OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

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1878

MICRO PHOTO INC
CLEVELAND. OHIO

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME XIII.

JANUARY 1 TO JUNE 25, INCLUSIVE,

1878.

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1878.

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ERRATA.

On page 21, No. **198,805,** in title, for "Pokes" read *Hampers,* and for "poke" read *hampers* wherever it occurs in the claims.

On page 39, No. **198,917,** in heading, strike out "one-half of his right," and for "Julian" read *Julia.*

On page 130, No. **199,367,** after "Cal." insert *assignor of one-half his right to James D. Culp, same place.*

On page 256, No. **200,039,** in heading, assignee's name, for "Clay" read *Clary.*

On page 261, No. **200,071,** first clause of claim, fourth line, strike out "reversely," and insert "reversely" between the words "slotted" and "at," same line.

On page 281, No. **200,136,** assignee's name, for "Wyscawer" read *Wyscarver.*

On page 336, No. **200,440,** in heading, strike out "Brookline, Mass."

On page 393, No. **200,742,** in third line of heading, for "Cambridge" read *Lawrence.*

On page 439, No. **200,979,** patentee's name, for "Corney" read *Comey.*

On page 448, No. **201,035,** in title, for "Picture-Frames" read *Picture-Frame-Cord Holders.*

On page 450, No. **201,047,** second clause of claim, first line, for "drill" read *side.*

On page 450, No. **201,048,** first clause of claim, third line, after "reservoir" insert *and inclosed in a tube, F, having an opening, F', through which it can be regulated.*

On page 482, No. **201,220,** in heading, after "assignor" insert *of one-half his right.*

On page 488, No. **201,261,** in claim, for "A" read *B.*

On page 528, No. **201,469,** inventor's name, for "Vanclain" read *Vanclain.*

On page 584, No. **201,815,** first clause of claim, second line, for "joined" read *formed.*

On page 601, No. **201,878,** assignee's name, for "Du Paget" read *Du Puget.*

On page 610, No. **201,945,** inventor's name, for "Rautz" read *Rautz.*

On page 713, No. **202,574,** seventh clause of claim, strike out "back plate of lock."

On page 922, No. **203,834,** in heading, "after N. J.," insert *assignor to The Celluloid Manufacturing Company, of New York.*

On page 971, No. **204,157,** in title, for "Tables" read *Chairs.*

On page 1004, No. **204,406,** assignee's name, for "Parris" read *Paris.*

On page 1142, No. **205,247,** in heading, erase "Mucilage," and for "Nathan" read *Nelson.*

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

JANUARY—JUNE, 1878.

THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE

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THE OFFICIAL GAZETTE—1878.

With this number THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE enters on the Seventh Year of its publication. Previous to the year 1872 the transactions of the Patent Office were made matters of public record in the nature of Annual Reports published some time after the expiration of each year, in form and method of compilation hardly in consonance with the extent of the business represented, its importance, and the magnitude of the interests involved. A limited number of those Reports were distribnted gratis by Members of Congress and the Patent Office, the circulation being thus partial and inconveniently located. The multiplication of inquiries, and the vexations which manifested themselves on account of lack of information as to the work of the Office, evidenced that the manufacturing interests and mechanical genius of the nation demanded more constant and ready references to Patent transactions than could possibly be comprehended in publications so far apart as those then in existence. Besides this, the illustrations of the Reports were, in many instances, crude and barren of detail, and even far behind the ordinary productions of the illustrative art of the day. To remedy annoyances and meet demands THE OFFICIAL GAZETTE was called into being. In its primitive form there were, naturally, many deficiencies which only time could correct. Constant improvements, inaugurated by apparent need, by the development of the arts and the production of machines, have frequently suggested themselves, and have been, from time to time, instituted. This number of the journal is presented as complete a work of the kind as modern appliances can produce, and it is intended that in the future numbers its information shall keep full pace with the demands of the business it represents; that its illustrations shall be ample and its references comprehensive—more so, perhaps, than the kindred Reports of any other Government undertaking to foster and promote the arts, sciences, and manufactures through the medium of a Patent system. This result is due alike to the progressive instinct of the American people and the judicious institutions of the Government. The faculty of invention of a naturally ingenious race is fostered and cultivated, and marked progress is directly attributable to the generous diffusion of intelligence concerning the operations of inventors, and the opportunity for comparison and deduction afforded by the official publication of their experiments and achievements. The fact of the general and increasing demand from manufacturers and mechanics for this publication is demonstrative of the high plane of esteem it has reached. The important part it plays in the industry of the nation and the favorable regard in which it is held abroad are tributes to the intelligence and liberality of our Government.

The change of form introduced with this number is one which will readily strike those who have had opportunity for comparison. For those who will become acquainted with the journal through this number it may be necessary to state that heretofore the illustrations have been presented on pages of three columns, in whose contracted space the cramped and reduced letter-press and drawings lost much interest and value,

and to a great degree failed in elucidation. The open and extended columns now afford the room necessary for adequate display of the drawings, and the type is much more legible. The index, instead of forming a part of the weekly number, interpolated between the text and illustrative divisions, as heretofore, is now relegated to its proper place, and forms a distinct and separate portion. Thus, in binding, the indexes will not be repeated in the parts and collated in the semi-annual volume, but will be detached from the numbers, and at the completion of each volume the whole and complete index for the half year will be furnished. The saving in time of delivery of the semi-annual index—one of the very important features of the work—will be material, amounting to the difference between months and days. It is the intention to further widen the province of THE GAZETTE by adding to its former contents of changes in our Patent Law and Practice, Commissioner's Decisions, &c., items germane to the subject of inventions, and articles concerning foreign Patent matters—such as changes in the laws and practice, &c., and the discussion of views appertaining to Patent proceedings and correlatives. This enlargement of its sphere will still further extend its usefulness, for there are constantly arising within the United States Patent Office matters which have, as yet, never had public notice of the official character which it is now proposed to give them, the publication of which, as simple matters of fact apart from expression of opinion, cannot but interest the constituency THE GAZETTE represents.

The New Classification.

The commission appointed by the Commissioner of Patents to revise the Official Classification of Subjects of Invention has completed its labors, and the following classification has been adopted, and will supersede the one now in use.

Examiners are arranging their sub-classes, and when they shall be all completed they will be published under the proper head.

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Copies of Patents.

A photolithographic copy of any current patent issued by this Office can be obtained by sending 25 cents, and when any number over twenty are desired they can be had for 10 cents each. Of the back issues the following classes have been reproduced, and can be procured upon the same terms as the current issues.

1. Aeration and Bottling.
2. Apparel.
4. Baths and Closets.
5. Beds.
6. Bee-hives.
7. Beer and Wine.
8. Bleaching and Dyeing.
9. Boats.
10. Bolts, Nuts, and Rivets.
11. Book-binding.
13. Brakes and Gins.
14. Bridges.
15. Brushes and Brooms.
17. Butchering.
18. Caoutchouc.
19. Carding.
20. Carpentry.
21. Carriages and Wagons.
23. Chemical Miscellaneous.
26. Cloth.
28. Cordage.
29. Crinoline and Corsets.
31. Dairy.
33. Drafting.
34. Driers and Kilns.
36. Electricity.
37. Excavators.
38. Felting and Hats.
40. Files.
42. Fire-arms.
44. Fuel.
45. Furniture.
47. Garden and Orchard.
48. Gas.
52. Gunpowder.
53. Hardware Manufacture.
55. Harrows.
56. Harvesters.
58. Horology.
59. Horseshoes.
61. Hydraulic Engineering.
62. Ice.
65. Kitchen Utensils.
66. Knitting and Netting.
67. Lamps and Gas-fitting.
68. Laundry.
71. Manures.
72. Masonry.
73. Measuring Instruments.
75. Metallurgy.
76. Metal-working, (bending and straightening.)
77. Metal-working, (boring and drilling.)
78. Metal-working, (forging, swaging, and riveting.)
79. Metal-working, (punching, cutting, and shearing.)
80. Metal-working, (rolling.)
81. Metal-working Tools.
82. Metal-working, (turning, planing, and milling.)
83. Mills.
85. Nails.
86. Needles and pins.
87. Oils, Fats, and Glue.
88. Optics.
89. Ordnance.
90. Ore.
91. Paint.
92. Paper-making.
93. Paper Manufactures.
94. Paving.
96. Plating.
97. Plows.
98. Pneumatics.
99. Preserving Food.
101. Printing.
102. Projectiles.
103. Pumps.
104. Railways, (the way.)
105. Railways, (cars and interior fittings.)
106. Railway-cars, (exterior mountings and fittings.)
107. Railway Track and Car Irons and Fittings, Manufacture of.
108. Roofing.
111. Seeders and Planters.
112. Sewing-machines.
114. Ships, (construction.)
115. Ships, (propulsion.)
116. Signals.
117. Silk.
118. Spinning.
119. Stabling.
120. Stationery.
124. Stills.
126. Stoves and Furnaces.
127. Sugar.
130. Thrashing.
131. Tobacco.
132. Toilet.
134. Tubing and Wire.
135. Umbrellas and Fans.
137. Water Distribution.
138. Water-wheels.
139. Weaving.
141. Wood-screws.

And the subdivisions of—

Bench-planes	Buttons and Machines.
Bale-ties.	Combs, &c.

The specifications of all patents issued since July 1, 1871, are in print, and will be furnished, with the drawing, without extra charge. The specifications of patents issued from November 20, 1866, to July 1, 1871, are in print, and where such is the case the Office will furnish them with the drawings; but it will not undertake to reprint copies of patents which have been exhausted. Other classes than those above given are in progress of reproduction, and it is expected that the entire number of classes will be completed during the present fiscal year.

French Patents.

After a suspension of ten years, the French Patent Office has again begun the publication of the specifications and drawings of its patents, and it is reproducing them in two series, the one comprising the back issues from 1864, and the other the current issues from 1874. The Minister of Commerce informs this Office that it will take six years to complete the series from 1864 to 1874, so that the publications will be complete.

The patents for 1864 and 1874 have been printed; 1865 and 1875 are now being reproduced. This Office is in receipt of all the publications which have been completed, and will receive the balance as fast as they are issued.

The Franco-Prussian war and the consequent reduction in appropriations are cited as reasons for the delay which has taken place in the publication of the French patents. Formerly the patents granted by the French Government were not published; but under article twenty-four of the present statutes, publication of the specifications was authorized after the payment of the second annuity.

The Minister uses his discretion in this publication, and many of the specifications are not published, except by abstract, and with some of them only the title is given.

The completion of these series will be a very important matter, and their addition to the Patent Office Library will contribute to the work of examination a great deal of valuable information not now attainable.

The "Fire" Official Gazette.

The *Journal des Inventeurs*, of Antwerp, Belgium, of the date of December 1, 1877, reproduces a good portion of the matter which appeared in THE OFFICIAL GAZETTE of October 9, giving an account of the fire of September 24, which destroyed the north and west wings of the Patent Office building. It says in reference to THE GAZETTE:

> The United States Patent Office has sent us the number of the 9th of October of its OFFICIAL GAZETTE, a publication of which we deem it our duty to speak to our readers.
>
> The first part of that number, containing sixty-six compact pages of text, is devoted to the history of the Office and the description of the fire in the museum. Superb engravings represent that apartment, the ground floor, the plans of the upper stories, and the ruins of that Pantheon of ingenuity and invention. As we have already spoken of the fire we shall not return to that subject.
>
> The Patent Office, of which we publish in a supplement two views, was ordered to be built on the 4th day of July, 1836, and commenced the same year. * * * * *
>
> We are pleased to acknowledge the superiority of the American people on the cool and simple manner in which the Office announces that it is going to rebuild the museum. * * * *
>
> The disastrous fire which has for some time blotted out the past assumes now the shape of a resurrection, tangible to the eye, as we can perceive from the second part of the bulletin, containing the list of the patents issued on the 9th day of October. That United States Patent Office GAZETTE is delightful to look at. In twenty-eight pages in octavo, it contains the drawings of no less than one hundred and eighty-seven various inventions, accompanied with a summary description. Those drawings are admirably well reproduced, artfully and almost luxuriously.
>
> The printing is carefully done and finished off in a manner unknown in Europe. We state the fact without hesitation.

THE NORWEGIAN PATENT JOURNAL.—The Office received during the past week the *Patenter. Bekjendtgjörelser fra Departementet for det Indre. Följer Polyteknisk Tidsskrift*, for 1876. It is the official publication of the Norwegian Patent Office, and is published in three parts each year. It contains drawings and descriptions of the patents granted, and is a very creditable publication. The drawings are shown *in extenso*, much after the style in vogue in the Great Seal Patent Office of Great Britain. The text is well printed in one part, and the drawings are attached to the back thereof. Formerly it was printed under a commission from the Government, by a scientific association; but it now appears as the official publication of the kingdom.

PRICE OF THE GAZETTE.—The price of THE OFFICIAL GAZETTE is still fixed at $6 per annum, and there is no reduction from that price except where five subscriptions are included in one order, when the subscription is $5; and subscribers can be added to this club, by the party or parties forming it, any time during the year, at the reduced price.

The Annual Index will not be furnished to subscribers hereafter without extra charge; but immediately after the expiration of each volume a Half-yearly Index will be given without charge, and should additional copies of the Half-yearly Index be desired, they will be furnished upon the payment of fifty cents for each additional copy required.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

THE DECISIONS FOR 1877.—The decisions of the United States Courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

TO SUBSCRIBERS.—Great care will hereafter be taken in mailing THE OFFICIAL GAZETTE to subscribers, and in case of its non-receipt the fault will not be in the Patent Office; when each issue shall have been mailed, the Office will assume that it has done its duty by the subscribers, and will not send extra numbers except upon receipt of 10 cents for each copy ordered.

BOUND VOLUMES FOR 1877.—The bound volumes of THE OFFICIAL GAZETTE for 1877 are now ready for distribution, and can be procured, in full law binding, for $8, and in half-calf for $7. The Annual Index for 1877 will not be ready for distribution, either to subscribers or purchasers of the bound volumes, before the 1st of May, 1878.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

COMMISSIONER'S DECISIONS.

DANIELS *vs.* CHESTERMAN.—*Motion.*

[*Motion in the matter of the interference between the application of William Daniels for the reissue of Letters Patent No.* 150,539, *granted May* 5, 1874, *and Letters Patent No.* 153,475, *granted to Edwin Chesterman, July* 28, 1874, *for* "IMPROVEMENT IN FARE-REGISTERS."—*Decided December* 15, 1877.]

A disclaimer contained in an original patent may be omitted upon reissue, notwithstanding it was entered to avoid a threatened interference, it being clearly established that the admission which it makes is an inadvertence.

If the interfering patentee believed the reissue applicant estopped from withdrawing the disclaimer, he should have objected at the outset of the controversy, and moved to dissolve the interference. His failure to do so presumptively admits the applicant's right to omit the disclaimer.

SPEAR, *Commissioner:*

The interference contest between the above parties was finally decided in favor of Daniels. Motion is now made on behalf of Chesterman to grant a rehearing, and permit the reopening of the case for the purpose of taking additional testimony. The object of the new testimony is to show that Daniels was fully advised of the nature and effect of the disclaimer entered, as alleged with his consent in the original patent, and that this was done with the avowed intention of avoiding an interference with Chesterman, who was a pending applicant before the Office at that time.

To withdraw the disclaimer upon reissue is not only contrary to law, according to argument of counsel, because it was not made through inadvertence, accident, or mistake in the first instance, but also, since Chesterman was induced to act in the belief that the disclaimer was of permanent binding force then, that Daniels should be prevented from going behind his voluntary undertaking to the serious injury of an innocent person.

Several affidavits are filed in support of the motion, and the arguments based thereon have been carefully considered.

Had the objection to the legal right of Daniels under the particular circumstances to omit the disclaimer from his reissue been made at an earlier stage of the case, it would have been entertained with much more patience. The affidavits of McHenry, Miller, and of Chesterman himself, all state, in effect, that they were fully advised of the existence of a disclaimer in the original Daniels patent, and it was their reliance upon its continued binding force which induced them to embark capital in manufacturing the contested device. If, then, this be so, and I take their own affidavits upon the point, it is a little curious that no motion was made by them to dissolve the interference at the outset, and when they first discovered the absence of the disclaimer from the reissue application. Then the legality of the action in this regard by Daniels could have been fully reviewed without detriment, and as a question vital to the very continuance of the declared interference. Failing to do this, they must be held to have admitted, by implication, Daniels's legal right to withdraw the disclaimer, precisely as he has done, and to have joined issue with him on the simple question of fact—viz., who is the prior inventor? The only mitigating fact is, that they were not fully advised of the circumstances attendant upon the original entry of the disclaimer, and which, they have since discovered, are of such nature as to work a virtual estoppel, in their point of view, against Daniels. Now, aside from the question as to whether they were not put upon inquiry at the start to learn of this matter by the mere omission of the disclaimer, and whether, as a matter of law, the action which an innocent party is induced to take as one of the elements of an estoppel, can apply to Chesterman, who proceeded on no other representation of Daniels than the published disclaimer—a disclaimer which the courts had ruled could be omitted on reissue, and whose views in this regard must have been constructively known, at least—waiving, I say, both the question of negligence and of the sufficiency of the deceptive representations, we are led to inquire what will be the effect of the additional testimony, even if fully established.

The material allegation is that of Examiner Wilber, who testifies to Daniels exclaiming, when shown the date of filing of Chesterman's application, "Oh, well, I can do nothing with him," which we are asked to construe as a direct admission of his (Daniels's) subsequent inventorship.

In the case of *Laidley* vs. *James*, (MS. opinions, Supreme Court, District of Columbia, April 13, 1865,) Justice Merrick says:

> An individual who has really discovered anything patentable may be told by others that his invention has been long known, and upon investigation he may ascertain that the knowledge of it is really subsequent to his own development of the idea. Now, if you credit his solemn admission under oath that it is old, why shall you not equally credit his solemn oath that the admission was inadvertent or a mistake? You have himself testifying against himself; and when, in addition thereto, he adduces a witness to prove that anterior to his first application he did, in fact, produce the invention, and then claims it as his own, the last oath must prevail to countervail the effect of the first. * * *
>
> Nothing should pass to the public or to his adversary through his mistake or inadvertency or ignorance by force of any language used in his specification, description, or claim which was within the scope of the invention he actually made anterior to his first application.

It is fully established that Daniels completed the invention some eight or ten months before the date which it is sought to fix upon him, and long previous to its reduction by his adversary, Chesterman. Several witnesses substantiate these facts, so that under the circumstances the disclaimer is obviously an inadvertence, which he may remedy without detriment.

The motion in behalf of Chesterman is denied.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Western District of Pennsylvania.

JOHN C. KLEIN *vs.* KLOMAN PARK & CO.

[*In Equity.—Before* MCKENNAN, *Cir. J.—Decided November* 23, 1877.]

The method of forming the eyes of picks, as set forth and claimed in Reissue Letters Patent No. 6,951, is new and patentable. To draw down the eyes on a mandrel between rolling-dies, after the bar has been punched and the metal set down at either end around the eyes, so that the walls of the eyes are elongated as desired, and preserved of uniform thickness, is a new step in the art, and impresses the whole method with the character of novelty.

Although defendant's dies were in four parts, and complainant's in but two, infringement was established from the fact that the "side dies," so called, when connected with the principal dies, were identical in operation and effect with the side walls of complainant's top and bottom dies.

[*George H. Christy* and *J. J. Coombs*, for complainant; *Bakewell & Kerr*, for defendants.]

Suit was brought for infringement of reissued Patent No. 6,951, granted to complainant February 29, 1876. The claims were as follows:

1. The within-described method of forming the eye of picks, consisting in, first, punching the bar; second, in setting down the metal on either end around the eye; and, lastly, drawing down on a mandrel between rolling-dies, substantially as described and shown.

2. The dies E, constructed as described, for drawing down the eye, substantially as shown.

MCKENNAN, *Cir. J.:*

The complainant's patent contains two claims, both of which the defendants are alleged to have infringed. The first is for the method described in the specification of forming the eye of picks, consisting in, first, punching the bar; second, in setting down the metal on either end around the eye; and, lastly, drawing down on a mandrel between rolling-dies, substantially as described and shown.

The second is for the dies by which this method is in part effectuated, constructed as described, for drawing down the eye, substantially as shown.

The original and distinguishing merit of the patentee's invention consists in supplying dies of novel construction and form, and so adapted to forming the eyes of picks by a new method, and in combining with the old steps in forming the eyes of picks a new element—to wit, drawing them down on a mandrel between rolling-dies, which completely encompass the walls of the eye. The result is the elongation of the walls of the eye as may be desired, with uniform thickness, and the complete formation of the eye by the process of rolling alone, leaving only such further manipulation as may be necessary to give finish to the device.

Under the proofs in this case, this last step in the process of manufacture is new, and therefore impresses upon the whole method the character of novelty.

The only process set up to controvert this was practiced upon what is called the "Root" machine at the Collins Company's works in Collinsville, Connecticut, before the date of complainant's patent. But it is evident that that machine did not perform the complete operation indicated in the first claim of the patent here, nor was it capable of performing it. The walls of the eye were undoubtedly drawn out upon a mandrel by the dies used in it; but they did not encompass or envelop the walls, nor, when their function was exhausted, did they form an eye whose walls were of uniform thickness. The eye was left thicker at the ends than at the sides, and it was therefore necessary to reduce this inequality by an additional and independent method. This is apparent, not only from the construction of the dies themselves, and the device produced by them, but from the proofs as to the manner of their use and the result of their operation.

Nothing, then, appears in the case to warrant any doubt as to the complainant's title. Upon the question of infringement, I think it is clear that the complainant's method of manufacture is employed by the de-

fendants. After punching the iron bar out of which the pick is to be formed, they set down the metal on either side of the eye, and then draw down the eye on a mandrel, between rolling-dies which entirely envelop the walls of the eye, and thus, by one operation, completely form it with the desired elongation, and with walls of uniform thickness.

It is true that the dies used by the defendants are formally different from those described in the complainant's patent; but I am satisfied that they embody all the characteristic features of the complainant's dies. Instead of two dies adapted to effectuate the complainant's method, placed above and below each other, the defendants use dies composed of four parts—top and bottom dies and side dies. The side dies, however, are the obvious equivalents of the side walls of the complainant's dies. They operate in the same way, perform the same function, and produce the same result. The only difference is in the method of their attachment to the upper and lower dies. In the one case the side walls of the principal dies are immediately attached to them; in the other they consist of dies separable from the main ones, but secured in their places by pivots, and when thus in place co-operating with the principal dies precisely as do the side walls of the complainant's top and bottom dies.

I am therefore of opinion that the complainant's patent is valid, that both its claims have been infringed, and that a decree should be rendered for the complainant.

U. S. Circuit Court—District of Maryland.

JOHN WINSLOW JONES *vs.* LOUIS McMURRY.

[*In Equity.—Bill for Injunction.*]

The U. S. Supreme Court, in *Jones* vs. *Sewall*, (1 Otto, 171,) declared Letters Patent No. 34,928 and No. 35,724 (canning green corn) to be void for want of novelty in the subject-matter, and not because of defective or insufficient specifications.

To surrender the original and obtain reissue letters patent does not impair the judgment of lack of novelty, it appearing that the inventions set forth are the same as those contained in the original patents.

If the reissue (No. 7,061) does contain something new and patentable, then the grant is none the less invalid because it is not for the same invention as the original. The meritorious matter should be embodied in a separate patent, and not ingrafted on one which has been adjudged to be wholly void.

Letters Patent No. 51,379 and No. 54,170, for a curved knife for cutting corn from the cob, are wanting in patentable novelty.

BOND, *J.*:

As this cause involves large pecuniary interests, and is also of much importance to the public at large, the court has very carefully read and considered the whole testimony, which is so voluminous that counsel could refer to it only in their arguments, or but partly read it.

This bill is preferred by complainant to establish the validity of four letters patent relating to inventions for the canning and preservation of green corn.

The first patent (No. 34,928, dated April 8, 1862) and its reissue (No. 7,067, dated April 18, 1876) cover the invented product, while the second patent (No. 35,274, dated May 13, 1862) and its reissue (No. 7,061, dated April 18, 1876) relate to the process for making the product.

The Supreme Court of the United States, in the case of *Jones* vs. *Sewall*, (1 Otto, 171,) determined that the original patents above named (Nos. 34,928 and 35,274) were void for want of novelty, and this court is saved the labor of investigating their validity; but the complainant here claims that though the original patents were declared invalid by the Supreme Court, he is entitled to the relief he asks because he has surrendered Patents Nos. 34,928 and 35,274, and the Commissioner of Patents has reissued the same to him because the originals were invalid merely "by reason of a defective or insufficient specification," under Sec. 4916 Rev. Stats. U. S.

He therefore, so far as this part of his case is concerned, relies upon the reissued patents, (Nos. 7,061 and 7,067,) which relate to both the process of canning and to the product of the canning process.

While we are of the opinion that the decision of the Supreme Court in *Sewall* vs. *Jones* is much broader than the complainant admits, and that it goes to the whole invention then and now claimed by Jones in the patents we are here considering, and that it determined that both the process and product now claimed by Jones was the invention of Appert in France and Durand in England more than sixty years ago, and held that Jones's patents were void for want of novelty, and not merely invalid for want of a proper specification and description of Jones's claim, nevertheless, since the Commissioner of Patents has reissued the patents to Jones, we would give him the benefit of them could we discover in what respect they differed essentially or substantially from the originals which the Supreme Court has decided were not novel. There is no essential difference, however, between the process described in Patent No. 35,274 and its reissue, (No. 7,061.) The first recites that, after some difficulty found in preserving the green corn without drying, the inventor removed the corn from the cob and boiled it, but that this process, the corn being broken by removal from the cob, dissolved the juices and made the corn insipid, and that, finally, he removed the corn from the cob, packed the kernels in cans, hermetically sealing them, and boiled them till the corn was cooked. The Supreme Court says, in *Jones* vs. *Sewall*, this is not new.

In his reissued patent the complainant states that he takes tender green corn and scrapes it from the cob so as not to detach the inner ends of the kernel, which, with the pieces and softer parts of the corn, he cooks together, and then proceeds with the old process of Appert for cooking and sealing. He claims as his invention "the process described of separating and obtaining the nutritious and edible parts of the corn, and boiling them in a liquid composed wholly or mainly of their own juices."

No one ever cut green corn from a cob who did not accomplish exactly what this claim describes, and no one under the process described in Patent 35,274, which required the corn to be removed from the cob, could so remove it without breaking the kernels, and when he proceeded to cook in a can, as the patent required, he would find necessarily more or less of the juices with it. The reissue does not claim that the juices only should be used in the cooking.

The process described in the reissue is substantially that of the original patent; but if we admit there is something new and patentable in the reissued patent which was not in the original, the patent is void, because it is not for the same invention as the original.

It may be the subject of a new patent, but cannot be a reissue of an old one, and that, too, of an old one which has been adjudged invalid by the Supreme Court for the want of novelty.

But the fact is, that Jones, as far back as May, 1862, had applied for and obtained a patent (No. 35,346) which described the cutting off the corn from the cob in very much the same words as he does in the reissued patent, (7,061.)

This patent (No. 35,346) Judge Clifford held, and rightly, to be substantially the same with No. 35,274, now under consideration.

It cannot, therefore, be claimed that the reissued patent contains anything which the original did not, and the original, says the Supreme Court, is void for the want of novelty.

The two remaining patents which the bill alleges the defendant has infringed are Nos. 51,379 and 54,170, which describe a curved knife for the removal of the corn from the cob. We are of opinion that these two patents are also void for want of novelty. The knife described in the first patent is simply a curved knife provided with a gage, for the purpose of removing corn from a cob. The second patent makes the gage adjustable. This, we think, the defendant has shown to be old.

The knife differs nothing in principle, and little in construction, from the knife known as the "spoke-shave," or from the paring-knife of Adam Oot. (Defendant's record, 606.)

But even if we admit the validity of these patents, we have looked in vain for any proof that the defendant has infringed them by using complainant's knife; on the contrary, the complainant's proof (Record, 25-42) shows that the defendant used a different knife entirely.

For these reasons, and without considering other and, as we think, equally fatal objections to the complainant's case, we think the complainant's bill should be dismissed with costs, and will sign a decree to that effect.

U. S. Circuit Court—Southern District of New York.

JAMES L. MARSH AND OTHERS *vs.* GEORGE WARREN AND ALEXANDER L. FAIRWEATHER.

[*Before* BLATCHFORD, *J.—Decided June* 19, 1877.]

The rights and remedies conferred by the copyright law are applicable to the amendatory act of June 18, 1874.

To effect the valid registry of a print or label under the amendatory act in question, a printed copy of the title of the article to be thus protected must be deposited at the Patent Office before its publication.

Preliminary injunction was accordingly denied, it appearing that the label had been published by being affixed and sold with the merchandise for which it was designed prior to its registration.

[*A. Broadnax*, attorney for plaintiffs; *Messrs. Hall & Blandy*, attorneys for defendants.]

BLATCHFORD, *J.*:

The statutory provisions which confer the rights and regulate the remedies of persons who register in the Patent Office under the act of June 18, 1874, (18 U. S. Stat. at Large, 78,) prints or labels designed to be used for any other articles of manufacture than pictorial illustrations and works connected with the fine arts are those which are contained in sections 4948 to 4971 of the Revised Statutes in regard to copyrights. The exclusive right of printing and publishing given by section 4952 is given to the author or proprietor only on complying with the provisions of sections 4948 to 4971. One of those provisions (section 4956) is, that no person shall be entitled to a copyright unless he shall "before publication" deliver at the proper office (in this case the Patent Office) a printed copy of the title of the article in respect of which the copyright is to be claimed.

In the present case the first label and its title were registered September 24, 1875.

I understand the bill to state that this label was used by the plaintiffs' assignors in the sale of their mixture, and of the bottles containing it to which such label was affixed, before that date, and as early as the mixture itself was sold—to wit, June or July, 1875. The sale of the bottles of the mixture with the label on it was a publication of the label.

At all events the bill does not allege that the title and label were deposited before the publication of the label. Such averment is necessary. As to the other three labels, they and their titles were registered March 20, 1877, and I understand the bill to state that those labels were used by the plaintiffs before that date in the sale of the mixture.

The motion for an injunction is denied.

U. S. Circuit Court—District of New Jersey.

CHRISTOLPH REISSNER *et al. vs.* L. W. ANNESS *et al.*

[*Suit for infringement of Reissue Letters Patent No.* 7,731.]

Where a replication is put in to a plea, the parties proceed to the examination of witnesses in the same way as in case of a replication to an answer.

This course having been prescribed by order of the court, a motion to revoke was denied.

[*B. F. Lee*, for complainant; *A. v. Briesen*, for defendants.]

MILAN, *J.*:

This is an application by the defendants to revoke the order, made by the court November 30, 1877, as to the taking of testimony, and to substitute therefor a new order giving to the defendants the right to begin and close the proofs.

The application is denied.

The first order is the correct one. Where a replication is put in to a plea, the parties proceed to the examination of witnesses in the same way as in case of a replication to an answer.

The force of the replication in such a case is the admission that the plea is sufficient in itself, but is not true in fact, and the testimony is to be taken as to its truth. If found true on the weight of evidence, a dismission of the bill on the hearing is a matter of course. (See *Hughes* vs. *Blake*, 6 Wheat., 472.)

DESIGNS.

[Each design bearing date January 1, 1878.]

10,385.—OIL-CLOTH.—*Franz Plock*, New York, N. Y., assignor to *George W. Blabon*, *George C. Blabon*, and *John C. S. Davis*, Philadelphia, Pa. Application filed December 8, 1877. Term of patent 3½ years.

10,386.—CASSIMERE.—*Timothy E. Hopkins*, West Fitchburg, Mass. Application filed December 18, 1877. Term of patent 3½ years.

10,387.—LACE FABRIC.—*Abraham G. Jennings*, Brooklyn, N. Y. Application filed December 17, 1877. Term of patent 7 years.

10,388.—LACE PURLING.—*Abraham G. Jennings*, Brooklyn, N. Y. Application filed December 17, 1877. Term of patent 14 years.

10,389.—KNITTED FABRIC.—*Emelie B. Nyholm*, Philadelphia, Pa. Application filed December 3, 1877. Term of patent 3½ years.

TRADE-MARKS.

[Each certificate bearing date January 1, 1878.]

5,463.—RIVETS AND BURS.—*Blake & Johnson*, Waterbury, Conn. Application filed December 10, 1877.

"A lozenge or diamond stamped or impressed upon the head of copper rivets, or upon the burs or washers thereof, or the word-symbol 'Diamond,' with the device printed on the labels, placed upon the boxes or packages containing copper rivets and rivet-burs of said company's manufacture, as shown."

5,464.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*McCoy & Co.*, New York, N. Y. Application filed December 13, 1877.

"The word-symbol 'THOROUGHBRED.'"

5,465.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*McCoy & Co.*, New York, N. Y. Application filed December 13, 1877.

"The word-symbol 'TATTOO.'"

5,466.—COLOGNE.—*Frank W. Barnum*, Danbury, Conn. Application filed November 8, 1877.

"The word-symbol 'PEERLESS.'"

5,467.—TEAS.—*M. Ehrman & Co.*, San Francisco, Cal., and New York, N. Y. Application filed October 26, 1877.

"The figure of a buffalo."

5,468.—PLUG-TOBACCO.—*Isaac Eppinger*, New York, N. Y. Application filed December 12, 1877.

"The word-symbol 'CABLE COIL.'"

5,469.—SOAP.—*Fairchild & Shelton*, Bridgeport, Conn. Application filed November 1, 1877.

"The word-symbol 'OZONE.'"

5,470.—SUSPENDERS AND BRACES.—*Hewins & Hollis*, Boston, Mass. Application filed December 3, 1877.

"The figure of a pine tree."

5,471.—CRACKERS, BISCUITS, OR WAFERS.—*George W. Heathman & Co.*, Dayton, Ohio. Application filed September 12, 1877.

"The word-symbol 'PATAPSCO.'"

5,472.—CIGARS.—*Kaufmann Brothers & Bondy*, New York, N. Y. Application filed December 14, 1877.

"The word-symbol 'HALF AND HALF.'"

5,473.—SHOES.—*Cyrus Libby*, Chicago, Ill. Application filed November 19, 1877.

"The word-symbol 'PROTECTION.'"

5,474.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*McCoy & Co.*, New York, N. Y. Application filed December 10, 1877.

"The word-symbol 'HACIENDA.'"

5,475.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Straiton & Storm*, New York, N. Y. Application filed December 11, 1877.

"The word-symbol 'CALUMET.'"

5,476.—ENCAUSTIC TILING.—*Fischer & Lansing*, New York, N. Y. Application filed May 21, 1877.

"The word-symbol 'AMERICAN.'"

5,477.—MOLASSES CANDY.—*M. K. Robb*, Brooklyn, N. Y. Application filed December 13, 1877.

"The letters 'X. L. M. K. R. N. T.'"

5,478.—MEDICINE FOR THE CURE OF CATARRH.—*Thompson & Dale*, Boston, Mass. Application filed December 10, 1877.

"A monogram composed of the initials, A. J. T.'"

5,479.—PAINTS.—*The Iron Clad Paint Company*, Cleveland, Ohio. Application filed April 30, 1877.

"The word-symbol 'IRON CLAD.'"

LABELS.

[Each certificate bearing date January 1, 1878.]

1,329.—Title: "EXTRA DRY."—*Frash & Co.*, New York, N. Y. Application filed December 19, 1877.

1,330, (Print.)—Title: "MERCEDES."—*Heppenheimer & Maurer*, New York, N. Y. Application filed December 19, 1877.

1,331, (Print.)—Title: "DAISY."—*Heppenheimer & Maurer*, New York, N. Y. Application filed December 22, 1877.

1,332, (Print.)—Title: "THE START."—*Heppenheimer & Maurer*, New York, N. Y. Application filed December 22, 1877.

1,333, (Print.)—Title: "SEVENTH DAUGHTER."—*Heppenheimer & Maurer*, New York, N. Y. Application filed December 22, 1877.

1,334, (Print.)—Title: "BEST HAVANA."—*Heppenheimer & Maurer*, New York, N. Y. Application filed December 22, 1877.

1,335, (Print.)—Title: "DETERMINO."—*Heppenheimer & Maurer*, New York, N. Y. Application filed December 22, 1877.

1,336.—Title: "NUREMBERG ULTRAMARINE WORKS, WASH BLUE IN BALLS."—*Charles F. Zentgraf*, New York, N. Y. Application filed November 23, 1877.

1,337.—Title: "ASHWELL'S SOLID COOKED CORNED BEEF."—*Ashwell & Co.*, New York, N. Y. Application filed December 27, 1877.

1,338.—Title: "PENNSYLVANIA OATEN GRITS."—*John S. Detweiler & Co.*, Philadelphia, Pa. Application filed December 26, 1877.

1,339.—Title: "DELAWARE WHEATEN GRITS."—*John S. Detweiler & Co.*, Philadelphia, Pa. Application filed December 17, 1877.

1,340.—"Title: "CASH SALE."—*Philip Deusner, Jr.*, of Kokomo, Ind. Application filed December 21, 1877.

1,341.—Title: "SWISS KUMYSS, OR LACTO PEPTICUM."—*Eugene A. Du Puy*, Brooklyn, N. Y. Application filed December 26, 1877.

1,342.—"Title: 'COMPOUND WITCH HAZEL PILLS."—*Benjamin W. Dyer*, New York, N. Y. Application filed December 21, 1877.

1,343.—Title: "JEFFERS' ORIGINAL BRONCHIAL CIGARETTES," &c.—*Perley Jeffers*, Chicago, Ill. Application filed December 24, 1877.

1,344.—"Title: "DR. Z. WATERS' INDIAN VEGETABLE CATHARTIC AND LIVER PILLS.—*Henry S. Woodard*, Bloomington, Ill. Application filed December 28, 1877.

1,345.—Title: "DR. Z. WATERS' RASPBERRY BALSAM."—*Henry S. Woodard*, Bloomington, Ill. Application filed December 28, 1877.

1,346.—Title: "DR. Z. WATERS' HONEY BALSAM."—*Henry S. Woodard*, Bloomington, Ill. Application filed December 28, 1877.

DISCLAIMERS.

6,580, (Reissue.)—*S. Emerson Root*, Bristol, Conn.; patented May May 10, 1859, No. 23,950; extended 7 years; reissued August 3, 1875; disclaimer filed December 28, 1877.

Disclaims that part of the claim in said specification which is in the following words, to wit:

"3. The combination of a zinc back with a paper dial, substantially as and for the purpose set forth."

Further, disclaims in the first and second clauses of the claim, "a metallic scalp, broadly considered, and the scope of the claims is restricted to the combinations of parts specified in said first and second claims, when the metallic scalp therein specified is provided with lateral flanges on its outer and inner edges substantially as illustrated in the drawings forming a part of said reissued letters patent."

Further, disclaims, "a rim of struck-up sheet metal," broadly considered, as entering into the fourth clause of claim, and restricts said claim to the combination of parts therein specified, when the "rim of struck-up sheet metal" therein specified is formed on the edge of the metallic back, and serves to govern the position of the dial, substantially as illustrated in the drawings forming a part of said reissued letters patent.

Further, disclaims "frame C," broadly considered, as entering into the combination of parts specified in the fifth clause of claim, and restricts the scope of said claim to the combination of parts therein specified, when the "frame C" is provided with lateral flanges on its outer and inner edges, substantially as illustrated in the drawings of said reissued letters patent.

194,616.—*Thomas O. Potter*, of Boston, Mass.; patented August 28, 1877; disclaimer filed January 9, 1878, by *Thomas O. Potter* and *Albert Nichols*, assignee of said *Potter*.

Disclaim "the broad combination of the shoulder-straps A A', and the two M-shaped button-straps, C C,' and limit the first claim in said patent to the special combination of the shoulder-straps and the button-straps, by means of sheaves, substantially as described in said patent.

NOTES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

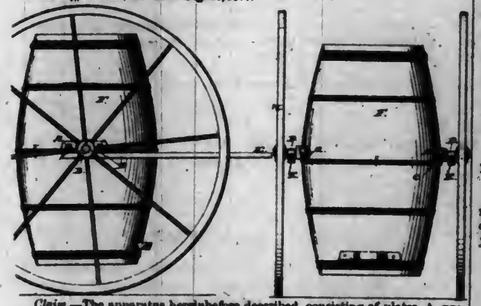
JANUARY 1, 1878.

193,733. MANUFACTURE OF IRON AND STEEL. Isaac L. Bell, Rounton Grange, England. Filed Oct. 20, 1877.

Claim.—1. As an improvement in the manufacture of iron and steel, the herein-before-described method of separating phosphorus from cast-iron, which consists in separately fusing cast-iron and oxide of iron, running or mixing together the melted cast-iron and the melted oxide of iron in a blending-vessel, and maintaining the temperature of the mixture at a point below that at which a rapid separation of the carbon from the iron takes place, until the phosphorus is oxidized and transferred to the oxide of iron, preparatory to the separation or removal of the contaminated oxide of iron from the metal, substantially as set forth.

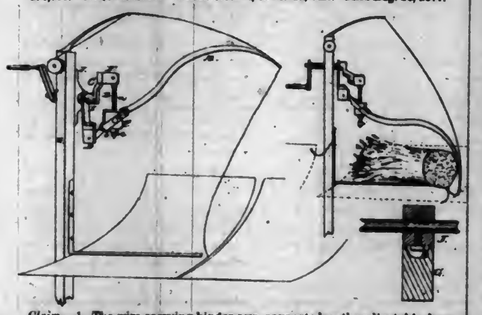
2. The hereinbefore-described method of manufacturing iron and steel, which consists in blending together melted oxide of iron and melted cast-iron, maintaining the mixture at a temperature sufficiently low to prevent a too great reduction of the carbon while causing the transfer of the phosphorus from the metal to the oxide of iron, and finally converting the metal into steel or malleable iron, substantially as set forth.

193,734. WATER-GARDENING TROUGH. Francis M. Hackman, Austin B. Hackman, and David T. Grilling, De Kalb, Ill. Filed Aug. 20, 1877.



Claim.—The apparatus hereinbefore described, consisting of piston A, provided with axles H, in combination with clasps D, shafts E, and barrel F, substantially as and for the purpose set forth.

193,735. GRAIN-BINDER. Charles Colshan, Cleveland, Ohio. Filed Aug. 28, 1877.



Claim.—1. The wire-carrying binder-arm, supported on the adjustable down-hanger I, as shown and described, in combination with the mechanism operating the same, all having a single or common support, J.

2. The band-carrying arm, actuated by crank C, in combination with pivoted lugs F and E and piston-rod B, as shown and described.

3. The combination of the pivoted wire-carrying arm, the piston operating said arm, and the spring for allowing a yielding movement between said arm and piston, substantially as described.

4. The combination of the box J, the sleeve supporting down-hanger I, the pivoted lug D, the arm A, the pivoted lug E, with the piston-rod B, having the adjustable collar *b* and spring *a*, with pivoted crank-pin F and crank C, as shown and described.

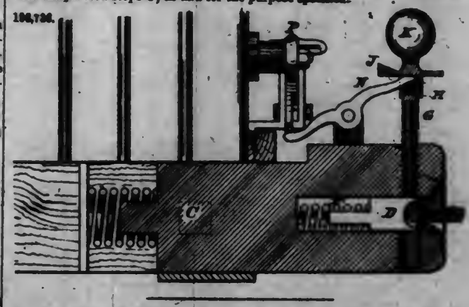
5. The combination of the pivoted wire-carrying arm and the piston pivoted to and operating said arm, substantially as described.

193,738. CAR-COUPLINGS. M. J. L. Dette, Buffalo, N. Y., assignor of two-thirds his right to Julius Cohen and Henry Milling, same place. Filed Dec. 3, 1877.

Claim.—1. The car-coupling hereinbefore described, consisting essentially of the draw-head C, having the link-aperture fitted with the push-block D, provided with the spherical depression in its face, the spring F on its shank, the coupling-pin G, having the collar J and the angular perforated part H, the lever E, and the levers P, said levers P being pivoted to the car-body, and operating within bifurcated brackets S S, having the stops U pivoted to said brackets, the whole constructed and arranged to operate substantially as and for the purpose specified.

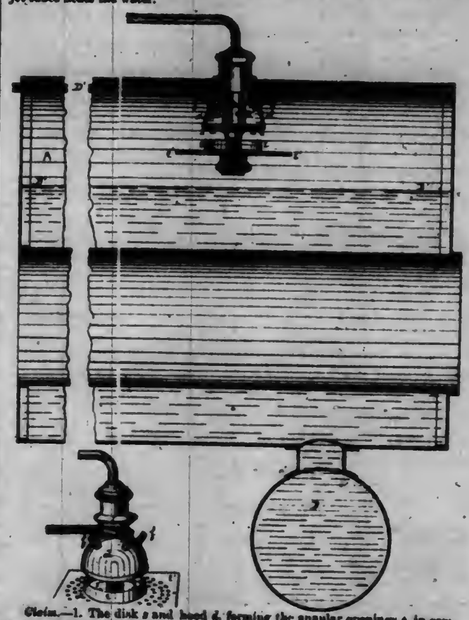
2. The mechanism for actuating the coupling-pin G, consisting essentially of the pivoted lever N, pivoted levers P P', and guide-brackets S S, provided with the pivoted stops U, as and for the purpose specified.

193,736.



193,737. HEATING AND PURIFYING WATER FOR STEAM-BOILERS. Samuel M. Fulton, Pittsburg, Pa. Filed Nov. 26, 1877.

Brief.—Water discharged from the feed-chamber falls on the top edge of the ring, which projects from the perforated plate, thereby further breaking or subdividing it into smaller particles. Steam admitted to the chamber through the jet-tubes heats the water.



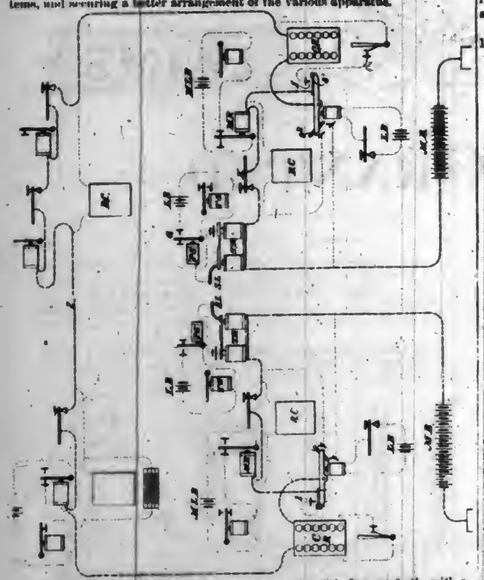
Claim.—1. The disk *a* and hood *d*, forming the annular openings *b*, in combination with annular ring *c*, arranged to receive the feed-water discharged through *a*, substantially as set forth.

2. The disk *a*, hood *d*, and ring *c*, in combination with plate *e'*, substantially as described.

3. A hood, *d*, having jet-holes, with or without jet-tubes, above the level of the water-supply inlet-ports *a'*, in combination with such ports, substantially as set forth.

198,738. MORSE TELEPHONIC TELEGRAPHY. Elisha Gray, Chicago, Ill. Filed Oct. 20, 1877.

Brief.—For equalizing the potential for both the Morse and telephonic systems, and securing a better arrangement of the various apparatus.



Claim.—1. The combination, substantially as hereinbefore set forth, with a telephonic transmitting apparatus and a Morse apparatus, of a rheostat which shunts the key and relay of the ordinary Morse apparatus.

2. The combination, substantially as hereinbefore set forth, of two branch circuits in a main line, one embracing a rheostat, the other one or more Morse relays and keys.

3. The combination, substantially as hereinbefore set forth, in one circuit, of telephonic apparatus, Morse apparatus, a rheostat shunting the Morse key and relay, and a condenser which, when the Morse key is closed, shunts both relay and rheostat, and, when opened, shunts the resistance only, whereby an even vibratory current is maintained upon the line.

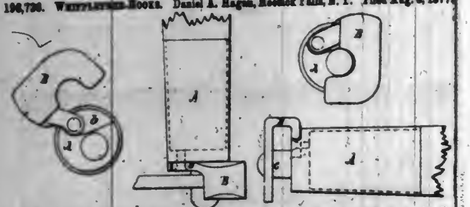
4. The combination, substantially as hereinbefore set forth, of branch circuits, a key, a relay, a resistance, and a condenser which shunts the key and relay when the key is closed, and the resistance when the key is opened.

5. The combination, substantially as hereinbefore set forth, in a branch circuit, of a relay, a key, and a condenser shunting them.

6. The combination, substantially as hereinbefore set forth, of branch circuits, a key, a relay, a resistance, and a condenser which shunts the key and relay when the key is closed, and the resistance when the key is opened.

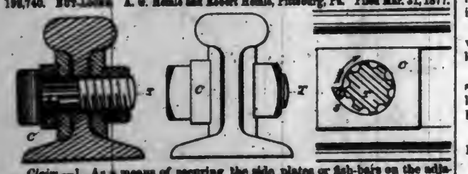
7. The combination, substantially as hereinbefore set forth, in a branch circuit, of a relay, a key, and a condenser shunting them.

198,739. WHIFFLETREE-HOOKS. Daniel A. Hagan, Mechanic Falls, N. Y. Filed Aug. 3, 1877.



Claim.—The trace-fastener consisting of a smooth projecting boss or pin, C, to which the harness-trace is attached, in combination with the rotating guard B, pivoted on socket-cap A, arranged and working as shown, substantially as described and set forth.

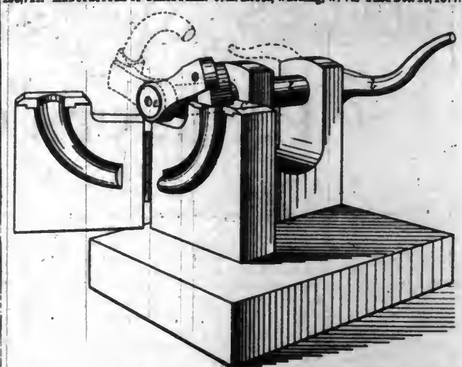
198,740. NUT-LOCKS. A. G. Heinle and Robert Heinle, Pittsburg, Pa. Filed Mar. 31, 1877.



Claim.—1. As a means of securing the side plates or fish-bars on the adjacent ends of railway-rails, the grooved necked bolt T, in combination with the loose pin i and eccentric hole s in the washer C, substantially in the manner shown and described.

2. A bolt, T, having a neck or shank of fluted or other described irregular shape in cross-section, in combination with loose rotating pin i and eccentric recess s in the wall of the hole through which the bolt-neck passes, substantially as set forth.

198,741. MANUFACTURE OF GLASSWARE. J. H. Noble, Wheeling, W. Va. Filed Dec. 15, 1877.



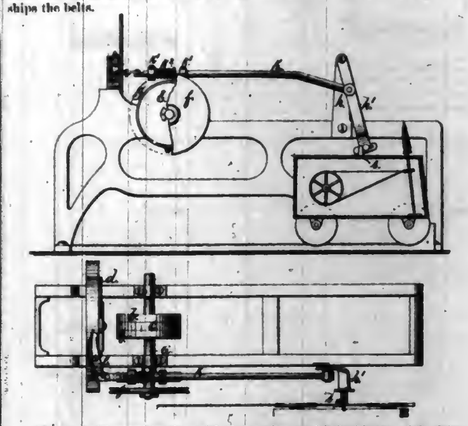
Claim.—1. A mold for pressing tubular articles of glassware having a curved cavity therein, in combination with a plunger having a curved form corresponding to the curve of the cavity, said plunger having a curved line of motion, substantially as described, whereby the path described by the plunger as it is inserted into or drawn from the mold is made to correspond with the line or curve of the cavity.

2. In combination with a glass-mold having a pressing-cavity therein, a curved plunger having a pressing stroke into, through, and out of the body of glass in the cavity, substantially as set forth.

3. The method of making curved tubular articles of glassware by causing a curved plunger to traverse the mold-cavity in the axial line of the curvature of the plunger, substantially as described.

198,742. SHIPPING MECHANISMS FOR SPINNING-MULES. Angelo Rowland and Harold Lawton, Westerly, R. I. Filed July 18, 1877.

Brief.—The momentum of the driving-shaft is arrested, when the carriage has completed its outward run, by means of a stud on said carriage coming in contact with a swinging lever, which actuates another lever extending lengthwise of the machine. This last-named lever is provided with a brake for acting upon a loose pulley on the driving-shaft, which, when clutched with the band-pulley, operates to arrest the driving-shaft and allow part of a revolution backward of said band-pulley when backing off. The weighted shipper is released from the hinged catch when the carriage has completed its outward run and shifts the belts.



Claim.—1. The combination, with the carriage and belt-shipper, of the driving-shaft, provided with the loose pulley *e*, band-wheel *f*, brake *g*, and clutches to connect said pulley and wheel, whereby the motion of the driving-shaft is instantly arrested, and the band-wheel allowed part of a backward revolution independent of the pulley, substantially as described.

2. The combination, with the belt-shifter and driving-shaft, the latter provided with the loose pulley *e*, band-wheel *f*, and brake *g*, of the rod *k*, swinging lever *k'*, and carriage provided with a stud, *i*, substantially as described.

3. The driving-shaft *a*, loose pulley *e*, band-wheel *f*, and clutches connecting said pulley and wheel, in combination with the brake *g*, rod *k*, spring-pressed lever *l*, and weight connected with the belt-shifter, and swinging lever *k'*, the latter adapted to be operated by the carriage, substantially as described.

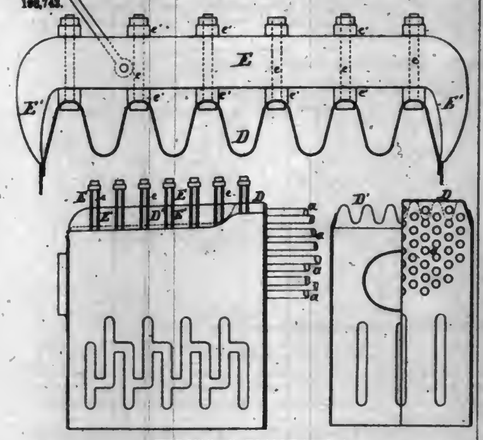
198,743. CROWN-SHEETS FOR STEAM-BOILERS. William S. Hudson, Paterson, N. J. Filed Aug. 14, 1877.

Brief.—The part of the crown-sheet near the tubes is left plain for the purpose of ready access to the tube-sheets, and the corrugated portion is stayed by stay-bolts running from the indentations through the crown-bar.

Claim.—1. The crown-sheet described, having the corrugated main body D lower than the front D, as and for the purposes herein specified.

2. The partially-corrugated crown-sheet D D', formed as shown, in combination with stay-bolts *s* and stay-bars E E', supporting the upper portions of the several corrugations and resting on firm supports, as and for the purposes shown and described.

198,743.



198,744. FOUNTAIN WATERING-TROUGHS FOR CATTLE. Samuel Johnson, Philadelphia, Pa. Filed Nov. 7, 1877.



Claim.—1. A cattle-car watering-trough consisting of the receptacle or tank A, provided at its lower end with a trough, B, and having a supplying-aperture and a discharging-aperture, *b*, the latter-mentioned aperture being so arranged with reference to the trough B that its upper edge stands slightly below that of the trough, substantially as and for the purpose set forth.

2. A cattle-car watering-trough consisting of the receptacle or tank A, in transverse section of a triangular shape, and provided with the trough B, and having a supplying-aperture and a discharging-aperture, arranged substantially as shown and described, and for the purpose set forth.

198,745. EXTRACTORS FOR REVOLVING FIRE-ARMS. Owen Jones and Frank W. Marston, Philadelphia, Pa. Filed June 6, 1877.

Brief.—The nose of the hammer, in the act of firing the cartridge, changes the shape of the latter, so as to bring a portion of its rim into engagement with a fixed annular extractor on the center-pin, whereby only the shells that have been fired are extracted when the cylinder is moved forward.



Claim.—1. The combination of the following elements: Independent mechanism, substantially as described, for extracting the cartridge-shells, and independent mechanism, substantially as described, for changing the shape or position of a portion of the cartridge-shell to bring it within the range of action of the extracting mechanism.

2. The combination of the following elements: An independent extractor, a cylinder, substantially as described, adapted to hold the cartridge out of the line of action of the extractor, and mechanism, substantially as described, adapted to act on the rim of the shell and cause it to engage with the extractor.

3. In combination with the cylinder E, the extractor D and the hammer F, substantially as described.

4. In combination with the cylinder and its center-pin, the extractor sleeve or equivalent device, and the hammer adapted to change the shape of the cartridge-shell, substantially as described.

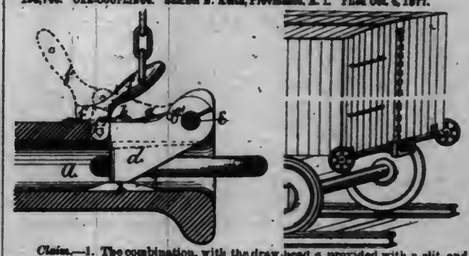
5. An independent extractor, lying out of the plane of the cartridges, having a recess adapted to receive the projecting portion of a shell after the form of the shell has been changed, as set forth.

6. In combination with an extractor lying out of the plane of the cartridge, and having a recess, a hammer-head adapted to enter the recess, as and for the purpose set forth.

7. The combination of the following elements: A cylinder adapted, substantially as described, to hold a series of cartridges out of the line of action of the extractor, a central extractor adapted to receive the projection of all the cartridges of the series after the forms of the shells have been changed, and mechanism, substantially as described, for changing the position or form of the rims of the cartridges.

8. The method described of extracting cartridge-shells, consisting, essentially, first, in locating a series of cartridges in the cylinder in a circle concentric with a central extracting device, but out of the line of the extractor's action; second, changing the shape or position of the rims of two or more cartridges, when the latter are exploded, to bring them within the range of the extractor's action; and, third, actuating the extracting device to simultaneously remove all the exploded cartridges.

198,746. CAR-COUPLINGS. Samuel H. Keith, Providence, R. I. Filed Oct. 4, 1877.



Claim.—1. The combination, with the draw-head *a*, provided with a slit, and the pin E, cast in one piece with the same, of the wedge *b* and detent *d*, arranged and operated substantially as and for the purpose described.

2. The combination, with the draw-head *a*, provided with the wedge *b*, pin E, and detent *d*, of the lever-cam *f f'* and hinge *f'*, and the spring *g*, arranged and operating substantially as specified.

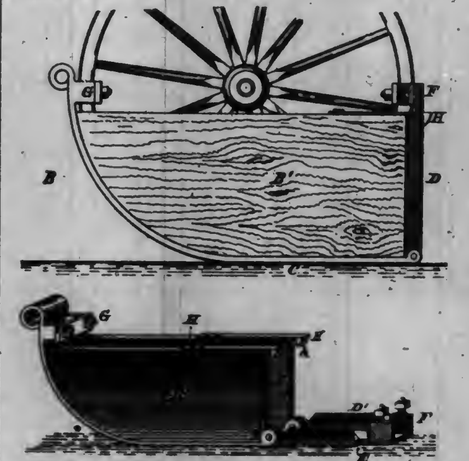
198,747. CAR-AXLE COUPLINGS. Charles M. Kimball, Bradford, Mass. Filed Sept. 18, 1877.



Claim.—1. My improved divided axle-coupling, consisting of the two semi-tubes, chambered as described, and of a surrounding helix, driven or shrunk upon them, all being substantially as set forth.

2. In combination with the axle portions A B and the semi-tubes C C', constructed and applied as described, a sleeve, D, separate from each of the said axle portions, and driven on such cylinders, and having a length to enable it to be moved endwise off them when the wheels are fixed on the axle, all being as specified.

198,748. SLED-RUNNER ATTACHMENTS FOR VEHICLES. Frederic Krempel, Buffalo, N. Y. Filed Dec. 13, 1877.



Claim.—The sled-runner attachment for wheeled vehicles, consisting essentially of the runner C, having its forward end provided with the clip or clamp G, the guards B', the hinged flap D, with the offsets E and clip or clamp F, and the catch-springs H, the whole constructed and arranged for attachment to a wheel, substantially as and for the use and purpose specified.

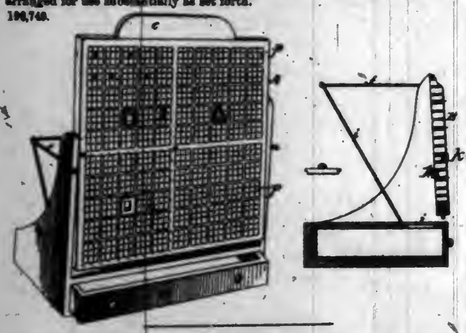
198,749. APPARATUS FOR TEACHING HISTORY, &c. Nelson Lovell, M. D., Montreal, Quebec, Canada. Filed July 24, 1876.

Brief.—A frame having compartments, and removable blocks fitting therein, bearing dates or other historical data for teaching.

Claim.—1. The square frame A, centrally hung upon pivots *b* in the standards *a a*, and provided with the compartments *p* and cubical blocks *b*, substantially as described.

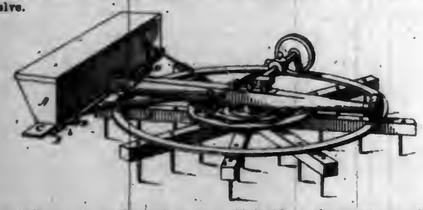
2. The apparatus for teaching herein described, consisting of the square frame A, having compartments *p*, blocks *k*, symbols l m n, and blackboard *c*, all arranged for use substantially as set forth.

196,749.



196,750. BROADCAST SEEDERS. Halsey H. Monroe, Thomaston, Me. Filed Dec. 7, 1877.

Brief.—Motion is imparted by a cam on the harrow, moving the valve back and forth in the line of draft under the port-holes in the hopper, and dropping the seed alternately on the sides of the valve to be scattered by flanges in the valve.



Claim.—1. A seed-box or hopper provided with a valve or valves reciprocating beneath the hopper, and adjusted to discharge the grain over its front and rear edges alternately.

2. A seed-box or hopper with a valve beneath, extending the whole length of said hopper, and reciprocating in the direction of the machine's line of advance, and adjusted to discharge the grain at the front and rear alternately, substantially as set forth.

3. A seed-box or hopper arranged transversely to the line of draft, with a valve reciprocating longitudinally with the line of draft, beneath it, as described, combined with flanges or platforms, movable or otherwise, to receive and scatter the seed as it is discharged from the port, for the purpose set forth.

4. A seed-box or hopper combined with a valve or valves reciprocating beneath said hopper, and provided with horizontal projecting flanges or platforms attached to and moving with said valve, to receive and scatter the seed, as set forth.

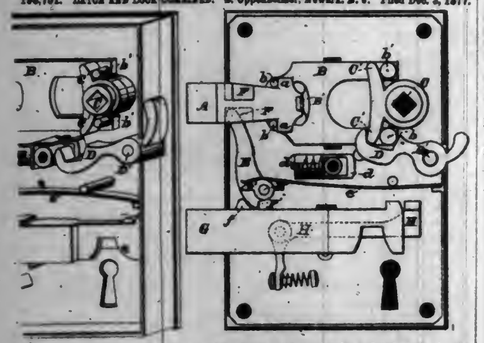
5. A seed-box or hopper arranged transversely to the line of draft, with a reciprocating valve beneath it, moving longitudinally with the line of draft, combined with independent guides to support said valve without frictional contact with the bottom of the hopper.

6. A seed-box or hopper arranged transversely to the line of draft, and a reciprocating valve beneath it in the direction of the line of draft, as shown, combined with guides D, supported by straps secured to the sides of said hopper.

7. A seed-box or hopper arranged transversely to the line of draft, and a valve extending the whole length thereof, and reciprocating in the direction of the machine's advance, combined with a gage and cut-off slide, C, as set forth.

8. The hopper A, constructed with the side openings for the admission of the draft-beam F, combined with a notched draft-beam and a wedging-key, *f*, to hold the parts securely together, as set forth.

196,761. LATCH AND LOCK COMBINED. S. Oppenheimer, Newark, N. J. Filed Dec. 3, 1877.



Claim.—1. In combination with the reversible latch or knob bolt A, the upright post B', provided with the overhanging cap, and placed upon the follower or sliding plate B, and the pins *b* and *b'*, arranged and constructed substantially as and for the purpose shown and described.

2. The dog D, in combination with the arm C' of the arbor C and the yoke of the follower or sliding plate B, whereby the arbor and yoke are held together and prevented from moving, substantially as and for the purpose shown and described.

3. The pawl F' upon the lever E, in combination with the lug *f'* upon the locking-bolt G and the latch-bolt A, whereby the locking-bolt is prevented from being forced inward until the latch-bolt is withdrawn, substantially as and for the purpose shown and described.

196,762. GOPHER OR RIDGING ATTACHMENTS FOR CULTIVATORS. Hugh Parker, Ottawa, Ill. Filed Aug. 14, 1877.

Brief.—Scrapers for hilling or ridging with their standards, braces, and connecting cross-bars, adjustable at all joints, and capable of being attached to plow-beams or cultivator-bars.

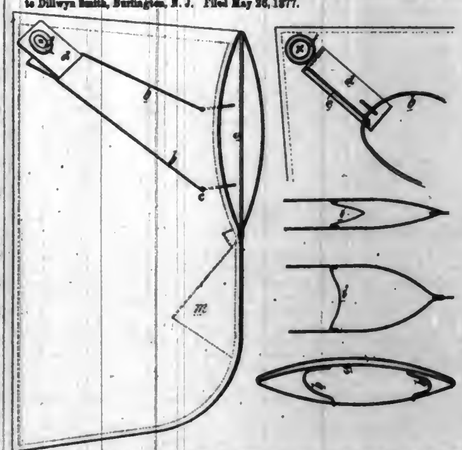


Claim.—1. The herein-described gopher or ridging attachment for cultivators, consisting of the adjustable blades C C, bars D D, pivoted brace-bars E H I, and adjustable bars G, substantially as and for the purpose specified.

2. The combination, with the blades C, of the bars D, provided with the vertical slots *e*, and the slotted brace-bars E H I, substantially as and for the purpose specified.

3. The combination of the bars D, provided with the slots *e* and slotted brace-bars, and the horizontal bars G, provided with the slots *g*, substantially as and for the purpose specified.

196,763. SAFETY-POCKETS. Wm. V. Perry, Beaver Dam, Wis., assignor of one-half his right to Dillwyn Smith, Burlington, N. J. Filed May 26, 1877.



Claim.—1. The combination of the pocket, the cord *b*, the strip *d*, and button or other fastening *f*, as specified.

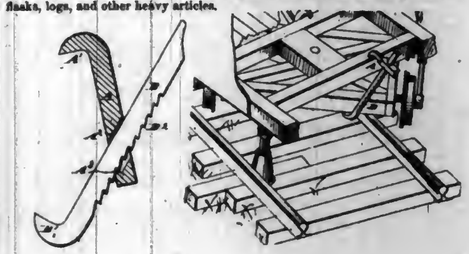
2. The combination of the pocket, the cord *b*, strip *d*, fastening *f*, and cord *e*, as described.

3. The combination of a pocket with a central partition, *c*, and devices for drawing the same to one side or the other, so as to obstruct the mouth of one portion of the pocket while the other is unobstructed, as specified.

4. The combination of a pocket with a strip, *i*, extending downward from the lower end of the mouth of the main pocket, to prevent the accidental falling out of the articles contained, substantially as set forth.

196,764. CLAMPS. Dewitt Rockwell and Nathan Doty, Columbus, Ohio. Filed June 20, 1877.

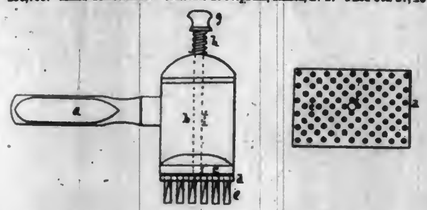
Brief.—For use in replacing cars upon the track; for clamping molders' flasks, logs, and other heavy articles.



Claim.—1. An adjustable clamp consisting in the combination, with a bar formed with the diagonal slot and toothed projection, of a bar engaging therewith, and provided with the rack edge, each of the said bars having straight bodies and a hooked extremity, substantially as described.

2. The adjustable clamp consisting of the straight slotted hook-bar A and the straight ratchet hook-bar B, the said bar B constructed to slide through an inclined slot in the bar A, and forming with each other an angle, C, substantially as and for the purposes described.

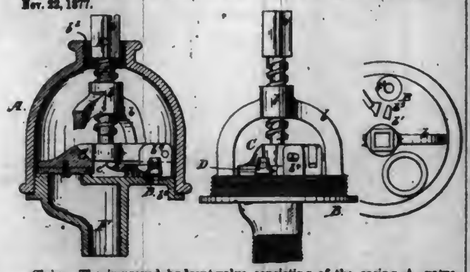
196,765. MEAT-TENDERERS. Clements T. Stephens, Ithaca, N. Y. Filed Oct. 27, 1877.



Claim.—1. The meat-tendering mallet, made by the handle *a*, the head or weight *b*, tooth-holding base *c*, and cleaning-plate *d*, combined and arranged substantially as set forth.

2. The handle *a*, the head *b*, tooth-base *c*, and cleaning-plate *d*, when the cleaning-plate is operated by a rod or shaft, *i*, lying in a cavity in the head *b*, and extending through it, and operated by a hand-knob, or equivalent, *g*, substantially as and for the purpose set forth.

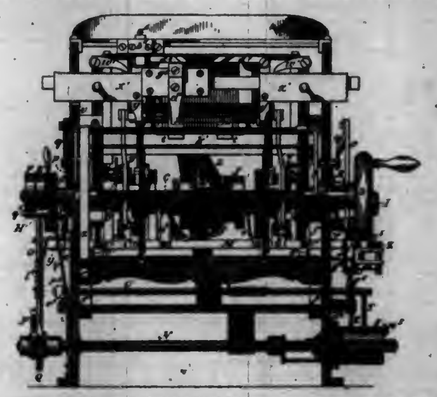
196,766. HYDRANT-VALVES. Franklin B. Stevens and Jos. L. Bond, Port Huron, Mich. Filed Nov. 22, 1877.



Claim.—The improved hydrant-valve consisting of the casing A, valve-plate B, constructed with the arch *b* and bearing *b'* *b'*, cut-off valve C, waste-valve D, having extension *d*, and projecting nipple F, substantially as set forth.

196,767. KNITTING-MACHINES. Eli Tuttay, Bennington, Vt., assignor of one-half his right to Charles Cooper, same place. Filed June 27, 1877.

Brief.—The characteristic features are: Special mechanism for shifting the position of the driver of the yarn-carrier from side to side; a perforated pattern-drum, acting in conjunction with pins for closing such holes as may not be necessary for determining the contour of the selvage, operated in conjunction with the narrowing mechanism, the single shipper-bar effecting the changes from knitting to narrowing, and vice versa, by a system of movable trucks acting on stationary cams; a driving-cam of peculiar construction, which, in connection with intermediate levers, actuates the yarn-carrier; a stopping mechanism actuated by a lug or pin on the pattern-drum. (The claims are additionally explanatory.)



Claim.—1. The mechanism provided for communicating reciprocatory movement to the slur-cock and yarn-carrier, consisting of cam-cylinder J, provided with groove *e e* and switch *b*, having lug *i*, mounted upon a shaft, in combination with lever K, provided with friction-roller *n*, and switch-guides *f* and *h*, attached to said lever, and adjusted to operate in connection with switch *b*, all substantially as described and set forth.

2. The mechanism for shifting the position of the vertically-movable driver *a'* from its position on one side of projection *g'* during one part of the stroke to a corresponding position on the opposite side of said projection preparatory to making the return-stroke, and consisting of shifting-latches *d'* and *d''*, each provided with projections [illegible] the inclined faces *e' e''* and *f' f''*, pivoted as shown, in combination with the vertically-movable driver *a'*, armed with lug *c'*, and adjusted to slide in box *b'* of the driver-head, all combined and operating substantially as shown and described.

3. The mechanism for determining the pattern or fashion of the piece to be wrought, and the appliances for operating the same, consisting of pattern-cylinder S, having its surface provided with holes adapted to be distributed and closed, substantially as described, so as to construct a system of longitudinal and circumferential ranges, having at one end groove *g'*, bisected by the diagonal cam-face *f'*, in combination with hub R and rod W, all arranged, as described, on a shaft actuated by pawl and ratchet, and co-operating with lever *h'*, armed with pins *i' i''*, substantially as described and set forth.

4. The mechanism for controlling the action of shipping-bar M and its attachments, consisting of bracket *j'*, attached to shipping-bar M, provided with movable stud *g'*, friction-roller Y, movable stud Z, connecting-link *c'*, pin X, and elbow *c''*, having projection *h'*, in combination with disk *c''*, armed with cams *a'*, *b'*, and *c'*, adapted to be controlled by apertures in pattern-cylinder S, substantially as described and set forth.

5. The described means for controlling the various knitting and narrowing movements of fashioning knitting-machines through the agency of axially-movable trucks or friction-rolls, working in conjunction with fixed cams, the shippers of which trucks are all attached to a common shipping-bar, arranged to be actuated by a narrowing-tackle dependent for its movements on a pattern-cylinder, all constructed, combined, and operating substantially as described and set forth.

6. The mechanism for stopping the machine at the termination of the pattern, consisting of lug *n'* or pin on pattern-cylinder, arm T of shaft U, latch *p'* thereon, and catch *o''* on belt-shipper *o*, all combined, arranged, and operating substantially as described and set forth.

7. The described means for regulating the length of traverse of the yarn-carrier, and for moving narrowing-points, consisting of cams *o' o'*, trucks *p' p'*, levers *r' r'*, vertical slides *u' u'*, spring *b''*, pawls *w' w'*, and narrowing-racks *x' x'*, with their described attachments, combined, arranged, and operating substantially as described and set forth.

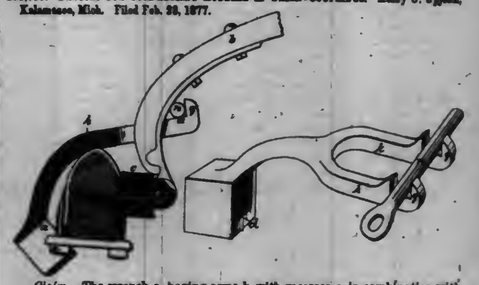
8. The cam-cylinder J, having slot *d*, in combination with latch *c*, attached to shipping-bar M, by means of which said cam-cylinder is locked while the operation of narrowing is progressing, substantially as described and set forth.

196,768. METHODS OF PRODUCING IMITATION-PEARL SURFACES. Frank Tuchfarber, Cincinnati, Ohio. Filed July 16, 1877.

Claim.—1. The method of producing imitation mother-of-pearl surfaces, consisting of first treating a metallic surface to produce a crystallized effect, then painting or printing thereon in imitation of mother-of-pearl, and finally varnishing, substantially as described.

2. A sign composed of a crystallized metallic base, having produced thereon the tints peculiar to mother-of-pearl, and varnished, substantially as described.

196,769. DEVICES FOR COUPLING RUBBERS IN THILL-COUPLINGS. Henry U. Ujohn, Kalamazoo, Mich. Filed Feb. 26, 1877.



Claim.—The wrench *c*, having arms *k*, with recesses *q*, in combination with pin *a*, or its equivalent, on which to rest as a fulcrum the shaft *b*, to compress the rubber spring *c*, substantially as described.

196,770. CORN-PLANTERS. George W. Brown, Galesburg, Ill. Filed July 30, 1877.

Brief.—Intermittent rotary motion is imparted to dual seed-cup plates or disks by a reciprocating bar carrying spring-pawls, that engage alternately with notches on the lower side of each disk. The notches also serve as stops. The seed-cup plates are journaled on raised bottoms.



Claim.—1. The dual seed-cup plates C C', arranged in the same seed-box, and provided with seed-cups, and geared to each other, so as to have simultaneous movements for simultaneous discharges, substantially as described, and for the purpose specified.

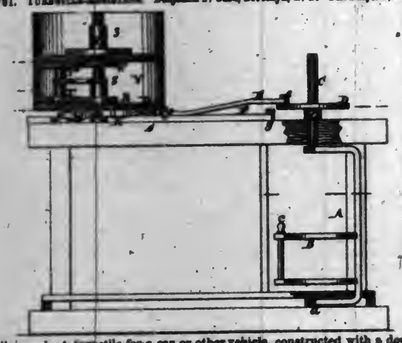
2. In combination with seed-cup plates C C', geared together, a reciprocating bar provided with devices which, acting on the disks alternately, will produce intermittent rotary motion of said disks, substantially as and for the purpose specified.

3. In combination with seed-cup plates C C', geared to each other, and provided with projections F, a reciprocating bar, B, having pawls G G', substantially as and for the purpose specified.

4. In combination with seed-cup plates C C', geared to each other, and provided with projections F, a reciprocating bar, B, having spring-pawls G G' and stops H H', substantially as and for the purpose specified.

5. The seed-cup plates C C', journaled on elevations E, and provided with cams F, exterior to and projecting downward over the elevation E, substantially as described, and for the purpose specified.

196,761. TURNSTILE-REGISTERS. Benjamin F. Card, Brooklyn, N. Y. Filed Apr. 6, 1877.



Claim.—1. A turnstile for a car or other vehicle, constructed with a double crank, A, and its attachments, connected with a registering mechanism, substantially as described, and so arranged as to register a passenger both on entering and leaving the car or other vehicle, or either on entering or leaving the car, and also so arranged as to permit the conductor to pass in and out of the car without registering.

2. The combination of the double crank A, provided with the arms B and vertical shaft C, with the reciprocating lever F, pawl H, and ratchet-wheel K, substantially as described.

3. The combination of the double crank A, provided with the arms B and vertical shaft C, with the reciprocating lever F and connecting-rod E, pawl H, and ratchet-wheel K, substantially as described.

4. The combination of the double crank A, provided with the arms B and vertical shaft C, with the reciprocating lever F, pawl H, ratchet-wheel K, and disks R and T, substantially as described.

5. The combination of the double crank A, provided with the arms B and vertical shaft C, with the reciprocating lever F, pawl H, tension-spring G, ratchet-wheel K, and disks R and T, substantially as described.

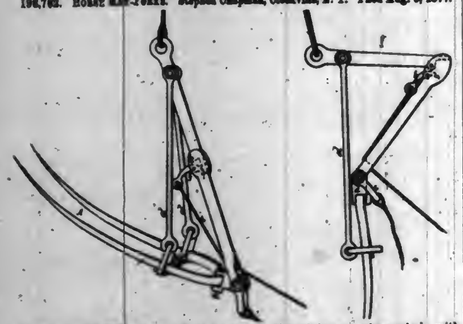
6. The combination of the double crank A, provided with the arms B and vertical shaft C, with the reciprocating lever F, connecting-rod E, pawl H, tension-spring G, ratchet-wheel K, and disks P, R, and T, substantially as described.

7. The combination of the double crank A, provided with the arms B and vertical shaft C, with the reciprocating lever F, pawl H, tension-spring G, ratchet-wheel K, disks P and R, and disk T, and disks S' and T', substantially as described.

8. The combination of the double crank A, provided with the arms B and vertical shaft C, with the reciprocating lever F, tension-spring G, pawl H, and ratchet-wheel K, substantially as described.

9. The combination of the double crank A, provided with the arms B and vertical shaft C, with the reciprocating lever F, tension-spring G, pawl H, ratchet-wheel K, disks R and T, and disks S' and T', substantially as described, and for the purposes set forth.

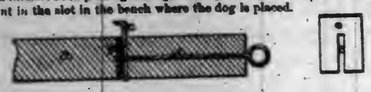
196,762. HORSE HAY-FORKS. Stephen Chapman, Clockville, N. Y. Filed Aug. 6, 1877.



Claim.—The combination of the tines A, formed in one piece whole with the cross-bar *b*, having eyes for the reception of the tines, and the lug *a*, also having an eye and suitable devices for holding said cross-bar and lug in place upon the tine, whereby the parts of the fork may readily be separated or put together.

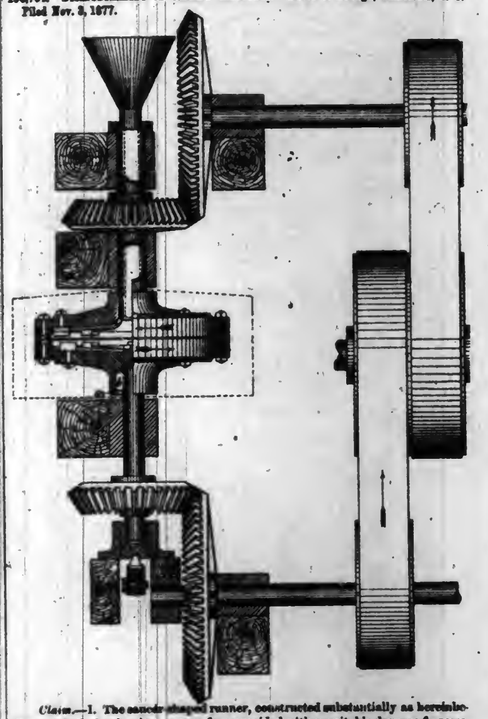
196,763. BENCH-DOGS. James Cook, Ingersoll, Mich. Filed Dec. 4, 1877.

Brief.—The dog is provided with a longitudinal slot, and secured in position by a threaded rod passing through the top of the bench, and slot in the dog, into a nut in the slot in the bench where the dog is placed.



Claim.—In combination with the bench *a*, having a vertical slot, the dog *c*, screw *d*, and clamping-nut *g*, the dog being slotted, so as to be adjusted vertically, substantially as shown and described.

196,764. DISINTEGRATING OR MIXING MACHINES. David C. Ebaugh, Charleston, S. C. Filed Nov. 8, 1877.



Claim.—1. The saucer-shaped runner, constructed substantially as hereinbefore set forth, having its concave face provided with a suitable dress or furrows, with a series of hammers, and with a raised ring or rim on its periphery.

2. The combination, substantially as hereinbefore set forth, of horizontal, oppositely-revolving concave or saucer-shaped runners, having raised rims or flanges, and arranged with their concave faces opposite each other, whereby material may be fed in bulk between the runners, and disintegrated by the attrition of one particle upon another, and by the action of the runners, and retained between them until sufficiently reduced to pass between the rims.

3. In combination, saucer-shaped horizontal oppositely-revolving runners, having their concave faces opposite each other, and being provided with furrows, hammers, and raised rims, substantially as described, whereby the material fed to the runners is disintegrated by the attrition of one particle upon another, by the furrows and hammers, and retained by the rims until thoroughly pulverized.

4. The combination, substantially as hereinbefore set forth, of horizontal saucer-shaped oppositely-revolving runners, the hollow upper spindle through which the feed passes, the lower spindle stepped upon a bridge-tree, and the driving-gearing, for the purposes specified.

196,765. VERTICAL LOOMS. J. M. Flagg, Providence, R. I. Filed Dec. 18, 1876.

Brief.—The improvements relate to the class of vertical looms, and consist in special combinations of mechanism for throwing the shuttle, relieving the swells, actuating the take-up, and in the construction of the shuttle. The shuttle is thrown by a spring. The staffs are set automatically, and held by a spring-latch. A sliding bar, through mechanism set forth in the claims, relieves the shuttle from the pressure of the swells just before the said bar sets free the picker-staffs. The take-up is operated by friction-clutches. The operating-arms are beveled at their outer ends, between which beveled ends and the flange the two yielding rolls are caught. The rolls are mounted in pivoted holders. The construction of the shuttle is shown by the claim.

Claim.—1. The combination of the rock-shaft O, having arms M P, the shuttle-picker R, connected to the arm P, the spring attached to the upper end of the arm M, with the sliding rod I, carrying a spring, and a spring-catch pivoted on a bracket, and arranged to engage with the lower end of the arm M, as set forth.

2. The combination, with the levers M M, of the catches L L and the sliding rods I I, operated by the slide H, the releasing devices N, and cam G, as and for the purpose set forth.

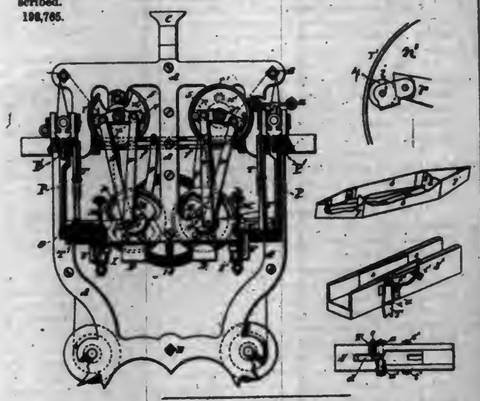
3. The combination, with the shuttle-boxes, of the adjustable spring-plates *s s* and mechanism, substantially as described, for vibrating said plates just prior to the throwing of the shuttle, as set forth.

4. In combination with the adjustable plates *s s*, the wedge *d*, the slides *s' s'*, and the lever *c*, operated by the jointed lever T, substantially as and for the purpose specified.

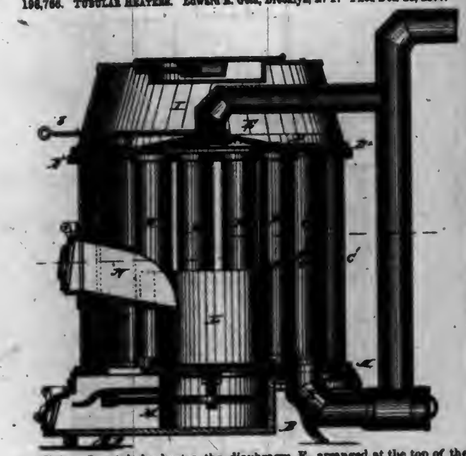
5. The take-up-actuating mechanism, consisting of the disk *n'*, provided with the projecting rim *r'*, the pivoted arms *r r*, provided with beveled ends, anvielding rolls 4 4, mounted in swinging holders, operating-arms *p p*, and crank-disk *t*, substantially as specified.

6. The combination of the shuttle-body, its notched cross-plate *g*, and the spindle, having a portion of the elastic sides curved inwardly, as shown and described.

196,765.

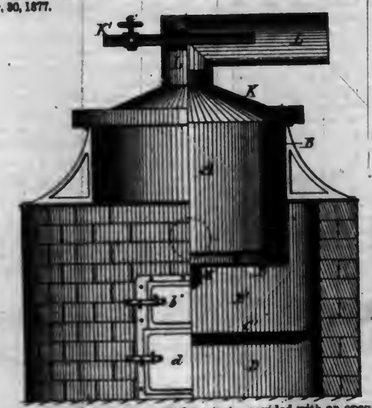


196,766. TUBULAR HEATERS. Edward E. Gold, Brooklyn, N. Y. Filed Dec. 10, 1877.



Claim.—In a tubular heater, the diaphragm E, arranged at the top of the tubes, and provided with pipe G, having damper *e*, in combination with the chute N, serving as a deflector upon one side, and the deflector O upon the opposite side, the fire-box L at the bottom of the heater-shells C C', and top D, substantially as and for the purpose set forth.

196,767. APPARATUS FOR ROASTING ORES. Henry F. Howell, Sarnia, Ontario, Canada. Filed Nov. 30, 1877.

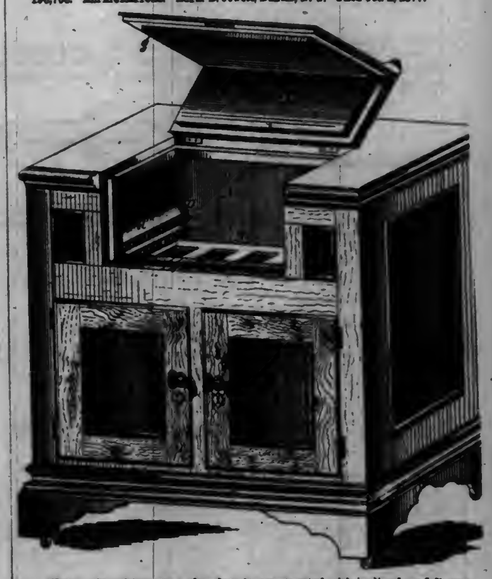


Claim.—1. The combination of the retort, provided with an opening above for escape of the fumes of an air-chamber surrounding the bottom and sides of the retort, and a draft-conduit communicating with said chamber, the combination being and acting as set forth.

2. The combination of the retort, the escape opening or flue above the same, and a draft-accelerator for producing a partial vacuum in the retort and increasing the draft through the same, with an air-chamber surrounding the bottom and sides of the retort, and a draft-conduit communicating with said chamber, substantially as set forth.

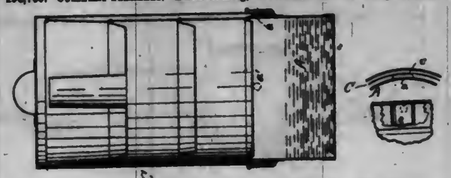
3. The combination of the retort A, flue L, pipe K', air chamber or jacket B, and air and steam pipes M N, arranged for joint operation, as shown and described.

196,768. REFRIGERATORS. Edgar B. Jewett, Buffalo, N. Y. Filed Oct. 2, 1877.



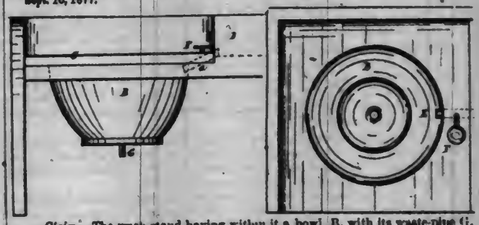
Claim.—In refrigerators, the plate D, constructed with inclined roof *d'*, overlapping the perforated wall *d''*, the gutter *e*, and perforated inclined part *d'''*, the whole arranged substantially as and for the purpose specified.

196,769. CULINARY STEAMERS. Hiram T. King, Rochester, N. Y. Filed July 23, 1877.



Claim.—As an improvement in culinary steamers, the detachable external cap or cover C and one or more internal trays, in combination with the annular water-space at the top of the boiler-section, said water space or channel being provided with one or more overflow-openings, *a*, which communicate directly with the steam-space of the boiler A, to permit the discharge thereto of the condensation deposited in the annular space, and yet prevent the escape of steam therefrom, substantially in the manner shown and described.

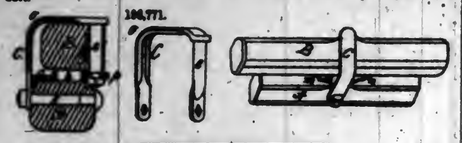
196,770. RESERVOIR AND WASH-STAND COMBINED. Amos D. Loftin, Cleveland, Ohio. Filed Sept. 10, 1877.



Claim.—The wash-stand having within it a bowl, B, with its waste-pipe G, and a reservoir, D, placed within the stand, having its bottom at, or slightly above, the rim of the bowl B, and on one side thereof formed by a partition in the stand, the reservoir connected to the bowl by a pipe, *a*, and stop-cock F, all constructed substantially as and for the purpose described.

196,771. WHIFFLETREE PLATES AND CLEVISES. Henry A. Lettgess, Paterson, N. J. Filed Feb. 5, 1877.

(*Claim.*—The combination of screw-bar *A*, the plate G, or equivalent, whiffletree B, and clevis C, when the latter is placed vertically and above the screw-bar *A*, so that one hook or side of the clevis C is used for the whiffletree pin or bolt.



196,771.

196,772. WEATHER-BOARD GAUGE. William S. Hauck, Bowlus, Iowa. Filed July 30, 1877.

Brief.—The upper part of the gage is made longer than that shown in the patent of Bedding, No. 41,783, March 1, 1864. (Passed by Board of Examiners-in-Chief.)



Claim.—1. The gage for the clap or weather boards, consisting of the stepped bar A A^1 A^2, having its right-angular portion or step a provided with a claw or tooth, *c*, substantially as and for the purpose set forth.

2. The stepped bar A A^1 A^2, having its right-angular portion or step a provided with a claw or tooth, *c*, and its leg A^1 graduated and slotted, and provided with an adjusting or gaging screw and nut, *b b'*, substantially as and for the purpose set forth.

196,773. PLOW. William L. Mathews, Isley City, Mich. Filed Sept. 11, 1877.

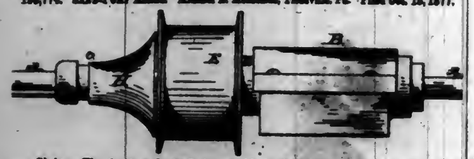
Brief.—A metallic beam laterally adjustable at the joint, and held in any position by serrations, a bolt, and a collar. The colter has a forked brace running to the rear, upon which a jointer is secured.



Claim.—1. A sectional adjustable beam, *a*, having its joint provided with notches *b* and a circular flange, *c*, whereby it can be adjusted for one, two, or three horses, substantially as shown.

2. In combination with the beam *a*, made in two parts, and provided with the notches *b* and flange *c*, the colter *g*, jointer *h*, and brace *i*, the colter being fastened to the beam at a point to the rear of the joint, whereby the beam can be adjusted without interfering with the position of the colter, substantially as set forth.

196,774. SAND-PUMP REEL. Richard B. McKeown, Titusville, Pa. Filed Oct. 16, 1877.



Claim.—The feathered shaft A, provided with block B, having at its end the shoulder *a* and spline D^1, upon which the drum B is mounted, in combination with the clutch H, substantially as shown and described.

196,775. MIDDLINGS PURIFYING AND SEPARATING MACHINE. George Ribbink, Chillicothe, Mo. Filed Apr. 3, 1876.

Claim.—1. In a middlings-separator, the combination, with blast-fan B^2 and upward open-top feeding-passage B^1, of the feed-spout B, having funnel-mouth C, and centrifugal feeder, consisting of cone b^1, saucer b^2, and vane-wheel b^3, substantially as shown and described, for the purpose specified.

2. In a middlings-separator, the combination, with blast-fan B^2 and upward open-top feeding-passage B^1, of open-top settling-chamber C, open-bottom expansion-chamber D, outer settling-chamber D^1, and suction-fan B^2, communicating with chambers D D^1, said feeding-passage and chambers being arranged one within another, substantially as and for the purpose set forth.

3. In a middlings-separator, the combination, with blast-fan B^2 and upward open-top feeding-passage B^1, of open-top settling-chamber C, open-bottom expansion-chamber D, outer settling-chamber D^1, suction-fan B^2, and discharge-bottoms D^2 C^1, all constructed and arranged substantially as shown and described, for the purpose specified.

4. In a middlings-separator, the combination, with open-top feeding-passage B^1 and open-top settling-chamber C, of double cone d^2 and open-bottom expansion-chamber D, provided with internal flange d^3 and fixed baffers d^4, substantially as shown and described, for the purpose specified.

5. In a middlings-separator, the combination, with suction-fan B^2, of fixed air-current deflectors and beaters *e*, arranged in the annular cone-space forming the upper part *d* of settling-chamber D, substantially as and for the purpose specified.

6. In a middlings-separator, the combination, with settling-chamber D^1 and expansion-chamber D, of suction-fan B^2 and chamber E, divided into compartments f^1 f^2, communicating with the fan through independent adjustable openings f^1 f^2, whereby the upward currents in the chambers D D^1 may be regulated independently of each other, substantially as and for the purpose specified.

7. In a middlings-separator, the combination, with suction-fan f^1, expansion-chamber D, and settling-chamber D^1, having bottom B^1, with elevated flue d^1 therein, of adjustable valve *a* in the outer wall of lower chamber C^1, substantially as shown and described, for the purpose specified.

8. In a middlings-separator, the combination, with suction-fan B^2, central open-top settling-chamber C, expansion-chamber D, and settling-chamber D^1, having bottom D^2, with elevated flue d^1 therein, of adjustable valve d^2 in the outer wall of lower chamber C^1, substantially as and for the purpose specified.

9. The process of purifying middlings, flour, meal, &c., by subjecting the particles to the action of steam or water, or both water and steam combined, for dampening the said particles in the manner described, and further subjecting said dampened particles to a drying action by the use of hot air, as herein described, in order thereby to remove from said particles meal, bad odor, and other injurious qualities.

10. In a middlings-separator, the combination, with the expansion-chamber D and feeding-passage B^1, of the steam-coil G and branch thereof projecting into said chamber, and provided with a self-closing valve, g^1, substantially as and for the purpose specified.

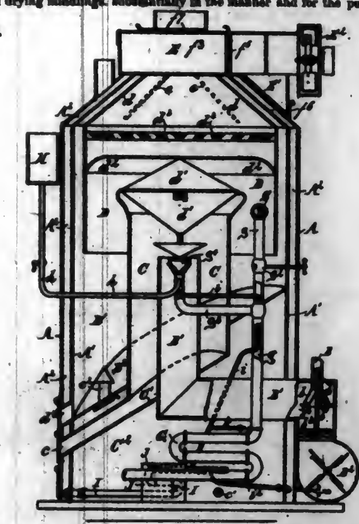
11. In a middlings-separator, the combination, with feed-spout B^1 and expansion-chamber D, of the steam-coil G and branch pipe g^2, with steam-spreading devices, constructed and arranged substantially as shown and described, for the purpose specified.

12. In a middlings-separator, the water-tank H, having pipe *h*, in combination with steam-pipe g^2, steam-coil G, feeding passage B^1, and expanding-chamber, into which the middlings are fed, substantially as shown and described.

13. In a middlings-separator, the hot-air coil I, provided with branch *i*, in combination with feed-passage B and expanding-chamber, into which the middlings are fed, substantially as and for the purpose set forth.

14. In a middlings-separator, the combination, with feeding-passage B^1, chambers D^1 and C^1, communicating therewith by adjustable opening d^2, of a steam-coil, G, communicating with the feeding passage or chambers for dampening and drying middlings, substantially in the manner and for the purpose set forth.

196,776.



196,776. RECOVERY OF WASTE NITROUS GASES. Bernard C. Molloy, London, and John D. Warren, South Kensington, England. Filed Dec. 3, 1877.

Brief.—After the use of nitric acid in oxidizing bodies, the waste gases are passed into a tower, and brought into contact with steam and hot-water spray and atmospheric air.

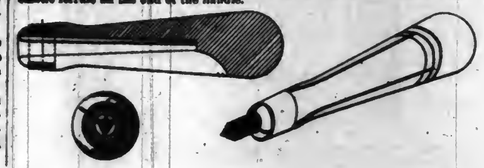
Claim.—1. The process herein described of absorbing peroxide of nitrogen and recovering nitric acid from its lower oxides, by the use in towers, or other suitable apparatus, of hot-water spray, substantially as hereinbefore described.

2. The process of peroxidizing and absorbing the lower oxides of nitrogen and of regaining the nitric acid, by the use in towers, or other suitable apparatus of hot-water spray in combination with atmospheric air, as hereinbefore described.

3. The application of this process of using and recovering nitric acid to the treatment of metals and metallic ores, and to other industrial purposes, substantially as hereinbefore described.

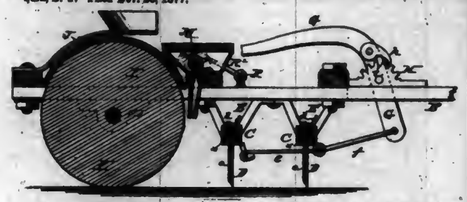
196,777. FILE-HANDLE. William T. Nicholson, Providence, R. I., assignor to the Nicholson File Company, same place. Filed Dec. 6, 1877.

Brief.—Files of different-sized tangs and files which have no tang proper, but taper in both directions from the middle toward the ends, can be firmly held by a handle provided with a circular chamber, and having a series of longitudinal slots equidistant from each other extending from the front to the inner end of the chamber, in which the corners of the file are placed and clamped by an elastic ferrule on the end of the handle.



Claim.—A file-handle chambered at one end to receive a file or file-tang, and slotted radially, as described, and provided with an elastic compress, the article being substantially as specified.

196,778. COMBINED LAND-ROLLER, HARROW, AND GRAIN-DRILL. Samuel P. Reynolds, Auburn, N. Y. Filed Nov. 20, 1877.

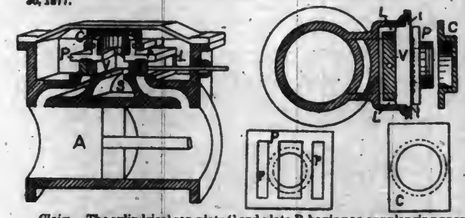


Claim.—1. The tongue B and slotted casting H, with ratchet-teeth *i*, in combination with pawl *h*, lever G, rods *e f*, and the swinging teeth D D, substantially as and for the purpose set forth.

2. The harrow-tooth D, constructed as described, with hollow at the back, sharp front edge *a*, serrations *x*, and lip *b*, and fastened in the beam by a key, *d*, substantially as herein set forth.

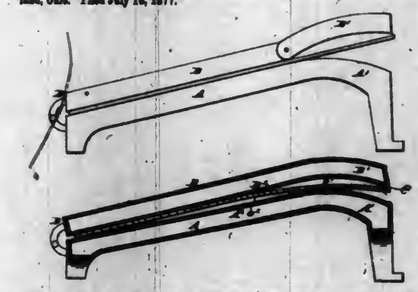
3. The spouts L, having their upper ends made square and cut on a semi-circle, in combination with the rotating and endwise-movable shaft M, formed with alternate large and small parts *m* and *n*, substantially as and for the purpose herein set forth.

196,779. BALANCED VALVE FOR STEAM-ENGINES. Fred B. Rice, Dunkirk, N. Y. Filed Nov. 20, 1877.



Claim.—The cylindrical cap-plate C and plate P, having an annular ring upon its upper side, in combination with a valve and a steam-chest having ledges L L *i i*, as and for the purpose set forth.

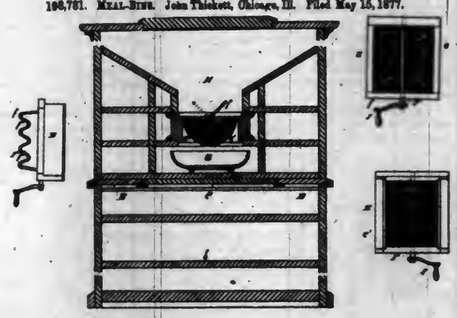
196,780. WOOD-RESAWING MACHINES. Saml. Swarts, Buffalo, N. Y., and John R. Cross, Cleveland, Ohio. Filed July 16, 1877.



Claim.—1. A steam or hot press for shaping coffin sides, consisting of platens A B, provided with curved portions A^1 B^1 and straight portions A^2 B^2, for receiving and simultaneously operating upon the whole length of the coffin side, substantially as described.

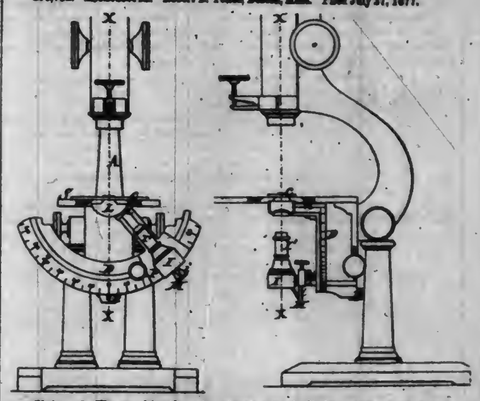
2. In machinery for bending wood, the combination, with the hollow platens, of the jointed steam-pipe connecting them, substantially as set forth.

196,781. MEAL-BIN. John Thickett, Chicago, Ill. Filed May 15, 1877.



Claim.—The combination, in a kitchen-cabinet, of the hopper H and the removable sieve E, the latter having therein a bottom consisting of the wire-cloth *e*, supported on the curved wires *e' e'*, and depressed between the said wires, in connection with the correspondingly-formed rotary shaker, substantially as and for the purposes specified.

196,782. MICROSCOPE. Robert B. Tolles, Boston, Mass. Filed July 27, 1877.



Claim.—1. The combination of a circular track, D, in a plane parallel to the optical axis X X of the instrument and coincident with the object to be examined, with a sub-stage carriage, B, upon which said track is mounted in a plane parallel to the optical axis, substantially as shown and described.

2. The combination of a graduated circular track, D, with a carriage, P, running therein, and carrying a condensing-lens and other accessories, either singly or combined, substantially as shown and described.

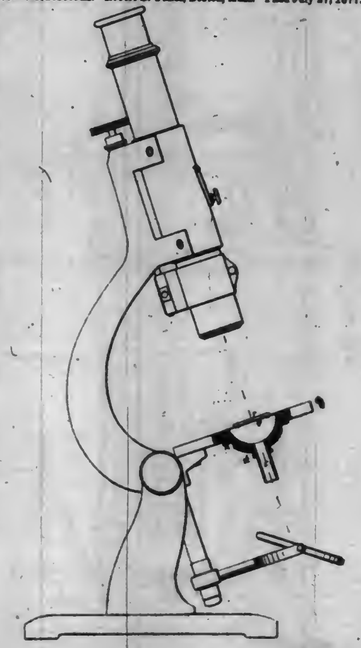
3. A turning-holder, I, carrying an index, M, in combination with a graduated arc, *i*, and a clamping device, to secure the holder either in the radius of the track D or at any degree of obliquity in which it may be placed, to carry an achromatic illuminator or other accessory, substantially as shown and described.

4. The combination of a convex lens, L, of plano-spherical or suitable form, with a plano-concave lens, *a*, of counterpart curvature, and a carriage, P, carrying said concave lens, also an illumination-tube, substantially as shown and described.

5. The combination of a convex lens, L, and an arm, *s*, on the axial end of which said lens is mounted, with a circular track, D, and carriage P, carrying a suitable illumination device, substantially as shown and described.

6. The combination of a graduated circular track, D, and carriage P, for guiding and supporting an illumination device and other accessories, with a stage, S, for supporting the object-slide, substantially as shown and described.

196,783. MICROSCOPE. Robert B. Tolles, Boston, Mass. Filed July 27, 1877.



Claim.—1. The swinging illumination-tube and illumination accessories for directing the illuminating-ray, and having for its axis of rotation the object-place, substantially as described.

2. The combination of a swinging illumination-tube and illumination accessories with adjusting mechanism, whereby its axis of rotation is made coincident with the object-place, whether the object under view be mounted in a thick or a thin slide, substantially as described.

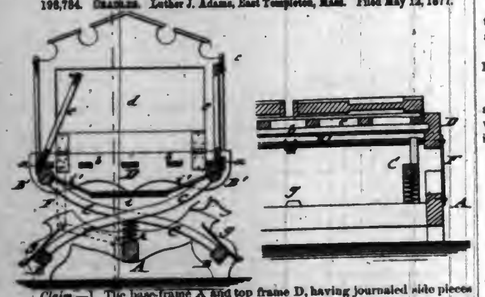
3. The combination of a swinging illumination-tube with a graduated arc, whereby the angle which the direction of the ray makes with the optical axis may be observed and recorded, substantially as described.

4. The combination of a swinging illumination-tube and a graduated arc with a traverse-lens, whereby the angles of aperture of objectives may be measured, substantially as described.

5. The combination of the swinging illumination-tube and traverse-lens with a stage, whereby the light directed through the illumination-tube, at a conveniently low angle, will have emergence from the lens at the highest angle required for an objective of the widest angle of aperture, thus adapting a thick stage to the efficient examination of objects requiring high obliquity of illumination, substantially as described.

6. The combination of a traverse-lens, substantially as described, with a stage, whereby the light directed perpendicularly upon it, at a conveniently low angle, will emerge from the lens at the most oblique incidence required for an objective of the widest angle of aperture, substantially as described.

196,784. CRADLES. Luther J. Adams, East Templeton, Mass. Filed May 12, 1877.

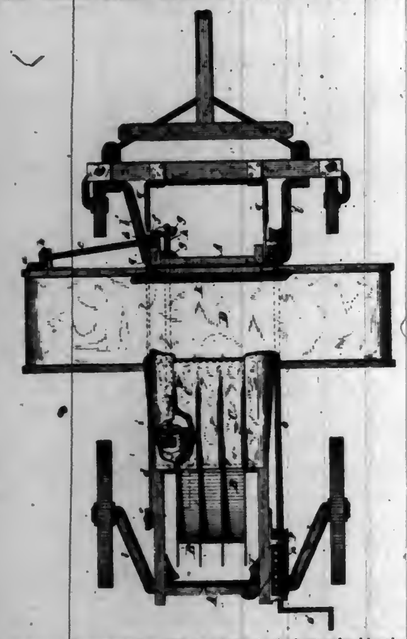


Claim.—1. The base-frame A and top frame D, having journaled side pieces B B', in combination with the curved and spring-acted cross-pieces C, secured to the side pieces, to produce the rocking of the top section, substantially as and for the purpose described.

2. The journaled side pieces B of the base-frame, provided with fixed treadles g, substantially as set forth.

3. The combination of the base-frame A, top frame D, journaled side pieces B B', curved cross-pieces C C, and pivoted locking-pieces F, to change cradle into crib, substantially as specified.

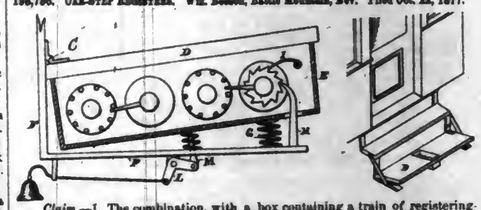
196,786. DITCHING-MACHINES. Matthew J. Austin, Benham, Tex. Filed Nov. 22, 1877.



Claim.—1. In combination with the frame A, the bent axles l l and arms F F, provided with toothed segments n n and rod o, having worms or screws n n, and crank or handle o', substantially as and for the purpose set forth.

2. The endless apron or carrier D, having one of its rollers provided with a gear-wheel, a, in combination with the gear-wheel b, shaft c, sliding bar d, lever e, shaft h, having the gearing g g' i, and gear-wheel j upon the ditching-wheels B, substantially as and for the purpose set forth.

196,786. CAR-STEP REGISTERS. Wm. Bowen, Battle Mountain, Nev. Filed Oct. 22, 1877.

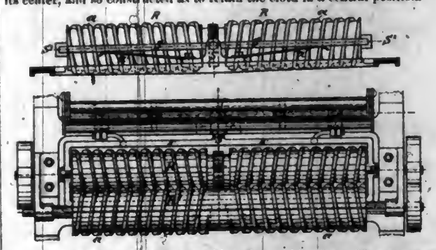


Claim.—1. The combination, with a box containing a train of registering-gears and a ratchet-wheel, said box secured in the tread of a car or other step, of the right-angled bar F, provided with the pawl H and spring G, the several parts constructed and arranged to operate substantially as herein shown and described.

2. The combination, with the box E, right-angled bar F, and spring G, of the projecting rod M and bell-crank L, arranged to operate in connection with a wire and bell, substantially as herein shown and described.

196,787. MACHINES FOR OPENING, SMOOTHING, SPREADING, AND GUIDING FABRICS. Wm. Birch, Salford, England. Filed Oct. 6, 1877.

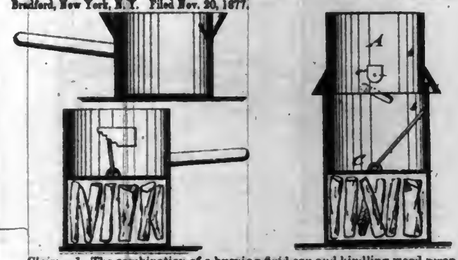
Brief.—The cloth, after leaving the beaters, passes between rollers, which are provided with spiral ribs or screw-threads, extending from the center each way, one half being right and the other left handed. The governor is pivoted at its center, and so constructed as to retain the cloth in a central position.



Claim.—1. In a smoothing-machine, the combination, with a governor constructed as described, of the spirally-ribbed or screw-threaded rollers R R' and connecting mechanism, for the purpose specified.

2. In a smoothing-machine, the supporting-frame of roll R, combined with a frame, S' S', pivoted at S, and sustained by springs s' s', substantially as and for the purpose specified.

196,788. COMBINED KINDLING-WOOD RECEPTACLE AND BURNING-FLUID CAN. S. Hinckson Bradford, New York, N.Y. Filed Nov. 20, 1877.



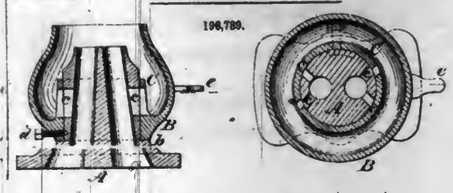
Claim.—1. The combination of a burning-fluid can and kindling-wood receptacle, substantially as and for the purpose set forth.

2. The combination, with a burning-fluid can, of a kindling-wood receptacle having an adjustable device for retaining the kindling material in position for saturation, substantially as specified.

3. The combination, with a burning-fluid can having outer cup or seat and drip-hole, with inner guard-flange, of a kindling-wood receptacle having an adjustable perforated retaining disk or diaphragm, substantially as and for the purpose set forth.

4. The combination, with the kindling-wood receptacle, having interior notches or step-shaped seats, of a perforated draining-disk adjusted by a retaining-rod to the size of the kindling material, substantially as and for the purpose set forth.

196,789.

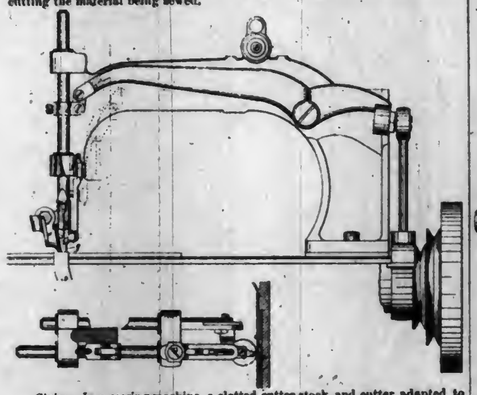


196,789. VARIABLE EXHAUSTS FOR LOCOMOTIVES. George S. Brainerd, St. Albans, Vt. Filed Nov. 30, 1877.

Claim.—The combination of a movable cone, B, having the inwardly-projecting sleeve C, with the nozzle A, each being provided with one or more ports, as herein shown and described.

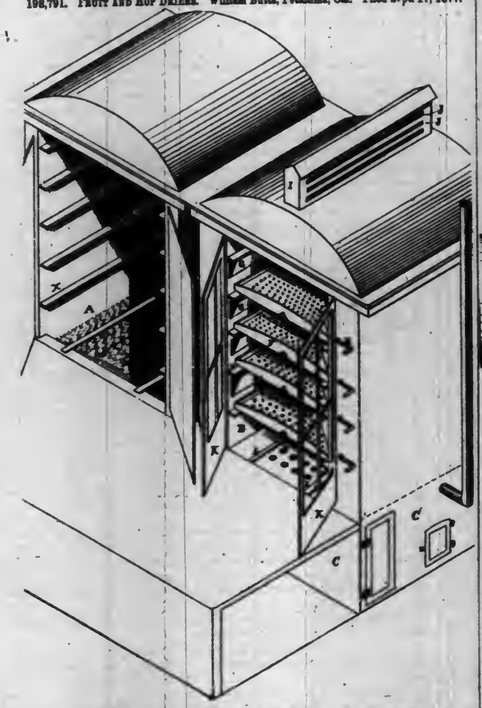
196,790. TRIMMING MECHANISMS FOR SEWING-MACHINES. Thomas Briggs, Lynn, Mass. Filed Oct. 11, 1877.

Brief.—The cutter-stock is provided with an elongated slot, through which is inserted a screw, which secures it to the head of the machine. A pin on the needle-bar works in a second slot in said stock, which pin, when near the completion of the downward stroke of the needle-bar, depresses the blade, thereby cutting the material being sewed.



Claim.—In a sewing-machine, a slotted cutter-stock and cutter adapted to be moved vertically in guideways, in combination with a pin moved by the needle-operating devices, the pin co-operating with the slot in the cutter-stock, to force the knife through the material at or near the termination of the downward stroke of the needle, substantially as described.

196,791. FRUIT AND HOP DRIERS. William Butts, Petaluma, Cal. Filed Sept. 17, 1877.



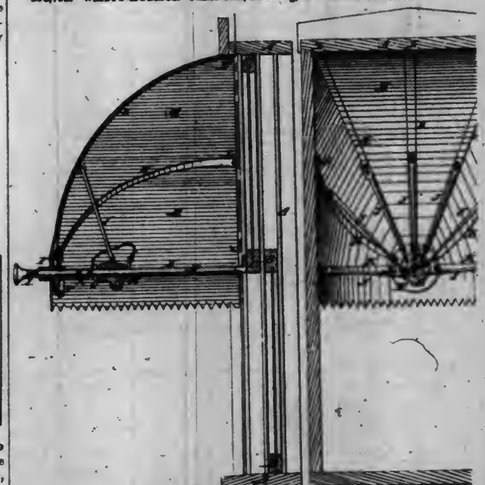
Claim.—1. The drying-chamber B, with its furnace-chamber C, in combination with a cooking-chamber, A, with its water tank M and the circulating-pipe N, which leads to the furnace-chamber C, substantially as and for the purpose described.

2. The combination, with a drying-chamber having side openings to admit the heated air, of a series of trays having concave under sides, substantially as and for the purpose described.

3. A drying-chamber, B, provided with the tracks L L and trays F F, in combination with the truck P, which is provided with a corresponding number of horizontal racks, V, which are supported only at one end, and which can be raised or lowered at will, substantially as and for the purpose described.

4. The trays F F, provided with the notches Y, in combination with the horizontal racks V, with their longitudinal rails or strips W, substantially as and for the purpose described.

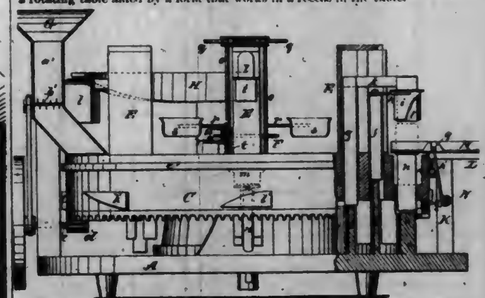
196,792. WINDOW-AWNINGS. James Cain, Pittsburg, Pa. Filed Sept. 1, 1877.



Claim.—The rod D, having the two runners E F, pins t t H, and spring I, in combination with the stretchers J and the pivoted ribs K, graduated in length, provided with a cover, and adapted to be applied to a window-frame, as and for the purpose specified.

196,793. TOBACCO MEASURING AND PACKING MACHINES. Clement C. Clawson, Raleigh, N. C. Filed July 30, 1877.

Brief.—The bags are filled by plungers as they are brought under them by a rotating table aided by a form that works in a recess in the table.

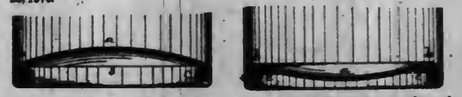


Claim.—1. The combination of the bed A, having cams a b c, the table C, carrying the vertical guide E, the follower h, form i, plunger l, and the sliding bars f g, substantially as shown and described.

2. The plates s, arms r, shafts o o', spring t, slide v, and cam F, in combination, substantially as shown and described.

3. The table L, slide M, and lever N, in combination with the table C, having on its periphery cams F' F, substantially as shown and described.

196,794. FASTENING BOTTOMS IN BOILERS. William H. Cloke, Rahway, N. J. Filed Nov. 23, 1876.



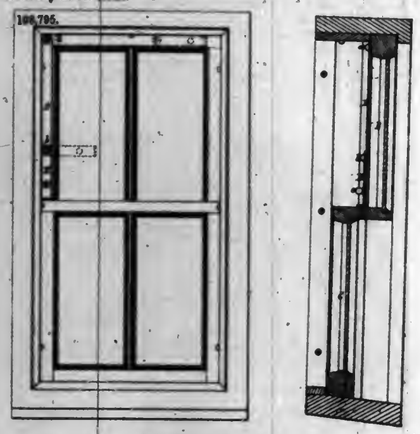
Claim.—The combination of an upwardly-convex bottom, having a depending flange riveted to the inside of the body of the boiler, with the body bent inwardly, to embrace the flange and cover the rivets, and with solder applied at the upturned edge of the body, as and for the purpose set forth.

196,795. SASH-FASTENERS. Samuel Cole, Stoneham, Mass. Filed Dec. 11, 1877.

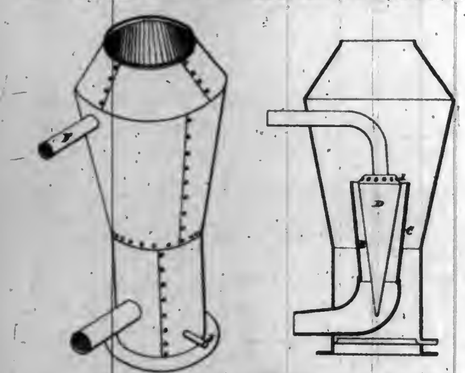
Brief.—A long and short bar pivoted or hinged together, or pivoted at the upper end to the top of the upper sash, in such manner that, swinging down in line, the jointed bar serves to brace or fasten the lower sash down, and when turned back on itself the window may be opened to a height corresponding to the length of the shorter bar, and at the same time securely held from being further opened from the outside.

Claim.—In combination with the window-frame and the two sashes thereof, the two bars D E, pivoted together, and arranged with each other and the said sashes and frame, and having the upper bar pivoted to the upper sash, all being substantially as set forth.

196,795.



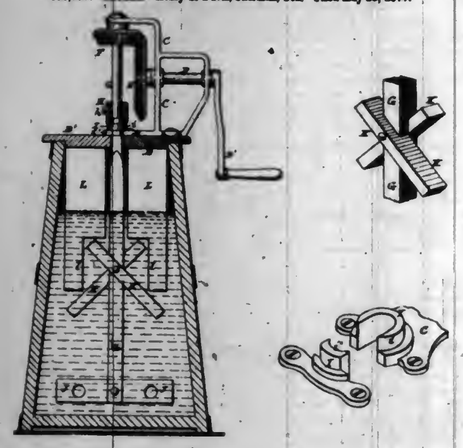
196,796. SPARK-EXTINGUISHERS. Benton V. Crumrine, Yuba City, Cal. Filed Nov. 21, 1877.



Claim.—1. The hollow tapering shell or cylinder C, attached to the exhaust-pipe inside of the smoke-stack of a steam-boiler, and having the cone D secured inside of it, so as to provide an annular space around it, which will deflect the exhaust-steam against the sides of the stack, substantially as and for the purpose described.

2. The tapering shell or cylinder C, attached to the exhaust-pipe inside of the smoke-stack, in combination with the hollow cone D, with its perforations I, and the suspending water-pipe F, substantially as and for the purpose described.

196,797. CHURNS. Henry T. Davis, Sherman, Tex. Filed May 20, 1877.

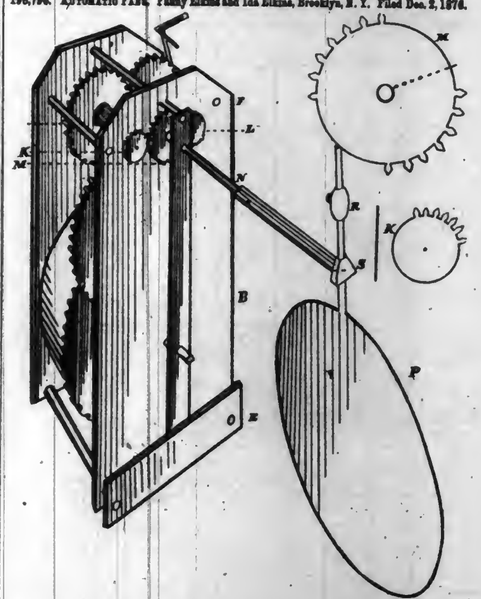


Claim.—1. The combination of the three external mutilated wheels K, L, and M, having their centers in a straight line, the wheels K and L being arranged to rotate regularly in opposite directions, and thereby communicating oscillatory motion, through any predetermined arc, to the wheel M, substantially as described.

2. The combination of the funnel-shaped tube S and freely-pivoted fan P, substantially as and for the purpose hereinbefore set forth.

3. The combination of the external mutilated wheels K, L, and M, funnel-shaped tube S, and freely-pivoted fan P, all substantially as shown and described.

196,798. AUTOMATIC FANS. Fanny Elkins and Ida Elkins, Brooklyn, N. Y. Filed Dec. 2, 1876.

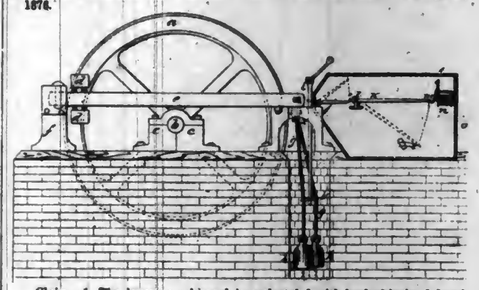


Claim.—1. The combination, with a churn-dasher, of the lid B B', provided with depending boards L L, having recesses l l, as and for the purpose set forth.

2. The dasher consisting of shaft G and crossed bars K K, in combination with recessed boards L l L l, depending from the lid, as and for the purpose set forth.

3. The combination of lid B B', blocks L, composed of two parts, i i', collar H, and dasher-shaft G, substantially as set forth.

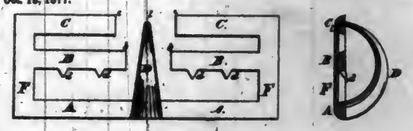
196,799. SAFETY-BRAKES FOR MACHINERY. Alex. A. Prévot, Paris, France. Filed Apr. 26, 1876.



Claim.—1. The levers e e, hinged in pedestal f, with brake-blocks d d and counterpoises h h, by the fall of which the free ends of said levers are brought toward each other, causing the blocks to grasp the rim of the fly-wheel, or its equivalent, the whole constructed, combined, and operated in manner and for the purpose substantially as herein set forth, and shown by the accompanying drawing.

2. The disengaging-gear, as described and shown, by means of which the counterpoises h h can be instantaneously set free.

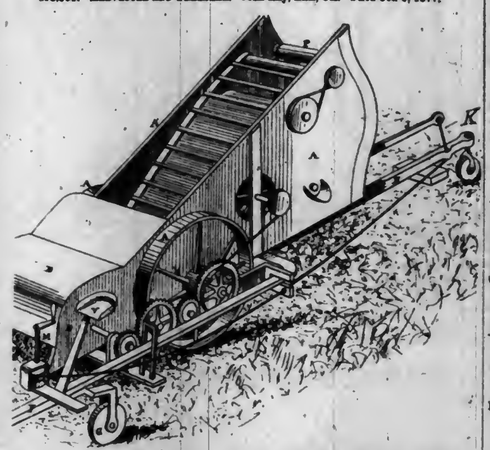
196,800. TRACE-CARRIER AND BACK-BAND BUCKLE. J. T. Gathright, Louisville, Ky. Filed Oct. 18, 1877.



Claim.—1. The back-band buckle composed of the straight lowermost cross-bar A A, side bars F F, two pairs of short cross-bars, B B and C C, cast of such length as to leave central spaces between the inner ends of each pair, and the trace-hook D, cast upon the lowermost bar A A, and having such form that its base or lowermost part shall not extend below said bar, substantially as shown and described.

2. The back-band buckle with the central portion of the bar C C left out in casting, and the trace-hook D, as constructed with reference thereto, the point of the hook serving to keep the middle portion of the band down in place, and at the same time forming a lock therewith, to prevent accidental or automatic detachment of the link of the trace-chain, substantially as described.

196,801. HARVESTER AND THRASHER. John May, Ellis, Col. Filed Oct. 8, 1877.



Claim.—1. The combination, with the thrashing-cylinder B, mounted in front of the header-frame, between the sides B' B', and having the concave D of the curved bottom C and curved carrier E, said curved bottom and carrier extending underneath the cylinder, so as to form a throat, into which the heads of standing grain are drawn by the rotation of the cylinder, and deposited directly upon the carrier, substantially as herein described.

2. The frame A' A', mounted upon the wheels A A, as described, in combination with the draft-pole F, the rear end of which is bent across the rear of the machine, and attached to it near one side by a movable joint, while the pole extends along the opposite side of the machine and to a distance in front of it, substantially as and for the purpose described.

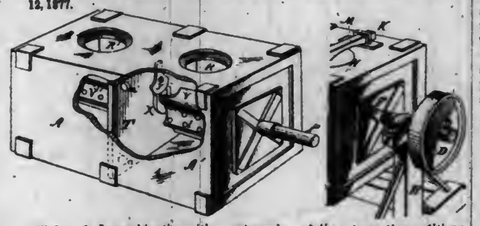
3. The frame A' A', having the hinged beam H extending in its rear, and supported at its extremity by a caster-wheel, I, in combination with the rigid beam or lever J of the thrasher-frame, said lever being connected with the crank-shaft M by a rope, K, which is attached to the extremity of the lever J, and passes down around a pulley on the beam H, and thence to the winding-shaft M, substantially as and for the purpose described.

4. The spring roller or drum P, connected with the lever J by a rope, O, which passes down around a pulley on the beam H, and thence up to the drum, substantially as and for the purpose described.

5. The spring roller or drum P, arranged to be rotated by the raising and lowering of the rear end of the thrasher-frame, and connected with the outer end of the screen R by a cord, Q, substantially as and for the purpose described.

6. A harvesting-machine consisting of a cylinder, B, mounted upon a header-frame in front of a traveling thrasher, and driven by a gearing from one of the bearing-wheels of the frame, and having the concave D mounted above the thrasher, and provided with a curved bottom, C, grain-carrier E, and shoe R, all combined and arranged to operate substantially as and for the purpose described.

196,802. ROTARY BOX-CHURNS. Ceylon Isbell and E. C. Taylor, Little York, N. Y. Filed Oct. 12, 1877.



Claim.—1. In combination with a rectangular rotating churn, the partitions T, provided with apertures a a' a'' a''' at their respective corners, adapted to be closed by suitable plugs to cut off communication between the compartments, whereby the capacity of the churn may be varied at will, substantially as specified.

2. In combination with a rotating churn, divided into compartments, as described, the independent agitators, suspended in journals, and adapted to rotate freely in the churn, substantially as and for the purpose set forth.

3. The combination, in a rotating churn, of the partitions perforated at their corners, as described, the independent agitators, journaled in the compartments and capable of a free rotary movement within the churn-box, substantially as specified.

196,803. THILL-COUPLINGS. Daniel A. Johnson, Boston, Mass. Filed Oct. 18, 1877.

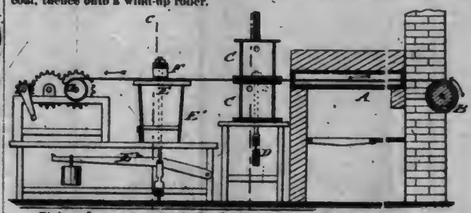


Claim.—1. The combination, with two disks fitted together substantially as described, and a bolt and nut, of a spring to press the two disks together, substantially as described.

2. In combination, the two disks, the bolt g, extended through each disks, and provided with the portions 4 5, the spring, and a nut to operate all, substantially as described.

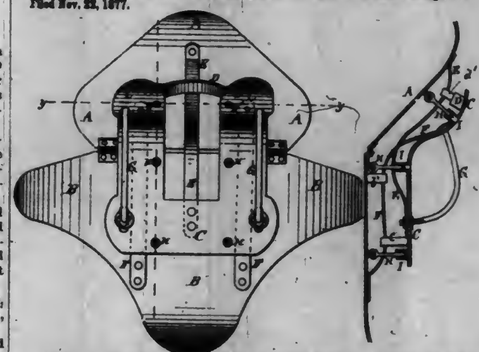
196,804. APPARATUS FOR HARDENING AND TEMPERING SHEET-STEEL. Albt. Lüttgen, Solingen, Prussia, Germany. Filed Sept. 29, 1877.

Brief.—A chain is fastened to the strip to draw it from the unwinding-drum through a heating-oven, and between stationary and adjustable parts of a pressure cooling apparatus, and then between a presser and a bridge heated by charcoal, thence onto a wind-up roller.



Claim.—In an apparatus for hardening and tempering steel, the combination of a heated tempering-box, having a top guide-bridge, with a pressure-block and weighted lever connected thereto, substantially as set forth.

196,805. POKES. David S. Ludlum, New Hampton, N. Y., and L. W. Ludlum, Orange, N. J. Filed Nov. 22, 1877.



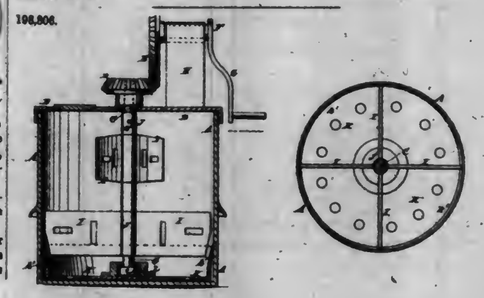
Claim.—1. A poke for cattle, made of outer plates A B, hinged to each other, and an inner plate, C, formed to suit the angles of the animal's head and horns, substantially as herein shown and described.

2. A poke for cattle, made of outer plates A B, hinged to each other, and an inner plate, C, formed to suit the angles of the animal's head and horns, kept a short distance apart by springs E F, and held together and in place by flexible stays d' b' c', substantially as herein shown and described.

3. A poke for cattle, made of outer plates A B, hinged to each other, and an inner plate, C, formed to suit the angles of the animal's head and horns, kept a short distance apart by springs E F, held together and in place by stays d' b' c', and having the upper plate A B armed with hinged points H, connected through the lower plate C, to come in contact with the head when any attempt is made to use the horns, substantially as herein shown and described.

4. The poke formed by the combination of the hinged plates A B, the curved and slotted plate C, the strap D, the springs E F, the bent stays G, the hinged pins H, and the guide-tubes I, with each other, substantially as herein shown and described.

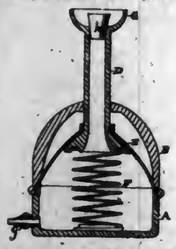
196,806.



198,806. CHURNS. John A. McConnell and Wm. V. McConnell, Crockett, Tex. Filed Sept. 29, 1877.

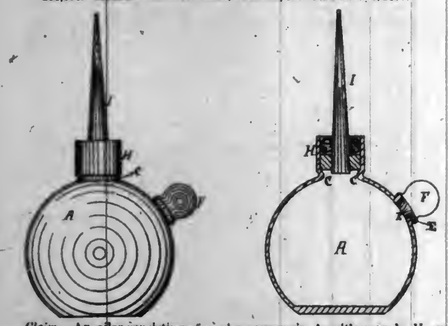
Claim.—The dasher-shaft C of a churn, having head *c* on the lower end, in combination with a box, L, attached to the middle of butter-pan K, as and for the purpose specified.

198,807. INSECT-POWDER INJECTORS. Giovanni N. Milco, Stockton, Cal. Filed May 23, 1877.



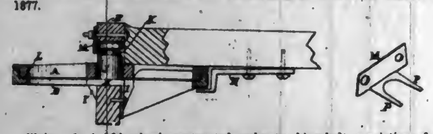
Claim.—The cylinder or vessel A B, with its nozzle *g*, in combination with the piston or diaphragm E, hollow piston-rod D, with its cup-shaped upper end G, and the spiral spring F, substantially as and for the purpose described.

198,808. OILERS. John J. Newbaker, Pottsville, Pa. Filed Nov. 24, 1877.



Claim.—An oiler consisting of a glass reservoir, A, with a neck, H, and flanges C and E, a metal discharge-tube, I, a cork stopper, inclosing the discharge-tube, resting on a flange, and forming the bottom of the drip-cup, and an elastic bulb secured about the flange E, substantially as shown and described.

198,809. FIFTH-WHEELS FOR VEHICLES. Peter Okerlund, San Francisco, Cal. Filed Nov. 21, 1877.

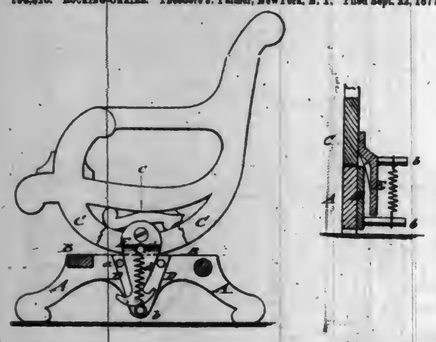


Claim.—1. A fifth-wheel constructed without a king-bolt, consisting of the two parts of a wheel, A and B, with their cross-pieces C and H, central hole D, stem J, with its slot K and key M, and bar N, all combined, constructed, and arranged substantially as and for the purposes above described.

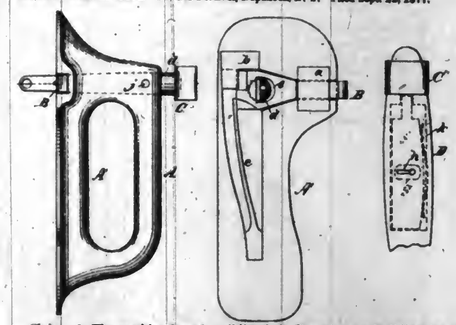
2. The circular parts A and B of a fifth-wheel, with their cross-pieces and radial arms, socket or hole D, stem J, and with a rim or flange, I, on the periphery of one of the parts, and a corresponding depression in that of the other, all constructed and arranged substantially as and for the purposes above described.

3. The key M, consisting of a plate, O, and projecting spurs or arms P, for holding the two parts of the wheel securely together, constructed and arranged substantially as and for the purposes herein described.

198,810. ROCKING-CHAIRS. Theodore J. Palmer, New York, N. Y. Filed Sept. 22, 1877.



198,811. DOOR-LATCHES. Thomas Percival, Napanoch, N. Y. Filed Sept. 22, 1877.



Claim.—1. The combination of a sliding bolt, B, spring, and sliding bar *d* with handle A, having a base-piece, substantially as shown and described.

2. The bolt B', having rectangular aperture *c'*, and notches for receiving the end of the spring, the spring *c'*, having a widened and slotted end, and the bar *d'*, in combination with handle D, having a base-piece, A^2, recessed to contain the spring and bolt, substantially as shown and described.

3. The bolt *f*, having the opening *g* and the spring *k*, the chambered handle D, and the notched bar *d'*, in combination, substantially as shown and described.

198,812. SOLUBLE-INK PENS. Joseph Perkins, San Francisco, Cal. Filed Oct. 22, 1877.



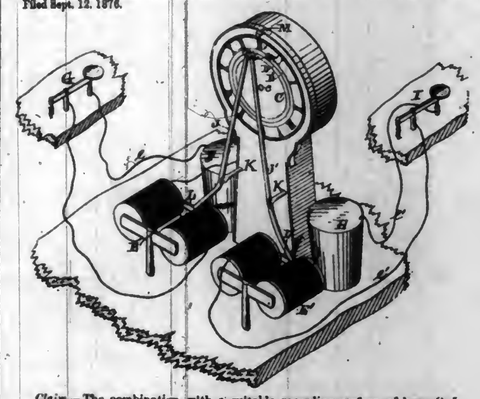
Claim.—The combination of a slotted pen-holder provided with a stationary pen and a longitudinal bore, and a sliding tube provided with a rod or bar of solidified soluble coloring compound, arranged to be adjusted in the longitudinal bore of the pen-holder, and in relation to the pen-point, substantially as and for the purpose described.

198,813. SPRING-HOOKS. George E. Ferris, Boston, Mass. Filed Nov. 8, 1877.



Claim.—As an improved article of manufacture, a hook provided with a tongue, a stop, a depression, and a thumb-piece, to operate substantially as described.

198,814. ELECTRO-MAGNETIC WATCHMEN'S TIME-RECORDERS. Wm. E. Phelps, Elmwood, Ill. Filed Sept. 12, 1876.

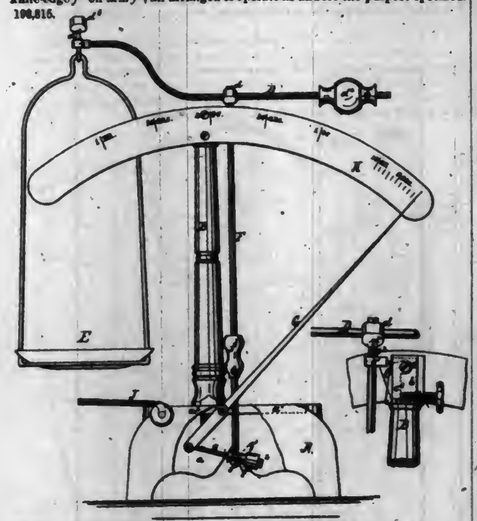


Claim.—The combination, with a suitable recording-surface, of keys G I, circuit-wires *e e'*, batteries F H, electro-magnets E E', armatures L L', upright elbow-levers J J', pivot arms or blocks K K, and markers *m m'*, each circuit with its attached devices being independent of the other, so that an injury to one battery can affect the operation of one pointer only.

198,815. PENDULUM-SCALES FOR WEIGHING. Nelson H. Putney, Bridgeport, Conn. Filed May 31, 1877.

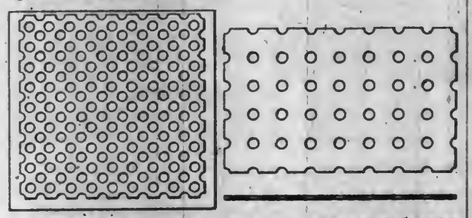
Claim.—In combination, the chambered base A, column B, balanced beam D on adjustable fulcrum-arm C, and having the rigidly-suspended weighted arm F, the pivoted pointer G, with its hinged arm *g* engaging at notch *g'* with the knife-edge *f'* on arm *f'*, all arranged to operate as and for the purpose specified.

198,816.



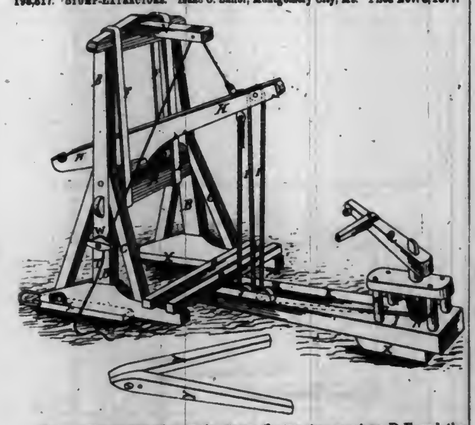
198,816. CARPET-LININGS. Alfred Robinson, New York, N. Y. Filed Jan. 20, 1875.

Brief.—Two thicknesses of paper are united together. The sheet that comes uppermost when laid is perforated with numerous holes, the under sheet forming a bottom to each cell.



Claim.—A carpet-lining made of two thicknesses of paper united together, in one of which thicknesses there are perforations, so that cells are formed in the paper for the reception of dust, and such cells do not pass through the paper, and hence the dust does not reach the floor, substantially as set forth.

198,817. STUMP-EXTRACTORS. Isaac O. Sailor, Montgomery City, Mo. Filed Nov. 6, 1877.

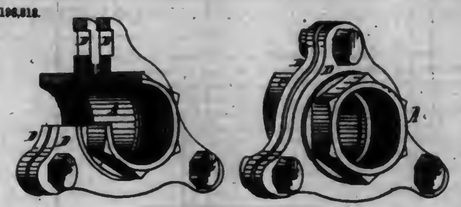


Claim.—The combination of the straps F with the cross-bars D E and the posts H, for supporting the lever H against downward pressure, substantially as herein shown and described.

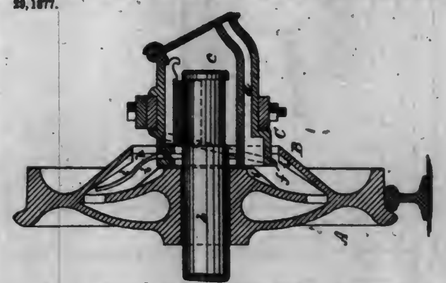
198,818. UNIONS OR JOINTS FOR PIPES. Joseph Shaw, Huddersfield, England. Filed Nov. 19, 1877.

Claim.—The loose flanges D, in combination with nuts A, for the purposes herein shown and described.

198,819.



198,819. CAR-WHEEL AND LUBRICATOR. Benj. F. Steinbarger, Hannibal, Mo. Filed Sept. 29, 1877.



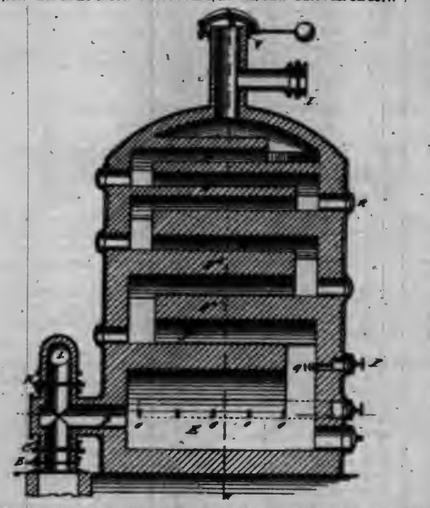
Claim.—1. The box C, having the grooved flange *f* and aperture *g*, in combination with the wheel A, having the flange B, substantially as shown and described.

2. The box C, having the channel *e* and passage *d* formed in it, substantially as and for the purpose herein shown and described.

3. The rod A, in combination with the box C, having the aperture *g*, substantially as and for the purpose described.

4. The radial ribs *i*, formed on the inner surface of the flange B and upon the web of the wheel A, substantially as and for the purpose herein shown and described.

198,820. HOT-BLAST OVENS. Jesse M. Smith, Newark, Ohio. Filed June 11, 1877.



Claim.—1. The hot-blast oven, circular in form, with dome-shaped top, in combination with horizontal walls, or arches and cross-walls, substantially as and for the purposes specified.

2. The oven constructed to form the chamber E, the flues N, and the holes O, as shown and described, for the purpose specified.

3. The combination of the air-inlet and its valve P, the openings Q, communicating with said air-inlet, the chamber E, and flue F, all as shown and described.

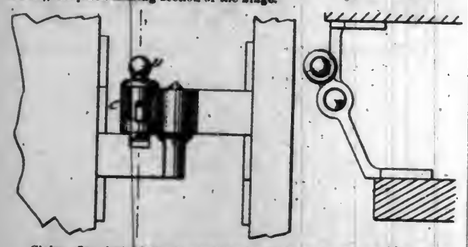
198,821. ROWLOCKS. R. R. Spedden and Eugene Spedden, Astoria, Oreg. Filed Nov. 21, 1877.



Claim.—A rowlock, B, secured to the gunwales of a boat by a chain, E, and spring or weight D, connected to the boat, all combined, constructed, and arranged substantially as and for the purposes herein described.

196,822. LOCK-HINGE. Joseph B. Stone, Jersey City, N. J. Filed Nov. 6, 1877.

Brief.—The hinge is provided with an auxiliary or guide sleeve, in which a vertically-moving gravity catch or bolt with beveled end works, the bolt being slotted and held in place by a cross-pin, and its beveled end passing over and locking the pintle-bearing section of the hinge.



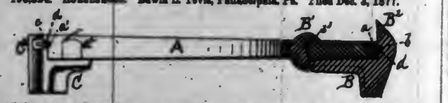
Claim.—In a lock-hinge, the combination, with pintle and sleeve, of an auxiliary sleeve, C, having cross pin, and a vertically-sliding slotted gravity-catch, D, beveled at the lower part, as shown and described.

196,823. GRATES FOR COOKING AND HEATING STOVES. Paul Symons, Plainfield, N. J. Filed June 4, 1877.



Claim.—A grate consisting of the end bars A, having gudgeons C, and the longitudinal bars B, said bars A B being connected by mortise and tenon, and held detachably by pins D, as shown and described.

196,824. HORSESHOE. Edwin L. Toris, Philadelphia, Pa. Filed Dec. 3, 1877.



Claim.—1. A horseshoe, A, provided with a groove, *a*, the toe-calk B, constructed out of one piece of metal, and provided with a curved flange, B^1, formed as shown, and face-plate B^2, the latter being provided with a groove, *b*, and nail *d*, the whole constructed, combined, and arranged to operate substantially as described.

2. A horseshoe, A, provided with grooves a^1 a^1 and mortises a^2 a^2, heel-calks C C, formed with a tenon, C^1, and face-plate C^2, the latter being provided with a groove, *c*, and nails *d d*, the whole constructed, combined, and arranged to operate substantially as described.

196,825. BARREL-HOOP MACHINE. Clark W. Thompson, Wells, Minn. Filed May 1, 1877.

Brief.—One of the ends of a hoop that have been beveled and shouldered is inserted in a recess formed for its reception in a revolving forming-wheel, and under a griping-pin projecting from a flange on said wheel, which is then revolved to draw the hoop tightly around it. The hoop is then automatically locked, and the wheel rotated until the locked ends of the hoop are brought immediately under a series of sectional, tapering, and yielding nail-holders or sockets, in which the nails are held until driven into and through the hoop by a series of drivers attached to a vertically-reciprocating frame, and their ends clinched by a series of anvils arranged in orifices in the rim of the forming-wheel.

Claim.—1. In a hoop-machine, the combination, with the forming-wheel, of a vibrating griping-pin, *e*, which engages with the lock of the hoop, and is withdrawn to permit the ends of the hoop to be secured to each other, substantially as set forth.

2. In a hoop-machine, the combination, with the forming-wheel, of fingers operated to thrust the formed hoop from its position upon the wheel, substantially as set forth.

3. The combination, in a hoop-machine, of a forming-wheel, fingers to thrust the hoop from its position upon the wheel, and a compressor, which presses the hoop upon the forming-wheel, whereby, when the compressor is removed from contact with the hoop, the hoop is thrust from said forming-wheel, substantially as set forth.

4. In a hoop-machine, a forming-wheel provided with anvils I^1, substantially as set forth.

5. In a hoop-machine, the combination of a forming-wheel and a series of reciprocating nail-drivers, which force nails through the hoop before the hoop is removed from the wheel, substantially as set forth.

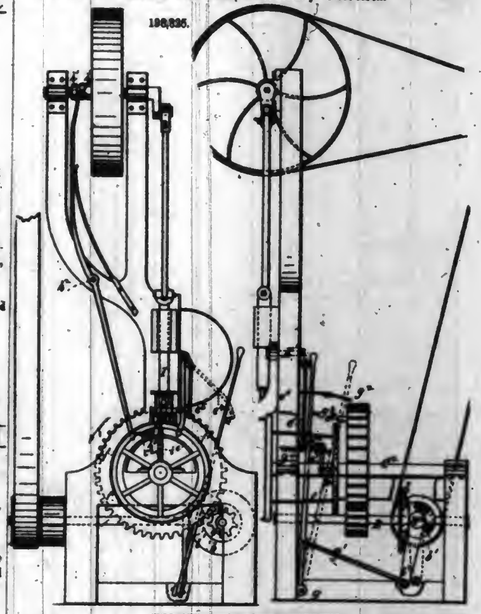
6. In a hoop-machine, the combination, with the forming-wheel and its driving mechanism, of a shipping-lever or its equivalent, actuated by the forming-wheel at each revolution to throw the said forming-wheel out of action, substantially as set forth.

7. The combination, with the forming-wheel, of a detent, which stops the rotation of said wheel at the proper point for nailing the ends of the hoop, and a shipping-lever or its equivalent, which automatically throws said wheel out of action at each revolution, and permits the detent to act upon the wheel, substantially as set forth.

8. In a hoop-machine, the combination, with the forming-wheel, of a reciprocating nail-driver and a shipping-lever or its equivalent, actuated by the forming-wheel to throw the nail-driver into action, substantially as set forth.

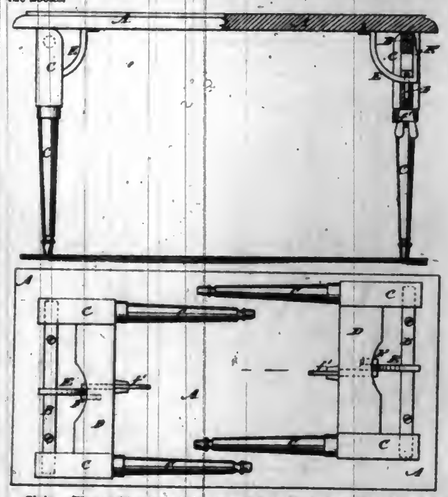
9. In a hoop-machine, the combination, with the nail-driver, of a tripping-latch, which automatically throws the driver out of action after the ends of the hoop have been secured to each other, substantially as set forth.

196,826.



196,826. FOLDING TABLES. George A. Trimble, Crown Point, N. Y. Filed Dec. 6, 1877.

Brief.—The ends of the table are provided with rigid curved bars, which are embraced by hooks passing through the end braces of the folding legs. The legs are rigidly locked in position by means of thumb-nuts on the lower ends of the hooks.



Claim.—The combination of the curved bars E, the hook-bolts F, and the thumb-nuts *f'* with the top A, the legs C, and the cross-bars B D of the table, substantially as herein shown and described.

196,827. HOT-AIR ENGINE. John B. Ward, San Francisco, Cal. Filed Nov. 6, 1877.

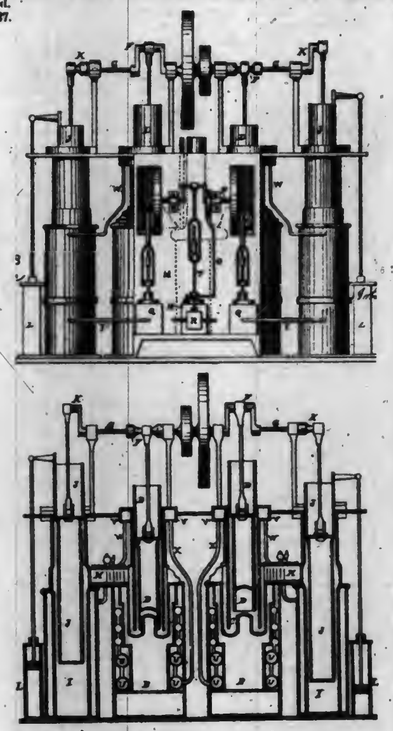
Claim.—1. The combination of the furnace of a hot-air engine, provided with a steam-coil, U, and the steam-cylinder N, connected with said air-engine by the steam-coil, whereby said steam-cylinder is supplied with steam generated in the furnace of the air-engine, substantially as herein shown and described.

2. The combination of the furnaces of hot-air engines, having steam-coils, the steam-cylinder N, to which the steam-coils are connected, and regenerating or supply cylinders I I, connected with the air-engines by tubes H, substantially as herein shown and described.

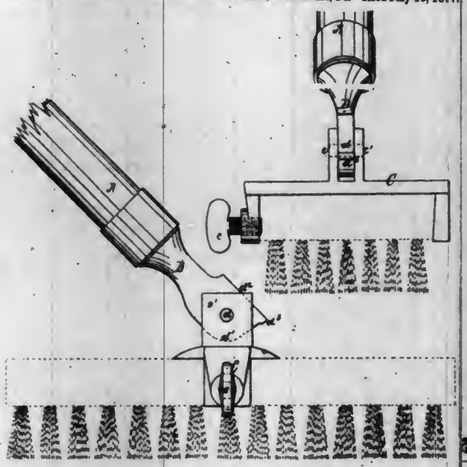
3. The combination of the furnace of a hot-air engine, provided with steam-coil U, the steam-cylinder N, air-pump Q, connecting-pipe Y, and supply-cylinder I, substantially as and for the purpose herein shown and described.

4. The combination, with the furnace of a hot-air engine, provided with the steam-coil U and the supply-cylinder I, of the water-chamber V, arranged around the stuffing-box in which the main piston moves, said chamber having pipes W X, communicating, respectively, with the water-jacket of the supply-chamber and the steam-coil, substantially as and for the purpose herein shown and described.

196,827.



196,828. SCRUBBING-BRUSHES. John M. Wilkinson, Phœnixville, Pa. Filed July 10, 1877.

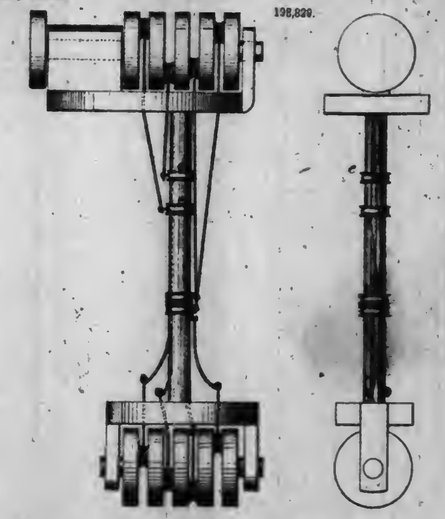


Claim.—The combination of handle A, arm D, having flattened end, curved edge d^1, straight edge d^2, and projection d^3, and brush-clamp C, having thumb-screw *e* and lugs *c'*, together with pin *d*, all arranged to operate as and for the purpose specified.

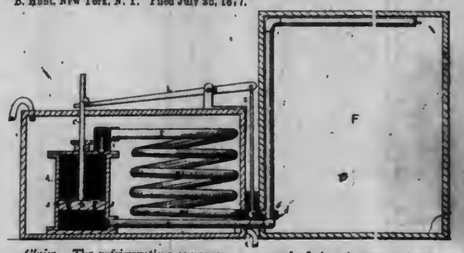
196,829. WINDMILLS. Alvin T. Winchell, Albion, Mich. Filed May 13, 1877.

Claim.—The combination of the reel-crank shafts, connected by two or more rods, or their equivalent, having ring or swivel joints, substantially as described, for transmitting the power of windmills to a counter-shaft and producing rotary motion.

196,829.



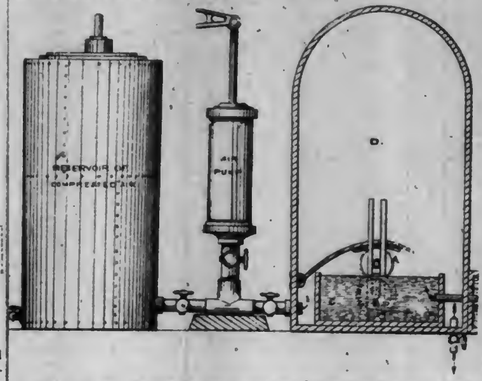
196,830. AIR-COOLING APPARATUS. Albert Albertson, Jersey City, N. J., assignor to Simon B. Hunt, New York, N. Y. Filed July 28, 1877.



Claim.—The refrigerating apparatus composed of the air-pump A, with its valves 1 2 3, in combination with the coil of pipe 5 5' 5'', and drop-valve 7, said valve being operated by the piston-rod *a*, through the lever L, to admit compressed air to the chamber F at intervals, as and for the purpose set forth.

196,831. ICE-MACHINES. Albert Albertson, Jersey City, N. J., assignor to Simon B. Hunt, New York, N. Y. Filed Aug. 6, 1877.

Brief.—A deflector above the ice-forming core confines the current of cold air to the latter, said core being partially immersed in the water to be frozen, and resting upon a totally immersed flexible revolving roller, and allowed to rise as the ice forms on its surface by having its bearings in open vertical slotted standards. At each end of the flexible roller is a circular knife to prevent the ice from forming at each end of the core.



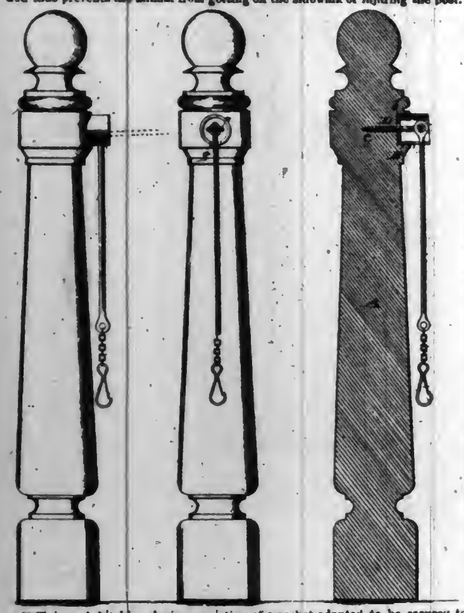
Claim.—1. In a machine for producing ice, the revolving ice-forming core A, moving vertically in open slotted standards, in combination with water-tank C and ice-chamber D, as and for the purpose set forth.

2. The ice-core A, in combination with rotary cutters to free said core of accumulated ice, as and for the purpose set forth.

3. In an ice-forming machine, the flexible roller B, provided with cutters, as described, in combination with the ice-forming core A, as and for the purpose set forth.

196,832. HITCHING-RAIL. Albert L. Andrews, Providence, R. I. Filed Sept. 6, 1877.

Brief.—The socket extends from the post and acts as a stop to the rigid bar, and thus prevents the animal from getting on the sidewalk or injuring the post.



Claim.—A hitching device consisting of a socket adapted to be secured to a post or other fixed object by means of a screw-threaded shank or bolt and a rigid hitching-bar, one end of which is pivoted within said socket, while the opposite end of said bar is provided with means for its attachment to the bit, substantially as described.

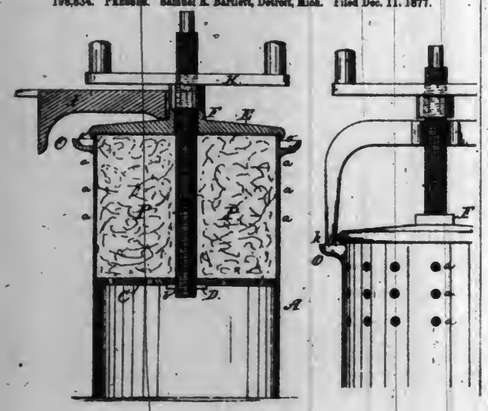
196,833. BED-SPRING. Edwin O. Barmore, New Buffalo, Mich. Filed Sept. 17, 1877.



Claim.—1. The double spring herein described, consisting of the coils A A', formed of a single piece of wire, and arranged one within the other, as shown.

2. The double spring herein described, consisting of the coils A A', formed of a single piece of wire, and arranged one within the other, and having each end formed into a loop, substantially as shown and described.

196,834. PRESSES. Samuel R. Bartlett, Detroit, Mich. Filed Dec. 11, 1877.



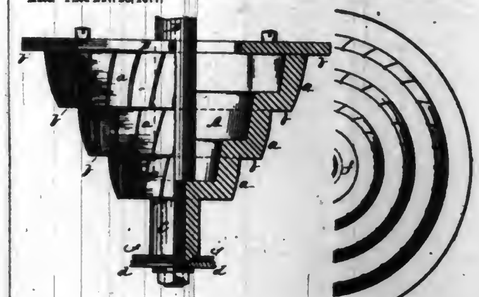
Claim.—1. The draw-up plunger C, movable and adjustable to the screw B, the colander A, the cover E, the threaded lever H, substantially as described, and for the purpose specified.

2. The wrench I, movable and adjustable to the cover E, the screw B, the threaded lever H, the plunger C, substantially as described, and for the purpose specified.

3. The clearing-arch K, movable and adjustable to the lugs *a a*, the colander A, the screw B, the plunger C, the threaded lever H, and the cover E, substantially as described, and for the purpose specified.

4. The pin *D*, movable and adjustable to the hole *b* in the screw B, the threaded lever H, the plunger C, and the cover E, substantially as described, and for the purpose specified.

196,835. BURNISHER-HEADS FOR BOOT AND SHOE MACHINES. Estique Boundry, Worcester, Mass. Filed Nov. 28, 1877.



Claim.—1. The burnisher-head A, constructed, as hereinbefore described, with the series of burnishing-surfaces *a* and guard-flanges *b*, arranged for supporting the bottom of the heels with their face-planes perpendicular to the axis of revolution, substantially as shown, and for the purpose set forth.

2. A revolving burnisher-head carrying an ornamental burr-beader, *f*, supported to revolve about the same axis, and arranged for independent rotary movement, substantially as set forth, whereby said bead can be rolled upon the heel-surface, for the purpose stated.

3. The combination, with the revolving annular welt-bead *d*, of the burr-bead *f*, arranged adjacent thereto upon the same spindle or axis, but free to revolve independently, substantially as and for the purpose set forth.

4. The revolving burnisher and beading head, made with the series of burnishing-surfaces *a*, guard-flanges *b*, central projection or sleeve C, and annular welt-beader *d*, substantially as and for the purposes set forth.

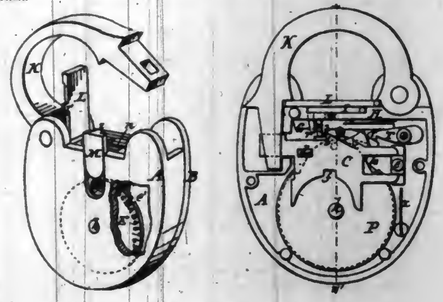
196,836. BEDSTEAD-FASTENINGS. Stephen D. Butler, New Buffalo, Mich. Filed Nov. 2, 1877.



Claim.—The hereinbefore-described locking-plate A, provided with the tapering lugs *a* at the top, and having a tapering base, *b*, the whole being adapted to fit within the correspondingly-shaped socket in the post C, and held therein by means of the said lugs *a* and base *b*, substantially as and for the purpose specified.

196,837. COMBINED INDICATOR AND SEAL-LOCK. Emanuel B. Caton, Washington, D. C., assignor of one-half his right to Robert Coltman, same place, and John T. Clements, St. Joseph, Mo. Filed Nov. 7, 1877.

Brief.—The indicator-dial moves one notch at each unlocking of the shackle, and after one revolution of the dial the bolt cannot be shot unless the seal is broken.



Claim.—1. The combination, with a sliding bolt, C, provided with a projecting lug, *a*, of an anchor, *g h i*, a ratchet-wheel, D, and an indicator-dial, E, arranged substantially as described, and for the purpose specified.

2. The combination, with a sliding bolt, C, with its shoulder *b*, of a sliding catch, G, with its shoulder *l*, and the pivoted seal-cap I, having a downwardly-projecting staple, *r*, substantially as described, and for the purpose specified.

3. The combination, with a seal-cap, I, and its staple *r*, of a sliding catch, G, provided with a stud, *s*, operating in a horizontal slot, *o*, substantially as described, and for the purpose specified.

4. The combination, with a sliding bolt, C, its shoulder *c* and lug *a*, an anchor, *g h i*, a ratchet-wheel, D, and an indicator dial or wheel, E, provided with a notch, *e'*, on its periphery, of a horizontal lever, S, with its hooked arm, *s*, an extended arm, *s'*, a vertical lever, T, with its shoulder or hook *t* and arm *t'*, and a spring-catch, G, working in grooves on the upper surface of said lever, substantially as described, whereby on each complete revolution of the indicator-wheel the sliding bolt and indicator-wheel may be locked and unlocked, as set forth.

5. The combination, with a sliding bolt, C, its shoulders *b c*, of a vertical lever, T, with its shoulder *t*, and a spring-catch, G, provided with a shoulder, *l*, and working in grooves on the upper surface of said lever, and a seal-cap, I, with its staple *r*, arranged substantially as described, whereby on each complete movement of the sliding bolt the seal-cap and bolt will be securely locked, as set forth.

6. The combination, with a sliding bolt, C, its shoulder *c*, of a vertical lever, T, with its shoulder or hook *t*, and a spring-catch, G, working in grooves on the upper surface of said lever, substantially as described, whereby at every backward movement of the sliding bolt said bolt will be held in a locked position, as set forth.

7. The combination, with a sliding bolt, C, and its shoulder *c*, of a vertical lever, T, with its shoulder or hook *t*, a spring-catch, G, provided with a stud, *s*, working in slot *o*, and a seal-cap, I, with its staple *r*, substantially as described, whereby the seal-cap and sliding bolt will be simultaneously unlocked, as set forth.

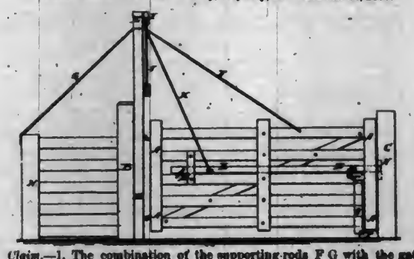
8. The metallic slide M, provided with a shoulder, *z*, and a slot, *s'*, in which a stud on the side of the lock operates, substantially as described, and for the purpose specified.

9. The combination, with a hasp, K, and its locking mechanism, of a seal-protector, L, pivoted to the sides of the lock, and held closed by a shoulder on the hasp, substantially as described, and for the purpose specified.

10. The combination, with a hasp, K, and its locking mechanism, of a pivoted seal-protector, L, with its projection or lug *l'*, and a slide, M, with its shoulder *x*, substantially as described, and for the purpose specified.

11. The key-hole slide N, provided with two springs, *w* and *w'*, and a catch, *y*, working in the key-hole slot, substantially as described, and for the purpose specified.

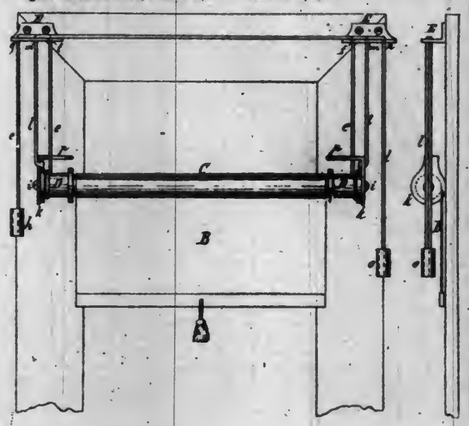
196,838. GATES. Hiram B. Cooksey, Clay City, Ill. Filed Oct. 26, 1877.



Claim.—1. The combination of the supporting-rods F G with the gate A, the upright or post E, and the post H, substantially as herein shown and described.

2. The combination of the upright or post E, the pivoted lever I, and the rods J and K with the gate A and the latch L, substantially as herein shown and described.

196,839. CURTAIN-FIXTURES. George W. Cornell, Clarence Centre, assignor of one-half his right to M. De L. Cornell, Cowlesville, N. Y. Filed Nov. 1, 1877.



Claim.—The combination, with the curtain E, of the roller C, provided with two pulleys, D D, cords *e e*, wound upon the pulleys D D, as described, and running upward over guides *f f g*, and connecting with weight *h*, the roller C being journaled in bearings *k k*, attached to cords *l l*, running over guides *m* and connecting with weight *o*, as and for the purpose hereinbefore set forth.

196,840. CARRIAGE-KNOBS. George L. Crandal, Binghamton, N. Y. Filed Nov. 26, 1877.



Claim.—A screw-shanked knob for carriages and other purposes, having the under or inner side of its knob proper formed with holds for the applying device.

196,841. UMBRELLAS. Edward Evans, Philadelphia, Pa. Filed Oct. 2, 1877.



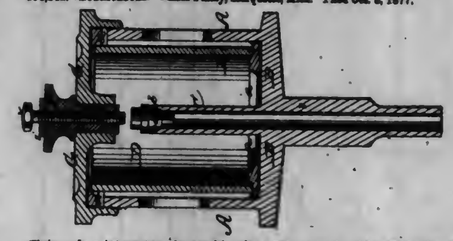
Claim.—1. The ratchets or stops D D', (either or both,) having long inclined sides *d'* and short sides *d'' d''*, substantially as shown and described, in combination with the umbrella-stick A, as and for the purpose set forth.

2. The lever E, having flaring head E', substantially as shown and described.

3. The runner B, having an offset or groove B', in combination with the stick A and ratchets D and D', substantially as shown and described.

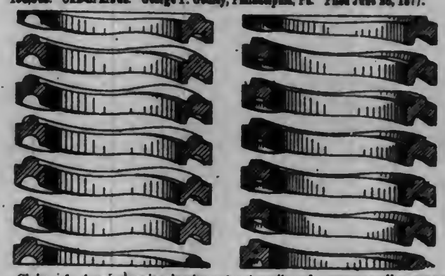
4. The combination of stick A, runner B, having slot *b*, ratchets D D', and spring-lever E, having flaring head E', and pivoted to said runner below the notch C, the several parts being constructed and arranged for operation substantially as shown and described.

196,842. LUBRICATORS. James Farley, Marquette, Mich. Filed Oct. 6, 1877.



Claim.—In a lubricator, the combination of the cage A, with solid bottom B, having central vertical tube C, with conical valve-seat *b* in its upper end, the cylinder D, screw-head G, conical valve *d*, and screw-plug F, with set-screw *h*, all substantially as and for the purposes herein set forth.

196,843. CAR-SPRINGS. George F. Godley, Philadelphia, Pa. Filed June 26, 1877.



Claim.—1. A spiral spring having a bead or rib and a corresponding groove on its upper and lower faces, with bearing-shoulders on either side of said rib and groove, substantially as shown and described.

2. A spiral car-spring made from a bar of metal which has one or more ribs or beads, with corresponding groove or grooves on the opposite side, with one or more bearings or shoulders projecting from said rib or ribs, substantially as shown and described.

196,844. ROTARY CUT-NAIL MACHINES. R. C. Grant, Middleport, Ohio. Filed Sept. 5, 1877.

Brief.—The plate is guided into the slot of the feed-tube by inclined shoulders in the hopper, and is held, while in said tube, between two spring-bars, retained in the slots of short push-bars arranged transversely of the tube. The beveled end of one of said push bars is brought in contact with a cam or tappet on the frame at each semi-revolution of the table, and the nail-plate thereby thrown into a position inclined to the axis of the tube, so that the blanks will be cut of the proper taper. Knives, between which the nail-plate passes, are set in a frame attached to the lower end of the feed-tube. A rotating cylinder is arranged horizontally beneath the feed-tube, and carries a cutter, which, acting in conjunction with the knives before referred to, severs the blank from the plate, and clamping and heading devices.

Claim.—1. In a nail-machine, the combination, with the cylinder, the movable block carrying the nipper, the shaft having an arm, *e*, and the cam for raising and lowering the nipper-block, for the purpose of carrying the blank down to the score in the dies, and subsequently expelling the same, as set forth.

2. In a nail-machine, the pivoted rest-plate M, the nipper-block, and the nipper, combined with the feed-tube and cylinder, as shown and described.

3. In a nail-machine, the movable die attached to the die-block X, the eccentric, the cam for operating them, said arms or projections, with which said cam comes in contact as the cylinder rotates, for the purpose of operating the die, as set forth.

4. In a nail-machine, the combination of the pivoted adjustable lever A', having an arm, *a'*, the L-shaped cam Z, and the eccentric and movable die, as shown and described.

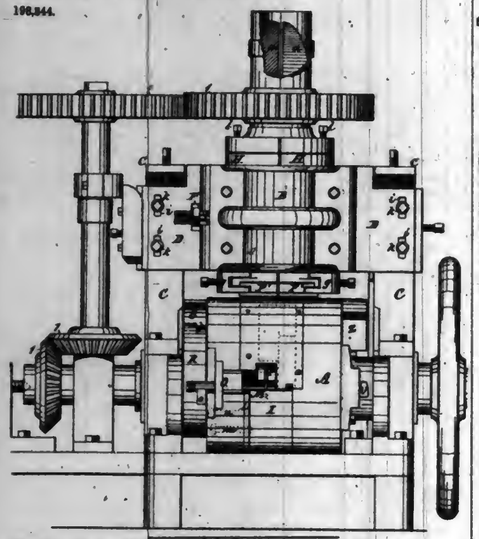
5. In a nail-cutting machine, the combination of a vertical rotating feed-tube and a horizontal rotating cylinder, each provided with suitable knives or cutters, substantially as shown and described.

6. In a nail-machine, the combination of the rotating feed-tube, the tappet device, and the bars for holding and oscillating the nail-plates, as shown and described.

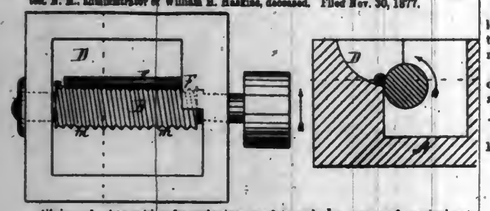
7. In a nail-machine, the tappet proper, having a screw-nut and spring applied to its shank, in combination with the push-bars and plate-holding bars, as shown and described, for the purpose specified.

8. In a nail-machine, the combination of the spring *c* and the push-bars and plate-holding bars *b b*, as shown and described.

198,844.



198,845. MACHINES FOR REDUCING WOOD TO PULP FOR PAPER. William A. Haskins, Littleton, N. H., administrator of William H. Haskins, deceased. Filed Nov. 30, 1877.



Claim.—1. A machine for reducing wood to pulp by means of a spiral cutter, operating substantially as specified.

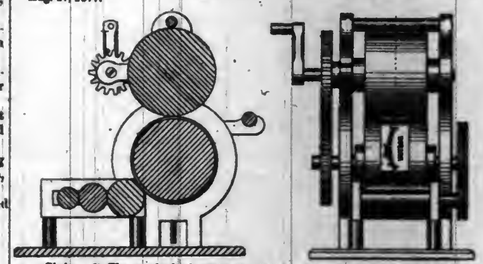
2. The combination of a support, D, for holding the wood to the cutter, a stop, F, for resisting the pressure on the wood imparted by the inclination of the cutter-spirals, and a spiral cutter, B, all operating substantially as and for the purpose specified.

198,846. BIRD-CAGE FEED-CUP HOLDERS. Andrew B. Hendryx, Ansonia, Conn., assignor to Andrew B. Hendryx & Co., same place. Filed Dec. 19, 1877.



Claim.—The herein-described feed-cup holder for bird-cages, consisting of the horizontal yoke and hooked uprights, substantially as described.

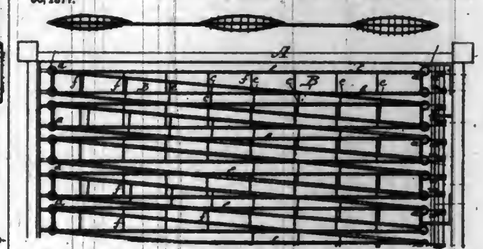
198,847. ART OF PRODUCING PRINTING-SURFACES. J. P. Jamison, Cambridge, Mass. Filed Aug. 17, 1877.



Claim.—1. The method of producing letters, figures, or ornamental designs in relief upon flat plates of metal, wood, ivory, or other compressible material, by engraving or sinking said design into the surface of a thin flat plate of steel, and then passing said engraved plate, with its engraved face resting upon the surface of a flat plate of softer metal, wood, ivory, or other compressible material, between a pair of pressure-rolls, substantially as described.

2. The method of producing designs in relief upon cylindrical surfaces, adapted to emboss the reverse of said designs in metal, wood, or ivory, by first engraving or sinking the design into the surface of a soft flat plate or ribbon of steel, tempering or hardening said plate or ribbon, passing said plate or ribbon, with its engraved surface in contact with a similar plate or ribbon of soft steel, between a pair of smooth pressure-rolls, to produce upon said soft-steel plate or ribbon the reverse of said design in relief, bending said relief plate or ribbon into the form of a circular hoop or segment, tempering said hoop or segment, and then securing said hoop or segment to the periphery of a cylinder, substantially as described.

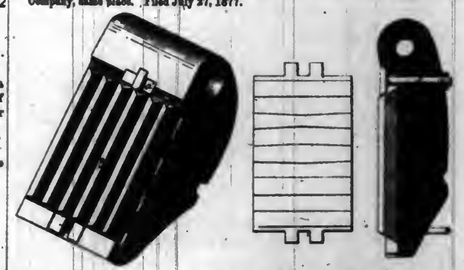
198,848. COMBINED FIRE-ESCAPE AND SPRING BED-BOTTOM. John G. King, Apollo, Pa., assignor of one-half his right to S. M. Jackson and A. G. Stinson, same place. Filed Aug. 30, 1877.



Claim.—1. A combined fire-escape and spring bed-bottom, composed of parallel sections consisting of bars in pairs, connected or adapted to be connected together, said pairs of bars being, respectively, connected by cross-bars, either rigid or elastic, substantially as specified.

2. In a combined fire-escape and bed-bottom, the spring-section consisting of three pairs of parallel slides, *e e*, connected or brought together at the ends, and bowed outwardly throughout their length by means of the transverse springs *f*, substantially as described.

198,849. STONE-BREAKERS. Saml. L. Marsden, New Haven, Conn., assignor to Blake Crusher Company, same place. Filed July 27, 1877.



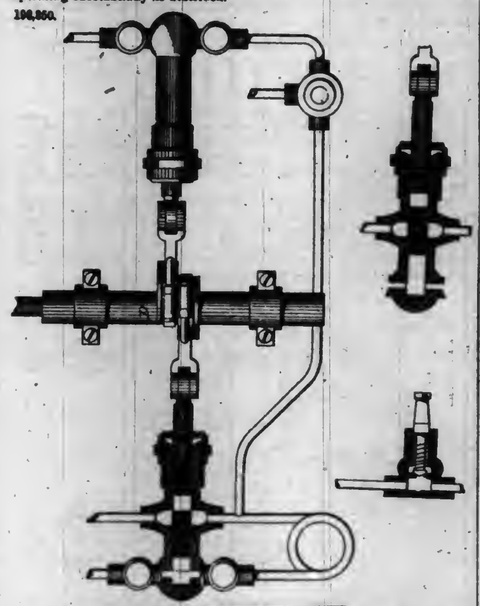
Claim.—1. The method herein described of seating the jaw-plates of stone-crushers, consisting in casting the jaw-plate with recesses in its back, and filling said recesses with soft metal, and subsequently dressed off to form the bearing-surface, substantially as described.

2. In a stone-crusher, the combination of the jaw *a a*, the jaw-plate, constructed with projecting lugs at both ends, and the jaw with a seat for said plate at the lower end, and a cavity to receive either of said lugs, with a bolt through the jaw, the head of which engages the upper lug, substantially as described.

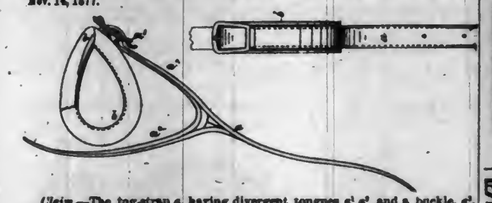
198,850. STEAM-BOILER FEEDERS. Thos. W. Mather, New Haven, Conn., assignor, by mesne assignments, to Automatic Boiler and Engine Company, same place. Filed Nov. 22, 1877.

Claim.—The combination of a pump operating to draw from the water-supply, a second pump operating to draw directly from the water-level of the boiler, and a chamber into which both the first and second pumps may discharge, with a valve opening from the said chamber to the boiler, and a waste-valve, and operating substantially as described.

198,850.



198,851. SHAFT-TUGS. John Miller, Petersburg, and William B. Miller, Altoona, Pa. Filed Nov. 14, 1877.



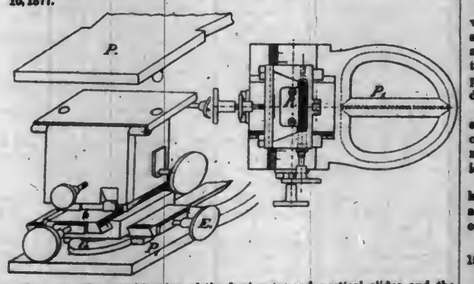
Claim.—The tug-strap *a*, having divergent tongues a^1 a^2, and a buckle, a^3, attached to the extremity of one of said tongues, in combination with the flanged protector *b*, having a permanently-secured strap, *d*, adapted to be fastened to the buckle, substantially as described.

198,852. MOLDS FOR CASTING METALS. Aaron J. Bellis, Pittsburg, Pa. Filed Nov. 3, 1877.

Brief.—The combustible liquid burns at the time of casting. Mentions light hydrocarbons, turpentine, and alcohol. As other materials, may use sharp sand, sugar, and rye-flour; may add fire-clay.

Claim.—Sand molds, cores, and matrices for casting metal, composed of sand, with or without binding or adhesive materials, and of benzine, or its equivalent highly-combustible and readily-ignitible liquid, substantially as specified.

198,853. DENTAL ARTICULATORS. Heinrich C. F. Ochlocker, Hamburg, Germany. Filed Dec. 10, 1877.



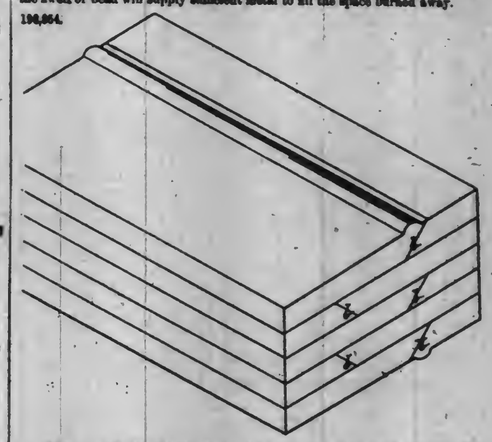
Claim.—1. The combination of the horizontal and vertical slides and the socket-joint C with the plates P' and P², arranged to operate in the manner and for the purpose substantially as set forth.

2. The hinged plate P', provided with pins B and A, in combination with the sliding block, arranged and operating for the purpose herein described.

198,854. FILES FOR MAKING SERIES. David B. Oliver, Pittsburg, Pa. Filed Nov. 2°, 1877.

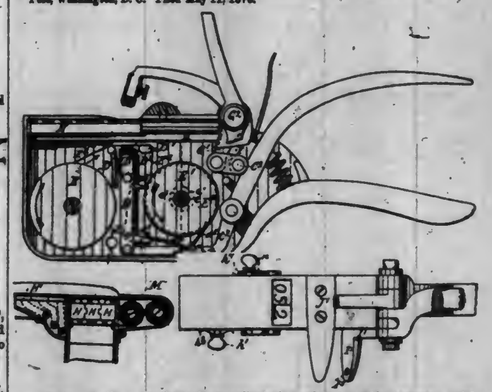
Brief.—To make provision for the burning away of the thin edges of the scarfed pieces forming the pile, the said pieces are provided with a swell or reenforce of metal along these edges, so that in the subsequent rolling of the pile the swell or bead will supply sufficient metal to fill the space burned away.

198,854.



Claim.—A pile for forming skelp, plate, tank iron, &c., having one or more layers formed from bevel or equivalent lapping-edged beaded pieces or bars, substantially as specified.

198,855. DEVICES FOR PRINTING TICKETS AND RECORDING CASH RECEIPTS. Benjamin C. Pole, Washington, D. C. Filed May 11, 1876.



Claim.—1. In a conductor's or collector's register, a slide provided with duplicate printing, marking, punching, or stamping devices on its opposite surfaces, substantially as and for the purposes set forth.

2. In a conductor's or collector's register, the combination of a slide or slides with characters for printing, marking, punching, or stamping on their opposite surfaces of a tape or band, a compound lever, provided with pressing-surfaces, so arranged as to simultaneously press a ticket, coupon, slip, or card on one surface, and a tape or band upon the reverse printing, marking, punching, or stamping surface of a slide, substantially as set forth.

3. In a conductor's or collector's register, the combination, with a slide provided with printing, marking, punching, or stamping devices on its opposite surfaces, of a recording tape or band, a printing or inking tape or surface, and a compound lever, operating double pressing-surfaces, adapted to be operated to force a ticket, coupon slip or card, and a recording-tape simultaneously into position to be similarly printed, marked, punched, or stamped, substantially as described.

4. In a conductor's or collector's register, the combination, with a series of slides, H H, provided with printing or marking surfaces on the opposite sides, of a single inking or marking ribbon or tape, M, passing over both printing or marking surfaces, and conducted to rollers on the side or under side of the register, substantially as described.

5. In a conductor's or collector's register, the combination, with a slide, *H*, having duplicate printing-surfaces, of parallel indicating slide or surface H^1, adapted to indicate the position of the printing, marking, or punching devices on the slide H, substantially as described.

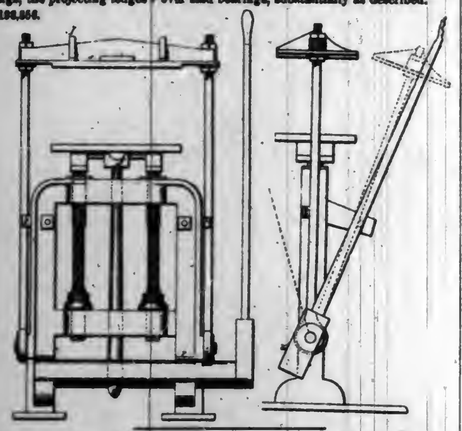
198,856. MOLDING-MACHINES. Henry Reynolds, New Haven, Conn., assignor to Reynolds & Co., same place. Filed Nov. 9, 1877.

Claim.—1. In a molding-machine, in combination with a vertically-moving bed, the slides C, which guide the said bed, and the protecting-collars A on said slides, substantially as described.

2. The combination of a vertically-moving bed, the rock-shaft, and lever, the said rock-shaft constructed with cavities upon the under side, corresponding to bearings on the frame, and with a connection from said rock-shaft to said bed, to communicate the movement of the lever through the rock-shaft to the bed, substantially as described.

3. In combination with the vertically-moving bed, rock-shaft, and its bearings, the projecting ledges over said bearings, substantially as described.

196,856.



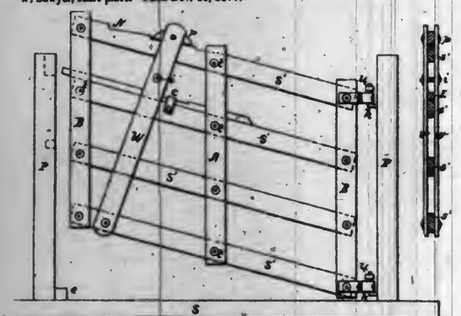
196,857. AUGERS. Henry L. Shaler, Deep River, Conn. Filed Nov. 21, 1877.

Brief.—The auger is provided with a spur, concave on the inside, and extended on a helix with a backward pitch, to act as a guide for the auger and to render the same easily sharpened.



Claim.—An auger formed with a concave spur, said spur extended on a helix, or with a backward pitch, substantially as and for the purpose set forth.

196,858. GATES. Pillester Smith, Palmyra, N. Y., assignor of one-half his right to Samuel W. Sawyer, same place. Filed Nov. 15, 1877.

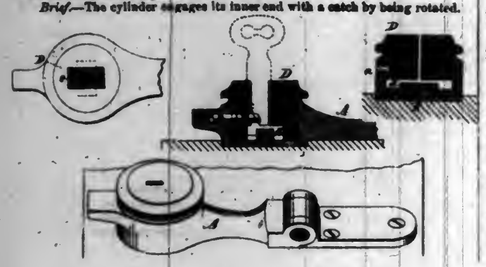


Claim.—1. In a pivot-slat gate, the loop-pawl W, bestriding all the slats S', and through-bolted to the bottom slat at its front end, provided with the oscillatory templet p, which, as the front end of the gate is raised, falls by its own weight into any radial notch, N, by which the gate is upheld at any desired point above, and by moving the pawl forward at any point below a level, substantially as described.

2. In a pivot-slat gate, the loop-pawl W, through-bolted to the bottom slat near the latch-stile of the gate, provided with the oscillatory templet p, and latch L, in combination with the stiles B, slats S', and loop A, substantially as and for the purposes set forth.

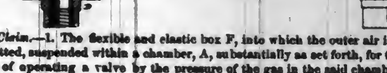
196,859. HASP-LOCKS. William D. Spencer, Middletown, Conn., assignor of one-half his right to Fred Van Sands, same place. Filed Nov. 9, 1877.

Brief.—The cylinder engages its inner end with a catch by being rotated.



Claim.—The combination of the strap A, cylinder D, arranged to rotate therein, a stationary device to engage the said cylinder, and a locking device to secure the said cylinder when engaged with said stationary device, substantially as described.

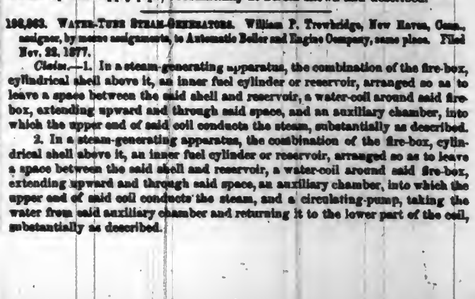
196,860. MACHINE-BELTING. Ludwig Starck, Mayence, Germany. Filed Aug. 24, 1877.



Claim.—A machine-belt consisting of stripe B, made of leather or other suitable material, inclosing a series of wires or twisted-wire ropes, A, and provided with cuts a, in the manner and for the purpose substantially as described.

196,861. FASTENERS FOR THE MEETING-RAILS OF SASHES. Charles E. Steller, Milwaukee, Wis. Filed Oct. 11, 1877.

Brief.—A vertical standard, preferably half rounded, to fit the mullion of the sash, is provided with a series of horizontal slots or openings, there being also a round opening near the top for lifting purposes. A horizontally-swinging arm or lever having a suitable spring-operated catch is pivoted to a plate attached to one of the meeting-rails in such manner as to engage with the horizontal openings of the standard, and hold the sash in desired position.

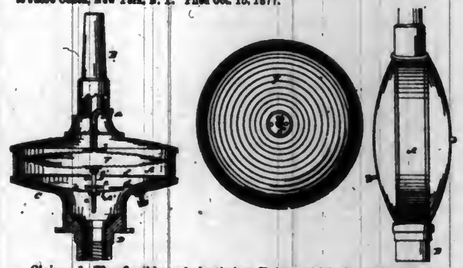


Claim.—1. The vertical adjusting-standard C, provided with base-plate D, horizontal slots or openings b', and opening E, combined with the sash A, substantially as and for the purpose specified.

2. The swinging arm or lever F, provided with the catch J, spring a', and lug C', and pivoted to the slotted plate G by the rivet N, substantially as and for the purpose specified.

3. The combination of the vertical adjusting-standard C, having horizontal openings b', with the swinging arm or lever F, constructed and operating substantially as and for the purpose specified.

196,862. GAS-REGULATORS. George W. Thompson, Brooklyn, assignor of one-fourth his right to Jacob Cohen, New York, N. Y. Filed Oct. 15, 1877.



Claim.—1. The flexible and elastic box F, into which the outer air is freely admitted, suspended within a chamber, A, substantially as set forth, for the purpose of operating a valve by the pressure of the gas in the said chamber, and thereby to diminish or increase the supply of gas.

2. The box F and pipe d, in combination with the chamber A, and suitable devices for diminishing the supply of gas to the said chamber, in proportion to the degree of pressure of the gas within the said chamber.

3. The combination of the box F, chamber A, valve e e', and screw-nut i on the rod e, as and for the purpose set forth.

4. The combination of the box F, chamber A, valve e e', and adjustable spring d, as and for the purpose set forth.

5. The gas-controller herein described, consisting of the chamber A, box F, adjustable valve e e', and adjustable spring d, arranged, in relation to the burner-tip and supply-pipe, substantially as herein shown and described.

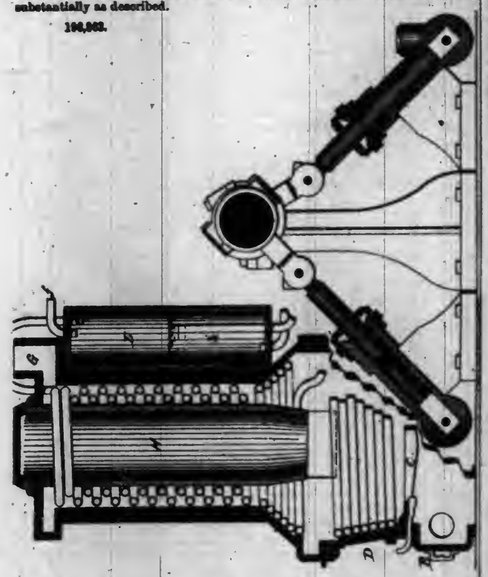
196,863. WATER-TUBE STEAM-GENERATORS. William P. Trowbridge, New Haven, Conn., assignor, by mesne assignments, to Automatic Boiler and Engine Company, same place. Filed Nov. 22, 1877.

Claim.—1. In a steam-generating apparatus, the combination of the fire-box, cylindrical shell above it, an inner fuel cylinder or reservoir, arranged so as to leave a space between the said shell and reservoir, a water-coil around said fire-box, extending upward and through said space, and an auxiliary chamber, into which the upper end of said coil conducts the steam, substantially as described.

2. In a steam-generating apparatus, the combination of the fire-box, cylindrical shell above it, an inner fuel cylinder or reservoir, arranged so as to leave a space between the said shell and reservoir, a water-coil around said fire-box, extending upward and through said space, an auxiliary chamber, into which the upper end of said coil conducts the steam, and a circulating-pump, taking the water from said auxiliary chamber and returning it to the lower part of the coil, substantially as described.

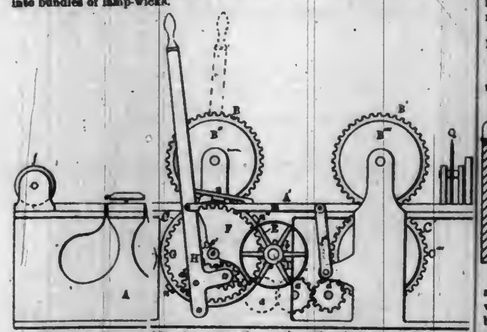
3. In a steam-generating apparatus, the combination of the fire-box, cylindrical shell above it, an inner fuel chamber or reservoir, arranged so as to leave a space between the said shell and reservoir, a water-coil around said fire-box, extending upward and through said space, an auxiliary chamber, into which the upper end of said coil conducts the steam, and an automatic water-feeding device, substantially as described.

196,863.



196,864. LAMP-WICK MEASURER AND CUTTER. George Washington, Woodberry, Md. Filed Nov. 1, 1877.

Brief.—The wicking is measured and cut into uniform lengths to be tied into bundles of lamp-wicks.



Claim.—1. In a machine for measuring and cutting lamp-wick, the combination of a frame, having the top thereof adapted as a trough or channel to receive the wicks from a wick-manufacturing machine, and a pair of upper and a pair of lower rolls, geared together and adapted to carry the said wicks longitudinally of the said trough or channel, the said rolls being provided with mechanism whereby they are automatically stopped after revolving sufficiently to cause the wicks to move longitudinally of the said trough a specified distance, substantially as and for the purpose herein set forth.

2. In combination with a pair of upper and a pair of lower rolls, connected to operate jointly and in connection with a trough or channel to conduct lamp-wicks from a wick-manufacturing machine, a circular revoluble cutting-disk, adapted, upon the automatic stoppage of the rolls, to be vibrated over and in contact with the said wicks, to sever the same, substantially as and for the purpose specified.

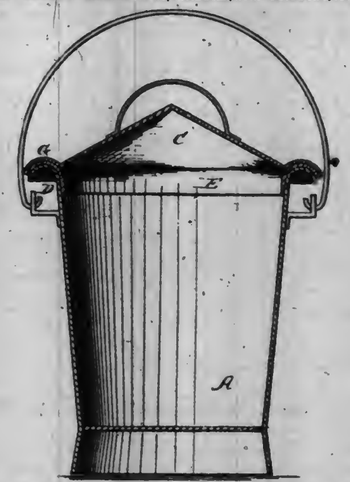
3. As means for communicating motion from the counter-shaft D, carrying the driving-pulley E, to the roll C, and for discontinuing the movement of the said roll independently of the said continuously-revolving counter-shaft, the pinion b, fastened to the said counter-shaft, spur-wheel F, secured to the shaft c, pinions d d', supported by the hand-lever H, pinion c', fastened to the shaft c, and the interiorly-toothed wheel G, connected rigidly to the said roll, all combined substantially as shown.

4. In combination with the vibratory hand-lever H, carrying the pinions d d', and provided with spring mechanism to influence it into such position as to disconnect the said pinions from the pinion c' and interiorly-toothed wheel G, a suitable stop adapted to sustain the said lever in a position the reverse of that described, except when operated upon by the lugs n'' on the periphery of the wheel G, substantially as and for the purpose herein set forth.

5. As means for revolving the disk Q independently of its position with reference to the lamp-wicks extended within the trough or channel A', and for effecting the vibratory movement of the said disk, the revoluble counter-shaft O and shaft M, connected by miter-gearing, as shown, and the shaft M indirectly geared to the said disk, in combination with the hollow shaft M', double arm R, secured to the said hollow shaft and carrying the said disk, and the bell-crank K, one arm of which is indirectly connected to the hand-lever H, and the other to a spring furnishing power to operate the said hand-lever and the said hollow shaft and its attachments, substantially as shown and described.

6. In combination with the upper plate of the frame A, forming the trough or channel A', and slotted to admit of the introduction of the binding-cords to the under side of the wicks, the clamp L, connected indirectly to one of the rolls receiving movement therefrom, in such manner as to admit of the compression of the wicks by the said clamp during the stoppage of the rolls, substantially as and for the purpose herein specified.

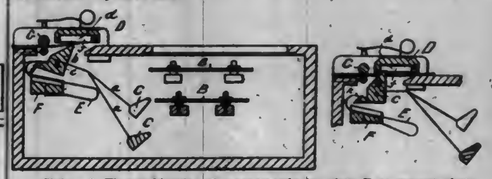
196,865. CHURNERS. Samuel Whitman, Green Point, N. Y. Filed Dec. 6, 1877.



Claim.—The combination of the bucket A, having the convex rim D around its upper end, and the cover C, provided with the flange E and concavo-convex rim G, substantially as and for the purposes herein set forth.

196,866. MECHANICAL MUSICAL INSTRUMENTS. O. H. Arne, Somerville, Mass. Filed Nov. 16, 1877.

Brief.—A set of spring hammers and plates or strings are operated by the movement of a pierced card.



Claim.—1. The combination of a sound-producing plate, B, or its equivalent, a hammer-head, C, a spring-lever stem, a, having a butt-piece, b, and a bar, D, with a strip of paper or other sheet material adapted to pass between the said bar and butt-piece, the whole being constructed and arranged to operate substantially as and for the purpose described.

2. The rail F, having the attached bent and curved spring E, in combination with the butt-piece b, having a spring-hammer, c, and a tail-piece, g, against the upper side of which the free end of the bent spring bears, whereby said spring, in its reaction, throws the hammer against the sounding-plate, substantially as and for the purpose described.

196,867. SWEAT-LEATHERS FOR HATS. John Bigelow, Philadelphia, Pa. Filed Oct. 6, 1877.



Claim.—1. A sweat-leather for hats with an attaching-slip and spring-band connected to the slip, all combined and prepared substantially in the manner and for the purposes set forth.

2. The combination of a spring-rod band with the edge of a sweat-leather by a stitch within and without the edge of said leather, but encircling said rod, substantially as described.

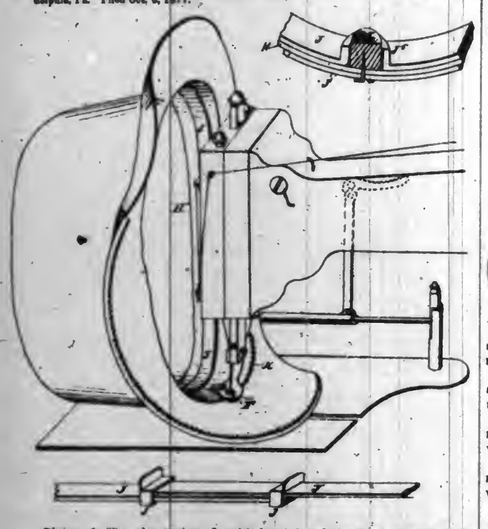
3. The combination of a spring-rod to and with the edge of a sweat-leather by stitching within and without the edge of the leather, but within the spring-rod, and each time through the lapped covering of the same, substantially as and for the purposes described.

4. The combination of a spring-rod to and with the edge of a sweat-leather, with a cord along the edge of said leather, substantially as and for the purposes described.

5. The process of uniting an independent attaching-slip having a spring-rod, or its equivalent, substantially as described, to the edge of a sweat-leather by overseaming or zigzag sewing, substantially in the manner and for the purposes set forth.

6. As a new article of manufacture, a circular spring-band sweat-leather, the several parts united and combined by overseaming or zigzag sewing, substantially in the manner set forth.

198,868. METHODS OF ATTACHING SWEAT-LEATHERS TO HAT-BODIES. John Bigelow, Philadelphia, Pa. Filed Oct. 6, 1877.



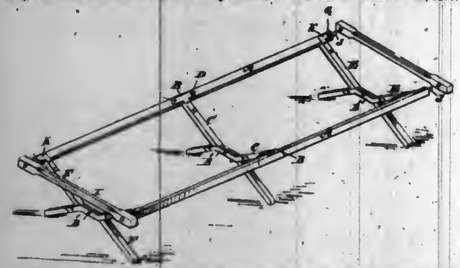
Claim.—1. The slip-spring J, with band *f* and dents or projections, as described, for preventing its slipping, substantially as and for the purposes set forth.

2. In machine hat-sewing, the process of holding the leather by spring-pressure independent of the sewing mechanism, and attached or applied inside the hat, substantially as and for the purposes set forth.

3. The band J, having boss *f*, suitably filled with cork or like material, and adapted to be used in combination with the hat and sweat-leather, substantially as and for the purposes set forth.

4. The process herein described for sewing sweat-leather to hat-bodies, which consists in placing the leather H between a circular spring, J, and the hat G, substantially as shown and described, so that the sewing may be done on the flat surface of the bed-plate of a sewing-machine, substantially as and for the purposes set forth.

198,869. CAMP-BEDSTEADS. R. A. Bradley, Ottawa, Ontario, Canada. Filed Nov. 19, 1877.



Claim.—A camp bedstead constructed of rails A A, divided at the middle and hinged by T-plates B to crossed legs C C, and by L-plates K, near the ends, to crossed legs E E F F, said legs formed with a zigzag at their intersection, and halved and pivoted, whereby the several parts will fold, as described, and close compactly together, in the manner set forth.

198,870. CAR-AXLES. William F. Brooks, New York, N. Y. Filed Sept. 21, 1877.



Claim.—1. The combination of the tubular axle A and tubular journal B, of separate wheel-bearing tubes C, shrunk or forced to their places on the main body and journal portion of the axle, substantially as and for the purpose described.

2. The hollow saddles or wheel-bearing tubes, constructed with an interior annular projection or stop for the ends of the main body of the axle and ends of the journal-tubes to bear or rest against, substantially as specified.

3. The independent hollow journals or journal-tubes, constructed of a diminishing thickness and increasing interior diameter from or near its middle, to either or both ends of said tubes, essentially as shown and described.

4. The combination of the main tubular body portion A of the axle, the independent hollow journal-tubes B B, having a diminishing thickness from or near their middle, and increasing interior taper toward either end, and the saddles or wheel-bearing tubes C C, constructed with an annular interior projection or stop, *b*, the whole being fitted together substantially as specified.

198,871. MACHINES FOR TREATING SPINE DISEASES. Meigs Case, Oneonta, N. Y. Filed July 24, 1877.

Brief.—The head is supported by frame-work extending upward from a four-wheeled perambulator with adjustable seat.



Claim.—1. An elastic suspensory apparatus adapted to support the head, as shown, combined with a supporting-frame independent of the body, and mounted upon wheels, so as to permit locomotion during treatment.

2. An elastic suspensory apparatus adapted to support the head, as shown, supported upon a wheeled carriage, and combined with a supplemental elastic support for the shoulders, as set forth.

3. An elastic suspensory apparatus adapted to support the head, as shown, mounted upon a wheeled carriage, and combined with a supplemental crank-wheel, to impart passive motion to the limbs, as set forth.

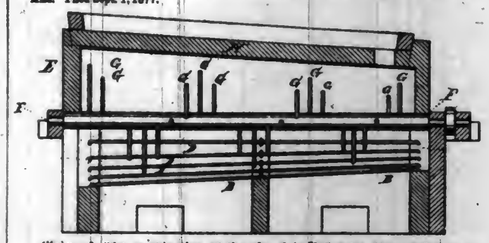
4. An elastic suspensory apparatus adapted to support the head, as shown, mounted upon a wheeled carriage, and combined with an adjustable seat, whereby the position from standing to sitting may be changed, as set forth.

198,872. PORTABLE BURIAL-VAULTS. James Chittock, St. Joseph, Mo. Filed Feb. 10, 1877.



Claim.—A coffin, vault, or tomb made of plastic material, the lid and body being united by a tongue-and-groove joint cemented together, and re-enforced by said cement extending into and hardening in holes leading into the groove, substantially as described.

198,873. COTTON-CLEANERS. Robert Deahe, Meridian, and William A. Maahan, Boonville, Miss. Filed Sept. 1, 1877.



Claim.—1. The combination of the closed half-chamber E, grated flaring concave B, having its wide end open, and shaft F, provided with a helical row of arms, G, and increasing in length toward the discharging end, substantially as specified.

2. The combination of the grated concave B, a central shaft provided with helically-arranged beating-arms, and the hinged upper half-chamber E, having an inner flaring curved wall, substantially as specified.

198,874. CORN-PLANTERS. John R. Dodge, Jr., and Wm. G. Mast, Normal, Ill. Filed Aug. 30, 1877.



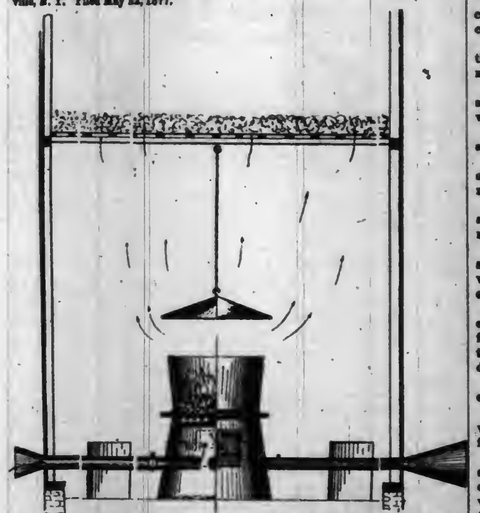
Claim.—1. The combination of the front frame C, having seed-boxes D, and seed-slide, provided with heaps *b' b'*, main frame A, having pivoted arms *b b*, rear frame F, and ground-wheel G, provided with cams *c*, substantially as and for the purpose specified.

2. The ground-wheel G, having heavy wires or bands E arranged across the outer surface or tire of the wheel, substantially as and for the purpose herein shown and described.

3. The combination, with the main frame A, supported on wheels B, and having the driver's seat centrally located upon the axle, of the frames C F, hinged or pivoted, respectively, to the front and rear of frame A, whereby raising the rear frame will raise and balance the front frame, independent of any auxiliary mechanism, substantially as herein shown and described.

4. The combination of the main frame, having driver's seat, pivoted arms *b*, pivoted lever H, stop *c*, and adjustable scraper K, the pivoted front frame C, having seed-boxes and slide, and the pivoted rear frame F, having ground-wheel G, provided with cams *c*, the several parts constructed and relatively arranged to operate substantially as herein shown and described.

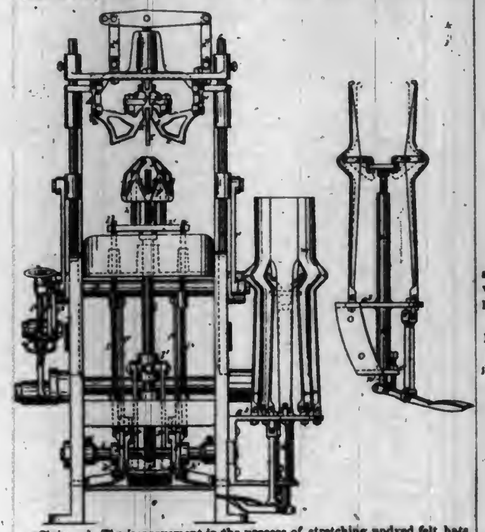
198,875. ART OF CURING HOPS, AND FURNACES USED THEREFOR. Wm. W. Edgerton, Brooklyn, N. Y. Filed May 22, 1877.



Claim.—1. As an improvement in the art of coring hops, subjecting them to the heat and gases from an open anthracite-coal fire, substantially as specified.

2. The combination, substantially as specified, of the open furnace and the vertically adjustable combined damper and deflector suspended over it.

198,876. PROCESSES AND MACHINES FOR STRETCHING HATS. Rudolf Bickenreyer, Yonkers, N. Y. Filed Dec. 11, 1877.



Claim.—1. The improvement in the process of stretching undyed felt hats, which consists in subjecting them to the action of corrugating stretching devices, and then subjecting them, while still hot and pliable, to a shaper, which, by peripherical expansion, removes the wrinkles or corrugations, substantially as described.

2. A machine embodying a series of radial stretching-fingers, and a suitable former for stretching hats on the corrugation principle, and an expansible shaper, which removes the wrinkles or corrugations by peripherical expansion, substantially as described.

3. The combination, with a suitable former for supporting a hat-body, of a series of radial stretching-fingers, each of which is provided with a tip-face and a side-crown face, and is vibrated toward and from a common center.

4. In a hat-stretching machine provided with a series of radial stretching-fingers, a former for supporting a hat-body, which is provided with a series of tip-stretching ribs, and a series of ribs for stretching the side crown of a hat-body, substantially as described.

5. In a hat-stretching machine, radial stretching-fingers provided with two working-faces, for operating, respectively, upon the tip and the side crown of a hat-body, substantially as described.

6. In a hat-stretching machine, a series of radial tip-stretching fingers, which are individually vibrated toward and from a common center, substantially as described.

7. In a hat-stretching machine, a series of fingers for stretching a side crown, which are individually vibrated toward and from a common center, in combination with a ribbed former, substantially as described.

8. A tip-ribbed former, in combination with vibrating tip-stretching fingers, the working-faces of which, when vibrated, have a more or less longitudinal movement toward the apex of the former, substantially as described.

9. A series of vibrating tip-stretching fingers, provided with rounded and serrated working-faces, in combination with a vertically-reciprocating head, which supports the fingers, substantially as described.

10. A series of vibrating tip-stretching fingers which are attached to and supported by a vertically-reciprocating head, substantially as described.

11. The combination, with a series of individually-vibrated stretching-fingers, of adjusting mechanism, which varies the working position of the fingers with relation to a common center, substantially as described.

12. The combination, with a series of vibrating and vertically-reciprocating stretching-fingers, of adjusting mechanism for varying the extent of the vertical movement, substantially as described.

13. The combination, with a series of vibrating and vertically-reciprocating stretching-fingers, of adjusting mechanism for varying the position of the fingers with relation to a common center, and adjusting mechanism for varying the extent of the vertical movement, substantially as described.

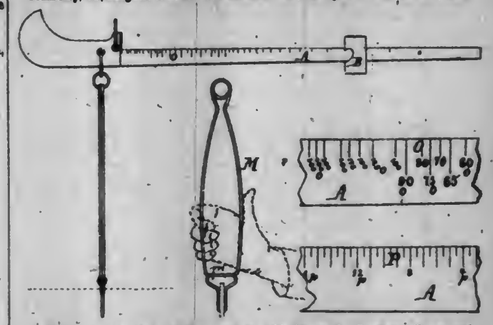
14. A series of radial vibrating stretching-fingers, provided with faces for operating on the tip and the side crown of a hat-body, in combination with a former provided with tip-ribs and side-crown ribs, and mechanism for placing the former and the stretching-fingers into working relations, substantially as described.

15. The combination, with a former, of a series of clearing-rods, which extend through the former when it is depressed, substantially as described.

16. The combination of a former, and a treadle for lifting and depressing it, with a clearer, which is connected to the treadle, and is lifted by it when the former is depressed, substantially as described.

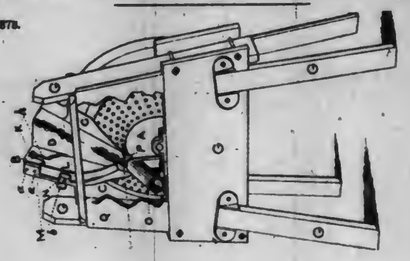
17. The combination, in a shaper, of a series of vertical levers, arranged in a circle, with a circular plate connected with the levers by links, a sliding spindle connected with said plate, and a treadle supported by a link, which is connected with the spindle, and limited in its movement by an adjusting-screw, substantially as described.

198,877. SCALES FOR WEIGHING PASTEBOARD. Franklin Fairbanks and Thomas Spooner, St. Johnsbury, Vt., assignors to E. and T. Fairbanks & Co., same place. Filed Nov. 30, 1877.



Claim.—The beam A, divided on one side by marks O, unequally spaced, and numbered in reverse order to that of ordinary graduations, in combination with the poise B and spring-clamp M, substantially as described, and for the purpose set forth.

198,878.



196,878. CORN-SHELLERS. James W. Flagar, Auburn, N. Y., assignor of one-half his right to Charles L. Adams, same place. Filed Aug. 21, 1877.

Claim.—1. The combination, with the conical or tapering sheller-wheel A, of the section D, having the slotted ear B, and controlled by the spring L bearing against the fulcrum-point *b*, substantially as described.

2. The tube O, provided with the spring R and curved controlling-piece P, substantially as described and set forth.

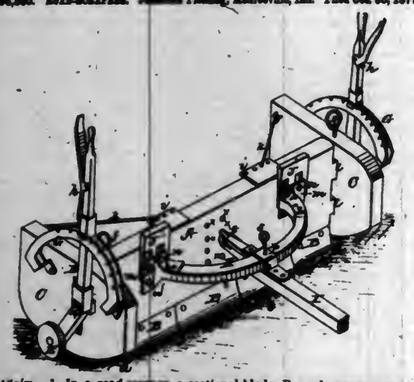
196,879. TIPS FOR FISHING-RODS. Charles R. Fisher, Chelsea, Mass. Filed Aug. 13, 1877.

Brief.—The coils of the tube constitute screw-threads of slow pitch, and embed themselves to a greater or less extent in the wood as it is screwed on the rod.



Claim.—A tip for fishing-rods, consisting of a tubular body composed of a wire helix, the outer or smaller end of such body terminating in an eye or loop to receive and guide the line, and the whole being substantially as and for purposes stated.

196,880. ROAD-SCRAPERS. Jonathan Fleming, Mooresville, Ind. Filed Oct. 20, 1877.



Claim.—1. In a road-scraper, a sectional blade, B, made concave from one end to about two-thirds of its length, as shown from *a* to *b*, and the remaining one-third straight, as shown from *b* to *d*, substantially as and for the purposes herein set forth.

2. In a road-scraper, the blocks or block-hinges C C, carrying the supporting-wheels, adjustable at any desired angle, and held by means of the hooks *k* and perforated plates *i*, substantially as and for the purposes herein set forth.

3. The combination, with the frame A, of the hinge-blocks C, levers D, with wheels E and pawls *h*, and the semicircular ratchets G, substantially as and for the purposes herein set forth.

4. The combination of the semicircle H with plates *m*, screws *n*, and slotted wedges J, substantially as and for the purposes herein set forth.

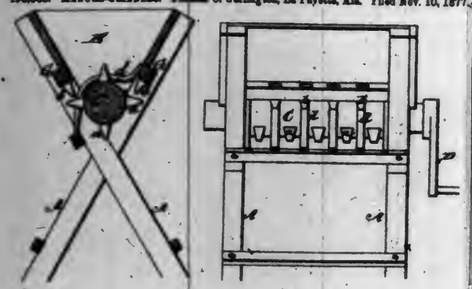
5. The combination of the frame A, having two vertical series of perforations, *s*, the adjustable semicircle H, tongues I, adjustable up and down and laterally in the perforations *s*, the loop *p*, pin *o*, and shaft *t*, substantially as and for the purposes herein set forth.

196,881. CORSETS. Charles W. Foster, New Haven, Conn. Filed Dec. 3, 1877.



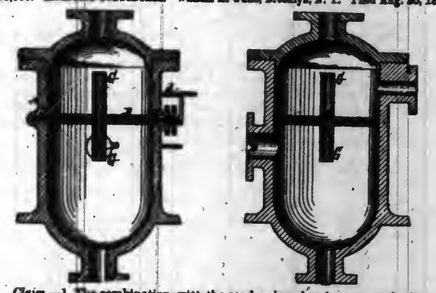
Claim.—In a corset, the top recesses or openings *b'*, having eyelets *c* and draw-cords *d*, alternating with bottom recesses *b*, similarly constructed, substantially as and for the purpose hereinbefore set forth.

196,882. MANURE-GRINDERS. Thomas C. Garlington, La Fayette, Ala. Filed Nov. 10, 1877.



Claim.—The within-described manure-mill, consisting of the crossed legs A A at each end, the toothed or spiked shaft C, supported in the crotches of the legs, and provided with the crank D, planks attached to the upper ends of the legs to form the hopper E, and the ribs *d*, all constructed substantially as for the purposes set forth.

196,883. INJECTING-CONDENSERS. William H. Guild, Brooklyn, N. Y. Filed Aug. 30, 1877.



Claim.—1. The combination, with the condensing chamber or vessel, of a perforated diaphragm or dividing-sprinkler provided with one or more ducts or pipes, constructed to project above the upper surface of it, and serving to establish communication between the upper and lower portions of the condensing-chamber, on opposite sides of the sprinkler, substantially as and for the purpose or purposes herein set forth.

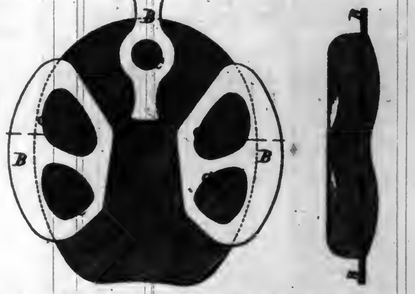
2. The combination, with the condensing chamber or vessel A, of a reversible sprinkler, B, provided with one or more ducts or pipes, G, arranged to project from opposite sides or faces of the sprinkler, essentially as described.

196,884. COMPOSITION FOR MOLDED ARTICLES. Joel B. Hayden, Hempstead, N. Y. Filed May 6, 1877.

Claim.—A new composition or material, made of uniform flexible threads or strips of wood, cut from timber longitudinally with the grain thereof, irregularly crossed, incorporated with glue, and compacted under pressure, substantially as and for the purpose specified.

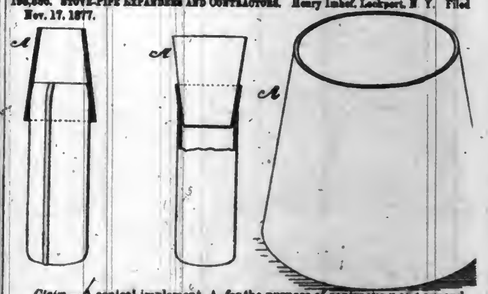
196,885. BUFFERS FOR HORSE-SHOES. Christian Hartmann, Hanover, Germany. Filed Oct. 20, 1877.

Brief.—The rubber pad is secured in place beneath the horse's foot by means of perforated metallic plates, which are adapted to enter between the hoof and shoe.



Claim.—The combination, with the buffer A, of the separate perforated elastic sheet-metal wings B B B, so embedded in said buffer that a portion of the latter will enter and fill the perforations, and having projecting edges conforming to the shape of a horseshoe, for supporting the buffer in place.

196,886. STOVE-PIPE EXPANDERS AND CONTRACTORS. Henry Imbof, Lockport, N. Y. Filed Nov. 17, 1877.

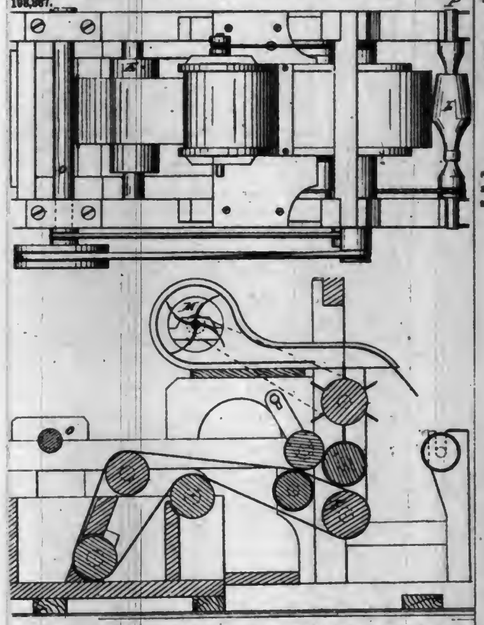


Claim.—A conical implement, A, for the purpose of contracting and expanding the ends of stove-pipes, substantially in the manner as hereinbefore set forth.

196,887. PAPER-PULP DISTRIBUTERS FOR COATING ARTICLES. Isaac Jennings, Fairfield, Conn. Filed Nov. 3, 1877.

Brief.—The article to be coated is placed on a horizontal shaft or spindle in front of the machine. The endless apron dips into the pulp and delivers it to a transfer-roller, which, in turn, delivers it to a metallic roller, from which the revolving spring-fingers throw it upon the article to be coated, aided by air from a fan-blower placed above the drum while the article is being slowly revolved.

196,887.

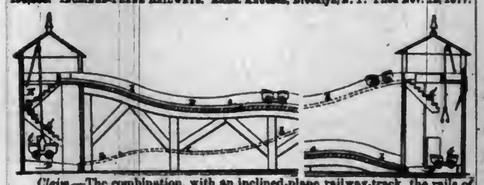


Claim.—1. The combination, with a wire-cloth, or its equivalent, for gathering the pulp from the vat, of one or more transferring-rollers, or its or their equivalent, and the picker adapted to take the pulp from the said transferring-roller and throw it upon the surface or article to be covered, substantially as hereinbefore set forth.

2. The combination of the wire-cloth, or its equivalent, the transferring or couching roller which takes the pulp from the said wire-cloth, the picker for throwing the pulp upon the surface to be covered, and an intermediate roller between the said picker and the said couching-roll, to receive the pulp from the couching-roll and deliver it to the picker, substantially as hereinbefore set forth.

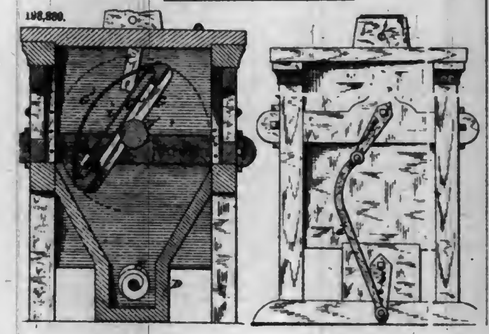
3. The combination, with the said wire-cloth and picker, of a revolving holder, the axial line of which is arranged substantially parallel to the axis of the picker, substantially as hereinbefore set forth.

196,888. INCLINED-PLANE RAILWAYS. Richd. Knudsen, Brooklyn, N. Y. Filed Nov. 12, 1877.



Claim.—The combination, with an inclined-plane railway-track, the rails of which present a series of ascending and descending inclined planes, of a friction-slide arranged at the foot or lower end of said track, and constructed to relieve the car of support by its wheels, and to act as a drag to the body of the car moving over it, substantially as specified.

196,890.



196,889. FLOUR-BOLTS. Fredrick Kraus, Coatsburg, Ill. Filed Oct. 11, 1877.

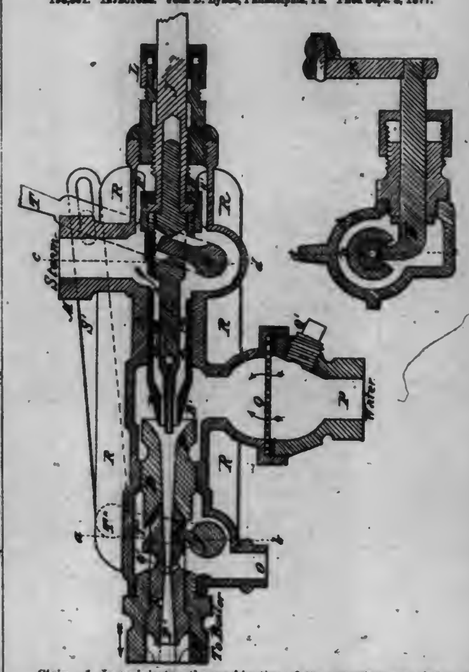
Claim.—The combination of the rotating conveyer E, with crank *b* on its end, the adjustable pitman *d*, crank *c*, riddle G, with shaft G', the rod *i*, and sliding weight *h*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

196,890. SAFETY-PINS. John P. Lindsay, Boston, Mass. Filed Dec. 17, 1877.



Claim.—A safety-pin formed of one piece of wire, and provided with a shield, B, composed of two loops, a *b*, arranged side by side, and terminating in a third loop, *c*, lying in a plane transversely therewith, and constituting the socket or guard for the point of the pin, substantially as described.

196,891. INJECTORS. John D. Lynde, Philadelphia, Pa. Filed Sept. 3, 1877.



Claim.—1. In an injector, the combination of the water-tube, consisting of the fixed part D and the movable part E, with the overflow O, all operating together as and for the purpose set forth.

2. The jet-tube C, provided with a tapered opening, as shown, and a recess adapted to receive the tooth G, as described.

3. The combination of levers T and T^{w} with the bar B', teeth G and F, and movable piece E, and jet-tube C, constructed as and for the purpose herein set forth.

4. The combination of the tube B, coupling H, valve-stem J, teeth G and F, lever T, bar B', lever T^{w}, and the parts C and E, as and for the purpose herein set forth.

5. In combination with the body A of the injector, the strainer Q, secured by the union-joint of the water-pipe P to the body A, as shown.

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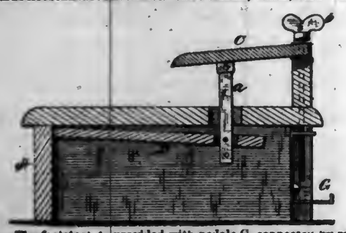
196,892. BED-BOTTOMS. James Magee, Gervais, Oreg. Filed Sept. 15, 1877.

Brief.—The cords are prevented from slipping over the heads of the holding-pins by a cleat, which may be slid up against them and fastened, and are also prevented from giving too much slack on one side by reason of extra weight by a hook, which clamps them to the middle portion of one of the end rails.

Claim.—1. The cord-rails of a bed-bottom, having rows of slightly-headed or straight pins, in combination with the undercut slats or cleats, as and for the purpose set forth.

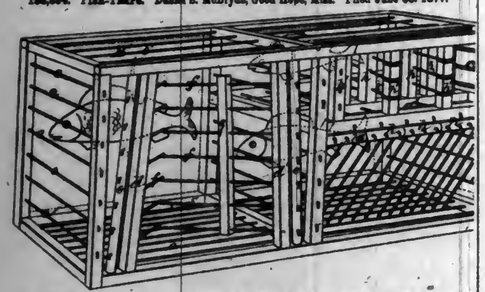
2. The combination, with the cord-rail and cord of a bed-bottom, of the double-hooked clamping-bolt, substantially as specified.

196,893. PEDAL ATTACHMENTS FOR PIANOS. Louis Mathias, Toledo, Ohio. Filed Oct. 30, 1877.



Claim.—The footstool A, provided with pedals C, connected by rods *a* with hinged blades D, and the adjustable fastening device G *b*, constructed substantially as and for the purposes herein set forth.

196,894. FISH-TRAPS. Daniel S. McBryde, Good Hope, Miss. Filed June 30, 1877.

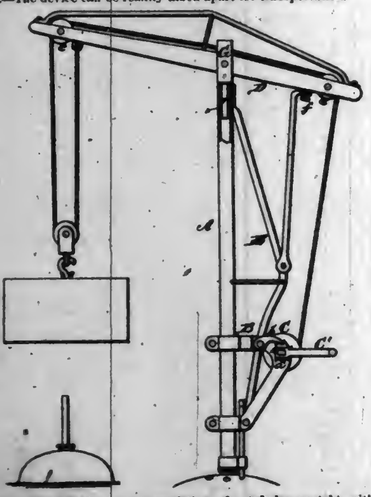


Claim.—1. The fish-trap herein described, having swinging automatically-closing gates, and a reflecting-mirror opposite thereto, serving as a decoy, substantially as specified.

2. The combination, with a fish-crate trap, of the swinging gravitating-doors, the jambs *d d'*, and braces *g*, arranged substantially as described, and for the purpose set forth.

196,895. PORTABLE DERRICKS. Alexander Meharry, La Fayette, Ind. Filed Aug. 16, 1877.

Brief.—The device can be readily taken apart for transportation.

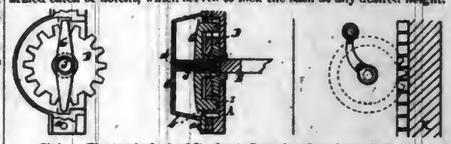


Claim.—1. A portable derrick consisting of a tubular upright, with side frame, carrying a windlass, and a top beam, pivoted in a metal loop, turning in and removable from the upper end of the upright, substantially as and for the purposes set forth.

2. The combination of the tubular upright A, frame B, windlass C, and bow-brace E, substantially as and for the purposes set forth.

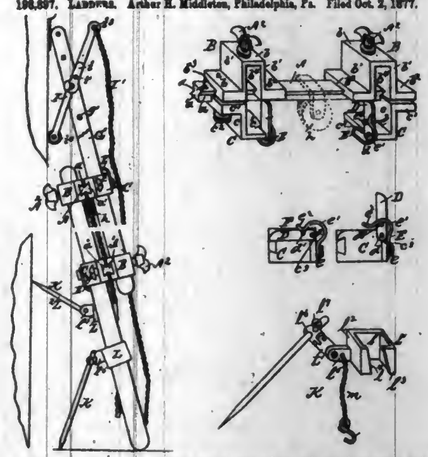
196,896. SASH-BALANCES. Charles Messenger, Cleveland, Ohio. Filed Sept. 17, 1877.

Brief.—A toothed wheel and rack. The wheel, operated by a key, raises and lowers the sash, and there is also combined therewith a spring-acted two-armed catch or detent, which serves to lock the sash at any desired height.



Claim.—The toothed wheel D, check G, spring J, and the shell or case herein described, in combination with the rack I, arranged in relation to a window frame and sash, and operated by a key, substantially in the manner as set forth, and for the purposes specified.

196,897. LADDERS. Arthur H. Middleton, Philadelphia, Pa. Filed Oct. 2, 1877.



Claim.—1. A device for uniting two or more firemen's truck or other ladders to form an extension-ladder, consisting of one or more cross-bars, upon which are placed two or more sets of brackets, so arranged that one set thereof embraces the sides of the upper ladder-section, while the other set embraces the sides of the lower ladder-section, substantially as shown and described, and for the purpose set forth.

2. A device for uniting two or more firemen's truck or other ladders to form an extension-ladder, consisting of a grooved cross-bar having one or more sets of adjustable brackets, one set of which is provided with spring-pawls, constructed and arranged for operation substantially as shown and described.

3. A device for uniting two or more firemen's truck or other ladders to form an extension-ladder, consisting of a grooved cross-bar, on which are mounted two sets of adjustable sliding brackets, one set of which is adjustably secured to said cross-bar, by set-screws or otherwise, and provided with pivoted spring-pawls, the other being provided with thumb nuts or screws to secure the device to a ladder, substantially as shown and described.

4. A device for uniting two or more firemen's truck or other ladders to form an extension-ladder, consisting of a cross-bar and one or more sets of brackets, to one set of which are attached pivoted spring-pawls, so arranged in relation thereto as to have three supporting-points for sustaining superincumbent weight, substantially as shown and described.

5. In combination with a device for uniting one or more firemen's truck or other ladders to form an extension-ladder, constructed substantially as shown and described, the levers I I, constructed as shown and described, and for the purpose set forth.

6. In combination with a device for uniting two or more firemen's truck or other ladders to form an extension-ladder, constructed substantially as shown and described, the braces K K, as and for the purpose set forth.

7. The combination of the cross-bar A, brackets B B and C C, pawls D D, pivoted to the brackets C C, the pulley *h* and rope H, and ladders G and G', constructed and arranged for operation substantially as shown and described.

196,898. GRAIN-BINDERS. Lewis Miller, Akron, Ohio. Filed June 5, 1875.

Claim.—1. The combination of the segmental arms 1 2 3 4, to gather the grain from the platform in a bundle or gavel, and then to compress and hold it in bundle form until it is bound during its passage over the platform, substantially as described.

2. In combination with the gatherer, compressor, and carrier, the twister or spinner *b'*, geared to rotate one or more times around the bundle, for forming a two-strand rope or band from the straw held by the gatherer, substantially as described.

3. In combination with the compressor and twister or spinner, the arm *s*, which has its center of rotation at or near the center of the diameter of the gavel, for forming the band around the gavel, as and for the purpose described.

4. The cam-guide on the platform, in combination with the segmental-arm compressor and the jointed-lever connection, for opening and closing said arms at stated intervals, substantially as described.

5. The combination of the segmental gathering and compressing jaws with the revolving straw-rope-band twister, substantially as described.

6. The jointed arm compressor, combined with springs attached to each segment, and overlapping each other, so as to cover the joints and present a continuous yielding surface to the gavel, substantially as described.

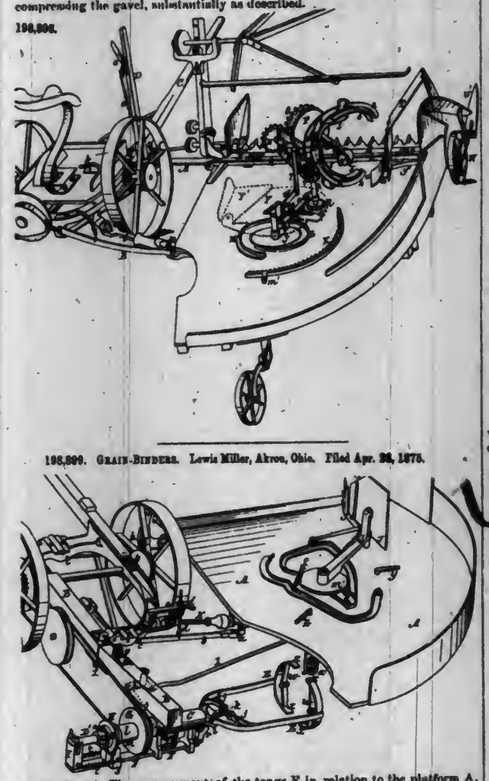
7. In combination with the inwardly-inclined twister and the crank-arm which carries it around, the hinge in the crank-arm and the spring *t*, crossing said hinged connection, so that the twister may yield and conform to the differing-sized gavels, substantially as described.

8. In combination with the twister, the gears O, P, and *o'*, for giving said twister its planetary motion around the gavel and a rotary motion around its own axial center, as and for the purpose described.

9. In combination with the compressor, the wing *s*, for pushing the gavel within the grasp of the compressor, substantially as described.

10. The combination of the rack K, arranged on the surface of the platform, with the cam M I, also arranged on the platform, and with the shaft and gears for operating the binding mechanism, and the compressor and jointed levers for compressing the gavel, substantially as described.

196,899. GRAIN-BINDERS. Lewis Miller, Akron, Ohio. Filed Apr. 26, 1875.



Claim.—1. The arrangement of the tongs E in relation to the platform A, so that the jaws *x* of the tongs and the hinged connections *s s* of the platform shall be substantially in the same line, and the tongs in position to receive the gavel from the platform, however much the latter may rise and fall in passing over the undulations of the ground.

2. The arrangement of the receiving-tongs E upon the frame of the machine, and the sweep-rake J, arranged upon the hinged platform A, to operate in combination, substantially as described, for the purpose specified.

3. The tongs E, pivoted to the head of the sleeve D, and the toggles *k*, pivoted to the tongs and the head of the sliding shaft D', substantially as described, for the purpose specified.

4. In combination with the tongs E and the shafts D D', toggles *k*, the pulley G and its hub *l*, the sliding clutch-piece H, and pin *n*, and recess *o*, for the purpose of connecting and revolving and disconnecting the tongs at intervals, as and for the purpose described.

5. In combination with the tongs E, the stop or brace *v*, automatically operated for holding the tongs in proper position to receive the gavel, and for releasing the tongs when it is to be revolved for the purpose of being bound, as described.

6. In combination with the beam B, that carries the tongs and tongs-operating mechanism, the hinge *f* and take-up *g*, for the purpose of adjusting the tongs to the height of the platform, as and for the purpose described.

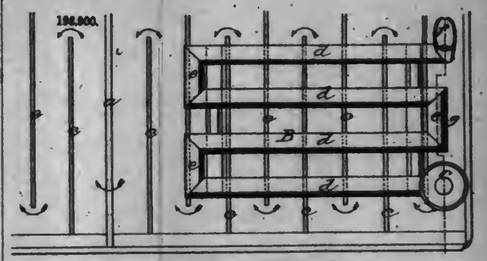
7. In combination with the sweep-rake and the cranks *y z*, which it moves in its circuit, the tongs E and the twister *a'*, and the connecting mechanism for operating said tongs and twister, as and for the purpose described and represented.

196,900. EVAPORATING-PANS. Wm. A. Morrison, Frelighsburg, assignor to E. E. Spencer, Parish of St. Armand East, Province of Quebec, Canada. Filed Oct. 13, 1877.

Brief.—Combines with an evaporating-pan a system of communicating pipes, placed in the pan above the sap, which, being raised to the boiling-point, will cause the sap in the pipes to be delivered to the pan in a heated or boiling condition.

Claim.—The subsidiary heater consisting of the spaced pipes *d* and the connecting-pipes *e*, set upon their under sides, and provided with the funnel C and discharge-spout *f*, extending above the level of the top of said pipes, substantially as set forth.

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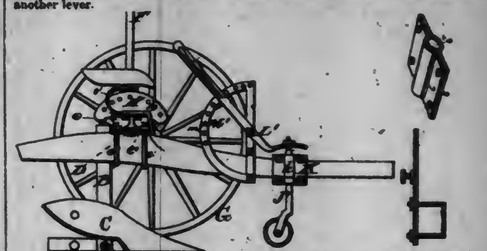
196,901. RUBBER OVERSHOES. John A. Olmsted, Port Richmond, assignor of one-half his right to Christopher Meyer, New York, N. Y. Filed Dec. 5, 1877.



Claim.—A rubber overshoe open in front from the instep upward, provided with the back leg extension or shield B, and having suitable ankle and leg fastenings, all substantially as and for the purpose specified.

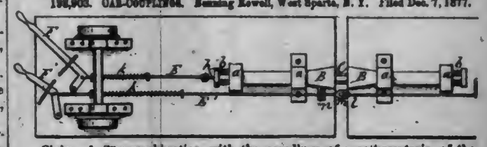
196,902. PLOWS. Joseph M. Payne, Dallas, Tex. Filed Jan. 12, 1877.

Brief.—A plow with one bearing-wheel. A cross-bar rigid to the beam supports the seat and journals a crank-axle, having a wheel raised and lowered by a lever and ratchet. A gage-wheel slides in a vertical socket by means of another lever.



Claim.—In a one-wheel plow, the combination of the cross-bar H, having the ratchet H', and being rigidly secured to the plow-beam, with the bell-crank lever F, carrying the wheel G upon its shorter arm, and the spindle-crank *f*, journaled to the cross-bar, substantially as described, and for the purpose set forth.

196,903. CAR-COUPLINGS. Benning Lowell, West Sparta, N. Y. Filed Dec. 7, 1877.



Claim.—1. The combination, with the couplings of a railway-train, of the rods E E', connected with the devices for raising the coupling-pin to uncouple, the rods succeeding the first rod being made in sections, provided with hook-and-eye joints coinciding with the couplings, and the eye ends being connected with the devices for raising the coupling-pin, whereby the operator, standing at the front, can uncouple the coupling and disconnect the sections of the rods at one and the same action, and can uncouple or detach any car in the train at will, as herein described.

2. The combination, with the spring-slide *c* and the coupling-pin *c* resting thereon, of the cord A, connecting with the devices for raising the pin, and the rod E, to which the cord is attached, extending to the front of the train, as shown and described, and for the purpose specified.

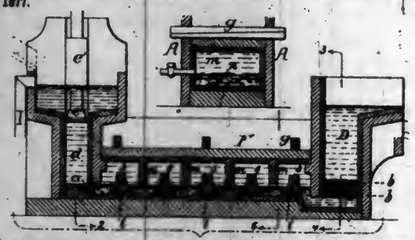
3. The combination, with the coupling of a railway-train, of the rod E, the cord A, the pulley *i*, and the rock-lever D, provided with a hook or equivalent device at its end, for holding the coupling-pin, as shown and described, and for the purpose specified.

4. In a car coupler and uncoupler, the rod E', constructed in sections, with hook-and-eye joints coinciding with the couplings, the eye-section being connected with the devices for raising the coupling-pin, in such a manner that the coupling-pin and the eye are raised at one and the same action, as herein described.

5. In combination with the rock-lever D, having the coupling-pin *e* suspended so as to be raised and lowered with it, the bearing or loop *n*, attached to the rock-lever and holding the rod or rods E, the whole arranged as described, so that the coupling-pin and the rod receive a simultaneous motion when the rock-lever is operated, as herein described.

6. The combination, with the rock-lever D, having the suspended coupling-pin *e* and the loop *n*, of the pivoted lever G, having its end resting loosely under the rock-lever, as shown and described, and for the purpose specified.

196,904. AMALGAMATORS. Ira M. Phelps, Philadelphia, Pa., assignor of a part of his right to Thos. L. Chase and E. J. Pillman, same place, and D. K. Allen, Boston, Mass. Filed Nov. 8, 1877.

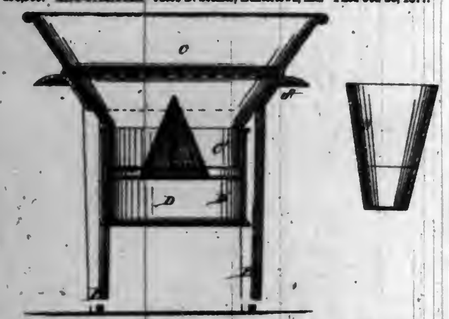


Claim.—1. The combination of the box A and the bridge-bars *f* in the same with the ribs *m*, carried by a removable cover, F, as specified.

2. The combination of the box A, having ribs or partitions *m* extending below the level of the mercury in the box, with the bridge-bars *f*, having passages *i* through the same, as and for the purpose set forth.

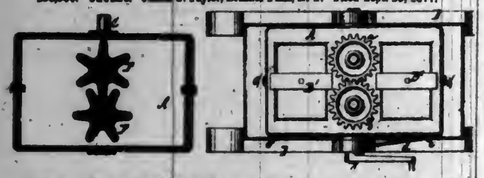
3. The box A, having a series of amalgamating or separating chambers, *s*, and having a depression at and near the discharge end, as and for the purpose described.

196,905. KILN-STRAINERS. Jacob D. Seehler, Hunterstown, Ind. Filed Oct. 20, 1877.



Claim.—In combination with the rim A, supported upon legs B B, the removable reservoir C C', removable band D, having partition D', and the conical strainer D², all constructed substantially as and for the purposes herein set forth.

196,906. OVENS. James G. Taylor, Brasher Falls, N. Y. Filed Sept. 29, 1877.



Claim.—The combination of the revolving tub A, corrugated rollers F F, which extend through said tub, meshing with each other, and are geared together exteriorly thereof, substantially as described.

196,907. COTTON-PRESSES. Robert G. Thompson and J. W. Thompson, Benham, Tex. Filed June 13, 1877.

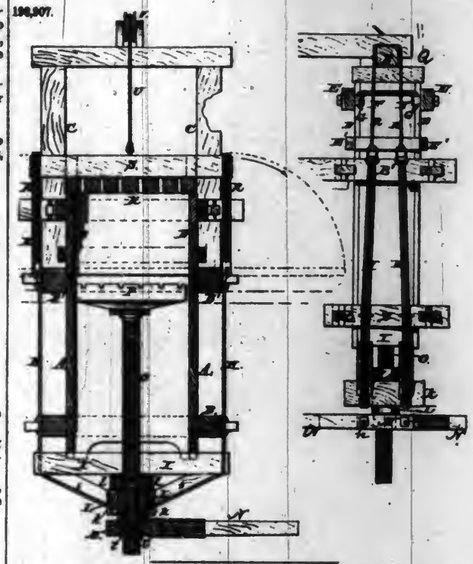
Brief.—The lower part of the press is located beneath the floor separating the first story or basement from the second.

Claim.—1. The combination, in a cotton-press, of the upper and lower sections, the crown-cap and its elevating devices, the bridge-tree and straps, connecting the same with crown-cap, the screw-threaded sleeve and its screw, and the follower traveling in the lower press-section, the whole adapted to operate substantially as herein set forth.

2. In combination with the two parts of the press, the bridge-tree I, angular braces *i i*, and lower horizontal block *k*, containing the internally-threaded sleeve for operating the screw of the straps H, passing around the horizontal block *k*, angular braces *i*, and bridge-tree I, and attached at their upper ends to the timbers B', and the looped straps R R, pivoted at their lower ends to the straps H, and adapted to hold the crown-cap down, substantially as described.

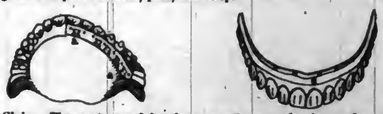
3. The combination, with the press, of the upper timbers B', projecting in rear of the press, the upright frame C, attached to the rearward extension, the beams T T, hinged to the frame C, and carrying the crown cap, the pulley V, and the windlass W, carried by said frame, and the rope or chain U, substantially as and for the purpose described.

196,907.



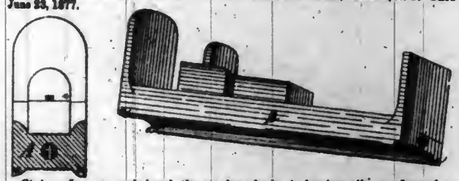
196,908. SECURING ARTIFICIAL TEETH ON ALUMINUM PLATES. Jonathan T. Thurston, Providence, R. I. Filed June 18, 1877.

Brief.—Dovetailed pins are riveted to the aluminum plate, and also a thin strip of metal, to both of which the teeth with their pins are united by vulcanizing rubber upon the teeth, pins, and strip.



Claim.—The posts *a* and band *c*, secured on an aluminum plate, in combination with a composition gum or vulcanite rubber, substantially as set forth, and for the purpose specified.

196,909. SPIRIT-LEVELS. Frederick T. Ward and Thomas Bodworth, Mohawk, N. Y. Filed June 23, 1877.



Claim.—In a mason's level, the stock or body A, having ribs *a a* formed or placed upon the sides thereof, and leveled off true, substantially as described, and for the purpose shown and specified.

196,910. HAND-HOES. William D. Webster, St. Catharines, Ontario, Canada. Filed Sept. 24, 1877.



Claim.—As an improvement in hand-hoes, the blade B, having a series of pointed teeth, *c*, arranged between two edge teeth, *d d*, with flat points or edges, the said edge teeth being shorter than the intermediate pointed ones, substantially as and for the purpose hereinbefore set forth.

196,911. EARTH-BORING MACHINES. Wm. H. Yarbrough, Sherman, Tex. Filed Oct. 6, 1877.

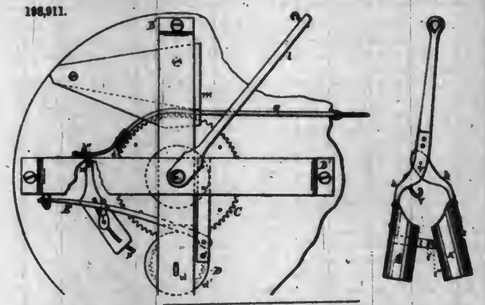
Claim.—1. In an earth-boring machine, the frame *h*, carrying the wheel D and drum *d'*, upon which the main rope is wound, and having the screw-threaded arm *f* and cranks *i* and *i'*, as shown and described, and for the purpose specified.

2. The strap *e*, having attached a catch and release, substantially as herein shown, and the adjustable stop *n*, toothed wheel C, and guide or shoe *m*, as and for the purpose described.

3. The earth-drill consisting of the two curved plates *g* K, attached to hinged shafts *b*, with the bar *i*, shouldered at *i'*, fixed to one plate, and a slot formed in a depression, *s*, on the other plate, as shown and described.

4. The combination of the two-part drill *g* K, having the hook V on the drill-shaft, as herein shown, and the mud-bucket, adapted to fit closely within the drill, to which it is secured by the chain *y*, and provided with a flexible valve resting upon the cross-bars *x*, which have sharpened lower edges, the valve being secured at its center by rod *o* and nuts *o'* and *o''*, as shown and described, and for the purpose specified.

196,911.

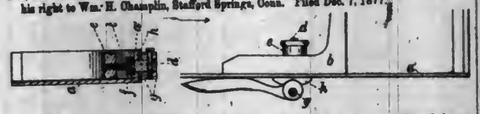


196,912. SAFETY-PINS. William A. Butler, New York, N. Y., assignor to Thomas L. Butler, same place. Filed Sept. 14, 1877.



Claim.—In a safety-pin, the shield B, having the U-shaped turned-over flange *d d'*, in combination with the pin A, having a semicircular curved end, *e*, confined within said U-shaped turned-over flange of the shield, and extending entirely along one side and the curved end and a portion of the other side of said shield, substantially as and for the purpose set forth.

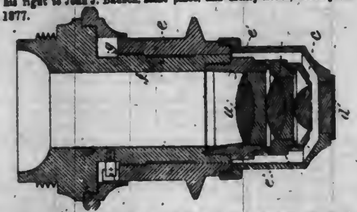
196,913. PRINTERS' COMPOSING-STICKS. Hiram C. Fenton, Wethersfield, assignor of one-half his right to Wm. H. Champlin, Stafford Springs, Conn. Filed Dec. 7, 1877.



Claim.—1. In combination, the body *a*, gage *b*, pin *d*, nuts *e f*, and lever-cam *g*, all arranged substantially as shown and described.

2. In combination, body *a*, gage *b*, pin *d*, nuts *e f*, lever-cam *g*, and friction-block *h*, all arranged substantially as shown and described.

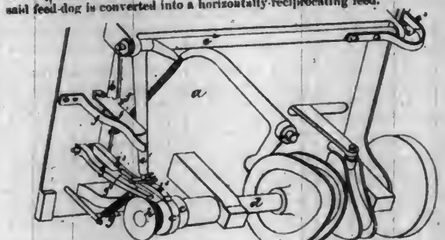
196,914. OBJECT-GLASSES FOR MICROSCOPES. Ernst Gundlach, Rochester, N. Y., assignor of one-half his right to John J. Bausch, same place, and Henry Lomb, Brooklyn, N. Y. Filed Nov. 26, 1877.



Claim.—The combination of the adjustable transparent plate *d* with the front lens *c* of the objective, the two being connected by a highly-refractive liquid, and the whole operating in the manner and for the purpose substantially as described.

196,915. FEEDING MECHANISMS FOR SEWING-MACHINES. Thomas K. Keith, Haverhill, Mass., assignor to Moses How, same place. Filed Oct. 23, 1877.

Brief.—The feed-dog, which in its normal condition is adapted to operate as an ordinary four-motion feed, is, when raised to its highest position, there held by means of a lever, whereby, as the machine is operated, the motion of said feed-dog is converted into a horizontally-reciprocating feed.



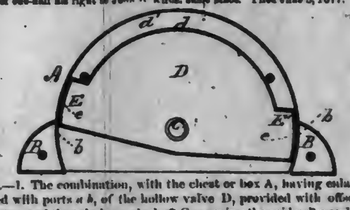
Claim.—1. In a sewing-machine, a feed-dog adapted, when in its normal condition, to propel the work in a single direction, combined with mechanism, substantially as described, for raising and supporting said feed-dog and preventing it from rising and falling, and mechanism for reciprocating it in a substantially horizontal plane, whereby, when the said feed-dog is raised and reciprocated, it reciprocates the work instead of propelling it in a single direction, substantially as and for the purpose specified.

2. In combination with the feed-dog *b*, the adjustable rest *f*, adapted to support said feed-dog in a raised position, and mechanism, substantially as described, for raising and lowering said rest, as and for the purpose specified.

3. In combination, the oscillating lever *g*, the feed-dog *b* and bar *b'*, the conoidal grooved disk *h*, the pivoted rest *f*, provided with spring *f²*, the fulcrum *e*, the arm *e'*, and the rock-shaft *e²*, substantially as described.

4. In combination with the conoidal disk *h*, having the intersecting endless grooves *h'*, and the lever *g*, adapted to oscillate in two directions, and provided with the pivoted lug *g'*, the spring *g²*, substantially as and for the purpose specified.

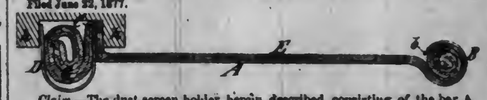
196,916. OSCILLATING VALVES FOR STEAM-ENGINES. Robert H. D. Morrison, Winona, Minn., assignor of one-half his right to John R. Kirch, same place. Filed June 6, 1877.



Claim.—1. The combination, with the chest or box A, having enlargements B, provided with ports *a b*, of the hollow valve D, provided with offsets E E', having ports *c*, and the tubular rock-shaft C, carrying the said valve and directing the steam into its interior, substantially as specified.

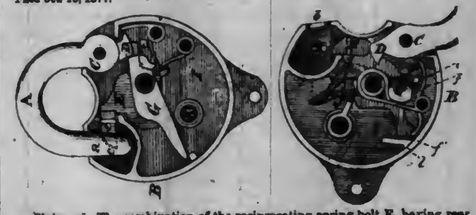
2. The valve-box A, having at its ends ports *a b*, the oscillating hollow valve, journaled in said box, and having ports *c*, and a tubular shaft admitting steam into the said valve, combined, arranged, and operating substantially as specified.

196,917. DUST-SCREEN HOLDERS FOR CAR-WINDOWS. Edward L. Wallace, Paterson, assignor of one-half his right to Julius M. Wallace, Oakridge, and Solomon S. Denton, Vernon, N. J. Filed June 22, 1877.



Claim.—The dust-screen holder herein described, consisting of the bar A, ring B, having the opening *b*, the projection C, and spring D, for holding the folded and rolled screen, and attaching the same to the window-casing, substantially as and for the purpose specified.

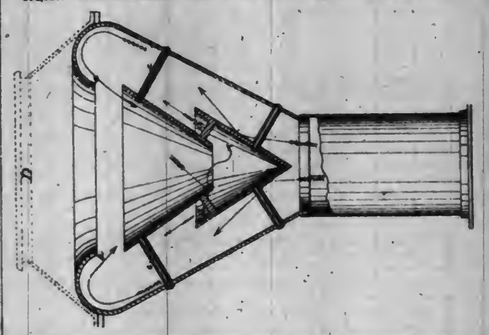
196,918. PADLOCKS. William P. Yoe, Cincinnati, Ohio, assignor to Post & Co., same place. Filed Oct. 15, 1877.



Claim.—1. The combination of the reciprocating spring-bolt E, having rear arms *f'* and *f''* and projection *i*, the locking spring-dog G, having shoulder *i'*, the shank or shackle A, having projection D, and the guides *d* and *l*, substantially as set forth.

2. The combination of reciprocating spring-bolt E, having shoulder *i*, independently-rocking spring-dog G, having shoulder *i'*, and the shank or shackle A, having downward projection D.

196,919. SPARK-ARRESTERS. William T. Uric, Warrensburg, Mo. Filed Dec. 8, 1877.



Claim.—1. A three-part spark-arresting smoke-stack, consisting of a barrel portion, a flared upper portion cast with a flange, and a central double-funnel hopper cast in one piece, combined to operate substantially as described.

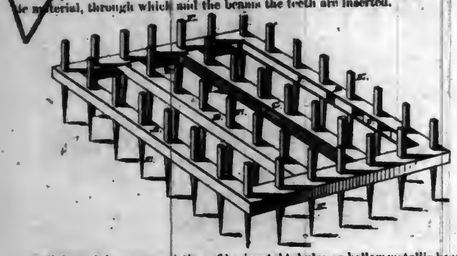
2. A smoke-stack having a downwardly-projecting deflecting-flange at its upper inside circumference, made continuous with its outer case, combined with a subjacent open-bottom funnel and a second lower closed-bottom funnel, having passage-ways between to permit a circulating current to be induced around the walls of the upper funnel, substantially as and for the purpose described.

3. The combination of the outer casing H, cast with a flange, *a*, the double funnel-shaped hopper C, cast in one piece with connecting bridge-arms, the thimbles *e*, and the rivets *f*, substantially as and for the purpose described.

4. As a new article of manufacture, the two-part hopper consisting of an upper open-bottom funnel, *b*, and a lower closed funnel, *c*, cast in one piece with bridge-arms, substantially as described.

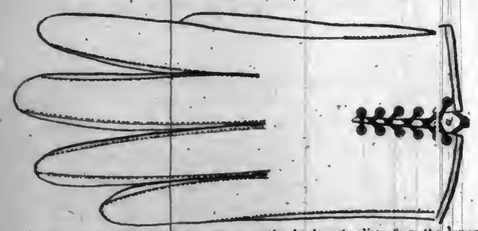
196,920. HARROWS. John Lemon, San Francisco, Cal. Filed Aug. 24, 1877.

Recf.—Tubular metallic beams having inside filling of wood or other elastic material, through which and the beams the teeth are inserted.



Claim.—A harrow consisting of horizontal tubular or hollow metallic beams, elastic inside filling F, and teeth E, inserted through beams and filling, substantially as described.

196,921. GLOVES. Austin C. Batts, Newark, N. J. Filed May 15, 1877.



Claim.—A glove having a slit, *a*, at the back, extending from the lower edge toward the fingers, and provided with lacings *b*, as and for the purpose set forth.

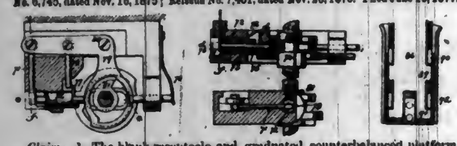
196,922. SCHOOL-DESKS. Frank T. Jane, Chicago, Ill. Filed Dec. 16, 1877.



Claim.—The combination of a desk-standard, A, with the slats B B, said slats being provided with dovetailed grooves, and the standard being secured in same by means of the strips *a*, the strips and standard being constructed substantially as and for the purpose set forth.

REISSUES.

8,020. PAPER-BOX MACHINES. Henry R. Heyl and August Brehmer, Philadelphia, Pa., assignors to the Novelty Paper Box Company. Patent No. 132,076, dated Oct. 8, 1872; Reissue No. 6,745, dated Nov. 16, 1875; Reissue No. 7,401, dated Nov. 28, 1876. Filed June 16, 1877.



Claim.—1. The blank-receptacle and graduated counterbalanced platform, combined and arranged substantially as herein described, to elevate the blanks, as required, with a force varied proportionally to the height of the pile of blanks.

2. The detent 13 14 and automatic device for temporarily releasing the same, substantially as set forth.

3. The feeder 21, constructed with one or more air-passages in its face, connected with a pipe for exhausting the air, in combination with the valve or valves operated by the descent and ascent of the feeder, by mechanism substantially as herein described.

4. In combination with staple forming and inserting mechanism, a work-support attached at one end to the machine, and provided near its free end with a staple-clinching mechanism, substantially as shown and described.

5. In combination with a forked or hollow staple guiding, supporting, and presenting mechanism, and staple-inserting mechanism operating within the same, two clinchers operating to bend the projecting legs of a staple down onto the material, and at angles toward each other, substantially as shown and described.

6. The combination of a bending-fork or hollow staple-presenting device, having interior longitudinal grooves to support and guide the staple when driving, with a pair of clinching jaws, the co-operation being such that the staple is inserted through the material in proper relation to the clinching mechanism, substantially as shown and described.

7. The combination of the bending-fork or hollow staple-presenting device with a reciprocating hammer or driving-rod, operating by percussion to drive the staple in the process of inserting it through the material, substantially as shown and described.

8. In combination with staple-clinching mechanism, operating to bend the two projecting legs of a staple at angles toward each other, the grooved bending-fork, operating to compress the material, and a reciprocating driver, their co-operation being such that in the process of driving the staple the material is clamped and the staple-legs are forced through it in such a position relative to the clinching mechanism as to be properly clinched thereby, substantially as shown and described.

9. A reciprocating hammer or driving-rod, operating, in conjunction with an automatic staple-presenting mechanism, to insert a staple, and, by pressure upon its head, to hold and compress the material to be united thereby, while the clinchers operate to bend down and clinch the staple-legs upon the compressed material, substantially as shown and described.

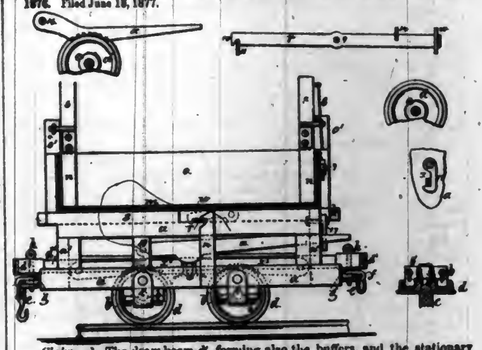
10. In combination with a staple-inserting mechanism, a clincher-stock or work-support, automatically moved to and from said staple-inserting mechanism, to carry the work and present the staple-clinching mechanism in position for co-operation with said staple-inserting mechanism, substantially as shown and described.

11. In combination with the automatic staple-presenting mechanism provided with internal staple-guiding grooves, clinching-jaws so constructed and operated that they shall stand apart to receive the legs of the inserted staple between them, and be closed together to bend the staple-legs toward each other and down onto the material, substantially as described.

12. In combination with a work-support, a head supporting the staple-inserting mechanism, constructed so as to be adjustable to and from the said support, substantially as described.

13. The combination of a staple supporting and presenting mechanism having guiding grooves or channels, and a staple-inserting mechanism operating in said grooves or channels, with a staple-clinching mechanism, all substantially as described.

8,021. DUMPING-CARS. Daniel O'Brien, Brooklyn, N. Y. Patent No. 134,046, dated Nov. 7, 1876. Filed June 18, 1877.



Claim.—1. The draw-beam *d'*, forming also the buffers, and the stationary tongue *g*, in combination with the coupling-pin *h*, clevis *f*, and chain *e*, substantially as set forth.

2. The box of the car, made with the swinging side *o*, pivots 4, and side pieces 5, in combination with the rope or chain 6 and pulleys, substantially as and for the purposes set forth.

3. The lever *r*, pivoted at 9, the hook 10, and catch-plate 11 on the swinging side *o*, in combination with the hooked plate 14, substantially as set forth.

4. The hook *s*, in combination with the lever *r*, hooks 10 and 11, car-box, and swinging side *o*, as and for the purposes set forth.

5. The brake-lever *x*, placed at the side of the frame opposite to that at which the box is dumped, and moving near its end in a slot in the frame *a*, in combination with the hook 17, for holding the brake-lever either up or down, as set forth.

6. The brake *x* and brake-levers x^2 x^3, arranged as shown, so that the brake-levers x^2 x^3 are operated simultaneously by the brake *x*, and the parts are not in the way of the car as it is dumped, as set forth.

7. The end pieces *a'* of the car-frame, beveled on the upper edge, and the central bearing-beam *b'* and side beam *a*, sustained by the end pieces *a'*, in combination with the car-body, hinged to the beam *b'*, so as to be tipped sidewise, substantially as set forth.

8. The swinging side of the car-box, with end pieces extending above the side, and hinged to the corner-posts at their inner edges, so as to swing shut, and sufficiently above the side to cause the same to swing clear of the load as dumped, substantially as set forth.

8,022. PAINTING WIRE-CLOTH. Chas. H. Waters, Groton, assignor to the Clinton Wire Cloth Company, Clinton, Mass. Patent No. 94,520, dated Dec. 1, 1869; Reissue No. 4,463, dated July 4, 1871; Reissue No. 6,626, dated Aug. 31, 1875. Filed Dec. 6, 1877.

Claim.—1. The hereinbefore-described improvement in the art of mechanically painting wire-cloth, which consists in coating its entire surface with paint, and then squeezing or pressing out the surplus paint between surfaces, substantially as set forth.

2. The hereinbefore-described improvement in the art of mechanically painting wire-cloth, which consists in passing the wire-cloth successively through a mass of paint thoroughly to coat its entire surface, and then between surfaces which press or squeeze off the surplus paint, substantially as set forth.

8,023. MACHINE-PAINTED WIRE-CLOTH. Charles H. Waters, Groton, assignor to the Clinton Wire Cloth Company, Clinton, Mass. Patent No. 94,520, dated Dec. 1, 1869; Reissue No. 4,463, dated July 4, 1871; Reissue No. 6,626, dated Aug. 31, 1875. Filed Dec. 6, 1877.

Claim.—As an improved article of manufacture, machine-painted wire-cloth possessing the characteristics hereinbefore set forth.

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CAVEATS.

Inventors filing caveats in the Office should be careful to describe their invention or improvement with accuracy, and illustrate such inventions as are capable of illustration with care and thoroughness.

Caveats are placed in the hands of the Examiners, who should not be expected to understand what the inventor means unless the latter has sufficiently matured his invention to clearly describe and illustrate it.

Caveats are sometimes filed in the Patent Office stating that the caveator is engaged in a series of experiments intended to accomplish certain results, and giving nothing more than a vague hint of the means by which the result is to be attained. As the courts have frequently decided that results are not patentable, the practice of the Patent Office is to the effect that a caveat cannot cover more ground than a patent. So, where a caveat describes more than one invention, the Examiner frequently overlooks a portion of the caveat, knowing that under the rules caveators are confined to a single invention.

Complaints are often made that caveats have been overlooked, and patents issued to subsequent applicants, when the fault lies in the hasty preparation of the caveat papers. The rules are explicit, that the caveat must describe the invention as fully as the inventor is able to do; that the drawings shall be of the same size as the drawings to accompany an application for a patent, (8 by 13 inches, on a sheet 10 by 15 inches, with an inch margin all round,) and on tracing-muslin, or light bristol-board or drawing-paper, which can be folded without breaking. A careful compliance with the rules will greatly facilitate the work of the Office, and will go a long way toward insuring the accuracy which is so necessary in securing their just rights to inventors.

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THE DECISIONS FOR 1877.—The decisions of the United States courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

TO SUBSCRIBERS.—Great care will hereafter be taken in mailing THE OFFICIAL GAZETTE to subscribers, and in case of its non-receipt the fault will not be in the Patent Office. When each issue shall have been mailed, the Office will assume that it has done its duty by the subscribers, and will not send extra numbers except upon receipt of 10 cents for each copy ordered.

BOUND VOLUMES FOR 1877.—The bound volumes of THE OFFICIAL GAZETTE for 1877 are now ready for distribution, and can be procured, in full law binding, for $8, and in half-calf for $7. The Annual Index for 1877 will not be ready for distribution, either to subscribers or purchasers of the bound volumes, before the 1st of May, 1878.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

ANNUAL REPORT, 1877.—The Annual Report of the Commissioner of Patents for 1877 will be published in extenso in the next issue of THE OFFICIAL GAZETTE, which will be ready for delivery Wednesday morning, January 30. Persons desiring extra copies of the Report must order them by Monday, January 28.

The New Classification.

The commission appointed by the Commissioner of Patents to revise the Official Classification of Subjects of Invention has completed its labors, and the following classification has been adopted, and will supersede the one now in use.

Examiners are arranging their sub-classes, and when they shall have been completed they will be published under the proper head.

Advertising	40
Aeration and bottling	1
Apparel	2
Arms and projectiles, making	86
Artificial limbs	3
Artificial stone, lime, and cements	106
Baths and closets	4
Beds	5
Bee-culture	6
Bleaching and dyeing	8
Boats	9
Book-binding	11
Boots and shoes	12
Brakes and gins	13
Bread, cracker, and lozenge making	107
Brewing and fermenting	7
Bridges	14
Brushing and scrubbing	15
Builders' hardware	16
Butchering	17
Caoutchouc and minor plastics	18
Carding	19
Care of live stock	119
Carpentry	20
Carriages and wagons	21
Chains, staples, and horseshoes	59
Chairs	155
Chemicals and medicines	23
Clasps and buckles	24
Clay and pottery	25
Cloth	26
Coating with metal	96
Coffins	27
Composite roofing	154
Coopering	147
Cordage	28
Crinoline and corsets	29
Curtain-fixtures	156
Cutlery	30
Dairy	31
Dentistry	32
Distillation	124
Drafting	33
Driers	34
Educational appliances	35
Electricity	36
Excavating	37
Explosives	52
Felting and hats	38
Fences	39
Fertilizers	71
Fine arts	41
Fire-arms	42
Fishing and trapping	43
Fluid-pressure regulators	50
Fuel	44
Furniture	45
Games and toys	46
Garden and orchard	47
Gas	48
Glass	49
Grinding and polishing	51
Hardware, making	53
Harness	54
Harrows and diggers	55
Harvesters	56
Hides, skins, and leather, chemical treatment	149
Hoisting	57
Horology	58
Hose and belting	60
Household articles	65
Hydraulic engineering	61
Jewelry	63
Journals and bearings	64
Knitting and netting	66
Lamps and gas-fittings	67
Laundry	68
Leather	69
Locks and latches	70
Locomotives	123
Marine propulsion	115
Masonry	72
Measuring instruments	73
Mechanical powers	74
Metal bending and straightening	153
Metal boring and drilling	77
Metal forging, punching, and shearing	78
Metal founding	22
Metal ornamentation	158
Metal personal ware, making	79
Metal-rolling	80
Metal bolts, nuts, rivets, and screws	10
Metal tempering, annealing, and cementation	148
Metal tools and implements, making	76
Metal tubing and wire	134
Metal turning, planing, and milling	82
Metal-working tools	81
Metallurgy	75
Mills	83
Music	84
Nails, spikes, needles, and pins	85
Nut and bolt locks	151
Oils, fats, and glue	87
Optics	88
Ordnance	89
Ore	90
Packing and storing vessels	150
Painting and graining	91
Paper-making	92
Paper manufactures	93
Paving	94
Photography	95
Plows	97
Pneumatics	98
Preserving	99
Presses	100
Printing	101
Projectiles	102
Pumps	103
Railway-cars	105
Railways	104
Refrigeration	62
Roofing	108
Safes	109
Seeders and planters	111
Sewing-machines	112
Sheet-metal-ware making	113
Ships	114
Signals	116
Silk	117
Spinning	118
Stationery	120
Steam-boilers	122
Steam-engines	121
Steam-furnaces	110
Steam-valves	136
Stone-working	125
Stoves and furnaces	126
Sugar and salt	127
Surgery	128
Tanning	129
Thrashing	130
Tobacco	131
Toilet	132
Trunks and equipments	133
Umbrellas and fans	135
Vegetable cutters and crushers	146
Wagon, car, and track irons	152
Washing apparatus	141
Water distribution	137
Water-wheels	138
Weaving	139
Wheelwright machines	157
Wire-working	140
Wood-sawing	143
Wood-turning	142
Wood-working	144
Wood-working tools	145

The above classes have been divided into the following—

DIVISIONS OF INVENTIONS.

Division No. 1, Tillage. *Examiner*, Fox. *Classes:* Harrows and Diggers, 55; Plows, 97; Seeders and Planters, 111.

Div. No. 2, Farm Stock and Products. *Examiner*, Jayne. *Classes:* Bee Culture, 6; Brushing and Scrubbing, 15; Butchering, 17; Dairy, 31; Fences, 39; Care of Live Stock, 119; Tobacco, 131; Vegetable Cutters and Crushers, 146.

Div. No. 3, Metallurgy, Distillation, and Refrigeration. *Examiner*, Dyrenforth. *Classes:* Fishing and Trapping, 43; Gas, 48; Refrigeration, 62; Metallurgy, 75; Ore, 90; Metal Coating, 96; Distillation, 124.; Sugar and Salt, 127.

Div. No. 4, Civil Engineering. *Examiner*, Pond. *Classes:* Bridges, 14; Carpentry, 20; Excavating, 37; Hydraulic Engineering, 61; Masonry, 72; Railways, 104; Roofing, 108; Curtain Fixtures, 156.

Div. No. 5, Fine Arts, Toys, and Apparel. *Examiner*, Burke. *Classes:* Apparel, 2; Crinoline and Corsets, 29; Educational Appliances, 35; Fine Arts, 41; Games and Toys, 46; Jewelry, 63; Music, 84; Photography, 95; Toilet, 132; Umbrellas and Fans, 135.

Div. No. 6, Chemistry. *Examiner*, Antisell. *Classes:* Brewing and Fermenting, 7; Bleaching and Dyeing, 8; Chemicals and Medicines, 23; Explosives, 52; Fertilizers, 71; Oils, Fats, and Glue, 87; Painting and Graining, 91; Preserving, 99; Hides, Skins, and Leather, 149.

Div. No. 7, Harvesting and Milling. *Examiner*, Parkinson. *Classes:* Brakes and Gins, 13; Garden and Orchard, 47; Harvesters, 56; Mills, 83; Thrashing, 130.

Div. No. 8, Furniture, Bread Making, and Laundry. *Examiner*, Tilden. *Classes:* Beds, 5; Furniture, 45; Laundry, 68; Bread, Cracker, and Lozenge Making, 107; Washing Apparatus, 141; Chairs, 155.

Div. No. 9, Hydraulics and Pneumatics. *Examiner*, Darnall. *Classes:* Aeration and Bottling, 1; Baths and Closets, 4; Pneumatics, 98; Pumps, 103; Water Distribution, 137; Water-Wheels, 138.

Div. No. 10, Carriages, Wagons, and Railway-Cars. *Examiner*, Sanders. *Classes:* Carriages and Wagons, 21; Railway-Cars, 105.

Div. No. 11, Leather Working, Machines, and Articles. *Examiner*, Chapman. *Classes:* Boots and Shoes, 12; Clasps and Buckles, 24; Harness, 54; Hose and Belting, 60; Leather, 69; Tanning, 129; Trunks and Equipments, 133.

Div. No. 12, Mechanical Engineering. *Examiner*, Schoepf. *Classes:* Hoisting, 57; Journals and Bearings, 64; Household Articles, 65; Mechanical Powers, 74; Presses, 100.

Div. No. 13, Metal Working. *Examiner*, Church. *Classes:* Chains, Staples, and Horseshoes, 59; Hardware Making, 53; Metal Bending and Straightening, 153; Metal Bolts, Nuts, Rivets, and Screws, 10; Metal Boring and Drilling, 77; Metal Forging, Punching, and Shearing, 78; Metal Personal Ware Making, 79; Metal Rolling, 80; Metal Tubing and Wire, 134; Metal Tools and Implements Making, 76; Metal Turning, Planing, and Milling, 82; Nails, Spikes, Needles, and Pins, 85; Nut and Bolt Locks, 151; Arms Making, 86; Wagon, Car, and Track Irons, 152.

Div. No. 14, Metal Working, Grinding, and Polishing, and Packing Vessels. *Examiner*, Stocking. *Classes:* Grinding and Polishing, 51; Metal Founding, 22; Metal Tempering, Annealing, and Cementation, 148; Metal-Working Tools, 81; Packing and Storing Vessels, 150; Sheet Metal Ware Making, 113; Wire Working, 140.

Div. No. 15, Plastics. *Examiner*, Hedrick. *Classes:* Artificial Stone, Lime, and Cement, 106; Caoutchouc and Minor Plastics, 18; Clay and Pottery, 25; Composite Roofing, 154; Felting and Hats, 38; Fuel, 44; Glass, 49; Paving, 94; Paper Making, 92; Stone Working, 125.

Div. No. 16, Electricity, Measuring Instruments and Optics. *Examiner*, Townsend. *Classes:* Drafting, 33; Electricity, 36; Horology, 58; Measuring-Instruments, 73; Optics, 88.

Div. No. 17, Printing and Paper Manufactures. *Examiner*, Freeman. *Classes:* Advertising, 40; Book-Binding, 11; Paper Manufactures, 93; Printing, 101; Stationery, 120.

Div. No. 18, Steam Engineering. *Examiner*, Fowler. *Classes:* Driers, 34; Fluid-Pressure Regulators, 50; Locomotives, 123; Steam-Boilers, 122; Steam-Engines, 121; Steam-Furnaces, 110; Steam-Valves, 136.

Div. No. 19, Stoves and Lamps. *Examiner*, Catlin. *Classes:* Lamps and Gas-Fittings, 67; Stoves and Furnaces, 126.

Div. No. 20, Surgery and Hardware. *Examiner*, Wilkinson. *Classes:* Artificial Limbs, 3; Builders' Hardware, 16; Coffins, 27; Cutlery, 30; Dentistry, 32; Locks and Latches, 70; Safes, 109; Surgery, 128.

Div. No. 21, Sewing-Machines and Textiles. *Examiner*, Appleton. *Classes:* Carding, 19; Cloth, 26; Cordage, 28; Knitting and Netting, 66; Sewing-Machines, 112; Silk, 117; Spinning, 118; Weaving, 139.

Div. No. 22, Guns, Ships, and Wood-Working. *Examiner*, Bartlett. *Classes:* Boats, 9; Coopering, 147; Fire-arms, 42; Marine Propulsion, 115; Ordnance, 89; Projectiles, 102; Ships, 114; Signals, 116; Wood-Turning, 142; Wood-Working Machines, 144; Wood-Working Tools, 145; Wood-Sawing, 143; Wheelwright Machines, 157.

The above classes of inventions have been grouped into twenty-two Divisions, the primary object being to separate the work of the Office into parts, each capable of being handled by a single Examiner. So far as possible the Divisions have been constituted of cognate inventions. This rule could not be strictly followed, however, because the size of the Division must be determined by the amount of work to be done. Hence, the Divisions here noted are rather divisions of the Office work than divisions of inventions; therefore, persons ordering copies will order by the Class number rather than the Division number. Under each one of these classes there are several sub-classes upon which the Examiners are at present at work. As soon as they are completed they will be published, together with the present information in relation to the new classification.

Of the above classes, all have been photo-lithographed except Artificial Limbs, Class 3; Builders' Hardware, Class 16; Coffins, Class 27; Coopering, Class 147; Cutlery, Class 30; Dentistry, Class 32; Locks and Latches, Class 70; Locomotives, Class 103; Nut and Bolt Locks, Class 151; Safes, Class 109; Steam-Boilers, Class 122; Steam-Engines, Class 121; Steam-Furnaces, Class 110; Steam-Valves, Class 136; Surgery, Class 128; Wheelwright-Machines, Class 157; Wood-Sawing, Class 143; Wood-Turning, Class 142; Wood-Working, Class 144; Wood-Working Tools, Class 145; and these are all being reproduced, and before the end of the year it is expected that photo-lithographic copies of any patent ever issued by the Government can be obtained in this Office for 25 cents per single copy, or 10 cents each where more than twenty copies are desired. A photo-lithographic copy of any current issue can be had at the same price.

The specifications of all patents issued since July 1, 1871, are in print, and will be furnished, with the drawing, without extra charge. The specifications of patents issued from November 20, 1866, to July 1, 1871, are in print, and where such is the case the Office will furnish them with the drawings; but it will not undertake to reprint copies of patents which have been exhausted.

COMMISSIONER'S DECISIONS.

J. H. AND G. H. PERKINS *vs.* SYDNEY S. COMPTON *vs.* GEORGE H. CHINNOCK *vs.* EDWIN A. LELAND.

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between J. H. and G. H. Perkins vs. Sydney S. Compton* vs. *George H. Chinnock* vs. *Edwin A. Leland for* "IMPROVEMENT IN SHEET-METAL CANS."—*Decided December* 29, 1877.]

Doubted whether parties who have made oath of joint inventorship can be deemed to be improperly joined merely upon inference deduced from the use of the singular pronoun by one of them in testifying as to the history of the invention.

In the absence of direct and positive testimony on the point, and there being corroborating evidence of the assistance of the other joint applicant in perfecting the invention, the Commissioner refused to disturb the joint oath.

A figure in a sheet of drawings which, if precisely followed, might possibly produce the invention in contest, will not suffice to establish priority where the foreign patent to which it belongs describes an essentially different invention.

[*J. Bonsall Taylor*, for Perkins and Perkins: *Jas. A. Whitney*, for Chinnock, Compton, and Leland.]

SPEAR, *Commissioner:*

Although there are three distinct applications and one patent in this case, there are practically only two parties, Perkins and Perkins on the one side, and Chinnock, Compton, and Leland on the other, their interests having been consolidated; and although there are three distinct issues, the conditions of the cases are such that the issues may all be considered together conveniently and without confusion.

Between Perkins and Perkins on the one hand and Compton on the other, the issue is as follows: "A sheet-metal can the side of whose head has a flange at substantially right angles to its main body and to the body of the can, said flange being soldered at its edge to the body of the can by a designedly frangible joint, both head and body of the can being constructed and arranged to move toward each other under force properly directed and sufficient to overcome the soldered joint."

Between Messrs. Perkins, Compton, Chinnock, and Leland the issue is stated to be, "A can having its parts which are to be separated to open the can joined by solder, and having such parts intentionally constructed and arranged to move toward each other upon the direct application to either of such parts of force properly directed and sufficient to break the solder."

Between Messrs. Perkins and Perkins and the patent of Leland, "A sheet-metal can the rim of whose head is set obliquely to the body of the can, and which, at its head, is united thereto by a designedly frangible joint, there being an interspace between the head and body to permit them to approach each other on fracture of the joint."

The same principle is involved in all the distinct cases. The construction is such that by forcing down the

cover of the can the soldered edges are ruptured and the cover can then be removed.

Preliminary to the discussion of the question of priority, my attention was called, by counsel for Messrs. Compton, Chinnock, and Leland, to a question raised, both before the Board and the Examiner of Interferences, as to the standing of Messrs. Perkins and Perkins as joint inventors.

Reliance was placed upon the testimony of George H. Perkins alone, by the parties opposing him, to show that he was the sole inventor of the device in controversy. In his direct examination George H. Perkins, in giving the history of the making of the invention, uses the singular pronoun, as if he had alone conceived of and worked out the invention. There is no direct and positive statement in that testimony that he was not aided by his brother, the other party joined with him in the application, and it is only a matter of inference from the language used by him in reciting the incidents attending the making of the invention. I doubt whether this would be sufficient to overcome the oath of the parties as to their joint invention. But it appears, further, from the testimony in answer to interrogatory 9, that his brother was with him when Exhibit B was made; that he "took up the experiments and conducted them for perfecting the details for making machinery for getting the cylindrical bodies, for perfecting machinery for drawing the lids, and for making solder of the desired frangibility." Also, in answer to interrogatory 10, he speaks of his brother using the blacking-box bottoms, which were used as covers in the course of the experiments.

He refers, also, to his brother, J. H. Perkins, in answer to cross-interrogatory 26 to the same effect. And J. H. Perkins is also referred to, in the testimony of Crumback, as having a share in the experimenting upon the cans. Under such circumstances I should not feel justified in going behind the oath of these parties, and deciding that they were not joint inventors. (*Wheeler* vs. *Russell* and *Miller*, C. D. 1872, p. 32; *Chase* vs. *White* and *Chase*, Ibid 1873, p. 99; *Carter & Dreyer* vs. *Perry & Dickey*, Ibid 1875, p. 112.)

The question of priority of invention is not difficult of solution. It is proved that Exhibits A and B were made by Perkins and Perkins in March of 1875. These exhibits show the invention in controversy. I think there is no doubt that they were following the invention diligently, reducing it to practice, providing machinery for the successful manufacture of the improved can, and in due order they filed an application for a patent. Beyond question, there is nothing which can pretend to antedate this except the English patent of Chinnock, which he puts in evidence to show priority of invention upon his part. This patent is of 1872.

I have examined carefully the specification and drawing of this English patent, and do not find therein the invention in controversy. Figure 16 of the drawing comes nearest to showing the invention. It may possibly be, that if a can were made precisely in the form as shown in the sectional Figure 16, it might be opened in the manner called for in the specification of Perkins and Perkins; but the invention described in the English patent of Chinnock is another and distinct invention. The general object had in view was the same, but the principle of the invention is radically different.

In order to remove the cover from the cans Chinnock proposed in his English patent to wrap about the can and the flange of the cover, over the line of junction, a strip which was to be soldered down in such manner as to be removable. One end was to overlap the other, and in order to remove the cover this strip could be torn off by taking hold of the overlapping end. There are some modifications of the plan, but the general idea is the same. There is no hint of leaving a space between the upper edge of the can and the inner surface of the cover, or any equivalent construction by which the cover could be crushed down in order to rupture the solder at the junction of the cover and the can. I am of the opinion, therefore, that Perkins and Perkins must be considered joint inventors, and that they are also prior inventors over the other parties in the controversy.

I therefore affirm the decision of the Board of Examiners-in-Chief, and award priority to Perkins and Perkins.

TRADE-MARKS.—*Appeal.*

[*Appeal from the decision of the Examiner of Trade-Marks in the matter of the application of Edward Warburg & Co., for registration of trade-mark filed May 28, 1877.—Decided August 25, 1877.*]

The words "Cachemire Milano" denied registration as a trade-mark for silk.

They may be properly descriptive of quality or origin, or are deceptive, and in either event are not registerable.

Such words distinguished from those which have a coined or fanciful signification that renders them unobjectionable as trade-marks.

DOOLITTLE, *Acting Commissioner:*

Applicants ask to have registered as a trade-mark the term "Cachemire Milano," to be applied to black silks. The term is used in connection with the words "R. Savie & Co.," and with a picture of the cathedral of Milan.

If not previously registered in connection with the same class of goods, the picture of the cathedral would be accepted as a proper trade-mark; but applicants assert that the essential part of their mark is the word-symbol "Cachemire Milano."

The decision of the Examiner of Trade-Marks on this point is exhaustive, I think, and is adopted and affirmed. It is as follows:

> The word "Cachemire," or "Cashmere," is not arbitrarily selected as a mark for silks, because it might easily have reference to a peculiarity of the silk. It would be the appropriate and only appellation for a fabric uniting the qualities of cashmere and silk; it might be applied to a species of silk resembling cashmere in appearance, or in the processes of its manufacture. As a matter of fact there is a well-known variety of silk characterized by a soft and lusterless finish, which goes by the name of "Cashmere black silk." The applicant is, therefore, seeking to register the proper name of an article of commerce, and his proposed mark would in fact give him a monopoly in the sale of such goods. The law is well settled on this point, and it is sufficient to refer to the decision of the Commissioner in *Laurence & Co.*, 10 OFFICIAL GAZETTE 163, and to case of *Fetridge* vs. *Wells*, Cox Am. Trade-Mark Cases, p. 183. The word "Milano," or "Milan," which by itself might conceivably be a fanciful term as applied to silk, becomes itself insignificant from its connection with a descriptive term, and to allow applicant to register it would prejudice the rights of those residents of Milan who might desire to manufacture and advertise Milan cashmere silks. In case it should be held that the words "Cachemire Milano" are not descriptive, they must then be held, according to the practice of the Office, to be deceptive. They have not the merit of being newly coined, like "Castroleum" or "Cocoaine," nor of being symbolically used, as "Rising Sun," when applied to an article of commerce. They are, in their proposed use, merely a misnomer, and are calculated to deceive. (*American Sardine Co.*, C. D. 1873, p. 83.) An inspection of the goods might or might not undeceive the purchaser; but this does not go to the essence of the objection. The mark is false and tends to deceive, and that is conclusive against the applicant. The same answer lies to the argument of attorneys, that the name of an inferior article is applied to a superior one. In fact, if the words in question are held to be not descriptive, the case is so perfectly analogous to that of the *American Sardine Co.* above cited that further argument is deemed unnecessary.

PRACTICE IN DECLARING INTERFERENCES.

[*In the matter of the interference between Stephens and Bailey. Subject, "BARB-FENCES."—Decided September 18, 1877.*]

In declaring an interference under Rule 53, Office Practice, the issue stated should contain a brief summary of the contested subject-matter, and should specify the conflicting claims. The omission of either is equally an error.

DOOLITTLE, *Assistant Commissioner:*

In this case the Examiner of Interferences returned the interference papers to the Primary Examiner upon an examination of the preliminary declaration, for the reasons that the interfering subject-matter, in his opinion, was not briefly and concisely defined, and that the claims involved were not specified.

Rule 53 requires that the Primary Examiner "will briefly and concisely define the interfering subject-matter, and specify the claims embracing the same." The object of this rule was to obviate all uncertainty and misconstruction of the issue, which had previously often arisen, greatly to the annoyance and confusion of the tribunals before whom the issue was discussed, and also to the parties and attorneys.

It seldom occurs that interfering claims are couched in precisely the same language, and are not susceptible of different constructions, and it is often the case that the matter in interference is claimed by one party, while it is only shown or described by the other. It has become absolutely necessary, therefore, that a clearly-defined and well-ascertained issue should be set forth by the Primary Examiner, which issue should consist of a description of the precise subject-matter in interference, apart from the specification by him of the claims which embrace it. To mention the matter constituting the issue without specifying the claims is not a full compliance with the rule, nor is it to mention the claims without defining the matter. The requirements of the rule are not to be overlooked because the language of the claims of the respective contestants happens to be the same, or substantially the same, as in the present case. The tribunals before whom the matter of priority is to be argued should not be compelled to travel through the record and make up the issue for themselves.

The Commissioner concurs in approving the action of the Examiner of Interferences.

DECISIONS OF THE COURTS.

Circuit Court of the United States—District of Massachusetts.

THE ATLANTIC GIANT POWDER COMPANY *vs.* GEORGE A. GOODYEAR. SAME *vs.* GEORGE W. TOWNSEND.

In Equity.—Before SHEPLEY, *J.—Decided December 22, 1877.*

MOTION FOR INJUNCTION PENDENTE LITE.

The explosive compound consisting of a combination of nitro-glycerine with infusorial earth (Reissue Letters Patent No. 5,799) is infringed by one in which the nitro-glycerine is mixed with a mealed powder composed of nitrate of soda, charcoal, and sulphur, it appearing that the powder, as an ingredient, is substantially the same as the infusorial earth in function and effect, although possessed of additional advantageous qualities as well.

When a substitute is used for one ingredient in a patented combination which has every property, and performs every function of the original in the combination, it does not cease to be an equivalent because, in addition, it does something more and better.

The original patent having called the absorbent material "inexplosive" with which the nitro-glycerine was mixed: *Held*, that to omit the term upon reissue was no enlargement of the invention. The word is ambiguous, since it is clear from the original description that the patentee did contemplate the use of materials which, though explosive, were not so in comparison and under like conditions with nitro-glycerine.

The patent having been adjudged valid by the court in a former trial, a preliminary injunction decreed, even though an independent suit based upon the patent was in progress in another court of equal jurisdiction.

SHEPLEY, *J.:*

The reissued patent of complainants (No. 5,799) for the invention of Nobel of a new explosive compound, consisting of a combination of nitro-glycerine with infusorial earth, or other equivalent substance, was fully considered by this court in the case of *The Atlantic Giant Powder Company* vs. *Mowbray*, (2 Holmes.) In that case the reissued patent was fully sustained as valid, and as not claiming in the reissue any invention different from the one substantially set forth and suggested in the original. The question presented in this case is, whether the pulverulent powder compounded of the usual proportions of nitrate of soda, charcoal, and sulphur, as used in the "Vulcan blasting-powder," in combination with nitro-glycerine, is, for the purposes of and in that combination, the equivalent of "*the substance*" described in the Nobel patent, which "possesses a great absorbent capacity, and which, at the same time, is free from any quality which will decompose, destroy, or injure the nitro-glycerine, or its explosiveness," thus, when combined with nitro-glycerine, forming out of the two ingredients "a composition which, without losing the great explosive power of nitro-glycerine, is very much altered as to its explosive and other properties, being far more safe and convenient for transportation, storage, and use than nitro-glycerine." The preferred form of this substance, as described by Nobel, was the *kieselgurgh*, or infusorial earth. The substance used by defendants, in combination with nitro-glycerine, is a mealed powder of nitrate of soda, charcoal, and sulphur, in proportions the same as in some gunpowder in common use in granular form. This substance has in the combination "a great absorbent capacity," and it is "free from any quality which will decompose, destroy, or injure the nitro-glycerine or its explosiveness." The compound of this substance with nitro-glycerine, without losing the great explosive power of nitro-glycerine, is far more safe and convenient for transportation, storage, and use than nitro-glycerine. It does not appear to be contended that the substance itself used by defendants does not possess, in the combination, every property claimed for the infusorial earth in the dynamite patent, or that the combination of it with nitro-glycerine, as "Vulcan blasting-powder," does not possess every attribute and property in a greater or less degree possessed by dynamite.

The contention of defendants is, that the only object and aim of Nobel's invention, as patented, was to render nitro-glycerine safer in handling and transportation; that there was no intent to augment its explosive force; that, on the contrary, the solid substance exerted no influence and remained as inert matter, while the object of the manufacturer of the Vulcan powder is stated to be "to render the explosion and combustion of gunpowder instantaneous." That this is not the sole or principal object of the combination is perfectly evident. If the only object of the combination be "to render the

explosion and combustion of gunpowder instantaneous," why begin the process by substituting for the granular gunpowder, so highly explosive, a mealed powder of the same ingredients in a pulverulent state, and of a lower degree of explosiveness than grained powder? As nitro-glycerine has eight or ten times the explosive force of the same quantity of gunpowder, as it explodes under proper conditions much more rapidly and instantaneously than gunpowder, the object of the compound is, manifestly, not merely to get an instantaneous explosion and combustion of the gunpowder, but *primarily* to effect an explosion, the operative effect of which is principally due to the nitro-glycerine in the compound, although augmented in some degree by the gas generated by the explosion of the powder. If the purpose be merely, by means of the nitro-glycerine, to effect instantaneous combustion of the powder, why is the ingredient of sulphur introduced, whose only function is to facilitate ignition—a purpose better accomplished by the nitro-glycerine itself? The real question in the case is more truly stated as follows: Does the substitution of gunpowder, as used in the Vulcan powder in combination with nitro-glycerine, in the place of the infusorial earth or other absorbent described by Nobel, make the combination a different and not an equivalent compound, because when gunpowder is used as an absorbent, in addition to fulfilling every condition and performing every function of the absorbent in the dynamite compound up to the time of the explosion, and at that time, it *then* has the additional function of co-operating, by means of its conversion into gas, with the nitro-glycerine in rending the rock, instead of remaining, like the infusorial earth, an inert substance?

The mica powder of Mowbray was held to be an equivalent of the dynamite, and to be subordinate to the dynamite patent, although the mica scales of Mowbray, while possessing all the properties which render the infusorial earth efficient and useful in the compound, had additional properties of greater elasticity and resiliency, and although the nitro-glycerine used by him and prepared by his process was much more effective than the less highly nitrated nitro-glycerine known to Nobel at the date of his invention. The books are full of cases proving that when a substitute is used for one ingredient in a patented combination which has every property and performs every function of the original in the combination, it does not cease to be an equivalent because, in addition, it does something more and better.

The equities in Mowbray's case were much stronger than in this case. For Mowbray, although not the first and original, but a subsequent inventor, was in fact an independent inventor of the substance of the Nobel invention, and he also made a subsidiary invention an improvement on the dynamite invention. In the present case there is no evidence of a combination of nitro-glycerine with gunpowder *as an absorbent* before the invention of Nobel, or even before it was used by the owners of the Nobel patent, as one of the modes of using and embodying his invention. The defendants rely upon the position assumed by them that, as gunpowder is an explosive of itself, the use of it in the combination is open to them, as the assignees of Nobel are claimed by them to be limited by the terms of their patent to a non-explosive substance as the absorbent. At the hearing on this motion the argument was strenuously and forcibly presented to the court that Nobel described his absorbent as an "inexplosive" substance, and that if the omission of the term "inexplosive" in the reissue enlarges the scope of the invention, the reissue itself is void; and that if the reissue is to be construed in connection with the original, and for the same invention, it must be limited to the use of absorbents as equivalents which are inexplosive. This position of the defendants is entitled to careful consideration.

In *Russell* vs. *Dodge*, (93 U. S. Reports,) in delivering the opinion of the Supreme Court of the United States, Mr. Justice Field says: "The change made in the old specification by eliminating the necessity of using the fat liquor in a heated condition, and making in the new specification its use in that condition a mere matter of convenience, and the insertion of an independent claim for the use of fat liquor in the treatment of leather generally, operated to enlarge the character and scope of the invention. The evident object of the patentee in seeking a reissue was not to correct any defects in specification or claim, but to change both, and thus obtain in fact a patent for a different invention. This result the law, as we have seen, does not permit." See also *Seymour* vs. *Osborne*, (11 Wall., 544.) The reissue in this case is not invalid according to the principles of law as stated in *Russell* vs. *Dodge*, and *Seymour* vs. *Osborne*. The word "inexplosive" is applied in the original patent as a term of description to a substance only preferentially used. The other descriptions in the specification clearly apply to substances which in one sense may be explosive, but are inexplosive as compared with nitro-glycerine. The word "inexplosive" appears clearly to have been used in the original patent to describe substances which, as compared with nitro-glycerine, were inexplosive by concussion, which would not, of themselves, explode under those conditions which rendered nitro-glycerine so dangerous and unsafe for practical use, and which, inexplosive of themselves under those conditions, when combined with nitro-glycerine, would make the combination a compound which would also be inexplosive except under such conditions as were not inconsistent with substantial safety in its use for blasting and similar purposes. In this sense the mealed powder used by the defendants is inexplosive. It prevents, by the interposition of its particles, the explosion of the nitro-glycerine by any such concussion as would ordinarily explode it when uncombined with an absorbent. It makes the compound practically inexplosive under ordinary fortuitous and accidental concussions, and practically explosive only under predetermined and prearranged conditions. The word is omitted in the reissue, and we think properly omitted, not for the purpose of including equivalents which were not within the scope of the original invention as described, but as an ambiguous expression not consistent with the other words in the specification which clearly describe the absorbent, its properties and functions, all of which properties and functions, it is evident, from a reading of the original patent, might appertain to a substance explosive under some conditions, but inexplosive under those conditions which made nitro-glycerine explosive by concussion, and dangerous and unsafe for practical use.

The conclusion, therefore, I think, is a legitimate one, that under the reissued patent the owners of the patent are not limited to treat as infringements the use of such equivalents only as are actually inexplosive, but they are entitled to the exclusive use of such equivalents as are inexplosive as compared with nitro-glycerine, and which, while complying with the other requisites of the infusorial earth in the combination, will, also, when combined with nitro-glycerine, form out of the two ingredients a composition which, without losing the great explosive power of nitro-glycerine, is more safe and convenient for transportation, storage, and use than nitro-glycerine.

The objection is taken by the counsel for the defendants to the granting of a preliminary injunction by this court in the cases now before the court, for the reason that an action has been pending for two years and upward in the circuit court for the second circuit, in which the same questions are involved, and that no effort has been made to prosecute such action or to obtain a preliminary injunction. It is proved that this action is pending in the circuit court for the second circuit. It is urged that the courtesy usually observed by one court toward another court of equal jurisdiction should deter this court from the exercise of its power to grant a preliminary injunction till that case, which was first originated in the other tribunal, should be finally brought to trial and decided by the court.

A consideration of the condition of this litigation in the respective courts will show that there is no foundation for this objection, and no ground for contending that the exercise of the jurisdiction of this court over the subject-matter would involve any want of courtesy to the court in which the other action is pending.

It is to be observed, in the first place, that the Nobel patent, under which this litigation arises, has been made the subject of litigation in this circuit, and that the Nobel patent, after a long and patient and exhaustive examination and argument by able counsel, and a hearing of the testimony of the most competent experts, has been adjudicated to be valid. The foundation, therefore, has been laid in this circuit for a motion for a preliminary injunction. The patent itself having been sustained after a litigation closely contested and free from any pretense of collusion or of any neglect to properly raise and ably present any issues which could be raised in defense, there is good ground upon which the parties complainant can urge with more force their motion for the preliminary injunction in this circuit, in which the validity of the patent itself has been sustained, in which the principal questions arising in this case, as well as in others, in relation to the validity of the reissue, have been fully tried and determined.

If such had not been the case in this circuit, and if there were a case pending in another circuit court of the United States involving the validity of this patent which had not been adjudicated upon in this circuit, and that case had progressed to a final hearing and was before the court for adjudication in such other circuit, this court, in the exercise of proper courtesy toward other tribunals of concurrent jurisdiction, would probably decline to hear a motion for a preliminary injunction, and would certainly decline to adjudicate upon it, under ordinary circumstances, without awaiting the decision of such other circuit court before which the case was pending for adjudication after a final hearing.

It would seem to follow that in this court, in which there has been such adjudication after a final hearing and a determination upon the validity of the patent, was the place, and peculiarly the proper place, to make the motion for a preliminary injunction, and that the exercise of its jurisdiction involves clearly no want of courtesy to any other tribunal in which such case has not reached a final hearing, and in which the testimony does not appear to have been taken. The injunctions, therefore, in these cases must issue against the defendants in the usual form.

U. S. Circuit Court—Eastern District of Pennsylvania.

NORWALK LOCK COMPANY *vs.* BERGER, MATHES, *et al.*

[*In Equity.—Before* MCKENNAN, *Cir. J.—Decided January* 17, 1878.]

Reissue Letters Patent No. 3,909, *granted April* 5, 1870, *to the Norwalk Lock Company, (assignees,) for* "IMPROVEMENT IN REVERSIBLE KNOB-LATCHES," *declared valid.*

[*Charles Howson*, for complainants; *A. H. Evans*, for defendants.]

DECREE.

MCKENNAN, *Cir. J.:*

And now, to wit, this 17th day of January, 1878—

This cause having been brought to final hearing upon the pleadings and proofs, and counsel for the parties respectively having been heard thereupon, and the same having been duly considered by this court, it is found, and hereby ordered, adjudged, and decreed, that letters patent reissued April 5, 1870, numbered 3,909, to the Norwalk Lock Company, assignees of Henry H. Elwell, for improvement in reversible knob-latches, and set forth in the bill of complaint filed, are good and valid, and that the title thereto is duly vested in the complainants.

And it is further ordered, adjudged, and decreed that the defendants have disturbed, violated, and infringed the exclusive right of the complainants under the said letters patent, as in said bill set forth.

And it is further ordered, adjudged, and decreed that the complainants do recover of the defendants the profits, gains, savings, and advantages made by the said defendants in consequence of the said infringement and violation of the exclusive rights of the complainants under the said letters patent, together with the damages the complainants have sustained thereby, and the costs, charges, and disbursements in this suit to be taxed.

And it is further ordered, adjudged, and decreed that it be referred to Robert N. Willson, Esq., as master, to ascertain and take, and state and report to the court, an account of the gains, profits, savings, and advantages which the said defendants have received, or which have arisen or accrued to them from infringing the said exclusive rights of the said complainants under the said letters patent, as well as of the damages the complainants have sustained thereby.

And it is further ordered, adjudged, and decreed that the complainants, in such accounting, have the right to cause an examination of said defendants, *ore tenus* or otherwise, and also the production of the books, vouchers, and documents of defendants, and that the said defendants attend for such purposes before said Robert N. Willson, Esq., master, from time to time, as said master shall direct.

And it is also further ordered, adjudged, and decreed that a perpetual injunction be issued in this suit against the said defendants, according to the prayer of the bill.

U. S. Circuit Court—Western District of Missouri.

ETHAN B. WRIGHT *vs.* ROLAND MCMILLAN; SAME *vs.* LEWIS HICKEY; SAME *vs.* WILLIAM SMITHPETER; SAME *vs.* HENRY GLICK.

[*In Equity.—Before* KREKEL, *J.—Decided November* 1877.]

Suit was brought in all four cases for infringement of Letters Patent (reissue) No. 2,667, granted to A. C. Teel, July 2, 1867, for "IMPROVEMENT IN FARM-GATES." In delivering an oral opinion, the Judge stated that it did not appear from the evidence that Teel

was the first and original inventor of the improvement described and claimed. It was specially ordered that the decree should go no farther than dismissing the bill with costs.

KREKEL, *J.*:

This cause came on to be heard at this term, and was argued by counsel; and thereupon, on consideration thereof, it was ordered, adjudged, and decreed that the complainant's bill be dismissed, and that said defendant, Roland McMillan, recover against the complainant, Ethan B. Wright, and Isaac R. Brown, his security, for costs, his costs and charges herein expended, and have thereof execution.

Like decree in the other cases.

TRADE-MARKS.

5,480.—REAPING-MACHINES AND MOWING-MACHINES.—*Adriance, Platt, & Co.*, Poughkeepsie and New-York, N. Y. Application filed December 12, 1877.

"The figure of the part of a cog-wheel, as above described, with the word-symbol 'ADRIANCE.'"

5,481.—PLUG-TOBACCO.—*Boyd & Co.*, St. Louis, Mo. Application filed December 17, 1877.

"A wheel surrounded by an ellipse."

5,482.—MINERAL WATER.—*Archelaus A. Colby*, New York, N. Y. Application filed December 15, 1877.

"The word-symbol 'DEEP ROCK.'"

5,483.—BACON, HAMS, AND CURED AND PICKLED MEATS.—*Samuel Dally*, Brooklyn, N. Y. Application filed December 17, 1877.

"The arbitrarily-selected word-symbol 'ANCHOR,' in connection with a representation of an anchor."

5,484.—PLUG CHEWING-TOBACCO.—*Gem City Tobacco Works*, Quincy, Ill. Application filed December 17, 1877.

"The word-symbol 'GOLDEN RULE.'"

5,485.—OIL-WELL SUPPLIES.—*Gillespie Brothers & Co.*, Pittsburg, Pa. Application filed December 17, 1877.

"The representation of a Continental soldier."

5,486.—CORSETS AND CORSET-CLASPS.—*Nathan Hyman*, New York, N. Y. Application filed December 15, 1877.

"The fancifully-selected word-symbol 'WELCOME.'"

5,487.—PACKED AND HERMETICALLY-SEALED MEATS.—*The St. Louis Beef Canning Company*, St. Louis, Mo. Application filed December 18, 1877.

"The pictorial representation of a steer or ox standing upon a buffalo-scalp, between the broad spread of a huge pair of horns, resting upon two upright cans of meat, in connection with the words 'BEEF CANNING Co.'"

5,488.—COTTON GOODS.—*Barnes, Bancroft & Co.*, Buffalo, N. Y. Application filed November 15, 1877.

"The word-symbol 'LANCASTER.'"

5,489.—SOAP.—*Curtis Davis & Co.*, Boston, Mass. Application filed November 8, 1877.

"The word-symbol 'WELCOME.'".

5,490.—DRIED OR EVAPORATED FRUIT.—*Camp & Blair*, Milford, Del. Application filed November 19, 1877.

"The letters 'C. & B.' in the center of a diamond-shaped figure."

5,491.—FLOUR.—*Empire Mill Company*, St. Louis, Mo. Application filed June 27, 1877.

"The word-symbol 'FANCY.'"

5,492.—MEDICAL PREPARATION.—*E. F. Houghton & Co.*, Philadelphia, Pa. Application filed February 8, 1877.

"The fanciful word 'PETROLEI.'"

5,493.—TWIST-TOBACCO.—*J. W. & C. G. Holland*, Danville, Va. Application filed December 8, 1877.

"The word-symbol 'PINE APPLE.'"

5,494.—ROASTED AND GROUND COFFEE.—*Warren J. Lown*, Washington, D. C. Application filed October 27, 1877.

"The word-symbol 'GREEN LEAF.'"

5,495.—SEMI-TROPICAL FRUITS.—*Frederick Loewer*, Brooklyn, N. Y. Application filed November 21, 1877.

"A circle and the letter 'L.'"

5,496.—MEDICAL COMPOUND.—*J. Walter Smith*, New York, N. Y. Application filed October 20, 1877.

"The following fanciful words and device, to wit: 'THE MONK'S LEGACY, OR VITAL RESTORATIVE; OMNE VIVUM EX OVO.'"

5,497.—ARTICLES OF CLOTHING.—*The Double Thread Sewing Company*, Boston, Mass. Application filed December 10, 1877.

"The representation of a scene in a clothing-store, with counters in the background, upon which are displayed goods appropriate to the establishment, as shown in the accompanying fac-simile. In front of the counters, and in the foreground of the illustration, are two persons endeavoring to pull asunder a garment, while somewhat in rear of them is a third person, who looks on as a delighted witness of their vain attempt to rip the seams of the garment."

5,498.—ARTICLES OF CLOTHING.—*The Double Thread Sewing Company*, Boston, Mass. Application filed December 10, 1877.

"The representation of a human hand, as shown in the accompanying fac-simile, resting upon a table, between the thumb and forefinger of which is held a needle, such needle having two eyes, while through each of such eyes passes a thread from one of two spools placed upon the table in immediate proximity to the hand."

5,499.—BOOTS AND SHOES.—*The Double Thread Sewing Company*, Boston, Mass. Application filed December 10, 1877.

"The representation of a group of persons in the street, as shown in the accompanying fac-simile, composed, first, of one (preferably an elderly person) who looks at one foot in dismay at the condition of her boot, which has ripped in the seams, and to which her attention has been called by the jeering comments of a gamin who stands beside her. The group further includes another lady, (preferably young and fashionably dressed,) who displays to the other one of her feet, upon which is a boot in perfect repair, while a third lady, somewhat in the background, looks on as an interested spectator."

5,500.—BOOTS AND SHOES.—*The Double Thread Sewing Company*, Boston, Mass. Application filed December 10, 1877.

"The representation of a boot inclosed within a concentric circular ornamental border, while within the border and about the boot we employ the words 'THE DOUBLE THREAD SEWING COMPANY.'"

5,501.—ROOFING CEMENT AND FELT.—*Warren, Lober & Co.*, Philadelphia, Pa. Application filed November 9, 1877.

"The representation of a star."

DESIGNS.

10,390.—RUBBER FABRIC.—*Augustus O. Bourn*, Bristol, R. I. Application filed May 12, 1876. Term of patent 14 years.

10,391.—BUTTONS.—*George C. Britner*, Brooklyn, N. Y. Application filed November 26, 1877. Term of patent 3½ years.

10,392.—GLASSWARE.—*John H. Hobbs*, Wheeling, W. Va. Application filed December 26, 1877. Term of patent 7 years.

10,393.—TEA CANISTER OR CADDY.—*Elisha Morgan, Jr.*, Chicago, Ill., assignor to *The Chicago Stamping Company*. Application filed December 17, 1877. Term of patent 7 years.

10,394.—CANISTER OR CADDY FRONT.—*Elisha Morgan, Jr.*, Chicago, Ill., assignor to *The Chicago Stamping Company*, same place. Application filed December 15, 1877. Term of patent 3½ years.

10,395.—HANDLES OF TABLE-WARE.—*Thomas Maddock*, New York, N. Y. Application filed December 29, 1877. Term of patent 7 years.

10,396.—FUNERAL ORNAMENT.—*William M. Smith*, Meriden, Conn., assignor to *Meriden Britannia Company*, same place. Application filed December 11, 1877. Term of patent 7 years.

10,397.—INKSTANDS.—*Otto F. Fogelstrand*, New Britain, assignor to *Hart, Bliven & Mead Manufacturing Company*, Kensington, Conn. Application filed December 6, 1877. Term of patent 7 years.

LABELS.

1,347.—Title: "DART'S COUGH SYRUP," &c.—*H. D. Barto*, Rochester, N. Y. Application filed December 18, 1877.

1,348.—Title: "BLACK'S EXPECTORATIVE."—*J. R. Gorham, Jr.*, Newburg, N. Y. Application filed November 2, 1877.

1,349.—Title: "GENUINE PERSIAN TOOTH PASTE."—*Eugene C. Lee*, Boston, Mass. Application filed December 3, 1877.

1,350.—Title: "MARSHALL'S RHEUMATIC OIL LINIMENT."—*Mary W. Marshall*, Fond du Lac, Wis. Application filed December 14, 1877.

1,351.—Title: "MARSHALL'S RHEUMATIC LINIMENT," &c.—*Mary W. Marshall*, Fond du Lac, Wis. Application filed December 14, 1877.

1,352.—Title: "THE —— BUSINESS DIRECTORY."—*Francis C. Osborn*, Syracuse, N. Y. Application filed December 20, 1877.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

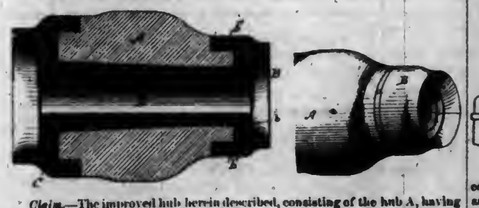
JANUARY 8, 1878.

198,923. HORSESHOES. Darius Alger, Providence, assignor of one-half his right to Joseph O. Tillinghast, Natick, R. I. Filed Oct. 4, 1877.



Claim.—A horseshoe having an outward bevel, C, running around the surface, deeper at the heel ends than on the toe, with a gradual slope, and an interior bevel, *f*, the heel ends E E rounded off, and arranged to support the foot at the counters, and not at or near the frog, substantially as and for the purpose described.

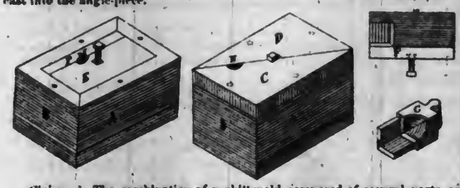
198,924. VEHICLE-HUBS. George P. Bennett, Corning, Iowa. Filed June 12, 1877.



Claim.—The improved hub herein described, consisting of the hub A, having the screw-threaded metal bands *a a* shrunk upon its outer ends, screw-cap C, and elongated box D, cast or formed in one piece, with its outer end screw-threaded, and the metal cap B, having interior screw-threads *b b'*, the several parts constructed and relatively arranged as and for the purpose specified.

198,925. CHILL-MOLDS FOR CASTING METAL. H. R. Bennell, Newark, N. J. Filed Dec. 12, 1877.

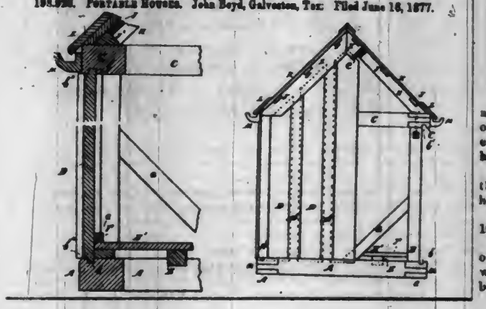
Brief.—Forms a new end part for the mold to replace one worn out, by inserting in the side parts a casting formerly produced by the entire mold, and pouring metal into the open end of the mold formed by the three pieces. Forms a new side part by placing in a box the other side part and an extra piece, and pouring. Casts nuts into the parts by which to handle them. The complete mold is slid over the end of an angle-iron frame piece, and the dovetailed tenon cast into the angle-piece.



Claim.—1. The combination of a chill-mold composed of several parts, as E F H, with a casting produced by it, as G, as and for the purpose set forth.

2. The combination of a sectional chill-mold, as E F H, and an extra piece, as L, and box A B C D, Fig. 1, as and for the purpose set forth.

198,926. PORTABLE HOUSES. John Boyd, Galveston, Tex. Filed June 16, 1877.

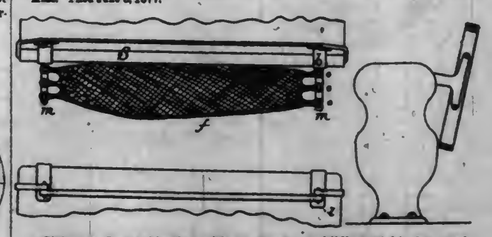


Claim.—1. In a portable house, of the longitudinal strips L L, the vertical sheeting K K, and the purlin J J, all arranged substantially as shown and described with relation to each other and the saddle N, for the purposes set forth.

2. The combination, in a portable house, of the flooring F', the cleats F F, the studs D' D', having thereon the shoulders *c c*, arranged as shown with relation to the cleats F F, all substantially as and for the purposes specified.

3. The combination, in a portable house, of the sills A A, having in their upper faces the grooves *b b*, the side wall-plates C C, similarly grooved in their lower faces, the gable-boards I I, shouldered at *c' c'*, the removable siding D D, the removable studs D' D', grooved in their vertical edges and shouldered at *c c*, the cleats F F, and the flooring, substantially as and for the purposes specified.

198,927. PORTABLE HAMMOCK ATTACHMENTS FOR CAR-SEATS. Myron D. Brooks, Boston Mass. Filed June 8, 1877.

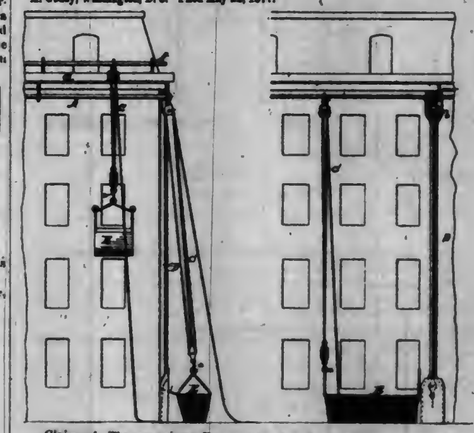


Claim.—1. In combination with a car-seat, a child's portable hammock, constructed and arranged to be attached to and supported by the seat-back, substantially as and for the purposes specified.

2. The combination of hammock *f*, the supporting-brackets formed with the bow *g*, arm *m*, and loops *l l*, with the retaining-straps, all constituting a portable attachment, substantially as described and shown.

3. As a new article of manufacture, a portable hammock-bracket, formed to be attached to a car-seat back, and with a projecting arm, *m*, for the attachment and support of the hammock end, substantially as described and shown.

198,928. FIRE-ESCAPES. Henry Burrows, Georgetown, assignor of one-half his right to Wm. H. Godey, Washington, D. C. Filed May 22, 1877.



Claim.—1. The car or crate E as constructed, the same being provided with a yielding or spring leaf or apron, *k*, to guide and enable the crate to pass easily over the door and window caps, or other projections on a building, when being either raised or lowered, substantially in the manner as and for the purposes herein specified.

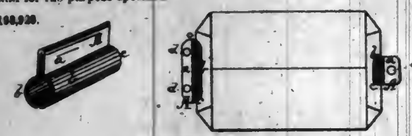
2. The slotted tubes D D, secured vertically to the building, for inclosing the pulley-blocks, and wire ropes C C, to protect them while not in use, but hold them in position for instant use, as shown and described.

198,929. CLASPS. Arthur Christey, Buffalo, N. Y. Filed Sept. 24, 1877.

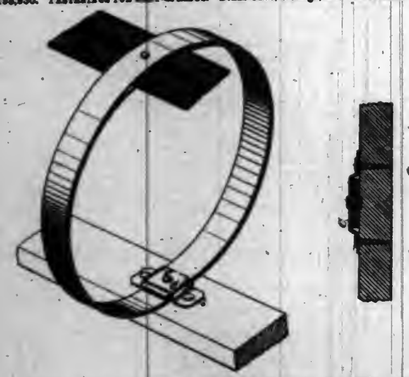
Claim.—1. For fastening together the open end or ends of an envelope, bag, or other package, the clamp or clasp A, constructed of a single piece of metal, with the two lips *b b* and the flat back or rear part *a*, and with or without the beveled ends *c c*, substantially as hereinbefore specified.

3. The metal clasp A *a b b a c*, with the holes *d d* in the flat back part *a*, as and for the purpose specified.

198,929.



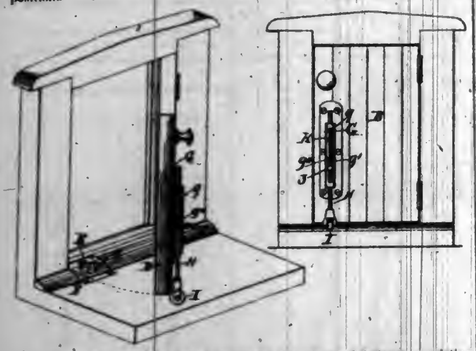
198,930. FASTENINGS FOR SLAT-SPRINGS. Isaac Cobb, Chicago, Ill. Filed June 26, 1877.



Claim.—The herein-described device for fastening the spring to the slat, consisting of the transverse strip of metal C, of such length that its ends project beyond the edges of the spring, which strip is riveted at its center to the spring, the rivet passing through the lapping ends thereof, and bolted, screwed, or otherwise secured to the slat at its ends, substantially as specified.

198,931. DOOR-CHECKS. John W. Craig, Kirkwood, Ill., assignor of one-third his right to H. H. Correll, same place. Filed Oct. 16, 1877.

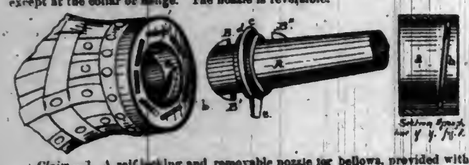
Brief.—A handled spring-rod, carrying at its lower end an anti-friction wheel, works in a tubular projection on a suitable attaching-plate, there being both vertical and lateral slots to constitute adjustable bayonet-fastenings, and the wheel, dropping into a recess of the door-sill, bolts or locks the door in closed position.



Claim.—The herein-described adjustable door stop and fastener, consisting of the plate G, having tubular projection *e*, formed with vertical slot *g'* and lateral slot *g''*, arranged to operate in combination with the spring-rod H K, having handle J and wheel I, and with the recess E of the door-sill, all substantially as and for the purpose specified.

198,932. BELLOWS-NOZZLES. William E. Edwards, Oakland, and Frank J. Grasse, San Francisco, Cal. Filed Oct. 3, 1877.

Brief.—The opening in the head of the bellows is provided with separate segments of a screw-thread. The nozzle has projections which catch the segments. When the nozzle is screwed into its place an air-space is left around it, except at the collar or flange. The nozzle is reversible.



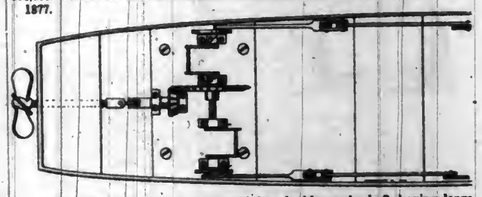
Claim.—1. A self-locking and removable nozzle for bellows, provided with locking-lugs B B', and flange and collar *c* and *d*, and combined and adapted to be used with a ring, ferrule, or other equivalent device, which is inserted and fixed within the opening in the bellows-head, and which is provided with segments of a screw-thread, to engage and hold the lugs B B', substantially as herein described and specified.

2. In combination with a bellows, the ring or sleeve *a*, fixed within the opening in the head, and provided with separate segments of a screw-thread, which are adapted to engage with and hold the lugs or projections formed upon the larger end of the nozzle, the same being constructed, for this purpose, substantially as herein described and specified, whereby the use of screws or bolts is dispensed with.

3. A bellows-nozzle constructed, substantially as herein described, with the lugs or projections B B' B'', and the flange and collar *c* and *d*, and the nib or ear *e*, combined and used in connection with the ring or ferrule *a*, formed as described, and fixed within the opening in the bellows-head.

4. In combination with a ring or ferrule, *a*, fixed within the opening in the head of a bellows, and provided with separate segments of a screw-thread, as described, the nozzle A, having its larger end of less diameter than the size of the ring or ferrule, and provided with lugs B B' upon this end, whereby, when the nozzle is inserted and locked within the head, an air-space will be left between these metal parts, except at the points where the lugs B B' touch the surface of the ring or ferrule, as herein described, for the purpose set forth.

198,933. MEANS FOR PROPELLING BOATS. Thomas Fotherston, Orange, N. J. Filed June 11, 1877.



Claim.—The combination of a revolving double-crank shaft, having large bevel-wheel, with the intermeshing bevel-pinion of the propeller-shaft and the flexibly-jointed propelling-shaft, substantially in the manner described, and for the purpose specified.

198,934. ADDING-REGISTERS FOR PENCILS. Chas. C. Fields, Abingdon, assignor of one-half his right to E. A. Mann and M. G. Mann, Washington County, Va. Filed June 21, 1877.



Claim.—1. The hundreds-registering wheel, having, as a carrying device, a single tooth, extending beyond the ordinary teeth, the tens-wheel, having a single carrying-tooth, and the thousands-wheel, having ten teeth of equal length, said wheels being constructed as described, and situated in the same plane, combined with the detents *g g'*, spring-pawl *f*, ratchet-wheel *e''*, and spring finger-piece *i*, substantially as specified.

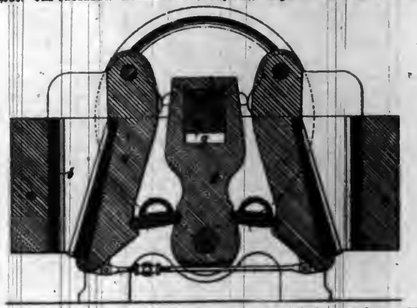
2. The within-described spring semi-spherical detent, combined with a toothed registering-wheel, having on its side a series of semi-spherical depressions for the entrance of said detent, substantially as described.

198,935. SCREW-DRIVERS. William L. Gilchrist, Franklin, N. H. Filed Nov. 20, 1877.



Claim.—The screw-driver A, provided with the wide groove *b*, extending entirely around it, in combination with the trumpet-mouthed tubular gage B and the screw *d*, arranged with and applied to said driver and groove, substantially as set forth.

198,936. ORE-CRUSHERS. Edward Gimson, Stalybridge, England. Filed Oct. 15, 1877.

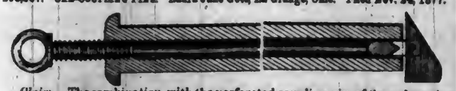


Claim.—1. The combination, substantially as hereinbefore set forth, of the fixed end jaws, the movable jaws, the rocking lever between the movable jaws, and the stays or toggle-connections between the rocking lever and movable jaws, whereby each of said jaws are operated upon by the rocking lever with the full power of the machine, and they are caused alternately to move toward the fixed jaws, thus doubling the amount of work which could be done in a given time by a single set of jaws.

2. The combination, substantially as hereinbefore set forth, of the frame, the movable jaws, the shafts upon which they are supported at their ends, the rocking lever between said jaws, supported upon a shaft at its end opposite that adjacent to the supporting-shafts of the jaws, the stays or toggles connecting the jaws near their free ends with the rocking lever, and the adjustable connection between the free ends of the jaws.

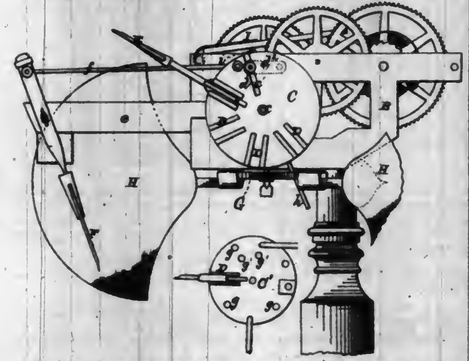
3. The stone-breaker, constructed substantially as hereinbefore set forth, with fixed end jaws, movable jaws, hung at their upper ends and adjustably connected at their lower ends, the rocking lever supported between the jaws at its lower end, to which lever motion is communicated by the driving-shaft and eccentric at its upper end, and the removable stays or toggles, loosely fitting at their ends in the rocking lever and movable jaws, to admit of adjustment of the jaws to vary the size of the crushed stone.

198,937. CAR-COUPLING PINS. Laura Jane Gott, La Grange, Ohio. Filed Nov. 24, 1877.



Claim.—The combination, with the perforated coupling-pin, of the rod passing through it, and provided at its lower projecting extremity with the tilting piece C, swinging freely therefrom, said rod and pin being adapted, as described, to be locked in any desired longitudinal adjustment relative to each other and independently of the buffer or draw-head, substantially as set forth.

198,938. AUTOMATIC FANS. John May, Junction City, Kans. Filed May 24, 1877.



Claim.—1. In an automatic fan, a vibrating disk, C, having one or more radial sockets and slots or apertures, *g g'*, in combination with connecting-rod *f* and fan F, substantially as and for the purpose set forth.

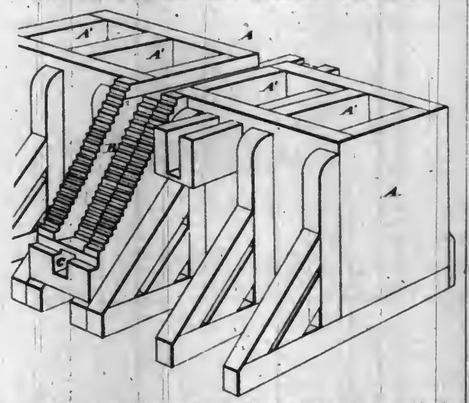
2. In an automatic fan, the vibrating disk C, having an arm or pendant, *h*, in combination with the horizontal lever G, having a fan or fans, substantially as and for the purpose set forth.

3. In an automatic fan, the vibrating disk C, having a socket or sockets, a slot or apertures, and a pendant or arm, *h*, in combination with the connecting-rod *f*, lever G, and fans E F H, substantially as and for the purpose set forth.

4. In combination with the operating mechanism and the leather-covered or frictional wheel *i*, hereinbefore described, the retarding lever or brake I, substantially as and for the purpose set forth.

5. The vibrating disk C, having one or more radial sockets and a slot or slots, in combination with fan E, connecting-rod *f*, and fan F, substantially as and for the purpose set forth.

198,939. WATER-DAMS. Hiram O. Herron, Cleveland, Ohio. Filed Oct. 17, 1877.



Claim.—1. A water-dam composed of the compartments A', in combination with the water-fall B, substantially as and for the purpose specified.

2. A water-dam composed of the compartments A', water-fall B, and gated or valved sluice C, substantially as and for the purposes specified.

3. The compartments A', constructed of horizontally-laid timbers laid in regular courses, each alternate course being a continuous piece extending the entire length of the dam, substantially as and for the purpose shown.

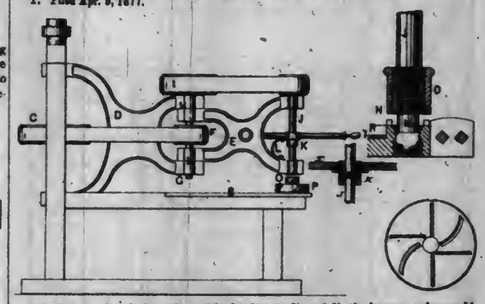
198,940. STOVE AND FURNACE LININGS. Addison B. Hodges, Hyde Park, assignor of one-half his right to Edward B. Wildes, Ipswich, Mass. Filed Nov. 13, 1877.

Brief.—Wrought-iron scrap is hammered to a shape corresponding to the lining, and melted wrought-iron scrap cast around it.



Claim.—The herein-described improved stove or furnace lining, consisting of the interior elastic and porous wrought-iron-scrap core *a a a*, and the metallic shell *b b b* cast around it, in a manner and for the purpose as herein set forth.

198,941. HIDE-FLESHING MACHINES. Edgar B. Holcomb and Dow A. Clay, Port Leyden, N. Y. Filed Apr. 9, 1877.

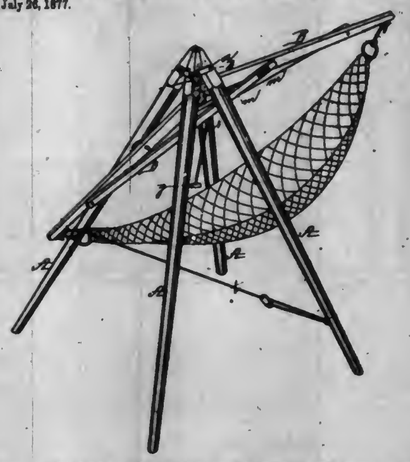


Claim.—1. In combination with the frames D and E, the boxes or sleeves H H, within which the shaft G revolves, all substantially as and for the purpose described.

2. The combination, with the frame E, of the lever T, collar K, shaft J, and supporting-spring L, substantially as and for the purpose set forth.

3. The combination, with the vertical shaft J, of the cutter-head P, with its knives or scrapers arranged radially, tangentially, or spirally from the central opening to the periphery, the head P being connected to the lower end of the shaft J by a ball-and-socket joint, and provided with a screw-coupling and sleeve-clutch, all substantially as and for the purpose stated.

198,942. SWINGING FRAMES FOR SUPPORTING HAMMOCKS. Albt. B. Holmes, Ipswich, Mass. Filed July 26, 1877.



Claim.—1. The beam or frame B, composed of stripe *k* and braces *m*, and provided with a hook or other means of hanging it in place, and with devices or means at its extremities for attaching a hammock thereto, substantially as described.

2. The combination of the legs or supporting-standard A A, the frame or beam B, and the adjustable guy *t*, as and for the purpose specified.

198,943. PROCESSES FOR REFINING RAW SUGAR. G. A. Jasper, Boston, Mass. Filed Sept. 6 1877.

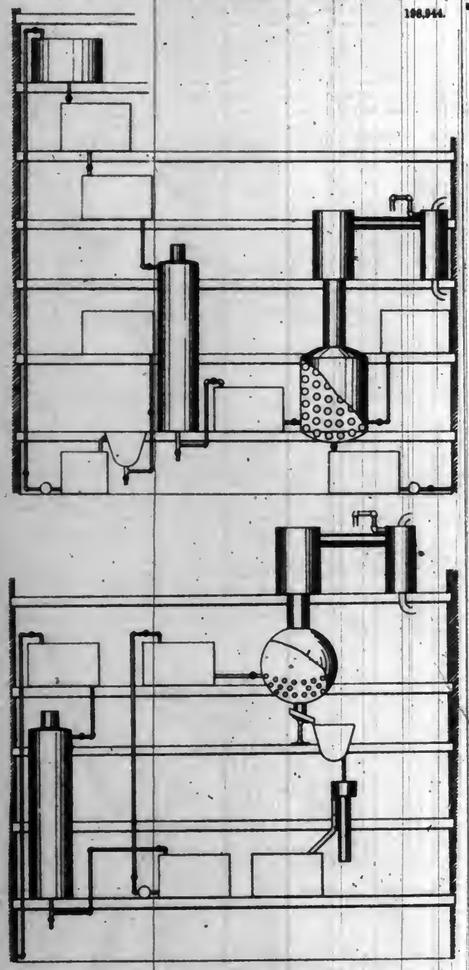
Claim.—The process of refining raw sugar by first dissolving it in warm water to an exceedingly thin liquor of low temperature, filtering the thin liquor, and evaporating it to the density of thick liquor, the low temperature being all the while maintained, and then filtering and crystallizing the thick liquor, chemicals being employed or not, as necessary, substantially as above set forth.

198,944. APPARATUS FOR REFINING RAW SUGAR. G. A. Jasper, Boston, Mass. Filed Sept. 6, 1877.

Brief.—Raw sugar is dissolved in warm water to form a thin liquor (10° to 15° Baumé) of low temperature, (120° Fahrenheit.) This is filtered through bag and bone-black filters, and evaporated to the density of thick liquor, (28° to 28° Baumé,) which is then refiltered and crystallized in the vacuum-pan. (See patent for the process of even date herewith.)

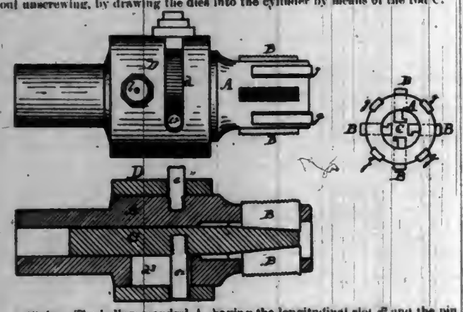
Claim.—Apparatus for dissolving raw sugar and preparing thick liquor, consisting of a mixer, warm-water and granulizing tanks, filters, evaporating-pan, and necessary receiving and conducting tanks, pipes, and pumps, in combination with apparatus for completing the process of producing refined sugar, consisting of a filter, vacuum-pan, mixer, centrifugal, and necessary receiving and conducting tanks, pipes, and pumps, substantially as described.

198,944.



198,945. COLLAPSIBLE SCREW-TAPS. Jas. M. Johnson, Cleveland, Ohio, assignor of one-half his right to Andrew Parker, same place. Filed Sept. 21, 1877.

Brief.—After cutting thread the tap can be withdrawn from the nut without unscrewing, by drawing the dies into the cylinder by means of the rod C.



Claim.—The hollow mandrel A, having the longitudinal slot a^2 and the pin c, the dies B B, having inclined bottoms and slots, the sliding rod C, having the inclined slots with feather for holding the dies B, and the pin c^2, the sleeve D, having the slots d d^2, and the adjustable stop h, when the several parts are constructed, combined, arranged, and operated substantially as shown and described, and for the purpose set forth.

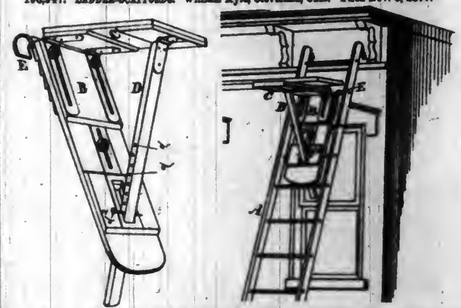
198,946. GUARDS FOR HARNESS-BUCKLES. Thomas P. Kemp, Lawrence, Mass. Filed Oct. 13, 1877.



Claim.—1. The combination, with a harness-buckle and strap, of the adjustable buckle-guard, arranged substantially as shown, for the purpose stated.

2. The buckle-guard A, provided with the metallic strip F, for the purpose set forth.

198,947. LADDER-SCAFFOLDS. William Kyle, Cleveland, Ohio. Filed Nov. 6, 1877.

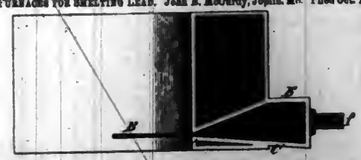


Claim.—The device herein described, consisting of the board B, provided with hooks E E and slots for adjustment of the same, and of the brace, hinged leaf C, and hinged brace D, having holes d and pin d^2, constructed and arranged to operate in combination with ladders A, substantially as and for the purpose set forth.

198,948. VEHICLE-SPRING EQUALIZERS. Dewitt C. Markham, Collinsville, N. Y. Filed June 29, 1877.

Claim.—The crank-rod A E, provided with the intermediate extension H, and journaled in the frame beneath the springs, in combination with the reach B and the connecting-links F, pivoted to either the spring-bar G or the pillow-block I, all constructed and arranged as shown and described, for operation with the springs.

198,949. FURNACES FOR SMELTING LEAD. John B. McCurdy, Joplin, Mo. Filed Oct. 15, 1877.



Claim.—1. The furnace constructed to form a blast slit or opening, B, contracting from its ends to its center, substantially as described.

2. The furnace constructed to form the blast-slit B, in combination with the water-chamber F and water-way b, as and for the purposes herein described.

3. The furnace constructed to form a blast slit or opening, B, the water-reservoir F, water-way b, and blast-chamber C, as described.

198,950. WOOL-COMBING MACHINES. Samuel Metcalfe, Pequonock, Conn. Filed July 11, 1877.

Brief.—The overlying gill-comb has a portion of its teeth in the same plane as, and parallel with, those of the lower comb, so that the wool may be worked by both combs at the drawing-off point. This is effected by mounting the said gill-comb upon an inclined adjustable axis and inclining its teeth. The two combs are revolved together by means of a stud or pin projecting from one and fitting into a slot in the other. At one side of the drawing-off point is a lifter-wheel, which partially presses the fiber into the upper comb.

Claim.—1. In a wool-combing machine, the combination, with a main lower comb or carrier, of an overlying revolving gill-comb, which presents a portion of its teeth in the same plane with the teeth of the lower comb, and parallel therewith, substantially as described, whereby the wool in being drawn off is operated upon by the teeth of both combs, as set forth.

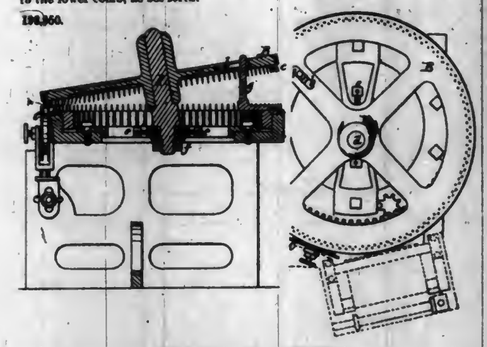
2. The combination, with the lower comb, of an upper circular comb, which revolves in an inclined plane and has inclined teeth, substantially as described.

3. The combination, with the lower and the upper comb, of the grooved lifter-wheel, substantially as described, whereby the wool is pressed into the upper comb without being released from the lower comb, as set forth.

4. The inclined upper comb mounted on an inclined axis, which is adjustable in its seat, substantially as described.

5. The combination, with a circular comb having a radial slot between its hub and rim, of a revolving lower comb provided with a vertical stud, which occupies the slot in the upper comb, substantially as described, whereby the two combs are operatively connected and simultaneously revolved by gearing applied to the lower comb, as set forth.

198,950.

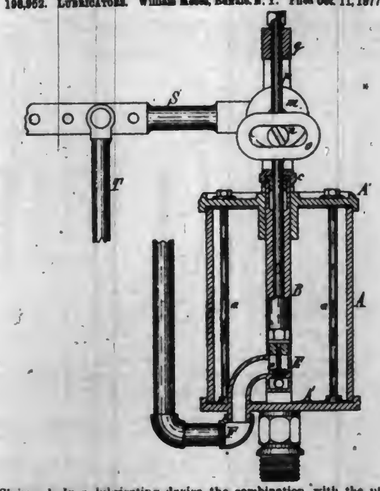


198,951. HAME-FASTENERS. Willoughby Moffatt, Hornellsville, N. Y., assignor of one-half his right to Barney W. Ehert, same place. Filed Nov. 24, 1877.



Claim.—A hame-fastener consisting of the frame A, thumb-piece B, jointed at d, and provided with the spring d^2, arranged substantially as described, in combination with the corred strap-plate G, as and for the purposes specified.

198,952. LUBRICATORS. William Mecos, Buffalo, N. Y. Filed Oct. 11, 1877.



Claim.—1. In a lubricating device, the combination, with the plunger C, provided with slotted yoke o, of the driving-shaft l, crank-wheel m, ratchet-wheel R, and rock-arm S, provided with pawl s, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the shaft l and ratchet-wheel R, of the hollow standard H, friction-block x, and set-screw y, substantially as and for the purpose hereinbefore set forth.

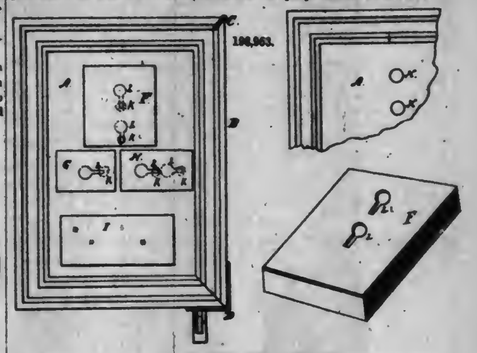
3. The combination, with the cover A^3, provided with a threaded feed opening, a^2, of the cylindrical strainer w, secured with its upper end to a threaded collar, w^1, substantially as and for the purpose hereinbefore set forth.

198,953. ADVERTISING MEDIUMS. Isaac Randall, Milwaukee, Wis. Filed Sept. 18, 1877.

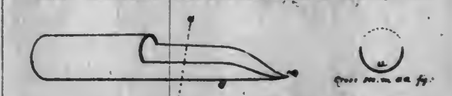
Brief.—Cards or other advertisements are mounted in blocks or tablets by gluing the edges, and are then exposed in public places by being attached to a board having a frame hinged at one corner.

Claim.—The combination of the board A, provided with broad flat headed nails K K, and a surrounding strip, B, hinged at one side, substantially as specified, and the blocks of cards or advertisements F G H I, with pasteboard backs, provided with slots L L L or L', as and for the purposes aforementioned.

198,953.



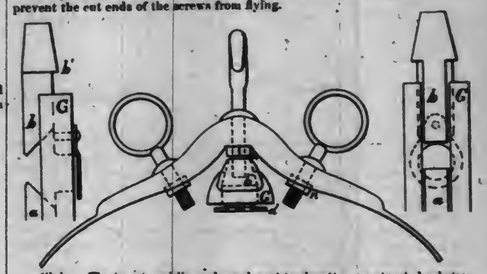
198,954. APPLE-CORERS. Emma E. Orendorff, Delavan, Ill. Filed July 3, 1877.



Claim.—The apple-corer a, of one piece of tubular imperforate metal, tapering, pen-like, to a single point, b, as constructed.

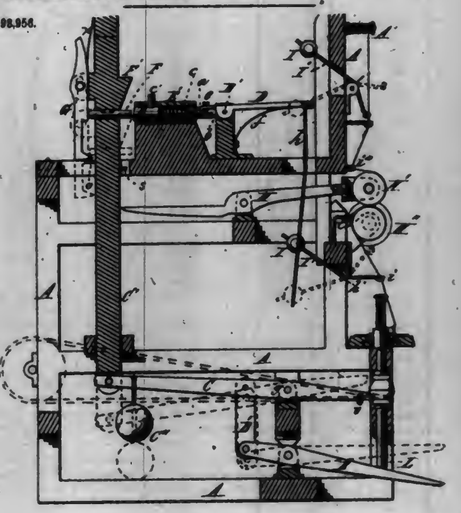
198,955. SADDLE AND PAD SCREW CUTTERS. Robert M. Sollock, Newark, N. J., assignor to Henry P. Osborne. Filed June 19, 1877.

Brief.—An inverted shoot, d, is riveted to the back part of the guide G, to prevent the cut ends of the screws from flying.



Claim.—The turret, saddle, and coach pad hook cutter, constructed substantially as described, with cutters a and b, projecting from the face of the guide G, the lower cutter being provided with a shoulder, a', and the upper cutter with a collar or stop, b', all adapted especially to fit inside of a saddle or coach pad, for cutting off the ends of the turret, saddle and coach pad hooks, substantially in the manner shown and described.

198,956.



196,956. STOP-MOTIONS FOR WINDING AND TWISTING MACHINERY. Dexter Smith, Springfield, Mass. Filed Sept. 7, 1877.

Brief.—A movable catch-bolt attached to a support operates in connection with a catch-lever to throw a latch out of position, which permits a shipping-rod to drop, and by means of a shipping-lever the belt is shifted from a tight to a loose pulley, thereby automatically stopping the machine upon the breaking of a thread.

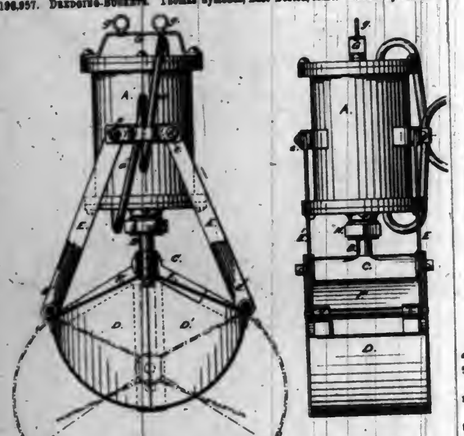
Claim.—1. In a stop mechanism, the movable catch-bolt E, combined with a catch-lever, D, and the adjusting-screw *e*, substantially as described.

2. In combination with the catch-bolt E and lever D, the latch-pin F, latch G, and shipping-rod I', substantially as and for the purposes set forth.

3. The tripping or weighted levers I', in combination with the rod A, the lever D, the catch-bolt E, spring *e*, latch-pin F, and shipping mechanism, substantially as and for the purposes set forth.

4. The shipping-rod C', provided with the cam F, in combination with the catch-bolt E and lever D, whereby, when the said shipping-rod C' falls, the catch-bolt E is thrown forward and caused to engage with the catch-lever D, substantially as described.

196,957. DREDGING-BUCKETS. Thomas Symonds, East Boston, Mass. Filed July 30, 1877.



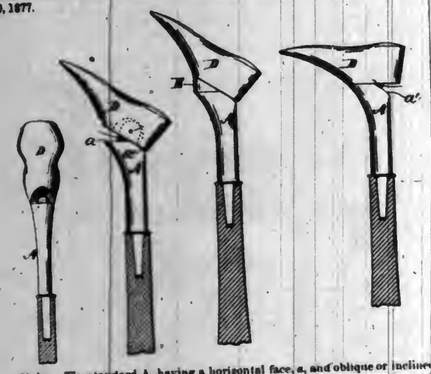
Claim.—1. The method of operating dredging buckets or grapples by means of a hydraulic cylinder, substantially as and for the purpose herein set forth.

2. In dredging-buckets, a diaphragm, F, arranged substantially as shown, and for the purpose described.

3. The combination of a hydraulic cylinder, A, bucket-sections D D', and levers E, E', arranged substantially as shown, and for the purpose described.

4. The combination of a hydraulic cylinder, A, bucket-sections D D', levers E E', cross-head C, and a diaphragm, F, all constructed and arranged substantially as shown and herein set forth.

196,958. BOOT AND SHOE NAILING LASTS. Gustavus V. Wells, Monmouth, Ill. Filed June 9, 1877.



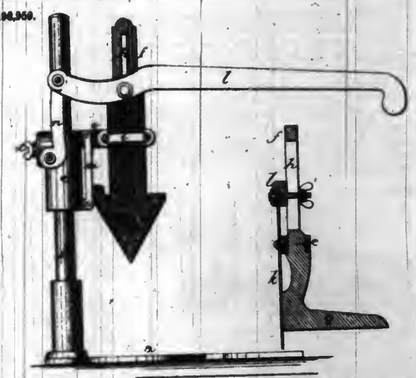
Claim.—The standard A, having a horizontal face, *a*, and oblique or inclined face *a'*, arranged to operate in combination with the last D and removable block E, substantially as and for the purpose specified.

196,959. CAN-OPENER. Charles M. Williams, Bethel, Ky. Filed Dec. 4, 1877.

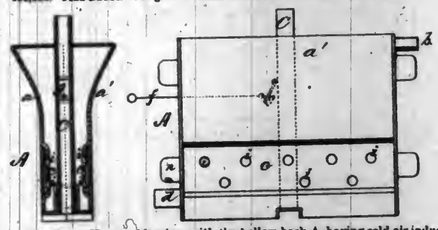
Brief.—An elaborate arrangement of upright standards, slides, arm or lever, pressure-foot, &c., guides and forces down the cutting-knife, which is detachable, and may be of divers shapes, for readily cutting into and opening various shaped cans.

Claim.—The base *a*, standard *b*, slide *c*, arm *e*, square standard *f*, pressure-foot *g*, slide *m*, and connecting-rod *n*, in combination with the operating-lever *l* and knife *k*, the whole being constructed substantially in the manner and for the purpose described.

196,960.



196,960. FIRE-BACKS. George W. J. Wolz, Greenfield, Ohio. Filed June 9, 1877.

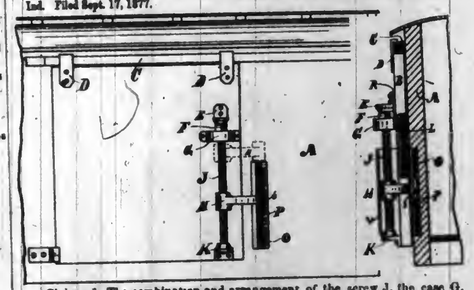


Claim.—1. The combination, with the hollow back A, having cold-air induct *d* and hot-air educt *b*, of the gas-discharging tube C, having register *g*, substantially as specified.

2. The combination, with the fire-back A, having air-chamber B, of the removable plate *c*, substantially as specified.

3. The combination, with hollow fire back A, having recess *c*, with perforations *i*, of the removable fire-plate *c*, substantially as specified.

196,961. INDICATOR-LOCKS. Levi S. Young, Cleveland, Ohio, and Chas. C. Gale, Indianapolis, Ind. Filed Sept. 17, 1877.



Claim.—1. The combination and arrangement of the screw J, the case G, the ratchet T, the brackets E, E, and K, and nut H, provided with an arm and head, P, in the manner and for the purposes hereinbefore set forth and described.

2. The combination and arrangement of the screw J, the nut H, provided with an arm and head, P, and pointer *f*, and the graduated-slide case O, as applied to freight-cars, in the manner and for the purposes set forth and described.

3. The jacket V, arranged and adapted to protect the screw J, when applied to freight-cars in the manner and for the purposes substantially as hereinbefore set forth and described.

4. The screw J, arranged to screw a locking device, H, in a slide, O, and provided with a ratchet or other equivalent means of operating an alarm, in combination with a car-door and car, in the manner and for the purposes substantially as hereinbefore set forth and described.

5. The slide-guide O, graduated so as to indicate different stations by means of a pointer, *f*, operated by a screw, J, in the manner and for the purposes substantially as set forth and described.

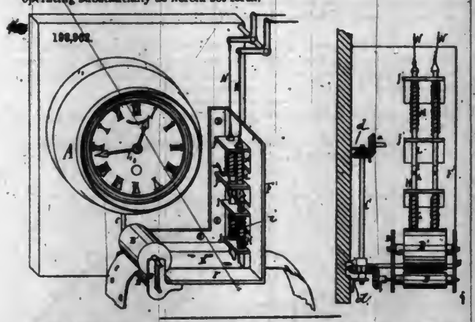
6. The alarm-sounding spring L, attached to a car-door or car, and operated by a ratchet, T, so as to sound an alarm on the door or car, in the manner and for the purposes substantially as set forth and described.

196,962. WATCHMEN'S TIME-DETECTOR. William E. Young, Chicago, Ill., assignor of one-half his right to James Early, same place. Filed July 2, 1877.

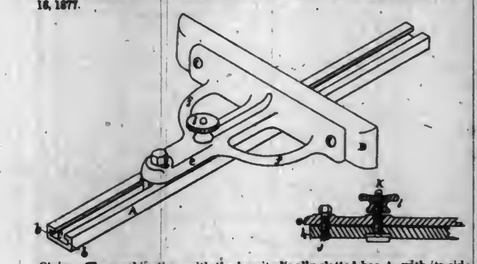
Claim.—1. The rollers B and B', if rotated by the movement of a clock, for feeding a paper ribbon, in combination with the punches H, having springs *i*, and being operated by bell-wire N and hooks *l* and *k*, substantially in the manner herein described, for the purpose specified.

2. The punch-bar H, having guides *f*, spring *i*, and hook *k*, in combination with the bar L, having guides *f'*, springs M and *m*, hook *l*, and bell-wire N, if attached to a clock, having rollers B and B', all constructed, arranged, and operating substantially as herein set forth.

196,962.

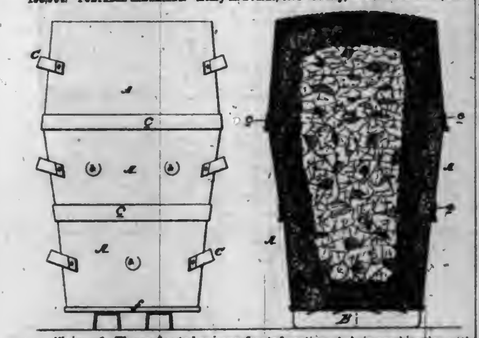


196,963. GAGES FOR SAWING-MACHINES. Olpha Bonney, Jr., San Francisco, Cal. Filed Feb. 16, 1877.



Claim.—The combination, with the longitudinally-slotted bar A, with its side grooves *b b* and pivoted swing-bar *h*, of the gage-bar D and its shank *e*, having transversely-slotted holes O O', set-screw *j*, square-headed bolt K, fitting and sliding in the grooves *b b* of the bar A, and thumb-nut *l*, the several parts constructed and arranged to operate in the manner herein shown and described.

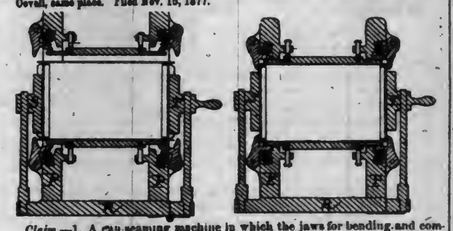
196,964. PORTABLE LIMEKILNS. Henry H. Bourne, Cloud County, Kans. Filed Jan. 2, 1877.



Claim.—1. The perforated or imperforated sections A A, in combination with straps or bands *c c*, substantially as and for the purpose set forth.

2. The perforated sections A A, provided with handles C C and perforated bottom or grate B, substantially as and for the purpose set forth.

196,965. CAN-SEAMING MACHINES. Edwin R. Bowie, New Bedford, Mass., assignor to E. T. Ovell, same place. Filed Nov. 15, 1877.



Claim.—1. A can-seaming machine in which the jaws for bending and compressing the seams are arranged in frames or yokes closing against the can, and are operated by the can itself through the intermediary of mechanical devices, substantially as herein shown and described.

2. The combination, with a pair of stationary yokes provided with can-supporting platens and seam bending and closing jaws, of a pair of movable yokes similarly provided with intermediate platens and seam bending and closing jaws, substantially as herein set forth.

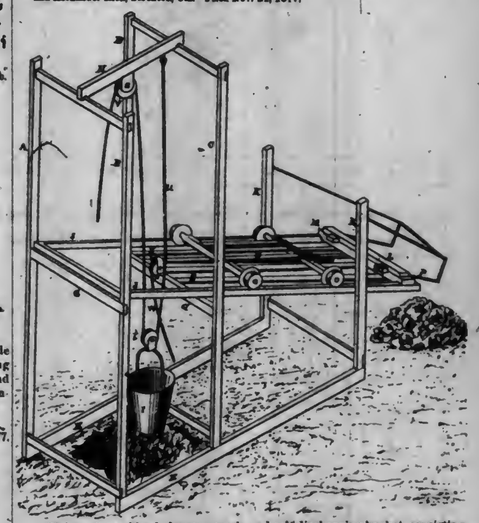
3. The combination, with the stationary and movable can-confining frames or yokes, of seam-closing jaws, the pivotal axes of which are parallel with the seam to be operated upon, substantially as set forth.

4. In a machine for closing and compressing seams of metal cans, the combination, with the side platens, arranged in stationary and movable yokes to correspond to the sides of the can, and with jaws operated by said platens, of springs, arranged for operation substantially as herein shown and described.

5. In a machine for closing and compressing seams of metal cans, the platens loosely hung in the stationary and movable yokes, and the means, substantially as herein shown and described, for regulating their play within said yokes.

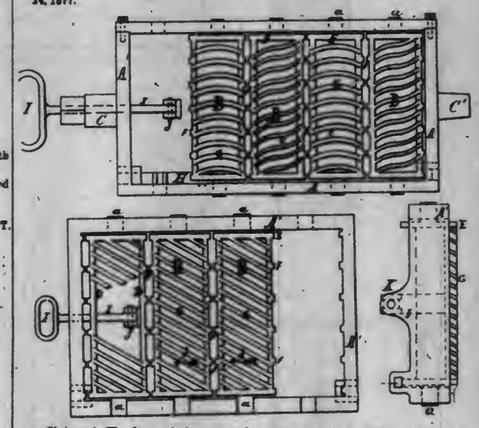
6. In a machine for closing and compressing seams of metal cans by means of jaws operated automatically, as described and claimed, a stationary and a movable end plate for holding the can confined in its proper position during the operation of closing the seam, substantially as set forth.

196,966. COMBINED ELEVATOR, TRACK, AND SELF-DISCHARGING BUCKET. John A. Bruner and Alexander Rich, Stockton, Cal. Filed Nov. 21, 1877.



Claim.—A combined elevator, track, and self-discharging bucket, consisting of the frame A B C D, with its cross-beam H and hoisting tub or bucket R, in combination with the inclined track J J, with its bumper-beam L, floor S, and basket or frame P, and the car O, all combined and arranged to operate substantially as above specified.

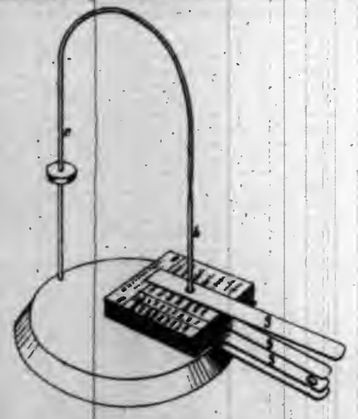
196,967. FURNACE-GRATES. Harvey M. Burritt and Geo. A. Obl, Newark, N. J. Filed Aug. 24, 1877.



Claim.—1. The frame A A, arranged to rotate on pivots C C', and containing rocking grates B B, operated by connections to handle I passing through pivot C, the whole constituting a rocking and dumping grate for furnaces.

2. The rocking grate B, constructed with side bars D D, trunnion-plates E, trunnions *a a*, and ribs G, inclined at an angle to the side bars D, for moving clinkers longitudinally on the grate, in the manner and for the purpose described.

196,968. BILL-FILER. William G. Bonney, San Francisco, Cal., assignor of one-half his right to Andrew Cannon, same place. Filed June 1, 1877.



Claim.—The metallic tags *g*, alphabetically marked and arranged, in combination with a bill-file consisting of the pivoted wire *b* and keeper-wire C, substantially as and for the purpose described.

196,969. COMBINED PUMP AND MEASURING-FAUCET. Saml. M. Cowles, Denver, Colo. Filed Aug. 22, 1877.

Brief.—An indicator-dial is used in combination with a locking-lever, which locks the shaft when the requisite amount is drawn out.



Claim.—1. The combination of the lever *a'*, operated by the pin *b'*, with the stop *d''* on the shaft *a*, for locking the pump-handle, constructed and arranged substantially as described.

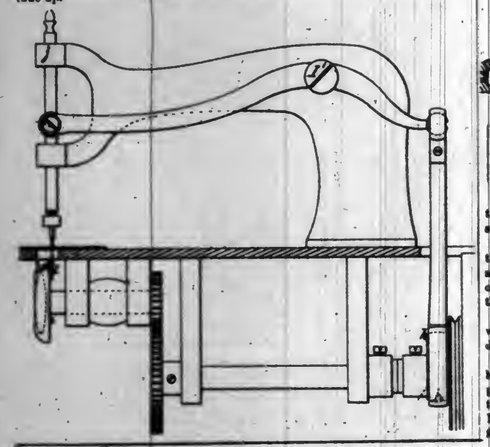
2. The combination of the lever *a'*, pin *b'*, spring *c''*, wheel *c'*, shaft *c*, having tooth *d'*, and stop *d''*, constructed and arranged substantially as described.

3. The combination of the lever, pin, spring, wheel, shaft, having tooth, and stop with the rim *m*, having downwardly-projecting pins, the indicator *c*, and the dial-plate *s*, substantially as described.

4. The combination of the locking devices *a' b' c' d'* and the indicating mechanism *c d' c', m s* with the barrel *a*, having cylinder *b*, wings *e e'*, and valves *a k*, and the tube *p*, substantially as described.

196,970. REVOLVING-HOOK SEWING-MACHINES. J. W. Corey, Salt Lake City, Utah. Filed July 7, 1876.

Brief.—The second revolution of the hook takes place while the needle is above the cloth, the purpose being to allow ample time for the operation of the take-up.

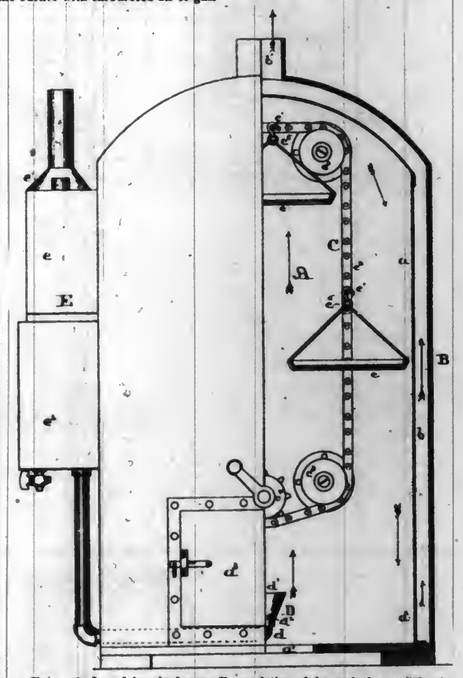


Claim.—1. The revolving hook herein described, having the point of its hook and the chamber for the bobbin on its front side, and having said point extend from said front and project beyond the rear side of the body of the hook, whereby the loop of the needle-thread is taken from the rear side of the hook and carried around the bobbin on the front side of the hook, substantially as set forth.

2. The revolving hook, constructed substantially as described, and the reciprocating needle, in combination with mechanism, substantially as set forth, whereby two complete revolutions are imparted to the hook during one complete reciprocation of the needle, for the purpose set forth.

196,971. APPARATUS FOR DRYING OR COOKING FRUIT, &c. John B. Crocker, Alton, Ill. Filed Oct. 13, 1877.

Brief.—A carbureter is placed on the side of the drying-chamber to supply the burner with carbureted air or gas.

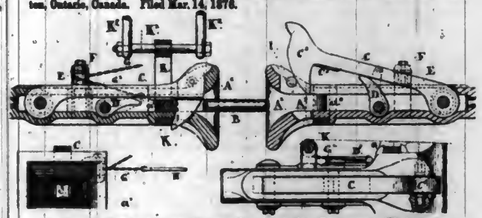


Claim.—1. In a drier, the burner D, consisting of the conical part d^3, having the perforations d^4, and the conical gauze d^5, substantially as described.

2. The combination of the chamber A, having the apertures a^1 a^1 and a^2, arranged as described, and the burner D, substantially as described.

3. The combination of the chamber A, having the apertures a^1 a^1 and a^2, the casing B, flue *b*, and burner D, substantially as described.

196,972. CAR-COUPLINGS. William Dunn, St. Mary's, assignor to Isaac B. McQuesten, Hamilton, Ontario, Canada. Filed Mar. 14, 1876.



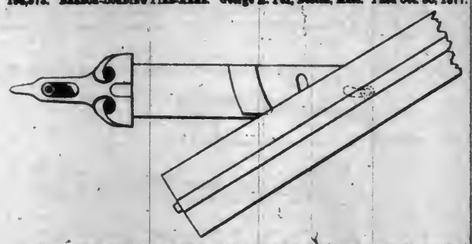
Claim.—1. The hand-rods H and H^1 and chains G, G^1, and G^2, in combination with the friction-roller E and crank-arm D^1, arranged and operating substantially as described, and for the purpose specified.

2. In combination with the draw-head A, with shoulders a^2 formed therein, the long hook-bar C^1, made to pass through the lower part of the draw-head, and constructed with weighted head C^2 and enlargement C^3 immediately in rear of the head, made to extend downward, so as to bear directly upon the link when the same is in position in the draw-head, as and for the purpose described.

3. The stirrup K^1, supported upon the horizontal bars K', in combination with the draw-head A, provided with the projecting strips *a*, substantially as described.

4. The combination, in a car-coupling, of draw-head A, shoulders a^2, weighted hook-bar $C C^1$, made to pass through the lower part of the draw-head, bearing-piece C^1, made to project downward a sufficient distance to bear directly upon the link for the purpose of holding it in a level position, and lifting-tongues $D D^1$, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

196,973. BREECH-LOADING FIRE-ARMS. George H. Fox, Boston, Mass. Filed Oct. 30, 1877.



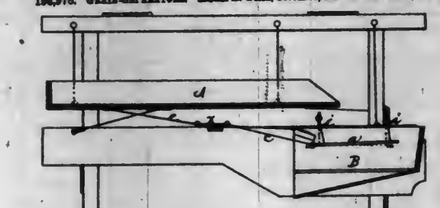
Claim.—In double-barreled breech-loading guns, a breech-seat composed of two flat planes, each of which is at right angles in all directions to the axis of the adjacent barrel, substantially as and for purposes stated.

196,974. BEEFSTEAK-TENDERERS. H. B. Fuller, Princeton, Me. Filed Oct. 27, 1876.



Claim.—A beefsteak-tenderer consisting of a metallic table, A, provided with pyramidal projections *a a*, in combination with the roller B, having corresponding pyramidal projections, as set forth.

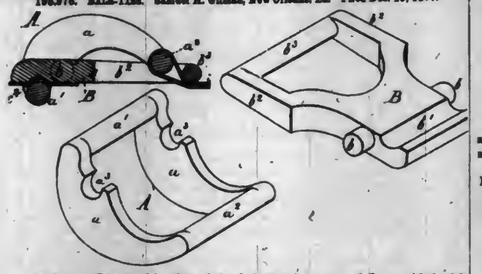
196,975. GRAIN-SEPARATORS. Hiram E. Goss, Florence, Ill. Filed Oct. 16, 1877.



Claim.—1. The combination and arrangement of the shaking-shoe B with the swinging sieve *a*, hung at its corners by the rods *i*, to swing endwise independently of the shoe B, in the manner and for the purpose set forth.

2. The sieve *a*, having a swinging pitching motion imparted to it by means of the rods *c*, *e*, and *i*, lever *x*, and swinging carrier A, when arranged to swing in the shoe B, in the manner and for the purposes set forth.

196,976. BALE-TIES. Samuel H. Gilman, New Orleans, La. Filed Dec. 19, 1877.



Claim.—1. The combination of the bale-tie pieces A and B, provided with a fulcrum, *b*, and connections a^2 b^2, clamping-groove b^1, and connection b^3, substantially as and for the purpose set forth.

2. A compound-lever griping cotton-bale tie having two jaws, which are connected together, and are provided, respectively, with cross-bars, as at a^2 and b^2, said tie having one end of the cotton-bale band passed around its bar a^2, and under its bar b^2, and the other end of said band being griped between the jaws of the tie, substantially as and for the purpose described.

196,977. CIGARETTES. Jacob Gerdes, New York, N. Y., assignor to Redlich & Schnitzler, same place. Filed Dec. 14, 1877.



Claim.—The cigarette herein described, consisting of the filling A, paper wrapper B, and tobacco mouth-piece C, as set forth.

196,978. GOVERNORS FOR STEAM-ENGINES. Paul Grimm, Glen Cove, N. Y. Filed July 5, 1877.

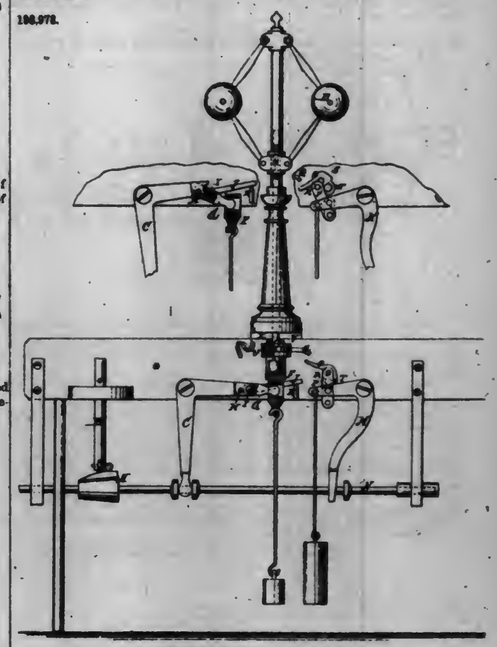
Claim.—1. The tripping weighted lever M, combined with a governor having a trip-jointed regulating-lever, C, substantially as described.

2. The combination of the tripping weighted lever M with the governor having the trip-jointed lever C, and with the regulating-cam A and shaft N, substantially as described.

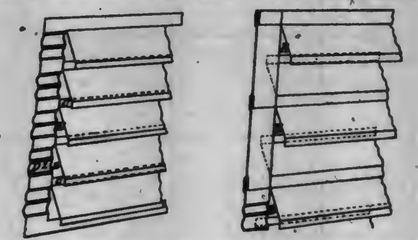
3. The stud K, arm J, and tripping-pin 1, combined with the jointed lever C, and with the head F of the governor-spindle, substantially as described.

4. The notched and pivoted dog O, link P, and pin S, combined with the weighted lever M, toe Q, and the head F of the governor-spindle, substantially as described.

196,978.



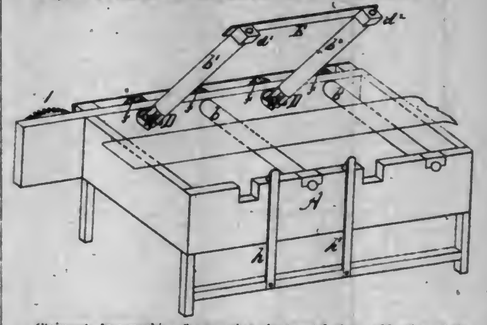
196,979. WINDOW-SHUTTERS. George Hayes, New York, N. Y. Filed June 4, 1877.



Claim.—A metallic plate having ledges formed by being bent inwardly and outwardly, or outwardly alone, with a margin folded or crimped in the manner described, and for the purposes herein set forth.

196,980. MACHINES FOR DRYING AND SCOURING SHEET METAL. Adelbert P. Hine, Wolcottville, Conn. Filed Sept. 6, 1877.

Brief.—The metal can be introduced sidewise between the rollers.

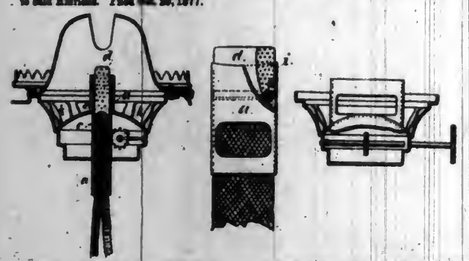


Claim.—1. In a machine for scouring sheet metal, the combination of the rollers *b* b^1, running in fixed boxes on the body A of the machine, the rollers b^1 and b^2, with the universal joints D D in the shafts thereof, movable boxes b^1 b^2, and the body A, substantially as and for the purpose set forth.

2. The combination, in a machine for drying and scouring sheet metal, of

the rollers b^1 and b^2 and their shafts, the universal joints D D, the connecting-bar E, boxes d^1 and d^2, and the catch-springs h and h^1, whereby the cleaning-rollers can be opened apart at one end on the line of their axes, and be returned and held in an operating position, and whereby the sheet metal can be placed between the rollers laterally instead of endwise, substantially as and for the purpose set forth.

196,961. LAMP-BURNERS. Chas. F. A. Hinrichs and Chas. Reirtz, Brooklyn, N. Y., assignors to said Hinrichs. Filed Oct. 30, 1877.



Claim.—1. The flat wick-tube *a*, having a transverse wire, *c*, and receiving the wick *b* in a folded condition, in combination with the mineral wick *d*, inserted into the top of the wick-tube and rising above the same, substantially as set forth.

2. The flat wick *d* of mineral material, in combination with the wick-tube *a* and holding-claw *i*, substantially as set forth.

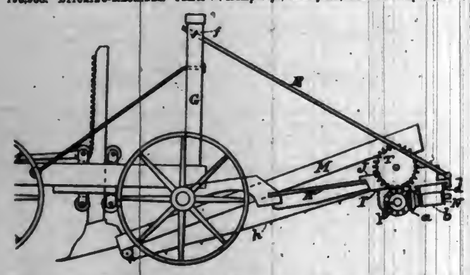
3. The combination, in a lamp-burner, of a flat mineral wick, a wick-tube, above the upper end of which the mineral wick projects, a case surrounding the wick-tube closely, and having openings to lessen the heat conducted downwardly, and means for varying the height of the mineral wick relatively to the surrounding case, substantially as set forth, whereby the base of the flame rises from the upper edge of the case, substantially as set forth.

196,962. SHOW-CASES. Francis A. Howell, Jersey City, N. J., assignor to William F. Reed, Brooklyn, N. Y. Filed Sept. 6, 1877.



Claim.—A show-case door having spring closing mechanism, and being arranged to slide under the case when open, substantially as described.

196,963. DITCHING-MACHINES. James W. Humphreys, La Fayette, Ind. Filed Sept. 1, 1877.



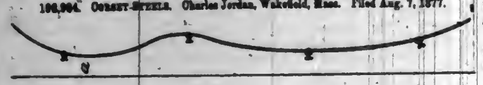
Claim.—1. The adjustable chute N, provided with the gear-wheel *a* and stay-spring *c*, in combination with the keyed shaft V, provided with the sliding gear-wheel Y, substantially as and for the purposes set forth.

2. In combination with the elevating-chute M, the adjustable chute N, working in ways in the under side of the sliding seat J, arranged to move upon the parallel beams C C, substantially as and for the purposes set forth.

3. The adjustable chute N, provided with the endless belt *b*, stay-spring *c*, and flanges *e e*, working in ways in the sliding seat J, in combination with the feathered shaft V, working in bearings W and X, and provided with the bevel-gear wheel Y and spur-gear wheel U, the latter engaging with the gear-wheel T, substantially as and for the purposes set forth.

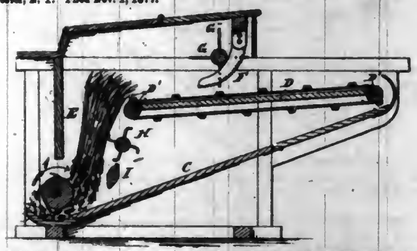
4. The parallel beams C C, articulated to the main shaft B, and supported at their rear ends by the adjustable braces E E, connected to the uprights G G, in combination with the sliding seat J and suitable adjustable gear for operating the endless belts *b* and *h*, all constructed and arranged substantially as and for the purposes set forth.

196,964. CORSET-STEELS. Charles Jordan, Wakefield, Mass. Filed Aug. 7, 1877.



Claim.—As a new article of manufacture, a corset steel or steels curved outwardly, as at *a*, into substantially the shape of the natural bust, as herein set forth, and for the purpose specified.

196,965. BAND-CUTTING FENDERS FOR THRASHING-MACHINES. Matthew H. Joslyn, Rochester, N. Y. Filed Nov. 1, 1877.



Claim.—1. The combination, with the undershot cylinder B and its concave, and the inclined feed-board C, of the conveyer D, having its delivery end located nearly or quite above the delivery end of the feed-board, substantially as and for the purpose set forth.

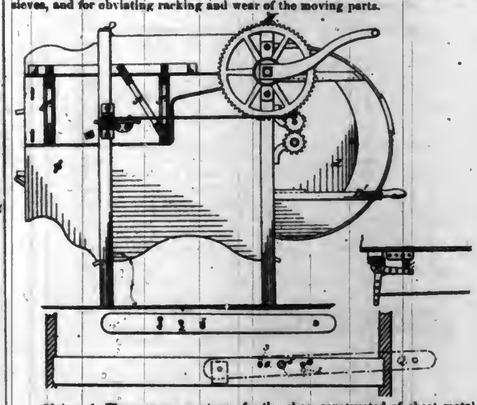
2. The combination, with the carrier D, picker G, and knives F, arranged as described, of the toothed roller H, journaled to the frame below the inner end of the carrier, substantially as and for the purpose set forth.

3. The combination, with the carrier D and the thrashing-cylinder, of the toothed scattering rake or roller H, journaled below the inner end of the carrier, and the rotary flapper I, journaled below the plane of the scattering-rake, and in front of the thrashing-cylinder, substantially as and for the purposes set forth.

4. The combination, with the carrier D and curved knives F, fixed rigidly in position, of the feed-roller or picker G, journaled to the frame, so that its teeth G' revolve between the knives, substantially as and for the purposes set forth.

196,966. GRAIN-SEPARATORS. Andrew W. Kendrick and Chas. T. Kendrick, Brooklyn, N. Y. Filed Nov. 12, 1877.

Brief.—Improvements in means for regulating the agitation and jar of the sieves, and for obviating racking and wear of the moving parts.



Claim.—1. The suspensory straps for the shoe, constructed of sheet metal as to their main portion, and a portion of their length at either end made of leather, substantially as and for the purposes set forth.

2. The combination, with the screen-box having an opening in the side, of a tapering sheet-metal discharge-spout, adapted to be applied from within, and provided with flanges or a shoulder, constructed and operating substantially as set forth.

3. The combination, with the elbow-lever having the adjustable arm, of the adjustable bracket attached to the shoe opposite to said lever-arm and the connecting-link, substantially as and for the purpose set forth.

4. The combination, with the upper shoe or screens of a grain or seed separator, of a screen for separating long and narrow grains from the shorter and thicker grains, formed of a single piece of wire-cloth, presenting a continuous screening and distributing surface, said screen having a short mesh upon its upper or receiving portion, and upon the remainder a long mesh parallel with the length of the screen, substantially as herein set forth.

5. A screen having a continuous screening and distributing surface of wire-cloth, having finer meshes at one end and coarser meshes running lengthwise of the screen over the rest of its surface, in combination with mechanism, substantially as described, for giving it an endwise reciprocating motion, terminating in its forward movement with a sudden stoppage and jar, substantially as and for the purpose set forth.

6. The combination, with the shouldered screen and the stationary detents, of the lever having an oblique line of adjustment-holes for its pivot, and the bearing-bar having a right line of adjustment-holes, substantially as set forth.

7. The combination, with a reciprocating screen striking a fixed bumper at the limit of its reciprocation, of a crank-shaft for imparting the motion, and a link, adjustable as to its length, for regulating the force of the stroke of the screen against the bumper, substantially as set forth.

8. The combination of the crank-wheel, the link, the vertical lever T, the horizontal lever Q, actuating the screen against the fixed bumpers, and the connecting-rod, made adjustable in length, substantially as set forth.

9. The combination of the reciprocating screen, the adjustably-fulcrumed lever, the connecting-rod, adjustable in length, and the crank-shaft, substantially as set forth.

10. The combination, with the metallic detents supporting the screens, of the shouldered screen, having the metallic face-plates on the striking-faces of its shoulders, substantially as set forth.

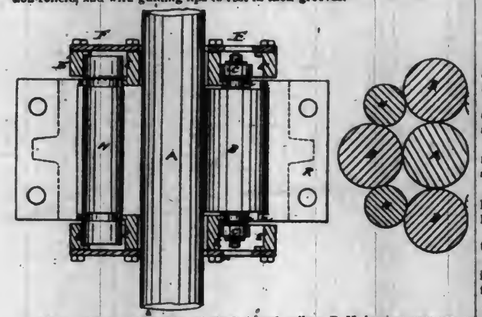
11. The combination of the adjustable upright lever T, the connecting-rod, made adjustable as to its length, the shouldered screen O, and the detents, substantially as set forth.

12. The combination, with the longitudinally-reciprocating screen, of a fixed bumper, against which said screen strikes at the end of its movement in the direction of flow of the grain, said screen being adjustable as to one of the limits of its throw, while the other remains unchanged, substantially as set forth.

13. A longitudinally-reciprocating screen, operating in connection with a fixed bumper, and provided with means, substantially as described, for varying independently the length of its reciprocation and the force with which it strikes the fixed bumper, substantially as and for the purpose set forth.

196,967. ANTI-FRICTION BEARINGS FOR ROTARY SHAFTS AND AXLES. Julius Lange and Alvin Eisenbraun, Lods, Poland, Russia. Filed Sept. 24, 1877.

Brief.—The rings are provided with flanges for bearing-surfaces for the friction-rollers, and with guiding-lips to rest in their grooves.



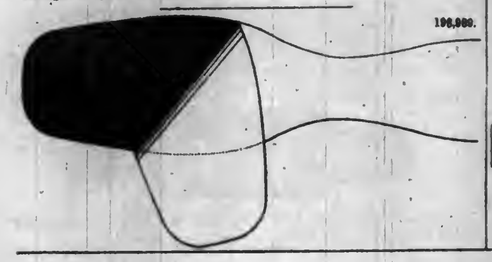
Claim.—The combination of shaft A' and rollers B H, having grooves *m*, with the runners C C, ring F, having flanges E E', neck P, and cap R, having lips *n*, substantially as specified.

196,968. SIGNAL-LANTERNS. Nathaniel Lash, Ellsworth, Ill. Filed Dec. 17, 1877.

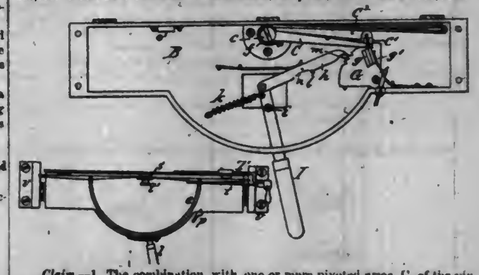


Claim.—The herein-described signal-box, consisting of the open-bottomed box A, having the white and colored glasses B and D and stop or stops *s*, and the vertically-adjustable sliding frame C, having lamp-holder and lamp E F, and the suspended signal-board H, the several parts constructed and relatively arranged to operate substantially as herein shown and described.

196,969.



196,969. MUSIC-LEAF TURNERS. William Liddell, Sandy Hill, N. Y. Filed Nov. 10, 1877.



Claim.—1. The combination, with one or more pivoted arms, C, of the pivoted segment G, provided with projection *g*, pawl *h*, and actuating-lever I, substantially as and for the purpose set forth.

2. The combination, with a series of pivoted arms, C C' C², of the pivoted segment G, provided with stepped projection *g* and notches *m*, pawl *h*, and actuating-lever I, substantially as and for the purpose set forth.

3. The combination, with one or more pivoted arms, C, of the pivoted segment G, provided with projection *g* and notches *m*, pawl *h*, having a recess, *n*, stop *l*, and actuating-lever I, substantially as and for the purpose set forth.

4. The combination, with a series of pivoted arms, C C' C², and segment G, provided with projection *g*, of the pivoted dog *p*, substantially as and for the purpose set forth.

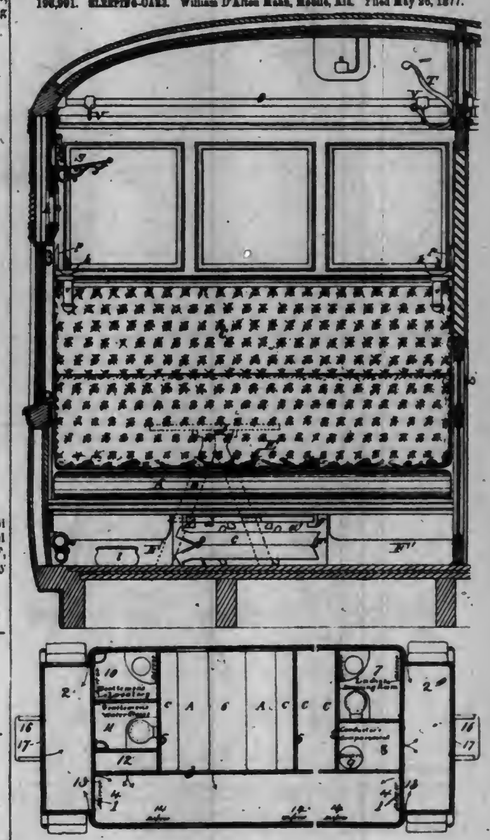
5. The combination, with the series of pivoted arms C C' C² and rack B', of the adjustable arm T and spring *t*, substantially as and for the purpose set forth.

6. The combination, with the top board or support A, provided with tapering ways *r*, of the base B, provided with lateral flanges *n*, substantially as and for the purpose set forth.

196,970. INSOLES FOR BOOTS AND SHOES. George H. Lavis, Philadelphia, Pa., assignor to Domestic Refrigerator and Pipe Covering Company, same place. Filed Nov. 9, 1877.

Claim.—An insole having a center of any reticulated material, and a covering or outside formed of paper treated in the manner described, and for the purpose set forth.

196,971. SLEEPING-CARS. William D'Alton Mann, Mobile, Ala. Filed May 26, 1877.



Claim.—1. A car constructed with state-rooms on one side thereof, and having a corridor on the other side thereof, the whole length of the car-body, communicating directly with inclosed platforms, as and for the purpose set forth.

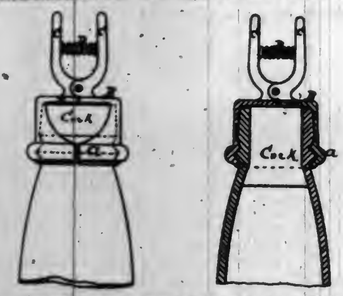
2. A car constructed with rooms 6, longitudinal corridor 4 on one side thereof, and the end rooms 7 8 10 11, having communication with the platforms only, as and for the purpose set forth.

3. The hinged upper couch, forming, when lowered, an inclined back, and constructed with a reversible flap, completing, in one position, the inclined and cushioned back, and in the other position imparting a level surface to the upper couch when the latter is supported horizontally, as described.

4. The hinged seat-seat A, having a supporting-box, F, beneath it, constructed with compartments F' F', leaving a space, *a*, as and for the purpose set forth.

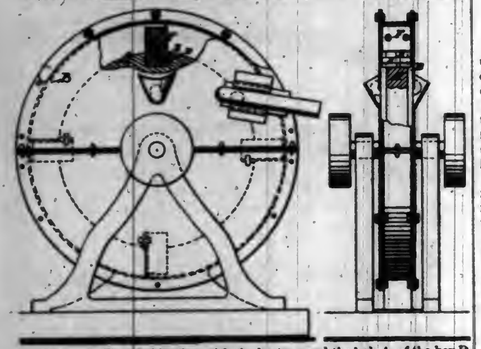
5. The couch-supporting catches L', constructed with sockets for the reception of lamps when the couches are not in use.

198,992. BOTTLE-STOPPER HOLDERS. Jacob Metzger, Indianapolis, Ind. Filed Dec. 15, 1877.



Claim.—The cork-holder composed of the jaws A, plates B, levers C, and spring D, constructed, arranged, and operating substantially as and for the purpose set forth.

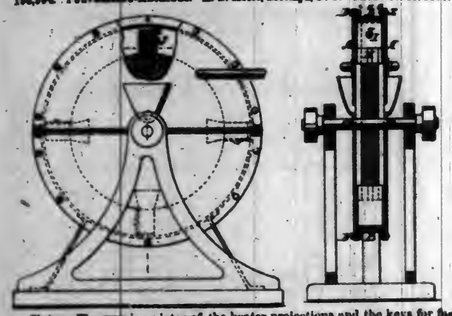
198,993. PULVERIZING-MACHINES. H. B. Moore, Brooklyn, N. Y. Filed Mar. 21, 1877.



Claim.—1. The combination, with the beater c and the hub A, of the key D, arranged laterally in the hub and the beater, and the key E, arranged radially in the hub and the beater, and going through the key D, substantially as described.

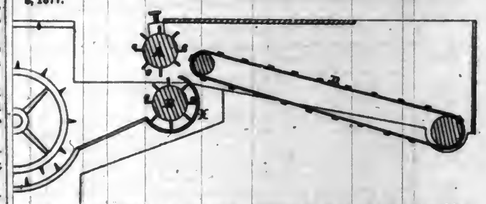
2. The combination, with the beater c and the hub A, of the key D, arranged laterally in the hub and the beater, the key E, arranged radially in the beater and the hub, and going through the key D, and the wearing-plate F, bolted on the beater over the head of the key E, substantially as described.

198,994. PULVERIZING-MACHINES. H. B. Moore, Brooklyn, N. Y. Filed Nov. 20, 1876.



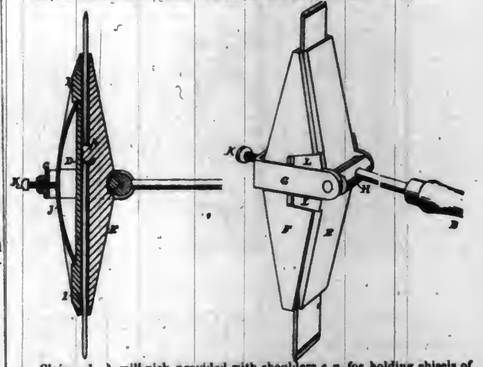
Claim.—The wearing plates of the beater projections and the keys for fastening said projections, combined and arranged in the manner described, for locking the keys by the plates, substantially as specified.

198,995. FEEDERS FOR THRASHING-MACHINES. Rufus B. Moore, Modesto, Cal. Filed June 8, 1877.



Claim.—The rollers A B, adjustably mounted in the throat of the thrashing-machine, and provided with the fluted ribs or bars *c c*, for feeding and regulating the supply of straw to the thrashing-cylinder, in combination with the concave K, the several parts constructed and relatively arranged substantially as herein described.

198,996. MILL-PICKS. William B. Morris, Collinsville, Cal. Filed Nov. 6, 1877.



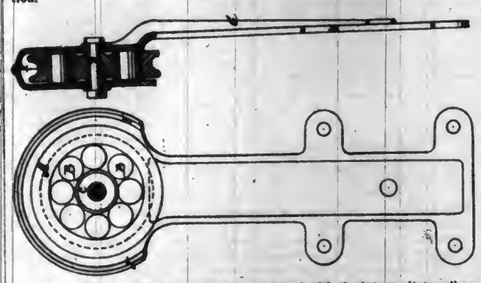
Claim.—1. A mill-pick provided with shoulders *o p*, for holding chisels of unequal length, and a handle attached to this holder, which can be placed at any desired angle with the chisels, substantially as and for the purposes herein described.

2. The parallel plates D and E, with their sides F and shoulders *o* and *p*, the plates held together and operated to clamp upon the chisels by a strap, G, roller H, strip or brace J, and set-screw K, in combination with the handle B, and all combined, operated, and arranged substantially as and for the purpose herein described.

3. The roller H, connecting the ends of the strap G, having a toothed surface fitting into a corresponding tooth depression in the plate E, and operated for clamping the plates D and E, and for securing the handle B at any angle with the chisels, substantially as and for the purposes herein described.

198,997. DOOR-HANGERS. Charles W. Pierce, New York, N. Y. Filed Mar. 7, 1877.

Brief.—A revolving center roller is combined with the ordinary anti-friction rollers, and with the outer ring, and the removable part of the case is supported by an overlapping flange, thus simplifying and reducing the cost of construction.



Claim.—The revolving center roller, combined with the intermediate rollers and the outer wheel or ring, and having its support on a center-pin, which is supported at one end in the stationary part of the case, and at the other end in the removable part of the case, which is itself supported by an overlapping flange of the stationary part, substantially as described, for the purpose set forth.

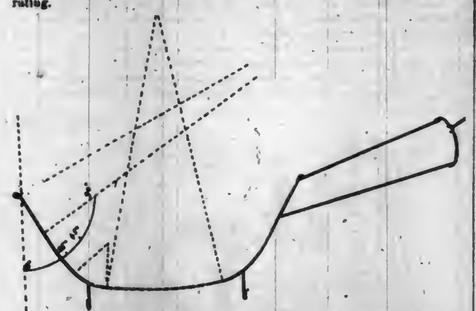
198,998. SALT AND SPICE BOTTLES. Geo. B. Richardson, Boston, Mass. Filed Dec. 18, 1877.



Claim.—A cap for salt or spice bottles, having a woven-wire top, substantially as and for purposes stated.

198,999. GRAVY-STRAINERS. Joseph Scheidler, New York, N. Y. Filed May 24, 1877.

Brief.—Made with two sets of slots—one for shaping, the other for perforating.

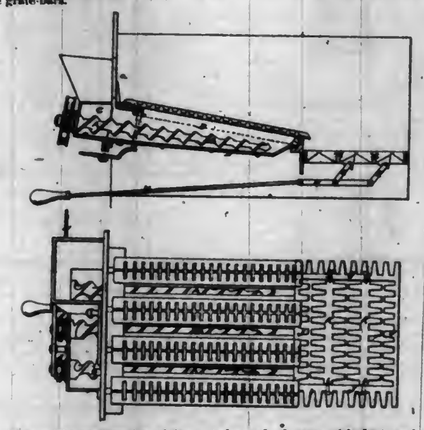


Claim.—1. A gravy-strainer stamped out of a single blank of metal, the line of whose side in any vertical central section being a continuous curve of long radius near the rim and near the center of the bottom, and of short radius and more abrupt curvature in an intermediate space which is nearer to the center of the bottom than to the rim, substantially as described.

2. A gravy-strainer stamped out of a single blank of metal, having a continuously-curved side, the curve of which is gradual through the first half of the descent from any point on the rim to the center of the bottom, then more abrupt, and then again gradual near the center of the bottom, and having perforations through the bottom of the same piece of metal, substantially as described.

199,000. FURNACE-FEEDERS. Michael H. Smith, Halifax, England. Filed Aug. 13, 1877.

Brief.—A tapering feed-screw is located within a tapering box, by means of which a greater force is exerted at the end of the screw in forcing the fuel onto the grate-bars.



Claim.—The combination of the grate-bars of a furnace with the troughs or tapering screw-cases B B, that are placed below and between and communicate with the several grate-bars, and connect at one end to a hopper, each of said screw-cases containing a tapering screw or worm, A, so arranged that the fuel is fed by the screws or worms A from the hopper into the screw-cases B, and from the screw-cases directly upon the grate-bars, all substantially as and for the purpose herein shown and described.

199,001. WOODEN SHINGLES MADE FIRE-PROOF. George B. Smith, Philadelphia, Pa. Filed Mar. 20, 1877.

Brief.—Renders fire-proof and preserves wooden shingles by boiling for forty-eight hours in a solution consisting of water, sulphate or chloride of zinc, sulphate of iron, and alum.

Claim.—As a new article of manufacture and sale, a wooden shingle impregnated with a combined preservative and non-inflammative compound.

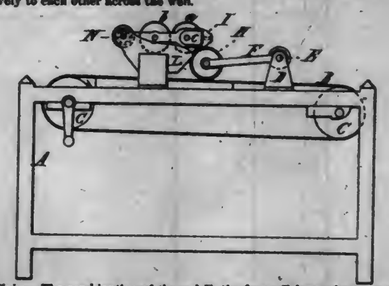
199,002. ELASTIC-WELTED FELT PACKING. Isaac Sharp, St. Louis, Mo. Filed July 7, 1877.



Claim.—The elastic packing fabric having between layers of pasted paper or felt strips of elastic substances inserted, as and for the purpose set forth.

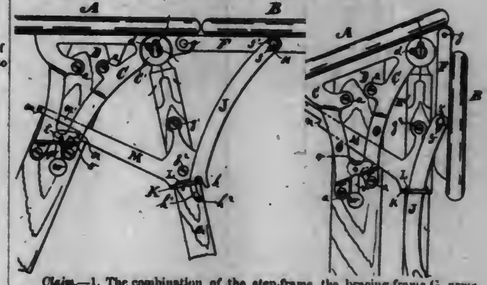
199,003. PRINTING ATTACHMENTS FOR PAPER-RULING MACHINES. John E. Taylor, Springfield, Mass. Filed Nov. 20, 1877.

Brief.—Sheets of paper pass from a ruling-machine onto the web B, and are by it carried under the printing-roll H, to receive an ornamental border or heading, as desired. The inking apparatus and the printing-roll are adjustable relatively to each other across the web.



Claim.—The combination of the rod E, the frame F, hung thereon and provided with the printing-roll H, the rod N, with the frame I hung thereon, and provided with the rolls *a* and *b*, all constructed substantially as described, and adapted to be attached to a paper-ruling machine.

199,004. STEP-LADDERS. Calvin G. Udell, Indianapolis, Ind. Filed June 7, 1877.

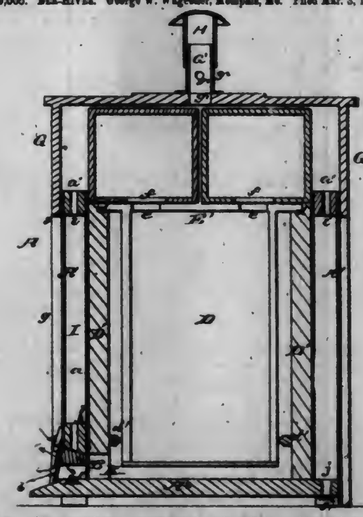


Claim.—1. The combination of the step-frame, the bracing-frame G, arms M, extending from one frame past the other, and a weighted catch, automatically securing the arm when the ladder is tilted back, and automatically releasing it when tilted forward, substantially as set forth.

2. The extension-piece B, hinged to and hanging downward from the rear edge of the top piece A, and adjustably supported by braces, to form a rearward extension of said top piece, as set forth.

3. The combination, in a step-ladder, of extension-step B, sliding brace J, having forked prongs *h h* at the lower end, and a loop or staple, K, on the frame, substantially as specified.

199,005. BEE-HIVES. George W. Wagenor, Memphis, Mo. Filed Mar. 3, 1877.

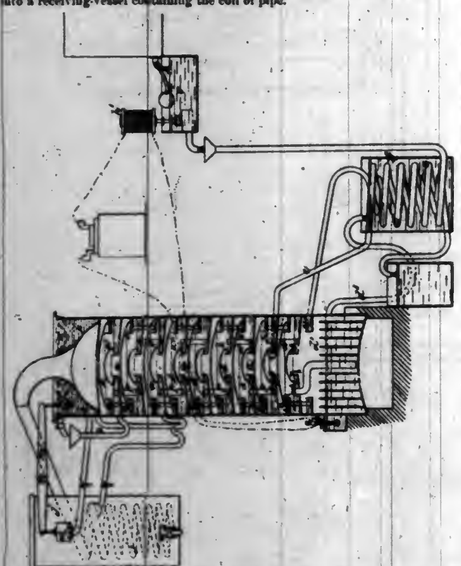


Claim.—The outer box A, constructed as described, and provided with ventilating-holes in its top and bottom, in combination with the inner box D, hav-

ing a surrounding air-space, and hollow top O, provided with the fixed perforated tube G' and adjustable sleeve H, substantially as and for the purpose set forth.

199,006. DISTILLING APPARATUS. Joseph Wallace, Belfast, Ireland, assignor to Isaac A. Hopper, Newark, and Thomas Barbour, Paterson, N. J. Filed July 26, 1877. Patented in England, Apr. 28, 1873.

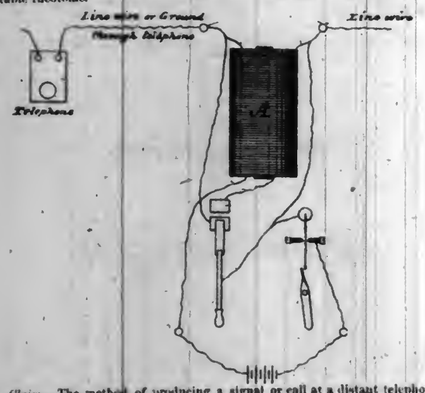
Brief.—The fusel-oil is condensed, and carried off by a secondary series of plates and channels connected by pipes. The inflowing wash-liquor, passing through a coil of pipe, is heated by the spent hot-wash, overflowing from the still into a receiving-vessel containing the coil of pipe.



Claim.—The combination of the described secondary series of inverted dishes or condensing-plates a a, arranged not to dip within the liquid, channels c c, and pipes to conduct the fusel-oil out of the apparatus, constructed and operating together substantially as described, to prevent the condensed fusel-oil from passing, with the vapor, through the column.

199,007. TELEPHONES. Thomas A. Watson, Boston, Mass. Filed Dec. 5, 1877.

Brief.—Produces a sound from the distant telephone itself, loud enough to call attention when the instrument is not in use, by sending upon the line rapidly-intermittent currents of high intensity, produced from an induction-coil and suitable rheotome.



Claim.—The method of producing a signal or call at a distant telephonic station by combining with a system of electric telephones an induction coil, rheotome or circuit-interrupter, circuit-closer, and galvanic battery, substantially as herein described.

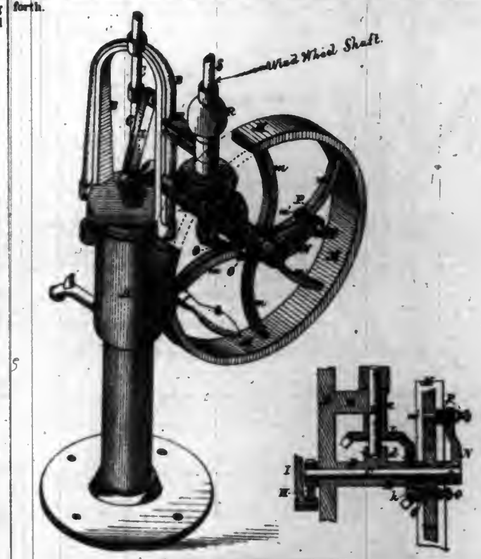
199,008. MECHANISM FOR TRANSMITTING POWER OF WINDMILLS. John S. Adams, Elgin, Ill. Filed Aug. 10, 1877.

Brief.—Consists principally in the means employed for transmitting the motion of the vertical shaft of a geared windmill to the reciprocating plunger of a pump, and for disconnecting said parts at will.

Claim.—1. As a means for transmitting the power of a geared windmill to a pump, the shafts F and G, the crank H, the bar I, pivoted upon said crank and the piston-rod C, the gears K and L, the crank-arm N, and the detent P, arranged to connect said crank-arm and the gear K, said parts being combined to operate in the manner and for the purpose substantially as specified.

2. As a means for transmitting the power of a geared windmill to mechanism which is operated by a belt, the shafts F and G, the gears K and L, the band-wheel M, and the detent O, said parts being constructed and combined in the manner and for the purpose shown.

3. The hereinbefore-described mechanism, in which the piston-rod C, shafts F and G, crank H, connecting-bar I, gears K and L, band-wheel M, crank-arm N, and detents O and P are constructed as shown, and combined with each other, a geared windmill, and a pump, substantially as and for the purpose set forth.



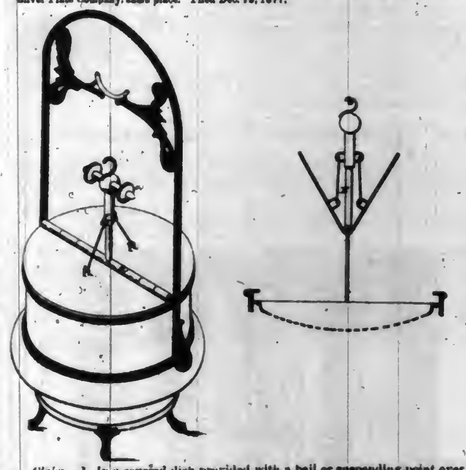
199,009. ROLLER-SKATES. Silas A. Allen, New York, N. Y. Filed Nov. 22, 1877.



Claim.—1. The combination, with plate A, of centrally-pivoted roller-shaft C and hangers B, having cheeks a a, as shown and described, whereby the plate is tilted and the shafts oscillated, as set forth.

2. In parlor-skates, the combined sole and heel plate, having triangular bottom pieces or hangers, with recessed pieces and convex cheeks, in combination with the centrally-pivoted roller-shafts, swinging in the recesses along the convex cheeks, all constructed and arranged for operation substantially as specified.

199,010. COVERED BUTTER-DISHES. S. W. Rabbitt, West Meriden, Conn., assignor to Wilcox Silver Plate Company, same place. Filed Dec. 10, 1877.

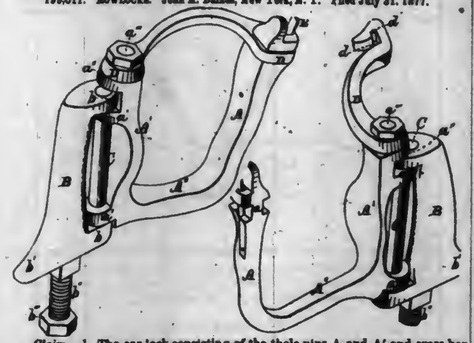


Claim.—1. In a covered dish provided with a bail or suspending-point over the cover, the cover divided into two parts, hinged together, and combined with a connection from each of the said two parts to a common device, by which the covers may be suspended at the said suspending-point, and thereby not only open the dish, but turn the parts of the cover upward on their hinges, substantially as described.

2. In a covered dish in which the dish is opened by raising the cover from the dish, a plate suspended to said cover, and so that raising the cover raises the said plate, and vice versa, substantially as described.

3. In a covered dish in which the cover is divided into two parts, hinged together, and combined with a connection from each of said parts to a device common to both, so that raising said device both lifts the covers from the dish, and at the same time turns the two parts upward on their hinges, substantially as described.

199,011. ROWLOCKS. John A. Baines, New York, N. Y. Filed July 31, 1877.



Claim.—1. The oar-lock consisting of the thole-pins A and A' and cross-bar A'', and provided with the ears a' and a'', in combination with the stud or standard B, having the ears b, and with the pivotal bolt C, substantially as and for the purpose specified.

2. In combination with the oar-lock described, the curved cap D, provided with the recess d and notch d', pivoted upon the upper end of the thole-pin A', and engaging with the necked upper end a of the thole-pin A, and with the spring-catch E, substantially as and for the purpose shown.

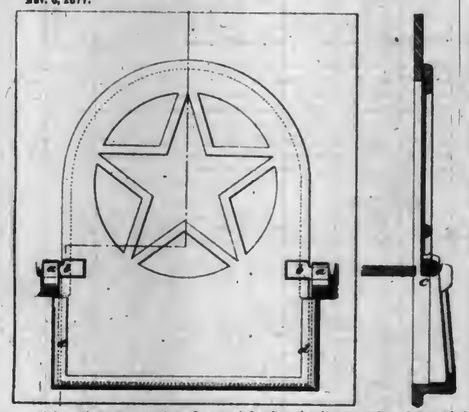
3. The hereinbefore-described rowlock, consisting of the thole-pins A and A', connected together by means of the cross-bar A'', and provided with the neck a, lugs a' and a'', and threaded stud a''', the stud or standard B, having the lugs b and bolt b'', the pivotal bolt C, the cap D, pivoted upon said thole-pin A', and the spring-catch E, secured upon said thole-pin A, and arranged to engage with the recessed end of said cap, said parts being constructed and combined to operate in the manner and for the purpose substantially as set forth.

199,012. HARROWS. Andrew H. Ballagh, Macon City, Mo. Filed May 21, 1877.



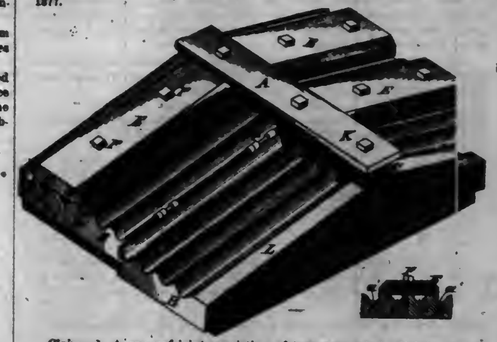
Claim.—The combination of two harrows having reciprocating bars D, bifurcated arms E, bars C C, and pivoted tooth-bars A, two or more of the latter being connected by two clevises, K, pivoted at their ends, and swiveled together at the middle, as and for the purpose specified.

199,013. PLATFORM-DOORS FOR STOVE-OVENS. Ebenezer Barrows, Brooklyn, N. Y. Filed Nov. 6, 1877.



Claim.—An oven-platform-door weighted at its lower end, and provided with inclined pivots working in cups a, as shown and described, so that said door will close automatically, and remain closed without a latch.

199,014. CAR-ROOFS. Lovick P. Barnes and John H. Paupel, St. Louis, Mo. Filed May 18, 1877.



Claim.—1. A car-roof joint consisting of two corrugated adjoining lower boards and an upper board or batten, the latter coming in contact with the former at three points only—viz., at the seam between the lower boards and in the second corrugation at each side of the seam—and being separated throughout the first corrugation at each side of the seam, substantially as described.

2. The combination, in a car-roof, of the boards B B, battens E E, bolts F F, and straps G G, substantially as described.

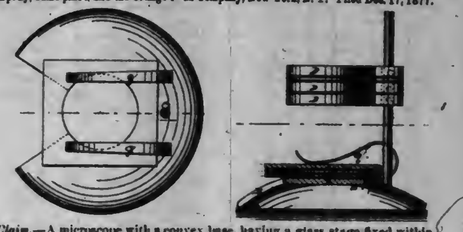
3. In a car-roof, the ridge-pole C, having the gutters c c, substantially as described.

4. The combination, in a car-roof, of the pieces D D, rafters I I, ridge-pole C, tie-rods H H, and king-rods J J, substantially as described.

5. The combination of the roof A, door L, ridge-pole C, and sliding hinges e e, substantially as described.

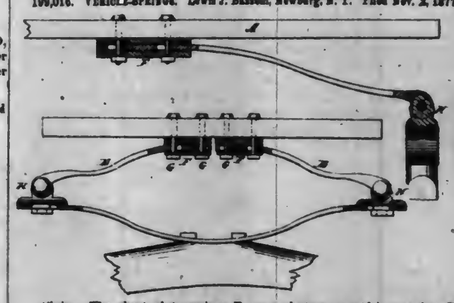
6. The combination of the roof A, door L, batten E, ridge-pole C, and sliding hinges e e, substantially as described.

199,015. MICROSCOPES. John J. Bausch, Rochester, assignor to the Bausch & Lomb Optical Company, same place, and the Orange Judd Company, New York, N. Y. Filed Dec. 17, 1877.



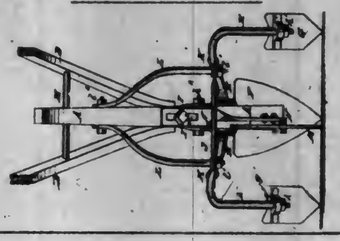
Claim.—A microscope with a convex base, having a glass stage fixed within a central opening therein, and with an opening in its side for the admission of light beneath the stage, substantially as and for the purposes described.

199,016. VEHICLE-SPRINGS. Lewis J. Bassett, Newburg, N. Y. Filed Nov. 2, 1877.



Claim.—The short plate-springs E, secured at upper end in a socket, F, of side bar or cross-bar, and pivoted at the lower end to a lag-bolt, H, of the half-spring E, as shown and described.

199,017.



199,017. CULTIVATORS. Isaac A. Benedict, West Springfield, Pa. Filed Oct. 25, 1877.

Brief.—To an ordinary shovel-plow side shares are attached by means of adjustable braces, with a cross-bar between the side beams, so that by adjusting this cross-bar backward or forward the side shares are brought nearer together, or at a greater distance apart.

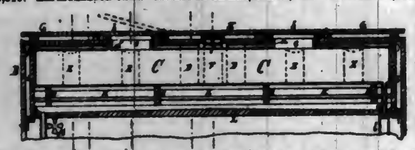
Claim.—The combination, with end-slotted and adjustable standards H H, of the connecting-bar J, clamps K, and rods L, the latter being vertically adjustable on standard A, as and for the purpose specified.

199,018. BARBED-FENCE MATERIALS. Lewis F. Botts, Chicago, Ill., assignor of one-half his right to Joseph S. Dennis and Henry H. Wheeler, same place. Filed Mar. 7, 1877.



Claim.—The combination, with the strap A of the fence, of barbs inserted in slits *a* in said strap, and secured in such slits by shoulders formed in the barbs by twisting or bending, substantially as and for the purpose set forth.

199,019. REFRIGERATOR-CARS. Richard M. Birdsall, Clinton, Wis. Filed Nov. 18, 1877.

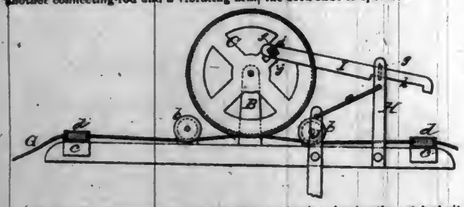


Claim.—1. In a refrigerator-car, the combination, with the roof B, of the rectangular ice-tank C, placed in the said roof, and the series of vertical metallic fines E on the sides of the same, substantially as described.

2. The combination, with the ice-tank C, placed in the roof of a car, of the horizontal fines *d'* on top of the tank, the vertical fines at the ends of the tank, and the vertical metallic fines D on the sides of the tank, substantially as described.

199,020. COMBINED CHECK-ROWER AND DROPPER MECHANISM. Albert M. Black and James Babcock, Decatur, Ill. Filed Oct. 20, 1877.

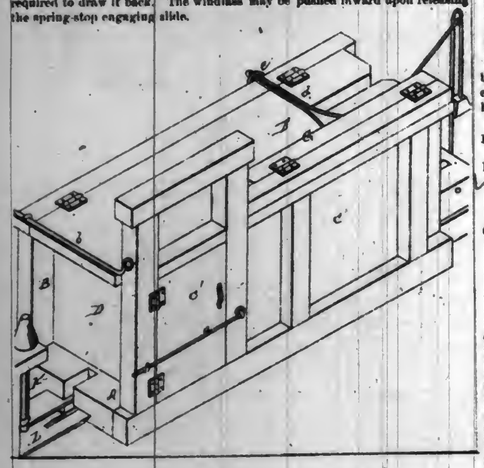
Brief.—A cord is fastened at each side of the field, one end in advance of the other the width of the row. The cord passes around a horizontal master-wheel and between guide-pulleys. The master-wheel has a slotted arm and an adjustable wrist-pin, that carries a connecting-rod having a long recess, which rests upon and within a keeper on a pivoted standard, by which, by means of another connecting-rod and a vibrating arm, the seed-slide is operated.



Claim.—In a check-rower, the dropping mechanism, having the notched pitman I, the vibrating lever H, drop-lever J, and connecting-rod *e*, in combination with the slotted drive-wheel C, substantially as specified.

199,021. HAY-PRESSES. Francis B. Beals, Bairbridge, N. Y. Filed Nov. 26, 1877.

Brief.—A weight is used to balance the follower, so that but little force is required to draw it back. The windlass may be pushed inward upon releasing the spring-stop engaging slide.

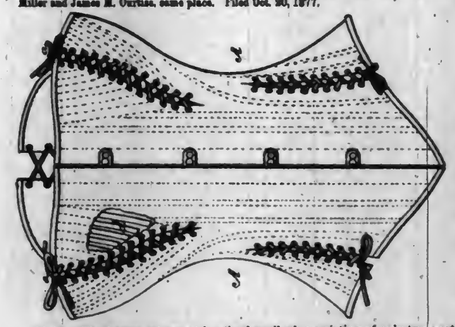


Claim.—1. The improved corset herein described, consisting of only two parts, A A, laced together at the back, and fastened at the front by the clasps, the front portion of each part being provided with a bosom-slit, *a*, from the upper edge downward for a suitable distance, and the two sides of the slit provided with short whalebones *d*, arranged diagonally, as shown, for holding that portion of the corset in the desired position, and with lacing-strings, as set forth.

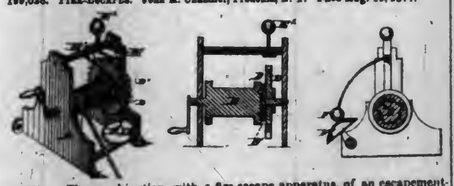
Claim.—1. In combination with an extension-ladder and fire-escape composed of the lapping ladder-sections A B C D, a carriage, K, having the recessed top and bottom walls, and provided with rollers, substantially as specified.

2. The combination of adjustable slotted braces P P with adjustable rollers O O, having recessed ends, substantially as specified.

199,027. CORSETS. E. Keyl Bullock, Detroit, Mich., assignor of two-thirds his right to Wm. J. Miller and James M. Curtiss, same place. Filed Oct. 20, 1877.



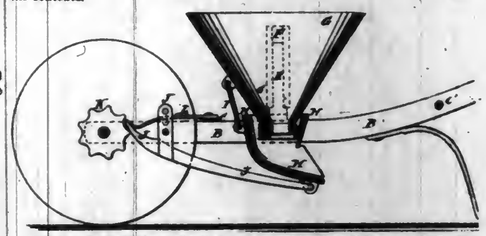
199,028. FIRE-ESCAPES. John M. Chandler, Fredonia, N. Y. Filed Aug. 11, 1877.



Claim.—The combination, with a fire-escape apparatus, of an escapement-wheel, D, or its equivalent, verge E, vibrating clapper F, and gong or bell F', substantially as and for the purposes described.

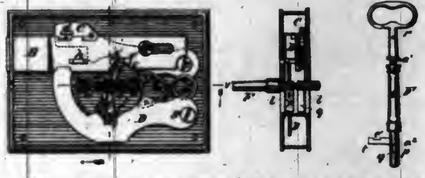
199,022. FERTILIZER-DISTRIBUTERS. William M. Boon, Perry, Ga. Filed Oct. 24, 1877.

Brief.—A frame with two handles is supported upon a single wheel, not unlike a common wheelbarrow. Upon the shaft of the wheel is fixed a scalloped wheel, which works the short arm of a lever, the long arm being pivoted to the extreme end of a pivoted shoe suspended immediately under the fertilizing hopper. The forward movement of the machine shakes the shoe and discharges the contents.



Claim.—In a fertilizer-distributer, the combination of the hopper G, the pivoted shaking-shoe H, the curved lever J, having an arm pivoted to side bar B, the scalloped wheel K, and spring L, all arranged to operate as shown and described.

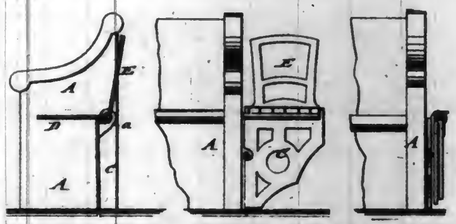
199,023. LOCKS AND KEYS. Daniel Border, Bedford, Pa., assignor of one-half his right to Lloyd Walter, same place. Filed Oct. 18, 1877.



Claim.—1. The combination of the bolt B, having notches *b* and stud *b'*, the pivoted edge-curved tumbler C, having studs *d f*, the pivoted tumbler D, having pin *k*, and the armed coil-spring *m*, as shown and described.

2. The spring-pressed shank *p*, having shoulders *a' a''*, fixed blade *q*, and bow *r*, in combination with the movable sleeve *s*, having blade *t*, and spring *u*, as and for the purpose specified.

199,024. FOLDING BRACKET-CHAIRS. Walter A. Brewster, Woodbury, N. J. Filed Nov. 10, 1877.



Claim.—The combination, with standard A, of the bracket C, swinging in bottom socket, the seat D, pivoted in ears of said bracket, to rest on its top edge, and the flanged back E, hinged to seat, as shown and described, so that by a single motion of the hand the bracket-chair may be folded or unfolded.

199,025. CULTIVATOR-TONGUES. William P. Brown, Zanesville, Ohio. Filed Apr. 23, 1877.

Brief.—A wheel or separating device between the team upon the tongue. Handles with hooks attached to tongue and axle.



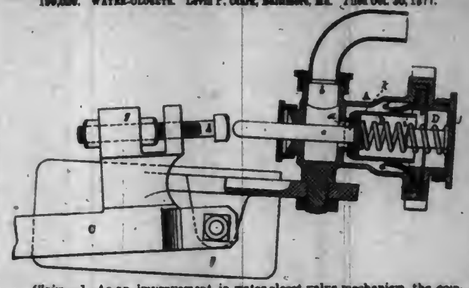
Claim.—1. An adjustable device located upon a cultivator-tongue, and extending rigidly across the same, so as to separate the team without being turned from a horizontal plane, substantially as described.

2. A separating wheel or disk, combined with the tongue of a cultivator, and arranged to rotate substantially as and for the purpose set forth.

3. The separating wheel B, arranged to rotate, and mounted upon a standard fixed to the tongue of the cultivator, as and for the purpose described.

4. The handles F, having hooks *c'*, in combination with the cultivator-tongue, the bar E, and crank-shaft C, substantially as and for the purpose described.

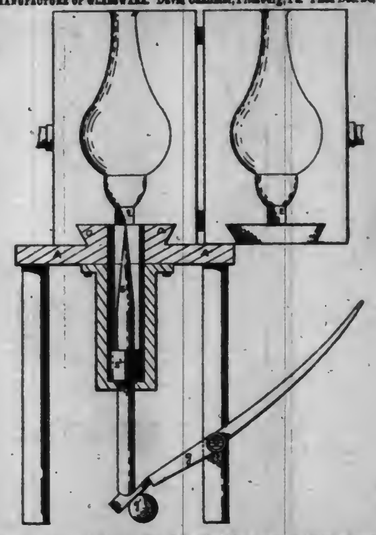
199,029. WATER-CLOSETS. Levin P. Clark, Baltimore, Md. Filed Oct. 30, 1877.



Claim.—1. As an improvement in water-closet valve mechanism, the combination of the valve-chamber A, hollow cylindrical valve B, having the perforation *k* in the side thereof, india-rubber ring *d*, and washer *e*, substantially as and for the purpose herein set forth.

2. In combination with the valve B, having the stem *c* projecting therefrom, and supported within the chamber A, the lever C, the said lever being provided with the lug *g*, carrying the adjustable bolt *h*, substantially as herein specified.

199,030. MANUFACTURE OF GLASSWARE. David Challinor, Pittsburg, Pa. Filed Dec. 24, 1877.



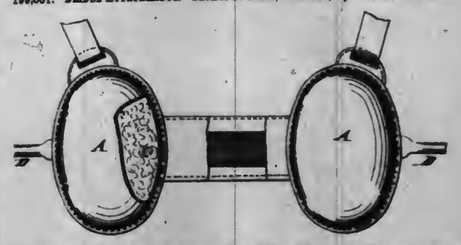
Claim.—1. The mode of making holes in blown-glass articles by causing a perforator to puncture the glass while inclosed in the mold, and while still retaining the proper degree of plasticity, substantially as set forth.

2. The combination of a perforator and blowing-mold, substantially as and for the purpose set forth.

3. A blowing-mold having a suitably-shaped cavity in its lower end, in combination with a perforator capable of motion in the axial line of the cavity, substantially as set forth.

4. The combination of blowing-mold, perforator, stem guide, and operating device, substantially as described.

199,031. BRIDLE ATTACHMENTS. Thomas P. Clines, Louisville, Ky. Filed Nov. 6, 1877.

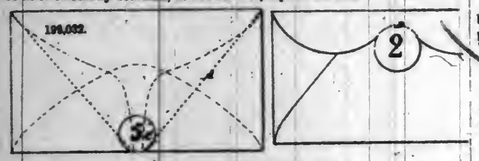


Claim.—As a safety attachment to bridles, the combination of pads A, attached to a lateral spring bridge or band, B, and hung to the head-gear of the bridle, with cross-straps D, ring E, lines F F', and rein G, arranged substantially as and for the purpose specified.

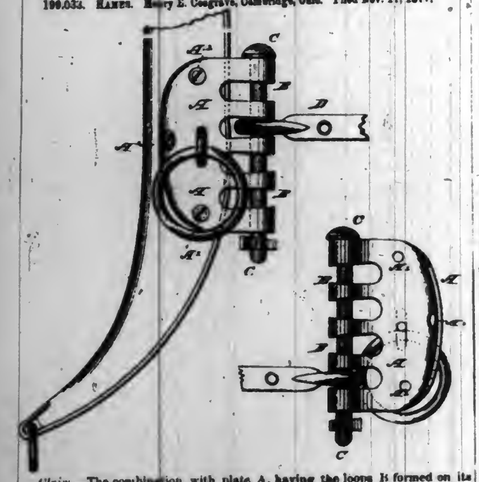
199,032. ENVELOPES. Joseph Clowes, Bedford, Pa. Filed Oct. 16, 1877.

Claim.—The letter envelope having an ungummed postage-stamp formed in

one-piece with the sealing-flap thereof, and attached thereto by a narrow neck, so as to be readily detached, as and for the purpose set forth.



190,033. HAMES. Henry E. Cosgrove, Cambridge, Ohio. Filed Nov. 17, 1877.



Claim.—The combination, with plate A, having the loops B formed on its rear longitudinal edge, of pin C and trace-loop attachment D, the said loops B being made with inwardly-curved side bodies, and the plate A being secured to the hame, as shown, all substantially as described, whereby the adjustable attachment may project rearward of the hame, and be in the direct line of draft, substantially as set forth.

190,034. BURGLAR-ALARM. Harvey F. Crawford, Brockton, Mass. Filed Nov. 16, 1877.



Claim.—1. In a burglar-alarm, the combination of the frame A, provided at one end with an anvil or nipple adapted to receive and hold a percussion cap or primer, the hammer-lever D, pivoted by one end to the frame A at the middle of its length, and having its movable end made thin and adapted to be swung into a position in contact and even with the rear end of the frame A, and to be inserted with said rear portion of the plate A into the crack between a door or window and its jamb or casing, and a spring for operating said hammer-lever when released, substantially as described.

2. The combination, in a burglar-alarm, of the plate A, provided with the anvil *b*, the spring B, adapted to hold a percussion-primer in position on said anvil, and the hammer-lever D, actuated by one or more springs, *e e*, and adapted to be set with its movable end in contact with the plate A at the end opposite to the anvil, and to be inserted with said plate between the edge of a door and its jamb, substantially as described.

190,035. WATER-WHEEL. David L. Cross, Austin, Tex. Filed Nov. 17, 1877.

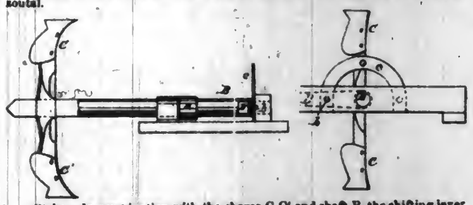


Claim.—1. In a current water-wheel, the combination of the stationary truncated conical hub B, with concave radial blades G, set inclined, and the rotating wheel, composed of the hub C, with the radial, concave, and tapering blades D, set inclined in the opposite direction to the blades G', substantially as herein set forth.

2. The combination of the box A, pivoted gates H, stationary hub G, with blades G', and the wheels C D, all constructed substantially as and for the purposes set forth.

190,036. REVERSIBLE PLOWS. Charles Daniel, Virginia, Mo. Filed Oct. 20, 1877.

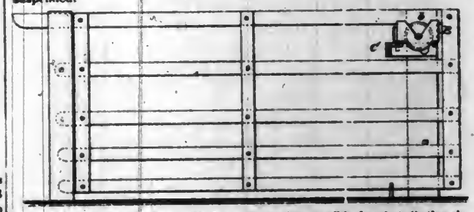
Brief.—The straight round beam is journaled in a frame mounted upon wheels. The plows are secured to the rear end of the beam, and to the forward end is a lever placed at right angles to the plow-standard. Moving this lever a hundred and eighty degrees will reverse the position of the plows. By moving ninety degrees and securing with a pin in a keeper the standards will be horizontal.



Claim.—In combination with the shares C C' and shaft B, the shifting-lever D, provided with pin *b*, and the curved bar *c*, having holes to receive said pin, all as shown and described.

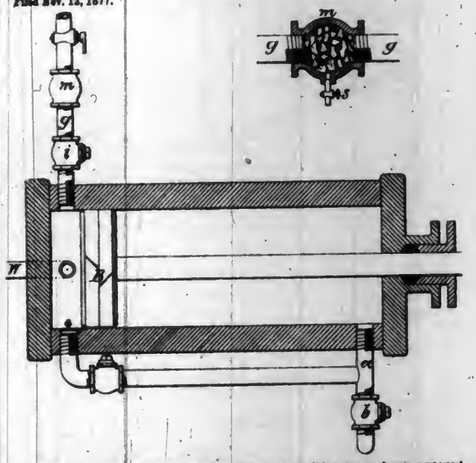
190,037. GATE-HANGER. William S. Dangler, Ottawa, Ohio, assignor of one-half his right to H. J. Dangler, same place. Filed Aug. 24, 1877.

Brief.—The reversible bracket has the form of the quarter of a circle. A horizontal vibrating guide-block has an anti-friction roller, on which the gate is suspended.



Claim.—In combination with the segmental reversible bracket C, the pivoted guide-block B, flanged and crotched, as described, and provided with an anti-friction wheel, *b*, substantially as specified.

190,038. FEED-WATER HEATER AND CONDENSER. Alex. de Beaumont, Philadelphia, Pa. Filed Nov. 12, 1877.



Claim.—1. The combination of the cylinder of a piston-pump, having valved communication between its opposite ends, with the valved water-inlet pipe *a*, valved steam-inlet pipe *g*, and valved discharge-pipe W, all substantially as specified.

2. The steam-pipe *g*, in combination with a casing, *m*, inclosing an obstructing-chamber, and provided with a petcock, *s*, all substantially as set forth.

190,039. MANUFACTURE OF TARTARIC ACID. Franz Dietrich, Murten, Switzerland. Filed Aug 18, 1877.

Claim.—The process of treating argols and lees of wine, as a preliminary step in the manufacture of tartaric acid, which consists in exposing said residues, in a dry state, to a temperature of 140° to 170° Celsius, as set forth.

190,040. BOBBIN-HOLDERS FOR SPOOLING-MACHINES. Horace Deak, Lowell, Mass. Filed Nov. 6, 1877.

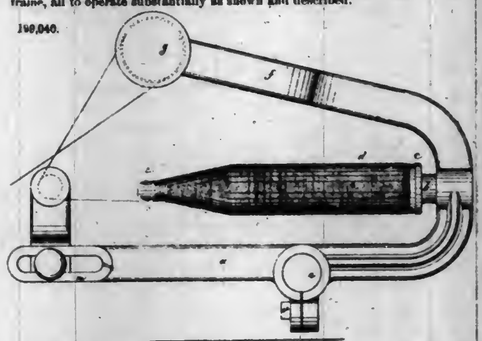
Brief.—The bobbin does not rotate. The yarn is led over an adjustable concave guide placed in line with the end of the bobbin, thence about a tension device, and finally to the spool, in the usual way.

Claim.—1. In a bobbin-holder for a spooling-machine, the combination, with the frame to support the bobbin, of the concaved surfaced adjustable yarn-guide, having its acting-surface substantially in line with the center of the bobbin, as and for the purpose set forth.

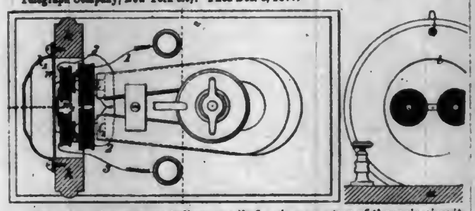
2. The combination, with a frame to sustain the bobbin and the guide *i*, arranged with reference to the bobbin, as described, of a grooved tension device, *g*, to control the tension upon the yarn, substantially as described.

3. The combination, with the spindle *b* and the independent frame *a f*, provided with eye *e*, and a set-screw to sustain the non-rotating bobbin, wound as a filling-bobbin, of a tension device and the yarn-guide *i*, connected with such frame, all to operate substantially as shown and described.

190,040.



190,041. TELEPHONES. Amos E. Dolbear, Somerville, Mass., assignor to the Gold and Stock Telegraph Company, New York city. Filed Dec. 6, 1877.



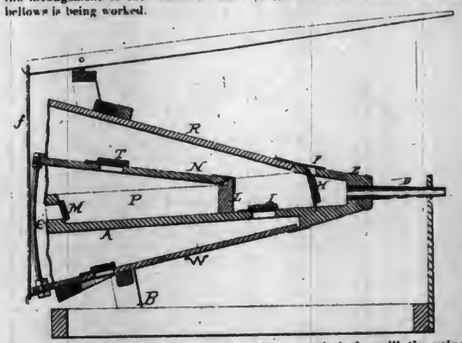
Claim.—1. One or more helices or coils forming a portion of the main circuit, and surrounding a core or cores maintained in a permanently-magnetic state, in combination with an electro-magnet whose helices are included in the same circuit, and which is so arranged as to act as an armature to the first-mentioned core or cores, and an elastic plate or diaphragm capable of responding either to sonorous vibrations traversing the atmosphere or other medium, or to corresponding electro-magnetic vibrations induced in the cores or armature by the influence of a current of varying strength traversing the said helices.

2. An armature attached to or forming a part of an elastic diaphragm, in combination with a damper or dampers interposed between the said armature and the stationary core or cores, in the manner and for the purpose specified.

3. The alarm attachment for telephonic instruments herein described, consisting of a cord having a suitably-prepared surface, attached to the elastic diaphragm, in the manner and for the purpose specified.

190,042. BELLOWS. Charles W. Dunn, Sr., Quincy, Ill. Filed Jan. 14, 1877.

Brief.—The boards are so arranged as to form a suitable air-chamber, and the arrangement of the valves is such as to give a continuous blast when the bellows is being worked.



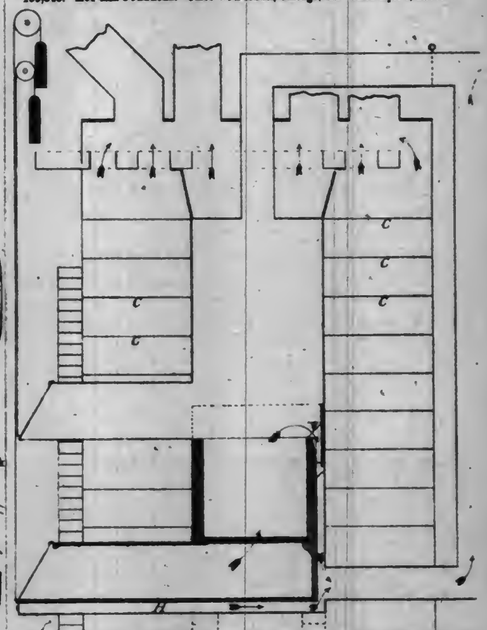
Claim.—1. The board A, provided on its rear vertical edge with the valve M, in combination with the board N, hinged to the standard L, and furnished with a valve, T, on its upper surface, whereby the chamber P is formed, substantially as expressed.

2. In a bellows, the block E, provided with transverse slot F, in which the adjustable damper H is placed, substantially as set forth.

3. In a bellows the combination of the boards A N E W with the valves I M T *a*, whereby suitable air-chambers are formed and a continuous blast effected, substantially as specified.

4. In a bellows, an automatic removable adjustable damper, for preventing the induction of hot air or gas from the furnace, substantially as shown and described.

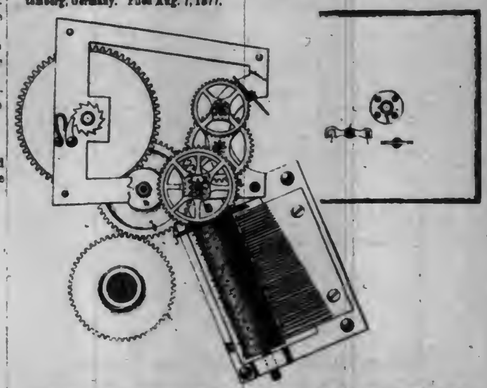
190,043. HOT-AIR FURNACE. Caleb W. Durham, Chicago, Ill. Filed Apr. 7, 1877.



Claim.—1. In a hot-air furnace, the combination, with a radiator, of inclined plates C and horizontal corner-pieces C', connecting said plates, substantially as shown and described.

2. In a furnace, the combination of the double-shouldered catches V with the lining of the fire-pot and the re-enforcing plate, substantially as shown and described.

190,044. SNOW-STAND FOR CHRISTMAS-TREES, &c. Johannes C. Eckardt, Stuttgart, Wurtemburg, Germany. Filed Aug. 7, 1877.



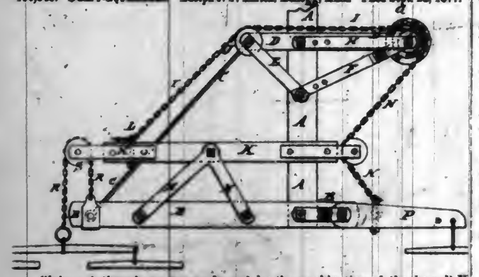
Claim.—1. As a new article of manufacture, a stand for Christmas-trees, &c., consisting of an arbor, A, having a socket, B, at one end, a clock mechanism, and a musical instrument, both of which are geared with the said arbor, a device for gearing and ungearing the musical instrument with the clock mechanism, and an inclosing-case, through which the arbor projects for supporting the socket B, all substantially as and for the purpose described.

2. The combination of an arbor, having a socket at one end for the reception of a Christmas-tree or other article, with a musical instrument, a clock-movement which is geared with both said arbor and the musical instrument, a sliding arbor and cog-wheel forming part of said clock-movement, and serving to gear the same with the musical instrument, and an inclosing-case, substantially as and for the purpose described.

3. The combination of an arbor, having a socket at one end for the reception of a Christmas-tree or other article, with a musical instrument, a clock-movement which is geared with both said arbor and the musical instrument, a sliding arbor and cog-wheel forming part of said clock-movement, and serving

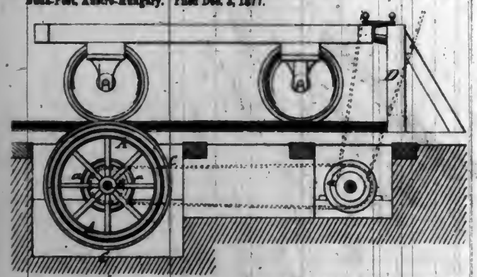
to gear the same with the musical instrument, a detent-lever adapted to engage with said sliding arbor, and an inclosing-case, substantially as and for the purpose described.

199,045. DRAFT-EQUALIZERS. Adolph J. F. Ehrich, Kellogg, Minn. Filed Sept. 22, 1877.



Claim.—A three-horse evener formed by the combination of the bars B K D H P, the braces C E F, the bracket M, the double pulley G, the guide-pulleys J O S, and the chains I N R with each other and with a tongue, A, substantially in the manner herein shown and described.

199,046. MACHINES FOR TESTING THE QUALITY OF ROLLING-STOCK, &c. Szent-Györgyi Elek, Buda-Pest, Austro-Hungary. Filed Dec. 3, 1877.

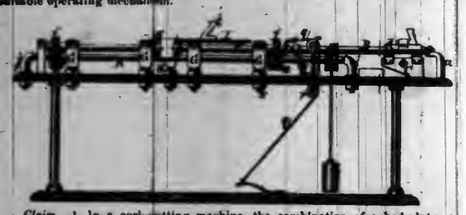


Claim.—1. A machine for testing railway rolling-stock and materials, consisting, essentially, of endless or rotatory rails, placed on supporting-disks of a revolving axle, and applied to the car-wheels, substantially as and for the purpose set forth.

2. A machine for testing railway rolling-stock and materials, consisting of endless or rotatory rails, revolved by suitable power, and of a railway-track on a level with the top of the rotatory rails, and of suitable devices for retaining the wheels in position for the action of the rotatory rails, substantially as and for the purpose set forth.

199,047. MACHINES FOR CUTTING CORKS. Antonio Fabre, New York, N. Y. Filed Nov. 23, 1877.

Brief.—A strip of previously-prepared cork is placed on the bed-plate transversely to a blank-cutting knife attached to a guide above the bed-plate, and working in a knife-receiving socket formed on the edge of the same, and the size of the blank regulated by an adjustable gage attached to the knife while being cut into blanks. The blank is then placed in a clutch supported upon a revolving shaft, and cut into a straight or tapering stopper by means of a finishing-knife supported on a vertically-adjustable guide-rod adjacent to said shaft, a rest for the knife during the movement, a driving-shaft connecting with said knife, so as to receive a revolving motion from the movement of said knife, and suitable operating mechanism.



Claim.—1. In a cork-cutting machine, the combination of a bed-plate, a knife-receiving socket in said bed-plate, a knife-guide located above the bed-plate, and a blank-cutting knife moving on said guide and projecting into the receiving-socket, substantially as described.

2. The combination, in a cork-cutting machine, of an adjustable gage for regulating the size of the cork-blank with a bed-plate, a knife-receiving socket in said bed-plate, a knife-guide located above the bed-plate, and a blank-cutting knife moving on said guide and projecting into the receiving-socket, substantially as described.

3. The combination, in a cork-cutting machine, of a clutch-shaft and a hinged finishing-knife, reciprocating on a guide made adjustable with relation to the clutch, substantially as and for the purpose set forth.

199,048. DOOR-LOCKS. James B. Folter, Oconomowoc, W. T. Filed Nov. 24, 1877.

Claim.—1. A tumbler-guide, slotted and recessed as described, in combination with a circular tumbler having an irregular hole as key-bearing, substantially as specified.

2. The locking-bar N and its conical spring, in combination with the cylinder C^3, having recess r and slot m, the tumblers 3 to 11, notched to receive said bar, and the cylinder C^3, having the beveled notches o, substantially as specified.

3. The combination of the bar N, having slot t and post v, with the conical spring seated in said slot, and embracing the said post, substantially as specified.

4. The rings I^v, of the same or different lengths, in combination with the correspondingly-grooved blade Q and the escutcheon-cylinder C^3 of a tumbler-lock mechanism, substantially as specified.

5. The combination, with the slotted bolt C, of the knob-hub a, having crank-pin a^1, and the connecting-hub c, having transverse groove g^4 engaging said pin, substantially as specified.

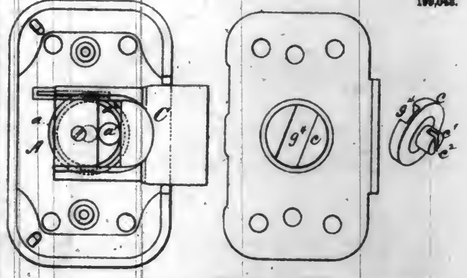
6. The combination, with the hub a, having crank-pin a^1, the grooved hub c, and the intermediate slotted bolt C, of the spring b^1 between the hub a and the lock-case, substantially as specified.

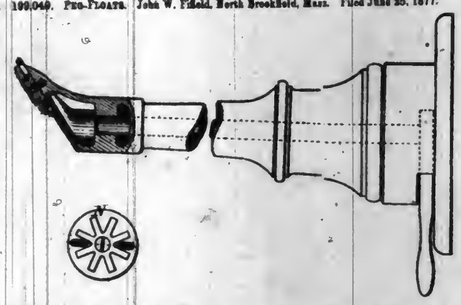
7. The combination, with the tumbler-case C^3, having the grooved head P, and the recessed connecting-hub c, having the grooved head c^2, of the connecting-plate c^1, engaging the said grooved heads, the slotted bolt C, the hub a, having crank-pin a^1, and the spring b^1 between the hub a and the bolt-case, as set forth.

8. The plate Q, having the transverse grooves, in combination with the ring or rings I^v, as set forth.

199,049. PEG-FLOATS. John W. Fifield, North Brookfield, Mass. Filed June 25, 1877.

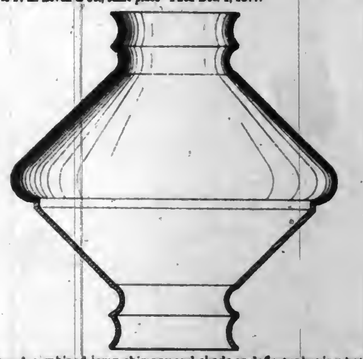
199,048.





Claim.—In a machine for cutting pegs in boots and shoes, the wheel F, formed with its double-edged cutting-divisions, substantially as above described.

199,050. COMBINED BRAND AND CHIMNEY FOR LAMPS. Samuel W. Fowler, New York, N. Y., assignor to F. H. Lovell & Co., same place. Filed Dec. 1, 1877.

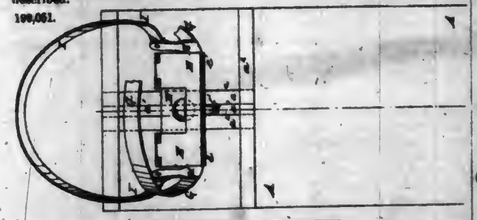


Claim.—A combined lamp-chimney and shade or deflector having both ends made to fit on the burner, and having a portion of its surface made of clear glass, to allow the light to pass freely through, and a portion of roughened or opaque glass, or other material, so as to deflect the light, whereby the light may be deflected either up or down, substantially as shown and described.

199,051. COMBINED BAR-HOLDER AND TRUCK. Edgar G. Frisbie and Charles H. Johnson, Monroe, Mich. Filed Oct. 12, 1877.

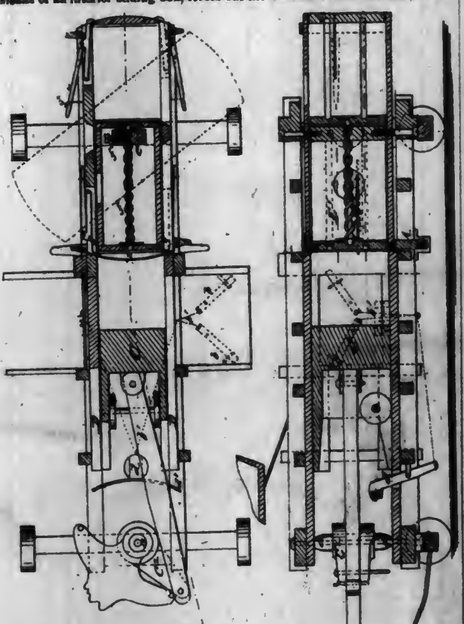
Claim.—The combination of the hinged plates E, the bolt and hand-nut F f^1, the rib e^1, the band G, the standards H, and the pivoted band I with the slotted board A a^1 and the frame B C D, substantially as herein shown and described.

199,051.



199,052. PORTABLE HAY AND COTTON PRESSES. Albert A. Gehrt, Quincy, Ill. Filed Oct. 16, 1877.

Brief.—The forming bale in one end of the revolving baling-chamber, by means of an interior sliding box, forces out the finished bale at the other end.



Claim.—1. In a portable press, the combination of a horizontal guide-frame with a reciprocating follower, pitman, and pivoted double cam at the end of tongue or sweep-lever of press, substantially as and for the purpose set forth.

2. The combination of the hinged side-doors of the guide-box, having fulcrumed latches, with a fulcrumed front lever having side arms, and with the pins of the double cam, to open the door or doors at end of forward stroke of follower, substantially as specified.

3. The combination, with a guide-box having side doors, and with a follower, of a revolving press-box at rear end of main frame, substantially as set forth.

4. The combination, with a guide-box of main frame having side doors, and with a follower, of a revolving press-box at rear end of main frame, the press-box being locked to connect with the guide-box by a spring-acted lock-lever, substantially as and for the purpose described.

5. The combination, with the guide-frame and a reciprocating follower, of a revolving press-box capable of being locked in position on end of guide-frame, and having an interior sliding box for moving out the bale at the rear end while forming a new bale at the front end, substantially as set forth.

6. The combination, with the guide-frame and follower, of a revolving press-box that is capable of being locked in position to connect with the guide-frame, and provided with an interior sliding box, to which a variable resistance to the pressure of the follower is imparted by adjustable friction devices, substantially as and for the purpose set forth.

7. The combination, in a portable press, of a pivoted and locked press-box, having fixed center post, with an interior sliding box having center pressure screw or shaft and frictional devices and head-blocks, that form contact with the center post when the sliding box arrives at either end of press-box, substantially as and for the purpose set forth.

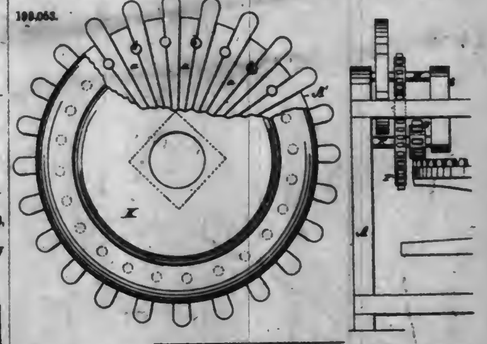
8. The combination, in a portable press, of the press-box having spring-latches and latch-levers with a movable door or head-block that is locked to either end of box, as required, substantially as specified.

199,053. HORSE-POWERS. Edmund Golecke, Crawfordville, Ga., assignor of one-half his right to Charles Bergstrom, same place. Filed Nov. 16, 1877.

Claim.—1. The gear-wheel consisting of a series of tapered plugs having semicircular transverse grooves, a disk or its equivalent, having partition a, with corresponding transverse grooves, the fastening-pins b, and the detachable disk K, or its equivalent, having holes to receive the ends of the pins, all combined and arranged substantially as shown and described.

2. The combination, with the slotted king-post, of the shaft-levers, united by a dear-joint, and secured by wedges, substantially as shown and described.

199,053.

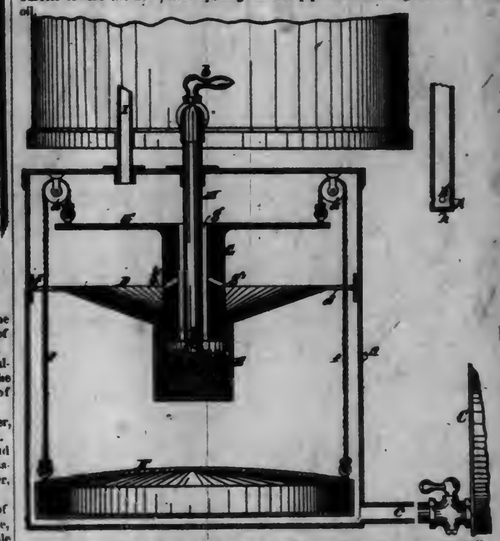


199,054. TANNING LEATHER. George Goodwin, Cookshire, Quebec, Canada. Filed Mar. 24, 1877.

Claim.—An improved process of tanning hides after the hair has been removed, so as to make water-proof leather, that consists in first soaking and agitating them forty-eight hours in a solution of sulphuric acid, and then treating them with a tanning-liquor formed of alum, two pounds; japonica, two pounds; salt, three quarts; and water, ten gallons, as set forth.

199,055. FEED-REGULATORS FOR CARBURETERS. George L. Gray, Philadelphia, Pa. Filed Oct. 20, 1877.

Brief.—The flow of oil to the carbureter is automatically regulated. An annular or tubular weight surrounding the feed-pipe is counterbalanced by a float, and is suspended in or over a mercury-cup, into which the feed-pipe also dips. An excess of oil admitted to the feed-chamber raises the float, thus lowering the weight into the mercury, causing it to rise and close the openings in the feed-pipe and shut off the supply of oil. The consumption of oil in the carbureter lowers the float, thus opening the feed-pipe and restarting the flow of oil.



Claim.—1. The flaring or dish-shaped shell or pan D, having a central well or cup, E, having tight bottom or blank end, and fixedly attached to the feeding-chamber A, with spaces or passages around its edges for the overflow of the liquid into the chamber beneath, substantially as shown and described.

2. The weight G, surrounding the feed-pipe H, and suspended above the mercury-cup E, in combination with the counterbalancing-float, substantially as shown and described.

3. The combination, with the feeding-chamber A, of the flaring pan D, having mercury-cup E, float F, weight G, and pipe H, substantially as shown and described.

199,056. MACHINES FOR MAKING HOOPS. John Greenwood, Rochester, N. Y. Filed Sept. 20, 1877.

Brief.—The hoop-blanks are first cut from a previously-prepared strip of wood as it is fed between a roller having a series of corrugated rings and an intermediate series of circular grooves, and a cutter-head provided with a series of dividing-cutters and a series of cutters having concave faces for rounding the outer corners of the hoop. They are then placed upon an endless bed formed of a series of inclined planes jointed together, and corresponding in position and number with the cutters; and fed under a roller having cones corresponding with said inclined planes, to a horizontal cutter-head carrying a straight-edge cutter, which planes off the raised or inner corners of the hoop.

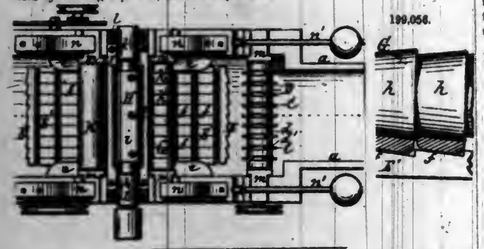
Claim.—1. In a hoop-machine, the cutter C, provided with knives *c*, having the slitting ends *c'*, for dividing the hoops, and the concave faces *c² c²*, for rounding the corners of the hoops, in combination with the pressing-roller D, resting above the cutters, as shown and described, and for the purpose specified.

2. In a hoop-machine, the combination of the endless apron or bed E, provided with the inclined planes *f f*, the roller G, provided with the cones *h h*, said planes and cones being parallel with each other, to hold the hoops in an angular position, and the planer H, set in a horizontal or straight position, to plane the hoops to a bevel, as herein shown and described.

3. In a hoop-machine, the combination of the saws or cutters C C, the feeding-roller H, the endless apron E, provided with the inclined planes *f f*, the pressing-roller G, provided with the cones *h h*, and the straight planer H, the whole arranged as described, so that the hoops are first cut from staves or sections, then carried in an inclined position through the apron and pressing-roller, and finally planed to bevel form by the planer, as herein described.

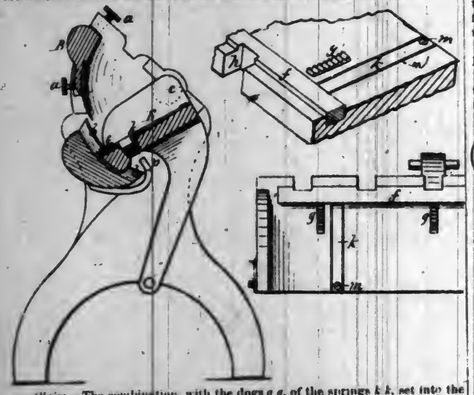
4. The process herein described of forming hoops, which consists in first slitting or dividing the hoops and rounding the corners, then passing the hoops in an inclined position between a bed and roller, and planing off the raised corners by a straight planer, as herein specified.

199,056.



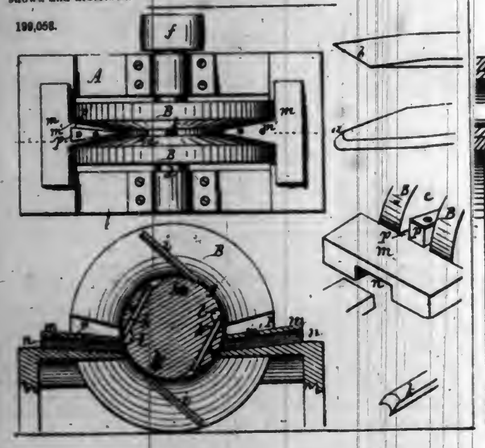
199,057. MACHINES FOR MAKING STAVES. John Greenwood, Rochester, N. Y. Filed Oct. 12, 1877.

Brief.—The stave-bolt is raised free from the dogs in the swinging bed at the back stroke, to enable it to slide down in position for a new cut, by means of a series of springs set in recesses in the face of the bed, and operated by stops, the lower ends of which are attached to the under side of the base-block.

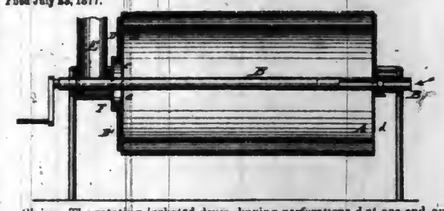


Claim.—The combination, with the dogs *g g*, of the springs *k k*, set into the face of the swinging bed E, and the stops *p p*, for operating upon and raising the springs above the level of the dogs in the back stroke of the bed, as herein shown and described.

199,058.



199,059. FEATHER-RENOVATORS. Gardner B. Griswold and John C. Gipson, Felt's Mills, N. Y. Filed July 23, 1877.



Claim.—The rotating jacketed drum, having perforations *d* at one end and central perforated portion *e* at the other, in combination with the draft-pipe E, communicating with both the drum and its jacket, and steam-pipe B, connected with the cylinder and its jacket by radial pipe D, having valves *a a*, substantially as specified, whereby steam may be admitted into the cylinder to wet the feathers, or into the jacket to dry the same, a current of air being maintained through the cylinder during both operations, as set forth.

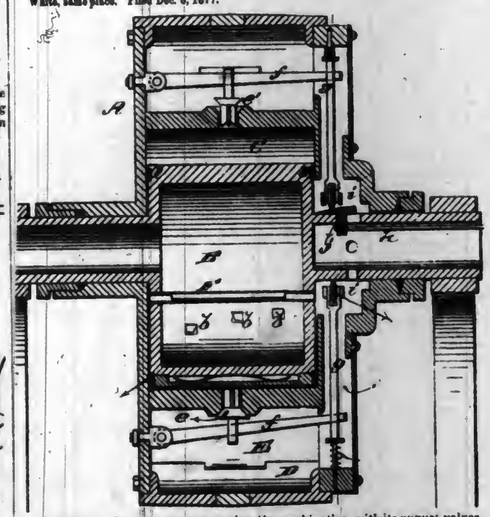
199,060. PORTABLE HAND-PUNCHES. Max L. Gutmann, Rochester, N. Y. Filed Dec. 7, 1877.

Brief.—Operates punch by putting forefinger through the ring and turning the cam-ring by the thumb and second finger. May have split cheek to hold the punch.



Claim.—The portable hand-punch herein described, consisting of the barrel A, the finger-loop *a*, the plunger *b*, the spring *i*, the cam-ring *m*, adjustable collar *n*, and the punch *d*, arranged to receive the blows of the plunger, the whole arranged to operate as and for the purpose specified.

199,061. ROTARY ENGINES. George O. Hale, Kansas City, Mo., assignor to himself and F. O. White, same place. Filed Dec. 6, 1877.

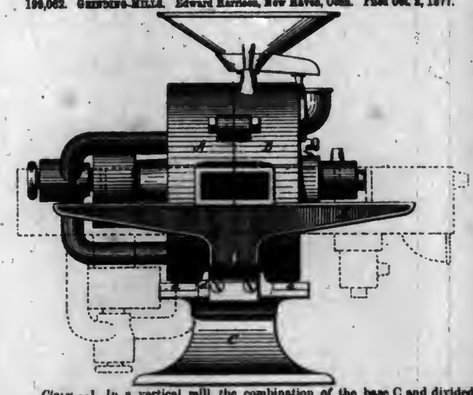


Claim.—1. In a rotary steam-engine, the combination, with its puppet-valves, which admit steam to its pistons, of the levers *f f*, spring-arms *g g*, arranged in the steam-passage *d d*, and the cam or shoe *j* upon the induction-trunnion, substantially as and for the purpose set forth.

2. In a rotary steam-engine, the swinging pistons E E', hung in the steam-chests, and entering the steam-chamber, and resting against the stationary eccentric B, in combination with the valves *c c'*, operated by suitable mechanism, substantially as and for the purpose set forth.

3. The combination of the outer cylinder A, inner cylinder C, forming steam-chests, stationary eccentric B, valves *c c'* and their operating mechanism, pistons E E', and the induction and eduction trunnions *a a'*, substantially as and for the purpose set forth.

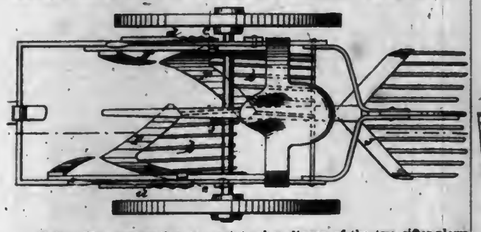
199,062. GRINDING-MILLS. Edward Harrison, New Haven, Conn. Filed Oct. 2, 1877.



Claim.—1. In a vertical mill, the combination of the base C and divided case, one constructed with stationary lugs, and the other with corresponding recesses to interlock the two, substantially as described.

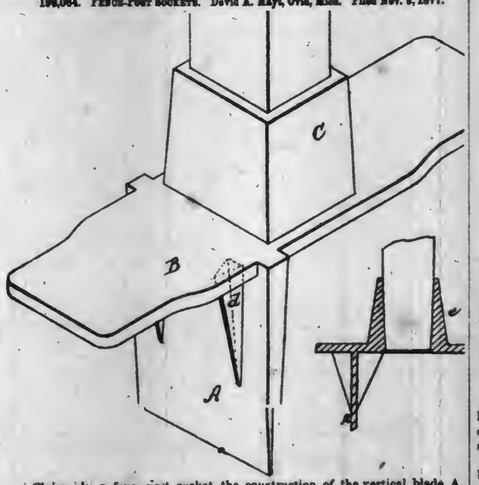
2. In a vertical grinding-mill, the combination of the base, case, and horizontal arms to the right and left, the case or heads constructed so as to be turned upon and supported by said arms without removing the case, substantially as specified.

199,063. POTATO-DIGGERS. Shreve Hartshorne, Bordentown, N. J. Filed June 4, 1877.



Claim.—The combination, in a potato-plow digger, of the two sifter-plows F *b* F' *b*, concaved to turn the soil inwardly, and set one in advance of the other, with a central double concave sifter-plow in the rear thereof, as and for the purpose specified.

199,064. FENCE-POST SOCKETS. David A. Hayt, Ovid, Mich. Filed Nov. 9, 1877.



Claim.—In a fence-post socket, the construction of the vertical blade A, horizontal plate B and the socket C, located to one side of the vertical blade, slightly tapering on the inside, and open at the bottom, substantially for the purposes set forth.

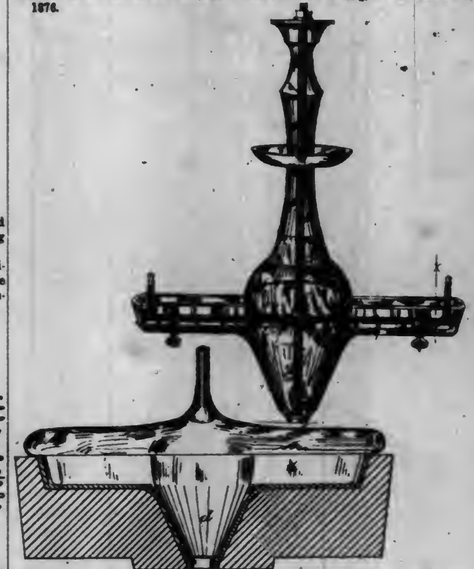
199,065. PRUNING-KNIVES. Ezra Hixson, Russell, Iowa, assignor of one-half his right to Geo. C. Beggs and George W. Pleets, same place. Filed June 1, 1877.



Claim.—1. The pruning-shears consisting of the stationary blade or hook B, having the flanges *e e* formed in one piece therewith, the plate or blade D, having teeth or a rack, and handle having a toothed or cogged segment, C, connected to said plate or blade D by a single axle or screw-bolt, *b*, substantially as and for the purpose set forth.

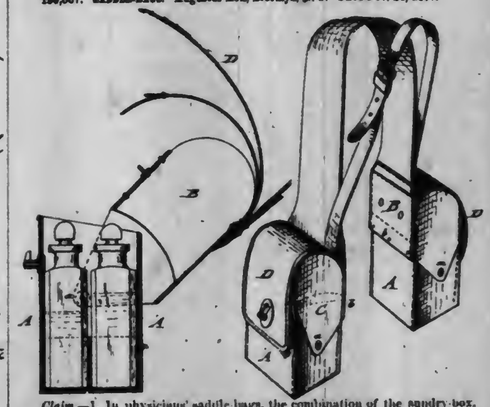
2. The combination, with the blade or hook B, the sliding serrated blade or plate D, reduced upon its rear side just above its rack or teeth, as shown, and segment C, the said reduction providing for the movement of said segment, by which it may be brought in close proximity with the heel of the knife D, and thus permit of the compact arrangement of the constituent parts, substantially as specified.

196,066. GLASS CHANDELIER-TRIMMINGS. John H. Hobbs, Wheeling, W. Va. Filed Nov. 6, 1876.



Claim.—The mode of making open-topped glass trimmings for chandeliers, by blowing the same to shape in an open-topped mold, D, provided with one central and two or more radial cavities, substantially as set forth.

199,067. SADDLE-BAGS. Augustus Hoff, Brooklyn, N. Y. Filed Nov. 28, 1877.



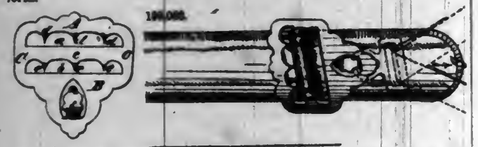
Claim.—1. In physicians' saddle-bags, the combination of the sundry-box, having side extensions or hangers, rear bearing, and inwardly-curved or concaved bottom, with a pivoted vial-box, having backwardly-inclined upper part, substantially as and for the purpose described.

2. The combination of the box A, with the backwardly-inclined portion, and box B, with concave bottom, the latter having side hangers C, pivoted at a to the former, and provided with a flap, D, applied as and for the purpose specified.

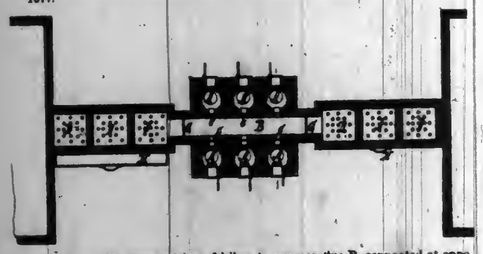
199,068. BUCKLES. Geo. M. Hotchkiss, New Haven, and John A. Clinton, West Haven, Conn.; said Clinton assignor to said Hotchkiss. Filed Oct. 17, 1877.

Claim.—The buckle composed of the frame A B C C and the cross-bar *c*, the top bar A of the frame having teeth *d d d*, inclined inwardly, and the cross-bar *c*, having a plain upper edge and teeth *e e e*, inclining outwardly from its lower edge, the whole constructed of a single piece of metal, substantially as set forth.

199,068.



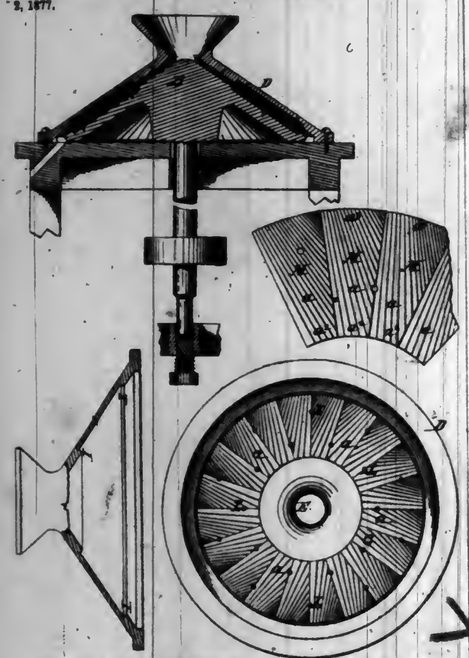
199,069. FURNACES FOR BURNING PYRITES. John Hughes, Stapleton, N. Y. Filed Sept. 14, 1877.



Claim.—1. The combination of kilns A, common flue B, connected at opposite ends to separate sets of cooling-chambers D, and the dampers or cut-offs G, whereby one set of said chambers may be disconnected from the kilns without interrupting the operation of the other set, substantially as set forth.

2. In a furnace for burning pyrites, the cooling-chambers D, provided with perforated bottoms and suitable devices for supporting pans or drawers thereunder, substantially as and for the purpose set forth.

199,070. MILLS FOR REDUCING GRAIN. Charles A. W. Jaquett, Brooklyn, N. Y. Filed July 2, 1877.



Claim.—In a mill for disintegrating grain wherein is combined a runner-cone, B, with a shell, D, having disintegrating-surfaces, the combination, with said disintegrating-surfaces, of the evener-space formed by the two smooth concentric zones or surfaces upon the cone and shell extending down from the eye or apex thereof.

199,071. HOISTING-MACHINES. Peter C. Johnson, Black Hawk, Colo. Filed Nov. 22, 1877.

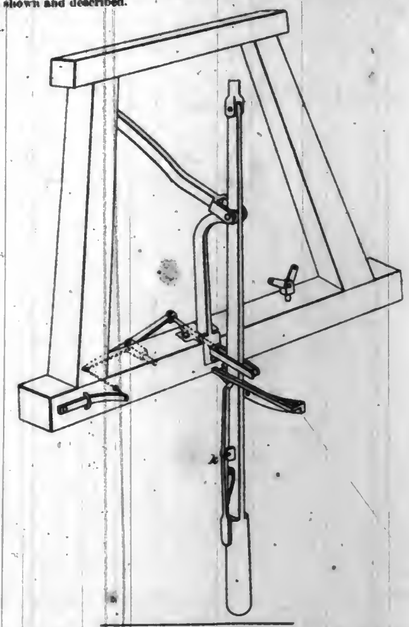
Claim.—1. The movable winding-drum C, having at each end a grooved friction-wheel, *b*, and brake-wheel *c*, and the metal-faced brake-shoes *c'*, in combination, as herein shown and described.

2. The combination, in a journal-box for hoisting-machinery, of the side bearing-pieces H and the wedges L, as herein shown and described.

3. The combination of the T-levers K, connecting-rods *f*, and shaft *h*, having arms *g*, with the wedges L, for operating the movable bearing-pieces H, as herein shown and described.

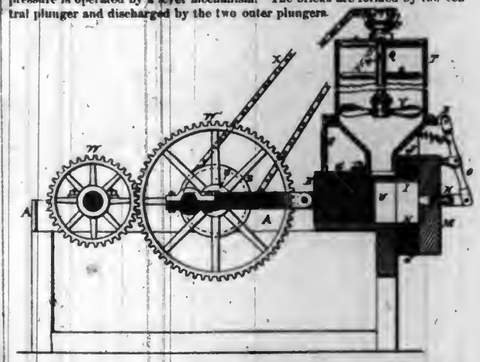
4. The combination of the hand-lever O with the wedge-operating levers, as herein shown and described.

199,071.



199,072. BRICK-MACHINES. William H. Kain, Philadelphia, Pa., assignor of one-half his right to John Q. A. Ziegler, same place. Filed Feb. 9, 1877.

Brief.—A mold-frame carrying two molds is reciprocated so as to alternately bring each into position for filling and for being discharged. The valve or ping for opening and closing the vent of the mold while being filled and during pressure is operated by a lever mechanism. The bricks are formed by the central plunger and discharged by the two outer plungers.

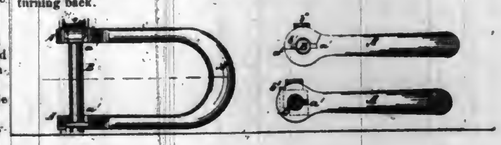


Claim.—1. In combination with the molds I I, compression-plunger B, and platen M, the air-valve N, lever O, rod R, and upright S, operated by the movement of the plungers B^1 and B^2, substantially as herein shown and described.

2. The combination, in a brick-machine, of the frame A, partitions *a a*, compression-plunger B, discharging-plungers B^1 and B^2, shaft C, cranks E, E^1, and E^2, levers F, F^1, and F^2, movable mold-frame H, guides J J, platen M, grooved cam-wheel L, lever K, shaft C', pinion W, and spur-wheel W', operating substantially as herein shown and described.

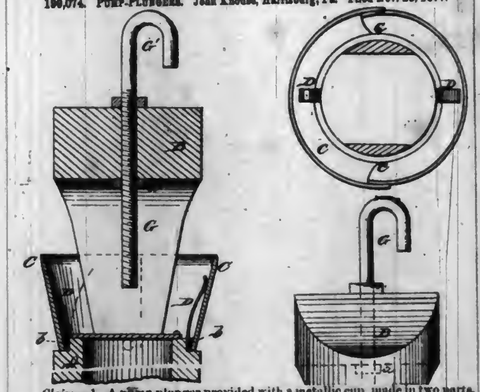
199,073. CLEVISES. William Kinsey, Bellevue, Ohio. Filed Oct. 27, 1877.

Brief.—The body of the clevis is of the usual form of construction. The hole in each end is provided with a slot, and a corresponding stud is formed on the lower end of the pin, and the under side of the lower arm of the clevis is recessed, so that the pin can turn half-way round. When in this position a button pivoted to the side of the head is turned down, which keeps the pin from turning back.



Claim.—An improved clevis, in which the bow A has grooves a^1 formed in the inner side of its pin-holes, and a shoulder, a^2, formed upon the outer side of its lower end, and in which the pin B has a lug, b^1, upon the side of its lower end, and a latch, b^2, pivoted to, and a shoulder, b^3, formed upon its head, substantially as herein shown and described.

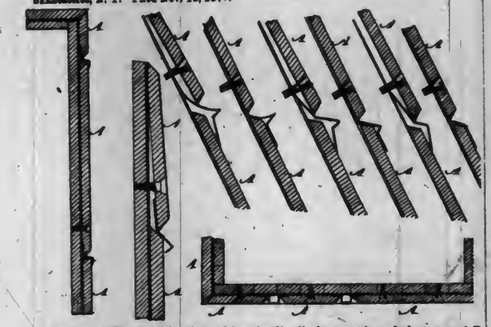
199,074. PUMP-PLUNGERS. John Knouse, Harrisburg, Pa. Filed Nov. 20, 1877.



Claim.—1. A pump-plunger provided with a metallic cup, made in two parts, overlapping each other, and pivoted at their lower ends, and provided at the inside with separate and independent springs, substantially as herein set forth.

2. The combination of the plunger-body A B, the cups C C, made in two parts and pivoted at their lower ends, the springs D D, packing *b*, and rod G, all substantially as and for the purposes herein set forth.

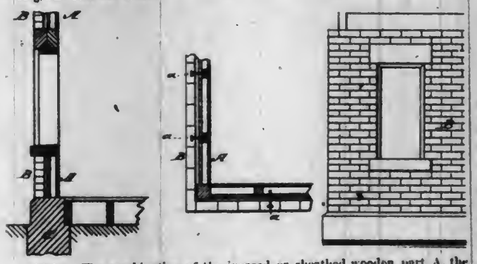
199,075. COVERING THE SIDES AND ROOFS OF BUILDINGS WITH SLATES. Edmund N. Leslie, Skaneateles, N. Y. Filed Nov. 10, 1877.



Claim.—1. The combination of longitudinally-bent strips of sheet metal B C with the adjacent edges of slates A, laid flat upon the surface to be covered, to form water-tight cross and upright seams between said edges, substantially as herein shown and described.

2. The combination of a plastic cement with the sheet-metal strips B C and the edges of the slates A, substantially as herein shown and described.

199,076. CONSTRUCTION OF HOUSES. Robert G. Lindsay and Christian G. Lindsay, Hollidaysburg, Pa. Filed Oct. 6, 1877.



Claim.—The combination of the incased or sheathed wooden part A, the outer part or face-wall B, formed of brick, the two being so located as to leave a clear dead-air space between them, and the nails or spikes *a*, which connect the two walls, substantially as shown and described.

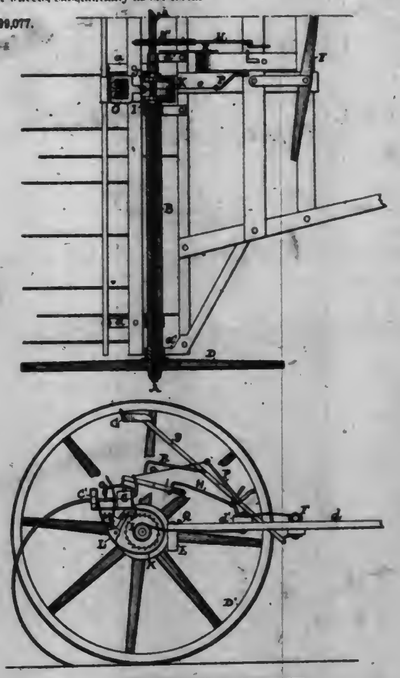
199,077. HORSE HAY-RAKES. Tyler C. Lord, Joliet, Ill., assignor of one-half his right to F. E. Marsh, same place. Filed Sept. 11, 1877.

Claim.—1. In combination with the wheels D D', the solid shaft or axle A, extending the full distance between the wheels, and the hollow shaft or axle B, journaled on the axle A, as described, the wheel D' being secured to the axle A and the wheel D to the hollow axle B, so as to revolve independent of each other, substantially as and for the purpose specified.

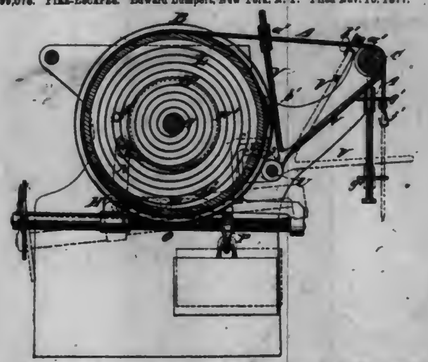
2. In combination with the wheels D D' and axles A B, the ratchet-wheels I J, one secured to each axle, and arranged to operate with the pawl-levers M, substantially as and for the purpose specified.

3. The lever P, connected and operating in combination with the slotted bell-crank lever O, for the purpose of throwing the pawls into gear with the ratchet-wheels, substantially as set forth.

199,077.



199,078. FIRE-ESCAPES. Edward Lampert, New York, N. Y. Filed Nov. 16, 1877.



Claim.—1. In a fire-escape, the combination, with the hollow drum, its attached rope or chain, and the coiled spring attached to the drum and its shaft, of two automatically-operating brake-wheels and brakes, one for controlling upward run of the rope or chain and the other for controlling the downward run of the same, substantially as set forth.

2. The combination, in a fire-escape, of an adjustable weight and means for indicating the adjustment of the same to the weight of the body to be lowered, the spring-drum, with its attached lowering rope or chain, and the brake and brake-wheel which regulates the descent of said rope or chain, substantially as specified.

3. The combination, in a fire-escape, with the spring-drum and its attached lowering rope or chain, of a brake-wheel and brake for controlling the descent of said rope or chain, and a regulator or means for automatically releasing and applying said brake at the two extremes of the up-and-down run or action of said rope or chain, essentially as specified.

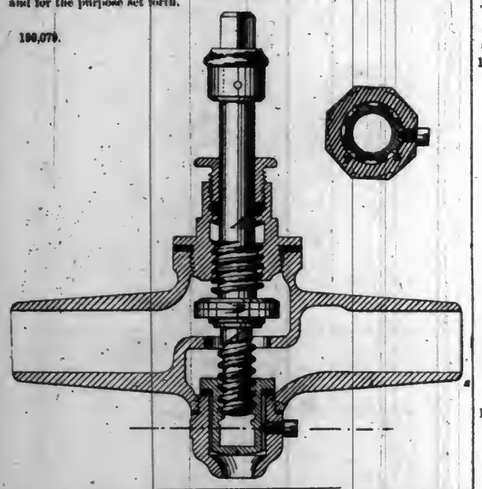
4. The stops *b'* and *f'*, attached to the lowering rope or chain, in combination with the lever V, the cam *c'*, the lever H^1, the brake F^6, the brake-wheel E', and the spring-drum B, substantially as and for the purposes herein set forth.

199,079. SERVICE-VALVES. Paul Magnus, New York, N. Y. Filed Dec. 13, 1877.

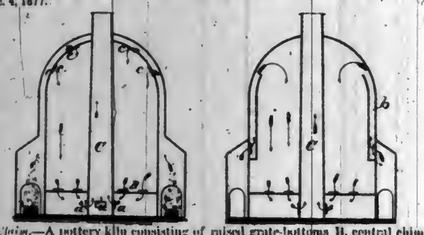
Claim.—As an improvement in screw-valves, the combination of a central screw-spindle, having a lower screw-thread of greater pitch than the upper thread, with a fixed supply-valve and a vertically sliding and guided drain-valve.

that is opened or closed as the supply-valve is closed or opened, substantially as and for the purpose set forth.

199,079.

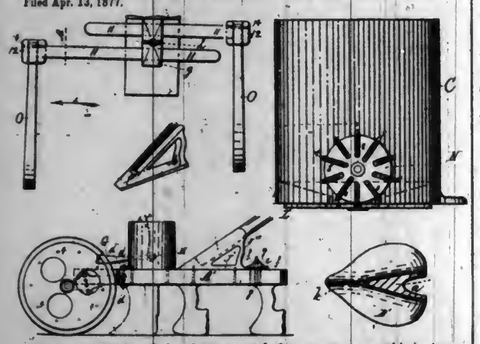


199,080. POTTERY-KILNS. Isaac Mann, Mutton, and Griggs Mark, Lewisburg, Pa. Filed Dec. 4, 1877.



Claim.—A pottery kiln consisting of raised grate-bottoms B, central chimney C, having apertures *c* below said bottom, and side furnaces, having flues provided with openings at top, all substantially as shown and described.

199,081. COMBINED CULTIVATOR AND SEED-DRILL. Elbridge O. Matthews, Oakham, Mass. Filed Apr. 13, 1877.



Claim.—1. The handle-bracket composed of two parts, arranged in juxtaposition, each part consisting of a brace, a base, an exterior flange, and a solid end, the last three elements being combined to converge to a common point, substantially as shown and set forth.

2. The combination, with the seed-box C and gage-plate L, of the operating and indicating seed-wheel N, substantially as and for the purposes set forth.

3. The combination, with the arms H, provided with recessed or slotted heads 12, of adjustable marking and steadying arms O, substantially as described.

199,082. PLOW ATTACHMENTS. John McBride, Des Moines, Iowa. Filed Mar. 17, 1877.

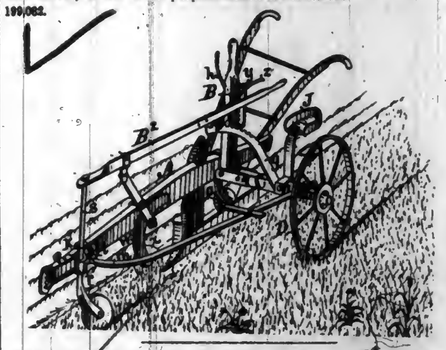
Brief.—The axle is hinged to the plow-beam, and the vertical lever wings or levels the plow. This lever carries a loop and rack, in which is held a horizontal lever, which adjusts the front caster-wheel. The fulcrum-post is jointed, and forms part of the colter-clamp.

Claim.—1. In combination with the plow-beam and hinged axle, the lever B, having the combined rack and fender *y*, and lever B', provided with the spring-latch *z*, substantially as and for the purposes shown and described.

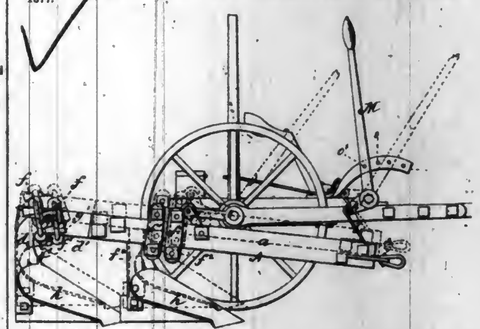
2. The adjustable and jointed fulcrum *t*, adapted to support the lever B', and to clamp the colter *w x* to the plow-beam, substantially as shown and described.

3. The vertical lever B, having the combined rack and fender *y* and the gravitating-latch *h*, the hinged axle C, carrying the wheel D and rack *g*, the jointed fulcrum *t*, clamping the colter *w x*, the horizontal lever B', having a spring-latch at its rear end, and carrying a caster-wheel at its front end, and the hinged and adjustable brace *u*, when arranged and combined to operate substantially as and for the purposes shown and described.

199,082.



199,083. GANG AND SULKY PLOWS. John R. McCormick, Georgetown, Tex. Filed June 30, 1877.

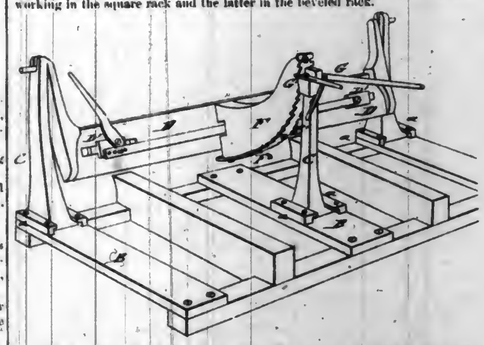


Claim.—1. The combination, with the plow-beam frame A, having plows F upon its side bars, the one in advance of the other, and axle C, having the double crank E, of the transporting-wheel D', arranged on said axle, and working between the side bars *a a'*, upon solid ground between the furrows of said beam-frame, substantially as specified.

2. The combination, with the axle C, having the double crank E, of the transporting-wheel D', journaled upon the outer bend of said crank, working between the side beams *a a'* of the plow-beam frame, and the connecting-rods r r', pivoted, respectively, to the said side bars, and to the end and inner bend of said crank, substantially as specified.

199,084. SAW-MILL-CARRIAGE ATTACHMENTS. Andrew J. McCollum and Thos. Scoly, Indianapolis, Ind., assignors to themselves and George D. Emery, same place. Filed Nov. 12, 1877.

Brief.—Logs that have been quartered are held while being cut into boards by means of dogs adjustable in slots formed in the lower part of a swinging frame mounted in detachable and laterally-adjustable posts upon the saw-carriage. The swinging frame can be adjusted to and held at any inclination desired by an arc-shaped arm attached to the same, and provided with a square rack on one side and a beveled rack on the other, in connection with a pivoted lever and spring-pawl attached to the upper part of the middle post, the former working in the square rack and the latter in the beveled rack.



Claim.—The combination of the supporting corner and middle posts C C, and of a swinging log-carrying bar, D, having arc-shaped arm F and racks F' F', with the adjusting-lever G and locking spring-pawl G', substantially as and for the purpose set forth.

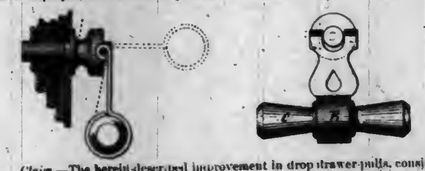
199,085. METALLIC FASTENERS. George W. McGill, New York, N. Y. Filed Oct. 26, 1877.



Claim.—A fastener consisting of the vertically-split prong *a a*, head A, washer B, and button-head C, when combined and arranged substantially in the manner herein described, for the purposes specified.

199,086. DRAWER-PULLS. Julius E. Merriman, West Meriden, Conn. Filed Nov. 30, 1877.

Brief.—The drop is formed from a single piece of sheet metal, bent at its upper end to form eyes for the hinge, and bent at its lower end into a transverse tubular-shaped ring or socket to receive the cross-bar constituting the handle, thus simplifying and cheapening the construction.

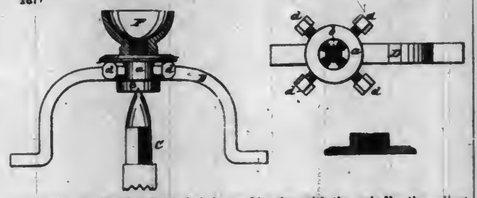


Claim.—The herein-described improvement in drop drawer-pulls, consisting in the drop constructed from a single piece of sheet metal, the lower end bent into tubular shape to receive the transverse bar, the upper end bifurcated and bent to embrace the pintle of the hinge, substantially as described.

199,087. MEDICATED SOAPS. Ethanan L. Moodie, New York, N. Y., assignor of one-half his right to Marion A. Parker, Jersey City, N. J. Filed Sept. 12, 1877.

Claim.—A soap in which sulphur and tar, in about the proportions described, are employed as ingredients, substantially as specified.

199,088. MILLSTONE-BALANCING DEVICES. John P. Moore, De Mosville, Ky. Filed Oct. 29, 1877

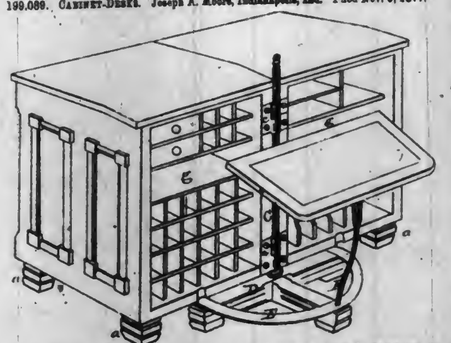


Claim.—1. The headed bolt *b*, in combination with the spindle, the adjusting screws, the perforated balance-rynd, and the clamping-nut arranged upon the threaded stem of said bolt, upon the opposite side of the balance-rynd from its head portion, substantially as and for the purpose described.

2. The combination, with the headed bolt *b*, the perforated balance-rynd, and the horizontal set-screws having angular heads, of a fastening-nut adapted to secure the bolt and lock the adjusting-screws, substantially as and for the purpose described.

3. The nut F, made in cup shape, and combined with the bolt *b*, the perforated balance-rynd, and the angular-headed horizontal adjusting-screws, as described.

199,089. CABINET-DESKS. Joseph A. Moore, Indianapolis, Ind. Filed Nov. 9, 1877.



Claim.—1. A cabinet-desk consisting of two wings, pivoted or hinged to a common shaft, upon which the wings rotate in opening or closing the desk, substantially as shown and described.

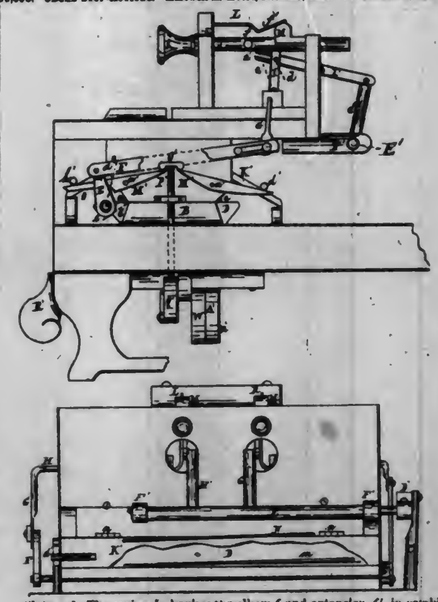
2. The wings of a cabinet-desk, each being provided with a recess, *g*, for the reception of the ends of the writing-table when the desk is closed, substantially as herein shown and specified.

3. The table B, supported by the shaft C and the standard F, substantially as specified.

4. In a desk, the upright shaft C, forming the hinge-pivot for the two wings, substantially as specified.

5. In a desk composed of rotating wings, as specified, the circular track E, attached to either the wings or the base, in combination with said wings, substantially as herein shown and described.

199,090. ORGAN STOP-ACTIONS. Hartwell S. Moore, Norwalk, Ohio. Filed June 23, 1877.



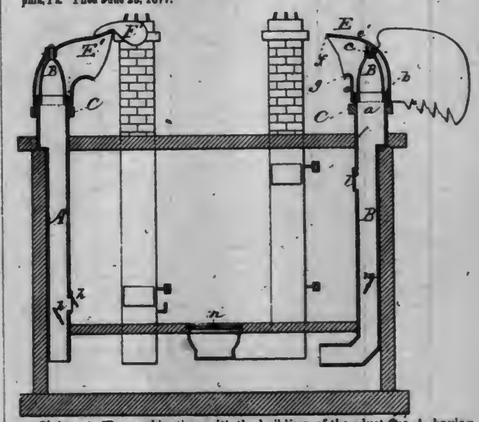
Claim.—1. The spring L, having the elbow *f* and extension *f'*, in combination with the lug or cam M on the draw-rod J, substantially as and for the purpose specified.

2. The shaft E', arms or standards H' and G', and bifurcated links I', J', and L', in combination with the arms I I, for operating jointly the mutes D and C, substantially as herein set forth.

3. In combination with the shaft E', the arm D', link C', bell-crank W, link V, and knee-lever U, all constructed and arranged to operate in the manner as and for the purpose set forth.

4. In combination with the swells K' and O, the levers *n' n'*, rod P', head O', and bifurcated bell-crank Q', constructed and arranged substantially as herein described, and for the purpose set forth.

199,091. VENTILATORS FOR MINES, CELLARS, AND BUILDINGS. John O. Morgan, Philadelphia, Pa. Filed June 23, 1877.



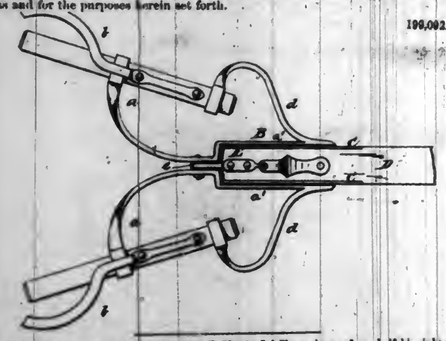
Claim.—1. The combination, with the building, of the educt-flue A, having valve *b*, damper *k*, and a revolving hood, E', with its mouth out of the wind, of the indict-flue B, having valve *l*, damper *m*, and a rotating hood or cowl, E, facing the wind, as and for the purpose set forth.

2. The hood or cowl E, having an overhanging penthouse, *f*, and a down-turned lower edge, substantially as specified.

199,092. WAGON-TONGUE SUPPORTS. Thos. Morgan, Marquette, Mich., assignor of one-third his right to Wm. H. Green, same place. Filed Oct. 27, 1877.

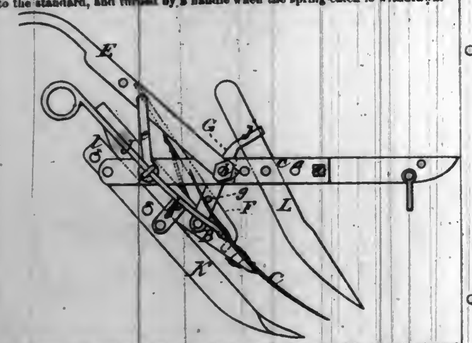
Claim.—The combination of the holder formed of the braces a d and arms a', the box or socket B, tongue D, and coupling C, all constructed substantially as and for the purposes herein set forth.

196,092.



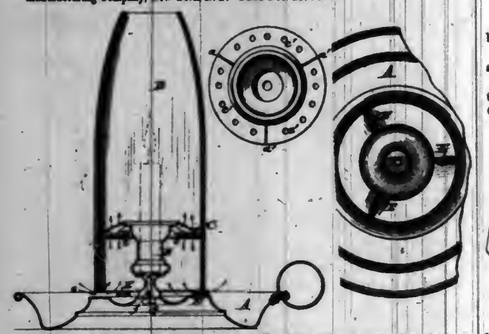
196,093. REVERSIBLE PLOWS. Benjamin F. Morris, Saltillo, assignor of one-half his right to T. P. Swift, Scott's Mill, and Wm. H. Strickland, Decatur County, Tenn. Filed Nov. 3, 1877.

Brief.—A double-pointed shovel-plow pivoted midway between the points to the standard, and turned by a handle when the spring-catch is withdrawn.



Claim.—The combination, with the beam B, the reversible plow C, pivoted thereto, the colter L, and the forked and looped brace G, secured to the beam and looped over the colter, of the snap-latch F, extending through and pivoted to said brace, substantially as specified.

196,094. CANDLESTICKS. Jos. Musgrove, Wood Haven, assignor to the Lebanon & Grosjean Manufacturing Company, New York, N. Y. Filed Dec. 11, 1877.

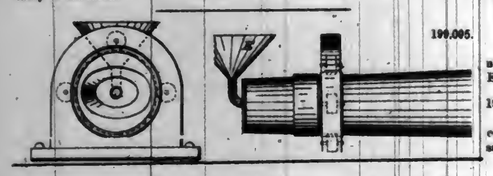


Claim.—1. The combination of the candlestick having a projecting rim, provided with air-passages, and the chimney arranged for the passage of air to its interior at or near the bottom thereof, substantially as set forth.

2. The combination of base A, having ridges or projections E, the socket having rim C, provided with suitable air-passages, and the chimney D, substantially as set forth.

3. The candlestick composed of the base A, socket B, having rim C formed in one or more pieces therewith, and secured to the center of said base, substantially as set forth.

196,095.

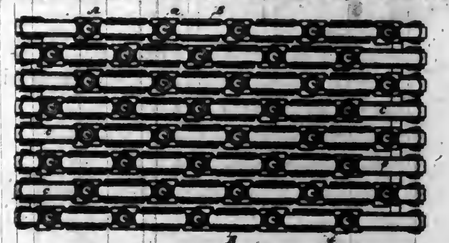


196,095. AMALGAMATORS. George O'Brien, London, England. Filed Sept. 17, 1877.

Claim.—An amalgamating-tube open at both ends, and having its inner surface non-circular in cross-section, as set forth.

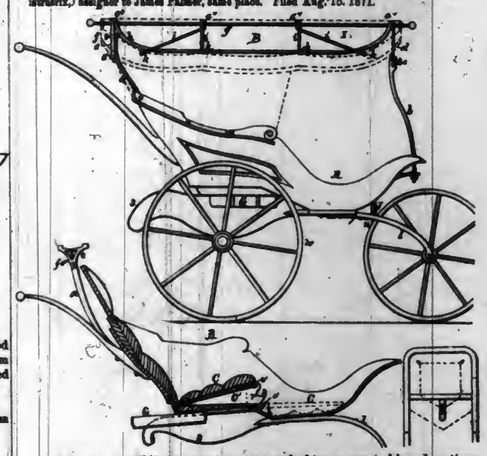
196,096. BED-BOTTOMS. Don D. Osborne, Magnolia, Wis., assignor of one-half his right to Warren Howard, same place. Filed Aug. 17, 1877.

Brief.—Each slat, with its springs, is complete and independent of the rest.



Claim.—The rectangular top spiral springs A, connected together longitudinally by means of the horizontal spiral springs B, in combination with slats C of a bed-bottom, substantially as herein shown and described.

196,097. CHILDREN'S CARRIAGES. George T. Palmer, Brooklyn, N. Y., (Ann Palmer, administratrix,) assignor to James Palmer, same place. Filed Aug. 15, 1871.

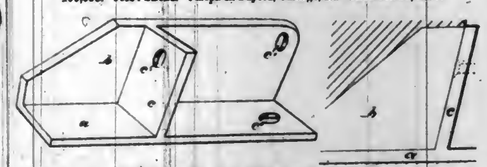


Claim.—1. A child's-carriage top composed of two separate hinged sections, both adapted to be folded either upon the other, substantially as set forth.

2. The combination, with a top-frame, B, and body A, of the central front and rear supports a b and pivoted top-arms d c, substantially as set forth.

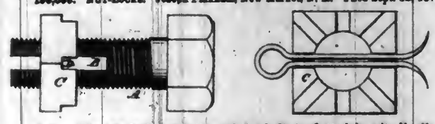
3. The combination, with the wagon-body, of the pivoted seat C, arranged to turn forward and form a portion of a flat bottom on a line with the seat-rest C', substantially as set forth.

196,098. JOIST-SHOES. Joseph B. Payson, Chicago, Ill. Filed Oct. 23, 1877.



Claim.—A joist-shoe flanges a b of which are at right angles to each other, and connected by a web, c, extending obliquely across flange b, and rectangularly across flange a, as shown and described.

196,099. NUT-LOCKS. Joseph Pinkham, New Market, N. H. Filed Sept. 12, 1876.



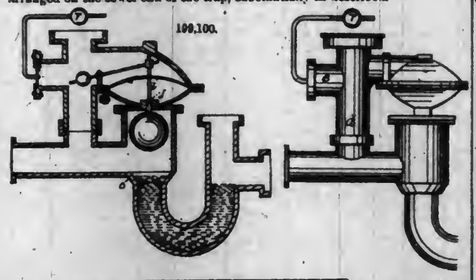
Claim.—The nut-lock consisting of the bolt A, slotted longitudinally, the nut C, having the transverse grooves in its under surface, and the locking-key E, substantially as described, for the purpose specified.

196,100. SEWER-TRAPS. William A. Pitt, New York, N. Y. Filed May 17, 1877.

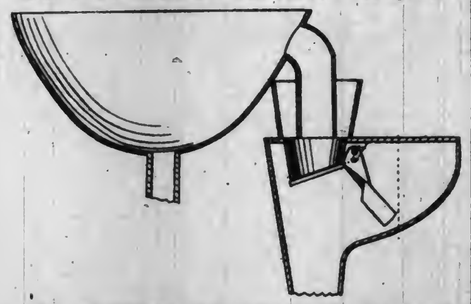
Claim.—1. The combination of the diaphragm with the ball-valve and the counterbalancing-weight, arranged in the passages of the sewer end of the trap, substantially as described.

2. The combination of the hinged valve with its balancing-weight and rod, arranged on the sewer end of the trap, substantially as described.

196,100.

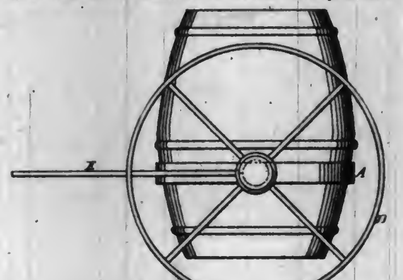


196,101. OVERFLOW-VALVES. William A. Pitt, New York, N. Y. Filed Aug. 2, 1877.



Claim.—The combination, with the overflow-pipe of the water-basin or other similar vessel constructed with the valve-chamber, of a valve hinged to its seat and weighted at its rear end, so that the valve remains on its seat except while the overflow-water retains it in an open position, substantially as described.

196,102. BARREL-CARTS. William Plank, De Kalb, Ill. Filed Sept. 10, 1877.



Claim.—1. In a barrel-truck, the combination of semi-annular parts a a, having half-sockets b b, and the shanks of spindles C of wheels D.

2. In a barrel-truck, the annular frame A, composed of semi-annular parts a a, half-sockets b b, and the shanks of the spindles C, in combination with the connected crossed draw-bars or shafts E, constructed and arranged substantially as shown and described.

196,103. HORSE HAY-RAKES. Seth E. Powers, Salisbury, Mo., assignor of one-third his right to J. L. Dobson, same place. Filed Aug. 25, 1877.



Claim.—1. In combination with a horse hay-rake, the central caster-wheel G, attached to the hinged lever H, and held in position by means of a hook, I, substantially as and for the purposes set forth.

2. In combination with the hinged lever H, carrying caster-wheel G, the hook I and latch J, substantially as and for the purposes set forth.

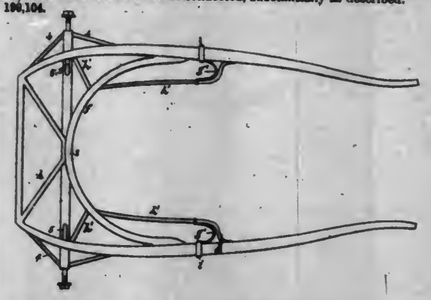
196,104. SULKIES. Joseph F. Pray, Boston, Mass. Filed Dec. 13, 1877.

Claim.—1. A sulky provided with a centrally-elevated axle, in combination with a front bar connected with the axle, substantially as described.

2. In a sulky, a front bar carried back and connected with a centrally-elevated axle, in combination with brace-bars g h, extended from the front bar backward.

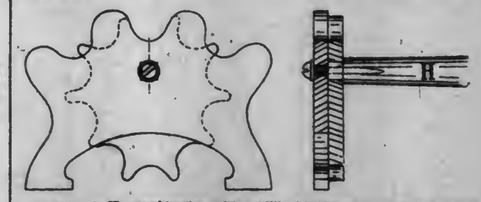
3. The shafts a b and the front bar, in combination with a centrally-elevated axle, with which the front bar is connected, substantially as described.

196,104.



196,105. BILLIARD-BRIDGES. Charles F. Prentice, New York, N. Y. Filed Nov. 26, 1877.

Brief.—To an ordinary fixed bridge is pivoted eccentrically a disk having waves or scallops cut in its edge, by which a rest of different heights for the cue is obtained.

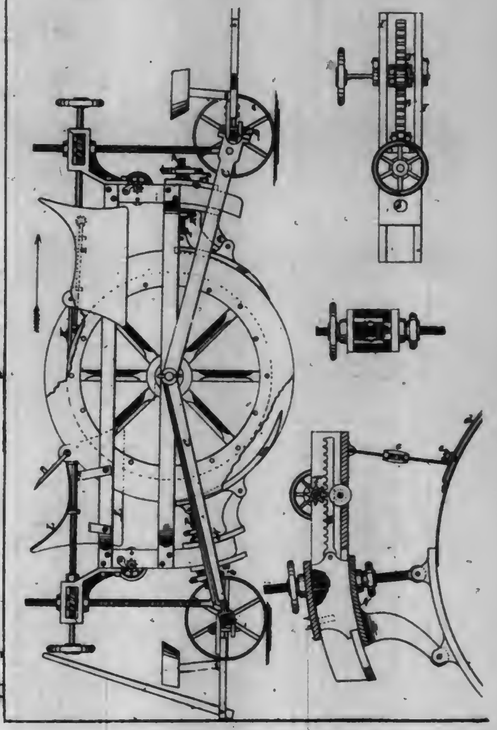


Claim.—1. The combination, with a billiard-bridge, of a voluted eccentric disk, substantially as and for the purpose set forth.

2. The combination, with a billiard-bridge, of a revolving voluted eccentric disk having handle attached, substantially as shown and described.

3. The combination, with a billiard-bridge, of a revolving voluted disk, the volutes of which are arranged at gradually-increasing distances from the point O of the disk's intersection with the handle, substantially as and for the purpose set forth.

196,106. DITCHING-MACHINES. Theo. F. Randolph, Morristown, N. J. Filed Dec. 17, 1877.



Claim.—1. In a ditching-machine, the combination of the curved guide-post, the circularly-adjustable spade, the block to which the latter is hinged or pivoted, and the ditching-wheel, as shown and described, for the purpose specified.

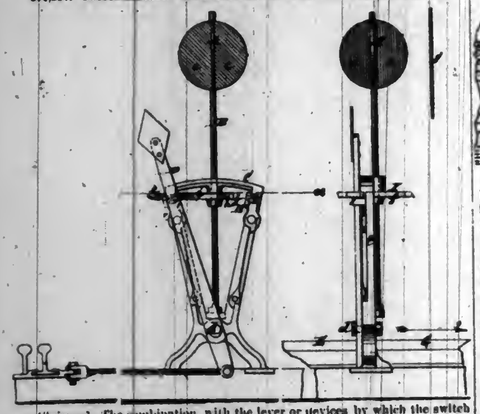
2. In a ditching-machine, the combination of the hinged rack-bar, the pinion meshing therewith, and the block N, the spade, and the channeled guide-post, as shown and described.

3. In a ditching-machine, the hinged spade, the adjusting-screw pivoted thereto, the block or holder N, the adjusting and set nuts, and the guide-post provided with a slot at its lower end, all combined and arranged as shown and described.

4. In a ditching-machine, the combination, with the ditching-wheel, of the hinged tongue having a perforated lug on its under side, and the locking-bolt, adapted to slide in guide-sockets beneath the chute, as shown and described.

5. In a ditching-machine, the combination of the two-part adjusting-rod with the extension or bail-piece of the spade, as and for the purpose specified.

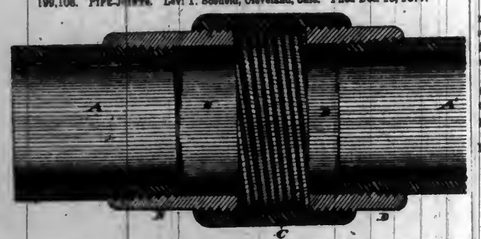
199,107. SWITCH-SIGNALS. David Rousseau, New York, N. Y. Filed June 2, 1877.



Claim.—1. The combination, with the lever or devices by which the switch is set into or out of line with the main track or with the siding, of a variable signal provided with a handle or lever and locking-plate, constituting a signal mechanism for turning or adjusting the signal and for locking the switch, whereby the same signal mechanism is made to lock the switch in both directions of its set, substantially as specified.

2. The combination, with a variable signal constructed to indicate the several positions and adjustments of the switch, of a locking plate or device actuated by said signal, for locking the switch in both directions of its set, stops for arresting the motion of said locking plate or device, and the switch-operating lever or device, constructed to control said stops, and to provide for the adjustment of the signal, essentially as and for the purposes herein set forth.

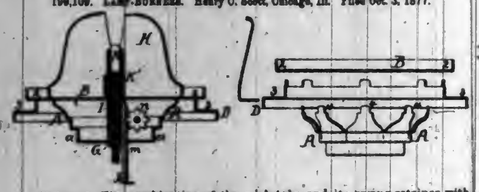
199,108. PIPE-JOINTS. Levi T. Scofield, Cleveland, Ohio. Filed Dec. 15, 1877.



Claim.—1. The combination, with the part C, having an inner tapering screw-thread, of the parts B and D, each of which is provided with inner and outer tapering screw-threads, substantially as set forth.

2. The combination, with pipe-sections A A', provided with tapering screw-threaded ends, of the parts B and D, each of which has inner and outer tapering screw-threads, and the part C, provided with tapering screw-threads on its inner surface, substantially as set forth.

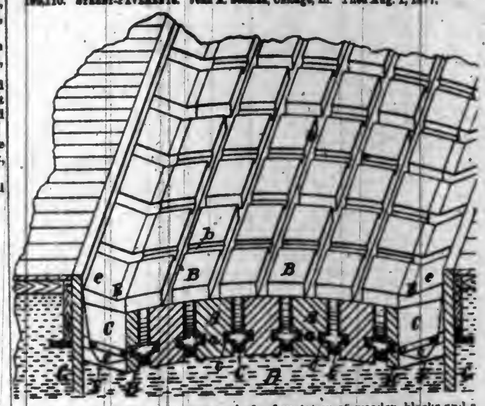
199,109. LAMP-BURNERS. Henry C. Scott, Chicago, Ill. Filed Oct. 3, 1877.



Claim.—1. The combination of the wick-tube and its spring-retainer with the slide K' and its projection or enlargement *x*.

2. The within-described burner, composed of the ring D, with its annular ledge 3, the perforated diaphragm B, secured to the ring, and having an annular ledge, 2, and the casing A, having projections secured to the diaphragm, all substantially as set forth.

199,110. STREET-PAVEMENTS. John A. Seaman, Chicago, Ill. Filed Aug. 1, 1877.



Claim.—1. A pavement composed of a foundation of wooden blocks and a broken surface of metal plates laid thereon, and provided with flanges extending down between the blocks and locked thereto, substantially as and for the purpose set forth.

2. The wooden blocks A, having grooves *a* in their sides, in combination with the iron plates B, constructed to rest upon adjacent rows of the former, partly on each, and provided with flanges C, on which are locking-ribs *c*, adapted to enter the grooves *a*, substantially as and for the purpose set forth.

3. The plates B, having grooves *b* in their upper surfaces, wide flanges C projecting from their under sides, and lateral ribs *c* on the flanges, in combination with the grooved wooden blocks, substantially as described.

4. The gutter-plate E, having its upper surface bent, as described, and inclined to the plane of the web or flange C, substantially as and for the purpose set forth.

5. A plate, B, provided with a tapering or wedge-shaped flange, C, having locking-ribs *c* thereon, in combination with the wooden blocks A, substantially as and for the purpose set forth.

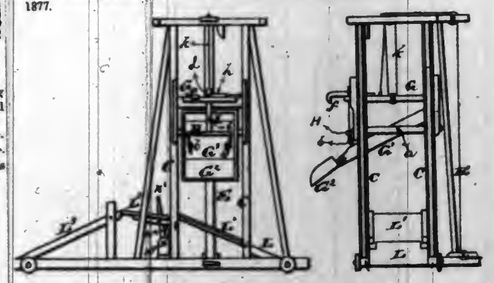
199,111. MANUFACTURE OF METAL RAKES. Elijah Sims, Aurora, Ill., assignor to Milton E. Sims, Curtis E. Sims, and John A. Sims, same place. Filed July 30, 1877.



Claim.—1. The within-described improvement in the manufacture of metal rakes, which consists in cutting from a strip or plate of metal, and by successive alternate cuts, as shown, two toothed blanks, from which the rakes are to be formed, properly curving the teeth and giving to them the desired taper by the means and in the manner substantially as shown and described.

2. The system of dies and punches herein described, arranged and adapted to cut the metal simultaneously from opposite sides of succeeding teeth, and at the same time form the rounded point to the teeth, in the manner and for the purpose specified.

199,112. GRAIN-DUMPING DEVICES. Abraham Smith, Wheeler's Grove, Iowa. Filed Sept. 1, 1877.



Claim.—1. In a machine for transferring grain, a movable frame, G, having a transfer-box, G', hung upon journals *a a* in the frame G, and its front end provided with a cross-bar, H, in combination with a vertical bar having a pin, *d*, substantially as and for the purpose set forth.

2. The combination of the frame G, the journaled box G', with hinged mouth G', T-shaped arms H', with pin *d*, spring-latch *h*, and latch *f*, all substantially as and for the purposes set forth.

199,113. CORN-PLANTERS. Joseph D. Smith, Rockford, Ill., assignor of one-half his right to Ralph Emerson and Wm. A. Talcott, same place. Filed Sept. 20, 1877.

Claim.—1. The concave-rimmed planter or covering-wheel, with its rim constructed in two equal sections, having divided spoke-sockets formed in part upon each section, and adapted to be secured together, substantially as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the sectional concave rim, having spoke-sockets formed in part upon each section, the hub and the spokes independently secured in the sockets.

3. The scrapers constructed, as hereinbefore described, of a concavo-convex form in cross-section, having sharp edges, pointed ends, and angular shanks, whereby they are rendered reversible and interchangeable, and adapted to operate obliquely to the rims of the wheels.

4. The combination, substantially as hereinbefore set forth, of the diverging main frame, the diagonally-acting scrapers secured to the rear ends thereof, and the rocking axle, for the purpose specified.

5. The combination, with the rocking axle, of the foot-rest F, having front and rear bearings *f f'*, for the purpose specified.

6. The combination of the main frame, the supplementary or runner frame, the hinge connecting them at their adjacent ends, the seat-standard, the seat-beam mounted thereon, and the upright upon the yoke-plate or fixed section of the hinge, to which upright the seat-beam is pivoted at its forward end, these members being constructed and operating substantially as hereinbefore set forth.

7. The combination and arrangement, as hereinbefore set forth, of the main frame, the supplementary frame hinged thereto, the tongue-extension projecting to the rear of the supplementary frame, the forked lever, provided with foot-rests at the rear ends of its branches, and pivoted at its forward end to an upright of the hinge connecting the two frames, and the link-connection between said lever and the tongue, for the purpose specified.

8. The combination of the main frame, the supplementary or runner frame, the hinge connecting their adjacent ends, the seat-beam mounted upon the standard on the main frame, the yoke-plate or fixed hinge-section secured to the main frame, its upright, to which the seat-beam is pivoted, the forked lever beneath the seat-beam, the tongue-extension, the connection between the extension and said lever, and the joint between the lever and the fixed hinge-section upright, these members being constructed, arranged, and operating as hereinbefore set forth, whereby the driver is enabled to increase or diminish the pressure upon the runner-frame, as specified.

9. The combination of the seed-slide guideway and hopper-supporting plates or sections, having side arms, the separating pillars connecting said sections at the ends of the arms, the seed-slide, having edge notches formed between lugs and fitting between the sections, so as to leave spaces between its edges and the pillars connecting the sections, to admit of the withdrawal of the lugged slide, and the shake-bar, to which the slide is detachably fastened, these members being constructed and operating substantially as hereinbefore set forth.

10. The hereinbefore-described reversible seed-slide, having a longitudinal groove on each face and near its opposite edges, and two sets of seed-cells arranged on opposite sides of its longitudinal center, whereby the slide is adapted to be guided in its reciprocations either side up, and the amount of seed dropped can be regulated simply by turning over the slide.

11. The combination, substantially as hereinbefore set forth, of the hopper-supports and seed-slide guideway, the grooved reversible seed-slides, each having two sets of seed-cells and guided by projections on the guideways, and the shake-bar, detachably connected with the seed-slides.

12. The combination, substantially as hereinbefore set forth, of the hopper, its guard or deflector secured to one side thereof, and serving to narrow the width of the opening in its bottom, the reversible seed-slide having two sets of seed-cells, arranged one on either side of the longitudinal center of the slide, and the cut-off working between the guard and opposite side of the hopper, whereby the grain is dropped through one set of openings in the slide, while the other set is protected and the grain prevented from access thereto.

13. The combination of the supplementary or runner frame, provided with the hoppers and their seed-distributing devices, and the adjustable toruing dropper's seat, mounted on the curved standard between the hoppers, substantially as hereinbefore set forth, whereby the dropper is enabled to face either hopper to work the shake-bar lever, and may otherwise adjust the seat to suit him, as set forth.

14. The combination of the inclined open-heel conductor, open at the back, and the runner, having a channeled heel, with which the conductor joins at the lower end, these members being constructed and operating as described, whereby an unobstructed view is given of the seed passing down the conductor, and bounding or scattering of the seed prevented.

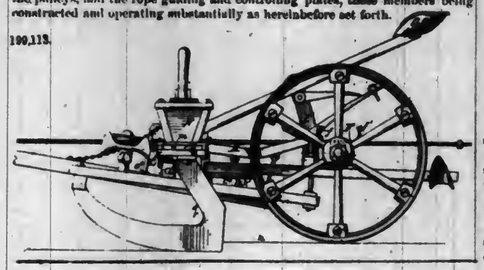
15. The combination of an inclined open-heel conductor, open at the back, and depending on its inclination to keep the falling seed from bounding out behind, with a pivoted valve operating therein, these members being constructed substantially as set forth, so that the seed is in view while descending the incline on either side of the valve.

16. The combination of the inclined open-heel conductor and the deflectors or seed-controllers beneath the seed-slide, as and for the purposes specified.

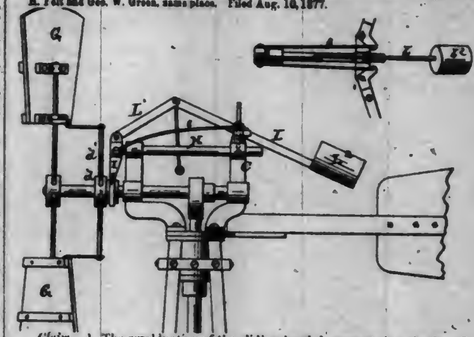
17. The combination of the open-heel conductors, inclined and having a plane-surfaced bottom, the flapper-valve loosely pivoted in the conductor, and the seed-slide with notches in its edge, in which the valve-shank engages, substantially as hereinbefore set forth, whereby an unobstructed view of the grain in the conductor is afforded, and the valve may quickly be lifted out or moved in the open-heel conductor to admit of reversing the seed-slide.

18. The combination of the supplementary frame, the centrally-pivoted levers, having corresponding guides or notches in their ends for the passage of the knotted rope, the shake-bar, the connections between said bar and the levers, the pulleys, and the rope guiding and controlling plates, these members being constructed and operating substantially as hereinbefore set forth.

199,113.



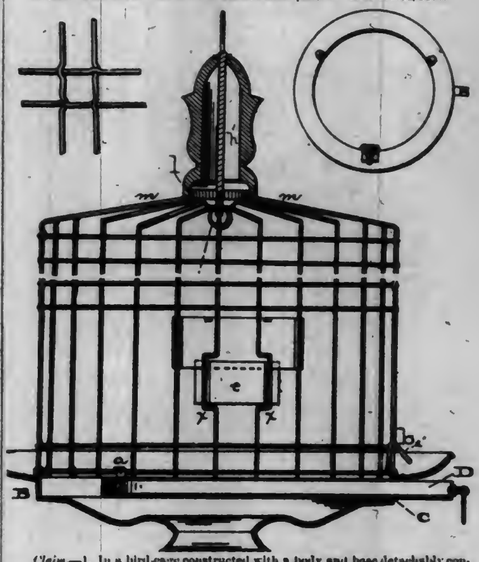
199,114. WINDMILLS. Seth H. Smith, Brooklyn, Mich., assignor of two-thirds his right to O. H. Felt and Geo. W. Green, same place. Filed Aug. 10, 1877.



Claim.—1. The combination of the sliding head *d*, connected to the fans G, the arm I, shaft H, and two side sails or regulators, arranged on opposite sides of the mill and connected to the arm I, substantially as and for the purposes herein set forth.

2. The combination of the arm I, toggle-levers L' L, and adjustable weight L', substantially as and for the purposes herein set forth.

199,115. BIRD-CAGES. Andrew Law Smith, Philadelphia, Pa. Filed Oct. 31, 1877.

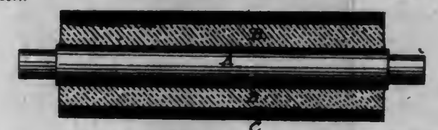


Claim.—1. In a bird-cage constructed with a body and base detachably connected, the struck-up metal base B, formed with a seat within its upper flaring portion for the tray D, and with a throat, C, extending partially around the side of said seat, substantially as herein shown and set forth.

2. Plate *e*, adapted to slide upon the vertical wires of the cage, so as either to interlock with the cup when it is seated between the wires, bent as at *x x*, or to close the opening between said bends when the cup is removed, substantially as herein shown and set forth.

3. The wires *m*, gathered at the top of the cage within the base of knob H, and bent over so as to hook upon a wire ring, *l*, adjusted within the hollow base of the said knob, substantially as shown and set forth.

199,116. VULCANIZED-RUBBER ROLLS. Amadeo Spadone, Jersey City, N. J. Filed Dec. 5, 1877.



Claim.—1. In printers' inking-rolls, an elastic vulcanized-rubber base, substantially as and for the purpose set forth.

2. As a new article of manufacture, a printer's inking-roll consisting of a solid core, A, a vulcanized-rubber portion, B, and a composition, C, with or without an intermediate fabric between the portions B and C, as set forth.

199,117. DOVETAILING-MACHINES. Charles Stengel, Hamilton, Ohio. Filed Jan. 30, 1877.

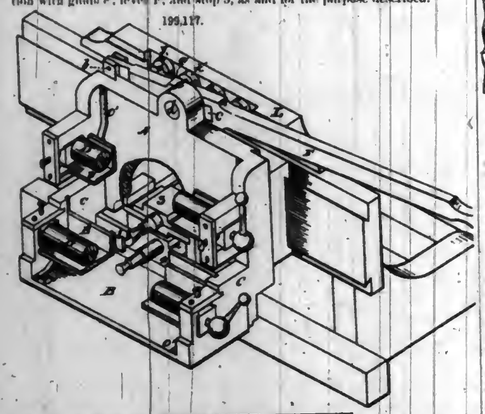
Claim.—1. The combination of the clamping-plates D', with their respective eccentric rolls D D', upon the holder-carriage A B C, as and for the purpose described.

2. The combination of two independently-working cutting-tools with the lumber-carriage and its operating mechanism, organized substantially as and for the purpose described.

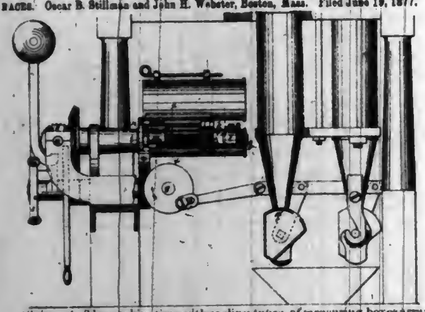
3. The curved and recessed heads X' of ribs V upon plate L, in combination with the reciprocating spring-dog P, as and for the purpose described.

4. The reciprocating self-acting dog P, provided with tooth *b*, in combination with guide *c'*, lever F, and stop 5, as and for the purpose described.

199,117.



199,118. MEASURING AND DISCHARGING APPARATUS FOR COOLING-TUBES OF CHAR-FURNACES. Oscar B. Stillman and John H. Webster, Boston, Mass. Filed June 19, 1877.



Claim.—1. The combination, with cooling-tubes, of measuring-boxes arranged to intermittingly receive and measure, and subsequently discharge the char while the tubes are closed, substantially as described.

2. In an apparatus to measure char, a cooling-tube and a bottom plate for the measuring-box, in combination with a measuring-box, provided with openings at bottom and top, and with a tube-closing plate, to operate in connection with the bottom of the tube, whereby the box may receive, measure, and discharge char intermittingly, substantially as described.

3. The combination, with the measuring-boxes and tube-closing plates, of mechanism to automatically move such plates to permit the char to be received intermittingly into the boxes, substantially as described.

4. The cooling-tubes and measuring-boxes, in combination with a screw-shaft and nut, and with devices, substantially as described, to connect the screw-shaft and boxes, so as to move the boxes intermittingly at any desired intervals of time, substantially as described.

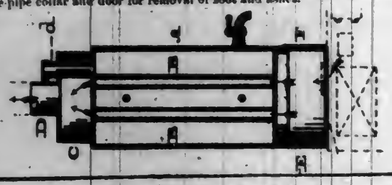
5. In an apparatus to measure char, wherein the links connected with the devices for controlling the flow of char from the tubes are arranged to have lost motion, as described, the combination, with the sleeve and clutch pinions, of the weighted sleeve-starting lever and the tappet-arm to move it, substantially as and for the purpose described.

6. The combination, with the tubes and measuring-boxes, of a connecting-rod having lost motion between it and its operating mechanism, substantially as described.

7. The measuring-boxes, in combination with a screw-shaft, nut, and fingers, whereby the boxes may be retained at rest for the desired interval of time, and then be quickly shifted, substantially as described.

199,119. WATER-BOILERS FOR STOVES AND RANGES. Edward Stumm, Philadelphia, Pa. Filed Sept. 18, 1877.

Brief.—A water-boiler made adjustable to any stove or range, being provided with detachable cap and base-piece and vertical flues for passage of hot air and smoke from stove. Base-piece provided with aperture for reception of stove-pipe collar and door for removal of soot and ashes.



Claim.—The water-boiler A, with flues B, cap C, with collar D, and the water inlet and outlet, in combination with the base E, having in its bottom plate *a'* the opening *b*, and in its side the door F, substantially as and for the purpose set forth.

199,120. NUT-LOCKS. William H. Sutton, Purdy, Tenn. Filed Dec. 5, 1877.



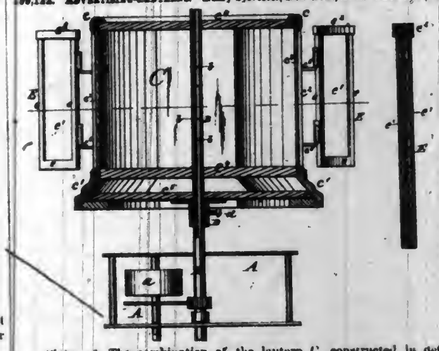
Claim.—An improved nut-lock formed of two strips, E F, of sheet metal, slitted longitudinally and transversely, having the flaps thus formed bent outward at right angles to form flanges e^1 f^1, to rest against the sides of the nuts, having hook-tongues e^2 f^2 formed upon their outer ends to hook upon the ends of the fish-plates, and having a tongue, f^3, formed upon the inner end of one strip to hook into the inner end of the slot in the other strip, substantially as herein shown and described.

199,121. JOURNALS FOR SHAFTS AND AXLES. Peter Sweeney, New York, N. Y. Filed May 24, 1877.



Claim.—A journal having a continuous spiral groove extending around it from its extremity to its shoulder, said groove being filled with a solid dry lubricant, consisting of plumbago and collodion, packed in the groove while in a plastic state, substantially as set forth.

199,122. ADVERTISING-LANTERNS. Henry Sylvester, New York, N. Y. Filed Dec. 10, 1877.



Claim.—1. The combination of the lantern C, constructed in detail as described, and provided with the collar and set-screw D *d*, with the panels E and the central gas-pipe B, revolved by the clock-work A, as and for the purpose specified.

2. The detachable advertising-panels E, in combination with the revolving lantern C, substantially as and for the purpose specified.

199,123. TURBINE WATER-WHEELS. Jesse G. Thompson, Clarion, Pa. Filed Jan. 8, 1877.



Claim.—1. A turbine water-wheel in which the buckets upon which the water primarily acts are arranged between two independent disks, so constructed with relation the one to the other as that the approximate faces of such disks may be brought closely together to form a tight joint between them, or separated for the purpose of allowing the water to enter the several sluiceways simultaneously, substantially as hereinbefore set forth.

2. The upper movable disk A, provided with curved buckets *b*, attached thereto, in combination with the lower disk E, having correspondingly-shaped openings, through which the said buckets are arranged and made to slide, substantially as shown and set forth.

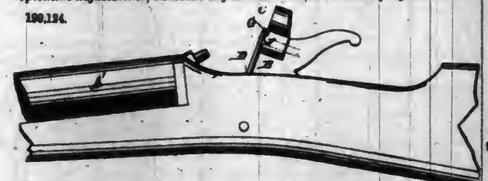
3. The movable upper disk A and lower fixed disk E, together with the adjustable sluiceways *e e*, in combination with the central spiral-bladed wheel T, substantially as shown and set forth.

199,124. ADJUSTABLE HAMMERS FOR FIRE-ARMS. Emil A. F. Tesperwein, Bourne, Tex. Filed Oct. 17, 1877.

Claim.—1. The combination, with the hammer B and the pivoted adjustable striker C, having depressions in its outer face, of the flat spring D, having projections G, and arranged upon the face of the hammer, to hold the striker to the hammer and lock the striker in its several positions, substantially as described.

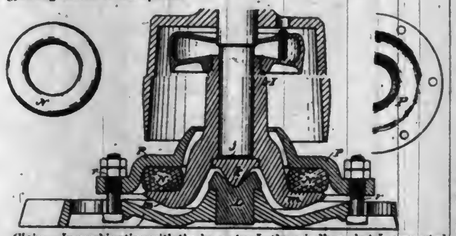
2. The combination, with a double-barreled gun, of a centrally-arranged hammer, having a pivoted striker provided with an adjustment between its two operative adjustments, substantially as described, and for the purpose set forth.

199,124.



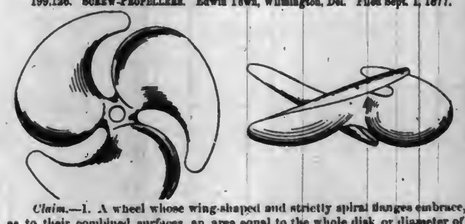
199,125. CENTRIFUGAL MACHINES. William H. Talbart, Troy, N. Y. Filed Sept. 20, 1877.

Brief.—The journal-socket, in which the basket-spindle is stepped and revolved, has at its bottom a pivot end, which bears so as to be capable of rocking in a circle upon the base-step, which thus supports the spindle-socket, while the latter has an annular side flange, upon which is an elastic cushion, on which bears a rim-cap that is separate from and surrounds the spindle-socket, and connected with and secured to the base-step, so that the spindle is adjusted in upright position, and the elastic cushion compressed to any degree to control the gyrating motion of the spindle.



Claim.—In combination with the base-step L, the spindle-socket I, supported by its central end pivot *k* bearing upon the base-step, so as to rock thereon, and having the lateral flange *m*, the cushion N, arranged over and upon the lateral flange of the spindle-socket, and the clamping-ring P, separate from the spindle-socket, and arranged over and upon the cushion, and adjustably secured to the base-step, substantially as shown and described.

199,126. SCREW-PROPELLERS. Edwin Town, Wilmington, Del. Filed Sept. 1, 1877.

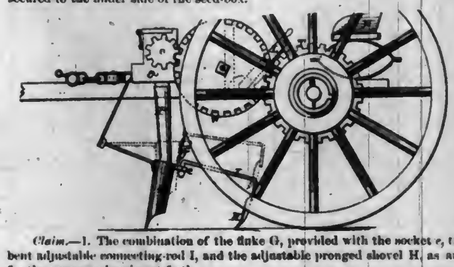


Claim.—1. A wheel whose wing-shaped and strictly spiral flanges embrace, as to their combined surfaces, an area equal to the whole disk or diameter of the wheel.

2. A wheel having wing-shaped spiral flanges, slightly extended in their crested extremities by curved concave butts or lip-formed additions, substantially as described.

199,127. CORN-PLANTER AND SEED-DRILL. Simon J. Weickel and Charles Weickel, Laclede, Mo. Filed Sept. 10, 1877.

Brief.—The drill-teeth are attached to the frame by adjustable connecting-rods. To the rear of the teeth, by adjusting-rods, are attached pronged shovels for covering. The delivery-spouts are provided with flanges, that slide in ways secured to the under side of the seed-box.



Claim.—1. The combination of the flukes G, provided with the socket *e*, the bent adjustable connecting-rod I, and the adjustable pronged shovel H, as and for the purposes herein set forth.

2. The spouts F, provided with side ears or flanges, and sliding in guides or ways under the drill-box, as herein set forth.

199,128. SNUFF-PACKAGES. B. Frank Wyman, Pittsburg, Pa. Filed Dec. 14, 1877.

Claim.—The herein-described package for snuff, consisting of a glass jar, A, having a groove, B, in its top, and a tin cup-shaped cover, C, in combination with the outer tin-foil covering D, inclosing the flaring neck of the jar and covering inner cover C', and with the inner packing E, substantially as specified.

199,129.



199,129. ORNAMENTING WOOD. Thomas Whitburn, Guildford, England. Filed May 24, 1877.

Claim.—The process of producing designs upon wood, consisting in first smoothing the surface of the wood and filling the pores with a size, and then printing the design upon the wood in a suitable press, substantially as and for the purposes set forth.

199,130. GAME-COUNTERS. John Whitelaw, Cleveland, Ohio. Filed Nov. 17, 1877.



Claim.—1. A game-counter composed of a bed-plate provided with a pointer, a second smaller plate, whose peripheral surface is provided with figures, a third plate, smaller than the last, and marked with trump or initial signs, and a pointer for the same, substantially as set forth.

2. In a game-counter, the combination of the index-pointer, the upper plate, provided with trump or initial signs, and the middle plate, provided with a circle of numerals, covered by the upper plate, and adapted to separately register with an opening formed in the face of the latter, substantially as set forth.

3. In a game-counter, the combination of the bed-plate and its pointer, the middle plate, provided with an inner and outer circle of numerals, and the upper plate, provided with trump or initial signs, and an opening in its face adapted to register with the inner circle of numerals on the middle plate, the said three plates and the index-pointer on the upper plate being centrally secured together by a single pivot, substantially as set forth.

4. The combination of the plates A B C, the indicators A' and D, and the trump signs and numerals, substantially as and for the purposes herein specified.

199,131. PUMPS. Josiah A. Whitman, Providence, R. I. Filed Dec. 6, 1877.

Brief.—Wrought metal is used to give lightness to the parts. The ball-valve is struck up from a rectangular piece of metal.



Claim.—1. The barrel or cylinder A of a pump formed, with the valve-seat *a* and suction-pipe connection A', from a single piece of wrought-metal tubing, substantially as and for the purposes described.

2. The hollow plunger-rod D of a pump, formed with the contracted lower end for a valve-seat, *d'*, and a flange projection, *d''* or D', to act as a guide in its reciprocation, formed from a single piece of wrought-metal tubing, substantially as and for the purposes described.

3. The stuffing-box B', made in two half-circles, and provided with external grooves *b'*, for packing, between it and ring-band or enlargement B, and interior chamber C, to contain packing *c*, between the stuffing-box and plunger, substantially as and for the purposes described.

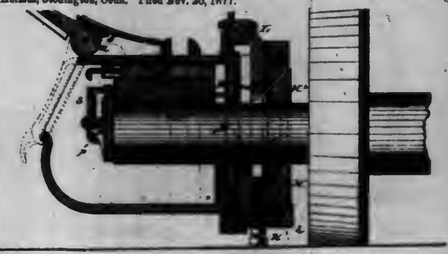
4. The combination of a hollow sheet-metal ball-valve, H or H', with a reciprocating hollow pump-plunger, D, constructed substantially as and for the purposes described.

5. A hollow-ball pump-valve, H or H', constructed, as shown and described, from thin sheet metal, for the purpose set forth.

6. The entire barrel or cylinder A of a pump, having the contracted part A', for the induction-pipe, formed from a single piece of wrought-metal tubing, as and for the purposes substantially as described.

7. The hollow plunger-rod D and valve-seat *d'* therein, formed from a single piece of wrought-metal tubing, substantially as and for the purposes described.

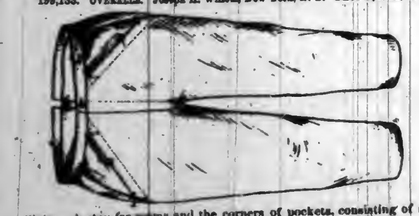
199,132. CAR-AXLE BOXES. George Williams, Groton, assignor of one-half his right to Miram O. Holmes, Stonington, Conn. Filed Nov. 20, 1877.



Claim.—1. The combination of the collars H H' with washer I, spring J, slide *k*, with recess *k'*, guides *l*, and screw *L*, all constructed substantially as and for the purposes herein set forth.

2. The combination of the slide K with lining *m* and guide-pin *n*, and the perforated cover L', for the purposes herein set forth.

190,133. OVERALLS. Joseph H. Willets, New York, N. Y. Filed Apr. 18, 1876.



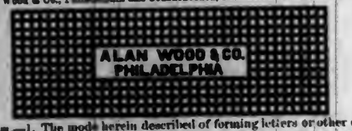
Claim.—A stay for seams and the corners of pockets, consisting of a wire staple applied crosswise of the seam or the corner of the pocket, and secured in place by clinching its ends over or upon the under side of the cloth, substantially as and for the purpose specified.

190,134. TUYERES. Thomas F. Witherbee, Port Henry, N. Y. Filed Sept. 20, 1877.



Claim.—The tuyere B, having a socket, *a*, with a spherical joint at the bottom thereof, in combination with the short nose-piece or reducer C and the blast-pipe A, either or both having a corresponding end joint, as and for the purpose set forth.

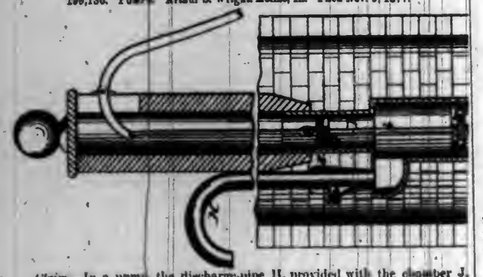
190,135. ART OF MAKING SHEET-METAL PLATES. Howard Wood, Conshohocken, assignor to Alan Wood & Co., Philadelphia and Conshohocken, Pa. Filed Oct. 22, 1877.



Claim.—1. The mode herein described of forming letters or other characters on sheet-metal plates—that is to say, by allowing the hot plates to cool in contact with a metal surface having the letters or other characters sunken in or formed in relief upon it, as set forth.

2. The combination of a plate for straightening sheet-iron with letters or other characters, sunken or in relief, as set forth, for the purpose specified.

190,136. PUMPS. Arthur S. Wright, Moline, Ill. Filed Nov. 9, 1877.

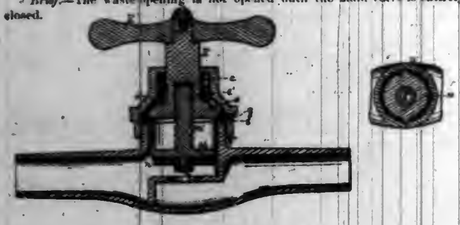


Claim.—In a pump, the discharge-pipe H, provided with the chamber J, having interior hinged valve L and regulating set-screw *k*, substantially as and for the purposes herein set forth.

REISSUES.

8,024. STOP-COCKS. Geo. G. Bailey, Pittsburg, Pa. Patent No. 127,547, dated June 4, 1872. Filed July 11, 1877.

Brief.—The waste-opening is not opened until the main valve is entirely closed.



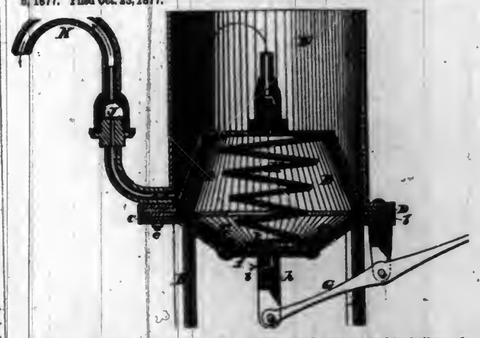
Claim.—1. In a stop-cock the main valve of which closes against the pressure, the combination of rotating valve-stem and vertical spring with the supply and waste ports, and valves governing the same, substantially as set forth, whereby the elastic force of the spring shall be operative in holding one valve to its seat while the stem is being rotated to shift the other valve.

2. A vertical spring combined, in a stop-cock-valve case, with a threaded rotating stem, a main valve closing against the pressure, and a waste-port valve, and arranged to press the waste-port valve against its port, and thereby close the waste while the through water-way port is open, substantially as set forth.

3. The combination of a flange, *e*, packing-ring *e*, spring *c*, and waste-passage *g*, arranged substantially as and for the purposes set forth.

4. In a stop-cock, the combination of the flanged stem E, packing-ring *e*, waste-passage *g*, and spring *c* with valve M and seat *b*, arranged substantially as and for the purposes set forth.

8,025. APPARATUS FOR PUMPING FLUIDS FROM CASKS, &c. Wm. F. Class, Cleveland, Ohio, assignor to Worswick Manufacturing Company, same place. Patent No. 191,856, dated June 5, 1877. Filed Oct. 23, 1877.



Claim.—1. The combination of the chamber E with suitable bellows for injecting air into it, outlet-pipe I, and valve J, substantially as and for the purposes shown.

2. The combination, with the chamber E, of a bellows provided with a plate, *f*, post *h*, and passage and valve *i k*, substantially as and for the purposes shown.

3. The combination, with the chamber E, of a bellows provided with a plate, *f*, post *h*, passage *i*, valve *k*, and treadle or handle G, substantially as shown.

4. The air-chamber E, with vent-tube I, check-valve J, and flexible tube K, in combination with the air-chamber C D and its valves and treadle or handle, substantially as shown.

8,026. APPARATUS FOR PUMPING FLUIDS FROM CASKS, &c. Wm. F. Class, Cleveland, Ohio, assignor to Worswick Manufacturing Company, same place. Patent No. 191,856, dated June 5, 1877. Filed Dec. 1, 1877.

Brief.—Compressed air is forced into the cask through the annular passage surrounding the discharge-pipe which passes through the plug.



Claim.—1. In a plug, the combination, with the conical or cylindrical barrel and the eduction-pipe, of the elastic ring and the annular chambers, formed, respectively, above and below the inner edge of said ring, substantially as set forth.

2. In a plug, the combination, with the barrel, of the induction-pipe provided with the inwardly-opening valve, governing communication between the same, substantially as set forth.

3. A plug consisting in the combination, with the barrel and the induction-pipe provided with an air-valve, of the eduction-pipe, the elastic ring, the upper and lower ring, expanding chambers, and the cap-piece, substantially as set forth.

8,027. BRICK-CARRYING CARS. John K. Caldwell, Philadelphia, Pa. Patent No. 75,243, dated Mar. 10, 1868. Filed Nov. 27, 1877.

Claim.—1. A drying-table having supports on two sides, said table and supports being provided with open hinges, which will permit the table to be raised from its support on either side, turning pivotally on the support of the other side, as and for the purpose set forth.

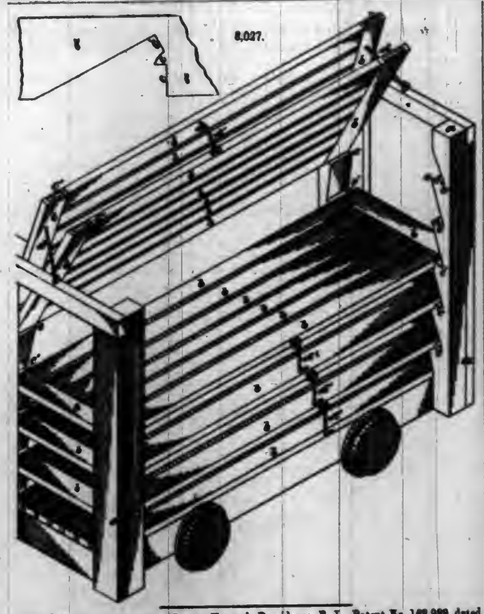
2. A drying-table, *b*, having mortises *c'* in its edges, in combination with supports *a*, formed with tenons *c*, substantially as shown and described.

3. A series of tables, *b*, resting and turning in recesses in the supports *a* in a drying-ear, substantially as set forth.

4. In a drying and bearing ear, the supports *a*, having ledges *c*, inclines *c'*, and tenons *c*, substantially as and for the purpose set forth.

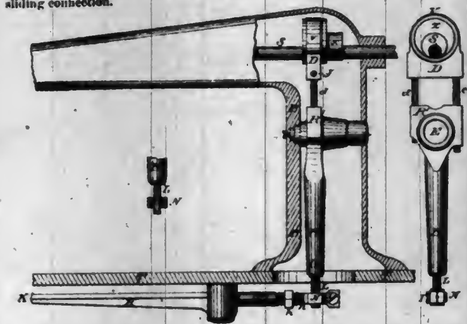
5. The combination of the tables *b*, supports *a*, ledges *c*, inclines *c'*, and tenons *c*, in a drying-ear, substantially as and for the purpose specified.

6. In a drying-ear, a table, *b*, sustained upon supports *a*, and adapted to turn upon one or either of its ends, in the manner herein described.



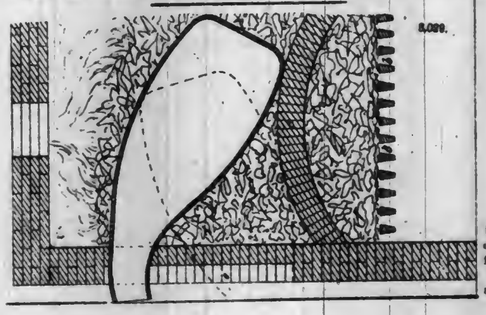
8,028. SEWING-MACHINES. George Hancock, Providence, R. I. Patent No. 168,989, dated Oct. 19, 1875. Filed Feb. 28, 1876.

Brief.—The shuttle-lever is moved by a vertical lever connected therewith by a universal-joint arrangement capable of adjustment. The vertical lever works on a pivot near its center, and is moved by an eccentric upon main shaft, the eccentric strap and block being joined to the lower part of the lever by a sliding connection.



Claim.—1. In a sewing-machine, the combination of the universal joint, consisting of the pivot L, clasping-socket N, having a V-shaped bearing, which grasps the said pivot, and adjustable thereto through the medium of the set-screw I, pivot *n*, adapted to be adjusted in the sleeve *m* on the end of the horizontal lever H, said sleeve *m* being split and provided with a nut, *h*, the several parts being constructed and arranged to operate in connection with each other, substantially in the manner as and for the purpose specified.

2. In a sewing-machine, the combination, with the vertical lever R, provided with the pivot *b*, and head-block R', and lever H, having the clasping-socket N, of the block D, provided with the rods *d* and *e*, and the eccentric strap V, overlapping the eccentric X, substantially as and for the purpose set forth.



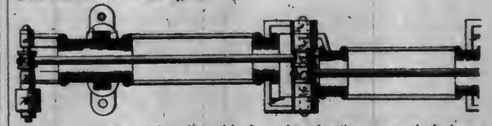
8,029. RETORTS FOR SEPARATING ZINC FROM GOLD AND SILVER ALLOYS. Edward Balbach, Jr., Newark, N. J. Patent No. 64,934, dated May 21, 1867; Reissue No. 5,461, dated June 24, 1873. Filed Dec. 24, 1877.

Claim.—1. A black-lead retort suitable for receiving gold, silver, lead, and zinc alloys, or of an alloy composed of any, all, or either of the said metals, and distilling off the zinc, the remaining alloy being afterward removed.

2. A movable retort formed with a neck, and introduced within a furnace, substantially as set forth, so as to be suitable for receiving gold, silver, lead, and zinc alloys, and distilling off the zinc, the remaining alloy being poured out by inclining the retort, as set forth.

8,030. GRINDING-MACHINES. George Cowing, Seneca Falls, N. Y., assignor to E. H. Cowing and Helen D. Cowing. Patent No. 38,565, dated May 19, 1863. Filed Sept. 15, 1877.

Brief.—A series of frames hinged to each other in pairs, and having double pulleys on the plates of the hinges, and having at opposite ends tubes, which are clamped together by a jointed ring, so as to move on each other to swivel each double frame to its neighbor.



Claim.—1. The combination, with the series of pulleys, respectively journaled in frames, of the cylindrical rings connecting the said frames in a swivel-joint, substantially as set forth.

2. The combination, with the series of pulleys, respectively formed on shafts adapted to have free axial rotation, of the frames in which the shafts have bearing, and the swivel-rings connecting the said frames, substantially as set forth.

3. The combination of the series of pulleys, respectively journaled in frames connected by cylindrical rings formed with annular flanges, which latter slide upon each other in annular rotation, and are held together by any interiorly-recessed locking-ring, substantially as set forth.

4. The combination, with the series of pulleys, respectively journaled in frames, the adjacent portions of which are formed with cylindrical rings, of the locking-ring, which holds the said cylindrical rings together, and yet admits of their free relative rotation, substantially as set forth.

5. The combination, with the double pulley-shafts, respectively journaled in frames formed with cylindrical rings, of extensions, as described, which connect the said rings, substantially as set forth.

6. The combination of two or more double pulley-shafts, respectively journaled in jointed frames, which latter are connected together by a swivel-joint, substantially as set forth.

7. The combination of two or more pulley-shafts, respectively supported in frames which are jointed in line with the said shafts, and are adapted to be turned or rotated relative to each other in a plane parallel with the axes of the said shafts, substantially as set forth.

8. The combination, with the series of pulleys, of the corresponding series of jointed frames in which the pulleys respectively have bearing, said frames being formed with adjacent cylindrical rings connecting in a swivel-joint, substantially as set forth.

9. The combination, with the series of pulley-shafts, journaled in respective frames which are jointed in axial line with the said shafts, of the swivel-ring joints connecting the said frames, substantially as set forth.

10. The combination, with the pulley-shafts, respectively journaled in frames jointed in axial line therewith, of the connecting cylindrical rings formed with annular sliding flanges, and the two-part locking-ring, substantially as set forth.

11. The combination, with the pulleys, jointed frames, and cylindrical rings, of the two-part locking-ring formed with an interior recess, which fits over the adjacent annular flanges on said rings, and is joined together by lugs and screws, substantially as set forth.

12. The combination, with the series of pulley-shafts, of the frames jointed in respective axial line therewith, said frames being formed with cylindrical rings having adjacent annular flanges, which are joined by a two-part ring whose interior central recess locks over the said flanges, substantially as set forth.

13. The combination, with the series of pulley-shafts, of the bearing-frames jointed in respective axial line therewith, said frames being formed with cylindrical rings, connected together by the described longitudinal extensions, substantially as set forth.

8,031. SHEET-METAL ELBOWS. Andrew Syverson, Chicago, Ill., assignor of one-half interest to Jos. S. Dennis, same place. Patent No. 190,736, dated Aug. 8, 1876. Filed Sept. 27, 1877.



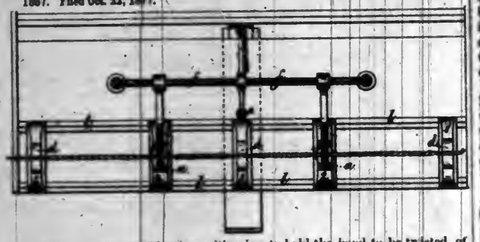
Claim.—1. A blank, A, having a convex edge at the end which is to be bent to form the curve or elbow in the pipe, and projections A' at the junction of this edge with the lateral edges, substantially as and for the purpose set forth.

2. A sheet-metal blank of uniform thickness, and of substantially the shape shown at the elbow end, whereby it is adapted to be drawn and bent into the

form of a pipe-elbow, substantially as set forth.

3. A sheet-metal elbow made of a single blank of sheet-iron of uniform thickness, having a single longitudinal seam, the elbow being formed without crimping or cutting, and presenting a smooth surface throughout when finished, substantially as shown and described.

8,032. WIRE-TWISTING MACHINES. Carl Shertan, New York, N. Y., assignor, by mesne assignments, to Washburn & Moen Manufacturing Company. Patent No. 66,206, dated July 16, 1867. Filed Oct. 22, 1877.



Claim.—1. The combination, with a jaw to hold the band to be twisted, of a revolving pinion or hub having an unoccupied radial slot, into which such band fits, substantially as set forth.

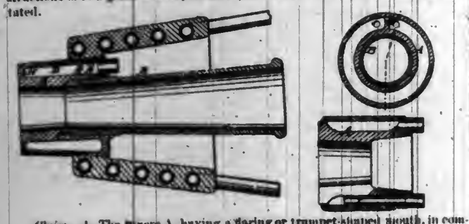
2. The combination, in a wire-twisting machine, of two slotted holding-jaws, and an intermediate radially-slotted pinion or hub revolved by gearing, and acting to twist the wire in opposite directions between the said pinion and the respective stationary jaws, substantially as set forth.

3. The combination, in a wire-twisting machine, of two revolving radially-slotted pinions or hubs, in combination with an intermediate stationary slotted holding-jaw, whereby the wire or band is twisted in opposite directions at the respective sides of the stationary jaw, substantially as set forth.

4. The slotted holding-jaws *d d d* upon the bed *l*, and the slotted pinions or hubs *a a*, in combination with the sectors and actuating mechanism, substantially as set forth.

8,033. TUYERES. Thos. F. Witherbee, Port Henry, N. Y. Patent No. 176,913, dated May 2, 1876. Filed Sept. 29, 1877.

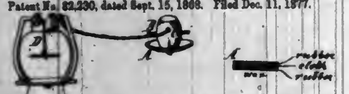
Brief.—A partition is arranged between the inlet and outlet pipes for the purpose of compelling the water to pass entirely around the tuyere. To prevent the collection of air on the inlet side, small passages, through which the air escapes, are formed in the partition. The tuyere tapers divergingly from the end of the blast-nozzle. By virtue of this construction the lodgment of obstructions is to a great extent prevented, and the operation of cleaning facilitated.



Claim.—1. The tuyere A, having a flaring or trumpet-shaped mouth, in combination with the blast-nozzle B, having the internal diameter of its front end coincident with the rear internal diameter of the tuyere, as and for the purpose set forth.

2. In a tuyere, the partition E, having the air-passages H, substantially as specified.

8,034. BOTTLE-STOPPERS. John Klee, Dayton, Ohio, assignor to Rowland C. Anthony, New York city. Patent No. 82,230, dated Sept. 15, 1868. Filed Dec. 11, 1877.



Claim.—1. A bottle-stopper having a shank perforated transversely near its upper end, and having an elastic disk secured to the shank below the end that enters the neck of a bottle, the disk having a free annular rim extending beyond the perimeter of the lower end of the shank, and capable of upward flexure when pressed downward into the neck of a bottle, substantially as described.

2. The combination, with a bottle-stopper plug, of an elastic disk secured to the plug below the end that enters the neck of the bottle, and having a free annular rim extending beyond the perimeter of said end, so that the disk peripherally surrounds the end of the plug when pressed downward into the neck of the bottle, and forms an air-tight joint, substantially as described.

3. The stopper or plug B, made conical or tapering at both ends, and provided at one end with the rubber packing-disk A, arranged as described, and secured by a tack, F, all as and for the purpose herein set forth.

8,035. TIME-LOCKS. Samuel A. Little, Shelburne, Mass., assignor to the Yale Lock Manufacturing Company, Stamford, Conn. Patent No. 146,832, dated Jan. 27, 1874; Reissue No. 7,104, dated May 9, 1876. Filed Dec. 15, 1877.

Claim.—1. The combination, substantially as above set forth, of the adjustable mechanism for continuously locking and unlocking daily the time-movements, and a device for preventing unlocking during a period greater than twenty-four hours.

2. In a time-lock, the combination, substantially as above set forth, of the time-movements and an adjustable device for determining the time of locking.

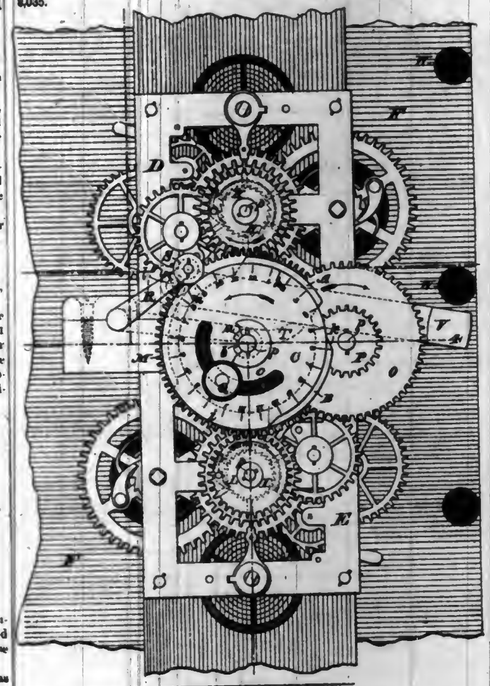
3. The combination, with the time-movements, of the wheels H I, the ratchets K L, and the common wheel M, arranged as described, for the purpose set forth.

4. In combination with the dial, the seventh-day cam-wheel A, adjustable as described, to prevent the falling of the bent lever R and dog V, either periodically or at required times, as described.

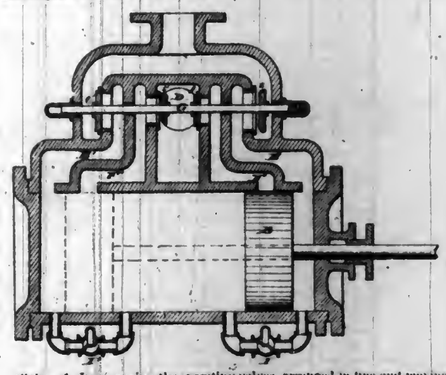
5. The combination, in a time lock, of time mechanism, a revolving graduated dial actuated thereby, a bent lever oscillated by the revolution of the dial on an immovable pivot, and a dog or obstruction, also oscillated on an immovable pivot, the lever and dog being so arranged that when one arm of the lever is pushed aside at a predetermined time by the revolution of the dial the other arm withdraws its support from under and permits the dog to turn by gravity, thereby leaving a free space for the retraction of the bolt-work, substantially as described.

6. The combination of multiple sliding bolt-work, a dog or obstruction oscillated on an immovable pivot, and tending, by gravity, to turn so as not to dog the bolt-work, a bent lever, oscillated also on an immovable pivot, for holding the dog in position against gravity to dog the bolt-work, a revolving graduated dial, which, by its revolution at a predetermined time, oscillates the bent lever and time mechanism that actuates the dial, substantially as described.

8,035.



8,036. VALVES FOR STEAM-ENGINES. Otis Adams, San Francisco, Cal. Patent No. 130,099, dated Aug. 6, 1872. Filed Dec. 29, 1877.



Claim.—1. In an engine, the operating-valves, arranged in line and moving together, in combination with separate steam and exhaust passages, adapting said valves to be operated automatically by pressure from the working cylinder.

2. The arrangement and combination of four valves on the stem G, in connection with passages E E', F F', and I P, substantially as for the purpose described.

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THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE

VOL. 13—No. 3. TUESDAY, JANUARY 15, 1878. PRICE—$6 per year.

ANNUAL REPORT OF THE COMMISSIONER OF PATENTS FOR THE YEAR 1877.

To the Senate and House of Representatives of the United States of America in Congress assembled:

In compliance with section 494 Revised Statutes, I submit the following report for the year ending December 31, 1877.

1. *Statement of moneys received.*

Amount received on applications for patents, reissues, designs, extensions, caveats, disclaimers, appeals, and trade-marks	$651,569 00
Amount received for copies of specifications, drawings, and other papers	48,193 01
Amount received for recording assignments	20,047 15
Amount received for subscription to the Official Gazette	9,497 69
Amount received for registration of labels	3,036 00
Total	732,342 85

2. *Statement of moneys expended.*

Amount paid for salaries		$308,024 54
Amount paid for photolithographing current issues		36,103 13
Amount paid for photolithographing back issues		30,303 02
Amount paid for illustrations for Gazette		41,084 34
Amount paid for tracings of drawings		33,306 73
Amount paid for contingent and miscellaneous expenses, viz:		
Stationery	$5,918 98	
Painting, glazing, varnishing, upholstering, &c	830 57	
Furniture, carpets, &c	2,120 78	
Fitting up cases in model-rooms, carpenters' work, lumber, and repairing furniture	7,262 41	
Plumbing and gas-fitting	107 95	
English patents and foreign periodicals	1,334 53	
Hardware	611 15	
Pay of temporary clerks and extra laborers	44,525 26	
Miscellaneous items, viz: Books for library, ice, subscriptions to journals, freight, washing towels, withdrawals, money refunded paid by mistake, repairing carriage and harness, keeping horse, advertising, printer's material, rubber stamps, drawing-instruments, cleaning carpets, paste, disinfectants, file-holders, decisions of courts, expenses attending preservation and protection of file-records and property of the Office at fire of September 24, 1877, and during subsequent rains, &c	8,942 73	
		71,654 36
Total		610,476 12

3. *Statement of the balance in the Treasury of the United States on account of the patent fund.*

Amount to the credit of the patent fund January 1, 1877	$992,354 67
Amount of receipts during the year 1877	732,342 85
Total	1,724,697 52
From which deduct expenditures for the year 1877	610,476 12
Balance January 1, 1878	1,114,221 40

4. *Statement of the business of the Office for the year* 1877.

Number of applications for patents, including designs, during the year 1877	20,308
Number of applications for reissues of patents	639
Number of patents issued, including designs	13,619
Number of patents reissued	568
Number of applications for extension of patents	2
Number of patents extended	2
Number of caveats filed during the year	2,809
Number of patents, including designs, expired during the year	802
Number of patents allowed but not issued for want of final fee	897
Number of applications for registering of trade-marks	1,416
Number of trade-marks registered	1,216
Number of applications for registering of labels	632
Number of labels registered	302

Of the patents granted, including designs, there were to—

Citizens of the United States	13,029
Subjects of Great Britain, (including Canada, 145)	362
Subjects of France	72
Subjects of Germany	91
Subjects of other foreign governments	65
Total	13,619

5. *Number of patents, including designs, issued by the United States Patent Office to residents of the different States and Territories, from January 1, 1877, to December 31, 1877.*

[The proportion of patents and designs to population is shown in the last column.]

States, &c.	Patents and designs.	One to every—
Alabama	43	23,418
Arizona Territory	2	4,229
Arkansas	36	13,513
California	341	1,642
Colorado	28	1,421
Connecticut	607	885
Dakota Territory	6	2,365
Delaware	28	4,464
District of Columbia	123	1,060
Florida	14	13,410
Georgia	63	18,795
Idaho Territory	1	14,999
Illinois	1,046	2,429
Indiana	450	3,734

5. *Number of patents, including designs, &c.*—Continued.

States, &c.	Patents and designs.	One to every—
Iowa	488	2,655
Kansas	103	3,538
Kentucky	151	8,748
Louisiana	79	9,073
Maine	132	4,749
Maryland	192	4,067
Massachusetts	1,392	1,046
Michigan	383	3,091
Minnesota	146	3,011
Mississippi	39	21,228
Missouri	365	4,715
Montana Territory	3	6,865
Nebraska	36	3,416
Nevada	24	1,770
New Hampshire	78	4,080
New Jersey	502	1,804
New Mexico Territory	3	30,624
New York	2,496	1,755
North Carolina	51	21,007
Ohio	1,083	2,460
Oregon	38	2,392
Pennsylvania	1,515	2,325
Rhode Island	212	1,025
South Carolina	34	20,753
Tennessee	114	11,039
Texas	115	7,117
Utah Territory	4	21,696
Vermont	58	5,733
Virginia	100	12,251
Washington Territory	4	5,988
West Virginia	31	14,258
Wisconsin	245	4,304
Wyoming Territory	9	1,014
United States Army	14	.....
United States Navy	2	.....
	13,029	2,959
Foreign	590	
Total	13,619	

6. *Comparative statement of the business of the Office from 1837 to 1877, inclusive.*

Year.	Applications.	Caveats filed.	Patents issued.	Cash received.	Cash expended.	Surplus.
1837	.....	.....	435	$29,289 98	$33,506 98	.....
1838	.....	.....	520	42,123 54	37,402 10	$4,721 44
1839	.....	.....	425	37,260 00	34,543 51	2,716 49
1840	735	228	473	38,056 51	39,020 67	.....
1841	847	312	495	40,413 01	52,666 87	.....
1842	761	391	517	36,505 68	31,241 48	5,264 20
1843	819	315	531	35,315 81	30,776 96	4,538 85
1844	1,045	380	502	42,509 26	36,244 73	6,264 53
1845	1,246	452	502	51,076 14	39,395 65	11,680 49
1846	1,272	448	619	50,264 16	46,158 71	4,105 45
1847	1,531	553	572	63,111 19	41,872 35	21,238 84
1848	1,628	607	660	67,576 69	58,905 84	8,670 85
1849	1,955	595	1,070	80,752 98	77,716 44	3,036 54
1850	2,193	602	995	86,927 05	80,100 95	6,816 10
1851	2,258	760	869	95,738 61	86,916 93	8,821 68
1852	2,639	990	1,020	112,656 34	95,916 91	16,739 43
1853	2,673	901	936	121,527 45	132,869 83	.....
1854	3,328	868	1,902	163,789 84	167,146 32	.....
1855	4,435	906	2,024	216,459 35	179,540 33	36,919 02
1856	4,960	1,024	2,502	192,588 02	199,931 02	.....
1857	4,771	1,016	2,910	196,132 01	211,582 09	.....
1858	5,364	934	3,710	203,716 16	193,193 74	10,522 42
1859	6,225	1,097	4,538	245,942 15	210,278 41	35,663 74
1860	7,653	1,084	4,819	256,352 59	252,820 80	3,531 79
1861	4,643	700	3,340	137,354 44	221,491 91	.....
1862	5,036	824	3,521	215,754 99	182,810 39	32,944 60
1863	6,014	787	4,170	195,593 29	189,414 14	6,179 15
1864	6,932	1,063	5,020	240,919 98	229,868 00	11,051 98
1865	10,664	1,937	6,616	348,791 84	274,199 34	74,592 50
1866	15,909	2,723	9,450	495,665 38	361,724 28	133,941 10
1867	21,276	3,597	13,015	646,581 92	639,263 32	7,318 60
1868	20,420	3,705	13,378	681,565 86	628,679 77	52,886 09
1869	19,271	3,624	13,986	693,145 81	486,430 78	206,715 03
1870	19,171	3,273	13,321	669,456 76	557,149 19	112,307 57
1871	19,472	3,366	13,033	678,716 46	560,595 08	118,121 38
1872	18,246	3,090	13,500	699,726 39	665,591 36	34,135 03
1873	20,414	3,248	12,864	703,191 77	691,178 98	12,012 79
1874	21,602	3,181	13,599	738,278 17	679,288 41	58,989 76
1875	21,638	3,094	†16,288	743,453 36	721,657 71	21,795 65
1876	21,425	2,697	†17,026	757,987 65	652,542 60	105,445 05
1877	*20,308	2,809	*13,619	732,342 85	‡613,152 62	119,190 23

* Including designs.
† Including $2,677 50 expended for restoring models, &c., damaged by fire.
‡ Includes trade-marks and labels.

RECEIPTS AND EXPENDITURES.

The above tables show a diminution in the receipts, expenditures, the number of applications filed, and the number of patents granted, compared with some previous years.

The number of applications for patents fluctuates from year to year, owing to many different causes; but there is no doubt that the increased facilities which this Office, by its publications, has afforded the public in the matter of the examination into the state of the various arts, have affected, and will continue to affect, to a great extent, the number and character of applications, as well as of patents. A less number of applications covering old fields of invention will be filed, and a corresponding improvement will be found in the character of patents granted.

The receipts of this Office for the past year in fees have exceeded its entire expenditures, not including the printing, to the amount of $121,867 73. If comparison were made alone between the amount of receipts and the amount of current expenses, the surplus of receipts would be about $180,000, nearly $60,000 being paid during the past year for the reproduction of patents issued prior to 1871, and not properly chargeable to the current expenses of the Office.

The total amount of expenditures for the past year, $610,475 12, is less than any year since 1871. This reduction is due, in part, to the smaller appropriations for the reproduction of the drawings of old patents. It should be added that a large draft has been made on the contingent fund by reason of the late fire.

PHOTO-LITHOGRAPHIC REPRODUCTION OF DRAWINGS.

The work of making copies of the drawings of patents granted prior to 1871, by reproducing them by the photo-lithographic process, was commenced in the summer of 1871.

The first step necessary to be taken in preparing the original drawings to be photo-lithographed is tracing the same with ink on muslin by hand. This preparatory work for the entire number of old drawings, amounting to 100,000, will be completed by March 31, 1878. The completion of 150 photo-lithographic copies of each of these drawings will speedily follow. Unfortunately, the recent fire destroyed about 31,000 and injured 16,000 more of the sets of photo-lithographs. The copies entirely destroyed include the important classes of Agricultural Implements, Land Conveyances, and Philosophical Instruments. For their reproduction an appropriation of $30,000 will be elsewhere asked, and is now, also, earnestly recommended. But no new tracings of the drawings just mentioned will be necessary.

The importance of this work cannot be overestimated. For the convenience of the Office and the public, the subjects of inventions are divided into 158 classes. The drawings of each class are numbered, named, and dated to correspond with the patents, and arranged in suitable portfolios, so that they can be easily inspected in making examinations into the state of the art. Drawings for sale are similarly arranged. It will be seen at a glance, under such arrangement, how valuable to the public is an accessible collection of patented drawings, and the great outlay necessary to their production will be more than repaid in a few years by the proceeds derived from the sales of the photo-lithographic copies. These proceeds already amount annually to ten or twelve thousand dollars.

PRINTING OF PATENTS GRANTED PRIOR TO 1867.

Closely allied to this subject of the reproduction of the drawings of back issues are the considerations which indicate the necessity for reproducing the specifications of patents granted prior to November 20, 1866. By some strange oversight the Government neglected, up to that time, to print the patents. To fill the constant demand, therefore, the Office is compelled to furnish manuscript copies of the specifications of inventions patented prior to that date, at the rate of ten cents per folio of one hundred words. This is a tedious and expensive process. Fifty or more copyists are constantly employed for this purpose; but even with this force orders are often delayed, greatly to the detriment of private and public interests. Under the present system, requiring examination of every application filed, the necessity is forced upon the Office and the public of looking through this vast mass of manuscript matter to ascertain the previous state of an art. Except by means of expensive copies, this wide field of information is not open to the public outside of Washington; and the business of the United States courts, in patent matters, is frequently delayed and embarrassed by the same slow and imperfect process of procuring copies of these valuable public documents. The manuscript certified copies furnished by the Office add to the tediousness and expense of suits. To the public generally, the information contained in the mass of manuscript in the Patent Office is practically inaccessible, and people often pay royalties, in ignorance of their rights, or because it is cheaper than to attempt any search through the manuscripts of American patents. The public pay annually tens of thousands of dollars for infringement examinations, and some of the older manuscript volumes in the Office are nearly worn out by the repeated perusals. I think there is no tax which inventors and manufacturers would so cheerfully pay as that which should be imposed for the purpose of printing these documents. In consideration of these facts I would urgently recommend that the reproduction of these specifications be authorized at as early a day as possible, so that the work may be proceeded with as rapidly as the interests of the service demand and the facilities of the Office permit. For this work an appropriation of $20,000 would prove ample for the next fiscal year. The sales of these copies, like those of the back drawings, would, at very moderate rates, soon reimburse the Government for the outlay, so great is the demand for completed classes of patents.

TRANSFER OF PRINTING TO THE PATENT OFFICE.

I desire also to call attention to the present mode of printing specifications for patents. This, like other printing, is done at the Government Printing Office. But the conditions under which this printing is done differ from those attending other public printing: First, patents are issued each week, and the specifications, as soon as the fees are paid, must be at once printed. This makes the time required an important element in the performance of the work. Second, as the specification is a legal document, necessarily describing and defining by technical and exact terms the nature of the grant, something more is needed than ordinary proof-reading. It is necessary frequently to refer to the Examiners, and to consult with them upon the correction of errors. It has therefore been found indispensable, in order to save frequent reprinting, to subject the proof-sheets of specifications to another proof-reading in the Office after that of the Government Printing Office, so that the papers must be carried back and forth before the work of each week is completed. If the work could be done in the Office, under the immediate supervision of the Commissioner and Examiners, I am confident that it could be done more expeditiously, with considerable saving, and more accurately. The amount each week does not average above four hundred pages.

In connection with this, the Commissioner might, if permitted by law, also print copies of such of the old specifications heretofore referred to as should be ordered by the public, without additional expense, or with very slight additional expense, using for this purpose only from the ordinary appropriation for making manuscript copies. The regular price charged according to law, ten cents per folio, would pay the greater part of the cost of printing. Fifty additional copies might be printed, which would remain as a stock on hand for the supply of other demands and as a source of revenue.

In connection with this matter it may be well to consider the fees paid upon the issue of the patents. The final fee of $20 was established by law when the applicant furnished the copy of the drawing which was to be attached to his patent, and when the copy of the specification accompanying the patent was in manuscript, and only a single copy was made. As no discrimination could be exercised in the amount of fees charged to cover the expense of examination, whether the case were simple or complex and difficult, it was not deemed advisable to make any distinction in any respect, and the same fee was required in all cases. But under the present plan of printing the specifications and drawings, the Government furnishes more for the same amount of money, and the difference in cost to the Government between patents requiring a large number of printed pages of matter and numerous sheets of drawings and those requiring few is of great importance, and easy to estimate with reasonable accuracy. Patents are sometimes issued in which the whole fee paid by the applicant would not cover the cost of setting the type for printing the specification. Either the Government loses in such cases, or parties taking out patents for simple inventions contribute to defray the expenses of the more complex. The inequality can be remedied, and exact justice done, by adding to the final fee required of the applicant the cost of printing his specification and drawings. In that case the final fee might be reduced. I estimate that a final fee of $15 and the cost of printing and photo-lithographing would reimburse the Government. But if models should not be required, and inventors relieved of that expense, as suggested elsewhere, probably fuller illustration by drawing would be required, and it would be safe and just to retain the full fee. Whatever surplus there might be could be expended most profitably for inventors and the public severally in the printing, heretofore suggested, of the old specifications.

DIGEST OF PATENTS.

I renew a suggestion made by the Commissioner of Patents in 1873, relating to the publication of digests

or abridgments of patented inventions such as are published by the British Government.

These abridgments contain in classified form brief summaries of the inventions patented in Great Britain. Each volume contains some special class of inventions, arranged chronologically, and with subject-matter indexes. Any one desiring to be fully and accurately informed in relation to the patents granted in that country in all classes of inventions may readily glean the information from the volume of abridgments, without which he would be compelled to search laboriously through the great mass of patents issued, now amounting to over 1,700 volumes.

The indexes are not full, but are sufficient to indicate the nature of the invention, and direct the inquirer to the volume and page where a full description and illustration may be found.

No such indexes have ever been made by this Government. It has been attempted by private individuals in a few special classes. The completion of the whole work would require two or three years. It can be best done under the supervision of the Office, and in connection with the special Office work of examination. These indexes would enable one searching for special information to perform in a few moments the work of a day. They would effect a saving to the Office greater than their cost, and would find a ready sale at remunerative prices among manufacturers and inventors.

The need of them increases each year, with the increase of the number of patents, and if generally distributed they would serve more effectually than any other means to defeat those who throughout the country, under worthless patents of narrow scope, impose upon the unwary and ill-advised. They might be distributed, in the same way as THE OFFICIAL GAZETTE, to public libraries in the Congressional districts, and would furnish an epitome of the entire record of the patents of the country, and ready information as to the state of the arts, accessible to all.

THE OFFICIAL GAZETTE.

The publication of THE OFFICIAL GAZETTE, a weekly reserript of the transactions of the Patent Office, was begun in 1872, taking the place of the old Patent Office Reports since that date. Its institution was made necessary by the growing demands of the manufacturing interests of the country for current information as to the operations of the Office, and its growing popularity is a sufficient guarantee of the wisdom of the policy which dictated the change.

The matter it contains is of special importance to manufacturers and all others interested in patent matters. The minimum price per annum for THE GAZETTE now fixed by law is $5, a rate limited to clubs, five or more in number; single subscribers are charged $6, and at these rates the circulation is considerable, and constantly increasing. But it is my opinion that the price fixed is too great to meet the popular demand, and that at a less price its circulation would be very largely increased. Under the law Members of Congress are permitted to name eight public libraries in their States to which THE OFFICIAL GAZETTE shall be sent, and I believe that number could be increased with very great benefit to the public service. The information contained in THE GAZETTE is national in its character, and its wide dissemination is beneficial to the country and to the business of the Office.

The Commissioner has none of the ordinary means used by publishers for bringing THE GAZETTE to the public notice, and in my judgment the circulation of it might be largely increased, and the receipts not diminished, if authority were given to offer the publication to newsdealers at a rate considerably less than the minimum price of $5 when a large number of copies are ordered.

LIBRARY.

During the year there have been added to the library—

	Vols.
Specifications of patents of various countries	101
Scientific works, bound periodicals, &c	891
Duplicate English patents, (unbound)	1,750
There were lost and destroyed by the fire	51
Books bound during the year	2,471
Total number of books in the library, not including duplicate English patents	24,000
Issued to Examiners and readers in the library, about	20,000
Number of scientific and other periodicals taken	253

One of the most important accessions during the year was a duplicate set of the specifications and drawings of English patents from 1852 to 1876, numbering 66,000, making about 1,750 large volumes, which were furnished by the liberality of the British Government, together with an additional set of abridgments down to the year 1866.

A complete duplicate set of the indexes of English patents has also been added, which will allow copies to go to the Examiners' rooms, and greatly facilitate the work of completing digests for the various classes down to date.

Some years since the work of making a complete name and subject-matter index in English of all the French patents was begun, and only partially completed, owing to the want of clerical force in the library. This work has been continued, and is now nearly complete, including over thirty thousand French patents, all that have been published to date. The Belgian patents are to be indexed in the same manner, and this work should be extended to the Italian, Austrian, Norwegian, German, and other patents, and supplements to the indexes made each year. There are many scientific publications, containing a large number of volumes, that need to be indexed to become readily accessible to Examiners and the public. The absolute necessity for this becomes evident from the fact that nearly one-half of all the works in the library are in foreign languages.

Another important work has been the preparation of a catalogue of the library. Heretofore there has been only an incomplete card catalogue, which was exceedingly cumbrous and almost useless to those most desirous of consulting the works in the library. During the year there has been compiled by the Librarian a complete catalogue or alphabetical index both of authors and subject-matter of all works in the library, making a royal octavo volume of over six hundred pages, the greater part of which is already printed. This is the first complete catalogue of the library ever published, and will add largely to the practical use of the library by simplifying the work of reference, for which this library was especially designed.

The importance of an extensive library in the work of this Office can scarcely be over-estimated. By the provisions of law, the Examiners are required to judge of the novelty of an invention before a patent issues, and, for the purpose of examination, need a library kept up to date. Those of the public interested in patents have the same need.

Of the arts and sciences, as represented by the 24,000 volumes now in the library, but very few departments are in any sense complete, while upon some subjects there are scarcely any works that can be consulted. There is urgent need of an addition of at least ten thousand volumes to make the collection what it should be at the present time, for this class of information must be complete and come down to the latest date to be reliable and of value.

Scientific works are costly, and from the limited portion of the contingent fund allowed for the purpose it has not been possible to procure such works as were needed, and I would therefore renew the recommendations heretofore made, and would suggest that the sum of ten thousand dollars be specially appropriated out of the surplus receipts of Office fees for the purchase of books for the library.

This Bureau would not even then be placed on a par with some others in regard to its library. It is believed that a complete library, properly classified and catalogued, with subject-matter indexes of the more important works, would save thousands of dollars each year in the time required to make examinations; and the efforts made the past year toward this end are already bearing fruit, for the report of the Librarjan shows that the usefulness of the library has increased at least threefold this year, even with the present imperfect facilities.

Arrangements are in progress for securing complete sets of the patents issued by all nations from the earliest dates, and to increase the list of foreign exchanges with scientific, literary, and other societies. In this connection it is but proper to state that more room is greatly needed for the use of the library to properly carry on the work assigned it. The increase of English and French patents has entirely filled the space allowed them, and provisions must be made for the additions of the coming year. The entire duplicate set of English patents remains in boxes, owing to want of space in which to arrange them.

In order to make the library more efficient, according to the plans before indicated, the selection of the persons employed has been made with special reference to their linguistic and other requisite attainments, and at the present time there is no one in the library who is not familiar with one or more foreign languages.

TRADE-MARKS AND LABELS.

This important branch of Office work is steadily increasing. One thousand four hundred and sixteen trade-marks and six hundred and thirty-two labels have been received for registration during the year. The receipts from this source for the past year have amounted to between thirty-eight and thirty-nine thousand dollars, about eight thousand dollars more than the receipts of last year.

The work of examination of trade-marks presented for registration, and the classification of the same, proceeds upon the same principle as examination and classification of applications for patents. The work has been divided into nearly eighty official classes, and the fac-similes arranged accordingly.

The importance of trade-marks to the commercial world is becoming more and more appreciated in this country, and the remedies under recent laws enacted for their protection in the United States courts are being frequently enforced.

LACK OF ROOM.

Recently, quite a large portion of the force engaged in tracing drawings and in making copies of the records have, by reason of the destruction of part of the building, necessarily been transferred to another building, greatly to the inconvenience of the Office. But this transfer has afforded no relief to the remaining portion of the force of this Bureau. Halls and dark, ill-ventilated rooms continue to be occupied and crowded by the employés and by valuable public records. This evil has existed for years, and increases in extent with the accumulation of the records. The public business relating to the grant of patents suffers especially by lack of the room necessary to the examining corps for the arrangement of matter to be consulted in the examination of applications for patents.

APPOINTMENTS AND PROMOTIONS.

Since 1869 appointments and promotions in the examining corps of this Office have, with some interruption, been made by competitive examinations. These examinations were resumed in April of last year. For promotions, the candidates have been examined almost exclusively in matters relating directly to the business of the Office in their particular line of duty, with a certain allowance in each case, determined before the examination for the general efficiency in such respects as could not be determined by the written examination.

Candidates for admission to the examining corps of the Patent Office have been examined for the lowest grade of the corps, and upon such mechanical subjects as come within the range of ordinary observation and attract the attention of persons having that natural interest in mechanism which accompanies an aptitude for such things. These examinations have also included some of the general principles of physics. The results of this system have been highly satisfactory. Men better fitted for the special work have been selected for appointment; the ablest, most diligent, and faithful men have been promoted; and, in addition to this, the effect, generally, upon the Office has been to stimulate industry, attention to business, and studious habits. These examinations have been conducted by gentlemen of higher grades in the Office, and without any expense to the Government. As the examinations have been hitherto conducted at the Department, an inconvenience has arisen to candidates from the necessity of their attendance at Washington for the purpose of an examination, which must result in many cases in disappointment. This might be remedied by holding an examination at stated periods in different parts of the country. I regard the system as of such importance in this Office as to justify some provision of law for conducting the examinations for the best interests of the Government and the convenience of all concerned.

LOSSES BY THE RECENT FIRE.

The fire of September 24th completely destroyed all of the building occupied by the Patent Office above the second or principal story in the north and west wings.

The part destroyed included one-half of the model-rooms, containing 163 cases, mostly filled with patented models. Besides, there were several thousand models belonging to pending cases, some of which were allowed and awaiting payment of the final fee, and others rejected by the Examiners, but liable to be called up

for further action within two years. In the roof-space above the west hall were stored some 13,000 models of finally rejected cases, which had been put there for the want of other available space for them in the building.

A room in the roof, one hundred feet long at the junction of the south and west wings, had been recently fitted up as a store-room for photolithographic copies of drawings, which, when the fire broke out, were being moved from the ground floor in order that the room they occupied might be used for other purposes. The flames spread into this room, and a large number of these copies were destroyed by fire and water.

The roof over the east hall had to be cut into, and the space between it and the vaulted ceiling was deluged with water, which could only find its way out through the brick masonry into the room below. By these means a great number of valuable models, especially in the classes of sewing and textile machines, were materially damaged, the cases and all their contents were drenched with water, and the complicated mechanism of iron and steel coated with rust.

It was at first estimated that the models in the north and west halls were entirely lost. On a careful survey of the burned halls, after removal of the heavy roof-irons, and other material of the building, it was believed practicable to preserve and restore a considerable number of the models which at first had been thought totally destroyed. Many of them were entirely of metal, and heavy enough to resist any but furnace heat, and others, of which wooden parts were consumed, were apparently preserved in sufficiently good condition for ordinary Office purposes. In clearing the space for the temporary roof, the dust and cinders were therefore carefully examined, and every scrap of a model, however valueless in appearance, was retained. Many considerations appeared to demand that, so far as possible, these models should be preserved. Apart from their intrinsic value as elaborate and costly productions of mechanic art, and as containing the actual history of the inventions, they were a part of the record-evidence upon which large amounts of capital had been invested. Hence it seems that if any of these models could be preserved it would be inexcusable to permit them to be lost. It was estimated that not far from ten thousand of them could be preserved.

Congress having appropriated the sum of $45,000 to be expended for this purpose, I have begun the work, and am happy to report that, so far as I can judge from the indications up to date, much more can be accomplished than I before deemed possible.

The number of models I shall be able to restore will probably be greater than I estimated, and the expense per model less.

The models in the east hall, which were damaged by water, seemed to demand the first attention. The inventions they represented were of great value, their parts were intricate, often minute, and the inevitable injury to them from rust was scarcely less than a fire would have occasioned. I therefore, immediately on the partial restoration of order in the Office, took steps to arrest the damage to these models by having them taken apart, oiled, and freed from rust, and have, up to this time, kept constantly engaged on this work such force as the means at my disposal have from time to time permitted. This part of the work will be shortly completed, and probably 5,000 models of the most valuable description preserved in perfect order.

The damage to photo-lithograph copies was at first estimated at 40,000 sets of 150 sheets each, requiring for their reproduction about $60,000. After clearing away, however, the portion rendered absolutely worthless by fire and water, I caused a careful examination to be made of the remainder, and found that a large proportion of them, having been packed in solid masses, had substantially withstood the fire, and might be made available for use and sale by trimming the charred edges. The result has been that I am able to reduce my original estimate for restoring these copies one-half, or approximately to $30,000.

Thirty patented drawings in the class of wood-working were in the hands of copyists working in the model-room, and were burned. This loss is particularly serious, as the models were also destroyed, and there is no means of replacing the drawings except from the original letters patent to which copies were attached. This may, in time, be accomplished.

Eleven volumes of drawings of English patents were also destroyed. It gives me special pleasure to state that this loss being made known to the Commissioners of Patents at London, they at once directed duplicate copies of these drawings to be sent to this Office without charge.

Of minor losses to books, furniture, and fixtures, there were many, none of them of special significance in themselves, but in the aggregate amounting to thousands of dollars. The water thrown on the fire poured in torrents through the ceilings, flooding all the rooms on the main floor in the north hall, and it was only by the most active exertions of a large force, day and night, that it was kept from deluging the floor below. The same experience was repeated a few days afterward by the occurrence of a severe rain-storm before the temporary roof was erected.

These successive disasters were necessarily discouraging, and, to a certain extent, demoralizing; but after each there was little delay in the restoration of order and resumption of work. The greatest embarrassment was occasioned by the want of room, so large a portion of the building being rendered unfit for use, and the General Land Office being compelled to trespass upon the already limited space devoted to this Bureau. But I am pleased to report that in the midst of these embarrassments and great apparent confusion, business proceeded almost as usual, and the weekly issues indicate no interruption. The records show only one day in which no patents were allowed, and that was shown to have occurred only because the clerk to whom allowed cases were sent, having been driven from his desk and room by the flood, had no place to receive them from the Examiners.

AMENDMENTS OF THE LAW.

Prior to the fire, models of patented machines had been accumulating in the Office since 1836—for some years at a rate of from twelve to fifteen thousand per annum. Some of these occupy fully a cubic foot of space, though many are smaller. Though the number of rejected models had been greatly diminished by occasional distribution to scientific institutions, at the time of the fire there were about thirteen thousand (13,000)

stored under the roof. Patented models had filled almost every available space in the fourth story of the building. They were useful to the public for the purpose of examination by persons desiring to be advised as to the novelty of inventions made by themselves or their clients. Duplicates were sometimes ordered to be used as evidence in court, and they were frequently referred to in applications for reissue. But it has become a serious question whether these advantages, added to the somewhat sentimental interest in the collection as a distinctively American display, were sufficient to justify the great cost on the part of inventors in furnishing these models, and on the part of the Government in storing and exhibiting them. I am of the opinion that, under certain conditions, it will be better to dispense with models in applications for patents. They form no part of the patent when issued. The law makes it essential to the validity of a patent that the specification and drawing thereof shall disclose fully the invention to those skilled in the art to which it pertains.

Examinations can be made without models, and, in my judgment, with greater certainty of fullness and accuracy from the drawings; since, without the model, the Examiner, relying wholly upon the drawings, would detect any imperfection. It will be necessary only that provision be made requiring models in cases where the capability of the machine to operate is called in question, or where the Examiner is in doubt as to the sufficiency of the drawing, or where models may be necessary for ready illustration on appeals, or in interference cases.

The omission of models will, as I have intimated, relieve the inventor of a large part of the expense attending applications for patents, and will tend, on the whole, to make the drawings and specifications attached to patents more full, clear, and explicit. The drawings in nearly all the patented cases having been reproduced, the preliminary and infringement examinations, hitherto made on the models, can now be made by means of copies of the drawings, of which I have already arranged one set to supply the place of the models destroyed. Now that the models which remain cover but half of the ground, it seems an opportune time to change the system, if such change is at all desirable.

In connection with this I also suggest that provision be made for the preservation of such models as shall be capable of operation, and be deemed valuable for the purpose of illustrating practical working machines, used anywhere in the country, and for the reception and custody of specimens of manufacture and working models of such operating machinery as manufacturers or inventors may desire to place on exhibition. A collection thus made up of working models, confined to inventions actually in use, would be of value as illustrating the state of the arts throughout the country, and would be unincumbered by the great mass of useless material accumulated under the old model system. It would require much less space for many years than that occupied by the models recently destroyed.

Much of the complaint against the patent system of this country has arisen out of the reissue of old patents with expanded claims. Under the law, and in conformity with the decisions of the courts, as understood by the Office, it has been the practice hitherto to allow the introduction, upon reissue, of matter shown in the model, but not contained in the drawing or specification of the original patent. As the model constitutes no part of the patent, is not referred to therein, and not brought to the notice of the public, the reissue of a patent based upon matter contained in the model alone may well operate as a surprise to the public. It gives opportunity for fraud, because it is impossible to keep the models in such strict and faithful custody as not to afford sometimes an occasion for changing a model, either by adding or taking away some part to materially change the invention, very substantial difference being sometimes made by a very slight change. I recommend, therefore, a modification of the law restricting the applicant for reissue to matters contained in the specification and drawing, without any reference to the model.

In this connection I refer, also, to another provision in the present law, contained in the latter part of section 4916 Revised Statutes, which has been understood by this Office to provide for the amendment of certain classes of cases upon reissue by the introduction of new matter on proof outside of the Office record. Such proof can only be furnished by voluntary affidavits. Although the repeal of this provision might, in some cases, work hardship, the opportunity for fraud is so great, and the temptation so strong, that it seems wiser and for the public interest that the section should be modified in this respect.

There is another class of cases, not infrequent, in which honest mistakes occur, which may be corrected without injury to the public, but for the correction of which no provision now exists. I refer to cases where parties, through ignorance of the law, have taken out patents as joint inventors, where one or more of the parties had, in fact, only the interest of an assignee. The law authorizing reissues does not touch these cases, and it has been held by the Department that the correction cannot be made as a clerical error. It is necessary only to authorize the Commissioner to receive such patents, with proper affidavits of the parties interested, and to make the correction, and a proper certificate thereof.

It is perhaps unavoidable, even under our system, which provides for an examination as to patentability, that patents of little or no value, and for unimportant improvements, should be very frequently granted. Many of these patents are used more to retard the progress of the arts than to advance them, and in such ways as to tend rather to bring the patent system into disrepute. For illustration: patents are often granted for inventions more or less crude, for machines capable of operation mechanically, but not capable of profitable operation, and not valuable commercially, or for processes which, for like reason, fail to become of practical value. These patents sometimes lie dormant until, in the progress of the arts and by the efforts of more practically successful or ingenious inventors, the goal is ultimately reached, and inventions are perfected and made practically useful, in which, however, are embodied the germs found in some of these old patents.

One of the greatest hardships, and the source of much complaint, has been the reissue of such old patents with claims covering machines subsequently invented and practically the first to operate successfully. To such

an extent has this been carried that when a man had really made a valuable invention it was necessary for him to examine the records of the Office, and ascertain what old patents could be found which might be reissued to cover his invention; and it has been a matter of prudence to secure such patents before investing in the manufacture of an invention liable to be dominated in that way.

Further than this, there are patents granted for improvements more or less trivial, differing in comparatively small particulars from machines or articles preceding them. It is difficult to prevent the issue of such patents, partly by reason of the urgency of the applicant, very largely by reason of the persistency and effort of attorneys whose fees in many cases are made to depend upon their success in obtaining the patent, and partly because it is very difficult for the Office to undertake to determine the practical value of an improvement. That which seems but a trivial change may amount in practice to a very important and valuable improvement. Since the grant of such patents cannot always be avoided, the question arises whether their duration may not be abridged, and for this purpose some process of natural selection be applied to the patents issued by the Government. It has, therefore, been thought desirable to require, at certain periods in the life-time of a patent, the payment of fees as a necessary condition to the continuation of the life of the patent. Such a provision would, in my judgment, tend to remove useless and frivolous patents, without imposing any serious burden upon those that prove meritorious.

For the convenience of the Office and the public, I suggest an amendment to section 4885 Revised Statutes. The existing law requires the payment of the final fee within six months after notice of allowance of the application. The conduct of business in the Office requires that the issue of patents for each week should be closed upon a certain day. If the final fee is paid, as is often the case, upon the last day of the six months, it is impossible to give the patent the date of the preceding issue, that having been closed and the papers all sent to the printer. As the day of closing the issue necessarily precedes, by two or three days, the date given to the weekly issue of patents, which is the day of signing those patents, the only practicable day of issue in such case does not come within the six months prescribed by law, and the Office is compelled to resort to the fiction of sending a new circular with a new date of allowance. Further, the patent is dated and begins its term of seventeen years on the day on which it is signed, and the Commissioner is compelled, under the present arrangement, to sign these patents in blank, and afterward print the specification and drawing, make up the patent, and affix the seal thereto, which, for the whole issue, requires about two weeks after the date of the patent. It seems desirable to have the law so changed in relation to the payment of the fees that the papers can be prepared and ready for delivery on the day when the term of the patent begins.

The last clause of section 4887 Revised Statutes requires that every patent granted for an invention which has been previously patented in a foreign country shall be so limited as to expire at the same time with the foreign patent. I know of no good reason for this restriction, either in the case of alien or citizen inventors. For citizens of this country, it simply amounts to a restriction upon the right which they would otherwise have to take out patents for their inventions in foreign countries. It is desirable often to take out a foreign patent first. The prior issue of the American patent requires extraordinary diligence on the part of the inventor (often unable at once to bear the expense of taking out foreign patents) in order to prevent unscrupulous parties from taking the invention abroad and patenting it, (as they may without making the oath of invention,) or to prevent the introduction into foreign countries of the publication of the invention, which, in some cases, would bar the issue of the foreign patent. In order to prevent the enjoyment by a foreign inventor of the patent granted him abroad, during any considerable part of the life-time thereof, and the subsequent taking out of the patent for the same invention in this country, it might be provided that the application should be made in this country within two years or less time after the date of the foreign patent.

I would also suggest that section 4897 Revised Statutes be amended in order to put applications forfeited for non-payment of the final fee upon the same basis as applications abandoned by reason of failure to act thereon within two years after action by the Office. As the law now stands, a discrimination is made against cases passed for issue, for matter decided to be patentable, which is not made against applications not so decided upon, but in the same manner neglected by the parties thereto.

I suggest that the law relating to declaration of interferences in the Patent Office (section 4904 Revised Statutes) be amended so as to provide that after the final decision in the Office between parties to an interference, the application of the successful party shall not be put in interference with any application filed after the closing of the testimony taken on behalf of the successful party, and permitting only an interference to subsequent parties with the patent of the party prevailing in the first interference. It sometimes happens that a party, defeated in the first interference, comes into the Office before the patent can issue to his opponent, with a new application signed and sworn to by some third party and assigned to himself. Such circumstances give rise to a very strong suspicion that the second interference is substantially a prolongation of the first.

In the second interference the subsequent party has the advantage of knowledge of his opponent's case; and it is asserted in some of these cases, with probability of truth, that the proceeding is simply for the purpose of delaying a patent while the parties defeated in the interference are enjoying the fruits of the invention.

The Office is in receipt of considerable revenue from the sale of copies. The customary price charged for manuscript copies is ten cents per hundred words; for printed copies of specifications, twenty-five cents per single copy, and ten cents each for twenty or more. For certified manuscript copies the price is the same as for uncertified; but for certified printed copies the price is the same as for manuscript copies. The latter price is exorbitant; and the price for printed copies is greater by far than the cost of printing; but when only a few

are ordered the price charged does not exceed the actual cost, taking into consideration the attendance necessary for the prompt delivery of such copies. Cases arise in which parties desire complete sets of classes, including several hundreds or several thousands of copies, and in such cases the price is excessive. I recommend that section 493 Revised Statutes be amended, in order that it may be more equitable in these respects.

Specific amendments to the law have already been suggested in accordance with these recommendations, which are embodied in a bill now before the Senate Committee on Patents.

In addition to the matters already suggested and embodied in the bill, there is another which has received considerable thought from those interested in patents, and to which I desire to call attention. Under the present organization of the Office there are twenty-two Principal Examiners issuing patents. Practically, there is no review of applications which have received their favorable action. These Examiners are frequently changing, and are not always in harmony as to their views of the law or their understanding of what is patentable thereunder. From their adverse decisions appeal may be taken to the Board of Examiners-in-Chief. This Board, having authority to reverse the Examiner's action, practically determines more than the Commissioner the general policy of the Office in the issue of patents. If they are inclined to issue patents for unimportant matters, they overrule the Examiners, and their decisions directly and as precedents govern the corps.

The Board, which consists of three members, is also, from causes which affect the Office generally, subject to change. Since its establishment in 1861 there have been fifteen different members. Under such conditions it must appear inevitable that there could not have been uniformity or the constant exercise of the wisest discretion in the granting of patents. The whole tendency has been toward an excessive issue of patents, and there is need of constant supervision.

The official sanction and certificate of novelty often give a patent value in the eyes of the applicant without much regard to what he is actually entitled to claim, and a very large number of cases are urged before the Office by attorneys whose fees depend upon the grant of the patent.

Under the present organization of the Office there is no hope of greater uniformity and no possibility of more careful supervision. It was proposed some years ago to accomplish this by grouping the classes, so as to place the granting of patents in fewer hands; but the scheme was never put into practice. It is impossible for the Commissioner to supervise personally one in a hundred of the patents issued. His duties are too diverse and numerous, and should rather be abridged. In fact, the business has outgrown the organization. Since the reorganization, in 1836, when the offices of Commissioner and Examiner were created, the number of Examiners has increased from one to eighty-eight, the total number of employés from seven to above four hundred, and the number of applications from about six hundred and fifty to above twenty thousand per annum. In 1837 the cash receipts were twenty-nine thousand two hundred and eighty-nine dollars and eight cents, and in 1876 they were seven hundred and fifty-seven thousand nine hundred and eighty-seven dollars and sixty-five cents. With this increase the business has naturally and inevitably become more complicated. This increase has added immensely to the executive duties of the Commissioner, and rendered them such as to need all his time and care. But in addition to these duties he has those of the appellate tribunal next above the Examiners-in-Chief; and although very few *ex parte* cases reach him, there are many appeals in interference cases which often require the examination of a large amount of testimony, and the decision of essentially the same questions as those which arise in infringement suits in the United States Courts. The duties of the Commissioner are not only too many, but they are incompatible. The watchfulness, care, and constant supervision required of the executive officer are inconsistent with the exercise of the judicial qualities necessary for the consideration of questions brought up by appeal. I believe that the Commissioner should be relieved of these judicial duties, and that they, as well as those which now devolve on the Board, should be confided to a more permanent tribunal than either the Board or Commissioner.

Such a tribunal has been suggested, of the nature of a Patent Court, to be established in connection with the Office, and to be composed of three members, appointed as other judges of the United States courts are appointed. To such a court all appeals from the adverse decisions of the Examiners might be directly taken. This would save one appeal, would relieve the Commissioner of all judicial duties, and would bring into direct connection with the Office a permanent judicial head. The Commissioner might then, with the other assistance already provided by law, inspect the patents which he signs, and refer to the court for revision such as might seem to him improper to issue.

I know of no plan which promises better than this to correct the evils arising out of granting patents for things which ought not to be patented. The law of 1836 provided for an examination as to novelty in order to guard against "the granting of patents for everything indiscriminately." The amendments now proposed are in the same direction, and contemplate more careful and uniform examination and complete supervision in allowing patents.

The evils complained of under the present system are not occasioned by patents granted to true and worthy inventors, but by worthless patents. They are not essential to the system, but incidental in its rapid growth, and trifling in comparison with the benefits bestowed.

These benefits have outrun the anticipations of the founders of the law, and, indeed, cannot be measured. In his report accompanying the bill which became the law of 1836, the chairman of the Senate Committee on Patents then said: "Important and interesting as the Patent Office is now considered, it is believed that, under such new organization as is contemplated by the bill presented herewith, it will contribute largely to the great interests of the country and bear no small part in elevating our national character. American ingenuity has obtained much consideration on the other side of the Atlantic. Even the manufacturers of England are not a little indebted to it for some of their most valuable improvements." This was before the invention of the reaper, before the sewing-machine, the telegraph, the various improvements in fire-arms, and

numbers of other American inventions which have been carried into Europe and over so large a part of the civilized world. The mind cannot grasp, no data can be collected to state, the vast results of American invention since 1836. Of the agricultural implements alone the single class of harvesters represents the working force of an immense army. Without these the grain-fields of the West could not be reaped. Indeed, in every art inventors have spurred manufacturers to the adoption of improvements which have made almost every useful thing in civilized life cheaper or better, and which have enabled us to enter into successful competition with older manufacturing countries in the markets of the world. The list of our exported manufactures is already long and is yearly increasing.

It cannot be doubted, I think, that this marvelous growth and excellence in inventions are due to the stimulus given by the protection afforded by the law. There are few valuable inventions which have not been the result of long study, and which have not required the expenditure of time and capital to perfect and bring into use—expenditures not to be expected unless there be held out the hope of reward.

The records of this Office, as well as the history of our manufactures, show the immense labors and achievements of inventors during the last half century. But the end in no department is yet reached. The fields of invention are exhaustless, and under protection wisely given the future will be richer in inventions than the past.

Respectfully submitted.

ELLIS SPEAR,
Commissioner.

WASHINGTON, D. C., *January* 29, 1878.

PRICE OF THE GAZETTE.—The price of THE OFFICIAL GAZETTE is still fixed at $6 per annum, and there is no reduction from that price except where five subscriptions are included in one order, when the subscription is $5; and subscribers can be added to this club, by the party or parties forming it, any time during the year, at the reduced price.

The Annual Index will not be furnished to subscribers hereafter without extra charge; but immediately after the expiration of each volume a Half-yearly Index will be given without charge, and should additional copies of the Half-yearly Index be desired, they will be furnished upon the payment of fifty cents for each additional copy required.

EXTRA COPIES OF THE GAZETTE.—The letter-press of THE GAZETTE has been prepared with a view of meeting the demand for extra copies of that particular portion which relates to Office practice, decisions of the courts, &c.

Extra copies of the letter-press can be had separately from the illustrated portion, and the weekly index of patents and patentees can be had in any number at 5 cents per copy. Where extra copies of either the letter-press or weekly index are desired orders must be sent to the Office as early as the Saturday preceding the issue of the following Tuesday.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

THE DECISIONS FOR 1877.—The decisions of the United States courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

TO SUBSCRIBERS.—Great care will hereafter be taken in mailing THE OFFICIAL GAZETTE to subscribers, and in case of its non-receipt the fault will not be in the Patent Office. When each issue shall have been mailed, the Office will assume that it has done its duty by the subscribers, and will not send extra numbers except upon receipt of 10 cents for each copy ordered.

BOUND VOLUMES FOR 1877.—The bound volumes of THE OFFICIAL GAZETTE for 1877 are now ready for distribution, and can be procured, in full law binding, for $8, and in half-calf for $7. The Annual Index for 1877 will not be ready for distribution, either to subscribers or purchasers of the bound volumes, before the 1st of May, 1878.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Eastern District of Pennsylvania.

A. W. GRAY, L. GRAY, AND A. Y. GRAY, *vs.* DANIEL HULSHIZER AND HENRY B. LARZALERE.

[*In Equity.—Before* MCKENNAN, *Cir. J.—Decree January* 17, 1878.]

Suit for infringement of patent granted to A. W. Gray, September 9, 1856, *for* "IMPROVEMENT IN HORSE-POWERS," *reissued July* 1, 1862, *and extended seven years from September* 9, 1870.

[No written opinion delivered. The Judge stated orally that, leaving other questions aside, he did not regard the proof of infringement as satisfactory.]

[*M. D. Connolly*, for complainants; *Charles Howson*, for defendants.]

MCKENNAN, *C. J.*:

And now, to wit, January 17, 1878—

This cause having been brought to final hearing upon the pleadings and proofs, and counsel for the parties respectively having been heard thereupon, and the same having been duly considered by this court, it is hereby ordered, adjudged, and decreed that complainants' bill of complaint herein be, and the same hereby is, dismissed, with costs to be taxed by the clerk of this court.

TRADE-MARKS.

[Each certificate bearing date January 15, 1878.]

5,502.—TOILET PREPARATION.—*William Henry Hall*, New York, N. Y. Application filed December 15, 1877.
"The word-symbol 'FLORILINE.'"

5,503.—EARTHENWARE.—*Knowles, Taylor & Knowles*, East Liverpool, Ohio. Application filed November 22, 1877.
"The figure or representation of a buffalo."

5,504.—CHEMICALS AND ACIDS.—*Pennsylvania Salt Manufacturing Company*, Philadelphia, Pa. Application filed November 10, 1877.
"The representation of a polar bear in connection with the word-symbol 'GREENLAND.'"

5,505.—STARCH.—*The Buffalo Grape Sugar Company*, Buffalo, N. Y. Application filed December 21, 1877.
"The word-symbol 'MIRROR.'"

5,506.—STARCH.—*The Buffalo Grape Sugar Company*, Buffalo, N. Y. Application filed December 21, 1877.
"The pictorial representation of a lady ironing clothes."

5,507.—STARCH.—*The Buffalo Grape Sugar Company*, Buffalo, N. Y. Application filed December 21, 1877.
"The pictorial representation of a Chinaman ironing clothes."

5,508.—STARCH.—*The Buffalo Grape Sugar Company*, Buffalo, N. Y. Application filed December 21, 1877.
"The pictorial representation of a boy in the act of husking corn."

5,509.—ORANGES.—*Frederick De Bary*, New York, N. Y. Application filed December 3, 1877.
"A representation of a shield surrounded by the words 'DE BARY'S GROVE, FLORIDA.'"

5,510.—PRODUCT OF PETROLEUM FOR TOILET PURPOSES.—*Binghamton Oil Refining Company*, Binghamton N. Y. Application filed December 3, 1877.
"The arbitrarily-selected words 'CREAM OF PETROLEUM.'"

5,511.—FERTILIZERS, MANURES, AND FERTILIZING COMPOUNDS AND INGREDIENTS.—*W. H. Bowker & Co.*, Boston, Mass. Application filed February 26, 1877.
"The word-symbol 'STOCKBRIDGE.'"

5,512.—TOILET-SOAPS.—*H. & J. Brewer*, Springfield, Mass. Application filed November 2, 1877.
"The symbol composed of the circular lines and the circle of dots."

5,513.—REED-ORGANS.—*The Burdett Organ Company*, (limited,) Erie, Pa. Application filed October 16, 1877.
"The word-symbol 'BURDETT.'"

5,514.—BRONCHIAL TROCHES, LOZENGES, OR WAFERS.—*Dabbs Brothers*, Philadelphia, Pa. Application filed December 15, 1877.
"The word 'CROW'S' and the figure of a bird."

5,515.—COUGH AND LUNG SIRUP.—*Andrew J. Flagg*, Claremont, N. H. Application filed Jnne 4, 1877.
"The words 'DR. A. J. FLAGG'S.'"

5,516.—SMOKING AND CHEWING TOBACCO, AND CIGARS, CIGARETTES, AND SNUFF.—*G. W. Gail & Ax*, Baltimore, Md. Application filed December 18, 1877.
"The fanciful words 'LITTLE JOKER.'"

5,517.—COMPRESSED YEAST.—*James W. Gaff & Co.*, Cincinnati, Ohio. Application filed April 13, 1877.
"The word-symbol 'GERMAN.'"

5,518.—MEDICINE FOR HORSES.—*Erasmus W. Haines*, San Francisco, Cal. Application filed November 14, 1877.
"The word-symbol 'ABYSSINIAN DESERT COMPANION.'"

5,519.—SMOKING-TOBACCO.—*Manuel Riquelme*, New Orleans, La. Application filed December 17, 1877.
"The coat of arms of the State of Louisiana."

5,520.—CARPET-WARP.—*James E. Reynolds*, East Orange, N. J. Application filed December 12, 1877.
"The word-symbol 'EUREKA.'"

5,521.—BISCUITS.—*E. J. Larrabee & Co.*, Albany, N. Y. Application filed November 20, 1877.
"The word-symbol 'EASTLAKE.'"

5,522.—PLUG-TOBACCO.—*The Pioneer Tobacco Company*, Brooklyn, N. Y. Application filed December 21, 1877.
"The application to the face of a plug of tobacco of a broken line."

5,523.—MEDICAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed April 26, 1877.
"The pictorial representation of our place of business."

5,524.—MEDICAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed April 26, 1877.
"The pictorial representation of a woodland scene."

5,525.—SPOOL-THREAD.—*Geo. M. Jacocks & Co.*, New York, N. Y. Application filed November 19, 1877.
"The letters 'T. N. T.' on a scroll over a shield, and the words 'LONSDALE MILLS.'"

5,526.—COTTON SHEETINGS, SHIRTINGS, AND OTHER COTTON GOODS.—*Jackson Company*, Nashua, N. H. Application filed November 16, 1877.
"The designation 'INDIAN-HEAD.'"

5,527.—COTTON SHEETINGS, SHIRTINGS, AND OTHER COTTON GOODS.—*Jackson Company*, Nashua, N. H. Application filed November, 16, 1877.
"The word-symbol 'WACHUSETT.'"

5,528.—MEDICINE.—*William R. Mercein*, Detroit, Mich. Application filed November 27, 1877.
"Two bust-figures of a person, marked, respectively, 'BEFORE TAKING,' 'AFTER TAKING.'"

5,529.—LINIMENT.—*Henry S. Woodard*, Bloomington, Ill. Application filed January 4, 1878.
"The words 'DR. Z. WATER'S NE PLUS ULTRA.'"

5,530.—SMOKING-TOBACCO AND CIGARETTES.—*Erich L. Witthaus*, Baltimore, Md. Application filed December 18, 1877.
"The monogram composed of the letters 'E. L. W.'"

5,531.—WASH-STANDS.—*John W. Pangborn*, Jersey City, N. J. Application filed January 3, 1878.
"The picture or symbol of the wash-stand, as shown."

LABELS.

[Each certificate bearing date January 15, 1878.]

1,353.—Title: "COMPOUND WITCH HAZEL HAIR RESTORER."—*Benjamin W. Dyer*, New York, N. Y. Application filed January 9, 1878.

1,354, (Print.)—Title: "DIDO."—*Heppenheimer & Maurer*, New York, N. Y. Application filed January 8, 1878.

1,355, (Print.)—Title: "GOOD TASTE."—*Heppenheimer & Maurer*, New York, N. Y. Application filed January 8, 1878.

1,356, (Print.)—Title: "OLD ABE."—*Heppenheimer & Maurer*, New York, N. Y. Application filed January 8, 1878.

1,357, (Print.)—Title: "MURRAY HILL."—*Heppenheimer & Maurer*, New York, N. Y. Application filed January 8, 1878.

1,358, (Print.)—Title: "IDOL."—*Heppenheimer & Maurer*, New York, N. Y. Application filed January 8, 1878.

1,359.—Title: "LEWIS' IMPROVED POTATO BUG EXTERMINATOR."—*Pearl C. Lewis*, Windham, N. Y. Application filed January 5, 1878.

1,360.—Title: "PRESERVING FLUID FOR BOTTLE AND EXPORT LAGER BEER AND ALE."—*Wm. Zinsser & Co.*, New York, N. Y. Application filed January 9, 1878.

1,361.—Title: "EUREKA CARPET WARP."—*James E. Reynolds*, East Orange, N. J. Application filed December 12, 1877.

DESIGNS.

[Each design bearing date January 15, 1878.]

10,398.—CARPETS.—*Frank E. Allen*, Yonkers, N. Y. Application filed December 18, 1877. Term of patent 3½ years.

10,399.—CARPETS.—*Hugh Barclay*, Philadelphia, Pa., assignor to *James H. Gay*, of same place. Application filed November 28, 1877. Term of patent 3½ years.

10,400.—CARPETS.—*Eugène Daniel*, Paris, France, assignor to *Roxbury Carpet Company*, Boston, Mass. Application filed January 4, 1878. Term of patent 3½ years.

10,401.—LIFTING-HANDLES.—*Nehemiah Hayden*, Essex, Conn. Application filed January 3, 1878. Term of patent 14 years.

10,402.—CARPETS.—*David McNair*, Boston, Mass., assignor to *Roxbury Carpet Company*, same place. Application filed January 4, 1878. Term of patent 3½ years.

10,403.—BUTTONS, STUDS, AND OTHER JEWELRY.—*James W. Miller* and *Isaac M. Miller*, Newark, N. J. Application filed December 10, 1877. Term of patent 7 years.

10,404.—COFFIN-RAILS.—*John R. Reed*, Westfield, Mass. Application filed January 3, 1878. Term of patent 3½ years.

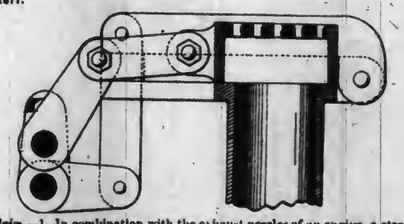
10,405.—MIRROR-FRAME.—*Emile V. Blaesius*, New York, N. Y. Application filed December 5, 1877. Term of patent 3½ years.

10,406.—HARNESS-TRIMMINGS.—*Simon Wiener*, Newark, N. J., assignor to *Wiener & Co.*, same place. Application filed December 15, 1877. Term of patent 7 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

JANUARY 15, 1878.

190,137. Exhaust-Nozzles of Locomotives. Richd. H. Allen, Hudson, N. Y. Filed July 13, 1877.



Claim.—1. In combination with the exhaust-nozzles of an engine, a steam-distributer placed over the delivery end of the nozzles, and provided with a series of small apertures through its top for subdividing the steam, the aggregate area of the said apertures being equal to or greater than the area of the nozzles, substantially as set forth.

2. In combination with a steam-distributer placed over the delivery end of the nozzles, movable arms, which operate to clamp the distributer over the nozzles and to release it, so that it can be removed therefrom, substantially as described.

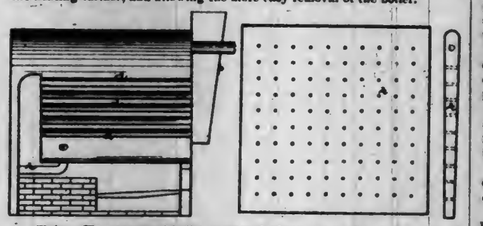
190,138. Box-Fasteners. Benj. S. Atwood, South Abington, Mass. Filed Sept. 26, 1877.



Claim.—The recurved spring *a*, fastened to piece *b*, and working in a slot in the end of the box, when combined with the piece *c*, secured under the lid, and operated through the hole *f*, all as described above.

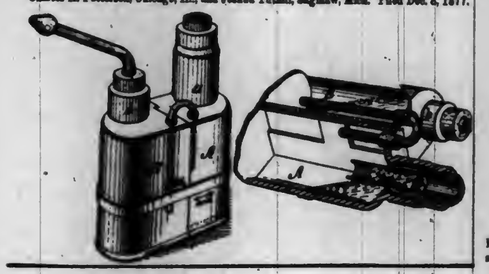
190,139. Steam-Boilers. John Baird, New York, N. Y. Filed Jan. 4, 1877.

Brief.—Independent sections are located alongside of the boiler, increasing the heating-surface, and allowing the more easy removal of the boiler.



Claim.—The compound boiler composed of a larger section, having a shell and water-legs, and supplementary sections extending above the water-level in the larger sections, each constructed and applied together substantially in the manner specified.

190,140. Inhalers. Oliver P. Barber, Saginaw, Mich., assignor of two-thirds his right to Charles H. Patterson, Chicago, Ill., and Joshua Tuthill, Saginaw, Mich. Filed Dec. 8, 1877.



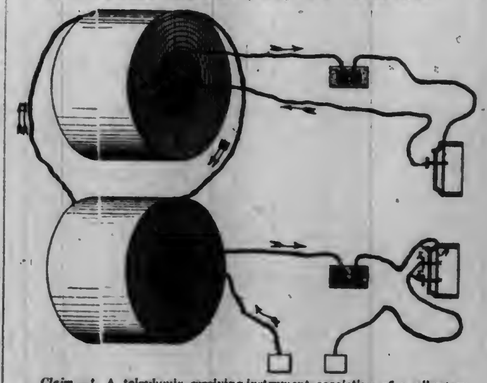
Claim.—1. In an inhaler, the combination of two glass vessels, A B, constructed to fit solidly together, and a removable band encircling and uniting said vessels, as shown.

2. An inhaler-body consisting of the two vessels or bottles provided with interlocking surfaces, and secured together by means of the encircling band, substantially as shown.

3. In an inhaler, the alkali-chamber suspended freely within the acid-chamber, and provided with a filling of absorbent material to retain the alkali, as shown, whereby the inversion of the inhaler is permitted without causing the escape or admixture of the acid and alkali.

4. The vessels A B, having the necks or mouths located at or near one side, and the communicating tube located at or near the other side, substantially as and for the purpose set forth.

190,141. Telephones. Emile Berliner, Washington, D. C. Filed Oct. 16, 1877.



Claim.—1. A telephonic receiving-instrument consisting of a vibratory plate of metal or carbon, forming one pole or end of a galvanic current, arranged in contact with several metal or carbon pins, which together form the opposite pole of the same current for reproducing sound.

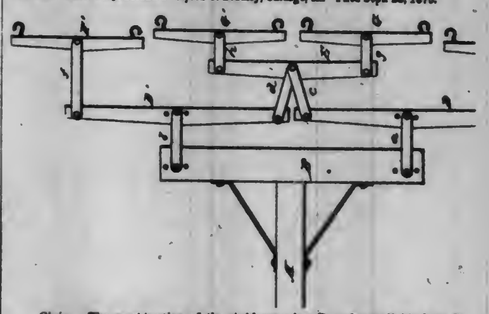
2. A telephonic receiving-instrument consisting of two metal or carbon plates in a vibratory position, each in contact with a metal or carbon pin, arranged in such a manner that both contacts are affected simultaneously by the same electric waves.

3. A combination of two induction apparatus with two separate battery-circuits, one of each passing through one of the primary coils, the secondaries of which are combined into one closed circuit with the iron cores, for the purpose described.

4. A mode of transforming waves of induced or tensional electricity into sound, by permitting them to act by induction upon a continued galvanic current, which passes through a vibratory medium, forming one pole, and being in contact with the opposite one of the said same galvanic current.

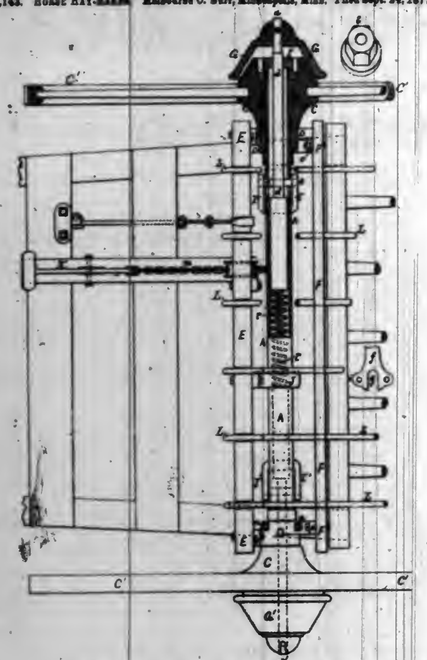
5. The telephonic receiving-instrument situated within a continued galvanic circuit, in which undulations are produced by the inductive undulatory currents of another electric circuit.

190,142. Draft-Equalizers. Byron C. Bradley, Chicago, Ill. Filed Sept. 28, 1876.



Claim.—The combination of the rigid cross-bar B and equalizing-bars D, D′, and E with the links *a b c d e f g h* and whiffletrees F F′ G G′, substantially as and for the purposes specified.

199,143. HORSE HAY-RAKES. Malbourne G. Burr, Minneapolis, Minn. Filed Sept. 24, 1877.



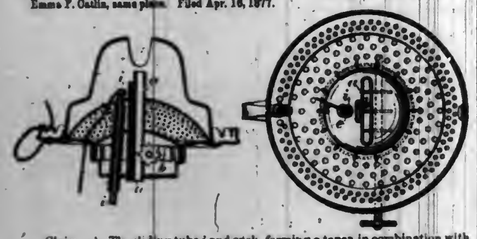
Claim.—1. The combination and arrangement of the axle A, collars D D, having the arms *b b' c c'*, rake-head E, and slotted board F, substantially as hereinbefore specified.

2. The combination and arrangement of the conical hubs C C, caps G G', rods *d d'*, spring or springs *r*, yokes I I', connecting-rods *k k'*, and lever *f*, having the elongated slot *g*, substantially as hereinbefore set forth.

3. The hollow nuts *t t'*, in combination with the journals B B', hubs C C, and rods *d d'*, arranged and operating substantially as hereinbefore described.

4. The rake-head E, formed as shown, in combination with the tooth L, having the opening *s* of a less extent than the width of the rake-head, as hereinbefore explained.

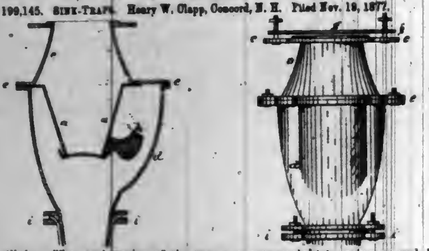
199,144. LAMP-BURNERS. Seth C. Catlin, Brooklyn, N. Y., assignor to Philip H. Begg and Emma P. Catlin, same place. Filed Apr. 16, 1877.



Claim.—1. The sliding tube *i* and wick, forming a taper, in combination with the main wick-tube *a* and other parts of the lamp-burner, substantially as specified.

2. The wick-tube and wick, forming a taper, introduced through the metal body of the lamp adjacent to the side of the wick-tube, substantially as set forth.

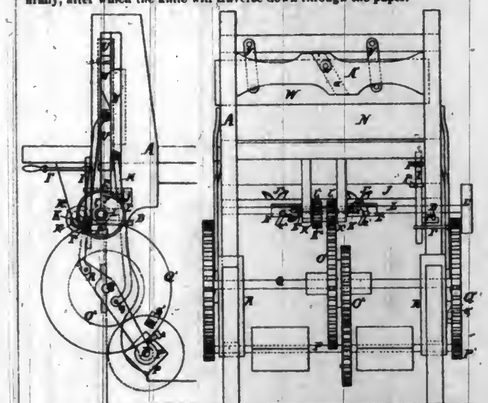
199,145. SINK-TRAPS. Henry W. Clapp, Concord, N. H. Filed Nov. 19, 1877.



Claim.—The combination of the trap *a*, counter-weight A, casing *c e* and *d d*, flanges *c c*, and provided with the counter-weight chamber, and collars *i i*, arranged and operating as and for the purposes set forth.

199,146. MACHINES FOR CUTTING PAPER. George R. Clarke, Brooklyn, N. Y. Filed Apr. 27, 1877.

Brief.—The operation of the mechanism is to depress the clamping-bar gently upon the paper, in which condition the paper may be moved a little if it shall be found by the operative to be desirable; but so soon as the climbing of shaft P, and the consequent movement of the levers, has depressed the knife so that it begins to bear upon the paper, the climbing will be temporarily arrested, and the clamping-bar further depressed, so as to hold the paper more firmly, after which the knife will traverse down through the paper.



Claim.—1. The combination of the levers R R, carrying the shaft P, with its gear-wheels P', operating the knife by the climbing of the wheels P' upon the wheels Q', which operate the clamping-bar, substantially as herein specified.

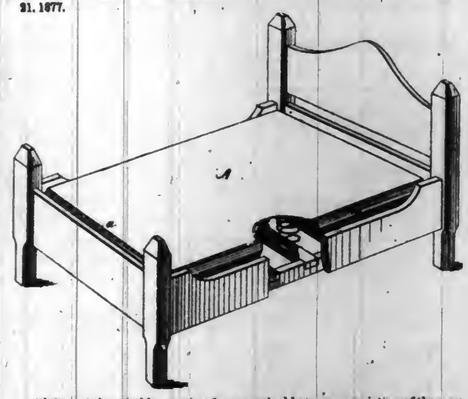
2. The clamping-bar N and knife W, with their respective operating mechanisms, constructed substantially as described, combined and arranged as shown, so that the clamping-bar shall first be depressed with moderate force, then the knife sink and commence to cut, then the clamping-bar be more forcibly depressed, and lastly the knife move farther and sever the paper, all substantially as herein set forth.

3. The intermediate gear-wheels K² K³, in combination with the wheels *f f'* and clutches E' E² on the driving-shaft I, adapted to both reverse the motion and impart a stronger and slower descending than ascending motion to the clamping-bar and knife, as herein specified.

4. The slide D and shaft I, with arms I' I', in combination with the lever R and its connections, and with the slide J, provided with the flaring plates or guiding-surfaces J' J², clutches E' E², wheels *f f'*, and connected mechanism adapted to reverse the direction of the motion when the knife has been fully depressed, as herein specified.

5. The cam *q'* on the wheel Q', in combination with the arm I² and suitable connections to the slide J, adapted to throw the latter into the middle position and indicate a state of rest of the knife and clamping-bar, as herein specified.

199,147. COVERINGS FOR SPRING BED-BOTTOMS. Noah Dutton, Janesville, Wis. Filed May 21, 1877.



Claim.—A detachable covering for spring bed-bottoms, consisting of the canvas A, having the weighted strips *a a a a* inserted in its four edges, the whole being adapted to rest directly upon the coiled springs, and to support and be wholly covered by the upholstered mattress, as set forth, substantially as described, and for the purposes specified.

199,148. SHAFT-SUPPORTERS FOR CARRIAGE-HARNESS. George C. Eastman, Lewiston, Me. Filed June 9, 1877.

Claim.—1. A shaft-supporter provided with the bridge G, the buckling-stud F, the eyes C D, and the loop E, arranged as set forth.

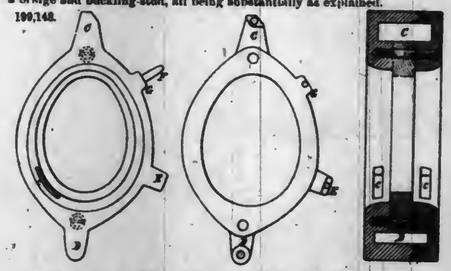
2. A shaft-supporter provided with one or more eyes or slots, *c*, applied to it or arranged in it as represented, for reception of a breeching-strap, as set forth.

3. A shaft-supporter constructed in two sections, and provided with an annular packing, *A*, arranged between them as specified, and having such sections and packing held in place by screws, arranged in them as set forth.

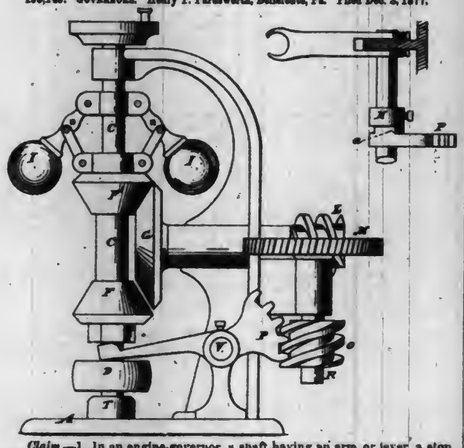
4. A shaft-supporter made in two separate parts, and having a packing between them, and also having a stud-supporting bridge extending from one to the other of them, and across the packing, such parts and packing being screwed together by screws, and all being essentially as shown and described.

5. A shaft-supporter body constructed in two separate sections, connected by screws, as described, and formed to receive and hold between them the said sections, an annular packing, and provided with eyes, an intermediate loop, and a bridge and buckling-stud, all being substantially as explained.

199,149.



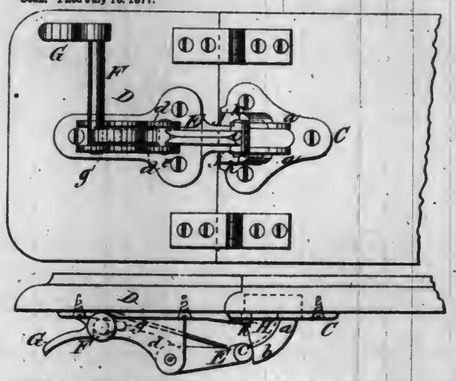
199,149. GOVERNORS. Henry T. Farnsworth, Bellefonte, Pa. Filed Dec. 3, 1877.



Claim.—1. In an engine-governor, a shaft having an arm or lever, a stop, and a toothed sector having a projection interposed between its sleeve and the valve or water-wheel-gate opening and closing mechanism, substantially as and for the purpose set forth.

2. The combination, with the sleeve C', having flanges F F', of the wheel G, shaft G', worm L, shaft R, pinion M, worm O, toothed sector P, having projection *a*, and shaft V, having a stop, H, and arm or lever Q, substantially as and for the purpose set forth.

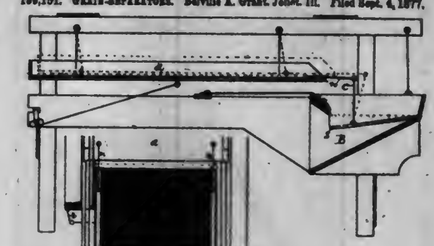
199,150. TABLE-LEAF SUPPORTS. Edward Flather and William Houghtaling, Bridgeport, Conn. Filed July 16, 1877.



Claim.—1. In a table-leaf support, the hinge-relief H, projections *k k*, and its combination with flange *j j* of support C, for the purpose of relieving the hinges from all strain.

2. In a table-leaf support, the trip-lever F, thumb-piece G, trip *g*, and its combination with flange D, supporting-lever E, spring *f*, and support C, all substantially as described and set forth.

199,151. GRAIN-SEPARATORS. Belville A. Grant, Joliet, Ill. Filed Sept. 4, 1877.



Claim.—1. The sieve S, having a tossing motion of its end next the fan imparted to it by means of the rod or chain *e*, hook *a*, and swinging carrier *c*, when arranged and operating substantially as set forth.

2. The combination of the swinging carrier *c*, having the rod or hook *a*, and link or chain *e*, with the laterally-shaking shoe B and sieve S, having its inner end free to rise and fall, as and for the purpose set forth.

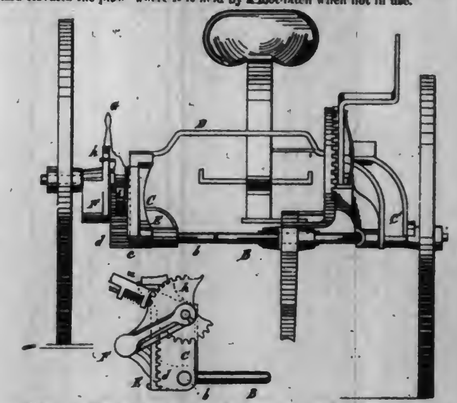
199,152. POLE-CRABS FOR VEHICLES. R. S. Crammon, Newark, N. J. Filed June 2, 1877.



Claim.—A pole-crab consisting of a pole-tip and yoke composed of different materials, the yoke being secured directly upon the tip, substantially as shown and described.

199,153. SULKY-PLOWS. Charles A. Hague, Chicago, Ill. Filed July 28, 1877.

Brief.—The land-wheel side of the frame has two cranks or arms pivoted together at their outer ends. The other end of the inner arm turns upon the main crank, while the outer arm carries the wheel-spindle and a sector-lever and locking devices. The sector engages a vertical rack upon the frame, and thus elevates it and levels the plow. A rigid arm and lever upon the furrow side turns the main crank. This lever engages a rack upon the plow-beam and elevates the plow where it is held by a foot-latch when not in use.



Claim.—1. The independent spindle *g*, carrying the land-wheel A', and connected with the machine by arms F E, in combination with lever G and rack *d*, for vertically raising and lowering that portion of the frame and crank next to the land-wheel, for the purpose of leveling the plow transversely, and at the same time keeping the axles of the wheels in the same vertical plane, substantially as specified.

2. The spindle *g*, carrying the land-wheel, crank B, frame C C' D, arms F E, hinged to each other at *f*, the arm F being secured to the spindle *g*, and the arm E being hinged to the crank B, in combination with devices for raising and lowering the end of the frame and axle next to the land-wheel, substantially as specified.

3. The spindle *g*, carrying the land-wheel, in combination with the crank B, frame C C' D, rack *d*, arms F E, lever G, and sector *i*, all constructed and operating substantially as described.

199,154. UPRIGHT-PIANO ACTIONS. A. H. Hastings, New York, N. Y. Filed June 9, 1877.

Claim.—1. In upright-piano actions, the standard A, provided with the jack C and the repeating-lever G, both pivoted to said standard, substantially as described.

2. The standard A, having the repeating-lever G, provided with the hook I, in combination with the notched hammer-butt J, as set forth.

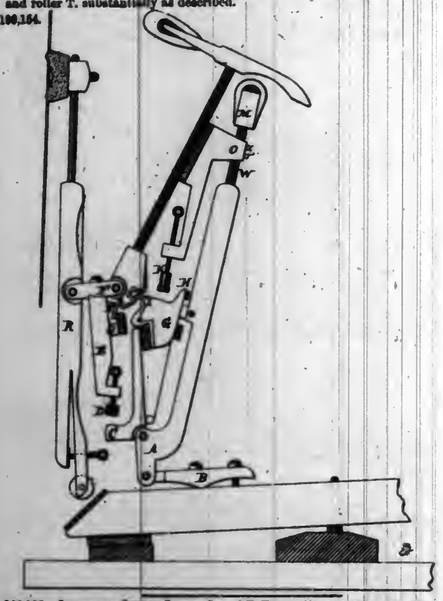
3. The standard A, having rod W and check M, in combination with the rail O, having detachable center V, as described.

4. The spring P in hammer-butt J, in combination with rail E, having stop Q, substantially as described.

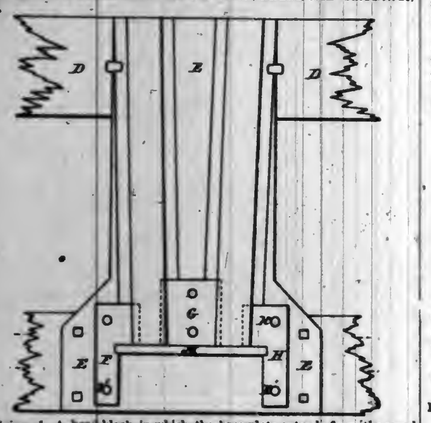
5. The tamper-lever R, having friction-roller T, in combination with key provided with inclined plane U, as set forth.

6. The damper-lever R, having spring provided with regulating-screw S and roller T, substantially as described.

199,154.



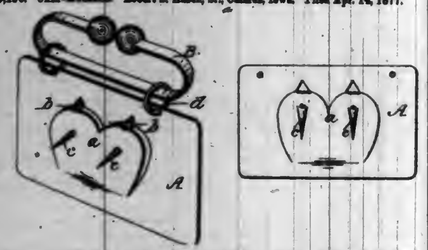
199,155. CHAIRS FOR SWITCH-RAILS. Samuel H. Havens, Hartford, Conn. Filed Nov. 20, 1877.



Claim.—1. A head-block in which the base-plate extends from the usual head-block timber back to the next tie which supports the rails, to prevent the head-block from rocking, and to give a firm seat for the rails, substantially as herein set forth.

2. The combination of the base-plate E and the lugs F G H, riveted to it to form a head-block for a railway-switch, substantially as herein described.

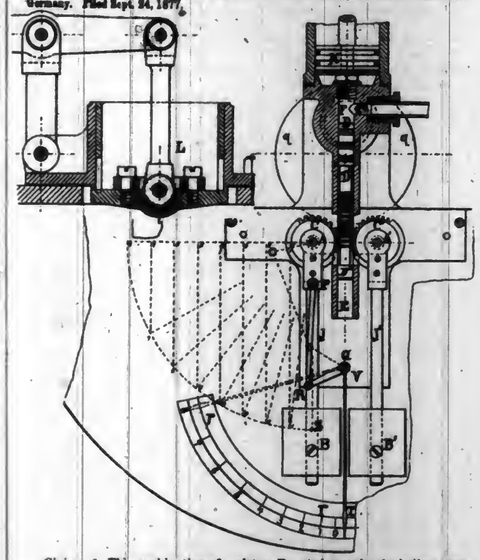
199,156. CALF-MUZZLES. Robert S. Hazen, Sr., Oahuna, Iowa. Filed Apr. 14, 1877.



Claim.—1. The calf-muzzle consisting of the plate A, provided with the suspending device B and with the spring-tongue *a*, having the inner barbs *b* and outer barbs *c*.

2. In a calf-muzzle, inwardly-projecting barbs or spurs, in combination with a spring to hold them out of contact with the nose of the animal unless outward pressure is applied, substantially as shown and set forth.

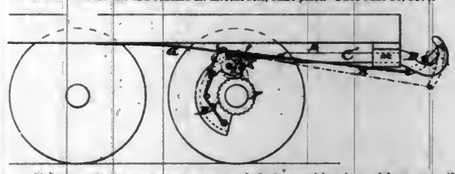
199,157. PRESSURE-GAGES FOR STEAM-BOILERS. Johan Heinig, Frankfort-on-the-Main, Germany. Filed Sept. 24, 1877.



Claim.—1. The combination of a piston, D, acted upon by the boiler-pressure, with rack D', toothed segments C C', levers J J', weights B B', and suitable gearing with hand to indicate the pressure on a scale, substantially in the manner and for the purpose described.

2. In combination with a piston, D, acted upon by pressure, and the piston D'' at the end of its rod, the arm G, with screws *d d'*, rod W, valve *e*, piston K, and safety-valve L, arranged to operate in the manner and for the purpose substantially as set forth.

199,158. CAR-STARTERS. Wilhelm Jasper, New York, N. Y., assignor of two-thirds his right to Herman Moschowitz and Schama M. Moschowitz, same place. Filed June 26, 1876.

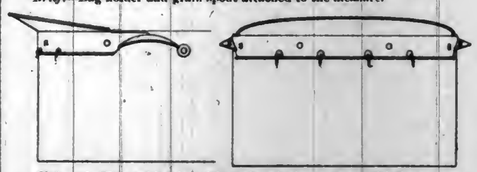


Claim.—1. In a car-starter, the pawl J, in combination with a cam, S, connected to a lever, E, arranged in the draw-hook D, and operated by the attachment or weight of the whiffletree, substantially in the manner and for the purpose described.

2. In combination with the draw-hook D, a lever, E, connected to a cam, S, arranged to operate substantially as set forth.

199,159. GRAIN-MEASURES. Jabial D. Knight, West Concord, N. H. Filed Dec. 11, 1877.

Brief.—Bag-holder and grain-spout attached to the measure.



Claim.—1. The combination of the series of points or spurs with the measure and its discharging-spout.

2. The combination of the spout with the band or flange and the series of spurs or points, arranged and projected therefrom as set forth.

3. The band, the nose, the spurs, and the handles, arranged and combined substantially as and for application to and use with a measure, as set forth.

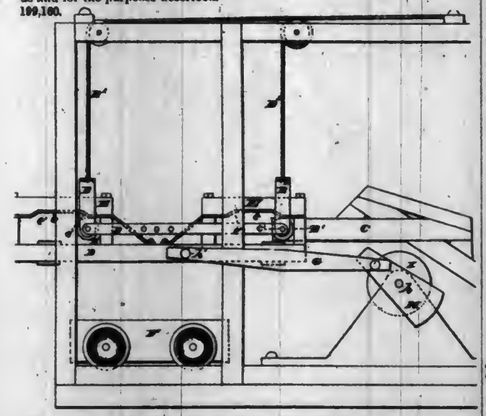
199,160. STONE-SAWING MACHINERY. Jas. Langstaff, Cleveland, Ohio. Filed June 28, 1877.

Claim.—1. A stone-sawing machine provided with a saw-frame for supporting the saws, and driven by a pitman, a supporting-frame for sustaining the saw-frame, one frame provided with a cam and the other with a cam-bearing for governing the saws, the said saw-frame and supporting-frame adapted to move downward along the same arcs, whereby the cam-bearings are always held in the same relation, substantially as and for the purposes described.

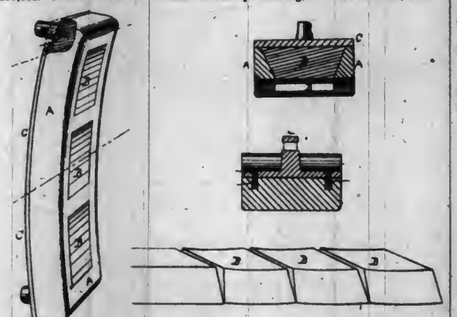
2. In a stone-sawing machine, the combination of a saw-frame driven by a crank and pitman, a supporting-frame suspended so as to be fed downward as the stone is sawed, and a pivoted frame or arm, C, for causing the supporting-frame to move downward in the same arc with the saw-frame, substantially as and for the purposes described.

3. In a stone-sawing machine, the combination of a saw-frame, D, provided with cams D', a suspended supporting-frame, B, provided with cam-rollers B', the pitman and crank G and H, and connecting arm or frame C, substantially as and for the purposes described.

199,160.



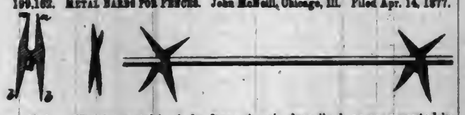
199,161. CAR-BRAKE SHOES. William McConway, Pittsburg, Pa. Filed Nov. 21, 1877.



Claim.—1. A car-brake shoe consisting of a cast-metal frame, A, having one or more recesses extending through the same from back to face, in combination with insertible blocks B, adapted to the form of such recesses, and a removable back, C, substantially as described.

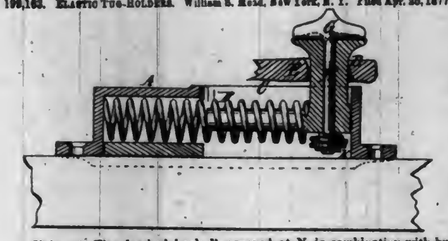
2. A rubber for car-brake shoes, consisting of a cast-metal frame, A, in combination with one or more detached blocks, B, insertible from the rear, substantially as and for the purpose described.

199,162. METAL BARBS FOR FENCES. John McFalls, Chicago, Ill. Filed Apr. 14, 1877.



Claim.—The flat metal barb for fences herein described, as represented in Figs. 3 and 4 of the drawing, having four points, *a b*, arranged nearly parallel with each other, and adapted to be applied edgewise to one or more rails of a fence, in the manner specified.

199,163. ELASTIC TUG-HOLDERS. William S. Mead, New York, N. Y. Filed Apr. 25, 1877.

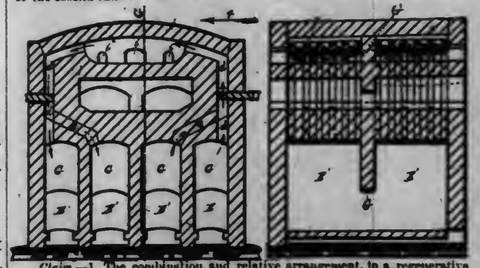


Claim.—1. The shanked hook B, grooved at N, in combination with button G H, which is held in place by spiral spring I, secured between washer J and bottom plate of hook B, in combination with spring F and barrel A, as and for the purpose set forth.

2. In a tug-holder to be attached to thills of running vehicles, the shanked hook B, provided with button G H, having spring I, washer J, and pin K, to hold the head of said button in groove N, in combination with the spiral spring F, secured in barrel A, to give a yielding draw to the tug E, as and for the purpose set forth.

199,164. FURNACES FOR HEATING IRON AND STEEL BARS. Charles H. Morgan, Worcester, Mass. Filed Oct. 1, 1877.

Brief.—The fire-chamber is divided into two compartments by a partition provided with openings. The first compartment is kept at a lower temperature than the other, (the admission of the mixed air and gas being regulated by dampers,) for the purpose of heating the metal gradually and entirely through to a red heat before it is passed through the openings in the partition into the welding-chamber. Equilibrium of temperature of the two sections of gases as they pass down out of the fire-chambers is prevented by the partition subject of the second claim.

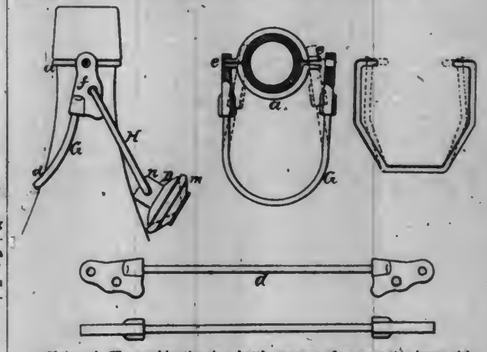


Claim.—1. The combination and relative arrangement, in a regenerative heating-furnace, of partition G', provided with openings *a*, *b*, and *c*, air and gas passages *d e*, and regulating devices *f*, *g*, and *h*, substantially as and for the purposes set forth.

2. The partitions G in gas and air chambers E E and E' E', substantially as and for the purposes set forth.

199,165. BOTTLE-STOPPER FASTENERS. Frank W. Perry, Philadelphia, Pa., assignor to Wm. A. Leavitt, same place. Filed Nov. 26, 1877.

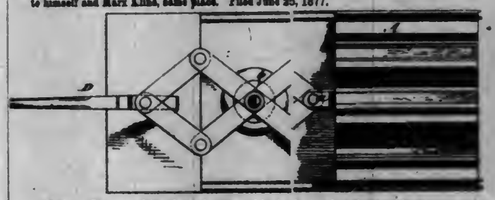
Brief.—The ends of the lever are cast on it. The neck-yoke or holder is in two segments. Construction for easy separation and close packing for transportation.



Claim.—1. The combination, in a bottle-stopper, of an operating-lever with a holder for the same, consisting of two detachable segments, *a a*, having projections *e e*, which form trunnions adapted to holes in the lever, on which the segments depend for retention on the neck of the bottle, all substantially as set forth.

2. The combination of the lever G, the holder for the same, and the yoke H, possessing such elasticity that it will retain the lever on the trunnions of the holder, as set forth.

199,166. MACHINES FOR POLISHING MOLDINGS. Chas. G. Purdy, New York, N. Y., assignor to himself and Marx Kline, same place. Filed June 25, 1877.



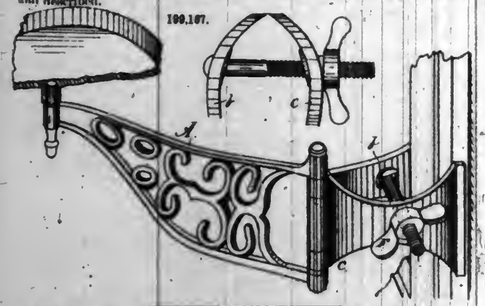
Claim.—The combination of a movable bed, A, placed on suitable ways, the lazy-tongs C, pivot *b*, and the lever D, substantially as shown and described.

199,167. BLACKNUTS. Frank H. Robinson, Aurora, Ill., assignor of one-half his right to Ira B. Tripp, same place. Filed Nov. 23, 1877.

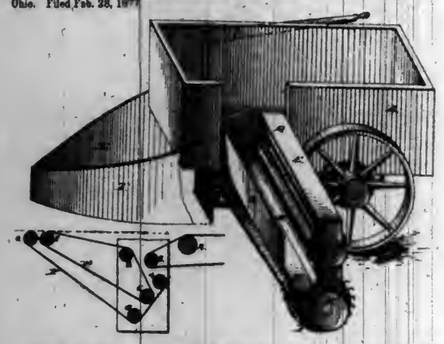
Claim.—1. In combination with a bracket-arm, A, the clamping-jaws *b c*, both hinged thereon, and adapted, when in use, to clamp a vertical bar or body, and a device for tightening such jaws.

2. In combination with the bracket-arm, the toothed clamping-jaws *b c*, bolt E, and nut F, the combination being and operating substantially as shown and described.

199,167.



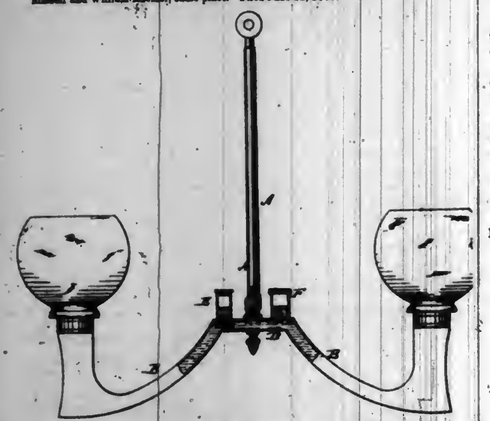
199,168. COTTON-HARVESTERS. Solomon Ruthenburg and Marcus Ruthenburg, Cincinnati, Ohio. Filed Feb. 28, 1877.



Claim.—1. The combination, with the frame E and picker-card F of a cotton-picking machine, of a counterbalance-weight connected with the frame, whereby the frame and its card are adapted to automatically rise and fall, substantially as and for the purpose described.

2. The card F, the counter-card G, the fender H, and the belt F^1, when counterbalanced by a weight or its equivalent, substantially as and for the purpose hereinbefore set forth.

199,169. CHANDELIERS FOR OIL-BURNERS. Mathaus Schmiedt, Newark, N. J., assignor to himself and William Roemer, same place. Filed June 12, 1877.



Claim.—1. The combination of the chandelier-stem A and the horizontal bracket-tube D with the upwardly-projecting filling-tube E and transparent indicator-tube F, both of which extend from the bracket-tube D, but are otherwise disconnected, substantially as herein shown and described.

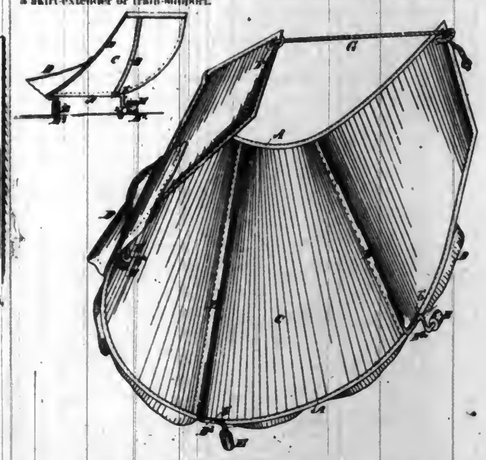
2. In a chandelier for oil-lamps, the combination of the hollow brackets B B with the central connecting-tube D, constituting a continuous channel, through which the brackets communicate with one another, and with the tubes E and F, that project from said tube D, substantially as specified.

199,170. DRESS-TRAIN SUPPORTERS. A. W. Thomas, Philadelphia, Pa. Filed Nov. 6, 1877.

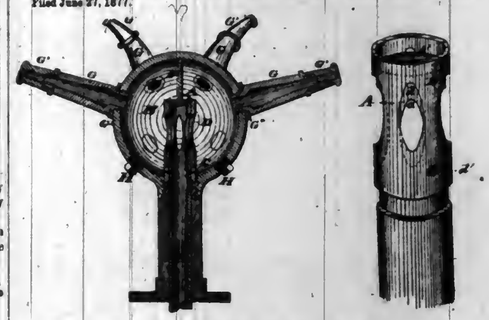
Claim.—1. A train extender or supporter formed or provided with projecting feet, which sustain the rim or body of the article out of contact with the floor or ground, substantially as shown and described.

2. In combination with the feet of a skirt-extender or train-support, shoes E, substantially as shown and described.

3. The rim A, wires B B B, extended to form feet, cover C, cape D, shoes E, and cord G, constructed and combined substantially as described, to form a skirt-extender or train-support.



199,171. FIRE-EXTINGUISHERS. Everett L. Abbott and John C. Birdsall, South Bend, Ind. Filed June 27, 1877.



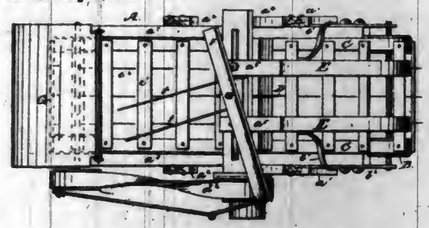
Claim.—1. The combination, with the feed-pipe, of mechanism for adjusting the size of the lateral opening *a*, substantially as and for the purposes described.

2. The combination, with the feed-pipe provided with openings *a*, of the sleeve D, with corresponding openings *d* and set-screw *d'*, or its equivalent, substantially as and for the purposes described.

3. The combination, with the revolving chamber, of nozzles G, adapted to receive interchangeable tips of different sizes, whereby the device may be regulated for various degrees of pressure within the feed-pipe A, substantially as and for the purposes described.

4. The combination, with the chamber, of nozzles G and stoppers H, adapted to be interchanged with each other, substantially as and for the purposes set forth.

199,172. BAND-CUTTING FEEDERS FOR THRASHING-MACHINES. H. K. Andrews, Decatur, Tex. Filed Aug. 22, 1877.



Claim.—The combination of the frame A, constructed with the uprights *a'* and cross-bar *a²*, having slots *c*, carrier C, cutter D, and adjustable guide-boards E, secured to the frame A by spring-supports *c'* and set-screws in the slots *c*, substantially as and for the purposes set forth.

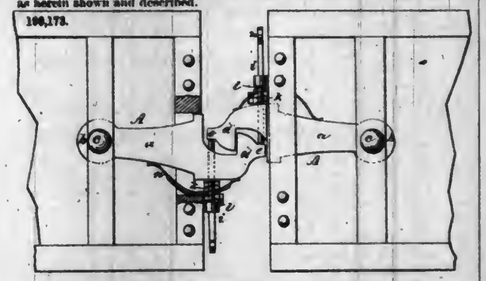
199,173. CAR-COUPLINGS. Jacob J. Anthony, Sharon Springs, N. Y. Filed Nov. 27, 1877.

Claim.—1. A car-coupling having hook with rib *c*, in combination with slotted cross-bar *j*, bolt *k*, and spring *l*, as and for the purpose described.

2. The combination, with bar *h*, of the brace *f*, having hole *g* extending under part *a* and overlapping disk *b*, as and for the purpose specified.

3. The right-angled lever *i*, having attached to it the slotted cross-bar *j*, the bolts *k*, and springs *l*, in combination with the draw-bar A, substantially as herein shown and described.

199,173.



199,174. NECK-YOKES AND COMBINED DRAFT TONGUES AND EQUALIZERS. Robert Atkin, Iowa City, Iowa. Filed June 20, 1877.



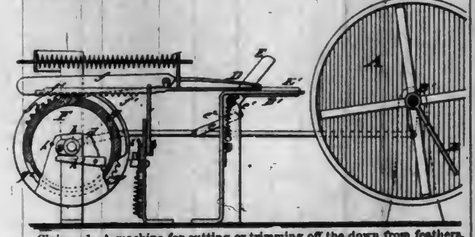
Claim.—1. A three-horse neck-yoke consisting of a neck-yoke bar having attachments for the breast-straps of three horses, and two supports for two poles, substantially as set forth.

2. The combination of a three-horse neck-yoke having bar G, pole-supports *h h*, and breast-strap attachments *m m o o*, and a three-horse draft-tongue having poles P P, neck-yoke catches *q q*, platform R, and attachments *s s*, substantially as and for the purposes set forth.

3. The combination of a three-horse draft-equalizer having double-tree A, bars B B, single-trees C C D, cord or chain E, and pulley F in the single-tree D, a three-horse neck-yoke having bar G, pole-supports *h h*, and breast-strap attachments *m m o o*, and a three-horse draft-tongue having poles P P, neck-yoke catches *q q*, platform R, and attachments *s s*, substantially as and for the purposes set forth.

199,175. MACHINES FOR CUTTING DOWN FROM FEATHERS. Charles Ballinger, White Mills, Pa. Filed May 12, 1877.

Brief.—Feathers are placed in a revolving wire drum, and are stirred therein by reciprocating stirrers, which cause the stems to project through the meshes of the wire, when they are seized by reciprocating gripers and drawn back upon a support, and subjected to the action of knives, which cut the down from the stem.



Claim.—1. A machine for cutting or trimming off the down from feathers, consisting essentially of a revolving feed cylinder or drum for the feathers, intermittently-reciprocating gripers, and intermittently-acting shearing or cutting knives, substantially in the manner and for the purpose set forth.

2. In a down-cutting machine, the combination of a revolving wire-gauze feed-cylinder with interior reciprocating stirrers, for causing the stems of the feathers to stick out through the meshes, substantially as described.

3. In a down-cutting machine, a revolving feed drum or cylinder divided by circumferential bands into narrow sections, each supplying a set of gripers and knives, substantially as specified.

4. The combination of the intermittently-reciprocating and opening and closing gripers D with a guide-support, D', having fixed side knives E', and with reciprocating or revolving cutting-knives E, substantially as described.

5. The combination of the forked and rack-shaped rear arm of the lower griper-finger, and of the weighted and pivoted rear arm of the upper finger, with a revolving cam-wheel having sectional toothed parts, raised central cam part, and centrally-grooved part, for withdrawing, opening, and closing the gripers, substantially as described.

6. The combination of the extended rear arms of the gripers, the actuating cam-wheel, constructed as set forth, the retaining side levers, and the returning spring and guides, to withdraw and retain gripers for cutting off the down from the feather and return the gripers, substantially as and for the purpose described.

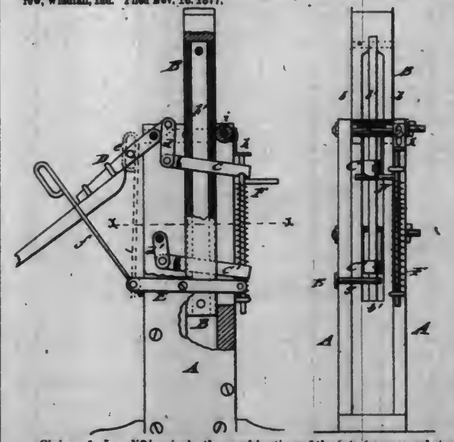
199,176. WAGON-BRAKES. Frederick A. Barlow, Ladora, Iowa. Filed Dec. 13, 1877.



Claim.—1. The combination, with a vehicle-bottom, of the transversely-adjustable lock-bars E E, curved at the outer ends, whereby the outer adjustment causes the locking of the wheel, substantially as set forth.

2. The combination of the transversely-adjustable bars E E, curved at their outer ends, and provided with teeth *s o* on their inner ends, with the cog-wheel C, provided with a key for turning the same, substantially as herein set forth.

199,177. LIFTING-JACKS. Samuel Barrow, David Barrow, Jacob Barrow, and Linzy S. Barrow, Windfall, Ind. Filed Nov. 16, 1877.



Claim.—1. In a lifting-jack, the combination of the interior grooved standard A, lifting post or bar B, made of side guide-rails and dovetailed center-bar, and of slotted pawls C C', that bite on the center-bar, and are operated for lifting by the hand-lever, substantially in the manner set forth.

2. The combination, in a jack, of a lifting post or bar and upper and lower pivoted pawls with a lever-rod connection of hand-lever and lower pawl, and spring-arm connection with upper pawl, so that the pawls alternately release and bind on the lifting-bar, to allow the lowering of the same, substantially as specified.

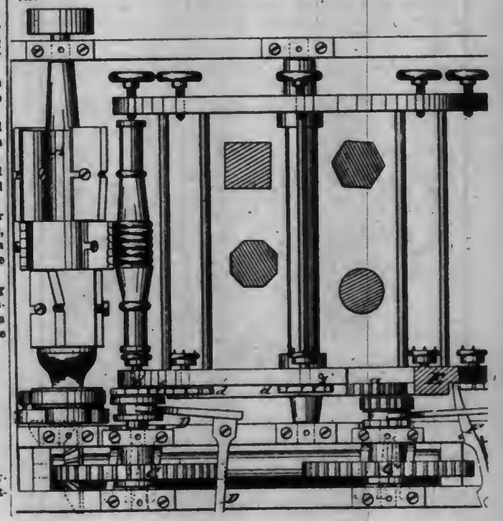
3. The combination, in a jack, with a guided lifting bar or post, operated by pivot-pawls biting on a dovetailed center-bar, of an upper roller to overcome the friction of the post, substantially as set forth.

4. The combination, in a jack, of the upper pawl-releasing spring-arm F with a slotted adjustable stop-plate, to adjust extent of drop-motion of jack in lowering weight, substantially as specified.

5. The combination, in a jack, of the operating hand-lever D, having side pin, looped adjusting connecting-rod *f*, fulcrumed side piece E, having arm *g*, with lower slotted pawl of lifting bar or post, to alternately raise and drop the same, substantially as described.

199,178. LATHES FOR TURNING ROUND OR POLYGONAL BODIES. Royal Beal, Orfordville, N. H. Filed Nov. 30, 1877.

Brief.—Round or angular wooden bodies can be turned on the same lathe. In turning angular bodies a series of blanks are secured in a slowly-revolving cylindrical frame, equidistant from the center, by chucks which are turned by ratchets and a pivoted spring-pawl, so as to expose, after each revolution of said frame, a new side of the blank to the action of a revolving sectional cutter, according to the number of teeth of the ratchets and number of sides to be produced. In turning round bodies the frame is thrown out of gear and locked into fixed position, the ratchets of each chuck being successively thrown into gear with a clutch device and gear, and each blank revolved against the cutter.



Claim.—1. The combination, in a lathe, of the rapidly-revolving cutters and of the slowly-revolving cylinder or drum, supporting the blanks by clamping-chucks, with a lateral spring-pawl, that changes the position of the ratchets and blanks at each revolution of the drum, and exposes a new side of the blank to the action of the cutter, substantially as and for the purpose set forth.

2. In a lathe, a revolving cylinder or drum having blank-carrying chucks, with notched ratchets, retaining spring-catches, and guide-pieces, in combination with a pivoted spring-pawl, that projects into and engages one tooth of each ratchet at each revolution of the drum, substantially as and for the purpose set forth.

3. The combination, in a lathe, of the revolving cutters and of the firmly-locked blank-carrying cylinder or drum, having clutches and ratchets, with a revolving clutch device, that engages the ratchet to expose one blank at the time to the action of the cutters for round turning, substantially as described.

190,179. COLLAPSIBLE CORES FOR CASTING. George Bisset, Jr., Quebec, Province of Quebec, Canada, assignor to himself and William H. Knight, same place. Filed Sept. 29, 1877.

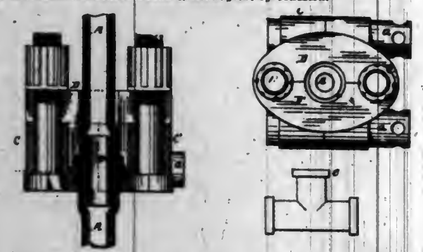


Claim.—1. The combination of a core-cylinder in sections that overlap at the side edges, bolts B, with inclined heads, conical blocks F, and end-threaded shaft D, provided with nuts *d* E, as shown and described.

2. The combination of the diaphragm C with the bolts B, attached to the segments A, the pyramidal or conical blocks F, and the shaft D, substantially as herein shown and described.

190,180. JOINING THE ENDS OF LEAD PIPES. Augustus L. Brickwell, London, England, assignor to George W. Elliot, New York, N. Y. Filed Oct. 19, 1877.

Brief.—The pipe ends are expanded, then thickened by upsetting, after which the thimble is inserted and the pipes are forced together at their ends, so as to form a continuous homogeneous joint by cohesion.



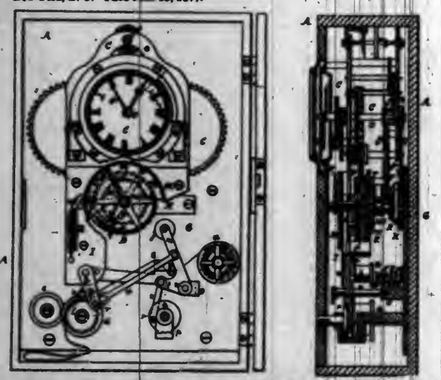
Claim.—1. The within-described process of uniting soft-metal pipes—that is to say, by placing them with their ends in contact, and then forcing them together until united by cohesion, forming a continuous homogeneous pipe, as set forth.

2. The tool for uniting the ends of soft-metal pipes by pressure, consisting of two sections, each embracing the end of one of the pipes, and power-screws, or equivalent devices, for drawing the sections together.

3. The combination of the die C C', in two parts, clamped together, the inner die D D', in two parts, and power-screws, substantially as and for the purpose set forth.

4. A pipe-joint consisting of two pipes of soft metal united by cohesion, end to end, forming one continuous homogeneous pipe around a central short tube, B, as described.

190,181. TELE-TALE CLOCKS. Reinhold Becklin, Brooklyn, assignor to Chas. A. Westbury, New York, N. Y. Filed June 13, 1877.



Claim.—1. The combination of a time-movement, a type wheel or wheels, an impression-device, a feeder, an inker, and an instrument for successively operating the inking impression and feeding devices, for the purpose set forth.

2. The combination of a time-movement, a type-wheel, an impression device, a feeder, an inker, and an instrument for moving the inking device over the face of the type at each impression, substantially as set forth.

3. The combination of a time-movement with the type-wheel D, the pinion J, spring R, escape-wheel K, ink-roller *j*, and the presser *c*, substantially as and for the purpose set forth.

4. The combination of the shaft *q*, crank *r*, link *s*, lever *t m*, and ink-roller *j*, substantially as described.

5. The combination of the shaft *q*, crank *r*, link *s*, lever *t m*, link *w'*, crank *g*, arbor *f*, spring *z*, pawl *h*, ratchet-wheel *i*, and feed-roller *d*, substantially as set forth.

6. The combination of shaft *q*, crank *r*, link *s*, lever *t m*, link *u*, crank *g*, arbor *f*, and presser C, substantially as described.

7. The combination of the dial M, hand N, sleeve D', type-wheels D E, wheel T, levers W V, spring *z*, and stud *w'*, substantially as specified.

8. The combination of the time-movement with the type-wheel D, the pinion J, spring R, and the escape-wheel K, substantially as and for the purpose set forth.

190,182. FURNACE-DOORS. Thomas R. Putman, Milan, Ohio. Filed Nov. 6, 1877.

Brief.—The door and deflector are simultaneously opened and closed by means of a counterbalanced weight provided with a recess wherein a pinion operates in conjunction with a rack cast on the surface of the recess. A weighted tripping device keeps the door in position when closed.



Claim.—1. The combination, substantially as herein described, of the door, the deflecting-plate, and its eccentric or cam-shaped overbalanced weights, operating together in the manner and for the purpose set forth.

2. The combination of the door, the deflecting-plate, and its overbalanced weights, provided with toothed segments, constructed to operate in the manner and for the purpose described.

3. The combination of the door and deflector with their operating segments and the cam-shaped recess, the back of the door-segment serving as a support for the counterbalance-weight, substantially as herein described.

4. The combination of the deflecting-plate and the overbalance-weight, said plate being provided with an angular socket in its journal-shaft, by which the plate may be set at any desired angle, as herein described.

5. The combination of the door, overbalanced as described, and the weighted tripping device E, whereby the door is held in position when closed, and automatically opening when released from said tripping device, as shown, and for the purpose set forth.

6. The combination of the door provided with the stiffening outwardly-projecting register-frame, whereby the door is prevented from warping, the tripping device, and overbalanced weights, said door being also provided with holes J for supplying the furnace with air, constructed and arranged in the manner and for the purpose set forth.

7. The combination of the door, the deflector-plate provided with its weights and segments, the tripping device, and the chamber formed between the door and the deflector, all arranged to operate as shown and described.

8. The combination of the door provided with the stiffening register-frame and register, the side or edge stiffening projecting plates *a*, with the chamber D, said door having the air-perforations J, with the tripping device, as shown and described.

190,183. EXTENSION-CHANDELIERS. John W. Carter, Brooklyn, N. Y., assignor to John W. Carter, Jr., same place. Filed Dec. 22, 1877.

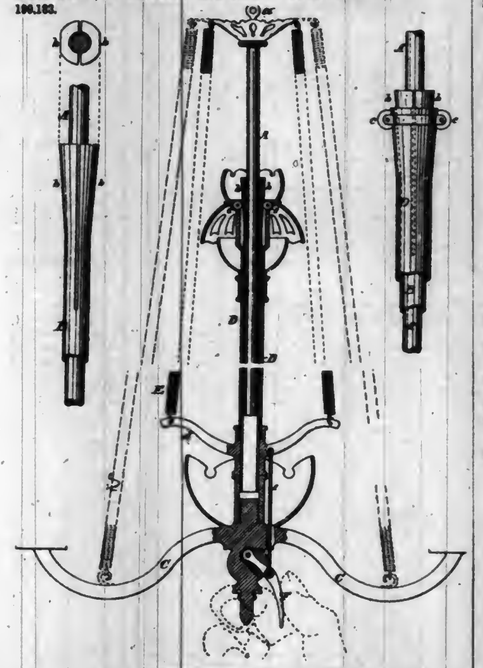
Claim.—1. The combination, in an extension-chandelier, of the suspended plain rod A, the tube B, surrounding said rod, and having a conical slit head,

and the tube D, surrounding the tube B, and provided with friction-rollers *c c*, to impinge on the coned portion of the same, all arranged as set forth, to form a clamping device, for the purpose specified.

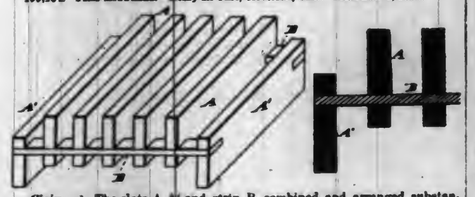
2. The combination, in an extension-chandelier, of a plain tube or rod suspended from the ceiling, a tube surrounding and sliding thereon, carrying the branches, and provided with a split conical head, and an outer inclosing-tube surrounding and sliding upon the last-named tube, and provided with friction-wheels arranged to impinge upon the split coned head of the inner tube, and press it against the rod, substantially as set forth.

3. The combination, in an extension-chandelier, of the rod A and tubes B D, provided, as set forth, with the connecting-rod *a*, or its equivalent, and the thumb-lever F, all constructed substantially as herein set forth.

190,183.



190,184. FIRE-KINDLERS. Henry H. Case, Cleveland, Ohio. Filed Dec. 4, 1877.



Claim.—1. The slats A A' and strip B, combined and arranged substantially as and for the purpose specified.

2. The strips A A', having slots or grooves formed in their ends at a point above their middle or axial portion, in combination with the retaining-strips B, arranged and combined substantially as and for the purpose specified.

190,185. CANCELING-STAMPS. Hiram A. Coats, Wallsville, N. Y. Filed Oct. 30, 1876.

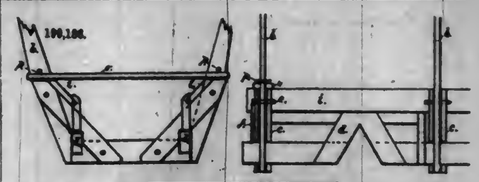


Claim.—The combination, substantially as specified, of the rigid post-marking-stamp and the rotary spring-seated canceling-stamp, normally protruding beyond the postmarking-stamp.

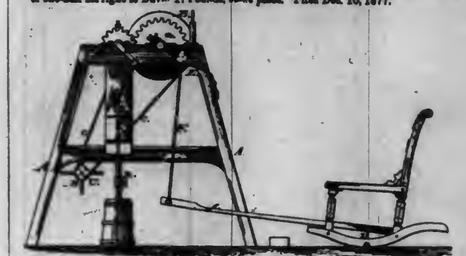
190,186. HAY-RAKES. Nelson B. Cooper, Dunreith, Ind. Filed Nov. 17, 1877.

Claim.—The combination of the jointed frames, consisting of the notched cross-sills *a*, side stakes *b*, and pivoted and notched braces *c*, provided with the legs *f f*, with the trussed frames *d*, notched tie-boards *l*, notched cross-pieces *e*, and the pins *p*, the several parts constructed and relatively arranged substantially as and for the purpose herein shown and described.

190,186.



190,187. MOTORS FOR OPERATING CHURNS. Thomas J. Crump, Buena Vista, Tex., assignor of one-half his right to David T. Pounds, same place. Filed Dec. 10, 1877.



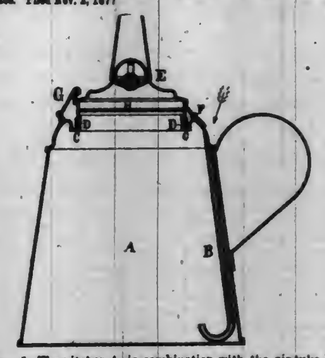
Claim.—1. The lever F, attached to and operated by the rocking-chair, in combination with the pitman *f*, crank *d*, and wheel B on the frame A, substantially as and for the purpose described.

2. The combination of the wheel B, operated as described, with the wheel *b*, having pitman *j*, substantially as and for the purpose specified.

3. The combination of the wheel B, provided with the belt *c*, with the rotary fan C, substantially as and for the purpose specified.

4. The herein-described motive power for churns, consisting of the frame A, carrying wheels B *b*, having cranks *d* and *i*, and pitmen *f* and *j*, operated by the lever F, attached to the chair, substantially as shown and described.

190,188. ALE-PITCHERS. Solomon Orswell, Palmyra, N. Y., assignor to Frank J. Garvin, same place. Filed Nov. 2, 1877

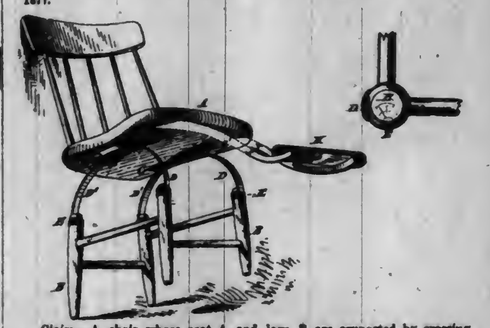


Claim.—1. The pitcher A, in combination with the air-tube B and the lid F, into which is secured the diaphragm H.

2. The lid E, in combination with the diaphragm H, the valve I, and the spout L.

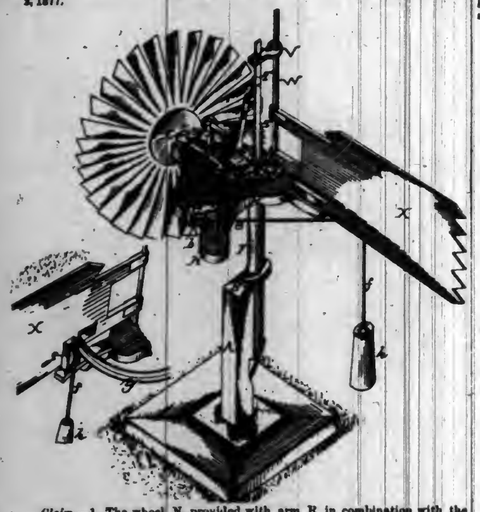
3. The lid E, in combination with the elastic ring D in the groove C, substantially as set forth, and for the purpose described.

190,189. OSCILLATING CHAIRS. George W. Cummings, Jr., Big Rapids, Mich. Filed Oct. 9, 1877.



Claim.—A chair whose seat A and legs B are connected by crossing springs D D', secured directly to legs by bands E, as shown and described.

190,190. WINDMILLS. Joseph Cushman and Josiah B. Cushman, Thomson, Ill. Filed Nov. 2, 1877.



Claim.—1. The wheel N, provided with arm R, in combination with the arm S and rod T, which is sustained in guides V, substantially as expressed.

2. In a windmill, the wheel I, axle K, and pinion M, in combination with the wheel N, arm S, and rod T, substantially as shown and described.

3. In a windmill, the vane X, provided with segmental guide *y*, in combination with the rope *f*, which passes over pulley *g*, and is furnished with weight *h*, substantially as set forth.

4. In a windmill, the pulleys *a b*, provided with the rope *c*, in combination with the vane X, furnished with the segmental guide *y*, rope *f*, and weight *h*, substantially as specified.

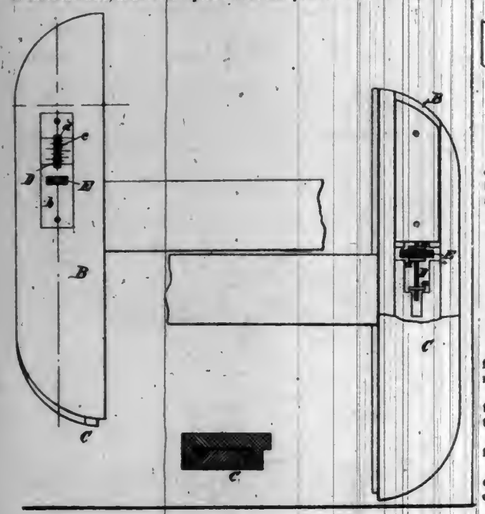
190,191. NUT-LOCKS. Frank B. Davis, Johnstown, Pa., assignor to Cambria Iron Company, same place. Filed Nov. 14, 1877.



Claim.—A lock-nut in which a wedge, F, is passed with its smaller end between a polygonal nut and a bar, *b'*, until its inclined surfaces contact with both, the smaller end of said wedge being then turned about the nut, as shown and described.

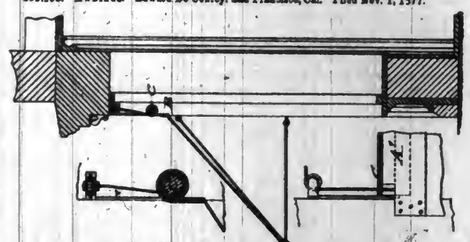
190,192. SPACING T-SQUARES. Joshua D. Day, New York, N. Y., assignor to himself, Daniel T. Ames, same place, and Charles C. Tainter, Elizabeth, N. J. Filed June 11, 1877.

Brief.—The blade of the T-square, by means of the special devices shown, is made movable, and thus adapted for use as a parallel ruler.



Claim.—The combination, with the head B of a T-square, of a slotted and graduated plate, *b*, screw D, having the index *c* and milled nut E, and the sliding part C, having the stud *c*, substantially as shown and described.

190,193. AWNINGS. Edward De Conrey, San Francisco, Cal. Filed Nov. 1, 1877.

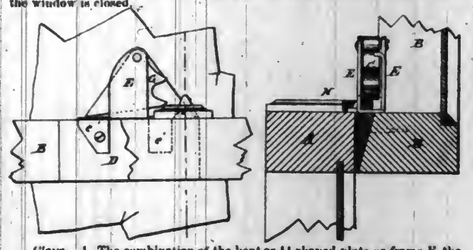


Claim.—1. An awning for store or other windows, attached to a fixed bar at some distance below the upper part of the window, and having an extension that is adjusted by a roller hung on top cords, so as to admit the light to or exclude it from the window, substantially as set forth.

2. An awning for store and other windows, which is hung in the customary manner, and attached to a fixed bar at some distance below the upper part of the window-casing, in combination with an extension and a roller for winding up or unwinding the extension, the roller being hung to adjustable top cords and guided along side flanges of the window-casing, substantially in the manner set forth.

190,194. FASTENERS FOR THE MEETING-RAILS OF SASHES. William T. Doremus, New York, N. Y. Filed Dec. 10, 1877.

Brief.—A bent U-shaped plate on top of one of the meeting-rails carries a shouldered or notched latch pivoted thereto, and adapted to engage with a peculiarly-formed catch-bar on the other meeting rail. There is also a V-shaped upwardly projecting strip, which engages with a beveled hole in the inner end of the catch-bar, serving to draw the meeting-rails more closely together when the window is closed.



Claim.—1. The combination of the bent or U-shaped plate or frame E, the pivoted latch G, provided with one or more shoulders or notches in the lower part of its forward edge, and the catch-bar H, with each other, to adapt them to be attached to the rails of a window-sash, substantially as herein shown and described.

2. The combination of the V-shaped strip J and the catch-bar H, provided with a beveled hole in its inner end, with each other, for drawing the meeting-rails of the sashes together when the window is closed, substantially as herein shown and described.

190,195. HOLDERS FOR NECK-WEAR. Edward D. Dougherty, Philadelphia, Pa. Filed Dec. 14, 1877.



Claim.—In a holder for neck-wear, the combination of the holder, of metal or other suitable material, having the projections or other suitable fastening devices, slot, and circular opening, with the tie-shield, all substantially as shown and described.

190,196. UMBRELLA TIP-CUPS. Henry S. Frost, Watertown, Conn. Filed Apr. 24, 1877.



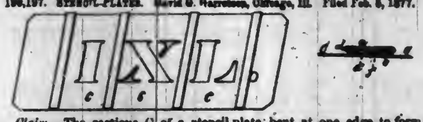
Claim.—1. In combination with a sliding cup-tube, a cylinder having a finished cap of reduced diameter, adapted to slide within the cup-tube without rubbing, as described.

2. In combination with the cup-tube having the beads a^2 and flange a^3 formed of a solid portion thereof, the cylinder having the enlargement b^2 and the intermediate spring, substantially as described.

3. In an umbrella tip-cup, the spring C, made smaller at one end, as and for the purpose described.

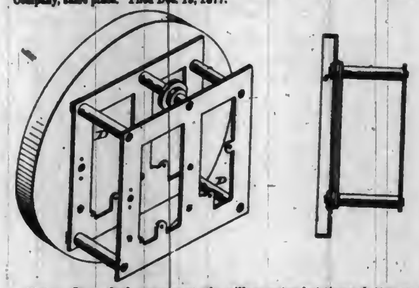
4. The runner described, having the cap with flange, the cylinder with enlargement or cap, and head held by kaurls, and the tapering spring, as described.

190,197. STENCIL-PLATES. David G. Garretson, Chicago, Ill. Filed Feb. 5, 1877.



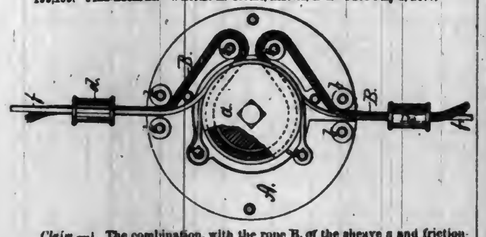
Claim.—The sections C of a stencil-plate, bent at one edge to form the groove or channel *d* and the part *e*, and at the opposite edge to form the wing *e'* and groove or channel *f*, substantially as and for the purpose specified.

190,198. CLOCKS. Augustus I. Goodrich, Waterbury, Conn., assignor to Waterbury Clock Company, same place. Filed Dec. 19, 1877.



Claim.—In a clock-movement, the pillars extended through the rear plate and through the back, with a shoulder or support between the rear plate of the movement and the back, and a securing device, substantially such as described, applied to the outer ends of the said extended pillars, substantially as and for the purpose described.

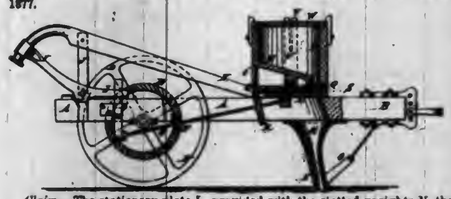
190,199. FIRE-ESCAPES. Welcome A. Greene, Lincoln, R. I. Filed July 2, 1877.



Claim.—1. The combination, with the rope B, of the sheave *a* and friction-strap *f*, arranged so that the weight is suspended from the friction-strap, and the rotation of the sheave retarded by the same, as and for the purpose described.

2. In a lowering apparatus, the combination, with the case A, rope B, sheave *a*, and guides *b b* and *c c*, of the friction-bands *f f* and guides *d d*, arranged and operating as and for the purpose described.

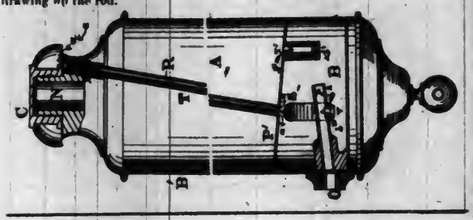
190,200. COMBINED DRILL AND PLANTER. George W. Grimes, Bluffton, Ind. Filed Oct. 6, 1877.



Claim.—The stationary plate L, provided with the slotted uprights V, the hoppers T, provided with an inclined bottom, the pivoted plate, provided with one or more holes, and a gear-wheel, in combination with the driving-gearing K G F E D, and with the frame-work A B of the machine, substantially as herein shown and described.

190,201. OIL-CHAMBERS FOR LAMPS. Horace T. Hanks, New York, N. Y. Filed Dec. 10, 1877.

Brief.—The valve V is held open by spring-rod R, when the cap C is screwed into place. When the cap is removed the spring closes the valve by drawing up the rod.



Claim.—1. In a fountain-lamp, a stationary upper oil-chamber, A, separated from a lower chamber, B, by a diaphragm, P', perforated for the outlet and inlet, respectively, of the tubes T and T', provided at top with an opening and an air-tight cap, C, and traversed by a valve-rod, R, which is operated by a spring, S', to close, and the cap C to open, a valve, V, for the passage of the oil from the lower chamber B to the burner.

2. In a fountain-lamp, a lower oil-chamber, B, provided with an outlet-pipe, P, opened and closed by a valve, V, under the control of a spring, S', and a cap, C, as shown and described.

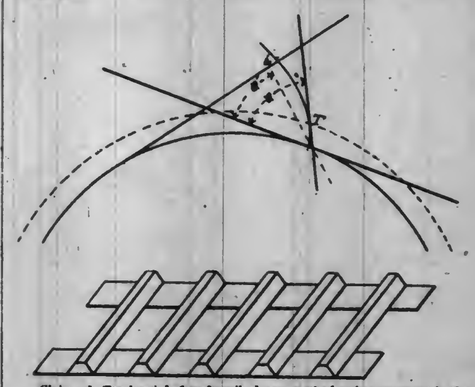
3. The valve-rod R, for operating the valve V, located in the air-tube T, and operated by a spring, S', and cap C, as set forth.

190,202. BAND-CUTTING FEEDERS FOR THRASHING-MACHINES. William E. Harwell, Stanrville, Ga. Filed Sept. 20, 1877.



Claim.—The combination, with the toothed carrying-belt D and the rotating shaft F, carrying the band-cutting knives, arranged above said belt, of the rotary scattering and delivering rakes H I, arranged at the inner end of belt, respectively above and in line with it, as and for the purpose specified.

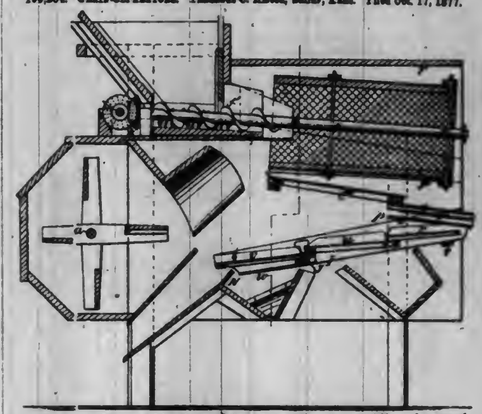
190,203. GEARING FOR TRANSMISSION OF POWER. John T. Hawkins, Salisbury, Vt. Filed Mar. 28, 1877.



Claim.—1. The herein-before-described new method or improvement in the art of transmitting power for operating driving-shafts of machines or lines of machinery by means of toothed pulleys upon said shafts, connected by an endless gearing of teeth or cogs, secured by rivets, bolts, or equivalent fastenings, to a belt of one or more continuous strips of material, without hinged joints, preferably metal sufficiently thin or tempered to conform to the curves of said pulleys without permanent set, substantially as specified.

2. In a system of endless gearing, a pulley or pulleys having upon the face or faces thereof non-rolling, non-sliding, and frictionless teeth or cogs of the involute form described, gearing with or interlocking corresponding teeth upon an enwrapping belt, substantially as specified.

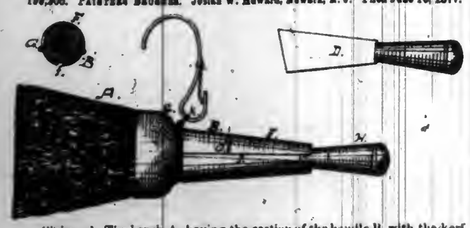
190,204. GRAIN-SEPARATORS. Theodore C. Hosted, Salina, Kans. Filed Oct. 17, 1877.



Claim.—1. The combination, with a fan and rotary riddle, of curved deflectors *d'*, arranged to direct the blast into the open end of the rotary riddle, as shown and described.

2. The combination, with shoe I, of the vibratory shaft *i* and pins *k'*, arranged substantially as and for the purpose specified.

199,205. PAINTERS' BRUSHES. Josiah W. Howard, Newark, N. J. Filed June 16, 1877.



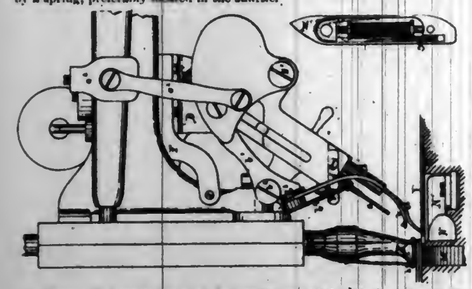
Claim.—1. The brush A, having the section of the handle B, with the kerf E for inserting from the end the putty-knife D, the handle H of which completes the handle of the brush, substantially as and for the purpose specified.

2. In combination with the handle B, having the kerf E, the case F, with its opening *f*, and made to slide laterally, substantially as and for purpose set forth.

3. In combination with the brush A and ring K, the detachable spring-hook I, substantially as and for purpose set forth.

199,206. BUTTON-HOLE SEWING-MACHINES. Thomas S. L. Howard, Somerville, assignor to George W. Simmons, Boston, Mass. Filed Feb. 16, 1876.

Brief.—In button-hole machines the slack of the under thread is taken up by a spring, preferably located in the shuttle.



Claim.—The combination of the shuttle provided with the spring *g*, the looper *a*, and finger *b*, substantially as described, whereby the slack of the loop of the under thread is properly taken up, as above explained.

199,207. CAR-AXLES. Nathaniel Jones, Syracuse, N. Y. Filed Dec. 29, 1877.



Claim.—1. In combination with the solid axle D', projecting from the wheel B, and the hollow axle D, projecting from the wheel A, the re-enforcing sleeve I, the annular recesses *a a*, formed in the axle D', and one or more flat keys, *b*, passing through the sleeve I and axle D, and filling one or more of the recesses *a* on one side, substantially as and for the purposes herein set forth.

2. In combination with the hollow axle D, projecting from the wheel A, and the solid axle D' and sleeve H, projecting from the wheel B, the annular recesses *a' a'*, formed around the outside of the hollow axle D, and one or more flat keys, *b'*, passing through the sleeve H, and filling one or more of the recesses *a'* on one side, substantially as and for the purposes herein set forth.

199,208. CAR-AXLES. Nathaniel Jones, Syracuse, N. Y. Filed Dec. 29, 1877.

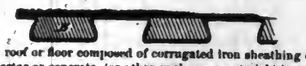


Claim.—The combination of the wheel A, having solid axle D, with shoulder *a* and swivel *b d*, the wheel B', having hollow axle D', and the hollow cylindrical piece I, encircling the swivel *b d*, and held in the hollow axle by a pin or key, *b*, substantially as and for the purposes herein set forth.

199,209. ANTISEPTIC COMPOSITIONS. Fabien Jourdan, Paris, France. Filed Nov. 1, 1877.

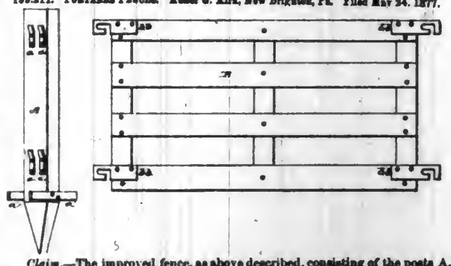
Claim.—The compound for preserving animal and vegetable substances, consisting of a mixture of alum, or bisulphate of alumina and potash, pure sulphate of lime, and the biborate of soda, or trade borax, in about equal proportions, as described.

199,210. FIRE-PROOF ROOFS AND FLOORS. Fredrick L. Kane, Brooklyn, assignor to Warren Chemical and Manufacturing Company, New York, N. Y. Filed Nov. 28, 1877.



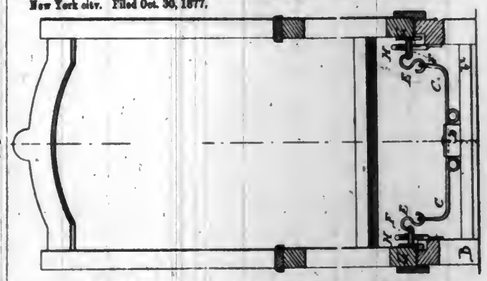
Claim.—A roof or floor composed of corrugated iron sheathing covered by a coating of mortar or concrete, (or other analogous material,) in combination with a covering or layers of paper, felt, or cloth, saturated or coated with oily, tarry, or pitchy material, in the manner and for the purpose herein described.

199,211. PORTABLE FENCES. Abner G. Kirt, New Brighton, Pa. Filed May 24, 1877.



Claim.—The improved fence, as above described, consisting of the posts A, having the metal receivers *a a*, and the supporting transverse boards *a' a'*, in combination with the panels B, provided with metal fastenings or attachments *b b*, said posts A and said panels B forming, when united as at Fig. 1, the improved portable fence for which the patent is solicited, substantially as shown and described, and for the purpose set forth.

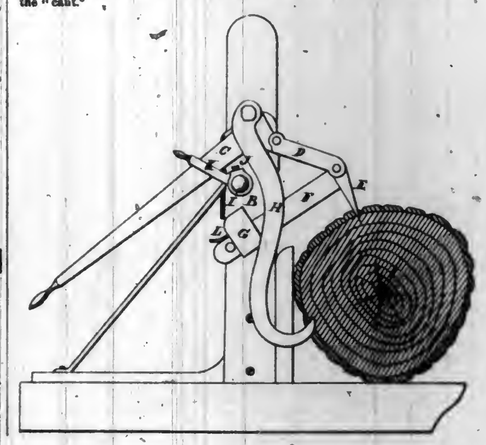
199,212. ROCKING-CHAIRS. John Kropp, Brooklyn, E. D., N. Y., assignor to M. J. Grossman, New York city. Filed Oct. 30, 1877.



Claim.—The combination of the stop-hooks H with the pins F G, the double or S hooks E, the springs C, and the chair A and base B, substantially as herein shown and described.

199,213. SAW-MILL DOGS. Charles J. Losch, Hartford Township, Van Buren County, Mich. Filed Nov. 3, 1877.

Brief.—Two swinging dogs, an upper and a lower one, are pivoted to a vertically-adjustable slide carrying a lever for forcing the dogs into the log; a swivel through which a bar pivoted to the upper dog passes for firmly binding the log to the knee; and a spring-catch for quickly adjusting the dog for the "cant."



Claim.—The combination of the lever C, pivoted bar D, dog E, and bar F with the swivel G, hook H, adjustable lever K, set-screws I and J, and spring-catch L, substantially as and for the purposes set forth.

199,214. BUTTER-DISHES. Andrew C. Lippitt, New London, Conn. Filed Dec. 21, 1877.



Claim.—1. The butter-dish consisting of the base A, having hollow bottom and side walls, and the top B, having the ice-chamber communicating with the interior of the base, as shown, whereby the butter may be completely surrounded by cold air and water.

2. In combination with the butter cup or base having the hollow walls, the hollow top or ice chamber B hinged thereto, and communicating therewith by a passage, *g*, at the hinge, as shown, whereby the flow of water from the top to the base is permitted when the dish is open as well as when it is closed.

3. In combination with the top B, the hollow base or cup A, provided with the annular groove *d*, communicating with the interior by a passage, *g*, and serving the double purpose set forth.

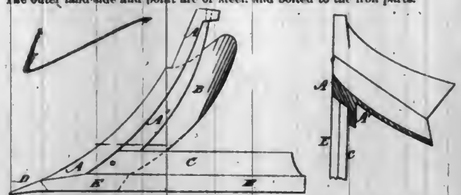
4. The top or ice chamber provided with the radial grooves *f*, as and for the purpose shown and described.

5. In combination with the base A, the hinged top B, provided with the rest E, serving the double purpose of sustaining the top and preventing the overturning of the dish.

6. A butter-dish consisting of a top ice-chamber and a bottom butter-dish, constructed with hollow walls to inclose the butter on all sides, and provided with a passage for the water from the top to the bottom.

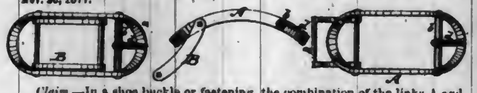
199,215. PLOWS. John W. Mahoney, Bishop Creek, Cal. Filed Sept. 29, 1877.

Brief.—The standard has a rear flange, and is cast in one piece with the mold-board. An inner iron land-side plate is bolted to the flange of the standard. The outer land-side and point are of steel, and bolted to the iron parts.



Claim.—The plow herein described, consisting of a mold-board, B, standard A, and flange A', all cast in a single piece, and combined with the point D, and with the land-side bars C and E, attached to the flange A', substantially as described.

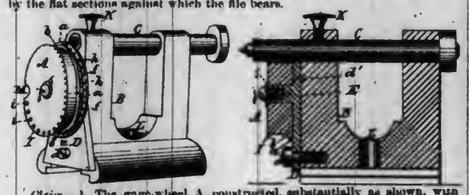
199,216. BUCKLES FOR SHOES, GLOVES, &c. Albert Makielsky, New York, N. Y. Filed Nov. 28, 1877.



Claim.—In a shoe buckle or fastening, the combination of the links A and B, pivoted together one within the other, with cross-bar *b* and tongue *d*, all substantially as and for the purpose stated.

199,217. PIVOT-TURNING ATTACHMENTS. William H. Manning, Rockport, Mass. Filed May 31, 1877.

Brief.—The two flanges on the circular plate are provided with graduated openings for the reception of the pivot, held and revolved in the chuck. The back-center passes into the hole in the rear flange to center the work, while a file applied to the pivot finishes the same, the depth of the cut being gaged by the flat sections against which the file bears.



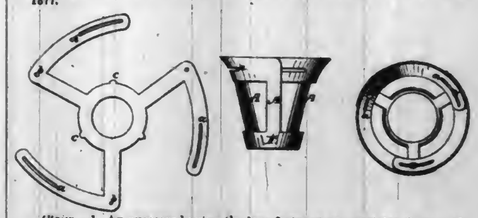
Claim.—1. The gage-wheel A, constructed, substantially as shown, with the inner flange *a*, perforated at regular intervals with holes *f*, lower flange *b*, with flat sections *h* on its periphery, and outer flange I, having a series of graduated holes, *i*, as and for the purposes described.

2. The gage-wheel A, constructed with the recess or opening M, in combination with the back-center C, substantially as and for the purposes described.

3. In combination with the gage-wheel A, the plate D, with stud E, for securing the gage-wheel to the tail-stock of a lathe, as described.

4. The combination of tail-stock B, back-center C, and clamping-screws K L of a lathe, plate D, with pin *d'* at its back, and stud E, double perforated flanged gage-wheel A *a b* I, screws *d j*, and collar J, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

199,218. EYEGLASSES FOR WATCH-MAKERS. John H. Mather, Chicago, Ill. Filed Aug. 23, 1877.

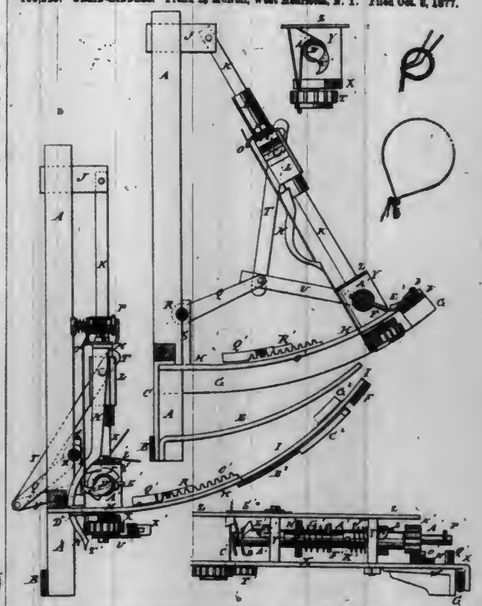


Claim.—1. An eyeglass having the lens fastened in a skeleton frame, substantially as shown, and for the purpose described.

2. An eyeglass having an extensible rim, R, composed of two or more extensible arms, substantially as shown and described.

3. In an eyeglass, the skeleton frame made of one piece, substantially as shown and described.

199,219. GRAIN-BINDERS. Frank E. McFall, West Henrietta, N. Y. Filed Oct. 8, 1877.



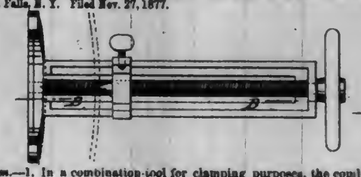
Claim.—1. The combination of the tube A^1 and the rod D^1, provided with the jaws B^1 C^1, the pins E^1 F^1 K' I' P', and the springs G^1 J', with the bar X, the swinging bar K, and the curved frame G H I, substantially as herein shown and described.

2. The combination of the gear-wheel N', the toothed rack O', and the spring-guide Q' R' with the tube A^1 and rod D^1 and their attachments, substantially as herein shown and described.

3. The combination of the spring-knife B^1 C^1 and the rubber block G^1 with the curved bar I of the frame-work, and with the tube and rod A^1 D^1 and their attachments, substantially as herein shown and described.

4. The combination of the sliding bracket Z, the arm M, and the needle N with the swinging bar K and the tube and rod A^1 D^1 and their attachments, substantially as herein shown and described.

199,220. BOLT-HOLDER AND CLAMPING-TOOL. Fred Norris and Clayton E. Sweet, Wappinger's Falls, N. Y. Filed Nov. 27, 1877.



Claim.—1. In a combination-tool for clamping purposes, the combination of a supporting guide-frame, a fixed and forked end standard, and a traveling post adjusted by actuating screw-bolt, the movable post having a recessed top part, as shown and described.

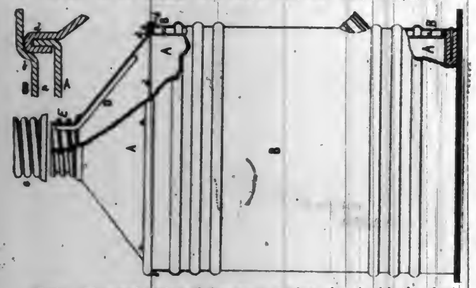
2. In a combination-tool for clamping purposes, the combination of a sup-

porting guide-frame, having a fixed and forked end standard and bottom pin, with an adjustable traveling post, having an angular bottom bearing, for the purpose specified.

199,221. SUPPOSITORIES. Ferdinand D. Owen, Joplin, Mo. Filed Nov. 27, 1877.

Claim.—A suppository of a cup shape, composed of slippery-elm bark, sassafras-bark, balsam copaiva, Dover's powders, and extract of valerian, combined in the proportions herein specified.

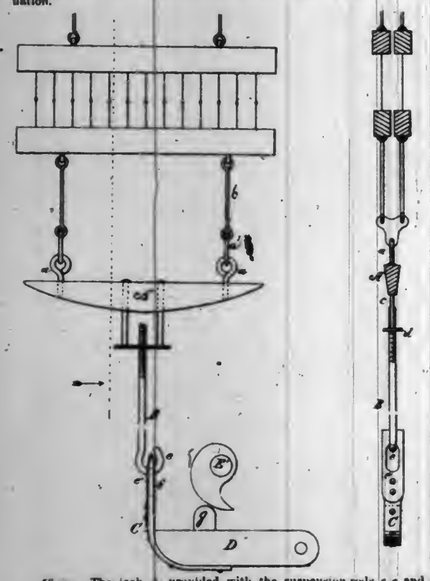
199,222. OIL-CAN JACKETS. Louis Peter, St. Paul, Minn. Filed Oct. 30, 1877.



Claim.—The combination of the can A, having edge *d*, with the sheet-metal jacket B, the rim of the latter being integral with the jacket, and bent over the edge of the can, substantially as and for the purpose described.

199,223. SHEDDING MECHANISMS. Orin Piper, Manchester, N. H. Filed Nov. 13, 1877.

Brief.—Improvement upon the mechanism covered by Letters Patent No. 87,341. The treadle and the heddle-jack are connected by an adjustable rod and a slotted strap. The invention consists in the special construction and combination.

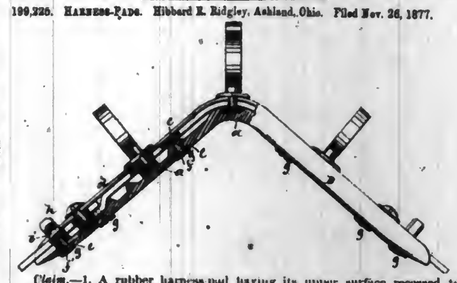


Claim.—The jack A, provided with the suspension-rods *c c* and screw-threaded plate *d*, in combination with the hooked and screw threaded connection-rod B, slotted strap, and cam-lever D, as and for the purpose specified.

199,224. LUBRICATORS. Joseph W. Reed, Kalamazoo, Mich. Filed Nov. 2, 1877.

Claim.—A lubricator having tube with adjustable slotted nozzle at upper end, and a reservoir mounted upon a stop-cock, the latter provided with passages, all substantially as shown and described.

199,225. HARNESS-PADS. Hibbard E. Ridgley, Ashland, Ohio. Filed Nov. 26, 1877.

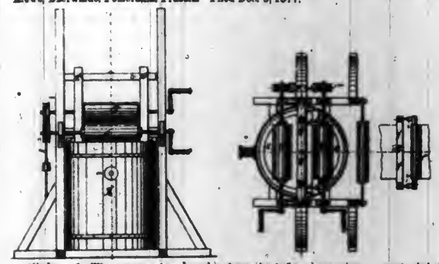


Claim.—1. A rubber harness-pad having its upper surface recessed to receive the harness tree, and the ends of the terrets and check-loop, and provided with countersunk holes for receiving fastening screws, as herein shown and described.

2. The fastening-screws *f*, provided with flexible washers *g* for fastening the rubber pad, as herein shown and described.

3. The trace-bearing-strap fastener, consisting of the curved yoke *h* and the screw *f*, as herein shown and described.

199,226. MATERIAL FOR INSOLES AND APPARATUS FOR MANUFACTURING THE SAME. Carl Rieve, Bserwalde, Pomerania, Prussia. Filed Dec. 6, 1877.



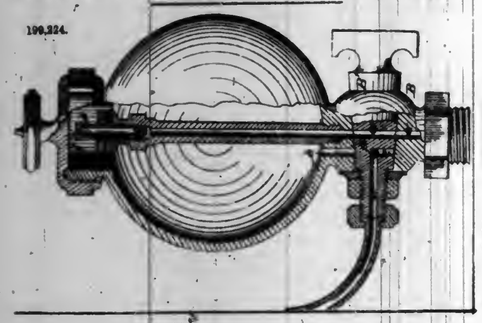
Claim.—1. The apparatus herein described for preparing a material for insoles for boots and shoes, consisting of a receiver for a waterproofing-bath, a surrounding steam-jacket, suitable means for immersing the material, drawing-off rollers, a pressure-roller, and a drawing-on roller, and apron having a clamp, as and for the purpose set forth.

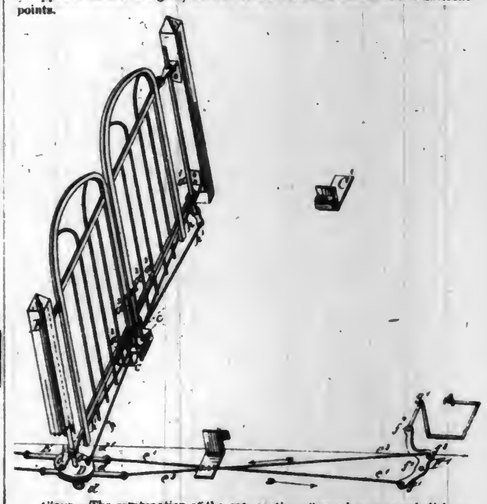
2. The material herein described for use in the manufacture of insoles for boots and shoes, consisting of a bottom layer of linen impregnated with waterproof substances, and a top layer of wool cemented to the bottom layer, as and for the purpose set forth.

199,227. GATES. Samuel Rogers, Pittsburg, Pa. Filed Sept. 1, 1877.

Brief.—The combination claimed is new in virtue of the two added bars or links that are pivoted to the disk, and the two pairs of rods which connect, on opposite sides of the gate, the bars to the wheel-iron cranks at two different points.

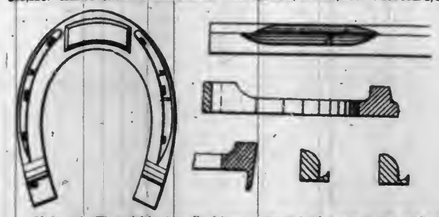
199,324.





Claim.—The combination of the gate-pintle *a*, flanged or grooved disk or wheel D, the rigid links E E', pivoted between the flanges of said disk, on opposite sides thereof, and eccentric to the pintle, the operating-wires *c c' c² c³*, the three-armed levers F F', and the wheel-irons, all constructed and operating substantially as set forth.

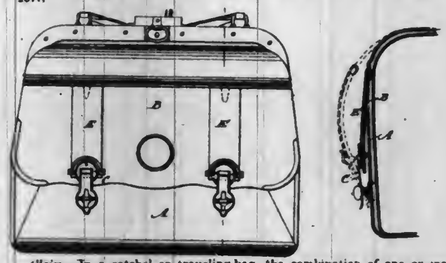
199,228. MANUFACTURE OF HORSESHOES. Jacob Russell, Newark, N. J. Filed Jan. 3, 1878.



Claim.—1. The within-described improvement in the manufacture of horse-shoes, which consists in first rolling the bar with a ledge or offset along one edge, forming the crease at the junction of said ledge and the body of the bar, and at the same time reducing the adjacent corner of the bar to the length of the crease, bending the bar into form, and finally, and by direct pressure, reducing the metal so as to form the toe and heel calks, and, at the same time, reduce the thickness of the bar between the calks, substantially as and for the purpose set forth.

2. The horseshoe constructed, substantially as described, with solid toe and heel calks, and an offset or ledge extending in front of the toe-calk, and adapted to supply the metal for the toe-clip, as and for the purpose set forth.

199,229. SATCHELS, TRAVELING-BAGS, &c. Isaac Schoner, New York, N. Y. Filed Dec. 13, 1877.



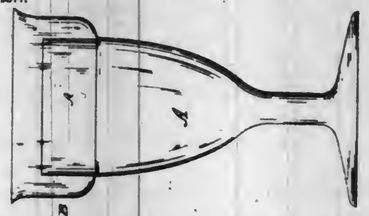
Claim.—In a satchel or traveling-bag, the combination of one or more metallic straps, E, with the flap B, that covers the outside pocket A, and with the fastening C, that secures said flap to said pocket, substantially as herein shown and described.

199,230. CENTER-BOARDS FOR VESSELS. Prosper L. Senat, Philadelphia, Pa. Filed July 2, 1877.



Claim.—The center-board B, hung to, but capable of sliding upon, the pivoted rod D, all substantially as and for the purpose specified.

199,231. VESSELS FOR HOLDING LIQUIDS. William F. Sherman, Lowell, Mass. Filed Aug. 17, 1877.



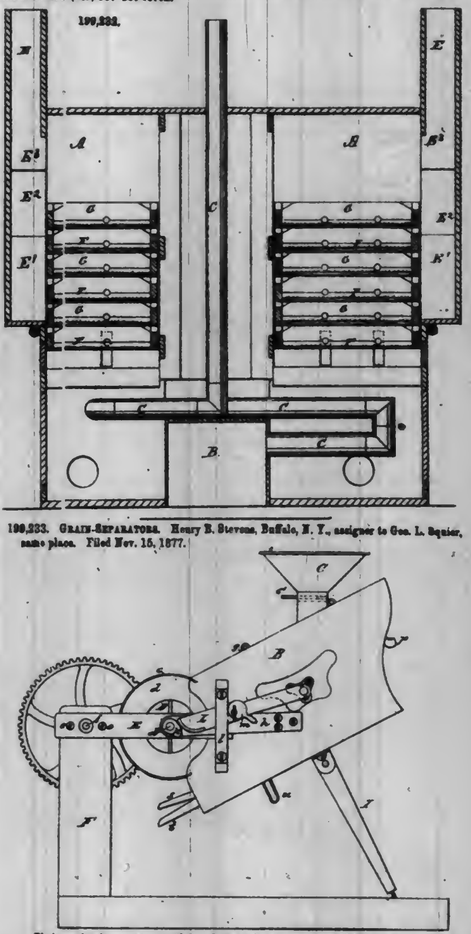
Claim.—The vessel A, in combination with the reservoir B, the rims of the two being arranged in relation to each other as described.

199,232. FRUIT-DRIERS. Joel C. Slaughter, Crumpton, Md. Filed May 5, 1877.

Claim.—1. In a fruit-drier, the combination of the case A, side or end draft-flues E, divided by partitions into a series of smaller flues, E', E², and E³, as described, central furnace B, smoke and heat pipe C, trays F, and frames G, as and for the purpose set forth.

2. The casing A, having doors O P, vertical slots, cleats H, hooks I, cords J, wheels M, and pawls N, in combination with the frames G and trays F, as and for the purpose set forth.

199,233. GRAIN-SEPARATORS. Henry B. Stevens, Buffalo, N. Y., assignor to Geo. L. Squier, same place. Filed Nov. 15, 1877.



Claim.—1. As a new article of manufacture, a portable grain-separator composed of a shaking-shoe and blast-fan, and adapted to be secured to a stationary support by means substantially as specified, for the purpose set forth.

2. In a portable grain-separator, the fan-case C *d d*, constructed with arms E E, attached to the side pieces of the fan-case, and adapted to be secured to a stationary support, substantially as and for the purpose set forth.

3. The combination, with the stationary fan and case D *d*, of the air-trunk B, straps *h*, and hinged leg l, substantially as and for the purpose set forth.

4. The combination, with the stationary fan D and side pieces *d d* of the fan-case, of the adjustable air-trunk B and fan-scroll *c*, attached thereto, substantially as and for the purpose set forth.

5. The combination, with the stationary fan D and side pieces *d d* of the fan-case, of the shaking-shoe A, adjustable air-trunk B, fan-scroll *c*, attached thereto, and straps *h*, substantially as and for the purpose set forth.

6. The combination, with the shaking-shoe A and stationary guide *l*, of the arm L and adjustable stop *m*, substantially as and for the purpose set forth.

7. The combination, with the shaking-shoe A and stationary guide *l*, of the arm L, adjustable stop *m*, fan D, and cam *k*, substantially as and for the purpose set forth.

8. The combination, with the fan D and cam *k*, of the trunk B, guide *l*, arm L, adjustable stop *m*, shoe A, and screens *n q r*, substantially as and for the purpose set forth.

9. The combination, with the fan and case D *d*, arms E, and crank *k*, of the trunk B, straps *h*, rod L, adjustable stop *m*, shoe A, and screens *n q r*, substantially as and for the purpose set forth.

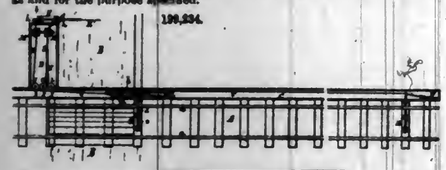
199,234. RAILROAD-SIGNALS. Moody A. Stevens, Cohasset, Mass. Filed Dec. 26, 1877.

Brief.—Three trippers are placed on the road-bed, one at the crossing and one at each side of the crossing. The tripper on either side, when the train passes over in the direction of the crossing, throws the flag at the crossing into a horizontal position. The train, in passing over the tripper at the crossing, throws the flag into an inclined position.

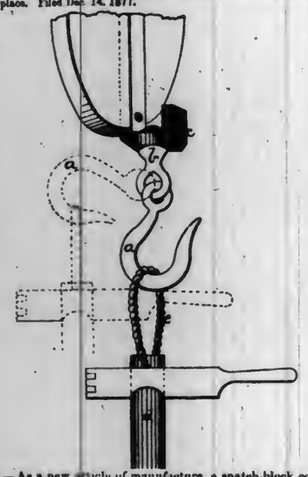
Claim.—The combination of the three trippers F G H, applied to the railway-track A, with the flag-staff C, pivoted to the post E at the crossing B, and

with the setting-springs U U and the lines E S T, chains k m, and guide-rollers I K L M N 4, all being arranged substantially in manner and to operate as and for the purpose specified.

199,234.

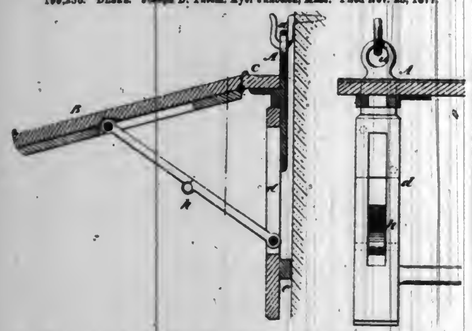


199,235. SNATCH-BLOCKS. Myron H. Tarbox, Lockport, N. Y., assignor to M. H. Tarbox & Co., same place. Filed Dec. 14, 1877.



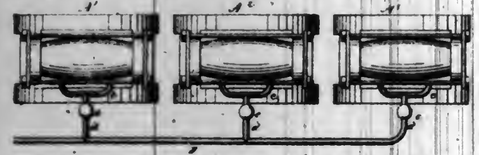
Claim.—As a new article of manufacture, a snatch-block constructed with an eye-swivel, *b*, and the attached loose eye-hook *c*, all substantially as and for the purpose specified.

199,236. DESKS. Joseph D. Tatem, Ayer Junction, Mass. Filed Nov. 28, 1877.



Claim.—A desk and side table consisting of the connected castings A A, having eyes *a* and brackets *b*, the slotted pieces *d d*, connected by cross-bar *c*, the hinged leaf B, and the shoulder-jointed braces *h*, as shown and described.

199,237. STEAM AND HYDRAULIC PRESSES. John F. Taylor, Charleston, S. C. Filed Sept. 30, 1877.

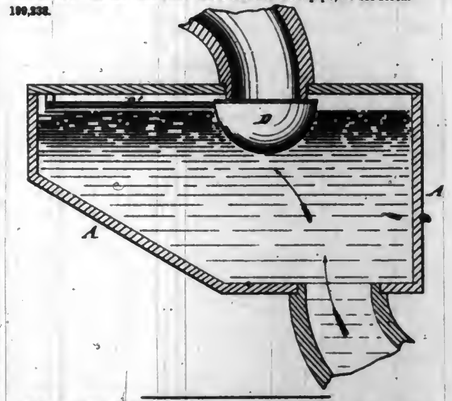


Claim.—Two or more presses, A, A', and A^2, whose cylinders *b* are connected together by pipe *c*, and with a single supply-pipe, D, by pipes *d*, having the valves *e*, as and for the purpose specified.

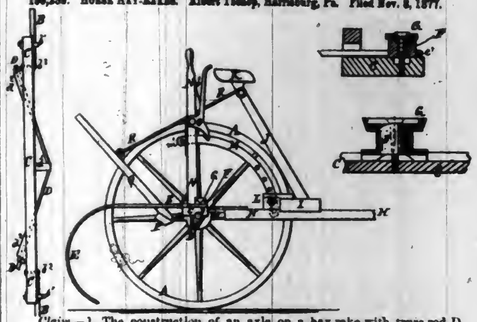
199,238. SEWER-TRAPS. Wellington Torrey and Charles B. Tillotson, Detroit, Mich. Filed Nov. 30, 1877.

Claim.—The combination, with a trap-chamber connecting with drain and sewer pipes, substantially as shown and described, of the valve D, provided with packing upon its working face, and a rigid arm or rod, D', the latter pivoted at its end to the horizontal upper surface of said chamber A, to cause the valve to rise with the backwater and close the drain-pipe, as set forth.

199,238.



199,239. MORSE HAY-RAKES. Albert Trabop, Harrisburg, Pa. Filed Nov. 6, 1877.

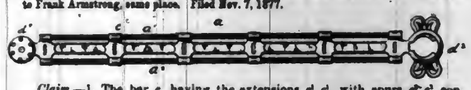


Claim.—1. The construction of an axle on a hay-rake with truss-rod D, block d^3, and nuts and washers d^4, or its equivalent for tightening rod, substantially as herein shown and described.

2. The combination of the slotted block L, the adjustable curved catch and stop-bar M, the lever N, and the spring lever-pawl O *o'* with the axle C and the cross bar 1 of the thills H of a hay-rake, substantially as herein shown and described.

3. The combination of the studs F, having cross-heads formed upon their lower ends, and the plates G, having cross-ribs formed upon their lower sides, with the eyes *d'*, formed upon the upper ends of the rake-teeth E, and with the grooved axles C, substantially as herein shown and described.

199,240. GARTERS. John H. Vinton and Michael E. Fitzpatrick, Bridgeport, Conn., assignors to Frank Armstrong, same place. Filed Nov. 7, 1877.



Claim.—1. The bar *c*, having the extensions c^1 c^1, with spurs c^2 c^2, constructed and arranged to operate as set forth.

2. The bar *c*, constructed to support and hold the springs a^1 a^1, with an intervening space, as described, and having a fastening, c^3, for securing the check-band *b* externally to and between said springs, substantially as set forth.

3. In a coil-spring garter, the check-band *b*, secured to the clasps d^1 d^1, and detached from and arranged between the adjoining springs, substantially as set forth.

4. The clasp *d*, constructed with the plates or bars d^1 d^1, having the extensions d^2 d^2 and spurs c^2 c^2, and adapted to be applied around the ends of the adjoining springs, and provided with suitable means for holding the ends of the check-band, substantially as set forth.

5. A garter composed of two round coil-wire springs having their ends secured to the clasp-plates, so as to provide an intermediate space throughout their entire length, and provided with one or more intermediate check-band supporters, substantially as described.

199,241. TEMPORARY BINDERS. John H. Van Pelt, New York, N. Y. Filed July 13, 1877.



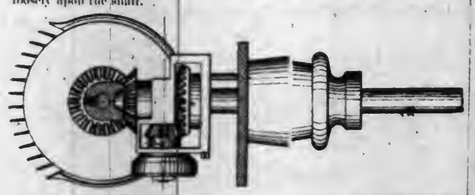
Claim.—In a temporary binder, the combination, with jaws A A and reversely-threaded screw D, of the nuts C C, each pivoted between two arms and to the ends thereof, as shown and described.

199,242. SIZE FOR CALCIMINING. William S. Welch, Westfield, N. J. Filed Oct. 31, 1877.

Claim.—A liquid size for calcimining, composed of an aqueous solution of a vegetable gum or gums and glue, and of spirits of turpentine, substantially as and for the purpose set forth.

199,243. POWER SHEEP-SHEARS. Joseph C. Wightman, Boston, Mass. Filed May 25, 1877.

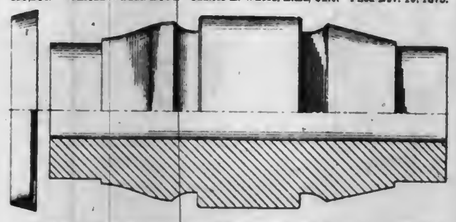
Brief.—The gear and grinding wheel are carried by a frame which moves loosely upon the shaft.



Claim.—1. An improved shearing device, consisting of a circular cutter, a grinding wheel for sharpening said cutter, and a comb-plate, all attached to a handle, a mechanism for transmitting motion through said handle to use cutter, grinding-wheel, and comb-plate, substantially as described.

2. The combination of a comb-plate, a circular cutter, and an edge-straightener, substantially as described.

199,244. VEHICLE-WHEEL HUBS. Charles K. Wilcox, Lima, Ohio. Filed Nov. 19, 1875.



Claim.—1. A wooden hub having the wood left in its natural condition at its ends, and having at the middle a highly-condensed zone or belt provided with metal confining bands, substantially as described.

2. The herein-described method of constructing a wooden hub, consisting in first constructing the hub with finished ends and an enlarged central belt, and then applying metal bands to the ends of said belt, and subsequently reducing the belt and the bands by compression to a size corresponding with the previously-finished ends.

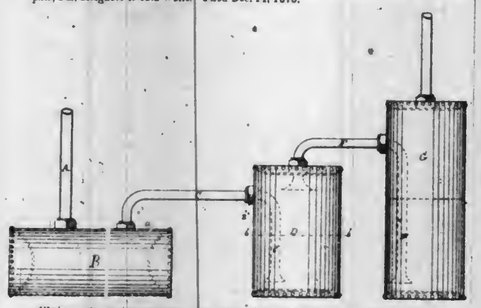
3. A metal hub-band having the overhanging lip at its inner side and the internal vertical, or substantially vertical, shoulder at the inside of said lip, substantially as shown and described, the lip being adapted to confine the spoke-receiving portion of the hub, and the shoulder to abut squarely against the grain of said portion, to prevent its displacement.

199,245. FIRE-KINDLINGS. Thomas Williamson and Wm. A. Vogts, Long Island City, N. Y. Filed Nov. 21, 1877.

Claim.—1. In compositions for fire-kindling, the combination of lamp-black, petroleum-oils, and rice-water, or its equivalent, formed into a thick coherent or solidified paste, substantially as herein set forth.

2. An improved fire-kindling, consisting of a solidified paste of lamp-black, petroleum-oil, and rice-water, formed into sticks or slabs, provided with a sustaining envelope of paper, substantially as herein set forth.

199,246. APPARATUS FOR CARBURETING AIR. Chas. E. Wells and Samuel Munyon, Philadelphia, Pa., assignors to said Wells. Filed Dec. 14, 1875.



Claim.—A high pressure apparatus for manufacturing illuminating gas, having an air-vessel, B, filled with air under pressure, a carbureter, D, connected therewith by means of the pipe C, and having in its lower end gasoline or other gaseous liquid, and a purifier, G, connected with the carbureter by means of the pipe F, and having sponge or other porous material, and a solution of lime or potash, or purifying material, the vessels B, D, and G, having high-pressure seals, substantially in the manner and for the purpose set forth.

199,247. MACHINES FOR CUTTING WOODEN HEELS. William W. Abbott, Philadelphia, Pa., assignor, by mesne assignments, to Edward P. Knipe, same place. Filed Nov. 9, 1877.

Brief.—The heel blank is carried upon a hinged reversible former, having an axial motion, and yielding longitudinally and transversely, and carrying a lever operated by a cam for clamping the heel blank, and provided with a lug which engages with a cam-shaped guard, and mounted and connected so that the blank is caused to traverse a path corresponding to the contour of the heel to be shaped, while the blank is cut by a suitable cutter in the direction of the grain of the wood, whereby the heel blank is smoothed and the wood prevented from splitting during the operation.

Claim.—1. The former hinged to the rotary and sliding bolt E, in combination with the supporting arm or lever C, and with the cam H and bearing-lug K, whereby said former may be caused to traverse a path corresponding to the contour of heel and shoe heels, substantially as and for the purpose set forth.

2. The reversible former F, in combination with the lever C and the lever L, substantially as and for the purpose set forth.

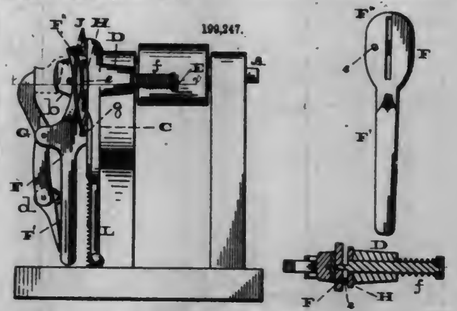
3. The former hinged to the sliding bolt E, and carrying the pin or lug *e*, in combination with the cam H and the lug or pin K, substantially as and for the purpose set forth.

4. The cam H, interposed between the former F and boss D, in combination with the bolt E, passed through said boss and cam, and connected to the former, substantially as and for the purpose set forth.

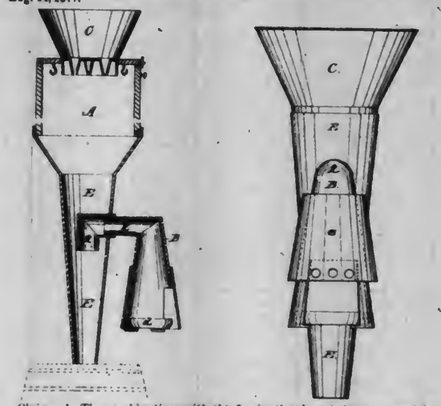
5. The former carrying the clamping-lever G, in combination with the cam-head *d*, pivoted to said lever, and bearing against the former, substantially as and for the purpose set forth.

6. The former F and cam H, in combination with guard J, substantially as and for the purpose set forth.

199,247.



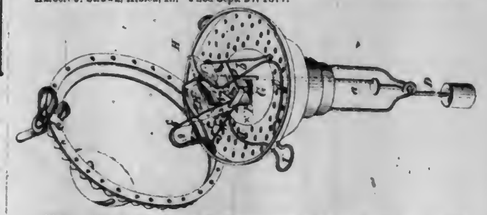
199,248. APPARATUS FOR PRESERVING MEAT, &c. Theodore G. Ames, Denton, Tex. Filed Aug. 14, 1877.



Claim.—1. The combination, with the fumigating-box A, its connected funnel C, and tube E, of the furnace attachment B, having its flue *c* projecting into the tube E and bent downward therein, substantially as shown and described.

2. The combination of the furnace attachment with the tube E, tapered from its upper to its lower extremity, to adapt it for insertion in an aperture in a cask, and to render it self-supporting therein, as shown and described.

199,249. LAMP-EXTINGUISHERS. William S. Asbury, Olney, assignor of one-half his right to Halbert J. Straws, Albion, Ill. Filed Sept. 27, 1877.



Claim.—The combination of the hinged cups H H, head-piece G, with rod *a*, pendulum D, thumb-lever I, with arms *d d*, bails *b b*, and spring J, all constructed and arranged to operate substantially as and for the purposes herein set forth.

199,250. FRUIT-GATHERERS. George W. Baker, St. Louis, Mo. Filed May 18, 1877.

Brief.—The jaws are sharp for cutting the fruit from the stem, and are forced together by four wire springs, secured at the top to the sides of the cutting-jaws, respectively, and at the bottom rigidly to the sliding sleeve.

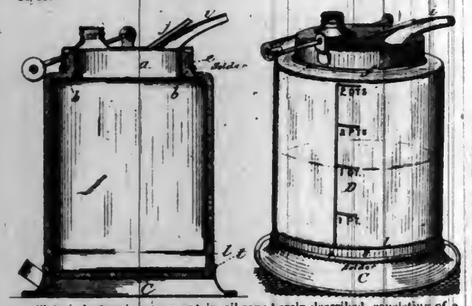
Claim.—1. The combination of jaws C C, sliding collar E, and springs D D D D, attached to said collar and hinged to said jaws, as and for the purpose set forth.

2. The combination of the cutting-jaws C C, springs D D D D, attached rigidly to a sliding collar, E, and adapted to force the jaws together, conducting-tube K, and rod or cord F, substantially as and for the purpose set forth.

199,250.



199,251. OIL-CANS. Charles S. S. Baron and Charles H. Tallman, Bellaire, Ohio. Filed Nov. 14, 1877.



Claim.—1. The improvement in oil-cans herein described, consisting of a glass oil holder, a metallic fixed cover, and a metallic fixed base.

2. A glass oil can having a fixed metallic cover, provided with ears for the carrying-bail.

3. The improved manufacture herein described, consisting of a glass oil-holder, a metallic fixed cover, having a spout, a vent-tube, a filling-nozzle, and a bail, and a metal base or foot.

4. The combination, with a glass oil-holder, of a fixed metallic carrying-cover and an intermediate metallic securing-band for said cover.

5. The neck of an oil-can, having outside recesses crossed by vertical ridges, in combination with a metallic cover-securing band, *f*, having an annular bead, and united to said neck by cement or plaster-of-paris filling, as herein set forth.

6. The intermediate cover-securing metallic band *f*, having an outward-flaring projecting base, *f'*, in combination with the fixed cover of a glass oil-can, whereby said band forms an accessible soldering-base for the cover.

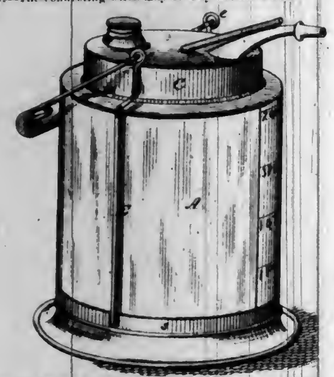
7. The glass oil can, having the bottom annular recess *k*, the bottom bead *m*, and the groove *n*, crossed by vertical ridges, in combination with a base-band, *e*, having an interior annular groove.

8. The band *e* of the base *C*, in combination with a glass oil can having a bottom annular recess, the top of which recess terminates in an upwardly-inclined bearing-shoulder, *f*, for said band.

9. The combination of the glass oil-holder, recessed at its bottom, as described, with a base-band having an outward-projecting bead, *t*, and an annular flaring base, *C*, the upper edge of which rests against said bead, for the purpose stated.

199,252. OIL-CANS. Charles S. S. Baron and Charles H. Tallman, Bellaire, Ohio. Filed Dec. 20, 1877.

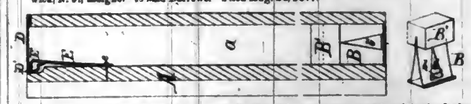
Brief.—The connecting wires may or may not have ears.



Claim.—1. In an oil can having a glass oil-holder, a metallic fixed sealed cover, and a metallic base, the wires E E, for connecting base and cover, substantially as described.

2. In an oil-can having a glass oil holder, a metallic fixed sealed cover, and a metallic base, the connecting-wires E E, terminating in eyes *e e* for the carrying-bail, substantially as described.

199,253. RULERS. Henry M. Barrows, New York, N. Y., and William Kennish, New Brunswick, N. J., assignor to said Barrows. Filed Aug. 24, 1877.

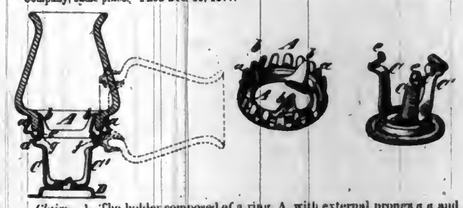


Claim.—1. The pencil-sharpener B, formed, as represented, with the hole *b* and the tapering slot *b'*, the ends being held together, or nearly together, by the block B', and the whole embraced by a substantial support, A, as and for the purpose herein specified.

2. A hollow ruler, A A', provided with a spring-cover, D E, holding the aperture closed by its elastic action, but allowing it to be easily opened, as herein specified.

3. In combination with a hollow ruler, A A' *a*, and spring-cover D E, the pencil-sharpener B B', adapted to serve the double purposes of a pencil-sharpener and of a stop for closing the passage *a*, as herein specified.

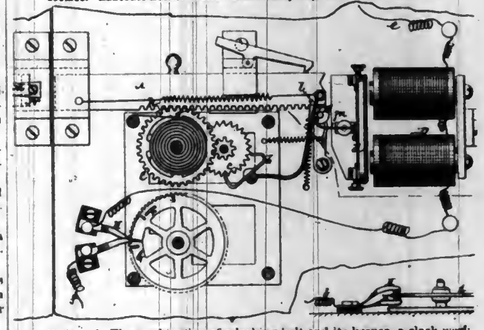
199,254. LAMPS. Eli J. Blackham, Bridgeport, Conn., assignor to the Wilmot Manufacturing Company, same place. Filed Dec. 10, 1877.



Claim.—1. The holder composed of a ring, A, with external prongs *a a* and internal prongs *b b*, substantially as and for the purpose herein described.

2. The combination of the burner-cap, the shade-holder or chimney-holder, and the elevated arms C C C', one of the said arms having the said holder hinged to it, and the other being provided with shoulders *d d* and tongues *e e* above said shoulders, substantially as herein described.

199,255. ELECTRIC LOCKS. Patrick Bows, Jersey City, N. J. Filed Dec. 5, 1877.



Claim.—1. The combination of a locking bolt and its keeper, a clock-work motor operating to shoot said bolt, an adjustable stop for holding said clock-work in check, and an electro-magnet for operating said stop to release the clock-work, for the purpose of actuating or shooting the bolt, substantially as specified.

2. The combination of a circuit closer or opener with and for operation by the bolt of a lock when shot, clock-work mechanism for shooting said bolt, a stop for holding said clock-work in check, and an electro-magnet for operating said stop to release the clock-work mechanism which shoots or actuates the bolt, whereby a series of bolts may be simultaneously or successively operated, substantially as specified.

3. The combination, with the hour or striking movement of a time-piece, of a circuit closer or opener controlled by said movement, an electro-magnet in the same circuit as the circuit closer or opener of the time-piece, a stop controlled by said magnet, a clock-work motor held in check by said stop, and a bolt operated by said motor when the stop is released from its hold on the motor, essentially as described.

4. The combination of the adjustable stop E, the electro-magnet D, controlling said stop, the anchor *b*, with its arm *i* and a spring, F, the escape-wheel *c* of a clock-work motor, and the bolt A, operated by said motor, substantially as specified.

5. The combination of the circuit-closer M N with the bolt A and the clock-work motor C, having its release controlled by an electro-magnet, essentially as and for the purpose herein set forth.

199,256. TORSION-SPRINGS FOR VEHICLES. William H. Brace, Nunda, N. Y., assignee of one-half his right to Junius B. Countryman, same place. Filed Dec. 8, 1877.

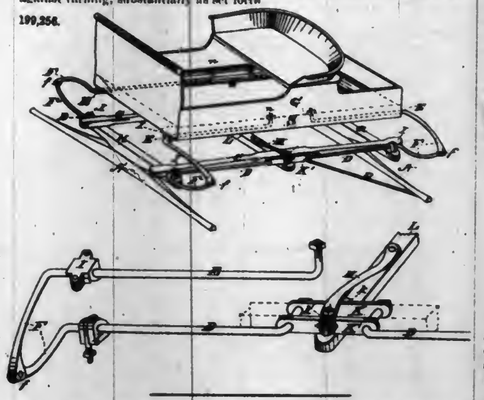
Claim.—1. In a side-bar vehicle, the parallel and longitudinal torsion-springs D E, fixed in pairs to the side bars and bed, respectively, and connected at their working ends by jointed arms F F, as set forth.

2. The upper torsion-springs E, fastened to the bed by turning up their ends in vertical position, passing them through the sills S, and there securing them by nuts *n*, as explained.

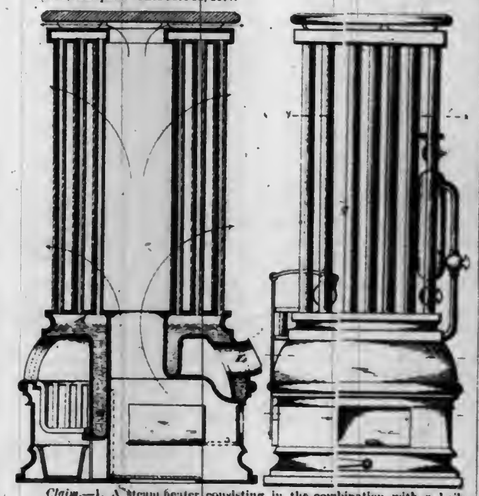
3. The torsion-springs D E, fixed at their ends to the side bars and bed, respectively, and secured at their elbows by boxes I I and cushions J J, as explained.

4. The plates K K', constructed with threaded studs *k k'*, in combination with the side bars C C and stay-bar L and brace M, for securing said side bars against turning, substantially as set forth.

199,256.



199,257. STEAM-RADIATORS. William H. Brown, Indianapolis, Ind., assignor to Isabella S. Brown, same place. Filed June 19, 1877.



Claim.—1. A steam heater consisting in the combination, with a boiler located within the fire box or chamber of the heater and suitable steam-pipes connected with said boiler, of a cold-air chamber extending through the boiler and between the steam-pipes, substantially as set forth.

2. In the combined steam-heating and air-ventilating stove, the boiler made with a central air-passage connecting the cold-air chamber in the base of the stove with the upper air-chamber surrounded by the series of steam-pipes, substantially as described.

3. The horizontal smoke-flue between the boiler and the cold-air chamber in the base of the stove, and entirely encircling the lower portion of the central air-passage of the boiler, substantially as described.

4. The combination, with a steam-boiler depending into the fire-chamber and steam-pipes connecting with the upper portion of the boiler, of a cold-air chamber formed in the base of the stove, and extending upwardly through the boiler and within the series of steam-pipes, the base of the heater being provided with dampers in its bottom and sides, substantially as described.

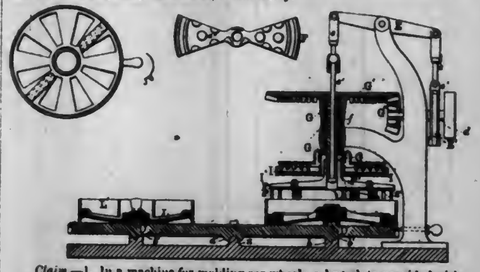
199,258. SWEAT-LEATHERS FOR HATS. John C. Budd, Brooklyn, N. Y. Filed Nov. 23, 1877.



Claim.—In combination with the crown and brim of a hat, a sweat-leather having its lower portion a turned back to lie between the crown and main portion of said sweat-leather, and attached to the said crown above the junction of the crown and brim, whereby the attaching seam is covered and concealed, and the doubled sweat-leather overlaps the said junction, and flares outward under and against the brim, presenting the appearance of a sweat-band attached thereto.

199,259. MACHINES FOR MAKING MOLDS FOR CAR-WHEELS. Benjamin Burgess, Baltimore, Md. Filed Nov. 21, 1877.

Brief.—Rammer is partially rotated horizontally by gearing, while being raised vertically by a cam which permits a spring to throw it down to effect the ramming. Sand-rake and striker revolved with rammer. Sieve-body, having adjustable openings in bottom, is stationary.



Claim.—1. In a machine for molding car-wheels, a bed-plate provided with a series of pattern-receiving seats, each having a pin for centering the pattern or section of the same, combined with a rammer and its operating devices, the said bed-plate being adapted to be moved and its seats brought under said rammer by suitable mechanism, substantially as and for the purposes specified.

2. In a machine for molding car-wheels, a revolving bed-plate provided with a series of seats having central pins to receive the pattern or section of the same, combined with a ramming appliance and its operating mechanism, and a stop or locking device, whereby, when one of the said seats containing the pattern centered thereon is brought under the rammer, the bed-plate is held stationary, substantially as specified.

3. In a machine for molding car-wheels, the following elements in combination, viz: a moving bed-plate having a series of seats provided with pins or centering devices, whereby the pattern or section of same is seated and centered, a rammer and mechanism imparting thereto an intermittent rotary and a vertically-reciprocating movement, and a locking device, whereby the plate, when any one of its several seats is brought under the rammer, is held stationary, substantially as described.

4. In a machine for molding car-wheels, the combination of a ramming device, a sand-tray, having openings in the bottom thereof adjustable in size, and adapted to feed the flask with sand as the said sand is compressed by the said ramming device, and a rake or series of rakes constructed to revolve within the sand-tray, to conduct the sand contained therein to the openings in the bottom thereof, substantially as herein described and shown.

5. In a machine for molding car-wheels, the rammer F, having projections *c''* on its under side, combined with mechanism whereby an intermittent rotary and a vertically reciprocatory movement is imparted to it, as specified.

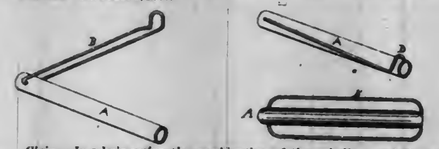
6. As means for communicating an intermittent rotary movement to the central shaft *c'*, carrying the rammer F, the beveled wheel G' and segmentally-toothed pinion G'', secured to the driving-shaft *d*, substantially as herein shown.

7. As means for elevating the central shaft *c'*, carrying the rammer F, independently of the intermittent rotary motion of the same, as described, the combination of the revolving cam E', cam-yoke *e'*, links *e* and *e*, and vibratory lever E, substantially as herein set forth.

8. The vertically-reciprocating rammer F, having a spiral spring placed about its axis, which spring, by resistance to compression, assists the force of gravity in impelling the descent of the rammer from its raised position, as specified.

9. A car-wheel pattern, each of the half-sections of which is provided with a shoulder or rest to receive one of the two parts of the flask, substantially as specified.

199,260. HAIR-CURLING DEVICES. Lycurgus Burnham, Woburn, and Daniel G. Chase, Somerville, Mass. Filed June 9, 1877.



Claim.—In a hair-curler, the combination of the spindle A and the continuous pivoted spring-loop B, said loop arranged to extend around the spindle, so as to clasp the hair on opposite sides of the same, substantially as described, and for the purpose explained.

199,261. HOLDERS FOR A MOWER-KNIFE-SHARPENING TOOL. Franz R. Coden and Thomas H. McCray, Evansville, Ind. Filed Nov. 14, 1877.

Brief.—Packing of wood, leather, or paper between holder and stone.

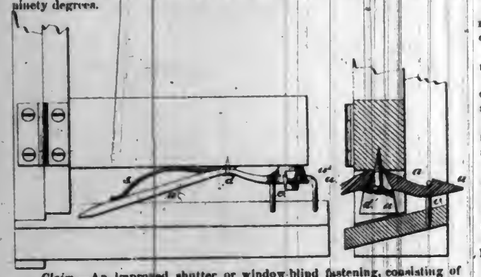


Claim.—The grinding-stone holder, consisting of the body B, having a plane under surface, an internally-threaded bent front end, *b*, a front handle, *d*, having screw *d'*, and a rear handle, C, having a substantially vertical slot,

C, and forward projection *a*, both the projection *a* and screw *d* being capable of being let into the ends of the stone, all as shown and described.

199,262. SHUTTER-FASTENING. Joseph H. Clark, Deering, Me. Filed Feb. 20, 1877.

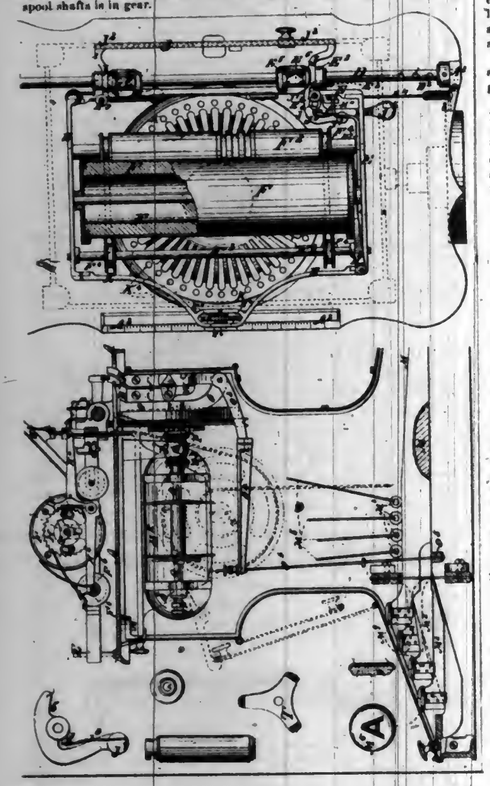
Brief.—A loosely-hinged bent lever, countersunk near the middle and pivoted at two points to the bottom edge of the shutter or blind, is provided with double vibrating catches, there being also a loosely attached wire spring and suitable staples for the catches to engage with, the construction giving a double vibrating motion, and enabling the catches to hold at an angle of less than ninety degrees.



Claim.—An improved shutter or window-blind fastening, consisting of the loosely-hung bent lever *a*, countersunk at a^1, pivoted at *d* and d^1, and provided with the crooked double vibrating catches a^2 a^3, in combination with the loosely-attached spring *e* and staple *c*, substantially as shown and described, for the purpose specified.

199,263. TYPE-WRITING MACHINES. Jefferson M. Clough and Wm. K. Jones, Rice, assignors to the Type Writer Company, New York, N. Y. Filed Nov. 19, 1875.

Brief.—The screw slots in the platen ratchet-wheel allow the latter's position to be changed relatively to the platen. The line space regulator has arms of different lengths, is located on the axle of the platen over the ratchet-lever, and limits the upward movement of the ratchet. The carriage is drawn back by the cord, which depresses the ratchet-lever onto the ratchet-bar arm, and thus lifts the ratchet-bar from the vibratory ratchets. When the carriage is near the place of starting the collar on the hinge-rail comes in contact with the trip-pin, which latter operates to push the cam part of the ratchet-bar arm from under the ratchet-lever, and thus allows the ratchet to drop and engage again with the ratchets. The spring-wheel, which operates to pull the carriage forward, also operates, by means of gear-wheels and shafts, to move the inking-ribbon. By means of a sliding shaft and duplicate gears on the same, the direction of motion of the inking-ribbon is changed as one or the other of the ribbon-spool shafts is in gear.



Claim.—1. The combination of a ratchet-wheel which has adjusting-slots with the fastening-screws and cylindrical platen of a type-writing machine, substantially as described.

2. The combination of a regulator which has arms of different lengths with the ratchet-lever, driving-ratchet, and platen ratchet-wheel of a type-writing machine, substantially as described.

3. The combination of a trip-pin and trip-ratchet with the ratchet-bar, ratchet-bar-raising lever, and paper-carriage of a type-writing machine, substantially as described.

4. The combination of a general hanger with the spring-wheel, letter-space ratchets, vibratory frame, and bell of a type-writing machine, substantially as described.

5. The combination of a shield with the cone-pulley of a type-writing machine, substantially as described.

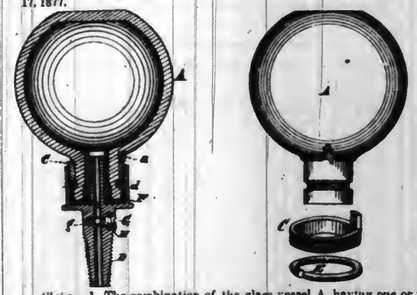
6. The combination of a latch with the handle or extended end of the main cog-wheel axle, which has two grooves in its periphery, and with the ribbon-spools of a type-writing machine, substantially as described.

7. The combination of a set-spring with the ribbon spool of a type-writing machine, and with a spool axle which has notches in the surface, substantially as described.

8. The combination of a slotted spring-guide with the pivoted type-bar and adjustable type-bar hanger of a type-writing machine, substantially as described.

9. The combination of a segment of two or more washers in one piece with two or more type-bars and type-bar hangers of a type-writing machine, substantially as described.

199,264. METALLIC HOOKS FOR GLASS VESSELS. John T. Cody, Cincinnati, Ohio. Filed Oct. 17, 1877.

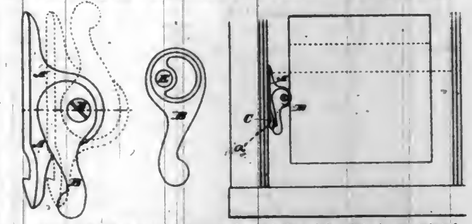


Claim.—1. The combination of the glass vessel A, having one or more recesses or notches, *a*, and a circular groove, *b*, the metallic screw-threaded collar C, having one or more projections, *c*, to fit said notch or notches, and the split ring E, constructed and operating substantially as and for the purpose specified.

2. In combination with the perforated stem D of the vessel, the adjusting-screw G, having an aperture, *g*, a sunken screw-driver head, and an elastic gasket, H, under the same, substantially as and for the purpose specified.

199,265. SASH-FASTENERS. Ira Cogswell, Chicago, Ill. Filed Oct. 16, 1877.

Brief.—A friction-plate having a bearing-flange is constructed with a locking-notch on the surface thereof, and there is a circular opening to receive an eccentric flange or hub on the operating-lever, the whole being pivoted to the sash by a single screw. There is also a rigid catch on the sash-frame, with which the locking-notch engages to form, when desired, a positive fastening.



Claim.—The sash-fastener described, consisting of the plate A, constructed with a locking-notch, *a*, in the friction-surface, and with a circular hole fitted to receive an eccentric flange or hub on the lever B, which is pivoted upon and attached to the sash by a center screw, E, all constructed as described, and combined with a catch, C, rigidly fixed to the window-stop, whereby the window-sash may be held or locked without rattle or injury to the window-stop.

199,266. ATTACHING DEVICES FOR HARNESS-STRAPS. Frederick Conway, Buffalo, N. Y. Filed June 14, 1877.



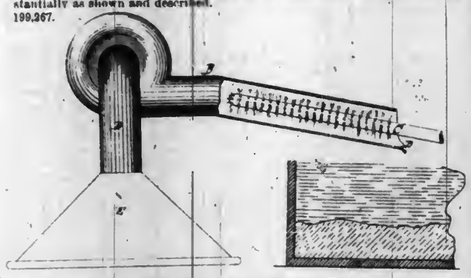
Claim.—The metallic frame A, having loops *c c'*, an open front, *a a*, and a back piece, *b*, provided with a series of perforations, by means of which it may be stitched to a strap or other part of the harness, and a projection, *c*, adapted to engage the folded end of a strap and secure it to the harness ring, all substantially as set forth.

199,267. APPARATUS FOR COLLECTING DUST FROM ORE-SEPARATORS, &c. John P. Conkling, Saratoga Springs, assignor to New York Ore Separating Company, New York, N. Y. Filed Mar. 22, 1876.

Claim.—In an ore-separator, the apparatus herein set forth for collecting the dust, the same consisting of the flaring hood E, suction-pipe D, fan-blower

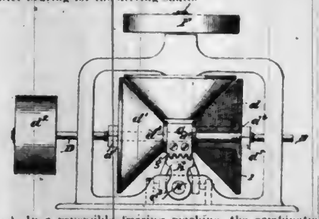
A, inclined dust-escape B, and perforated water-pipe C, said perforated pipe being situated in the inclined dust-escape, all constructed and operating substantially as shown and described.

199,267.



199,268. PANELING-MACHINES. Henry J. Cordesman, Jr., Cincinnati, Ohio, assignor to Cordesman, Egan & Co., same place. Filed Aug. 24, 1877.

Brief.—The shifting clutch, by which the direction of the cutter is changed, acts as a center bearing for the driving shaft.



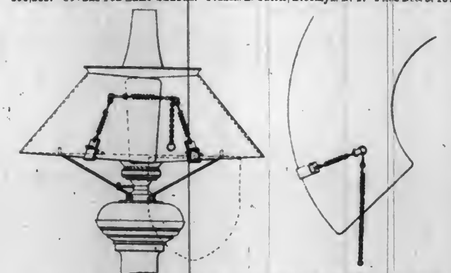
Claim.—1. In a reversible frizzing machine, the combination, with the driving-shaft, of a shifting clutch located between the driving-pulleys, and having a sliding connection and support upon the frame, the whole to act as a shifting clutch, and also as a center journal for the shaft.

2. In a reversible frizzing-machine, the combination, with driving-shaft D, having driving-pulleys *d d'*, and clutch G, of the operating-shaft H, substantially as and for the purpose specified.

3. In a reversible frizzing machine, the combination, with driving-shaft D and shifting-devices G H *k*, of the adjustable stops I I', substantially as and for the purpose specified.

4. In a friction-pulley for frizzing-machines, the combination of flanged shaft D d^2 and flanged sleeve d^1 1, secured together, to operate substantially as and for the purpose specified.

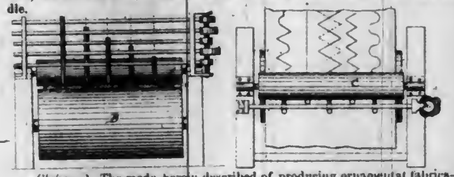
199,269. COVERS FOR LAMP-SHADES. Francis L. Cutter, Brooklyn, N. Y. Filed Dec. 5, 1877.



Claim.—A shade-cover composed of a segmental strip of sheet metal or other opaque material, suitable fastening devices for uniting said strip at its opposite ends, and of spring hooks or clamps adapted to grasp or embrace the lower edge of said strip and the lower edge of the shade or frame to which the whole is applied, substantially as and for the purpose described.

199,270. MANUFACTURE OF ORNAMENTAL FELT FABRICS. Parley A. Dailey, New York, N. Y. Filed June 28, 1877.

Brief.—Pattern-yarns are laid upon the surface of a traversing fabric, by means of movable guides or equivalent mechanism, in any predetermined pattern, and are then secured to the fabric by felting or the use of a punching-needle.



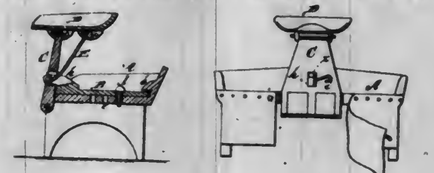
Claim.—1. The mode herein described of producing ornamental fabrics—that is, passing a fabric or a bat of felt beneath a series of thread-carriers, by which threads are laid separately and loosely upon the surface of the bat, in proper position to form the pattern, and then securing the two together, as set forth.

2. The combination, with the series of thread-carriers, arranged above a transverse sheet, to lay threads loosely thereon, of a pattern wheel or chain, or the equivalent thereof, for controlling the lateral positions of the carriers, substantially as set forth.

3. The combination of the thread-carriers, regulating mechanism, and roller G, as specified.

4. The improved fabric, ornamented by threads, lying separately throughout their length on the surface, constituting the pattern, and secured by incorporation with the body of the fabric, as set forth.

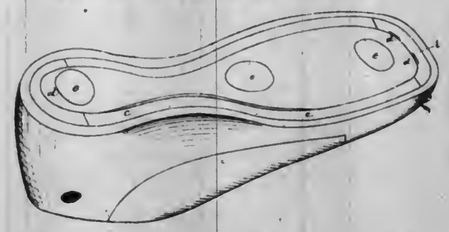
199,271. LAP-SEATS FOR WAGONS. George W. Damon, Brooks, Me. Filed Dec. 3, 1877.



Claim.—1. The adjustable and removable cross-bar B, hinged standard C, and hinged seat D, arranged in combination with the main seat A, for the purposes set forth.

2. The brace E, arm *h*, and pin *i*, in combination with the seat-standard and cross-bar, for the purposes set forth.

199,272. LASTS. Levi Darevir, Natick, Mass. Filed May 15, 1877.



Claim.—1. As an improved article of manufacture, a wooden last grooved near its edges, as described, and filled with peg-receiving strips of wood, *c*, cut, steamed, and pressed into shape, as described, and shown at 2 3 4, to fit the groove in the last, the grain of the strip *c* being uppermost, all substantially as described.

2. The wooden last provided with a grooved bottom, in combination with pieces of wood bent and shaped to fit such grooves, saturated with oil, and secured in such grooves, as and for the purpose set forth.

199,273. PANTALOONS. Jacob W. Davis, San Francisco, Cal. Filed Jan. 3, 1878.



Claim.—As a new article of manufacture, pantaloons provided with permanent patch and stay pieces of the same cloth or fabric of which the pantaloons are made up, said pieces being secured thereto when the pantaloons are manufactured, and arranged with the face or nap in close contact with the inner or wrong side of the cloth, and stitched around the entire edge, as specified.

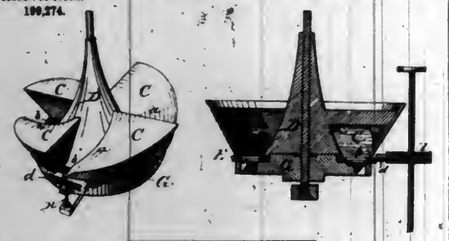
199,274. FLUMES FOR WATER-WHEELS. James P. Drouillard, Greenville, Mich., assignor of one-half his right to Alex. Gleason, same place. Filed Nov. 19, 1877.

Claim.—1. In combination with a horizontal bucket-wheel, a conical chute or water-conveyer, consisting of the following parts: an exterior conical casing, B, interior cone D, and conductors C, whereby a series of inclined water-passages, *a*, are formed, terminating in openings *b*, substantially as and for the purpose hereinbefore set forth.

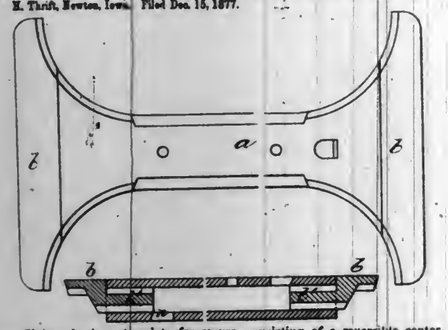
2. The combination of the conical chute or conveyer B C D, whereby a series of inclined water-passages, *a b*, are formed, with the gate-plate E, having openings *c* and segmental rack *d*, substantially as and for the purpose herein before set forth.

3. The combination of the conical chute or conveyer B C D, gate-plate E, and horizontal bucket-wheel G, substantially as and for the purpose herein-before set forth.

199,274.



199,275. REVERSIBLE CENTER-PIECES FOR STOVES AND RANGES. James Dutot and Wm. H. Thrift, Newton, Iowa. Filed Dec. 15, 1877.



Claim.—1. A center-plate for stoves, consisting of a reversible center-piece, alike on both sides, and the detachable end pieces, substantially as specified.

2. The combination, in a center-plate for stoves, of a center-piece, *a*, having a mortise at each end, and the detachable end pieces *b*, tenoned into said mortises, substantially as specified.

3. The combination, with the hollow open-ended reversible center-piece *a*, of the detachable end pieces *b*, having tenons *b'*, adapted to be received in the ends of the center piece, substantially as specified.

199,276. HORSE-COLLAR FASTENINGS. John H. Emerson, St. Joseph, Mo. Filed Dec. 1, 1877.

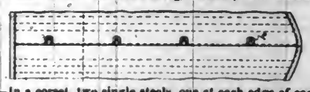


Claim.—1. The combination, with a divided horse-collar, of the metallic plates B B', adapted to reach entirely across the top of the collar, and completely covering the dividing-line between the fore and after walves of the same, and the vibrating slotted latch attached to one of said plates, and rotary hook secured to the other plate, substantially as specified.

2. The combination, with the collar A, having division *a*, of the edge plates B B', having each a step, *b*, and provided, respectively, with the rotating hook *c* and the vibrating latch *d*, substantially as specified.

3. The collar-fastening consisting of the edge plates B B', having each an erect step, *b*, and provided with a rotating hook, *c*, and a vibrating slotted latch, *d*, substantially as specified.

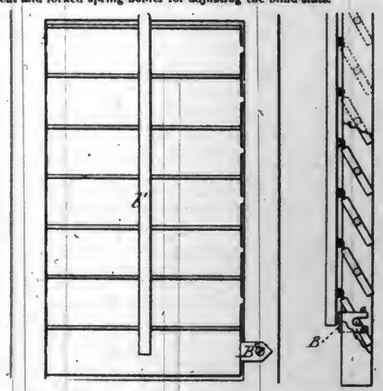
199,277. CORSET-CLASPS. David H. Fanning, Worcester, Mass. Filed Dec. 13, 1877.



Claim.—In a corset, two single steels, one at each edge of each half of the corset, and a double or stronger and stiffer steel placed near one of the single steels, but farther back from the edge of the corset, one of the single steels being provided with eyes, and the double or thicker steel with studs, whereby the two single steels at the extreme edges of the corset, when the corset is hooked together at the front, will fall, the one over the other, and alongside of the double or thicker steel, the connection between the two steels *a b* at one edge of the corset being flexible, to operate substantially as described.

199,278. BLIND-STOPS. Henry Fellows, Bloomington, Ind. Filed May 12, 1877.

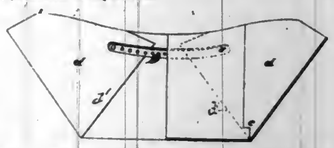
Brief.—The claim exhaustively sets forth the details of construction. A bent and forked spring-holder for adjusting the blind-slats.



Claim.—The improved slat-fastener herein described, consisting of the bent and forked metallic spring B, the base *a* of which is attached to the shutter-frame by a screw, *c*, and the shank of which is provided with a reverse bend, *z*, and terminates in the forked spring branches *d*, projecting between a slat end and the rail, embracing the journal of said slat, and bearing against the end of said slat, whereby the slats of the whole series are held in place, substantially as specified.

199,279. BUTTER-TRAYS. William M. Ferris, Jr., St. Louis, Mo. Filed Nov. 21, 1877.

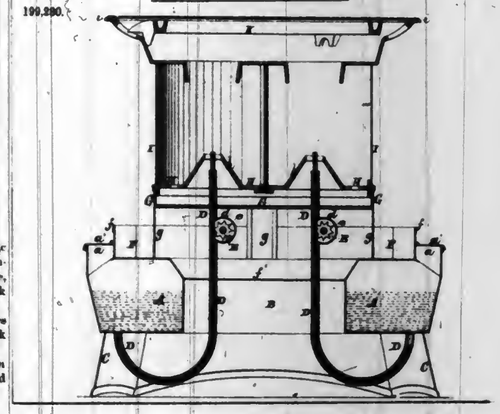
Brief.—Covers the corners by a rabbet-end fastening of metal, wood, or leather, perforated or imperforate.



Claim.—1. The butter-box formed of a single blank, having biangular scorings *a a'* and offsets *c c*, and of a fastening, D, bent, folded, and arranged substantially as shown and described.

2. The combination of the blank having biangular scorings *a a'* and slittings *d'* and *e*, ent as described, and the fastening D, as and for the purpose set forth.

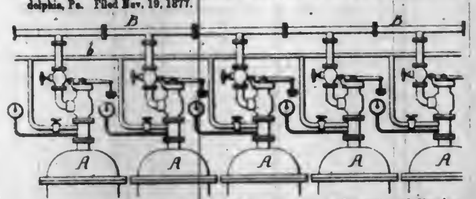
199,280.



199,280. COAL-OIL STOVES. John A. Frey, New York, N. Y. Filed Nov. 21, 1877.

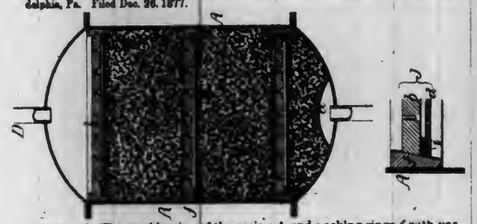
Claim.—A coal oil stove in which are combined the following-named elements, to wit: an oil-reservoir which horizontally surrounds a central air-chamber, a water-reservoir that incloses the upper side of said air-chamber, and extends over a portion or the whole of the upper side of said oil-reservoir, and wick-tubes which pass downward through said water-reservoir and air-chamber, and thence extend in a curve downward, outward, and upward to, and are connected with, the bottom of said oil-reservoir, substantially as and for the purpose set forth.

199,281. RECTIFYING APPARATUS. Anthony J. Gallagher and Augustus B. Gallagher, Philadelphia, Pa. Filed Nov. 19, 1877.



Claim.—The combination, in rectifying apparatus, of a series of filtering-vessels, A, a feed-pipe, B, common to all the cylinders, the system of pipes and cocks, whereby the said vessels are rendered independent of each other, and the loaded valves, by the automatic action of which a uniform pressure may be maintained in each vessel independently of the uniform pressure maintained in the other vessels, all substantially as set forth.

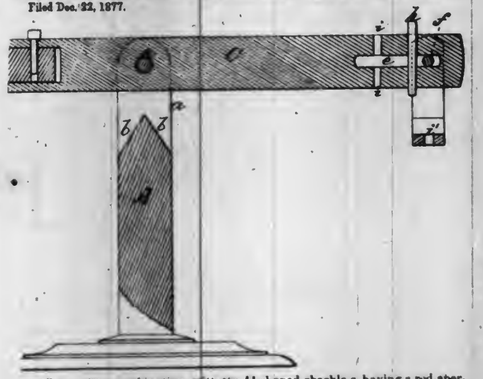
199,282. RECTIFYING APPARATUS. Anthony J. Gallagher and Augustus B. Gallagher, Philadelphia, Pa. Filed Dec. 26, 1877.



Claim.—1. The combination of the casing A and packing-rings *f* with partitions J, each consisting of a perforated wooden disk, *b*, and a perforated metal disk, *d*, with a space intervening between the two, as set forth.

2. The combination of the casing and its partition or partitions with an elastic packing-ring of a wedge-shaped section, as set forth.

199,283. BRAKES FOR OPERATING SHIPS' WINDLASSES. Lehman Garison, Philadelphia, Pa. Filed Dec. 22, 1877.



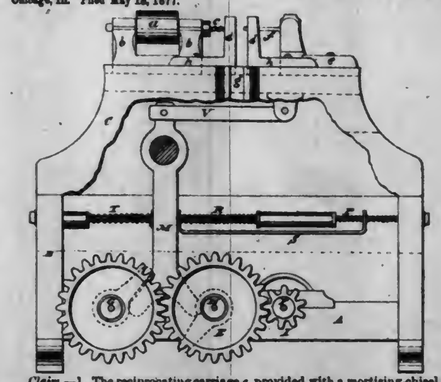
Claim.—The combination, with the U-shaped shackle *g*, having a rod-aperture, *i'*, of the brake-lever C, having the longitudinal slot *e*, the spaced perforations *i*, the key *h*, and the shackle-bolt *f*, as and for the purpose specified.

199,284. SHIELDS FOR COMMODE-COVERS. Henry Gerould, Cleveland, Ohio. Filed Sept. 17, 1877.



Claim.—An adjustable shield, consisting of two elastic webs with central openings, and having their peripheries united to each other and their inner edges free, thereby forming a covering for the edge of a commode cover, under which cover one of said webs extends to some distance as a lining, whereas the other extends around the edge of the cover, and for some distance or partially over the top thereof, substantially as herein described, and for the purposes specified.

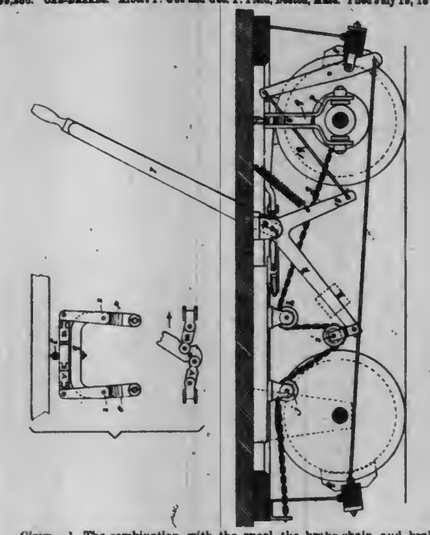
199,285. MORTISING AND BORING MACHINES. Robert L. Gromlee and Ralph S. Gromlee, Chicago, Ill. Filed May 18, 1877.



Claim.—1. The reciprocating carriage *e*, provided with a mortising-chisel, *f*, and rotating bit or bits *c*, facing to each other, and placed a suitable distance apart to mortise lumber between them, said carriage being driven by suitable mechanism, as and for the purpose set forth.

2. The combination of the carriages *e* and *h h*, carrying the guides *d d*, connecting-rod V, cam-levers M N, rod *y*, spring R T, adjusting-nut Q, clamp S, bit *c*, and chisel *f*, as and for the purpose set forth.

199,286. CAR-BRAKES. Albert F. Gue and Geo. F. Field, Boston, Mass. Filed July 19, 1877.

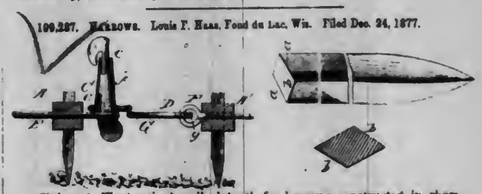


Claim.—1. The combination, with the spool, the brake-chain, and brake lever to operate the brake-beam and shoes, of an auxiliary brake-lever loosely connected with the chain, and interposed between it and the brake-lever, substantially as described.

2. The combination, with the clutches and their operating-levers *o p*, of the pivoted horizontal lever *s* and the links *u v*, connected therewith at different sides of its fulcrum, to operate the clutch-levers positively and simultaneously, all substantially as described.

3. The combination, with the car-body and sheaves *h j*, of the brake-chain, its winding-spool, the auxiliary brake-lever connected with the main brake-lever, and the pivoted sheave *i*, arranged on a bight of the chain between the sheaves *h j*, substantially as described.

199,287. HARROWS. Louis F. Haas, Fond du Lac, Wis. Filed Dec. 24, 1877.



Claim.—1. The herein-described tooth for harrows, constructed in rhomboidal form in cross-section, whereby it can be set straight in the beams or timbers of the harrow, and present but one side or cutting-edge to the ground and in the line of the draft, substantially as specified.

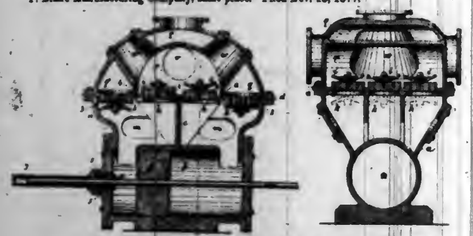
2. The combination, with the sections A A' of a harrow, of the hooked

rods *c c* and hinged or pivoted loops G, substantially as and for the purpose herein shown and described.

3. The combination, with the loops G of the section A′ of the harrow, of the section A, having the hooked rods *c c*, provided with the friction spools or rollers *f*, substantially as and for the purpose specified.

4. The combination, with the sections A A′ of a harrow, of the coupling-sections C D, consisting of the bolts E, vertical hooked rods *c c*, friction spools or rollers *f*, eyebolts F F, and pivoted or hinged loops G *g g*, the several parts constructed and relatively arranged to operate as herein shown and described.

199,288. DOUBLE-ACTING STEAM-PUMPS. Albert F. Hall, Boston, Mass., assignor to George F. Blake Manufacturing Company, same place. Filed Nov. 13, 1877.



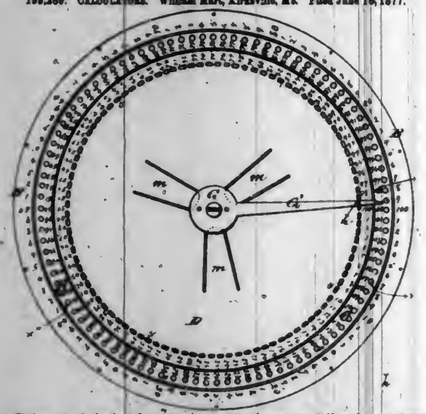
Claim.—1. The combination, with the flanged top, provided with inlet and discharge openings, and the flanged fluid-chamber, of the valve-plate interposed between the top and chamber, and provided with the inlet and discharge valves, the parts being all bolted together, substantially as described.

2. The fluid-chamber provided with openings *h f* and channels *l*, in combination with inlet and discharge valves, to operate all substantially as described.

3. In a direct-acting pump, the top provided with the inlet and discharge openings, and the fluid-chamber connected with and containing the pump-cylinder, in combination with inlet-valves opening downward into such chamber, and discharge-valves opening upward from such chamber, all substantially as described.

4. The combination, with the cylinder-head and an adjustable bushing, *x*, of a cylinder, *y*, communicating with the main cylinder by means of openings *5*, and containing the end of the piston-rod, substantially as described.

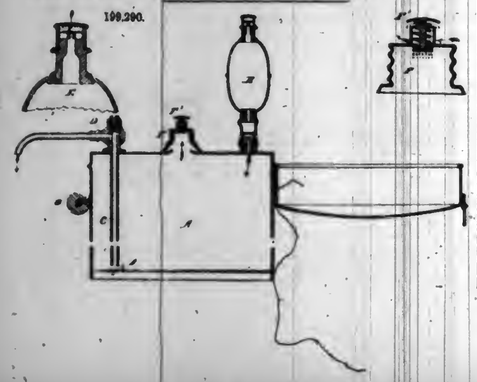
199,289. CALCULATORS. William Hart, Kirksville, Mo. Filed June 16, 1877.



Claim.—1. A device for counting, consisting essentially of a stationary ring or plate, B, with one set of figures, a movable ring or plate provided with a second set of figures and corresponding holes, and turned by hand, and a disk or plate having a third set of figures, held by a latch and turned by friction when the latch is raised, substantially as herein set forth.

2. The combination of the base A, the stationary numbered ring B, the movable numbered and perforated ring C, having the lug *h*, the movable numbered and perforated disk D, the latch G′, with pin *n*, and the stop *i*, all constructed substantially as and for the purposes herein set forth.

199,290.

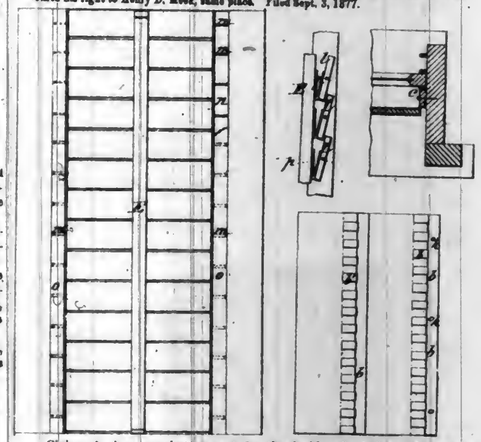


199,290. LAMP-FILLERS. Hyman Hatch and Albert T. Hatch, South Elgin, Ill., assignors of one-fourth their right to George B. Hubbard, same place. Filed Sept. 11, 1877.

Claim.—1. A pneumatic lamp-filler consisting of the combination of the air-tight vessel A, having a filling-port; a flexible air-injecting bulb, E, having therein two valved air-ports or check-valves, one serving as an air-induction and the other as an air-eduction; a discharge-tube, C, extending nearly to the bottom of the vessel, and terminating at its upper end in the rotary nozzle or faucet D, having therein a port arranged to be opened and closed alternately during the rotation of the nozzle, substantially as and for the purposes set forth.

2. A pneumatic lamp-filler consisting of the combination of the air-tight vessel A, cap F, vent F′, flexible air-injecting bulb E, tube C, and faucet D, all constructed, arranged, and operating together substantially as and for the purposes specified.

199,291. PAPER SHUTTERS FOR WINDOWS. William Hipkins, Bellaire, Ohio, assignor of one-fourth his right to Henry D. Mock, same place. Filed Sept. 3, 1877.



Claim.—1. A paper shutter part for the inside of windows, the panels whereof are joined by a fabric hinge.

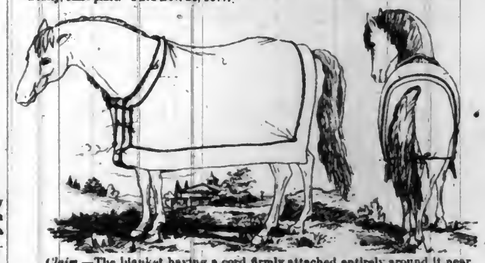
2. Paper shutter parts constructed with panels and jamb-pieces united by hinges of fabric.

3. Paper shutter parts constructed with panels and jamb pieces, and with a thin covering, which may bear panel imitations or ornaments.

4. In a paper-shutter part, the jamb-pieces *c*, adapted to be attached to deep or narrow jambs or to the architrave-jambs, substantially as described.

5. In combination with the pivoted slats of a paper shutter, the regulating-strip E and fabric hinges *p*, substantially as described.

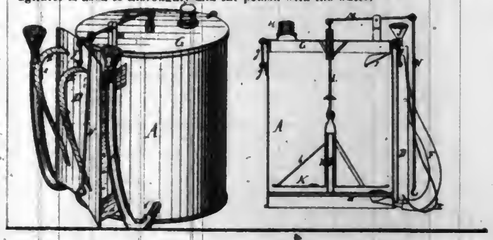
199,292. HORSE-BLANKETS. Israel H. Hodgdon, Gray, Me., assignor to himself and William Beatty, same place. Filed Nov. 26, 1877.



Claim.—The blanket having a cord firmly attached entirely around it near its edges, and formed into loops, which project through suitably-faced holes in the corners thereof, substantially as and for the purpose set forth.

199,293. GARDEN-SPRINKLERS. Adolf Hodel, Jefferson, and Frank A. Stauber, Chicago, Ill. Filed June 6, 1877.

Brief.—Free circulation of air between the shoulder-piece and the vessel prevents the person carrying the apparatus from becoming chilled. The vessel may contain a poisonous solution for destroying insects, in which case the agitator is used to thoroughly mix the poison with the water.



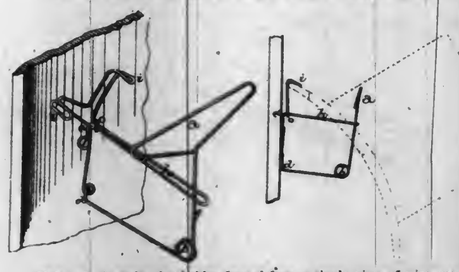
Claim.—1. A garden-sprinkler consisting of a cylindrical vessel, A, having shoulder-plate D, secured thereto at such distance apart as to leave an air-space between, substantially as and for the purpose described.

2. In a garden-sprinkler, the combination, with the vessel A, adapted to be carried on the back of the operator, of the perforated plunger K, rod L, beam M, pivoted in a standard rising from the cover G, and rod N, hanging down from the end of the beam M, so that the plunger can be conveniently moved while the apparatus is in position, constructed and arranged substantially as described and shown.

3. In a garden-sprinkler, the combination, with the vessel A, of the stem *b* in the bottom of such vessel, and the perforated plunger K, having a hollow stem, K′, sliding over the said stem *b*, constructed and arranged substantially as described and shown.

4. In a garden-sprinkler adapted to be carried on the back of the operator, the combination, with the vessel A and cover G, of the inclined deflector I, secured to the inside of the vessel next to the shield for the operator, constructed substantially as and for the purposes set forth.

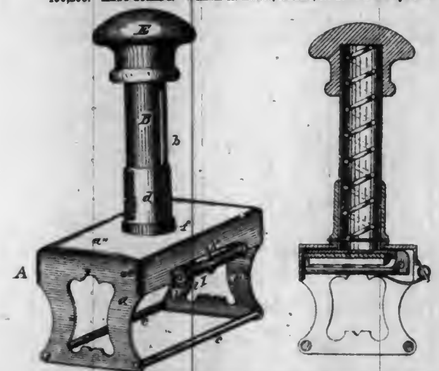
199,294. HAT-HOLDERS. Orlando Jonaes, Boston, Mass. Filed Dec. 21, 1877.



Claim.—1. A spring hat-holder formed from a single piece of wire, consisting of the form *a*, spring *b*, bar *h*, and points *i*, whereby the hat is held at three different places, substantially as set forth.

2. A hat-holder constructed of a single piece of wire, having the form *a* and the points *i*, whereby the lower rim of the hat is raised upward, substantially as shown and described.

199,295. HAND-STAMPS. William R. Keeler, Buffalo, N. Y. Filed May 5, 1877.



Claim.—1. A hand stamp in which the ink-pad retainer is pivoted to the frame within the sides *a a′*, and caused to recede from and advance to the impression-plate by the action of the lugs *c′* upon the slot-holes *h* in the sides of said pad-retainer, causing the same to describe a partial revolution around its pivots *c*, as specified.

2. The combination, with the frame A, whose upper part consists of a box-shaped compartment, of the impression-plate C and the pad-retainer G, the parts being arranged in relation to each other, as described, within said box-shaped compartment, to which the pivoted pad-retainer forms a cover to exclude dust, &c., from the impression and inking plates, substantially as described and stated.

3. A hand stamp consisting, essentially, of the frame A, whose upper part is formed with a box-shaped compartment, the impression-plate C, provided with the lugs *c′*, and the inking pad retainer G, pivoted within said box-shaped compartment, and actuated by the lugs *c′* acting upon the sides, and the spring I pressing upon the back of said pad-retainer, the whole being constructed and arranged to operate substantially in the manner as and for the use and purpose specified.

4. The combination, with a pivoted pad-retainer having the curved slot-holes *h h′*, of the spring I, arranged to act upon the said retainer, substantially in the manner and for the use and purpose set forth and described.

199,296. STOVE-GRATES. James A. Lawson, Troy, N. Y. Filed Oct. 19, 1877.

Brief.—The center pintles on the grate-bars extend downwardly through the supporting-bar, and those on the end extend in the same manner through the connecting-bars.

Claim.—1. In a stove-grate, a grate-bar provided upon its lower side, at or near its longitudinal center, with a pintle, which extends downward therefrom, and at its lower end has an enlargement or head, said parts being cast in one piece, substantially as and for the purpose specified.

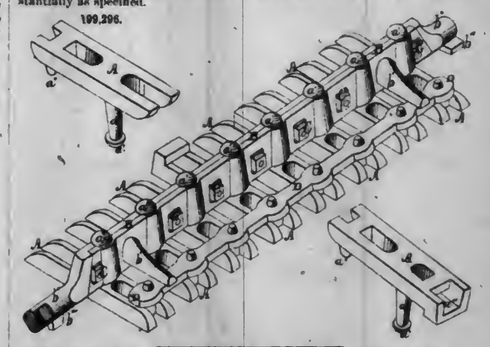
2. In a stove-grate, a supporting-bar for pivoted movable grate-bars, which is divided longitudinally upon a central line, and has its sections secured rigidly together, substantially as and for the purpose shown.

3. In combination with the grate-bars A, provided with the pintles *a″*, the connecting-bar D, having the openings *d*, which engage with said pintle, substantially as and for the purpose set forth.

4. In combination with the connecting-bar D, and with the rear ends of the pivoted grate-bars A, the lugs or arms *b′*, projecting from the bar B beneath said parts, substantially as and for the purpose shown and described.

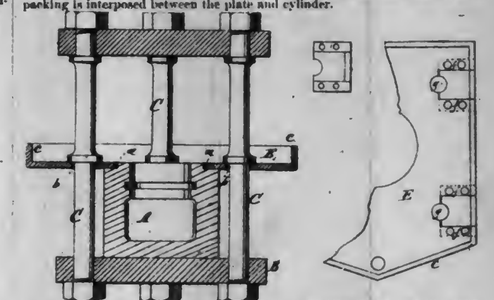
5. The hereinbefore-described stove-grate, in which the grate-bars A, provided with the pivotal pintles *a*, having heads *a′*, and the shaking-pintles *a″*, the supporting-bar B, formed in two sections, and provided with the openings *b* and lugs or arms *b′*, and the connecting-bar D, having the openings *d*, are constructed and combined to operate in the manner and for the purpose substantially as specified.

199,296.



199,297. HYDRAULIC PRESSES. Alfred B. Lawther, Chicago, Ill. Filed Nov. 30, 1877.

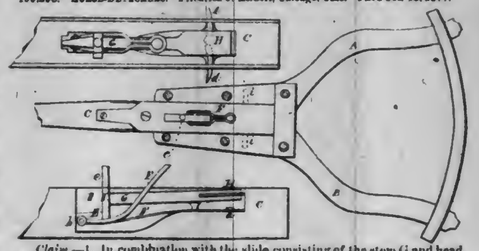
Brief.—The plate on top of cylinder secures the head from other strains than those due to pressure, and forms a receptacle to catch all of the dripper leakage. The plate is so constructed as to be easily removed. Soft-metal packing is interposed between the plate and cylinder.



Claim.—1. The cylinder A and columns C, in combination with the plate E, for joining the cylinder and columns, substantially as specified.

2. The cylinder A and columns C, in combination with the plate E and a soft-metal packing, substantially as and for the purposes specified.

199,298. HORSE-DETACHERS. Friedrich J. Leidorf, Chicago, Ohio. Filed Oct. 18, 1877.



Claim.—1. In combination with the slide consisting of the stem G and head H, the head I and arms *d e*, substantially in the manner as described, and for the purpose specified.

2. The spring D′, block E, and bifurcated lever F, in combination with the head I and slide consisting of the stem G and head H, provided with arms *d e*, in the manner substantially as described, and for the purpose set forth.

3. The spring D′, block E, bifurcated lever F, and slide consisting of the stem G and head H, arms *d e*, head I, and standard *e*, arranged to operate substantially as described, in combination with the tongue C and hounds of a wagon or other vehicle, as set forth, and for the purpose specified.

199,299. PILE-DRIVERS. Nelson F. Libby and Pascal Hatch, Chelmsford, Mass. Filed Apr. 21, 1877.

Claim.—1. In a pile-driving machine, a lifting-chain, F, moving at an angle to the path of the drop C, as and for the purpose specified.

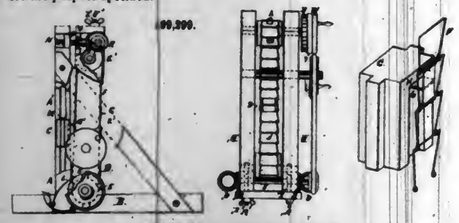
2. In a pile-driving machine, a lifting-chain, F, moving at a variable angle to the path of the drop C, as and for the purpose specified.

3. The combination of the drop-guide frame A A′, provided with nuts O O′, and the pivoted chain-frame D D′, provided with tangent-screws N N′, as and for the purpose specified.

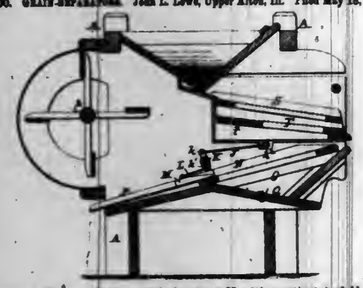
4. The combination of the tangent-screws N N′, provided with bevel-gears Q Q′, and the shaft S, also provided with bevel-gears R R′, as and for the purpose specified.

5. The combination of the drop C, having the ear H, the chain F, provided with studs G G′, the chain-gears E E′, the ratchet K, and the pawl L, as and for the purpose specified.

199,299.



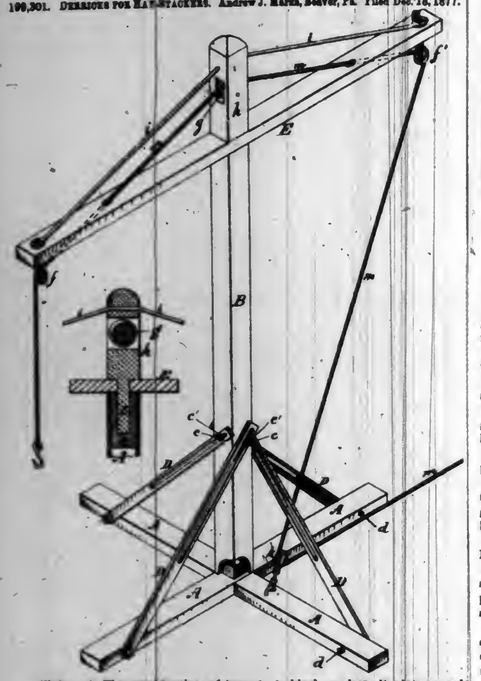
199,300. GRAIN-SEPARATORS. John L. Lowe, Upper Alton, Ill. Filed May 18, 1877.



Claim.—1. The combination, with the screen N, of the vertical shaft H, having arm h^3, rod J, transverse shaft K, having arms k k', and rod L, as and for the purpose set forth.

2. The combination, with the screen N and shoe I, of the vertical rock-shaft H, having arms h h' h^3, rod J, transverse shaft K, having arms k k', and a rod, L, as and for the purpose set forth.

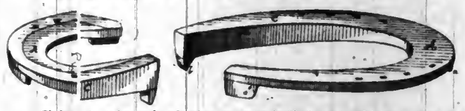
199,301. DERRICKS FOR HAY-STACKERS. Andrew J. Marks, Beaver, Pa. Filed Dec. 18, 1877.



Claim.—1. The combination of base A A, block a, shaft H, slotted and pivoted braces D, bolts c, centrally-swiveled beam E, upright h, rod i, pulleys f, f', and g, and rope m, substantially as described.

2. The combination of base-planks A, block a, shaft B, bolts c, and the slotted and pivoted braces D, substantially as described, whereby a universal adjustment can be effected for the shaft with relation to its base A.

199,302. HORSESHOES. Henry O. McConey, Washington, D. C. Filed Jan. 5, 1878.

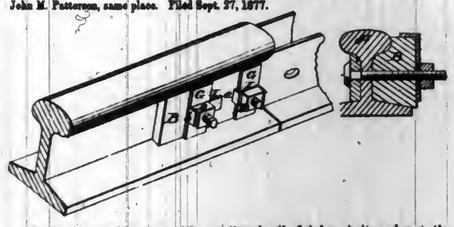


Claim.—1. A horseshoe having its outer half of greater thickness than the inner half, substantially as and for the purpose described.

2. A horseshoe having its outer half of greater weight and thickness than the inner half, substantially as described.

3. A horseshoe having its outer half of a gradually-increasing weight and thickness from the center of the toe to the heel, and the inner half of ordinary construction, as and for the purpose set forth.

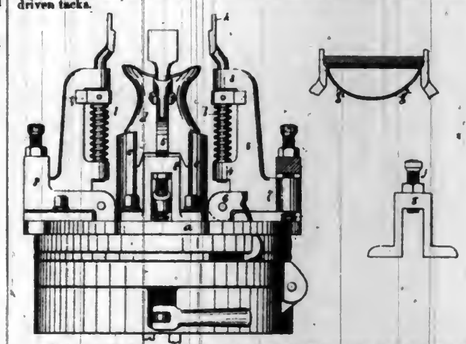
199,303. NUT-LOCKS. Edward McConnell, Lexington, Va., assignor of one-half his right to John M. Patterson, same place. Filed Sept. 27, 1877.



Claim.—In combination with a railroad-rail, fish-bar, bolt, and nut, the washer G, provided with an opening, through which the bolt passes, and also provided with a lateral groove, and the plate I, filling said groove to be flush with the face of the washer, but elevated above the surface of the fish-plate, and provided with an opening, through which the bolt passes, and having one end bent outward to the side of the nut, substantially as and for the purposes herein set forth.

199,304. JACKS FOR BOOTS AND SHOES. Gordon McKay, Cambridge, Mass. Filed Dec. 18, 1877.

Brief.—Jack provided with suitable yielding gages for centering the outer sole when applied to the lasted shoe, the sole being supplied with partially-driven tacks.



Claim.—1. The combination, with a boot or shoe holding jack, of gages to govern the position of the outer sole with reference to the lasted upper and inner sole, substantially as described.

2. The combination, with last holding and adjusting devices, of gages b for the side edges of the outer sole, to operate substantially as described.

3. The combination, with last-holding devices, of gages for the side edges and toe of the outer sole, substantially as described.

4. In an apparatus to attach the outer sole to the upper and inner sole, a gage to bear against the edge of the outer sole, and against the upper below it, to operate substantially as described.

5. The outer-sole gages and their rods, in combination with a spring to permit the movement of the rods and gages in the holding-arm.

6. The combination, with a last holding and adjusting jack, of gages for the edge of the outer sole, and adjusting devices to control the position of such gages as to their distance from a central line drawn longitudinally through the last, substantially as described.

199,305. DREDGING-MACHINES. Joseph Monge, Point Michel, La. Filed Oct. 1, 1877.

Claim.—1. A dredge-bucket provided on one side with a triangularly-shaped flattened surface, two of the sides of which terminate in the rounded portion of the bucket, while the remaining side forms the cutting-edge thereof, substantially as described, and for the purpose set forth.

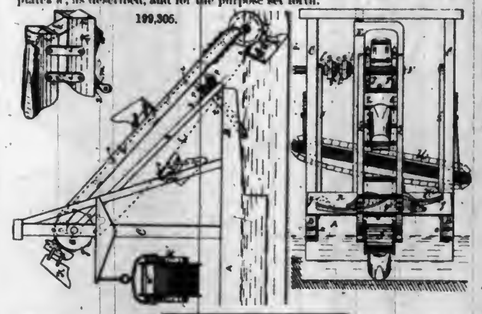
2. The improved means herein described for attaching the buckets to their chains, the same consisting of the straps z and rounded shaft m, and of the elongated straps s, in which is fitted a cross-bar, as and for the purpose specified.

3. In a dredging-machine, the tracks q q, curved in reverse directions, over which the bucket-frame operates, as described, and for the purpose set forth.

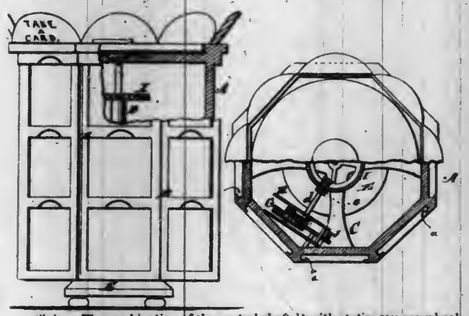
4. The discharge-carrier, composed of frame U, provided with rollers r.

over which operate two or more endless chains provided with overlapping plates x, as described, and for the purpose set forth.

199,306.

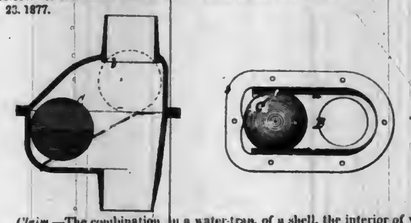


199,306. REVOLVING ADVERTISING-CASES. Robert C. Millings, Charleston, S. C. Filed Dec. 8, 1877.



Claim.—The combination of the central shaft D with stationary cog-wheel I, the rotating casing A, the clock-work G, attached to and rotating with said casing, and the shaft d, with pinion e, meshing with the cog-wheel I, substantially as and for the purposes set forth.

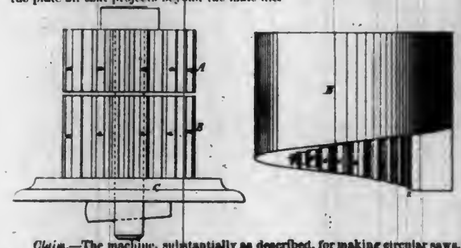
199,307. CHECK-VALVES FOR SEWERS. Charles Hasher, Brooklyn, E. D., N. Y. Filed Nov. 23, 1877.



Claim.—The combination, in a water-trap, of a shell, the interior of which forms a valve-chamber, and which is made in two parts or sections, each having a flange to receive screws or rivets, whereby the said sections are detachably united together, inlet and outlet orifices respectively extending from said two sections, one above and the other below, both being in line with each other, inclined valve-supporting ways located in one section, a valve-seat formed in the other section, and a buoyant valve resting on said ways, the whole being adapted to operate substantially as described.

199,308. MACHINES FOR MANUFACTURING CIRCULAR SAWS. William E. Nickerson, Somerville, Mass. Filed Dec. 26, 1877.

Brief.—The disk is clamped between the two portions of the male die, which is then forced into the corresponding die, shearing or cutting away from the plate all that projects beyond the male die.



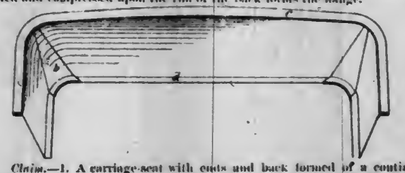
Claim.—The machine, substantially as described, for making circular saws, it consisting of the tubular and channeled female die E and the ribbed male die, composed of the portions A and B, and their clamping bolt or devices, all being constructed and to operate essentially as set forth.

199,309. PROCESSES FOR PREVENTING INCRUSTATION IN STEAM-BOILERS. John North, Keokuk, Iowa. Filed Nov. 9, 1877.

Claim.—The process of preventing scale or incrustation in locomotive and other steam-generating boilers, and of removing it if formed, by treating the water at its ordinary temperature, first with carbonate of sodium, and afterward with chloride of ammonium, in about equal quantities, the salts being added separately, and then heating the water, substantially as described.

199,310. CARRIAGE-SEATS. John D. Olds, Fort Wayne, Ind. Filed Oct. 3, 1877.

Brief.—The metal is folded upon itself in the corners. A strip of metal folded and compressed upon the rim of the back forms the flange.

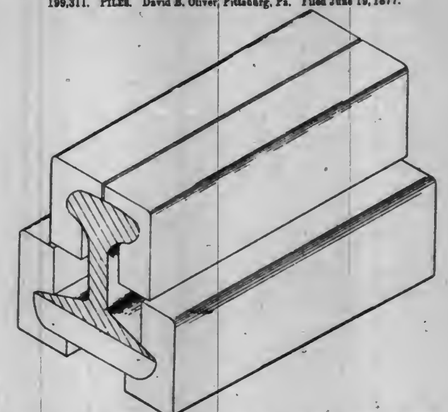


Claim.—1. A carriage-seat with ends and back formed of a continuous length of sheet metal, folded upon itself at the rear corners, substantially as described.

2. The combination, with a sheet-metal carriage-seat back having an outwardly-turned upper flange, of a strengthening and finishing flange or top rail, composed of a length of sheet metal bent and folded flatly upon itself, and compressed into engagement with both sides of the flange of the seat back, substantially as described.

3. The combination, with a sheet-metal carriage-seat back having an outwardly-turned upper flange, of a strengthening and finishing flange or top rail, composed of sheet metal folded flatly upon itself, compressed into engagement with both sides of the flange of the seat-back, halved together at the corners, and united, substantially as described.

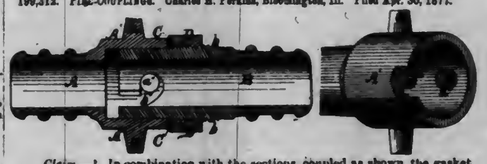
199,311. PILES. David B. Oliver, Pittsburg, Pa. Filed June 19, 1877.



Claim.—1. The combination, with a rail, of a series of similarly-flanged bars and an equalizing-bar adapted to encircle the rail, substantially as and for the purpose specified.

2. The double-flanged pile-bars, substantially as described, adapted to be applied to both the head and flange of a rail in forming a pile, substantially as specified.

199,312. PIPE-COUPLINGS. Charles H. Perkins, Bloomington, Ill. Filed Apr. 30, 1877.



Claim.—1. In combination with the sections, coupled as shown, the gasket C, interposed between the shoulder b' and the end of the female section, and the sleeve-nut D, fitted upon the threaded portion b of the male section, and capable of compressing said gasket, in the manner and for the purpose substantially as shown.

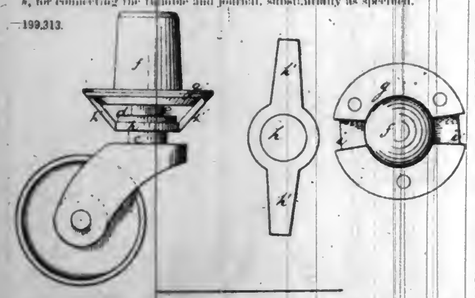
2. The hereinbefore-described coupling, composed of the female section A A′, provided within its enlarged end with the pins a'', the male section B B′, having the threaded enlargement b, shoulder b', and curved slots b'', the gasket C, of compressible material, and the sleeve-nut D, said parts being constructed and combined to operate in the manner and for the purpose substantially as set forth.

199,313. FURNITURE-CASTERS. John B. Richey, Allegheny, Pa. Filed Dec. 5, 1877.

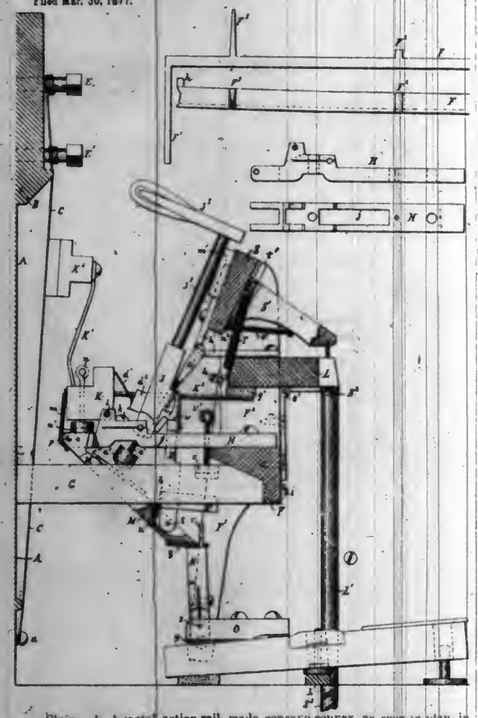
Brief.—A link or strap is constructed with a ring-shaped opening of sufficient size to pass freely over the collar or annular lug of the journal-section, and with tongue extensions adapted to be folded or bent over the flange of the socket-thimble, the construction simplifying the connection of parts and obviating the tendency to locking of the caster.

Claim.—In a furniture caster, the combination of a thimble or cup, *f*, having a flange, *g*, for connecting it to an article, a journal-section, having a pivot-post, *r*, and fork *c*, with either a solid or separable flange, and a strap or link, *k*, for connecting the thimble and journal, substantially as specified.

199,313.



199,314. UPRIGHT-PIANO ACTIONS. Charles E. Rogers and Alfred F. Rogers, Boston, Mass. Filed Mar. 30, 1877.



Claim.—1. A metal action-rail, made concavo-convex, as seen in plan, in combination with three stop-or bearings upon its concave side and a fastening-screw for securing said rail to the central stop or bearing, all arranged and adapted to operate substantially as and for the purposes described.

2. A metal action or flange rail, provided with a radius-arm at either end thereof, through the ends of which said rail is pivoted to the case, in combination with three stops or bearings for its inner edge to rest against and a screw for securing said rail to the middle bearing, substantially as described.

3. The action or flange rail F, having formed thereon or secured thereto two radius-arms, F', projecting downward from its under side, two lugs or blocks, F², and two or more arms, F³, projecting upward from its upper side, all arranged and adapted to operate substantially as and for the purposes described.

4. The flange H, secured to the rail F, and projecting therefrom toward the strings, and adapted to support all the several parts of the action, except the key and sticker, substantially as described.

5. A flange, H, provided with bearings for the pivots of the hammer-butt, the damper, and the jack-operating lever, and with the slot *j*, for the passage of the jack, substantially as and for the purposes described.

6. The lever M, pivoted at *p* to the flange H, and provided with the heel *o* and the strap *q*, and means of connection with the jack at *t*, substantially as described.

7. In combination with the lever M, constructed and arranged as set forth, and provided with the felt *e'*, secured to the upper surface thereof, the long adjusting-screw *a'*, passing through the hammer-butt, as shown, and carrying at its lower end the button *a''*, all arranged and adapted to operate substantially as and for the purposes described.

8. The damper-stud K, provided with the damper-wire K', carrying at its upper end the damper K², and also with the wire K³, projecting from said stud at right angles, or nearly so, to the damper-wire K', in combination with the oscillating pedal-rail L and the spring *m*, substantially as described.

9. The damper-stud K, provided with the regulating-screw *n* and button *n'*, in combination with the lever M, provided with the heel *o*, and the spring *m*, secured at one end to the damper-stud K and at the other end to the lever M, substantially as described.

10. In combination with the flange H, provided with slot *j*, and adapted to support the hammer, the damper, and the jack-operating lever M, the jack R, pivoted to the lever M, and adapted to project upward through the slot *j*, and to engage with the shoulder J' of the hammer-butt J, substantially as described.

11. The jack R, provided with the arm R', and having its upper end formed as shown in Figs. 5 and 6, in combination with the flange H, provided with the slot *j* and the adjusting-screw *r'* and button *r*, all arranged and adapted to operate substantially as and for the purposes described.

12. The combination, in an upright piano, of a single series of flanges, each carrying a hammer, a damper, a jack, and a jack-operating lever, and all secured to a single flange-rail, located in front of the action, or on the opposite side thereof from the strings, a loud-pedal rail, and a soft-pedal rail, both hinged to, or mounted upon, said flange-rail, substantially as described.

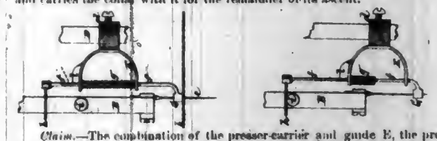
13. The combination, in an upright piano, of the flange-rail F, a loud or soft pedal rail hinged thereto, and a pedal-rod leading directly from said loud or soft pedal rail downward between the keys, and adapted to connect directly to the pedal without the interposition of levers, substantially as described.

14. The combination of the flange-rail F, the soft-pedal rail S hinged thereto, and provided with the hinged or pivoted arm S', the spring *o'*, and the pedal-rod S², all arranged and adapted to operate substantially as described.

15. The combination of the flange-rail F, the loud-pedal rail L, and soft-pedal rail S, both hinged to the rail F, and the spring T, secured at one end to the rail L and at the other to the rail S, all arranged and adapted to operate substantially as and for the purposes described.

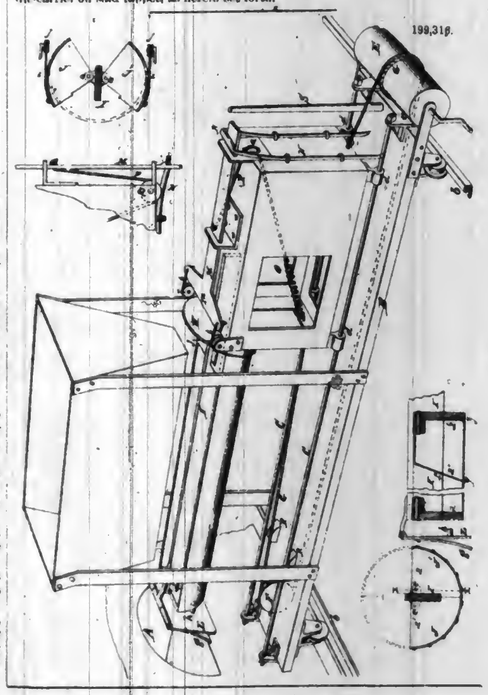
199,315. DARNING ATTACHMENTS FOR SEWING-MACHINES. Reuben M. Rose, Brooklyn, N. Y. Filed Nov. 22, 1877.

Brief.—For use on a sewing-machine in fancy stitching, darning, &c. The needle is encircled by a collar on the end of a rod sliding up and down in a light frame attached to the presser foot-bar of the sewing-machine. The collar is acted on by a spring, and presses on the work until the needle is free therefrom, when a stud on the needle-bar comes in contact with an arm of the rod, and carries the collar with it for the remainder of its ascent.



Claim.—The combination of the presser-carrier and guide E, the presser and needle-guide C *f*, the spring *g*, and the tappet A, the whole organized substantially as herein described, to be attached to and detached from a sewing machine, and, when attached thereto, to be operated by the action of the needle-carrier on said tappet, as herein set forth.

199,316.



199,316. GAS-RETORT CHARGERS. Abbott Q. Ross, Cincinnati, Ohio. Filed Apr. 21, 1877.

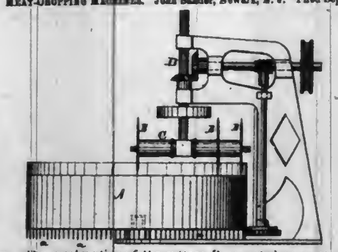
Brief.—The sectional semi-cylindrical scoop, containing a charge of coal, is opened at its bottom, as it completes its forward movement into the retort, by a spring operating through the medium of a T-bar, ropes, and pulleys, the bar being automatically released from a locking-bail at the right moment." A plate at the front end of the scoop serves to push out the coke from "through-retorts," and may be operated as a rake in ordinary retorts.

Claim.—1. The carrying-frame D, having a projecting bar, I, to which the parts J J' of the scoop are pivoted, substantially in the manner and for the purpose specified.

2. In combination with the parts J J', the bar M *k*, catch or bail N, spring O, post S, and incline or inclines R, the parts being connected and operating substantially as and for the purpose specified.

3. The combination, substantially as specified, of the frame D, having a projecting bar, I, the parts J J' of the scoop pivoted to said bar, and the swinging plate L, carried on the end of said bar.

199,317. MEAT-CHOPPING MACHINES. John Sander, Newark, N. J. Filed Sept. 7, 1876.



Claim.—The combination of the cutters B, mounted upon the horizontal shaft C, vertical shaft D, and mechanism for rotating the same, and cutting-block A, having its center eccentric to the vertical shaft, all operating as set forth.

199,318. GIRTH FOR HARNESS. Chas. M. Sanford, Hauppauge, N. Y. Filed Nov. 24, 1877.

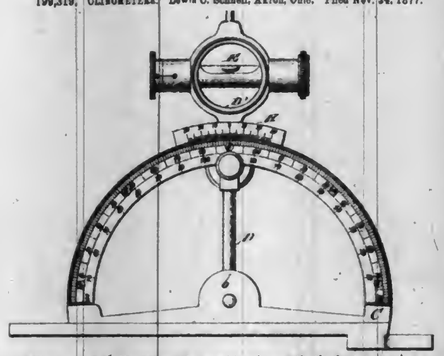


Claim.—1. The saddle-girth A, having the edge cushions *a* and middle depression *c*, and provided with the transverse bridge-fastenings, substantially as specified.

2. The combination, with the saddle-girth A, having the edge cushions, middle depression between said cushions, and bridge-straps, of the belly-band A, fitting in said depression and confined by said bridge-straps, substantially as specified.

3. The girth herein described, having transverse bridge-strap, the belly band confined between the padded sides of the saddle-girth, and provided with a ring for the martingale attachment, substantially as specified.

199,319. CLINOMETERS. Lewis C. Schnell, Akron, Ohio. Filed Nov. 24, 1877.

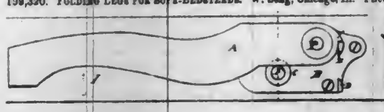


Claim.—1. In a clinometer, the combination, with the bed A, having ears *b b*, of the arm D, pivoted to ears *b* of the bed, and passing upward between the semicircles B C, and having on the upper end thereof a ring, D', in which is arranged a spirit-level, substantially as and for the purpose set forth.

2. In a clinometer, the pivoted arm D, carrying a spirit-level, operated by means of a pinion, *d*, attached to a shaft having a thumb-piece, G, for turning the same, in combination with the semicircular rack *e* of the semicircle B, substantially as described.

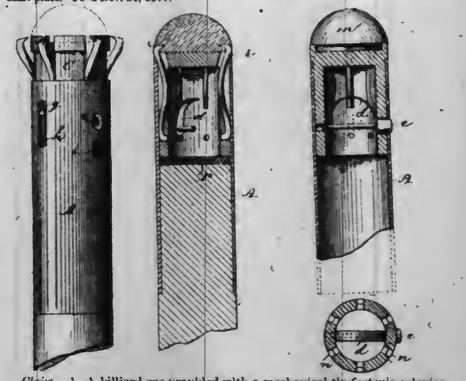
3. The herein-described instrument called "clinometer," consisting of the bed A, graduated semicircle C, cogged semicircle B, centrally-pivoted bar D, with level E and vernier H, adjusting device G *b'*, and clamping-screw I, all substantially as and for the purposes herein set forth.

199,320. FOLDING LEGS FOR SOFA-BEDSTEADS. W. Seag, Chicago, Ill. Filed Oct. 14, 1876.



Claim.—The plate I, provided with a socket, G, lugs E D, in combination with the leg A and the catch consisting of the stem H, collar J, and projection F, the collar operating under the leg to be held in place, as set forth.

199,321. BILLIARD-CUES. Carl Seymer, Berlin, Germany, assignor to Richard Horstmann, same place. Filed Nov. 20, 1877.



Claim.—1. A billiard cue provided with a mechanical tip-fastening device, consisting essentially of a sliding shell carrying jaws which are automatically spread or extended to receive the tip or cushion, and closed to grasp the same, by the movements of said sliding shell out of and into the case A, all substantially as described.

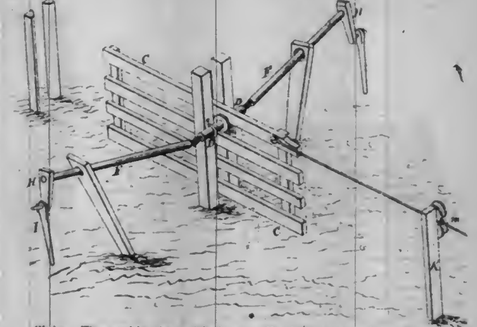
2. The combination, with a cue-stick, of a sliding shell, C, provided with means for holding a tip, and with devices for securing it either extended from or pressed into contact with the cue-stick, substantially as described.

3. The combination, with the grooved sliding shell C, of the arms *r*, having jawed upper ends, and bent to form knees, substantially as described.

4. The combination, with the sliding shell C and its arms *r*, of the fastening-bolt *e* and case A, substantially as described.

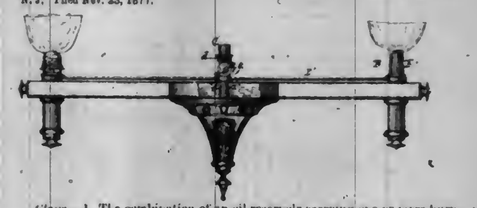
199,322. FARM-GATES. Samuel S. Sherman and Jeremiah G. Sherman, McHenry, Ill. Filed Aug. 30, 1877.

Brief.—A guide-rod which is attached to the gate passes between stationary pulleys. The gate is supported on a shaft having a double-flanged roller. Tumbling rods attached to the ends of said shaft are provided at their outer ends with cranks and handles.



Claim.—The combination, with the gate C, of the guide-rod I, and the pulleys *m m*, the shaft H, with double-flanged roller *a*, the tumbling rods F F, with cranks H H at their ends, and the hand-pieces I I, all substantially as and for the purposes herein set forth.

199,323. CARBURETING ATTACHMENTS FOR GAS-BURNERS. Christian G. Spengler, Hoboken, N. J. Filed Nov. 23, 1877.



Claim.—1. The combination of an oil-reservoir carrying one or more burners, a gas-supply pipe opening centrally into and near the top of said reservoir, and one or more branch gas-supply pipes connected with said reservoir near its top, and the points of attachment of the burner or burners, whereby the gas-pressure upon the surface of oil in the reservoir will be evenly distributed, substantially as and for the purpose set forth.

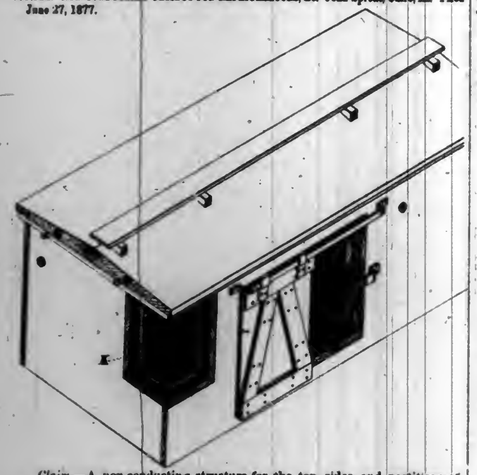
2. The combination, with an oil-reservoir, gas-supply pipe, and gas-feed pipe or pipes, arranged as specified, of a burner constructed of a closed cap

having a suitable tip, and of a foraminous absorbent cylinder or wick extending up into such cap and down into the oil-reservoir, substantially as and for the purpose described.

3. The combination, with the gas-ping, of the set-screw *e*, having a suitable bearing thereon, and the stop *d*, substantially as and for the purpose set forth.

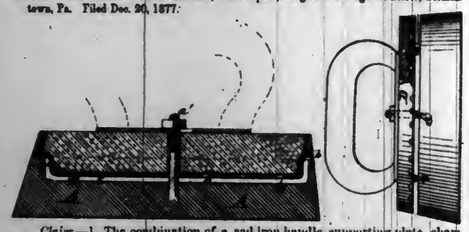
4. The combination, with the oil-reservoir arm, of the nipple or cap E, connected with branch gas-pipe D', the thimble I, and the foraminous cylinder or wick G, extending upward into said nipple, and downward through the reservoir-arm into said thimble, substantially as set forth.

199,324. NON-CONDUCTING CASINGS FOR REFRIGERATORS, &c. John Sproat, Cairo, Ill. Filed June 27, 1877.



Claim.—A non-conducting structure for the top, sides, and partitions of refrigerating apparatus, composed of an ordinary wooden exterior wall and an inner wall, separated therefrom by an air-space, and consisting of paper K, matched boards L, and paper M, arranged in the order named, substantially as specified.

199,325. SAD-IRONS. John B. Stamour, Philadelphia, assignor to George W. Selser, Germantown, Pa. Filed Dec. 20, 1877.

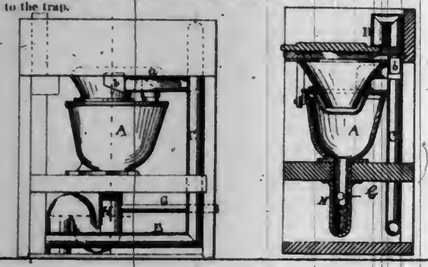


Claim.—1. The combination of a sad-iron handle supporting-plate, chambered to receive a non-conducting material, and having its bottom wall perforated, with a smoothing-base, between which and said handle-supporting plate is an open space, through which the air has access to the perforations in said handle-supporting plate, substantially as and for the purpose set forth.

2. The combination of a sad-iron handle supporting-plate, chambered to receive non-conducting filling, and having its bottom wall, except an outer rim, perforated and depressed, with a top-chambered smoothing-base, the upper edge of the chamber-wall of which forms a bearing for the said top plate, and between which and said top plate are arranged air-passages to a space between said handle-supporting plate and the inner walls of the base-chamber, substantially as described, the whole arranged in such manner that air will enter and pass through the chamber of the base, and have access to the non-conducting filling of the handle-supporting plate, whereby loss of heat from said base by upward radiation is almost entirely prevented.

199,326. WATER-CLOSETS. John H. Stevens, Cambridge, Mass. Filed Nov. 12, 1877.

Brief.—The bowl and receiver are both ventilated. Air may be supplied to the trap.



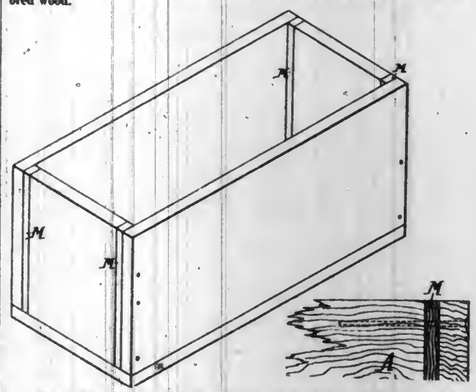
Claim.—1. The combination, in a water-closet, of the pipes D^2 D^3, opening, respectively, from the receiver and the bowl, or either of said pipes, arranged to open into the vertical pipe C above the top of the bowl, the vertical pipe C, and the pipe E, leading to the hot-flue of a chimney, or some other passage to the outer air, all arranged substantially as and for the purpose described.

2. The combination of the ventilating supply-pipe G, opening into the waste-pipe H above or at its water-seal, and the receiver A, and the ventilating delivery-pipe D^3, all arranged substantially as described, for the purpose set forth.

3. A water-closet provided with a ventilating-conduit, *c*, above the edge of the bowl and below the upper surface of the seat, leading to the ventilating-flue D^3, in combination with an upwardly-projecting rim, *b*, around the orifice of the ventilating-flue, substantially as described, and for the purpose set forth.

199,327. MANUFACTURE OF BOXES. Henry C. Stone, Brooklyn, N. Y. Filed Nov. 9, 1877.

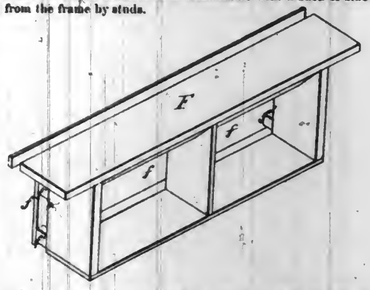
Brief.—The strips have the grain transverse to the adjacent parts. The ends may be put in with the grain running up and down; then the strips are put between the ends and top and bottom. The strips may be of different-colored wood.



Claim.—The within-described improvement in boxes, consisting of the wood strips M, arranged as shown, with the grain running transversely to the grain of the adjacent pieces, as and for the purposes herein specified.

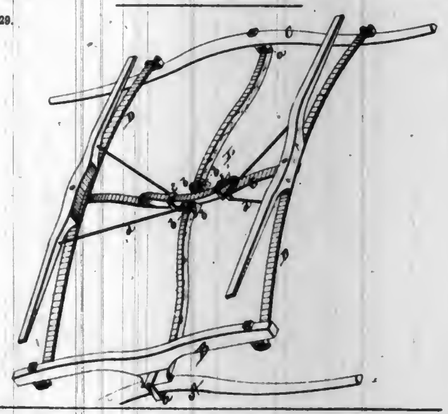
199,328. BEE-HIVES. Rabin Strawser, Nekoda, Pa. Filed June 30, 1877.

Brief.—The invention consists in a comb-frame with a back or side wall separated from the frame by studs.



Claim.—In a bee hive, the comb-frame F, having a back or side wall, *f*, separated from said frame by the studs *f'*, substantially as and for the purpose specified.

199,329.



199,329. VEHICLE-SPRINGS. George Stricker, Catawissa, Pa. Filed Nov. 21, 1877.

Claim.—1. In a vehicle having side springs D D, connecting the rear axle and front head-block, a single center perch, I I, divided in the center, and having the outer ends connected to the front and rear axles and the inner ends pivoted to a cross-brace, G, having its ends rigidly connected to the side springs, substantially as herein set forth.

2. In combination with the divided perch I I, cross-brace G, and side springs D D, with bars H H, the stays *d d*, arranged substantially as and for the purposes herein set forth.

199,330. BARBS FOR FENCE-WIRE. Spencer H. St. John, Cedar Rapids, Iowa. Filed Dec. 13, 1877.



Claim.—The barb made of a staple placed astride of the fence-wire, in combination with barb *a*, wound around the prongs of such staple, between their ends and the main wire, the whole secured in place by spreading the staple, substantially in the manner and for the purpose set forth.

199,331. POST-OFFICE BOXES. Warren H. Taylor, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Nov. 7, 1877.



Claim.—1. In a post-office lock-box, the combination of a yielding heel-pin, a bolt, and an interposed spring for causing the door to fly open when unfastened, substantially as described.

2. In a post-office lock-box, the combination of a rod and cam, so constructed and arranged with reference to a bolt and slot on the door that when turned from the rear in one direction the cam will enter the slot and fasten the door, and when turned in the other direction it will engage with the bolt and retract it and unlock the door, substantially as described.

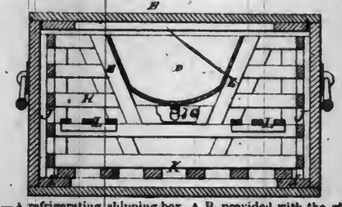
3. A metallic frame for a post-office lock-box, having its fastening flanges flush with its external edges, substantially as described.

4. In a post-office lock-box, the combination of two adjoining metallic door-frames, having lugs flush with their external edges, a partition provided with a central slot for receiving the lugs, and a pin passing through the partition and lugs, and uniting the frames, substantially as described.

5. In a post-office lock-box, a complete four-sided metallic door-frame, of one piece of metal, provided with fastening-lugs that are removed from and not flush with the inside edges of the frame, in combination with the centrally-slotted partitions for receiving the lugs, so as to conceal the latter and leave the interior walls of the box smooth and unobstructed, substantially as described.

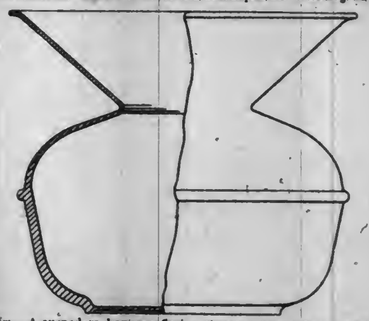
199,332. REFRIGERATOR SHIPPING-BOXES. Calvin H. Turner and Marcus C. Turner, Batavia, N. Y. Filed July 19, 1877.

Brief.—The stationary cleats F support the ice-pan, and prevent any upward movement or slipping of the racks R. The small racks L serve as braces to prevent the front and back racks H from falling toward each other. The end racks J are slid vertically down in position.



Claim.—A refrigerating shipping-box, A B, provided with the stationary cleats E E, ice-pan D, and the removable side and bottom racks, all substantially as and for the purposes herein set forth.

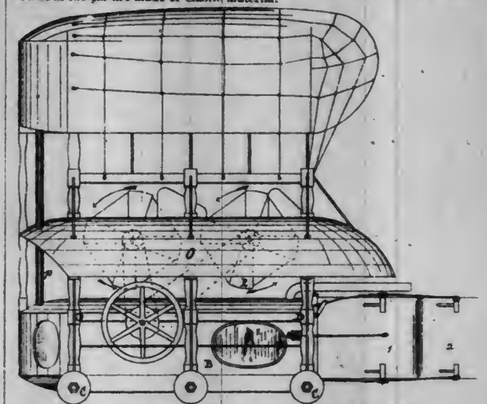
199,333. CUSPADORES. Samuel J. Van Stavoren, Philadelphia, Pa. Filed Aug. 14, 1877.



Claim.—A cuspadore having a flaring throat, a breast, base, and bottom made of a single piece of material, without joint or seam, said base or part between the breast and bottom being of greater thickness than its throat and breast, and of sufficient gravity to cause the vessel to self-right when upset, substantially as shown and described.

199,334. AERIAL VESSELS. Fritz A. L. Von Ehren, New Orleans, La. Filed July 16, 1877.

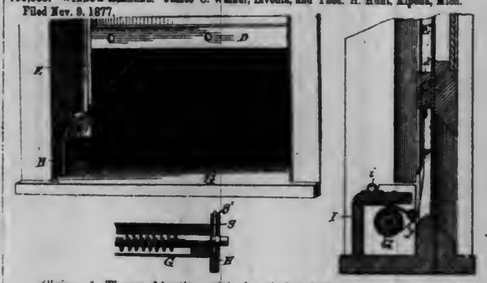
Brief.—The propelling-wheels are so constructed as to present, when pressing downward, an expanded solid flat surface to act upon the air. The wheels beneath the car are made of elastic material.



Claim.—1. In an aerial machine, the cabin or hull B, mounted upon rubber or equivalent elastic wheels C C, substantially as described.

2. The propelling-wheels E, having the blades *f* hinged to the wheels, in combination with the rods I, pins K, and grooved plate L, substantially as described.

199,335. WINDOW-SCREENS. James C. Walker, Livonia, and Thos. H. Hunt, Alpena, Mich. Filed Nov. 9, 1877.



Claim.—1. The combination, with the window sash and casing having the guides E and the spring-roller G, of the strip D, having the tongues *d* and the wire screen F secured to said strip, substantially as herein shown and described.

2. The combination, with the journal-plate H, having hole *g'*, and the pin *g*, of the spring-roller shaft, having a square portion extending beyond the journal-plate, substantially as and for the purpose herein shown and described.

3. The combination, with the spring-roller G and screen F, of the casing I, provided with the spring presser-roller J, substantially as and for the purpose herein described.

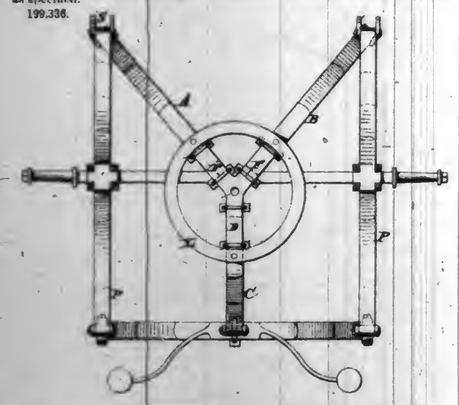
199,336. PLATFORM-SPRINGS. Marshall C. West, Spencer, assignor of one-half his right to Frank Ferris, Owego, N. Y. Filed Nov. 10, 1877.

Claim.—1. In a platform-gear for vehicles, the combination of the frame or platform D, consisting of three branching arms, the three branching springs A B C, attached to the arms of the platform, and the cross-spring N, attached

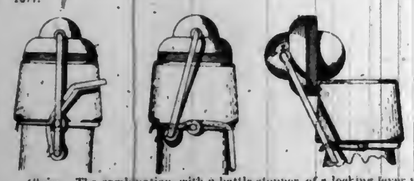
to the single spring C and to the ends of the side springs D, which are attached at their other ends to the springs A B, the whole being constructed and arranged substantially as and for the purpose described.

2. The combination of the branching springs, the frame D, and the plate I, and the straps and cross-pieces for securing the whole together, substantially as specified.

199,336.



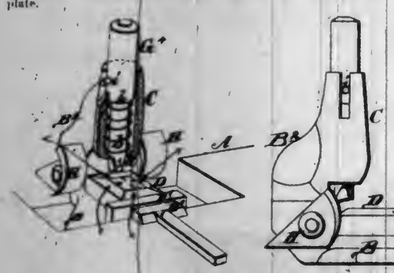
199,337. BOTTLE-STOPPER FASTENERS. Elbert D. Weyburn, Pittsburg, Pa. Filed Oct. 27, 1877.



Claim.—The combination, with a bottle stopper, of a locking lever pivoted to the bottle within its length, and a stopper yoke pivoted to the free ends of the locking lever, substantially as and for the purpose specified.

199,338. SAW-SETS. Willet C. Wheeler, Oshkosh, Wis. Filed July 23, 1877.

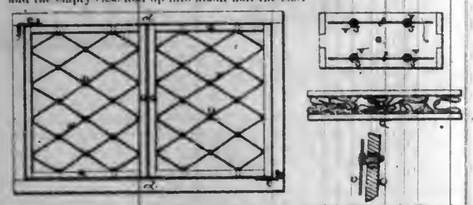
Brief.—Different dies are used to correspond with the bevels on the bed plate.



Claim.—The improved saw-set herein described, consisting of the standard B², provided with a vertical slotted socket, C, the interchangeable spring dies, having pins *c*, in combination with the adjustable bed-piece D, having four different bevels, gages D¹, recessed bench A, shoulder B¹, and key E, all constructed and operated as shown and described.

199,339. EGG-CARRIERS. Robert R. Wilkinson, Jamestown, Mich. Filed Dec. 15, 1877.

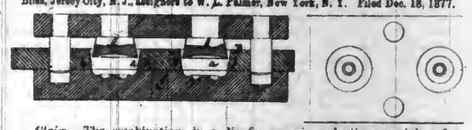
Brief.—The ends and sides are prevented from dropping inward by hooks pivoted on one and engaging in recesses on the other. The empty egg sections and the empty case fold up into about half the size.



Claim.—1. The combination of the strips *e*, provided with the hooks *e*, in combination with the end pieces having the holes *s* and wires *l*, substantially as shown.

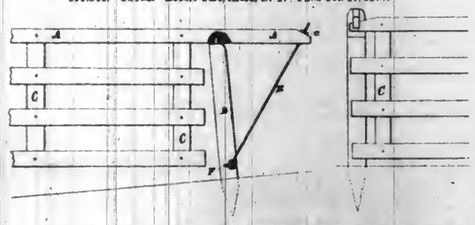
2. The egg-sections *g*, having removable ends, that are adapted to be fastened to the cloth sections, substantially as set forth.

199,340. DIES FOR FORMING ARTICLES OF ELASTIC MATERIALS. Geo. L. Winn and Jonathan Bliss, Jersey City, N. J., assignors to W. L. Palmer, New York, N. Y. Filed Dec. 18, 1877.



Claim.—The combination, in a die for pressing plastic materials, of a plunger tapering down toward its rear end, a plunger guide, provided with a hole to receive the plunger, and with a recess for the reception of the surplus material, and a matrix, corresponding in shape to the article to be produced, all combined and adapted to operate substantially as shown and described.

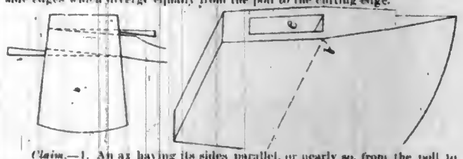
199,341. GATES. Robert Yale, Afton, N. Y. Filed Oct. 17, 1877.



Claim.—As a means for suspending the gate to or from the post D, the rearward-extended top rail A, resting upon said post, and pivoted thereto by the stud *d*, the rod E, having its threaded upper end passed through the rear end of said rail, and secured in place by the nut *e*, and the eyebolt F, secured within the lower end and rear side of said post, and having pivoted thereon the lower end of said rod, said parts being combined to operate in the manner and for the purpose substantially as specified.

199,342. AXES. Charles L. Young, Newport, Mo. Filed Feb. 15, 1875.

Brief.—The ax has an eye having square corners and parallel sides, and side edges which diverge equally from the poll to the cutting edge.



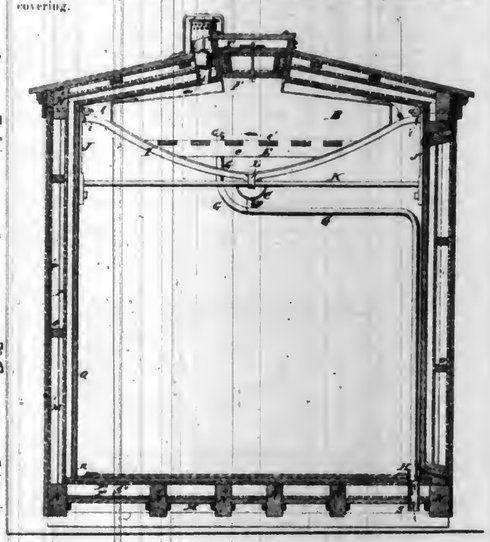
Claim.—1. An ax having its sides parallel, or nearly so, from the poll to a point, *b*, at or near the lower part of the eye, and converging from said point to the cutting-edge, its surfaces being planes, or nearly so, substantially as set forth, for the purposes herein described.

2. An ax the side edges of which diverge equally from the poll to the cutting edge, as shown, for the purposes herein described.

3. An ax provided with an eye having square corners and parallel sides, substantially as shown, for the purposes herein described.

199,343. REFRIGERATOR-CARS. Arnold W. Zimmerman, Dayton, Ohio, assignor to himself, Chas. W. Miles, Milford, Conn., and Samuel Pillsbury, New York, N. Y. Filed May 14, 1877.

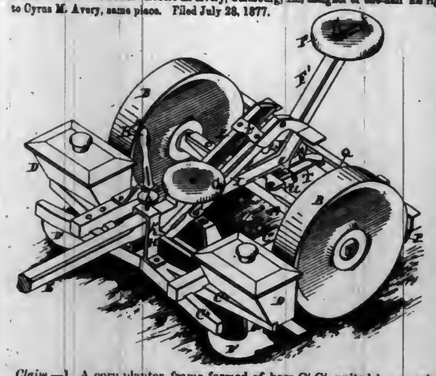
Brief.—The doors or hatchways of the cars have recesses or grooves around the edges thereof, which are filled with felt secured by linen or duck covering.



Claim.—1. The ice-receptacle, B, having an elevated ice-carrying platform, E, and elevated overflow-pipe G, substantially as and for the purpose specified.

2. In combination with the ice-receptacle B, the supporting-truss I J J' K, constructed substantially as and for the purpose specified.

199,344. CORN-PLANTERS. Robert H. Avery, Galesburg, Ill., assignor of one-half his right to Cyrus M. Avery, same place. Filed July 28, 1877.



Claim.—1. A corn-planter frame formed of bars C' C', united by an axle, A, and bracing-bars C'', substantially as and for the purpose specified.

2. The draft-pole E, hinged to standards *a*, which project in rear of the axle A, substantially as described, and for the purpose specified.

3. The draft-pole E, having the driver's seat F and the dropman's seat G, both fixed upon it, hinged to the axle A, and arranged to operate with the frame C, carrying the seeding devices and mounted on said axle, substantially as described, and for the purpose specified.

4. The levers I, hinged to the tongue E and arranged to operate with the yoke H, frame C, and axle A, substantially as and for the purpose specified.

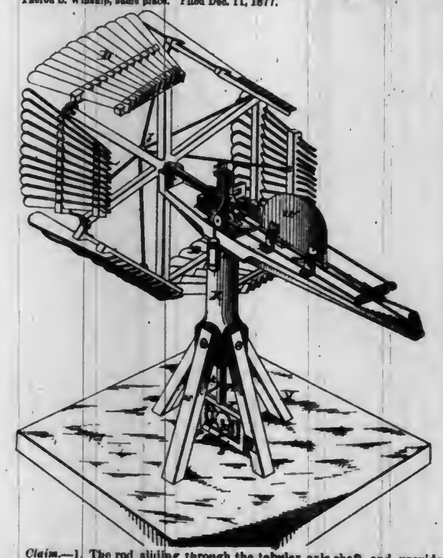
5. The catch J, pivoted to the tongue E and arranged to operate with the levers I and connecting-plate *i'*, yoke H, frame C, and axle A, substantially as described, and for the purpose specified.

6. The elbow-lever journaled on the bolt *e'*, upon which the tongue E is journaled, and combined with link T and scraper-bar Q and axle A, substantially as described, and for the purpose specified.

7. In a corn-planter, a sliding scraper-bar, Q, in combination with a link, T, hinged to the central part of the bar, so as to allow either scraper to yield, and a lever, S, hinged or pivoted to the axle of the planter, substantially as and for the purpose specified.

8. The cut-off N, having a slot, *s*, by which it is hung upon a shaft, *s'*, so that either or both of its ends may be raised, substantially as described, and for the purpose specified.

199,345. WINDMILLS. George Hedges, Racine, Wis., assignor to Eugene B. Winship and Theron S. Winship, same place. Filed Dec. 11, 1877.



Claim.—1. The rod sliding through the tubular axle-shaft, and provided at its one extremity with braces connecting directly with the fans, while its opposite end connects with the pivoted cross-bar and double-weighted cord, substantially as described.

2. The combination, with the pivoted cross-bar on the sliding-rod extremity, formed with the loop attachment, of the draw-cord running rearward over a sheave, thence in return and down through the tubular pitman, substantially as described.

3. The combination, with the wrist-pin and sliding block, of the slotted frame engaging the pitman, and made with the two vertical slots communicating with the main horizontal slot, substantially as described.

4. The combination, with the motion-frame, secured to the lower extremity of the pitman, and provided with the vertical rack sides, of the toothed segments engaging therewith, and the actuated pinion-wheel, substantially as described.

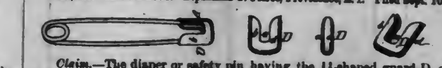
5. The combination, with the motion-frame, segmental gears, and pinion, located between the latter, of the spring-pawls formed thereon, and alternately engaging the said pinion, substantially as described.

6. The combination, with the motion-frame, of the vertical guides and cross-bar, supported upon the lower main frame-work of the mill, substantially as described.

7. The combination, with the tubular turn-post passing through the mast, and formed with the collar on its lower extremity, of the metallic plate secured to the bottom of the mast, and provided with the annular groove in the ring formation thereon, substantially as described.

8. In a windmill having a tubular mast, the combination, with the beam provided with the described wind-board, of the turn-post, adapted to have entire vertical bearings by means of the collar on its lower extremity seating into the metallic plate, which latter is secured to the bottom of the mast, said collar having a convex edge, which corresponds to the annular groove or concavity formed in the raised projection on the said bearing-plate, substantially as described.

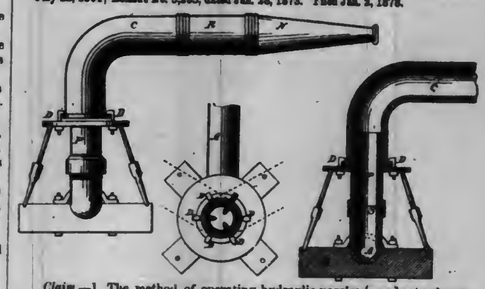
199,346. SAFETY-PINS. Zephaniah G. Pierce, Providence, R. I. Filed Sept. 10, 1877.



Claim.—The diaper or safety pin having the U-shaped guard D, open on each side to admit the pin to the catch end *b*, substantially as specified.

REISSUES.

8,037. ORE-WASHING APPARATUS FOR HYDRAULIC MINING. Joseph M. Allenwood, Timbuctoo, Cal., assignor, by mesne assignments, to Joseph Craig. Patent No. 43,466, dated July 12, 1864; Reissue No. 5,255, dated Jan. 28, 1873. Filed Jan. 2, 1873.



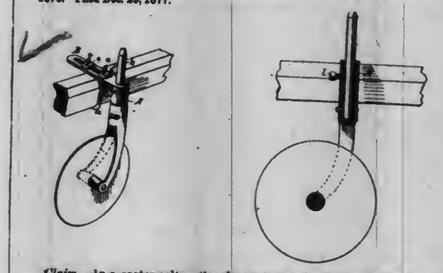
Claim.—1. The method of operating hydraulic nozzles in order to change their horizontal direction, consisting in cramping the pipe or nozzle upon the stream of water which is passing through the discharge-pipe, so as to move the machine in an opposite direction by the force of the water passing through the discharge-pipe, substantially as above specified.

2. The combination of a discharge-pipe provided with guides or diaphragms, and the elbow C, connected by a working joint with the supply-pipe A, substantially as and for the purposes above specified.

3. The combination of two elbows, C A, with the swiveling joint D, substantially as and for the purposes above described.

4. The combination of the two working joints or couplings D and E with the discharge-pipe N and supply-pipe A, by means of which both the horizontal and vertical motions are obtained, substantially as and for the purposes specified.

8,038. COLTERS. Sam T. Ferguson, Minneapolis, Minn. Patent No. 172,872, dated Feb. 1, 1876. Filed Dec. 29, 1877.



Claim.—In a caster-colter, the sleeve A, provided with the thumb-screw *l*, and having the slotted horizontal arm B, in combination with the yoke *a*, provided with the screws and nuts *c c'*, substantially as and for the purpose set forth.

8,039. BOOK-BINDING. Ira Reynolds, Dayton, Ohio, assignor to himself and Lucius D. Reynolds, same place. Patent No. 99,191, dated Dec. 21, 1869. Filed Dec. 18, 1877.

Claim.—1. A removable book-cover the back of which is made of metal.

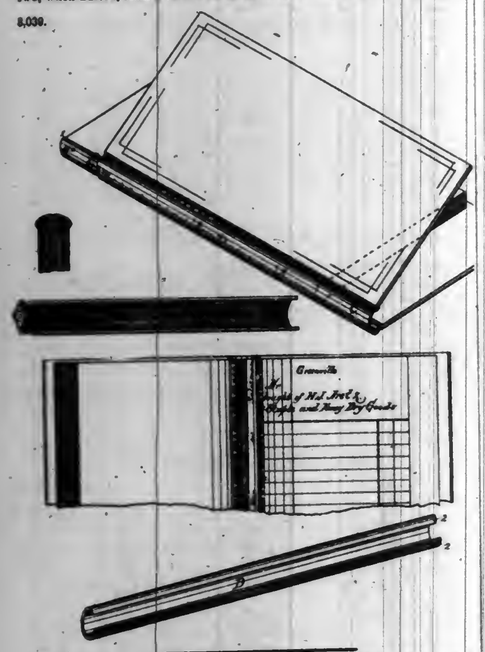
and shaped to span and grasp the back of a book, substantially as shown and described.

2. A removable, unbound, stitched book, provided with compressed and hardened longitudinal ribs 1 upon its back, adapting it to be slipped into or out of, and firmly held by, a removable cover, the back of which is shaped to span and grasp the same, substantially as shown and described.

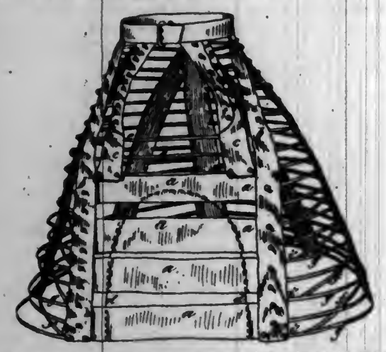
3. A book-cover the metal back of which forms an integral part thereof, and supports the two lids of the cover, and is shaped to span and grasp the back of a removable book, substantially as herein set forth.

4. A cover and book, substantially such as specified, each having a longitudinal groove or indentation, as described, and shown in Fig. 3, so that the two, when united, form a tube or chamber to receive a pencil or similar article.

8,039.



8,040. HOOP-SKIRT. Francis A. Brewster, Brunswick, Ga., assignor to himself and John W. Lebaron. Patent No. 67,158, dated July 30, 1867. Filed Dec. 6, 1877.



Claim.—1. The combination, in a hoop-skirt, of springs extending around the back only of the same, with bands of textile fabric extending across the front, and tapes running up and down for the attachment of the ends of said springs and bands, substantially as set forth.

2. The springs extending from the tape *b* around the skirt to the tape *b'*, in combination with the bands *a*, and one or more semi-elliptical springs, *d*, the whole constructed substantially as and for the purpose set forth.

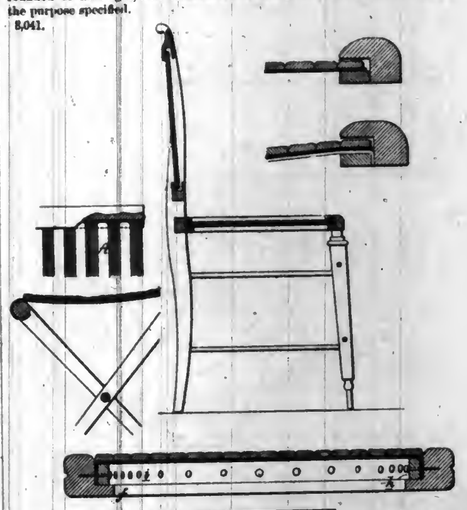
3. In a hoop-skirt divided wholly or partially down the front, the auxiliary ribs or tie-springs *f f*, arranged to operate substantially as and for the purpose herein set forth.

8,041. CHAIR-BOTTOMS. Henry S. Hale, Philadelphia, Pa. Patent No. 144,065, dated Dec. 30, 1873. Filed Dec. 17, 1875.

Claim.—1. The combination, for chair-seats and other articles of furniture, of a frame having grooves in its inner edges, with a panel composed of wooden strips united to a backing of fabric, the said panel being fitted into the grooves of the frame, and depending upon the latter for its integrity and support, all as set forth.

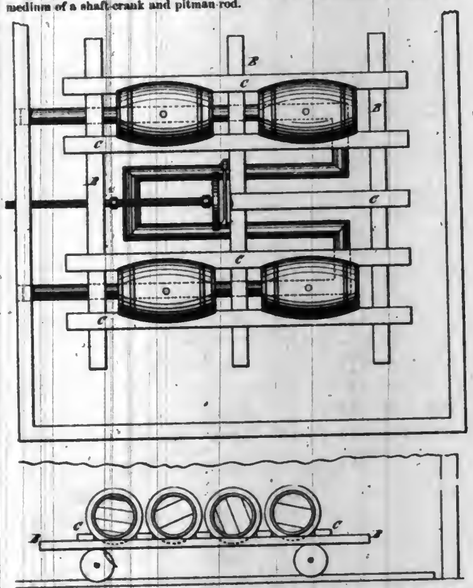
2. The within-described compound material, consisting of wooden strips, rounded at the edges, and secured to a backing of textile fabric, as and for the purpose specified.

8,041.



8,042. APPARATUS FOR AGING WHISKY AND OTHER SPIRITS. Josiah Peiffer and Samuel Richards, Valeria, Pa., assignors, by mesne assignments, to said Josiah Peiffer, Cordelia H. Peiffer, and Henry C. Johnson. Patent No. 112,485, dated Mar. 7, 1871. Filed Dec. 4, 1877.

Brief.—The liquor, in casks or barrels and subjected to a temperature of about 110° Fahrenheit in a tight room heated by steam-pipes, is agitated by a reciprocating frame or rack supported on the axles of wheels or rollers running upon rails. The barrel-supporting rack is reciprocated through the medium of a shaft-crank and pitman-rod.



Claim.—1. In combination with apparatus for moving the vessels containing the liquor, a pipe or conduit for conveying steam in suitable proximity thereto, substantially as and for the purposes set forth.

2. In an apparatus for aging liquors, a frame or rack for supporting the vessels containing the liquor, and having a reciprocating motion upon rollers, in combination with steam pipes or conduits, the rack traversing the steam-pipes, substantially as set forth.

3. In an apparatus for aging liquors, a frame, B C, mounted upon rollers R R, which move upon a suitable track, the whole combined with a crank and pitman for communicating the desired motion, substantially as shown and described.

4. In an apparatus for aging liquors, the combination of a cask or barrel supporting frame mounted upon rollers, which move upon a practically horizontal track, a crank and pitman for communicating the desired motion, and the steam-conducting pipes or conduits, the whole arranged and operating substantially as and for the purposes set forth.

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THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE

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CAVEATS.

Inventors filing caveats in the Office should be careful to describe their invention or improvement with accuracy, and illustrate such inventions as are capable of illustration with care and thoroughness.

Caveats are placed in the hands of the Examiners, who should not be expected to understand what the inventor means unless the latter has sufficiently matured his invention to clearly describe and illustrate it.

Caveats are sometimes filed in the Patent Office stating that the caveator is engaged in a series of experiments intended to accomplish certain results, and giving nothing more than a vague hint of the means by which the result is to be attained. As the courts have frequently decided that results are not patentable, the practice of the Patent Office is to the effect that a caveat cannot cover more ground than a patent. So, where a caveat describes more than one invention, the Examiner frequently overlooks a portion of the caveat, knowing that under the rules caveators are confined to a single invention.

Complaints are often made that caveats have been overlooked, and patents issued to subsequent applicants, when the fault lies in the hasty preparation of the caveat papers. The rules are explicit, that the caveat must describe the invention as fully as the inventor is able to do; that the drawings shall be of the same size as the drawings to accompany an application for a patent, (8 by 13 inches, on a sheet 10 by 15 inches, with an inch margin all round,) and on tracing-muslin, or light bristol-board or drawing-paper, which can be folded without breaking. A careful compliance with the rules will greatly facilitate the work of the Office, and will go a long way toward insuring the accuracy which is so necessary in securing their just rights to inventors.

PRICE OF THE GAZETTE.—The price of THE OFFICIAL GAZETTE is still fixed at $6 per annum, and there is no reduction from that price except where five subscriptions are included in one order, when the subscription is $5; and subscribers can be added to this club, by the party or parties forming it, any time during the year, at the reduced price.

The Annual Index will not be furnished to subscribers hereafter without extra charge; but immediately after the expiration of each volume a Half-yearly Index will be given without charge, and should additional copies of the Half-yearly Index be desired, they will be furnished upon the payment of fifty cents for each additional copy required.

EXTRA COPIES OF THE GAZETTE.—The letter-press of THE GAZETTE has been prepared with a view of meeting the demand for extra copies of that particular portion which relates to Office practice, decisions of the courts, &c.

Extra copies of the letter-press can be had separately from the illustrated portion, and the weekly index of patents and patentees can be had in any number at 5 cents per copy. Where extra copies of either the letter-press or weekly index are desired orders must be sent to the Office as early as the Saturday preceding the issue of the following Tuesday.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

THE DECISIONS FOR 1877.—The decisions of the United States courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

TO SUBSCRIBERS.—Great care will hereafter be taken in mailing THE OFFICIAL GAZETTE to subscribers, and in case of its non-receipt the fault will not be in the Patent Office. When each issue shall have been mailed, the Office will assume that it has done its duty by the subscribers, and will not send extra numbers except upon receipt of 10 cents for each copy ordered.

BOUND VOLUMES FOR 1877.—The bound volumes of THE OFFICIAL GAZETTE for 1877 are now ready for distribution, and can be procured, in full law binding, for $8, and in half-calf for $7. The Annual Index for 1877 will not be ready for distribution, either to subscribers or purchasers of the bound volumes, before the 1st of May, 1878.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

The New Classification.

The commission appointed by the Commissioner of Patents to revise the Official Classification of Subjects of Invention has completed its labors, and the following classification has been adopted, and will supersede the one now in use.

CLASSES OF INVENTIONS.

Advertising	40	Cordage	28
Aeration and bottling	1	Crinoline and corsets	29
Apparel	2	Curtain-fixtures	156
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The above classes have been grouped, for Office purposes, to form the following—

DIVISIONS.

Division No. 1, Tillage. *Examiner*, Fox. *Classes:* Harrows and Diggers, 55; Plows, 97; Seeders and Planters, 111.

Div. No. 2, Farm Stock and Products. *Examiner*, Jayne. *Classes:* Bee Culture, 6; Brushing and Scrubbing, 15; Butchering, 17; Dairy, 31; Fences, 39; Care of Live Stock, 119; Tobacco, 131; Vegetable Cutters and Crushers, 146.

Div. No. 3, Metallurgy, Distillation, and Refrigeration. *Examiner*, Dyrenforth. *Classes:* Fishing and Trapping, 43; Gas, 48; Refrigeration, 62; Metallurgy, 75; Ore, 90; Metal Coating, 96; Distillation, 124.; Sugar and Salt, 127.

Div. No. 4, Civil Engineering. *Examiner*, Pond. *Classes:* Bridges, 14; Carpentry, 20; Excavating, 37; Hydraulic Engineering, 61; Masonry, 72; Railways, 104; Roofing, 108; Curtain Fixtures, 156.

Div. No. 5, Fine Arts, Toys, and Apparel. *Examiner*, Burke. *Classes:* Apparel, 2; Crinoline and Corsets, 29; Educational Appliances, 35; Fine Arts, 41; Games and Toys, 46; Jewelry, 63; Music, 84; Photography, 95; Toilet, 132; Umbrellas and Fans, 135.

Div. No. 6, Chemistry. *Examiner*, Antisell. *Classes:* Brewing and Fermenting, 7; Bleaching and Dyeing, 8; Chemicals and Medicines, 23; Explosives, 52; Fertilizers, 71; Oils, Fats, and Glue, 87; Painting and Graining, 91; Preserving, 99; Hides, Skins, and Leather, 149.

Div. No. 7, Harvesting and Milling. *Examiner*, Parkinson. *Classes:* Brakes and Gins, 13; Garden and Orchard, 47; Harvesters, 56; Mills, 83; Thrashing, 130.

Div. No. 8, Furniture, Bread Making, and Laundry. *Examiner*, Tilden. *Classes:* Beds, 5; Furniture, 45; Laundry, 68; Bread, Cracker, and Lozenge Making, 107; Washing Apparatus, 141; Chairs, 155.

Div. No. 9, Hydraulics and Pneumatics. *Examiner*, Durnall. *Classes:* Aeration and Bottling, 1; Baths and Closets, 4; Pneumatics, 98; Pumps, 103; Water Distribution, 137; Water-Wheels, 138.

Div. No. 10, Carriages, Wagons, and Railway-Cars. *Examiner*, Sanders. *Classes:* Carriages and Wagons, 21; Railway-Cars, 105.

Div. No. 11, Leather Working, Machines, and Articles. *Examiner*, Chapman. *Classes:* Boots and Shoes, 12; Clasps and Buckles, 24; Harness, 54; Hose and Belting, 60; Leather, 69; Tanning, 129; Trunks and Equipments, 133.

Div. No. 12, Mechanical Engineering. *Examiner*, Schoepf. *Classes:* Hoisting, 57; Journals and Bearings, 64; Household Articles, 65; Mechanical Powers, 74; Presses, 100.

Div. No. 13, Metal Working. *Examiner*, Church. *Classes:* Chains, Staples, and Horseshoes, 59; Hardware Making, 53; Metal Bending and Straightening, 153; Metal Bolts, Nuts, Rivets, and Screws, 10; Metal Boring and Drilling, 77; Metal Forging, Punching, and Shearing, 78; Metal Personal Ware Making, 79; Metal Rolling, 80; Metal Tubing and Wire, 134; Metal Tools and Implements Making, 76; Metal Turning, Planing, and Milling, 82; Nails, Spikes, Needles, and Pins, 85; Nut and Bolt Locks, 151; Arms Making, 86; Wagon, Car, and Track Irons, 152.

Div. No. 14, Metal Working, Grinding, and Polishing, and Packing Vessels. *Examiner*, Stocking. *Classes:* Grinding and Polishing, 51; Metal Founding, 22; Metal Tempering, Annealing, and Cementation, 148; Metal-Working Tools, 81; Packing and Storing Vessels, 150; Sheet Metal Ware Making, 113; Wire Working, 140.

Div. No. 15 Plastics. *Examiner*, Hedrick. *Classes:* Artificial Stone, Lime, and Cement, 106; Caoutchouc and Minor Plastics, 18; Clay and Pottery, 25; Composite Roofing, 154; Felting and Hats, 38; Fuel, 44; Glass, 49; Paving, 94; Paper Making, 92; Stone Working, 125.

Div. No. 16, Electricity, Measuring Instruments and Optics. *Examiner*, Townsend. *Classes:* Drafting, 33; Electricity, 36; Horology, 58; Measuring-Instruments, 73; Optics, 88.

Div. No. 17, Printing and Paper Manufactures. *Examiner*, Freeman. *Classes:* Advertising, 40; Book-Binding, 11; Paper Manufactures, 93; Printing, 101; Stationery, 120.

Div. No. 18, Steam Engineering. *Examiner*, Fowler. *Classes:* Driers, 34; Fluid-Pressure Regulators, 50; Locomotives, 123; Steam-Boilers, 122; Steam-Engines, 121; Steam-Furnaces, 110; Steam-Valves, 136.

Div. No. 19, Stoves and Lamps. *Examiner*, Catlin. *Classes:* Lamps and Gas-Fittings, 67; Stoves and Furnaces, 126.

Div. No. 20, Surgery and Hardware. *Examiner*, Wilkinson. *Classes:* Artificial Limbs, 3; Builders' Hardware, 16; Coffins, 27; Cutlery, 30; Dentistry, 32; Locks and Latches, 70; Safes, 109; Surgery, 128.

Div. No. 21, Textiles. *Examiner*, Appleton. *Classes:* Carding, 19; Cloth, 26; Cordage, 28; Knitting and Netting, 66; Sewing-Machines, 112; Silk, 117; Spinning, 118; Weaving, 139.

Div. No. 22, Guns, Ships, and Wood Working. *Examiner*, Bartlett. *Classes:* Boats, 9; Coopering, 147; Fire-arms, 42; Marine Propulsion, 115; Ordnance, 89; Projectiles, 102; Ships, 114; Signals, 116; Wood-Turning, 142; Wood-Working Machines, 144; Wood-Working Tools, 145; Wood-Sawing, 143; Wheelwright Machines, 157.

The classes of inventions have been grouped into these twenty-two Divisions, the primary object being to separate the work of the Office into parts, each capable of being handled by a single Examiner. So far as possible the Divisions have been constituted of cognate inventions. This rule could not be strictly followed, however, because the number of classes to be assigned to any one Division must be determined by the amount of work which the classes so grouped would impose upon an Examiner and the force at his command, usually three or four Assistant Examiners and a clerk. Hence, the Divisions here noted are rather divisions of the Office work than divisions of inventions; therefore, persons ordering copies will order by the Class number rather than the Division number. Under each one of these classes there are several sub-classes upon which the Examiners are at present at work. As soon as they are completed they will be published, together with the present information in relation to the new classification.

Of the above classes, all have been photo-lithographed except Artificial Limbs, Class 3; Builders' Hardware, Class 16; Coffins, Class 27; Coopering, Class 147; Cutlery, Class 30; Dentistry, Class 32; Locks and Latches, Class 70; Locomotives, Class 103; Nut and Bolt Locks, Class 151; Safes, Class 109; Steam-Boilers, Class 122; Steam-Engines, Class 121; Steam-Furnaces, Class 110; Steam-Valves, Class 136; Surgery, Class 128; Wheelwright-Machines, Class 157; Wood-Sawing, Class 143; Wood-Turning, Class 142; Wood-Working, Class 144; Wood-Working Tools, Class 145; and these are all being reproduced, and before the end of the year it is expected that photo-lithographic copies of the drawings of any patent ever issued by the Government can be obtained in this Office for 25 cents per single copy, or 10 cents each where more than twenty copies are desired. A photo-lithographic copy of any current issue (specification and drawing) can be had at the same price.

The specifications of all patents issued since July 1, 1871, are in print, and will be furnished, with the drawing, without extra charge. The specifications of most of the patents issued from November 20, 1866, to July 1, 1871, are in print, and where such is the case the Office will furnish them with the drawings; but it will not undertake to reprint copies which have been exhausted.

COMMISSIONER'S DECISIONS.

STEARNS *vs.* PRESCOTT.—*Interference.*

[*In the matter of the interference between the application of Henry A. Stearns, filed May* 20, 1876, *and the patent of Charles H. Prescott, No.* 175,255, *January* 17, 1876, *for* "IMPROVEMENT IN MACHINES FOR FOLDING BATTING OR WADDING."—*Decided December* 1, 1877.]

Public use and sale of the invention under circumstances fatal to the grant of a patent having been disclosed in the testimony of an interference contestant, he was not permitted to explain away its force by additional *ex parte* evidence.

Such testimony may have entered materially into the determination of the question of priority. To present it for one purpose, and, after favorable award, to allow it to be assailed for another, might result in the reversal of the former award, and would be a bad precedent as well.

After expiration of limit of appeal, and in event none is noted by the adverse (the defeated) party, the application remanded to the Primary Examiner to ascertain whether the statutory bar of public use or sale is established by the testimony.

DOOLITTLE, *Acting Commissioner:*

In the above-named interference the Examiner found that Stearns, the applicant, was the first and original inventor, but that the invention was reduced to practice by him, and publicly sold for more than two years prior to the date of filing his application. This being a statutory bar to the grant of a patent to Stearns, the Examiner, while awarding priority to him, at the same time reports this fact to the Commissioner, as provided by Office Rule 59.

Counsel for Stearns now requests that he be allowed sufficient time to file affidavits to fully explain all matters relating to his invention, its conception and reduction to practice, in order to establish conclusively that the use prior to the time provided for by law was of an experimental character, and should not operate to deprive Stearns of his patent.

The limit of appeal not having expired, the case does not become *ex parte* until that time; but it is just as well to now render my decision on this request, as it will not affect the future proceedings of the case, should either appeal be taken or the case be returned to the Primary Examiner, without an appeal upon the question of priority, to determine the matter of abandonment on the part of Stearns.

The very purpose of the interference was to develop the history of the invention on the part of the contestant, and it was necessary for the applicant to adduce proof showing not only that he had completed this invention experimentally, but had actually reduced it to practice before the patentee, in order to establish priority against the latter.

The fact of abandonment by public use or sale should be established by indubitable proof; and if there is any doubt upon this point, that doubt should be resolved by the Office in favor of the applicant, so that if the proof in this case is not sufficient to establish that fact clearly and unequivocally, Stearns will be allowed his patent. On the other hand, if the proof of public sale for more than two years prior to the filing of his application is established against Stearns by the testimony already taken, it would be simply disproving his own case by counter-affidavits to allow him to now show that such was not the fact. It would be establishing a very bad precedent, indeed, if, after a party has set forth the dates of the conception, completion, and use

of his invention in a proceeding especially adapted for that purpose, he were allowed, upon obtaining an award of priority, to proceed to rebut or explain away the very proof, perhaps, upon which such judgment had been based. The effect of the affidavits now proposed to be taken by the applicant might be of that character that, if originally considered by the Examiner of Interferences, would possibly have changed his opinion or materially modified his decision on the question of priority, especially as against a patentee.

It will be seen that the Examiner of Interferences does not rest his report as to abandonment alone upon public use of the invention by applicant for more than two years prior to his application, but also upon the fact of sale. Now, a single instance of sale for profit, or offering for sale, is sufficient to create a statutory bar, whereas mere use may be experimental. Whatever the character, then, of the applicant's use of his invention may have been, if the proof is clear that the completed invention was sold, or offered for sale, by him more than two years prior to the filing of his application, there is no discretion left to the Office or to the courts. The law is inflexible on this subject. (*Sisson* vs. *Gilbert*, 5 Fish., 109; *Blandy* vs. *Griffith*, 3 ib., 617.)

The request is denied, and the case will remain suspended until the time of appeal has expired; and if the patentee has not, during that time, taken his appeal, the case will be remanded to the Primary Examiner to consider the testimony, in view of the report of the Examiner of Interferences, and decide thereon in accordance with the above principles.

R. W. HAMILTON.—*Ex parte.*

[*Interlocutory appeal from the decision of the Primary Examiner in the matter of the application of Robert W. Hamilton for* "INDEPENDENT CONDENSING MECHANISM FOR STEAM-ENGINES," *filed August* 29, 1877.—*Decided November* 22, 1877.]

Division of an application required where distinct inventions pertaining to steam-condensing apparatus, to air-pumps, and valve-rods, were embraced in it.

In one sense the inventions relate to steam-engines, but in an advanced state of the art specific improvements of an original machine may arise which will be equally applicable to every species of the machine. It is absolutely necessary to keep such matters within well-defined limits of classification.

SPEAR, *Commissioner:*

The questions at issue relate to a division of the application. I understand the Examiner to decide that each of the combinations separately claimed in this application should be the subject of a distinct application, on the ground that they are distinct inventions relating to well-recognized classes.

The questions are not easy to decide, as the Office, on the one hand, would avoid imposing any hardship upon an applicant by requiring separate applications for what might be included in one; and, on the other hand, would avoid the confusion which would, in the present condition of the arts, necessarily result from indiscriminately including in one patent matters known and recognized as belonging to distinct classes. In an advanced state of the art subdivision becomes more and more necessary, and that which was before known only as a part of a machine may become a distinct subject-matter of improvement—improvement not relating directly to the whole machine, but specifically confined to a part of the original machine and applicable to that part, whether used in a machine of one class or another.

It is absolutely necessary, both for the Office and the public, to keep such matters within well-defined limits of classification; otherwise it will be impossible for either to keep accurately advised as to the state of the art in any particular class.

In the case under consideration applicant states that his "invention relates to an independent condensing mechanism which can be attached to and used in connection with any ordinary steam-engine."

His first claim is for—

A combined air-pump and coudenser for steam-engines, in which the air-pump, constructed and arranged as set forth, is contained in the base of the condenser, and is operated by an indendent steam-cylinder.

This claim covers the organization referred to above. The apparatus is made up of an air-pump, condenser, and independent steam-cylinder, all old elements, but, as is alleged, organized in a new manner. That is the leading feature of the invention. Undoubtedly any minor features of this machine as a newly-organized apparatus would be patentable in the same patent. But the second claim is for—

The water-packing space Q around the plunger of the air-pump, in combination with the pipe M, leading from the condensing-chamber, or other equivalent device for supplying it with water.

It is the pipe M which brings the water from the condenser to the water-packing space; but, evidently, in the phrase "other equivalent device," anything which will bring the water to the packing-space may be included. This claim is, therefore, for no more than the simple packing, applicable, as the Examiner says, to pistons in various uses, and belonging to a distinct class of inventions. It is a part of this organization as a brake is a part of the organization of a complete railway-car; but the patenting of it as an improvement in water-packing in the patent purporting to be for a newly-organized "independent condensing mechanism" would lead directly to the confusion guarded against by the policy of committing but a single invention in one patent.

It is also true of the third claim that it is not for an improvement in the new organization, but for an improvement in air-pumps. I see no reason, however, why the second and third claims, being improvements in air-pumps, should not be both included in one application. There appears to be no special application of the valve-rod to this condensing apparatus. It might be applied as well, as the Examiner says, to engines used for other purposes. It is an improvement in a well-defined class. The first claim pertains to one application, the second and third to another, and the fourth to another.

The decision of the Examiner is affirmed.

YOST AND WARNER *vs.* POWELL.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of Yost and Warner, filed October* 13, 1875, *and the application of Powell, filed May* 27, 1875, *for* "IMPROVEMENT IN HARVESTERS."—*Decided November* 26, 1877.

In a second interference controversy over the same subject-matter, a motion made at final hearing of the question of priority to admit certain new claims and remand the case to the Primary Examiner to determine their patentability was refused for want of sufficient reason.

Favorable action respecting the claims would reopen the cause for additional testimony. Since the emphatically novel element in the new claims is already embodied in those stated in the issue, a neglect to take satisfactory evidence relating thereto, which has not been the case, would be inexcusable.

An employer is entitled to use the suggestion or invention of an employé which is an improvement ancillary to a preconceived plan of reorganizing an old machine.

SPEAR, *Commissioner:*

Immediately before the hearing on appeal from the Board in this case, a motion was made to remand the case to the Primary Examiner, with instructions to examine new and enlarged claims. This motion contemplated, if the decision and the claims should be favorable, the reopening of the case for the taking of new testimony on behalf of Powell as to the enlarged claims.

It was alleged that the testimony had been taken in relation only to the combination which the Commissioner in the former interference on this same subject-matter had declared to be the true issue, and, further, that it was now discovered by Powell that he was entitled to make broader claims, and specifically to claim at least one element of the combination as new in itself.

It did not appear to me from the presentation then made that the case should be reopened; but final decision was reserved on that point until after hearing on the question of priority. After more thorough examination I find nothing to change the conclusion then reached.

One important element of the combination which constituted the original issue was what is called the "horn" upon the forward end of the frame. With the motion to reopen, the new claims proffered by Powell more particularly related to this element. Of these claims it may be said that the first is not for patentable subject-matter. The horn alone has no significance or use. It is only in combination with the chain and other parts that it becomes of importance. Further, as it was the main element in the combination, and emphatically the novel part of the construction, I think Powell could not be excused for failure to put in all the testimony in his possession in regard to it. As a matter of fact, he did testify, as well as other witnesses on his behalf, as to the making of this special element. The wrought-iron horn, alleged to have been made by Graves, under Powell's directions, in the spring of 1870, is specifically referred to in the testimony, both by Powell and by Graves. (New testimony, Int. 13, Graves; Int. 4, Powell; and Cross-Int. 13, Powell.) To reopen this case now in this second interference on the same subject-matter, and after so long a lapse of time, would require reasons much stronger than those presented.

On the question of priority of invention the decisions of the Examiners-in-Chief and Examiner of Interferences agree. A great mass of irrelevant testimony was taken, and, as is usual when parties working at first harmoniously afterwards fall out, the contest has been conducted with bitterness.

Amid all the contradictions, it is clear that Powell was in the employ of Yost when the invention was made; that the invention was an improvement ancillary to the preconceived plan of reorganizing the "Climax" machine, for the construction of which reorganized machine Powell and other workmen had been employed by Yost. I agree with the Examiner of Interferences, that Yost was entitled to use the suggestions of Powell as to the arrangement of the chain and pulley in the end of the horn, granting that Powell made them first. Of this, however, I am not convinced.

I find nothing in the record sufficient to warrant the refusal of a patent to Yost and Warner as joint inventors. They were doubtless in consultation when the invention was in progress. This is enough to justify their claim. The Office does not undertake to go behind the oath of joint invention, unless it appear from the evidence that such joint invention was impossible.

The decision of the Examiners-in-Chief is affirmed.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Northern District of New York.

MARGARET BURRALL *et al. vs.* JOHN A. RUMSEY *et al.*

[*Suit was brought upon Letters Patent No.* 38,002, *William D. Burrall, assignee, granted March* 24, 1863, *for* "IMPROVEMENT IN CORN-SHELLERS."]

A possible difference between a patented device and another known to the trade long before the date of the patent, indicated only by a statement of result in the specification, will not suffice to establish a difference in invention.

To establish this diversity it will not do to rely on describing the result attained; the description must show *how* it can be attained.

OPINION.—*November* 12, 1877.

WALLACE, *J.:*

If the corn-shellers made and sold by the patentee, and in public use more than two years prior to the application for his patent, embody the same invention as that described in the patent, this action cannot be maintained. The patent is for an improvement in corn-shellers, which—

Consists in the peculiar shape and mode of applying the spring that keeps the ear into the angle formed by the face-plate and feed-wheel, whereby the ear is free to revolve without obstructions, whatever size or shape it may be.

The spring is described as—

Attached to the upper part of the hopper, and so shaped that the shank thereof shall be contained within a recess in the hopper, which commences at the point in the hopper where the spring is attached, and the lower end curved so as to come sufficiently near the angle formed between the face-plate and feed-wheel to press the ear to the shelling operation, the shank remaining in the recess, and not presenting any obstruction to the rotation of an ear in the hopper, even if the same is very crooked, while the end of the spring presses the ear to the shelling operation.

The machines made and sold by the patentee many years before the application for the present patent exhibit a spring attached to the hopper, so shaped that the shank is contained within the recess in the hopper, which commences where the spring is attached, and the lower end of the spring is curved so that it comes sufficiently near the angle formed between the face-plate and feed-wheel to press the ear of corn to the shelling apparatus.

The sole question is, Does the patent describe a spring or a recess, or both in combination, differing from the construction of the old machine? The drawings do not afford any aid. The old machines embody every feature in the description, except that it may be claimed that the spring does not play into the recess to the same extent. The description does not point out how the spring and recess are to be constructed, severally or in relation to each other, so that the spring will play into the recess in any different manner than in the old machines. It will not do to rely on describing the result attained; the description must show how it can be attained, and that is not done by such generalities as are here indulged in. The specification deals with a spring and recess undistinguishable from those of the old ma-

chines, unless it is because they are so constructed "as not to present any obstruction to the rotation of the ear in the hopper."

This language describes a result which it has taken the patentee twenty years, according to the proofs, to accomplish, and which, upon his theory, involved not alone mechanical skill but invention to attain it.

The bill is dismissed with costs.

U. S. Circuit Court—Southern District of New York.

BULLOCK PRINTING PRESS COMPANY *vs.* GEORGE JONES, AS TREASURER OF "THE NEW YORK TIMES;" GEORGE JONES, AS FOR HIMSELF; EDWIN B. MORGAN, LOUIS J. JENNINGS.

[*In Equity.—October Term*, 1877.]

Claim 9 of Letters Patent No. 38,200, granted to Bullock, Adams, and Selden, April 14, 1863, for "improvement in printing-machines," construed to be for a combination of the sheath with the fixed knife in the same cylinder. It is new and patentable.

Adverse knowledge and use of the device claimed, prior to the patentees' invention thereof, on a machine which was never completed, the device itself not being patented or otherwise given or made accessible to the public until long after the issue of complainant's patent, will not invalidate the exclusive right of the patentees.

The grippers which operate, in conjunction with the sheath and knife, to seize and conduct forward the severed end of the paper web, form no part of the patented combination. That they are referred to in describing one of the purposes of the invention does not include them in it; hence, where other means in lieu of the grippers were employed to advance the web, infringement of the combination existed none the less.

Notwithstanding the use of the infringed combination was stopped upon suit brought, an injunction and account were decreed. The defendants have made no disclaimer of the right to use, nor does it appear that the previous use, though disadvantageous to themselves, was without damage to complainants. Moreover, there may be other evidence as to profits on an accounting.

[*B. F. Lee* and *F. C. Bowman*, for complainants; *Charles F. Blake*, for defendants.]

OPINION.—*January* 17, 1878.

WHEELER, *J.*:

Upon hearing this cause on bill, answer, replication, proof, and argument of counsel, it appears that the orator is the owner of Patent No. 38,200, dated April 14, 1863, issued to William Bullock, Calvin Adams, and George S. Selden, for an improvement in printing-machines alleged to have been invented by Bullock. The foundation of the claim for relief in this suit is that part of the patent embraced in the ninth claim, and the corresponding part of the specification. The defendants resist the claim for relief on the ground that this part of the patent is invalid for the reason that, as they claim, Bullock is not the original and first inventor, and also for that, according to the construction of the patent that they insist upon, they have not infringed upon it.

They have set up in their answer, in support of their claim of prior knowledge and use by others, an English patent to one Cowper in 1828, a description of which was deposited in the Astor Library in New York; a patent to one Beaumont in 1853, to one Beach in 1857, to Hoe in 1859, and prior knowledge and use by Hoe and one Tucker. They have also put in evidence a provisional specification for a patent filed by one Green in 1853.

The specification in Beach's patent describes some devices as being such that may be used, which are more like those in the orator's patent in this respect than any of the others except Tucker's, and have been principally relied upon in the argument, with Tucker's, to show that Bullock was not the original and first inventor of this contrivance. This part of the orator's patent is for the employment of a yielding sheath in two strips, pressing outward, one on each side of a fixed knife in a revolving cylinder, for two purposes—one to hold the paper firmly against the edges of the groove for the knife in the opposite cylinder while the knife severs it, the other to hold the end of the web till it is taken by other machinery and drawn along for the next operation. Beaumont's patent was for a knife moved by a lever and cam outward. Beach's was for an improvement on Beaumont's in respect to the method of moving the knife, and mentions such strips as compose this sheath in connection with an outward moving, but not with a fixed, knife.

This patent is really for the combination of the sheath with the fixed knife in the same cylinder. The other combination is of a springing knife, with a sheath in the same or opposite cylinder, and is essentially different. The prior knowledge and use by Hoe and Tucker were the same, and rest upon the testimony of Tucker, not, however, in any wise controverted. Nor is it disputed that the device put together by them, as stated in his testimony, was substantially the same as that invented by Bullock. Nor is it claimed upon any evidence that Bullock in any way learned of this device from Hoe or Tucker, or from their invention, nor that he is not an original inventor of it, believing himself to be the first inventor, but only that in fact he was not the first inventor.

From the testimony of Tucker it appears that they made this device for a part of a machine to be called a perfecting-press, which they never completed, and that they kept this part of it so far to themselves that they did not give it to the public, nor suffer them to acquire it under a patent or otherwise until long after Bullock's invention.

The statutes on this subject, as embodied in sections 4886 and 4920 Rev. Stats. U. S., would defeat the patent and orator's right of recovery if the invention was known to or used by others in this country, or if Bullock is not only an original but also the first inventor of it.

In *Gayler* vs. *Wilder*, 10 How., 491, Taney, Ch. J., delivering the opinion of the majority of the court upon the effect of these statute provisions in connection with others bearing upon their construction, said that "by knowledge and use the legislature meant knowledge and use existing in a manner accessible to the public." That when the means of obtaining the knowledge would not be within their reach, as far as other interest was concerned, it would be the same as if the improvement had never been discovered. And when an inventor by the efforts of his own genius brings an invention to them, and places it in their possession, the law regards him as the original and first inventor, and protects his patent, although the improvement had been invented before and used by others. Upon this construction of the law, Bullock, although not literally the first, is in law the first inventor of this improvement, and the knowledge and use of it by Hoe and Tucker, as stated, do not invalidate the patent.

It further appears, that when this suit was brought the defendants were using a yielding sheath composed of strips, one on each side of the knife, as described in the orator's patent, but not grippers to seize and conduct forward the end of the web. The patent, as to this part of it, is for a new combination and arrangement of known parts, and not for any of the parts by themselves. If the true construction of the language of the patent is, that the grippers are a part of the combination patented, as has been urged for the defendants, the combination used by them may be so different from that patented in the orator's patent that the use by the defendants is not an infringement. But the grippers are not mentioned in the claim as any part of the device for which the patent was claimed. They are referred to in describing one of the purposes of the invention, but not as a part of the invention itself. It is not considered that this reference to them included them in the combination patented. So it appears that the defendants were using the device patented, and infringing the patent. After the suit was brought they stopped using it, and commenced using something else, according to the testimony, of equal advantage to them. It is suggested that because they have stopped using it there should be no decree for an injunction, and that there can have been no profits, and for that reason there is no occasion for an account.

But the defendants have not disclaimed the right to use the invention, nor does it appear that the use which was an infringement may not have occasioned damage to the orator, although not advantageous to the defendants, and, besides, there may be other evidence as to profits on an accounting. It is ordered hereupon that a decree be entered for an injunction and account, with costs to the orator.

U. S. Circuit Court—Eastern District of Pennsylvania.

JOSEPH L. PENNOCK *vs.* HORACE A. BEALE.

[*In Equity.—Before* MCKENNAN, *Cir. J.—Decided January* 17, 1878.]

Letters Patent No. 153,110, *granted to Joseph L. Pennock, July* 14, 1874, *for* "IMPROVEMENT IN PUDDLING-FURNACES," *declared valid.*

[*Charles Howson*, for complainant; *N. Sharpless*, for defendant.]

DECREE OF COURT.

MCKENNAN, *Cir. J.*:

And now, to wit, this 17th day of January, 1878—

This cause having been brought to final hearing upon the pleadings and proofs, and counsel for the parties respectively having been heard thereupon, and the same having been duly considered by this court, it is found, and hereby ordered, adjudged, and decreed, that the letters patent numbered 153,110, granted to Joseph L. Pennock, July 14, 1874, for improvement in puddling-furnaces, and set forth in the bill of complaint filed, are good and valid, and that the title thereto is duly vested in the complainant.

And it is further ordered, adjudged, and decreed that the defendant has disturbed, violated, and infringed the exclusive right of the complainant under the said letters patent as in said bill set forth.

And it is further ordered, adjudged, and decreed that the complainant do recover of the defendant the profits, gains, savings, and advantages made by the said defendant in consequence of the said infringement and violation of the exclusive rights of the complainant under the said letters patent, together with the damages the complainant has sustained thereby, and the costs, charges, and disbursements in this suit to be taxed.

And it is further ordered, adjudged, and decreed that it be referred to John Cadwalader, Jr., Esq., as master, to ascertain and take, and state and report to the court, an account of the gains, profits, savings, and advantages which the said defendant has received, or which have arisen or accrued to him from infringing the said exclusive rights of the said complainant under the said letters patent, as well as of the damages the complainant has sustained thereby.

And it is further ordered, adjudged, and decreed that the complainant in such accounting have the right to cause an examination of said defendant, *ore tenus* or otherwise, and also the production of the books, vouchers, and documents of defendant, and that the said defendant attend for such purpose before said John Cadwalader, Jr., Esq., master, from time to time, as said master shall direct.

And it is also further ordered, adjudged, and decreed that a perpetual injunction be issued in this suit against the said defendant, according to the prayer of the bill.

LABELS.

[Each certificate bearing date January 22, 1878.]

1,362.—Title: "JABON ECONÓMICO DE COLGATE & CA."—*Colgate & Co.*, New York, N. Y. Application filed January 10, 1878.

1,363.—Title: "ROBERT A. HANCE'S ELIXIR COCA COMP."—*Robert A. Hance*, Philadelphia, Pa. Application filed January 14, 1878.

1,364.—Title: "BENZINE SOAP."—*A. Melzer*, Evansville, Ind. Application filed September 15, 1877.

1,365.—Title: "A. W. PRATT & CO., MANUFACTURERS OF VARNISHES," &c.—*A. W. Pratt & Co.*, New York, N. Y. Application filed October 5, 1877.

1,366.—Title: "RALPH'S SCOTCH SNUFF."—*Stewart, Ralph & Co.*, Philadelphia, Pa. Application filed December 29, 1877.

1,367.—Title: "RALPH'S CAROLINA SNUFF."—*Stewart, Ralph & Co.*, Philadelphia, Pa. Application filed December 29, 1877.

1,368.—Title: "SCOTCH SNUFF OF A VERY SUPERIOR QUALITY."—*Stewart, Ralph & Co.*, Philadelphia, Pa. Application filed December 29, 1877.

1,369.—Title: "RALPH'S SCOTCH SNUFF."—*Stewart, Ralph & Co.*, Philadelphia, Pa. Application filed December 29, 1877.

1,370.—Title: "STEWART, RALPH & CO., MANUFACTURERS OF SCOTCH SNUFF."—*Stewart, Ralph & Co.*, Philadelphia, Pa. Application filed December 29, 1877.

1,371.—Title: "SYLVESTER'S CURE FOR NEURALGIA AND DIPHTHERIA."—*Sylvester & Dunn*, San José, Cal. Application filed January 14, 1878.

1,372.—Title: "SUNDAY-SCHOOL CLASS BOX."—*M. W. Smith* and *F. C. Fairbanks*, Chicago, Ill. Application filed January 12, 1878.

1,373.—Title: "WALCOTT'S REMEDY FOR PAIN."—*E. H. Walcott*, Natick, Mass. Application filed January 4, 1878.

1,374.—Title: "EL CIRCULO DE ORO, FIVE-CENT CIGAR."—*American Cigar Company*, Westfield, Mass. Application filed December 29, 1877.

1,375, (print.)—Title: "HUSSEY'S SPECIAL MESSAGE AND LETTER BOX."—*Robert Eason*, New York, N. Y. Application filed January 17, 1878.

DISCLAIMER.

194,616.—*Horace R. Allen*, Indianapolis, Ind.; patented November 23, 1875; disclaimer filed January 28, 1878.

Disclaims that part of the specification which reads as follows: "Figure 3 is a view of the pump."

Also disclaims Fig. 3 in the drawing, and matter showing the pump.

TRADE-MARKS.

[Each certificate bearing date January 22, 1878.]

5,532.—CARBONATED BEVERAGES.—*Brandt Brothers*, Newark, N. J. Application filed December 24, 1877.
"The monogram composed of the letters 'B B.'"

5,533.—PLAITERS.—*Frank Calvert*, Lowell, Mass. Application filed March 17, 1877.
"The word-symbol 'PARIS.'"

5,534.—WHEATEN GRITS.—*John S. Detwiler & Co.*, Philadelphia, Pa. Application filed December 17, 1877.
"A monogram composed of the letters 'W' and 'G.'"

5,535.—CORSETS.—*David H. Fanning*, Worcester, Mass. Application filed May 9, 1877.
"The fanciful title 'KID FITTING.'"

5,536.—KEROSENE-WICK.—*Fletcher Manufacturing Company*, Providence, R. I. Application filed December 22, 1877.
"The device of a naked arm and the smaller rectangular space."

5,537.—LEMONADE-POWDER.—*J. A. Folger & Co.*, San Francisco, Cal. Application filed December 29, 1877.
"The word-symbol 'LIMONIUM.'"

5,538.—TEAS.—*J. A. Folger & Co.*, San Francisco, Cal. Application filed December 29, 1877.
"The word-symbol 'GOLDEN GATE.'"

5,539.—TEAS.—*J. A. Folger & Co.*, San Francisco, Cal. Application filed December 29, 1877.
"The word-symbol 'PIONEER.'"

5,540.—TEAS.—*J. A. Folger & Co.*, San Francisco, Cal. Application filed December 29, 1877.
"The word-symbol 'CLIPPER.'"

5,541.—REFINED PETROLEUM.—*J. W. Hunnewell & Co.*, Boston, Mass. Application filed December 24, 1877.
"The word-symbol 'CRYSTALLINE.'"

5,542.—LEATHER-DRESSING.—*Walter P. Jenney*, Brooklyn, N. Y. Application filed November 14, 1877.
"The word-symbol 'WATERTIGHT.'"

5,543.—PREPARATION OF MAGNESIA.—*Robert Letson*, Brooklyn, N. Y. Application filed December 5, 1877.
"The word-symbol 'ANTRACHINE.'"

5,544.—PLUG-TOBACCO.—*Loker Tobacco Company*, St. Louis, Mo. Application filed December 22, 1877.
"A series of rectangular figures, of uniform size, alternately elevated and depressed, as shown."

5,545.—WINES.—*Daniel A. Mayer*, New York, N. Y. Application filed December 27, 1877.
"The representation of a Hungarian horseman, (Csikos.)"

5,546.—PRESERVED GREEN CORN.—*Louis McMurray*, Baltimore, Md. Application filed December 17, 1877.
"The word-symbol 'EAGLE.'"

5,547.—SOAP.—*A. Melzer & Co.*, Evansville, Ind. Application filed August 20, 1877.
"The figure of a pyramid and sun, with the motto 'Purita et Constantia,' and the word-symbol 'CHINESE.'"

5,548.—SPOOL-COTTONS.—*Mount Tom Thread Company*, East Hampton, Mass. Application filed June 7, 1877.
"The word-symbol 'PEMBROKE.'"

5,549.—MUSICAL TOYS.—*John F. Phillips*, Jersey City, N. J. Application filed December 26, 1877.
"The fancifully-selected word 'CORNETTO.'"

5,550.—CANNED MEATS.—*St. Louis Beef Canning Company*, St. Louis, Mo. Application filed October 29, 1877.
"The figure of a steer standing upon a steer's scalp having the horns attached."

5,551.—LINIMENT.—*Volckert P. D. Townsend*, New York, N. Y. Application filed April 25, 1877.
"The fac-simile of the signature of V. P. D. Townsend and the initials 'V. P. D.' in parenthesis."

5,552.—LEATHER-DRESSING.—*Lucius Morris West*, Rockford, Ill. Application filed December 27, 1877.
"The symbol of a carriage-top, as shown."

5,553.—PLUG CHEWING-TOBACCO.—*Buchanan & Lyall*, New York, N. Y. Application filed December 5, 1877.
"The capital letters 'B. L.'"

5,554.—CHEWING AND SMOKING TOBACCO.—*Buchanan & Lyall*, New York, N. Y. Application filed December 28, 1877.
"The word-symbol 'BULL'S EYE.'"

5,555.—CHAMPAGNE WINE.—*Duminy & Co.*, Ay, France. Application filed October 24, 1877.
"The title or designation 'DUMINY & CO.'"

5,556.—SMOKING-TOBACCO AND CIGARETTES.—*Charles G. Emery*, Brooklyn, N. Y. Application filed December 22, 1877.
"The word-symbol 'BEATS THE WORLD.'"

5,557.—PLUG CHEWING-TOBACCO.—*Gem City Tobacco Works*, Quincy, Ill. Application filed December 17, 1877.
"A band or strip of metallic foil, bearing a scale, and traversing the plug of tobacco from end to end longitudinally, as shown."

5,558.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 22, 1877.
"The representation of a lady and cigar-maker's table."

5,559.—CIGARS AND CIGARETTES.—*A. Lichtenstein & Brother*, New York, N. Y. Application filed December 28, 1877.
"The word-symbol 'SENSES.'"

5,560.—CASSIMERES.—*Middlesex Company*, Lowell, Mass. Application filed December 26, 1877.
"The representation of a portion of a railway-train, embracing the locomotive and mail-car. Over the representation of the railway-train is engrossed the word 'Middlesex,' (the name of the corporation,) and below it the words 'U. S. Mail Agent Cloth.'"

5,561.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*McCoy & Co.*, New York, N. Y. Application filed December 27, 1877.
"The word-symbol 'SOVEREIGN.'"

5,562.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*McCoy & Co.*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'MORO.'"

5,563.—INKS.—*Reynolds & Reynolds*, Dayton, Ohio. Application filed December 19, 1877.
"The diamond, the crescent, the cross, and the globe."

5,564.—CIGARS.—*Manuel Riquelme*, New Orleans, La. Application filed December 24, 1877.
"The representation of Punch and the dog, as shown."

5,565.—THRASHING-MACHINES.—*Roberts, Throp & Co.*, Three Rivers, Mich. Application filed December 26, 1877.
"The word-symbol 'INVINCIBLE.'"

5,566.—ANTI-BILIOUS ROOT AND PLANT PILLS.—*George G. Steketee*, Grand Rapids, Mich. Application filed October 29, 1877.
"The word 'KIMM'S,' the figure of the lions supporting the shield, and my fac-simile signature."

5,567.—CIGARS.—*Matthias M. Smith*, New York, N. Y., Application filed December 27, 1877.
"The word-symbol 'STRIKER'S MINIATURA.'"

5,568.—CIGARS.—*Matthias M. Smith*, New York, N. Y. Application filed December 27, 1877.
"The word-symbol 'ELEVADO.'"

DESIGNS.

[Each design bearing date January 22, 1878.]

10,407.—BOTTLE.—*Richard M. Atwater*, Millville, N. J., assignor to *James Whitall, R. Pearsall Smith, John Mickle, Jr., Charles Roberts, Charles A. Tatum*, and *William H. Nicholson*, of the cities of Philadelphia and New York. Application filed January 12, 1878. Term of patent 7 years.

10,408.—FONT OF PRINTING-TYPES.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed December 6, 1877. Term of patent 14 years.

10,409.—POCKET-BOOK FRAMES.—*Louis Prahar*, New York, N. Y. Application filed December 17, 1877. Term of patent 7 years.

10,410.—COFFIN-SCREWS.—*John R. Reed*, Westfield, Mass. Application filed January 3, 1878. Term of patent 3½ years.

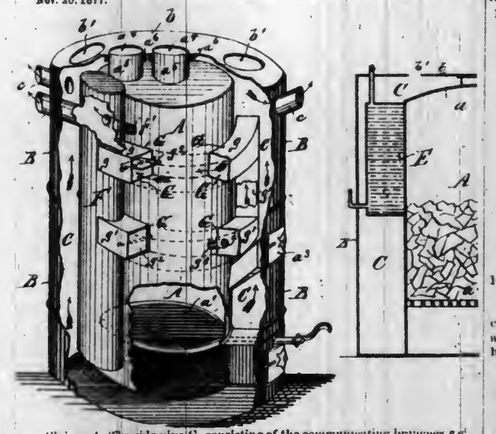
10,411.—WATCH-CASES OR LOCKETS.—*Arnold Robert*, Brooklyn, N. Y. Application filed December 22, 1877. Term of patent 14 years.

10,412.—FOOT-PIECE FOR TREADLES.—*George S. Darling*, Chicago, Ill. Application filed January 14, 1878. Term of patent 14 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

JANUARY 22, 1878.

199,347. COMBINED HEATING FURNACE AND RANGE. James P. Beck, St. Louis, Mo. Filed Nov. 20, 1877.



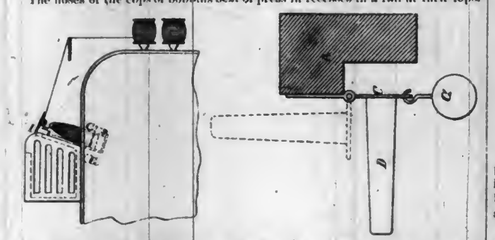
Claim.—1. The side pipe G, consisting of the communicating branches g g', arranged within the hot-air chamber to surround the oven, as shown and described, and having dampers g^2, the short pipe g^3, in combination with the drum and furnace A, by means whereof the passage of the flames, smoke, &c., takes place from said furnace, and surrounds the oven or ovens, as and for the purposes set forth.

2. The combination of the oven or ovens D, having the flange d, the hot-air chamber C, the side pipe G, consisting of the connecting-branches g g', arranged as shown and described, and having damper g^2, the short pipe g^3, the furnace A, the drum F, and cylinder B, all said parts operating as and for the purposes set forth.

3. The inside cylinder A, having its top a provided with short pipes a^2, the exterior cylinder B, having its top b provided with the holes b', the shoulders a^4, the oven or ovens D, the water-heater E, the side pipe G, and the drum F, all said parts being arranged and constructed as and for the purposes set forth.

199,348. WINDING AND REELING COTTON, SILK, WORSTED, &c. William L. Bright, George Ingham, and Jacob Fielding, Rochdale, England. Filed May 22, 1877.

Brief.—To the movable halves of weighted hinges are attached taper pegs for carrying cops or bobbins. These pegs, being upon the movable parts of the hinges, are capable of being shifted from their oblique working position to a vertical position, and vice versa, for detaching or applying the cops or bobbins. The noses of the cops or bobbins bear or press in recesses in a rail at their tops.



Claim.—1. The combination, with the rail A, of the weighted hinge C, having the peg D, for carrying a bobbin, substantially as described and shown.

2. The combination of the rail A with the weighted hinge C, peg D, and bar I, substantially as described and shown.

199,349. HOSE-COUPLINGS. William A. Caswell, Chicago, Ill., assignor of one-half his right to E. B. Preston, same place. Filed Nov. 20, 1877.

Claim.—1. The section of the coupling for hose, made solid, in one piece, and provided with the chamber which receives the hose, of a taper or conical form of largest diameter inside.

2. The coupling-section, made solid and in one piece, and having the tapered hose-chamber, and the hose, in combination with the thimble, which is inserted through the water-way, and then expanded to compress the hose within the chamber, substantially as shown.

3. The expanded thimble, expanded in tapering form, with a recurve, e, to form a smooth water-way.

4. The combination of a coupling, a hose, a swaged thimble, and the rubber ring-cap.

199,350. APPARATUS FOR ATTACHING HOSE TO COUPLINGS. William A. Caswell, Chicago, Ill., assignor of one-half his right to E. B. Preston, same place. Filed Nov. 20, 1877.

Brief.—Screw-rod is operated by a wrench, so as to advance or retract cone, to expand or contract the segmental piece, and expand the hose and thimble against the inside of coupling. Male couplings abut against lower stop of the barrel, and female ones slide over that shoulder to the second stop.

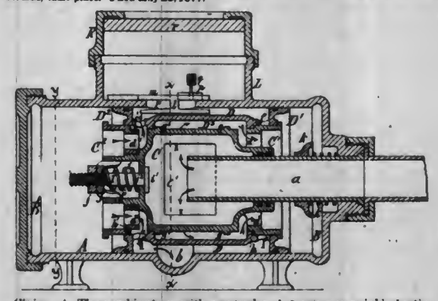


Claim.—1. The segmental expanding piece, made conical exteriorly, and with a rounded base to form a smoother water-way, substantially as specified.

2. The combination, with a hose-fastening apparatus consisting of an expanding mandrel, of an indicator or index to denote the amount of expansion by means of the forward motion of the nut, substantially as specified.

3. The combination, with the barrel, of the traveling nut, the screw for impelling the same, the guide-rods, the cone attached thereto, and moving on a central guide-rod, and the segmental expanding-piece, substantially as specified.

199,351. PISTON WATER-METER. Henry Chandler, Buffalo, N. Y., assignor to George C. Stearns, same place. Filed May 23, 1877.



Claim.—1. The combination, with a cylinder, A, having an axial induction-pipe, a, and central discharge-pipe b, of the hollow valve C, sliding on the induction-pipe, and hollow piston D, surrounding the valve C, and made capable of longitudinal movement thereon, for reversing the parts, substantially as and for the purpose hereinbefore set forth.

2. The combination, with a cylinder, A, having an axial induction-pipe, a, and central discharge-pipe b, of the hollow valve C, provided with openings c' and ports d d', and surrounding piston D^1 D^2 D^3, provided with ports f f', substantially as and for the purpose hereinbefore set forth.

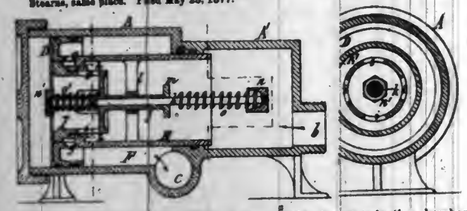
3. The combination, with the hollow piston D^1 D^2 D^3, of the hollow valve C, provided with rings g g' and shoulders h h', for limiting the movement of the piston on the valve, substantially as hereinbefore set forth.

4. The combination, with the cylinder A, piston D, and hollow valve C, of the reversing-bolt I, provided with adjustable washer J and spring f, all arranged as shown and described, for the purpose set forth.

5. The combination, with the cylinder A, induction-pipe a, hollow valve C, and piston D, of the collar k, sliding on the pipe a, and spring k', interposed between the collar k and head B, substantially as and for the purpose hereinbefore set forth.

6. The combination, with a liquid-meter, of the bar l and anchor N, having a long pallet, o, and short pallet o', for actuating the escape-wheel p, substantially as and for the purpose hereinbefore set forth.

199,352. PISTON WATER-METERS. Henry Chandler, Buffalo, N. Y., assignor to George C. Stearns, same place. Filed May 23, 1877.



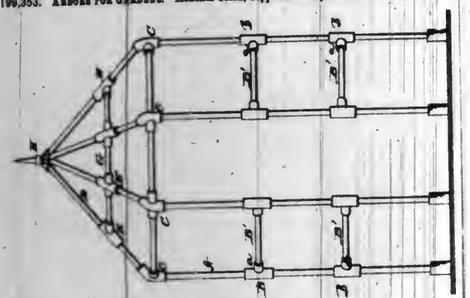
Claim.—1. The combination, with the cylinder A and induction-chamber A', of the piston D, provided with hollow extension E and hollow valve I, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the measuring-cylinder A and induction-chamber A', separated by the annular bearing *a*, and induction-pipe *b* and discharge-pipe *c*, of the piston D, provided with hollow extension E, having ports *g*, and hollow valve I, provided with ports *i*, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the measuring-cylinder A and induction-chamber A', of the piston D, provided with hollow extension E, and hollow valve I, provided with reversing-rod *k*, arranged axially in the valve and piston, and projecting through both ends thereof, substantially as hereinbefore set forth.

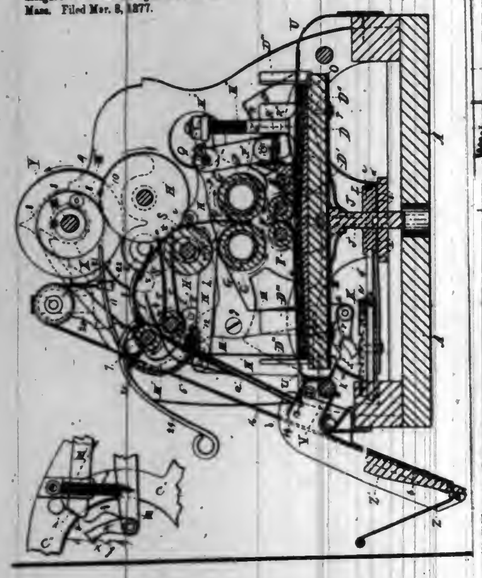
4. The combination, with the measuring-cylinder A and induction-chamber A', of the piston D, provided with hollow extension E, having an area of cross-section equal to one-half of the area of the cross-section of the measuring-cylinder, for insuring a uniform flow of liquid from the meter, substantially as and for the purpose hereinbefore set forth.

199,353. ARBORS FOR GARDENS. Issachar Clark, Tippecanoe City, Ohio. Filed Jan. 4, 1878.



Claim.—A summer-house or arbor formed of sections of metal pipe connected together by side couplings B, rafter and brace couplings C E, and the dome or crown-piece H, the several parts being constructed in the manner and for the purpose specified.

199,354. MACHINES FOR FOLDING AND COUNTING PAPER. Nathan F. Clement, Northampton, assignor of one-half his right to Rice, Barton & Fales Machine and Iron Company, Worcester, Mass. Filed Mar. 8, 1877.



Claim.—1. The combination, with the table D, the pressure-feet E, and feed-rolls F F', of mechanism, substantially as herein described, controlled in its action by the paper upon the table, for raising said table for adjustment of the paper thereon to the action of said pressure-feet and feed-rolls, substantially as shown and described.

2. The combination, with feed-rolls F F' and pressure-plates U, of the pressure-feet or starters E, substantially as described.

3. The combination, with delivery-roll I', of guard-arm 24 and its plate 25, substantially as and for the purpose set forth.

4. The combination, with the guide-piece Z', of mechanism, substantially as described, for raising and lowering the same, substantially as and for the purposes set forth.

5. The combination, with the guide-piece Z' and pulley Y, of the weighted belt or strap 16, substantially as and for the purposes set forth.

6. The combination, with the bottom delivery-roll I and spring T, of cam S', substantially as and for the purposes set forth.

7. The combination, in a machine for folding and counting paper, of delivery-rolls I I', one of which is arranged to retard or check the movement of one-half of the folded sheet until the fold of the next sheet overlaps it, substantially as and for the purposes described.

8. The combination, with the hinged pressure or starting feet E, of sliding piece R', substantially as and for the purposes set forth.

9. The mechanism, substantially such as above described, for folding paper, in combination with mechanism, substantially as described, for counting and rearing the same in separate packages, as shown and set forth.

199,355. TREE-PROTECTORS. Henry E. Daggett, Parton, Ill. Filed June 9, 1877.



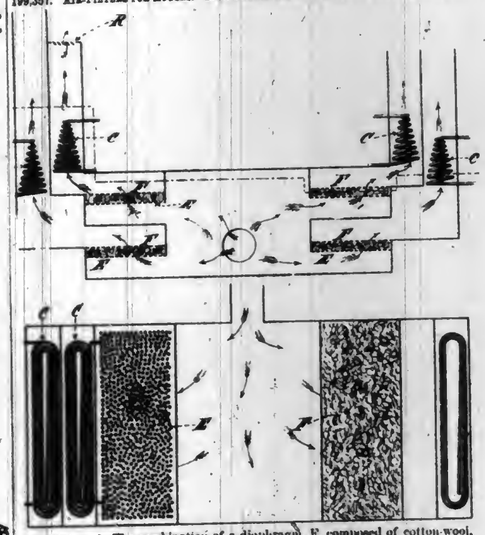
Claim.—The herein-described tree-protector, consisting of the wire B, having barbs C and slotted bands D, said wire to be wound spirally around the tree-trunk, with the barbs projecting therefrom, and secured thereto by means of the slotted bands and bolts, substantially as and for the purpose set forth.

199,356. PLATFORM-SCALES. William B. Daniels, Harlan, Ind. Filed Nov. 14, 1877.



Claim.—In combination with the graduated strips F and attached weights, the pronged beam A, forked beams C and D, and platform 1, all arranged as described, for the purpose set forth.

199,357. AIR-FILTERS FOR HOUSES. E. N. Dickerson, New York, N. Y. Filed Dec. 1, 1877.



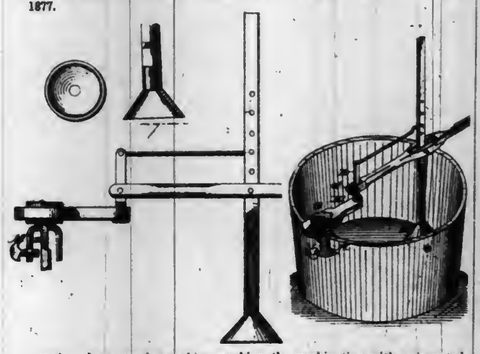
Claim.—1. The combination of a diaphragm, F, composed of cotton-wool, placed within the air-passage of a house, and a heater, C, whereby the entering air is filtered and heated, while at the same time a forced circulation is maintained, substantially as described.

2. In combination with the closed chamber A, the series of diaphragms F, composed of cotton-wool, each arranged within its own air-passage, whereby an equal distribution of air is obtained, substantially as described.

3. In combination with the closed chamber A, the series of filtering-diaphragms F and heaters C, a diaphragm and heater being located in each flue, substantially as and for the purposes described.

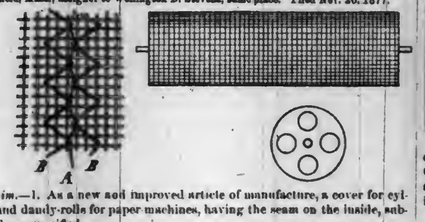
4. In combination with the air-passage of a house, a filter, E, composed of cotton-wool or equivalent material, the heater C, and valve R, substantially as described.

199,358. CLAMPS FOR WASHING-MACHINES. Cyrus A. Dodge, Chicago, Ill. Filed May 1, 1877.



Claim.—In a powder washing-machine, the combination, with an inverted U-shaped clamp, of an upright for supporting the operative parts, provided with a lower extension, and adapted to be clamped against the side of the tub between the legs of the said clamp, substantially as set forth.

199,359. MAKING SEAMS IN WOVEN-WIRE WORK FOR PAPER-MACHINES. John Dunbar, Springfield, Mass., assignor to Wellington D. Stevens, same place. Filed Nov. 20, 1877.



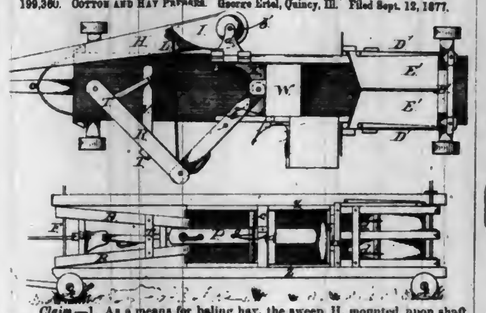
Claim.—1. As a new and improved article of manufacture, a cover for cylinders and dandy-rolls for paper-machines, having the seam on the inside, substantially as specified.

2. The process of sewing wire-cloth for paper-machines, of forming a series of loops, B B, on the side which does not come in contact with the pulp, and drawing the same together, substantially as shown.

3. In a cylinder-cover for paper-machines, the wire A and looped wires B B, in combination with woven-wire cloth, all arranged substantially as specified.

4. A seam for wire-cloth in paper-machines, in which the thread does not come to the surface in contact with the pulp except at the points where it is looped around the strand.

199,360. COTTON AND HAY PRESSES. George Ertel, Quincy, Ill. Filed Sept. 12, 1877.



Claim.—1. As a means for baling hay, the sweep H, mounted upon shaft *b'*, and provided with cam I and rope or chain L, in combination with the draw-rod P, forked bars R, and bar V, which is secured by the brace T and stud T', substantially as specified.

2. A horizontal hay-press, provided on its vertical side with the hinged door *d*, and in rear of this with the doors D', furnished on their upper edges with flanges E', in combination with the follower W, draw-rod P, forked bars R, bar V, rope or chain L, and sweep H, substantially as set forth.

199,361. SLED-PROPELLERS. James B. Erwin, Milwaukee, Wis. Filed Nov. 19, 1877.

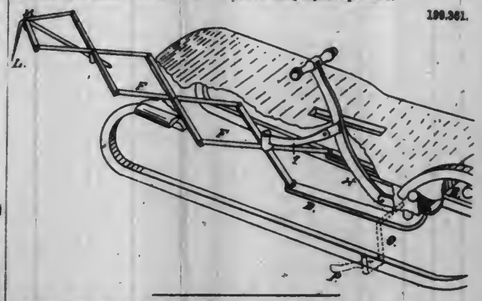
Claim.—1. The combination of the lazy-tongs F and rod L, operated in manner substantially as described, as a means for propelling sleds, as set forth.

2. The combination of the quadrant-gears E E with the levers F H and bar I, for the purpose of propelling the sled, substantially as set forth.

3. The bar I, in combination with the lever H and lazy-tongs F, substantially as shown.

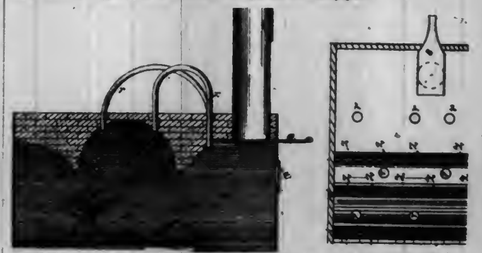
4. In combination with the sled A, the foot-supports O, provided with the guiding-springs P, substantially as and for the purpose specified.

199,361.



199,362. METALLURGIC-GAS FURNACES. William S. Gillen, Pittsburg, assignor of part of his right to Jas. S. Negley, Jr., and H. C. Campbell, same place, and D. B. Ashbaugh, Leechburg, Pa. Filed Feb. 17, 1876.

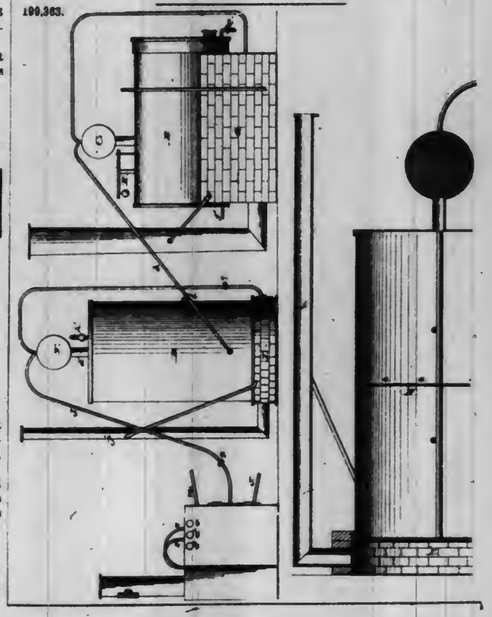
Brief.—Gas enters through the pipe *m*, and air through the pipe *n*, immediately above and to one side of it. Gas and air issue through perforations in these pipes, and their relative position throws the burning gas upon the hearth. Other air-pipes, Q, &c., in the arch of the furnace, complete the combustion and burn the waste gases, which return through the curved pipes *r*.



Claim.—1. In a metallurgic gas-furnace, the hearth R, provided with an offset, V, and perforated pipe *m*, in combination with the air-blast pipes Q^1 Q^2, located above the hearth, and the pipe *n*, located in front of the same, the said parts being arranged and adapted to concentrate the heat, substantially in the manner herein specified.

2. In a metallurgic gas-furnace provided with the above arrangement of hearth and pipes, the arched pipes *r*, communicating with the neck T of the furnace, and with the fire-chamber L alongside of the blast-pipes Q^1 Q^2 Q^3, substantially as shown and specified.

199,363.

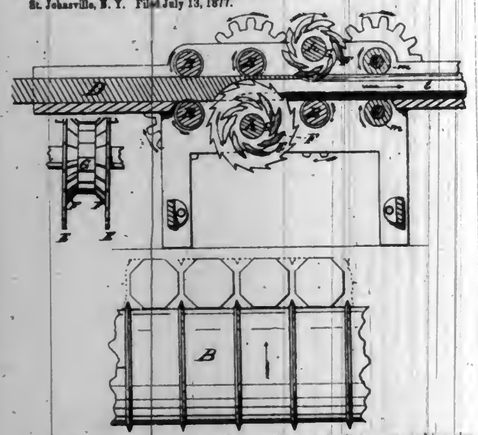


199,363. PROCESSES AND APPARATUS FOR PREPARING HYDROCARBON GAS FROM GAS-WELLS. William S. Gillen, Pittsburg, assignor to David B. Ashbaugh, Leechburg, and H. C. Campbell, Pittsburg, Pa. Filed Feb. 16, 1877.

Claim.—1. The process of preparing hydrocarbon gas or oil from gas or oil wells or other gas-supply as a fuel for furnaces for manufacturing purposes, by forcing it into boiling water to thoroughly wash, purify, and mingle it with steam, then superheating and drying, so as to expand and increase the inflammable qualities, and finally conducting it into the burner of the fire-chamber of a furnace, ready to ignite and burn with the best effect, as and for the purposes hereinbefore specified.

2. The combination of boiler B, having perforated plate E and drum C, with heater D, having perforated plate H and drum F, as connected together by pipe *b*, and with furnace K by pipe J, as and for the purposes hereinbefore specified.

199,364. MACHINES FOR PLANING OCTAGONAL BLANKS FOR CLOTHES-PINS. Aaron Hall, Jr., St. Johnsville, N. Y. Filed July 13, 1877.

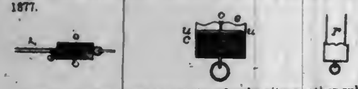


Claim.—1. In combination with the knife-shaped rollers, arranged in pairs, as shown and described, the bevel cutters or saws F and surface-cutters G, substantially as and for the purpose set forth.

2. In combination with the arbor *h*, the cutters F and G and dividing-saws E, substantially as set forth.

3. In combination with the feed-rolls B *c*, saws E, cutters F and G, the rubber-covered rollers L *m*, operating substantially in the manner and for the purpose described.

199,365. WATCH-GUARD TIPS. Charles E. Hayward, Attleborough, Mass. Filed June 26, 1877.



Claim.—1. The watch-guard tip, of vulcanite or other substances, having the perforation *e* and the slots *s* and *s u*, substantially as described, and for the purpose specified.

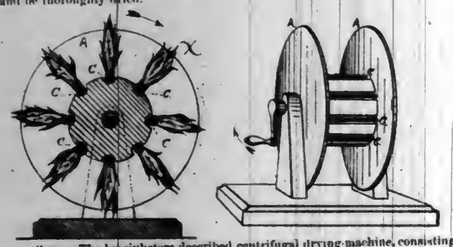
2. The combination of the watch-guard tip, of vulcanite or other substance, perforated, and having slots, substantially as described, with the wire *e* and the ribbon or braid *r*, for the purpose specified.

199,366. PROCESSES OF ORNAMENTING MARBLE AND SIMILAR SURFACES. Gustave Hetmann, New York, N. Y., assignor to Felix Marx, same place. Filed Aug. 16, 1875.

Claim.—In the process of electroplating designs in stone and analogous substances, the method of securing perfect adhesion between the metal and stone by means of wires of copper, or of the same metal to be electro-deposited, applied along the bottoms of all the engraved portions of the stone, and secured therein by means of rivets of the same metal; substantially as and for the purposes set forth.

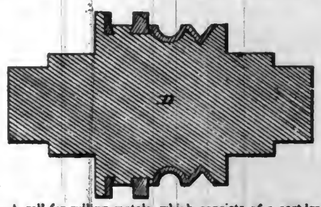
199,367. TOBACCO-DRYING MACHINES. Wm. B. Isaacs, San Francisco, Cal. Filed July 30, 1877.

Brief.—The "hands" of tobacco are attached by their butts to a revolving drum, so that by centrifugal action they are made to radiate from the drum and be thoroughly dried.



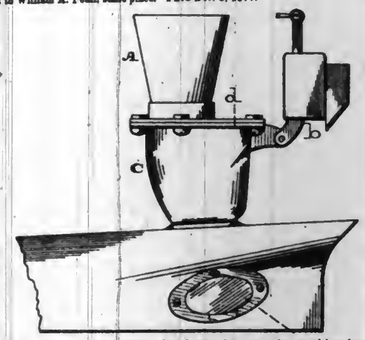
Claim.—The hereinbefore described centrifugal drying-machine, consisting of the drum A A, mounted upon a suitable shaft or axis, *a*, and having a series of rods or bars, b b, arranged around the axis between the disks of the drum at a distance apart from each other, constructed and arranged to operate substantially as set forth.

199,368. ROLLS FOR ROLLING METALS. David Jones, Youngstown, Ohio. Filed Feb. 27, 1877.



Claim.—A roll for rolling metals, which consists of a cast-iron body and wrought-iron or steel collars, said collars secured to the body in the process of casting the latter, substantially as described.

199,369. SHIPS' WATER-CLOSETS. John E. Jones, Philadelphia, Pa., assignor of one-half his right to William A. Peall, same place. Filed Dec. 3, 1877.



Claim.—1. The water-closet bowl and its pan, in combination with an outer valve, controlled by said pan, substantially as and for the purpose set forth.

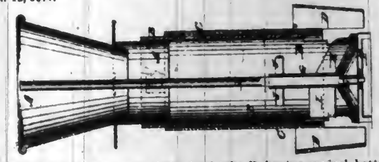
2. The bowl A and outlet-tube D, in combination with the intermediate chamber C *d*, and with the pan B, outer valve E, and controlling-connection F, substantially as and for the purpose set forth.

199,370. TINWARE. Isaac F. Kearns, Chicago, Ill. Filed Dec. 26, 1877.



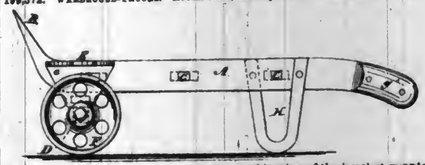
Claim.—The vessel of tinware, formed with a fold, B, in the metal of the bottom, to serve as a re-enforcement against wear, substantially as specified.

199,371. FEED-REGULATORS FOR MILLSTONES. Charles F. Kemmerer, Drums, Pa. Filed Oct. 12, 1877.



Claim.—The combination of the fixed tube B, having conical bottom and cross-shaped apertures near lower end, the sliding tube C, the shield D, and the wings H I, all constructed and arranged substantially as and for the purpose specified.

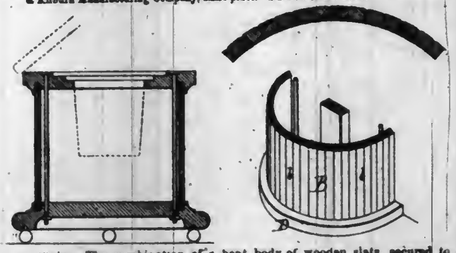
199,372. WAREHOUSE-TRUCKS. Robert Kent, Brooklyn, N. Y. Filed Dec. 18, 1877.



Claim.—1. In a warehouse-truck, the combination of the bracket-guards E, the frame, comprising the side pieces A and end B, made of a single piece of wrought-iron, and the axle D, the whole constructed and arranged substantially as and for the purpose herein set forth.

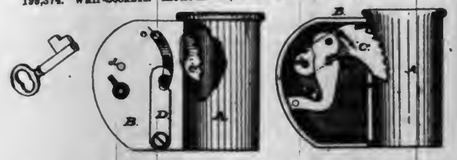
2. In a warehouse-truck, the V or U shaped legs H, made of a single piece of metal, and with their extremities attached upon opposite sides of the side pieces A, substantially as and for the purpose herein set forth.

199,373. FURNITURE STRUCTURES. Obecny Kilburn, Philadelphia, Pa., assignor to the Hale & Kilburn Manufacturing Company, same place. Filed Aug. 28, 1877.



Claim.—The combination of a bent body of wooden slats, secured to a backing of fabric, with annular or curved and grooved or recessed cap and base, forming with the said body a self-contained structure, as set forth.

199,374. WHIP-SOCKETS. Albert H. Lau, San Francisco, Cal. Filed Nov. 7, 1877.

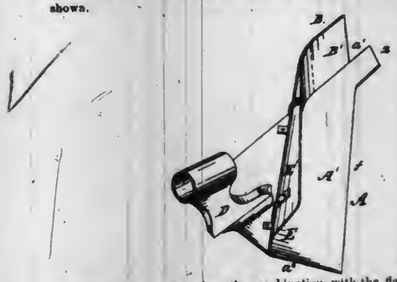


Claim.—1. In combination with a sleeve or socket, A, the locking device or clutch composed of the parts C D E *c d e f g*, arranged and combined with a suitable chamber upon the side of the said sleeve, and with the end of the clutch working through a slot in the side thereof, substantially as herein described and set forth.

2. The locking device composed of the following parts, arranged within the chamber B: first, the serrated bolt or clutch C; second, the curved dog E, with serrated or roughened end; third, the pin *c*, working through a slot in the face-plate; fourth, the spring-catch D upon the outside of the face-plate; fifth, the springs *e g*, for throwing the parts into action, combined and arranged to operate substantially as herein described and set forth.

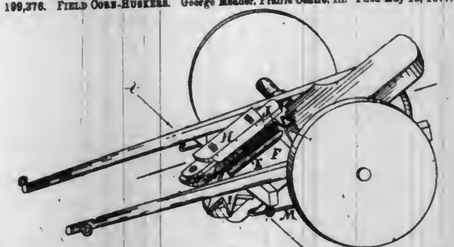
199,375. WEEDING-HOES. Walter Luckhurst, Woodbridge Township, Middlesex County, N. J., assignor of one-half his right to Cassimer W. Boynton, same place. Filed Apr. 16, 1877.

Brief.—The plate A extends across and forms the entire bottom surface, and the curved clearing-blade is secured thereon with angle-irons, riveted as shown.



Claim.—In a weeding hoe, the combination, with the flat blade A, of the clearing-blade B, having its end B' secured to the edge or side *a'*, while its other end, E, is carved forward, and is extended across and secured to the face A', between the shank D and edge *f*, substantially as and for the purposes set forth.

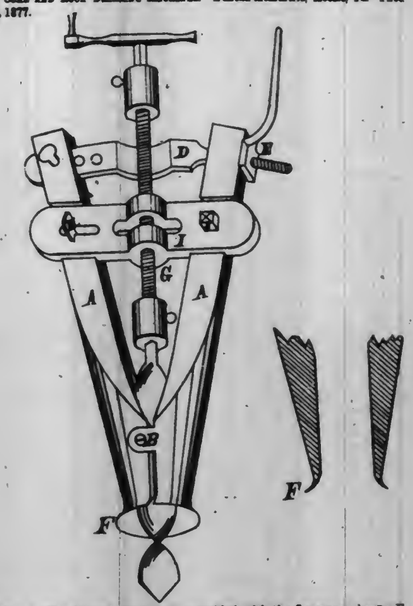
199,376. FIELD CORN-HUSKERS. George Meader, Prairie Centre, Ill. Filed May 18, 1877.



Claim.—1. The combination of the gathering-wheel I and open spiral elevator J, the end whereof is prolonged past the center of said wheel, so as to co-operate with it in moving the corn to the husking-rollers E and F.

2. In combination with the adjustable guide-board H and grooved husking-rollers E and F, the gathering-wheel I and the open spiral elevator J, the front end whereof is prolonged past the center of said wheel, for the purpose set forth.

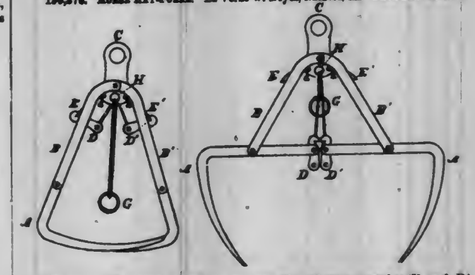
199,377. COAL AND ROCK DRILLING MACHINES. Duncan McMurtrie, Moosic, Pa. Filed Oct. 16, 1877.



Claim.—1. The hinged posts A A, provided with the flanges or hooks F, in combination with cross-piece D and handle-nut E, substantially as and for the purpose specified.

2. The combination of posts A A, cross-piece D, and handle, with reversible yoke I and screw G, all constructed, arranged, and operating in the manner and for the purpose specified.

199,378. HORSE HAY-FORKS. La Verne W. Noyes, Batavia, Ill. Filed Oct. 20, 1877.



Claim.—1. The tines A and A', carrying the vibrating catches D and D', in combination with the stops E and E' and the bails B and B', hinged together, as shown and described.

2. In combination with the tines A and A', carrying the vibrating catches D and D', the bails B and B', hinged together, and the stops E and E', the movable head C, substantially as shown and described.

3. In a hay-fork, the movable head C, with shoulders *a a*, serving as stops for the bails, substantially as shown and described, and for the purpose herein set forth.

4. The rope F and the guide or support H, in combination with the vibrating catches D and D', the stops E and E', the bails B and B', and the tines A and A', all arranged substantially as shown and described, and for the purpose herein set forth.

199,379. LAPPING-MACHINES. Hercule H. Ranga, Philadelphia, Pa., assignor of one-half his right to William H. Frazier, Chicago, Ill. Filed May 26, 1877.

Brief.—Rollers feed the web onto the main cylinder, which, being oscillated, delivers said web to the pressure-rollers, by which it is folded and pressed and the lapping perfected, the lap passing thence to the roller upon which it is wound. This lap-roller and its friction-roller are supported near the periphery of the cylinder by means of two arms, which are fastened in their middle to the ends of the shaft of main cylinder and receive a rocking motion from said shaft. The pressure-roller has a continuous forward motion imparted by means of lazy-tong levers and spring-pawls.

Claim.—1. The combination of the cylinder A, and mechanism, substantially as described, for oscillating the same, with the rollers G G', substantially as shown and described.

2. The combination of the cylinder A and mechanism, substantially as described, for oscillating the same, feed-rollers D D, and pressure-rollers G G', substantially as shown and described.

3. In combination with the oscillating cylinder A, turning loosely on the shaft B, the arms L L, fast on said shaft, and the friction-brake or dog M N, substantially as shown and described.

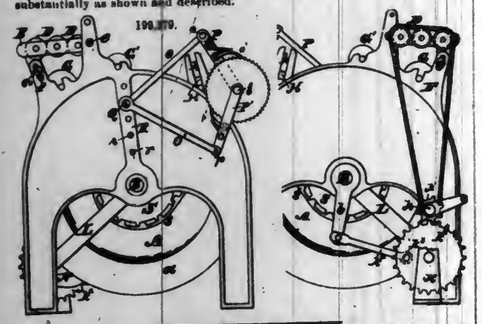
4. In combination with the cylinder A, the winding-roller H, friction-roller I, and arms L L, substantially as shown and described.

5. The combination of cylinder A, loose on the shaft B, shaft *i*, pulleys *i*[1] and S, with chain *c*, substantially as shown and described.

6. In combination with the roller I and mechanism, substantially as described, for imparting a vibratory motion to the same, the shaft *i*, sustaining the ratchet *i*[3], the levers O P, and pawl *o'*, substantially as shown and described.

7. In combination with the roller I, mechanism for vibrating same, shaft *i*, and ratchet *i*[3], the lazy-tong levers O P, and pawl *o'*, the adjusting-plate R, substantially as shown and described.

199,379.



199,380. FORCE-PUMPS. Wilbur F. Raymond, Brooklyn, assignor to himself, Chas. A. Allen, New York, and Austin G. Foster, Seneca Falls, N. Y. Filed June 25, 1877.

Brief.—A hollow piston-rod with a movable packing between two valves and ports which receive water below the packing and deliver it above, producing a continuous flow.



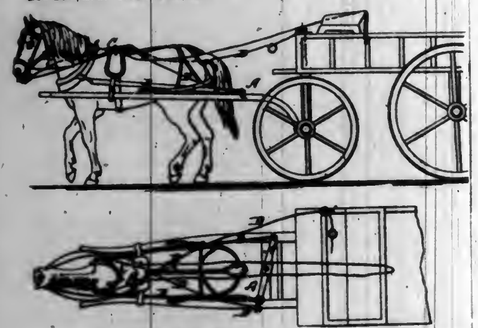
Claim.—1. The valve C, mounted below the movable piston E, in combination with the hollow plunger D, having the holes *d*, and with the barrel A, having the holes *a*, and a suitable exterior casing, H, and valves B and M, as herein specified.

2. The valve M', with its tubular part M, and the means for confining it between the extension A' and the tube H², extending downward from the seat H' *h*, as herein specified.

3. The combination of the screw-coupling H² and its packing H⁶ in the exterior casing H with the tapering tube H², rubber valve M M', and tapering extension A', extending downward from the barrel A, as and for the purposes herein specified.

4. In combination with the barrel A, exterior casing H, hollow plunger D, and hollow movable piston E, the delivery-valve C below and the check-valve F above said piston, and carried therewith on the hollow plunger, and with suitable valves B and M' seated on the fixed parts, as and for the purposes specified.

199,381. APPARATUS FOR HITCHING AND SECURING RUNAWAY HORSES. F. Wm. Schwiers, New York, N. Y. Filed Dec. 24, 1877.



Claim.—The combination of the strap D with the whiffletree A and check-rein C, said strap being secured to one end of the whiffletree and passed through the check-rein, or through a ring connected thereto, substantially as herein shown and described.

199,382. TYPE-WRITING MACHINES. C. Latham Sholes, Milwaukee, Wis., assignor to the Type Writer Company. Filed Jan. 2, 1874.

Claim.—1. The combination of a type-bar of a type-writing machine, which type-bar has a trunnion or journal on each side, with an annular circular disk, which disk has a journal-bearing groove in its upper surface, and a radial vertical slot through its inner periphery or inner edge, substantially as described.

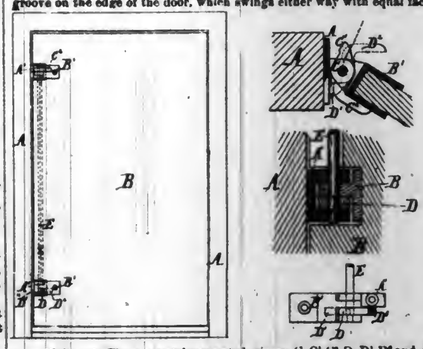
2. The combination of a type-bar of a type-writing machine, which type-bar has a trunnion or journal on each side, with an annular circular disk, which disk has a journal-bearing groove in its upper surface, and a radial vertical slot through its inner periphery or inner edge, and with a partition or stop across the journal-bearing groove of such disk, substantially as described.

199,382.



199,383. DOOR-SPRINGS. Herman C. Steinhoff, Weehawken, N. J. Filed Aug. 14, 1877.

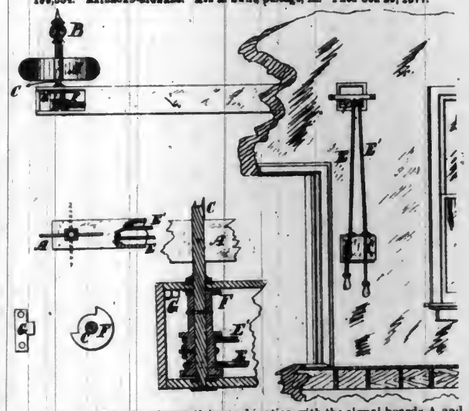
Brief.—The parts which support the spring serve also as the hinges on which the door rests and turns, the spring being preferably recessed in a groove on the edge of the door, which swings either way with equal facility.



Claim.—1. The oppositely-mounted pieces C C' C² D D' D² and the connected spring E, combined and adapted to serve, relatively to a door and door-frame, as and for the purposes herein specified.

2. The metal parts A' B', adapted to serve the double functions of a hinge and of supports for the spring E, in combination with such spring, and with the pieces C C' C² D D' D², one of which shall turn with the door in one direction, while the other serves as an abutment or hold for the spring, as herein specified.

199,384. RAILROAD-SIGNALS. Asa B. Swift, Chicago, Ill. Filed Oct. 29, 1877.



Claim.—1. The signal-post C, in combination with the signal-boards A and lantern B attached thereto, and the two independent cords E E', connected at one end to the pivoted post, and extending directly to the operator, but disconnected throughout, substantially as and for the purpose set forth.

2. The pivoted signal-post C, provided with a stop-disk, F, cut away as described, in combination with the stop G and the operating cords E E', arranged and operating substantially as set forth.

199,385. TRUSS-HOOPS. Clark W. Thompson, Wells, Minn. Filed May 1, 1877.

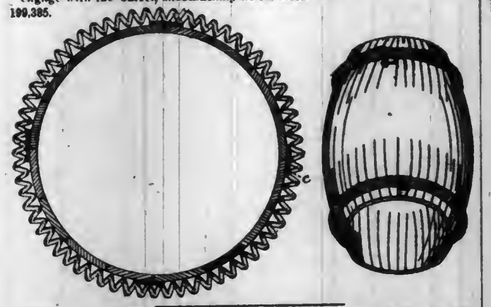
Claim.—1. An elastic truss-hoop, parts of which are drawn toward each other upon two or more sections of the barrel, substantially as set forth.

2. A truss-hoop provided with lugs *c*, to assist in maintaining the hoop in position upon the barrel, substantially as set forth.

3. A truss-hoop formed of coiled metal, substantially as set forth.

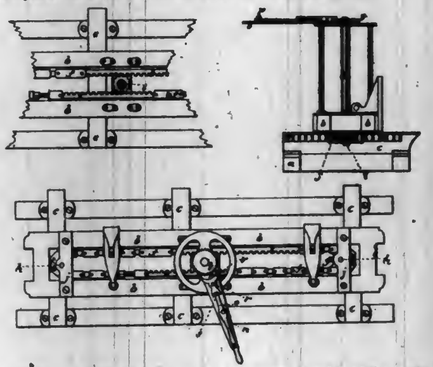
4. A truss-hoop provided upon its inner surface with transverse ribs which engage with the barrel, substantially as set forth.

199,385.



199,386. SAW-MILL HEAD-BLOCKS. R. Dexter Whitney, Gardiner, Me. Filed Nov. 20, 1877.

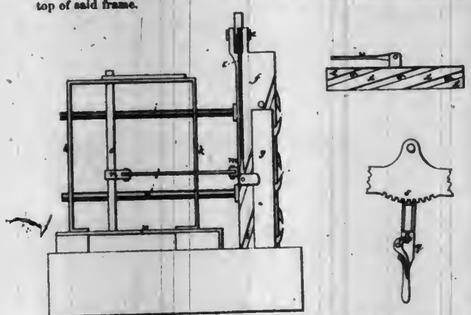
Brief.—The log is moved up after a board has been cut off and adjusted for another cut by means of reciprocating racks attached to chain-belts passing around sprocket-wheels mounted in vertical shafts which carry on their lower ends pinions which mesh with racks upon the sides of the tracks, operated by a ratchet-wheel and lever and pawl attached to the upper end of a vertical shaft mounted in a frame in the middle of the block, and carrying at its lower end a pinion which gears into and actuates the reciprocating racks.



Claim.—The combination, with the two frames a and *b*, of the tracks *c*, slides *d*, moving racks *e*, belts *f*, wheels *g*, and shafts, pinions *i*, racks *w*, upright shaft *k*, pawl *n*, with parts *o r s t u p*, ratchet *q*, and pinion *l*, as herein described.

199,387. SAW-MILL DOGS. R. Dexter Whitney, Gardiner, Me. Filed Nov. 20, 1877.

Brief.—For sawing boards of uniform thickness from "crooked" logs or logs of unequal thickness, the log is held between an upper and a lower series of vertically-adjustable dogs mounted in a casing attached to rods passing through a frame in the log-carriage, and laterally adjustable in said frame by a crank-shaft connected thereto, and to a vertical rod provided at its top with a pivoted lever carrying a pawl which works in a segmental rack formed in the top of said frame.

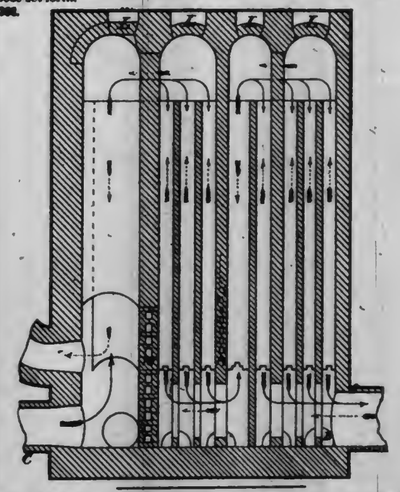


Claim.—The combination of the standard *f* with the dogs *a*, lever *b*, arms *c d*, plates *g*, grooves *i*, and projections *h*, with rods *j j*, frame *k*, arm *l*, lever *n*, shaft *o*, lever and pawl *q r*, and rack *s*, the whole to operate as herein set forth.

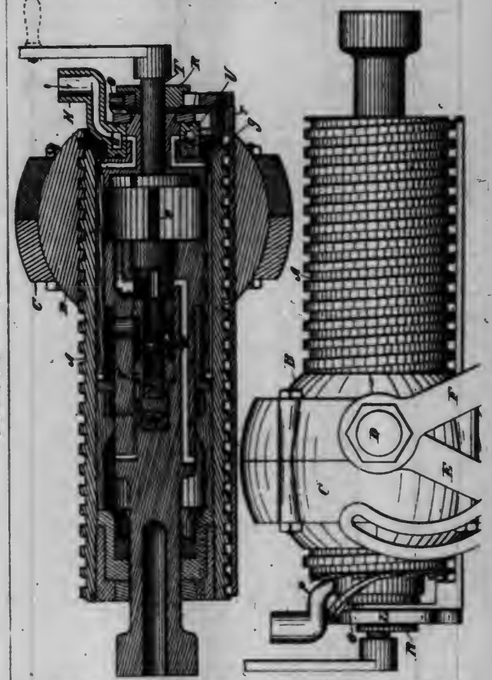
199,388. APPARATUS FOR HEATING AIR AND GASES. Thomas Whitwell, South Stockton, England. Filed Nov. 9, 1876. Patented in England, May 16, 1876.

Claim.—The heating apparatus (through which the burning gas and the air or gas to be heated pass alternately, in opposite directions, in contact with the same surfaces) constructed with transverse vertical walls or partitions, crossing from side to side, and arranged in series or sets, forming divided passage-ways, which are connected with each other alternately at top and bottom, and extend across the apparatus, whereby friction is lessened, while heating-surfaces of the width of the apparatus are provided, substantially as and for the purpose set forth.

199,388.



199,389. ROCK-DRILLS. Edward S. Winchester, Boston, Mass., assignor of one-half his right to Harvey K. Flagler, same place. Filed June 15, 1877.



Claim.—1. In combination with the valve V, the friction or spring stem *w*, constructed to operate substantially as described.

2. In a rock-drill, the combination of a clamp, C, supported by two trunnions in adjustable legs E F, an adjustable spherical block or nut, B, mounted in said clamp, and a drill-cylinder supported in and susceptible of longitudinal adjustment through said nut, substantially as shown.

3. In combination with the threaded cylinder and nut or bearing, the rotating eccentric R and pawl O, arranged to operate substantially as described.

4. In combination with the cylinder A, having the inlet ports or passages in its head, the hollow or grooved annular collar U, arranged to operate substantially as and for the purpose set forth.

5. In combination with the rotating cylinder A, the pawl *m*, connected to the shaft T, and arranged to operate substantially as set forth.

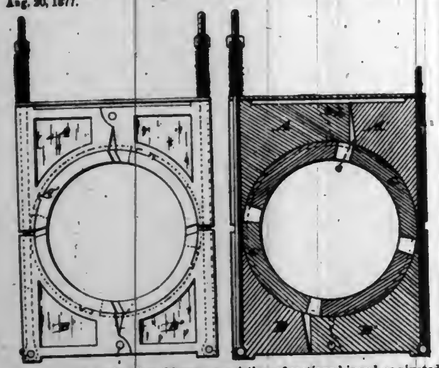
6. In a rock-drill, a naked externally-threaded cylinder mounted directly

in and adjustable through a sustaining-nut, and provided at one end with a steam-supply pipe, substantially as shown, whereby the steam is delivered directly to the cylinder and the adjustment of the latter permitted without the employment of an inclosing-case, as usual.

7. In a rock-drill, a casked externally-threaded cylinder adjustably mounted in a sustaining-nut, and provided with a steam-supply pipe and feeding devices, substantially such as shown, both sustained by the cylinder.

8. In a rock-drill, an externally-threaded cylinder mounted and adjustable in a sustaining-nut, in combination with a piston, valve, steam-supply, and feeding devices, all sustained by the cylinder, substantially as shown.

190,390. GASKETS FOR CAR-AXLE BOXES. George S. Winslow, Cedar Rapids, Iowa. Filed Aug. 20, 1877.



Claim.—1. A gasket for oil-boxes, consisting of sections hinged or pivoted to each other, substantially as and for the purpose set forth.

2. The sections of a gasket for oil-boxes, consisting of hinged or pivoted sections, said sections being cut away at their meeting or joining edges, substantially as and for the purpose set forth.

3. The sections of a gasket each of which is formed with a mortised and tenoned edge, said sections arranged in pairs above and below the journal, and the pairs hinged or pivoted to each other, substantially as and for the purpose set forth.

4. The combination, with the hinged sections of a gasket, of an adjusting-rod engaging with the lower sections of the gasket, substantially as and for the purpose set forth.

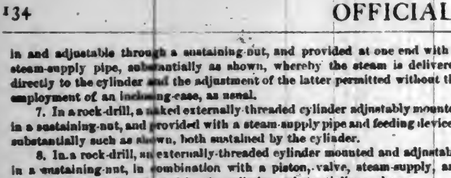
5. The combination, with the hinged sections forming a gasket, of adjusting-rods, connecting in any suitable way with the lower sections, a cross-bar, spiral springs, and adjusting-nuts, substantially as and for the purpose set forth.

6. A gasket consisting of hinged sections, having a groove formed in their sides or sides and bottom, in combination with adjusting-rods located in said grooves, and operating the hinged sections, substantially as and for the purpose set forth.

7. The combination, with the hinged sections of a gasket, of a sectional removable bushing, substantially as described.

8. The combination, with a gasket having circular and transverse locking-grooves on its inner face, of the detachable wearing-bushing, having an annular rib and short right-angular projections formed on its corresponding or adjoining face, substantially as and for the purpose set forth.

190,391. AUGERS. Thomas W. Wissinger, West Milton, Ohio. Filed May 7, 1877.



Claim.—As a new article of manufacture, the auger-bit having a cylindrical shaft, A, the horizontal cutting-edges B, with vertical cutting-edges C, extending both above and below and slightly in front of the said cutting-edges B, substantially as described.

190,392. POTANCES FOR WATCHES. Chas. V. Ward, Waltham, Mass., assignor to American Watch Company, same place. Filed Dec. 7, 1877.

Claim.—The hollow potance *b*, the portion *c d* of which is partly or wholly inserted into the top plate *a*, or the top plate *a* partly projecting into the potance *b*, thus securing the correct position of the latter, constructed substantially in the manner and for the purpose as above described.

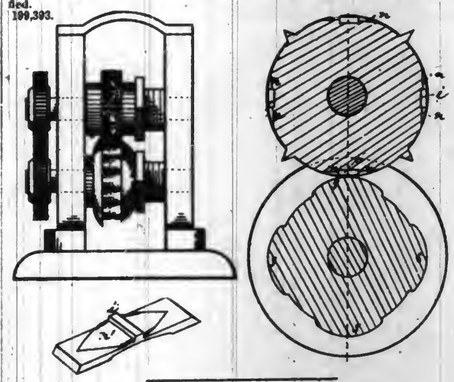
190,393. ROLLS FOR MAKING AX-BLANKS. William Acheson, Pittsburg, Pa., assignor to himself, Thomas Ross, and James Boyd, same place. Filed Nov. 28, 1877.

Claim.—1. In a machine for forming ax-blanks, the combination of two rolls, one having a tongue grooved transversely to form the poll and the other having an eccentric projection to form the eye of the blank, the tongued roll being provided with knives for scoring the blanks, substantially as specified.

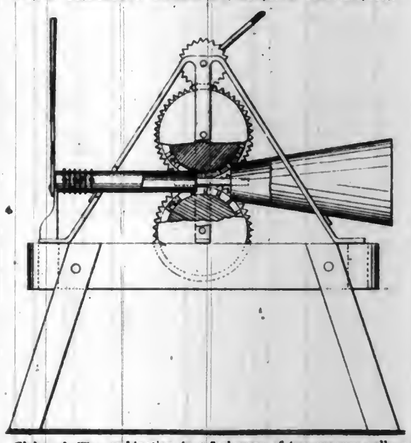
2. In a machine for forming ax-blanks, the combination of two rolls, one of said rolls provided with the grooves *a d n*, substantially as and for the purpose specified.

3. In a machine for forming ax-blanks, the combination of two rolls, one provided with two detachable rings or collars, forming a tongue, one of said collars being grooved transversely, substantially as and for the purpose specified.

190,393.



190,394. FUEL-PRESSES. Nathan Aldrich, Alden, Iowa. Filed Jan. 2, 1878.



Claim.—1. The combination, in a fuel-press, of two concave rolls, a feeding-funnel, and discharge-tube, substantially as herein shown and described.

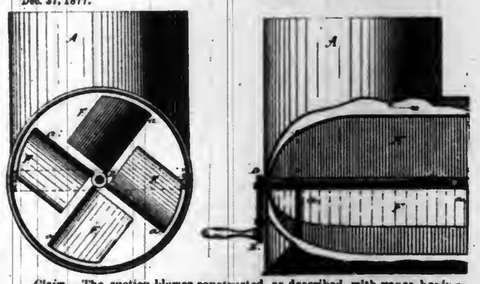
2. The combination of the lever carrying the triangular knife with the discharge-tube of a fuel-press, substantially as shown and described.

190,395. LETTER-FILES. William A. Amberg, Chicago, Ill. Filed Nov. 14, 1877.



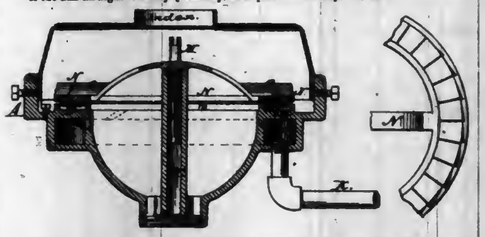
Claim.—As a new article of manufacture, the case herein described, consisting of the body A, having the solid back a and the neck *b*, the wrapper C, and cover B, as set forth.

190,396. DRAFT APPARATUS FOR STOVES, &c. James B. Andrews, Jersey City, N. J. Filed Dec. 27, 1877.



Claim.—The suction-blower constructed, as described, with vanes having their forward ends bent and rear ends curved, the whole mounted and secured to the shaft, as shown and described.

190,397. ROTARY FLUID METERS AND MOTORS. Edmund Anthony, Albany, N. Y., assignor of one-half his right to Henry Q. Hawley, same place. Filed Sept. 12, 1877.



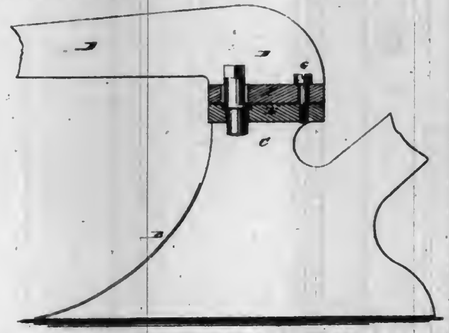
Claim.—1. A fluid meter or motor consisting of a case, A, an annular inlet-passage, C, a groove, D, having small oblique openings *p* through its bottom and the upper surface of its sides planed, a horizontal wheel, N, consisting of a rim with arms to connect it with a shaft, and having one side of said rim provided with ratchet-teeth in its center and planed edges on each side of said teeth, a shaft, M, and a hollow standard, the whole constructed and arranged as described, so that the said wheel, when at rest in said groove, must make a close joint with it from its planed edges resting upon the planed surfaces of said groove, and so that no fluid can pass through the said groove without floating the wheel and flowing against its teeth in the direction of their revolution, substantially as described.

2. In a fluid meter or motor, a groove having the upper surface of its sides planed, and one or more oblique openings through its bottom, in combination with a flat wheel revolving in said groove, and having ratchet-teeth on one side near its periphery, and planed surfaces on one or both sides of said teeth, the said wheel and groove arranged in the manner described, so that the fluid entering the groove must float the wheel revolving in it and flow against its teeth before it can escape, substantially as described.

3. In a fluid meter or motor, a flat wheel having on one side, near its periphery, ratchet-teeth, in combination with an inlet-pipe having on the side next said wheel a groove to receive said teeth, and having one or more oblique openings, through which the fluid must pass to actuate the wheel, substantially as described.

190,398. PLOWS. Eli H. Babcock, John O. Whiting, and Oliver H. Chamberlain, Onondaigua, N. Y. Filed Nov. 8, 1877.

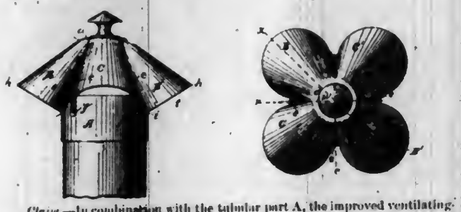
Brief.—The standard and beam are united by horizontal plates which turn upon each other, and thus adjust the point of the beam to or from land.



Claim.—The combination of the plow-beam D, having the slotted plate F, with the standard C, provided with plate E, pivot-bolt G, clamping-bolt H, and eccentric-pin I, substantially as herein shown and described.

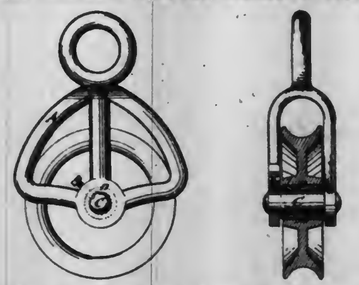
190,399. VENTILATING-CAPS FOR CHIMNEYS, &c. Ashbell Barnum, Green Island, assignor of one-half his right to Gilbert Geer, Jr., Troy, N. Y. Filed Jan. 5, 1878.

Brief.—The combination, with the tubular part, of a cap composed of the pairs of opposite inclined hoods of approximately semi-conical form, and arranged radially in a circle around a common center, and connected together and closed at their tops by the plate, and united along their interned side parts, and all shaped, proportioned, and arranged together, and in respect to the said tubular part.



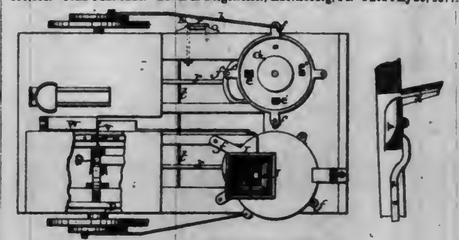
Claim.—In combination with the tubular part A, the improved ventilating-cap consisting of the pairs of opposite inclined semi-conical hoods B B' C C', connected and closed at their tops by the part *d*, and united at their inwardly-turned parts *e*, and proportioned and arranged together, and in respect to the top of the said tubular part, substantially as shown and described.

190,400. PULLEY-BLOCKS. Edgar B. Beach, West Meriden, Conn. Filed Dec. 31, 1877.



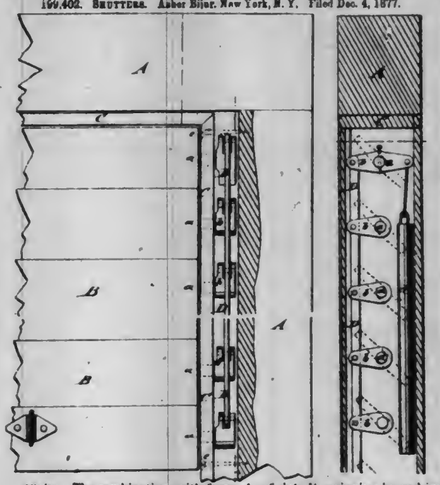
Claim.—As an improvement in sheaves and pulleys, the combination of a pulley and center-pin, secured detachably to hanger or block, with a wooden sleeve interposed between pulley and pin, substantially as and for the purpose set forth.

190,401. CORN-PLANTERS. Edwin L. Bergstresser, Hublersburg, Pa. Filed July 26, 1877.



Claim.—The combination, with the axle B, of the wheel-sleeve D, having lugs *a a*, the clutch R, lever S, spring, and foot-lever W, substantially as and for the purposes herein set forth.

190,402. SHUTTERS. Asher Bijur, New York, N. Y. Filed Dec. 4, 1877.



Claim.—The combination, with frame A, of slats B, swinging by end journals *a* in detachable frame C, the ends of said journals being provided with short crank arms *b*, connected by rod D, and counterbalanced, as shown and described, for the purpose specified.

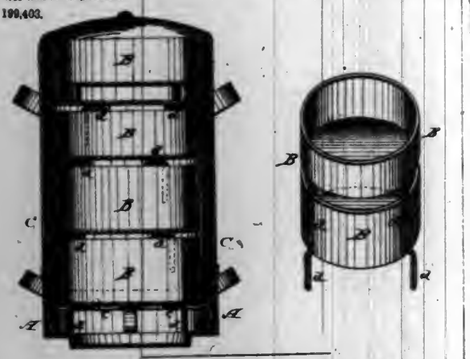
190,403. STEAM CULINARY VESSELS. Orville S. Bliss, Georgia, Vt. Filed June 20, 1877.

Brief.—The interchangeable sections are separated by metallic supports attached to the bottom, and projecting out and bent downward to form a shoulder, which extends down over the outside of the section beneath, thus allowing free circulation of steam in and around the sections.

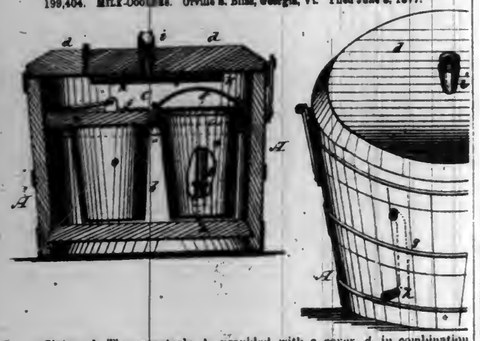
Claim.—1. The combination of the steam culinary vessel A, having cover C, with the interchangeable sections B B, separated from each other by the metallic supports *d d*, and arranged substantially as and for the purposes set forth.

2. The metallic supports *d d*, which are attached to the interchangeable sections B B, to keep them separate from each other for the admission of steam to their contents, to retain them in position when in use, and to serve as feet when used as dishes apart from the culinary vessel, substantially in the manner above described.

199,403.



199,404. MILK-COOLERS. Orville S. Bliss, Georgia, Vt. Filed June 8, 1877.

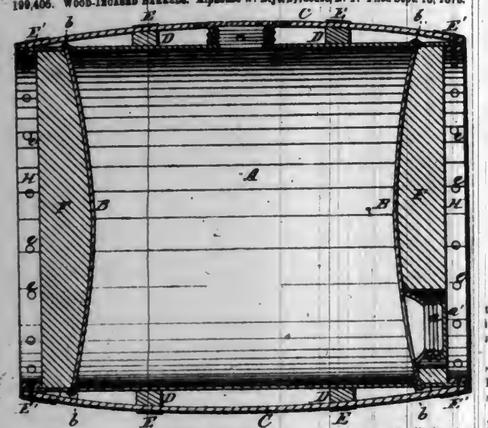


Claim.—1. The receptacle A, provided with a cover, *d*, in combination with the pipes *b*, funnel *i*, cans *c*, and a water-overflow, substantially as described.

2. The combination of the receptacle A, shelf *a*, cover *d*, pipes *b*, funnel *i*, cans *c*, and a water-overflow, substantially as described.

3. The combination of the receptacle A, shelf *a*, cover *d*, cans *c*, and a pipe, *g*, substantially as described.

199,405. WOOD-INCASED BARRELS. Alphonso W. Bice, Syracuse, N. Y. Filed Sept. 13, 1876.



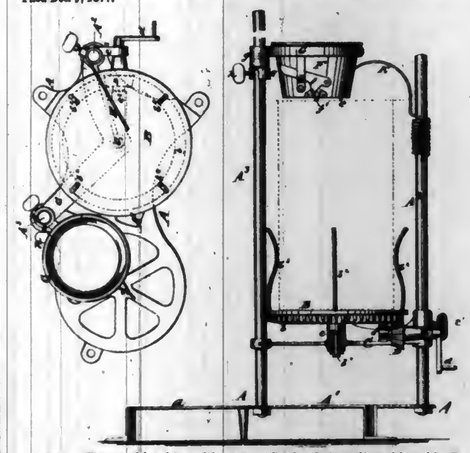
Claim.—1. In a wood-incased metal barrel, the straight metal cylinder A, having inward grooves formed by the outward heads *b b*, in combination with the metal heads B B, having their concave sides outward and their edges fitted into said grooves and sealed, as described.

2. The combination, in a wood-incased metal barrel, of the concave metal heads B B, the straight metal cylinder A, having the heads *b b*, forming inward grooves to receive and seal the edges of said concave heads, the plano-convex heads F F, and the metal end rings H H, all constructed for use as herein set forth.

3. A wood-incased metal barrel having the inner metal heads B, the outer wooden heads and the beads *b*, the inner grooves of which and the circumference of the wooden heads join and give the proper support and seat to the circumference of the metal heads, having their concave sides outward, as herein set forth.

4. The combination, with the metal cylinder A, having inward grooves in its body, the metal heads B B, inwardly curved and fitted into said body-grooves, and the outer heads F F, of the outer staves C, their binding-hoops E E', and the inner bilging-bands D, all constructed as herein set forth.

199,406. CAN WAXING OR SOLDERING APPARATUS. Thomas Bown, South Charleston, Ohio. Filed Dec. 7, 1877.



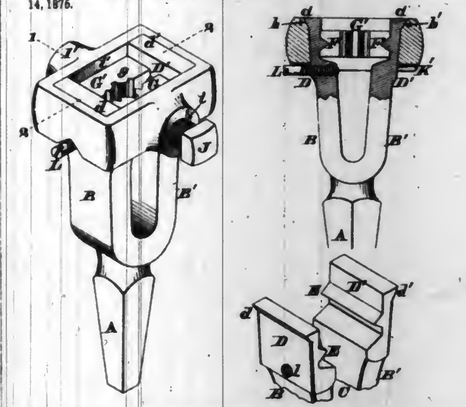
Claim.—The combination, with posts A' A', of the adjustable table B, having arms *b'*, and the adjustable spring E, curved to form a pressing-point, *e*, as shown and described, whereby cans of varying sizes may be held.

199,407. STOVE-POLISH LIQUIDS. George U. Briggs, Chicago, Ill. Filed June 26, 1877.

Brief.—The oil of sassafras is added to the polish to give it a pleasant odor, and a decoction of logwood-bark is added to prevent the compound from freezing.

Claim.—A fluid stove-polish wherein carburet of iron, ivory-black, hard soap, and water are compounded, substantially as described and specified.

199,408. SCREW-CUTTING-DIE HOLDERS. John F. Brinckmann, Cincinnati, Ohio. Filed Dec. 14, 1876.



Claim.—1. In a die-wrench, the branches B B', provided at their extremities with shoulders *d d'*, in combination with the yoke, whose opposite upper inner edges are beveled to engage said shoulders, and screw I, substantially as and for the purposes set forth.

2. The die-wrench composed of the branched stock A B B', provided with shoulders *d d'* and tongues E, and dies G, provided with grooves F and screw I, and the yoke provided with screw J, substantially as and for the purposes set forth.

199,409. VELOCIPEDES. Alonzo M. Buchanan, Moberly, Mo. Filed June 4, 1877.

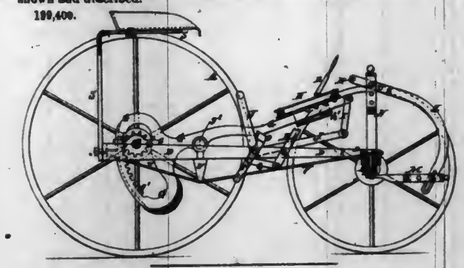
Claim.—1. The combination, in a velocipede, with wheels F F, that turn axle B, of the levers G G, pivoted at *g'*, having arc-slot and teeth *g'* at the weight ends, and provided with treadles at the power ends, as and for the purpose described.

2. The levers G G, rods I, and levers J, arranged in a velocipede with respect to seat, as and for the purpose set forth.

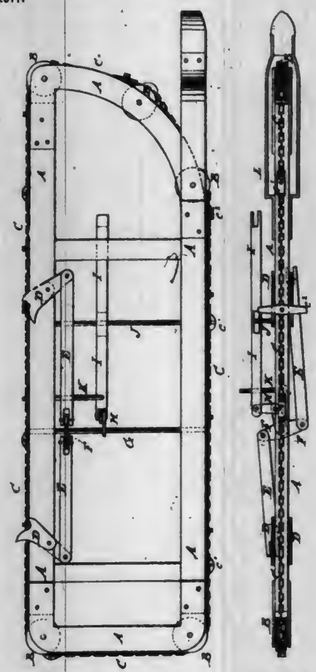
3. The adjustable foot-rests H, formed of the two plates, the interposed springs, and the socket, and its spring and cross-pin, in combination with the levers G, substantially as herein shown and described.

4. The combination of the handle K, the curved adjustable bar L, and the branched supporting-bars N M with the forward axle B', substantially as herein shown and described.

199,409.

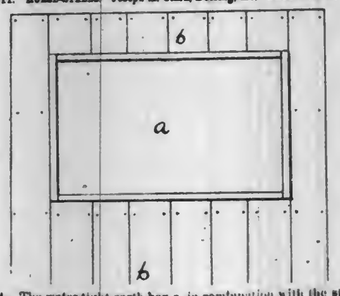


199,410. CHECK-ROWER ATTACHMENTS FOR CORN-PLANTERS. Edward R. Carr, Avon, Ill. Filed Nov. 30, 1877.



Claim.—The combination of the runner-frame A, provided with the pulleys B, the endless chain C, provided with the blocks *c'* and the cross-cleats *c''*, the two pairs of trip-levers D, the two connecting-bars E, the equal-armed lever F, the pivoted rod G, the arm H, the lever I, and the fulcrum-rod J, with each other, substantially as herein shown and described, to adapt the device to be attached to a corn-planter for operating its seed-dropping slide.

199,411. HORSE-STALLS. Joseph H. Ulark, Deering, Me. Filed June 16, 1877.



Claim.—The water-tight earth-box a, in combination with the stall-floor *b*, substantially as shown and described.

199,412. BROOM-BINDERS. John W. Clif, Buffalo, N. Y., assignor of one-half his right to Lewis P. Baker, same place. Filed July 31, 1877.

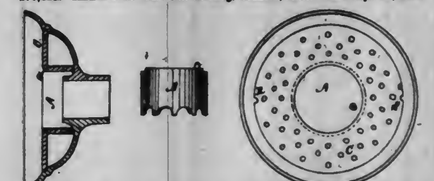


Claim.—1. As an improved article of manufacture, a broom-binder formed of a single piece of wire, with the side A', bends *c c'*, arm A'', with the hook *a*, and the arm A''', with the bends *b* and *a'*, substantially as described, for the purpose specified.

2. As an improved article of manufacture, a broom-binder consisting of the guard A, formed of a single piece of wire, with the side A', bends *c c'*, arm A'', with the fastening *a*, and the arm A''', with the bends *b* and *a'*, said guard having the clamps D, provided with the hooks *f*, engaging the notches *d d'*, as and for the use and purpose specified.

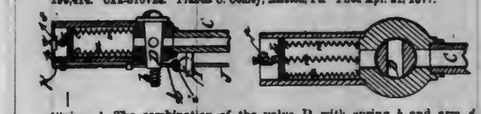
3. The binder for a broom-brush or similar article, consisting of the guard A, adapted to tightly embrace said broom, the clamps D, passing transversely through the same, and connecting the parallel sides of said guard, and the rod E, arranged above said clamps, the whole constructed and arranged substantially as and for the use and purpose stated.

199,413. SEED-TRAPS. James H. Codding, Taunton, Mass. Filed Sept. 22, 1877.



Claim.—The cap A, resting upon the inner surface of the bowl, in combination with the perforated plate C and the bowl, having the spurs R and S, all for the purposes and in the manner substantially as herein set forth.

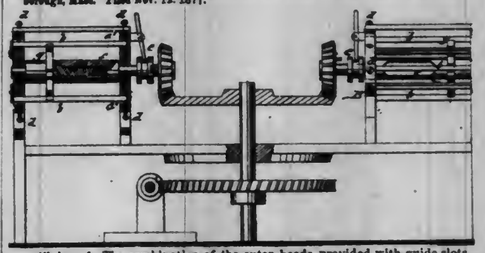
199,414. COAL-STOVES. Francis C. Conley, Ralston, Pa. Filed Apr. 21, 1877.



Claim.—1. The combination of the valve D, with spring *b* and arm *d*, having a cavity in its outer end, the pendulum J, ball C, with nib *i*, and the seat I, all substantially as and for the purpose described.

2. The combination of the valve D, having arm *d*, the rod *t*, shaft *p*, with crank *p'* and flange *s*, and the plunger or follower L, with springs *m* and hook *o*, all substantially as and for the purpose described.

199,415. MACHINES FOR BOARDING OR BREAKING RAW HIDES. William Coupe, South Attleborough, Mass. Filed Nov. 12, 1877.



Claim.—1. The combination of the outer heads provided with guide-slots *a*, the inner heads with socket-recesses *a'*, the cross-bars *b*, pivoted buttons *b'*, and set-screws *d*, as and for the purpose set forth.

2. The combination, in a crib for breaking raw hides, of the outer slotted and inner recessed heads, with retaining cross-bars supported in the heads, and with pivoted plates or buttons of the outer heads, for securing the rigid position of bars, substantially as described and specified.

199,416. MACHINES FOR MAKING LASTING-TACKS. Thomas B. Orr, Bloxwich, Great Britain. Filed May 11, 1877. Patented in England, Aug. 15, 1876.

Brief.—The tacks are made from square wire, which is fed through a tube of the same sectional outline by the mechanism specified in the first and second claims. The end of the wire protrudes through a square aperture in a cut-off block, and is reduced to the desired extent by cutters carried in a sliding frame, fed to its work by a spring or weight, and retracted through the medium of a pivoted lever by a cam. The cut-off block rises after the cutters have receded, and severs the tack from the unreduced portion of the wire, leaving it with a square head.

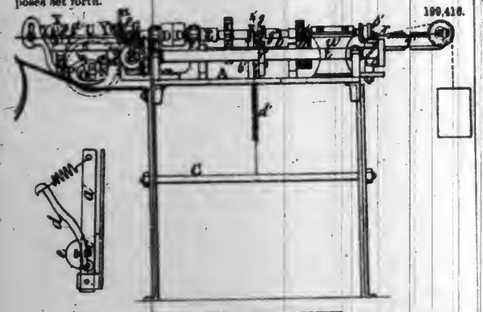
Claim.—1. The combination of the shaft N, lever P, cam O, wedge-piece X, and sliding plate S, all arranged to operate in substantially the manner set forth.

2. The combination of the sliding plate S, wedge-piece X, griping-levers U U, and gripers W W, all constructed and arranged to operate substantially as set forth.

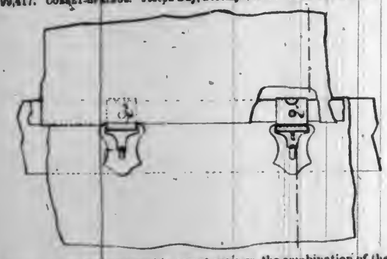
3. The combination of the lever P, cam O, shaft N, sliding plate S, griping-levers U U, gripers W W, wedge-piece X, tube *c*, constructed as shown, lever

d, shaping tools *g*, box *g'*, cam *s*, lever *r*, spindle *p*, gear wheels *k l m n*, shaft *o*, weight *q*, or its equivalent, disk or cam *c'*, lever *h*, spring *d'*, or its equivalent, and steeling or cutter *h'*, all arranged substantially as shown, for the purposes set forth.

199,416.

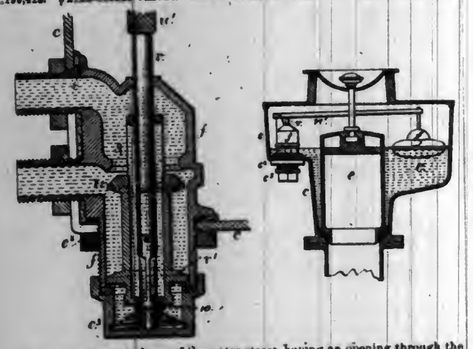


199,417. CORSET-SPRINGS. Joseph Day, Brooklyn, N. Y. Filed Oct. 6, 1877.



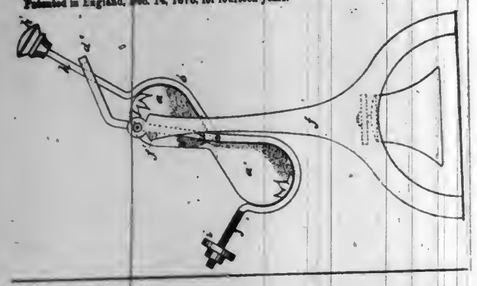
Claim.—As an improvement in corset-springs, the combination of the lower broad stay, having steel hooks, with an overlapping stay having eye-plates hinged to fastening bands or clamps of the stay, said eye-plates being made of one piece of metal, with a recess broad at the base and narrow at the apex, and enlarged back of the recess to extend beyond the points of the hooks, substantially as set forth.

199,418. WATER-CLOSET VALVES. John Demarest, New York, N. Y. Filed Nov. 15, 1877.



Claim.—The chamber *c* of the water-closet, having an opening through the bottom thereof, in combination with the valve-cylinder *f*, that passes through said opening, the nut *c'*, for holding the cylinder *f*, and the removable cap *c'*, valve, and controlling-piston, substantially as set forth.

199,419. TIRE-SIGNAL. Joaquim Antonio De Macedo, Leeds, England. Filed Jan. 2, 1878. Patented in England, Dec. 14, 1876, for fourteen years.



Claim.—1. A sand-glass mounted on a horizontal axis, and weighted so that when supported in a nearly vertical position it will overbalance when the sand has run from one bulb into the other, and thus cause an alarm to be given, substantially as herein shown and described, for the purpose specified.

2. The combination, with a sand-glass hung on a horizontal axis, and so weighted that it will overbalance, as herein specified, of a regulating nut or weight adjustable upon a screw-threaded arm, so that the sand-glass may be made to overbalance when more or less of the sand has run out, substantially as herein shown and described.

3. The combination, with a pedestal or frame, *f*, of a sand-glass mounted on a horizontal axis and weighted, as herein described, a swing-frame in which the axis of the sand-glass is mounted, and which is itself also hung on centers in said pedestal or frame, substantially as and for the purposes herein specified.

4. The combination of the sand-glass mounted on a horizontal axis, the swing-frame hung on centers, as described, and provided with the backward-inclined portion d^3, and the standards having stops to limit the movement of said frame, so that the latter will support the sand-glass at the proper inclination while the sand is running out, substantially as specified.

5. The combination, with a sand-glass, *a a'*, of the frame *b*, in which it is fixed, the hammer *h*, the bell, the regulating-screw and nut *j i*, the horizontal axis *c*, the swing-frame *d*, supporting the axis *c*, and hung on centers *c* in standards *f*, all arranged and operating substantially as and for the purpose specified.

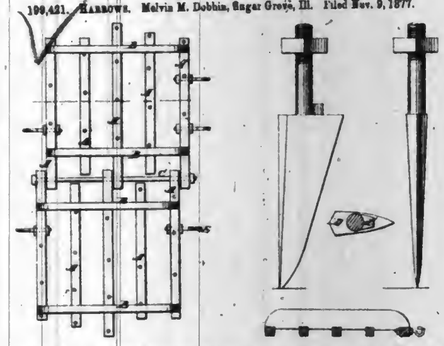
199,420. COMPOSITIONS FOR BLACK MORTAR. Clemens A. Didden, Washington, D. C. Filed Dec. 11, 1877.

Brief.—Graphite is pulverized and mixed with coal-dust or black sand, to which is added lime, Portland cement, or any of the elements or combination of elements composing mortar.

Claim.—1. A composition consisting of coal-dust and pulverized graphite, substantially as described, and for the purposes specified.

2. In a mortar or cement for laying brick or stone composed of lime, slaked lime, sand, coal-dust, Portland cement, or any of the elements or combinations of elements composing mortar, graphite as an ingredient or component part, substantially as described, and for the purpose specified.

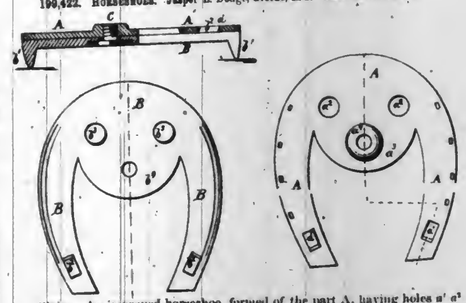
199,421. HARROWS. Melvin M. Dobbin, Sugar Grove, Ill. Filed Nov. 9, 1877.



Claim.—1. A harrow in which the tooth bars of each section are arranged transversely, and connected by longitudinal bars, that also form runners, as shown and described.

2. A harrow-tooth drawn to an acute angle on one edge and to an obtuse angle on the opposite edge, the former edge being rearwardly sloped and the other perpendicular, for the purpose specified.

199,422. HORSESHOES. Jasper L. Dodge, Greene, R. I. Filed Dec. 14, 1877.



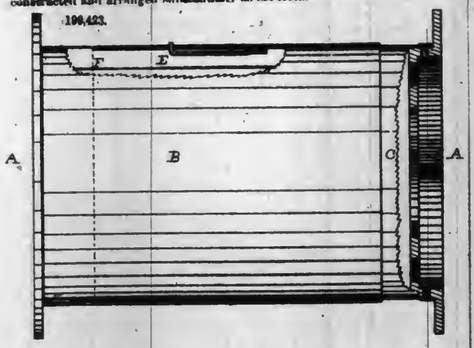
Claim.—An improved horseshoe, formed of the part A, having holes a' a^2 formed through it, and having its forward part filled with a plate, a^2, provided with a boss, a^3, having a screw-hole formed through it, the part B, having grooves to receive the nail-heads, having studs b^2 b^2 formed upon it, and having its forward part filled with a plate, b^3, provided with a countersunk hole, and the screw C, substantially as herein shown and described.

199,423. STOVE-PIPE THIMBLES. Henry Dixon and Frank W. Unverferth, Dayton, Ohio. Filed Dec. 24, 1877.

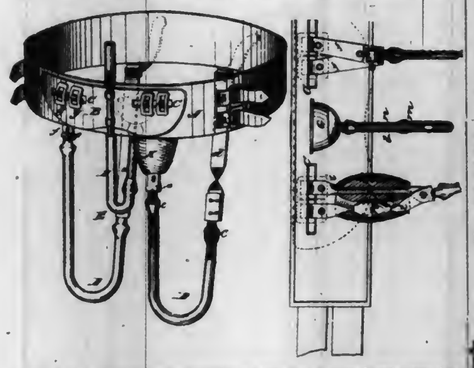
Claim.—1. The flanged plates A, cylinders B and C, and spring-catch E, constructed and arranged substantially as shown and described.

2. The flanged plates A, cylinders B and C, spring-catch E, and slide F, constructed and arranged substantially as set forth.

199,423.



199,424. TRUSSES AND SUPPORTERS. Alex. M. Dye, Elkhart City, Ill. Filed Oct. 6, 1877.



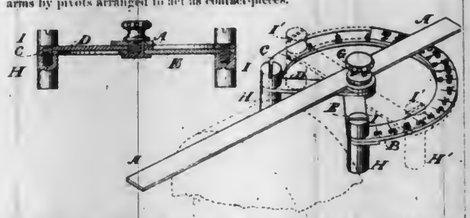
Claim.—1. The combination, with abdominal pad, slotted and secured on the front of waistband, of straps provided with flat fastening-buttons, as shown and described.

2. The rupture-pad, consisting of a number of spheroids sliding freely on cords or straps passing through their axes, and contained within a flexible or textile bag, constructed and operating substantially in the manner described and specified.

3. The flexible connection between the cup B, and bent rigid stem F, consisting of the rod *l*, the lower extremity of which enters a plug in the bent stem, the whole being enveloped in rubber tubing, substantially in the manner described and specified.

199,425. CENTERING-SQUARE AND PROTRACTOR. Eric Ericson, Joliet, Ill. Filed Nov. 10, 1877.

Brief.—A ruler-arm swinging on a pivot, the center of which is in line with one edge of the blade, and two graduated semicircular arcs, sliding one upon the other, one end of each arc being respectively connected to radial arms by pivots arranged to act as contact-pieces.



Claim.—The radial arms D and E, contact-pieces H H and H, and graduated arcs B and C connected therewith, in combination with blade A and pivot G, substantially as shown and described.

199,426. VENTILATORS. Henry M. Farnam, St. Albans, Vt. Filed Dec. 21, 1877.

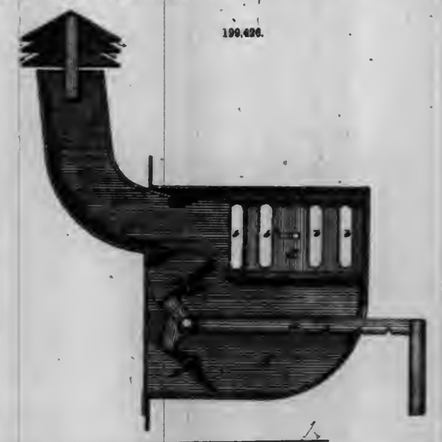
Brief.—A casing with screened supply-pipe and adjustable doors, curved exhaust-pipe and damper above the supply-pipe. The exhaust-pipe is provided with a compound cap or protector for preventing the entrance of rain and snow and keeping up the draft.

Claim.—1. The combination of a casing, having screened side and top openings, forming the air-supply pipe, and adjustable regulating-doors, with an exhaust-pipe above the side-entrance opening, substantially as and for the purpose specified.

2. The combination of the air-supply pipe, having screened side and top openings, adjustable regulating-doors and registers in the end walls, with a curved exhaust-pipe above side-entrance opening, substantially as described.

3. The combination, in a ventilator, of the air-exhaust pipe with a protector made of lower slotted sections and closed top or cap section, substantially as and for the purpose specified.

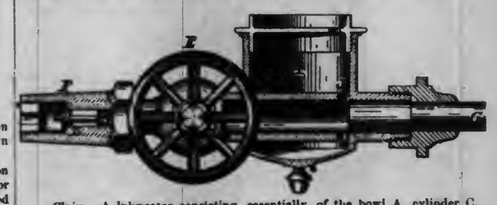
199,426.



199,427. MANUFACTURE OF PAPER-PULP FROM SALT-WATER FIBROUS PLANTS. William E. Farrell, Philadelphia, Pa. Filed Dec. 7, 1877.

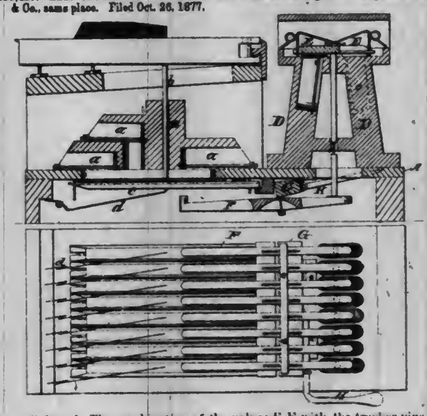
Claim.—In the process of reducing the fibers of salt hay (the botanical name of which is *Spartina juncea*) and other salt-water fibrous plants to paper-pulp, first removing the coloring matter and other intercellulose substances foreign to the pure color of the fiber therefrom by boiling the same in clear fresh water as a preliminary stage, and then subjecting the remaining fiber to a boiling in a caustic solution to complete the operation, substantially as described.

199,428. LUBRICATING-PUMPS. Edward G. Feltheusen, Buffalo, N. Y. Filed Dec. 17, 1877.



Claim.—A lubricator consisting, essentially, of the bowl A, cylinder C, piston G, and the shank F, formed with the stop-cock E, bowl A, and cylinder C in one piece, said cylinder being passed through the walls of the bowl, and provided with filling-apertures J, as and for the use and purpose specified.

199,429. REED-ORGAN ACTIONS. Levi K. Fuller, Brattleborough, Vt., assignor to J. Estey & Co., same place. Filed Oct. 26, 1877.



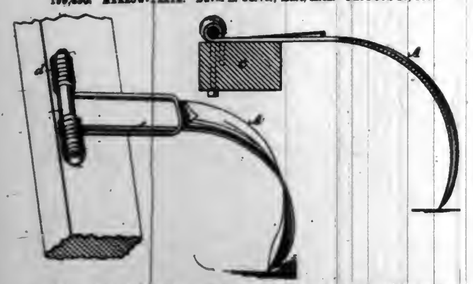
Claim.—1. The combination of the valves E E with the tracker-pins *f f*, attached rigidly to their narrowed ends, as shown, when the said narrowed ends are arranged in the manner shown, so that the pins may be aligned, as set forth.

2. The combination of the lever F, hinged rocker-bar G, stop-lever H, valve *e*, and tracker-pin *f*, all arranged substantially as and for the purposes set forth.

3. The combination of the socket-boards D D, arranged to form walls of

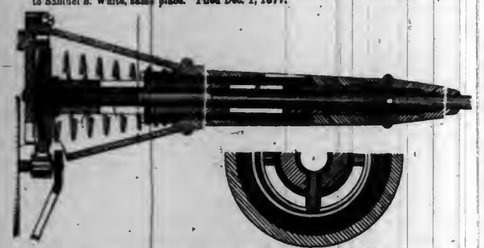
an inclosed chamber, Y, the cells *c c*, arranged in alternate order in same, and opening into the chamber Y, the valves E E, and the adjustable tracker-pins *f f*, attached rigidly thereto, all substantially as and for the purposes set forth.

199,430. HARROW-TEETH. David L. Garver, Hart, Mich. Filed Oct. 16, 1877.



Claim.—The combination, with beam *c* and hinged tooth A, of the torsional spiral spring *d*, having its ends coiled, as shown, from the ends toward the middle of bolt which hinges said tooth to the beam, and formed with the extended portion *e* resting upon the back of the tooth, all constructed and arranged to operate substantially as shown and described.

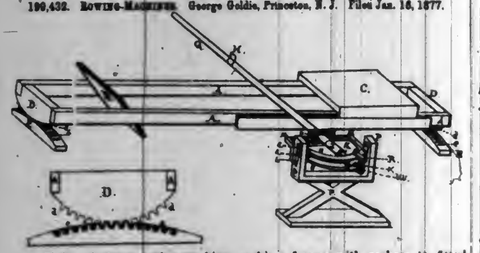
199,431. HAND-PIECES FOR DENTAL ENGINES. John W. Gilbert, Philadelphia, Pa., assignor to Samuel S. White, same place. Filed Dec. 1, 1877.



Claim.—1. The combination, substantially as hereinbefore set forth, in a dental-engine hand-piece, of the casing, the rotary chuck or tool-holder, and its clutch and tool-locking devices, which simultaneously release the tool and disconnect the driving mechanism by a single movement.

2. The dental-engine hand-piece hereinbefore described, consisting of the combination of the casing, the rotary chuck or tool-holder, the driving shaft or spring, a clutch interposed between the chuck and shaft, and a tool-locking device carried by the chuck and connected with the clutch, whereby a single movement is sufficient to operate both clutch and tool-lock.

199,432. ROWING-MACHINES. George Goldie, Princeton, N. J. Filed Jan. 16, 1877.



Claim.—1. In a rowing-machine, rocking frames with rockers D, fitted with teeth *d d*, and rolling surfaces *f f*, rolling upon flanges *g g*, and teeth *e e* of rack-plates E, substantially as described, and for the purpose specified.

2. The combination, in a rowing-machine, of the loom G, indicator H, cam-piece J, and cam K, with the swivel-ring *a* and slide-bearings U U, traveling between movable friction-slides N N, fitted with lugs *h h*, working in the curved slots L L, substantially as described.

3. In a rowing machine, the movable friction-slides N N, with their double-nutted fastenings *p p* and *x x*, and compressor R, and cavity at *n*, substantially as described.

4. The slide-bearings U U, with their guide-pins *y y*, pins *z z*, and flexible connections *c c*, and cam-opening, as used in a rowing machine, substantially as described.

5. In a rowing-machine, the combination of the cam-piece J with the swivel-ring *a*, its pivots *b b*, swinging in the oar-lock S, supported on the outriggers M M, in turn supported by the standards P P, resting upon the base F, substantially as described.

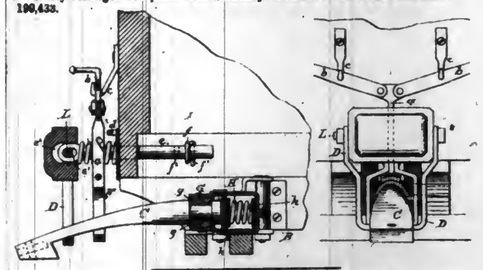
199,433. CAR-COUPLINGS. Henry M. Grover, Vinton, Iowa. Filed Dec. 1, 1877.

Claim.—1. The combination, with the coupling-bar, of the loop F, notched link *a*, foot-lever or levers *b b*, pivoted hook or hooks *c c*, and staple *d*, substantially as and for the purpose herein shown and described.

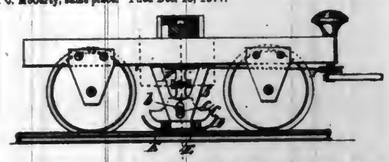
2. The combination, with the coupling-bar and draw-spring, of the frame G, to which the bar is swiveled, and the right-angled plates I I, the several parts relatively arranged and connected together substantially as herein shown and described.

3. The combination, with the buffer, provided with the enlarged holes *e' e'*, of the adjustable spring-rods *e e*, provided with the oblong slots *e' e'*, and secured to the buffer by the transverse rod L, the several parts constructed and relatively arranged to operate substantially as herein shown and described.

199,433.



199,434. CAR-BRAKES. Amos K. Hadley, New York, N. Y., assignor to himself and William F. C. McCarty, same place. Filed Dec. 15, 1877.

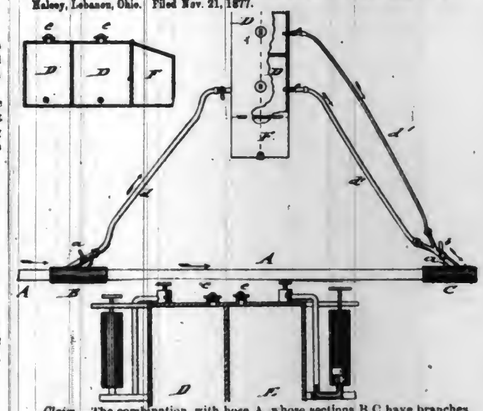


Claim.—The yielding-faced brake C D E, the toggle-joint bars F F, the knuckle-bars G, and the actuating cogged wheel H, combined and arranged substantially as described, and for the purpose set forth.

199,435. PAPER PANELS TO IMITATE WOOD. Charles Hansen, Ebeltoft, Denmark, assignor to himself, Sophus Oerting, same place, H. H. Holmes, Montgomery, Ala., and P. J. McKenzie Oerting, Warrington, Fla. Filed Apr. 23, 1877.

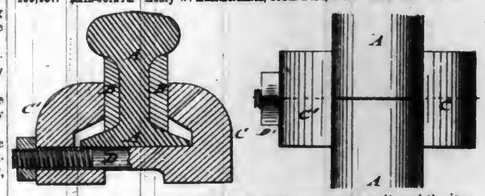
Claim.—A solid paper panel for ceilings and wainscotings, consisting of several paper boards saturated with oil and drier, and consolidated into a solid board, as set forth.

199,436. CARBONIC-ACID-GENERATING ATTACHMENTS TO FIRE-ENGINE HOSE. Joseph S. Haley, Lebanon, Ohio. Filed Nov. 21, 1877.



Claim.—The combination, with hose A, whose sections B C have branches *a*, provided with stop-cocks *b*, arranged at an acute angle thereto, of the vessels D E F and tubes *d d'*, the latter provided with stop-cocks, all substantially as shown and described.

199,437. RAIL-JOINTS. Henry W. Hammersmith, South Bend, Ohio. Filed Nov. 10, 1877.

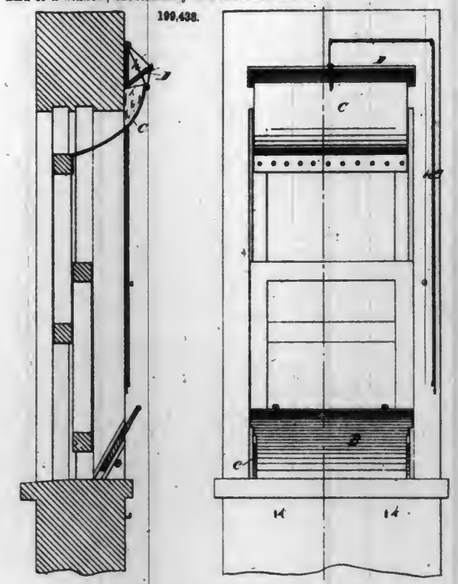


Claim.—The jaw C, having a bottom screw-threaded stem, D, and the jaw C', provided with an apertured base, and the clamping-nut D', in combination with the fish-bars B B and rail-sections A, the jaws embracing the fish-bars and clamping the rail sections, as and for the purpose set forth.

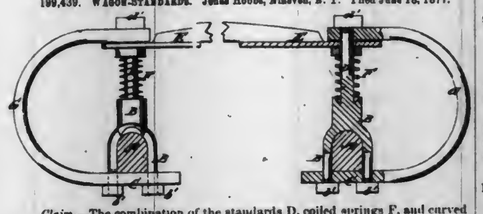
199,438. VENTILATORS FOR WINDOWS. Lorenzo D. Harvey, Sheboygan, Wis. Filed July 9, 1877.

Claim.—The curved metallic deflector C, having cloth side pieces, and provided with a hinged cover, D, in combination with the frame and upper sash of a window, substantially as shown and described.

199,438.

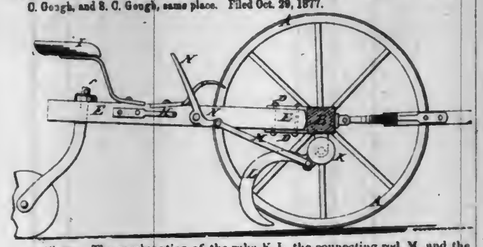


199,439. WAGON-STANDARDS. Jonas Hobbs, Nineveh, N. Y. Filed June 18, 1877.



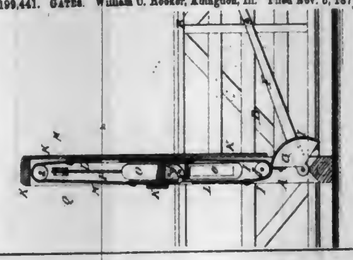
Claim.—The combination of the standards D, coiled springs F, and curved braces G, having yokes C, with the bars or frame E, that support the wagon-body, and with the clips B, attached to the bolsters of the wagon-gearing, substantially as herein shown and described.

199,440. HORSE HAY-RAKES. John C. Holton, Owensborough, Ky., assignor to himself, Wm. O. Gough, and S. C. Gough, same place. Filed Oct. 29, 1877.



Claim.—The combination of the rake K L, the connecting-rod M, and the bent lever N with the axle B and the beam or bar E of the truck-carriage, substantially as herein shown and described.

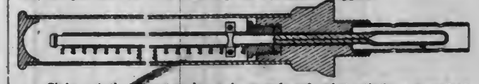
199,441. GATES. William C. Hooker, Abingdon, Ill. Filed Nov. 6, 1877.



Claim.—The combination of the connecting-bar E, the lever F, the segmental pulley G, the cords, slotted bars, and guide-pulleys I M L J *m'*, the weight and pawl O N, and the cords and guide pulleys or eyes P Q R, with each other, and with the gate B, the support and box H K, and the side posts S, substantially as herein shown and described.

199,442. THERMOMETERS. John S. P. Huddleston, Boston, Mass. Filed Jan. 4, 1878.

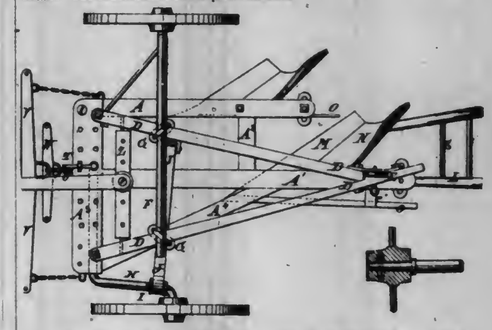
Brief.—Bulb and portion of tube re-enforced by depositing upon them a coating of silver and copper to prevent corrosive action on the glass by acids, &c., and prevent bulb from breaking when pressure is applied.



Claim.—A thermometer glass tube re-enforced, substantially as described, by metal deposited and fixed thereon by means essentially as specified.

199,443. WHEEL-PLOWS. Cornelius L. Jackson, Millersburg, Ill. Filed Apr. 23, 1877.

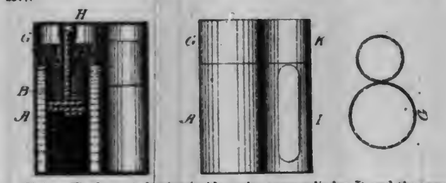
Brief.—Separate crank-axles. The furrow-wheel crank is secured in vertical position, and may be adjusted for a broader tread. The land-wheel crank is horizontal and of a length to be in rear of the other, so that as both are attached to lever D the land-wheel will rise fastest. The land-wheel is attached to the lever by a spring. The plows may be used without the wheel-frame. The construction of the plow-standard.



Claim.—1. The combination of the V-lever D, crank-axle H, U-strap I, and spring J with the plow-beams and wheels, as and for the purpose described.

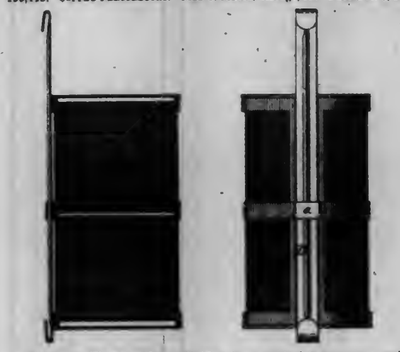
2. The standard K, made with a lateral offset or bend, and provided with a slotted top plate, the curved brace k^2, the handle seat k^4, and the arm k^3, in combination with the beam, the mold-board, and the share of a plow, substantially as herein shown and described.

199,444. MATCH-SAFE AND LAMP COMBINED. Charles Jacobi, Ransom, Ill. Filed Nov 8, 1877.



Claim.—The lamp A, having inside a wire-gauze cylinder, B, and the cover G, with a closing tube, H, in combination with the match-safe I, substantially as described.

199,445. COFFEE-PERCOLATORS. John C. Jansen, Chicago, Ill. Filed Dec. 6, 1877.

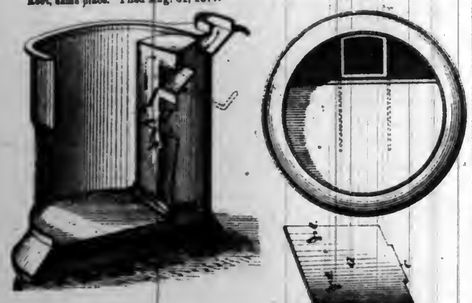


Claim.—1. The percolator divided by a central transverse partition into two compartments, essentially as shown, and provided with a handle hooked at both ends, whereby the percolator may be suspended either end up, and the

fresher charge may be distinguished from the older one, substantially as set forth.

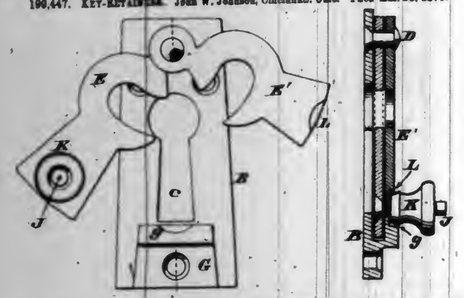
2. The combination, with the percolator, of a bundle whereby it may be suspended within the coffee-pot, and upon which it is adjustable, substantially as specified.

199,446. WOOD HEATING-STOVES. Sherman S. Jewett, Buffalo, N. Y., assignor to Jewett & Root, same place. Filed Aug. 31, 1877.



Claim.—The detachable back fire-plate G, a portion of which forms the front wall of the rear flue or flues, in combination with the interior back plate E, in connection with a diving-flue heating-stove, substantially as and for the purposes herein described and shown.

199,447. KEY-RETAINERS. John W. Johnson, Cincinnati, Ohio. Filed Mar. 28, 1876.



Claim.—1. The combination of plate B C c, pivot D, swinging guard-plate E, recessed guard G g, screw-threaded pin J, and nut K, for the purpose specified.

2. The combination of plate B C c, pivot D, swinging guard-plates E E', screw-threaded pin J, and nut K, as and for the purpose described.

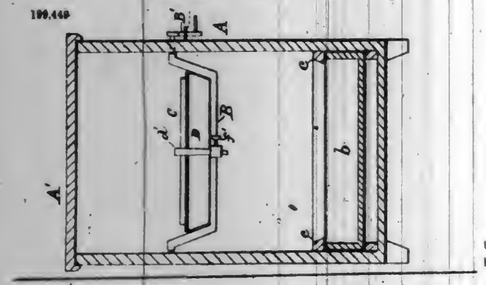
3. The combination of key-hole plate B C c and swinging slotted guard-plates E E', substantially as and for the purposes specified.

199,448. PENCIL-SHARPENERS. Walter H. Keyes, East Princeton, Mass. Filed Dec. 15, 1877.



Claim.—Its a pencil sharpener consisting of a conical barrel, A, and knife-blade B, the blade adjusted by means of screws *b*, and arranged with a bend, substantially as described, whereby the point will be cut a little faster than the wood, as set forth.

199,449.



199,449. ASH-SIFTERS. Andrew S. Kingsbury, Utica, assignor of two-thirds his right to Warren Ramsey and Hiram H. Ramsey, Mohawk, N. Y. Filed Nov. 28, 1877.

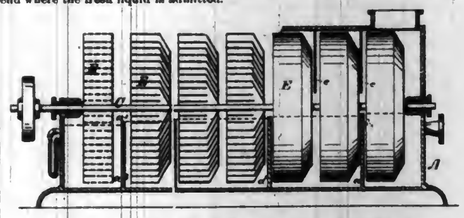
Brief.—Clamp adjustable to be of varying depths to hold ash-pans of differing depths.

Claim.—1. An ash-pan-holder frame, B, adjusted on bearings in the ash-sifter box A, and having a screen or grate, C', hinged to adjustable studs *d*, and provided with an adjustable spring-catch, *d'*, for sifting ashes from the coal or cinders in an ash-pan of a stove without removing them from the pan, substantially as described.

2. The ash-pan-holder frame B, provided with adjustable studs *d*, for holding the hinged screen-lid C, to adjust the size of the frame to the size of the stove ash-pan, substantially as described.

199,450. GAS-PURIFYING APPARATUS. Thomas H. Kirkham, Westminster, David Hulett, High Holborn, and Samuel Chandler, Jr., and Josiah Chandler, 104 Newington Causeway, England. Filed Aug. 6, 1877. Patented in England, Feb. 1, 1877, for fourteen years.

Brief.—Gas is washed and purified by a suitable detergent liquid and a series of revolving beaters, the latter throwing the liquid into spray, and operating in separate communicating chambers, formed in a horizontal cylinder. The partitions forming the chambers are of decreasing height from the liquid induction end of the cylinder, thus permitting the liquid to flow from chamber to chamber. The gas enters at the opposite end of the cylinder, and thus comes in contact with liquid of increasing purity, till it makes its exit at the end where the fresh liquid is admitted.



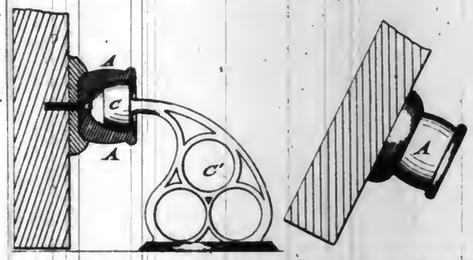
Claim.—1. In a gas-purifier, the rotary washers E E, arranged to rotate between partitions *a a'*, &c., and *c c*, in combination with the said partitions and the vessel A, substantially as herein set forth.

2. In a gas-purifier, a horizontal vessel, A, provided with partitions *a a' a''*, &c., each being slightly higher than the one next adjoining, and partitions *c c*, depending from the roof or cover of the vessel, substantially as set forth.

3. The horizontally arranged vessel A, divided into compartments by means of partitions *a a' a''*, &c., each partition being slightly higher than that next adjoining, as fully set forth, in combination with suitable washers, substantially as and for the purpose specified.

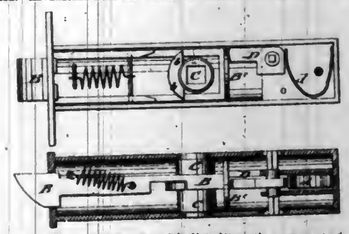
199,451. DOOR STOPS AND HOLDERS. Henry Knowlton, Flint, Mich., assignor to himself and Lorenzo D. Cook, same place. Filed Dec. 4, 1877.

Brief.—A cup-shaped rubber socket, attached by a single screw to its base and to the door, is combined with a fixed ball-shaped stop on the base-board in such manner that the rim of the rubber socket closes on and over the stop, the head of the stop compressing air to form a cushion, and likewise holding the door firmly in position.



Claim.—The rubber socket A, secured by a single central screw to a concaved base, combined with a conical stop, C, the head of the socket closing on and over the rear shoulder of the stop, and the latter compressing air to form a cushion to the door as it is thrown open, as well as holding it firmly in position, all substantially as shown and described.

199,452. REVERSIBLE LATCHES. Charles H. Labelle, Keeseville, N. Y. Filed Oct. 18, 1877.



Claim.—The combination, with disk B' on the rear end of a mortise-lock bolt, of the dog D and spring *d*, constructed and arranged as and for the purpose specified.

199,453. SAW-FILING MACHINES. Oliver W. Le Mar, New Burlington, Ohio, assignor of one-half his right to A. M. Judy, same place. Filed May 31, 1877.

Brief.—The different claims explain the different features.

Claim.—1. A saw-filing machine constructed with a frame supporting two top bars, B and C, which guide a file-carriage, have transverse slots at both ends, are adjustable, are secured by means of thumb-screws *a a* to the upright supports, and connect and brace the latter, substantially as shown and described.

2. The file-carriage having two main parts pivoted together, the upper adapted to guides B C, and the lower suspended below the upper, and adjustable on its pivot, as specified.

3. A file-carriage adapted for holding a file for filing saws in a saw-filing machine, constructed in three sections, A A' A'', the first section, A, sliding lengthwise of the machine upon the top bars B and C, and having the same relative position thereto at all points on said bars, with section A', which carries the cross-sliding sash A'', on which the file F is hung, pivoted under said bars to the top section A, so as to allow it to be moved radially in a horizontal plane to any required angle to the line of the saw, as and for the purpose hereinbefore described.

4. A file-carriage for saw-filing machines, constructed in three sections, A, A', and A'', sections A and A' each constructed with an elevated bridge-tree, *a'* and *a''*, respectively, extending across their side rails, between the top bars B and C of the machine, through which the latter section, A', carrying the section A'', is pivoted to the former section, A, as and for the purpose set forth.

5. A saw-filing machine having a file-carriage with a top sliding section or sash-frame, A, having the same relative position at all points to its guide bars or ways B and C, and a lower section pivoted to the upper, and consisting of the pivoted frame A' and frame A'', sliding on the frame A' and carrying the file F, as set forth.

6. In the file-carriage A A' A'', connected by a pivot-bolt, *a'''*, through its two first sections, as shown, the scale *i'* on the top section A, and the index or pointer *i*, extending through the center of the front bar V of section A, in line with file F, and through a slot in said scale, and having a milled clamp-nut on the lower end of its threaded shank, for clamping the two sections together and fastening the index *i* at any point on the scale, for indicating the angle or degree given to the file, substantially as shown and described.

7. The graduated guide-plate B, arranged as shown, and combined with the sliding file-carriage having a curved index on the upper section, a pointer, *i*, carried by the lower section, and a pointer, *i''*, extending over the graduations on the guide, as set forth.

8. In a file-carriage for saw-filing machines in sections A A' A'', the pivoted section A', having rails *b b* extended in front of the machine, and provided with hangers, a crank-shaft and drive-wheel, D, mounted thereon, and connected by an adjustable pitman, *c*, with the cross-sliding sash A'', for giving to the latter a reciprocating movement, as and for the purpose specified.

9. The combination of the sliding section A'', carrying the file, crank-shaft, pitman *c*, the rock-shaft *c'*, for holding the tang of the file, and the sliding block *c'''*, for holding the point, substantially as specified.

10. In a file-carriage adapted to be operated in a saw-filing machine, the bridge-tree *b'*, block *c'''*, sleeve *c''*, with its scale *i''*, and set-screw *c*, for the purpose of holding the end of the file, and allowing it to be turned on its axis and secured at any angle or degree required, for the purpose set forth.

11. In a saw-filing machine having a file-carriage, operated as described, the adjustable inclined bar *t*, with its long slot *c''*, side slots *a* and *a'*, springs *s''* and *s*, operated in connection with tongue *m*, and its catch or stud *n*, sliding block *c'''*, provided with the tip holding and adjusting devices specified, spring *n'*, loop *n''*, the adjustable bridge-tree *b'*, having thumb-screws *b''*, all arranged and operated for the purpose of raising the file-tip and clearing the file from the saw on its backward stroke.

12. In combination with the devices for elevating the tip end of the file F, as adapted to be operated in the file-carriage of a saw-filing machine, and as herein shown and described, the rock-shaft *c'*, having file-chuck *f'*, for holding the shank end of said file and allowing its radial movement, the adjustable pitman *c*, drive-wheel D, and shaft, and the file-carriage A'', A', and A, the whole arranged to be operated by either a chain or screw movement, substantially as and for the purpose described.

13. In combination with a movable file-carriage for saw-filing machines supported upon guide-bars B and C of the same, above the saw-clamp *c'*, the chain *d*, attached thereto by hooks *d'* in line with saw-clamp, pulleys *d''* and *d'''*, supported by the end bars of the frame of the machine, windlass E, having ratchet-wheels H and H', and pawls *g*, *h''*, and *h'''*, hand-levers h and *h'*, and the crank-shaft *f*, with its belt and pulleys *p p'*, as and for the purpose hereinbefore set forth.

14. In combination with the windlass-shaft E, with its ratchet-and-pawl devices, shown and described, for operating the file-carriage of a saw-filing machine by a chain, *d*, connected therewith, as set forth, the tong foot-lever G, with its catch-pawls *g*, chain, and counter-weight W, as shown and specified.

15. The screw 1, stop-block nut D', sub-post B, and its scale, as and for the purpose hereinbefore set forth.

16. In combination, shaft E, with its chain-and-pulley connections for the operation of the file-carriage A A' A'', ratchet-wheel H, pawls *g* and *h''*, lever *h*, with its rods *j* and *j'*, foot-lever G, slot *O''*, spring *p'''*, hand-lever *h'*, rods *j''*, pawls *h'''*, and ratchet-wheel H, (with an arresting block-nut, D', adjustable upon a screw, 1, to any required point on a graduated scale,) adapted to be operated with said foot-lever and its counter-weight W, substantially as and for the purpose specified.

17. The sectional nut N, its pivot *a'''*, in combination with the file-carriage and screw S, substantially as set forth.

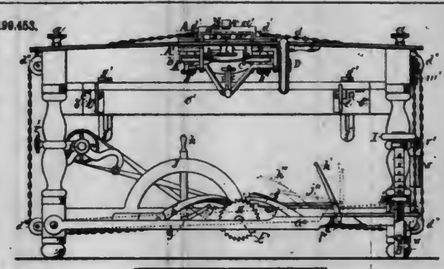
18. The horizontally-divided nut N, having but one section thereof threaded, its two sections hinged together and fastened by a spring-clasp, r, and adapted to be operated upon an extended screw, substantially as hereinbefore set forth.

19. The combination of the file-carriage, chain, windlass, pawls, and ratchet-wheels, operated by the foot-lever, and the adjustable stop D', substantially as set forth.

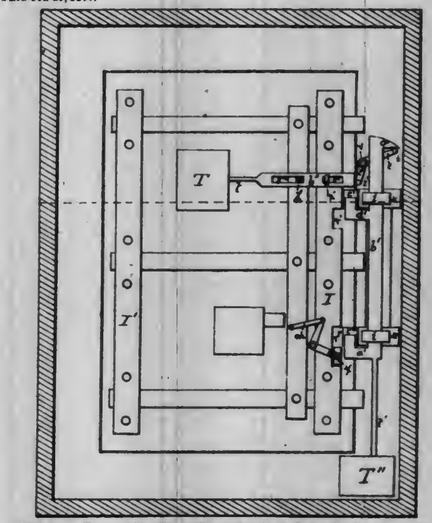
20. The pivoted hangers I, provided with slots r, for the insertion of the ends of the saw-clamp O', a graduated scale thereon, and a thumb-screw for adjusting the height of said clamp, as shown and specified, substantially as and for the purpose set forth.

21. The combination of the horizontal swinging saw-clamp O', its pendent arms L, set-screws *k'*, and graduated stationary segment, as set forth.

199,453.



199,454. TIME-LOCKS. Lewis C. Lillie, Elizabeth, N. J., and S. M. Lillie, Philadelphia, Pa. Filed Oct. 29, 1877.

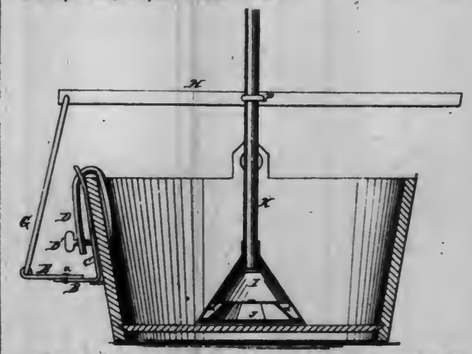


Claim.—1. The combination, with a time-lock, T, on the door, or a time-lock, T', on the jamb, of a safe or vault, of an auxiliary locking mechanism placed on the jamb, and consisting of the bar *b''*, elbow-lever, sliding bar *b*, and blocks *c' c'*, working with reference to the lugs *a* and the guide I, having recesses *c'* in it, substantially as and for the purpose specified.

2. The combination, with a time-lock, T, on the door, or a time-lock, T', on the jamb, of a safe or vault, of an auxiliary locking mechanism placed on the jamb, and formed as described, in connection with the guide I, having in it recesses *c''*, containing a sliding piece, *z*, moved by the elbow-lever, rod *m*, and the train-bolts, substantially as and for the purpose specified.

3. The combination, on a safe or vault, of a locking mechanism on the jamb, the train-bolts on the door, and intermediate mechanism connecting the two, and operating to lock the auxiliary mechanism on the jamb, on the turning of the train-bolt spindle, substantially as described.

199,455. CLOTHES-WASHERS. Nathan H. Long, Muncie, Ind., assignor to himself, John Marks, and Philip F. Davis, same place. Filed Nov. 10, 1877.



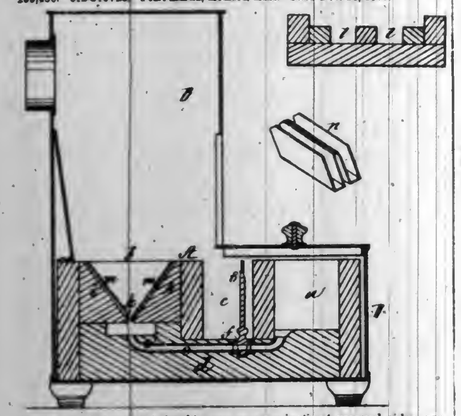
Claim.—1. The cone washer I, provided with an interior circumferential flanged rim, J, having openings *e e* cut in the flange, and bars or braces *h h* running across the top of the rim, whereby a chamber is formed, which is filled with the clothes as the washer descends, substantially for the purposes herein set forth.

2. The combination of the clamp D with thumb-screw D', elbow B C, pivoted plate E, hinged fulcrum G, and operating-lever H, substantially as and for the purposes herein set forth.

3. The loop L, hook-bolt P, and thumb-nut R, in combination with the operating lever H and washer I, with stem or handle K, substantially as and for the purposes herein set forth.

4. In combination with a wash-tub, the device B C E, clamp D, fulcrum G, operating-lever H, connecting device L P R, and washer I, with stem K, all constructed substantially as and for the purposes herein set forth.

199,456. OIL-STOVES. Pearl Martin, Medford, Mass. Filed Nov. 23, 1877.



Claim.—1. A fire-pot, *b*, having two or more inclined grooved sides, provided with one or more continuous or separate wicks of asbestus or other suitable material, in combination with an oil-reservoir, substantially as described.

2. The oil-receptacle *a*, in combination with the fire-pot *b*, having two or more inclined grooved sides, provided with one or more separate or continuous wicks, substantially as and for the purpose set forth.

3. A sheet or other metal wick-holder, *s*, in combination with a fire-pot, *b*, having two or more inclined grooved sides, provided with one or more grooves, *l*, and an oil-receptacle, as and for the purpose described.

4. A casing, B, in combination with the fire-pot *b*, having two or more inclined grooved sides, and an oil-receptacle, *a*, as and for the purpose described.

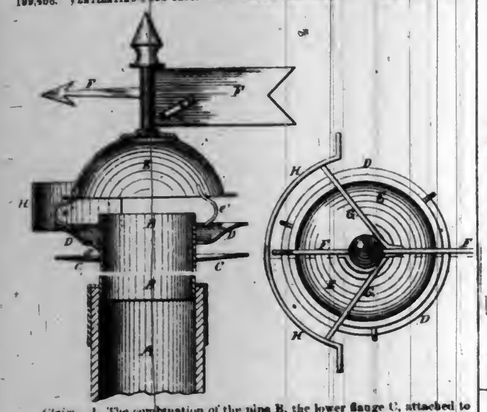
199,457. KNIFE SCOURERS AND POLISHERS. Alex. E. McDonald, Hartford, Conn., assignor of one-half his right to John R. Sloane, same place. Filed Nov. 22, 1877.

Brief.—Of solid grinding material or of wood coated with grit.



Claim.—A solid back, A, of some gritty substance or composition, with or without a solid core of some other material, provided with a rigid face, *c*, curved in but one direction, a rigid molded edge or edges, *a b*, and a suitable handle, B, to form an improved article of manufacture, substantially as and for the purposes set forth.

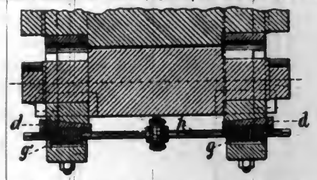
199,458. VENTILATING-FLUE CAPS. J. D. McLinden, New York, N. Y. Filed Dec. 24, 1877.



Claim.—1. The combination of the pipe B, the lower flange C, attached to the said pipe B, the upper flange D, supported by the arms *d'*, and the dome E, supported by the arms *e'*, substantially as herein shown and described.

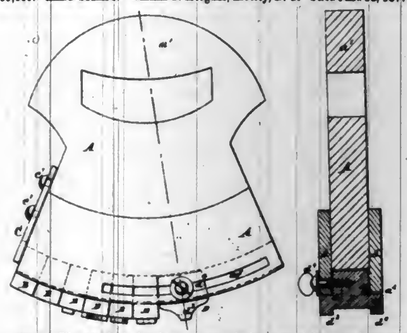
2. The combination of the pipe B, the lower flange C, attached to the said pipe B, the upper flange D, supported by the arms *d'*, the dome E, supported by the arms *e'*, the vane F, and the guard-plate H, supported by the arms G, substantially as herein shown and described.

199,459. ROLLING-MILLS. Charles H. Morgan, Worcester, Mass. Filed Feb. 1, 1877.



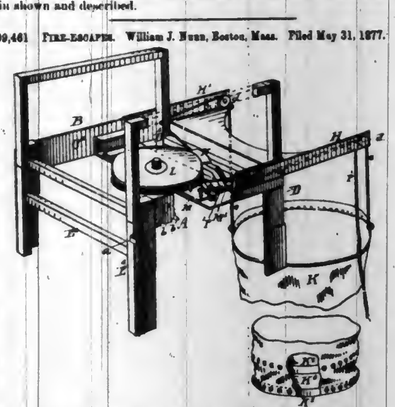
Claim.—The combination, with the worms *g g'*, of the open or cap wedges *d d'*, arranged in relation to the worm-shaft A and roll-shafts or journals, as shown and described.

199,460. HAND-STAMPS. William T. Morgans, Liberty, N. Y. Filed June 18, 1877.



Claim.—The stock A, having a groove in its curved face, an inwardly-projecting flange, *a²*, along the groove, and a curved slot, *a³*, at the side of said groove, and provided with a slotted stop-plate, C, and a clamping-block, D, provided with guide projections *d²*, and a clamping-screw, *d³*, substantially as herein shown and described.

199,461. FIRE-ESCAPES. William J. Hunn, Boston, Mass. Filed May 31, 1877.

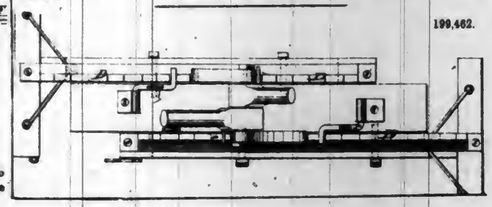


Claim.—1. The combination of the wheel L in the body of the chair A H with the ropes *c c*, sheaves *d d*, the hinged back H H' of the chair, and the legs D D', all operating together substantially as described, and for the purpose set forth.

2. The combination of the spring reel-wheel L, the ropes *c c*, the fixed brake N, and the lever P, substantially as described, and for the purpose set forth.

3. The falling car K, provided with the disks K^1 K^2 and air-compartment K^3, arranged to operate substantially as described, and for the purpose set forth.

199,462.



199,462. CARPET-STRETCHERS. Richard J. Parrett, Albany, Ind. Filed Dec. 3, 1877.

Claim.—A carpet-stretcher having a foot-piece between two arms, the latter worked independently of each other by separate ratchets, pawls, and levers, substantially as shown and described.

199,463. BACK AND SHOULDER BRACES. John W. Partridge, Boston, assignor to Esther E. Partridge, Brookline, Mass. Filed Oct. 22, 1877.

Brief.—The two parallel vertical spring-braces taper each way from the waist. The ends are united by a raised connection, to which the cross pieces (also tapering) are pivoted.



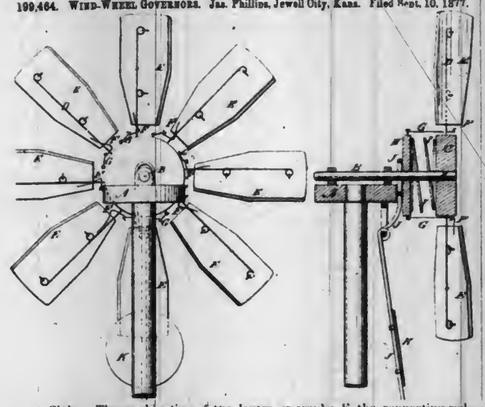
Claim.—1. The parallel connected springs A A, made widest at a point below the center and tapering in each direction, to make the spring strongest at the waist, all as and for the purposes set forth.

2. In combination with the above-described springs A A, the rigid connecting-pieces, centrally arched or raised to avoid contact with any vertebral protuberance, and to allow free turning motion to the cross-springs C and B, as and for the purposes set forth.

3. In combination with the upright springs A A and their arched connections, the cross-springs B C, loosely pivoted to the raised cross-connections, and tapering each way from a central point, all as and for the purposes set forth.

4. The combination of the upright graduated springs A A with central raised connections, the loosely-pivoted cross-springs B C, provided with knobs or other securing devices at each end, and the connection D, provided with a knob, all as and for the purposes set forth.

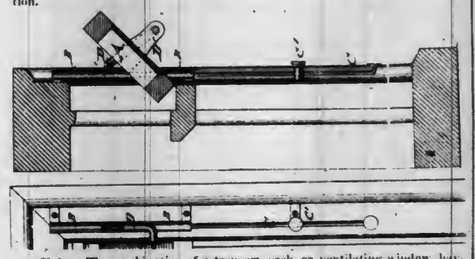
199,464. WIND-WHEEL GOVERNORS. Jas. Phillips, Jewell City, Kans. Filed Sept. 10, 1877.



Claim.—The combination of the levers or cranks F, the connecting-rods G, the disk H, the spring or springs I, the lever J, and the wing K with the wheel-shaft B, the hub C, the wings E, and the turn-table A, substantially as herein shown and described.

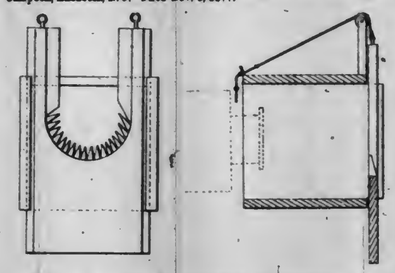
199,465. TRANSOM-LIFTERS. Justus H. R. Prall, Elmira, N. Y. Filed July 23, 1877.

Brief.—A hollow and slotted guiding-tube is provided for the operating slide-rod, and there are rigid bracket-arms, and a pivoted connecting-arm coacting to open or close the transom, or by means of a set-screw to hold it at any desired angle, the slotted tube constituting the main novelty in construction.



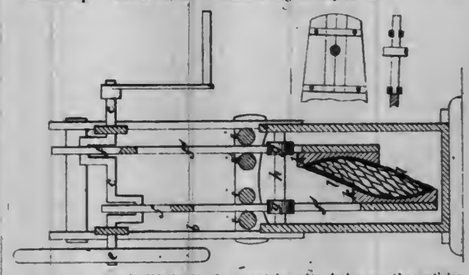
Claim.—The combination of a transom, sash, or ventilating window, having rigid bracket-arm D', with a pivoted connecting-arm, D, slotted guide-tube B, arranged sidewise of sash, and of an operating slide-rod, C, and set-screw C', to adjust sash at any position and angle, substantially as set forth.

199,466. PHOTOGRAPHIC VIGNETTING DEVICES. Francis M. Price, Irvington, and Alfred S. Campbell, Elizabeth, N. J. Filed Nov. 6, 1877.



Claim.—An adjustable vignette-shield, in combination with a box for shading the same, as and for the purpose specified.

199,467. WASHING-MACHINES. Walter Roberts and Alfred E. Roberts, Graham's Town, Cape of Good Hope. Filed Dec. 18, 1877. Patented in England, May 30, 1877.

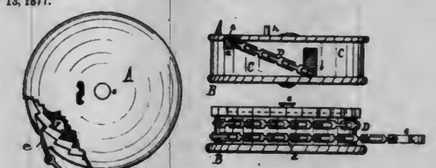


Claim.—1. The flexible basket for containing the clothes or other articles to be washed, such basket consisting of the movable disks or palms *k k* and the flexible connecting net-work *l*, or its equivalent, substantially as described.

2. The combination, substantially as hereinbefore set forth, of the two disks or palms, their slotted connecting-rods, the two-cranked axis from which said rods are suspended, the fulcrum-rollers, and the guide-rollers at right angles thereto, whereby the palms are given up-and-down circular motions in opposite directions, move in parallel vertical planes and unchanging paths, and are caused to thoroughly rub the articles between them.

3. The combination, forming a washing-machine, of a tub for containing the water or liquid for washing, a flexible basket, and apparatus for giving a continually-varying form to the said basket, substantially as described.

199,468. CHAIN-LOCKS FOR VALISES. James R. Rhoubottom, Woodsport, N. Y. Filed Dec. 13, 1877.



Claim.—The combination of the rotating case A C, cap B, spindle *c*, chain D, provided with a catch, *e*, and a suitable locking device, consisting of a ratchet and a spring-catch, arranged to be unlocked by a key, substantially as described.

199,469. HAND-PIECES FOR DENTAL ENGINES. Josephus Re Qua, Rochester, N. Y. Filed Feb. 17, 1877.

Brief.—The sectional hand-piece carries entirely within it a clamping-sleeve for the rotary chuck or tool-holder. This clamping-sleeve moves endwise on the chuck when released from the spline which locks it.



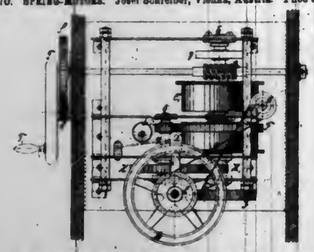
Claim.—1. The combination in a dental engine hand piece, substantially as hereinbefore set forth, of the sectional casing, the rotary chuck or tool-holder, mounted in bearings therein, and the clamping-sleeve, movable endwise on the chuck and entirely inclosed within the casing.

2. In a dental engine hand-piece, the combination, substantially as hereinbefore set forth, of a casing, a rotary tool-holder mounted therein, and a tool-securing device automatically operated by the rotation of the tool-holder to secure or release the tool.

3. The combination, substantially as hereinbefore set forth, of the casing, the spindle mounted therein and locked against endwise movement, the clamping sleeve movable endwise on the spindle, and a clutch or spline to lock the clamping-sleeve against rotary movement with the spindle, while permitting it to move endwise thereon, whereby the shanks of operating tools may be locked in or removed from the spindle-socket or chuck.

4 The combination, substantially as hereinbefore set forth, of the casing the rear section of which is removable, the spindle provided with the collar, enlarged threaded portion, and split socketed end, the clamping-sleeve provided with the internally threaded enlarged head, working upon the threaded portion of the spindle, and with inclined or reduced end working over the split end of the spindle, and the sliding clutch or spline adapted to engage with the clamping-sleeve.

199,470. SPRING-MOTORS. Josef Schreiber, Vienna, Austria. Filed Jan. 4, 1878.

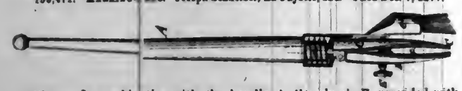


Claim.—1. In a spring motor, the combination of two independent coiled springs, fitted within shells or casings, upon a single shaft, with winding and power transmitting devices, substantially as herein set forth.

2. The combination of the shaft E, spring-barrels C C' D D', spur-rim F, pinion F', shaft G, spur-wheel H, pinion H', and screw-wheels I I' with the vertical shaft O and direct driving mechanism of the machine, as and for the purpose set forth.

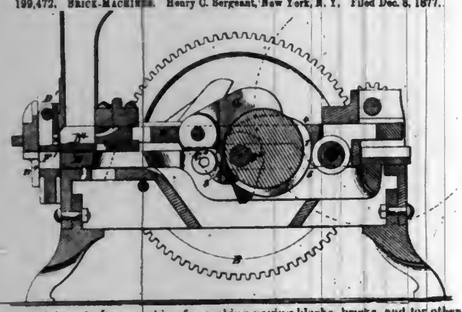
3. The combination of the shaft *i*, provided with a handle-eccentric, *k*, and spring brake-arm *g*, with the balance wheel and motor mechanism, as and for the purpose set forth.

199,471. MARKING-PENS. Joseph Schneider, La Fayette, Ind. Filed Dec. 7, 1877.



Claim.—In combination with the handle A, the shank B, provided with the stationary blade C and the hinged blade D, said blades being curved toward each other from base to point, and laterally from edge to edge, provided with the lining *e* and regulated by the screw E and spring F, substantially as and for the purpose specified.

199,472. BRICK-MACHINES. Henry C. Bergeant, New York, N. Y. Filed Dec. 8, 1877.

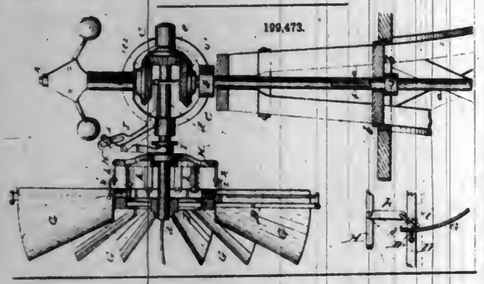


Claim.—1. In a machine for making paving-blocks, bricks, and for other similar purposes, a presser having a longitudinal recess in its under surface and a vertical aperture through its body, substantially as and for the purpose set forth.

2. In a machine for making paving-blocks, bricks, and for other similar purposes, a sliding mold having in a portion of its surface a series of apertures for relieving the same from obstruction in being operated by the accumulation of sticky or pasty substances, substantially as set forth.

3. In a machine for making paving blocks, bricks, and for other similar purposes, the combination of the sliding mold D', the levers D, the yoke D', and the cam B', the parts being arranged to operate substantially as and for the purpose specified.

199,473.

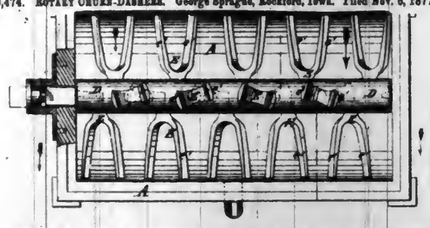


199,473. WINDMILLS. Thomas H. Shephard, Lincoln, Nebr., assignor of one-half his right to Warren Fuller, same place. Filed Dec. 1, 1877.

Claim.—1. The turn-table C, inclosing the gear-wheels *e e'*, in combination with the tube *a*, shaft *f*, and governor, substantially as and for the purpose set forth.

2. The combination of the wind-wheel fans G, links *i*, arms *h*, spider H, lever I, with slot and pin *x*, the slotted elbow-lever J, and the governor-rod *k*, substantially as and for the purposes herein set forth.

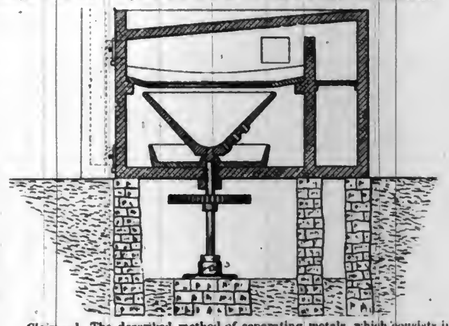
199,474. ROTARY CHURN-DASHERS. George Sprague, Rockford, Iowa. Filed Nov. 6, 1877.



Claim.—In a churn, the combination, with dasher-shaft, of bifurcated paddles E, having blades *e'*, diverging from each other, and placed at an inclination to the central plane of cross-section of the cream-box, as and for the purpose specified.

199,475. SEPARATING MOLTEN METALS. Frederick J. Seymour, Wolcottville, Conn. Filed Apr. 16, 1877.

Brief.—The flame passes over the melting-hearth, or down through the central opening therein, and around the melting-pot, at will. The metal melts, and runs down through the central opening in the concave hearth into the melting-pot, where it is kept molten by the flame surrounding the pot. A vertical jolting motion is given the latter as it revolves. The molten metals arrange themselves according to their specific gravities, and are tapped off into the trough. The heat is regulated so as to melt the more fusible metal first, &c.

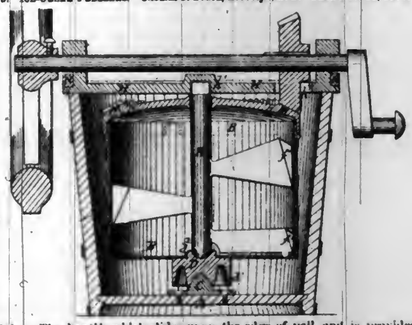


Claim.—1. The described method of separating metals, which consists in subjecting a molten mass of the combined metals in a containing-vessel to a jigging or settling motion, whereby the metals are arranged according to their relative specific gravities, and may be separately drawn off, substantially as set forth.

2. The combination, with a pot for melted metals and a shaft for sustaining the same, of the gearing for rotating the pot, and the cam-teeth S, for raising the pot and allowing it to drop, substantially as set forth.

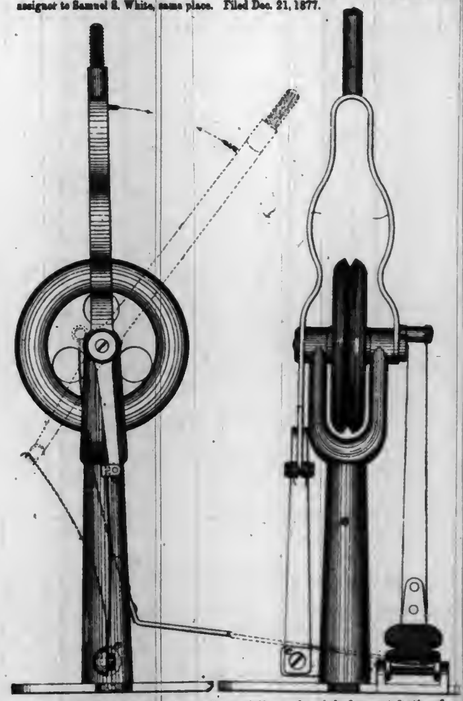
3. The inclined hearth of the reverberatory furnace, having a bottom outlet or opening, in combination with a collection-pot located beneath said opening, a chamber beneath the hearth containing said pot, and flues and dampers, substantially as set forth, whereby the furnace-flame is either conveyed over the hearth to the chimney, or down through said hearth and around the pot, as set forth.

199,476. ICE-CREAM FREEZERS. Thomas J. Soden, Brooklyn, N. Y. Filed Nov. 10, 1877.



Claim.—The bar H, which slides upon the edge of pail, and is provided with grooved ends that pass on and off the horizontal arms of bars N, as and for the purpose set forth.

199,477. ROCKING STANDARDS FOR DENTAL ENGINES. Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place. Filed Dec. 21, 1877.



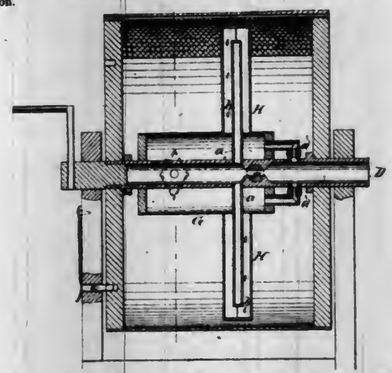
Claim.—1. The combination, substantially as hereinbefore set forth, of a base or supporting-standard, a rocking arm pivoted thereon, and a plate-spring fixed upon the base and acting upon the rocking arm, whereby the tension of the spring diminishes as the arm is deflected.

2. The combination, substantially as hereinbefore set forth, of the base, the rocking arm pivoted thereon, and the spring secured to the base overlapping the extension of the arm and moving endwise through a loop thereon, whereby the spring acts as a lock to prevent the movement of the rocking arm in one direction.

3. The plate-spring, secured at one end to the base, provided with a hook at the other, and movable endwise through a loop on an extension of the rocking arm, to limit the range of movement of the latter.

199,478. FEATHER-RENOVATORS. Wm. A. Stewart, Big Rapids, Mich. Filed Sept. 10, 1877.

Brief.—The spring-stop bolt *s* serves to retain the cylinder in any desired position.



Claim.—1. The combination, in a feather-renovator, of a series of radial tubes for heating and drying, and a series of steaming-tubes, inclosing the heating-tubes, and serving the double purpose of distributing steam and of a guard for preventing the feathers from coming into contact with the heating-tubes during the secondary process of drying, substantially as herein shown and described.

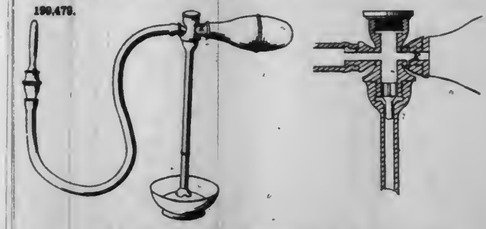
2. The combination of the tubular shaft D, having valve F, tubes *a*, cylinder G, tubes H, and tubes *c*, having valves *d*, substantially as shown and described.

199,479. SYRINGES. Benjamin F. Sutton, Brooklyn, N. Y. Filed Aug. 17, 1877.

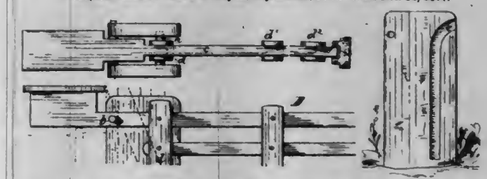
Claim.—1. The rigid inflexible suction-tube, having two openings for attaching an elastic bulb either perpendicular with or at right angles to said tube, in the manner specified, and substantially as set forth.

2. A syringe having a rigid suction-tube, with the elastic bulb connected directly thereto at, or nearly at, a right angle, and a flexible discharge-pipe in the same axial line, substantially as described.

199,479.



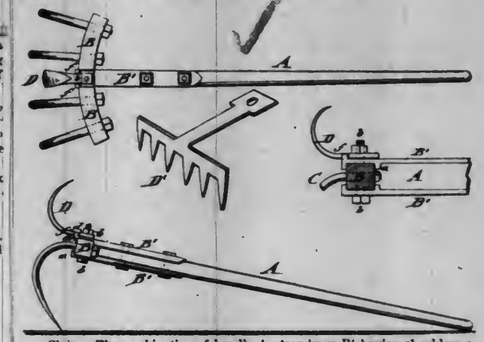
199,480. GATES. Oliver L. Taylor, Fayetteville, N. Y. Filed Dec. 11, 1877.



Claim.—A gate-post provided with continuous slots *c*, extending upward and to the edges, and adapted to receive and guide the legs *n* of the pivoted folding gate D, as set forth.

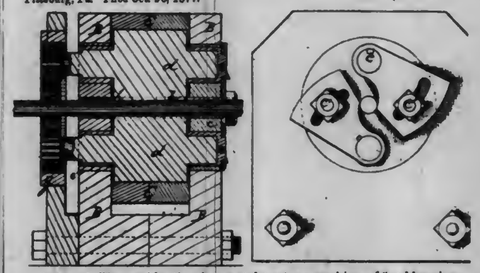
199,481. CULTIVATING IMPLEMENTS. Wm. H. Thomas, Way Cross, Ga. Filed Sept. 29, 1877.

Brief.—A wooden handle is provided with two concave straps of iron, which are bolted to the lower end of the handle. A curved cross-head is held in place by a bolt that passes through the projecting flat ends of the straps and cross-head, which is fitted to receive a series of curved teeth. The upper strap is provided with two lips, one upon each lower corner, and various formed teeth, or a series of them, or a hoe-blade, may be attached.



Claim.—The combination of handle A, strap-irons B', having shoulders *a*, the cross-bar B, and through bolt *b*, the upper one of said strap-irons provided with lugs *f f*, for the attachment of drill-tooth D, all constructed and arranged to operate substantially as shown and described.

199,482. MACHINES FOR SCALING AND STRAIGHTENING METAL BARS. Samuel Trethewey, Pittsburg, Pa. Filed Oct. 26, 1877.

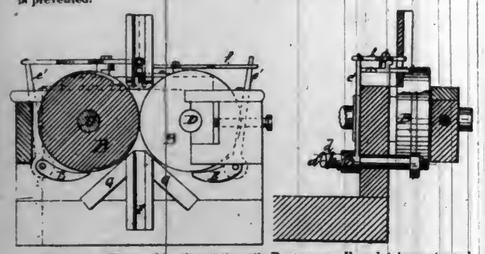


Claim.—1. The combination, in a metal-working machine, of fixed housings, a rotary housing, work-rolls journaled in the rotary housing and provided with pinions, and an independent internal gear for actuating the work-rolls, substantially as and for the purpose specified.

2. The combination, with the rotary housings and work-rolls journaled therein, of the axially-arranged guide or guides, substantially as and for the purpose specified.

199,483. HORSESHOE-NAIL MACHINES. John E. Wheeler, Lynn, and David B. Loring, Boston, Mass. Filed Mar. 19, 1877.

Brief.—A detent with a forked end plays through a slot in the feed-tube, retreats to allow but one blank at a time to pass, and immediately returns, embraces each side of the shank of the blank, and prevents it from tilting as it is drawn into the rolls. A delivery-tunnel is fastened to the frame below the rolls, and has attached to each side an arm, upon which the imperfect blanks, removed from the grooves of the rolls by the stripper, fall, and are directed to separate receptacles, the perfect blanks falling through the tunnel. Each stripper is connected with a cut-off detent, by which, should a blank be so firmly lodged as to force the stripper downward, the further feeding of blanks is prevented.



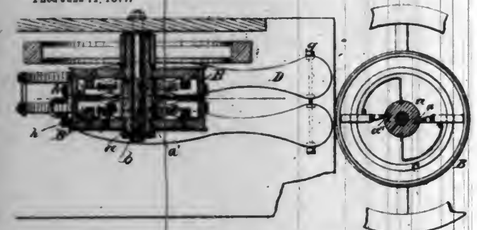
Claim.—1. The combination of the rolls B, strippers E, and delivery-tunnel F, not extended to the periphery of the rolls, all operating as described, to separate the perfect from the imperfect rolled blanks.

2. The combination of the metal strippers E, shaft *d'*, spring *d*, arm *e*, and slotted lever *f*, substantially as and for the purpose described.

3. The combination of a feed-tunnel, revolving dies, and delivery-tunnel with the strippers E and the inclines G, all arranged in relation to each other and operating as described.

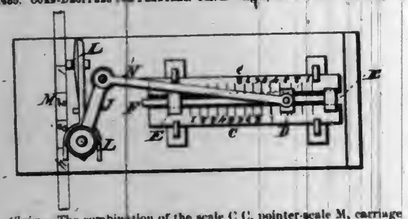
4. The combination, in a horse-nail machine, of a tunnel having a positive forked cut-off, rolls B, and a distributing device with metal strippers E, arranged to operate a cut-off only when a blank is lodged in a die, substantially as shown and described.

199,484. TREADLE-MOTION. Theodore F. Woodbridge and Andw. P. Gerlach, Mendota, Ill. Filed June 11, 1877.



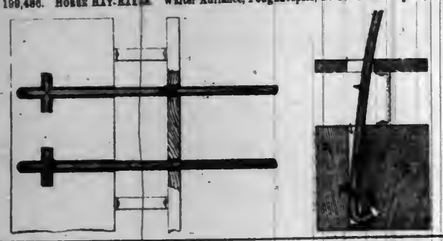
Claim.—The circular hubs *a*, ratcheted and connected with rims of the pulleys B B by spring-pawls, in combination with reversed belts *h h'*, connected with treadles, as shown and described, whereby the hub that is fast to shaft may be rotated, as specified.

199,485. CORN-DROPPERS FOR PLANTERS. Jas. L. Wright, Wilmot, Wis. Filed July 13, 1877.



Claim.—The combination of the scale C C, pointer-scale M, carriage E F, cross-head D, lever L, connecting-rod N, crank J, clutch K on shaft I, as and for the purpose set forth.

199,486. HORSE HAY-RAKE. Walter Adriance, Poughkeepsie, N. Y. Filed July 14, 1877.



Claim.—1. The herein-described method of opening the crevices in oil-wells by percussive blows *in vacuo* on water or other body of intermediate liquids, substantially as and for the purpose set forth.

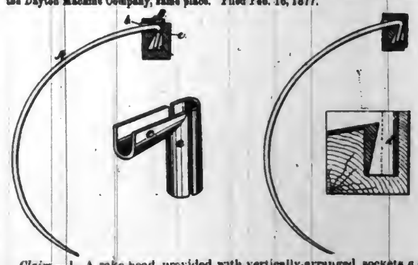
2. The combination, with a well-tube, of a steel packing and weighted drop or ram, substantially as and for the purpose set forth.

3. The weighted drop or ram provided with the opening *a* and lip or lips *b*, substantially as and for the purpose specified.

4. The weighted drop or ram provided with the shoulders *a'*, in combination with the rods or bars *c c*, substantially as described.

5. The weighted drop or ram having the rubber packing ring or rings, substantially as and for the purpose set forth.

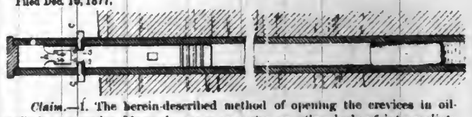
199,487. HORSE HAY-RAKES. Wales Aldrich, Dayton, Ohio, assignor of one-half his right to the Dayton Machine Company, same place. Filed Feb. 16, 1877.



Claim.—1. A rake-head provided with vertically-arranged sockets *a* or *f*, larger at the bottom than at the top, and horizontal grooves or sockets *b* or *g*, larger in the rear than in front, in combination with the strips B or F and the ends of the rake-teeth, bent at an acute angle, as and for the purpose specified.

2. The metal bearing-sockets, composed of the parts *d* and *e*, constructed and applied as and for the purpose specified.

199,488. RAMS FOR OPENING CREVICES IN OIL-WELLS. Abram Alexander, Pittsburg, assignor of one-half his right to Samuel M. Boyd, same place, and Chas. R. Moore, St. Petersburg, Pa. Filed Dec. 10, 1877.



Claim.—1. The herein-described method of opening the crevices in oil-wells by percussive blows *in vacuo* on water or other body of intermediate liquids, substantially as and for the purpose set forth.

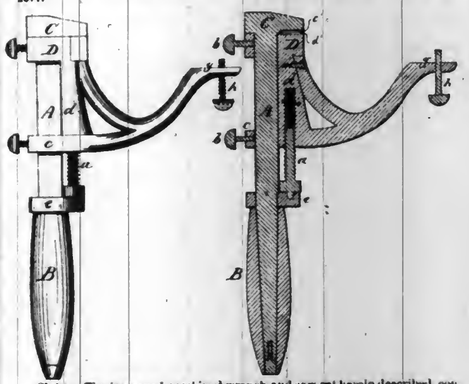
2. The combination, with a well-tube, of a steel packing and weighted drop or ram, substantially as and for the purpose set forth.

3. The weighted drop or ram provided with the opening *a* and lip or lips *b*, substantially as and for the purpose specified.

4. The weighted drop or ram provided with the shoulders *a'*, in combination with the rods or bars *c c*, substantially as described.

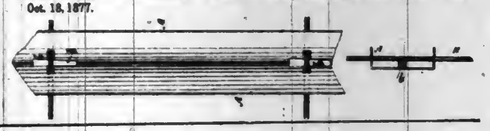
5. The weighted drop or ram having the rubber packing ring or rings, substantially as and for the purpose set forth.

199,489. COMBINED WRENCH AND SAW-SET. Jacob Backer, Rose Hill, Tex. Filed July 26, 1877.



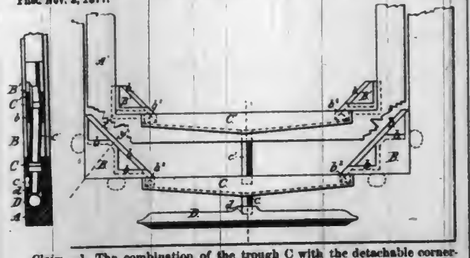
Claim.—The improved combined wrench and saw-set herein described, consisting of the stock A, having solid jaw C and handle B, and adjustable sliding jaw D, having bracket F, provided with plate *g* and thumb-screw *h*, and set-screws *b b*, the jaws C D being provided with recesses *c' d'*, facing each other, as shown, all combined, arranged, and operating substantially in the manner and for the purpose herein shown and specified.

199,490. FENCE-WIRE RETAINERS. William P. C. Bain, Edinburgh, North Britain. Filed Oct. 18, 1877.



Claim.—The improved wire-fence dropper A, constructed with open eyes or notches *a*, and secured to the fence-wires by wedges *b*, substantially as set forth.

199,491. PHOTOGRAPHIC-PLATE HOLDERS. Benjamin F. Baltaly, Montreal, Quebec, Canada. Filed Nov. 2, 1877.



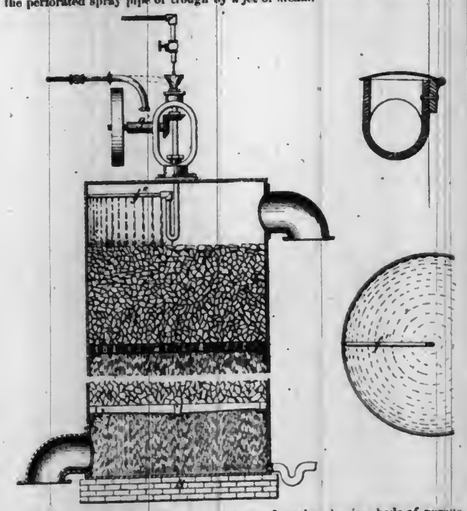
Claim.—1. The combination of the trough C with the detachable corner-pieces B, provided with a groove or gutter, *b'*, and projecting points *b²*, for entering the groove of the trough, in the manner and for the purpose herein specified.

2. The combination of the receiving-vessel D, having its mouth *d* at or near its middle, with the frame A of the plate-holder, as herein set forth.

3. The combination, with the frame A, of the detachable corner-pieces B, provided with the groove or gutter *b'* and projecting points *b²*, as hereinbefore described, the trough C, and the receiving-vessel D, having its mouth at or near its middle, as herein set forth.

199,492. COMBINED GAS SCRUBBER AND WASHER. John Balmore, New York, (Harlem,) N. Y. Filed Nov. 2, 1877.

Brief.—Gas is washed with a limited supply of water in the form of a fine shower or spray, just sufficient in quantity to absorb all its ammonia and produce a concentrated liquor, thus avoiding waste of water and deterioration of the gas by washing out and absorbing its volatile hydrocarbons and olefiant gas, which latter result from an excessive use of water. The gas also passes through beds of wet coke, by which it is broken up, thus subjecting every particle to the absorbent action of water, and by which it is freed from its heavy tar. The gas, by passing up against the flow of water, comes in contact last, at the top of the washer and scrubber, with fresh water, so that it goes into the ednction-pipe perfectly purified. Obstructions and impurities are cleared from the perforated spray pipe or trough by a jet of steam.



Claim.—1. A combined gas scrubber and washer, having beds of porous material and intervening spaces, in combination with a horizontal, radial, revolving, perforated spray pipe or trough, having a vertical limb extending centrally through the head of the scrubber, substantially as described.

2. A perforated spray pipe or trough of lead, in combination with a gas-washer, for the purpose set forth.

3. A perforated spray pipe or trough, having a U-shaped water-seal bend or trap, in combination with a gas-washer, as and for the purpose set forth.

4. A central, radial, revolving, perforated spray-pipe, having a U-shaped trap, in combination with operating mechanism, for revolving it and the cylinder of a gas washer and scrubber.

5. A radial, revolving, perforated spray pipe or trough in which the perforations increase in number and size from the inner toward the outer end, whereby the water is sprinkled and distributed evenly from center to circumference, and every part of the surface of coke equally wetted.

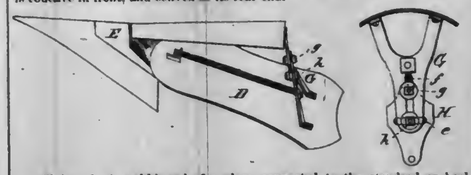
6. A radial, revolving, perforated lead spray pipe or trough, having a U-shaped water-seal trap, in combination with a combined gas washer and scrubber, substantially as and for the purpose described.

7. A steam-jet apparatus, in combination with a perforated spray-pipe of a gas washer and scrubber, for dissolving and blowing out tarry and other obstructions from the spray-pipe.

8. The perforated spray-trough of lead, having a strengthening backing of iron and a hinged cover, substantially as and for the purpose described.

199,493. PLOWS. Francis A. Barrows, Castleton, Vt. Filed Dec. 28, 1877.

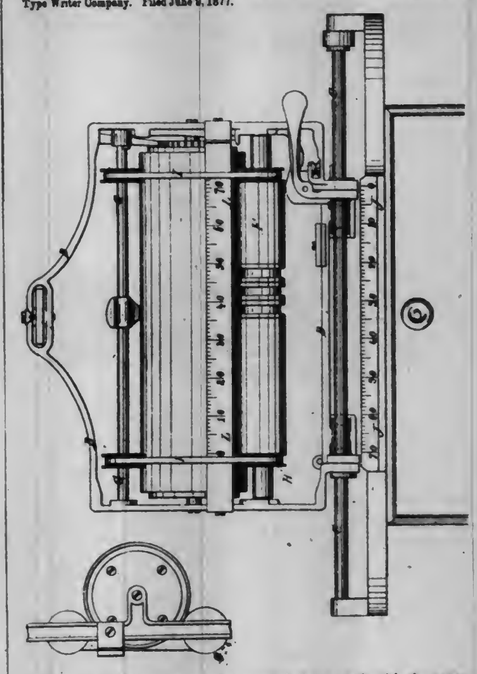
Brief.—The swivel-plow has a connecting-brace in two parts between the land-side and mold-board. A slot permits its extension to throw out the mold-board, and a cross-slot allows it to be raised or lowered. The mold-board is concave in front, and convex at its rear end.



Claim.—1. A mold-board of a plow, connected to the standard or heel thereof, substantially as specified, so that the mold-board will have both a vertical and lateral adjustment, substantially as and for the purpose set forth.

2. The mold-board D, having secured thereto plate G, with vertical slot *f*, in combination with the plate H, having longitudinal slot *e*, and the bolts and nuts *g h*, substantially as and for the purpose specified.

199,494. TYPE-WRITING MACHINES. Walter J. Barrus, New York, N. Y., assignor to the Type Writer Company. Filed June 9, 1877.

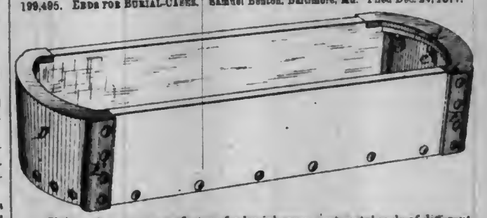


Claim.—1. The combination of a reversed dial or scale with the paper-carriage of a type-writing machine, substantially as described.

2. The combination of a reversed dial or scale with and attached directly to the paper-carriage of a type-writing machine, substantially as described.

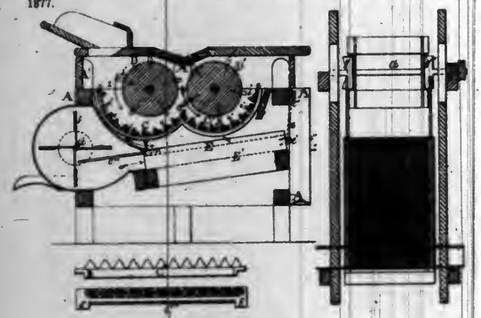
3. The combination of a dial or scale attached to the main frame with another dial or scale attached to the paper carriage of a type-writing machine, substantially as described.

199,495. EDDS FOR BURIAL-CASES. Samuel Benton, Baltimore, Md. Filed Dec. 24, 1877.



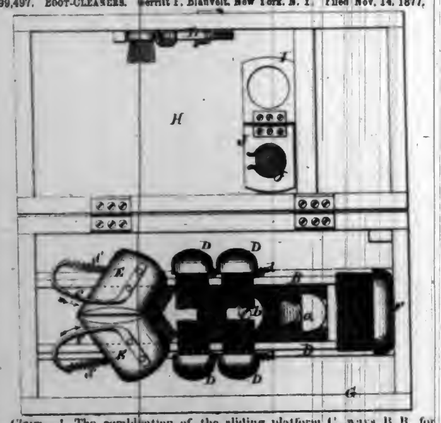
Claim.—As a new manufacture for burial cases, cast-metal ends of different sizes for different-sized cases, having vertical side lap-moldings, open on their inner sides, inward-projecting top rims, forming a continuation of the top molding laps, and inward projections, as supports for the trimming-strips, for use as described.

199,496. CORN-SHELLING MACHINES. William M. Blair, Williamsport, Md. Filed Nov. 6, 1877.



Claim.—The combination, with the toothed cylinders D D', of the toothed perforated concaves C C', the latter placed nearer its cylinder than the former, substantially as set forth.

199,497. BOOT-CLEANERS. Gerrit F. Blauvelt, New York, N. Y. Filed Nov. 14, 1877.



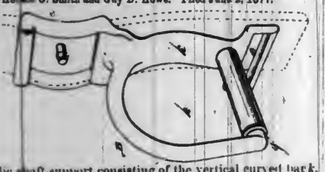
Claim.—1. The combination of the sliding platform C, ways B B, for guiding said platform, and lateral brushes D D, for cleaning or polishing the side parts of the boot or shoe, substantially as described.

2. The combination of the sliding platform C, ways B B, for guiding said platform, and transverse brushes E E, for cleaning or polishing the waist and the toe part of the boot or shoe, substantially as described.

3. In a boot or shoe blacking device, the foot-support provided with a heel-brush, F, on a level with and arranged transversely to the side brushes D, substantially as and for the purpose set forth.

4. The combination of the case G, its hinged lid H, the ledge I, and weighted blacking-receptacle J, hinged to said ledge, substantially as described.

199,498. HARNESS TUGS AND ATTACHMENTS. John D. Blincoe, Lewisport, Ky., assignor of two-thirds of his right to Horace G. Smith and Guy D. Howe. Filed June 2, 1877.



Claim.—The metallic shaft support consisting of the vertical curved bar *k*, curved bar *f*, transverse bar *g*, and loop *e*, in combination with the buckle, substantially as and for the purposes set forth.

199,499. MAIL-BAG CATCHERS. Jas. A. Beals, Dinsmore, assignor to D. M. Bailey & Brothers, Cardville, Pa. Filed Nov. 19, 1877.

Claim.—1. The combined receiving and delivering crane herein described, consisting of the stationary post A, rotating shaft B, arm E, having receiving-hook F and swiveled keys *j j*, swinging arm E', having swiveled key *i*, or its equivalent, latch D, and spirally-grooved sleeve C, all constructed and combined to operate substantially as and for the purpose hereinbefore set forth.

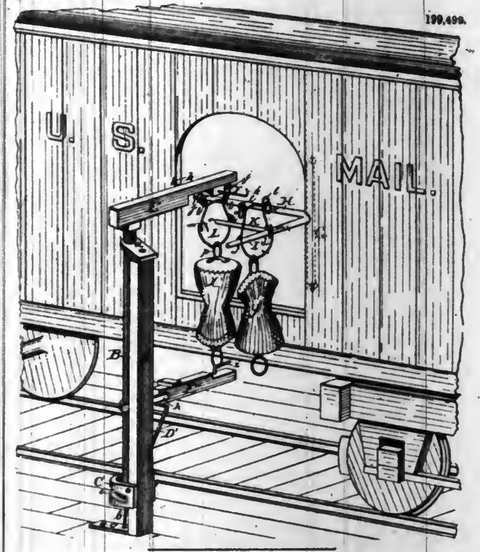
2. As an improvement in mail-bag cranes, the rod F, having hooked ends *k k*, for receiving the exchange-bag from a passing mail-train, substantially as and for the purpose hereinbefore set forth.

3. The combined delivering and receiving catcher herein described, consisting of the vertical pivoted rod G, having horizontal arms H I at right angles to each other, the latter provided with a projecting arm, K, parallel to H, substantially as and for the purpose hereinbefore set forth.

4. The rings L, for suspending the mail-bags while these are being exchanged, consisting of a rod or wire bent into an annular shape, and having an opening, *m*, loops or eyes *l l*, and hooks *n n*, substantially as and for the purpose hereinbefore set forth.

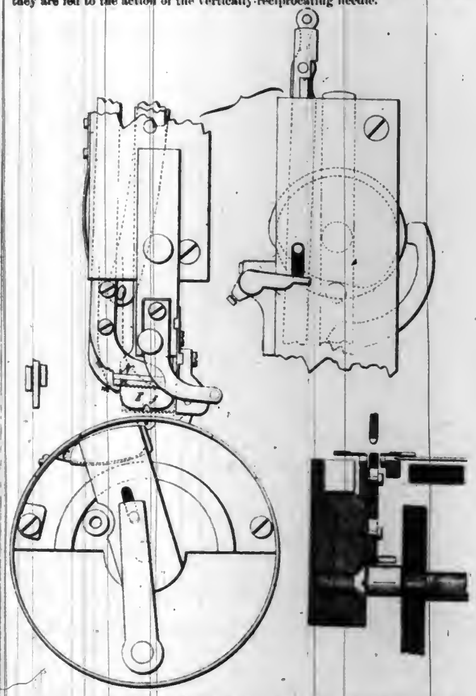
5. The device herein described for delivering and receiving mail-bags, consisting of the crane, constructed as herein described, in combination with the combined delivering and receiving catcher G H I K and the exchanging-rings L, all arranged and operating substantially as herein described, for the purpose shown and specified.

199,499.



199,500. MACHINES FOR SEWING STRAW BRAID. Chas. F. Bosworth, Milford, Conn. Filed July 18, 1877.

Brief.—The work-support plate is provided with a slot, in which engages a vertically-reciprocating slide or bender, which bends the strips of braid as they are fed to the action of the vertically-reciprocating needle.



Claim.—1. The herein-described method of sewing straw braid edge to edge, consisting in bending longitudinally one edge of each of the two braids to be stitched together, and then, while their edges are lapped and folded, passing a needle with its thread transversely through the folded portion of the braids, to secure the braids together in a flat state, substantially as and for the purpose set forth.

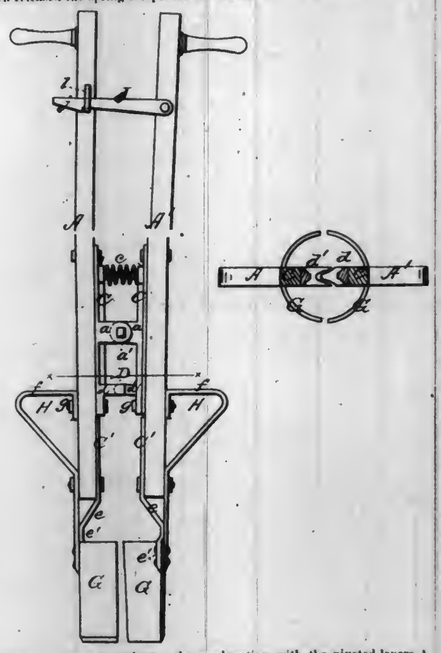
2. The combination, with sewing mechanism, of mechanism adapted to guide straw or other plaited braids, and present the two runs of braid to be stitched together in a longitudinally bent or folded condition to the needle, substantially as described.

3. In combination, the slotted work-plate, a reciprocating bender working into or through said slot, and a feed mechanism working at right angles to the path of the needle, substantially as described.

4. In combination, the slotted work-plate, a reciprocating needle moving in a path transverse to the said slot, a reciprocating bender working into or through said slot, a feed mechanism working at right angles to the path of the needle, and a reciprocating follower corresponding to the bender, and working from the opposite or under side of the work-plate, substantially as described.

199,501. TRANSPLANTING-TOOLS. John C. Bowman, Pickens, Miss. Filed Nov. 24, 1877.

Brief.—The two handles are hinged together near the bottom. Below the hinge is a guide to hold the handles parallel at right angles to the axis of motion of the hinge. Above the hinge is fixed a spiral spring, that tends to press the handles apart above the hinge and compress them below. The lower ends of the handles are provided with pearly semicircular blades, and foot-pieces are provided for forcing them into the ground. At the upper end of the handles is a hook-latch, which secures the handles from separating, but when released the spring compresses the blades.



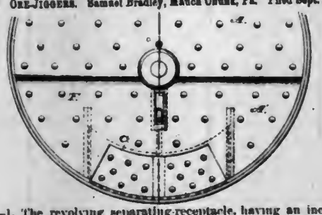
Claim.—1. In a transplanter, the combination, with the pivoted levers A A' and the spring *e*, of the gage J, as and for the purpose specified.

2. The combination, with the pivoted levers A A' and spring *e*, of the guide D, consisting of the recessed spur *d'* and the rabbeted spur *d*, engaged in said recessed spur, substantially as specified.

3. The levers A A', having shovels G upon their ends of less dimensions than a half-cylinder, the fulcrum *a a'*, the spring *e* above said fulcrum, the guide D below it, and the gage J, combined, arranged, and operating as set forth.

4. The combination, with the shovels G and levers A A' of a transplanter, of outside foot-plates H, extending downwardly and forming supports for the shovels, and the inside plates C', extending below the levers, and forming braces to strengthen the lower ends of the plates H at their point of attachment to the shovels, substantially as specified.

199,502. ORE-JIGGERS. Samuel Bradley, Mauch Chunk, Pa. Filed Sept. 26, 1877.

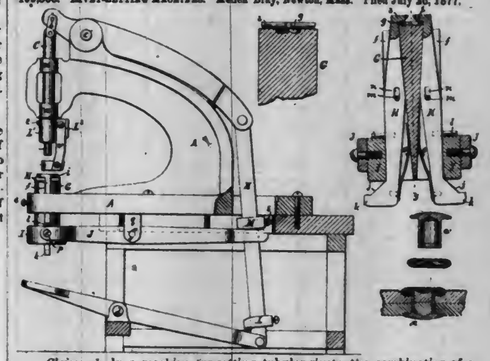


Claim.—1. The revolving separating-receptacle, having an inclined floor or bottom, with the discharge-opening for the slate at the lowest point, substantially as described.

2. A receptacle for coal and slate separating machines, composed of a box or tub of the form of a greater segment of a circle, and provided at the line of section of the circle with the straight vertical flange D, and with bottom A A', substantially as shown.

3. The combination of the receptacle, being in form the greater part of a segment of a circle, and having the flanges D and E and floor or bottom A A', and of the valve or slide-gate C, as described.

199,503. RIVET-SETTING MACHINES. Mellen Bray, Newton, Mass. Filed July 26, 1877.



Claim.—1. In a machine for setting tubular rivets, the combination of a reciprocating plunger adapted to operate on one side of the material in which the rivet is to be inserted, a stationary anvil for upsetting the rivet, and a movable rest or table upon the opposite side, said rest being adapted to be interposed between the driver and anvil, and afterward retracted to allow of the rivet being clinched, substantially as described.

2. The combination of a reciprocating plunger adapted to force the rivet through the material from one side thereof, a fixed or stationary anvil, arranged upon the opposite side of said material, and provided with a recess or pocket in its upper end to receive the burr, and the movable jaws or pads *i i*, adapted to be automatically interposed between said anvil and the material to be riveted, in a position to support the work while the rivet is being forced through it, and to be retracted to allow the work to rest upon the anvil while the rivet is being clinched, substantially as described.

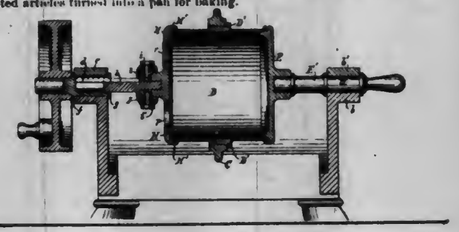
3. The combination of the reciprocating setting-plunger C, the fixed or stationary anvil G, a pair of levers, H H, each provided at one end with the jaw-like pad *i*, and at the other end with the inclined or wedge-shaped surface *j*, shoulder *k*, and pin *l*, and pivoted to the anvil by the pin *m* passing through the slot *n* in said lever, and the annular collar I, surrounding and inclosing the lower ends of the anvil and the levers H H, and suitable mechanism for imparting an intermittent reciprocation of said collar, substantially as and for the purposes described.

4. In combination with a fixed or stationary anvil, a pair of levers, H H, pivoted thereto, and provided with jaws or pads *i i*, inclined surfaces *j*, shoulders *k*, pins *l*, and slots *n*, and the annular collar I, surrounding said anvil and levers, the lever J, reciprocating rod E, and the two adjustable collars L and M, all arranged and adapted to operate substantially as and for the purposes described.

5. The combination of a reciprocating setting-plunger, a rivet-receiver mounted loosely upon and adapted to move during a portion of its stroke with said plunger, and made in the form of a pair of spring-jaws, containing a socket adapted to receive the rivet at the top and hold it in a vertical position directly beneath the setting-plunger, a fixed or stationary anvil adapted to receive the thrust of said setting-plunger, and a movable rest or table adapted to be automatically interposed between said anvil and the material to be riveted, in a position to support the work while the rivet is being forced through the material, and then to be retracted to a level with the top of said fixed or stationary anvil, substantially as and for the purposes described.

199,504. JAPANNING. Mellen Bray, Newton, Mass. Filed Oct. 10, 1877.

Brief.—The vessel having been turned into a vertical position, the removable cover is detached, and the whole interior of the vessel and the inner face of the cover are coated with the paint or japanning material. The articles to be japanned are then placed in the vessel and the cover replaced. The vessel and its supporting-ring are then turned on the bearings of the latter into a horizontal position, when a journal formed on the handle of the cover will rest in a bearing on the supporting-frame. A sliding clutch or coupling-disk, connected with the driving-shaft by means of a spline and feather, is then coupled to the bottom of the vessel, which is then rotated, thereby causing the articles within the vessel to be rolled or tumbled about until the coat of japanning material on the interior surface of the vessel is transferred to them, when the coupling-disk can be withdrawn, the journal of the handle released from its bearing, the vessel turned into a vertical position, the top removed, and the coated articles turned into a pan for baking.



Claim.—1. The process of coating small articles with a semi-liquid japanning material or other paint, as herein set forth, by first spreading said material evenly upon the inner surface of a close vessel or chamber, placing therein a number of the articles to be coated, and then causing said articles to be tumbled, shaken, or otherwise agitated within said vessel, substantially as and for the purposes described.

2. In the method herein described of coating small articles with a semi-liquid or paint-like japanning material, the employment of articles of dissimilar shapes and unequal sizes, as set forth, whereby all portions of the surfaces of the articles to be painted may be uniformly coated, as described.

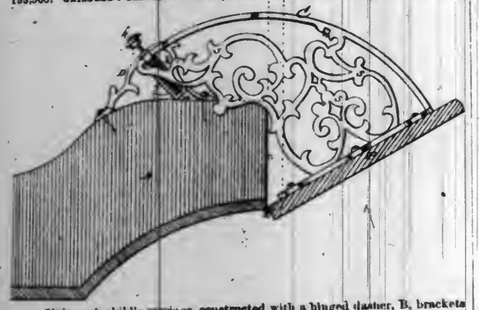
3. The vessel D, provided with a removable cover, and mounted in the gimbal-ring C, in combination with the coupling-disk H, mounted upon the driving-shaft, and adapted to engage with the bottom of said vessel D to compel it to revolve therewith, substantially as and for the purposes described.

4. The combination of the vessel D, cover E, provided with the short shaft or handle E', having formed thereon the journal *a*, the fixed half-box *b*, hinged cap *b'*, and the gimbal-ring C, all arranged and adapted to operate substantially as and for the purposes described.

5. The combination of the vessel D, provided at one end with the removable cover E, and at its other end with the boss or lug *r*, the gimbal-ring C, adapted to support the vessel in a horizontal or vertical position, and the disk H, provided with the annular lip H' and one or more holes or recesses, *p*, and mounted upon the driving-shaft, and adapted to engage with or be disengaged from said vessel, substantially as and for the purposes described.

6. The vessel D, provided with the collar D', removable cover E at one end, and the boss *r* at the other end, in combination with the gimbal-ring C and the coupling-disk H, adapted to engage with said vessel to cause it to revolve therewith, and to be disengaged therefrom, to allow said vessel to be turned into a vertical position, substantially as and for the purposes described.

199,506. CHILDREN'S CARRIAGES. Rodney G. Britton, Springfield, Vt. Filed Dec. 10, 1877.



Claim.—A child's carriage constructed with a hinged dasher, B, brackets D, spring-catch *l*, and guards C, substantially as and for the purpose described.

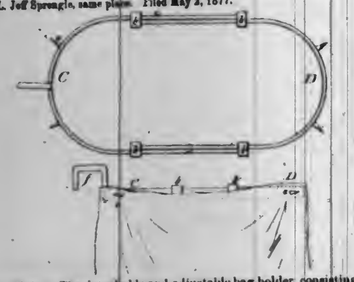
199,508. INSULATING UNDERGROUND TELEGRAPH-WIRES. David Brooks, Philadelphia, Pa., assignor to Brooks Underground Telegraph Construction Company, (limited,) same place. Filed Jan. 9, 1878.



Claim.—1. The mode herein described of preparing telegraph-cables preparatory to laying the same—that is to say, first clothing the wires with a fibrous wrapping and binding them together, then subjecting the cable to heat, and while the cable is hot introducing it into a heated tube, and finally sealing the ends of the same, all substantially as set forth.

2. The mode described of maintaining a cable of wires wrapped with fibrous material in an insulated condition—that is to say, by placing them in pipes within which air or gas deprived of moisture is maintained under pressure, as described.

199,507. BAG-HOLDER. Andrew Brubaker, Ashland, Ohio, assignor of one-half his right to L. Jeff Sprengle, same place. Filed May 2, 1877.



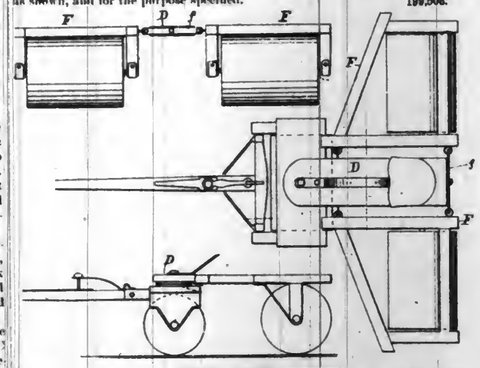
Claim.—The detachable and adjustable bag-holder, consisting of the spreading sections C and D, each having parallel bars *c* attached to slideways *b*, embracing the bars *c* of the other, said bars reciprocating with the slideways, and provided with vertical hook *f*, substantially as specified.

199,509. LAND-ROLLERS. Roger W. Bunting, Madison, Mich. Filed Oct. 30, 1877.

Brief.—The frame D is pivoted at *x*, whereby the rollers are separately adaptable to the unevenness of the ground, without materially moving the seat of the driver.

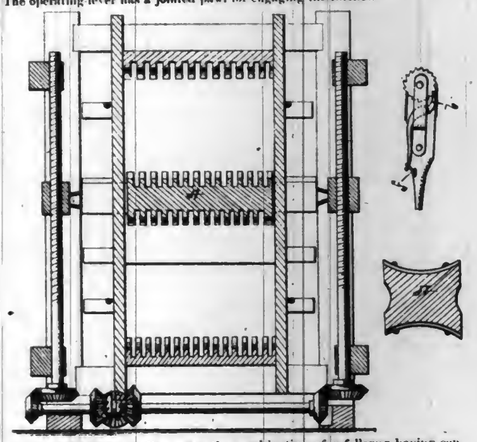
Claim.—The frame D, pivotal bar *f*, links *d*, and frames F, substantially as shown, and for the purpose specified.

199,508.



199,509. BALING-PRESSES. William H. Burgess, Jackson P. O., N. C. Filed Nov. 26, 1877.

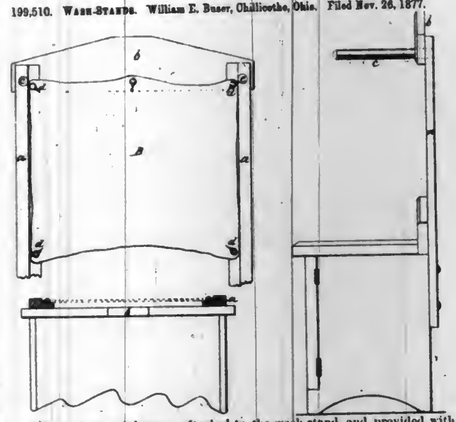
Brief.—The follower is provided with upper and lower concave surfaces. The operating-lever has a jointed pawl for engaging the ratchet.



Claim.—1. In a baling press, the combination of a follower having concave upper and lower surfaces with an upper and a lower pressing-bed having concave faces, said follower being movable upward and downward toward the pressing-beds, substantially as set forth.

2. The jointed pawl *b d* and link *f*, in combination with the operating lever, as described.

199,510. WASH-STANDS. William E. Buser, Chillicothe, Ohio. Filed Nov. 26, 1877.



Claim.—The uprights *a a*, attached to the wash-stand, and provided with rabbets along their inner sides, the studs *d*, fixed in said rabbets, the top connecting-bar *b*, and attaching-pins *c c*, and the detachable splasher B, having eyelets to adapt it to be secured to the studs, and thereby to the frame, all as shown and described.

199,511. SAFETY-PINS. William A. Butler, New York, N. Y., assignor to Thomas L. Butler, same place. Filed Dec. 24, 1877.

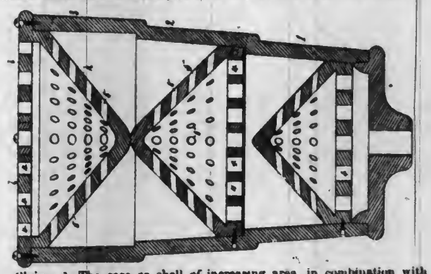


Claim.—1. A safety-pin having the unsharpened limb of the wire rigidly attached to the guard or shield, and bent or extended laterally from the side of the said guard or shield, whereby the latter is supported off from the limb which carries it, substantially as described.

2. The guard-case D, in combination with the coil *g* of the wire of the pin, essentially as described.

199,512. DEVICES FOR ABSORBING THE NOISE OF ESCAPING STEAM. George H. Bursell, Boston, Mass., assignor to himself and Frederic E. Stevens, same place. Filed Dec. 13, 1877.

Brief.—The silencer absorbs the noise of escaping steam, and may be attached to the exhaust-steam pipe of railway-car brakes or steam-engines.

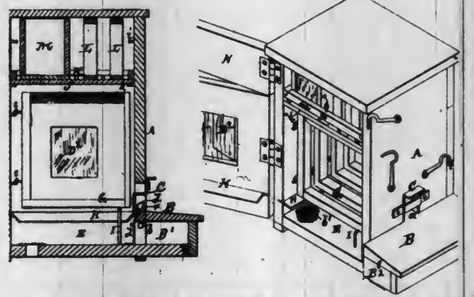


Claim.—1. The case or shell of increasing area, in combination with a series of perforated diaphragms and cones, substantially as described.

2. The combination, with a shell or case of a silencer, of a series of cones, perforated as described.

3. In a silencer, a cone perforated with holes running at right angles to a line drawn longitudinally through the center of the case, substantially as described.

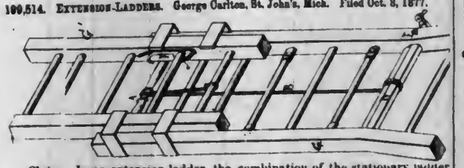
199,513. BEE-HIVES. Malachi A. Carriker and Noah J. Carriker, Litchfield, Ill. Filed July 19, 1877.



Claim.—1. In a bee-hive, the combination, with the hive A, having bee-entrance *a*, of the alighting-board B, with trap B', the passages *b b*, and the slide C, having side pieces *d d*, with apertures *x x*, substantially as and for the purposes herein set forth.

2. The division-board J, provided with the open frame K, and having the frames L and box M held rigidly thereto, in combination with the hive having two sets of supporting-pins, *h* and *i*, whereby said board, frames, and box may be reversed, substantially as and for the purposes herein set forth.

199,514. EXTENSION-LADDERS. George Carlton, St. John's, Mich. Filed Oct. 8, 1877.



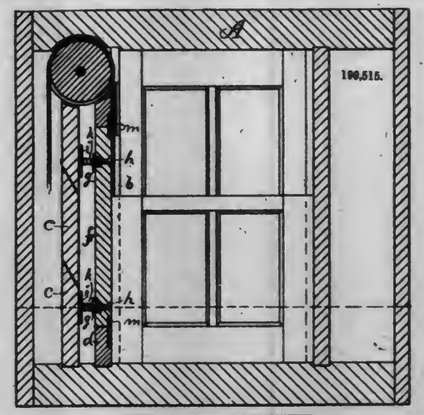
Claim.—In an extension-ladder, the combination of the stationary ladder G, provided with windlass D, having stop-pin E, friction-rollers C, and pulley A, with sliding ladder G', having hook F and rope H, substantially as and for the purpose specified.

199,515. WINDOW-FRAMES. Michael Casey, New Britain, Conn. Filed Aug. 30, 1877.

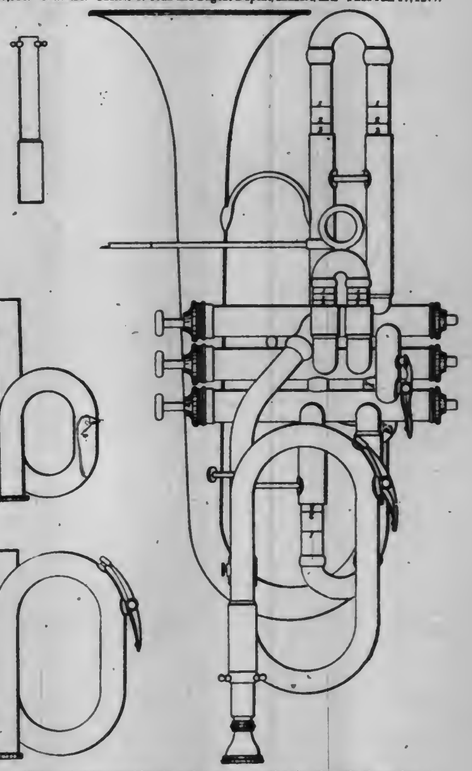
Claim.—1. In a window-frame, the rails *c d*, with space between, and with the box for the weight to run in outside of both of said rails, in combination with the yielding portion *f* and the spring *k*, placed between the rails *c d*, and directly opposite the lower sash, substantially as described, and for the purpose specified.

2. In a window-frame, the yielding portion *f*, in combination with the button *n*, substantially as described, and for the purpose specified.

199,515.



199,516. CORNETS. Charles G. Conn and Eugene Dupont, Elkhart, Ind. Filed Jan. 17, 1877.



Claim.—1. The combination of a compensating bend with the valve of a cornet or other wind-instrument, arranged so as to be closed by the depression of the valve to produce a valve tone, as and for the purpose herein set forth.

2. The valve-slides graduated for adjustment, as herein described.

3. The combination of the valves, the compensating bends, and the graduated valve-slides, as and for the purpose set forth.

4. A cornet or other wind-instrument constructed with a compensating-bend, connected with the valve and arranged to be closed thereby when a valve tone is produced, and with a valve-slide of correspondingly-increased length to admit of drawing the said slide out when the instrument is changed from a higher to a lower key by the introduction of an additional length of pipe, substantially as described.

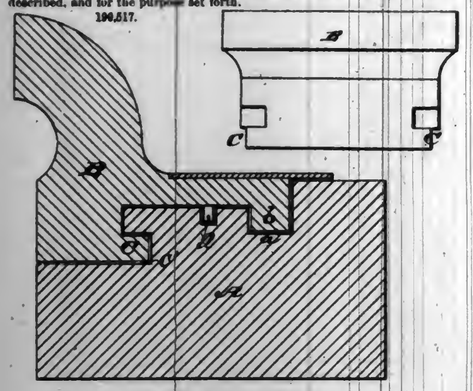
199,517. VISES. Elbert P. Cook and James F. Hall, Havana, N. Y. Filed Aug. 25, 1877.

Brief.—Lag or pin shown in either as a substitute for circular tongue. The groove may be square or V-shaped. The lip is cast on large vises, and permanently fastened on small ones.

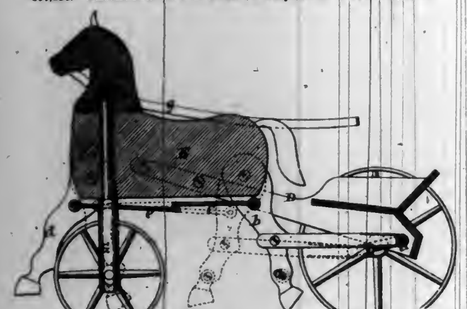
Claim.—In a vise, the combination of the bed-piece A, having the semicircular recess C' and circular groove *s*, and the movable jaw B, having the semi

circular flanged projection C, the circular pendent tongue b, or its equivalent, and the overlapping lip D, all constructed to operate in the manner as described, and for the purpose set forth.

199,517.



199,518. VELOCIPEDES. James A. Crandall, Brooklyn, N. Y. Filed Nov. 2, 1877.



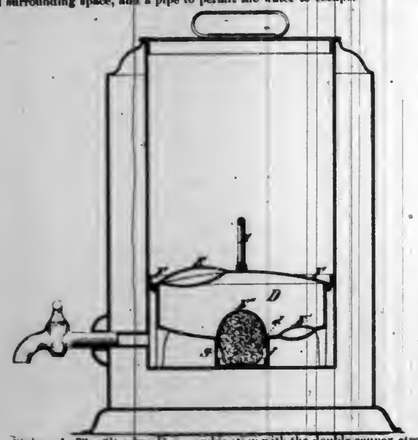
Claim.—1. In a velocipede, the combination of the vibrating legs of an imitation horse, the crank-shaft of the driving wheel or wheels, and suitable connecting-rods, substantially as described.

2. The double-crank shaft B of the driving-wheels, vibrating hind legs *b b*, fore legs *d d*, and connecting-rods, substantially as described.

3. The combination of the vibrating hind legs and vibrating fore legs of the imitation horse, connecting cross-rods *c e*, and suitable connections with the driving-wheels, substantially as and for the purpose set forth.

199,519. WATER-FILTERS. John Crawford, New York, N. Y., assignor to James Stephens and Elliott P. Gleason, same place. Filed July 10, 1877.

Brief.—The claims and drawings show the invention—viz., a suspended interior vessel having a box at its base, and perforated plate to permit straining and descent of the water therein, and filtering media in exits beneath it, and surrounding space, and a pipe to permit the water to escape.



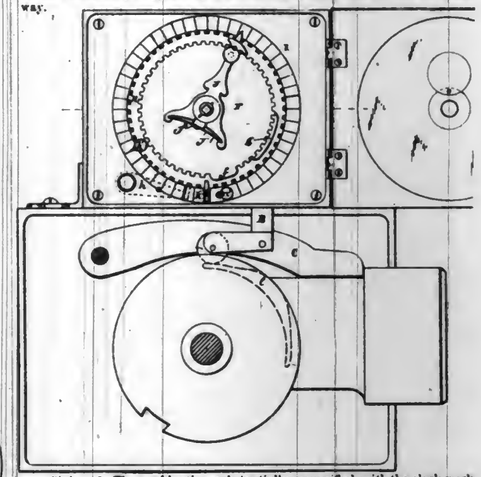
Claim.—1. The filter-box D, in combination with the double-convex strainers E E', the central tubular opening *d* in the bottom of the box, the strainer E'', inserted in the said tubular opening, and the cap *g*, for closing said opening and retaining in the tubule *f* the sponge S, substantially as and for the purpose specified.

2. The combination, with a box for containing filtering material and strainers for permitting the flow of water through the box, of a flexible or elastic cup-packing ring, F, attached to the said box, substantially as and for the purpose set forth.

3. The combination, with a vessel for containing water or ice, or both, of the filter-box D, constructed with the strainers and tubulated opening and packing, substantially as described, and supported in the vessel above the bottom, to leave a space for filtered water, substantially as and for the purpose set forth.

199,520. TIME-LOCKS. Milton A. Dalton, Cincinnati, Ohio. Filed July 27, 1877.

Brief.—When the time for unlocking arrives, the time mechanism stops itself, and the dog can be raised by the lock-spindle. In addition to this means for unlocking, a separate mechanism is arranged to suspend the guarding action of the time-piece for any predetermined period. If the time-piece should accidentally stop, the dog can be raised by the lock-spindle, in the usual way.



Claim.—1. The combination, substantially as specified, with the clock-work of a time-lock provided with regular means for starting and stopping its guarding action, of auxiliary means, substantially such as described, adapted for automatically suspending and again automatically renewing such guarding action at any time before the hour at which the regular means will stop it.

2. In a time-lock, the combination, substantially as specified, of the clock-work, the dogging mechanism, the adjunct which controls said dogging mechanism, and a means for automatically locking and unlocking said adjunct while the clock-work is running continuously, whereby the time-lock is enabled to automatically suspend and to automatically again resume its guarding action.

3. The combination of a time-piece having a ratchet, D, disconnected from its gear-work when the time-piece is in motion, and capable of rigid connection with the said gear-work when the time-piece is at rest, a lock having a cam upon one of its tumblers, the drive-wheel, or some operative part, and a connecting mechanism attached to a dogging-arm in the lock, adapted to be moved by revolving the arbor and retained or allowed to move back by the ratchet, according as the ratchet is held rigid or not so held, substantially as hereinbefore set forth.

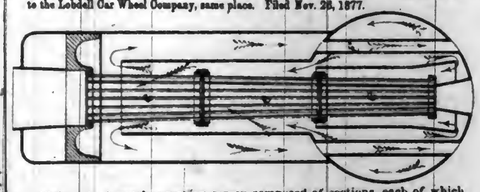
4. The combination, substantially as described, of the disks F and G and hand J with a time-piece, the disks being notched to receive the pin projecting from the inner side of the hand, for the purpose of separately setting the disks and holding them together when set.

5. In combination with a time-piece, the ring H and lever *h*, the ring being fitted to revolve loosely, and notched to receive the detent of lever *h*, for the purpose of locking the ring with its pin *h'* in a position to stop the hand J, as and for the purpose specified.

6. In a time-attachment for locks, the combination, substantially as described, of the loose ratchet D, the lever *k*, and the cam-disks of the time-piece, the lever *k* being arranged with its bar *k'* in a position to lock the ratchet D, and one of its arms in a position to be operated upon by the cams on said disks for the purpose of locking said ratchet when desired.

7. The combination, substantially as specified, of the dial, the hand, the balance-wheel of the clock-work, and the lever *n*, having a lateral stud in the radial line, or thereabout, of the zero-point of the dial, to be struck by the hand for vibrating the said lever to lock the balance-wheel.

199,521. SPARK-ARRESTERS. Asa O. Denio, Wilmington, Del., assignor of one-half his right to the Lobdell Car Wheel Company, same place. Filed Nov. 28, 1877.



Claim.—1. A spark-arresting screen composed of sections, each of which consists of a series of bars and retaining-rings, affording protection for the ends of the said bars, all as set forth.

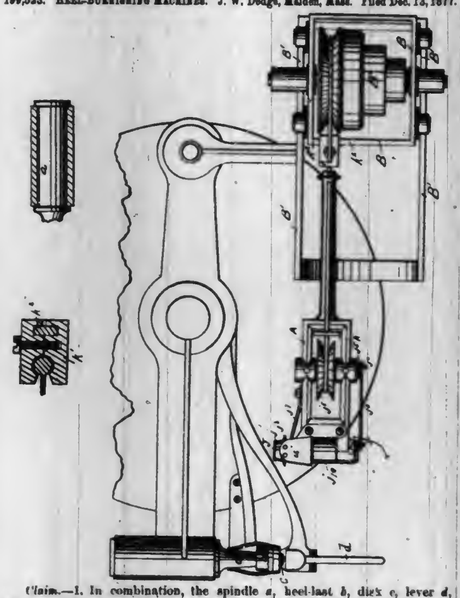
2. The combination of the bars *e*, angle-iron rings *f*, and encircling band *i*, as specified.

199,522. MARQUETRY. Joseph Dill, Boston, assignor to Ezra H. Brabrook, Cambridge, Mass. Filed May 15, 1877.



Claim.—A marquetry floor or other surface consisting of a layer of lumber provided with one or more inlays, forming a part of said surface, the extreme width of which inlays is no greater than their surface width, said inlays having perpendicular edges next the surfaces, and being held in position by one or more tenons, tongues, or other projections, extending from and being a part of the main lumber, and entering said inlays below the surface, substantially as herein set forth.

199,523. REEL-BURNISHING MACHINES. J. W. Dodge, Malden, Mass. Filed Dec. 13, 1877.



Claim.—1. In combination, the spindle *a*, heel-last *b*, disk *c*, lever *d*, treadle-step *f*, and treadle *g*, substantially as described.

2. In combination, the tool-carrier A, tool J, shafts *f'* and *f²*, and connections *f³ f⁴ f⁵*, the shaft *f²* revolving and the shaft *f'* oscillating, all as set forth.

3. The combination of the tool-carrier A, with its two shafts *f'* and *f²*, one oscillating, the other revolving, with the pulley-frame B by means of the ball-and-socket joint, as set forth, in order that the tool-carrier may have the motions above mentioned without effecting the driving of the tool.

4. In combination with the tool-carrier A, and frame B, the adjustable clamps *k k'* and cross-bar *k²*, as set forth.

5. In combination, the burnisher and its shank, the hollow shaft *f'*, sleeve *f⁹*, set-screw *f⁸*, and lock *f⁷*, as set forth.

6. In combination, the jack, the tool-carrier, the pulley B, frame B², tracks B', and pulley B³, substantially as described.

199,524. WIRE-BARBING MACHINES. Thomas B. Doolittle, Bridgeport, Conn., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Filed Oct. 22, 1877.

Brief.—Feed-rolls have grooves of different sizes for main wires of different sizes. Barbs by a reciprocating mechanism, which feeds barbs one by one to dies, which clamp them about the main wire. The barbed wire is drawn through a trough pivoted to the bed of the machine into a reeling mechanism.

Claim.—1. The combination, with the shafts Q and Q''', provided with gears Q' and Q'''', of the grooved feed-rolls Q'' and Q'''', grooved standard R, ratchet-wheel R', pawl *f*, and operating-lever S, with its journal and journal-ant *g'*, substantially as and for the purposes set forth.

2. The combination, with feed-rolls Q'' and Q'''', provided with two or more grooves, of adjustable guide *k* and tube or pipe *x*, substantially as and for the purposes set forth.

3. The combination of lever D''', cam D'', barb-compressing hammer or die *s*, with grooved block *v*, and pins *y''*, said parts being constructed and relatively arranged substantially as and for the purposes set forth.

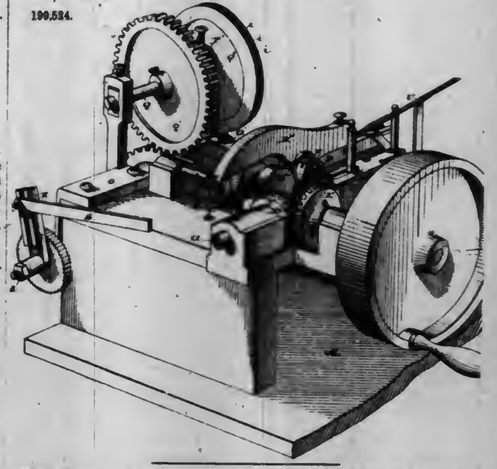
4. The combination, with shaft D and sliding frame T, of cam D'''', inclined piece 3, sliding piece 5, provided with ears 6 and 7, bar 8, hinged arm or lever 12, head 13, and spring 14, substantially as and for the purposes set forth.

5. The combination, in a machine for barbing fence-wire, of an inclined barb-receptacle, U, provided with flanges U' and a central rib, U'', substantially as and for the purposes set forth.

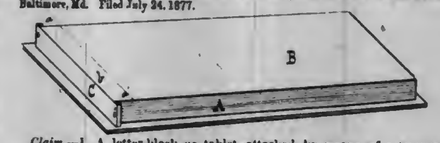
6. The combination, with sliding frame T and inclined barb-receptacle U, of standards 16 and 17, provided with fingers 18 and 19, substantially as and for the purposes set forth.

7. The combination, with block 4, of bar 5 and head 13 of arm 12, substantially as and for the purposes set forth.

199,524.



199,525. TEMPORARY BINDERS FOR LETTERS, &c. Henry H. Edwards and John R. Edwards, Baltimore, Md. Filed July 24, 1877.

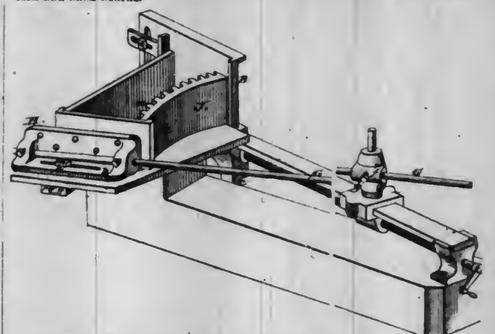


Claim.—1. A letter-block or tablet attached by means of a temporary binder to a cover or backing, and provided with a removable blotter, substantially as described.

2. In combination, the binder C, having recurved ends *c c'*, the tablet A, having studs *a'*, and the blotter B, having the flexible end *b*, all substantially as described, and for the purpose set forth.

199,526. APPARATUS FOR FORMING MOLDS FOR GEAR-WHEELS. John H. Felthousen, Baltimore, Md. Filed Jan. 5, 1878.

Brief.—To form a segment of a mold for a toothed or a plain rim, adjust the swinging side radially to the diameter of the desired wheel, place pattern on table against the vertically-adjustable side, and place facing-board against other end of pattern, and swing the radially-moving side against back of facing-board. Set the stop on vertically-adjustable side, and put in back-board. To remove mold, lower the vertically-removable side, and take away pattern and back boards.



Claim.—1. The mold-former having one of its sides adjustable in the arc of a circle, substantially as described, and for the purpose set forth.

2. A mold-former having one of its sides adjustable in the arcs of circles of varying diameters, in order to receive segmental patterns for wheels of different sizes, substantially as described.

3. The combination, in a mold-former, of a stationary bottom or table, a vertically-adjustable side or abutment, and a side piece adjustable on varying arcs, said sides being adapted to receive between them replaceable walls for the mold-chambes and segmental patterns formed on different arcs.

4. The combination, with the adjustable side H, of the radius-rod G and adjustable center-pin *e*, substantially as described, whereby the former may be adjusted to receive patterns of different sizes and arcs.

199,527. FISH-HATCHING APPARATUS. T. B. Ferguson, Baltimore, Md. Filed Jan. 12, 1878.

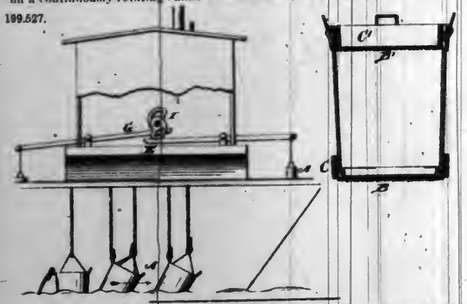
Claim.—1. In the hatching of fish spawn, the method of producing change of water in the vessels containing the spawn, and currents for moving the eggs, which consists in reciprocating the boxes or vessels in the water, substantially as herein set forth.

2. One or more series of vessels for containing the spawn, in combination with mechanism for moving the same up and down in the water, substantially as and for the purposes herein set forth.

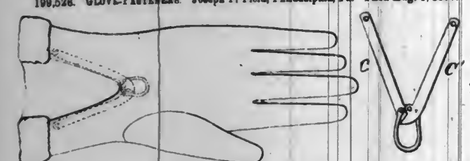
3. The combination of the cylindrical vessel A, wire cloths B B', and fastening-bands C C', substantially as and for the purposes herein set forth.

4. As a means for the hatching of fish-spawn, the combination of a portable scow or other vessel with a series of vessels, A, suspended from pivoted levers D, which are operated by a series of eccentrics, I, set at varying angles on a continuously rotating shaft, G, substantially as set forth.

199,527.



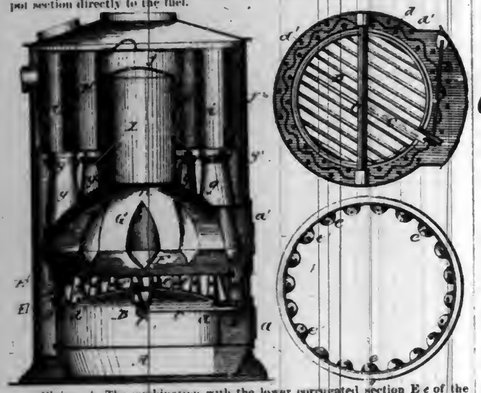
199,528. GLOVE-FASTENERS. Joseph F. Field, Philadelphia, Pa. Filed Aug. 9, 1877.



Claim.—In a glove-fastener, the combination of the two arms C C', pivoted near the lower ends, with the U-shaped spring, having its ends attached to the said arms at or nearly opposite to the pivotal point of the arms, substantially as shown and described.

199,529. FURNACES. William F. Flagg, Bloomington, Ill. Filed Sept. 12, 1877.

Brief.—Air is admitted through perforations in the corrugated wall of the fire-pot, and also through perforations in the rim or plate supporting the fire-pot section directly to the fuel.



Claim.—1. The combination, with the lower corrugated section E *e* of the fire-pot, having holes *e'*, of the auxiliary wrought or sheet iron band E' and rim of the bottom D, provided with the two series of holes *d d'*, substantially as and for the purpose described.

2. The combination, in a furnace, of the outer case or jacket, having the large door or doors *a*, ash-pit A, lower section D of fire-pot, having the annular perforated rim, corrugated section E, wrought or sheet iron band E', outwardly-flaring section F, section G, connecting heating-tubes *g g'*, drum H, having the series of vertical air-tubes *i* and central opening *j*, and the dome I, the several parts constructed and relatively arranged substantially as herein shown and described.

199,530. INJECTORS. Samuel Fowden, Philadelphia, Pa. Filed Nov. 26, 1877.

Claim.—1. The combination of the casing A, having a threaded portion, *e*, with the plug F, the combining-tube J, and the key *w*, substantially as described.

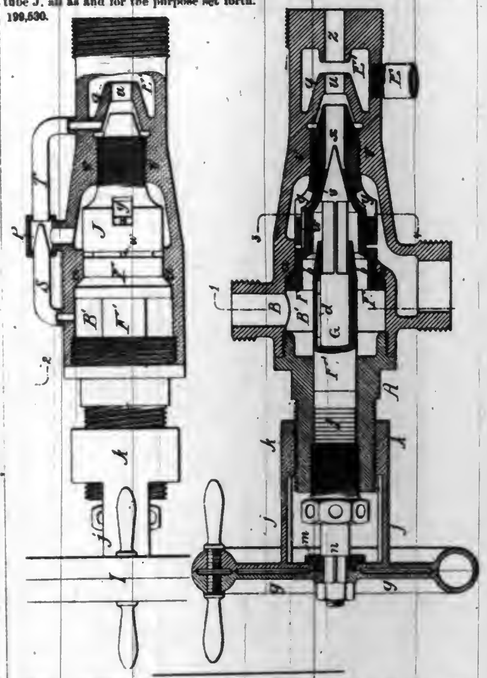
2. The combination of the plug F, adapted to a seat in the casing, and having an extension, F', with the stem G, follower *c*, and packing-rings *f*, the latter bearing against the rear end of said extension F', all as specified.

3. The combination of the stem G with the halved handle I, constructed and arranged substantially as described, so as to either rotate the said stem or move the same longitudinally.

4. The combination of the chamber P, communicating with the water-space of the injector, the jet-pipe S, communicating with the steam space, and the pipe T, communicating with the combining-tube, all as set forth.

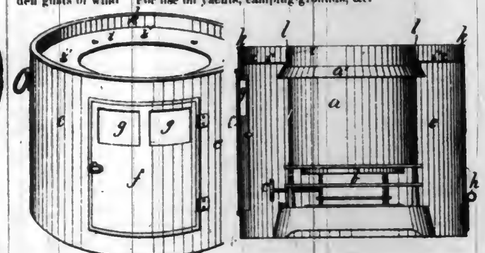
5. The combination of the movable tube J with the fixed annular casing *q*, having an opening, *u*, which forms a continuation of the opening *s* of the tube J, all as and for the purpose set forth.

199,530.



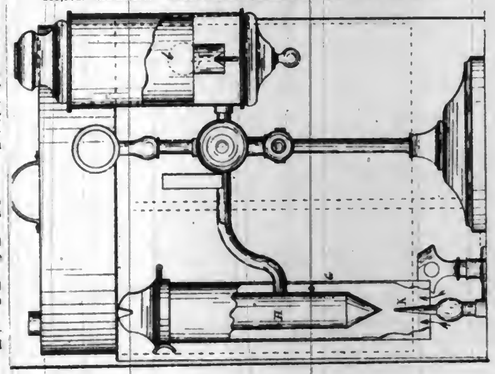
199,531. ATTACHMENTS TO KEROSENE-STOVES. Abraham Freeman, Boston, Mass. Filed Aug. 9, 1877.

Brief.—Adapted to be set over an oil-stove to protect the same from sudden gusts of wind. For use on yachts, camping-grounds, &c.



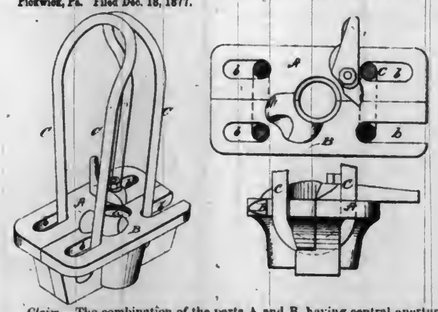
Claim.—The herein described wind-guard or oil-stove protector, consisting of the cylindrical casing *e*, with its door *f* and damper *h*, in combination with the annular perforated and detachable cover *i i' i'' k* and the perforated ring *l l' l''*, as and for the purpose herein set forth.

199,532. OIL-LAMPS. Wilmot H. Garlick, Elliottsville, Ohio. Filed Dec. 20, 1877.



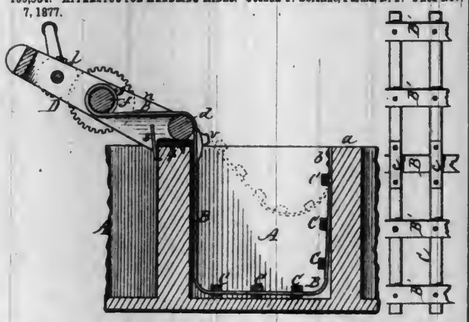
Claim.—In combination with the air-holder herein described, and oil-reservoir, or equivalent, the shell G, wick-tube H, having apointed or conical end, J, jet point or points K, and stop-cock, substantially as and for the purpose set forth.

199,533. DEVICES FOR RAISING AND LOWERING TUBES IN OIL-WELLS. Harvey M. Gillespie, Fickwick, Pa. Filed Dec. 18, 1877.



Claim.—The combination of the parts A and B, having central aperture *a* and end slots *b b'*, and the links C C', substantially as and for the purposes herein set forth.

199,534. APPARATUS FOR HANDLING HIDES. Joshua T. Gorsline, Parma, N. Y. Filed Nov. 7, 1877.



Claim.—1. In an apparatus for raising materials from vats, the flexible straps or connections B, in combination with a vat, fastened at one end to the top of the vat, extending down through and along the bottom of the vat, underlying the contents thereof, and rising upon the opposite side, the other end being free for the application of power to raise the contents of the vat, as shown and described, and for the purpose specified.

2. The combination, with the hoisting-machine D, of the flexible winding strap or straps B, flexible side straps B' B', and slats C C, the slats being arranged to slide upon the winding strap or straps, in the manner and for the purpose specified.

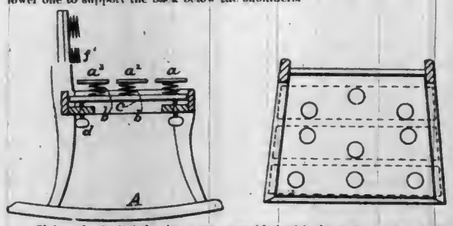
3. The combination, with the slats C C, of a winding strap or straps, B, passing loosely through eyes or loops of the slats, so that the slats can slide freely thereon, and side straps B' B', attached permanently to the slats to keep them in place, as described.

4. A rack for use in vats, consisting of a winding strap or straps, B, side straps B' B', and slats C C, the slats sliding upon the winding-strap, but being permanently attached to the side straps, and said winding strap or straps being attached at one end only to the vat, the other end being free, so that when power is applied the load will be raised to one side of the vat, as described.

5. The hoisting-machine D, provided with the pulley *d* and winding-roller *f*, and constructed with the inclined spurs *r r*, the dog or brace *s*, and the stops *v v*, as shown and described, and for the purpose specified.

199,535. SEWING-MACHINE CHAIRS. Susan De Lamater Granger, Ann Arbor, Mich. Filed Mar. 26, 1877.

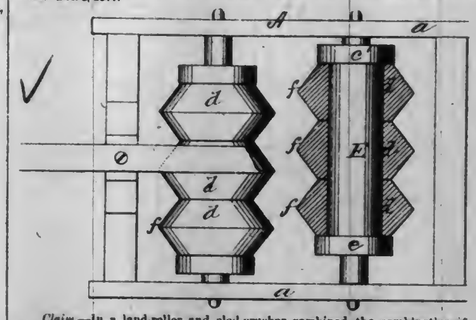
Brief.—The peculiar arrangement of the springs under the seat is intended to give an easy movement thereto, and the back of the chair is provided with two transverse rows of springs, the upper one to support the shoulders and the lower one to support the back below the shoulders.



Claim.—1. A chair having a seat provided with the separate slats *a a' a²*, each supported by the springs, arranged as described, for the purposes set forth.

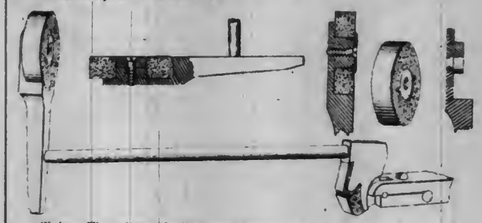
2. A chair having the back provided on the upper part with two rows of springs, *f f'*, substantially as and for the purposes described.

199,536. LAND-ROLLER AND CLOD-CRUSHER. Wilhelm Gutenberger, Sacramento, Cal. Filed Dec. 1, 1877.



Claim.—In a land-roller and clod-crusher combined, the combination of the frame A, having hangers D, provided with oblong slots *b*, the shaft E, having spindles *e* journaled in said oblong slots, and free to move up and down to the unevenness of the ground, and the annular sections *f*, mounted closely on said shaft E between the stops *c'* and *e*, but capable of an independent rotating movement on said shaft, substantially as specified.

199,537. PIANO-HAMMERS. Alvin O. Hall, Cincinnati, Ohio, assignor to himself and George C. Smith, same place. Filed Dec. 8, 1877.



Claim.—The adjustable disk piano-hammer herein shown and described, having a head with a projection adapted to enter and support the disk, a disk having a hard center throughout part of its width, and a screw to secure the disk, substantially as and for the purpose specified.

199,538. BARBED FENCES. John Hallnor, Ithaca, Nebr. Filed Oct. 17, 1877.



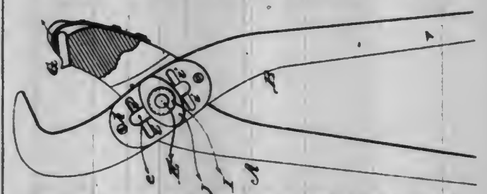
Claim.—1. The blank A, consisting of a continuous strip, having on one or both sides incisions *a a*, substantially as and for the purpose hereinbefore shown and specified.

2. The combination, with a fence-wire, of the continuous blank or strip A, having on one or both sides incisions *a a*, substantially as and for the purpose hereinbefore set forth.

3. The method of manufacturing barbed fence-wire, consisting in, first, making incisions *a a* in one or both sides of a continuous strip, A, and then twisting the blank thus formed around an ordinary fence-wire, by which operation the barbs *b*, formed by the incisions *a*, are made to project in all directions, substantially as and for the purpose herein shown and specified.

4. As an improved article of manufacture, the barbed fence-wire herein described, consisting of a core formed by an ordinary wire, around which a continuous blank or strip, A, having incisions *a*, has been twisted, substantially as and for the purpose herein shown and specified.

199,539. PIPE-TONGS. George A. Harbaugh, Bellefonte, Pa. Filed Aug. 18, 1877.



Claim.—In pipe-tongs, the combination of the handle A, bolt E, handle B, with slot *e*, plate *h*, with notches *i*, the washer J, with studs *x*, and the nut I, all substantially as and for the purposes herein set forth.

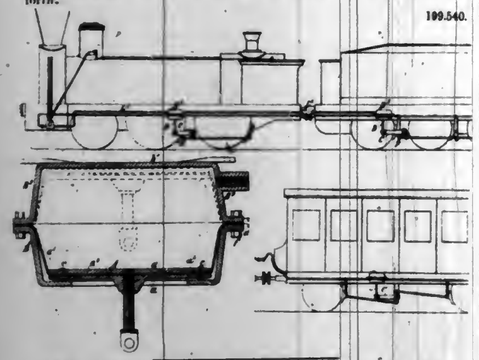
199,540. VACUUM-BRAKES FOR RAILWAY-CARS. John Hardy and John G. Hardy, Vienna, Austria. Filed May 31, 1877.

Claim.—1. In a vacuum-brake, the combination of the cylinder, having an exhaust-outlet, sloping sides, and flat heads, with the piston-head A, of about the size of the head of the vacuum chamber, the said piston-head being connected to the brakes by suitable levers, and to the cylinder by a flexible sack, *a'*, secured thereto about midway between the ends of the said cylinder, so that

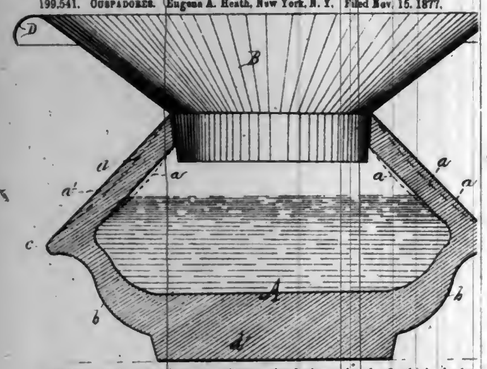
the piston and sack may rest on the head and sloping sides of the cylinder in each of the extreme positions of the piston, all substantially as described.

2. The within-described system of brakes, comprising one or more ejectors, a series of brake-cylinders, a set of pipes connecting an ejector with the brake-cylinders on the engine and tender only, and an independent set of pipes connecting an ejector with the cylinder on the cars, as and for the purpose set forth.

199,540.



199,541. CUSPADORES. Eugene A. Heath, New York, N. Y. Filed Nov. 15, 1877.



Claim.—1. A cuspadore or spittoon the body or bowl of which, in its exterior configuration, is formed on two irregular curves, the cusp of which is so projected that when the vessel is tipped from an upright position it touches the floor on the base-line at right angles to the perpendicular, and arrests the further movement of the vessel, substantially as and for the purposes as herein shown and set forth.

2. A cuspadore or spittoon the body or bowl of which, in its exterior configuration, is formed on curved lines *a* and *b*, forming cusp *c* at their tangent, curved line *a* at its apex being truncated, and curved line *b* terminating in a flattened base of increased weight, all arranged and operating as and for the purposes substantially as herein shown and set forth.

3. A cuspadore or spittoon the body or bowl of which is, in its exterior configuration, formed on a straight line, *a'*, and a curved line, *b*, which, at their tangent-point, form the cusp *c*, such vessel being truncated at its apex, while its base is flattened and increased in weight below the cusp line, all substantially as and for the purposes substantially as herein shown and set forth.

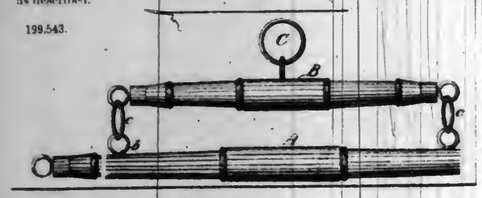
199,542. ORNAMENTAL CHAINS. James L. Hooley, Attleborough Falls, Mass., assignor to Davidson Brothers, New York, N. Y. Filed Oct. 5, 1877.



Claim.—1. A chain link constructed of two loops or rings, bent toward each other at opposite points, fastened together at such points, and each provided with one or two longitudinal grooves, in combination with filling-pieces the edges of which are inserted in said grooves, substantially in the manner and for the purpose set forth.

2. A metallic bar bent to form a loop or link for a chain, provided with two longitudinal grooves, situated at angles of about ninety degrees toward each other, to receive and sustain in position two filling-pieces, substantially as described.

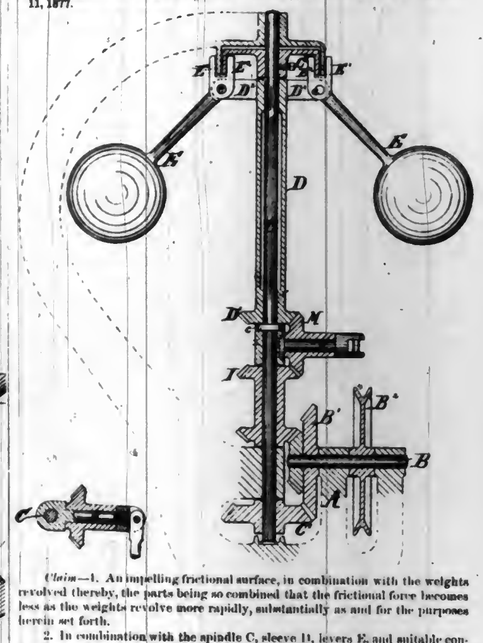
199,543.



199,543. NECK-YOKES. Jacob Heinert, Marysville, Cal. Filed Sept. 24, 1877.

Claim.—The combination of the yoke-bar A, having connecting rings or straps *c c*, with the tongue-bar B, having the loop or ring C for the insertion of the tongue, substantially as and for the purpose herein shown and specified.

199,544. REGULATORS FOR STEAM-ENGINES. N. G. Herreshoff, Providence, R. I. Filed Jan. 13, 1877.



Claim.—1. An impelling frictional surface, in combination with the weights revolved thereby, the parts being so combined that the frictional force becomes less as the weights revolve more rapidly, substantially as and for the purposes herein set forth.

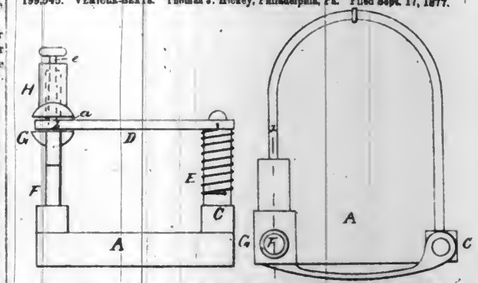
2. In combination with the spindle C, sleeve D, levers E, and suitable connections to the motor, the friction-rings C^2 and the corresponding jaws E^2 on the loaded levers E, adapted to serve as herein specified.

3. In combination with a centrifugal governor, and with provisions for allowing the motor to run ahead or behind, as specified, a stationary friction-piece, A', adapted to restrain the motion of the governor when in excess, as herein specified.

4. The beveled gears B' I C^3 and pulley B^3, in combination with the wheel M, controlling the freely-turning arms *g*, and with the revolving parts C D, having motions, the one uniform and the other varying with that of the engine, as herein specified.

5. The combination of revolving weights, impelling frictional means, retarding frictional means, and connecting mechanism for controlling the motor, according as it runs ahead or behind, as herein specified.

199,545. VEHICLE-SEATS. Thomas J. Hickey, Philadelphia, Pa. Filed Sept. 17, 1877.



Claim.—1. The combination of a spring-guard, D, with a seat, A, for the purpose shown and described.

2. The combination of the post C, guard D, and the spring E, for the purpose shown and described.

3. The combination of the post F, cells G H, and the bolts *e e*, for the purpose shown and described.

4. The combination of the posts C F, guard D, bolts *e e*, and the spring E, for the purpose shown and described.

199,546. MACHINES FOR CUTTING AND PUNCHING NUT-BLANKS. George B. Hill, Detroit, Mich., assignor to the Michigan Bolt and Nut Works, same place. Filed Jan. 15, 1878.

Brief.—Two blanks are severed from the bar by a descending plunger. Each of these blanks is pushed in front of a slide, which, advancing, forces and holds it against a stop until the punch descends. After the blanks are punched the stops swing vertically and uncover discharge-openings in the bed, into which the blanks are forced by an advance of the slides.

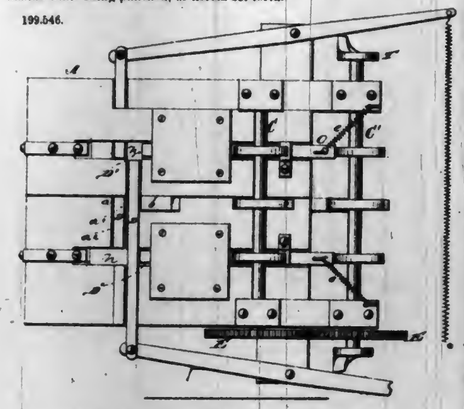
Claim.—1. The plunger J, shear-blades a^1 a^1, and arms D D D^1 D^1, combined substantially as and for the purposes specified.

2. In a nut-machine, the combination of the plunger J, shear-blades a^1 a^1, stop *b*, arms D D and D^1 D^1, with operating mechanism, constructed and arranged substantially as shown and described.

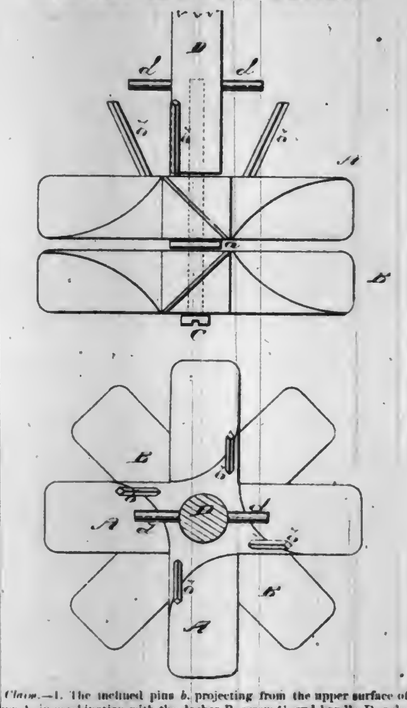
3. In a nut-machine, the combination of the plunger J, shear-blades a^1 a^1, stop *b*, arms D D and D^1 D^1, with punches K K, substantially as described.

4. The spring-arms S S, guides *u u*, and arms D^1 D^1, for holding the blanks while being punched, as herein set forth.

199,546.



199,547. CRUSHS. James M. Hill, Olney, Ill. Filed Oct. 20, 1877.



Claim.—1. The inclined pins *b*, projecting from the upper surface of the dasher A, in combination with the dasher B, screw C, and handle D, substantially as and for the purposes herein set forth.

2. The handle or rod D, provided with the horizontal arms or pins *d d*, in combination with the dashers A B, pins *b*, and screws C, substantially as and for the purposes herein set forth.

199,548. VEHICLE-BODIES. Amicaid A. Hughson, Cortland Village, N. Y. Filed Sept. 13, 1877.

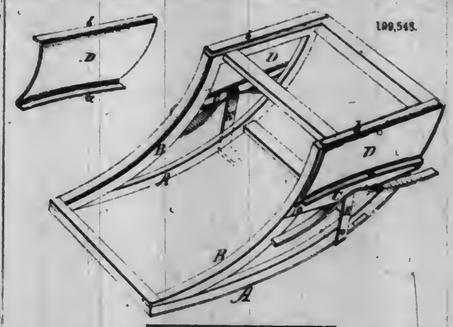
Claim.—1. The combination of the sills A and B with the cross-bar C, substantially as described.

2. The side support D, in combination with the spring-bar C, as and for the purposes substantially as described.

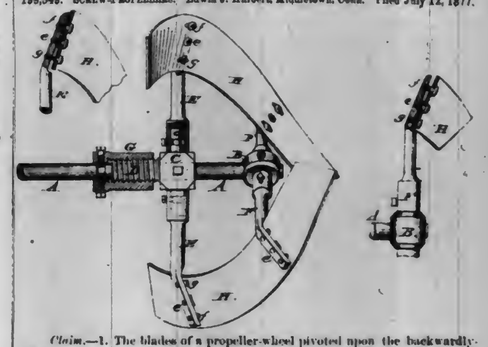
3. The stays E E, in combination with spring-bar C and sill A.

4. In a carriage-body, the combination of side sills A and B with spring-bar C, stay E, and side support D, substantially as described.

199,549.



199,549. SCREW-PROPELLERS. Edwin J. Hulbert, Middletown, Conn. Filed July 12, 1877.



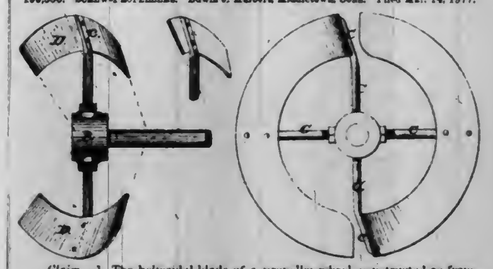
Claim.—1. The blades of a propeller-wheel pivoted upon the backwardly-inclined ends of self-adjusting arms upon adjustable hubs, substantially as described.

2. Helicoidally-shaped blades of a propeller wheel, pivoted upon the backwardly-inclined ends of self-adjusting arms by means of the center pivot-bolt *e* and guide-bolts *f* and *g*, operating in slots, substantially as described.

3. The helicoidally-shaped blades of a propeller wheel, pivoted to backwardly-inclined arms, as described, and provided with a washer upon the pivot-bolt between the blade and arm, so as to allow a rocking motion of the blade upon its arm, substantially as described.

4. The hub C, movable upon its shaft, and provided with self-adjusting arms, bent backward at their outer ends, and pivot and stay-bolts and washers, for adjustably securing the blades to the bent ends of said arms, in combination with the fixed hub B, provided with similar mechanism, and the blades H H, substantially as described.

199,550. SCREW-PROPELLERS. Edwin J. Hulbert, Middletown, Conn. Filed Mar. 14, 1877.



Claim.—1. The helicoidal blade of a propeller-wheel, constructed as from a segment of a flat annular ring, first bent in a curve transversely, and then its alternate corners bent in opposite directions, with one corner straightened, substantially as described.

2. The blades of a screw-propeller, the helicoidal surface of which is of the form described, so that a section of its surface made by a plane passing through the axis of rotation shall be inclined backward at a constant angle with the axis, substantially as set forth.

3. The revolving shaft of a screw-propeller, carrying one or more radial arms, said arms having their outer ends bent backward from a perpendicular, as and for the purpose set forth.

4. The blades of a propeller-wheel of the helicoidal shape described, secured upon the outer ends of radial arms bent backward so as to retain the blades in their angular position, as described.

5. The blades of a screw-propeller supported on the ends of radial arms and inclined backward, so that a section of its surface made by a plane passing through the axis of rotation shall form an angle less than a right angle with said axis, substantially as described.

199,551. HARVESTER CUTTER-BARS. Richard W. Iliff, Glen Gardner, N. J. Filed Oct. 27, 1877.

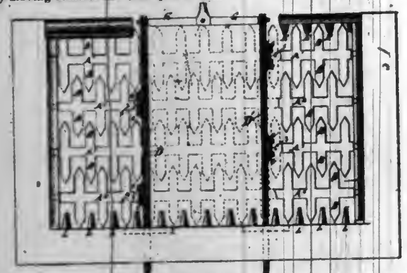
Claim.—In a cutter-bar for reapers and mowers, the combination of the bar A, having longitudinal groove *a*, the plate with rib *b*, and the knife-sections D, having extensions D', with shoulders *d d'* and tongue *d²*, all substantially as and for the purposes set forth.

199,551.



199,552. SHAKING-GRATES. Oliver P. Jackson, Pittsburg, Pa. Filed Jan. 22, 1877.

Brief.—The alternate bars are rocked in opposite directions by the oppositely-moving arms of the T-shaped lever.

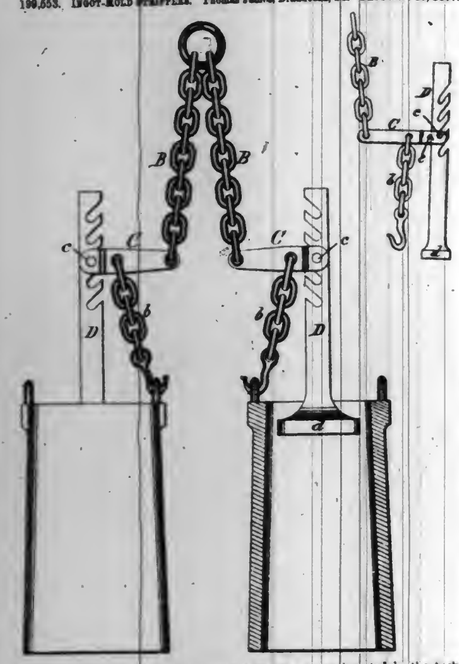


Claim.—1. Two or more rock-bars provided with lever-arms, and on each side with a series of short projecting horizontal bars, arranged to alternate with and interlap those of the next adjoining rock-bar, or with a series of short stationary bars, in combination with a two-arm lever and actuating-rods, all arranged and operating as described and for the purpose set forth.

2. The two-arm lever G, rods D and D', and lever-arms C, all combined and operating to impart a rocking motion to bars A, and as described, for the object as specified.

3. The combination, in a fire-grate, of the bars A B, lever-arms C, rods D, lever G, vertical bars E, and stationary bars L, all arranged and operating as described, and for the object as specified.

199,553. INGOT-MOLD STRIPPERS. Thomas James, Braddocks, Pa. Filed Nov. 19, 1877.

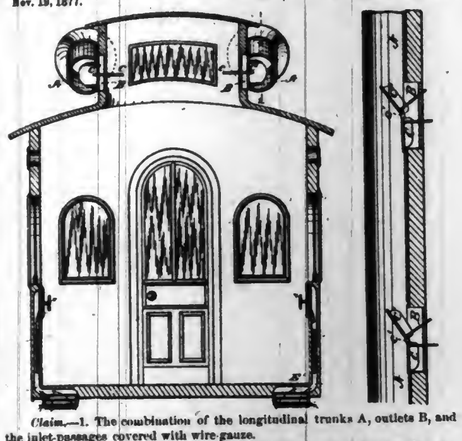


Claim.—1. As a means of stripping molds, a lever inserted in the tackle of a hoisting apparatus, which tackle is attached to the mold, and provided with means of bearing upon the contents of the mold, substantially as described.

2. The combination of chains B and *b*, lever C, and plunger D, substantially as described.

3. The combination of chain B, chain or grapple *b*, lever C, bifurcated at one end, and having cross-pin *c*, with plunger D, provided with one or more inclined open slots, substantially as specified.

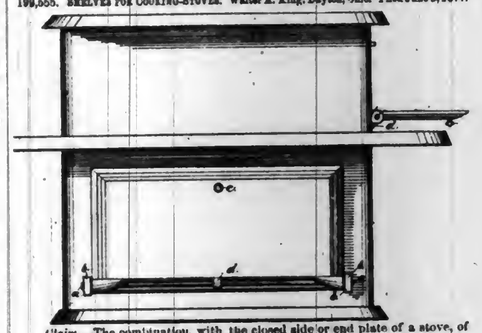
199,554. VENTILATING RAILWAY-CARS AND SHIPS. John M. Keating, Memphis, Tenn. Filed Nov. 19, 1877.



Claim.—1. The combination of the longitudinal trunks A, outlets B, and the inlet-passages covered with wire-gauze.

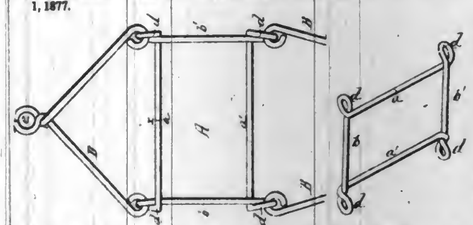
2. The combination of the longitudinal trunks and deflectors, for producing induced currents to exhaust the air from the car or cabin, as explained.

199,555. SHELVES FOR COOKING-STOVES. Walter A. King, Dayton, Ohio. Filed June 5, 1877.



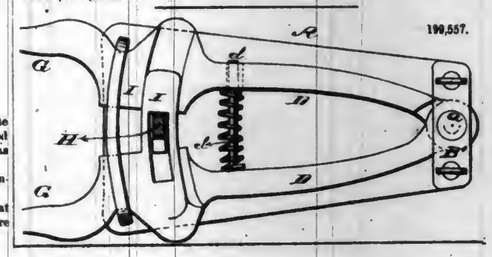
Claim.—The combination, with the closed side or end plate of a stove, of a shelf hinged or pivoted at its corners to the stove, and provided with a detent or catch, *c*, and bracket *d*, whereby it can be let down and sustained in a horizontal position without interfering with the objects designed to be attained by the stove, substantially as specified.

199,556. LADDERS. Aaron R. W. Knight, Philadelphia, (Somerton P. O.,) Pa. Filed Oct. 1, 1877.



Claim.—A ladder in which links B, having eyes at both ends, are combined with sections A, each made of a single rod or bar of metal, bent so as to form horizontal portions *a a'*, vertical portions *b b'*, and an eye, *d*, at each corner, as specified.

199,557.



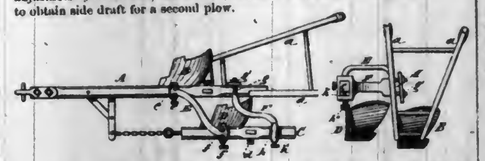
199,557. BOOT-JACKS. Josiah B. Laffer, Harrison City, Pa. Filed Oct. 20, 1877.

Claim.—1. In a boot-jack, the combination of the pivoted levers D D, formed with the jaws G G and slotted arms I I, the spring *d*, and the wedge H, substantially as and for the purposes set forth.

2. The combination of the base A, levers D, with jaws G and slotted arms I, the spring *d*, and the foot-piece C, with wedge H, all constructed substantially as and for the purposes set forth.

199,558. PLOWS. Leonard J. Lowe, Ashland City, Tenn. Filed Sept. 1, 1877.

Brief.—A supplemental plow-beam, each beam carrying a plow vertically adjustable by set-screws, and laterally adjustable by braces. A draft-regulator to obtain side draft for a second plow.

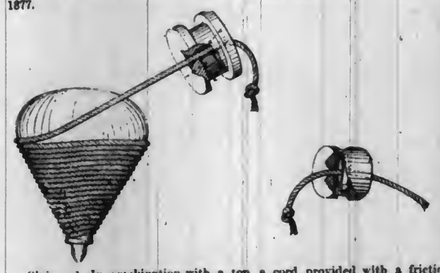


Claim.—1. The combination of the beam A, having the vertically-adjustable plow B, beam C, having the vertically-adjustable plow D, and slotted braces E F, provided with the set-screws *c c'*, *f f''*, *g g''*, and *h' h''*, substantially as and for the purpose herein shown and described.

2. In combination with the plow-beam A, the device for adjusting and regulating the line of draft herein described, consisting of the curved bar G, pivoted at *i*, and having shoulder *p*, lever H, and arm I, all constructed and combined to operate substantially as and for the purpose herein shown and specified.

3. The combination of plow-beam A, draft-regulating device G H I, and supplemental plow-beam C, substantially as and for the purpose herein shown and set forth.

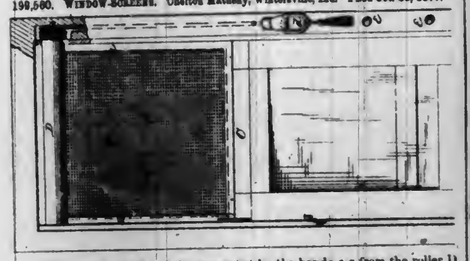
199,559. TOP-SPINNING DEVICES. Edward D. Mackintosh, Brooklyn, N. Y. Filed Oct. 19, 1877.



Claim.—1. In combination with a top, a cord provided with a friction clutch or brake, substantially as described, and for the purposes specified.

2. A top-spinning device consisting of a cord provided with a friction clutch or brake contained within a button, substantially as described, and for the purposes specified.

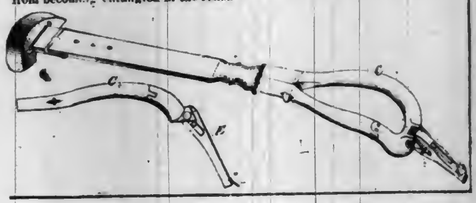
199,560. WINDOW-SCREENS. Chelten Matheny, Winterville, Ind. Filed Oct. 30, 1877.



Claim.—The upper sash C, suspended by the bands *a a* from the roller D, the removable screen G, and cord *b*, all constructed substantially as and for the purposes herein set forth.

199,561. ADJUSTABLE STIFF CRUPPERS FOR HARNESS. James O. McCallum, Los Angeles, Cal. Filed May 10, 1877.

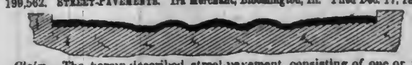
Brief.—A support attached to the crupper prevents the tail of the animal from becoming entangled in the reins.



Claim.—1. The combination, with the rigid adjustable crupper C, of the tail-support E, pivoted thereto and adapted for use, all as shown and described.

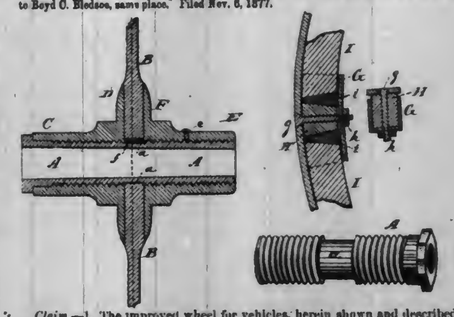
2. The combination, with the back-strap of a harness, of the crupper C and pivoted tail-support E, all arranged substantially as shown, for the purpose stated.

199,562. STREET-PAVEMENTS. Ira Merchant, Bloomington, Ill. Filed Dec. 17, 1877.



Claim.—The herein-described street-pavement, consisting of one or more series of stone tracks laid lengthwise, and forming the lowest portions of the street, the intermediate portions between and outside of the stone tracks formed of stones set edgewise, and the intermediate surfaces of the street made rounding, and the outside surfaces of the street made declining from the sidewalks toward the stone tracks, substantially as and for the purpose specified.

199,563. VEHICLE-WHEELS. John M. Moss, Collierville, Tenn., assignor of one-half his right to Boyd C. Bledsoe, same place. Filed Nov. 6, 1877.



Claim.—1. The improved wheel for vehicles, herein shown and described, consisting of the cylindrical screw-threaded axle-box A, having central blank section *a*, screw-threaded sleeve C, cast in one piece with face-plate D, having recesses *d*, sleeve E, cast in one piece with the clamp-plate F, set-screw *e*, tightening-wedges *f*, and spokes B, all constructed and combined substantially as and for the purpose set forth.

2. As an improvement in tire-tighteners, the double wedge *i i*, with its operating-cap G, bolt *g*, and jam-nut *h*, in combination with the central stationary block H and fellies I I, substantially as and for the purpose shown and set forth.

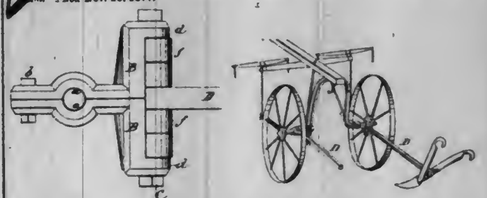
199,564. STEAM-HEATING APPARATUS. David Needham, Oskaloosa, Iowa. Filed Sept. 24, 1877.

Brief.—The seam in the cylindrical metal furnace is covered by an air-pipe leading from the ash-pit to the cover to prevent destruction of seam by heat.



Claim.—In a steam-heater constructed substantially as herein described, the air-pipe K, leading from the ash-pit to the upper cover, and covering the seam *k* of the fire-chamber, substantially as described, for the purpose herein shown and specified.

199,565. WHEEL-CULTIVATORS. Benjamin F. Needham and Laban W. Needham, Newcastle, Ind. Filed Nov. 13, 1877.



Claim.—1. The combination of the clamp-plates B, bent twice at right angles to form lugs *d*, with the pivot-bolt C, the washers *f*, and the perforated plow-beam, substantially as and for the purpose described.

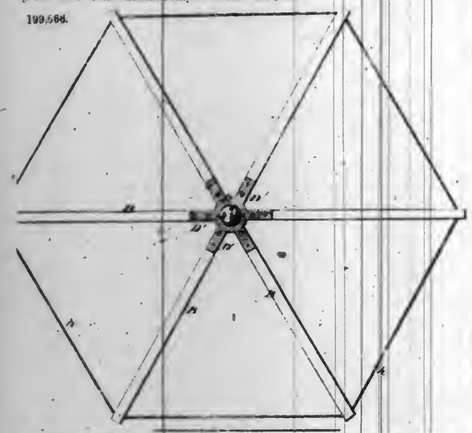
2. The combination of the axle, having collar *e*, the clamp-plates B, having curved grooves and slots *g*, and bent twice at right angles to form lugs *d*, the pivot-bolt C, washers *f*, and plow-beam D, substantially as and for the purpose described.

199,566. MOSQUITO-NET FRAMES. Hjalmar Hyvall, Chattanooga, Tenn. Filed Dec. 18, 1877.

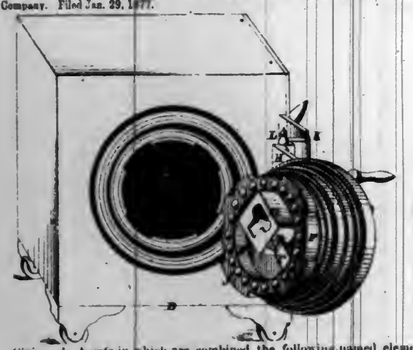
Claim.—In a mosquito-net frame, the leather hinge formed of the circular piece D, with radial arms D', all cut in one piece, in combination with the cen-

ter post A, having shoulder a, and the arms B, connected at their outer ends by the cord b, all substantially as herein set forth.

199,566.



199,567. BURGLAR-PROOF SAFES. David O. Paige, Detroit, Mich., assignor to Detroit Safe Company. Filed Jan. 29, 1877.



Claim.—1. A safe in which are combined the following named elements, viz: a round door, which, when seated, may be locked within its opening by a partial rotation upon its axis, a spring-bolt for preventing the unlocking of said door by rotation, and time mechanism by which said spring-bolt may be withdrawn at any determined hour, substantially as specified.

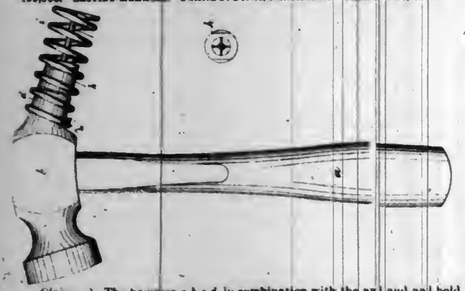
2. In combination with the carrier K, for sustaining, seating, and unseating the door E, the friction-rollers M, which form bearings for said carrier, and are adjustable vertically, substantially as and for the purpose set forth.

3. In combination with a circular pivoted safe-door, a toothed segment formed upon the carrier to which said door is pivoted, and a pinion journaled upon said door and engaging with said segment, substantially as and for the purpose specified.

4. In combination with the hinge-carrier K, arranged to move longitudinally within the recess b, and provided with the opening i, which is toothed upon its lower edge, the pinion N, journaled within said opening, and arranged to engage with the teeth of the same, substantially as and for the purpose shown and described.

5. The means employed for sustaining the hinge L and rendering the same adjustable toward or from the front wall of the safe, consisting of the carrier K, secured to or upon said hinge, fitted within the recess b in the outer side of the side wall of said safe, and capable of longitudinal motion within said recess, substantially as specified.

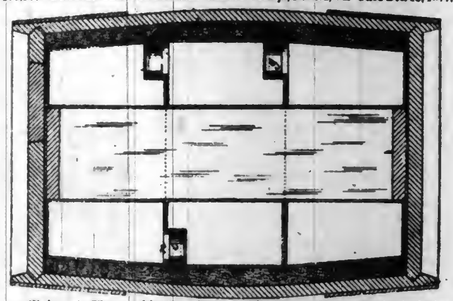
199,568. LASTING-HAMMERS. Patrick F. Peters, Natick, Mass. Filed Oct. 18, 1877.



Claim.—1. The hammer *a b c d*, in combination with the awl and awl holding devices *e f h*, the guard spring *i*, and its holder *l*, the spiral spring surrounding the portion *d* of the hammer, and the awl and awl-holder, all substantially as set forth.

2. The hammer *c b*, its extension *d*, and awl-holding devices, in combination with a strong spiral spring, *i*, forced upon and made to hug closely the extension and envelop the awl-holding devices, to prevent the spring moving laterally with relation to the awl, and from coming in contact with the awl, substantially as shown and described.

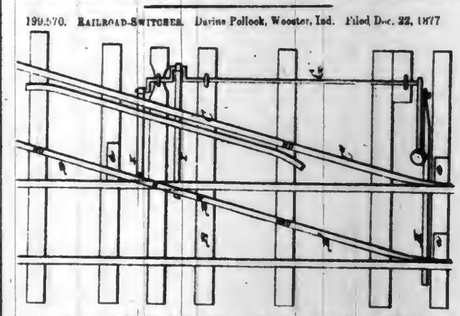
199,569. SHIPPING-CASE FOR OYSTERS. James J. Phillips, Norfolk, Va. Filed Dec. 15, 1877.



Claim.—1. The combination, in a packing-case, of an outer or inclosing vessel and a series of independent annular vessels, the latter being provided with central passages, which fall in line with each other when the vessels are in place, the vessels at the extremities being provided with stoppers for closing the central passages, whereby an inclosed ice-chamber is formed extending throughout the series, substantially as specified.

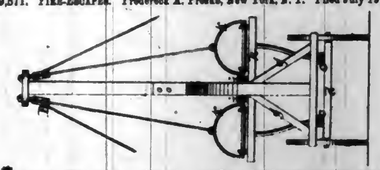
2. A packing-can having a stopper-neck on one side, and on the other a recess to receive the stopper-neck of the next vessel, substantially as specified.

199,570. RAILROAD-SWITCHES. Darius Pollock, Wooster, Ind. Filed Dec. 22, 1877.



Claim.—The rails C, D, D', and D², of the construction described, operated simultaneously by means of the single-crank shaft G and connecting-rods H I I, in combination with the inclined pieces *a*, attached to the ties, for the purpose of elevating the switch-rails over the main rail, as described.

199,571. FIRE-ESCAPES. Frederick A. Brooks, New York, N. Y. Filed July 19, 1877.



Claim.—1. The combination of a truck, a ladder-supporting frame rising from each end of the frame, for supporting each end of a disconnected ladder, and a standard having a sheave in its upper end, substantially as and for the object set forth.

2. In a truck for ladders, a truck-frame composed of longitudinal bars resting on cross-pieces at each end, and of a central cross-piece, in combination with a standard rising from said central cross-piece, and having both longitudinal and lateral braces, and with a ladder-supporting frame composed of cross-pieces, which are connected to the truck-frame and arranged in an elevated position, substantially as and for the purpose described.

199,572. REMOVABLE BOOK-BINDINGS. Ira Reynolds, Dayton, Ohio, assignor to Reynolds & Reynolds, same place. Filed Dec. 18, 1877.

Claim.—1. The back for a book-cover, made of a single piece of wood, having its inner face concaved with a continuous or unbroken curve, its center thicker than its edges, and its edges rigid or unyielding, substantially as shown and described.

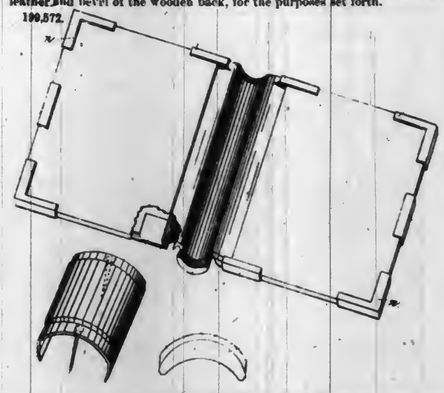
2. The wooden back having its inner face concaved in cross-section, and thicker at its center than at its edges, and having its edges beveled or chamfered off, as described, and as shown in Fig. 4.

3. The metal headings or end pieces *b*, in combination with the wooden back, as and for the purposes set forth.

4. The center metal hub and band, cut or grooved longitudinally on the inside, and bent down over the leather and bevel of the wooden back, as shown at Figs. 2 and 5, and for the purposes set forth.

5. The end metal hub and band provided with a head, *q*, and also with their edges longitudinally grooved on the inside, and bent down over the leather and bevel of the wooden back, for the purposes set forth.

199,572.

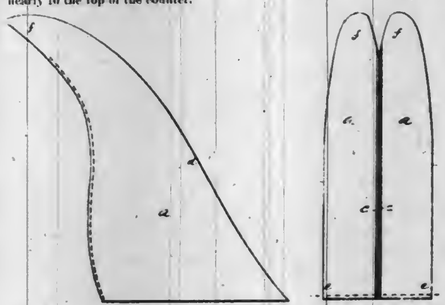


199,573. PROCESSES FOR SHARPENING FILES. Miles A. Richardson, Bridgeport, Conn. Filed Oct. 13, 1877.

Claim.—The method of resharpening files by directing upon them a sand-blast, operating to wear or grind away the back of the teeth, and to repoint the same, substantially as set forth.

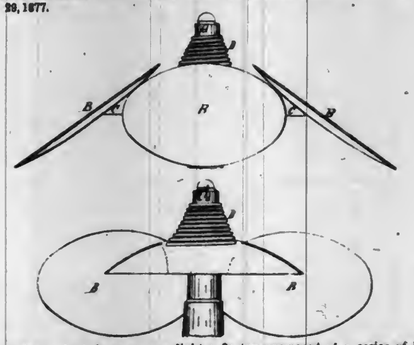
199,574. COUNTER-STIFFENERS FOR BOOTS AND SHOES. Wm. H. Richardson, Salem, Mass. Filed Oct. 24, 1877.

Brief.—The stiffener is made in two parts, united by a seam which extends nearly to the top of the counter.



Claim.—The heel-stiffener herein described, consisting of the parts *a a*, having curved front and rear edges *e d*, said rear edges being attached together for the greater portion of their length, but having their upward-projecting portions *f f* unattached and separated, substantially as and for the purpose set forth.

199,575. REFLECTORS FOR LAMPS, &c. Charles Robinson, Cambridgeport, Mass. Filed Aug. 29, 1877.



Claim.—1. A lamp or gas light reflector, composed of a series of individual concave reflectors, B B B B, arranged around and below the burner A, substantially as and for the purpose herein specified.

2. In combination with the burner A and reflector B B B B, the coiled spring D, by which the said reflector is suspended from the said burner, substantially as and for the purpose herein specified.

199,576. SUPPORTS FOR HOSE-BUCKLES. Chas. H. Bodig, Cleveland, Ohio. Filed Aug. 24, 1877.

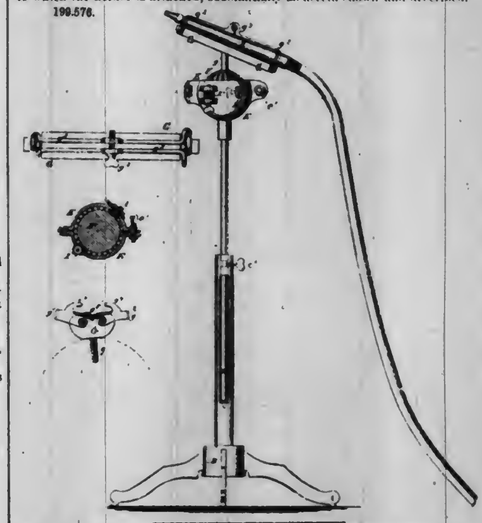
Brief.—Not susceptible of a description briefer than the claims.

Claim.—1. The combination of the plate G, provided with the stem *g'*, the pivoted clamping-rods *g²*, having loops or bends formed in their ends, and the clamping-screw *g³*, with the ball F and the socket E, made in two parts, hinged to each other at one side, and secured by a clamping-screw *e²*, at the other side, and attached to a stand, substantially as herein shown and described.

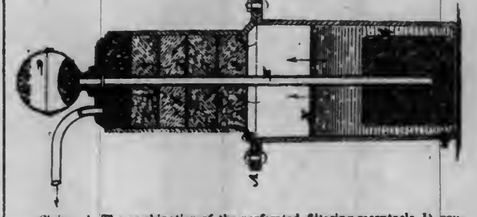
2. The bars *g⁴*, pivoted at the ends of the arms at one end to the block G, provided with hooks *g⁵* upon their pivoted arms, and with hooks *g⁶* upon the overlapped ends of their free arms, in combination with the said block G, the ball F, the socket E *e'*, and a stand, substantially as herein shown and described.

3. The combination of the gear-wheels I, provided with the handles *i'*, with the socket E *e'*, and with the teeth formed upon the surface of the ball F, to which the holder is attached, substantially as herein shown and described.

199,576.



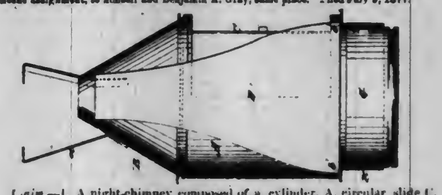
199,577. AIR-FILTERS FOR BEER-PUMPS. Johann C. A. Rohde, Hamburg, Germany. Filed Oct. 31, 1877.



Claim.—1. The combination of the perforated filtering-receptacle D, containing cotton or other substance, charged with a disinfecting acid, the pipe or duct E, the body A of the filter, charged with a liquid disinfectant in its base, the charcoal block G, immersed within said liquid disinfectant, and arranged to receive within it the lower or delivery end of the pipe E, one or more perforated chambers, I, containing a dry pulverized disinfectant, and the suction or discharge pipe or outlet *a*, substantially as herein described.

2. The process of filtering air by passing it first through a loose or fibrous material charged with a disinfecting acid, next through a solid filtering body or block, afterward through a disinfecting liquid, and finally through a pulverized disinfectant, essentially as specified.

199,578. NIGHT-CHIMNEYS FOR LAMPS, &c. Joseph F. Rose, Tiverton, R. I., assignor, by mesne assignment, to himself and Benjamin A. Gray, same place. Filed July 9, 1877.



Claim.—1. A night-chimney composed of a cylinder, A, circular slide C, movable cone B, chimney D, and collar E, combined and arranged substantially as described.

2. The combination of the removable grooved collar G and the permanently-fixed collar E with the body of the night-chimney, substantially as described.

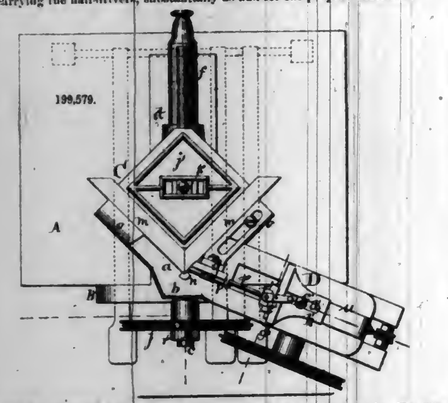
199,579. MACHINES FOR NAILING AND CLAMPING PICTURE-FRAMES. Morris Rose, New York, N. Y. Filed Dec. 5, 1877.

Claim.—1. The combination, in a machine for nailing picture-frames, of a clamping device, consisting of a head, *b*, a fixed jaw, *a*, and movable jaw *f*, of lateral nail-receiving sockets, (one or more,) attached to the head *b* of the clamp by slotted plates adapted to be adjusted both vertically and laterally, and nail-drivers, (one or more,) attached to a horizontal slide, D, by slotted plates adapted to be adjusted both vertically and laterally, all substantially as shown and described.

2. The combination, with a stationary jaw, *a*, of a movable jaw, *f*, secured to a slide, *s*, a screw-spindle, *c*, which turns in the head supporting the stationary jaw, and extends into a shell secured to the slide *s*, and a sectional nut, *g*, which engages with the screw-spindle, all combined and adapted to operate substantially as set forth.

3. The combination, with a clamping device, adjustable nail-receiving sockets, (one or more,) adjustable nail-drivers, (one or more,) a slide having cogs on its under side, adapted to engage a pinion to operate the nail-drivers, and independent foot levers connected with the clamping device, and the slide carrying the nail-drivers, substantially as and for the purpose described.

199,579.



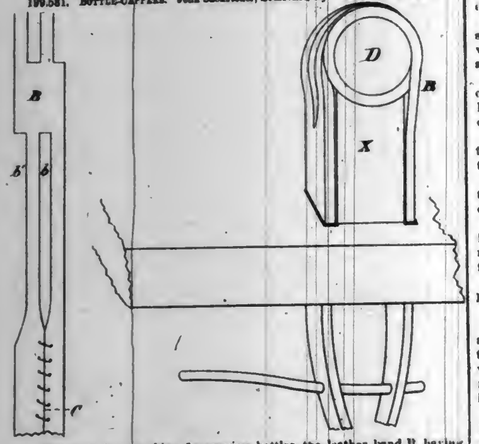
199,580. METHODS OF ORNAMENTING METALLIC SURFACES FOR JEWELRY, &c. Wm. Riker, Newark, N. J. Filed Jan. 17, 1878.



Claim.—1. The method herein described of ornamenting metallic surfaces for jewelry and other similar articles, which consists in cutting apertures in the main plate corresponding to the design, and inlaying said apertures with designs or emblems cut from a bimetallic plate or plated piece of the same thickness as the body plate, in which one metal is of the same character and color as the article or back of the article itself, and the other of some different color suitable to the design or emblem to be produced, substantially as described.

2. As a new article of manufacture, a pin or badge having upon its face inlaid designs of different colors of metal and a back of uniform color and quality, the said inserted pieces being flush front and back with the body plate, substantially as shown and described, and for the purpose set forth.

199,581. BOTTLE-CAPPERS. John Sackstader, Louisville, Ky. Filed Oct. 19, 1877.

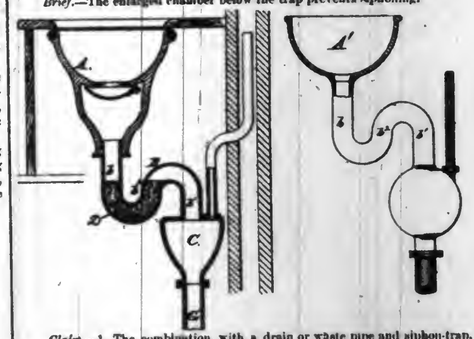


Claim.—1. In a machine for capping bottles, the leather band B, having slots or openings *a a' b b'*, formed by cutting strips therefrom, and cut C, by which it may be doubled and interlaced to form a collar or loop, D, substantially as described, for the purpose herein shown and specified.

2. The combination of the bench A, having upright or standard X, band B, and foot-lever L, all constructed, arranged, and operating substantially as described, for the purpose herein shown and specified.

199,582. TRAPS FOR WATER-CLOSETS, &c. James Sargent, Rochester, N. Y. Filed Dec. 31, 1877.

Brief.—The enlarged chamber below the trap prevents siphoning.



Claim.—1. The combination, with a drain or waste pipe and siphon-trap, of an enlarged chamber or swell, connected to or formed in one piece with the eduction end of said trap, and an air-supply pipe or passage leading from said chamber or swell, substantially as described, whereby siphoning of the trap of a water-closet, urinal, wash-basin, or sink is prevented, and sewer-gases and foul air are excluded from passing through said traps.

2. The combination, with a water trap or seal, of an enlarged chamber or swell connected to the eduction end of said trap, a ventilating-pipe leading from the said chamber or swell to the open air, and a fine or wall ventilating-passage, substantially as set forth.

3. The improved water trap or seal herein described, consisting of the tubular limbs *b b' b''* of the reversely-bent pipe B, and the enlarged chamber or swell C, formed in one piece therewith, and adapted for connection to a ventilating-pipe, substantially as described, and for the purpose set forth.

4. As a new article of manufacture, a combined wash or water-closet basin, trap, and ventilating swell, formed near the lower terminal of said trap, and adapted for connection with a ventilating-pipe, the whole formed in one piece of metal, earthenware, or other suitable material, substantially as set forth.

5. The combination of the trap I, swell K, gate *m*, and the intermediate ventilating-pipe *n'*, substantially as described, whereby sewer emanations are excluded from and pure air admitted to the house-pipe H and connecting waste-pipes.

6. The combination of the water-closet basin A and wash-basin A', each provided with a top, B, and connecting with a common waste-pipe, G, above the swell C, whereby one ventilated swell, as hereinbefore described, may serve for two basins.

199,583. HARDENING, TEMPERING, AND PRESSING GLASS. Frederick Siemens, Dresden, Germany. Filed Nov. 14, 1877.



Claim.—1. The improvement in the art of pressing glass, substantially as described, the same consisting in covering or lining the face of the pressing-mold with one or more sheets or layers of metal or vegetable fabric, powder, or solution, for the purpose set forth.

2. A pressing-mold having its inner surface covered by one or more sheets, layers, or coatings of a substance or combination of substances that will retard or modify the action of the mold upon the article to which it is applied.

3. The method of applying to the surface of the glass a sheet, layer, or coating of material having a different heat-conducting power from a sheet, layer, or coating applied to the surface of the molds, substantially as herein described.

4. The improvement in the art of pressing glass, consisting in maintaining the pressing-mold for desired periods during the pressing at given degrees of temperature below the boiling-point of water, substantially as set forth.

5. A hollow pressing-mold maintained at a constant temperature by the circulation through it of water or other liquid, substantially as herein described.

6. A hollow glass-pressing mold adapted for circulation of water through its interior, and having its face covered by one or more sheets or layers of metal gauze, fibrous or textile fabric, powder, or solution, substantially as set forth.

199,584. GAGE-LATHES. Edwin Silver, Reading, assignor to John Keats, Wood Green, England. Filed Oct. 16, 1877. Patented in England, Apr. 24, 1877.

Brief.—Wooden pill-boxes, spools, bobbins, &c., can be rapidly and accurately turned by means of automatically-operated tail-stock, suitable cutting-tools mounted on sliding stocks, a carrier for taking the turned articles when finished and depositing them in a suitable receptacle, a hollow for the rotation of the blank to be turned, and a solid arbor for the insertion of a boring-tool for interior cutting.

Claim.—1. The lathe-bed A, having the central hollow box B, which partly incloses the mechanism for operating the cutter-stocks, and is provided with ways for supporting and guiding cutter or tool stocks arranged thereon, substantially as described.

2. The combination, with mechanism, substantially as described, below the ways of the lathe-bed for operating two or more cutter-stocks, and a vertical cam-shaft carrying the cam or cams for actuating said mechanism, of a horizontal shaft supported in bearings upon the lathe below the bed and geared with said cam-shaft, substantially as and for the purpose set forth.

3. The combination, with the automatically-moving tail-stock M, for feeding the wood through the rotating hollow arbor J, of the rotating spur-center *e*, substantially as and for the purpose described.

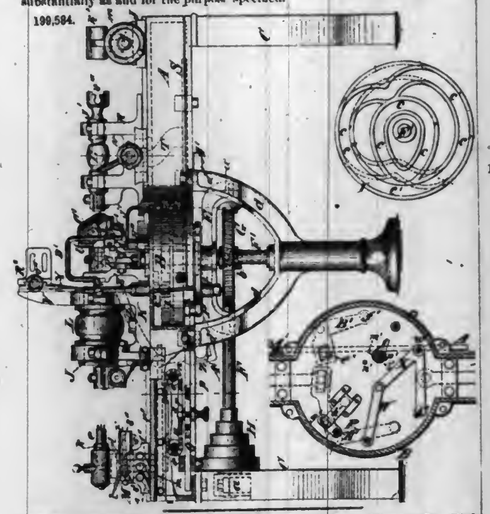
4. The combination, with the ratchet *m*, for moving the tail-stock reciprocated by the cam I through intermediate mechanism, of the pawls *l*, carried by the tail-stock M, for engaging the said ratchet, the projection *x'* on said pawls, and the slide *t'*, for disengaging said pawls from said ratchet, substantially as and for the purpose specified.

5. The combination of the tail-stock M, the stationary ratchet *r''*, attached to the lathe-bed, and the pawls *l''*, pivoted to said tail-stock in such manner that all of said pawls are raised by raising the inner one of said pawls, substantially as and for the purpose set forth.

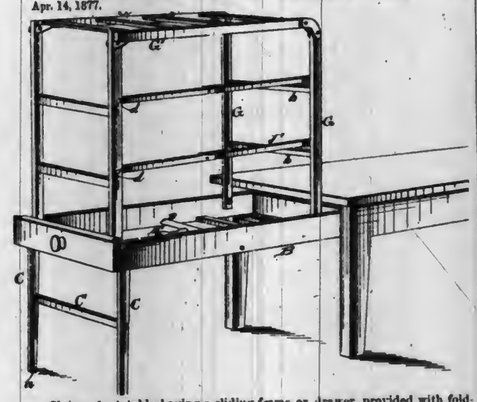
6. The combination, with the head-stock K, of the swinging tubular carrier C', substantially as and for the purpose herein specified.

7. The combination of the sliding cutter-stock R''', the tool-post *l'*, having the projection *m'* and oscillating on its vertical axis, the spring *p'*, and stop *n'*, substantially as and for the purpose specified.

199,584.



199,585. COMBINED TABLE AND CLOTHES-HORSE. David M. Singer, Johnstown, Pa. Filed Apr. 14, 1877.



Claim.—1. A table having a sliding frame or drawer, provided with folding legs and an elevated folding structure or clothes-rack, substantially as herein set forth.

2. The combination, with the sliding frame B, of the folding legs C, having notches *a* in the lower ends, and the diamond-shaped rocking bar D, with lever D', substantially as and for the purpose herein set forth.

199,586. BUCKLES. Edward S. Smith, Waterbury, Conn., assignor to Smith & Griggs Manufacturing Company, same place. Filed Dec. 19, 1877.



Claim.—In an improved buckle, the combination, with the frame, cross-bar, and tongue, of a fastening-plate having transverse or anchor-shaped fastening end, and an auxiliary fastening-prong struck up from said plate, as shown, the tongue and plate both hinged to the cross-bar, all as set forth, for the purpose described.

199,587. CORSETS. Lyman T. Smith, New Haven, Conn. Filed June 27, 1877.

Claim.—1. The combination, with a corset, of a continuous rigid waistband, substantially as and for the purpose described.

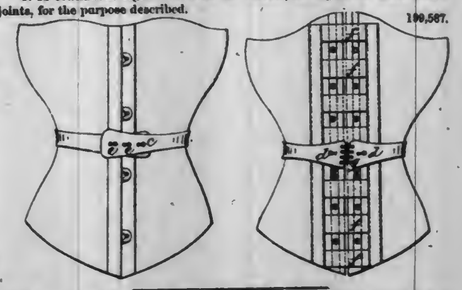
2. The combination, with a corset having buttons *d d* and *e e*, of a continuous rigid waistband having eyelets *b b* and *c c*, substantially as and for the purpose herein set forth.

3. The combination, with a corset having elastic connecting-bands, of a continuous rigid waistband, substantially as and for the purpose described.

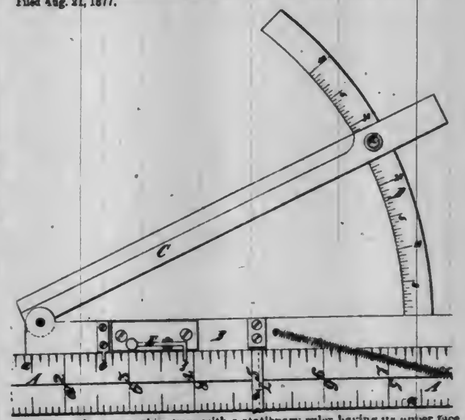
4. A continuous rigid waistband for corsets, having a concavo-convex form in cross-section, for the purpose described.

5. A continuous rigid waistband for corsets, having one or more hinge-joints, for the purpose described.

199,587.



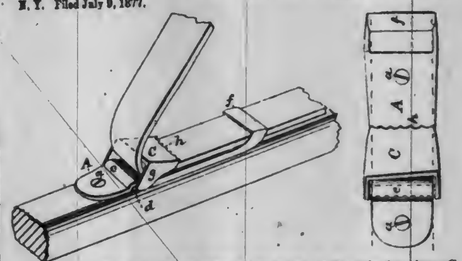
199,588. QUADRANT PARALLEL SECTION-LINE RULERS. Gustav Seltmann, New York, N. Y. Filed Aug. 21, 1877.



Claim.—1. The combination, with a stationary ruler having its upper face provided with a series of notches indicative of the divisions of space, and a movable triangular ruler adapted to be moved along the edge of the stationary ruler, and having a tooth for engaging successively with said notches in the stationary ruler, of a spring for lifting the movable ruler, so as to disengage the tooth thereof from a notch in the stationary ruler, and permit the adjustment of the movable ruler, substantially as and for the purpose specified.

2. The combination of the stationary ruler A, having notches *a* in its edges, the movable triangular ruler, composed of base-limb B, hinged ruler-limb C, protractor-limb D, set-screw *d*, and the tooth *e*, lifting-spring G, and the spring I, connected to the stationary ruler A and the base-limb B of the movable ruler, substantially as and for the purpose specified.

199,589. HOLDBACK ATTACHMENTS FOR CARRIAGES. Mark W. Spaulding, Rensselaer Falls, N. Y. Filed July 9, 1877.



Claim.—1. The boldback attachment consisting of the swinging clamp C, provided with lip *h*, coupled with the carriage-thill, as and for the purpose described.

2. The holdback attachment consisting of the plate A and swinging clamp C, coupled together substantially as set forth.

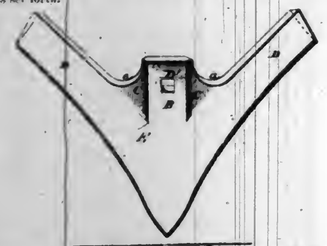
3. In combination, the plate A, having the recess or groove *d* and loop *f*, and the swinging clamp C, provided with the lip *h*, substantially as set forth.

199,590. COTTON-SWEEP. William W. Speer, Pittsburg, Pa. Filed Sept. 20, 1877.

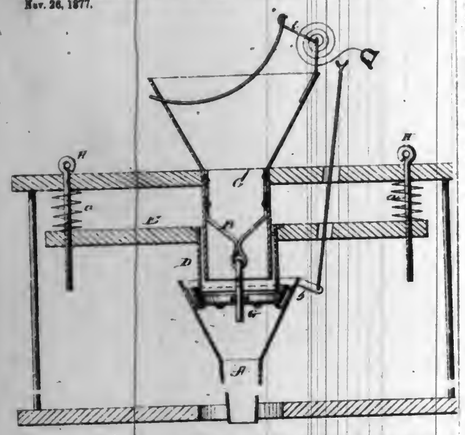
Claim.—A cotton-sweep having a standard seat or bearing, E, partly on the stem and partly on the body of the sweep, the arms D D and stem B being

joined by the angular pieces C, which are formed with curved edges *a*, substantially as set forth.

199,590.

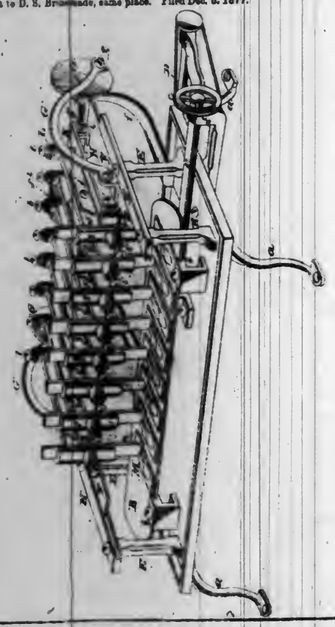


199,591. FEED-REGULATORS FOR MILLSTONES. William Steele, Moffatt's Creek, Va. Filed Nov. 26, 1877.



Claim.—The combination of the tube D, bar E, screws H, and springs *a* with the discharge-funnel A and cup G', substantially as and for the purposes herein set forth.

199,592. BURNISHING-MACHINES. Jeremiah Stover, Birmingham, Conn., assignor of one-half his right to D. S. Brownade, same place. Filed Dec. 8, 1877.



Claim.—1. The combination, with a movable plate adapted to have one or more patterns and a number of articles to be burnished secured thereto, of a superposed, movable plate provided with one or more followers and a number of burnishers, substantially as set forth.

2. The combination, with a movable plate or table adapted to have one or more patterns and one or more articles to be burnished secured thereto, of a superposed yielding plate provided with one or more followers and one or more burnishers, said yielding plate arranged and adapted to be moved transversely to the movement of the pattern-plate, substantially as set forth.

3. The combination, with a reciprocating plate and a plate hinged thereto, said plates being connected to each other in a yielding manner, of one or more followers and one or more burnishers, substantially as set forth.

4. The combination, with a reciprocating plate and a yielding plate hinged thereto, of one or more followers and a series of burnishers, said followers and burnishers being removably secured to independent and yielding holders, substantially as set forth.

5. The combination, with the yielding plate, of a series of burnisher-holders, the same provided with sockets and springs, adapted to have their tension adjusted by screws attached to said sockets, substantially as set forth.

6. The combination, with a series of burnishers and one or more followers, said burnishers and followers attached to a yielding plate, of a pattern-plate provided with a screw-threaded nut and a screw-threaded shaft, adapted to engage in said nut and impart a reciprocating movement to said plate, substantially as set forth.

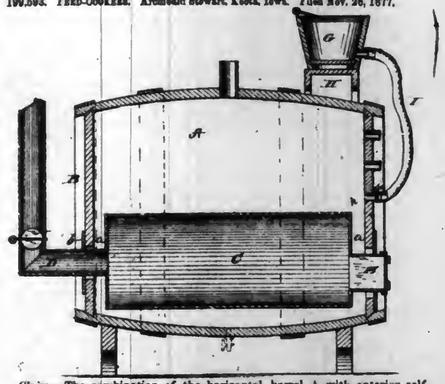
7. The combination, with the longitudinally-reciprocating pattern-plate B, the transversely-reciprocating plate F, and hinged plate H, of the springs *h h'* and the series of burnishers, substantially as set forth.

8. The burnisher-holders J, constructed with an open groove, *i*, at one end, and provided with a socket, L, at the opposite end, substantially as set forth.

9. The combination, with the yielding plate H, of one or more burnisher-holders, pivoted to said plate, and springs K, located in sockets L, formed on one end of said holders, substantially as set forth.

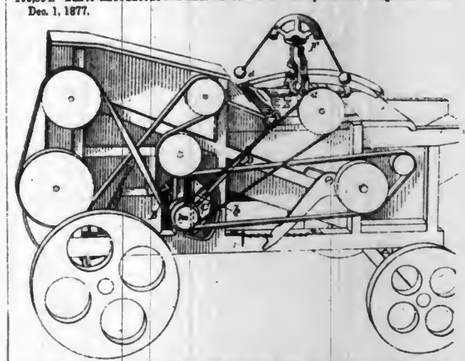
10. The combination, with the plate F and hinged plate H, the latter provided with one or more followers and a series of burnishers, of the shaft *f'*, disks or wheels G, and connecting-rods G', substantially as set forth.

199,593. FEED-COOKERS. Archibald Stewart, Keota, Iowa. Filed Nov. 26, 1877.



Claim.—The combination of the horizontal barrel A with exterior self-feeder G, the two being connected by the flexible pipe I, the fire-box C, collars *a a* at each end, and the smoke-pipe D, all constructed substantially as and for the purposes herein set forth.

199,594. BLAST-REGULATORS FOR GRAIN-SEPARATORS. Henry S. Stone, Orange, Ind. Filed Dec. 1, 1877.



Claim.—The governor F, in combination with the balance-lever E, provided with the rigid arms D and the gates C, substantially as and for the purpose set forth.

199,595. CLAM-BAKERS. John L. Stroub, New York, N. Y. Filed July 10, 1877.

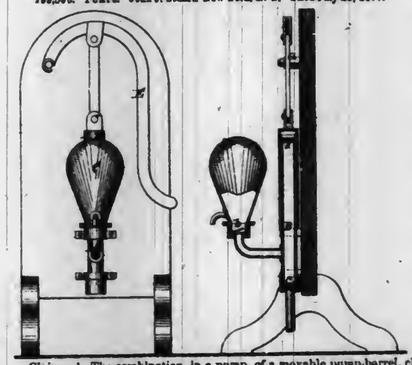
Brief.—A gridiron for baking clams, provided with inverted hollow V-shaped bars. Clams are wedged in, mouth downward, between the bars, which prevent the opening of the clams under the action of the heat, thus retaining the liquor in the shells.

Claim.—The combination, with the frame A, of the inverted V-shaped bars C, formed with inverted V-shaped cavities on their under sides, and attached at their ends to the sides of the frame, substantially as and for the purpose described.

199,595.



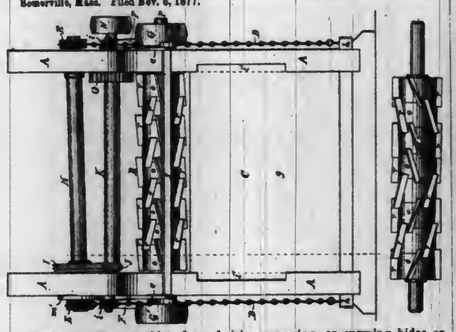
199,596. PUMPS. John J. Stuart, New York, N. Y. Filed July 25, 1877.



Claim.—1. The combination, in a pump, of a movable pump-barrel, closed at the upper end, and a stationary suction-pipe fitted within said pump-barrel, and an air-chamber connected with the suction-pipe, the suction-pipe and air-chamber being provided with suitable valves, and the whole adapted to operate substantially as described.

2. In combination with the movable pump-barrel, the stationary suction-pipe, provided with an inwardly-projecting flange on its upper edge, to which is attached a packing-ring of leather or other suitable material, substantially as specified.

199,597. MACHINES FOR UNHAIRING, SCOURING, AND CURRYING HIDES. Joseph A. Talpey, Somerville, Mass. Filed Nov. 6, 1877.



Claim.—1. In a machine for unhairing, scouring, or currying hides or skins, a cylinder having formed upon or secured to its periphery a series of short oblique ribs or blades, arranged in rows around the cylinder and at opposite angles to the axis of said cylinder, with the ends of the blades in one circumferential row extending longitudinally of the cylinder beyond the contiguous ends of the ribs in the next circumferential row, substantially as and for the purposes described.

2. In a machine for unhairing, scouring, or working out hides or skins, a working-cylinder, made up of a series of ring-sections, each provided with one or more projecting ribs or blades, arranged obliquely upon its periphery, and extending at one or both ends beyond the radial end face of said ring, substantially as and for the purposes described.

3. The combination, in a machine for working hides or skins, of two working-cylinders, arranged parallel with each other, and adapted to revolve in unison in opposite directions, and each provided with one or more oblique working-blades, adapted to scrape the surface of the hide or skin, and a carrier-plate, adapted to receive the hide or skin folded by its middle over the edge thereof, and to be moved edgewise alternately in opposite directions between said cylinders, substantially as and for the purposes described.

4. The carrier-plate C, adapted to be reciprocated between the working-cylinders, and to be swung into an oblique position, to facilitate the application and removal of the hides or skins, substantially as described.

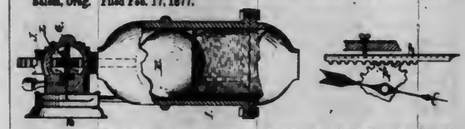
5. The reciprocating carrier-plate C, made of metal or other non-elastic substance, and covered with rubber or other elastic material, in combination with the two working-cylinders B and B', arranged parallel to each other, and adapted to revolve in unison in opposite directions, and in contact with a hide or skin folded over the edge of the carrier-plate, substantially as and for the purposes described.

6. The combination of the working-cylinders B and B', eccentric boxes *e* and *e'*, toothed segments *d* and *d'*, and rod or bar *f*, all arranged and adapted to operate substantially as and for the purposes described.

7. The combination of the carrier-plate C, chains D D, sprocket-wheels E E, shaft H, and the counter-weights F F, all arranged and adapted to operate substantially as and for the purposes described.

8. The shaft H, having mounted thereon the chain-wheels E E and the grooved frictional wheel I, and mounted and adapted to revolve in a fixed bearing at one end, and in an eccentric box, *m*, provided with a lever, *m'*, at the other end, in combination with the shafts K and M, adapted to revolve in opposite directions, and the frictional pinions J and L, adapted to be alternately engaged with the wheel I, substantially as set forth and described.

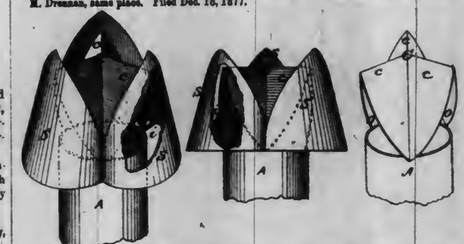
199,598. HIGH AND LOW WATER INDICATORS FOR STEAM-BOILERS. Alvin W. Vanderstes, Salem, Oreg. Filed Feb. 17, 1877.



Claim.—1. The rod K, having attached thereto the wheel F', valve I', and indicator-hand, in combination with the cap G, provided with a journal-bearing for said rod K, substantially as described.

2. The rod K, having attached thereto the wheel F' and valve I', in combination with the float E, cog-stem F, whistles C D, and water-gage B, whereby a high and low water alarm is sounded, and the height of water in the boiler indicated, substantially as described.

199,599. VENTILATOR AND CHIMNEY-CAP. John Walker, Boston, Mass., assignor to Charles M. Drennan, same place. Filed Dec. 18, 1877.



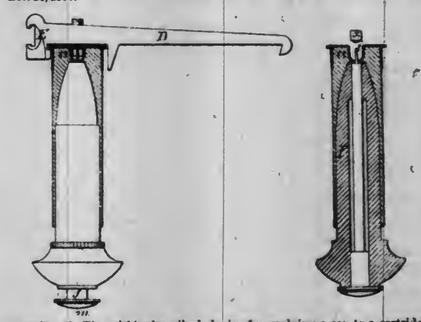
Claim.—1. A ventilator and chimney-cap composed of a tube or conduit, closed or capped at its top, and provided with lateral discharge-openings, and a series of shields located on the outside of the tube or conduit opposite the lateral openings, and entirely separated from said openings by spaces *i*, whereby air is permitted to pass vertically between the shields and openings, as set forth.

2. The cap C, composed of the radiating horizontal gables *c*, joined together at their inner ends, and having openings O at their outer ends, in combination with a tube or conduit, A, said cap constituting a covering, and a series of lateral discharge-openings for the tube or conduit, as set forth.

3. The combination of the cap C, constructed as described, with the tube or conduit A and the shields S, located outside of and opposite to the openings of said cap, and separated entirely from said openings by spaces *i*, substantially as and for the purpose specified.

4. The combination of the shields S with a tube or conduit, A, said shields being separated from the tube or conduit by spaces, which are unobstructed from top to bottom of the shields, as set forth.

199,600. CARTRIDGE-CAPPING IMPLEMENTS. Thomas M. Wallis, Philadelphia, Pa. Filed Nov. 26, 1877.



Claim.—1. The within-described device for applying a cap to a cartridge, said device consisting of an arm, D, having on the under side a hook, *b*, adapted to the rim of a cartridge, or to a projection adjacent to the same, all as specified.

2. The within-described implement, consisting of the arm D, a hook, *b*, and finger *c*, all as set forth.

3. The within-described implement, consisting of an arm, D, having a hook, *b*, a head, F, with jaws *e*, and a hook, *f*, as specified.

190,601. GASKETS. Wm. Wallace and John King, Ansonia, Conn. Filed Dec. 16, 1877.

Claim.—The herein described gasket, consisting of the soft body, as described, coated by an electro-deposit of copper, and substantially as specified.

190,602. LUBRICATING DEVICES. Franklin B. Walton, Dallas, Tex. Filed Dec. 21, 1877.

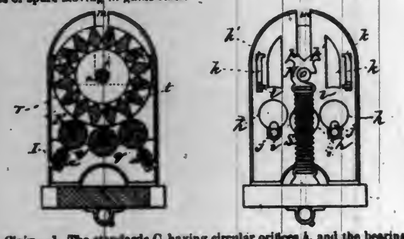


Claim.—1. The combination, with the cross-head of an engine or other reciprocating part of machinery, and the guides or ways on which it works, of a reservoir for the lubricant, a wheel for taking up and applying the same to the friction-surface with which the wheel works in contact, and a spring for supporting the wheel, substantially as shown and described.

2. The slotted metallic plate, the wheel a segment of which fits the slot therein, and the spring in which the wheel is journaled, all combined as shown and described.

190,603. WASHING-MACHINES. John R. Wanzo and Levi W. Brashough, York, Pa. Filed Oct. 6, 1877.

Brief.—The lower rollers are inserted through orifices in the standards, and rest in bearings cut in the lower edge of the orifices. They are held in place by a slotted retaining-plate secured to the inner face of the standard by means of spurs moving in guide-slots.



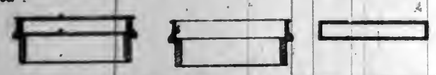
Claim.—1. The standards C, having circular orifices *h*, and the bearings *i*, opening into the same, in combination with the rollers D D¹ D², of less diameter than the said orifices, substantially as specified.

2. The standards C, having bearings *i*, orifices *h*, and lateral guide-slots *k*, and the retainer-plates E, having spurs *l*, engaging said slots, in combination with rollers D D¹ D², having journals *j*, substantially as specified.

3. The combination, with the rollers D D¹ D², the plates C, affording bearings for said rollers, and having a vertical slot, *m*, and the pressure-roller journaled in said slots, of the hooks H, engaging the journals of roller G, and the springs S, substantially as specified.

190,604. SPINNING-RINGS. Joseph W. Wetzler, Canton, Mass. Filed Aug. 21, 1877.

Brief.—Worn rings are utilized by reaming them out and inserting a bushing provided with one or two semi-races. Said ring may have a cross-cut or not.



Claim.—1. The ring, as constructed with the stationary partial or semi race, and the socket for the reception of the movable bushing, having a single partial or semi race, or two of such, as described.

2. The combination of the movable partial or semi race bushing with the ring having the stationary partial or semi race, and the socket or rabbet for holding the movable bushing.

3. The contractile ring as constructed with the partial or semi race, the rabbet or socket, and the cross-cut, arranged as set forth.

190,605. MACHINES FOR PREPARING AND TREATING MIDDLINGS. Federigo Wegmann, Naples, Italy. Filed Aug. 22, 1877.

Claim.—1. The combination, in rolls for treating meal or middlings, of a porcelain or china surface, a metal core, and a sulphur bed or layer interposed between the metal and the porcelain, for the purpose stated.

2. The combination, in rolls for treating meal or middlings, of a porcelain or china surface, a metal core, a sulphur bed or layer, and a paper or similar layer glued upon said core, for the purpose stated.

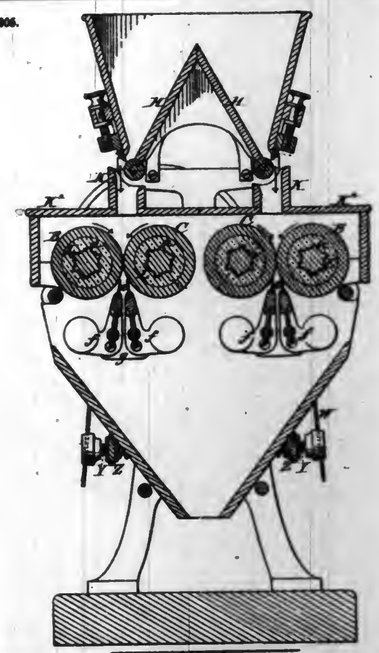
3. In a machine for treating meal or middlings, the crushing-rolls having porcelain or china coating or surface upon a sulphur bed, a core layer of paper or like material, and core grooves or projections, whereby both the porcelain coating and the paper layer are held fast to each other and to the metal core.

4. The scraper-carrier *d*, connected by tongue-and-groove bearings with weighted levers, in combination with a pivot-stem connection, *d'*, with said levers, substantially as and for the purpose herein set forth.

5. The self-adjusting crushing-roll bearing-boxes D, fulcrumed upon the fixed pins U, in combination with the spring-levers W, socketed in said boxes, and bearing upon the long arms T thereof, as set forth.

6. The self-adjusting crushing-rolls, supported in bearings fulcrumed upon fixed pins U, and connected by socket-joints with spring-levers W, bearing upon the long lever-arms T, in combination with the screws Y, the springs, and the screw-bearing nuts Z, substantially as herein set forth.

190,606.

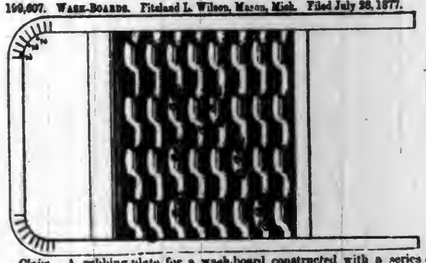


190,606. NEWSPAPER-FILES. Henry S. Williams, Boston, Mass. Filed Nov. 27, 1877.



Claim.—A newspaper-file, A, composed of two sticks, beveled at the ends and fitted with sockets or caps, and a screw-rod, *a*, that by turning the handle to which a socket is attached the papers will be firmly bound together and the opening conform to the varying thickness of papers required.

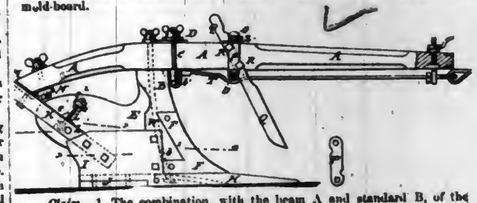
190,607. WASH-BOARDS. Fitzland L. Wilson, Mason, Mich. Filed July 28, 1877.



Claim.—A rubbing-plate for a wash-board constructed with a series of parallel corrugations, having struck-up rounded projections *c* at intervals along their lengths, substantially as and for the purposes specified.

190,608. PLOWS. Edmund Yaker, Sheridan, Pa. Filed Nov. 6, 1877.

Brief.—The draft-strain divided between the standard and point of plow-beam. Devices for the colter and its clamp. The screw-rod and ear upon the mold-board.



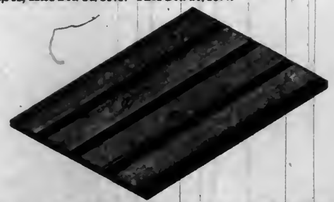
Claim.—1. The combination, with the beam A and standard B, of the draft-rod T, secured, as shown, to the top part of the standard, and running forward under the beam, the eyebolt V, with its two adjusting-nuts, and the nut V, adjusted upon the threaded portion of the draft-rod behind the eyebolt, all substantially as and for the purposes herein set forth.

2. The combination, with the plow-beam A, of the colter Q, having its shank perforated and notched, as described, the notched yoke P, set-screws R R, bow O, and flanged plate S, all substantially as and for the purposes herein set forth.

3. The combination of the mold-board E, having rib *e'* and lug *e²* upon its under side, the mold-board handle K, and the rod L, secured to the handle by one of the bolts fastening said handle, and the upper end of the rod passing through the lug *e²*, and held by nuts on both sides of said lug, substantially as and for the purposes herein set forth.

REISSUES.

8,043. RUBBER ARTICLES. Hiram P. Dunbar and Thos. C. Lothrop, Boston, Mass. Patent No. 170,941, dated Dec. 14, 1875. Filed Dec. 26, 1877.

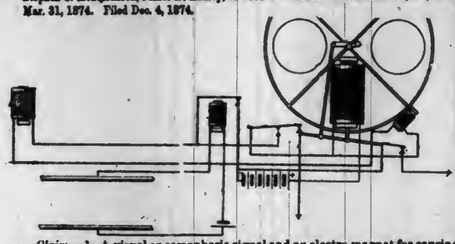


Claim.—1. A process or method of producing rubber products, which consists in uniting with a base or body of comparatively low cost, containing a quantity of rubber, an inlaying or overlaying ornamentation of characters of any given material, color, or tint, provided with sufficient pure or fine india-rubber (or caoutchouc) to enable them to assimilate more or less completely with the base, and be susceptible of vulcanization, substantially as and for purposes stated.

2. A product composed of a base or body of cheap material, containing a quantity of rubber, and an overlaying or inlaying ornamentation, the material of which contains sufficient pure rubber to receive vulcanization, substantially as and for purposes stated.

3. A floor-cloth composed of a base or body of cheap material, of which india-rubber is a component part, and an overlaid or inlaid ornamentation, composed of materials to impart the desired colors or neutral tints, and a sufficient quantity of rubber to assimilate with the rubber of the base, and be susceptible of vulcanization with the latter, substantially as and for purposes stated.

8,044. ELECTRIC RAILWAY-SIGNALS. Frank L. Pope, Elizabeth, N. J., assignor to himself, Stephen C. Hendrickson, James N. Ashley, and Jas. D. Lincoln. Patent No. 148,152, dated Mar. 31, 1874. Filed Dec. 4, 1874.



Claim.—1. A visual or semaphoric signal and an electro-magnet for causing the same to be displayed or exhibited, in combination with a circuit-changer which is automatically brought into action by the movement of said signal, to interrupt or divert the electric current passing through said electro-magnet before the armature of said magnet has completed its movement, substantially as specified.

2. A visual or semaphoric signal, an electro-magnet for causing the same to be displayed or exhibited, and a circuit-closer so constructed and arranged as to remain continuously in action during the time occupied by a locomotive or train in passing a given point, in combination with a circuit-changer which is automatically brought into action by the movement of said signal, to interrupt or divert the electric current passing through said electro-magnet as soon as it has performed its office, substantially as specified.

3. A circuit-closer so constructed and arranged as to remain continuously in action during the time occupied by a locomotive or train in passing a given point, but no longer, thereby keeping the circuit of the signal-operating battery closed only during a corresponding period of time, and a signal-disk which is caused to be exhibited by the action of said battery upon an electro-magnet, in combination with a circuit-changer attached to said signal-disk, or its operating mechanism, which shall automatically transfer the current of said battery to the controlling electro-magnet of a secondary visual signal immediately after it has actuated the primary signal, substantially as specified.

4. A primary and a secondary electro-magnetic signal, respectively included in and operated by a separate branch circuit from one and the same battery, in combination with a circuit-closer operated or controlled by a moving railway-train, and a circuit-changer automatically brought into action by the movement of the primary signal, whereby the current from the battery passing through the first-mentioned circuit-closer is diverted from the actuating or controlling electro-magnet of said primary signal, and allowed to act upon the corresponding electro-magnet of the secondary signal, so that the same battery may be successively employed to actuate the primary and the secondary signal.

5. A primary signal so constructed as to be placed in a position indicating "danger" or "caution," and a secondary signal so constructed as to indicate "safety," in each case by the action of an electric current upon an electro-magnet, in combination with a galvanic battery, and a circuit-changer for transferring the current of the said battery from one of the signal-operating magnets to the other in succession, substantially as specified.

6. The arrangement of the primary signal upon the line of a railroad at the distance of a train's length, or more, in the rear of the track-circuit closer which actuates the said signal, substantially as and for the purpose specified.

7. A circuit-closer so constructed and arranged as to remain continuously in action during the time occupied by a locomotive or train in passing a given point, but no longer, a signal-disk moved in one direction by the action of an electro-magnet under control of said circuit-closer, and in the other by that of a counter-balance, in combination with a lug secured to the said signal-disk, and acted upon by an independent holding or retaining device or power, whereby the said disk will be retained in position after the action of the locomotive or train upon the said circuit-closer or circuit has ceased, substantially as specified.

8. A movable signal-disk, in combination with an electro-magnet and an armature attached to the periphery of said disk, for locking the same in position by the action of residual magnetism after the electric current has been withdrawn from the actuating electro-magnet of said disk, substantially as specified.

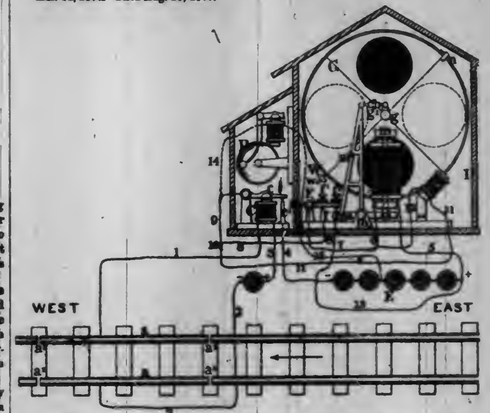
9. A circuit-closer so constructed and arranged as to remain continuously in action during the time occupied by a locomotive or train in passing a given point, but no longer, a signal-disk moved in one direction by the action of an electro-magnet under control of said circuit-closer, and in the other by that of a counter-balance, in combination with mechanism for retaining or locking said disk against the action of its counter-balance after the action of the train upon said circuit-closer has ceased, and a device for unlocking or releasing said signal-disk by the action of an independent electric circuit and circuit-closer, substantially as specified.

10. A visual or audible signal which is caused to be displayed or sounded by the action of an electro-magnet, a device for releasing, reversing, or stopping said signal by the action of an electro-magnet, included in the circuit of a line-wire extending to the next signal point or station in advance, in combination with a circuit-closer attached to and operated by the mechanism of the primary or secondary signal at said advance station, and a circuit-closer for actuating said primary or secondary signal, placed at the distance of a train's length, or more, in advance of the signal, substantially as specified.

11. A semaphoric or visual signal controlled by an electro-magnet, and placed at a distance of a train's length, or more, in the rear of the track-circuit closer, which causes said signal to be actuated, in combination with a circuit-closer operated or controlled by the movements of said signals for releasing or reversing the next rearward signal of the series, substantially as specified.

12. A circuit-closer placed upon a railroad-track, and arranged to be operated by a moving train, in combination with the actuating electro-magnet of a semaphoric or visual signal, situated the distance of a train's length, or more, in the rear of said circuit-closer, and with the releasing or reversing electro-magnet of another signal, situated at the entrance of the next rearward section, substantially as specified.

8,045. ELECTRIC RAILWAY-SIGNALS. Frank L. Pope, Elizabeth, N. J., assignor to himself, Stephen C. Hendrickson, James N. Ashley, and Jas. D. Lincoln. Patent No. 149,152, dated Mar. 31, 1874. Filed Aug. 25, 1877.



Claim.—1. An additional or secondary circuit, in combination with a primary circuit, composed in part of a rail or rails of a railroad-track, substantially as and for the purpose herein specified.

2. The combination of the following elements: a primary circuit, composed of the conductors 1, 2, and 3 and the rails *a a* of a railroad-track connected thereto, so arranged that said circuit will be completed by establishing a metallic connection between two of the said rails, insulated from each other, a secondary circuit, operated and controlled by a relay, C, placed in said primary circuit, a visual or semaphoric signal, G, and an electro-magnet, M, substantially as and for the purpose herein specified.

3. The combination of the following elements: a primary circuit, composed of the conductors 1, 2, and 3 and the rails *a a* of a railroad-track connected thereto, so arranged that said circuit will be completed by establishing a metallic connection between two of the said rails, insulated from each other, a secondary circuit, operated by a relay, C, placed in said primary circuit, and an audible signal, P, under the control of an electro-magnet, substantially as specified.

8,046. DIES FOR MAKING COLLARS. Geo. K. Snow, Watertown, Mass. Patent No. 132,546, dated Oct. 29, 1872. Filed Nov. 20, 1877.

Claim.—1. A cutting-die so constructed and operating as to shape the contiguous ends of two collars, and at the same time shape about one-fourth part of the length of one edge of each of said two collars and about one-half the length of one edge of another collar, the middle of which is opposite to the ends of the two collars first named, substantially as described.

2. In combination with a cutting-die arranged to shape the contiguous

ends of two collars and the middle portion of a third, button-hole dies so arranged and working therewith as to cut two end button-holes and one center button-hole, each in separate collars, substantially as described.

3. In combination with a cutting-die arranged to shape the contiguous ends of two collars and the middle portion of a third, a stitch-embossing die so arranged in connection therewith as to emboss an imitation stitch on one of said collars, substantially as described.

4. In combination with a cutting-die arranged to shape the contiguous ends of two collars and the middle portion of a third collar, a pair of embossing dies so arranged in connection therewith that the same movement which shapes portions of three collars shall emboss the line of fold on one of said collars, substantially as described.

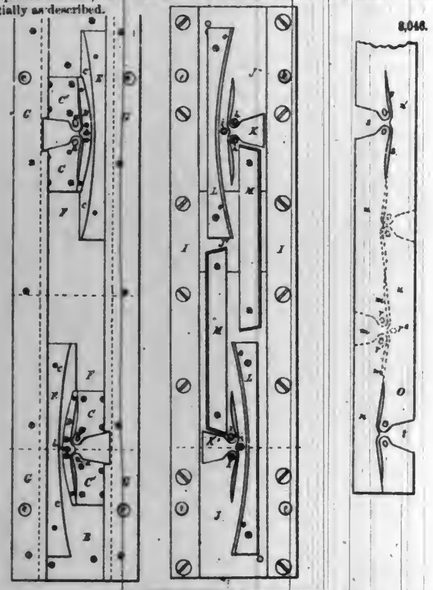
5. The combination of the shaping-dies K K', button-hole dies *i i h h h*, stitch-embossing dies M M, and creasing-dies L L in the cross-head, and corresponding female dies and resisting-surfaces in the bed-plate, for the purpose specified.

6. The combination of two sets of cutting and embossing dies, constructed, arranged, and operating substantially as herein described, for the purpose specified.

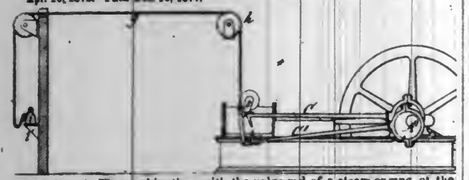
7. The above-described process of cutting collars, by first cutting the material into strips of even width, having straight parallel edges, and suitable for two rows of collars, and then feeding the said strips endwise to the action of dies, which cut between the contiguous ends and the contiguous sides of collars, so that two collars are cut from the strip at each movement of the machine, substantially as described.

8. The above-described process of embossing collars, by first cutting the material into strips of even width, having straight parallel edges, and then feeding the said strips to the action of dies, which emboss the lines of stitching upon two collars, one in each row, at each movement of the machine, substantially as described.

8,046.



8,047. VALVE-GEARS FOR STEAM-ENGINES. John V. Tift and William O. Bryant, Buffalo, N. Y., executors of Joseph N. Tift, deceased, and William Love. Patent No. 125,769, dated Apr. 16, 1872. Filed Dec. 10, 1877.



Claim.—1. The combination, with the valve-rod of a steam-engine, of the eccentric-rod C', provided with a guide-arm, *c*, and the adjustable end piece D, provided with a guide-arm, *d*, substantially as hereinbefore set forth.

2. The combination, with the eccentric-rods and guides C C' *c c' d d'*, of the connecting-bar F, as hereinbefore set forth.

3. In a reversible horizontal steam-engine, the combination, with the eccentric-rods C C', so connected with the valve-rod or arm that their forward ends will descend when released, of the connecting-bar F, cord or rope *g*, and guide-pulleys *h*, for reversing the engine at a considerable distance therefrom, substantially as hereinbefore set forth.

8,048. ARTIFICIAL BUTTER. William D. Andrew, New York, N. Y. Patent No. 166,966, dated Aug. 24, 1875. Filed Dec. 20, 1877.

Brief.—Obtaining from animal oils a new product useful for culinary and other purposes, and combining such new product with milk, cream, or butter.

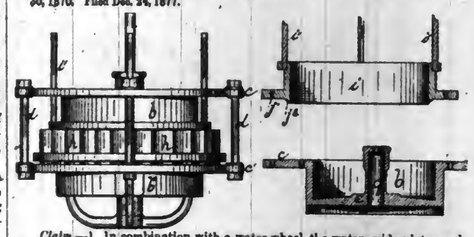
Claim.—1. The process of refrigerating animal oil after its globules have been ruptured by churning or otherwise agitating, as specified.

2. The new product herein described, having the consistence and appearance of butter, consisting of animal oil, refrigerated or congealed after the oil-globules have been ruptured, as herein specified.

3. The complete process of manufacturing artificial butter herein described, consisting, first, in rupturing and destroying the globular condition of animal oil by agitation, and then refrigerating the same, then combining the product thus obtained with butter, cream, milk, and churning until a thorough amalgamation takes place, as specified.

4. The artificial butter described, consisting of the globule-ruptured refrigerated animal oil, combined and amalgamated with butter, cream, milk, as specified.

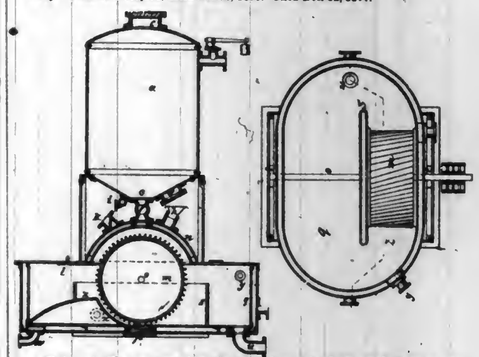
8,049. WATER-WHEELS. Dwight Cushman, Hartford, Conn. Patent No. 106,787, dated Aug. 30, 1870. Filed Dec. 24, 1877.



Claim.—1. In combination with a water-wheel, the water-guide plates and the wheel-gate, provided with the flange mortised for the passage of the water-guide plates, all substantially as shown and described.

2. In combination with a water-wheel, the gate *i*, the flange *c' j*, and the beveled surface *j'*, all substantially as shown and described.

8,050. PROCESSES AND APPARATUS FOR MASHING. Gustav Ellenberger, Darmstadt, Germany. Patent No. 109,156, dated Oct. 26, 1875. Filed Dec. 31, 1877.



Claim.—1. The process of producing a fine pulp from amylaceous or saccharine vegetable substances, as corn, grain, potatoes, &c., by steaming the materials under pressure before reduction, and then grinding the same, substantially as described.

2. In the art of reducing and mashing amylaceous or saccharine vegetable substances, and preparing the same for fermentation, the process herein described, which consists in first subjecting said substances to steam under pressure, afterward grinding the same while hot to a fine pulpy mass, and when said mass is partially cooled adding the requisite malt and sugar, which is followed by artificial cooling and the addition of yeast, substantially as described.

3. The process of grinding and mixing amylaceous or saccharine vegetable substances by a continuous circulation through the grinding device, substantially as described.

4. The combination of a closed steam-vat, for steaming under pressure, with a mashing-vessel, substantially as described.

5. A mashing apparatus consisting of a vat with a partition, *s*, in combination with a revolving drum, *m*, and plate *p*, substantially as described.

6. A mashing apparatus consisting of a vat with a partition, *s*, in combination with a revolving drum, *m*, plate *p*, and sloping elevation *s*, substantially as and for the purpose specified.

8,051. SATCHEL AND TRAVELING-BAG HANDLES. George Havell, Newark, N. J., assignor to Frederick Stevens, James Roberts, and George Havell, same place. Patent No. 156,077, dated Dec. 22, 1874. Filed June 13, 1877.



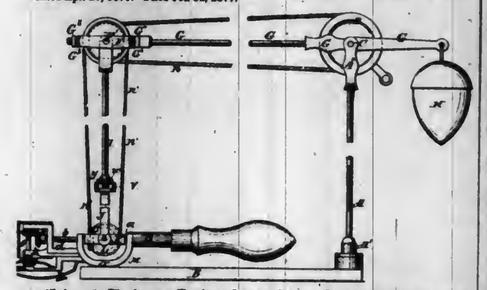
Claim.—1. A curved tubular sheet-metal handle, having its ends adapted to be attached to a satchel or other object by a hinged joint.

2. A curved tubular handle formed of sheet metal, having a uniformly-tapering shape each way from its central portion toward its ends, substantially as described.

3. A curved tubular handle formed of sheet metal, having its ends so bent as to form hollow bearings or journals for the reception of the pivots by which the handle is sustained, substantially as described.

4. A curved tubular handle formed of the two pieces of sheet metal A, externally recessed in the middle to form the bearing *a*, and provided with the end projections *b b*, in combination with the central collar C and the end ferrules B B, substantially as described.

8,052. ANIMAL-SHEARING MACHINES. Roswell T. Smith, Nashua, N. H., assignor, by mesne assignments, to the American Shearer Manufacturing Company, same place. Patent No. 59,099, dated Oct. 23, 1866; Reissue No. 4,823, dated Nov. 7, 1871; Reissue No. 6,400, dated Apr. 27, 1875. Filed Oct. 31, 1877.



Claim.—1. The hanger F, pivoted upon the arm G, which is pivoted to its support A, whereby the hanger itself is permitted to vibrate in a vertical plane, and the arm and hanger together are permitted to vibrate in a vertical plane which is at right angles to the plane in which the hanger alone vibrates, in combination with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

2. The bearing N, pivoted upon the stirrup-rod I and upon the section O, whereby said bearing is permitted to move in planes at right angles to one another, in combination with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

3. The arm G, pivoted to a swiveling support, A, in combination with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

4. The rod or bar I, pivoted to hanger of rod G, in combination with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

5. The section O, pivoted to bearing N, in combination with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

6. The combination of the swiveled rod or bar I with the section O, pivoted to bearing N, and having freedom to move in planes at right angles to each other, with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

7. The combination of the arm G, having freedom to vibrate vertically, the bar or rod I, having freedom to swing in planes at right angles to each other, and the section O, pivoted to bearing N, and having freedom to vibrate in planes at right angles to each other, with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

8. The combination of arm G, swiveled support A, bar or rod I, having freedom to swing in planes at right angles to each other, and the section O, pivoted to bearing N, with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

9. The arm G, rod or bar I, swivel-joint V, and the section O, pivoted to bearing N, in combination with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

10. The shaft *g*, driven with a positive motion from the prime motor, which has its power transmitted to said shaft through the gearing which is supported on shafts which form the joints of the parts composing the machine, in combination with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

11. The combination of the following elements—viz., a vertically-swinging arm, G, a balancing-weight, H, and a support for said arm—with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

12. The combination of the following elements—viz., a vertically-swinging arm, G, a balancing-weight, H, a support for said arm, and a swivel-joint, A'—with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

13. The combination of the following elements—viz., an arm, G, pivoted to swing vertically, a balancing-weight, H, a support for said arm, a hanger, F, a pivot-shaft, F', and a pendent swinging rod or bar, I—with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

14. The combination of the following elements—viz., an arm, G, pivoted to swing vertically, a balancing-weight, H, a swinging pendent rod or bar, I, stirrup, J, and joint V—with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

15. The combination of the following elements—viz., the gear-shaft *g* on section O, and carrying a gear, *f*, and a pivot-shaft, K, on bearing N, and carrying a gear, M, and intermediate gearing—with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

16. The section O, carrying the instrument to be driven, and the handle pivoted to a vibrating bearing, N, on a pivot-shaft, K, in combination with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

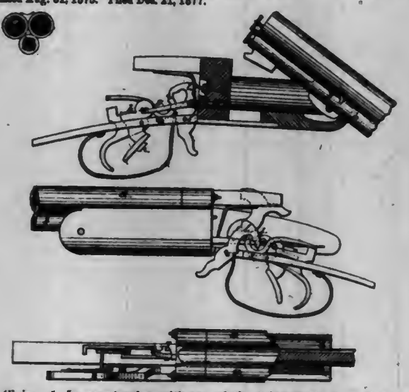
17. The combination of the following elements—viz., a swivel-stirrup J on rod I, bearing N, section O, carrying a handle, and the shafts K and *g*, connected by bevel-gears M and *e* and *e* and *f* and *b*—with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

18. The combination of the following elements—viz., a vertically-swinging arm, G, a balancing-weight, H, a pendent swinging rod or bar, I, and a hinged section, O, carrying the instrument to be driven, and pivot-shafts which support the gear-wheels and said arm, bar, and section—with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

19. The combination of the following elements—viz., belt-pulley D on pivot-shaft C, belt-pulleys E and E' on pivot-shaft F', belt-pulley L on pivot-shaft K, belts *a a'*, arm G, pivoted to swing vertically, a support for this arm, a balancing-weight, H, a pendent rod or bar, I, having a stirrup at its lower end—with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, substantially as described.

20. The combination of the following elements—viz., an arm, G, pivoted to swing vertically, a support for said arm, a balance-weight, H, a swinging pendent rod, I, shaft *b*—with a shearing implement consisting of a handle and comb-plate extending from it, and a moving shearing-cutter to operate with the comb-plate, all substantially as described.

8,053. BREECH-LOADING FIRE-ARMS. Wm. H. Baker, Syracuse, N. Y. Patent No. 167,993, dated Aug. 31, 1875. Filed Dec. 21, 1877.



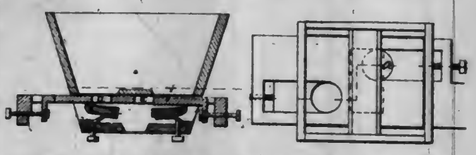
Claim.—1. In combination with one of the triggers for operating one of the hammers, a locking device for holding the barrels in position, substantially as shown.

2. The trigger *h*, having a slot in its upper part, in combination with the connecting-rod *g*, bolt *d*, and barrels, as set forth.

3. The combination of the third hammer *l* with the sear, extending to both triggers, so as to be operated by either one, substantially as described.

4. The combination of the concealed hammer *l*, pivoted to the base-plate, and having an external projection for cocking the same, with the guard *o*, acting as a spring for this hammer, all substantially as set forth.

8,054. CORN-PLANTERS. Joseph W. Fawkes, Marco, Ill. Patent No. 40,250, dated Aug. 8, 1865. Filed Dec. 18, 1877.



Claim.—1. In a corn-planter, in connection with the seeding devices, the tilting bars or slides, for the purposes herein set forth.

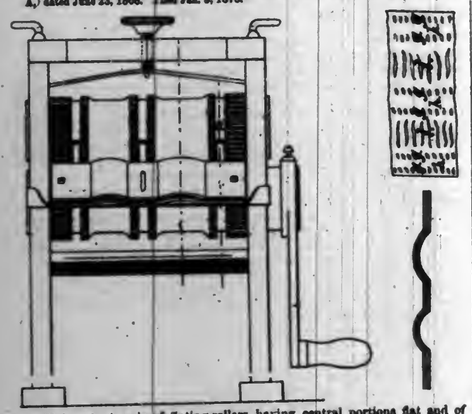
2. The reciprocating dropping-slide, provided with tilting bars, forming one side of the holes or cells, said bars being also adjustable, whereby the size of the dropping-holes may be regulated and the free ends of the bars yield, for the purpose set forth.

3. The reciprocating dropping-slide, provided with tilting bars arranged in the reciprocating slide of a corn-planter, springs arranged under said bars, for holding them in place and allowing them to yield, for the purposes herein set forth.

4. In combination with tilting bars arranged in the reciprocating slide of a corn-planter, springs arranged under said bars, for holding them in place and allowing them to yield, for the purposes herein set forth.

5. The combination of a reciprocating dropping-slide, tilting bars arranged therein, springs under said bars, and stationary pivoted bars interposed between the springs and the slides, substantially as and for the purposes herein set forth.

8,055. FLUTING-MACHINES. Geo. E. King, New York, N. Y., assignor to Frederick H. Kurzheedt, same place. Patent No. 62,402, dated Feb. 26, 1867; Reissue No. 3,000, (Division A,) dated June 23, 1868. Filed Jan. 3, 1878.

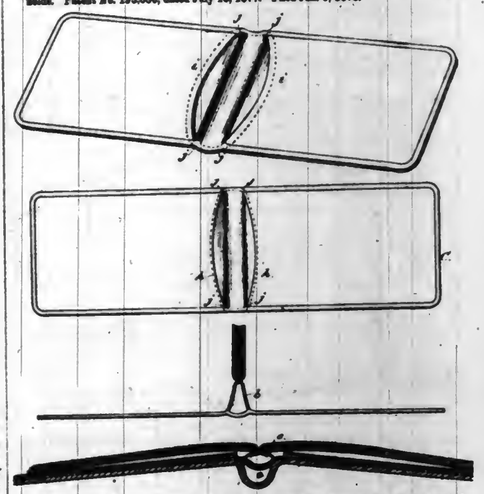


Claim.—1. A pair of fluting-rollers having central portions flat and of diminished diameter, and broad enough to allow the passage of the material to form a puffed strip substantially unmarked by the fluting-meshes, such central portions being bounded by zones of fluting-meshes, and on each side of said zones by other flat portions, all constructed and operating substantially as described.

2. In combination, the following elements: first, a pair of fluting-rollers having broad central portions, substantially as described, bounded by narrow zones of fluting-meshes, and on each side of such zones other flat portions; second, a guide having opposite the central flat and recessed portion a curved or arched portion, or its equivalent, for deflecting the material from the plane of motion in other parts of the guide, and thereby drawing in laterally an extra fullness, all constructed and operating substantially as described.

3. In combination, the following elements: first, a pair of fluting-rollers having broad central portions, substantially as described, bounded by narrow zones of fluting-meshes, and on each side of such zones other flat portions; second, pressers bearing against the flat narrow zones; third, a guide coextensive with the width of the fabric, and provided with a curved or arched portion, or its equivalent, opposite the broad central portions of the rollers, all constructed and operating substantially as described.

8,056. BOOK-BINDING. Ira Reynolds, Dayton, Ohio, assignor to himself and Lucius D. Reynolds. Patent No. 193,036, dated July 10, 1877. Filed Jan. 3, 1878.



Claim.—1. The removable binder C, provided with a cord, tape, or band, *h i*, for the purpose of strengthening the pocket at the points *j j j j*, substantially as described.

2. In combination with a book complete, composed of leaves and cover, both stitched through the center, and both folded at one operation or in one fold, a removable binder, having pockets to be slid over the permanent cover of the book proper, such pockets being re-enforced at the points *j j j j* by means of the cords, tapes, or bands *h i*, substantially as described.

3. In combination with a flexible removable binder, a book complete, composed of leaves and cover, both stitched through the center, and both folded at one operation or in one fold, the stitching-threads thereof being firmly tied and secured to the back of the cover, substantially as herein set forth.

4. A book the ends of the binding tapes, cords, or bands of which pass through and are firmly secured to the back of the cover, substantially as described and set forth.

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CAVEATS.

Inventors filing caveats in the Office should be careful to describe their invention or improvement with accuracy, and illustrate such inventions as are capable of illustration with care and thoroughness.

Caveats are placed in the hands of the Examiners, who should not be expected to understand what the inventor means unless the latter has sufficiently matured his invention to clearly describe and illustrate it.

Caveats are sometimes filed in the Patent Office stating that the caveator is engaged in a series of experiments intended to accomplish certain results, and giving nothing more than a vague hint of the means by which the result is to be attained. As the courts have frequently decided that results are not patentable, the practice of the Patent Office is to the effect that a caveat cannot cover more ground than a patent. So, where a caveat describes more than one invention, the Examiner frequently overlooks a portion of the caveat, knowing that under the rules caveators are confined to a single invention.

Complaints are often made that caveats have been overlooked, and patents issued to subsequent applicants, when the fault lies in the hasty preparation of the caveat papers. The rules are explicit, that the caveat must describe the invention as fully as the inventor is able to do; that the drawings shall be of the same size as the drawings to accompany an application for a patent, (8 by 13 inches, on a sheet 10 by 15 inches, with an inch margin all round,) and on tracing-muslin, or light bristol-board or drawing-paper, which can be folded without breaking. A careful compliance with the rules will greatly facilitate the work of the Office, and will go a long way toward insuring the accuracy which is so necessary in securing their just rights to inventors.

PRICE OF THE GAZETTE.—The price of THE OFFICIAL GAZETTE is still fixed at $6 per annum, and there is no reduction from that price except where five subscriptions are included in one order, when the subscription is $5; and subscribers can be added to this club, by the party or parties forming it, any time during the year, at the reduced price.

The Annual Index will not be furnished to subscribers hereafter without extra charge; but immediately after the expiration of each volume a Half-yearly Index will be given without charge, and should additional copies of the Half-yearly Index be desired, they will be furnished upon the payment of fifty cents for each additional copy required.

EXTRA COPIES OF THE GAZETTE.—The letter-press of THE GAZETTE has been prepared with a view of meeting the demand for extra copies of that particular portion which relates to Office practice, decisions of the courts, &c.

Extra copies of the letter-press can be had separately from the illustrated portion, and the weekly index of patents and patentees can be had in any number at 5 cents per copy. Where extra copies of either the letter-press or weekly index are desired orders must be sent to the Office as early as the Saturday preceding the issue of the following Tuesday.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

THE DECISIONS FOR 1877.—The decisions of the United States courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

TO SUBSCRIBERS.—Great care will hereafter be taken in mailing THE OFFICIAL GAZETTE to subscribers, and in case of its non-receipt the fault will not be in the Patent Office. When each issue shall have been mailed, the Office will assume that it has done its duty by the subscribers, and will not send extra numbers except upon receipt of 10 cents for each copy ordered.

BOUND VOLUMES FOR 1877.—The bound volumes of THE OFFICIAL GAZETTE for 1877 are now ready for distribution, and can be procured, in full law binding, for $8, and in half-calf for $7. The Annual Index for 1877 will not be ready for distribution, either to subscribers or purchasers of the bound volumes, before the 1st of May, 1878.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

The New Classification.

The commission appointed by the Commissioner of Patents to revise the Official Classification of Subjects of Invention has completed its labors, and the following classification has been adopted, and will supersede the one now in use.

CLASSES OF INVENTIONS.

Advertising	40
Aeration and bottling	1
Apparel	2
Arms and projectiles, making	86
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Artificial stone, lime and cements	106
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Brakes and gins	13
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Brewing and fermenting	7
Bridges	14
Brushing and scrubbing	15
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The above classes have been grouped, for Office purposes, to form the following—

DIVISIONS.

Division No. 1, Tillage. *Examiner*, Fox. *Classes:* Harrows and Diggers, 55; Plows, 97; Seeders and Planters, 111.

Div. No. 2, Farm Stock and Products. *Examiner*, Jayne. *Classes:* Bee Culture, 6; Brushing and Scrubbing, 15; Butchering, 17; Dairy, 31; Fences, 39; Care of Live Stock, 119; Tobacco, 131; Vegetable Cutters and Crushers, 146.

Div. No. 3, Metallurgy, Distillation, and Refrigeration. *Examiner*, Dyrenforth. *Classes:* Fishing and Trapping, 43; Gas, 48; Refrigeration, 62; Metallurgy, 75; Ore, 90; Metal Coating, 96; Distillation, 124.; Sugar and Salt, 127.

Div. No. 4, Civil Engineering. *Examiner*, Pond. *Classes:* Bridges, 14; Carpentry, 20; Excavating, 37; Hydraulic Engineering, 61; Masonry, 72; Railways, 104; Roofing, 108; Curtain Fixtures, 156.

Div. No. 5, Fine Arts, Toys, and Apparel. *Examiner*, Burke. *Classes:* Apparel, 2; Crinoline and Corsets, 29; Educational Appliances, 35; Fine Arts, 41; Games and Toys, 46; Jewelry, 63; Music, 84; Photography, 95; Toilet, 132; Umbrellas and Fans, 135.

Div. No. 6, Chemistry. *Examiner*, Antisell. *Classes:* Brewing and Fermenting, 7; Bleaching and Dyeing, 8; Chemicals and Medicines, 23; Explosives, 52; Fertilizers, 71; Oils, Fats, and Glue, 87; Painting and Graining, 91; Preserving, 99; Hides, Skins, and Leather, 149.

Div. No. 7, Harvesting and Milling. *Examiner*, Parkinson. *Classes:* Brakes and Gins, 13; Garden and Orchard, 47; Harvesters, 56; Mills, 83; Thrashing, 130.

Div. No. 8, Furniture, Bread Making, and Laundry. *Examiner* Tilden. *Classes:* Beds, 5; Furniture, 45; Laundry, 68; Bread, Cracker, and Lozenge Making, 107; Washing Apparatus, 141; Chairs, 155.

Div. No. 9, Hydraulics and Pneumatics. *Examiner*, Durnall. *Classes:* Aeration and Bottling, 1; Baths and Closets, 4; Pneumatics, 98; Pumps, 103; Water Distribution, 137; Water-Wheels, 138.

Div. No. 10, Carriages, Wagons, and Railway-Cars. *Examiner*, Sanders. *Classes:* Carriages and Wagons, 21; Railway-Cars, 105.

Div. No. 11, Leather Working, Machines, and Articles. *Examiner*, Chapman. *Classes:* Boots and Shoes, 12; Clasps and Buckles, 24; Harness, 54; Hose and Belting, 60; Leather, 69; Tanning, 129; Trunks and Equipments, 133.

Div. No. 12, Mechanical Engineering. *Examiner*, Schoepf. *Classes:* Hoisting, 57; Journals and Bearings, 64; Household Articles, 65; Mechanical Powers, 74; Presses, 100.

Div. No. 13, Metal Working. *Examiner*, Church. *Classes:* Chains, Staples, and Horseshoes, 59; Hardware Making, 53; Metal Bending and Straightening, 153; Metal Bolts, Nuts, Rivets, and Screws, 10; Metal Boring and Drilling, 77; Metal Forging, Punching, and Shearing, 78; Metal Personal Ware Making, 79; Metal Rolling, 80; Metal Tubing and Wire, 134; Metal Tools and Implements Making, 76; Metal Turning, Planing, and Milling, 82; Nails, Spikes, Needles, and Pins, 85; Nut and Bolt Locks, 151; Arms Making, 86; Wagon, Car, and Track Irons, 152.

Div. No. 14, Metal Working, Grinding, and Polishing, and Packing Vessels. *Examiner*, Stocking. *Classes:* Grinding and Polishing, 51; Metal Founding, 22; Metal Tempering, Annealing, and Cementation, 148; Metal-Working Tools, 81; Packing and Storing Vessels, 150; Sheet Metal Ware Making, 113; Wire Working, 140.

Div. No. 15 Plastics. *Examiner*, Hedrick. *Classes:* Artificial Stone, Lime, and Cement, 106; Caoutchouc and Minor Plastics, 18; Clay and Pottery, 25; Composite Roofing, 154; Felting and Hats, 38; Fuel, 44; Glass, 49; Paving, 94; Paper Making, 92; Stone Working, 125.

Div. No. 16, Electricity, Measuring Instruments and Optics. *Examiner*, Townsend. *Classes:* Drafting, 33; Electricity, 36; Horology, 58; Measuring-Instruments, 73; Optics, 88.

Div. No. 17, Printing and Paper Manufactures. *Examiner*, Freeman. *Classes:* Advertising, 40; Book-Binding, 11; Paper Manufactures, 93; Printing, 101; Stationery, 120.

Div. No. 18, Steam Engineering. *Examiner*, Fowler. *Classes:* Driers, 34; Fluid-Pressure Regulators, 50; Locomotives, 123; Steam-Boilers, 122; Steam-Engines, 121; Steam-Furnaces, 110; Steam-Valves, 136.

Div. No. 19, Stoves and Lamps. *Examiner*, Catlin. *Classes:* Lamps and Gas-Fittings, 67; Stoves and Furnaces, 126.

Div. No. 20, Surgery and Hardware. *Examiner*, Wilkinson. *Classes:* Artificial Limbs, 3; Builders' Hardware, 16; Coffins, 27; Cutlery, 30; Dentistry, 32; Locks and Latches, 70; Safes, 109; Surgery, 128.

Div. No. 21, Textiles. *Examiner*, Appleton. *Classes:* Carding, 19; Cloth, 26; Cordage, 28; Knitting and Netting, 66; Sewing-Machines, 112; Silk, 117; Spinning, 118; Weaving, 139.

Div. No. 22, Guns, Ships, and Wood-Working. *Examiner*, Bartlett. *Classes:* Boats, 9; Coopering, 147; Fire-arms, 42; Marine Propulsion, 115; Ordnance, 89; Projectiles, 102; Ships, 114; Signals, 116; Wood-Turning, 142; Wood-Working Machines, 144; Wood-Working Tools, 145; Wood-Sawing, 143; Wheelwright Machines, 157.

The classes of inventions have been grouped into these twenty-two Divisions, the primary object being to separate the work of the Office into parts, each capable of being handled by a single Examiner. So far as possible the Divisions have been constituted of cognate inventions. This rule could not be strictly followed, however, because the number of classes to be assigned to any one Division must be determined by the amount of work which the classes so grouped would impose upon an Examiner and the force at his command, usually three or four Assistant Examiners and a clerk. Hence, the Divisions here noted are rather divisions of the Office work than divisions of inventions; therefore, persons ordering copies will order by the Class number rather than the Division number. Under each one of these classes there are several sub-classes upon which the Examiners are at present at work. As soon as they are completed they will be published, together with the present information in relation to the new classification.

Of the above classes, all have been photo-lithographed except Artificial Limbs, Class 3; Builders' Hardware, Class 16; Coffins, Class 27; Coopering, Class 147; Cutlery, Class 30; Dentistry, Class 32; Locks and Latches, Class 70; Locomotives, Class 103; Nut and Bolt Locks, Class 151; Safes, Class 109; Steam-Boilers, Class 122; Steam-Engines, Class 121; Steam-Furnaces, Class 110; Steam-Valves, Class 136; Surgery, Class 128; Wheelwright-Machines, Class 157; Wood-Sawing, Class 143; Wood-Turning, Class 142; Wood-Working, Class 144; Wood-Working Tools, Class 145; and these are all being reproduced, and before the end of the year it is expected that photo-lithographic copies of the drawings of any patent ever issued by the Government can be obtained in this Office for 25 cents per single copy, or 10 cents each where more than twenty copies are desired. A photo-lithographic copy of any current issue (specification and drawing) can be had at the same price.

The specifications of all patents issued since July 1, 1871, are in print, and will be furnished, with the drawing, without extra charge. The specifications of most of the patents issued from November 20, 1866, to July 1, 1871, are in print, and where such is the case the Office will furnish them with the drawings; but it will not undertake to reprint copies which have been exhausted.

COMMISSIONER'S DECISIONS.

J. BLACKMAN *vs.* J. B. and R. J. MORRAY.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of Josiah Blackman, filed October 7, 1876, and the patent of Joseph B. and Robert J. Morray, No.* 177,741, *May* 23, 1876, *for* "IMPROVEMENT IN BURIAL-CASES."—*Decided October* 25, 1877.]

Coffins having top and bottom sections, with tongue-and-groove interlock joints, the sections being made wholly of cement, terra-cotta, or glass, are old in the art. To make a coffin in like manner, with top section of glass and bottom of cement, is without invention.

Both materials are old for the purpose they serve in the particular combination, and since there is no new resultant function or effect developed, but a simple summation of the separate results of the contributing elements, the coffin as thus constructed is without patentable merit.

An interference controversy involving such subject matter was accordingly dissolved and the application rejected.

DOOLITTLE, *Acting Commissioner:*

The subject-matter involved in this interference is fully set forth in the following paragraph contained in the patent of the Morrays:

> The invention consists of a burial-case the entire top portion of which is formed of glass and the lower portion of cement, the two being hermetically joined by tongue-and-groove and cement joints, also flanges and bolts. The case is particularly designed for use within a monumental cement case, which is set in the ground and provided with a removable top, by removing which the body of the deceased can be seen through the glass top of the inner case.

Blackman, the applicant, describes the lower part of his coffin as made of "cement, or glass and cement, or artificial stone, or other material which does not readily decompose."

The patent of J. R. Cannon of October 25, 1859, No. 25,883, is for a glass burial-case in two parts, upper and lower, which are hermetically joined "by tongue-and-groove and cement joints, also by flanges and bolts," and with an air-pump attached thereto, precisely as described by the contestants. Mention may be found in nearly every cyclopedia of coffins made of cement, baked clay, &c. Patents for constructing coffins from hydraulic cement were granted as early as 1835, and subsequently patents have been granted for cement coffins, coffins made of asphaltum composition, and for peculiar cements for coating and sealing coffins. David Sholl, March 27, 1855, was granted a patent for "a coffin composed of terra-cotta or pottery-ware." This undoubtedly was several thousand years old. Glass lids to wooden coffins are notoriously old.

But it is said that by this combination there has been united for the first time in a coffin the element of strength or indestructibility and the element of transparency—a non-breakable coffin capable of wear and transportation, and at the same time having a transparent lid. But these materials were used for precisely the same purposes before. Neither of them possesses even the merit of being put to a new use, and now that they are employed in juxtaposition each performs precisely the same functions as before. These results are not the product of the combination, but a "mere aggregate of several results, each the complete product of one of the combined elements." (*Hailes* vs. *Van Wormer*, 20 *Wall.*, 353; *Reckendorfer* vs. *Faber*, 10 O. G., 71.)

Given the desire to unite the elements of strength and transparency in a coffin in the manner now claimed,

and the materials and method are at once found in this very art. Compared, then, with what existed before, the present alleged invention consists in simply selecting proper and well-known materials for their proper and well-known uses, without the least exercise of the inventive faculty.

After an interference has been declared, and has passed through its various stages of appeal, too much caution cannot be exercised in deciding that the subject-matter involved is unpatentable. But this question is the first one to be considered and determined by the Office when an application is to be examined on its merits, and if overlooked or a mistake is made in respect thereto at the beginning, it remains a matter that should be corrected subsequently.

As held by the U. S. Supreme Court in *Dunbar* vs. *Myers*, 11 O. G., 35—

> invention or discovery is the requirement which constitutes the foundation of the right to obtain a patent, and it was decided by this Court, more than a quarter of a century ago, that, unless more ingenuity and skill were required in making or applying the said improvement than are possessed by an ordinary mechanic acquainted with the business, there is an absence of that degree of skill and ingenuity which constitute the essential elements of every invention.. (*Hotchkiss* vs. *Greenwood*, 11 How., 267.)

The Supreme Court in this case cites seven of its own decisions, and several circuit court decisions, in support of this doctrine, in which the devices declared to be unpatentable for want of invention evince as great exercise of that faculty in their construction as in that of the one now in controversy. The Court adds, also, that conclusive support to the proposition that an applicant for a patent is not entitled to the public protection unless the supposed improvement involves actual invention or discovery is found in the oft-repeated decisions of the English courts having jurisdiction in such cases, and a large number of such cases are cited.

It is opposed to the true interests of inventors and of the public for this Office to adopt a lower standard of invention than that recognized by the courts. In applying this rule great care, of course, should be taken, as Judge Shipman remarks in *Kirby* vs. *Beardsley*, (3 Fisher, 265,) to give to the inventor the benefit of doubt as to originality or creative thought—

> so as to nourish inventive enterprise, by lending encouragement to every degree of merit. This is the more important, as simple contrivances—the offspring of simple, even involuntary thoughts—often produce great and beneficial results, while complex and elaborate ones—the product of long and profound cogitation—not unfrequently prove comparatively or wholly abortive. *But it is obvious that there is a limit beyond which mere changes cannot and ought not to receive protection.*

It seems a hardship in this particular case to refuse a patent to the applicant, as the evidence shows clearly to my mind that the patentee (his application having been made by his executors) did not have the idea in mind at all which constitutes the alleged novelty in the subject-matter in issue—viz., a burial-case composed of a glass top and a cement bottom. There is not a word of testimony nor a scrap of evidence of any kind showing that he actually proposed to make the bottom part of cement. On the other hand, it appears to have been first hit upon by Blackman, the applicant, after the death of the patentee. Blackman had been engaged by the patentee to embody his invention in models, and, so far as an entire glass burial-case is concerned, I have no doubt the patentee was the first to propose the plan, but the cement bottom was an afterthought, and originated with Blackman, pending negotiations between himself and the executors of the patentee in regard to filing a joint application for a patent. But, nevertheless, a patent to Blackman must be refused, as the duty of the Office is clear, and it does not follow that because a bad patent has been granted to the patentee, one equally so should be granted the applicant.

W. H. TOWERS *vs.* J. A. PEASE.—*Interference.*

[*Appeal from the decision of the Examiners-in-Chief in the matter of the interference between the application of W. H. Towers, filed September 2, 1876, and the patent granted to J. A. Pease, September 5, 1876, No. 181,974, for* "IMPROVEMENT IN COLORED RAWHIDE TIPS FOR BOOTS AND SHOES.—*Decided August 27, 1877.*]

An applicant, to establish priority as against a patentee, must show that he was first to make the invention, and that he had reduced it to practice before the grant of the patent, or was following it up with reasonable diligence.

It is incumbent upon an appellant to show clearly the error in the decisions of the lower tribunals.

SPEAR, *Commissioner:*

The substance of the reasons of appeal in this case appears to be, that Towers has made out no better showing in the present interference than Pease did in a former interference with another party. It seems hardly necessary to discuss this question. Pease stands before the Office and the country as a patentee. In order to make out his title to a patent, Towers would be compelled to show that he had been the first to make the invention, and that he had reduced it to practice before the grant of the patent, or was following it up with reasonable diligence.

It is clear from the record that he had neither reduced it to practice, nor had exercised reasonable diligence. The single specimen filed as Exhibit A is manifestly only an experiment, and for more than ten years the experiment has been abandoned. It does not appear that it ever would have been revived had not Towers been stimulated by the efforts of more diligent inventors.

The decision of the Board of Examiners-in-Chief and the Examiner having both been in favor of Pease, it was incumbent upon the appellant to show clearly error in their decisions; and in view of the patent, it was incumbent upon him to make out a clear case against the patentee. Nothing of this has been done, and the decision of the Board of Examiners-in-Chief is affirmed.

DECISIONS OF THE COURTS.

Supreme Court of the United States.

ROBERT WERNER, APPELLANT, *vs.* GEORGE E. KING.

(Appeal from the Circuit Court of the United States for the Southern District of New York.)

A device for puffing fluted fabric, consisting of a double-plated segment of a hollow cylinder, with its arch upward, between the guide-plates of which the material passes to the ordinary grooved fluting-rolls beyond, (Reissue Letters Patent No. 3,000, G. E. King, June 23, 1868,) is not infringed by a spring-pressed detent or finger operating above and in conjunction with a smooth flat plate, over which the material is fed to the rolls. (Letters Patent No. 134,621, R. Werner, January 7, 1873.)

It appears that in the first device, (the complainant's,) the cross-section curve of the arched guide-plates being greater in length than the rolls, a redundant width of material is constantly fed to the latter, which excess causes the material to rise in irregular puffs between the fluting-lines; in the second, the spring-finger momentarily detains the central portions of the fabric intermediate to the fluting-lines, and thereby produces the crinkles: *Held*,

1. The difference is more than one of form. With complainant the puffing is due entirely to the curved guide, and unless a guide in some manner gives an arch or curve to the material on passing into the rolls, it is not within the scope of his patent. The result produced must not only be the same, but it must be done in substantially the same way.
2. The devices operate on different principles. The arched guide invariably feeds the same amount of redundant material, irrespective of the elasticity or rigidity of the fabric, while the detention of the finger, and consequently the puffing, will vary with the resisting strength of the fabric and the power of the pressed spring.
3. With the arched guide the puffing results from a pressure which is uniform over the entire surface of the fabric; with the detent or finger the pressure varies.
4. The two devices are in no sense mechanical equivalents, unless complainant claims every method by which a redundancy of material is presented to the rolls for puffing. This he does not do, and, if he did, the claim would be fatal.

[*Arthur v. Briesen*, for appellant; *Frederick H. Betts*, for appellee.]

MILLER, *J.:*

There was issued to George E. King, on the 26th February, 1867, letters patent for a new and useful improvement in fluting-machines. This patent he surrendered, and on the 23d June, 1868, had two patents granted him as reissues of the original. The first of these (No. 3,000) was for the machine by which the article of fluting and puffing described in the patent was made, and the other (No. 3,001) was for the article made as described. The record before us is that of a suit in chancery, brought by King against Robert Werner for an infringement of both these patents. Werner defended on the ground that the patents were void for want of novelty, and also by denying the infringement. The circuit court held that the defense was sustained as to the patent for the article produced, on the ground that it was not new, but rendered a decree in favor of plaintiff as to the reissued patent (No. 3,000) for the machine. The defendant, Werner, alone appeals, and seeks a reversal of the decree on both the grounds urged below.

We will examine the question of infringement first, pellee, he can very well leave to others the task of confor if the appellant has not infringed the patent of attesting its validity.

The defendant is also patentee of a machine for crimping and fluting, which produces an article similar to that of plaintiff, and parts of the machine by which the purpose is effected are substantially the same as his. If on looking at the machine in detail there is such substantial identity as to all its parts, the appellant must be held to be an infringer, for his patent bears a date more than four years subsequent to that of plaintiff.

Appellee's schedule declares that his invention is designed for making puffing applicable to shirt-bosoms, trimming, or other purposes of dress, in which the article as it issues from the machine is (without having recourse to laundering) delivered in a complete form, either singly or in two or more series or rows, composed of flattened borders with flutes running along their inner edges, and puffed or wrinkled surfaces between the flutes.

The fabric to be fluted and puffed is drawn between a pair of rollers moved by a crank, the rollers, where they approach each other, having flutes or grooves, so arranged as, by their pressure on the fabric as it passes between them, to make the fluting and to flatten it. These grooves on the rollers, while they are continuous in the annular or circumferential direction of the rollers, are interrupted in their longitudinal direction by smooth spaces, so that the material passing between the rollers is fluted or crimped in parts of its width and left plain in other parts, which do not pass over the grooves. It is obvious if this plain portion of the fabric, as it passes over the plain surface of the roller, can be so presented as to be compressed laterally, or in any other manner to have more of the material thus forced into the machine than is necessary to cover this plain surface, that when it comes out of the machine, while the fluted parts are fixed and flattened, the intermediate portion must present a puffed and irregular surface. It is this effect which is desired, and which King, by an additional contrivance, produces, and it is this contrivance which, in combination with the fluting-rollers already described, but which are not new, he claims as his invention.

This part of the machine consists of a double-plated segment of a hollow cylinder, the arch of which is upward, so arranged with regard to the fluting-rollers that the part of the material which is intended to be puffed and not fluted, passing first between the plates of this arched guide, is presented to the plain surface of the roller, with the width of the strip increased by the difference between the lines of the curved or arched surface of the cylinder and the plain or horizontal surface of the roller which receives it. The result is, that when the material comes out of the machine this redundancy of the plain part of it assumes the form of irregular puffs, which is the end to be attained. All this is very well described, and specific references, illustrated by drawings, are given to the various parts of the machine.

> What I claim as new, [he says in conclusion,] and desire to secure by letters patent, is, the guide E, constructed with one or more curved or arched portions, *a*, in combination with suitable fluting-rollers, substantially as herein set forth, for the purpose specified.

The schedule of Werner's patent, which is numbered 134,621, describes the same kind of fluting-rollers, which are designed to produce, while passing through them, what he calls a "crinkled" surface in that part of the fabric not fluted. But in his machine the redundancy of material is produced by passing it over a smooth, flat surface, from which it is presented to the fluting-rollers, and while so passing over this flat surface a detent or finger is applied to that part of it not to be fluted, which, by reason of the pressure of a spring, holds back this part of the material. It is thus formed into V-shaped waves or crinkles, more or less irregular, whereby the desired effect is produced.

It will be observed that the main features of both machines are the same, and that whatever is new in either is engrafted upon a fluting-machine, many of which were patented long prior to both of them.

The question we are now to consider is, whether the flat surface and finger or detent of Werner are the mechanical equivalents of the double-plated segment of a cylinder used by King, within the principles of the patent law on that subject.

It is said that they are equivalents because they produce the same result. The fact stated may be doubted, for an examination of numerous pieces of textile fabrics passed through both machines shows in those crimped by Werner's the regular V-shaped crinkle, with the acute angle pointing in the same direction with great uniformity, while in those passed through King's the

puffs are elevated, wavy, and irregular. But since the patent for the article is not contested here, this difference is of no other importance than as it illustrates the difference in the mode of operation of the two machines.

It is further said that the difference is merely one of form, and cases are cited in which this Court has held that a mere variation in the form or shape of the instrument cannot be successfully used to evade the monopoly. But where form is of the essence of the invention it is necessarily material, and if the same object can be attained by a machine different in form, where that form is inseparable from the successful operation of the instrument, there is no infringement. (*Winans* vs. *Denmead*, 15 Howard, 330.) In King's patent the result sought is wholly due to the guiding-arch, through which the fabric is carried. It is this semicircular form which gives the redundancy of material necessary to the puff, and no guide which did not in some manner give the material an arched or curved shape as it passed into the fluting-rollers can be considered as a part of King's patent. It is not only necessary to an infringement that the arrangement which infringes should perform the same service, or produce the same effect, but, as Mr. Justice Nelson said, in *Sickles* vs. *Borden*, 3 Blatchford, 535, *it must be done in substantially the same way*. (*Burr* vs. *Duryee*, 1 Wall., 531.)

The difference in the shape or form of the guide in these machines is not the only one. They operate on entirely different principles. King's instrument is to some extent automatic.

The strip of the fabric to be used, being once between the upper and under plates of his arched guide, cannot escape, and it must, in passing into the fluting-rollers, present the same amount of redundant material, whatever may be the elasticity or rigidity of the fabric. A piece of leather would, if it passed through, present precisely the same elevation of the arch and length of line of the semicircles as a piece of gauze; whereas, under the operation of the detent of Werner, the length of the lines and the acuteness of the angle of the V would vary with the resisting strength of the fabric and the power of the spring which pressed the detaining-finger.

Another marked difference is, that in King's machine the redundant fullness which makes the puff is produced by a pressure which is uniform over the surface of the fabric, the two plates giving it the exact form required, and no other; while Werner's finger seizes the fabric in the center of the part to be crinkled, and by pulling on it at this central point, as it is dragged in between the rollers, enough of the material is drawn in from the edges toward the center to create the redundancy necessary to the puff or crinkle. This is done by the material passing over a flat, smooth surface, and while on this flat plate the finger is applied to it, and detains or draws to this central point a portion of the fabric. There exists no such plate or flat surface or finger in King's machine. It seems impossible to hold that this flat surface, this pointed finger, whose force is dependent on a spring, are the mechanical equivalents of the double-plated semi-cylinder of King's guide. If this be so, it is because King's patent covers every method which can be invented for presenting the material to the fluting-rollers in such a manner as to create a redundancy to be made into puffs. This is not claimed, and if claimed the claim would be fatal to the patent.

We are of opinion that the machine of Werner, and its use by him, is no infringement of King's, and the decision of the circuit court is therefore reversed, and the case remanded, with directions to dismiss the bill.

U. S. Circuit Court—Northern District of New York.

THE KETCHUM HARVESTING MACHINE COMPANY *vs.* THE JOHNSTON HARVESTER COMPANY.

[*In Equity.—Before* WHEELER, *J.—June Term*, 1877.]

Reissue Letters Patent No. 4,484, granted W. F. Ketchum, July 25, 1871, for "improvement in single-wheel grain and grass cutting machines," and Reissue Letters Patent Nos. 4,672 and 4,673, (Divisions A and B,) granted W. F. Ketchum, December 12, 1871, for "improvements in attachments for harvesters," are valid, in view of the state of the art, and are for the same inventions as the original patents.

[*H. U. Soper* and *A. McCallum*, for complainant; *George Harding*, for defendant.]

OPINION.—*Filed November 8, 1877.*

WHEELER, *J.:*

This cause has been heard on bill, answer, replication, proofs, briefs, and oral argument of counsel for the orator, and oral argument of counsel for the defendant.

The orator has one reissued patent, No. 4,484, dated July 25, 1871, in force to the 29th day of June, 1879, and has had two others, No. 4,673, in Divisions A and B, dated December 12, 1871, which expired February 10, 1873, for improvements in grain and grass cutting machines, originally granted to William F. Ketchum, the two latter as one, and all transferred to the orator, as described and set forth in the pleadings and proofs.

The one not expired seems to be, substantially, for an improvement in single-wheel machines, by which the main frame and operating machinery are carried largely into and somewhat through, and the draft-pole close up to, a hollow driving-wheel having outward-curved spokes and outward hub, so as to balance the weight of the machine well on the wheel and the draft of it on the pole.

One of the others, for a shoe slotted as a guide for and guard to the cutter at the heel of the cutter-bar, and extending forward from there to the main parts of the machine, to support the cutter-bar on the ground, and clear a track for and shield the heel of it there, in grass-cutting machines, and to support it from the main parts, in either grass or grain cutting machines.

And the remaining one, for braces from the cutter-bar to extensions of the main frame above and in front or rear of it to support it from these extensions and leave a clear space toward the main frame for the operating machinery.

These inventions, especially the one for balancing the machine, and the one for the shoe, serving also for a brace, are useful and valuable.

The orator claims that the defendant has infringed, to some extent, all of them; and on the part of the defendant it is insisted that Ketchum was not the first inventor of these improvements; that the reissues of the patents to the orator were not for the same inventions as the original patents, and that therefore they were void, and that if they are valid the defendant has not infringed them.

It is obvious that the questions arising on these claims are almost, if not quite, pure questions of fact.

The defendant has introduced several prior patents to others for improvements in this class of machines, claiming that they show earlier inventions of these improvements, and the original patents to Ketchum, claiming that they set forth different inventions.

But from as careful as practicable examination of these patents, and comparison of them with those of the orator, in the light of the other evidence in the case, none of the inventions by others than Ketchum seem to have been directed toward the same objects sought for by him in these, and none of them appear to have in any substantial degree attained the same results that he did; and neither does it appear that the reissues are, in reality, for any inventions different from the ones described in the original patents.

Therefore the patents are considered valid.

It does appear from the testimony and exhibits concerning the defendant's machines that the defendant has manufactured and sold machines for cutting grass, and combined machines for cutting grass and grain, containing a form of shoe extending forward from the heel of the cutter-bar to the main parts of the machine, that is covered by the orator's patent for improvements in those respects, during the time the orator had those patents, and has been, and is now, manufacturing and selling machines for cutting grain that embody a part of the combination covered by the orator's patent for placing the machinery mostly within, and the draft-pole near to, the single hollow drive-wheel.

Therefore, it appears that the orator is entitled to a decree for a reference to a master for an account of the profits to the defendant gained by these infringements, and of the damages thereby to the orator, and for the payment of the profits, or damages if in excess of the profits, to the orator, and for an injunction against further infringement, according to the prayer of the bill, with costs to the orator.

Let a decree be entered for the orator accordingly.

DECREE.—*Filed December 28, 1877.*

This cause having come on to be heard at this term upon the pleadings and proofs, after hearing counsel for the respective parties and due proceedings had, it is, upon consideration, ordered, adjudged, and decreed:

That the several letters patent for improvements in harvesting-machines set forth in the bill of complaint—viz., letters patent reissued in two divisions to the complainant on the 12th day of December, 1871, and numbered 4,672 and 4,673, the original patent granted to William F. Ketchum, February 10, 1852, and letters patent reissued to said complainant on the 25th day of July, 1871, numbered 4,484, the original patent granted to said William F. Ketchum, June 29, 1858, each of said patents having been extended seven years—are good and valid in law.

That the said William F. Ketchum, the patentee of the said improvements in harvesters described in the said reissued patents, was the first and original inventor and discoverer of the inventions described and claimed therein, and in the specifications annexed thereto, and that the said complainant is the exclusive owner of said patents.

That the defendant, the Johnston Harvester Company, has infringed upon the said letters patent, and upon the exclusive rights of the complainants under the same.

And it is further ordered, adjudged, and decreed that the complainant do recover of the defendant the profits, gains, and advantages which the said defendant has received or made by reason of the infringement of the said several letters patent, and that said complainant do also recover any and all damages the said complainant has sustained by reason of the infringement of said letters patent by the defendant.

And it is hereby referred to Hon. Charles Mason, a master of this court, to take and state the account of said gains, profits, and advantages, and to assess such damages, and to report thereon with all convenient speed; and the defendant is hereby directed and required to attend before said master from time to time, as required, and to produce before him such books, papers, and documents as relate to the matters in issue, and the officers, members, and clerks of said company, defendant, are required to submit to such oral examination as may be required by said master.

And it is further ordered, adjudged, and decreed that a perpetual injunction issue out of and under the seal of this court restraining the defendant, its clerks, agents, and workmen from making, using, or selling any harvesting machine or machines containing or embodying in any way or manner whatsoever the said inventions and improvements mentioned and described in said Letters Patent No. 4,484, reissued to said complainant July 25, 1871, and from infringing upon any of the claims of said letters patent in any way whatsoever; but that the issuing thereof be suspended upon the defendant paying five dollars on each machine with concave wheel built and sold by them hereafter in the United States during the term of said patent, and two dollars and fifty cents on each machine having a concave wheel built by them hereafter for a foreign market and sold in the foreign market.

And it is further ordered, adjudged, and decreed that the complainant do recover of the defendant the costs of this suit, and that the questions of increase of damages and all further questions be reserved until the coming in of the master's report.

DESIGNS.

[Each design bearing date January 29, 1878.]

10,413.—INKSTANDS.—*Samuel Clark*, Brooklyn, N. Y. Application filed November 30, 1877. Term of patent 7 years.

10,414.—LAMP-CHIMNEY.—*Samuel W. Fowler*, New York, N. Y. assignor to *F. H. Lovell & Co.*, same place. Application filed November 30, 1877. Term of patent 7 years.

10,415 and 10,416.—BRACELET.—*Charles H. Graef*, Edgewater, N. Y. Applications filed November 12, 1877. Term of patents 7 years.

10,417.—FONT OF PRINTING-TYPES.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed December 17, 1877. Term of patent 14 years.

10,418.—FOUNTAIN-BASIN OR FLOWER-BED.—*William Tweeddale*, Brooklyn, N. Y., assignor to *North American Iron Works*, same place. Application filed January 3, 1878. Term of patent 14 years.

10,419.—COOK-STOVES.—*Russell Wheeler* and *Frank E. Wheeler*, Utica, N. Y. Application filed December 26, 1877. Term of patent 7 years.

10,420.—HANDLES OF SPOONS AND FORKS.—*George Wilkinson*, Providence, R. I., assignor to *Gorham Manufacturing Company*, same place. Application filed January 7, 1878. Term of patent 7 years.

10,421 to 10,423, inclusive.—PISTOL-HANDLE.—*Daniel B. Wesson*, Springfield, Mass. Applications filed January 11, 1878. Term of patents 14 years.

10,424.—FIRE-PLACE HEATERS.—*William Burrows*, Brooklyn, N. Y., assignor to *J. L. Mott Iron Works*, New York, N. Y. Application filed January 3, 1878. Term of patent 14 years.

10,425 to 10,433, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed December 26, 1877. Term of patents 3½ years.

TRADE-MARKS.

[Each certificate bearing date January 29, 1878.]

5,569.—LINIMENT.—*William Bickford*, Boston, Mass. Application filed December 24, 1877.
"The word-symbol 'MOCIFAC.'"

5,570.—MEDICINAL PREPARATION.—*Ambrose L. Clum*, Red Wing, Minn. Application filed December 18, 1877.
"The letters 'A. L. C.,' arranged within the three sides of a cube, as shown."

5,571.—MEDICAL PREPARATION.—*Alonzo M. Du Bois*, Cobden, Ill. Application filed December 24, 1877.
"The word-symbol 'NEW-BLOOD.'"

5,572.—FEVER SPECIFIC.—*Joseph G. De Bretton*, Desdier Landing, La. Application filed January 2, 1878.
"The representation of a wine-glass with a tea-spoon therein."

5,573.—BEAUTIFIER FOR THE COMPLEXION.—*Dolly Moulton Gale*, Worcester, Mass. Application filed December 24, 1877.
"The word-symbol 'SNOWFLAKE.'"

5,574.—MEDICATED SALTS.—*Holman Liver Pad Company*, New York, N. Y. Application filed December 28, 1877.
"The arbitrarily selected word 'ABSORPTION.'"

5,575.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'EMIGRANT.'"

5,576.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'ROSA DE LA REINA.'"

5,577.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'HOME AGAIN.'"

5,578.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'PITANA.'"

5,579.—CIGARS, CIGARETTES, AND SMOKING, AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'FINE ARTS.'"

5,580.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'HIGH SPORT.'"

5,581.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'PRINCESS ROYAL.'"

5,582.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'CONSOLADOR.'"

5,583.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'ARBITRATOR.'"

5,584.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'MIRANDA.'"

5,585.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed December 31, 1877.
"The word-symbol 'TRUE LOVE.'"

5,586.—BAKING-POWDER.—*James H. Pitt*, Bellaire, Ohio. Application filed December 31, 1877.
"The word-symbol 'OHIO VALLEY.'"

5,587.—MOËT AND CHANDON CHAMPAGNE WINE.—*Renauld, Francois & Co.*, New York, N. Y. Application filed July 18, 1877.
"The title or designation 'MOËT AND CHANDON,' preceded and followed by a representation of a five-pointed star."

5,588.—MINCED FISH.—*William W. Treat*, Watertown, Mass. Application filed December 28, 1877.
"The letters 'W. W. T.'s,' and the symbols of a hand and chopping-knife, as shown."

5,589.—ARTICLE OF FOOD.—*William W. Treat*, Watertown, Mass. Application filed December 28, 1877.
"The letters 'W. W. T.'s,' and the symbol of the cod-fish shown."

5,590.—BOOTS AND SHOES.—*Joseph H. Walker*, Worcester, Mass. Application filed December 31, 1877.
"The fanciful word 'NOMENDUM.'"

5,591.—HYDRAULIC HOSE.—*Eureka Fire Hose Company*, New York, N. Y. Application filed November 14, 1877.
"The word-symbol 'PARAGON.'"

5,592.—HYDRAULIC HOSE.—*Eureka Fire Hose Company*, New York, N. Y. Application filed November 14, 1877.
"The figure of a Greek cross."

5,593.—HYDRAULIC HOSE.—*Eureka Fire Hose Company*, New York, N. Y. Application filed November 14, 1877.
"The word-symbol 'EUREKA.'"

5,594.—MEDICAL PREPARATIONS.—*Jules Ferré*, Paris, France. Application filed December 22, 1877.
"The word-symbol 'RICORD.'"

5,595.—MEDICAL PREPARATIONS.—*Jules Ferré*, Paris, France. Application filed December 22, 1877.
"The allocation of the monogram, open books, and medals."

5,596.—MEDICAL PREPARATIONS.—*Jules Ferré*, Paris, France. Application filed December 22, 1877.
"The word-symbol 'BROU.'"

5,597.—CONFECTIONERY.—*Jacob Kreischer*, Albany, N. Y. Application filed December 5, 1877.
"The figure of a bear."

5,598.—CANNED BAKED BEANS.—*Wm. Underwood & Co.*, Boston, Mass. Application filed November 15, 1877.
"The representation of a dish of baked beans and a loaf of brown bread, as shown."

5,599.—CANNED AND HERMETICALLY-SEALED GOODS.—*William W. Boyer*, Baltimore, Md. Application filed January 3, 1878.
"The letter 'B.'"

LABELS.

[Each certificate bearing date January 29, 1878.]

1,376.—Title: "ROME'S TOOTH-POWDER."—*Joseph R. Bond*, Brooklyn, N. Y. Application filed January 18, 1878.

1,377.—Title: "INFORMATION FOR THE TRADE."—*Richard Cahill*, Brooklyn, N. Y. Application filed January 18, 1878.

1,378. (Print.)—Title: "PENELOPE."—*Heppenheimer & Maurer*, New York, N. Y. Application filed January 18, 1878.

1,379. (Print.)—Title: "ELFIN."—*Heppenheimer & Maurer*, New York, N. Y. Application filed January 18, 1878.

1,380. (Print.)—Title: "SPECIAL ARTIST."—*Heppenheimer & Maurer*, New York, N. Y. Application filed January 18, 1878.

1,381.—Title: "PROF. SHAW'S FRAGRANT ANTISEPTIC COLOGNE, &c.—*Littell & Shaw*, New York, N. Y. Application filed January 16, 1878.

1,382.—Title: "THE NEVER-BREAK CORSET-CLASP."—*Thomson, Langdon & Co.*, New York, N. Y. Application filed December 21, 1877.

1,383.—Title: "WILLIMANTIC SIX-CORD, WARRANTED 200 YARDS, WHITE, 12."—*Willimantic Linen Company*, Hartford, Conn. Application filed January 17, 1878.

1,384.—Title: "AMERICAN SILK-FINISH SPOOL-COTTON."—*Willimantic Linen Company*, Hartford, Conn. Application filed January 17, 1878.

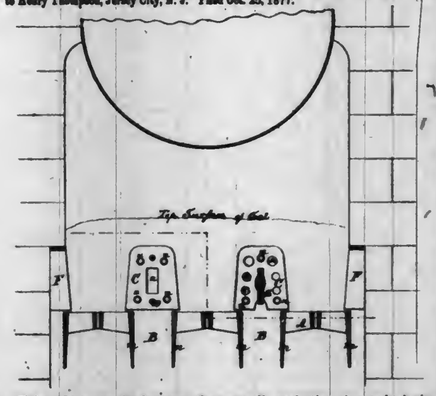
1,385.—Title: "REID'S SIX-CORD THREAD."—*Willimantic Linen Company*, Hartford, Conn. Application filed January 17, 1878.

1,386.—Title: "TINT FOR BANK-CHECKS AND DRAFTS."—*The Continental Bank Note Company*, New York, N. Y. Application filed January 23, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

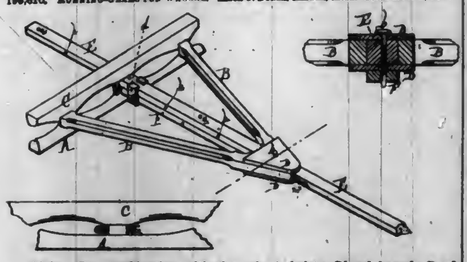
JANUARY 29, 1878.

190,609. FURNACE-GRATES. Wm. J. Allen, New York, N. Y., assignee of one-half his right to Henry Thompson, Jersey City, N. J. Filed Oct. 25, 1877.



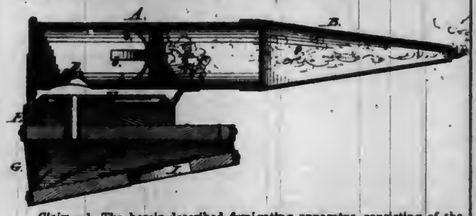
Claim.—In grates for furnaces, the upwardly-projecting air-supply device, made up of sections C, provided with separating-lugs a and bolted together, central openings H, and side walls F, with the ordinary grates, all constructed and arranged to operate substantially as described.

190,610. RUNNING-GEARS FOR WAGONS. Allen J. Beach, Linden, Mich. Filed Nov. 1, 1877.



Claim.—The combination, with the axle A, bolster C, and bounds B, of the stationary part F, the sliding reach E, passing between the axle and bolster, the metallic plates D, and the adjustable clips H, all constructed and arranged substantially as described and shown.

190,611. DEVICES FOR DESTROYING INSECTS BY FUMIGATION. Tracy F. Bingham, Abronia, Mich. Filed Dec. 12, 1877.

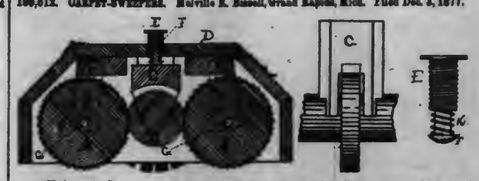


Claim.—1. The herein-described fumigating apparatus, consisting of the stove A, having cone-shaped opening D, and provided with the tapering nozzle B, perforated fire-plate C, and shield F, the several parts being adapted for operation in connection with the bellows G, substantially as and for the purpose specified.

2. The combination of the stove A, having cone-shaped opening D, and provided with tapering nozzle B, perforated fire-plate C, and shield F, with the block E and bellows G, provided with the springs H and valve I and exhaust-nozzle, substantially as and for the purpose specified.

3. The combination of the stove A, provided with the cone-shaped opening D and shield F, with the block E and exhaust-nozzle of the bellows G, substantially as and for the purpose specified.

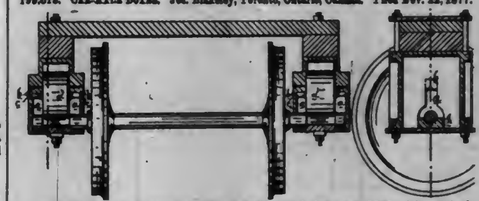
190,612. CARPET-SWEEPERS. Melville R. Bissell, Grand Rapids, Mich. Filed Dec. 3, 1877.



Claim.—1. In a carpet-sweeper, the combination of the screw E, spiral spring K, and bolt F with the bearing-block C and friction-roller B, for the purpose of adjusting the block and roller vertically, substantially as and for the purpose described.

2. The pendulum-bearing J, provided with the spring S, in combination with the drive-wheels A, substantially as described.

190,613. CAR-AXLE BOXES. Jos. Blakesley, Toronto, Ontario, Canada. Filed Nov. 22, 1877.

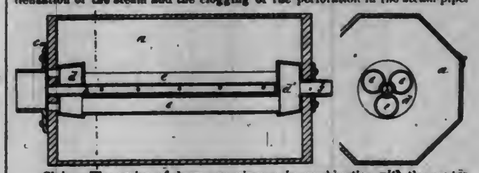


Claim.—1. In combination with a hollow axle-box provided with vertical recesses, the boxes *b* and anti-frictional wheel *d*, constructed and arranged to operate substantially as specified.

2. In a hollow axle-box the inner faces of which are provided with vertical and coincident recesses, and in combination therewith, the boxes *b*, anti-frictional wheel *d*, box *b*, and axle B, the parts being constructed and arranged to operate substantially as and for the purposes described.

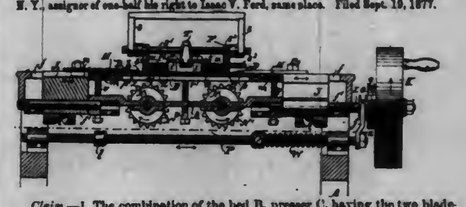
190,614. FEATHER-RENOVATORS. John J. Bonney, Fulton, N. Y. Filed Aug. 9, 1877.

Brief.—By the operation of the slide-valve steam may be admitted to both the steam-drums and perforated pipe, or the whole current of steam may be passed into the steam-drums. The arrangement of steam-drums prevents condensation of the steam and the clogging of the perforation in the steam-pipe.



Claim.—The series of drums or pipes *c*, in combination with the center pipe *b*, end chambers *d d'*, and valve *e*, for opening the ports, constructed and arranged as and for the purposes specified.

190,615. MACHINES FOR FOLDING BLANKS FOR COLLARS AND CUFFS. George Bexley, Troy, N. Y., assignor of one-half his right to Isaac V. Ford, same place. Filed Sept. 19, 1877.



Claim.—1. The combination of the bed B, presser C, having the two blade-like end edges *b b*, and the end ledges D D, conformed to the end edges of the presser and elevated above the bed, and having even tops adapted to permit folding plates to be moved to and fro closely over and across the end ledges and end edges of the presser, as shown and described.

2. The combination of the bed B, presser C, having the blade-like side edge *c* and end edge *b*, and the side ledge E and end ledge D, conformed to the side and end edges of the presser, and elevated above the bed, and having

even tops adapted to permit folding-plates to be moved to and fro closely over and across the side and end ledges and the side and end edges of the presser, substantially as shown and described.

3. The combination of the bed B, presser C, having the blade-like end edges *b b*, the end ledges D D, elevated above the bed, and the end folders H H, secured to carriers J J, and thereby movable to and fro closely over and across the end ledges and the end edges of the presser, substantially as shown and described.

4. The combination of the bed B, presser C, having the blade-like end and side edges *b* and *c*, the end and side ledges D and E, and the side folder I, secured to carriers J', and thereby movable to and fro closely over and across the side ledges and the side edge of the presser, substantially as shown and described.

5. The combination of the bed B, presser C, having the end edge *b* and side edge *c*, the end ledge D and side ledge E, the end folder H and side folder I, and carriers by which the end and side folders are movable to and fro closely over and across the end and side ledges and end and side edges of the presser, substantially as described.

6. The combination of the bed B, presser C, having the blade-like end edge *b*, the end ledge D, the end folder H, and mechanism, essentially such as described, whereby the end folder is automatically moved to and fro closely over and across the end ledge and the end edge of the presser only upon depressing the presser onto the bed, as set forth.

7. The combination of the bed B, presser C, having the thin side edge *c*, the side ledge E, the side folder I, and mechanism, essentially such as described, whereby the side folder is moved automatically to and fro closely over and across the side ledge, and the side edge of the presser only upon the depression of the presser onto the bed, as set forth.

8. The combination of the bed B, presser C, having the end and side edges *b c*, the end and side ledges D E, the end and side folders H I, a mechanism, essentially such as described, by which the end and side folders are moved automatically to and fro across the end and side ledges and the end and side edges of the presser upon depressing the presser onto the bed, as set forth.

9. The combination of the bed B, ledge D, and presser C, having the edge part *a* movable toward and from the ledge, while the presser is depressed upon a blank on the bed, as shown and described.

10. The combination of the bed B, ledge D, having the recess *p* therein, and the presser C, having its edge part *a* movable into and out of the recess in the ledge when the presser is depressed upon a blank on the bed, as shown and described.

11. The combination of the bed B, ledge D, presser C, having the edge part *a* movable toward and from the ledge, and the folder H movable to and fro over and across the ledge and edge of the presser, when the latter is depressed upon a blank on the bed, substantially as shown and described.

12. The combination of the bed B, ledge D, presser C, having the movable edge part *a*, and mechanism, substantially as described, by which that edge part of the presser is automatically moved toward and from the ledge upon depressing the presser upon a blank on the bed, as set forth.

13. The combination of the bed B, ledge D, folder H, presser C, having the movable edge part *a*, and automatic mechanism, substantially as described, by which the said edge part of the presser is moved toward and from the ledge, and the said folder is moved to and fro over and across the ledge and edge of the presser, upon depressing the presser upon a blank on the bed, substantially as shown and described.

14. The combination of the bed B, end and side ledges D E, presser C, having the end and side edges *b c*, with the edge part *a* movable toward and from the end ledge, and the side folder I, furnished with a carrier, and thereby movable to and fro over and across the side ledge and the side edge of the presser, as set forth.

15. The combination of the bed B, end and side ledges D E, side folder I, presser C, having the side edge *c*, and movable end edge part *a*, and automatic mechanism, substantially as described, by which that end edge part of the presser is moved toward and from the end ledge, and the side folder is moved to and fro over and across the side ledge and the side edge of the presser, upon depressing the presser upon a blank on the bed, substantially as shown and described.

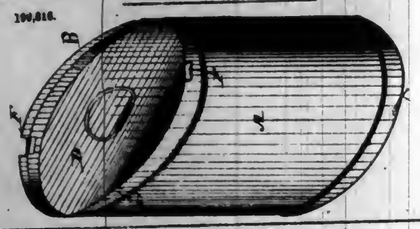
16. The combination of the bed B, end and side ledges D E, presser C, having the end and side edges *b c*, with the end edge part *a* movable toward and from the end ledge, and the end and side folders H I, furnished with carriers, and thereby movable to and fro closely over and across the end and side ledges and the end and side edges of the presser, respectively as shown and described.

17. The combination of the bed B, end and side ledges D E, presser C, having the end and side edges *b c*, with the end edge part *a* movable, the end and side folders H I, and automatic mechanism, substantially as described, by which the part *a* of the presser is moved toward and from the end ledge, and the end and side folders are, respectively, moved to and fro over and across the end and side ledges and end and side edges of the presser, upon depressing the presser upon a blank on the bed, substantially as described.

18. The bed B, having the end ledges D D, formed with the recesses *p p* under the ledges and the longitudinal slot *r*, as shown and described.

19. The bed B, having the end ledge D and slot *r*, in combination with the presser C, having the end edge *b* conformed to the end ledge, and the blade R adjustable on the presser and in respect to the slot in the bed, substantially as shown and described.

199,616.

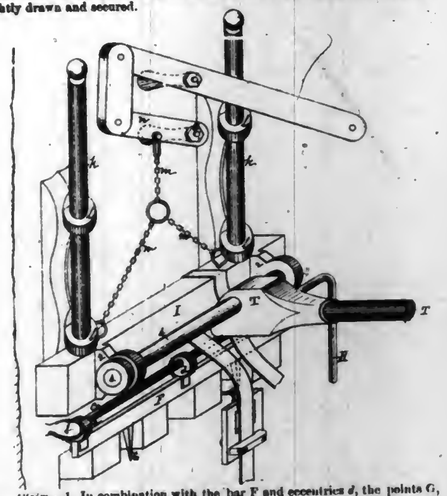


199,616. METAL CASE. George Browne, Montreal, Quebec, Canada, assignor of one-half his right to Thomas T. Turnbull, same place. Filed Dec. 26, 1877.

Claim.—The can A, having a straight chine, B, and having a crease, C, to govern the depth to which the head or cover will be inserted in said can; furthermore, having portions F of the chine nicked and turned down over the upward flange of the head or cover, in combination with the head or cover D, as described.

199,617. BALE-BAND TIGHTENERS. George Bull and Louis Koch, New Orleans, La. Filed Aug. 21, 1877.

Brief.—The points operated by the crank-rod and eccentrics pierce the buckle ends of the bands, and hold them in position while the other ends are tightly drawn and secured.



Claim.—1. In combination with the bar F and eccentrics *d*, the points G, substantially as and for the purpose described.

2. In a baling-press, a horizontal rod, *e*, operating in bearings *b*, and provided with handle H and eccentrics *d*, in combination with a bar, F, the latter suspended from the said eccentrics by rings *c*, in a manner which will admit of its points G being vertically operated or swung out of the way when not in use, as described.

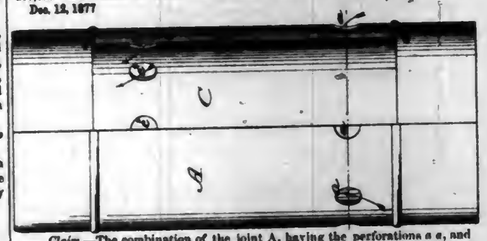
3. In a baling-press, a tightening device operated by means of compound levers, the said device consisting of a horizontal plate, I, provided with vertical guides, and with a bar, *s*, the latter furnished with cam-levers T, for clamping the ends of the bands, as and for the purpose specified.

199,618. STOVE-PIPE ADJUSTERS. William P. Cook, New Garden, Ind. Filed Jan. 8, 1878.



Claim.—The slide-bar B, rod D, bracket C, and set-screw E, in combination, with the pipe A, in the manner substantially as and for the purpose herein set forth.

199,619. AUTOMATIC STOVE-PIPE VENTILATORS. Edward P. Corby, St. Louis, Mo. Filed Dec. 12, 1877



Claim.—The combination of the joint A, having the perforations *a a*, and the pipe C, having the flanges *c c'* and apertures *c² c³*, constructed and arranged substantially as described.

199,620.



199,620. STOVE-PIPE VENTILATORS. Edward P. Corby, St. Louis, Mo. Filed Jan. 6, 1878.

Claim.—The herein-described ventilator, consisting of the joint A, having the perforations *b²*, the flue *b*, having the perforations *b³*, and the flue *c*, having the perforations *c'*, substantially as described and shown.

199,621. FOUNTAIN-PENS. Alonzo T. Cross, Providence, R. I. Filed Dec. 3, 1877.



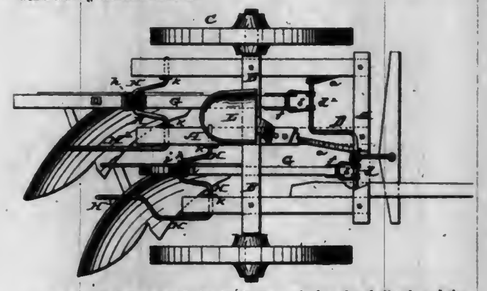
Claim.—1. The vibrating pin D and spring F, combined with an air-tube, B, case A, and tube H, substantially as described.

2. The pin D, projecting slightly from the tube H, and made capable of a vibrating endwise movement within the tube H and slotted tube E upon the lower end of the air-tube B by means of the spring F.

3. The pin D and spring F, in combination with an extensible joint, K, in the air-tube B, substantially as described.

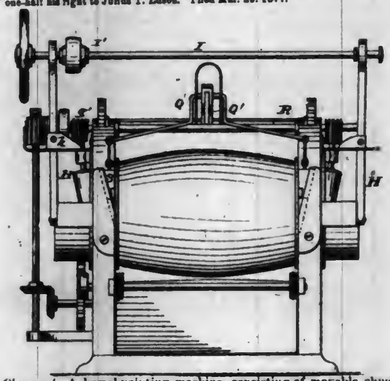
199,622. GANG AND SULKY PLOWS. Horace L. Daniels, Redwood Falls, Minn. Filed Nov. 2, 1877.

Brief.—A frame suspended below the main frame receives the draft. The plow-beams are attached to it by swinging links pivoted to both frame and plow-clevis. The plow-beams are each hung to a separate crank-shaft, and an independent lever from each extends to the right side of the driver's seat. The plows are drawn backward in the act of rising, the front and rear ends of the beams having the same motion.



Claim.—The beam frame D, having braces *a*, clevises *f*, and clips *b*, and the sulky-frame, in combination with the beams G, draft-bar I, and operating-levers H H', constructed and arranged substantially as and for the purpose set forth.

199,623. MACHINES FOR PAINTING BARRELS. Mark L. Dering, Cleveland, Ohio, assignor of one-half his right to Julius T. Edson. Filed Mar. 29, 1877.



Claim.—1. A barrel-painting machine, consisting of movable chucks for clamping the ends of the barrel, in combination with mechanism, substantially as described, for revolving the barrel about its axis, and brushes for delivering paint to the surface of the barrel as it is revolved, substantially as and for the purposes described.

2. In a barrel-painting machine, the combination of the movable chucks for clinching the ends of the barrel, mechanism, substantially as described, for revolving the same about its axis, brushes for delivering paint to the surface of the barrel, and automatic mechanism for stopping the barrel when properly painted, substantially as and for the purposes described.

3. In a barrel-painting machine, the combination of the revolving chucks for clamping the barrel, mechanism, substantially as described, for revolving the same, and revolving brushes for applying the paint to the sides and ends of the barrel, substantially as described.

4. In a barrel-painting machine, the combination of frames F, levers H, and revolving chuck D, the chuck D being suitably geared with driving-power E, substantially as and for the purposes described.

5. The combination, with the chuck-supporting frames F, of the levers H and shaft I, substantially as described.

6. In a barrel-machine, the combination, with the stops S, of the lever Q², friction-clutch Q³, and lever Q², substantially as and for the purposes set forth.

7. The combination of lever Q, clutch Q³, rod R, and stops S', substantially as described.

8. The combination, with the lever Q, of the stops S' *s'*, substantially as described.

9. The combination, with the drive-shaft E, of the pulley-wheel J, clutch J', and lever K, the said shaft provided with worm-gears L L', for operating the brushes, substantially as described.

10. The combination, with the shaft E, of the worm-gears L, made to slide upon the shafts by frames *l*, substantially as described.

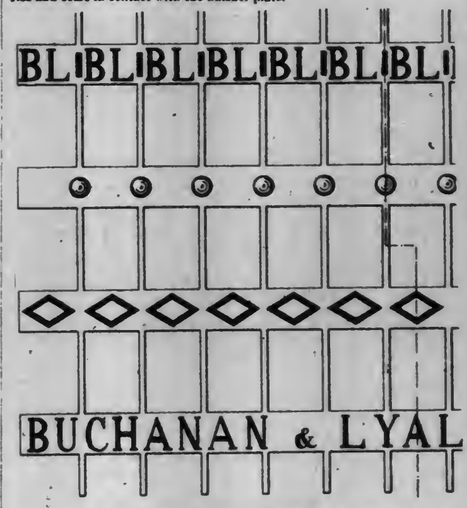
11. The combination, with the clutch J' and lever K, provided with the grooves *k k'*, of the pinion *m*, provided with the stud *k²*, substantially as and for the purpose described.

12. The combination, with the clutch Q' and stops S, of the releasing-lever Q⁴, whereby a barrel, in entering the machine, releases the clutch Q', and interposes the stop S in front of the next following barrel, substantially as described.

13. The combination of projections or stops C² and *s'*, for centering the barrel, substantially as and for the purposes described.

199,624. MARKING-FRAMES FOR PLUG-TOBACCO. David W. De Forest, Brooklyn, N. Y. Filed Dec. 31, 1877.

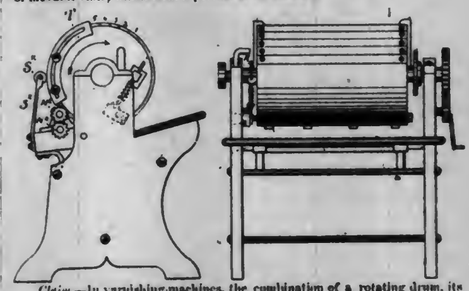
Brief.—The letters or symbols upon the frame are impressed into the plug by the finisher-plate, and the open parts of the frame permit the tobacco to rise and come in contact with the finisher-plate.



Claim.—A skeleton plate or frame with raised letters or devices thereon, jointly with a finishing-plate, for simultaneously finishing and marking plug-tobacco, substantially as herein described.

199,625. MACHINES FOR VARNISHING. Thomas R. Dooley, Boston, Mass., assignor, by mesne assignment, to Edward K. Butler, same place. Filed Sept. 13, 1877.

Brief.—The sheets of material to be varnished are taken up by the cylinder and carried under the varnishing-roller, which, by suitable mechanism, is kept from contact with any part of the cylinder not covered by the sheet which is being coated. The cylinder is adjusted to sheets of different size by means of movable slats, which form a portion of its surface.



Claim.—In varnishing-machines, the combination of a rotating drum, its standards, and the varnishing-tank and varnishing-rollers with the guards Y Y', the movable guard-slides T T', and the guard-roller arms S⁵ S⁶, where the drum is provided with one or more movable slats, all when constructed and arranged to operate substantially as described and shown.

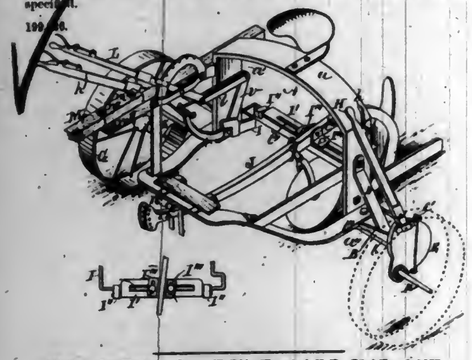
199,626. SULKY-PLOWS. Samuel E. Drake, Canton, Ill., assignor of one-half his right to George H. Platt, same place. Filed June 30, 1877.

Claim.—1. An axle constructed, substantially as described, of a wrought-iron bar having vertical side and horizontal portions *a a' a''*, and cast-metal plates B B, having flanges *b b''* and circular disks C, for the purpose specified.

2. The disks E, constructed in two parts, secured together, as shown, at *c' c'*, combined to operate with the disks C, substantially as described, and for the purpose specified.

3. The slotted angle-plates I''' and bolts i', arranged to operate with the slotted saddle I', yoke L and plow-beam J, substantially as and for the purpose specified.

199,626.



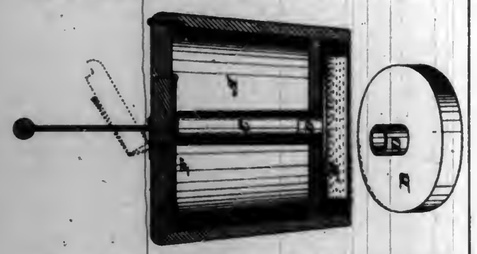
199,627. CAR-WHEELS. George W. Eddy, Waterford, N. Y. Filed Nov. 6, 1877.



Claim.—1. The combination, in a car-wheel, of the hub and rim portions A and B, provided with grooves in their adjacent faces, a ring, D, and one or more packing-sheets on each side of said ring.

2. The combination, in a car-wheel, of a hub, A, having a grooved web, *a*, a tread, B, having a grooved web or plate, *b*, and an intermediate metal ring, D, seated in and between the two webs, as shown.

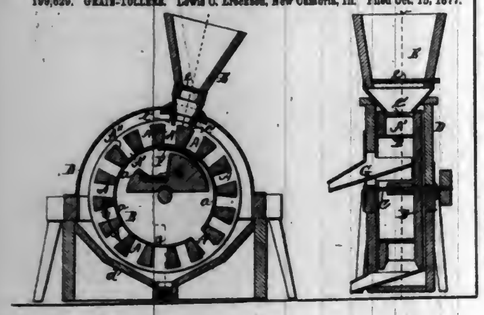
199,628. TOBACCO-PAILS. Jacob T. Emerick, Chicago, Ill. Filed Nov. 26, 1877.



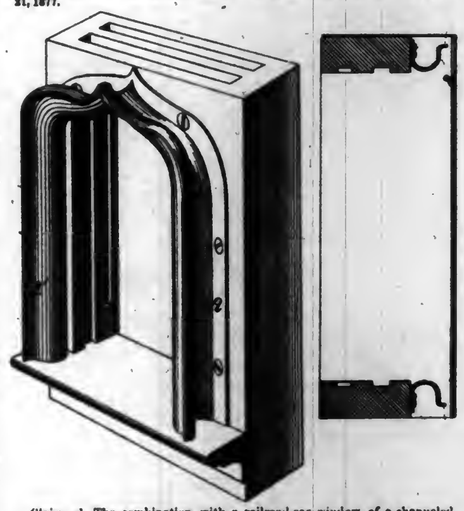
Claim.—1. In a tobacco-pail and receptacles used for a similar purpose, the combination, with the pail A, of the water-reservoir B, provided with the vertically-projecting neck D, substantially as described, and for the purpose specified.

2. In a tobacco-pail, the vertically-arranged tube C, in combination with the neck D and the water-reservoir B, connected and operating in the manner set forth, and for the purpose specified.

199,629. GRAIN-TOLLERS. Lewis C. Erickson, New Cambria, Ill. Filed Oct. 15, 1877.



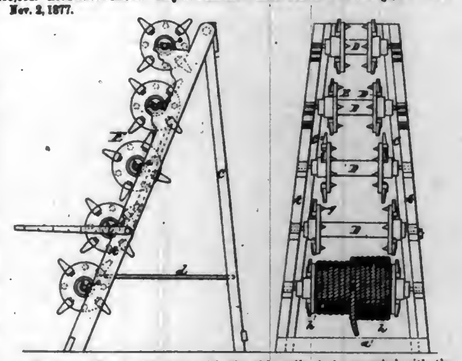
199,630. CAR-WINDOW DEFLECTORS. Daniel M. Everstine, Cumberland, Md. Filed July 21, 1877.



Claim.—1. The combination, with a railroad-car window, of a channeled or trough-shaped deflecting-plate, projecting outwardly from the window on each side thereof, and extending from the base or sill entirely around the top of the same, substantially as set forth.

2. As a new article of manufacture, a channeled or trough-shaped metal plate formed to fit entirely around a car-window, except at base, and having its concavity outward, and a projecting flange upon its outer edge, substantially as set forth.

199,631. ROPE-SPOOL RACKS. Benj. F. Felix and William Scharnweber, Chicago, Ill. Filed Nov. 2, 1877.



Claim.—1. The combination, with the side rails A A, provided with the depending pivoted braces C and tie-braces *d*, of the series of spools D, each having the adjustable flanges E E, provided with the spurs *g*, substantially as and for the purpose specified.

2. The combination, with the axle of the spools D, of the adjustable flanges E E, provided with the series of spurs *g*, substantially as and for the purpose specified.

199,632. CARPET-SWEEPERS. Benedict Figer, San Francisco, Cal. Filed Oct. 26, 1877.

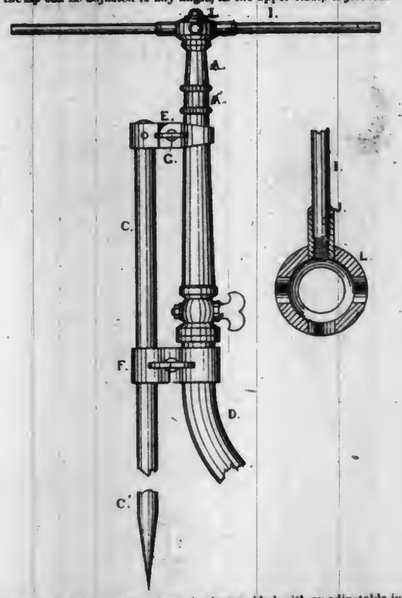


Claim.—1. The adjustable plates D and E, with their vertical slots G, the plate D being provided with a hook-shaped slot, in combination with the brush F and its pulley H, the brush being held in the plates D and E, and retained in the hook-shaped slot by the belt on the pulleys C and H, substantially as and for the purpose above described.

2. The projecting saddles O, attached to the end plates N, in combination with the rubber band I, substantially as and for the purpose described.

199,633. REVOLVING FOUNTAINS. Henry G. Fiske, Springfield, Mass. Filed Sept. 10, 1877.

Brief.—The revolving tip is attached to the nozzle of the hose. The nozzle is secured to a rod or standard by two clamps. By removing the lower one the tip can be adjusted to any angle, as the upper clamp is jointed.



Claim.—1. The revolving fountain tip provided with an adjustable jointed clamp, whereby the said tip may be secured at any desired angle when fastened to a suitable standard, substantially as shown and described.

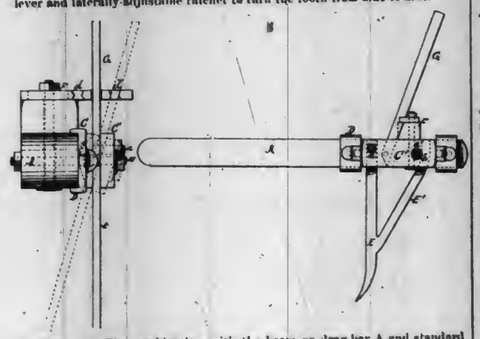
2. The combination of the tip A, provided at A' with an internal screw-thread, and adapted to be coupled to the end of the hose D, the clamp E, and the standard C, whereby the said tip may be supported and held in an upright position, substantially as shown and described.

3. The jointed clamp E, provided with the spurs Q, recesses P, and screw G, arranged to adjust to the different angles which the recesses will allow, and provided with the jaws N and O, fitted to fasten to the tip A of the hose-nozzle B, substantially as shown and described.

4. The tip A, combined with the revolving case L and perforated tubes I, fitted to be secured therein, and provided with an internal screw-thread at A', and adapted to be attached to an ordinary hose-nozzle, substantially as shown and described.

199,634. CULTIVATORS. Silvanus H. Ford, Beaver Dam, Wis. Filed Aug. 17, 1877.

Brief.—A friction or slip tooth arranged upon a rocking bracket, with a lever and laterally-adjustable ratchet to turn the tooth from side to side.



Claim.—1. The combination, with the beam or drag-bar A and standard E, of the rocking clamp-plates C and C', substantially as and for the purpose specified.

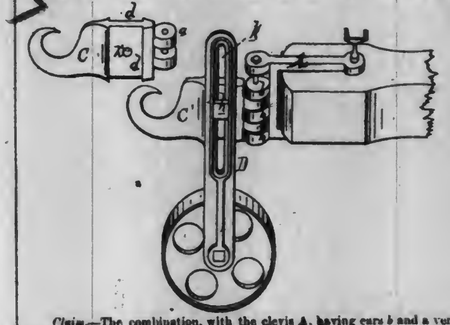
2. The combination, with the rocking clamp-plates C and C', of the lever G and notched bracket F, substantially as and for the purpose specified.

199,635. PIANO-FORTES. Ernst Gabler, New York, N. Y. Filed Dec. 7, 1877.



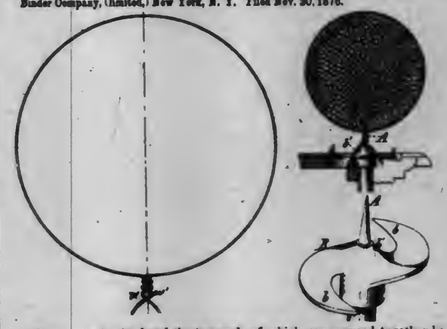
Claim.—The combination, in a piano-forte, of the wire bridge A with the metal plate B, and with the supporting wrest-plank D and strings E, all arranged so that the wire A is held against the plate and against the wooden support by the pressure of the strings, substantially as herein shown and described.

199,636. PLOW-WHEEL ATTACHMENTS. Horatio Gale, Albion, Mich. Filed July 17, 1877.



Claim.—The combination, with the clevis A, having ears *b* and a vertical bolt, of the hook C, provided with ears *a*, for attachment to clevis, and having recessed side *d* and hole *h'*, the slotted wheel-standard D, and square-headed bolt *h*, all constructed and arranged substantially as described and shown.

199,637. GRAIN-BINDERS. Jeptha Garrard, Cincinnati, Ohio, assignor to Excelsior Grain Binder Company, (limited,) New York, N. Y. Filed Nov. 20, 1876.



Claim.—1. A wire band the two ends of which are secured together by a series of interlocked open coils, substantially as herein set forth.

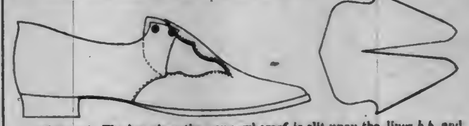
2. The combination of a twister, B, having a tightening ridge, *b'*, over the axis of a pair of curved radial arms, *b b*, and a tapering coil-pin, A, affixed to said twister at its axis of motion, as herein specified, for the purpose set forth.

199,638. UMBRELLA-RUNNERS. Adam Good, San Francisco, Cal. Filed July 30, 1877.



Claim.—The runner-tube A, with its flange B, in combination with the outside tube C, with its grooved bead D, slots E, and fastening I, substantially as and for the purpose described.

199,639. LOW SHOES. Thomas J. Greenwood, Warren, Ill. Filed Dec. 11, 1877.



Claim.—1. The low shoe the vamp whereof is slit upon the lines *b b*, and combined with the notched and sprung gusset, substantially as set forth.

2. The gusset notched and sprung together, substantially as described, and united with the vamp in its sprung condition, essentially as specified.

199,640. WELL-BORING MACHINES. Jerome Hess and James Manning, Stockton, Cal. Filed Nov. 21, 1877.

Claim.—1. The guide-rod *f'*, mounted vertically as a shaft, and provided with the fixed driving-pulley G and sliding toothed wheel H, with its hub-extension, in combination with the sliding cross-head G', with its boring-tube I and toothed wheel J, one end of said cross-head having a bearing on the hub-extension of the wheel H, so that the wheel and cross-head move together, substantially as and for the purpose above specified.

2. The vertical tube I, mounted in the sliding cross-head G', and provided with the coupling-piece Q at its lower end, and a closed box, K, with its spout I'', at its upper end, and having the flanged block M and tube N below the cross-head, in combination with the extensible boring sectional tubes I' and well-casing O, all combined and arranged to operate substantially as and for the purpose described.

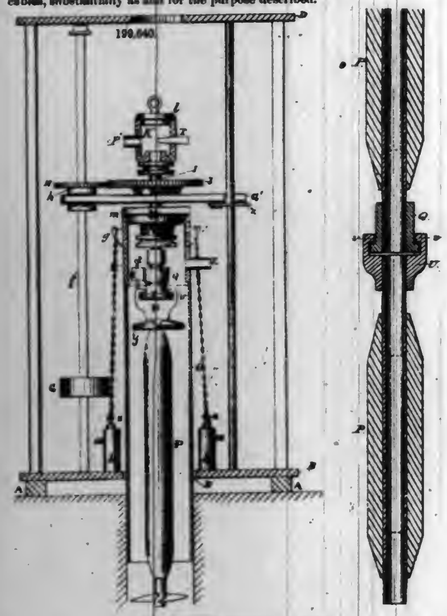
3. The boring-tube sections P, having a large diameter and reduced ends, substantially as and for the purpose described.

4. The improved rod or tube coupling consisting of the part Q, with its flange or rim r cut away, as described, and having the projection S, with its spring bolt or piston t, in combination with the head U, with its opposite hooks v, substantially as and for the purpose described.

5. The loose block M, with its flange m, carried upon the tube I, in combination with the short tube N, with its spout Z and well-casing, substantially as and for the purpose described.

6. The hydraulic jack b, secured upon the cross-plate B, in combination with the short tube M, with its lugs or ears m, and the connecting chains or cables, substantially as and for the purpose described.

199,640.

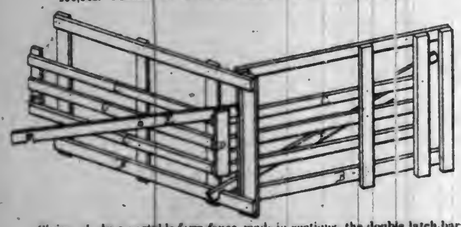


199,641. RIBBON-BLOCKS. Thomas Hagerty, Brooklyn, E. D., N. Y. Filed July 18, 1877.



Claim.—A ribbon-block the cylinder or drum of which is made of a thin sheet or veneer of wood, substantially as and for the purpose described.

199,642. FENCES. Enoch Hallett, Hillsdale, Mich. Filed Oct. 24, 1877.



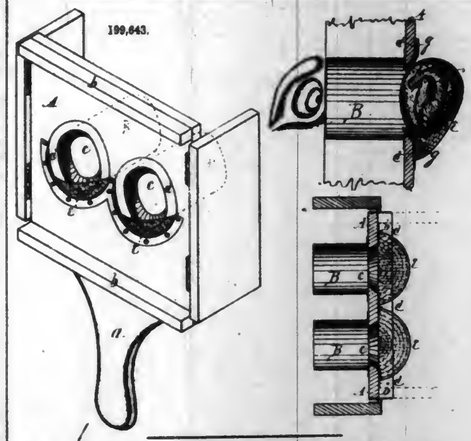
Claim.—1. In a portable farm-fence, made in sections, the double latch-bar and brace E, pivoted to the central stile of each section, and having notched ends adapted to lock the section to which it is attached with the two adjoining sections, substantially as described and shown.

2. A portable fence the sections of which are composed of vertical stiles and horizontal rails, the central rails C being attached so as to project from one end of the section, in combination with the double latch-bar and brace E, substantially as described and shown.

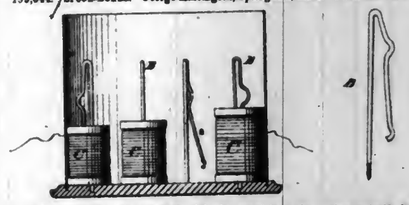
199,643. EGG-TESTERS. Edwin Halloway, Belvidere, Ill. Filed Aug. 30, 1877.

Claim.—The combination of the tablet A, tubes B, and the ring-facings d, both the tubes and the facings being made of opaque material, and said facings having annular flanges, which secure them to the tablet, with the wire nettings e e respectively surrounding the lower portion of openings c in said tablet, substantially as described.

199,643.



199,644. SPOOL-BOXES. George Harrington, Springfield, Mass. Filed Oct. 15, 1877.

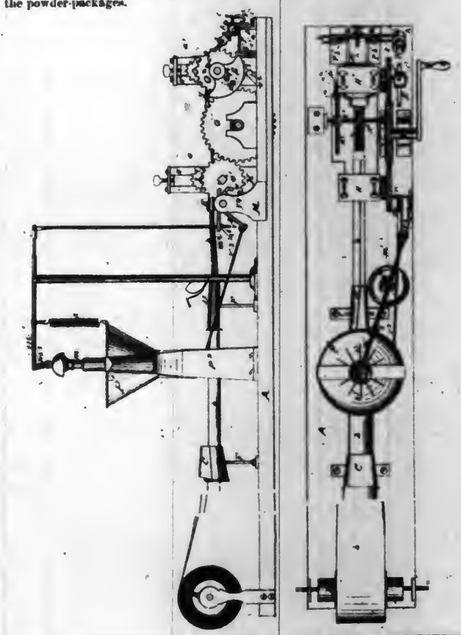


Claim.—1. In combination with the spool-box, the spring-spindle H, formed of spring-wire, constructed and adapted to operate as a tension device upon thread-spools.

2. In combination with the spool-box, the removable spring spool-spindles B.

199,645. MACHINES FOR PUTTING UP MEDICAL POWDERS. Wm. E. Hoeren, Pittsburg, Pa. Filed Aug. 10, 1877.

Brief.—The paper is carried forward from a roll and creased or partially folded. It then passes under a hopper, from which the powder is automatically fed. The paper is again passed through stationary folders, and afterward between rollers, which compress, crease, cut off, fold the ends, and deliver the powder-packages.



Claim.—1. In a machine for folding packages for medical powders, the combination of a series of two or more folding-guides, one or more pairs of compressing-rolls, and a pair of rolls having in their peripheries longitudinal creasers and cutters for the transverse creasing and cutting of the packages, substantially as set forth.

2. In a machine for putting up medical powders, the combination of a series of two or more folding-guides, a device adapted to give an intermittent feed of powder arranged between such folders, one or more pairs of rolls having on their peripheries longitudinal creasers and cutters for the transverse creasing and cutting of the packages, substantially as set forth.

3. As a means of folding the ends of a package for medical powders, the combination of a pair of creasing-rolls, a guide for bending back the free end, a pair of compressing-rolls, and a device for carrying the package from the creasing to the compressing rolls, substantially as described.

4. In a machine for putting up medical powders, the combination of a folding device and a counting device, substantially as described, whereby the finished packages are arranged in regular order and number.

5. In a machine for folding packages for medical powders, a pair of rolls having longitudinal creasers and cutters in their peripheries for the transverse creasing and cutting of the packages, in combination with compressing-rolls R, R', R², and R³, substantially as set forth.

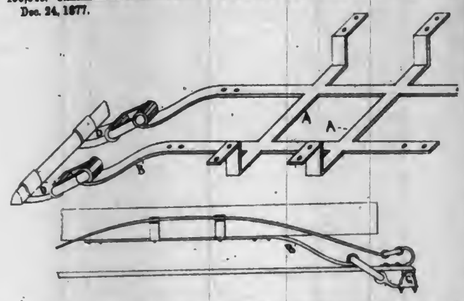
6. In combination with the hopper of a machine for putting up powders, a vertically and rotary moving plunger, substantially as and for the purpose specified.

7. The combination of a hopper for holding the powder, a valve to regulate the discharge, and a vertically and rotary moving plunger to pulverize the powder and facilitate the discharge, substantially as set forth.

8. As a means of conveying packages from one set of rolls to another, the combination of clip h h', shaft k, spring k', arm K, and wiper S, substantially as set forth.

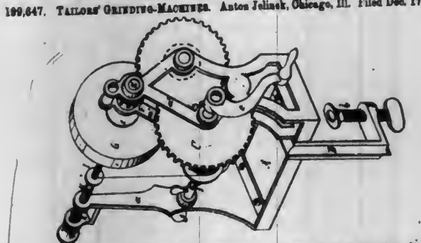
9. As a counting device in a machine for putting up powders, the combination of a detent or stop, n², and a wheel, A¹, having a series of spring-plates arranged radially thereon, such wheel being connected with the folding apparatus by suitable gearing, for giving intermittent motion, substantially as set forth.

199,646. CARRIAGE-SPRINGS. Jackson W. Hewitt and Willis J. Hewitt, Jackson, Mich. Filed Dec. 24, 1877.



Claim.—The short auxiliary springs B B, intermediate of the side half-elliptic springs, and the cross-bars A A, with angular ends, the same being formed into a frame in one piece, with a flat surface, substantially as herein shown and described, and for the purpose specified.

199,647. TAILORS' GRINDING-MACHINES. Anton Jelinek, Chicago, Ill. Filed Dec. 17, 1877.



Claim.—1. The spindle E, having emery-wheel G and chuck g, in combination with the spindle H, having spring h, all arranged within a frame and with suitable driving-gear, substantially in the manner and for the purpose herein set forth.

2. The spindle B, having pinion F, emery-wheel G, and chuck g, and spindle H, having spring h, in combination with the pin J, all placed within a suitable frame, having clamp B and screw b, and arranged with gear-wheels C, D, and d, substantially as and for the purpose described and shown.

199,648. STEAM-GENERATORS. Thomas L. Jones, Natchez, Miss. Filed Mar. 21, 1877.

Brief.—By a combination of devices the products of combustion are forced into the water-space of the boiler. A settling-chamber is provided for the sediment at the bottom of the generator.

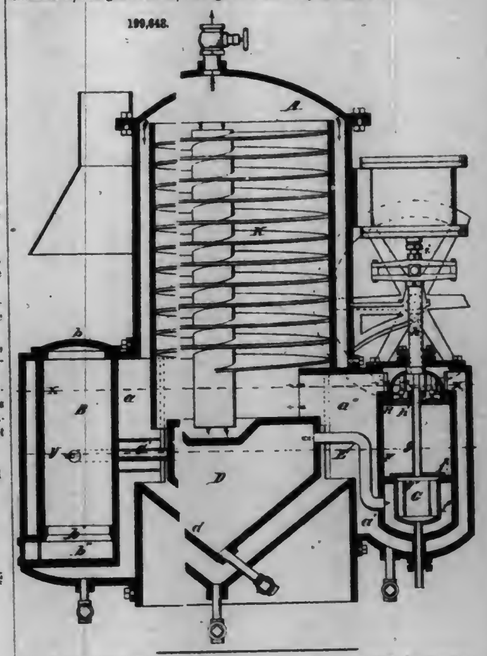
Claim.—1. The combination of the generator A, furnace B, pipes C, C', and E, settling-chamber D, and valve-chamber F, substantially as described.

2. In a steam-generator wherein the steam is generated by passing heated air or gaseous currents directly into and through the water in the generator, the arrangement, substantially as herein described, of the air and gas injecting mechanism within the body of water of the generator, and between the furnace or heating agency and the point where the heated gaseous currents are injected into the generator.

3. The combination of the generator A, valve-chamber F, pipe E, valve G, and plunger H, having the valves h' h', substantially as described.

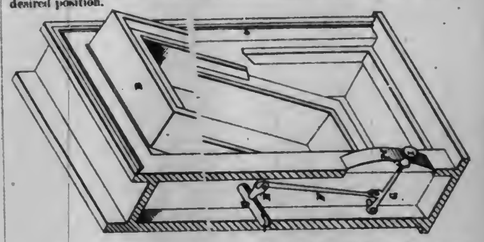
4. The combination of the plunger H, hollow valve G, and stem g g', chamber F, and generator A, arranged substantially as described.

199,648.



199,649. DEVICES FOR OPERATING WINDOWS AND TRANSOMS. James Kelly, San Francisco, Cal. Filed Dec. 13, 1877.

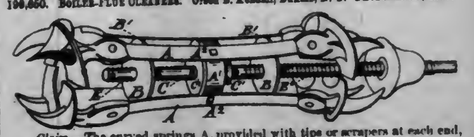
Brief.—A rotary bar midway of the sash is provided with a short horizontal lever, and this lever is joined to a vertical connecting-rod, and a lower horizontal lever projecting out into the room, this last terminating in a knob set-screw, the construction serving to open or close windows, transoms, and the like very readily, and by means of the set-screw to lock or hold them in desired position.



Claim.—1. A device for operating turning sash, consisting of the rotary bar or journal C, connected with the sash or sashes B, and provided with the lever E, in combination with the connecting-rod F and lower lever G, substantially as herein shown and described.

2. The rotary bar C, lever E, connecting-rod F, and lever G, in combination with the locking and operating knob or set-screw I, substantially as herein described, for the purposes specified.

199,650. BOILER-FLUE CLEANERS. Orson B. Kendall, Buffalo, N. Y. Filed June 29, 1877.



Claim.—The curved springs A, provided with tips or scrapers at each end, as specified, in combination with the center piece A¹, longitudinally-movable expanding disks B B, and rod C, provided with a right-and-left hand screw, as and for the purposes described.

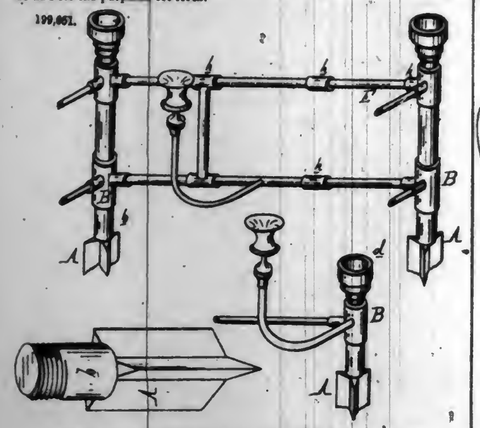
199,651. IRON FENCES. Jesse Kinney, London, Canada. Filed July 30, 1877.

Claim.—1. The three-flange post A, terminating in a threaded shaft, b, in combination with the tubular post B, substantially as described.

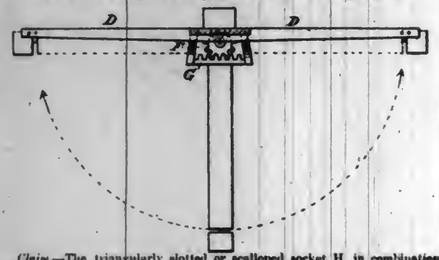
2. The posts B, terminating in the cups d, in combination with the horizontal tubular rounds, substantially as described.

3. In combination with a tubular fence, constructed substantially as specified, the pipe and cup for supporting a flower-vase or plant-pot, substantially as and for the purposes set forth.

199,851.

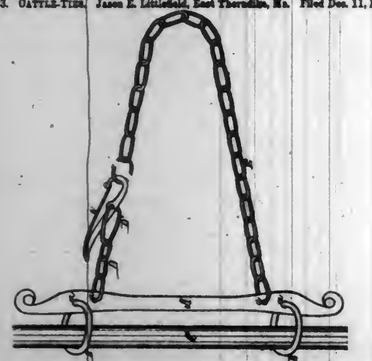


199,852. FARM-GATES. James Lepley, Lewisburg, Pa. Filed July 23, 1877.



Claim.—The triangularly slotted or scalloped socket H, in combination with the pin or pintle of the upper hinge, the gearing F and G, and lever D, substantially as set forth.

199,853. CATTLE-TIES. Jason E. Littlefield, East Thorndike, Me. Filed Dec. 11, 1877.



Claim.—1. The cow-fastener snap-hook having the supporting-link arranged with or pivoted to its shank at or near its junction with the crook, substantially as represented.

2. The combination of the snap-hook, having its shank projecting in opposite directions from its sustaining-link D', as represented, with the chains D E and the slide-bar A, provided with the rings B B, all being as set forth.

199,854. COMPOUNDS FOR PRODUCING ILLUMINATING-GAS. Louis Marks, San Francisco, Cal. Filed Dec. 6, 1877.

Claim.—A gas-producing compound composed of human excrement, raw limestone, pitch-pine, sawdust saturated with petroleum, sewage-matter, and Australian shale, in the proportions above specified.

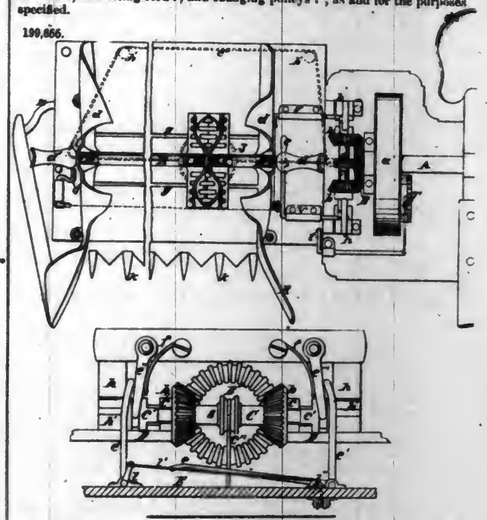
199,855. HAND-BINDING HARVESTERS. Joseph P. Maull, St. Louis, Mo., assignor of one-half his right to Louis C. Maull, same place. Filed May 28, 1877.

Claim.—1. The stationary semi-cylindrical breast *d*, in combination with the traversing grain-gatherer G, arranged with their depressions *d'* and *g'*, substantially as set forth.

2. The gatherer G, in combination with counter-shaft *c'*, beveled wheels *b b b*, pulley *a*, direct, and the changing pulleys *b' b'*, and cord *c''*, operated as and for the purpose specified.

3. The clutches *c c*, pulley *a*, and cords *c'*, in combination with the treadles *s*, connecting-cord *F*, and changing pulleys *b'*, as and for the purposes specified.

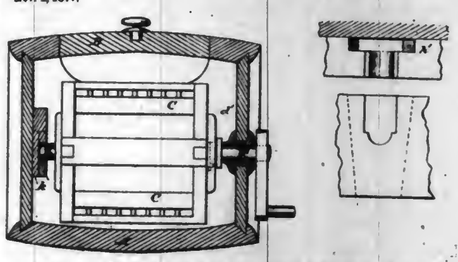
199,856.



199,856. TREATING PAPER TO RENDER IT INCOMBUSTIBLE. Oscar Mayo, Evanston, Ill. Filed Jan. 4, 1878.

Claim.—The process of rendering paper infusible and comparatively incombustible, by subjecting same to a bath of a strong solution of salt, and, after drying, to a bath of the solution of equal parts of the phosphate and the tungstate of soda, substantially as described.

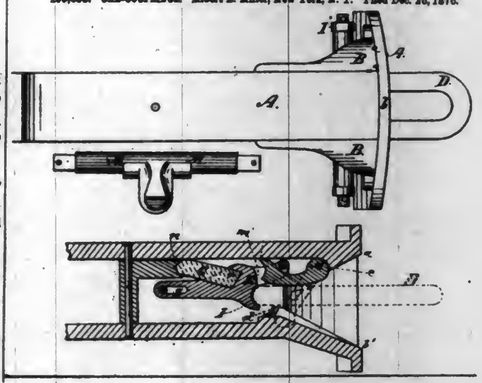
199,857. SECURING ROTARY DASHERS IN CHURNS. John McAneeney, Philadelphia, Pa. Filed Nov. 1, 1877.



Claim.—1. In a rotary churn, the key *k*, made wedge-shaped on its sides, with the raised portion *m*, made concave at its bottom, with the lower portion *n* of the key made thin, so as to slide behind the end of the shaft E, substantially as described, and for the purposes set forth.

2. The short shaft F and revolving dasher C, provided at opposite ends with the slot *c'* and short shaft E, in combination with the shoulder *k'* and key *k*, adapted to fit down upon and pass behind the shaft E, substantially as described and shown, and for the purposes set forth.

199,858. CAR-COUPLINGS. Albert L. Miller, New York, N. Y. Filed Dec. 26, 1876.



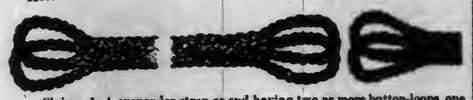
Claim.—1. A draw-head having the flaring mouth, throat, or entrance, and the concave heel *d* at the lower side thereof, and concave shoulder on the upper side thereof, in combination with the detachable side pieces B, substantially as and for the purpose herein set forth.

2. The wrought-iron draw-head, constructed with the upper and lower plates *B' C'*, having straight parallel and perpendicular sides or edges, in combination with the detachable side pieces B, substantially as and for the purpose herein set forth.

3. The pawl M, constructed with the shaft and concave free or inner end, in combination with the concave shoulder *c*, the heel *d*, the longitudinally-yielding dog E, and one or more actuating-levers, substantially as and for the purpose herein set forth.

4. The longitudinally-yielding dog E, in combination with a spring, G, substantially as and for the purpose herein set forth.

199,859. SUSPENDER-STRAPS. Louis Meixner, New York, N. Y., assignor of one-half his right to Bradley, Voorhees & Day Manufacturing Company, (limited,) same place. Filed Dec. 14, 1877.



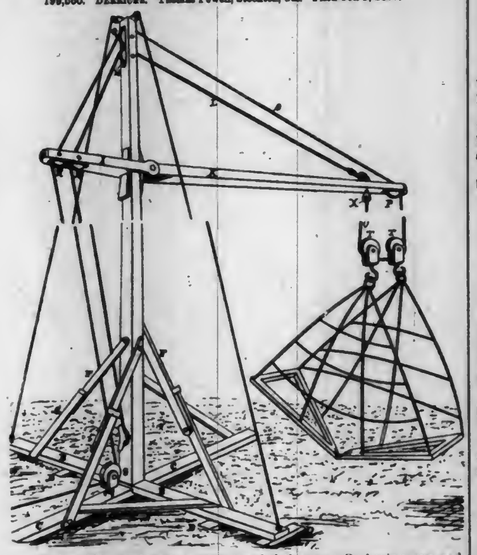
Claim.—1. A suspender strap or end having two or more button-loops, one above another, at one end or at both ends, substantially as shown and described.

2. A suspender strap or end crocheted or otherwise made in one piece from a single cord or yarn, and having one or more button-loops at one end or at both ends, substantially as shown and described.

3. A crocheted, braided, knitted, woven, plaited, or similarly-made suspender strap or end, in one piece, and having two or more button-loops at one end, substantially as shown and described.

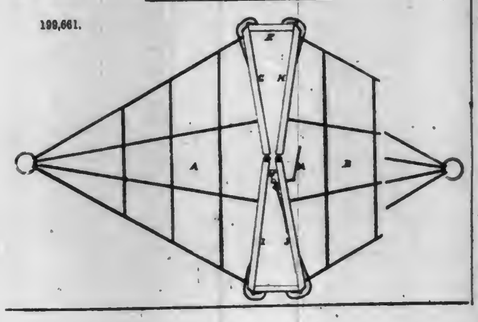
4. A crocheted, braided, knitted, woven, plaited, or similarly-made suspender strap or end, having two or more button-loops at each end, all made in one piece, substantially as shown and described.

199,860. DERRICKS. Thomas Powell, Stockton, Cal. Filed Oct. 9, 1877.



Claim.—The combination, with the hoisting-rope O, having one end attached to the eye X, and passing around the pulley P, thence over the pulleys Q R, of the locks T T, arranged to travel in its bight, substantially as and for the purpose described.

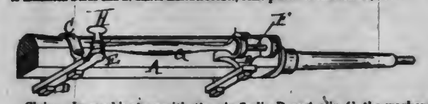
199,861.



199,861. METERS FOR UNLOADING WAGONS. Thomas Powell, Stockton, Cal. Filed Oct. 22, 1877.

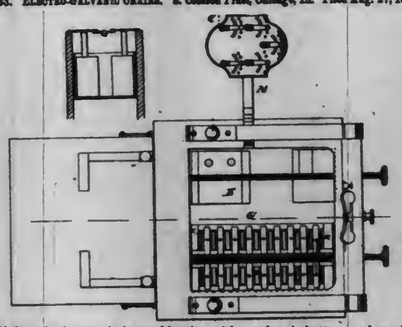
Claim.—A connection for the two parts, A B, of an unloading-net, consisting of four or more hinged bars, G H I J, in combination with a latching device, substantially as above specified.

199,862. THILL-COUPLINGS. Theodore H. Pate, Wayne, Mich., assignor of one-half his right to Hamilton Bates and I. Smith Knickerbocker, same place. Filed Dec. 31, 1877.



Claim.—In combination with the shaft-clip B and clip C, the washer-bar D, provided with the hollow and threaded stud E, the bolt F, provided with the arm G, constructed as described, and the thumb-screw H, arranged to operate substantially as and for the purposes specified.

199,863. ELECTRO-GALVANIC CHAIRS. S. Gleason Pratt, Chicago, Ill. Filed Aug. 27, 1877.

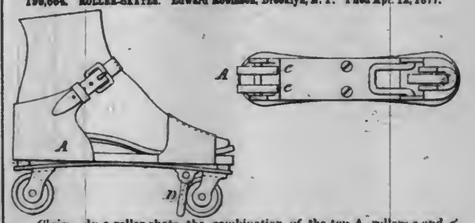


Claim.—1. A seat, A, in combination with a galvanic battery and an electro-magnetic battery and connecting-wires, substantially as and for the purposes described.

2. The combination of the batteries G and E with a seat, A, connecting-wires, and switches, so arranged that the current from either battery, or from both batteries, may be used and controlled by means of a single set of switches, substantially as specified.

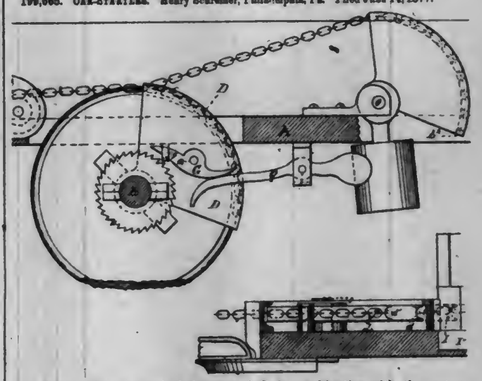
3. The seat A, in combination with the support M and switch-box Q, located and operating substantially as set forth.

199,864. ROLLER-SKATES. Edward Robinson, Brooklyn, N. Y. Filed Apr. 12, 1877.



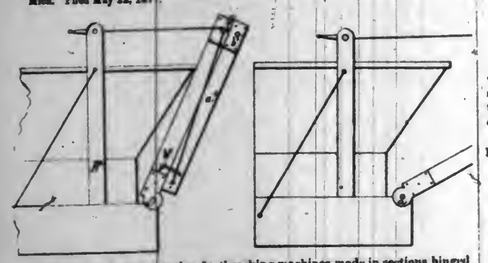
Claim.—In a roller-skate, the combination of the top A, rollers *c* and *c'*, and link or checking device D, substantially as described, and for the purpose specified.

199,865. CAR-STARTERS. Henry Schreiner, Philadelphia, Pa. Filed June 14, 1877.



Claim.—The automatic balance-pawl Q, in combination with the sector-lever D, stop *g*, and weighted lever Q, substantially in the manner and for the purpose set forth.

190,666. STRAW-ELEVATORS FOR GRAIN-SEPARATORS. Freedom G. Shepard, Battle Creek, Mich. Filed May 22, 1877.



Claim.—1. A straw-stacker for thrashing-machines made in sections hinged together, and provided with pins, studs, or their equivalent, near the point of hinging, substantially as and for the purpose described.

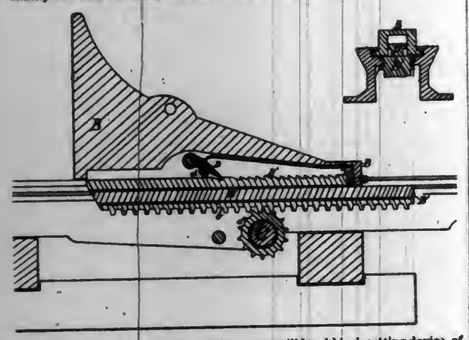
2. The hinged sections of a straw-stacker, provided with pins or studs *b b'*, or their equivalent, arranged on opposite sides of the pivots of the hinges, and in close proximity therewith, substantially as and for the purpose set forth.

3. The straw-stacker formed of hinged sections, and provided with pins, studs, or their equivalents, near the point of hinging, in combination with the rope or cord attached to said carrier at a point beyond the hinge or pivot, for the purpose and substantially as described.

4. The straw-stacker formed of the hinged sections, and provided with the pins, studs, or their equivalent, and the cord, in combination with the windlass, all arranged and operating substantially as described.

190,667. HEAD-BLOCKS FOR SAW-MILLS. Edward H. Stearns, Erie, Pa. Filed May 17, 1877.

Brief.—Independent pawls act on the ratchet-wheel alternately to constantly advance the knees when the lever is vibrated.



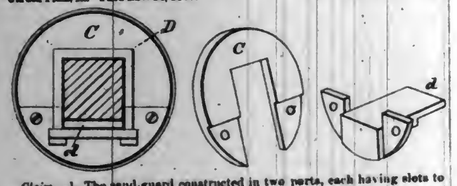
Claim.—1. The combination, within a saw-mill head-block setting device, of the ratchet-wheel J and pawls H and I, which pawls oscillate toward and from each other alternately, and are pivoted to carriers which are concentric with each other and with said ratchet-wheel J, as and for the purposes set forth.

2. The combination, within the setting mechanism of a saw-mill head-block, of a ratchet-wheel, J, which is operated upon by a pawl, which pawl is pivoted on a yoke or carrier which is concentric with said ratchet-wheel J, and which carrier is operated by being connected by a bar with the actuating-lever or a crank upon a shaft extending from said lever, substantially as set forth.

3. The combination of the shaft C, pinion *c*, rack *b*, and slide B' with the knee B, said knee being moved only when in communication with said slide, by a proper attaching and detaching device, substantially as and for the purposes mentioned.

4. In combination with the chains L', the knee B and shaft C, said chains being attached at one end to the said knee, and at the other end to the said shaft C, for the purposes mentioned.

190,668. SAND-GUARD FOR VEHICLE-WHEELS. Wm. Stuart, Fulton, and Delos J. Parker, Garden Plain, Ill. Filed Nov. 24, 1877.



Claim.—1. The sand-guard constructed in two parts, each having slots to receive the axle, and halved and fastened together, forming one continuous guard, and provided with a lug to receive the fastening-clip, substantially as described.

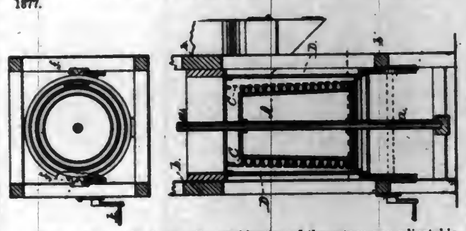
2. The sand-guard constructed in the two parts C C', each having a slot to receive the axle, and halved and fastened together, forming one continuous guard, adjusted within the projecting band *a* of the hub, and provided with a lug, *d*, to receive the fastening-clip D, substantially as and for the purposes described.

190,669. JOURNAL-BEARINGS. John Sweeney, New Haven, Conn. Filed June 26, 1877.



Claim.—The combination of an imperforated outer casing of cheap metal with a longitudinal central rib of hard metal, dovetailed into the inside of said casing, and an inner facing of anti-friction metal secured by flanges on the inside of said casing, the attachment of said central rib to the shell being entirely independent of the anti-friction facing, substantially as set forth.

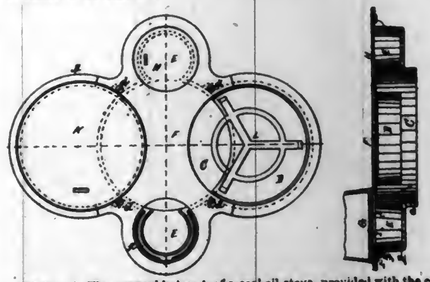
190,670. GRAIN-SCOURING APPARATUS. Gardner E. Throop, Auburn, N. Y. Filed Apr. 23, 1877.



Claim.—In a grain-cleaner, the combination of the rotary non-adjustable brush A, the conical screen C, carried by the non-rotating jacket D, which is adjustable in the line of its longitudinal axis, and the adjusting devices for said jacket, substantially as and for the purpose specified.

190,671. COOKING ATTACHMENTS TO COAL-OIL STOVES. A. H. Underwood, Dundee, assignor of one-half his right to H. H. Sherburne, Chicago, Ill. Filed July 6, 1877.

Brief.—Adapted to support one or more cooking utensils of different sizes to be heated at the same time.



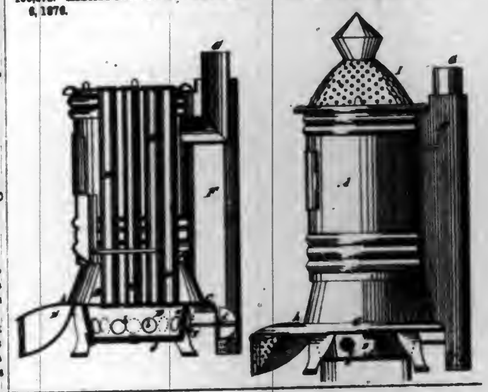
Claim.—1. The removable top A of a coal-oil stove, provided with the central opening C, heating-chambers D D, and one or more supplemental chambers, E E, of less diameter than the chambers D D, and provided with the ventilating-opening *f*, substantially as and for the purpose specified.

2. The removable top A of a coal-oil stove, provided with the central opening C, and one or more heating-chambers, E, the wall of said chamber or chambers being so arranged as to form the air-space *f* between them and the top plate F, substantially as and for the purpose specified.

3. The combination, with the removable top A of a coal-oil stove, provided with the central opening C, and one or more heating-chambers, D D, *b'* the removable ring J, having the openings *a* formed therein, substantially as and for the purpose specified.

4. The combination, with the heating-chambers D D in the removable top A of a coal-oil stove, of the ring J and flanged cover K, substantially as and for the purpose specified.

190,672. HEATING AND VENTILATING STOVES. James B. Walls, Chicago, Ill. Filed Mar. 6, 1876.



Claim.—1. The ventilating and auxiliary draft-flue H, arranged underneath the hearth, and extending from the floor of the room to the front of the ash-pit, substantially as and for the purpose set forth.

2. The ventilating-pipe F, constructed without openings into the room, except at the lower end, and extending from the floor of the room to the chimney-flue, in combination with the smoke-pipe G, inclosed therein, substantially as and for the purpose set forth.

3. The combination of the ventilating-pipe F and the regulating-damper *f*, substantially as and for the purpose set forth.

4. The combination of the ventilating-pipe F, damper *f*, and annular damper *e*, connected thereto, substantially as and for the purpose set forth.

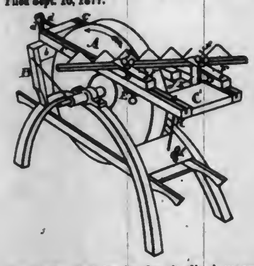
190,673. SCREW-CUTTING DIES. Frederic E. Wells and Frank O. Wells, Greenfield, Mass. Filed June 18, 1877.

Brief.—The die-holder is provided with four holes equidistant from its center. The holding and adjusting screws, working through them, enter corresponding holes in the dies. One of these holes in each die is nearer the center than the other, so that the holding-screw impinges on the outer side of one hole and the inner side of the other, and so that, as one or the other screw advances the dies will expand or contract, as the case may be.



Claim.—The combination and arrangement of the dies, the holder, and the screws, in the manner substantially as shown and described.

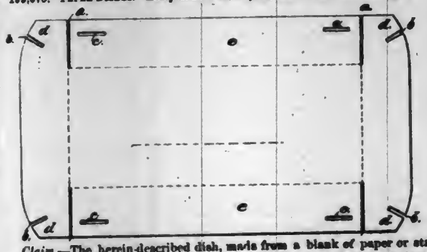
190,674. HARVESTER-KNIFE ATTACHMENTS FOR GRINDSTONES. George A. Whitney, La Grange, Ohio. Filed Sept. 10, 1877.



Claim.—1. The frame C C', having longitudinal grooves *c c*, the blocks D D, having spring-plates F F, with thumb-screws *f f*, the clamps E E, and bearing-blocks *g g*, when constructed substantially as described, in combination with grindstone A, as and for the purpose set forth.

2. The adjustable supporting-rod H, in combination with holding-frame C C and grindstone-frame, as shown and described.

190,675. PAPER DISHES. Henry L. B. Wolf, Dayton, Ohio. Filed Nov. 30, 1877.



Claim.—The herein-described dish, made from a blank of paper or straw board, having its corners slit straight at *a*, and having the slits *b* and *c* located as shown, whereby barbs *d* are formed to hold the dish in shape, substantially as and for the purpose specified.

190,676. ELECTRIC ATTACHMENTS FOR GAS-BURNERS. Arthur W. Wright, New Haven, Conn., assignor to Abraham L. Bogart, New York, N. Y. Filed May 23, 1877.



Claim.—1. In combination with a non-conducting bat's-wing gas-tip, a metallic electrode, *c*, consisting of a metallic wire passed around and secured within the groove *a* of the said gas-tip, substantially as shown and described.

2. The combination of a non-conducting bat's-wing gas-tip, a metallic-wire electrode, *c*, secured within the groove *a* of the said gas-tip, and the point *e* of the second electrode, located opposite to one termination of the slot *b* of said gas-tip, as herein shown and described, for the purpose set forth.

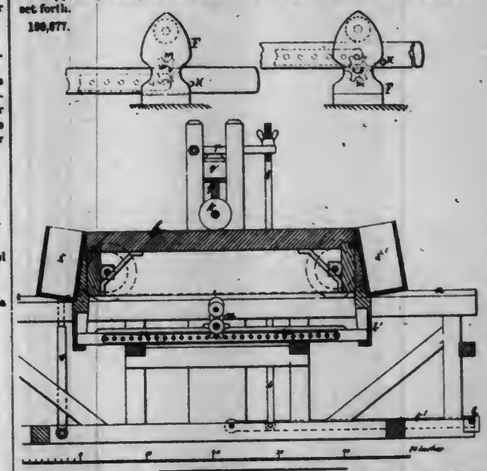
190,677. CLOTHES-MANGLES. Heinrich Albers, Hannover, Prussia. Filed Nov. 8, 1877.

Brief.—A feed-table is provided with depending grooved hangers, in which an endless rack-bar is so adjusted as to be alternately brought over and under a fixed pinion by means of pins arranged upon the rack, sliding alternately upon opposite curved sides of a stop-piece, thus by a continuous rotation of the pinion in one direction giving a reciprocating movement to the feed-table.

Claim.—1. In a clothes-mangle, the combination of a reciprocating feed-table, having slotted or grooved guides or hangers, the vertically-adjustable rack fitted therein, and the supporting-frame, having suitable devices for raising and lowering the rack, with the pressing-roller and driving-shaft, carrying a spur-wheel, and fitted in stationary bearings on the supporting-frame, as and for the purpose set forth.

2. The combination of the fixed stop-piece F, having curved or inclined front and rear surfaces, and the reciprocating rack-bar, having pins H, with the supporting-frame, feed-carriage, and pressing-roller, as and for the purpose set forth.

190,677.



190,678. BALE-TIES. Thos. A. Andrews and Alfred G. Edwards, Gainesville, Tex. Filed Nov. 30, 1877.



Claim.—A bale-tie whose frame A is provided with an end bar, *a'*, having wedge-shaped catch *a'*, cut away at *c*, as and for the purpose specified.

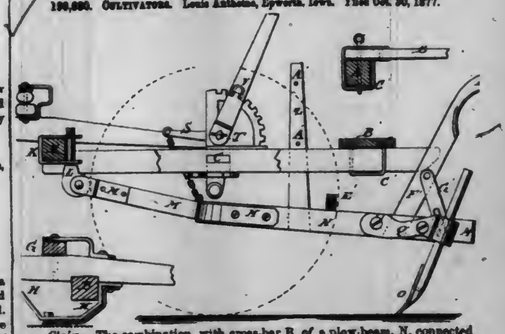
190,679. CLIP-IRONS FOR CARRIAGES. John W. Anderson, Greene, Pa. Filed Mar. 26, 1877.



Claim.—1. The combination of a pair of flanged clip-irons, H N, provided with bearing-plates J J', united by stud or bolt N' and pivot-bolt W', and operating substantially as and for the purposes set forth.

2. The clip-irons H N, adapted to be tightened about whiffletrees and other carriage wood-work by riveted seams, as described, in combination with the seam-covers S', applied thereto as and for the purposes set forth.

190,680. CULTIVATORS. Louis Anthoine, Epworth, Iowa. Filed Oct. 30, 1877.



Claim.—The combination, with cross-bar B, of a plow-beam, N, connected therewith by the U-bar K, lug-pivot L, and offsetted bar M, substantially as and for the purpose specified.

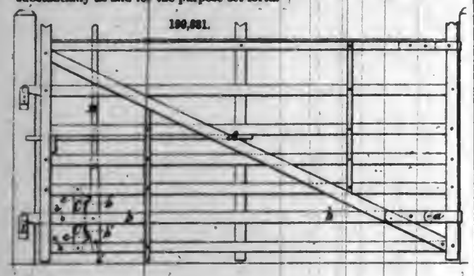
190,681. GATES. Milton S. Austin and Cyrus B. Austin, Cuba, Ohio. Filed Dec. 30, 1877.

Claim.—1. In a gate, a lever fulcrumed to a sliding bar and bearing against a fixed point upon the gate, to lift or elevate its forward end, substantially as set forth.

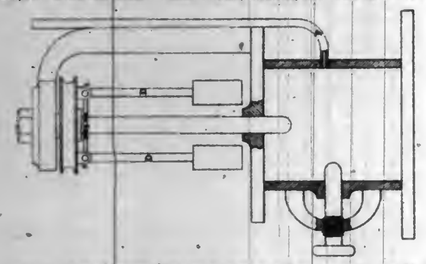
2. In combination with a gate having the sliding projecting bar *b*, the lever B and bar C, having one or more salient points or projections, *c*, substantially as and for the purpose set forth.

3. The combination, with a gate having its lower hinge attached to a sliding bar, of the lever B and bar C, provided with one or more projections, *c*, substantially as and for the purpose set forth.

196,681.



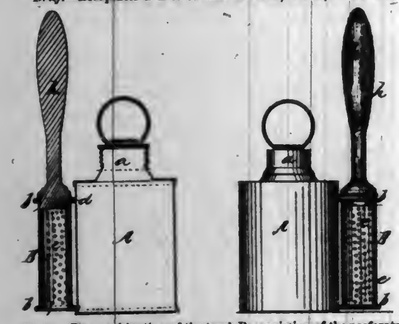
196,682. SPEED-INDICATOR. William S. Bates, Cincinnati, Ohio. Filed Oct. 27, 1877.



Claim.—In combination with one or more revolving weights, a closed vessel containing fluid, and a plunger for converting the centrifugal force of said weight into pressure in the fluid, the velocity of revolution being measured by the amount of said pressure, substantially as described.

196,683. FIRE-KINDLERS. John Beard, Franklin, Ind. Filed Dec. 17, 1877.

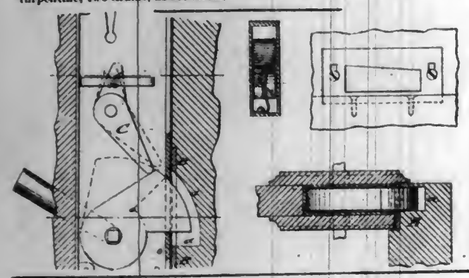
Brief.—Receptacle B is to contain asbestus, cotton, or the like.



Claim.—The combination of the torch B, consisting of the perforated receptacle *c* and handle *b*, with the can A, with screw-cap *a* and guards *b*, substantially as and for the purpose set forth.

196,684. OINTMENTS. Cinthia Jane Beattie, Pueblo, Colo. Filed Oct. 27, 1877.

Claim.—A compound consisting of dried bark of sumac-root, one ounce; bacon-grease, one ounce; mutton-suet, one-half ounce; bees-wax, one-half ounce; resin, one-fourth ounce; spirits of camphor, two drams; and spirits of turpentine, two drams, as set forth.



196,685. DOOR AND WINDOW FASTENINGS. Hjalmar Bergman, Stockholm, Sweden. Filed Oct. 17, 1877.

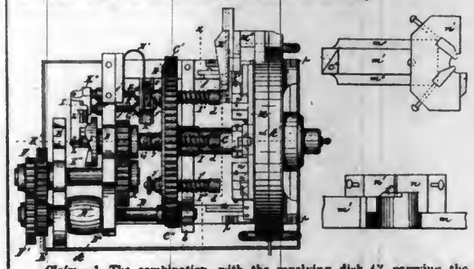
Brief.—A face-plate is formed with an inclined side or edge, constituting a wedge-shaped slot, adapting it, when the catch or bolt is turned down, to cause the door to close more tightly. There is also a peculiarly-shaped fulcrumed latch or segmental bolt operated by a key, and locked in either position by a toothed spring entering grooves of the upper arm of the latch for that purpose.

Claim.—1. The face-plate having a slot or recess, with inclined side or edge, to adapt it to cause a door to close tightly when the latch or bolt is turned or forced down, as shown and described.

2. In a door and window lock, the combination of a segmental bolt of the knob-spindle with a fulcrumed latch, carried by a key over the bolt or clear of the same, the latch being locked in either position by a toothed spring entering grooves of the upper arm of the latch, substantially in the manner and for the purpose set forth.

196,686. BOLT-THREADING MACHINES. Orlando F. Briggs, Chicago, Ill., assignor to Henry F. Oliver, same place. Filed Nov. 30, 1877.

Brief.—The face-plate and revolving disk, carrying mandrels and pinions for rotating the same, form between them an oil-chamber. The non-revolving tail-block, with the journal-bearing for the shaft, and the revolving die-plate, are together movable to and from the face-plate. The jaws of the blank-holders are opened and closed and locked and unlocked automatically.



Claim.—1. The combination, with the revolving disk C, carrying the series of bolt-holding mandrels, and geared wheels for rotating said mandrels, and the revolving die-plate M, carrying the series of screw-cutting dies, of the non-revolving tail-block A', forming the journal-bearing at one end of the shaft carrying the disk, and supporting the mechanism for opening and closing the dies, and arranged to admit of being moved together with the die-plate to or from the disk, substantially as and for the purpose specified.

2. The combination, with the shaft C and disk C', carrying the series of bolt-holding mandrels, and the geared wheels for rotating said mandrels, of the block h, cam-wheel L', shifting-lever L, roller h', cross-bar K'', shafts K K, springs *j j*, and cross-head K', all operating together substantially as and for the purpose specified.

3. The combination, with the revolving die-plate M, carrying the series of fixed and movable die-blocks a and n', of the wedge-shaped lugs *e' e''* and rollers P and P, for opening and closing the dies, substantially as and for the purpose specified.

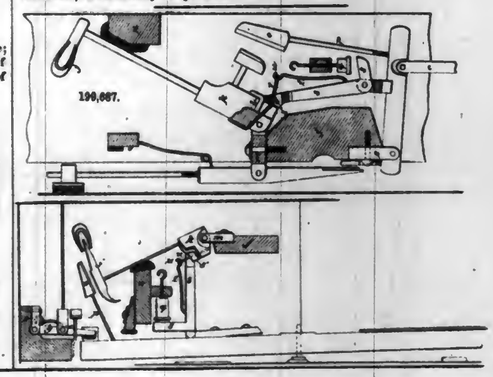
4. The combination, with the revolving die-plate M, carrying the series of fixed and movable die-blocks, of the series of auxiliary levers S, stop-pins *s'*, and rim M', provided with the cam-groove *l*, substantially as and for the purpose specified.

5. The combination, with slide R and receptacle R', for automatically feeding the bolt-blanks, of the adjusting-block T, provided with the cam-groove *t* and the series of adjusting-pins *t''*, for moving the slide, substantially as and for the purpose specified.

6. The combination, with the fixed die-block n, of the longitudinally-movable die-block n', provided with the lip *f'''*, projecting therefrom, and so as to pass into the recess formed in or under the fixed die-block, the stop-pin *s'*, arranged to enter the opening in the movable die-block, and the mechanism for actuating said stop-pin, substantially as and for the purpose specified.

7. The combination, with the revolving disk C', carrying the series of bolt-holding mandrels and pinions for rotating the same, of the face-plate H, arranged to form the journal-bearings at one end of each of the pinions, and so as to form the oil-chamber within the disk, for lubricating the pinions and mandrels, substantially as specified.

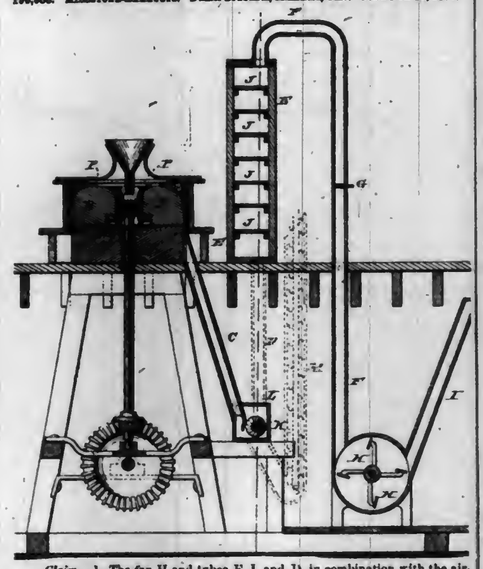
196,687.



196,687. PIANO-FORTE ACTIONS. John Brinsmead, London, Great Britain, assignor to John Brinsmead & Sons, same place. Filed Jan. 2, 1878.

Claim.—In a piano-forte action, the spring *t* and loop or cord *s*, in combination with the slotted hopper *v*, having the inclined surface or projection *v'*, and the hammer-butt *k*, arranged to operate substantially as described.

196,688. MILLSTONE-EXHAUSTS. Daniel Brubaker, Mansfield, Ohio. Filed Dec. 12, 1877.

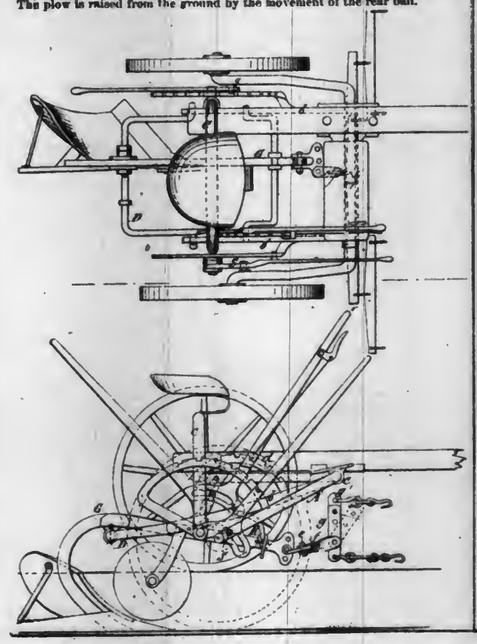


Claim.—1. The fan H and tubes F, I, and D, in combination with the air-regulating chest E, air-tight conveyer-case L, conveyer K, and delivery-spout C, constructed and arranged for the purpose specified.

2. The regulating-chest E, with the adjustable slides J, in combination with the cold-air inlet P, tubes D, F, and I, and fan H, constructed and arranged for the purpose set forth.

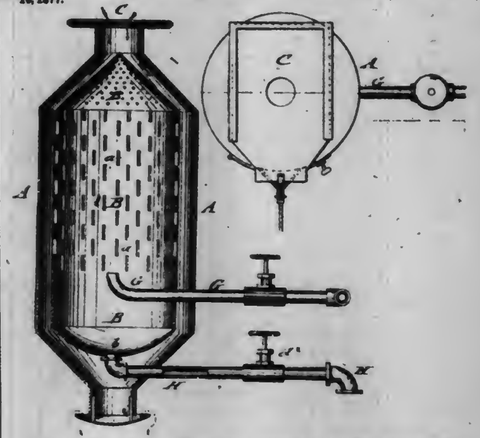
196,689. SULKY-PLOWS. Elijah C. Budd, Prairie Green, Ill. Filed Oct. 6, 1877.

Brief.—The plow is mounted upon a frame supported upon two wheels. The rear part of the frame forms a bail, to which the beam is adjustably attached near the rear end. The forward end of the beam is supported in a stirrup attached to a loose bail pivoted in the stationary frame of the machine. The plow is raised from the ground by the movement of the rear bail.



Claim.—The combination, with plow-beam G, pivoted to frame D, of the loosely-swinging yoke D, attached to plow-beam by a loop that slides thereon, as shown and described, for the purpose specified.

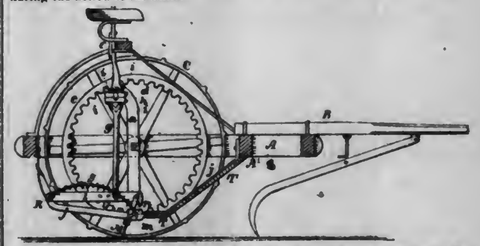
196,690. WHEAT-STEAMING APPARATUS. John Burkholder, Centreburg, Ohio. Filed Oct. 16, 1877.



Claim.—The improved wheat-steamer composed of the outer conical-ended vessel A, having the centrally-perforated top or slide C, and the inner vessel B, having the perforated conical top, the imperforate conical bottom, and a slitted body, and the pipes G and H, all combined as shown and described, for the purpose specified.

196,691. CORN-STALK CUTTERS. Milton Clark and Charles A. Heckel, Decatur, Ill. Filed Nov. 15, 1877.

Brief.—Knife pivoted to two horizontal hinged bars pivoted to the pitmen, so as to give a draw-cut to said knife, which can swing back and forth and is pressed forward by a spring after having been thrown rearward. Breaker constructed with an inclined and a horizontal portion, the inclined part serving to break down the stalks, and the horizontal part to hold them during the action of the knife.

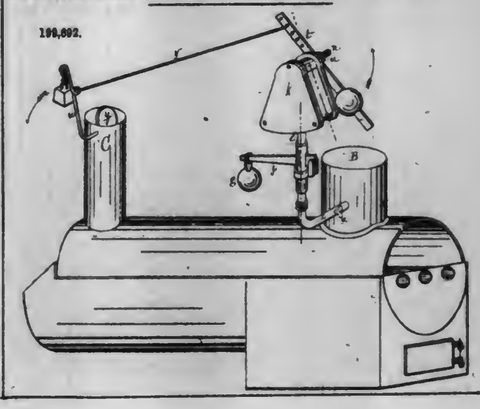


Claim.—1. The pivoted bars *l l*, in combination with the rods *m m*, knife M, pitmen *g g*, crank-rod D, pinion *d*, and cogged rim *e*, arranged so as to give the knife a draw-cut, substantially as and for the purpose set forth.

2. The spring S, in combination with the knife M, bars *l l*, and projections *n n*, substantially as and for the purpose set forth.

3. The breaker T, constructed with the horizontal and angling pieces, as shown and described.

196,692.



199,692. DAMPER-REGULATORS FOR STEAM-BOILER FURNACES. William R. Cole, Detroit, Mich. Filed Nov. 6, 1877.

Claim.—1. In a damper-controlling device, and in combination therewith, and with a pipe communicating with a steam-generator, and provided with a valve, a safety-valve wherein the disk-valves *b*, chest *c*, stem *d*, and weighted lever *f* are arranged to operate substantially as described, and for the purposes set forth.

2. In combination with a safety-valve, the port or ports *h* on one or both sides of the safety-valve lever, and in the support thereof, affording communication for the passage of steam from the chest *c* to the chamber *i*, substantially as and for the purposes specified.

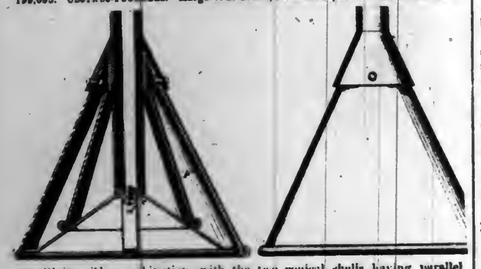
3. In combination with the safety-valve of a steam-generator, the triangular and segmental-shaped valve-case, provided with inlet and outlet ports, and the wing-valve, rigidly secured to a projecting shaft, substantially as and for the purposes described.

4. In a valve-case, and in combination therewith, the metallic strips *k'* and springs *p*, secured to the face of the wing-valve *m* by means of the clamp *o*, substantially as and for the purposes set forth.

5. In a valve-case provided with an outlet-port, *r*, the plug *s*, projecting from and secured to the face of a vibrating wing-valve, substantially as and for the purposes specified.

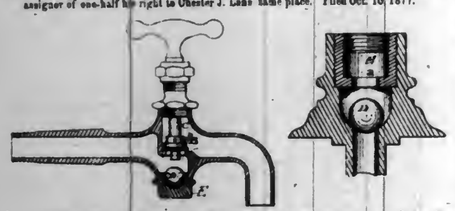
6. In combination with the shaft of a vibrating wing-valve, the perforated and weighted lever *t*, rod *u*, and weighted arm *v* of the damper, substantially as specified, and for the purposes set forth.

199,693. CLOTHES-POUNDERS. Margaret P. Colvin, Battle Creek, Mich. Filed Dec. 5, 1877.



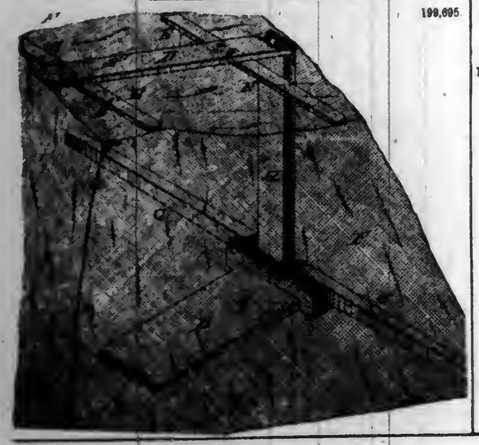
Claim.—The combination, with the two conical shells having parallel inclined sides, and forming the open concave space in the bottom of the pounder, of the collar or sleeve fitting about the spindle and connecting the shells together, the outer one of said shells being provided with the strengthening cap-piece, which secures the shell to said spindle, substantially as set forth.

199,694. CHECK-VALVES FOR BIB-COCKS AND FAUCETS. Orrin Collier, Sacramento, Cal., assignor of one-half his right to Chester J. Lane same place. Filed Oct. 10, 1877.



Claim.—The combination, with a cock or faucet having main valve B, of a ball check-valve, D, and a screw plug, E, for allowing the ball check-valve to be removed from the cock or faucet when desired, constructed substantially as described and shown.

199,695.



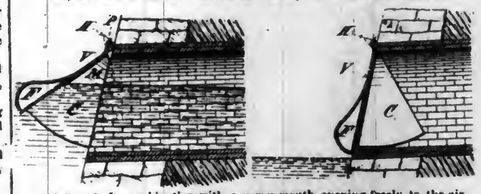
199,696. PORTABLE MOSQUITO-BARS. Albt. A. Cowing, Watkins, N. Y. Filed July 17, 1877.

Claim.—1. The bar or base B, in combination with the standard A and a suitable frame-work for supporting the net, substantially as and for the purpose set forth.

2. The standard A, base B, side bars C, and the upper folding longitudinal bar D, substantially as and for the purpose set forth.

3. The standard A, folding base B, folding arms C, folding bar D, folding arms E, and net F, constructed and arranged substantially as and for the purpose set forth.

199,696. SEWER-VALVES. John Dikeman, Brooklyn, N. Y. Filed Nov. 24, 1877.



Claim.—1. In combination with a sewer-mouth opening freely to the air, and exposed to entering currents of air, a valve closing by gravity, for the purpose of closing the mouth of said sewer against entering currents of air, but allowing the escape of the sewage, substantially as described.

2. In combination with a sewer having its mouth-opening between high and low water, a valve closing by gravity and opening by means of a float attached to said valve, whereby the mouth of the sewer is constantly sealed, while the weight of the valve is taken from the escaping sewage when the mouth of the sewer is sealed by the water, substantially as described.

3. My improved sewer-valve having a float, F, and the entrance-closing flaps C, substantially as described.

4. My improved sewer-valve V, having a float, F, flaps C, and shoulder H, substantially as described.

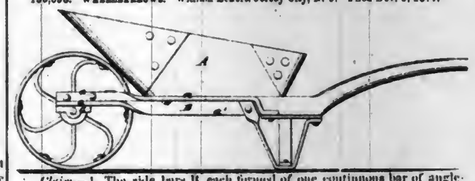
5. My improved sewer-valve V, provided with the entrance-closing flaps C, adapted to exclude currents of air from the mouths of sewers exposed thereto, substantially as described.

199,697. BUTTER-SHAPERS. Wm. H. Dulaney and Theophilus Dulaney, Peterstown, W. Va. Filed Nov. 26, 1877.



Claim.—The method herein described of preparing butter for market, consisting in placing a circular band or hoop with overlapping ends into a ring-shaped former, then filling and stamping the butter into the band, and finally securing band and stamped butter by a suitable retaining device, substantially as set forth.

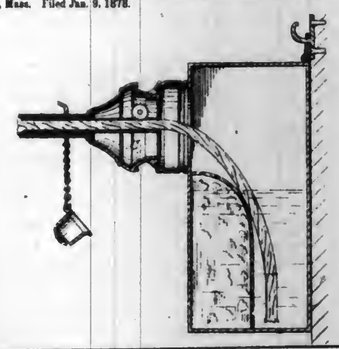
199,698. WHEELBARROWS. William Eckert, Jersey City, N. J. Filed Nov. 9, 1877.



Claim.—1. The side bars B, each formed of one continuous bar of angle-iron, twisted one fourth of a turn, as shown, in order to present its flanges *a a'*, each in its turn, in a horizontal position for the support of the box A and the wheel-shaft bearings C of a wheelbarrow, in the manner and for the purpose substantially as specified.

2. The curved angular bar iron brace H, in combination with the twisted side bars B, substantially as and for the purpose specified.

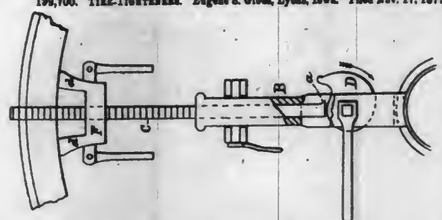
199,699. LAMPS. George F. Geer, Concord, assignor of one-half his right to Geo. L. Dames, Boston, Mass. Filed Jan. 9, 1878.



Claim.—1. In combination with a lamp having a horizontal wick-tube, the curved diaphragm for facilitating the adjustment of the wick, substantially as specified.

2. The combination, with the lamp and its horizontal wick-tube or burner, of a perforated or foraminous diaphragm and the absorbent packing or filling for distributing the oil to the wick, substantially as specified.

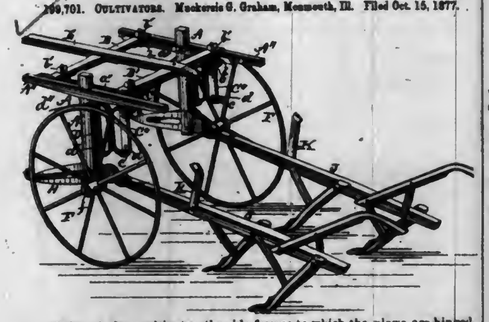
199,700. TIRE-TIGHTENERS. Eugene S. Gibbs, Lyons, Iowa. Filed Nov. 17, 1877.



Claim.—1. The movable head F, adjustable vertically on the rock-bar C, and provided with the arms *d d*, in combination with the standard B and cam D, substantially as and for the purposes described.

2. The spoke-clamp K, hinged or pivoted to the standard B, and having jaws hollowed to fit the surface of the spoke, and adjustable in length to suit different-sized wheels, substantially as described.

199,701. CULTIVATORS. Mackenzie G. Graham, Monmouth, Ill. Filed Oct. 15, 1877.



Claim.—1. In a cultivator, the side frames to which the plows are hinged or journaled, combined with one or more bars, B, having guides, by which they are connected with the side frames, and whereby the said side frames may be slid or reciprocated upon the bar or bars B, to advance or recede either of the side frames while they are held at uniform distances apart, and the bar or bars B remain at right angles to the line of progression of the machine and in a horizontal position, substantially as specified.

2. The guide pole or tongue E, bolted to the bar B, and arranged to operate with the sliding frames A, plows J J, and wheels F, without interfering with the sliding or parallel motion of the frames, substantially as and for the purpose specified.

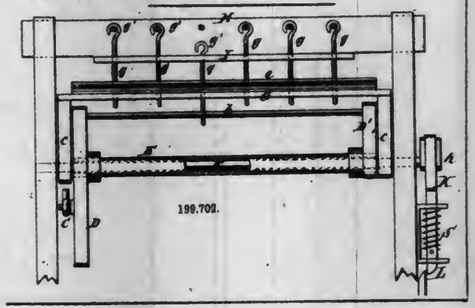
3. The extensile and contractile yoke C D, arranged to operate with the standards A', to which the cultivator-plows J are attached, substantially as and for the purpose specified.

4. In combination with an extensible yoke, C D, and bar B, to which the tongue E is bolted, frames A, having plows J and wheels F attached thereto, and arranged to operate substantially as described, and for the purpose specified.

5. The bar or bars B, combined with the bars *a''*, on which they slide, and with the standards A', plows J, and wheels F, substantially as described, and for the purpose specified.

6. The bars B B', having adjustable loops *b* on their ends, combined with the frames A, plows J, and wheels F, substantially as and for the purpose specified.

7. The draft-plates H, rigidly attached to the standards A', and having extended rear ends A', to which the plows J are connected, combined with the sliding frames A, wheels F, bars B, and tongue E, substantially as described, and for the purpose specified.



199,702.

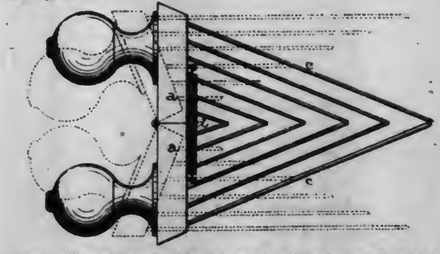
199,702. STOP-MOTIONS FOR WARPING-MACHINES. John B. Greenhalgh, Uxbridge, Mass. Filed July 30, 1877.

Brief.—For stopping the machine when a thread breaks. A slotted plate is attached by arms to the shaft which carries the trip. When a thread breaks, its wire drops through the slotted plate and is struck by the vibrating rod. The plate being carried along with the rod in its vibration causes the trip to oscillate, lifting the latch and freeing the belt-shifter.

Claim.—1. The combination, in a warping-machine, of the swinging slotted plate G, having arms *a* and guides *c*, the vibrating rod *b*, having arms D D', and the solid shaft F and tubular shaft E, with the drop-wires *g*, perforated guide-board H I, and mechanism, as described, for connecting the same with a belt-shifting device or stop-motion, substantially as herein set forth.

2. The combination of the yoke K, latch L, spring S, belt-shifting lever N, and spring *s* with the shaft F, having oscillating trip *h*, drop-wires *g*, slotted plate G, and rod *b*, as and for the purpose set forth.

199,703. CRANBERRY-PICKERS. Luther Hall, Zebina Hall, and Wm. Crowell, Dennis, Mass. Filed Sept. 24, 1877.



Claim.—The combination of the two boards *a*, hinged together and provided with the wires *c* and handles, with the springs *d* for closing them, substantially as shown and described.

199,704. DISH-WASHERS. Emma S. Hampton, Detroit, Mich. Filed July 23, 1877.

Brief.—The dishes are placed within a wire cage, which is set in a boiler. A smaller wire cage is placed within the whole, which receives and protects the dishes from the dasher.



Claim.—The cage C, with its guard-cage C' and the dash B, in combination with the boiler A and its perforated cover A', substantially as and for the purpose set forth.

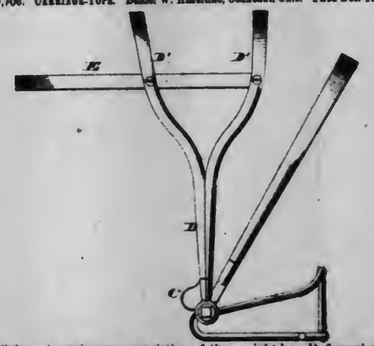
199,705. BAG-HOLDERS. Aaron L. Hatfield, Constantine, Mich. Filed Nov. 7, 1877.



Claim.—1. The combination of the pivoted jaw F and pivoted bail G, for holding a bag, substantially as described and shown.

2. The combination, with the vertical rod C, of the adjustable block D, carrying the pivoted jaw F and pivoted bail G, constructed and arranged substantially as described and shown.

199,706. CARRIAGE-TOPS. Daniel W. Hazeltine, Conneaut, Ohio. Filed Dec. 15, 1877.



Claim.—A carriage-top consisting of the upright bow D, formed with the two supplemental bows D', branching diagonally from its upper body portion, while its lower body is provided with spring C, connecting it to the finger-iron

B', in combination with the horizontal bow E, which does not project rearward of the rear one of the supplemental bows, and the independent bow F, substantially as set forth.

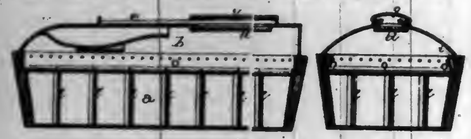
199,707. GRATE-BARS FOR FURNACES. Nicolaus Hensel, Prag, and Paul Wilhelm Liebich, Teplitz, Austria. Filed Nov. 6, 1877.



Claim.—The hollow grate-bar A, having diagonal knife-edge ribs *d*, and diagonal perforated blades *g*, combined with the slotted sides *e e*, substantially as herein shown and described.

199,708. METALLIC BURIAL-CASES. Michael M. Herrman and George Herrman, Herrman, Ill. Filed Dec. 27, 1877.

Brief.—The cement-groove is first formed by a double bend of the top edges, and is then furnished with holes, to which the lining may be sewed.

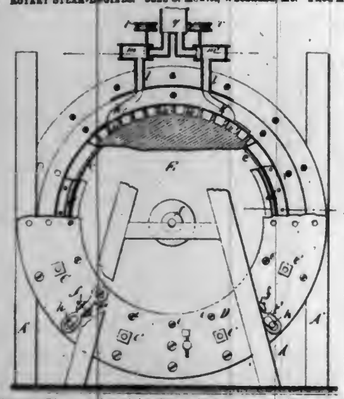


Claim.—1. The lid *b*, provided with the ways or guides *s* and slide-lid *g*, for the purpose of protecting the glass *d*, substantially as shown.

2. The V-shaped braces, having a sharp point at their upper end for the purpose of supporting the lining of the coffin in position, substantially as specified.

3. In a burial-case or coffin, the groove *c*, formed by turning over the top edge of the sides, which edge is also furnished with a series of holes for the attachment of the lining, substantially as shown.

199,709. ROTARY STEAM-ENGINES. John S. Hewitt, Wheatland, Mo. Filed Aug. 11, 1877.

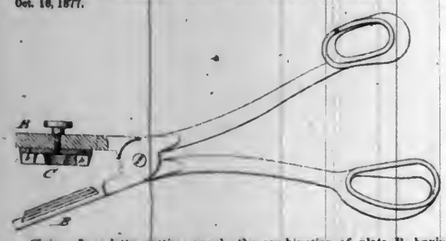


Claim.—1. The annular plates D, having the ports *k k'*, the piston-disk E, having buckets *b*, and rims *c*, and the packing *d*, in combination, substantially as shown and described.

2. The levers F, bolts *f*, bolts *h*, having nuts *g*, and the annular plates D, in combination, substantially as shown and described.

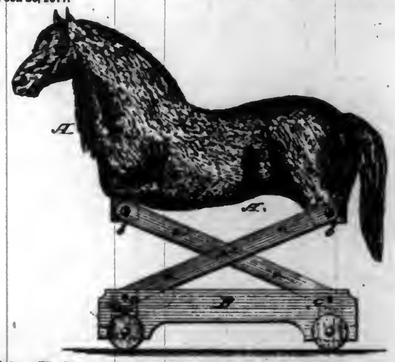
3. The steam-chests *m m' i*, valves *n p*, pipes *r*, and exhaust-receiver *q*, in combination with the casing D and wheel E, substantially as shown and described.

199,710. PUNCHES FOR CUTTING LETTERS. Jean A. Hitter, Jr., St. Martinsville, La. Filed Oct. 16, 1877.



Claim.—In a letter-cutting punch, the combination of plate B, having center hole and set-pins, with a detachable cutting-punch, C, having holes registering with the center hole and pins, and with a fastening clamp-screw, substantially as and for the purpose described.

199,711. HOBBY-HORSES. Thomas J. Hobbs and Leonard Hunting, Baldwinsville, Mass. Filed Oct. 26, 1877.



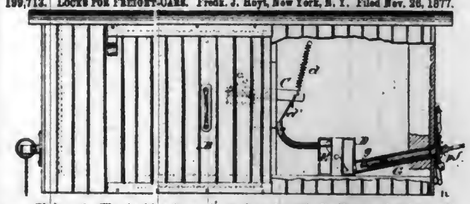
Claim.—The horse A, in combination with the pivoted bars *a*, pivoted at the ends of the horse and to the frame H, crossing each other at *a'*, having a longitudinal motion, and forming a rocking-horse without the use of rockers or springs, constructed and arranged substantially as set forth.

199,712. ROLLERS FOR DRAIN-TILE MACHINES. Abraham Horrocks and Edward D. Stevens, Bardolph, Ill. Filed Aug. 9, 1877.



Claim.—A roller for brick or drain-tile machines composed of a center core, *a*, of either wood or metal, and an outer porous covering, B, of sulphate of lime, (plaster-of-paris,) substantially as described, and for the purpose set forth.

199,713. LOCKS FOR FREIGHT-CARS. Fredk. J. Hoyt, New York, N. Y. Filed Nov. 26, 1877.

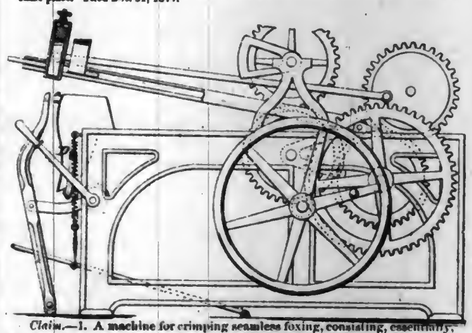


Claim.—1. The locking-lever C, spring *d*, cord *d'*, disengaging-lever E, and key G, in combination, substantially as herein shown and described.

2. The hook *l*, projecting from the end of the car, for retaining the key G in the tube F, as herein shown and described.

3. The folding hasp *b*, in combination with the door H, having the recess *a*, substantially as shown and described.

199,714. MACHINES FOR CRIMPING SEAMLESS FOXINGS FOR BOOTS AND SHOES. Henry Hubel, New York, N. Y., assignor to Hieronymus Herold, Julius Herlod, and Jacob Zwicker, same place. Filed Dec. 31, 1877.



Claim.—1. A machine for crimping seamless foxing, consisting, essentially, of a fixed crimping-block, of suitable devices for retaining the foxing on the block, and of intermittently swinging and reciprocating crimping-jaws that stretch and shape the foxing to the crimping-block, substantially as and for the purpose described.

2. The combination of the fixed crimping-block, having front pins and sliding side jaws, with a lever-acted tongue-holding jaw, fitting on the pins, and with treadle-acted swinging side jaws, that close on or open from the sliding jaws to secure or release the foxing, substantially as described, and for the purpose specified.

3. The combination of the fixed crimping-block with the correspondingly-shaped front jaw, having adjustable cheeks, and with the sliding and guided rear jaw, having beveled edge, substantially as described, and for the purpose specified.

199,715. PUNCHES FOR METAL. Samuel E. Jenkins, Nashville, Tenn. Filed June 30, 1877.

Brief.—The supplemental cutters remove the ragged edges left by the main punch.



Claim.—The spiral shears or supplemental cutters B B', in combination with the punch A, the same being constructed, arranged, and operated in the manner and for the purpose substantially as herein set forth, shown, and described.

199,716. STIRRUP-SUSPENDERS FOR RIDING-SADDLES. Larkin F. Johnston, Pocahontas, Ark. Filed Oct. 6, 1877.



Claim.—As an improved manufacture, the device hereinbefore described, consisting of the rectangular case B, having parallel slots E E and G G at top and bottom to receive the stirrup-straps, the interior shoulders H H, the plate C, made narrower than the case to allow the lower strap to pass over it, and the spiral spring A, all constructed and arranged as shown and described.

199,717. CARTRIDGES. Owen Jones and Frank W. Marston, Philadelphia, Pa. Filed July 10, 1877.



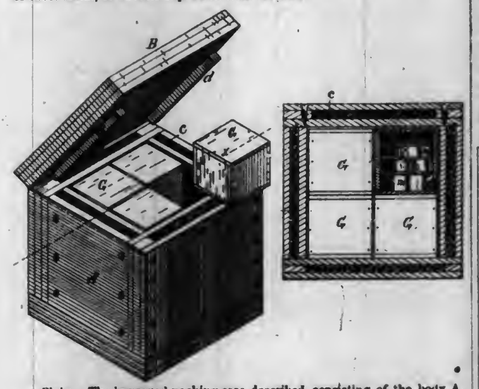
Claim.—1. The cartridge A, having the flanges *a* and *a'*, as and for the purpose described.

2. The cartridge A, having the flanges *a a'* and swell *a²*, as described.

3. The cartridge A, having an auxiliary flange with polygonal sides, as described.

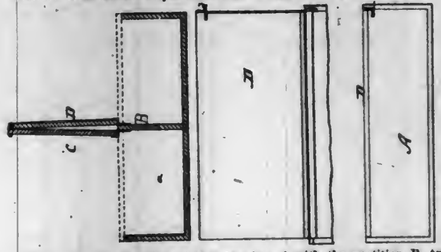
199,718. PACKING-CASES. William Jordan, Waterville, Me. Filed Jan. 7, 1878.

Brief.—The cover may be hinged or not, preferably not. Then it is furnished with four flanges to compress the packing. Flanges, preferably of tin or sheet metal, to obviate expansion from moisture.



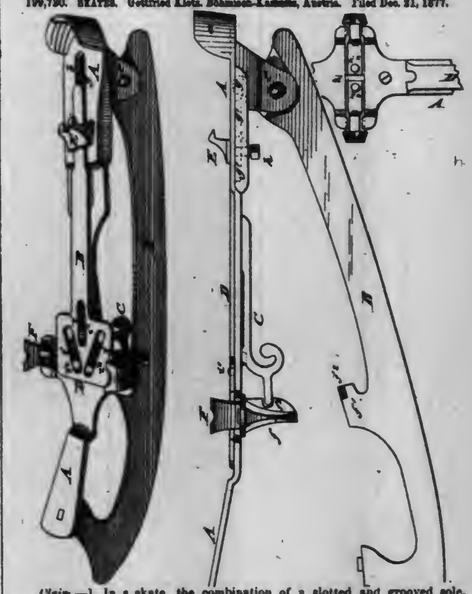
Claim.—The improved packing-case described, consisting of the body A, provided with the chambers *c*, packed with wool, the cover B, provided with the wool-packed chamber *c* and flanges *d*, and the cubical boxes G, constructed, combined, and arranged to operate substantially as and for the purpose set forth and specified.

199,719. CIGAR-BOXES. Leopold Kaufmann, New York, N. Y. Filed Dec. 4, 1877.



Claim.—The combination of the cigar-box A with the partition B, two lids, C D, and with the catches *d* on said lids, all arranged so that said lids will support each other and hold each other by their catches in vertical position, substantially as specified.

199,720. SKATES. Gottfried Kletz, Bohmisch-Kamnitz, Austria. Filed Dec. 21, 1877.

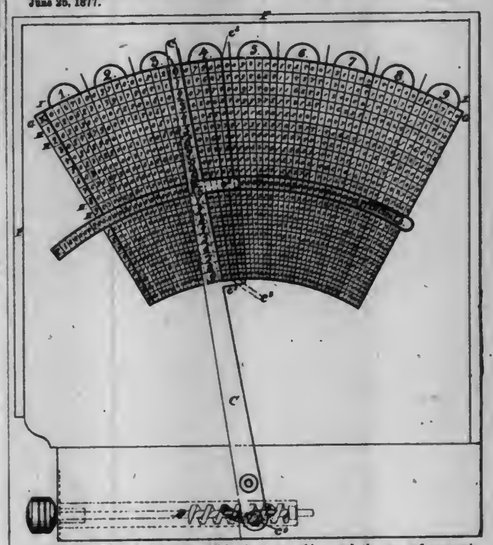


Claim.—1. In a skate, the combination of a slotted and grooved sole-plate, having sliding and slotted guide-plates and clamp-screw, and adjustable heel and sole clamps, with the runner, pivoted to the heel part of the sole-plate, and engaging the slotted rear guide-piece by a projecting lug, to operate the heel and sole clamps, substantially as set forth.

2. The combination, in a skate, of the sole-plate A, having longitudinally and laterally recessed post *f*, and lock-spring C, with pivoted runner B, having raised part *f'*, with lug *f²*, substantially as specified.

3. In a skate, the combination of the sole-plate A, laterally sliding sole-clamps F, sliding and slotted guide-plate D, and connecting guide-piece *g'*, and adjustable heel-clamp E, with clamp-screw *h*, to adjust the clamps to any size of foot, substantially as set forth.

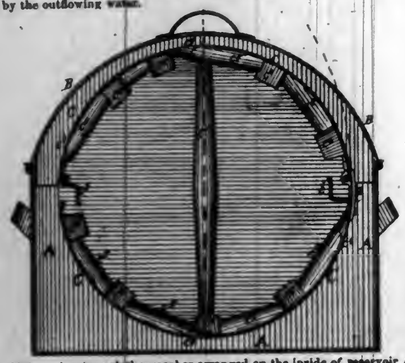
199,721. DEVICES FOR CALCULATING PERCENTAGE, &c. J. Lee Knight, Topeka, Kans. Filed June 26, 1877.



Claim.—The combination, with the two tables and the arc, of approximate principals of the indicator C, having upon its upper part the ten digits, and upon its lower part the nine significant figures, placed opposite the series of combinations of the two tables, pivoted at the center from which the arcs of said tables are struck, and adjusted by a swiveled screw and pin, or equivalent device, substantially as herein shown and described.

190,722. BOILER WASHING-MACHINE. John P. La Grange, Ashtabula, Ohio. Filed Nov. 8, 1877.

Brief.—The flanges *c* on the inside of the cylinder prevent the clothing from being drawn into the water-spaces between the two sections of the cylinder by the outflowing water.



Claim.—A rotary clothes-washer arranged on the inside of reservoir A B, and having water-spaces between the adjacent edges of its stationary and movable parts, said spaces being covered on the inside by flanges *c*, as shown and described.

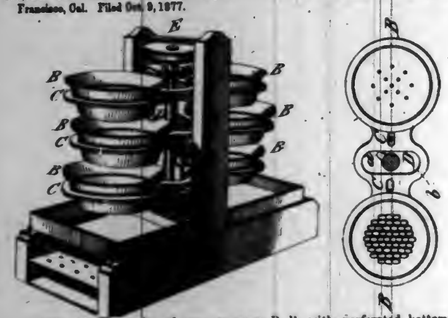
190,723. POWDER FOR CANNON. Theodore T. S. Laidley, U. S. Army. Filed Oct. 1, 1877.

Brief.—The grains are formed by pressing the cake in an apparatus provided with wires for making the perforations, and afterward breaking into cubical grains, and tumbling in a barrel to remove the angles.



Claim.—Gunpowder consisting of cubical grains, each grain being perforated centrally through two opposite sides, and having the angles rounded off, substantially as described, and for the purpose specified.

190,724. ORE-AMALGAMATOR. Jean Baptiste Le Clere and Maximilian A. Cochet, San Francisco, Cal. Filed Oct. 9, 1877.

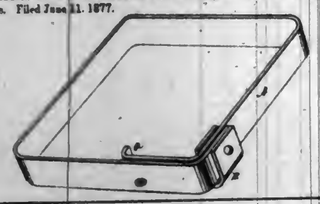


Claim.—1. The series of cups or pans B B, with perforated bottoms arranged vertically, one over the other, in supporting rings or frames C C, to which a vibratory motion is given, the said cups or pans containing and being used in combination with a series or number of balls or globules of lead or silver coated with quicksilver, constructed and arranged to operate together substantially as set forth.

2. In combination with the series of vibrating cups or pans B B, arranged and actuated substantially as hereinbefore described, the series of troughs or trays F F¹ F² and inclined perforated and coated plates G G¹, arranged as herein described, for the purpose set forth.

3. The combination, with the series of frames C, carrying cups or pans B, arranged as described, of the vertical cam-shaft E, for imparting a vibrating motion to such frames and cups, substantially as and for the purposes set forth.

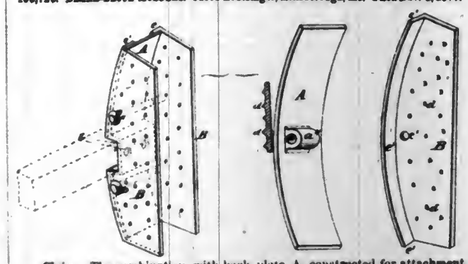
190,725. BALE-TIES. Wm. R. Lenard, Waco, Tex., assignor to himself and Jos. S. Rodecker, same place. Filed June 11, 1877.



Claim.—1. A bale-band having its end bent at right angles, thereby forming a hook for engagement with the bale-cover, substantially as described.

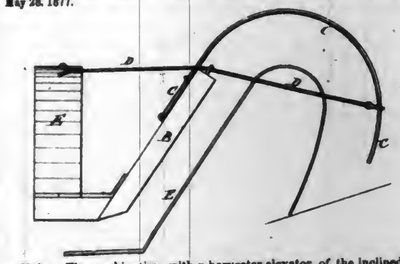
2. The bale-band herein described, provided with the portion *a*, bent at right angles to the band, and adapted to engage with the bale-cover, and having the U-shaped clasp B, substantially as set forth.

190,726. BRAKE-BLOCK HOLDERS. Jacob Leutzinger, Hillsborough, Mo. Filed Nov. 2, 1877.



Claim.—The combination, with back plate A, constructed for attachment to a wagon-lever or brake-bar, of the two side plates B B, provided with flanges at right angles thereto, and adapted to be held by one or more bolts, detachably, to the back plate and brake-bars, as shown and described.

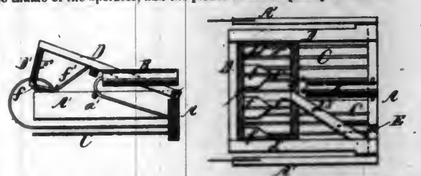
190,727. HARVESTER CUT-OFFS. Alonzo L. Long and Edgar C. Long, Big Rock, Ill. Filed May 28, 1877.



Claim.—The combination, with a harvester-elevator, of the inclined board or bar B, the curved spring-wires C, the cord D, and the treadle E with the seat-board A of a harvester, for cutting off or separating and interrupting the grain while a gavel is being removed from the trough, substantially as herein shown and described.

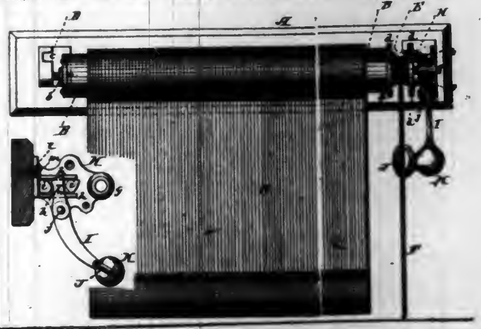
190,728. CRANBERRY-PICKERS. Daniel Lambert, Marston's Mills, Mass. Filed Aug. 16, 1877.

Brief.—The frame D, having the bent wire *f* and the accompanying plate *f* attached thereto at the rear, is pivoted in front of the handle, and thrown up by means of a spring. When the picker is operated it is pressed upon the bushes, and the berries projecting through the frame D is pressed down by the thumb of the operator, and the picker is drawn quickly backward.



Claim.—The frame A A′, with its toothed bottom C, the spring E, and the movable frame D D′, with its strippers *f*, constructed and arranged as and for the purpose set forth.

190,729. CURTAIN-FIXTURES. Ferdinand C. D. McKay, Paterson, N. J. Filed Dec. 10, 1877.



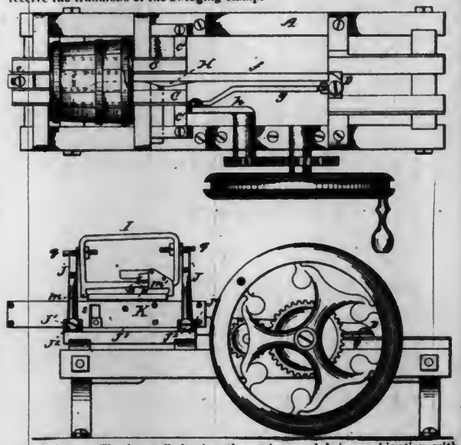
Claim.—1. The standard H, in combination with the slide *i*, lever I, and lug or lugs *e e*, substantially as and for the purpose set forth.

2. In a curtain-fixture, the roller B, having head E and lugs *a a*, in combination with the transversely-slotted slide *i*, lever I, provided with weight K, and opening or ring J, substantially as and for the purpose set forth.

3. The standard H, provided with flanges A and journal-bearing *g*, in combination with the transversely-slotted slide *i*, lever I, and lugs or projections *e e*, substantially as and for the purpose set forth.

190,730. MACHINES FOR DRESSING STAVES. Horace H. Miller, Lyndonville, Vt. Filed Oct. 11, 1877.

Brief.—A tub or similar wooden vessel is automatically rotated while the inner surfaces of the staves are being dressed in the direction of their length by a reciprocating plane. The outer surface and one edge of the staves are simultaneously dressed and jointed by a reciprocating plane having a face and a side cutter, while held in a swinging clamp mounted upon two vertically-adjustable standards provided with a series of sockets in their upper parts to receive the trunnions of the swinging clamp.



Claim.—1. The lever G, having the spring-pawl *k*, in combination with the ratchet or toothed wheel F upon the shaft of the cylinder or vessel rotating belt, and the cam H upon the plane-arm *f*, substantially as and for the purpose set forth.

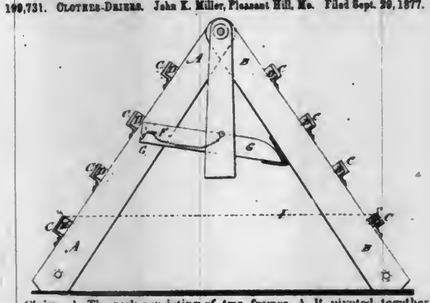
2. The supports or standards J J, having the sockets *r r′*, in combination with the eyes or sockets J′ J′ and set or adjusting screws J³ J³, substantially as and for the purpose set forth.

3. The stave-holding device or clamp, consisting of a frame with axes or trunnions *q q*, stationary and movable jaws *m m′*, and mechanism for operating the movable jaw, substantially as and for the purpose set forth.

4. The stave-holding device or clamp I, in combination with the supports or standards J J, having the upper and lower sets of sockets *r r′*, substantially as and for the purpose specified.

5. The device or clamp I for holding the stave, in combination with the standards or supports J J, having the sockets *r r′*, and the plane K, having upper and side bits, substantially as and for the purpose set forth.

190,731. CLOTHES-DRIERS. John K. Miller, Pleasant Hill, Mo. Filed Sept. 20, 1877.



Claim.—1. The rack consisting of two frames, A B, pivoted together at top, adjustable to different distances apart by hinged spacing-bars G, and provided with open keepers C, as and for the purpose specified.

2. The combination of the canvas I and bars H with the bars A B, the hooks C, and the hinged bars G, substantially as herein shown and described.

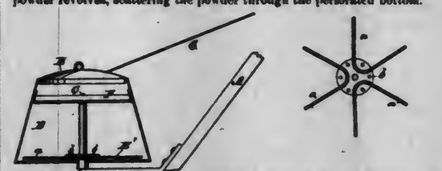
190,732. WATCH-CROWNS. Alexander Milné and Armand Jourdain, Newark, N. J. Filed Dec. 18, 1877.



Claim.—A watch-crown made of an inner shell, with central screw-socket, and of an exterior covering-shell, substantially as and for the purpose set forth.

190,733. POWDER-DUSTERS FOR DESTROYING INSECTS. Matthew Moore, Whippany, N. J. Filed June 30, 1877.

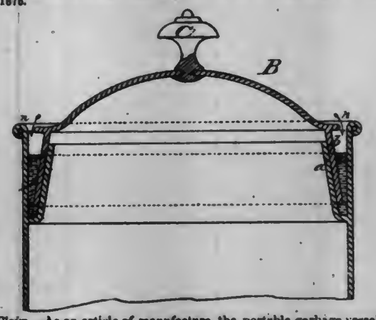
Brief.—The agitator is stationary, while the receptacle containing the powder revolves, scattering the powder through the perforated bottom.



Claim.—1. The receptacle D, having a cover, E, for its upper end, a perforated bottom, and a supporting cross-bar, F, located below its said upper end, in combination with the agitator E′, the rod A, having angular shank and standard C, the connecting-rod G, lever H, and the straps I, substantially as and for the purpose described.

2. The agitator consisting of the clamp-plates *b b* and the stirrers *a*, bent in the middle and secured as described, in combination with the receptacle having perforated bottom, as and for the purpose described.

190,734. ODORLESS GARBAGE-RECEIVERS. James G. Moore, Philadelphia, Pa. Filed Nov. 11, 1878.



Claim.—As an article of manufacture, the portable garbage-vessel herein described, consisting of a cylindrical body, having around its mouth an annular inside flange, forming a water-seal trough, and a convex lid, B, of less diameter than said mouth, to provide a channel or passage, *a*, between the margin thereof and the edge of said lid, and having a flange, *b*, extending down into said trough and binding upon its inner wall, constructed and arranged substantially as specified.

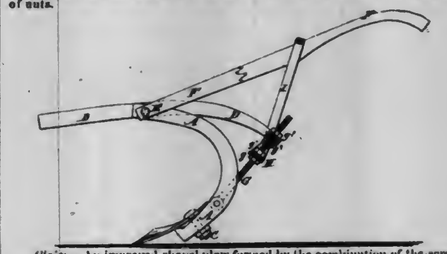
190,735. ENAMELING SHEET-IRON WARE. F. G. Niedringhaus and Wm. F. Niedringhaus, St. Louis, Mo. Filed Nov. 17, 1877.

Brief.—The acid added to the glaze causes a more nearly perfect oxidation of the metallic base.

Claim.—The combination, with the ordinary glaze used in making mottled enameled sheet-iron ware, of sulphuric or equivalent liquid acid, substantially as and for the purpose described.

190,736. PLOWS. Asa Newsom, Valdosta, Ga. Filed Dec. 6, 1877.

Brief.—The several parts of the plow-frame are pivoted together. The head of a bolt is secured to the lower part of the standard, and extends upward through the beam and handle-braces, which are each adjusted by pairs of nuts.



Claim.—An improved shovel-plow formed by the combination of the screw G, and its two pairs of nuts *g′ g′*, and the bent bars H I, with the curved slotted standard A, the beam D, and the handles F, substantially as herein shown and described.

190,737. ROTARY PUMPS. Alonzo Notoman, Toledo, Ohio. Filed Apr. 30, 1877.

Brief.—The piston-head is concentric to the case; abutment nearly a crescent, the ports passing through it; the pistons transverse, each having a guide-pin within it, and a spring, and separable at its center for expansion.

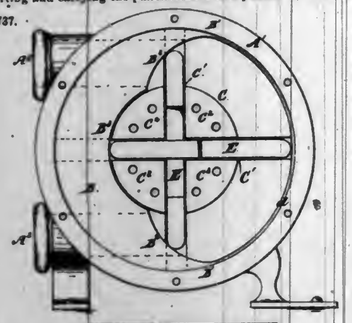
Claim.—1. The semicircular abutment B, constructed with the recess B′ and cam-surfaces B², and having its ends or points B³ extended past the central line or diameter of the cylinder A¹, and having through it water-passages communicating with the ports A² A³ and the inner chamber of the casing, in combination with the piston-head C and pistons E, substantially as set forth.

2. In a rotary pump, the head-plates D, constructed with the guide-channels D², in combination with the piston-head C and pistons E, for the purpose set forth.

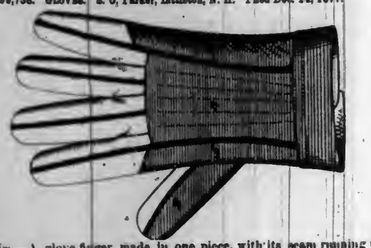
3. In a rotary pump, the pistons E E, constructed as described, and divided into the equal parts E' E', and held in line by the pin *e* in holes *e'*, and provided with the springs *e''*, and placed so as to move at right angles across each other, in combination with the piston-head C, having channels C' C', formed at right angles to each other, and head-plates D, constructed with channels D', substantially as set forth.

4. A rotary-pump casing, A, constructed with the cylindrical part A', having rabbets or packing-grooves *d* formed around its edges or rim, abutment B, and plates A' A', arranged and adapted to receive and retain the head-plates D, supporting and carrying the piston-head C and pistons E, as set forth.

190,737.

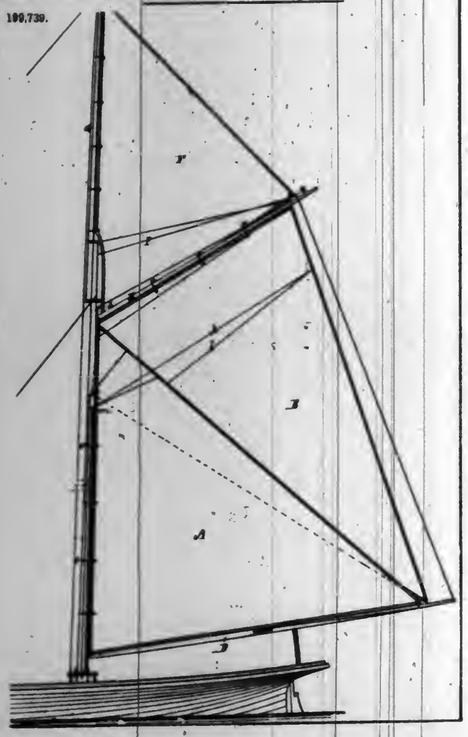


190,738. GLOVES. S. O. Parker, Littleton, N. H. Filed Dec. 14, 1877.



Claim.—A glove finger made in one piece, with its seam running up its back, substantially as herein shown and described.

190,739.



190,739. REEFING FORE-AND-AFT SAILS. Theo. Peterson, Boston, Mass. Filed Jan. 8, 1878.

Claim.—1. The sail B, applied to the gaff, and provided with inhauling, outhauling, brailing, and lap-setting ropes, as described, in combination with, and arranged substantially as described with, the sail A, as set forth, applied to the mast and boom, as specified.

2. The combination of the stationary gaff with the mast, top-mast, and boom, and the three sails A B F, provided with operating-lines, and arranged and applied substantially as set forth.

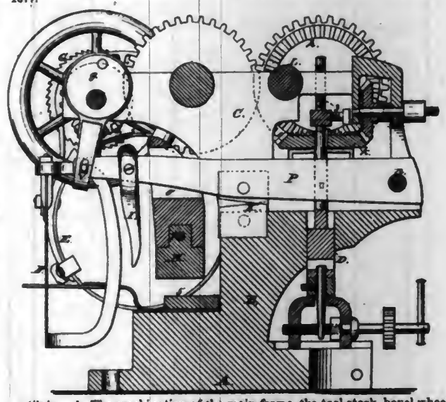
190,740. DOOR-SPRINGS. Adalbert W. Pierce, Oconto, Wis. Filed Jan. 3, 1878.

Brief.—Two brackets, each carrying a spring-arm, are attached—one to the door, the other to the jamb—the free ends of the arms being detachably connected together by a pin or otherwise, the construction allowing the device to be easily applied, permitting an extended movement, and by its ready detachability to be as easily thrown out of operation.



Claim.—The within-described spring, consisting of brackets A A' and spring-arms *b b*, connected together detachably at the ends, as and for the purpose described.

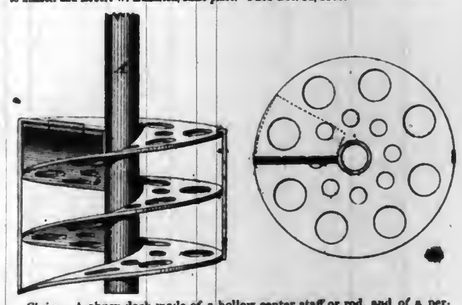
190,741. BLACKSMITHS' COMBINED MACHINES. August Pirch, Denver, Colo. Filed Sept. 3, 1877.



Claim.—1. The combination of the main frame, the tool-stock, bevel-wheel *k*, feed mechanism 3 3 4 4, and driving gear, substantially as and for the purpose set forth.

2. The combination of the main frame A B C, lever P, eccentric *g*, shaft *f*, tool-stock D, and driving-gear, relatively located and adapted as set forth, for the operation of a hammer, shears, swage, reciprocating saw, punch, and chisel, substantially as shown and described.

190,742. RECIPROCATING CHURN-DASHER. Wm. W. Primm, Murphysborough, Ill., assignor to himself and Robert W. Hamilton, same place. Filed Dec. 11, 1877.



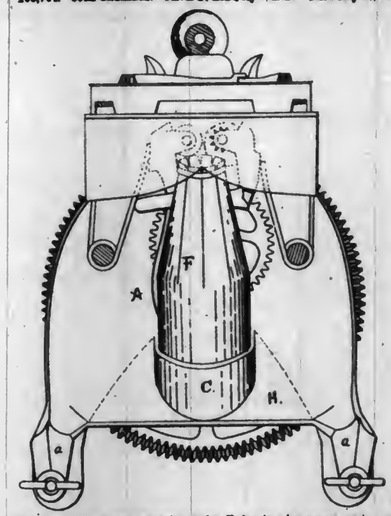
Claim.—A churn-dash made of a hollow center staff or rod, and of a perforated dash-plate, extending spirally around the staff, and having a hinged radial gate at the upper edge, substantially as described.

190,743. ENAMEL-COATED KNIFE AND FORK HANDLES. Theodore S. Ransom, Somerville, Mass. Filed Jan. 19, 1878.

Brief.—Applies the enamel described in Patents Nos. 63,428 and 67,679 to metal handles of knives and forks.

Claim.—The new manufacture herein described—knives and forks with metallic handles coated with the enamel herein specified, all substantially as set forth.

190,744. CORN-SHELLERS. Calvin D. Read, Ayer, Mass. Filed May 10, 1877.

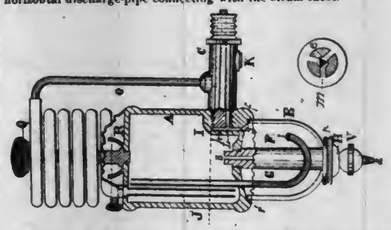


Claim.—1. The cob-separating tube F, having its upper part constructed with spring-sections turned inward, and at their upper extremity a little outward, to produce a taper form of tube somewhat flaring at the upper end, substantially as and for the purpose herein specified.

2. In a corn-sheller, a frame, A, constructed with an inclined corn-discharging bottom, H, a cob-discharging tube, C, and clamp-supports *a a*, the bottom H being arranged to extend past the line of the tube C, and the clamp being formed at the lower edge of said bottom, so that the corn will be discharged into, and the cobs be discharged outside of, a receptacle, to which the machine is attached by the said clamps, substantially as and for the purpose herein specified.

190,745. LUBRICATORS FOR STEAM-ENGINES. Samuel Reid, Chicago, Ill. Filed Sept. 22, 1877.

Brief.—The steam condenses in the coil and passes into the lower part of the oil-chamber, thereby forcing the oil upward to overflow into a pipe, and down through it into a glass reservoir filled with water, where the oil by its lighter specific gravity rises, and is readily observed as it passes on its way to the horizontal discharge-pipe connecting with the steam chest.



Claim.—1. The transparent liquid-chamber E, placed below the oil chamber, and combined with the water and oil pipes J G, whereby the oil, by its head above the water, in transparent chamber passes in pipe G down into the water, and by its less specific gravity, after it is forced from the pipe G, rises through the water in drops visible, to show the constant lubricating process, as and for the purpose set forth.

2. The combination of the transparent liquid-chamber E, oil-pipe G, water-pipe J, and condensing-coil B, provided with cock T, as specified.

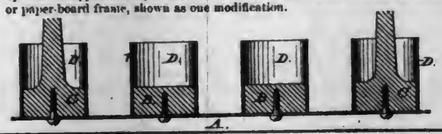
3. The flat-sided three-way cock, consisting of parts H U V, combined with a water-exit pipe, *d*, an induction and exit pipes, X W, annular groove *n*, and transparent chamber E, pipes G J, and hole S in pipe F, as and for the purpose set forth.

4. The valve *m*, in combination with stud K, provided with an annular groove and ports, the pipes L L', one placed higher than the other, cylinder C, and transparent chamber E, substantially as and for the purposes set forth.

5. The combination of the case A, transparent chamber E, and pipes J G, in a lubricator, as described and shown.

190,746. EGG AND FRUIT CARRIERS. Oscar Ricklefsen, New York, N. Y. Filed Jan. 21, 1878.

Brief.—The material of tubes may be rubber or other such elastic waterproof material. Some of the blocks for holding the tubes may be extended upward to support the layer above. The tubes may be clamped onto the wooden or paper-board frame, shown as one modification.

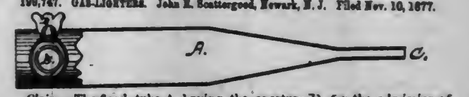


Claim.—1. A carrier for eggs, fruits, &c., consisting of the bottom plate A, provided with the blocks B and the elastic tubes D, arranged as shown, and for the purpose described.

2. A carrier for eggs, fruit, &c., consisting of the bottom plate A, provided with the blocks B, the elastic tubes D, and the blocks C, having the projections *c*, for supporting the upper layers of carriers, as and for the purpose described.

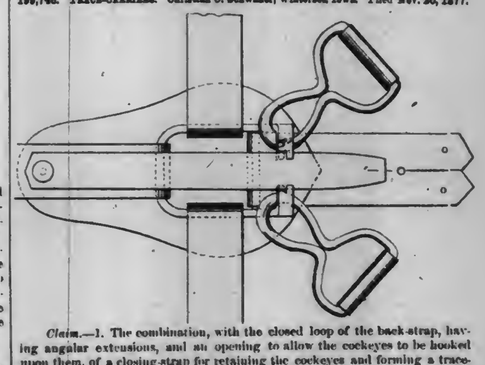
3. A carrier for eggs, &c., consisting of a bottom plate, A, provided with elastic tubular or solid pieces, D, of the material described, and arranged in such manner that the eggs, fruit, &c., are held and clamped between the four adjacent pieces successively, as shown, and for the purpose described.

190,747. GAS-LIGHTERS. John R. Scattergood, Newark, N. J. Filed Nov. 10, 1877.



Claim.—The fixed tube A, having the aperture D, for the admission of gas or air, to be closed by the stop-cock B, and having at the opposite end an aperture, C, for the exit of gas, substantially as and for the purpose specified.

190,748. TRACE-CARRIERS. Christian C. Schwaner, Winterset, Iowa. Filed Nov. 20, 1877.



Claim.—1. The combination, with the closed loop of the back-strap, having angular extensions, and an opening to allow the cockeyes to be hooked upon them, of a closing-strap for retaining the cockeyes and forming a trace-carrier, substantially as and for the purpose set forth.

2. The combination of the closed back-strap loop, having angular rear extensions with bent-down or recessed ends, with a closing-strap adapted to be inserted below the bent or into the recessed ends, substantially as described.

190,749. TOOLS FOR CUTTING LINES IN THE SOLE-EDGES OF BOOTS AND SHOES. Edward Boepee, Albany, N. Y., assignor to Nelson Lyon, same place. Filed Jan. 3, 1878.



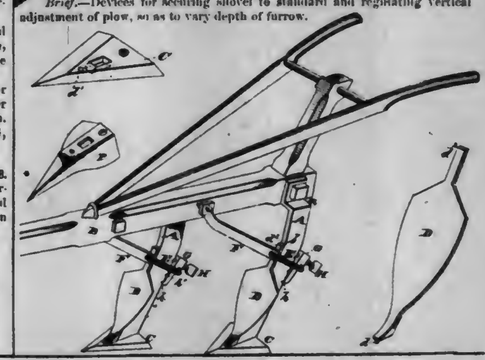
Claim.—1. In a tool for cutting parting-lines in soles of boots and shoes, the combination, with the shank A, gage-holder C, made with a convex surface, *e*, gage-plate D, made with a concave surface, *c*, and provided with slot *a* and set-screw *b*, of the cutter E, as set forth, for the purpose described.

2. The combination, with shank A, provided with recess *c*, and cutter E, of the clip-band F and binding-screw *g*, all arranged and operating substantially in the manner set forth, for the purpose specified.

3. In a tool for cutting parting-lines in soles of boots and shoes, the cutter E, made with V-shaped form, having cutting-edges *n* and *n'*, made concave in form, and with bevels *x* and *x'*, situated in relation to the said cutting-edges, in the manner substantially as shown and described, for the purpose set forth.

190,750. PLOWS. Archibald Sipe, River Bank, Va. Filed Oct. 26, 1877.

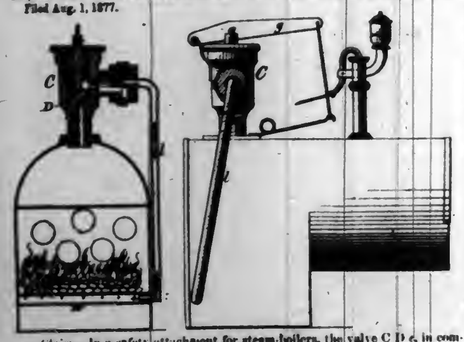
Brief.—Devices for securing shovel to standard and regulating vertical adjustment of plow, so as to vary depth of furrow.



Claim.—1. The combination, with pivoted standard A, swinging brace F, and shovel D, or other substantial plow working part, as described, of link E and wedge G, the latter being held in place by detent *h*, formed in same piece therewith, and engaging with notches on the rear side of the standard, together with set-screws H, having end bearing against the latter, substantially as set forth.

2. The combination, with share C or other substantial plow working part, as described, which engages with catch *c* and lug *c'*, formed on the lower end of standard A, of shovel D, or similar plow working part, made with lug *d*, which seats in slot *d'* of said share, the upper shank of the shovel being secured to the standard by the described vertically-adjustable clamping mechanism, substantially as set forth.

190,751. SAFETY ATTACHMENTS FOR STEAM-BOILERS. Geo. W. Smith, Hubbardston, Mich. Filed Aug. 1, 1877.



Claim.—In a safety attachment for steam-boilers, the valve C D *c*, in combination with, and connected to, the pipe *l* and perforated pipe *m*, arranged in proximity with the fire-grate, and connected to the pipe *l*, substantially as and for the purpose set forth.

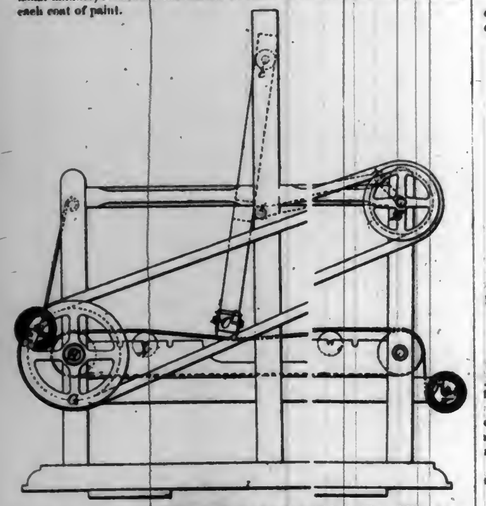
190,752. GRATES FOR STOVES AND RANGES. Saml. Smyth, Pittston, Pa. Filed Jan. 7, 1878.



Claim.—The two-part swinging grate-sections, having concave surfaces for the burning of coal, and convex exterior segments adapted to the burning of wood, or the reverse, substantially as set forth.

190,753. MACHINES FOR RUBBING OIL-CLOTHS. A. E. Snow, Philadelphia, Pa., assignor to Thomas Foster, same place. Filed July 31, 1876.

Brief.—To each side of a pumice-stone-coated rubbing-board is attached a square-edged scraper, and the rubber thus constructed is oscillated in the usual manner, to smooth the surface of oil-cloth or other fabric after receiving each coat of paint.



Claim.—In a machine for rubbing oil-cloth, the combination, with an oscillating rubber provided with a pumice-stone-coated rubbing-face, of one or more metallic scrapers attached to said rubber, substantially as and for the purpose set forth.

190,754. LAMP-EXTINGUISHERS. Charles W. Seale, Boston, Mass., assignor to Frank Tripp, same place. Filed Jan. 12, 1878.

Brief.—The plate H is held against the wick when the latter is elevated by a weight, I, and when it is depressed the weight carries the plate over the top of the wick, thus extinguishing the flame. This plate is cut out in its center, so that air can pass between it and the wick to feed the flame.

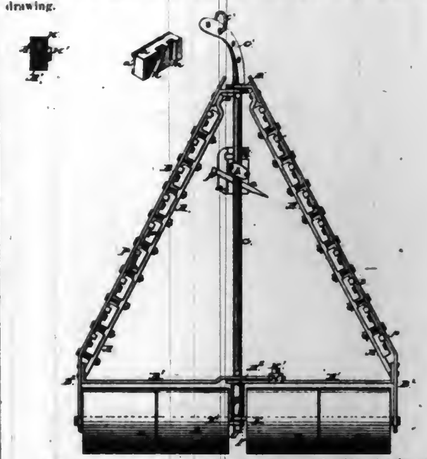


Claim.—1. In combination with the wick-tube A, the clasp C, brackets D D', having inclined slots E E', sliding pivots F, and extinguisher G H N I, constructed and arranged substantially as and for the purposes set forth.

2. In combination with the wick-tube A, the extinguisher-cap H, having the curved edge P, so as to form an opening between the said cap and tube, substantially as and for the purposes set forth.

190,755. HARROW AND ROLLER COMBINED. William M. Stebley, King William Court-House Va. Filed Aug. 31, 1877.

Brief.—The nature of the invention is fully shown in the claims and the drawing.

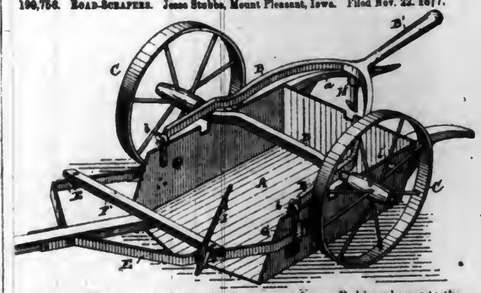


Claim.—1. In a non-reversible harrow, the combination of pairs of bars A B with plain bar-teeth *p*, held rigidly interposed between them by teeth-holding pieces *a*, rabbeted at *a'*, and socketed at *m* and *n* to secure the said teeth rigidly, adjustably clamped in vertical or inclined direction, in the manner as and for the purpose set forth.

2. The locking device, as described, consisting of the harrow transverse stays or scrapers A^1, clip H, bolt H', and draft-bar C C', all operating jointly to hold the otherwise flexibly-united side harrows A B A^1 rigidly extended, substantially as set forth.

3. Two harrows, A B A^1, each provided with a pair of rollers, R, inflexibly connected therewith, and with the transverse parts A^1, in combination with each other by means solely of the draft-bar C C', as set forth.

190,756. ROAD-SCRAPERS. Jesse Stubbs, Mount Pleasant, Iowa. Filed Nov. 22, 1877.



Claim.—1. In a road-scraper having a rear frame, B, hinged near to the front end of the scraper-box, and provided with wheels C, the draft-bars E, journaled to the box A in rear of the hinged connection of the bars B, substantially as described, and for the purpose specified.

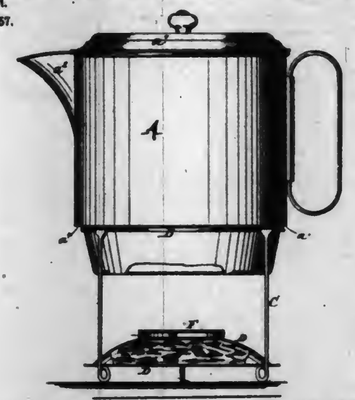
2. In a road-scraper having a rear frame, B, hinged near to the front end of the scraper-box, and provided with wheels C, the draft-bars E and lugs G, arranged to operate with the frames B E and box A, substantially as described, and for the purpose specified.

3. The latch I, pivoted to the frame, and arranged to operate with the pin *i* on the box A, substantially as and for the purpose specified.

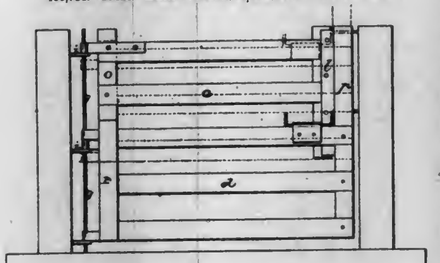
190,757. PORTABLE COOKING APPARATUS. Charles H. Turner, Boston, Mass. Filed Dec. 10, 1877.

Claim.—The combination of the boiler A, provided with the strainer *a'*, and the stove consisting of the tin receptacle D, with the perforated brass plate burner E and cover F, the legs C, and the ring B, said stove being made of a size fitting it to be placed inside the boiler A, as and for the purpose specified.

190,757.



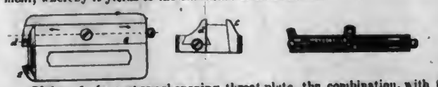
190,758. GATES. Morris W. Tucker, Sumner, Mich. Filed Nov. 15, 1877.



Claim.—In a gate, the combination of the two parts c *d*, the one, *d*, being vertically adjustable up and down, rod *g*, post *p*, and guide-plate *l*, the parts being constructed and arranged to operate substantially as shown and described.

190,759. THROAT-PLATES FOR BOOT AND SHOE SEWING MACHINES. Joseph S. Turner, Rockland, Mass. Filed Oct. 18, 1877.

Brief.—A throat-plate adapted to be attached to an ordinary wax-thread sewing-machine is provided with two guide-points, which enter the channels cut in the soles of boots and shoes, one of which is capable of lateral movement, whereby it yields to the curvature of said channel.



Claim.—1. In a channel-opening throat-plate, the combination, with the guide *c*, of the guide *d*, adapted to yield laterally to the curvature or position of the channel.

2. A fixed guide to enter and follow a channel at one side of the awl-passage, in combination with a guide at the opposite side of the awl-passage, adapted to yield laterally to the right or left of the fixed guide, substantially as and for the purpose described.

190,760. CORK-EXTRACTORS. Peter Tyrer, Melbourne, Colony of Victoria. Filed May 9, 1877.



Claim.—The independent wires *a a*, united at their centers at right angles to each other, and having their ends passed through the handle-rod A, in combination with the handle, as described.

190,761. DUMPING-CARS. Matthew Van Wormer, Dayton, Ohio. Filed Dec. 24, 1877.

Claim.—1. The combination, with the bed-plate C, of the jointed rocker-hinge bolt F, adapted to project through said plate and through the truck-timbers, and provided with the groove *j* and rib *k*, to conform to the upper face of said plate, and with the arched rib *g* and slot 2, adapting it for the socket A *h'*, substantially as shown, and for the purposes described.

2. The movable side bearings m, made with flanges *o* and groove *p*, adapted to the grooved and flanged plate *q r*, and provided with a projection, *s*, substantially as and for the purpose set forth.

3. In combination with the side bearings m, the shaft u, its arms *x*, rods *y*, and lever *z*, substantially as shown and described, and operating to move the side bearings off the truck-timbers and to replace them again.

4. In combination with the shaft u, the lever *z*, slotted lever *z'*, link 8, bar 6, and catches, substantially as shown and described, and operating to fasten and unfasten the doors, as set forth.

5. The combination, with the described devices for operating the side bearings m, and with the described devices for fastening and unfastening the doors of one hand-lever, *z*, operating in conjunction with the slotted link 8, for actuating both sets of devices consecutively by one continuous movement of said lever, as set forth.

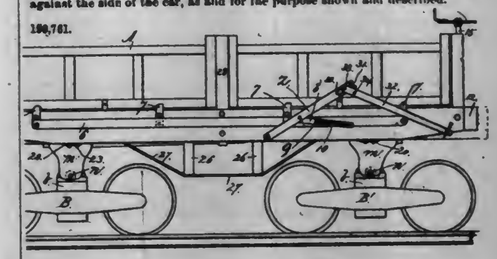
6. In combination with the longitudinal shaft 11 and its gear, the vertical shaft 15, and its gear, chains, or rope 18 and pulley 19, and the tuck-timbers, to which the chain or rope is fastened, substantially as and for the purpose set forth.

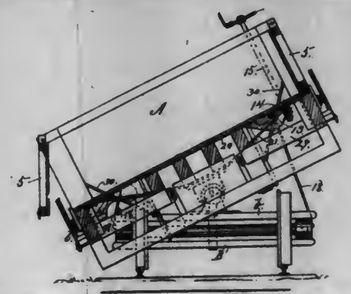
7. The described construction of the car-bed with its longitudinal sills w, which are next adjacent to the outer sills e, placed lengthwise and near the center of the car, leaving a clear broad space between them for dumping, combined with the cross-timbers 26 and their supports or braces 27, and whereby the dumping and the working of the machinery may be effected without the cars coming in contact with the wheels, or the interference of the structure with the mechanism.

8. In combination with the door stakes or posts 28, the short sills 29 and iron braces 30, passing obliquely through the posts and through the car-floor, and secured to these sills, as shown and described.

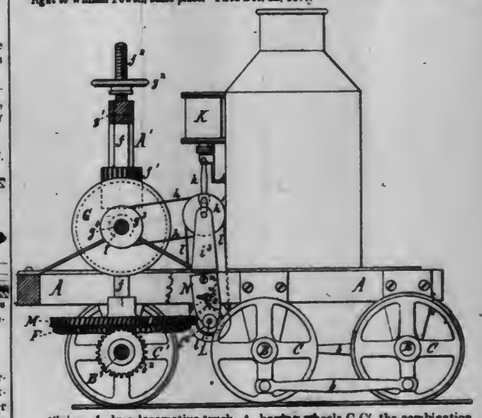
9. In combination with the lever *z*, its slot 32 and notch 31, the extension bar or handle 32*, and its pivotal pin 33 and locking-pin 34, the construction permitting this compound lever to be elongated for use, and to be shut up against the side of the car, as and for the purpose shown and described.

190,761.





190,762. STEAM STREET-CARS. Edson F. Vaux, Washington, D. C., assignor of one-half his right to William Powell, same place. Filed Dec. 22, 1877.



Claim.—1. In a locomotive truck, A, having wheels C C', the combination of a main propelling-engine and an auxiliary engine, and the intermediate auxiliary mechanisms, whereby the traction may be increased or diminished alternately, at the will of the operator, substantially as set forth.

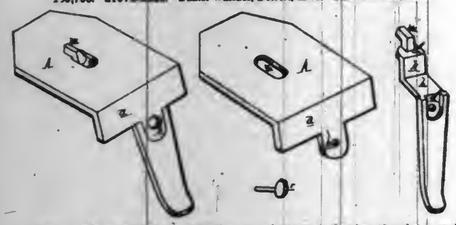
2. In a locomotive-truck, A, the combination of independently-operated main driving-wheels C and the independently-operated auxiliary driving-wheels C', and intermediate auxiliary mechanism, whereby the speed may be alternately increased or diminished, substantially as set forth.

3. The combination of the axle B', wheel b^3, wheel F, having a screw-wheel periphery, M, and the propelling worm-wheel L, having swinging supports N, substantially as and for the purpose set forth.

4. The combination of the axle B', having traction-wheels C', the wheel b^3, the wheel F, having a shaft, *f*, elevating-screw f^1, and hand-wheel f^2, the pinion f^3, and the propelling-wheel G, substantially as and for the purpose set forth.

5. The combination of the boiler E, the main engine D, the auxiliary engine K, and the mechanism described for changing speed and power alternately, substantially as and for the purpose set forth.

190,763. STOVE-LEGS. Daniel Walther, Detroit, Mich. Filed Nov. 22, 1877.



Claim.—The combination, with the stove-bottom A, having the slot *a* and depending lip *b*, of the leg B, provided with the recess *d*, flanges *h k l*, and ing *n*, all constructed and arranged substantially as described and shown.

190,764. CALENDARS. Willoughby W. Watson, Montrose, Pa. Filed June 29, 1877.



Claim.—1. A continuous adjustable calendar-chart, A, provided with the names of the months and days and the numbers of the days of the month printed thereon, substantially as shown, beginning at the bottom and counting upward, in combination with a roller, B, on which the said calendar is arranged to roll and unroll, and a suitable back-board, C, to form a desk, all substantially as specified.

2. The combination, with the continuous calendar A, printed as described, of the strip *a*, roller B, back-board C, desk D, and prop E, so constructed and arranged that the prop may be folded in behind the desk, substantially as shown and described.

3. The combination of the calendar A, constructed and mounted as herein specified, the back-board C, the desk D, and the prop E, all arranged substantially as herein shown and specified.

190,765. LAVATORY APPARATUS. Darius Wellington, Boston, assignor to Edwin C. Aldrich, Hyde Park, Mass. Filed Apr. 9, 1877.



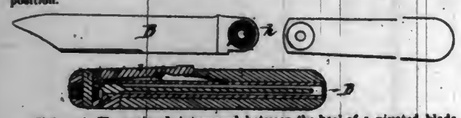
Claim.—1. The slab and its support and a bowl-holding shell, in combination with holders to sustain the shell, and permit its application to, and its removal from, below the slab without disturbing the slab, substantially as described.

2. The combination, with the metallic shell, of a packing applied to the shell, and adapted to fit the under side of the slab, substantially as and for the purposes set forth.

3. The metallic shell, in combination with the removable cap, to permit access to the cup or trap without disturbing the shell or slab, substantially as described.

190,766. POCKET-KNIVES. William T. Whitehouse, Boston, Mass. Filed Oct. 26, 1877.

Brief.—As an improvement on Patent No. 195,319, September 18, 1877, there is provided an interposed coil-spring, chambered between the heel of the blade and the adjoining portion of the handle, in such manner that the blade of a pocket-knife is automatically thrown wide open when the catch-spring of the handle is released, the catch serving likewise to lock the blade in open position.



Claim.—1. The spring *h*, interposed between the heel of a pivoted blade, B, and the adjacent portion of the handle A, for the purpose of automatically throwing open the blade, substantially as set forth.

2. The combination of the pivoted blade B, spring *h*, interposed between the heel of the blade and the adjacent portion of the handle A, and a catch, *i*, for locking the blade in an open or closed position, substantially as described.

190,767. MANUFACTURE OF HORSESHOE-NAILS. George F. Whitney, Winchester, assignor to Louisa O. Robertson, trustee, Boston, Mass. Filed Nov. 6, 1877.

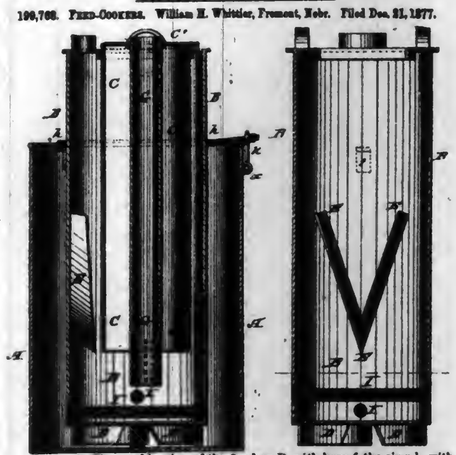


Claim.—1. A hot-rolled bar or plate of iron having formed thereon, at regular and equal distances, raised ribs *a a*, extending transversely across said bar or plate in a direction oblique to the parallel edges thereof, substantially as and for the purposes described.

2. The method of producing nail-blanks having two straight sides contiguous to each other, from which to manufacture horseshoe-nails, which consists in first producing, by hot-rolling, a bar of iron the body or main portion of which is of a width and thickness about equal to the width of the head and the thickness of the shank, respectively, or to the thickness of the head and the width of the shank, respectively, of the desired blank, and provided at regular and equal intervals, upon one of its sides or edges, with raised ribs or an increased thickness of stock, arranged obliquely to the edges of said bar, and then, by means of suitable dies, cutting said bar transversely across to sever a blank and form the head and of two blanks, and at the same time divide a section of said bar by cutting through the line *a f* parallel, or nearly so, to the two sides or edges of said bar and the two short oblique lines *d e* and *f g*, extending from the opposite ends of the parallel cut *e f* to the opposite sides of the bar, substantially as described.

3. The method of manufacturing horseshoe-nails herein set forth, which consists in cutting or punching from a bar or plate of hot-rolled ribbed iron blanks having two contiguous straight sides, and provided upon their opposite sides with projections or an increased thickness and width of stock, to form a head oblique to its shank, bending said shank at its junction with the head, and compressing, upsetting, and shaping said head by means of suitable dies, and then, by another operation, rolling the shank of the blank to elongate, condense, and shape it, and then trimming and beveling the point of the nail, substantially as herein set forth and described.

190,768. FEED-COOKERS. William H. Whittier, Fremont, Nebr. Filed Dec. 21, 1877.



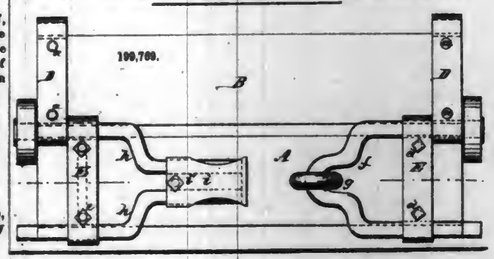
Claim.—1. The combination of the fire-box B, with lugs *f*, the ring *h*, with arms *i*, the hooks *k*, and the eyes or staples *x* on the barrel, for the purposes herein set forth.

2. The ribs or flanges D on the bottom of the fire-box B, for the purposes herein set forth.

3. The fire-box B, with interior cylinder C and tube G, in combination with the deflector E and outer part A, substantially as and for the purpose set forth.

4. The water-tubes I, in combination with the fire-box B, ribs or flanges D, cylinder C, and deflector E, substantially as and for the purpose set forth.

190,769.



190,769. HORSE-POWER CHAINS. Martin Williams, St. Johnsville, N. Y. Filed Nov. 30, 1877.

Brief.—The rods carrying the rollers may be reversed when worn.

Claim.—1. The link D, made as described, and having secured to it the clip F, in combination with the tread-plank B, having the tenon *b*, substantially as herein specified.

2. The link-fastening consisting of the threaded rod *e*, bent twice at right angles, in combination with the tread-plank A, substantially as specified.

3. The combination of the U-shaped rod *f* with the links D E, as herein shown and described.

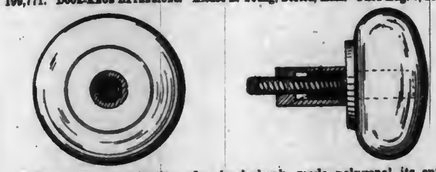
4. The reversible rods A and the clamp *i*, in combination with the links of a horse-power chain, substantially as shown and described.

190,770. CORN-POPPERS. Irvin Yost, Thornville, Ohio. Filed Jan. 12, 1878.



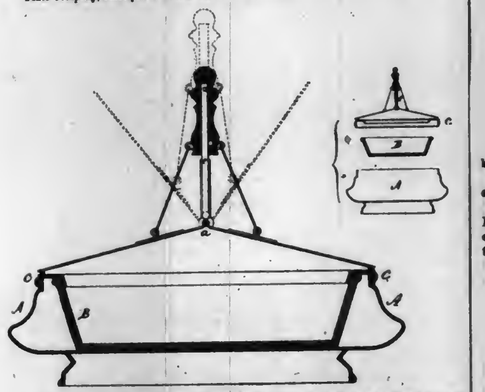
Claim.—The combination of the popper *c*, handle *c*, disk *d*, and handle *g*, the popper being made to revolve by the application of a finger to the disk, substantially as shown.

190,771. DOOR-KNOB EXTENSIONS. Alonzo E. Young, Boston, Mass. Filed Aug. 7, 1877.



Claim.—The combination of a knob-shank, made polygonal its entire length, and provided with an internal screw-thread, a spindle screw-threaded on its corners, and a flanged sleeve to cover the entire space between the rose and the knob, made to fit over the knob-shank and spindle, to attach the two firmly together after the adjustment, substantially as above described.

190,772. COVERED DISHES. S. W. Rabbitt, West Meriden, Conn., assignor to Wilcox Silver Plate Company, same place. Filed Jan. 14, 1878.

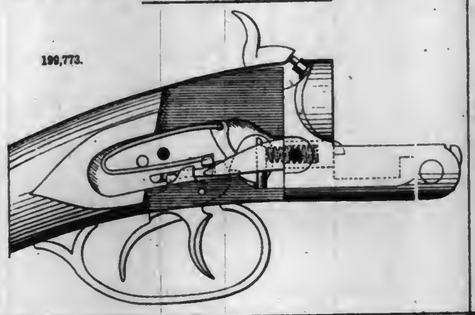


Claim.—1. The combination of the body A, the inner pan B, band C, and a cover hinged to the said band, substantially as described.

2. The combination of the body A, the inner pan B, the band C, and a cover hinged thereto, with a locking device between the said band and the body, substantially as described, and for the purpose of securing the parts together.

3. In a covered dish, a divided cover, the two parts hinged permanently to the band, combined with a lifting-handle in connection with said covers, and so that by said handle the covers may be lifted, substantially as described.

190,773.



190,773. LOCKS FOR FIRE-ARMS. William H. Baker, Syracuse, N. Y. Filed Dec. 21, 1877.

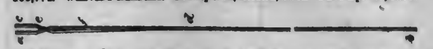
Brief.—The mainspring is arrested before the hammer strikes the firing-pin, and the stroke is completed by the momentum of the hammer. At the instant of striking, the link which connects the tumbler and mainspring has its pivoted corner drawn down, whereby the mainspring is slightly compressed. The expansion of said spring draws up the pivoted corner of the link and throws the lower end forward, carrying the tumbler to the half-cock notch.

Claim.—1. The lock-plate for breech-loading fire-arms herein described, having flanges projecting from its longitudinal edges, and a stud for supporting, and a ledge or stop for limiting the movement of the mainspring, substantially as set forth.

2. The combination of lock-plate, having stud and ledge, as described, with mainspring, slotted link, and tumbler, as and for the purposes set forth.

3. The hollow locking-bolt, its contained operating-spring, and the trigger, when constructed and combined for operation as shown and described.

190,774. WEAVING-NEEDLES. Harvey Ball, Nashua, N. H. Filed Apr. 21, 1877.



Claim.—The weaving-needle composed of two metallic spring-wires, *a b* and *c d*, secured together at *d*, and arranged to cross each other at *e*, all substantially as described, and for the purpose set forth.

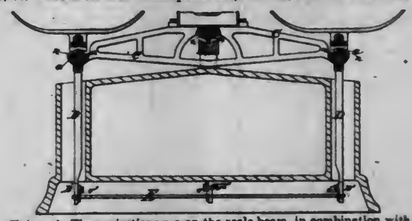
190,776. ANIMAL-TRAPS. Abram H. Barber, Red Oak, Iowa. Filed Dec. 11, 1877.

Brief.—The cap is removable for the purpose of removing the rats.



Claim.—An animal-trap consisting of the tube or cylinder *a*, provided with the spikes *c* at one end, and sleeve *d*, spikes *e*, and the catch for holding the sleeve in position, substantially as shown and described.

190,776. WEIGHING-SCALES. Christopher Becker, New York, N. Y. Filed Oct. 12, 1877.

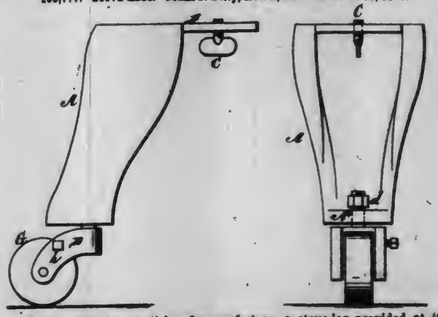


Claim.—1. The projections *n n* on the scale-beam, in combination with the knives *a*, substantially in the manner and for the purpose described.

2. In a parallelogram scale, the plate *v* in the center of the parallel bar E, arranged in the manner substantially as set forth.

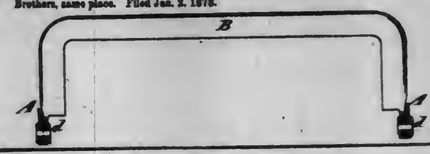
3. The herein-described knife-joint connection between the end of the rod D and the end of the parallel bar E, whereby this beam or bar E is acted upon equally on both sides, thereby equalizing the pressure on the same, substantially in the manner set forth.

190,777. STOVE-LEGS. Frank B. Berry, Mercer, Me. Filed Dec. 15, 1877.



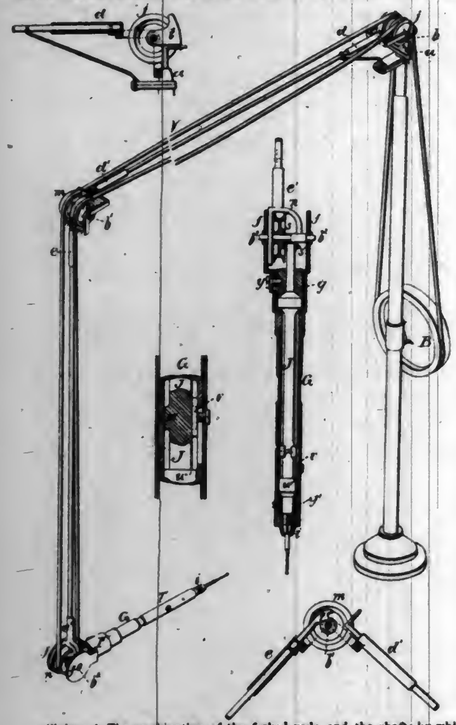
Claim.—As a new article of manufacture, a stove-leg provided at its upper end with an arm, B, and set-screw C, and at its extreme base with a flat piece, A', through which is passed the shank of a caster-wheel frame fastened thereto by a nut, *d*, substantially as shown and described.

190,778. POCKET-BOOK FRAMES. Charles Blust, New York, N. Y., assignor to Behlmer Brothers, same place. Filed Jan. 2, 1878.



Claim.—The combination, with the separately-formed parts A B of the frame of a pocket-book, porte-monnaie, bag, or satchel, of eyelets for joining said parts, and hinging them together, substantially as and for the purpose specified.

199,779. DENTAL ENGINES. William G. A. Bonwill, Philadelphia, Pa. Filed Dec. 17, 1877.



Claim.—1. The combination of the forked rods, and the shafts by which they are pivoted together, with the segmental stop-plates *t*, hung to the shafts, as specified.

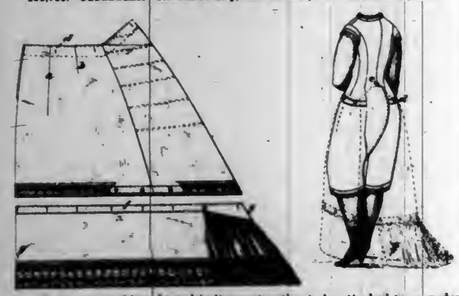
2. The combination of the stem G and its shaft J with the shaft b^3, pulley *u*, bevel-wheel *s*, and bevel-pinion *s'*, all substantially as set forth.

3. The combination of the slotted stem G and its bearing-block *g* with the slotted socket F and the screw *y*, which serves to secure both socket and block in position, as specified.

4. The combination of the shaft J and its universal chuck *i* with the stem G and its sliding sleeve T, all substantially as set forth.

5. The combination of the shaft J and its slotted collar *w*, and the slotted stem G, with the sliding sleeve T and its block *v*.

199,780. UNDERWEAR. Clara L. Bradley, San Francisco, Cal. Filed Jan. 21, 1878.



Claim.—1. A skirt adapted in its construction to be attached to an undergarment mainly below the waist-line, and provided with the extension *c*, substantially as described and shown, and for the purpose set forth.

2. A skirt constructed substantially as above described, and provided with darts upon its upper edge, whereby it is adapted to fit the form without fullness, as set forth.

3. A skirt constructed substantially as above described, in combination with a detachable flounce, as set forth.

4. A detachable flounce consisting of the front and back breadths and the yoked band, the back breadths being gathered into the yoked portion of the band, substantially as described and shown.

5. The combination of a skirt adapted to be attached below the waist-line with an undercut constructed substantially as described.

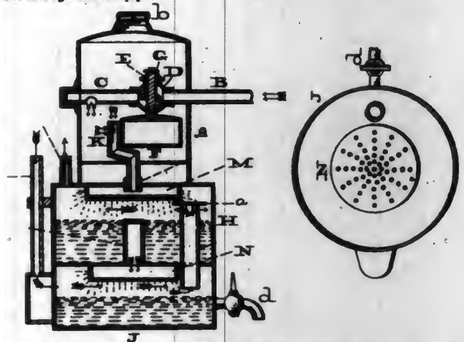
6. The combination of a skirt adapted to be attached mainly below the waist-line with an undercut, substantially as described.

7. A skirt provided with a detachable flounce, in combination with an undercut, substantially as described.

8. An undercut constructed to fit the form closely above and loosely below the waist-line, substantially as described, in combination with a skirt having a detachable flounce, substantially as specified.

199,781. CARBURETERS. James Bradley, Philadelphia, Pa. Filed May 28, 1877.

Brief.—Liquid hydrocarbon, under suitable head, enters the horizontal pipe in the upper part of the figure, and, following the direction indicated by the double arrows, passes through a valve and into an upper chamber, where its height is regulated by a float attached to the valve; thence by an overflow-pipe ending in a rose or spray-box into a middle chamber; thence by a similar overflow and rose into the lowest chamber, whence surplus liquid may be drawn off by a cock. Air enters the vertical pipe to the left, and, following the direction indicated by the single arrows, passes successively over the liquid and through the spray in the lowest chamber, and over the liquid and through the spray in the middle chamber, and then, having been thus carbureted, out through the exit-pipe.



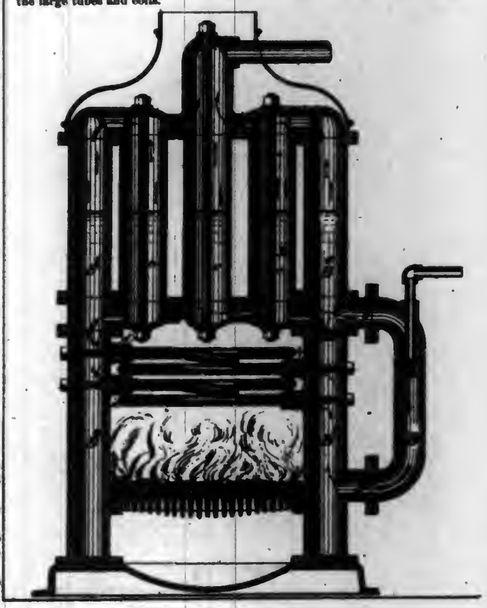
Claim.—1. The receiving-chamber A and carbureting-chambers H J, in combination with the intermediate rose or spray chambers M N, and with the overflow-pipe K of the chamber A, projecting into the rose M of the chamber H, and fitted to the screw-plug in said chamber H, substantially as and for the purpose set forth.

2. The chambers H J and spray-chambers M N, in combination with the pipe P and its deflector *a*, substantially as and for the purpose set forth.

3. The chamber A and pipes B C, with float-valve D, chambers H and J, with rose or spray chambers M N, pipes K P, and induction and eduction pipes, constructed, combined, and operating substantially as and for the purpose set forth.

199,782. WATER-TUBE STEAM-GENERATOR. Alvan D. Brock, Grantville, Mass. Filed Oct. 6, 1877.

Brief.—One of the upright tubes is provided with a diaphragm, by means of which the water is made to take a circuitous route in its circulation through the large tubes and coils.



Claim.—1. The combination, in a steam-generator, of two vertical circulation-tubes, a series of spiral coils of pipe, each connected at its ends to the circulation-tubes, a transverse diaphragm placed in one of the circulation-tubes above the level of the coils, a steam and water reservoir communicating with the circulation-tubes above the level of the diaphragm, and a pipe which communicates at top with the reservoir, and at bottom with one of the circulation-tubes at a point below the diaphragm therein, substantially as and for the purpose specified.

2. The combination, in a steam-generator, of one or more spiral coils of pipe connected to two vertical circulation-tubes, one of which is provided with a transverse diaphragm located above the level of the coils, a steam and water reservoir communicating with the circulation-tubes, and an inclosing casing, substantially as and for the purpose specified.

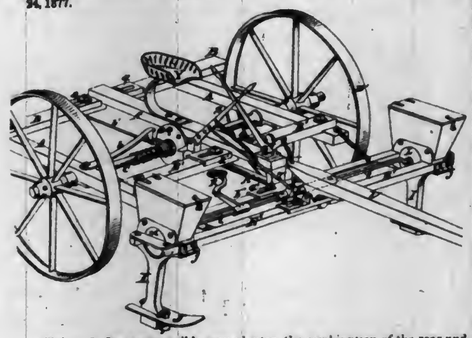
3. The combination, in a steam-generator, of two vertical circulation-tubes, a transverse diaphragm placed in one of the circulation-tubes, a steam and water reservoir connected with the circulation-tubes, and a pipe communicating at top of said reservoir, and at bottom with one of the circulation-tubes at a point below the diaphragm therein, substantially as and for the purpose specified.

4. The combination, in a steam-generator, of a steam and water reservoir communicating with two vertical circulation-tubes, a diaphragm placed in one of said circulation-tubes below the level of said reservoir, a pipe communicating at top with said reservoir, and at bottom with the circulation-tube containing the diaphragm at a point below the level of the diaphragm, and a feed-water pipe delivering to said communicating pipe, or to the circulation-tube to which it is connected, substantially as and for the purpose specified.

5. The combination, in a steam-generator, of two vertical circulation-tubes provided with a transverse diaphragm, and one or more coils of pipe, connected at each of their ends to the circulation-tubes, substantially as and for the purpose specified.

6. The combination, in a steam-generator, of two vertical circulation-tubes provided with a transverse diaphragm, and connected by coils of pipe, and a superposed or elevated steam and water reservoir, substantially as and for the purpose specified.

199,783. CORN-PLANTERS. Robert Brown and William Houston, Dayton, Ohio. Filed Aug. 24, 1877.



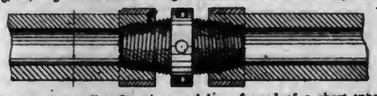
Claim.—1. In an expansible corn-planter, the combination of the rear and front body-beams B B', the slotted plates *a a'*, to which the said beams are adjustably connected, the dropper-supporting beams E' E," the slotted plates G G', to which the latter are adjustably attached, the axle C, and the sleeve *c*, forming a bearing for the axle and the side beam A of the machine, and carrying the wheel D', said sleeve being adjustable upon the axle, substantially as described.

2. In a corn-planter, the oscillating feed-cylinder I, provided with a carrying-cell, *i*, and a discharge-aperture, *i'*, and arranged to act as a cut-off to the tubes P or P', as and for the purpose set forth.

3. The distributing-cylinder I, provided with interchangeable sliding dovetailed plates having carrying-cells of different sizes, in combination with the inner cylinder, having tubes P or P', for the purpose set forth.

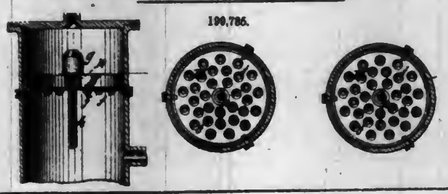
4. The furrow-opener I', having a rear flaring tenon fitting a corresponding slot in the foot of the seed-spout, in combination with the shoe *d*, keyed to said spout, substantially as described.

199,784. COUPLINGS FOR SOFT-METAL PIPES AND HOSE. Samuel A. Brumbaugh, Harrisburg, Pa., assignor to himself and George J. Bolton, same place. Filed Sept. 22, 1877.



Claim.—A coupling for pipes and hose formed of a short tube, whose conical ends are ratchet-threaded to the right and left, the middle being provided with a collar apertured to receive the spanner, as shown and described.

199,785.



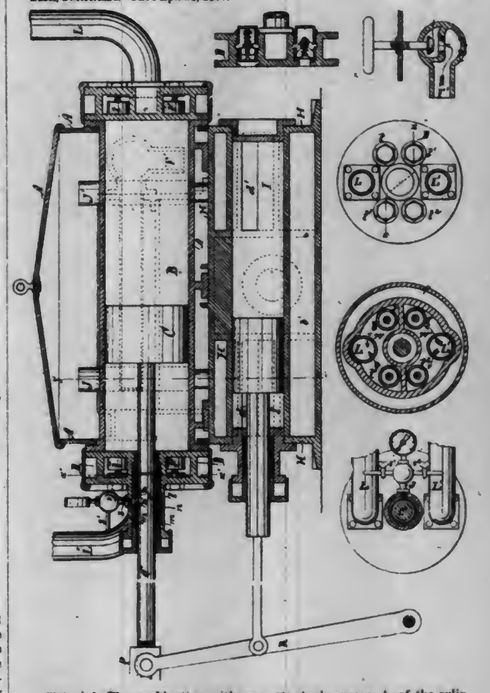
199,786. APPARATUS FOR DEAERATING WATER. Emil Bürgin, New York, N.Y. Filed July 30, 1877.

Brief.—Water is admitted at the top of a column and falls through the perforated dividers, by which it is finely broken up and its contained air liberated. This air is exhausted through a pipe at the top of the column. The water thus deaerated is fitted for freezing in an ice-machine.

Claim.—1. In combination with the hollow column, its inlet-pipe, and perforated water-dividers having central openings, the float I, valve *g*, and valve-stem *h*, passing through the central openings in the water-dividers, which act as guides to the valve-stem, substantially as and for the purposes hereinbefore set forth.

2. The water-dividers secured in the hollow column, and consisting of pans E, having the under sides of their bottoms constructed with perforated downwardly-projecting bosses or nipples *f*, substantially as and for the purposes hereinbefore described.

199,786. STEAM-CONDENSING AND GAS AND AIR COMPRESSING APPARATUS. Emil Bürgin, Basel, Switzerland. Filed Apr. 26, 1877.

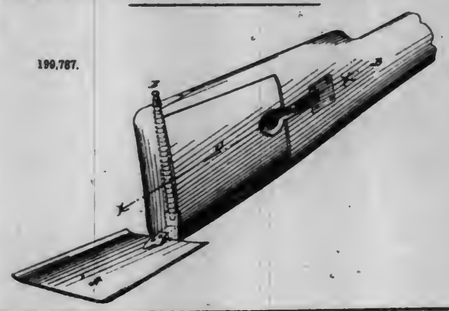


Claim.—1. The combination, with one water tank or case, A, of the cylinder of an air or gas compression pump, and the condenser of a steam-engine for driving the said pump, both arranged within the said tank or case, to be both cooled by the water circulating through the said tank or case, substantially as herein described.

2. The combination, with the water tank or case A, containing the cylinder of an air or gas compressing pump, and the condenser of the condensing steam-engine which works said pump, of the case or chest H, placed below said tank or case A, and the air-pump of said steam-engine, placed within said case or chest H, and connected with said condenser, substantially as herein described.

3. The combination, with the stuffing-box of the compressing-pump B, of the ring *n*, escape-pipe *s*, and branch pipes s^1 s^2, provided with stop-cocks, the said branch pipes being connected, the one with the suction or inlet pipe, and the other with the force or outlet pipe of said pump, as described.

199,787.



199,787. INTRENCHING-TOOLS. James L. Buskett, St. Louis, Mo. Filed Aug. 30, 1877.

Claim.—1. The metal plate C', provided with the hole *c* and spring-catch F, in combination with a spade or intrenching-tool having its straight shank provided with the transverse notch or groove *b*, substantially as and for the purpose specified.

2. The stock B of a gun provided with the recess C, spring-catch or its equivalent *d*, and metal plate C', in combination with the spade or intrenching-tool A, substantially as and for the purpose specified.

199,788. BALE-TIES. Samuel J. Chapman, Charleston, S. C., assignor to himself and Daniel S. Wilson, same place. Filed Jan. 5, 1878.



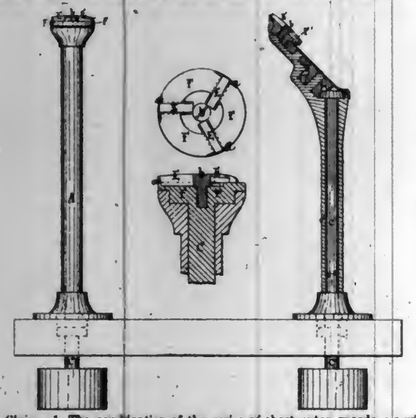
Claim.—1. A bale-tie constructed with a wedge-shaped slot, and having a loop attached to or formed on one end of the tie for the attachment of one end of the band, substantially as set forth.

2. A bale-tie or buckle, formed with wedge-shaped slot and automatic fastener for securing the free end of the band, and the inclined rectangular loop attachment for securing the opposite end of the tie, substantially as set forth.

199,789. LUBRICATING COMPOUNDS. Richd. J. Chard, Brooklyn, N. Y. Filed Dec. 23, 1877.

Claim.—A lubricating compound composed of West Virginia mineral oil, caoutchouc, sulphur, plumbago, sal-soda, and bees-wax, and combined substantially in the manner and in the proportions specified.

199,790. MACHINERY FOR CUTTING PEGS FROM BOOTS AND SHOES. Henry O. Chesley, Hopkinton, Mass., assignor to Louis K. Hutchinson, same place. Filed May 7, 1875.

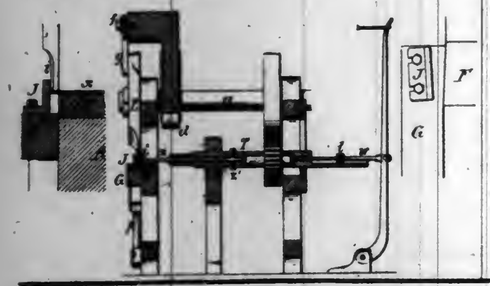


Claim.—1. The combination of the series of short outer guards *a a* with the cutter-head F and its cutters, substantially as described.

2. The cutter-head F, having a central opening for its spindle, and slotted, as shown, in combination with the cutters and the spindle, the slots being adapted to receive the cutters endwise, the cutters being adapted to enter the slots endwise, and the spindle acting to keep the cutters in place endwise, the whole combination being as set forth.

199,791. CUT-NAIL MACHINES. John W. Chewning, Jr., Shadwell Depot, Va., assignor of one-half his right to James Rowland and Nathan Rowland, Philadelphia, Pa. Filed Oct. 16, 1877.

Brief.—The intermittingly-revolving feed-tube is long enough to contain several nail-plates, which are fed through the same by the action upon the end of the rear plate of a blank swiveled on the end of a rod connected to a lever, against which pressure is exerted by a spring or weight. The rear portion of the tube is cut away so as to form a flat shelf, on which each nail-plate is laid prior to being fed through the tube. The blank severed from the plate is clamped vertically between the lower end of the cutting-knife and upper face of the gage-lever, and confined laterally between the gage and the edge of the fixed cutter while being headed.



Claim.—1. The combination of the revolving cylinder A, with its double diaphragm B and double-acting ingress and egress valves E and I, in combination with the piston C, mounted upon the longitudinal shaft so as to oscillate in the chambers upon each side of the diaphragm, substantially as and for the purpose herein described.

2. The double ingress-valve composed of the disks E E, united by the stem F, and operating alternately upon the outside of openings in the double diaphragm B, substantially as and for the purpose herein described.

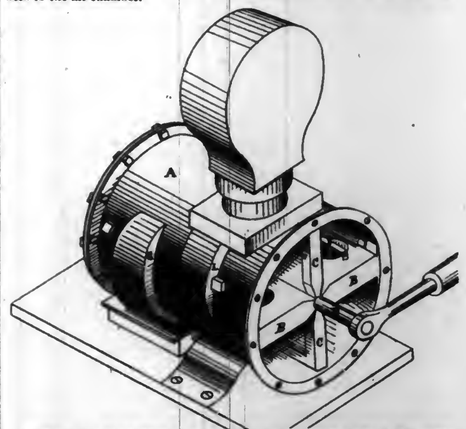
3. The discharge-valve I, working within the diaphragm, so as to alternately close the upper and lower discharge-opening, substantially as herein described.

4. The cylinder A, constructed with the semicircular passages G and L, communicating respectively with the ingress-pipe and the suction-chambers in the diaphragm, and with the discharge-pipe and chambers of the diaphragm upon each side, in combination with the double-acting ingress and egress valves, substantially as herein described.

5. The diaphragm B, having its independent valves upon each side of the oscillating shaft so divided as to form four distinct chambers, in combination with valves E and I, so constructed as to perform their duty in both directions, substantially as herein described.

199,792. OSCILLATING PUMPS. Pharez A. Clark, Anaheim, Cal. Filed Aug. 10, 1877.

Brief.—A horizontal cylinder; induction beneath; air-chamber and eduction above; horizontal hollow diaphragm central, abutting against a revolving shaft carrying two wings, which force the incoming water into the diaphragm, (opening and closing its valves,) whence it ascends through concentric chambers to the air-chamber.



Claim.—1. The cylinder A, with its double diaphragm B and double-acting ingress and egress valves E and I, in combination with the piston C, mounted upon the longitudinal shaft so as to oscillate in the chambers upon each side of the diaphragm, substantially as and for the purpose herein described.

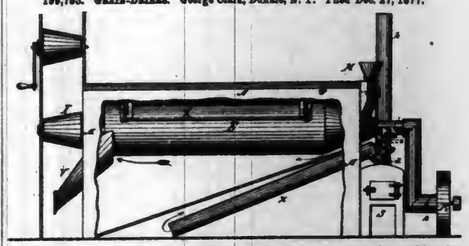
2. The double ingress-valve composed of the disks E E, united by the stem F, and operating alternately upon the outside of openings in the double diaphragm B, substantially as and for the purpose herein described.

3. The discharge-valve I, working within the diaphragm, so as to alternately close the upper and lower discharge-opening, substantially as herein described.

4. The cylinder A, constructed with the semicircular passages G and L, communicating respectively with the ingress-pipe and the suction-chambers in the diaphragm, and with the discharge-pipe and chambers of the diaphragm upon each side, in combination with the double-acting ingress and egress valves, substantially as herein described.

5. The diaphragm B, having its independent valves upon each side of the oscillating shaft so divided as to form four distinct chambers, in combination with valves E and I, so constructed as to perform their duty in both directions, substantially as herein described.

199,793. GRAIN-DRIERS. George Clark, Buffalo, N. Y. Filed Dec. 27, 1877.



Claim.—1. The revolving cylinder E within a close case, in combination with a furnace, exhaust-fan, partition Y, and pipes Z, Z', and P, whereby the currents induced by exhaust are compelled to travel in the direction specified, and for the purposes hereinbefore set forth.

2. In combination with the cylinder and exhaust-pipe, arranged as described, the pipes Z Z' *b* and dampers *d e*, whereby currents of different temperatures are caused to travel in the manner and for the purposes specified.

3. The cylinder-head formed with openings O, in combination with the feed-hopper and valve for controlling the feed, as set forth.

4. The discharge-spout V, provided with flap-valve W, and arranged as described with reference to the cylinder, whereby the discharge takes place without affecting the currents, as hereinbefore set forth.

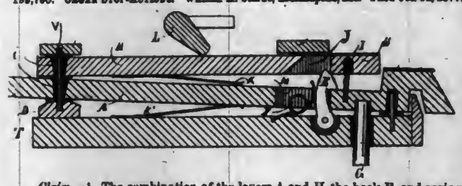
199,794. FASTENING HEADS IN METAL CYLINDERS. Perry B. Clark, Minneapolis, Minn. Filed Dec. 22, 1877.

Brief.—Illustrated as applied to a cylinder with a flue. May be applied to fasten the head into a can-body. Need not use solder.



Claim.—The means for fastening heads to metal cylinders, which consists in a beveled band or hoop fastened to a cylinder or tube, a head having a flange fitting over the beveled edge of said band or hoop, and the edge of the cylinder or tube turned over against the head, substantially as shown and set forth.

199,795. ORGAN STOP-ACTIONS. William H. Clarke, Indianapolis, Ind. Filed Oct. 31, 1877.



Claim.—1. The combination of the levers A and H, the hook E, and spring F, all constructed to operate as specified, with the cam L, substantially as and for the purpose described.

2. The lever H, pivoted to the fulcrum-pin V, and provided with a recess or slot, J, in combination with hook E and slotted lever A, substantially as shown, and for the purposes specified.

3. In reed or pipe organs, the combination of the levers A and H, the hook E, spring F, and lever-frame T, all constructed to operate as specified, with the sticker rod or lever G, substantially as and for the purposes specified.

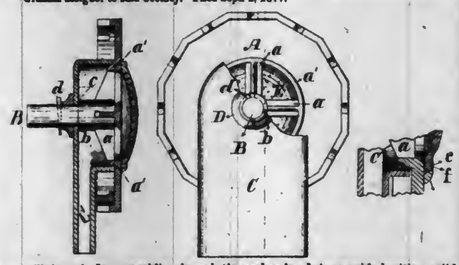
4. The lever A, pivoted on the fulcrum-pin V, and formed with a raised portion, B, at the front end, in combination with the hook E and spring F, attached to the frame T, in the manner and for the purposes specified.

199,796. COMBINED CALENDAR AND CLASP. John W. Collins, Baltimore, Md. Filed Sept. 13, 1877.



Claim.—A calendar consisting of sheets secured at their tops and free on their bottoms and sides, combined with the wire clamping device, consisting of the spirals *a a* and parts *a' a'*, *a''*, *a'''*, *d d*, *b b*, *c c*, and *c' c'*, as and for the purposes set forth.

199,797. TUMBLING-BARRELS. John C. Cooley and Thomas T. Graham, Chicago, Ill.; said Graham assignor to said Cooley. Filed Sept. 1, 1877.



Claim.—1. In a tumbling-barrel, the end or head A, provided with a solid stub-shaft, B, cast in one piece therewith, and having central openings arranged around said shaft, substantially as and for the purpose set forth.

2. The barrel-head A, provided with central openings, as described, in combination with the journal B and the exhaust-pipe C, mounted on said journal, substantially as and for the purpose set forth.

3. The barrel-head A, provided with a flange, *a'*, around the openings in the head, in combination with the exhaust-pipe C, the upper end of which is constructed hood-shaped and fitted upon the flange *a'*, substantially as described.

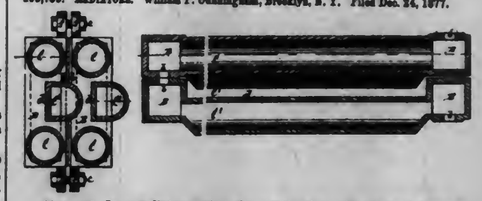
199,798. CARRIAGE-CURTAIN LOOPS. George L. Crandal, Binghamton, N. Y. Filed Nov. 30, 1877.



Claim.—1. A carriage-curtain loop consisting of two metallic strips, A B, united by folding the parts over, as shown, with their united edges closed down, and corrugated to securely hold them in place, substantially as described.

2. A carriage-loop provided with a corrugated edge seam, for the purpose described.

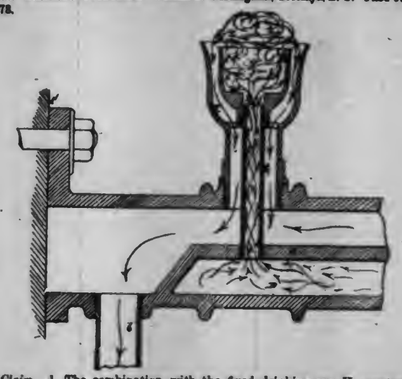
199,799. RADIATORS. William F. Cunningham, Brooklyn, N. Y. Filed Dec. 24, 1877.



Claim.—1. In a radiator-section, the combination, with the end boxes or chambers B B, having communicating ports or passages *b b* on reverse sides of its opposite ends, of tubes C C', each alternate one being offset laterally beyond one side of the end boxes or chambers, whereby a tube of each section is interposed between two tubes of the adjacent section, substantially as specified.

2. The tubes C C', arranged so that each alternate one is out of line or plane with the tubes on opposite sides of it in the same radiator-section, and constructed alternately with flattened sides *d*, in combination with the end boxes or chambers B B, having communicating ports or passages *b b* between the sections of the radiator, on reverse sides of each section, at opposite ends thereof, essentially as described.

199,800. DRINKING-FOUNTAINS. William F. Cunningham, Brooklyn, N. Y. Filed Jan. 2, 1878.

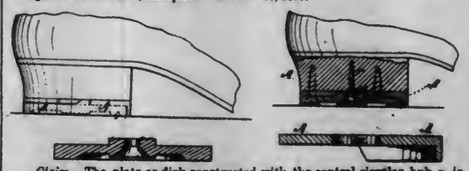


Claim.—1. The combination, with the fixed drinking-cup H, constructed to receive the water up through it, of the fixed overflow-cup I, arranged to inclose within it the drinking-cup H, essentially as described.

2. The combination, with the fixed drinking-cup H, constructed to receive the water up through it, of the fixed overflow-cup I, constructed to closely encircle or inclose the drinking-cup H, and having its upper edge or margin raised slightly above the top edge or margin of the drinking-cup, substantially as specified.

3. The combination, with a fixed inner drinking-cup and a fixed outer overflow-cup, of an inlet pipe or duct, an outlet pipe or duct, and a supply branch pipe connecting the inlet pipe or duct with the drinking-cup, and arranged to pass through the outlet pipe or duct of the overflow-cup, essentially as shown and described.

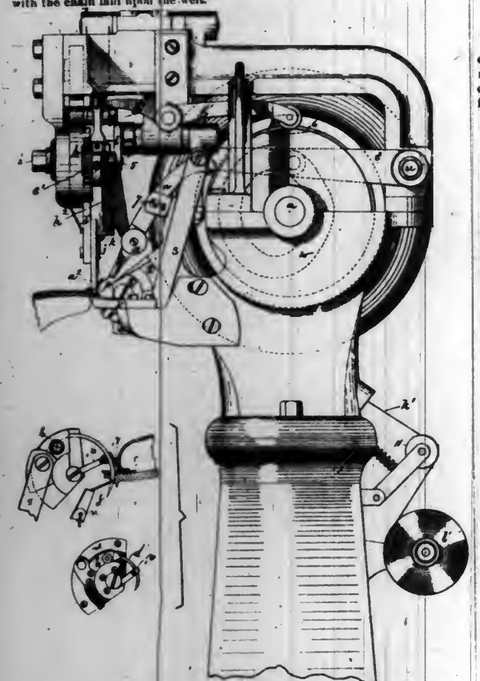
199,801. BOOT AND SHOE HEELS. Joseph Dalton, New York, N. Y., assignor of one-half his right to Gustave Simon, same place. Filed Dec. 20, 1877.



Claim.—The plate or disk constructed with the central circular hub *a*, in combination with the frame A, constructed with the central circular socket *w*, provided to receive the said hub, and having the countersunk hole *c'*, the parts being made and arranged substantially as herein set forth, to sustain the plate or disk against lateral strain by the action of the hub in conjunction with the walls of the socket, as described.

199,802. SEWING-MACHINES FOR BOOTS AND SHOES. Christian Dancel, New York, N. Y., assignor to Charles Goodyear, Jr., same place. Filed Nov, 27, 1876.

Brief.—The sole and welt are sewed by a curved needle operating through a work-support provided with a lip to enter the angle between the welt and upper, and serve as a gage at the same time. The work is held in position by a channel guide, which adapts itself to the inequalities of the material, and is firmly locked upon the work during the action of the awl and the formation of the stitch, the stitch formed being the ordinary chain-stitch, with the chain laid upon the welt.



Claim.—1. The narrow rest or work support A^1 i, provided with a lip, f, in combination with a straight awl to penetrate the outer sole, entering it at the bottom of the channel, and with a curved needle adapted to enter the welt and the hole formed in the sole by the awl, substantially as described.

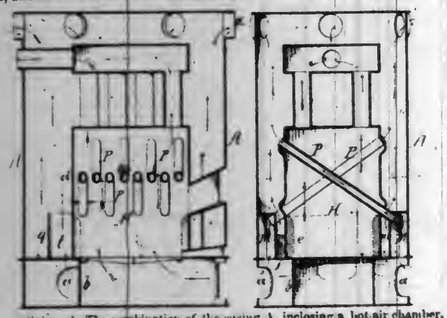
2. In combination, a stationary rest or support for the material, a channel-guide, free to adapt itself to the varying thickness of the material prior to each descent of the awl and the formation of the stitch, and a locking device, to hold the channel-guide positively while the awl enters the material and the stitch is formed.

3. The channel-guide a^1 and its toothed shank b', in combination with the locking device, pinion, pawl, and mechanism for causing the said pawl to engage and disengage the locking device when the awl moves backward to again penetrate the sole, substantially as described.

4. In combination, the awl-bar, the locking device, the channel-guide, and the spring connected with the awl, to draw down the channel guide upon the material as the awl descends, substantially as described.

199,803. HEATERS. John F. Death, Reading, Pa., assignor of one-half his right to Francis J. Obert, same place. Filed Dec. 6, 1877.

Brief.—The deflector is a continuation of the inner wall of the air-chamber M, and serves to deflect a current of air against the back of the fire-pot.



Claim.—1. The combination of the casing A, inclosing a hot-air chamber, the closed chamber M near the bottom of the same, the combustion-chamber H, and the tubes P, which extend diagonally through the combustion-chamber, communicate at their lower ends with the chambers M, and at their upper ends with the hot-air chamber, as specified.

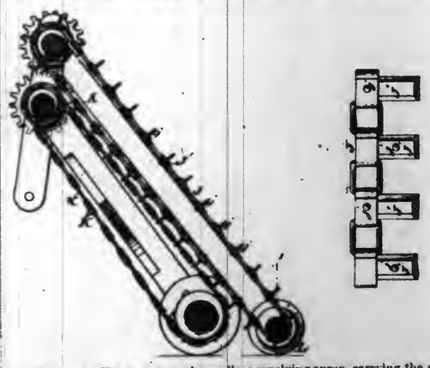
2. The combination of the casing A, combustion-chamber H, the tubes P, chambers M, shield q, and passages n and t, all substantially as specified.

199,804. PENDULUM-CLOCKS. Henry J. Davies and Walter D. Davies, Brooklyn, N. Y. Filed Dec. 26, 1877.



Claim.—The combination, with the arbor or pivot of the anchor and the ears a a', or yoke rigidly attached to the anchor, of a crutch-wire fitted to the said arbor or pivot independent of the anchor, and a spring applied between one of the said ears and the head of the crutch-wire, substantially as described, for the purpose herein set forth.

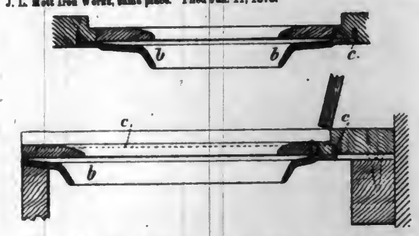
199,805. HAY RAKE AND LOADER. William W. Dean, Macon, Ill. Filed Nov. 2, 1876.



Claim.—1. The upper or outer endless revolving apron, carrying the gathering or raking teeth, and mounted in a frame pivoted to the attaching-frame, so as to conform to the surface of the ground, in combination with an under or inner endless revolving apron, coacting with the raking-apron to elevate the hay, as described.

2. The two frames A B, independently pivoted upon the connecting-frame at top and disconnected at bottom, so as to conform independently to inequalities in the surface of the ground while carrying the aprons J J' and K K', respectively, as and for the purpose set forth.

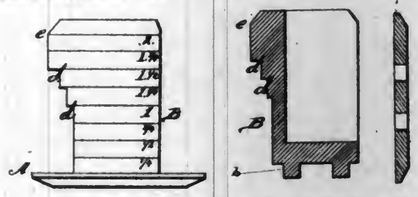
199,806. SLOP-SAFES FOR WATER-CLOSETS. John Demarest, New York, N. Y., assignor to J. L. Mott Iron Works, same place. Filed Jan. 11, 1878.



Claim.—The slop-safe for water-closets, made of cast-iron, having the downward flange b and the upward flanges c, as and for the purposes set forth.

199,807. BOARD RULE AND GAGE. David L. Dunsmore, Stanton, Mich. Filed July 7, 1877.

Brief.—A lumber-scale having a gage attached for measuring the thickness of the lumber measured.



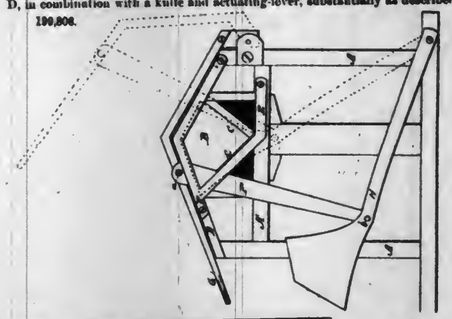
Claim.—The combination of a head, A, and a socket-gage, B, graduated as described, and provided with notches d and shoulder e, or their equivalents, substantially as and for the purposes herein set forth.

199,808. STRAW-CUTTERS. William V. Devault and Dick J. Devault, Johnson City, Tenn. Filed Dec. 13, 1877.

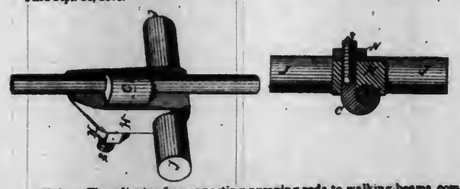
Claim.—1. The lever D, pivoted upon one side of the box below the top of the same, and bent over to the other side, in combination with the knife F, gage-bar H, and box B, substantially in the manner and for the purpose described.

2. The box B, provided with tapering angle-boards C and a roof portion, D, in combination with a knife and actuating-lever, substantially as described.

199,808.

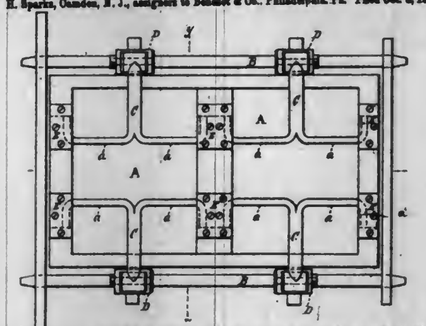


199,809. POLISH-ROD ADJUSTERS FOR OIL-WELLS. Asaph M. Kleckner, Kendall Creek, Pa. Filed Sept. 14, 1876.



Claim.—The adjuster for connecting pumping-rods to walking-beams, composed of the grooved head H and open claw-hook C, provided with threaded stem S and nut N, all constructed, arranged, and operating in the manner and for the purpose specified.

199,810. TORSION-SPRINGS FOR VEHICLES. William Evans, Philadelphia, Pa., and William H. Sparks, Camden, N. J., assignors to Bennett & Co., Philadelphia, Pa. Filed Oct. 6, 1877.



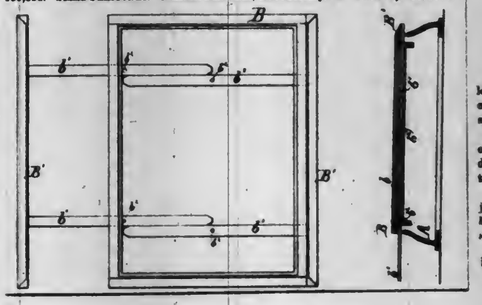
Claim.—1. A combined torsional spring and hanger made in a single piece, the body of the hanger being of suitable size and form, and the spring consisting of two arms, projected therefrom in opposite directions, substantially in the manner and for the purpose set forth.

2. A rigid body, C, of suitable size and form, and round arms a a, projected from its inner end in opposite directions, to form a combined torsional spring and hanger, substantially as and for the purpose set forth.

3. The combination of the combined torsional spring and hanger, consisting of the rigid body C and spring-arms a a, with the bottom of a vehicle and the side bars B B, substantially as and for the purpose set forth.

4. The clips E, in combination with the spring-arms a a of the hanger and body A of a wagon, substantially as and for the purpose set forth.

199,811. SCALE-PLATFORMS. Franklin Fairbanks, St. Johnsbury, Vt. Filed Sept. 28, 1877.



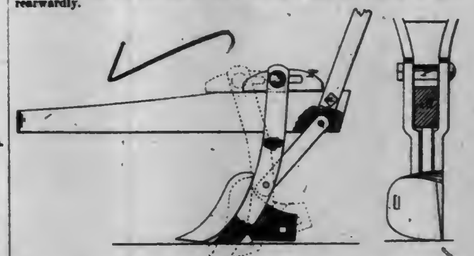
Claim.—1. In scale-platforms, the wings B', extending parallel to the corresponding sides of platform B, and having each two or more slides, b', attached thereto, and moving simultaneously therewith, as herein specified.

2. The slides b^1, provided with the shoulders c, in combination with the main platform B, provided with staples or their equivalents on its lower face, adapted to engage with the shoulders, substantially as described.

3. The slides b^1, provided with shoulders c, and sliding each past its opposite one, in combination with the main platform B and with the connecting-wings B', as herein specified.

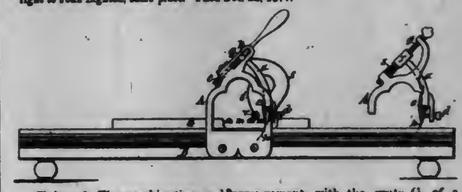
199,812. PLOWS. Daniel P. Ferguson, Jonesborough, Ga. Filed Dec. 5, 1877.

Brief.—The upper end of the standard is bifurcated, embracing and extending above the beam, embracing also a slotted wedge-shaped block, the securing-bolt passing through the upper end of both arms and through the block. A pivoted brace connects the lower end of the standard and the beam rearwardly.



Claim.—The combination of the slotted sliding block with the beam and the standard, whose forks are connected above the beam by means of the transverse bolt, which passes through the block, as shown and described.

199,813. PLAITING-MACHINES. Conrad Fichter, Syracuse, N. Y., assignor of one-half his right to John Lighten, same place. Filed Dec. 22, 1877.



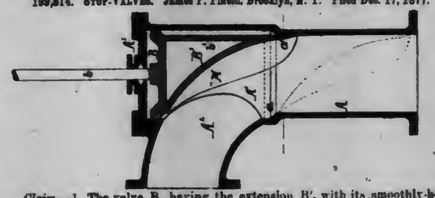
Claim.—1. The combination and arrangement, with the grate G, of a frame arranged to slide bodily in an oblique direction toward the grate, and carrying with it the plaiting-knife, substantially as described.

2. In combination with the plaiting-grate G and bed-piece B, the standards A, provided with oblique guides g, a frame composed of the bar b, adapted to slide on guides g, and having fixed arms a, united at their lower extremity by bar f, and the knife k, hinged to bar f, and having an adjusting back support and a yielding rearwardly-pressing device, substantially as and for the purpose specified.

3. In combination with a plaiting-knife arranged to move in an oblique direction through the interstices of a grate, the bar r, held in front of the knife by a spring connected with the knife-carrier, substantially in the manner and for the purpose described.

4. In a plaiting-machine, the combination and arrangement of the standards A, provided with obliquely-arranged guides g, a knife-carrier, supported in its elevated position by spring s, and adapted to slide bodily on said guides, the plaiting-knife k, hinged to its carrier, the set-screw d at the rear, and springs e in front of the knife, and the bar r, connected with the knife-carrier by springs s', all constructed and arranged to operate substantially as shown and described.

199,814. STOP-VALVES. James F. Fifield, Brooklyn, N. Y. Filed Dec. 17, 1877.



Claim.—1. The valve B, having the extension B', with its smoothly-hollowed face M, in combination with a pipe or fluid-passage, A, and angular arm or bend A^3, adapted to form a smoothly-curved passage for the fluid, as herein specified.

2. The chamber A^1, larger than the pipe A, in combination with the branch or arm A^3, and with the valve B, having a wedge-like extension, B', of smaller diameter, adapted to move in the part A, and allow the main body B to come to a tight bearing on the annular seat a, as herein specified.

3. The pipe A, smaller than the chamber A^1, and provided with the projection a', in combination with the branch A^3 and valve B, having the groove b' and hollowed surface M, substantially as described, and for the purpose set forth.

199,815. LAMP-CHIMNEYS. Henry S. Fifield, New Hampton, N. H. Filed Mar. 30, 1877.

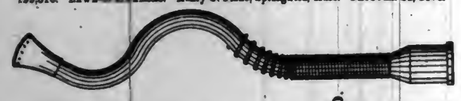
Claim.—The lamp chimney described, provided with the flap top, having

a ring, *c*, with grooves *d* extending radially entirely across the same, substantially as and for the purposes set forth.

199,815.

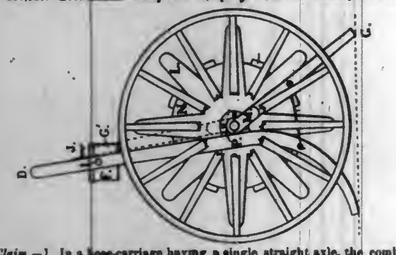


199,816. LAWN-SPRINKLERS. Henry G. Fiske, Springfield, Mass. Filed Jan. 21, 1878.



Claim.—In a lawn-sprinkler, the combination of the pliable tube A with the supporting-base D, increasing in flexibility from near the tip B to its outer end, substantially as shown and described.

199,817. HOSE-REELS. Henry G. Fiske, Springfield, Mass. Filed Sept. 10, 1877.

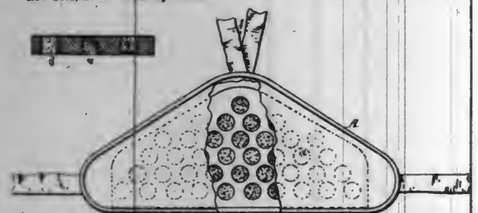


Claim.—1. In a hose-carriage having a single straight axle, the combination of the reel, the wheels, and the upright arms, provided with forwardly-extending feet, the reel, wheel, and arms being independent of each other, and all mounted upon the axle, so as to revolve with it or on it, substantially as described.

2. In combination with an axle and wheels thereon, a hose-reel rigidly secured on the axle, the long arms having lower curved ends E E, which extend beyond the periphery of the wheels, and the legs or feet G G, hinged to the axle, and of a length to extend beyond the periphery of the wheels, and capable of being folded up to the sides of the arms, all substantially as and for the purposes herein set forth.

3. In a hose-reel, the handle D, having suspended thereon by means of the joints I I the swinging box F, the said joints being fastened to the box above its center of gravity, and thereby causing it always to retain an upright position when the handle is tipped in the usual way, substantially as shown and described.

199,818. PADS FOR EXTERNAL APPLICATION OF MEDICINAL AGENTS. E. Harwood Flagg, New York, N. Y. Filed July 17, 1877.



Claim.—As a new article of manufacture, a medicinal pad, A, made of felt or other suitable material, in which the medicinal agent is carried in cells or other suitable receptacles *a*, formed in the pad, as set forth.

199,819. METHODS OF COMPRESSING AIR. Joseph P. Frisell, Boston, Mass. Filed Nov. 27, 1877.

Brief.—The air is compressed by a column of water descending through a shaft or pipe, and flowing through a tunnel and out of an ascending shaft or pipe into a suitable receiver.

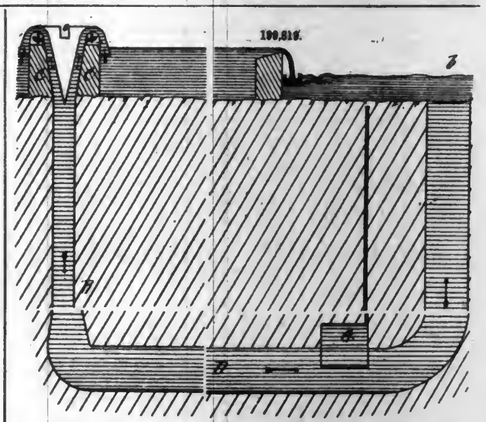
Claim.—1. The method of compressing air by introducing it within a column of water descending through a shaft or pipe, and flowing through a tunnel into and out of an ascending shaft or pipe, the air compressed in the descending shaft escaping into a suitable receiver located at or communicating with the top of the tunnel, from which it is taken to the point where it is to be used, substantially as described.

2. The siphon *c*, in combination with a descending shaft, B, tunnel D, ascending shaft E, receiver G, and pipe *l*, as and for the purpose set forth.

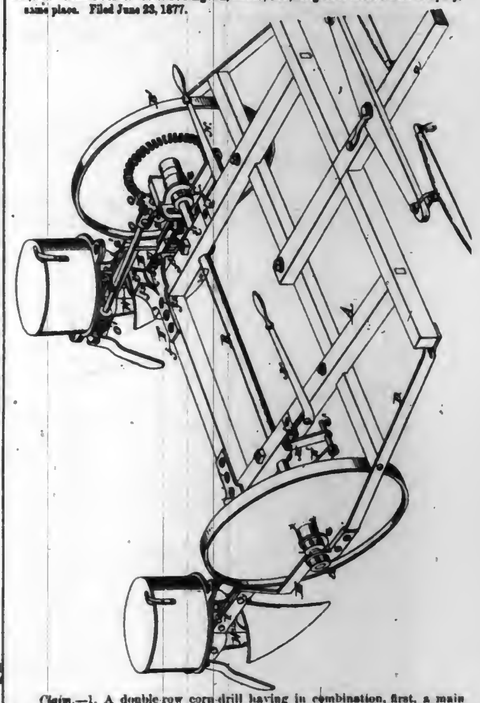
3. The gallery *d*, extending around and beneath the summit of the siphon *c*, in combination with a means of admitting air therefrom into the column of water in the descending shaft B, substantially as described, for the purpose specified.

4. The chamber *f*, with its perforations *h*, and gate or valve *i*, in combination with the siphon *c* and descending shaft B, substantially as and for the purpose described.

199,819.



193,820. CORN-DRILLS. Jesse P. Fulgham, Milton, Ind., assignor to Hoosier Drill Company, same place. Filed June 23, 1877.



Claim.—1. A double-row corn-drill having in combination, first, a main frame mounted on two wheels, which are the ground-wheels of the machine and driving-wheels of the seed-droppers; second, two independent secondary frames, coupled to swing on the axle of the ground-wheels, to each of which secondary frames are rigidly attached all the operative parts of a corn-drill in proper permanent operative relation; and, third, a driving-connection between each ground-wheel and dropper-plate, which swings with the secondary frame, to which it is permanently secured, and preserves an unchanging relation between these two points.

2. The adjustable graduated plates on the main frame for determining the space between the rows without measurement, substantially as specified.

3. The combination, substantially as specified, of the laterally-sliding bearing of the shaft O, the cranked trigger-shaft, the spring thereof, the trigger, and the fixed cam surface for acting on the trigger to turn the trigger-shaft, whereby the shaft O is moved laterally for throwing its pinion either in or out of gear with the ground-wheel of the main frame.

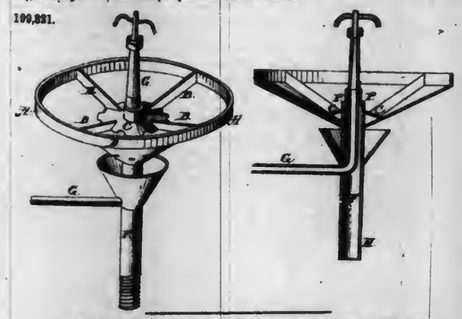
4. The adjustable bearing P of the driving-shaft O, in combination with the pivoted hopper, shiftable toward and from the gear driving its dropper-plate, and the clamping screw or screws, substantially as and for the purpose specified.

199,821. FOUNTAINS. Frank H. Gay and Reine J. Follett, Corry, Pa. Filed June 1, 1877.

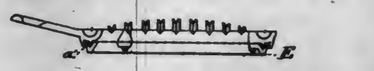
Claim.—1. A vegetable-pan, A, constructed as shown, with its partitions B B, perforated hub C P, and made to revolve on the discharging-pipe F as its axle.

2. The centrifugal fountain, in combination with the supply-pipe G and vegetable-pan A, for the purposes herein set forth.

199,821.



199,822. BROILERS. John B. Geyser, Allegheny, Pa. Filed Dec. 26, 1877.



Claim.—A broiler having a rib, *a'*, and lugs *b*, in combination with the annular recessed ring E, having lugs which correspond to those of the broiler, and an intermediate sheet of wire-gauze clamped around its edges by the rib of the broiler and recess of the ring, the said broiler and ring being secured together by means of lugs and screws, all substantially as herein shown and described, and for the purposes set forth.

199,823. METALLURGIC CRUCIBLES. Wm. L. Glerieux, Newark, N. J. Filed Nov. 23, 1877.



Claim.—As a new article of manufacture, a crucible or retort having an outer facing of black-lead, and inner lining of sand composition, or its equivalent, as and for the purpose set forth.

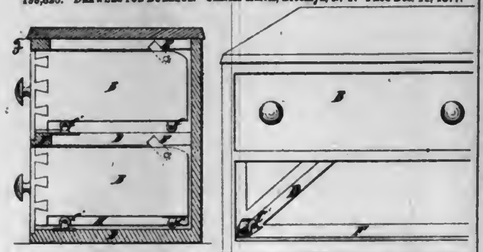
199,824. CHAIR-BOTTOMS. Samuel Green, Aurora, N. Y. Filed Mar. 12, 1877.



Claim.—1. A chair-seat composed of woven cane, the strands thereof being passed over the outer edge of the seat-frame to its under surface, and there secured to an independent strip or strips, which are fastened to said seat-frame, as and for the purpose set forth.

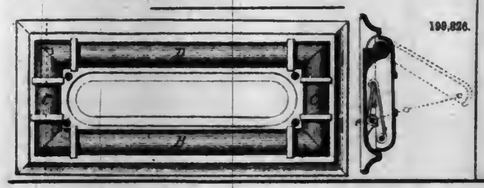
2. A chair-seat the frame thereof being recessed underneath to receive the strip or strips which fasten the cane, and having a slot opening upward out of said recess, through which the cane may pass, as and for the purpose set forth.

199,825. DRAWERS FOR BUREAUS. Charles Harris, Brooklyn, N. Y. Filed Dec. 11, 1877.



Claim.—In combination with the case having front rail F and stationary roller C', the drawer B, provided with roller C and stops E at its rear, and having the upper rear corners rounded, said parts being arranged substantially as and for the purpose set forth.

199,826.

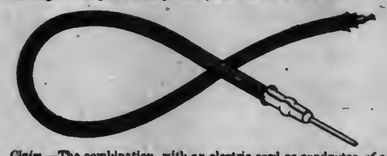


199,826. LIFTING-HANDLES. Nehemiah Hayden, Essex, Conn. Filed Jan. 3, 1878.

Claim.—1. In a lifting-handle, the handle-bar hinged to the plate, and with a jointed connecting-link between the handle and the base below the hinging-point of the handle, substantially as described.

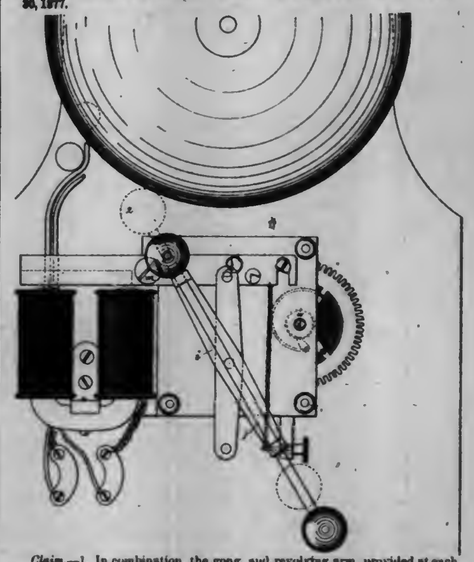
2. A lifting-handle composed of two parallel bars, one above the other, and jointed at their ends, hinged to the plate at substantially the axis of the upper bar, substantially as described.

199,827. TIPS FOR FLEXIBLE ELECTRIC CONDUCTING-CORDS. Lewis E. Heaton, Providence, R. I., assignor to Eugene F. Phillips, same place. Filed Dec. 7, 1877.



Claim.—The combination, with an electric cord or conductor, of a tip-wire, a compressing-binder, and a tip-shell, which is compressed and closed down upon and around the binder and firmly secured to the tip-wire, substantially as described.

199,828. CENTRIFUGAL BELL-ALARMS. Charles W. Holtzer, Brookline, Mass. Filed Ap. 30, 1877.

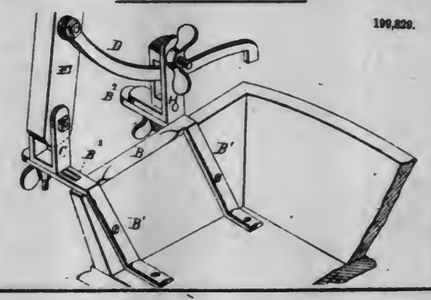


Claim.—1. In combination, the gong, and revolving arm, provided at each end with a detent-pin, a guide, a striker loosely connected therewith, substantially as described, and a lever provided with two detent-pins, one detent-pin on the lever stopping the revolution of the guide and arm just as the striker meets the gong, to permit the striker to descend from the gong under the action of gravity, and at a subsequent movement of the lever to release the revolving arm and permit it to again rotate and cause the striker to strike the gong, each blow of the striker being under control of the operator, substantially as described.

2. In combination, the electro-magnet, and arm provided with two detents, the gong, the shaft, the revolving arm provided with detents at each end, and a striker adapted to move to and from the center of motion of the revolving shaft and arm, and mechanism to rotate the shaft when the armature is operated, substantially as described.

3. The revolving guide *i*, in combination with the rod *j* and the two strikers connected therewith, and made movable in position with reference to the center of rotation of the guide, substantially as described.

199,829.



190,828. BUGGY-TOPS. William H. Hopkins and Martin L. Stebbins, Waverly, Iowa. Filed Dec. 18, 1877.

Claim.—1. The combination of the adjustable clip C, bow E, brace D, and adjustable clamp I, substantially as and for the purposes herein set forth.

2. The iron B, with arms B' and slotted arms B², in combination with the adjustable clip C, adjustable clamp I, curved brace D, and bow E, for the purposes set forth.

190,830. HORSESHOES. Robert B. Hagunin, New York, N. Y. Filed Jan. 14, 1878.



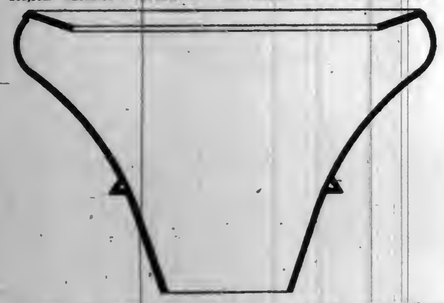
Claim.—1. In a hinged horseshoe, the combination of the side piece A, provided with the lip B, calk F, and strengthening projection H", constructed, substantially as described, with the side piece A', the two being united by a rivet, or its equivalent, substantially as and for the purposes set forth.

2. The combination of the pivot-button C with the hinging parts of shoe-plates, having corresponding cavities, all secured together by a rivet, or its equivalent, substantially as and for the purposes specified.

3. In combination with a hinged or expanding shoe, the combined arrangement of the flange or rib J and outside bevel J', the two arranged to form a groove or concave surface, to confine and hold the inner and outside surface of the hoof, and support the shoe and shoe-nails, substantially as and for the purposes specified.

4. In combination with a hinged or expanding shoe, the removable hollow projecting nut M and expanding bolt N, having bearings P P', substantially as and for the purposes specified.

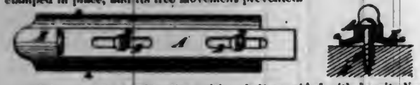
190,831. WATER-CLOSET BOWLS. Jesse L. Hutchinson, Baltimore, Md. Filed Jan. 5, 1878.



Claim.—A new article of manufacture, consisting of a sheet-metal water-closet bowl having its surface coated with some vitreous material, substantially as herein specified.

190,832. BOLTS FOR FASTENING DOORS, &c. William F. Hyatt, Brooklyn, N. Y. Filed June 19, 1877.

Brief.—A longitudinally-slotted bolt and its separate base-plate are secured together, and the latter to the door, by one set of screws, which also serve for the movement of the bolt, but preclude the movement of the base-plate. The base is likewise slightly curved, forming a spring-plate interposed between the bolt and the door, whereby, the screws being tightened, the bolt is clamped in place, and its free movement prevented.



Claim.—1. The combination, with a bolt provided with longitudinal slot or slots passing entirely through it, and a base-plate or sheath made separate therefrom, and provided with holes opposite the aforesaid slots, of screws passing through the slot or slots of the bolt from the outer side, and passing through and fitting snugly in the holes of the base-plate or sheath, substantially as described, whereby the bolt is secured to the base-plate or sheath, and the latter is secured to its support by the same means, which of themselves afford provision for the movement of the bolt, and preclude the movement of the base-plate or sheath.

2. The combination, with a bolt, A, and screws for securing it to its support, of a base-plate, B, for the bolt, constructed to form a spring, substantially as and for the purposes set forth.

190,833. COMPOUNDS FOR STEAM-PACKING. John Johnson, Brooklyn, N. Y., assignor of one-half his right to James R. Gilbert, same place. Filed Dec. 10, 1877.

Claim.—A compound for steam-packing, consisting of rubber, bone-black, and sulphur, in about the quantity named, the same being vulcanized at a required degree of heat, for the purpose specified.

190,834.



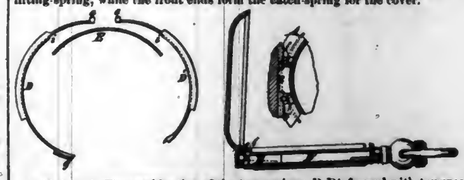
190,834. NUT-LOCKS. Lazare Landaber and Hilaneel S. Laird, San Luis Obispo, Cal. Filed Nov. 6, 1877.

Claim.—1. A nut-lock consisting of a washer, B, having upward-projecting flanges C and pawls D, in combination with a washer, E, having downward-projecting flanges F and radial slots G G, constructed, combined, and arranged substantially as and for the purpose herein described.

2. The washer B, with its upwardly-projecting flanges C and inwardly-projecting pawls D, in combination with the radial grooves or slots H H in the surface of the material which the washer is in contact with, and a bolt and nut, substantially as and for the purpose herein shown and described.

190,835. WATCH-CASE SPRINGS. Jacques Laurent, New York, N. Y. Filed Jan. 8, 1878.

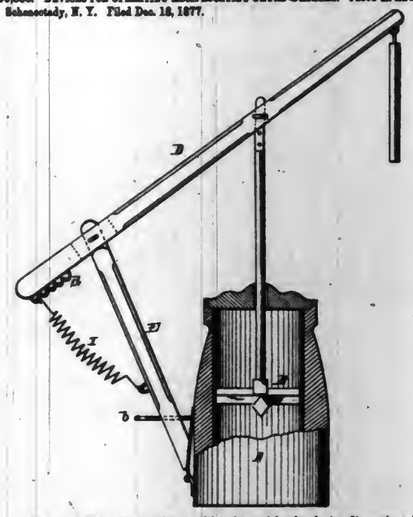
Brief.—In a watch-case, the combination of two springs held in position by a suitable locking-piece, the rear ends of which perform the functions of a lifting-spring, while the front ends form the catch-spring for the cover.



Claim.—1. The combination of the two springs D D', formed with tongues *e e* at their rear ends, to act upon the hinge of the watch-case cover, and abutting together at their front ends, and the locking-piece E, substantially as and for the purpose herein described.

2. In combination with the two springs abutting together at their front ends, and held together by the locking-piece E, the catch *g*, formed upon one of the abutting ends of the said springs, substantially as herein described, whereby both springs are made to act upon said catch, as herein set forth.

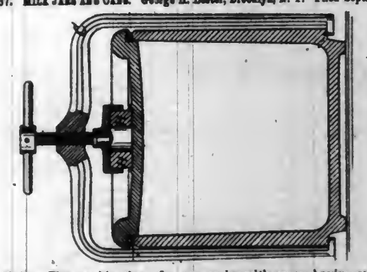
190,836. DEVICES FOR OPERATING RECIPROCATING CHURN-DASHERS. Jacob H. Lawrence, Schenectady, N. Y. Filed Dec. 18, 1877.



Claim.—1. The rack *d*, in combination with the lever D, spring I, and arm E, for the purposes herein set forth.

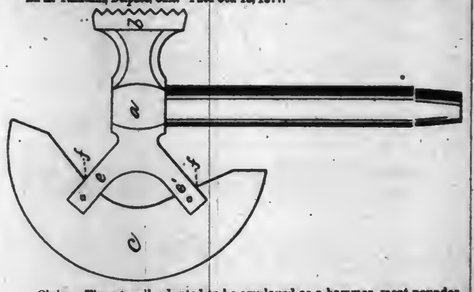
2. In combination with the vibrating arm E and its lever D, with churn-dasher suspended therefrom, and the churn A, the adjusting-screw *b*, for the purposes herein set forth.

190,837. MILK JARS AND CANS. George H. Lester, Brooklyn, N. Y. Filed Sept. 22, 1877.



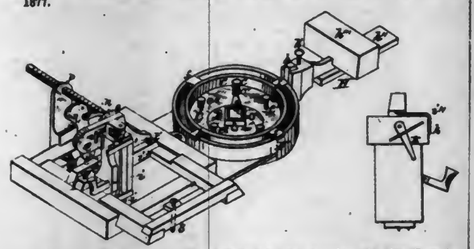
Claim.—The combination of a can or jar with cover, having one or more recesses in its bottom, and a bail carrying means for depressing the cover (which allows for expansion and contraction of the milk) and engaging the recess or recesses of the bottom of the can or jar, as and for the purposes set forth.

190,838. COMBINED HAMMER, MEAT-POUNDER, AND HASHER. Elbon V. Longworth and Eli M. Tannehill, Delphos, Ohio. Filed Oct. 13, 1877.



Claim.—The utensil adapted to be employed as a hammer, meat-pounder, or hasher, having the convex head *b*, provided with points *b'*, the body *a*, having the diverging prongs *c c'*, with slots *f*, and the curved blade *c*, seated in said slots, substantially as specified.

190,839. MILLSTONE-DRESSING MACHINES. Robert Lytle, Pine Flats, Pa. Filed Oct. 13, 1877.



Claim.—1. The base-plate B, supporting and carrying the ring C on its upper edge, as described, its eye having an upwardly-projecting flange, *b*, adapted to be secured to the stone-spindle by set-screws, substantially as and for the purposes set forth.

2. In combination with base B and ring C, as described, the rod-staff H, fitting on the dovetailed slide-joint *h*, and adapted to be trued by set-screws *h'*, substantially as and for the purposes set forth.

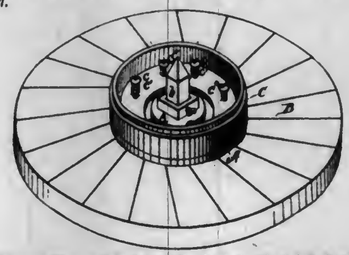
3. In a rod-staff, the spider E, adapted to be used upon the ring C, which carries the mill-staff, substantially in the manner and for the purposes set forth.

4. In combination with the rod-staff H, the hinged arm *w*, substantially as and for the purposes set forth.

5. The millstone-dressing frame I, as described, capable of being freely moved over the stone, and provided with the sustaining-screws *s*, whereby it is adapted to be held steady while the diamond is worked, substantially as set forth.

6. The combination of guide-bar F, with frame I, so that it is adjustable thereto by screws *t* and trued by screws *t'*, substantially as described.

190,840. DEVICES FOR DRESSING MILLSTONES. Robert Lytle, Pine Flats, Pa. Filed Oct. 24, 1877.



Claim.—1. The combination of the base A, adapted to be fitted to and upon a millstone with the ring C, which is flexibly secured to said base by set-screws passing through springs, and provided with set-screws *c* for truing it on said base, substantially as and for the purposes set forth.

2. In combination with the base A and ring B, the three screws *c* and springs *c'*, substantially as and for the purposes set forth.

190,841. SPAR-TORPEDO BOATS. Wm. H. Mallery, Bridgeport, Conn., assignor to American Propeller Company, same place. Filed Nov. 22, 1877.



Claim.—In a torpedo-boat, a spar projecting from the bows of the boat, and divided at or near that point into two branches, one extending along each side of the boat, and attached to or made a part of a transverse shaft, combined with mechanism for adjusting the spar, substantially as described.

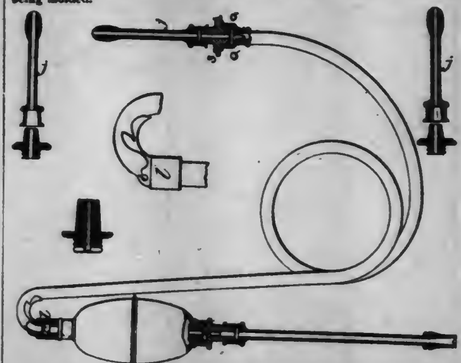
190,842. INSOLES FOR BOOTS AND SHOES. Thomas S. Matteson and Judson Wise, Logan, Ohio. Filed Jan. 5, 1878.



Claim.—An insole or slip-sole for boots and shoes, constructed on its upper surface with a central raised portion, forming depressions in front and rear and on the sides thereof, substantially as and for the purposes herein set forth.

190,843. ENEMA-SYRINGES. Morris Matteson, New York, N. Y. Filed Dec. 21, 1877.

Brief.—Smooth couplings are made in which rubber and metal are brought together to make tight joints, and yet avoid the wear that readily takes place between metal and metal. The peculiar form of plug and tubes allows of their being molded.

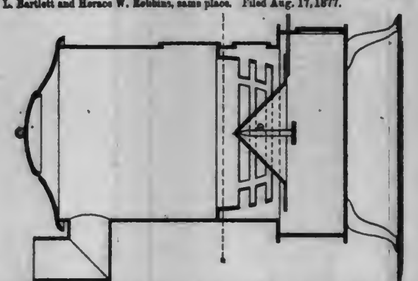


Claim.—1. The tube-protector *l*, having one side so formed as to form a rest for the tube, and which catches over the end of the coupling by which outlet-tube is connected to the bulb, substantially as described.

2. An inlet or outlet tube for enema-syringes made of hard rubber, metal, or other inflexible material, and which has a conical receptive cavity made in its inner end in the process of molding, substantially as set forth.

3. The coupling-joint of an enema-syringe made from hard rubber, celluloid, or analogous material capable of being molded, furnished upon one end with a screw-thread, and upon the other with a conical plug, in combination with metal inlet and outlet tubes, or said joint of metal with rubber inlet and outlet tubes, whereby rubber and metal are brought in contact, substantially as shown.

190,844. FIRE-PLATES FOR STOVES. Hugh L. McAvoy, Baltimore, Md., assignor to David L. Bartlett and Horace W. Robbins, same place. Filed Aug. 17, 1877.



Claim.—A fire-plate for stoves, boilers, and furnaces, consisting of a plate provided with a raised center of conical or pyramidal form, combined with a central pin or bar, supporting the said plate at the apex of the under side of the same, whereby both a rocking and a vibratory movement may be given to the plate, substantially as and for the purposes herein specified.

190,845. SCROLL-SAWING MACHINES. Reuben McChesney, Ilion, assignor of one-third his right to Thomas B. Davis, New York, N. Y. Filed June 3, 1874.

Brief.—The table and saw-gates are supported upon a trussed arm or frame provided with studs on its outer edge, over the ends of which pass an iron cable for preventing the vibration of said arm. The table can be adjusted and held at any desired angle by a sector plate rigidly attached to the lower end of the arm. A slotted and perforated semicircular plate is attached to the under side of the table and pivoted to the sector plate. The tension of the saw and driving-bands is regulated by a frame vertically adjustable in grooves in the upper end of said arm. The driving-bands can be adjusted for saws of different lengths by an oscillating wheel pivoted to the rear of the trussed arm, and provided with a series of openings near its periphery through which pass pins for connecting said bands and wheel.

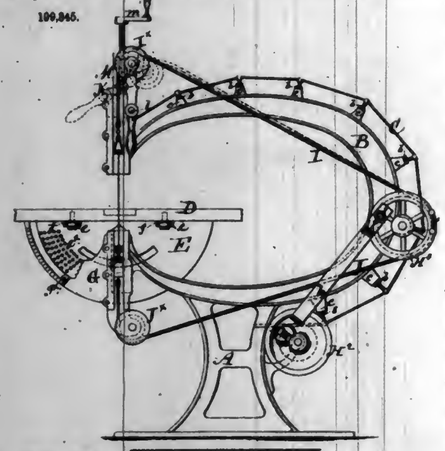
Claim.—1. The combination, with the base or pedestal A and its trussed arm B, provided with the studs *a* on its outer edge, of the wire cable or rod C, passing around the trussed arm and over the ends of the studs, in the manner and for the object specified.

2. The combination of the trussed arm B, provided with the stationary sector-plate G and the table D, with the semicircular plate E pivoted to the sector-plate, and provided with the series of perforations *e'*, pin *g'*, and set-screw *g*, for inclining said table D, substantially as herein shown and described.

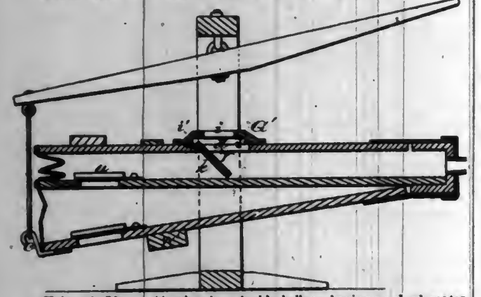
3. The sliding frame M, carrying the lever K, and provided with a vertical screw, M, for moving said frame vertically in the grooved recess in the end of the arm B, substantially as and for the purpose described.

4. The oscillating wheel H, provided with a series of openings, *j*, near its periphery, in combination with the two bands I and J, connected with said wheel by pins *i* passing through the openings *j* for adjusting the bands, substantially as and for the purpose described.

199,845.



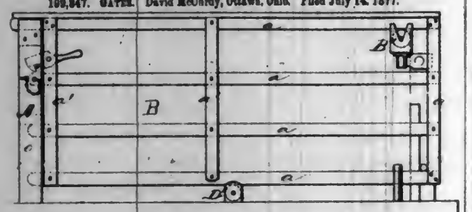
199,846. BELLOWS. Franklin M. McCrory, Goshen, Ind. Filed Dec. 8, 1877.



Claim.—1. The combination, in a double bellows having a valved center board, of a valved lower board adapted to be operated by means of a lever, and an upper board adapted to operate by its own gravity or by means of a weight, and provided with a draft-valve for the escape of any gases that may collect in the bellows when idle, substantially as specified.

2. The valve for bellows consisting of the seat-plate G', having orifice *i* and an annular rabbet, *i'*, and a flap, *k*, hinged to the said plate, fitting in the said rabbet and closing the said orifice, substantially as specified.

199,847. GATES. David McCurdy, Ottawa, Ohio. Filed July 14, 1877.



Claim.—A hinge for sibling and swinging gates, consisting of the cracket B', having a socket, *b*, with beveled upper end, and the rotating support C, having a tang, *c*, and a recess, *c'*, on its under side, around said tang, adapted to receive the socket, in combination with the roller D, journaled in said bracket, substantially as specified.

199,848. BELT-PULLEYS. Philip Medart, St. Louis, Mo., assignor of one-third his right to Geo. W. Fisher, same place. Filed Dec. 26, 1877.

Claim.—The combination, in a belt-pulley wheel, of a hub and arm, *s*, made in one piece of cast-iron, and a rim of wrought-iron, as and for the purpose shown and specified.

199,848.



199,849. INSTRUMENTS FOR ADMINISTERING BALLS TO HORSES. John Middleditch, West Chester, N. Y. Filed May 12, 1877.



Claim.—An instrument for administering balls of physic, &c., to horses, constructed with a conical barrel, A, piston *f*, spiral spring *j*, bulb B, slot *s* in the handle C, and combined retaining and releasing catch *b e g i*, substantially as and for the purpose described.

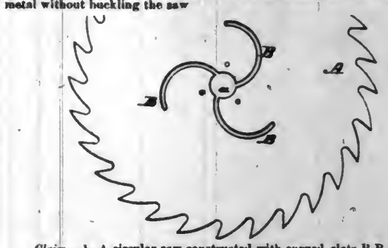
199,850. BUTTONS, &c. William A. L. Miller, San Francisco, Cal. Filed Dec. 19, 1877.



Claim.—A button or analogous article provided with the shell A, having a glass face and internal vertical bars, forming divided chambers, which are adapted to receive granulated material, substantially as shown and described.

199,851. CIRCULAR SAWS. John F. Milligan, St. Louis, Mo., assignor to Joseph W. Branch, same place. Filed Feb. 1, 1876.

Brief.—The slots are intended to permit expansion and contraction of the metal without buckling the saw

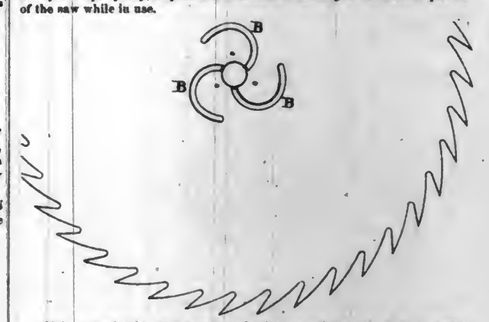


Claim.—1. A circular saw constructed with curved slots B B B in its central portion, as and for purpose the set forth.

2. A circular saw constructed with curved slots B B B extending from the eye, as shown and described, for the purpose set forth.

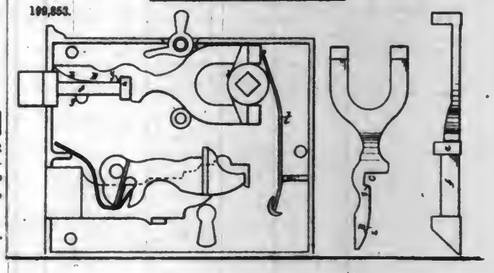
199,852. CIRCULAR SAWS. John F. Milligan, St. Louis, Mo., assignor to Joseph W. Branch, same place. Filed Mar. 10, 1876.

Brief.—The saw is provided with a series of curved slots, arranged between the eye and periphery, to prevent the excessive heating of the central portion of the saw while in use.



Claim.—A circular saw constructed with curved slots B B B, arranged between the eye and periphery, substantially as and for the purpose set forth.

199,853.

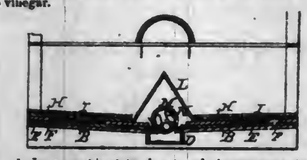


199,853. REVERSIBLE KNOB-LATCHES. John L. Moore, Pittsburg, Pa. Filed Dec. 6, 1877.

Claim.—The tilting section A, its arm B, recess *c*, and inclined edges *x y*, in combination with the section D, its stem *f*, and head *e*, and with the stationary pin *g* of a lock-case, substantially as set forth.

199,854. VINEGAR-GENERATORS. John B. Hotchkiss, Mansfield, Ohio. Filed Dec. 18, 1877.

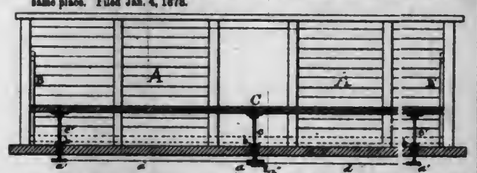
Brief.—The apparatus consists of a chamber having inclined ventilated floors and a central trough and coil of pipe for steam-heating. Apple or grape pomace being placed in the chamber, fermentation takes place, and the liquid flowing off meets in the hollow floors with currents of heated air, and is converted into vinegar.



Claim.—1. In a combined leach-vat and vinegar-generator, the inclined floors B F I, separated by strips E H, and forming hot-air chambers, in combination with the trough D, substantially as specified.

2. In a leach-vat and vinegar-generator, the combination of the inclined floors, having hot-air spaces between them, with the coil of pipe N and cover L, substantially as expressed.

199,855. STOCK-CARS. Albert Nicolaesen, Baltimore, Md., assignor to Mary E. Nicolaesen, same place. Filed Jan. 4, 1878.

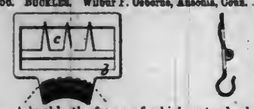


Claim.—1. In stock-cars, a vertically-adjustable beam extending lengthwise of the car, and operated by a series of screws, substantially as and for the purpose described.

2. The combination of the pulleys *a a' a'*, screws *c c' c'*, and beam C, substantially as and for the purpose described.

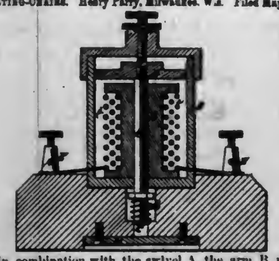
3. In stock-cars, the vertically adjustable beam extending lengthwise of the car, for supporting the animals, substantially as described.

199,856. BUCKLES. Wilbur F. Osborne, Ansonia, Conn. Filed Nov. 22, 1877.



Claim.—A buckle the frame of which extends downward to form a segment-shaped loop, substantially as described.

199,857. TILTING-CHAIRS. Henry Parry, Milwaukee, Wis. Filed May 29, 1877.



Claim.—1. In combination with the swivel A, the arm B, provided with hook J, spring I, arm Q, arranged to operate in the slot R, and projecting point O, arranged to operate in the notch P, substantially as and for the purpose specified.

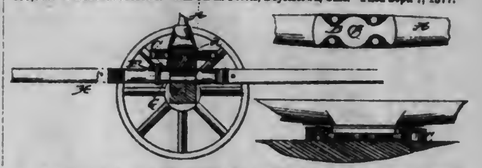
2. The swivel A, provided with arm B', in which there is a socket, F, and shoulder or fulcrum H, in combination with the lever E and spring I, substantially as and for the purpose specified.

3. The lever E, as combined with the arm B', provided with a hole and pin, by which they are locked in a rigid position, substantially as and for the purpose specified.

199,858. COMPOSITIONS FOR SLATE. Horace Fassnacht, Schoolcraft, assignor to Gilbert A. Watkins, Detroit, Mich. Filed Dec. 18, 1877.

Claim.—The within-described compound for artificial slating and other purposes, composed of alcohol, shellac, white glue, naphtha, copperas, ether, rubber, soap-stone, alum, ground marble, pumice-stone, drop-black, zinc, and pulverized glass, substantially as herein set forth.

199,859. WAGON-COUPLINGS. William R. Porter, Doylestown, Ohio. Filed Sept. 7, 1877.

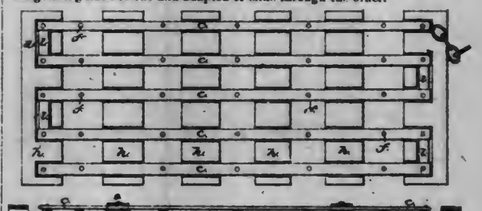


Claim.—1. The bolster A, provided with rocking plate B, in combination with the wheel Q, substantially as described.

2. In combination with the rocking bolster and fifth-wheel, the plate G on the top of the axle, the plate F on the under side of the sand-board, and the reach H, coupled to said plates, substantially as described.

199,860. SPRING-BED AND FIRE-ESCAPE. John C. Rahner, Portland, Oreg. Filed Aug. 27, 1877.

Brief.—The ladder sections are arranged edgewise upon the bedstead-rails, and the side pieces are made yielding by springs interposed between them, the rungs being fixed to one and adapted to slide through the other.



Claim.—1. The combination of slats *c* and rods *f*, and springs adapted to support the upper slats upon the lower ones, the sections thereby constituted being arranged, as shown, upon the bars of the bedstead, and joined together by suitable connections *l*, substantially as and for the purpose set forth.

2. In combination with the above-described connected sections, provided at one end with the means of attachment to a fixed object, the grooved supporting-bars *h* and clamps *l*, as described.

199,861. HORSE-POWERS. John C. Randall, Sulphur Springs, Tex., assignor of one-half his right to A. H. Edwards and Y. M. Edwards, same place. Filed June 26, 1877.

Claim.—The combination of the stationary gear-wheel A with the rotating lever-head D, having laterally-projecting leaves or wings *h*, constructed as described, for the insertion of the counter-wheels F, and provided with raised keepers *i*, substantially as described, for the purpose herein shown and specified.

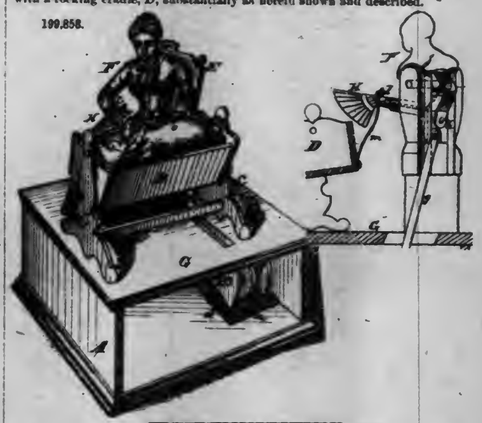
4. The combination of the connecting-rod *g* and reciprocating block or slide *h* with the flexible strap *i* and jointed neck *j* of the figure F, substantially as specified.

5. The combination of the swiveled hand *l* and fan H with the string *n* and cradle D, substantially as specified.

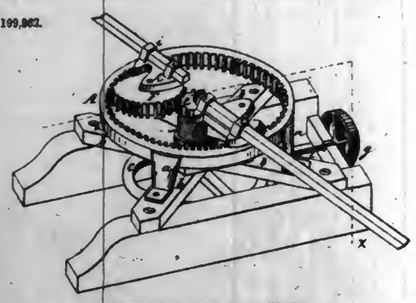
6. The combination of the hand *o* and flexible arm *p* of the figure F with the cradle D, substantially as specified.

7. The mechanical toy representing a female figure, F, in combination with a rocking cradle, D, substantially as herein shown and described.

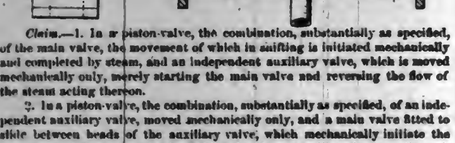
199,858.



199,862.



199,863. WHEEL-HUBS. Edmund D. Reynolds and Oliver B. Reynolds, Brockton, Mass. Filed Jan. 12, 1878.

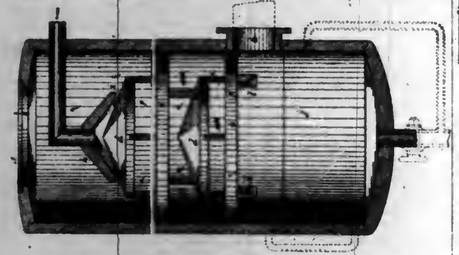


Claim.—1. In a three-part wheel-hub, the recessed central portion A, having the projections *a'* cast integral therewith, substantially as and for the purpose set forth.

2. In a three-part wheel-hub, the recessed central portion A, having the projection *a'* cast integral therewith, in combination with the slotted spokes B, substantially as and for the purpose set forth.

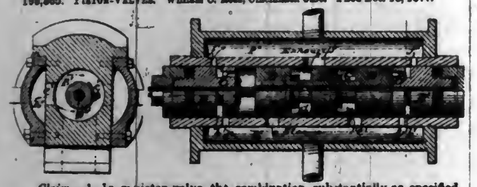
3. The herein-described wheel-hub, consisting of the recessed central portion A, having perforated projections *a'*, spokes B, having central slots *b* and transverse holes *b'*, the transverse pins *d*, and the flanges C D, the several parts connected together substantially as specified.

199,864. PROCESSES FOR SEPARATING SACCHARINE MATTERS FROM AIR. E. K. Richards, Cambridge, Mass. Filed Oct. 26, 1877.



Claim.—In the manufacture of sugar, the process herein described of separating saccharine matters from the air after its passage from a sugar-drying apparatus, consisting in passing such air through sheets or films of water, substantially as described.

199,865. PISTON-VALVES. William C. Rees, Cincinnati, Ohio. Filed Dec. 18, 1877.



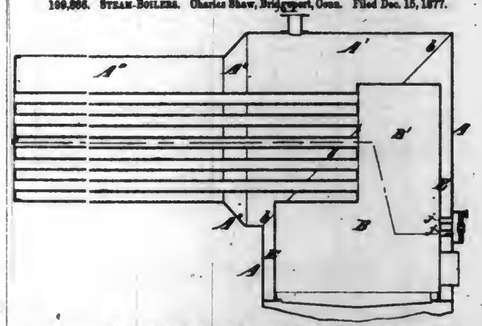
Claim.—1. In a piston-valve, the combination, substantially as specified, of the main valve, the movement of which in shifting is initiated mechanically and completed by steam, and an independent auxiliary valve, which is moved mechanically only, merely starting the main valve and reversing the flow of the steam acting thereon.

2. In a piston-valve, the combination, substantially as specified, of an independent auxiliary valve, moved mechanically only, and a main valve fitted to slide between heads of the auxiliary valve, which mechanically initiate the movement of the main valve in shifting, besides controlling the ports through which steam enters to complete such shifting of the main valve.

3. The combination, substantially as specified, of the triple-headed main valve, the cylinder-ports, the main exhaust-port, the main steam-induction ports of the valve-chest, the double-headed auxiliary valve, whose heads are provided with steam-passages, and the auxiliary steam and exhaust ports of the valve-chest.

4. The combination, substantially as specified, of the open-ended valve-chamber, the double-headed auxiliary valve, and the main valve confined between the heads of the auxiliary valve, so that both valves can be drawn together endwise from out of the open-ended valve-chamber.

199,866. STEAM-BOILERS. Charles Shaw, Bridgeport, Conn. Filed Dec. 15, 1877.

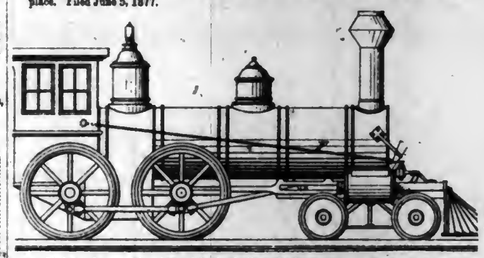


Claim.—1. In a tubular boiler, the combination of the vertical course A, having its entire upper edge beveled or mitered, and the horizontal course A', having its entire front edge correspondingly mitered or beveled and joined thereto, so that the top surface of the boiler fully overlaps the vertical course, substantially as described.

2. The combination, in a tubular boiler, of the cylindrical courses A' A''' and the truncated conical course A'', connecting said cylindrical courses, and forming an oblique wall entirely around the boiler, substantially as set forth.

3. In a tubular boiler of the locomotive type, the fire-box composed of the lower cylindrical part B and the upper semi-cylindrical part B', the flat side of which forms a tube plate, substantially as and for the purpose set forth.

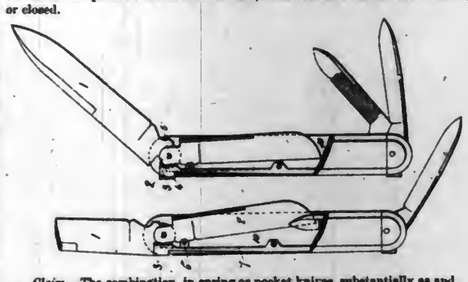
199,867. ALARMS FOR LOCOMOTIVES TO DRIVE CATTLE FROM THE TRACK. Wm. A. Simpson and Samuel Kimball, Lawrence, Kans.; said Simpson assignor to Louisa B. Simpson, same place. Filed June 5, 1877.



Claim.—In combination with the boiler of a locomotive, a series of diverging pipes projecting in front of the locomotive, above the pilot or cow-catcher, and communicating with the boiler, said nozzles being provided with a stop-cock, by means of which hot water or steam, or both, may be projected in front and to the sides of the locomotive, substantially as and for the purposes specified.

199,868. POCKET OR SPRING KNIVES. William Singleton and Edmund Priestman, Sheffield, Great Britain. Filed Dec. 29, 1877.

Brief.—The pivot end of the main blade is formed with a slot, in which a catch on the spring engages, and securely holds the blade in open position, preventing it from being accidentally closed. A side projection on the spring is arranged in such manner that when the adjacent blade is slightly depressed in its closed position the spring is forced backward and its catch disengaged from the slot in the pivot of the main-blade end, when the blade can be shut down or closed.



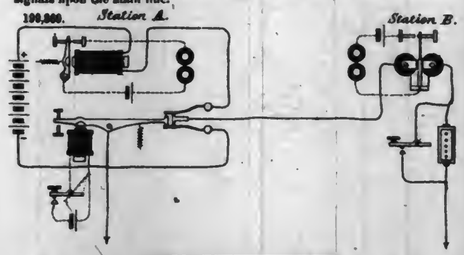
Claim.—The combination, in spring or pocket knives, substantially as and for the purpose specified, of the slotted blade 1, with the spring-catch 3, arranged to be actuated, as described, by the depression of an adjacent blade or instrument upon a projection, 6, of the said spring.

199,869. DUPLEX TELEGRAPHS. Garritt Smith, Astoria, N. Y., assignor to George B. Prescott, New York, N. Y., and the Western Union Telegraph Company. Filed Apr. 14, 1877.

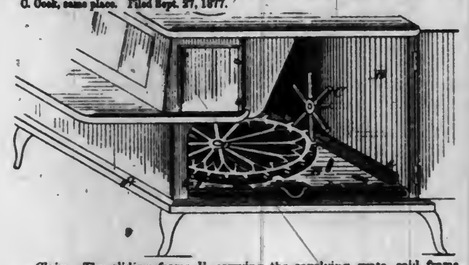
Claim.—1. In a duplex telegraph, a pole-changing key or transmitter, a battery, and a receiving-instrument so constructed as to respond to changes in the strength of the main-line current, (said receiving-instrument being placed between the transmitter and the battery,) in combination with one or more keys or transmitters so constructed as to transmit signals by increasing and decreasing the strength of current upon the line without interrupting the circuit, and one or more receiving-instruments so constructed as to respond to changes in the polarity of the current irrespective of its strength.

2. A rheostat in the main-line circuit and a key which transmits signals by breaking and closing a shunt passing around said rheostat, in combination with a sounding or recording instrument and a local battery, the circuit of which is opened and closed by the movements of the key when transmitting signals upon the main line.

199,869.

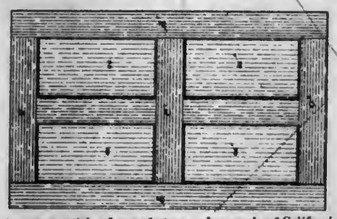


199,870. REVOLVING GRATES FOR COOK-STOVES. William Smith, Clowe, Ind., assignor of four-fifths of his right to Winfield S. Rollings, Harrison H. Stout, Albert R. Tucker, and E. C. Cook, same place. Filed Sept. 27, 1877.



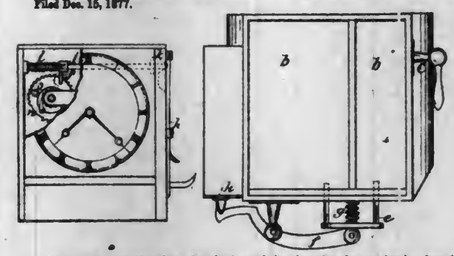
Claim.—The sliding frame E, carrying the revolving grate, said frame being provided with suitable ways for directing it and keeping it in place in the oven, as is herein fully set forth.

199,871. MANUFACTURE OF DOORS, &c. Jason Springer, San Francisco, Cal. Filed Apr. 9, 1877.



Claim.—As a new article of manufacture, a door made of California sugar-pine, with the layers of the pieces presented edgewise or at right angles to the sides, and running parallel to the edges of the same, substantially as described.

199,872. AUTOMATIC ANIMAL-FEEDING DEVICES. Emil Sterning, Hartford, Conn., (P. O. address, Parkville, Conn.,) assignor of one-half his right to Joseph A. Mongevan, same place. Filed Dec. 15, 1877.



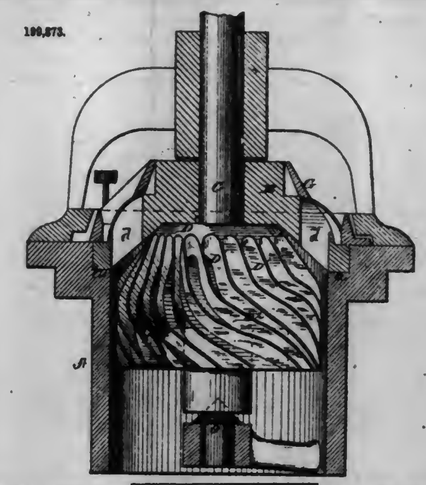
Claim.—In combination, the clock-work having the alarm-wheel *n*, bearing the pin *o*, the rod *j*, bearing the stud *f* and spring *i*, the sliding bar *h*, bearing the notch *k*, the spring *i*, the lever *f*, the pawl *e*, the spring *g*, and the flap *b*, all substantially as described, and for the purpose set forth.

199,873. TURBINE WATER-WHEELS. Richd. M. Stewart, Americus, Ga. Filed Dec. 18, 1877.

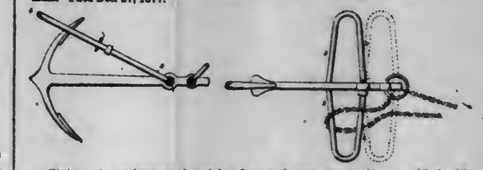
Claim.—1. The water-wheel constructed of a hub, D, having its lower part cylindrical and upper part conical, and provided with buckets D' D', extending at different angles from top to bottom of the hub, as herein set forth.

2. The combination, with the wheel D D' D', of the casing A, extending below the wheel, the top E, with chutes *d*, and the gate G, substantially as herein set forth.

199,873.

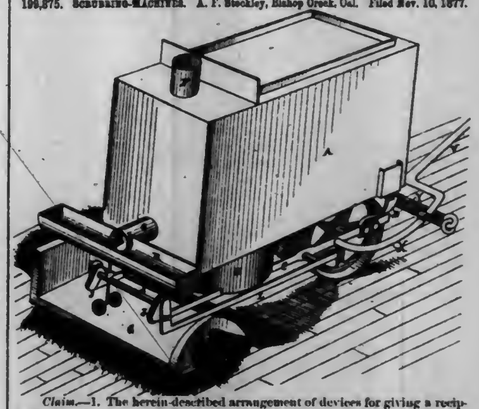


199,874. ANCHORS. Alfred A. Stimson, Rockport, assignor to himself and J. J. Mills, Chelsea, Mass. Filed Dec. 27, 1877.



Claim.—As an improved article of manufacture, an anchor provided with an endless swiveling stock, adapted to operate substantially as described.

199,875. SCRUBBING-MACHINES. A. F. Stockley, Bishop Creek, Cal. Filed Nov. 10, 1877.

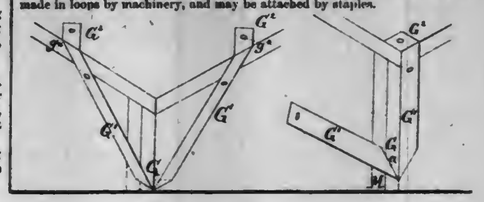


Claim.—1. The herein-described arrangement of devices for giving a reciprocating movement to the brush, consisting of the wheel M, with a sunken gear in its outer periphery, pinion, cranks, and shaft K, horizontal arms L, and fixed upright standards H, substantially as specified.

2. The combination, with the tank A, of the sprinkler R, valve S, and its operating mechanism, consisting of the vertical rod T and arm and adjustable nuts U, substantially as herein shown and described.

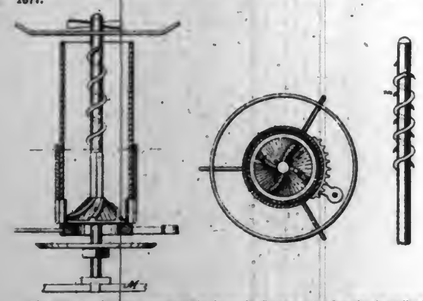
199,876. BOXES. Henry C. Stone, Brooklyn, N. Y. Filed Dec. 4, 1877.

Brief.—Ends of straps may be pointed and driven into the wood. Recesses may be carried farther from the corners, hence straps be longer, so that the straps from one corner will cross those from another. The wire straps may be made in loops by machinery, and may be attached by staples.



Claim.—The straps G G' G², inserted through the corner of a rectangular box, and extended upon three of the contiguous faces thereof, as and for the purposes specified.

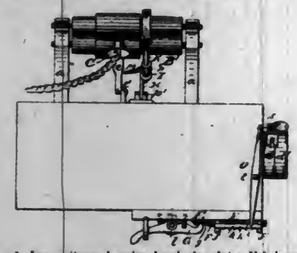
199,877. MILL-FEEDING APPARATUS. David P. Sulouff, Millintown, Pa. Filed Nov. 20, 1877.



Claim.—As the improvement in force feed apparatus herein described, the combination, with the hopper and runner, of the feed-tube having lateral discharge-openings, the damsel or spirally-flanged shaft, and the ribbed cone, for operating as specified.

199,878. STOP-MOTIONS FOR RAILWAY DRAWING-HEADS. Clark A. Tabor, Hope Valley, R. I. Filed Oct. 17, 1877.

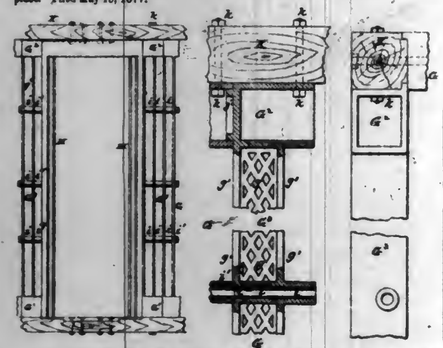
Brief.—When a sliver breaks in passing through the trumpet the top roll falls in the loop of a pivoted adjustable lever, which operates another lever extending beneath the machine, so as to release the latch from its hold upon the spring-actuated bolt, thus bringing into action the further devices for operating the shipping lever, and thus stopping the machine.



Claim.—1. In a railway drawing-head, the plates E *k*, in combination with latch G, spring *h*, and bolt F, having pin *i* projecting up through the guide-slot *k'*, formed between said plates E and *k*, whereby pin *i* serves the double purpose of preventing the bolt from turning in its bearings or brackets, and of operating the belt-shifting mechanism, substantially as and for the purpose herein shown and specified.

2. In combination with the compact rollers and trumpet of a railway drawing-head, the operating mechanism herein described, for stopping automatically the motion of the head on the breaking of the roving, consisting essentially of the adjustable rod K, arm I, lever H, latch G, bolt F, lever arm O, and belt-shifter N, all combined to operate substantially as and for the purpose herein shown and specified.

199,879. JAIL-CELLS. John S. Thomas, Fort Worth, Tex., assignor to Ellen C. Thomas, same place. Filed May 19, 1877.



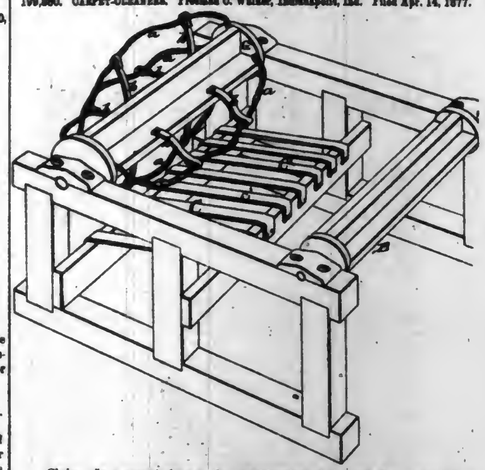
Claim.—1. The walls for jail-cells formed of vertical sections G, secured together by through-bolts I, substantially as set forth.

2. In combination with the bolts I and sections G, the transverse tubular bars for the concealment of the bolts, as set forth.

3. The jail-cell constructed of the cast sections G, through-bolts I, and corner-posts H, and all and head timbers K, substantially as set forth.

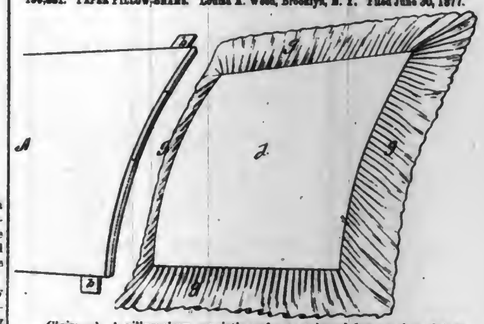
4. The lining of the outer or main walls of jails with sheet-iron, in connection with the narrow windows, lined with chilled cast-iron, substantially as set forth.

199,880. CARPET-CLEANERS. Freeman C. Walker, Indianapolis, Ind. Filed Apr. 14, 1877.



Claim.—In a carpet-cleaner, the combination of the roll B on which the carpet to be cleaned is wound, the inclined flexible platform C, and a beating-roller provided with radial straps *b*, connected by longitudinal cords *a*, substantially as shown and set forth, whereby the carpet is fed by means of the inclined platform and beater without the aid of auxiliary mechanism.

199,881. PAPER PILLOW-SHAMS. Louisa A. Wood, Brooklyn, N. Y. Filed June 30, 1877.



Claim.—1. A pillow-sham consisting of a pasteboard form and a plain or ornamented paper cover, substantially as specified.

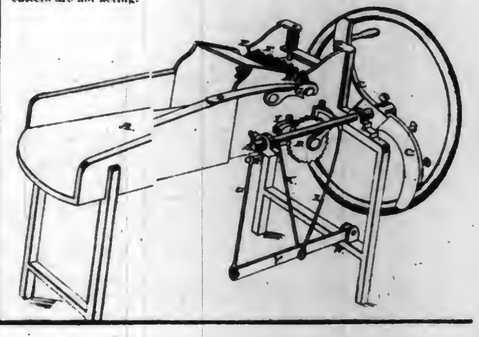
2. The pillow-form A, composed of pasteboard, curved and stiffened by curved marginal ribs, substantially as specified.

3. The pillow-sham cover composed of a paper body, *d*, and a marginal paper frill or edgings, *g*, adapted to be attached to the form A, substantially as specified.

4. The combination, with an arched pillow-form having edge tags *b*, of the removable paper sham B, having similar tags, adapted to be secured to those of the form, substantially as specified.

199,882. HAY-CUTTERS. John Weichhart, San Francisco, Cal. Filed Oct. 4, 1877.

Brief.—The feeding-rolls are geared together at one end, and at the opposite two pawls and a ratchet-wheel are made to turn both twice for every revolution of the cutting-wheel. Therefore the hay is only fed forward when the cutters are not acting.



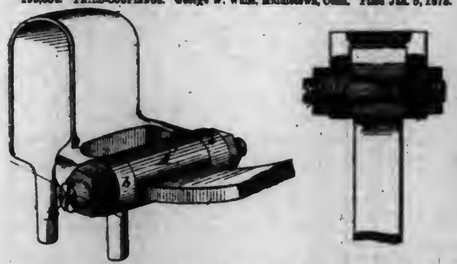
Claim.—The feed-roller D, with its ratchet-wheel P, operated by the pawls Y Y, through the medium of the rods X X', lever-bar V, connecting-rod U, crank T, and cutter-wheel, in combination with the upper roller F and connecting-gears I J K L, substantially as and for the purpose described.

199,883. WRITING-INK. Gus A. Wells, Hopkinsville, Ky. Filed Nov. 9, 1877.

Brief.—The improvement consists in preventing the gelatinization of the composition by neutralizing any acid in the ingredients with ammonia.

Claim.—The ink or writing-fluid formed of sodii boras, shellac, lamp-black, camphora, alcohol, and aqua ammonia dissolved in water, substantially in the proportions specified.

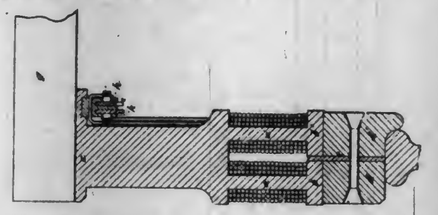
199,884. THILL-COUPLINGS. George W. Walls, Middletown, Conn. Filed Jan. 5, 1878.



Claim.—The combination, with the conical eye of a carriage-shaft, pitman, or similar article, of a shackle consisting of two ears having screw-bolt holes of different sizes, a conical bolt having a cylindrical screw-threaded portion at each end, and fitting said eye and shackle, and jam-nuts upon both ends of said bolt outside the shackle, whereby the bolt is prevented from turning.

199,885. ELECTRO-MAGNETIC TRACTION DEVICES FOR LOCOMOTIVES, &c. Richd. Werdermann, London, England. Filed Apr. 4, 1876.

Brief.—The rim of the wheel is divided into two parts, which are insulated from each other, so that each of the parts may constitute a magnetic pole opposite in kind to the other.



Claim.—The construction of a wheel with its rim, felly, or tire divided throughout its circumference into two or more parts, insulated from each other, and provided with suitable conductors, so that each of the said parts or divisions forms one pole of an electro-magnet.

199,886. RUBBER CUSHIONS FOR VEHICLE-SPRINGS. Webster B. West, Wilmington, Ohio. Filed Oct. 12, 1877.



Claim.—The combination, with the spring and axle-cap having a recess or cavity in its upper surface, of the interposed rubber cushion embedded in said cavity or recess, and projecting above the surface of the axle-cap, substantially as described.

199,887. FIRE-PROOF COLUMNS. Peter B. Wight, Chicago, Ill., assignor of one-half his right to Harvey B. Merrell, Morristown, N. J., and Thomas Ferguson, Detroit, Mich. Filed Dec. 31, 1877.



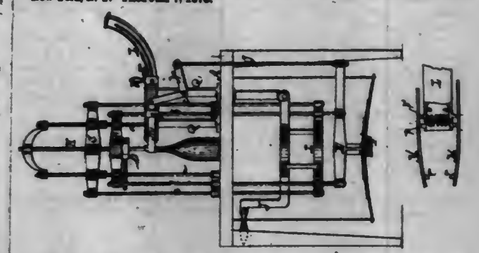
Claim.—1. In a fire-proof column constructed as described, the protecting-gores B, provided with the grooves *b*, as and for the purpose set forth.

2. The combination of the grooved gores with the continuous flange *c*, when constructed and arranged as described.

3. The combination of the grooved gores B and continuous flanges *c*, when constructed and arranged as described, with the grouting material filling the interstices between the same, for the purpose of securing the gores firmly in place, as set forth.

4. The combination of the cementing material with the gores B and the continuous T-shaped flanges, when arranged to fill the space between the same out or near to a line with the exterior surfaces of the gores, as and for the purpose set forth.

199,888. STOPPER-FASTENING ATTACHMENTS TO BOTTLING-MACHINES. John Geo. Wolf, New York, N. Y. Filed Jan. 7, 1878.

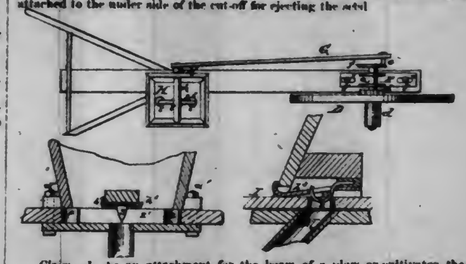


Claim.—1. The combination, with a bottling-machine substantially such as herein described, of a mechanism for feeding and applying the stopper-fastening agraffes to the bottles before the stopper-driving plunger is raised, the motion of said agraffe-feeder being produced as the bottling-cup is permitted to rise, substantially as set forth.

2. The combination, with the agraffe-guide L, of a pusher, M, provided with flps *r*, springs *o o*, provided with noses *p p'*, and an agraffe-forcing slide, *b*, all constructed and adapted to operate substantially as shown and described.

199,889. SEED-DROPPERS. John T. Wright, Columbia, Tenn. Filed June 6, 1877.

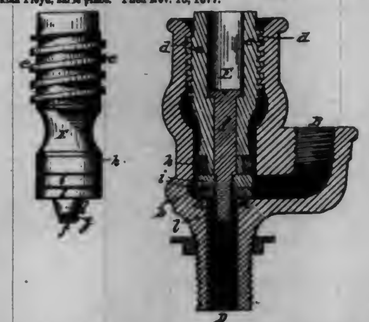
Brief.—On the front end of the beam is attached an adjustable casting carrying the operative mechanism. Into a slot in the seed-slide projects a spur, attached to the under side of the cut-off for ejecting the seed



Claim.—1. As an attachment for the beam of a plow or cultivator, the adjustable casting E, shaft *a*, with pinion *b* and disk *f*, the wheel D, with internal cog-gear *D'*, and the pitman G, placed on a wrist-pin on the disk *f*, as and for the purposes herein set forth.

2. The combination of the spur *s*, attached to the cut-off *h²*, and the slide I, having dropping-holes *s s*, with a groove or slot, *s'*, connecting the same, substantially as and for the purposes herein set forth.

199,890. HYDRANT-VALVES. Daniel Suers, Shamokin, Pa., assignor of one-half his right to Hezekiah Floyd, same place. Filed Nov. 15, 1877.



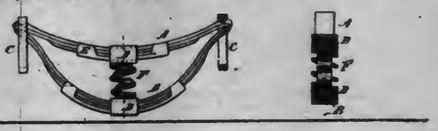
Claim.—1. The casing A, provided with apertures B and D, in combination with the screw E and pin *f*, with its washers, substantially as set forth.

2. In a hydrant-valve, the casing A, having seat *a*, in combination with the screw E and pin *f*, having washers *i*, substantially as specified.

3. In a hydrant-valve, the screw E, having threads *e* and washer *h*, in combination with the seat *a*, and with the pin *f*, having washers *i*, substantially as specified.

REISSUES.

8,057. LOCOMOTIVE-SPRINGS. James Jenkins, Evanston, Wyo. Patent No. 185,542, dated Dec. 19, 1876. Filed Nov. 17, 1877.

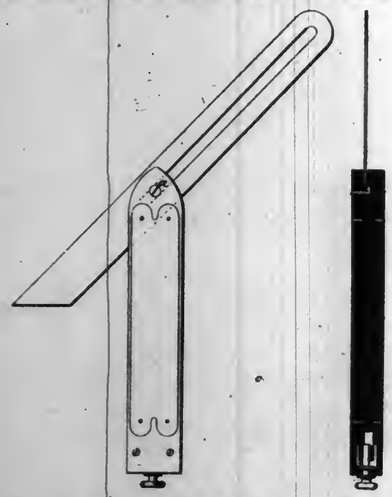


Claim.—1. A locomotive drive-spring whose upper and lower parts have their ends in contact, as shown, and freely and independently movable in guides or hangers, and provided with a median connection, substantially as shown and described.

2. A spring composed of the curved multiple-leaf portion B and the nearly-straight part A, having their contracted ends extended in horizontal, or nearly horizontal, planes, so that they have free sliding movement, one on the other, in a lengthwise direction, thereby allowing unlimited expansion of the spring, in combination with the slotted hangers or guides C C, which prevent lateral movement of the spring ends, substantially as shown and described.

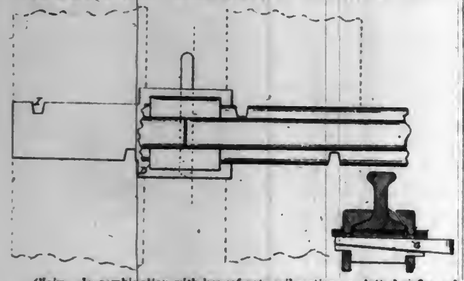
3. In combination with the parts A B, having their ends disconnected, but in free or sliding contact, and the median clip D, the spring F, placed between said parts, and serving as the means of connection, as shown and described.

8,058. TRY-SQUARE AND BEVEL. Isaiah J. Robinson, St. Johnsbury, Vt., assignor to Henry Fairbanks, same place. Patent No. 104,906, dated June 14, 1870. Filed July 27, 1877.



Claim.—The herein described improvement in bevel squares, consisting in the combination of the handle, the blade hung upon a pivot in said handle, and a clamping mechanism to engage the blade near the pivot, when arranged to be operated at the opposite end of the handle.

8,059. RAIL-JOINTS. George E. Morris and Charles W. Gregory, Danville, Ill. Patent No. 115,630, dated June 6, 1871. Filed Jan. 23, 1875.



Claim.—In combination with imperforate rail-sections, a slotted unflanged longitudinal bed-plate, slotted clips arranged in pairs on the opposite sides of the rail, so as to clasp the same and pass through the slots in said bed-plate, and a fastening key or wedge, all of said parts being arranged and combined substantially as set forth.

8,060. FINISHING TOBACCO-PLUGS. Alton Miller and Christian Worley, St. Louis, Mo., assignees of one-half their right to John Finzer & Brothers, Louisville, Ky. Patent No. 195,119, dated Dec. 6, 1877. Filed Dec. 29, 1877.

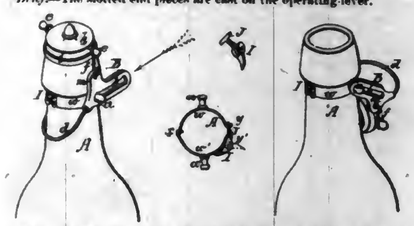


Claim.—1. The described process of marking plug-tobacco, which consists in impressing letters or other marks directly into the side of the plug during the process of manufacture, and by the pressure employed in making the plug, substantially as described.

2. A tobacco-plug marked with an impression, substantially as described.

8,061. BOTTLE-STOPPERS. Frank W. Perry, Philadelphia, Pa., assignor to Wm. A. Learis, same place. Patent No. 197,800, dated Dec. 4, 1877. Filed Jan. 12, 1878.

Brief.—The slotted end pieces are cast on the operating-lever.



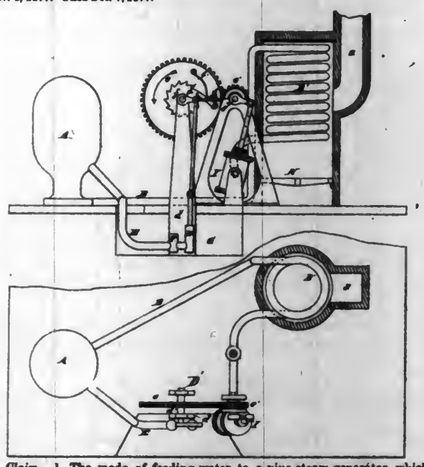
Claim.—1. The combination of projections *a a'* on the neck of the bottle, and like projections *c c* on the stopper, with connected arms B B, having slots adapted to the said projections *a*, and with links by which the stopper is connected to the arms, all substantially as set forth.

2. The collar A', made in two segments, connected together at one end, and combined at the other end with the link J and cam-lever I.

3. An operating-lever for bottle-stoppers, said lever consisting of a wire or yoke, *d*, and cast-metal end pieces or arms B B, as specified.

4. The cast-metal arms B B, each provided with a slot, *b*, and eye *m*, as described.

8,062. WATER-TUBE BOILERS. Charles Tyson, Philadelphia, Pa. Patent No. 196,844, dated Nov. 6, 1877. Filed Dec. 7, 1877.



Claim.—1. The mode of feeding water to a pipe steam-generator, which consists in the use of a supplemental pressure equal to the working-pressure of the motor, induced by an air-chamber, hydrnat, or equivalent, to automatically feed water to the generating-pipe during the operation of the motor, so that upon the stoppage of the motor subsequent generation of steam shall expel the water from the generating-pipe, and thus further generation of steam be prevented while the motor is at rest, substantially as described.

2. In a pipe steam-generator, the combination of a water supply or reservoir, G, pipe E, pumps D, air-chamber A, generating-pipe B B', and furnace H, substantially as shown and described, and for the purposes set forth.

8,063. SEWING-MACHINES. August Beck, New York, N. Y., assignor to Louis Dryfoos and Joseph Dryfoos. Patent No. 190,184, dated May 1, 1877. Filed Jan. 9, 1878.

Brief.—Feed-rollers of a conical form are used, by which the bodies and borders are fed forward in such manner as to be properly stitched. A spring presser-foot of coiled wire is employed around each needle, and is lifted clear of the material as it is fed forward. The forward and lateral feed-motions are effected by frictional clutches, which are made to act by levers operated by cams or tappets upon the driving-shaft, such levers being made adjustable to effect the desired length of stitch.

Claim.—1. The combination, with a series of vertically-reciprocating needles mounted in a laterally-reciprocating sewing-frame, of conical feed-rolls acting intermittingly during the intervals of the formation of stitches, substantially as herein shown and described.

2. The combination, substantially as set forth, with a series of vertically-reciprocating needles, of a like number of vertically-yielding and elastic annular presser-feet, one for each needle, each presser-foot surrounding its needle, and attached to and moving with the needle bar or holder, or rising from the cloth-plate when the feed takes place.

3. The combination of the laterally-reciprocating sewing-frame and independent forward feed with a series of needles carried by said sewing-frame, and a like number of vertically-yielding annular presser-feet, one for each needle, each presser-foot surrounding its needle, and attached to and moving with the needle bar or holder, as shown and set forth.

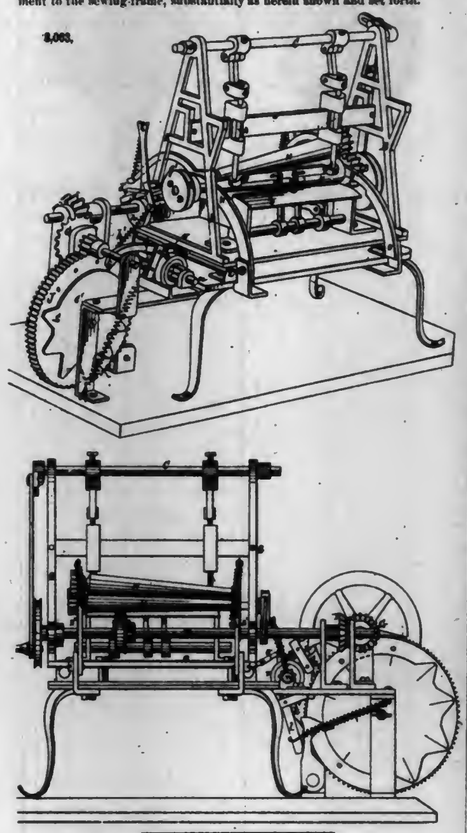
4. The described mechanism for operating the feed, consisting of a friction-clutch clasping the feed-shaft, in combination with a vibratory pivoted lever supported on one end of the clutch, and having one of its arms overhanging, but not attached to, the other and free end of the clutch, substantially as set forth, so that the movement of said lever shall cause the clutch first to close upon the shaft, and then to rotate the same, as set forth, whether the said mechanism be used to operate the forward or lateral feed.

5. The combination of the friction-clutch, the feed-shaft embraced by the same, and the vibratory lever provided at that end which acts on the clutch with means of adjustment, whereby the lost motion of the lever may be increased or decreased at pleasure, to regulate the length of the feed.

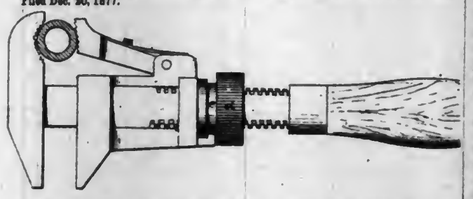
6. The combination, with the sewing-frame, of the pattern-wheel and removable pattern-cams, one set on each face of the wheel, the one set designed to move the sewing-frame in one direction, the other set in the other direction, each set acting alternately on the frame, and both being removable to allow different sets of pattern-cams to be interchangeably used on the same wheel.

7. The pattern-wheel, with removable pattern-cams, one set on each face of the wheel, in combination with friction-clutches and their operating-levers, one set for each set of pattern-cams, and a rock-shaft, on which said clutches are mounted, connected with and imparting a laterally-reciprocating movement to the sewing-frame, substantially as herein shown and set forth.

8,063,



8,064. WRENCHES. James McLaren, Albany, N. Y. Patent No. 59,852, dated Nov. 20, 1866. Filed Dec. 20, 1877.



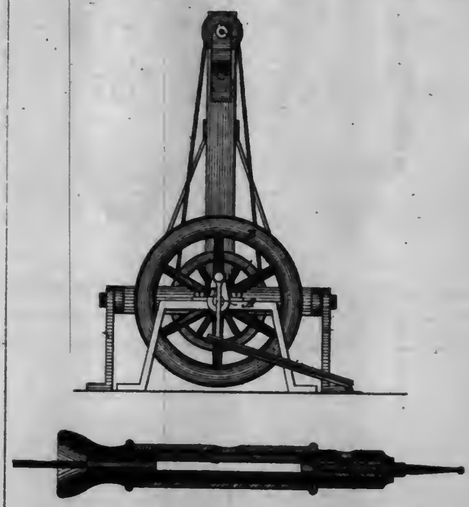
Claim.—1. The combination, in a duplex wrench, of two stationary jaws on a screw-threaded shank or stock, and a slide operated by a screw-nut, and having projecting from one of its sides a rigid jaw, and connected to the opposite side a yielding spring-jaw, adapted to serve, in conjunction with one of the stationary jaws, as a pipe-wrench, substantially as described.

2. In a duplex wrench, the combination of the two stationary jaws and shank, and a sliding jaw having a separate yielding spring-jaw connected thereto, substantially as described.

3. The combination, in a duplex wrench, of a shank having two stationary jaws, a rigid sliding jaw, and a laterally-yielding spring-jaw, substantially as set forth.

8,065. DENTAL DRILLS. Chandler Poor, Dubuque, Iowa, assignor to Samuel S. White, Philadelphia, Pa. Patent No. 113,908, dated Aug. 22, 1871. Filed Dec. 27, 1877.

Brief.—The upright part of the frame moves in a plane at right angles to the plane in which the main pulley driving-wheel rotates. The hand-piece case has reduced removable end bearings, which screw into the main case and afford bearings for the chuck with its reduced ends.



Claim.—1. A dental engine constructed substantially as hereinbefore set forth, composed of the following elements, to wit: a base or support, a rocking arm or frame pivoted upon the base, a counter-balance acting on the rocking arm, a driving-pulley mounted upon and vibrating with the rocking arm in a plane at right angles to that in which the driving-pulley turns, a driven pulley, also mounted upon and vibrating with said arm, belt-connections between the pulleys, a flexible power-conveyer connected with the driven pulley, a rotary tool-chuck or mandrel driven thereby, and a prime mover to impart motion to the driving-pulley without interfering with its rocking movements.

2. The combination, in a dental engine, of a base or support, a rocking arm or frame pivoted thereon, carrying driving mechanism vibrating therewith in a plane at right angles to that in which the driving-pulley turns, a counter-balance acting on the rocking arm to retain it normally in an upright position, while allowing it a certain degree of flexure in one direction, and a foot-treadle imparting motion to a driving-shaft connected with the shaft of the driving-pulley by a universal joint in the axis of vibration of the rocking arm, as set forth.

3. A dental-engine sectional hand-piece constructed substantially as hereinbefore set forth, with the diameter of its bore reduced at each end to constitute journal-bearings for the reduced ends of a rotating chuck or mandrel, having its front end provided with a socket for the reception of the shank of an operating-tool, and its rear end adapted for connection with the driving-power.

4. A dental-engine hand-piece constructed substantially as hereinbefore set forth, provided at its front end with a bearing for the front end of a rotary chuck mounted therein, and at its rear end with a removable bearing or sleeve for the rear end of the chuck, whereby the said rear bearing, when properly adjusted, prevents unsteady working and endwise movement of the chuck in the casing, but when removed permits of the withdrawal of the chuck without necessitating its disconnection from the driving-shaft.

5. The combination, substantially as hereinbefore set forth, in a dental-engine hand-piece, of a casing having a removable bearing to permit of the withdrawal of the chuck, a rotary chuck enveloped by said casing, and prevented from endwise movement therein by bearings at each end of the casing, and a tool-locking device carried by the chuck, to lock the tool-shank in the socket, access being had to the tool-locking device through an aperture or opening in the casing, in line with which opening the lock is always brought to permit of its manipulation, owing to the prevention of endwise movement of the chuck in the hand-piece.

6. The combination, substantially as hereinbefore set forth, of a hand-piece enveloping a rotary chuck locked against endwise movement, and provided at its forward end with a socket and tool-lock, the hand-piece turning freely upon the chuck without impeding its rotation, with flexible driving mechanism imparting motion to the chuck from the rear, whereby the hand-piece is given a wide range of movement in various directions, is capable of turning freely to conform to the movements of the hand of the operator, and is adapted for the ready interchange of operating-tools.

8,066. LAMPS. Bennett B. Schneider, New York, N. Y. Patent No. 197,128, dated Aug. 24, 1875. Filed Dec. 10, 1877.

Claim.—In combination with a case, A, and reservoir B, provided with a valve, a catch, D, and means to receive the catch, whereby the reservoir is automatically locked in place by a vertical movement of the same, substantially as and for the purpose set forth.

8,066.



8,067. LAMPS. Bennett B. Schneider, New York, N. Y. Patent No. 197,128, dated Aug. 14, 1878. Filed Dec. 13, 1877.

Brief.—The spring tends to close the valve and lift the reservoir as soon as the catch is released.

Claim.—The combination of a catch applied to lock the reservoir when inserted to its place in the receiver, and a spring-valve applied to the bottom of the reservoir, substantially as specified.

8,067.

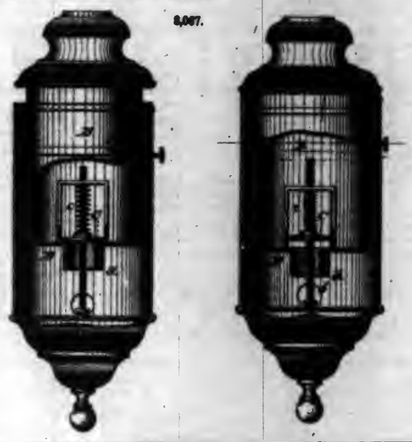


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THE NEW CLASSIFICATION.

The commission appointed by the Commissioner of Patents to revise the Official Classification of Subjects of Invention has completed its labors, and the following classification has been adopted, and will supersede the one now in use.

CLASSES OF INVENTIONS.

Advertising	40	Cordage	28
Aeration and bottling	1	Crinoline and corsets	29
Apparel	2	Curtain-fixtures	156
Arms and projectiles, making	86	Cutlery	30
Artificial limbs	3	Dairy	31
Artificial stone, lime, and cements	106	Dentistry	32
Baths and closets	4	Distillation	124
Beds	5	Drafting	33
Bee-culture	6	Driers	34
Bleaching and dyeing	8	Educational appliances	35
Boats	9	Electricity	36
Book-binding	11	Excavating	37
Boots and shoes	12	Explosives	52
Brakes and gins	13	Felting and hats	38
Bread, cracker, and lozenge making	107	Fences	39
Brewing and fermenting	7	Fertilizers	71
Bridges	14	Fine arts	41
Brushing and scrubbing	15	Fire-arms	42
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Butchering	17	Fluid-pressure regulators	50
Caoutchouc and miner plastics	18	Fuel	44
Carding	19	Furniture	45
Care of live stock	119	Games and toys	46
Carpentry	20	Garden and orchard	47
Carriages and wagons	21	Gas	48
Chains, staples, and horse-shoes	59	Glass	49
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The above classes have been grouped, for Office purposes, to form the following—

DIVISIONS.

Division No. 1, Tillage. *Examiner*, Fox. *Classes:* Harrows and Diggers, 55; Plows, 97; Seeders and Planters, 111.

Div. No. 2, Farm Stock and Products. *Examiner*, Jayne. *Classes:* Bee Culture, 6; Brushing and Scrubbing, 15; Butchering, 17; Dairy, 31; Fences, 39; Care of Live Stock, 119; Tobacco, 131; Vegetable Cutters and Crushers, 146.

Div. No. 3, Metallurgy, Distillation, and Refrigeration. *Examiner*, Dyrenforth. *Classes:* Fishing and Trapping, 43; Gas, 48; Refrigeration, 62; Metallurgy, 75; Ore, 90; Metal Coating, 96; Distillation, 124.; Sugar and Salt, 127.

Div. No. 4, Civil Engineering. *Examiner*, Pond. *Classes:* Bridges, 14; Carpentry, 20; Excavating, 37; Hydraulic Engineering, 61; Masonry, 72; Railways, 104; Roofing, 108; Curtain Fixtures, 156.

Div. No. 5, Fine Arts, Toys, and Apparel. *Examiner*, Burke. *Classes:* Apparel, 2; Crinoline and Corsets, 29; Educational Appliances, 35; Fine Arts, 41; Games and Toys, 46; Jewelry, 63; Music, 84; Photography, 95; Toilet, 132; Umbrellas and Fans, 135.

Div. No. 6, Chemistry. *Examiner*, Antisell. *Classes:* Brewing and Fermenting, 7; Bleaching and Dyeing, 8; Chemicals and Medicines, 23; Explosives, 52; Fertilizers, 71; Oils, Fats, and Glue, 87; Painting and Graining, 91; Preserving, 99; Hides, Skins, and Leather, 149.

Div. No. 7, Harvesting and Milling. *Examiner*, Parkinson. *Classes:* Brakes and Gins, 13; Garden and Orchard, 47; Harvesters, 58; Mills, 83; Threshing, 130.

Div. No. 8, Furniture, Bread Making, and Laundry. *Examiner* Tilden. *Classes:* Beds, 5; Furniture, 45; Laundry, 68; Bread, Cracker, and Lozenge Making, 107; Washing Apparatus, 141; Chairs, 155.

Div. No. 9, Hydraulics and Pneumatics. *Examiner*, Durnall. *Classes:* Aeration and Bottling, 1; Baths and Closets, 4; Pneumatics, 98; Pumps, 103; Water Distribution, 137; Water-Wheels, 138.

Div. No. 10, Carriages, Wagons, and Railway Cars. *Examiner*, Sanders. *Classes:* Carriages and Wagons, 21; Railway-Cars, 105.

Div. No. 11, Leather Working, Machines, and Articles. *Examiner*, Chapman. *Classes:* Boots and Shoes, 12; Clasps and Buckles, 24; Harness, 54; Hose and Belting, 60; Leather, 69; Tanning, 129; Trunks and Equipments, 133.

Div. No. 12, Mechanical Engineering. *Examiner*, Schoepf. *Classes:* Hoisting, 57; Journals and Bearings, 64; Household Articles, 65; Mechanical Powers, 74; Presses, 100.

Div. No. 13, Metal Working. *Examiner*, Church. *Classes:* Chains, Staples, and Horseshoes, 59; Hardware Making, 53; Metal Bending and Straightening, 153; Metal Bolts, Nuts, Rivets, and Screws, 10; Metal Boring and Drilling, 77; Metal Forging, Punching, and Shearing, 78; Metal Personal Ware Making, 79; Metal Rolling, 80; Metal Tubing and Wire, 134; Metal Tools and Implements Making, 76; Metal Turning, Planing, and Milling, 82; Nails, Spikes, Needles, and Pins, 85; Nut and Bolt Locks, 151; Arms Making, 86; Wagon, Car, and Track Irons, 152.

Div. No. 14, Metal Working, Grinding, and Polishing, and Packing Vessels. *Examiner*, Stocking. *Classes:* Grinding and Polishing, 51; Metal Founding, 22; Metal Tempering, Annealing, and Cementation, 148; Metal-Working Tools, 81; Packing and Storing Vessels, 150; Sheet Metal Ware Making, 113; Wire Working, 140.

Div. No. 15 Plastics. *Examiner*, Hedrick. *Classes:* Artificial Stone, Lime, and Cement, 106; Caoutchouc and Minor Plastics, 18; Clay and Pottery, 25; Composite Roofing, 154; Felting and Hats, 38; Fuel, 44; Glass, 49; Paving, 94; Paper Making, 92; Stone Working, 125.

Div. No. 16, Electricity, Measuring Instruments and Optics. *Examiner*, Townsend. *Classes:* Drafting, 33; Electricity, 36; Horology, 58; Measuring-Instruments, 73; Optics, 88.

Div. No. 17, Printing and Paper Manufactures. *Examiner*, Freeman. *Classes:* Advertising, 40; Book-Binding, 11; Paper Manufactures, 93; Printing, 101; Stationery, 120.

Div. No. 18, Steam Engineering. *Examiner*, Fowler. *Classes:* Driers, 34; Fluid-Pressure Regulators, 50; Locomotives, 123; Steam-Boilers, 122; Steam-Engines, 121; Steam-Furnaces, 110; Steam-Valves, 136.

Div. No. 19, Stoves and Lamps. *Examiner*, Catlin. *Classes:* Lamps and Gas-Fittings, 67; Stoves and Furnaces, 126.

Div. No. 20, Surgery and Hardware. *Examiner*, Wilkinson. *Classes:* Artificial Limbs, 3; Builders' Hardware, 16; Coffins, 27; Cutlery, 30; Dentistry, 32; Locks and Latches, 70; Safes, 109; Surgery, 128.

Div. No. 21, Textiles. *Examiner*, Appleton. *Classes:* Carding, 19; Cloth, 26; Cordage, 28; Knitting and Netting, 66; Sewing-Machines, 112; Silk, 117; Spinning, 118; Weaving, 139.

Div. No. 22, Guns, Ships, and Wood-Working. *Examiner*, Bartlett. *Classes:* Boats, 9; Coopering, 147; Fire-arms, 42; Marine Propulsion, 115; Ordnance, 89; Projectiles, 102; Ships, 114; Signals, 116; Wood-Turning, 142; Wood-Working Machines, 144; Wood-Working Tools, 145; Wood-Sawing, 143; Wheelwright Machines, 157.

The classes of inventions have been grouped into these twenty-two Divisions, the primary object being to separate the work of the Office into parts, each capable of being handled by a single Examiner. So far as possible the Divisions have been constituted of cognate inventions. This rule could not be strictly followed, however, because the number of classes to be assigned to any one Division must be determined by the amount of work which the classes so grouped would impose upon an Examiner and the force at his command, usually three or four Assistant Examiners and a clerk. Hence, the Divisions here noted are rather divisions of the Office work than divisions of inventions; therefore, persons ordering copies will order by the Class number rather than the Division number. Under each one of these classes there are several sub-classes upon which the Examiners are at present at work. As soon as they are completed they will be published, together with the present information in relation to the new classification.

Of the above classes, all have been photo-lithographed except Artificial Limbs, Class 3; Builders' Hardware, Class 16; Coffins, Class 27; Coopering, Class 147; Cutlery, Class 30; Dentistry, Class 32; Locks and Latches, Class 70; Locomotives, Class 103; Nut and Bolt Locks, Class 151; Safes, Class 109; Steam-Boilers, Class 122; Steam-Engines, Class 121; Steam-Furnaces, Class 110; Steam-Valves, Class 136; Surgery, Class 128; Wheelwright-Machines, Class 157; Wood-Sawing, Class 143; Wood-Turning, Class 142; Wood-Working, Class 144; Wood-Working Tools, Class 145; and these are all being reproduced, and before the end of the year it is expected that photo-lithographic copies of the drawings of any patent ever issued by the Government can be obtained in this Office for 25 cents per single copy, or 10 cents each where more than twenty copies are desired. A photo-lithographic copy of any current issue (specification and drawing) can be had at the same price.

The specifications of all patents issued since July 1, 1871, are in print, and will be furnished, with the drawing, without extra charge. The specifications of most of the patents issued from November 20, 1866, to July 1, 1871, are in print, and where such is the case the Office will furnish them with the drawings; but it will not undertake to reprint copies which have been exhausted.

PRICE OF THE GAZETTE.—The price of THE OFFICIAL GAZETTE is still fixed at $6 per annum, and there is no reduction from that price except where five subscriptions are included in one order, when the subscription is $5; and subscribers can be added to this club, by the party or parties forming it, any time during the year, at the reduced price.

The Annual Index will not be furnished to subscribers hereafter without extra charge; but immediately after the expiration of each volume a Half-yearly Index will be given without charge, and should additional copies of the Half-yearly Index be desired, they will be furnished upon the payment of fifty cents for each additional copy required.

EXTRA COPIES OF THE GAZETTE.—The letter-press of THE GAZETTE has been prepared with a view of meeting the demand for extra copies of that particular portion which relates to Office practice, decisions of the courts, &c.

Extra copies of the letter-press can be had separately from the illustrated portion, and the weekly index of patents and patentees can be had in any number at 5 cents per copy. Where extra copies of either the letter-press or weekly index are desired orders must be sent to the Office as early as the Saturday preceding the issue of the following Tuesday.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

COMMISSIONER'S DECISIONS.

P. G. L. G. DESIGNOLLE.

[*In the matter of the application of Paul G. L. G. Designolle for patent for* "IMPROVEMENT IN THE PRODUCTION OF ARTIFICIAL ANIMAL-BLACK."—*Decided November* 10, 1877.]

In stating claims no set expression or formula need be followed, but they must come within the subject-matter disclosed by the specification, and must, moreover, be clear, distinctive, well defined, and accurate, and not for mere abstractions, generalizations, functions, or results.

Certain claims wanting in these requisites criticised and rejected.

DOOLITTLE, *Acting Commissioner:*

Objection is taken to the action of the Examiner, who requires that certain changes shall be made in the clauses of claim submitted by applicant before they can be considered upon their merits. The applicant disputes the force of the criticisms and declines to make the suggested changes, insisting, with much earnestness, that he should not be circumscribed as to the language he may employ in the statement of his claims, or as to the form in which the claims shall be presented.

Section 4888 R. S. makes it incumbent upon an inventor, when he files his application for patent, to "particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery," and it is as clearly the duty of the Commissioner to see that this requirement is complied with as to ascertain whether the written description is full, clear, and exact, or, indeed, as to pass upon any one of the prerequisites made conditional by law to the issuance of the grant.

In carrying this provision into effect, the Office is little disposed to interfere with an applicant, either in the choice of his words or in the form in which they are stated. Its policy is rather to permit the greatest latitude of expression consistent with the subject-matter of invention, only demanding that the claims shall be clear, distinctive, well-defined, and accurate, as opposed to mere abstractions, generalizations, functions, or results. The invalidity of these latter forms has been so frequently pronounced upon that it is not deemed necessary to discuss their permissibility. After such uniform condemnation, because of their lack of definiteness or of tangible matter, it is evident that the Commissioner must decline to entertain them, for the public have rights to be guarded as well as the applicant, and it needs to be informed in more distinctive terms than such forms of claim ever convey exactly what has been invented and protected.

It results, then, that if the Office, upon examination, is satisfied of the clearness and correctness of the claim in specifying the scope of the invention, there is nothing to hinder an immediate adjudication upon the merits.

That the claim is not formulated in certain set expressions, which may have had judicial sanction, or been usual in Office practice, is quite immaterial. These have their advantages, and serve as a general guide; but they are not in any sense exclusive, and should not be permitted to hamper an applicant in the free exercise of his judgment as to the method of presenting his summary of invention, so long, of course, as he keeps within the limits of the rule respecting distinctiveness and accuracy, just alluded to. Bearing this in mind, we are prepared to consider the sufficiency of the claims upon which the present appeal has been taken.

Clause 1 is for—

The process herein described of disintegrating, by means of caustic soda and under pressure, clippings or wastes of leather or other analogous substances, as one of the steps in the manufacture of artificial bone-black.

The process is a chemical one. The tannate of gelatine contained in the leather being decomposed in the presence of the caustic soda, under suitable conditions of heat and pressure, a tannate-of-soda solution results, while the gelatine remains unaffected in the menstruum. It follows, then, that it is more accurate to say "decomposing" rather than "disintegrating," for the latter word applies only to molecular and not to atomic changes of structure; further, that the word "solution" should be inserted after soda, for the dry salt will have practically no value in effecting the transformation.

An investigation of the specification, taken in connection with the well-known principles of chemical science, likewise concludes us that pressure alone will not suffice to produce the desired reaction between the tannate and the soda. The steam which is introduced into the vessel in which the materials are contained is not simply for the purpose of subjecting them to pressure, but it likewise serves as a heat-carrier, for, as often happens, heat is vitally essential to the practical accomplishment of the proposed decomposition. It is necessary, then, that the words "heat and" be inserted before "pressure," if the present claim is to be retained. These alterations being made, the claim is accurate and well defined, and may stand for examination as to its novelty.

Claim 2 reads—

The admixture, with the magma prepared as hereinbefore described and claimed, of bibasic phosphate of lime in variable proportions, substantially as and for the purposes set forth.

The words, "the admixture," &c., may mean either the act, or, in other words, the process of treating, or they may be designed to cover the product which results. It was just such another form as this that was passed upon in the recent case of *Merrill* vs. *Yeomans*, (94 U. S., 568,) and the same doubt and difficulty of construction was met with that is now encountered. How shall the Examiner proceed in searching upon the novelty of the claim, and if it were allowed, what knowledge would the public possess of its scope? As a matter of fact, the process of mixing the materials has nothing peculiar about it. The specification distinctly states that "the mixture is effected by suitable machinery," so that we are forced to conclude that the applicant intended to claim the product. But if it is the product, then the claim is inaccurate; for it is nowhere stated in the description that the applicant contemplates making an artificial carbon-black from the magma and the lime phosphate alone; nor is it correct to say that the finished article has the magma as an ingredient. The magma, which is simple gelatine, has been converted into carbon by the calcination it has undergone, and it is carbon which is in combination with the phosphate in the market product. The claim, then, in any point of view, is uncertain, and cannot be entertained under the law.

The same criticisms apply with equal force to claim 3: The "combination with the compound hereinbefore described and claimed of," &c., may be construed with

equal facility to mean either the process of doing so or the product which results. Nor is it certain whether by "the compound hereinbefore described and claimed" is meant the magma alone, or the magma and lime phosphate mixed. Both alternatives have been claimed in substance in the previous clauses, while, in the body of the specification both are given as materials with which it is contemplated to mix the "neutral phosphate of magnesia." It is quite apparent that the Office cannot deal with any certainty with a claim so ambiguous in purport and scope.

Claim 4 is sufficiently descriptive of the market product to enable an examination to proceed. That it is "calcined and granulated in the manner hereinbefore described" is of no moment in ascertaining whether an "artificial, phosphated animal-charcoal" is new in the art, and these words of limitation, by way of process, may be disregarded by the Examiner in his search on the novelty of the article. If 'an artificial, phosphated animal-charcoal" is new, then, according to the doctrine of *Merrill* vs. *Yeomans*, applicant is entitled to the monopoly, however produced; and if it is old, it follows, as a logical consequence, that the making of it in a particular manner cannot give him any claim upon the article. The words, then, relating to process, while of no moment, are not technically objectionable, for the claim is descriptive without them, and it may, therefore, stand as presented.

In claim 5, however, this is not the case. Presumably this claim is for a finished article. Yet there is no word or phrase which is, in any clear sense, descriptive of it. "Molded in the manner and for the purpose" may mean that a certain process is pursued, or, on the other hand, that the artificial charcoal, when completed, is possessed of certain distinguishing molded characteristics. Now, if the words have the former meaning, we find that the distinguishing features of the article are made to depend entirely on the manner of making, and this we have just seen is no test whatever of the patentability of the product. If the words are intended to have the latter meaning, then we are compelled to resort to the specification to ascertain exactly what those molded features of distinction are. But under the law it is the office of the claim to set these forth, and if it fail to do so, then it is neither specific nor well defined. If it were to remain as at present, the Examiner might well be at a loss to know when his inquiry was at an end; and in event he placed one construction upon the claim and allowed it, whereas the interpretation of the applicant proved to be a much broader one, the public might be subjected to annoyance about what was possibly common property, and all because the examination had been conducted upon an erroneous idea. The claim is properly objected to.

Claim 6 is essentially for the employment of the artificial carbon-black in filtering saccharine juices, &c.

It seems to be quite clear in scope, and may be retained, though it is not intended to pass thus prematurely upon its patentability.

The application is remanded to the Examiner with these suggestions.

P. A. DAILEY.—*Interlocutory Appeal.*

[*Appeal from the decision of the Principal Examiner in the matter of the application of Parley A. Dailey for letters patent for* "IMPROVEMENT IN THE MANUFACTURE OF ORNAMENTED FELT FABRICS."—*Decided August* 3, 1877.]

A mode of manufacturing ornamented felt fabrics, the machinery employed, and the article produced declared to be properly joined in a single application.

The case of *Murray and Wuterich* (C. D. 1873, p. 96) considered.

SPEAR, *Commissioner.*

The applicant states that this invention relates to the manufacture of that class of fabrics in which the ornamentation is produced by means of pattern-yarns laid upon the surface of a fabric in proper position to form the pattern, and are then fitted or otherwise secured thereto, and that his invention consists of an improved fabric and mode of producing the same, and of mechanism used therefor.

The claims are as follows:

1. The mode herein described of producing ornamental fabrics—that is, passing a fabric or a bat of felt beneath a series of thread-carriers, by which threads are laid separately in curved or zigzag lines upon the surface of the bat, in proper position to form the pattern, and then securing the two together, as set forth.
2. The combination, with the series of thread-carriers arranged above a tranverse sheet to lay threads loosely thereon, of a pattern wheel or chain, or the equivalent thereof, for controlling the lateral positions of the carriers, substantially as set forth.
3. The combination of the thread-carriers, regulating mechanism, and roller C, as specified.
4. The improved fabric ornamented by threads lying separately on the surface, constituting the pattern, and secured by portions passing into the body of the fabric, as set forth.

The appeal is taken in this case from the decision of the Examiner requiring a division of the application by the elimination of the second and third claims. The Examiner followed in his decision the authority of the Commissioner as set forth in the case of *Murray and Wuterich*, (C. D. 1873, p. 96.) The Commissioner, in the case cited, required the division of the application, basing his decision upon what appeared to him to be the fact that there were three distinct and independent inventions set forth in the application before him. The rule which was the basis of the decision has undoubtedly a substantial basis, and ought to be adhered to. It requires that such distinct and independent inventions should be made the subject of a single patent, and undoubtedly processes or machines and their products coming within this rule must be the subject of separate applications.

No rule of universal application can be given for this class of cases more than for any other; but in each case, as it comes up for consideration, the inquiry must be made, whether the process or machine and the products thereof are so separate and distinct that they can be called independent inventions. In the present case the Examiner admits the first and fourth claims in the same application, the first being for the process and the fourth for the product, and this is done, as I think, justly and with good reason. For not only does the idea of the article itself appear to be inseparable from the process of forming it, so that one could not be well conceived of without the other, but a patent for one would appear to be useless without the exclusive right to the other. The right to use the process would be profitless without the right to the product of that process. Indeed, no patent could be granted for the product, involving, as such patent must, the right to make and use, without a description of the process and the implied right to the process. But the question remains not so plain and easy to decide, whether in the same application the claims for the machine should also be admitted. I observe that in the first claim some mechanism is specified, so that I infer some mechanisms, such as "a series of thread-carriers," are necessary to the exercise of the process. I take it for granted, also, that these are old in the precise form in which they may be used to carry out this process; otherwise the claims for the process could not be allowed; for a so-called mechanical process—that is to say, a process which depends upon some mechanism in the practice of it—must amount to a new way of using an old machine. It appears, therefore, that the combinations included in the second and third claims are improved mechanisms by which this process may be the better carried on. It may be carried on without these, but not so rapidly or effectively. Unquestionably, then, the idea or mental conception of the improved machine is not necessarily a part of the original conception of the fabric, or the process by which the fabric is produced; yet it may be a very closely-related part of the invention, possibly essential, as a matter of fact, to the successful manufacture of the invention. These improvements upon the machine may, and it seems to me probably do, bear the same relation to the original invention as improvements in the details of a machine bear to the general principle or improvement of its operation; and it would seem to be as proper to admit this modification, or detail, or perfection of the invention, as far as applicant was able to carry it, into the patent, for the principal part of the invention, as it would be to grant a patent containing a broad claim for the principle of a machine, and also narrow claims for details of construction.

Further than this, it may be true that the claims for the process and the product are of little value without the control of these improvements. Certainly these improvements can be of no value whatever unless in conjunction with the other inventions.

The Examiner, in refusing to consider these claims, followed perhaps the letter of the decision referred to, and felt bound by that decision; but I think that it has not been the practice of the Office to adhere so closely to that decision as to make it apply indiscriminately to all cases in which processes or machines were involved; and I am of the opinion that the ends of justice are better subserved by allowing in one patent the claims for machines or processes and products, wherever their relation is such to each other as not to make it plain that they are independent inventions.

The decision of the Examiner is reversed.

J. H. HALL & CO. AND J. L. ATKINSON.—*Trade-mark.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of J. H. Hall & Co. and Jane L. Atkinson, for registration of a trade-mark.—Decided February* 2, 1878.]

Where a trade-mark has lost its office of pointing out distinctively the origin or ownership of the article to which it is affixed, and has become a generic term in common use as such, it cannot be readopted by the original owners thereof, or monopolized by any one firm or person.

DOOLITTLE, *Acting Commissioner:*

Both of the tribunals below have expressed an opinion adverse to the registration of the trade-mark in dispute by either party, although, as to priority, the Board of Examiners-in-Chief have in substance reversed the decision of the Examiner of Interferences. As the controlling matter to be determined is the right of either party to register, the question of priority need not be considered, if the determination of the former question conclude the right of both to registration.

The testimony shows that about the year 1840 Alexander Calhoun and David Atkinson were a firm engaged in Marysville, Ky., in the manufacture of plows; that they devised a plow which met with great favor among the agricultural districts of the South, and this plow soon became known as the "Calhoun" plow. Some time between 1840 and 1858, (it does not appear when,) Atkinson died, and his widow took his place as a member of the firm. In the last-named year (1858) Calhoun died, and his place was supplied by John Calhoun. This firm continued to supply the market with the plows in question until about the breaking out of the war in 1861, since which time Mrs. Atkinson has not been engaged either in the manufacture or sale of plows; but the firm of which she was a member leased the right to manufacture these plows, and to use the brand of "Calhoun & Atkinson," (the designation stamped upon the plows, although the same were commonly known as the "Calhoun plow,") to Hall, Black & Baldwin, who were succeeded by the firms of Baldwin, Black & Co., W. W. Baldwin & Co., and finally by Cox & Poynter. From the time of their giving up their lease in 1867, Hall, Black & Baldwin, now the firm of James H. Hall & Co., one of the applicants in the present case, continued, without any special lease or permission, the manufacture and sale of the "Calhoun" plow, and branded their plows in that manner without any opposition from Mrs. Atkinson or her lessees.

The evidence shows that not only this firm, but business firms in Pittsburg, Pa., Rising Sun, Ind., St. Louis, Mo., and perhaps firms in one or two other places, have manufactured, without any substantial opposition, plows known by the same name—viz., the "Calhoun" plow.

James H. Hall & Co., for themselves, and Jane L. Atkinson, for herself or lessees, it does not appear clearly which, now seek to register this word "Calhoun," and to monopolize its use upon plows made by them. As already intimated, the evidence on both sides clearly shows that this name has ceased to denote origin or ownership of any particular person or firm, but is used extensively by firms to designate a particular plow of a peculiar shape, and known to the public as the "Calhoun" plow. Such being the fact, the law applicable to the case is well settled, and is set forth in the celebrated case of *Canal Co.* vs. *Clark*, (13 Wall., 311.) The doctrine of many decisions is there summarized, and declared to be, that—

The office of a trade-mark is to point out distinctively the origin or ownership of the article to which it is affixed, or, in other words, to give notice who was the producer. * * * The trade-mark must, either by itself or by association, point distinctively to the origin or ownership of the article to which it is applied. The reason of this is, that unless it does, neither can he who first adopted it be injured by any appropriation or imitation of it by others, nor can the public be deceived. * * * No one can claim protection for the exclusive use of a trade-mark or trade-name which would practically give him a monopoly in the sale of any goods other than those produced or made by himself. If he could, the public would be injured rather than protected, for competition would be destroyed. Nor can a generic name, or a name merely descriptive of an article of trade, of its qualities, ingredients, or characteristics, be employed as a trade-mark and the exclusive use of it be entitled to legal protection.

At the commencement of their operations the firm of Calhoun & Atkinson, when they were the sole manufacturers of the "Calhoun" plow, although branding it by the firm-name of Calhoun & Atkinson, doubtless could have protected themselves in the sole use of the trade-name "Calhoun." The mark would then have fulfilled the requirements just mentioned by the Supreme Court, and would have distinctively pointed out the sole origin and ownership of that article; but as the matter now stands, the trade-mark has not those

qualities. It is no more distinctive when used by the firm of James H. Hall & Co. than when used by any of the firms in any of the places above mentioned. In fact, by association, it has become a legitimate mark of any manufacturer who puts into market the peculiar form of plow known as the "Calhoun" plow. This name has become generic, is in common use as such, and can no longer be monopolized by any one firm or person without injury to the general public. (*Fetridge* vs. *Merchant*, 4 Abb. Prac. Rpts., 156.)

For these reasons, and without entering upon the consideration of the question of priority, registration is denied to both applicants.

DECISIONS OF THE COURTS.

Circuit Court of the United States—Northern District of Ohio.

THEODORE COMSTOCK *et al. vs.* SANDUSKY SEAT COMPANY *et al.*

[*In Equity.—Before Justice* N. H. SWAYNE *and Judge* WELKER.—*Decided January* 12, 1878.]

Reissue Letters Patent No. 4,780, granted March 5, 1872, to Comstock, Booth, and Booth, assignees, for carriage bodies and seats, examined and sustained.

The date of invention of the device covered by the patent on which infringement suit was brought, fixed at the time when the inventor perfected the invention, made models of the device, and entered into a contract for its manufacture.

The mere making of the invented article more than two years before applying for letters patent is quite immaterial, and where there is a doubt upon the evidence as to public use or sale of the article under like circumstances, the doubt should be resolved against the respondents, upon whom rests the burden of proof. (*Coffin* vs. *Ogden*, 18 Wall., 120.)

The patent is *prima facie* valid. It is a muniment of title. He who would overcome it must do so by a clear preponderance of evidence.

The objection that the patent was for a simple substitution of one material for another, involving no invention, not having been set up regularly in the answer, was overruled.

WELKER, *J.*, delivering the opinion, with the concurrence of Justice SWAYNE.

This suit is brought upon Reissue Letters Patent No. 4,780, granted to the complainants, Theodore Comstock, Ezra Booth, and Henry F. Booth, as assignees, by mesne assignment, of Simon P. Graham, March 5, 1872, for improvement in carriage bodies and seats.

The defenses are, severally, (1) non-infringement, and (2) invalidity of the patent. The invalidity alleged being (1) anticipation, (2) prior use, (3) abandonment, (4) public use for more than two years prior to application for complainants' patent, (5) also that reissue was for a different invention from the original, and (6) the existence of a prior Canadian patent, &c.

We have carefully considered the evidence and arguments of counsel, and now state our conclusions.

I. It is not controverted that Graham's invention was perfected, and that he made two seats as described in his patent, prior to April, 1867.

II. He applied for his patent August 9, 1869. The patent was issued October 5, 1869, and was reissued March 5, 1872, upon which reissue this suit is founded.

III. At the close of the argument we were satisfied that the patent of the complainants was valid unless successfully assailed (1) for want of novelty with respect to the invention, or (2) by reason of the sale and use of the thing patented more than two years prior to the application for the patent, that is, more than two years before August 9, 1869—in other words, before August 9, 1867. These points we have carefully considered in our further examination of the case.

IV. As to the priority of invention, our attention was particularly called to the claim in behalf of Burt. Upon examination of the testimony bearing upon the subject, it seems to us clear that it is not shown that anything that was done by Burt was not done later than April, 1867.

It is clear upon the proofs that Graham perfected his invention, made models, and took them with him to Wauseon, and there entered into a contract with Stebbins for the manufacture of the seats in November, 1866.

His invention, according to the record, may be fairly held to date back to that time. But this is immaterial, as nothing is shown as to any other party which antedates the time fixed by the admission of respondents' counsel, which is before April, 1867. The other cases of alleged prior invention are unsustained. It is unnecessary to remark further in regard to them. V. As to the use and sale of the thing patented.

(1.) The Stebbins contract. This contract was entered into by Graham & Stebbins in November, 1866. No seats were completed by them. Two were partly made when the contract was put an end to, and Stebbins retired. Graham alone completed these seats. The mere making them without anything more was immaterial; but (2) Graham sold one of them, after they were completed, to Ben Smith, with a buggy, of which it was a part. The date of this sale is important in the case. The testimony upon this point is very conflicting; upon the whole, it does not satisfy us that the sale was made before August 9, 1867. We are brought to the conclusion that it was not. If the evidence, however, raised a doubt, which we think it does not, such doubt, it is well settled, should be resolved against the respondents, upon whom rests the burden of proof. (*Coffin* vs. *Ogden*, 18 Wall., 120.) This rule is founded in justice and good sense. The patent is *prima facie* valid. It is a muniment of title. He who would overcome it must do so by a clear preponderance of evidence.

VI. We are in some doubt as to the point whether the invention is not in substance only the substitution of one material for another, iron for wood, and whether, hence, there is not a want of patentability. (*Hotchkiss* vs. *Greenwood*, 11 Howard, 248.)

This defense is not set up in the answer, as it should have been; but, possibly, the bill shows no equity on its face, and perhaps the facts are such that the court can take judicial notice of them. (*Brown* vs. *Piper*, 1 Otto, 37.) But in view of the decision in *Smith* vs. *Goodyear*, (3 Otto, 486,) we are inclined to think we ought to overrule this objection, and leave the respondents to raise the question, if they think proper to do so, in the Supreme Court, by appeal.

VII. The infringement complained of is made out by the evidence.

Upon the whole case, then, we think there should be a decree for the complainant, which we direct to be entered, and the usual reference to commissioner to report account and damages.

DECREE.—*January* 11, 1878.

This case having been brought on to be finally heard, on the pleadings and proofs at the April term of this court, 1877, before their honors Justice Swayne and Judge Welker, holding the said term of court, and the counsel for the respective parties having been fully heard thereon, and the case having been submitted on the oral arguments and full briefs by the counsel for the respective parties, and due deliberation having been thereon duly had, it is ordered, adjudged, and decreed, and this court, by virtue of the power therein vested, doth order, adjudge, and decree:

First. That the reissued Letters Patent No. 4,780, issued to Theodore Comstock, Ezra Booth, and Henry F. Booth, of Columbus, Ohio, as assignees, by mesne assignment, of Simon P. Graham, of London, Canada, and dated March 5, 1872, being a reissue of the Letters Patent No. 95,466, granted to Simon P. Graham, October 5, 1869, for improvement in carriage bodies and seats, are good and valid in law.

Second. That the complainants are the sole and exclusive owners of all the rights granted or conferred by said reissued letters patent.

Third. That the defendants have infringed and violated said reissued letters patent by manufacturing at Sandusky, Ohio, and selling in various parts in the United States, carriage-seats embodying the improvements described in said patent, and recited respectively in the third, fourth, fifth, sixth, seventh, eighth, ninth, and tenth claims thereof.

Fourth. That the said defendants do account to the said complainants for the damages sustained by the complainants, and for the profits made by the said defendants in consequence of such infringement.

Fifth. That an account of the said damages and said profits be taken and stated by Earl Bill, Esq., who is hereby appointed special master commissioner for that purpose; and that the defendants, their attorneys, agents, servants, and employés appear before the said master from time to time, on notification from him and under his direction; and that the complainants may examine the said defendants, their officers, employés, agents, attorneys, and servants, under oath, as to the several matters pending on the said reference; and that the said defendants produce before the said master, on oath, all such deeds, contracts, specifications, papers, writings, and books as the said master shall direct, that are in their custody or under their control, or subject to their order, and that relate to said matters that shall be pending before the said master; and that the said master have all the authority and power conferred upon masters in like cases by the 77th rule prescribed by the Supreme Court of the United States as rules of practice of the courts of equity of the United States.

Sixth. That a perpetual injunction issue out of and under the seal of this court against the said defendants and each of them, commanding them, their attorneys, agents, workmen, officers, servants, and employés to desist from making, using, or vending any carriage-seats containing or embodying any inventions described in said reissued letters patent, and recited in the third, fourth, fifth, sixth, seventh, eighth, ninth, and tenth claims thereof, and from in any manner infringing upon or violating any rights or privileges granted or secured to the complainants by said reissued letters patent.

Seventh. That the said complainants recover of the said defendants as well the damages as the profits which shall be reported by the said master herein, and that, upon the confirmation of his report, a decree shall be entered against the defendants therefor, and also for the costs of the complainants in this suit in this court; and that the complainants have execution therefor and for the compensation of the said master, to be fixed on the coming in and confirmation of his report.

Eighth. That the parties and master may apply on due notice to the court upon the foot of this decree for such other and further order, instructions, and directions as may be necessary.

CAVEATS.—Inventors filing caveats in the Office should be careful to describe their invention or improvement with accuracy, and illustrate such inventions as are capable of illustration with care and thoroughness.

Caveats are placed in the hands of the Examiners, who should not be expected to understand what the inventor means unless the latter has sufficiently matured his invention to clearly describe and illustrate it.

Caveats are sometimes filed in the Patent Office stating that the caveator is engaged in a series of experiments intended to accomplish certain results, and giving nothing more than a vague hint of the means by which the result is to be attained. As the courts have frequently decided that results are not patentable, the practice of the Patent Office is to the effect that a caveat cannot cover more ground than a patent. So, where a caveat describes more than one invention, the Examiner frequently overlooks a portion of the caveat, knowing that under the rules caveators are confined to a single invention.

Complaints are often made that caveats have been overlooked, and patents issued to subsequent applicants, when the fault lies in the hasty preparation of the caveat papers. The rules are explicit, that the caveat must describe the invention as fully as the inventor is able to do; that the drawings shall be of the same size as the drawings to accompany an application for a patent, (8 by 13 inches, on a sheet 10 by 15 inches, with an inch margin all round,) and on tracing-muslin, or light bristol-board or drawing-paper, which can be folded without breaking. A careful compliance with the rules will greatly facilitate the work of the Office, and will go a long way toward insuring the accuracy which is so necessary in securing their just rights to inventors.

THE DECISIONS FOR 1877.—The decisions of the United States courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

TO SUBSCRIBERS.—Great care will hereafter be taken in mailing THE OFFICIAL GAZETTE to subscribers, and in case of its non-receipt the fault will not be in the Patent Office. When each issue shall have been mailed, the Office will assume that it has done its duty by the subscribers, and will not send extra numbers except upon receipt of 10 cents for each copy ordered.

TRADE-MARKS.

[Each certificate bearing date February 5, 1878.]

5,600.—PHOTOGRAPHIC MATERIALS AND APPLIANCES.—*E. & H. T. Anthony & Co.*, New York, N. Y. Application filed January 7, 1878.

"The representation of a hand holding an egg the end of which is broken."

5,601.—CULTIVATORS.—*E. S. & F. Bateman*, Spring Mills, N. J. Application filed January 16, 1878.

"The word-symbol 'IRON AGE.'"

5,602.—CUTLERY.—*William Brokhahne*, New York, N. Y. Application filed January 16, 1878.

"The figure of a frog standing upon its hind legs, and having a spear passing through its body from rear to front in an upwardly-inclined direction. The spear is made with a diamond-shaped head. In connection with this figure I use the words 'DIAMOND SPEAR.'"

5,603.—CUTLERY.—*William Brokhahne*, New York, N. Y. Application filed January 16, 1878.

"The word-symbol 'HAMBURG.'"

5,604.—GLUE.—*Charles A. Clybourn*, Chicago, Ill. Application filed January 8, 1878.

"The word-symbol 'HERCULES' and the picture of the man shown."

5,605.—CIGARS AND SMOKING-TOBACCO.—*Deutsch & Fuchs*, New York, N. Y. Application filed January 10, 1878.

"The representation of a safe-front, showing the door *a*, the knob *b*, and hinge *c*."

5,606.—LEAD-PENCILS.—*Eagle Pencil Company*, New York, N. Y. Application filed January 9, 1878.

"The word-symbol 'SILK.'"

5,607.—SMOKING AND CHEWING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*A. G. Fuller & Co.*, Danville, Va. Application filed January 12, 1878.

"The fanciful words 'SAILOR'S KNOT.'"

5,608.—STOVE-POLISH AND PLUMBAGO.—*George F. Gantz*, New York, N. Y. Application filed January 7, 1878.

"The word-symbol 'STARBRIGHT.'"

5,609.—COFFEE.—*Thomas C. Jenkins*, Pittsburg, Pa. Application filed January 5, 1878.

"The Egyptian design shown in the accompanying fac-simile—to wit, a female figure bearing a child, represented upon a black ground between two highly-ornamented pillars."

5,610.—COFFEE.—*Thomas C. Jenkins*, Pittsburg, Pa. Application filed January 5, 1878.

"A representation of a store having a checkered front, as shown."

5,611.—PLUG-TOBACCO.—*Loker Tobacco Company*, St. Louis, Mo. Application filed January 8, 1878.

"A hexagonal symbol of (preferably bright) metal, bearing upon its face the words 'LOKER TOBACCO COMPANY,' as shown."

5,612.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*McCoy & Co.*, New York, N. Y. Application filed January 11, 1878.

"The word-symbol 'OTHELLO.'"

5,613.—BLACKING.—*James S. Mason Company*, Philadelphia, Pa. Application filed January 14, 1878.

"The word-symbol 'CHALLENGE,' used in connection with the words 'Mason's Blacking,' and the pictorial group of the negro, boy, dog, and boot."

5,614.—CIGARS.—*George W. Nichols*, Brooklyn, N. Y. Application filed January 15, 1878.

"The word-symbol 'SOLACE.'"

5,615.—FLOUR.—*Benjamin R. Pegram, Jr.*, New York, N. Y. Application filed January 15, 1878.

"The word-symbol 'SCHLOSS.'"

5,616.—SOAP.—*Procter & Gamble*, Cincinnati, Ohio. Application filed January 7, 1878.

"The word-symbol 'AMBER.'"

5,617.—CIGARS.—*Edwin Tucker*, Brooklyn, N. Y. Application filed December 18, 1877.

"A device as follows: It represents three violets inclosed within a circle, with the word 'Trade' on the left-hand side of the circle, and 'Mark' on the right-hand side thereof, with the words 'LA VIOLA' underneath the said circle, the said device, letters, and words being arranged as shown."

5,618.—PLUG CHEWING-TOBACCO.—*The Dausman & Drummond Tobacco Company*, Alton, Ill. Application filed December 29, 1877.

"The word-symbol 'CROSS-BAR.'"

5,619.—SIRUPS.—*Veiller, Jayne & Co.*, Green Point and New York, N. Y. Application filed October 4, 1877.

"The representation of a crown."

5,620.—PIANOS.—*Haines Brothers*, New York, N. Y. Application filed December 26, 1877.

"The arbitrary symbol shown in the accompanying fac-simile, which represents the coat of arms of the State of New York."

5,621.—COFFEE EXTRACT OR ESSENCE.—*Philip Bachert*, Buffalo, N. Y. Application filed January 10, 1878.

"The picture of an American bison or buffalo."

5,622.—CANDY.—*E. Greenfield & Son*, New York, N. Y. Application filed December 31, 1877.

"The word-symbol 'PACIFIC ROCK.'"

5,623.—FLOUR.—*Lanterman & Stewart*, Grayville, Ill. Application filed January 15, 1878.

"The word-symbol 'PEOPLE'S FAVORITE.'"

5,624.—MEDICAL COMPOUND.—*John D. McCarthy*, Augusta, Ga. Application filed January 10, 1878.

"The figure of a ladder with a person mounted thereon holding in his hand a bottle with the word 'Triumph' printed on the same."

5,625.—MEDICINES.—*William R. Warner & Co.*, Philadelphia, Pa. Application filed January 12, 1878.

"The fanciful word 'PARVULES.'"

LABELS.

[Each certificate bearing date February 5, 1878.]

1,387.—Title: "COUNT YOUR PAPER."—*John A. Dushane*, Baltimore, Md. Application filed December 29, 1877.

1,388.—Title: "WOODBINE MILLS."—*John A. Dushane*, Baltimore, Md. Application filed December 29, 1877.

1,389.—Title: "SHEETS TO THE QUIRE."—*John A. Dushane*, Baltimore, Md. Application filed December 29, 1877.

1,390.—Title: "GUARANTEED FULL COUNT."—*John A. Dushane*, Baltimore, Md. Application filed December 29, 1877.

1,391.—Title: "THE AMERICAN CORN, BUNION, AND WART CURE."—*Elbert, Brother & Co.*, Washington, D. C. Application filed January 30, 1878.

1,392.—Title: "FRENCH'S FRECKLE REMOVER."—*A. S. French*, East Hampton, Ohio. Application filed January 24, 1878.

1,393, (Print.)—Title: "FOREST HOME."—*Heppenheimer & Maurer*, New York, N. Y. Application filed January 25, 1878.

1,394.—Title: "JEFFERS' FRENCH CATARRH CURE."—*Perley Jeffers*, Chicago, Ill. Application filed January 29, 1878.

1,395.—Title: "MARSHALL'S LUNG SYRUP FOR COUGHS, COLDS," &c.—*Mary W. Marshall*, Fond du Lac, Wis. Application filed January 31, 1878.

1,396.—Title: "MARSHALL'S IMPROVED CONDITION POWDER FOR HORSES AND CATTLE."—*Mary W. Marshall*, Fond du Lac, Wis. Application filed January 31, 1878.

1,397.—Title: "PERRY'S HARNESS OIL SOAP."—*James A. Perry*, Pawtucket, R. I. Application filed December 15, 1877.

1,398.—Title: "THE CHARTER OAK AXE."—*The Collins Company*, Collinsville, Conn. Application filed November 27, 1877.

DESIGNS.

[Each design bearing date February 5, 1878.]

10,434.—LAMPS.—*Arthur H. Benton*, Minneapolis, Minn. Application filed January 22, 1878. Term of patent 3½ years.

10,435.—COLLAR AND CUFF BOXES.—*Asher N. Luehe*, New York, N. Y. Application filed November 10, 1877. Term of patent 7 years.

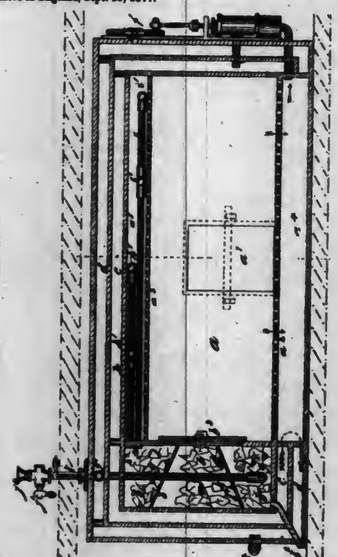
10,436.—HANDLES OF SPOONS, LADLES, &c.—*Morgan Morgans, Jr.*, Brooklyn, N. Y. Application filed January 19, 1878. Term of patent 3½ years.

10,437 to 10,442, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed January 24, 1878. Term of patents 3½ years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

FEBRUARY 5, 1878.

199,891. REFRIGERATORS. George E. Acklom, Cheltenham, England. Filed June 26, 1877. Patented in England, Sept. 15, 1877.



Claim.—The apparatus constructed substantially as described, consisting of the chambers or jackets *c d*, the interior chamber *a*, having perforated floor and ceiling, the ice-chamber *b*, the fresh-air passage *f*, foul-air-exit valve *k*, and pumping apparatus *e*, as and for the purposes set forth.

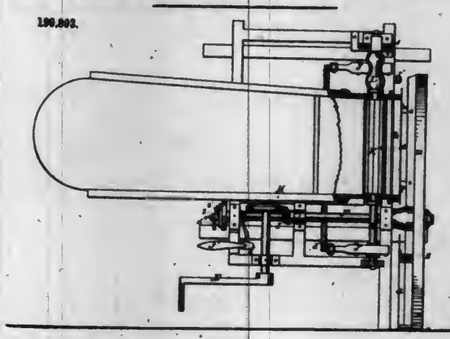
199,892. FORGING-MANDRELS. John R. Alker, Pittsburg, Pa., assignor to *Jones & Laughlins*, same place. Filed Jan. 12, 1878.



Claim.—1. A forging-mandrel having guiding-wings *c c* attached thereto, substantially as and for the purpose set forth.

2. A forging-mandrel having guides *c* arranged upon the point of the stem, substantially as and for the purpose set forth.

199,893.

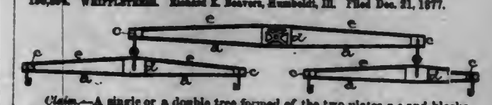


199,894. STRAW-CUTTERS. Joseph Baron, Dayton, Ohio. Filed Mar. 3, 1877.

Brief.—Two pawl-and-ratchet devices, connected to the lower feed-roll shaft on opposite sides of the machine, are connected to the two ends of a vibrating bar fixed on a rock-shaft that is operated by a crank on a clutch-sleeve on the end of a shaft that is geared to the driving-shaft. Thus the ratchets operate alternately, and their action may be arrested at will by merely moving the clutch-sleeve out of connection with the crank-disk.

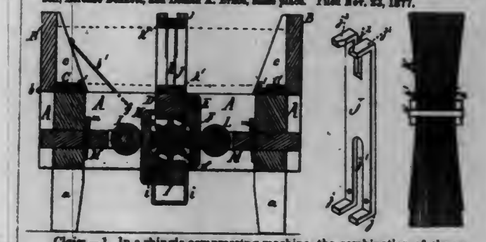
Claim.—The combination, with the motor or crank-shaft, the feed-roll shaft K, and the ratchet-and-pawl devices connected to the two ends of said shaft, of the herein-described mechanism for imparting feed movement to the roll through the medium of the two pawl-and-ratchet devices, operating alternately, thus producing two feed movements to every revolution of the cutter-wheel.

199,895. WHIFFLETREES. Richard P. Beaver, Humboldt, Ill. Filed Dec. 21, 1877.



Claim.—A single or a double tree formed of the two plates *a c* and blocks *c c d*, the parts being bolted or riveted together, substantially as shown.

199,896. SHINGLE-PACKING MACHINES. William A. Bennett, Augusta, Wis., assignor to himself, Lorenzo Bennett, and Lomax A. Bruce, same place. Filed Nov. 22, 1877.



Claim.—1. In a shingle-compressing machine, the combination of the central pinion F, the bar D above and the bar I below the said pinion, the rack E on one side and the rack H on the other side of the said pinion, and the pressing-bars J, whereby a symmetrical compressing effect is produced upon the central parts of the shingle-bundle from below and above, substantially as set forth.

2. The frame A, constructed with the ledges C *c'*, substantially as and for the purpose described.

3. The combination of the racks E H, the pinion F, the friction-rollers L, and the bars M, having adjusting-wedges *m*, bearing against the frame A, whereby the said racks are kept in position with the pinion, substantially as set forth.

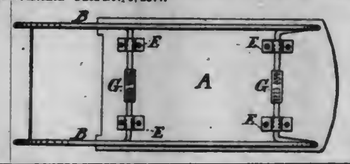
4. The ledges *c'* and C, in combination with the rigid and swinging guides B B', side boards *c*, pressing-bar D, and pressing-bars J, substantially as and for the purpose described.

199,896. SPICE-BOXES. Theodore W. Burger, Plainfield, N. J. Filed Feb. 3, 1877.



Claim.—In a dredge-box of the class specified, the movable revolving plate having the usual inlet-opening, but devoid of a circumferential flange, and having its circumferential edge pressed directly upon the unmilled, unribbed end of the box, specifically as herein set forth.

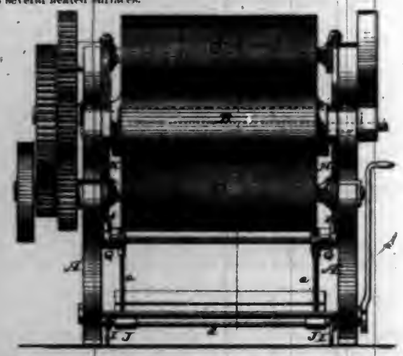
199,897. BOYS' SLEDS. John Y. Chapman, Buffalo, N. Y., assignor of one-half his right to Joseph W. Holmes. Filed Nov. 9, 1877.



Claim.—A sleigh consisting of the bottom A, tubular runners B, bent substantially as specified, and securely held together by the right-and-left-hand screw-sleeves G, and to the bottom A' by the caps E, substantially as described.

199,898. IRONING-MACHINES. William Cootie and James Cootie, Troy, N. Y. Filed Aug. 18, 1877.

Brief.—By a suitable arrangement of gearing, the covered roll is rotated with greater velocity than the heated roll, which stretches the damp side of goods of more than one thickness simultaneously with the drying, and consequent expansion, of the other side. The upper and lower pairs of rollers are respectively balanced upon the opposite ends of a centrally-pivoted lever. A concave polygonal polishing-roll may be substituted for the usual form of heating roll, and the goods acquire an extraordinary polish by contact with its several heated surfaces.



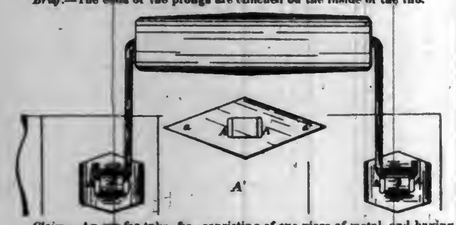
Claim.—1. The method of ironing articles of a plurality of thicknesses, such as collars, cuffs, &c., by stretching the damp short side simultaneously with the drying and natural expansion of the other side, substantially as set forth.

2. In a calender-machine having two calender-rolls set in reversed position, as described, the combination, with said rolls, of the movable bearings in which the rolls are mounted, the rods H H, pivoted beams G G, rods *a a*, weighted levers J J, screw *b*, and shaft *d*, with cams I I, all constructed substantially as and for the purposes herein set forth.

3. In a calender-machine, the concaved polygonal-faced polisher I, in combination with a rotating calender-roll, substantially as and for the purposes herein set forth.

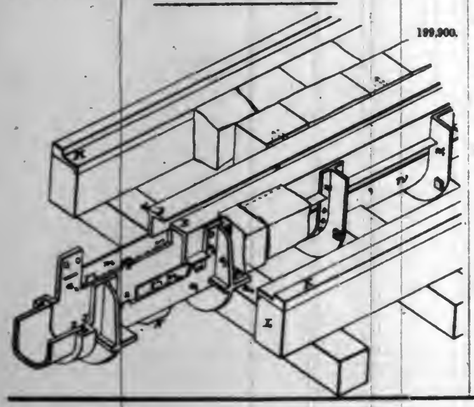
199,899. TUB-EARS. Truman Dunham and Wm. M. Dunham, Cleveland, Ohio. Filed Sept. 1, 1877.

Brief.—The ends of the prongs are clinched on the inside of the tub.



Claim.—An ear for tubs, &c., consisting of one piece of metal, and having a body or plate, prongs, and openings A, between which openings the metal of the body is struck up, forming a projecture or eye beyond the face of the body or plate, and open at both ends, substantially as herein described.

199,900.



199,900. TUBES FOR WIRE-ROPE RAILWAYS. William Eppelsheimer, San Francisco, Cal. Filed Sept. 4, 1877.

Brief.—A semicircular tube is connected to the upper plates by brackets or rings, which are secured to the cross-ties, a space being left along the tube on both sides, between the plates and the lower or semicircular tube, whereby ready access is had to the interior, said space being closed by paving-blocks constructed to conform to the tube, and brackets or rings. The lower tube-sections are united by male and female joint.

Claim.—1. In a wire-rope railway, the rope-carrying tube formed of a tube, *a*, with irons D or E connected thereto by brackets or rings, substantially as herein set forth.

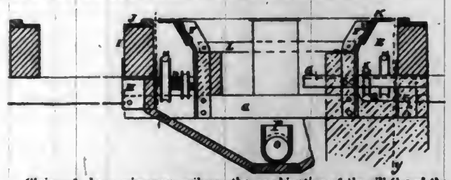
2. The rope-carrying tube A, provided with side openings *a*, for the purposes herein set forth.

3. The combination of the tube A, having side openings *a*, and the paving-blocks M, constructed substantially as and for the purposes herein set forth.

4. The rope-carrying tube, made in sections, connected together by male and female joints I J, said joints being closed by rubber or pitch, substantially as herein set forth.

199,901. WIRE-ROPE RAILWAY-TUBES. William Eppelsheimer, San Francisco, Cal. Filed Sept. 4, 1877.

Brief.—The rope tubes are located outside of and between the two tracks, being formed by the outer surfaces of the inner sills of each track, and uprights secured at their lower ends to ties extending across under each tube, and near their upper ends to brace-bars. To insure drainage of tubes where inclination of street varies, certain of the cross-ties are higher than others, and their uprights correspondingly shorter, and the gutter is passed above certain ties, and under certain others, thereby giving the desired fall for drainage.



Claim.—1. In a wire-rope railway, the combination of the sill G and the uprights F F F' F', fastened to it, for the purposes herein set forth.

2. In a wire-rope railway, the two tubes containing the ropes and pulleys, in combination with a common sill, G, for the purposes herein set forth.

3. The combination of the uprights F F', sill G, and bar L, as and for the purposes set forth.

4. In a wire-rope railway, the arrangement of the tube containing the rope outside of the track, for the purposes herein set forth.

5. In a wire-rope railway, the combination, with the sills, of a series of uprights of varying length, supporting the rope-carrying tubes, for the purpose of accommodating the railway to the fall of the street, as herein set forth.

6. In a wire-rope railway, a gutter arranged to run under certain of the sills and above certain other sills, substantially as herein set forth.

199,902. LEVELS. Samuel Gieninger, Pittsburg, Pa., assignor to E. W. Brentzel, same place. Filed June 19, 1877.

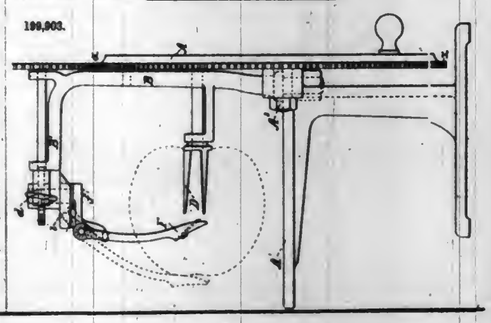


Claim.—1. The combination of an index or pointer, D, having a longitudinal slot, with a swinging pendulum, B, holding a pin, *c*, which passes through said slot, and forms the only connection between pendulum and pointer, as shown and described.

2. The combination of the slotted dial C, slotted pointer D, and pendulum B, said pendulum being provided with a pin, *c*, passing through slotted dial and into slot of pointer, as shown and described.

3. The combination of a swinging pendulum, slotted pointer or index, slotted dial, and connecting-pin, as described.

199,903.



199,903. APPLE-PARING MACHINES. William H. Goodchild, New York, N. Y., and Samuel F. Hay, Metuchen, N. J.; said Hay assignor to said Goodchild. Filed Sept. 30, 1876.

Claim.—1. The combination and arrangement, in the combined vegetable-cutter and apple-parer herein shown and described, of the standard B, supporting a fork, D, and knife F, and their operating mechanism, substantially as set forth, with the table A' and driving-gear *x*, all substantially as and for the purposes herein specified.

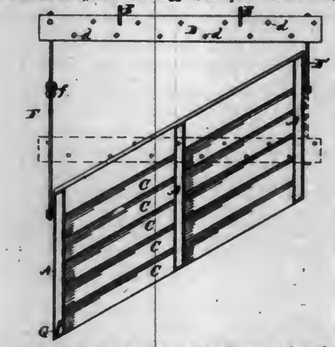
2. The combination, substantially as herein described, of the fork D, the knife F, and the worm-gearing and the spur-gearing, for the purpose specified.

199,904. TOOLS FOR STRETCHING FENCE-WIRES. Ansbel Green, Aurora, Iowa. Filed Sept. 20, 1877.



Claim.—As a new article of manufacture, the tool composed of the hand-lever *a*, having a hook, *b*, and stationary shoulder or jaw *c*, and carrying the pivoted lever *d*, having an eccentric-jaw, *f*, and pin *g*, substantially as shown and described, to be operated in the manner and for the purposes set forth.

199,905. COMBINED HARROW AND CLOD-CRUSHER. John W. Haggard, Bloomington, Ill., assignor of one-half his right to Elias C. Haggard, same place. Filed Dec. 18, 1877.

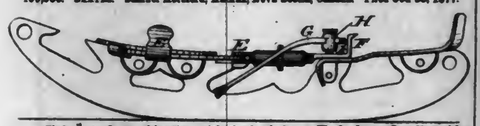


Claim.—1. A clod-crusher formed of obliquely-arranged overlapping slats C, secured to frame-bars A, substantially as and for the purpose specified.

2. In combination with a clod-crusher formed of overlapping obliquely-arranged slats C, a harrow, D, connected therewith by a longer rod, F, and shorter rod E.

3. A rhomboidal-shaped clod-crusher having overlapping slats C, and a draft-hook, G, at its rear end, substantially as described, and for the purpose specified.

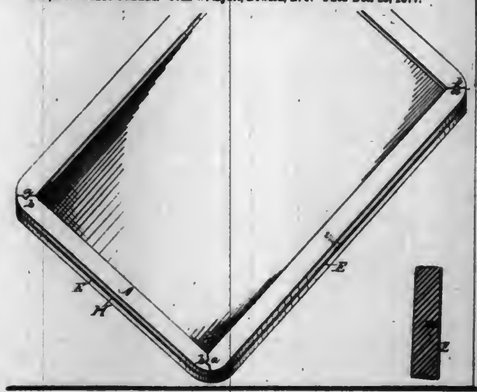
199,906. SKATES. Samuel Hereford, Halifax, Nova Scotia, Canada. Filed Oct. 30, 1877.



Claim.—1. In combination with the heel-clamp F, the lever G, adjustably mounted in the pivot-block H, and arranged to act at its end against the clamp, in the manner shown.

2. In combination with the system of sole-clamping levers E and the heel-clamp, connected by the right and left hand screws and sleeve, the adjustable lever G, arranged to operate as shown.

199,907. SLATE-FRAMES. John W. Hyatt, Newark, N. J. Filed Dec. 15, 1877.



Claim.—1. A slate-frame provided about its outer edge with a continuous groove to receive a binding-ligament, substantially as specified.

2. A slate-frame the parts of which are united by a continuous wire, or its equivalent, placed around the outer edge of the frame, substantially as specified.

3. A slate-frame the parts of which are all united by a single ligament wholly or partially sunken into the outer edge of the frame, and entirely encompassing said frame, substantially as specified.

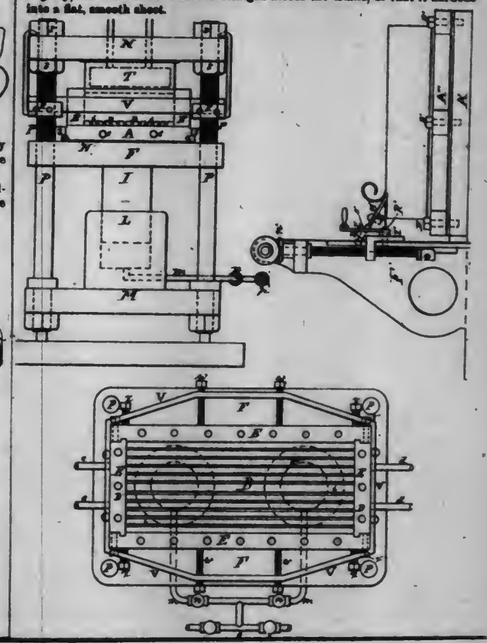
4. A slate-frame having a miter provided with a transverse stud, as specified, in combination with a continuous wire that entirely encompasses the frame, substantially as set forth.

5. The slate-frame B, provided with the groove E and continuous wire H, entirely encompassing the frame, substantially as specified.

6. The combination of the stud *a*, as specified, recess *b*, and continuous wire H, entirely encompassing the frame, substantially as set forth.

199,908. MANUFACTURE OF SHEETS OF CELLULOID AND OTHER PLASTIC COMPOSITIONS. John W. Hyatt, Newark, N. J., assignor to the Celluloid Manufacturing Company, same place. Filed Dec. 20, 1877.

Brief.—The prime object of the invention is to firmly fasten a slab of celluloid to a plate for the purpose of planing said slab into sheets of any required thickness. The requisite number of sheets of celluloid are placed one above the other on the boss B, situated under the platen T, the chases being in place, and there secured by frame V and its clamp-screws. Hydraulic pressure is communicated to the rams I, which elevates platen T, plate A, chase E, and the material therein, until the dependent platen T enters the space between the chases, compressing the material between its lower surface and the upper surface of the boss B. The pressure is continued until equaling two hundred and fifty pounds, more or less, to the square inch, and is maintained throughout the entire operation. When the requisite pressure is reached, the heating agent is admitted into the cavity in the plate A. The lower stratum of the celluloid is first heated and solidified, and the air is expelled from the bottom upward through the material and the spaces between the edge of the material and the faces of the chases. Under the action of the heat the lower surface of the celluloid becomes plastic, and the pressure forces it into and causes it to completely fill the grooves D. When the air is completely expelled, the heating agent is gradually introduced into the cavity in the dependent platen T, now in contact with the "celluloid," which, under the operation of the heat, becomes plastic, and under the pressure is solidified into a single compact slab. The pressure being continued, the plate A and platen T are filled with water or other cooling agent, which chills and hardens the celluloid in place. The chases are removed, and the material is found in a homogeneous slab secured upon the boss B. The shrinkage of the celluloid on exposure to the air causes the portion which has been forced into the inclined grooves to operate as clutches or hooks, grasping the metal with great power, and holding the slab firmly, by a tension toward the center, against any movement or force either lateral or upward. The operation of planing is effected by securing the plate A, carrying the slab of celluloid, upon the bed-plate A', and causing the latter to move, thereby bringing the material in contact with the edge of the plane, which is depressed as desired, according to the thickness of the sheet to be removed from the slab. After one of the slabs has been shaved off, leaving only a thin film of celluloid upon the plate A, a second slab may be secured thereon by means of collodion, cement, or other solvents that will cause the slab to unite homogeneously with the film remaining upon the plate. The slab thus attached may be manipulated the same as if secured upon the plate in the manner first described. The sheet of celluloid planed from the slab is placed in the frame E'' and held securely while drying, during which it shrinks slightly, which draws it taut and straight across the frame, so that it hardens into a flat, smooth sheet.



Claim.—1. A slab of material secured upon a surface through the operation of the power it exerts in shrinking, acting upon two or more elevations or depressions on or in the surface on which the slab is placed, substantially as set forth.

2. A plate for retaining plastic composition in place, provided with grooves or apertures, the planes of which would intersect if extended.

3. A plate for retaining plastic composition in place, provided on its upper surface with apertures or indentations, upon which the material in shrinking can exert tension, substantially as set forth.

4. A plate for retaining plastic composition, provided with apertures or grooves inclining toward the longitudinal central plane of the plate, substantially as set forth.

5. The plate A, provided with the grooves D, substantially as specified, and for the purpose set forth.

6. A hollow plate or table provided with means of receiving a heating and a cooling agent, and having its surface grooved, indented, or corrugated, substantially as set forth, and for the purpose specified.

7. The plate A, provided with the boss B, substantially as specified, and for the purpose set forth.

8. A plate having a surface grooved or indented and surrounded by a level edge, substantially as expressed, and for the purpose specified.

9. The combination of a series of vertical hollow walls upon a horizontal hollow plate having elevations or depressions, the walls and plate being attached in a steam-tight manner, as set forth, and for the purpose specified.

10. The chase E, for the purpose specified.

11. The chases E, in combination with the plate A, substantially as expressed.

12. The hydraulic cylinders L, provided with the pipes m, having the regulating-valves n, and connected by the pipe o, provided with a supply-pipe and exhaust-valve, substantially as set forth.

13. The regulating-nuts B, for the purpose set forth.

14. The dependent hollow plates T, provided with means of receiving a heating or cooling agent, and placed upon a non-conducting surface, substantially as set forth.

15. The frame V and clamp-screws w and x, for the purpose specified.

16. The frame V and clamp-screws w and x, in combination with the chases E, substantially as set forth.

17. The plate A‴, in combination with the chases E″, for the purpose specified.

18. The plate A‴ and chases E″, in combination with the plate D″, substantially as set forth.

19. A strip or chase composed of fibrous or porous material saturated with water, for the purpose specified.

20. The process of solidifying pieces of composition, which consists in subjecting them to pressure, then heating the mass from below, then applying heat above, the pressure being sustained pending the heating operations, as and for the purpose specified.

21. The process of solidifying pieces of composition, which consists in subjecting them to pressure, then heating the mass from below, then heating it from above, then cooling it while still under pressure, substantially as set forth.

22. A receptacle the base and walls of which are capable of separate or conjoint heating or cooling, in combination with a platen capable of being heated or cooled, as set forth.

23. The process of simultaneously consolidating several pieces of composition and affixing the slab thus formed to a plate, which consists in rendering it plastic while under pressure, whereby a portion of it is forced into suitably-shaped apertures in the plate, which portion is hardened while therein, substantially as specified.

24. A plate carrying an immovably-fixed slab of composition, and capable of being tilted, as substantially set forth, and for the purpose specified.

25. The screws R, in combination with the levers f′ f′ and rod e′, substantially as set forth.

26. A slab of plastic composition secured upon a plate by means of cement, or its equivalent, that causes it to homogeneously unite with a portion of the same or analogous composition fixed immovably upon the plate, substantially as set forth.

27. The frame Z″, composed of two sections united by bolts, for the purpose of drying a sheet of plastic composition, substantially as set forth.

28. The within-described process of making sheets of plastic composition, which consists, first, in forming and causing the adhesion of a slab of the composition to a plate; second, subjecting such slab to the operation of a plane to reduce it to sheets; and, third, drying the sheets thus produced in a frame, substantially as set forth.

29. A plate for retaining plastic composition provided with two or more apertures to receive or projections to hold the slab when hardened therein or thereon, whether the plate be hollow or solid, substantially as set forth.

30. A slab of plastic composition fixed upon a bed or plate by the means substantially as herein specified, for the purpose of enabling the division or planing of the slab, substantially as set forth.

31. A plate carrying a slab of plastic composition affixed thereon by means of heat and pressure, substantially as set forth, and for the purpose specified.

190,909. MANUFACTURE OF COMBS FROM CELLULOID, &c. John W. Hyatt, Newark, N. J., assignor to the Celluloid Manufacturing Company, same place. Filed Dec. 26, 1877.

Brief.—The dies, properly lined and containing the celluloid, are inclosed in the case E and introduced into the cylinder F. The door of the cylinder is closed securely, and a steam-tight chamber formed, into which hot oil or glycerine, &c., is admitted, which, flowing over the dies and entering the same, renders the celluloid plastic. The ram then elevates the cylinder, and brings up the dies until the upper one comes in contact with the head of the piston above, and the desired pressure is exerted on each die, forming the celluloid into the desired blank, the gas and vapor generated in the heated dies being taken up by or escaping through the porous material enveloping the celluloid, and thus preventing the formation of indentations in the blank. The pressure is continued until it equals about five tons on each die. The oil or glycerine is then drawn off and the cylinder filled with a chilling agent, which hardens the blank. The blank can then be removed from the die.

Claim.—1. As a new article of manufacture, a comb made of celluloid, substantially as specified.

2. A porous non-adhesive covering or lining for the purpose of receiving or affording an escape for gases or vapor generated from the article enveloped when warmed under pressure, substantially as specified.

3. The case E, provided with the lugs d, substantially as and for the purpose specified.

4. A metallic die having a porous surface, and exposed to a body of hot fluid or liquid heating agent, substantially as and for the purpose specified.

5. A movable cylinder provided with the head m, in combination with a metallic die lined with porous material, substantially as set forth.

6. As a means of absorbing gas and vapor, a piece of porous non-adhesive material inserted between a heated metallic or equivalent surface and an object to be pressed, substantially as specified.

7. The movable cylinder F, provided with a door, h, in combination with the head m, and piston l, and rods i, substantially as specified.

8. The die D, provided with the cavities a b, lined with a porous material, substantially as specified.

9. A strip of plastic composition coated with a mixture, substantially such as herein described, that prevents the adhesion of porous material, and enveloped in a covering of porous material, substantially as specified.

10. The process of molding plastic composition herein described, which consists in coating the composition with a material to prevent the adhesion of porous material, then placing it in a metal or equivalent die, with porous material interposed between the die and the composition, and subjecting the die and material simultaneously to pressure and the action of a warming liquid or fluid, and then to the action of a chilling agent, substantially as specified.

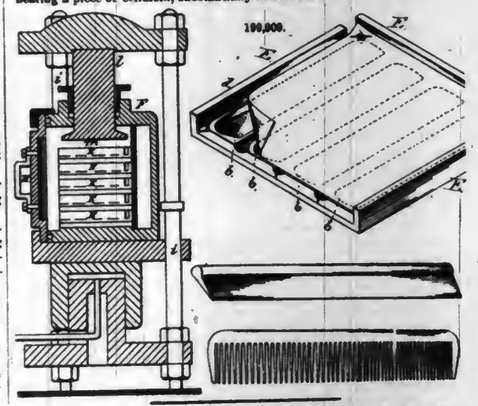
11. As a new article of manufacture, the comb-blank B, substantially as specified.

12. As a means of forming plastic compositions, a die having a porous surface, a cylinder, a piston movable therein, and a hydraulic ram, substantially as specified.

13. The combination of a metallic or equivalent die lined with a porous coating, a liquid or fluid heating agent, and pressure, substantially as specified.

14. A die lined with porous material, and subjected to successive operations of heating and cooling without change of pressure, substantially as set forth.

15. A current of hot oil, glycerine, or their equivalent, for the purpose of heating a piece of celluloid, substantially as set forth.

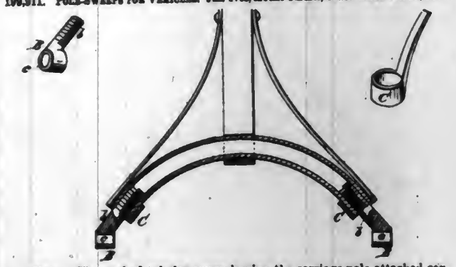


190,910. PROCESSES FOR DRYING FRUIT. Jacob Hyder, Pork Mountain, N. C. Filed Nov. 12, 1877.

Claim.—1. The process of treating fruit preparatory to drying, which consists in immersing the same in a solution of water, sugar, starch, or its specified equivalent, salt, and milk, substantially as and for the purpose specified.

2. The hereinbefore-described solution, composed of water, sugar, starch, or its specified equivalent, salt, and milk, substantially as set forth.

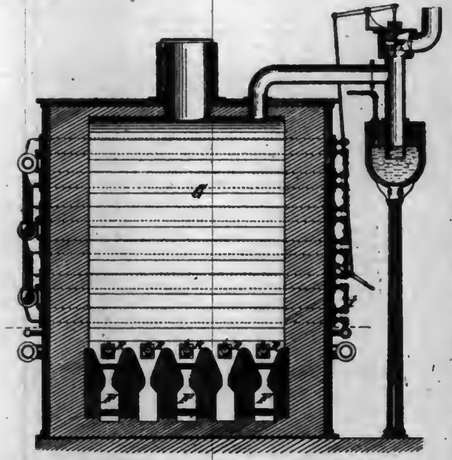
190,911. POLE-SWEEPS FOR VEHICLES. Jas. Ives, Mount Carmel, Conn. Filed Oct. 12, 1877.



Claim.—The arched tubular sweep having the carriage-pole attached centrally to it, and provided with screw-threads in its ends, in combination with eyes B c, having tangs which are set oblique with respect to the eyes, so as to coincide with the curved form of the sweep, and are provided with screw-threads b on their inner ends, the said screw-threaded portions of the sweep being bound by collars attached to braces, all substantially as and for the purpose set forth.

190,912. APPARATUS FOR THE MANUFACTURE OF GAS. Ernest J. Jurmanowski, New York, N. Y. Filed Aug. 30, 1877.

Brief.—Superheated steam is decomposed in contact with incandescent carbonaceous fuel, which is periodically revived to the decomposing temperature by blasts of hot air. The steam and air are heated in separate channels in the walls of the furnace, from which extend independent tuyere-pipes, controlled by independent valves for separately supplying the fuel with air and steam. The steam is passed through a small tuyere with contracted nozzle within the larger air-tuyere, whereby it is kept under high pressure and kept hot. The valves of the air and steam pipes and the gas-eduction pipes are of soap-stone.



Claim.—1. A gas-generating chamber having within its walls two sets of superheaters, one of which is used to superheat air, the other of which is used to superheat steam, the said superheaters being connected with the interior of the gas-generating chamber by two independent sets of conducting pipes and tuyeres, whereby the steam and air are kept separate throughout their entire course, substantially as described.

2. A gas-generating chamber combined with two independent sets of superheaters, one of which is used for air, the other of which is used for steam, and two independent valves, one of which admits the superheated steam to one tuyere, the other of which admits the superheated air to another tuyere, substantially as described.

3. A gas-generating chamber having in its walls two independent superheaters, one of which is used to superheat air, the other of which is used to superheat steam, the air-superheater being connected with a large tuyere, and being itself larger in diameter than the other superheater, the steam-superheater being connected with a small tuyere, and being itself smaller in size than the air-superheater, whereby pressure is kept up on the steam, and its heat is likewise maintained, thereby preventing a fall of heat, which necessarily follows from the expansion of steam, substantially as described.

4. A gas-generating chamber having in its walls two superheaters, one superheater being used to superheat steam, the other superheater being used to superheat air, the said superheaters being connected with a double tuyere, this double tuyere consisting of a small interior tube, and a large exterior tube, the said double tuyere being constructed substantially as described, for the purpose of keeping up a pressure of superheated steam, while at the same time the superheated steam, being surrounded by superheated air which flows through the outer tuyere, is thereby protected from radiation.

5. A gas-generator having in its walls four sets of superheaters, which can be used alternately, one of each set being used for superheating air, the other being used for superheating steam, substantially as described.

6. A gas-generating chamber having in its walls four sets of superheaters and four valves, controlling the passage of the gas through said superheaters, the said valves being connected by means of operating-levers, whereby the operator can from one point open or close the four valves, substantially as described.

7. In combination with air or steam superheaters placed in the walls of a generator, a soap-stone valve or valves, controlling the air or steam passing through said superheaters, substantially as described.

190,913. LUBRICATING COMPOUNDS. Clark Johnston, Rochester, N. Y. Filed Jan. 15, 1878.

Claim.—A lubricating compound consisting of petroleum, African-palm wax, graphite, mineral extract of petroleum, and a suitable alkali, substantially as described.

190,914. HUB-ATTACHING DEVICES. Solomon Kepner, Pottstown, Pa. Filed Jan. 7, 1878.

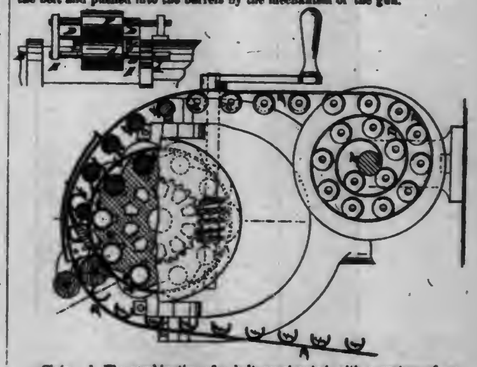


Claim.—1. The combination of the spindle a, having the rectangular grooves c made in its outer end, and provided with the projection g, with the nut h, having the flanges i, substantially as shown and described.

2. The combination of the nut h, made heaviest upon one side, as at r, having the flange s on its inner edge, and the flanges i, with the axle a, having the grooves c and shoulder g, substantially as set forth.

190,915. MACHINE-GUNS. Edwin A. Leland, New York, N. Y., assignor, by mesne assignments, to Thomas C. Miles and J. B. Kidder, same place. Filed July 27, 1876.

Brief.—The cartridges are held in catches on a belt, and are taken from the belt and pushed into the barrels by the mechanism of the gun.



Claim.—1. The combination of a belt constructed with a system of cartridge-holders, the breech-loading mechanism of a mitrailleur, and mechanism for transferring the cartridges from the belt to the receiver of the breech, substantially as and for the purpose specified.

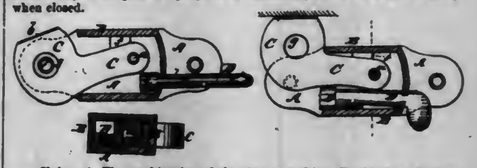
2. The spring cartridge-holders f, provided upon the belt D, in combination with the picker I, arranged to force the cartridges from the said holders to the receivers a of the breech, substantially as herein set forth.

3. The combination of the reel with the belt provided with the cartridge-holders, and with the breech-loading mechanism of a mitrailleur, the whole being arranged for operation substantially as and for the purpose herein set forth.

4. The combination of the rolls F G, gearing intermittently with the revolving breech of a mitrailleur, with the belt constructed with a system of cartridge-holders, substantially as and for the purpose set forth.

190,916. SASH-FASTENERS. Abraham W. Lozier, New York, N. Y., assignor to R. G. Grade, Rutherford Park, N. J. Filed June 30, 1877.

Brief.—A horizontal vibrating lever and a sliding bolt of peculiar construction coact within a suitable shell or case, in such manner as to hold the sash readily at any point for purposes of ventilation, as well as to lock it firmly when closed.



Claim.—1. The combination of the plate A and box B with the vibrating lever C, and with the sliding bolt D, which moves in an oblique direction against the exposed face of the lever, substantially as herein shown and described.

2. The bolt D, made with the eccentric c, and with the projecting rib b, and combined with the box B, and with the lever C, to operate substantially as herein shown and described.

190,917. RULES FOR MAKING STRAIGHT AND CIRCULAR LINES. Wm. V. Marshall, Janesville, Wis. Filed July 1, 1876.



Claim.—1. In combination with the rule A, elastic strap or bow B, plate and loop a, clasp and loop a′, provided with the key or wedge c, substantially as hereinbefore described, and for the purposes set forth.

2. The elastic strap or bow B, provided with spurs b b, metallic plate and loop a, clasp and loop a′, provided with key or wedge c, in combination, substantially as herein shown and described.

190,918. METALLIC CANS. Charles F. Maxfield, Fairhaven, assignor to Edward T. Covell, New Bedford, Mass. Filed Jan. 14, 1878.

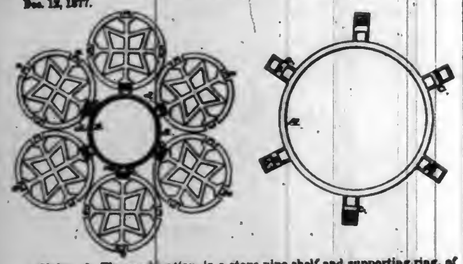


Claim.—1. A head constructed for application onto the body of a can, in the manner shown and described—that is to say, provided with a double interior and exterior flange, the latter being sufficiently open to admit of the insertion therein of the ends of the body of the can, substantially as set forth.

2. The method of uniting the can-body with a head, such as is described and claimed, by first placing said head, with its double exterior flange, upon

the ends of the can-body, and by then bending inwardly upon the heads the said exterior flange, together with the ends of the can-body which are inserted therein, all substantially as set forth.

190,919. STOVE-PIPE SHELF AND UTENSIL-STAND. Geo. McAdams, Winchester, Ind. Filed Dec. 12, 1877.



Claim.—1. The combination, in a stove-pipe shelf and supporting-ring, of the arm C, having cross-bar *d*, inclosure *g*, and notch *f*, with hook *e* and slots *h*, substantially as described.

2. The combination of collar A with pipe B by means of rivets *i*, inserted in the manner and for the purpose set forth.

190,920. SASH-FASTENERS. Marshall McComb, Pittsburg, Pa. Filed Dec. 1, 1877.

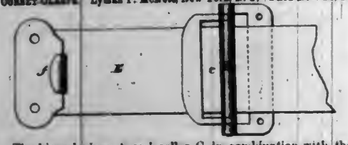
Brief.—A two-armed lever, with hooked projection, is formed with trunnions, and adapted to a seat in the frame, or in a detachable block placed therein, and this lever is combined with and engages certain peculiarly-arranged shoulders in the sash, or in a notched strip inserted therein, the construction being such that the sash is readily locked against movement in either direction.



Claim.—1. The combination of the sash, its shoulders *s t*, and lever I, its arms *f f'*, and hooked projection *m*, as described.

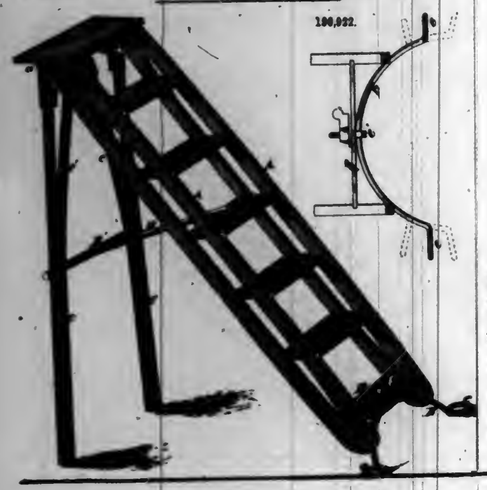
2. The combination of the lever I and bearing-block K, constructed and adapted to each other, and to be applied to a window, as specified.

190,921. CORSET-CLASPS. Lyman F. McNett, New York, N. Y. Filed Nov. 21, 1877.



Claim.—The hinged clasp A and roller C, in combination with the strap E and hook *f*, substantially as shown, and for the purposes set forth.

190,922.



190,922. STEP-LADDERS. Martin Mohrt, Belleville, Ill. Filed Oct. 8, 1877.

Claim.—1. The curved foot E, in combination with the clamping-eye *c'*, nut *c''*, and the foot of the ladder, substantially as and for the purpose set forth.

2. The combination of the ladder A B and holes *b* with the brace D, pin *d'*, and legs C, substantially as and for the purpose set forth.

3. The legs C, having branches *c c'* pivoted to the cross-piece *a* at a different height from the main legs C C, as and for the purpose set forth.

4. The legs C, having branches *c c'*, pivoted at a different height from the main legs C C, to the cross-piece *a* of the ladder, in combination with the brace D, elongated eye *d*, and eye *d'*, as and for the purpose set forth.

190,923. LOOP-WHEELS FOR KNITTING-MACHINES. Henry M. Keller, Nottingham, England. Filed Feb. 20, 1877. Patented in England Mar. 10, 1876.

Brief.—The loop-wheel is made in two parts separated by a groove. The bottom part is provided with blades of tempered steel, which are soldered into a brass bush surrounding the hollow spindle. The top part is provided with a corresponding number of blades, made preferably of soft steel, and is made adjustable upon the hollow spindle.



Claim.—A loop-wheel made in two parts, *a b*, each part fitting upon a spindle, *f*, and arranged as described, whereby the blades *d* on the one part may be adjusted relatively to the blades *g* on the other part, as desired, by turning one part of the wheel upon the said spindle.

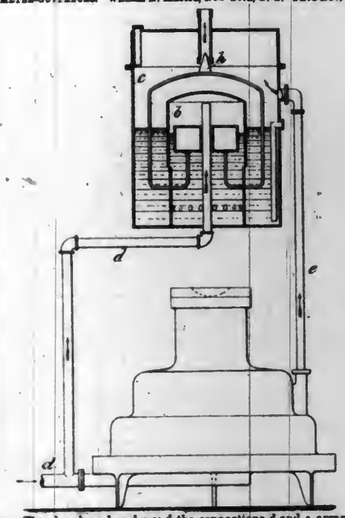
190,924. BARBED FENCE-WIRE. Mostreville P. Migbell Delta, Iowa. Filed July 25, 1877.



Claim.—1. A barbed fence-wire consisting of one or more unbroken strands, having a continuous spiral twist or curvature, and additional short strands *a* twisted tightly into the curves or sinuosities of the main strand, and bent outward at their ends, substantially as shown and described.

2. The herein-described method of forming barbed fence-wire by twisting two or more strands together, and subsequently severing one of said strands at suitable intervals, and bending the ends formed thereby outward.

190,925. METER-GOVERNOR. William H. Milsted, New York, N. Y. Filed Nov. 2, 1877.



Claim.—The chambers *b* and *c* and the connections *d* and *e*, arranged with relation to the measuring mechanism, and combined with a float, or its equivalent, for working the valve A, substantially in the manner and for the purpose described.

190,926. DEVICES FOR CATCHING FISH. John A. Mitchell, Maysville, Ky. Filed June 16, 1877.

Claim.—1. A device for catching fish, consisting essentially of a plunger operated by a driving-spring, and carrying two or more hooks, thrown outward by springs, the parts being so arranged that the butt-ends of the hooks will enter the mouth first, as herein set forth.

2. The combination of the spring-plunger D, having recesses X, the hooks H H, and springs I, constructed and arranged as and for the purposes herein set forth.

3. The combination, with the tube C and plunger D, of the trigger-spring G, with pin or screw *h*, and bait-ring J, for the purposes herein set forth.

4. The combination of the shell A, head B, with tube C, plunger D, with driving-spring E, hooks H, with actuating-springs I, trigger G *h*, and bait-ring J, all constructed and arranged to operate substantially as and for the purposes herein set forth.

190,927. HORSESHOES. Edward Marmion, Rochelle, Ill. Filed Jan. 3, 1878.

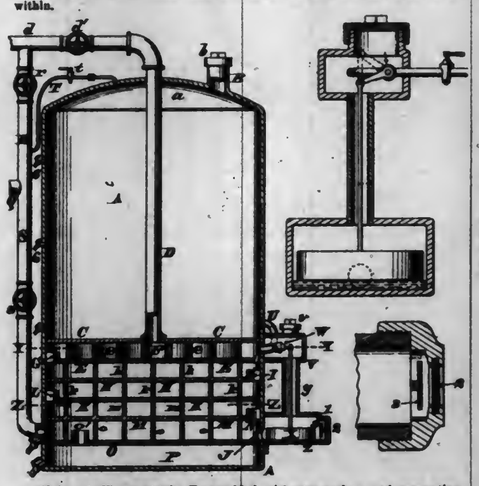


Claim.—1. The shoe *a*, having the recesses in its rear ends, in combination with the springs or elastic material, and the calks *d e*, the parts being so constructed that the spring is entirely hidden from sight and protected from all wear, substantially as described.

2. The combination of the shoe *a*, having the recesses in its rear ends, the elastic substance *c*, calks *d e*, and the front removable calk *g*, substantially as shown.

190,928. CARBURETING APPARATUS. Michael D. Nolan, New Richmond, Ohio, assignor of one-half his right to Samuel L. Yeatres. Filed Aug. 10, 1876.

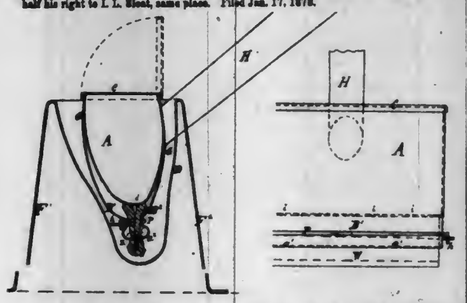
Brief.—The vent-pipe, connecting the induction air or gas pipe with the oil-reservoir, has a stop-cock for shutting off the air from the reservoir while it is being filled with oil, which is thus performed without interfering with the pressure of gas in the carbureter or service pipes. Oil is supplied automatically from the reservoir to the carbureter by a float and valve. The float-chamber has a glass window and reflector for showing the height of the oil within.



Claim.—1. The vent-tube T, provided with stop-cock *t*, and connecting reservoir A and tube B, substantially as and for the purposes set forth.

2. The window 2 and reflector 3, applied to the external float-chamber, substantially as described.

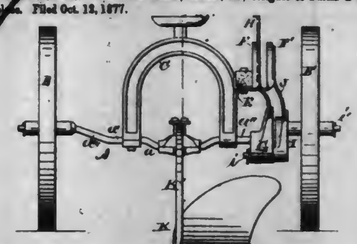
190,929. GRIDDLE GREASER AND HOLDER. Moses Nichols, Newburg, N. Y., assignor of one-half his right to I. L. Sloat, same place. Filed Jan. 17, 1878.



Claim.—1. The griddle-greaser consisting of a vessel, A, with perforated bottom *i i*, springs or clamps B' B', for holding the cloth W, handle H, lid C, and clamp P, substantially as and for the purpose specified.

2. The stand D F' F', in combination with the greaser A, substantially as specified.

190,930. SULKY-PLOWS. William H. Parlin, Canton, Ill., assignor to Parlin & Orendorff, same place. Filed Oct. 12, 1877.



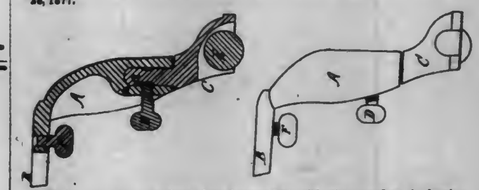
Claim.—1. In a sulky-plow, an axle, A, having a double crank, *a*, to which the plow is attached, and a crank, *a'''*, carrying the land-side wheel, said crank diverging obliquely from the wheel-spindle, as shown and described, whereby the weight of the driver and frame is utilized in raising the plow from the ground, substantially as and for the purpose specified.

2. The axle A, having central double crank *a*, to which the plow is attached, the oblique crank *a'''* at one end, and a fixed crank, G, upon the other end, to which a crank, I, is journaled, and on which the furrow-wheel B' is carried, substantially as and for the purpose specified.

3. The crank-axle A, constructed as described, and combined with the cranks G and I, levers H and J, rack-bars F F', arch C, plow K, and wheels B B', substantially as described, and for the purpose specified.

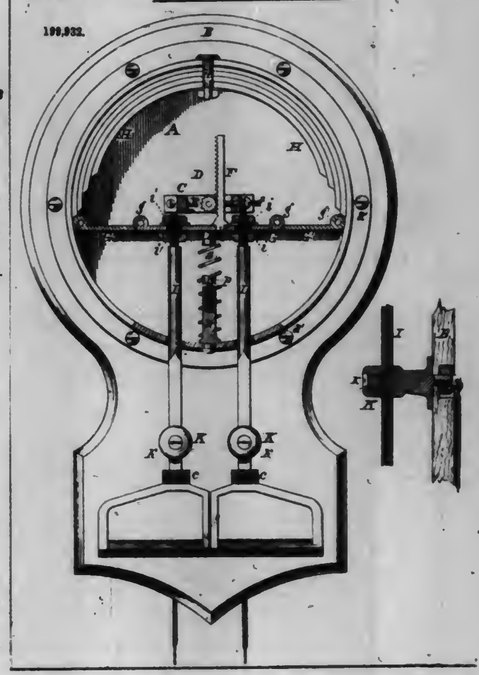
4. The axle A, having double crank *a* and crank G in the relative radial positions described, arranged to operate with the crank I, arch C, and plow K, substantially as described, and for the purpose specified.

190,931. STOVE-LEGS. Joseph E. Pope and Joseph S. Anthony, Taunton, Mass. Filed Dec. 20, 1877.



Claim.—A stove-leg formed and provided with the member A, having shank or locking-plate B, to be attached to the stove, the member C corresponding in proper proportion in its size and contour to part A, to constitute a symmetrical leg when in position, provided with the truck E, and arranged, as described, so as either to rotate relatively to part A or to be rigidly secured thereto, all substantially as set forth and shown.

190,932.



190,932. EXERCISING-MACHINES. John Preiss, Buffalo, N. Y. Filed May 8, 1877.

Claim.—1. In a test-gage, the combination, with the case A, of the series of curved leaf-springs H, connecting-links G' G'', and a recording device connected with said leaf-springs, substantially as and for the use and purpose stated.

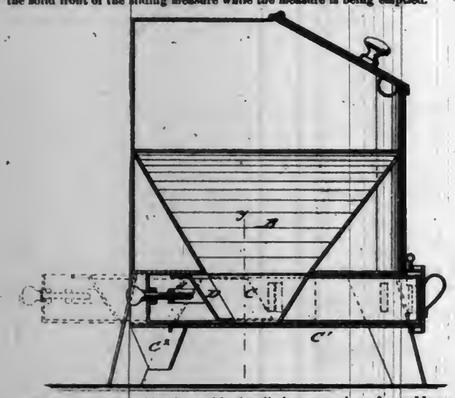
2. A test-gage consisting of a case, A, a series of curved springs, H, links G G' G'', handles L L, rods I I, and the recording device composed of the rack P and pinion E, the whole constructed and arranged to operate substantially in the manner as and for the use and purpose stated.

3. The combination, with the central link G, of the post R and the adjusting-screw *p*, for the purpose mentioned.

4. The combination, with the post K, of the screw-plug *k* and the spiral spring J, arranged in relation to the rod I, substantially as and for the purpose described.

190,933. MEASURING-CADDIES. James C. Reed, De Witt, Iowa. Filed June 26, 1877.

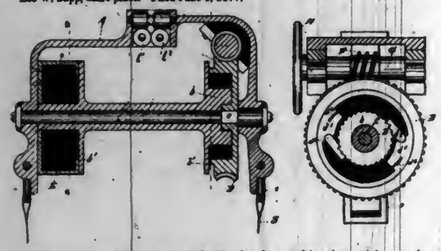
Brief.—A measuring-hopper, adjustable in size by means of a movable end way, registers alternately with the discharge-spout of the caddy and the receiving-spout of the bag or receiving-vessel, the discharge-spout being closed by the solid front of the sliding measure while the measure is being emptied.



Claim.—1. The combination, with the discharge-opening of a caddy or other receptacle having bottom guide-casing with rear spout, of a sliding bottom, having adjustable measuring portion and solid cut-off front portion, to discharge the quantity measured off and close bottom opening of caddy, substantially as specified.

2. The sliding bottom C, guided in bottom casing of caddy or other receptacle, and having solid front portion, acting as cut-off, and a hopper-shaped measuring portion, in combination with a sliding rear wall and side guide-walls, and an adjusting-screw to set hopper portion to any desired weight to be measured, substantially as set forth.

190,934. FIRE-ESCAPES. Charles Richards, Cleveland, Ohio, assignor of one-half his right to Leo W. Bapp, same place. Filed June 6, 1877.



Claim.—1. A fire-escape consisting in the combination, with a casing or frame-work provided with the body-strap, reel, and rope, of the worm-gear D *g* and hand-wheel H, substantially as described.

2. In a fire-escape, the combination of the frame with the rollers F F F F, provided each with a semicircular groove, for the purpose of guiding the rope, substantially as described.

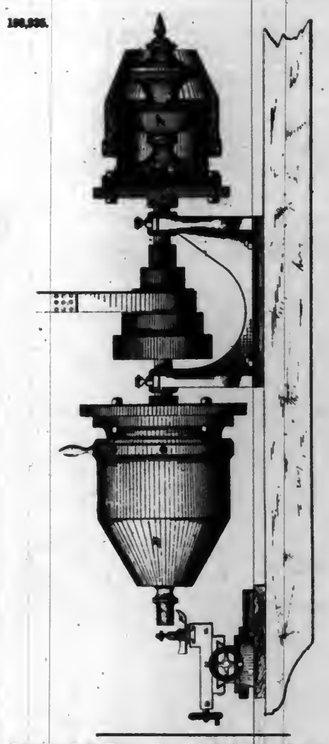
190,935. LATHE-CHUCKS FOR TURNING STONE. Ethan Rogers, Cleveland, Ohio, assignor to James C. Gaines, same place. Filed Jan. 4, 1878.

Claim.—1. A chuck adapted to receive and retain the article to be turned or finished, consisting, essentially, in an enlarged centering-head and an open-ended adjustable cap, the latter constructed to be longitudinally adjusted, and of such form that it will hold the article against lateral displacement, substantially as set forth.

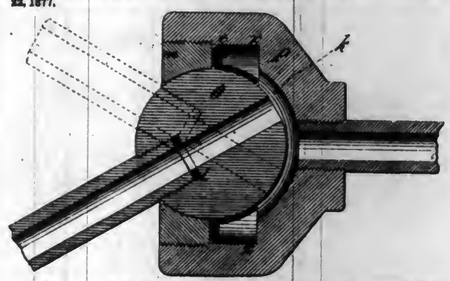
2. A chuck adapted to receive and retain the article to be turned or finished, consisting of an enlarged centering-head, the barrel of which is screw-threaded on its outer surface, and an open-ended cap provided with a screw-thread, said cap being constructed to hold said article at a point without the end of the barrel of the centering-head, substantially as set forth.

3. A chuck adapted to receive and retain the article to be turned, consisting, essentially, of an enlarged centering-head provided with a centering-spud for holding one end of the article in a central position, and an adjustable open-ended cap adapted to hold the opposite end of said article against either lateral or longitudinal displacement by its direct engagement with the surface of a portion of said article, substantially as set forth.

190,935.



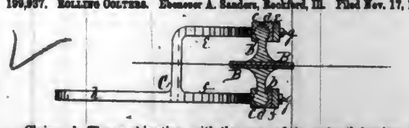
190,936. UNIVERSAL GLOBE-VALVES. Thomas P. Rowland, New York, N. Y. Filed Nov. 22, 1877.



Claim.—1. A spherical surface, O, rolling in contact with a corresponding spherical surface, *m*, supported in the casing P, which casing is provided with the U-packing *c*, and held between the sphere O and the casing P, and having its spherical surface in contact with the rolling sphere, substantially as described.

2. The combination of the sphere O, pipe B, passing through said sphere, the spherical U-packing *c*, chamber *h*, and inlet-passage A, substantially as described.

190,937. ROLLING COULTERS. Ebenezer A. Sanders, Rockford, Ill. Filed Nov. 17, 1877.



Claim.—1. The combination, with the arms of the yoke C, having spherical journal-bearings secured thereto, of the disks B, each having the shaft *a* and spherical bearing formed solid therewith, substantially as set forth.

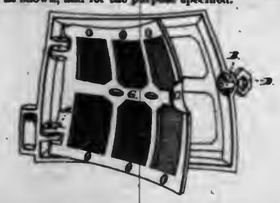
2. The combination, with the arms of the yoke C and disks B, the latter having shafts *a* and spherical journals *b* formed solid therewith, of the two-part bearings *c d* and screw-staples *g*, for securing the bearings in place, substantially as set forth.

190,938. STOVE-DOORS. Grange Sard, Jr., Albany, N. Y., assignor to himself and Rathbone, Sard & Co., same place. Filed Dec. 19, 1877.

Claim.—1. A gauze-supporting frame hinged to the mica door F, substantially as shown and described.

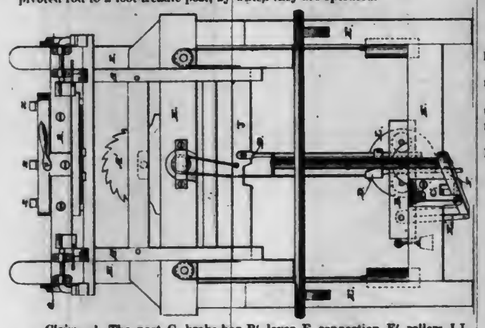
2. The projecting lip C, in combination with the catch B and turn-key D, substantially as shown, and for the purpose specified.

190,938.



190,939. MACHINES FOR SAWING SHINGLES. William J. Sherburne, Hastings, Minn. Filed June 15, 1877.

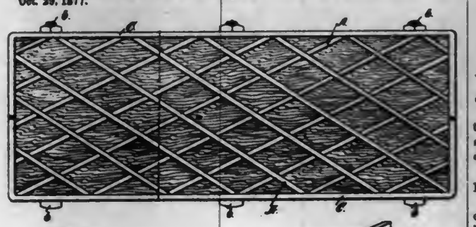
Brief.—The shingle-bolt is secured, while being sawed into shingles, to a sectional head-block formed of two inclined sections—a forward and a rear one, the rear one being provided with a sliding metallic rest, which projects beyond the lower part of the front section, and rigidly secured to the bolt-carriage. The front one has a series of metallic guards upon the face thereof, a series of wedge-shaped teeth projecting from said face, and a series of concaves immediately under said teeth, to prevent sawdust from getting under the teeth. The front section is vertically adjustable by an eccentric lever, and the head-block adjustable to the saw by pawls and racks. The bolt-carriage is vertically adjustable by two pitman-boards, one of which is attached to it, and both working through a brake-box having friction-rollers, and connected by a pivoted rod to a foot-treadle post, by which they are operated.



Claim.—1. The post G, brake-box B', lever F, connection E', rollers I I, boards D D, and cross-rail J, in combination with the sash-carriage A, substantially as and for the purpose hereinbefore set forth.

2. The combination of the head-block B R, teeth S, concaves T, guards *x*, rest Y, and slide-plate V, substantially as and for the purpose hereinbefore set forth.

190,940. BED-PLATES FOR PAPER OR RAG ENGINES. Alvan A. Simonds, Dayton, Ohio. Filed Oct. 29, 1877.

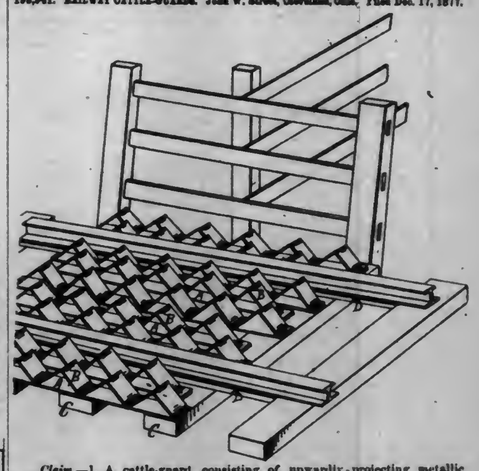


Claim.—1. In a bed-plate for paper or rag engines, the slotted knives A, dovetailed and interlocked, as specified, whereby they are self-sustained and rendered rigid, as set forth.

2. In a bed-plate for paper or rag engines, the knives A, arranged in parallel intersecting rows, forming rhomboidal interstices between them, whereby no two of the joints are in a straight transverse line across the top of the knives, as and for the purpose specified.

3. The herein-described bed-plate for paper or rag engines, consisting of the slotted knives arranged in parallel intersecting rows, and the angular clamping-plates C and bolts *b*, substantially as specified.

190,941. RAILWAY CATTLE-GUARDS. John W. Street, Cleveland, Ohio. Filed Dec. 17, 1877.

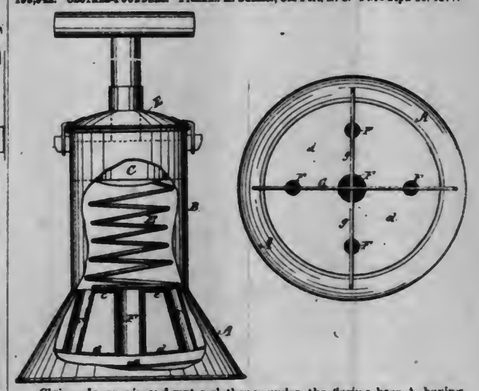


Claim.—1. A cattle-guard consisting of upwardly-projecting metallic points or angles attached to strips or bars, substantially as set forth.

2. A cattle-guard consisting of bars each having a zigzag metal strip attached thereto, substantially as set forth.

3. In a cattle-guard, the combination, with the metal points or projections, of the sunken ties C and longitudinal strips D, substantially as set forth.

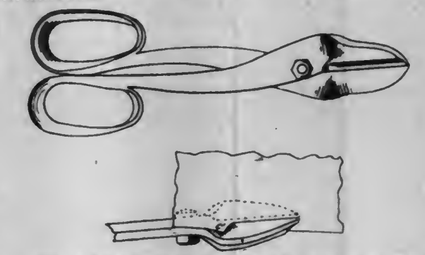
190,942. CLOTHES-POUNDERS. Franklin A. Sumner, Old Fort, N. C. Filed Sept. 13, 1877.



Claim.—In an air and water clothes-pounder, the flaring base A, having the tubes F, connecting the diaphragms *c* and *d*, the piston C, and the spiral spring E, placed in the cylindrical piston-chamber B, between the piston and diaphragm *c*, all said parts being combined as specified.

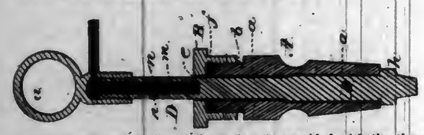
190,943. SHEARS. Ezekiel Van Heerden, Boston, Mass. Filed Jan. 3, 1878.

Brief.—The blades of a pair of shears are so formed that they bend back or fall away from the cutting-edges and from each other, the construction being specially adapted for tinners' shears, or the cutting of sheet metal, and permitting the more ready change of direction, as in turning corners, by leaving space, and preventing the tendency of stiff material to get in the way of the shear-blades.



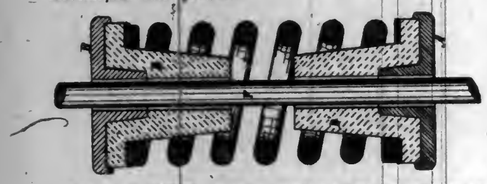
Claim.—A pair of shears one or both of whose blades are so constructed as to bend back or fall away from their cutting-edges and from each other, in order to provide room for the material operated upon, substantially as herein set forth.

199,944. COCKS AND FAUCETS. Claudius Vermaud, Quincy, Ill., assignor to himself, Bernard Arntzen, Louis Miller, and John Weber. Filed Nov. 26, 1877.



Claim.—In a cock or faucet, the casing A, provided with the through-aperture *a*, nut B, and packing *f*, in combination with the stem D, extending through the casing, and having the enlargement *b* on one end, and provided with the apertures *n*, conduit *m*, and conduit *t*, substantially as specified.

199,945. SPIRAL SPRINGS. Richard Voss, New York, N. Y., assignor to John Van Dorsen Reed, same place. Filed Sept. 18, 1877.



Claim.—1. A rubber-center spiral spring composed of a steel spiral coil, in combination with and having in its interior a column of rubber, consisting of one or two conically-shaped cores, the longitude of which column is less than that of the spiral coil, as shown and described.

2. A rubber-center spiral spring composed of a steel spiral coil, in combination with and having in its interior a column of rubber, consisting of one or two conically-shaped cores, as shown and described.

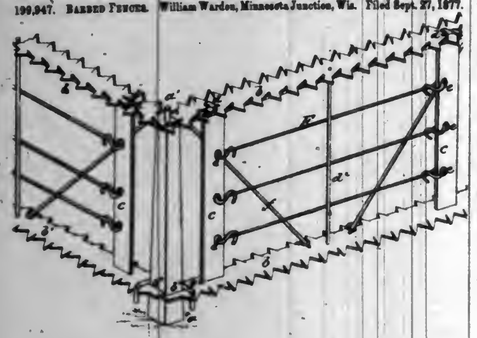
3. A rubber-center spiral spring composed of the combination of the bed-plate A, cap B, and rubber core or cores D D', as shown and described.

199,946. WIRE FENCES. William Warden, Minnesota Junction, Wis. Filed Sept. 12, 1877.



Claim.—The slotted wrought-iron posts A, wires *b*, and staples *c* combined, the wires being bent into the slots of the posts to secure greater rigidity, and prevent displacement when a wire becomes severed, substantially as described.

199,947. BARBED FENCES. William Warden, Minnesota Junction, Wis. Filed Sept. 27, 1877.



Claim.—1. A fence-panel having stock-guards made of sheet metal, with saw-tooth or serrated edges, and arranged in horizontal planes at the top and bottom of the fence, the upper bar having teeth bent upwardly, and the bottom bar having teeth bent downwardly, so as to prevent the passage of stock over or under the fence, as described.

2. A portable metallic fence-panel having the top and bottom bars, by which the parts of the panel are held together and supported, made of sheet metal arranged in horizontal planes, and formed, either or both, with toothed or serrated edges to constitute stock-guards, as shown and described.

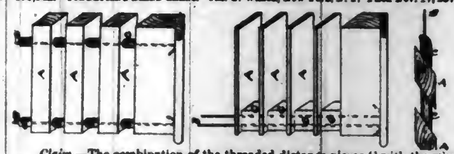
3. The combination of the horizontal sheet-metal bars *b b'*, vertical connections *c c*, and horizontal wires *e e*, constituting the essential features of a portable metallic fence-panel, substantially as described.

4. A portable metallic fence-panel composed, essentially, of top and bottom horizontal bars of sheet metal, vertical uniting-bars of similar material, and horizontal wires, said horizontal bars having serrated or saw-tooth edges, and the wires being attached at their ends to the vertical bars, substantially as described.

5. The combination, with the horizontal sheet-metal slotted bars of the portable panel, of the vertical sheet-metal connecting-bars, attached to said horizontal bars by slitting and clinching their ends, substantially as described.

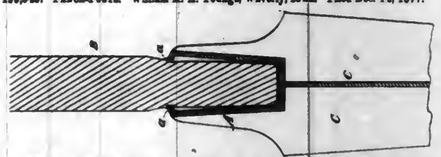
6. The combination, in a portable metallic fence-panel, of the horizontal bars, having toothed or serrated edges, the vertical connecting-bars of sheet metal, the central vertical supporting-rod, and the horizontal wires, and diagonal wire braces, substantially as described.

199,948. CONNECTING BLIND-SLATS. Jas. G. Wilson, New York, N. Y. Filed Nov. 17, 1877.



Claim.—The combination of the threaded distance-pieces C with the wires B and slats A, substantially as set forth.

199,949. FENCE-POSTS. William M. H. Youngs, Waverly, Iowa. Filed Dec. 14, 1877.



Claim.—1. The fence-post socket A, having the inwardly-projecting pointed flanges *a a*, substantially as and for the purpose set forth.

2. The fence-post socket A, made tapering from above downward, and having inwardly-projecting flanges *a*, substantially as shown and described.

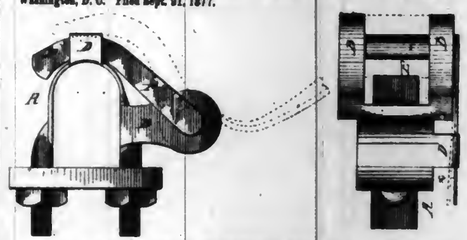
3. A fence-post support consisting of the tapering socket A, having inwardly-projecting flanges *a* and tapering right-angled blades C C, substantially as shown and described.

199,950. FIRE-EXTINGUISHERS. François C. Zapfe, New York, N. Y. Filed Nov. 23, 1877.

Brief.—A solution of certain chemical agents, which, when thrown upon fire, evolve gases which are incombustible, and do not support combustion.

Claim.—The herein-described fire extinguishing and preventive compound, consisting of a mixture of calcium chloride, alum having a potash base, chloride of ammonium, borax, and water, substantially as herein set forth.

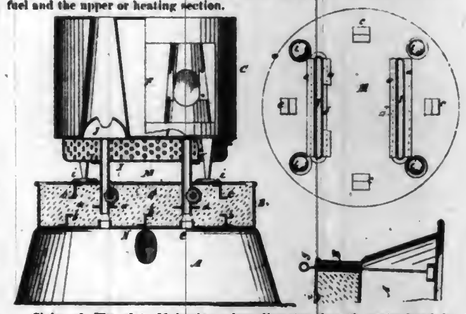
199,951. THILL-COUPLINGS. Chas. L. Alexander, Beresford L. Osborn, and John G. Anthony, Washington, D. C. Filed Sept. 21, 1877.



Claim.—The bolt E, having the springing crank-arm F, in combination with the catch D upon the clip A, substantially as described.

199,952. COAL-OIL STOVES. Silas D. Baldwin, Chicago, Ill. Filed May 31, 1877.

Brief.—A stove constructed in the manner described, so as to have absolutely no metallic connection of parts between the base containing the liquid fuel and the upper or heating section.



Claim.—1. The plate M, having a less diameter than the outer band, in combination with the non-conducting filling O, and arranged in the manner described, to leave a space between the outer band and the plate, substantially as specified.

2. The hooks or holders *e b*, in combination with the plates M and N and cement O, for holding the parts together and in position, substantially as described.

3. The wick-tube I, having its lower end terminating within and supported by the cement or filling O, in combination with the wick-opening *c*, substantially as set forth.

4. The combination of the plate M, wick-tubes I, with the cement O, band B, and plate N, all arranged as described, to prevent metallic connection with the oil-reservoir, substantially as specified.

5. The cement-spaces *d* around the wick-tubes in plate M, substantially as and for the purpose described.

6. In an oil-stove, the combination, with the base A, of a non-conducting material, arranged in the manner described, to prevent metallic connection of the parts subjected to heat with those containing the liquid fuel or oil, to prevent the transmission of heat to the oil by conduction, substantially as specified.

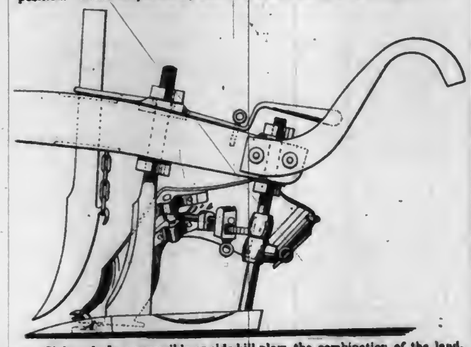
199,953. STEAM-PRESSURE GAGES. Oliver W. Bayley, Dayton, Ohio. Filed Dec. 12, 1877.



Claim.—In a steam-pressure gage, the combination, with the tubes *d* and arms *m*, of the bifurcated bracket *l*, link-arm C, disk *i*, segmental rack-arm *j*, shaft *h*, pinion-shaft *g*, and spring *p*, the several parts constructed and relatively arranged to operate as specified.

199,954. REVERSIBLE PLOWS. Peter Bouchet, New York, N. Y. Filed Dec. 18, 1877.

Brief.—The double mold-board is hinged to an extension-arm. The latter is swiveled upon the rear standard of the frame, and revolves around it from side to side. A hook upon the point locks the mold-board or share in working position. Colter suspended by links and moved laterally by a lever.



Claim.—1. In a reversible or side-hill plow, the combination of the land-side and adjustable colter with a swiveled duplex share and mold-board, adapted to swing around a vertical rear standard and lock to the point of the land-side, substantially as and for the purpose specified.

2. The combination of the land-side, having point and locking-hook, with a duplex share and mold-board having perforated points, and being hinged to a swivel-brace of the rear standard, substantially as and for the purpose specified.

3. The combination of the land-side having fixed locking-hook, and of an extension swivel-brace of the rear standard, with a duplex share and mold-board hinged to said brace, and adapted to swing around the rear standard from one side to the other for changing direction of plow, substantially as specified.

199,955. SCREW HOISTING-PULLEY APPARATUS. Alfred Box, Philadelphia, Pa. Filed Nov. 12, 1877.

Brief.—The casing is made in two parts, which, when secured together by bolts, hold the various operative parts. A channel or groove is provided in the worm-wheel to receive the hoisting-chain, which passes thereby beneath the operating-screw. The annular rim serves as a guard for the hand-chain while the holes for the chains guide them.

Claim.—1. In a screw hoisting apparatus, a hollow screw, D *d*, as and for the purpose set forth.

2. In a screw hoisting-pulley apparatus, the gear-wheels E F, intermediate of hand chain-wheel G and screw D, as and for the purpose set forth.

3. The combined worm-wheel and chain-sheave B, as and for the purpose set forth.

4. A box or casing constructed with a rim, *a*², adapted to form a chamber for the hand chain-wheel, as and for the purpose set forth.

5. In a screw hoisting-pulley apparatus, the combination, with the hand chain-wheel G and intermediate gear-wheels, of the rim *a*², acting as a guard to prevent the chain from leaving the wheel, as and for the purpose set forth.

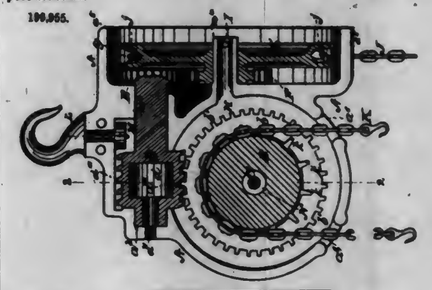
6. The worm-wheel casing H, constructed with a stud, *a*¹, to receive the hand chain-wheel G, as and for the purpose set forth.

7. A screw hoisting apparatus having its box or casing A centrally and perpendicularly divided, *a c*¹, to permit the insertion and removal of the hoisting devices, as and for the purpose set forth.

8. The combination, with the worm-wheel and lifting-chain, of the casing A, constructed with openings *a*² *a*², adapted to keep the chain in line with the wheel, as and for the purpose set forth.

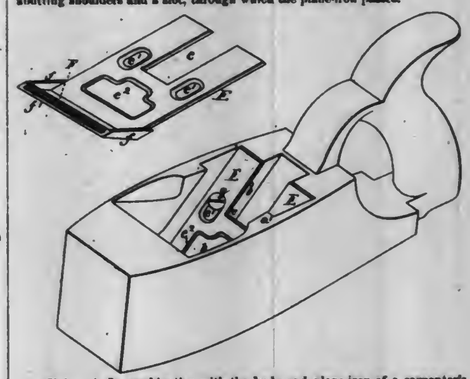
9. The combination, with the hand chain and wheel, of the rim *a*², having openings *a*¹ *a*¹ for guiding the chain, in the manner described, and for the purpose set forth.

199,956.



199,956. BENCH-PLANES. Joseph B. Boyce, Lockport, N. Y. Filed Jan. 12, 1878.

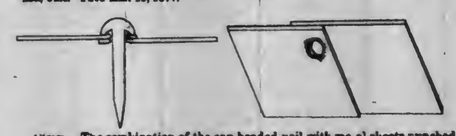
Brief.—The throat and mouth of a plane are protected from wear by a metal lining-plate longitudinally adjustable, and provided at its lower part with abutting shoulders and a slot, through which the plane-iron passes.



Claim.—1. In combination with the body and plane-iron of a carpenter's plane, the lining-plate E, having slots *c*¹ *c*¹ and a longitudinal opening, *c*, and a mouth, F, formed with abutting shoulders *f*, united as at *f'*, substantially as and for the purpose set forth.

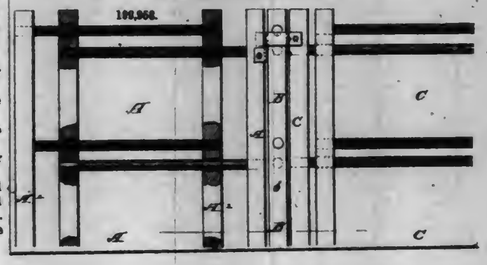
2. A metal lining-plate, E, for a carpenter's plane, the lower portions of which are constructed as at *f'*, *f'*, and F, and the upper portion provided with a central longitudinal opening or slot, *c*, to correspond or register with the groove *a* of an ordinary plane, substantially as and for the purpose described.

199,957. METHODS OF APPLYING NAIL-HEADS OR METAL ROOFING. John L. Boyer, Cincinnati, Ohio. Filed Mar. 15, 1877.



Claim.—The combination of the cup-headed nail with metal sheets punched so that the flange extends upward, substantially as herein described, and for the purpose specified.

199,958.

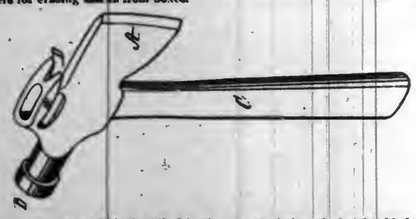


199,958. CHOPPER-DRIERS. Levi G. Cantell, Cleveland, Ohio. Filed Nov. 26, 1877.

Claim.—A clothes-frame consisting of two or more hinged leaves, A B C, and extension sections A′ B′ C′, the bars of the extension section being made to pass through openings in the uprights of the hinged leaves, and vice versa, substantially as and for the purposes described.

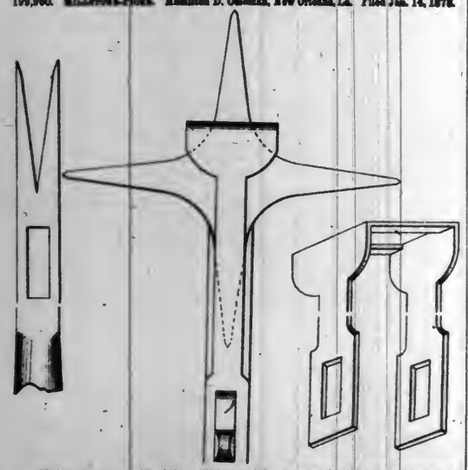
199,959. HATCHETS. John C. Chapman, Boston, Mass. Filed Oct. 12, 1877.

Brief.—The hatchet is provided at the extremity of the eye with two cutters for erasing marks from boxes.



Claim.—The within-described implement, consisting of a hatchet-blade, A, hammer-head B, and one or more shaves, *c*, located in line with the handle C, and a claw, D, projecting out from the shave or shaves in the direction of the hammer-head or hatchet-blade, all constructed in one piece, and arranged as shown and set forth.

199,960. MILLSTONE-PICKS. Hamilton D. Coleman, New Orleans, La. Filed Jan. 14, 1878.



Claim.—1. A star-head for millstone-picks provided with cutting-edges or points, said head being removably secured to the handle, substantially as and for the purpose set forth.

2. A strap provided at its upper end with an opening or slotted head, through which one of the points or cutting-edges of the pick-head passes, said strap being secured to the handle, substantially as and for the purpose specified.

3. A strap provided at its upper end with an opening or slot, through which one of the cutting-edges or points of the pick-head passes, the lower ends of the strap also being formed with openings, in combination with a key and wedge for securing the same to the handle, substantially as and for the purpose described.

4. The combination, with a star-head of a millstone-pick provided with points or cutting-edges, of a handle bifurcated or slotted at one end for the reception of said head, and a means, substantially as described, of securing the head within the slot or bifurcation, for the purpose set forth.

5. The pick-head or tool and bifurcated or slotted handle, in combination with the strap and a means for securing or fastening said strap to the handle, substantially as and for the purpose described.

199,961. STEAM-ENGINES. James G. Cooper, Brooklyn, N. Y. Filed Jan. 29, 1877.

Brief.—An annular valve surrounding the ends of the engine-cylinder, and arranged between the latter and an outer steam case or jacket, is used to control the motion of the engine-piston.

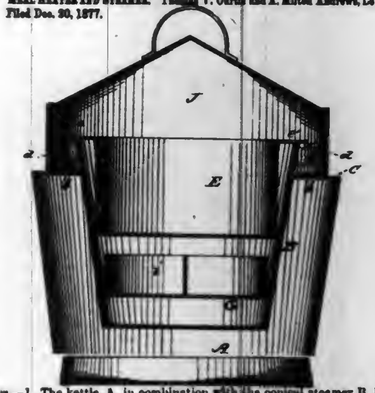
Claim.—1. The combination, with the double-headed annular valve, the annular steam chest or jacket in which said valve works, and the engine-cylinder, of the cylinder-covers, constructed to partly form the valve-seat, substantially as specified.

2. The combination, with the cylinder-heads N and the cylinder B′, of the rings V on the inner faces of the cylinder-heads, constructed to leave an exhaust-passage between them and the outer portions of said heads, and to form tapering ports *g h* at the ends of the cylinder, essentially as described.

3. The combination of the cylinder B′, the jacket R′, the cylinder-heads N, the rings V, constructed to leave an exhaust-passage between them and the outer portions of said heads, also to form tapering ports *g h* at the ends of the cylinder, and the double-headed annular valve P, substantially as specified.

4. The combination of the pistons *o′ o′* and their cylinders O O with the double-headed annular valve P, the cylinder B′, its heads N, and the ports *g h*, essentially as described.

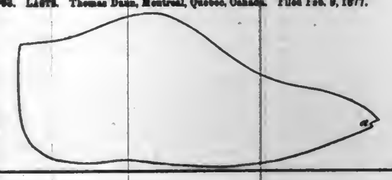
199,962. MEAL-HEATER AND STEAMER. Thomas V. Curtis and A. Milton Andrews, Le Mars, Iowa. Filed Dec. 20, 1877.



Claim.—1. The kettle A, in combination with the conical steamer B, having secured below its rim the horizontal flange C, said flange having a vertical rim or flange, *d*, and openings *a b*, and the horizontal cut-off D, with openings *c*, substantially as and for the purpose set forth.

2. The combination, with the steamer B, having flange C, openings *a b*, and cut-off D, with openings *c*, of the frame H, provided with openings *h*, for the reception of the vessel or vessels I, substantially as and for the purpose described.

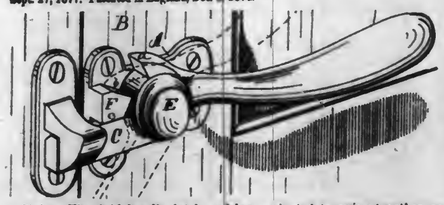
199,963. LASTS. Thomas Dunn, Montreal, Quebec, Canada. Filed Feb. 9, 1877.



Claim.—1. A last for turned shoes, provided with the grooved or recessed portion *a b c*, with an end projection, all substantially as shown, for the purpose set forth.

2. The process herein described, consisting of forming and scouring a toe tip or protector to the upper and sole of a turned shoe by means of a groove or recess in the end of the last, all substantially as set forth.

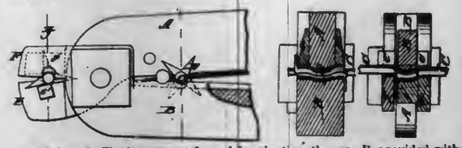
199,964. GATE-LATCHES. Montague Davenport, Finsbury, London, Great Britain. Filed Sept. 27, 1877. Patented in England, Dec. 8, 1874.



Claim.—The rigid handle, latch, and lug *a*, pivoted to swing together, as set forth, in combination with the base-plate A and stop F *b c*, the confronting faces of the latch C and lug *a* engaging the flat faces *b c* of the stop F, substantially as described, and for the purpose specified.

199,965. PINCHERS FOR APPLYING FENCE-BARBS. John W. Edwards, Oswego, Ill. Filed Nov. 23, 1877.

Brief.—One clamping-seat on the handle side of the pivot for applying barbs to fence-wire, and another in front of pivot to tighten barbs already applied.



Claim.—1. The instrument formed by pivoting the arm B, provided with a longitudinal groove, and one or more transverse notches in its inner edge, and the arm A, provided with a longitudinal projection, square shoulders, and one or more transverse notches in its inner edge, to each other at their forward ends, substantially as herein shown and described.

2. The combination of the projection E, provided with a longitudinal groove, a transverse notch, and side projections *e′*, and the projection F, provided with a transverse notch, and having a block, *f′*, attached to the inner side of one of its parts, with the pivoted arms A B, substantially as herein shown and described.

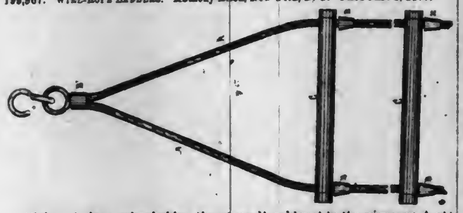
199,966. POCKET-KNIVES. Albert E. Elmer, Shelburne Falls, Mass. Filed July 2, 1877.

Brief.—One of the side plates constituting the handle is slitted down a short distance, and disconnected from the back in such manner as to constitute a spring coacting with a lug on the side plate and suitable recesses in the blade, the construction dispensing with the ordinary back-spring of the knife, and utilizing a portion of one of the side plates to operate as a spring.



Claim.—In a pocket-knife or article of cutlery, as described, the handle A, having one or both of its side plates *b* and its back *c* in one piece, and one of such side plates slit and disconnected from the back for a sufficient distance from the upper end thereof to enable the said side plate to operate as a spring for the blade, such side plate being provided with a lug, *f*, to operate with recesses *g h* in the blade B, all being substantially as set forth.

199,967. WIRE-ROPE LADDERS. Anthony Elson, New York, N. Y. Filed June 8, 1877.



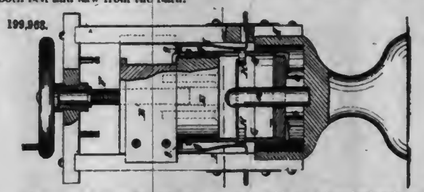
Claim.—1. In a wire-ladder, the stops H, soldered to the wire-rope A at points immediately below the place of contact of the rounds C with the wire-rope, to prevent the slipping of the rounds, substantially as described.

2. The combination of the wire-rope and a cup, B, around it, between which and the rope is an annular space filled with solder or other cement, to secure the cup in place upon the rope, whereby each round of the ladder is prevented from slipping down upon the wire-rope, substantially as described.

199,968. APPARATUS FOR HARDENING AND TEMPERING SAWS. Silas E. Farmer, Dayton, Ohio, assignor to himself and Alvan A. Simmons, same place. Filed June 11, 1877.

Brief.—Saw is placed on spring-clamps, and the plunger lowered till wedges on it withdraw the clamps sidewise, when the saw drops upon the bed in the bath, where it is compressed by plunger. The plunger, on rising, lifts both bed and saw from the bath.

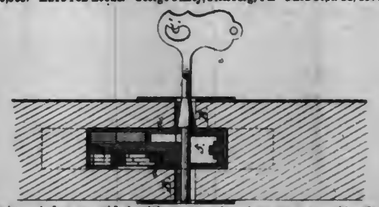
199,969.



Claim.—1. A bed, D, which is mounted on blocks *b* in a bath-tub, A, and which is vertically movable, and centered by a post, *a*, in combination with the follower E and lifting-rods G G, substantially in the manner and for the purpose described.

2. The spring-fingers or saw-supports H H and tripping-wedges *g g*, in combination with the bed D and follower E, arranged and operating substantially as described.

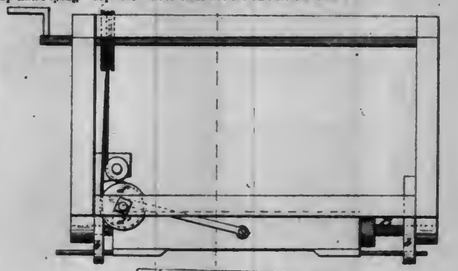
199,969. KEYS FOR LOCKS. George Finley, Pittsburg, Pa. Filed Sept. 18, 1877.



Claim.—A key provided with a stem heavier upon one side than the other, for the purpose of keeping the key-bit at an angle with the key-hole, as and for the object described and set forth.

199,970. CLOTH-SHEARING MACHINES. Arthur A. Forbes, Valleyfield, Quebec, Canada. Filed Dec. 22, 1877.

Brief.—A board whose under side is concaved, and covered partly with a whalebone brush and partly with emery, is placed above the guide-roller and arranged to reciprocate transversely of the fabric, for the purpose of breaking up hairs lying warpwise whose ends are pulled into the cloth.

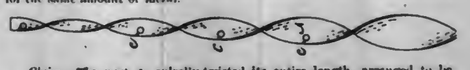


Claim.—1. As an improvement in cloth-shearing machines, the combination, with the guide-roller that conducts the cloth to the setting-up brush, of a laterally-reciprocating board having grooved or concaved under side covered with a whalebone brush and emery, or equivalent cutting material, substantially as and for the purpose set forth.

2. In cloth-shearing machines, the combination of the guide-roller that conducts the cloth to the setting-up brush with a laterally-reciprocating board having grooved or concaved under side covered with a suitable cutting material, the board being also capable of vibration in its supporting-arms, to allow the passage of the sewing at the ends of the cloth, substantially as and for the purpose set forth.

199,971. METAL FENCE-POSTS. Henry L. Geckley, Joliet, Ill. Filed Nov. 6, 1877.

Brief.—By being twisted its entire length the post has greater strength for the same amount of metal.



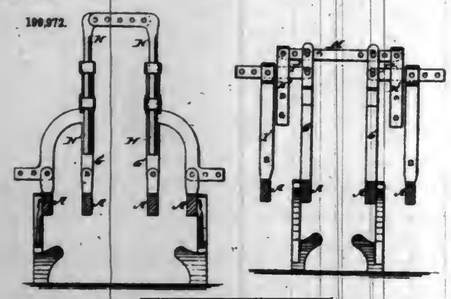
Claim.—The post A, spirally twisted its entire length, arranged to be driven in the earth at its largest end, and provided with notches *c*, to receive the wires of the fence, all constructed and operating as and for the purposes set forth.

199,972. CULTIVATORS. Jefferson M. Graves, Blossom Prairie, Tex. Filed Nov. 3, 1877.

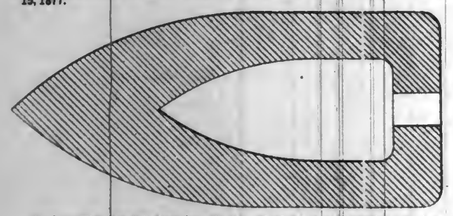
Claim.—The combination of beams A, bars G, having curved arms I, and

the pivoted angle-bars H, all connected and arranged as and for the purpose specified.

199,972.

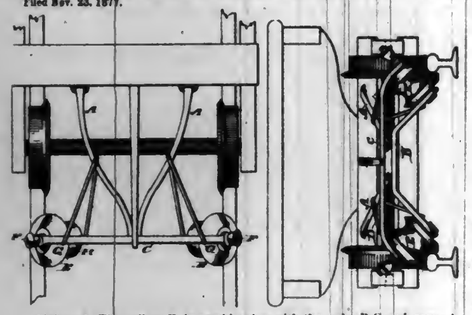


199,973. PROJECTILES FOR HEAVY GUNS. Robert Hadfield, Sheffield, England. Filed Oct. 15, 1877.



Claim.—The hereinbefore-described method of manufacturing steel projectiles, which consists in casting the projectiles, annealing them to give them a tough and homogeneous character, and then hardening the points to adapt them for increased penetration.

199,974. SAFETY-GUARDS FOR CARS. John W. Harding and Isaac Towell, Columbus, Tex. Filed Nov. 23, 1877.

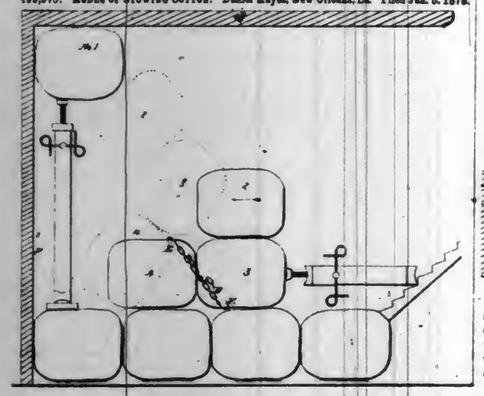


Claim.—1. The rollers E, in combination with the yoke B C and arms A A, substantially as shown and described.

2. The combination of a truck with arms and rollers traveling in front of the wheels and upon the rails, substantially as shown and described.

3. The combination of a tongue consisting of arms and braces with rollers and spring, substantially as set forth.

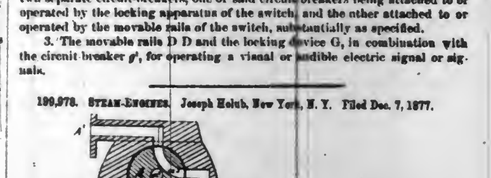
199,975. MODES OF STOWING COTTON. Daniel Hayes, New Orleans, La. Filed Jan. 5, 1878.



Claim.—The combination of cotton by connecting together the two opposite upper and lower surfaces of two adjacent bales by the hooks E and adjustable chain D while under the pressure of the jack-screw, substantially as and for the purpose specified.

199,976. KNIFE CLEANER AND SHARPENER. Christian A. Haugaard, Dubuque, Iowa, assignor of one-half his right to Monroe M. Cady, same place. Filed July 16, 1877.

Brief.—The knife may be sharpened at the same time it is cleaned by running it between the jaws D D', or the piece C may be turned on its pivot, and the jaw D' held in position.

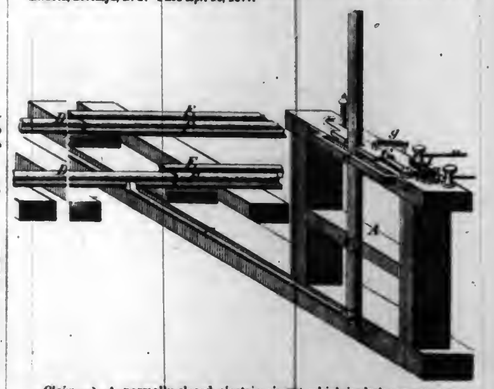


Claim.—1. The knife-cleaner having a pivoted piece, C, held in place by a beveled joint, *b d*, substantially as described and shown.

2. The pivoted jaw D' of a knife sharpener, forming a clasp to hold the swinging part of a knife-cleaner in place, substantially as described and shown.

3. The utensil for cleaning and sharpening knives, consisting of the back-board A, brick-box B, swinging piece C, and jaws D D', all constructed and arranged substantially as described and shown.

199,977. ELECTRIC SIGNALING APPARATUS FOR RAILROAD-SWITCHES. Stephen C. Hendricken, Brooklyn, N.Y. Filed Apr. 16, 1877.

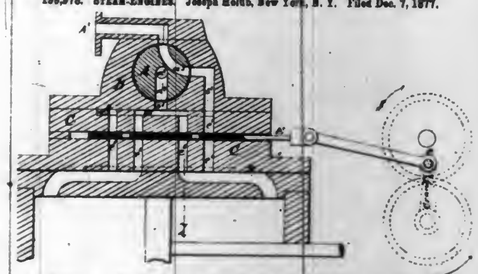


Claim.—1. A normally-closed electric circuit which includes one or more electric signals, so arranged as to be maintained in a position denoting safety by the action of a constant current traversing said circuit, in combination with a circuit-breaker attached to the locking apparatus of a switch, when arranged substantially as specified, so that the signal-circuit must be interrupted before the switch-rails can be moved from their normal position, and cannot be restored until the said rails have been replaced in such position.

2. A normally-closed electric circuit which includes one or more signal-operating magnets, so arranged as to be maintained in a position denoting safety by the action of the current traversing said circuit, in combination with two separate circuit-breakers, one of said circuit-breakers being attached to or operated by the locking apparatus of the switch, and the other attached to or operated by the movable rails of the switch, substantially as specified.

3. The movable rails D D and the locking device G, in combination with the circuit-breaker g^1, for operating a visual or audible electric signal or signals.

199,978. STEAM-ENGINES. Joseph Holub, New York, N.Y. Filed Dec. 7, 1877.



Claim.—1. The combination, with the main slide-valve D, and with the auxiliary slide-valve E, and with the sets of inlet and outlet ports in the chests B C, shown and described for each of the said valves, of the steam-valve A, provided with the ports a a^1 for the valve D, and the ports a^2 a^3 for the valve E, and the common exhaust a^4, all constructed and arranged to operate substantially as and for the purpose specified.

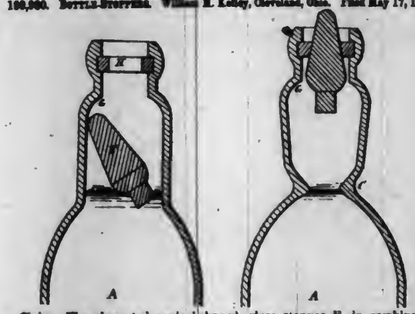
2. The combination, with the main slide-valve D, and with the auxiliary slide-valve E, of the steam-valve A, provided with the set of ports a a^1 a^2 for the main valve D, and with the set of ports a^3 a^4 a^5 for the valve E, said ports and valves being arranged to admit steam through the auxiliary valve E only when steam is shut off from the main valve D to stop the engine, substantially as and for the purpose specified.

199,979. HAIR-CRIMPERS. Isidor Kaus, New York, N.Y. Filed Nov. 22, 1877.



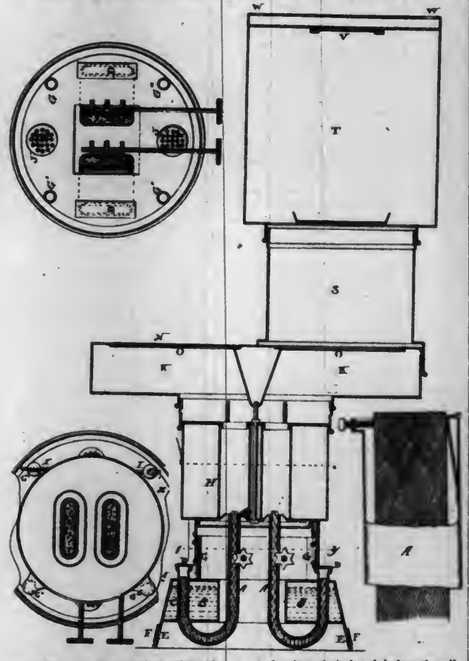
Claim.—A hair-crimper, A B C, in which the bent wire or hair-pin A has a notch, a^1, formed in its bend to receive the eye of the binding-wire B, and prevent it from slipping off said bend, substantially as herein shown and described.

199,980. BOTTLE-STOPPERS. William H. Kelley, Cleveland, Ohio. Filed May 17, 1877.



Claim.—The elongated conical-shaped glass stopper F, in combination with the ring H and neck of the bottle A, contracted at its base at C, and having a shoulder, G, substantially as and for the purpose described.

199,981. OIL-STOVES. Augustus F. Kibbe, Brooklyn, N.Y. Filed Oct. 4, 1877.



Claim.—1. The siphon wick-tubes A A, having their bend below the oil-reservoir, one end of each of the said tubes extending upward through the oil-reservoir, said tubes having a perforated face, C, both inside and outside the reservoir, for the use and purpose substantially as herein shown and specified.

2. Siphon-tubes, in combination with base apertures E and sliding dampers F, for regulating the supply of cold air to keep said siphon-tubes cool, substantially as described.

3. The inverted perforated detachable cones J, with flanged rims, as described, for convenience and safety in replenishing and supplying air to the oil-chamber and siphon-tubes, substantially as herein shown and described.

4. The perforated legs or standards G G' G'' G''', the rear standards being one punctured and the other slotted on top for the reception of pins or trunnions I I, said pins or trunnions being rigidly attached to the base, forming a joint for tilting and holding the drums secure, substantially as herein shown and described.

5. A two-hole top whose plane is increased by two hollow shelves, M M, heated by direct air communication from the stove, both through and around the deflector L, substantially as herein shown and described.

6. The perforated double top of oven, with sliding damper V, as applied to an oil-stove, for retaining and regulating the heat therein, substantially as herein shown and described.

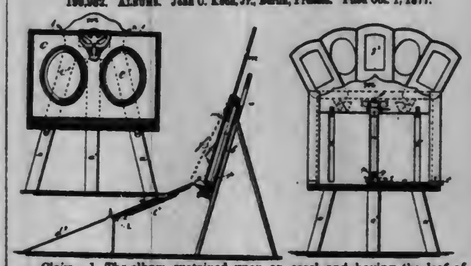
7. The extension-drum S, with flange U, as applied to a two-hole top for oil-stoves, for the use and purpose herein specified.

8. The drum or cylinder X, forming the top of stove for heating purposes, in combination with inner chamber *b*, inlet-pipes Y Y Y, pipe *c*, and outlet-pipes *d d d*, applied in the manner and for the purpose substantially as specified.

9. The springs *n n*, either perforated or plain, with or without set-screws *p*, as applied to a siphon or other wick-tube, for the use and purpose specified.

10. A hollow bead or bolt, *r*, arranged to screw up to the wick, and thus fill the space, substantially as herein shown and described.

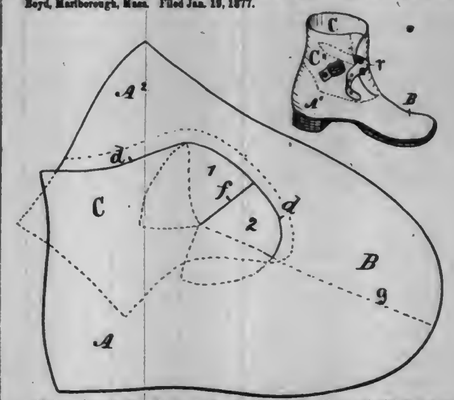
199,982. ALBUMS. John O. Koch, Jr., Berlin, Prussia. Filed Oct. 1, 1877.



Claim.—1. The album sustained upon an easel, and having the leaf of pictures d^1 within the swinging cover *c*, and the picture-holder *f* and half-sheet leaves d^1 f^1 d^2 f^2, substantially as set forth.

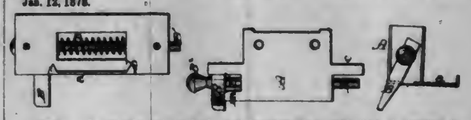
2. The photograph-album made as a box, containing the sliding frame *m* and its picture-holders, in combination with the spring *n*, spring-latch *e*, and button *t*, substantially as set forth.

199,983. SHOES. William H. Land, Des Moines, Iowa, assignor of one-half his right to Joseph Boyd, Marlborough, Mass. Filed Jan. 19, 1877.



Claim.—In a buckle shoe or gaiter, the lapel formed integral with the upper A B C, having an incision, *f*, and the buckling-strap, having a triangular-shaped end, *r*, applied over the incision, substantially as and for the purposes shown and described.

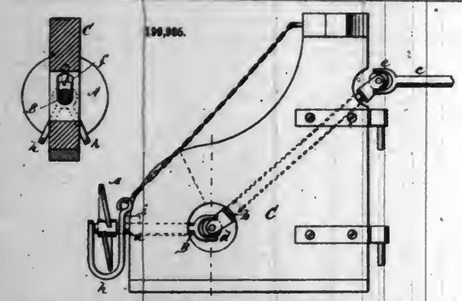
199,984. BURGLAR-ALARMS. Simon D. Lauffer, Irwin Station, Pa., assignor of three-fourths of his right to Aaron H. Moseley, Cyrus F. Bilhimer, and Wm. Williams, same place. Filed Jan. 12, 1878.



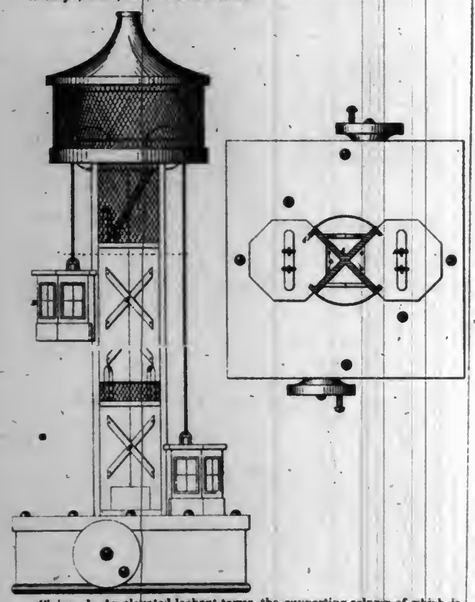
Claim.—In a sash or door lock and burglar-alarm, the box A, having in front a slanting upper edge, in combination with the bolt B, rod B^1, spring *s*, and extension *a*, substantially as and for the purpose set forth and described.

199,985. STEERING-PROPELLERS. Turner F. Lavens, Cascades, Wash. Filed June 25, 1877.

Claim.—The combination, with screw A, of a shaft in sections, *a b c*, connected by joints *d e*, the slotted rudder C, and the guard *h*, having lug *i*, as and for the purpose specified.



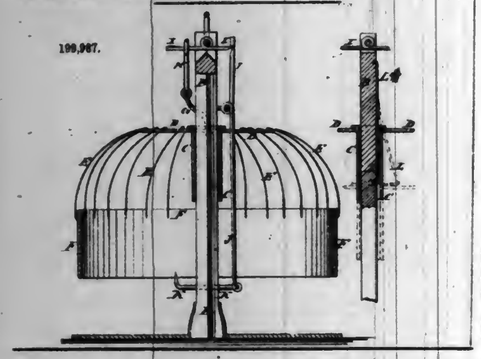
199,986. AERIAL OBSERVATORIES. Nathan C. Lombard, Cambridgeport, assignor to Abby A. Sawyer, Boston, Mass. Filed Jan. 16, 1878.



Claim.—1. An elevated lookout-tower, the supporting-column of which is made cruciform in shape in cross-section, in combination with one or more passenger elevator-cars, each fitted to and occupying the angular space between two of the wings or arms of said cruciform column, and suitable mechanism for raising said car or cars to the top of said column, substantially as described.

2. The combination, in a lookout-tower, of a supporting-column of cruciform shape in cross-section, two elevator-cars arranged upon opposite sides of said column, each within, or partially within, one of the angles formed between two of the wings of said column, and adapted to be guided in its ascent or descent by said column, and one or more landings, located at intermediate points between the base and the top of the column, and occupying the angles between the wings of said column not occupied by the ascending and descending cars, substantially as described.

199,987.

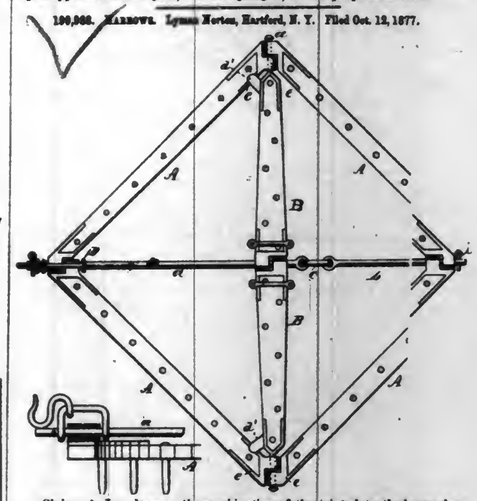


199,987. ANIMAL-TRAPS. David McGuire, New Garden, Mo. Filed Oct. 20, 1877.

Brief.—The spring L prevents the cage from being raised by the victim after the trap is sprung.

Claim.—The combination, with post-cage D E F and sleeve C, of the pivoted hook-rod H, pivoted rods I J, the hook-rod K, having arms projecting upon opposite sides of post, and the spring L, for the purpose set forth.

199,988. HARROWS. Lyman Norton, Hartford, N. Y. Filed Oct. 12, 1877.



Claim.—1. In a harrow, the combination of the jointed toothed cross-bar B, having the fingers d^2, the rods *a b*, and the jointed toothed front and rear bars A A, all combined as shown and described.

2. In a harrow, the combination of the bars A A, having hooks *f f*, the cross-bar B, having curved pivots *d*, the rods *a b*, and key *i*, as shown and described, whereby the said parts are adapted to be readily connected and detached, as shown and described.

199,989. PLUG-TOBACCO. Robert W. Oliver, Richmond, Va. Filed Dec. 31, 1877.

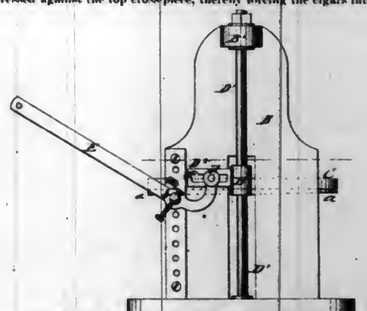


Claim.—1. The improved method of forming plug-tobacco herein described—namely, bending the rope of tobacco in one continuous plane around and upon itself, so as to produce a slab of rope-tobacco approximating a rectangle in outline, and then subjecting said slab, free from contact with other slabs, to pressure in a mold, in such manner as to close the interstices and square the slab, substantially as described.

2. The plug or slab of rope or twist tobacco, rectangular in outline, and flattened and condensed as herein described.

199,990. PRESSES FOR COMPRESSING CIGARS, &c., IN PACKING-BOXES. Frank X. Osberg, Cincinnati, Ohio. Filed Aug. 11, 1877.

Brief.—The follower is moved vertically by the lever-frame, whose fulcrums may be adjusted so as to give the required movement. The box-cover is pressed against the top cross-piece, thereby forcing the cigars into the box.

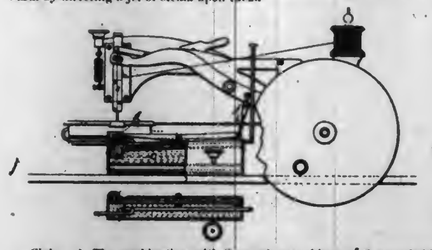


Claim.—1. In a cigar and tobacco press, the combination of the vertically sliding and guided platform C, having runners D and slotted arms D^1, with the recessed standards B, guide-rods D^1, and connecting top piece B^1, and with the fulcrumed lever-frame, having curved connecting ends, substantially in the manner and for the purpose set forth.

2. The combination of the fulcrumed platform-operating lever-frame with perforated pieces of the standards, to change height of fulcrums and terminal height of platform, substantially as specified.

199,991. WAXING DEVICES FOR SEWING-MACHINES. Marshall H. Pearson, Leeds, England. Filed June 4, 1877.

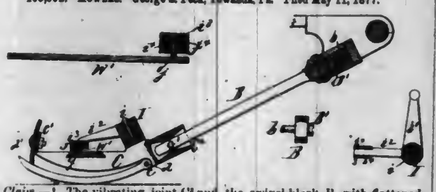
Brief.—A well of wax is provided beneath the table of the machine, and below the lowest point reached by the needle, which is heated to the proper temperature by a tank of water, and which surrounds the lower part of the well, and is heated by gas or other means. A cup attached to a lever actuated by connection with the needle-arm of the machine works in this well, and raises a cup full of the heated wax as the needle descends, so that a portion of the needle is immersed therein. The needle and shuttle are kept moist and warm by directing a jet of steam upon them.



Claim.—1. The combination, with the sewing-machine and the wax-holder, of a lifting device for the wax, consisting of a cup or pump, and mechanism for connecting the same to the operating parts of a sewing-machine, whereby the said wax-lifting device is raised and lowered at every reciprocation of the needle, and caused to present the melted wax with uniformity for the needle to enter the same, substantially as set forth.

2. The method herein specified of warming the shuttle of the sewing-machine and lessening the adhesion of the wax by directing upon such shuttle a jet of steam to warm and moisten the same, substantially as set forth.

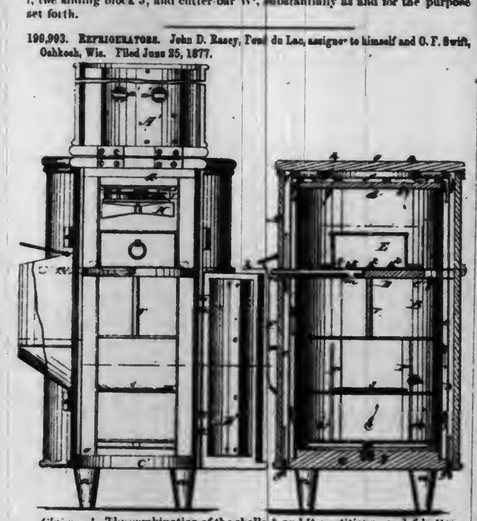
199,992. MOWERS. George S. Peck, Towanda, Pa. Filed May 11, 1877.



Claim.—1. The vibrating joint C^2 and the swivel-block B, with flattened sides and semi-cylindrical top and bottom, in combination with the block C, rod B, screw *b*, and frame A, substantially as and for the purpose set forth.

2. The cutter-vibrator I, having the arms i^1 i^2, and the driving-head i^3, with flanges i^3, in combination with the block C, to which it is attached by pin *i*, the sliding block J, and cutter-bar W', substantially as and for the purpose set forth.

199,993. REFRIGERATORS. John D. Racey, Fond du Lac, assignor to himself and O. F. Swift, Oshkosh, Wis. Filed June 25, 1877.



Claim.—1. The combination of the shells A and B, partitions *e* and *f*, bottom C, provided with apertures *g*, and heads *d e*, provided with apertures A and *i*, substantially as shown and described.

2. The combination of the shelf D, having apertures C', the trough *n*, ice-drawer F, having ribs *k* and perforations *l*, and the reservoir F, substantially as set forth.

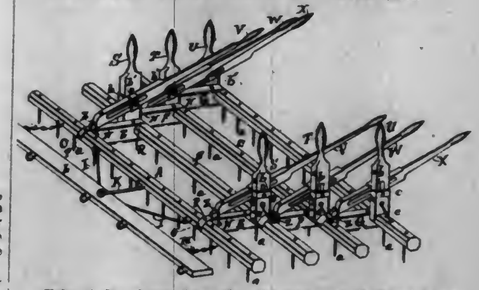
199,994. HORSE HAY-RAKES. William Reno, La Fayette, assignor to himself, O. W. Heath, and James Heath, same place; said O. W. and J. Heath, assignors to Elijah M. Witter, West Jefferson, Ohio. Filed Dec. 23, 1876.

Claim.—The combination, with the rake A B C D, of the shoes E E, pivoted at their middle to the rake-head A; as and for the purpose specified.

199,994.



199,995. HARROWS. David Rhodes, Fredericktown, Mo. Filed Jan. 2, 1878.

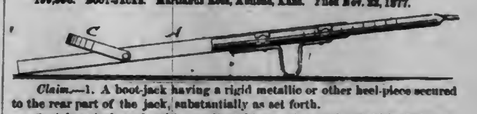


Claim.—1. In a harrow-frame, the adjustable beams B, C, and D, provided with the uprights or fulcrums S, T, and U, in combination with the slotted levers V, W, and X, whereby the harrow-teeth may be cast forward or backward, or be held in a perpendicular position, substantially as and for the purposes set forth.

2. A harrow-frame the adjustable beams of which are provided with the fulcrums S, T, and U, and connected by the side bars E, F, and G, in combination with the slotted levers V, W, and X, whereby each beam is made to act independently of the others, substantially as and for the purposes set forth.

3. In a harrow-frame, the adjustable beams of which are provided with the slotted fulcrums S, T, and U, and connected by the side bars E, F, and G, the slotted levers V, W, and X, secured by the clasps *b b'*, bolts and nuts *c*, and loops Z, to permit the removal of the levers, that the harrow-frame may be folded, substantially as and for the purposes set forth.

199,996. BOOT-JACKS. Marianus Rose, Abilene, Kans. Filed Nov. 22, 1877.



Claim.—1. A boot-jack having a rigid metallic or other heel-piece secured to the rear part of the jack, substantially as set forth.

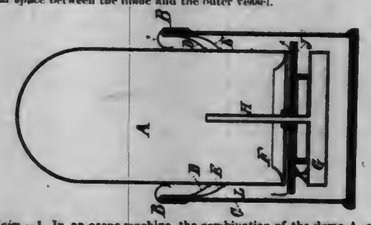
2. A boot-jack made with an adjustable toe-piece and a rigid heel piece or support, substantially as and for the purpose set forth.

3. In a boot-jack, a wooden jack-piece, A, provided with a U-shaped brace, having downwardly-bent portions *a*, said brace being attached to piece A at both sides of the recess, so as to strengthen the same and prevent splitting, substantially as described.

4. In a boot-jack, an adjustable toe-piece having graduated spring-legs, and a front bow twisted at right angles to the legs, substantially as and for the purpose described.

199,997. OZONE-GENERATORS. Amos W. Saugster, Buffalo, N. Y., assignor of one-half his right to Edward M. Jewett, same place. Filed Oct. 29, 1877.

Brief.—Ozone is generated by the slow oxidation of phosphorus partially submerged in water, so as to permit a slight access of air. The phosphorus is supported upon a hollow float (preferably of glass) having a central tube for the insertion of weighting material. The vapors and fumes from the phosphorus rise into a glass dome, from which they escape, as ozone, by the annular space between the dome and the outer vessel.



Claim.—1. In an ozone-machine, the combination of the dome A, springs B D E, and vessel C, for the purpose of holding the dome vertical and retaining it at any point desired.

2. The combination of the dome A, vessel C, float G, phosphorus K, and the interposed frame J, for the purposes specified.

3. In an ozone-machine, a glass dome, A, provided with an inwardly-projecting flange, F, as and for the purposes set forth.

199,998. TEMPORARY BINDERS. John W. Shoemaker and Samuel Dodsworth, Leavenworth, Kans. Filed Dec. 5, 1877.

Claim.—The combination, in a temporary binder, with the fixed vertical tubes B, that hold the papers, of the needles C, having transversely-apertured

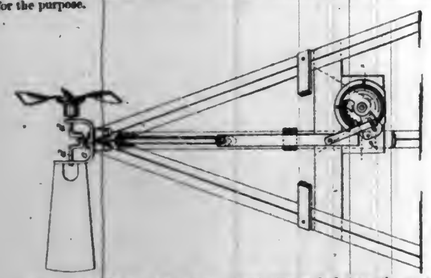
conical heads, whose shoulders rest on the top of said tubes, while the shanks of said needles extend down into the tubes, as shown and described.

199,998.



199,999. GRINDING-MILLS. Silas C. Schofield, Freeport, Ill. Filed Feb. 26, 1877.

Brief.—Pawl drives the runner, which is ratcheted upon its periphery for the purpose.



Claim.—In a grinding-mill having a fixed plate or bed-stone, the runner having ratchet-teeth, as described, in combination with the reciprocating pitman, having a pawl, as described, substantially as and for the purpose set forth.

200,000. CARBURETERS. Mortimer Shea and James McG. Hamilton, Nashville, Tenn. Filed Oct. 31, 1877.

Brief.—Gas and air are brought together and mixed in the desired proportions by a pair of revolving meter-drums secured upon the same shaft in a suitable case, and the gas and air are carbureted by placing a volatile hydrocarbon oil in the case in which the drums revolve.



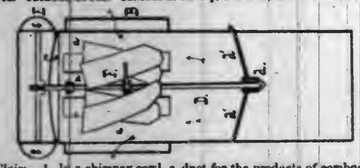
Claim.—The combination, with a carbureter, of chamber E, with the pipes a c F, valve-chamber G, float-valve H, and pipe I, substantially as and for the purposes set forth.

200,001. SLIDING DOORS. Silas Smith, Hammondsport, N. Y. Filed July 21, 1877.



Claim.—In sliding doors, the guiding-rail A, having the downwardly-projecting flange a, in combination with and entering the groove B in the door or gate C, substantially as and for the purpose set forth.

200,002. CHIMNEY-COWLS. Christian E. Soelkey, Baltimore, Md. Filed Jan. 22, 1878.



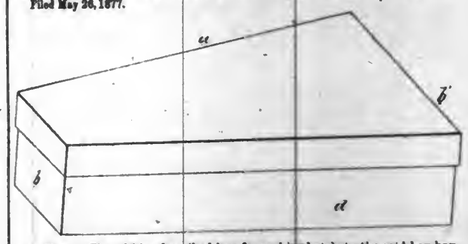
Claim.—1. In a chimney-cowl, a duct for the products of combustion, provided with lateral openings, in combination with a propeller-wheel and a wind-wheel, the latter being separated by a plate, as set forth.

2. In a chimney-cowl, a central flue containing a propeller-wheel, and having lateral openings, the said flue being inclosed within a perforated drum, and surmounted by a wind-wheel, substantially as described.

3. In combination with the cylinder A, the drum B, propeller-wheel F, and wind-wheel E, arranged substantially as described.

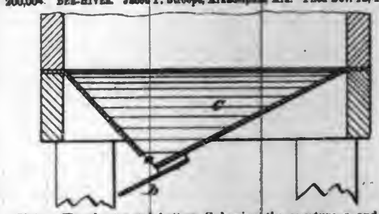
4. In combination with the cylinder A, the shaft D, cap *d*, and arms *d'* *d'*, one of which is made tubular and communicates with the exterior of the cylinder, substantially as described.

200,003. PAPER BOXES FOR PACKING HATCHETS. John W. Sprowles, Philadelphia, Pa. Filed May 26, 1877.



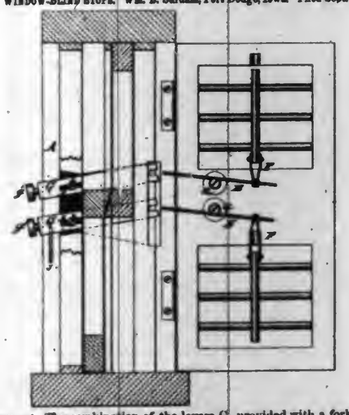
Claim.—The within-described box for packing hatchets, the said box having parallel ends *b b'*, one side, *a*, at right angles to the ends, and the side *d* inclined, all as set forth.

200,004. BEE-HIVES. Jacob P. Stroope, Arkadelphia, Ark. Filed Nov. 12, 1877.



Claim.—The sheet-metal bottom C, having the aperture *a*, and provided with the plate *b*, suspended a short distance below it, substantially as and for the purpose herein shown and described.

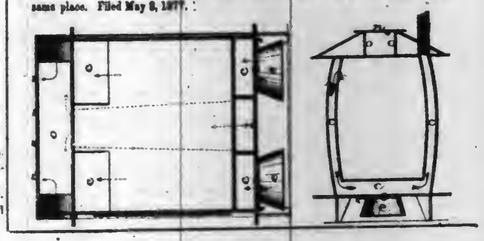
200,005. WINDOW-BLIND STOPS. Wm. B. Sardam, Fort Dodge, Iowa. Filed Sept. 10, 1877.



Claim.—1. The combination of the levers G, provided with a forked inner end, and having a slot, *g*, and fulcrum-pin *h*, with the levers E, connecting-links F, upper and lower series of slats of the window-blind, and window-casing A, as and for the purpose set forth.

2. The combination of the locking-stop J with the window-casing A, operating-lever G, blind-lever E, connecting-link F, and series of blind-slats, as herein set forth.

200,006. HEATING-STOVES. John M. Sycks, Delaware, Ohio, assignor to Mattie C. Sycks, same place. Filed May 8, 1877.



Claim.—In a heating-stove, the combination of the air-flues *l*, the smoke-flues *c*, and the upper chamber provided with partitions *o* and openings *n*, substantially as shown.

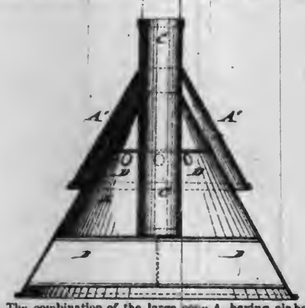
200,007. MOUTH-PIECES FOR MUSICAL INSTRUMENTS. John G. True, Chatsworth, Ill. Filed Aug. 16, 1877.



Claim.—1. A cushion for mouth-pieces of wind-instruments, consisting of an elastic annular band, the same being laid around and upon the periphery or edge of the mouth-piece by a removable clamping-ring, and turned around and over the same, substantially as and for the purpose set forth.

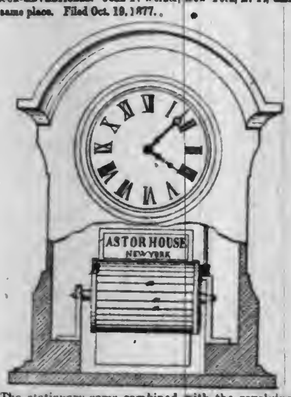
2. The mouth-piece B, formed with the annular seat or shoulder *a* and rim *b*, in combination with the clamping-ring C, having annular shoulder *c*, for holding and retaining the elastic band upon the mouth-piece, as specified.

200,008. CLOTHES-POUNDERS. Harvey Trumbull, Central College, Ohio. Filed Apr. 20, 1877.



Claim.—The combination of the large cone A, having air-holes D, small cone A', braces B, and socket C, the upper cone being but about one-half the length of the lower one, substantially as shown and described.

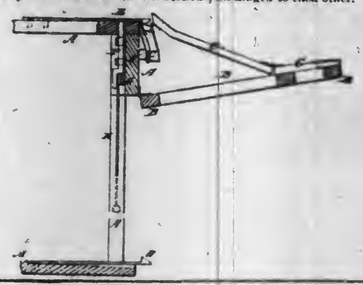
200,009. CLOCK-ADVERTISERS. John P. Werner, New York, N. Y., assignor to William C. Spellman, same place. Filed Oct. 19, 1877.



Claim.—The stationary cams combined with the revolving drum, wheel, or frame, and the radially-sliding plates therein, and arranged to cause said plates to project above said drum or wheel during a certain portion of their course, and then allow them to drop into the drum, substantially as described.

200,010. WAGON-TOPS. George E. Whitaker, Holden, Mass. Filed Aug. 18, 1877.

Brief.—A brace made in four sections, all hinged to each other.

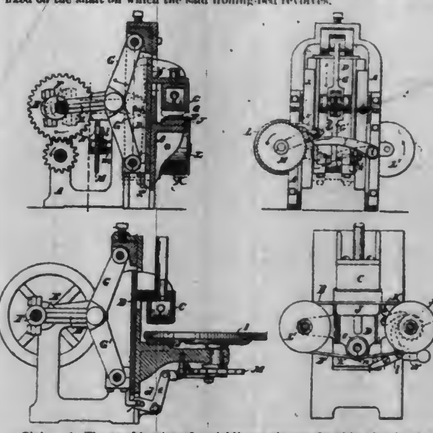


Claim.—1. The combination of the bar C, made in parts or sections hinged to each other, and the spring-catches D E, or other fastenings, with the hinged frame B and the body A of a cart or wagon, substantially as herein shown and described.

2. The combination of the push-rod F, the levers G, and the wires or cords H with the spring-catch E, the body A, the hinged frame B, and the sectional hinged bar C, substantially as herein shown and described.

200,011. IRONING-MACHINES. Thomas S. Wiles, Albany, N. Y. Filed July 21, 1877.

Brief.—The heated iron and ironing-bed are pressed one against the other by being attached to vertically-reciprocating frame actuated by an elbow-lever connected by a suitable link and crank to revolving shaft. The ironing-bed is of endless form, and is intermittingly revolved by a pin on the sliding frame striking a lever, which latter actuates a pawl engaging with a ratchet-wheel fixed on the shaft on which the said ironing-bed revolves.



Claim.—1. The combination of a yielding moisture-absorbing ironing-bed, a smoothing-iron adapted to be heated while in use, and to fit against the ironing-bed, a carrier, D, a rotary driving-shaft, and mechanism connecting the driving-shaft with the carrier, so that the uniform rotation of the driving-shaft causes the smoothing-iron and ironing-bed to be pressed one against the other, and separated repeatedly at and during uniform periods and intervals, substantially as described.

2. The combination of the smoothing-iron, yielding moisture-absorbing ironing-bed, of greater extent than the smoothing-iron, and movable, so as to permit different parts thereof to be presented to the smoothing-iron, the carrier D, rotary driving-shaft E, and jointed levers G G', connected with and operated by the said driving-shaft, substantially as described.

3. The combination of the smoothing-iron, yielding moisture-absorbing ironing-bed of continuous or endless form, and movable, so that all parts thereof can be presented in succession and repeatedly to the smoothing-iron by moving the ironing-bed in one direction, the carrier D, levers G G', rotary driving-shaft E, crank F, and rod H, substantially as described.

4. The combination of the smoothing-iron, adapted to be heated, movable moisture-absorbing ironing-bed, carrier by which the smoothing-iron and ironing-bed are pressed one against the other and separated, and devices connecting the said carrier with the ironing-bed, so that the latter is moved a step only while not in contact with the smoothing-iron by pressing together and separating the smoothing-iron and ironing-bed, substantially as described.

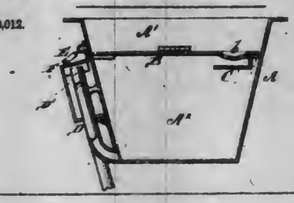
5. The combination of the smoothing-iron, movable moisture-absorbing ironing-bed, rotary driving-shaft E, carrier D, and devices connecting the carrier with the said driving-shaft and ironing-bed, substantially as described, so that the uniform rotation of the driving-shaft causes the smoothing-iron and ironing-bed to be pressed one against the other and separated repeatedly at and during uniform periods and intervals, and the ironing-bed to be moved a step at each pressing together and separation of the smoothing-iron and ironing-bed.

6. The combination of the smoothing-iron C, ironing-bed in the form of an endless apron, K, with supporting-stock J and pulleys L L', rotary driving-shaft E, carrier D, and jointed levers G G', connected with and operated by the said driving-shaft, substantially as set forth.

7. The combination of the smoothing-iron C, ironing-bed in the form of an endless apron, K, with supporting-stock J and pulleys L L', carrier D, ratchet M, and driving-pawl N, connected with and operated by the said carrier, substantially as described.

8. The combination of the smoothing-iron C, endless apron K, support J, pulleys L L', rotary shaft E, carrier D, jointed levers G G', connected with and operated by the driving-shaft, ratchet M, and pawl N, connected with and operated by the said carrier, substantially as described.

200,012.



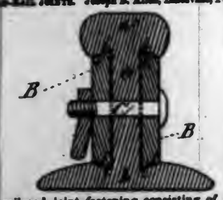
200,012. GREASE-ARRESTERS FOR BOXES. William T. Atkins, Toronto, Ontario, Canada. Filed Jan. 24, 1878.

Claim.—1. The vessel A, with hinged plate B, forming a sink, A^1, and grease-arresting chamber A^2, said chamber being provided with the upwardly-curved pipe D, having tube D', adapted to be opened or closed, at will, by a cork or other suitable means, substantially as and for the purposes specified.

2. The hinged plate B, having strainer *b*, and provided below the same with the shield C, for the purposes herein set forth.

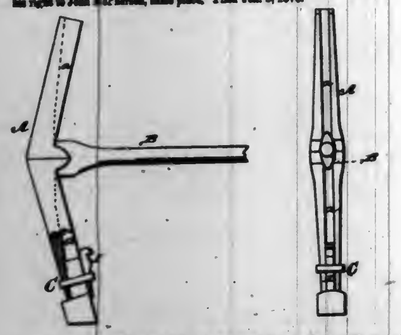
3. In combination with the curved pipe D, with air-inlet D' and the grease-arrester, the cover F, constructed and arranged substantially as and for the purposes herein set forth.

200,013. RAILROAD-RAIL JOINTS. Joseph B. Allen, Lionville, Pa. Filed May 27, 1876.



Claim.—The railroad joint-fastening consisting of the wedge-form key-plates B, having their inner corners acute, and the longitudinal acute angular recesses *i* on the under side of the tread and upper side of the flange on each side of the web, said recesses gradually shelving out to the surfaces of said tread and flange without abutment, as shown and described.

200,014. STONE-CUTTING TOOLS. Richard L. Arundell, Rochester, Ky., assignor of one-half his right to John McPherson, same place. Filed Jan. 6, 1878.



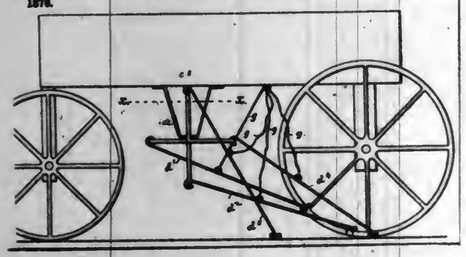
Claim.—The head or stock A, constructed as described, with two arms set at an obtuse angle, with a handle, B, in the center, each arm having a longitudinal inclined groove, *a*, in combination with bands C C' and key-wedges *I*, for the ready attachment of various stone-cutting tools, as herein set forth.

200,015. LAMP-BURNERS. Lewis J. Atwood, Waterbury, Conn., assignor to the Plume & Atwood Manufacturing Company, same place. Filed Sept. 17, 1877.



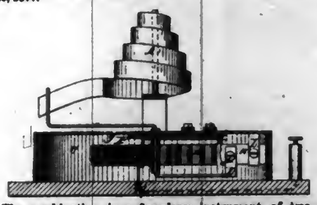
Claim.—The combination, in a lamp-burner, of an elevated air-distributer, supports for the same, forming also an open base for the chimney, a circular range of springs around the air-distributer, with incisions between them, a cone or deflector, and a hinge connecting the same to the air-distributer, the parts being constructed and arranged as specified.

200,016. DEVICE FOR PROPELLING WAGONS. Elbridge Baker, Salem, Mass. Filed Oct. 13, 1876.



Claim.—The combination, with the cranks c^1, c^2, c^3, c^4, and c^5, of the rods d^1, d^2, d^3, and d^4, attached, respectively, to the cranks c^1, c^2, c^3, and c^4, and the strings *g*, attached to said rods, and to the body of the wagon, the whole constructed and arranged to be operated by means of the crank c^5, substantially as herein set forth.

200,017. THERMOSTATS FOR ELECTRIC FIRE-ALARMS. Rudolph F. Bartel, New York, N. Y. Filed Apr. 23, 1877.



Claim.—The combination, in a fire-alarm instrument, of two convolute springs, each constructed of two metals of different degrees of expansibility, and a double-armed spindle or pivot placed between the springs, one of the arms being connected to and moving with the free end of one of the springs, and the other arranged to come into contact with the free end of the other spring, the whole being arranged in electric circuit with a signal-instrument and with the battery, one coil being adapted to expand with greater rapidity than the other under extraordinary changes of temperature to break the circuit, and the two to travel together under ordinary changes to prevent false alarms, substantially as specified.

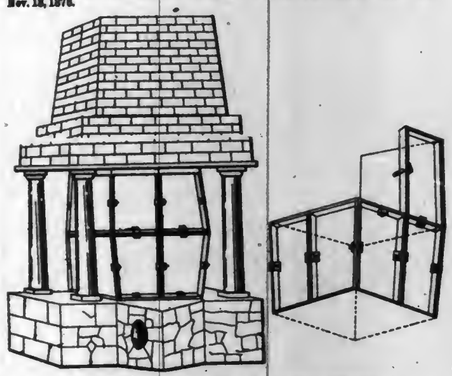
200,018. BUTTON-FASTENINGS. Charles E. Bates, West Cheshire, Conn. Filed Jan. 3, 1878.



Claim.—1. The combination of the disk *a*, with two or more prongs projecting therefrom, the flanged ring *c d*, and the cover *e*, the three parts secured together by means of the said flanged ring, substantially as described.

2. The securing-prongs *b b* of the button, constructed in concavo-convex form in transverse section, substantially as described.

200,019. BLAST AND REVERBERATORY FURNACES. Cornelius Bennett, Clifton, Ariz. Filed Nov. 13, 1876.



Claim.—1. A copper working-chamber for metallurgic furnaces.

2. A copper working-chamber for metallurgic furnaces in which the chamber-walls of copper are of uniform thickness.

200,020. TYPES. James E. Bettis, St. Louis, Mo., assignor to Carl Schraubstadter and James A. St. John, same place. Filed Aug. 30, 1877.

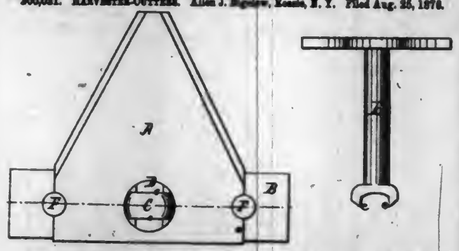


Claim.—1. As a new manufacture, a printer's movable type made in sections, for the purpose described.

2. A form composed of the sectional type *a a'* and other intermediate type, B, arranged substantially as described, and for the purpose set forth.

3. A form composed of the type *a a'*, type B, rules D, and leads E E, substantially as described.

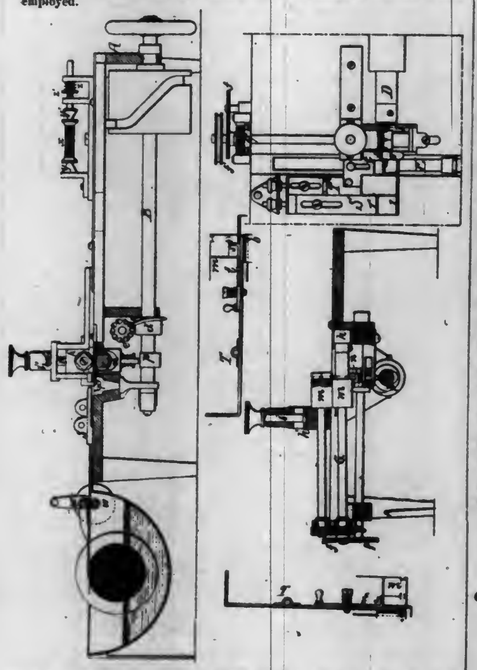
200,021. HARVESTER-CUTTERS. Allen J. Bigelow, Ennis, N. Y. Filed Aug. 25, 1876.



Claim.—The combination of the knife A, having slot D, with beveled lips *d d*, with the bar B, provided with pivot-button C, having straight sides *e e* and beveled ends *e' e'*, all constructed substantially as set forth.

200,022. STRAW-BRAID SEWING-MACHINES. Frederick Blackburn and Valentine Meeslein, Philadelphia, Pa., assignors of three-fifths their right to Henry Friedberger, Henry L. Browne, and Bernhard Browne, same place; said Bernhard Browne assignor to said Friedberger. Filed July 29, 1877.

Brief.—Circular feed-rollers with angular projections are employed with a forked crimping-bar so arranged that at the proper part of the revolution of the feed-rollers it crimps the braid upon the upper roller for the action of a horizontally-reciprocating needle. A plate carried by the bearing of the lower feed-roller operates to raise the sewed material above the action of the needle. An adjustable gage for regulating the amount of overlap is also employed.



Claim.—1. The within-described feed-rolls for sewing-machines, the said rolls being circular with angular extensions, as specified.

2. The combination of the feed-rolls of a sewing-machine with the forked crimping-plate s and mechanism, substantially as described, for reciprocating said crimping-plate.

3. The combination of the lower feed-roll with the plate I, carried by and moving with the bearing of said lower feed-roll, as and for the purpose set forth.

4. The guide T and adjustable gage-plate t, in combination with a spring and screw or pin for keeping the two in contact, substantially as specified.

200,023. BUTTON OR STUD FASTENINGS. Richard Bousard, New York, N. Y., assignor to himself, Adolph Schwarz, and Joseph Schwarz, same place. Filed Nov. 14, 1877. Patented in France, Dec. 14, 1871.

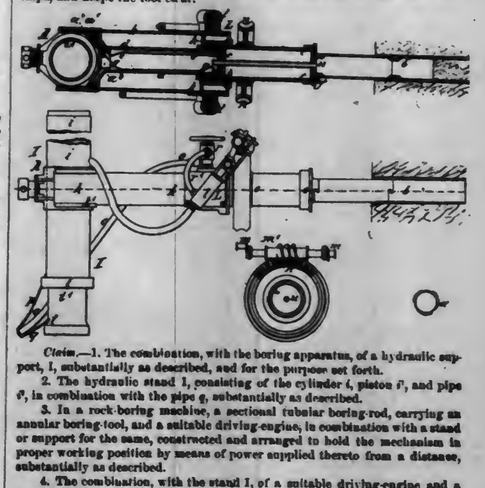


Claim.—1. In a sleeve-button, stud, or similar fastening device, a square shank, *b*, one arm, b^1, of which is connected with said button, while the arm b^2 of said shank is squared, in combination with the hinged catch *c*, provided with a square recess, and the spring-plate *d*, all constructed and operating substantially as described, for the purpose specified.

2. A square shank for a button or similar fastening, having one arm, b^2, flattened and recessed, and provided with a tooth or projection, c', in combination with a latch or catch pivoted upon the arm opposite to the arm b^1, substantially as described, for the purpose specified.

200,024. ROCK-BORING MACHINES, (HYDRAULIC). Alfred Brandt, Ebensee, Austria. Filed Oct. 2, 1877.

Brief.—Water is admitted into the stand or vertical cylinder, forcing a piston out of one end, and a cylinder out of the other, thereby securing the apparatus to the floor and roof of tunnel. The two engines give rotary motion to the tool, and the pressure of water in the horizontal tube or cylinder forces the tool forward. The water at the same time washes out the sand and stone chips, and keeps the tool clear.



Claim.—1. The combination, with the boring apparatus, of a hydraulic support, I, substantially as described, and for the purpose set forth.

2. The hydraulic stand I, consisting of the cylinder *i*, piston i^1, and pipe i^2, in combination with the pipe *q*, substantially as described.

3. In a rock-boring machine, a sectional tubular boring-rod, carrying an annular boring-tool, and a suitable driving-engine, in combination with a stand or support for the same, constructed and arranged to hold the mechanism in proper working position by means of power supplied thereto from a distance, substantially as described.

4. The combination, with the stand I, of a suitable driving-engine and a sectional tubular boring-rod, carrying an annular boring-tool, so constructed as to be operated by the same power, supplied from a distance, but independently of each other, the boring-rod and tool having a rotary motion imparted thereto, and adapted to reciprocate together with the driving mechanism upon said support, substantially as described, for the purpose specified.

5. The combination of the sectional boring-rod *b*, the cylinder *c*, piston *d*, hydraulic engines *l*, worm-shaft *m*, worm *m'*, and worm-wheel *n*, all constructed and operating substantially as set forth.

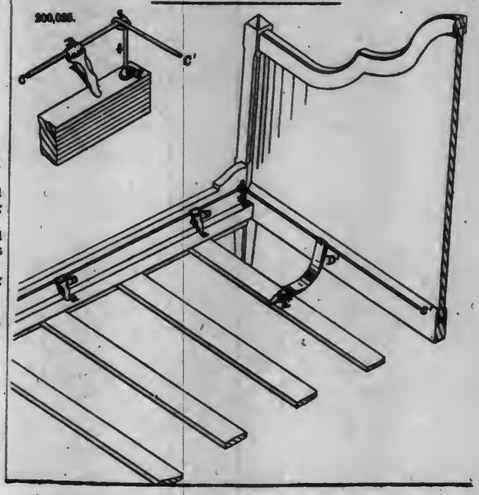
6. The combination, with the exhaust-ports of the hydraulic engines *l l*, of the piston *d* and pipe *a* of the cylinder *c* and the hollow boring-rod *b*, as and for the purposes specified.

7. In combination, with the cylinder *c*, of the piston *d* and sleeve A, having ports a^1 and the pipes *e p*, substantially as and for the purposes specified.

8. The combination, with the cylinder *c* and pipe *f*, the casing L, and hydraulic engines *l l*, and the guides *k k* of the piston *d*, sleeve or head A, and slides k^1 k^1, substantially as and for the purposes specified.

9. The combination of the piston *d* and cylinder *c*, forming annular space *h* between them, of the pipe *g* and head or sleeve A, having port a^2, substantially as described, for the purpose specified.

200,025.



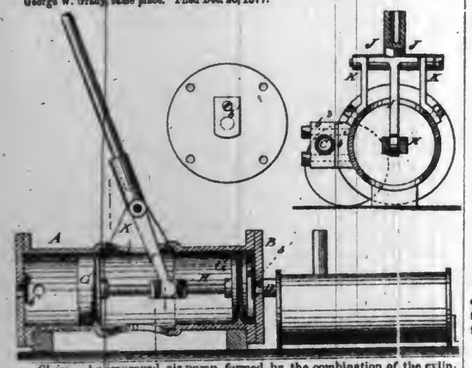
200,025. BED-CLAMPS. Charles M. Bryson, Cleveland, Ohio. Filed Nov. 26, 1877.

Brief.—A wire frame consisting of a single wire parallel with each side and end of the bedstead, and fastened within and at each corner thereof, provided with straps having at their ends fastening or holding devices to clasp and hold the clothes, said straps being freely movable to any part of the wires.

Claim.—1. The combination, with a bedstead, of a wire rail, straps adjustable upon such rail, and spring-clips or equivalent devices, substantially as and for the purposes set forth.

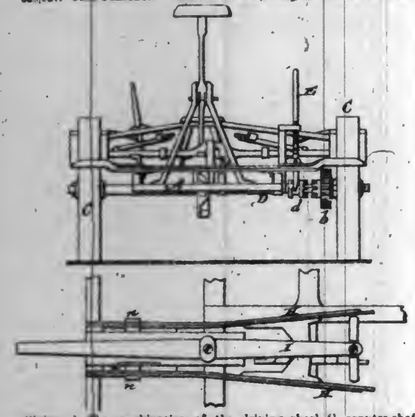
2. In a device for securing or holding covering upon a bed, the combination of the frame C C', straps D D', buckles *a*, and upright *b*, with tie *c*, constructed as and for the purposes described.

200,026. AIR-PUMPS. Warren S. Burgess, Norristown, Pa., assignor to John H. Dager and George W. Grady, same place. Filed Dec. 26, 1877.



Claim.—An improved air-pump, formed by the combination of the cylinder A, provided with the inlet-valves b^1 in its head, and the blocks b^2 b^2 and outlet-valves b^3 in its side, the pipes C D, the air-reservoir E, the two pistons G, the single piston-rod H, provided with a short slot in its center, and the lever F, provided with the circular head upon its lower end, and the cross-head J, by which it is pivoted to the brackets K, attached to the said cylinder A, substantially as herein shown and described.

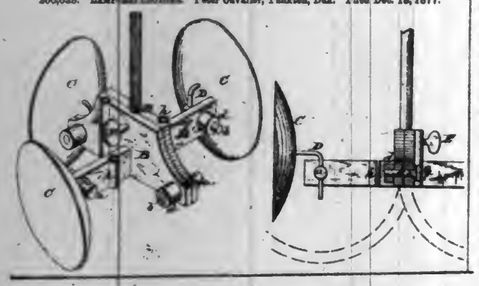
200,027. CORN-PLANTERS. William M. Carriker, Irving, Ill. Filed Dec. 1, 1877.



Claim.—1. The combination of the driving-wheel C, counter-shaft D, gears *a b*, clutch *d*, with lever E, tappet-wheel G G', and spring-fingers H H, substantially as and for the purposes set forth.

2. The slide L, with arms *n*, in combination with the bar K and spring-fingers H H, for the purposes set forth.

200,028. LAMP-EXTINGUISHER. Peter Cavalier, Yankton, Dak. Filed Dec. 18, 1877.



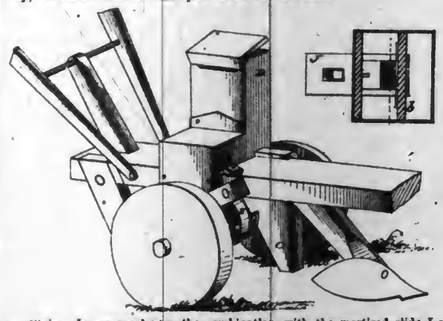
Claim.—A lamp-extinguisher consisting of the cone C, the arms *a*, the rod D, the spring E, the lever F, the rod G, the bell-crank lever H, the rod I, the lever J, the rod K, the lever L, the rod M, the lever N, the rod O, the lever P, the rod Q, the lever R, the rod S, the lever T, the rod U, the lever V, the rod W, the lever X, the rod Y, the lever Z, the rod A', the lever B', the rod C', the lever D', the rod E', the lever F', the rod G', the lever H', the rod I', the lever J', the rod K', the lever L', the rod M', the lever N', the rod O', the lever P', the rod Q', the lever R', the rod S', the lever T', the rod U', the lever V', the rod W', the lever X', the rod Y', the lever Z', the rod A'', the lever B'', the rod C'', the lever D'', the rod E'', the lever F'', the rod G'', the lever H'', the rod I'', the lever J'', the rod K'', the lever L'', the rod M'', the lever N'', the rod O'', the lever P'', the rod Q'', the lever R'', the rod S'', the lever T'', the rod U'', the lever 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Claim.—In a reflector, the combination of the adjustable bolt *b*, having tubular head *a*, the fastening-nut *d*, and the reflector C, with L-shaped arm D, for the purposes herein set forth.

2. The combination of the arm B B, with adjusting set-screw E, bolts *b*, with tubular heads *a*, and reflectors C, with arms D, substantially as and for the purposes herein set forth.

200,029. CORN-PLANTERS. John V. Cloyd, Whitley Court-House, Ky. Filed Apr. 11, 1877.

Brief.—The seed-slide is operated by a cam upon the shaft of the bearing-wheels. A brush attached to the hopper extends to the bottom of the seed-cup, and forms a flexible wall upon one side of the same.



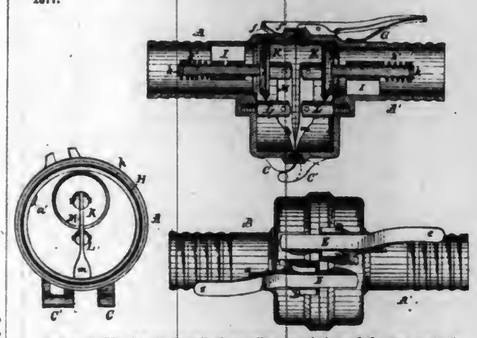
Claim.—In a corn-planter, the combination, with the mortised slide J *a*, of the hopper-brush *c*, arranged to extend into and across said mortise, and form the movable end thereof next to the dropping-conductor, as herein set forth.

200,030. TOBACCO-PIPES. William Demuth, New York, N. Y. Filed Jan. 7, 1878.



Claim.—A tobacco-smoking pipe having its bowl provided with an interior fire-proof lining composed of flint, feldspar, and soluble glass, substantially as described.

200,031. CAR-BRAKE COUPLINGS. Frederick W. Eames, Watertown, N. Y. Filed June 13, 1877.



Claim.—1. The herein-described coupling, consisting of the two parts A A', each the counterpart of the other, and having the hooked lugs C and staple-lugs C', substantially as and for the purpose specified.

2. In a coupling device consisting of two parts, each the counterpart of the other, the combination of the hooked levers E and springs G with the hook-formed lugs C and staple-formed lugs C', substantially as and for the purpose specified.

3. In a coupling device consisting of two parts, substantially as described, the combination of the valves K, brackets L, and levers M, arranged to operate substantially as and for the purpose specified.

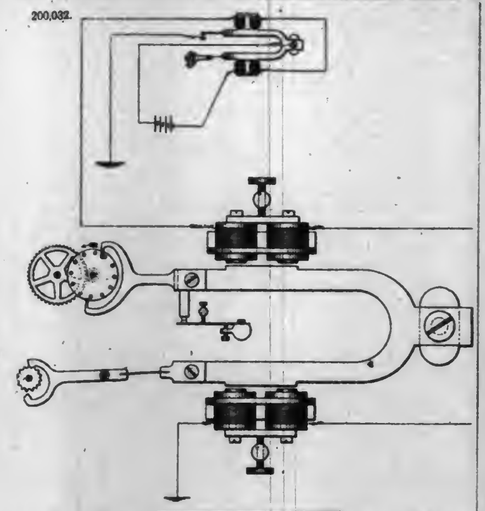
4. In a coupling device, substantially as described, the combination of the valve K, valve-stem *k*, sleeve-guideway I, and spiral spring *k'*, operating to close the valve automatically, as set forth.

200,032. SYNCHRONOUS MOVEMENTS FOR ELECTRIC TELEGRAPHS. Thos. A. Edison, Menlo Park, N. J. Filed Nov. 1, 1876.

Claim.—1. The combination, with a reed or tuning-fork, and an electro-magnet and circuit-breaker to maintain the vibration thereof, of pallets, a toothed wheel, and a shaft receiving its revolving motion from, or being controlled by, the vibrations of the reed or tuning-fork, substantially as set forth.

2. The combination of two or more reeds or tuning-forks, corresponding electro-magnets, and a circuit-breaker with two or more revolving shafts, toothed wheels, and pallets moved by the vibration of the reeds, substantially as and for the purposes set forth.

200,032.



200,033. FRYING-PANS. James Edgar, New York, and Alfred Bardell, Brooklyn, E. D., N. Y. Filed Jan. 23, 1878.



Claim.—1. The combination, with the solid handle of a pan, of an attached covering-plate, C, provided with openings to permit of the circulation of air between the said handle and covering-plate, substantially as described.

2. The combination, with a pan-handle having upwardly-projecting flanges on its opposite edges, of a ventilated covering catching over or around said flanges, substantially as and for the purpose described.

3. The combination, with a pan-handle, of a ventilated covering, which is open at or near its opposite ends, and is provided with a hole, which registers with a hole in the handle, and forms a source of communication between the opening at or near the outer end of the covering and the atmosphere, substantially as and for the purpose described.

200,034. HAT BLOCKING AND BANDING MACHINES. Rudolf Eickemeyer, Yonkers, N. Y. Filed Dec. 20, 1877.

Brief.—The reciprocating banding-ring B, secured to the cross-head *b*, is made to vibrate rapidly (about four hundred times a minute) by means of the crank-shaft C, pitmen *d*, and sliding rods *c*. The block D is placed on the carrier *d'*. The hat, previously stretched and heated, is placed on the block, its brim resting on the lower clamping or supporting plate *k'*. The treadle E is depressed, elevating the spindle *e*, block B, and lower plate *k'*, until the brim of the hat is firmly held between the clamping-plates *k* and *k'*. The hand-lever *g* is then raised, its arm *g'* engaging with the cross-bar *g''* of the toggle-lever *f f'*. The toggle-lever being attached to the hub of the block-carrier *d'*, which slides freely on the spindle *e*, the raising of the handle *g* elevates the hat-block to its highest position, enabling the lower edge of the banding-ring to work down to and fully develop the band. The catch-bars *h* engage with the plate *i*, securing the block in its elevated position. After the hat has been operated on for from thirty to sixty seconds, the spindle is, partially lowered, and the hat and block removed; then the spindle is fully lowered. The catch-bars *h* are released by the stop *h'*, permitting the block-carrier to fall to its normal position, ready to receive another block and hat, after which the operation is repeated.

Claim.—1. In a hat blocking and banding machine, the combination, with a movable hat-block and a clamping device for holding a hat firmly by its brim while on the block, of a rapidly-reciprocating banding-ring, which vibrates toward and from the clamp and parallel with the central axis of the block, substantially as described, whereby the band of a hat, while held by the clamp and on the block, may be rapidly and thoroughly developed, as set forth.

2. The combination, with a rapidly-reciprocating banding-ring, of two clamping-plates, a detachable hat-block, and a hat-block spindle which is movable toward and from the banding-ring, substantially as described.

3. The combination, with the upper clamping-plate, the hat-block and its carrier-plate, the lower clamping plate, the spindle and treadle by which the hat-block is partially elevated, and the lower plate placed in clamping relation with the upper plate, of the toggle-levers and hand-lever for fully elevating the block, substantially as described.

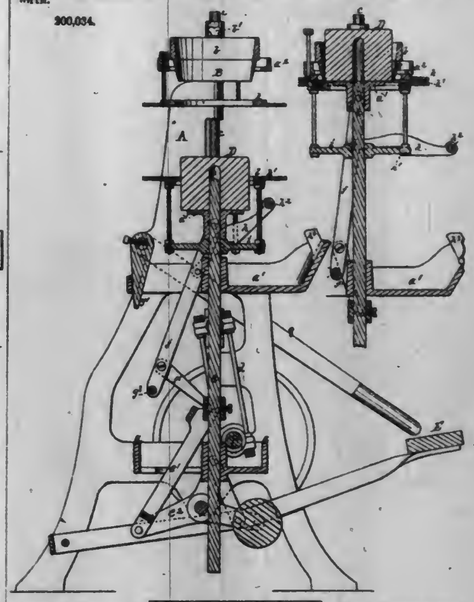
4. The combination, with the hat-block and its carrier-plate, of the spindle and treadle by which the block is partially elevated, the toggle-levers and hand-lever by which the block is fully elevated, and the catch-bars by which the block is maintained in its elevated position independently of the hand-lever, substantially as described.

5. The combination, with the hat-block, spindle, treadle, toggle-lever, hand-lever, and catch-bars, of the stationary stop, which releases the catch-bars when the spindle is lowered, and permits the block to fall on the spindle to its normal position, substantially as described.

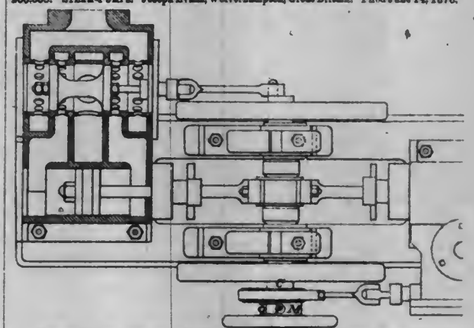
6. The combination, with the banding-ring, of the cross-head to which it is attached, the sliding rods, pitmen, and double-crank shaft, substantially as described.

7. The combination, with a clamping device operated by a spindle and a treadle, of toggle-levers which connect the treadle-lever and spindle, substantially as described, whereby the toggle-levers, when the clamp is closed, will sustain the pressure and practically relieve the foot of the operative, as set forth.

200,034.



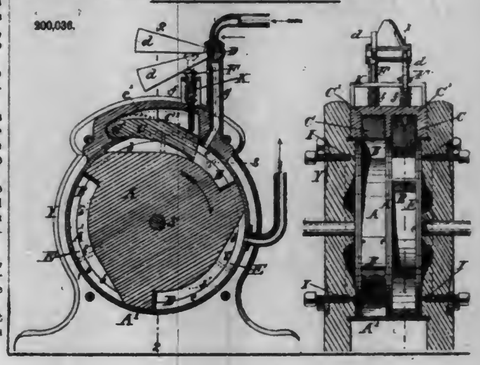
200,035. STEAM-PUMPS. Joseph Evans, Wolverhampton, Great Britain. Filed June 14, 1876.



Claim.—1. In combination with the reversing-eccentric to actuate the steam-valve of a steam pumping-engine, an eccentric disk or crank for actuating the pump-valve, substantially as shown and described.

2. The reversing-eccentric to actuate the steam-valve of a steam pumping-engine, and an eccentric disk or crank for actuating the pump-valve, in combination with the steam and pump valve, substantially as described.

200,036.



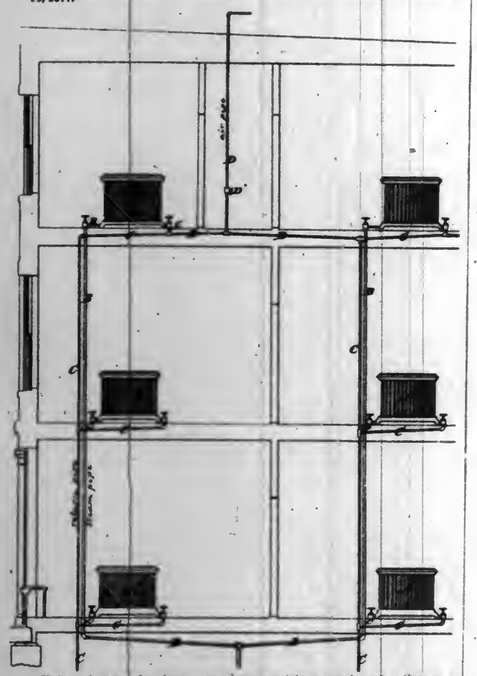
200,036. ROTARY ENGINES. George Evans, Cleburne, Tex. Filed May 2, 1877.

Claim.—1. The combination of frame E, wheel A, having pistons B and abutments C, as and for the purpose set forth.

2. The combination of the frame E, having arms *a*, and wheel A, having pistons B, and excavations *b* under said arms, as set forth.

3. The combination of wheel A, having pistons B, valves D, having arms *d*, rods F, and abutments C, as and for the purpose set forth.

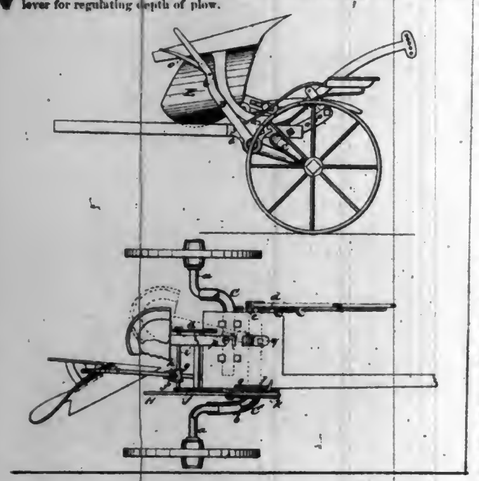
200,037. STEAM APPARATUS FOR BUILDINGS. J. Warren Faxon, Quincy, Mass. Filed Oct. 11, 1877.



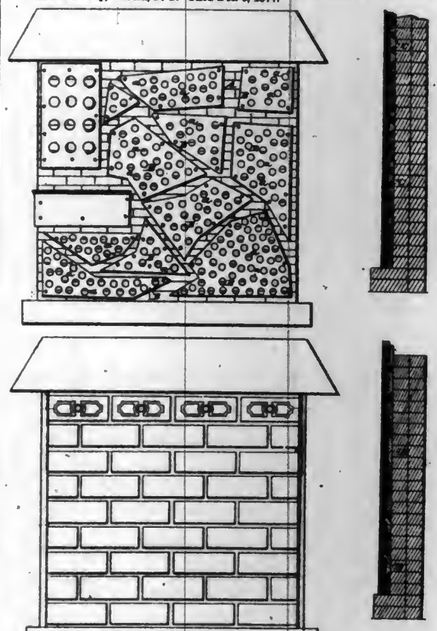
Claim.—A steam-heating apparatus comprising a series of radiators, a pipe, B, to conduct steam to said radiators, and a return-pipe, C, independent of the pipe B, to conduct water from said radiators, combined with a valved air-pipe, D, connected to the upper end of the return-pipe, and constituting a petcock for all the radiators and a vent for the return-pipe, whereby air is conducted from the radiators to the outside of the building, and the descent of water through the return-pipe is facilitated, as set forth.

200,038. SULKY-PLOWS. Sam T. Ferguson, Minneapolis, Minn. Filed Jan. 3, 1878.

Brief.—Crank-arms having different lengths of crank and formed of bent tubular sections of different diameters. Plow arranged to be turned over upon the platform in a reversed position. Slotted adjustable gage-bar attached to lever for regulating depth of plow.



200,039. FACINGS FOR BUILDINGS. Geo. B. Field, New York, assignor of one-half his right to James A. Clay, Auburn, N. Y. Filed Dec. 6, 1877.



Claim.—1. A facing for buildings, consisting of a main coating of cement secured to the wall by means of perforated metal sheets or beveled lathe, and an outer surfacing consisting of glass plates or slabs secured to said main coating by means of a backing of fine sand and cement, or equivalent material, substantially as set forth.

2. The outer surface of a facing for buildings, composed of glass plates formed with beveled or grooved edges, and secured in place by means of suitable cement inserted between the adjacent edges of said glass plates, substantially as set forth.

200,040. SAW-SETS. James P. Fields, Greenville, Tenn. Filed Nov. 16, 1877.

Brief.—The setting-disks are held upon their journals by flat clasp-springs, and one of the said disks is adjustable toward and from the other. When it is necessary to straighten out irregularly-set teeth, plain disks are employed.



Claim.—1. The removable file F, arranged in the line of the saw and combined with the frame-piece and the revolving disks, for the purpose of leveling the teeth, substantially as described.

2. A saw-set composed of the frame-piece A, revolving disks B B', flat clasp-springs C C', set-screw D, and clamping bolt and nut *b c*, combined and arranged substantially as shown and described.

3. The combination of the slotted clasp-spring C', the adjustable disk B', the bolt and nut *b c*, and the frame-piece A, substantially as described.

200,041. BREECH-LOADING FIRE-ARMS. William Field, Birmingham, England. Filed Dec. 20, 1877.

Claim.—1. The construction and combination of parts hereinbefore described, and illustrated in the several figures of the accompanying drawings, for lowering and raising the hinged rising and falling breech-blocks and vertically-sliding breech-blocks of breech-loading small-arms—that is to say, a breech-block provided with an inclined or diagonal groove in one or in both of its sides, and having combined with it and placed on the axis of the hand-lever of the rifle or gun a single or forked horned lever, the horn or horns of which single or forked lever engage with and work in the inclined groove or grooves in the block, and by their action lower or raise the breech-block when the hand-lever is moved in the required direction, substantially as described and illustrated.

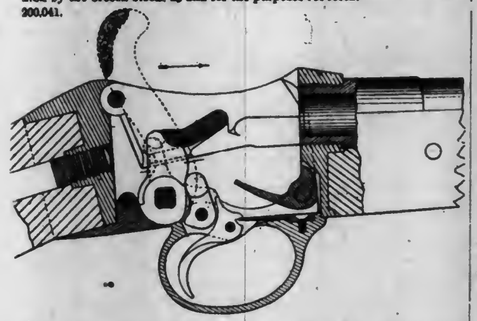
2. The construction and combination of parts hereinbefore described, and illustrated in Figs. 1, 2, 3, 4, and 5 of the accompanying drawings, for cocking the tumblers or tumbler-levers and striking-pins of hinged rising-and-falling-block guns or rifles—that is to say, a cocking-lever placed in front of the horned raising and lowering lever of the rifle, and below the tail end of the tumbler or tumbler-lever, which cocking-lever is arranged to be acted upon by projections on the front of the said raising and lowering lever, and made to act upon the tail end of the tumbler or tumbler-lever, and cock the said tumbler or tumbler-lever when the hand-lever is moved in the proper direction to open the breech, the several parts of the raising and lowering lever and cocking-lever being constructed, arranged, and operating substantially as described and illustrated.

3. The combination, with the hand-lever and horned lever, engaging a diagonally-grooved either hinged or vertically-sliding breech-block, of a spring-hammer and percussion-pin and cocking mechanism, substantially as herein shown and set forth.

4. The combination of a diagonally-grooved breech-block, to be operated by a hand-lever through the medium of a horned lever, both of which are fixed on one and the same axis, with a cocking mechanism operated by the hand-lever referred to, but arranged upon an independent axis and parallel with that of the hand-lever, substantially as set forth.

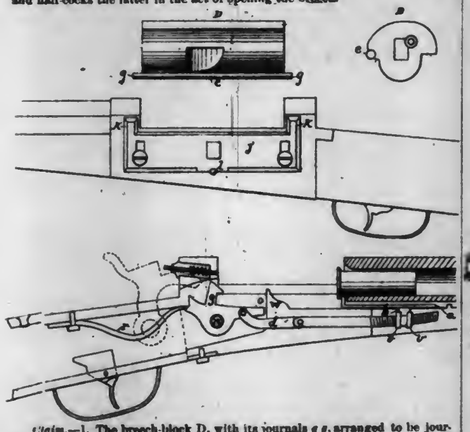
5. The combination, with a hand-lever actuating a breech-block to cause the same to rise and fall, as described, of a compound extracting-lever operated by the breech-block, as and for the purposes set forth.

200,041.



200,042. BREECH-LOADING FIRE-ARMS. William B. Finch, Eureka, Cal. Filed Dec. 5, 1877.

Brief.—By moving the side plate down, the journals of the breech-block are uncovered, when said block may be removed to disable the gun. The lever by which the breech-block is unlocked engages with an arm of the hammer and half-cocks the latter in the act of opening the breech.



Claim.—1. The breech-block D, with its journals *g g*, arranged to be journaled in the open seats or bearings *b'*, in combination with the sliding plate J, with its covering-arms K, and the spring press-pin *l*, or equivalent device, substantially as and for the purpose described.

2. The lever M, connected by the shaft *n*, with the latch-lever *g* and lifting-lever O, said lifting-lever being connected with the shell-retractor *s* by the hinged bar *d* and set-nuts *r r*, substantially as and for the purpose described.

200,043. HYDRANT AND STREET-WASHER. John B. Fish, Providence, Pa. Filed July 30, 1877.

Claim.—1. A hydrant or street-washer having a supply-pipe provided with a compression-valve and adapted to be turned to open or close the stop-cock, as and for the purpose set forth.

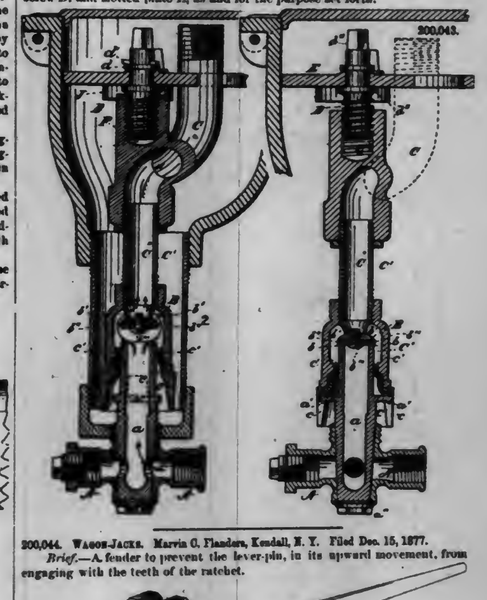
2. The combination of stop-cock A, having hollow plug *a*, provided with wings or lugs *a'*, and the supply-pipe C, having recesses *c*, as and for the purpose set forth.

3. The compression-valve B, constructed with passage-ways *b'*, in combination with the hollow plug *a* and adjusting-screw D, as and for the purpose set forth.

4. The pipe C, adapted to turn the plug *a*, and swiveled to the slotted plate E, as and for the purpose set forth.

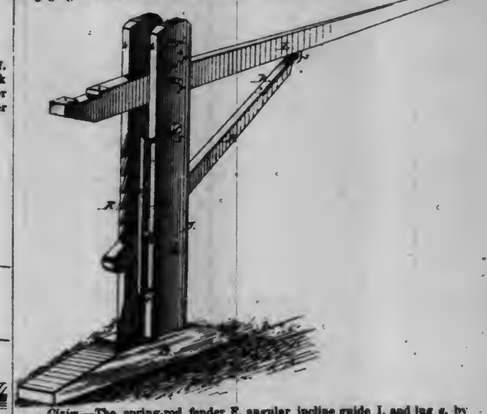
5. The combination of stop-cock A *a a'*, compression-valve B, pipe C, screw D, and slotted plate E, as and for the purpose set forth.

200,043.



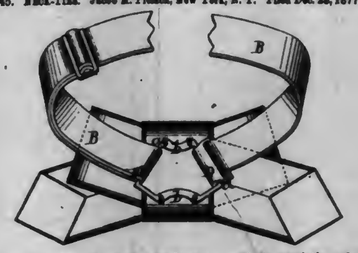
200,044. WAGON-JACKS. Marvin C. Flanders, Kendall, N. Y. Filed Dec. 15, 1877.

Brief.—A fender to prevent the lever-pin, in its upward movement, from engaging with the teeth of the ratchet.



Claim.—The spring-rod fender F, angular incline guide I, and lug *g*, by which the pawl-pin is taken above the ratchet without catching in the teeth, in combination with the ratchet-plates R, standard S, lever L, and pawl P, staple *s*, hasp *h*, pin *i*, fulcrum-pin *p*, perforations *p'*, and base B, for the purposes substantially shown and described.

200,045. NECK-TIES. Jacob H. Fleisch, New York, N. Y. Filed Dec. 28, 1877.

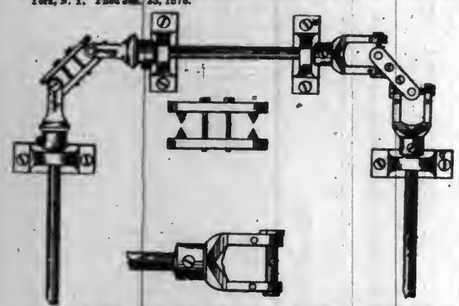


Claim.—1. As a new article of manufacture, a neck-tie consisting of a bow having attached oblique bars *a a*, band B, formed with the loop F, passing

around one of said oblique bars, and provided with a stide, C, for adjusting the band, and a hook, D, at the free end of said band, adapted to engage the other oblique bar, all substantially as shown and described.

2. The shield E for neck-ties, stamped up from sheet metal, with the two oblique bars *a a* and cross-pieces *b b*, constructed and adapted to be attached to the neck-tie, substantially as and for the purpose described.

200,046. UNIVERSAL JOINTS FOR CONNECTING ROTARY SHAFTS. Joseph L. Follett, New York, N. Y. Filed Jan. 23, 1878.



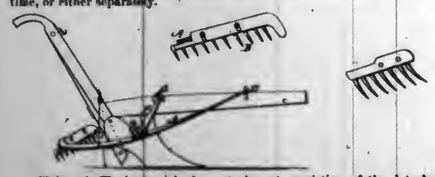
Claim.—1. The combination of the two rocking pins, supported in bearings on the contiguous ends of the two shafts to be connected, with the intermediate links, adjustably connected or held together, and provided with fixed centers engaging sockets in the rocking pins, substantially as set forth.

2. The yokes formed with split or divided bearings, provided with tightening-screws and supporting rocking pins, as described, in combination with the intermediate adjustably-connected links, having fixed centers engaging the rocking pins, as set forth.

3. The two parallel shafts and the intermediate shaft, provided with rocking pins supported in bearings on said shafts, as described, in combination with the two sets of connecting-links, the links of each set being adjustably connected, and provided with fixed centers engaging the rocking pins, and the whole being arranged for joint operation, substantially as set forth.

200,047. ATTACHMENTS FOR PLOWS. Wm. B. Fowler, Baltimore, Md. Filed Sept. 18, 1877.

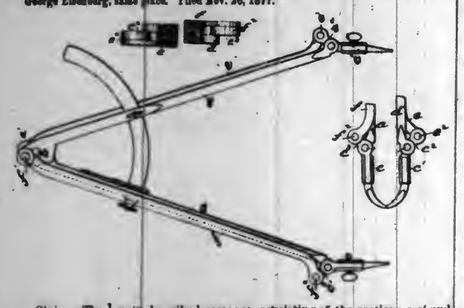
Brief.—A hinged curved bar, extending from the beam to the rear of the plow, to carry a rake and smoothing-board. Both may be used at the same time, or either separately.



Claim.—1. The improved plow attachment consisting of the detachable adjustable clamps E G, the curved pivoted bar A, the brace or stay-bar F, and the rake and scraper attached to the bent arm of the bar A, as shown and described, for the purpose specified.

2. The adjustable scraper or smoothing-board and the rake, combined with the pivoted arm A, as shown and described.

200,048. COMPASSES. Andrew P. Frushman, Bellville, Ill., assignor of one-half his right to George Eisenberg, same place. Filed Nov. 26, 1877.



Claim.—The herein described compass, consisting of the sections *a a'* and *c c'* and the rods *e* and *f*, the rods being connected at their lower ends with the sections *c' c*, and at their upper ends directly with the sections *a a'*, and combined and operated substantially as described.

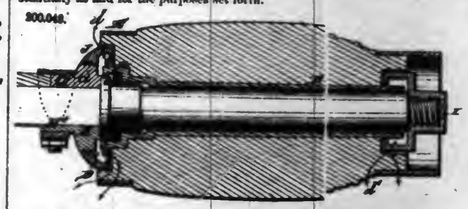
200,049. WAGON-HUBS. Moses D. Golder, Lewiston, Me. Filed Nov. 17, 1877.

Claim.—1. The box J, formed with an interior circumferential groove, *d*, secured on the axle, and fitting in an annular recess in the inner end of the hub, as and for the purposes set forth.

2. The combination of the semicircular pieces G and H, provided with entering screw threads, and having rearwardly-projecting arms G' H', and the box J screwed thereon, and provided with interior circumferential groove *d*, substantially as and for the purposes set forth.

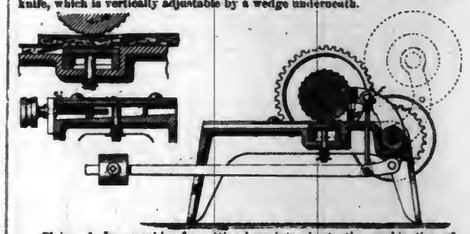
3. The axle-nut L, formed with an interior circumferential groove, *d'*, substantially as and for the purposes set forth.

200,049.



200,050. MACHINES FOR CUTTING HORN INTO SHEETS. Martin M. Goldsmith, New York, N. Y., George M. Cruickshank, Providence, and Stephen Brown, Greene, R. I., assignors to the Goldsmith & Whatley Manufacturing Company, New York, N. Y. Filed Jan. 4, 1878.

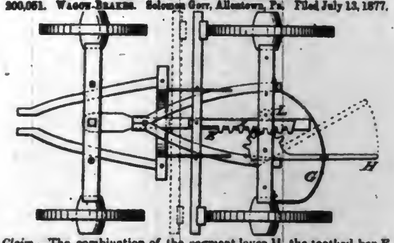
Brief.—The horn to be cut is fed against the knife by the feed-wheel, and the thickness of the portion cut off is regulated by the plate C in front of the knife, which is vertically adjustable by a wedge underneath.



Claim.—1. In a machine for cutting horn into sheets, the combination of a fixed cutting-knife with a vertically-adjustable gage-plate in front of the same, and with a revolving feed and pressure roller above the gage-plate, substantially as described, and for the purpose specified.

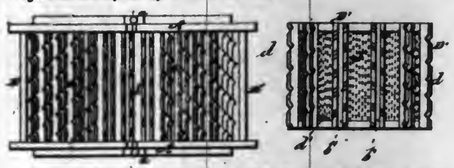
2. In a machine for cutting horn into sheets, the combination, with a supporting-table having longitudinal center groove and side rails, of a fixed knife resting on the rails, of a vertically-adjustable gage-plate in front of the knife, and of a revolving feed-roller supported in a swinging and weighted yoke or frame, substantially as and for the purpose described.

200,051. WAGON-BRAKES. Solomon Gorr, Allentown, Pa. Filed July 13, 1877.



Claim.—The combination of the segment-lever H, the toothed bar E, and the roller L, arranged upon the rear axle or bolster, provided with the ratchet-bar G, substantially as set forth.

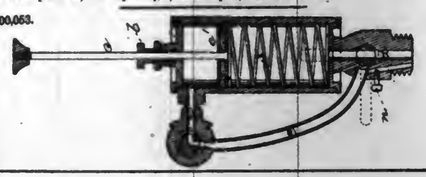
200,052. WASHING-MACHINES. John T. Greenwood, Jr., Beloit, Wis., assignor of one-half his right to Julius R. Nye, same place. Filed Dec. 15, 1877.



Claim.—1. The combination, in a washing-machine, of the bars D D', arranged as described, and provided with longitudinal grooves *b b'* and inclined or diagonal notches *d d'*, the notches *d'* running in the opposite direction from the corresponding ones, *d*, in the bottom bars, whereby the rubbing capacities of the machine are increased and the clothes prevented from working to either side of the machine.

2. The pin *p*, projecting from one end of the rocker, in combination with the end piece E, with opening *e*, for the purposes set forth.

200,053.

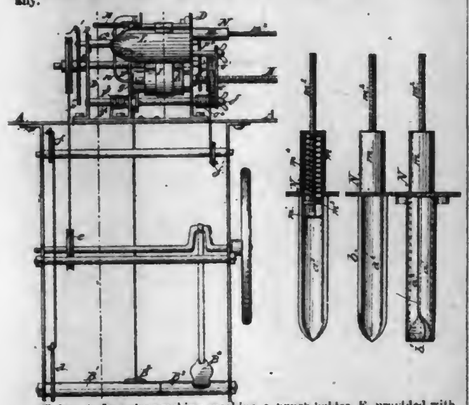


200,053. STEAM-ENGINE LUBRICATORS. Augustus Guild and Frederick B. Clark, Middletown, Conn. Filed Aug. 11, 1877.

Claim.—The combination, with a cylindrical cup, A, a piston, *c'*, and guide-rod *c*, of the passage *d*, opening into said cylinder below the piston, the conduit *e*, leading into the cylinder above said piston, and having a valve, N, and stop-cock O, and a spring arranged below said piston, substantially as specified.

200,054. CIGAR-MACHINES. Frederic Haehnel, New Orleans, La., assignor to Mayer Brothers & Haehnel, same place. Filed Jan. 28, 1878.

Brief.—The mold has a lip for putting the wrapper on the tip of the cigar, and a vibrating cutter acts against the mold at the lip, to cut the wrapper that projects. The narrow belt is under the control of a gage to shift it laterally.



Claim.—1. In a cigar-making machine, a bunch-holder, E, provided with a lip, *b'*, and rounded end, as shown, and for the purpose specified.

2. In a cigar-making machine, an oscillating curved knife, G', in combination with a bunch-holder provided with a lip, *b'*, and rounded end, substantially as shown, and for the purpose described.

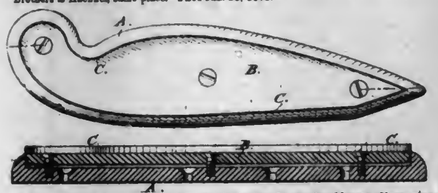
3. The improved regulator N, composed of the guide or holder *m*, screw-rod *m'*, regulator head *m''*, nut *m'''*, and spring *m''''*, in combination with a cigar-mold, as described.

4. In a cigar-making machine, the adjustable gage, M, in combination with the narrow shiftable belt I and bunch-holder E, substantially as shown and described.

5. In a cigar-making machine, one or more removable bands, M'; applied to the loose cylindrical roller D', as and for the purpose set forth.

6. In a cigar-making machine, the removable table L, provided with the curved inner end, in combination with the bunch-holder E, provided with a lip, *b'*, arranged substantially as and for the purpose specified.

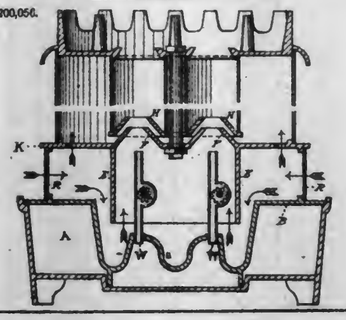
200,055. CIGAR-WRAPPER CUTTERS. Frederic Haehnel, New Orleans, La., assignor to Mayer, Brothers & Haehnel, same place. Filed Jan. 28, 1878.



Claim.—1. In a cigar-machine, the bed-plate D, made of larger dimensions, but of a shape to conform to the contour of the wrapper to be cut by the reciprocating cutter, as shown, and for the purpose herein described.

2. In a cigar-machine, the cutter or knife holder A, recessed for the reception of the cutter C and clamping-piece B, arranged substantially as and for the purpose specified.

200,056.



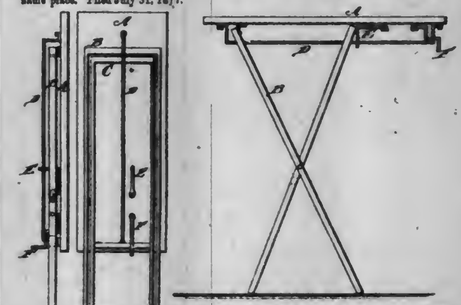
200,056. OIL-STOVES. Thomas Hall, Brooklyn, N. Y., and Thos. J. Whitney, Philadelphia, Pa. Filed Apr. 7, 1877.

Claim.—1. The reservoir A, with depressed recess in bottom, and with a flange around the edge to receive the cover B, in combination with the cover B, with depression in top, and a hanging partition extending into the recess in the bottom of A, substantially as described.

2. The reservoir A, wick-tubes W W, perforated ring E, plate K, and curtain E, substantially as shown.

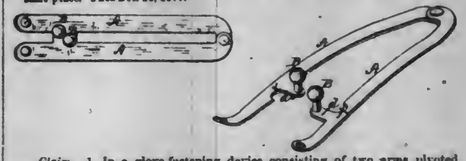
3. The hanging partition or curtain E, plate K, and cones F and H, substantially as shown and described.

200,057. FOLDING TABLES. William W. Hart, Detroit, Mich., assignor to Fred. H. Seymour, same place. Filed July 31, 1877.



Claim.—A folding table having the long leg-frame B and the shorter leg-frame C, the guard D, and stops E and F, constructed and arranged, with references to the bed A, substantially as specified.

200,058. GLOVE-FASTENINGS. George Havell, Newark, N. J., assignor to Roberts & Havell, same place. Filed Dec. 18, 1877.

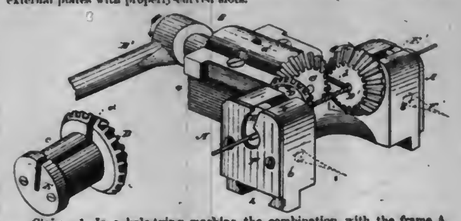


Claim.—1. In a glove-fastening device consisting of two arms pivoted together at one end and free at the other end, the knobs or protuberances near the free ends of said arms, for the purposes set forth.

2. The combination of the pivoted arms A A, having projections *d d*, curved recesses *x x*, and the knobs B B on said projections, substantially as and for the purposes herein set forth.

200,059. BALE-TYING MACHINES. Frank S. Heath, Corry, Pa. Filed Dec. 3, 1877.

Brief.—The lapping ends of the wire are twisted in opposite directions to make a continuous twist from one end of the lap to the other. The slot in each twisting-pinion is narrower at that end of the pinion which is not geared. Wire is prevented from escaping radially from the slots during twisting by external plates with properly-curved slots.



Claim.—1. In a bale-tying machine, the combination, with the frame A, of the two slotted pinions D D', revolving in opposite directions, substantially as described, for the purposes set forth.

2. In a bale-tying machine, the combination, with the frame A, of the revolving slotted pinions D D' and the journals *c c'*, having slots adapted to hold the wire at their outer ends, substantially as and for the purposes set forth.

3. In a bale-tying machine, the combination, with the frame A, of the bevel-gear wheel C, the revolving slotted pinions D D', revolving slotted journals *c c'*, and the slotted plates E E', secured to the ends of such journals, substantially as described and shown.

4. In a bale-tying machine, the combination, with the revolving slotted pinions for twisting lapped wire, of means to prevent the wire from twisting out of such slots, substantially as described and shown.

5. The combination, with the revolving slotted pinions, of the stationary guiding-plates F F', having the eccentric slots *f f'*, constructed substantially as described and shown.

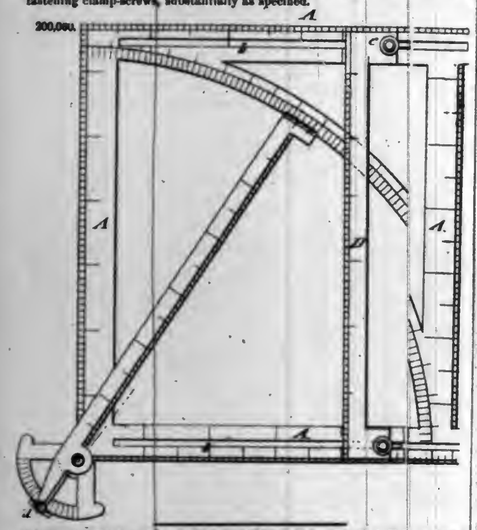
6. The combination, with the frame A, of the counter-shaft B, gear-wheel C, slotted pinions D D', slotted journals and plates *c c'* E E', and guiding-plates F F', all constructed and arranged substantially as described and shown.

200,060. SURVEYORS' PLOTTING-INSTRUMENTS. Daniel F. Ritt, Ottawa, Ill. Filed Oct. 22, 1877.

Claim.—The combination of square frame A, having guide-slots in par-

sliel sides, with a sliding lateral scale, D, having verniers at the ends and fastening clamp-screws, substantially as specified.

200,060.



200,061. PEN-HOLDERS. Joseph Hoffman and Claes W. Boman, New York, N. Y., assignors to Joseph Reckunderfer, same place. Filed Jan. 14, 1878.

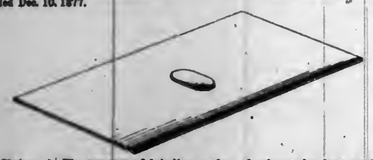
Brief.—Improvement on Patent No. 154,801 to J. W. McGill, September 8, 1874, and consists in forming the blank with means whereby, when it is coiled into shape, the outer barrel will be prevented from expanding at its nib end, while the inner or nib barrel is left free to yield.



Claim.—1. A pen-holder formed of a single piece of sheet metal coiled into a pen-holder, with outer barrel and inner nib, as described, with a tongue on the one part engaging the other part in such manner as to prevent the expansion of the outer barrel at the nib end, while leaving the nib free to yield.

2. A pen-holder formed of a single piece of sheet metal coiled into a scroll or volute, with walls of double thickness throughout its length, the inner fold (constituting the nib-piece) being connected with the outer fold by a tongue or locking-piece to prevent said outer fold from spreading, substantially as set forth.

200,062. PROCESSES OF LABELING PLUGS OF TOBACCO. Hiram W. Hunt, Brooklyn, N. Y. Filed Dec. 10, 1877.



Claim.—1. The process of labeling a plug of tobacco by first producing a depression therein, and afterward placing a label in such depression, substantially as described.

2. A labeled plug of tobacco having the label held in an independently-formed depression, substantially as described.

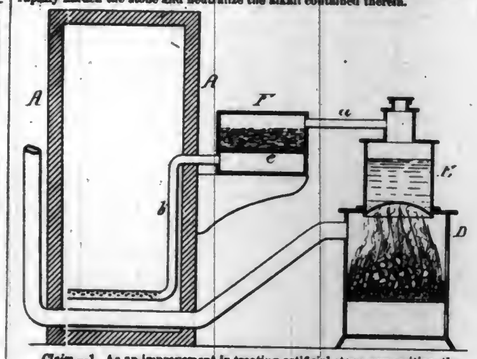
200,063. CHEST-PROTECTING VESTS. George F. Jackson, Minneapolis, Minn., assignor to himself and C. B. Simpson, same place. Filed Nov. 2, 1877.



Claim.—The combined vest and protector, consisting of the connected protectors B C, having extensions *b' c'*, independent of undervest A, and detachably connected to said vest, as and for the purpose specified.

200,064. TREATING ARTIFICIAL STONE. Alex. S. Johnson, Philadelphia, assignor to himself, Edward E. Hedley, and T. Frank Taylor, same place, and Lyman Gleason, Honesdale, Pa., and J. J. Grant, New York, N. Y. Filed Dec. 6, 1877.

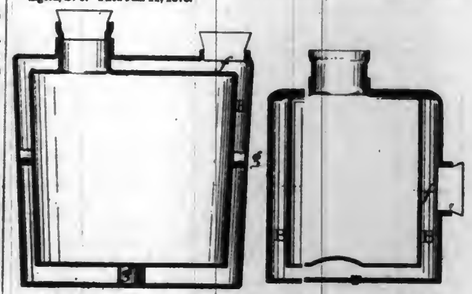
Brief.—Blocks of artificial stone are subjected to the action of steam which has been caused to pass through a mass of granulated or powdered sulphur to rapidly harden the stone and neutralize the alkali contained therein.



Claim.—1. As an improvement in treating artificial-stone composition, the within-described method of subjecting the same to the action of steam which has previously passed through a mass of sulphur, all substantially as specified.

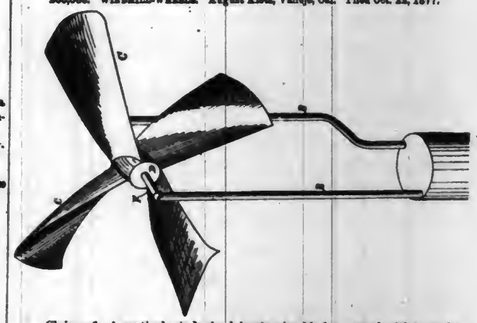
2. The combination of the structure A, furnace D, vessel E, and sulphur-box F with the pipes *a* and *b*, arranged substantially as specified.

200,065. FLASKS FOR COOLING LIQUIDS. Adrian M. Klosowski and Victor Klobassa, Washington, D. C. Filed Jan. 11, 1878.



Claim.—As a new article of manufacture, a refrigerating pocket-flask consisting of an interior receptacle for the liquid to be cooled, and an exterior air-tight case for containing a solution of a refrigerant salt, the exterior case having an opening capable of tight closure for the introduction of the salt, substantially as described.

200,066. WINDMILL-WHEELS. August Klotz, Vallejo, Cal. Filed Oct. 22, 1877.



Claim.—1. A vertical wind-wheel having its blades curved with a gradually-increasing inclination in the direction of the axis of the wheel, said blades being twisted spirally and made of flexible material, substantially as and for the purpose described.

2. A windmill composed of the hub D, with its radiating spirally-twisted metallic blades C C C upon a shaft or spindle, F, between fixed uprights B B, substantially as and for the purpose set forth.

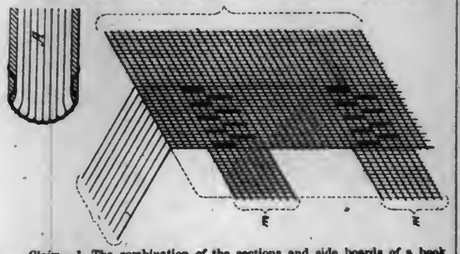
200,067. POSTAL CARDS. Mark Lee, Higginsville, Mass. Filed Oct. 29, 1877.

Claim.—As a new manufacture, a double folded postal card, consisting of a message-card and reply-card folded upon each other, and printed and stamped as described, so that the proper address side will be exposed and the other covered, the free ends of the cards being provided with the dovetail interlocking devices *b c*, all in the manner and for the purposes specified.

200,067.



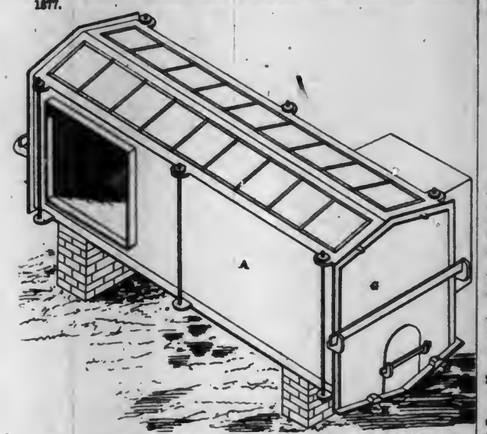
200,068. BOOK-BINDING. James C. Love, Philadelphia, Pa. Filed Dec. 6, 1877.



Claim.—1. The combination of the sections and side boards of a book with a strip of fabric having strong transverse threads interwoven with light longitudinal threads, and secured to the folded backs of the said sections, all substantially as set forth.

2. The mode herein described of securing the sides of books to the sections—that is to say, securing a strip of open fabric by staples or stitches and glue, or other equivalent cement, to the sections, cutting away the strips, so as to leave tapes *m*, and securing the latter to the sides, all as set forth.

200,069. MERCURY-CONDENSERS. Charles E. Livermore, San Francisco, Cal. Filed Nov. 21, 1877.

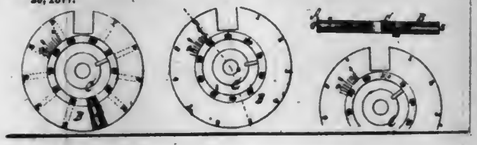


Claim.—1. In a quicksilver-condenser, the combination of the sides A A, having inclined flanges *a*, and the flanged top and bottom plates D C, substantially as and for the purpose specified.

2. In a quicksilver-condenser, the double inclined top and bottom plates D C, having projecting flanges *d*, substantially as and for the purpose herein shown and described.

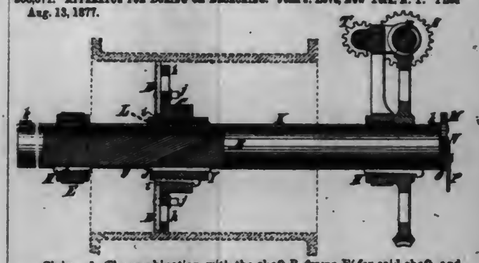
3. The doors G of a quicksilver-condenser, having the notches fitted to the corresponding lugs H, for the purpose of guiding and replacing the doors, substantially as herein described.

200,070. TUMBLERS FOR PERMUTATION-LOCKS. Joseph Loch, New York, N. Y. Filed June 29, 1877.



Claim.—The combination, in a tumbler for combination-locks, of two disks, one working within the other, a number of radial holes in the outer and a corresponding number of radial screw-sockets in the inner disk, a series of marks or lines on the face of the inner disk, each mark corresponding in position to one of the radial screw-sockets, a segmental scale marked on the outer disk near its inner edge, and a series of figures or characters marked on said outer disk, each figure or character corresponding in position to one of the radial holes in this disk, all constructed and operating substantially in the manner herein shown and described.

200,071. APPARATUS FOR BORING OR BROACHING. John J. Love, New York, N. Y. Filed Aug. 13, 1877.



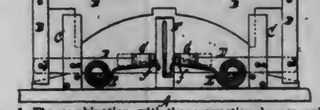
Claim.—1. The combination, with the shaft B, frame E' for said shaft, and the driving mechanism therefor, of the rectangular head-pieces G, to be secured to the ends of a cylinder to be operated upon, said head-pieces being slotted reversely in one direction, and said frame being slotted at its points of connection with said head-pieces, substantially as described, whereby the said shaft and its driving mechanism may be readily attached to, adjusted in, and detached from a cylinder operated upon.

2. In an apparatus for broaching, dressing, or boring cylinders, the combination of a main shaft provided with a longitudinal groove, an adjustable journal, a key for locking said journal in different positions, so as to turn with the said shaft, and flanges extending from the ends of said journal and overlapping the bearing in which it sits, substantially as specified, whereby longitudinal motion of the shaft is obviated.

3. The combination, with a screw-shaft or worm, of an apparatus for broaching, dressing, or boring cylinders, and the cutter-head or sleeve, which it moves longitudinally through a cylinder, subjected to the action of its cutters, of a nut tapering externally lengthwise, substantially as specified, whereby all wear, or any difference in size between said nut and cutter-head or sleeve, is compensated for, and jumping and jerky movements incident to looseness are obviated.

4. The combination of the shaft B, bearings and journals E E' H, head-pieces G, cutter-head and cutters C *b c* D *j*, feeding worm or screw K, gears M N O, and driving mechanism Q R S T U V W X.

200,072. VEHICLE-SPRINGS. William McCord, Sing Sing, N. Y. Filed Jan. 7, 1878.



Claim.—1. The combination, with the supporting bar or axle A, of two jointed beams, D D, the vertical standards C C, to which said beams are pivoted, a yoke, B, guided in its vertical movement by the standards C C, and pivoted at its ends to the outer ends of the beams, and springs E, connected with the supporting-bar and with the beams, so as to exert pressure on the latter between the pivotal points and jointed ends of the same, substantially as described.

2. The combination, with the scale-beams D D, springs E E, supporting-bar A, and yoke B, of slides G G, for regulating the power of the springs, substantially as set forth.

3. The combination, with the scale-beams D D, springs E E, supporting-bar A, yoke B, and slides G G, of a standard, F, provided with a guide-slot, which standard forms a stop for the yoke B, and prevents injury to the springs, substantially as set forth.

200,073. CAR REGISTERING APPARATUS. Robert McOully, Philadelphia, Pa. Filed May 7, 1877.

Claim.—1. In a car or other vehicle, the combination of an alarm-gong and fare-registering mechanisms, and a mechanism for operating the same, consisting of a main reverse or double acting cord applied upon pulleys, and provided with appropriate pendants, whereby, with one pull of the operator's hand on either of the pendants, the said alarm-gong and fare-registering mechanisms, at different parts of the car, are simultaneously operated, substantially as set forth.

2. The case C upon the car-ridge, containing the main operating-cords and the parts instrumental for operating the said main cords by hand, substantially as set forth.

3. In a car or other vehicle, the combination of an alarm-gong and fare-registering mechanisms with an operating double or reverse acting main cord, having a number of hand or pulling cords, as at H^1 H^2 H^3 H^4, conveniently distributed both within and without the car, substantially as set forth.

4. In a car or other vehicle, the combination of two or more sets of alarm and fare-registering mechanisms for the indication and registration of fares of different character and value, and an operating mechanism consisting of two or more main reverse or double acting cords, having appropriately and relatively located pendants for simultaneously operating any one of said sets of mechanism from any one place in the said car, substantially as set forth.

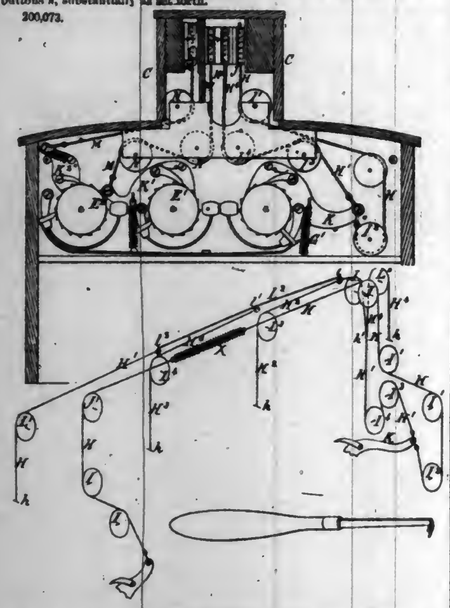
5. In a car provided with fare-registering and alarm-gong mechanisms, the combination of the cords H H^1, guide-pulleys I^1 I^2, and levers F K, substantially as set forth.

6. The combination of the cord M, the levers F¹ K', and the movable pulling-rod O, substantially as set forth.

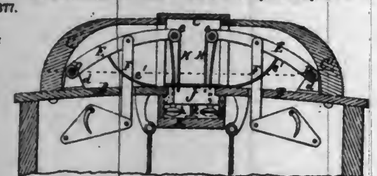
7. The sliding case P, inclosing the lower extremity of the pulling-rod O, substantially as set forth.

8. The case P, or its equivalent, for protecting the operating button or buttons *h*, substantially as set forth.

200,073.



200,074. CAR REGISTERING APPARATUS. Robert McOully, Philadelphia, Pa. Filed May 7, 1877.

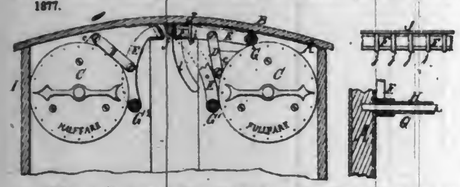


Claim.—1. In a car, a fare-registering and alarm apparatus having its operating mechanism secured above the roof of the car, and having its operating-pendants below the roof of the car, substantially as set forth.

2. The cases C C', or equivalents, in combination with the rods D e, arms E, pulling-rods H, and connecting rods F, substantially as set forth.

3. The slide J, having a stationary case, K, and sliding pendants H, substantially as set forth.

200,075. CAR REGISTERING APPARATUS. Robert McOully, Philadelphia, Pa. Filed May 7, 1877.



Claim.—1. In a car or other vehicle, the combination of alarm and registering mechanisms, having their own independent fulcra, with a mechanism which operates the same, and has as its fulcrum the usual hand rail or strap-rail of the car, substantially as set forth.

2. The combination of the swinging operating-bar F and the guard-pins *j*, substantially as set forth.

3. The combination of the swinging operating-bar F and the guard-bar *f*, substantially as set forth.

4. The combination of the extended swinging operating-bar F, the slot *l*, and a shield for closing the slot, substantially as described.

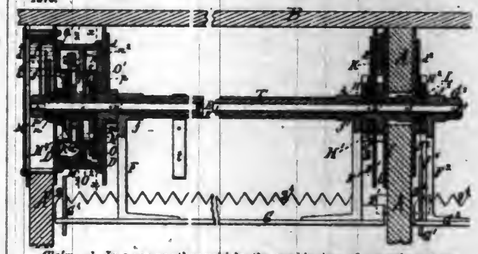
5. The combination of the bar F, extended beyond the ends of the car, the lap L², and the swinging shield 1², substantially as set forth.

6. The combination of the oscillating slotted tube M', spring M, and the pin *d* of the operating mechanism, substantially as set forth.

7. The combination of the arbor I, having a tube, H, and the arms E, substantially as set forth.

8. The tubular spring-case M', having parallel slots *m*, and a cylindrical bearing *m'*, at the bottom, substantially as set forth.

200,076. CAR REGISTERING APPARATUS. Robert McOully, Philadelphia, Pa. Filed Nov. 10, 1876.



Claim.—1. In a car or other vehicle, the combination of a number of registering devices arranged in different places, and for the convenient inspection of the passengers, the said registering devices being operated by one common central arbor, and by one single movement of the same, and the said central arbor constituting the usual hand or strap rail of the car, substantially as set forth.

2. The arbor E, supporting the operating-arms F F¹ F², in combination with a registering and an alarm mechanism, substantially as set forth.

3. The arms F F¹, in combination with the bar G, the spring-pawl *f'*, and the ratchet-wheel H, substantially as set forth.

4. The combination of the plate N, having a pawl, O, the case O', having a space, *o'*, in its surface *o*, the pin *n'*, and the ratchet-wheel H², substantially as set forth.

5. In a car registering apparatus having a stationary indicating-plate with hands or pointers, the central arbor with revolving disk and spring-pawl O, having a cam, *o'*, at its side, whereby it is lifted out of the space *n'* of the case O', and out of the teeth of the ratchet-wheel H², substantially as set forth.

6. The tube T, in combination with the oscillating tube E' and the revolving arbor E, substantially as set forth.

7. The arm F², having a bar, G², spring (5', and spring-pawl *f'*, substantially as set forth.

8. In a car registering apparatus having a stationary indicating-plate with hands or pointers, the ratchet-wheel H², having a spring-pawl, Q', pivoted to a plate, Q, operated by the central arbor, in combination with the case R, having a space, *r'*, in its surface *r*, and the ratchet-wheel H', substantially as set forth.

9. The case O', fitted loosely on the arbor E and into the case M, and being prevented from revolving by the notch *m'* and lug *m*, substantially as set forth.

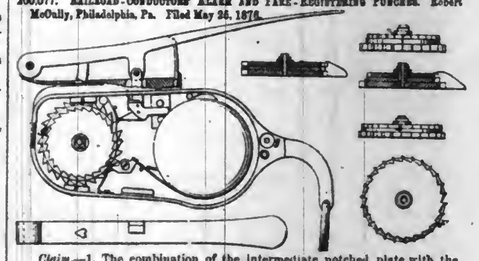
10. The combination of a ratchet-wheel, H², and a spiral sidewise-operating spring-pawl, *p*, substantially as set forth.

11. The guard *g'*, or equivalent, upon the bar G, for the purpose of preventing the operation of the said bar G by unauthorized persons, substantially as set forth.

12. The usual hand-rail E of a car, made to serve its regular purpose, and as a central operating and supporting shaft or arbor of an alarm and registering device or devices, substantially as setforth.

13. The hand-rail or strap-rail of a car lever for operating a registering device, or an alarm and registering device, or a plurality of registering devices and an alarm, substantially as set forth.

200,077. RAILROAD-CONDUCTORS' ALARM AND FARE-REGISTERING PUNCHES. Robert McOully, Philadelphia, Pa. Filed May 26, 1876.



Claim.—1. The combination of the intermediate notched plate with the registering-wheels and the reciprocating pawl, so arranged that the pawl rides upon the rim of the notched plate, and is held in relief from the teeth of the ratchets in its back strokes until each of its back movements is nearly completed, and from contact with the teeth of the multiplying-ratchet until the unit-ratchet has made a complete revolution, substantially as described.

2. The cap of the register and alarm-chamber of the machine, fastened in position by means of the dowels, catching-pin, and a spring, substantially as described.

200,078. MACHINES FOR UNHAIRING AND SCOURING HIDES AND SKINS. Jas. W. McDonald, Woburn, Mass. Filed Dec. 17, 1877.

Brief.—Improvement on Patent No. 184,175, of November 7, 1876.

Claim.—1. In a machine for unhairing and scouring hides and skins, a table or bed arranged between a feeding device and a pressure-roll, to support or partially support the hide or skin in relation to a scouring roll, substantially as and for the purpose described.

2. In a machine for unhairing or scouring hides and skins, the combination of the table E, the positively-actuated adjustable revolving pressure-roll D, and a scouring roll, B, arranged immediately over said pressure-roll, substantially as described.

3. The combination of the feed-rolls C C', the bed or table F, the scouring-roll B, and the adjustable revolving pressure-roll D, as described.

4. The combination of the endless apron, not extended beyond the feed-rolls, a table or bed, E, the scouring-roll B, and an adjustable revolving pressure-roll, as set forth.

5. In a machine for unhairing or scouring hides and skins, the combination of the feed-roll C, having a yielding bearing between the springs *c c'*, and means for adjusting the same with the feed-roll C', all arranged substantially as and for the purpose set forth.

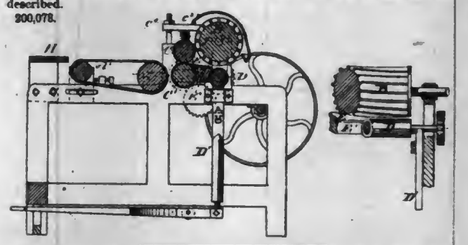
6. The combination of the endless apron and feeding-rolls, or either, with the bed E, scouring-roll B, and an adjustable revolving pressure roll, substantially as described.

7. In a machine for unhairing and scouring hides and skins, the combination of the positively-actuated adjustable pressure-roll, provided with means for vertical adjustment in relation to the scouring-roll, with the scouring-roll arranged above said pressure-roll, substantially as described.

8. The combination of a positively-actuated adjustable pressure-roll, provided with means for vertical adjustment in relation to the scouring-roll, a scouring-roll arranged above said pressure-roll, as shown, and means for presenting the hide or skin to be operated upon to said pressure and scouring rolls, substantially as described.

9. The combination of the positively-actuated adjustable pressure-roll, provided with means of vertical adjustment in relation to the scouring-roll, scouring-rolls, and feed-rolls, when the said pressure-roll is caused to revolve somewhat faster than the feed-rolls, thereby exerting a straining action upon the hide or skin while it is being fed, substantially as and for the purpose described.

200,078.

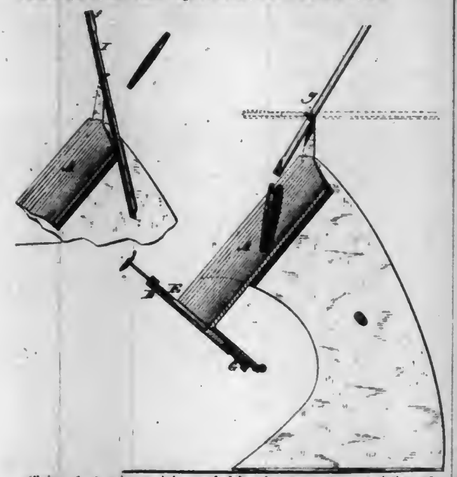


200,079. TINNING AND FINISHING SHEET-COPPER. Robert McManus, Ansonia, Conn. Filed Dec. 11, 1877.

Brief.—To exclude the air from the untinned side of the copper sheet, places the sheet upon a plate fitting accurately thereto, pours the melted tin thereon, and, when the tinning is completed, plunges instantly into a cold bath, which may be alkaline, and the tinned sheet is then rolled and finished as usual.

Claim.—The herein-described process for tinning sheet-copper, consisting in applying the tin to one surface, while the other is protected from the atmosphere, and immediately plunging into a cooling-bath, substantially as set forth.

200,080. DEVICES FOR RECEIVING AND DELIVERING COIN AND DETECTING COUNTERFEIT COIN. John W. Meaker, Chicago, Ill., assignor of two-thirds his right to Harvey B. Merrell, Morristown, N. J., and Thomas Ferguson, Detroit, Mich. Filed Dec. 24, 1877.

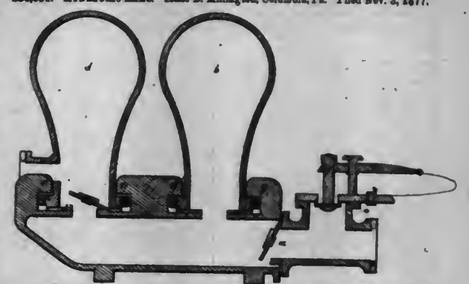


Claim.—1. A coin receiving and delivering apparatus, consisting of a semicircular receptacle, A, gate E, frame D, and spring G, constructed as described, and arranged to operate as set forth.

2. In combination with a coin receiving and delivering device, as herein described, the suspended metallic plate I, having lips *f* thereon, forming a gage to test the thickness and diameter of coin, with stop *g*, for holding the same in such position that if of the proper weight it will be delivered automatically to the receiver, but if not, then be automatically rejected, as herein shown and set forth.

3. In combination with the semicircular receptacle A, the gate E and frame D, provided with the opening *d*, for securing the certain delivery of the coin, as set forth.

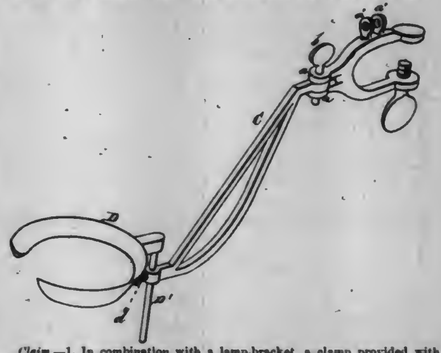
200,081. HYDRAULIC RAMS. Isaac B. Millington, Columbia, Pa. Filed Nov. 3, 1877.



Claim.—1. A hydraulic ram provided with a receiving-chamber, *b*, and a discharge-chamber, *d*, substantially as shown.

2. In a hydraulic ram, the location of the maintaining-valve *a* between the receiving-chamber *b* and the controlling-valve *i*, substantially as set forth.

200,082. LAMP-BRACKETS. John J. Nolan, East Saginaw, Mich. Filed Dec. 22, 1877.



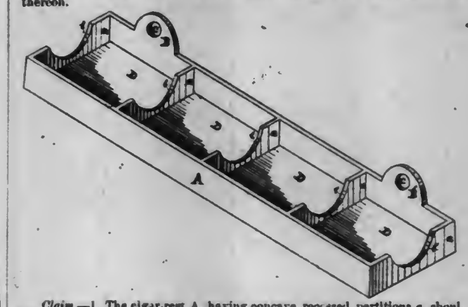
Claim.—1. In combination with a lamp-bracket, a clamp provided with devices at right angles to each other, for connecting the bracket to the clamp, whether said clamp is fastened in a vertical or a horizontal position, as herein set forth.

2. In a lamp-bracket, the combination, with a clamp and a lamp-supporting device, of the reversible inclined bracket C, whereby a lamp can be held in a plane below the clamp or above said plane, substantially as set forth.

3. A lamp-bracket consisting of a clamp provided with ears or lugs *a a'*, arranged at right angles to each other, a bracket, C, and the lamp-support D, substantially as shown and described.

200,083. CIGAR-SUPPORTS. Frank L. Oviatt, Cleveland, Ohio. Filed Nov. 1, 1877.

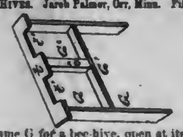
Brief.—The device can be attached to a billiard-table, under the ledge, and made to hold lighted cigars upon its cross-pieces, for the convenience of players, and to prevent the injury to the table by laying the lighted cigar thereon.



Claim.—1. The cigar-rest A, having concave recessed partitions *a*, shoulders B B', and holes *c c*, as and for the purposes described.

2. In a cigar-rest, the receptacle A, shoulders B B', and holes *c c*, as and for the purposes described and shown.

200,084. BEE-HIVES. Jacob Palmer, Orr, Minn. Filed Sept. 8, 1877.



Claim.—The comb-frame G for a bee-hive, open at its bottom and having

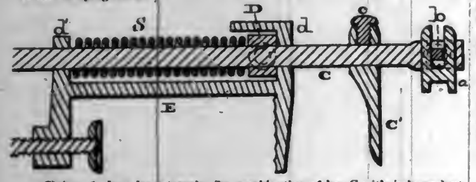
the top slat *t*, provided with the spaces *t'*, the horizontal piece G¹, arranged about midway, and the perforated upright bar G², connecting the intermediate piece t¹ and the top slat *t*, substantially as shown, and for the purposes set forth.

200,085. PROCESS OF OBTAINING FIBER FROM WOOD FOR PAPER-PULP. William B. Patrick, Marinette, Wis., assignor of one-half his right to Andrew C. Merryman, same place. Filed Sept. 22, 1877.

Claim.—The process of preparing wood for paper-pulp, which consists in removing the fibers lengthwise of the wood, conveying it to a wet-machine, and boiling the half-stuff, either with or without alkali, for the purpose of removing all resinous or foreign matter from the pulp, substantially as described.

200,086. LOOM-TEMPLES. Robt. F. Pearson, Philadelphia, Pa., assignor of one-half his right to E. V. Macbeths, Jr., same place. Filed Dec. 3, 1877.

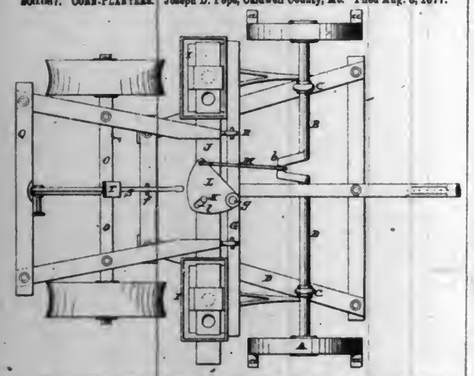
Brief.—The temple-roller and arm may be adjusted vertically with relation to the temple-bar. The bar may be adjusted to and from the lay by means of a collar and set-screw applied directly to the bar between the guide-flanges of the clamping-frame.



Claim.—1. In a loom-temple, the combination of bar C with independent roller-arm B, provided with a vertical slot and a screw-bolt, whereby the temple-roller and roller-arm may be vertically adjusted, substantially as herein shown and described, and for the purpose specified.

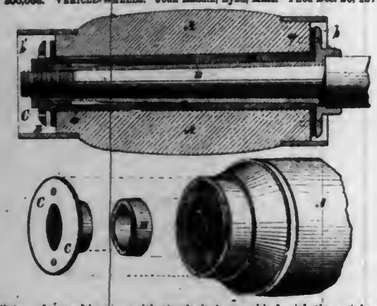
2. The combination, with the bar C, clamping-frame E, provided with guides *d d'*, and the spring S, of the stop-collar D, applied to the bar C between the guide *d* and the spring S, and the set-screw *e*, whereby the position of the temple-roller is regulated relatively to the lay, substantially as shown and described.

200,087. CORN-PLANTERS. Joseph D. Pope, Caldwell County, Mo. Filed Aug. 8, 1877.



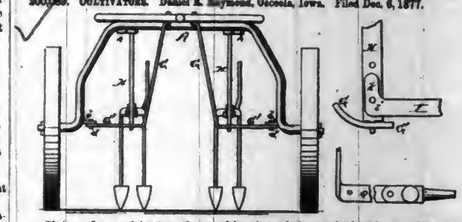
Claim.—The combination of the wheels A A, constructed with markers *a a*, crank-shaft H *b*, rod M, and horizontal slotted plate L *l*, all arranged substantially as and for the purpose set forth.

200,088. VEHICLE-WHEELS. John Baddin, Lynn, Mass. Filed Dec. 26, 1877.



Claim.—In combination with the hub A, provided with the axial opening *a*, and with the elastic tube D, fitted within said opening, the box B, having at one end a flange, *b*, and at its opposite end a threaded portion, *b'*, the flanged nut C, fitted over said threaded portion *b'*, and the washer E, fitted around said nut and bearing against the end of said tube D, said parts being arranged so that the inward movement of said nut shall compress said elastic tube longitudinally and expand the same radially, and thus confine said box firmly within said hub, substantially as specified.

200,089. CULTIVATORS. Daniel B. Raymond, Osceola, Iowa. Filed Dec. 6, 1877.



Claim.—In a cultivator, the combination of the arched axle A, with perforated castings A and lugs *b*, the inclined braces G, forming horizontal perforated bars G', the laterally-adjustable pivoted bars H, and the vertically-adjustable cultivator-beams I, forming L-shaped clips *k* at their forward ends, all constructed substantially as and for the purposes herein set forth.

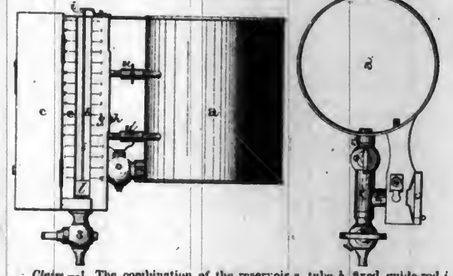
200,090. RETAINERS FOR SEWING-MACHINE ATTACHMENTS. George Rohfaus, Philadelphia, Pa., assignor to the American Button Hole Overseaming and Sewing Machine Company, same place. Filed Oct. 24, 1877.

Brief.—Two projections or pins on the attachment are adapted to holes in the ends of two parallel bars connected by a link at their outer ends. The screw for securing the whole to the bed-plate of the sewing-machine passes between the bars.



Claim.—The combination of a sewing-machine attachment having two pins, *b b*, with two bars, B and B', adapted to the said pins, and connected together at their outer ends by a link, D, all substantially as set forth.

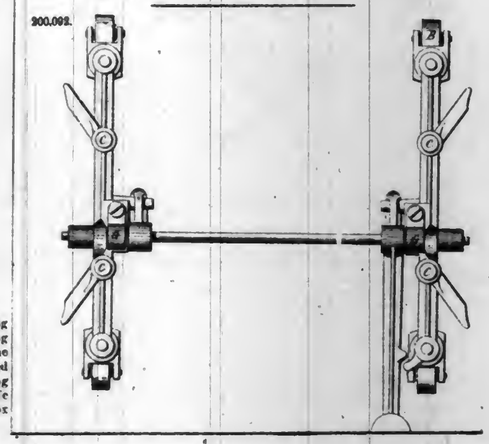
200,091. LIQUID-MEASURES. Seth Rigby, 3d, and Clark F. Rigby, Newcastle, Pa. Filed Aug. 28, 1877.



Claim.—1. The combination of the reservoir *a*, tube *b*, fixed guide-rod *i*, float *l*, sliding thereon, and pipes *a a'*, substantially as shown.

2. In combination with the measuring-tube of a reservoir, the rigid scale having the quantity of oil contained in the reservoir marked on it from its bottom toward its top, and an adjustable gage having the figures marked from the top to the bottom, and which is provided with a set-screw, *k*, for holding it in any position, substantially as set forth.

200,092.



200,093. SEWING-MACHINE CASTERS. Benjamin F. Ryder, New Haven, assignor to Martin W. Foster, Danbury, Conn. Filed Dec. 11, 1877.

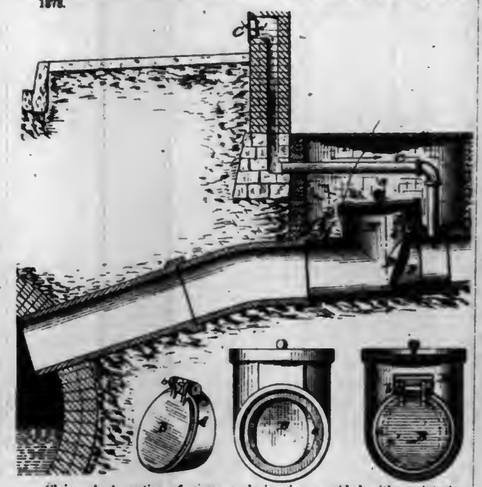
Brief.—A caster-carrying frame is constructed with vertical parallel guide-posts, combined with slides on said guides, upon which the legs of the sewing-machine table rest, and also with cams and treadle for raising and lowering the slides, and a suitable latching device, the construction permitting the ready change from solid bearings to the casters, and vice versa, at pleasure.

Claim.—1. The combination of the frame carrying a caster at each end and vertical parallel guides on the said frame with a slide on said guides, and constructed to receive the legs of the machine, substantially as specified.

2. The combination of the frame carrying a caster at each end and vertical parallel guides on the said frame, a slide on said guides, and constructed to receive the legs of the machine, with cams and treadle, substantially as described.

3. The combination of the frame carrying a caster at each end and vertical parallel guides on the said frame, a slide on said guides, and constructed to receive the legs of the machine, with cams and treadle, and a latching device to engage the said treadle, substantially as described.

200,093. TRAPS FOR DRAINS, SEWERS, &c. James Sargent, Rochester, N.Y. Filed Jan. 26, 1878.



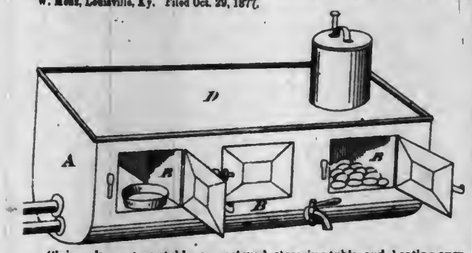
Claim.—1. A section of sewer or drain pipe provided with an interior gate or valve, and having its inner area on the outward side of said valve or gate circular in cross-section, while on the inward side of said gate the cross-section of said area is elliptical, and of less transverse diameter than the outward end, substantially as and for the purpose set forth.

2. A section of drain-pipe provided with an interior gate opening in the direction of the flow, and adapted at its inward portion for connection with a pipe for conducting air into a line of drain-pipe at the rear of the gate, substantially as and for the purpose set forth.

3. The combination, with a section of drain-pipe having its opposite end openings in the same longitudinal plane, and its inward portion contracted, of a gravity gate or valve provided with a separate inclined jamb or bearing, adapted for insertion or removal at will, substantially as and for the purpose set forth.

4. The combination, with a drain-pipe, of a gravity gate or valve arranged to open in the direction of the sewer, but prevented from opening in the opposite direction, an air-pipe leading from said drain-pipe at the rear or house side of its gate, and a valve arranged in said air-pipe and adapted to open inwardly, but prevented from opening outwardly, substantially as and for the purpose set forth.

200,094. STEAMING-TABLE AND HEATING-OVEN COMBINED. William T. Shaw and George W. Moss, Louisville, Ky. Filed Oct. 29, 1877.



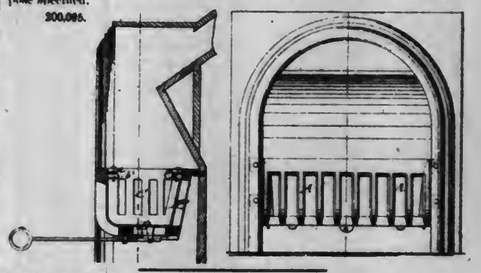
Claim.—In a steam-table, a contained steaming-table and heating-oven, consisting of the water-tank A, having the flat top D, in combination with the ovens B, arranged in said tank, substantially in the manner described.

200,095. BASKET-GRATES. Howard T. Simons, Cambridge, Ohio. Filed Jan. 2, 1878.

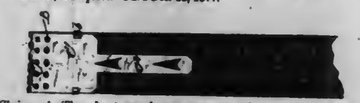
Claim.—1. A basket-grate consisting of bottom, front, back, and end sections, the latter hung detachably in front and back sections by means of overlapping lugs and pins at the top, and a bottom pin of the end pieces fitting into a forward extension of the rear rail of the back, as shown and described.

2. The offset lugs on the rear of the top rail of the back, in combination with the recessed bar let into the rear wall of the chimney, as and for the purpose specified.

200,096.



200,096. LAMP-WICKS. Walter D. Smith, Prophetstown, Ill., assignor of one-half his right to F. J. Barber, same place. Filed Dec. 18, 1877.



Claim.—1. The sheet-metal cap constructed, as described, of the perforated part C, superforated parts C¹ C¹, and straps C² C², with tongues *a a*, in combination with the wick A and asbestus tip B, substantially as and for the purposes herein set forth.

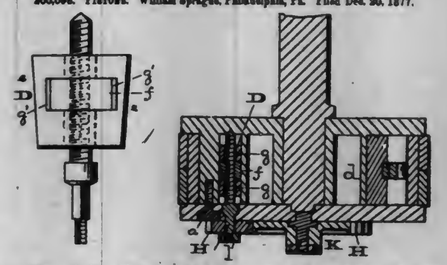
2. The straps *b b*, in combination with the cap, tip, and wick, substantially as and for the purposes herein set forth.

200,097. SWAGES FOR SAW-TEETH. Nathan W. Spaulding, San Francisco, Cal. Filed Aug. 4, 1877.



Claim.—The combination, with a swage for expanding, flaring, upsetting, or sharpening saw-teeth, of a lever and centering clamp or holder, J, for preventing lateral displacement by clamping the tooth near its point, substantially as specified.

200,098. PISTONS. William Sprague, Philadelphia, Pa. Filed Dec. 20, 1877.



Claim.—1. In a piston provided with a sectional or segmental ring, with suitable springs applied around the same, the wedges D, having a wedge shape in vertical section, and beveled so as to have in horizontal section a like conformation, the same being adjusted between the segments of the ring so as to constitute therewith a full circle, and adapted to expand the same, in the manner substantially as herein shown and described.

2. As a means for adjusting the wedges D, a screw or stud passing vertically through each wedge, and a nut arranged upon the screw within an enlarged central opening, *g'*, whereby the said wedge, with its partially-inclosed nut, may be adjusted by the rotation of the screw, substantially as shown and specified.

3. The screws or studs projecting through the follower, in combination with gear-wheels H, having engaging-nuts F, and the gear-wheel K, having a head, *l*, and nut F', whereby the wedges may be simultaneously operated by rotation of either of the gear-wheels H K, substantially as and for the purpose set forth.

200,099. CURTAIN-FIXTURES. Elbridge G. Stanley, Fitchburg, Mass. Filed Oct. 29, 1877.



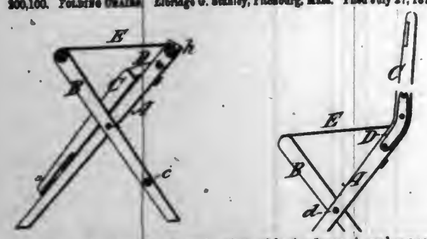
Claim.—1. The reversible spool B, provided with one or more double-faced teeth, *c*, in combination with the double pawl D, having its projections *a a* on opposite sides, substantially as and for the purpose set forth.

2. The reversible bracket C, having two bearings, K K', in combination with the reversible spool B and double pawl D, provided with opposite projections, substantially as and for the purpose set forth.

3. The reversible double pawl D, provided with opposite projections, in combination with a curtain-spool provided with a ratchet, substantially as and for the purpose set forth.

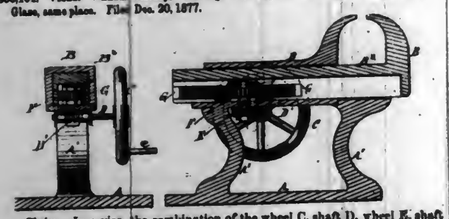
4. The swinging lever *g*, having an open guide, H, formed in its lower end, substantially as and for the purpose herein shown and described.

200,100. FOLDING CHAIRS. Elbridge G. Stanley, Fitchburg, Mass. Filed July 27, 1877.



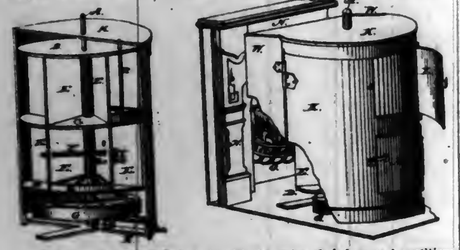
Claim.—The back C, of equal width with the frame A, and connected thereto below the cross-bar A by means of the straps D, in combination with the seat E, the parts constructed and arranged relatively to each other as described, whereby the back is adapted to be folded or unfolded over the legs B without disturbing the seat when opened for use, and supported directly by frame A when opened, substantially as specified.

200,101. VISES. William Starkey, Pittsburg, Pa., assignor of one-eighth his right to Thos. Glass, same place. Filed Dec. 20, 1877.



Claim.—In a vise, the combination of the wheel C, shaft D, wheel E, shaft *e*, wheel F, movable jaw H', fixed jaw B, and rack G, substantially as described and shown, and for the purpose set forth.

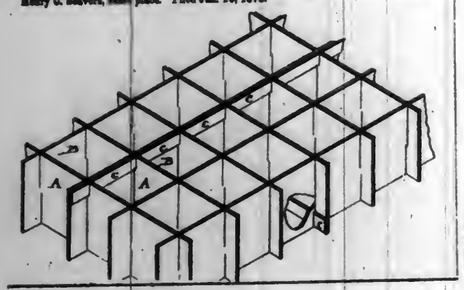
200,102. CULINARY UTENSILS. Johnathan W. Steele, Chicago, Ill. Filed Sept. 13, 1877.



Claim.—1. The vertical shaft A, with the series of shelves and partitions attached to the same, in the manner set forth, in combination with the case K, doors or wings W, and fire-place O, in the manner shown and described, and for the purpose set forth.

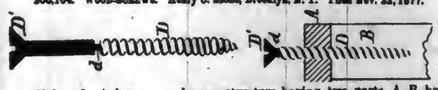
2. The vertical shaft A, with the series of shelves and partitions attached to the same, in the manner set forth, in combination with the case K, fire-place O, jamb N, friction-wheel G, and friction-roller H, in the manner shown and described, and for the purpose set forth.

200,103. CELL-GRATE. John L. Stevens, New York, N. Y., assignor to Nicholas Schroder and Henry C. Seavers, same place. Filed Jan. 16, 1878.



Claim.—In an egg-carrier tray composed of pieces A and B, having equidistant notches or slits *x* for the longitudinal and cross pieces to let into each other, the strips C C, secured to the pieces A and B at or near the center, upon the upper and lower sides, respectively, and crosswise of each other, and let into slits Y Y in said strips, for binding the several parts of the frame securely together, substantially as herein set forth.

200,104. WOOD-SCREWS. Henry C. Stone, Brooklyn, N. Y. Filed Nov. 22, 1877.



Claim.—1. A box or analogous structure having two parts, A B, held together by a screw, D, as shown, as a means of preventing the surreptitious opening of the box, the screw being so formed as to be difficult of removal and replacement, as specified.

2. A wood-screw having one or more narrowed or reduced points in any portion of its length, which shall break by torsion or otherwise, as may be required in its application, all as heretofore specified.

3. The screw D, having a head, D', connected, by a slender neck, *d*, to the main body, and having a sub-head, D², all adapted to serve as and for the purposes herein specified.

200,105. STREET-PAVEMENTS. William H. Stow, Chicago, Ill., and Henry M. Stow, San Francisco, Cal. Filed Aug. 22, 1877.

Brief.—Crushed or broken iron slag is laid on a hard foundation. On the slag is laid a course of boards, and on the boards are placed the thin wooden blocks which form the wearing-surface. The blocks are covered with a composition composed of sixty parts coal-tar, three parts sulphur, and twelve parts lime.



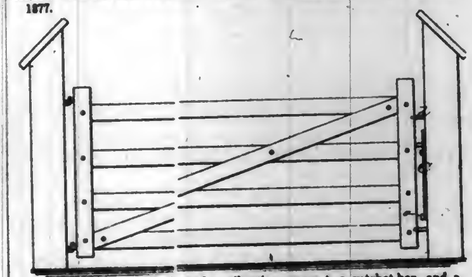
Claim.—1. In a street-pavement, the combination of a hard, inflexible base, a top course of short and thin wood blocks, and an intermediate board flooring, substantially as described.

2. In a street-pavement, the upper course of wood laid upon crushed or broken slag or cinders, substantially as described.

3. In a street-pavement, the wooden upper course covered by a composition composed of coal-tar or its products, sulphur, and lime, substantially as described.

4. In a street-pavement, the combination of a hard base, a covering of crushed slag or cinders, a board flooring, and an upper course of vertical wood blocks, substantially as described.

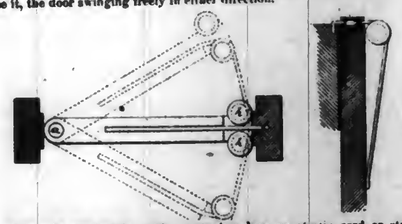
200,106. GATE AND DOOR FASTENERS. Charles T. Sweet, Cumberland, Ohio. Filed July 2, 1877.



Claim.—The combination of a vibrating support, a ratchet-bar, and a guide therefor with a gate or door, substantially as specified.

200,107. DOOR-SPRINGS. Lazarus Threlfall, Colne, England. Filed Nov. 9, 1877. Patented in England Apr. 24, 1874.

Brief.—The upper edge of the door is grooved, and carries an elastic strap attached to both the door and to the jamb, at points a considerable distance from each other, but taking bearings on both at the opening edge or opposite the hinges. There are also one or more anti-friction rolls, around which the elastic band works, the construction being such that the band or strap extends as the door is opened, and when the door is free automatically contracts to close it, the door swinging freely in either direction.

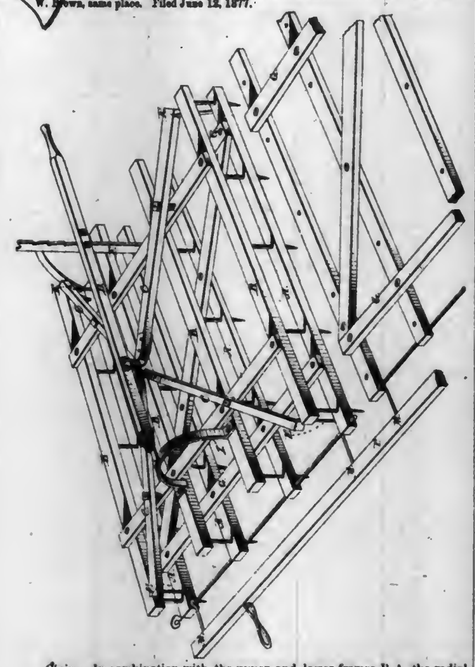


Claim.—In combination with a swinging door, an elastic cord or strap, attached to the door and to the jamb, and taking its bearing at the opening edge of the door and corresponding jamb, and a pulley or pulleys between the two attached points, and around which said elastic cord will work, substantially as and for the purpose described.

200,108. TANNING COMPOUNDS. Chas. J. Tinnerholm, Brooklyn, assignor, by mesne assignments, to the Massachusetts Sole Leather Company, New York, N. Y. Filed Aug. 1, 1877.

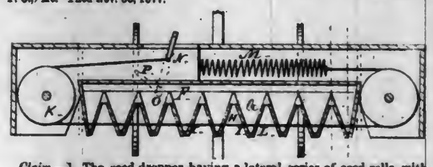
Claim.—The process of tanning and improving leather by treating the hides or leather for the respective times specified in a solution of Peruvian bark, catechu, Glauber's salt, salt of tartar, oxide of zinc, and alum, compounded in the proportions and of the strength specified, substantially as described.

200,109. HARROWS. George M. Titus, Rock Falls, Ill., assignor of one-half his right to Wm. W. Brown, same place. Filed June 12, 1877.



Claim.—In combination with the upper and lower frames B A, the radial arms C and lifting-lever D, the arms C being connected to the upper and lower frames and to the lever D, in the manner described, whereby the frames may be separated with the least expenditure of power, as hereinbefore set forth.

200,110. SEED-DROPPERS. Aaron Vannorman, Benton Township, Knox County, (Sand Hill P. O.,) Mo. Filed Nov. 30, 1877.



Claim.—1. The seed-dropper having a lateral series of seed-cells, with a lengthwise back-and-forth vibrating discharger passing through the cells, and their side walls and seed-spaces, with a spring at one end to stir and feed the seed, as set forth.

2. The seed-dropper having a discharger, I, vibrating lengthwise through the seed-cells, with a spring at one end to draw it back, substantially as set forth.

3. The seed-droppers with the elevated seed-box and wheels underneath and within the extended ends of box, with shaft O, having bar P and operating-crank N, arranged to work the cord or rod dropper L under the overhanging ledge F, substantially as set forth.

200,111. WAX-THREAD SEWING-MACHINES. Jos. R. Walker, Worcester, Mass. Filed Apr. 25, 1877.

Brief.—The thread carriers or fingers are held in a horizontal plane by two supporting-bars carried by the head of the machine, to which they are attached by a crank at one end and a link-piece at the other, and are operated by a rocking motion communicated to the bar having the crank-connection. The presser-foot bar is provided with a device to hold the ends of the threads, and the table is fitted with a guide-plate, whereby a lap-seam and a brace-piece covering it may be sewed at one operation.

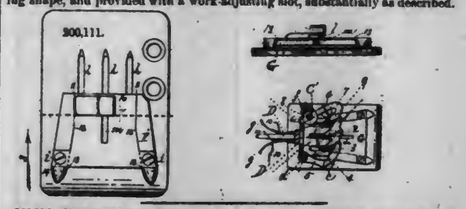
Claim.—1. The combination, with the vertical presser-arm, of presser-foot D', provided with projection D and flaring springs *g g*, arranged as shown and described, and for the purposes set forth.

2. The combination, with the thread-carrier B, provided with a series of thread eyes or fingers, of hinged arm 7 and link-piece 5, arranged as shown and described, and for the purposes set forth.

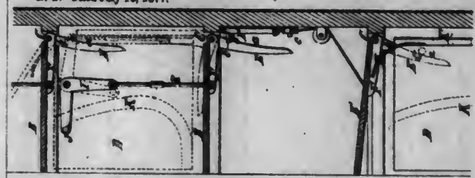
3. The combination, with the needle-plate of a sewing-machine, of a spring-flap arranged between side bars, and provided upon its upper side with an S-guide, substantially as and for the purposes set forth.

4. The combination, with the needle-plate of a sewing-machine provided with two or more needle and awl slots, of two side bars having parallel and angular inner guiding-surfaces, as described, and a spring-flap of corresponding shape, and provided with a work-adjusting slot, substantially as described.

200,111.



200,112. MECHANISMS FOR OPENING AND CLOSING DOORS OR COVERS OF HOISTWAYS. John B. Waring, Stamford, Conn., assignor of one-half his right to William O. Allison, New York, N. Y. Filed July 16, 1877.



Claim.—1. The combination, with a swinging door or cover provided with a downwardly-extending rod, bar, or arm having an inclined face, of an elevator platform, car, or cab provided with a tappet or projection, whereby, during the ascent of said platform, car, or cab, the said door or cover is opened with a slow initial movement, to permit the passage of the said platform, car, or cab, and during the descent of said platform, car, or cab the door or cover is supported in closing, so that it will not slam noisily.

2. The combination, with a swinging door or cover provided with a downwardly-extending rod, bar, or arm having an inclined face, and an elevator platform, car, or cab provided with a tappet or projection for acting on the inclined face of the said rod, bar, or arm, of a push-piece and prop mounted on the elevator platform, car, or cab, whereby the door or cover may be opened by the action of the tappet or projection on the rod, bar, or arm with a slow initial movement, and subsequently by the action of the push-piece with a more rapid movement.

3. The combination, with a swinging door or cover provided with a downwardly-extending rod, bar, or arm having an inclined face, and an elevator platform, car, or cab provided with a tappet or projection for operating on the inclined face of the rod, bar or arm, of a recess in said rod, bar, or arm, to permit the passage of the tappet or projection beyond it after performing its work.

4. The combination, with a swinging door or cover, of a rod, bar, or arm attached rigidly thereto, extending therefrom, and having an inclined face to be operated upon by a tappet or projection on an elevator platform, car, or cab, and serving as a weight for effecting the closing of the door or cover, and preventing it from being slammed against the side of the hoistway during its opening.

5. The combination, with a swinging door or cover, of a hinge, a support, and a rod, bar, or arm to be operated upon by a tappet or projection on an elevator platform, car, or cab, all made in one piece, whereby rigidity and firmness are secured.

6. The combination, with a swinging door or cover, of a bell-crank or bent lever pivoted in a hoistway some distance above the said door or cover, a connection between said door or cover and one arm of said lever, a projection extending from the other arm, and an incline carried by an elevator platform, car, or cab, whereby, during the descent of the said platform, car, or cab, the door or cover will be opened to permit its passage, and during the ascent of the platform, car, or cab above it the door or cover will be supported, so that it will not slam noisily.

7. The combination of a door, B, support F, hinge C, and rod, bar, or arm E, made in one piece, a bell-crank or bent lever, I, a connection between the latter and the said support F of the door or cover B, the tappet or projection G, and incline K on the elevator platform, car, or cab D, substantially as and for the purposes set forth.

200,113. CUT-OFFS FOR FLEXIBLE PIPES. Charles Ward, Charlestown, Mass., assignor to Davidson Rubber Company. Filed Jan. 5, 1878.



Claim.—1. A cut-off composed of wire bent to form a spring, as at 7, a space for the tube at 8, a notch, as at 11, a holding portion to be engaged by the notch, and finger and thumb pieces, substantially as described.

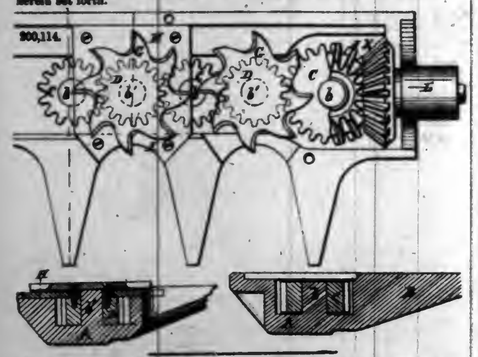
2. As an improved article of manufacture, a cut-off for flexible pipe, said cut-off being of a single piece of wire, bent as shown and described, to be applied to the pipe, all as set forth.

200,114. HARVESTER CUTTER-BARS. Edwin R. Whitney, Magog, Quebec, Canada. Filed Nov. 28, 1876.

Brief.—Casting (instead of otherwise securing) the studs in one piece with the finger-bar. (Passed by Board of Examiners-in-Chief.)

Claim.—The combination of the longitudinally-grooved finger-bar A, with series of studs *b b'* cast therein, the alternate cog-wheel C, placed on the studs

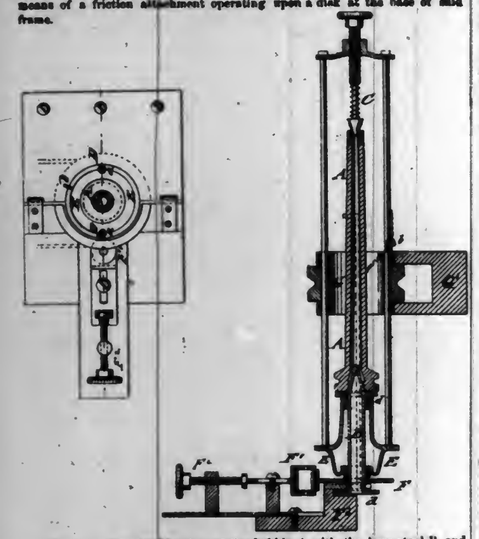
b, and the alternate cog-wheels D, placed on the studs *b'*, and provided with the circular toothed cutters G and the covering-plate E, substantially as herein set forth.



200,114.

200,115. SPINDLES AND FLIERS FOR SPINNING MACHINERY. Henry M. Williams, Coldwater, Mich. Filed Mar. 20, 1877.

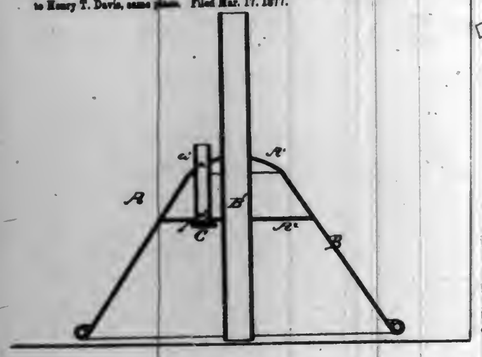
Brief.—The wire frame supports the bobbin at its bottom by a base-steel, and at its top by a spring-acted cone, and the whole is revolved by means of the ring or whirl. The rotation of the bobbin and wire frame is regulated by means of a friction attachment operating upon a disk at the base of said frame.



Claim.—1. The combination of the bobbin A with the base-stool B, and with the sliding and spring-acted top bearing C, supported in the top and bottom pieces of the revolving wire frame, substantially as specified.

2. The combination of the bobbin A and base-stool B, having guide-flanges and friction-disk F, with an adjustable tension or brake roller, F', substantially as and for the purpose specified.

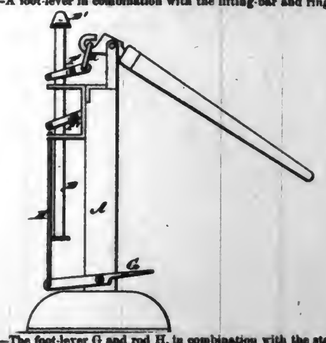
200,116. GRAVEL-PUNCHERS. Geo. W. Weed, Athens, Tenn., assignor of one-half his right to Henry T. Davis, same place. Filed Mar. 17, 1877.



Claim.—The clothes-pounder consisting of the shell B, having horizontal partition A^1, valve C *c'*, opening through said partition into the vertical tube *a'*, which extends above the vertex of the conical shell B, and the tubular handle B', extending downward as far as the lower edge of said shell B, all as and for the purpose set forth.

200,117. LIFTING-JACKS. Franklin S. Yingst, Mount Wolf, Pa., assignor of two-thirds his right to Wm. H. Bloomhart and Adam Hake, same place. Filed Jan. 5, 1878.

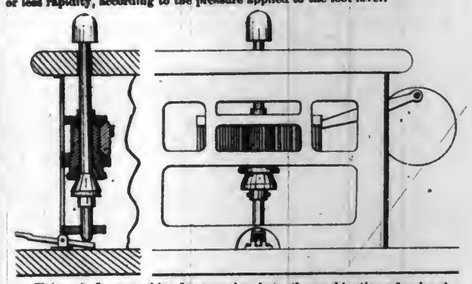
Brief.—A foot-lever in combination with the lifting-bar and rings.



Claim.—The foot-lever G and rod H, in combination with the standard A, rod D, and ring F', as and for the purposes set forth.

200,118. MACHINES FOR POUNCING HATS. George Yale, Newark, N. J. Filed Mar. 8, 1877.

Brief.—A foot-lever, X, elevates the vertical shaft B, carrying the block C. The male part of the clutch H' is made fast to the shaft, and rises with it, engaging the counterpart above. The counterpart H is secured to the pinion E, which is moved by means of the rack D, operated by the rod F, through the medium of the crank-wheel G. The engagement with the pinion causes the vertical shaft with its block, moving back and forth, to revolve with a greater or less rapidity, according to the pressure applied to the foot-lever.



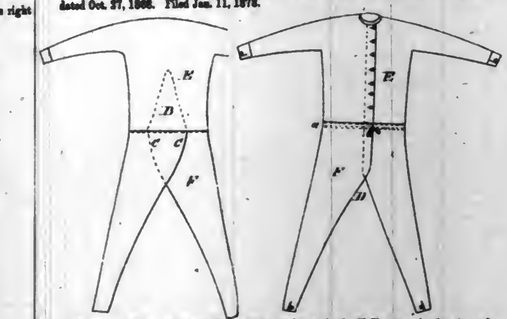
Claim.—1. In a machine for pouncing hats, the combination of a longitudinally-movable block-carrying rod with a friction-clutch and operating mechanism, substantially as and for the purposes set forth.

2. In a machine for pouncing hats, the combination of a sliding friction-clutch and block-carrying rod with a treadle for throwing said clutch into gear, substantially as set forth.

3. In a machine for pouncing hats, the combination, with its vertical shaft, block, and clutch, of the reverse operating mechanism, substantially as described, whereby the block is moved in two directions while being operated upon, substantially as set forth.

REISSUES.

8,068. CONBINED SHIRT AND DRAWERS. Erastus S. Bennett, Brooklyn, N. Y., assignor, by mesne assignments, to George Frost and Geo. H. Phelps, Boston, Mass. Patent No. 93,447, dated Oct. 27, 1869. Filed Jan. 11, 1878.



Claim.—1. The combination of the shirt or body E E, open in front, and the drawers or legs F, overlapped, as shown at C C, all substantially as described.

2. In combination therewith, the drawing-string or adjuster *a a*, applied and operating substantially as described.

8,069. COMBINATION UNDERSUITS. Chas L. Bradley, San Francisco, Cal. Patent No. 198,805, dated Dec. 25, 1877. Filed Jan. 21, 1878.



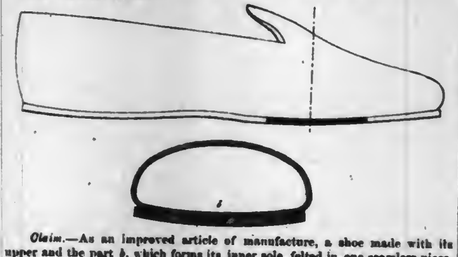
Claim.—1. A garment for underwear consisting of an upper or vest portion, A, and a lower or drawers portion, B, combined, the portion A, at and above the waist-line, being cut and made to be tight or glove fitting, as contradistinguished from the sack form, and the portion B, below said waist-line, made loose and flowing, substantially as described, for the purpose of supporting and protecting the vital portions of the body of the wearer, and at the same time to allow of the free movement of the lower limbs, as specified.

2. The patterns 2, 3, and 4, forming each half of the garment, cut the whole length of the garment, and of the configuration shown, sewed together, and adapted to fit the form, substantially as herein shown and described.

3. A combination suit for underwear, essentially as described, and having a seam extending transversely downward from a point at the armhole below the shoulder, across the buttock, to a point below the crotch of the garment, substantially as specified.

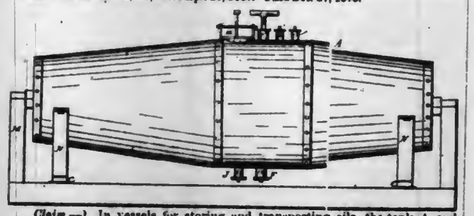
4. In a combination under-garment made of two or more pieces, the seam *q*, as and for the purposes set forth.

8,070. FELT SHOES. Chas. W. Palmer, Lynn, and Chas. Houghton, Boston, Mass., assignors, by mesne assignments, to the Merino Shoe Company. Patent No. 98,703, dated Jan. 11, 1870. Filed Jan. 12, 1878.



Claim.—As an improved article of manufacture, a shoe made with its upper and the part *b*, which forms its inner sole, felted in one seamless piece, and provided with an outer sole, secured thereto, substantially as described.

8,071. VESSELS FOR STORING AND TRANSPORTING OILS. Thomas J. McGarry, Cleveland, Ohio. Patent No. 64,123, dated Apr. 23, 1867. Filed Dec. 27, 1876.



Claim.—1. In vessels for storing and transporting oils, the tank A and the shell or lining B, forming a water-chamber at the sides and ends, in combination with inlets and outlets, arranged as and for the purpose substantially as set forth.

2. The tank for transportation, supported upon journals or bearings, as and for the purpose set forth.

3. The saddles N, provided with spring-bearings, in combination with the tank, substantially as and for the purpose set forth.

4. In combination with the oil tank A of a railway-car, the saddles N, substantially as and for the purpose set forth.

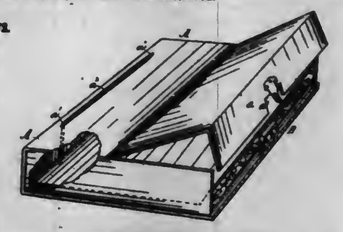
8,072. TEMPORARY RUFFLERS. Edward N. Thompson, Starke, Fla., assignor to William A. Amberg. Patent No. 110,767, dated September 5, 1871. Filed Oct. 30, 1877.

Claim.—1. The case A, having a lid or cover, *a*, and the guard or post B, in combination with index-leaves arranged to receive letters loosely between them, substantially as set forth.

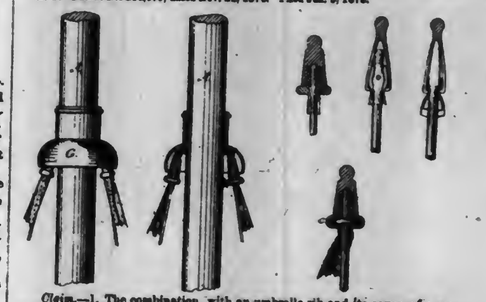
2. The case A, lid or cover *a*, and guard B, in combination with the binding *a'* and the index-leaves, substantially as specified.

3. The index-leaves perforated at their backs, to rise and fall on the binding and keep them in place, in combination with the binding and with the case A, forming a guide for the insertion of the letters, and holding them in place, substantially as shown and described.

8,072.



8,073. UMBRELLA-RIB TIPS. Alfred A. Valentine, New York, and H. A. Morrison, Brooklyn, N. Y. Patent No. 194,675, dated Nov. 21, 1876. Filed Jan. 5, 1878.



Claim.—1. The combination, with an umbrella-rib and its cover, of a compressible metallic clamp, cap, or tip, said clamp, cap, or tip being constructed with an inward blunted projection, so that when clamped or compressed upon the cover it will not cut the same, and will secure the covering material firmly to the rib, substantially as set forth.

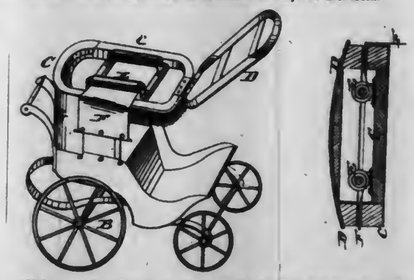
2. An umbrella or parasol cap, tip, or clamp, constructed with an annular groove, recess, or projection, in combination with a rib having near its outer end a groove, recess, or projection, substantially as and for the purpose described.

3. A clamp, tip, or cap for an umbrella-rib, said clamp, tip, or cap having an inward blunt bead or flange at or near its open end, between which bead or flange and the rib the umbrella-cover may be clamped without being cut, substantially as set forth.

4. In an umbrella, the combination, with the ribs thereof, provided with annular shoulders near the extremities, of the divided collars, with or without the elastic washer, adapted to fit over the same and secure the covering thereon, and the screw-tips for securing said collars in place, substantially as described.

8,074. CANOPY-TOPS FOR CARRIAGES. Calvin E. Peabargh, Louisville, Ky. Patent No. 101,233, dated May 29, 1877. Filed Jan. 16, 1876.

Brief.—The top opens and the curtains are deposited therein.



Claim.—1. In a buggy or carriage, the hollow canopy-top C, provided with the lid D, and combined with the curtains, for which it constitutes a receptacle, substantially as specified.

2. The hollow canopy-top C, combined with the cover D, rollers E, and curtains, substantially as herein shown and described.

8,075. ELECTRIC AND THERMOSTATIC FIRE-ALARMS. Geo. S. Shute, Boston, Mass. Patent No. 150,090, dated Apr. 21, 1874. Filed Dec. 27, 1877.

Claim.—1. In a fire-alarm instrument, insulated thermal bars constructed of metals of different degrees of expansibility, and connecting devices, whereby a circuit may be completed between them, one of such bars being placed in a case or apartment, while the other bar is left more exposed, in order that in case of fire the exposed bar will be the first to feel the heat or sudden change of temperature, which will cause it to expand quicker than the inclosed bar, and thus operate the connecting devices to make a metallic connection between the inclosed and more exposed bar, to throw into action an electric alarm, the

bars under gradual or ordinary changes of temperature moving together substantially alike without closing the circuit.

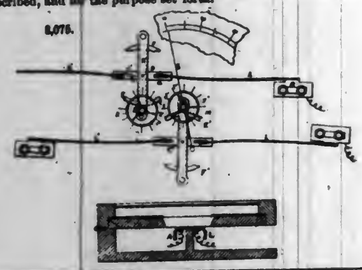
2. In a fire-alarm instrument, the combination, with thermal bars, of a case divided to form two apartments, one for each bar, one apartment being more exposed to the atmosphere than the other, whereby the bar in the more exposed apartment, at sudden or great changes of heat or temperature, will be moved more than the other bar in the least exposed apartment, and will thereby operate devices to form a metallic connection between the two bars in the different apartments, and set in action an electric alarm in circuit with the bars, substantially as described.

3. A thermostatic fire-alarm case divided into two apartments, one of which is more open to the action of the atmosphere than the other, whereby one apartment in a given time may receive a greater amount of heat than the other, to operate thermal bars in such apartments, one more rapidly than the other.

4. The combination of the thermal bar A, the cross-head C, and the thermal bar A', all arranged to operate together substantially as described, and for the purpose set forth.

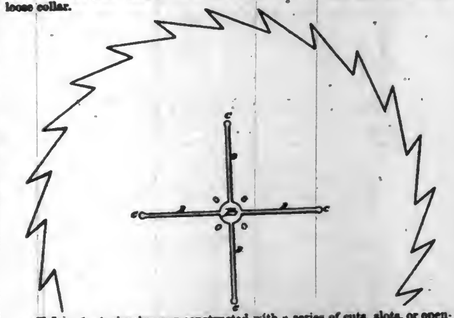
5. The combination of the thermostat A A', the circuit-closer *b b' c c'*, and the thermostat L L', one series of the thermostats being placed in an inclosed and the other in an exposed space, all operating together substantially as described, and for the purpose set forth.

8,076.



8,076. CIRCULAR SAWS. James K. Lockwood, Alpena, Mich. Patent No. 70,738, dated Nov. 12, 1867; Reissue No. 7,753, dated June 19, 1877. Filed Jan. 21, 1878.

Brief.—The saw is prevented from buckling, cracking, or running unevenly by reason of unequal contraction or expansion under varying temperatures by a series of slots having enlargements at their ends, and extending from the eye toward the periphery, and a series of elongated dowel-holes formed near the eye for the pins which pass through the permanent collar and saw into the loose collar.



Claim.—1. A circular saw constructed with a series of cuts, slots, or openings in its inner or central portion, to prevent the warping or buckling of the saw when any part of it is expanded by heat.

2. A circular saw constructed with cuts, slots, or openings D, terminating in holes or enlargements C, substantially as and for the purposes set forth.

3. A circular saw constructed with cuts, slots, or openings, and with elongated bolt or dowel holes near the eye, substantially as and for the purposes set forth.

4. A circular saw constructed with cuts, slots, or openings terminating in enlargements or circular openings C, and with enlarged bolt or dowel holes near the eye, substantially as and for the purposes set forth.

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THE NEW CLASSIFICATION.

The commission appointed by the Commissioner of Patents to revise the Official Classification of Subjects of Invention has completed its labors, and the following classification has been adopted, and will supersede the one now in use.

CLASSES OF INVENTIONS.

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Boats	9	Electricity	36
Book-binding	11	Excavating	37
Boots and shoes	12	Explosives	52
Brakes and gins	13	Felting and hats	38
Bread, cracker, and lozenge making	107	Fences	39
Brewing and fermenting	7	Fertilizers	71
Bridges	14	Fine arts	41
Brushing and scrubbing	15	Fire-arms	42
Builders' hardware	16	Fishing and trapping	43
Butchering	17	Fluid-pressure regulators	50
Caoutchouc and minor plastics	18	Fuel	44
Carding	19	Furniture	45
Care of live stock	119	Games and toys	46
Carpentry	20	Garden and orchard	47
Carriages and wagons	21	Gas	48
Chains, staples, and horse-shoes	59	Glass	49
Chairs	155	Grinding and polishing	51
Chemicals and medicines	23	Hardware, making	53
Clasps and buckles	24	Harness	54
Clay and pottery	25	Harrows and diggers	55
Cloth	26	Harvesters	56
Coating with metal	96	Hides, skins, and leather, chemical treatment	140
Coffins	27	Hoisting	57
Composite roofing	154	Horology	58
Coopering	147	Hose and belting	60
		Household articles	65
		Hydraulic engineering	61
		Jewelry	63
		Journals and bearings	64
		Knitting and netting	66
		Lamps and gas-fittings	67
		Laundry	68
		Leather	69
		Locks and latches	70
		Locomotives	123
		Marine propulsion	115
		Masonry	72
		Measuring instruments	73
		Mechanical powers	74
		Metal bending and straightening	153
		Metal boring and drilling	77
		Metal forging, punching, and shearing	78
		Metal founding	22
		Metal ornamentation	158
		Metal personal ware, making	79
		Metal-rolling	80
		Metal bolts, nuts, rivets, and screws	10
		Metal tempering, annealing, and cementation	148
		Metal tools and implements, making	76
		Metal tubing and wire	134
		Metal turning, planing, and milling	82
		Metal-working tools	81
		Metallurgy	75
		Mills	83
		Music	84
		Nails, spikes, needles, and pins	85
		Nut and bolt locks	151
		Oils, fats, and glue	87
		Optics	88
		Ordnance	89
		Ore	90
		Packing and storing vessels	150
		Painting and graining	91
		Paper-making	92
		Paper manufactures	93
		Paving	94
		Photography	95
		Plows	97
		Pneumatics	98
		Preserving	99
		Presses	100
		Printing	101
		Projectiles	102
		Pumps	103
		Railway-cars	105
		Railways	104
		Refrigeration	62
		Roofing	108
		Safes	109
		Seeders and planters	111
		Sewing-machines	112
		Sheet-metal-ware making	113
		Ships	114
		Signals	116
		Silk	117
		Spinning	118
		Stationery	120
		Steam-boilers	122
		Steam-engines	121
		Steam-furnaces	110
		Steam-valves	136
		Stone-working	125
		Stoves and furnaces	126
		Sugar and salt	127
		Surgery	128
		Tanning	129
		Thrashing	130
		Tobacco	131
		Toilet	132
		Trunks and equipments	133
		Umbrellas and fans	135
		Vegetable cutters and crushers	146
		Wagon, car, and track irons	152
		Washing apparatus	141
		Water distribution	137
		Water-wheels	138
		Weaving	139
		Wheelwright machines	157
		Wire-working	140
		Wood-sawing	143
		Wood-turning	142
		Wood-working	144
		Wood-working tools	145

The above classes have been grouped, for Office purposes, to form the following—

DIVISIONS.

Division No. 1, Tillage. *Examiner*, Fox. *Classes:* Harrows and Diggers, 55; Plows, 97; Seeders and Planters, 111.

Div. No. 2, Farm-Stock and Products. *Examiner*, Jayne. *Classes:* Bee Culture, 6; Brushing and Scrubbing, 15; Butchering, 17; Dairy, 31; Fences, 39; Care of Live Stock, 119; Tobacco, 131; Vegetable Cutters and Crushers, 146.

Div. No. 3, Metallurgy, Distillation, and Refrigeration. *Examiner*, Dyrenforth. *Classes:* Fishing and Trapping, 43; Gas, 48; Refrigeration, 62; Metallurgy, 75; Ore, 90; Metal Coating, 96; Distillation, 124; Sugar and Salt, 127.

Div. No. 4, Civil Engineering. *Examiner*, Pond. *Classes:* Bridges, 14; Carpentry, 20; Excavating, 37; Hydraulic Engineering, 61; Masonry, 72; Railways, 104; Roofing, 108; Curtain Fixtures, 156.

Div. No. 5, Fine Arts, Toys, and Apparel. *Examiner*, Burke. *Classes:* Apparel, 2; Crinoline and Corsets, 29; Educational Appliances, 35; Fine Arts, 41; Games and Toys, 46; Jewelry, 63; Music, 84; Photography, 95; Toilet, 132; Umbrellas and Fans, 135.

Div. No. 6, Chemistry. *Examiner*, Antisell. *Classes:* Brewing and Fermenting, 7; Bleaching and Dyeing, 8; Chemicals and Medicines, 23; Explosives, 52; Fertilizers, 71; Oils, Fats, and Glue, 87; Painting and Graining, 91; Preserving, 99; Hides, Skins, and Leather, 149.

Div. No. 7, Harvesting and Milling. *Examiner*, Parkinson. *Classes:* Brakes and Gins, 13; Garden and Orchard, 47; Harvesters, 56; Mills, 83; Threshing, 130.

Div. No. 8, Furniture, Bread Making, and Laundry. *Examiner* Tilden. *Classes:* Beds, 5; Furniture, 45; Laundry, 68; Bread, Cracker, and Lozenge Making, 107; Washing Apparatus, 141; Chairs, 155.

Div. No. 9, Hydraulics and Pneumatics. *Examiner*, Durnall. *Classes:* Aeration and Bottling, 1; Baths and Closets, 4; Pneumatics, 98; Pumps, 103; Water Distribution, 137; Water-Wheels, 138.

Div. No. 10, Carriages, Wagons, and Railway-Cars. *Examiner*, Sanders. *Classes:* Carriages and Wagons, 21; Railway-Cars, 105.

Div. No. 11, Leather Working, Machines, and Articles. *Examiner*, Chapman. *Classes:* Boots and Shoes, 12; Clasps and Buckles, 24; Harness, 54; Hose and Belting, 60; Leather, 69; Tanning, 129; Trunks and Equipments, 133.

Div. No. 12, Mechanical Engineering. *Examiner*, Schoepf. *Classes:* Hoisting, 57; Journals and Bearings, 64; Household Articles, 65; Mechanical Powers, 74; Presses, 100.

Div. No. 13, Metal Working. *Examiner*, Church. *Classes:* Chains, Staples, and Horseshoes, 59; Hardware Making, 53; Metal Bending and Straightening, 153; Metal Bolts, Nuts, Rivets, and Screws, 10; Metal Boring and Drilling, 77; Metal Forging, Punching, and Shearing, 78; Metal Personal Ware Making, 79; Metal Rolling, 80; Metal Tubing and Wire, 134; Metal Tools and Implements Making, 76; Metal Turning, Planing, and Milling, 82; Nails, Spikes, Needles, and Pins, 85; Nut and Bolt Locks, 151; Arms Making, 86; Wagon, Car, and Track Irons, 152.

Div. No. 14, Metal Working, Grinding, and Polishing, and Packing Vessels. *Examiner*, Stocking. *Classes:* Grinding and Polishing, 51; Metal Founding, 22; Metal Tempering, Annealing, and Cementation, 148; Metal-Working Tools, 81; Packing and Storing Vessels, 150; Sheet Metal Ware Making, 113; Wire Working, 140.

Div. No. 15 Plastics. *Examiner*, Hedrick. *Classes:* Artificial Stone, Lime, and Cement, 106; Caoutchouc and Minor Plastics, 18; Clay and Pottery, 25; Composite Roofing, 154; Felting and Hats, 38; Fuel, 44; Glass, 49; Paving, 94; Paper Making, 92; Stone Working, 125.

Div. No. 16, Electricity, Measuring Instruments and Optics. *Examiner*, Townsend. *Classes:* Drafting, 33; Electricity, 36; Horology, 58; Measuring-Instruments, 73; Optics, 88.

Div. No. 17, Printing and Paper Manufactures. *Examiner*, Freeman. *Classes:* Advertising, 40; Book-Binding, 11; Paper Manufactures, 93; Printing, 101; Stationery, 120.

Div. No. 18, Steam Engineering. *Examiner*, Fowler. *Classes:* Driers, 34; Fluid-Pressure Regulators, 50; Locomotives, 123; Steam-Boilers, 122; Steam-Engines, 121; Steam-Furnaces, 110; Steam-Valves, 136.

Div. No. 19, Stoves and Lamps. *Examiner*, Catlin. *Classes:* Lamps and Gas-Fittings, 67; Stoves and Furnaces, 126.

Div. No. 20, Surgery and Hardware. *Examiner*, Wilkinson. *Classes:* Artificial Limbs, 3; Builders' Hardware, 16; Coffins, 27; Cutlery, 30; Dentistry, 32; Locks and Latches, 70; Safes, 109; Surgery, 128.

Div. No. 21, Textiles. *Examiner*, Appleton. *Classes:* Carding, 19; Cloth, 26; Cording, 28; Knitting and Netting, 66; Sewing-Machines, 112; Silk, 117; Spinning, 118; Weaving, 139.

Div. No. 22, Guns, Ships, and Wood-Working. *Examiner*, Bartlett. *Classes:* Boats, 9; Coopering, 147; Fire-arms, 42; Marine Propulsion, 115; Ordnance, 89; Projectiles, 102; Ships, 114; Signals, 116; Wood-Turning, 142; Wood-Working Machines, 144; Wood-Working Tools, 145; Wood-Sawing, 143; Wheelwright Machines, 157.

The classes of inventions have been grouped into these twenty-two Divisions, the primary object being to separate the work of the Office into parts, each capable of being handled by a single Examiner. So far as possible the Divisions have been constituted of cognate inventions. This rule could not be strictly followed, however, because the number of classes to be assigned to any one Division must be determined by the amount of work which the classes so grouped would impose upon an Examiner and the force at his command, usually three or four Assistant Examiners and a clerk. Hence, the Divisions here noted are rather divisions of the Office work than divisions of inventions; therefore, persons ordering copies will order by the Class number rather than the Division number. Under each one of these classes there are several sub-classes upon which the Examiners are at present at work. As soon as they are completed they will be published, together with the present information in relation to the new classification.

Of the above classes, all have been photo-lithographed except Artificial Limbs, Class 3; Builders' Hardware, Class 16; Coffins, Class 27; Coopering, Class 147; Cutlery, Class 30; Dentistry, Class 32; Locks and Latches, Class 70; Locomotives, Class 103; Nut and Bolt Locks, Class 151; Safes, Class 109; Steam-Boilers, Class 122; Steam-Engines, Class 121; Steam-Furnaces, Class 110; Steam-Valves, Class 136; Surgery, Class 128; Wheelwright-Machines, Class 157; Wood-Sawing, Class 143; Wood-Turning, Class 142; Wood-Working, Class 144; Wood-Working Tools, Class 145; and these are all being reproduced, and before the end of the year it is expected that photo-lithographic copies of the drawings of any patent ever issued by the Government can be obtained in this Office for 25 cents per single copy, or 10 cents each where more than twenty copies are desired. A photo-lithographic copy of any current issue (specification and drawing) can be had at the same price.

The specifications of all patents issued since July 1, 1871, are in print, and will be furnished, with the drawing, without extra charge. The specifications of most of the patents issued from November 20, 1866, to July 1, 1871, are in print, and where such is the case the Office will furnish them with the drawings; but it will not undertake to reprint copies which have been exhausted.

PRICE OF THE GAZETTE.—The price of THE OFFICIAL GAZETTE is still fixed at $6 per annum, and there is no reduction from that price except where five subscriptions are included in one order, when the subscription is $5; and subscribers can be added to this club, by the party or parties forming it, any time during the year, at the reduced price.

The Annual Index will not be furnished to subscribers hereafter without extra charge; but immediately after the expiration of each volume a Half-yearly Index will be given without charge, and should additional copies of the Half-yearly Index be desired, they will be furnished upon the payment of fifty cents for each additional copy required.

EXTRA COPIES OF THE GAZETTE.—The letter-press of THE GAZETTE has been prepared with a view of meeting the demand for extra copies of that particular portion which relates to Office practice, decisions of the courts, &c.

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BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

DECISIONS OF THE COURTS.

Circuit Court of the United States—District of Massachusetts.

BADISCHE ANILIN AND SODA FABRIK *vs.* HAMILTON MANUFACTURING COMPANY.

[*In Equity—No.* 811.]

The provision of the patent act of 1870, that in the case of a prior foreign patent, the United States patent "shall expire at the same time with the foreign patent, or, if there be more than one, at the same time with the one having the shortest term," is not retroactive. It did not take away any portion of the term of an existing patent, nor any right to an extension [*a reissue?*] which was in force when such patent was granted.

Hence, a patent granted originally in 1869, and reissued after the passage of the act of 1870, is not abridged in term by the expiration of a prior foreign patent for the same invention occurring subsequent to the reissue.

The right to reissue a patent in two divisions, one for a new product and the other for a new process of making it, even though the original patent related to the process alone, is fully sustained. (*Goodyear vs. Providence Rubber Co.*, 2 Fisher.)

When a thing is produced new, in and of itself, it is patentable as a new manufacture.

If it be capable of being produced by various different processes, yet when the product is new, independent of the process, the patent is infringed by the unlicensed manufacture of the new product by any mode of manufacture, the process of manufacture being wholly unimportant.

Artificial alizarine (Reissue Letters Patent No. 4,321, granted April 4, 1871,) is a composition of matter differing essentially from the dye-stuffs obtained from the madder plant and from the chemically pure alizarine of the laboratory. It is new and useful, and the patent therefor is not invalid simply because the inaccurate term "alizarine" makes it apparently cover pre-existing products of the same name.

George Gifford and *J. Van Santvoord* for complainant; *Edward N. Dickerson* for defendant.

OPINION OF THE COURT.—*February* 4, 1878.

SHEPLEY, *J.:*

An objection is raised to the validity of the reissued letters patent under which complainants claim that the original patent was taken out in England by Graebe and Liebermann, on the 16th of June, 1869, and was suffered to expire, by reason of the omission to pay the annual fees upon it, on the 18th of December, 1871, after the reissue of the American patent for the same invention, dated April 4, 1871. It is contended that the patent in controversy was issued under the act of July 8, 1870, and that as the 25th section of that act provided that an American patent "shall expire at the same time with the foreign patent" which has been obtained previous to the American patent, the reissue of the American patent expired on the 18th of December, 1871, when the English patent expired.

The act of March 3, 1839, provided that, in all cases where a patent shall be granted after the same invention shall have been patented in a foreign country, "such patent shall be limited to the term of fourteen years from the date of publication of such foreign letters patent." The act of March 2, 1861, provides "that all patents hereafter granted shall remain in force for the term of seventeen years from the date of issue," and repeals all acts and parts of acts before passed inconsistent with the provisions of the act of 1861. The act of 1870, § 25, provides that in case of a prior foreign patent the United States patent "shall expire at the same time with the foreign patent, or, if there be more than one, at the same time with the one having the shortest term."

The law of July 8, 1870, Rev. Stat., § 4887, was not retroactive, and did not operate to put an end to American patents granted before the law took effect. The original patent in this case was dated October 5, 1869, before the passage of the act of 1870. Without a breach of good faith to the patentee, who had complied with the provisions of previous acts by disclosing his invention and paying the required fees, Congress could not take away any portion of the term of the patent, or any right to an extension [*a reissue?*] which existed under the laws in force when the patent was granted, and which formed a part of the contract between the parties. Nor is any such intention to be gathered from the words of the statute. The act of 1870 has not, in the practice of the Patent Office, been acted upon as retroactive. (*Apperly* vs. *Clinsold*, Com. Dec., 1870, p. 164.) This long-continued usage and practice of one of the departments of the Government is entitled to be considered by courts with great respect. The act of 1870, while repealing prior acts, contains a proviso saving all rights existing and all remedies which have arisen under any of said laws, and section 5597 of the Revised Statutes contains a similar provision. The patent of Graebe and Liebermann, assigned to the complainants, did not, therefore, expire when the English patent became void by the omission to pay the annual fees.

The subject of the patent is a new and useful composition of matter, being an improvement in dyes or coloring matter produced from anthracene, and styled in the reissue as "artificial alizarine." Before the invention of Graebe and Liebermann the word "alizarine," a word coined from the Arabic and modern Greek names for madder, was commercially applied to a class embracing different varieties of dye-stuffs obtained from the madder plant. These dye-stuffs owed their value not only to a crystallized compound, which can be obtained from the madder and some other plants, known as "alizarine," but also to other materials existing naturally in the madder, or produced by the action of fermentation, heat, and the like, and by the aid of chemicals. The term "alizarine" was also applied by chemists to a theoretically pure crystallized extract from madder, whose formula was $C^{14}H^8O^4$. These madder extracts were among the most valuable dye-stuffs known to the world, and to supply the great and constantly increasing demand for them large tracts of land were devoted to the raising of madder.

In 1868, Graebe and Liebermann, by a new process invented by them, produced their new composition of matter, now, for want of a name more accurately descriptive, called "artificial alizarine," a product unknown to both science and the arts at the date of their invention. Coal-tar, (a substance containing a large number of the compounds caused by the various reactions which take place when coal is subjected in close vessels to intense heat,) when submitted to a second distillation, yields at a very high temperature, as one of its products, anthracene, which, when purified, is a white waxy substance. From this body named "anthracene," Graebe and Liebermann, by the series of chemical treatments described in the specifications, built up a beautiful and complex product, an artificial dye-stuff, now known as "artificial alizarine." This was not a chemically pure alizarine. Their process stopped far short of the elimination from the product of the bodies other than chemically pure alizarine. In fact, the

presence of some of the other bodies appears to much enhance the value of the dye-stuff produced by their process. This product was one entirely new. The process by which they produced it was entirely new. Anthrapurpurine, isopurpurine, and other bodies, combined with alizarine in their product, are not known to have existed before they were produced by Graebe and Liebermann.

This composition of matter, which to a great degree has taken the place of madder preparations in the arts of dyeing and calico-printing, was new as to its origin. It was a purely artificial production, built up, as well described by Professors Morton, Hedrick, and Ordway, by a process of chemical synthesis from materials none of which contained it, or anything approaching to it, in character or properties. Its composition was new. It contained, combined with alizarine, other bodies of themselves effective dyeing agents before unknown, and existing for the first time when produced by Graebe and Liebermann. It was new not only in some of its new chemical properties, but in its capacity to produce, in dyeing and calico-printing, tints which cannot be obtained with the preparations of madder or any other dye-stuffs previously known.

Objection is made to the validity of the reissued patent upon which this bill is brought. Graebe and Leibermann, on the 5th of October, 1869, obtained letters patent of the United States, No. 95,465, in which, after describing their process in the words contained in the reissue, they made the following claim:

The within-described process for the production of alizarine, by first preparing bibromanthrakinon or bicloranthrakinon, and then converting these substances into alizarine, substantially as above set forth.

This patent was subsequently reissued in two divisions, one for the process and one for the product. In division B, upon which this suit is brought, they claim—

Artificial alizarine produced from anthracene or its derivatives by either of the methods herein described, or by any other method which will produce a like result.

The right to reissue in two divisions, one for the new process and one for the new product, is fully sustained by the opinion of Mr. Justice Clifford in *Goodyear* vs. *Providence Rubber Co.*, (2 Fisher, 510.)

No doubt can be entertained that a new product or manufacture, and a new process or method of producing the new article, are the proper subjects of separate and distinct claims in an original patent; and, if so, then it is equally clear that the patentee, under that provision, upon a return of the patent for correction and reissue, and upon complying with the conditions therein specified, may have several patents for the distinct and separate parts of his invention.

When a thing is produced new, in and of itself, it is patentable as a new manufacture. If it be capable of being produced by various different processes, yet, when the product is new, independent of the process, the patent is infringed by the unlicensed manufacture of the new product by any mode of manufacture, the process of manufacture being wholly unimportant. (*Merrill* vs. *Yocmans*, 1 Holmes, 331; *Goodyear* vs. *R. R.*, 1 Fisher, 632.) But defendants further contend that alizarine was a well-known substance long before the patent, and it could not be made the subject of any letters patent, and that the reissue is void as claiming alizarine broadly, and as claiming more than the invention described in the original. An examination of the original and the reissue will show that the same process and the same product is described in both. Before the invention, the name "alizarine" has been used as a generic term, applied to many different dye-stuffs, and yellow and green alizarines were in the market. Chemically pure alizarine existed only in the books, and a body approximating to it only in the laboratory of the chemist. As the new manufacture was intended to take the place of the dye-stuffs extracted from madder, and as, in common with those dye-stuffs, it owed a large proportion of its value as a dye to the presence of alizarine, it was not erroneous, although not accurately descriptive, to apply to this product of a distillation of coal treated with chemicals a name which had been applied to preparations from madder, without any more accuracy in one case than the other. Whatever Graebe and Liebermann called their product in the original or the reissue, it was a new product, and they showed what it was and how it could be produced. Pure alizarine, if it ever existed except in chemical notation or laboratory experiment, could not have been made the subject of a patent. Nor have Graebe and Liebermann undertaken to patent alizarine, if by alizarine is meant what was known before their inventions to chemists as the body existing in dye-stuffs prepared from the madder. What they have patented is the new composition of matter and the new manufacture, having the described properties, produced from anthracene by any process which will produce their new product.

Before the discovery of the aniline dyes, Dahme and Unverdorven, by treating indigo, obtained a new substance, which was called "aniline," from *anil*, the word used in some countries for indigo, as *al-nil* is the Arabic for the indigo plant. When a similar substance was obtained from coal-tar, it was also called "aniline." But calling the dye thus obtained from coal-tar by the same name as the dye extracted from the indigo plant did not make the aniline dyes and the indigo dyes identical, although they are in some respects identical in composition. So, when Graebe and Liebermann's new dye was discovered, they at first called it "alizarine," from the Arabic, *Al-zari*, name of the madder plant. But calling their extract from anthracene by the same name which had been applied to the extracts from madder did not necessarily imply that the two things were identical, as most surely they are not in fact, and are shown not to be by the specifications.

Reissue Division B must therefore be considered as a valid patent for a new manufacture and composition of matter, and as the evidence clearly proves an unlicensed use by the defendants, there must be a decree for injunction and account, according to the prayer of the bill.

U. S. Circuit Court—District of Connecticut.

HORATIO H. ABBE, EZRA G. CONE, ELIJAH C. BARTON, AND AUGUSTUS H. CONKLIN, COPARTNERS UNDER THE NAME OF GONG BELL MANUFACTURING COMPANY, *vs.* JONATHAN C. CLARK AND PAUL HILLIARD.

Reissue Letters Patent No. 6,644, granted E. C. Barton, September 14, 1875, for a toy, construed to be for "the combination of two connected wheels with a bell or bells arranged between and upon the axle of the wheels, which bells are connected with the wheels so as to revolve therewith, and to ring when revolving."

The invention is patentable, and is infringed by a toy consisting of a pair of wheels connected by a hollow drum or axle in which are attached bells that revolve simultaneously with the wheels, and ring while revolving; likewise, it is infringed by a toy in which one of a pair of wheels connected by bent metallic rims or axles has an attached sleigh-bell, which is encircled by the rims, and which revolves with the wheels, and rings as it does so.

It is no enlargement of the invention to draw the reissue claim so as to cover various kinds of bell, the original being laid simply to a gong-shaped bell. The drawings and specification clearly show that the form of bell is not an essential characteristic of the invention, and it is manifest that the original claim must have been unnecessarily limited.

[*J. C. Clayton* for the complainants; *W. E. Simonds* for the defendants.]

OPINION.—*February* 4, 1878.

SHIPMAN, *J.*:

This is a bill in equity to restrain the defendants from the alleged infringement of reissued letters patent which were granted to the plaintiffs, as assignees of Elijah C. Barton, on September 14, 1875. The original patent was dated May 19, 1874.

The invention is a child's toy, and, as shown in the drawings attached to the patent, is a pair of wheels connected by an axle, in combination with two open-mouthed or gong-shaped bells mounted upon the axle and between the wheels, so as to revolve therewith, and to be caused to ring whenever the wheels are rotated. A tongue or draft-bar is also connected with the wheels, so as to allow the wheels and bells to be rotated independently of the draft-bar.

The three claims of the reissue are—

1. The combination, with the connected wheels A A, of one or more bells arranged between and connected to said wheels, so as to revolve simultaneously therewith, and to ring when so revolving.
2. The combination of the loosely-connected tongue or draft-bar I' with the wheels A A and intermediately-arranged revolving bell or bells.
3. The combination of the following elements: the wheels A A, a pair of open-mouthed or gong-shaped bells, C C, provided with striking mechanism, and an axle or cross-rod, B, connecting the said wheels.

The defendants manufacture and sell two toys. The first consists of a pair of wheels connected with each other by a drum or large hollow axle. Sleigh-bells are attached to the inside of the drum or axle, between the wheels, by elastic or rigid connections, which bells revolve simultaneously with the wheels, and ring when revolving. The second toy consists of a pair of wheels connected with each other by bent metallic rims or axles, and attached to one wheel, and encircled by the rims, is a sleigh-bell, which revolves with the wheels, and rings as it revolves. In each device a bail is so connected with the axle and wheels as to allow the wheels to revolve independently of the bail.

The defendants deny the novelty of the patented invention, and also deny infringement.

The record shows that prior to the date of plaintiffs' original patent the following inventions were known in the art: First, the toy of Joseph Dewell, invented in 1865, and patented May 26, 1874, which consists of a ring made of a piece or pieces of leather, or some similar material, with one or more bells attached to the inner periphery of the ring. Second, the Crawford and Hervey patent, dated November 19, 1867, the Charles C. Johnson patent of March 23, 1869, the English patent of William Robert Lake, filed April 20, 1869, and the Rivera Ward patent of December 22, 1870. All these devices are children's trundling-hoops, to which are attached in various ways, either upon the inside of the hoops or upon the spokes, bells, which ring as the hoop is trundled. Third, the George W. Brown patent of June 25, 1872, which consists of a pair of connected wheels of different diameters. It has a bell which rings by the jolting of the vehicle, but has no bell connected with the wheels so as to revolve simultaneously therewith. Fourth, the bell of William H. Nichols, patented August 27, 1872, which is a call-bell composed of two open-mouthed gong-bells which revolve upon a fixed horizontal shaft.

No one of these articles has the characteristic features of the plaintiffs' device, but are widely removed from their toy. The evidence in regard to the pre-existing devices shows that Barton's invention consisted in the combination of two connected wheels, with a bell or bells arranged between, and upon the axle of the wheels, which bells are connected with the wheels so as to revolve therewith, and to ring when revolving, the arrangement of wheels and bells being substantially as described. The load of bells is put between the connected wheels, and the bells revolve with the revolving wheels. He had apparently no predecessor in this combination.

It cannot be earnestly denied that the defendants' toys infringe the terms of the first and second claims of the reissue, if the plaintiffs are entitled to the described combination of connected wheels with a bell or bells of any shape. But it is insisted that in the original patent the invention was limited to gong-shaped bells, and that the first and second claims of the reissue are void unless the bell or bells which are therein mentioned are also thus limited. It is true that the plaintiffs' original specification and drawings describe gong-bells, and that the claim of the original patent was for a combination of the wheels with a pair of open-mouthed or gong-shaped bells, &c. There is no difference between the drawings of the patents, and no substantial difference in the descriptive portion of the two specifications.

"The purpose of a surrender and reissue is not to introduce new features, ingredients, or devices, but to render effectual the actual invention for which the original patent should have been granted," (*Collar Company* vs. *Van Dusen*, 23 Wall., 530;) but the actual invention is to be shown, suggested, or substantially indicated in the original specification, drawings, or models, and the scope or effect of the invention is not to be enlarged so as to include what was not so shown, suggested, or indicated. An inspection of the drawings and specification in this case clearly suggests that the shape of the bells was not an essential feature of the invention, but that their shape or form could be greatly modified, while the essential characteristics of the invention were unaltered. A moderate degree of mechanical skill could substitute a sleigh-bell or an ordinary open-mouthed bell for a gong-bell. The actual invention was indicated by the device as shown in the patent; but it was so claimed that any one might take advantage of and have the benefit of the original thought by a substitution of one form of bell for another. In order to protect inventors who have taken patents which are inoperative by reason of such inadvertence, the statute has provided for a surrender and reissue. The strong tendency of recent decisions has properly been to restrict reissue to the precise thing which the patentee invented, and which he had shown or had indicated in the specification or drawings, and not permit patentees to expand their claims and take in whatever improvements subsequent inventors have made. But in this case the invention manifestly had a wider scope than was claimed in the original patent.

It follows that the first and second claims have been infringed.

Let a decree be entered for an injunction and an account.

U. S. Circuit Court—District of Massachusetts.

GEORGE DRAPER *vs.* THE POTOMSKA MILLS CORPORATION.

[*In Equity*—No. 494.]

1st, 3d, 4th, and 6th claims of Reissue 6,016 referred to in the decision.

1. In combination with the compound spindle having the whirl fixed to its sleeve, the bobbin fitted to that part of the said compound spindle which is above the sleeve thereof, and extended downward, so as to encompass the sleeve.

3. The combination of the compound live-spindle and the whirl, fixed to the lower part of the sleeve thereof, with the bobbin extended down around the sleeve, and bearing thereon and on the part of the spindle which is above the sleeve.

4. The compound live-spindle, and the whirl fixed thereto, combined with the bolster extended up within the sleeve of the spindle, and with the bobbin encompassing the sleeve, and bearing thereon and on that part of the spindle which is above the sleeve.

6. The whirl, the compound live-spindle D E, and the bolster A, arranged substantially as set forth, when combined with the bobbin, so applied to the said spindle as to encompass it and have bearings upon the parts of it extending both above and below the top of the bolster.

An imperfect and incomplete invention resting in mere theory, or in intellectual notion, or in uncertain experiments, and not actually reduced to practice, and embodied in some distinct machinery, apparatus, manufacture, or composition of matter, is not patentable.

Illustrated drawings of conceived ideas do not constitute an invention, and unless they are followed up by a seasonable observance of the requirements of the patent laws, they can have no effect upon a subsequently-granted patent to another.

Where a patent is assailed for lack of novelty, sketches and drawings may be resorted to to fix the date of inceptive invention, and if there has been no unreasonable delay subsequently in adapting the invention and applying for patent, the protection of the patent will be carried back to the date thus established.

To introduce new words or phrases which are more aptly descriptive does not invalidate a reissue, the invention set forth being the same as in the original patent.

The combined spindle and bobbin (reissue Letters Patent No. 6,016, granted August 18, 1874.) is novel, useful, and patentable, and is infringed by combining a spindle and bobbin so that the spindle, bolster, and sleeve will permit a quill-bobbin of ordinary size to come down and so encompass the same as to take one bearing upon the sleeve below the top of the bolster, and another upon the spindle above the sleeve or bolster, the sleeve carrying the whirl between the bolster and the step.

[*Chauncey Smith* and *A. K. P. Joy*, for complainant; *Benjamin F. Thurston* and *D. Hall Rice*, for defendant.]

SHEPLEY, *J.*:

This case has been argued at great length and with great ability, upon a record of over eleven hundred pages of testimony. I will state as briefly as possible the conclusions to which the court has arrived after a careful consideration of the evidence and the elaborate arguments of counsel.

First, that the invention by Draper of a combined spindle and bobbin, the spindle consisting of a shaft having a sleeve attached to it which extends down over the tubular and elevated bolster, and below the bolster, to carry the whirl between the bolster and the step, and fitted for a bobbin to extend below the top of the bolster, the bobbin having a bearing above the bolster, and another below the bolster upon the sleeve, as described in his patent, Reissue No. 6,016, dated August 18, 1874, was novel, useful, and patentable.

Second, that the said Draper is entitled, upon the evidence in this record, to date his invention as having been substantially made by him as early as May 13, 1871, and fully perfected and embodied in an operative spindle and bobbin prior to January 19, 1872.

An imperfect and incomplete invention, resting in mere theory, or in intellectual notion, or in uncertain experiments, and not actually reduced to practice and embodied in some distinct machinery, apparatus, manufacture, or composition of matter, is not, and indeed cannot be, patentable under our patent acts, since it is impossible, under such circumstances, to comply with the fundamental requisites of those acts. (*Reed* vs. *Cutter*, 1 Story, 590.) Illustrated drawings of conceived ideas do not constitute an invention, and unless they are followed up by a seasonable observance of the requirements of the patent laws, they can have no effect upon a subsequently-granted patent to another. But a patentee whose patent is assailed upon the ground of want of novelty, may show by sketches and drawings the date of his inceptive invention, and, if he has exercised reasonable diligence in perfecting and adapting it, and in applying for his patent, its protection will be carried back to such date. (*Reeves* vs. *The Keystone Bridge Company*, 1 OFFICIAL GAZETTE, 466.) The drawings made by Draper, and exhibited to Sawyer, May 13, 1871, exhibit a matured and perfected invention in the mind of the inventor, requiring only an embodiment in an operative spindle and bobbin to entitle him to a patent. As there was no unreasonable delay or want of diligence in perfecting and adapting the invention and applying for a patent, I see no reason, upon the evidence in this record, why the protection of his patent should not be carried back to that date.

I therefore find, third, that Draper was the original and first inventor of what is claimed by him in the reissued patent aforesaid, and was not anticipated by any of the persons whose prior knowledge and use are alleged as matter of defense in the answer of respondents.

Upon a comparison of the reissued with the original patent, no new invention is found to be described or claimed in the reissue, or anything which is not clearly indicated and claimed as invention in the original. The "new matter" relied upon by defendants proves to be only new words or phrases more aptly describing the old invention. The same construction and combination of spindle and bobbin are claimed in the reissue as in the original. The fourth conclusion, therefore, is that the reissued patent is valid.

Fifth, the respondents, by constructing and combining their spindle and bobbin, as proved, so that the spindle, bolster, and sleeve will permit a quill-bobbin of ordinary size to come down and so encompass the same as to take one bearing upon the sleeve below the top of the bolster, and another upon the spindle above the sleeve or bolster, the sleeve carrying the whirl between the bolster and the step, have infringed the first, third, fourth, and sixth claims of the reissued patent.

Decree for injunction and account as prayed for in complainant's bill.

U. S. Circuit Court—Northern District of Ohio.

JAMES S. AND THOS. B. ATTERBURY *vs.* JOS. G. GILL, ADMINISTRATOR OF ANDREW J. BEATTY, DECEASED.

[*In Equity.—On demurrer to bill of revivor and motion to strike of demurrer.—Decided December 28, 1877.*]

A bill of revivor brought under Rule 56 of court, the respondent having died while the case was before a commissioner to assess amount of award, and after interlocutory decree establishing the validity and infringement of complainants' patent, will not revive the case under the rule unless an order is made to that effect.

No order reviving the case having been made, a demurrer to the bill of revivor was allowed to stand, although entered without leave.

Proceedings in equity for infringement of patents are not strictly proceedings for torts. Aside from the restraint by perpetual injunction, an infringer must account as trustee for profits realized, and is liable for the damage of infringement; hence, where a decree had settled the question of infringement, and the case had been referred to a master to ascertain the amount for which final decree should be entered, pending which the respondent died, the action was held to survive notwithstanding.

[*Bakewell & Kerr*, counsel for complainants; *Prentiss, Baldwin & Ford*, counsel for defendant.]

WELKER, *J.*:

The complainants, in original bill, complained against respondent Beatty for infringement of their patent for an improved jelly-glass. Answer was filed by respondent, and testimony taken and hearing had, and decree for complainants establishing validity of patent and infringement by the respondent, and referring it to commissioner to take account of profits and damages.

After this decree and reference, and before account was taken, the respondent died. After the expiration of rule-day, to answer a bill of revivor, under Rule 56, the administrator of respondent filed a demurrer to the bill of revivor, and motion was made by complainant to strike the demurrer from the files. At the time the rule to answer expired, and prior to the filing of the demurrer, no order had been made reviving the suit against the administrator, nor had the administrator obtained leave to file the demurrer:

Held, that, under Rule 56, the case was not revived unless an order to that effect was made, and that, in this particular case, the demurrer was allowed to stand as if filed in rule, and the motion overruled.

Survivor of actions for infringement of patents against the administrator of the infringer after a decree for injunction and reference to master to assess amount for which decree was to be entered:

Held, 1. That although, as a general rule, actions for torts do not survive against the representatives of deceased defendants pending the suit, yet these proceedings in equity for infringement of patents are not strictly proceedings for torts. The respondent who infringes a patent is held in equity as a trustee of the owner of the patent, and compelled to account to him for the profits realized from the manufacture of the infringing machine or products.

The infringer is also liable to the patentee for damages for such infringement, and both of these causes of action are combined in the case in equity, as well as the prayer for perpetual injunction.

2. That in this case, the decree having settled the question of infringement, and the case having been referred to master before the death of respondent, to ascertain the amount for which the decree should be rendered, which will embody either both or one of the claims of claimant, therefore the action does survive.

The demurrer is overruled and order of revival entered.

Circuit Court of the United States—District of Massachusetts.

HUGH W. COLLENDER *vs.* AMASA W. BAILEY.

[*In Equity—No. 512.—Decided February 4, 1878.*]

The claim in Reissue Letters Patent No. 2,511, granted to H. W. Collender, March 19, 1867, for cushions for billiard-tables, construed to be for the art or process of making the cushion, and not for the cushion itself, as completed.

[*James E. Maynadier*, for complainant; *Henry D. Hyde*, for defendant.]

OPINION OF THE COURT.

SHEPLEY, *J.*:

Reissued Patent No. 2,511, to Hugh W. Collender, dated March 19, 1867, is for an "improvement in cushions for billiard-tables. One of the questions presented in this case is, whether the patent is for an improvement in the mode of making the cushion or for the improved cushion thus made—in other words, whether the patent is for a "new manufacture," or a "new art" or process. The words of the claim clearly apply to a new art or process of making the cushion. The claim is as follows:

I do not claim in this application the use of two rubbers of different densities, as this is covered by a former patent of mine; nor do I claim a steel strip, a whalebone strip, or any other substances which are used with a view of producing a cushion which has an elastic foundation and a comparatively solid face; but what I claim as my invention, and desire to secure by Letters Patent, is: Uniting the parts employed in forming combination billiard-cushions by placing the harder or more dense and less elastic substances in a mold, and allowing the melted rubber to flow against, around, or into the harder or more dense and less elastic substances, or causing the plastic rubber, by pressure, to unite with the same, and then vulcanizing the india-rubber, substantially as and for the purposes set forth.

In the case of *Collender* vs. *Came*, decided by Mr. Justice Clifford, in this circuit, at the May term, 1876, it did not become necessary for the court to decide whether the reissued patent of the complainant was for an art or a manufacture, as the defendant in that case used the Collender process and made the Collender product. In this case it becomes necessary to decide that question, for only eight of the cushions proved to have been made by the defendant were made by the process described by Collender, while others made by a different process are claimed by complainant to be the equivalents of his product. In this case the patent is construed to be for the *art* of—

Uniting the parts employed in forming combination billiard-cushions by placing the harder or more dense and less elastic substances in a mold, and allowing the melted rubber to flow against, around, or into the harder or more dense and less elastic substances, or causing the plastic rubber, by pressure, to unite with the same, and then vulcanizing the india-rubber, substantially as and for the purposes set forth.

Under this construction of the patent, defendant is only liable for infringement, by reason of making eight sets of cushions by the Collender process.

The decree will be for the complainant for an injunction against the use of the Collender process, and for the profits from the use of the eight sets of cushions, and for one-half of complainant's costs.

TRADE-MARKS.

[Each certificate bearing date February 12, 1878.]

5,626.—TOILET PREPARATION FOR THE COMPLEXION.—*Justus A. Burnham*, Chicago, Ill. Application filed December 14, 1877.

"A cut representing an urn-shaped vessel with the words 'MILK OF ROSES' inscribed thereon, the same surrounded by figures of little angels dropping in roses, one of the angels, with pestle, compounding the same, as shown."

5,627.—FERTILIZERS.—*W. H. Bowker & Co.*, Boston, Mass. Application filed December 26, 1877.

"The fanciful words 'HILL AND DRILL.'"

5,628.—SALERATUS AND SODA.—*Church & Co.*, New York, N. Y. Application filed December 27, 1877.

"The words and letters 'CHURCH & CO.'S' and the representation of the uplifted arm of a mechanic holding in the hand a hammer.

5,629.—SALERATUS.—*Church & Co.*, New York, N. Y. Application filed December 27, 1877.

"The words and letters 'CHURCH & CO.'S,' the word-symbol 'HOME,' and the representation of a child in a sitting posture holding in its hands biscuits or rolls, while upon a table are placed biscuits or rolls."

5,630.—COLOGNE.—*E. W. Hoyt & Co.*, Lowell, Mass. Application filed September 28, 1877.

"The symbol of an oblique-angled parallelogram."

5,631.—FLUIDS FOR PREVENTING INCRUSTATION IN STEAM-BOILERS.—*John Harper Morris*, Richmond, Va. Application filed November 22, 1877.

"The word 'SALAMANDER.'"

5,632.—RUFFLING.—*D. Miller & Co.*, New York, N. Y. Application filed December 31, 1877.

"The word-symbol 'COLUMBIA.'"

5,633.—CANDLES.—*Procter & Gamble*, Cincinnati, Ohio. Application filed December 26, 1877.

"A parallelogram, the perimeter of which consists of a fanciful bordering composed of right lines and crosses, which parallelogram contains at the left upper corner a circular figure, composed of a representation of thirteen stars and a profile similar to that of a human face; to the right thereof certain numerals, intended to designate the size and the quantity of the candles—as, for example, '12' or '14' for the size and '20' for the quantity; and at the right of said numerals the word 'Extra,' and thereunder is the word 'Adamantine' in block letters; then a broad bar, followed by the word 'Candles;' then a line; then the words 'Procter & Gamble' in fanciful letters, and ending with the name 'Cincinnati.'"

5,634.—WATCH-SPRINGS.—*Susefeld, Lorsch & Co.*, New York, N. Y. Application filed October 13, 1877.

"The arbitrary designation 'M. PARADIS.'"

5,635.—STARCH.—*The Buffalo Grape Sugar Company*, Buffalo, N. Y. Application filed December 21, 1877.

"The pictorial representation of a steamboat."

5,636.—STARCH.—*The Buffalo Grape Sugar Company*, Buffalo, N. Y. Application filed December 21, 1877.

"An oval field containing a number of corn-ears."

5,637.—WATER-PROOF WEARING-APPAREL.—*Charles E. Tuthill*, Greenport, N. Y. Application filed December 29, 1877.

"The fanciful words 'LONG ISLAND,' inclosed within an elliptical-shaped symbol, as shown."

5,638.—WHEAT, CORN, AND RYE FLOUR.—*Union Steam Mills Company*, St. Louis, Mo. Application filed December 1, 1877.

"The words 'CALLA LILY,' in connection with the device showing calla lilies and the words 'Union Steam Mills Co., St. Louis, Mo.'"

5,639.—WHEAT, CORN, AND RYE FLOUR.—*Union Steam Mills Company*, St. Louis, Mo. Application filed December 1, 1877.

"The words 'STARRY CROWN,' with the device showing starry crown, and the words 'Union Steam Mills Co., St. Louis, Mo.'"

5,640.—WHEAT, CORN, AND RYE FLOUR.—*Union Steam Mills Company*, St. Louis, Mo. Application filed December 1, 1877.

"The words 'WATER LILY,' in connection with the device showing vase of water-lilies and the words 'Union Steam Mills Co., St. Louis, Mo.'"

5,641.—MACHINERY-GREASE.—*Union Lubricator Manufacturing Company*, Boston, Mass. Application filed October 1, 1877.

"The words 'UNION LUBRICATOR MANUFACTURING CO.,' arranged as shown in the accompanying fac-simile, in connection with a representation of a cask and canisters, and a shield with stars and stripes."

5,642.—NEWSPAPER PERIODICAL.—*The American Plumbers' Publishing Company*, New York, N. Y. Application filed December 8, 1877.

"The said words 'THE PLUMBER AND SANITARY ENGINEER,' and their peculiar arrangement, and type on the title-page."

5,643.—ALL KINDS OF MANUFACTURED TOBACCO.—*Allen & Co.*, New York, N. Y. Application filed November 20, 1877.

"The word-symbol 'SPECIE.'"

5,644.—LEAD-PENCILS.—*Eberhard Faber*, Port Richmond, N. Y. Application filed January 19, 1878.

"The word-symbol 'SIBERIAN.'"

5,645.—LEAD-PENCILS.—*Eberhard Faber*, Port Richmond, N. Y. Application filed January 19, 1878.

"The fanciful title 'ROUND GILT.'"

5,646.—LEAD-PENCILS.—*Eberhard Faber*, Port Richmond, N. Y. Application filed January 19, 1878.

"The fanciful title 'HEXAGON GILT.'"

5,647.—MEDICINAL PREPARATIONS OF THE COCA-LEAF.—*Charles M. Fletcher*, Brooklyn, N. Y. Application filed January 21, 1878.

"A circular band, upon which are the words 'Atahuallpa Inca,' and within the band the head of an Indian crowned with a circular plume of feathers. At the four opposite sides of the band, projecting outward, are lozenge-shaped figures, simulating in general effect a cross, and connected with each other by a wreath of leaves.

5,648.—POLISH FOR METALS AND GLASS.—*John P. Haines*, New York, N. Y. Application filed January 19, 1878.

"The word-symbol 'LUSTERINE.'"

5,649.—BOTTLE-STOPPERS.—*Karl Hutter*, New York, N. Y. Application filed January 22, 1878.

"The word-symbol 'LIGHTNING.'"

5,650.—CIGARS AND CIGARETTES.—*Levy Brothers*, New York, N. Y. Application filed January 18, 1878.

"The word-symbol 'LEGION OF HONOR.'"

5,651.—CIGARS AND CIGARETTES.—*Levy Brothers*, New York, N. Y. Application filed January 18, 1878.

"The representation of a Maltese cross, with three medallion heads arranged thereon, as shown."

5,652.—CIGARS.—*Liebes Brothers & Co.*, San Francisco, Cal. Application filed January 21, 1878.

"The word-symbol 'GANYMEDE,' in connection with the representation of Ganymede and the eagle."

5,653.—CIGARS.—*Liebes Brothers & Co.*, San Francisco, Cal. Application filed January 21, 1878.

"The word-symbol 'ERIN,' in connection with the representation of a female playing upon a harp."

5,654.—MEDICINES FOR HORSES, CATTLE, AND POULTRY.—*Frederic A. Miller*, Philadelphia, Pa. Application filed January 19, 1878.

"A bull running away and a man in ordinary costume chasing and seizing him by the horns."

5,655.—PENS, PENCILS, AND PEN-HOLDERS.—*The Joseph Dixon Crucible Company*, Jersey City, N. J. Application filed February 8, 1878.

"The word-symbol 'VELVET.'"

5,656.—MEDICAL COMPOUND.—*Romano Vlahov*, Sebenico, Dalmatia, Austria. Application filed January 21, 1878.

"A shield with three crowned leopard heads arranged on the inner field of the same."

LABELS.

[Each certificate bearing date February 12, 1878.]

1,399.—Title: "HOOKER'S STOMACH BITTERS."—*James C. Ferre*, Springfield, Mass. Application filed December 12, 1877.

1,400.—Title: "COCA BITTERS, THE GREAT SOUTH AMERICAN TONIC."—*Charles M. Fletcher*, New York, N. Y. Application filed January 21, 1878.

1,401.—Title: "LEGION OF HONOR."—*Levy Brothers*, New York, N. Y. Application filed January 18, 1878.

1,402.—Title: "TO PROTECT THE PUBLIC AGAINST COUNTERFEITS," &c.—*Frederic A. Miller*, Philadelphia, Pa. Application filed January 19, 1878.

1,403.—Title: "SHILOH'S BELLADONNA PLASTER."—*Schuyler C. Wells*, Le Roy, N. Y. Application filed January 24, 1878.

1,404.—Title: "WOOD'S SACCHARINE ANTISEPTIC."—*Mary M. Wood*, Brooklyn, N. Y. Application filed February 1, 1878.

DESIGNS.

[Each design bearing date February 12, 1878.]

10,443 and 10,444.—CARPETS.—*Robert Allen*, Yonkers, N. Y., assignor to *Alexander Smith & Sons Carpet Company*, same place. Applications filed January 10, 1878. Term of patents 3½ years.

10,445.—SLEEVELESS CROCHETED JACKET.—*John Holmes*, Boston, Mass. Application filed January 11, 1878. Term of patent 3½ years.

10,446 and 10,447.—FONT OF PRINTING-TYPES.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Applications filed December 6, and August 20, 1877. Term of patents 14 years.

10,448.—FRINGED LACE FABRIC.—*Warren P. Jennings*, Brooklyn, N. Y. Application filed January 9, 1878. Term of patent 7 years.

10,449.—CARPETS.—*William A. Pardoe*, Yonkers, N. Y., assignor to *Alexander Smith & Sons Carpet Company*, same place. Application filed January 10, 1878. Term of patent 3½ years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

FEBRUARY 12, 1878.

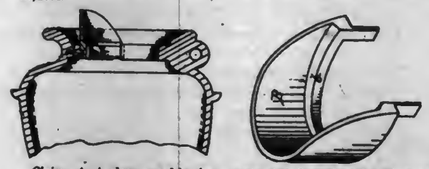
200,119. SAFETY-VALVE. Henry G. Ashton, Somerville, Mass., assignor to Ashton Valve Company, Hartford, Conn. Filed Dec. 4, 1877.



Claim.—1. In a safety-valve, the valve h, having the chamber e, in combination with the seat f, cylinder d, and casing f n, arranged to operate substantially as described.

2. In a safety-valve, the valve h, having the perforated annular projection h' and chamber e, in combination with the seat f, substantially as described.

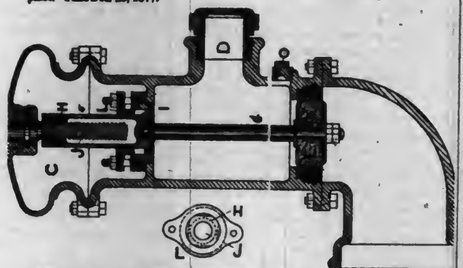
200,120. METAL-LIPPED GLASS VESSELS. Thomas B. Atterbury, Pittsburg, Pa. Filed Jan. 17, 1878.



Claim.—1. A glass vessel having a contracted flanged neck and metallic pouring-lip, substantially as specified.

2. A hollow article of glassware of the class specified, having a contracted rabbeted orifice to receive a metallic lip, and a metallic lip provided with clamping-lugs to secure it to the glass article, substantially as and for the purpose specified.

200,121. HYDRANTS. Alvah C. Austin, Oakland, Cal., assignor to Anthony Chabot, same place. Filed Dec. 18, 1877.



Claim.—As a means of operating the valve of a hydrant, the combination, with the screw-spindle J, acting as prime mover, of a polygon sleeve or nut, H, guided in a stuffing-box, I, having a gland, L, fitting the exterior of said sleeve H, the said sleeve H being connected with the valve-stem G, as herein set forth, and for the purpose described.

200,122. COMPOSITION ROOFS. Michael B. Bailey, Chicago, Ill., assignor of one-half his right to Frank Bauer, same place. Filed June 11, 1877.

Brief.—On a battened roof is spread a course of felt and painted with a fire-proof compound or paint. On this layer of felt is spread a one-fourth-inch layer of the following compound: Two barrels Portland cement, two barrels coarse screened sand, eighty pounds asphaltum, and three pounds gum-shellac. On top of this compound is placed another layer of felt, secured at its edges by strips of tin, and heavily coated with an elastic fire-proof paint, and the final finish of sand and gravel, or gravel.



Claim.—1. The roof herein described, composed of the layer of felt b, the composition c, the felt d, and the paint and gravel f, the same being applied in the order named, substantially as set forth.

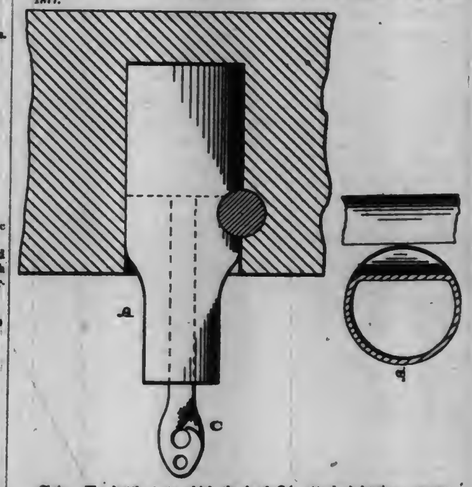
2. The compound or composition consisting of Portland cement, coarse screened sand, asphaltum, and gum-shellac, in the proportions and combined in the manner described.

200,123. COMPOSITIONS FOR PAVEMENTS. Eugene S. Bradford, Springfield, Ill. Filed Nov. 21, 1877.

Brief.—A vessel containing water and asphaltum is heated so as to dissolve the asphaltum, the asphaltum remaining on the surface of the water. Pulverized mineral or earthy substances are then fed into the kettle. The mineral and earthy substances are saturated as they pass through the asphaltum into the water beneath, where the particles are freed from the surplus asphaltum, which rises to the surface or mass of asphaltum above.

Claim.—The process herein described of saturating pulverized mineral or earthy matters with asphaltum or other agglutinating material which will float on water, by passing the pulverized mineral or earthy matter through the asphaltum into the water, whereby the surplus of asphaltum is thrown off, substantially as described, and for the purpose set forth.

200,124. TELEGRAPH-INSULATORS. David Brooks, Jr., Philadelphia, Pa. Filed Apr. 19, 1877.



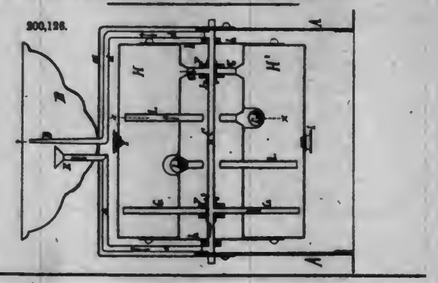
Claim.—The bottle A, to which the hook C is attached, having a groove or flute blown in its side, substantially as and for the purpose set forth.

200,125. BARBS FOR FENCE-WIRES. Charles Brunner, Peru, and Hiram Reynolds, La Salle, Ill. Filed Mar. 24, 1877.



Claim.—The barbed washers a b c, in combination with the staples d and a fence-wire, substantially as and for the purposes shown and described.

200,126.

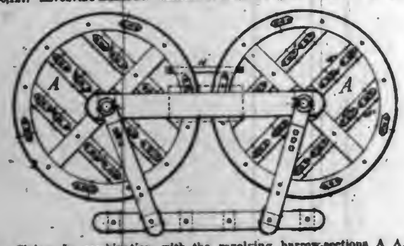


200,126. PARLOR-FOUNTAINS. Fritz Buchhara, Chicago, Ill. Filed Jan. 17, 1878.

Claim.—1. A parlor-fountain and, in combination therewith, the vessels H and H_1, so connected with each other and with the nozzle D and funnel E by pipes and valves that their relative positions can be interchanged without disconnection, and without impairing the operating faculties of the same, substantially in the manner and for the purpose set forth.

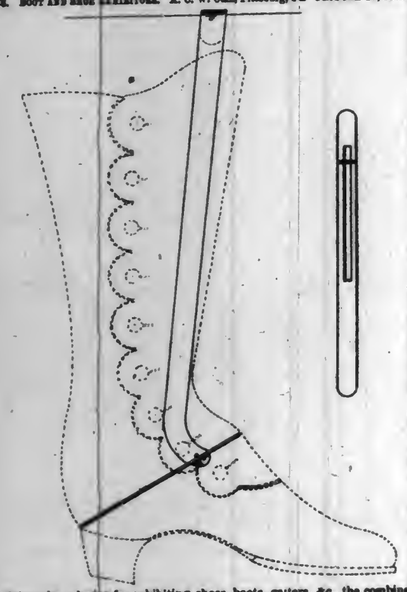
2. The vessels H and H', arranged to swing around a hollow shaft or trunnion, C, connected with nozzle D and funnel E, and having faucets or valves F f, pipes G g, valves *l l*, and pipes L L, all constructed, arranged, and operating substantially in the manner described and shown.

200,127. REVOLVING HARROWS. Christian Bunck, Lansing, Ill. Filed Dec. 10, 1877.



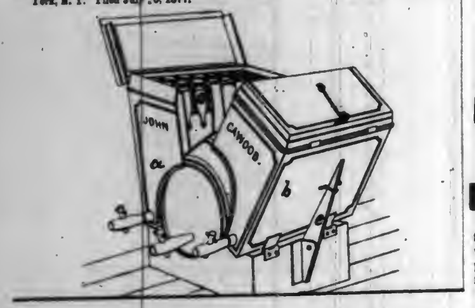
Claim.—In combination with the revolving harrow-sections A A, the coupling-bolt H, inserted through their rims, substantially in the manner herein set forth, for the purpose specified.

200,128. BOOT AND SHOE REPELLENTS. A. C. W. Cain, Pittsburg, Pa. Filed Jan. 17, 1878.



Claim.—In a device for exhibiting shoes, boots, gaiters, &c., the combination of the cross or supporting bar and the suspension-piece, the suspension-piece being pivoted to the cross-bar off its center, so as to form a long and short arm, substantially as and for the purpose specified.

200,129. REFRIGERATORS FOR COOLING BEER KEGS AND BOTTLES. John Cawood, New York, N. Y. Filed July 10, 1877.



Claim.—1. The ice-box constructed in two parts, a and *b*, hinged at the bottom, to open away from each other at the top, substantially as described.

2. The brackets *c*, hinged to the rack and held by staples to the boxes, for the purpose of supporting the latter, in the manner described.

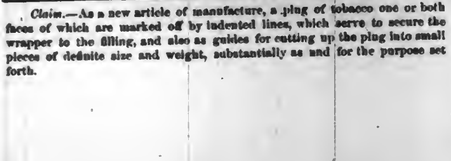
200,130. JOINING SHEET METAL TO WIRE-CLOTH FOR THE CONSTRUCTION OF FLY-TRAPS, &c. S. M. Cook, Boston, Mass. Filed June 14, 1877.

Brief.—For bottoms of fly-traps, sieves, &c., used instead of bent or twisted wire staples.



Claim.—The combination of the sheet-metal disk or bottom A, having struck-up points E, with the woven-wire part B, the said points being bent or clinched over the wire, as and for the purposes set forth.

200,131. CUTTING-PRESSES. William L. Cousland, Philadelphia, Pa. Filed Apr. 19, 1877.



Claim.—The combination of a movable guide-post, attached to the upper pressure-bed or platen, raised or lowered by means of a lock-motion, consisting of a movable spiral, turned by a hand-wheel, and engaged with button-heads or teeth placed on the guide-post, together with a toggle-joint, operated by a lever-cam and connecting-rod, substantially as set forth.

200,132. FENCES. John G. Drake, Little Rock, Ark., assignor of one-half his right to Charles O. Kimball, same place. Filed Nov. 6, 1877.

Claim.—1. As an improvement in the art of building fences, the method herein described of uniting the several elements necessary to form the intermediate panels—that is to say, resting the ordinary split rails one upon another, between the double vertical stakes, holding them down by means of the wire bands *a a*, securing the upper rows of rails at their central points by means of the crossed inclined stakes, and holding the riders down by bands *b b* at their central points, said riders being also supported at their extremities by the inclined stakes, all the parts being united substantially as shown and described, for the purpose of resisting the overturning action of high water and of stock, as explained.

2. As an improvement in the art of building fences, the method herein described of uniting the several elements necessary to form the end panels—that is to say, resting the ordinary split rails one upon another, the several rows of lower rails being held in place by bands *a a* at their ends, causing the inclined cross-stakes E E to bear down upon the central points of said rails, arranging the vertical stakes at or near the end of each of the said panels and at the corners, as shown, and holding the riders F F down by the bands *b b*, the corner or end riders being longer than the others, and the whole being united as and for the purposes set forth.

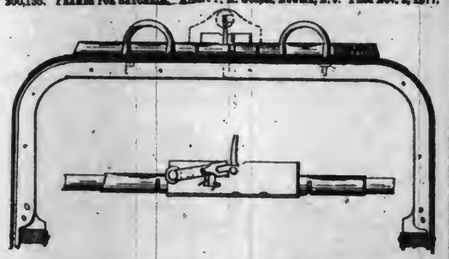
200,133. MARKING PLUG-TOBACCO. James T. Drummond, Alton, Ill. Filed Nov. 6, 1877.

Claim.—As a new article of manufacture, a plug of tobacco one or both faces of which are marked off by indented lines, which serve to secure the wrapper to the filling, and also as guides for cutting up the plug into small pieces of definite size and weight, substantially as and for the purpose set forth.

200,134. PROCESSES FOR UTILIZING ZINC SULPHATE. Constantine Fahlberg, Baltimore, Md. Filed Jan. 10, 1878.

Claim.—The process herein described for the utilization of zinc sulphate, consisting in first precipitating the zinc as carbonate by means of sodium carbonate or bicarbonate, and then recovering the sodium bicarbonate by an ammonio-soda process, thus making the whole continuous.

200,135. FRAMES FOR SATCHELS. Albert F. H. Gospel, Newark, N. J. Filed Nov. 2, 1877.



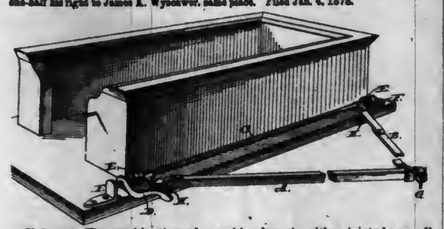
Claim.—1. As a means for locking satchel-frames at one or more points, a continuous bolt having a spring action, and operated by a rotary shank, in combination with a suitable number of locking-catches, substantially as set forth.

2. In a satchel-frame, a pair of jaws having an opening tension produced by a spiral spring, secured upon or near the hinges thereof, substantially as specified.

3. In a satchel-frame, a spring-bolt engaging the locking-catches at one or more points, in combination with the spiral springs for opening the jaws, substantially as set forth.

4. A satchel-frame the jaws of which are secured together at two or more points by a slidiag spring-bolt, actuated by a rotary knob placed on the side of the frame, substantially as set forth.

200,136. PUSHING-BARS FOR RAILWAY-CARS. Isaac S. Goldman, Edinburg, Ill., assignor of one-half his right to James K. Wycoswer, same place. Filed Jan. 4, 1878.



Claim.—1. The combination of a pushing-bar, A, with a jointed arm, B, and end band and hook G, substantially as described.

2 The combination of a pushing-bar, A, and jointed arm B, and end band and hook G with a horizontal rod, C, provided with joints and bearings, substantially as described.

3. The combination of a pushing-bar, A, and jointed arm B, end band and hook G, and rod C with rubber balls E E, castings F F, lever D, and castings H H, substantially as described.

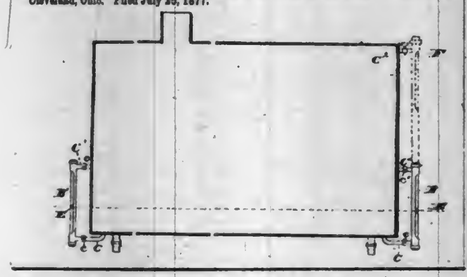
200,137. SLATE-FRAME ATTACHMENTS. Charles Goldthwait, South Weymouth, Mass. Filed Jan. 2, 1878.



Claim.—1. The combination of the stud *b* with the pencil-sharpener D and the dust-receiver B, as specified.

2. The combination of the slate-frame, the pencil-sharpener D, the stud *b* attached thereto, the diametric bar C, and the dust-receiver B, all being arranged and applied substantially as set forth.

200,138. GAGES FOR INDICATING THE AMOUNT OF WATER IN OIL-CARS. L. Allen Heard, Cleveland, Ohio. Filed July 26, 1877.



Claim.—1. An indicator for oil car or tanks, the same made as a single metallic cylinder having a glass face, and provided with the stoppers or plugs at both extremities, substantially as described.

2. In an indicator for oil car or tanks, the bulb or float E, adapted by its gravity relative to both water and oil to float at the point of junction of the same within the said indicator, substantially as described.

3. The combination, with a tank-car, of an indicator, B F, and connections C C' C', for simultaneously indicating the level of water and the height of oil in the car, substantially as and for the purposes described.

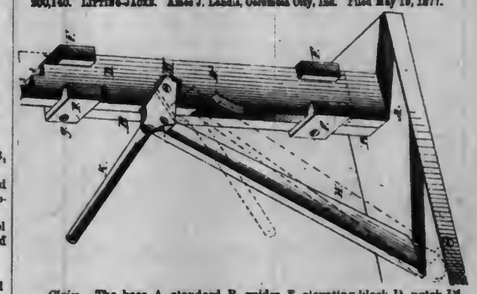
200,139. BURNERS FOR FUEL. James M. Hicks, Summit, N. J. Filed Feb. 10, 1877.



Claim.—1. In a fuel-burner, the combination, substantially as hereinbefore set forth, of a fire-chamber, open at its top to receive air and at its bottom for the discharge of the gases from combustion, and provided with a base-plate to support the fuel, an air-supply conduit opening into said fire-chamber at its top, and connecting said fire-chamber with the air at a point below the level of the fire-chamber, with an exit-passage leading from the base of said fire-chamber to the atmosphere or chimney, constructed and operating substantially in the manner and for the purposes set forth.

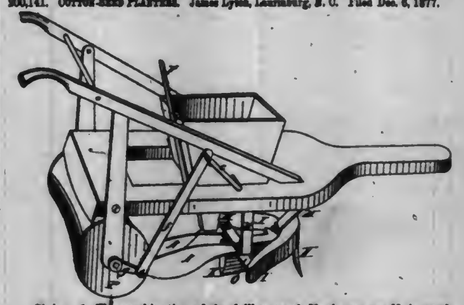
2. In a fuel-burner, the combination, substantially as hereinbefore set forth, of a fire-chamber, open near its top to receive air and at its bottom for the discharge of the gases from combustion, and provided with a base-plate to support and direct the fuel, an air-supply conduit opening into said fire-chamber near its top, and connecting it with the atmosphere below the level of the fire-chamber, a fuel-reservoir opening at its base into said fire-chamber, with an exit-passage leading from the base of said fire-chamber to the exit-pipe or chimney, constructed and operating in the manner and for the purposes set forth.

200,140. LIFTING-JACKS. Ames J. Landis, Columbia City, Ind. Filed May 10, 1877.



Claim.—The base A, standard B, guides F, elevating-block D, notch D', lever K, and movable fulcrum H, all combined and operated together for lifting weights and holding or locking them in position when raised, substantially as described and illustrated.

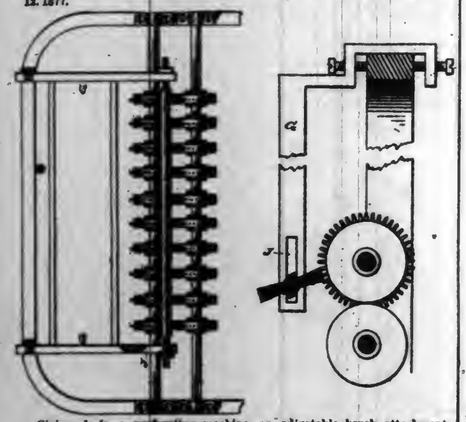
200,141. COTTON-SEED PLANTERS. James Lynch, Laurinburg, N. C. Filed Dec. 6, 1877.



Claim.—1. The combination of the drill or tooth H, the opener K, located in rear thereof, and leaving an open space between the two, the clearing-wings I I, and the covering-blades N N, the several parts being connected with each other and with the frame-work by means of bars M and O, substantially as shown and described.

2. The combination of the frame A, drill or tooth H, opener K, clearing-wings I I, constructed as shown and described, the blades N N, and the curved covering-roller P, all arranged as and for the purposes set forth.

200,142. PERFORATING-MACHINES. Rosalie W. Mackall, Washington, D. C. Filed Nov. 12, 1877.



Claim.—1. In a perforating-machine, an adjustable brush attachment having a vertical and horizontal adjustment, substantially as described.

2. The arms G, provided with slots J, and having a backward and forward adjustment, in combination with a brush of any suitable construction, for the purpose set forth.

200,143. THILL-COUPLINGS. Edwin L. Marshall, Cleveland, Ohio. Filed Nov. 3, 1877.



Claim.—In thill-supporters, the binding-plate B and spring-loop D, provided with an offset or shoulder for engaging the end of the said plate for supporting the thills in an elevated position, in combination with the clip, thills, and axle, substantially in the manner as described, and for the purpose specified.

200,144. DROP-WEIGHTS FOR OIL-WELLS. Mark T. McCormick, Petrolia, Pa. Filed July 28, 1877.



Claim.—1. A drop-weight for oil-wells, with a clear unobstructed channel through its center, substantially as set forth.

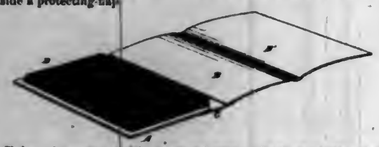
2. A drop-weight for oil-wells, formed with a central bore, B, and provided with a hollow pin, C, on its upper end, substantially as and for the purpose set forth.

3. A drop for oil-wells, constructed with a central vertical bore, B, and with an annular groove or series of grooves, D, formed around its upper end, substantially as and for the purpose set forth.

4. A drop, A, for oil-wells, constructed with a central vertical bore, B, and with a hollow pin, C, on its top, and groove or grooves D formed around its upper end, substantially as and for the purposes set forth.

200,145. BOOKS OR CARDS OF PAPER. James S. McDonald, Chicago, Ill. Filed Sept. 14, 1877.

Brief.—Sheets of carton or colored paper are bound in a cover having at one side a protecting-flap.



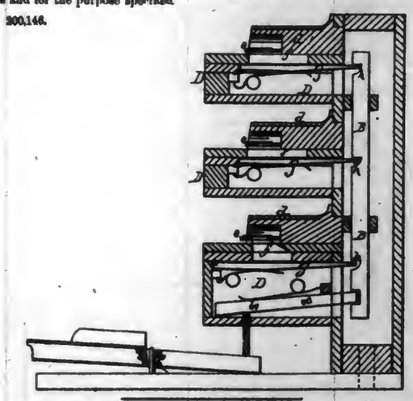
Claim.—As a new article of manufacture, a book consisting of colored impression-sheets D D, the said sheets connected to the cover A B B' at the junction of the parts A and B, and the part B' folded back toward the said junction, substantially as and for the purposes specified.

200,146. REED-GUARDS. James Meissner, Buffalo, N. Y. Filed Oct. 20, 1877.

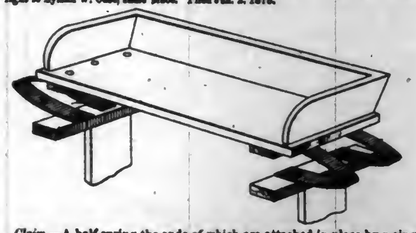
Claim.—In an upright action for organs, the arrangement of the valves *g g* inside the wind-chests D D, one under every reed, each valve and pro-

trading, and all operating simultaneously by the single vertical valve-strip B, as and for the purpose specified.

200,146.

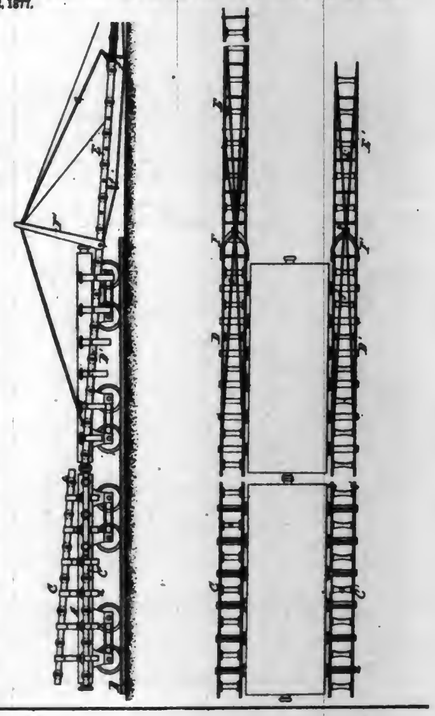


200,147. WAGON-SEAT SPRINGS. Elisha H. Morrill, Winsted, Conn., assignor of one-half his right to Lyman W. Case, same place. Filed Jan. 2, 1878.



Claim.—A half-spring the ends of which are attached in place by a single pivotal bolt, substantially as and for the purposes described.

200,148. UNLOADING RAILS AND TIES FROM CARS. Daily S. Moore, Chicago, Ill. Filed Nov. 22, 1877.



Claim.—1. The combination, with the platform of a railway-car, of one or more inclined tracks or tramways, C and C', arranged to admit of being elevated or depressed to change the inclination thereof, substantially as and for the purpose specified.

2. The combination, with the platform of a railway-car, of two or more inclined tracks or tramways, D E and D' E', the tracks E and E' arranged to extend forward in advance of the forward end of the car, substantially as and for the purpose specified.

3. The combination, with the tracks D E and D' and E', of the uprights F F' and truss-rods *g* and *g'*, for supporting the forward end of the tracks E and E', substantially as specified.

200,149. IMPLEMENTS FOR FILLING CARTRIDGE-SHELLS. James Newman, Aurora, N. Y. Filed Jan. 21, 1878.



Claim.—1. The combination of a funnel, a charger, and a supporting-handle, connected together in the manner and for the purpose substantially as shown and described.

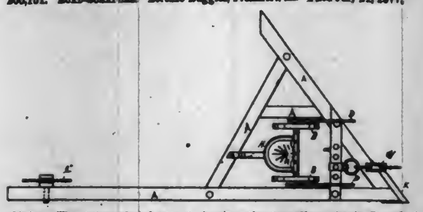
2. The combination of the handle C, provided with loop *c*, and the funnel A, when the parts are connected by a hinge which allows them to be turned relatively to each other, as shown and described.

200,150. PRESERVING JUICES OF GREEN CORN. Jas. H. Oliver, Baltimore, Md. Filed Sept. 26, 1877.

Claim.—1. An improved process for treating the juices of green corn for preservation as an article of food, consisting in the separation of the juices from the pulp and hulls, the preparation of said juices by agitating and cooking them, and in the preservation of the product thus prepared in hermetically-sealed cans, substantially as described.

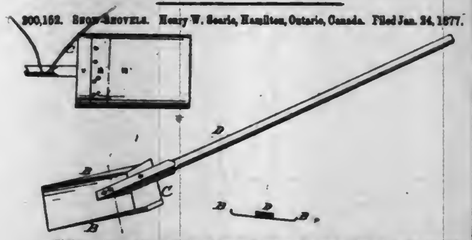
2. A new article of manufacture—the pure concentrated juices of green corn hermetically sealed up in tight cans for future use as food, substantially as hereinbefore set forth.

200,151. ROAD-SCRAPERS. Lorenzo Baggies, Frankfort, Ill. Filed July 31, 1877.



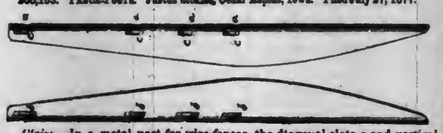
Claim.—The triangular frame A, having the traveling-wheels B, axle L, levers D, spur-wheel *e*, shear K, seat H *i*, perforated cross-bar *a*, and clevis and chain C, all constructed, arranged, and operating as and for the purposes set forth.

200,152. SNOW-SHOVELS. Henry W. Searle, Hamilton, Ontario, Canada. Filed Jan. 24, 1877.



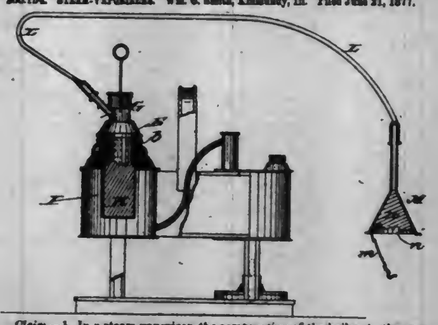
Claim.—As a new article of manufacture, the snow-shovel, substantially as herein described, consisting of the sheet-metal blade, having inclined upturned edges B, beveled inclined wooden back or head piece C, and the handle D, having beveled foot, bolted to the said blade, and its shank bolted to said inclined head-piece.

200,153. FENCE-POSTS. Justus Sickles, Cedar Rapids, Iowa. Filed July 27, 1877.



Claim.—In a metal post for wire fences, the diagonal slots *a* and vertical slots *b c*, the latter extending in opposite directions from their connection with the diagonal slot, forming a self-locking device, substantially as and for the purpose herein set forth.

200,154. STEAM-VAPORIZERS. Wm. G. Smith, Kinmundy, Ill. Filed June 21, 1877.

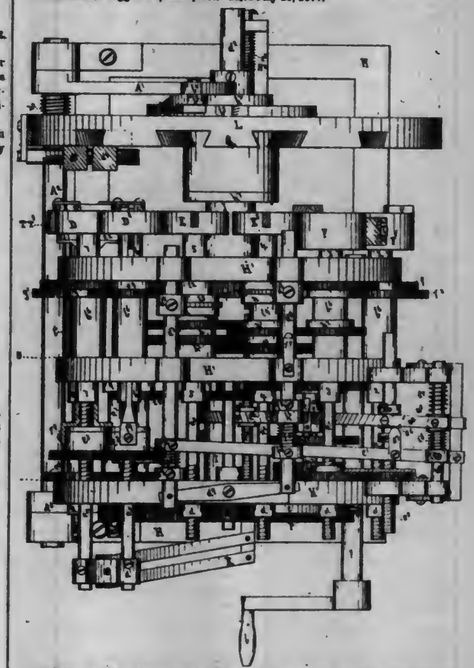


Claim.—1. In a steam-vaporizer, the combination of the boiler A, the separate dry-steam chest B, steam-pipe D, colander I, tube L, and inhaling-funnel M, as described.

2. The combination, with the dry-steam chest B and tube L, of the valve H and top chamber G, as described.

3. The inhaling-funnel M, provided with the perforated hinged lid *m* and sponge *n*, as set forth.

200,155. MACHINES FOR MAKING METAL SCREWS. Levi W. Stockwell, Havana, Ohio, assignor to Stockwell, Bragg & Co., same place. Filed July 13, 1877.



Claim.—1. In a screw-cutting machine, a revolving series of non-rotating rod-holders, in combination with a series of rotating tools, adapted to operate simultaneously and successively on the rods to perform the operations of milling the rods, threading the screws, and severing the screws from the rods, the series of rod-holders being adapted to carry rods, which may be fed forward at each revolution of the series for the formation of screws, substantially as described.

2. The carrier L, in combination with stop b^5, spring z^2, arms A^1 A^2, spring-pin e^3, and wheel *e*, having a toothed segment, substantially as described.

3. The wheel P, having a toothed segment, and cam R, in combination with the bar d^1, rods a^4 a^5, spindles 6 7, and chucks D D', substantially as described.

4. The wheels P and *e*, each having a toothed segment, in combination with wheel e^2, shaft d^2, carrier L, pawl b^3, ratchet b^4, and the cam R, bar d^1, rods a^4 a^5, spindles 6 7, and chucks D D', substantially as described.

5. The cams c^1 c^2, in combination with rods f^3 f^4, screw-wheel c^3, and screw a^3, substantially as described.

6. The lever e^4 and screw b^2, in combination with rod d^3, collars f^1 f^2, spring f^3, clutch n, and pins *s s'*, substantially as described.

7. The chuck E' and wheel n^1, in combination with wheel e^1, screw e^2, lever e^5, rod d^3, and clutch n, substantially as described.

8. The clutch o^4, in combination with stop o and the scroll-wheel n^5, substantially as described.

9. The chuck F and screw s^5, in combination with wheels o^4 n^5, clutch o^5, stop o, wheel n^5, and scroll-wheel n^5, substantially as described.

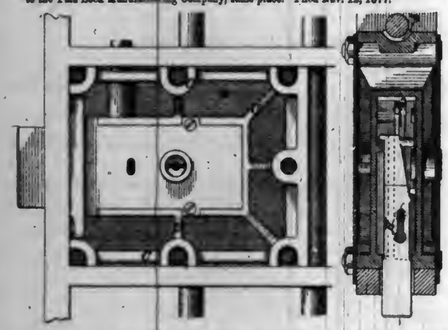
10. The chuck F', spindle 2, rod s, wheels o^4 s^4, screw s^5, collar d^4, lever e^5, collar b^5, spring c^5, rod d^5, clutch c^6, wheel h, spindle 5, and chuck E, substantially as described.

11. The clutch o^5, for withdrawing chucks F F', in combination with lever e^5, screw s^5, collar x^1, lever e^4, rod d^5, and clutch c^6, substantially as described.

12. The combination of chuck F, spindle 3, sleeve b^4, and wheel n^5, with wheel n^5, clutch n, sleeve i^5, spindle 4, and chuck E', substantially as described.

13. The cam R, a part of it being parallel with its line of motion, in combination with bar d^5, rod n^5, spindle 7, chuck D, and with the toothed segment-wheel P, wheel o^5, toothed segment-wheel s, shaft d^5, ratchet b^5, pawl b^5, and carrier L, substantially as described.

200,156. PRISON-LOCK. Henry R. Towne and Thos. P. Keating, Stamford, Conn., assignors to the Yale Lock Manufacturing Company, same place. Filed Nov. 12, 1877.



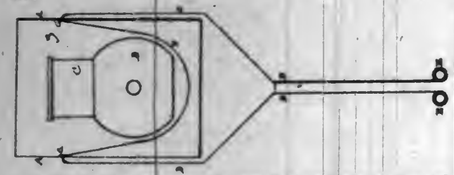
Claim.—1. A lock-case surrounded by a spider or frame-work, substantially as above set forth.

2. The combination of an internal lock-case, a spider, and a supplemental external shield or case, substantially as set forth.

3. The combination of a cast-metal case, and inclosing or covering plates which are not in direct contact with the lock-case, and which shield and protect it, substantially as described.

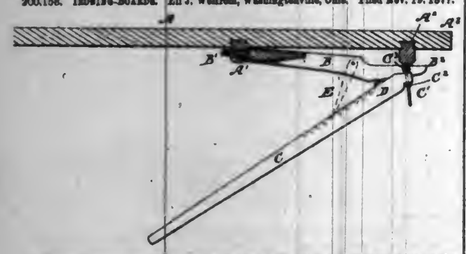
200,157. AIR-COOLING APPARATUS. Robert B. Williamson, Washington, D. C. Filed July 6, 1877.

Brief.—A horizontal vessel to contain ice is placed in a larger case, which is filled with water to a point above the top of the ice-vessel. A curtain or sheet of textile fabric passes under the ice-vessel and out through slots on both sides of the case, and falls to any of the desired points. A roller is attached to the lower end of the curtain, and underneath this roller a trough is placed to catch the water which is drawn through the slots in the case by capillary attraction.



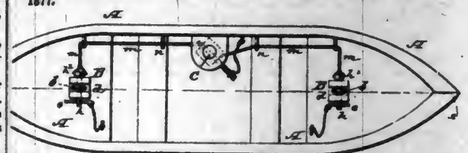
Claim.—The combination of the ice-vessel B, supply-chamber C at top, saturated cloth D, with its adjustable rollers E E at its ends, to be raised or lowered, and slits G in the water-tight box A, all constructed and arranged as herein described, and for the purposes set forth.

200,158. IRONING-BOARDS. Eli J. Wolfrom, Washingtonville, Ohio. Filed Nov. 19, 1877.



Claim.—The combination, with the board A and leg C, hinged near to the rear or butt end of the board A, of the clamp B, having one end pivoted to the under side of and between the pivotal point of the leg C and the outer or free end of the board A, while its outer end has an independent vertical movement, and extends past the pivotal point of the leg, and near to the butt or rear end of the board and fulcrum D, all arranged to operate substantially as and for the purpose set forth.

200,159. BOAT-DETACHING APPARATUS. Cornelius P. Wyckoff, Mobile, Ala. Filed Nov. 6, 1877.

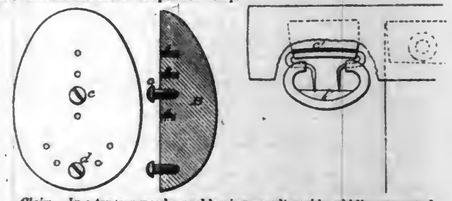


Claim.—1. In a boat-detaching apparatus, the combination, with the boat A, of the posts B B, forming the forks d d, the links b b, attached to the hoisting-ropes a a, the pins h h, ropes or chains m m, and the windlass C, arranged in the center, at one side of the boat, substantially as and for the purposes herein set forth.

2. The combination of the perforated fork d, with slot x in one jaw, the headed and slotted pin h, with tongue or rib i, and the key c, substantially as and for the purposes herein set forth.

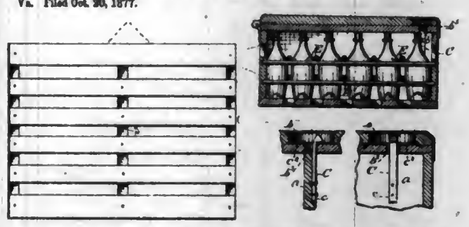
200,160. TRUSSES. Alexander Adamson, Washington, D. C. Filed July 21, 1877.

Brief.—The pad and its metal plate are provided with adjusting-holes for two pins or screws, one of which serves to secure both ends of the waist-belt, and the other the end of the perineal strap.



Claim.—In a truss, a wooden pad having an adjustable middle screw-stud, c, in its flat back for the attachment of the waist-belt ends, and below the same in said back an adjustable screw-stud, d, for the attachment of the front end of the crotch-strap, in combination with the hip-strap A and crotch-strap C, substantially as specified.

200,161. BOTTLE-PACKING CASES. Peter Aitcheson and Robert P. Aitcheson, Alexandria, Va. Filed Oct. 30, 1877.



Claim.—1. In a packing-case for bottles containing beer, wine, or other liquids, the combination, with the box A and cover or lid B, provided with the recess b^2 and opening b^3, of the vertical spring C, catching-point c^1, washer c^2, and seal b^4, substantially as shown and described, for the purpose specified.

2. In a packing-case for bottles containing beer, wine, or other liquid, the combination, with the box A, provided with the transverse central partition a, and cover or lid B, provided with recess b^2 and opening b^3, of the vertical spring C, catching-point c^1, washer c^2, seal b^4, and auxiliary bar D, substantially as shown and described, for the purpose specified.

3. In a packing-case for bottles containing beer, wine, or other liquid, the combination, with the box A, having its ends and sides provided with the circular recesses e e, of the two double sets of equidistant independent elastic cylindrical rods E, each rod being of somewhat greater diameter than double the height of the bulge of any bottle to be packed, each set having the same number of members, and the two sets having their corresponding member parallel, and arranged, respectively, in the same vertical plane, substantially as shown, to hold bottles with a bulge by lateral pressure above and below the same, so that the open case may be inverted without discharging its contents.

4. The packing-case for bottles herein described, consisting essentially of the box A, provided with the transverse central partition a, cover or lid B, provided with the recess b^2, opening b^3, and auxiliary bar D, spring C, provided with catching-head c^1, washer c^2, and the two double sets of equidistant cylindrical wooden rods E E, all constructed and arranged substantially as herein shown and described, for the purposes set forth.

200,162. HYDRANT-VALVES. James Bains, Cincinnati, Ohio, assignor of one-half his right to Joseph L. Cochran, same place. Filed Jan. 23, 1878.

Brief.—When the discharge-pipe f is raised the water runs from the supply-pipe b through the holes a, and out. The water is cut off by the descent of the discharge-pipe, and the water in it runs into the waste-chamber above the piston. On the next upward stroke of the pipe it is forced out.

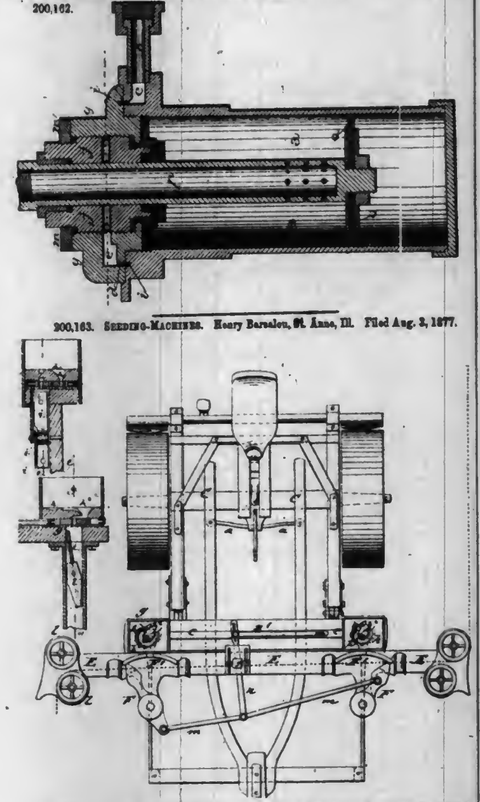
Claim.—1. The combination of the waste-water chamber a, having a chamber, e, formed at the end of the inlet-pipe p, nut or cover g, having the chamber a, and the groove or grooves in the top of the chamber and the under side of the nut, whereby the water can pass from the chamber e into a, whether the two chambers are together or not, substantially as shown.

2. The combination of the waste-water chamber a, chambers e e, nut or cover g, having an opening or openings through its side, communicating with

the chamber e, and the vertically-adjustable pipe p, having a hole or holes through its lower end, substantially as set forth.

3. The combination of the vertical adjustable pipe p, having a hole or holes through its lower end, and a piston or plunger attached thereto, waste-water chamber a, nut j, cover g, chambers e e, and connecting-grooves, all arranged to operate substantially as and for the purposes specified.

200,163. SEEDING-MACHINES. Henry Barnaloo, St. Anne, Ill. Filed Aug. 3, 1877.



Claim.—1. The combination, with knotted check-cord passing around wheel or pulley, of the supporting-piece E, having double wheels and pivoted end-slotted arms F, the guide-flanges F', and the lever a, connected by pivot-rods m to the arms F, as and for the purpose specified.

2. The combination of the seed-dropping device with a conductor-plate fitted into the seed-box, and provided with feed-slot having sharp edges to cut up lumps, substantially as set forth.

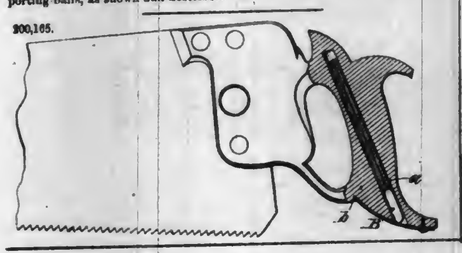
200,164. TORPEDOES FOR OIL-WELLS. Joel J. Boyer, Lamartine, Pa. Filed Dec. 13, 1877.

Brief.—The torpedo is supported on the bottom of the well, the lowering-cord is released or slackened, and the weighted firing-rod thereby allowed to drop and explode the caps in the central tube.



Claim.—In a torpedo, the combination, with shell having anchor-socket, of the solid anvil C, guide-tube D, weighted drop-wire E, and guard of supporting-bails, as shown and described.

200,165.

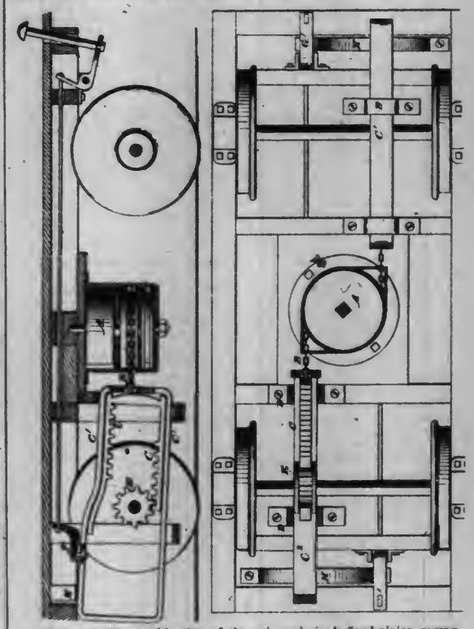


200,166. HARNESS-TERRETS. Charles E. Bristol, New Haven, Conn., assignor to W. & E. T. Fitch, same place. Filed Oct. 26, 1877.



Claim.—A terret provided with two arms, B D, the one turned upward over the other, so as to leave an opening between the ends of the two, one of the said arms having a lateral curved extension at its end to form a guard, substantially as shown and described.

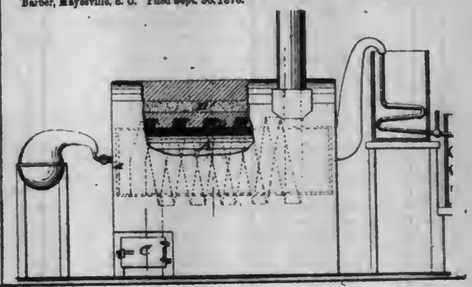
200,167. CAR BRAKE AND STARTER. John E. Brown, Lansingburg, N. Y. Filed Nov. 6, 1877.



Claim.—1. The combination of the axle and single fixed pinion, spring, and chain with the yoke C, the lower part of which has a blank space at the forward end for slipping gear against the constant resistance of the spring, substantially as set forth.

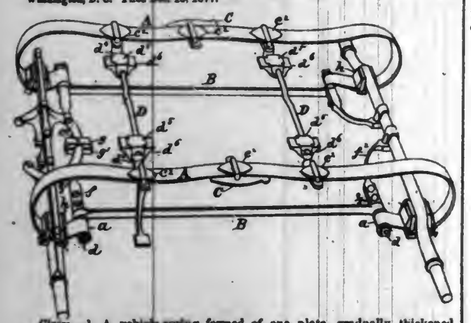
2. The combination of the axle and spur-pinion with the yoke C, oscillating frame C', spring H, and system of levers and rods for actuating the braking and starting mechanism from the front platform, substantially as set forth.

200,168. PROCESSES OF MANUFACTURING OILS FROM ORGANIC SUBSTANCES. Duncan M. Buie, Wilmington, N. C., assignor to himself and James F. Post, same place, and Davis D. Barber, Maysville, S. C. Filed Sept. 20, 1876.



Claim.—The process of manufacturing oil from wood, which consists in injecting steam and carbonic-acid gas into the retort containing the wood, and heated to a high temperature, as specified.

200,169. VEHICLE-SPRINGS. Micajah E. Burris, New York, N. Y., assignor to Wm. Burris, Washington, D. C. Filed Dec. 15, 1877.



Claim.—1. A vehicle-spring formed of one plate, gradually thickened from the cross-center a^1 to the points b b, and from the points c to the points b^1, and gradually diminished in thickness from the points b to the points c, and from the points b^1 to the scrolled ends, substantially as and for the purposes described and shown.

2. A spring, A, of one plate, varied in thickness at the several parts, and having the ends scrolled, forming the eyes a a, in combination with the connecting-rod B, provided with the lateral spindles d d, adjusted in the sleeves d^1 in the eyes of the spring, and lateral arms f, connecting with the fifth-wheel and the hind axle, substantially as and for the purposes described.

3. The double ings h, formed on the head-block and hind axle, and provided with recesses in the upper side to receive the clips h^1, for holding the springs in place, substantially as described.

4. In combination with the side springs A, the hanging-irons D, provided with the steps E, attached to the springs, and bent at d^3 to drop them below the level of the springs, and having the depressions d^3 in the center, to avoid contact with the stay-bar, and provided with the shoulders d^4, forming bearings for the rubber cushions d^5 in the hanging-boxes d^6, substantially as and for the purposes described.

5. The rub-irons C, provided with shoulders c^1, and attached to the springs A, substantially as and for the purposes described.

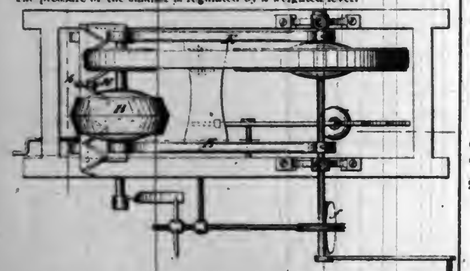
6. In a vehicle having the springs A, the fifth-wheel held in a level position by the guy stays or arms connected with or formed on the rods B, substantially as described.

7. In a vehicle having the springs A, the fifth-wheel having a hole, c^3, through both plates for conveying oil to the bearing-plate, and having a solid clip formed on the upper plate, and a bearing-plate, f^1, provided with a groove to fit the under surface of the bottom plate, and the rubber cushions s, adjusted in cups in the bearing-plate and clip-nuts, substantially as and for the purposes described.

8. The spring A, formed of one plate, varied in thickness at the several points, as set forth, the connecting-rods B, having lateral spindles d d and lateral arms f f, connecting with the hind axle and with the fifth-wheel, the rub-irons C, and the hanging-irons D, fastened to the spring, and the fifth-wheel F, provided with the anti-rattling devices g g^1 k n s, all constructed and combined substantially as and for the purposes described.

200,170. MACHINES FOR SHARPENING MOWER AND REAPER KNIVES. Henry F. Bush and Martin L. Bush, Doylestown, Pa. Filed Nov. 24, 1877.

Brief.—The emitter-holder is intermittently drawn toward the beveled grinder by mechanism connecting the shafts of the two grinders, and is retracted by a coiled spring fastened at its end respectively to the frame and the pinion. This mechanism may be disconnected by sliding the shaft of the gear-wheel. The larger grinder is made a belt-wheel to operate the smaller. The pressure of the smaller is regulated by a weighted lever.

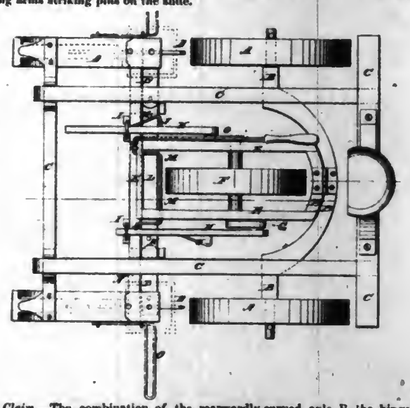


Claim.—1. In a machine for sharpening the knives of mowing and reaping machines, a transmitting side shaft, revolved by worm-gear connection with the driving-shaft, and having radial end arms, in combination with a lever-arm or plate of the spring-acted pinion-shaft that reciprocates the knife-supporting bed-plate to move the bed-plate slowly against the grindstone and return it quickly in opposite direction, substantially as set forth.

2. In a machine for sharpening mower and reaper knives, the combination of the swinging frame that supports the knife-grinding stone with a fulcrumed and weighted lever that bears on a cross-piece of the frame, and enters a recess of the cross-piece when the frame is raised, so as to regulate the pressure and support the stone in raised position for adjusting the knife or removing it from the bed-plate, substantially as specified.

200,171. CORN-PLANTER ATTACHMENTS. John J. Carey, La Salle, Ill. Filed Dec. 7, 1877.

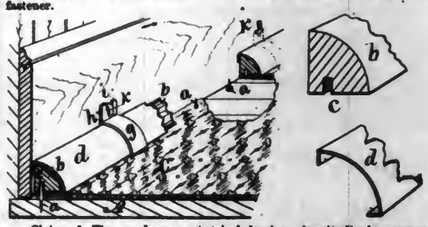
Brief.—The frame in which the operating-wheel is journaled is hinged to the curved axle. Motion is imparted to the seed-slide by cams on the reciprocating arms striking pins on the slide.



Claim.—The combination of the rearwardly-curved axle B, the hinged frame E, the third wheel F, the cranks G, the bars H, the inclines J, the pins or blocks K, and the guides I with the wheels A, the frame C, and the dropping-slide L of a corn-planter, substantially as herein shown and described.

200,172. CARPET-FASTENERS. Francis O. Clark, Des Moines, Iowa. Filed June 29, 1876.

Brief.—A wooden carpet-strip, longitudinally slotted to receive a row of double-pointed carpet-tacks, is covered by a metal shell, and this combined wood and metal strip is held in place by a suitable keeper and a revolving screw, clamping the whole together, the upwardly-projecting points of the tacks fitting in the longitudinal groove on the under side of the carpet-fastener.



Claim.—1. The wooden carpet-strip b, having a longitudinal groove, c, in its under side and near its central line, adapted to receive and engage a row of pointed carpet-holding nails, a, fixed in the floor, in the manner shown and described.

2. The series of fixed carpet-nails a, the combined wood and metal carpet-strip b d, having the groove c, the keeper g, and a revolving screw, k, arranged and combined to operate substantially as and for the purposes shown and described.

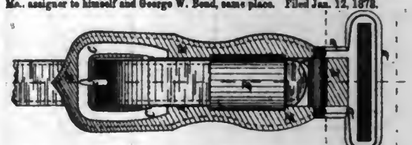
200,173. LIBRARY-TABLES. Henry Closterman, Cincinnati, Ohio. Filed Mar. 19, 1877.

Brief.—A perforated leg is attached to the under side of the adjustable top, the perforation or eye being adapted to receive a pin attached to the back of the drawer and lock the top when closed.



Claim.—In combination with the table A, having hinged top B and drawer C, the pin-and-eye locking device c^1 H, substantially as and for the purpose specified.

200,174. BEARERS FOR HARNESS COLLARS AND BRICHING. Joseph H. Coffin, Biddeford, Me., assignor to himself and George W. Bond, same place. Filed Jan. 12, 1878.



Claim.—1. A bearer for harness, formed of the plate A and loop or keep B, cast in one piece, and having a buckle, C, and fastener D cast upon the ends of the said plate A, substantially as herein shown and described.

2. The fastener D of the harness-bearer A B C D, made with a shoulder

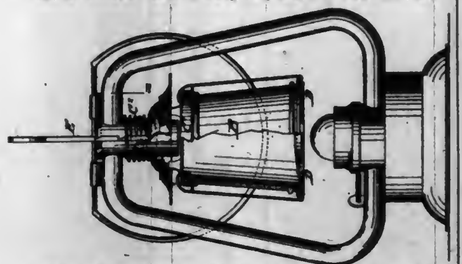
or offset, recessed to receive the end of the sweat-leather, and with a slot to receive a piece of leather for the stitches to pass through in sewing the said fastener in place, substantially as herein shown and described.

200,175. PIPE-WRENCHES. Charles C. Coleman, Honolulu, Hawaiian Islands. Filed Dec. 29, 1877.



Claim.—A pipe-wrench composed of the handle A B and the oppositely-moving jaws C and D, united as shown, together with the link E, the whole constructed substantially as herein described.

200,176. LANTERNS. Charles W. Colony, Sandy Creek, N. Y. Filed Dec. 17, 1877.



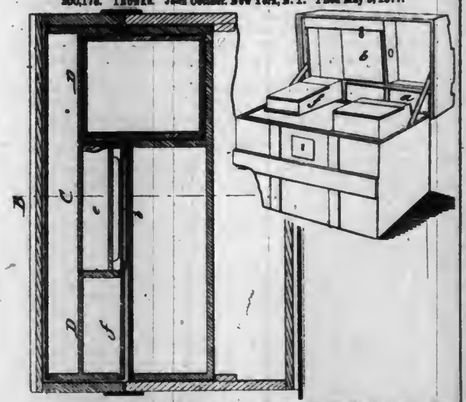
Claim.—The combination, in a lantern, of the looped and notched bail E and the spiral spring C^3 with the globe-holder C, C^1, and D, the globe B, and the lantern-frame, having a top guide-tube and the slotted guides a for the bail, all constructed and relatively arranged as shown, to operate in the manner set forth.

200,177. WEATHER-STRIPS. Austin W. Comstock, Mount Pleasant, Iowa. Filed Jan. 16, 1877.



Claim.—The combination, with the jamb, the door, and molding, having a rabbet and applied to the door so as to form a groove, b, to receive the upper portion of the strip above the lower edge of the door, of a spring, F, attached to the door or molding, and projecting beyond the edge of the door, whereby the strip shall completely cover the crack under the door, and it shall be lifted and held in such position by the spring when the door is opened, and permitted to fall of its own weight when the door is closed.

200,178. TRUNKS. John Cottner, New York, N. Y. Filed May 5, 1877.



Claim.—A trunk-lid, B, having hinged receptacle C, divided by a horizontal partition, D, the drawer a, adjoining hat-box space, the looking-glass b, hinged and projected by cushion, the drawer d below the glass, a jewel-receptacle back of the glass, and a hinged desk, f, all arranged as shown and described.

200,179. COMBINED SHAWL-STRAP AND HEAD-REST. Edwd. P. Cowan, Germantown, Philadelphia, Pa. Filed Dec. 15, 1877.

Claim.—1. As a new article of manufacture, the shawl-strap and head-rest, arranged substantially as shown and described, and adapted to be interchangeably used, as set forth.

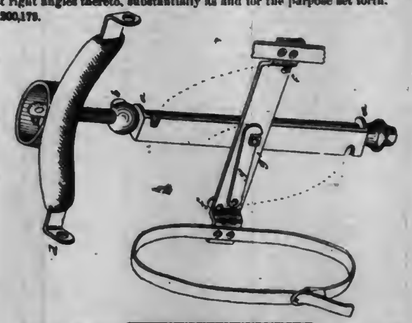
2. The combination, with the rigid shawl-strap bar, having fixed socket-tube, of an adjustable extension-rod and detachable head-rest, secured to the ends of the extension-rod, to serve as handle when used as a shawl-strap, substantially as and for the purpose described.

3. In a shawl-strap and head-rest, the head-rest having perforated end lugs for attachment as a handle to a shawl-strap bar, substantially as described.

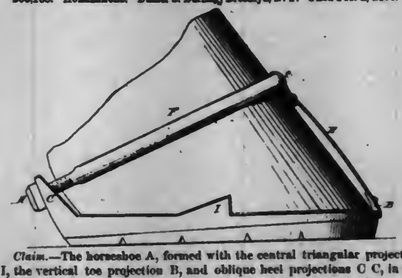
4. The combination of the spring-cushioned head-rest, having fixed screw-socket attached to the spring-band, with the adjustable extension-rod and fixed socket-tube of shawl-strap bar, to be supported as head-rest, substantially as specified.

5. The combination of the main bar of the shawl-strap, carrying the fixed socket-tube and extension-rod, with an auxiliary bar, to which the straps are attached, and with means for locking the auxiliary bar below the main bar, or at right angles thereto, substantially as and for the purpose set forth.

200,179.

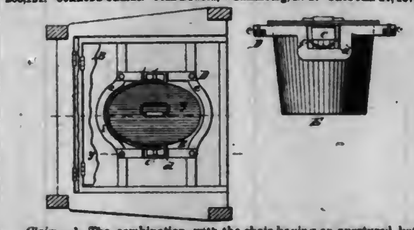


200,180. HORSESHOES. Daniel S. Darling, Brooklyn, N. Y. Filed Feb. 1, 1876.



Claim.—The horseshoe A, formed with the central triangular projections I I, the vertical toe projection B, and oblique heel projections C C, in combination with the clamp F, having screw-threaded ends passing through the heel projections, and held by nuts H, and the flexible flat strap E, attached to the toe projection at one end and looped around the clamp F at its other end, as and for the purpose described.

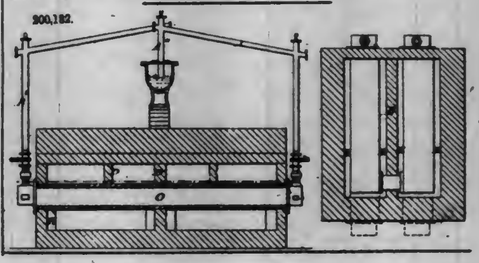
200,181. COMMODE-CHAIRS. John Dawson, Williamsburg, N. Y. Filed Jan. 24, 1878.



Claim.—1. The combination, with the chair having an apertured bottom, of the frame having the recess and supporting-springs, for supporting a pail in contact with the under surface of the bottom, substantially as shown and described.

2. The elliptical pail E, having the rectangular brackets c and the bail i, in combination with the supporting-frame D, substantially as herein shown and described.

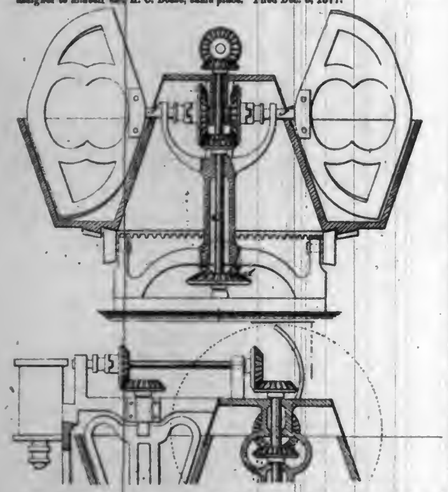
200,182.



200,182. PROCESSES OF MANUFACTURING GAS. Louis A. L. E. P. de la Peyrouse, London, England. Filed Mar. 13, 1877. Patented in England, Aug. 15, 1876.

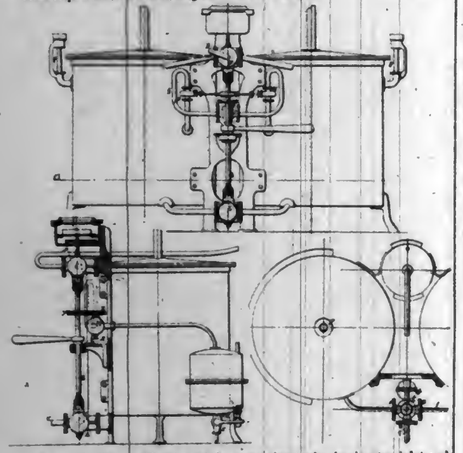
Claim.—The hereinbefore-described improvement in the method of manufacturing gas, (by alternately charging the retorts or different portions of a retort, and causing the products of distillation of the fresher charge to pass through a previously and highly heated partially-exhausted charge,) which improvement consists in independently heating the different charges and raising the temperature of the retort or retorts, or portion of a retort, containing the partially-carbonized material to a higher degree than that to which the fresher charge is subjected by an independent heat, and maintaining this high temperature as uniformly as possible until a time short of that at which the material of the first charge would be completely exhausted of gaseous products, then withdrawing said charge, inserting a fresh one, and passing its products through the previous and now partially-exhausted charge, which is likewise independently and highly heated, substantially as set forth.

200,183. DOUGH-KNEADING MACHINE. Louis Durand, Quebec, Province of Quebec, Canada, assignor to himself and H. C. Bosse, same place. Filed Dec. 6, 1877.



Claim.—The combination, in a dough mixing or kneading machine, of a revolving ring-shaped trough, having tapering body, with one or more kneaders or mixers, revolving in opposite direction to trough, and having straight opposite sides, corresponding to inclination of sides of trough, and curved intermediate sides, substantially as specified.

200,184. APPARATUS FOR MEASURING, CONTROLLING, AND REGISTERING LIQUIDS. François Jean Joseph Delori, Beaumerke, Belgium. Filed Nov. 6, 1877.



Claim.—1. The combination of the measuring-tanks, having top inlet and bottom outlet pipes, the sampling-tank, pipes S, valves U, spindle G, and connecting-rods operated by an eccentric on said spindle, substantially as described.

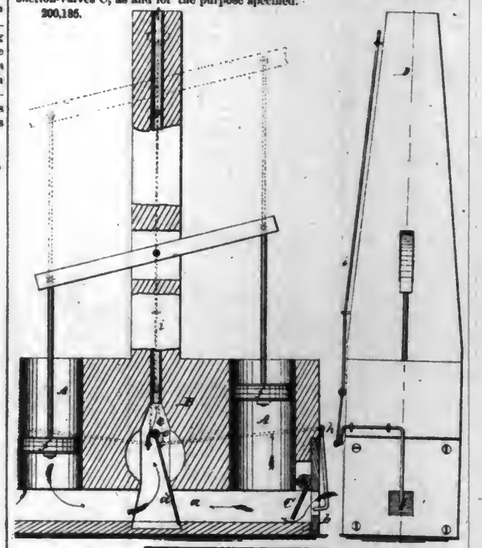
2. The combination of cock E, spindle G, pipe S, and valve U, and connecting-rod operated by an eccentric on said spindle, substantially as set forth.

200,185. PUMPS. Samuel B. Elsey, Hope, Ark. Filed Dec. 1, 1877.

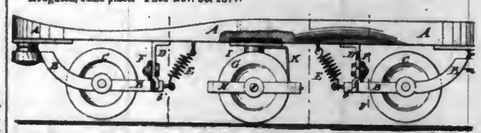
Claim.—1. A pump having two cylinders, A, connected with the passage *a*, said passage having at each end a suction-valve, C, and in the middle a discharge-valve, *d*, which is common to both cylinders, as herein specified.

2. The right-angled levers *h*, connected with the rod *i*, and having their lower ends bent inwardly, as described, in combination with the pump, having suction-valves C, as and for the purpose specified.

200,186.



200,186. ROLLER-SKATES. James Forsyth, New York, N. Y., assignor to himself and John P. Houghton, same place. Filed Nov. 30, 1877.



Claim.—1. The combination, with swiveled front and rear rollers C, of intermediate rolls G, journaled in a swiveled frame and projecting a little lower than the end rolls, as and for the purpose described.

2. The roller-frame B, swiveled at one end to the end of foot-plate A, and at the other end connected by arm *b'* and spring E with the foot-plate A, as set forth.

3. The combination of the swiveled frame H and the stationary standard I with the intermediate roller or rollers G and the foot block or plate A, substantially as herein shown and described.

4. The combination of the stop K with the swiveled frame H of the intermediate roller or rollers G and the foot block or plate A, substantially as herein shown and described.

5. The combination of the rubber block J with the standard I, to which the frame H of intermediate roller or rollers G is swiveled, and with the foot block or plate A, substantially as herein shown and described.

6. The standard D, depending from plate A, and provided with notches in the lower part that receive a rear arm, *b'*, of the roller-frame B, as shown and described.

7. The combination of the friction-rollers F with the standards D and the swiveled frames B of the caster-rollers C, substantially as herein shown and described.

200,187. POSTAGE-STAMPS. John Fox, New York, N. Y. Filed Nov. 13, 1877.



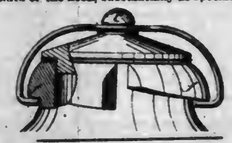
Claim.—A stamp for postal, internal-revenue, and other purposes, having the paper thereof cut entirely through, so as to form several distinct pieces, and having a backing or facing of tissue-paper or other delicate substance applied to the stamp, to unite the several pieces thereof, as and for the purpose set forth.

200,188. FRUIT-JARS. George W. Gomber, Sybertsville, Pa. Filed Aug. 11, 1877.

Claim.—1. The combination of a cover having central neck and button, and of a wire bail made of two sections, with semicircular neck parts and end lips, with the mouth of a jar having opposite recesses and inclined ledges, substantially in the manner and for the purpose set forth.

2. The combination, with the round neck and button of a fruit-jar cover, of a wire bail made of two sections, with neck-clasping parts, soldered together at both sides of the neck, substantially as specified.

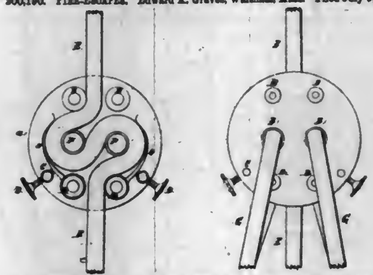
200,189.



200,189. FERTILIZERS. Frederick C. Grange, Baltimore, Md. Filed Mar. 8, 1877.

Claim.—The admixture of tripoli and "kainit," forming a fertiliser, as described.

200,190. FIRE-ESCAPES. Edward K. Graves, Waltham, Mass. Filed July 9, 1877.



Claim.—The fire-escape device hereinbefore described, composed of the plates *a a'*, and posts B B B, B', B, B, the springs H H, and adjustable screws D D, in combination with the rope E E and cords G G.

200,191. BOTTLE-STOPPER FASTENINGS. John B. Griffin, Boston, Mass., assignor to himself and James C. Gerlach, same place. Filed July 26, 1877.



Claim.—The lever B, pivoted to the collar *a*, and provided with a spring, in combination with a pivoted cap or stopper, constructed to operate substantially in the manner and for the purpose set forth.

200,192. ASBESTUS SHEATHING-PAPER. Peter C. Halpine, Waltham, Mass., assignor of one-half his right to William Roberts, same place. Filed Jan. 23, 1878.

Claim.—As an improved article of manufacture, sheathing-paper composed of an intermediate layer, *a*, and layers or sheets of asbestus paper applied each side thereof, all substantially as and for the purpose described.

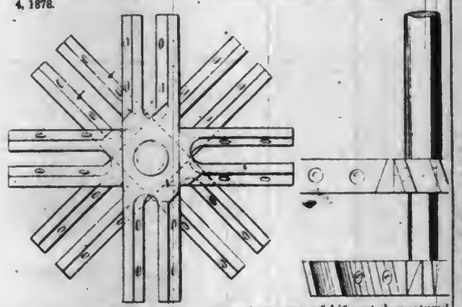
200,193. MINERS' SQUIBS. George Hayes, Girardville, Pa. Filed Jan. 5, 1878.

Brief.—The explosion of the detonating alarm indicates that the squib is doing its work.



Claim.—A miner's squib consisting of an ordinary squib with an interior explosive alarm device, substantially as described, and for the purpose specified.

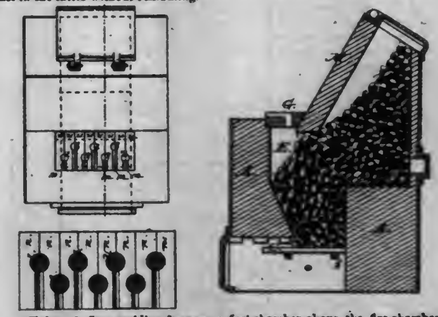
200,194. RECIPROCATING CHURN-DASHERS. Martin R. Heliker, Wauseon, Ohio. Filed Jan. 4, 1878.



Claim.—A churn-dasher consisting of two sets of bifurcated apertured arms, arranged as shown, and having inclined sides, the sides of alternate arms being inclined in opposite directions, substantially as herein shown and described.

200,195. FURNACES FOR LIKE-WELDING. John Henry Helm, Allegheny, Pa. Filed Nov. 8, 1877.

Brief.—The arrangement of the fire and fuel chambers is such that the former may be emptied for cleaning and then replenished from the burning fuel in the latter without rekindling.



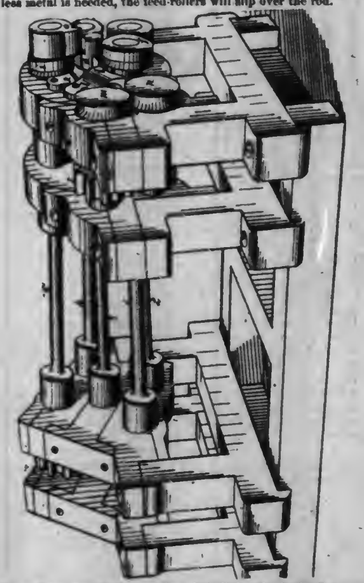
Claim.—1. In a welding-furnace, a fuel-chamber above the fire-chamber, having its bottom above and in rear of the grate, substantially as herein described, and for the purpose set forth.

2. In a welding-furnace, the fire-chamber, the inner surface of the front or breast wall slanting inward to a vertical line beyond the heating-cells in the crown of the furnace, in combination with the fuel-chamber above and in rear thereof, substantially as herein described, and for the purpose set forth.

3. In a welding-furnace, the crown G, constructed of a series of fire-bricks having grooves in their sides and in their top edge, forming, when brought together, cells *l* and recesses *w*, substantially as herein described, and for the purpose set forth.

200,196. MACHINES FOR FORMING CHAIN-LINKS. John Henry Helm, Allegheny, Pa. Filed Sept. 12, 1877.

Brief.—By adjustment of the feed-rollers the impinging force thereof is gaged, so that while the longer radii of the mandrel are passing the first cam the feed will be sufficient, but that while the shorter radii are passing said cam, and less metal is needed, the feed-rollers will slip over the rod.



Claim.—1. In a machine for forming chain-links, the feed-rollers *n* and *n*, and a revolving mandrel over which the links are formed, said mandrel being surrounded with a series of revolving cams, which press the iron against said mandrel, and a revolving cutter for severing the formed link from the forming link, substantially as herein described.

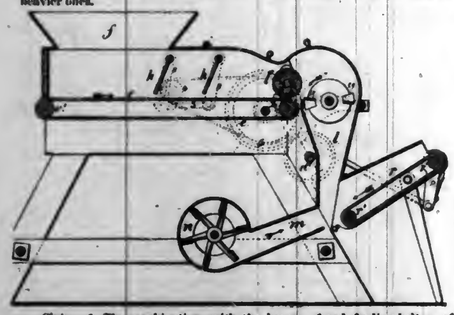
2. In a machine for forming chain-links, the feed-rollers *n* and *n*, and the detachable guide *k* and cutter *o*, in combination with the mandrel *c*, and suitable number of cams for pressing the iron from which the links are formed against the periphery of the mandrel, substantially as herein described.

3. In a machine for forming chain-links, the feed-rollers *n n* and cutter *o*, in combination with the mandrel *c*, and cams for pressing the iron from which the links are formed against the periphery of said mandrel, substantially as herein described.

4. The feed-rollers and adjusting mechanism for regulating their impinging force for feeding the iron for the link blank, as required by its spiral form and the longer and shorter radii of the mandrel, in combination with said mandrel and suitable bending mechanism, substantially as described.

200,197. PREPARING FEATHERS FOR BEDDING. Alonzo Hicks, Flushing, N. Y., assignor to himself, Mason S. Seymour, and George W. Quackenbush, same place. Filed Jan. 29, 1877.

Brief.—The feathers are placed in the hopper on the feeding-belt, and as they are fed to the cutters the detaining-fingers arrange them in proper position for the action of the cutters. After the feathers have been cut, and as they fall, they are subjected to an air-blast, which separates or assorts them by weight into bins. A backward-moving belt receives the heavier portions of the feathers and feeds them backward, to be subjected a second time to the blast, whereby the lighter portions are more effectually separated from the heavier ones.

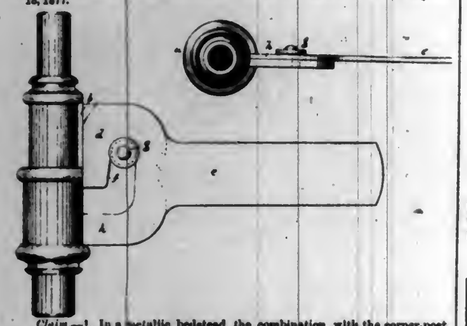


Claim.—1. The combination, with the hopper *f* and feeding-belt *e*, of detaining-fingers *h* and a cutter, for the purposes and as set forth.

2. The combination, in a machine for preparing feathers, of a cutter to separate the feathers transversely, an air-blast to act upon the cut feathers as they fall, a chamber containing two or more bins for the feathers, and mechanism for presenting the heavier portion of the feathers a second time to the action of an air-blast, substantially as set forth.

3. The belt *r*, having a gradual backward movement toward the blower *s*, in combination with such blower and the rotary cutter for separating the feathers, and the trunk for the air-blast, substantially as set forth.

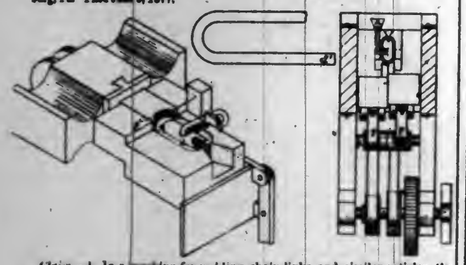
200,198. METALLIC BEDSTEAD FASTENINGS. Livera Hull, Charlestown, Mass. Filed Oct. 18, 1877.



Claim.—1. In a metallic bedstead, the combination, with the corner-post, its bearing-ledge *b*, and the pin *g*, located outside of the post, of the side piece provided with the hook *d*, shaped and adapted to bear at its edges against both the pin and bearing-ledge, to operate substantially as and for the purpose set forth.

2. The metallic post, its projection *h*, the bearing-ledge *b* outside of it, and the headed pin *g*, secured to the projection *h*, in combination with the hooked portion *d*, shaped to co-operate with the ledge and pin, all substantially as described.

200,199. MACHINES FOR FORMING CHAINS AND LINK BLANKS. August C. Jordan, Pittsburg, Pa. Filed June 9, 1877.



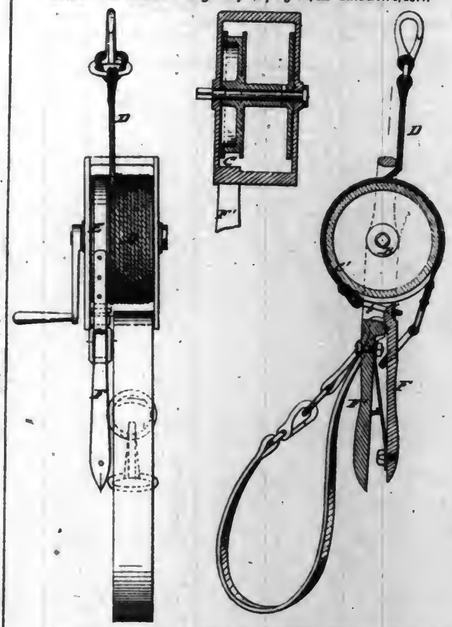
Claim.—1. In a machine for welding chain-links and similar articles, the clamping-dies, forming a matrix adapted to receive and support a partially-formed blank, in combination with a reciprocating welding tool or tools adapted to bend, close, and weld the open end of the blank, substantially as specified.

2. In a machine for welding chain-links and similar articles, the clamping-dies, forming a matrix adapted to receive and support a partially-formed blank, in combination with a reciprocating tool for bending, and a second reciprocating tool for bending, closing, and welding the unfinished portion of the blank, substantially as specified.

3. In a machine for forming chains, the clamping-dies adapted to form a matrix to receive and support a partially-formed link, and having a transverse slot, as at *w*, in combination with a reciprocating plunger adapted to bend, close, and weld the free end of the blank, substantially as specified.

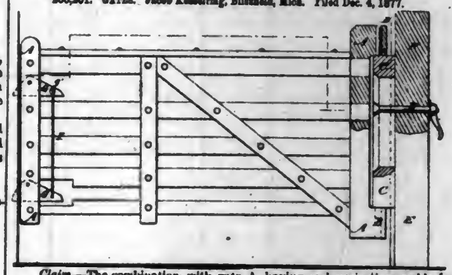
4. In combination with the transversely-slotted holding-dies, a clamping-jaw operated by a treadle, for holding a finished link firmly in place while another link is being united thereto, substantially as described.

200,200. FIRE-ESCAPES. George Kenyon, Springfield, Ill. Filed Nov. 6, 1877.



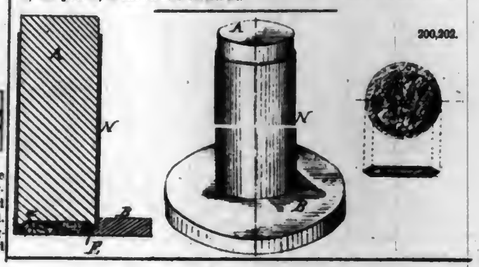
Claim.—A hand device for operating the brake-band of a fire-escape pulley or drum, consisting of the fixed handle F', spring *d*, and movable handle F, the latter receiving both rings of brake-band, and being fulcrumed on a projection of fixed handle, as shown and described.

200,201. GATES. Jacob Kessling, Blissfield, Mich. Filed Dec. 4, 1877.



Claim.—The combination, with gate A, having oval projections or blocks B B on the rear upright, of the slotted bar C, the pintles, the bolt and nut D *d'*, and post E, as shown and described.

200,202.

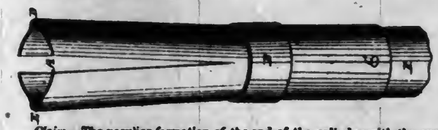


200,203. PIPE-TOBACCO. Francis S. Kinney, New York, N. Y. Filed Dec. 5, 1877.

Claim.—1. As a new article of manufacture, a cake of tobacco having its edges beveled by compression, substantially as set forth.

2. A die composed of the upper and lower sections A B, having the beveled annulus E, in combination with the tubular casing N, substantially as and for the purpose set forth.

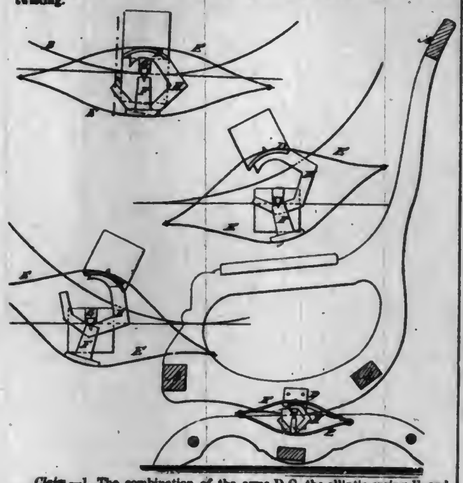
200,203. HANDLE-EXTENSION ATTACHMENTS FOR BROOMS, &c. Robert G. Kaer, Sidney, Ohio. Filed Nov. 10, 1877.



Claim.—The peculiar formation of the end of the cylinder with the openings A and ridges D and F, and the combination of the sliding band B and the cylinder when thus formed.

200,204. ROCKING-CHAIRS. John Kapp, Brooklyn, E. D., assignor to Martin J. Grossman, New York, N. Y. Filed Jan. 11, 1878.

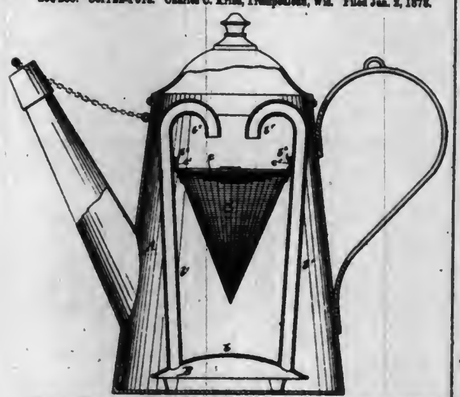
Brief.—The attachment of the lower leaf of the elliptic spring to the base of the chair is by means of socketed posts and pins, the posts attached to the lower leaf, and the pins, which play in the sockets in the upper ends of the posts, to the base of the chair, the object being to cause the spring to assume such a position that all strain upon it will be direct without any tendency to twisting.



Claim.—1. The combination of the arms D G, the elliptic spring E, and the oscillating posts F with each other, and with the rocker and pedestal of the chair, cradle, or crib, substantially as herein shown and described.

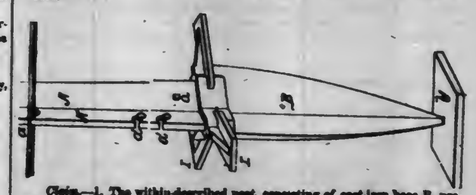
2. The combination of the posts D G, the elliptic spring E, the oscillating posts F, and the stop-hook H with each other, and with the rocker and pedestal of a chair, cradle, or crib, substantially as herein shown and described.

200,205. COFFEE-POTS. Charles C. Kribs, Trempealeau, Wis. Filed Jan. 2, 1878.



Claim.—The reticulated holder C of a coffee or tea pot, suspended between spray pipes or tubes *b' b'*, and under the curved upper ends of said tubes, as and for the purpose specified.

200,206. METALLIC PIPES-POSTS. William Langham, Cedar Rapids, Iowa. Filed July 23, 1877.



Claim.—1. The within-described post, consisting of cast-iron base B, provided with braces I, and having stem or projection *b* cast or secured in its upper part, and cap A, fastened thereto by the means *a f f'*, substantially as and for the purposes set forth.

2. The key *d*; having a slot or groove near its middle, and adapted to and combined with flange A in the opening *a'* of the fence-wire hole *a* and *c'*, substantially as described.

3. The post herein described, having the base B, provided with the anchor-plate *b'*, secured thereto by pin *b'*, substantially as and for the purposes set forth.

200,207. PIANO-TUNING PINS. John Lautenschlager, Ashland, Ky., assignor to Jacob Lautenschlager, Sr., Dayton, Ohio. Filed Nov. 27, 1877.

Brief.—The string being wound upon the main pin in two directions, the auxiliary pin is employed to take up the slack string from the main pin, thus bracing the same.



Claim.—A double tuning-pin, consisting of a main pin, around which the string is wound first in one direction, passed through a hole of the same, and then wound in opposite direction, and of a second auxiliary pin, to which the continuation of the string is applied in the customary manner, substantially as set forth.

200,208. CARRIAGE-SPRINGS. James A. Lewis, New Haven, Conn. Filed Jan. 14, 1878.



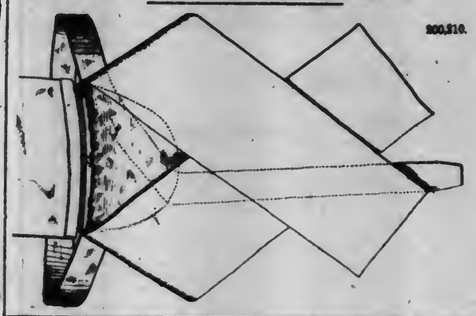
Claim.—The combination, in a carriage-spring, of the outer cylinder constructed with a head at each end, and a stud thereon fitted to receive a nut, and with a notch in each head extending into the said stud, a cylindrical bar arranged within said cylinder, and with projections corresponding to the notches in the heads, the two parts of the spring shaped to correspond to the space in the cylinder around the bar, and nuts on the said studs inclosing a portion of the projections on the said bar, substantially as described.

200,209. FELT WASHERS FOR PAPER-MAKING MACHINES. George W. Lewbwaite, Fort Miller, assignor to Ezekiel Lamon, South Argyle, N. Y. Filed Jan. 16, 1878.



Claim.—The combination of the fluted washer-rolls J K and a washer-box, F G H I, with the frame A, the felt M, and the perforated water-pipe N of a paper-making machine, substantially as herein shown and described.

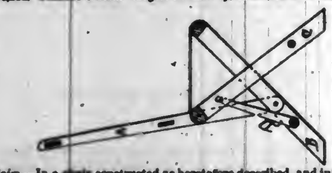
200,210.



200,210. SCARFS. Charles W. Lyford, Brooklyn, N. Y. Filed Jan. 26, 1878.

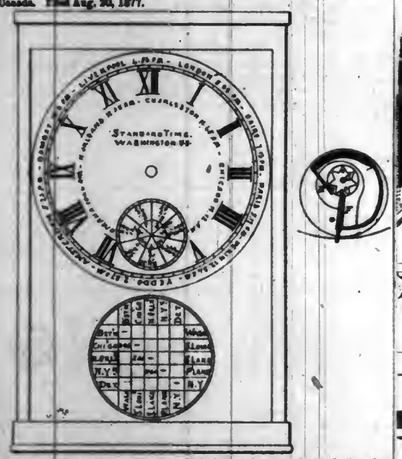
Claim.—A scarf whose shield is provided with two or more covers, substantially as and for the purpose herein shown and described.

200,211. FOLDING CHAIRS. Eugene H. Mahoney, Boston, Mass. Filed Mar. 12, 1877.



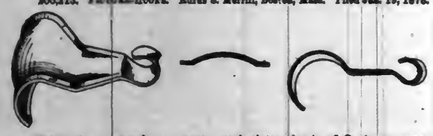
Claim.—In a chair constructed as heretofore described, and in combination with the leg-frames B and C and back-frame A, the link or bar D, connecting the leg frames B and C, in the manner and for the purpose as set forth.

200,212. CALENDAR-DIALS FOR CLOCKS AND WATCHES. William D. McGlaghlen, London, Ontario, Canada. Filed Aug. 30, 1877.



Claim.—The combination, with the dial-plate of a watch or clock, of a revolving calendar-plate, E, and operating mechanism, consisting of the ratchet and ratchet-wheel F G, and spring-pawl H, said ratchet F projecting beyond the edge of the dial-plate, substantially as and for the purpose herein shown and described.

200,213. PICTURE-HOOKS. Rufus S. Merrill, Boston, Mass. Filed Jan. 19, 1878.



Claim.—1. A wrought or sheet metal picture-hook, of S shape, approximately, formed with one or more longitudinal stiffening-corrugations, as and for the purposes set forth.

2. A wrought or sheet metal picture-hook, of S shape, approximately, formed with one or more longitudinal stiffening-corrugations, bounded by flat or plane bearing-surfaces, substantially as set forth.

3. The wrought or sheet metal picture-hook, broad at the rail end and narrower at the picture end, formed with one or more longitudinal stiffening-corrugations, bounded by plane bearing-surfaces, with the edges of the bend of the lower or picture end rounded or bent, substantially as set forth.

200,214. CARRIAGE-AXLES. Willis E. Miller, New Haven, Conn. Filed Nov. 30, 1877.



Claim.—The combination of an axle-arm the collar of which is constructed with a flange projecting forward parallel with the axis, and a box constructed with a groove corresponding to said flange, and so as to extend over the said collar, with an annular recess between the said collar and the box, substantially as described.

200,215. CORN SHELLING AND GRINDING MACHINES. Jos. G. Morris, Chicago, Ill., assignor of one-half his right to William E. Cressins, same place. Filed Jan. 11, 1878.

Brief.—A corn shelling, separating, grinding, and bolting mill for domestic use.

Claim.—1. In a portable mill, the combination of the corn-shelling, cob-separating, elevating or conveying, feeding and cleaning, grinding, and bolting and separating mechanisms, substantially as and for the purpose herein shown and described.

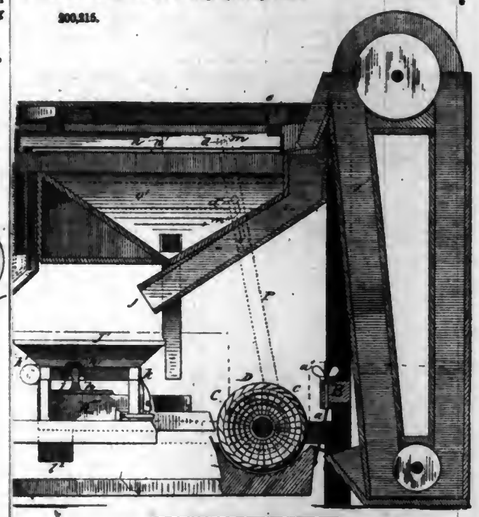
2. The combination of the grinding-burr D, metallic plate G', and corn-shelling plate or disk G, connected together and arranged upon the shaft C, substantially as and for the purposes specified.

3. The combination, with the hopper J', provided with the bottom opening j, of the vertically adjustable and shaking or vibrating shoe K, having the valve h, with enlarged head h', the several parts constructed and relatively arranged to operate substantially in the manner herein shown and described.

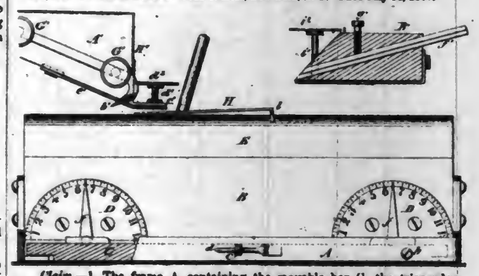
4. The combination of the riddle, centrally suspended by hangers and mechanism, substantially as described, whereby said riddle is adapted to receive oscillating, reciprocating, or vibrating and jarring movements, substantially as and for the purpose specified.

5. The combination, with the riddle and wheel P', or its equivalent, of a connecting-rod, provided with longitudinal slots m m', playing upon the pins d d', substantially as and for the purpose specified.

200,215.



200,216. PARALLEL RULERS. John C. Moss, New York, N. Y. Filed July 18, 1877.



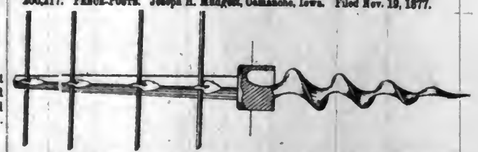
Claim.—1. The frame A, containing the movable bar C, the triangular weight-bar B, and the curved plate E, in combination, for supporting and guiding the pen-carrying device, substantially as herein shown and described.

2. The semicircular scales D and the adjusting-screws e, having indexes f, for graduating the movement of the bar C, substantially as shown and described.

3. The plate H, having the nib l and one or more posts, G, for carrying a lining or ruling instrument, substantially as herein shown and described.

4. The spring c' and the adjusting-screw d', in combination with the plate H', provided with the lip c', substantially as shown and described.

200,217. FENCE-POSTS. Joseph H. Mudgett, Comanche, Iowa. Filed Nov. 19, 1877.



Claim.—1. The improved arrangement of the clips in the re-entrant angle of the post, in such manner that the hooks shall be located back of a line intersecting the salient angles of the two flanges, as shown and described.

2. The improved post having hollow head of cylindrical form, by which it may be turned and drawn into the earth, as specified.

200,218. FILE-CLEANERS. William T. Nicholson, Providence, R. I., assignor to the Nicholson File Company, same place. Filed Dec. 6, 1877.

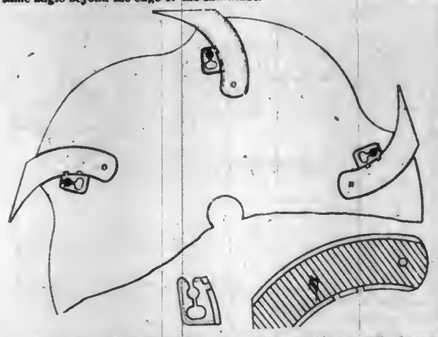


Claim.—1. A file-cleaner composed of a bristle brush upon one side, a wire-tooth brush upon the other face, and provided with a scoring-awl, substantially as described.

2. A file-cleaner-brush provided with a recessed handle for holding a scoring-awl, and a spring for confining the awl in the recess, substantially as described.

200,219. INSERTIBLE SAW-TEETH. Squire J. Randall and Jas. O'Brien, Fort Ludlow, Wash. Filed Dec. 11, 1877.

Brief.—An arc-shaped tooth is detachably secured in a corresponding recess in the blade by means of a split spring-holder, grooved on three sides, seated in a recess in the saw, and provided with a projection that fits into recesses of the adjacent edge of the tooth, in connection with a pin in the holder, for the purpose of moving the tooth when run, so as to project at the same angle beyond the edge of the saw-blade.



Claim.—1. As an improvement in saws with adjustable saw-teeth, the combination of the saw, having arc-shaped recess for tooth and side recess for tooth-holder, the edges of both recesses being tongued, with an arc-shaped tooth and a split spring-holder, both grooved to fit the corresponding recesses of the saw, the tooth-holder locking, furthermore, by a projection into recesses or notches of the tooth, substantially as and for the purpose described.

2. The combination of a saw having recesses for adjustable tooth and a detachable tooth-holder with an arc-shaped saw-tooth, made movable in the recess, and with a spring-holder and spreading rivet or pin, that locks a projection of the holder into one of the side recesses or notches of the tooth, substantially as and for the purpose set forth.

200,220. WASHING-MACHINES. John W. Bicker Chelsea, Mass. Filed July 26, 1877.

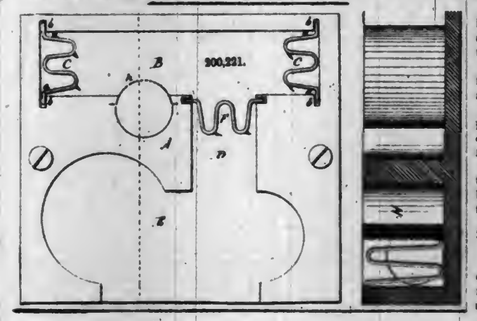
Brief.—The transverse bridge-pieces or division-plates which separate the contiguous rolls prevent the clothes from being drawn down between or around the lower rolls. Two or more stiffening-rods extend longitudinally between the end pieces of the machine, and pass through the bridge-pieces.



Claim.—1. In combination with the main fluted roll C, the bed D, composed of a series of short independent rolls, g, supported on parallel rods h, connected by bridge-pieces or division-plates E, which extend transversely across the machine, and separate the contiguous rolls, substantially as and for the purpose described.

2. The combination of the re-enforcing-rods G with the rods h, rolls g, and bridge-pieces E, substantially as and for the purpose set forth.

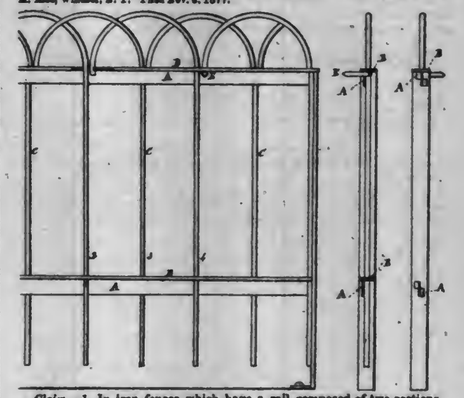
200,221.



200,221. ANIMAL-TRAPS. Eugene B. Ripley, Unionville, Conn. Filed Nov. 22, 1877.

Claim.—In an animal-trap, the combination of the passage B, gravity-gate C at each end of said passage, the receiving-chamber E, passage D, gravity-gate F in said passage, and the reversible cover, constructed with elongated slots and corresponding headed studs on the body, and so that the cover may be applied either side up, substantially as described.

200,222. FENCES. Corydon A. Root, Andover, Ohio, assignor of one-half his right to Isaac M. Rice, Windsor, N. Y. Filed Nov. 6, 1877.

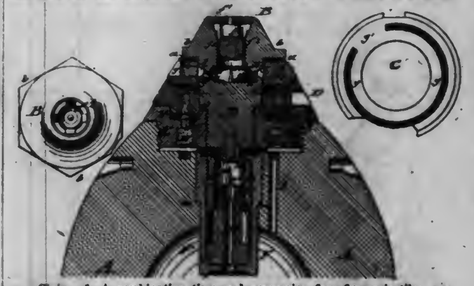


Claim.—1. In iron fences which have a rail composed of two sections—viz., the vertical web A and a horizontal plate or cap, B—so arranged in relation to said web as to form, in combination therewith, a T-rail, the projection of the ends of the curved portion of the picket downward through the top plate alternately on opposite sides of the web, and providing said picket ends with a gain or notch, by which to engage the picket with said top plate, substantially as specified.

2. The bent or outward projection of the extremity E of the picket, substantially as and for the purpose specified.

200,223. COMBINATION SHELL-FUSES. Eduard Rubin and August Fornerod-Stadler, Thun, Switzerland. Filed Jan. 3, 1878.

Brief.—The time-fuse composition is arranged in two graduated rings, which may be turned and set relatively to each other so as to regulate the time of bursting. The time-fuse is ignited by a percussion-fuse arranged in the front part of the fuse-case, the fire from which passes through openings in the case to ignite said time-fuse. In case of the failure of the time-fuse the charge of the shell is ignited by a percussion-fuse in the rear of the fuse-case.



Claim.—1. A combination time and percussion fuse for projectiles, consisting of upper and lower graduated and adjustable fuse-rings, a connecting-fuse base-plate with interior powder-chamber, and of a retaining center screw-bolt arranged with devices to ignite the time-fuse at the moment of firing the gun, and a percussion-fuse at the moment of striking an object, substantially as and for the purpose set forth.

2. In a combination-fuse, the combination of the center screw-bolt B, having central cavity with radial exit-holes, a fixed firing-point, and a sliding and spring-cushioned priming-pin, with the upper fuse-ring C, to communicate fire to the same at the moment of firing the gun, substantially as set forth.

3. In a combination-fuse, time-fuse rings having bottom grooves filled with fuse composition, said grooves separated by a solid bridge, and provided with an exit-hole for the escape of the gases, substantially as specified.

4. In a time-fuse, the combination of the sliding firing-pin f, having supporting-springs f^2, with the bolt B, having cavity e, screw-cap f^1, and points e', and openings d, communicating with fuse-rings, as and for the purpose set forth.

5. In a percussion-fuse, the combination of the sliding bolt F', having central firing-channel point e^2 and springs a^2, and the guide-sleeve c, with the bolt-casing F and screw-bolt B, having a primed bottom chamber, as and for the purpose set forth.

200,224. BOTTLE-STOPPER FASTENERS. Charles Sedgwick, New York, N. Y. Filed Jan. 8, 1878.

Claim.—1. The combination, in a bottle-stopper-fastening device, of a pivoted bail or yoke, and of a stopper having a cap-plate, with anti-friction roller and slotted guide-ears or extensions, substantially as shown and described.

2. The combination, in a bottle-stopper-fastening device, of a pivoted bail or yoke with a stopper having a cap-plate, with the usual elastic stopple portion at the under side, a revolving anti-friction roller parallel to the upper part of the bail at the top, and side extensions or ears with bail-guiding slots that extend from a point slightly back of the center of the roller to some distance in front of the same, substantially as specified.

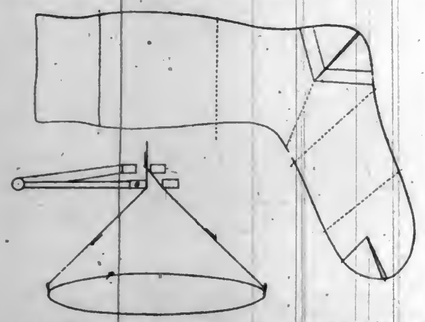
3. The combination, with a stopper having a cap-plate with revolving anti-friction roller, turning in perforated lugs of the cap-plate, and projecting above the same, of a swinging bail or yoke pivoted to the neck-band, and guided in slotted extensions or ears of the cap-plate, that serve to retain the bail in closed or open position, substantially as specified.

200,224.



200,225. METHODS OF KNITTING STOCKINGS. Benjamin F. Shaw, Cambridge, Mass. Filed May 15, 1877.

Brief.—The loops are varied in length on the rear side from those on the front side of each course throughout the fashioned part of the stocking. The selvaged extensions of the heel parts relieve the instep from strain.



Claim.—1. A stocking the heel of which is composed of independent selvaged pieces and narrowed and widened portions connecting them, substantially as described.

2. In the manufacture of a knitted web, the method of fashioning the web, consisting in varying the length of the loops in each course of the web, substantially as described.

200,226. DUSTER-COATS. Albert P. Silva, Elmira, N. Y. Filed Nov. 30, 1877.



Claim.—1. A duster having the imitation vest B in two sections, that pass around the neck and are connected at the collar-sections a, the latter adapted to turn over the collar of shirt, as shown and described.

2. In combination with the subject-matter of the above claim, the dust-guards C, stitched on the interior of sleeve, and closed around the wrist by bands and buckles, as and for the purpose specified.

200,227. GRAIN-DRILLS. Joshua M. Smith and H. W. G. Thomas, Springfield, Ohio. Filed June 5, 1877.

Claim.—1. In a grain-drill, two bars or sets of bars, G G', to which the drag-bars are attached, pivoted in the frame of the machine, whereby they may be swung by a lever or equivalent device to change the hoes from a straight to a V-shaped or diagonal rank, or vice versa, as set forth.

2. The pivoted connecting-pieces or staples *a*, pivoted to the bars G G', as set forth, whereby the parallelism of both is maintained, substantially in the manner and for the purpose specified.

3. The arrangement and combination, with the feed-wheel K, of the inclined segmental cut-off *m* upon the rock-shaft L, whereby the discharge-channel is composed of two distributing-surfaces, and can be regulated at will, substantially as and for the purpose set forth.

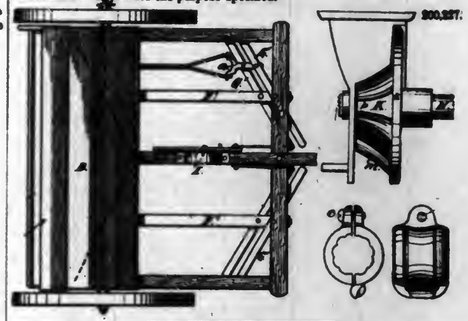
4. The combination, with the seed-cup and feed-wheel of a grain-drill, of a sectional shaft, united by couplings, whereby one or more cups may be disconnected and removed without disturbing the whole set, substantially in the manner specified.

5. The sleeve-coupling herein described, consisting of the hinged sections with a fluted bore, and clamped upon the shaft by a set-screw, *c*, in the manner and for the purpose specified.

6. The combination, with the driving-shaft of a grain-drill, provided with suitable connecting-gearing, of the reciprocating distributing-trough T, hung under the discharge-orifices of the seed-cups, in the manner and for the purpose specified.

7. The herein-described spring-hoe, composed of the drag-bar *i*, pivoted arm *l*, bars *k*, and spring *n*, the parts being connected and united to the hoe, substantially as and for the purpose specified.

200,227.



200,228. DISTEMPER PAINTS. George L. Stevens, Brooklyn, assignor to the Averill Paint Company, New York, N. Y. Filed Dec. 7, 1877.

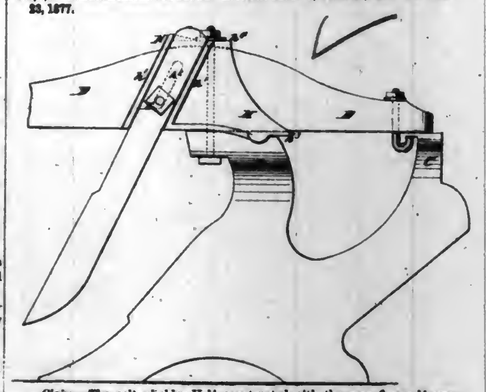
Claim.—A prepared dry calcimine or distemper paint to which the proper quantity of binding material has been added, and the whole made or compressed into the form of a cake, tablet, ball, or other shape, as an improved article of manufacture.

200,229. FRUIT-JARS. Thomas W. Synnott, Wemoah, N. J. Filed Jan. 11, 1877.



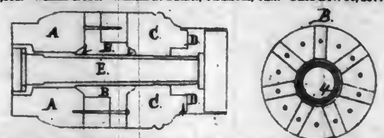
Claim.—A glass jar having a screw-thread upon the neck, which has been molded in the act of molding the jar, and running out into the shoulder, and provided with ears E and F, formed upon the neck of the jar beyond the running-out point of the lower extremity of the thread, and adapted to retain the packing-ring in position against the shoulder, substantially as shown and described.

200,230. COLTER-HOLDERS FOR PLOWS. Robert B. Thomson, Dansville, Mich. Filed Nov. 23, 1877.



Claim.—The colter-holder H A', constructed with the rear flange A^1, provided with a cross-rib, and the slotted top flange A^2, in combination with the standard B, having a grooved head, and the beam D, substantially as shown and described.

200,231. WHEEL-HUBS. William B. Tucker, Columbus, Ohio. Filed Nov. 10, 1877.

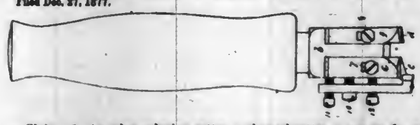


Claim.—1. The combination of two solid wooden hub-sections with an interposed metallic spoke-holder, separate from the axle-box, made in one piece, a threaded box, and a clamping-nut or hub-band, substantially as set forth.

2. The combination of two solid wooden hub-sections with an interposed metallic spoke-holder, separate from the axle-box, made in one piece, and devices for preventing the separation of the said parts.

3. The combination of spoke-holder B, separate from the axle-box, having annular flanges *b*, with wooden sections A and C, correspondingly recessed, threaded box E, and nut or hub-band D, substantially as set forth.

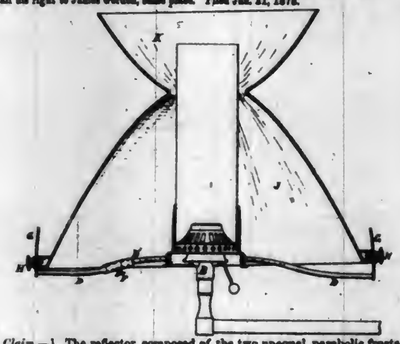
200,232. CHANNELING-TOOLS FOR BOOT AND SHOE SOLES. Jos. S. Turner, Rockland, Mass. Filed Dec. 27, 1877.



Claim.—1. An edge-reducing cutter, a channel-cutter, a presser for each cutter, and an edge-gage.

2. In a channeling-tool, the portion 14, the rest on the rib *h*, in combination with cutters *c d* and adjustable pressers *e f*, substantially as described.

200,233. REFLECTORS FOR GAS-BURNERS. George Walton, Cincinnati, Ohio, assignor of one-half his right to James Gordon, same place. Filed Jan. 21, 1878.

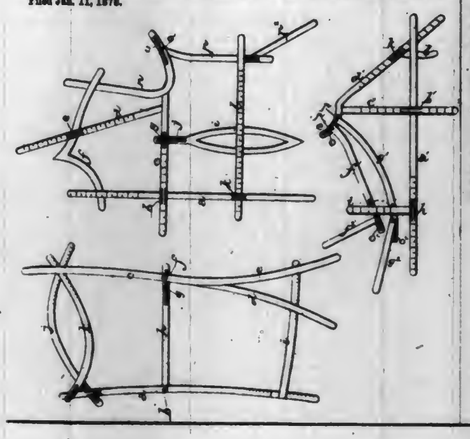


Claim.—1. The reflector composed of the two unequal parabolic frusta J K, joined at their apices, substantially as and for the purpose set forth.

2. The holder C, whose arms D terminate in slotted ears G, traversed by screws H, occupying screw-sockets I on the reflector, substantially as set forth.

3. The combination of the extension-arm D D', screws F and H, slotted ears G upon the ends of the arms, and screw-sockets I upon the reflector, substantially as and for the purposes set forth.

200,234. ADJUSTABLE PATTERNS FOR GARMENTS. Ursula L. Webster, New Haven, Conn. Filed Jan. 11, 1878.



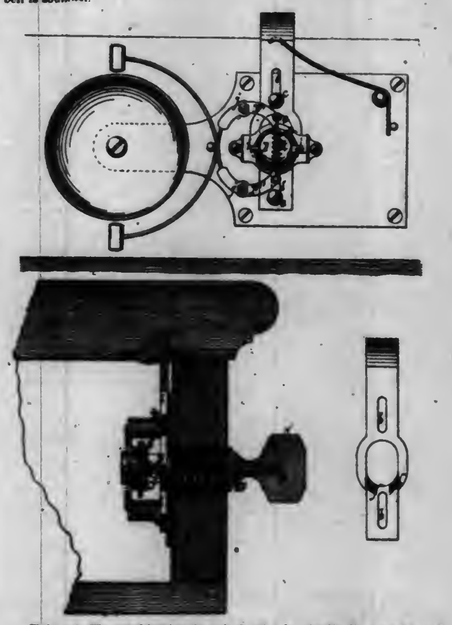
Claim.—1. In an adjustable pattern for cutting the front of a female garment, the combination of the center rule *c*, adjustable upon the chest-rule *e*, main rule *d*, neck-and-shoulder rule *f*, dart *i*, rule *l*, and rods *p* p^1, the parts being adjustable upon one another, substantially as shown.

2. An adjustable pattern for cutting the back of a female garment, consisting of the center bar *a'*, rule *c'*, shoulder-rule d^1, arm-rule *e'*, back-rules f^1 f^2, bottom rule *i*, and neck-rule *l*, substantially as described.

3. An adjustable pattern for cutting sleeves for female garments, consisting of the bars *a e*, guide *i*, cross-bar *h*, rules *j k*, and rods *d* or *e*, substantially as specified.

200,235. ALARM-LOCKS. John G. Wolf, New York, N. Y. Filed Jan. 19, 1878.

Brief.—The handle is turned so that the operating-pin comes between the levers which operate the bell-hammers. When the handle is turned the alarm-bell is sounded.



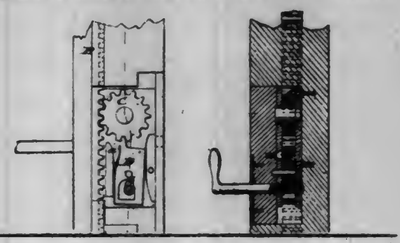
Claim.—1. The combination, in a lock, of a longitudinally movable and rotating spindle, having a conical head at its inner end, a trip-pin projecting from said head, a spring latch or bolt having an inclined lug, which is adapted to co-operate with the conical head, a bell, and one or more hammers, the shanks of which are situated in the path of the trip-pin, substantially as described.

2. The combination, in a lock, of a longitudinally movable and rotating spindle, having a conical head at its inner end, a trip-pin projecting from the conical head, a spring latch or bolt, having an inclined lug adapted to co-operate with the conical head, a bell, one or more hammers, the shanks of which are situated in the path of the trip-pin, and a guard-plate having a hole for the passage of the conical head, and a slot emanating from said hole for the passage of the trip-pin, substantially as described.

3. The combination, in a lock, of a longitudinally movable and rotating spindle, having a conical head at its inner end, a trip-pin projecting from the conical head, a spring latch or bolt, having an inclined lug adapted to co-operate with the conical head, and a guard-plate provided with a hole for the passage of the conical head, a slot for the passage of the trip-pin, and with notches on the edge of said hole to engage with the trip-pin, substantially as described.

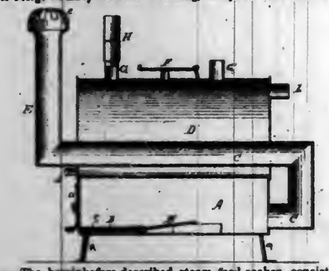
200,236. SASH-FASTENERS. Isaac N. Wood and Alexander Morton, Wilmington, Del. Filed Dec. 19, 1877.

Brief.—The ordinary rack and intermeshing pinion are combined with a fulcrumed spring-pawl, which is operated by a cam working in a recess of the pawl, there being also a shaft and operating-handle, the construction providing a ready means of locking the sash, closed or unclosed, or at any desired height.



Claim.—The combination, with rack and pinion, of the pawl D and cam *b*, the latter working in recess of pawl and on a shaft having outer handle, as shown and described.

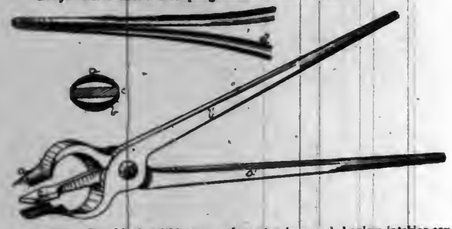
200,237. STEAM FEED-COOKERS. Lafayette Worth, Winterset, Iowa, assignor of two-thirds his right to George W. Kirby and Lewis Thornburg, same place. Filed Dec. 13, 1877.



Claim.—The hereinbefore-described steam feed-cooker, consisting of the furnace A, with sectional hinged grate and lever, boiler D, with tubes *d d'* G G' I, safety-valve F, flue C, passing entirely through the boiler, and provided with the smoke-stack and spark-condenser E *e*, the several parts constructed and relatively arranged to operate substantially as and for the purpose set forth.

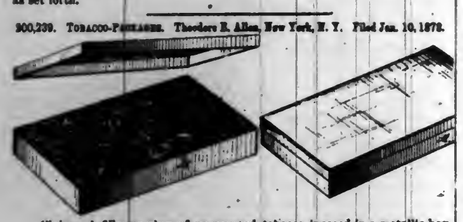
200,238. BLACKSMITHS' TONGS. John H. Aller, Pittsburg, Pa., assignor to Jones & Laughlin, same place. Filed Jan. 13, 1878.

Brief.—For sucker-rod couplings and other like articles.



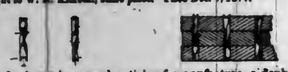
Claim.—In a blacksmith's tongs, the outer jaws *a b*, having interior concave faces, in combination with one or more intermediate jaws, *c*, substantially as set forth.

200,239. TOBACCO-PACKAGES. Theodore R. Allen, New York, N. Y. Filed Jan. 10, 1878.



Claim.—A filler or plug of unwrapped tobacco inserted in a metallic box, as a new article of manufacture.

200,240. NAILS FOR BOOTS AND SHOES. Horatio N. Allen, Norwood, Mass., assignor of one-half his right to W. R. Kimball, same place. Filed Dec. 7, 1877.

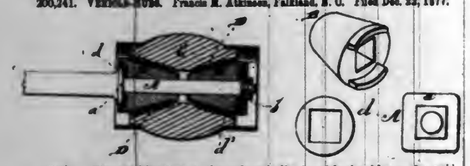


Claim.—1. As an improved article of manufacture, a double-pointed nail having a twist-grooved body and cylindric head, as and for the purposes set forth.

2. A nail having two gain-twist grooves, with angles of taper on opposite sides, leaving corresponding ribs or flanges, which terminate in oblique points, as and for the purposes specified.

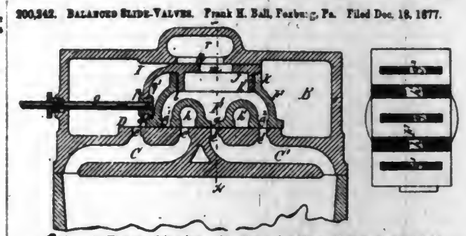
3. A nail having gain-twist flanges on opposite sides, and corresponding grooves with angles of taper which meet, forming a cutting-edge between the two oblique clinching-points, substantially as and for the purposes set forth.

200,241. VEHICLE-HUBS. Francis M. Atkinson, Falkland, N. C. Filed Dec. 22, 1877.



Claim.—The combination of the axle-spindle A, with shoulder *a*, the conical thimbles B B, washers *d d*, nut *b*, and hub C, having the cone-shaped boxes D D', all substantially as and for the purposes herein set forth.

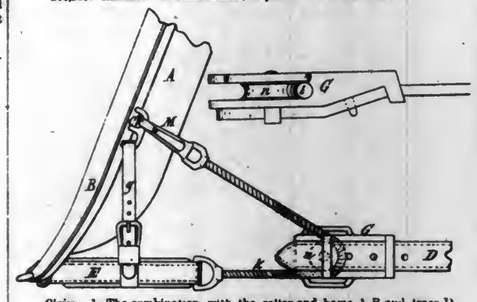
200,242. BALANCED SLIDE-VALVES. Frank H. Ball, Foxburg, Pa. Filed Dec. 18, 1877.



Claim.—1. The combination, with the valve-chest B, provided with face-plate D, having steam-ports *e e' e'' e'''*, and face-plate I, having exhaust-opening *n*, of the hollow slide-valve F, constructed with three steam-ports *g g' g''*, and two intermediate cavities, *h h'*, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the valve-chest B, provided with face-plate D, having steam-ports *e e' e''*, and face-plate I, having exhaust-opening *n*, of the hollow slide-valve F, provided with steam-ports *g g' g''*, recesses *h h'*, and sleeve *k*, and the adjustable plate J, provided with sleeve *k'* and opening *m*, substantially as and for the purpose set forth.

200,243. HARNESS. Theron Boardman, Gray, N. Y. Filed Dec. 6, 1877.



Claim.—1. The combination, with the collar and hame A B and trace D, of the breast-collar E and strap or rope *k*, connecting the breast-collar and hame-collar with the trace, substantially as shown and described, and for the purpose set forth.

2. The combination, with the collar and hame A B, provided with staple C and the trace D, of the breast-collar E, rope *k*, secured thereto and provided with snap-hook M, and trace-buckle G, having a roller, *n*, substantially as and for the purpose set forth.

200,244. HAT-HOLDERS. Frank Bobbitt, Varna, Ill. Filed Aug. 31, 1877.



Claim.—In a church-pew, the ring C, having a handle, D, and slide-rings E E and F F, and the ways G G, in combination with the seat A and back B of a pew, all constructed and arranged substantially as described.

200,245. HYDRAULIC MOTORS. James M. Bois, Salamanca, N. Y. Filed Dec. 17, 1877.

Brief.—By the pressure of air acted upon by the fall of water through the siphon, water is forced into a higher reservoir. Thus a series of intermittent operations will take place, and a wheel connected therewith will be periodically set in motion.

Claim.—1. In a hydraulic motor, the combination, with the air-pressure chamber, formed with air-valve mechanism in its top, and the waste-pipe, having a spring discharge-valve, of one or more water-pressure chambers, the latter being provided with the several valves respectively controlling communication with the open air, the compressed-air-feeding connection, and the water-feeding connection, substantially as set forth.

2. In a hydraulic motor, the combination, with the water-pressure chamber, made with the several valves which respectively control connection with the open air, the compressed air, and the water-feed, of the upright discharge-pipe, the latter being formed with an enlargement near its base connection with said chamber, in which a suitable check-valve is seated, substantially as set forth.

3. In a hydraulic motor, the combination, with the air-pressure chamber, of the siphon, formed with the air-connecting pipe near its top, substantially as set forth.

4. In a hydraulic motor, the combination, with the long leg of the siphon, of the air-pipe *b*, made to extend nearly to the top of the siphon, and provided with the upwardly-opening valve *b'*, substantially as set forth.

5. In a hydraulic motor, the combination, with the reservoir A and siphon B, of the air-pressure chamber C, the same being constructed as described, whereby the said chamber C has a capacity equal to the volume of water discharged at one of the intermittent operations of the siphon, substantially as set forth.

6. In a hydraulic motor, the combination, with reservoir A and chamber C, of the siphon B, the latter having its receiving and discharging mouths *b' b''* of the same relative size, and of less diameter than the body of the siphon, substantially as set forth.

7. In a hydraulic motor, the combination, with reservoir A, siphon B, and air-pressure chamber C, of the water-wheel C', substantially as set forth.

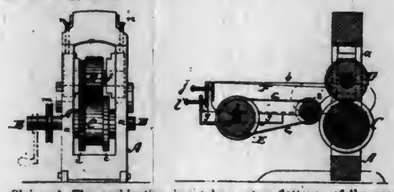
8. In the described hydraulic motor, the combination, with the air-pressure chamber C, of spring-valves *c* and *d* and the weighted valve *c'*, all made and adapted to operate substantially as set forth.

9. In a hydraulic motor, the combination, with air-pressure chamber C and water-pressure chamber F, both made and provided with the respective valve mechanism, as described, of the connecting air-pipe E, having valves *e* and *e'*, substantially as set forth.

10. In a hydraulic motor, the combination, with the water-pressure chamber F and air-connecting pipe E, of the weighted valves *e'* and *f''*, the two being adapted to operate as described, whereby said valve *f''* will open before valve *e'* opens, substantially as set forth.

200,246. TOBACCO-STEM FLATTENERS. Nicholas H. Bergfeldt, New York, N. Y. Filed Aug. 4, 1877.

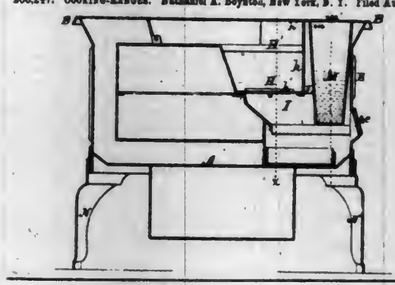
Brief.—The frames that carry the belt-rollers are adjustable. The upper roller enters the lower roller between two flanges, one of which gears with a flange on the upper roll.



Claim.—1. The combination, in a tobacco-stem flattener, of the pressure-roller C, having two flanges, *d* and *e*, of which one is toothed, with the pressure-roller D, carrying a toothed wheel that meshes into the toothed flange *d*, substantially as herein shown and described.

2. The combination of the frame A, having side rails *b*, with the adjustable bearings *g*, set-screws *l*, shaft E, belt *m*, shaft B, feed-apron G, and frame F, all arranged to operate substantially as herein shown and described.

200,247. COOKING-RANGES. Nathaniel A. Boynton, New York, N. Y. Filed Aug. 5, 1876.



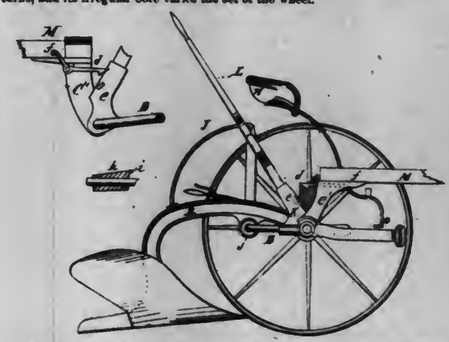
200,248. PRESERVING MEATS. Julius Brose, Covington, Ky. Filed Apr. 7, 1877.

Claim.—1. The process herein described of preserving hams and other articles of food by wrapping them first in paper or similar material, and then inclosing the same in canvas or other similar material, and hermetically sealing the same by a coating of asphaltum, substantially as set forth.

2. A hermetical casing for articles of food, consisting of a receptacle of canvas coated or saturated with asphaltum, substantially as set forth.

200,249. SULKY-PLOWS. Byron C. Bradley and Charles A. Hague, Chicago, Ill. Filed July 23, 1877.

Brief.—The lifting-lever is rigid with the crank-axle, which carries the plow. Its ratchet is upon the plow-beam, and locks the latter to the crank. When the plow is raised, the lever is locked to the arched frame by a foot-pawl or catch. The spindle is provided with a fixed sleeve, upon which the wheel turns, and its irregular bore varies the set of the wheel.

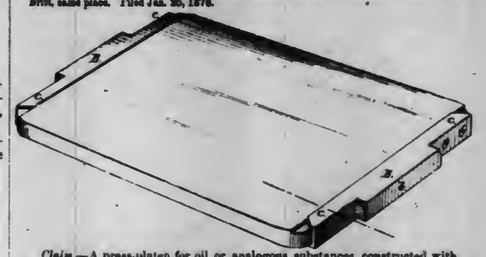


Claim.—1. In a sulky or gang plow, a plow hinged upon a crank, in combination with a lever permanently secured to the crank, and a rack or other equivalent device connected with the plow-beam, for the purpose of raising and lowering the plow independently of the frame, and locking the plow when in use, so that it cannot turn on the crank, substantially as specified.

2. A plow-beam hinged to a crank, B, in combination with the frame C D, supporting a seat, tongue M, stop *o*, lever L, and rack J, substantially as and for the purpose set forth.

3. The sleeve *h*, provided with spur *i*, to fit a corresponding recess in the spindle-arm, and having the hole that receives the spindle diagonal to or not concentric with the circumference of the sleeve, whereby the sleeve is prevented from turning upon the spindle, and the pitch or gather of the wheel is regulated, substantially as specified.

200,250. PLATENS FOR OIL-PRESSES. Stephen Britt, Brooklyn, N. Y., assignor to Benjamin Britt, same place. Filed Jan. 26, 1878.



Claim.—A press-platen for oil or analogous substances, constructed with metallic end clamps B B, provided with laterally-projecting flanges *c c*, substantially as described.

200,251. MACHINES FOR DRAWING AND STRAIGHTENING METAL BARS. Latham Brightman, Cleveland, Ohio, assignor of one-half his right to August Brankman. Filed June 8, 1877.

Brief.—The roller-carrier is made in sections, for the purpose of permitting the grasping mechanism to seize the rod just as its end emerges from the drawing-die.

Claim.—1. In a metal drawing and straightening machine, the combination, with a drawing-die and suitable means for grasping the bar, of a revolving sectional carrier provided with rollers, the latter arranged to act on the surface of the metal bar, substantially as described.

2. In a metal drawing and straightening machine, the combination, with a drawing-die and suitable means for grasping the bar, of a revolving sectional carrier, provided with a series of straightening-rollers, arranged in

alternately-opposite succession along the line of the drawing action, substantially as described.

3. In a metal drawing and straightening machine, the combination, with a drawing-die and suitable means for grasping the bar, of a revolving sectional carrier, a counter-shaft, and suitable intermediate gearing to impart a rotary movement to said carrier, substantially as described.

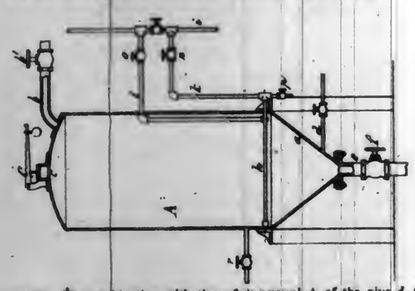
4. In a metal drawing and straightening machine, the combination, with a drawing-die and suitable means for grasping the bar, of the revolving sectional carrier H, gear-wheel I, pinion J, shaft S, pulley L, and frame K, substantially as described.

5. The combination, with the sectional revolving roller-carrier, of a supporting-frame constructed in two parts, and adapted to be withdrawn from its operative position, so as to release the rollers from contact with the shaft, substantially as described.

6. The combination, with the sectional revolving roller-carrier, of collars or rings for securing the sections of the carrier together, substantially as described.

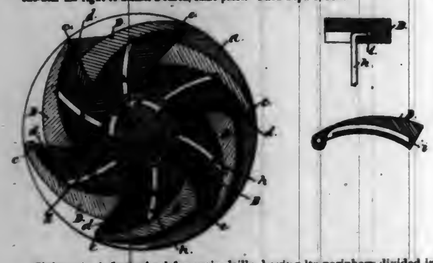
200,252. APPARATUS FOR REFINING LARD. Richard Bullymore, Buffalo, N. Y. Filed Aug. 25, 1877.

Brief.—The invention consists in the special combination of devices covered by the claim. The steam-coil is located at a distance from the bottom of the tank sufficient to leave a space for the cleansing solution. The lard is let in from the rendering apparatus through a pipe at the top of the tank.



Claim.—The combination, with the refining-vessel A, of the pipe *d*, for admitting steam to the lower portion of the tank, steam-coil h, arranged in the vessel A, substantially as described, whereby a space is left below the coil for the settling of the cleansing solution and impurities, and another space above the coil for the refined lard, steam supply and escape pipes *i k l*, discharge-pipes *r q*, and vapor-escape *e*, substantially as and for the purpose set forth.

200,253. FEED-WHEELS FOR GRAIN-DRILLS. Joseph Burroughs, Dayton, Ohio, assignor of one-half his right to Daniel Denson, same place. Filed Sept. 3, 1877.



Claim.—1. A feed-wheel for grain-drills, having its periphery divided into simultaneously-adjustable compartments of unchanging width, to vary the feeding capacity of the wheel, as set forth.

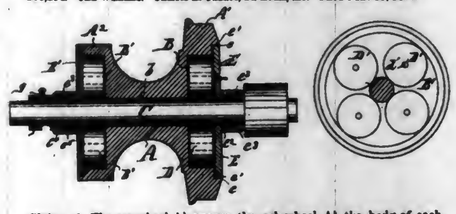
2. A feed-wheel for grain-drills, consisting of sets of disks *a*, mounted upon a sleeve, B, and containing between them adjustable segment-pieces D, as and for the purpose set forth.

3. In a feed-wheel for grain-drills, having adjustable buckets, the sleeve B, shaft C, and collars E, united as described, whereby the segmental pieces D can be vibrated through the medium of the arms *h*, or equivalent devices, as set forth.

4. The combination, with the disks *a* and pivoted segment-pieces D, of the division-plates *d*, whereby the grain is prevented from getting within the wheel.

5. In a feed-wheel for grain-drills, the segmental bottom pieces D having segmental slots *i* on their under sides, and pivoted at one end between a pair of disks, as and for the purpose set forth.

200,254. CAR-WHEELS. Charles E. Candee, St. Louis, Mo. Filed June 15, 1877.

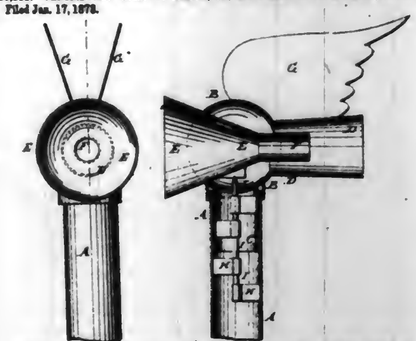


Claim.—1. The car-wheel A^1 proper, the sub-wheel A^2, the body of each being provided with anti-friction wheels D D', arranged as shown and described, the caps E E', and the journal of a car-axle, all said parts being combined to operate in the manner and for the purpose set forth.

2. The improved car-wheel, consisting of the car-wheel A^1 proper, having the lubricant-chamber B, the sub-wheel A^2, having the lubricant-chamber B', the caps E E', sleeves e^2, the packing e^3 e^3, all said parts being combined with relation to the journal of a car-axle, so as to form the annular passage communicating from the chamber B to B', as and for the purpose set forth.

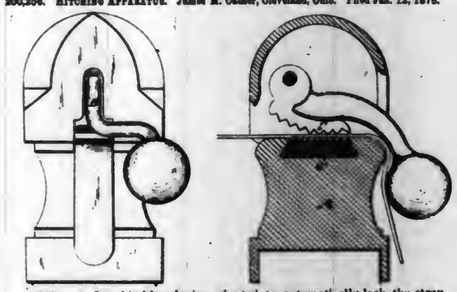
3. The car-wheel A^1, its chamber B, wheels D, the sub-wheel A^2, its chamber B', wheels D', the caps E E', stuffing-boxes e^3, the annular passage from chamber B to B', said parts being combined with the journal of a car-axle, and forming the improved car-wheel A, to operate in the manner and for the purpose set forth.

200,255. VENTILATORS. Isaac W. Canfield, Jr., and Castino R. Demarest, Nyack, N. Y. Filed Jan. 17, 1878.



Claim.—The combination of the lower pipe C, the globular shell B, the rear pipe D, the conical pipe E, the inner rear pipe F, the wing or wings G, and the pivot I with each other and the pipe or flue A, substantially as herein shown and described.

200,256. HITCHING APPARATUS. James M. Comer, Cleveland, Ohio. Filed Jan. 12, 1878.



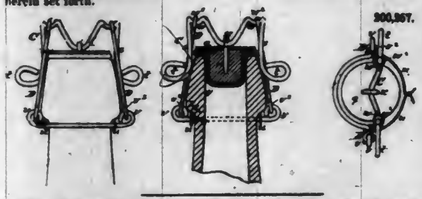
Claim.—1. In a hitching device adapted to automatically lock the strap against withdrawal, the combination, with the serrated cam-lever, of the independent base-piece, made of rubber or similar flexible material, the same being thereby adapted to cause the strap to be closely engaged between the two without injury to it, substantially as set forth.

2. The combination, with the cam-lever provided with a weight or ball formation at its free end, of the close case, in which it is eccentrically pivoted, said case being adapted to protect the parts from the weather, and formed with an independent base, of rubber or similar flexible material, between which latter and the cam of the lever the strap may be secured, substantially as set forth.

3. In a hitching device adapted to automatically lock the strap against withdrawal, the spring-pressed cam-lever, substantially as set forth.

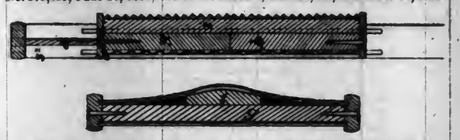
200,257. BOTTLE-STOPPER FASTENERS. Peter H. Caverly, Brooklyn, E. D., N. Y. Filed Dec. 31, 1877.

Claim.—The double crank C, with its wrists *w w*, thumb-levers *t t*, and side portions *s s*, in combination with the pivotal staple *x*, pivotal loops *v v*, and links D D, for locking and unlocking a bottle-stopper, in the manner herein set forth.



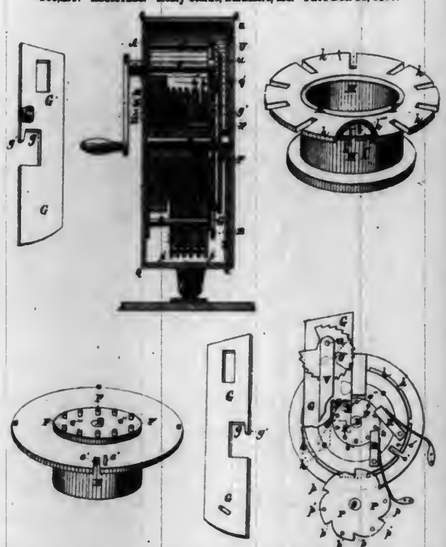
200,258. WASH-BOARDS. Samuel L. Caverly, Brooklyn, E. D., N. Y. Filed Nov. 12, 1877.

Brief.—This invention is an improvement on the patents of G. R. Wright, No. 179,085, June 20, 1876, and J. W. Latcher, No. 185,553, December 19, 1876.



Claim.—The combination, in a reversible wash-board, of side pieces, having parallel longitudinal grooves in each, transverse and longitudinal filling-pieces, having crossed grain to prevent warping, and nails or screws driven between said grooves into the edges of said transverse filling-pieces, substantially as herein shown and described, for supporting and securing flat and convex sheets of corrugated zinc on the respective sides of the board, in the manner herein specified.

200,259. REGISTERS. Henry Clarke, Baltimore, Md. Filed Dec. 13, 1877.



Claim.—1. The means employed for rotating and locking in place the register-cylinder E, consisting of the spring push-pins or detents F, arranged within the rear end of said cylinder, and the slide G, provided with the notch *g* and lug *g'*, and arranged to move longitudinally over the inner end of said cylinder, and to engage alternately with said pins, substantially as and for the purpose specified.

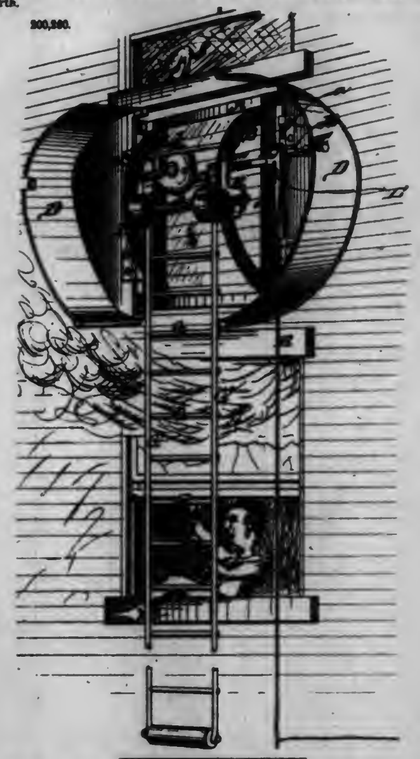
2. As a means for communicating the rotary motion of the primary dials to the succeeding or secondary dials, the plate or flange *c*, provided at its periphery with one radial notch, *c'*, and upon its rear face with the stud *c''*, the plate or flange h, provided with ten radial peripheral notches, *h'*, and the wheel F, having several peripheral teeth, *p*, each of which may be brought into position for engagement with said stud *c''*, and provided upon its rear face with several pins, *p'*, that engage with said notches h, substantially as and for the purpose shown.

200,260. FIRE-ESCAPES. Ira D. Cross, Reno, Nev. Filed July 28, 1877.

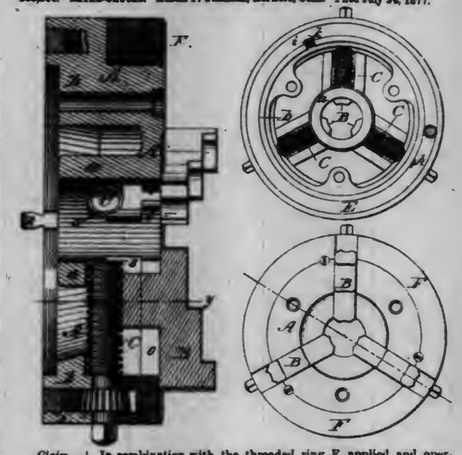
Brief.—The doors are opened from below by a cord which releases a spring-catch, and, opening, they release and lower the ladder. An alarm-bell strikes by the descent of the ladder.

Claim.—1. The combination, with the spring-doors D D and catch E, of the angular shaft S, having a notch, *x*, on its inner arm, and the lever M, pivoted thereto and provided with the pin *s*, substantially as and for the purposes herein set forth.

2. The combination, with the ladder and the pulleys to which it is attached, of the ratchet-wheel *h*, spring-dog L, with arm or plate L', the lever M, and swinging door D, substantially as and for the purposes herein set forth.



200,261. LATHE-CHUCKS. Austin F. Cushman, Hartford, Conn. Filed July 24, 1877.



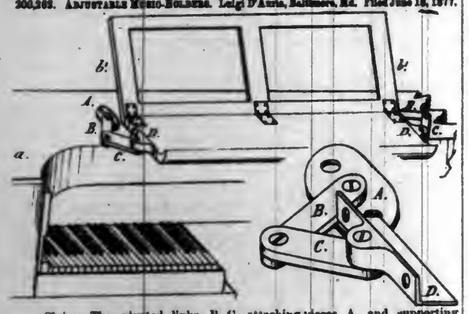
Claim.—1. In combination with the threaded ring E, applied and operating as shown, the spring *k*.

2. The chuck-body A, with the jaw-guides and the screw-bearings in its front, the whole made in one piece, as shown, in combination with the ring F, applied in the manner and for the purpose shown and described.

3. In a lathe-chuck having sliding jaws, the radial screws C, mounted in bearings at their outer ends, and having their inner threaded ends seated in open bearings, in combination with the jaws provided with the threaded necks, substantially as and for the purpose described.

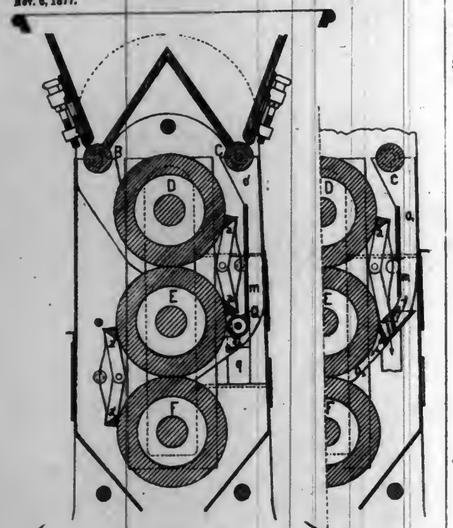
4. In combination with the sliding jaws, provided with the short threaded neck on the back, the slotted body A, having its face recessed to form shoulders at the sides of the jaws, and also recessed around the central opening, as and for the purpose described.

200,362. ADJUSTABLE MUSIC-HOLDERS. Luigi D'Auria, Baltimore, Md. Filed June 18, 1877.



Claim.—The pivoted links B C, attaching-pieces A, and supporting devices D, in combination with a suitable base, a, and with or without the leaf-rack b', substantially as described.

200,363. CRUSHING-ROLLS. Gustav Daverio, Oberstrass, near Zürich, Switzerland. Filed Nov. 6, 1877.

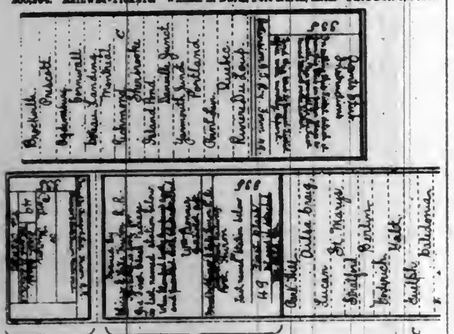


Claim.—1. In a mill having two or three rollers, the combination of the rope-pulleys H H', having a number of grooves, with an expanding pulley, J, and a corresponding driving-rope, as and for the purpose specified.

2. The combination of the three rollers D, E, and F, the two feed-channels N and a^1 a^2, and the worm or creeper G, as and for the purpose described.

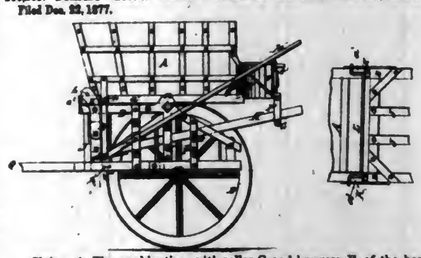
3. The combination of the two independent feed-channels N and a^1 a^2 with the three rollers D E F, whereby the grinding operation may be carried on independently between the rollers D E and E F, substantially as described.

200,364. RAILWAY-TICKETS. William E. Davis, Port Huron, Mich. Filed Dec. 3, 1877.



Claim.—An extension coupon-ticket in which are combined the coupons A of the road represented by the issue-office, the head B of a connecting or extension road, a coupon, C, having the names successively in separable divisions of the stations on the extension-road, and the agent's stub, all substantially as and for the purpose set forth.

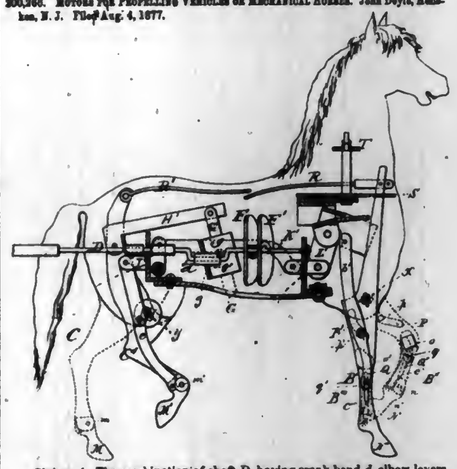
200,365. DUMPING-WAGONS. Charles P. Dinkle and Charles R. Woodward, Carlisle, Pa. Filed Dec. 22, 1877.



Claim.—1. The combination, with roller G and hangers F, of the box A, the recessed cross-bar I, and the front bars J, as and for the purpose described.

2. The lever M, fulcrumed at m, and the link N, having pivotal connections m', in combination with box A, the catch O attached thereto, and the catches P of frame B, as and for the purpose specified.

200,366. MOTORS FOR PROPELLING VEHICLES OR MECHANICAL HORSES. John Doyle, Hoboken, N. J. Filed Aug. 4, 1877.



Claim.—1. The combination of shaft D, having crank-bend *d*, elbow-levers G G', links H H', rods K K', and the fore and hind legs of the apparatus, substantially as described.

2. In combination with the vibratory legs of a mechanical horse or road-engine, the shaft D, cam-disks F F', rods K K', pins *k k'*, elbow-levers I I' and L L', hoof-rods *e e'*, and knee-rods *b b'*, substantially as described.

3. The combination of elbow-lever L, knee-rod *b*, hoof-link *c''*, hoof N, and the upper and lower joints of leg B, having slots P and Q, in which move pins *p* and *q*, substantially as and for the purpose set forth.

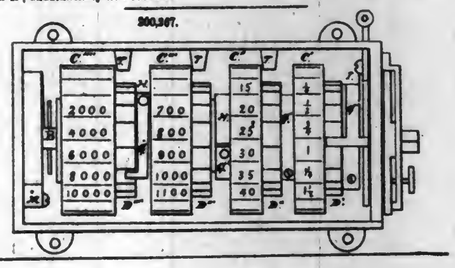
4. The combination of cam-disks F F', rod K, pin *k*, elbow-lever I, hoof-rod *e*, pivoted hoof M, and leg C, substantially as specified.

5. The combination of cam-disks F F', rod K, pin *k*, elbow-lever I, hoof-rod *e*, hoof M, leg C, link H, and elbow-lever G, substantially as described.

6. In combination with the shaft D, having crank-bend *d*, the elbow-levers G G', connected by the slotted plate *g*, and the cam-disks F F', all connected with and operating the legs and joint-rods thereof in a mechanical horse or road-engine, substantially as specified.

7. The pivoted plate S, having slots *s s'*, in combination with the fore legs B B', substantially as described.

200,367.



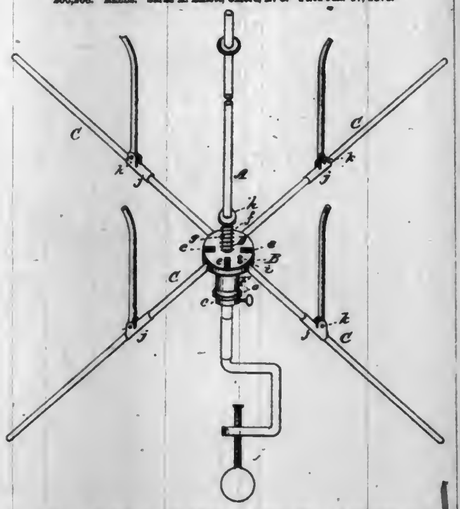
200,367. TALLYING-MACHINES. Walter H. Durant, Milwaukee, Wis. Filed Sept. 14, 1877.

Claim.—1. The combination of the lever V, ratchets D', and tally-wheels C', and with spring-pawls G', substantially as and for the purpose specified.

2. The gage O, provided with the adjusting-pin S, for regulating the stroke of the lever J, substantially as and for the purpose set forth.

3. The combination of the rod N, levers K J, shaft B, and the tallying mechanism, substantially as set forth.

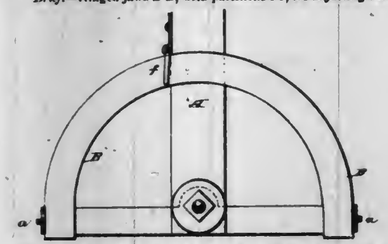
200,368. REELS. Sarah A. Elliott, Oxford, N. C. Filed Jan. 17, 1878.



Claim.—The head B, with hinged or pivoted arms C, in combination with the central shaft A, disk D, having slots *c*, sleeve *g*, spring *f*, and shoulder *j*, substantially as and for the purpose set forth.

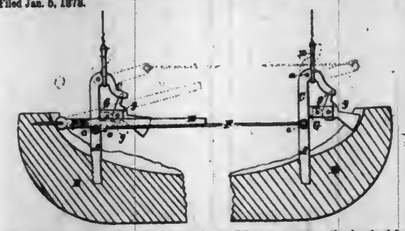
200,369. CARRIAGE-TOPS. John V. Emmitt, Bowling, Ill. Filed Nov. 26, 1877.

Brief.—Hinged jaws B B, with partitions *b b*, for adjusting the top.



Claim.—The jaws B B, provided with partitions *b*, in combination with the standard A and lock *f*, substantially as and for the purpose specified.

200,370. BOAT ATTACHING AND DETACHING APPARATUS. Bradley A. Fiske, Naperville, Ill. Filed Jan. 5, 1878.



Claim.—1. In a boat detaching and attaching apparatus, the hooked lever C, having a pin or projection, *c*, in combination with the lever E, provided with a flange or projection, *e*, substantially as and for the purpose set forth.

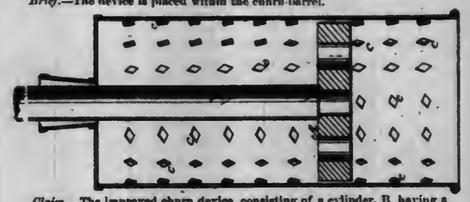
2. In a boat detaching and attaching apparatus, the hooked lever C, in combination with the arm G, provided with a weighted lever, *g*, and stop *g'*, substantially as and for the purpose set forth.

3. In a boat detaching and attaching apparatus, the hooked lever C, having a pin, *c*, in combination with the lever or shaft E, provided with a flange, *e*, and the connecting-wire, chain, or other suitable material, F, substantially as and for the purpose set forth.

4. In a boat detaching and attaching apparatus, the upright bar A, hooked lever C, pin *c*, arm G, weighted lever *g*, stop *g'*, lever E, flange *e*, and connecting-wire F, substantially as and for the purpose set forth.

200,371. DEVICES FOR USE IN REciprocating CHURNS. John Forsyth, Paris, Tex. Filed Jan. 12, 1878.

Brief.—The device is placed within the churn-barrel.

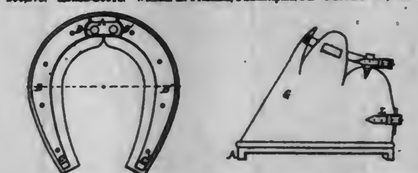


Claim.—The improved churn device, consisting of a cylinder, B, having a series of angular openings, *c*, and a dasher, A, arranged and adapted for use as described.

200,372. EXPLOSIVE COMPOUNDS. Samuel J. Fowler, Westfield, Mass. Filed Apr. 13, 1877.

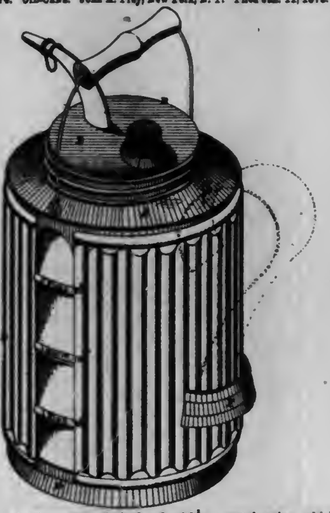
Claim.—An explosive compound consisting of the combination of nitrate of ammonia and sulphate of soda with an explosive, substantially as described.

200,373. HORSE-BOOTS. William H. Franklin, Philadelphia, Pa. Filed Jan. 16, 1878.



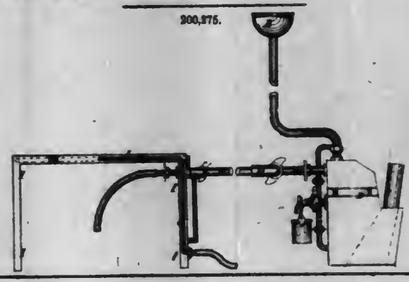
Claim.—The jointed side pieces B and B', combined with the toe-piece A and upper-leather C, having straps to contract the same and adapt and hold it to the hoof, as set forth.

200,374. OIL-CANS. John A. Frey, New York, N. Y. Filed Jan. 11, 1878.



Claim.—A glass reservoir inclosed within a metal casing, which is provided at one side with a vertical opening that is spanned by horizontal metal bars, to indicate the height within said reservoir of any predetermined quantity of liquid, substantially as specified.

200,375.



200,275. HOT-BATH APPARATUS. Thomas Galbraith, Londonderry, Ireland. Filed Aug. 15, 1877.

Claim.—The three-sided bath I, having hollow space for steam, and provided with an air-pipe within said space, as and for the purpose set forth.

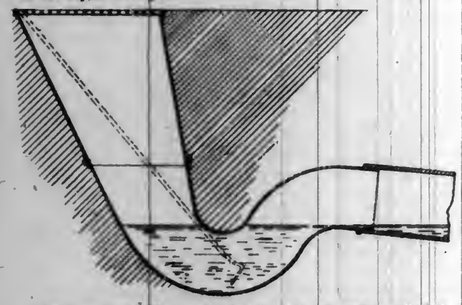
200,276. FENCE-POST. Andrew A. Garver, Albion, Iowa. Filed Dec. 8, 1877.



Claim.—The metallic fence-post A, formed with the downwardly-projecting lips *d* and slots *i*, and provided with pins or keys for supporting the wires, as herein set forth.

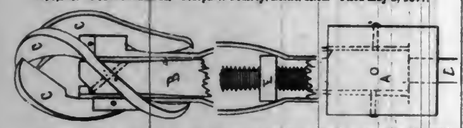
200,277. STREET INLETTER AND STENCH-TRAP. John Gisel, Buffalo, N. Y. Filed Jan. 30, 1877.

Brief.—The basin being set at the street-corner, the water, whether falling in over the front or a side wall, in its descent, strikes and follows the rear wall into the trap, so flushing it.



Claim.—The combined sewer-basin and stench-trap herein described, the said basin being so formed that its entire figure is inclined back from the neck of the trap, and is of a regular taper, assuming a rectangular form at the mouth, whereby it may be set at the street-corners and the water caused to flow into it, in the manner described, and for the purposes set forth.

200,278. TUBE-CLEANERS. Joseph S. Godfrey, Leslie, Mich. Filed May 8, 1877.



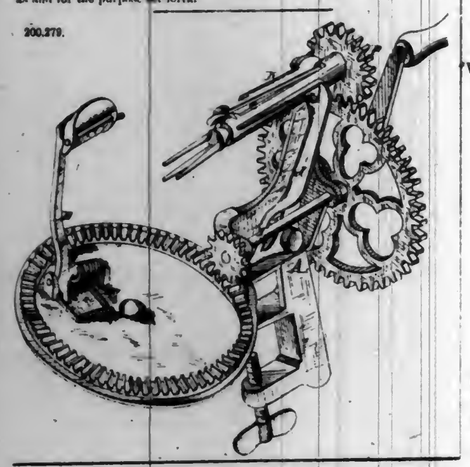
Claim.—1. In a tube-cleaner, a cutting-blade pivoted at or near the middle, as and for the purpose set forth.

2. In a tube-cleaner, the spiral cutting-blades pivoted at or near the middle, and attached to adjustable springs, as and for the purpose set forth.

3. In a tube-cleaner, the springs B, having a portion of their length arched near the middle, in combination with a nut and screw-threaded rod for expanding the same, as and for the purpose set forth.

4. In a tube-cleaner, the combination of the spiral cutting-blades C, pivoted at or near the middle to the springs B, the springs B, arched a portion of their length near the middle, nut E, screw-threaded rod D, and head-piece A, as and for the purpose set forth.

200,279.



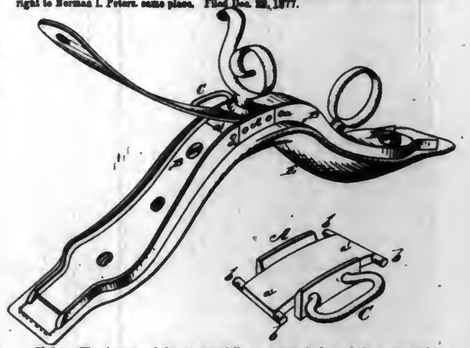
200,279. APPLE-PARERS. David H. Goodell, Antrim, and Wm. Robb, Nelson, N. H. Filed Oct. 18, 1877.

Claim.—1. The combination, with the turn-table having a cam, *d'*, on its periphery, of the elbow-lever *d*, pivoted at its lower end, and having one arm slotted and embracing the turn-table and operated by its cam, and its other end carrying the apple-fork, substantially as and for the purpose described.

2. The stripper K, hinged to the stationary frame, in combination with the fork-arm, to which it is articulated, for the purpose set forth.

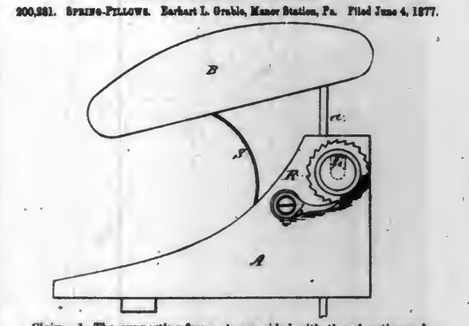
3. The oscillating elbow-lever carrying the apple-fork and shaft, in combination with the stripper and the turn-table having a cam for oscillating said elbow-levers, substantially as set forth.

200,280. HARNESS-SADDLE TREES. James H. Gordon, Keota, Iowa, assignor of one-half his right to Herman I. Peters, same place. Filed Dec. 22, 1877.



Claim.—The improved harness-saddle tree consisting of the center piece A, having loop C, projecting tongues *a'*, and projecting rivets *b*, and the grooved or slotted end pieces B B, as shown and described.

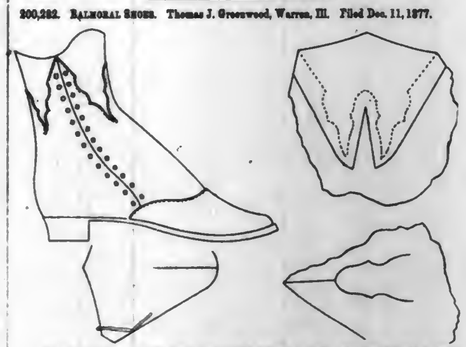
200,281. SPRING-PILLOWS. Barhart L. Grable, Manor Station, Pa. Filed June 4, 1877.



Claim.—1. The supporting-frame A, provided with the elevating-rods *a a'*, the cords K K, the roller O, pawl *b*, slots E E, and ratchet B, all constructed and operated as and for the purpose set forth.

2. The combination of the spring-pillow B with the frame A and springs S S, the whole constructed as shown and described, and for the purpose set forth.

200,282. BALMORAL SHOES. Thomas J. Greenwood, Warren, Ill. Filed Dec. 11, 1877.



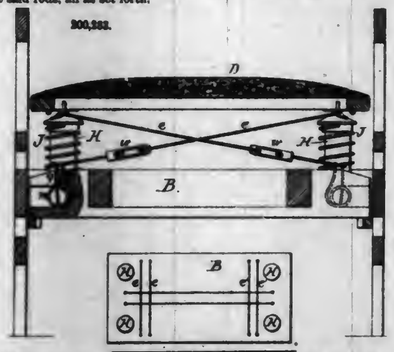
Claim.—A shoe-upper provided with a forked slit, combined with a gusset, also slit, and spread to embrace the tongue formed by said forked slit, as and for the purpose set forth.

200,283. CHAIR-BOTTOMS. Daniel F. Haase, Philadelphia, Pa. Filed June 9, 1877.

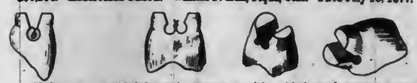
Claim.—1. The combination of the seat D, the rods H, connected loosely to the under side of the seat, and the springs J, with the base B.

2. The combination, with the base B and diagonal stays, of coiled springs *w*, lodged in recesses in the said base, and having arms *q*, for attachment to the said rods, all as set forth.

200,283.



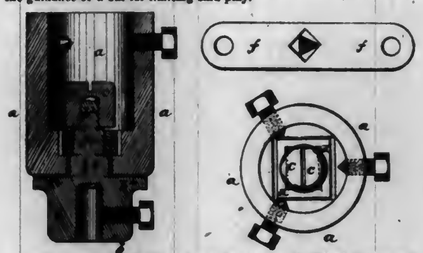
200,284. ARTIFICIAL TEETH. William P. Hall, Piqua, Ohio. Filed July 10, 1877.



Claim.—An artificial tooth provided with a V-shaped groove across the base, with slight under-cut at the bottom, substantially as and for the purposes herein set forth.

200,285. BORING AND DRILLING APPARATUS. Julius Hall, 90 Chancery Lane, Middlesex County, England. Filed Jan. 16, 1878.

Brief.—For boring square or angular holes. The drill-holder is provided with a square shoulder with rectangular collar within a recess of large dimensions in the chuck, which permits lateral play of the tool and its holder under the guidance of a bar for limiting said play.

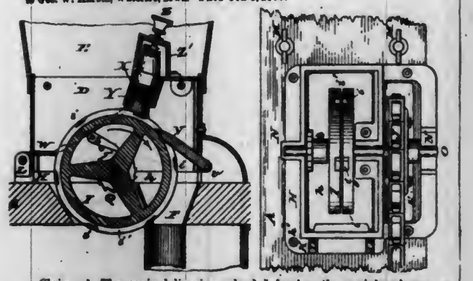


Claim.—1. The drill-holder *b*, constructed as described, with screw *b'*, square shoulder *b²*, and circular concentric shoulders *b³ b⁴*, and arranged to work or play laterally in any direction within or on a rotating chuck at the same time as it is revolved by said chuck, substantially as herein set forth.

2. The combination of the drill-holder *b*, having screw *b'*, square shoulder *b²*, and circular shoulders *b³ b⁴*, the chuck *a*, with square recess, as described, and the loose collar *d*, and nut *c*, all substantially as and for the purposes herein set forth.

3. The guide-bar *f*, with hole through the same, and the triangular drill *e*, in combination with the holder *b* and chuck *a*, all constructed substantially as and for the purposes herein set forth.

200,286. CORN-PLANTERS. James W. Harbin, Evansville, Ind., assignor of one-half his right to Geo. W. Harbin, Waterloo, Iowa. Filed Oct. 8, 1877.



Claim.—1. The grain-delivering wheel I, having the peripheral cups or cavities *i*, of rectangular plan, and having the radial rear and oblique front wall, as and for the purpose set forth, and the deep circumferential groove *i'*, in combination with the gravitating or self-adjusting ejecting-tongue V, whose point is made beveling, and underlies said cavities, the whole being arranged and adapted to operate in the manner designated.

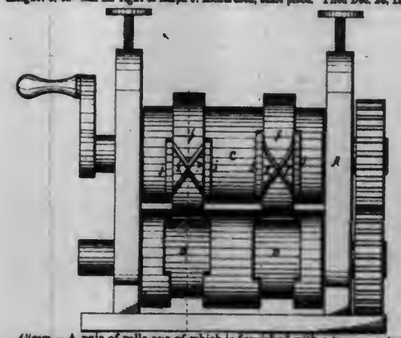
2. In the grain-box D of a corn-planter, the slotted oblique diaphragm W *w*, having the socket X and adjustable cut-off Y Z, and inclosing the upper half of a peripheral grain-wheel, I, substantially as set forth.

3. In combination with the hinged grain-box D and the wheels I and J, the bed-plate H, having the openings *h* and *h'* for the grain and sprocket wheels, respectively, bearings N for the seed-distributer shaft, and lugs L for hinging the grain-box.

4. The combination of the metallic endless-chain connection T, sprocket-wheel J, ratchet-wheels P Q, pawls R S, grain-wheel shaft O, and grain-wheel I, as and for the purpose set forth.

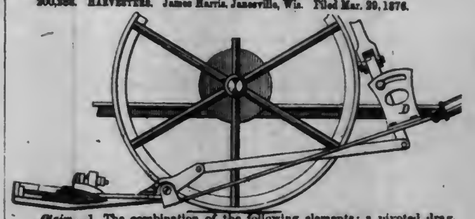
5. In combination with the brush shield or socket X in the diaphragm W *w*, the separable cap-piece Z', having the adjusting-screw Z, as and for the purpose designated.

200,287. MACHINES FOR FORMING CULTIVATOR-POINTS. James Harper, Pittsburg, Pa., assignor of one-half his right to Ralph J. Richardson, same place. Filed Dec. 26, 1877.



Claim.—A pair of rolls one of which is furnished with a tongue or tongues, *f*, in which are secured cutters *g*, having bevel-edges *h*, operating within the grooves of the other roll, whereby a bevel-edge is formed on the cultivator-points or analogous articles, substantially as herein described.

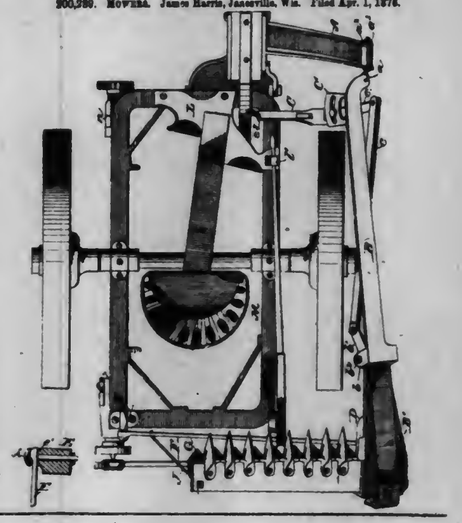
200,288. HARVESTERS. James Harris, Janesville, Wis. Filed Mar. 20, 1876.



Claim.—1. The combination of the following elements: a pivoted drag bar jointed to the shoe, a vertical adjusting-lever and locking device, mounted on or near the pivoted end of the drag-bar, and intermediate connections, substantially as described, for uniting the lever to the shoe, as set forth.

2. In combination with a drag-bar capable of adjustment to roll the finger-bar, a vertical lever located on the drag-bar at its relatively fixed end, and intermediate connecting devices, substantially as described, for transmitting its movement to the shoe.

200,289. MOWERS. James Harris, Janesville, Wis. Filed Apr. 1, 1876.



Claim.—1. In combination with a turning drag-bar, a sectional lever having a detachable or folding portion, as described.

2. In combination with the lever C and folding drag-bar B, the shoe B', having arm b', and the connecting-rod c, pivoted to lower end of lever C, and above the drag-bar to the arm b', the construction being such that when the lever is properly operated the arm b' and rear end of bar c may be caused to approach the drag-bar, to avoid contact with the wheel in folding, substantially as described.

3. In combination with a folding lever and a harvester-frame, adapted to arrest the movements of the hinged portion of the lever and fold the same, a rack-bar, C', substantially as described, adapted to take the strain when the lever strikes the frame, substantially as described.

4. In combination with the lever portion c^1, provided with the inclined face c^2, the lever portion c^3, provided with the spring-bolt c^4, having the double-inclined face, as described.

5. In combination with a reciprocating knife-bar, a sliding hook adapted to act automatically by gravity, to prevent said knife-bar from sliding from its bearings when the cutter-bar is folded, substantially as described.

6. The combination of a sliding hook with a casting having an inclined recess, adapted to guide it into the line of the movement of the knife-bar, substantially as described.

7. The hook having a limiting projection, in combination with the recess having a limiting shoulder, as described.

8. In combination with the runner B' and the runner H, the drag-bar B, the rear end of which projects beyond the front end of the shoe and protects the same, as described.

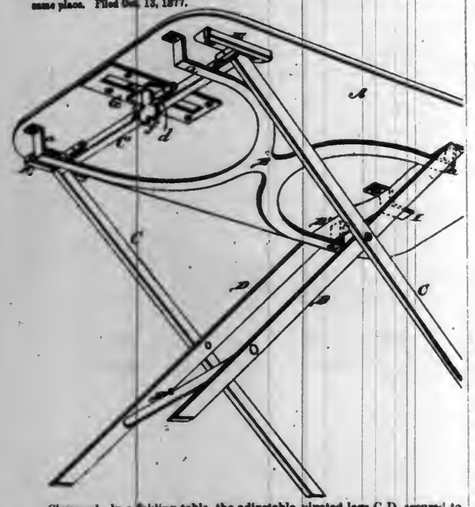
9. In combination with the brace-bar F, the pivoted rod J, attached thereto, substantially as described, the construction being such that when the cutter-bar is folded the brace-bar, cutter-bar, and securing-rod are capable of being moved to, and independently of the frame.

200,290. EGG-BEATERS. Reuben H. Harrison, Faribault, Minn. Filed Jan. 5, 1878.



Claim.—The egg-beater hereinbefore described, formed of the sheet-metal handle C, having its edges a' bent inward, the bowl-frame formed of a wire, A, whose projecting ends a are secured in the handle, and the wire body B, all constructed and arranged as shown and described, for the purpose specified.

200,291. FOLDING TABLES. William W. Hart, Detroit, Mich., assignor to Fred. H. Seymour, same place. Filed Oct. 13, 1877.



Claim.—1. In a folding table, the adjustable pivoted legs C D, secured to one end of the table-top by means of guides and journals, in combination with frame B and hook I, substantially as described, and for the purposes set forth.

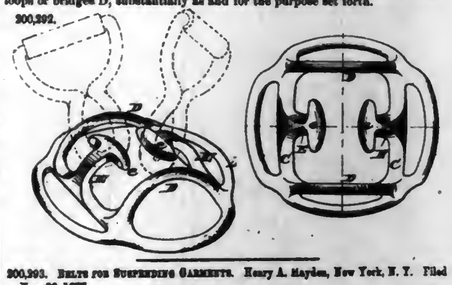
2. In combination with an adjustable table, the frame B, provided with stops a a, and cross-bar C', provided with journals, which extend under guide-plates, substantially as described, and for the purposes set forth.

3. In a folding table, the top A, to which is secured a skeleton frame, B, provided with stops a a, guides E E and G, in combination with pivoted X-legs C D, provided with cross-bars D^1 D^2, and journals b b, screw e, and nut f, substantially as described, and for the purposes set forth.

200,292. TRACE-GUARDS. William B. Hayden, Columbus, Ohio. Filed Dec. 20, 1877.

Claim.—The combined back and hip strap fastening and trace-supporter, substantially as herein described, consisting of the back and crupper strap bars, hip-strap bars, rein and cockeye guard-loops D D, and loops C C, supporting the inwardly-curved, posts E, provided with crescent-shaped cross-heads e, having inner curved faces, said posts and cross-heads having their curvature approximately in the same plane with the rein and cockeye guard loops or bridges D, substantially as and for the purpose set forth.

200,293.

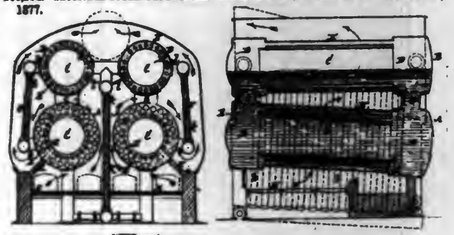


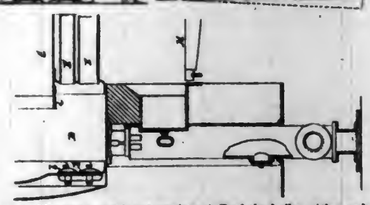
200,293. BELTS FOR SUSPENDING GARMENTS. Henry A. Hayden, New York, N. Y. Filed Nov. 28, 1877.



Claim.—As a new article of manufacture, a belt for suspending garments, provided with suspending devices consisting of one or more pairs of plates, the under plate of each pair being secured to the belt, and the outer plate of each pair being pivoted to said under plate, and constructed with claws that project a short distance beyond the end of said under plate, substantially as shown and described.

200,294. SECTIONAL STEAM-GENERATORS. Hermann Heine, Berlin, Prussia. Filed Dec. 15, 1877.





Claim.—1. The upper and lower sections A B of the boiler, either or both constructed of a tubular waist, C, heads or end cylindrical chambers D D, and water-tubes E, connecting said heads outside of said waist, in combination with necks or connections O between the upper and lower sections of the boiler, at or near the opposite ends thereof, substantially as specified.

2. In a boiler having one or more sections, either of which is composed of an elongated tubular waist, C, and heads D D, with one or more series of water-tubes, E, outside of said waist and between the heads, the combination of the hand-holes b, the covers c thereto, arranged opposite said tubes at one end of the boiler, and one or more series of removable stays, G, bracing said end or head of the boiler, essentially as described.

3. The combination, with the lower section A and upper section B of the boiler, either or both of which are constructed of a waist connecting opposite end heads or ends, and having water-tubes connecting said heads outside of the waist, of the lower diaphragm I, the walls J K, and the grate H, essentially as described.

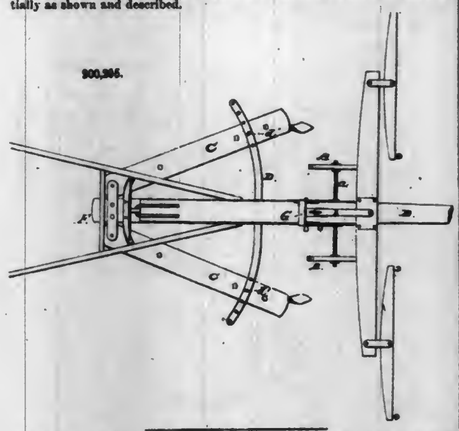
4. The tubular water-walls J K, in combination with the diaphragm I, and two or more series of upper and lower sections, A B, of the boiler, constructed—that is, either or both of said sections—of hollow enlarged ends or heads, tubular connecting-waists between said heads, and water-connecting tubes outside of the waists and between the heads, substantially as specified.

200,295. CORN AND POTATO COVERERS. William Herbert and Cornelious T. Herbert, Irving Park, Ill. Filed June 15, 1877.

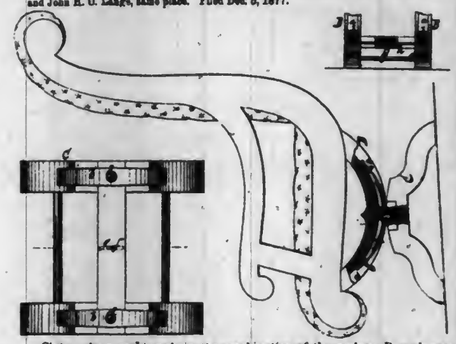
Brief.—The side beams carry the scrapers and expand in front. From the side of the gage-wheel a loop-standard rises, through which pass the center beam and tongue, both of which are made adjustable in the standard.

Claim.—In a corn and potato coverer, the combination, with the fixed center beam F and the adjustable beams and scrapers C C', of the wheels A and axle a, the loop-standard G, rigidly attached to the said axle, and the hinged pole B, the said pole and beam F adjustable in said loop-standard G, substantially as shown and described.

200,296.

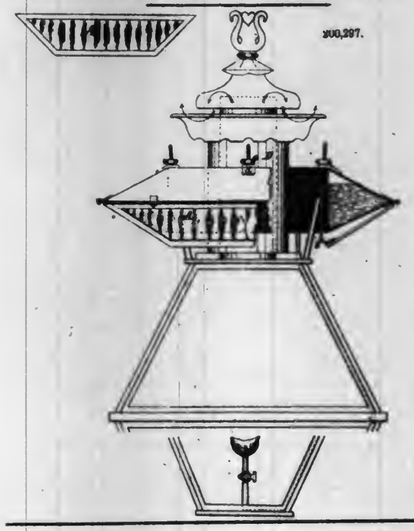


200,296. ROCKING-CHAIRS. Ernst A. C. Hesse, Brooklyn, E. D., N. Y., assignor to himself and John H. C. Lange, same place. Filed Dec. 5, 1877.



Claim.—In a rocking-chair, the combination of the rockers B, each constructed with a longitudinal groove, a, formed in its lower bearing-edge, and the flat springs b, arranged within said grooves, and having their free and disconnected ends confined within the grooves by pins, said springs being attached at their centers to the supporting-frame C, substantially as set forth.

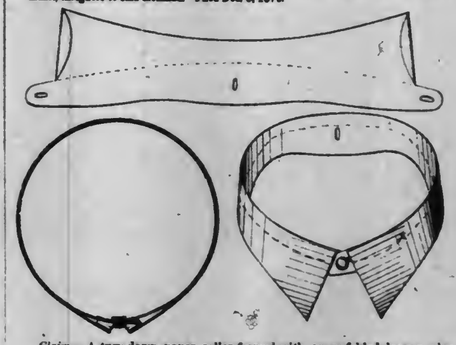
200,297.



200,297. STREET-LAMPS. August Hess, Baltimore, Md. Filed Jan. 21, 1878.

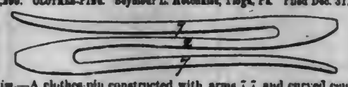
Claim.—In combination with a street-lamp, a series of hinged reflectors, and devices for adjusting their angle of inclination, substantially as and for the purpose specified.

200,298. PAPER COLLARS. Jas. H. Hoffman, New York, N. Y., and Charles Spofford, Boston, Mass., assignors to said Hoffman. Filed Dec. 5, 1874.



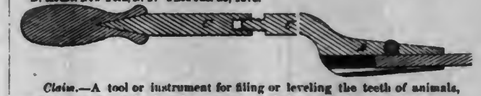
Claim.—A turn-down paper collar formed with an unfolded longer edge and with folded ends, which are secured to the collar-body by an adhesive substance, as set forth.

200,299. CLOTHES-PINS. Seymour L. Hotchkiss, Tioga, Pa. Filed Dec. 31, 1877.



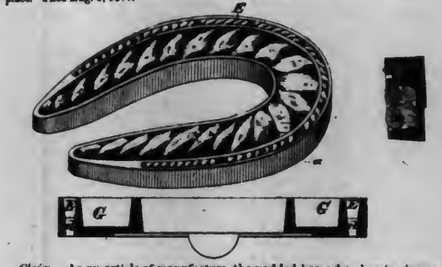
Claim.—A clothes-pin constructed with arms 7 7 and curved central portion 2, as and for the purpose set forth.

200,300. INSTRUMENTS FOR SMOOTHING AND LEVELING THE TEETH OF HORSES. Charles D. House, New York, N. Y. Filed Jan. 26, 1878.



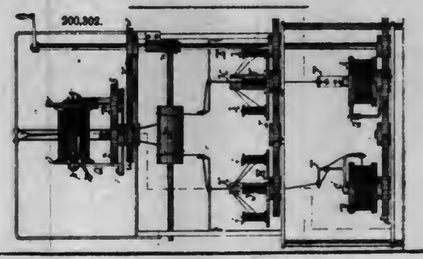
Claim.—A tool or instrument for filing or leveling the teeth of animals, consisting of the following elements, viz: a holder with its retaining-groove beveled to allow the easy passage between the back teeth, a grinding or filing tool made adjustable as to its length by a set-screw located near the center of the holder, and a sectional handle which may be shortened when the instrument is to be used upon the front teeth with the grinding-tool extended, the several parts constructed and arranged as herein shown and described.

200,301. HORSESHOES. Jas. R. Howard, St. Louis, Mo., assignor to Marcus I. Wright, same place. Filed Aug. 3, 1877.



Claim.—As an article of manufacture, the padded horseshoe herein shown and described, consisting of a metal body having a pad-recess, G, extending below the surrounding nail groove or channel E, whereby a re-enforced verge or edge, a, is formed, having perforations d for the nails, substantially as and for the purpose herein set forth.

200,302.



200,302. MACHINES FOR COVERING CORD. F. W. Huppelsberg, Brooklyn, N. Y., assignor to Steinbern & Huppelsberg, same place. Filed Jan. 7, 1878.

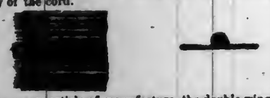
Brief.—The strands to be covered pass upward through an eye in the head, while the covering-threads pass from their spools through the guides, and are twisted around said strands at a point immediately above the heads. The covered strands are then conducted over a friction-roller, and are finally twisted together by the receiving-spool, upon which the finished cord is wound.

Claim.—1. The combination, with the two spools for carrying the strands to be covered, the two rotary disks adapted to support a series of spools containing the covering-threads, and the upper winding mechanism, of the friction-roller N and mechanism for revolving the same, around which roller the covered cord passes prior to being acted on by the winding mechanism, substantially as and for the purpose described.

2. The combination, with the disks adapted to carry the spools containing the covering-strands, of the central laying-head K and its series of guides *i*, having eyes, said guides being adjustably connected with the laying-head, substantially as and for the purpose described.

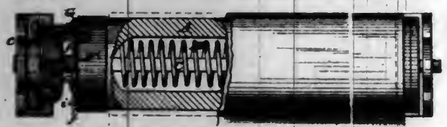
200,303. DOUBLE-WINGED PLAITED CORD. F. W. Huppelsberg, Brooklyn, N. Y., assignor to Steinbern & Huppelsberg, same place. Filed June 20, 1877.

Brief.—An improvement upon Patent No. 192,202, of June 19, 1877. The cylindrical body consists of parallel warp-threads covered by braiding-threads. The wings consist of a series of warp-threads running parallel to those in the body, each wing being covered by one-half of the braiding-threads which cover the body of the cord.



Claim.—As a new article of manufacture, the double-winged plaited cord herein described, all being formed in one piece, the two braided wings projecting from the opposite sides of the plaited cord, as and for the purpose set forth.

200,304. CURTAIN-ROLLERS AND BRACKETS. Wm. F. Hurrell, Jr., Cincinnati, Ohio. Filed Dec. 28, 1877.



Claim.—1. The combination, with the spindle and coiled spring, of a key rigidly fixed in the end of the spindle, and provided with a projection, *h*, serving as a stop for pawls on the end of the roller.

2. In combination with the spring-roller, a cap, F, attached to the end of the same, the pawls G, pivoted near the periphery of said cap, and having extended or weighted ends *f*, and the T-shaped head on the end of the spindle C, serving as a stop for the pawls, and as a key for winding up the coiled spring or adjusting and regulating its tension, substantially as described.

3. The cap F, attached to the end of the spring-roller, and having the studs *i* and the pawls G, provided with extensions or weighted ends *f*, in combination with the T-shaped key E, attached to the end of the spindle C, and having a laterally-projecting arm, *h*, substantially as and for the object set forth.

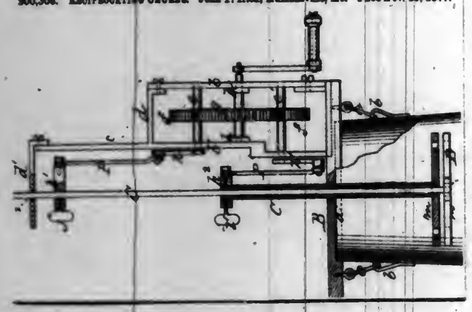
200,305. SHUTTLES FOR SEWING-MACHINES. James P. Hutton, Berry Station, Ky. Filed Nov. 26, 1877.

Brief.—A small lever is pivoted in the forward end of the shuttle-casing, on one arm of which a regulating-screw bears, and causes the other arm to press on the bobbin-head with greater or less force, to produce the desired tension on the shuttle-thread.



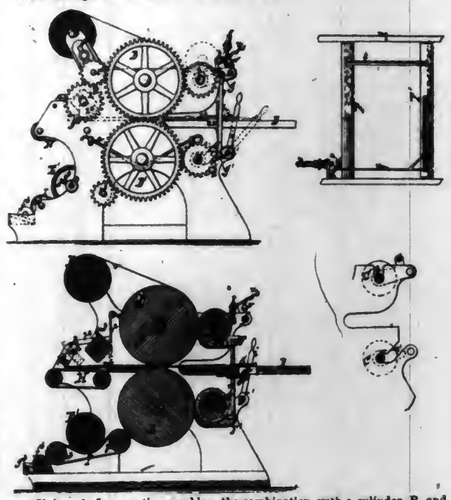
Claim.—The combination of the shuttle-casing A, the bobbin B, adapted to bearings in the casing, and having a head, *b*, the lever D, having a short arm adapted to bear upon the periphery of the head *b*, and the screw *c*, for adjusting the lever, all substantially as specified.

200,306. RECIPROCATING CHURNS. John T. Irick, Hunnaeville, Mo. Filed Nov. 10, 1877.



Claim.—The combination, with the tubular dash-rod G and the rod C, passing through the same, of the adjusting-collars h^1 h^2, the pitmen P P', the crank-arms *k k'*, the shafts *e e'*, the gear-wheels *f*, and the master-wheel *g*, substantially as specified.

200,307. MACHINES FOR FEEDING, PASTING, AND CUTTING PAPER AND OTHER FABRICS. Gustav L. Jaeger, New York, N. Y. Filed Jan. 12, 1878.



Claim.—1. In a pasting-machine, the combination, with a cylinder, B, and with a paste-roller, C, running directly in the paste-trough F, of a rock-shaft, *f*, provided with two arms, *d*, for adjusting the position of the paste-roll, substantially as shown and described.

2. In a pasting-machine, the combination, with a cylinder, B', and a paste-roller, C', which has its bearings in slots c^1, of cranks d^1 and straps c^1, adapted to impart to the paste-roller a sliding motion toward and from the cylinder B', and to retain the same in close contact with said cylinder, substantially as set forth.

3. In a pasting-machine, the combination, with two cylinders, B B', and two paste-rollers, C C', of two rock-shafts, *f f'*, connecting-rod *h*, hand-lever *i*, and notched plate *k*, all constructed and adapted to operate substantially as and for the purpose shown and described.

4. The combination, with a paste-roller, of a yielding scraper secured to a rock-shaft which is subjected to the action of a spring or weight, for pressing the scraper up against the surface of the paste-roller, substantially as set forth.

5. The combination, with two paste-troughs, F F', one situated above the other, of a common feed-pipe, *o*, valve *p*, pipe *n*, and float *r*, substantially as and for the purpose described.

6. The combination, in a pasting-machine, of a mechanism for feeding pasteboards in sheets, a cylinder for bringing a web in contact with the pasteboard, a roller for supplying paste to the web, and a cutter for separating the web between the succeeding sheets of pasteboard, substantially as set forth.

7. The combination, in a pasting-machine, of a mechanism for feeding pasteboard in sheets, a cylinder for bringing a web in contact with the pasteboard, a roller for supplying paste to the web, a cutter for separating the web between the succeeding sheets of pasteboard, and a brush for pressing down the end of the web after the same has been cut, all constructed and adapted to operates substantially as described.

8. The combination, with the cylinders, running in contact with each other (or nearly so) in opposite directions, of a slide adapted to feed sheets of paper or pasteboard to the cylinders, substantially as set forth.

9. The combination, with the knife-shaft and with the feed-slide, of cog-wheels h^2 i^2, or equivalent mechanism, for regulating the relative speed of the knife-shaft, and also the motion of the feed-slide for sheets of different length, substantially as described.

10. The combination, in a pasting-machine, of two cylinders, B B', two paste-rollers, C C', a feed-slide, G, a revolving cutter, m^2, cam h^3, for imparting motion to the feed-slide, and gear-wheels k^2 i^2, for adjusting the motion of the cutter and of the feed-slide to sheets of different length, substantially as set forth.

11. The combination, with a roll of paper or other material, and with a cylinder, to which said material is to be delivered, of two rollers, which serve to impart to the roll a slow revolving motion, substantially as described.

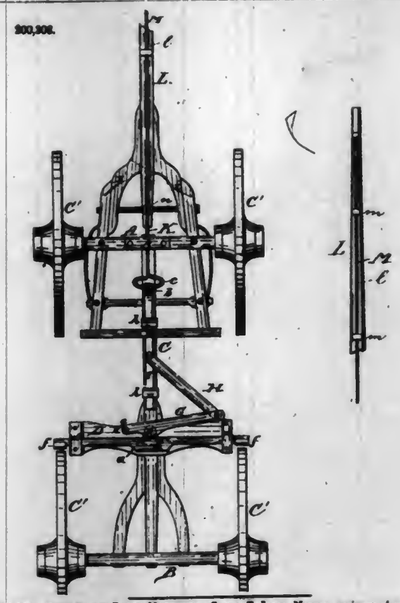
12. The combination, with two rollers which support the roll E', of a trough containing water or other liquid, substantially as and for the purpose set forth.

13. The combination, with a cylinder and with a griper situated in a cavity in the cylinder, of a protecting-plate, the gripers being so formed that when the same is closed its face, together with that of the protecting-plate, produces an unbroken surface of the cylinder, substantially as and for the purpose described.

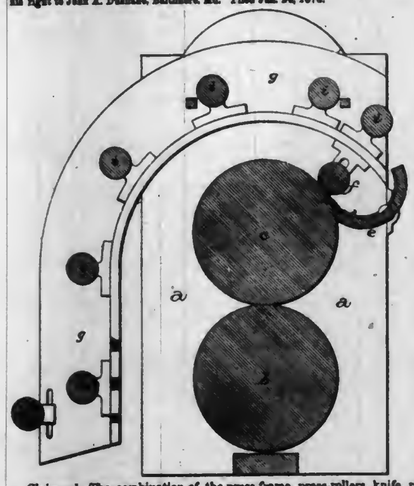
200,308. AUTOMATIC WAGON-BRAKES. Lars Johannesen, Blair, Wis. Filed Aug. 13, 1877.

Claim.—The tongue L, having sliding rod M, sliding bars K I, connecting-rod H, lever G, and brake-bar F, pivoted to the latter, all combined, arranged, and operating substantially in the manner and for the purpose herein shown and specified.

200,309.



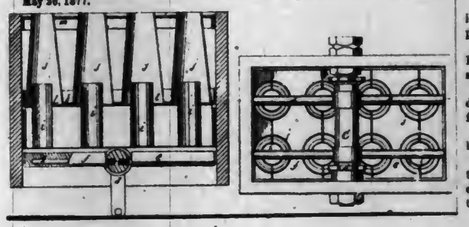
200,309. DOCTORS FOR PAPER-MACHINES. George F. Jones, Morgan, assignor of one-half his right to John A. Dushane, Baltimore, Md. Filed Jan. 24, 1878.



Claim.—1. The combination of the press frame, press-rollers, knife, roller *f*, and frame *g*, provided with a series of rollers for preventing the sheet of paper from coming in contact with the press rollers, substantially as set forth.

2. The roller *a*, made vertically adjustable for tightening the sheet, substantially as specified.

200,310. DEVICES FOR SUPPLYING STEAM AND AIR BLAST TO FURNACES. Evan J. Jones, Indianapolis, Ind., assignor, by mesne assignments, to the Eureka Blast Company. Filed May 30, 1877.



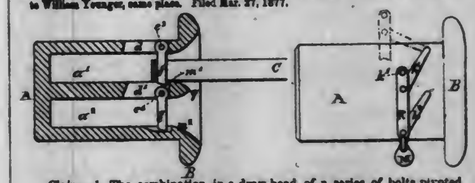
Claim.—1. A series of tubes arranged in the ash-pit wall of a furnace, and provided with a plate to fill the spaces around the tubes, substantially as and for the purposes set forth.

2. The tubes *i* and plate *k*, and a plate, *n*, arranged in the wall of a furnace, in combination with devices for introducing steam into the tube, all substantially as and for the purposes set forth.

3. The steam-pipe C, provided with two passages, *a b*, and arms *e f*, in combination with cut-offs *c d*, all constructed substantially as and for the purposes set forth.

4. In an apparatus for introducing steam to furnaces, the combination of the tubes *i* and partitions *n*, the latter forming chambers around the tubes for the purpose of breaking up or preventing eddying currents, substantially as set forth.

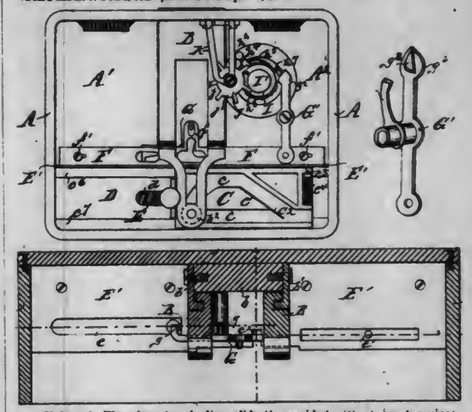
200,311. CAR-COUPLINGS. Simon J. Keim, Catasauqua, Pa., assignor of one-half his right to William Younger, same place. Filed Mar. 27, 1877.



Claim.—1. The combination, in a draw-head, of a series of bolts pivoted on shafts one above the other, levers at the ends of said shafts, and a weighted link uniting said levers, substantially as and for the purposes specified.

2. The combination, in the draw-head A, of the two recesses a^1 a^2, the falling bolts c^1 c^2, the stops m^1 m^2 on the lower side of the recesses, the levers h^1 h^2, and the weighted link K connecting them, as herein described.

200,312. TIME-LOCKS FOR SAFES, &c. Phineas F. King, St. Louis, Mo., assignor to G. N. Beard and E. J. Beard, same place. Filed Apr. 28, 1877.



Claim.—1. The elevating incline slide C, provided with its center piece and flat spring-pins c^2 c^3, the plate E', having slots *e* e^1 e^3, the spiral main-spring, in combination with the vertical bolt B, substantially as and for the purposes set forth.

2. The elevating incline slide C, having pins c^2 and springs c^4, in combination with plate E', having slots *e* e^1 e^3, as and for the purposes set forth.

3. The horizontal plate E', provided with its slot or openings, in combination with the elevating incline slide C, having the spring-pins c^2 c^3 and the bolt B, substantially as and for the purposes set forth.

4. The three-armed lever G, provided with the lower projecting points and center bearing, in combination with the reciprocating slide-bar F, substantially as and for the purpose set forth.

5. The vertical lever or trigger G', provided with center bearing, flattened side edges g^2 g^3, in combination with the reciprocating slide-bar F, substantially as and for the purposes set forth.

6. The locking-arm provided with pawl and spring, and projecting hub at outer extremity, in combination with the ratchet or pawl wheel and vertical trigger, substantially as and for the purpose set forth.

7. The dog-wheel I, secured to clock-spindle, and provided with a sliding pin, and pin at right angle, and slot, in combination with the unlocking arm and trigger, as and for the purpose set forth.

8. The diagonal safety-lever attached to vertical balance lever or trigger, in combination with the safety unlocking device, substantially as and for the purpose set forth.

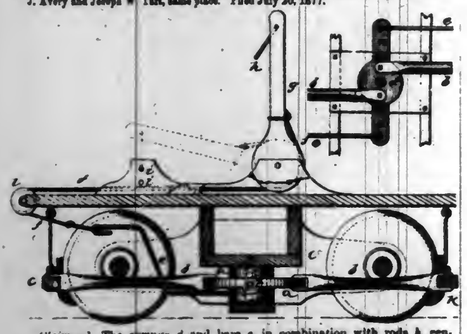
9. The combination of the vertical bolt B, elevating incline slide C, plate E', reciprocating slide-bar F, and three-armed lever or trip, substantially as and for the purpose set forth.

10. The combination of the ratchet-wheel, locking-arm, unlocking-arm, dog-wheel, marker or seven-day wheel, trigger, and reciprocating slide, as and for the purpose set forth.

11. The marker or seven-day wheel having spokes *f* and space *f'*, in combination with dog-wheel having pin i^2, as and for the purpose set forth.

12. The combination of the safety unlocking device, diagonal lever, vertical trigger, reciprocating slide-bar, three-armed lever or trip, plate E', elevating incline slide C, and vertical locking-bolt B, substantially as and for the purposes set forth.

200,313. CAR-BRAKES. James A. Kirby, Chicago, Ill., assignor of two-thirds his right to D. J. Avery and Joseph W. Taft, same place. Filed July 20, 1877.

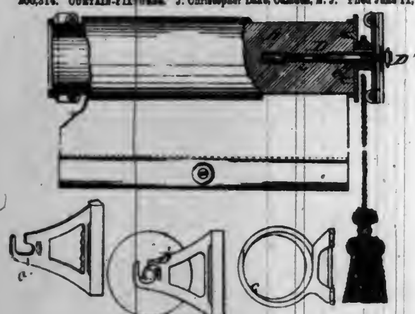


Claim.—1. The springs *d* and bars *c*, in combination with rods *b*, centrally-located lever *a*, and mechanism for operating the same, substantially as and for the purpose set forth.

2. The springs *d* and bars *c*, in combination with the lever *a*, bars *b*, rod or cord *e f*, and lever *g*, substantially as set forth.

3. The catch *h i*, in combination with the lever *g*, cord *f*, lever *a*, and bars *b*, for holding the brake-shoes out of contact with the wheels, substantially as specified.

200,314. CURTAIN-FIXTURES. J. Christopher Lake, Camden, N. J. Filed June 11, 1877.



Claim.—In combination with mechanism, substantially as described, for raising the curtain and detaining the shaft, the roller A and shaft D, the latter being embedded in the former, and held, as set forth, by the binding action of the wood, whereby when the shaft is released from its catch, both roller and shaft will turn together, while, when the shaft is detained, the roller will turn freely upon and independently of it, as and for the purpose specified.

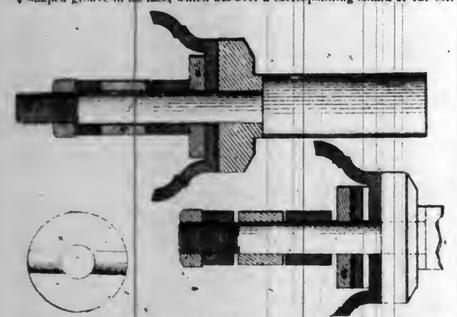
200,315. METHODS OF MAKING HORSESHOE-NAILS. Nathan O. Lewis, Brookline, Mass. Filed Jan. 2, 1878.



Claim.—The described method of manufacturing horseshoe nails, which consists in first preparing a circular plate with a central opening, the section of the plate being that of the nail, and subsequently punching the nails therefrom in radial lines, substantially as and for the purpose described.

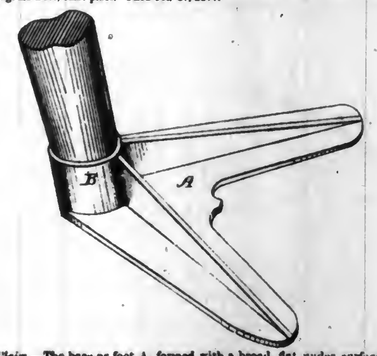
200,316. CUTTER-HEADS. Olof Lindblad, Jamestown, N. Y. Filed Aug. 11, 1877.

Brief.—The cutters are secured in position by means of a collar having a V shaped groove in its face, which fits over a corresponding shank of the bit.



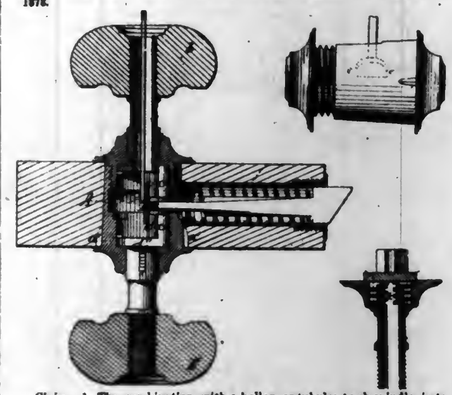
Claim.—The collar *a*, having a V shaped groove running centrally across its side, in combination with reversible (sectional) cutters, as set forth in the above specification.

200,317. SAFEGUARDS FOR CHAIRS. Shubael K. Loco, Attleborough, Mass., assignor to Georgiana Loco, same place. Filed Oct. 17, 1877.



Claim.—The base or foot A, formed with a broad, flat under surface, and a socket, B, for attaching it to the rear legs of a chair, so that said chair may assume its usual vertical position, and at the same time prevent it from accidentally tipping over, substantially as and for the purpose set forth.

200,318. KNOB-LATCH AND LOCK. Washington I. Ludlow, Rochester, N. Y. Filed Jan. 11, 1878.



Claim.—1. The combination, with a hollow or tubular knob-spindle, independent of the opposite knob-spindle of its case or lock, and having a suitable lateral opening or openings, of tumblers or bolts arranged within said spindle and adapted for operation by a suitable key, so that they may be projected through said opening or openings, to engage with catches or stops which prevent the rotation of the spindle, for the purpose of operating a latch or lock-bolt, substantially as set forth.

2. A hollow latch-operating spindle provided with suitable apertures and having tumblers or bolts inclosed therein, and an operating-knob having a central key-hole, through which a key may be inserted into said spindle to actuate the inclosed bolts or tumblers, for engaging with or disengaging from stops or catches, substantially as described.

3. The combination, with a latch or lock case composed of two hollow cylindrical parts having inner shoulders at their outer ends, of knob-spindles having enlarged inner ends which will not pass through the shouldered ends of said parts, so that the spindles may be inserted through said parts from the inside thereof before the same are joined together, but cannot be removed outwardly, substantially as set forth.

4. The combination, with a lock-case, of a knob-spindle having a central longitudinal passage opening into the bolt-chamber, to the rear of the end of the bolt when projected, substantially as described, whereby a key may be inserted through said spindle and across the path of the bolt, to prevent retraction thereof.

5. The combination, with the lock-case constructed substantially as described, and inclosing a chamber opening into a contracted portion forming a spindle-bearing, of a tubular knob-spindle inclosing bolt-work or tumblers, and having its inner end provided with a head or flange carrying a bolt-operating jag, and closed at its said inner end, to prevent tampering with the lock-bolt by an instrument inserted through the tubular portion of said spindle, substantially as set forth.

6. The combination, in a lock, of a series of loose tumblers, arranged in contact with each other, and a compressing-spring, whereby said tumblers are held closely together in any position, but permitting lateral independent movement thereof by a suitable key, so that when one or more of said tumblers is moved in attempting to pick the lock, other tumblers will be also moved by friction of the adjacent surfaces, substantially as and for the purpose set forth.

200,319. LOCKS FOR DRAWERS. Washington I. Ludlow, Rochester, N. Y. Filed Jan. 11, 1878.

Claim.—1. A drawer-lock case having its key-hole surrounded by a projecting tube, which is secured to the base-plate of the lock-case, and is screw-threaded to engage with the wood, whereby the lock may be secured in position by the said tube alone, and cannot be detached when the drawer is closed, substantially as set forth.

2. The combination, with a lock-bolt, of one or more double spring-tumblers, each made in one piece, pivoted thereto, the connected parts of which are arranged to be moved in opposite directions by a key, to permit the operation of the bolt, substantially as set forth.

200,319.



200,320. FIRE-PROOF MATERIALS FOR WALLS, CEILINGS, FLOORS, &c. Michael F. Lyons, New York, N. Y. Filed Dec. 17, 1877.

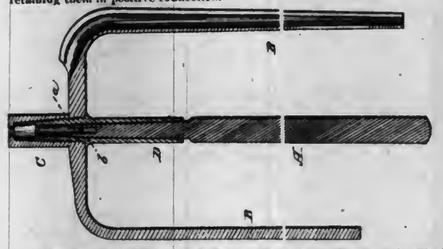


Claim.—1. The fire-proof composition described, composed of shell-lime, plaster-of-paris, coal-ashes, or the like light earthy matter, and alum, as herein specified.

2. As a new article of manufacture, a molded slab for fire-proof structures, formed of lime, plaster, ashes, and alum, and provided with a wire net, A, a tenon at one end, and a groove at the opposite end, as shown.

200,321. FLIERS FOR SPEEDERS AND FLY-FRAMES. Wm. C. Macomber, Baltic, Conn. Filed Jan. 2, 1878.

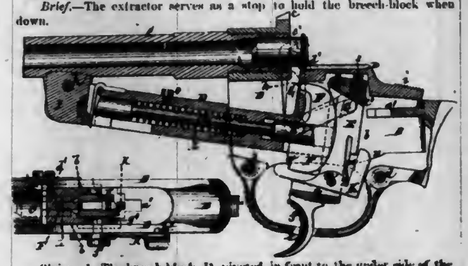
Brief.—Longer bearing upon the spindle is attained by means of a tube having an exterior screw-thread for fitting into the nose of the flier, which is provided with an interior screw-thread. The top of the spindle is slotted, and the nose of the flier is provided with a pin for fitting in such slot, and thus retaining them in positive connection.



Claim.—The tube D, provided at one end with exterior screw-threads, in combination with the spindle A, having slot *a*, the flier B, with nose C, having interior screw-threads, and the pin *b*, all substantially as and for the purposes herein set forth.

200,322. BREECH-LOADING FIRE-ARMS. Paul Mauser, Oberndorf, Wurtemberg. Filed July 21, 1877.

Brief.—The extractor serves as a stop to hold the breech-block when down.



Claim.—1. The breech-block D, pivoted in front to the under side of the barrel or projection therefrom, and constructed with an upwardly-bent portion at its rear end, in combination with an independent hammer carried by the breech-block, and with the breech-frame B, having a mortise up through it, and open in front for the reception and movement of said block, substantially as specified.

2. The combination of the breech-block closing-spring M, the nose-piece I on the under side of the barrel, the tip-piece *g*, the sliding hammer-stem *a*, the hammer F, the breech-block D, and the breech-frame B, essentially as described.

3. The pin or screw *o* on the upper forward portion of the breech-block, in combination with the barrel C and the breech-block D, essentially as described.

4. The combination, with the breech-block D, pivoted in front to the under side of the barrel, of the trigger E, pivoted to the upper rear portion of the breech-block, and the sear K, pivoted to the trigger, for operation in relation with each other and with the hammer, substantially as specified.

5. The trigger E, constructed with a convex base or lower sides, *f*, in combination with the bearings *a* within the breech-frame, and the pivoted breech-block D, essentially as described.

6. The stop or projection *a'*, in combination with the sear K, having an upwardly-bent rear arm, the trigger E, carrying said sear, and pivoted to the breech-block, the sliding hammer F, having a notch or step, *r*, in its lower portion for engagement with the sear, and the forwardly-pivoted breech-block, substantially as specified.

7. The sliding hammer F, with its attached stem *a*, in combination with the spring L and hollow breech-block D, essentially as described.

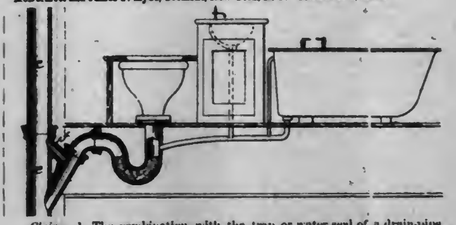
8. The elbow-lever G, which serves to extract the cartridge-shell, and to hold the breech-block when down, in combination with the forwardly-pivoted breech-block D, the breech-frame B, the pivot *b'*, uniting said lever at a fixed point with the breech-frame, and the portion *c'* of the rear end of the breech-block, arranged to bear down on the lower arm of the elbow-lever when the breech-block is lowered, whereby said lever is operated in a direct, quick, and positive manner by the rear end of the breech-block, substantially as specified.

9. The combination, with the forwardly-pivoted breech-block D, of a locking catch or stop for holding said block from being accidentally shifted when raised to close the breech, essentially as described.

10. The locking catch or stop for holding the breech-block in its closed position, composed of a spring stop-lever, H, having an attached cam, *g'*, in combination with the pivoted breech-block D, having a step or notch, *i'*, and the reduced base portions *t* of the trigger, whereby the trigger is also locked from being accidentally drawn back, substantially as specified.

11. The trigger-guard H, having an opening, *e*, in its lower portion, for the finger-piece of the trigger to pass through when lowering the breech-block, essentially as described.

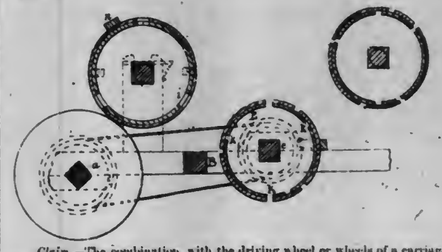
200,323. MEANS FOR PREVENTING THE SIPHONING OF TRAPS OF WATER-CLOSETS. Patrick McDermott and James P. Hyde, Tremont, New York, N. Y. Filed Feb. 4, 1878.



Claim.—1. The combination, with the trap or water-seal of a drain-pipe, of an air-pipe communicating with said trap and terminating outwardly in a main drain-pipe, to which the air has access, substantially as described, whereby siphoning is avoided and a perfect seal maintained.

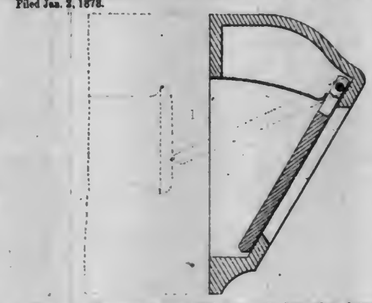
2. As a new article of manufacture, a section of drain-pipe having an inclined branch, which is connected thereto near its divergent end by a smaller pipe or hollow arm, the whole formed in one piece, of iron, lead, earthenware, or other suitable material, substantially as described.

200,324. FERTILIZER-DISTRIBUTERS. Alonzo Mahaney, Middleborough, Mass. Filed Mar. 31, 1876.



Claim.—The combination, with the driving wheel or wheels of a carriage, of a cylindrical seed-box arranged to rotate by means of direct contact, substantially as described.

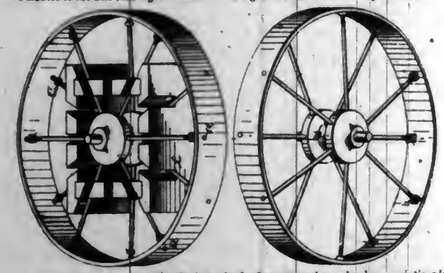
200,325. CAR-AXLE-BOX LIDS. John E. Meth and Wilhelm Lindemann, Grand Island, Nebr. Filed Jan. 2, 1878.



Claim.—1. The combination, with a car-axle box, of an interior swinging and spring-acted lid or cap closing the opening of the face-plate, substantially as and for the purpose set forth.

2. The combination, with a car-axle-box, of a swinging and spring-acted lid or cap, hinged at the upper corners to the inside of the box, substantially as and for the purpose set forth.

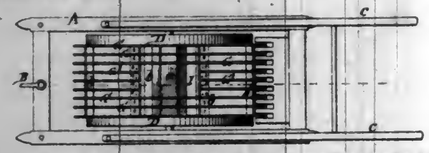
200,326. PROCESSES OF CASTING WHEELS. Charles F. Mebler and James B. Mebler, Pekin, assignors of one-half their right to Andrew J. Hodges, Peoria, Ill. Filed July 23, 1877.



Claim.—The herein described method of constructing wheels, consisting in placing the spokes loosely in the rim, casting the hub upon the inner ends of the spokes, and making the rim concentric by pressure applied about the spokes, and maintained against the interior of the rim, substantially as and for the purpose specified.

200,327. SOD-CUTTER AND COTTON-CHOPPER. John Moore, Salisbury, Mo. Filed Sept. 27, 1877.

Brief.—The nature of the invention is fully described in the claim and shown in the drawing.



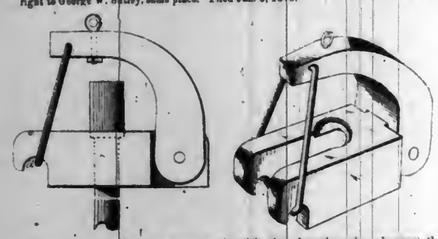
Claim.—The combination of the frame A, with clevis B and handles C C, the rotating wheel a D b, the circular cutters G, and the sectional cutters G^1 G^2, all constructed substantially as and for the purposes herein set forth.

200,328. RULING-PENS. John C. Moss, New York, N. Y., assignor to Photo-Engraving Company, same place. Filed Sept. 10, 1877.



Claim.—The combination of the graduated disk with the screw, the jaws of the pen, and a pin or indicator, substantially as shown and described.

200,329. WELL-TUBE CLAMPS. Francis B. O'Donnell, Franklin, Pa., assignor of one-half his right to George W. Batley, same place. Filed Jan. 5, 1878.



Claim.—1. A well-tube clamp made with the clamping-piece having the open slotted body, and provided with the supporting-piece pivoted thereto at one extremity, and adapted to have its free end detachably engage with the opposite extremity thereof, substantially as described.

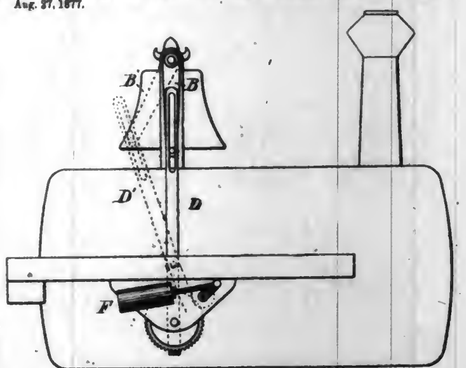
2. A clamp for well-tubing, made with the open-slotted clamping-piece, the arch-shaped supporting-piece pivoted thereto at one extremity, and adapted to detachably engage with its opposite extremity, and provided with suitable means for connection with the derrick or other tackle apparatus, substantially as described.

3. The combination, with the clamping-piece formed with a central through-opening, and a longitudinal open slot communicating therewith, of the supporting device, which is pivoted thereto, and whose free extremity is provided with a stirrup or loop which engages with catch formations on the open slotted end portion of the clamping-piece, substantially as described.

4. The combination, with the clamping-piece having an open-slotted body, of the semi-arch piece, adapted to support the same by a suitable connection at either end thereof, and which is provided with the swivel adapted to engage with suitable tackle apparatus, substantially as described.

5. The combination, with the clamping-piece and curved supporting-piece, provided with the swivel attachment, of the stirrup or loop, and suitable catch engagement therewith, substantially as described.

200,330. BELL-HANGERS FOR LOCOMOTIVES. William C. Orenden, Worcester, Mass. Filed Aug. 27, 1877.

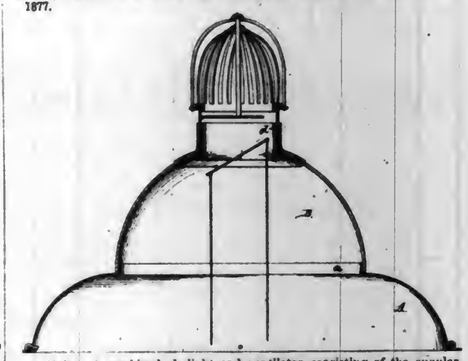


Claim.—The combination of the engine F, the crank I, slotted lever D, and the bell-arm B, as and for the purposes described.

200,331. MEDICAL COMPOUNDS. Amanda Owen, Williamsport, Pa. Filed Aug. 31, 1877.

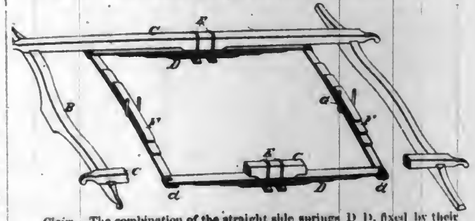
Claim.—The medicinal compound herein described, consisting of a decoction of flowers of hops, bark of wild cherry, buds of balm of Gilead, flowers of chamomile, stalks of wormwood, bark of prickly-ash, roots of spikenard, with pith extracted, and raspings of quassia, sugar, tar, and spirits of anise, in about the proportions herein specified, for the purposes set forth.

200,332. VENTILATING-SKYLIGHTS. Simon J. Pardessus, Brooklyn, N. Y. Filed Dec. 22, 1877.



Claim.—A combined skylight and ventilator, consisting of the annular metallic base A and the transparent dome B, connected together and each flaring downwardly, whereby the light is equally disseminated throughout the apartment, said dome being constructed with a central opening or passage communicating with the atmosphere or a ventilating attachment, and provided with a suitable register, substantially as set forth.

200,333. VEHICLE-SPRINGS. Henry W. Pell, Rome, N. Y. Filed Oct. 20, 1877.



Claim.—The combination of the straight side springs D D, fixed by their centers beneath the side bars C C, and the arched end springs F F, supporting the bed by their centers, and fixed to the extremities of the side springs D D by the lock-joints *d d*, all as herein specified.

200,334. COMBINED TIRE UPSETTER AND SHEARS. Isaac H. Peacock and Willard Peacock, Minerva, Ohio. Filed July 7, 1877.

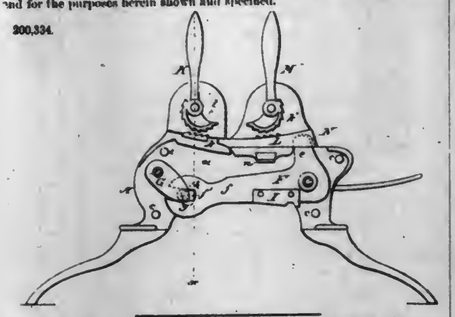
Claim.—1. The side pieces a b, shaft C, having its bearings therein, bent lever F, having forked arm *f*, shaft D, having cam G, provided with friction-roller *h*, and lever H, all combined and operating substantially in the manner and for the purpose herein shown and specified.

2. The bent lever F, having forked arm *f*, carrying the shear-blade I, operating-cam G, having friction-roller *h*, and slotted frame A, having detachable covering-plate *b*, provided with solid shear-blade J, all arranged and operating substantially as described, for the purpose set forth.

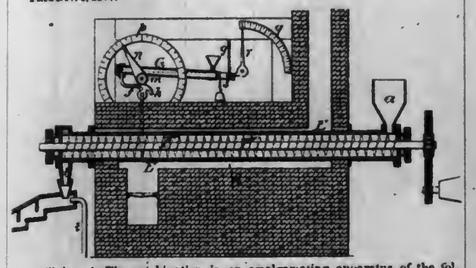
3. The combination of sliding plate I, having gable-stud *a* and recess N, side plates *a b*, having grooves *n'* on their inner sides to fit the stud *n*, lever F, having arms *e f*, cam G, having friction-roller *h*, and shaft D, substantially as described, and for the purpose specified.

4. The improved tire upsetting and shearing machine herein described, consisting, essentially, of the slotted frame A, shafts C D, cam G, having friction-roller *h*, bent lever F, having forked arm *f*, carrying shear-blade I, slide L, having bracket *k'* and eccentric-lever M, operated by short arm *e* of lever F, detachable covering-plate *b*, having shear J, set-screw S, and bracket *l*, carrying eccentric-lever K, all arranged and operating substantially in the manner and for the purposes herein shown and specified.

200,334.



200,335. ORE-AMALGAMATORS. Ira M. Phelps, Philadelphia, Pa., assignor of a part of his right to Theodore L. Chase and H. J. Fillman, same place, and D. K. Allen, Boston, Mass. Filed Nov. 8, 1877.

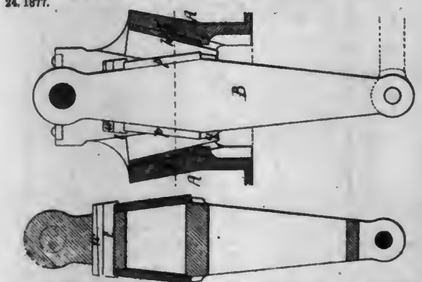


Claim.—1. The combination, in an amalgamating apparatus, of the following elements, namely: a retort arranged within a furnace and having a screw-conveyer, a pipe for supplying mercury to said retort, a pivoted box or tube containing the mercury-supply, and a device, substantially as described, for automatically tilting said box or tube, so as to constantly maintain the contents of the same at a certain level.

2. The combination of the furnace and the mercury-supply pipe *f* with a horizontal retort, E, provided with a feed-screw, F, and having the main discharge-opening on the upper side, as and for the purpose set forth.

3. The combination of the retort E, having a discharge-opening, *e*, on the upper side, with a casing surrounding the discharge end of the retort, forming the annular passage *b* and discharge-opening *d*.

200,336. ORE-CRUSHERS. Ira M. Phelps, Philadelphia, Pa., assignor of a part of his right to Theodore L. Chase and H. J. Fillman, same place, and D. K. Allen, Boston, Mass. Filed Oct. 24, 1877.



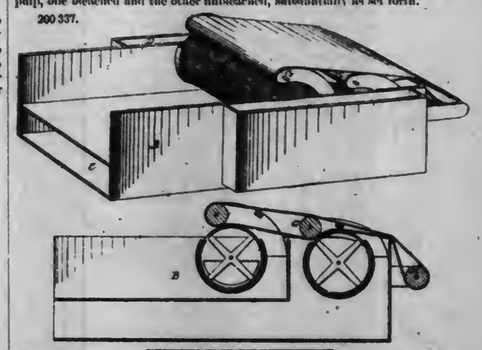
Claim.—The combination of the frame A with the lever B, pivoted at a point above the crushing-jaws, and extending beneath the floor or platform on which the frame A rests, all substantially as and for the purpose herein set forth.

200,337. PAPER FOR PAPER BAGS AND APPARATUS FOR MAKING THE SAME. Thomas Phillips, Akron, assignor of one-half his right to Alfred Adams, Cleveland, Ohio. Filed Nov. 5, 1875.

Claim.—1. The combination, in a paper-forming machine, of two separate vats, H, each provided with a cylinder, with a single felt, and a coucher, G, arranged to operate on each cylinder, and one or more waste-water boxes common to both vats, all constructed to operate substantially as shown and described, whereby two different qualities of pulp may be united before being pressed to form a sheet of paper, as set forth.

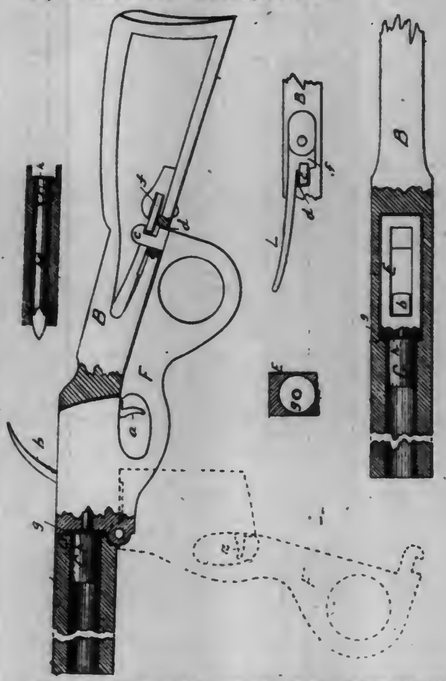
2. As a new article of manufacture, a paper composed of two layers of pulp, one bleached and the other unbleached, substantially as set forth.

200,337.



200,338. BREECH-LOADING GUNS. Ebenezer Pierce and Selmar Eggers, New Bedford, Mass. Filed July 10, 1877.

Brief.—A side lever locks the trigger-guard in place.



Claim.—The trigger-guard F, having hook-stud *e*, in combination with stock B, having hole *d*, and lever L, all substantially as and for the purpose specified.

200,339. HORSE-COLLAR FASTENINGS. Charles W. Pott, Sparta, Wis. Filed Dec. 20, 1877.



Claim.—The horse-collar fastening herein described, consisting of the caps A, having the dowel-pins *b* and the sockets *c*, in combination with the spring-catch X, attached to one of the caps A, and the lock-staple Z, attached to the other, substantially as set forth.

200,340. POCKET-BOOK FRAMES. Daniel M. Read and Louis Prahar, New York, N. Y. Filed Dec. 17, 1877.

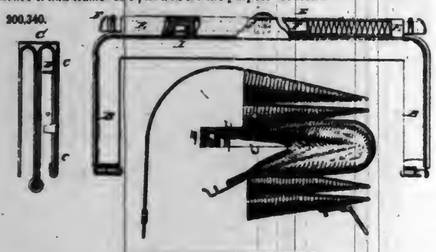
Claim.—1. The combination of a detachable cap-plate, C, with one side, B, of a pocket-book frame, secured in place by points D, formed upon one of

sam parts, and bent over the edge of the other part, substantially as herein shown and described.

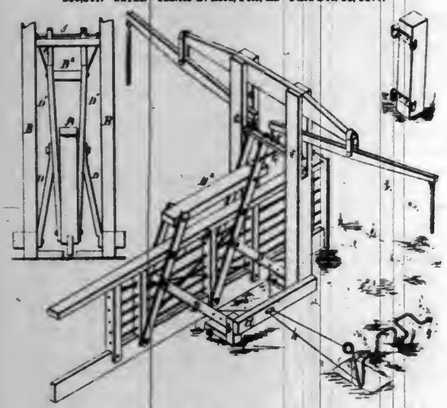
2. The combination of the catch-socket E, formed in one piece, with the cap-plate C, detachably attached to one side of the pocket-book frame A B, substantially as herein shown and described.

3. The catch-plate C, having the point I, and the catch bolt F, having a bottom slot or groove adapted to receive said point, in combination with the socket E and frames A B, as and for the purpose set forth.

200,340.

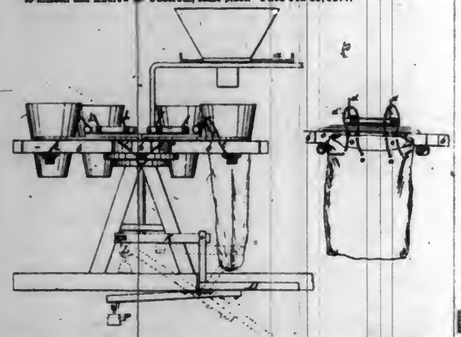


200,341. GATES. Charles D. Reed, Polo, Ill. Filed Dec. 18, 1877.



Claim.—In combination with a gate, A, the system of levers D D and D' D' on each side, and connected above the gate by the saddle D², and means for operating the levers, substantially as herein set forth.

200,342. APPARATUS FOR BAGGING GRAIN. Francis H. Ralph, New York, N. Y., assignor to himself and Andrew K. Underhill, same place. Filed Oct. 15, 1877.



Claim.—1. A horizontal frame pivoted in such manner as to rotate, and having radial arms provided with spring-hooks for supporting the bags to be filled and for drawing taut the cords that close the mouths of the bags, and the funnels or guide-tubes, located between the radial arms, all combined as shown and described.

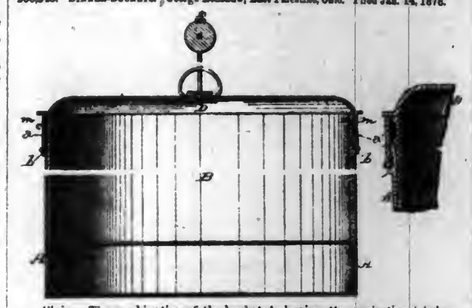
2. The combination of the tilting weighted trap, the connecting-rod and ratchet mechanism, and the rotating frame, as shown and described.

3. The springs having projecting ends, in combination with the spring arms or hooks, as shown and described.

4. The wire springs attached to the frame, and having ends e projecting in an upward direction, for the purpose of piercing the bags and supporting them until the weight of their contents overcomes the tension of the springs, as shown and described.

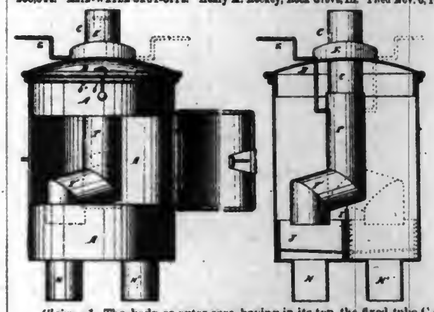
5. In combination with the spring-hooks e e and d d, the bag and its attached buckles and cords, as shown and described.

200,343. DINNER-BUCKETS. George Bonshaw, East Palestine, Ohio. Filed Jan. 14, 1878.



Claim.—The combination of the bucket A, having the projection b below its upper edge, with the deck B, having the projection a and space a', and cover D, having the flange c projecting downward so as to rest upon the projection b, the various parts being constructed and arranged to operate substantially as set forth.

200,344. RAIN-WATER SHUT-OFFS. Henry M. Rockey, Rock Grove, Ill. Filed Nov. 6, 1877.

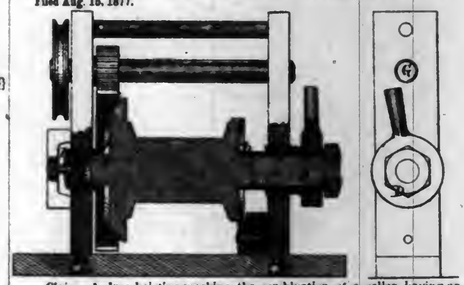


Claim.—1. The body or outer case having in its top the fixed tube C and the slot D, and in its bottom the tubes H and H' and the dividing-wall I, in combination with the loose or rotary bent tube F, entered by the tube C, and suspended by the part G passing through the slot D, substantially as and for the purposes specified.

2. The body or case having a top slotted, as at E, and provided with the tube C and shoulder E, and a bottom provided with the tubes H and H' and the dividing-wall I, in combination with the loose bent tube F and part G, substantially as and for the purposes specified.

3. The body A, provided with the door K and slotted top B, having therein the tube C, the wall I, the discharge-tubes H and H', the adjustable tube F, and the shifting-rod G, all combined substantially as and for the purposes specified.

200,345. FRICTION-DRUMS FOR HOISTING-MACHINES. John Rockworth, New York, N. Y. Filed Aug. 16, 1877.



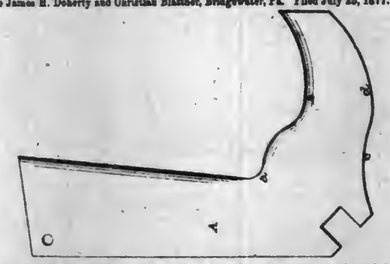
Claim.—1. In a hoisting-machine, the combination of a collar, having an external screw-thread and fitted loosely on the shaft of the hoisting-drum, with a standard having a threaded hole for the reception of said collar, a nut secured to the end of said shaft, and a friction wheel or pulley the axis of which coincides with the axis of the hoisting-drum, the whole being adapted to operate substantially as described.

2. In a hoisting-machine, a friction wheel or pulley having a gudgeon which passes through a standard of the machine-frame, and is stepped in a block secured to said standard, in combination with a collar having an external screw-thread and fitted loosely on the shaft of the hoisting-drum, a standard having a threaded hole for the reception of said collar, and a nut secured to the end of said shaft, the whole being adapted to operate substantially as described.

3. In a hoisting-machine, the combination of a brake-block, adapted to arrest the motion of the hoisting-drum, with a collar having an external screw thread and fitted loosely on the shaft of the hoisting-drum, a standard having

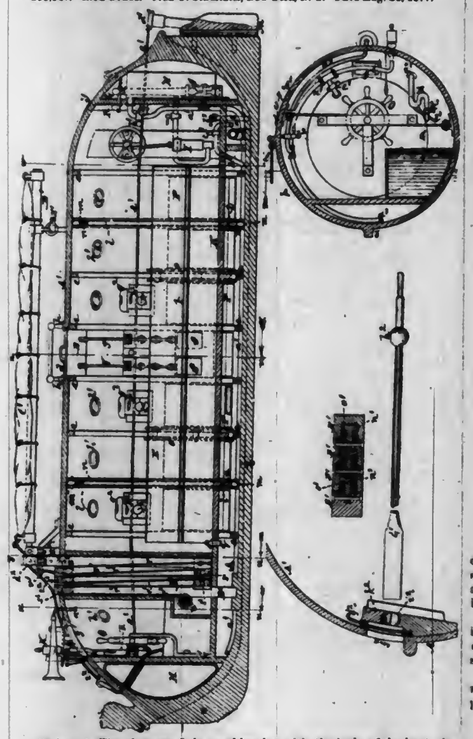
a threaded hole for the reception of said collar, a nut secured to the end of said shaft, and a friction wheel or pulley the axis of which coincides with the axis of the hoisting-drum, the whole being adapted to operate substantially as described.

200,346. CRIMPING-BOARDS FOR BOOTS AND SHOES. Geo. Schallenberger, Rochester, assignor to James H. Doherty and Christina Blattner, Bridgewater, Pa. Filed July 25, 1877.



Claim.—A crimping-board, A, curved downwardly from a to b, and from b curved outwardly to the point at the toe, upon the top edge, and having the curve upon the lower edge, as shown by the letters c d, substantially as and for the purposes specified.

200,347. LIFE-BOATS. John F. Schultheis, New York, N. Y. Filed Aug. 28, 1877.



Claim.—1. The air-pump I, in combination with the body of the boat, the bulk-heads G at the ends of said boat, the air-reservoirs H, and one or more pneumatic signals, K L, substantially as specified.

2. The combination, with the body of the boat, having a close top, A', of one or more air-traps, R, provided with outlets P for water collecting therein, substantially as specified.

3. The sectionally-constructed mast composed of tongued and grooved sliding sections B', arranged one in front of the other, in combination with the hoisting-ropes r¹, the upper and lower pulleys s¹, and the windlass s², substantially as specified.

4. The boom B', in combination with the upright c², by which it is jointed at its inner end to the top A' of the boat, the guide-rail E' for the outer end of the boom, and the extensible mast, essentially as described.

5. The combination of the outer shutters g² with the inner shutters k² and the spherically-constructed rowlocks f², formed in part by said inner shutters, essentially as described.

6. The combination, with the boat, of the water-closet H', provided with upper and lower valves P m² in its soil-pipe n², and mechanism for opening and closing said valves in reverse relation with each other, essentially as described.

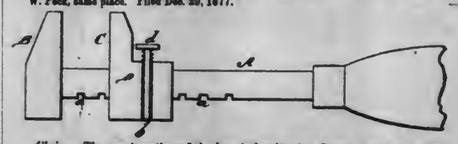
7. The combination, with the water-closet, of the pump I', the suction-pipe n³, the bilge-water suction-pipe d², the cocks k³, the delivery-pipe c², and the soil-pipe n², essentially as described.

8. The combination of the steering-wheel O, ropes c¹, provided with rods in line therewith, and playing longitudinally through the stuffing-boxes N, and the pulley d⁵ on the rudder-staff, substantially as described.

9. The spherically-formed rowlock f², composed in part of a sliding shutter, k², in combination with the oar having a spherical enlargement to fit said rowlock, substantially as described.

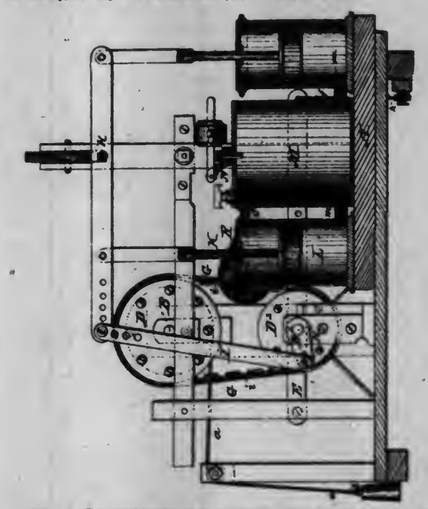
10. The combination, with the pump I' in a boat, of the rising-pipe k², provided with a cock, z², and entering the bowl of the water-closet H', and the pipe c², provided with the cock f², and connected to said pipe z² below the bowl of said water-closet, substantially as and for the purpose set forth.

200,348. WRENCHES. Solomon Schwedt, Reesville, Ill., assignor of one-half his right to J. W. Peck, same place. Filed Dec. 29, 1877.



Claim.—The combination of the bar A, having jaw B and series of notches a, the jaw C, with grooved and mortised hub D, the toothed stirrup b, with cross-bar d, and the spring f, all constructed substantially as and for the purposes set forth.

200,349. ORGAN-BLOWERS. Eliphalet S. Scripture, Brooklyn, N. Y., assignor to himself, Wm. H. Harway, and Mary W. Hendrickson, same place. Filed Jan. 23, 1878.

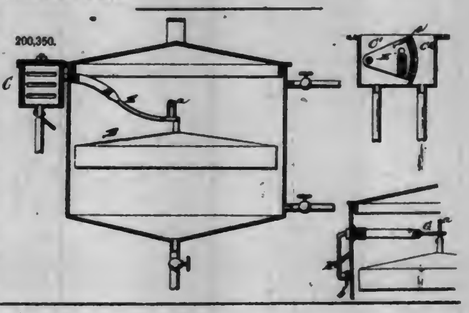


Claim.—1. The combination of an operating mechanism worked by weight or spring, one or more air-pumps, and an air receiver and distributer, all constructed and arranged to operate substantially as described, whereby the operating mechanism is automatically stopped and started by the variable pressure in the receiver, as herein set forth.

2. In an organ-blower, the angular driving-wheels D and D', each made in two parts, with washers e between said parts, and connected by the endless chain formed of triangular links G, jointed together substantially as herein set forth.

3. The auxiliary flexible air receiver and distributer R, arranged in connection with the main receiver M, to operate substantially as and for the purposes herein set forth.

200,350.

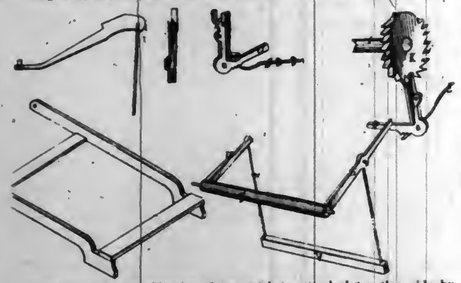


200,350. STEAM-PUMP GOVERNORS. Charles A. Sellon, New Hudson, N. Y. Filed Jan. 19, 1878.

Claim.—1. In a steam-pump governor, the water-box C, divided into the two compartments C' C², having pipes communicating with the tank and pump, and provided with the curved gate D, in combination with the lever E, float B, and case A, constructed and arranged substantially as shown, and for the purposes set forth.

2. In combination with the float B in the case A, the loop *a*, lever G, rest *b*, spring H, and pivoted lever I, with the weight J, all constructed substantially as and for the purposes set forth.

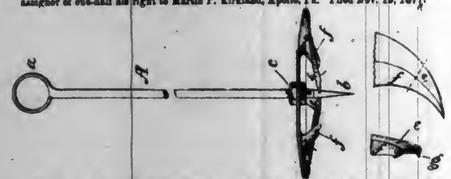
200,351. TYPE-WRITING MACHINES. C. Latham Sholes and Carlos Glidden, Milwaukee, Wis., assignors, by mesne assignments, to the Type Writer Company. Filed Jan. 16, 1874.



Claim.—1. The combination of two ratchets, attached together side by side, pointed practically in the same direction, and pivoted so they may vibrate in the same plane in one direction, but one pivoted separately, so it may vibrate independently in a plane at a right angle to that of the joint vibration, so they may vibrate in parallel planes in the reverse direction, with only one series of ratchet-teeth and notches, and with the key-levers, vibratory frame, paper-carriage, and platen of a type-writing machine, substantially as described.

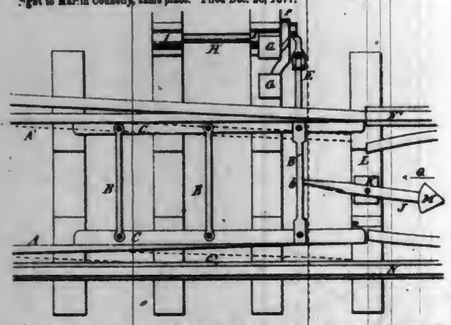
2. The combination of a horizontal bar, attached and pivoted so it may vibrate across in front of the key-levers, with the vibratory frame and letter-space ratchets of a type-writing machine, substantially as described.

200,352. POST-HOLE DIGGERS. Michael Shott, Kiskiminetas Township, Armstrong County, assignor of one-half his right to Martin P. Kirkland, Apollo, Pa. Filed Nov. 19, 1877.



Claim.—The post-hole auger consisting of pointed and threaded stock A, elliptical plate B, having two downwardly-inclined lips, *c c*, with their inner marginal edges of ogee curves, and bent down to form aprons *f f*, and at their outer margins swaged cutters *g g*, said curves at their inner ends diverging from the center of the plate, substantially as described.

200,353. RAILWAY-SWITCHES. William Spielman, Philadelphia, Pa., assignor of one-half his right to Martin Connelly, same place. Filed Dec. 20, 1877.



Claim.—1. The connected switch-rails A A', weighted arms G G', shaft H, crank-hub F, and rod E, combined with the main track rails, substantially as described.

2. Combined with the rails of the main track, the switch-rails A A', connected as described, arms G G', shaft H, cranked hub F, rod E, lever J, having angularly shaped head M, and rod B', substantially as and for the purpose specified.

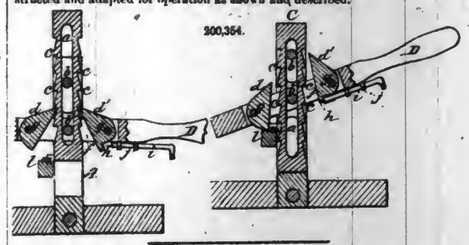
200,354. LIFTING-JACKS. James W. Stevens, Roundhead, Ohio. Filed July 18, 1877.

Claim.—1. The combination, with the dog *d*, carried by the lever, and the notched lifting-bar C, of the cross-piece *l*, fixed to the standard A in position to receive the lower point of said dog and turn its upper end out by the action of the lever, to lower said bar, as set forth.

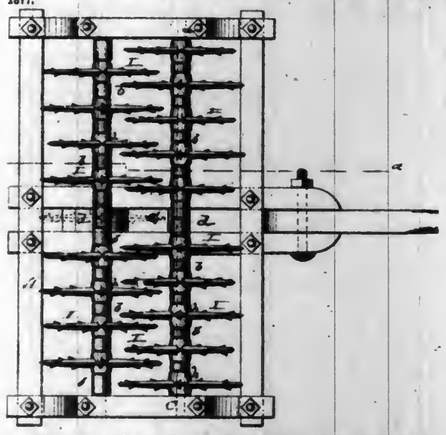
2. A slotted lever, D, a push-bar carried thereby, a weighted dog, *d'*, provided with a projection, *h*, a dog, *d*, the block *l*, with its incline *m*, the ratcheted lifting-bar, and the standards, combined and operating substantially as described.

3. The double-rack lifting-bar C *e e*, having the vertical slot *a*, the standards A, having the guide cross-pins *b b'*, and the lever D, pivoted upon one of said guide cross-pins *b'*, and carrying the weighted dogs *d d'*, all constructed and adapted for operation as shown and described.

200,354.

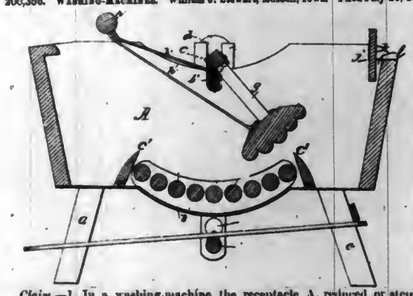


200,355. PULVERIZING-CULTIVATORS. George Stevenson, Zionsville, Ind. Filed July 16, 1877.



Claim.—The thimbles or tubes *b b*, in combination with the rods *a* and the star-wheels I, having hubs *h*, and the frame, whereby the wheels may be adjusted to any desired distance apart in relation to each other, constructed and arranged substantially as and for the purpose set forth.

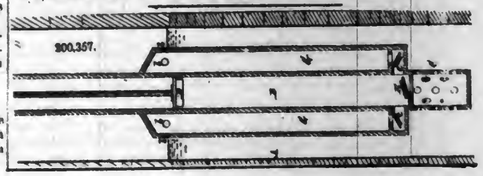
200,356. WASHING-MACHINES. William J. Stewart, Russell, Iowa. Filed July 26, 1877.



Claim.—1. In a washing-machine, the receptacle A, recessed or stepped, as at *f f*, in combination with the board *k*, fastened against the vertical portion of the said step, leaving a space, *l*, between it and that end of the receptacle, substantially as and for the purpose set forth.

2. The partitions *c' c'*, recessed, as shown and described, to admit of the free circulation of the water, in combination with the suds-box A and rollers G G, substantially as and for the purpose set forth.

200,357.

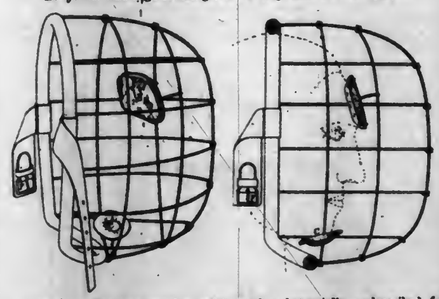


200,357. WORKING-BARRELS FOR OIL-WELLS. Edward E. Swett, Olean, N. Y. Filed Nov. 14, 1877.

Claim.—The combination of the inverted or inwardly-opening foot-valves *c* and the air-pipes G, having openings in the upper ends, and arranged to project above the oil-bearing rock, with the working-barrel B of the pump, its suction-valve E, and lower perforated pipe C, substantially as shown and described.

200,358. MASKS. Frederick W. Thayer, Waverly, Mass. Filed Jan. 15, 1878.

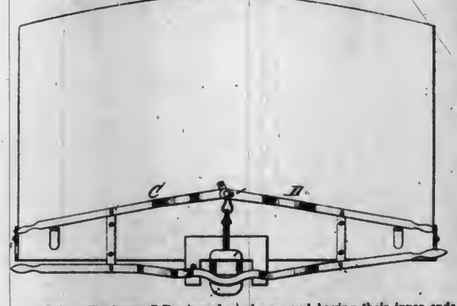
Brief.—A wire cage covering the face to protect base-ball players.



Claim.—1. The face-guard or safety-mask, substantially as described, for the purpose specified, it consisting of the open cage and forehead and chin rests or bearings, all combined and arranged essentially as set forth.

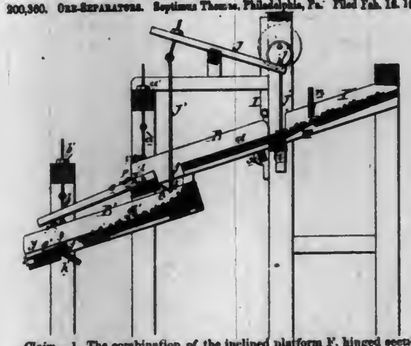
2. The open cage provided with the forehead rest, arranged in it substantially as represented.

200,359. CAR-COUPLINGS. William A. Tew, Lima, Ohio. Filed Jan. 23, 1878.



Claim.—The levers C D, pivoted as shown, and having their inner ends curved in an outward direction, in combination with the catches or hooks *f*, substantially as and for the purpose set forth.

200,360. ORE-SEPARATORS. Septimus Thorne, Philadelphia, Pa. Filed Feb. 16, 1877.



Claim.—1. The combination of the inclined platform F, hinged section *m*, and a vertically-reciprocating slide or gate, *i*, with the frame B and its inclined plane *d*.

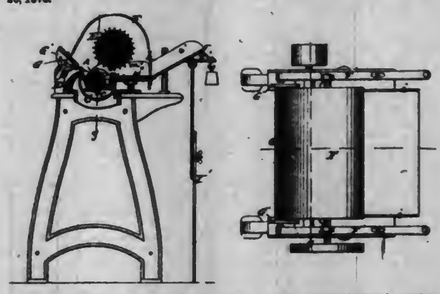
2. The combination of the frame B and its inclined plane *d* and the vertically-reciprocating slide *i* with the platform F, its hinged section *m*, and the gate *n*, as described.

3. The combination of the frame B, with its inclined planes *d* and *e*, leaving an intermediate opening, *f*, and the inclined chute *h*, with the frame B', its planes and opening.

4. The combination of the planes *d* and *e*, leaving an intermediate opening, *f*, with the plane *d'* and the reciprocating gate *s*.

5. The combination of the frame B, carrying the planes *d e*, with the frame B', carrying the planes *d' e'*, the two frames being independently adjustable at different inclinations.

200,361. BARK-CUTTING MACHINES. Samuel R. Thompson, Brookline, Mass. Filed Jan. 26, 1878.



Claim.—1. The combination of a rotary cutter, having isolated cutting-teeth, and a converging concave, formed as a sieve or perforated partition, whereby the larger particles or lumps of bark between the cutter and concave are separated from the smaller particles, and subjected to the action of the cutter, to be cut up thereby without crushing, and the smaller particles impelled through the sieve.

2. In a bark-cutting machine, the combination of a rotary cutter, A, a bed-plate, M, having a shoulder, *m*, and a curved sieve or perforated partition, C, arranged to form a laterally-converging space under said cutter, and terminating in a shoulder, *m'*, all arranged substantially as and for the purpose specified.

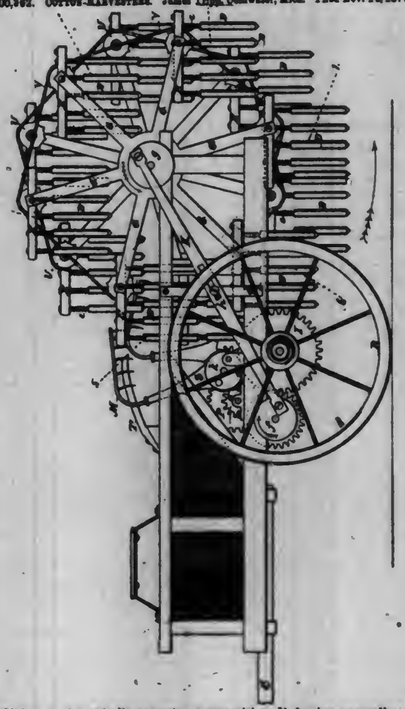
3. In a bark-cutting machine employing a rotary cutter, A, and a rising and falling feed-roll, E, a hood or casing, F, supported on the bed of the machine, arranged to cover the cutter and feed-roll, and provided with slots *e'*, in which the journals of the feed-roll may rise and fall, substantially as described.

4. The feed-roll E, combined with the blocks E', adapted to rise and fall independently, and provided with the double conical bearings E², substantially as and for the purpose specified.

5. The rotary cutter A, composed of the longitudinally-grooved cylinder or body A' and the detachable rods or blocks *a*, each provided with a series of detachable teeth, *a'*, substantially as described.

6. The combination of the grooved cylinder or body A', the rods or blocks *a*, having teeth *a'*, and means, substantially as described, for securing the blocks in the cylinder.

200,362. COTTON-HARVESTERS. James Tripp, Goldwater, Mich. Filed Nov. 14, 1877.



Claim.—1. A vertically-operating cotton-picker, D, having upwardly-projecting spines or card-teeth, made inflexible or rigid against lateral bending, but arranged to yield in longitudinal direction, substantially as described.

2. The pointed feet *e*, arranged upon the lower extremity, and combined with the vertically-operating picker carrying upwardly-projecting teeth, substantially as and for the purpose described.

3. The combination, with the series of sets of pickers, of a rag wheel arranged upon the pivot of each set of pickers, and an endless chain encircling all the rag-wheels of said series, for the purpose of preventing the individual swaying movement of the sets, substantially as described.

4. A series of sets of pendent and vertically-operating pickers, combined with and pivoted to the reel-arms G, arranged upon a revolving axis, substantially as and for the purpose described.

5. The combination, with the reel-frame, carrying the sets of pickers and provided with disks *g*, of the lever-pitman K, connected with the crank-pin of its driving-shaft, and having an intermediate fulcrum, substantially as shown and described.

6. The strippers L, arranged upon the rear portion of the cotton-receptacle, and having forwardly-inclined curl-teeth *i* and laterally-projecting brushes *j*, in combination with the revolving sets of pickers, substantially as shown and described.

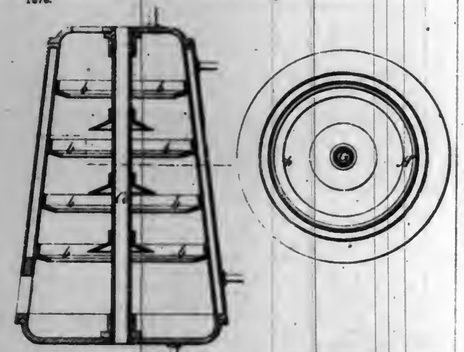
7. The combination, with a set of parallel rearwardly-projecting strippers, L, of a set of pickers, D, arranged in open parallel bars E, having a single cross-bar, F, to adapt the pickers to pass through and deliver their burden to the strippers, substantially as described.

8. The rake M, in combination with the strippers L, the receptacle A, and the clearing-fingers T, substantially as and for the purpose described.

9. The combination, with the shaft R, carrying eccentric *k*, of the rake M, having its bar S slotted and embracing the axle of the driving wheels, to secure and control the compound movement of said rake, substantially as described.

10. A cotton-picking device consisting of a set of revolving pendent pickers, a set of strippers, a rake, and clearing-fingers, substantially as shown and described.

200,363. FILTERING APPARATUS. Anthony Van Haagen, Philadelphia, Pa. Filed Jan. 16, 1878.

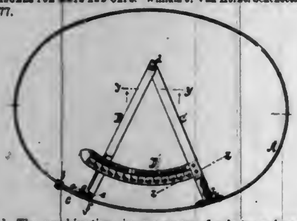


Claim.—1. A filtering-vessel in which an outer tapering casing, larger below than above, and having a steam-jacket, is combined with internal flanges *b*, secured to the interior of the said casing, as and for the purpose set forth.

2. The combination, in a filtering-vessel, of the central steam-chamber G with flanges *e*, projecting from the casing of the chamber, as specified.

3. The combination of the outer jacketed and tapering casing and its internal flanges with the central tube G and its flanges, as set forth.

200,364. MEASURES FOR HATS AND CAPS. William J. Van Horne, Schenectady, N. Y. Filed Dec. 28, 1877.



Claim.—1. The combination, in a measure for hats and caps, of a thin elastic metal strip, A, U-shaped handles B C, made of sheet metal, the handle B being made to overlap the handle C, and a pivot passing through the side flanges of both handles, the handles being secured to the elastic metal strip, substantially as shown and described.

2. The combination, in a measure for hats and caps, of a thin elastic metal strip, A, U-shaped handles B C, made of sheet metal, a pivot passing through the side flanges of both handles, and a bracket, *g*, fitting into an eye between the side flanges of the handle B, for securing said handle to the elastic strip, substantially as set forth.

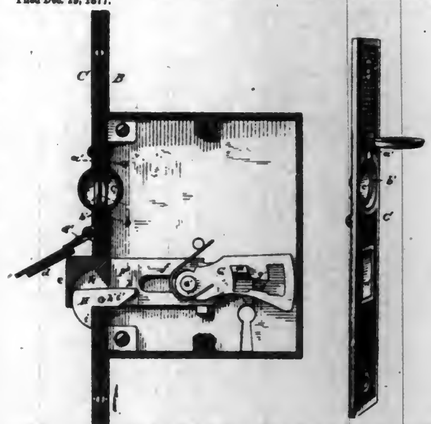
3. The combination, in a measure for hats and caps, of a thin elastic strip, A, U-shaped handles B C, made of sheet metal, a pivot passing through the side flanges of both handles, and a T-shaped bracket, *h*, the vertical shank of which fits between the side flanges of the handle C, substantially as and for the purpose described.

4. The combination, in a measure for hats and caps, of a thin elastic strip, A, having an inch-measure on its inner surface, U-shaped pivoted handles B C, and a graduated segment, D, secured to one of the U-shaped sheet-metal handles, substantially as and for the purpose set forth.

200,365. MEANS FOR PREVENTING FRAUD IN STAMPS, CHECKS, BONDS, &c. THOMAS C. VAN HUYS, Bloomington, Ind. Filed Nov. 22, 1877.

Claim.—The improvement in the art of preventing fraud in the use of stamps, checks, drafts, bonds, bills, labels, tickets, notes, and all other printed instruments, consisting in coloring, as set forth, the paper from which such instruments are made with one or more of the colors named, then impregnating such instruments, made substantially as described, with a soluble salt or salts of nickel or cobalt, or both, combined with a soluble salt of mercury, and, when dried, writing, printing, or stamping upon said instruments with a soluble sulphide, all substantially as described.

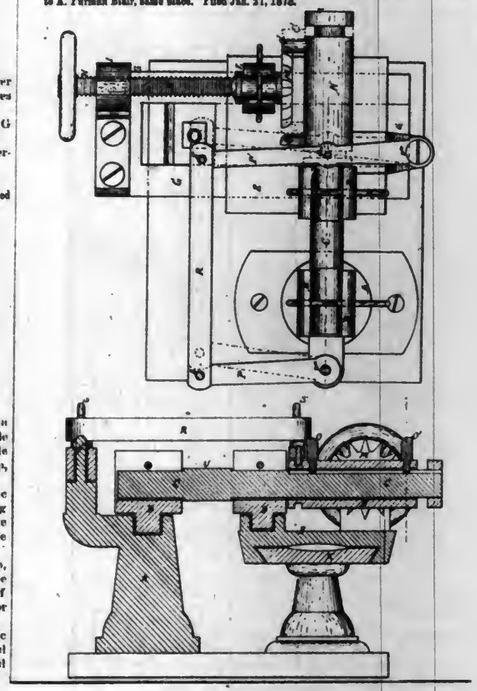
200,366. LOCKS FOR SLIDING DOORS. Herbert Wadsworth, Hohokus Township, Bergen County, N. J., assignor to Hopkins & Dickinson Manufacturing Company, New York city. Filed Dec. 19, 1877.



Claim.—1. In a lock for sliding doors, the main bolt F, having a solid outer end, and recessed from its under side to receive the concealed pivoted hook-bolt H, the said hook-bolt being operated by the movement of the main bolt, substantially as and for the purpose set forth.

2. The combination, with the keeper-plate C, of the swinging plate E, having a face, *d*, adapted to enter the bolt-opening, and presenting the same appearance as the end of the bolt in the face-plate B, substantially as and for the purpose set forth.

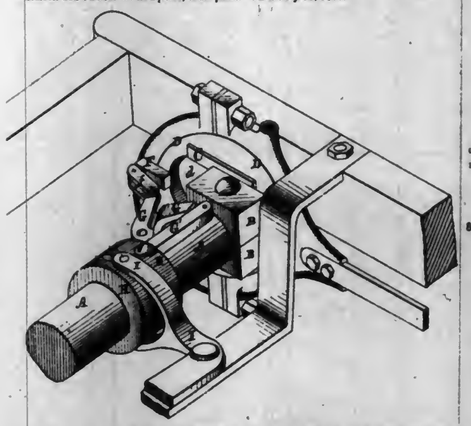
200,367. WIRE GUIDES FOR PAPER-MACHINES. J. Atwood White, Philadelphia, Pa., assignor to A. Furman Blair, same place. Filed Jan. 21, 1878.



Claim.—1. The combination of a revolving shaft, C, loose-keyed sleeve N, having lugs O O', toothed wheel M, screw shaft H, and frame P R P', substantially as and for the purposes described.

2. The combination of loose-keyed sleeve N, having lugs O O', located upon and revolving with shaft C, toothed wheel M, and screw-shaft H, substantially as and for the purpose described.

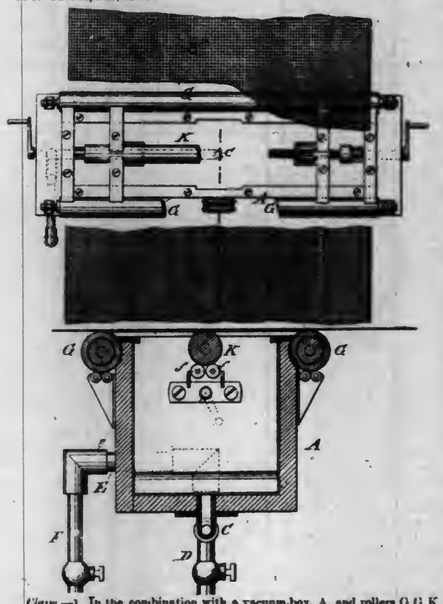
200,368. VALVE-GEARS FOR STEAM-ENGINES. Edwin Williams, Norwich, N. Y., assignor to himself and Charles W. Lamphere, same place. Filed July 31, 1877.



Claim.—1. The means employed for connecting the eccentric D with and rendering the same radially adjustable upon the shaft A, consisting of the blocks B, secured to or upon said shaft, and provided within opposite edges with rabbets *b*, and the shoes C, fitted to and sliding within said rabbets, and secured within opposite sides of the central opening *d* of said eccentric, substantially as and for the purpose specified.

2. As an improvement in valve-gearing for steam-engines, the eccentric D, provided within opposite sides of its central opening *d* with shoes C, which fit within rabbets *b* of blocks B, that surround and are attached to the shaft A, the connecting-bars *f*, the bell-crank lever G, the connection G', the grooved collar H, and the lever I, said parts being constructed and combined to cause said eccentric to be moved radially upon said shaft whenever said lever I is moved horizontally upon its pivotal bearing, substantially as and for the purpose set forth.

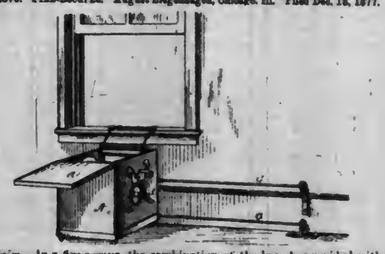
200,369. SUCTION-BOXES FOR PAPER-MAKING MACHINES. Cornelius Young, Sandy Hill, N. Y. Filed Sept. 22, 1877.



Claim.—1. In the combination with a vacuum-box, A, and rollers G G K, the pipes F, E, and D, arranged to operate substantially as herein described.

2. Elastic rollers G G, adjustable as described, and rigid roller K, in combination with a vacuum-box of a paper-making machine, as set forth.

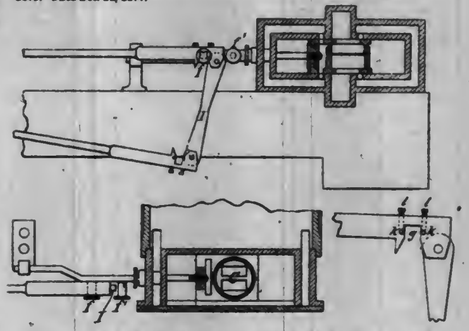
200,370. FIRE-ESCAPES. August Eisenbagen, Chicago, Ill. Filed Dec. 18, 1877.



Claim.—In a fire-escape, the combination of the box A, provided with the cars I and the rod or rods H, secured along the side of the room, substantially as and for the purpose herein shown and described.

REISSUES.

8,077. VALVE-GEARS. Frank H. Bell, Fenburg, Pa. Patent No. 161,195, dated Mar. 23, 1875. Filed Dec. 21, 1877.



Claim.—1. The combination, with the eccentric-rods E E', of the valve-rod D, provided with studs *f f'*, and bar I, arranged between said studs, and connecting the ends of the eccentric-rods, substantially as and for the purpose set forth.

2. The combination, with the recessed eccentric-rods E E' and studs *f f'*, of the double-wedge-shaped bar I, arranged between said studs, and connecting the ends of the eccentric-rods, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the eccentric-rods E E', provided with recesses *g*, of the bearing-pins *k* and set-screws *l*, substantially as and for the purpose hereinbefore set forth.

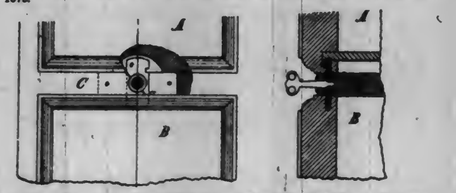
8,078. WIRE FENCES. Chas. D. Johnson and Levi F. Johnston, Marshalltown, Iowa. Patent No. 166,916, dated Mar. 27, 1877. Filed Jan. 9, 1878.



Claim.—1. The metallic fence-post A, made semicircular in cross-section, and provided on the concave side with the lengthwise rib *b*, extending from end to end, substantially as shown and described.

2. The combination, with the ribbed posts A and wires B, of the wire fastenings D, having their ends twisted together back of and across the ribs, substantially as shown and described.

8,079. LOCKS FOR DRAWERS. Raal W. Whitney, New York, N. Y., assignor to Wilson Sewing-Machine Company, Chicago, Ill. Patent No. 156,876, dated Jan. 19, 1875. Filed Jan. 14, 1878.



Claim.—The combination, with drawers A B and bar C, of the double turn-bolt *c* at the bar, whereby both drawers may be locked or unlocked with one motion of a single key, substantially as specified.

8,080. WHEEL-HARROWS. Frank Bramer, Little Falls, and Orrin W. Badger, Whitney's Point, N. Y.; said Badger assignor to said Bramer. Patent No. 174,767, dated Mar. 14, 1876. Filed Jan. 25, 1878.

Claim.—1. Wheel-gangs hinged by their inner ends to an intermediate pole or tongue, or to an extension thereof, substantially as hereinbefore set forth, whereby they are enabled freely to conform to the surface over which they travel.

2. The combination, substantially as hereinbefore set forth, of independent wheel-gangs with an intermediate pole or pole-frame, to which they are hinged at two points, whereby they are braced against transverse strains, as well as allowed freely to conform to undulations of the surface over which they travel.

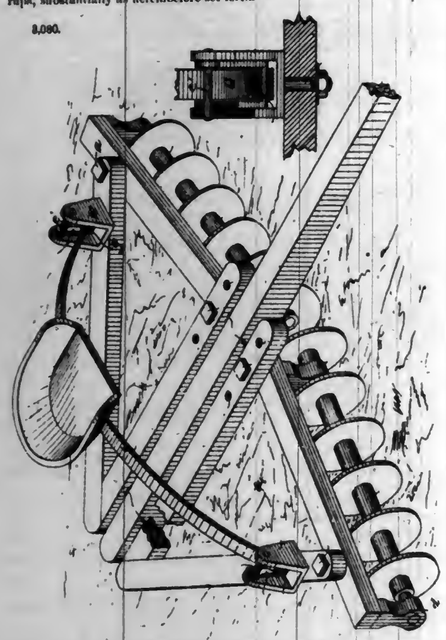
3. The combination, substantially as hereinbefore set forth, of wheel-gangs, an intermediate pole or pole-frame, to which their inner ends are directly hinged, and a transverse seat-support connected with the outer ends of the gang-frames, whereby the weight of the driver keeps the gangs down to their work without interfering with their vibrations on their hinges.

4. A transverse seat-support connected with independently-hinged wheel-gangs by means of swinging compensating links or stirrups, substantially as hereinbefore set forth, whereby the vertical movements of the gangs are limited.

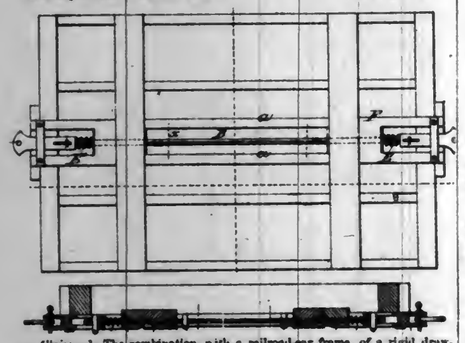
5. The combination, substantially as hereinbefore set forth, of hinged wheel-gangs, swiveling socket-pieces mounted on the gang-frames, and a transverse seat-support pivoted to stirrups in the socket-pieces, whereby both the vertical movements and angular adjustments of the wheel-gangs are compensated.

6. The wheel-harrow hereinbefore described, consisting of the combination of wheel-gangs hinged to an intermediate pole or pole-frame, swiveling socket-pieces mounted on the gang pieces, planks, or frames, swinging stirrups pivoted in said socket pieces, and a transverse seat-support pivoted to the stirrups, substantially as hereinbefore set forth.

8,060.



8,061. DRAFT APPARATUS FOR RAILROAD-CARS. Samuel Griffith and John S. Patterson, Cincinnati, Ohio, assignors of one-third interest to Lafayette Devenny. Patent No. 167,333, dated Aug. 31, 1875. Filed June 8, 1877.



Claim.—1. The combination, with a railroad-car frame, of a rigid draw-bar and two draw-heads, each sliding upon one end of said bar, the draw-heads being connected to the bar, and their range of motion thereon regulated by keys driven through the bar and passing freely through longitudinal slots in the draw-heads, substantially as set forth.

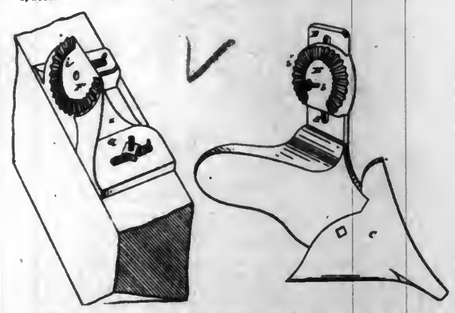
2. The combination, substantially as specified, with a railroad-car frame, of a continuous draw-bar, two draw-heads respectively connected to opposite ends of said draw-bar by keys passing through longitudinal slots in the draw-heads, and safety-keys inserted in the draw-bar, behind the bolster.

3. The combination, with a railroad-car frame, of a continuous draw-bar, draw-heads sliding thereon and bearing against springs, by which compressive strain is applied to the frame-bolsters and extra sills extending from one bolster to the other in the horizontal plane of the continuous draw-bar, substantially as set forth.

4. The combination, with a railroad-car frame, of a continuous draw-bar, a draw-head sliding on each end of said bar, and draft and buffing springs, which bear at one end against the sliding draw-heads, and at the other against fixed blocks surrounding the draw-bar, and interposed between the springs and frame-bolsters in the line of draft, substantially as set forth.

5. The combination, with the car-frame, of the continuous draw-bar and its draw-head keys, the slotted draw-heads, the draft and buffing springs, the fixed blocks, and the extra sills, these members being arranged for joint operation, substantially as set forth.

8,062. PLOWS. Horatio Gale, Albion, Mich., assignor, by mesne assignments, to the Gale Manufacturing Company, same place. Patent No. 167,033, dated Sept. 6, 1870. Filed Dec. 6, 1877.



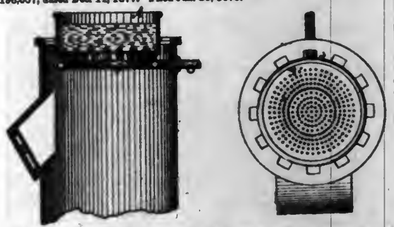
Claim.—1. In a plow, the combination, with the beam, of a plate, G, on the under side of the beam, provided with lateral slots S S and suitable bolts, for adjustably securing the said plate to the beam, whereby the alignment of the mold-board and land-side faces of the jointer or small plow, placed in advance of the main plow, may be readily adjusted to a true, equal, and parallel correspondence with said main plow, substantially as described.

2. In a plow, an adjusting-plate, G, secured to the under side of a plow-beam, in combination with a standard, B, carrying a small plow, and secured to said plate by a bolt, for the purpose of aligning the land-side of the small plow with the main plow, and at the same time adjusting the pitch of the small plow, thereby securing for said small plow both a lateral and vertical adjustment, substantially as set forth.

3. The small plow, having slotted standard B, the bolt b, and the adjusting-plate G, in combination with the main plow and beam, for the purpose of a vertical adjustment of the small plow to control the depth of the furrow, substantially as herein set forth.

4. In combination with the main plow and beam, the small plow, the slotted standard B, and adjusting-plate G, and the fast and loose serrated disks E F, substantially as herein set forth.

8,063. SHOT-MANUFACTURING MACHINES. Benjamin Tatlock, New York, N. Y. Patent No. 166,057, dated Dec. 11, 1877. Filed Jan. 23, 1873.



Claim.—1. The combination, in an apparatus for manufacturing drop shot, of a shield or cylinder with the dropping-pan, said shield or cylinder being closed, in whole or in part, at the top and open to the atmosphere at the bottom, for retaining heat and keeping currents of cold air from the outside surface of the pan, substantially as set forth.

2. The combination, in an apparatus for manufacturing drop-shot, of a dropping-pan with a gas-flame or other supply of artificial heat of the necessary temperature, applied to the bottom of the pan for regulating and controlling the temperature of the metal, substantially as described.

3. The combination, in an apparatus for manufacturing drop-shot, of a dropping-pan, a gas-flame or other supply of artificial heat of the necessary temperature within the interior of the shield under the bottom of the dropping-pan, and of a shield or cylinder for retaining heat and keeping the currents of cold air from the metal as it is discharged from the dropping-pan, substantially as set forth.

4. In the process of manufacturing drop-shot, the application of a gas-flame or other equivalent gaseous heat to shot metal as it is forming and after it separates into drops, which heat shall be sufficient to insure spherical forms before the metal becomes solidified, and before it reaches the water or other non-elastic liquid below, substantially as herein described.

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CAVEATS.—Inventors filing caveats in the Office should be careful to describe their invention or improvement with accuracy, and illustrate such inventions as are capable of illustration with care and thoroughness.

Caveats are placed in the hands of the Examiners, who should not be expected to understand what the inventor means unless the latter has sufficiently matured his invention to clearly describe and illustrate it.

Caveats are sometimes filed in the Patent Office stating that the caveator is engaged in a series of experiments intended to accomplish certain results, and giving nothing more than a vague hint of the means by which the result is to be attained. As the courts have frequently decided that results are not patentable, the practice of the Patent Office is to the effect that a caveat cannot cover more ground than a patent. So, where a caveat describes more than one invention, the Examiner frequently overlooks a portion of the caveat, knowing that under the rules caveators are confined to a single invention.

Complaints are often made that caveats have been overlooked, and patents issued to subsequent applicants, when the fault lies in the hasty preparation of the caveat papers. The rules are explicit, that the caveat must describe the invention as fully as the inventor is able to do; that the drawings shall be of the same size as the drawings to accompany an application for a patent, (8 by 13 inches, on a sheet 10 by 15 inches, with an inch margin all round,) and on tracing-muslin, or light bristol-board or drawing-paper, which can be folded without breaking. A careful compliance with the rules will greatly facilitate the work of the Office, and will go a long way toward insuring the accuracy which is so necessary in securing their just rights to inventors.

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COMMISSIONER'S DECISIONS.

WYMAN *vs.* KNOWLES.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of Horace Wyman, filed October 27, 1874, and letters patent granted to Lucius J. Knowles, January 21, 1873, for* "IMPROVEMENT IN LOOMS."—*Decided January* 11, 1878.]

The interference declaration sustained, the device being one for correcting faults in fancy-loom weaving, which permitted the shedding mechanism and pattern-cylinder to be operated independently of the lay in finding a lost pick. That the device is attached to an open-shed loom in one case and to a close-shed in the other makes no essential difference, the independent and unison operation which it secures being common to both looms.

Corroborated testimony respecting certain unpreserved drawings illustrative of the invention not wholly disregarded where the patentee's efforts prior to their date of making and his subsequent achievements brought them clearly within the line of invention pursued.

Although the subordinate device containing the invention performs its functions well, yet if the machine in which it is embodied proves a failure this experimental test will not prevail against an adversary who has perfected and successfully operated the entire machinery containing it.

The interference decided in favor of the patentee, his adversary having failed to antedate the inceptive invention as fixed by the unpreserved drawings, or, disregarding these, to show that the alleged prior embodiment by him was other than a neglected and unappreciated experiment.

[*Crosby and Gregory*, attorneys for Wyman: *T. H. Dodge and A. Pollok*, attorneys for Knowles.]

SPEAR, *Commissioner:*

This is an interference between a patent granted January 21, 1873, and an application filed October 27, 1874. Knowles is the patentee. The subject-matter of the interference relates to mechanism for correcting faults or errors in weaving upon fancy looms, and consists of a clutch interposed between the crank-shaft and the shedding mechanism and pattern cylinder or chain, the organization being such that the shedding mechanism and pattern-cylinder may be operated independently of the lay in going back to find a lost pick.

The claims in controversy are precisely the same in the patent as in the application, and the clutch mechanism is substantially the same, though the looms themselves differ materially, that of Knowles being what is known as an open-shed and that of Wyman a close-shed loom. My attention was called to these differences at the hearing, and particularly to the differences in operation of the two looms with respect to the backward movement of the mechanism in finding a lost pick. In the loom of Wyman, whenever it is found desirable to reverse the movement, it is only necessary to disconnect the shedding and pattern mechanisms from the lay by a single clutch, and then, by one crank or handle, to reverse both the shedding and the pattern mechanisms, the two moving backward in conjunction and simultaneously. In Knowles' machine the shedding devices cannot practically be moved backward, so that there can be no backward simultaneous movement of pattern chain or cylinder and shedding devices. They can be moved forward together, but this, I understand from the testimony and from the admission of Knowles himself, (cross-interrogatory 168,) is not ordinarily practicable. The mode of operation, as appears from the testimony and from the construction of the loom, is to disconnect the lay from the machinery which operates the heddles, then disconnecting also the pattern cylinder or chain from the shedding apparatus, to work the latter forward and the former backward alternately until the true pick is found.

It was urged by counsel for Wyman, with apparent force, that the first and fourth claims adopted by Knowles in his Reissue No. 7,785, granted July 3, 1877, and which has been substituted for the original patent in the present interference, were misleading in using the term "in unison," as relating to his loom, this term having been borrowed from Wyman's claims. This would certainly be true if the words "in unison" are to be interpreted as meaning simultaneously, or in the same direction, for the Wyman loom alone has shedding mechanism, as I have said, capable of simultaneous backward operation with the pattern mechanism. Yet it does not appear to me, either from the ordinarily accepted meaning of the term or from the nature of the invention, that the words quoted should be construed to mean simultaneous movement. I leave out of the discussion the simultaneous forward movement possible in the Knowles loom, because, as shown clearly by counsel for Wyman, and as appears from admissions of Knowles, heretofore mentioned, the forward movement throughout the entire pattern would be ordinarily impracticable.

The unison or harmony required in the reverse movement necessary to find the lost pick is simply that the levers or arms of the shedding mechanism and the protuberances on the pattern-chain shall be operated in an orderly manner corresponding to the pattern. It is immaterial whether the shedding mechanism be moved backward or forward; the operation of the heddles is the same in either case. But the fault being discovered ordinarily soon after its occurrence, it is practicable only to turn the pattern-chain backward (that being the shorter way) until that row of protuberances be found which moved the shedding mechanism to form the pick preceding what is called the lost pick. And, further, it is necessary to move this pattern-chain backward step by step, and to operate the shedding mechanism at the right moment and at each step of the pattern-chain. This prescribed and orderly movement is the unison and harmony necessary, and appears to me to be independent of all considerations of simultaneous movement, or movement of both mechanisms in one direction, and that the words used are compatible with the opposite and alternate motions of the shedding and pattern mechanism in Knowles's loom. I cannot, therefore, base any action upon the terms used in Knowles's claims, and find them to be sufficiently in harmony with his invention, though the information as to the operation of his loom in this particular was derived rather from the testimony and from an inspection of the model than from the specification of the reissued patent.

The invention, therefore, though differing in some subordinate details, being essentially the same, and the claims properly made and in direct conflict, it remains to determine the question of priority of invention. The Examiner of Interferences and the Examiners-in-Chief both find in favor of Knowles, and agree as to what appear to me to be the material facts in the case.

I am inclined to disregard all the testimony relating to Knowles's efforts prior to 1869, because it relates to matters so long passed, and kept only in memory unassisted by record, and because the testimony itself is not sufficiently definite. The testimony of Knowles and his assistant, Merriam, relating to the drawings alleged to have been made in 1869, is seriously weakened by the failure to preserve the drawings then made. Undoubtedly Knowles was at such time making drawings of improvements in looms; but considering that these drawings have not been preserved, and that the subject-matter of the interference is closely related to and nearly like other and really distinct combinations in this class of looms, the testimony of Knowles as to the making of the drawings of the invention in controversy in 1869, and the communication of the invention to Merriam, his assistant, even though corroborated by the testimony of the latter, is not of a high order. Yet I cannot wholly disregard it. It is consistent with his previous efforts and his subsequent achievements; and, if Knowles invented the device, or advanced so far as to illustrate it by drawing, and to communicate it to another, then he, to that extent, antedates the first step of Wyman in this matter by nearly one year. But this drawing and description of 1869 do not appear to me to be essential to a decision of the case. Beyond question, Knowles made a full-size working-loom embodying the invention in controversy in the latter part of the year 1871, from drawings which, I believe, were made in the early part of that year. This loom was exhibited to manufacturers in practical operation, weaving cloth, and was offered for sale as early as January, 1872. From that time Knowles proceeded to make such looms, advertised them for sale, and actually sold them to manufacturers of cloth. One circular illustrating and describing the loom is in evidence, and bears the imprint of August, 1872. His application for patent was made November 19, 1872, and the patent, as stated, bears date of January 21, 1873.

Further than this, it is shown that, besides the constructive knowledge which Wyman must be supposed to have had of the Knowles patent issued in January of 1873, he saw a Knowles loom having the invention in controversy, as made and applied by his opponent, in actual and successful operation in a mill as early as July, 1873. It was not till after this that Wyman took the first steps toward making a model or procuring a patent, and not till after this that he sold a loom having the invention.

With such a state of facts, in order to justify the issue of a second patent, it is incumbent on Wyman to show clearly and conclusively a demonstrated prior reduction to practice. The doctrine of the Office, held without variation for a series of years, is that the same rule must be observed in the Office as in the courts, and that a party seeking to obtain a patent for an invention patented to another must prove the same state of facts as would serve to defeat that patent in the courts.

It was asserted for Wyman at the hearing, and has been insisted upon by counsel on his behalf throughout the controversy in the Office, that he perfected the invention and reduced it to practice in 1870.

Leaving out of account the alleged prior invention on the part of Knowles in 1869, the drawing said to have been made by him at that time, and the communication to Merriam, his draftsman, I do not think that the testimony on behalf of Wyman, as to the alleged reduction to practice and operation of the invention in 1870, is sufficient to justify a conclusion in his favor. If he had actually made the invention at that time, and embodied it in a working loom, and then shown that loom to customers, and preserved it intact until the time of taking testimony, then I think he was bound to show clearly and conclusively exactly what the invention was, the fact of its perfection and successful operation, of its continued existence, and that it was not a mere experiment neglected and abandoned; for, if this loom, alleged to have been made in 1870, and placed in the experiment room, was never actually put to use, and if it remained in an experimental state forgotten until Knowles had made the invention and given it to the public, then Knowles's patent cannot be defeated thereby, and Wyman is not entitled to a patent. All that directly relates to the loom of 1870 is contained in the testimony of Wyman himself. In answer to interrogatory 10: "When was the full size loom completed?" he says, "By August, 1870." In answer to interrogatory 13, he says:

> The loom containing the clutch-device was set up in a private experiment-room at the works, and, after being completed, a belt was placed upon it, and it was operated, and was considered satisfactory. Six harness-frames were placed upon it, but there was no warp put in or cloth made in it.

Two other witnesses were called for Wyman, one the draftsman and pattern-maker at the Crompton Loom Works, of which Mr. Wyman was superintendent. He testifies in relation to the drawing, Exhibit Wyman A, which is not very material to this inquiry, excepting as tending to show what the loom was, as made by Wyman. Of the full-sized machine this witness does not say one word. The only other witness for Wyman is Gale, the model-maker, who made the model somewhere between September 12 and December 20, 1873. The only reference made by him to a full-size loom is in answer to interrogatory 6, when questioned as to what the model referred to by them was made from, he says: "From a full-sized loom." This is absolutely all that can be gathered from the testimony relating to the operation of the invention, or use of it, in 1870, except where, upon cross-examination, (in answer to cross-interrogatory 73,) being asked why he did not in August, 1873, when furnishing a loom containing the invention, send the 1870 loom, if he had it, or take the clutch device off and put it upon the loom that was sold, Wyman says:

> The 1870 loom was an untried loom, while the one it was applied to was in successful operation in the mills.

Whether or not this loom of 1870 was precisely the same as the model is a fact of not certain inference. That when built it worked satisfactorily is a matter only of Mr. Wyman's opinion. Whether or not it remained intact or was broken up or destroyed does not clearly appear from the testimony. It is certain from Mr. Wyman's own statement that the loom itself was an untried loom. Taking even this admission, it would seem, on the authority of *Whiteley* vs. *Swann*, (7 Wall, 685,) that although this disconnecting mechanism which is the subject of the controversy performed its function well, yet if the machine in which it was embodied proved a failure, Wyman would not have been able upon that machine to establish his claim as the first inventor of the disconnecting mechanism against a party who had embodied the invention in a successful operating machine. But, aside from that, the authorities are many and clear requiring that Wyman should have established beyond doubt that his invention was a practical operating machine, and that it was not an abandoned experiment laid aside until after he had

been advised of the successful operation of the machine in the hands of another inventor.

Although inclined not to give much weight ordinarily to testimony relating to drawings which have not been preserved, and especially when some time has elapsed since the event of their making, and since the conversations between the inventor and his witnesses, in which the invention was communicated, yet I think some weight should be given to that of Knowles relating to the 1869 drawings, and it is certainly more full and explicit, and better sustained, than the testimony of Wyman in relation to the machine said to have been made in 1870. Assuming, then, that Knowles made the invention and communicated it to his draftsman in 1869, and that he completed the invention, put it in practical working order in 1872, patented it in January, 1873, and has given the invention to the public as fully and completely as it is possible to do, he is entitled to the invention, in my judgment, even if Wyman made the loom as fully and completely as is claimed by his counsel in 1870; for the question of diligence is a relative one, and, so far as the public are concerned, Knowles has been the more diligent of the two, and Wyman labors under the influence of having been spurred on in his efforts by the success of Knowles. But, even rejecting the alleged invention of Knowles in 1869, I am still of the opinion that Wyman fails to prevail over him, because he does not show clearly and conclusively that the loom in his experiment-room was anything more than an experiment, neglected and unappreciated until after the loom of Knowles had become an established success, and was brought to Wyman's notice as such.

I therefore affirm the decision of the Board, awarding priority of invention to the patentee, Knowles.

FUNCK *vs.* DOTY.—*Motion.*

[*In the matter of the interference between the application of Joseph Funck, for the reissue of Letters Patent No. 184,855, and reissue Letters Patent No. 7,867, granted Henry Harrison Doty, August 28, 1877, for* "IMPROVEMENT IN LAMPS."—*Decided November 22, 1877.*]

An invention accurately defined and limited in the original patent cannot be expanded on reissue to include antecedent improvements not within the scope of the patent as originally granted.

To omit a disclaimer on reissue, which is entirely consistent with the limited invention disclosed by the original patent, and obviously not entered through inadvertence, accident, or mistake, will not permit the insertion of a claim broader in scope than the invention for which the original patent was issued.

A rack-and-pinion device, for adjusting a central button-rod at various heights, and thus regulating the lamp-flame, being old, no invention was necessary to apply the same contrivance in adjusting the height of a vertical deflector or jacket surrounding the lamp-flame and concentric therewith.

DOOLITTLE, *Assistant Commissioner:*

The issue in this interference is defined by the Primary Examiner, as follows:

A deflector located between the outer wick-tube and the chimney, provided at its base on both sides with air-inlets, and vertically adjustable by means of racks and driving-pinions, as and for the purposes described.

A motion was made to dissolve the interference, on the ground that the subject-matter, as set forth in the above declaration, was not patentable. Appeal is taken from the decision of the Examiner, holding that the matter is patentable in view of the state of the art.

The specific combinations of the parties set forth in their patents were not in conflict. Doty's deflector is vertically adjusted at the same time with his lamp-chimney — the chimney resting upon a perforated bracket forming part of the outer deflector. Whereas, in Funck's patent the deflector in question is separated from the lamp-chimney, and, while the deflector is vertically adjusted by means of the rack and pinion, the chimney-holder is independently raised and lowered by a pair of thumb-lugs attached thereto, and operated within the inclined slot upon an outer jacket. The vertical adjustment of both the chimney-holder and the deflector, each independently of the other, is clearly and specifically set forth and claimed in Funck's patent. It appears to be the chief point of distinction between him and Doty.

The purpose of Funck in giving to his deflector a separate adjustment is set forth as follows in his patent:

The object of the second part of the invention is to provide, in the most simple and effective way, for burning different kinds of oil, and for regulating the draft according to the temperature and wind, so as to insure the proper supply of oxygen to the outside of the flame, independently of the adjustment of the chimney; and this part of the invention consists in a movable air-jacket, the upper end of which is, by preference, slightly enlarged, the same being located in the air-space between the outer wick-tube and the chimney-holder, and adapted to be raised or lowered independently, at will, to regulate the application of air to the outside of the flame, as required.

Not content with a description limiting himself to the independent adjustment of the deflector, he voluntarily followed it with a disclaimer, wherein he sets forth Doty's combination, as follows:

I am aware that a four-wick burner has been made with an adjustable external deflector surrounding the wick-tubes, the upper end of said deflector being curved inwardly, to deflect air against the flame, while a support or gallery for the chimney is attached to its outer surface. The chimney and said deflector are thus raised and lowered simultaneously, and the ordinary button is employed in combination therewith. This device I disclaim as old.

What may be considered as relating to the special matter now in controversy was included in the second claim of Funck's patent, and is as follows:

2. The concentric jacket M surrounding the wick-tubes within the chimney holder, and adjustable vertically independently of the chimney-holder and other parts of the burner, substantially as herein specified, for the purposes set forth.

It may be added that Funck's model, which is a full-sized operative device, shows the particular independent adjustable deflector and separately adjustable chimney, which are also illustrated in the drawing. The present drawing and model are precisely the same, as well as the descriptive part of the specification, with the exception that the disclaimer above quoted has been omitted.

The radical change consists in the introduction of a new claim which departs from the original limitation of the patent to a deflector adjustable independently of the chimney, and includes—in the language constituting the present issue, as above declared—the structure shown and described by Doty, of a vertically-adjustable air jacket or cylinder surrounding the outer wick-case, having attached thereto a chimney gallery or bracket, and raised and lowered simultaneously therewith by one and the same mechanism.

In my opinion this is a good practical illustration of that undue elasticity and expansiveness given to a reissue application to cover an antecedent invention, which the courts so emphatically condemn. Restricted as he is by his patent to the vertical adjustment of the deflector and the chimney, each by its separate mechanism, Funck cannot be allowed the claim he now makes, without expanding that patent to cover a different invention from that for which it was originally granted.

So far as this independent adjustment is an improvement on previous machines, this patentee must be restricted to that improvement, because that is the extent of his invention, and he cannot be allowed to incorporate in his claims the old machine or article which he has thus improved. (*Whittemore et al.* vs. *Cutter*, 1 Gall., 480; *Lowell* vs. *Lewis*, 1 Mason, 182; *Barrett* vs. *Hall*, Ib., 447.)

The new matter consists of an enlargement of his claim to include a result which did not flow from the invention as originally stated and described. (*Putnam* vs. *Yerrington*, 9 OFFICIAL GAZETTE, 689.)

In regard, further, to the disclaimer made by Funck at the close of his original specification, it may be said, as was held in *Whitney* vs. *Emmett*, (1st Robb's Patent Cases, 567,) to operate "as a proviso restraining and limiting the patent." It cannot be held to have been made through inadvertence, accident, or mistake, as it is simply consistent with the entire specification, and its present omission does not affect the scope of Funck's invention. The specification is still inconsistent with the new claim introduced in the reissue application.

To this class of disclaimers the language of Mr. Justice Bradley in *Wicks* vs. *Stevens* (2 Woods, 310) is not inappropriate:

Was it a legal reissue of the patent of 1866? The patent of 1866 was confined to portable revolving cotton-presses. I assume that the reissued patent extends to all cotton-presses, stationary as well as portable, for, if confined to the latter, the defendant does not infringe it. Had this extension to stationary presses been omitted in the original patent by accident or mistake, it might be corrected in the reissued patent. But its application to revolving presses generally was first claimed and then abandoned in the application for the original patent of 1866, and the claim as finally made by the patentee, and to secure which alone his patent issued, was for a combination applicable to portable presses only. It cannot be said, therefore, that a neglect to claim the combination as applicable to revolving presses generally was an inadvertence, accident, or mistake. It was an exclusion, designed and understood at the time.

Attempts to grasp claims by means of reissued patents, which, while the evidence is fresh at the time of the original application, the patentee would not have the hardihood to make, are getting too frequent, and are too often acquiesced in by the Patent Office. Perhaps this is not to be wondered at when we consider the persistency with which claims once abandoned are pressed upon the Department after the evidence of their futility has been forgotten.

Doty has not at any time made a claim to the matter now in issue, so that restricting each party to the combinations originally claimed, or which now can be legitimately covered by reissue and which have reference to the vertical adjustment of the outer deflector and chimney-holder, no interference exists; and the one now declared must be dissolved with the limitation placed upon Funck's present application herein indicated.

So far as the patentability of the device of the rack and pinion applied to raising and lowering the outer deflector of lamps of this construction is concerned, I think the same, *per se*, cannot be the subject of a patentable claim.

The Examiner discusses this arrangement as a combination, and as to one reference, that of Horn, patented January 8, 1842, No. 2,413, wherein a rack and pinion is used for lowering and elevating a central button-rod for regulating the flame, he holds—

It would not be efficient in operating the large external cylinder of Funck, because it is in that case applied to adjust a device having a different location and different functions, and because it required more than ordinary mechanical skill to apply racks and pinions to an external deflector, such as shown in the cases of Doty and Funck.

But the principle of raising and lowering a button-rod, as shown in Horn's patent, and also shown in the patent now in question, is precisely the same as in attaching the same rack and pinion to an outside deflector. In both Funck's and Doty's case the rack and pinion for lowering and raising the concentric wicks are simply transferred and applied to the outside deflector, where they perform the same mechanical function. The mechanical function of adjusting vertically an object by rack and pinion being old and well known to all intelligent mechanics, it requires no invention to simply attach the same to any part of a lamp which before had been raised and lowered by the fingers, or by any other simple mechanical means.

I cannot agree with the Examiner that this claim of Funck, which is the matter in issue, should be regarded as a combination. The combination of the deflector, wick-tubes, and chimney-holder was complete without the rack and pinion. The applicant now simply presents this additional claim for vertically adjusting one of the features of that combination by the old and well-known device first mentioned.

The selection of that device and the putting it to its usual and appropriate use does not evince the exercise of invention, even though its location may be a new one.

For this reason, also, the decision of the Examiner is reversed.

T. E. PARKER.—*Trade-Mark.*

[*Appeal from the decision of the Examiner of Trade-Marks in the matter of the application of Thomas E. Parker, filed August 8, 1877, for registration of a label.—Decided November 13, 1877.*]

Registrable prints or labels and trade-marks are recognized by the terms of the law, and the decisions of the courts, as applicable only to some kind of merchandise.

Labels give the names of manufacturers, place of manufacture, nature or quality of goods, directions for use, &c. Trade-marks are arbitrary symbols, which serve to distinguish the manufactured goods from those of a similar character made by other persons. Both are affixed in some manner to the goods they designate, and are not an essential constituent of the merchandise itself—

Hence, the figure of a boy, together with certain words, printed in minute squares upon a sampler-card is the subject of a design-patent. It is not to be attached as a distinguishing label or symbol to certain merchandise, but is the article itself.

[*R. H. Eddy*, attorney for applicant.]

DOOLITTLE, *Assistant Commissioner:*

Applicant describes his label as consisting of—

the figure of a boy, and the words "Scratch my back," surrounded by a border of parallel lines, as shown, the figure and the words being formed of numerous squares, printed and arranged as represented. This label is for use on cards, or sheets of abrasive paper or cloth, and as a pattern for sampler-work, to be wrought on the squares, in order to so finish the label when desirable. The cards thus labeled are intended for use in firing friction-matches.

I am informed that it is quite common to work designs of precisely this character upon the back of abrasive paper or cloth, but the question of novelty is not the one at issue, but rather that of identity. Is it a label, trade-mark, or design, or should it be copyrighted?

As held in the Simpson case, (10 OFFICIAL GAZETTE, 333,) one definition given by Webster of a label is about what the Office regards as being the proper matter to be registered as such. "A narrow slip of silk, paper, parchment, &c., affixed to anything denoting its con-

tents, ownership, and the like, as the label of a bottle, or a package." So far as this definition includes fanciful and arbitrary matter, which may be used for the sole and independent purpose of a trade-mark, to denote origin or ownership, it is not applicable to matters registered as labels.

Registrable labels or prints and trade-marks are recognized by the terms of the law and the decisions of the courts as applicable only to some kind of merchandise; labels, as giving the names of the manufacturers, place of manufacture, nature or quality of goods, directions for their use and the like; and a trade-mark as some arbitrary symbol to distinguish the same from those goods of a similar character made by other persons.

The trade-mark statute requires applicants to specify "the class of merchandise and the particular class of goods comprised in such class" to which the mark has been, or is intended to be, appropriated.

The section of the copyright law relating to labels provides that no prints or labels to be used for "any other articles of manufacture" than pictorial illustrations of works connected with the fine arts shall be entered under the copyright law, but may be registered in the Patent Office.

And the penal act of August 14, 1876, embracing within its terms both trade-marks and labels, applies to the fraudulent affixing of them to goods or packages containing the same.

The courts have always sustained trade-marks and labels on precisely the same principles, and they uniformly discuss these matters as having been affixed, in some way, to goods, as merchandise, and not as constituting the merchandise itself.

This was remarked by the learned judge in the case of *Moorman* vs. *Hoge*, (2 Sawyer, 78,) in passing upon an alleged trade-mark. He stated that he had examined, with care a large number of cases involving infringement of trade-marks, including all the recent cases which he had been able to find bearing upon the question, and that he had found no case in which the use of an article or package containing it had been enjoined, unless there was some symbol, word, letter, or form impressed or affixed to the article, and which, considered separately from the article or package, was used as the trade-mark.

This view of the law was also approved by the United States circuit court for the southern district of New York, in the case of *Harrington* vs. *Libby*, (12 OFFICIAL GAZETTE, 188.)

In the present instance, then, the matter sought to be registered is not a label, print, or a trade-mark affixed to goods or merchandise, to denote ownership, or the character of the goods, and the like, but is the article itself—a fanciful pattern wrought or to be wrought into or upon the article—forming part of the article, and giving to it a certain value, by way of a new appearance, like a new pattern worked upon a slipper.

Neither is it designed to be published as a work of fine art, and therefore is not the subject of copyright.

We are now led to consider whether the design act applies to the case.

The law relating to design provides for the granting of patents to those who, among other things, have invented and produced "any new and original impression, ornament, pattern, print, or picture to be printed, painted, cast, or otherwise placed on, or worked into, any article of manufacture."

The Supreme Court have held that the object of this act was to extend the protection of a patent to the ingenious producer of new and original appearences given to manufactured articles, whereby their salable value was enhanced, and the demand for them enlarged.

They add, that this appearance may be the result of the peculiarity of configuration or of ornament alone, or of both conjointly. (*Gorham Manufacturing Company* vs. *White*, 14 Wall., 511.)

In view, then, of the fact that the matter in question is ornamental in character, and is to be incorporated into the structure of the article, to be a permanent part thereof, I am of opinion that it comes within the terms and meaning of the design act. (See case of White, Com. Dec., 1871, p. 304.)

The subjects to be protected under the design, copyright, label, and trade-mark acts are often so nearly the same in character that it is difficult always to say to which class they belong, especially in the absence of definitions in the statutes, but these provisions differ in some respects so widely that the Executive Departments must give them some positive interpretation to insure an orderly administration of public business.

The decision of the Examiner of Trade-Marks is affirmed.

J. L. MASON.—*Appeal.*

[Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application for the reissue of Letters Patent No. 19,786, granted to John L. Mason, March 30, 1858, for an "IMPROVEMENT IN LATHE-CHUCKS;" extended in 1872.—Decided December 27, 1877.]

A lathe chuck or former having a screw-thread on its face, being old for spinning up screw-caps from ductile metal, no invention is necessary to round the edge of the thread so as to prevent the cutting of the metal cap along the line of the spiral.

To taper a lathe-chuck and to make it with a screw-thread on its face are both well-known constructions in the art of spinning metal. It is without patentable merit to unite both these features in the same chuck, when no joint modified effect is obtained, but a simple aggregation of their individual functions.

[*S. A. Duncan*, for applicant.]

SPEAR, *Commissioner:*

At the time the extension of this patent was granted the single claim which it contained, and upon which all opposition turned, read as follows:

The chuck herein described for spinning screw-caps, &c., having a flange, a rounded thread, and a rounded groove, the groove and thread vanishing gradually at the flange, substantially as described.

From the nature of the case, it is quite apparent that the Commissioner could have considered and pronounced upon the patentability of no subject-matter, except what was set forth in the claim.

In the reissue which it is now sought to obtain the old claim has been abandoned, and among the new ones presented are the following, which are clearly of much broader scope:

1. The screw chuck or former for spinning caps of thin sheet metal provided with a rounded thread, as and for the purpose set forth.

4. A screw chuck or former made tapering towards its outer end, substantially as and for the purpose set forth.

In the English patent No. 14,059, (Old Law,) granted to F. J. Beltzung in 1852, the method of spinning up soft-metal caps or covers with internal screw-threads, from a suitable blank, is very satisfactorily described.

In this connection it is well to remember that the art of spinning up articles of ductile metal around a former was a well-established one at that time. With these facts clearly in mind we find that Mr. Mason went no farther in his alleged invention than to round the edges of the screw-thread on the chuck, instead of leaving them with a sharp cutting-edge, as in the patent of Beltzung.

From the nature of the material with which the mechanic worked in spinning up caps according to the Beltzung specification, it is not surprising that the metal should be cut through along the spiral of the screw-thread if the chuck were provided with a thread having a sharp edge.

The most obvious expedient, the simplest means for remedying this fault, the one which would naturally suggest itself to a person of common intelligence, would be to reduce the cutting-edge by dulling it, or, in other words, rounding it, so that the cutting effect should no longer exist. Viewed in the light of the state of the art, I cannot agree that this simple expedient rises to the merit of a patentable invention.

In regard to claim 4 it must be evident that the advantage or purpose of the taper which is given to the chuck is in no wise modified or affected by the fact that the chuck is also provided with a screw-thread. The purpose of the two features is quite distinct, and, to my view, the claim will be fully answered if we find that prior to applicant's invention it was common to make these spinning chucks or formers with a taper. That it was so, is a matter well known in the art and which does not require any specific reference to establish. This being so, to unite in the same former another old feature—to wit, a screw-thread where both perform the same old function, in the same old way, and produce no joint modified effect, but a simple aggregated result—is utterly devoid of invention and cannot be patented.

The action of the Board in rejecting claims 1 and 4 is affirmed.

DECISIONS OF THE COURTS.

U. S. Circuit Court—District of Massachusetts.

THE GOODYEAR DENTAL VULCANITE COMPANY *vs.* CHARLES H. OSGOOD, (No. 716*a*;) SAME *vs.* DENISON D. DICKERSON, (No. 763;) SAME *vs.* GEORGE A. LOWE, (No. 799.)

[*In Equity.*]

[Suits brought upon Reissue Letters Patent No. 1,904—*Dental Vulcanite Company*, assignees. The cases are similar to *Dental Vulcanite Company* vs. *Davis*, 12 OFFICIAL GAZETTE, I.]

The right to tax the docket fee where the case is one of a number embraced by stipulation in a single hearing, the decree in one to stand for the decree in all, is undoubted.

So, too, after issue and interlocutory decree deciding the merits, if the case is finally dismissed by the court on final decree, and upon motion of the complainants, the docket fee is to be taxed.

Wherever a final decree is entered by the court in an equity cause, after replication filed, for the purpose of taxation of the docket fee, this is to be considered as the "final hearing" referred to in Section 824 Revised Statutes.

The docket fee is not to be taxed for an attorney unless his name has been entered on the docket before the filing of the general replication, and unless he has been admitted to the bar of some circuit court, or of the Supreme Court of the United States.

In the taxation of costs, "final hearing" is to be considered as the submission of a case in equity for the determination of the court after the case is at issue.

[*B. F. Lee* and *Brown* and *Holmes*, for complainant; *A. D. Chandler* and *E. Luther Hamilton*, for defendants.]

REPORT OF CLERK ON APPEAL FROM TAXATION OF COSTS.

To the Honorable the Judges of the Circuit Court:

These cases had all proceeded to issue by the filing of a replication. The first case was included in the same stipulation as 729*a*, the case against *Charles G. Davis*, (OFFICIAL GAZETTE, October 2, 1877,) heard by the court, and the interlocutory order that defendant did not infringe by use of celluloid was entered therein after the opinion was read in the said case against Davis. The second and third cases were not included in said stipulation. Each of the cases were dismissed by order of court on complainants' motion.

Upon the hearing upon the taxation, I allowed an attorney fee of $20 in each case, and from this allowance the complainants appealed. I based my decision solely upon the practice of the clerk's office, under which an attorney fee of $20 is taxed for the prevailing party in every equity case disposed of by order of court otherwise than upon an agreement of parties. Previous to a decision by Mr. Justice Clifford that, when an equity case is disposed of by agreement of parties, the prevailing party is not entitled to an attorney fee, such fee was taxed in every equity case disposed of; but since that decision an attorney fee has not been taxed in such cases as come strictly within Judge Clifford's decision, but has been taxed in every other equity case disposed of.

Respectfully submitted.

JOHN G. STETSON, *Clerk.*

OPINION OF THE COURT—*February* 11, 1877.

SHEPLEY, *J.:*

The record shows in each of the above cases that a bill, answer, and replication were filed. No. 716*a* was heard by the court with many other cases under a stipulation embracing a large number of cases to be heard together. The decree in one case was to stand as the decree in all. There can be no doubt of the right to tax the docket fee in this case. In the other two cases, after issue, an interlocutory decree was entered by the court, which substantially decided the merits of the controversy. The cases were finally dismissed by the court upon a final decree on motion of complainants. The docket fee is to be taxed in these cases also. Wherever a final decree is entered by the court in an equity cause after replication filed, for the purpose of taxation of the docket fee, this is to be considered as the "final hearing" referred to in Rev. Stat., Sec. 824.

This docket fee is not to be taxed for an attorney unless the name of the attorney taxing the fee has been entered on the docket before the filing of the general replication, and such attorney has been admitted to the bar of the Circuit Court of the United States in this or some other circuit, or to the bar of the Supreme Court of the United States.

In the taxation of costs, "final hearing" is to be considered as the submission of a cause in equity for the determination of the court, so that the case may be finally disposed of upon bill and answer, or bill, answer, and replication, or upon pleadings and proofs, or otherwise after the case is at issue.

The taxation of the clerk in these three cases is affirmed, and the costs are allowed as taxed.

TRADE-MARKS.

[Each certificate bearing date February 19, 1878.]

5,657.—LINIMENT.—*Charles E. Davison*, East Boston, Mass. Application filed November 16, 1877.
"The letters 'C. E. D.' in the form of a monogram."

5,658.—PLUG-TOBACCO.—*Joseph G. Dill*, Richmond, Va. Application filed February 11, 1878.
"The word-symbol 'GONDOLA.'"

5,659.—MEDICINAL PREPARATION.—*Enos F. Furey*, Camden, N. J. Application filed January 28, 1878.
"A portrait of myself."

5,660.—WIRE AND CORAL JEWELRY.—*William C. Greene & Co.*, New York, N. Y., and Providence, R. I. Application filed January 25, 1878.
"The representation of a clover-leaf, as shown."

5,661.—COLOGNE.—*W. A. Hoyt & Co.*, Boston, Mass. Application filed January 28, 1878.
"The word-symbol 'NEW FLORAL.'"

5,662.—MEDICINAL CAPSULES.—*Victor E. Mauger*, New York, N. Y. Application filed January 25, 1878.
"The word-symbol 'AMERICAN.'"

5,663.—MEDICINAL CAPSULES.—*Victor E. Mauger*, New York, N. Y. Application filed January 25, 1878.
"The letters 'A. C.' in a monogram."

5,664.—BAKING-POWDER.—*Palmer Baking Powder Company*, Philadelphia, Pa. Application filed January 29, 1878.
"The symbol of a cook in the act of carrying or exhibiting, with evident satisfaction, a plate of biscuits."

5,665.—ANTISEPTIC, DEODORIZER, AND EMBALMER.—*James S. Plumb*, Syracuse, N. Y. Application filed January 16, 1878.
"The word-symbol 'ACETOL' and a monogram comprised of the letters 'J. S. P.'"

5,666.—SOAP.—*Henry V. Raymond*, Brooklyn, N. Y. Application filed January 25, 1878.
"The word-symbol 'MARVEL.'"

5,667.—JEWELRY.—*Steinau Jewelry Company*, Cincinnati, Ohio. Application filed January 15, 1878.
"The fanciful words 'IMPERIAL CASKET.'"

5,668.—BAKING-POWDER.—*Smith, Hanway & Co.*, Baltimore, Md. Application filed January 24, 1878.
"The word-symbol 'BIG BONANZA' and the picture of a negro cook kneeling before a cooking-stove bursted at the top."

5,669.—FLAX THREADS, TWINES, AND YARNS.—*Smith & Dove Manufacturing Company*, Andover, Mass. Application filed January 26, 1878.
"The representation of a Scotch thistle."

5,670.—PLUG CHEWING-TOBACCO.—*Senour, Simrall & Noonan*, Covington, Ky. Application filed January 26, 1878.
"A series of lines, grooves, channels, or indentations, running at acute angles or in zigzag style along the sides of the plug, and transversely across part of the breadth of the plug from each side, equidistant from and parallel to each other, as shown."

LABELS.

[Each certificate bearing date February 19, 1878.]

1,405.—Title: "EXTRA DRESS STYLES."—*H. B. Claflin & Co.*, New York, N. Y. Application filed February 7, 1878.

1,406.—Title: "THESE PRINTS ARE GUARANTEED TO BE FULL MADDER," &c.—*H. B. Claflin & Co.*, New York, N. Y. Application filed February 7, 1878.

1,407.—Title: "ORIENTAL COMPANY FAMILY GERMAN SOAP."—*Cornwall & Brother*, Louisville, Ky. Application filed December 21, 1877.

1,408.—Title: "CORNWALL & BROTHER'S DIXIE'S DELIGHT."—*Cornwall & Brother*, Louisville, Ky. Application filed December 21, 1877.

1,409.—Title: "CORNWALL & BROTHER NATIONAL SOAP."—*Cornwall & Brother*, Louisville, Ky. Application filed December 21, 1877.

1,410.—Title: "CORNWALL & BROTHER GAME SOAP."—*Cornwall & Brother*, Louisville, Ky. Application filed December 21, 1877.

1,411.—Title: "ALBION VEGETABLE OIL SOAP."—*Cornwall & Brother*, Louisville, Ky. Application filed December 21, 1877.

1,412.—Title: "CORNWALL & BROTHER BLUEING SOAP."—*Cornwall & Brother*, Louisville, Ky. Application filed December 21, 1877.

1,413.—Title: "BLUE BELL CORNWALL & BROTHER."—*Cornwall & Brother*, Louisville, Ky. Application filed December 21, 1877.

1,414.—Title: "CORNWALL & BROTHER KENTUCKY SOAP."—*Cornwall & Brother*, Louisville, Ky. Application filed December 21, 1877.

1,415.—Title: "HAMBURGER BONELESS HAM."—*Tuttle Culver*, New York, N. Y. Application filed February 9, 1878.

1,416.—Title: "WITCH HAZEL OINTMENT."—*Benjamin W. Dyer*, New York, N. Y. Application filed February 12, 1878.

1,417.—Title: "TUNYOAP WATERTIGHT."—*Walter P. Jenney*, Brooklyn, N. Y. Application filed November 14, 1877.

1,418.—Title: "ANTI-CORROSIVE CAR BOX OIL."—*Edward H. Kellogg*, New York, N. Y. Application filed July 31, 1877.

1,419.—Title: "RICKSECKER'S BAY RUM SHAVING STICK."—*Theodore Ricksecker*, New York, N. Y. Application filed September 27, 1877.

1,420.—Title: "RIKER'S AMERICAN FACE POWDER."—*William B. Riker* and *William H. Riker*, New York, N. Y. Application filed February 6, 1878.

1,421.—Title: "IMPERIAL CASKET."—*Steinau Jewelry Company*, Cincinnati, Ohio. Application filed January 15, 1878.

1,422.—Title: "WENCK'S AMERICAN COLOGNE."—*Wenck & Beltor*, New York, N. Y. Application filed February 11, 1878.

DESIGNS.

[Each design bearing date February 19, 1878.]

10,450.—FONT OF PRINTING-TYPES.—*James M. Conner*, Greenville, N. J. Application filed December 6, 1877. Term of patent 7 years.

10,451.—CARPETS.—*William De Hart*, Amsterdam, N. Y., assignor to *Stephen Sanford*, same place. Application filed January 23, 1878. Term of patent 3½ years.

10,452 to 10,467, inclusive.—CARPETS.—*John Fisher*, New York, N. Y., assignor to *Lowell Manufacturing Company*, Lowell, Mass. Applications filed February 5, 1878. Term of patents 3½ years.

10,468 to 10,473, inclusive.—CARPETS.—*Edwin Fisher*, New York, N. Y., assignor to *Lowell Manufacturing Company*, Lowell, Mass. Applications filed February 5, 1878. Term of patents 3½ years.

10,474.—CARPETS.—*Daniel C. Kirschner*, Amsterdam, N. Y., assignor to *Stephen Sanford*, same place. Application filed January 23, 1878. Term of patent 3½ years.

10,475 to 10,488, inclusive.—CARPETS.—*Elemir J. Ney*, Lowell, Mass., assignor to *Lowell Manufacturing Company*, same place. Applications filed February 5, 1878. Term of patents 3½ years.

10,489.—FONT OF PRINTING-TYPES.—*Edwin C. Ruthven*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed December 26, 1877. Term of patent 14 years.

10,490 to 10,493, inclusive.—CARPETS.—*Charles W. Swapp*, New York, N. Y., assignor to *Lowell Manufacturing Company*, Lowell, Mass. Applications filed February 5, 1878. Term of patents 3½ years.

10,494.—CARPETS.—*Cornelius Uster*, Amsterdam, N. Y., assignor to *Stephen Sanford*, same place. Application filed January 23, 1878. Term of patent 3½ years.

10,495 and 10,496.—TOWELS.—*Charles James Webb*, Randalstown, Ireland. Applications filed January 31 and February 1, 1878. Term of patents 7 years.

10,497.—STREET OR PARK LAMP.—*George D. Burton*, New Ipswich, N. H. Application filed January 18, 1878. Term of patent 14 years.

10,498.—CASES OF UPRIGHT PIANOS.—*George M. Guild*, Boston, Mass. Application filed January 4, 1878. Term of patent 3½ years.

10,499.—SHIRT-FRONT.—*John Hope*, Providence, R. I. Application filed December 17, 1877. Term of patent 14 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

FEBRUARY 19, 1878.

200,371. WIRE BALE-TIES. Wm. E. Dorr, Gebenhill, N. Y., assignor to Gustus S. France, Worcester; said G. S. France assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Filed Nov. 17, 1876.

Brief.—At each end of the bale-wire a part is bent back upon itself, and the end twisted therewith, leaving a loop. One of these loops is divided by a twist into two openings, in which engage two hooks formed in the collapsed loop at the other end.



Claim.—1. A wire bale-tie provided with two hooks at one end, substantially as shown and described.

2. In a wire bale-tie, the combination of two hooks at one end with two loops at the other, substantially as shown and set forth.

3. A wire bale-tie having the loop at one end divided by a twist, so as to form two loops, and two hooks at the other end, bent in the bight of the wire doubled upon itself, substantially as shown and set forth.

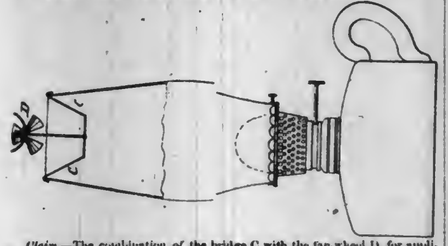
200,372. BURGLAR-ALARMS. George F. Bixby, Lynn, Mass. Filed Apr. 19, 1877.

Brief.—By pushing in the hinged trigger the alarm mechanism is released and an alarm is sounded.



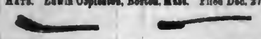
Claim.—In combination with casing A, slotted on opposite sides at *a* and *a'*, trigger B, rod L, detent C, spring F, and the alarm mechanism, substantially as set forth.

200,373. LAMPS. Francois Carrier, New York, N. Y. Filed Dec. 14, 1877.



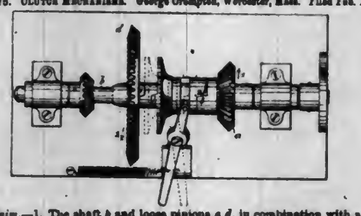
Claim.—The combination of the bridge C with the fan-wheel D, for application to a lamp, above the flame of the same, substantially as herein shown and described.

200,374. HATS. Edwin Copleston, Boston, Mass. Filed Dec. 27, 1877.



Claim.—As an improved article of manufacture, a Manilla or other plaited hat having its brim and crown formed of two thicknesses of material, the edges of the brim being turned in opposite directions, as shown, and stitched together, leaving the upper and lower edges of the brim smooth and the edge finished, all substantially as described.

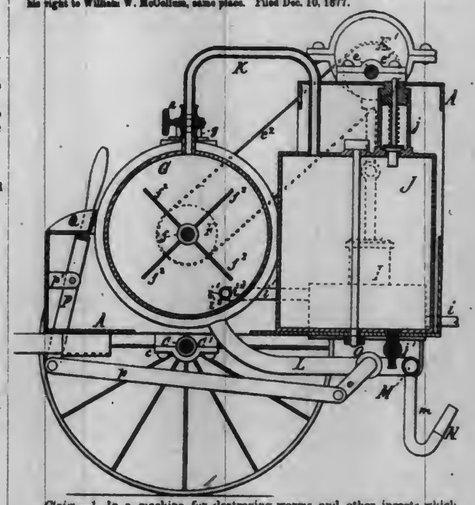
200,375. CLUTCH MECHANISMS. George Crompton, Worcester, Mass. Filed Feb. 1, 1878.



Claim.—1. The shaft *b* and loose pinions *a d*, in combination with a clutch and beveled cogs, *b 4*, to operate substantially as and for the purpose described.

2. The shaft *b*, the loose pinion *a*, provided with a shoulder, the loose pinion *d*, provided with a cog, *4*, in combination with the clutch provided with the cog *b*, and the shoulder and inclined end, to operate all substantially as described.

200,376. INSECT-EXTERMINATORS. William T. Daughtrey, Selma, Ala., assignor of one-half his right to William W. McCollum, same place. Filed Dec. 10, 1877.



Claim.—1. In a machine for destroying worms and other insects which collect on plants, and for other purposes, the combination of a carriage, a force-pump, a fluid-tank, with or without an agitator, a compression-cylinder, and a distributing-pipe with discharging-nozzles, substantially as set forth.

2. In a machine for destroying worms and insects which collect on plants, and for other purposes, the combination of a sprinkling apparatus, having escape-passages, which distribute or deposit the poisonous liquids in streams or jets, which are forced toward and in contact with each other, and a force-pump for supplying the said apparatus with compressed air, substantially as set forth.

3. A pump, I, constructed to supply the tank G with fluid, and then to compress the fluid by forcing air into the tank and compression-cylinder J, in combination with a worm and insect destroying apparatus or other sprinkling apparatus, substantially as set forth.

4. The distributing-pipe M of the machine, with upwardly-curved or upwardly-inclined nozzles N, which discharge the fluid in an upward direction, longitudinally with the stalks of the plants, and beneath the branches and leaves thereof, substantially as set forth.

5. The combination of the lever P, located near the driver's seat, the connecting-rod *p*, the arm *o*, the stop-cock C, the pipes L, N, and *m*, and the nozzles N, substantially as set forth.

6. The chamber J, having a safety-valve, *j*, a pipe, K, and cocks *k* and *f'*, substantially as and for the purpose set forth.

7. The nozzle N, having the central cone n^2 and the inclined openings n', in combination with the distributing-pipe M of the tank G, substantially as and for the purpose set forth.

8. The agitator f^3, connected with and driven by the axle of the carriage, in combination with a water and air-tight tank, G, for containing poisonous liquids, whereby liquids impregnated with poisonous substances for destroying insects are kept in proper condition for being discharged during the operation of the machine, substantially as set forth.

9. The force-pump communicating with the tank and cylinder, and connected with and driven by the axle of the carriage, substantially as described.

10. The pipe i^2, perforated within the tank or barrel G, in combination with the force-pump I, substantially in the manner and for the purpose described.

200,377. FENCE-WIRE STRETCHERS. Charles S. Davis, Worcester, Mass., assignor to Washburn & Moen Manufacturing Company, same place. Filed Dec. 6, 1877.

Claim.—1. The combination, with the jaws C C, of the projections D D, for the purposes set forth.

2. The combination, with the jaws C C, projections D D, and adjustable clamp G, of levers E E, links *b b*, hook *f*, and eyes *a'*, *e*, and *c*, substantially as and for the purposes set forth.

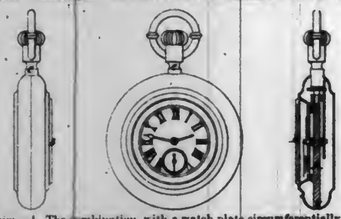


200,378. RIDING-SADDLES. James R. Dempsy, Logan County, Ky. Filed May 27, 1878.



Claim.—The ventilated spring-seat for saddles, consisting of the spring-frame, with the ends E F curved upward and connected together by cross-bands c c' and d d', the whole adapted for spring movement in any direction, all substantially as shown and described.

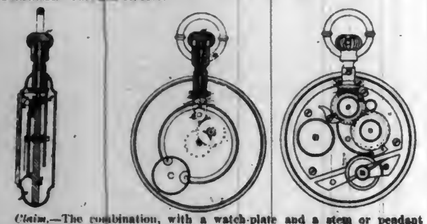
200,379. WATCH-CASES. Ovide Domon, Bienne, Switzerland. Filed Mar. 28, 1877.



Claim.—1. The combination, with a watch plate circumferentially grooved, as described, of a case consisting of two parts, constructed and arranged substantially as herein shown and described.

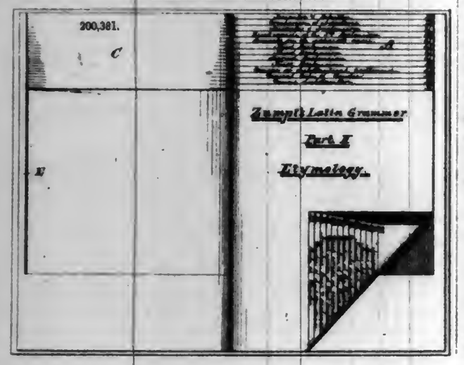
2. The peculiar construction of the front case, the same consisting of a corrugated annular disk provided with a feather-edge on the one side and a return flange at the other, and with a bezel-edge cut at the angle formed by the return flange and the corrugated disk, substantially as shown and set forth.

200,380. STEM WINDING AND SETTING DEVICES FOR WATCHES. Ovide Domon, Bienne, Switzerland. Filed Dec. 13, 1876.



Claim.—The combination, with a watch-plate and a stem or pendant directly attached thereto, of a central and longitudinally-movable spindle rigidly connected with the crown-piece, and provided with a Breguet click and suitable gear wheel, arranged in relation to the watch-winding gear and the hand-setting gear, substantially as herein described, and of a helical spring located in a chamber in the stem surrounding said spindle, and acting against the bottom of said chamber and the under side of said crown-piece, as and for the purposes herein shown and described.

200,381.

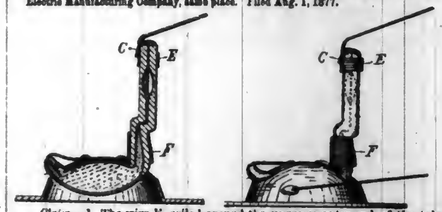


200,381. INDEXING BOOKS. Josephus Echols, West Point, Miss. Filed June 29, 1877.

Claim.—1. The combination of the graduated leaves A and the divider E, provided with the beveled strip C, as shown and described.

2. The divider E, provided with the beveled strip C and edge index F, as shown and described.

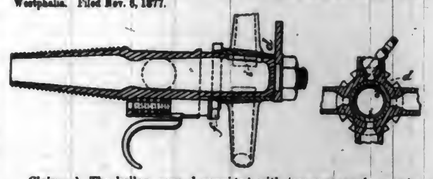
200,382. MERCURIAL THERMOSTATS. Ward B. Farrar, Chicago, Ill., assignor to Western Electric Manufacturing Company, same place. Filed Aug. 1, 1877.



Claim.—1. The wire E, coiled around the upper or outer end of the tube, forming the connection between the line-wire and platinum wire C, substantially as and for the purpose set forth.

2. The wire F, coiled around the tube at the bulb end thereof, in combination with the shield attached thereto, substantially as and for the purpose set forth.

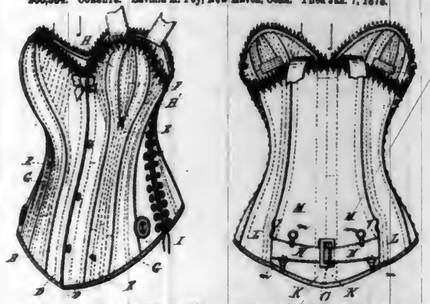
200,383. TAPS WITH TURNABLE OUTLETS. Carl G. Fischer, Schloss Holte, near Bielefeld, Westphalia. Filed Nov. 6, 1877.



Claim.—1. The hollow cone *d*, provided with two or more elongated outlets, *e*, adapted to filling bottles, in combination with the tap, on the conical end of which it is arranged to revolve, substantially as and for the purpose set forth.

2. In combination with the hollow revolving cone *d*, having two or more outlets, the spring-bolt *f*, as and for the purpose described.

200,384. CORSETS. Lavinia H. Foy, New Haven, Conn. Filed Jan. 7, 1878.



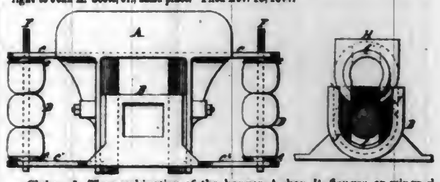
Claim.—1. The combination, with a corset made whole in the back and provided with springs or stiffeners K K, of back-straps N N, substantially as and for the purposes set forth.

2. The combination, with the back parts M M and back-side pieces L L, of straps N N and skirt-supporting hooks *m m*, arranged above and below the straps N N, as shown and described.

3. The combination, with the oval-shaped ends H H' of the center bust-piece E, of the double-gored section-piece F, substantially as shown and described.

4. The combination of the pieces D, E, F, and G, cut in the form shown in Figs. 3, 4, 5, and 6, to form bust-sections of a corset, as shown and described.

200,385. CAR-AXLE BOXES. Albert A. Freeman, Philadelphia, Pa., assignor of one-half his right to John H. Scott, Jr., same place. Filed Nov. 13, 1877.

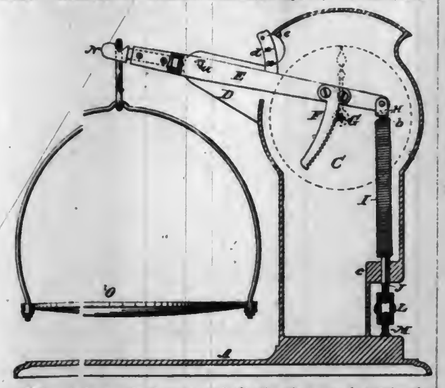


Claim.—1. The combination of the hanger A, box B, flanges or wings c' and c^2, and triangular openings O and O', for the legs of the hanger to pass through, substantially in the manner shown and described.

2. In combination with the groove or channel I, formed on the end of the box, the gum ring G, plates H and H', and lugs *l* and *l'*, constructed substantially as described, and adapted to pass over the axles, to compensate for the lateral thrust of the axles and end wear of the box.

3. The combination of the hanger A, provided with V-shaped guides and flange c, with the box B, flanges or wings c' and c^2, springs D and D', groove or channel I, gum ring G, and plates H and H', substantially in the manner and for the purpose shown and described.

200,386. WEIGHING-SCALES. Christian A. Fredericks, Brooklyn, N. Y. Filed Jan. 2, 1878.



Claim.—1. In a scale, the means of adjusting the tare and confining the lower end of the spring, consisting of the rod J, arranged to fit closely in the part *c*, but to move endwise therein, the screw M, fixed rigidly in the base, and the nut L, having a right and left female screw, all arranged substantially as and for the purposes set forth.

2. In a scale, the combination of the spring I with the beam E, forked adjusting-screw H, and flanged nut *b*, all constructed and arranged substantially as set forth.

3. The combination of the beam E with an extension-piece, N, to support the pan or article to be weighed, the latter being fixed adjustably to the bar, and arranged in such a manner that the distance between the bearing-point *a* of the lever E and the point of support of the article to be weighed may be altered at will, substantially as and for the purposes set forth.

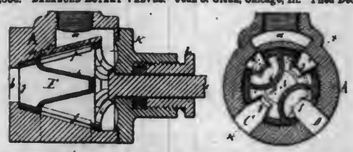
4. The combination of the screw M, rigidly connected with or forming part of the base A, with the nut L and screw-rod J, by means of which one end of the lever E is directly acted upon and raised or lowered at will, substantially as and for the purposes herein set forth.

200,387. FIRE-ESCAPES. William B. Garoutte, Greene County, Mo. Filed May 1, 1877.



Claim.—A fire-escape consisting of a single disk, having grooved projections on one side, as shown, and a rope, C', whereby the said rope may be instantly rove upon the pulley, substantially as specified.

200,388. BALANCED ROTARY VALVES. John S. Glenn, Chicago, Ill. Filed Dec. 19, 1877.



Claim.—1. In a conical valve, E, adapted to receive steam through one end and exhaust it through the opposite end, the combination of the steam and exhaust ports *f f* and *g g* on the sides of the valve with the partition *h*, constructed substantially as described, so that the steam-ports connect exclusively with one end of the valve and the exhaust-ports with the other end.

2. The valve E, having stem *e*, ports *f* and *g*, partition *h*, and radial ribs *i*, all constructed, arranged, and operated substantially in the manner set forth.

3. The valve-casing A, having entrance-port *a* in its side and exit-port *b* in one end, and provided with the cylinder-ports C D, connected by passages with cavities of equal size diametrically opposite, in combination with the conical valve E, having ports adapted to receive steam through one end and exhaust through the opposite end, substantially as and for the purpose set forth.

4. The casing A, having ports *a*, *b*, C, and D, cavities *c* and *d*, faces c' and d^2, cover K, and gland L, in combination with the valve E, having stem *e*, ports *f f* and *g g*, partition *h*, and ribs *i*, all constructed, arranged, and operating substantially as herein set forth.

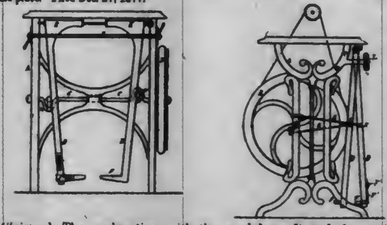
200,389. POSTMARKING AND STAMP-CANCELING MACHINES. Robert L. Grisman, Lancaster, Ky. Filed Nov. 17, 1877.



Claim.—1. The stamp-canceling and postmarking device herein described, consisting of the combined marker and canceler, the ink-pad, and letter-support, and the palm glove or strap, substantially as and for the purpose set forth.

2. The palm strap or glove F H, carrying the combined ink-pad and letter-support, and provided with means, substantially as described, for securing the strap to the hand.

200,390. MACHINE-TREADLES. Simon Haas, Lyons, France, assignor to O. Dognin & Co., same place. Filed Dec. 27, 1877.



Claim.—1. The combination, with the pendulums D and the sectional crank-shaft C, of the links G, connecting such shaft and pendulums directly to each other, the combination being and operating as described, and whereby the foot-rests or treadles may be actuated simultaneously in the same or in opposite directions, as set forth.

2. In combination with the pendulums, arranged to swing upon the same fixed fulcrum, and connected to the crank sectional shaft between their points of suspension and the lower swinging ends, the adjustable foot-rests F, applied, as described, to the lower extremities, as shown and described, and for the purpose set forth.

3. In combination, the swinging parts or pendulums D D, the sectional crank-shaft C, and the adjusting shaft-coupling sleeve and screws, as and for the purposes set forth.

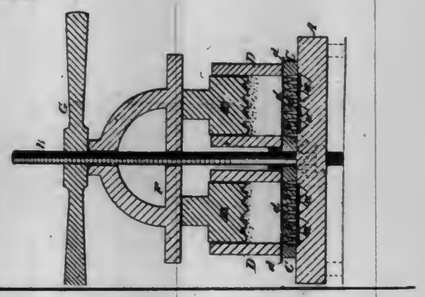
200,391. HOT-WATER HEATERS FOR BUILDINGS. Joseph W. Hardwick, Weymouth, Mass. Filed Mar. 8, 1877.



Claim.—The improvement in the art of heating graperies, greenhouses, and other buildings by means of hot water, the same consisting in providing the structure to be heated with water-piping inclosing an inner pipe or pipes supplied with steam from a steam-generator or other source of steam-supply, as set forth.

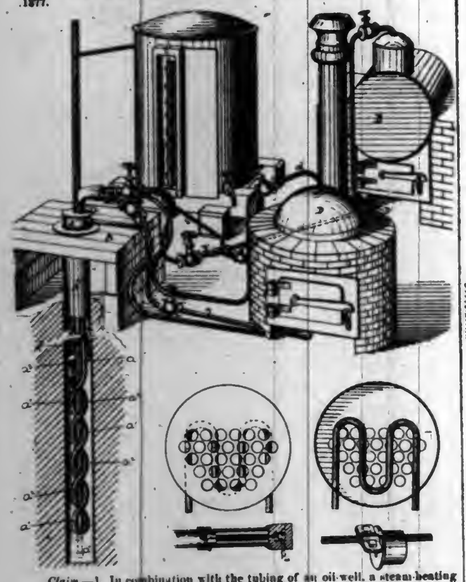
200,392. APPARATUS FOR PRESSING BUTTER. Joseph Harlan, Lexington, Ind. Filed Nov. 19, 1877.

Brief.—By the operation of the press the moisture is removed and the butter solidified.



Claim.—The combination of the corrugated base A, fixed screw B, baseboard C, perforated as specified, bottom cloths *d d*, two or more matrices, D D, grouped around the screw, followers E E, pressure-plate F, and nut G, substantially as set forth.

200,393. STEAM-HEATER FOR OIL-WELLS. Joseph Harris, Allegheny, Pa. Filed Dec. 29, 1877.



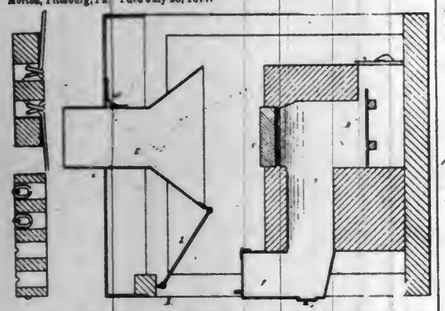
Claim.—1. In combination with the tubing of an oil-well, a steam-heating pipe or pipes passing around or inclosing the same opposite the oil-bearing rock, substantially as and for the purposes set forth.

2. The double reverse spiral a^1 a^2, in combination with the tubing, substantially as and for the purposes set forth.

3. The combination, for use in connection with an oil-well, of a steam-generator, a superheater, tubing, and steam-heating pipe or pipes surrounding the tubing, substantially as set forth.

4. As a device for use in oil-wells, a steam-coil adapted by its form to pass down through the casing, around the tubing, and distribute heat with practical uniformity to the walls of the well on all sides, substantially as set forth.

200,394. FURNACES FOR HEATING LINKS. J. Henry Heim, Allegheny, assignor to Howard Morton, Pittsburg, Pa. Filed July 23, 1877.



Claim.—1. In a furnace for heating links, the detachable section C of the crown of the fire-chamber D, said section being provided with grooves and coils, substantially as herein described, and for the purpose set forth.

2. In a furnace for heating links, the detachable section of the crown of the fire-chamber D, in combination with the hinged bell-mouth stuck E, substantially as herein described, and for the purpose set forth.

3. In a furnace for heating links, the fuel-chamber F, in combination with the fire-chamber D, detachable section C, and hinged bell-mouth stuck E, substantially as herein described, and for the purpose set forth.

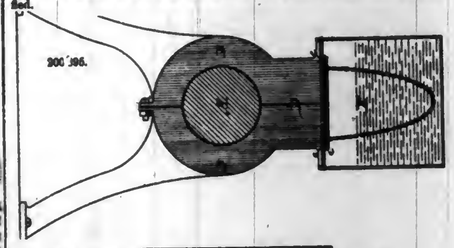
200,395. LUBRICATORS FOR BEARINGS. Austin D. Hoffman, Chicago, Ill., assignor of one-half his right to William A. Amberg, same place. Filed Jan. 23, 1878.

Claim.—1. The lubricating apparatus to be used in conjunction with the hub of a shaft-hanger, and consisting of the divided shell, constructed to form, in connection with the hub and shaft, an annular chamber at the end of the hub to inclose the lubricating-band, substantially as specified.

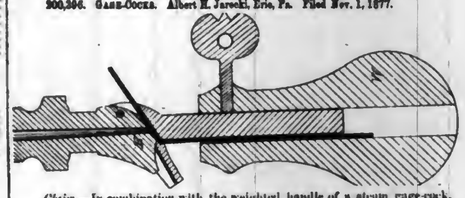
2. The combination of the divided shell, the tube, the disk, and the oil-reservoir and chain, substantially as specified.

3. The combination of the divided shell, the tube, the slotted disk, and the bolt at the top of the shell uniting the two halves, substantially as specified.

200,396.

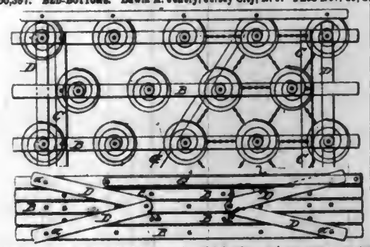


200,396. GAGE-COCKS. Albert H. Jarecki, Erie, Pa. Filed Nov. 1, 1877.



Claim.—In combination with the weighted handle of a steam gage-cock, a packing-tape placed within the handle, and means, substantially as shown and described, for retaining and adjusting the same.

200,397. BED-BOTTOMS. Edwin A. Jeffery, Jersey City, N. J. Filed Nov. 19, 1877.

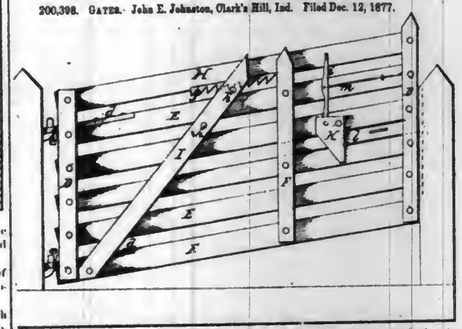


Claim.—1. A spring bed-bottom in which the springs are mounted upon slats connected together by a flexible cross strip or strips, C C, of webbing or its substantial equivalent, which will permit the bottom to collapse, the same being provided with a suitable distending and straining mechanism, with stops at the knuckles, substantially as and for the purposes set forth.

2. The combination of the slats B B, bearing suitable springs, the flexible connections C C, of webbing or its equivalent, and the toggle-levers D D, having rule-joints, or being stopped at the knuckles in some equivalent manner, all arranged substantially as and for the purpose herein set forth.

3. In combination with the slats B B, connections C C, and toggle-levers D D, the brace or braces G, as and for the purposes set forth.

200,398. GATES. John E. Johnston, Clark's Hill, Ind. Filed Dec. 12, 1877.



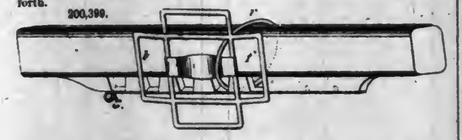
Claim.—1. The dog K, pivoted to the rail E, and having attached to it the sliding bar *l* and draw-rod *i*, in combination with the spring *m*, rail H, rack *f*, and pin *h*, substantially as and for the purpose set forth.

2. In a gate, the stiles D, rails E, rail H, provided with rack *f*, stiles F, and inclined bars I, furnished with pins *h*, in combination with the pivoted dog K, sliding bar *l*, draw-rod *i*, and spring *m*, all being arranged substantially as and for the purpose expressed.

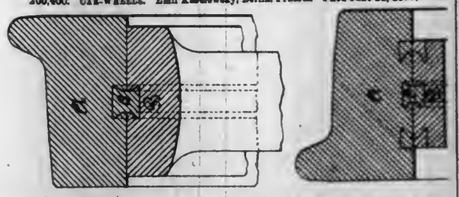
200,399. HARNESS. Batt Jones, Rock Mart, Ga. Filed Nov. 19, 1877.

Claim.—As an improvement in harness, the draft attachment consisting of the metallic frame provided with the side loops *a l*, end loops *b f*, and the curved transverse bar *c*, with its ring *r*, in combination with the notched plate *s* and its covering-spring *t*, attached to the shaft, all as and for the purpose set forth.

200,399.

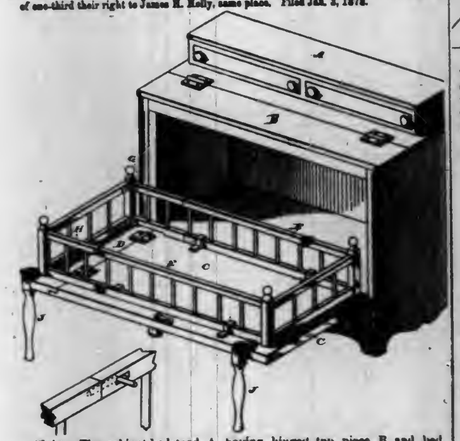


200,400. CAR-WHEELS. Emil Kaselowsky, Berlin, Prussia. Filed June 21, 1877.



Claim.—The method of fastening tires on wheels by filling corresponding grooves—turned into the crown of a wheel and the tire, and of dovetailed, hook-shaped, or other section convenient for the purpose set forth—with molten metal or alloy of a point of fusion which is lower than the point of fusion of either crown or tire, and which allows a separation of the so-formed parts by melting or cutting out the so-formed ring.

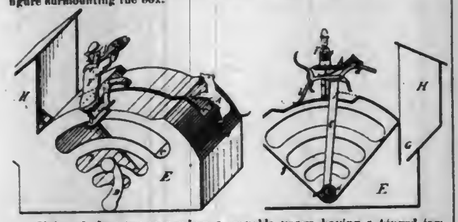
200,401. CABINET-BEDSTEADS. John G. Knapp and Jas. W. Knapp, Warwick, N. Y., assignors of one-third their right to James R. Holly, same place. Filed Jan. 3, 1878.



Claim.—The cabinet-bedstead A, having hinged top piece B and bed bottom or front C, provided with end extension D, with hinged extension-rails G H, rails E, and legs J, all constructed and arranged substantially as shown and described.

200,402. TOY MONEY-BOXES. William H. Lotz, Chicago, Ill. Filed Dec. 17, 1877.

Brief.—The turn of the crank forward causes the dog image to seize in its mouth, carry forward, and deposit a coin previously held in the hand of the figure surmounting the box.



Claim.—1. In a toy money-box, a movable image having a hinged jaw, hand, or claw, which automatically opens, closes, and opens again while the figure advances, so that the figure will grasp the coin, convey it to the receptacle, and deposit it, all in its advancing movement, substantially as described.

2. In a toy money-box, a movable image having a hinged jaw, hand, or claw, in combination with a lever to which the hinged jaw, hand, or claw is connected, said lever being operated by the depression or projection on the plate or surface over which it is moved, substantially as described.

3. In a toy money-box having a curved slotted top, the combination of a movable image, mounted on a radial arm, and adapted to be moved back and forth over the top of the box, the hinged jaw, hand, or claw of the image, connected with a lever which is operated by the depression or projection upon the plate or surface over which the figure is moved, the said image being adapted to grasp the coin, convey it to the receptacle, and deposit it, all in the advancing movement, substantially as described.

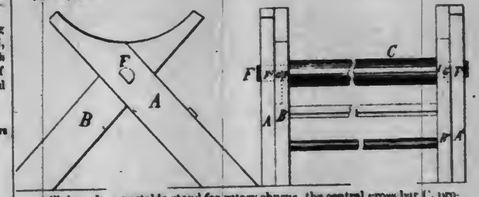
4. The movable image A, having hinged jaw *a*, in combination with the figure F, having spring *f*, all arranged to operate in combination with a money-box, substantially in the manner and for the purpose set forth.

5. The movable image A having hinged jaw *a*, attached to lever *b*, and operated by spring *b'*, in combination with the box E, having a recessed top, and a figure, F, having spring *f*, all arranged to operate substantially as herein set forth.

6. The dog image A, attached to arm C', having spindle *c* and crank D, and having a hinged jaw, *a*, operated by a lever, *b*, and spring *b'*, in combination with the figure F, having spring *f*, all constructed and arranged to operate in combination with a money-box having receptacle G, substantially in the manner described, to operate as specified.

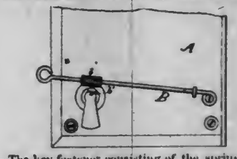
7. The dog image A, attached to arm C', rotated on spindle *c* by crank D, and having a hinged jaw, *a*, operated by lever *b* and spring *b'*, in combination with the figure F, having spring *f*, all constructed, arranged, and operating on a money-box, E, having a curved and recessed top and a receptacle, G, substantially in the manner set forth.

200,403. FOLDING STANDS FOR ROTARY CHURNS. John McAneeny, Philadelphia, Pa. Filed Jan. 26, 1878.



Claim.—In a portable stand for rotary churns, the central cross-bar C, provided with the half-round F at its end and the circular part I, forming a shoulder with its main portion, in combination with the cross-legs A A', provided with the half-round slot F', and the cross-legs B B', provided with the three-quarters-circular opening G, substantially as shown and described, and for the purposes herein set forth.

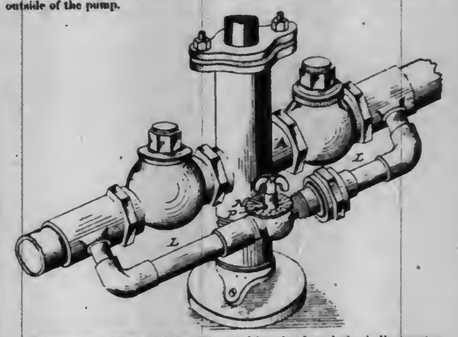
200,404. KEY-FASTENERS. Robert McCully, Philadelphia, Pa. Filed Mar. 9, 1877.



Claim.—The key-fastener consisting of the spring-wire B, attached to the lock A, and provided with the catch *b b'*, to engage automatically with a notched key when the latter is so turned as to lock the bolt, substantially as described and shown.

200,405. FEED-WATER REGULATORS. Charles Mendenhall, Cincinnati, Ohio. Filed Nov. 2, 1877.

Brief.—When the graduated valve is set, only the desired quantity of water passes into the boiler; the remainder passes round to the supply-pipe outside of the pump.



Claim.—In a pump relief attachment, the pipe I, and the indicator stop-valve M, provided with the graduated disk N and index-finger I', in combination with a pump and its check-valves, constructed as described.

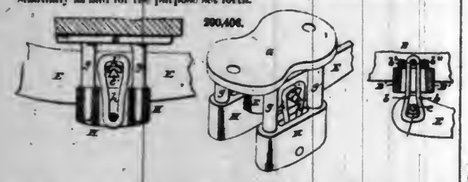
200,406. PLATFORM-SCALES. Alonzo B. Pearson, St. Louis, Mo. Filed Aug. 3, 1877.

Claim.—1. The table-plate G, having legs *g*, resting in bearing-block H, having link-connection with the knife-edge *e'* of the scale-lever E, substantially as and for the purpose set forth.

2. The scale-lever E, pivoted to the frame B by links *b* passing through

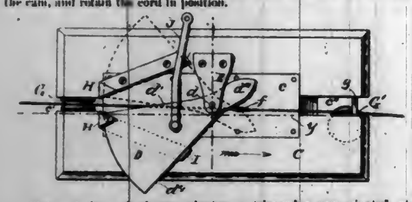
elongated slots in the cross-piece b', and secured to sliding washers b^3, substantially as and for the purpose set forth.

200,406.



200,407. CHECK-ROW ATTACHMENTS TO CORN-PLANTERS. Edmund W. Quincy, Peoria, Ill., assignor of two-thirds his right to John Y. Mills and William H. Mills, same place. Filed Dec. 31, 1877.

Brief.—The triangular cam is vibrated laterally by knots on the check-row cord striking against first one side and then the other of the projecting cam end. Suitable stops and guides are provided to restrict the movement of the cam, and retain the cord in position.



Claim.—1. In a check-row planter, a triangular cam pivoted at one end, and having cam-faces on its opposite sides, arranged to operate with a knotted check-row cord or wire by direct frictional contact, substantially as and for the purpose specified.

2. In a check-row planter, an oscillating cam, between which and a fixed plate the check-row wire or cord passes, adapting the knots on said wire or cord to act upon the side or sides of the cam, substantially as and for the purpose specified.

3. The cam D, pivoted to an overhanging arm, E, to facilitate removal and replacing of the check-row wire or cord between the cam and plate C, substantially as described, and for the purpose specified.

4. The guards H, arranged to operate with the cam D, plate C, and check-row wire or cord, substantially as described, and for the purpose specified.

5. In a check-row planter, the triangular cam D, having cam-faces, as described, and arranged to operate with a knotted check-row rope or wire, and with the plate C and stops I, substantially as and for the purpose specified.

6. In a check-row planter, the triangular cam D, having cam-faces and projecting end d^{10}, as described, and arranged to operate with the guides G G' and check-row cord or wire, substantially as and for the purpose specified.

7. In a check-row planter, the triangular cam D, having cam-faces, as described, arranged to operate with the link J by means of the knotted check-row wire or cord, substantially as and for the purpose specified.

200,408. LAMP-ORNAMENTS. Elisha R. Roswell, Stratford, Conn. Filed Jan. 2, 1878.



Claim.—The combination of the plates a and b, air-chamber d, and supports c c c, all substantially as described and set forth.

200,409. BOTTLE-STOPPERS. Lanchlan Rose, London, England. Filed Nov. 19, 1877. Patented in England, Mar. 9, 1877.

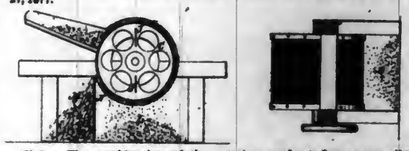
Brief.—Whole stopper of greater specific gravity than contents of bottle, its head being of that specific gravity, and its bottom being of lighter material. Hence, while the bottle is inverted, the heavy top falls into the neck of the bottle. On righting the bottle, the gaseous contents hold the rubber washer up against its seat in the neck of bottle. Materials mentioned are china, glass, earthenware, metals, rubber, vulcanite xyloidine, bone, ivory, horn, cork, non-porous woods—*e. g.*, lignum-vitæ. Dyes the ivory or bone to indicate nature of contents, instead of labeling. Covers either head or bottom with rubber, to protect bottle from shocks of stopper, or stopper from chemical action of contents of bottle. Inserts a weight into head and covers entrance with wax. May make in three, two, or in one part, exclusive of washer and weight.



Claim.—1. In internal bottle-stoppers for bottling gases or aerated or gaseous liquids, the combination, with the stopper, of a lighter body, such as cork, vulcanite, horn, non-porous wood, or other suitable material, fixed or adjusted in the end of the stopper, substantially as and for the purpose described.

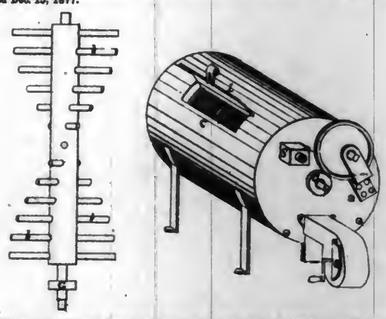
2. In internal bottle-stoppers adapted for bottles to be filled with gases or aerated or gaseous liquids while the bottle is inverted, a stopper having a hermetically-sealed weight in that end which closes the bottle-neck, and the whole stopper having a specific gravity greater than the liquid, all as shown and described.

200,410. SEED-CLEANING MACHINES. Isaac B. Sandusky, Fayette County, Ky. Filed Aug. 27, 1877.



Claim.—The combination of the rotating perforated scouring-cylinder, formed of outwardly-punched sheet metal, and provided with fan-blades in its interior, and the perforate scouring-jacket, substantially as described, and for the purpose set forth.

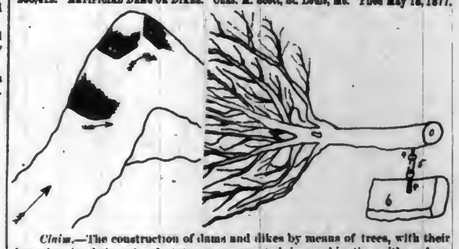
200,411. FEATHER-RENOVATORS. Daniel B. Sanders and Junius Smith, Burlington, Mich. Filed Dec. 15, 1877.



Claim.—1. In a feather-renovator, two concentric cylinders with steam-space and steam-chest between, provided with hot-air inlet F and gauze or perforated-plate protected openings L and L', all combined and arranged substantially as and for the purpose herein described and shown.

2. The box S, in combination with the feather-receptacle and with the hot-air apparatus, for the purpose of throwing oily vapors into the receptacle, substantially as and for the purpose herein shown and described.

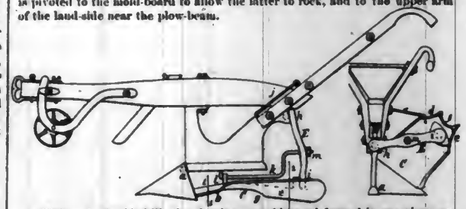
200,412. ARTIFICIAL DAMS OR DIKES. Chas. M. Scott, St. Louis, Mo. Filed May 18, 1877.



Claim.—The construction of dams and dikes by means of trees, with their branches in their natural state, as represented, in combination with anchors arranged as shown, and for the purpose herein described.

200,413. SIDE-HILL PLOWS. Henry F. Shaw and Geo. F. Shaw, Boston, Mass. Filed Dec. 29, 1877.

Brief.—A mold-board concave in the front portion, and divided at the rear into two concave sides connected by a sunken web. The rear connecting-brace is pivoted to the mold-board to allow the latter to rock, and to the upper arm of the land-side near the plow-beam.



Claim.—1. A side-hill plow having a mold-board formed in one piece, so that the rear portion presents two diverging concave surfaces, and hung, as to its rear end, by means of a link, E, pivoted at h and i, substantially as herein-before described.

2. The mold-board C, pivoted at a, and attached, as to its rear end, to the body of the plow by means of the link E, pivoted at h and i, substantially as and for the purpose hereinbefore set forth.

200,414. ROCKING-CHAIR FAN ATTACHMENTS. Knud Thompson and Lars G. Bergstrom, Norwalk, Ohio. Filed Aug. 31, 1877.

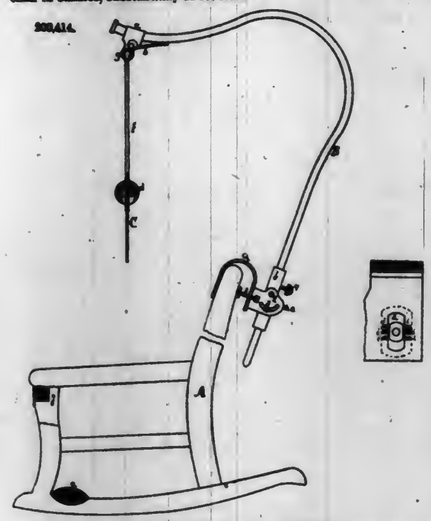
Claim.—1. In combination with the rod B and clamp a of a pendent fan device, the adjusting-plate a a and tube b, arranged and operated substantially as and for the purposes mentioned.

2. In combination with the rod B and fan C of a pendent fan device, the clip c, provided with a suitable clamping device, substantially as and for the purpose mentioned.

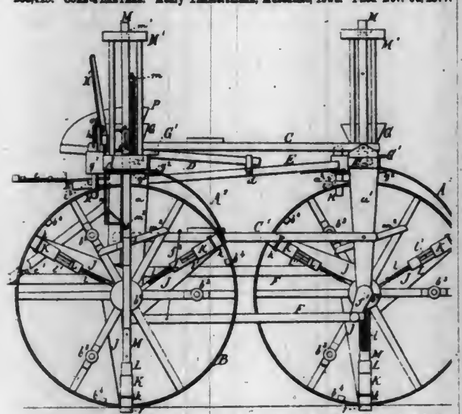
3. In combination with the fan C and rod f, the ball d, attached to said rod above said fan, and made adjustable upon said rod, substantially as and for the purposes mentioned.

4. In combination with the rocking-chair A, supplied with a device for suspending a fan above the same, the removable weights s or g, for keeping said chair in balance, substantially as set forth.

200,414.



200,415. CORN-PLANTERS. Henry Timmermann, Muscatine, Iowa. Filed Nov. 14, 1877.



Claim.—1. In a corn-planter, the combination of the frames A A' and the parallel connecting-rods C C', whereby the frame A' can be adjusted in and out of operation at will, substantially as set forth.

2. In a corn-planter, the combination of the coupled frame A A', tongue E', having a staple, e', the bars D, the fulcrum d, and the foot-lever E, having a bolt, e, whereby the frame A' is raised and held so, or lowered, substantially as set forth.

3. In a corn-planter, with two front wheels and one middle rear wheel and coupled frames A A', the combination of the axles b b', cranks f f', and detachable connecting-rods F, substantially as and for the purpose set forth.

4. The carriage-wheel B, provided with conducting-spouts, valves, plungers, and arms b', in combination with the laterally-vibrating tube I, the hopper H, slide G', tension-spring g^3, drop-pin H, and drop-rod M, the latter attached to the frame A, substantially as and for the purpose described.

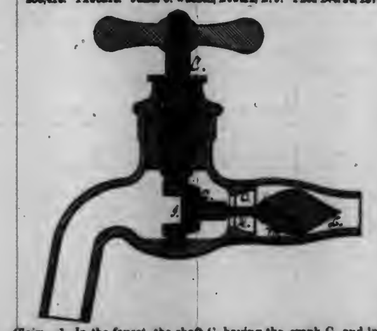
5. The combination, with the carriage-wheel B, provided with the conducting-spouts, valves, and plungers, of the hopper and its connections and the laterally-vibrating tube, which intermittently occupies an oblique position between the hopper and the wheel B, substantially as and for the purpose described.

6. The combination of the revolving tube J, plunger L, and spring valve K, carriage-wheel B, and reciprocating drop-rod M, attached to frame A, substantially as described.

7. The combination of the drop-rod M, having a tension-spring, m, an inclined arm, m^2, an adjustable check, m^1, and the revolving lifting-rollers b^2, substantially as and for the purpose set forth.

8. The hand-lever N, having rods a, b, and c, and bell-crank lever O, and connecting-rod o', whereby the drop-rod M, the drop-pin H, and the vibrating tube I are moved in and out of action.

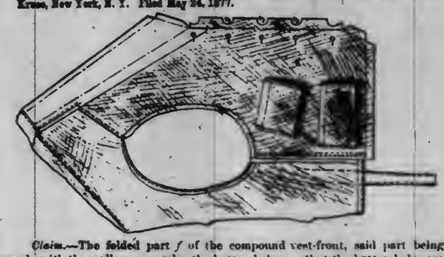
200,416. FAUCETS. James O. Waddell, Newark, N. J. Filed Dec. 24, 1877.



Claim.—1. In the faucet, the shaft C, having the crank G, and incased in the threaded sleeve I, substantially as and for the purpose set forth.

2. In combination with the shaft C, having the crank G and the threaded sleeve I, the pointed flange L and stem K, being made in one continuous piece and fitted to screw into the sleeve I, substantially as and for the purpose set forth.

200,417. VESTS OR PAPER AND OTHER MATERIAL. Franz C. Weber, Brooklyn, and Frederick Kruse, New York, N. Y. Filed May 24, 1877.



Claim.—The folded part f of the compound vest-front, said part being made with the scallops g g under the button-holes, so that the button-holes are strengthened by the strip f near the edge of the vest, but are at the same time left flexible, substantially as herein shown described.

200,418. HAND BRANDING-STAMPS. Horace Wickham Jr., Waukegan, assignor of one-half his right to Henry P. Caldwell, Chicago, Ill. Filed Apr. 10, 1877.

Brief.—A hand branding-stamp is constructed with a skeleton base, and contains movable metal type, which are heated by means of a jet of gas introduced through the handle.



Claim.—1. In combination with the skeleton base K, the tube C, flexible tube E, handle H, and turner J, substantially as described, and for the purposes set forth.

2. The combination of the skeleton base K, tube C, flexible tube E, handle H, burner J, cap B, plate D, and types A A, substantially as described, and for the purposes set forth.

200,419. IRONING-MACHINES. Thomas S. Wilcs, Albany, N. Y. Filed May 4, 1877.

Brief.—The heated roll is carried back and forth over the ironing-bed by a frame pivoted near the lower portion of the machine, and actuated by a nut which travels on a screw shaft longitudinally of the machine, the frame having ways to allow the necessary vertical play of the nut required in its longitudinal movement. Said screw-shaft is provided at one end with a bevel-gear wheel, which meshes with two correspondingly-beveled gears arranged loosely upon a cross-shaft, which also carries a double clutch feathered thereon, and capable of being alternately engaged with two similarly-shaped clutches upon the inner sides of the two beveled gears. The clutch mechanism is automatically operated by a lug on the nut alternately striking two stops arranged on opposite sides of and at the opposite ends of rock-shaft, which is arranged longitudinally of the machine, and carries a finger connecting with the double clutch. The ironing-bed is composed of an iron frame upon which is successively placed layers of rubber felt, canton flannel, and muslin.

Claim.—1. The combination of the supporting-frame A, arched ironing-bed B, stationary on the supporting-frame, vibrating carrier D, mounted on an axis, E, below the stationary bed, and the smoothing-iron C, secured to the vibrating carrier, and thereby moved to and fro along and in forced contact with the stationary arched bed, substantially as described.

2. The combination of the stationary curved ironing-bed B, smoothing-iron C, and carrier D, having its axis of vibration below the bed, and movable upward and downward, and weighted, so that the smoothing-iron, in its to-and

tro movements, shall conform to variations in the surface of the bed, and be pressed with a regulating yielding force upon articles of various thickness being ironed on the bed, substantially as described.

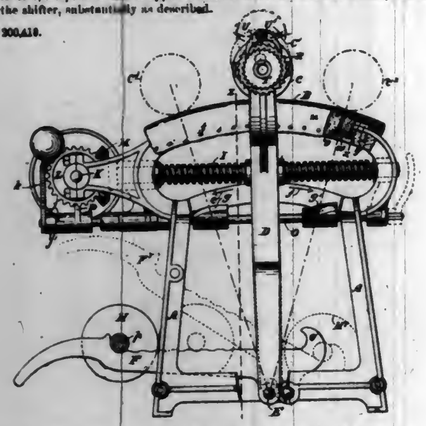
3. In combination with the stationary arched bed B, smoothing-iron C, and carrier D of the smoothing-iron, the lever F, connected with the axis E of the carrier, and having an adjustable weight, H, whereby the smoothing-iron can be elevated and retained away from the bed, and returned thereto, substantially as set forth.

4. In combination with the stationary ironing-bed, smoothing-iron C, and carrier D, the screw I, mounted to turn in opposite directions, and the traversing nut J, having a self-adjusting connection with the carrier, substantially as described.

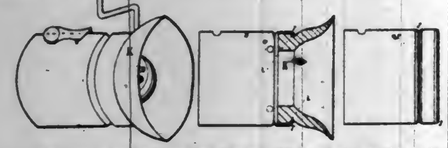
5. The combination, with the stationary ironing-bed, smoothing-iron and its carrier, screw I, and nut J, connected with the carrier, of the driving-shaft K, bevel-gears L L' M, clutch N, and clutch-shifter l^3, all constructed and arranged substantially as described.

6. The combination of the stationary ironing-bed, smoothing-iron and its carrier, screw I, nut J, reversible gearing for turning the screw in opposite directions, rock-shaft O, inclines g g', finger h, shifter l^3, and weighted rocking lever k, adapted to fall on opposite sides of the rock-shaft and thereby actuate the shifter, substantially as described.

200,419.



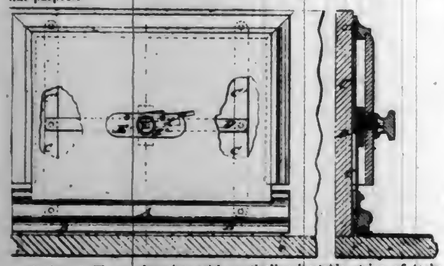
200,420. SPEAKING-TUBES. Thomas J. Woolcocks and Geo. O. Woolcocks, Jersey City, N. J. Filed Dec. 31, 1877.



Claim.—As a new article of manufacture, the barrel of a speaking-tube made from a single blank of metal, with a contracted flange, l, at its upper end, in combination with the channel or groove L on the neck of the mouth-piece K, as a means of uniting them solidly together without soldering or other cementing process, substantially as described.

200,421. CARPET-FASTENERS. Warren Aldrich, Lowell, Mass. Filed July 13, 1877.

Brief.—A toothed strip, guided vertically below the mop-board, and operated by suitable lever mechanism, serves to take hold of or release the carpet, and is likewise adapted to be used along the riser of the stair for a like purpose.



Claim.—1. The combination, with vertically-adjustable strips, of tacks driven at intervals through one strip, and having their heads held between two strips, as and for the purpose described.

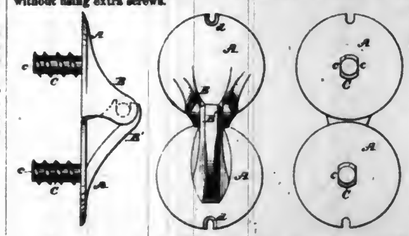
2. The combination of the vertically-movable fastening-strips, having projecting teeth or points, and two or more guide-pins, with guide-holes of the floor or tread, substantially as specified.

3. The combination of the toothed and guided fastening-strip with jointed pivot-links, lateral joint-connecting bar, and suitable operating mechanism to raise or lower the fastening-strip, substantially as and for the purpose specified.

4. In carpet-fasteners, a toothed strip guided below the mop-board or stair-riser, as and for the purpose specified.

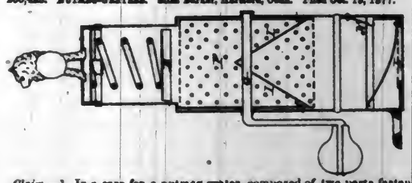
200,422. HINGES FOR MOLDERS' FLASKS. Asbury Barker, Peekskill, N. Y. Filed Jan. 21, 1878.

Brief.—A screw may be inserted in the edge of the flange to keep hinge from working around. If one pair of hinges are made with right-hand and the other pair with left-hand screw-threads, they will retain their position without using extra screws.



Claim.—In a hinge for molders' flasks, the hinge B B', having the flanges A A and screws C C, the latter with mutilated thread o c, substantially as shown and described.

200,423. BUTTERS-GRATERS. Silas Barker, Hartford, Conn. Filed Oct. 19, 1877.



Claim.—1. In a case for a nutmeg-grater, composed of two parts fastened together by rivets or screws, and arranged to inclose and form bearings for the grinding devices, the drawer-receptacle, made integral with the case, as described.

2. The inclined conductor l within the cylindrical grater, for discharging the contained powder, substantially as herein described.

3. The drawer K, having the perforated plate l, secured in the bottom and located beneath the grating-cylinder, as set forth.

200,424. SKATES. Everett H. Barney, Springfield, Mass. Filed Jan. 7, 1878.



Claim.—1. A cast-iron skate having the clamp-brackets a a' cast in complete form under the sole-pad thereof, substantially as set forth.

2. The grooves x x, cast between the brackets a a' and the sole or heel plate of a skate, substantially as and for the purpose set forth.

3. The combination, in a cast-iron skate, of the sole-pad B, brackets a a', and stud b, said parts all being cast in complete form, and clamps f f and screw A, substantially as and for the purpose set forth.

4. The standard 3, divided longitudinally into two portions, increasing in lateral separation up to their junction with the heel-pad, substantially as and for the purpose specified.

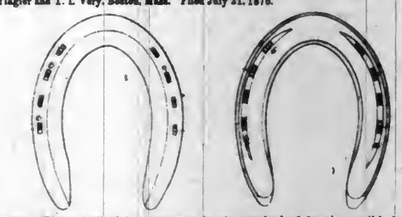
5. The standard 3, divided longitudinally into two portions, increasing in lateral separation up to their junction with the heel-pad D, its upward projection E, and the rear part of the runner, all cast in one piece, substantially as and for the purpose set forth.

6. The combination of the hollow standard 3, heel-clamp H, heel-clamp screw o, heel-pad D, and projection E, substantially as and for the purpose set forth.

7. The chamber F, cast in the standard 3, substantially as and for the purpose specified.

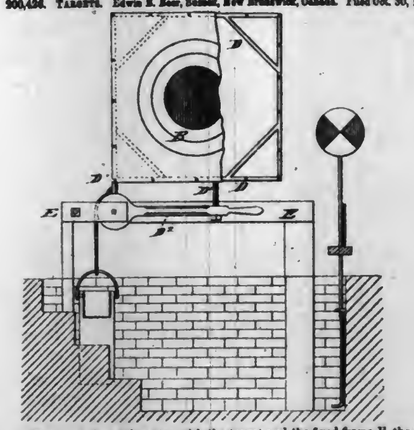
8. The heel-pad D and heel-steadying upward projection E, cast upon the standard 3, substantially as and for the purpose set forth.

200,425. MANUFACTURE OF HORSESHOES. Hasen J. Batchelder, Fitchburg, assignor to H. K. Flagler and T. I. Very, Boston, Mass. Filed July 31, 1876.



Claim.—The described improvement in the method of forming nail-holes in horseshoes, which consists in forming the crease and a series of indentations or countersinks on both sides of the shoe, drilling holes through the bottom of such indentations, and subsequently enlarging, squaring, and finishing the hole by means of a pritchel, substantially in the manner and for the purpose specified.

200,426. TARGETS. Edwin B. Bear, Bemer, New Brunswick, Canada. Filed Oct. 30, 1877.

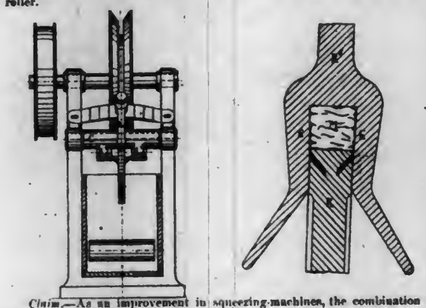


Claim.—1. In combination with the target and the fixed frame E, the lever D^3, pivoted to the latter, and rigidly connected with the former, so that the target may be swung out of its normal position when required, as and for the purpose specified.

2. As an improvement in targets, the target-supporting lever-frame, made of pieces tapering toward the front, and provided with ping-holes and wooden plugs at the back, to attach target, substantially as set forth.

200,427. SQUEEZING-MACHINES FOR BLEACHERS AND DYERS. William Birch, Salford, Great Britain. Filed Nov. 26, 1877.

Brief.—For the use of bleachers, dyers, and calico-printers. The material to be squeezed is confined between the sides of the groove in the periphery of the upper flanged rollers, and pressed by the "work-piece," or lower plain roller.



Claim.—As an improvement in squeezing-machines, the combination of narrow metal or other rollers, the upper one having a groove, the bottom and top parts of which are of dovetail and bell-mouth shape, respectively, with the plain or male roller, having a packing near the working face working against the sides of the groove.

200,428. BALE-TIES. Joseph R. Blossom, Brooklyn, N. Y. Filed Jan. 19, 1878.



Claim.—1. As an improvement in the process of baling with hoops in two sections applied to the bale, connecting the same at opposite sides of the bale by the fastening devices, and drawing up the slack by adjusting said devices, as set forth.

2. A bale-tie fastening with which the ends of the hoop are connected, constructed as described, to draw together the ends of the band when the fastening is turned laterally, as set forth.

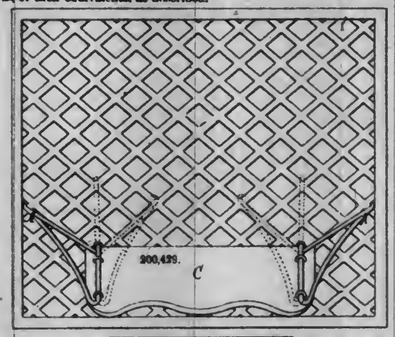
3. A bale-tie fastening having edges with which the loops engage, constructed and arranged substantially as described, whereby the ends of the hoop are drawn nearer together by laterally turning the fastening when engaged with the loops, as set forth.

4. A laterally-turning fastening provided with lugs a, as and for the purpose specified.

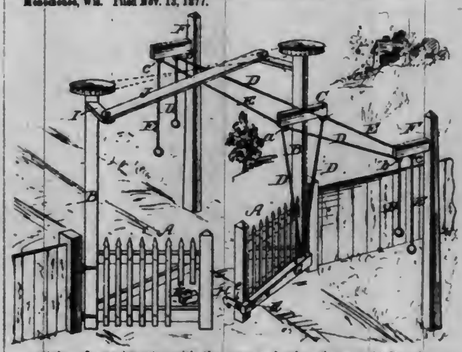
200,429. ADJUSTABLE FOOT-RESTS FOR HOT-AIR REGISTERS. Jacob Bonnet, New York, N. Y. Filed Oct. 4, 1877.

Brief.—A platform-shelf provided with bracket-arms adjustable to any-sized register.

Claim.—As a new article of manufacture, an adjustable foot-rest for hot-air registers, consisting of the platform C and arms A, secured by screw-sockets B, or their equivalents, as described.



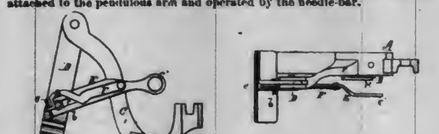
200,430. GATES. Felix J. Bergin, Wilson, assignor of one-fourth his right to Frank J. McLean, Menomonee, Wis. Filed Nov. 13, 1877.



Claim.—In combination with the gate A, having the upright B and arm C, the two cords D E, connected to opposite ends of the arm, and extended thence through the standard F and down within reach, as shown and described.

200,431. RUFFLERS FOR SEWING-MACHINES. George W. Burgess, Skowhegan, Me. Filed July 17, 1877.

Brief.—Rigidly attached to the presser-foot is an upwardly-extending arm, to the upper end of which is pivoted a pendulous arm having at its lower end the ruffling-blade. This blade is reciprocated by an arm adjustably attached to the pendulous arm and operated by the needle-bar.

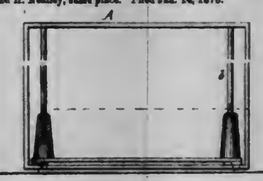


Claim.—1. The combination of the presser-foot A, the arm C extended therefrom, the bent pendulous and studded bar D, the spring G, and the slotted bar E, provided with the toothed rack e and the recessed latch F, all arranged and applied substantially as set forth.

2. The presser-foot A and the plate or projection B, arranged therewith so as to form between them the third place or passage a for the cloth, as set forth, in combination with the arm C, pendulous bar D, spring G, and the slotted bar E, provided with the toothed rack e and the recessed latch F, all being substantially as specified.

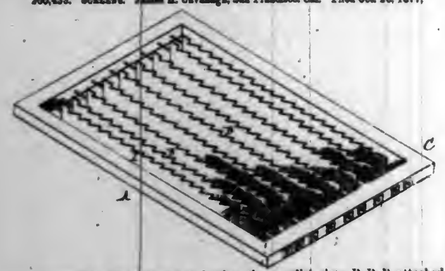
3. The combination of the fureated gage H, as described, for use with the ruffler, provided with the recess a, arranged with the presser-foot A, as set forth.

200,432. SHELVES FOR STOVE-OVENS. Charles H. Bussell, Monroe, Me., assignor to himself and Edmund H. Nealley, same place. Filed Jan. 14, 1878.



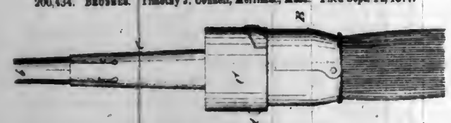
Claim.—The shelf B, pivoted within the oven A, and provided with a curved arm, *c*, as shown and described, for the purpose specified.

200,433. SCREENS. James H. Cavanagh, San Francisco, Cal. Filed Oct. 26, 1877.



Claim.—The screen-frame A, having the parallel slats B B B attached firmly to one end, and provided with a straining or tightening device at the opposite end, whereby the slats are secured and adjusted in the frame without cross-bars interrupting the spaces between them, substantially as and for the purpose specified.

200,434. BRUSHES. Timothy J. Connell, Merrimac, Mass. Filed Sept. 14, 1877.

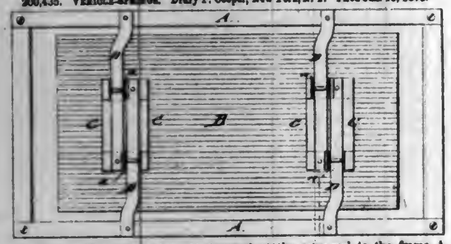


Claim.—1. A brush-bridle, B, having its sections pivoted at lower end and held at upper end by a cup-ferrule, as shown and described.

2. The reversible and adjustable brush-bridle B, drawn in or contracted at the lower end, the bristles being allowed to spring out above and below the contraction, as shown and described.

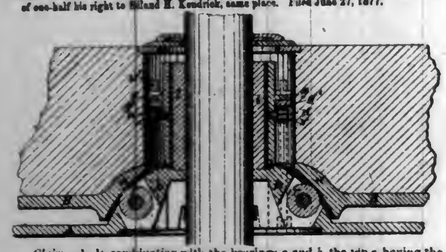
3. The brush-ferrule C, having extension-tube C', with spring-fingers at the end, to allow the ferrule and bridle to be vertically adjusted, as specified.

200,435. VEHICLE-SPRINGS. Drury F. Cooper, New York, N. Y. Filed Jan. 15, 1878.



Claim.—The cross-springs D, fastened at the outer end to the frame A, at the inner end to the body, and having an intermediate elastic connection with the body, as and for the purpose specified.

200,436. MILL-SPINDLE BUSHES AND THRUST. Elbridge G. Cushing, Oswego, N. Y., assignor of one-half his right to Roland H. Kendrick, same place. Filed June 27, 1877.



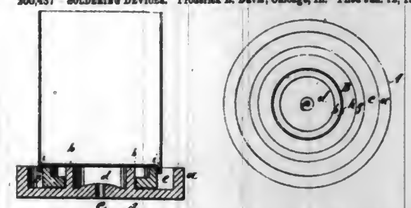
Claim.—1. In combination with the bearings a and b, the pin c, having the beveled circumferential depression d, and the roller r, having the eye e, beveled in a relatively greater angle from each side to form a circumferential ridge in the center, constructed substantially as described and shown, for the purpose set forth.

2. In combination with a spindle-bush, the set-screw u, having cylindrical head v, with longitudinal grooves or threads in its periphery, and the auxiliary set-screw w', arranged vertically by the side of the head v of the set-screw proper, and provided thereat with external screw-threads, substantially in the manner and for the purpose set forth.

3. The combination and arrangement, with the spindle-bush, of the set-screw u, having on its outer end the cylindrical head v, with longitudinal grooves in its periphery, and the auxiliary set-screw w', arranged vertically by the side of the head v of the set-screw proper, and provided with external screw-threads thereat, and having one end extended through the bed-plate A, and its opposite end through a projection on the exterior of the hub, above the set-screw proper, substantially as and for the purpose specified.

4. In combination with the set-screw w', the flange g on hub h, having slot f, and the plate g', attached to said flange by bolt i, and having a slot transverse to that of the flange, substantially as and for the purpose set forth.

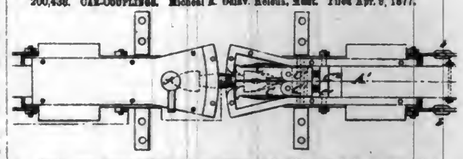
200,437. SOLDERING DEVICES. Frederick B. Davis, Chicago, Ill. Filed Jan. 12, 1878.



Claim.—1. The removable ring or plate B, provided with the flange g and opening f, in combination with the base or support b, whereby the device can be adapted to solder cans of various sizes, substantially as specified.

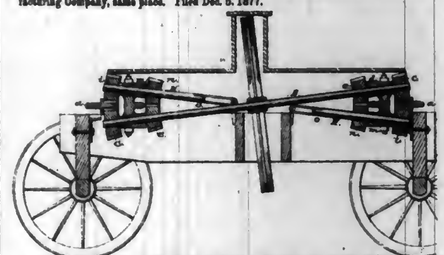
2. The combination, in a device for soldering purposes, of the plate A, provided with the flange a, central support or base b, solder-receptacle c, central air-chamber d, and opening e, with the removable plate or support B, provided with the opening f and flange g, substantially as and for the purposes specified.

200,438. CAR-COUPLINGS. Michael B. Delay, Helena, Mont. Filed Apr. 9, 1877.



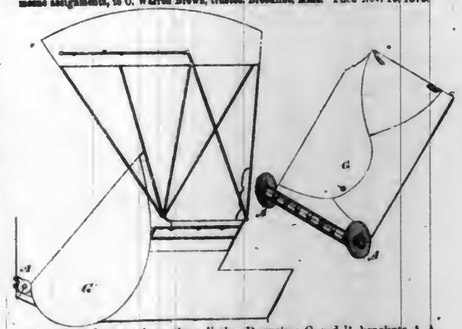
Claim.—A car-coupling whose draw-head slides and is connected by chains b with the bolts d, substantially as and for the purpose specified.

200,439. HORSE-POWERS. William W. Dingee, Oshkosh, Wis., assignor to the Sawyer Manufacturing Company, same place. Filed Dec. 5, 1877.



Claim.—In combination, master-wheel a, pinions c f, shafts H B, and pinions a e, substantially as set forth.

200,440. CARRIAGE-BOOTS. Charles P. Dodge and C. Warren Brown, Salem, assignors, by mesne assignments, to C. Warren Brown, trustee, Brookline, Mass. Filed Nov. 16, 1876.

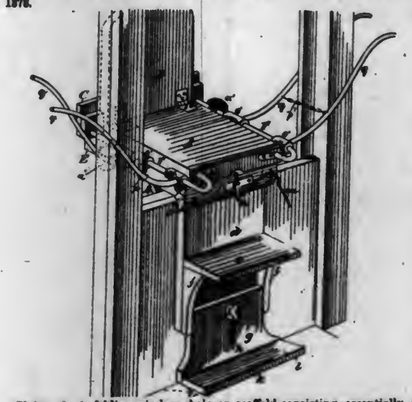


Claim.—1. In a carriage, the cylinder D, spring C, rod B, brackets A A, ratchet H, pawl J, and thumb-pieces K and L, when combined with a boot or apron, G, of such width that the sides must be folded over the center in order that the said boot or apron may be wound around the cylinder D by the force of the spring C, substantially as shown, and for the purpose herein specified and described.

2. In combination, the boot G, cylinder D, spring C, brackets A, rod B, with rubber tubing N or its equivalent, substantially as and for the purpose described.

3. In combination, the boot G, cylinder D, spring C, brackets A, rod B, and casing O, substantially as described.

200,441. WINDOW-CLEANING CHAIRS. Anna Dormitzer, New York, N. Y. Filed Jan. 12, 1878.



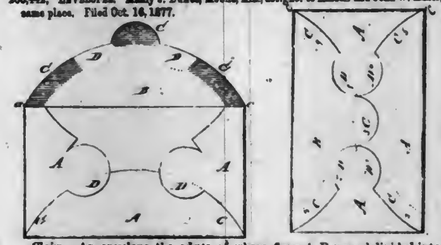
Claim.—1. A folding window chair or scaffold consisting, essentially, of the pieces A C, hinged guard B, rods F q, bracing device m n o b, and the piece d, provided with slide-piece g, all arranged as shown and described.

2. The combination of the side rods F and the adjustable curve rods q, with the platform A, substantially as shown and described.

3. The cord m and fastenings n o, in combination with the adjustable brace b, substantially as herein shown and described.

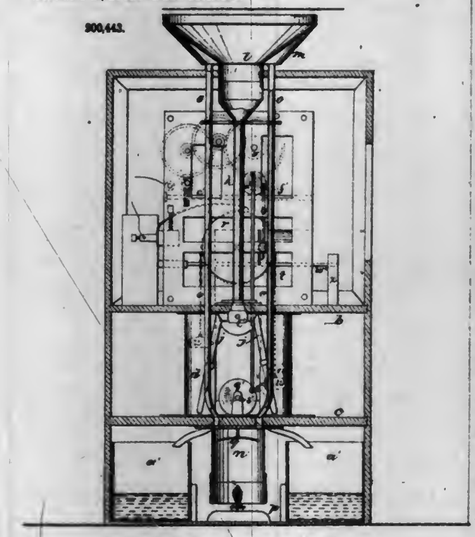
4. The support d, having the adjustable spur-piece g, in combination with the platform A, as herein shown and described.

200,442. ENVELOPES. Manly J. Duffee, Mobile, Ala., assignor to himself and John W. Miller, same place. Filed Oct. 16, 1877.



Claim.—An envelope the edges of whose flaps A B are subdivided into several alternately overlapping and underlapping parts, as indicated in drawings, from 1 to 9, the mucilage being applied alternately to the outer and inner faces at C D, as shown and described.

200,443.



200,443. RAIN-GAUGES. Lawrence Deane and Ephraim T. C. Richmond, Morgantown, W. Va. Filed Dec. 3, 1877.

Claim.—1. The combination, in a rain-gage, of a heating-lamp and jacketed receiving-funnel, substantially as herein shown and described.

2. The combination, in a rain-gage, of two float-cylinders, each containing a float, a chain for connecting the two floats, and a chain-wheel for transmitting the motion of the floats to the recording apparatus, substantially as herein shown and described.

3. The combination, with the float-cylinders, of a receiving-funnel and a three-way valve for directing the water into the float-cylinders, substantially as herein shown and described.

4. A spring-actuated train of gearing, controlled by the floats, in combination with the receiving and discharge valves of the float-cylinders, substantially as herein shown and described.

5. The combination of the float-cylinders *d*, the tube *c*, having discharge-openings *i*, the piston-valves *f*, and connection for moving the said valves simultaneously with the valve C, as herein shown and described.

6. The detent-lever k^1, having two oppositely-disposed inclined planes, P, the chain-wheel *r*, having the finger m^1, and the disk f^1, having the pin g^1, in combination, substantially as and for the purpose specified.

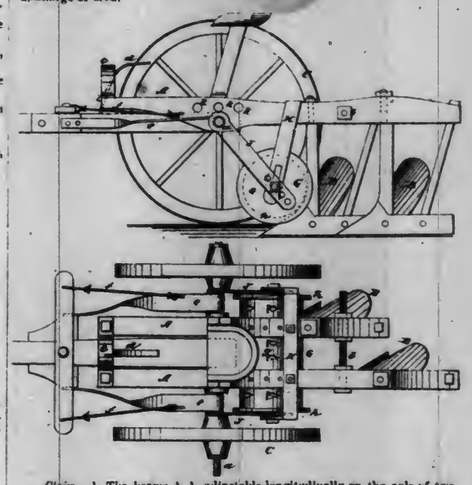
7. The movable rack c^1, the pencil-arm k^3, and the paper-carrying drum F, rotated by clock-work, as described, in combination with the floats *s* and intermediate mechanism for conveying motion from the floats to the movable rack, substantially as herein shown and described.

8. The disk f^2, carrying electrical conducting-wires k^2, in combination with the float-chain-wheel *r*, substantially as herein described.

9. The floats *s*, having pins or projections on their peripheries, substantially as and for the purpose specified.

200,444. PLOW AND SEEDER. Pinkney H. Elliot, Greenville, Tex. Filed Aug. 3, 1877.

Brief.—In adjustable yokes pendent from the plow-beams is journaled a seed-distributer having adjustable perforated cylinders for graduating the discharge of seed.



Claim.—1. The beams A A, adjustable longitudinally on the axle of two transporting-wheels, and adjustable laterally, in combination with the pivoted and braced draft-pole D, plows B, and a rotary seed-distributer, substantially as described.

2. The rotary seed-distributer G, consisting of perforated cylinders *g g* and wheels or circular flanges *h*, in combination with turn-plows B B, having their mold-boards turned in the same direction, and arranged in rear of distributer, substantially as and for the purpose specified.

3. In combination with a distributer, G, that rolls on the ground, the slotted yoke H and arms J J, perforated at several points, substantially as described.

200,445. DENTAL PLATES. James D. Fahnestock and Llewellyn A. Powell, Aurora, Ill.; said Powell assignor to Osborn Willcox, same place. Filed Nov. 19, 1877.



Claim.—A process of forming a dental plate and teeth in one homogeneous piece of porcelain, by first taking a pattern of plate and teeth directly from the mouth of patient, and from this forming a sectional mold, then packing this mold with a mass of plastic porcelain and subjecting it to pressure, the product being finished in the usual manner, as described.

200,446. LUBRICATORS. George H. Flewwe, Chicago, Ill. Filed Dec. 21, 1877.

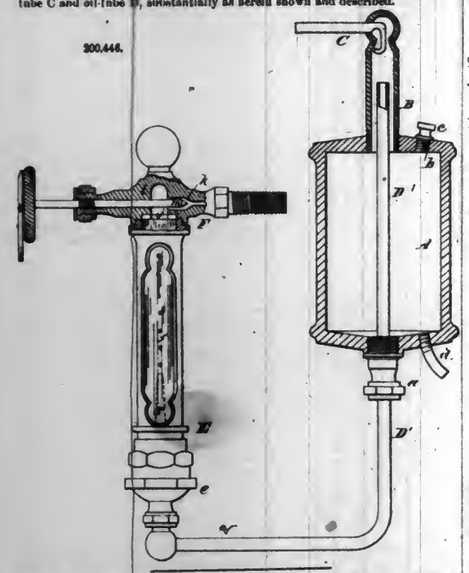
Claim.—1. The indicator E, consisting of the glass tube *f*, contained by a suitable support, and the nozzle *r*, in combination, substantially as shown and described.

2. The stand-pipe B, in combination with the oil-reservoir A, for receiving the steam-pipe C and oil-conducting pipe D, substantially as herein shown and described.

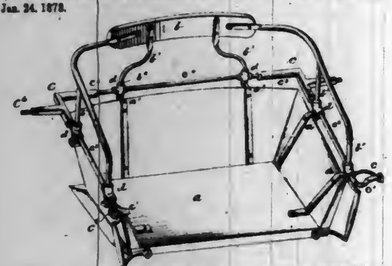
3. The combination of the indicator E and reservoir A, having the steam-tube C and oil-tube D, substantially as herein shown and described.

3. The combination of the indicator E and reservoir A, having the steam-tube C and oil-tube D, substantially as herein shown and described.

200,446.



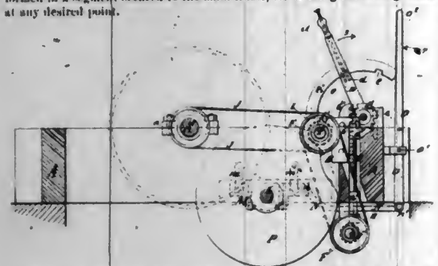
200,447. SHIFTING-RAILS FOR CARRIAGE-SEATS. Conrad Fritschy, Delaware, Ohio. Filed Jan. 24, 1878.



Claim.—The shifting rail *c*, made in sections c' c^2 c^3, united by socket-nuts *d*, having the vertical openings d^2, in combination with the seat *a*, having supports a', and lazy-back *b*, having supports b^1, all arranged and adapted together substantially as and for the purposes set forth.

200,448. CIRCULAR-SAW MILLS. Francis C. Frost, Anoka, Minn., assignor to himself and Joseph E. Craig, same place. Filed Dec. 7, 1877.

Brief.—The feed of a circular-saw mill can be changed during full run, and the necessity of stopping the mill and shifting belts on different pulleys obviated, by means of a large friction-wheel mounted on the shaft, one of the bearings of said shaft attached to pivoted links, and reciprocated by a pivoted lever connected to said bearing by a rod, a pair of friction-pulleys, of different sizes, mounted in a vertically-sliding frame operated by a lever attached to the pinion-shaft, and carrying a spring-pawl, which meshes into notches formed in a segment secured to the main frame, for holding the sliding frame at any desired point.



Claim.—1. The wheel P and shaft I, in combination with the bearing M, links *m*, rod N, lever O, and with the friction-rollers F F' and sliding frame H, substantially as and for the purpose specified.

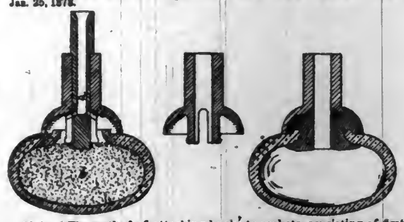
2. The combination of the rollers F F', connected to revolve simultaneously, the frame H, legs a^1 and rods b', racks b^{x} and pinions C, shaft *c*, lever D, pawl *d*, and notched segment E, substantially as and for the purpose specified.

200,449. ORGAN-PIPES. Albert Geminder, Columbus, Ohio. Filed Oct. 30, 1877.



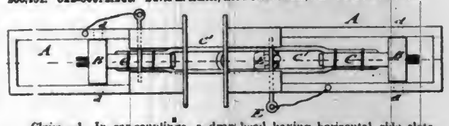
Claim.—An organ-pipe provided at the side and above its mouth with one or more openings, and having a corresponding valve or valves adapted to close the same, and arranged to be operated by suitable mechanism, whereby one or a series of tones differing from the natural tone or pitch of the pipe may be produced, at the option of the performer, substantially as and for the purpose described.

200,450. ATTACHING SHANKS TO DOOR-KNOBS. John W. Haines, Cambridge, Mass. Filed Jan. 25, 1878.



Claim.—The method of attaching knobs to sockets, consisting of first filling, or partially filling, the knob with sand or other suitable substance or material, so as to form a bed, and afterward pouring the lead or other substance upon the said bed, and around the neck or entrance of the knob, for the purpose of casting the same to the socket.

200,451. CAR-COUPLINGS. David R. Halter, Lee's Cross Roads, Pa. Filed Jan. 24, 1878.

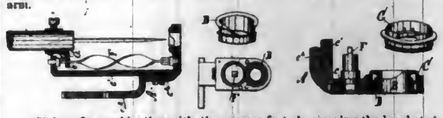


Claim.—1. In car-couplings, a draw-head having horizontal side slots, with end recesses or seats, in combination with an adjustable guide frame or block and link-stock attached to guide-frame, to extend link beyond mouth of draw-head or withdraw it, substantially as and for the purpose described.

2. The combination of the draw-head A, having slotted sides, adjustable guide-block B, and link-block C, having bottom spring catch *d*, with fulcrumed draw-lever D, substantially as and for the purpose specified.

200,452. EMBROIDERING ATTACHMENTS FOR SEWING-MACHINES. George E. Hart, Newark, N. J., assignor to Amasa Mason, New York, N. Y. Filed Dec. 21, 1877.

Brief.—Improvement on Letters Patent 183,330, October 17, 1876, and consists in driving the loop-carrier by means of two gears—one formed on an annulus surrounding the carrier, and the other on the end of a vertical, spirally-grooved, or twisted shaft, acted upon by an arm or projection on the needle-arm.



Claim.—In combination with the presser-foot A, carrying the bracket *e*, and the fixed laying-hub B and loop-carrier C, the spirally-grooved shaft F, adapted to be operated by a projection upon the needle-bar of a sewing-machine, and the gears D and F, all constructed and arranged to operate substantially as and for the purpose specified.

200,453. STOP-COCKS FOR STEAM-BOILERS. John L. Heald, Vallejo, Cal. Filed Dec. 1, 1877.



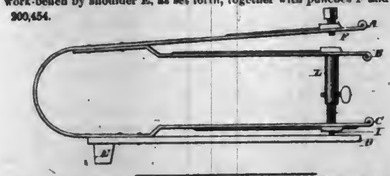
Claim.—1. A safety stop-cock having a relief-passage, E, and apertures *c c* formed in its plug, substantially as herein described, for the purposes set forth.

2. A safety stop-cock, A, having the inlet and outlet passages C D situated at right angles to each other, and the passage D extending through the barrel thereof, in combination with the plug B, having the aperture *b*, and the passage E and the relief-openings *c c*, the said passage leading out through the end of the plug, or through the channel *a* and outlets *e f*, all constructed and arranged together substantially as herein described, for the purposes set forth.

200,454. MACHINES FOR PUNCHING SHEET-METAL TUBING. Edward C. Higgins, Fairhaven, Mass. Filed Oct. 22, 1877.

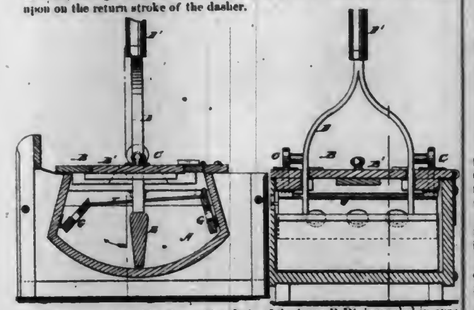
Claim.—For the purpose of punching with one movement both sides of a cylinder or piping of sheet metal at points diametrically opposite each other, the combination of arms A, B, and C and arm or standard D, secured to the work-bench by shoulder E, as set forth, together with punches F and I.

200,454.



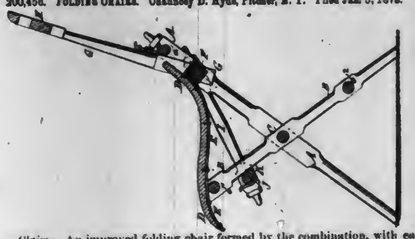
200,455. WASHING-MACHINES. Charles H. Horne, Berwick, Me. Filed June 30, 1877.

Brief.—The clothes are manipulated between the hinged boards and the dasher. By means of the rod connecting the two hinged boards, when the dasher squeezes the clothes up against one board, the other board is pulled forward, rolling the clothes over and presenting fresh surfaces to be operated upon on the return stroke of the dasher.



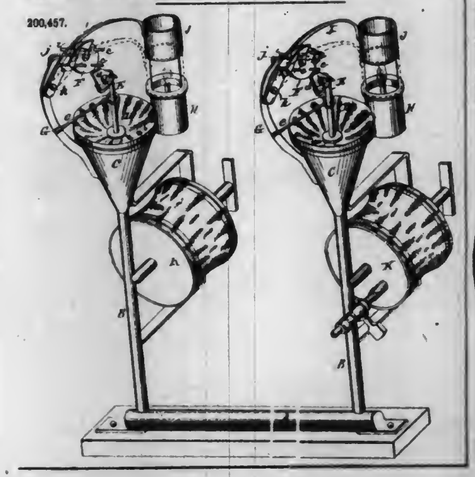
Claim.—The combination, with tub A, of the lever D D', journaled to eyes C C on cover B, and the hinged boards G G, unattached to said lever, but connected together by a rod, J, as shown and described.

200,456. FOLDING CHAIRS. Chauncey D. Hyde, Pitcher, N. Y. Filed Jan. 5, 1878.



Claim.—An improved folding chair formed by the combination, with each other, of the two pairs of legs A B, the pivoted bars I, the seat D E, and the back G H, the hooks K, the connecting-rounds a' b^1 b^2 J, and the pivoting-rounds C F, substantially as herein shown and described.

200,457.



200,457. PNEUMATIC SIGNALING APPARATUS. D. H. Inscoupe, Bloomington, Ill., assignor of one-half his right to Mathew Falcon, same place. Filed July 22, 1877.

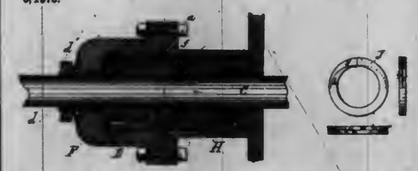
Brief.—The compressing device is operated by the passing train, and the air confined in the pipes is caused to lift the flexible coverings of the funnel-shaped chambers on the vertical pipes, whereby the signal is operated.

Claim.—1. The combination, with the tube A and air-compressing device K, of the tube or hollow post B, having a funnel-shaped mouth, C, flexible air-tight covering D, and a signaling device, substantially as and for the purpose described.

2. The combination of the tube A, tubes or hollow vertical posts B, with the lanterns H H, screens J J, and intermediate connecting mechanism, substantially as and for the purpose specified.

3. The combination of the tube or hollow post B, having funnel-shaped mouth C and flexible air-tight covering D, vertical rod H, wheel or disk G, having pins *e f*, pivoted arm I, carrying screen J, lantern H, and an air-compressing device, substantially as and for the purpose specified.

200,458. STUFFING-BOXES FOR STEAM-ENGINES. Chas. C. Jerome, Chicago, Ill. Filed Feb. 6, 1878.

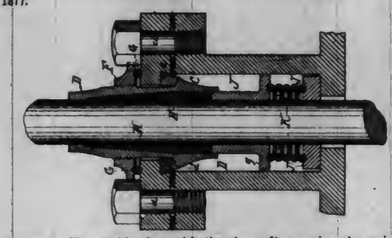


Claim.—1. The combination, with the supplemental stuffing-box B and packing-ring F, of the tapering cylinder D, having the spherical shoulder *s* seated within its recess in the ring, and provided with the sleeve *d* and nut d', for preventing the cylinder from being drawn off its seat by the receding movement of the piston-rod, as specified.

2. The combination, with the tapering cylinder D, of the sleeve H, containing a portion of the packing-rings, and made laterally adjustable with or independent of the cylinder, substantially as and for the purpose specified.

3. The packing-rings J, severed at one point and rabbeted on the outer edge and on alternate sides, to form the shoulders *h* eccentric to the bore of the ring, substantially as and for the purpose specified.

200,459. STUFFING-BOXES FOR STEAM-ENGINES. Chas. C. Jerome, Chicago, Ill. Filed Dec. 7, 1877.

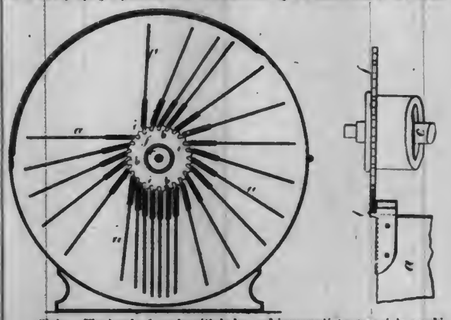


Claim.—1. The combination, with the sleeve D, carrying the series of packing-rings H, and adjusted to extend through the face-plate, of the adjusting-nut F and elastic packing-ring G, substantially as and for the purpose specified.

2. The combination, with the sleeve D, carrying the series of conical packing-rings, and arranged to admit of a lateral movement with the piston-rod, of the ring J', spring K, and the follower J, provided with the flange *g*, and arranged to loosely enter the sleeve, substantially as and for the purpose specified.

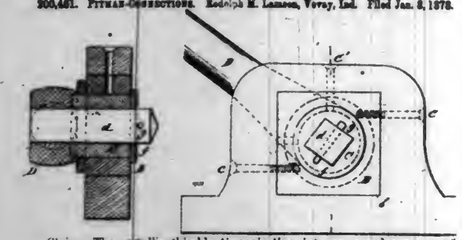
200,460. PICTURE-EXHIBITORS. John C. Koch, New York, N. Y. Filed Nov. 2, 1877.

Brief.—Holders or leaves similar to those of ordinary photograph-albums are hinged to heads mounted on a shaft which is actuated by clock-work. By means of stops on the heads and heel-pieces on the hinges the leaves are held in a nearly upright position when carried over by the revolution of the shaft.



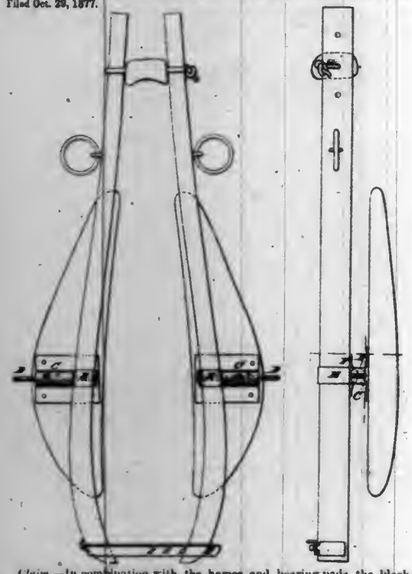
Claim.—The heads *f*, made with holes and intermediate stops *i*, in combination with the hinges of sheet metal attached to the leaves *a*, and having heel-pieces *l*, substantially as set forth.

200,461. PITMAN-CONNECTIONS. Rodolph M. Lamson, Vevay, Ind. Filed Jan. 8, 1878.



Claim.—The metallic thimble C, projecting into an annular recess of pitman D, and held therein, around the pitman-journal *d* and to the detachable bushing B, by washer *f* and pin *g*, as and for the purpose specified.

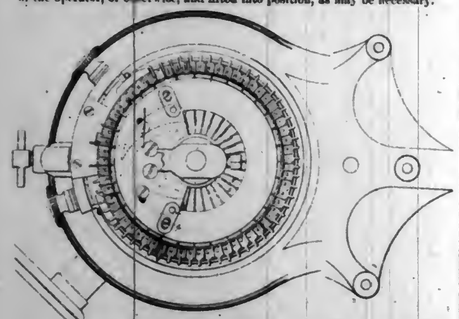
200,462. HAMES. Jos. M. Lassiter, Manchester, Tenn., assignor to R. L. Lassiter, same place. Filed Oct. 29, 1877.



Claim.—In combination with the hames and bearing-pads, the block F, having a threaded face-groove, the metallic hame-strap E, the long bearing-plate C', and the combined pivot-bolt and trace-hook D, having a portion of its shank screw-threaded, all as shown and described, for the purpose specified.

200,463. CIRCULAR-KNITTING MACHINES. George A. Leighton, Manchester, N. H., assignor of one-half his right to William Corey, same place. Filed May 7, 1877.

Brief.—The needles are elevated and depressed, according to the direction of the cam-cylinder, by means of two pivoted cams acting on the butts thereof. The dial-annulus is provided with a rim and open center and cam, which allow the dial-needles to be operated as required. The needles are constructed with tail-pieces, and have butts of a sufficient length for being engaged by the hand of the operator, or otherwise, and lifted into position, as may be necessary.



Claim.—1. The pivoted cams adapted both to elevate and draw down the needles, in combination with springs to hold the cams up, and with rests above and below the cams to support their free ends, substantially as and for the purpose described.

2. Two pivoted cams and their springs, adapted to operate substantially as described, in combination with pivoted needle-lifters, to elevate the butts of the needles above the pivots of the cams, substantially as described.

3. As a new article of manufacture, a knitting-machine needle provided with a tail-piece and a projecting portion, 2, as and for the purpose described.

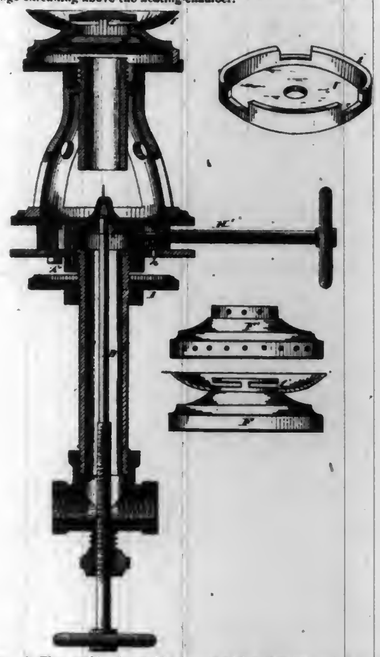
4. The combination, with the cam-cylinder, of needles provided with connected tail-pieces, and with butts adapted to project horizontally beyond the portion of the cylinder upon which they rest, to permit the butts to be engaged to lift the needles, and the tail-pieces below the butts retaining the needles in their grooves when elevated, all substantially as described.

5. The dial-annulus and separable cams *b'* *c'*, pivoted at *d'* *e'*, and rim *a'*, in combination with the dial-needles, to permit them to be operated to knit or to be drawn out of operative position to hold their loops, all substantially as described.

6. The annulus *y*, provided with an annular rim, *a'*, to prevent the needles from being drawn completely from their beds, and with a central recess to permit access to be had to the butts of the dial-needles, in combination with the dial-bed and its cams *b'* *c'*, substantially as described.

200,464. GASOLINE-BURNERS. Fordyce A. Lyman, Cleveland, Ohio, assignor of one-half his right to Solomon H. Schauck, same place. Filed Jan. 8, 1878.

Brief.—The vapor-passage in the base of the heating-chamber supplies a heating-flame. The initial heat is produced on the burning-plate by oil from the passage extending above the heating-chamber.



Claim.—1. The combination, with the vaporizing-chamber and heating-chamber surrounding the same, and formed with passages *h* and *h'*, of the burning-plate I, substantially as set forth.

2. The combination, with the vaporizing-chamber, provided with suitable valve mechanism, and the heating-chamber, which surrounds it and is formed with the passages *h* and *h'*, of the valve H' and the horizontal burning-plate I, provided with or without wind-guards *i*, substantially as set forth.

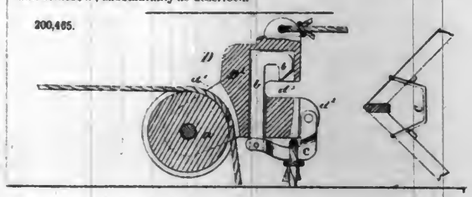
3. The combination, with the vaporizing-chamber and the annular heating-chamber, of the burner proper, the intermediate vertical tube, and the standards or open support upon which said tube and burner are raised independently above the vapor-jet orifice, substantially as set forth.

4. The combination, with the burner F, formed with slot *f'*, of the annular upwardly-flaring plate *f*, formed on the top thereof below said slot, substantially as set forth.

5. The combination, with the vaporizing-chamber, of the surrounding chamber H, provided with burning-jets *h* and valve H', for supplying gasoline or vapor to the said jets, substantially as described.

6. The combination, with the main vapor-jet, of the chamber H, plate I, and orifices *h'*, substantially as described.

200,465.



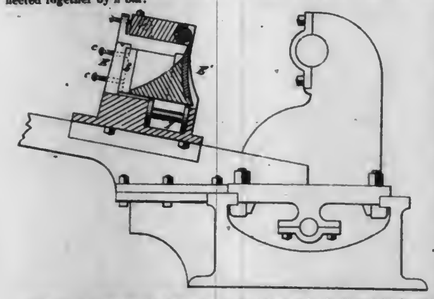
200,466. HAT-ELEVATORS. Charles M. Mallory, Wauseon, Ohio, assignor to himself and Mathias Orendorf, same place. Filed Jan. 8, 1878.

Brief.—The beveled catch rides over and hooks onto a brace when the carrier is brought to the position for loading. The elevation of the load releases the catch.

Claim.—The carrier D, constructed of the combination of the block D', provided with the lugs *d* *d'* *d''* and the opening *d'''*, with the pulley *e*, sliding catch *b*, and lever *c*, substantially as specified.

200,467. MACHINES FOR CUTTING VENEERS. John D. McEachren, Galt, Ontario, Canada. Filed Jan. 14, 1878.

Brief.—The direct longitudinal movement of the knife-bar, notwithstanding its great liability to wear loose in its guides, owing to the pressure of the log against the knife, is preserved by means of a carrier-frame provided with standards carrying gibs adjustable by screws passing through the rear of said standards. The friction which would ensue from the great downward pressure upon the knife and bar in the act of cutting is relieved by supporting the knife-bar upon friction-rollers arranged in a recessed carrier-frame and connected together by a bar.

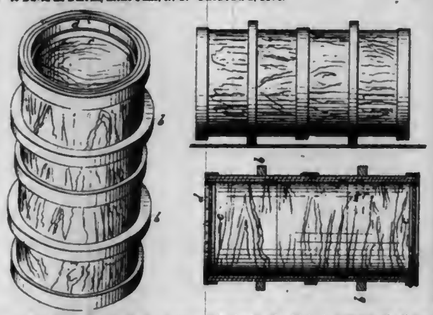


Claim.—1. The carrier-frame provided with standards E and E', in combination with the gib *b* and adjusting-screws *c*, for the purpose of preserving the rectilinear movement of the knife-bar, as set forth.

2. The supporting-rollers I and connections K, in combination with the carrier-frame and knife-bar, as set forth.

3. The combination of a recessed carrier-frame and reciprocating knife-bar, supported upon friction-rollers and prevented from undue lateral movement by adjustable gibs, as shown and described.

200,468. BARRELS. John D. McEachren, Galt, Ontario, Canada, assignor of one-half his right to David H. Farrell, Little Falls, N. Y. Filed Jan. 2, 1878.



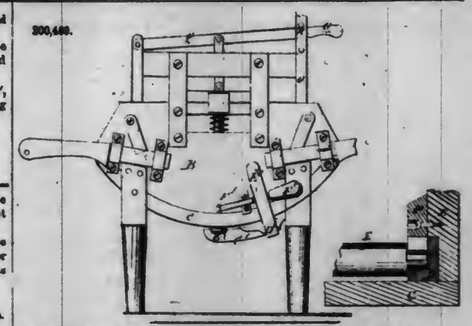
Claim.—1. A barrel or package the body of which is composed of two hollow cylinders of veneers, rolled one upon the other, the inner cylinder formed of two or more pieces of veneer, scarfed and lapped at their meeting edges, and the grain of the wood running round the barrel, and an outer cylinder, composed of one or more pieces of veneer, with its grain running parallel to the length of the barrel or package, as and for the purpose specified.

2. In a veneer barrel, the combination of a barrel-cylinder composed of two hollow cylinders, rolled one upon the other, having the grains of the wood of the respective cylinders crossing each other at right angles, the inner cylinder formed of two or more pieces, scarfed and lapped at their meeting edges, with the hoops *b b* and *c d*, as and for the purpose shown and described.

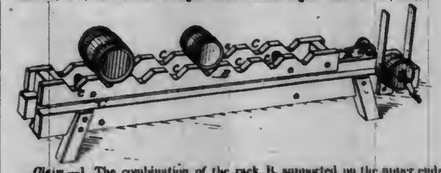
200,469. WASHING-MACHINES. Joseph Metais, Chippewa Falls, Wis. Filed Aug. 11, 1877.

Claim.—In combination with the suds-box having a discharge-aperture in its bottom, the arm O', carrying ping B', the shaft D', arm E', and angular or shouldered spring-catch F', all as shown and described.

200,469.



200,470. MACHINES FOR WASHING CASKS. Adolph Mantenberger and H. M. Underwood, Kenosha, Wis.; said Underwood assignor to said Mantenberger. Filed Nov. 12, 1877.



Claim.—1. The combination of the rack B, supported on the upper ends of links C, a buffer or stop to limit the movement of the rack, and the slotted pitman and crank to impart motion thereto, substantially as shown and described.

2. In a machine for washing casks, the combination of a reciprocating frame to carry the casks, mechanism for throwing said frame endwise, and a buffer or buffers arranged to suddenly arrest the movement of the frame at each stroke, substantially as described.

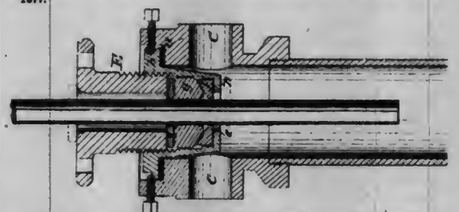
3. In a cask-washing machine, a cask-carrying frame having a horizontal and vertical movement, which is repeatedly elevated by positive action, and permitted to descend by gravity against a stop or buffer.

4. In a cask-washing machine, a reciprocating cask-carrying frame, a buffer or stop therefor, and operating mechanism, said members being combined and arranged substantially as shown.

5. In a cask-washing machine, a cask-carrying frame elevated by positive-acting mechanism, and permitted to descend endwise to the right and left alternately against stops or buffers.

6. In combination with the reciprocating rack B, mounted on the links C, the double elastic buffer *a a*.

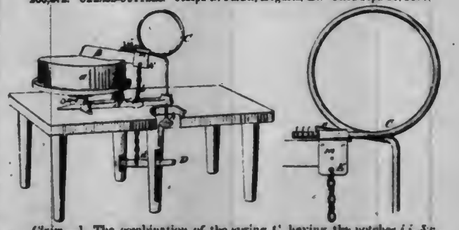
200,471. OIL-SAVER AND CASING-HEAD. Edgar J. Northrup, Warren, Pa. Filed Oct. 26, 1877.



Claim.—1. The beveled ring *f* and washers *i*, in combination with the sleeve E and cone D, for adapting the same to an elastic cable-packing, as herein shown and described.

2. The packing-ring *k*, having an aperture flared or countersunk on both sides, as and for the purpose specified.

200,472. CHEESE-CUTTERS. Joseph E. Parker, Augusta, Me. Filed Sept. 26, 1877.



Claim.—1. The combination of the spring C, having the notches *i i*, &c., therein, with the knife H, having the hand *m* and spring *n* thereon, operating as and for the purposes set forth.

2. The combination of the spring C, knife H, chain *b*, and treadle D, substantially as described, and for the purposes set forth.

3. In a cheese-cutter, the knife H, hand *m*, spring *n*, spring C, with the

notches *i i* therein, in combination with the chain *b* and treadle D, or its equivalent, as specified and described.

4. The combination of the turn-table A, knife B, and spring C with the chain *b* and treadle D, or its equivalent, substantially as and for the purposes specified.

5. The combination of the turn-table A, knife B, spring C, and bed-plate G with the chain *b* and treadle D, as specified and described.

6. The combination of the turn-table A, knife B, spring C, bed-plate G, and set-screw *h* with the chain *b* and treadle D, or its equivalent, substantially as described, and for the purposes set forth.

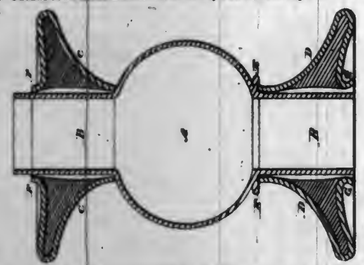
7. The combination of turn-table A, knife B, and spring C, as and for the purposes set forth.

8. In a cheese-cutter, the combination of the turn-table A, knife B, having the lands *n* and spring *s* thereon, with the spring C, having the notches *i i*, &c., therein, substantially as and for the purposes set forth.

9. In a cheese-cutter, the knife B and spring C, in combination with the bed-plate G, adapted to allow the knife to be swung to the right or left, as described, and for the purposes specified.

10. The improved cheese-cutter, composed of the bed-plate G, turn-table A, knife B, having the lands *n* and spring *s* thereon, in combination with the spring C, having the notches *i i*, &c., therein, the set-screw *h*, chain *b*, and treadle D, all operating as described, and for the purposes specified.

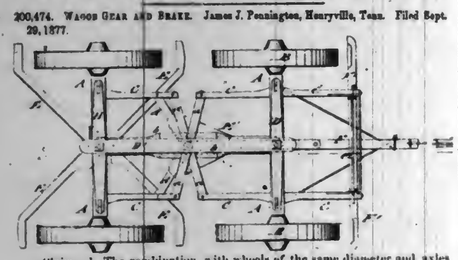
200,473. GLOBES FOR STREET-LAMPS. Faust Le Roy Bescur, Pittsburg, Pa. Filed Jan. 15, 1878.



Claim.—1. A globe for a street-lamp, constructed with an extension, B, and grooved flange E, substantially as and for the purpose set forth.

2. The combination of the globe A, provided with a flange, E, and extensions B, with the reflectors C and D, having projections F and G, all constructed and arranged substantially in the manner shown and described.

200,474. WAGON GEAR AND BRAKE. James J. Pennington, Henryville, Tenn. Filed Sept. 29, 1877.

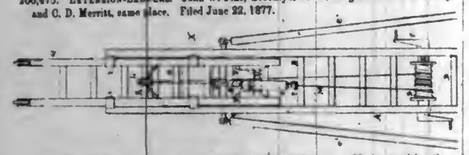


Claim.—1. The combination, with wheels of the same diameter and axles connected by median pivoted reach A', of the front and rear bounds C, connected by pivoted cross-rods *a*, and the bolsters D D, turning on king-bolts and connected by piece D', as and for the purpose described.

2. The combination of the double brakes E, having front arms, connected by pivot links *d* with the slide-bar E', the tongue F, and the suspended brake-lever F', as and for the purpose set forth.

3. The combination, with the sliding tongue or swinging shafts and intermediate actuating center piece, of front brakes applied to tongue or shafts, and fulcrumed diagonal hind brakes, substantially in the manner and for the purpose set forth.

200,475. EXTENSION-LADDERS. John W. Pine, Brooklyn, N. Y., assignor to J. W. Buckley and C. D. Merritt, same place. Filed June 22, 1877.



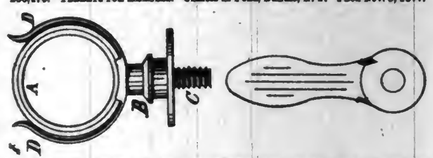
Claim.—1. In an extensible ladder, the elevating-rope M, in combination with the device for linking its two ends together to form an endless rope, composed of the barreled spring N and prolongations R and T, as and for the purposes set forth.

2. In combination with the linking device, composed of the barreled spring N, turn-buckle S, and prolongations R and T, the cross-bar U of the extension ladder, as and for the purposes set forth.

3. The combination of the main and extensible ladders A and Q, safety-latch Y, spring a^3, guard b^2, and step c^2, as and for the purposes set forth.

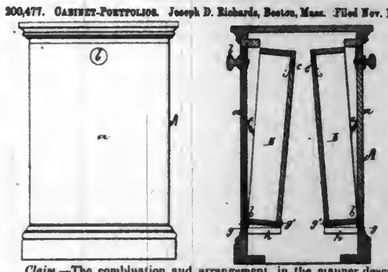
4. The combination of the main and extensible ladders A and Q with the shoes c^3 and self-locking jointed eyebolt g^2, secured to their upper ends, as constructed, and for the purposes set forth.

200,476. TERRETS FOR HARNESS. Charles L. Pond, Buffalo, N.Y. Filed Nov. 3, 1877.



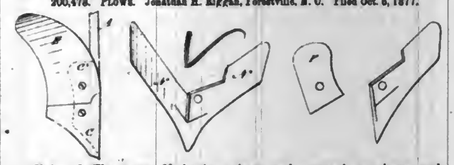
Claim.—The terret A B C, in combination with one or more encircling springs, D, arranged substantially as shown, for the purpose set forth.

200,477. CABINET-PORTFOLIOS. Joseph D. Richards, Boston, Mass. Filed Nov. 12, 1877.



Claim.—The combination and arrangement, in the manner described, of the cabinet A and portfolios B C, provided with rollers *g'* to run on rails *h*, and pivots *e e* to slide in slots *d d*, and with a cover, *a*, connected to the body by a chain, *c*, all constructed as specified, for the purpose stated.

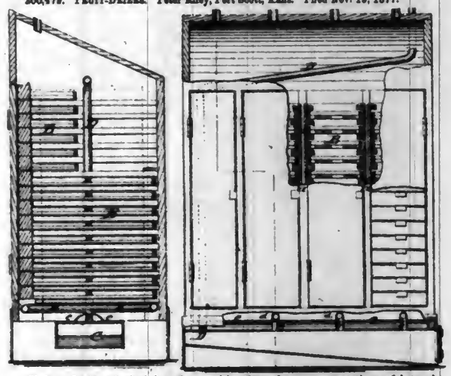
200,478. PLOWS. Jonathan H. Riggan, Forestville, N. C. Filed Oct. 6, 1877.



Claim.—1. The sweep N, having wings, and recessed, as shown and described, so that it may be substituted for point D, as set forth.

2. The combination of the guard-plate P with the standard A and the sweep, to prevent the seat for the mold-board from being worn, substantially as herein shown and described.

200,479. FRUIT-DRIERS. Peter Riley, Fort Scott, Kans. Filed Nov. 19, 1877.



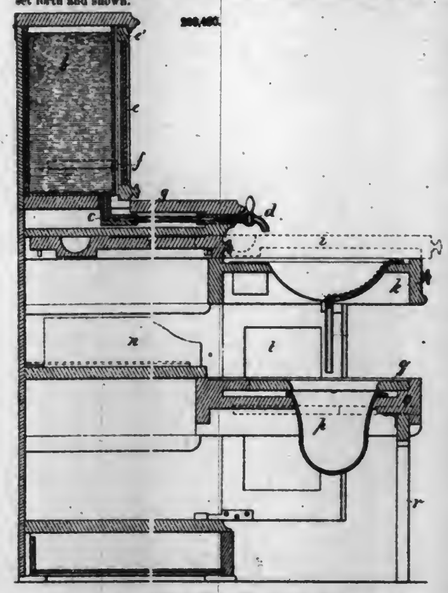
Claim.—1. In a fruit-drier, the combination of one or more tiers of lateral trays, separated by vertical passages, with a longitudinal fire-place extending at right angles thereto, and having lateral pipes with T ends, and a central concave guard-plate, to distribute the heat equally through the drier, substantially as and for the purpose set forth.

2. In a fruit-drier, the combination of one or more tiers of fruit-trays and a shorter end tier of trays with a longitudinal fire-place extending at right angles below the trays, and with a smoke-pipe that extends upward back of the short tier of trays, then at suitable inclination through the top part, and to the outside at the opposite end, to keep up a uniform current of heated air through the trays and the top openings, substantially as and for the purpose set forth.

200,480. TOILET-CABINETS. Geronimo Rivera, Bridgetown, Island of Barbadoes, West Indies. Filed Aug. 9, 1877.

Claim.—The herein described improved toilet-cabinet, consisting of the closets *a a*, water-tank *b*, pipe *c*, faucet *d*, adjustable looking-glass *e*, movable top *g*, sliding towel-racks *h h*, sliding writing-desk *i*, sliding wash-stand *k*, sliding towel-drawer *n*, sliding chamber-chair *o*, with its bowl *p*, cover *q*, and folding supports *r*, and the sliding shirt or slipper drawer *s*, as and for the purpose set forth and shown.

200,481.



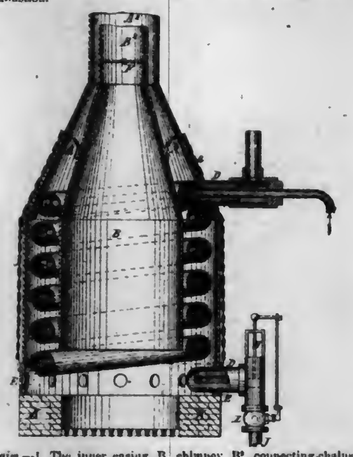
200,481. CHAMBER-VESSELS. Abel M. Rentoy, New York, N. Y. Filed July 3, 1876.



Claim.—In connection with a chamber-vessel, the device A, fixed or adjustable, and constructed substantially as and for the purpose specified.

200,482. COIL STEAM-GENERATORS. Weber R. Salisbury, Battle Creek, Mich., assignor of one-half his right to Henry J. Brimmer, Adams, N. Y. Filed Feb. 10, 1877.

Brief.—The water is heated in the inner coil while passing through the steam-space in the outer coil. Said inner coil is perforated near its lower end, through which perforations the water is emitted and immediately flashed into steam. The inner shell, operated by chains, controls the course of the products of combustion.

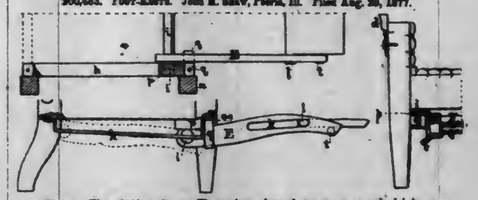


Claim.—1. The inner casing B, chimney B', connecting-chains G, and turning valve F, in connection with casing A and circle-valve E, all in combination with a coil boiler, as herein specified.

2. A coil boiler consisting of a double coil, one coil of less diameter than, and located within the interior of, the other, said inner coil or pipe being partially perforated, as described and shown.

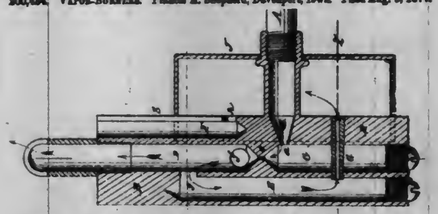
3. A coil boiler with a double coil, one located within the interior of the other, said inner coil conducting and heating the feed-water, in combination with branches or T-pieces, the lower one of said branches being provided with piston H and valve L, by means of which the water in the coil is kept at a proper height, all constructed and arranged substantially as shown and described.

200,483. FOOT-RESTS. John M. Shaw, Peoria, Ill. Filed Aug. 20, 1877.



Claim.—The sliding frame E, having slotted transverse rods *i i*, in combination with lateral rods *h h* of the chair, hangers or rests *q q*, and blocks P P, substantially as and for the purposes described.

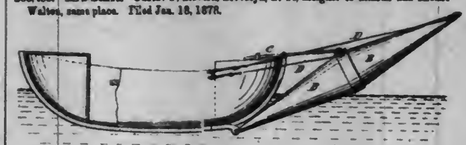
200,484. VAPOR-BURNERS. Francis B. Shepherd, Davenport, Iowa. Filed Aug. 3, 1877.



Claim.—1. The frame or case A, constructed with chambers C D E, communicating with each other, as described, in combination with the tubes A, F, and G, arranged substantially as and for the purposes specified.

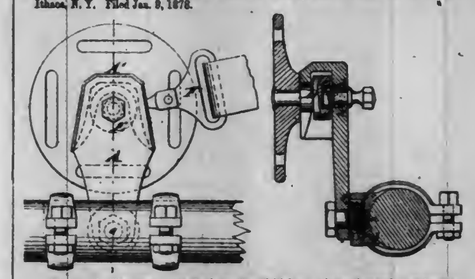
2. The shield or case J, combined with the slitted tube F and the tubes A G, arranged substantially as described.

200,485. LIFE-BOATS. Gustav F. Sievers, Brooklyn, N. Y., assignor to himself and Alonzo Walter, same place. Filed Jan. 18, 1878.



Claim.—A double-cone buoy, B, pivoted at one end to bottom of boat, held from the middle by a median boom, C, and braced laterally by stays D, substantially as shown and described, for the purpose specified.

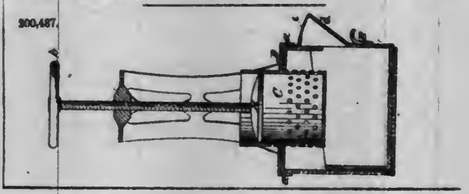
200,486. APPARATUS FOR ATTACHING HARNESS TO THE SHAFTS. Milton H. M. Smith, Ithaca, N. Y. Filed Jan. 8, 1878.



Claim.—1. The snap attached to the thill by a pivot through a side concaved plate clamped to said thill, as shown and described.

2. The snap cushioned to the pivot-plate on thill by a spring that allows an easy and gradual back pressure, as specified.

200,487.



200,487. HOUSEHOLD-FRAMES FOR FRUITS, &c. Emily A. Stuart, Brooklyn, N. Y. Filed Oct. 27, 1877.

Brief.—The receptacle for fruit, &c., for pressure and extraction of juice, is made in a separate piece, so as to be readily detached. The drawer that receives the extract is provided with a strainer and spout.

Claim.—1. The perforated receptacle C, having a central flange, D, the screw-actuated follower H, and the box A, having the drawer B, in combination, as herein shown and described.

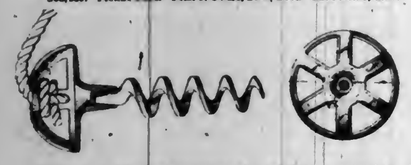
2. The combination of the spout *d*, having the strainer *e*, with the drawer B, as herein shown and described.

200,488. TEMPORARY BINDERS. H. E. Thompson, Jr., Pittsfield, Mass. Filed Jan. 30, 1878.



Claim.—An improved binder or file, formed by the combination of the semi-tubular plate C, the semicircular perforated end plates D D, the hinged arms F F, and the detached rod E with each other, and with the back B and sides A A of the case, substantially as herein shown and described.

200,489. PICKET-PINS. Peter J. Tweed, Blair, Nebr. Filed Dec. 8, 1877.



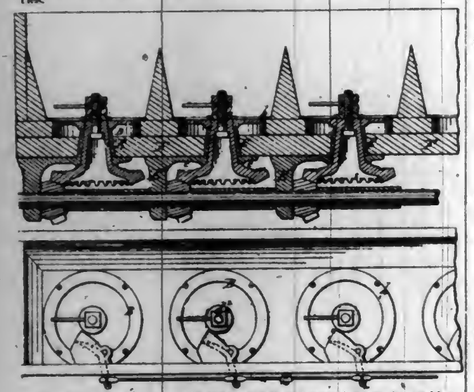
Claim.—1. A picket-pin consisting of a spiral or screw having a hollow convex head, in which may be swiveled a tedder-rope, as herein shown and described.

2. A picket-pin provided with a conical sleeve projecting from the under surface of its head, forming a bearing-surface for supporting the screw against lateral strain, as herein shown and described.

3. A picket-pin having a screw formed of a tapering bar, as herein shown and described, whereby the screw is thickest at its upper end and gradually diminishes in thickness toward its lower end.

200,490. FERTILIZER-DISTRIBUTERS. H. P. Underhill, Baltimore, Md. Filed Jan. 4, 1878.

Brief.—Projecting into the hopper and over the horizontally-rotating disks are pivoted tongue-plates, for controlling the discharge of fertilizer by splitting the flowing stream and discharging a part into the delivery-receptacles.



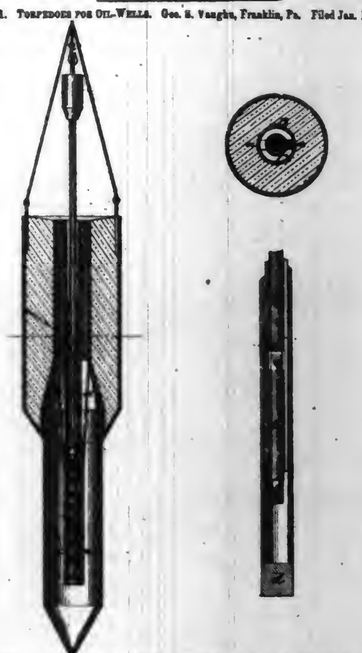
Claim.—1. The horizontally-rotating disk or hopper-bottom, in combination with an adjustable pivoted tongue plate or gage, for effecting and controlling the discharge of the contents of the hopper, substantially as described.

2. The combination, with the hopper, of a series of horizontally-rotating disks or bottom plates, each provided with an adjustable pivoted tongue plate or gage, for regulating the discharge of the grain or fertilizer, as described.

3. The combination, in a machine for distributing fertilizers, of a series of horizontally-rotating disks, separately-pivoted tongue plates or gages for regulating the discharge of the fertilizer, and means for simultaneously adjusting said gages, substantially as described.

4. The combination of the rotating hopper-bottom or disk, the pivoted tongue-plate moving over said disk, and the horizontally-rotating stirrer arranged above said disk and tongue-plate, said parts being combined and operating substantially as described.

200,491. TORPEDOES FOR OIL-WELLS. Geo. S. Vaughn, Franklin, Pa. Filed Jan. 11, 1878.

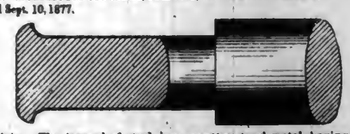


Claim.—1. An oil-well torpedo consisting of a lower portion or shell for the nitro-glycerine, of a double upper part or shell filled with tamping material, of a central perforated guide-tube, with solid bottom end or anvil, extending through lower and upper shells, and of a weighted drop-rod, substantially as and for the purpose described.

2. The combination of the lower shell or torpedo and the upper double tamping-shell with a central guide-tube, suspended from the upper shell, and having perforations, and solid lower or anvil end, and with a suspended and weighted drop-rod and capped start, substantially as and for the purpose specified.

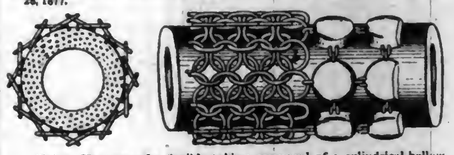
3. The combination of the perforated guide-tube, having anvil at lower end, and of a weighted drop-rod, suspended from a hook of the bail of the torpedo, with a short iron rod or start, having percussion-caps at both ends, and connected by a ferrule to the drop-rod, substantially as and for the purpose specified.

200,492. JOURNALS FOR CAR-AXLES, SHAFTING, &c. Harwood Wakeman, New York, N. Y. Filed Sept. 10, 1877.



Claim.—The journal of steel, iron, or other hard metal, having the pores or inequalities of the surface filled with lead or similar soft metal, substantially as and for the purposes set forth.

200,493. ARMOR FOR FLEXIBLE TUBING. Harwood Wakeman, New York, N. Y. Filed Nov. 28, 1877.



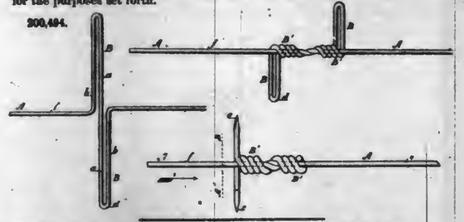
Claim.—The armor for flexible tubing, composed of a cylindrical hollow chain, the links of which are connected substantially as set forth.

200,494. BARBED FENCE-WIRES. C. F. Washburn, Worcester, Mass. Filed Nov. 17, 1876.

Claim.—1. A barbed fence-wire formed from a single strand of wire, looped together and cut to form four points or barbs at given distances apart, substantially as described.

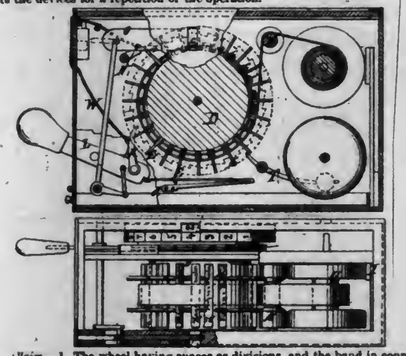
2. The combination, with the parts *e* and *f* of the sections of main wire or wires A, of the twists B B' and four points or barbs, *c*, substantially as and for the purposes set forth.

200,494.



200,495. BALLOT-BOXES. Morris D. Williams, Syracuse, N. Y. Filed July 26, 1877.

Brief.—By means of an outwardly-projecting lever, a door is opened, through which the ballot is inserted, and received upon the periphery of a wheel, which periphery is divided into spaces by means of pins, between which and around the wheel is wound a flat belt, which binds each ballot within the space into which it is inserted, a bell sounded, and an additional number indicated by the register. Releasing the lever closes the door and sets the devices for a repetition of the operation.



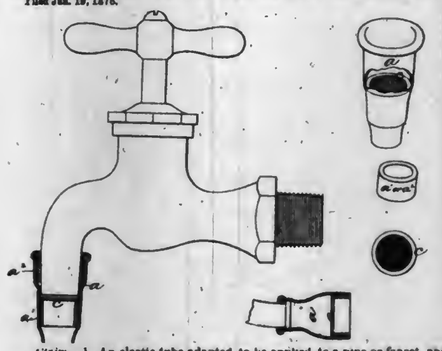
Claim.—1. The wheel having spaces or divisions, and the band in connection therewith, combined and arranged in relation to the opening in the box through which the ballots are deposited, substantially as described.

2. The combination of the wheel having spaces or divisions to receive the ballots, the door to the passage for the ballots, and the band in connection with said wheel, substantially as described.

3. The combination of a receiving-wheel having a series of spaces for the ballots, the band for confining the ballots thereon, and the register for recording the ballots, substantially as described.

4. The combination, in a ballot-box, of the self-closing door to the opening through which the ballots are deposited, the wheel with separate spaces for the ballots, the band for retaining the ballots on the wheel, and the bell for signaling the opening of the box, substantially as described.

200,496. STRAINERS FOR FAUCETS AND WATER-PIPES. A. H. Willoughby, Lowell, Mass. Filed Jan. 19, 1878.



Claim.—1. An elastic tube adapted to be applied to a pipe or faucet, and provided with a detachable sieve inclosed in said tube, as set forth.

2. The elastic tube or holder *a*, provided with a supporting ring or flange, a^1, combined with a sieve, *c*, resting on said ring, as set forth.

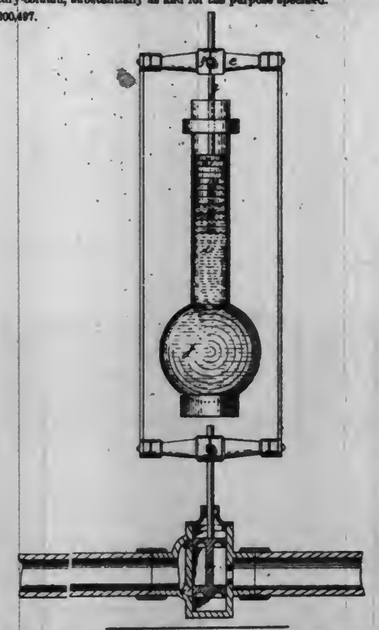
3. The elastic tube or holder provided with sieve *c*, combined with an elastic ring, a^2, as set forth.

200,497. DEVICES FOR INDICATING AND AUTOMATICALLY REGULATING THE TEMPERATURE OF APARTMENTS. Edward Armstrong, Allegheny, Pa., assignor to himself and James B. Hutchinson, same place. Filed Feb. 2, 1878.

Brief.—Tube I is rigidly secured by a bracket to a side wall of the room.

Claim.—In combination with a heater or register valve, the cross-heads, the float or piston adjustably connected to the cross-head, and the graduated mercury-column, substantially as and for the purpose specified.

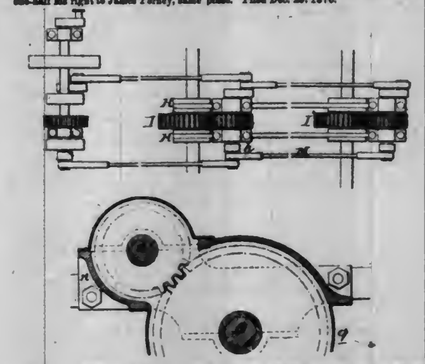
200,497.



200,498. WASHES FOR COVERING BRICK SURFACES. Frederick W. Bartlett and Chas. Ward, Buffalo, N. Y. Filed July 19, 1877.

Claim.—A compound for washing brick buildings, &c., consisting of sulphate of iron, sulphate of copper, a coloring matter, and milk, incorporated in about the proportions herein set forth.

200,499. DRIVING-GEAR FOR STREET-CARS. Joshua Bishop, Philadelphia, Pa., assignor of one-half his right to James Forney, same place. Filed Dec. 29, 1876.



Claim.—1. The combination of the frames H H, having bearings for the axles and for the shaft geared to the axle, with the segments m n, connecting the said frames, as set forth.

2. The combination of the frames H H, having bearings for the axle and for the shaft geared to the axle, with the segments m n and shields *p q*, as described.

200,500. CORSETS. Charles A. Hahn, McGrawville, N. Y., assignor to Perrin H. McGraw, same place. Filed Nov. 28, 1877.

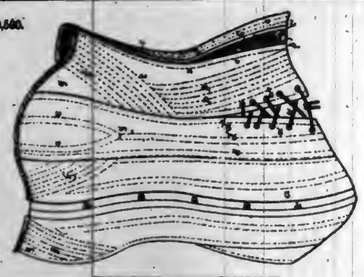
Claim.—1. A corset provided with stiffening-ribs, having A-shaped slits directly over the hips, in which are inserted A-shaped elastic gores, filling the slits, and extending across and resting on the hips, all as set forth.

2. The combination, in a corset, of the elastic A-shaped hip-gores *b*, and ribs extending from directly below the arms, and stiffening the opposite edges of said gores, as described.

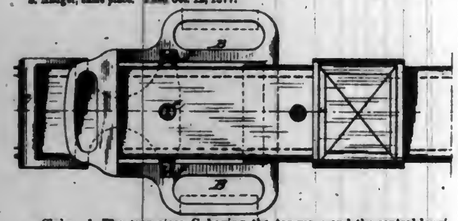
3. The combination, in the front of the corset, of the bone d^3, extending to the point *y*, the bones *c c*, diverging from said point, and bones *d* d^2, as set forth.

4. The combination, in a corset, of the A-shaped elastic gore extending across the hip, and regulated by the lacings *w* of a front slit, as described.

200,500.



200,501. BUCKLES. Walter Bray, Jr., Auburn, N. Y., assignor of one-half his right to Phineas S. Hadger, same place. Filed Oct. 12, 1877.

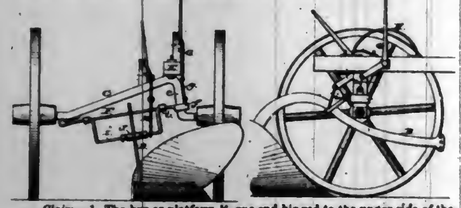


Claim.—1. The loop-piece C, having the tongue *e* and the central longitudinal bar *d*, which connects the curved bearing-loop *a*, in combination with the buckle-frame B *f*, all constructed and operating to relieve the tongue of undue strain, as specified.

2. The loop-piece C, consisting substantially of the part *a*, the tongue *e*, and bearing-arms *b b*, shoulders *g g*, the central longitudinal bar *d*, and the curved loop *c*, adapted to be used in combination with the buckle-frame, as described.

200,502. SULEY-PLOWS. Robert C. Buckley, Peoria, Ill. Filed Sept. 24, 1877.

Brief.—The axle-tree is inclined from the land-side wheel upward, and then downward at right angles to the axle of the furrow-wheel. A bar is hinged to the under side of the axle-tree near the land-side wheel, and to this bar the plow-beam is attached, the free end embracing the descending portion of the axle-tree, and is raised and lowered by a lever.



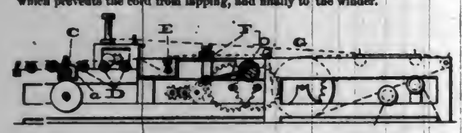
Claim.—1. The bar or platform F, one end hinged to the under side of the axle-tree, and its other connected with a lever, by means of which and its connection with the plow-beam the position of the plow with relation to the sulky-frame is adjusted, substantially as and for the purpose specified.

2. The combination of the inclined axle-tree C, hinged platform F, and lever G with the bail I, substantially as and for the purpose specified.

3. The combination of the inclined axle-tree C, hinged platform F, bail I, and lever K, substantially as and for the purpose specified.

200,503. MACHINES FOR POLISHING AND FINISHING CORD. William Buckius, Philadelphia, Pa. Filed Nov. 19, 1877.

Brief.—After passing over emery-rollers, which remove the waste, the cord is dampened and sized. It is then subjected to the action of a reciprocating rubber, provided with a yielding connection and elastic faces, from whence it passes around a heating-cylinder and a roller placed diagonally, which prevents the cord from lapping, and finally to the winder.

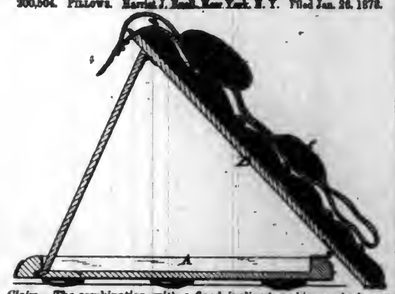


Claim.—1. In an apparatus for polishing and finishing twine and cords, the emery-rollers B, dampening-rollers C, with water-troughs c, wet-rollers D, having fibrous surfaces, and size-troughs, with sizing-rollers E, all combined and arranged for successively treating the twine or cord, substantially as herein shown and described.

2. In combination with the sizing-rolls E, wet-rolls D, and dampening-rolls C, the heating-cylinder G and reciprocating rubber F, constructed substantially as described, and adapted to operate between the sizing-rollers and the heating-cylinder, as herein shown, and for the purposes specified.

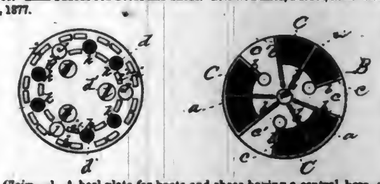
3. The cylindrical roller *J* at the end of the apparatus, set diagonally to or out of parallel with the heating-cylinder G, in combination with said cylinder and with the polishing-rolls H, the latter being intermediate between said roller *J* and the heating-cylinder G, substantially as and for the purposes herein shown and described.

200,504. PILLOWS. Harriet J. Heath, New York, N. Y. Filed Jan. 26, 1878.



Claim.—The combination, with a fixed inclined cushion or body support, B, of a combined adjustable pillow cover and holder, E, substantially as and for the purpose set forth.

200,505. HEEL-PLATES FOR BOOTS AND SHOES. Levi W. Buxton, Nashua, N. H. Filed Dec. 22, 1877.



Claim.—1. A heel-plate for boots and shoes having a central boss, *a'*, and edge flange *a*, the radial ribs *b*, sector-shaped compartments *c*, intervening sector-shaped spaces *c'*, and equidistant screw-holes, substantially as specified.

2. The heel-plate B, having sector-shaped recesses upon its upper side, the apertures *d*, extending through said plate, the cushions C, fitting said recesses and having studs *k* projecting through said apertures, the annular spaced corks *l l'*, and the spaced spurs *j* upon its under side, and the equidistant screw-holes *d'*, substantially as specified.

200,506. BEE-FEEDING DEVICES. Emma Carter, Folsom City, Cal. Filed Oct. 9, 1877.

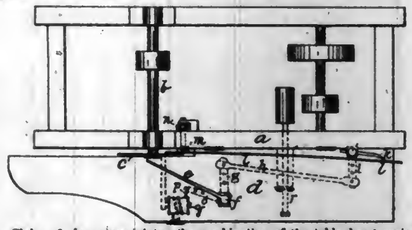
Brief.—The frame holding the cloth is set over the comb-frames, so that the bees can get the material put upon the cloth. A screen protects the cloth.



Claim.—The improved bee-feeding device herein described, consisting of the bottomless box or frame C, having cloth *d* and screen D, all combined, arranged, and operating substantially in the manner and for the purposes herein shown and specified.

200,507. STAVE-JOINTERS. Thomas M. Chapman, Old Town, Me. Filed Jan. 9, 1878.

Brief.—The stave automatically adjusts the feeding-guide and table to regulate the swell and bevel of the stave.



Claim.—1. In a stave-jointer, the combination of the table *d* and spring-guide *l* with the levers *e* and *i* and connecting mechanism, substantially as described, whereby the bilge of the stave is automatically regulated, substantially as specified and shown.

2. In a stave-jointer, the hinged table *d*, lever *e*, and arm *o*, in combination with the cord or chain *p* and pulley *q*, whereby the bevel or list of the stave is automatically regulated, substantially as and for the purposes set forth.

200,508. SEWING-MACHINE CHAIRS. Franklin Chichester, Poughkeepsie, N. Y. Filed May 7, 1877.

Claim.—1. A sewing-machine chair provided with an adjustable back-panel, constructed with a sliding bar, pivoted to the vertical arm or lever supporting the adjustable back-panel, and resting in contact with a cam formed on one end of a bell-crank lever, said bell-crank lever being pivoted to the rear arm of the supporting-spider, and combined with an operating-lever and plunger, substantially as and for the purpose described.

2. In a sewing-machine chair, the combination of a cam, a series of levers, whereby the cam is operated, and an adjustable back-panel and its pivoted support, substantially as and for the purpose described.

3. In a sewing-machine chair, the combination of a cam, bell-crank lever, operating-lever, and plunger, substantially as and for the purpose shown and described.

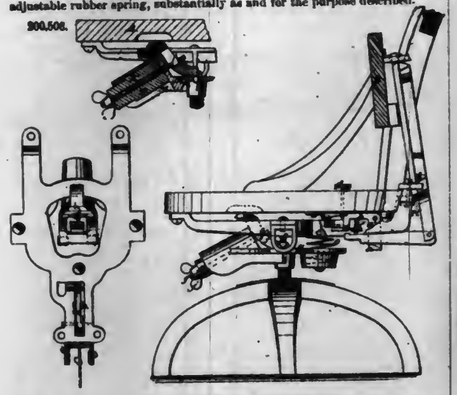
4. In a sewing-machine chair, a bell-crank lever and cam, combined with a spring, F, operating in effecting the adjustment of the back-panel, substantially as described.

5. In a sewing-machine chair, the combination of a vertical lever or arm supporting the adjustable back-panel with a spring, whereby the panel is protruded, substantially as and for the purpose described.

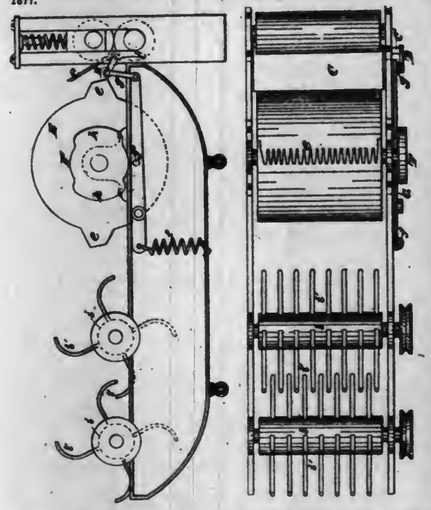
6. In a sewing-machine chair, a rubber spring, with its upper surface protected by a curved shield, in combination with a set-screw, whereby the same is made adjustable, substantially as and for the purpose described.

7. In a sewing-machine chair, a rocking yoke, in combination with an adjustable rubber spring, substantially as and for the purpose described.

200,509.



200,509. MACHINES FOR WASHING WOOL. John Clegg, Providence, R. I. Filed May 16, 1877.



Claim.—1. The lifting-cylinder provided with buckets or troughs, open only at their tops or mouths, and arranged substantially as described, so as to lift the wool and at the same time retain it in a thoroughly saturated condition, for presentation to the squeeze-rolls, as set forth.

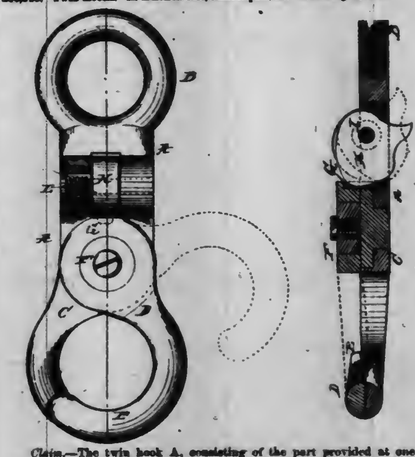
2. The combination, with the lifting-cylinder, provided with buckets or troughs, open only at their tops or mouths, substantially as described, and the squeeze-rolls, of the chute C, inclining downwardly toward said squeeze-rolls, as set forth.

3. The hinged or pivoted chute C, in combination with the squeeze-rolls and lifting-buckets.

4. The combination of the pivoted or hinged tilting-chute, the lifting-cylinder, and suitable intermediate mechanism, substantially as described, for lifting or tilting said chute to allow the buckets to pass, as specified.

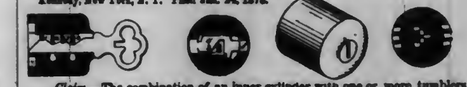
5. The combination, with the squeeze-rolls and lifting-cylinder, of the hinged or pivoted chute C, crank D, link *g*, lever G, cam F, and spring *f*, substantially as and for the purpose described.

200,510. TWIN HOOKS. E. Harrison Ode, Philadelphia, Pa. Filed Aug. 2, 1877.



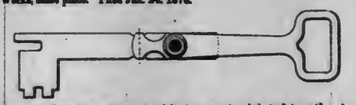
Claim.—The twin hook A, consisting of the part provided at one end with the ring B and at the other end with the hook C, the hook D, pivoted at F, and the cam H, pivoted at I, and held in place by the spring L, and adapted to enter a slot, G, all substantially as shown and described.

200,511. CYLINDER-LOCKS. Cornelius C. Coleman, Branford, Conn., assignor to Thomas Kennedy, New York, N. Y. Filed Jan. 24, 1878.



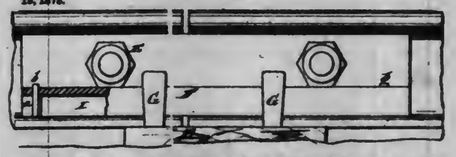
Claim.—The combination of an inner cylinder with one or more tumblers arranged transversely therein, each tumbler constructed with a bearing for the key, inclined transversely to the inclined bit or working-surface of the key, and an outer cylinder, within which the inner cylinder is arranged to rotate by means of the key, the said outer cylinder constructed with notches or grooves corresponding to the said tumblers, and substantially as described.

200,512. EXTENSION-KEYS. Cornelius C. Coleman, Branford, Conn., assignor to Branford Lock Works, same place. Filed Jan. 24, 1878.



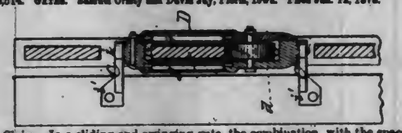
Claim.—A door-key constructed in two parts, jointed together by a transverse hinge or pivot, the parts extending beyond the hinge, and one part constructed with projections toward the other part, and so as to engage the said other part, substantially as described.

200,513. NUT-LOCKS. John Collman and John Collman, Jr., Cedar Rapids, Iowa. Filed Jan. 19, 1878.



Claim.—In combination with the rails, fish-plates, bolts, and nuts, the grooved bar F, spikes G, bar I, and pings *b b*, substantially as and for the purposes set forth.

200,514. GATES. Samuel Cristy and David Jay, Floris, Iowa. Filed Jan. 12, 1878.



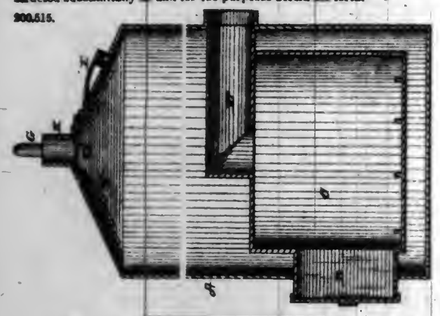
Claim.—In a sliding and swinging gate, the combination, with the spaced horizontal brackets C C', of the longitudinally-slotted block D, having the bearing-roller *f* and the lateral anti-friction rollers *g*, substantially as specified.

200,515. FEED-COOKERS. Andw. G. Cunningham, John Winhofer, and Robert M. Rice, Keota, Iowa. Filed Nov. 26, 1877.

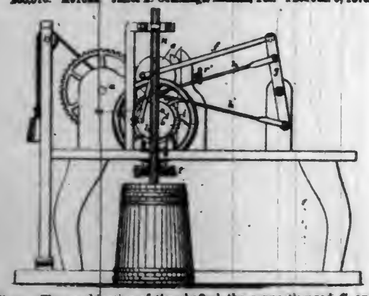
Claim.—The within-described feed steamer, consisting of the vessel A, with conical top B, having water-inlet H, nozzles G, and safety-valve I, and the furnace C, having central opening on top, and the smoke-exit E, consisting of an elbow-pipe connected to the central opening on top of the furnace,

and extended through the side of the casing, and the fire-door D, all constructed substantially as and for the purposes herein set forth.

200,515.



200,516. MOTORS. James K. Cummings, Ledonia, Tex. Filed Jan. 6, 1878.



Claim.—The combination of the shaft *d*, the connecting-rod *f'*, operated from one end of the shaft *d*, and the connecting-rod *f*, oscillating lever *g*, pawls *h h'*, ratchet wheel *i*, and the connecting-rod *m*, operated from the other, the whole being arranged substantially in the manner described, and for the purpose set forth.

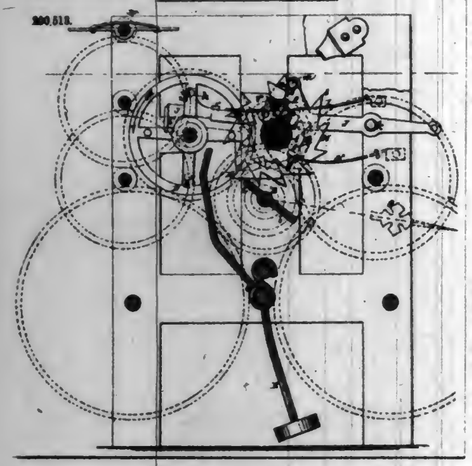
200,517. BELTING. William H. Curtiss, Buffalo, N. Y., assignor of two-thirds his right to Richmond H. Bickford and Fred. B. Curtiss, same place. Filed Jan. 15, 1878.



Claim.—1. A belt having its tapering overlapping ends rounded at their corners, so that when cemented together the cemented surfaces are less liable to become separated, all substantially as shown and described.

2. A belt having the edges of its tapering overlapping portions B B' constructed with round corners *b b'*, and having the surfaces to which the round edges are secured provided with correspondingly-formed recesses or depressions *c*, substantially as and for the purpose set forth.

200,518.



200,518. STRIKING-MOVEMENTS FOR CLOCKS. Walter D. Davies, Brooklyn, and Francis A. Lambert, New York, assignors to said Davies and Henry J. Davies, Brooklyn, N. Y. Filed Dec. 27, 1877.

Claim.—1. The combination of the wheel H, actuated in one direction by the striking-wheel, or by the mechanism which drives the said wheel, a dog, M, connected with said wheel so as to move in concert therewith, a revolving stop, *c*, operated by the time-movement of the clock through an equal space each succeeding hour, a coiled spring, I, applied between the said wheel H and the said stop *c*, and a lever operated by the time-movement of the clock, to control the liberation and stoppage of the striking-wheel, and of the said wheel H and its dog M, substantially as specified.

2. The combination, with the minute-wheel arbor B, having one or more tappets, *b c*, the star-wheel G, having an attached pin or stop, *e*, the ratchet-wheel H, having an attached dog, M, the spring I, the lever J, and the striking-wheel D, essentially as described.

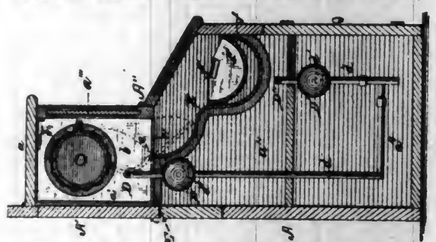
3. The dog M, provided with slip or lost motion, in combination with the ratchet-wheel H and the pin or stop M on the lever J, substantially as specified.

200,519. WAGON-AXLE SLEEVES. John Dickens, Kingston, N. J. Filed Oct. 30, 1877.



Claim.—The combination, with the axle A, having the separate threaded portions a^1 a^2 of different diameters, of the adjustable sleeve D, flanged at *d*, and the external and internal screw-collars C E, the latter being flanged at *e*, all substantially as and for the purpose described.

200,520. COFFEE-ROASTERS. George H. Downie, Winona, Minn. Filed Oct. 23, 1877.



Claim.—1. In a cabinet roasting and warming device for nuts and the like, the metal plate E, serving in part as a lining for chamber A', and forming, with hinged lid *e'*, a chute to tray F, substantially as and for the purposes set forth.

2. In combination with a roaster, as described, the metal plate E and perforated warming-tray F, substantially as and for the purposes set forth.

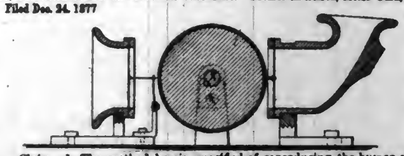
3. The cabinet-case A, having roasting-cylinder B, plate E, and warming-tray F, with suitable bosters D and D'', and provided with upright glass front *a'''* and sloping glass lid A'', substantially as and for the purposes set forth.

4. A roasting-cylinder, B, having corrugated body and hinged lid and cast-metal ends, substantially as and for the purposes set forth.

5. In a nut roasting and warming cabinet-case, A, the combination of the roasting-cylinder B with the metal plate E, hinged lid *e*, and the warming-receptacle F, whereby the contents of the roaster may be fed down into the said receptacle, and without exposure to the air, substantially as and for the purposes set forth.

6. A nut roaster and warmer having cabinet-case A, provided with glass front *a'''* and store closets or chambers *a''* and *a'*, and a roasting-cylinder, B, operated automatically, as described, and having a warming-chamber, F, fed from the roaster above it, and covered with a glass lid, said case being suitably furnished with bosters D and D'', said parts constructed and operating as set forth.

200,521. PHONOGRAPH OR SPEAKING MACHINES. Thomas A. Edison, Menlo Park, N. J. Filed Dec. 24, 1877



Claim.—1. The method herein specified of reproducing the human voice or other sounds by causing the sound-vibrations to be recorded, substantially as specified, and obtaining motion from that record, substantially as set forth, for the reproduction of the sound-vibrations.

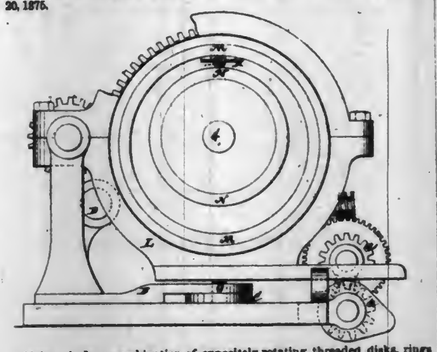
2. The combination, with a diaphragm exposed to sound-vibrations, of a moving surface of yielding material—such as metallic foil—upon which marks are made corresponding to the sound-vibrations, and of a character adapted to use in the reproduction of the sound, substantially as set forth.

3. The combination, with a surface having marks thereon corresponding to sound-vibrations, of a point receiving motion from such marks, and a diaphragm connected to said point and responding to the motion of the point, substantially as set forth.

4. In an instrument for making a record of sound-vibrations, the combination, with the diaphragm and point, of a cylinder having a helical groove,

and means for revolving the cylinder and communicating an end movement corresponding to the inclination of the helical groove, substantially as set forth.

200,522. MACHINES FOR IMPRESSING SCREW-THREADS ON BOLTS, &c. Charles Fairbairn and Henry Simon, Manchester, England. Filed Aug. 24, 1877. Patented in England, Nov. 20, 1875.



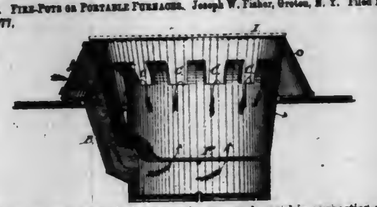
Claim.—1. In a combination of oppositely-rotating threaded disks, rings or rolls arranged to move in transverse relation to the longitudinal axis of the bolt, rod, or blank to be impressed, the disks, rings, or rolls having their axes of rotation arranged at an inclination in relation with each other equal to a portion of the angle of the thread to be produced on the rod, bolt, or blank, and having their impressing-threads at an angle equal to the difference between the angle of inclination of the axes of said disks, rings, or rolls and the angle of the required thread or impression on the bolt, rod, or blank, substantially as specified.

2. The combination of the internally-threaded rotating hollow roll or ring M with the externally-threaded and reversely-rotating roll N, essentially as and for the purpose herein described.

3. The combination of the rocking frame L, the internally-threaded rotating ring M, sole-plate B, with its attached standards adjustable on or about a pivot, O, the externally-threaded disk or ring N, the sole-plate C, with its attached standards, also adjustable on or about the pivot O, and means for raising and lowering the internally-threaded outer ring M, substantially as specified.

4. The cutter E, in combination with the grooved disks, rings, or rolls, essentially as and for the purpose herein set forth.

200,523. FIRE-POTS OR PORTABLE FURNACES. Joseph W. Fisher, Groton, N. Y. Filed Nov. 13, 1877.



Claim.—1. In a portable fire-pot or furnace to be used in connection with a stove or range, the body K, having grate F, the rim O, and air-passage B, all constructed and combined substantially as described.

2. A fire-pot constructed with body K, V-shaped rim O, and air-passage B, in combination with cover or griddle I, substantially as described, and for the purpose specified.

200,524. WIRE LADDERS. John Flinn, Philadelphia, Pa. Filed Apr. 28, 1877.

Brief.—A series of U-shaped wire links, bent or twisted to form loops or eyes at the juncture of their sides and rounds, and also at their upper ends, the eyes in the upper ends of each link hooking into those at the angles of the next link, thus forming hinged joints, whereby the ladder is capable of being folded into a small space when not in use.

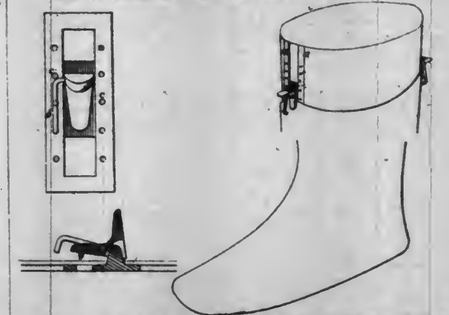


Claim.—1. The hinged or pivoted links B C D, &c., composed each of a single piece of wire, bent to produce sides *b c d* and rounds b^1 c^1 d^1, eyes b^2 of the hinged joints c^2 d^2 being formed at the junction of the sides and round, and loops c^2 d^2, &c., at the upper ends of the sides of each link, substantially as shown and described.

2. The combination of hinged or pivoted links B C D, &c., each of said links being constructed of a single piece of wire, bent to form sides *b c d* and rounds b^1 c^1 d^1, with loops c^2 d^2, &c., at the upper ends of the sides, and eyes b^2 c^2, &c., at the junction of the sides and round of each link, the ends of one link being passed through the eyes b^2 c^2 d^2 of the next, and twisted, as shown at b^2 c^2 d^2, and said eyes being enlarged sufficiently to permit said twists to rest therein, as shown, and the links to be snugly folded upon each other, substantially as shown and described.

3. The improved folding ladder, consisting of a series of bent or U-shaped wire links, having eyes at their angles and loops at their ends, by which they are hinged together and adapted to fold one upon the other, as shown.

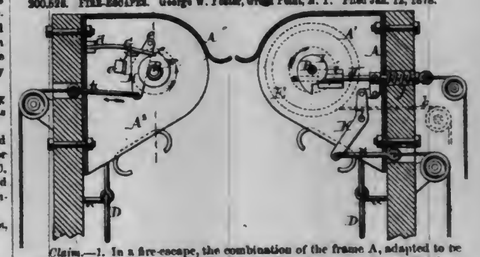
200,525. BOOT-TREES. John T. Flynn, Colchester, Conn. Filed Feb. 1, 1878.



Claim.—1. A boot-tree provided with a vertically-adjustable clamp for securing and drawing up the leg, as set forth.

2. The combination of the tree, vertically-adjustable clamp, and retaining device, as described.

200,526. FIRE-ESCAPES. George W. Foster, Green Point, N. Y. Filed Jan. 12, 1878.



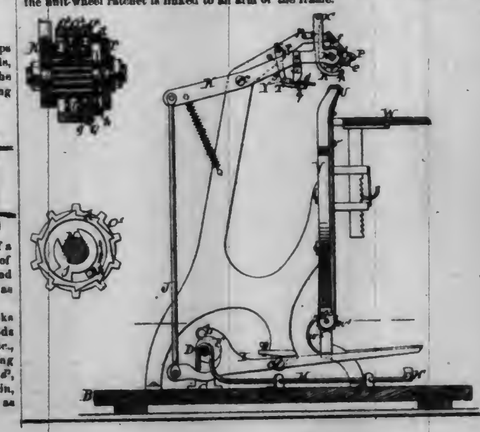
Claim.—1. In a fire-escape, the combination of the frame A, adapted to be secured to a building, the axle B, the drum C, having the pulley E and flexible ladder D, the shouldered stop-wheel F, the spring-pawl G, the depending pivoted lever H, having a lateral toe, *f*, and link *h*, the whole constructed to operate substantially as and for the purpose described.

2. The combination of the frame A, shaft B, revolving drum C, and flexible ladder D wound on said drum, with the cam I on the end of the shaft, and the longitudinally-sliding rod J, which embraces said cam, and is connected with an alarm mechanism, all substantially as and for the purpose set forth.

3. The combination of a frame adapted to be fastened to a building, a revolving drum mounted in said frame, a flexible ladder wound on said drum, a cam secured to the axle of said drum, a reciprocating rod, which is engaged by said cam, and adapted to be connected to an alarm, and a lever for moving and holding said reciprocating rod out of the path of the cam, substantially as described.

200,527. PAGING-MACHINES. Edward Cornelio, Jersey City Heights, N. J. Filed Oct. 26, 1877.

Brief.—An eccentric on a belt-rotated shaft may be slid sidewise, so as to act under a pin on a treadle which is connected to a lever carrying a numbering-head of usual construction. The lever carrying the pawl which engages the unit-wheel ratchet is linked to an arm of the frame.

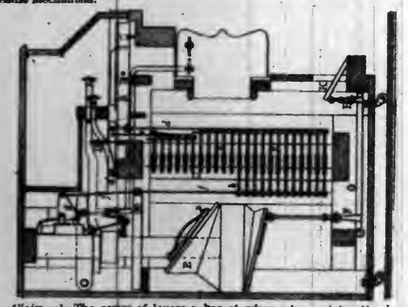


Claim.—1. In a machine for paging or numbering, the combination of the driving-shaft D, sliding cam or eccentric F, spring G, bifurcated rod H, the treadle I, having a laterally-projecting pin, b, connecting-rod J, and lever K, carrying the printing mechanism, all adapted to operate substantially as described.

2. In combination with the lever K, the fixed arbor N, the arm P, mounted on said arbor, the jointed link *f*, spring-pawl *e*, the unit-wheel O^1, having ratchet-teeth *d*, the spring-blade Q, affixed to said unit-wheel, its pin *g*, and lug h, the trip-wing *j*, secured to said fixed arbor, and the ten-wheel O^2, having concentric perforations *i*.

200,528. REED-ORGANS. Henry F. Crosteel, Gardnerville, Md. Filed June 26, 1877.

Brief.—The arrangement of the harmonic frame is such as to serve also as a transposer, and bellows-springs are partly dispensed with by a seesaw treadle mechanism.



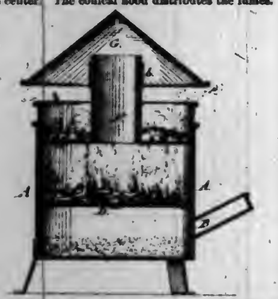
Claim.—1. The series of levers *a*, bar *a'*, wires *c*, lever-plates C, wires *f*, and bell-cranks *g*, combined with the keys B and wires *d*, substantially as and for the purposes specified.

2. The combination of the series of levers *a*, bar *a'*, and keys B with the sliding barred frame D, substantially as and for the purposes described.

3. In combination with the bellows E, the rocking shaft G, having secured thereto two cross levers, one of the said levers being attached by means of rods or similar devices to the hinged doors of the bellows, and the other lever connected by rods or links to the foot-boards I K, substantially as and for the purpose herein specified.

200,529. INSECT AND VERMIN FUMIGATORS. Francis Keenon, Nevada City, Cal., assignor of one-half his right to Milton Green, same place. Filed Dec. 12, 1877.

Brief.—The brimstone, tobacco, &c., is placed in the pan and fumes driven off by the heat applied from the furnace beneath said pan, the draft-flue passing through the center. The conical hood distributes the fumes.



Claim.—The combination of the chamber A, provided with draft-opening B and perforated plate D, with the pan E, having central flue F, and cone-shaped hood G, substantially as and for the purpose specified.

200,530. SATCHEL-HANDLES. George Havell, Newark, N. J. Filed Jan. 23, 1878.

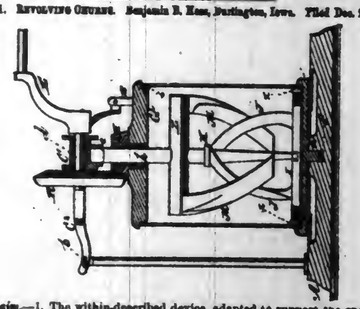


Claim.—1. A curved tubular tapering sheet metal satchel-handle, in combination with eyebolts secured to its ends, substantially as described.

2. The lap-joint B, composed of the conical stem of an eyebolt and the end portions of two strips of sheet metal, adapted by suitable corrugation and bending to form, when united, a curved tubular handle, the end portion of one of such sheets of metal being wrapped around the conical stem of the eyebolt, and being in its turn infolded by the end portion of the other strip of metal, whereby the three members of the joint are held together by friction, substantially as shown and described.

3. The split eyebolt C, struck up from wrought metal in such shape that when bent or folded its central portion forms an eye or loop, and the remaining portions form the solid conical stem *c*, substantially as shown and described.

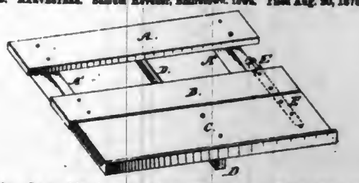
200,531. REVOLVING CHURNS. Benjamin B. Hess, Burlington, Iowa. Filed Dec. 22, 1877.



Claim.—1. The within-described device, adapted to support the operating mechanism above the churn, comprehending the cross-bar C, tube C^1, and frame C^2, as set forth.

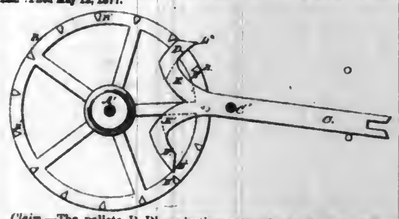
2. An improved dasher device for revolving churns, consisting of a shaft, A, a cross-bar, I, dasher-rods J J, having their upper ends connected to a cross-bar, K, and horizontal bar L, with pendent dasher-rods M M, the said dasher-rods J and M, being twisted spirally in opposite directions, and adapted one to be rotated and the other held stationary, substantially as shown and described.

200,532. HARVESTERS. Samuel Hoverter, Hairstown, Iowa. Filed Aug. 20, 1876.



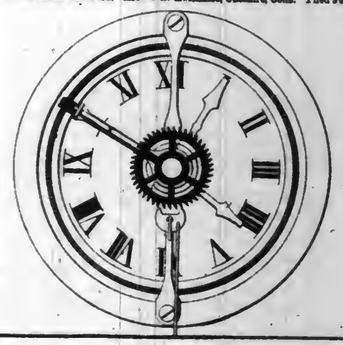
Claim.—In combination with the frame A A' A'' and binders' table or platform B, having the projecting arm or bracket E, the rock-shaft D and tilting-board or receiver C, placed the whole length of the table or platform B, and oscillating upon an axis transverse to the movement of the machine, substantially as and for the purpose herein shown and specified.

200,533. ESCAPEMENTS FOR WATCHES AND CLOCKS. James M. Hitchcock, Michigan City, Ind. Filed May 13, 1877.



Claim.—The pallets D D^1, projecting outward and downward from the pallet-arms E E^1, and arranged so as to be within the path of a circumference described by the teeth B, thereby giving a centripetal escape to both, substantially as described.

200,534. CLOCK-MOVEMENTS. Arthur E. Hotchkiss, Cheshire, Conn. Filed July 27, 1877.



Claim.—In a clock-movement, the combination of a central revolving shaft, a concentric stationary gear, a radial shaft caused to revolve in a horizontal plane by connection with said central shaft, and caused to revolve on its own axis by connection with said stationary gear, and an escapement-wheel in connection with said radial shaft, substantially as described.

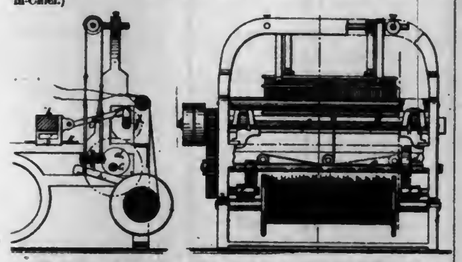
200,535. COLLARS. William M. Hume, New York, N. Y. Filed Jan. 14, 1878.



Claim.—A collar provided with a button, b, and tab C, having the button-hole *c*, substantially as described, and for the purposes set forth.

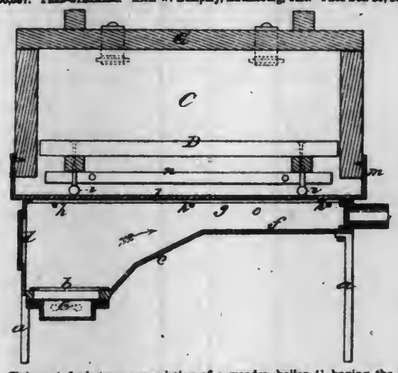
200,536. LOOMS. Ephraim Howard, Providence, R. I. Filed Sept. 1, 1877.

Brief.—Consists in a new arrangement of the various parts of the loom, whereby greater compactness is attained. (Allowed by Board of Examiners-in-Chief.)



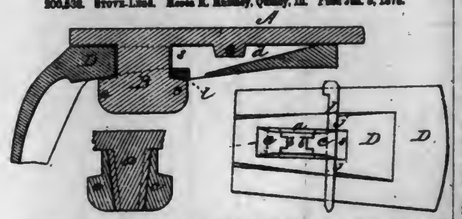
Claim.—The following combination of parts within a loom-frame, to wit: a cam-shaft having cams secured thereto at opposite ends thereof, harness-levers pivoted to studs attached to the side frames of the loom, and a yarn-beam located between the opposite sets of cams and harness-levers, all arranged substantially as and for the purpose set forth.

200,537. FEED-STEAMERS. Alex. W. Humphry, Hiramsburg, Ohio. Filed Dec. 20, 1877.



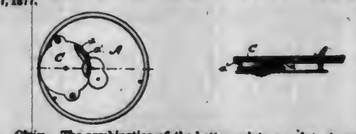
Claim.—A feed-steamer consisting of a wooden boiler, C, having the end walls somewhat shorter than the side walls, and a metallic bottom, *l*, the latter being carried up on the exterior of said end walls at *m*, and bounding the recesses under the edges of said end wall, substantially as specified.

200,538. STOVE-LEGS. Moses K. Huntley, Quincy, Ill. Filed Jan. 5, 1878.



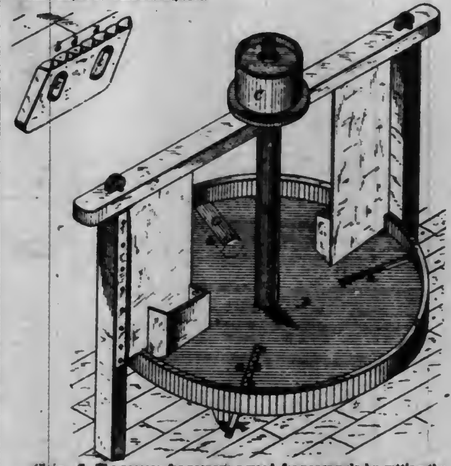
Claim.—The combination of the plate A, provided with T headed lug B and lug *c* on its bottom, and the stove-leg, having a horizontal shank, D, provided with inclined recess *d*, and the locking-pin *l*, adapted to be secured under the T-headed lug, substantially as specified.

200,539. WATCH-PLATES. John L. Hutchinson and Henry Dobcock, Elgin, Ill. Filed Aug. 7, 1877.



Claim.—The combination of the bottom plate, or plate A under the dial-plate, provided with an opening, *a*, through which the mainspring-barrel can be removed and replaced, and the barrel-bridge C, arranged to fit within said opening *a*, substantially as herein shown and described.

200,540. MACHINES FOR PREPARING WOOD FOR MAKING PAPER-PULP. Wallace W. D. Jeffers, Glens Falls, N. Y. Filed Feb. 14, 1878.



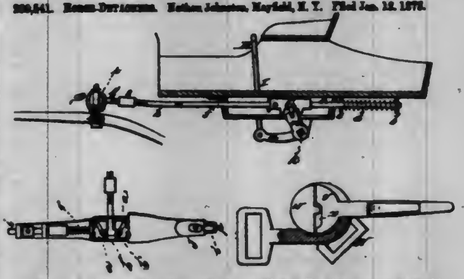
Claim.—1. The process for preparing wood for paper-pulp by cutting the fibers crosswise while in the block, and then terminating the same, and then scraping or cutting them at an angle to the cross-cuts, substantially as herein set forth.

2. The process for preparing wood for paper-pulp by crossing or indenting the wood lengthwise of the fibers, then cutting or crossing across the fibers, and then scraping or cutting at an angle to the cross-cuts, substantially as herein set forth.

3. In a machine for preparing wood for paper-pulp, the combination of the series of cutters *b* and the single cutter F, arranged with relation to each other substantially as herein set forth.

4. In a machine for preparing wood for paper-pulp, the combination of one or more cylinders, G, having longitudinal teeth *i*, the series of cutters *b*, and the single cutter F, substantially as and for the purposes herein set forth.

200,541. HORSE-DETACHERS. Nathan Johnston, Mayfield, N. Y. Filed Jan. 12, 1878.



Claim.—1. The combination, with the whiffletree D, of the spring-bolts *i i*, connected to a rod, *t*, the slide G, connected to the rod *t*, and a device in close proximity to the seat of the vehicle for operating said slide, for the purposes set forth.

2. The combination of the slide G with rods *s f*, spring *d*, jointed screw-rod A, screw-rod *t*, and tubular screw-coupling *e*, substantially as and for the purposes herein set forth.

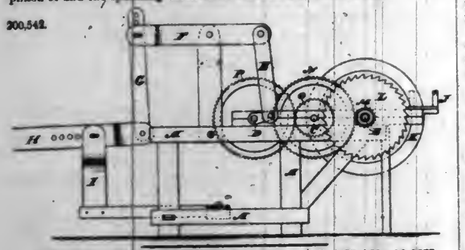
3. In combination with the slide G, arranged under a vehicle-body, the rock-shaft *h*, with arms *m n*, rod L, and loop H, passing through the vehicle-body, for the purposes herein set forth.

200,542. CIRCULAR SAWING MACHINES. Charles E. Jones, Watertown, Wis., assignor of one-half his right to Junius Jones, Chicago, Ill. Filed Sept. 21, 1877.

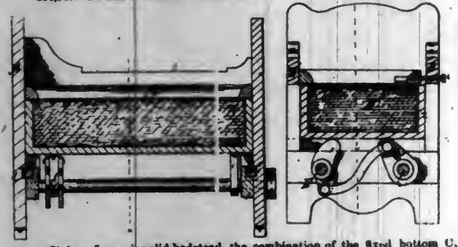
Brief.—The saw is driven by means of a series of gear-wheels operated by a working-beam and a lever pivoted in a standard in the rear of the main frame, and connected by a rod having an adjustable center to the working-beam.

Claim.—In a machine for sawing wood, the combination of the operating-lever H, the connecting-rod G, with the working-beams F and the pitmen E, in connection with the shafts B C D and the gear-wheels N O P, and the pinion M and the operating mechanism, substantially as described.

200,542.

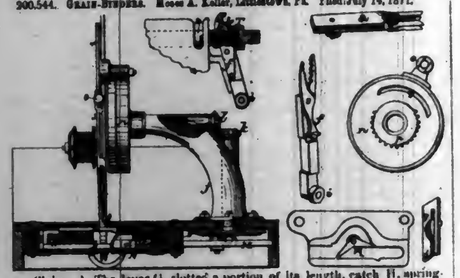


200,543. INVALID-BEDSTEADS. Joseph Kaylor, Pittsburg, Pa. Filed May 16, 1877.



Claim.—In an invalid-bedstead, the combination of the fixed bottom C, the movable bottom or mattress-frame D, and the cams *c'*, connected by link *c*, and adapted to raise and lower the movable frame, substantially as specified.

200,544. GRAIN-BINDERS. Moses A. Keller, Littlestown, Pa. Filed July 14, 1877.



Claim.—1. The lever G, slotted a portion of its length, catch H, spring-cranked lever, a tripping device, L, and an operating-lever, provided with a pin or projection, substantially as shown, the parts being combined for operation as described.

2. The combination of the segmental pinion S and rack-bar Q with the shaft, having a recessed head to receive the loop-former, and a hook, U, substantially as shown, for the purpose specified.

3. The combination of a shuttle-frame, a rack-bar, a shaft having a segmental pinion, and a recessed head with a reciprocating loop-former, substantially as specified.

4. The combination of the reciprocating loop-former, that moves horizontally back and forth, and the stationary revolving recessed head T, having a hook, U, for the purpose of winding the cord around the loop-former, substantially as and for the purpose set forth.

5. The combination of the revolving stationary recessed head T, having the hook U and the reciprocating pronged loop-former, with the plier-jaws, moving at an angle to the loop-former, for the purpose of drawing the ends of the string through the prongs, substantially as shown.

6. A loop-former having its end divided into two prongs, for the purpose specified.

7. A loop-former having its end divided into two prongs, in combination with a mechanism for moving it back and forth, and a revolving recessed head, that is provided with a hook, U, substantially as shown.

8. A loop-former having its end divided into two prongs, and each prong having a groove formed in its outer side to receive the string, in combination with a revolving hooked head, as described.

9. The combination of the reciprocating cutter-bar *b* with the yielding cord-holder *d* and spring *e*, whereby the cord is securely held without any danger of being pinched off, substantially as shown and specified.

10. The plier-jaws *f*, constructed and operating as shown, in combination with the pronged loop-former, stationary revolving recessed head provided with a hook, U, a switch to open and close the jaws, and a roller, *i*, substantially as described.

11. The jaws *f*, having a stud or projection to catch in the switch *g*, the switch being made to open the jaws as they advance and close as they recede, substantially as specified.

12. The combination of shaft *m*, standard *j*, gear-case *n*, toothed segmental disk *p*, and a revolving disk, *r*, substantially as described.

13. The combination of the segmental toothed stationary disk *p*, gears *s t*, guides *q n*, revolving disk *r*, and disk *v*, substantially as specified.

14. A mechanism for operating the binding and compressing arms of a binder, consisting of a large disk, *r*, that continually revolves a smaller disk placed in the larger one, and which revolves intermittingly, and a mechanism for revolving them, in combination with said arms, substantially as shown.

15. The combination of a large disk, *r*, that continually revolves a smaller disk revolving intermittingly in the larger one, and a mechanism for operating them, with a pivoted hub, 6, binder-arm *y*, and compressor-arm Z, substantially as described.

16. The revolving disk *r*, or its equivalent, having a pivoted eccentric wrist-pin, *x*, that is secured to the intermittingly-revolving disk *v*, and upon which pin are mounted the cord-carrying arm, the compressor-arm, and the cord-spool, the parts being combined to operate substantially as set forth.

17. The binding-arm *y*, having the slot 1, in combination with the compressor-arm Z and connecting-rod 2, both arms being placed on the same pivot, substantially as shown.

18. The combination of the binding-arm *y*, having the slots 1 5, with the compressor-arm Z, connecting-rod 2, and a rod with or without joints, for connecting the compressor-arm with the slot 5, substantially as described.

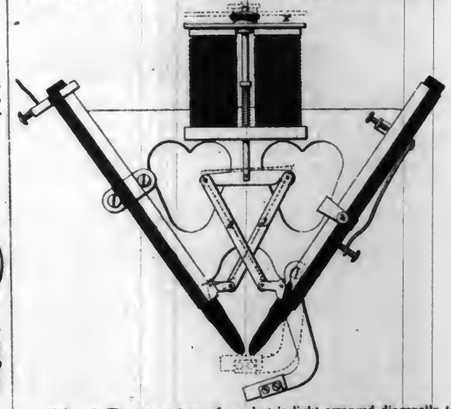
19. The combination of the compressor-arm Z, rods 3 4, and binder-arm *y*, having slot 5, with a spring, 9, substantially as set forth.

20. The combination of the hub 6, binder-arm *y*, compressor-arm Z, and their connecting-rods, with the cam 7 and spring 8, substantially as shown.

21. In combination with the cord-carrying arm and revolving wrist-pin, the cord-spool mounted on said wrist-pin, and having a suitable tension, so as to keep the slack of the cord wound up as the cord-carrying-arm carries the cord around the bundle, substantially as described and shown.

22. The combination of the pronged reciprocating loop-former *a*, having the friction-roller W, with the automatic switch-plate for moving the former in and out, substantially as shown.

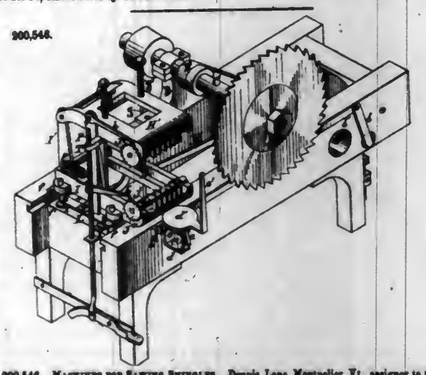
200,545. ELECTRIC LIGHTING APPARATUS. John King, Ansonia, Conn., assignor of one-half his right to Wallace & Sons, same place. Filed Jan. 3, 1878.



Claim.—1. The two carbons of an electric light arranged diagonally to each other, and free in their holders, combined with mechanism, substantially such as described, to grasp the said carbons while the circuit is unbroken, but to release them immediately on the breaking, and force them to the focusing-point independent of their holders, substantially as described.

2. The combination, in an electric light, of two carbons arranged diagonally to each other, and free in their holders, with a hinged focusing-guide and mechanism for operating said guide, to automatically come to the focusing-point when the circuit is broken, and to be turned away so soon as the circuit is made, substantially as described.

200,546.



200,546. MACHINES FOR SAWING SHINGLES. Dennis Lane, Montpelier, Vt., assignor to the Lane Manufacturing Company, same place. Filed Jan. 22, 1878.

Brief.—Perfect accuracy is secured in the setting of the shingle-bolt to the saw, so that it is moved forward an equal distance for different-sized bolts, thus securing an equal thickness to all the shingles cut by means of a circular saw. Automatically-operating feed-rollers, the upper one of which is vertically adjustable by and having an adjustable lifter, and suitable operating mechanism. The new bolt is rested, while removing the slab of the old one, upon a partially-rotating table on the main frame, and provided with a vertical guard, and a handle for starting and stopping the carriage.

Claim.—1. In a shingle-machine, a reciprocating carriage, in combination with a movable gaging-incline, for feeding forward the block, actuated by a rotating cam-wheel through suitable connecting devices, as shown and described.

2. The vertically-adjustable friction-wheel E', in combination with the bell-crank and connecting-rod, provided with a toothed rack at one end, and actuated by the pinion-shaft and hand-crank, for the purpose of imparting a reciprocating motion to the carriage I, or arresting that motion when desired, all substantially as set forth.

3. The crank-bar G' and its disk G, in combination with the cam-wheel F and supporting-plate F', substantially as and for the purpose specified.

4. The cam-wheel F, in combination with the slide M', provided with the pin *e*, and pivoted connecting-rod M, for the purpose of imparting a forward movement to the feed-rolls of a shingle-machine, as set forth.

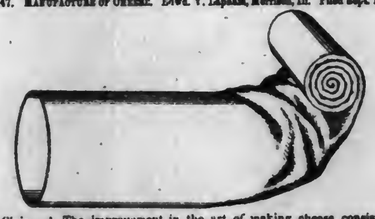
5. The pivoted swinging bar K, provided with pawls *h h'*, in combination with the automatically-moving gaging-incline, whereby the bar K is allowed free movement, except at the moment of setting the block forward, substantially as and for the purpose specified.

6. The vertically-sliding rod P, provided with the adjustable lifter T, in combination with the foot-lever R, for the purpose of raising the upper feed-roll of a shingle-machine, as set forth.

7. The swinging frame H' and spring-encircled rods *g*, in combination with the carriage I, as and for the purpose specified.

8. The partially-rotating table *c'*, for supporting the block, provided with the vertical guard *c'*, substantially as and for the purpose set forth.

200,547. MANUFACTURE OF CHEESE. Edwd. Y. Lapham, Morrison, Ill. Filed Sept. 1, 1877.



Claim.—1. The improvement in the art of making cheese, consisting in surrounding the curd before pressure with a seamless cloth, substantially as specified.

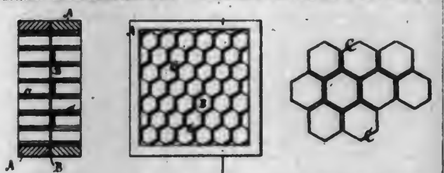
2. A cheese having a seamless-cloth envelope, substantially as specified.

200,548. SEAL-PRESSES. Samuel Larkin, Bridgeport, Conn. Filed Sept. 29, 1877.



Claim.—In combination with the jaw A and handle B, provided with anti-friction roller E, the jaw A' and handle I, formed separately, and pivoted to each other and the jaw A at H G, respectively, the pivoted end of the handle I being formed with a cam-face, the whole arranged and operating substantially as and for the purposes set forth

200,549. ARTIFICIAL HONEY-COMBS. Alfred B. Lawther, Chicago, Ill. Filed Oct. 29, 1877.



Claim.—1. An artificial honey-comb constructed of fibrous materials, as described.

2. An artificial honey-comb formed of fibrous material and coated with wax, substantially as specified.

3. The combination of the frames A A, web B, and artificial cells C, formed substantially as described.

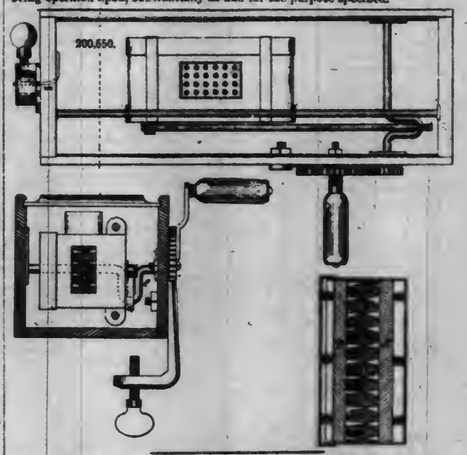
200,550. KNIFE-SCOURERS. Samuel K. Lees, Attleborough, Mass. Filed Jan. 16, 1878.

Claim.—1. In a machine for scouring and polishing knives, two or more brushes, between which the knife-blade is inserted and held, said brushes being made to reciprocate during the process of polishing and scouring, substantially as and for the purpose set forth.

2. In a machine for scouring and polishing knives, two or more brushes secured or placed within a reciprocating drum or casing, said brushes being automatically or self adjusting to the varying thickness of the knife-blade, substantially as and for the purpose specified.

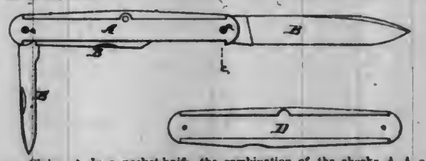
3. In a machine for scouring and polishing knives, a metallic bushing placed around the opening of the box or casing, through which the knife is inserted, and a set-screw and packing for holding the knife stationary while being operated upon, substantially as and for the purpose specified.

200,550.



200,551. POCKET-KNIVES. Carl Leetters, Solingen, Germany. Filed Jan. 28, 1878.

Brief.—The claims exhaustively set forth details of construction in which the novelty consists.



Claim.—1. In a pocket-knife, the combination of the cheeks A A and blade or blades B with the tubular rivets *a a*, which hold said cheeks and blades firmly together, and which do not extend beyond the metal cheeks, and are adapted to receive the longer rivets that hold the shells, substantially as herein shown and described.

2. In a pocket-knife, the combination of the cheeks A A and blade or blades B, and short tubular rivets *a*, with the longer solid rivets *b* and shells D, all arranged so that the long rivets and shells can be applied after the other parts have been riveted together, substantially as herein shown and described.

200,552. BOTTLE-REGISTERS. William S. Lynn, Philadelphia, Pa. Filed Oct. 10, 1877.



Claim.—1. The combination, with a bottle for holding liquids, of a cylindrical case fitting within the neck of the bottle, and having a side spout or conduit for the egress of the liquid, a pendulum which is pivoted on a pin in said case, placed parallel to the spout, and registering mechanism connected with said pendulum, whereby, at each inclination of the bottle, the pendulum will be caused to assume an inclined position and operate the registering mechanism, substantially as and for the purpose specified.

2. The combination of a cylindrical case, A, a weight or pendulum, B, pivoted therein near its lower end, and having an arm, *b*, jointed to a vertical rod, b^1, a pivoted lever, b^2, moved by said vertical rod, a double-armed lever, b^3, the lower arm of which is actuated by the lever b^2, a pawl, b^4, pivoted to the upper arm of the lever b^3, and a ratchet-wheel, *c*, and dial C, moved by the pawl b^4, substantially as set forth.

3. The combination, with the register-case and a locking-lever projecting therefrom, and operated by a rod within the case, of a bottle having an internal recess or depression to engage the projecting arm of the locking-lever, substantially as set forth.

200,553. PAPER-RULING MACHINES. John McAdams, Brooklyn, N. Y. Filed Aug. 20, 1877.

Brief.—The paper, after having been ruled by one set of pens with parallel lines running in one direction, is next passed by conveyer A to the checking device I, where it is temporarily arrested, and then seized by the rolls D G, (the cheek I acting as a pivot against and around which it moves,) which swing it around a quarter-turn, when it then strikes the adjustable stop K, properly registers, and passes on by conveyer B to be cross-ruled by a second set of pens.

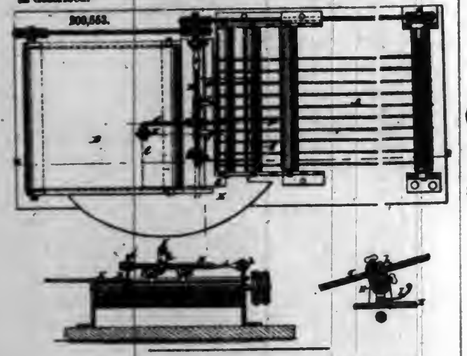
Claim.—1. The combination, with the endless conveyers A and B, of the laterally and intermediately disposed wheels or rollers D G, and one or more paper retarding or checking devices arranged to one side of said wheels or rollers, and constructed to stop or hold the sheet at its forward edge while being turned by the wheels or rollers D G, substantially as specified.

2. The elastic shaft H and its loose wheel or roller G, in combination with the wheel or roller D, having a positive motion, the conveyer A, near one side and in rear of which said wheels or rollers are arranged, and one or more paper retarding or checking devices, I, arranged to one side of the wheels or rollers D G, and constructed to stop or hold the sheet at its forward edge while being turned by said wheels or rollers, essentially as and for the purpose herein set forth.

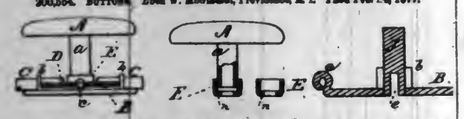
3. The combination, with the elastic shaft H and the wheels or rollers D and G, of one or more paper retarding or checking devices, I, arranged to one side of said wheels or rollers, and constructed to stop or hold the sheet at its forward edge while being turned, substantially as specified.

4. The stop K, in combination with the wheels or rollers D G, essentially as described.

200,553.

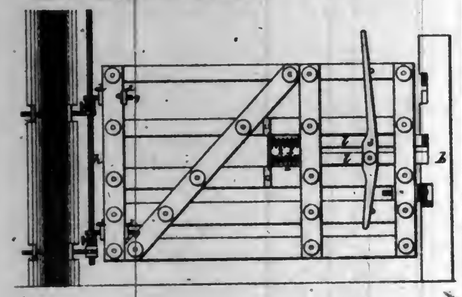


200,554. BUTTONS. Eben W. McGlassin, Providence, R. I. Filed Feb. 24, 1877.



Claim.—The disk A, having the tubular stud a and flanged or bead cap B *n*, the latter being struck up from a perforated disk, and soldered to the stud *a*, so as to form the annular groove, as shown, in combination with the stud J and pushers C C, secured to the disk B, and having catches *i i*, all as and for the purpose specified.

200,555. GATES. William C. Mantor, Garrett, Ind., assignor of two-thirds his right to Jas. S. Smith and Henry M. Jones. Filed Nov. 9, 1877.



Claim.—The combination of the latches *i*, rods 1, springs 2, levers 3, and notches in the side of the post *b*, whereby either latch for opening the gate can be operated, substantially as described.

200,556. CONVERTING RECIPROCATING INTO ROTARY MOTION. Edwin Meredith, Batavia, Ill. Filed Jan. 16, 1878.



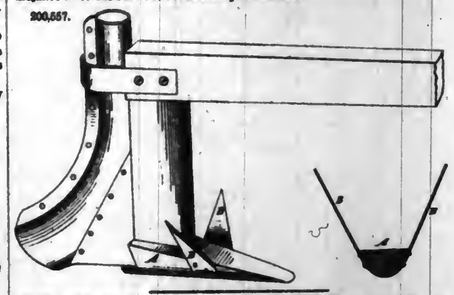
Claim.—The two wheels C¹ and C², actuated by the shaft C and its spring-pawl *c'*, and the engaged pinions *d* and *e d'*, combined and arranged as and for the purpose set forth.

200,557. TILE-LAYING MACHINES. James I. Mettler and William J. Mettler, Moulton, Ill. Filed Dec. 29, 1877.

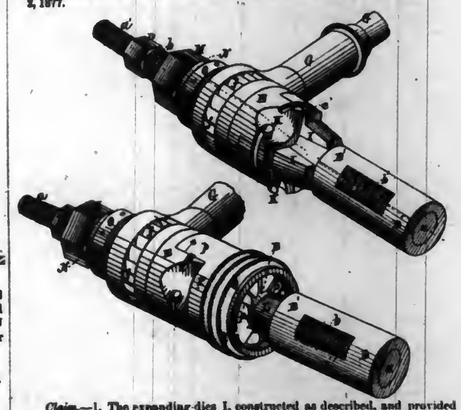
Brief.—The under side of the mole is of a semicircular form, and is provided on each side, about midway from the point to the heel, with a pointed cutter, diverging slightly, but not of sufficient length to cut the sod above.

Claim.—The combination, in a tile-laying machine, of the mole A and lateral inclined cutters B, extending upward from the mole, but not to such a distance as to cut the sod, substantially as set forth.

200,557.



200,558. TUBE EXPANDER AND TRIMMER. John E. Mantell, Middletown, N. Y. Filed Aug. 2, 1877.



Claim.—1. The expanding-dies I, constructed as described, and provided with the rearward-projecting stud *i*, in combination with the head E, having the recesses *e* and *e'*, and set-screws K, substantially as and for the purpose shown.

2. In combination with the head E and nut M, the washers N and interposed collar O, provided with radially-pivoted rollers *o*, substantially as and for the purpose set forth.

3. In combination with the head E, provided with the recesses *e*, and arranged to rotate upon the mandrel B, the cutter-head P, provided at its inner end with lugs *p*, that fit into said recesses, and having upon its outer end cutting-teeth *p'*, substantially as and for the purpose specified.

4. In combination with the cutter-head P, having a threaded periphery, the gage-collar Q, fitted upon said threaded periphery, in the manner and for the purpose substantially as shown.

5. The hereinbefore-described device, in which the mandrel A, provided with the tapering portion *a* and threaded portion *a'*, the hollow mandrel B, having the slotted head *b'* *b* and threaded end *b'*, the dogs C, the nut D, the head E, provided with the recesses *e* and *e'*, the expanding-jaws I *i*, the set-screws K, the nut M, the washers N, and the roller-collar O *o*, are constructed as shown, and combined with means for rotating the same, in the manner and for the purpose substantially as set forth.

200,559. PLOWS. William S. Moon, Pleasant Grove, Ga. Filed Dec. 18, 1877.

Brief.—The share is mounted upon a wedge-shaped saddle having lugs at both ends, that fit the space between the branches of the lower end of the standard.



Claim.—The combination, with the plow-foot D, of the reversible wedge-shaped block G, having projections *h h* and notches *x x*, the plow E, having projection *i*, and the bolt *d*, with nut *e*, all substantially as and for the purposes herein set forth.

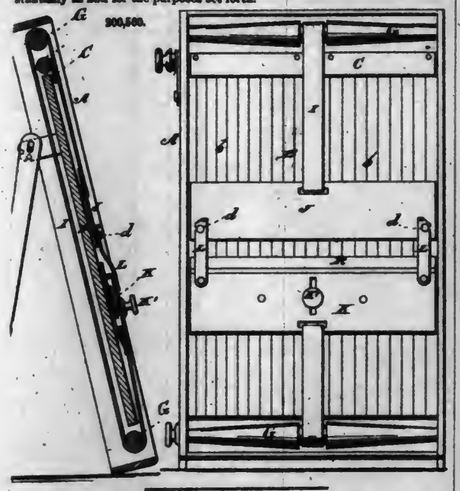
200,560. COPY-HOLDERS. James D. Moore, Cambridge, Iowa. Filed Dec. 1, 1877.

Claim.—1. In a copy-holder, the rollers G G, band I, slides J K, and hooks L L, constructed and combined substantially as and for the purposes set forth.

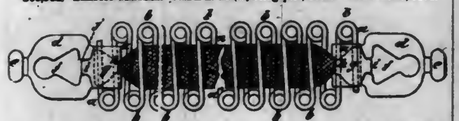
2. The combination, with the slide K, of the levers P P, slide R, and knob K', substantially as and for the purposes set forth.

3. The combination of the frame A, bed B, spring-flange C, rollers G G, band I, slides J K, hooks L L, levers P P, and slide R, all constructed substantially as and for the purposes set forth.

200,560.



200,561. ELASTIC GARTERS. James L. Moore, Bridgeport, Conn. Filed Jan. 26, 1878.

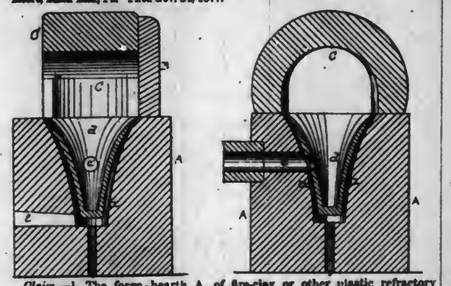


Claim.—1. In a garter, the spring of continuous wire, composed of two marginal series of coils, *b*, and intervening transverse connections *a*, substantially as and for the purpose described.

2. The combination, with the metallic spring, constructed with the marginal series of coils and intervening transverse connections, of the longitudinal flexible inelastic check or checks *r*, all constructed and arranged as and for the purpose described.

3. The combination, with the metallic spring for an elastic band or garter, of a clasp, *d*, having the hole *f*, notch or recess *j*, extension *g*, and tongue *i*, said extension being bent around the terminal parts *a a'* of the spring, and fastened by bending the tongue *i* into the recess or notch *j*, substantially as specified.

200,562. FORGES. Thomas C. Morrison, Brady's Bend, and Edward J. Mildren and McConnel Moore, Black Lick, Pa. Filed Nov. 24, 1877.



Claim.—1. The forge-hearth A, of fire-clay or other plastic refractory material, having a cavity, *c*, a lateral blast-hole, *c*, for air, and a bottom hole, *h*, for cleaning, substantially as set forth.

2. The combination of hearth A and removable fire-clay lining *d*, substantially as described.

3. As a device for promoting combustion and heat in open fires, while not interfering with ordinary forge operations, a fixed as distinguished from a hinged arch; C, open its entire or nearly its entire height and width on two opposite sides, in combination with the hearth A, substantially as set forth.

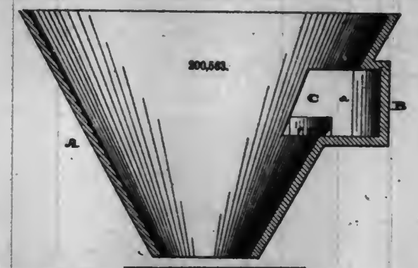
4. A fixed as distinguished from a hinged arch, C, open in front its entire or nearly its entire height and width, in combination with tile B, which closes an otherwise correspondingly open rear side, and with the hearth A, substantially as set forth.

200,563. DISINFECTING ATTACHMENTS TO WATER-CLOSETS. John F. Heaby, Philadelphia, Pa., assignor of one-half his right to Charles S. Greene, same place. Filed Jan. 19, 1878.

Claim.—1. The water-closet bowl provided with the set-back disinfectant chamber B, substantially as and for the purpose set forth.

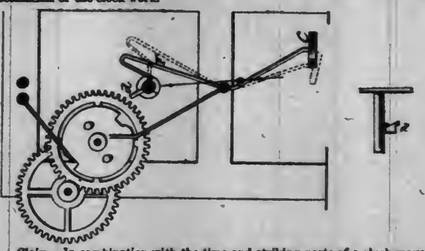
2. The water-closet bowl having a side opening, *a*, in combination with the disinfectant-chamber B, having a wall, C, substantially as and for the purpose set forth.

200,563.



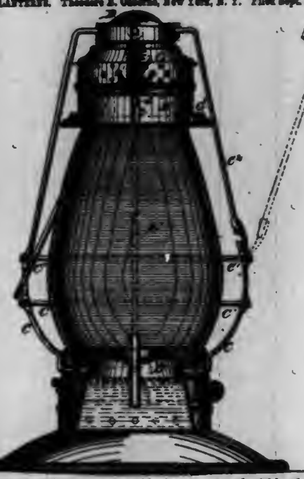
200,564. CLOCK STRIKING-MOVEMENTS. Hiram D. Northrop, Waterbury, Conn., assignor to the Waterbury Clock Company, same place. Filed Jan. 2, 1878.

Brief.—By means of an additional arm on the hammer-shaft and a cam on the minute-arbor, the half-hour is struck without operating the striking mechanism of the clock-work.



Claim.—In combination with the time and striking parts of a clock-movement, the second arm F from the hammer, and dam *d* on the minute-pointer shaft, substantially as and for the purpose described.

200,565. LANTERNS. Theodore E. Osborne, New York, N. Y. Filed Sept. 28, 1877.

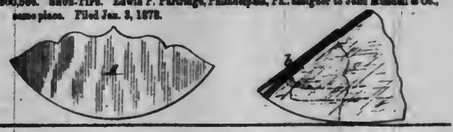


Claim.—1. In a lantern, a movable hoop arranged within the top of the lantern, provided with one or more wind-breakers, and held down on top of the globe by means of a spring, substantially as and for the purposes herein set forth.

2. In a lantern, the top entirely disconnected from the wire guards, and provided with an interior movable hoop, in combination with the guards, the top G, and a fixed frame or cap attached to the upper ends of the guards, substantially as herein set forth.

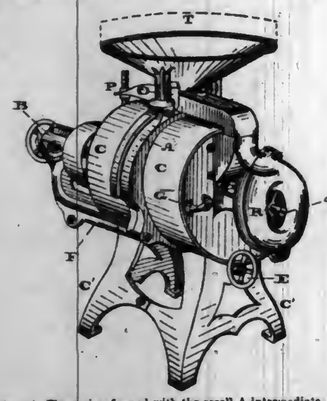
3. In a lantern, the combination of the base, the stationary guards C C, the fixed cap or frame D, and the hinged guard C², connected to said cap or frame by a screw or other suitable means, substantially as and for the purposes herein set forth.

200,566. SHOE-TIPS. Edwin F. Partridge, Philadelphia, Pa., assignor to John Mundell & Co., same place. Filed Jan. 3, 1878.



Claim.—The sole-leather tip having its thickest portion at the point *b*, gradually tapering crosswise to its edges, and adapted to be stitched all around, as shown and described.

200,567. VERTICAL GRINDING-MILLS. Calvin G. Phillips, Philadelphia, Pa. Filed Mar. 13, 1877.



Claim.—1. The casing formed with the scroll A intermediate of the parts C C, and extending wholly or partially around the stones or grinders, substantially as and for the purpose set forth.

2. The combination, with the stones or grinders, of an encircling scroll, A, and one or more cleaners acting as fans, substantially as and for the purpose set forth.

3. The bridge-tree box B, with the partition H, forming an oil-receptacle, in combination with the runner-shaft journaled to said partition, substantially as and for the purpose set forth.

4. The bridge-tree box B, in combination with the bracket F, supporting the box and receiving the adjusting-arm D, substantially as and for the purpose set forth.

5. The combination, with the sections of the case A, of the trunnions G on the outer faces thereof, substantially as and for the purpose set forth.

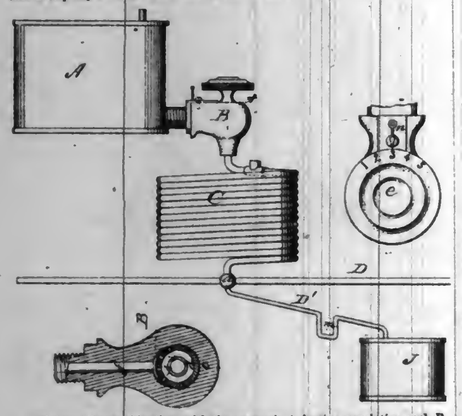
6. The fan-case communicating with the feed-spout and shoe, in combination with the fan fitted on and operated directly by the runner-shaft, substantially as and for the purpose set forth.

7. The elastic bushing P, in combination with the shoe and connected suspension pieces O, substantially as and for the purpose set forth.

8. The elastic bushing P, in combination with the shoe and operating-arm, substantially as and for the purpose set forth.

200,568. CARBURETERS. William H. Reed, Chicago, Ill. Filed Nov. 10, 1877.

Brief.—Oil in definite and regulated quantities is fed to the coil carbureter by a valve, the hollow plug of which has a number of openings, and the head of which has a graduated dial, to which there projects a fixed index. The oil flows down through the coil, while the air or gas to be carbureted flows up in the opposite direction. A trapped pipe covers the excess of oil from the coil into a drip cup or vessel below the gas or air main.



Claim.—The combination, with the reservoir A, having regulating-cock B, the coil C, and a feed-pipe, D, of the drip-pipe D', having the U bend *n*, and the drip-tank J beyond said bend, substantially as specified.

200,569. ELECTRIC CONDUCTORS FOR ELEVATOR-ANNUNCIATORS, &c. Thomas L. Reed, Providence, R. I., assignor of one-half his right to Eugene F. Phillips, same place. Filed July 10, 1877.

Brief.—Flexible conductors for elevator-annunciators, &c., consisting of insulated wires surrounded by a metallic coil to prevent kinking

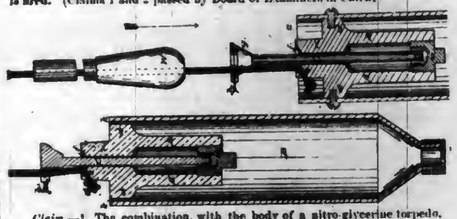
Claim.—A flexible electric conductor composed of any desired number of insulated wires inclosed within a metallic coil, substantially as described.

200,569.



200,570. TORPEDOES FOR OIL-WELLS. Edward A. L. Roberts, Titusville, Pa. Filed Oct. 7, 1876.

Brief.—The torpedo has an inside chamber, in which the detonating-charge is fired. (Claims 1 and 2 passed by Board of Examiners-in-Chief.)

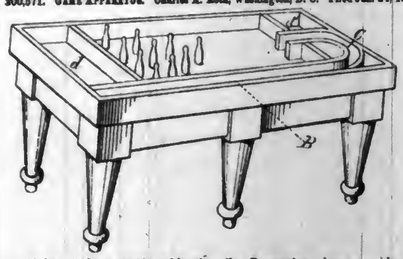


Claim.—1. The combination, with the body of a nitro-glycerine torpedo, of a priming-chamber for containing a priming-charge of nitro-glycerine, and devices, substantially as described, for exploding a fulminate within the priming-chamber, so as to apply the initial force within the body of the priming-charge, substantially as specified.

2. The priming-chamber for torpedoes, for containing nitro-glycerine, having the orifice for introducing the percussion-rod, and through which the priming-chamber may be charged, in combination with a percussion-rod, adapted to explode a fulminate within the priming-chamber, substantially as and for the purpose specified.

3. The combination, with a torpedo-body, B, of the priming-chamber A, having the notched flange a^3, the filling and percussion-rod orifice *e*, with funnel-mouth *f*, and the percussion-rod having the slotted wired head, the whole constructed substantially as and for the purpose specified.

200,571. GAME APPARATUS. Charles A. Roth, Washington, D. C. Filed Jan. 24, 1878.



Claim.—1. In a ten-pin table, the alley B, running along one side of the table only, from the foot to the head, and terminating at the latter portion of the table in a crook, C, opening at a point intermediate of the sides and near the head A, whereby the ten-pins will be set up at the foot of the table by the player, and from the end at which the ball is played, as herein shown and specified.

2. In a ten-pin table, the arrangement of the alley B along one side only of the table, with its crook C at the head thereof, and terminating at the point herein specified, and the compartments *d d'* at the foot and head of the table, respectively, as and for the purposes herein shown and described.

200,572. LIFE-PRESERVERS. Detlef Rage, Providence, R. I. Filed Dec. 31, 1877.



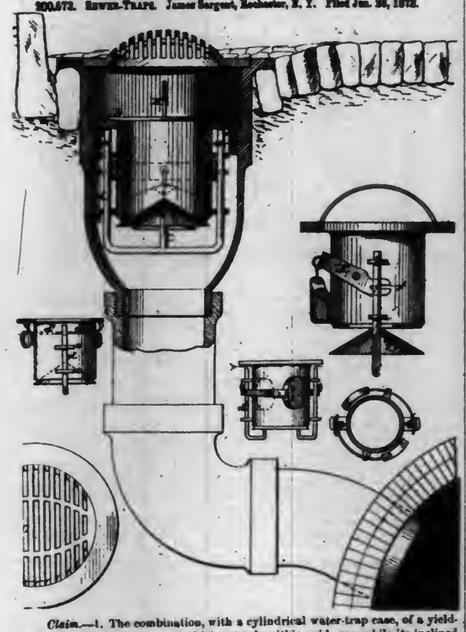
Claim.—1. A life-preserver made of an elastic tube, the ends of which are secured by passing one end over and beyond a sleeve, and the other end over

the first and beyond the sleeve, so that the same are firmly held by elasticity of the tube, as and for the purpose described.

2. In a life-preserver, the combination, with the tube A, of the sleeve B, the air-hole *c*, extending through both ends of the tube, and the sleeve and the elastic lap *d*, arranged and operating substantially as and for the purpose described.

3. A portable life-preserver, consisting of an elastic air-tube, and provided with an air valve or hole, closed by an elastic strap or loop, arranged and operating substantially as and for the purpose described.

200,573. SEWER-TRAPS. James Sargent, Rochester, N. Y. Filed Jan. 26, 1878.



Claim.—1. The combination, with a cylindrical water-trap case, of a yielding conical valve the apex of which extends within said case, while its inclined surface has its bearing on the lower edge thereof, substantially as described, so that the opening of the valve will be entirely on a horizontal line, and only sufficient to permit the passage of the volume of water by which the depression of the cone is occasioned, whereby foul air or sewer-gas is prevented from escaping through the trap.

2. In a drain-trap, the combination, with a cylindrical case, of a yielding conical valve the apex of which projects upward therein, suitable devices for returning said valve to its bearing against the lower edge of said case, and guides for holding it in a vertical and central position during its movement, substantially as described.

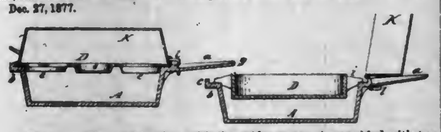
200,574. INSECT-TRAPS. Franz Schreiber and Anton Weigand, New York, N. Y. Filed Dec. 28, 1877.

Brief.—The inlet-apertures, consisting of inclined passages, are provided with flap-valves or gates made of mica, sufficiently flexible to be easily raised by the insect when entering the trap. The top of the trap is provided with a removable foraminous screen to allow for the destruction and removal of the insects.



Claim.—A roach or insect trap provided with mica valves or gates, substantially as and for the purpose set forth.

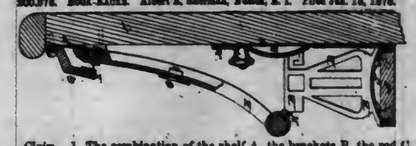
200,575. COOKING UTENSILS. Chas. G. Shepard and Peter Adams, Jr., Buffalo, N. Y. Filed Dec. 27, 1877.



Claim.—1. The combination, with the spider or pan A, provided with top flange *b* and offset *c*, of the removable cover K and removable pan D, provided with lifter-opening *g*, substantially as and for the purpose set forth.

2. The combination, with the spider A, having a handle, *a*, of the cover K, provided with hinged loop *l*, sliding upon the handle *a*, substantially as and for the purpose set forth.

200,576. BOOK-RACKS. Albert B. Sherman, Natick, R. I. Filed Jan. 18, 1878.



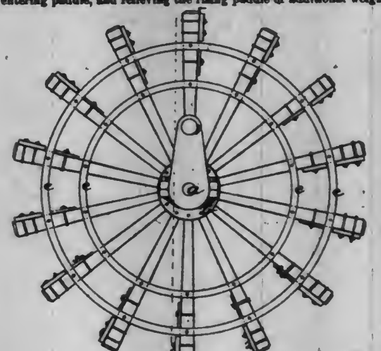
Claim.—1. The combination of the shelf A, the brackets B, the rod C, the swinging arms E, the springs F, and the cups G with each other, substantially as herein shown and described.

2. The combination of the convexed rubber plate J with the shelf A of the book-rack, substantially as herein shown and described.

3. The convexed rubber plates K, attached to the back of a pew, to operate in connection with the rod D and swinging arms E, for holding the books closed, substantially as herein shown and described.

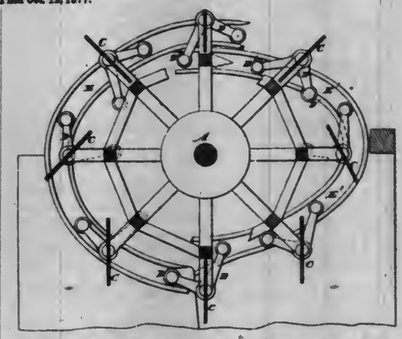
200,577. PADDLE-WHEELS. Levi Shock, Pittsburg, Pa. Filed Nov. 12, 1877.

Brief.—"Splash-boards" are secured to the radial arms just above the ordinary paddle-board, preferably with a slight space between them, by which construction the water splashed or thrown up by the entering paddle strikes the splash-board of the preceding paddle, and is deflected thereby and falls in advance of the entering paddle, thereby rendering the water more solid for the entering paddle, and relieving the rising paddle of additional weight.



Claim.—The combination, with a paddle-wheel, of a series of splash-boards, arranged on or between the arms above the paddle, substantially as and for the purpose specified.

200,578. FEATHERING PADDLE-WHEELS. William C. Smaltzig, Springfield, Mo., assignor of two-thirds his right to William McAdams, E. T. Robberson, and O. M. Jones, same place. Filed Oct. 12, 1877.



Claim.—The buckets C, rotating around their common axis, and also each independently around its own axis, in combination with the double cranks D D and independent segmental races E E', arranged in such position that they shall alternately receive the wrist-pins of the crank and support the strain at the points where the buckets enter, and leave the water at points outside of the vertical planes of the bucket, and that at the same time they shall act as guards for the wrist-pins, which are always in or inside of the races, substantially as set forth.

200,579. DITCHING-MACHINES. William Smith, Germi, Ill. Filed Jan. 25, 1878.

Claim.—1. In a ditching-machine, the vertical guide-bar G and inclined conveyer, rigidly connected by horizontal top bars I, all forming an adjustable whole, and the vertical grooved front guides *b b*, the vertical rear guides *c c*, and the horizontal bars *e a*, forming the wheeled frame, and the locking-rod Z, all arranged as shown and described.

2. In a ditching-machine, the combination of the plow, conveyer, and vertical bar, having a part of its guide-ribs cut away, the vertical parallel guides, similarly cut away, and the pivot-rod, all as shown and described, whereby

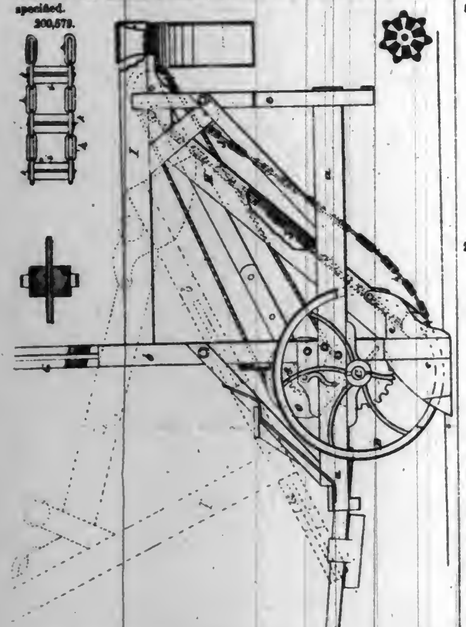
the plow and elevator-frame are adapted to be turned or inverted in position, as and for the purpose set forth.

3. In a ditching-machine, the combination of the loose arms, the pulley and pinion connected thereto, the gear fixed on the axle, the pulley fixed on the chain-wheel shaft, the radius-bar, and the vertically-adjustable elevator-frame, all as shown and described, for the purpose specified.

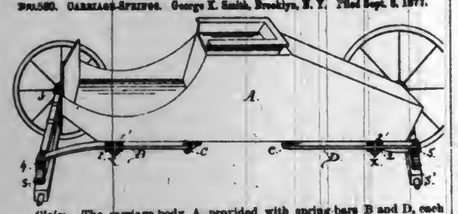
4. In a ditching-machine, the elevator composed of two chains, the shouldered cross-bars, and the rods having their ends bent to embrace and clamp the links, as shown and described.

5. In a ditching-machine, the chain-wheel L, having its interdental portion beveled in the manner described, in combination with a chain-elevator, as specified.

200,578.

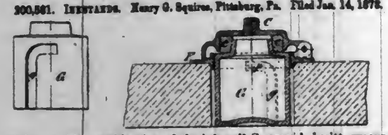


200,580. CARRIAGE-SPRINGS. George K. Smith, Brooklyn, N. Y. Filed Sept. 6, 1877.



Claim.—The carriage-body A, provided with spring-bars B and D, each bar being connected to the body by loops C, and arranged between two flexible pads, 1 1′ and 2 2′, secured to the bottom of the body by straps X X, independently of each other, in combination with the cross-bar provided with flexible pads 5 5 and springs S′, the several parts being arranged and combined, in relation to each other, substantially as and for the purpose specified.

200,581. INKSTANDS. Henry G. Squire, Pittsburg, Pa. Filed Jan. 14, 1878.



Claim.—1. The combination of the ink-well G, provided with grooves *g g*, with the frame F, having pins *p p*, as described and set forth.

2. The frame F, having pins *p p*, and the hinged cover C, having inside lining *c*, as described, and for the purpose set forth.

200,582. MILLS FOR ROLLING METAL. James H. Swett, Pittsburg, Pa. Filed Sept. 3, 1877.

Brief.—Guide-rolls adapted to turn or twist the bar passing from one pair of rolls to another, so as to bring that portion of the bar once at the edge of the groove into the bottom of the succeeding groove, and thereby work out the fin; also, a counterpoised swinging guide and stripper to insure the proper passage from the working into the twisting guide-rolls.

Claim.—1. In combination with one or more pairs of work-rolls, a pair of guide-rolls having adjustably-pivoted bearings or shafts, substantially as and for the purpose specified.

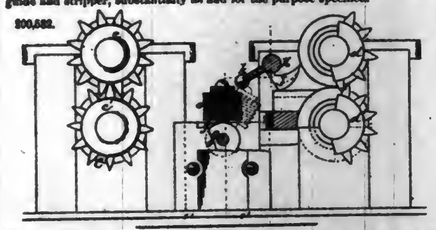
2. In combination with one or more pairs of work-rolls, the adjustably-pivoted guide-rolls having relief-bearing, substantially as and for the purpose specified.

3. In combination with one or more pairs of work-rolls, a pair of guide-rolls having threaded peripheries, substantially as and for the purpose specified.

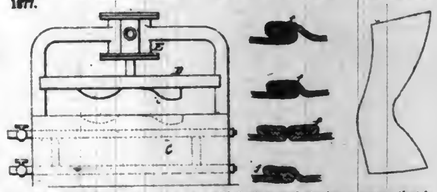
4. In combination with the work and guide rolls, a swinging guide and stripper, substantially as and for the purpose specified.

5. In a metal-working machine, the swinging counterpoised cam-shaped guide and stripper, substantially as and for the purpose specified.

200,582.



200,583. MANUFACTURE OF CORSETS. John C. Tallman, New York, N. Y. Filed Dec. 18, 1877.

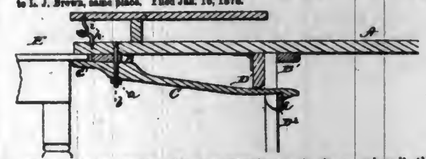


Claim.—1. The mode within described of manufacturing corsets—that is, by uniting and folding the various pieces to form heavy seams, and then condensing the latter, and molding the body of the corset by subjecting the same to heat and pressure between dies, as set forth.

2. A corset-pad or part of a corset, having ribs *f* formed of folds of the body material, compressed in the manner and by the means substantially as specified.

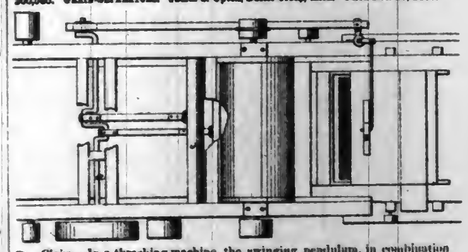
3. The corset-press consisting of the lower die C and heating devices, upper die D, and pressing device E, supported by a yoke, B, connected to the die C, as described.

200,584. IRONING-TABLES. Sidney C. Terry, Augusta, Mich., assignor of one-half his right to L. J. Brown, same place. Filed Jan. 16, 1878.



Claim.—In combination with an ironing-board, A, the cross-bar B, the hinged legs D D, with cross-bars D¹ and D² and cleats *d d*, and the spring-lever C, pivoted at *b*, with its outer end extended to form the clamping-jaw C′, all constructed and arranged substantially as and for the purposes herein set forth.

200,585. GRAIN-SEPARATORS. James S. Upton, Battle Creek, Mich. Filed Dec. 14, 1877.



Claim.—In a thrashing-machine, the swinging pendulum, in combination with the swinging boot and shoe, as an intermediate counter balance for the same, the said pendulum, boot, and shoe being separately operated directly from a single-crank shaft, as set forth.

200,586. VATS. Christian Visel, Coldwater, Mich. Filed June 10, 1877.

Brief.—The tub is fastened together by rods bent around and inserted through its several parts, and secured by nuts on the outer ends of the said rods, formed with screw-threads for that purpose.

Claim.—1. In a vat or other receptacle, the bows C C, embracing its ends and fastening its supporting standards or legs thereto, substantially as and for the purpose set forth.

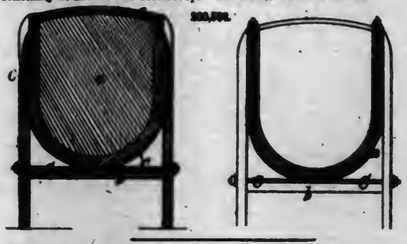
2. In a vat or other receptacle, the bows C C, embracing its ends and fastening its supporting standards or legs thereto, and the said legs and their connecting pieces or braces together, substantially as and for the purpose set forth.

3. In combination with a vat or other receptacle, the central bow B and bows C C, substantially as shown and described, and for the purpose set forth.

4. In combination with a vat or other receptacle and its supporting-standards, the bows B and C C, substantially as shown and described, and for the purpose set forth.

5. In combination with a vat or other receptacle and its supporting standards or legs and their connecting pieces or braces, the bows B and C C, substantially as shown and described, and for the purpose set forth.

200,586.

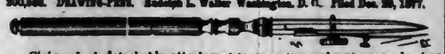


200,587. SEPARATING TIN FROM TIN-SCRAP. Peter G. Vogelius, Philadelphia, Pa. Filed Oct. 3, 1877.

Claim.—1. The process herein described, consisting in subjecting tin-scrap to the action of a nitric-acid or dilute nitric-acid bath, the iron of such scrap being rendered passive by connection with the positive pole of an electrical battery, substantially as shown and described.

2. The process herein described for the removal of tin from tin-scrap, consisting in subjecting the tin to the action of nitric acid or dilute nitric acid while the iron is in a passive condition, substantially as described.

200,588. DRAWING-PENS. Rudolph L. Walter Washington, D. C. Filed Dec. 20, 1877.



Claim.—1. A detachable attachment to an ordinary drawing-pen, having slot *a* and measuring-point *c*, substantially as and for the purpose set forth.

2. A detachable attachment to an ordinary drawing-pen, having screw *a*, slot *a*, and measuring-point *c*, substantially as and for the purpose specified.

3. A section or parallel lines spacing attachment to an ordinary drawing-pen, having the clamp *b*, slot *c*, screw *a*, and measuring-point *c*, operating together substantially as and for the purpose above set forth and described.

200,589. MACHINES FOR PRINTING PILLS. Wm. B. Warner, Philadelphia, Pa. Filed Nov. 26, 1877.

Brief.—A vertically-reciprocating notched bar carries the pills from their receptacle to the printing-bed, where they are printed or indented by being rolled under pressure by means of a slide, which reciprocates horizontally over the bed. At the farther end of the grooves of the bed are a series of apertures, through which the pills drop into bottles placed thereunder.



Claim.—1. The mode herein described of printing or indenting the surface of pills—that is, by causing printing or indenting surfaces to roll the pills under pressure, in the manner set forth.

2. A pill-printing machine in which a bed with a series of V-shaped grooves is combined with a slide carrying the printing or indenting plates, substantially as set forth.

3. The combination of the bed and its series of V-shaped grooves with the pill-reservoir *a* and the notched bar E, to which a vertical reciprocating motion may be imparted, substantially as described.

4. The combination of the slide and its printing or indenting plates with the bed having V-shaped grooves, the sides of which are clothed with rubber or other equivalent yielding material, all substantially as specified.

5. The combination of the grooved bed, the slide, and the reciprocating transverse bar E with mechanism, substantially as described, through the medium of which the slide is caused to operate the bar, in the manner set forth.

200,590. COMBINED PLANTER, LAND-ROLLER, AND FERTILISER-DISTRIBUTER. Reuce B. Werner, St. Joseph, Mo. Filed Dec. 22, 1877.

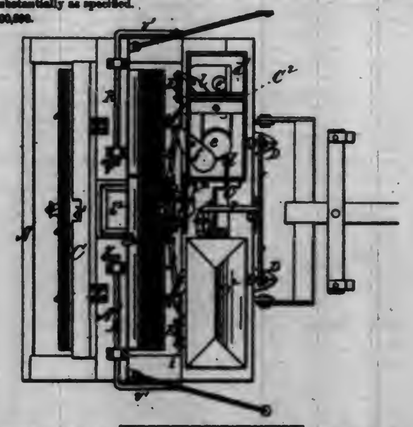
Brief.—A roller in three sections is mounted in a frame, upon which, forward of the roller, is mounted a seed-box, containing also a receptacle for fertiliser. The middle section of the roller is provided with cogs, which, in the rotation of the roller, are brought into contact with the arms of a feeling device, thus working one or two sets of valves for the purpose of sowing seed alone or distributing therewith fertilising material.

Claim.—1. The combination, with frame A and the roller B, journaled therein and having tappets *c*, of the converging swing-levers D D², the connecting-rods *g g′*, the valves *f f′*, and the hoppers *d*, having openings *e* and dropper-spouts *e′*, substantially as specified.

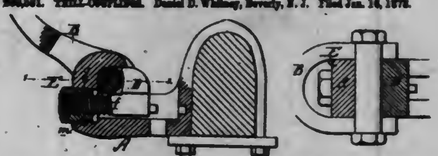
2. In combination with the levers D¹ D² of a seed-dropping device and their actuating mechanism, a fertiliser-receptacle having the stemmed valves *l F*, the levers E, having slots *i i′*, the rods F, adapted to be engaged with and disengaged from the said levers on the ball *p′*, and arms *k*, whereby seed alone may be planted or dropped into a hill along with a fertiliser, substantially as specified.

3. In combination with the roller *e′*, having cogs *c*, the swing-levers D¹ D², simultaneously actuated thereby, the end-wise-movable fulcrum-rods A A¹ and their front connecting-plate *h*¹, having an offset, *h*¹, the vibrating lever H, having a spur engaging said offset, the arm *r*, and the transverse supporting-rod *s*, the connecting-rods J, and the flexible shank *m m*¹ of the shovels D, substantially as specified.

200,590.

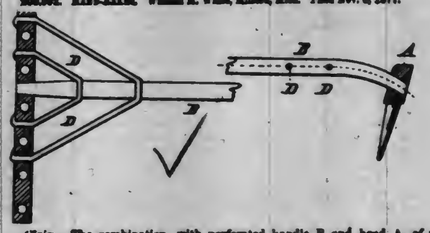


200,591. TRILL-COUPLERS. Daniel D. Whitney, Beverly, N. J. Filed Jan. 14, 1878.



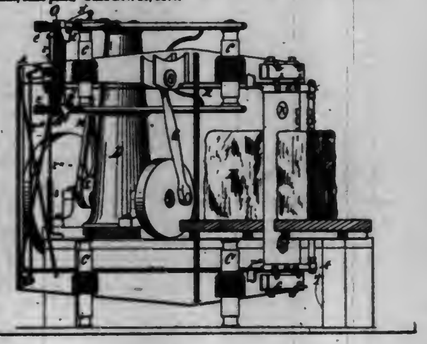
Claim.—The combination of the block A and the thill R, constructed and adapted to each other as described, with the sliding block D and its threaded stem *f*, the recessed tightening-nut E, and the pin *m*, for preventing longitudinal movement of said nut, all substantially as set forth.

200,592. HAND-RAKE. William M. White, Milford, Mich. Filed Nov. 3, 1877.



Claim.—The combination, with perforated handle B and head A, of a series of braces, D, each of said braces having its ends secured to said head by having its middle part made straight, and passing transversely through said handle, and its intermediate parts extending in oblique lines from said handle to said head, substantially as set forth.

200,593. STONE-HAMMER MACHINES. Hugh Young, New York, N. Y., assignor to William Radcliffe, same place. Filed Nov. 16, 1877.

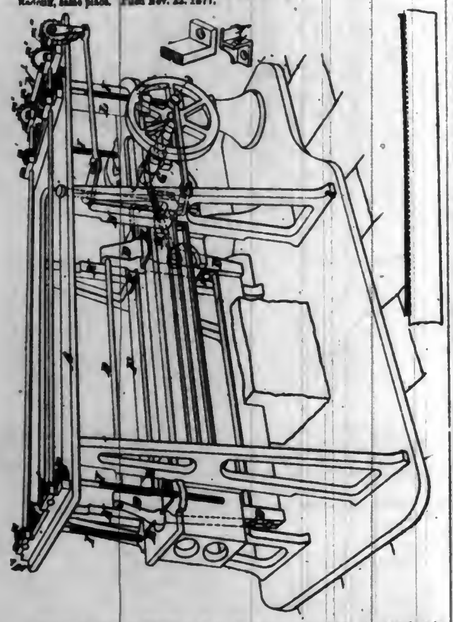


Claim.—1. A saw-gate projecting over and under the carriage, both laterally and toward the front or end of the machine toward which the cutting-edge of the principal saw is presented, substantially as and for the purpose set forth.

2. The combination, in a stone-sawing machine, of a reciprocating saw gate or sash, a principal saw, and a detachable auxiliary saw, for attachment to or connection with the principal saw in the same plane and in parallel relation with the principal saw, substantially as and for the purpose specified.

3. The combination of the separate push or lift motion slide O, parallel to the guides C, which govern the reciprocating motion of the saw-gate, and having its bearings in or on that portion of the machine which supports said guides C, means for imparting motion from the main shaft I, or any shaft positively connected therewith, to said slide O, and means for imparting from said slide O a corresponding edgewise motion to the saw or saws, substantially as and for the purpose set forth.

8,004. STONE-SAWING MACHINES. Hugh Young, New York, N. Y., assignor to William Kelliff, same place. Filed Nov. 22, 1877.



Claim.—1. The combination, in a stone-sawing machine, of a fixed main frame or support and movable framing, which carries parallel guides or slides for directing the reciprocation of the saw-gate, and which also carries the bearings for the shaft for driving the said saw-gate, and which is adjustable in a direction perpendicular to the stroke of the saw, whereby the said shaft and said guides or slides are always maintained in a fixed relation with each other in said adjustable framing, substantially as and for the purpose described.

2. The combination, in a stone-sawing machine, of a fixed main frame or support, movable framing, which contains parallel guides or slides for the saw-gate, and bearings for the shaft which drives the saw, and automatic means for moving the said movable framing, shaft, guides, and saw together, for the purpose of feeding the saw to the work, substantially as and for the purpose set forth.

3. The combination, with the movable framing, holding in fixed relation the parallel guides for the saw-gate D, and the bearings for the shaft G, which drives the saw, of a system of male screws, I, of equal pitch, fitted to female screws in said frame, supported in bearings on the main frame or support, and actuated equally and uniformly by a system of bevel-gearing and shafts through a ratchet-and-pawl movement driven by the said shaft G, substantially as and for the purpose specified.

4. The combination, with the saw-blade, of the detachable stiffening-back, constructed and applied substantially as and for the purpose specified.

REISSUES.

8,004. CAR-AXLE BOXES. John Stephenson, New York, N. Y. Patent No. 49,005, dated July 25, 1865. Filed Dec. 23, 1875.

Claim.—1. A car-axle-box shell provided with a groove, *d*, at the front verge of its roof *f*, for receiving the upper edge of the door, substantially as set forth.

2. A car-axle-box shell provided with a thickened front wall, A, in which is formed a hole, *a*, wholly external of the oil-chamber, for the reception of a screw-bolt or pin, *c*, to secure the door E in place, substantially as set forth.

3. A car-axle-box shell having a groove at the front verge of the roof for receiving the upper edge of the box-door, and having a hole approximately vertical in the front wall for the reception of the bolt or pin which secures the door, substantially as set forth.

4. A car-axle-box shell having a dust-chamber at its rear, provided with projecting walls, constructed and arranged to form additional chafing-surfaces for the pedestal jaws or guides, substantially as set forth.

5. A car-axle-box shell provided with a dust-chamber at its rear, and an opening therein for the admission of the dust-collar or packing, and internal grooves for holding the check-plate at the end of the axle, substantially as set forth.

6. A car-axle-box shell having a dust-chamber at its rear, and an opening therein for the admission of the dust-collar, the walls of said chamber being made to project to form chafing-surfaces for the pedestal jaws or guides, and the roof of the shell shortened to admit entrance and exit of check-plate, substantially as set forth.

7. A car-axle-box shell having the check-plate grooves, in combination with the shortened roof, whereby the check-plate can be put in position within the box or removed, at pleasure, substantially as set forth.

8. A car-axle-box shell provided with a shortened roof, the internal surface of which, in the line of its length, is made straight or plain or convexly curved, and the sides of the box provided with shoulders or grooves for the reception of a removable check-plate to secure the brass or bearing in place, substantially as set forth.

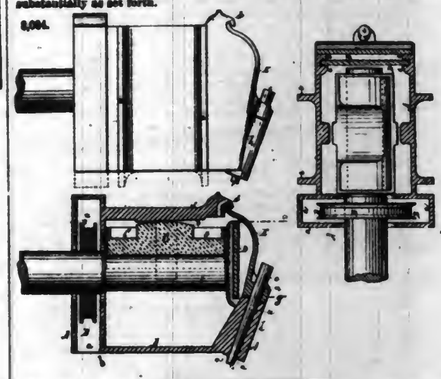
9. A car-axle-box shell having the ceiling a longitudinally segmental or plane surface, and the front verge of the roof with a groove for lodgment of the upper edge of the box-door, substantially as set forth.

10. A car-axle-box shell having a chamber at the rear for the dust-collar, grooves for lodgment of the check-plate, roof shortened for placing and removing the check-plate, and door overhanging the check-plate to retain it in position, substantially as set forth.

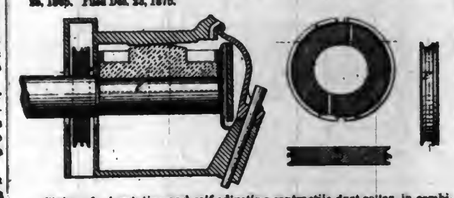
11. A car-axle-box provided with a dust-collar chamber at its rear, shoulders or grooves at its front for the reception of a removable check-plate, and a shortened roof, substantially as set forth.

12. The combination of a car-axle the journal of which is unprovided with a collar or shoulder at its outer end with a removable brass and a car-axle box, having shoulders or grooves for the reception of a removable check-plate, and a shortened roof, the internal surface of which, in the line of its length, is made plain or straight, or convexly curved, in the manner and for the purpose substantially as set forth.

8,004.



8,005. CAR-AXLE BOXES. John Stephenson, New York, N. Y. Patent No. 49,005, dated July 25, 1865. Filed Dec. 23, 1875.



Claim.—1. A rotating and self-adjusting contractile dust-collar, in combination with an undivided car-axle box provided with a dust-chamber having an opening therein for the admission or withdrawal of the dust-collar, substantially as and for the purposes set forth.

2. A rotating and self-adjusting contractile dust-collar, in combination with an axle-journal and an undivided car-axle box, provided with a dust-chamber having an opening therein, for the admission or withdrawal of the dust-collar, substantially as and for the purposes set forth.

3. A rotating and self-adjusting contractile dust-collar, in combination with an axle-journal unprovided at its outer end with a button or shoulder, and an undivided car-axle box provided with an opening therein, for the admission or withdrawal of the dust-collar, substantially as and for the purposes set forth.

8,006. CAR-AXLE BOXES. John Stephenson, New York, N. Y. Patent No. 49,005, dated July 25, 1865. Filed Dec. 23, 1875.

Claim.—1. A car-axle journal brass or bearing in which the central part of its upper surface is transversely raised for contact with the ceiling of the box, and its two ends provided with cells for holding the lubricant, and which are made to communicate with each other by suitable channels or passage-ways, and with the contacting surfaces of the brass and journal, substantially as set forth.

2. The combination of a removable check-plate and a car-axle journal unprovided with a shoulder or button at its outer end with a brass or bearing

and an axle-box the contacting surfaces of which do not interlock with each other, substantially as set forth.

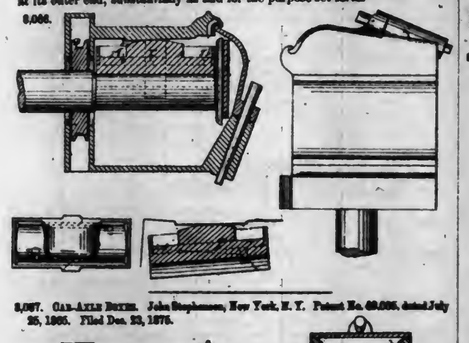
3. The combination of a brass or bearing and a car-axle box the contacting surfaces of which on the upper surface of the former and under side of the roof of the latter are formed by one plain and one convexly-curved surface, or by two convexly-curved surfaces, in the line of their length, with a car-axle having a journal unprovided with a collar at its outer end, substantially as and for the purpose set forth.

4. The combination of a brass or bearing with a car-axle box having a shortened roof and a removable door and check-plate, the contacting surfaces of the under side of the roof and upper side of the bearing being formed by one plain and by one convexly-curved surface, or by two convexly-curved surfaces, in the line of their length, substantially as and for the purpose set forth.

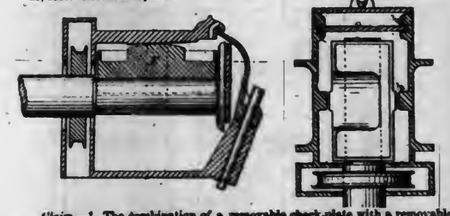
5. The combination of a brass or bearing with a car-axle box having a removable door and check-plate, the contacting surfaces of the under side of the roof and upper side of the bearing being formed by one plain and by one convexly-curved surface, or by two convexly-curved surfaces, in the line of their length, substantially as and for the purpose set forth.

6. The combination of a brass or bearing and a car-axle box having a removable door and check-plate, the contacting surfaces of the under side of the roof and upper side of the bearing being formed by one plain and by one convexly-curved surface, or by two convexly-curved surfaces, in the line of their length, with an axle the journal of which is unprovided with a shoulder at its outer end, substantially as and for the purpose set forth.

8,006.



8,007. CAR-AXLE BOXES. John Stephenson, New York, N. Y. Patent No. 49,005, dated July 25, 1865. Filed Dec. 23, 1875.



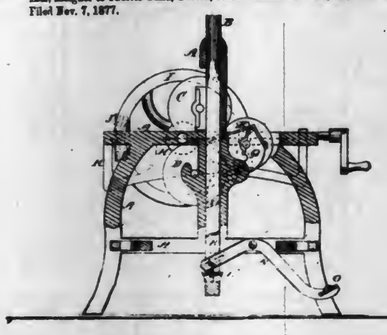
Claim.—1. The combination of a removable check-plate with a removable brass or bearing, and a car-axle box provided with shoulders or grooves formed in its side walls, for the reception of the ends of the check-plate, substantially as described.

2. A car-axle box having located at the end of the axle a plate to check the end motion of the axle, each side edge of the plate resting in a groove, and prevented from rising out by the overhanging lid or door of the box.

3. A removable check-plate, in combination with a car-axle box provided with shoulders or grooves formed in its side walls, for the reception of the ends of the check-plate, an axle-journal unprovided with a button or shoulder at its outer end, and a removable brass or bearing held in position by said check-plate, substantially as described.

4. A removable check-plate and a removable brass, in combination with a car-axle box provided with a shortened roof and door, substantially as and for the purpose set forth.

8,008. LEATHER BOARDING AND GRAINING MACHINES. Louis Townsend, Terre Haute, Ind., assignor to Chester Guild, Boston, Mass. Patent No. 196,105, dated Apr. 23, 1872. Filed Nov. 7, 1877.



Claim.—1. In a machine for boarding, graining, and softening leather, an adjustable plate or blade, over the edge of which the leather to be boarded is folded and moved, said plate or blade being adjusted by mechanism, substantially as and for the purpose set forth.

2. In a machine for boarding, graining, and softening leather, the combination, with upper and lower boarding-rollers, of a plate or blade over which the leather is folded, said upper roller and plate or blade adapted to be adjusted simultaneously and with relation to each other, substantially as and for the purpose described.

3. In a machine for boarding, graining, and softening leather, a plate or blade, in combination with pivoted arms or levers, an intermediate lever, and a foot-lever or treadle, whereby the operator is enabled to adjust said plate or blade in relation to the boarding rollers or cylinders, substantially as and for the purpose set forth.

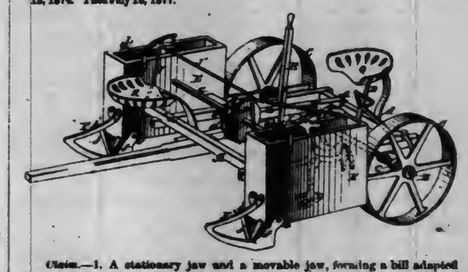
4. The combination, with suitable boarding-rollers and an adjustable plate or blade, of a feeding-roller, for the purpose of holding the leather against the boarding-rollers, substantially as specified.

5. The spring L and set-screw M, for the purpose of holding the upper roller C against the lower roller D, as set forth.

6. The shaft K, bevel-gear wheels I J, gear-wheels E F, and intermediate gear-wheel G, combined to operate substantially as and for the purpose specified.

7. The frame A, the central end posts of which are grooved longitudinally upon their inner sides to receive the frame B and the slotted levers N and Q, plate or blade S, and rollers C D P, combined to operate substantially as and for the purpose specified.

8,009. SEED-PLANTERS. Lyman J. Corbin, Winnebago, Ill. Patent No. 146,321, dated Jan. 13, 1874. Filed July 16, 1877.



Claim.—1. A stationary jaw and a movable jaw, forming a bill adapted to grasp and retain the seed by spring action, substantially as described, and for the purpose set forth.

2. The fixed jaw *i* and pivoted jaw *i*', rotating within the hopper, and adapted to pick up the grain and deliver it to the discharge-spout or outlet, substantially as described.

3. The jaws *i i*', rotating within the grain-box, as described, in combination with the tripper L, for operating the pivoted jaw *i*', as set forth.

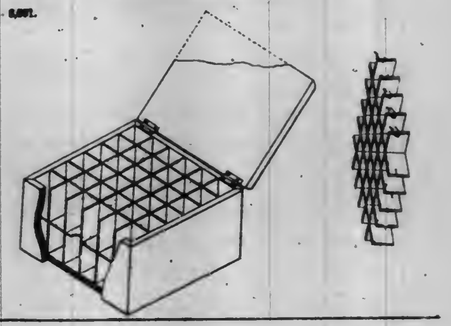
4. The fixed jaw *i* and pivoted jaw *i*', rotating within the hopper E, in combination with the tripper L and discharge-spout *e*', substantially as and for the purpose set forth.

8,010. PROCESSES FOR PRESERVING MEATS. David C. Link, New York, N. Y. Patent No. 194,633, dated Aug. 28, 1877. Filed Feb. 1, 1878.



Claim.—The improved process of preserving solid meat and preparing it for use, substantially as hereinbefore described, the same consisting in first removing the bone from the previously pickled meat, then placing it in a self-adjusting bladder, and smoking and boiling it while so inclosed, substantially as set forth.

8,011.

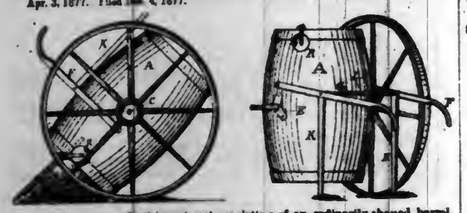


8,091. CASES FOR TRANSPORTING EGGS. John L. Stevens and Geo. W. Stevens, San Francisco, Cal., assignors, by mesne assignments, to Charles E. Coburn and Harriet P. Billings, Chicago, Ill. Patent No. 62,378, dated Feb. 26, 1867. Filed Feb. 6, 1878.

Claim.—1. In a case for transporting eggs, the combination of two or more removable trays, each containing a series of bottomless cells or compartments, with one or more removable diaphragms or dividing-boards, substantially as and for the purpose specified.

2. The combination of two or more trays, each containing a series of bottomless cells or compartments, with one or more removable diaphragms or dividing boards, substantially as and for the purpose specified.

8,092. BARREL-TRUCK. James O. A. Bennett, Morrison, Ill. Patent No. 189,015, dated Apr. 3, 1877. Filed Dec. 4, 1877.



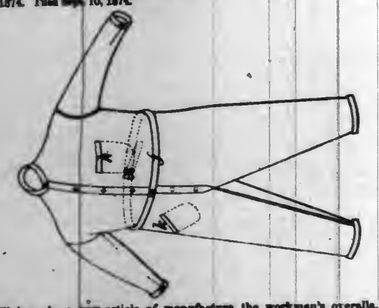
Claim.—1. A wheel barrel-cart consisting of an ordinarily-shaped barrel, to the sides of which are bolted plates E, having attached the spindle or arm C, as shown, and provided with handles attached directly to the barrel, and legs so attached as to sustain the barrel upright, as specified.

2. A truck or cart consisting of a barrel mounted by the spindles C, attached by the plate E to the sides, and the handles F, attached as shown, and connected by the cross-bar G, which is bolted to the barrel, and the legs K, attached to the handles by a screw or bolt, as herein shown and described.

3. The barrel-cover M, pivot-rods W, and balls or weights R, arranged and operating substantially as shown and described.

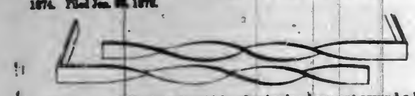
4. The improved barrel-cart, consisting of the barrel A, with spindles C, secured by the plate or lug E, wheels B, and handles F, and the weight-balanced cover, substantially as shown and described, and for the purpose set forth.

8,093. OVERALLS. Henry F. Woodward, New York, N. Y. Patent No. 189,093, dated July 21, 1874. Filed Sept. 10, 1874.



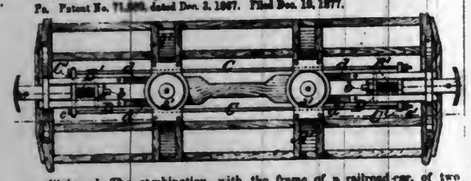
Claim.—As a new article of manufacture, the workman's overalls, open down the front to the crotch, or nearly so, provided with sleeves, pockets, and suitband, and in which the woven fabric of the front of the garment extends in one piece from the shoulder to the bottom of the leg, so as to avoid a seam at the front of the waist, substantially as set forth.

8,094. BALE-TIES. Joe J. Hagins, Rock Hill, S. C. Patent No. 151,190, dated May 19, 1874. Filed Jan. 26, 1878.



Claim.—A metallic bale-tie which, after having been put around a bale, is locked by twisting its lapped ends together in a continuous twist.

8,095. DRAFT AND BUFFING APPARATUS FOR RAILROAD-CARS. Edward L. Ossm, Harrisburg, assignee of seven-eighths of his right to Caroline J. Dougherty, same place, W. D. Moore, Wilkesbarre, Henry Levis, Frederick J. Kimball, and J. Snowden Bell, Philadelphia, Pa. Patent No. 71,589, dated Dec. 3, 1867. Filed Dec. 18, 1877.

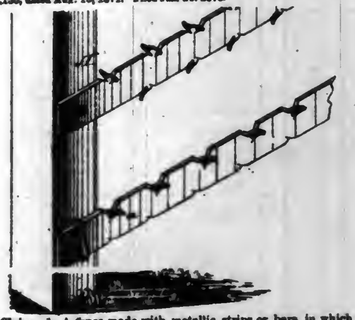


Claim.—1. The combination, with the frame of a railroad-car, of two yielding draw-heads or bumpers and an intermediate rigid connection, upon which said draw-heads have a sliding movement, whereby strains of draft are transmitted to the car-frame through the rigid connection, and strains of pushing and buffing imparted directly to the frame without acting upon or through said rigid connection, substantially as herein set forth.

2. The combination, with the frame of a railroad-car, of two yielding draw-heads or bumpers, having a free movement upon an intermediate rigid connection, and bumper-springs interposed between said draw-heads and stationary abutments, which transmit the strains of draft and buffing to the frame-timbers, substantially as and for the purposes set forth.

3. The combination, with the frame of a railroad-car, of two yielding draw-heads or bumpers and an intermediate rigid connection composed of two longitudinal draft-rods, passing through apertures in the frame on each side of the king-bolts or center-pins, and united at their ends by transverse coupling-plates having freedom of movement toward each other upon said draft-rods, substantially as and for the purposes set forth.

8,096. FENCE. Lyman P. Judson, Rose, N. Y., assignor to Jacob Brinkerhoff. Patent No. 118,136, dated Aug. 15, 1871. Filed Jan. 26, 1878.

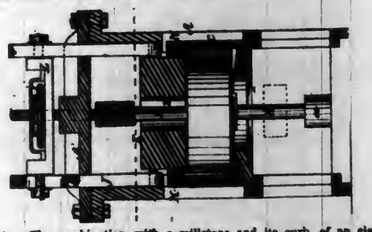


Claim.—1. A fence made with metallic strips or bars, in which the edges of the lengths are cut and formed into projecting spurs or barbs.

2. As a new article of manufacture for the lengths of a fence, metallic material provided with projecting spurs or barbs integral therewith, for the purpose set forth.

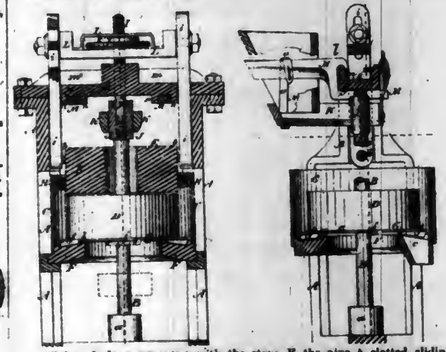
3. An improved fencing material, consisting of a metallic strip or bar, wrought into form suitable for fencing, and having spurs or barbs formed on the edge thereof and integral therewith.

8,097. GRINDING-MILLS. Bennet Whitney, Rahway, N. J., assignor to Wm. L. Teter. Patent No. 83,574, dated Oct. 27, 1868. Filed Nov. 7, 1877.



Claim.—The combination, with a millstone and its curb, of an elastic packing arranged between the periphery of the stone and the curb, substantially as set forth.

8,098. GRINDING-MILLS. Bennet Whitney, Rahway, N. J. Patent No. 83,574, dated Oct. 27, 1868. Filed Nov. 7, 1877.



Claim.—1. In combination with the stone E, the pins h, slotted sliding bars i, slotted plate g, adjustable plate L, stationary screw I, and nut j, all operating as described, for adjustably suspending the stone E in the framing, substantially as described.

2. The reversible Z-shaped bars M, provided with hooks l, arranged to support the hopper and shoe, substantially as and for the purpose described.

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CAVEATS.—Inventors filing caveats in the Office should be careful to describe their invention or improvement with accuracy, and illustrate such inventions as are capable of illustration with care and thoroughness.

Caveats are placed in the hands of the Examiners, who should not be expected to understand what the inventor means unless the latter has sufficiently matured his invention to clearly describe and illustrate it.

Caveats are sometimes filed in the Patent Office stating that the caveator is engaged in a series of experiments intended to accomplish certain results, and giving nothing more than a vague hint of the means by which the result is to be attained. As the courts have frequently decided that results are not patentable, the practice of the Patent Office is to the effect that a caveat cannot cover more ground than a patent. So, where a caveat describes more than one invention, the Examiner frequently overlooks a portion of the caveat, knowing that under the rules caveators are confined to a single invention.

Complaints are often made that caveats have been overlooked, and patents issued to subsequent applicants, when the fault lies in the hasty preparation of the caveat papers. The rules are explicit, that the caveat must describe the invention as fully as the inventor is able to do; that the drawings shall be of the same size as the drawings to accompany an application for a patent, (8 by 13 inches, on a sheet 10 by 15 inches, with an inch margin all round,) and on tracing-muslin, or light bristol-board or drawing-paper, which can be folded without breaking. A careful compliance with the rules will greatly facilitate the work of the Office, and will go a long way toward insuring the accuracy which is so necessary in securing their just rights to inventors.

PRICE OF THE GAZETTE.—The price of THE OFFICIAL GAZETTE is still fixed at $6 per annum, and there is no reduction from that price except where five subscriptions are included in one order, when the subscription is $5; and subscribers can be added to this club, by the party or parties forming it, any time during the year, at the reduced price.

The Annual Index will not be furnished to subscribers hereafter without extra charge; but immediately after the expiration of each volume a Half-yearly Index will be given without charge, and should additional copies of the Half-yearly Index be desired, they will be furnished upon the payment of fifty cents for each additional copy required.

EXTRA COPIES OF THE GAZETTE.—The letter-press of THE GAZETTE has been prepared with a view of meeting the demand for extra copies of that particular portion which relates to Office practice, decisions of the courts, &c.

Extra copies of the letter-press can be had separately from the illustrated portion, and the weekly index of patents and patentees can be had in any number at 5 cents per copy. Where extra copies of either the letter-press or weekly index are desired orders must be sent to the Office as early as the Saturday preceding the issue of the following Tuesday.

COMMISSIONER'S DECISIONS.

KIRCHNER *vs.* BLAIR.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the applications of William M. Kirchner, filed February* 20, 1877, *and George W. Blair, filed March* 28, 1876, *for patent for* "IMPROVED METHOD OF FLARING AND CRIMPING GLASS-WARE."—*Decided February* 16, 1878.]

A motion made after final interference hearing, but before decision announced, to remand the cause to the Primary Examiner to reject old and admit new claims, to redeclare the interference and permit the taking of additional testimony, denied.

The existing claims are patentable, and state the invention as satisfactorily as the proposed substitutes. There has been no mistaking the issue, and no material error in the taking of testimony.

A mistake in fact which could have been avoided with reasonable care is no ground for a new trial, particularly where the fact is itself immaterial.

It is safer to depend upon the full history of what an exhibit machine has done, as developed by the testimony, than to trust to expert evidence (now) as to what it is capable of doing.

A contestant establishes nothing by an exhibit machine, which, though producing the same result, does it in a manner and by means different from what are within the invention as stated in the issue.

Priority awarded an applicant who was first to conceive and first to reduce the inventions stated to actual and successful practice.

[*Bakewell & Kerr*, attorneys for Blair; *J. J. Johnston*, and *Hill & Ellsworth*, attorneys for Kirchner.]

SPEAR, *Commissioner:*

After the hearing in this case, in which the question of priority of invention was fully discussed, but before any announcement of decision, motion was made on the part of Kirchner, as follows:

First. To suspend said interference and remand the applications to the Primary Examiner. And then—

Secondly. In view of the state of the art, as shown in the patents of M. H. Collins of September 3, 1867, and September 26, 1871, and in Ure's Dictionary and other works on the subject of glass manufacture, to allow said Kirchner to withdraw his first and second claims.

Thirdly. To direct the rejection of the first and second claims of said Blair on the same references above cited.

Fourthly. To grant leave to said Kirchner to amend his application by inserting the following additional claims, viz:

1. The combination of a tapering ribbed flarer for opening out the end of the chimney by rotation, as described, with a crimper for indenting at one operation a series of crimps in the end of the chimney, and with guide-rests for holding the chimney in line with the flarer during the operation of flaring, and with the crimper during the operation of crimping, substantially as described.

2. The combination of the tapering ribbed flarer, and mechanism for revolving the same; guides for holding the snap and chimney concentric with the axis of the flarer; and a crimper arranged at the back of the flarer, whereby the chimney can be flared, or flared and crimped, without retracting it.

Fifthly. To examine said claims, and, if found to be new, and also found to exist in the subject-matter of Blair's application, to redeclare the interference on new issues.

Sixthly. To reopen the taking of evidence, in view of newly-discovered evidence, and in view of the impropriety of the present first and second issues, and permit both parties to take additional testimony.

The second, third, fourth, and fifth appear rather to be a part of the first motion, or of the nature of reasons for granting it. The references specified under the second head have been heretofore referred to in this case, and I find in them no good reason for refusing the claims, which are the same in the applications of both parties. I therefore decline to direct the rejection of the first and second claims of Blair, nor do I see any good reason for granting leave to Kirchner to insert the additional claims. The invention in controversy has been made perfectly clear; and the question of priority can be as certainly determined, in my judgment, upon the claims as they now stand, as upon those presented in the motion. The parties to this interference have never, in taking the testimony, made any material error as to the nature of the invention in controversy. It is not necessary, therefore, to examine the said claims, and re-declare the interference on new issues. The sixth motion is "to reopen the taking of evidence in view of newly-discovered evidence." Under this head Kirchner states in his affidavit that Peter Kunzler, one of his witnesses, in his former testimony, made a mistake as to the date of his visit to the Fort Pitt Glass Works of Blair & Zimmerman, during which he saw the invention in operation; that said visit was in March of 1876, and not in October of 1875; and after the making of a certain exhibit, (Kirchner, No. 3,) and not before. He refers also to proof by experts as to the construction of the exhibit. The last point under this head relates to a decision of the Board of Examiners-in-Chief. On the first point, Kunzler's affidavit is simply to his want of recollection of a fact which, by due attention, might have been remembered, and is not reasonable ground for granting a new trial. But Kunzler's testimony as to the date of visiting the Blair and Zimmerman Works (in September or October of 1875) is corroborated to some extent by the testimony of Kirchner himself, who, on cross-examination, admits that he went with Kunzler to the works of Blair & Zimmerman, yet does not indicate that there was more than one visit, and states that the visit was in the fall of 1875. In my view of the case, it does not appear to be material whether it was before or after seeing what Blair & Zimmerman had done that Kirchner applied himself to the invention. The other propositions under this head are either not material or apparently not newly-discovered evidence.

The nature of Exhibit 4 must have been known to applicant, and appears to me sufficiently clear upon inspection. Further, it is safer to take the history already fully given in this testimony of what the machine, Exhibit 4, has done than to trust to the opinions of experts as to what it is capable of doing.

The other matters in the affidavit are either immaterial or cumulative. The motion is denied.

There are two distinct, though kindred, forms of the invention in controversy. The first relates simply to—

The method of flaring hollow glass articles, without external pressure, by reheating the end to be flared, and then pressing it over a tapering former having two or more converging ribs or edges, while either former or article is rotated, &c.

The second matter includes, with this manner of flaring, a simultaneous crimping.

Upon the first point the devices of the two parties are substantially the same.

The ribbed former, expanding and shaping the article by rotation, with but small part of the surface in constant contact with the interior surface of the glass, is represented as giving a better effect than the older method of pressing in a solid and smooth former which imparts the required shape by direct contact simultaneously at every point. This first process may be used without reference to the second, independently, with perfectly good effect so far as is required for the flaring. The two inventions, therefore, though properly in one application, and indeed claimed in combination as forming one apparatus or process, were not necessarily made or used simultaneously.

This appears to have been true in the history of Blair's invention. The testimony shows that he first used the method of flaring the chimneys by means of a ribbed former. I am satisfied by the testimony that he did this some time in the summer of 1875. It was, in respect to this part of the invention, something more than a mere idea or knowledge of a want, as represented by counsel for Kirchner. It was not necessary, as appears, that a new device should be invented for practicing this part of the invention. The crimping device patented to Atterbury, August 14, 1866, served the purpose. It was only necessary to press the chimney upon this crimper, while rotating either one or the other during the process. This is what Blair did in the fall of 1875. The testimony of Blair is sustained on this point by his own associates and workmen. Kunzler, one of Kirchner's witnesses, also testified that, in company with Kirchner, he visited the Dithridge and Company's works in September or October, 1875, and saw the process going on of flaring by rotation. (Kunzler's testimony, cross-interrogatory 36.) He afterward, as stated above, made affidavit that this was an error, and that he saw the invention in March following, but I am inclined to trust his original rather than his refreshed recollection. From this flaring alone, Blair went on and soon produced the combined rotating flarer and crimper, having the crimper capable of independent rotation. These machines Blair has been using extensively and successfully. I do not think it material to inquire at precisely what date in the fall of 1875 or spring of 1876 Blair invented this improved flarer and crimper, with the crimper capable of independent rotation. Exhibit "wire-crimper" is represented as having been used in January, 1876. In the summer or fall of 1876, Blair had the two-part crimpers and flarers made in considerable numbers, as appears from the books of Smith & Co. (Kirchner's printed record, pages 50 and 51.) Blair's record is complete as an independent inventor, diligent in introducing the invention into use, and in making application for a patent therefor.

The Board of Examiners-in-Chief refer to the fact that the invention and application of Kirchner were not brought forward until after the assignees of Kirchner had been defeated in a former interference with Blair on the same subject-matter, though with the application of another party. Whether or not this fact should require a higher order of proof on the part of Kirchner, it certainly tends to throw a cloud upon his case in regard to the perfection and practicability of his invention, for men do not ordinarily relinquish a valuable invention, having once made and tested it, and become apprised of its value.

The first record evidence of Kirchner's invention which has been preserved consists of Exhibits Kirchner 3 and 4, a drawing and machine. This machine is produced. It has a rotating ribbed former and is capable of operation in accordance with the terms of the first claim; but it is not constructed in accordance with the terms of the third and fourth claims. The crimping device is made to slide on the shaft of the former, and rotates with it. It may be moved back while the glass tube is advancing upon the former in the process of flaring, and when that is accomplished, and the rotating of the former stopped, then the crimper may be brought forward and perform its function. This may be capable of performing the flaring and crimping, but neither the machine nor the operation is the same as those of Blair. In Blair's the tube advances in the flaring operation upon the former, strikes the crimper, and continues to advance, completing the flaring and crimping simultaneously.

Kirchner, in his specification, describes the construction of his invention in accordance with the Exhibit 4, and speaks of the other form (Blair's) as if it were plainly the equivalent—a theory not supported by anything in the appearance or history of the exhibit. I agree with the Examiner of Interferences and the Board that Exhibit 4 does not show the invention included in the third claim, and is not a machine capable of operation in accordance with the requirements of the second claim. But this exhibit is all that Kirchner has to rely upon to carry his invention back of the conceded date of Blair's "two-part crimper." So far, therefore, as concerns the second and third claims, Kirchner has no standing. But the machine, Exhibit 4, was not made till after the operation of the rotating plug. It seems hardly credible that Kirchner did not also see the first invention of Blair or become aware of it in the fall of 1875; and, as I have said, it was only after this that he made the machine, and after this that he made the drawing, Exhibit 3. As to the first invention, then, Blair had it in operation before Kirchner had done more, according to his own testimony, and giving him all he claims, than make a sketch, not preserved. The testimony strongly indicates, and Kirchner's own course in relation to this invention as strongly tends to show, that the machine, Exhibit 4, was, as organized and operated, an experiment not successful enough to save it from being thrown aside and forgotten; and that it would never have been resuscitated but for the successful use of Blair's invention. It could not, therefore, even if it came within the terms of his claims, defeat the application of Blair, who had put the invention into successful use before Kirchner was heard of in the matter. I see no occasion to call in question the patentability of the invention in any of the claims.

On the question of priority, I fully agree with the Examiners-in-Chief, and affirm their decision.

THE DECISIONS FOR 1877.—The decisions of the United States courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

TO SUBSCRIBERS.—Great care will hereafter be taken in mailing THE OFFICIAL GAZETTE to subscribers, and in case of its non-receipt the fault will not be in the Patent Office. When each issue shall have been mailed, the Office will assume that it has done its duty by the subscribers, and will not send extra numbers except upon receipt of 10 cents for each copy ordered.

BOUND VOLUMES FOR 1877.—The bound volumes of THE OFFICIAL GAZETTE for 1877 are now ready for distribution, and can be procured, in full law binding, for $8, and in half-calf for $7. The Annual Index for 1877 will not be ready for distribution, either to subscribers or purchasers of the bound volumes, before the 1st of May, 1878.

DECISIONS OF THE COURTS.

Supreme Court of the United States.

[*No. 232.—October Term*, 1877.]

THE UNION PAPER BAG MACHINE COMPANY AND SAMUEL CUPPLES, APPELLANTS, *vs.* MERRICK MURPHY AND R. W. MURPHY.

[*Appeal from the Circuit Court of the United States for the Eastern District of Missouri.*]

A weighted knife with five planes or faces, which descends by gravity upon a flat continuous paper web and severs a peculiar outline blank that folds into a bag without further cutting, (Claim 1, Letters Patent No. 24,734, William Goodale,) is infringed by a stationary serrated-edge knife of substantially the same form fixed to the machine-bed, and which cuts the same shaped blank from the web passing above by conjoint action with a quick-descending striker that gives the paper a vertical blow, directly in advance of the edge of the knife.

The two devices—viz, the knife and the striker—operating together perform the exact same function as that performed in the complainants' machine by the ascent and descent of the cutter. It makes no difference that the latter severs the blank by its own gravity, while in the former the descending striker falls upon the paper at the proper moment to cause the stationary knife to cut for the same purpose. They are alike in function.

Except where form is of the essence of an invention it has but little weight in determining the question of infringement. It is necessary to look at the mode of operation and at the result, as well as at the means by which the result is attained.

Similarities or differences are not to be judged by names. One device is substantially the same as another if it performs substantially the same functions in substantially the same way to obtain the same result, and this though they differ in name, form, or shape.

Mr. Justice CLIFFORD delivered the opinion of the Court.

Rights secured to an inventor by letters patent are property which consists in the exclusive privilege of making and using the invention and of vending the same to others to be used for the period prescribed by the patent act, and the provision is that every patent and any interest therein shall be assignable in law by an instrument in writing. (Rev. Stats., Secs. 4884, 4898.

Letters patent bearing date July 12, 1859, were granted to William Goodale for new and useful improvements in machinery for making paper bags, as more fully described in the specification. Patents at that date were granted for the period only of fourteen years, but the record shows that the same was duly extended for the further term of seven years from the expiration of the original term, and that the patentee, on the 14th of July, two days subsequent to the extension of the patent, by an instrument in writing, sold and assigned all his right, title, and interest in the patent to the complainants, who instituted the present suit. What they charge is that the respondents are making and using the patented improvement, the title to which they acquired by virtue of the aforesaid written assignment.

Service was made and the respondents appeared and filed an answer, setting up several defenses, all of which are abandoned except the one denying the charge of infringement. Proofs were taken, and the circuit court, having heard the parties, entered a decree dismissing the bill of complaint. Prompt appeal to this court was taken by the complainants, and they now assign for error the decree of the circuit court in dismissing the bill of complaint, it being conceded that it was dismissed upon the ground that the charge of infringement was not proved.

Machines for making paper bags are old, as both sides admit, and the evidence in this case shows that they have been constructed by many persons and in various forms for more than twenty years, and with more or less utility. Neither party in this case claims to be the original and first inventor of an entire machine of the kind, nor could such a claim, if made, be sustained, in view of the admitted state of the art. Improvements in various parts of such a machine are claimed by the assignor of the complainants, but, inasmuch as the charge of infringement is confined to the first claim of the patent, it will be sufficient to describe the nature and operation of the principal device embodied in that claim without attempting to give any minute description of the other parts of the machine.

Seven claims are annexed to the specification, the one in question being described in substance and effect as follows:

Making the cutter which cuts the paper from the roll in such form that in cutting off the paper it cuts it in the required form to fold into a bag without further cutting out.

Such a machine of course has a frame which supports all its parts, and it also has a table to support the paper as it is unwound from the roll and moved forward under the cutter. Prior to the operation the roll is prepared, being of the proper width to fold lengthwise and form the bag. Feed-rollers are arranged in the machine for moving the paper under the cutter as it is unwound from the roll, the cutter being attached to a horizontal bar and working within vertical guides erected on opposite sides of the machine. Operating vertically, as the cutter does, it will be sufficient to state that it derives its upward movement from two cams on a constantly-rotating horizontal shaft, and that it descends by its own weight, which is sufficient to cause the cutting of the paper by the cutter, the descent taking place during the intermissions between the feeding movements of the paper.

Devices and means for forming the bag of the desired length and width are also shown in the specification and drawings, together with the devices and means for effecting the side lapping over the device called the "former," and the devices and means for pasting one edge of the same by passing it over a paste-roller, which causes it to adhere so as to form the seam when the edges of the blank are folded over by the lappers. Both the sides of the blank, so called, and the lap at the bottom, are pasted by the means described in the specification, but it is unnecessary to enter into these details in this investigation, as the charge of infringement is limited to the first claim.

Evidence of a satisfactory character is exhibited to show that the assignor of the complainants was the first person to organize an operative machine to make paper bags from a roll of paper in the flat sheet by a transverse cut across the same with a knife having five planes, so that the blanks, so called, when cut and folded, will present a paper bag of the form and description given in the specification and drawings of the patent.

Wide differences exist in the arrangement of the devices composing the operative parts of the respondents' machine in question from those exhibited in the machine of the complainants, but the frames are not substantially different, and the machine of the respondents has two uprights, which afford bearings for the shaft and for the roller on which the paper is wound, and for two sets of feed-rollers which perform the same function as the feed-rollers in the complainants' patent. Instead of the cutter arranged to ascend and descend as described in the complainants' specification, the respondents have a knife with a serrated edge, which is attached to the bed beneath the shaft, on a line with the feed-rollers, lying on its side, so that the paper when moved by the rollers will pass freely over it, as it extends slightly beyond the edge of the bed. Being attached to the bed, the knife, though it is substantially in the form of the cutter employed in the complainants' machine, neither rises nor falls, nor would it perform any function whatever in the machine were it not for the striker, which is a straight piece of metal with a blunt edge, made to revolve with the shaft, which, by the aid of certain other devices, first causes it to rise and then throws it sharply down in such a manner that it makes a vertical blow upon the paper, causing the knife to sever it as effectually as the cutter does in the complainants' machine, showing that the two devices—to wit, the knife and the striker, operating together—perform the exact same function as that performed in the complainants' machine by the ascent and descent of the cutter.

Argument to show that the form of the knife and the cutter are substantially the same is quite unnecessary, as that is proved to a demonstration by a comparison of the two devices. Nor can it make any difference that the cutter is made to cut the paper by its own gravity while the knife is made to cut by the fall of a device which performs no other function than to fall upon the paper at the proper moment and cause the stationary knife to cut for the same purpose.

Decided support to that proposition is found in the testimony of the expert witness examined for the complainants. He testifies that he finds in the patent of the respondents the representation of a cutter for forming paper bags so shaped that in the operation of separating the blanks from the roll of paper in the formation of bags it will perform the same function as the cutter in the complainants' machine, giving as his reason for the conclusion that the serrated edge of the knife, as it is there called, is so shaped as to form a blank for the bags, so that the seam may be made in the middle of the bag, and that the bottom is provided with a lap, so that both parts may be firmly pasted together, and the top provided with a lip for the convenience of opening the bag when it is used.

Explanations of a valuable character are also made by the same witness in respect to the particular form of the knife employed by the respondents in their machine when used to form the lip at the top or bottom of the bag. Speaking of the fact that the knife used by the respondents has serrations or teeth of different degrees of depth, he says that their outer points all coincide with the same straight line across the paper, and that the operation of cutting, when it has progressed to the depth of the small teeth in the knife, becomes substantially the same as that performed by the cutter in the complainants' machine, for the reason that the rest of the cutting is continued by a series of cutting-edges that have a lap at the bottom and a lip at the top, or, in other words, the cutting that is commenced in a straight line ceases as soon as the small teeth cease to cut, and then the coarser teeth continue the cutting operation down to their full extent, and constitute a cutter substantially like the one employed in the complainants' machine.

Suppose the explanation last given is too theoretical for practical application, still we are all of the opinion that the knife and the striker employed by the respondents perform substantially the same function as the cutter in the complainants' machine, with the devices for raising it up and letting it drop upon the paper as it is moved forward by the rollers.

Except where form is of the essence of the invention, it has but little weight in the decision of such an issue, the correct rule being that in determining the question of infringement the court or jury, as the case may be, are not to judge about similarities or differences by the names of things, but are to look at the machines or their several devices or elements in the light of what they do, or what office or function they perform and how they perform it, and to find that one thing is substantially the same as another if it performs substantially the same function in substantially the same way to obtain the same result, always bearing in mind that devices in a patented machine are different in the sense of the patent law when they perform different functions, or in a different way, or produce a substantially different result.

Nor is it safe to give much heed to the fact that the corresponding device in two machines organized to accomplished the same result is different in shape or form the one from the other, as it is necessary in every such investigation to look at the mode of operation or the way the device works, and at the result as well as at the means by which the result is attained.

Inquiries of this kind are often attended with difficulty; but if special attention is given to such portions of a given device as really do the work, so as not to give undue importance to other parts of the same, which are only used as a convenient mode of constructing the entire device, the difficulty attending the investigation will be greatly diminished, if not entirely overcome. (*Cahoon* vs. *Ring*, 1 Cliff., 620.)

Authorities concur that the substantial equivalent of a thing in the sense of the patent law is the same as the thing itself, so that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape. (*Curt. on P.*, 4th ed., sec. 310.)

Apply that principle to the case before court, and it is clear that the knife in the respondents' machine, when considered in connection with the striker, is substantially the same thing as the cutter in the machine of the complainants, when put in operation by the means employed to raise it and let it fall, to perform the cutting functions, without which the machine would be of no value.

Tested by these considerations, it is clear that the decree of the circuit court is erroneous, even if the construction of the patent is that which the respondents assume it to be, as they do not contend that the claim for the cutter used by the complainants as embodied in the first claim of their patent is invalid.

Decree reversed, and cause remanded, with directions to enter a decree in favor of the complainants, and for further proceedings, in conformity with the opinion of this court.

U. S. Circuit Court—Northern District of Illinois.

WILSON PACKING COMPANY *et al. vs.* WILLIAM B. CLAPP.

[*In Equity.—Before* BLODGETT, *J.*]

The main and principal features of the art of preserving fruits, vegetables, and meats in hermetically-sealed cans or packages being old, whether a patent for each particular article of canned goods "as a new article of commerce" can be sustained as a new invention, *Quære.*

Courts should not be hasty or inconsiderate in granting injunctions at the instance of the holders of such patents against other manufacturers of similar goods. Preliminary injunction accordingly dissolved, leave to make motion to such effect based on suitable affidavits being granted at the time of the injunction.

Doubted whether a frusto-pyramidal shaped packing-can with rounded corners for containing preserved meat, and which facilitates its removal in solid mass, is a patentable device, because lacking in novelty.

The defendant having neither made nor sold goods in the similitude of complainant's goods within the district where suit was brought, the preliminary injunction was dissolved; ordinarily such process cannot run beyond the district from whence it issues.

[*Munday & Evarts, West & Bond, John N. Jewett, and T. A. Goodwin*, for complainants; *Eldridge and Tourtelotte, Noble & Orrick, and Coburn & Thacher*, for defendants.

BLODGETT, *J.*:

On the 5th day of January last a motion was made by said complainants, based on the bill and affidavits previously filed, for an injunction restraining the defendant from putting up, manufacturing, or selling canned cooked corn-beef in such manner as to infringe upon certain patents belonging to complainants and particularly described in the bill. The bill and affidavits were not read, but, both parties being represented by counsel, it was conceded that a case was made for an injunction, and an injunction order was accordingly entered as prayed, with the understanding that defendant might move for the vacation of said order as soon as counsel could prepare their affidavits. The affidavits were soon after filed, and the motion submitted upon the allegations and proofs of the respective parties, and the briefs and arguments of counsel.

The bill charges that complainants own the three patents relating to the subject-matter of packing and preserving meats in hermetically-sealed cans or packages.

The first of said patents was issued in 1864 to W. C. Marshall; the second was issued in 1874 to W. J. Wilson; and the third was issued in 1875 to J. A. Wilson. All these patents have been reissued, and two of them (the Marshall and one of the Wilson) within the past year.

The claims are, briefly, for canned meat put up in the manner described "as a new article of commerce," and for some special improvements in the cans or packages, the principal of which is the shape of the can, the Wilson can being made in the form of a section of a pyramid with rounded corners, whereby the solidly-packed contents of the can are turned out in a firm mass or cake by cutting off the bottom or large end of the can, so that the beef can be readily cut in slices for the table.

The process of preserving fruits, vegetables, and meats in hermetically-sealed cans or packages is not new or original to these patentees.

In 1810, M. Appert published in France the details of the process then lately discovered by him for preserving fruits, vegetables, and meat by parboiling or cooking them so as to expel the fixed air, and then sealing them up in air-tight cans, bottles, or jars.

This discovery was considered of so much importance to the world that the French Government paid M. Appert 10,000 francs for making it public, and the art has since then been extensively practiced both in this country and in Europe.

The Appert process was afterward improved by Durand, Doukin, Gamble, and others in England, and by Winslow and others in this country, so that canned foods of various kinds had become an article of commerce long before the date of either of complainants' patents. (9 Encyclopedia Britannica, 767, title: *Food*, published in 1855. 13 New American Cyclopedia, published in 1863, title: *Preservation of Food*, page 569.)

The main and principal features of the art being so old, it will be at least a nice question how far a patent for each particular article of canned goods, "as a new article of commerce," can be sustained as a new invention. I do not mean to be understood as now saying that such patents are invalid for want of novelty. I only intend to say that, I think, courts should not be hasty or inconsiderate in granting injunctions at the instance of the holders of such patents against other manufacturers of similar goods.

And, had the whole facts been brought to my notice, as they are now, at the time the original motion was made, I feel sure I should not have granted the injunction. So far as the complainant's patents cover the cans they use, no special proof is put into the record. To the eye, the cans used by complainants and those said to have been sold by defendant appear to be, externally, substantially alike.

But I doubt whether the pyramidal shape, which is the distinctive feature of complainants' can, is a patentable device.

It would seem to be a shape so often adopted in other packages and molds, when it is desirable to turn the contents out whole or solid, as to be no longer novel. Still, it may be patentable—I only intimate a doubt—and say, that I think a court should be cautious in regard to such a patent.

Aside from the objections that apply directly to the patents, it does not appear from the record that this defendant has ever made or sold any goods in the similitude of complainant's goods in this district.

He is the agent of a St. Louis Packing Company, for the sale of their goods in New York city, and does no business, and has no place of business, in this district.

A preliminary injunction ought not, therefore, to issue against him in this district, because such a process cannot run beyond the terminal limits of the district—certainly not in an ordinary case—such as is made in this record. A case possibly might be made upon extraordinary facts, which would justify such an issue, but such a case is not made here.

It also appears that, immediately on the entry of the order in this case, circulars and notices were sent outside of the district to parties engaged in the trade, dealing with the complainants' competitors, intended to alarm such persons, and injure the trade of competing manufacturers.

This strikes me as hardly justifiable under the circumstances. I think complainants, if they have faith in their patent, should make their attack directly on such competitors as they claim are infringing their patents, and contest the question squarely with them.

This class of goods has now, according to the proofs gone into, very general use as an article of food, and can be found for sale in most family groceries; and it seems to me not the right course to attack these dealers, and annoy and intimidate them by threats of patent suits.

The course taken by complainants suggests the charge that they intend to obtain many of the advantages of an injunction by harassing and interfering with the business of a rival without taking the risk of a direct suit with that rival, where they would be responsible for the consequences of their act. Such may not have been their purpose, but it is liable to such construction.

The injunction is dissolved.

U. S. Circuit Court—District of Massachusetts.

WILLIAM W. BROWN *et al. vs.* RUBBER STEP MANUFACTURING COMPANY *et al.*

[*In Equity.—No.* 832.]

Letters Patent No. 19,347, granted E. W. Chaffee, February 16, 1858, construed to be for a flexible-gum mat, having flexible-gum ridges to serve as scrapers, and cells or inclosed spaces to contain the dirt.

The patent is not infringed by a device for carriage and car steps, in which a series of small rubber hemispheres or pyramids are arranged upon a vulcanized-rubber base-piece, so that they shall project a slight distance above its surface.

In the patented device the elastic resilient ridges, over which the foot may easily slide, serve as "scrapers to clean the feet," and the cells or inclosed spaces hold the dirt thus removed. In the other device the projecting hemispheres or pyramids present a frictional bearing to prevent sliding, and make the foot rest firmly, while the depressions corresponding to the patentee's dirt-cells are not to retain the dirt, but by the construction of the parts, and the elasticity of the material, facilitate the removal of mud, water, and ice. The two contrivances do not perform the same function by the same means, and each is unfit for the use and purpose for which the other is intended.

[*James E. Maynadier* for complainants; *Thomas William Clarke* for defendants.]

OPINION OF THE COURT.—*February* 4, 1878.

SHEPLEY, *J.*:

The patent to Chaffee, No. 19,347, under which complainants have filed this bill, is for "a cellular india-rubber door-mat," composed of caoutchouc and its compounds, or equivalent gums. The thing invented, described in the specification, and covered by the claim in the letters patent, is a mat of rubber, gutta-percha, or other flexible gums, formed by ridges or gratings, to serve as scrapers to clean the feet, and cells or spaces of whatever form to contain the dirt. It is not material that the ribs or ridges should intersect or cross each other at such an angle as will form a lozenge-shaped cell, in the manner described by the patentee as that usually adopted by him as the best mode of construction. The ridges may be circular, parallel, serpentine, or of any other shape that will allow them to act as scrapers to clean the feet, and to leave cells or spaces of whatever form to hold the dirt removed by the scrapers. The dirt-cells may be closed at the bottom, or open, to allow the water to run out. Three things only are necessary, and these are indispensable to constitute the thing secured by the patent. First, a flexible-gum mat; second, flexible-gum ridges to serve as scrapers; third, cells or inclosed spaces to contain the dirt. While the patentee does not use the phrase "inclosed spaces," he describes his spaces as spaces which contain, and are made for the purpose of containing, dirt. Such cells or spaces are necessarily something more than mere extents of uninclosed space. The patentee describes for this purpose a border around the mat, which would make such cells or inclosed spaces to contain the dirt, even if the gratings were parallel, serpentine, or otherwise so constructed as not to intersect each other and form cells.

The defendants are charged with infringement, by the manufacture of certain articles designed to constitute the steps of wheeled carriages, and others constructed for permanent attachment to the steps of cars. The contrivances for carriage-steps are all of them formed upon a plate of cast-iron. None of them are larger than about six inches in the greatest dimension. All of them have upon their backs an iron bolt, or projection, for the purpose of attaching them to the step-bracket of a carriage.

The other exhibits are plates, the largest of which is not more than half the size of the smallest door-mat, with little hemispheres of rubber projecting less than a quarter of an inch above a surface of vulcanized rubber, or small pyramids of rubber, half an inch square at the base and an eighth of an inch high, set all over the surface of vulcanized rubber, base to base.

These contrivances differ from the cellular door-mat described in the Chaffee patent in the following particulars: The elevations or ridges in the Chaffee mat are designed and intended to present a flexible yielding surface, over which the foot may easily slide, so that the ridges may act as a brush would act if the foot were moved over it, and "serve as scrapers to clean the feet." The low pyramids, or hemispheres and projections in the defendants' contrivances, are designed and intended to give a firm frictional bearing for the foot, and to prevent any slipping or sliding over the surfaces of the elevations, and not intended "to serve as scrapers to clean the feet." The cells or depressed spaces in the Chaffee mat are intended and constructed "to hold the dirt." The depressions in defendants' contrivances are not intended or constructed "to hold the dirt," but are constructed rather as conduits or gutters, for the purpose of allowing and facilitating the automatic removal of mud, snow, and ice. They are purposely so arranged as to provide no recesses for the lodgment of snow, ice, or water. The low pyramids, hemispheres, and projections are so constructed that in case any ice should be formed between them it would at once be broken, being very thin and supported only by the elastic base, by the pressure of the foot slipping on it, and the broken ice would be thrown off by the rebound of the base and the rubber projections, when the pressure is removed.

The function of the Chaffee mat is to present to the foot elastic resilient ridges, over which the foot may easily slide, that the ridges may act in place of brushes "as scrapers to clean the feet," and also to present convenient cells or spaces "to hold the dirt" thus removed. The function of the defendants' contrivances is to pre-

sent to the foot a frictional bearing to prevent sliding or slipping, for the foot to rest firmly on, not to be scraped over, and grooves or gutters or depressions, not "to contain dirt," but to prevent it from being retained, and to facilitate the removal of mud, water, and ice.

The two contrivances do not perform the same function by the same means, and the defendants' products are unfit for the use for which the complainants' products are intended, and the complainants' products are unfit for use for the purposes for which the carriage and car steps of the defendants are manufactured. There is no evidence of infringement by the defendants, and the bill of complainants is dismissed with cost.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

TRADE-MARKS.

[Each certificate bearing date February 26, 1878.]

5,671.—FLOUR.—*H. Bocker & Co.*, New York, N. Y. Application filed January 16, 1878.
"The word-symbol 'MOUNTAIN.'"

5,672.—FLOUR.—*H. Bocker & Co.*, New York, N. Y. Application filed January 16, 1878.
"The word-symbol 'ORANGE.'"

5,673.—FOOD FOR FOWLS, &C.—*W. H. Bowker & Co.*, Boston, Mass. Application filed December 26, 1877.
"The word-symbol 'ANIMAL MEAL.'"

5,674.—SMOKED OR CURED MEATS.—*Daniel Crouse & Sons*, Utica, N. Y. Application filed January 9, 1878.
"The words and letters 'DANIEL CROUSE & SONS, IDEAL.'"

5,675.—FLOUR.—*George V. Hecker & Co.*, New York, N. Y. Application filed September 26, 1877.
"The word-symbol 'MANHATTAN.'"

5,676.—FLOUR.—*George V. Hecker & Co.*, New York, N. Y. Application filed September 26, 1877.
"The word-symbol 'GEM OF THE MILL.'"

5,677.—CIGARS AND CIGARETTES.—*Hantsch & Crouse*, Reading, Pa. Application filed January 7, 1878.
"The words and numerals 'CROUSE'S BIG 333 s,'" (threes.)

5,678.—CORSETS.—*I. Newman & Co.*, New Haven, Conn. Application filed January 14, 1878.
"The symbol of the triangle."

5,679.—COTTON GOODS.—*Neuss, Heslein & Co.*, New York, N. Y. Application filed January 24, 1878.
"The concentric rings and the equilateral triangles, as described and shown."

5,680.—CIGARS.—*Straiton & Storm*, New York, N. Y. Application filed December 20, 1877.
"A rectangular symbol applied directly to a cigar."

5,681.—EDGE-TOOLS.—*The Collins Company*, Collinsville, Conn. Application filed October 8, 1877.
"The letter and words 'R. KING, CANTON.'"

5,682.—RAILROAD SUPPLIES.—*The Nottingham Manufacturing Company*, New York, N. Y., and Jersey City, N. J. Application filed September 23, 1875.
"A shield or escutcheon supported on one side by a lion, and on the other side by a rhinoceros, as shown."

5,683.—CHEWING-TOBACCO.—*The State of Kentucky Tobacco Manufacturing Company*, Louisville, Ky. Application filed January 24, 1878.
"The word-symbol 'PROGRESS.'"

5,684.—PLUG-TOBACCO.—*Ryan & Cummiskey*, St. Louis, Mo. Application filed January 29, 1878.
"A symbol formed of a combination of diagonal lines and X's, as shown."

5,685.—CIGARS.—*Buchanan & Lyall*, New York, N. Y. Application filed January 28, 1878.
"The words 'Planet,' 'Audacia et Industria,' and the representation of a human hand and part of the arm carrying a sword."

5,686.—LAGER-BEER.—*Charles Joly*, Philadelphia, Pa. Application filed December 26, 1877.
"A pictorial representation of a group of figures comprising a gentleman, lady, little boy, and colored servant."

5,687.—MEDICINAL PREPARATION.—*Joseph C. Richardson*, St. Louis, Mo. Application filed August 14, 1877.
"The design or combination of the retort, shield, monogram, and sprays."

5,688.—METAL FOR ANTI-FRICTION PURPOSES.—*George K. Tryon, Son & Co.*, Philadelphia, Pa. Application filed January 29, 1878.
"The word-symbol 'PHOSPHOR-BABBITT.'"

5,689.—WHEAT-FANS.—*E. Whitman, Sons & Co.*, Baltimore, Md. Application filed January 29, 1878.
"The fanciful words 'MONTGOMERY'S ROCKAWAY.'"

LABELS.

[Each certificate bearing date February 26, 1878.]

1,423.—Title: "GUARANTEE."—*E. S. Allen & Co.*, Cleveland, Ohio. Application filed December 17, 1877.

1,424.—Title: "SOLIDIFIED GLYCERINE."—*James R. Gray*, Ayer, Mass. Application filed February 13, 1878.

1,425.—Title: "GERARD'S PREVENTIVE."—*William Gerard*, Brooklyn, N. Y. Application filed February 13, 1878.

1,426.—Title: "MANHATTAN MILLS."—*Jabe O. King*, New York, N. Y. Application filed January 21, 1878.

1,427.—Title: "LAWRENCE THREAD."—*Jabe O. King*, New York, N. Y. Application filed January 21, 1878.

1,428.—Title: "FAMILY ALE."—*The Long Island Brewery*, Brooklyn, N. Y. Application filed February 12, 1878.

DESIGNS.

[Each design bearing date February 26, 1878.]

10,500.—CUFF.—*William Barker*, West Troy, N. Y. Application filed January 14, 1878. Term of patent 3½ years.

10,501.—DISH-HANDLES.—*John W. Burgess*, East Orange, N. J. Application filed February 15, 1878. Term of patent 7 years.

10,502.—GLASS SHADES.—*John H. Hobbs*, Wheeling, West Va. Application filed February 12, 1878. Term of patent 7 years.

10,503.—SLEEVE-BUTTONS.—*Albert W. Sturdy*, Attleborough, Mass., assignor to *Sturdy Brothers & Co.*, New York, N. Y. Application filed February 6, 1878. Term of patent 7 years.

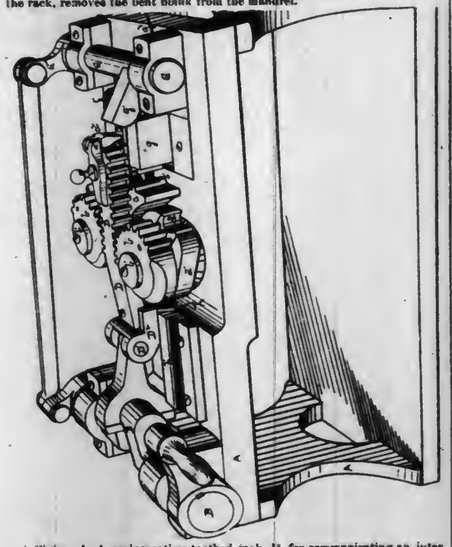
10,504.—SPOONS.—*Henry L. Wallace*, Wallingford, Conn., assignor to *Wallace Brothers*, same place. Application filed February 7, 1878. Term of patent 7 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

FEBRUARY 26, 1878.

200,596. MACHINES FOR BENDING TUBULAR SOCKETS. John H. Alker, Pittsburg, Pa., assignor to Jones & Laughlins, same place. Filed Dec. 6, 1877.

Brief.—Shears sever the desired length of blank from the bar. A mandrel, depending from a rack-bar, pulls the blank between a pair of former-blocks, by which it is bent to a U form. Two oscillatory dies, attached to the under faces of segmental gear-wheels, operated by the rack, complete the bending operation. A forked stripper, actuated by a swinging toe-piece on the rack, removes the bent blank from the mandrel.



Claim.—1. A reciprocating toothed rack, D, for communicating an intermittent oscillatory motion in opposite directions, through gear-wheels *b b*, to a pair of U-faced bending-dies, *d d*, in combination with shears *s s'*, formers *c c'*, and mandrel *e*, substantially as set forth.

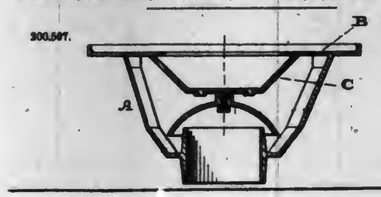
2. The stripper *a*, having wedge-shaped prongs *a'*, and an incline, *a²*, in combination with the swinging toe *a³*, attached to the rack, substantially as set forth.

200,596. MANUFACTURE OF CLOCK-CASES. Norman Allen, Forestville, assignor of one-half his right to Elbridge H. Lane, same place, and E. C. Hamlin, Plainville, Conn. Filed Oct. 22, 1877.



Claim.—That improvement in the art of making clock-cases which consists in cutting off the blocks across the grain of green wood, removing the entire middle portion of the blanks sufficiently to form them into ring shape of the proportions described while they are yet green, and finally finishing the same by turning in such form as to leave the grain running from front to rear of the case, substantially as described, and for the purpose set forth.

200,597.

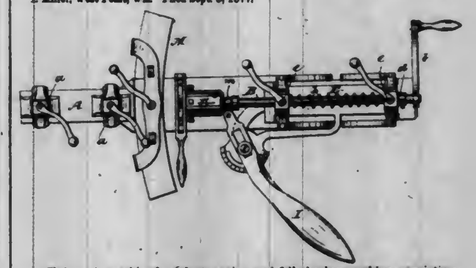


200,597. HYDRANT SEWER-TRAPS. Wm. C. Anable, Lamberton, N. J. Filed July 30, 1877.

Brief.—Water is prevented from splashing out of the sink by the overhanging plate of the same, and by the overhanging ledge of perforated basin.

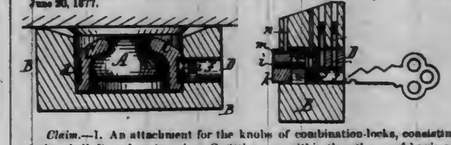
Claim.—The top plate B of the box A, in combination with the perforated basin C, having an overhanging ledge, D, substantially as and for the purpose set forth.

200,598. SPOKE-TENONING AND FELLY-BORING MACHINES. Harvey S. Barnes and John L. Miller, West Point, Wis. Filed Sept. 3, 1877.



Claim.—A combined spoke-tenoning and felly-boring machine, consisting of the frames A A', screws *n*, shaft B, collar *d*, hollow auger C, boxes D, frame E, screws *e*, springs F and *h*, lever *I*, and felly-boring attachment M, all combined and operating together as and for the purposes described.

200,599. ATTACHMENTS TO COMBINATION-LOCKS. Robert Beachman, Lyons, N. Y. Filed June 20, 1877.



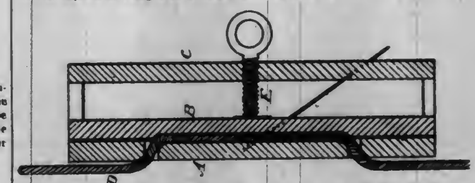
Claim.—1. An attachment for the knobs of combination-locks, consisting of the shell B and center piece C, fitting one within the other, and having a loose turning movement upon the knob, said parts being secured together by locks, as shown and described, and for the purpose specified.

2. The center piece C, constructed in halves or sections for fitting around the knob, and provided with the circumferential groove *d*, in combination with the outer shell or casing B, provided with a socket to receive it, and with supplementary locks D set into the outer shell, and in line with the said groove *d*, as shown and described, and for the purpose specified.

3. The combination, with the center piece C, provided with the circumferential groove *d*, of the lock D, having a bolt, *k*, movable endwise into and out of said groove, as shown and described, and for the purpose specified.

200,600. FIRE-ESCAPES. Hezekiah J. Bowman, Cleveland, Ohio, assignor of one-half his right to Martin Loser, same place. Filed Oct. 12, 1877.

Brief.—A clevis is attached to the case at its middle part, and is capable of swinging to either end, and to it the person is secured. This renders the device capable of being used in either direction upon the rope.



Claim.—The combination of the strips A B C, rope D, screw E, and clevis F, when constructed and arranged to operate substantially as shown and described, for the purpose set forth.

200,601. STEAM-RADIATORS. William H. Brown, Indianapolis, Ind., assignor to Isabella S. Brown, same place. Filed June 12, 1877.

Claim.—1. A steam-radiator stove provided with an illuminated base and a boiler partly inclosed thereby, the latter having an annular flue formed about its inner central body between upper and lower ring-chambers, and connecting by side flue-openings with the fire chamber, substantially as described.

2. In a steam-radiator stove, a boiler having its upper ring-chamber made

in full cross-measurement of the stove, and forming a portion of its outer wall, the smaller ring-chamber being located in the fire-chamber, and the short vertically-curved passages connecting the said chambers, substantially as described.

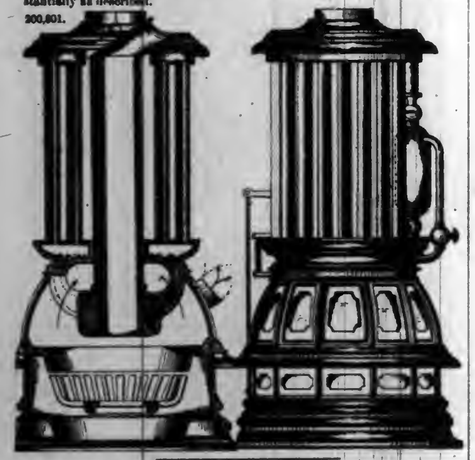
3. In a steam-radiator stove, a boiler having an upper ring-chamber, which forms a part of the outer wall of the stove, and the lower ring-chamber of smaller diameter, and the water-passages connecting the two, the said passages being formed as shown, whereby they are subjected on all sides to the action of the fire and smoke of the combustion-chamber, substantially as described.

4. In a steam-radiator stove, a boiler made as an independent casting, having the annular flue within its inner central body, and the side flues connecting the fire-chamber therewith, and combined with the exit-flue, substantially as described.

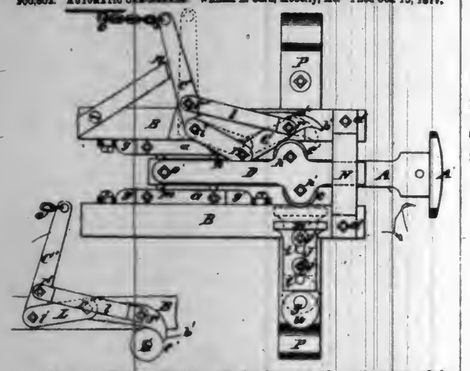
5. In a steam-radiator stove, a boiler having its lower ring-chamber provided with the annular shoulder formed on the inner circumference of its upper surface, and upon which the fuel-cylinder is supported, substantially as described.

6. In a steam-radiator stove, the boiler having upper and lower ring-chambers connected by short vertical passages, curved at their sides, and an annular flue formed centrally within its body, the said flue communicating with the fire-chamber through the passages which connect the ring-chambers, substantially as described.

200,601.



200,602. AUTOMATIC CAR-BRAKES. William L. Card, Moberly, Mo. Filed Oct. 15, 1877.



Claim.—1. The combination, with the draw-bar of a railway-car, of the sliding bar D, having attached thereto the friction-wheels *c c*, as described.

2. The toggle-lever C, with hook *b'* and brake-lever C', in combination with brake-rod *f* through link connections *e* and *e'*.

3. The combination of the cam *n*, stem *g*, and the plate J, having slots *i i*, the raised guide-track *m'*, and guide-pins *j*, for the purpose set forth.

4. The combination, with the car-timbers B and cross-sill P, of the toggle-lever C, connecting with and operating a car-brake through the intermediate brake-lever C', connecting-links *e'*, loop *e*, and brake-rod *f*, as and for the purpose described.

5. The combination of the draw-bar A, sliding bar D, and friction-wheel *c*, with the sliding plate J, secured to cross-sill P by guide-pins *j*, and movable by stem *g* and cam *n*, as and for the purpose set forth.

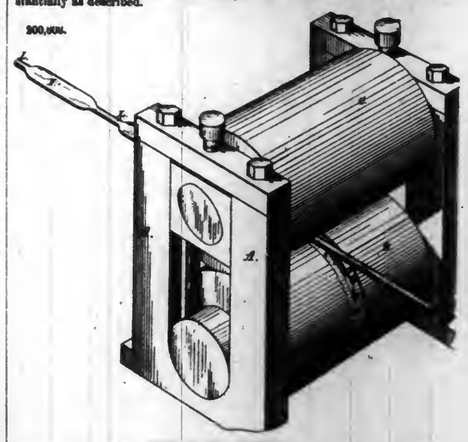
200,603. MACHINES FOR ROLLING BLANKS FOR CARRIAGE-AXLE CLIPS. Emerson D. Clapp and Frederick Van Patten, Auburn, N. Y. Filed Dec. 26, 1877.

Claim.—1. The roll B, provided with one or more sets of depressions, 1 2 3 4, and with a recess, H, in combination with the roll C, having a cylindrical surface, substantially as described.

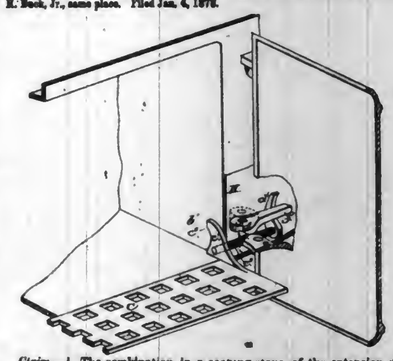
2. The roll B, having one or more sets of depressions, 1 2 3 4, and a recess, H, with means for forcing the metal therein, substantially as described.

3. The combination of a pair of rolls, one of which is provided with a recess, H, two or more sets of depressions, 1 2 3 4, and one or more lips, substantially as described.

200,604.



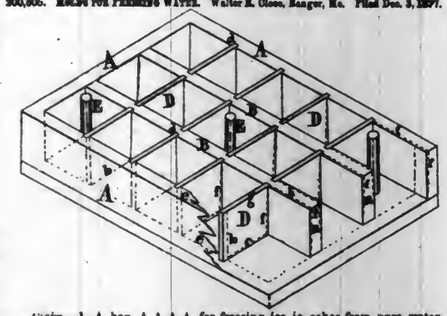
200,604. DOORS FOR COOKING-STOVES. Benj. F. Clement, St. Louis, Mo., assignor to Charles H. Beck, Jr., same place. Filed Jan. 4, 1878.



Claim.—1. The combination, in a cooking-stove, of the extension *e'*, lever F, arm *e'*, journal *e'*, and shelf C, substantially as described.

2. The combination, in a cooking-stove, of the lever F, arm *e'*, journal *e'*, and shelf C, substantially as described.

200,605. MOLDS FOR FREEZING WATER. Walter B. Close, Bangor, Me. Filed Dec. 3, 1877.



Claim.—1. A box, A A A A, for freezing ice in cakes from pure water, having the longitudinal partitions B B, beveled from the bottom *i* to the top A, into which are cut grooves *d d*, and the iron plates D D, beveled from the top to the bottom, and fitted into and sliding in the channels or grooves *d d*.

2. A box, A A A A, for freezing ice, divided into regular and uniform sized squares or checks by the longitudinal partitions B B and the movable iron plates or cross-partitions D D, sliding in the channels or grooves *d d*, so as to be removed and replaced at pleasure.

200,606. SEWING-MACHINE SHUTTLES. Philip Diehl, Elizabeth, N. J., assignor to the Singer Manufacturing Company, New York, N. Y. Filed Sept. 6, 1877.

Brief.—A skeleton-frame shuttle in which the ball and plate are rigidly connected. A central socket in the butt receives one pivot of the bobbin, and the other pivot fits into a lateral socket in the beak of the shuttle, and is kept in place by a spring whose curved end laps over the socket.

Claim.—1. A solid frame shuttle for a sewing-machine, consisting substantially as before set forth, of the jointless ball and plate, and means for detachably supporting the bobbin on the ball.

2. The combination, substantially as before set forth, of the jointless ball and plate frame shuttle with a spring-latch, to hold the bobbin to the ball.

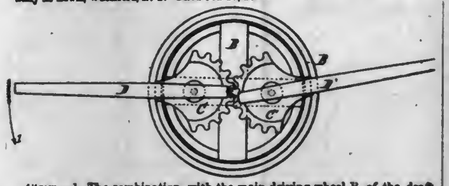
3. The combination, substantially as before set forth, of the jointless ball and plate frame shuttle with the tension-spring, to make tension on the shuttle-thread.

4. The combination, substantially as before set forth, of the jointless ball and plate frame shuttle, the tension-spring, and the thread-guard.

200,606.



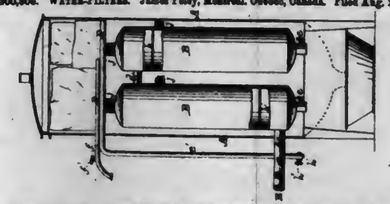
200,607. DRAFT-EQUALIZERS FOR HORSE-POWERS. Levi Dodge, Evanston, Ill., assignor to Sally A. Lewis, Waterford, N. Y. Filed Oct. 25, 1877.



Claim.—1. The combination, with the main driving-wheel B, of the draft-levers D and D', pivoted to the said wheel, and connected together at their inner or adjacent ends by means of a link, substantially as and for the purpose specified.

2. The combination, with the main driving-wheel B and draft-levers D and D', of the gear-quadrants C and C', substantially as and for the purpose specified.

200,608. WATER-FILTERS. James Foley, Montreal, Quebec, Canada. Filed Aug. 2, 1877.



Claim.—1. In a water-filter, the filtering-tanks B B, connected together by short pipes or tubes *d d*, in combination with the pipes C and E, having the valves or cocks *e g g'*, substantially as and for the purpose set forth.

2. In a water-filter, the filtering-tanks B B, having the cocks or valves *e e*, in combination with the pipes C and E, having the valves or cocks *e g g'*, and connected together by the pipe A, having the valves *h'*, substantially as and for the purpose set forth.

3. The receptacle or inclosure A, having an ice-chamber, in combination with the tanks B B and the coil of pipe D D, disposed upon the said tanks and in the said ice-chamber, substantially as and for the purpose set forth.

4. In a water-filter, the filtering-tanks B B, having the ingress and egress pipes C and E, in combination with the coil of pipe D *e'*, substantially as and for the purpose set forth.

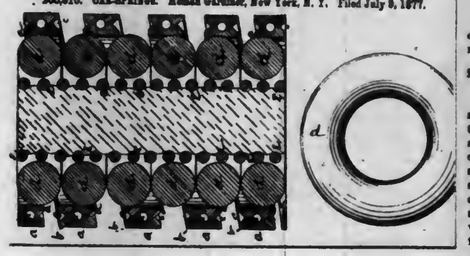
200,609. UMBRELLA-RUNNERS. H. S. Frost, Watertown, Conn., assignor to A. H. Weniese, same place. Filed Jan. 17, 1878.



Claim.—1. The described method of making the runner, consisting, essentially, first, in drawing a metal disk into a tube with an enlarged head; secondly, crimping the head to form the vertical nicks *a'*; and, thirdly, sawing the horizontal groove *a²*.

2. As a new article of manufacture, a runner made in one piece, having an enlarged head provided with the crimped vertical nicks and the horizontal slots, as set forth.

200,610. CAR-SPRINGS. Hemen Gardiner, New York, N. Y. Filed July 9, 1877.



Claim.—1. The exterior spirally-coiled compound steel spring, composed of the parts *a a b*, welded together at their ends, and the ends of *b* secured by and within the welding, constructed, arranged, and operating substantially as set forth.

2. The rubber rings *d*, in combination with the exterior steel spiral, constructed and arranged and operating substantially as set forth.

3. The spring above described, composed of the several parts *a b d e*, combined, arranged, and operating substantially as set forth.

200,611. WINDOW-CLEANING DEVICES. Elias P. Hall, Chicago, Ill. Filed Jan. 14, 1878.

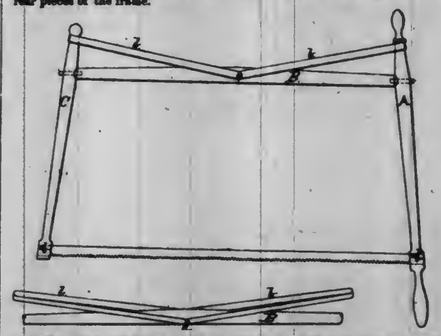


Claim.—1. An improved device for cleaning windows, consisting of a handle, A, the piece B, the sharp-edged rubber strip C, secured to the under side of the piece B, and a rubber stiffening-strip of flat material, D, secured to the front edge of the piece B, all being constructed and arranged as described.

2. The combination, with the holding parts of the device, of a reversible rubbing-strip, of flat rubber, cut concave at the ends, as shown.

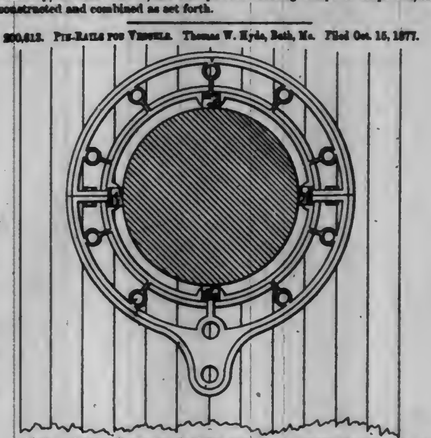
200,612. BUCK-SAW FRAMES. Amos Holbrook, Lockport, N. Y. Filed Mar. 6, 1877.

Brief.—The saw is strained by means of two bracing-straps pivoted to the center of the cross-piece, and passing over the upper ends of the front and rear pieces of the frame.



Claim.—The saw-frame herein described, consisting of the reversible pieces A and C, adapted to hold the saw and strain it properly by their elasticity, the cross-bar B, and the pivoted bracing straps or loops *b b*, all constructed and combined as set forth.

200,613. PIN-RAILS FOR VESSELS. Thomas W. Hyde, Bath, Me. Filed Oct. 15, 1877.



Claim.—A pin-rail composed of the two or more parts, of cast metal, in combination with the notched cleat *a*, attached to the mast and holding the rail, as herein set forth.

200,614. WINDOW HANGINGS AND FASTENINGS. John Q. Ingham, Elmira, N. Y., assignor to Elliott A. Ingham, Clinton, Iowa. Filed Aug. 23, 1877.

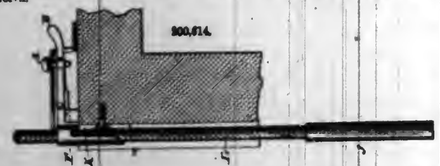
Brief.—A suitable box or case, for attachment to the meeting-rail, carries a lock-bolt, and is provided with a drop-latch, whereby the bolt is held within the case, except when it is desired to lock the sash, there being also a spring, an operating-lever, and a sash-lift. There is also a latch lift or stop, a vertical clasp having corrugated jaws, a hollow weight on the sash-line, and a peculiar spring-fastener, the whole constituting a combined sash-balance, sash-lift, and sash-lock, the construction being such that while all the elements coact in the complete operation of the locking device or devices, yet the different parts are so arranged as to separately constitute a sash-lift and a sash-balance, and the whole serving to open, close, and lock a two-casement window with ease and facility.

Claim.—1. The drop-latch I, in combination with the bolt D, whereby the latter is held within its casing, except when it is desired to lock the sash, and the coacting latch lift or stop M, substantially as specified.

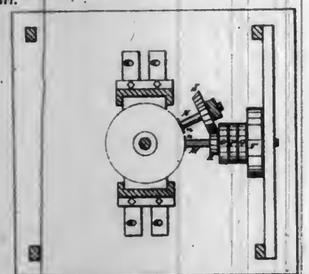
2. The combination of the lock-bolt D, sash-lift E, coacting drop-latch I and latch-lift M, operating-lever B, spring C, and the vertical clasp, having corrugated jaws F K, all substantially as shown and described.

3. The improved combined sash-balance, sash-lift, and sash-lock, consisting of the lock-bolt and sash-lift D E, drop-latch I, latch-lift M, lever B, spring C, and vertical clasp F K, together with the spring-fastener H, sash-cord L, and hollow weight J, the spring-fastener constituting a lock-bolt and safety-check, all operating substantially as described and shown, for the purposes set forth.

200,614.



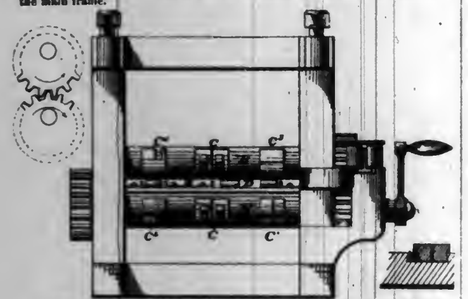
200,615. COTTON-PRESSES. Edmund M. Ivens and Jos. H. Dorand, New Orleans, La. Filed July 24, 1877.



Claim.—The combination and arrangement of the shafts M N, pulleys O P Q, bevel-wheels R S, pinions a a', bevel-wheel I, and nut I, substantially as and for the purpose set forth.

200,616. MACHINES FOR MAKING AXES. Charles L. Jefferis, Jamestown, N. Y. Filed Jan. 11, 1877.

Brief.—Crank-pins on the eccentric-gears operate plungers—the one to bend the blank by forcing it between two small rollers, and the other to swage the poll to the proper thickness after it has been effected, the rollers and the anvil being located on a sort of stirrup projection integral with or attached to the main frame.



Claim.—1. The combination, in an ax-poll machine, of dies for giving shape to the blank, bending mechanism for folding the blank, pressing mechanism for giving the proper thickness to the poll, and dies for welding and edging the bent blank, substantially as and for the purpose described.

2. The combination of the die-rollers B B', bearing-dies C C' C² C³, the plunger F² and rollers F', plunger G², and anvil G², substantially as and for the purpose described.

3. In an ax-poll machine, the split dies and intermediate adjusting-pieces, substantially as and for the purpose described.

4. The combined welding and edging-dies C³, substantially as and for the purpose described.

200,617.



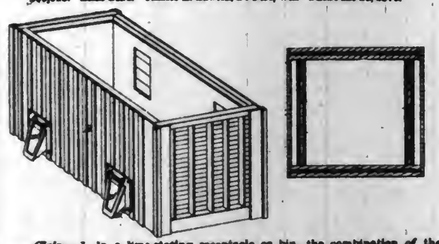
200,617. COMBINATION-PARAGONS. Robert M. King and S. Burnett Pierce, Chicago, Ill. Filed July 2, 1877.

Claim.—1. A case, A, with an orifice, *i*, adapted to receive a chain, combined with the locking-bolt B, moving flatwise across said orifice to engage between the links of a chain, in the manner shown, and the combination locking-rings C C, substantially as set forth.

2. The several rings C C, provided with pins *s s*, as set forth, and arranged to rotate upon a hollow center hub, D, into which the stud E may retreat when the bolt B is withdrawn.

3. The bolt B, adapted to lock a chain by clamping its links against the edge of the orifice *i* of the plate A, and combined with a series of rings, C C, divided at one side, as set forth, and provided with pins *s s*, and actuated by the rotation of the spindle of the index-plate F, as shown and described.

200,618. LIME-BINS. Charles A. Lawton, De Pere, Wis. Filed June 18, 1878.



Claim.—1. In a lime-storing receptacle or bin, the combination of the outer wall, made of one thickness of boards, the inner wall, made with two or more thicknesses of boards, having paper boards inserted between the said inner boards, and the inclined discharging-spouts, carrying the hinged covers, substantially as described.

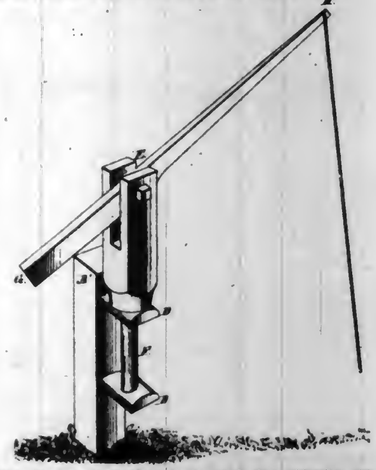
2. In a lime-storing receptacle or bin, the combination of the outer wall, the double inner wall, composed of two thicknesses of boards, with paper inserted between the inclined discharging-spouts, the receiving-doors, and the doorway-inclosing boards, (designated C',) all arranged as specified.

200,619. BOOT AND SHOE HOLDERS. Nelson Lyon, Albany, N. Y. Filed Dec. 15, 1877.



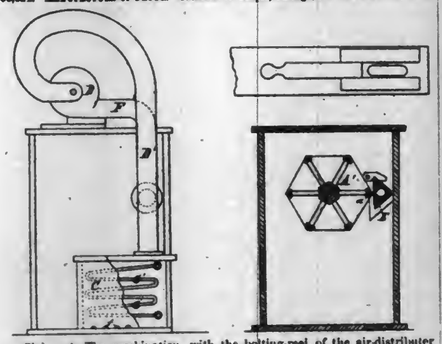
Claim.—The combination, with the holder A *a b c*, or the standard C and attaching-flange D, the whole being adapted to be secured to the front of a box, as and for the purpose set forth.

200,620. TETHERS. William B. Mathews, Delta, Ala. Filed June 20, 1877.



Claim.—In an implement for tethering stock, the combination, with stationary post A', of the perforated brackets D D, secured to the side thereof, and supporting the revolving forked upright E F, and the balanced leading pole G, pivoted in said upright, the whole being arranged as shown and described.

200,621. MANUFACTURE OF FLOUR. Christian S. Marple, Chicago, Ill. Filed Oct. 11, 1877.



Claim.—1. The combination, with the bolting-reel, of the air-distributer E, pipes D' and F', the fan, and hot-air chamber C', substantially as and for the purpose specified.

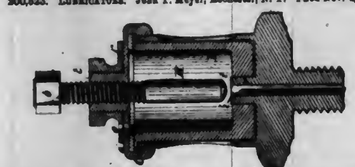
2. The process herein described of regulating the temperature of the air within the bolting-chest, and preventing the glutinous matter and fine fibrous impurities from adhering to the bolting-cloth, by introducing jets or currents of heated air into the bolting-chest, and in direct contact with and against the outer surface of the bolting-cloth and through the meshes thereof, substantially as specified.

200,622. MEAT-BROILERS. John McConnell, Cleveland, Ohio. Filed July 23, 1877.



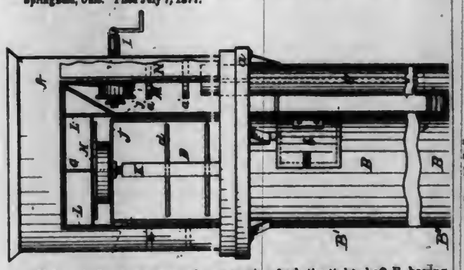
Claim.—A meat-broiler whose concavo-convex body is provided with a series of holes, the sides of each of which are at right angles to that portion of the broiler-body through which it passes, and each of which is provided on the upper surface of the broiler with an abrupt ridge extension or inclosing rim, substantially as described.

200,623. LUBRICATORS. John T. Meyer, Rochester, N. Y. Filed Nov. 4, 1876.



Claim.—The combination, with the screw-cap having an orifice, *o'*, and threaded projection *t*, of a nut, *x'*, turning on said projection, and having a flange and orifice, *o*, as set forth.

200,624. REFRIGERATORS FOR COOLING ARTICLES UNDER GROUND. Samuel P. Miller, Springfield, Ohio. Filed July 7, 1877.



Claim.—1. In an apparatus for preserving food, the tight shaft B, having a subterranean portion, B'', as and for the purpose set forth.

2. The combination, with a case, A, and a shaft, B, of the vertical ventilating-tube C, as and for the purpose set forth.

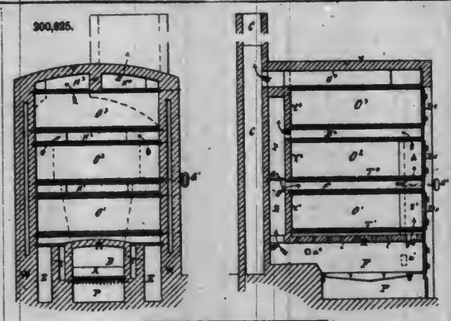
3. The combination, with the case A and shaft B, of the ventilating-tube C, weight F, and rack of shelves D, said weight and shelves being adapted to force a current of air through the apparatus, as set forth.

4. The apparatus herein described, consisting of a case, A, shaft B, having basement and subterranean portions B' B'', ventilating-tube C, rack of shelves D, rope or chain G, sheaves E, weight F, windlass M, and handle I, as and for the purpose set forth.

200,625. BAKING-OVENS. Moses Fishole, Fowburg, N. Y. Filed Jan. 30, 1878.

Claim.—The baking-oven built of brick, iron plates, and tiles, consisting of three or more apartments, O' O² O³, one above the other, with flues H' H² H³ H⁴ between and above them, flues S S, single fire-place F below, and damper-regulators G' G², arranged substantially as and for the purpose specified.

200,625.

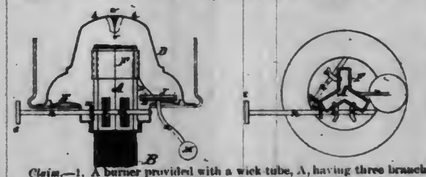


200,626. ENAMELING SHEET-IRON WARE. Frederick C. Niedringhaus and William F. Niedringhaus, St. Louis, Mo. Filed Feb. 15, 1878.

Claim.—1. The herein-described improvement in the mode of enameling iron-ware, which consists in expelling the carbon from the metallic base before the formation of the enamel thereon, for the purpose described.

2. As an improved manufacture, enameled sheet-iron ware having the enamel fused upon a decarbonized metallic base.

200,627. LAMP-BURNERS. Andrew T. Nord, Brooklyn, N. Y. Filed July 25, 1877.

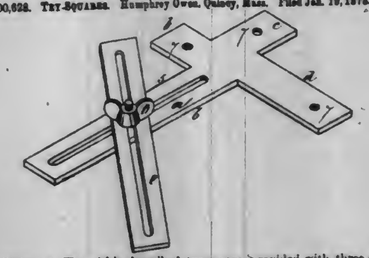


Claim.—1. A burner provided with a wick-tube, A, having three branches, in combination with a similar three-branched wick, B, and cap D, provided with holes *h h h*, with central division-piece *w*, pointed at its internal lower edges *v*, arranged in the manner and for the purpose set forth.

2. Wick-raising wheels *a*, having beveled or bent teeth, diagonal to their spindle and square to the surface of the wick, and operating in combination with the three-branched wick B, substantially in the manner and for the purpose set forth.

3. In combination with the wick-tube A, the cap or tube F, provided with an arm, *r*, and disk-plate J, in combination with the disk-plate L, provided with a rod, *x*, having a weight, M, at its end, the whole being arranged to operate in the manner and for the purpose substantially as described.

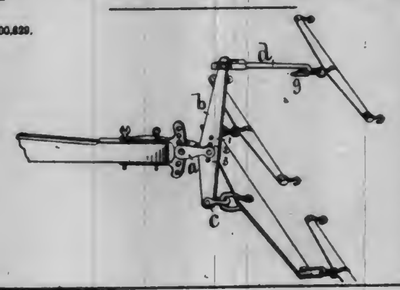
200,628. TRY-SQUARES. Humphrey Owen, Quincy, Mass. Filed Jan. 19, 1878.



Claim.—1. The within-described try-square, provided with three or more arms, each of a different length, forming a series of two or more independent squares of different sizes in a single implement, substantially as and for the purpose set forth.

2. The combination of the slotted bevel-arm e with a try-square having arms *a b c d*, of different lengths, substantially as and for the purpose specified.

200,629.

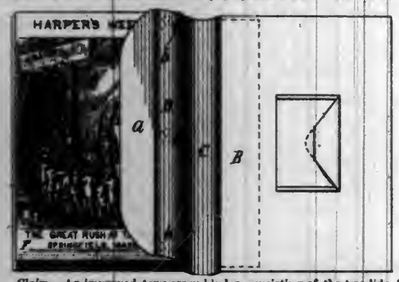


200,629. DRAFT-EQUALIZER. James A. Stephens, Mott, Iowa, assignor of one-half his right to Thomas Tennant, same place. Filed May 23, 1877.

Claim.—1. In a three-horse equalizer, the bifurcated adjustable single-tree carrier *d*, having a locking device, *g*, in its front end, in combination with a vertical oscillating lever, *b*, substantially as and for the purposes shown and described.

2. As an improved article of manufacture, the three-horse equalizer composed of the combined clevis and fulcrum *a*, the oscillating and vertically-adjustable lever *b*, carrying the link *c* at its lower end, and the adjustable and horizontal single-tree carrier *d*, having a holding device, *g*, in its front end, substantially as and for the purposes shown and described.

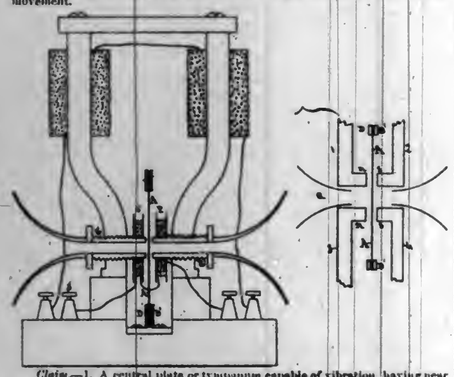
200,630. TEMPORARY BINDER. Jesse P. Tapley, Springfield, Mass. Filed July 30, 1877.



Claim.—An improved temporary binder, consisting of the two lids A and B, united by a permanent back, C, in combination with the loose back D, adapted for the insertion of wires *b* through holes made therein, said back being secured at one side to the lid A, and having the tucking flap *a* at its other side, all arranged and constructed substantially as and for the purpose hereinabove described and set forth.

200,631. TELEPHONE. John Trowbridge, Cambridge, Mass. Filed Dec. 5, 1877.

Brief.—Permanent magnets and coils are placed on opposite sides of the diaphragm, for the purpose of insuring the greatest freedom of vibration and movement.

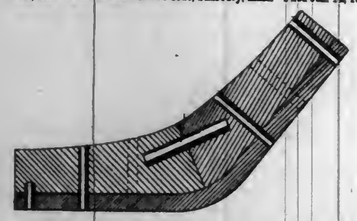


Claim.—1. A central plate or tympanum capable of vibration, having near its center and upon each of its sides the terminals of one or more electro-magnets, or of one or more permanent magnets, and their respective coils, by which an intermittent current of electricity is generated, as herein described.

2. The adjustable tubular pole-pieces G G', serving the double purpose of magnets and of passages for the sound-waves to the central vibrating plates, as herein described.

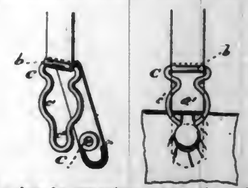
3. The vibrating plate, having one or more permanent magnets or electro-magnets on opposite sides thereof, in combination with the tubular pole-pieces, the mouth-pieces, and the conducting wire or wires, leading to similar instruments at distant stations, as herein described.

200,632. BOAT-KNEE. David True, Salisbury, Mass. Filed Jan. 14, 1878.



Claim.—A boat-knee to the bottom or under side of which is attached a longitudinal supplementary strip of wood, said strip extending each side of the bend or division in said knee, for the purpose set forth.

200,633. CLASPS FOR SUPPORTING GARMENTS. William B. Walker, Boston, Mass. Filed Sept. 21, 1877.



Claim.—In a clasp for supporting garments, the combination, with the wire loop *c*, of the piece of webbing or other textile material *a*, provided with the seam *b*, and extending down behind the said loop, and provided with an ordinary button upon the front side thereof, substantially as and for the purpose hereinbefore set forth.

200,634. NAME-PLATES FOR DOOR-KNOBS, &c. Eugene A. Webster, Springfield, assignor to George H. Stark, Palmer, Mass. Filed June 7, 1877.



Claim.—1. The shell A, in combination with an ordinary knob, substantially as and for the purposes specified.

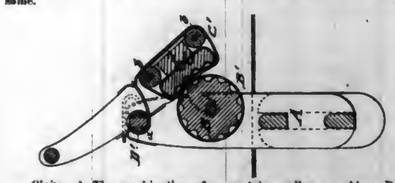
2. In combination with a bell-pull or knob of the ordinary shape, the shell A and collar B, substantially as and for the purposes specified.

3. The collar B, cut away to allow of its passage over the knob when detached from the shell A, as and for the purposes specified.

4. A name-plate constructed to fit a knob or bell-pull tightly and conform to the shape of the same, substantially as and for the purposes specified.

200,635. WASHING-MACHINES. Thomas C. Welch, Cincinnati, Ark. Filed May 5, 1877.

Brief.—The clothes are rubbed between a cloth-covered corrugated roller and a wash-board set into a spring-acted lever-frame, the wash-board being covered by a band passing around the board and friction-rollers back of the same.



Claim.—1. The combination of a revolving roller or rubber, B, having covering-cloth B', with a swinging and spring-acted wash-board, C, having encircling band C', substantially as specified.

2. The combination of the spring-acted lever-frame with a wash-board having friction-rollers and encircling band, and with a fastening-bolt to remove band, if desired, substantially as specified.

200,636. GASOLINE COOKING-STOVES. Henry Wellington, Green Point, N. Y. Filed Jan. 25, 1878.

Claim.—1. In a reservoir for hydrocarbon oils, the combination, with the ordinary top plate thereof, of a second or auxiliary plate, located beneath the first, a filling-pipe passing through the two, and the wire-netting or perforated metallic shields arranged to cover the inlets for oil, substantially as shown and described.

2. In a reservoir for hydrocarbon oils, the combination, with the top plate thereof, of a filling-pipe connected therewith by means of an annular section of wire-netting or perforated material, the lower or discharge end of said pipe being similarly provided with perforated material, substantially as and for the purposes set forth.

3. The combination, as before set forth, of the two plates C and D, filling-pipe B, lid or cover E, and the protectors *b c*.

4. In a gasoline cooking-stove in which the supply-pipe is located beneath the burners and occupies a central position with respect to the stove, the combination, with the reservoir located under the burners and supply-pipe, of funnels conducting drip from the burners and supply-pipe down to and through the tubes which unite said funnels with the reservoir, substantially as and for the purposes explained.

5. The combination, as before set forth, of a shelf extending beneath the burners, a drip-reservoir, N, pipes *g*, and funnels *f*, detached from said shelf, the reservoir being sustained by the shelf through the medium of the funnels, for the objects named.

6. In combination with the top plate of a gasoline cooking-stove, a water-tank supported by said top plate in a position removed from over the burner, said tank being provided with circulating-pipes which surround said burner and form the union between the top plate and reservoir, the several parts being arranged substantially as shown and described.

7. The combination, as before set forth, of the top plate of a gasoline cooking-stove, the water-tank P, circulating-pipes K K', upon which said reservoir is supported, the burner, and the valve *d*, for controlling the circulation of the water, in the manner and for the purposes explained.

8. In combination with a water-tank supported by the top plate of a gasoline-stove through the medium of circulating-pipes, arranged substantially as

shown, a valve, *e*, located in one of the supporting-pipes, and adapted to permit the withdrawal of water from said tank, in the manner and for the purposes explained.

9. In combination with a water-tank supported by the top plate of a gasoline-stove through the medium of the circulating-pipes, and in a position removed from over the burner which supplies heat therefor, a steaming-chamber, R, mounted upon said tank, made removable therefrom, and adapted to be operated substantially as shown and described.

10. In combination with a water-tank supported by the top plate of a gasoline-stove through the medium of the circulating-pipes, and in a position removed from over the burner, a perforated cover, depressed toward its center, adapted to conduct water down into the tank and to form the bottom of the steaming-chamber, substantially as shown and described.

11. In combination with a water-tank provided with circulating-pipes and adapted for use in connection with a gasoline-stove, a check-valve located in the discharge-section of said pipes, and arranged, substantially as shown and described, so as to permit the continuous discharge of water from the tank, but to automatically arrest the return motion of the water, for the objects explained.

12. In combination with the valve-seat L of the circulation-valve, the pipe or rod M, serving to sustain the end of the oil-supply pipe, a suitable barrier being placed between said oil-pipe and the water-pipe, substantially as and for the purposes set forth.

13. In a gasoline cooking-stove, the combination of the top plate, the legs provided with shoulders located above the shelf which is under the burners, the oil-supply pipe, and the shelf, the several parts being united and braced together by means of the rods or pipe-sections I I, substantially as shown and described.

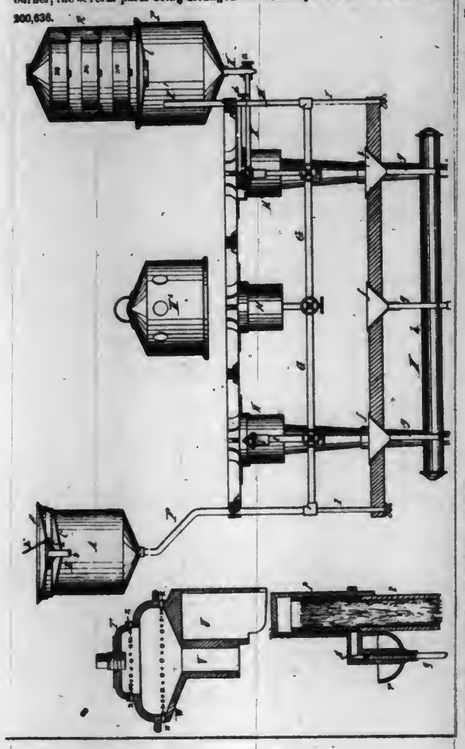
14. In combination with the removable section of the top plate of a gasoline-stove, said section being sustained by the frame-work and located over the burner, which is supported upon a centrally-disposed supply-pipe, the depending wind-guard, open at top and bottom, and attached to and made removable with said section, thereby affording easy access to the burner and its valves, substantially as shown and described.

15. In combination with the herein-described wind-guard, which is attached to and depends from the removable section of the top plate, and which is located over the vertically-disposed burner, the cover H', serving to form a chamber with said guard, in the manner and for the purposes specified.

16. In a gasoline-burner adapted for heating purposes, the combination of the perforated cone, the cylindrical air and gas conducting tube leading thereto, and the socket adapted to receive the projecting end of the vaporizing-chamber, the three parts being cast in one piece, which is readily detachable from the vaporizing-chamber, the said parts being arranged in reference to each other substantially as shown and described.

17. In a gasoline-burner, the combination, with the cylindrical vaporizing-chamber, of an angular projection cast therewith, and affording the seat and socket for the needle-valve, and an unbroken communication between the jet-orifice and the vaporizing-chamber, which chamber enters the socket of the burner, the several parts being arranged substantially as shown and described.

200,636.



200,637. MACHINES FOR SETTING TIRES. Jonathan B. West, Geneseo, N. Y. Filed Mar. 10, 1877.



Claim.—1. In a machine for setting tires, the endless chain or band B, composed of links pivoted together, and provided with cams or equivalent compressing devices, arranged at intervals around the circle, and operating to produce compression of the chain or band upon the tire, as shown and described, and for the purpose specified.

2. In a machine for setting tires, the combination, with the links *b b*, composing the endless chain or band, of the cams *d d*, fitting in holes *c c* of said links, and used either with or without the pins *d' d'*, as shown and described, and for the purpose specified.

3. In a machine for compressing tires, the combination, with the links *b b'*, composing the endless chain or band, and with cams *d d*, for operating the links, of the pins *d' d'*, fitting at intervals in the slots *c' c'* of the links, for the purpose of adjusting the endless chain or band on the tire preparatory to applying the power, as herein shown and described.

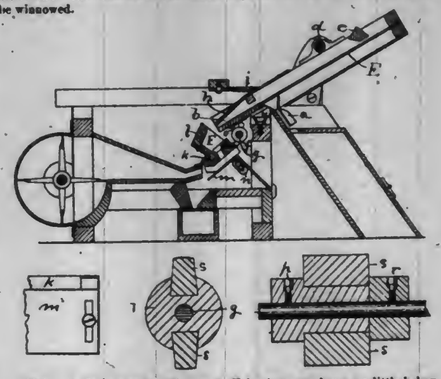
4. In a machine for setting tires, the combination, with the links *b b*, provided with the holes *c'*, of the pins *d'*, made in halves, and the wedges *w*, fitting between the halves, and operating to draw the links in opposite directions when driven, as herein shown and described.

5. In a machine for setting tires, the combination, with the cams *d d*, of the jointed arms *l l* and *m m* and the gear or rim G, or equivalent, for producing simultaneous action of the cams, as and for the purpose specified.

6. In a machine for compressing tires, the combination, with the jointed links *b b*, composing the endless chain or band, of the rests *p p p*, projecting inward, and forming the supports for the wheel, as herein described.

200,638. MACHINES FOR SEPARATING IRON FROM FOUNDRY REFUSE. Oliver D. Woodruff, Southington, Conn. Filed Oct. 22, 1877.

Brief.—The refuse passes down the inclined vertically-vibrating screen, the fine dust falling through to the outer chute, and the rest passing on to meet the blast at K, the iron falls into the box below and the light material is blown out. The riffle-bar in the screen regulates the size of the particles to be winnowed.



Claim.—1. In a separator, the screen E, having cross-beam *e* a little below its upper end, a single pair of horizontal bearings between its ends, on which the screen can oscillate to vibrate its ends vertically, and the two chutes *a* and *b* at its lower end, substantially as described, and for the purpose specified.

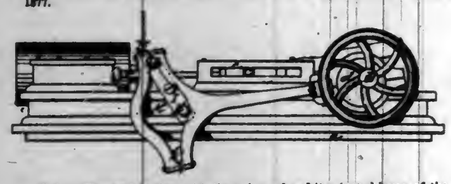
2. In a separator, the screen E, having cross-beam *e* a little below its upper end, the chute *b* at its lower end, and a single pair of horizontal bearings between its ends, on which the screen can oscillate to vibrate its ends vertically, in combination with mechanism for oscillating said screen and its above-named parts, substantially as described, and for the purpose specified.

3. In a separator, the screen E, having cross-beam *e* a little below its upper end, a single pair of horizontal bearings between its ends, on which the screen can oscillate to vibrate its ends vertically, and the chute *b*, provided with cover *h* at its lower end, substantially as described, and for the purpose specified.

4. In a separator, the adjustable chute-cover *k*, in combination with the apron *m*, having their adjacent sides adjusted parallel to each other, substantially as described, and for the purpose specified.

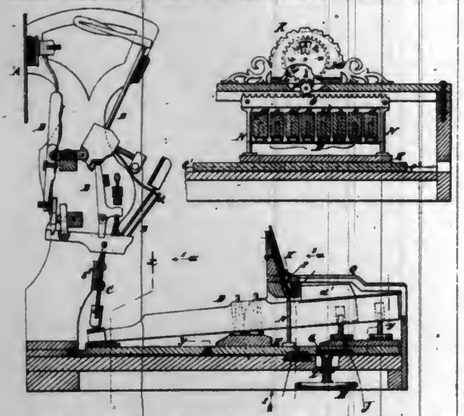
5. In a separator, the combination of hinged chute-cover *k*, apron *m*, slotted at its ends and adjustably secured to said cover, and the adjustable stops on the sides of the frame, substantially as described, and for the purpose specified.

200,639. VALVE-GEAR FOR STEAM-ENGINES. George W. Ziegler, Butler, Pa. Filed Nov. 5, 1877.



Claim.—The combination, with the valve-rod and its pivoted lever, of the yoke-lever having the sectional yoke and liners, and thereby adapted to be operated by the single cam, substantially as and for the purpose specified.

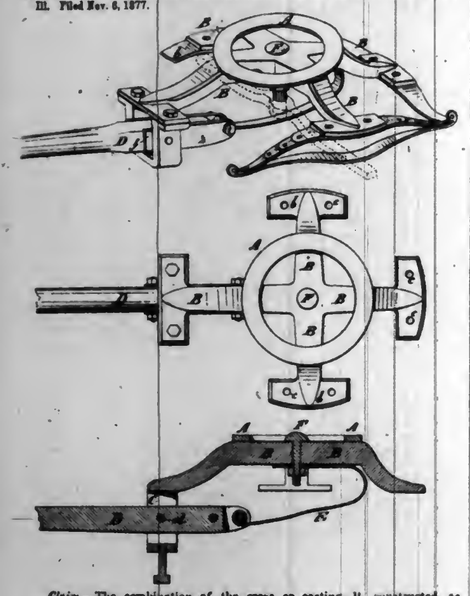
200,640. TRANSPOSING KEY-BOARDS. Carl A. Agrue, New York, N. Y. Filed Feb. 28, 1876.



Claim.—1. The rack J, pinion G, hand-wheel H, the sliding key-board D E, the rack-frame N O, and the index K, all constructed and operating as and for the purpose specified.

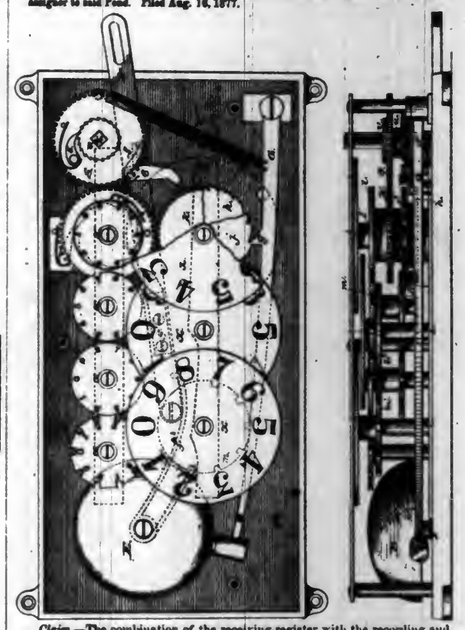
2. The combination of the rack-frame N O with the sliding key-board D E and the index K, for the purpose specified.

200,641. WAGON-GEARING AND TONGUE-SUPPORT. Christian Baumgaertner, Rock Island, Ill. Filed Nov. 6, 1877.



Claim.—The combination of the cross or casting H, constructed as described, and fifth-wheel A, with the king-bolt F, bent spring E, jam-nut *g*, and pivoted tongue D, substantially as and for the purpose herein shown and specified.

200,642. REGISTERS. Joseph Benner and Philander Pond, Philadelphia, Pa.; said Benner assignor to said Pond. Filed Aug. 16, 1877.



Claim.—The combination of the receiving-register with the recording and transfer register by means of the gear-wheels *k*, *o*, and *s*, ratchet-wheels *n* and *c*, and the pawls *c'* and *s'*, or their equivalents, whereby the receiving-register is permitted to remain in a state of rest while the recording-register is turned in one direction for recording, but is caused to turn simultaneously with the recording-register, to receive the transfer, when the recording-register is turned in the opposite direction, substantially as set forth.

200,643. NECK-YOKE FASTENERS. Austin W. Comstock, Mount Pleasant, Iowa. Filed Feb. 9, 1877.



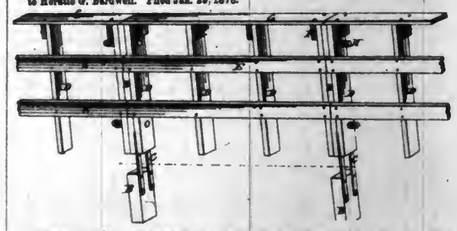
Claim.—The spring D, recessed in the pole A, in combination with the latch C and face-plate B, all constructed and arranged in the manner and for the purposes set forth.

200,644. BALE-TIES. Ferdinand Cook, New Orleans, La. Filed Apr. 5, 1877.



Claim.—A bale-band provided with a hook the engaging part of which is provided with a shoulder, and the extreme end of the hook extended below its juncture with the shank, whereby the hook is prevented from lateral displacement in either direction when the tie is secured to the bale, substantially as set forth.

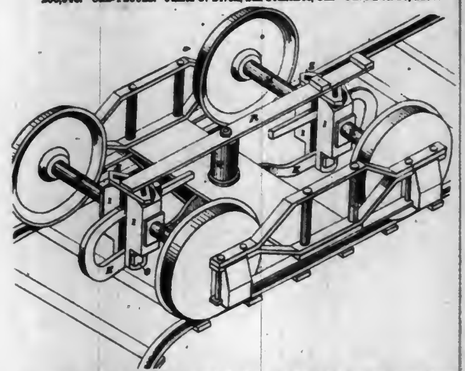
200,645. FENCES. Emmett Densmore, Blooming Valley, Pa., assignor of one-half his right to Horatio G. Bardwell. Filed Jan. 29, 1878.



Claim.—1. In a fence-post, the combination of two wooden parts in line with but separate from one another, one part adapted to be buried in ground below the surface, and the other to be elevated above the ground and free from the surface, with a metal plate thin in the line of the fence and wide transversely thereto, or with two metal bars asunder in line across the line of the fence, attached to both the upper and lower wooden parts, substantially as described.

2. In a fence-panel, the combination of a series of board stiles thin in the line of the fence and wide transversely thereto, to which are attached a series of rails, one above another, with a board cleat or rafter attached across the upper end of each stile, and the grain of which rafter is in line across the line of the fence, and with a board rail or cap thin vertically and wide horizontally, attached to the rafters over the ends of the stiles, substantially as described.

200,646. CAR-TRUCKS. James G. Divell, San Francisco, Cal. Filed Dec. 29, 1877.



Claim.—The blocks I I, attached to the beam E by a pivot at its lower end, and connected by means of pins or studs N with the oppositely inclined angular slots T T in the casting S, in combination with the adjustable boxes P K and short axle H, the whole operated by the pivoted bar R, which connects one truck of the car with the other, substantially as shown, and for the purpose described.

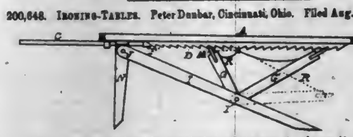
200,647. BUSTLES AND PANNIERS. Stephen Dixon, London, England. Filed Sept. 14, 1877.



Claim.—1. A bustle or pannier provided with cork strips or ribs, substantially as described.

2. A bustle or pannier having independent adjusting-bands attached at the ends of the ribs, substantially as and for the purpose described.

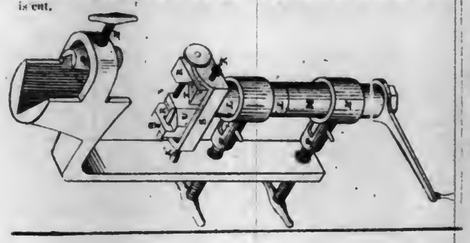
200,648. IRONING-TABLES. Peter Dunbar, Cincinnati, Ohio. Filed Aug. 20, 1877.



Claim.—An ironing-table consisting of the top A, clamp B, sliding sleeve-board C, ratchets D D', folding legs N I, and braces G G', with cord R and loop L, adapted to raise said braces for engagement with the ratchets when the legs are unfolded and the table set up for use, substantially as described, and for the purpose set forth.

200,649. SPOKE-TENONING MACHINES. Robert W. Eaton, Watsonville, Cal. Filed Jan. 14, 1878.

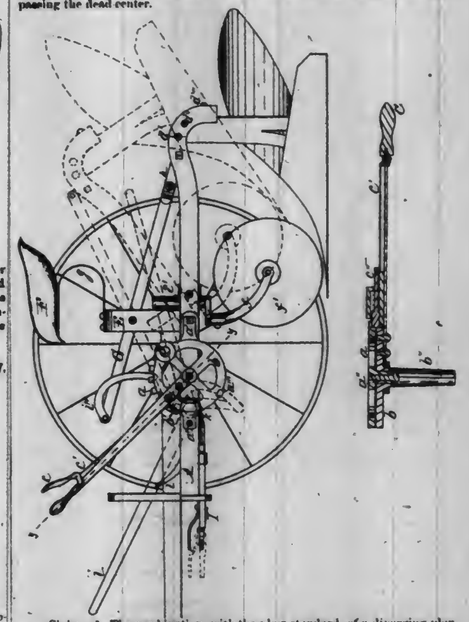
Brief.—The cutter-head is formed of two sliding parts, one of which carries the knife, and is provided with a V-shaped projection, and the other a corresponding notch, so as to form three bearing-points for the tenon when it is cut.



Claim.—The cutter-head consisting of the block R R, adjustable in the frame S, and having the interlocking V-shaped groove T and V-shaped projection U, with the concave edge, all combined and arranged to operate substantially as shown, and for the purpose described.

200,650. SULKEY-PLOWS. Nathan Elmer, Prospect, Ill. Filed Nov. 6, 1877.

Brief.—The plow is mounted on two wheels. The beam is bifurcated, connecting rearwardly and curving downwardly to receive the plow-standard, which is pivoted between the two parts, and provided with a set-screw to give pitch to the plow. A long lever, pivoted to the seat-support near its middle, is connected to the rear of the beam by a link, and to a rock-shaft at its forward end by a curved link. This rock-shaft is provided with a lever and a pulley having a chain passing around it and secured thereto, and also connected with a sliding draw-bar, whereby the draft of the team may be used in conjunction with the rock-shaft lever to raise the plow from the ground. In both positions the plow is automatically locked by one or other of the links passing the dead center.



Claim.—1. The combination, with the plow-standard, of a diverging plow-beam constructed with downwardly-projecting rear end, between the plates of which the standard is pivoted, the lower rear portion of said beam serving as a stop to limit the movement of the plow-standard, substantially as described.

2. The combination, with a plow-standard, of a diverging plow-beam constructed with downwardly-projecting rear end, between the plates of which the standard is pivoted, the lower rear portion of said beam provided with a set-screw for adjusting the position of the plow, substantially as described.

3. The combination, with a vertically-adjustable main frame, of the diverging plow-beam, braced at its forward end by a cross-bar, and having the plow-standard pivoted between the plates of its rear end, said beam constructed with a downward rear projection, which serves as a stop to limit the movement of the plow, substantially as described.

4. The combination, with the diverging bars of the plow-beam and cross-bar located between said bars, of a vertical colter-shaft, provided with a crank on its lower end, to which is pivoted the yoke of a rolling colter, and a screw-eyebolt engaging with the cross-bar and vertical colter-shaft, whereby the rolling colter may be adjusted either vertically or laterally, substantially as and for the purpose described.

5. The rock-shaft journaled in the main frame, and provided at one end with a hand-lever, *i*, and at the other end with a curved arm, *i'*, in combination with the locking and lifting lever G, which is pivoted to the seat-support, link, connecting the rear end of the lifting-lever with the plow-beam, and curved link *i''*, connecting the lever G with the curved arm *i'*, substantially as described.

6. The combination, with the curved arm *i'*, rock-shaft H, lever t, and curved link *i''*, of the draw-bar, constructed and arranged substantially as described, whereby the power of the team may be employed to raise and lock the plow, substantially as described.

7. The combination, with the rock-shaft provided with the hand-lever and curved arm, the lifting-lever G, and curved link *i''*, of the draw-bar, constructed and arranged substantially as described, whereby the joint action of the operator and team may be employed to raise and lock the plow suspended, substantially as described.

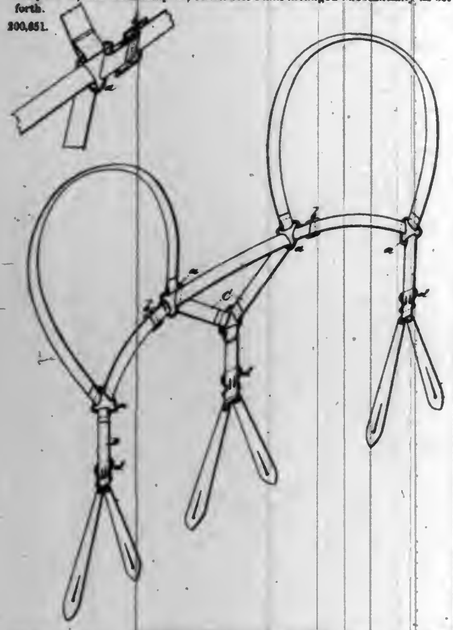
200,651. COMBINED SHOULDER-BRACE AND SUSPENDERS. Alfred P. Fuller, Rutland, Vt. Filed Sept. 10, 1877.

Claim.—1. The combination of the arm-loops A, adjusting-straps B B, self-adjusting loop C, and back-strap D', constructed and arranged substantially as set forth.

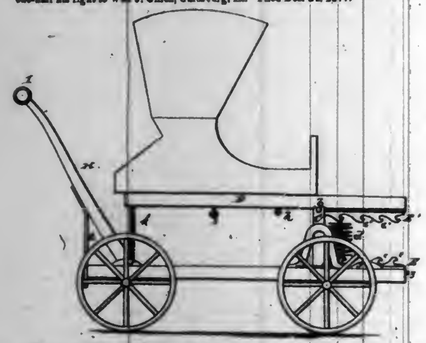
2. The combined shoulder-brace and suspenders, consisting of the arm-

loops A, the adjustable back-straps B, the self-adjusting loop C, the suspender-straps D D, and back-strap D′, constructed and arranged substantially as set forth.

200,851.



200,852. COMBINED BABY JUMPER AND CARRIAGE. Mark P. Gillen, Forreston, assignor of one-half his right to Wm. J. Gillen, Galesburg, Ill. Filed Dec. 24, 1877.



Claim.—1. The combination of the bed A with standards C C, the platform D, hung in the standards upon trunnions *b b*, the hooked bars E E′, adjustable coil-springs *d d*, and the spring *k*, substantially as and for the purposes herein set forth.

2. The platform D, supported upon trunnions, rocked by means of springs, and provided with guides or ways *f f*, to receive an adjustable sliding carriage body or basket, as herein set forth.

3. The handles H H, provided with hooks *n*, and spring-arms I, with holes *x*, in combination with the bed A, having pins *y*, and the boxes J, with catches *w*, substantially as and for the purposes herein set forth.

200,853. CORNICE-MOLDS AND MITERING DEVICES. Geo. K. Glenn and Henry Fern, Woodland, Cal. Filed July 30, 1877.

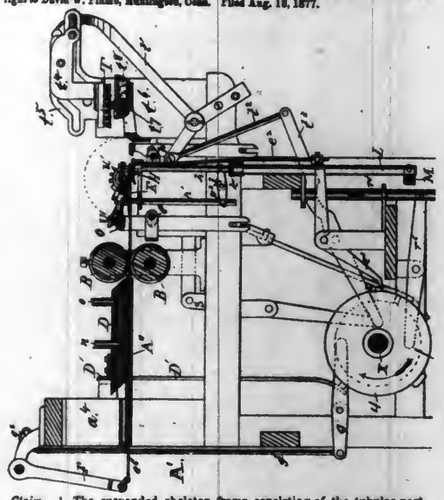


Claim.—1. The cornice-mold and miter-forming device, consisting of the sides A A, adjustably secured to the board D, whereby their outer ends may meet or be separated, so as to form an interior or exterior angle-joint, substantially as herein described.

2. The sides A A, with their feet B and dowel-pins C and securing-screw, in combination with the board D and brace-rod E, substantially as described.

3. In combination with the angularly-placed sides A and board D for forming miter-joints, the hinged distributing-boards F, substantially as and for the purpose herein described.

200,854. PAPER-BAG MACHINES. Almon R. Glover, Birmingham, assignor of one-half his right to David W. Plumb, Huntington, Conn. Filed Aug. 18, 1877.



Claim.—1. The suspended skeleton frame consisting of the tubular part A″, the non-tubular side pieces A A connected thereto, the whole being supported at the rear end by the hanger *a′*, bent horizontally at its lower end to admit one edge of the paper, and resting at its forward end upon the lower one of the grooved feed-rollers B, as and for the purposes described.

2. In combination, the rocker-arm F, the tube A″, suspended and supported as described, the reciprocating shank or shover *c*² and its triangular former, and the recessed or grooved rollers B B, substantially as and for the purposes described.

3. The triangular former E, provided with the notch *e*′ at its tip or point, and with the opening *e*² through its body, as and for the purposes set forth.

4. The combination of the crimping-plate N and the table H, these parts being constructed and operated as shown and described.

5. In combination with the former E, the finger *e*′, loosely attached thereto, and a lifting device operating to elevate said finger, the construction permitting the finger, when released by the lifter, to freely drop to place by its own gravity, as and for the purposes described.

6. The nippers U, combined with the arm *u*², pusher *u*⁴, collar *u*³, and sliding collar *r*³, substantially as and for the purpose set forth.

7. The side holders or guides R R, operated in the manner and for the purpose described, in combination with the table H, plate N, and folders O P, substantially as shown and described.

8. The side holders or guides R R, in combination with the lever *r*¹, spring *r*², slide *r*³, and lever *r*⁴, substantially as shown and described.

9. In combination with the stationary paste-cup *f*′ and its pasting-roller *f*², the paster-brush T, having the movements, substantially as described, derived from the slide *t*′, slotted guide-plate *t*², link *t*³, and lever *t*⁴, as shown and set forth.

10. In combination with the frame A A A″, the steam-box D, its operating-lever D′, and cam 1, substantially as shown, and for the purpose described.

11. The feed-rollers B B, grooved as described, in combination with the skeleton frame A A″, and with the bar or arm *c*′ of the former-plate E, the combination permitting this bar to operate the former at the same time that the feed-rollers are feeding the paper.

12. In combination, the tube-former A A A″, the intermittingly-acting steam-box, grooved feed-rollers B B, and the described devices for forming the bottom of the bag.

13. In combination, the tube-former A A A″, steam-box D, grooved rollers B B, bottom-forming devices, and the pressure-pad W, the combination operating as set forth.

14. In combination, the tube-former A A A″, steam-box D, grooved rollers B B, bottom-forming devices, pressure-pad W, and the paster T, the combination operating as set forth.

15. In combination, the tube-former A A A″, steam-box D, grooved rollers B B, bottom-forming devices, pressure-pad W, paster T, and the shears C C′, the combination operating as set forth.

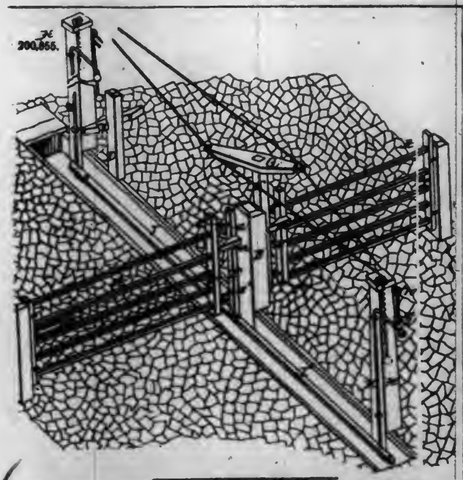
200,855. GATES. Richard Gray, Bloomington, Ill., assignor to Thomas J. Gray, Goodland, Ind. Filed Nov. 1, 1877.

Claim.—1. The combination, with the stationary post B, of the swinging post E, hinged thereto, as shown, and the gate with its rear stile F, said post and stile E F hinged together by long and short arms reversely secured to near the top and bottom of said post and stile, whereby the whole gate is drawn backward when the swinging post is turned, substantially as herein shown and described.

2. The combination, with the gate and swinging post, of the projecting ears *m*, substantially as and for the purpose specified.

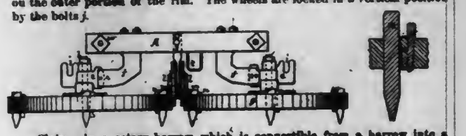
3. The combination, with the gate, swinging post, crank-arm I, and connecting-rods J J′, of the vertical weighted crank-spindles K and posts H, the several parts constructed and arranged to operate substantially as herein shown and described.

200,856.



200,856. ROTARY HARROWS. Samuel Hartman, Pittsburg, Pa. Filed Jan. 10, 1878.

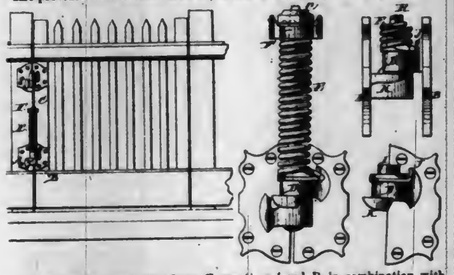
Brief.—The implement may be changed from a harrow to a wheeled vehicle for transferring it from place to place. The friction-wheels operate only on the outer portion of the rim. The wheels are locked in a vertical position by the bolts *j*.



Claim.—In a rotary harrow which is convertible from a harrow into a vehicle, the arms *a*, with sockets for bars B, and formed with the side projecting ears *i*, having recesses therein, in combination with the bar A, provided with bolts *j* and bracket *f*, with hinged bearing *e*, substantially as herein shown and described, and arranged to operate as set forth.

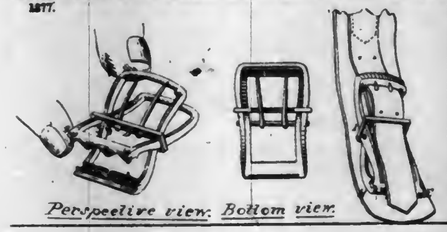
200,857. SPRING-HINGES FOR GATES, &c. Wesley Hull, Fort Wayne, Ind. Filed Aug. 31, 1876.

Brief.—A long spring-encircled rod, serving as a pintle of the hinge, is surmounted by a regulating-drum having ratchet-teeth, and a cap-piece with corresponding ratchet-teeth, one end of the spring being secured to the socket of one leaf of the hinge, and the other within the drum. The spring, being compressed in attaching the cap, acts upon the drum in such manner as to cause the automatic locking of the ratchets, thus holding the spring at any point to which it may be moved, and regulating the tension. The hinge is also provided with suitable inclines, to lock the gate when wide open.



Claim.—The regulating-drum F, cap C, and rod E, in combination with spring E, secured to the exterior end of socket D, substantially as and for the purpose set forth and described.

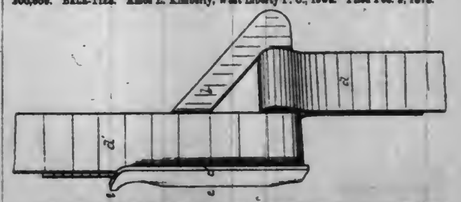
200,858. COMBINED CLASP AND BUCKLE. John R. Judd, New York, N. Y. Filed Sept. 20, 1877.



Perspective view. Bottom view.

Claim.—A combined buckle and clasp, arranged as shown, having all its movable parts pivoted on a single axis, with or without the slide, all substantially as and for the purposes set forth.

200,859. BALE-TIES. Amos E. Kimberly, West Liberty P. O., Iowa. Filed Feb. 9, 1878.

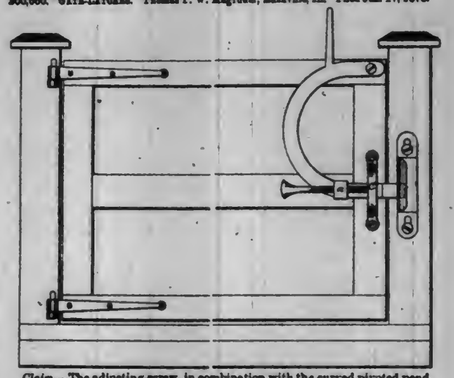


Claim.—1. The bale-tie described, consisting of three bars, *a b d*, constituting exactly or approximately a right-angled triangle, and of a flange, *a′*, or equivalent lug, projecting from the bar *c*, substantially as set forth.

2. The right-angled triangular bale-tie *a b c*, with flange *c′*, in combination with loops *d d′*, substantially as set forth.

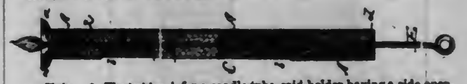
3. The triangular bale-tie *a b c*, having a flange, *c′*, projecting from one side of the bar *c*, and a lug, *a*, projecting from the opposite side, substantially as and for the purpose set forth.

200,860. GATE-LATCHES. Thomas P. W. Magruder, Rushville, Ill. Filed Jan. 17, 1878.



Claim.—The adjusting-screw, in combination with the curved pivoted pendent latch and the guard or keeper, substantially as shown and described.

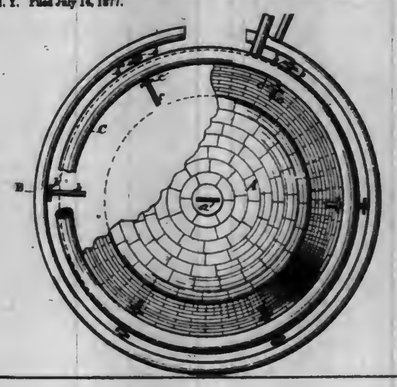
200,861. CANDLESTICKS. Jeremiah McCarthy, Springfield, Mass., assignor to Alois Diepenbrock, New York, N. Y. Filed Jan. 30, 1878.



Claim.—1. The holder A for a candle-tube, said holder having a side opening, *b*, for the insertion of the candle, and the inwardly-projecting rim *c*, in combination with a spring-plunger, substantially as herein shown and described.

2. In combination with the holder A, having side opening *b* and rim *c*, the plunger C, spring D, and rod E, said rod extending through the bottom of the holder, substantially as herein shown and described.

200,862. METHODS OF OPERATING CHARCOAL-KILNS. William A. Milne, Copake Iron Works, N. Y. Filed July 14, 1877.



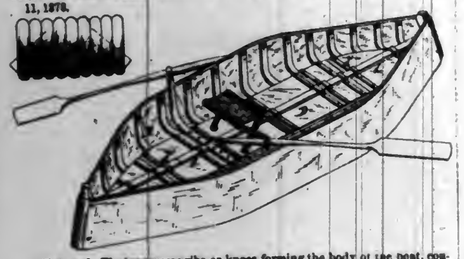
Claim.—1. The described method of operating charcoal-kilns, consisting, essentially, in the following series of steps: first, preparing the kiln in the usual well-known manner, and lighting the fire; second, closing tightly the usual opening or openings into the atmosphere; and, third, forcing air into the kiln in a series of equal or unequal jets, and out of the same with the products of distillation in another series of jets to the condenser.

2. The kiln described, having the independent system of pipes H and C, provided with regulating-dampers.

200,663. PURIFYING COAL. Parker F. Morey, Oakland, Cal. Filed Nov. 21, 1877.

Claim.—The herein-described bath, composed of a solution of water and sulphuric acid, of the proper density to separate coal from its impurities, substantially as herein described.

200,664. PORTABLE FOLDING BOATS. Nathaniel A. Osgood, Battle Creek, Mich. Filed Feb. 11, 1878.



Claim.—1. The transverse ribs or knees forming the body of the boat, connected and held in their parallel relation to each other by means of the flexible covering only, in the manner and for the purpose substantially as described.

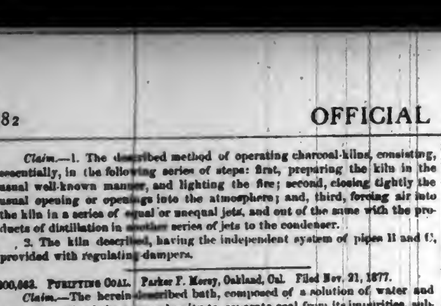
2. The body of the boat, composed of the parallel ribs and the flexible covering applied thereto, as described, in combination with the sectional or divided bottom board, secured in place for holding the boat in its extended form, substantially as described.

3. The ribs or knees, provided with the loops or eyes a', in combination with the cord or rope forming the gunwale when the boat is extended, substantially as described.

4. The rib or bar B, to which the rowlocks are applied, rigidly connected to and made removable with one of the sections of the divided bottom board, substantially as described.

5. The combination of the folding seat with the removable bottom board, substantially as described.

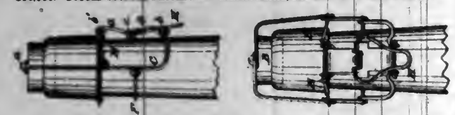
200,665. FIRE-ESCAPE. Douglass Ottinger, Erie, Pa. Filed Dec. 26, 1877.



Claim.—1. The improved fire-escape apparatus herein described, consisting of the gill-twine or other rope, E, having the loop A and the slide or sleeve B, and the friction clutch-pieces C, substantially as specified.

2. In a fire-escape, the gill-twine rope E, having the fixed loop A and the sleeve B, constructed and arranged to operate as shown and described.

200,666. BOTTLE-STOPPER FASTENING. Geo. F. Cotton, Norfolk, Va. Filed Feb. 1, 1878.



Claim.—1. A pair of toggle-arms having its upper end connected with a fixed collar, and its lower end connected to and combined with a sliding bail carrying the stopper, substantially as and for the purpose described.

2. A pair of toggle-arms having its upper end attached to a fixed collar, and its lower end attached to a sliding bail carrying the stopper, in combination with the said bail and the links E, connecting the bail to the said collar, as and for the purpose set forth.

3. The guide and stop loop F, combined with the sliding bail carrying the stopper, and the links E, connecting said bail with the stationary collar, substantially as and for the purpose set forth.

4. The lever loop or latch H, pivoted to the middle joint of the toggle-arms, and arranged to fulcrum on the lower joint, in combination with said toggle-arms and the bail carrying the stopper, as set forth.

200,667. REAR SIGHTS FOR FIRE-ARMS. Adolph Reda, Rochester, N. Y. Filed Dec. 26, 1877.

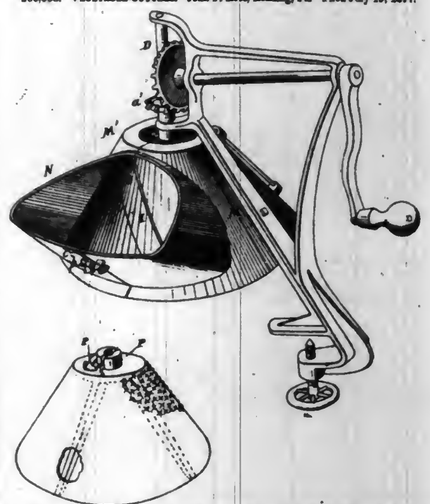
Brief.—For changing the size of the peep-hole without changing the sight.



Claim.—1. As an improvement in rear sights for fire-arms, a ratchet or revolving disk provided with several peep-holes of different diameters, in combination with the stock A, the latter being provided with a corresponding central opening, substantially in the manner and for the purposes set forth.

2. In combination with the stock A of gun-sights, and the pivoted disk a, the detachable cap C, substantially as and for the purposes set forth.

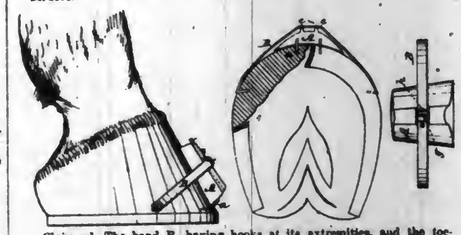
200,668. VEGETABLE-CUTTERS. John F. Rote, Reading, Pa. Filed July 19, 1877.



Claim.—1. In combination with the cone G, arranged on a vertical axis, the metallic casing made with hopper attached, in two sections, the one section, M, rigidly secured to the frame, and the other section, M', hinged to the section M, and both preserving the same equal and uniform distance from the surface of the cone, substantially as set forth.

2. The combination of the cone provided with the hub P, having hook R, slot n, and groove i, with the shaft D and pin n, substantially as and for the purposes herein set forth.

200,669. TOE-WEIGHTS FOR HORSES. Harvey Satterwhite, Martinsville, Ind. Filed Jan. 26, 1878.

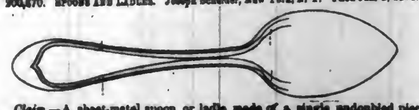


Claim.—1. The band B, having hooks at its extremities, and the toe-weight having spurs or projections at the bottom, combined and arranged to be secured and tightened upon the horse's hoof, substantially as described.

2. The combination, with a continuous or inseparable band having hooked extremities, of a toe-weight having spurs or projection a, and a vertically-adjustable hook or slide for tightening the band, substantially as described.

3. The slotted adjustable plate d, provided with a projecting hook, combined with the toe-weight having guides e and set-screw f, and with the band B, substantially as described.

200,670. SPOONS AND LADLES. Joseph Schneider, New York, N. Y. Filed Jan. 2, 1878.



Claim.—A sheet-metal spoon or ladle made of a single undoubled piece of metal, having two corrugations or branches of a corrugation running along the sides of the bowl below its edge, one along each side, and approaching one another at the point of junction of the handle with the bowl, and running up into the handle in such manner that the concave curve of the bowl extends between them into the handle, substantially as set forth.

200,671. WHIP-SOCKETS. Amos Sears, Newark, N. J. Filed July 21, 1877.

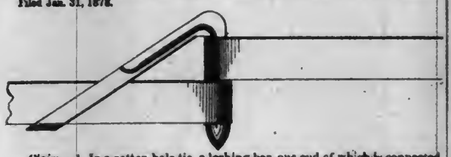


Claim.—1. The tapering rigid whip-socket, in combination with solid metallic rings having arms or bearings, substantially as and for the purpose set forth.

2. The combination of a rigid whip-socket and a continuous elastic lining, constructed substantially as and for the purpose set forth.

3. A diaphragm, J, extending internally from the top or bottom of a rim, h, in combination with the whip-socket and lining, for the purpose set forth.

200,672. BALE-TIES. Henry Shaw, Waveland, Miss., and Frederic Cook, New Orleans, La. Filed Jan. 31, 1878.



Claim.—1. In a cotton-bale tie, a locking-bar, one end of which is connected to one end of the band in such a manner that the free end of said bar may be moved away from the edge of the band to allow the bar to be inserted through the loops on opposite ends of the band when said loops are arranged side by side, substantially as set forth.

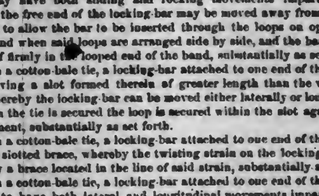
2. In a cotton-bale tie, a locking-bar, one end of which is provided with a brace, which is connected with one end of the band in such a manner that the brace may have both sliding and rocking movements imparted thereto, whereby the free end of the locking-bar may be moved away from the edge of the band to allow the bar to be inserted through the loops on opposite ends of the band when said loops are arranged side by side, and the bar adapted to seat itself firmly in the looped end of the band, substantially as set forth.

3. In a cotton-bale tie, a locking-bar attached to one end of the band by a brace having a slot formed therein of greater length than the width of the band, whereby the locking-bar can be moved either laterally or longitudinally, and when the tie is secured the loop is secured within the slot against lateral displacement, substantially as set forth.

4. In a cotton-bale tie, a locking-bar attached to one end of the band by a diagonal slotted brace, whereby the twisting strain on the locking-bar is sustained by a brace located in the line of said strain, substantially as set forth.

5. In a cotton-bale tie, a locking-bar attached to one end of the band, and adapted to have both lateral and longitudinal movements imparted thereto, said locking-bar formed with an enlarged head or end, to prevent the lateral movement of said bar after it has been secured in place, substantially as set forth.

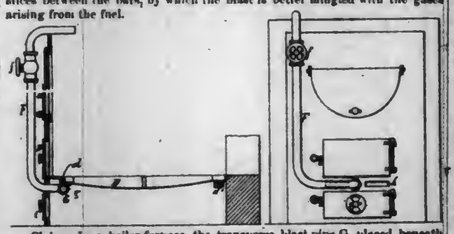
200,673. ANCHORS. Robert R. Spedden and Daniel F. Stafford, Astoria, Oreg. Filed Dec. 29, 1877.



Claim.—In an anchor constructed substantially as described, the cam-shaped tripping and binding spurs *f f*, in combination with the single fluke B, as and for the purpose described.

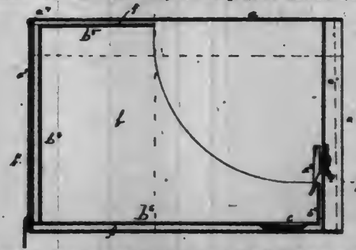
200,674. APPARATUS FOR SUPPLYING STEAM-BLAST TO BOILER-FURNACES. Edward B. Stagg, Chicago, Ill. Filed Dec. 19, 1877.

Brief.—The steam-blast pipe is located directly under the grate-bar bearer, by which it is protected from the intense heat, and ashes prevented from falling into the nozzles. Said nozzles are located immediately under the interstices between the bars, by which the blast is better mingled with the gases arising from the fuel.



Claim.—In a boiler-furnace, the transverse blast-pipe G, placed beneath the front support d of the grate, and having steam-openings g arranged in line with the interstices between the grate-bars, in combination with the steam-supply pipe F and air-openings h in the boiler-front, substantially as described.

200,675. BILL-FILES. Smith Thompson, Washington, D. C. Filed Dec. 1, 1877.



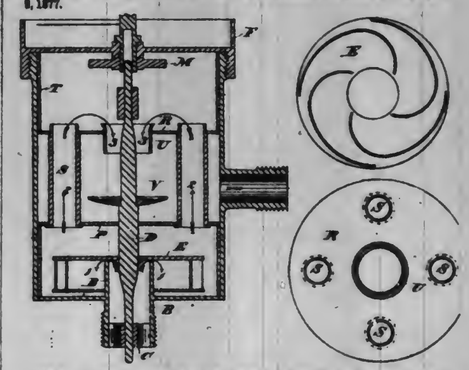
Claim.—1. The metallic file-holder A, composed of the outer casing a and the water-tight box or inner casing b, having a part of the inner end of its top plate and a part of the upper end of its inner end plate cut away, and arranged to be laterally removable from the outer casing a, substantially as and for the purposes specified.

2. The single metallic case a, constructed with the inner projecting rim or flange a^2, surrounding its open end, in combination with the inner casing b, having guides or projections on its bottom for supporting it in a horizontal position, and clear of the bottom of the outer case, for the purpose of providing an air chamber or space, f, entirely surrounding the inner casing or file-holder, substantially as set forth and described.

3. The metallic casing a, provided with a hook, c, and with a locking device, a^2, on its rear end, and having the turned-in edges on its open end, arranged and adapted to receive and hold the casing b, as set forth.

4. The combination, with the casing a and the casing b, having its inner end partially closed, of an eccentric or lock, a^2, journaled in the closed end of the outer casing, arranged and adapted for the purposes set forth.

200,676. ROTARY WATER-METERS. Thomas Walsh, Montreal, Quebec, Canada. Filed Nov. 9, 1877.



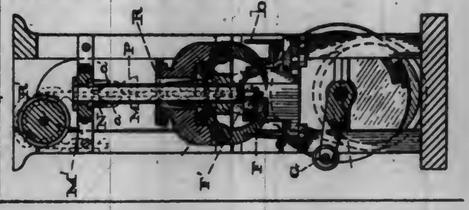
Claim.—1. The combination of the wheel E, having its vanes or spirals arranged to be inclined between the upper and lower plates of said wheel, arranged as set forth, whereby a uniform orifice for the flow and escape of the water is formed at the periphery of said wheel, with inlet B, arranged to cause the flow of water into the meter to form a fluid cushion to the wheel E, substantially as described.

2. The combination of the inlet-pipe B, wheel E, having spindle D and dished disk V, and sleeve U, substantially as and for the purposes set forth.

3. The combination of the inlet B, wheel E, having spindle D and disk V, diaphragms P and R, sleeve U, and pipes S, substantially as and for the purposes set forth.

200,677. GRAIN-MAKING MACHINES. Jos. J. White, Smithville, N. J. Filed Apr. 11, 1877.

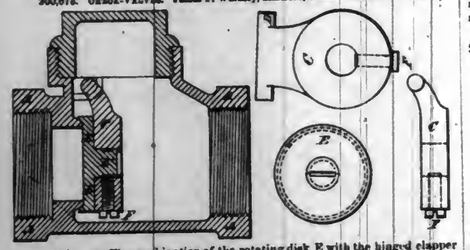
Brief.—The end of the rod is cut off and bent round a bisected mandrel by means of curved fingers and welded by a roller. The mandrel divides to permit the welded link to be drawn up and placed in position to receive the next. This is done by means of a tube, which makes a quarter-turn back and forth on its axis, which is imparted thereto by cams on its outer surface coming in contact with a sliding table on the reciprocating cross-head.



Claim.—1. In a chain-making machine, a welding-roller, G, in combination with a bisected mandrel, F, the halves of which are fixed upon heads caused to approach and recede from one another, substantially as and for the purpose described.

2. The tube M, provided with the cam N, having spiral faces *a a'*, and the cam P, in combination with the sliding table R, having shoulders *b b'*, substantially as and for the purpose described.

200,673. CHECK-VALVES. James F. Whitney, Hartford, Conn. Filed Jan. 7, 1878.

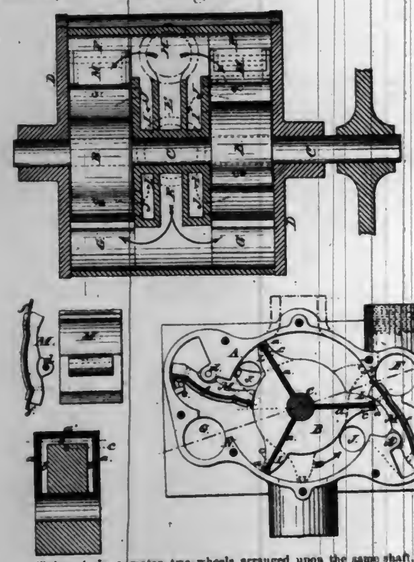


Claim.—1. The combination of the rotating disk E with the hinged clapper C, substantially as herein described.

2. The combination of the clapper C, the disk E, and the screw F, substantially as herein described.

200,679. WATER-MOTORS. Jacob S. Williams, St. Louis, Mo. Filed Aug. 14, 1877.

Brief.—Water, being admitted through the inlet-pipe, passes through the port-distributers to the wheels on the right and left through the central waterway on both sides of the shaft to the distributers, and thence to the right and left to the opposite sides of the wheels.



Claim.—1. In a motor, two wheels arranged upon the same shaft, their chambers being open at opposite sides, in combination with valves, water-inlet ports or distributers, and a central communicating water-way therefor, whereby the water is directed upon the wheels right and left at their opposite sides.

2. The combination of the revolving wheels B B on the same shaft and the pivoted valves M with a case and the inlet-ports or water-distributers F and G, arranged for operation substantially as herein set forth.

3. In a motor, the interior cross water-way E, the exhaust-passage I, and the double sets of inlet-ports or water-distributers F G and exhaust-ports J J, in combination with the wheels and their co-operating valves, substantially as herein set forth.

4. In a motor having wheels with abutments, the dovetail packing a and underlying channels *b* in the abutments and wheel, as described, in combination with the jet-openings *c* in the acting sides of said abutments, substantially as and for the purpose herein set forth.

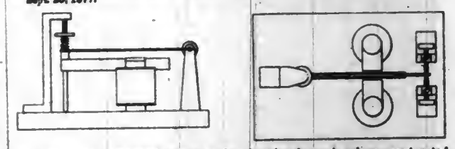
5. The distributer-projections N of the case, the valves M, and the wheel-abutments L, so arranged in relation to each other and the jet-openings *c* that, as the wheels revolve, the outside packing of the abutments will pass the said projections N before the valves have passed said jet-openings, whereby the packing is prevented from being projected in advance of its passing said projections.

6. The combination, with the pivoted valves M and the wheel-abutments L, constructed for operation substantially as described, of the stops *e*, whereby the inward movements of the valves are arrested and their pressure and friction upon the wheels reduced.

7. In a motor having wheels in separate chambers upon the same shaft, and in which said chambers communicate on both sides of the wheels, the abutments of the wheel in one chamber arranged one-twelfth of the wheel-circumference in advance of the wheel-abutments in the other chamber, whereby equal to three chambers are always working full with a greatly-increased available power.

8. The motor herein described, consisting of a case with separate interior water-ways, with double sets of ports communicating respectively therewith, wheels with abutments arranged in separate chambers upon the same shaft, and the pivoted valves opposite each other in said chambers, all constructed and operating as herein set forth.

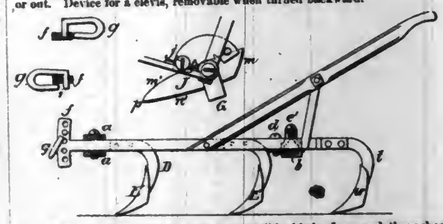
200,680. TELEGRAPH-RELAYS. Geo. Allen and James W. Brown, London, England. Filed Sept. 20, 1877.



Claim.—A compound armature for electric-telegraph relays constructed in two parts, pivoted or working, and free to move separately on the same center or axis, substantially as set forth.

200,681. CULTIVATOR. Samuel L. Allen, Philadelphia, Pa. Filed Dec. 6, 1877.

Brief.—A scraper-blade with both ends sharp—the point of one end downward, and the other upward. Secured to a curved and pivoted standard with segmental cross-head, which may be turned to cause the scraper to throw in or out. Device for a clevis, removable when turned backward.

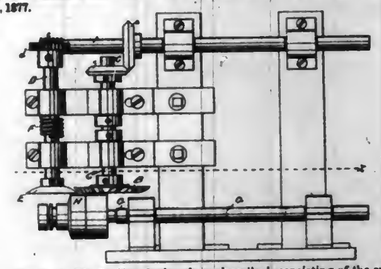


Claim.—1. The within-described reversible blade J, carved throughout its length, having an inclined end, *m*, and a curved end, *m'*, the latter merging into the lower edge *a* of the blade, and forming with the upper edge *a'* a point, *p*, and both ends *m m'* being sharpened, as specified.

2. The combination of the frame of the machine and a furrowing-blade with a pivoted frame, G, as described, whereby, without changing the point of connection of said device, the blade may be reversed, so as to cause it to throw either from or toward the row, as specified.

3. The combination of the T-head *f*, having openings nearer the rear edge than the front, as described, with the clevis *g*, having an opening, *i*, as set forth.

200,682. LEATHER-SKIVING MACHINES. Christopher Amoscon, Boston, Mass. Filed June 1, 1877.



Claim.—1. The feeding device above described, consisting of the supporting-roll H and the feeding-disk E, the roll being below the disk, and only the lower surface of the disk, near its edge, in contact with the periphery of the roll, all as described.

2. The combination of a revolving cutter and a cylindrical bed, arranged with the axis of the cutter at right angles to the axis of the bed, substantially as and for the purpose described.

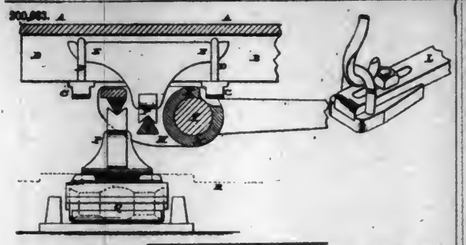
3. The combination of a feeding device and a revolving cutting device, both substantially as above described, the cutting-edge, when making a cut, moving away from the feed and in a direction across the line of the feed, as set forth.

4. The improved cutter above described, consisting of the hub *b*, provided with a series of radial blades, *b'*, each bent slightly upward, substantially as specified.

200,683. PLATFORM-SCALES. Stephen J. Austin, Litchfield, Ill. Filed June 21, 1877.

Claim.—The bar I, having an arm, H, provided with a knife-edge, G, intermediate of the bearing-bar I and bearing P, sleeve K, and knife-edge O, in combination with the platform A B, T-piece constructed with arms E E and saddle F, and the links D D, adapted to engage with pins *c c* of blocks C C, all arranged in the manner specified, substantially as set forth.

200,683.



200,684. SWEEPERS FOR SEEDING-MACHINES. Matthew Barbour, Hamilton, Ohio. Filed Aug. 2, 1877.



Claim.—A seeding-machine sweeper consisting of a beveled lipped hinged scraper, B, spring C, and cylindrical case A, all combined substantially as specified.

200,685. PAPER COLLARS. Stephen Bates, Providence, R. I. Filed Dec. 10, 1877.



Claim.—A turn-down collar composed of paper, or paper and cloth combined, and provided at the folded edge with a bead, which projects inward for contact with the neck of the wearer, substantially as described.

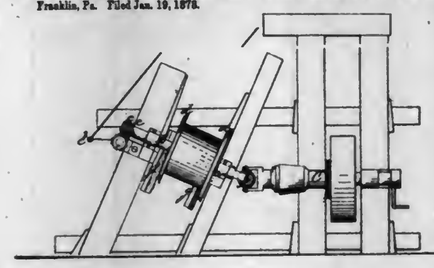
200,686. CUPS AND OTHER VESSELS. Henry Berry, West Meriden, Conn., assignor of one-half his right to Frederick Ratcliff, same place. Filed Feb. 2, 1878.



Claim.—1. In the manufacture of silver-plated ware, the method of applying the handle to silvered, plated, finished, and burnished vessels, substantially as specified.

2. The combination, with a vessel, A, having the upper and lower sockets *a a'*, of the handle B, having the spurs *b*, adapted to be stepped in said sockets, and a rivet, screw, or catch, *p*, holding the step into the socket, substantially as specified.

200,687. HAND-PUMP REELS FOR DEEP WELLS. Dewitt C. Brawley and Wm. H. H. Morris, Franklin, Pa. Filed Jan. 19, 1878.



Claim.—1. The combination, with the sand-pump reel and its shaft, of the flexible driving-shaft and clutch mechanism, for communicating power to the reel, substantially as specified.

2. The combination, with the sand-pump reel or drum and clutch mechanism, of the collared shaft and pinion and shaft slipping mechanism, substantially as specified.

3. The combination, with the sand-pump reel or drum, provided with a collared shaft, of the pinion and shaft, for giving an endwise motion to the drum, and the brace-bars, for arresting the motion of the drum, substantially as specified.

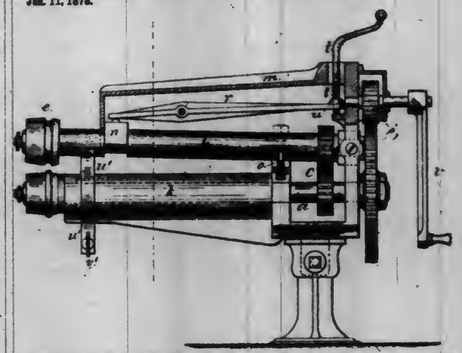
200,688. LABEL-HOLDERS. Charles M. Bright, Waupaca, Wis. Filed Feb. 2, 1878.



Claim.—1. The type-case-label holder having an oblong rectangular opening, a raised bead, *b*, surrounding the said opening, the stops *d* cut out of the inner wall of said bead, and the spurs *c* upon the lower edge of the said wall, substantially as specified.

2. The combination of a label-holder having an opening bounded by the raised bead *b*, the stops *d*, formed out of the inner wall of the said bead, and the spurs *c* at the lower edge of said wall, with the glass shield B and type-label C, substantially as specified.

200,689. SHEET-METAL-BENDING MACHINES. Chas. Brumbacher, Tarrytown, N. Y. Filed Jan. 11, 1878.

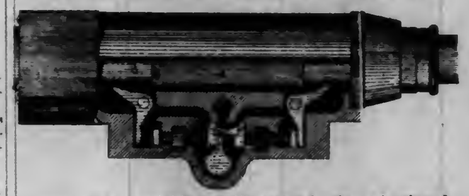


Claim.—1. The combination, in a sheet-metal-bending machine, of a lower roller and shaft, an upper roller and shaft, a hollow metallic arm, and a bearing for the shaft of the upper roller, and a lever and adjusting-screw for operating the bearing of the upper shaft, substantially as set forth.

2. The sheet-metal-bending machine having a hollow case for the lower shaft, in combination with the gage *w'*, provided with arms, and the screw *v'*, passing through such arms, whereby the gage is made to grasp the case, substantially as set forth.

3. In a sheet-metal-bending machine, the combination, with the lower shaft *c*, of the hollow case *k*, extending from the side of the frame, and carrying the bearing for said shaft *c*, and provided with a rib below such case to sustain the same, substantially as set forth.

200,690. ROCK-DRILLS. Charles Burleigh, Fitchburg, Mass. Filed Jan. 26, 1876.



Claim.—1. In a rock-drill, a rigidly-connected valve and valve-rod, arranged entirely within the case, in combination with levers adapted to be moved by the piston to start the valve-rod, substantially as and for the purpose described.

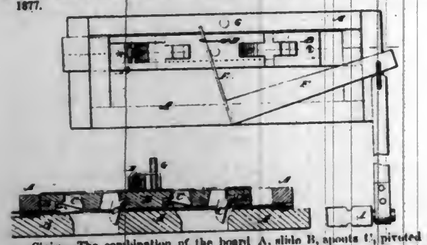
2. In a rock-drill, a valve-rod arranged entirely within the casing, in combination with a finger arranged within the casing and adapted to be engaged with and to operate the valve-rod, with spring to hold the finger in central position, substantially as described.

200,691. BUTTON-FASTENERS. Henri Burtey, Paris, France. Filed Dec. 26, 1877.



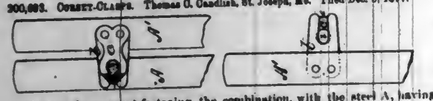
Claim.—The combination of the shank *d* and its shoulder *f'* with the face A and back B of the button, and with intervening spring-arms *d d*, which are adapted to bear directly on the said back B when there is a pull on the button.

200,692. SELF-DROPPING FOR PLANTERS. John Butterfield, Woodlawn, Me. Filed Oct. 13, 1877.



Claim.—The combination of the board A, slide B, spouts *b'*, pivoted in holes of said slide, the keeper D, spring-arm E, pin *b*, and lever F, all constructed and arranged as shown and described, to form a self-dropping attachment for corn-planters.

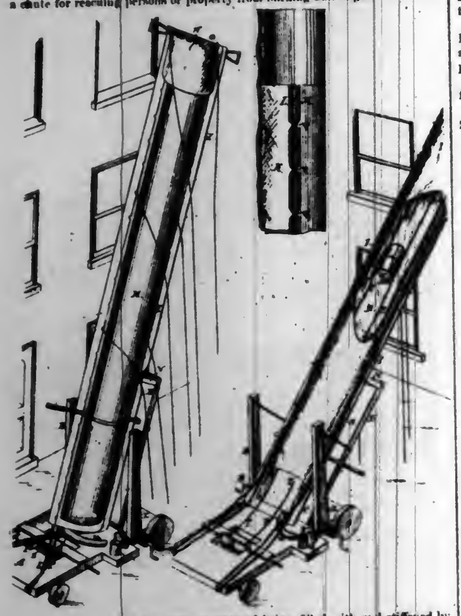
200,693. CORSET-CLASPS. Thomas G. Candlish, St. Joseph, Mo. Filed Dec. 3, 1877.



Claim.—In a corset-fastening, the combination, with the steel A, having beaded knobs *d*, of the steel A', having the slotted guides *b* and perforated catches *c*, substantially as specified.

200,694. FIRE-ESCAPES. Thomas F. Carpenter, New York, N. Y. Filed Jan. 29, 1878.

Brief.—A flexible air-tight tube is stiffened, so as to be capable of being raised and moved to the desired part of a building by air forced therein, and when secured in place the air is allowed to escape, and the outer surface of the collapsed tube, together with a suitable flexible covering, is employed as a chute for rescuing persons or property from burning buildings.



Claim.—1. A flexible tube capable of being filled with and stiffened by air, which can be raised, lowered, moved, and secured in a window or other space in a building, substantially as described.

2. In combination with a tube capable of being filled with air and stiffened thereby, a flexible house covering, substantially as described.

3. The combination of the flexible tube, capable of being stiffened by air forced therein, with devices for fastening it in a window or other space in the building, and to the ground, substantially as described.

4. The tube H, provided with a protecting piece, W, substantially as described.

5. The tube H, closed at both ends, combined with a device for filling the same with air, substantially as described.

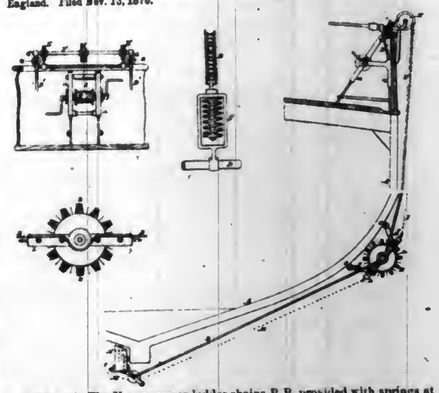
6. The combination of the tube H, platform N, support E, and means for raising and lowering the same, substantially as described.

200,696. HAT-HOLDERS. Jesus M. Castillo, New York, N.Y. Filed Jan. 31, 1878.



Claim.—As an article of manufacture, the device consisting of the plate A, the hinged clasp B, provided with a sliding band, *b'*, the hinged pin C, and the hinged plate D, provided with the point *d'*, with each other, substantially as herein shown and described.

200,696. APPARATUS FOR CLEANING HULLS OF VESSELS, &c. Henry James Cole, London, England. Filed Nov. 13, 1876.

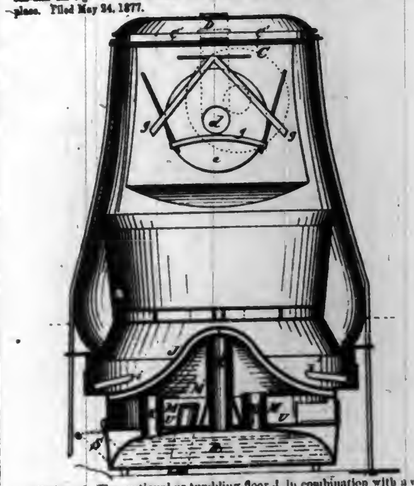


Claim.—1. The Vaucanson or ladder chains B B, provided with springs at one or both extremities, in combination with the keel-block N and frame G, arranged to straddle the top rail of the vessel, all constructed and arranged to operate substantially as set forth.

2. The combination of a rotating brush, R, mounted in a traveling frame, I, with ladder-chains B B, fixed elastically at the ends, as set forth, and arranged to engage toothed wheels on the shaft of the brush, as and for the purposes set forth.

3. The combination of the winch K, ropes J M, chains B B, block N, frame G, and brush R, all arranged to operate substantially as set forth.

200,697. SELF-EXTINGUISHING STOVES. William F. Condon, Ziwaukie, Mich., assignor of one-half his right to Ernst Wetzel, Wm. E. Gardner, David Crosser, and E. J. Clark, same place. Filed May 24, 1877.



Claim.—1. The sectional or tumbling floor J, in combination with a water tank below the same, substantially in the manner and for the purposes set forth.

2. The steep arched floor J, in combination with the ring H, having scrapers thereon, substantially as set forth.

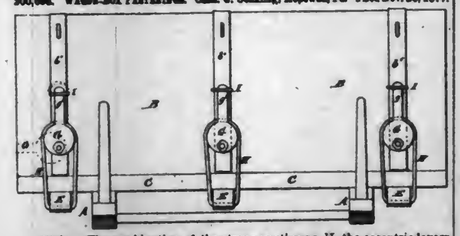
3. The water tank R, provided with several pipes, K, in combination with the salt chamber, having pipes M, substantially as and for the purposes set forth.

4. The shut-off or slide F, in combination with the stove-door, said slide being held loosely in place by means of the guide-rods *g''*, so that the slide or shut-off will close by means of its own gravity when the stove is overturned.

5. In combination with the smoke-pipe *d*, the shut-off *c*, held loosely in place by guide-rods *g*, so that said slide, moving by its own gravity, will close the flue whenever the stove falls over, no matter in which direction it falls, substantially as set forth.

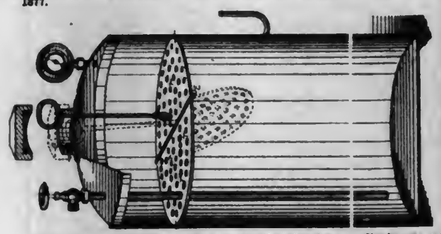
6. The sliding damper G, in combination with the ash-pan and the draft-openings therein, said slide being held loosely in place by means of guide-rods *g'*, and arranged, as described, so as to close by its own weight whenever the stove is overturned in any direction, substantially as set forth.

200,698. WAGON-BOX FASTENINGS. Chas. C. Conkling, Hopewell, Pa. Filed Nov. 30, 1877.



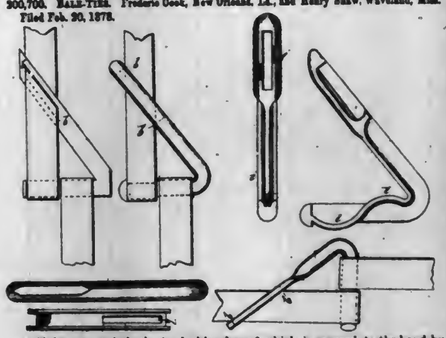
Claim.—The combination of the straps or stirrups H, the eccentric-levers G *g'*, and locking devices with the detachable parts of a wagon-body, said straps being hinged to the bottom bars, and thus adapted to lock with or be disengaged from the eccentrics when the arms of the latter are adjusted to lie between the side bars of the straps, substantially as shown and described.

200,699. FIRE-EXTINGUISHERS. Thomas E. Connelly, New Brighton, Pa. Filed Dec. 31, 1877.



Claim.—In combination with a generating-chamber, a diaphragm or receiving-plate, movable in whole or in part, and having an opening or openings through or past the same, and an operating rod or stem, constructed and arranged substantially as described.

200,700. BALE-TIES. Frederic Cook, New Orleans, La., and Henry Shaw, Waveland, Miss. Filed Feb. 20, 1878.



Claim.—1. A bale-tie the locking-bar of which is secured to the band by means of a slotted diagonal brace the end walls of which are formed to bite or pinch the edges of the band when the tie is secured on the bale, substantially as set forth.

2. A bale-tie provided with a locking-bar and diagonal brace, the latter having a slot for the reception of the band, the end walls *b b* of said slot being formed and adapted to bite the edges of the band when the bands are secured on the bale, substantially as set forth.

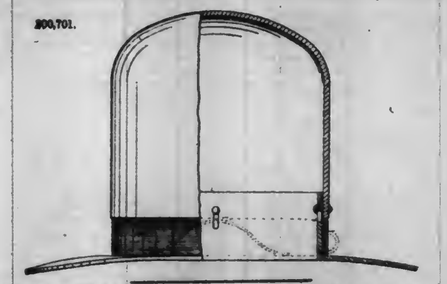
3. A bale-tie consisting, essentially, of a locking-bar provided with a diagonal brace which is adapted to be attached to any portion of the band, and secured against displacement by inserting the locking-bar through the opposite loops of a band, when said loops are arranged side by side, substantially as set forth.

4. A bale-tie consisting, essentially, of a locking-bar provided with a diagonal brace, which is furnished with hooks, lips, or projections, arranged to admit of the band when the locking-bar is swung outwardly, and to overlap the edges of the band when the locking-bar is inserted through the opposite loops of a band, when said loops are arranged side by side, substantially as set forth.

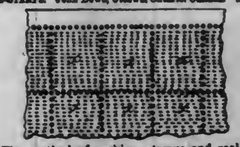
200,701. FIREMEN'S HATS. José Miguel de Ollo, New York, N. Y. Filed Jan. 7, 1878.

Claim.—A fireman's hat made of a brim with inner raised portion, and of a yielding and spring-cushioned body guided thereon, substantially as specified.

200,701.



200,702. POSTAGE-STAMPS. John Dews, Ottawa, Ontario, Canada. Filed Nov. 17, 1877.

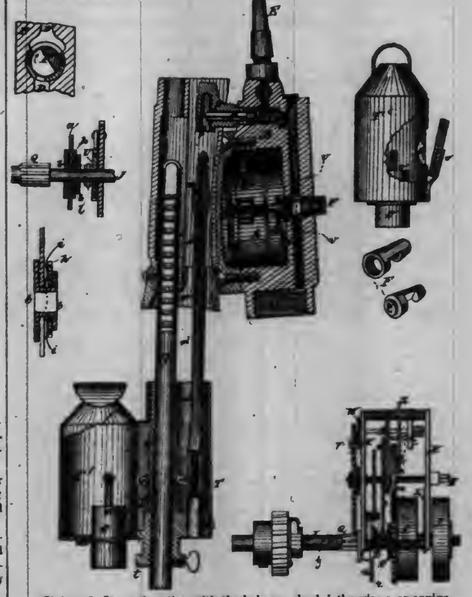


Claim.—1. The method of making stamps and seals which consists in coloring one side of the prepared sheet of paper, perforating the same with numerous slits, then subjecting the sheet to pressure to close said slits, then coating the colored side with adhesive material, and dividing the sheet by perforating in the usual manner, substantially as described.

2. As an article of manufacture, a postage or other stamp or seal, the body of which is provided with numerous closed perforations, is colored on the back, and has the adhesive substance applied to said colored surface, substantially as described.

200,703. GAS-LIGHTER AND AUTOMATIC EXTINGUISHER. Geo. S. Dunbar, Pittsfield, Mass. Filed Jan. 23, 1878.

Brief.—A toothed rod, through intermediate gear, winds the clock, and closes the valve in the gas-pipe to extinguish the gas, the time for closing said valve being governed by the distance in which the winding-rod is inserted in its tube. Special devices for lighting the gas, and starting and stopping the works described.



Claim.—1. In combination with the balance-wheel *d*, the wire *c*, or equivalent, operated to start the train of gear by the rocking play motion of the main or spring shaft J, substantially as specified.

2. The combination of the balance-wheel *d*, wire *c*, lever *n*, friction ratchet and pawl *b j*, spring *e*, and flanged hub *b* with the main shaft J, having pin *l* and the slotted or notched hub *u* of the ratchet U of the main or driving wheel, substantially as and for the purpose set forth.

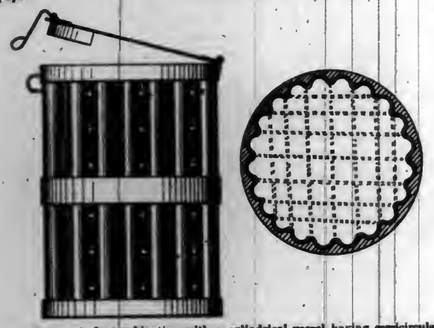
3. The spring-pressed time-valve F, arranged upon the end and in the axial line of the shaft H of a clock mechanism, in combination with the passage D, leading to the burner E, substantially as and for the purpose set forth.

4. The hollow perforated rod M', in combination with the valve r and lamp s, substantially as and for the purpose set forth.

5. In combination with the winding-rod O, the lamp s and reflector v, substantially as and for the purpose set forth.

200,704. EGG-CARRIERS. David E. Dutrow, Washington, D. C. Filed Sept. 15, 1877.

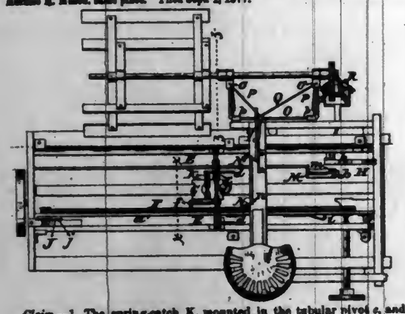
Brief.—The vessel made preferably of paper; also trays and disks of paper.



Claim.—1. In combination with a cylindrical vessel having semicircular corrugations, as described, trays and scalloped disks fitting said corrugations, as set forth.

2. A corrugated vessel, as described, arranged for carrying eggs or fruit, having sliding strips and apertures, as and for the purpose described.

200,705. HARVESTERS. Richard Emerson, Sycamore, Ill., assignor of one-half his right to Horatio E. Mason, same place. Filed Sept. 1, 1877.



Claim.—1. The spring-catch K, mounted in the tubular pivot e, and provided with the toe k', in combination with the forked stop c', substantially as and for the purpose set forth.

2. The rocking rake-shaft D, reciprocating in a single track, in combination with the arm G, cam H, and switch h, substantially as and for the purpose set forth.

3. The rocking rake-shaft D, in combination with the forked arm I and spring-stop i, substantially as and for the purpose set forth.

4. The spring guard or wiper N, arranged on the elevator-incline, and operating in connection with the reciprocating rake D, substantially as described.

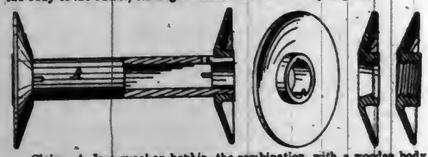
5. The curved guide J, in combination with a cam, j, and the rake-tooth d, provided with a pin, d', substantially as and for the purpose set forth.

6. The hinged reel-supporting frame O, in combination with the sliding reel-shaft bearings o and the adjusting-link P, attached to the bearings at one end and connected to the main frame at the other, substantially as and for the purpose set forth.

7. The hand-lever q, in combination with the forked arm Q, vibrating frame O, sliding bearings o, and adjusting-link P, substantially as and for the purpose set forth.

200,706. BOBBINS AND SPOOLS. Rimmon C. Fay, Pawtucket, R. I. Filed Dec. 7, 1877.

Brief.—The body is of wood and the heads of metal. The heads are provided with hubs having one or more longitudinal webs, each of which occupies a slot in the end of the barrel. Tapering plugs, having exterior webs for fitting into the unoccupied slots in the ends of the barrel, are inserted in the hubs, thus expanding the ends of the barrel, and, together with the shoulder on the body of the barrel, serving to secure the heads firmly in place.

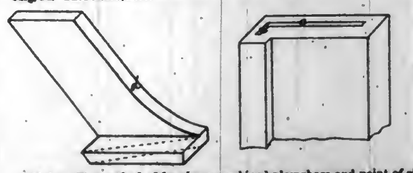


Claim.—1. In a spool or bobbin, the combination, with a wooden body or barrel having an abutting shoulder near each end, of metallic heads provided with hubs and conical plugs which expand the ends of the barrel within the hubs, substantially as described.

2. The combination, with a wooden barrel having an abutting shoulder and longitudinal slots at each end, of a metallic head and hub provided with interior longitudinal webs and a conical plug, substantially as described.

3. The combination, with a wooden barrel having an abutting shoulder and longitudinal slots at each end, of a metallic head and hub, and a conical plug provided with exterior longitudinal webs, substantially as described.

200,707. MANUFACTURE OF COMBINED PLOW SHARE AND POINT. Charles M. French, Pittsburg, Pa. Filed Nov. 3, 1877.



Claim.—The method of forming a combined plow share and point of either cast-steel, iron-backed steel, or soft-center steel herein described, the same consisting in first forming a flanged bar from the ingot previously prepared, as described; secondly, cutting the flanged bar transversely into sections, substantially as specified; and, finally, trimming the flange obliquely to form the point and land-side, as and for the purpose specified.

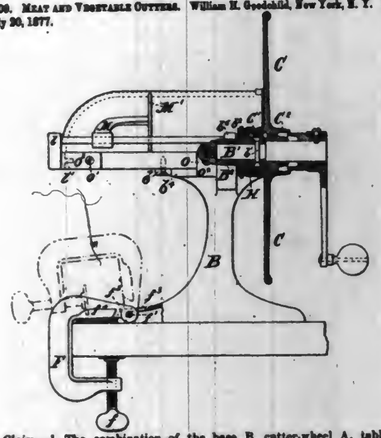
200,708. STRING-SCALES FOR WEIGHING. Jos. A. George and John S. George, Bridgeport, Conn. Filed Jan. 22 1878.



Claim.—1. The thimble B, provided with slot a, for the purpose as described and set forth.

2. The combination of shells A and C with thimble B, slot a, and spring D, all substantially as described and set forth.

200,709. MEAT AND VEGETABLE CUTTERS. William H. Goodchild, New York, N. Y. Filed July 20, 1877.



Claim.—1. The combination of the base B, cutter-wheel A, table L^2, feeder R, and feeder M, substantially as described.

2. The clamp F, articulated to the broad foot portion of the base B on the side farthest from the cutter-wheel, and seated, when in use, in a recess in said base, substantially as set forth.

3. The gage-plate C, when placed directly on the shaft B^1, in combination with the adjusting-nut b and cutters D, substantially as and for the purposes herein set forth.

4. The combination of the lips C^1 with the gage-plate C and nut b, and the combination of the lips C^2 with the gage-plate C and hub D^2, all substantially as and for the purposes herein specified.

5. A circular guard around the center of a cutter-wheel, to prevent any substances being fed against the face of the wheel at a point nearer to the center thereof than that at which they can be cut by the knives in said wheel, substantially as herein set forth.

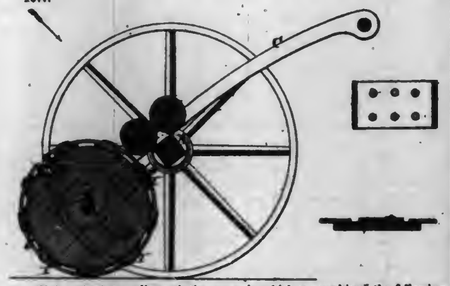
6. The combination of the guard-ring H, adjusting-nut b, and cutter-wheel A, substantially as herein specified.



200,710. COMBINED COLLAR AND HAMES. John B. Gerby, Hiramsburg, Ohio. Filed Jan. 18, 1878.

Claim.—The combined collar and hames, consisting of the wooden hame-sections within the collar, and covered by the incasement of zinc or leather, enveloping the whole, the slide-bars and the adjustable tugs thereon, the hinge secured to the upper ends of the hame-section, the pad underneath the same, fastened to one side of the collar only, and the spring-catch at the lower end, said catch adapted to secure the collar, substantially as specified.

200,711. TRAVELING PRINTING APPARATUS. Kennedy Gray, Chicago, Ill. Filed Dec. 18, 1877.

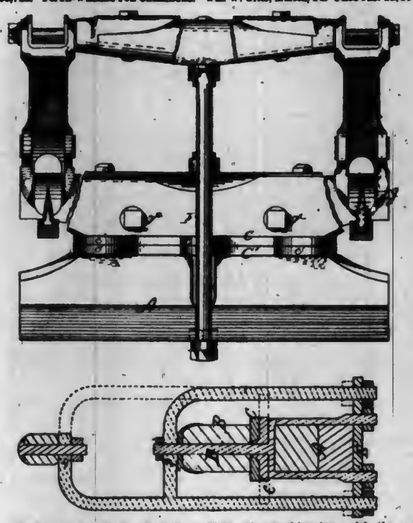


Claim.—1. A traveling printing-press in which are combined the following instrumentalities, viz: the supporting truck-wheels B, the axle A, the parallel sills C C, mounted on the axle, and forming pushing and pulling handles, the journaled inking-rollers, and the type-wheel journaled in the extreme ends of the side sills, substantially as shown and described.

2. In a traveling printing apparatus, the combination of a type-wheel, circumferential bands serving to confine the types of said wheel, clamping-bars to which the opposite ends of said bands are fastened, and adjusting-screws passing through said bars, substantially as described.

3. The combination, in a traveling printing apparatus, of a type-wheel, types constructed of vulcanized india-rubber, and having metallic strengthening-plates, which are embedded in the india-rubber, and circumferential bands serving to confine said types, substantially as described.

200,712. FIFTH-WHEELS FOR CARRIAGES. Wm. W. Grier, Hulton, Pa. Filed Jan. 19, 1878.



Claim.—1. In a fifth-wheel for vehicles, the combination, with the axle and head-block, of the king-bolt and head-block or saddle-clip, both rigidly secured to and moving with the axle, substantially as and for the purpose specified.

2. In a fifth-wheel for vehicles, the combination, with the axle and head-block and spring-bar, of the king-bolt clip and saddle-clip provided with a brace-arm, the saddle-clip rigidly secured to the axle and the brace-arm connected to the spring-bar, so as to swivel on the spring-bar, substantially as and for the purpose specified.

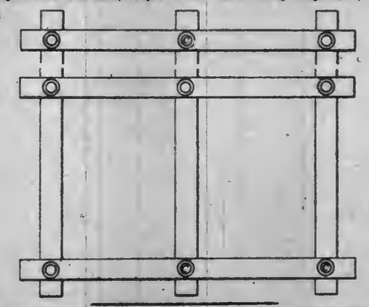
3. In a fifth-wheel, the combination of the saddle-clip, the clip king-bolt, and the extended yoke common to both saddle-clip and king-bolt clip, substantially as specified.

4. In a fifth-wheel, the saddle-clip provided with the spring-bar brace-arm, substantially as and for the purpose specified.

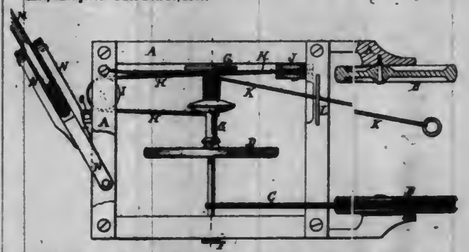
200,713. FRAMES FOR PHOTOGRAPHS. Alonzo Griffin, Meshoppen, Pa., assignor of one-half his right to Edward Merritt, same place. Filed Nov. 16, 1877.

Claim.—A frame for photographs, composed of crossed strips laid the one upon the other, and secured together at their points of intersection, having slideways D formed therein, adapted for use substantially as specified.

200,713.

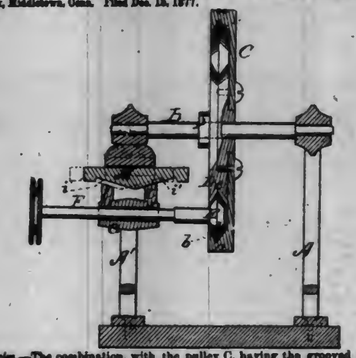


200,714. TOY CARRIAGES. Henry Groth, New York, N. Y., assignor to himself and Philip Klee, same place. Filed Dec. 27, 1877.



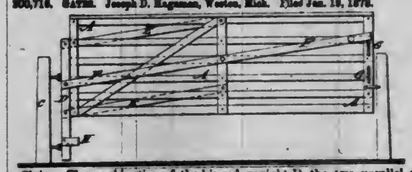
Claim.—An improved toy carriage, formed by the combination, with the frame A, the wheels E, and the adjustable guide-wheel M N, of the band C, the fly-wheel D, the double clutch-spool G, the elastic cord H, the guide-pulleys I J, and the impelling-cord K, substantially as herein shown and described.

200,715. COUPLING-SHAFTS WITH REVERSE MOTIONS. Augustus Guild and Frederick B. Clark, Middletown, Conn. Filed Dec. 18, 1877.



Claim.—The combination, with the pulley C, having the grooved hub D and flange a, the friction-pulley E, and its shaft F, of the rocking journal G, having beveled spurs l, one at each side of its axis, and the slide M, having inclined lower edge l^2, substantially as specified.

200,716. GATES. Joseph D. Hageman, Weston, Mich. Filed Jan. 14, 1878.



Claim.—The combination of the hinged upright D, the two parallel pivoted bars E, and the pivoted lever F with the rear post C and the gate A, substantially as herein shown and described.

200,717. APPARATUS FOR ADMINISTERING MEDICINE TO HORSES. Henry Hartman, Camp Hallock, Nev. Filed Dec. 26, 1877.

Brief.—To the combined bit and gag with medicine-funnel is added a valve.

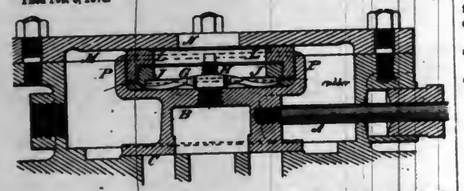
Claim.—1. The gag A, having the aperture *a* and screw B, and the levers C, having the curved slot *c* and slot *g*, in combination, substantially as shown and described.

2. The receptacle D, having the tube *q* and hinged cover *r*, the valve *u*, fork *v*, and cord F, in combination, substantially as shown and described.

200,717.

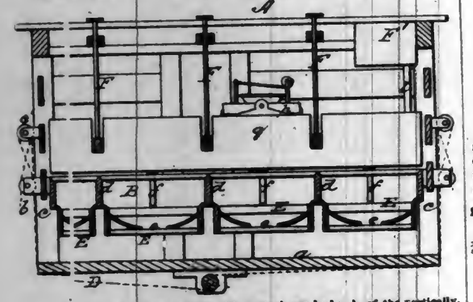


200,719. BALANCED VALVES FOR STEAM-ENGINES. George A. Haworth, Liverpool, England. Filed Feb. 6, 1878.



Claim.—In combination with the steam-chest having the opening N in its back, the slide-valve B, provided with the back flange P, equilibrium-ring I, ring-packing J, springs G G, bearing under the equilibrium-ring, and screws H H, mounted in the springs and exposed on the back, as shown.

200,718. STOCK-CARS. William H. Hayes, Salisbury, Md. Filed Dec. 20, 1877.



Claim.—1. The combination, with a stock-car body, A, of the vertically-adjustable frame B and its independent beds E, substantially as specified.

2. The combination, with a car-body and its adjustable bed-frame B, of the adjustable beds E, substantially as specified.

3. The combination, with a car-body, its adjustable bed-frame, and its beds E, of the vertical and adjustable gratings F, substantially as specified.

4. A watering-bucket for stock-cars, of spherical form, having the spaced flanges *w v* and the funnel *t*, as and for the purpose specified.

5. The combination of the bucket *m* and its feed-pipe *n* with the jointed ring *p*, having jaws *s s'*, adapted to gripe said pipe, substantially as specified.

6. The combination, with a stock-car body, of the vertically-adjustable frame, extending the length of the car, and sustaining independent beds or cradles, substantially as specified.

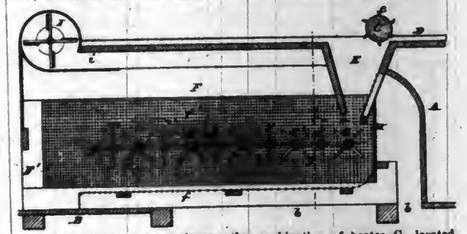
200,720. SAFETY-HALTERS. August Kimball, Yonkers, N. Y. Filed Jan. 23, 1878.



Claim.—1. A headstall having looped extensions on the forward part thereof to receive a check-band for encompassing the head of a horse or other animal, substantially as shown and described.

2. The combination, in a halter, of a headstall having looped extensions on the forward part thereof, and a check-band which extends through the loops of said extensions, and the two ends of which project from one of the loops, so that such ends of the band can be connected to a hitching-strap, substantially as described.

200,721. COTTON-CLEANERS. William Herrmann, Cotton Plant, Miss. Filed Oct. 8, 1877.



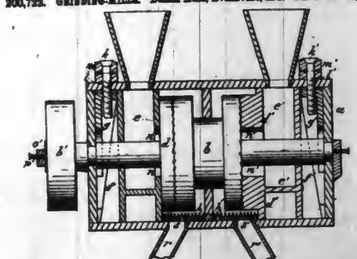
Claim.—1. In a cotton-cleaner, the combination of beater G, located beneath the hopper, and a series of beaters, G^1, operating in opposite direction to the beater G, said beaters G and G^1 being provided with fingers *g*, adapted to overlap in the manner described, so as to convey the cotton from one end of the chamber to the other.

2. The combination of the box or chamber F, having wire sides *f f*, and a series of beaters, G^1 *g*, as and for the purpose set forth.

3. The combination, with the wire-sided box or chamber F *f f*, of a series of beaters, G^1, and blower I, arranged within said chamber.

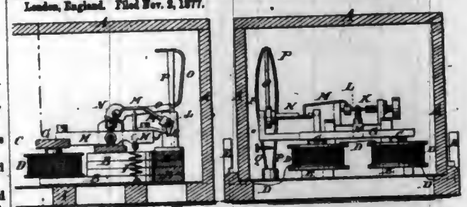
4. A cotton-cleaner consisting of case A, feed-roller C, chamber F, having wire sides *f f*, blast-fan I, and rotary beaters G G^1, all substantially as and for the purpose set forth.

200,722. GRINDING-MILLS. Daniel Hess, Evansville, Ind. Filed Oct. 27, 1877.



Claim.—In a grinding-mill, the supply-chamber *c*, having a vertical non-revolving exterior disk fixed to one side, the vertical keys *f*, secured to its opposite exterior side, and the keys *g*, provided with the adjusting-screw *k* and the spring *h*, all constructed substantially as described, and for the purpose specified.

200,723. MAGNETO-ELECTRIC FIRE-ALARM AND SIGNALING APPARATUS. A. S. Hakley, London, England. Filed Nov. 2, 1877.



Claim.—The combination of the magnet B, having rods C attached to its ends, and whether re-enforcing-magnets be used or not, the coils D, the armature G, the lever H, the spiral spring I, the arms and rod K M L, the rod and arm N O, and the clamps P, with each other, for operating an electric alarm-bell automatically upon an increase of temperature, substantially as herein shown and described.

200,724. RECARBURIZERS FOR USE IN THE PNEUMATIC PROCESS. Robert W. Hunt and August Wendel, Troy, N. Y. Filed Nov. 30, 1877.

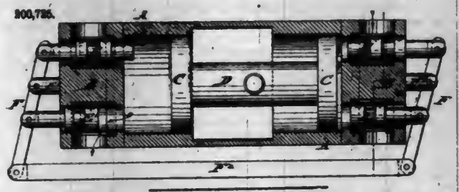
Claim.—1. The method herein described for producing a recarburizing agent for use in the manufacture of steel, which consists in subjecting a melted or partially-melted mixture of pig-iron and spiegeleisen or ferro-manganese to the action of an air-blast sufficiently long to substantially oxidize the silicon and manganese without materially decarburizing the metal.

2. As a new article of manufacture, the improved recarburizing metal hereinbefore described, having as characteristics a white crystalline structure, great hardness, strength, and density, with the minimum or but a trace of manganese, silicon, and sulphur, substantially as hereinbefore set forth.

200,725. RECIPROCATING STEAM-ENGINES. Cyrus Hunter, Stonewall, Va., assignor to himself and John F. Hunter, same place. Filed July 30, 1877.

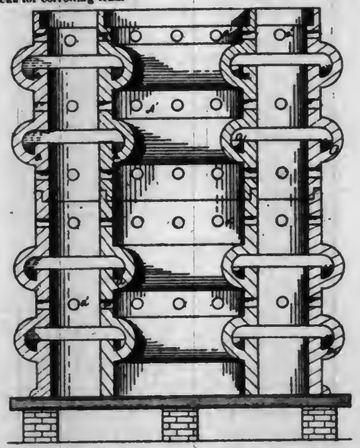
Claim.—The combination of cylinders A and connected pistons C with the supply-valves E, having inwardly-extended stems, fulcrumed valve-levers F, exhaust-valves E', and connecting-rod F^3, to produce simultaneous movement of the valves and balancing the movement of the same, substantially as specified.

200,725.



200,726. APPARATUS FOR THE MANUFACTURE OF WHITE LEAD. Geo. L. Irwin, Allegheny, Pa. Filed Nov. 23, 1877.

Brief.—Perforated tiles having pockets for the acid are used to construct the stacks for corroding lead.



Claim.—1. A stack for the manufacture of white lead, consisting of a double series of columnar sectional perforated tiles, so arranged that an interspace or corrosion-chamber is produced thereby, said tiles being applied, one above the other, to the required height, substantially as specified.

2. A tile for constructing corroding-chambers for sectional white-lead stacks, said tiles being perforated and provided with rests to the cross-pieces which support the buckles, substantially as specified.

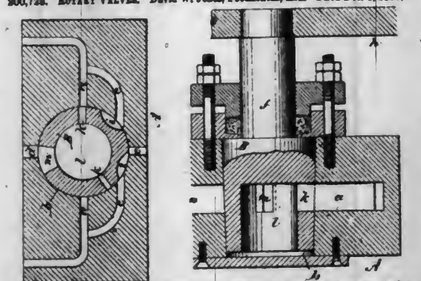
3. A tile for constructing corroding-chamber for sectional white-lead stacks, said tile being perforated and provided with acid-pockets, substantially as specified.

200,727. METHODS OF MAKING COPPER BOTTOMS FOR DOMESTIC BOILERS, &c. Thos. James and Thomas L. James, Seymour, Conn. Filed Dec. 19, 1877.



Claim.—The method herein described for the manufacture of copper bottoms, consisting in striking a hard and soft blank together, the soft outside to form a protection for the inner or hard blank, whereby a hard and a soft article are both produced by one and the same operation, substantially as described.

200,728. ROTARY VALVES. David W. Jones, Pocahontas, Ark. Filed Dec. 8, 1877.

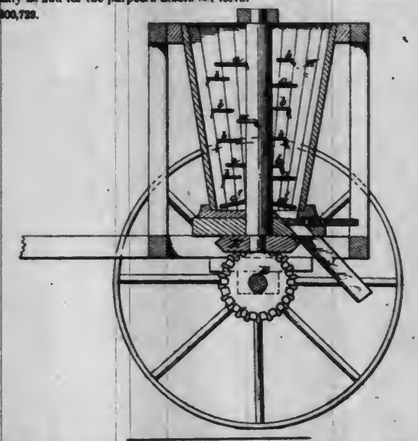


Claim.—The combination of the rotary valve B, having the central chamber *i*, the openings *k m*, communicating with said chamber and the surface cavities *l*, with the casing A, having the connected passages *a c*, the supply-port *c*, and exhaust-port *d*, all constructed and relatively arranged as herein shown, to operate in the manner set forth.

200,729. MANURE AND GUANO DISTRIBUTERS. Robert J. Jordan and James H. Barron, Bowersville, Ga. Filed Dec. 18, 1877.

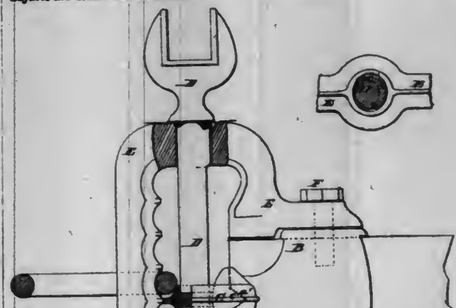
Claim.—In a fertilizer-distributer, the hopper H, made in the form of an inverted truncated cone, and composed of a series of narrow strips jointed together and provided with the spikes *b*, in combination with the upright shaft G, with spikes *a* and inclined spikes *a'*, and provided with a gear-wheel on its bottom, which takes into a gear-wheel on the axle of the machine, all substantially as and for the purposes herein set forth.

200,730.



200,730. PLOW-CLEVISES. Donald A. Kennedy, Eau Claire, Wis. Filed Jan. 26, 1878.

Brief.—The arms of the horizontal clevis are rigid with a socket which rides upon the plow-beam, and is held by set-screws, which also pivot the vertical clevis. Through the latter is passed a bolt with eccentric bearings, which holds the draft-link in a notch, or, by turning, allows the draft to be vertically adjusted. The bolt also passes through the horizontal clevis, and adjusts the draft to or from land.



Claim.—An improved plow-clevis formed by the combination of the sleeve B, the horizontal clevis C, the vertical clevis E, and the eccentric bolt or pin D with each other, substantially as herein shown and described.

200,731. APPARATUS FOR THE MANUFACTURE OF MANURE FROM NIGHT-SOIL. Charles M. Kimball, Bradford, Mass. Filed Jan. 4, 1878.

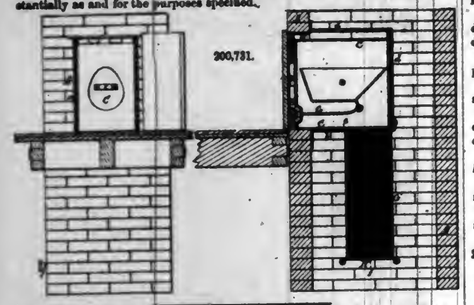
Brief.—The drawer, with the seat, is moved in and out from the chimney. The pan is reversed by means of a rod, and discharges the contents into the tube, where they are subjected to the action of smoke, hot air, and gases. Stops are erected on the platform and within the chimney to limit the movement of the pan.

Claim.—1. The combination of a fire-place chimney, or a passage to receive and discharge smoke or volatile products of combustion therefrom, with a drawer provided with a privy-seat, and applied to such chimney or passage so as to be movable into or out thereof, all substantially as and for the purpose specified.

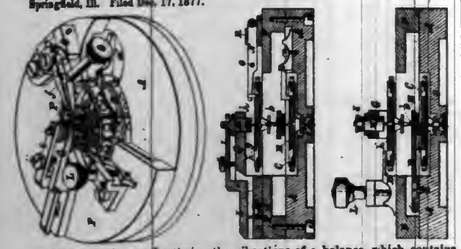
2. The combination of a fire-place chimney, or a passage to receive and discharge smoke or volatile products of combustion therefrom, with a drawer provided with a privy-seat and a reversible pan, and applied to such chimney or passage so as to be movable into and out of such, all being substantially as and for the purposes as set forth.

3. The stop *d*, combined with the platform and the chimney arranged therewith, and provided with the drawer, as and for the purpose set forth.

4. The combination of the perforated or foraminous tube G' and its door H with the chimney A and its drawer C, all being arranged and applied substantially as and for the purposes specified.



200,732. GAGE FOR ADJUSTING THE HAIR-SPRINGS OF WATCH-BALANCES. Jas. Kinahan, Springfield, Ill. Filed Dec. 17, 1877.



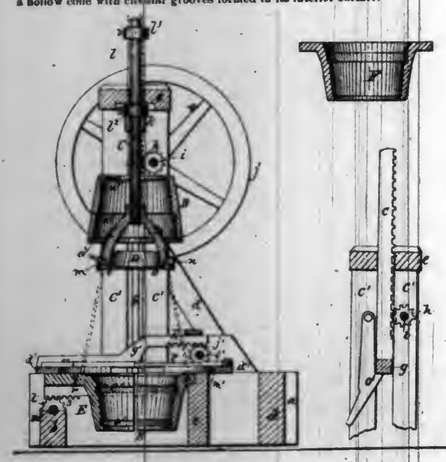
Claim.—1. A gage for timing the vibrations of a balance, which contains a permanently pivoted gage-balance, and mechanism for pivoting directly over the same the balance to be adjusted, and for securing in position the hair spring stud of the latter, substantially as and for the purpose specified.

2. In combination with the bridge-piece B, secured upon the plate A and provided with the pivot-opening b, the bridge-piece G, pivot-block H, pivoted lever I, spring *i*, and set-screw *i'*, substantially as and for the purpose shown.

3. The hereinbefore-described device, in which the plates A and F, bridge-pieces B and G, balance-wheel C, staff *c*, hair-spring stud D, hair-spring E, pivot-block H, lever I, spring *i*, set-screw *i'*, screw L, lug M, slitted bar N, screw O, grooved block Q, and locking-lever R are constructed and combined in the manner and for the purpose specified.

200,733. MACHINES FOR TRUSSING BARRELS. Horace W. King, Alden, N. Y. Filed Dec. 1, 1877.

Brief.—Wooden barrels can be rapidly set up and the truss-hoops applied thereto by means of a vertically-reciprocating hollow truncated cone having an inner series of offsets for receiving, engaging, and forcing the truss-hoops into position; a vertically-reciprocating annular head carrying a truss-hoop, between which and a form in the head the upper ends of the staves are placed; a separable bed, one part of which carries a pair of curved and spring-actuated arms, the other, oppositely-disposed triangular pieces, and both parts simultaneously adjustable for contracting the lower ends of the staves; a separable hollow cone placed immediately below said bed, and having circular grooves in its inner surface for the truss-hoops to be applied to the lower end of the barrel. The barrel, during the process of heating, is confined in a bed having a hollow cone with circular grooves formed in its interior surface.



Claim.—1. The annular head D, provided with supporting-hooks a and rabbet a, in combination with the movable hollow cone B, substantially as herein shown and described.

2. The combination, with the separable bed E, of the semicircled plates d''' d^{iv}, provided with mechanism for moving them simultaneously in opposite directions, substantially as herein shown and described.

3. The curved arms f^1 and triangular pieces n', in combination with the plates d''' d^{iv}, substantially as herein shown and described.

4. The combination of the spring m' with the curved arms f^1, substantially as shown and described.

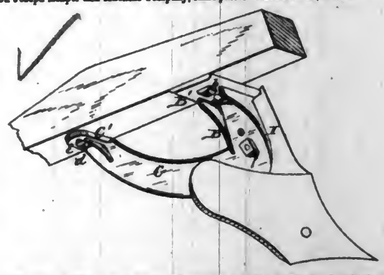
5. The separable bed E, having formed in it an inverted hollow truncated cone, b', having a flaring mouth, for supporting the lower truss-hoops and contracting the partly-formed barrel, substantially as shown and described.

6. The combination, in a barrel-trussing machine, of the wheel *j*, pinions *h*, racks C, cone B, and head D, as herein shown and described.

7. The combination, in a barrel-trussing machine, of the plates d''' d^{iv}, racks h' j', and pinions j^1, substantially as herein specified.

8. The combination of two hollow truncated cones, B F, constructed, arranged, and operating together substantially as and for the purpose specified.

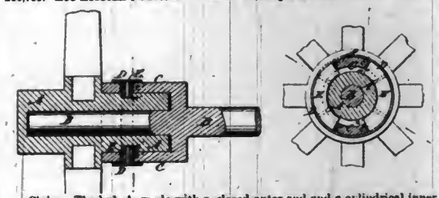
200,734. PLOWS. John C. Knoblock and Theiss M. Bissell, South Bend, Ind., assignors to St. Joseph Reaper and Machine Company, same place. Filed Jan. 16, 1878.



Claim.—1. The jointer-arm F, provided with a flange, I, which projects over the front of the jointer-standard B, for the purposes herein set forth.

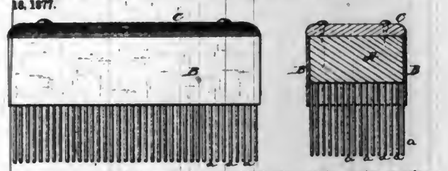
2. The combination of the perforated standard B with brace C, provided, respectively, with the heads B' and C', and laterally adjustable on the under side of the plow-beam, the flange *h*, and the perforated jointer-arm F with flange I, all constructed substantially as and for the purposes herein set forth.

200,735. HUB-ATTACHING DEVICES. Frodk. O. Lee, Ridgefield, Conn. Filed Feb. 4, 1878.



Claim.—The hub A, made with a closed outer end and a cylindrical inner end, having a ring-groove, *a'*, formed around it, the axle B, provided with a cup-collar, C, short transverse slots *c'*, formed in its opposite sides, and the open spring-steel band D, provided with the blocks or keys E, in combination with each other, substantially as herein shown and described.

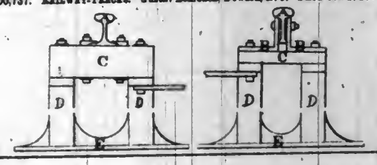
200,736. WOODEN BRUSHES FOR SCRUBBING. George W. Lee, Ridgewood, N. Y. Filed Dec. 10, 1877.



Claim.—1. A brush formed of a solid block of wood by sawing or otherwise removing, lengthwise of the grain, a portion of the wood in directions at right angles to each other across the face to form fibers or teeth, as and for the purpose set forth.

2. The wooden block A, having teeth *a a*, forming a part of it, and bound with the band B, and provided with a cap-piece, C, as and for the purpose specified.

200,737. RAILWAY-TRACKS. Gustav Lohbach, Newark, N. J. Filed Oct. 8, 1877.

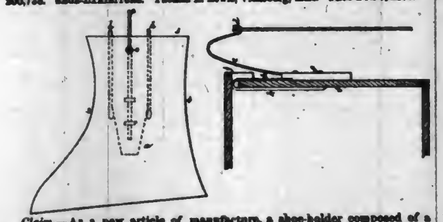


Claim.—1. The combination, with the rail A, of the chair-plate B and pedestals D E D, arranged to operate as and for the purposes herein set forth.

2. The combination, with the rail A, of the chair-plate B, cushion-block C, and supporting-pedestals D E D, as and for the purposes set forth.

3. The combination, with the rail A, of the wooden chair-block C, in Fig. 3, and the supporting-pedestals D E D, substantially as and for the purposes set forth.

200,738. SHOE-EXTENSORS. Thomas R. Lewis, Vicksburg, Miss. Filed Dec. 7, 1877.



Claim.—As a new article of manufacture, a shoe-holder composed of a distending device, *a*, prong *c* to support it, a rest, to bear against the front of the box, as described, and broad hook *b*, to engage the box edge and steady the rest and prong.

200,739. BAROMETERS. Robert Mann Lowne, East End, Finchley, England, assignor to Jos. Gall, New York, N. Y. Filed Aug. 16, 1877.



Claim.—The barometer herein described, having gage-tube *c*, compressed-air bulb *b*, fluid-reservoir *c*, and mercury-tube *d*, the latter being open at its upper end to the atmosphere, its lower part forming an inverted goose-neck, terminating a short distance above the bottom in the reservoir *c*, the whole being formed out of the material of a continuous tube bent to form two vertical legs, substantially as set forth.

200,740. ACCELERATING-GUNS. Asel S. Lyman, New York, N. Y., assignor to Accelerating Fire Arms Company, same place. Filed Feb. 19, 1878.

Brief.—The additional chambers to contain accelerating-charges are in an enlargement of the breech. These chambers have a charge-opening passing down through the metal of the gun from above.



Claim.—1. The enlarged breech of the gun containing a series of chambers opening into the bore through apertures smaller than the chambers, substantially as described.

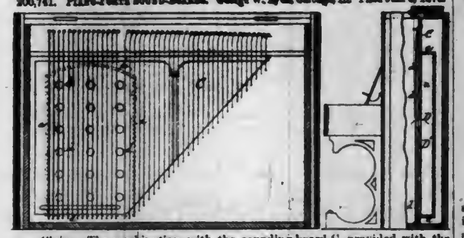
2. The accelerating-charge chambers having a breech-closing plug, and a priming or charging aperture above, substantially as described.

3. A gun having an accelerating-charge chamber spherical, or nearly so, in form, said chamber communicating with the bore through an aperture smaller than the diameter of the chamber.

4. A gun having an accelerating-charge chamber spherical, or nearly so, in form, said chamber communicating with the bore through an aperture inclined forward, substantially as shown and described.

5. The accelerating-gun herein described, having a series of charge-chambers in an enlargement of the gun, each chamber communicating with the bore through an aperture smaller than the chamber, and having a charging-orifice and a breech-closing plug, all constructed and arranged substantially as described.

200,741. PIANO-FORTE SOUND-BOARDS. George W. Lyon, Chicago, Ill. Filed Jan. 6, 1878.



Claim.—The combination, with the sounding-board C, provided with the perforations *d*, of the auxiliary sounding-board D and strips *a a*, forming the sounding chamber D', immediately back of or under the wound strings, and so that the walls of the chamber and auxiliary board will be supported wholly from the board C, and free from contact with the frame or other parts of the instrument, substantially as and for the purpose specified.

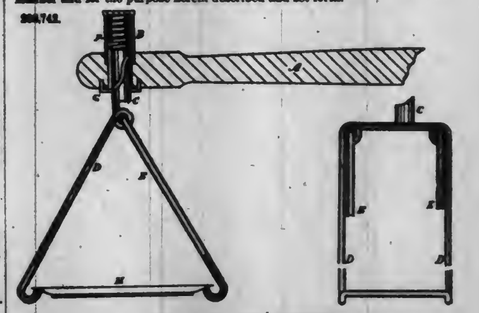
200,742. PIE-TURNERS. Nelson P. Maddocks, Lawrence, assignor to Charles D. Moore, same place, and George B. Reed, Cambridge; said Moore assignor to George A. Durrell, also of Cambridge, Mass. Filed Feb. 8, 1877.

Claim.—1. A pie-turner composed of plate-holding arms revolved semi-circularly by suitable mechanism in a guide-ferrule of the handle, substantially as and for the purpose set forth.

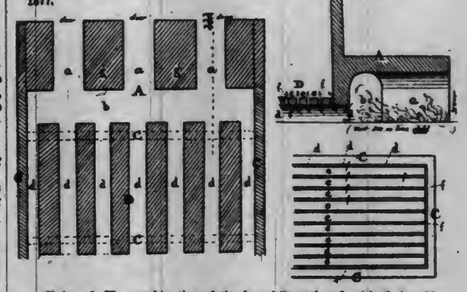
2. The combination of the spirally-grooved worm C with the spring F and the hooks D and E, in the manner and for the purpose herein described and set forth.

3. The combination of the handle A, the cover B, the spirally-grooved worm C, the hooks D and E, the spiral spring F, and the guide-pin G, in the manner and for the purpose herein described and set forth.

200,743.



200,743. TILE OR BRICK KILNS. Robert G. McCullough, Somerville, Ill. Filed Dec. 21, 1877.



Claim.—1. The combination of the base kiln-arches *d*, with their table *c*, with main arch *b* and furnace-arches *a*, as arranged and substantially as described.

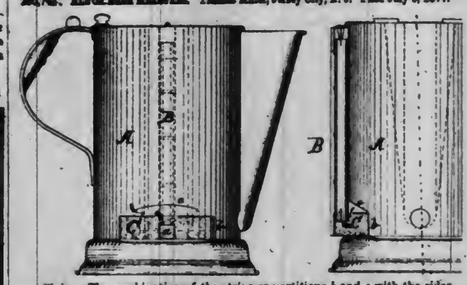
2. The combination of the cross-flues *f* and base-arches *d* with the flanking-arches *b b*, as constructed with furnace-arches *a*, substantially as and for the purposes described.

3. The combination and arrangement of extra-mural lateral arches *b b* with furnaces *a a*, kiln-floor flues *d*, and floor D, substantially as described.

4. The combination and arrangement of the table D, flues *d* and *f*, as an up-draft kiln.

5. The arrangement of the lines of bricks *c*, separated by parallel flues or chinks *f*, the latter opening into each arch, successively crossed by same below, as described.

200,744. ALE OR BEER MEASURES. Thomas Miller, Jersey City, N. J. Filed July 6, 1877.



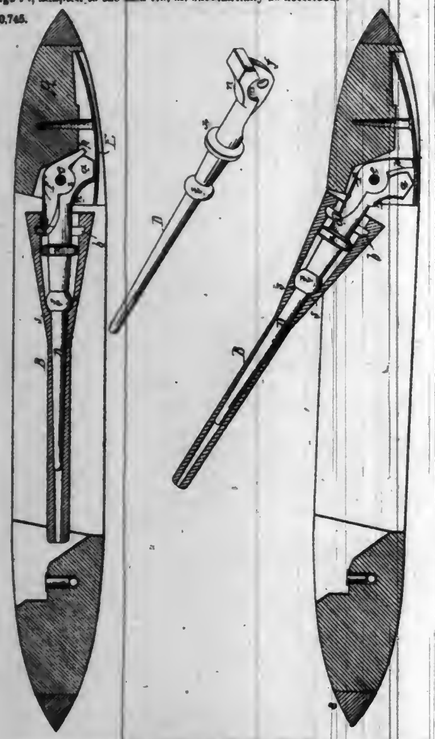
Claim.—The combination of the strips or partitions *b* and *c* with the sides and bottom of an ale or beer measure, so as to form a compartment surrounding the outlet to the measuring-tube B, substantially as and for the purpose shown and described.

200,745. LOOM-SHUTTLES. Guy C. Mills, Nashua, N. H., assignor to Eaton & Ayer, same place. Filed Aug. 1, 1877.

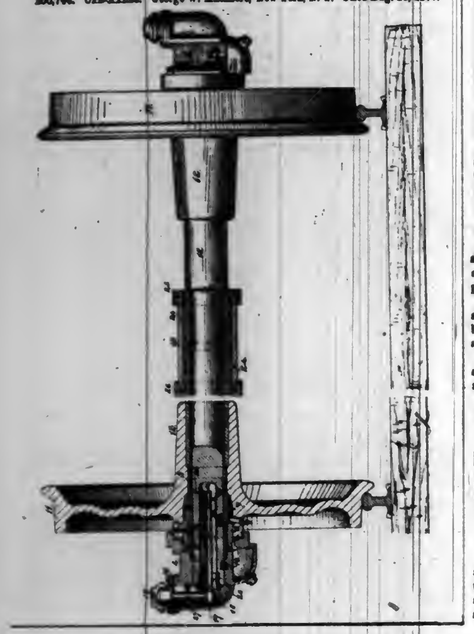
Brief.—On elevating the end of the spindle the short arm of the bell-crank lever is acted on by the spring that bears on the head of the spindle, so as to force the long arm close to the side of the spindle, and the bobbin may easily be slipped on; but when placed in its usual position the short arm of the lever, coming in contact with a portion of the shuttle-body, moves the projecting end of the long arm into the groove of the bobbin and retains the latter in position.

Claim.—The combination of a bobbin, B, having a groove, *b*, and the spindle D, having a rib, *f*, with the lever F, provided with a projection, *d*, and lugs *i i*, adapted to the said rib, all substantially as described.

200,745.



200,746. CAR-AXLES. George W. Milmore, New York, N. Y. Filed Aug. 14, 1877.



Claim.—1. The combination of a stationary axle with wheel having sleeves, and a tube encircling their ends, substantially as described.

2. The combination of a stationary axle with wheels provided with sleeves, a tube encircling their ends, and means for keeping the said tube in position, substantially as described.

3. The combination of a stationary axle, 1, with wheels 11, provided with sleeves 12 and collars 24, and tube 13, with its projecting flange and nut, substantially as described.

4. The sleeves 12, having collars 24, one of which projects beyond the end of the sleeve to which it is secured, and overlaps the end of the companion sleeve to break joints, substantially as described.

5. The combination of the box, provided with an annular projection, with the pedestal support, having an annular projection to resist lateral motion or thrust of the axle, substantially as described.

6. The box 2, having annular projections 3 at each end, and having a groove, 9, substantially as described.

7. The box 2, having annular projection 3, combined with the pedestal-support 4, having annular projection 5, substantially as described.

8. The combination of the pipes 27 18, with their collars 20 21, with the chambers 14 26 and their holes 23 23, substantially as described.

9. A journal-bearing provided with a primary oiler, consisting of a chamber, 26, and hole 23, and with a secondary oiler consisting of a chamber, 14, hole 22, and pipes 18 27, whereby the lubricant may be conveyed directly to the bearing-surfaces without contact with the lubricant contained in the primary oiler, substantially as described.

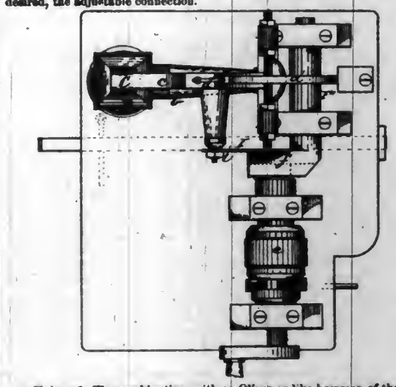
200,747. SCREW-DRIVERS. Roderick Munroe, Fitchburg, Mass. Filed Sept. 22, 1877.



Claim.—The combination of the blade A, having a ratchet-ferrule firmly attached thereto, the handle B, with its ratchet-ferrule firmly attached, the spring G in the handle, above the shank of the blade, and the pin F, extending across a groove in the shank, to allow a limited play to the latter, all substantially as shown and described.

200,748. POWER MECHANISMS FOR HAMMERS. Benjamin Murphy, Allegheny, Pa. Filed Dec. 28, 1877.

Brief.—A quick falling and slow rising movement, as in hand-work, is imparted to the hammer. The length of stroke is determined by moving a pin on an adjustable connection depending from the hammer-helve along a slot of an arm attached to the independently-pivoted ways. The relation of the hammer to the anvil is regulated by lengthening or shortening, as is desired, the adjustable connection.

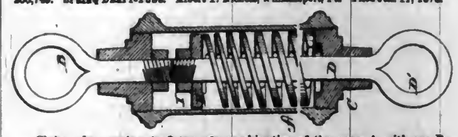


Claim.—1. The combination, with an Oliver or like hammer, of the power-shaft, provided with a crank-pin, a slide, and independently-pivoted ways, and connecting devices for operating the hammer from the independently-pivoted ways, substantially as specified.

2. The combination, with the hammer, of the power-shaft, provided with a crank-pin, a slide, and its pivoted ways or box, an arm projecting from the box, and a link adjustable on the arm, substantially as and for the purpose specified.

3. The combination, with a hammer of the class specified, of the power-shaft, provided with a crank-pin, a slide, and its pivoted ways, the link-arm, and adjustable link, substantially as and for the purpose specified.

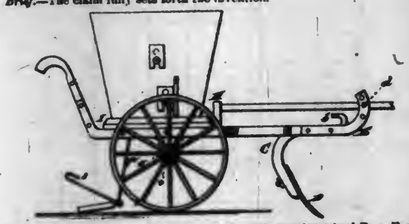
200,749. SPRING DRAFT-TUGS. Albert T. Nichols, Williamsport, Pa. Filed Jan. 11, 1878.



Claim.—In a spring draft-tug, the combination of the cage A, with eye B at one end, the head C at the other end, the rod D, with eye D' passing through the head, the washer and nut H I, and the spiral spring F, graduated in thickness from one end to the other and surrounding the rod, all constructed substantially as and for the purposes herein set forth.

200,750. COTTON-SEED PLANTERS. Manning L. Fix, James M. Stone, and Levi Anderson, Paris, Tex. Filed Jan. 5, 1878.

Brief.—The claim fully sets forth the invention.

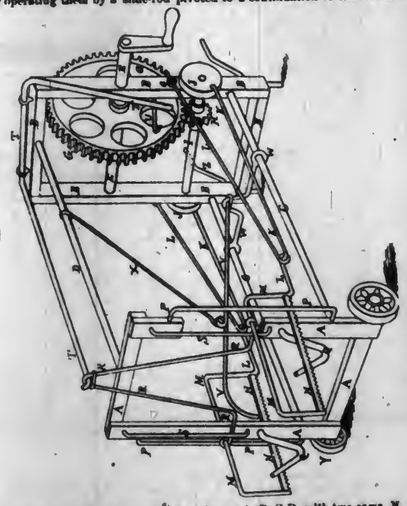


Claim.—1. The combination of the axle K, with sprocket-wheel R, endless chain O, and shaft *n*, with sprocket-wheel R within the hopper, and stirrers *n*, substantially as and for the purpose set forth.

2. The shaft *n'*, with stirrers *n* and sprocket-wheels R' and R², in combination with the endless chain O and sprocket-wheel R, substantially as and for the purpose set forth.

200,751. SAWING-MACHINES. Thomas F. Osburn, Jeffersville, Ill. Filed Dec. 22, 1877.

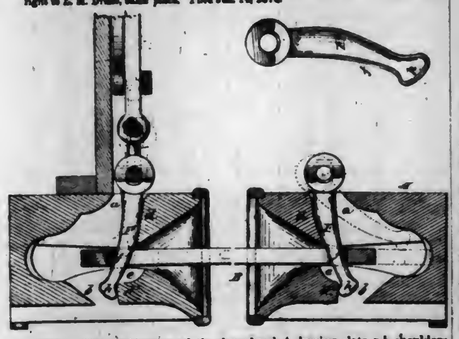
Brief.—The wood is firmly held, while being sawed, by a hooked rod, the rear end of which is pivoted to a cross-bar attached to the lower part of the main frame, and its forward part attached to a rod sliding on a bar, which connects the upper parts of the main frame. The saws are connected to a disk for operating them by a slide-rod pivoted to a continuation of the saw-frame.



Claim.—1. The combination, in a frame, A B C D, with two saws, N, of the slide-rods K L, the former pivoted to the latter, and the latter forming a continuation of the saw-frame M, as shown and described.

2. The combination of the holding-rod V and the adjusting-rod X with the frame A B C D, substantially as herein shown and described.

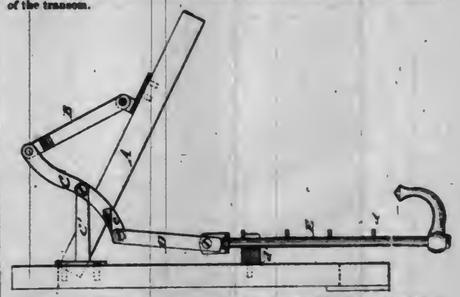
200,752. GAS-GENERATORS. William N. Partwire, Frankfort, Ky., assignor of one-third his right to E. H. Drane, same place. Filed Jan. 14, 1878.



Claim.—The combination of the draw-head A, having slots *a b*, shoulders *d d'*, and curve or incline *c*, with the coupling-pin F, having toe *h a*, its lower end, substantially as and for the purposes herein set forth.

200,753. TRANSOM-LIFTERS. August F. Pfeifer, Newark, N. J. Filed Jan. 16, 1878.

Brief.—A swiveled and sliding hand-rod, connected by an intermediate pivot-rod with a fulcrumed lever and pivot-piece, which operate the transom, is provided with side pins or studs, which interlock with a guide-socket to hold the transom in desired position. There is also a projecting cheek of the fulcrumed lever, against which the pivot-bar bears, to facilitate the opening of the transom.

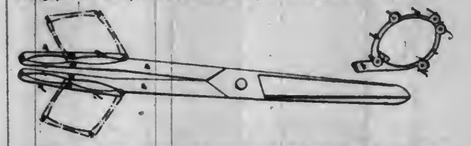


Claim.—1. The combination, with the mechanism B C D for operating a transom, of the swiveled hand-rod E, having side studs *d* and the recessed guide-socket *d'*, as and for the purpose specified.

2. The combination of transom A, pivoted connecting-piece B, and fulcrumed lever C, having projecting cheek *e* near upper pivot, with connecting pivot-piece D and sliding and guided hand-rod E, substantially as shown and described.

200,754. SCISSORS, FORCEPS, &c. Louis A. Fiehen, Paris, France. Filed Dec. 29, 1877.

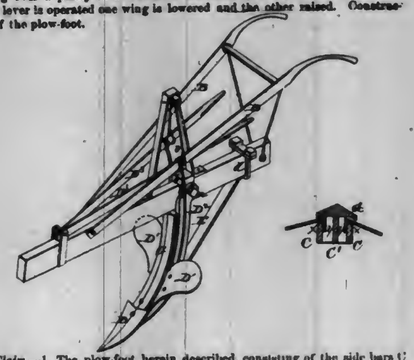
Brief.—The loop or bow is hinge-jointed, so that when not in use they can be folded together in the same plane with the blades, occupying no more space in width than the body of the scissors, the construction adapting scissors, forceps, and the like, for sheaths or cases by the folding in of the handles.



Claim.—Scissors, forceps, and like instruments constructed with hinge-jointed bows, opening and folding in the same plane with the blades, substantially as described.

200,755. PLOWS. William J. Pirkle, Cumming, Ga. Filed Aug. 10, 1877.

Brief.—The wings slide up and down in the grooved plow-foot, and, by means of rods, are connected to the levers, which are connected by a cord passing over a pulley in a standard mounted upon the beam, so that as either lever is operated one wing is lowered and the other raised. Construction of the plow-foot.



Claim.—1. The plow-foot herein described, consisting of the side bars C C, center bar C', plow D, and front bar G, substantially as and for the purposes herein set forth.

2. In combination with the grooved plow-foot, provided with a movable wing on each side, the rods D' D', connected to the levers D' D', the cord *f* and pulley *n* in the standard *m*, the ends of said cord being connected to the levers, so that by pressing one lever down the other is thrown up, thus reversing the wings, and to make a right or left hand turning plow.

200,756. WASHING-MACHINES. Joseph F. Pond, Cleveland, Ohio. Filed June 1, 1877.

Claim.—1. A locking-bar placed between the rolls B B, which meshes into the corrugations of both rolls at the same time, for the purpose of stopping the rotation of the rolls.

2. The slotted lever K, in combination with the crank-shaft L or pin P and the rock-shaft F, substantially as and for the purpose specified.

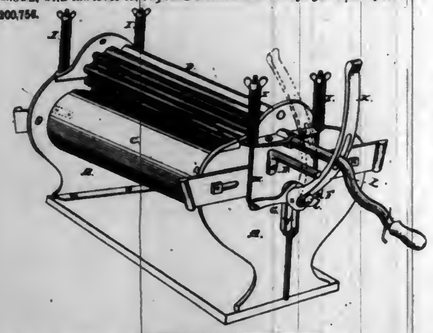
3. The reciprocating sliding bars J J, in combination with the rock-shaft F and oscillating bars E E and rolls B B, substantially as and for the purposes set forth.

4. The oscillating bars F F, having recesses to receive the lugs *a a* on rock-shaft F, when the slotted lever K is pushed forward, to prevent the rolls B B from oscillating, as and for the purpose specified.

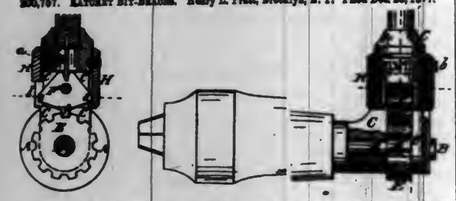
5. The oscillating bar F, provided with a non-circular opening, in combination with rock-shaft F, having near one end a bearing-surface of form corresponding with said opening, whereby the said rock-shaft and bar oscillate together, and the rock-shaft is allowed free longitudinal motion, as specified.

6. The combination of the vibrating bar G, having lug *g'*, projecting through slot *f* in upright A, adapted to press against the oscillating bar E, as shown, with the lever K, to prevent friction on the upright A, as specified.

200,756.



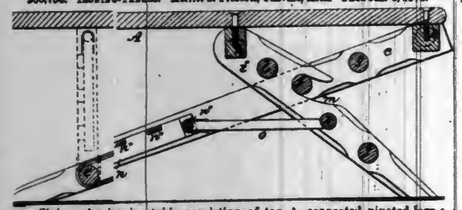
200,757. RATCHET BIT-BRACES. Henry L. Pratt, Brooklyn, N. Y. Filed Dec. 26, 1877.



Claim.—1. The combination, with the ratchet-wheel E, spring-acted detent or pawl F, provided with a single tooth, and so pivoted as to oscillate on its pivot in substantially the same plane with the disk E, and a stop, substantially as described, which may be moved from side to side of said pawl, or adjusted so as to lock the same in a central position, whereby the bit-stock may be rotated in either direction or locked to the brace-handle, constructed and operating substantially in the manner described and specified.

2. The combination of the notched wheel or disk E, double-acting spring-pawl F, and swiveled ring H, constructed and operating substantially in the manner described and specified.

200,758. IRONING-TABLES. Merritt S. Prescott, Otisville, Mich. Filed Jan. 4, 1878.



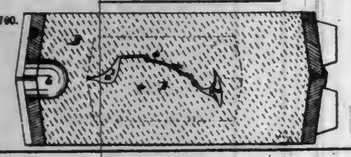
Claim.—An ironing-table consisting of top A, connected pivoted legs *c*, and notched pivoted legs *i*, the frame *n*, consisting of side pieces *n'* and cross-bars *n''*, pivoted on lower cross-bar *o*, and the pivoted brace O, resting against cross-bar *k*, as shown and described.

200,759. METHODS OF AUTOGRAPHIC PRINTING. Josiah Pumphrey, Birmingham, England. Filed Jan. 15, 1877.

Brief.—The writing is done on ordinary thin paper with an ink composed of aniline crystals dissolved in acetic acid, glycerine being added thereto. Many copies may be taken from one writing.

Claim.—The method of autographic printing herein described, the same consisting in writing or drawing upon a sheet of paper, which, when dry, is placed face inward upon a plate impervious to water, then covered by a damp-ened sheet of paper, which is backed with a sheet of water-proof material, and the whole subjected to pressure.

200,760.



200,760. DENTAL-PLATE MOLDS. Geo. F. Rose, Brooklyn, E. D., N. Y. Filed Aug. 1, 1877.

Brief.—An extra mold incloses an ordinary one and prevents it from shrinking apart.

Claim.—1. A mold for casting metal dental plates, composed of the inner mold A, in which is the matrix, and formed distinct by itself, and entirely inclosed by the envelope B, together with suitable ingates *a'*, as described, and for the purpose specified.

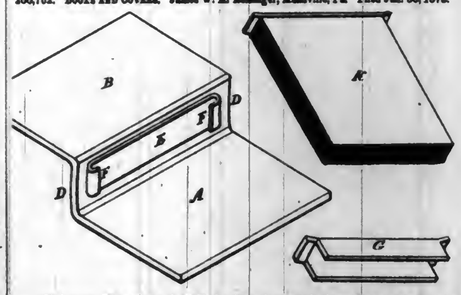
2. In a mold for casting metal dental plates, composed of the inner mold A and its incasing-envelope B, having suitable ingates *a'*, the pocket or recess *a²*, communicating with the matrix, as and for the purpose specified.

3. In a mold for casting metal dental plates, the recess *b* in the envelope B, which incases the inner mold A, as described, and for the purpose specified.

200,761. PROCESSES FOR MAKING MOLDS FOR DENTAL PLATES. Geo. F. Rose, Brooklyn, E. D., N. Y. Filed Aug. 1, 1877.

Claim.—The process of fabricating a mold for casting metal dental plates, which consists in first forming of plaster, in the usual manner, the mold proper, in two sections, containing the matrix, and, when the same has hardened, thoroughly saturating the same with water, and then completely enveloping the same in a plaster casing, providing suitable ingates, and, when the casing is hardened, thoroughly drying the mold, all as described, and for the purpose specified.

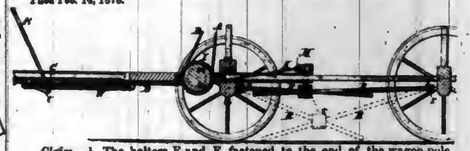
200,762. BOOKS AND COVERS. James W. H. Reisinger, Mauville, Pa. Filed Jan. 30, 1878.



Claim.—1. The cover A B D, having the metal clasp E, provided with flanges F F, bent inwardly from its ends, in combination with the book or tablet K, having a back-piece, the ends of which project from the book or tablet, all substantially as shown, described, and for the purpose specified.

2. The leaves or tablet K, secured to the back-piece by glue or other adhesive substance, the ends of said back-piece projecting from the sides of the tablet, whereby the latter is adapted for attachment to the covers A B D, substantially as shown, described, and for the purpose set forth.

200,763. DEVICES FOR HITCHING HORSES TO VEHICLES. Elias Repp, Menasconee, Wis. Filed Feb. 14, 1878.

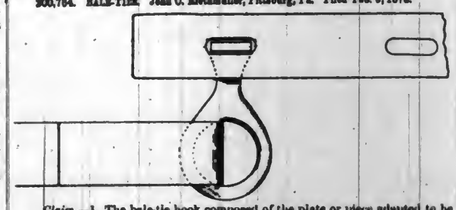


Claim.—1. The halters E and F, fastened to the end of the wagon-pole and looped through the slip-ring C, which slides upon the keeper W, by means of the cords A B, substantially as described.

2. The halters E and F, the slip-ring C, the keeper W, and the cords A B, operated by means of the pulley I, substantially as described.

3. In combination with the hitching apparatus, and operated in connection with it, the anchor-rods R R and S S, to be held in place by the rings *t t*, which are connected by a rigid bar, and raised and lowered by means of cords passing over the pulleys M, N, O, and P to the main pulley I, as described and shown.

200,764. BALE-TIES. John C. Riethmüller, Pittsburg, Pa. Filed Feb. 9, 1878.



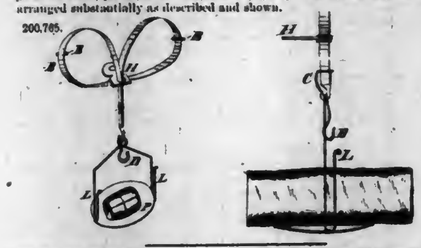
Claim.—1. The bale-tie hook composed of the plate or piece adapted to be pivoted to a band, and the transverse cleat, substantially as and for the purpose specified.

2. The combination, with a slotted bale-tie, of the plate pivoted thereto, so that it can be turned at an angle to the line of draft, said plate provided with a transverse cleat or locking-lug, substantially as and for the purpose specified.

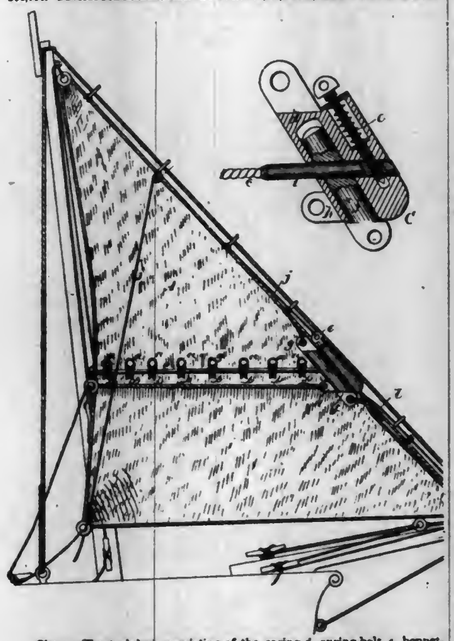
200,765. SPRING-SCALES. William B. Ross and James S. Ross, Nashville, Tenn., assignors of one-half their right to Edward B. Campbell and Harry Harrison, same place. Filed Sept. 27, 1877.

Claim.—The combination, in a spring-scale, of the springs S S, handle H, graduations G, pan P, hooks L L, hook D, spring-catch C, and stops B B, all arranged substantially as described and shown.

200,765.

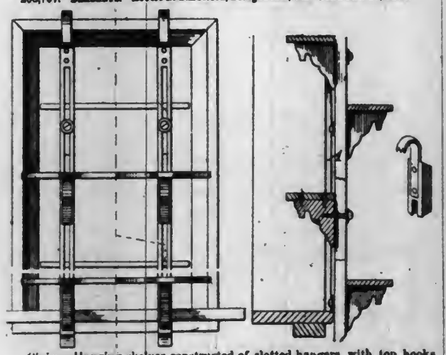


200,766. DEVICES FOR REEFING JIBS. Edwd. Rowell, 2d, Salem, Mass. Filed Jan. 15, 1878.



Claim.—The tack-lock consisting of the casing *d*, spring-bolt *e*, bonnet-bolt *f*, and end piece of lace-line *i*, in combination, substantially as herein shown and described.

200,767. BRACKETS. Robert B. Sanderson, Bridgewater, Pa. Filed Jan. 17, 1878.



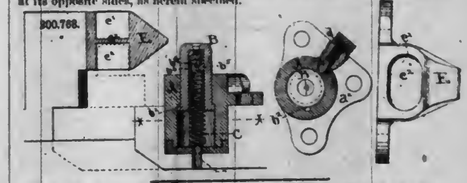
Claim.—Hanging shelves constructed of slotted hangers, with top hooks and adjustable bracket-shelves secured to the hangers, substantially as and for the purpose set forth.

200,768. SLIDING-DOOR LOCKS. James W. Schoonmaker, Albany, N. Y., assignor of one-half his right to Thomas J. Garvey, same place. Filed Sept. 28, 1877.

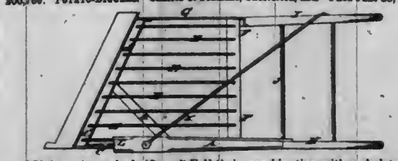
Claim.—1. The lock for sliding doors herein described, consisting of the casing A, bolt B, provided with the projection *b²* formed therein, and spring C, in combination with the key F, forming a connection with and operating the bolt B, in the manner herein specified.

2. The reversible striker E, having beveled faces and recesses arranged at its opposite sides, as herein specified.

200,768.

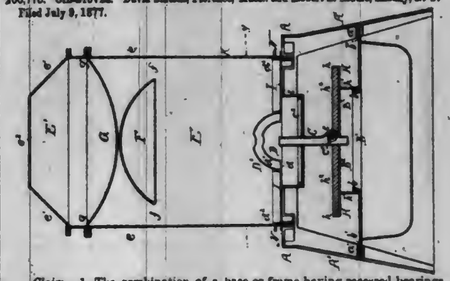


200,769. POTATO-DIGGERS. Charles O. Seamans, Chesterton, Ind. Filed June 25, 1877.



Claim.—An arched sifter, *d* E F G, in combination with a skeleton plow, whose land-side is connected with share by brace M, and with beam by brace L and post B, the arch of sifter being thus allowed to rise, as shown and described.

200,770. OIL-STOVES. David Shields, Florence, Mass., and Robert K. Liddle, Albany, N. Y. Filed July 9, 1877.



Claim.—1. The combination of a base or frame having recessed bearings *a* with the heating or cooking drum provided with projections *b'*, through which pass set-screws N, adapted to said bearings, all substantially as set forth.

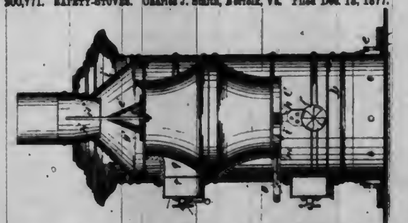
2. The combination of the reservoir and its support L, having flanges *b'*, with the guides on the base.

3. The combination, substantially as described, of the drum E, inverted cone or dome G, and a dome or cone, F, and annular space *f*.

4. The combination of the drum E, its domes or cones, and the annular space *f* with the openings *e e* in the drum.

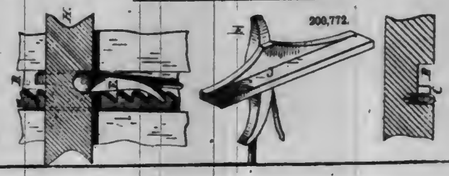
5. The combination of the drum E, its inverted cone or dome G, and the openings *e'* and *e²* above said cone or dome.

200,771. SAFETY-STOVES. Charles J. Smith, Norfolk, Va. Filed Dec. 18, 1877.



Claim.—The combination, with a chamber in the cylinder and below the bottom *b*, of an air-chamber between the casting *a* and flanged lower end of the cylinder, the latter and the casting being perforated, as and for the purpose specified.

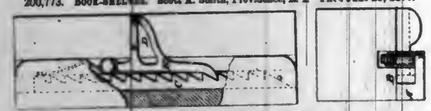
200,772.



200,772. BRACKETS FOR BOOK-SHELVES. Scott A. Smith, Providence, R. I. Filed Dec. 10, 1877.

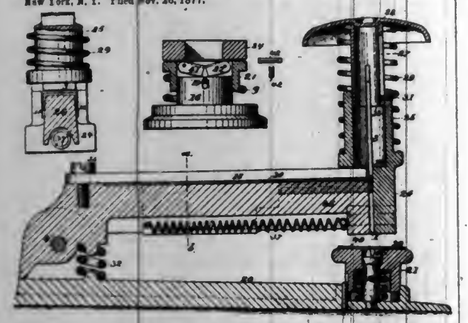
Claim.—The combination of the grooved upright B, the pawl E, connected with a projecting pin, C, or cross-bar J, the rack C, and the shelf H, the whole constructed, arranged, and operating in the manner substantially as described.

200,773. BOOK-SHELVES. Scott A. Smith, Providence, R. I. Filed June 29, 1877.



Claim.—The combination of the standard having the grooves A B, the rack C, and the shelf rest D, the whole constructed, arranged, and operating in the manner substantially as described.

200,774. MACHINES FOR INSERTING AND CLINCHING METALLIC STAPLES. D. M. Somers, New York, N. Y. Filed Nov. 26, 1877.



Claim.—1. In a machine for setting staples, the combination, with a staple-inserting plunger, of a clinching-head provided with a bending-slot having inclined ends, and a clinching-anvil, the said clinching-head and anvil being constructed to reciprocate with respect to each other, substantially as described.

2. The staple-clinching mechanism consisting of a reciprocating clinching-head, as 21, and a stationary anvil, as 16, having the clinchers 41 42, substantially as described.

3. The combination of the plunger 3, reciprocating staple-guiding block 24, and the clinching-head 21, having a bending-slot, with inclined ends, substantially as described.

4. The combination, with the reciprocating staple-guiding block 24 and the plunger 3, operating through the same, of the clinching-head 21 and clinching-anvil 16, substantially as described.

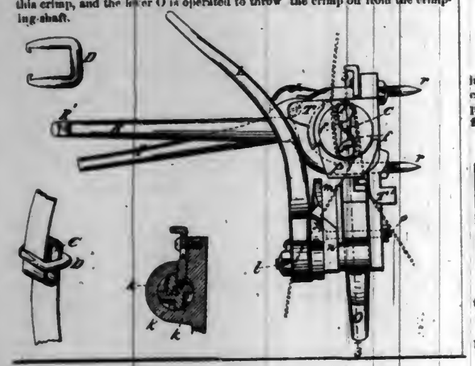
5. The combination, with the swinging arm 26 and staple-guiding block 24, of the feeding-slide 36 and passage-ways 11 12, substantially as described.

6. In a machine for setting staples, the combination of a reciprocating plunger, as 3, and a reciprocating staple-guiding block, as 24, with a staple-clinching mechanism, whereby the latter mechanism is automatically operated by said plunger, substantially as described.

7. The combination of the guide-plate 39, having a recess, 40, with the clinching-head 21 and staple inserting and clinching mechanisms, substantially as described.

200,775. BALE-TIES AND APPARATUS FOR APPLYING THE SAME. Noah W. Spoors, Memphis, Tenn., assignor of one-eighth of his right to Ada Brown, same place. Filed Aug. 10, 1877.

Brief.—The apparatus is placed against the front of a cotton-bale to tie the band ends between the jaws of the crimping-shaft. The surplus ends of the band are cut off by the shears. The crimping-shaft is then rotated by means of the ratchet-lever, imparting a double S-shaped crimp to the interlocked portions of the band. The U-shaped keeper is then applied to retain this crimp, and the lever O is operated to throw the crimp off from the crimping-shaft.



Claim.—1. The bale-tie herein described, consisting of the interlocking S-shaped crimps C and U-shaped keeper D, for securing the same.

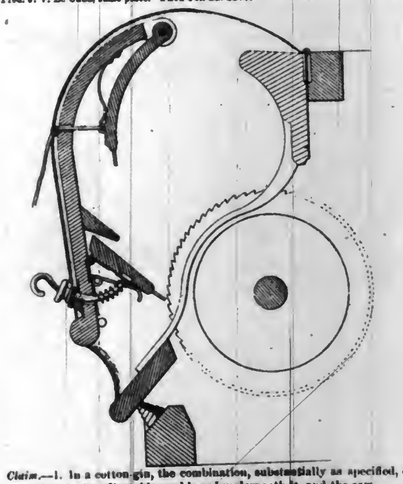
2. The crimping apparatus constructed with a forked shaft, E F, and a ratchet-lever, I J, for rotating the same.

3. A bale-tying machine constructed, substantially as described, with a fork-shaft, E F, and ratchet-lever I J, and detent-dog *k*, and a slide, P, for discharging the crimped band.

4. The combination, with a crimping-machine, substantially as set forth, of the shears L *n a*, for severing the hoop.

5. The combination, with a bale-tying machine, operated substantially as set forth, of the fork R, for retaining the same in position on the bale while in operation.

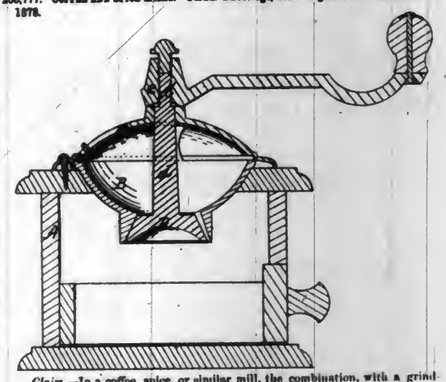
200,776. COTTON-GINS. Andrew L. Stietenroth, Natchez, Miss., assignor of one-half his right to Fred. J. V. Le Caud, same place. Filed Oct. 22, 1877.



Claim.—1. In a cotton-gin, the combination, substantially as specified, of the guard-board, the adjustable seed-board underneath it, and the saw.

2. The combination, substantially as specified, of the seed-board, the hooks or rods, the thumb-nuts, and the springs or their equivalents.

200,777. COFFEE AND SPICE MILLS. Turner Strobridge, New Brighton, Pa. Filed Feb. 7, 1878.



Claim.—In a coffee, spice, or similar mill, the combination, with a grinding-nut having a threaded shank, of a crank provided with a threaded nut or collar, adjustable on the threaded shank, and a set or jam screw, for fixing the position of the adjustable crank, substantially as and for the purpose specified.

200,778. MATCH-SAFES. George R. Taylor, Cranston, R. I. Filed Jan. 23, 1878.

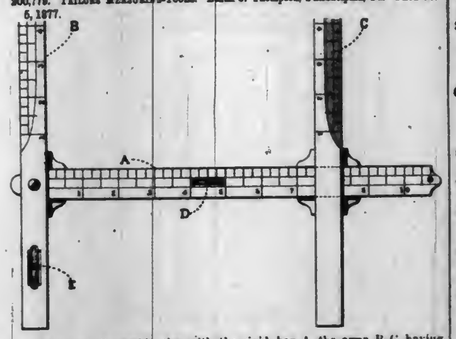


Claim.—1. The box A, reduced in width at one side, cut away, and edge turned, in combination with bar *a*, follower *b*, having projection *c*, and cover B, having aperture *d*, as shown and described.

2. An igniting-spring supported by a frame, *f*, fastened in the cover by a button, *g*, projecting therethrough, as and for the purpose set forth.

3. The combination of the rubber spring *b* with the follower *b*, substantially as and for the purpose herein shown and described.

200,779. TAILORS' MEASURING-TOOLS. Ethan O. Thompson, Philadelphia, Pa. Filed Oct. 5, 1877.



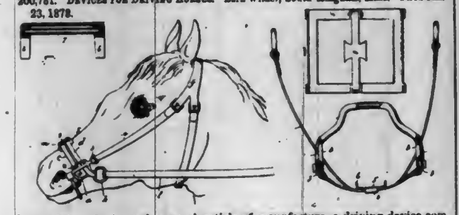
Claim.—1. In combination with the rigid bar A, the arms B C, having rigid handle-extensions, and operating substantially as and for the purpose described.

2. In combination with the rigid bar A and arms B C, having handle-extensions, the levels D E, substantially as and for the purpose described.

200,780. FLAVORED SYRUPS. Hugh W. Walker and Thos. L. Patterson, Greenock, Scotland. Filed Sept. 24, 1877.

Claim.—The within-described flavored syrups, consisting of the residual juices of sugar-manufacture, rendered uncrystallizable and mixed with flavoring-extracts, as set forth.

200,781. DEVICES FOR DRIVING HORSES. Ezra Wilder, South Hingham, Mass. Filed Jan. 23, 1878.

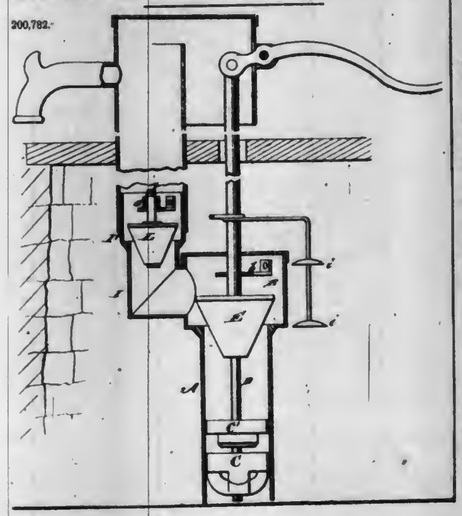


Claim.—1. As an improved article of manufacture, a driving device composed of a jaw-holder, nose-bands, and cheek-pieces, to operate when the nose-bands are drawn upon by driving-reins, substantially as described.

2. The cheek-pieces and detachable jaw-holder, bent to encompass the lower jaw and to connect the cheek-pieces, thereby dispensing with the usual mouth-piece, in combination with a covering for the jaw-holder, substantially as described.

3. The combination, with the cheek-pieces, jaw-holder, and nose-bands, of a nose-bridge for the bands, substantially as described.

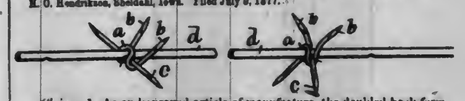
200,782.



200,782. PUMPS. John M. Willis, Richmond, Ky. Filed Nov. 24, 1877.

Claim.—In a pump, the combination of the cylinder A, with chamber B, rod D, with piston C, having valve C', the valve E, and discharge-pipe I, with valve L, all substantially as and for the purposes set forth.

200,783. FENCE-BARB. Lewis T. Larson Wing, Cambridge, assignor of one-half his right to H. O. Hendrixson, Sheldahl, Iowa. Filed July 9, 1877.

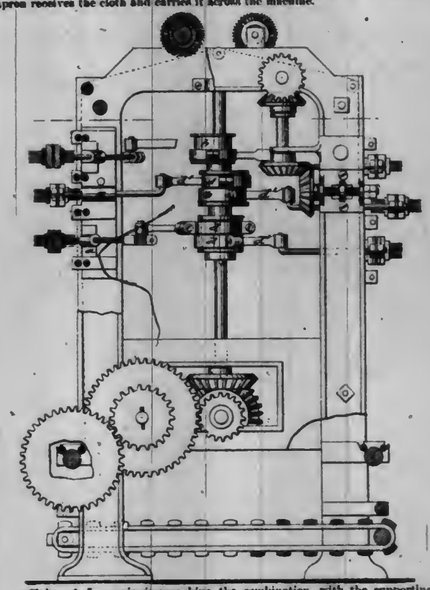


Claim.—1. As an improved article of manufacture, the doubled hook-form and pointed barb-piece *a b b*, substantially as and for the purposes set forth.

2. The doubled hook-form and pointed piece *a b b* and the pointed piece *c*, in combination with a fence wire, *d*, to form a four-pointed fence-barb.

200,784. GIGGING-MACHINES FOR NAPPING CLOTH. Christian Woelfel and James Massey, Chester, Pa. Filed Sept. 22, 1877.

Brief.—The napping-cards, which are made adjustable, so that their striking-force may be regulated without removing the cloth, are reciprocated in planes at right angles to the cloth by means of upright shafts having eccentrics, with which the cards are connected by means of straps and arms. A portion of the cards are arranged to strike the cloth obliquely. An endless apron receives the cloth and carries it across the machine.



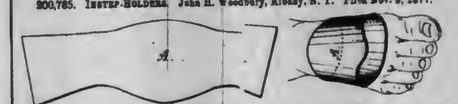
Claim.—1. In a gigging-machine, the combination, with the supporting main frame, of horizontally-adjustable bracket-plates, carrying the guide rolls, guide-sleeves, and the napping-cards, to regulate the striking of the cloth while the machine is in motion, substantially as and for the purpose set forth.

2. The combination of the adjustable bracket-plates, having guide-sleeves, guide-rolls, and the card-carrying slide-rods, with the operating upright shafts, eccentrics, and connecting straps and arms, substantially as specified.

3. The combination, with taking-up and stretching rolls and guide-rolls alternating with the napping-cards, of napping-cards and mechanism, substantially as described, to reciprocate the same in planes at right angles to the cloth, and also at a suitable lateral angle of inclination thereto, whereby the bottom of the warp is reached, substantially as and for the purpose described.

4. The combination, in a gigging-machine, with the taking-up and stretching rolls, reciprocating cards, and guide rolls, of an endless movable table or apron at the lower part of the machine, to carry the cloth from one side to the other, substantially as described.

200,785. INSTEP-HOLDERS. John H. Woodbury, Albany, N. Y. Filed Nov. 9, 1877.



Claim.—As a new article of manufacture, the instep-holder A herein described, consisting of an endless band of suitable material, for encompassing the instep and giving support to the tarsal and metatarsal bones, as herein set forth.

200,786. FRUIT-BASKETS. Lucius W. Beecher, Westville, Conn. Filed Jan. 17, 1878.

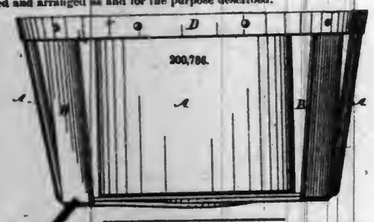
Brief.—The auxiliary corner pieces are thicker than the main pieces, to strengthen the basket.

Claim.—1. The basket described, having the main side pieces A A placed at right angles to each other, with an intermediate space between their bottom portions at each corner, and the auxiliary corner-pieces D, adapted to fill the intermediate space, the construction being such that the basket has an outline which is quadrangular, with the exception of the corners, which are rounded, substantially as set forth.

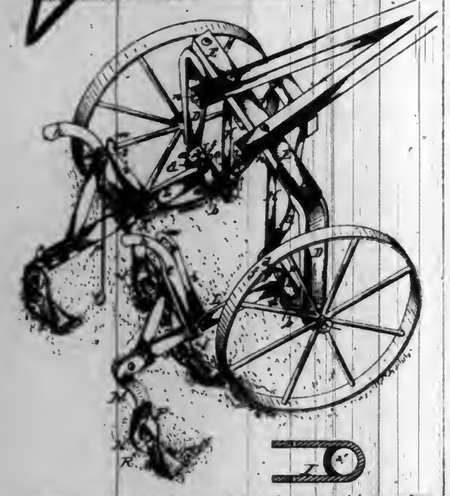
2. In a basket composed of the main and auxiliary corner-pieces, substantially as described, the auxiliary pieces B, of thicker material, as and for the purpose set forth.

3. The described basket, consisting of the main pieces A, of thin material, and auxiliary corner pieces, of heavier material, and securing-hoops C D, combined and arranged as and for the purpose described.

200,786.

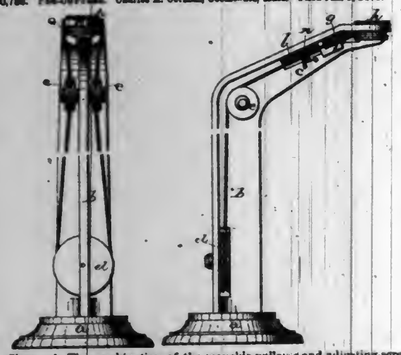


200,787. CHILLED PLOWS. Patrick Brannan, Freeport, Ill. Filed Oct. 23, 1877.



Claim.—The plow-beams L, provided upon the upper and lower surfaces of their front ends with the lips *d*, having apertures *i*, in combination with the cylindrical sleeve I, provided with scalloped lips *a*, projecting rearward from the top and bottom of said sleeve, and having apertures *b*, thus protecting the axles B, and affording a free lateral movement of the plow-beams, substantially as shown and set forth.

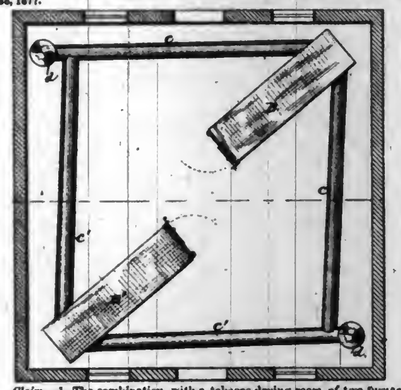
200,788. PEG-CUTTERS. Charles A. Corman, Cochituate, Mass. Filed Jan. 9, 1878.



Claim.—1. The combination of the movable pulley *g* and adjusting-screw with the peg-cutter *h*, substantially as set forth.

2. The combination of the horn *c*, pulleys *d e g*, adjusting-screw *i*, nut *n*, and peg-cutter *h*, substantially as specified.

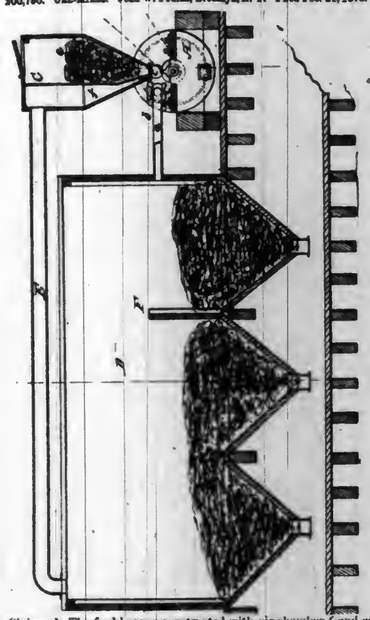
200,789. APPARATUS FOR CURING TOBACCO. Daniel V. Davis, Mocksville, N. C. Filed Dec. 28, 1877.



Claim.—1. The combination, with a tobacco-drying room, of two furnaces, extending from points near diagonally-opposite corners of said house, in the general direction of the center thereof, and horizontal flues extending from the opposite sides of each of said furnaces, and connected at diagonally-opposite corners thereof with flues leading out from said room, substantially as described.

2. The combination, with a drying-room, of the furnaces B B', having their mouths near the center of said room, the flues *c e* and *c' e'*, connected at the corners thereof, and the vertical flues *d d*, substantially as described.

200,790. ORE-MILLS. John W. Foulke, Brooklyn, N. Y. Filed Feb. 21, 1878.



Claim.—1. The feed-hopper constructed with air-chamber *f* and compartment *e*, in combination with the casing A, provided with pipes *c* and *d*, as and for the purposes shown and described.

2. The wedge-shaped hammers, provided with the removable hard-metal faces, in combination with the grinding-wheel, mortised obliquely or wedge-like to properly seat the hammers, which latter are fastened with set-screws, as and for the purposes shown and described.

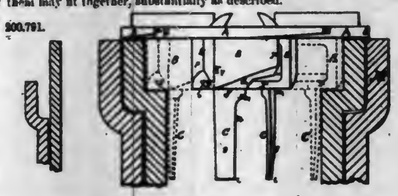
3. The chamber D, provided with the feeder F, in combination with air-tube E, the hopper C, having the compartment *f*, casing A, and tubes *a b*, whereby a continuous current of air is maintained, as and for the purposes set forth.

200,791. MACHINES FOR ENLARGING THE ENDS OF CLAY TUBULAR BODIES AND FORMING COLLARS THEREON. George D. Goodrich, Boston, Mass. Filed Aug. 11, 1877.

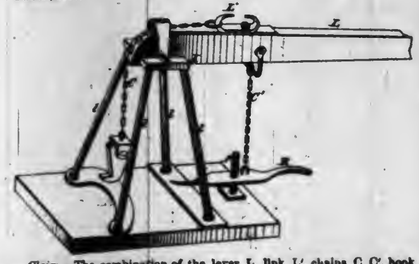
Claim.—1. The combination, with a segmental projection, B, of a finger or prong, C, constructed and arranged to act in relation thereto, substantially as described, for the purpose specified.

2. The segmental projection A, with a notch, *c*, and arm *r*, so that a series of them may fit together, substantially as described.

200,791.



200,792. LIFTING-JACKS. Nathan Hill, Clyde Township, Allegan County, assignor to John K. Divers, same place, John Hill Grand Rapids, and Wm. B. Tripp, Bangor, Mich. Filed Feb. 22, 1877.



Claim.—The combination of the lever L, link L', chains C C', hook H, and ratchet R, when placed in position, constructed, and operated substantially as above described, and for the purposes set forth.

200,793. TRILL-COUPLINGS. Hamilton Howell, Salem, Ohio. Filed Jan. 30, 1878.



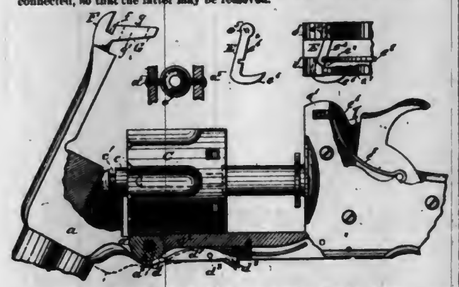
Claim.—1. The cap-plate having a slot, and combined with the clamp-screw bolt, the clip-box, and the cross-head coupling, as described.

2. The clip-box having the raised front and side top shoulders, in combination with the adjustable cap-plate, the cushion, and the clamp-screw, as set forth.

3. The combination, in a thill or pole coupling clip, of the box, the cross-head irons, the horizontal adjustable cap-plate, the cushion, and the clamp-screw, all constructed as and for the purpose herein set forth.

200,794. REVOLVING FIRE-ARMS. Owen Jones, Philadelphia, Pa. Filed Jan. 26, 1878.

Brief.—An engagement between the hinged barrel and the cylinder draws the latter forward, to extract the shells, upon turning the barrel down. By pressing a catch, which, in its normal position, limits the movement of the barrel, a further movement is allowed, by which the barrel and cylinder are disconnected, so that the latter may be removed.



Claim.—1. The combination of the lever-barrel a with the cylinder C, substantially as described, the barrel having an independent pivot-connection, a^2, and being directly united to the cylinder at the center of the same, without intermediate connections, for the purpose of giving movement to the cylinder without strain upon the center-pin, substantially as described.

2. In combination with the lever-barrel having an independent pivot point, a^2, and the studs a^3, the cylinder C, having the central projection *c* and annular groove *c'*, substantially as described.

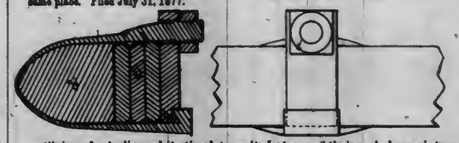
3. The combination of the following elements: a tilting lever-barrel, a removable cylinder, and a movable stop, adapted to permit the movement of the lever-barrel beyond its normal limit, for the removal of the cylinder, substantially as described.

4. In combination with the pivoted catch, held down at each end, substantially as described, the lever-arm having a projecting portion adapted to extend beneath the catch, as described.

5. In combination with the recessed arm of the lever-barrel, the pivoted catch-piece, extending across the arm, and held down at each of its ends, as described.

6. In combination with the recessed arm and catch-piece, the projection G and hammer-head, as described.

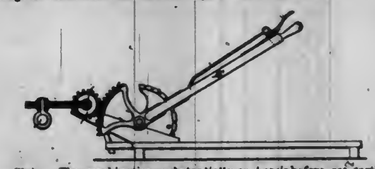
200,795. CLIPS FOR VEHICLES. David Kirk, Orleans, N. Y., assignor to William A. Lamb, same place. Filed July 31, 1877.



Claim.—1. A clip and its tie-plate, united at one of their ends by an interlocking hook.

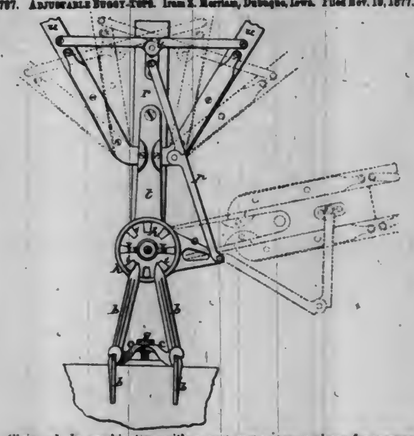
2. The clip at one end formed with a half-dovetail hook, and the cross-tie having a corresponding hook formation, for interlocking one with the other, in combination with a screw-threaded stem and nut, for securing the other end of the tie-plate, substantially as described.

200,796. HARVESTER-REELS. Leander J. McCormick and William R. Baker, Chicago, Ill., assignors to C. H. & L. J. McCormick, same place. Filed June 23, 1876.



Claim.—The combination, substantially as hereinbefore set forth, of the frame, the rock-shaft mounted thereon and supporting the reel, gearing mounted on the rock-shaft, the sector-rack controlled by a hand-lever, and the notched plate and detent, whereby the reel may be adjusted and held in its adjusted position.

200,797. ADJUSTABLE BUGGY-TOPS. Ivan S. Morrison, Dubuque, Iowa. Filed Nov. 10, 1877.



Claim.—1. In combination with a seat and a top, a clamp for securing them together, consisting of the part *b*, having the disk *h* upon its upper end, and the part *c*, supported and moving upon the part *b*, substantially as shown.

2. The clamp for securing the seat and top together, composed of the two parts *b c*, the part *b* having the disk *h* formed upon its upper end, and the part *c* slotted at its outer end to receive a clamping-bolt, *g*, whereby the part *c* may be adjusted back and forth upon the part *b*, substantially as described.

3. In a buggy-top or seat-awning, the perforated disk *h*, forming the top of the seat-clamp *b*, and provided on its outer side with a flange, *l*, upon which the whole top is supported and moves, substantially as specified.

4. The intermediate disk *m*, provided with teeth to catch in the disk *h*, and an arm to fasten the brace *p* to, substantially as shown.

5. The intermediate disk *m*, having the hub Q, upon which the central bow *r* turns, substantially as described.

6. The combination of the disks *h m*, central bow, arm, brace *p*, and bolt or screw *k*, and nut, substantially as set forth.

7. The intermediate toothed disk *m*, adjustable back and forth between the disk *h* and the central bow *r*, and provided with a stop, *s*, to support the top when it is down, substantially as specified.

8. The intermediate toothed disk *m*, adjustable back and forth between the disk *h* and the bow *r*, and which is provided with the arm *s*, flange or hub Q, and stop *s*, substantially as shown.

9. In a seat-cover, the combination of a bow having a limited movement

of its own, a toothed disk to which this bow is connected, and which can be adjusted back and forth, and a disk or support to which the cover and toothed disk are clamped, substantially as specified.

10. In combination with a seat-cover, the brace *p*, located inside of the cover, and the adjustable disk *m*, having the arm *n*, substantially as described

11. In combination with a top that can be raised and lowered and opened and closed, a brace, *p*, for supporting it when up, and a separate brace, *y*, for holding it open, both braces being located inside of the top in easy reach of the driver, substantially as set forth.

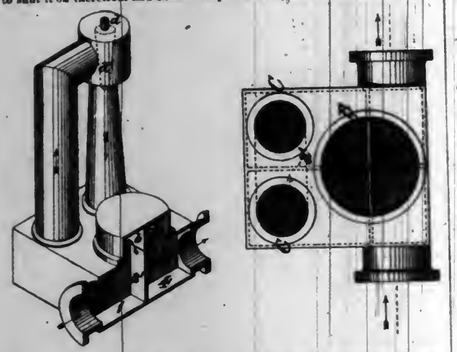
200,798. CAR-AXLES. George W. Millington, Wilmington, Del. Filed Jan. 23, 1878.



Claim.—A car-axle composed of two sections, A A', either or both of which is constructed with an annular groove, C, near the adjacent end of the sections, in combination with a sleeve, B, arranged over and upon the two ends of the sectional axle, and having near one or both ends an annular groove, D, and a series of anti-friction balls, *e*, arranged and inclosed entirely within the said grooves, substantially as set forth.

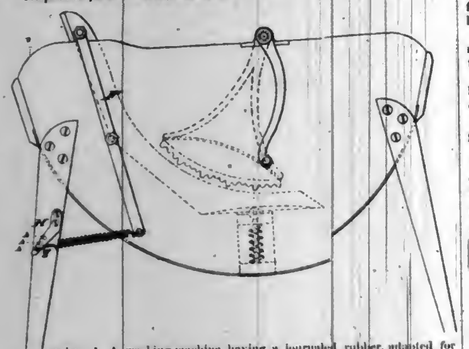
200,799. BY-PASSES FOR GAS-WORKS. Henry G. Morris, Philadelphia, Pa., assignor to H. Morris, same place. Filed Dec. 28, 1877.

Brief.—A steam-jet exhauster is combined with a by-pass valve, the regulating-cap of which latter is turned to direct the gas through the exhauster or to shut it off therefrom and cause it to pass directly through the valve chest.



Claim.—The combination of a case or chest divided by partitions into four chambers, and having supply and discharge nozzles communicating with two of its chambers, respectively, an exhauster having its suction and discharge pipes respectively connected to the other two chambers, and a movable regulator having a partition registering with the partitions of the case, so as to establish communication between the supply and discharge nozzles, either directly or intermediately through the exhauster, substantially as set forth.

200,800. WASHING-MACHINES. W. H. Nicholson, Cincinnati, Ohio, assignor to himself and Joseph M. Stephens. Filed Sept. 22, 1877.



Claim.—1. A washing-machine having a journaled rubber, adapted for both vibratory and rotary motion, and a localized wash-board, whose face presents both a concave and convex surface, substantially as and for the purpose specified.

2. The combination, substantially as specified, of the vibratory rubber, the wash-board, the vertically-yielding spring-frame supporting the lower forward end of the wash-board, and the pivoted vibratory spring-levers, to the upper arms of which the top of the wash-board is pivoted.

3. In combination with the levers F and springs G of the wash-board E, the notched inclined brackets H *h*, substantially as and for the purpose specified.

200,801. MANUFACTURE OF COPPER AND TINNED-COPPER SHEETS. Andrew O'Neill, Baltimore, Md. Filed Jan. 18, 1878.

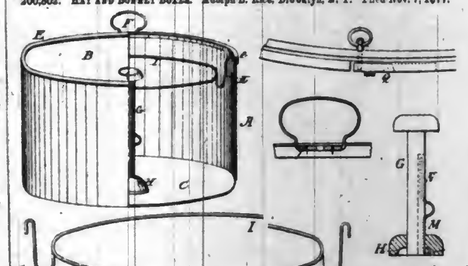
Claim.—1. The method of finishing sheet-copper or tinned-copper sheets, the same consisting in rolling and cross-rolling, and, finally, machine-planishing, as set forth.

2. The method of preparing sheet-copper or tinned copper, consisting in cold-rolling the sheet at right angles, machine-planishing, and, finally, lacquering one or both sides, as set forth.

3. The method of preparing tinned-copper sheets, the same consisting in rolling the copper, pickling, tinning, immersing the plate in an alkaline solution, cross-rolling, machine-planishing, and, finally, lacquering, substantially as described, and for the purpose set forth.

4. A cold-rolled, cross-rolled, machine-planished plate of copper or tinned copper, one or both surfaces being lacquered or not, substantially as described.

200,802. HAT AND BONNET BOXES. Adolph B. Rice, Brooklyn, N. Y. Filed Nov. 7, 1877.



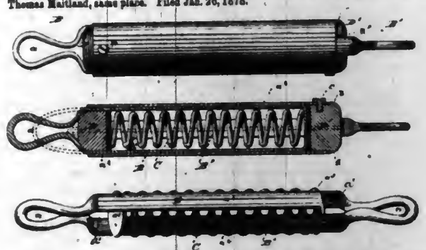
Claim.—1. The box herein described, having the staple of its hinge extended to form a handle for carrying, substantially as set forth.

2. In a hat or bonnet box, the base-piece H, having standard G and spring-catch M, substantially as described.

3. In combination with the box A, having metallic binding-strips e E, the removable ring I, substantially as described.

4. The box herein described, consisting of the walls A of a single strip of wood, bottom C, and hinged lid B, the walls and lid being provided with metallic binding-strips, as set forth.

200,803. TUG-LINES. William P. Riley, Williamsport, Pa., assignor of one-half his right to Thomas Maitland, same place. Filed Jan. 26, 1878.



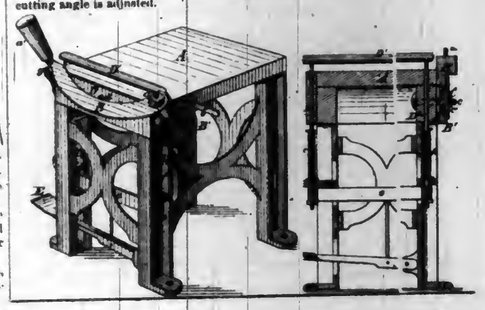
Claim.—1. The combination, with the cylindrical shell, of the broad and flat draft-links B B', and a single cylindrical spring inclosed by such draft-links, substantially as described.

2. In a tug-link, the draft-links B B', having eyes *a*, concave parallel sides a^2, and ends a^3, in combination with the cylindrical spring C, substantially as described and shown.

3. The elastic tug-link described, consisting of the cylindrical shell A, heads D D', the broad and flat draft-links B B', and the inclosed spring C, all constructed, arranged, and combined substantially as described and shown.

200,804. BOOK-BINDERS' BEVELING-MACHINES. Henry W. Rokker, Springfield, Ill. Filed Feb. 20, 1877.

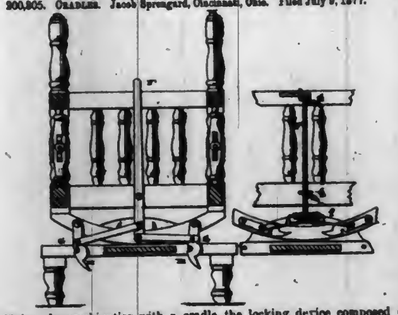
Brief.—The heel of the knife is pivoted to a circular frame having an eccentric opening, in which works a cam or eccentric, by means of which the cutting angle is adjusted.



Claim.—1. In a book-binder's beveling-machine, the combination of the cutting-knife and a movable eccentric bearing, to which the said knife is pivoted, substantially as and for the purpose set forth.

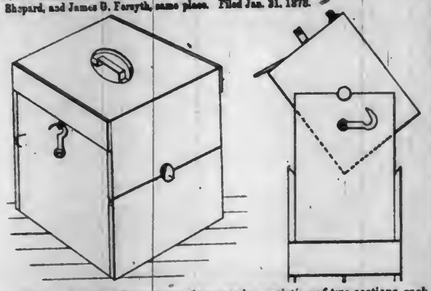
2. In a book-binder's beveling-machine, the combination, with the knife B, of the frame B', cam C, and bolt *c*, constructed and arranged substantially as described and shown.

200,805. CRADLES. Jacob Sprengard, Cincinnati, Ohio. Filed July 9, 1877.



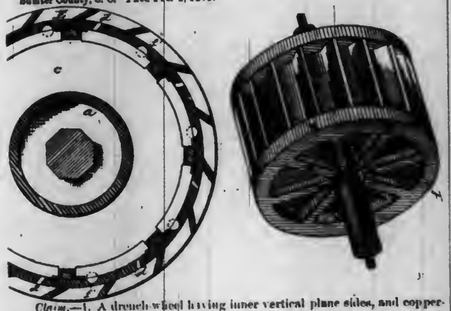
Claim.—In combination with a cradle, the locking device composed of lever F, link G, latches H, and their engaging pins, said latches and pins being secured, the one to the rocker and the other to the base upon which the rocker rests, substantially as shown and described.

200,806. CASINGS FOR CANS. Augustus F. Tripp, Buffalo, N. Y., assignor to himself, Sidney Shepard, and James G. Forsyth, same place. Filed Jan. 31, 1878.



Claim.—A casing for cans or other vessels, consisting of two sections, each having two or more opposite sides longer than its other sides, such longer sides of one section matching the shorter sides of the other section with a binding-joint, substantially as and for the purpose set forth.

200,807. DRENCH-WHEELS FOR HIDES AND SKINS. Isaac Wells, East Hampton, Conn., assignor of one-half his right to James F. Post, Wilmington, N. C., and David D. Barber, Sumter County, S. C. Filed Feb. 1, 1878.



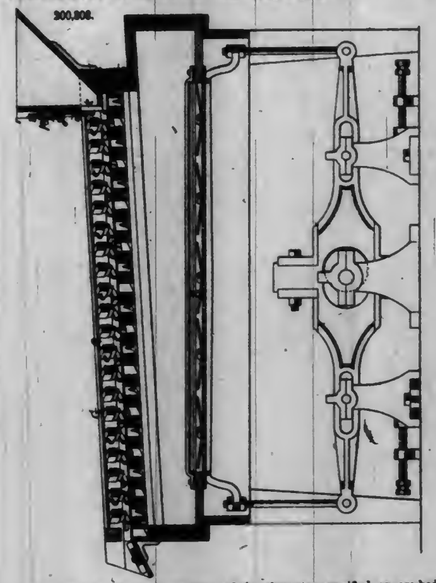
Claim.—1. A drench-wheel having inner vertical plane sides, and copper-covered transverse cleats formed on its interior periphery, the same being provided with the described water-inlet and discharge openings, the latter connecting with channel-ways formed on the interior of the periphery adjacent to each of the transverse cleats, substantially as set forth.

2. A drench-wheel consisting in the combination with siding C, formed on the interior side of supporting-arms B, and provided with discharge-openings *f*, of the periphery E, formed with the double-inclined channels *f'* on its inner side, and provided with the water-inlet openings *d*, substantially as set forth.

200,808. DRY-ORE SEPARATORS. George C. Wetmore, New York, and Francis S. Rice, Ticonderoga, N. Y. Filed Aug. 7, 1877.

Brief.—Ore passes out from the hopper and takes its course over the cloth-covered chambers of the diagonally-inclined ore-bed, but beneath the skimmers, to be discharged at the enlarged tail end. The blast from the bellows and air-box beneath the ore-bed passes through the cloth and drives the lighter particles upon top of the heavy, so as to be guided by the skimmers (which lie upon and at an angle with the chambers and their separating-ribs) to one side, while the heavy portions are guided by the ribs to the other. The heavy and light portions thus pass out at opposite sides of the tail end. The ribs serve to keep the cloth stretched over the chambers while acting as guides.

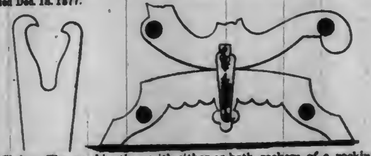
200,808.



Claim.—1. In a dry-ore separator of the character specified, an ore-bed constructed of a series of open frames or sections, extending in a diagonal direction, and each covered with cloth, or its equivalent material, of a series of upwardly-projecting ribs running parallel to said open frames or sections, and of a suitable inclosing-frame, substantially as and for the purpose described.

2. In a dry-ore separator of the character specified, an ore-bed which is enlarged or expanded toward its lower end or tail, and provided with a series of ribs, *e*, in combination with the skimmers *s*, the whole constructed to separate the heavy from the lighter portions of the ore, and discharge the same on opposite sides at such enlarged lower portion of the ore-bed, substantially as specified.

200,809. ROCKING-CHAIRS. Siegfried Willershausen and Frank Rheuer, New York, N. Y. Filed Dec. 12, 1877.



Claim.—The combination, with either or both rockers of a rocking-chair and a chair-supporting frame, of a pin secured to the rocker or rockers, a spring which is connected to said pin at one end and to the supporting-frame at its other end, and of an upwardly-projecting slotted plate secured to said supporting-frame, the slot in said plate being constructed to embrace the pin, and to form both a guide and stop for the latter, and provided with an opening to permit the removal of the chair, substantially as described.

200,810. DOOR-PLATES. Bryce A. Wilson, Providence, R. I. Filed Mar. 1, 1877.



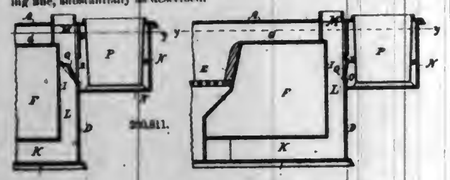
Claim.—As a new article of manufacture, the herein-described door-plate, consisting of the metal disk *a a'*, paper name-disk *b*, convex glass disk *c*, united and arranged with respect to each other as shown and set forth, and the attaching-screw *d*.

200,811. COOKING-STOVES. Garden G. Wolfe, Troy, N. Y., assignor to Wiltsie F. Wolfe, same place. Filed July 10, 1873.

Claim.—1. In a cooking-stove having a top flue, G, lateral descending flues H H, and central ascending flue L, as set forth, the chamber O, adapted to receive and contain a water-reservoir in rear of the descending and ascending flues, and open to the descending flues and flue over the oven, and formed by the rearwardly-extending side, end, and bottom plates N, and rim-like top plate, and having the valve Q in the rear side of the ascending flue, substantially as described.

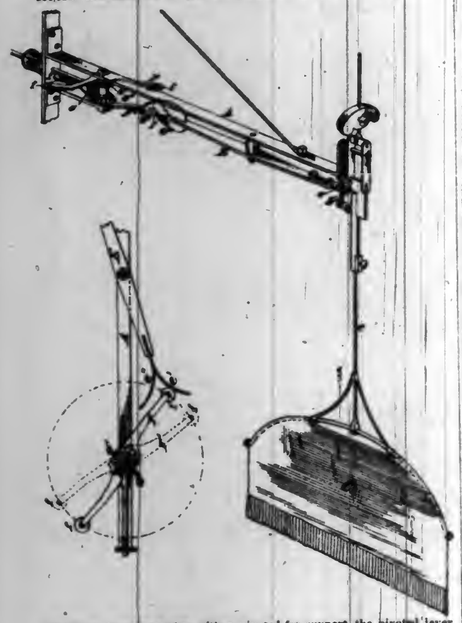
2. In a cooking-stove having a top flue, G, descending flues H H, and

ascending flue L, as set forth, the chamber O, formed by the rearwardly-extending side, end, and bottom plates N and rim-like top plate, and open to the descending flues and to the flue over the oven, inclosing a water-reservoir, P, and having a passage, R, between the ascending flue and the front side of the reservoir, and the forwardly-tilting valve Q in the rear side of the ascending flue, substantially as described.



200,811.

200,812. AUTOMATIC FANS. Ignaz Zettl, Cincinnati, Ohio. Filed July 28, 1877.



Claim.—1. In combination with a pivoted fan-support, the pivoted lever E *e e'* and oppositely revolving arms F F', driven by suitable motive power, to operate substantially for the purpose specified.

2. In combination with a pivoted fan-frame, the lever E, having the connecting-fork *e*, operating substantially as and for the purpose specified.

200,813. DUMPING-CARS. Matthew Van Werner, Dayton, Ohio. Filed Feb. 8, 1878.



Claim.—1. The combination of the iron bars E and F F and rod I, disposed relatively to each other, and to the car-bed and sills, substantially as shown and described, and for the purposes set forth.

2. The bent iron bar I, placed between the inner sills C C, in combination with the short timber N, draw-bars P P, bolts *r r*, and flanges *n o* of the king-bolt socket.

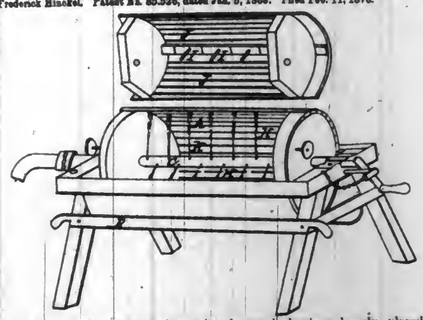
3. The socket H, having thick overlapping flanges or lips *g g*, and bolt-holes through them at the elevated points described, in combination with the jointed rocker-king bolt, and with the bolt *t*, passing through both flanges and through the head of the bolt, substantially as shown and described.

4. In combination with the iron transom, constructed as described, and with the sills C D, the extra floor-sills C' D', adapted for a level though raised car-floor, while permitting the bed-timbers to be practically on a level with ordinary merchandise cars.

5. The bolster-piece V, having its top beveled off downward toward its ends, as set forth, and provided with the metal-faced spaces or recesses *v'*, adapted for the sustaining and shifting thereon of the side bearings, as and for the purposes set forth.

REISSUES.

8,099. WASHING SHAVINGS IN BREWERIES. Edwin D. Braisard, Albany, N. Y., assignee of Frederick Hinckel. Patent No. 85,536, dated Jan. 5, 1869. Filed Feb. 11, 1878.



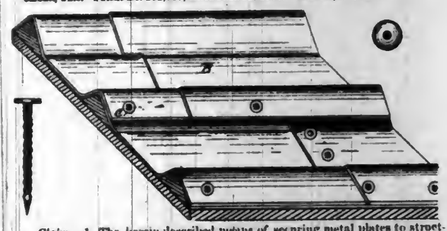
Claim.—1. The process of treating brewers' shavings loosely placed together in a vessel supplied with jets of water, substantially as described.

2. The process of treating brewers' shavings with jets of water while such shavings are being rotated or agitated in a vessel, substantially as described.

3. The combination of a vessel capable of rotation on its axis with means for producing jets of water within it, substantially as described.

4. A vessel capable of rotation on its axis, in combination with a perforated pipe for producing jets of water within such vessel, substantially as described.

8,100. METHODS OF SECURING METAL PLATES TO STRUCTURES. William O. Hyndman, Cincinnati, Ohio. Patent No. 191,763, dated June 12, 1877. Filed Sept. 7, 1877.



Claim.—1. The herein-described means of securing metal plates to structures, which consists of a pointed wire nail having its body or shank barbed or roughened, in connection with a washer of soft material, substantially as and for the purpose set forth.

2. The herein-described means of securing metal plates to structures, which consists of a pointed wire nail having a round head, and its body or shank barbed or roughened, in connection with a washer of soft material, substantially as and for the purpose specified.

8,101. CULINARY ATTACHMENTS TO BASE-BURNING HEATING-STOVES. Jeremiah Dwyer and George E. Barbour, Detroit, Mich., assignors to Michigan Stove Company, same place. Patent No. 195,109, dated Sept. 11, 1877. Filed Dec. 8, 1877.



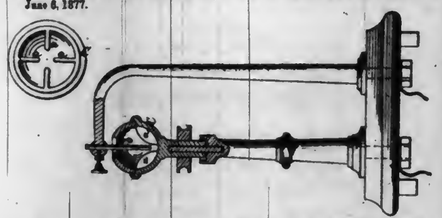
Claim.—1. The portable culinary attachment B, adapted to fit the back and flue-case or exit of a base-burning heating-stove, substantially as described.

2. In a portable culinary attachment adapted to fit the top of the rear vertical flue-inclosure of a base-burning heating-stove, the combination of the chamber C, the bottom and front of which are formed by the body of the stove, with usual exit *d* as an ingress-flue to said chamber, and the exit-flue *a'* as an egress-flue, substantially as and for the purposes set forth.

3. In a base-burning heating-stove, and covering the top of the rear flue-inclosure thereof, a portable culinary attachment, having the bottom and one side of the chamber inclosed by it formed by the body of the stove, provided with a boiler-hole in its top, situated immediately, or nearly so, over the exit-flue of the stove, when the attachment is in place and in front of the exit-flue of the attachment.

4. In a base-burning heating stove, a portable culinary attachment, the front and bottom of which are formed by the body of the stove and the top of the flue-chamber, having an upward exit near the rear thereof, and a boiler-hole between such exit and the body of the stove, substantially as and for the purposes set forth.

8,102. DYNAMO-ELECTRIC MACHINES. Edward Weston, Newark, N. J., assignor of one-half interest to Roberts & Havell, same place. Patent No. 182,977, dated Oct. 3, 1876. Filed June 6, 1877.



Claim.—1. For use in combination with a dynamo-electric machine, a mechanical switch operated by a mechanical connection with the machine, or with the driving-power thereof, for automatically opening or closing an external electric circuit, and holding such circuit open or closed, according to the speed of the machine, substantially as described.

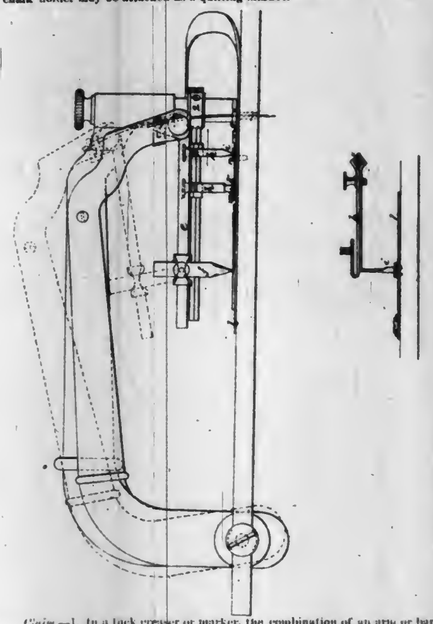
2. A dynamo-electric machine and an electroplating or electrotyping vat, respectively included in the same electric circuit, in combination with a short circuit provided with an automatic switch, adapted to close the short circuit concurrently with any given diminution in the strength of the currents resulting from a diminution in the speed of rotation of the dynamo-electric machine, for the purpose of providing a path through which the reverse current from the electrodes in the vat may flow without flowing through the machine.

3. A section of an electric circuit, composed of a rotating mass of fluid, adapted to occupy different positions in or out of the circuit, when subjected in the one case to the preponderating influence of gravity, or, in the other case, to the preponderating influences of the centrifugal forces generated by its own rotation.

4. In combination with a magneto-electric machine, a switch operated or controlled by means of a belt or other mode of transmitting power from a revolving shaft, and an adjustable wire or other piece of metal, the whole being arranged to open or close a circuit between the machine and an external conductor when the speed of the machine reaches a certain point.

8,103. MECHANISMS FOR MARKING CLOTH IN SEWING-MACHINES. Henry W. Fuller, Brooklyn, N. Y., assignor, by mesne assignments, to Isaac W. Barnum. Patent No. 28,633, dated June 5, 1860; extended seven years. Filed Oct. 20, 1877.

Brief.—The marking devices are supported on a spring-arm connected with a rod projecting from the presser, and in their natural position are above the cloth. Under the notched device is an adjustable block with a raised edge, and under the edged device is a groove. As the needle-bar descends, a projection thereon causes the markers to strike down upon the cloth, producing creases (one upward and the other downward) which are always parallel to the line of stitching, and may be adjusted to the distances desired. A pencil or chalk holder may be attached as a quilting-marker.



Claim.—1. In a tuck-creaser or marker, the combination of an arm or bar supporting a spring-arm at right angles to it, carrying a marker, a bed-plate resting on the bed-plate of the sewing-machine supporting a marker, and an arm or bar adapted to be operated by the needle-arm of said machine striking and forcing down the spring-arm carrying the upper marker, for the purposes specified.

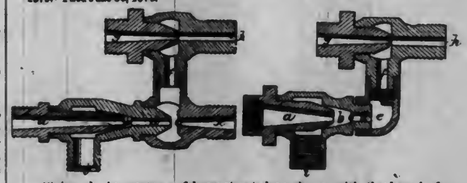
2. The combination, with the bed-plate supporting a marker, of a vibrating arm carrying a second marker and connecting mechanism, substantially as specified.

3. A tuck-creasing mechanism and a sewing-machine arranged, connected, and combined together substantially as described, so that one tuck may be sewed and a fold creased parallel thereto for a succeeding tuck simultaneously therewith, substantially as set forth.

4. The combination, with the stitch-forming and feeding mechanism of a sewing-machine, of two or more creasing-markers arranged above and below the cloth, whereby a continuous crease is marked in the cloth parallel to a seam being sewed therein, substantially as specified.

5. In combination with the needle arm or bar of a sewing-machine, and vibrating therewith, an arm carrying a pencil-point or other pigment to mark a line on the surface of cloth parallel to the line of seam as set forth.

8,104. INJECTORS. George H. Little, Peabody, Mass. Patent No. 165,843, dated July 20, 1875. Filed June 30, 1876.



Claim.—1. An ejector, *g f h*, constructed as shown, with the bore *h* of a uniform larger diameter than the outlet of the tapering bore *g*, for raising water.

2. In combination with an injector, an ejector, *g f h*, constructed, as shown, with the bore *h* of a uniform larger diameter than the outlet of the tapering bore *g*, and attached to the overflow of the injector, as shown, to raise water for the injector.

3. An ejector carrying a solid jet of steam for lifting, and so arranged in relation to the overflow and steam-jet of an injector as to aid the injector in forcing water.

4. An ejector carrying a solid jet of steam, attached to an injector carrying a solid jet of steam, each complete in itself, and capable of being worked independently or together.

5. In combination, the steam-tube for forcing water, the auxiliary tube for drawing water at starting, and the priming-chamber *o*, all substantially as shown, and for the purpose described.

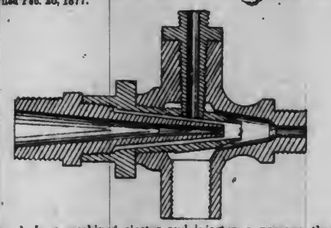
6. The priming-chamber *o*, constructed and applied to the injector, substantially as shown and set forth.

7. A priming-chamber, *o*, applied as set forth, in combination with the suction-tube, and whereby a space is provided around said tube for holding or receiving water for an injector.

8. The adjustable suction-tube *p*, in combination with and projecting into and within the priming-chamber, for the purpose of varying the quantity of water which may be received into and delivered from said chamber.

9. In a combined injector and ejector, the tubes *a* and *g*, interchangeable one with the other, whereby the lifting-tube may be used as the forcing-tube, and vice versa.

8,105. INJECTORS. George H. Little, Peabody, Mass. Patent No. 165,843, dated July 20, 1875. Filed Feb. 20, 1877.



Claim.—1. In a combined ejector and injector, a passage through the ejector adapted for carrying a solid jet or current of steam within and through the regular steam-tube of the injector, the combination being such that the injector and ejector may each have its own independent supply of steam.

2. In a combined ejector and injector, the steam-tubes *a'*, *a*, and *g*, and the water-inlet *f* and outlet *b*, these parts being arranged and operating substantially as and for the purpose set forth.

3. The steam-tube of an ejector arranged within the forcing-tube of an injector, having a supply of steam independently of such ejector, and adapted to create a vacuum or partial vacuum in the mixing chamber or tube of the injector, and to combine the two jets of steam after the water has been lifted, such combined jets operating to force the water into the boiler or against other pressure.

4. The two independent steam-tubes, arranged, relatively to each other and to the water-tube, substantially as set forth, whereby one water inlet and outlet serves for both the ejector and injector, or for either.

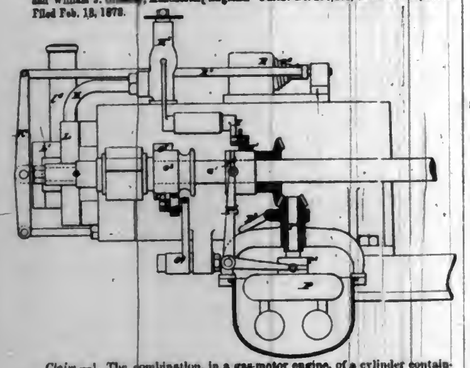
8,106.



8,106. CLASPS FOR POCKET-BOOKS. Louis Meeser, New York, N. Y., assignor to Zinn & Meeser, same place. Patent No. 155,110, dated June 29, 1875. Filed Feb. 16, 1878.

Claim.—The combination, in a spring-clasp, of a shell, which forms the base or supporting plate, a cap provided with a tail-piece adapted to engage with said shell and allow the cap to swing up and down, a spring secured to the shell and bearing upon the tail-piece of the cap, and a stud fixed upon the base-plate, and arranged to operate substantially in the manner and for the purpose herein described.

8,107. GAS-MOTOR ENGINES. Nicolaus A. Otto, Deutz, Germany, and Francis W. Crossley and William J. Crossley, Manchester, England. Patent No. 196,473, dated Oct. 23, 1877. Filed Feb. 18, 1878.



Claim.—1. The combination, in a gas-motor engine, of a cylinder containing a weak or diluted combustible uniform mixture of gas and air with a separate passage or chamber containing a strong or undiluted mixture of gas and air, and provided with an igniting slide or valve, substantially as set forth.

2. The combination, in a gas-motor engine, of the cylinder and slide-chamber, containing the igniting-flame, with a suitable device for producing an equilibrium of pressure therein just before said slide-chamber opens into the cylinder, substantially as set forth.

3. The combination, with the main cylinder of a gas-motor engine and its slide, of intermediate appliances, substantially as described, whereby the pressure in the main cylinder acts upon the slide to cause a close contact between said slide and the face on which it works, and so that the slide is relieved of pressure at all times when such close contact is not required.

4. In a gas-motor engine, the central passage I to the cylinder, operating in combination with the slide F, gas-pipe M, and valve M^1, lever N, and cam N^1 N^2, constructed as described, for first introducing a weak charge of gas and air into the cylinder, and then a strong charge into the said passage, substantially as and for the purpose herein set forth.

5. In a gas-motor engine, the passage I, made to project centrally into the cylinder, whereby the air and gas entering through the same become uniformly mixed with each other and with the gases already contained in the cylinder, substantially as herein described.

6. In a gas-motor engine wherein the charge is under compression, the passage f^3 in the slide, communicating with the cavity f^2, and so formed as to communicate with the interior of the cylinder just before the cavity f^2 communicates directly therewith, in order to establish an equilibrium of pressure between the cylinder and slide-cavity, substantially as herein described.

7. In a gas-motor engine, the cylinder B, communicating with the cylinder B, and having a piston, B^1, acting on a lever, R^1, so as to press the slide against the cylinder face when excess of pressure exists in the cylinder B, substantially as and for the purpose herein described.

8. In a gas motor engine, a cam for working the gas-valve, arranged to be slid by the governor entirely to one side of the lever of the gas-valve when the engine runs too fast, so that the cam cannot effect the opening of the gas-valve until the speed of the engine is reduced, substantially as and for the purpose herein described.

9. In a gas-motor engine, a cam for working the gas-valve, arranged to be slid by the governor entirely to one side of the lever of the gas-valve when the engine stops, so that the cam cannot be in position for holding the gas-valve open when the engine stops, substantially as described.

10. In combination with a sliding cam for working the gas-valve, and operating as set forth, a strut for temporarily holding the cam in position for actuating the gas-valve while the engine is being started, substantially as herein described.

11. In a gas-motor engine, the combination, with the exhaust-valve, of a cam or equivalent device, whereby the valve is held open during the first part of the first compressing-stroke on starting the engine, substantially as and for the purpose set forth.

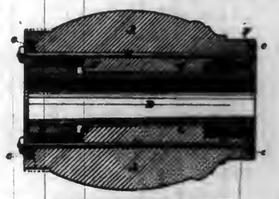
12. The before-described improved gas-motor engine, wherein a weak combustible charge in the cylinder is fired by a strong combustible charge in a separate passage, in combination with means, constructed substantially as shown, for establishing an equilibrium of pressure between the cylinder and the slide-cavity containing the igniting-flame, and for causing the pressure in the cylinder to affect the requisite close contact between the slide and the face against which it works.

8,108. NUBS FOR CARRIAGE-WHEELS. John Boddis, Lynn, Mass. Patent No. 102,706, dated May 3, 1870. Filed Jan. 10, 1878.

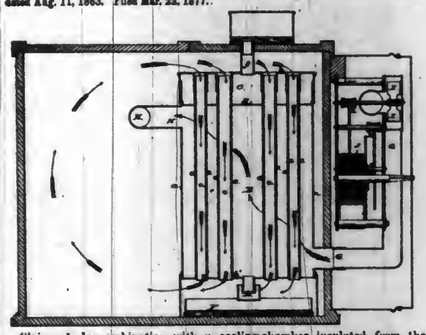
Claim.—1. In combination with the hub A, the metal box B and the elastic tubes or rings D, which surround the ends of said box within the recesses *a'* of said hub, the collars C fitted within said tubes over the ends of said box, and provided with radial flanges *c*, that extend outward over the ends of said tubes and over the ends of said hub, and each capable of an independent inward motion over said box, so as to cause said tubes to be compressed longitudinally and expanded radially within their said recesses, substantially as and for the purpose specified.

2. In combination with the compression-collars C and elastic packing D, sheet metal interposed between said parts, substantially as and for the purpose shown.

8,108.



8,109. REFRIGERATING APPARATUS. John L. Albergo, Buffalo, N. Y. Patent No. 30,466, dated Aug. 11, 1863. Filed Mar. 22, 1877.



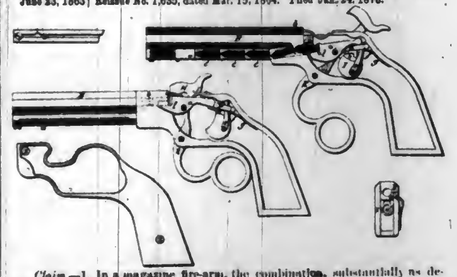
Claim.—1. In combination with a cooling-chamber insulated from the external air, a closed chamber or box fitted with a series of tubes or plates, to the surface of which the refrigerant is supplied, combined with a blower to cool the pipes by evaporating the refrigerant with a forced current of air.

2. A refrigerating apparatus consisting of a closed chamber or apartment insulated from the external air, and fitted with a series of cooling pipes or plates, combined with an external reservoir to contain the refrigerant, and from which it is made to flow or circulate over the surface of the cooling-pipes to cool the atmosphere within the apartment.

3. A refrigerating apparatus consisting of a closed chamber insulated from the external air, and fitted with a series of cooling pipes or plates, combined with an external reservoir to supply the refrigerant, a separate chamber, combined with the cooling pipes or plates, and connected to the external reservoir, for the purpose of distributing the refrigerant evenly upon the surface of the pipes or plates, substantially as shown by C.

4. In combination with a closed preserving-chamber, insulated from the external air, and combined with a refrigerating-chamber, a blower arranged to force a current of air through or over the refrigerant, by which the temperature of the air in the preserving-chamber is reduced and its circulation and distribution augmented.

8,110. MAGAZINE FIRE-ARMS. Albert Ball, Worcester, Mass. Patent No. 38,935, dated June 23, 1863; Reissue No. 1,635, dated Mar. 15, 1864. Filed Jan. 24, 1878.



Claim.—1. In a magazine fire-arm, the combination, substantially as described, of a barrel and magazine, both open at the breech, a frame to which the barrel and magazine are attached, and constructed with a vertical chamber in rear of said open end of barrel and magazine, with an opening through the side of the frame in rear of the magazine, through which the magazine is charged.

2. In a magazine fire-arm, the combination, substantially as described, of a barrel and magazine, both open at the breech, an opening in the side of the frame, through which the magazine is charged, and a carrier to receive a cartridge from the magazine and present it in line with the bore of the barrel.

3. The combination of the locking-piece P, the spring *g*, and catch *f* with the tumbler I and the carrier *o*, the whole being constructed and arranged in manner, and so as to operate, substantially as described.

4. In a magazine fire-arm, the carrier constructed, as described, so as to receive within it a cartridge from the magazine, to raise it up to the barrel or charge-chamber thereof, to form part of and serve as a breech to such chamber, and finally to withdraw the shell of the cartridge therefrom, all substantially as described.

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THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE

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COMMISSIONER'S DECISIONS.

EDWIN L. PAINE.—*Motion.*

[*In the matter of the application of Edwin L. Paine, for letters patent for an* "IMPROVEMENT IN ELECTRO-MAGNETS," *filed October 8, 1877, and allowed January 19, 1878.—Decided February 20, 1878.*]

MOTION TO SUSPEND ISSUE.

In determining to whom a patent shall issue it is neither the duty nor within the power of the Office to reform or cancel assignments, or make decrees on the equitable rights of parties, based upon extrancons or *ex parte* proof.

There being conflicting claimants to ownership in an invention for which letters patent were to issue, he was excluded from the grant whose assignment deed did not certainly identify the invention in controversy with the one which the deed conveyed.

It is a mere license, and not such an assignment as will include a party in the grant of letters patent, which reserves to the assignor certain uses of the invention the patent is intended to secure.

Where an application is withheld from issue for the sole purpose of ascertaining who is a legal assignee to be included in the grant, an assignment deed will be considered, even though filed of record subsequently to the payment of the final fee.

A suit in equity to fix title of contesting claimants to an invention will not justify the detention of an application for patent therefor, which has been passed to issue.

[*Wiedersheim & Co., and Baldwin, Hopkins & Peyton*, attorneys for applicant; *J. C. Clayton*, attorney for Albright, assignee.]

DOOLITTLE, *Acting Commissioner:*

October 8, 1877, applicant filed an application for a patent for "a new and useful improvement in electro-magnets." He stated therein that—

the object of my invention is to simplify the construction of that class of electro-magnets required for percussive action, as in dental pluggers, telegraph-sounders, and electro-magnetic stencil-tools.

The claim allowed reads as follows:

I claim the combination of the bobbin A, the continuous shell B, and the paramagnetic armature D, placed within the shell and below the top edge of the same, being substantially an improvement in electro-magnets.

The application was allowed January 19, 1878.

The question is, To whom shall the patent issue, in view of certain assignments, or instruments purporting to be such, now on record in this Office?

Sec. 4895, R. S., provides that—

Patents may be granted, and issued or reissued, to the assignee of the inventor or discoverer; but the assignment must first be entered of record in the Patent Office. And in all cases of an application by an assignee for the issue of a patent, the application shall be made, and the specification sworn to, by the inventor or discoverer, &c. * * * *

Sec. 4898, R. S., provides that—

Every patent or interest therein shall be assignable in law by an instrument in writing; and the patentee, or his assigns or legal representatives, may in like manner grant and convey an exclusive right, under his patent, to the whole or any specified part of the United States. An assignment, grant, or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration without notice, unless it is recorded in the Patent Office within three months from the date thereof.

These are all the provisions of the law relating to assignments of patents or interests therein based upon an original application. There are other provisions relating to assignments of reissue patents, which are not pertinent to the present inquiry. The section last cited has been held by the courts to be substantially the same in its provisions as the eleventh section of the act of 1836. (*Turnbull* vs. *Weir Plow Company*, 7 OFFICIAL GAZETTE, 173.) And that act, so far as assignees, grantees, and licensees are concerned, has been construed as follows:

There are three classes of persons in whom the patentee can vest an interest of some kind in the patent. They are an assignee, a grantee of an exclusive sectional right, and a licensee. An assignee is one who has transferred to him in writing the whole interest of the original patent, or an undivided part of such whole interest in every portion of the United States. And no one, unless he has such an interest transferred to him, is an assignee. A grantee is one who has transferred to him in writing the *exclusive* right, under the patent, to make and use, and to grant to others to make and use, the thing patented, within and throughout some specified part or portion of the United States. Such right must be an *exclusive* sectional right *excluding* the patentee therefrom. A licensee is one who has transferred to him, in writing or orally, a less or different interest than either the interest in the whole patent, or an undivided part of such whole interest, or an exclusive sectional interest. (*Potter* vs. *Holland*, 1 Fish., 327; *Meyer* vs. *Bailey*, 8 OFFICIAL GAZETTE, 437.)

In recognition of this doctrine and to govern proceedings in such cases, Office Rule 2 prescribes:

In case of an assignment of the whole interest in the invention or of the whole interest in the patent, if granted, the patent will issue to the assignee, upon the request of the latter or his assignor; and so, if the assignee holds an undivided part interest, the patent will, upon a similar request, issue jointly to him and the inventor; but the assignment must first have been entered of record, and at a day not later than the date of the payment of the final fee.

It would appear to be simply the duty of the Office in issuing patents, in view of certain assignments and requests made therein, to consider the language of the assignments, and if an intelligible direction can be derived therefrom to give it force. It is neither the duty nor within the power of the Office to reform or cancel assignments, or make decrees on the equitable rights

of parties based upon extraneous or *ex parte* proof. As held by the Commissioner in the case of Edison, (7 OFFICIAL GAZETTE, 423:)

The issue before the Commissioner is, To whom shall the patents be granted? In determining this question the Commissioner must be guided entirely by the record. He has not the authority of a court to consider evidence outside the record as to outstanding equities. The only question that he can decide is, Who on the record possesses the *legal* title to these inventions? He must issue the patents accordingly, if the requirements of the Office, in such cases provided, have been complied with.

The first assignment to which attention has been called is that of applicant, Edwin L. Paine, of Essex county, State of New Jersey, to Henry M. Paine, of the same county and State, dated May 24, 1877, and recorded June 25, 1877. This assignment sets forth that, whereas said Edwin L. Paine has invented certain new and useful improvements in electro-magnetic stencil-tools, for which he is about to make application for letters patent; and that Henry M. Paine is desirous of acquiring an interest in the said invention and in the letters patent to be obtained therefor, he, therefore, in consideration of the sum of $1 and other valuable considerations, sells and assigns, transfers and sets over unto the said Henry M. Paine the full and exclusive right to said invention, as fully set forth and described in the specification prepared and executed by him the 24th day of May, 1877, preparatory to obtaining letters patent of the United States therefor, and he thereby authorizes and requests the Commissioner of Patents to issue the said letters patent to the said Henry M. Paine as an assignee of his entire right, title, and interest in and to the same for the sole use and behoof of the said Henry M. Paine and his legal representatives.

It will be seen that the invention here alluded to was identified as having been described and set forth in a specification prepared and executed by Edwin L. Paine on the 24th day of May, 1877. No specification of that date has been filed in this Office. The application on which the present dispute arises was executed September 22, 1877, and filed, partially complete, October 8, 1877, the drawings not having been filed until October 20. And this application is not for an improvement, as described in the above assignment, in "electro-magnetic stencil-tools," but as an improvement in electro-magnets generally, so that we must put entirely out of consideration the assignment mentioned as one not certainly identified with the present application.

The next instrument in order of date is an assignment made June 12, 1877, recorded November 9, 1877, from Henry M. Paine to Edwin L. Paine, reciting that, whereas, by the assignment above named, made on the 24th of May, 1877, Henry M. Paine is the sole owner of certain improvements made by the said Edwin L. Paine in "electro-magnets;" and that, whereas the said Edwin L. Paine is desirous of acquiring the use of the said improvements in the construction of relay instruments and sounders for telegraphic purposes, Henry M. Paine, for and in consideration of $1, sells, assigns, and transfers unto the said Edwin L. Paine all the right, title, and interest that said Henry M. Paine may possess by virtue of the issue of letters patent for said improvement in electro-magnets, when the same shall be applied to telegraph relay instruments and sounders; the same to be held and enjoyed by the said Edwin L. Paine for his own use and behoof, and the use and behoof of his legal representatives, for the full end of the term for which letters patent are or may be granted, &c.

This assignment purporting, but incorrectly so, to cover the invention set forth in the previous assignment of May 24, 1877, which had relation to an application for a patent executed on the same day, cannot be regarded as covering in terms the application now in question.

The next instrument was executed by E. L. Paine, September 22, 1877, recorded January 25, 1878. This instrument recites that—

Whereas, I, Edwin L. Paine, of the county of Essex, State of New Jersey, and city of Newark, have invented a new and useful improvement in telegraph-sounders, for which I have this day executed and I am about to make application for letters patent of the United States; and

Whereas, Andrew Albright, of the same place, is desirous of acquiring an interest in said invention, and in the letters patent to be obtained therefor—

Now, therefore, to all whom it may concern be it known, that, for and in consideration of $1.00 and other specified considerations, the receipt of which is hereby acknowledged, I, the said Edwin L. Paine, have sold and assigned, set over, and do hereby sell, assign, and set over unto the said Andrew Albright one undivided half interest in my improvement in telegraph-sounders, and do hereby authorize and request the Commissioner of Patents to issue the letters patent for the same to said Andrew Albright for the use and behoof of the said Andrew Albright and the said E. L. Paine and their legal representatives. In testimony whereof I have hereunto set my hand and affixed my seal this 22d day of September, 1877, &c.

As stated, this instrument was executed on the same day with the application now before the Office. This application is not confined to an improvement in telegraph-sounders alone, but in one place is described as an improvement in telegraph-sounders, and in another as an improvement in electro-magnets generally. The drawing accompanying said application represents the improvement as applied to a telegraph-sounder, and as the undivided half interest mentioned is not for the *use* of the improvement when applied to telegraph-sounders, but an undivided half interest in the entire application executed on that day and about to be filed, as the Commissioner of Patents is directed to issue letters patent for the same jointly to said Albright and said Paine, and, as there is no other application of Edwin L. Paine before the Office, this assignment must be regarded as having relation to the entire invention covered by such application, of which Andrew Albright is owner of an undivided one-half interest, and to whom jointly with the inventor the patent must issue, if not otherwise directed by subsequent assignments from one or both the same parties before the issue of the patent.

The next instrument is one executed November 5, 1877, recorded November 7, 1877, and is an assignment from E. L. Paine to Silas C. Halsey, of Newark, N. J.; in which, for due consideration, Paine sells and assigns unto the said Halsey "all his right, title, and interest in and to a certain invention in telegraph-sounders, being an undivided one-half, as fully set forth and described in a specification of which he, in union with Albert Albright, assignee of one-half of the invention, applied for a patent from the United States, which application was filed in the Patent Office October 4, 1877; and he thereby authorizes and requests the Commissioner of Patents to issue the said letters patent unto the said Silas C. Halsey jointly with said Albert Albright, their heirs and assigns." It is recited, however, that this deed is made a collateral security for a certain sum of money, on the condition that said Paine should apply for a patent upon an improvement in a telegraph-relay, which he had assigned to said Halsey, and which application Paine therein agreed to file, and to proceed

to practically and successfully develop the invention and obtain a patent thereon.

In this instrument the name of Albright is given as Albert Albright; but as the application is correctly referred to as having been filed October 4, 1877, it identifies Albert Albright as the same person as Andrew Albright in the previous assignment, referring to the same application, and which was executed September 22, 1877.

Since this matter was argued, Silas C. Halsey filed an assignment, dated January 31, 1878, recorded February 9, 1878, assigning to Andrew Albright all his right, title, and interest in said invention, as recorded in Liber F., 22, p. 472, being the one just referred to.

There are two other instruments to be considered, both of which were executed on the 21st day of January, 1878. The first is from E. L. Paine to Charles H. T. Collis, trustee for William J. Philips, *et al.*, of Philadelphia, Pennsylvania, and is as follows:

Whereas, Letters patent of the United States were allowed me, Edwin L. Paine, of the city of Newark, State of New Jersey, on the 19th day of January, 1878, for improvements in electro-magnets; and

Whereas, William J. Philips, Daniel S. Robeson, and others, of the city of Philadelphia, State of Pennsylvania, are desirous of acquiring an interest in the same—

Now, therefore, to all whom it may concern, be it known that, for and in consideration of the sum of $1.00, to me in hand paid, the receipt of which is hereby acknowledged, I, the said Edwin L. Paine, have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over unto Charles H. T. Collis, in trust for the said Philips, Robeson, and their associates, all the right, title, and interest whatever which I have in and to the said invention, in and to the letters patent therefor aforesaid, (always excepting and the use of said improvements in the manufacture, sale, and use of the same of telegraph-sounders and telegraph-relay instruments,) the said to be held and enjoyed by the said Charles H. T. Collis, in trust as aforesaid, for the use and behoof of said Philips, Robeson, and their associates, and for the use and behoof of their legal representatives, to the full end of the term which said letters patent are or may be granted, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made.

In testimony whereof I have hereunto set my hand and affixed my seal this 21st day of January, 1878.

No request is made herein as to the issue of the patent. The instrument must be regarded as simply giving to the assignees a right to make, sell, and use the invention in all connections, excepting that relating to telegraph-sounders and telegraph-relay instruments.

An *assignment*, as above held by the Supreme Court, must be for the entire monopoly or an undivided interest therein for the whole country or a specified part thereof. Such an instrument as this, which proposes to confine an invention to a particular use or uses, is not an assignment at all, but is a mere *license*. (*Blanchard* vs. *Eldridge*, 1 Wall, Jr., 337; Curtis on Patents, Sec. 212.)

The second transfer from the inventor to the same parties, made on the same day, but recorded January 25, 1878, is as follows:

Whereas, I, Edwin L. Paine, of the city of Newark, State of New Jersey, did execute and deliver to Charles H. T. Collis, of the city of Philadelphia, trustee for William J. Philips, Daniel S. Robeson, and their associates, by writing, dated January 21, 1878, all my right, title, and interest in and to certain letters patent allowed me for improvements in electro-magnets; and whereas said assignment excepted from the provisions thereof the use of said improvement for the manufacture, sale, and use of the same for telegraph-relay instruments—

Now, therefore, be it known that, for and in consideration of the sum of $1.00, to me in hand paid, the receipt whereof I do hereby acknowledge, I do hereby include the assignment of said improvement for the manufacture, sale, and use of the same for telegraph-relay instruments as fully as though the same were not excluded from the original assignment bearing even date herewith. Witness my hand and seal this 21st day of January, 1878.

Reference to telegraph-sounders is omitted from this latter instrument; its language is not that of an assignment of a whole or undivided interest, and no direction is given as to the issuance of the patent; but admitting it to be, in connection with the former instrument, an assignment of the entire interest, it is met with the insuperable objection that the entire interest had been previously assigned to Albright and Halsey, with direction that the patent issue jointly to the latter-named parties.

For the convenience of the Office the rule requires that an assignment shall have been of record before the payment of the final fee; but where, as in the present instance, the issue is withheld for the very purpose of determining after the fee has been paid to whom the patent shall issue, the simple rule of the law, that the assignment "must first be entered of record in the Patent Office," will be followed, without regard to the date of the payment of the final fee. The final fee was paid January 25, 1878. Halsey's reassignment to Albright, therefore, recorded February 9, 1878, and above recited, is regarded as of force.

It being found by this examination of the record that the entire right and title to this invention is vested in Andrew Albright, of Newark, Essex county, New Jersey, the patent will issue to him in accordance with the directions of the parties.

In regard to that part of the motion to suspend the issue of this patent until Paine can file a bill in equity where his rights in the premises, as well as those of the alleged assignees, can be judicially determined, I think the following direction of the Secretary of the Interior to the Commissioner of Patents, in the matter of the application of James Sargent (12 OFFICIAL GAZETTE, 475) a sufficient answer:

Due regard must always be given to the rights of all parties in interest, in any proceeding; but if, after a fair consideration of all the questions affecting them, you are compelled, in obedience to law and the facts presented, to decide in favor of one and against the other, so that your judicial functions are exhausted, it is neither equitable nor just that the party who has established his right to the claim in controversy should be delayed in the enjoyment of it, so far as it depends upon your action, because it is possible that another tribunal, not appellate, may determine the same question otherwise.

If the filing a bill in equity by parties asserting adverse claims to try questions already decided by your office could be permitted to stay final action on your part, very few patents for really valuable inventions would, in my opinion, hereafter be issued, and the injurious results which would necessarily follow would be beyond calculation.

The various motions on the part of Paine are denied.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

THE DECISIONS FOR 1877.—The decisions of the United States courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

TRADE-MARKS.

[Each certificate bearing date March 5, 1878.]

5,690.—MEDICINAL PREPARATIONS.—*Brown Medicine and Manufacturing Company*, Leavenworth, Kans. Application filed January 31, 1878.

"A pictorial illustration composed of a globe or sphere surrounded by a druggist's mortar and pestle, and traversed by a band supporting a druggist's graduated glass and chemist's retort, as shown."

5,691.—CANNED FRUITS AND VEGETABLES.—*Erie Preserving Company*, Brant and New York, N. Y. Application filed December 8, 1877.

"The word-symbol 'ERIE.'"

5,692.—FLOUR.—*George V. Hecker & Co.*, New York, N. Y. Application filed September 26, 1877.

"The symbol 'H.'"

5,693.—FLOUR.—*Henry Hottel* and *Lemuel Painter*, Woodstock, Va. Application filed January 23, 1878.

"The word-symbol 'STONEWALL.'"

5,694.—LARD.—*T. Robert Jenkins & Son*, Baltimore, Md. Application filed November 2, 1877.

"The representation of a leaf and the fanciful words 'Jas. Monroe & Co., Baltimore, Md.'"

5,695.—BOOTS AND SHOES.—*J. H. Walker*, Worcester, Mass. Application filed January 21, 1878.

"The word 'ALEC.'"

5,696.—MEDICINAL PREPARATIONS.—*Vought & Killgore*, Dover, New Jersey. Application filed January 31, 1878.

"The letters 'X X.'"

5,697.—CIGARS.—*Beckman, Noble & Co.*, Westfield, Mass. Application filed February 2, 1878.

"The word-symbol 'NO NAME.'"

5,698.—CIGARS.—*Beckman, Noble & Co.*, Westfield, Mass. Application filed February 4, 1878.

"The word-symbol 'REAL CODILLO.'"

5,699.—WATER-CLOSETS.—*Bartholomew & Co.*, New York, N. Y. Application filed February 1, 1878.

"The letters and characters 'B & Co.,' arranged as a monogram."

5,700.—COTTON SHEETINGS.—*Coffin, Altemus & Co.*, Philadelphia, Pa., Boston, Mass., Baltimore, Md., and New York, N. Y. Application filed February 2, 1878.

"The pictorial representation of the chambermaid making up a bed, as shown."

5,701.—TEAS.—*Cuthbert, Hamilton & Co.*, Philadelphia, Pa., and New York, N. Y. Application filed February 2, 1878.

"The pictorial representation of the interior of a store, as shown."

5,702.—FINE-CUT CHEWING-TOBACCO.—*Goodwin & Co.*, New York, N. Y. Application filed February 4, 1878.

"The word-symbol 'BLACK PRINCE.'"

5,703.—COOK-STOVES.—*Benjamin R. Hawley*, Hyde Park, Ill. Application filed February 5, 1878.

"The word-symbol 'DOUBLE QUICK.'"

5,704.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Thomas H. Hall*, New York, N. Y. Application filed February 7, 1878.

"The word-symbol 'ROSE OF EGYPT.'"

5,705.—SMOKING-TOBACCO.—*S. F. Hess & Co.*, Rochester, N. Y. Application filed February 1, 1878.

"The word-symbol 'PRIDE OF ROCHESTER.'"

5,706.—CABINET OR REED ORGANS.—*Peloubet, Pelton & Co.*, New York, N. Y., and Bloomfield, N. J. Application filed February 5, 1878.

"The fanciful word 'STANDARD.'"

5,707.—WHISKIES.—*Henry Rosenheim*, Baltimore, Md. Application filed February 4, 1878.

"The word-symbol 'SPRING DALE.'"

5,708.—BAKING-POWDER.—*S. S. Schindler* and *Charles H. S. Davis*, Meriden, Conn., and New York, N. Y. Application filed January 25, 1878.

"The English coat of arms and the word-symbol 'VICTORIA.'"

5,709.—BUTTER COMPOUND.—*Marcus D. Strait*, St. Louis, Mo. Application filed January 17, 1878.

"The circle, star, and monogram composed of the letters 'BC.'"

5,710.—PLOWS.—*H. C. Shaw Plow Company*, Stockton, Cal. Application filed February 6, 1878.

"The letter 'R' and the figure '8.'"

5,711.—CIGARS.—*Simon Salomon*, New York, N. Y. Application filed February 7, 1878.

"The word-symbol 'ALEXANDRA.'"

5,712.—FERTILIZERS.—*Ames, Manning & Ames*, Hagerstown, Md. Application filed August 31, 1877.

"The fanciful words 'BUFFALO HEAD.'"

5,713.—FLOUR.—*Wells Finch*, New York, N. Y. Application filed January 8, 1878.

"The word-symbol 'HIGH TOAST.'"

LABELS.

[Each certificate bearing date March 5, 1878.]

1,429.—Title: "SULPHIDE OF ARSENICUM.—*G. C. Dohme & Co.*, Baltimore, Md. Application filed February 20, 1878.

1,430.—Title: "FAIRBANKS' SUNDAY-SCHOOL COLLECTION-BOX."—*John Fairbanks*, Chicago, Ill. Application filed February 21, 1878.

1,431.—Title: "FRENCH'S RUBBER CEMENT."—*David H. French*, Hudson, Ill. Application filed February 26, 1878.

1,432.—Title: "MAGILL'S CHILL CURE."—*Henry A. Magill*, Louisville, Ky. Application filed February 25, 1878.

1,433.—Title: "DR. H. MOZLEY'S LEMON ELIXIR, &C."—*H. Mozley*, St. Louis, Mo. Application filed January 28, 1878.

1,434.—Title: "BUNSEN'S DYSPEPSIA CURE."—*Sloan & Co.*, Philadelphia, Pa. Application filed February 26, 1878.

1,435.—Title: "BYERLY'S GONORRHŒA MIXTURE."—*Sloan & Co.*, Philadelphia, Pa. Application filed February 26, 1878.

1,436.—Title: "SLOAN'S LACTO-PHOSPHATE OF LIME, IRON, AND COD-LIVER OIL."—*Sloan & Co.*, Philadelphia, Pa. Application filed February 26, 1878.

1,437.—Title: "FAIRBANKS' IMPROVED CLASS-COLLECTION BOX."—*Marcus W. Smith* and *Charles F. Fairbanks*, Chicago, Ill. Application filed February 26, 1878.

1,438.—Title: "DESIGN FOR MEDICINE LABEL."—*Albert Snyder*, Sherman, Texas. Application filed February 25, 1878.

DESIGNS.

[Each design bearing date March 5, 1878.]

10,505.—STATUETTE.—*Truman H. Bartlett*, Boston, Mass., assignor to *Edward Miller & Co.*, West Meriden, Conn. Application filed April 12, 1877. Term of patent 14 years.

10,506.—SCARF.—*Henry G. Fisk*, New York, N. Y. Application filed January 19, 1878. Term of patent 3½ years.

10,507.—WALL-POCKETS.—*Lawrence N. B. Gray*, Boston, Mass. Application filed February 23, 1878. Term of patent 7 years.

10,508.—CHESS-MEN.—*William E. Parker*, New Britain, Conn., assignor to *C. B. Stanley & Co.*, same place. Application filed January 30, 1878. Term of patent 7 years.

10,509.—TOY MONEY-BOX.—*Elisha Stevens*, Cromwell, Conn. Application filed February 20, 1878. Term of patent 3½ years.

10,510.—ORGAN-CASE.—*James B. Woodford*, Worcester, Mass. Application filed February 13, 1878. Term of patent 7 years.

10,511.—ROCKING-CHAIR FRAMES.—*Siegfried Willershausen* and *Frank Rhoner*, New York, N. Y., assignors to said *Rhoner*. Application filed February 2, 1878. Term of patent 7 years.

10,512.—COOK-STOVE.—*Alexander Wemyss*, Philadelphia, Pa., assignor to *Sheeler, Buckwalter & Co.* Application filed November 21, 1877. Term of patent 7 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

MARCH 5, 1878.

200,814. TEMPLES FOR LOOMS. Nicholas I. Allen, Hopedale, Mass., assignor to Dutcher Temple Company, same place. Filed Sept. 1, 1877.

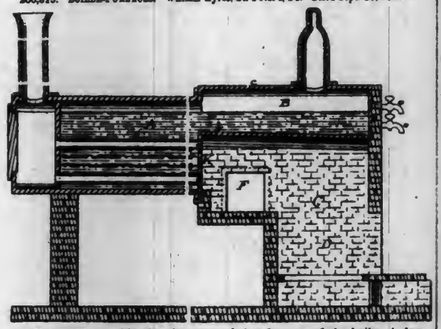
Brief.—Instead of the ordinary rollers having teeth arranged entirely around their peripheries, the bars or rollers, in the present instance, have but a single row of teeth, and are provided with stops to limit the oscillation of the said bars in either direction.



Claim.—1. In a loom-temple, two or more toothed rods, substantially as described, in combination with stops adapted to co-operate with and limit the oscillation of the rods both forward and backward, substantially as set forth.

2. The temple-rods provided with pins and arms *f*, in combination with the base and cap and stops for the arms, substantially as described.

200,815. BOILER-FURNACES. William Ayres, St. Peter's, Pa. Filed Sept. 16, 1876.



Claim.—The combination, in a steam-boiler furnace, of the boiler A, having the partial flue-head K, and above this the transversely-concave end extension B, forming the crown of the furnace-chamber, and resting upon the side walls H of the same, the front combustion-chamber C, and the rear chamber F of said furnace, as specified.

200,816. COMBINED VENTILATING-HOSELE AND SPOUT. Lewis F. Botts, Chicago, Ill., assignor of one-half his right to *Jos. S. Dennis* and *Henry H. Wheeler*, same place. Filed Aug. 9, 1877.



Claim.—1. A cap, A, provided with a nozzle-aperture, *a*, and a spout-aperture, *b*, in combination with a disk, C, fitted underneath the cap, and provided with a pouring and filling aperture, *c*, and a device whereby the disk may be rotated from the outside of the cap, to register the nozzle aperture with either of the spout apertures, or to close the apertures, substantially as and for the purpose set forth.

2. The cap A, provided with filling and pouring apertures, and a spout, as described, in combination with the disk C, having the large filling and pouring and small venting apertures *c* and *c'*, substantially as and for the purpose set forth.

3. The disk C, having the filling and pouring aperture *c* and the vent-hole *c'* arranged directly opposite each other, in combination with the cap A, provided with filling-aperture *a* and pouring-aperture *b*, similarly arranged, and the spout B, arranged and operating substantially as and for the purpose set forth.

200,817. COFFEE-POLISHING MACHINES. Hans O. Bloom, Chicago, Ill., assignor of one-half his right to John B. Raymond, same place. Filed May 18, 1877.

Brief.—Bags of coffee are placed between the two reciprocating plates for polishing.

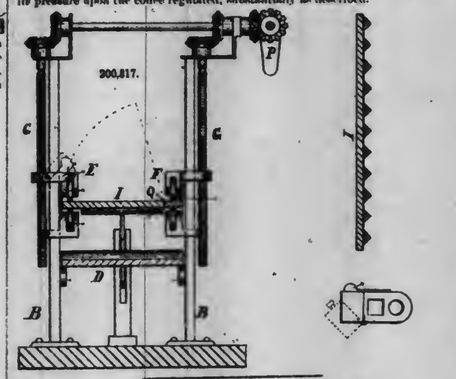
Claim.—1. The standards B, in combination with the corrugated plate D, supported on stationary rollers, the similar plate I, supported above the former on rollers adjustable vertically, and mechanism for reciprocating said plates, substantially as and for the purpose set forth.

2. The standards B, in combination with the plate I and adjustable roller-blocks E and F, for supporting and adjusting the plate, substantially as and for the purpose set forth.

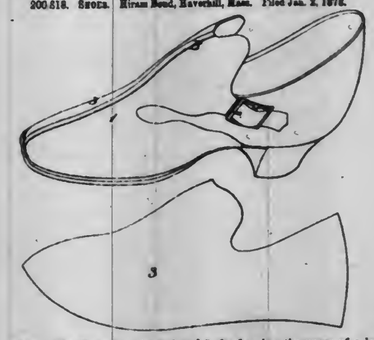
3. The plate I, provided with an uneven under surface, and made in two parts, connected together by hinges Q, in combination with the hinge-block F, substantially as and for the purpose set forth

4. The long screws G, in combination with the supporting-standards, the blocks E and F, and the plate I, whereby the plate is adjusted vertically and its pressure upon the coffee regulated, substantially as described.

200,817.



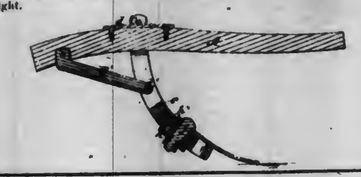
200,818. SHOES. Hiram Bond, Haverhill, Mass. Filed Jan. 2, 1878.



Claim.—The parts or patterns 1 and 3, for forming the vamp of a low-cut shoe, when the edges of said parts which are to be sewed together are cut on different curves, as shown and described, whereby the side flap of the instep in the completed shoe is caused to fit smoothly and press against the side of the foot, as set forth.

200,819. SHOVEL-PLOWS. Thaddeus W. Boyle, Augusta, Ga. Filed Jan. 23, 1878.

Brief.—A bolt with longitudinal corrugations fits into the interior teeth of the standard, and with a stop-washer holds the shovel true at any desired height.

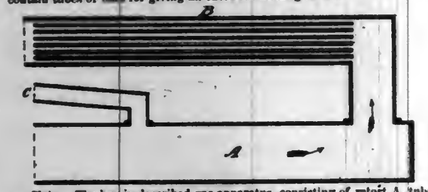


Claim.—1. In combination with a forked plow-standard and a shovel attached to its lower end, the teeth or corrugations *a*, formed upon the inside faces of said standard, and also similar corrugations formed longitudinally upon the shank of the bolt, to retain the shovel upon the standard, in connection with a washer formed with wings A^1 and projections A^2, substantially as and for the purpose described.

2. In combination with a forked standard having interior corrugations and a shovel-bolt with longitudinal corrugations, the washer A, having wings A^1 and projections A^2, substantially as and for the purpose described.

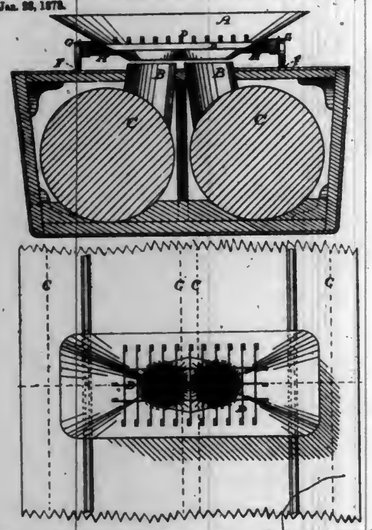
200,820. GAS-RETORTS. James Burns, London, Ontario, Canada. Filed Apr. 16, 1877.

Brief.—Oil is passed through a small retort, where it is partially vaporized, into the large retort, where vapor and gas are formed, which pass through the tubular retort, and are converted into a fixed gas. The third retort may contain tubes or bars for giving an extended heating-surface.



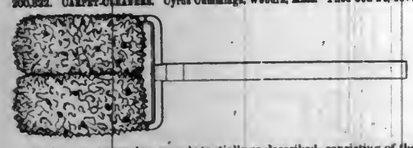
Claim.—The herein-described gas apparatus, consisting of retort A, tubular retort B, and oil-retort C, the several parts constructed and relatively arranged with each other as specified.

200,821. HOPPERS FOR PNEUMATIC DREDGING-SCOWS. Robert Cartwright, Rochester, N. Y. Filed Jan. 28, 1878.



Claim.—The grating D D, adapted to cut up the dredged material, in combination with tanks C C, having inlets B B, as shown, and for the purpose described.

200,822. CARPET-CLEANERS. Cyrus Cummings, Woburn, Mass. Filed Oct. 24, 1877.



Claim.—A carpet-cleaner, substantially as described, consisting of the furcated handle, the rotary shaft, and the mass or masses of sponge applied thereto, all being arranged essentially as set forth.

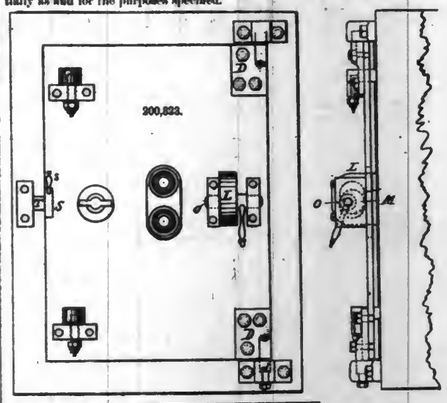
200,823. BURGLAR-PROOF SAFES. George L. Damon, Boston, Mass. Filed Jan. 22, 1878.

Claim.—1. In combination with a safe or vault, a swinging frame hinged to the jamb of the safe or vault, and a door adjustably hinged at its front edge to said frame, whereby the door may be adjusted vertically at the front edge to compensate for sagging, substantially as specified.

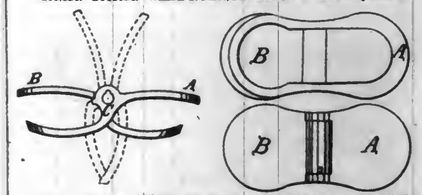
2. In combination with a safe or vault and its door, a supporting-frame adjustably hinged or pivoted at one edge to the jamb of the safe or vault, and at the other adjustably hinged to the front edge of the door, whereby the front and rear edges of the door may be adjusted vertically to compensate for sagging, substantially as set forth.

3. In combination with the safe-door and supporting-frame, the studs projecting from said door and frame, and the intervening friction-rollers for supporting the free end of the door and facilitating its movement to and from the frame, substantially as specified.

4. In combination with a safe, its door and supporting-frame, a cam or cams, M, mounted on a rock-shaft, O, journaled in bearings upon the frame, and adapted to operate in a slotted stud or studs, L, attached to the door, and a cam, S T, mounted in bearings on the jamb of the safe or vault, and adapted to be brought to bear against the front edge of the frame and door, substantially as and for the purposes specified.

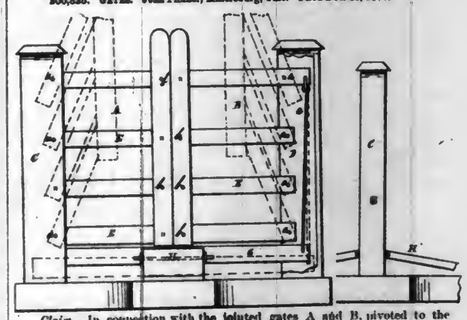


200,824. BUTTONS. William T. Farre, Providence, R. I. Filed May 5, 1877.



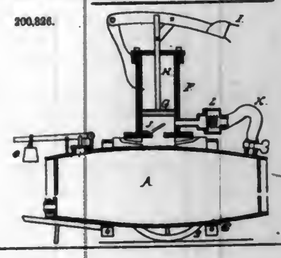
Claim.—The clasp consisting of the skeleton bent plate A and the solid bent plate B, the latter provided with a barrel or tube to receive a coiled spring and joint-pin, and the whole constructed and operating substantially as and for the purposes specified.

200,825. GATES. John Flinner, Millersburg, Ohio. Filed Dec. 10, 1877.



Claim.—In connection with the jointed gates A and B, pivoted to the posts C and D, the bar G, links *e*, and platform H, constructed and arranged to operate substantially as herein described, and for the purpose set forth.

200,826.



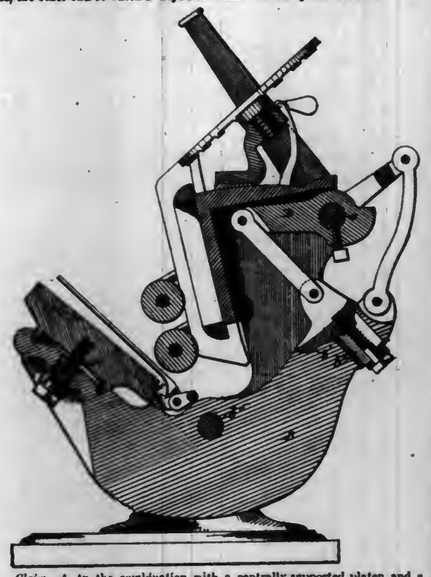
200,826. FIRE-EXTINGUISHERS. Theodore F. Gilliland, Milwaukee, Wis., assignor of one-half his right to William Gutenkunst, same place. Filed Aug. 25, 1877.

Brief.—The compressed air is forced from the pump into the reservoir, and by its pressure forces the water through the nozzle.

Claim.—The combination of lever I, piston-rod H, piston G, valve J, cylinder F, pipe K, and valve L with reservoir A, said cylinder having a suitable air-inlet, and said receptacle or reservoir A having a suitable outlet for fluid, substantially as set forth.

200,827. PRINTING-PRESSES. William H. Golding, Chelsea, Mass. Filed Dec. 11, 1876.

Brief.—On the front end of a curved rocker-beam is a circular recess having a curved edge, adapted to receive an annular flange on the back of the platen, which is secured in place by a central screw passing through the beam and a concave washer fitting a spherical segmental projection on the lower side of the beam. The other end of the beam carries a shoe, beneath which may be placed adjusting-sheets. The shoe is connected to one joint of a toggle, the other end of which is keyed to a shaft rocked by a hand-lever.



Claim.—1. In the combination with a centrally-supported platen and a rocker-beam, a thrust-lever and adjustable shoe, substantially as described, the construction being such that the strength of the impression is determined by the adjustable shoe and lever, and the squareness of the impression by the platen and beam.

2. In combination with a toggle-joint and rocker-beam, the removable strip g^4 and an intermediate shoe and set-screw, for determining the length of the thrust, substantially as described.

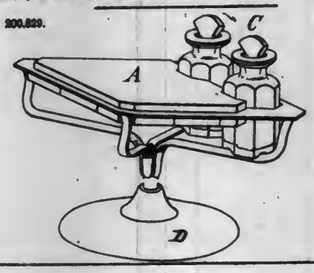
3. The combination of the following elements: a rocker-beam, a thrust-lever, an intermediate shoe capable of adjustment, and mechanism, substantially as described, for securing the shoe in any position in which it may be adjusted.

200,828. COOLING BEATING-ENGINES FOR PAPER-PULP. Charles L. Hamilton, Roxborough, Pa. Filed Dec. 20, 1876.



Claim.—The process of directing a flowing stream of cool water around and upon the shell of a beating-engine, to absorb and carry off the heat engendered by the operation of beating the fibrous materials in the interior, substantially as and for the purpose described.

200,829.

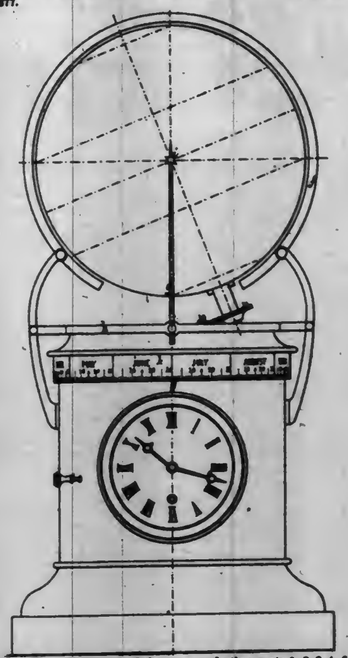


200,830. SLAB AND BOTTLE-HOLDER FOR DENTISTS. Edward F. Hanks, Jersey City, N. J. Filed July 10, 1877.

Brief.—A small bottle-holding stand, having a diminutive porcelain slab and stem with base-plate, is intended to be grasped by the little finger of one hand, thus forming a convenient appendage for dentists' use, in connection with plastic fillings and the like.

Claim.—The combination, in a holder for dental use, of the slab A, the stem B, the bottles C C, and the base D, substantially as and for the purposes herein set forth.

200,831. COSMOGRAPHIC CLOCKS. Charles Edouard and Etienne Lemaire, Paris, France. Filed Dec. 6, 1877.



Claim.—1. The arrangement of the gears and other parts 1, 2, 3, 4, 6, 7, 8, 9, 10, and 11, for rotating the globe on its own inclined axis, substantially as shown and described.

2. The combination of the gears and other parts 6, 4*, 12, 14, 15, 16, 17, 18, 10, and 11, for imparting to the globe its translative motion.

3. The combination, for adjusting the globe on its axis, of the central pipe, the loose piece 22*, the hollow in socket of the gear 11, and the vertical pins 23, attached outside of the said socket.

4. In combination, the loose pipe 22*, socketed bevel-gear 11, pins 23, and adjustable screw 24, substantially as shown and described.

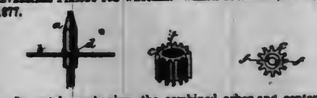
5. The spindles 3 and 12, handle 27, bevel-wheel 6, ratchets 4 and 4*, with their pawls, for the purpose of imparting rapid rotary motion to the entire mechanism by hand.

6. The arrangement of the pinion 16, the worm-wheel 15, disengaging-plate 26, button 29, spring 30, and handle 27, for disconnecting the mechanism and imparting to the globe simply rotary motion on its own axis.

7. The arrangement of the spindle 12 of the ratchet 4* with its click, the gear 6, and the handle 27, for imparting to the globe merely its yearly travel.

8. The lever 36, the rod 36*, the arm 39, the spring 37, the spindles 33 and 34, the pendulum-escapement 35*, the spindle 38, with its fly, as shown in Figs. 6, 7, 8, 9, and 11, for the purpose of driving, at will, the clock and the globe, either at their regular slow speed or at an accelerated speed, for the purpose of demonstration or otherwise, but in both cases by means of the clock-work.

200,832. REVERSIBLE PINIONS FOR WATCHES. William P. Huntoon, Stuart, Iowa. Filed Dec. 10, 1877.



Claim.—In watch mechanism, the combined arbor and center wheel *a b*, having the spiral-form hooks *d*, in combination with the reversible pinion *c*, having the spiral-form cavities *f* in its under side and bore, substantially as and for the purposes shown and described.

200,833. THILL-COUPLINGS. Henry J. Ilse, Birmingham, Conn., assignor to himself and D. M. Bassett, same place. Filed Aug. 14, 1877.

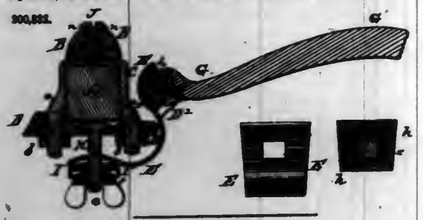
Claim.—1. The combination, with the bottom plate D of the thill-coupling, of the swing-bolt H, spring E, and nut *a*, substantially as and for the purpose herein set forth.

2. The flanged slide or washer I, in combination with the bolt H, spring E, and nut *a*, for the purposes herein set forth.

3. The combination of the leather *f* and the spring E, provided with the teeth *s* and slot *t*, the leather being pressed into said teeth and through the slot, for the purposes herein set forth.

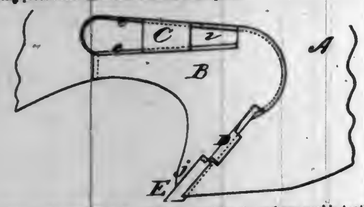
4. The combination, with the axle A and bed-piece B, of the clip C, having tubular projection *m* with interior screw-threads, and the screw J, having cup-head, all substantially as and for the purposes herein set forth.

200,832.



200,833. MEANS FOR SETTING INSERTIBLE SAW-TEETH. Nelson Johnson, Jasper, N. Y. Filed June 26, 1875.

Brief.—The tooth is secured in position by means of a clamping-piece inseparably attached to the plate by a key-piece of soft metal applied to the clamping-piece after its insertion in the saw-plate.



Claim.—The combination, with a saw-plate, A, and removable tooth E, of the clamp-piece B, the locking-wedge C, and the guard or key piece D, the latter being constructed of soft metal, and applied substantially as and for the purposes herein set forth.

200,834. PROCESSES OF MANUFACTURING ARTIFICIAL STONE. Frederick Koskul, Philadelphia, Pa. Filed Apr. 27, 1877.

Brief.—Clay, soluble glass, sand, stone-dust, powdered glass, chalk, soapstone, lime, sulphate of antimony, zinc-white, white lead, &c., are variously compounded and dipped into or coated with a heated solution of soluble glass.

Claim.—The method or process of dipping an artificial stone, in a heated state, into or saturating it with a heated solution of soluble glass before baking it, substantially for the purposes and in the manner herein described.

200,835. PROCESSES OF MANUFACTURING ARTIFICIAL STONE. Frederick Koskul, Philadelphia, Pa. Filed Apr. 27, 1877.

Brief.—Uses lime and water mixed to the consistency of dough, also lime slaked with sulphate of iron, combined with earth, pulverized stone, brick-dust, ashes, and, while in a plastic condition, pressed into hot molds to shape and harden.

Claim.—The process of hardening a composition of lime or other substances by hot molds, substantially for the purposes and in the manner herein described.

200,836. CENTERING DEVICES FOR SURVEYORS' TRANSITS. Wilhelm L. F. Mariens, Collago Point, N. Y. Filed Aug. 13, 1877.

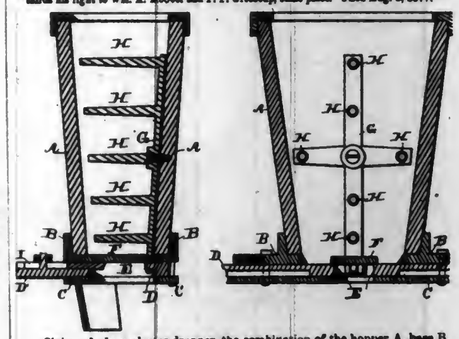
Brief.—Determines the vertical axis by means of the arms and the reflector placed over the center stake, and thus does away with the plumb-bob commonly used.



Claim.—1. A surveyor's instrument provided with the arms *e e'*, which are provided, respectively, with the sight *d* and mark *d'*, such sight and mark being equidistant from the vertical axis of the instrument, substantially as and for the purpose specified.

2. The combination of the reflector D with the surveyor's instrument, having the perforated arm *e* and the marked or perforated arm *e'*, substantially as specified.

200,837. FERTILIZER-DROPPERS. James C. Melvin, Perrysville, Ohio, assignor of two-thirds his right to Wm. A. McCool and P. P. Greenup, same place. Filed Aug. 1, 1877.

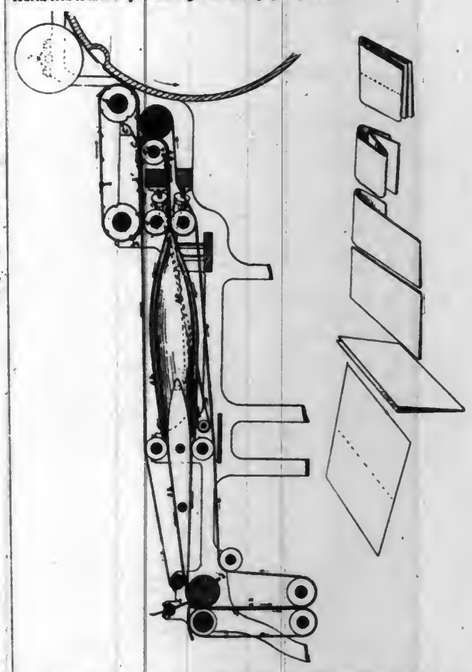


Claim.—1. In a plaster-dropper, the combination of the hopper A, base B, slide-valve D, cut-off I, and bottom plate C with the centrally-pivoted stirrer G, having arms H, and connected with the slide D, as shown, for the purpose set forth.

2. The hopper A, base B, having transverse plate F, slide-valve D, bottom plate C, and cut-off I, secured to the slide-extension D', as shown, all combined and operating substantially in the manner and for the purpose set forth.

200,838. PAPER-FOLDING MACHINES. Ernst Nordblom and Lorenz Hansen, Chicago, Ill. Filed Apr. 6, 1876.

Brief.—From the final cylinder of a printing-press the sheet is taken by grippers on endless bands, which also carry vibrating blades, folding it into grippers on a cylinder. The once-folded sheet thence passes on endless tapes into and through curved shields, making two transverse folds, across which the fourth fold is made by a rotating blade and griper-cylinder.



Claim.—1. The combination, with the final cylinder or a printing-press, of the folding-roll D, its feeding-belts and knife, and the folding-shields, the guiding-tapes, and final folding-roll and its appliances, substantially as specified.

2. As a means for producing folds in newspapers, the double-shield contrivance, along which the paper is carried, and which produces the fold or folds by the form of the shields, substantially as specified.

3. The pivoted folding-blade C, attached to the belts *b'*, in combination with the cam C' and belts *b*, substantially as specified.

4. The combination of the folding-shields and the guiding-tapes, constructed and arranged substantially as described, so that the sheet is carried upon the shields in the shape shown at Fig. 13, substantially as specified.

5. The combination of the guiding-tapes 20 and 21, the shields F G, and through-tapes 22, substantially as specified.

6. The combination of the guiding-tapes 20 and 21, the shields F and G, the through-tapes 22, and the supporting-tapes 24, substantially as specified.

7. The combination of the shields F and G with tapes twisted and arranged in diagonal lines, one set leading to the outside of shield F and one to inside thereof, substantially as shown at Figs. 5, 6, and 7.

8. The shield G, provided with the flaring edge *h*, in combination with the shield F, substantially as specified.

9. The combination of the appliances for producing the first fold, substantially as specified, and the folding-shields and guiding-tapes with the final folding-roll J and its appliances, substantially as specified.

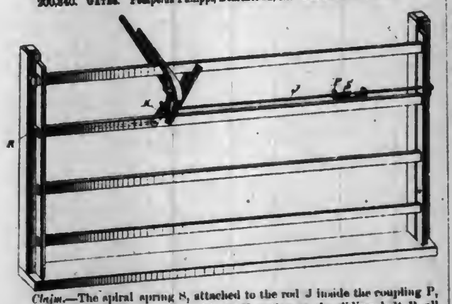
10. The combination of the appliances, substantially as specified, for producing the first fold with the shields and guiding-tapes, substantially as specified.

200,839. METALLIC NAIL-STRIPS FOR BOOTS AND SHOES. Wm. F. Prusha, Hudson, assignor of two-thirds his right to Waldo B. Brigham, same place, and Elisor Alden, Marlborough, Mass. Filed Dec. 29, 1877.



Claim.—A metallic nail-strip for boots and shoes, consisting of a narrow strip of metal formed with one sharpened edge, a double-flanged edge, *b*, and deep parallel transverse grooves *c* on each side, extending from the sharpened edge through the body and flange, substantially as described, for the purpose specified.

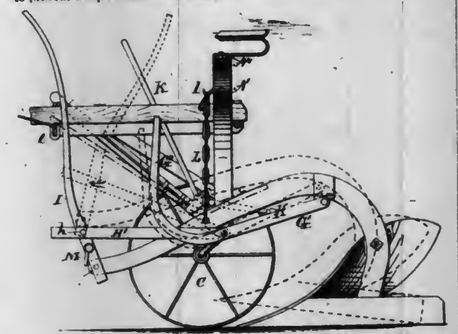
200,840. GATES. Pompeius Philippi, Boardstown, Ill. Filed June 29, 1877.



Claim.—The spiral spring S, attached to the rod J inside the coupling P, in combination with the lengthened lever K, acting on the sliding bolt R, all for the purpose as herein described.

200,841. SULKY-PLOWS. Joshua Pierpont, Bushnell, Ill. Filed June 9, 1877.

Brief.—The plow-beam is suspended by two yokes. The front yoke is connected to the beam by a link or lever, which allows the yokes to oscillate and the wheels to pass over uneven places without disturbing the plow. The lever and front yoke raise the point of the plow first. A lever used as a stop to prevent the plow-beam from rising.



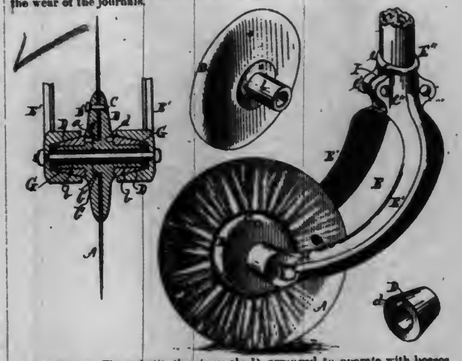
Claim.—1. In a sulky-plow in which the plow-beam is connected to the axle by means of a pivoted yoke projecting rearward from the axle or frame, the combination of a pivoted yoke projecting forward from the axle or frame, and connected to the plow-beam by means of a link or lever, so as to permit the plow to rise and lower by the oscillation of the yokes, substantially as and for the purposes specified.

2. In combination with a plow connected to the axle by a rear yoke, a forward yoke, link, and lever, I, by means of which the plow may be raised from the soil with its point end first, substantially as described, and for the purpose specified.

3. The lever K, arranged to operate with the yokes G H, lever I, axle A, and wheels C, substantially as described, and for the purpose specified.

200,842. PLOW-COLTERS. Joshua Pierpont, Bushnell, Ill., assignor to Pierpont & Tuttle, same place. Filed Dec. 31, 1877.

Brief.—Tapering false journals are placed upon and turn with the journal proper. The yoke is in two parts, between which is placed packing in the upper socket, so that the two parts may be drawn together to compensate for the wear of the journals.



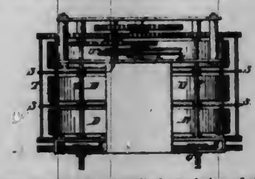
Claim.—1. The substitutive journals D, arranged to operate with bosses B B', having projections *b*, on which the journals D are fixed, and with the colter A, substantially as and for the purpose specified.

2. The substitutive tapering journals D, arranged to operate with similarly-shaped opposed bearings in the limbs E' of the yoke E, and seated on the projections *b* from the bosses B B', substantially as and for the purpose specified.

3. The yoke E, made in two parts, E' E', adjustable at both ends, in combination with tapering journals D and colter A, substantially as described, and for the purpose specified.

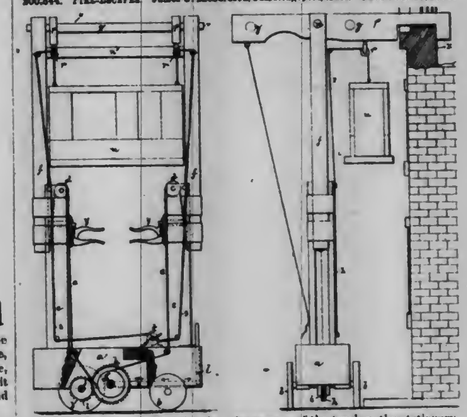
200,843. SPRING-MOTORS. Eli B. Rice, Madison, Wis. Filed May 14, 1877.

Brief.—The arrangement of gears upon both ends of the spring-reels, meshing with corresponding pinions, tends to equalize strain.



Claim.—The motor herein described, consisting of the reels D D, having gear-wheels at each end, tie-rods T, and division-plates S, and inclosing a series of springs, fastened at one end to the reel-shaft and at the other to the tie-rods T, combined with a common driven shaft, G, having double pinions, and a gear-wheel, for transmitting motion, substantially as described.

200,844. FIRE-ESCAPES. James G. Richardson, Cambridgeport, Mass. Filed June 16, 1877.

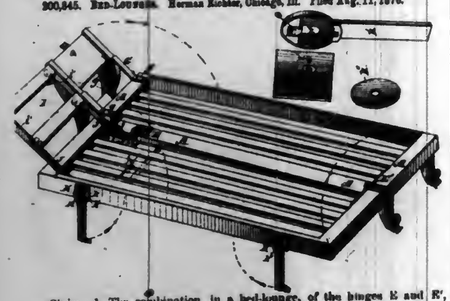


Claim.—1. The combination, in a fire escape, of the truck *a*, the stationary uprights *e e*, the movable uprights *f f*, provided with the stops *y y*, and the

tilting-frame, having the sides *p p* provided with projections or grappling-hooks, as and for the purpose set forth.

2. The tilting-frame *o*, operated by the rope *r* at the rear, and provided with the grappling-arms *p p*, in combination with the movable car or receptacle *u*, provided with the sliding shutters *v v*, as and for the purpose set forth.

200,845. BED-LOUNGE. Herman Richter, Chicago, Ill. Filed Aug. 11, 1876.



Claim.—1. The combination, in a bed-lounge, of the hinges E and E', constructed as herein specified, and arranged as shown and described with relation to each other, the body, and the folding seat, for the purposes set forth.

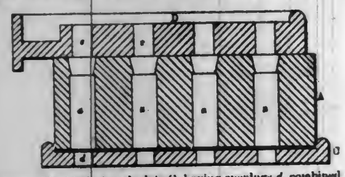
2. The combination, in a bed-lounge, of the tilting head or bolster and the hinges G G, the latter constructed and arranged substantially as specified, to support the head above and on the folded seat.

3. The combination, in a bed-lounge, of the seat-extension I, hinged to the upper end of the folding seat by means of the hinges J J, constructed, arranged, and operating substantially as and for the purposes specified.

4. A folding and self-locking leg, in combination with a bed-lounge, the leg consisting of the combination of the fixed base-plate *k*, having the pins or stops *l l'* projecting outwardly therefrom, the slotted leg-extension *k'*, recessed and notched on its under face, as shown, the spring *o*, arranged in the slot of part *k'*, and the pin or rivet *n*, all adapted for operation together, substantially as and for the purposes specified.

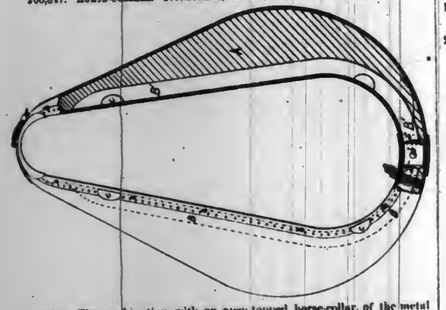
200,846. DEVICES FOR LOADING CARTRIDGES. Edwin Schenck, Baltimore, Md. Filed Dec. 19, 1877.

Brief.—The shells are placed in the cells in the block, and the block is then placed on the perforated bottom or base. The tray is then placed on the block in such position as to break communication between the cells in the tray and those in the block. The cells in the tray are then filled with powder, and the tray is moved so as to allow the powder to drop into the shells. Wads are then rammed into the shells, and the operation is repeated to charge with shot.



Claim.—The block A and plate C, having openings *d*, combined with the sliding tray D, provided with the cells *c*, substantially as described.

200,847. HORSE-COLLARS. P. J. Schmitz, St. Paul, Minn. Filed Nov. 16, 1877.



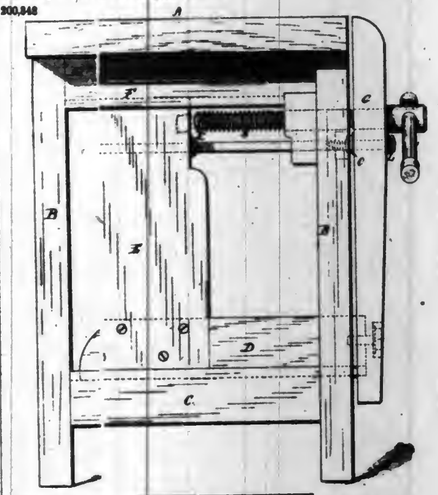
Claim.—The combination, with an open-topped horse-collar, of the metal braces B B', hinged together at *b*, and provided with shoulders *d d'*, adapted to limit the distance to which the collar may be opened or closed, arranged and operating substantially as hereinbefore described.

200,848. BENCH-VISES. Actor P. Thompson, Monmouth, Me., assignor to D. P. Boynton, same place. Filed Dec. 19, 1877.

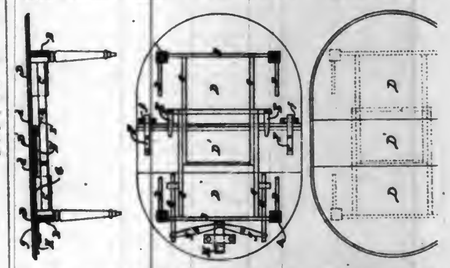
Brief.—The movable jaw may be set perfectly parallel with the fixed jaw or set at an angle.

Claim.—The combination of the sliding carriage E D and frame F D C', the adjusting screw-rod A, and the movable jaw G and screw S, all arranged and operating as and for the purpose set forth.

200,848



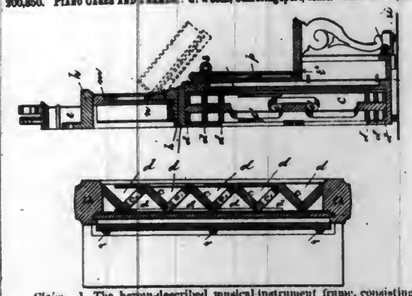
200,849. EXTENSION-TABLES. J. B. Thurston, Brooklyn, N. Y. Filed Apr. 5, 1877.



Claim.—1. An extension-table having the sliding sections D D, connected by the slides *c*, arranged to form a storage-pocket beneath the top, to receive the supplemental leaves D', the latter resting upon the upwardly-pressing springs E E, and being each provided with hooks F upon one edge, adapted to engage automatically with lugs or eyes *f* upon the edges of the adjacent leaves, as and for the purpose set forth.

2. In combination with the table-top D, the slides G G, connecting-levers *g g*, and thumb-piece H, so constructed that when the thumb-piece is drawn to the edge of the table the arms will pass under and form a support to an extra leaf, substantially as described.

200,850. PIANO CASES AND FRAMES. G. Woods, Cambridgeport, Mass. Filed Dec. 7, 1877.

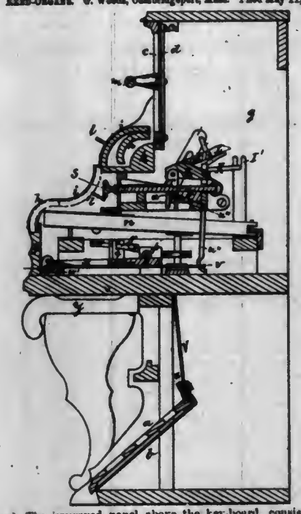


Claim.—1. The herein-described musical-instrument frame, consisting of the parts *c c c*, united together so as to form a continuous corrugated frame as and for the purpose set forth.

2. In combination with the corrugated frame *c c c*, the V-shaped braces *d d d* and perforations *c' c' c'*, as and for the purpose set forth.

3. In combination with the case of a musical instrument, the herein described music-holder, consisting of the open frame *h*, the hinged cover *m*, and receptacle *n*, as and for the purpose set forth.

200,851. REED-ORGANS. G. Woods, Cambridgeport, Mass. Filed May 11, 1876.

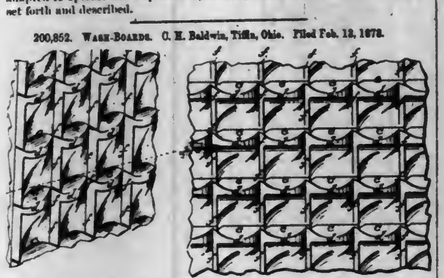


Claim.—1. The improved panel above the key-board, consisting of the perforated fret-work *c*, in combination with the ornamental wood or metal, back *d*, substantially as and for the purpose set forth.

2. The cheek-pieces *s s*, made in one piece with the key-slip *f*, the whole being made detachable from the frame *g g*, substantially as and for the purpose set forth and described.

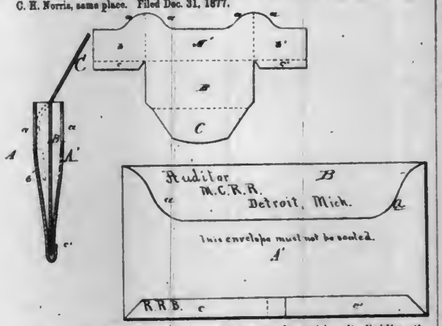
3. In combination with the fall *i*, the horizontal ridge or projection *l*, adapted to operate the stop-drawn *s*, for the purpose and in the manner herein set forth and described.

200,852. WASH-BOARDS. C. H. Baldwin, Tiffin, Ohio. Filed Feb. 12, 1878.



Claim.—A wash-board having a metal working-surface, composed of a series of soap-cups, *c*, rubbing-ridges *d*, and lateral gutters *f*, substantially as and for the purpose set forth.

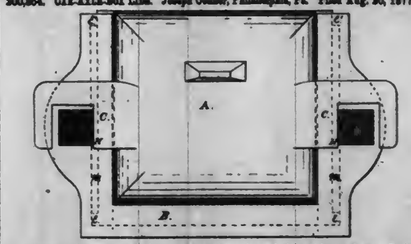
200,853. ENVELOPES. William L. Benham, Detroit, Mich., assignor of one-half his right to C. H. Norris, same place. Filed Dec. 31, 1877.



Claim.—1. The envelope A, having the central partition B, dividing the envelope into two pockets, and the single reversible flap C, substantially as and for the purpose set forth.

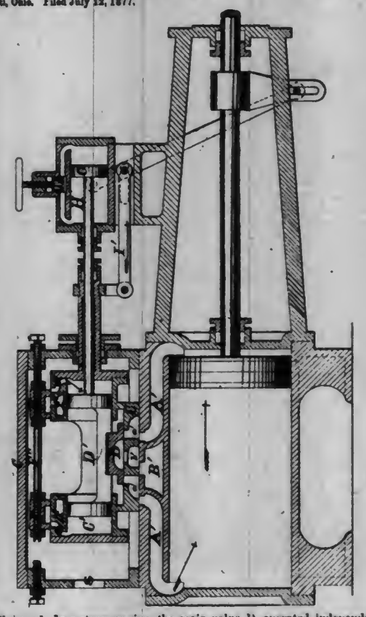
2. The envelope described, consisting of the side A', cut away at *a a*, the flaps *b b'*, having lapels *c c'*, the partition B, and flap C, all constructed and arranged substantially as described.

200,854. CAR-AXLE-BOX LIDS. Joseph Conner, Philadelphia, Pa. Filed Aug. 30, 1877.



Claim.—In a car-axle box, the combination of the slide A, frame B, lugs C C, and stop-lugs *e* and *e'*, constructed and arranged substantially as and for the purpose described.

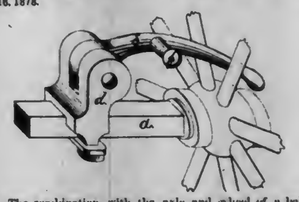
200,855. VALVES FOR STEAM-ENGINES. Ezra Cope, Hamilton, and James R. Maxwell, Cincinnati, Ohio. Filed July 12, 1877.



Claim.—1. In a steam-engine, the main valve D, operated independently of the main engine, and the movable valve-seat, operated from the main piston by a fixed connection of intermediate mechanism, in combination with the cataract H, by means of which the distribution of steam to the main cylinder is varied according to the work to be done, substantially as described.

2. The auxiliary cylinder C', secured to and moving with the movable valve-seat, in combination with the auxiliary piston D' and the main valve D, constructed and arranged substantially as and for the purpose described.

200,856. SAFETY-STOPS FOR CHILDREN'S CARRIAGES. James Curran, Providence, R. I. Filed Jan. 16, 1878.

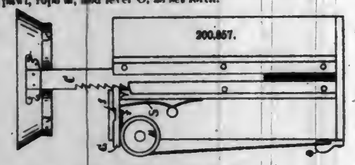


Claim.—The combination, with the axle and wheel of a baby-carriage, of a swinging stop, E, hinged to a bracket or clip, *d*, secured to the axle, whereby the stop may rest upon the axle when not in use, and be turned over between the spokes of the wheel when required to serve as a stop, substantially as described.

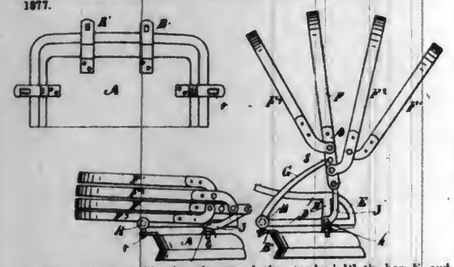
200,857. BAG-HOLDERS. W. H. Dungan, Johnson County, Ind. Filed Oct. 31, 1877.

Claim.—The combination of the box, the slide C, holder A, sliding frame

G, adapted to notches in the slide C', wheel H, forming a frictionless support for the pawl, rope *m*, and lever O, as set forth.



200,858. SHIFTING CARRIAGE-TOPS. Caleb Easterling, Marion County, Ind. Filed Dec. 17, 1877.



Claim.—1. In combination, the arm J, the standard D', the bow F, and the movable fulcrum-brace G, and stud H, all arranged to be operated in the manner substantially as set forth and described.

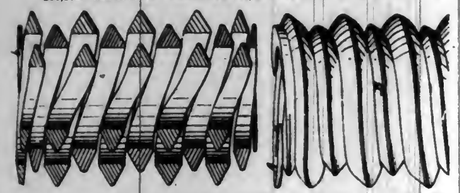
2. The combination and arrangement of the arm J and the movable fulcrum-brace G with vehicle-top bows F F and seat A, whereby a forward motion is imparted to the top, when the same is being folded down, in the manner substantially as shown and described.

200,859. CIGARETTES. C. G. Emery, Brooklyn, N. Y. Filed Jan. 9, 1878.

Claim.—1. As an improved article of manufacture, a cigarette the wrapper of which is composed of a thin paper, or similar fibrous covering, rendered saliva-proof by applying to it a solution of shellac, or equivalent slowly-combustible gum, resinoid, or material, substantially as and for the purposes herein specified.

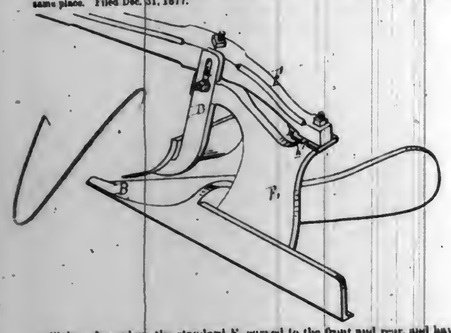
2. As an improved article of manufacture, cigarette-wrapper paper made saliva-proof by applying to it a coating or solution of shellac, or equivalent slowly-combustible gum or other substance, substantially as herein specified.

200,860. CAR-SPRINGS. Carlos French, Seymour, Conn. Filed Aug. 11, 1877.



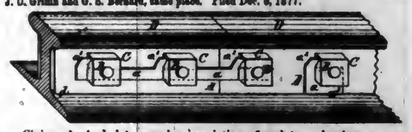
Claim.—A spring or nest of springs composed of bars triangular in cross-section, and having equal sides, coiled into a spiral form, substantially as and for the purpose described.

200,861. PLOWS. Horatio Gale, Albion, Mich., assignor to Gale Manufacturing Company, same place. Filed Dec. 31, 1877.



Claim.—In a plow, the standard E, curved to the front and rear, and having the vertical flanged recess *m* on the extreme forward and upper part of the front projection of the standard for receiving a jointer-arm, D, in combination with an adjustable beam, F, pivoted to the forward projection of the plow-standard, substantially as described and shown.

200,862. NUT-LOCKS. G. W. Godwyn, Petersburg, Va., assignor of two-thirds his right to J. C. Grills and G. S. Bernard, same place. Filed Dec. 6, 1877.



Claim.—1. A skeleton-washer consisting of a plate, *a*, having one or more semicircular notches, a^1, and one or more tongues or projections, a^2, substantially as described, for the purpose specified.

2. A skeleton-washer consisting of the plate *a*, having a semicircular notch, a^1, a tongue, a^2, and the flange or rib a^3, or its equivalent, substantially as described, for the purpose specified.

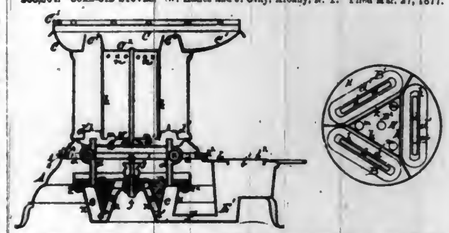
200,863. RUNNING-GEAR FOR WAGONS. F. Gordon, Chicago, Ill. Filed Jan. 28, 1878.



Claim.—1. The set-bolt *u*, with shoulders *v* and nuts *w x*, in combination with strap *y*, plate *y'*, and nuts *z*, for holding the ends of the truss-bars upon the axle after the latter has been adjusted by the set-bolt, substantially as and for the purpose specified.

2. The means herein described of securing the shank *s* of the axle to the truss-bars, consisting of the set-bolt *u*, formed with shoulders *v*, in combination with the nuts *w* and *x*, substantially as and for the purpose set forth.

200,864. COAL-OIL STOVES. W. Hailes and J. Gray, Albany, N. Y. Filed Mar. 27, 1877.



Claim.—1. The combination, with the oil-reservoir E, supply-pipe F, and wick-chambers *a c c*, of the air-chamber *c*, communicating with said wick-chambers near the bottom of the same, substantially as and for the purpose set forth.

2. The combination of plates *x* and *z*, each having the form shown and described, with the rubber packings c^1 and c^2, bolt *f*, and nut *f'*, substantially as and for the purpose set forth.

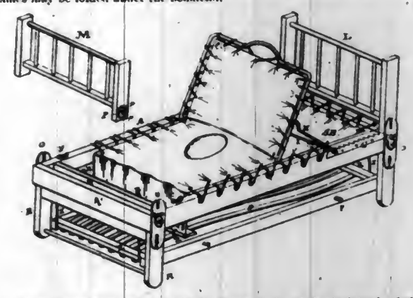
3. The combination, with the combustion-chamber section and burners, of vertical partition-plates *k k*, arranged polygonally, and separating an inner air-chamber from the flame-chambers, substantially as set forth.

4. In an oil-stove, the combination, with the combustion-chamber section, of the cooking-section C, having radial horizontal flues C^1 C^1, leading outward from exits C^2 C^2, and separated from each other by the intermediate vertical walls C^3 C^3, when all are arranged to adapt said horizontal flues to lead the hot gaseous products from the said exits outward and in contact with the bottom of a vessel placed over the same, substantially as and for the purpose set forth.

5. The combination, with the combustion-chamber section and a central air-chamber receiving air from beneath, of the heating-chamber, composed of an air-chamber provided with vent-openings above, and inclosed by an outer chamber situated vertically over the said combustion-chamber section, said outer chamber being provided with openings at its base, and having a tapering form of dividing-wall between said outer chamber and said heating-chamber, all arranged and constructed in the manner and for the purpose set forth.

200,865. INVALID-BEDSTEADS. A. Ike, Lancaster, Pa. Filed Sept. 17, 1877.

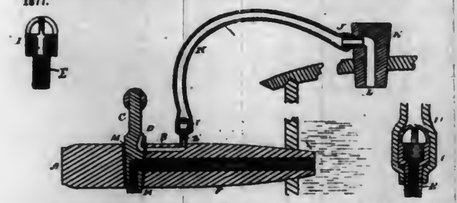
Brief.—The head and foot boards or frames are detachable, and the leg-frames may be folded under the bedstead.



Claim.—The combination, with the frame A A' of the bedstead, of the plate O, provided with the notches *q* and *u* and slot *t*, the head or foot frame

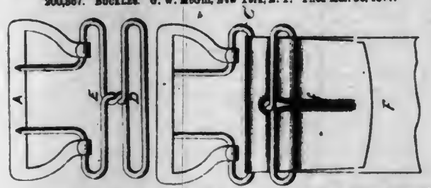
L or M, provided with plate P, and leg portion provided with the headed pins, as and for the purpose set forth.

200,866. VENT-FAUCETS. P. G. Lillie and L. A. Robeat, Lockport, N. Y. Filed Dec. 28, 1877.



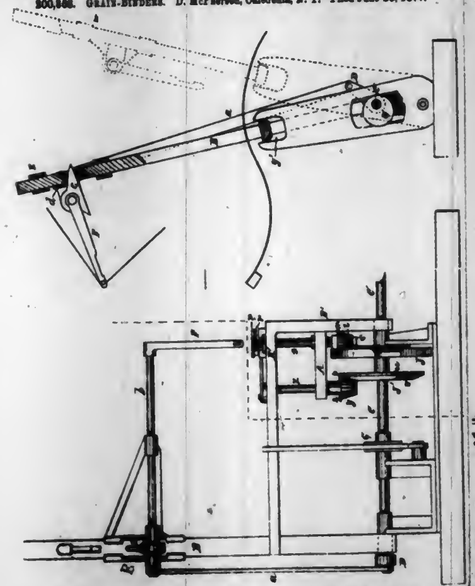
Claim.—The combination, in a vent-faucet, of the spigot C, provided with air-passage D, barrel F, provided with air-passage B, valve E, having valve-seat I, tube H, hollow screw J, and plug K, having air-passage L, all constructed, arranged, and operating substantially in the manner shown and described.

200,867. BUCKLES. G. W. McGill, New York, N. Y. Filed Mar. 26, 1877.



Claim.—A buckle provided with the supplemental loop D, connected by a twisted neck, E_1, to the body-loop t', and adapted to receive the strap F, as herein shown and described.

200,868. GRAIN-BINDERS. D. McPherson, Caledonia, N. Y. Filed June 25, 1877.



Claim.—1. In combination with the concentric twister-plate *p* and hook *r*, and the pinions *l* and *m*, the mutilated gear J, the latter having a continuous rotary motion, and formed substantially as shown and described, for the purpose of imparting to said twister-plate and hook unlike intermittent rotations, always in the same direction, as and for the purposes set forth.

2. In combination with the cutter K, the segmental gear J', crank-shaft *x*, and connected parts, arranged to operate substantially as set forth.

3. The binding-arm F, having a vertical movement upon a guide, B, a lateral movement with its supporting frame, and an upward swing by means of the rock-shaft *b* and necessary attachments, for the purposes set forth.

4. The combination of a binder-arm, F, mutilated gears J J', concentrically-revolving twisting apparatus *p r*, and clamping wire-cutter K, substantially as and for the purposes set forth.

200,869. TRANSOM-LIFTERS. W. B. Mitchell, New York, N. Y. Filed Dec. 29, 1877.

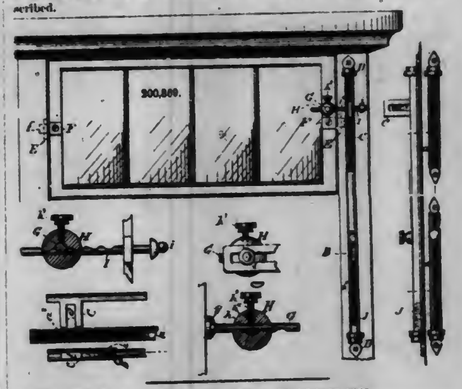
Brief.—An actuating rod, moving in a slotted tube, is combined with a peculiarly-constructed removable fork-piece. There is also a short headed rod, notched or recessed, and combined with a recessed stud and ball, the construction furnishing ready means of opening, closing, or holding the transom in any desired intermediate position.

Claim.—1. In combination with the actuating-rod B, the removable fork-piece C, substantially as described.

2. The combination of the fork-piece C, the rod I, and stud G with the ball H, as described.

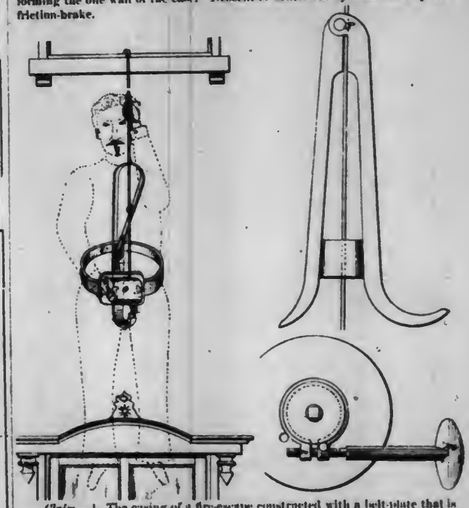
3. In combination with the slotted tube *a*, the actuating-rod B, and the removable fork-piece C, the finishing-brackets D, as described.

4. In a transom-lifter, the headed rod I, having the notches or recesses P, in combination with the recessed stud G and ball H, substantially as described.



200,870. FIRE-ESCAPES. J. G. Moore, Lowell, Mich. Filed July 17, 1877.

Brief.—The device adjustably secured to the waist-belt by a belt-plate forming the one wall of the case. Descent is controlled by a hand-clamp and friction-brake.



Claim.—1. The casing of a fire-escape constructed with a belt-plate that is adapted to be adjustably secured to a waist-belt, substantially as set forth.

2. The combination, with the waist-belt, of the belt-plate of the casing, and a removable cross-bar provided with teeth that engage with the belt, substantially as set forth.

3. A portable fire-escape consisting, essentially, of a metallic ribbon, one end of which is coiled upon a winding-drum, the casing of which is secured to a waist-belt, and a hand-clamp engaging with the metallic ribbon above the winding-drum, and disconnected from either the belt or winding-drum, whereby said clamp may be adjusted independently of the winding-drum, substantially as described.

4. The casing of a fire-escape constructed with a belt-plate provided with rings on its upper and lower edges, which serve for the attachment of the supporting straps, substantially as set forth.

5. The combination, with the supporting straps, each provided with snap-hooks, of the belt-plate of the casing, having rings secured to its upper and lower edges, substantially as set forth.

6. The cap formed with a shield to protect the end of the regulating-screw, substantially as set forth.

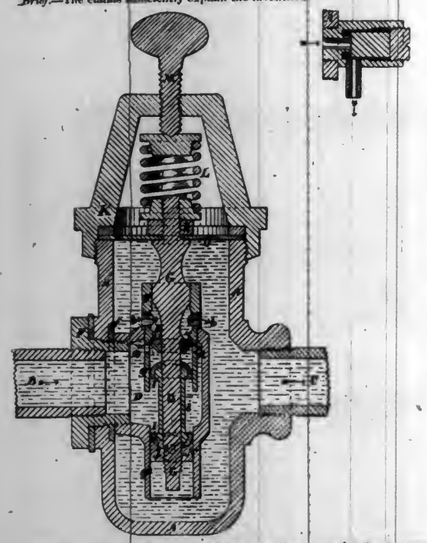
7. The combination, with the metallic ribbon and its casing, of a waist-belt and upper and lower supporting-belts, substantially as set forth.

8. A hand-clamp consisting of two jaws, of outwardly-curved handles, and a circular spring interposed between the handles, substantially as set forth.

9. The combination, with the metallic ribbon and its casing, the latter secured to a waist-belt, of the upper supporting-belt, provided with a ring for engagement with the ribbon, substantially as set forth.

200,871. WATER-REGULATOR. H. Mueller and J. Gross, Decatur, Ill., assignors of one-third their right to F. A. Kornmeyer, same place. Filed Nov. 21, 1877.

Brief.—The claims sufficiently explain the invention.

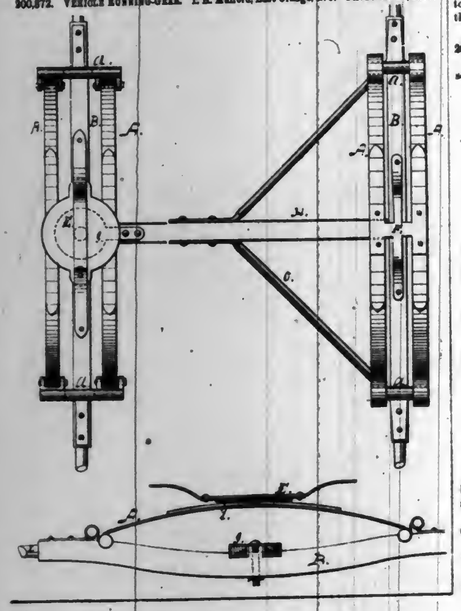


Claim.—1. A water-regulator constructed so that an equal water pressure is received from the main or inlet B on the concavity of the cup-shaped disks I I, and from the outlet C, or supply-pipes of the building, on the convexity of the disks, substantially as and for the purpose set forth.

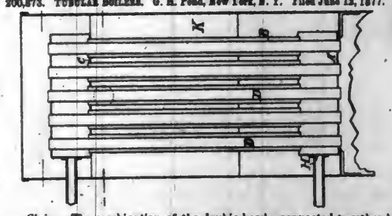
2. The receiving-chamber D, upper chamber E, balanced cup-shaped valves I I, inlets *a a*, and outlets *b b*, in combination with the valve H, substantially as shown and described.

3. The combination of the spring L, thumb-screw M, casing A, plunger G, chambers D E, valve H, and balanced valves I I, substantially as shown and described.

200,872. VEHICLE RUNNING-GEAR. I. H. Mulford, East Orange, N. J. Filed June 20, 1877.



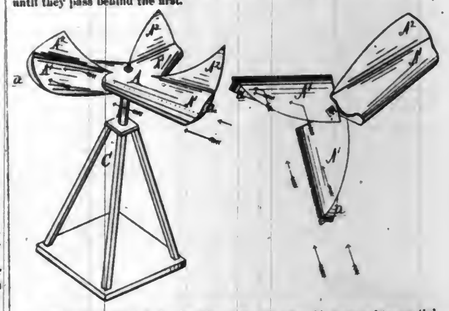
200,873. TUBULAR BOILERS. G. H. Pond, New York, N. Y. Filed June 12, 1877.



Claim.—The combination of the double heads, connected together by two sets of tubes, the fire-tubes passing through the water-tubes, and the diaphragm K, substantially as and for the purpose set forth.

200,874. WINDMILLS. Fabian Robert, Monroe, Mich., assignor to himself and P. B. Brady, Toledo, Ohio. Filed Feb. 7, 1878.

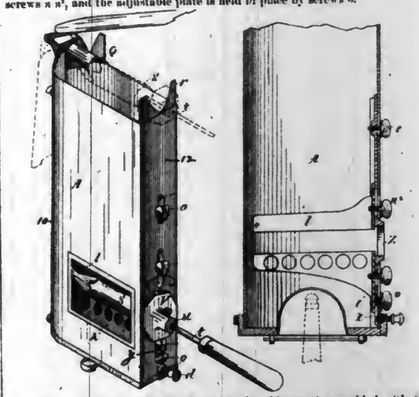
Brief.—The wind, striking fairly into and against one arm, is deflected through it, and strikes the preceding one obliquely just before it becomes tangent to the plane of direction of the wind, the latter impinges against the lip and impels it forward. Before this, however, the outer end of the arm and its upturned extension are directly in the path of the wind, and it acts upon them until they pass behind the first.



Claim.—The wheel A, having three concave arms, A', arranged tangential to its axis, each arm terminating in the curved extension A² and provided with the lip *a*, substantially as described.

200,875. SOLDERING APPARATUS. F. S. Robinson, Boston, Mass. Filed Dec. 24, 1877.

Brief.—The holders are attached to the adjustable plate by means of the screws *a a'*, and the adjustable plate is held in place by screws *o*.



Claim.—1. In a soldering apparatus, the chimney A, provided with the holders *l* K and an opening through which the iron is inserted, substantially as and for the purpose specified.

2. In a soldering apparatus, the holders *l* K, having their inner ends depressed, substantially as and for the purpose set forth.

3. In a soldering apparatus, the chimney A and flange *r*, in combination with the flange *r*, substantially as and for the purpose set forth.

4. In a soldering apparatus, the chimney A, provided with the stud Q and notch *r*, substantially as and for the purpose specified.

5. In a soldering apparatus, the adjustable plate *a*, provided with the flange *z*, in combination with the chimney A, substantially as and for the purpose set forth and specified.

6. The cover *p*, hinged to the top of the chimney A, said chimney being provided with a lateral opening, through which the soldering-iron is inserted, and with the holders I K, substantially as and for the purpose specified.

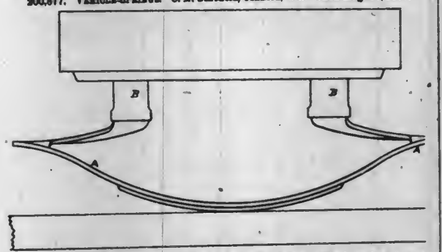
200,876. CANISTER-SHOT. A. M. Sawyer, Athol, Mass. Filed Jan. 11, 1878.



Claim.—1. A canister-shot provided with a casing of malleable iron or other hard metal, of such strength that it will not be forced outward against the bore or into the grooves of the gun, nearly divided transversely into two or more sections, connected together by one or more connecting bars, bands, or ties of sufficient strength to hold the sections together till placed in the gun, and too weak to resist the force of the explosion of the charge of powder which discharges the shot from the gun, substantially as and for the purposes described.

2. In a canister-shot, the casing A, made in one piece, of malleable iron or other hard metal, and nearly divided transversely into two or more parts by one or more series of cuts or slits, *c c*, arranged, relative to each other, substantially as described, and for the purposes described.

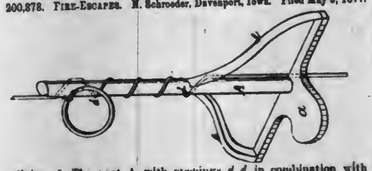
200,877. VEHICLE-SPRINGS. C. N. Schofield, Oshkosh, Wis. Filed Aug. 27, 1877.



Claim.—1. The combined semi-elliptic and double spiral spring A, constructed substantially as shown and described, for the purpose specified.

2. The spring A, in combination with the jointed stay-arm B, substantially as shown and described, for the purpose specified.

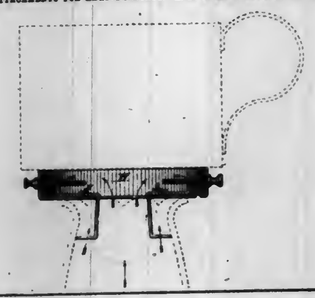
200,878. FIRE-ESCAPES. H. Schroeder, Davenport, Iowa. Filed May 9, 1877.



Claim.—1. The post A, with openings *d d*, in combination with seat *c*, rigidly attached to said post, and sustained by arms *e e*, as and for the purpose set forth.

2. In combination with post A and seat *c*, rigidly secured thereto, the armrest *c*, attached to post A by staple *b*, as and for the purpose set forth.

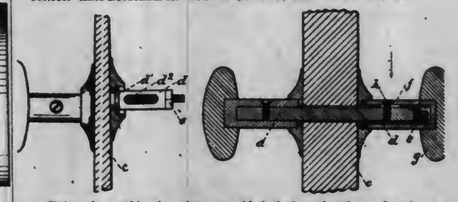
200,879. ATTACHMENTS FOR LAMP-CHIMNEYS. L. D. B. Shaw, Boston, Mass. Filed Dec. 19, 1877.



Claim.—1. A heater constructed, as described, with a close rim and perforated bottom, and provided with adjustable braces to bear against the inside of the lamp-chimney, all constructed and operating as and for the purpose described.

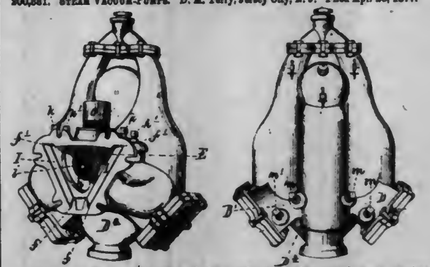
2. In combination with a heater to be attached to the top of a lamp-chimney, sliding and adjustable braces made to bear against the inside of the chimney, in the manner and for the purpose specified.

200,880. KNOB ATTACHMENTS. W. Stewart, Hartford, Conn. Filed Jan. 26, 1878.



Claim.—In combination, the many-sided shaft *a*, the sleeve *d*, fitting to said shaft, the nut *c*, the knob *g*, provided with the tubular shaft *f*, fitting over the nut and sleeve, and the screw *h*.

200,881. STEAM VACUUM-PUMPS. D. M. Terry, Jersey City, N. J. Filed Apr. 20, 1877.



Claim.—1. The combination of the perforated valve-seat I or L, having the edges beveled, flexible valve *k*, and perforated valve-guard *i*, for limiting the play of the valve, the whole arranged for use in a steam vacuum-pump, in the manner substantially as herein shown and set forth.

2. In combination with a steam vacuum-pump having valve-chambers E, D, and D', provided with V-shaped recesses *l* and *f*, the perforated valve-seats L and I, carrying suitable valves, and the retaining and adjusting set-screws or bolts *k* and *k'*, and *n* and *n'*, inserted through the walls of the said chambers, the whole arranged, applied, and operating as and for the purposes as herein shown and described.

200,882. TOBACCO-PIPES. T. A. Van Norden, Quincy, Cal. Filed Jan. 4, 1878.



Claim.—In a pipe, the combination, with the shell of a saliva-chamber, and a tube, *c*, entering one end of said chamber, of the hinged cap D, covering the opposite end of the chamber, and locked to the shell of the same by a catch, and carrying the tube *b*, constructed and arranged substantially as and for the purpose set forth.

200,883. WATCH-MAKERS' OIL-CUPS. Eugene R. Weber, San Francisco, Cal. Filed Sept. 10, 1877.



Claim.—The combination, with the cup A and its cover B, of the spring C, encircling the cup and secured thereto and to the cover, substantially as herein shown and described.

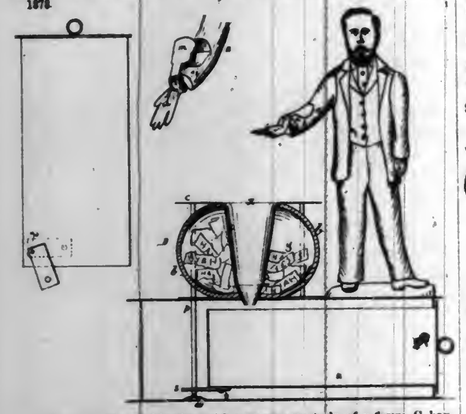
200,884.



200,884. CAR WHEELS AND AXLES. James M. Whiting, Providence, R. I., assignor of one-half his right to E. H. Whiting, same place. Filed Nov. 10, 1877.

Claim.—The combination of a series of horizontal elastic rods, each of which extends across from wheel to wheel, with a pair of car wheels and their axles, substantially as set forth.

200,885. TOY MONEY-BOXES. B. M. Abell and F. Brobst, New York, N. Y. Filed Jan. 2, 1878.



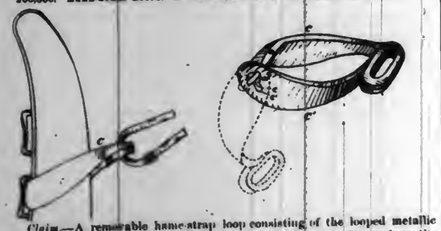
Claim.—1. The combination, with a money-receptacle, of a figure, C, having an arm extended above the opening of the receptacle, and a hand pivoted at the wrist, as set forth.

2. The combination, with the receptacle, of the glass globe *b* and funnel *c*, communicating with the receptacle.

3. The combination, in a money-box, of the receptacle, the entrance to which is through a glass ballot-box containing slips *y*, as set forth.

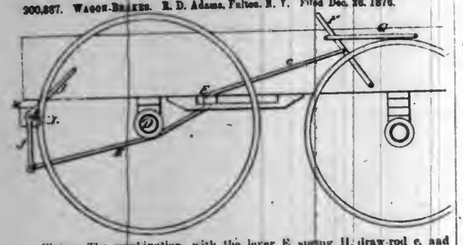
4. The combination, with the drawer, and with the rod *p*, for securing the box D, of the adjustable perforated plate *s*, as specified.

200,886. HAME-STRAP LOOPS. A. Ahlsiter, Boscobel, Wis. Filed Aug. 7, 1877.



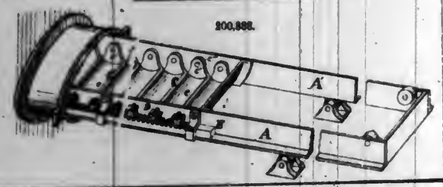
Claim.—A removable hame-strap loop consisting of the looped metallic pieces C and C', provided with means for detachably connecting each to the other, substantially as and for the purposes specified.

200,887. WAGON-BRAKES. R. D. Adams, Fulton, N. Y. Filed Dec. 26, 1876.



Claim.—The combination, with the lever E, spring H, draw-rod e, and lever F, of the pivoted levers J J, brake-bar L, draw-rods K K, and brake-shoe M, having three or more faces, substantially as described, and for the purpose set forth.

200,888.



200,889. CHARGING-SCOOPS FOR GAS-RETORTS. T. H. Birch, Cincinnati, Ohio. Filed Dec. 13, 1877.

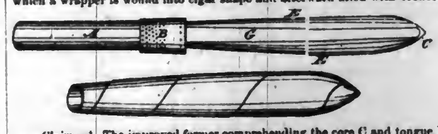
Brief.—The buckets of the charger are hung transversely on the lateral bars of the frame for the purpose of evenly spreading the charge of coal on the bottom of the retort by their inversion. The buckets being provided with pinions meshing with a toothed rack, they are reversed by the impact of the rack with the end of the retort upon the forward thrust of the loaded scoop, thus depositing the charge of coal throughout the length and breadth of the retort.

Claim.—1. A series of invertible buckets, C', suspended transversely within a suitable scoop-frame, and operating substantially as set forth.

2. The series of buckets C, pivoted transversely within the open scoop-frame A A', and having geared or other suitable connection D, with one or more slide bars or racks, E, substantially as and for the purpose set forth.

200,890. DEVICES FOR FORMING CIGAR-WRAPPERS. Orris A. Bishop, Chicago, Ill., assignor of one-half his right to W. E. Geer, same place. Filed Sept. 19, 1877.

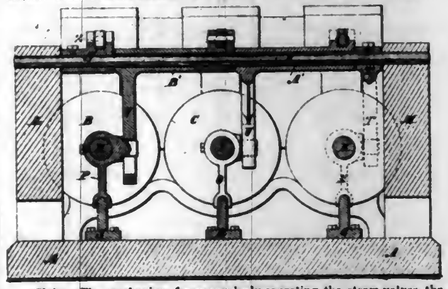
Brief.—The several segments, when put together, constitute a form upon which a wrapper is wound into cigar shape and afterward filled with tobacco.



Claim.—1. The improved former comprehending the core C and tongue D, the grooved sections or segments E, and the sections or segments G, as shown and described.

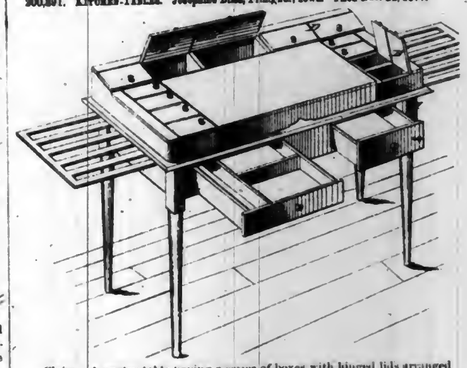
2. The sliding thimble B, jointly with the core and its handle, and the sections or segments E G, as shown and described.

200,890. STEAM PUMPING-ENGINES. G. F. Blake, Boston, Mass. Filed Feb. 21, 1878.



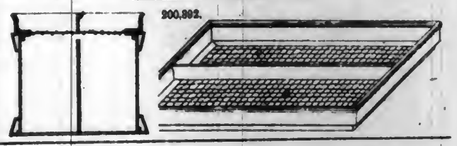
Claim.—The mechanism for successively operating the steam-valves, the same consisting of the rock-shaft S', levers T U V, and sleeves A' B', constructed and arranged as described, and combined with the valve-rods Z Z' Z² and piston-rods H I K, in the manner stated.

200,891. KITCHEN-TABLES. Josephine Bliss, Pringhar, Iowa. Filed Nov. 21, 1877.



Claim.—A pastry-table having a series of boxes with hinged lids arranged along three sides of the table, a reversible molding-board between the boxes, sliding end grates, and front storage-drawers, the whole arranged substantially in manner shown and specified.

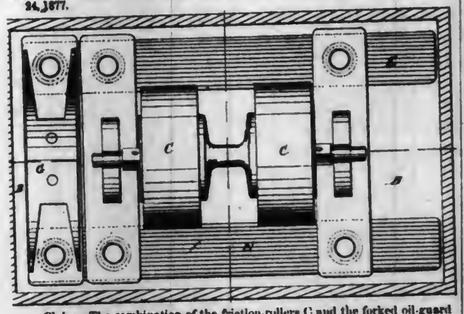
200,892.



200,892. HOP-PICKING BOXES. Wm. Brooks, Middlefield, assignor to J. W. Lamb, Otsego, N. Y. Filed Feb. 6, 1878.

Claim.—The described improved hop harvesting or picking box, consisting of the hop-harvesting box proper, provided with a removable screen-cover, adapted to permit the passage therethrough of the hops, and to retain the twigs, leaves, and other extraneous substances thrown upon the screen with the hops, as set forth.

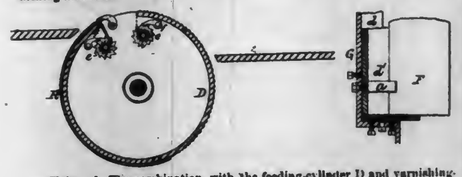
200,893. CAR-AXLE BOXES. W. H. Burden and F. C. Burden, Cleveland, Ohio. Filed Dec. 24, 1877.



Claim.—The combination of the friction-rollers C and the forked oil-guard G with the journal A and the box B, said oil-guard being curved or semicircular in form, and located at the inner end of the axle-journal, to operate substantially as and for the purpose specified.

200,894. VARNISHING-MACHINES. Garrett Burns, Chicago, Ill., assignor to Rand, McNally & Co., same place. Filed Oct. 3, 1877.

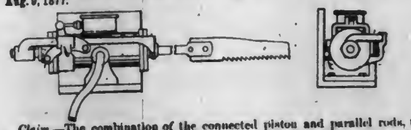
Brief.—Improvement in varnish-troughs and cylinder-blankets for varnishing-machines.



Claim.—1. The combination, with the feeding-cylinder D and varnishing-roller F, of the removable elastic cushion H, made to conform to the size of the sheets to be varnished, and projecting from and beyond the periphery of the feeding-roller, substantially as and for the purpose specified.

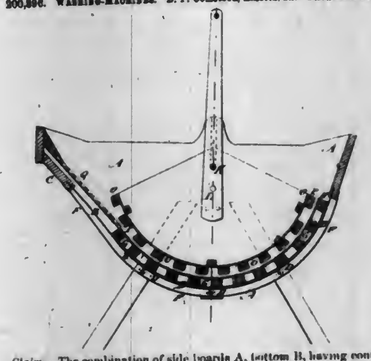
2. The combination, with the varnish-trough G and varnishing-roller F, of the movable gage-blocks *a a*, substantially as and for the purpose specified.

200,895. STEAM-ENGINES FOR SAWING-MACHINES. J. J. Carter, Sacramento, Cal. Filed Aug. 9, 1877.



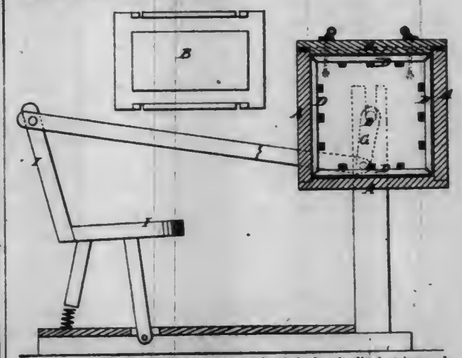
Claim.—The combination of the connected piston and parallel rods, the latter serving to operate the valve, and also to prevent the piston-rod from turning, substantially as set forth.

200,896. WASHING-MACHINES. B. F. Comstock, Lincoln, Ill. Filed Nov. 16, 1877.



Claim.—The combination of side boards A, bottom B, having continuation ends C C, false bottom F, and the two curved bars G, receiving in sockets the diagonal slats H, as shown and described.

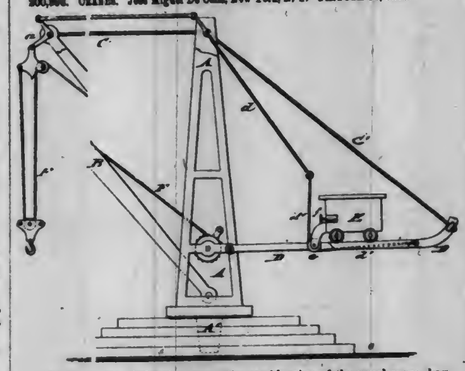
200,897. REVOLVING BOX-COVERS, AND DEVICES FOR OPERATING THE SAME. Eli P. Conner, Monticello, Iowa. Filed Nov. 27, 1877.



Claim.—1. The grates D, beveled on ends of the longitudinal strips, and held in place by the movable cover B, for the purpose set forth.

2. The combination, with the cranks of a drive-shaft, of a chair balanced upon its front legs, and having its rear supported on springs, and a pitman pivoted to said chair at the upper part of its back, as shown and described.

200,898. CRANES. José Miguel De Celis, New York, N. Y. Filed Jan. 12, 1878.

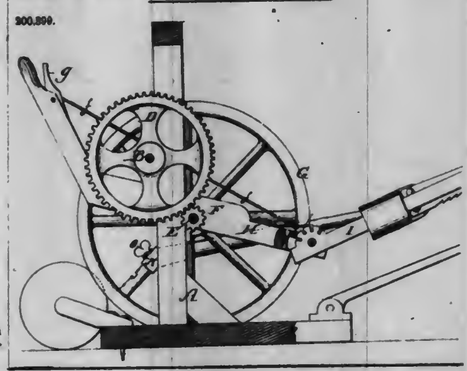


Claim.—1. In a balancing-crane, the combination of the usual crane, having braced and adjustable rear arms and movable self-acting counterpoise, with a fulcrumed-lever system operated by the weight suspended from the hoisting-chain, so as to set the counterpoise, substantially as and for the purpose described.

2. The combination of a crane, having braced double front jib and adjustable inclined rear arms, with a transmitting-lever system fulcrumed to top of crane, and connecting the pulley-block of the hoisting-chain with the rear arms, and with a movable counterpoise of the rear arms, substantially as shown and described.

3. The combination of crane A B C, having braced rear arms D and wheeled counterpoise E, with the hoisting-tackle F, fulcrum bell-crank lever *a*, lever-rod *b*, fulcrumed lever *d*, chain *d'*, and pulley *e* of counterpoise E, substantially as specified.

200,899.



200,899. SAWING-MACHINES. W. Dixon and B. W. Records, Walton, Ky. Filed Dec. 21, 1877.

Brief.—The saw is attached to a sliding head connected by a pitman with a pivot on a block mounted in one of the spokes of the fly-wheel. The guide-bar is provided with a notched head on its inner end, and is jointed to the inner end of a rocking frame having a spring-catch working in said head, and operated by a lever pivoted to the upper end of a backwardly-extending adjusting arm connected by a rod to said catch. By adjusting the block radially on the fly-wheel, the length of movement of the saw may be increased or diminished.

Claim.—1. The combination of the main frame and the gearing therein, the rocking frame H, provided with the saw-guide and the backwardly-extending arm, the sliding saw-carrying head, and the pitman, constructed and arranged as shown.

2. In a wool-sawing machine, the boxes of the main crank-shaft E, provided with the wrist or extension *d*, having the saw-sustaining frame mounted thereon, as shown.

3. In combination with the rocking frame H, having the rear arm or lever, and the saw-guide jointed to the forward end of said frame, the catch J, connected with the operating device *g* on the rear arm of the frame, as shown.

200,900. BANJOS. Henry C. Dobson, New York, N. Y., assignor to C. L. Dobson, same place. Filed Dec. 26, 1877.



Claim.—1. The straining-ring G, of cast metal, provided with perforated projections *f* to receive the screws *f f*, substantially as set forth.

2. The bracket D, having the vertical part *b* and flange *c*, and a screw-shank, by which it is attached to the hoop B, as set forth.

3. In a banjo having an outside sounding-box, C, and an inside fixed hoop, B, the brackets D D, secured at one end to the said hoop, and at the other to the box-side E, and provided with female screws for engaging straining-screws *f f*, substantially as described.

4. The combination of the cast-metal straining-ring G, fixed hoop B, machine-screws *f f*, and brackets D D, supporting said hoop and engaging said machine-screws, when all are constructed and arranged to operate substantially as set forth.

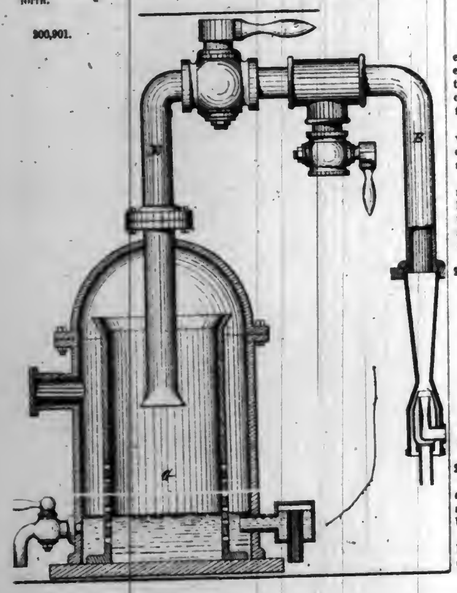
5. In a banjo having an outside sounding-box, C, and an inside hoop, B, fixed within the same by brackets, a sustaining-bracket, D, the body portion *a* of which is depressed to a plane below that of the upper edge of the sounding-box side, for the purposes set forth.

6. The bracket D, for sustaining the hoop B within the sounding-box C, its body portion being below the upper edge of said sounding-box, and provided with a vertically-projecting wall, *b*, and a flange, *c*, the latter resting upon and secured to the top edge of the sounding-box side E, no other part of said bracket touching said sounding-box, substantially as represented.

7. The sounding-box C of a banjo, composed of the bottom piece F and thin side or wall E, the said wall having a thickened top part, *d*, as and for the purposes set forth.

8. In a banjo having an inner hoop, B, on which the parchment head is stretched, and an outer sounding-box, C, the handle H, secured to the latter, cut away at *g*, and its upper portion *h* extending over the top edge of said sounding-box and abutting against the ring G, so as to resist the strain of the strings nearly in the line of the top surface of the handle, substantially as set forth.

200,901.



200,901. MACHINES FOR COMPRESSING AND PURIFYING AIR. Isidore Dreyfus, New York, N. Y. Filed Jan. 14, 1878.

Claim.—1. The herein-described method of conveying and compressing air, and of dissolving, condensing, and carrying off gases, vapors, &c., by the employment of a steam-blast in connection with water or other liquid.

2. The combination, in one apparatus, of a steam-injector, a surrounding water-chamber, and an intermediate air or gas chamber, substantially as set forth.

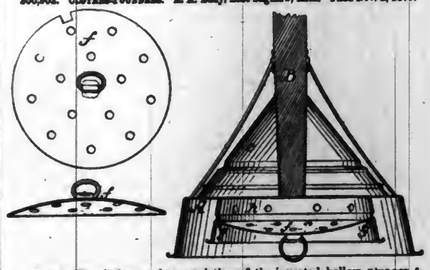
3. The combination, in an injecting apparatus, of steam, air, and water nozzles, the same being arranged successively or in superposed series, substantially as set forth.

4. The combination, with the triple steam, air, and water chamber and nozzles, of a combining-chamber, substantially as set forth.

5. The combination of the three-chambered injector for conveying steam, air, and water, as described, with a collecting-chamber or receiver, substantially as set forth.

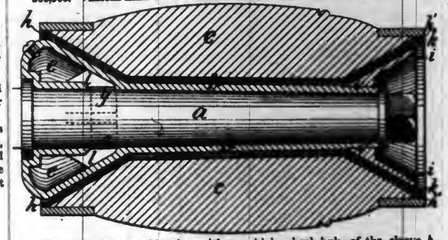
6. The combination, with a steam-injector for mixing air or gases with water or other liquid, of a collecting-chamber or receiver having an automatic overflow at given pressures, substantially as set forth.

200,902. CLOTHES-WASHERS. R. A. Eddy, East Saginaw, Mich. Filed Nov. 2, 1877.



Claim.—The clothes-washer consisting of the inverted hollow plunger A, having the depending perforated rim *e* and the convex perforated plate *f* therein, as shown.

200,903. VEHICLE-AXLE BOXES. J. Edson, Boston, Mass. Filed Dec. 26, 1877.



Claim.—1. The combination, with a vehicle-wheel hub, of the sleeve *b*, extending throughout the said hub, and formed with the conical chambered end *a* and screw-threaded end, the conical nut *i*, adapted to said screw-threaded end, and the conical elastic packings *h h'*, interposed between the conical chambered end of the sleeve and the conical nut, substantially as and for the purpose described.

2. The sleeve *b*, formed with the conical end, in combination with the vehicle-wheel hub, the conical elastic packing *h*, the conical nut *i*, and the conical metallic plate *k*, interposed between the nut and the hub, substantially as described.

3. The sleeve *b*, formed with a conical end, having a chamber, *c*, communicating with the axle to be lubricated, in combination with the vehicle-wheel hub, having a cone-shaped recess in its end, within which the conical end of the sleeve is arranged, and the cone-shaped elastic packing *h* between the hub and said conical end of the sleeve, substantially as and for the purpose described.

200,904. BAG-LOCKS. R. Flocks, Newark, N. J., assignor to R. Newman & Co., New York, N. Y. Filed Jan. 26, 1878.



Claim.—The sliding case C, in combination with the plate B and suitable spring *s*, arranged to operate in combination with the staples D', substantially in the manner and for the purpose described.

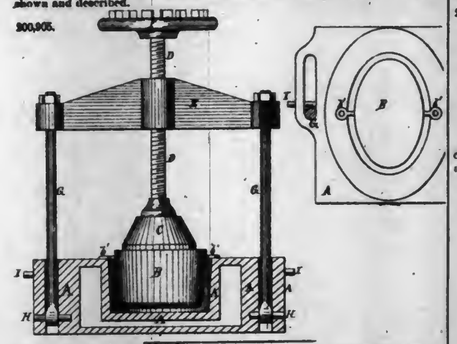
200,905. HAT-PRESSING MACHINES. A. C. Fuller, Middletown, N. Y. Filed Dec. 29, 1877.

Claim.—1. The base A of a hat-press, made hollow, and with a close inner surface or wall, to adapt it to serve as a mold for casting the female die or shell, a holder for holding the said shell, and a steam-chest for heating it when being used, substantially as herein shown and described.

2. The combination of the detachable ring-flange S with the base A of a hat-press, substantially as herein shown and described, and for the purpose specified.

3. The combination of the pivoted standards G, the pivoting-pins H, and the detachable locking-pins I with the slotted base A of a hat-press, and with the cross-beam E, that supports the pressure-screw D, substantially as herein shown and described.

200,905.



200,906. HAT-FOLDING DEVICES. A. C. Fuller, Middletown, N. Y., assignor to himself and G. B. Fuller, same place. Filed Dec. 29, 1877.



Claim.—1. The mode of folding hat-bodies by means of the bands B C, the rubber block D, and the receiver or die E, substantially as herein shown and described.

2. The bands B C and the rubber block D, in combination with each other and the receiver or die E, for folding a hat-body, substantially as herein shown and described.

200,907. WINDOWS. George H. Gerken, New York, N. Y. Filed Jan. 31, 1878.

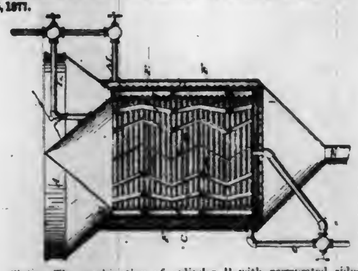
Brief.—The sashes are centrally pivoted to end strips, which slide in vertical grooves in the frame, and the joints between the sashes and the sliding end strips are covered by face-strips. The lower halves of the face-strips are hinged or otherwise removable, whereby the sashes, when lowered to the bottom of the frame, can be turned on their pivots and cleaned on both sides.



Claim.—1. The combination, with a window-casing having lower hinged or detachable face-strips, of sashes that are pivoted to guided end strips, so as to be swung into convenient position for cleaning, substantially as and for the purpose set forth.

2. The combination, with sashes hung by pivots to guided end strips, of upper guide-strips and of lower hinged or detachable strips, that cover the joints of sashes and end strips, and prevent their swinging when being moved up or down, substantially as and for the purpose set forth.

200,908. DRIERS FOR GRAIN AND MIDDLINGS. E. H. Gratiot, Platteville, Wis. Filed Apr. 6, 1877.



Claim.—The combination of cylinder B with corrugated sides H, the outer steam or hot-air chamber C, with inner corrugated side F, and with or without grain or middlings mixers or strips I, substantially as and for the purpose specified.

200,909. CAPS FOR GLASS STRINGS. E. Hagerty, New York, N. Y. Filed Oct. 20, 1877.



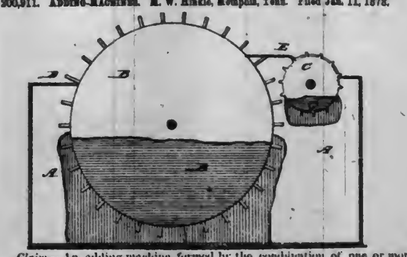
Claim.—The combination of a syringe-tube, A, a plunger having rod C, and a guide-tube, D, the latter screw-threaded on the outside, receiving cork E, and provided with flanged ring-plate F G, as and for the purpose specified.

200,910. ASH-PANS FOR LOCOMOTIVES. John R. Harrison, Cincinnati, Ohio. Filed Oct. 20, 1877.



Claim.—The combination, in a locomotive ash-pan, of the slats C, concaved on upper surface, and the water-supply pipes or nozzles I, substantially as shown and described, for the purpose specified.

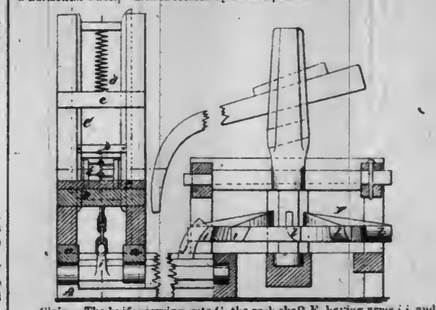
200,911. ADDING-MACHINES. M. W. Hinkle, Memphis, Tenn. Filed Jan. 11, 1878.



Claim.—An adding-machine formed by the combination of one or more pairs of wheels, B C, provided with the numbered pins and teeth, with the box A, provided with the index-numbers between the said wheels B, and with the notched plates D E, substantially as herein shown and described.

200,912. MACHINES FOR CUTTING SHINGLES. Andrew I. Hogan, Mason, Ill. Filed Dec. 17, 1877.

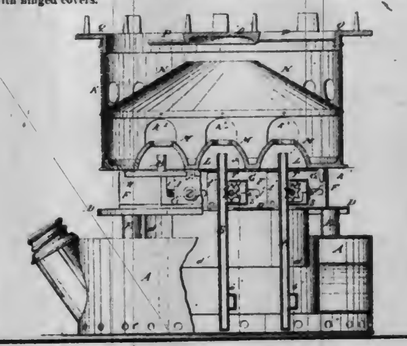
Brief.—The cutting-knife is mounted in a vertically reciprocating gate connected with a rock-shaft, and operated by cams or tappets on the periphery of a horizontal wheel, which is rotated by animal-power.



Claim.—The knife-carrying gate C, the rock-shaft E, having arms *i j*, and the cam-wheel F, in combination, substantially as herein shown and described.

200,913. OIL COOK-STOVE LAMPS. H. L. Howse, Sacramento, Cal. Filed Aug. 18, 1877.

Brief.—An annular oil-reservoir upon which is supported a frame with a depending flange extending into the circular air-space in center of reservoir. This frame carries also peculiar mechanism for adjusting the ratchet-wheels to raise and lower the wick, said ratchet wheels being inclosed by drip-boxes with hinged covers.



Claim.—1. The combination of the shield D with the oil-reservoir A, the wick-tubes B, and the frame F, substantially as herein shown and described.

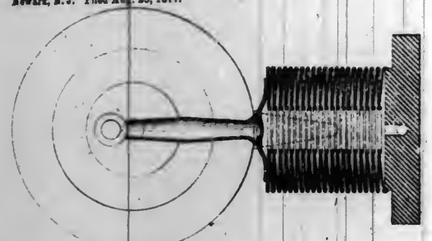
2. The frame F, having angular slots *f'* formed in its side bars to receive the ratchet-stems G, the plates I, provided with the slots *i*, to receive the ratchet-stems G, and the clamping-bolts J, for securing them adjustably to said frame, substantially as herein shown and described.

3. The combination of the ring-flange *d'* with the shield D, the oil-reservoir A, and the wick-tubes B, substantially as herein shown and described.

4. The combination of the drip-boxes S, provided with the covers T, with the wick-tubes B, substantially as herein shown and described.

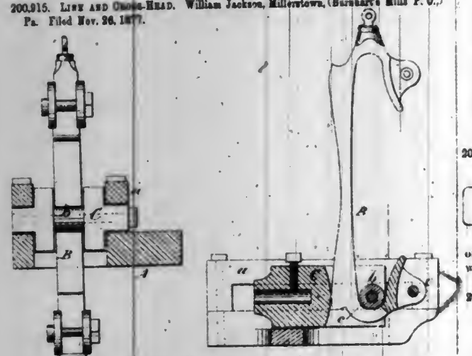
5. The combination of the plate I, of wire-gauze or finely-perforated sheet metal, and the hollow studs *f*, with the frame F, the wick-tubes B, and the cast bottom of the chimney K, substantially as herein shown and described.

200,914. PNEUMATIC, HYDRAULIC, OR STEAM PRESSURE APPARATUS. John W. Hyatt, Newark, N. J. Filed Aug. 25, 1877.



Claim.—The flexible chambers composed of elastic metal plates connected alternately, centrally, and circumferentially, substantially as and for the purposes described.

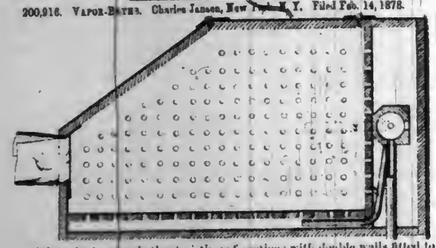
200,915. LINK AND CROSS-HEAD. William Jackson, Millerstown, (Barnhart's Mills P. O.), Pa. Filed Nov. 26, 1877.



Claim.—1. A hook-link, in combination with a cross-head having a slotted opening, a convexity in said opening, a roller, *b*, and a pin, *c*, as shown and described, for the purpose set forth.

2. The hook-link B, having a convexed surface on the back, declining toward the middle of link, in combination with a cross-head recessed in its slotted opening, as and for the purpose specified.

200,916. VAPOR-BATHS. Charles Janson, New York, N. Y. Filed Feb. 14, 1878.



Claim.—1. A vapor-bath consisting of sections with double walls fitted to the entire body or a part of the same, the inner walls being perforated to admit the free exit of steam or vapors, substantially as and for the purpose set forth.

2. A vapor-bath consisting of sections with double walls fitted to inclose the entire body or a part of the same, the sections being separately supplied with steam or vapors, and the inner walls perforated for the exit of the steam, substantially as and for the purpose set forth.

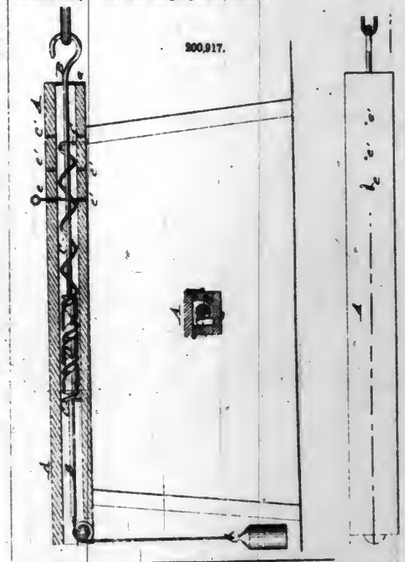
200,917. DEVICES FOR TWISTING YARN INTO HANKS. S. S. Jennings and A. Jennings, Sullivan, Ill. Filed Jan. 26, 1878.

Brief.—The twisting is accomplished by means of a rod with hook end, which is made to revolve upon being drawn out, the amount of twist being regulated by a stop-pin. Upon removing the hank, the rod is drawn back by a cord and weight.

Claim.—1. A device for twisting yarn into hanks, consisting of a suitable guide box or frame, a fixed spiral guide-wire, and of a twisting-rod having spirally-grooved section, outer hooked end, and opposite weighted end, substantially as and for the purpose specified.

2. The combination of guide-box A, having fixed spiral guide-wire C, with twisting-rod B, having spirally-grooved section D, and with stop-pin *e*, passing through box and spiral wire, to regulate the number of rounds of twist, substantially as and for the purpose specified.

200,917.

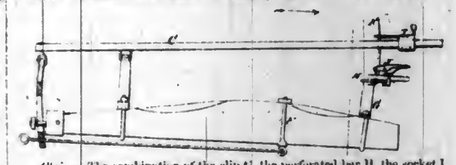


200,918. HOLDERS FOR LEATHER STRAPS. Daniel A. Johnson, Boston, Mass. Filed Feb. 1, 1878.



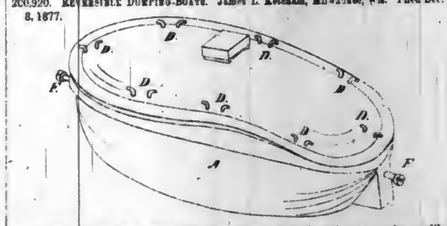
Claim.—As an improved article of manufacture, a strap-holder composed of a button and a yielding arm extending therefrom, to operate in connection with a side-loop, substantially as described.

200,919. PLOW-REGULATOR. Daniel M. Johnson, Emerson, Iowa. Filed July 30, 1877.



Claim.—The combination of the clip G, the perforated bar H, the socket I, the pin, lever, and spring J, the perforated bar K, and the pin and socket L, with the end of the lever C, for holding the said lever in place, substantially as herein shown and described.

200,920. REVERSIBLE DUMPING-BOATS. James I. Ketcham, Milwaukee, Wis. Filed Dec. 8, 1877.



Claim.—1. A boat provided with pivots at each end, so as to be readily reversible, substantially as set forth.

2. Boat A, provided at each end with gudgeons or pivots F, and having cover D, constructed substantially as set forth.

200,921. SHUTTER-FASTENINGS. John C. Knoeppel, New York, N. Y. Filed Sept. 7, 1877.

Brief.—A cap is cast upon the outer fastening-hook, and there is an opening or recess at the lower end of the inner flange of the case or cylinder, to prevent, ordinarily, the entrance of water and to provide for its escape.

There are also peculiar guards and rests onto which the fastening-hooks fit, and a novel construction of the nearly circular rear points of the fastening-hooks.

Claim.—1. In a shutter-fastener, the flange or inner face G of the cylinder or case A, having an opening or recess, K, as and for the purpose herein stated.

2. In a shutter-fastener, the fastening-hook C, having the cap E, as and for the purpose herein stated.

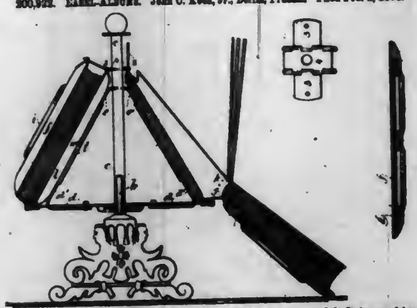
3. The nearly circular rear points *a a' a''* of the fastening-hooks B and C, substantially as described, for the purpose specified.

4. The fastening-hooks B and C, having downwardly-projecting spurs or stops *d d*, fitting and resting in a recess formed by the guards F F, combined with rests H H, for the purpose herein specified.

200,921.



200,922. EASEL-ALBUMS. John C. Koch, Jr., Berlin, Prussia. Filed Feb. 1, 1878.



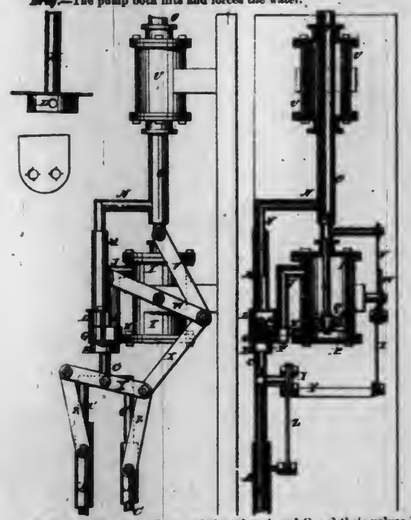
Claim.—1. The standard *b c*, plate *d*, and arms *a' a''* and *d' d''*, in combination with the photograph-album, and the sheet-metal socket *t* upon the back cover thereof, into which the ends of the arms *a' a''* and *d' d''* pass, substantially as set forth.

2. The photograph-album having the front cover recessed and provided with grooves, in combination with the picture-holder adapted to slide into said grooves, substantially as set forth.

3. The plate 4, having a central hole for the standard and hinge-sections at the edges, in combination with the photograph-albums and the hinged clasps 3 thereof, substantially as set forth.

200,923. LIFT AND FORCE PUMPS. Neil Malmquist, New York, N. Y., assignor to himself and John Loyd, same place. Filed Dec. 4, 1877.

Brief.—The pump both lifts and forces the water.



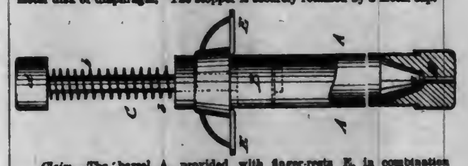
Claim.—1. The combination of the tubes A and C and their valves B and D, the valve-chest E G L and its valves F K and passages H J, the cylinder I, the piston P, and the tubes M N O, substantially as herein shown and described.

2. The combination of the connecting-bars V X Z, the equal-armed lever Y, and the operating-lever W with the tubes O A for operating the pump, substantially as herein shown and described.

3. The valve-chest formed of the lower chamber E, the intermediate chamber G, divided into two compartments by a vertical partition, and provided with the inlet-valves F, the passages H J, and the outlet-valves K, and the upper chamber L, substantially as herein shown and described.

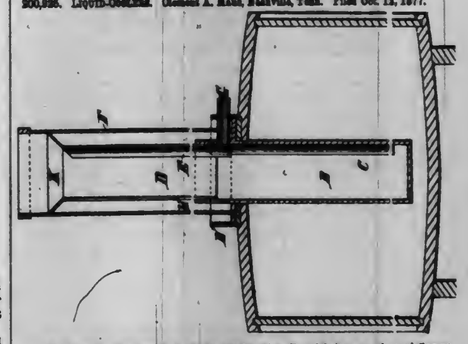
200,924. INSECT-POWDER BLOWERS. Michael Mast, New York, N. Y. Filed Jan. 4, 1878.

Brief.—The barrel is closed by a perforated stopper cut out conically at the inside, and re-enforced at the apex of the conical cavity by a perforated metal disk or diaphragm. The stopper is securely retained by a metal cap.



Claim.—The barrel A, provided with finger-rests E, in combination with the spring-acting piston C, provided with a thumb-rest, *d*, whereby the blower may be operated by hand, as set forth.

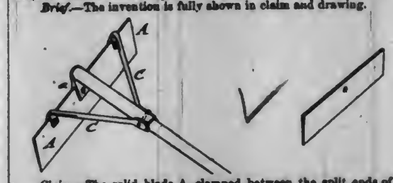
200,925. LIQUID-COOLERS. Clement A. Mann, Nashville, Tenn. Filed Oct. 12, 1877.



Claim.—The combination of the cooler-pipe B, with its cup-shaped flange B' and the discharge-pipes C and G, the feeder-pipe D, with its shield E and funnel-shaped flange K, and the insulating-pipe F, substantially as and for the purpose specified.

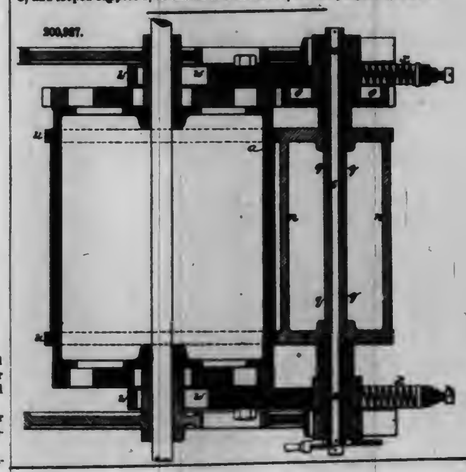
200,926. COTTON-HOES. Joseph M. Moore, Orville, Tex. Filed Dec. 8, 1877.

Brief.—The invention is fully shown in claim and drawing.



Claim.—The solid blade A, clamped between the split ends of braces C C, and looped support *c*, as shown and described, for the purpose specified.

200,927.

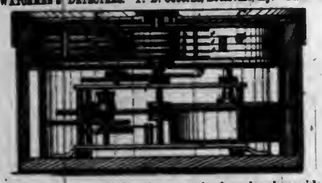


200,927. ROTARY PRINTING-MACHINES. George Newman, Leeds, England. Filed May 14, 1877. Patented in England, July 17, 1872.

Brief.—The type-cylinder, having two flat form-faces with intermediate ink-distributing surfaces, is twice the size of the impression-cylinder, which rests in sliding bearings reciprocated by cams on the ends of the type-cylinder, the two cylinders being geared together. Eccentric bushes on the journals of the impression-cylinder shaft are connected by a rod running through the shaft, and one of the bushes bears a hand-lever, by which the impression is adjusted or thrown off.

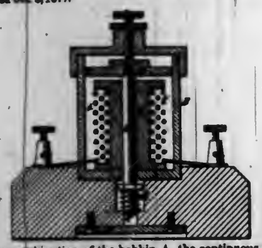
Claim.—The revolving carrier sustaining one or more flat printing-surfaces, in combination with the side bars *w*, rollers 1, cams 2, shaft *q*, griper-cylinder *n*, eccentric bushes *r*, and their connecting-rod *s*, substantially as set forth.

200,928. WATCHMEN'S DETECTORS. T. D. Osborne, Louisville, Ky. Filed Aug. 10, 1877.



Claim.—In a watchman's time-detecter, the hour-hand provided with two or more radially-movable punches, and separate mechanisms for operating the same, whereby one or more of said punches may be operated at the same time, substantially as and for the purposes herein set forth.

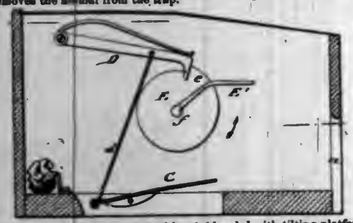
200,929. ELECTRO-MAGNETS. Edwin L. Paine, Newark, N. J., assignor to A. Allbright, same place. Filed Oct. 3, 1877.



Claim.—The combination of the bobbin A, the continuous shell B, and the paramagnetic armature D, placed within the shell and below the top edge of the same, being substantially an improvement in electro-magnets.

200,930. ANIMAL-TRAPS. Jacob A. Palmer, Sabia, Ill. Filed Dec. 11, 1877.

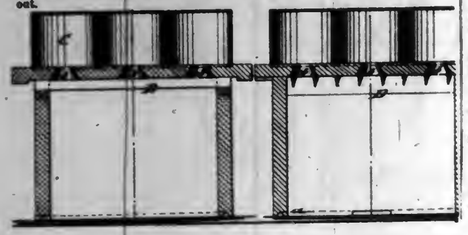
Brief.—The box is divided by a partition into two divisions, the first being the trap proper, and the second containing the actuating-spring and gearing mechanism. The trap is sprung by the animal when stepping upon the platform, which releases the pawl from the wheel, the spring mechanism causing the wheel to revolve, whereby the backwardly-bent arm thereon strikes, kills, and removes the animal from the trap.



Claim.—The pawl D, connected by rigid rod *d* with tilting platform C, in combination with the wheel E, having shoulder *e*, and backwardly-bent arm E', as and for the purpose specified.

200,931. BEE-HIVES. Jesse W. Park, Columbia, Tex. Filed Oct. 6, 1877.

Brief.—The upper notched sections rest upon the walls under the cover, so that when the latter is removed any number of the frames can be taken out.



Claim.—1. As an improvement in hives in which the honey-box compartment is supported upon and separate from the brood-chamber, the removable notched strips placed upon the upper edges of the brood-chamber inclosure and the comb-strips fitted therein, as described.

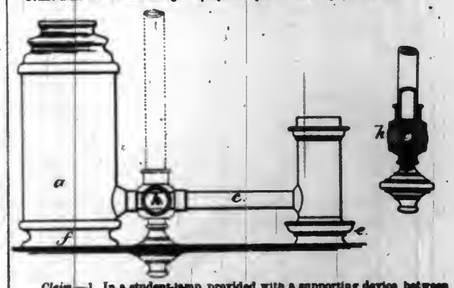
2. The lower section or brood-compartment, having bottom groove to be filled with soap for killing the insects, substantially as set forth.

200,932. TOOL-HANDLES. John E. Parrish, Centreville, La. Filed Aug. 18, 1877.



Claim.—The rubber tip B, provided with shank and circumferential flange, as shown in the drawing, and for the purpose specified.

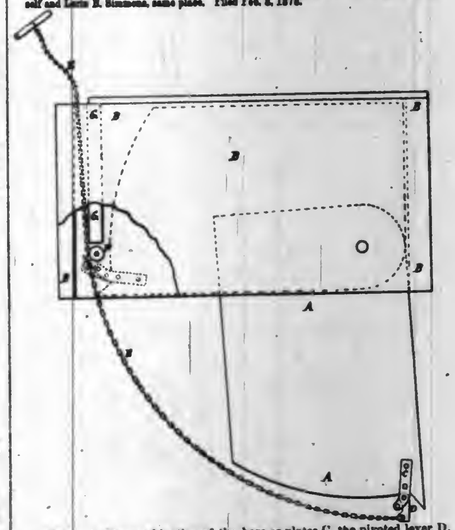
200,933. STUDENT-LAMPS. Francis W. Platt, Waterbury, Conn., assignor to himself and the Plume & Atwood Manufacturing Company, same place. Filed Sept. 17, 1877.



Claim.—1. In a student-lamp provided with a supporting device between the fountain and burner, the base *f* of the fountain and the base *e* of the wick-holding tube at the same level, or nearly so, for the purposes and substantially as set forth.

2. The block A and jaw *m*, in combination with the reservoir *a*, tube *c*, and wick-holding tube *d*, substantially as set forth.

200,934. CENTER-BOARDS FOR VESSELS. Luther Reed, Henderson, N. Y., assignor to himself and Lucie B. Simmons, same place. Filed Feb. 8, 1878.



Claim.—1. The combination of the bars or plates C, the pivoted lever D, and the chain E with the lower rear corner of the center-board A, substantially as herein shown and described.

2. The point *a'*, formed upon the lower rear corner of the center-board A, in combination with the bars or plates C, the pivoted lever D, and the chain E, substantially as herein shown and described.

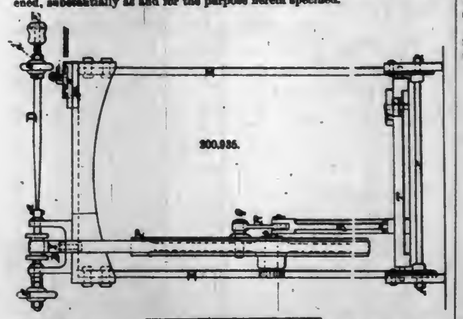
3. The sheave F, placed in the lower rear part of the box B, and the false post G, in combination with the rear part of the said box B, and with the chain E, substantially as herein shown and described.

200,935. GRINDING-MACHINES. Charles Riches, Caister, Great Yarmouth, Great Britain, assignor of one-half his right to H. R. J. Denton, Wolverhampton, England. Filed June 14, 1876. Patented in England, Oct. 2, 1874.

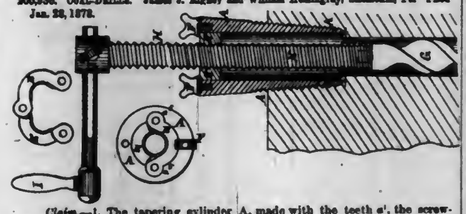
Claim.—1. In a grinding or sharpening machine, a sharpening-wheel, A, the spindle D of which, at one end, is connected by a universal joint with the driving mandrel or shaft, and at the other end is mounted in a simple direct-

ing-handle, E, as a bearing, substantially as and for the purpose herein specified.

2. The sharpening-wheel A, having its spindle D supported at one end by a universal-joint connection with a driving mandrel or shaft, and at the other end by a handle, in which it turns, in combination with a sliding rest or holder, K, mounted on a pivoted support, J, for holding the article to be sharpened, substantially as and for the purpose herein specified.



200,936. COAL-DRILLS. James J. Rigney and William Hemingray, Shamokin, Pa. Filed Jan. 28, 1878.

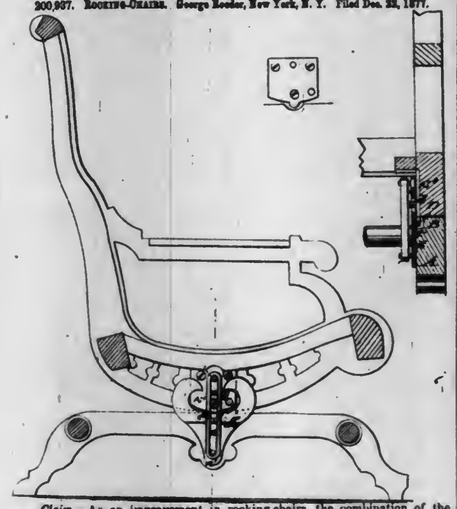


Claim.—1. The tapering cylinder A, made with the teeth *a'*, the screw-thread *a²*, the longitudinal grooves or channels *a³*, holes *a⁴*, and the recesses *a⁵*, to adapt it to support and guide the drill, substantially as herein shown and described.

2. The combination of the hinged nut E and the cross-head screws F with the tapering cylinder A and the screw H, that carries the drill G, substantially as herein shown and described.

3. The combination of the drill G and the adjustable crank I with the screw H, the hinged nut E, and the tapering cylinder A, substantially as herein shown and described.

200,937. ROCKING-CHAIRS. George Reeder, New York, N. Y. Filed Dec. 22, 1877.



Claim.—As an improvement in rocking-chairs, the combination of the base-frame, having straight top rails and center plates with hook ends, with a rocking seat-frame, connected by suitable springs to the base, and having center plates with stop-pins and downward-projecting bottom lugs, entering recesses or sockets of the rails, substantially as and for the purpose specified.

200,938. WATER-COIL STEAM-GENERATORS. Wilber S. Salisbury, Chicago, Ill., assignor of one-half his right to Henry J. Brimmer, Adams, N. Y. Filed Oct. 31, 1877.

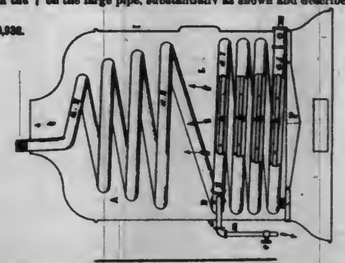
Brief.—The inner tube is provided with slanting perforations, by which the feed-water is given a twirling motion on its emission from the tube.

Claim.—1. A coil boiler consisting of an upper heating or steam-drying section, A, and a lower generating-section, B, provided with a feed-pipe, *d*, also feeding-space L, between the sections, arranged for passing in fuel, as described and shown.

2. A coil boiler with an upper and lower section, the lower section being provided with a coil in its interior of small pipe, said inner coil being provided with slanting holes, connecting-pipes *d* and *m*, and steam-cock *c*, all constructed and arranged substantially as shown and described.

3. A coil boiler with an upper and lower section, the lower section B having a removable inner coil receiving its feed-water supply at the bottom through the T on the large pipe, substantially as shown and described.

200,939.

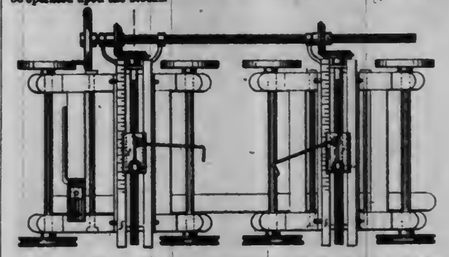


200,939. COLLARS AND CUFFS. Rufus H. Seaborn, Charles O. Kanouse, and Albert A. Seaborn, Newark, N. J. Filed May 10, 1877.

Claim.—A fabric for collars and cuffs, or other similar articles, having outer sheets or layers of celluloid and an interlining of textile or fibrous material, substantially as and for the purposes specified.

200,940. SAW-MILL HEAD-BLOCKS. Jas. S. Seefield, Little Sioux, Iowa. Filed Jan. 4, 1878.

Brief.—The carriage which supports the head-block is composed of two short sections carried by a bar having a rack moved by a pinion. The first section is adjustably attached to a rock-rail by a rock-shaft and eccentric-lever for adjusting the head-blocks toward or from each other. The blocks are provided with short beveled and mortised knees, so that logs of different sizes can be operated upon the blocks.



Claim.—1. The carriage having its first section adjustably fastened to the rock-rail by a rock-shaft and eccentric-lever, as shown and described.

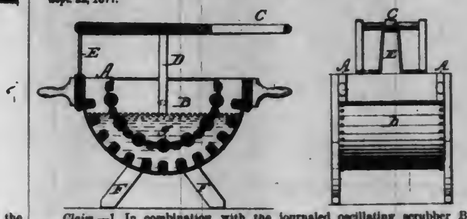
2. The combination, with head-blocks, of the short beveled and mortised knee, the bevel striking the log directly under the circle, and close to the point where it rests on the block, and driving the dog into the log.

3. The short beveled and mortised knee *l*, in combination with the head-block C, substantially as herein shown and described.

200,941. SHEEP-WASHES. Adam Scott, Robert Scott, and Charles A. Stone, Wamego, Kans. Filed Dec. 6, 1877.

Claim.—A sheep-wash formed of the described proportions of tobacco, potash, turpentine, and tar, as and for the purpose specified.

200,942. WASHING-MACHINES. Henry Hevert and Frank J. Young, Denison, Iowa. Filed Sept. 22, 1877.

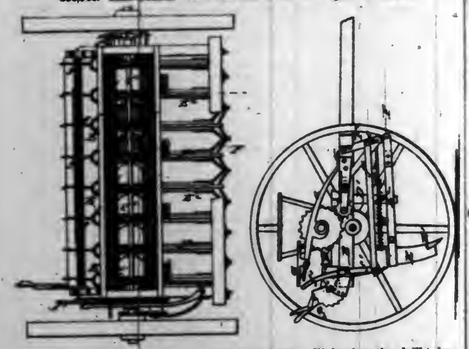


Claim.—1. In combination with the journaled oscillating scrubber B, mounted in the body A, the lever C, pivoted at its middle to the scrubber, and connected at one end to the body by a link, E, as shown, whereby the lever is adapted for operating and regulating the pressure of the scrubber.

2. In combination with the body A and scrubber B, constructed as shown, the lever C and link E, constructed and arranged to sustain the scrubber when raised upon the end of the body, in the manner shown and described.

3. In combination with the body A, scrubber B, and lever C, the pivoted standard or link E, made in one piece with the two inclined legs, and arranged as shown.

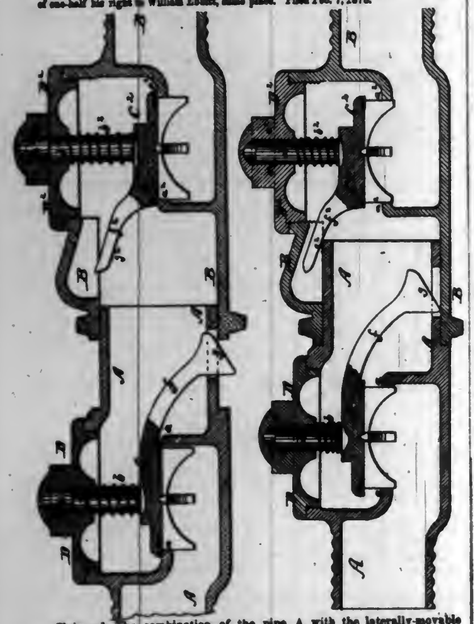
200,943. SEED-DRILLS. Ole N. Stearns, Hale, Wis. Filed Nov. 17, 1877.



Claim.—1. The combination, with forked arms E^3, having the drill-tubes pivoted thereto, of the compound crank-shaft F and rods F^3, carrying springs *e*, substantially as and for the purpose specified.

2. The combination, with arms E^3, of the drill-tubes, the crank-shaft F, and the rods and springs F^3 *e*, the connecting-rod, rack, and operating-lever, substantially as shown and described.

200,944. VALVE-COUPLINGS FOR VACUUM-PIPES. Wm. H. Smith, New York, N. Y., assignor of one-half his right to William Ebbitt, same place. Filed Feb. 7, 1878.



Claim.—1. The combination of the pipe A with the laterally-movable valve C, having a rigid projecting arm, *f*, which projects in the way of the pipe to be coupled to the pipe A, and serves to open the valve when the pipes are coupled, without thereby straining any part of the pipe or mechanism, substantially as herein shown and described.

2. The pipe A, having screw-cap D, and combined with the laterally-movable valve C, having rigidly-projecting arm *f*, substantially as herein shown and described.

3. A coupling for the pipes of vacuum-brakes, consisting of pipes A B, having valves C C^1 in the same, said valves being moved laterally, and forced away from their seats by rigidly-projecting arms f f^1, all arranged substantially as herein shown and described.

200,945. SHADES FOR UMBRELLA'S CARRIAGES. Herbert S. Smith, Brooklyn, N. Y. Filed Oct. 1, 1877.

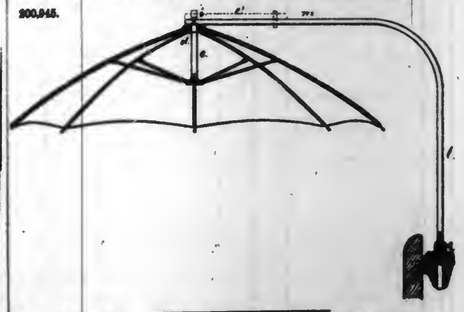
Claim.—1. In combination with the parasol and the supporting-arm thereof, a rod passing from the stretchers through the crown of the parasol, and provided with a joint capable of passing through the crown-ring, substantially as and for the purposes set forth.

2. The pivoted joint *i* in the rod *m*, having a projecting end to form a T, in combination with the parasol-frame and supporting-arm, substantially as set forth.

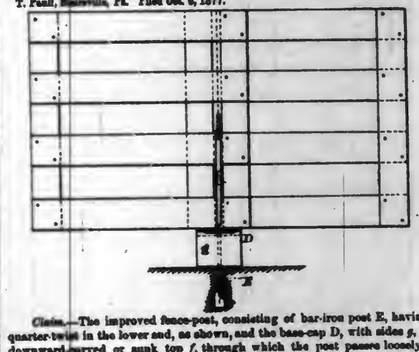
3. The supporting-arm *l* of the parasol or canopy, having a toothed clutch around the vertical, or nearly vertical, portion thereof, in combination with the toothed socket *n*, secured upon the carriage, and through which said arm *l* passes, whereby such parasol can be positioned horizontally, substantially as set forth.

4. The combination, with a parasol, of an arm connected to the child's carriage, and a joint connecting the rod of the parasol to such arm, the parts being constructed substantially as specified, so that the joint will pass through the crown of the parasol, and the latter close around the arm, as set forth.

200,945.



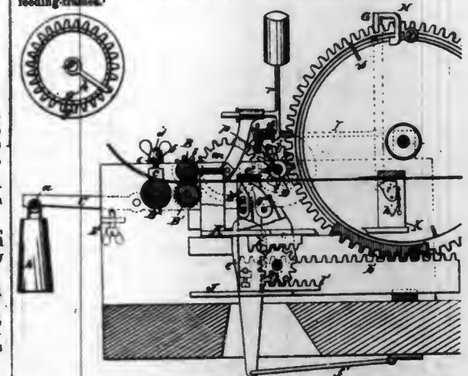
200,946. FENCE-POSTS. Ariel B. Sprout, Hagbaville, assignor of one-half his right to Gen. T. Paull, Hainesville, Pa. Filed Oct. 6, 1877.



Claim.—The improved fence-post, consisting of bar-iron post E, having a quarter-twist in the lower end, as shown, and the base-cap D, with sides *g*, and downward-curved or sunk top *f*, through which the post passes loosely, as shown and described, and for the purpose specified.

200,947. WIRE CUTTING AND BENDING MACHINES. Wm. E. Stearns, Rutland, Vt., assignor to himself and Julia M. Smith, same place. Filed Oct. 10, 1877.

Brief.—The wire is passed under two U-shaped guides having holding and feeding dogs, and over an upwardly-sliding cam-operated cutter. The power feeds the wire through rolls, and by an oscillating sector-wheel reciprocates two frames carrying the feeding and cutting devices. The oscillating sector-wheel, by stops on it, operates a bell-crank lever, which mediately, through a clutch, slides lengthwise a shaft having fixed pawl on each end, so that they alternately engage their wheel-ratchets, operated by the main driving-gear. The ratchets drive the main sector-wheel in different directions. The cutter-lever is pivoted to the rack, which communicates motion to the feeding-frames.



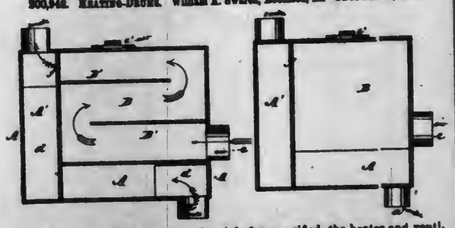
Claim.—1. The combination of the frame K, carrying the wire-clamping dog i^2, the head J_1 carrying a wire-cutting device, and mechanism for imparting to frame K and head J reciprocating motion, substantially as herein shown and described.

3. The combination of the lever *c'*, provided with the rod *f'*, with the cutter *d'*, substantially as herein shown and described.

3. The pinion *i* and wheel *g*, provided with ratchets, as described, the shaft D, having arms *h k* and collar *o*, the rod *p*, having fingers *q*, and the weighted lever *r*, in combination, substantially as herein specified.

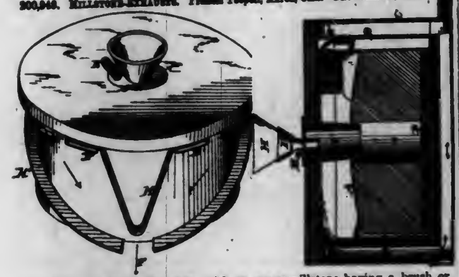
4. The combination of the grooved spur-wheel E, having studs *v w*, shaft G, having arms H I, and the shifting-rod *p*, substantially as and for the purpose herein shown and described.

200,948. KNEADING-DRUMS. William A. Swarm, Robinson, Ill. Filed June 4, 1877.



Claim.—As the improvement hereinbefore specified, the heater and ventilator having side and top air entrance and exit openings *e e'*, the inner suspended air-chamber B, having the parallel shelves B^1, with alternating openings, the smoke-passage A, extending beneath said chamber and across the ends thereof, and the rear passage A^1, communicating with passage A by means of openings *f* at the top of the vertical partition, all as shown and described, for the purpose specified.

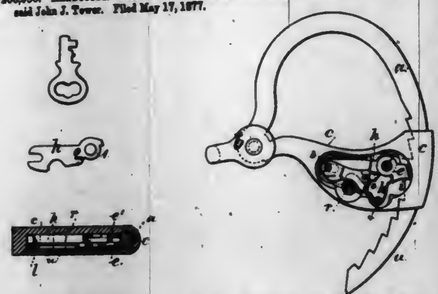
200,949. MILLSTONE-EXHAUSTS. Francis Teapell, Akron, Ohio. Filed Jan. 21, 1878.



Claim.—1. The combination, with an upper millstone having a brush or broom secured to its upper surface, of an inner and outer casing, together constituting an intervening annular air-chamber, said inner chamber provided with air-passages and suitable screens for covering said air-passage, substantially as set forth.

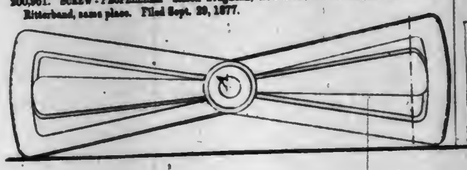
2. The combination, with casings D and C, of the air-guides E H^1 and central guide H^2, said guides converging at the exhaust-passage F, substantially as set forth.

200,950. HANDCUFFS. John J. Tower and Henry W. Kahlke, Brooklyn, N. Y., assignors to said John J. Tower. Filed May 17, 1877.



Claim.—The combination, with the radius-bar *c* and notched segment *a*, of the swinging catches *e e'*, pivoted to the sliding bar *h*, the tumbler *l*, cylinder *r*, and plate-key, substantially as set forth.

200,951. SCREW-PROPELLERS. Simon Traghein, New York, N. Y., assignor to David S. Ritterband, same place. Filed Sept. 20, 1877.

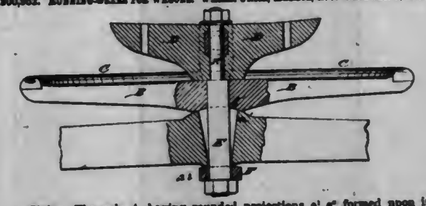


Claim.—1. A propeller-screw made with blades of the usual pitch, and with strengthening-frames extending from the boss or hub at both sides and across the outer center points of the blades, substantially in the manner and for the purpose set forth.

2. A propeller-screw made with blades of the usual pitch, and with strengthening-frames extending at an oblique angle of inclination to the plane of the blades from the boss of the screw outwardly at both sides of the blades, and across the outer center points of the same, substantially as and for the purpose set forth.

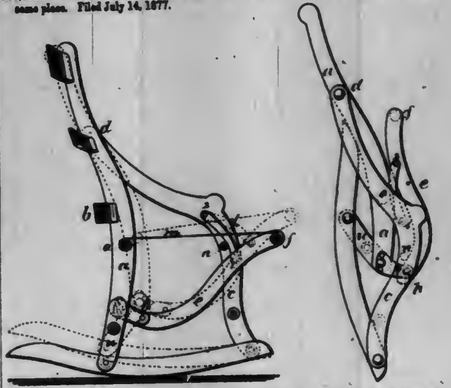
3. A propeller-screw made with blades of the usual pitch, and with strengthening-frames extending at an angle of inclination to the blades from the boss outwardly at both sides of the blades, and across the outer center points of the same, the front and rear edges of the strengthening-frames being beveled to facilitate the motion of screw and reversing of vessel, substantially as specified.

200,952. RUNNING-GEARS FOR WAGONS. William Ulrich, Madison, N. J. Filed Jan. 7, 1878.



Claim.—The axle A, having rounded projections a^1 a^2 formed upon its upper and lower sides, and a V-shaped slot formed through it, in combination with the concaved cross-bar B of the fifth-wheel C, upon which the head-block D rests, and with the square lower part of the king-bolt E, substantially as herein shown and described.

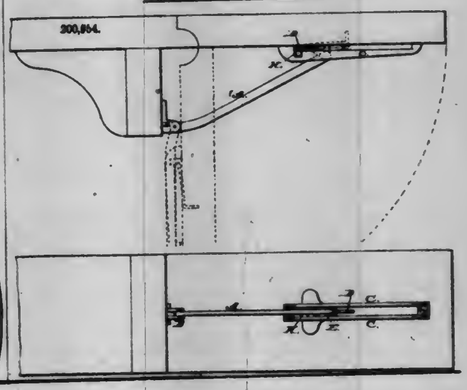
200,953. FOLDING CHAIRS. John E. Wakefield, Worcester, Mass., assignor to E. W. Vaill, same place. Filed July 14, 1877.



Claim.—1. In a folding chair containing the back legs *a*, front legs *c*, jointed at *d*, and seat-frame *e*, jointed at *h*, the links *l*, jointed at their upper ends to the legs *c*, and at their lower ends to the seat-frame *e*, and the stops *n* upon the legs *c* behind the links *l*, for the purposes and substantially as set forth.

2. A seat or seat-frame attached at *h* to the back, the links *l* connecting the seat-frame to the front legs and the flexible seat, in combination with the rockers *t* and supplemental back legs *u*, substantially as set forth.

200,954.

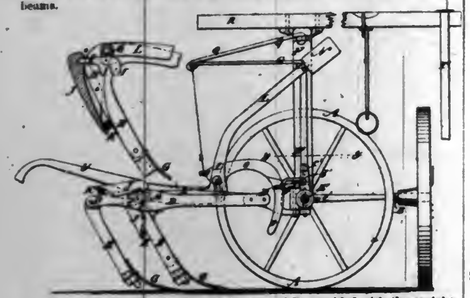


200,954. TABLE-LEAF SUPPORTS. George T. Wallace, Mansfield, Ohio. Filed May 4, 1877.

Claim.—The combination of the pivoted brace A, having the pivoted catch E, with the slotted guide C, provided with the notch or slot H and spring D, the several parts being constructed, arranged, and combined to operate substantially as and for the purpose described.

200,955. CULTIVATORS. Patrick J. Ward, St. Mary's, Ind. Filed Dec. 27, 1877.

Brief.—The cultivators are mounted on wheels supporting an arched axle-tree. The beams are attached in the ordinary manner, and for each set a crane extends rearwardly from the elevated axle-tree, and a pendent rod forms a fulcrum for a weighted lever, which is brought into play in raising the beams.

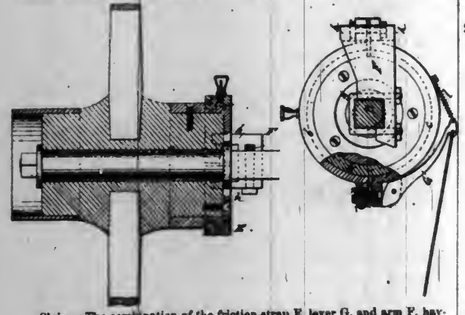


Claim.—1. The combination of the journal B, provided with the upright arm b^1 and the horizontal arm b^2, the sleeve C, provided with the lug c^1, the curved arm c^2, and the curved arm c^3, with the wheel A, the spindle E of the arched bar or axle F, and the plow-beam D, substantially as herein shown and described.

2. The combination of the bent levers L, the weights N, the bent and slotted levers O, the rods, wires, or chains P, and the hinged arms Q with the plow-beams D and the arched bar or axle F, substantially as herein shown and described.

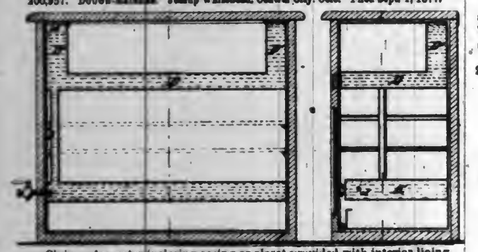
3. The combination of the lock-block I and spring-latch J K with the arm formed upon the pivoted end of the weighted lever L N, the plow-beam D, and the plow-standard H, as and for the purpose specified.

200,956. BRAKES FOR LIGHT VEHICLES. Charles H. Weiss, Eckley, Pa. Filed Feb. 1, 1878.



Claim.—The combination of the friction-strap E, lever G, and arm F, having ears h, for receiving two ears of the friction-band, substantially as herein shown and described.

200,957. DOUBLE-BATHERS. Joseph Whitehead, Central City, Colo. Filed Sept. 1, 1877.



Claim.—An outer inclosing casting or closet provided with interior lining, and closed by top lid and front doors, in combination with a hollow table, having hollow end and rear walls, and with one or more hollow shelves below the table, connected with the table by a water-conducting-pipe, the lowermost shelf having a discharge-faucet, substantially as and for the purpose specified.

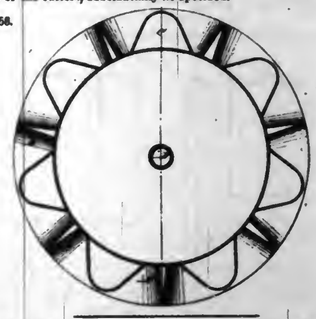
200,958. CAKE-CUTTERS. Joseph Whitehead, Central City, Colo. Filed Sept. 22, 1877.

Claim.—1. A French-roll molder made of a number of cutters arranged on the circumference of a revolving body, said cutters having lateral divisions or bridges, substantially in the manner and for the purpose set forth.

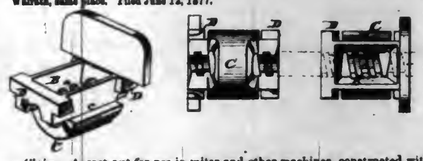
2. A French-roll molder made of a revolving body, arranged with a series of oval or other cutters at the circumference, the cutters having flaring sides and tapering or wedge-shaped bridges, substantially as and for the purpose set forth.

3. A French-roll molder having a series of oval cutters arranged on the circumference of a revolving body, the cutters having flaring sides and lateral wedge-shaped bridges, whose top is slightly depressed below the level of the outer edge of the cutters, substantially as specified.

200,958.

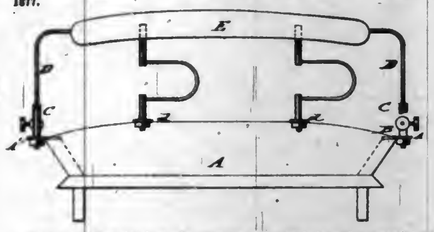


200,959. NUTS. Archibald Wieting, Fort Plain, N. Y., assignor of one-half his right to A. Walrath, same place. Filed June 12, 1877.



Claim.—A cast nut for use in miter and other machines, constructed with the recess B, threaded bridge C, and threaded extensions D D, arranged substantially as described, and having its threads formed complete and finished in the process of casting.

200,960. SPRING-BACKS FOR VEHICLE-SEATS. Ebenezer Wilson, Otto, N. Y. Filed Oct. 6, 1877.

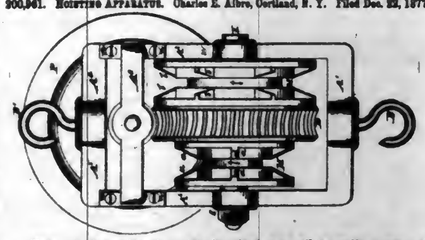


Claim.—1. A spring-back for vehicle-seats, consisting of a second back supported on adjustable side spring-arms and C-shaped rear springs, substantially as and for the purpose set forth.

2. The combination of seat A, having fixed front posts and adjustable rear posts, with the side spring-arms D and second back E, the side spring-arms being made adjustable in the posts to regulate tension of side spring-arms, substantially as specified.

3. The combination of the second back with the adjustable side spring-arms and the C-shaped rear springs that rest on brackets of the seat, and turn by their threaded upper arms into the back, to regulate the height of the same, substantially as set forth.

200,961. HOISTING APPARATUS. Charles E. Albro, Cortland, N. Y. Filed Dec. 22, 1877.



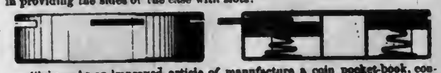
Claim.—1. In combination with the wheel part of the endless screw, the differential pulleys mounted at each side thereof, and the supporting-frame of the screw part journaled in detachable bearings A^3, the whole constructed and arranged substantially as specified.

2. In a hoisting apparatus, the combination, with the differential pulleys of the wheel part, of two endless screws located one on each side of the pulleys and on the same shaft, and two screw parts gearing into said wheel parts and journaled in detachable bearings, substantially as and for the purpose specified.

3. In a hoisting apparatus, the frame-work A^1, A^2, A^2, A^4, A^5, and A^6, swivel-hooks B and B', substantially as described, in combination with one or more endless screws, the differential pulleys H and H', drive-wheel P, and axle or shaft I I', all substantially in the manner and for the purpose herein shown and specified.

200,962. STREET POCKET-BOOKS. George W. Annsbury, Chicago, Ill. Filed Nov. 15, 1877.

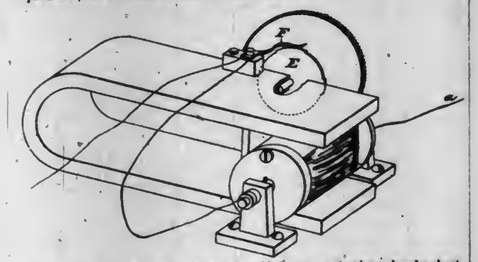
Brief.—Improvement on Patent No. 191,336. The improvement consists in providing the sides of the case with slots.



Claim.—As an improved article of manufacture a coin pocket-book, constructed as described, and consisting of a case having separate compartments adapted for different sized coins, and provided with lateral slots for the passage of the coin, in combination with a spring and cap for each opening, substantially as herein set forth.

200,963. MAGNETO-SIGNAL APPARATUS. George L. Anders, Boston, assignor to E. Baker Welch, Cambridge, Mass. Filed Oct. 10, 1877.

Brief.—At an interval when it is not desired that a magneto-electric impulse should be sent to a distant station, the impulse is automatically short-circuited through the machine. Thus a series of short circuits, automatically produced, break the line-circuit to form a desired signal.

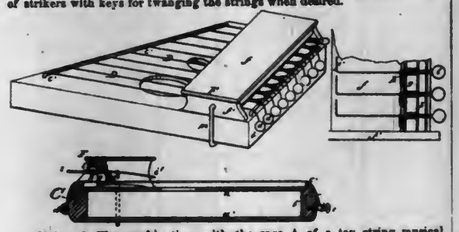


Claim.—1. A magneto-generator provided with mechanism whereby short circuits are automatically established or broken at definite intervals on the operation of the machine, substantially as and for the purpose set forth.

2. The combination, with the rotating armature of the generator, of the disk E and arm F, and gearing connecting the disk to the armature, substantially as and for the purpose set forth.

200,964. TOY MUSICAL INSTRUMENTS. Leavitt Anderson, Chicago, Ill. Filed Aug. 7, 1877.

Brief.—The toy harp or dulcimer has a removable frame containing a set of strikers with keys for twanging the strings when desired.



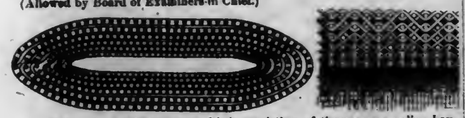
Claim.—1. The combination, with the case A of a toy string musical instrument, of a frame carrying spring hammers and keys adapted to be removably attached to the said case, substantially as and for the purposes set forth.

2. In a toy musical instrument, the combination, with the case A, of the frame F, having hooks *m*, for removably securing it to the said case, substantially as and for the purposes set forth.

3. In a toy musical instrument, the combination, with the frame F, of the spring keys and hammers *i i'*, bridge *g*, rod *h*, and cushion *l*, constructed and arranged substantially as described and shown.

200,965. TUBULAR WOVEN FABRICS. Seth W. Baker, Providence, R. I., assignor to S. W. Baker Manufacturing Company, same place. Filed June 16, 1877.

Brief.—Improvement on Letters Patent No. 57,659. The alleged invention consists simply in weaving the fabric shown in such patent in tubular form. (Allowed by Board of Examiners-in-Chief.)



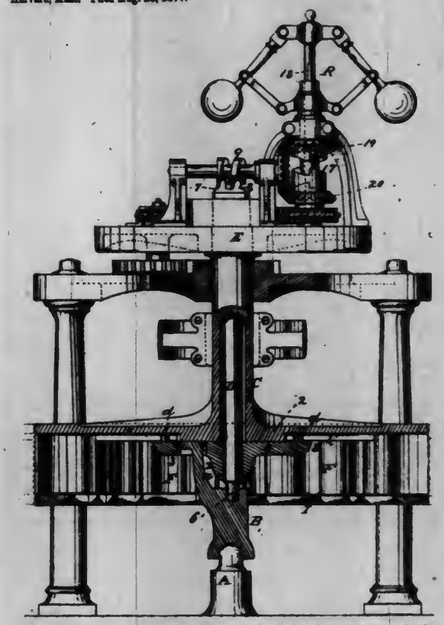
Claim.—1. A tubular woven fabric consisting of three or more plies, having a portion of the warps of the inner and of the outer plies interwoven with the adjacent intermediate ply or plies, the remaining portions of the warp of the outer and of the inner plies passing nearly straight over and under the weft or filling of said plies, whereby the outer and inner surfaces are closely woven and a tubular fabric formed without seam or joint, substantially as set forth.

2. A tubular woven fabric composed of three or more plies, wherein the warp of the outer ply is of strong thick thread, and the warp of the inner ply of fine thread, one-half of the warp of the outer ply and one-half of the warp of the inner ply, together with a continuous weft, constituting the main portion of the outer and inner surfaces of the fabric, while the remaining portion of the warp of the outer and inner plies is laid diagonally and interwoven with the intermediate ply or plies by the continuous weft, which latter is laid helically, and extends through all the plies, substantially as set forth.

3. A tubular woven fabric composed of three or more plies, wherein a continuous weft or filling is laid successively through the several plies of the fabric, said weft passing from the outer to the inner ply in helical form, and then outwardly to the outer ply, thereby forming a continuous helical filling, which extends the entire length of the fabric, substantially as set forth.

4. A tubular woven fabric made up of three or more plies, wherein one-half of the warp of the outer ply and one-half of the warp of the inner ply are laid alternately over and under the continuous weft, while the remaining portions of the warp of said plies are interwoven with the intermediate ply or plies by said weft, which latter is laid helically between the successive plies of the fabric, the entire warp and weft of said fabric being woven together, substantially as described, whereby the fabric is its normal condition is of oval or flattened form in cross-section, substantially as set forth.

200,966. TURBINE WATER-WHEELS. Asa Bee, Lancaster, assignor to Oliver W. Turner, Harvard, Mass. Filed Aug. 23, 1877.



Claim.—1. As an improvement in center-discharge turbine water-wheels, a float or bucket adjustable on a vertical pivot, for the purpose of regulating the capacity of the issue, and constructed to discharge the water in a direction about opposite to the motion of the bucket.

2. The combination of the pivoted floats A, radial or oblique arms *b'*, and adjusting cog wheel or plate 3, for regulating the position of the floats as required.

3. The base-shaft B, constructed with arms, connecting with the shaft C through apertures in the gear-wheel 2 3, substantially as described.

4. The hollow shaft C and inner shaft D, combined so as to have a limited independent rotation, substantially as and for the purpose set forth.

5. The combination of the shaft D and arm 7 with a governor and suitable transmitting mechanism for regulating the capacity of the wheel, substantially as described.

6. The main shaft B C, constructed in two parts, connected by arms, and provided below the plate E with a gear or pulley for transmitting the power.

7. The annular bottom plate I, notched, as represented, to correspond with the float-cavities.

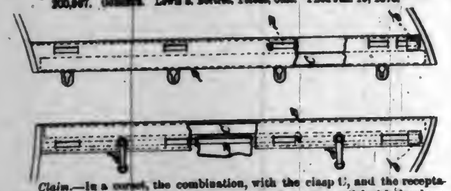
8. The beveled arms *b* and notched plate I, for the purposes set forth.

9. The combination, with a water-wheel, of the governor R, mounted on a plate or frame, E, so as to be carried in an orbit around the axis of the wheel, as described.

10. The combination, with a water-wheel, of the governor R, the clutch 17, the worm shaft 9, and the transmitting-arm 7, constructed and arranged as described, permitting the regulating mechanism to remain out of gear while the action is normal, and causing it to be thrown into gear automatically when required.

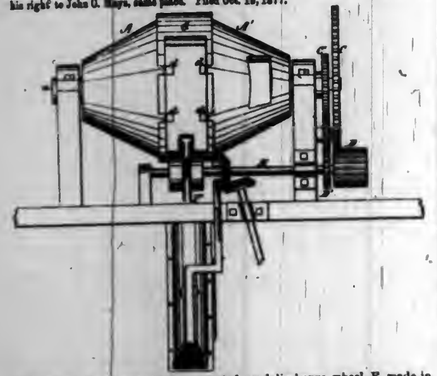
11. The combination, with a water-wheel, of the governor R, plate or frame E, belt 13, and spring 14, constructed, arranged, and operating as described, for the purposes set forth.

200,967. CORSET. Lewis S. Bertron, Toledo, Ohio. Filed Jan. 10, 1878.



Claim.—In a corset, the combination, with the clasp C, and the receptacle B for the same, of the elastic bow or rod D, running parallel with the clasp, and passing in and out through the slots cut in the cloth, and the lower end of the same resting in the pocket *b*, all substantially as and for the purpose herein set forth.

200,968. COTTON-PLANTER. William H. Bowman, South Salem, Ohio, assignor of one-half his right to John G. Hays, same place. Filed Oct. 10, 1877.



Claim.—1. In a seed-planter, serrated seed-discharge wheel F, made in two parts, mounted adjustably on the shaft, and the interposed spiral spring, as shown and described.

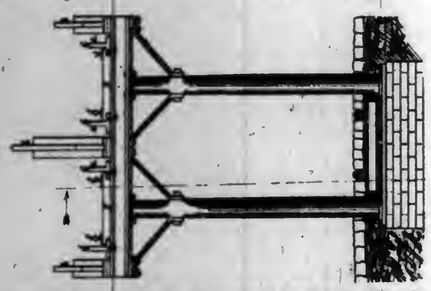
2. In a seed-planter, the hopper formed of two cones placed with their bases together, and arranged to revolve in opposite directions, substantially as shown and described.

3. In a seed-planter, the two cones A A', the concentric solid and hollow shafts B B', the gears C C', pinions D D', and the counter-shaft E, all combined and arranged as shown and described, to operate as specified.

4. In a seed-planter, the combination, with the band made in two parts, hinged together, of the spring and screw-fastening, substantially as shown and described.

200,969. ELEVATED RAILWAYS. Alexander Brandon, New York, N. Y. Filed Nov. 14, 1877.

Brief.—Main supporting-girders formed of arched inverted T-beams, flat metallic lower chords, vertical tension-rods, and cross-beams resting upon said chords. Upon the cross-beams of the girder are longitudinal flanged safety-girders, the inner horizontal flanges of which support cross-ties having slotted ends, said ties supporting the rails of the track, the vertical flange of said girders preventing the wheels from leaving the track.

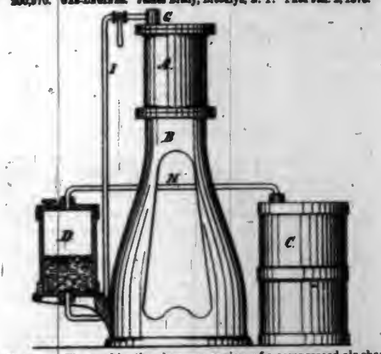


Claim.—1. The combination of the flanged longitudinal safety-girders, the cross-ties or sleepers supported on the flanges of said girders, and the rails supported on said ties or sleepers inside of the webs of the said girders, substantially as and for the purpose herein described.

2. The combination of the cross-ties or sleepers, having grooves at their ends, with the longitudinal flanged girders, constructed to enter by their flanges within the grooves of said sleepers, the rails supported by said sleepers, and spikes or means for securing the rails to the sleepers, substantially as specified.

3. The combination, with the longitudinal compound main girders, constructed as described, of the transverse beams arranged between the ends of said girders, and carried by the lower chords of the latter, substantially as and for the purpose herein set forth.

200,970. GAS-ENGINES. James Brady, Brooklyn, N. Y. Filed Jan. 2, 1878.



Claim.—1. The combination, in a gas-engine, of a compressed-air chamber, C, an oil-reservoir, D, and a pipe or passage, H, connecting said chamber with said reservoir, for transmitting pressure from said chamber to the oil in said reservoir, to force the oil from said reservoir into the burner-box of such engine for conversion into gas, substantially as described.

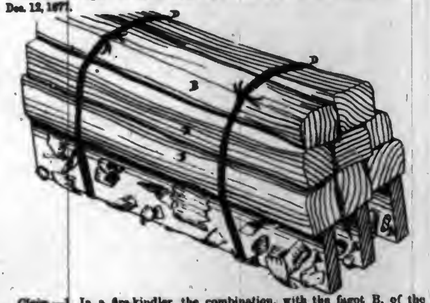
2. The combination, with the compressed-air chamber, oil-reservoir, and pipe H, connecting the said chamber and reservoir, of the pipe I, connecting the bottom of said reservoir with the burner-box G, and the cock J in said pipe I, for regulating the supply of oil to said burner-box, substantially as and for the purpose specified.

200,971. WRENCHES. Addison Berdan and Amander E. Warren, Tecumseh, Mich. Filed Aug. 13, 1877.



Claim.—The combination of the handle A, provided with jaw B, the sliding jaw C, provided with the open loop or sleeve D, and the lug *a* on its outer end, the jaw B being operated by the thumb-screw G, swiveled in the jaw B, and screwing through the movable jaw C, all constructed substantially as and for the purposes herein set forth.

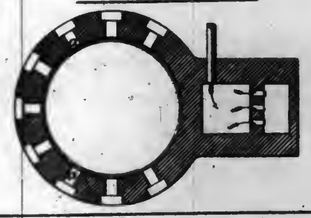
200,972. FIRE-KINDLERS. John J. K. Beste and Geo. L. Heckler, Cleveland, Ohio, assignors of one-half their right to Dorcas P. Sherbondy and Van Dorn Lillie, New York, N. Y. Filed Dec. 12, 1877.



Claim.—1. In a fire-kindler, the combination, with the fagot B, of the strips A, placed on edge beneath said fagot, and coated with a combustible composition, substantially as described.

2. The fire-kindler described, consisting of the fagot B, composed of pieces of wood laid promiscuously, and the thin strips A, placed on edge beneath said fagot equal distances apart, and coated with a combustible composition and with shavings, the whole being bound together, in substantially the form shown, by the cords D.

200,973

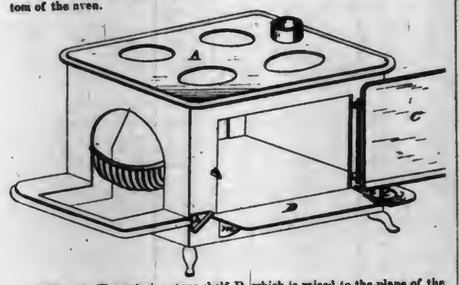


200,973. GLASS-FURNACES. James M. Brookfield, Brooklyn, N. Y. Filed Feb. 13, 1878.

Claim.—In a glass-furnace, the combination of the wind-box F, arranged in the rear of the ash-pit, and communicating therewith through the passage *e*, and the pipe *d*, projecting outward from said wind-box, substantially as and for the purpose set forth.

200,974. STOVE-SHELVES. Esek Bussey, Troy, N. Y., assignor of one-half his right to Chas. A. McLeod, same place. Filed Feb. 25, 1878.

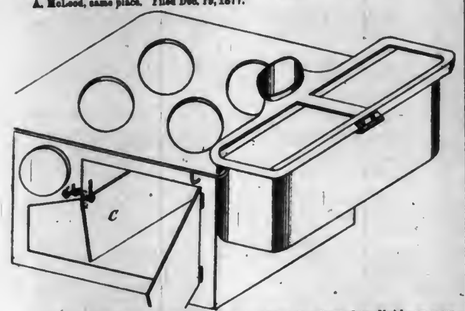
Brief.—The shelf always retains a position parallel to the oven-bottom, and travels upon inclined guides, so that closing the door lowers the shelf out of the way of the same, and opening it raises the shelf to a level with the bottom of the oven.



Claim.—1. The exterior stove-shelf D, which is raised to the plane of the oven-bottom by opening the oven-door, and by closing said door is lowered to a plane below the oven, always retaining a position parallel, or nearly parallel, to the oven-bottom, substantially as and for the purposes described.

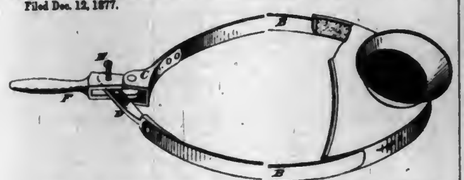
2. The horizontally-sliding shelf D on the outside of the stove, combined therewith and with the oven-door C, having pin *c*, substantially as and for the purposes set forth.

200,975. STOVE-OVENS. Esek Bussey, Troy, N. Y., assignor of one-half his right to Charles A. McLeod, same place. Filed Dec. 19, 1877.



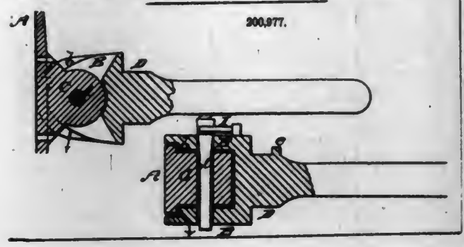
Claim.—The hinged and movable partition C, adapted to divide an oven vertically and transversely—that is, in a line parallel with the fire-box, and to be held in any desired position, in the manner described, substantially as and for the purposes set forth.

200,976. ADJUSTABLE STRAINERS FOR MILK-PAILS. Marvin Campbell, South Bend, Ind. Filed Dec. 12, 1877.



Claim.— The combination of the bands B B, lug C, shank D, provided with a series of holes, pin E, and locking-lever F, substantially as set forth.

200,977.

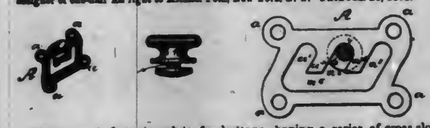


200,977. SHOE-YOKE ATTACHMENTS FOR WAGON-TONGUES. Andw. J. Clemmons and Henry M. Hills, Bardett, Mo. Filed Jan. 12, 1878.

Claim.—1. The combination of the jaws B B, having shoulders *b b* and flanges *b' b'*, with the plate A and circular projection C, as and for the purposes set forth.

2. In combination with the parts A, B B, C, and D, the safety-pin *d*, formed with the shoulders *i i*, and the spring I, substantially as and for the purposes set forth.

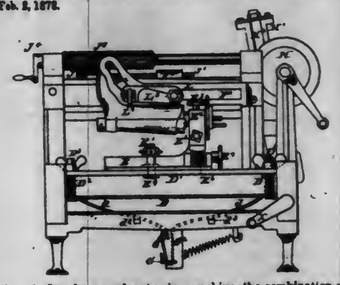
200,978. FASTENING-PLATES FOR SHOE-BUTTONS. George Conover, New Haven, Conn., assignor of one-half his right to Michael Foth, New York, N. Y. Filed Jan. 10, 1878.



Claim.—1. A fastening-plate for buttons, having a series of cross-slots opening into a longitudinal slot, substantially as set forth.

2. Plate A, having oblique slots a^1 a^2 a^3 and connecting-slot a^4, adapted to receive and hold a button, substantially as set forth.

200,979. MACHINES FOR TREEING BOOTS AND SHOES. Willard Corney, Westborough, Mass. Filed Feb. 5, 1878.



Claim.—1. In a boot or shoe treeing machine, the combination of the jack E E^1 and yielding support or table D^1, all substantially as and for the purpose set forth.

2. The combination of the yielding table D^1, the springs D^2, screw-posts D^3, and the plate D with the levers *d*, straps G^1, and foot-lever, all operating together substantially as described, and for the purpose set forth.

3. The combination of the rub-stick L^2 and its holder L^3 with the guide-slot F^1 F^1, operating substantially as described, and for the purpose set forth.

4. In a boot-treeing machine, the combination of the block J^1, the screw J^1, the block H^2, and gear-wheel J, all operating substantially as described, and for the purpose set forth.

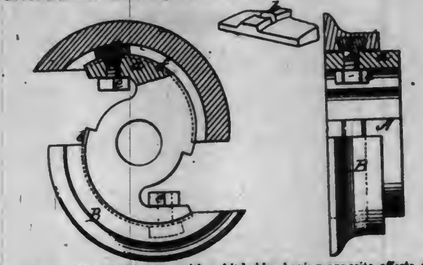
5. In a boot and shoe treeing machine, the combination of the block H^2, the link H^1, the pivot-block H^3, and the screw H^4 with the swinging arm H^1, gears H^2 H^2, and shaft H^1, all operating substantially as described, and for the purpose set forth.

6. In a jack, the combination of the swinging part E^2 with the adjusting-screw E^3, substantially as described, and for the purpose set forth.

7. In a boot and shoe treeing machine, the rub-stick L^2, having a pivoted or hinged joint, *l*, and spring F, substantially as described, and for the purpose set forth.

200,980. CUTTER-HEADS. Columbus M. Coulter, Danville, Ill., assignor of one-half his right to Ezra A. Leonard, same place. Filed Feb. 9, 1878.

Brief.—Curved bits having dovetailed grooves in their under sides are attached to cutter-head, having curved bearing-surfaces and opposite offsets, by adjustable bolts having dovetailed heads adapted to enter said grooves, and suitable nuts for securing the bolts in position.



Claim.—The combination, with a bit-holder having opposite offsets and curved flanged bearing-surfaces, of the correspondingly-curved bits, having a dovetailed groove upon their under sides, and the adjusting-bolts, having dovetailed heads adapted to enter the said grooves, substantially as specified.

200,981. COMBINED HYDROMETER-CUP AND THIEF. Camillus Cox, Washington Heights, assignor of one-half his right to Charles E. Goodrich, Chicago, Ill. Filed Aug. 21, 1877.

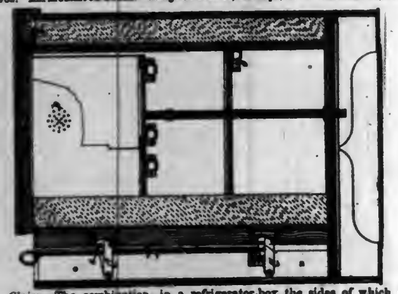
Claim.—1. The funnel C C C, in combination with a thief, B B, and hydrometer-cup A, as and for the purposes set forth.

2. The self-acting valve *b*, in combination with the thief B B and hydrometer-cup A, substantially as set forth.

200,981.



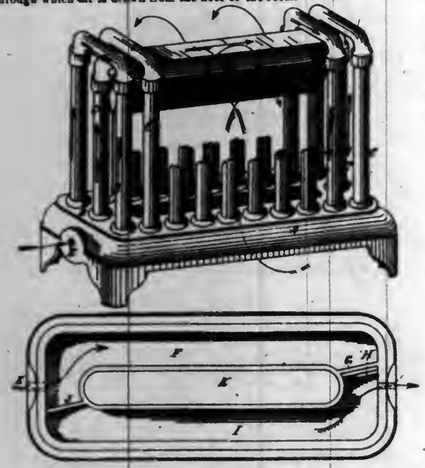
200,982. REFRIGERATOR-BOXES. George D. Cunliffe, Brooklyn, N. Y. Filed Jan. 19, 1878.



Claim.—The combination, in a refrigerator-box the sides of which are detachable from each other, and constructed with double walls, of catches which are located in said double walls, and serve to hold the sides together, and vertical rods for operating the catches, substantially as shown and described.

200,983. STEAM-RADIATORS. John H. Cunningham, Chelsea, Mass. Filed Nov. 24, 1877.

Brief.—The hollow longitudinal deflector has connection at one end with one chamber, and at the other end with the other steam-chamber of the radiator-base, and is also disposed directly over the longitudinal slot in the base, through which air is drawn from the floor of the room.



Claim.—1. The opening E, the solid bridge-wall J, and the hanging bridge-wall G, in combination with the chambers F and I, and the whole in combination with pipes C C' and hollow longitudinal connection D, constructed and arranged substantially as described, and for the purposes set forth.

2. The combination of the chambers F and I, constructed substantially as described, pipes C C', and the hollow longitudinal connection D, substantially as and for the purposes set forth.

3. The steam-chambers F and I, in combination with opening E, pipes C', and connection D, constructed and arranged substantially as described, and for the purposes set forth.

4. The combination of the longitudinal slot K, the return-pipes C, the pipes C', and the hollow connection D, constructed and arranged substantially as and for the purposes set forth.

5. The deflector H, constructed substantially as described, and for the purposes set forth.

200,984.



200,984. BOTTLE-STOPPERS. Jeremiah W. Curtis, New York, N. Y. Filed Dec. 24, 1877.

Claim.—In combination with the tubular cork or plug A and cock *g* of the faucet B, applied to said cork or plug, the body of said faucet constructed with a cap, *c*, forming a flange to cover the top of the cork, a discharge-tube, *d*, made to form a hollow rivet for clamping the cork at or from its opposite ends, a socket, *f*, for the cock, and a nozzle, *h*, on said socket, substantially as specified.

200,985. AXLE-LUBRICATORS. Francis W. Carpenter, Harrison, N. Y. Filed May 17, 1877.



Claim.—1. The tube A, provided with nipple B at its lower end, and flange or rim at the top, and having its inner walls smooth and parallel from the top to the shoulder formed by the nipple, in combination with the stem *a*, having a piston-head, D, of a size equal to the size of the tube, and having an extended point, D', to fit the nipple, and a head for connecting to the top of the tube, all substantially as and for the purposes herein set forth.

2. The plate L, provided with ears *b b*, and the perforated and grooved leg *h*, in combination with the spring-pin I, provided with the loop *n*, substantially as and for the purposes set forth.

200,986. DIES FOR MOLDING PLASTIC SUBSTANCES. Martin Carty, Newark, N. J. Filed July 25, 1877.



Claim.—1. A die composed of any suitable number of sections fitted into a suitable receiver, each of the sections being provided with a cavity, and being retained in position by a screw, in combination with a plug, C, and a follower, D, all constructed and adapted to operate substantially as herein shown and described.

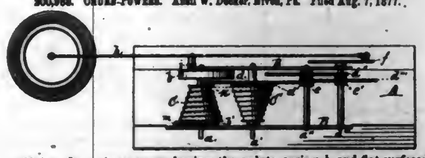
2. The combination, with the follower D, die A, and receiver B, of a tapering plug, *g*, and a hollow cap, E, substantially as and for the purpose set forth.

200,987. POLICEMEN'S CLUBS. John Christmann, Washington, D. C. Filed July 19, 1877.



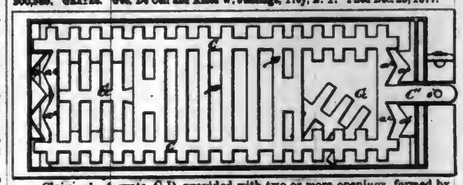
Claim.—A policeman's club or baton having a whistle or whistles in its handle, and provided at its striking end with a lamp or torch, constructed and arranged substantially as described, and for the purpose set forth.

200,988. CHURN-POWERS. Ansil W. Decker, Hives, Pa. Filed Aug. 7, 1877.



Claim.—In a churn-power having the volute spring *b* and flat-surfaced screw-cones C and C', with their shafts and gearings, the means for tightening the belt, consisting of the wheel *d*, loose upon the shaft *c'*, and carrying a pawl, and the ratchet-wheel *d'*, tight upon said shaft, and attached to the cone C', combined as specified.

200,989. GRATES. Geo. De Cell and Ames W. Jennings, Troy, N. Y. Filed Dec. 29, 1877.



Claim.—1. A grate, C D, provided with two or more openings, formed by a discontinuation of one or more bars of the grate, and having an auxiliary grate or swing, D, for each opening pivoted to the under side of the main grate, for the purposes set forth.

2. The catches E, in combination with the main and auxiliary grates, for the purposes set forth.

200,990. PADLOCKS. Hippolite A. Duraisseau, Elizabeth, N. J. Filed Jan. 25, 1878.

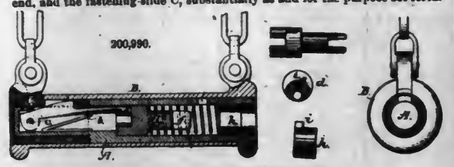
Claim.—1. The combination, in a tubular lock, of a detaining bolt or catch and a rotating spindle, one end of which is provided with a cam-groove for operating such bolt or catch, substantially as described.

2. In a tubular lock, the rotating spindle, having one end provided with a cam-groove to act upon the bolt, and the other end slotted to engage with the key, substantially as and for the purpose set forth.

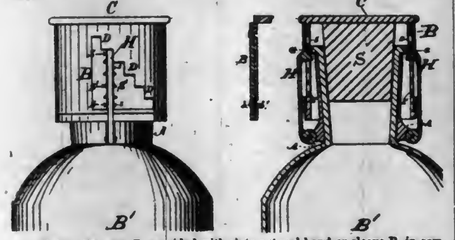
3. In a tubular lock, the combination of a tumbler moving along longitudinal and transverse slots, and a rotating spindle provided with a cam for depressing the bolt or catch, substantially as and for the purpose set forth.

4. In a tubular lock, the combination of the bolt or catch *a*, pivoted at one end, and the fastening-slide C, substantially as and for the purpose set forth.

200,990.



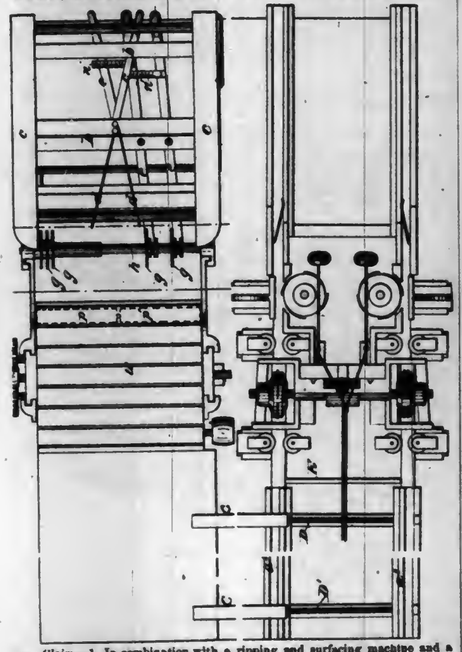
200,991. BOTTLE-STOPPERS. Alanson F. Dietz, Guilderland Centre, N. Y. Filed Aug. 23, 1877.



Claim.—The cap C, provided with slots *s s'* and band or sleeve B, in combination with hooks H and supports A, combined and arranged on a bottle, to operate as herein shown.

200,992. MACHINES FOR RIPPING, SURFACING, AND MATCHING LUMBER. John Du Bois, Williamsport, Pa. Filed Apr. 12, 1877.

Brief.—The lumber is fed to the adjustable saws, and slitted to the proper width before being fed to the planer-head, which is wide enough to operate on several boards at the same time. After being planed or surfaced the boards are fed back through a double-headed matcher placed alongside the first machine, and connected thereto by bars to facilitate the handling of lumber.



Claim.—1. In combination with a ripping and surfacing machine and a duplex matching-machine, intermediate devices, substantially such as shown and described, to facilitate the feeding of the strips from the first machine to the second.

2. The rests C C', D D', and E, arranged in connection with the ripping and surfacing and the matching machines, substantially as shown and described.

3. The combination, substantially as shown and described, of a multiple ripping and surfacing machine, a duplex matching-machine, and devices constructed and arranged substantially as shown, to enable a single attendant to feed two strips at a time from the first machine to the second, as set forth.

4. A machine for ripping and surfacing lumber, consisting of a series of laterally-adjustable ripping-saws mounted on a common shaft, a separate independent surfacing head or cylinder, and feeding devices, substantially such as shown, adapted to pass the boards to the saw and surface successively.

5. The combination, in one machine, of the series of saws and their adjusting-levers, the surfacing-cylinder H, and endless bed *w*, arranged for joint operation on the lumber, as described.

6. In combination with the surfacing head or cutter, extending entirely across the machine, the two independent press-rolls *p p'*, arranged substantially as shown, whereby the machine is adapted for surfacing simultaneously two boards or strips of different thicknesses.

7. In combination with the series of ripping-saws, the guides *e* and the two arms *d*, with their levers C and the rack-bar *f*, substantially as shown.

8. In combination with the laterally-adjustable saws *g* and their adjusting-levers *i*, the rack-bar *k* and the adjustable gate *l*, as shown.

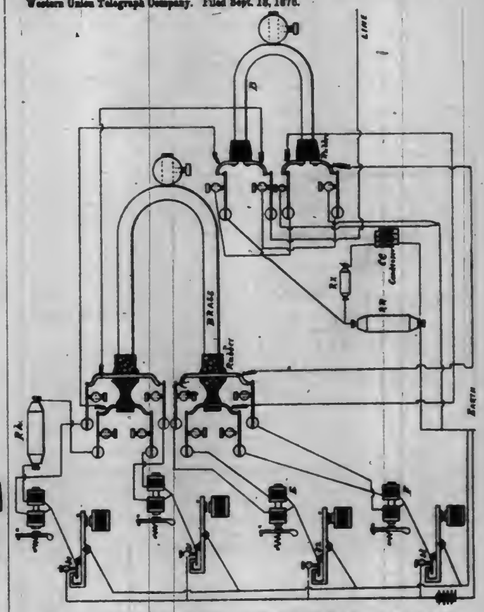
9. In combination with the endless slatted bed, having single central teeth *b'* under the ends of each slat, the driving pulleys or wheels *b²*, having their teeth arranged to act singly and centrally under the ends of the slats against the teeth *b'*, in the manner shown.

10. In combination with the laterally-adjustable saws and their adjusting-levers *i*, the indicator arms or plates attached to the levers, as shown.

11. In a wood planing or surfacing machine, the combination of an endless slatted bed, *w*, and supporting wheels or rolls, with fixed guides *c'*, arranged to receive and sustain the ends of the slats on their front faces, as shown and described, for the purpose of preventing the corners of the slats from marking the lumber.

12. In combination with the bed *w* and wheels *b²*, constructed in the peculiar manner shown, the fixed guides *c'* and *d'*, arranged to bear on the front and rear sides of the slats, as shown.

200,993. ACOUSTIC TELEGRAPHS. Thomas A. Edison, Menlo Park, N. J., assignor to the Western Union Telegraph Company. Filed Sept. 18, 1876.



Claim.—1. In a transmitting telegraph-instrument, two tuning-forks, extra contact-points, and circuit-connections to the main and artificial lines, substantially as and for the purposes set forth.

2. The combination, with the several tuning-forks or equivalents composing the transferring mechanism, of a main line and an artificial line with devices connected to the latter to create proper conditions, and receiving-instruments, for the purpose set forth.

3. The combination of several continuity-preserving transmitting-instruments, differential-coil relays, resistance-coils, and condensers, substantially as shown, with the vibrating tuning-forks, or equivalent devices, at both terminals, with the main line and artificial line, for the purposes set forth.

4. The tuning-fork B, Fig. 2, spring *a b*, points *c d*, and line and earth wire *m*, all arranged and operated substantially as set forth, and for the purposes specified.

5. The shunts E' and E², Fig. 3, resistance R, condenser *c'*, in combination with the electro-magnet or other receiving-instrument, for the purposes set forth.

200,994. AUTOMATIC-TELEGRAPH PERFORATOR AND TRANSMITTER. Thomas A. Edison, Menlo Park, N. J. Filed Nov. 11, 1876.

Claim.—1. The punch and die *a b* and notched coupler *c*, in combination with the eccentric *p*, fork *k*, and electro-magnet *m*, substantially as set forth.

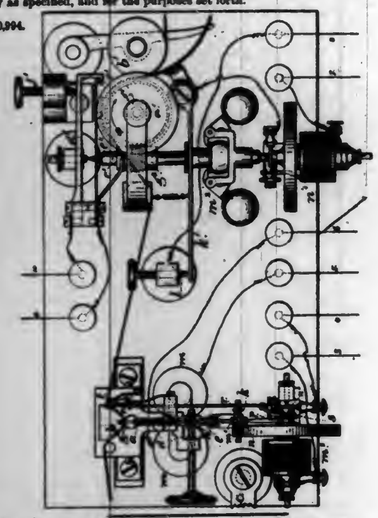
2. In a perforating apparatus, a continuously-revolving shaft and a step-

by-step feed operated thereby, in combination with a punch that is actuated by the shaft while the paper is quiescent, a coupler to connect the power and the punch, and an electro-magnet to move such coupler, substantially as set forth.

3. Punch and paper-feeding mechanism reciprocated by the eccentrics *p* and *s*, when the same are arranged in such a position that the paper is only fed when the punch is clear of the die.

4. The transmitter consisting of a drum, *a'*, contact-points and springs *c' d' r'*, electric engine *n'*, and governor *m' k' l*, all arranged and operated substantially as specified, and for the purposes set forth.

200,994.



200,995. CARTRIDGES. George W. Evans, Baltimore, Md. Filed Sept. 14, 1877.

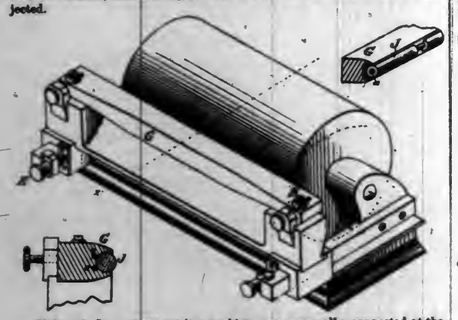
Brief.—The bead at the rear end of the tube fills the annular groove in the base-block, and extends into the flange of the cap, and serves to hold the parts together.



Claim.—The combination of the tube A, having bead *a*, base-block B, having annular groove or recess *b*, and cap C, substantially as and for the purpose herein shown and described.

200,996. MACHINES FOR CUTTING VENEERS. Curtiss T. Fairchild, Salisbury, assignor to Burrell, Ives & Co., Little Falls, N. Y. Filed Jan. 26, 1878.

Brief.—In a machine for cutting veneers, in which the log is rotated against the knife, a pressure-roller, supported at its ends at intervals by journals of less diameter than the roll, is employed, by means of which logs having "wind-strokes" or other cracks are prevented from "slabbing off" under the action of the cutting-knife. Said roll is supported in a bar having a concavity, within which it revolves, and in which are friction-rollers or small journals and bearings at different points of its length for relieving it from excessive friction, and enabling it to resist any strain to which it may be subjected.



Claim.—1. In a veneer-cutting machine, a pressure-roller supported at the ends and at intervals by journals of less diameter than the roll, whereby excessive friction is avoided, in combination with a recessed supporting-bar that partly incloses the roll and supports it in fixed bearings, substantially as and for the purpose specified.

2. In a veneer-cutting machine, a pressure-roller supported at its ends and at intervals by journals of less diameter than the roll, in combination with a supporting-bar, G, said bar having friction-rollers inserted into recesses formed in the concavity thereof, for the purpose of relieving the friction of the roller, while it is made to bear with equal pressure upon the face of the log during its whole length, substantially as and for the purpose specified.

3. The recessed supporting-bar G, provided with the bearings *b*, in combination with roll J, constructed with journals *a*, which revolve in the bearings *b*, for the purpose of stiffening and relieving the friction of the roll, as set forth.

200,997. OXUKES. Chester Farmer, Rockford, Ill. Filed June 6, 1876.

Brief.—One of the shaft-journals (bolted to the barrel) is hollow, and in it is fitted a tube that projects into the barrel, where it passes through the apex of a funnel attached to the tube, the base of the funnel being closed by a plate that has three holes in its margin, and the tube a short distance from said plate. Otherwise the invention is sufficiently explained by the claims and drawings.



Claim.—1. The combination, with a churn-barrel, of a head made in two parts, one of which is a closed head and adapted to fit against the end of the barrel, while the upper part is an open or skeleton frame or rim, and constructed to embrace the outer edge of the lower head, and also overlap the sides of the barrel, substantially as described.

2. The combination, with a churn-barrel, of a closed head adapted to fit against the end of the barrel, and an open or skeleton frame or rim constructed to embrace the outer edge of the lower head, said frame or rim provided with lugs for the attachment of suitable tightening and fastening bolts, substantially as described.

3. The combination, with a churn-barrel, of a close or imperforate head adapted to fit against the end of the barrel, and a cast-iron skeleton frame or rim constructed to embrace the outer edge of the main head, said frame having lugs for the attachment of tightening-bolts cast solid therewith, substantially as described.

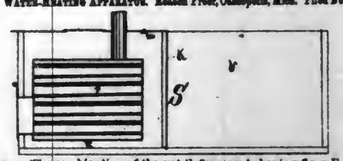
4. The combination, with a churn-barrel, of a head adapted to fit against the end of the barrel, a skeleton frame or rim constructed to receive and retain the main head in place, and suitable packing interposed between the end of the barrel and the head, substantially as described.

5. The combination, with a churn-barrel and cast-metal frame or rim and churn-head secured within said rim, of hinged tightening-bolts adapted to engage in grooved lugs formed on the periphery of said cast-metal rim, substantially as described.

6. A churn-rest having small perforations in its larger end, substantially as described.

7. In a churn operated by revolving the body with the inclosed cream, the combination of a hollow bearing-journal, the tube *g*, and perforated funnel-shaped head *g'*, arranged and operating substantially as described, and for the purpose set forth.

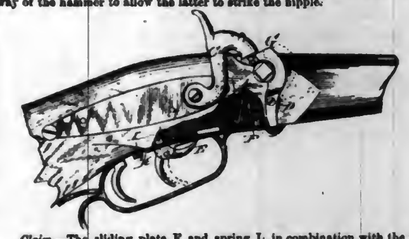
200,998. WATER-HEATING APPARATUS. Reason Frost, Cassopolis, Mich. Filed Nov. 1, 1877.



Claim.—The combination of the vat S, furnace A, having flues F, detachable partition K, and connecting-pipe G, all arranged and operating substantially as and for the purpose herein shown and specified.

200,999. NIPPLE-GUARDS FOR FIRE-ARMS. Nathan Frost, Centre Point, Ind. Filed Oct. 29, 1877.

Brief.—A pull upon the front trigger moves the plate with which the guard is connected, and throws the upper end of said guard forward out of the way of the hammer to allow the latter to strike the nipple.

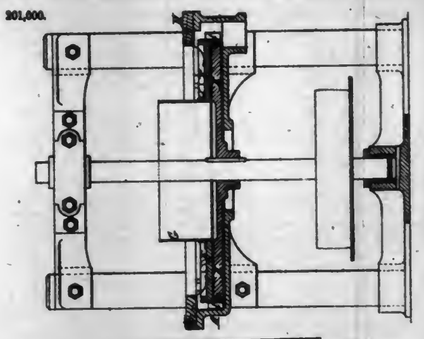


Claim.—The sliding plate F and spring I, in combination with the pivoted guard G and trigger E, substantially as set forth.

201,000. APPARATUS FOR REDUCING SEMOLINO, MIDDLINGS, OR SHARPS TO FLOUR. Robt. Frost, Chester, England. Filed Sept. 20, 1877. Patented in England, May 24, 1877.

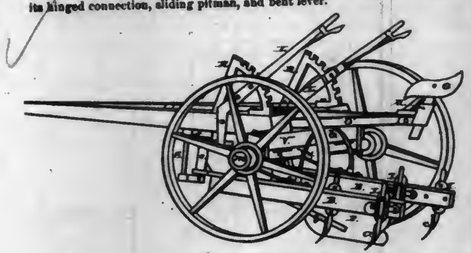
Claim.—The combination, with the runner E, faced as described, of the similarly-faced crushing plate or surface F, having a central feed-hole for the passage of semolino to the runner, such plate being supported by the runner, and prevented from rotating by means of studs projecting from its periphery, and entering vertical guides in the mill-case, substantially as specified.

201,000.



201,001. SULKY-CULTIVATORS. Saber Gosley, Beloit, Wis. Filed Apr. 19, 1877.

Brief.—The plow-beams suspended from the forward standard or hanger, its hinged connection, sliding pitman, and bent lever.



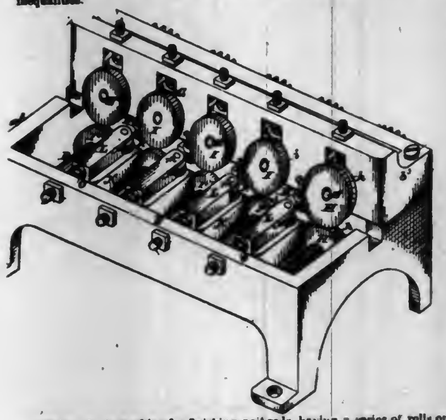
Claim.—1. The standard S, having the slotted foot-bar *b* on its lower end and the grooved block or arm *f* upon its upper end, and provided with the post K, pivoted to the foot-bar *b*, and sliding in the grooved arm *f*, substantially as shown and described.

2. The combination of the standard S *f b* and post K with plate E, having thimble-socket *e* and plow-beam B, as shown and described.

3. The combination of standard S *f b*, socket-plate E *e*, brace-rods *o o*, plow-beams B, hinged slotted arms *g*, bent levers L, and ratchet-plates R, all arranged substantially as shown and described, and for the purpose set forth.

201,002. MACHINES FOR FINISHING NAIL-RODS. George Gilbert, Philadelphia, Pa., assignor to William and Harvey Rowland, same place. Filed Sept. 20, 1877.

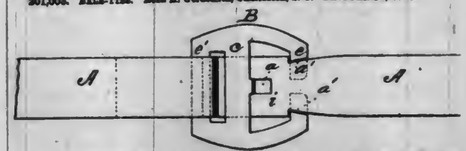
Brief.—A series of pairs of rolls arranged alternately vertically and horizontally, the horizontal rolls to operate on the flat side, and the vertical rolls on the edges, of the nail-rod, for the purpose of straightening said rod and reducing burrs and other unevenness of surface. Flanges on the first pair of horizontal rolls prevent the rod from leaving them laterally. One roll of each alternate pair is pressed upon the rod by a spring bearing (by virtue of which the rolls will yield and not draw out the rod) with sufficient force to flatten all inequalities.



Claim.—1. A machine for finishing nail-rods, having a series of rolls on horizontal shafts and another alternating series of rolls on vertical shafts, arranged respectively in pairs, one shaft of each pair having a yielding spring-bearing, while the other shaft of same pair has a fixed bearing, the initial pair of rolls on horizontal shafts being flanged to constitute guides, while the others of the same series have plain peripheries, as shown and described, and for the purpose specified.

2. In combination with rolls H H' I I' on horizontal shafts, flanged rolls M R on vertical axes, and alternating with the first-named rolls, substantially as shown and described, said rolls being arranged in pairs, one shaft of each pair having a yielding spring-bearing and the other a fixed bearing, as set forth.

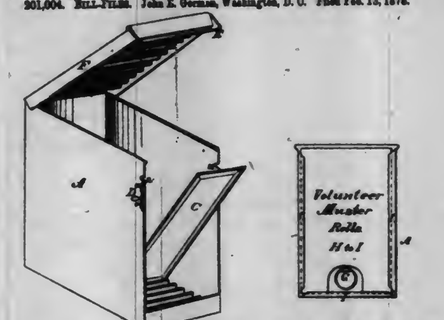
201,003. BALE-TIES. Reas H. Goldsmith, Charleston, S. C. Filed Jan. 12, 1878.



Claim.—1. The buckle B, having the center bar *c*, provided with the recurvate hook *d*, and the end bar *a* and dovetail recess *f*, in combination with the binder A, having a loop, *a*, at one end, and a longitudinal slot, *e*, and the angular-edge notches *a'*, substantially as specified.

2. An open bale-tie buckle having the center bar *c*, provided with hook *d*, and an end bar, *a*, and a dovetail recess, *f*, adapted for use substantially as specified.

201,004. BILL-FILES. John E. Gorman, Washington, D. C. Filed Feb. 13, 1878.



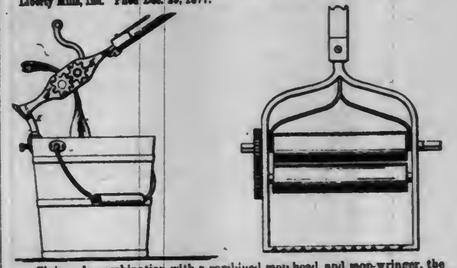
Claim.—1. The combination of the permanent end and the hinged end, corrugated as described, with the follower C, substantially as and for the purpose set forth.

2. The combination of the hinged end F, bail E, and sides A, notched at *a*, substantially as described.

3. The combination of the bail E, notched side plate A, and the fastening device D, constructed and arranged substantially as described.

4. A file holder or box having the corrugated ends or sides, the bail, and follower, all constructed, combined, and arranged substantially as described.

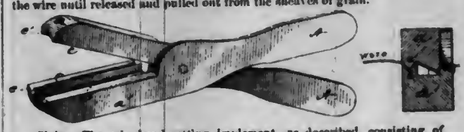
201,005. CLAMPS FOR ATTACHING MOP HEADS AND WRINGERS TO PAILS. Lavina Grube, Liberty Mills, Ind. Filed Dec. 20, 1877.



Claim.—In combination with a combined mop-head and mop-wringer, the clamp H, arm I, and jaws J J', substantially as and for the purposes set forth.

201,006. WIRE-BAND CUTTERS. Robert Hale, Minneapolis, Minn. Filed Feb. 12, 1878.

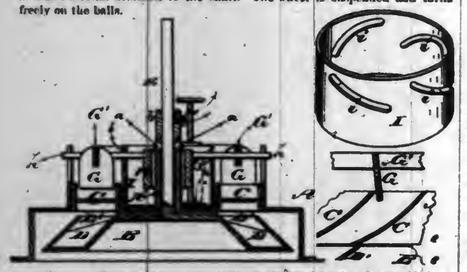
Brief.—A supplementary grooved jaw, having a V-shaped groove and corresponding projection, catches and bends the wire, in advance of the completion of the cut by the cutting-edges, in such manner as to automatically hold the wire until released and pulled out from the sheaves of grain.



Claim.—The wire-band cutting implement, as described, consisting of handles A A, provided with a grooved jaw, *c*, and a jaw having a projection, *c'*, fitting in the groove, and the cutting-edges *c c'*, substantially as and for the purpose set forth.

201,007. TURBINE WATER-WHEELS. George A. Harbaugh, Bellefonte, Pa. Filed Aug. 18, 1877.

Brief.—The buckets are provided at their upper ends with a wing-extension inclined in an opposite direction. By this arrangement the recoil force of the water is confined and retained within the wheel. The sluice-gates are operated by one movement. The guides give proper direction to the water through the case. Friction-balls are placed between the upper surface of the hub and a collar attached to the shaft. The wheel is suspended and turns freely on the balls.



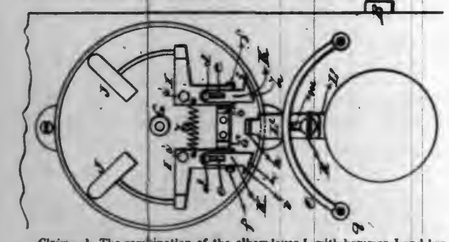
Claim.—1. In a turbine water-wheel, the inclined bucket D, provided at its upper end with a triangular extension, D', inclined in a direction opposite to the inclination of the bucket, substantially as described, and for the purpose set forth.

2. The hub A', made concave at its upper end, in combination with the collar *b*, made concave at its lower end, balls *a a*, and spindle E of the water-wheel B, substantially as described, and for the purpose set forth.

3. The casing A, provided with the guides C, in combination with the sluice-gates G, all attached to the adjustable ring G', and buckets D, provided with the triangular extensions D', substantially as described, and for the purpose set forth.

4. The combination of the gates G, ring G', with arms *h*, and the ring I, with spiral slots *i*, for the purposes herein set forth.

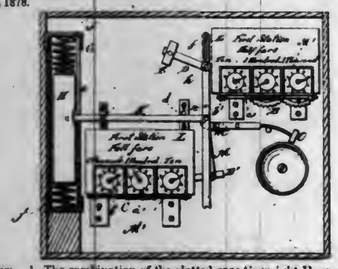
201,008. BURGLAR-ALARMS. Horace Hart, Little Valley, N. Y. Filed Jan. 19, 1878.



Claim.—1. The combination of the elbow-lever I, with hammer J and lug *f*, stationary lug *b*, and the sliding foot K, having cam-edge *h*, substantially as and for the purposes set forth.

2. The elbow levers I, provided with the slotted sliding feet K, suspended from the pins *d*, substantially as described.

201,009. PLATFORM PASSENGER-REGISTERS. Saml. Hastings, Pleasant Valley, N. Y. Filed Jan. 5, 1878.



Claim.—1. The combination of the slotted case U, weight H, springs J J', and lever K, said lever being connected to the registering mechanisms B and C, and to a series of levers supporting a platform, so that the weight of a person stepping on such platform will operate the devices, substantially as herein set forth.

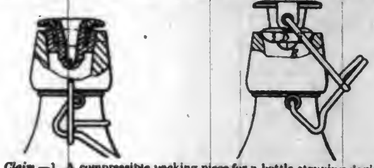
2. The registering cards L, applied to the auxiliary disks, and held by means of pins i and spring clamps M, for the purpose set forth.

3. The bridge T, mounted upon wheels t, in combination with the platform R and its frame, for the purposes set forth.

201,010. MEDICAL COMPOUNDS. Henry Hawkins and Mary Hawkins, Sedalia, Mo. Filed Oct. 16, 1877.

Claim.—A compound of alcohol, chloroform, tincture of capsicum, tincture of aconite-root, oil of sassafras, oil of winter-green, gum-camphor, sweet spirits of niter, oil of rajeput, oil of origanum, and aniline, in substantially the above proportions, and for the purposes specified.

201,011. BOTTLE-STOPPERS. William H. Hicks, Brooklyn, N. Y. Filed Oct. 29, 1877.

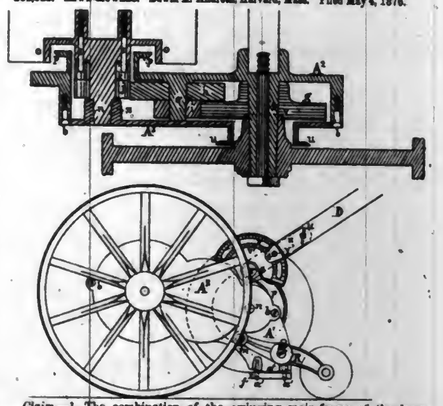


Claim.—1. A compressible packing-piece for a bottle-stopping device, provided with a projection to attach it to a cap-piece, and surrounded by a flange of no greater diameter than the mouth of the bottle, and thickened near its circumference to supply material for making the joint entirely within the walls of the bottle-mouth, and arranged to operate substantially as described.

2. The combination, in a bottle-closing device, of a cap-piece, a compressible packing-piece surrounded by a flange of no greater diameter than the mouth of the bottle, and thickened at its circumference to supply the material for the joint, arranged to operate entirely within the bottle-mouth, substantially in the manner and for the purposes set forth.

3. The combination, in a bottle-closing device, of a closing mechanism, a rigid cap-piece, a compressible packing-piece surrounded by a flange of no greater diameter than the mouth of the bottle, and thickened near its circumference to supply material for packing the joint entirely within the walls of the bottle-mouth, with a bottle, all arranged to operate substantially in the manner and for the purposes set forth.

201,012. LAWN-MOWERS. Edwin A. Hildreth, Harvard, Mass. Filed May 4, 1876.



Claim.—1. The combination of the swinging main frame of the lawn-mower, forming a gear-case independently from any part of the supporting-wheels, and free to float along the surface of the ground in the rear of the tread of the main driving-wheels, the driving handle or pole attached to the main frame in the rear of the axle, and the supporting truck-wheels outside of and independent from the frame and gear-case, substantially as described.

2. The combination and arrangement of the following parts: the truck-wheels formed without any gearing on the same, the main frame of the lawn-mower, and the gear-case A between said wheels and in rear of the axle, the lower stationary knife connecting the two sides of the main frame, and the revolving cutter, substantially as described.

3. The main frame of the lawn-mower or gear-case A, arranged in the rear of the axle of the main driving-wheels, and independent of the latter, to support and protect the inclosed train of spur-gearing, substantially as described.

4. The combination of the ring or flange surrounding the revolving hub of the main driving-wheel with the gear-case cover, substantially as described.

5. The combination of the extended hub of the main driving-wheel, passing through the gear-case, with the projection on the inner end of the hub formed to fit into the corresponding recess in the gear within the case, substantially as described.

6. The combination, with the floating main frame of a lawn-mower, carrying the cutting apparatus in rear of the axle, of a handle pivoted to said frame, and adapted to be swung to front or rear, to be used as a draw or push handle at will.

7. The combination, with the main frame of the lawn-mower, of a draft pole or handle, hinged to be turned either to the front or rear of the machine, to adapt for drawing or pushing at will, and a clamping device adapted to clamp the handle in any desired position within its sweep, and allowing, when clamped, a limited amount of free play, substantially as described.

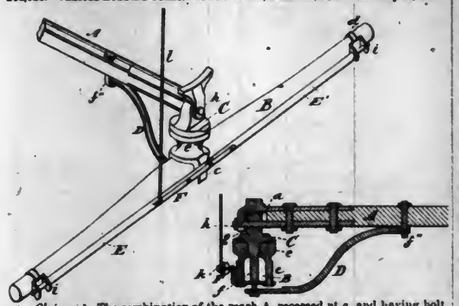
8. The combination and arrangement, in a lawn-mower, of the revolving journal, the rotary cutter, the inclosed driving-gear, and the stationary box or bearing in the main frame placed outside of the driving-gear, substantially as described.

9. The main frame of a lawn-mower, having the tapering journals formed integral therewith, substantially as shown, and for the purpose described.

10. The revolving cutter, having the tapering journals formed integral therewith, in combination with the corresponding tapering boxes formed in the main frame of the mower, as and for the purpose set forth.

11. The combination of the handle-arm D', plate-piece *e'*, turning on the same center, and having a certain amount of free play, and a clamping device between the handle and said plate, substantially as described.

201,013. VEHICLE RUNNING-GEARS. Jos. A. Hinson, Oskaloosa, Iowa. Filed July 18, 1877.

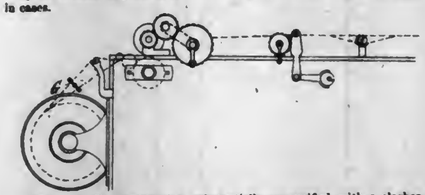


Claim.—1. The combination of the reach A, recessed at *a*, and having bolt *b*, bell-shaped king-bolt C, clip *c*, having raised step or shoulder *e*, axle B, and brace D, pivoted at *f'* and *f''*, substantially as and for the purpose herein shown and described.

2. As an improvement in horse-detachers, the recessed rods E E', in combination with the operating-lever arm F, resting within the recesses in rods E E' made for its reception, substantially as and for the purpose herein shown and described.

201,014. SLASHERS. Moses L. Hitchcock, Cornwall, Ontario, Canada, assignor of one-half his right to John Bergin, same place. Filed Jan. 4, 1878.

Brief.—The warp is separated into two parts by a dividing-roll, one shade passing over the roll, and the other directly to the warp-beam. The shades of warp are retained in position by a double comb, the teeth of which are inclosed in cases.



Claim.—1. The combination, substantially as specified, with a slasher, of a dividing-roll located in front of the tension-rolls, whereby the thread is delivered in two equal shades to the warp-beam.

2. The combination, substantially as specified, with a slasher, of a double comb, G, and cases H H, to hold the shades of warp in uniform order, and thereby insuring a perfect lease on removal of the warp from the slasher.

201,015. COMBINED BED-BOTTOM AND FIRE-ESCAPE. William U. Hoover, Bowling Green, Ky. Filed Oct. 19, 1877.

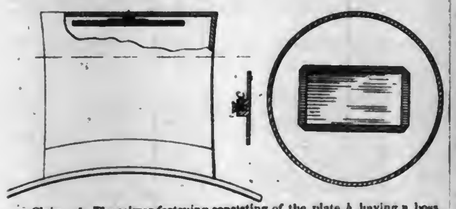


Claim.—1. A combined fire-escape and bed-bottom, consisting of a flexible ladder extending to and fro over the slats of the bedstead, and resting upon springs interposed at intervals between the ladder and the slats, and supported at the ends by tension or stretcher springs, which hold the ladder at full tension upon the bedstead, substantially as and for the purpose set forth.

2. In combination with the bottom slats and flexible ladder, the springs C, having extension *e*, adapted to enter and support the rounds of said ladder, substantially as described.

3. In combination with the spring-supported flexible ladder, the tension-springs B, of the form shown, adapted to keep the sections of the ladder extended with a yielding tension, substantially as described.

201,016. HAT-MIRRORS. Frederick J. Hoyt, New York, N. Y. Filed Jan. 23, 1878.



Claim.—1. The mirror-fastening consisting of the plate *b*, having a boss, *c*, provided with a countersunk screw-hole, and the screw *d*, fitted to the said screw-hole, substantially as specified.

2. The combination of the mirror-fastening with the mirror, when the said fastening is attached to the mirror by means of cement, as herein described.

201,017. MACHINES FOR DRILLING OR BORING ROCKS. Thos. B. Jordan, London, England. Filed Dec. 28, 1877. Patented in England, Feb. 2, 1877, for fourteen years.

Claim.—1. In a rock-drilling machine, a hollow piston-rod, *b'*, driven forward by compressed air, combined with the drill-rod *c*, the cylinder *a*, a lifting-block carried by said hollow piston-rod, and a long nut, *g*, carried by said lifting-block, and having a rotary movement independent thereof, for operation substantially as herein set forth.

2. The combination, in a drilling-machine, of the air-compressing cylinder *a*, the piston *b*, its tubular rod *b'*, and screw-threaded drill-bar *c* with the lifting device *e f*, the feed device *g h k'*, and the stopping or retarding device *i j k*, all constructed for operation substantially as herein set forth.

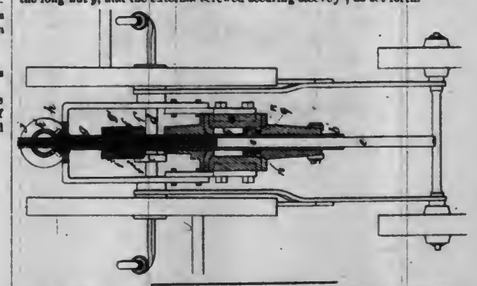
3. In a rock-drilling machine, the lifting-block *f* of the tubular piston-rod *b'*, united to the long nut *g* by means of the annular collars *g'*, for the purpose stated.

4. The combination, in a rock-drilling machine, of the air-compressing cylinder *a* and the opposite piston tubular extensions *b* with the tubular lifting-block *f*, carried by one of said piston tubular extensions, and a drill-carrying rod having a longitudinal feed movement within and through said piston tubular extensions and the tubular lifting-block, substantially as herein specified.

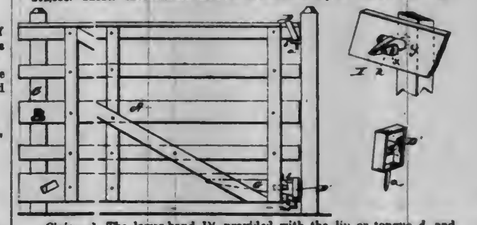
5. The holes *a'* in the upper end of the air-compressing cylinder *a*, in combination with the packing *p*, to assist in packing the tubular piston-rod, as specified.

6. The cup-packing *b²* on the upper side of the piston, in combination with the air-compressing cylinder *a* and said piston, whereby the air is allowed to pass up around the periphery of said piston during its downward stroke, and to close said space during the ascent of the piston, as specified.

7. The lifting-block *f*, constructed of the parts *f' f''*, and combined with the long nut *g*, and the external screwed securing-sleeve *f''*, as set forth.



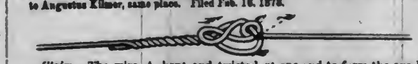
201,018. GATES. Michael Kelter and Peter Leickum, McHenry, Ill. Filed Dec. 14, 1877.



Claim.—1. The lower band D', provided with the lip or tongue *d*, and fastened by a key, *c*, in combination with a gate, A, and slide G, with slot *n* and key *m*, for the purposes herein set forth.

2. The arm I, with pivoted plate h, in combination with a gate and gate-post, for the purposes set forth.

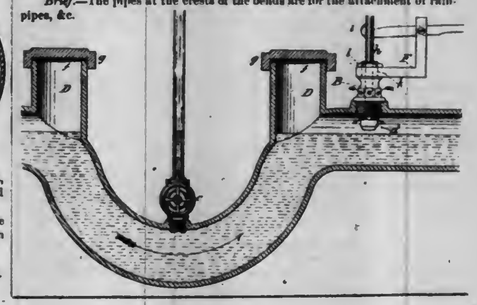
201,019. BALE-TIES. Irving A. Kilmer, Howe's Cave, N. Y., assignor of one-half his right to Augustus Kilmer, same place. Filed Feb. 16, 1878.



Claim.—The wire A, bent and twisted at one end to form the eye B, and the other end bent to form the eye C, double part F, and catch D, substantially as herein set forth.

201,020. SEWER-TRAPS. John L. Knight, New York, N. Y. Filed Feb. 20, 1878.

Brief.—The pipes at the crests of the bends are for the attachment of rain-pipes, &c.



Claim.—1. A sewer-trap provided with a gage-glass, A, inserted in and rising from the bend of the trap, substantially as and for the purpose set forth.

2. In a sewer-trap, a vacuum-valve formed of a perforated insertible and removable cylinder, B, the lower edge of which forms the seat for the balanced valve-disk *d*, of smaller diameter than the end of the cylinder, substantially as shown and described.

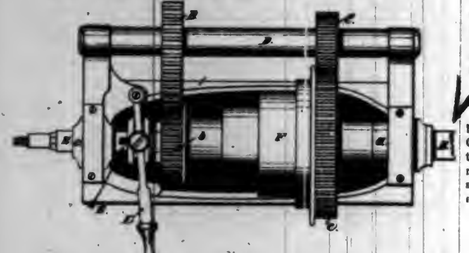
3. In a sewer-trap, the combination of the valve-cylinder B, valve *d*, and lever *e* with the fulcrum-post F, rotatable on the valve-cylinder B, to render the lever, &c., adjustable to the location of the trap, substantially as herein set forth.

4. In a sewer-trap, the combination, with the vacuum-valve *d*, of the balancing-lever *e*, provided on the end of its short arm with the friction-roller *i*, which receives the contact of the valve-stem *h*, as and for the purpose set forth.

5. A trap provided with the branches D D, extending vertically from the crests of the bend, and provided with the packed screw-covers *g g*, substantially as herein set forth.

201,021. LATHE-HEADS. William Krutsch, Dayton, Ohio, assignor to Buckeye Iron and Brass Works, same place. Filed Sept. 3, 1877.

Brief.—To give a slow and fast speed to the spindle at will.



Claim.—1. The combination, with a hollow mandrel and its contained rod, of the collar I, having right-angular recessed blocks *k*, provided with toggle-levers *l*, for alternately expanding or contracting the rings *e* and *f*, whereby the cone F and gear-wheel *c* are alternately locked to the mandrel, as and for the purpose specified.

2. The combination, with a recessed cone and gear-wheel upon a lathe-mandrel, of the rings *e* and *f*, constructed and arranged as described, and operated by the toggle-levers *l* in the collar I, whereby they may be respectively and alternately expanded or contracted to connect the cone or gear-wheel to the mandrel, in the manner and for the purpose specified.

3. The herein-described lathe-head, consisting of the frame A, back gear B C, cone F, and gear-wheel *c*, hollow mandrel with its rod G and lever L, collar I, with its toggles *l*, disk *g*, and rings *e f*, the whole being constructed and united substantially as specified.

201,022. TREATMENT OF WOOD FOR CORSET-STAYS, &c. James Guy La Feste, Indianapolis, Ind., assignor to Hiram G. Farr, same place. Filed Aug. 16, 1877.

Claim.—1. The process herein described of rendering wood permanently pliant, consisting of treatment with carbolic acid, glycerine, shellac, and asphaltum.

2. As an article of manufacture, wood rendered permanently pliant by treatment with carbolic acid, glycerine, shellac, and asphaltum, substantially in the manner set forth.

201,023. CURTAIN ROLLERS AND BRACKETS. J. O. Lake, Camden, N. J. Filed Nov. 9, 1877.



Claim.—1. In combination with a shade-roller provided with a spiral spring for rolling up the shade, a pawl and ratchet so arranged that the former will engage with the latter by simply pulling down the shade at any speed, either vertically or at any inclination from the window, and will not engage when the shade is raised slowly either vertically or at such inclination, substantially as set forth.

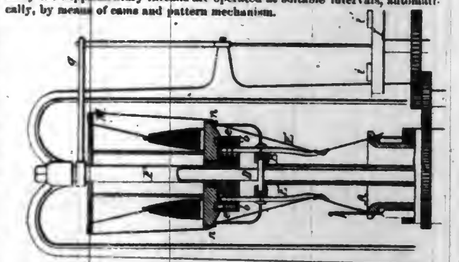
2. In combination with a shade-roller provided with a spiral spring for rolling up the shade, a slotted two-ended pawl hung upon a fast collar on the spindle, and an annular ratchet secured to the roller and moving therewith, said parts being arranged substantially as described, so that said pawl will, on the descent of the shade at any speed, automatically assume such position that it will engage with the ratchet and lock the roller on merely letting go of the shade without any manipulation, and when the shade is caused to ascend slowly will not engage with said ratchet.

3. In combination with a shade-roller having a spiral spring for winding up the shade, and a ratchet, F, a double-ended tilting pawl, E, formed with an elongated slot, *e'*, whereby said pawl may be slid back and forth to bring it into and out of position for engagement of either end with said ratchet, as set forth.

4. In combination with a spring curtain or shade roller, a pawl and ratchet or locking device that will lock the roller on the descent of the shade, before the latter can ascend, by simply pulling down the shade vertically or at any inclination from the window, as and for the purpose set forth.

201,024. KNITTING-MACHINES. Thomas Langham, Elwood, N. J. Filed Jan. 12, 1878.

Brief.—For knitting stripes or figures, the levers or yarn-guides which carry the supplementary threads are operated at suitable intervals, automatically, by means of cams and pattern mechanism.

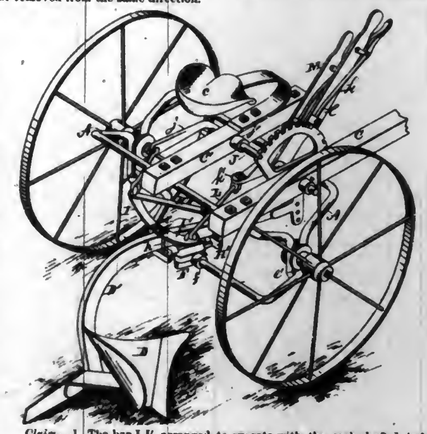


Claim.—1. The combination of the levers E, the ring *b* and its cams, the recessed ring *c* and the sleeve F, connected to the said ring *c*, all substantially as specified.

2. The combination of the levers E, the ring *b* and its cams, and the recessed ring *c* with devices, operated substantially as described, for causing the partial turning of said ring *c*, as set forth.

201,025. SULKY-PLOWS. James C. Leidy, Galesburg, Ill. Filed Oct. 12, 1877.

Brief.—Plow-beam attached to its crank by a rocking saddle. A cross-bar is bolted to the plow-beam, each end of which is connected to a lever. One of the levers is rigid upon its crank-shaft and levels the plow locking to the other lever, which is loose upon the shaft until so locked, when it will raise or lower the whole. The rock-shaft and levers with the plow may be adjusted laterally. One end of the plow-crank is bent around, to be inserted or removed from the same direction.



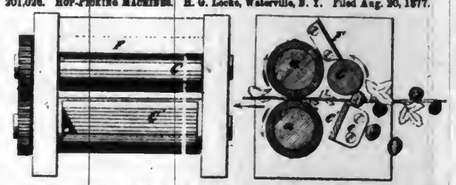
Claim.—1. The bar I I', arranged to operate with the rock-shaft J, independent cranks *j k'*, connecting-rods *j''* L, and sulky A B, substantially as and for the purpose specified.

2. The levers *k* and M and their respective cranks or arms *k' j*, and links *j''* L, combined with the plow D, hinged to the sulky-frame, so as to have lateral oscillation, substantially as and for the purpose specified.

3. The combination of the laterally-hinged plow with two cranks or arms, *j k'*, to which the plow is connected, so that the one crank, *j*, may be oscillated to incline the plow, while the other, *k'*, aids in retaining it in position, substantially as and for the purpose specified.

4. In combination with the frame A, the yoke E, having ends *e e'*, bent or curved as described, to facilitate placing and removal in the frame A, substantially as and for the purpose specified.

201,026. HOP-PICKING MACHINES. H. G. Locke, Waterville, N. Y. Filed Aug. 20, 1877.

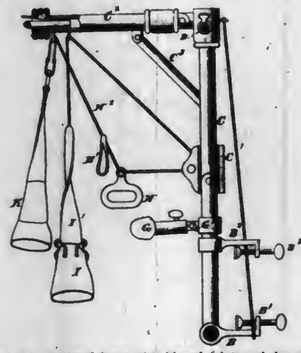


Claim.—1. The combination, in a hop-picking machine, of a pair of drawing-rollers for moving the vine longitudinally, a stationary stripping-bar, and rotary bar, arranged to brush the vine in a direction opposite that in which said vine is moved, substantially as and for the purpose set forth.

2. In a hop-picking machine, the vine-drawing rollers, stationary stripping-bar C', rotary stripping-bar C, and the guard F, for preventing the hops from being thrown between the drawing-rollers, substantially as set forth.

201,027. OBSTETRICAL SUPPORTERS. John Love, Lincoln, Nebr., assignor of one-half his right to M. E. Jennings, same place. Filed Jan. 10, 1878.

Brief.—A frame made up of vertical and parallel upright and horizontal adjustable bars is attached by set-screws to the foot-board of a bed. Stirrups and straps are suspended by cords and pulleys from the overhanging portions of the frame, and knee-pads, universally adjustable, are arranged upon the uprights.



Claim.—1. The sectional frame with hinged joints and sleeves, in combination with the arms B B' and set-screws B' B', for attaching the frame to the foot-board of the bed, substantially in the manner set forth.

2. In combination with the frame and overhanging arms C', adjustable stirrups H H and cords H', substantially as set forth.

3. In combination with the frame and overhanging arms C', the adjustable back-support I I' and stirrups H, connected by cords H', passing through rings or pulleys on the vertical and horizontal arms C C', substantially as set forth.

4. The combination of the frame and overhanging arms C', the adjustable shoulder-support K, substantially as set forth.

5. In combination with the posts C, the knee-pads G, hinged to said posts, and also being vertically and horizontally adjustable, in the manner substantially as set forth.

201,028. MANUFACTURE OF CAUSTIC ALKALIES AND PREPARATIONS OF ALUMINA. Carl Löwig, Breslau, Silesia, assignor to Gustav Loewig, Dresden, and Friedrich Loewig, Goldschmieden, Germany. Filed May 31, 1877.

Claim.—1. The production of caustic alkalies from carbonates of alkalies, substantially as hereinbefore described, by heating to a red heat with alumina or oxide of iron.

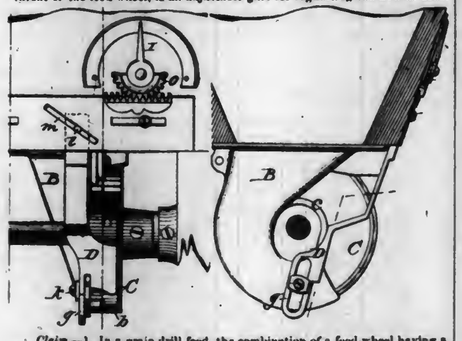
2. The simultaneous obtaining of aluminates of lime, strontium, and magnesium, when producing caustic alkalies, substantially as herein specified.

3. The production of the aluminates of barium, strontium, lime, and magnesia by heating to a red heat alumina, bauxite, or silicate of alumina with the alkaline earths or their carbonic-acid salts, substantially as herein set forth.

4. The production of gelatinous hydrate of alumina by the formation of chloride of aluminum from the aluminates of the earths prepared according to the herein-described process, or from clay, as herein described, and the decomposition of the same, by means of the earths or their carbonic-acid salts, or the said aluminates, substantially as herein described.

201,029. FORCE-FEEDS FOR GRAIN-DRILLS. Andrew J. Martin, Springfield, Ohio, assignor to P. P. Mast & Co., same place. Filed Jan. 10, 1878.

Brief.—In suitable guides, and moving tangentially across the face and throat of the feed-wheel, is an adjustable gate for regulating the flow of seed.



Claim.—1. In a grain-drill feed, the combination of a feed-wheel having a side rim or flange to carry the grain, a feed cup or case, and a sliding gate arranged to slide radially or tangentially across the seed channel or passage, substantially as shown and described.

2. The combination of feed-wheel C, cup B, and upright gate D, having its lower end arranged to slide downward into or across the seed channel or throat.

3. The combination of a feed cup or case, a feed-wheel having a carrying rim or flange on its side, and a tangentially or radially sliding gate having its end arranged to slide into and across the throat or channel in the wheel.

4. In combination with the feed-wheel having the side rim or flange, and the feed cup or case having the central hub, the radially or tangentially sliding gate D, bearing upon the rear side of the hub, as shown.

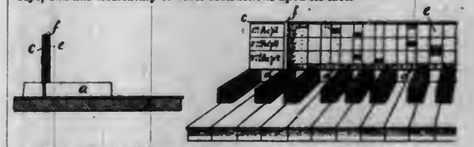
5. In combination with the feed-wheel and cup or case, as shown, the radially or tangentially sliding gate D, having a guide-arm, *g*, bearing on the outside of the cup or case, substantially as shown.

6. The sliding gate D, having the arm *g*, in combination with the feed-cups having a stud, *h*, on the outside to support and guide said arm.

7. In combination with the feed-wheel, and the cup on grain box or hopper, the radially or tangentially sliding gate having its upper end supported upon the hopper, and the sliding plate provided with inclined slots and connected with the gate, as shown and described.

201,030. CHARTS FOR KEY-BOARD MUSICAL INSTRUMENTS. Frank E. Mason, Cambridge, assignor to Frederick W. McCleave, Somerville, Mass. Filed Mar. 26, 1877.

Brief.—The chart is placed in position directly over and resting on the keys, and has elementary or other instructions upon its face.



Claim.—The combination of one or more charts, *c c*, with the back or support *c*, having the fastenings *f f*, as and for the purpose set forth and described.

201,031. CIGAR-PIPES. John G. McCarter, Milford, Mass. Filed Apr. 28, 1877.

Brief.—The tobacco cartridge is pressed forward as it is burned, in smoking, by the tubular plunger, and the device is wrapped to resemble a cigar.



Claim.—1. The tubular flanged tobacco-chamber A, constructed as described, in combination with the telescopic tube B, fitting and filling the chamber, and provided with a perforated cap and mouth-piece, the tubes being so arranged as to shorten the device as the tobacco is consumed, and maintain the outward appearance of a cigar, substantially as set forth.

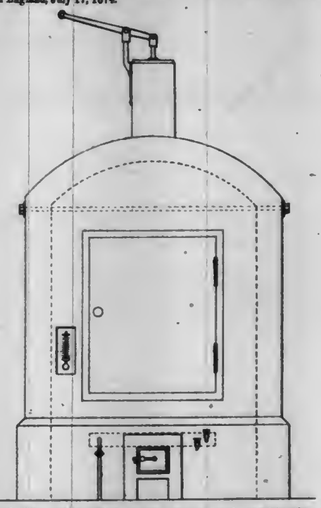
2. A tobacco cartridge prepared as herein described, with one end permanently closed, so as to cause the smoke to pass around rather than through the tobacco, and adapted for use with a smoking-tube and perforated stem, substantially as set forth.

201,032. STONE PRESERVATIVE AND RENOVATING COMPOUNDS. Alex. McLean, Toronto, Ontario, Canada, assignor of two-thirds his right to L. W. G. Whitney and Benjamin Morton, same place. Filed Jan. 7, 1878.

Brief.—Three parts Portland cement, one part gray lime, two parts hydraulic cement, and one part plaster-of-paris are ground together and mixed with a solution of one gallon of water, one-half pint spirits of salt or sulphuric acid, and one-fourth pint hydrochloric acid.

Claim.—The within-described compound, consisting of Portland cement, gray lime, hydraulic cement, and plaster-of-paris, in combination with a solution composed of water, sulphuric acid, and hydrocholoric acid, mixed and applied substantially in the manner and for the purpose specified.

201,033. LUMBER-DRIERS. Alexander McNeile, Pontenville, England. Filed Oct. 31, 1877. Patented in England, July 17, 1874.

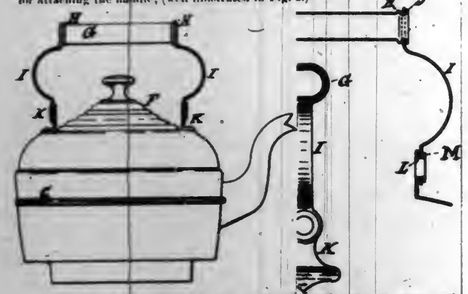


Claim.—1. The construction, arrangement, and combination of parts herein shown and described, constituting an apparatus for drying and seasoning timber, and consisting of a close chamber with fire-place and open flue,

and fitted with open shallow vessels containing water, arranged as shown, so that the heated gaseous products of combustion, by passing under the said shallow vessels, may evaporate the water contained therein, and then mingle with such aqueous vapor, thereby producing a mixture of gases, which will be carried forward by a gentle draft through the fire-place and flue, and caused to flow or pass through the stack of timber, as and for the purpose herein set forth.

201,034. TEA-KETTLE. Nicholas A. Mensar and Hugh Sangster, Buffalo, N. Y., assignors to Louisa A. Mensar. Filed Dec. 17, 1877.

Brief.—The kettle is made of two pieces of sheet metal, united by a lap-joint intersecting the opening for the inserted spout, thereby forming a brace for the vessel at the point most liable to injury. Novel means also provided for attaching the handle; (well illustrated in Fig. 2.)



Claim.—1. The combination, in a malleable-metal kettle, of upper and lower spun or drawn up sections, united, forming a lap-joint around the kettle, and a spout made in a separate piece and inserted on the line of the joint, whereby the thickness of the latter affords a lateral bracing, as set forth.

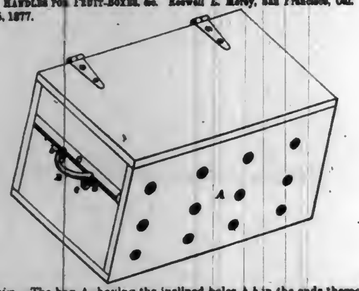
2. A kettle-handle composed of the parts G, I, and K, put together by means of the shoulders H, flanges J, rims L, and flanges M, substantially as and for the purposes specified.

201,035. PICTURE-FRAME. Frederic H. Moore, Boston, Mass. Filed Nov. 10, 1877.



Claim.—As a new article of manufacture, the herein-described picture-frame-cord holder, the same consisting of the casing A, pivoted cam c, supported in shoulders a, and provided with projecting thumb-lever d, and the hook e, whereby the device may be readily connected with the ordinary screw-eye upon the picture-frame, as and for the purposes set forth

201,036. HANDLES FOR FRUIT-BOXES, &c. Roswell E. Morey, San Francisco, Cal. Filed July 25, 1877.



Claim.—The box A, having the inclined holes *b b* in the ends thereof, and inclined grooves *c* adjacent to said holes, cross-strip c, with its notches *f*, and the flexible handle B, all combined and arranged to operate substantially as above specified.

201,037. HYDRAULIC ELEVATORS. Chas. H. Morgan, Worcester, Mass. Filed July 16, 1877.

Brief.—The locking or safety-stop mechanism is governed in its action by pressure from water within the cylinder, and operates automatically to uphold or lock the car in position when a sudden reduction of the ordinary supporting pressure occurs

Claim.—1. In a hydraulic elevator, the combination, with the car or platform, of a safety-stop or locking mechanism governed in its action by pressure from the water within the elevator or water-cylinder, and automatically operating to uphold or lock the elevator-car in position when sudden reduction of the ordinary supporting pressure occurs, substantially as hereinbefore set forth.

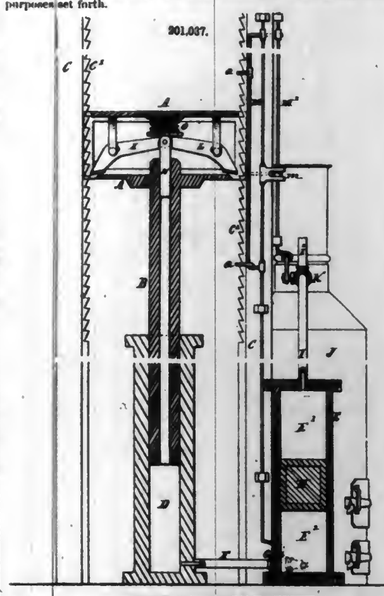
2. In combination with the cylinder D, platform A, and ratcheted guides C C', the hollow piston-column B, piston N, spring O, and locking-levers L, substantially as and for the purposes set forth.

3. In an elevator mechanism operated by hydraulic and steam power, a duplex governing apparatus the parts of which are arranged for combined or independent action, in combination with valves for regulating the flow of steam and the flow of water into and from the reservoir or intermediate cylinder, substantially as hereinbefore set forth.

4. In combination with the cylinder E and pipes F I, the stop-cocks or valves G and K and governing-rods M M', substantially as and for the purposes set forth.

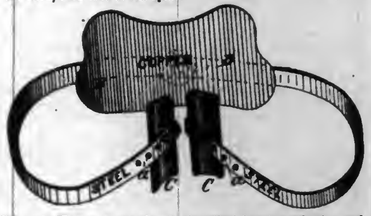
5. The combination, with the elevator-platform A, piston B, cylinder D, intermediate reservoir-cylinder E, and steam-supply boiler J, of the pipes F I, valves G K, governing-rods M M', and coupling *m*, substantially as and for the purposes set forth.

201,037.



201,038. APPARATUS FOR DEVELOPING THE CHEST. Daniel J. Mosher, Norwich, N. Y. Filed Sept. 4, 1876.

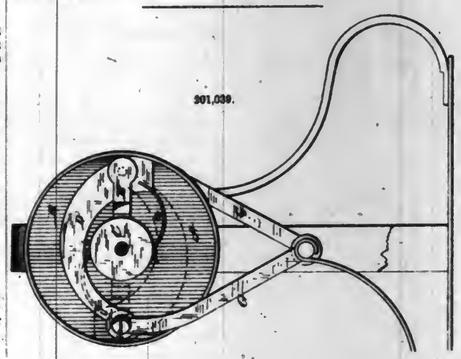
Brief.—A metal plate rests upon the chest, and is held thereon by a spring metal band, the ends of which are furnished with small metal pads, and rest upon the back, each side of the spine.



Claim.—1. The apparatus herein described for strengthening and developing the muscles of the chest and shoulders, consisting of the spring A, having the metal plates B C C, when constructed and applied in the manner substantially as specified.

2. The method of developing the chest and preventing and curing round shoulders, by opposing the muscles by means of a spring or springs, substantially as specified.

201,039.

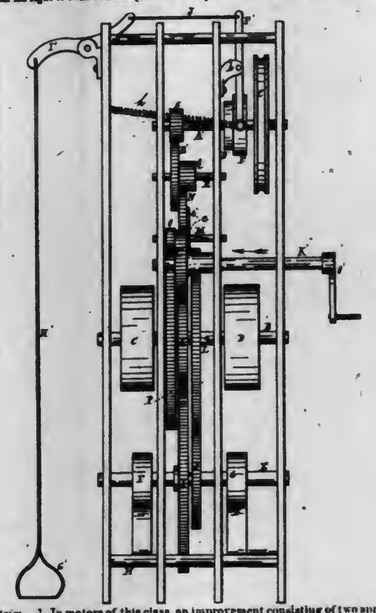


201,039. MECHANICAL MOVEMENTS. John W. Mullins, London, Ky. Filed Dec. 18, 1877.

Brief.—The lever upon either side of the disk is curved around the center.

Claim.—The combination, with the wheel A, having an annular recess, B, in each face, the hub C in the center of the wheel, provided with an annular groove around each end, the curved levers D D, one being placed on one side of the wheel and the other on the other side, and extended from one side of the recess to the other, the brakes E, pivoted to the levers D, and having their ends placed in the grooves in the hub, the springs *a a*, and the bars G G, connecting the free ends of the levers D D, all constructed substantially as and for the purposes herein set forth.

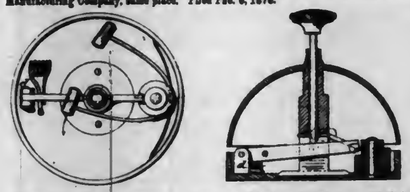
201,040. MOTORS FOR SEWING-MACHINES. Israel E. Myrick, Cleveland, Ohio, assignor of one-half his right to John F. Hollingsworth, same place. Filed Feb. 11, 1878.



Claim.—1. In motors of this class, an improvement consisting of two springs secured at their interior ends to the same shaft B, and having upon said shaft the gears P K L, one of which is keyed thereto, one loose thereon, and the other in gear with the pinion O, with the wheels K L in gear with the wheels I J, the latter secured to one shaft, and having thereon the springs F G, constructed and arranged to operate conjointly, substantially as and for the purpose set forth.

2. In motors, the combination of the gears P K, united together and loose upon the shaft B, with the gear L rigidly thereon, and having one or more volute springs connected with said shaft, and arranged in such relation to the gears I J and springs F G that the force of the springs C D is transmitted to the gear J by the gear L, and thence communicated to the gear K and its upper connections by the gear I, co-operating with the action of the springs F G, substantially as and for the purpose specified.

201,041. CALL-BELLS. Wm. H. Nichols, East Hampton, Conn., assignor to Bevin Brothers Manufacturing Company, same place. Filed Feb. 6, 1878.



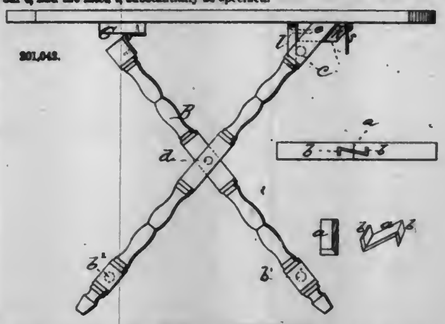
Claim.—1. The combination, with a call-bell centrally supported by a hollow standard projecting from a suitable base, of a plunger playing in said standard through the top of the bell, and actuating an arm projecting laterally from said standard through a slot therein, a rocking hub arranged upon said base, and having an oblique face arranged in the path of said arm, and a hammer-arm extending in proper direction for its hammer to strike the bell when the hub rocks on its axis, substantially as set forth.

2. A call-bell centrally supported by a hollow standard projecting from a suitable base, a clapper-arm pivoted to said base, and arranged to swing in a plane parallel therewith, and a plunger extending through an opening in the top of the bell and its supporting-standard, and adapted to operate said clapper-arm, substantially as set forth.

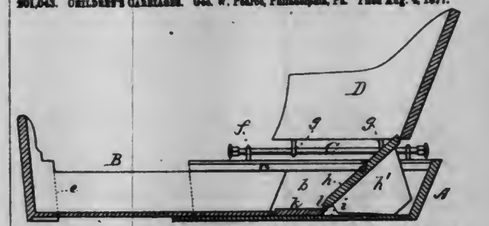
201,042. FOLDING TABLES. William H. Palmer, Warren, Pa. Filed Jan. 26, 1878.

Claim.—In a folding table, the combination, with the shouldered cleat having the recessed or undercut ends, of the bevel-ended legs, the upper cross-bar *a*, and the latch *i*, substantially as specified.

201,042.



201,043. CHILDREN'S CARRIAGES. Geo. W. Pearce, Philadelphia, Pa. Filed Aug. 4, 1877.

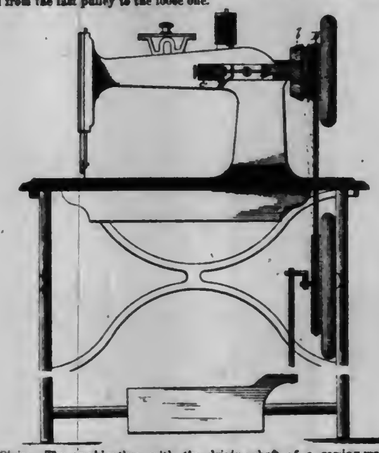


Claim.—1. The combination, with the body-section A, having the spaced edge-rail C and the extensible telescope section B, of the adjustable seat-back D, having eyebolts *g*, receiving said rod, and the removable seat J, having a hinged front board, *k*, substantially as specified.

2. The seat J, having the side standards *k'*, with inclined front edges and front board *k*, hinged to the front edge of the seat, in combination with a carriage-body, A, an extensible section, B, and a seat-back, D, adjustable to the front or rear, substantially as specified.

201,044. BOBBIN-WINDERS. Nahum S. G. Perkins, Norwalk, Ohio, assignor to Dunsbee Manufacturing Company, same place. Filed Jan. 12, 1878.

Brief.—Improvement on Letters Patent No. 123,635. The pulley of the bobbin-winder is adapted to be thrown into and out of direct contact with the loose pulley. When it is desired to wind a bobbin the driving-belt is transferred from the fast pulley to the loose one.



Claim.—The combination, with the driving-shaft of a sewing-machine having a grooved driving-pulley rigidly secured thereto, of a loosely-mounted grooved pulley placed by the side of the driving-pulley, and a bobbin-winder pulley adapted and arranged to have its periphery thrown either in or out of direct contact with said loosely-mounted grooved pulley, substantially as set forth.

201,045. FIRE-KINDLERS. James E. Prentice, Saginaw, Mich. Filed Feb. 4, 1878.

Claim.—1. A block of kindling material in which the vertical inner portions are of the same depth as the block, but are thinner than the outer ends thereof, substantially as and for the purpose set forth.

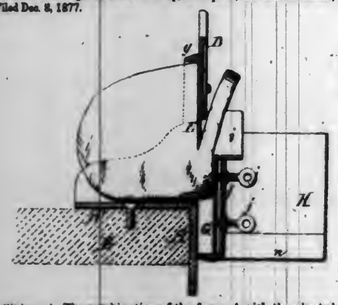
2. A block of kindling material having the longitudinal slots *a b*, the inner ends of which pass slightly beyond the vertical center of the block, while

the outer ends are open at alternate ends of same, substantially as shown and described.

201,045.



201,046. IMPLEMENTS FOR CUTTING BREAD, MEAT, &c. Lewis Quigg, Spring City, assignor of one-half his right to Oliver R. Keely, same place, and Enos S. Shantz, Philadelphia, Pa. Filed Dec. 8, 1877.

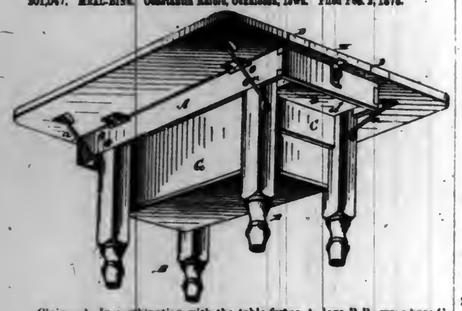


Claim.—1. The combination of the frame A with the pivoted lever D, having a recessed portion, *f*, set-screws *j*, and plate G, all substantially as set forth.

2. The combination of the frame A with a slicing-lever having a knife, E, and carrying the receptacle for the slices, all substantially as set forth.

3. The combination of the slicing-lever with the receiver H, shaped as shown, and secured to the lever, so that by operating the latter the contents of the receiver may be discharged, in the manner described.

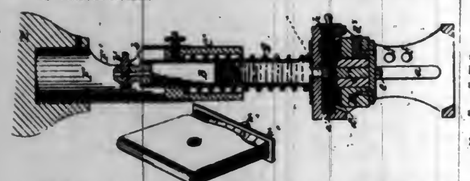
201,047. MEAL-BIN. Constantin Raible, Ochaloosa, Iowa. Filed Feb. 2, 1878.



Claim.—1. In combination with the table-frame A, legs B B, cross-bars C C, and strips D D, the removable chest G, having its side pieces extended, as shown at *b b*, at each end, to support the chest on the cross-bars C C and form receptacles for spice boxes F, all substantially as herein set forth.

2. In combination with a table having stationary top drill-pieces D D and a hinged center piece, H, the removable chest G, having its upper edges bevel-ed, as shown at *x*, as and for the purposes set forth.

201,048. PNEUMATIC FOUNTAIN-STAMPS. Wm. A. Roberts and Maseena E. Gary, Richmond, Va. Filed Jan. 24, 1878.



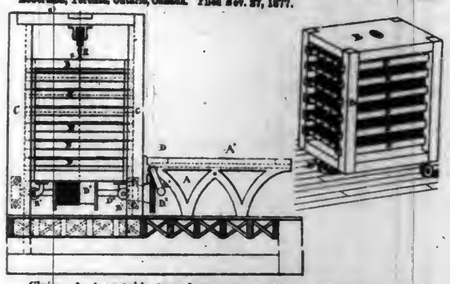
Claim.—1. In combination with the ink-reservoir of a reversing-stamp provided with an ink-pad, substantially as described, the air-cock *b*', located at the upper end of said reservoir from the side, substantially as and for the purpose set forth.

2. In combination with a reversing-stamp and ink-reservoir provided with an air-cock at its upper end, the yoke-elevating spring *g*, coiled around the lower portion of the reservoir supported by the frame A, and located under said yoke, substantially as shown, and for the purpose described.

3. In combination with a hand-stamp provided with an ink-reservoir, the ink-pad H, made of several thicknesses of woven material, glued or cemented at the edges, perforated half through its center or ink-receiving opening, and connected at one side to a metallic clamp, by which it can be conveniently handled, substantially as described.

4. The combination of the frame A, the tubular reservoir inclosed in a spring located under the yoke, the air-cock *b*', located on top of the reservoir, the tube F, having an opening, F', through which the cock *b*' is regulated, and the ink-pad H, all constructed and arranged for joint operation as described.

201,049. PORTABLE TRAY RECEIVER AND ELEVATOR FOR LOZENGE-MACHINES. Thomas Robertson, Toronto, Ontario, Canada. Filed Nov. 27, 1877.

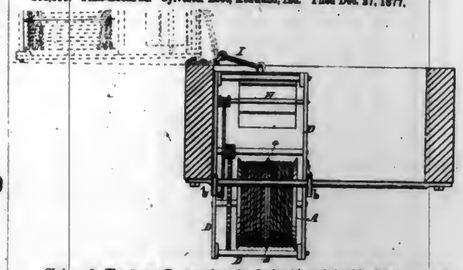


Claim.—1. A portable tray-elevator frame, B, provided with a series of tray-bearings, B', corresponding with the slide-bars of a lozenge-machine, and arranged to receive the lozenge-trays one above the other as they are passed out of the lozenge-machine, substantially as shown and described.

2. The portable tray-elevator frame B, in combination with the guide-posts C, lozenge-machine slide-bearings A', and suitable elevating and lowering mechanism for moving said frame up and down, as required.

3. In combination with a lozenge-machine which delivers the finished lozenges on trays, the portable elevator-frame B, arranged and operating substantially in the manner shown and described.

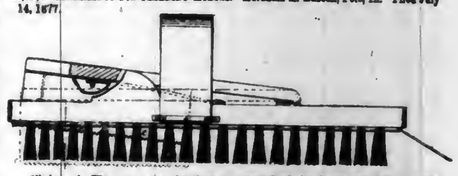
201,050. FIRE-ESCAPES. Sylvester Root, Kentland, Ind. Filed Dec. 27, 1877.



Claim.—1. The frame D, carrying the fly-brake and double drum, with its attached ropes wound in reverse direction thereon, and the hinge I, attached to the wall or casing so as to allow the frame to be swung out of the window, all combined as shown and described.

2. The combination of the hinged frame, carrying the double drum and provided with the hooks *b b*, and the cross-bar attached to the window-casing or wall, as shown and described.

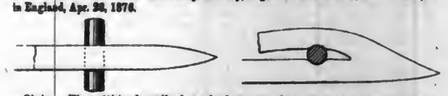
201,051. IMPLEMENTS FOR GROOMING HORSES. Abraham A. Russell, Pole, Ill. Filed July 14, 1877.



Claim.—1. The grooming implement formed of the brush having a hand strap or loop, and provided with slots in one end thereof, and the curry-comb hinged to the back of the brush, and supported upon springs at its free end, as shown and described.

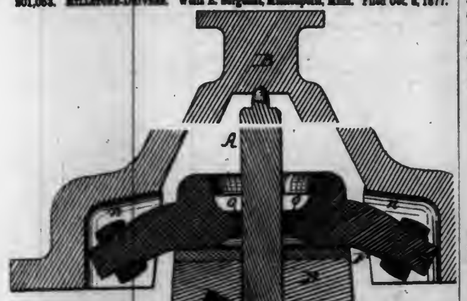
2. The combination of the sliding scraper and guide-wires with the brush, as shown and described.

201,052. METHODS OF MANUFACTURING THE FINGERS OF HARVESTING-MACHINES. Bernhard Samuelson and Wm. G. Mauwaring, Banbury, England. Filed Nov. 16, 1877. Patented in England, Apr. 26, 1876.



Claim.—The within-described method of manufacturing the fingers of harvesting-machines, by first incorporating with the steel bars or steel-cased fagot, capable of being hardened, and of which the finger is composed, a cross-piece or bar of softer metal, to form the guard in front of the cutter; afterward forging or fashioning the whole into shape; and subsequently subjecting it to a hardening process, whereby the fingers present hard-steel cutting-edges, while the guard in front of the cutter-bar is of tougher or less brittle material, substantially as specified.

201,053. MILLSTONE-DRIVERS. Wells E. Sergeant, Minneapolis, Minn. Filed Oct. 8, 1877.



Claim.—1. In combination with a mill-spindle and ball, a transverse rock-shaft having cranked or bent ends and a central eye or bend passing around the spindle.

2. The millstone-driver consisting of the mill-spindle, the ball B, provided with recesses in its lower ends and mounted on the spindle, and a transverse rock-shaft with cranked ends carried by the spindle, and arranged with its ends in the recesses of the ball, as shown.

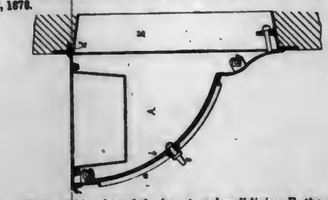
3. The rock-shaft C, having the elevated central eye or bend, with the journals thereunder seated in a support, D.

4. The rock-shaft C, having journals seated in the block D, and secured by the inserted steel blocks F, substantially as shown.

5. The combination of the spindle A, driver-block D, and rock-shaft C, having a central eye or bend, and the points O_1 to prevent end motion.

6. In a millstone-driver, a transverse rock-shaft with cranked ends, constructed to pass around instead of through the spindle.

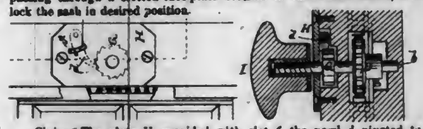
201,054. HOT-AIR DEFLECTORS AND EVAPORATORS. Saml. B. Sexton, Baltimore, Md. Filed Jan. 23, 1878.



Claim.—The combination of the box A and wall-lining E, the same being united by means of a slot and a projection fitted thereto, and a screw-bolt connection, substantially as specified.

201,055. RAIL-BALANCES. Florimond L. Shinkle and David F. Stambaugh, Ossey, Ill. Filed June 26, 1877.

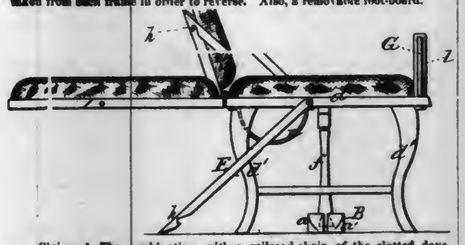
Brief.—As an improvement on Patent No. 188,432, March 13, 1877, a ratchet and pawl on the operating-shaft, the pawl having a projecting lug passing through a slotted face-plate secured to the window-frame, serve to lock the sash in desired position.



Claim.—The plate H, provided with slot *f*, the pawl *d*, pivoted to the under side of the same, and having projecting lug *h*, passing through the slot in the plate, in combination with the ratchet G on the shaft *b*, and the cog-wheel D, rack C, and adjustable knob I, all as and for the purposes herein set forth.

201,056. CAR-SEATS. Eben B. Simpson, Bridgewater, Va. Filed Jan. 12, 1878.

Brief.—The seat is held to the floor of the car by a central leg having a dovetailed lower end fitting into a dovetail frame on the floor, and must be taken from such frame in order to reverse. Also, a removable foot-board.

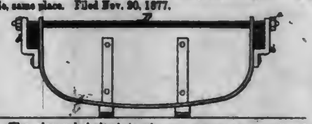


Claim.—1. The combination, with a railroad-chair, of the slotted dovetailed guide B and the central leg *f*, having the dovetail tenon *g*, substantially as specified.

2. The combination of the arched slotted guide B, having the dovetail space *b*, and a railroad-chair having the central leg *f*, engaging the said guide, substantially as specified.

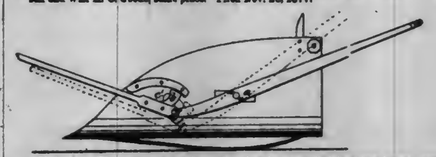
3. The combination, with a railroad-chair having an adjustable back, of the adjustable staple-guides *l* and the removable boards G, substantially as specified.

201,057. EARTH-SCRAPERS. Benjamin Slusser, Sidney, Ohio, assignor to himself and Wm. H. C. Goode, same place. Filed Nov. 20, 1877.



Claim.—The clamp *b*, bolted to the scraper upon one side of the handle, and combined with the tie-rod D, extended through the side of the scraper, and connected with the free end of the clamp, to close in the handle and secure it in place, substantially as described.

201,058. REVOLVING EARTH-SCRAPERS. Benjamin Slusser, Sidney, Ohio, assignor to himself and Wm. H. C. Goode, same place. Filed Nov. 26, 1877.



Claim.—1. The scraper having the circular parallel locking-irons, combined with the ball having the right-angular catches, substantially as and for the purpose described.

2. The combination, with the scraper having the circular parallel locking-irons, of the handle pivoted to the scraper near its center of burden, and extended forward beyond its pivots, together with the ball pivoted to said extensions of the handles, and having right-angular catches adapted to co-operate with the circular locking-irons, substantially as and for the purpose described.

201,059. LIGHTNING-ROD CONNECTIONS. Charles H. Smith and John Hewitt, Chicago, Ill. Filed Dec. 20, 1877.

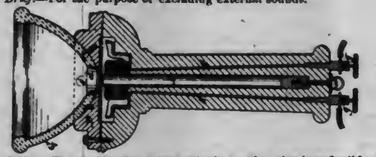


Claim.—1. The process of forming the tenon upon the rod-sections and securing the coupling thereon before galvanizing, and then placing them in the galvanizing medium, thus not only rendering the coating continuous, but also securing the coupling and its adjacent rod section or sections rapidly together, substantially as specified.

2. The combination of a section of a lightning-rod and its couplings, when united by a continuous galvanic coat, substantially as specified.

201,060. TELEPHONES. John E. Smith, New York, N. Y. Filed Jan. 21, 1878.

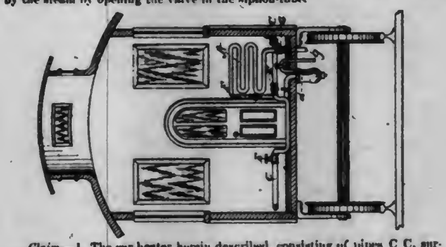
Brief.—For the purpose of excluding external sounds.



Claim.—The combination, with a telephone, of an elastic or flexible cushion, ring, or cup, G, substantially as and for the purpose described.

201,061. CAR-HEATERS. Wesley Smith, Adrian, Mich., assignor of one-half his right to H. H. Osgood, same place. Filed Dec. 27, 1877.

Brief.—High-pressure steam can be passed to either or both sides of the car, and admitted at will to the radiators. Water of condensation will escape under the spring-valve when steam-pressure is removed. It can be blown out by the steam by opening the valve in the siphon-tube.



Claim.—1. The car-heater herein described, consisting of pipes C C, surrounding the car, and provided with valves E E E E on each side of the doors, and the vertical coils A A at the corners of the car, and provided with valves F F, the whole arranged as shown, for the purpose of regulating the heat in different portions of the car.

2. The combination, with the pipes C and H, of the chamber B, located between said pipes, and provided with an automatic valve, *b' b''*, adapted to be closed by the steam-pressure, and opened when pressure is withdrawn, so as to permit the water of condensation to escape, as set forth.

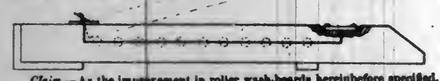
3. The combination, with the chamber B, located and connected in the manner described, of the siphon S, provided with valve *c''*, for permitting the water of condensation to escape while steam-pressure is on, as set forth.

201,062. EGG-CARRIERS. Wm. W. Smith, Chicago, Ill. Filed Nov. 28, 1876.



Claim.—A tray for carrying eggs, made of paper-pulp or an analogous material, formed with cavities, substantially as and for the purpose specified.

201,063. WASH-BOARDS. Henry L. St. Clair, Vineland, assignor to himself and Stephen Leach, Malaga, N. J. Filed Feb. 14, 1878.



Claim.—As the improvement in roller wash-boards hereinbefore specified, in combination with the frame and rollers, the hinged section *a* and a fastening device therefor, substantially as shown and described.

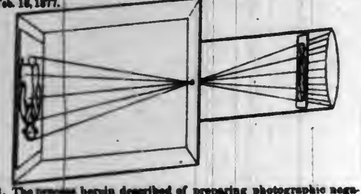
201,064. HOLLOW AUGERS. George N. Stearns, Syracuse, N. Y. Filed Apr. 26, 1876.

Brief.—The cutter is adjustably attached to the head by a slotted pivoted cap having a recess, into which the cutter shank fits, and a set-screw for securing it in position.



Claim.—The cutter E, attached to the hollow auger by means of the pivoted cap *y*, constructed, arranged, and combined as and for the purposes herein described.

201,065. PREPARATION OF PHOTOGRAPHIC NEGATIVES. George W. Stigleman, Richmond, Ind. Filed Feb. 16, 1877.



Claim.—1. The process herein described of preparing photographic negatives by coating the same with a gelatine or other varnish insoluble in balsam of fir or equivalent substance, and attaching to the varnished and retouched surface of said negative a plate of clear glass by heating both negative and clear glass to prevent breakage, and pouring upon one or the other of them a quantity of balsam of fir or equivalent substance, and pressing and retaining said plates together while kept heated, to exclude air-bubbles and remove unevenness between them, and dry the varnishes, substantially in the manner and for the purpose set forth.

2. A photographic negative prepared by coating an ordinary negative with a gelatine or other varnish insoluble in balsam of fir or equivalent substance, and attaching to the varnished and retouched surface a plate of clear glass by heating both negative and clear plate to prevent breakage, and pouring upon either of them a quantity of balsam of fir or equivalent substance, and pressing and retaining said plates together while kept heated, to exclude air-bubbles, to remove unevenness, and to dry the varnishes, substantially as hereinbefore set forth.

201,066. PAILS AND OTHERED HOOP AND EARS. Rinaldo H. Stilwell, Stockton, N. J. Filed Nov. 20, 1877.



Claim.—1. The combination of a pail or similar vessel, provided with a circumferential socketing groove, with an elastic hoop-ring of wire sprung into the said groove, substantially as shown and described.

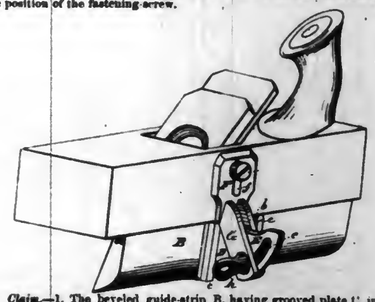
2. As a new article of manufacture, a removable and readily-attachable pail hoop formed of wire, and having the bail-ears or handles formed directly thereon by loops or bends in the composing wire of the hoop, substantially as herein shown and described.

201,067. CRAYONS. J. W. Swarts, Philadelphia, Pa. Filed Jan. 19, 1878.

Claim.—Crayons composed of glue, alkali, and wax, substantially as and for the purpose set forth.

201,068. EDGE-PLANES. Harrison P. Taylor, Minerva, Ohio. Filed Sept. 7, 1877.

Brief.—The guide-strip is reversible, can be used on the side or face of the stock, and can be used with planes of different thicknesses without changing the position of the fastening-screw.

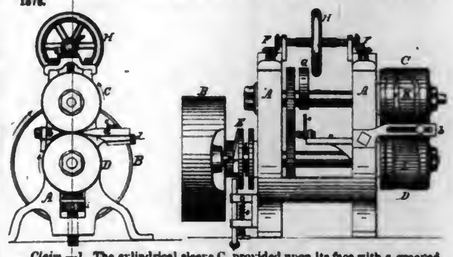


Claim.—1. The beveled guide-strip B, having grooved plate C, in combination with the reversible plate D and vertically-adjustable key-plate F, substantially as and for the purpose herein shown and specified.

2. The combination of the slotted and vertically-adjustable key-plate F with the graduated segment E, provided with the reversible plate D, substantially as and for the purpose herein shown and described.

3. The combination of the reversible plate D, provided with the slotted and graduated segment E, with the beveled or wedge-shaped guide-strip B, substantially as and for the purpose herein shown and specified.

201,069. MACHINES FOR SKIVING STIFFENERS FOR BOOTS AND SHOES. David H. Thomas Syracuse, N. Y., assignor of one-half his right to John D. Gray, same place. Filed Jan. 4, 1878.



Claim.—1. The cylindrical sleeve C, provided upon its face with a grooved mold, K, having an elastic backing, in combination with the sleeve D, provided on its face with corrugations or spurs to coincide with the mold K, and the driver B, substantially as shown and specified.

2. In a machine for skiving stiffenings, the sleeve C, constructed with a grooved mold, K, upon its face, and adapted to be secured on a feed-roll, the beveled adjusting-knife a, in combination with a feed roll or support, D, as herein described, and for the purposes specified.

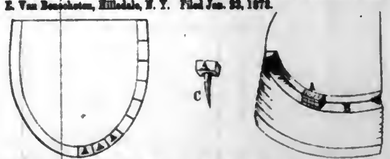
3. In combination with the roll C, constructed with a mold, K, upon its face, the adjusting bevel-gear screws F F, substantially as shown and specified.

4. In combination with the feed-rolls C D, provided, respectively, with cylindrical sleeves, constructed with the mold K and corrugations I, a tension-spring, *k*, in the manner and for the purposes specified.

5. In a machine for skiving stiffenings, in combination with a cylindrical sleeve, C, constructed with a mold, K, for skiving stiffenings, an automatic stop device, substantially as shown, and for the purpose specified.

6. In combination with the feed-rolls C D, constructed to receive cylindrical sleeves, provided with a mold, K, and corrugations I, the knife a and the feeding-gage *b*, as herein set forth and described, and for the purposes specified.

201,070. METALLIC PROTECTORS FOR THE SOLES AND HEELS OF BOOTS AND SHOES. Henry E. Van Benschoten, Hillsdale, N. Y. Filed Jan. 23, 1878.



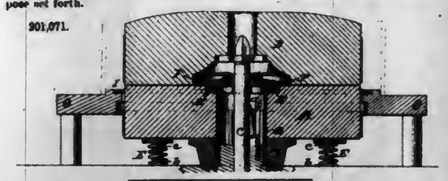
Claim.—A heel or sole protector having a suitable penetrating-shank and an enlarged head of such shape that when a series of protectors are driven into the rabbeted edge of a heel or sole their outline will conform to the contour of the finished heel or sole, substantially as set forth.

201,071. BED-STONE SUPPORTS FOR GRINDING-MILLS. Forrest G. Wallace, Jackson, assignor to Alfred E. Hawes and John Webster, Detroit, Mich. Filed Nov. 22, 1877.

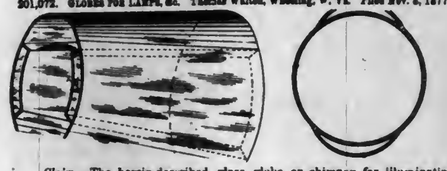
Brief.—Metal spiral springs provided with broad supporting-disks are fixed to bottom of bed-stone and top of stone plank, thus dispensing with guiding section of inclosing hank.

Claim.—In combination with the stones A D, elastic packing, and the hank O, the coiled springs E, cylindrical studs or projections *b* and *c*, attached respectively to the bed-stone and stone plank, and extending toward the center of the spring from the top and bottom, whereby the stone A is held from lateral movement by the springs and studs without the aid of the hank or supporting frame, constructed and arranged substantially as and for the purpose set forth.

201,071.



201,072. GLOBES FOR LAMPS, &c. Thomas Walton, Wheeling, W. Va. Filed Nov. 6, 1877.



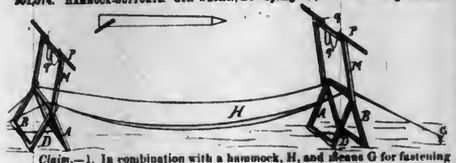
Claim.—The herein-described glass globe or chimney for illuminating apparatus, the same consisting of a body and air-ducts attached to and forming a part thereof, substantially as shown and described.

201,073. SHOW-BRACKETS FOR DRAWERS AND BOXES. Charles M. Webster, Albany, N. H., assignor to Nelson Lyon, same place. Filed Oct. 26, 1877.



Claim.—The combination, with handle A, provided with means, substantially as described, for attachment to a box or drawer, and having slots *c*, of the elastic clamp *s*, composed of wire, and connected with said handle, with the binding portion of said clamp bearing on the face side of said handle, in the manner and for the purpose set forth.

201,074. HAMMOCK-SUPPORTS. Geo. Wheeler, New Springville, N. Y. Filed Aug. 14, 1877.

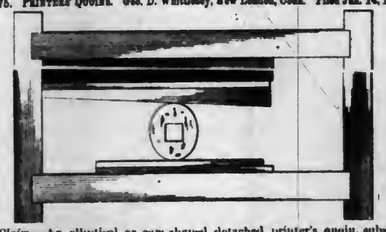


Claim.—1. In combination with a hammock, H, and sleeves G for fastening the ends to the floor or ground, the frames A B, lying one within the other, and connected by an axis, C, as and for the purposes herein specified.

2. In combination with the frames A B, having stops *b*, the frame M, turning on the same axis C, and adapted to support a mosquito-net, or analogous canopy, as herein specified.

3. The folding levers P, in combination with the frames M A B and axis C, and adapted to serve as and for the purposes herein specified.

201,075. PRINTERS' QUOINS. Geo. D. Whittlesey, New London, Conn. Filed Jan. 14, 1878.



Claim.—An elliptical or cam-shaped detached printer's quoin, substantially as described.

201,076. SEAL-LOCKS. Andrew F. Whiting, Norwich, Conn. Filed Dec. 26, 1877.

Claim.—1. A hasp fitting over a post, in combination with a lever which is swung into alignment with said post, to which it is pivoted, to permit of the detachment of the hasp therefrom, substantially as and for the purpose set forth.

2. In a seal-lock, the combination, with the hasp A, of the post B, having a seal and mechanism for locking said seal thereto, substantially as and for the purpose set forth.

3. The hasp A, in combination with the seal D, slotted post B, having the slotted locking device E, and a spring-catch engaging the said device, substantially as and for the purpose set forth.

4. The hasp A, in combination with the lever C, post B, including a seal, locking mechanism, and seal D, substantially as and for the purpose set forth.

5. The combination of the hasp A, lever C, seal D, and slotted post B, having the seal-locking mechanism E *g*, substantially as and for the purpose set forth.

6. The lever C, post B, hasp A, and post F, having the seal G, in combination, substantially as and for the purpose set forth.

7. The combination of the hasp A, post B, having a seal, D, lever C, and post F, having a seal, G, substantially as and for the purpose set forth.

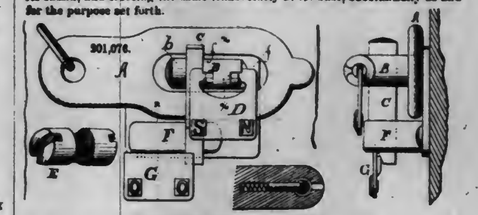
8. The combination of the seal D with the slotted hasp-post B, having the annularly-grooved locking device E, provided with slots *c*, notch *h*, and stop *i*, and spring-catch *g*, substantially as and for the purpose set forth.

9. The lever-post F, having the inclined or diagonal slot *k* and spring-catch *j*, in combination with the seal G, having an obtuse-angled shank, substantially as and for the purpose set forth.

10. A lock-seal provided with a bifurcated or open shank, *m*, substantially as and for the purpose set forth.

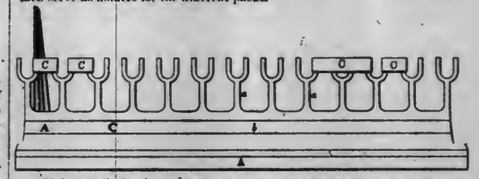
11. The seal G, having a shoulder or flange, *l*, at a point between it and its shank, and crossing the same transversely at its base, substantially as and for the purpose set forth.

201,076.



201,077. POSTAL-CARD FILES. Asher Wiel, Baltimore, Md. Filed Nov. 1, 1877.

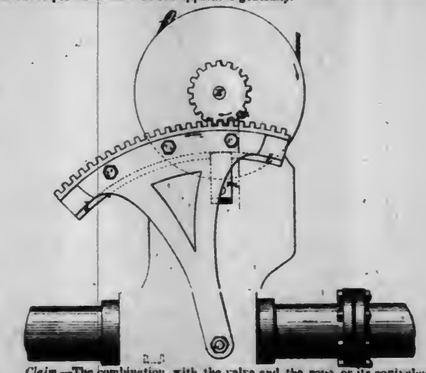
Brief.—Elastic bands are arranged on forked pins, which are inserted in a suitable base, forming divisions for classifying postal-cards, &c. When the spaces are filled, the cards are removed, together with the elastic bands, which then serve as holders for the different packs.



Claim.—A device for the purpose herein specified, consisting of the base A and pins *a*, connected thereto, in combination with the removable elastic bands C, substantially as shown.

201,078. HYDRAULIC ELEVATORS. Joel G. Willard, New York, N. Y. Filed June 27, 1877.

Brief.—A long stroke of the rope is required to open the valve a little, which allows the hydraulic column, by which the elevator is raised, to enter slowly, prevents it entering suddenly, on a sharp pull of the operating-rope, and thus prevents strain on the apparatus generally.



Claim.—The combination, with the valve and the rope, or its equivalent, extended to the car, of a pinion operated by the movement of the rope and a sector driven by said pinion, and having its axis of motion coincident with the center of oscillation of the valve, substantially as and for the purpose described.

201,079. FORCE-FEEDS FOR GRAIN-DRILLS. James F. Winchell, Springfield, Ohio. Filed Jan. 10, 1878.

Brief.—The feed-regulating gate is hung upon the axis of the feed-wheel, and is arranged to swing into the delivery-opening from the outside, to diminish the size of the discharge-opening.

Claim.—1. In a force-feed for grain-drills or seeders, a feed-regulating gate hung upon or concentric with the axis of the feed-wheel, substantially as shown and described.

2. In combination with the cup or case B and flanged wheel A, the swinging feed-regulating gate C, mounted within the wheel, with its axis concentric

with that of the wheel, and arranged to vary the capacity of the grain-channel, substantially as shown.

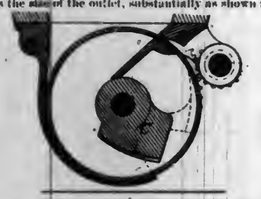
3. In a force-feed for grain-drills, a pivoted feed-regulating gate, pivoted upon or arranged to encircle the shaft of the feed-wheel, substantially as shown and described.

4. The feed-regulating gate pivoted upon or around the feed-wheel shaft, and provided with the rack, in combination with the pinion, substantially as shown.

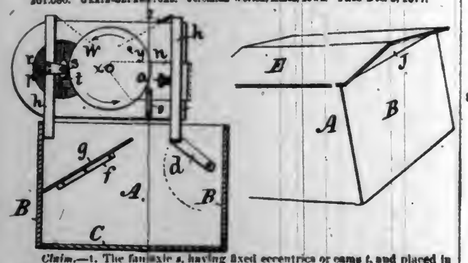
5. In a force-feed, the combination of a feed-wheel, a feed-cup in or against which the wheel is mounted and through which the grain is delivered, and a feed-regulating gate pivoted at a point within the periphery of the wheel, and arranged to swing into the grain-outlet or delivery-opening from the outside, so as to diminish the size of the outlet, and thereby regulate the discharge of grain, substantially as shown and described.

6. In a force-feeding mechanism, the combination of a feed-wheel, a feed-regulating gate pivoted at a point within the periphery of the wheel, and a feed cup or case, into the mouth or delivery-opening of which the gate is arranged to close, the inner face of the gate and the edge of the delivery-opening being arranged at an angle to each other, so that as the gate swings inward it gradually diminishes the size of the outlet, substantially as shown and described.

201,079.



201,080. GRAIN-SEPARATORS. Jeremiah Worick, Ames, Iowa. Filed Dec. 8, 1877.



Claim.—1. The fan-axle *s*, having fixed eccentrics or cams *t*, and placed in fixed bearings, the friction-wheels *w*, rigidly fixed to an axle, *x*, and the suspended vibrating screen-carrier *n*, arranged and combined to operate substantially as shown and described, for the purposes set forth.

2. The box-form base A B C, having adjustable props *d*, fixed cleats *f*, and a removable cover, E J, and thereby adapted to support a grain-separator, and to receive the graded matters therefrom while in operation, and to inclose and protect the same when not in use, substantially as shown and described.

201,081. STOVE-PIPE SHELTER. Robert 9. Yeags, St. Louis, Mo., assignor of one-half his right to Edward D. Cox, same place. Filed Jan. 21, 1878.



Claim.—1. The combination, with a stove-pipe, A, of the plate B, curved on its inner side to fit said pipe, and constructed with a horizontal groove, *b*, ears *b*¹ *b*², and notch *b*³, the encircling wire C, and the shelf-support E, as and for the purpose set forth.

2. The shelf constructed of a single wire, forming a hinge, E, shelf E¹, twist E², and brace E³ E⁴, as and for the purpose set forth.

3. The combination, with the shelf E E¹ E² E³ E⁴, of the brace F, as set forth.

REISSUES.

8,111. COOKING-STOVES. Wm. A. Strong, Jr., Joliet, Ill., administrator of William H. Moore deceased, assignor to Solar Stove Works, same place. Patent No. 96,826, dated Nov. 16 1869. Filed Jan. 18, 1878.

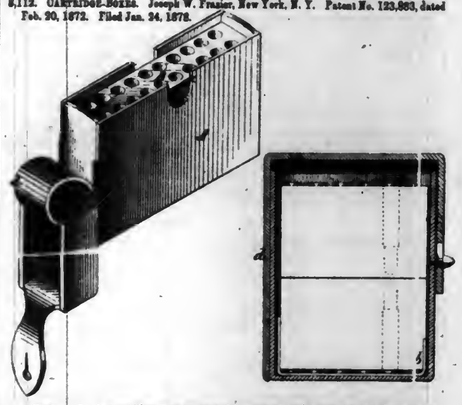


Claim.—1. The double damper having a single axis and two wings, in combination with a cooking-stove having down-draft side flues and an extension-chamber in the rear, substantially as described.

2. The dampers *i*, combined with a stove having side flues *c c* and an extension-chamber, B, and arranged as shown, so as to do double duty, as described.

3. The horizontal sliding damper *h*, combined with the extension B, and with the stove having down-draft side flues *c c* and dampers *o* and *i*, substantially as and for the purpose described.

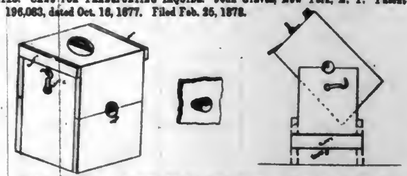
8,112. CARTRIDGE-BOXES. Joseph W. Frasier, New York, N. Y. Patent No. 123,863, dated Feb. 20, 1872. Filed Jan. 24, 1878.



Claim.—1. A cartridge box or pouch adapted to be worn upon the person, and provided with a cover or lid attached to the front side of the box, and adapted, in opening, to swing outwardly and downwardly therefrom, substantially as and for the purpose set forth.

2. A cartridge box or pouch provided with a lid having a flexible connection with the box or pouch at a point below the top of the box, substantially as and for the purpose described.

8,113. CANS FOR TRANSPORTING LIQUIDS. John Graves, New York, N. Y. Patent No. 196,063, dated Oct. 16, 1877. Filed Feb. 26, 1878.

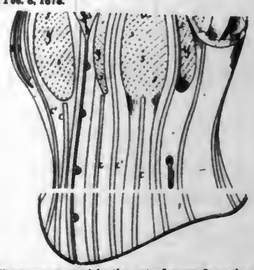


Claim.—1. A box or case for oil and other cans, formed of two sections, separated at or near the center of two of its sides, the sides of the lower section having bearings to support the trunnions upon the sides of the can, substantially as and for the purpose set forth.

2. A box or case for oil and other liquids, made of two sections, separated at or near the center of two of its sides, the meeting edges of these sides having bearings for the trunnions upon the sides of the can, while the remaining sides are arranged with locking devices for connecting the sections, substantially as described.

3. A box or case for oil and other cans, formed of two sections, separated at or near the center of two of its sides, the remaining sides of the lower section being extended above the can, and provided with bearings for the trunnions upon the sides of the can, so that the can may be supported and tilted thereon, substantially as and for the purpose set forth.

8,114. CORSETS. Ira De Van Warner, Bridgeport, Conn. Patent No. 189,405, dated Apr. 10, 1877. Filed Feb. 8, 1878.



Claim.—1. The improvement in the art of manufacturing corsets, consisting in forming pockets in the separate sections, inserting the ribs therein, and then uniting the sections, as set forth.

2. The within-described mode of securing the ribs or bones by stitches passing through the same and through the cloth.

3. A corset provided with ribs secured in position by stitches passing through the same, substantially as specified.

4. A bosom-pad corset in which the breast-receptacles are stiffened by series of diagonal and vertical ribs, as specified.

5. The combination of the ribs *c'*, extending the length of the corset, the shorter ribs *c c*, extending from the lower edge to the breast-sections, and the series of small ribs stiffening the breast sections, substantially as specified.

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THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE

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ORDER.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 19, 1878.

By direction of the Secretary of the Interior, the firm of Knight & Knight, of Washington, D. C., and the individual members thereof, (viz., F. W. and W. D. Knight,) are disbarred from practice before this Bureau, because of "gross misconduct," (Section 487, Rev. Stats.,) and will not be recognized from and after this date as attorneys in the prosecution of cases.

ELLIS SPEAR,
Commissioner of Patents.

[The firm in the above order is in no wise connected with that of Knight Bros.]

COMMISSIONER'S DECISIONS.

GEORGE LISNER.—*Trade-Mark.*

[*Appeal from the decision of the Examiner of Trade-Marks in the matter of the application of George Lisner for the registration of the trade-mark* "PALAIS ROYAL," *filed January* 14, 1878.—*Decided February* 14, 1878.]

No more than one class of merchandise can be entered in a single registration of a trade-mark.

"Fancy goods" does not definitely ascertain any one class of merchandise: *Hence*, registration of a mark refused until the particular class was more clearly specified.

DOOLITTLE, *Acting Commissioner:*

Applicant designates the class of merchandise on which he uses his mark as "Fancy Goods." He does not limit himself to any "particular description of goods comprised in such class," but describes how he proposes to apply it to "gloves" and some other fancy articles.

The Examiner is of the opinion that gloves are not properly embraced in the class of fancy goods, and requires that to be stricken out; but neither the Examiner nor applicant attempts to describe what is meant by "fancy goods."

Although the practice of the Office is to admit registration of a trade-mark to be applied to an entire class of merchandise, as "paints" or "alcoholic spirits," yet this privilege has not been extended to admit under one registration several classes of merchandise.

The term "fancy goods" has no well-known or ascertained meaning, but includes articles of every class—rubber, wood, ivory, glass, cloth, and liquid goods, stationery, jewelry, perfumeries, &c. It is a more comprehensive term than "groceries" or "dry-goods." The objection, therefore, is not that a whole class of goods is specified, but that no practical or substantial limitation is made.

The law in requiring the specification of the class of merchandise to which the trade-mark has been or is to be applied, no doubt had in view the convenience of the public, so far as the records of this Office are concerned, at least, in order that there might be obtained therefrom some definite idea as to the extent of a registrant's privilege.

To permit a trade-mark to be registered applicable to numerous classes of goods without restriction is to overlook this requirement, and produce uncertainty and confusion in the records of the Office and in the minds of the public.

The registration will be denied until applicant restricts his application to a particular class or description of merchandise.

DECISIONS OF THE COURTS.

Circuit Court of the United States—District of Massachusetts.

In Equity.—No. 747.

GEORGE A. WHITING *vs.* JOHN A. S. GRAVES *et al.*

The mere fact of employment gives to the employer no title in letters patent for inventions made by the workman while in his service.

A workman engaged to make improvements in the special machinery of a fancy dry-goods manufactory, of which his employer is to have the fullest benefit, forfeits no part of his title to letters patent for inventions which are of general applicability and not confined to the specialities of construction in the factory machinery.

The terms of the particular contract may operate as a license to the employer to use machinery invented by the workman and put in use during his employment, but it would not of itself confer any legal title to the invention or to letters patent protecting it—

Hence, where the employer rested his suit for infringement on a legal title obtained under such circumstances, the court ruled

that the equitable title of the workman under which the defendants justified was superior, and that there was no infringement. In a court of equity a party holding an equitable title cannot be ousted of his equitable rights by the holder of the legal title who in such case stands as trustee for the party beneficially interested.

[*Thomas William Clarke*, for complainant; *George D. Noyes*, for defendant.]

OPINION OF THE COURT.—*February* 4, 1878.

SHEPLEY, *J.*:

The complainant being about to start a factory for the manufacture of fancy dry-goods employed Elijah L. Howard as a machinist, at a salary of twenty-one dollars a week. The complainant states the employment as follows:

I also engaged a machinist, whose duties were the making and keeping in order of rufling, ruching, and fluting machines, and all attachments or machinery required for the manufacturing of any goods which might be necessary to be made.

Complainant, however, on being interrogated as to what information he communicated to Howard, as to the duties and services expected of him, replies:

I told him that I should require him to make what machinery was necessary and keep it in repair.

Howard testifies that complainant, being about to start a rival factory for the manufacture of rufflings, in which sewing-machines were to be used, wanted a man to take charge of his machinery; that Howard was introduced to him by one Leavitt as a competent man for that service; that Whiting agreed to employ him. He testifies:

He was to pay me twenty-one dollars a week; that was all the agreement made.

It is apparent from the complainant's statements, as well as from the testimony of Howard, that there was nothing in the original contract for service which would give Whiting any legal or equitable title to any letters patent for any inventions Howard might make. During the term of his employment patents for a number of inventions made by Howard were issued to Whiting, his employer, to whom the right in the inventions had been assigned by Howard, at or before the times of making the applications. Many of these were for such little additions to sewing and other machines as were necessary to adapt them to the making of fintings, ruffles, and ruchings. As these were adaptations of machinery to the special business of Whiting, and the expenses of the applications and the patent fees were paid by him, it seems to have been considered by both parties that Whiting had the sole interest in the patents. Two patents, however, were issued in the name of Whiting for the inventions of Howard, for contrivances applicable to sewing-machines generally, being for improved mechanisms for operating such machines. It is claimed on the part of the complainant that he is the sole owner of these letters patent, and that Howard has no legal or equitable interest therein. The defendants claim that Howard, the inventor, is entitled to an equitable interest in one-half of the rights under these two patents.

Whiting contends, and in substance testifies, that Howard went to Whiting with an understanding that he should make improvements in the machinery of Whiting's factory to the best of his ability, and Whiting should have the fullest benefit of them; and the patents upon these inventions were procured merely for business protection by Whiting, and the manufacture for sale of the machines was an afterthought. Even if this were so, there would seem to be no good reason why Howard should not receive some benefit from the use of his inventions in other factories than Whiting's and from the sale of his inventions to others. It was no part of the original employment of Howard, according to Whiting's statement of his understanding of it, to invent machinery for general use, but only in the factory of Whiting. This was a factory not for making and selling machinery, but for manufacturing fancy dry-goods with the aid of machinery. The employment to invent and perfect machinery for that purpose, while it would operate as a license to Whiting to use machines invented by Howard, and put in use under such employment, would not, of itself, confer upon Whiting any legal title to the invention itself or to letters patent protecting it. Whiting states in his testimony that he had no thought of patenting any inventions at the time of the employment of Howard, and that the patent business never occurred to his mind at that interview. Yet it is contended that when the applications were made for the patents on the treadles, Howard assigned the inventions to Whiting without any consideration other than what would arise from the nature of the employment, and that the legal and equitable title to the letters patent is so absolute in Whiting that he is entitled to treat Howard and the defendants who are using the treadles under Howard, as infringers. Whiting states that subsequently to the time when the patents for the two treadles were issued, he agreed to give Howard one-half of the profits from the manufacture and sale of the Howard treadles as long as Howard remained in his employment. It appears that a separate account was opened on Whiting's book under the head of the "Howard Treadle Account."

Howard, on the contrary, testifies that Whiting said he would pay the expense of the patent on the first treadle for one-half interest in it; that he subsequently told him he had the papers made in his own name, assigned to himself, and that at any time Howard wanted a transfer of his interest in those papers he would do so; and that when he proposed to have the second treadle invention patented, he said he would make the same terms as on the first patent; that he (Howard) assented to that, and the papers were made accordingly.

Three witnesses, Graves, Weston, and Kenerson, all testify to conversations at different times with Whiting, in which he stated to them, respectively, that he was to pay the expenses of obtaining the patents for one-half interest in them, and was to assign one-half to Howard whenever he wanted it. This seems to fully confirm Howard's statement of the transaction, and Whiting's version of the arrangement is uncorroborated by any witness, and is not consistent with the attendant facts and circumstances proved in the case. After Howard left the employment of Whiting, he assigned his equitable interest in these two patents to the defendant Graves. Under this assignment the defendants, Graves and Abercrombie, his partner, have made and used the patented treadles. As it is clear upon the evidence in this record that Howard had an equitable title to one-half of these two patents, the defendants cannot be held to infringe. In a court of equity a party holding an equitable title cannot be ousted of his equitable rights by the holder of the legal title, who in such a case stands in a court of equity as trustee for the use of the party beneficially interested. (*Continental W. Co.* vs. *Empire W. Co. et al.*, 8 Blatch., 295; *Clum* vs. *Brewer*, 2 Curtis, 506; *Woodworth* vs. *Cook*, 2 Blatch., 151; *Price* vs. *Dyer*, 17 Ves., 357; 1 Story Eq. Jur., § 161.)

The defendant's plea is sustained and the bill dismissed with costs, and decree will be entered accordingly.

CAVEATS.—Inventors filing caveats in the Office should be careful to describe their invention or improvement with accuracy, and illustrate such inventions as are capable of illustration with care and thoroughness.

Caveats are placed in the hands of the Examiners, who should not be expected to understand what the inventor means unless the latter has sufficiently matured his invention to clearly describe and illustrate it.

Caveats are sometimes filed in the Patent Office stating that the caveator is engaged in a series of experiments intended to accomplish certain results, and giving nothing more than a vague hint of the means by which the result is to be attained. As the courts have frequently decided that results are not patentable, the practice of the Patent Office is to the effect that a caveat cannot cover more ground than a patent. So, where a caveat describes more than one invention, the Examiner frequently overlooks a portion of the caveat, knowing that under the rules caveators are confined to a single invention.

Complaints are often made that caveats have been overlooked, and patents issued to subsequent applicants, when the fault lies in the hasty preparation of the caveat papers. The rules are explicit, that the caveat must describe the invention as fully as the inventor is able to do; that the drawings shall be of the same size as the drawings to accompany an application for a patent, (8 by 13 inches, on a sheet 10 by 15 inches, with an inch margin all round,) and on tracing-muslin, or light bristol-board or drawing-paper, which can be folded without breaking. A careful compliance with the rules will greatly facilitate the work of the Office, and will go a long way toward insuring the accuracy which is so necessary in securing their just rights to inventors.

PRICE OF THE GAZETTE.—The price of THE OFFICIAL GAZETTE is still fixed at $6 per annum, and there is no reduction from that price except where five subscriptions are included in one order, when the subscription is $5; and subscribers can be added to this club, by the party or parties forming it, any time during the year, at the reduced price.

The Annual Index will not be furnished to subscribers hereafter without extra charge; but immediately after the expiration of each volume a Half-yearly Index will be given without charge, and should additional copies of the Half-yearly Index be desired, they will be furnished upon the payment of fifty cents for each additional copy required.

EXTRA COPIES OF THE GAZETTE.—The letter-press of THE GAZETTE has been prepared with a view of meeting the demand for extra copies of that particular portion which relates to Office practice, decisions of the courts, &c.

Extra copies of the letter-press can be had separately from the illustrated portion, and the weekly index of patents and patentees can be had in any number at 5 cents per copy. Where extra copies of either the letter-press or weekly index are desired orders must be sent to the Office as early as the Saturday preceding the issue of the following Tuesday.

TRADE-MARKS.

[Each certificate bearing date March 12, 1878.]

5,714.—BAKING-POWDER.—*C. E. Andrews & Co.*, Milwaukee, Wis. Application filed February 4, 1878.
"The word-symbol 'REGAL' and the figure of a crown."

5,715.—PLUG-TOBACCO.—*Bulkley & Moore*, New York, N. Y. Application filed February 8, 1878.
"The word-symbol 'LA FAVORITA.'"

5,716.—CIGARS.—*Beckman, Noble & Co.*, Westfield, Mass. Application filed February 15, 1878.
"The word-symbol 'PICKS.'"

5,717.—SOAP.—*William Dreydoppel*, Philadelphia, Pa. Application filed February 14, 1878.
"The word-symbol 'LINCOLN MONUMENT.'"

5,718.—BAKING-POWDER.—*W. R. Forsyth & Co.*, Pittsburg, Pa. Application filed February 21, 1878.
"The word 'FORSYTH'S' and a monogram composed of the letters and character 'W. R. F. & Co.'"

5,719.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Thomas H. Hall*, New York, N. Y. Application filed February 8, 1878.
"The word-symbol 'BRAVO.'"

5,720.—WATCHES.—*Edward D. Howard and Clarence M. Howard*, Fredonia, N. Y. Application filed February 9, 1878.
"The word-symbol 'FREDONIA.'"

5,721.—WATCHES.—*Edward D. Howard and Clarence M. Howard*, Fredonia, N. Y. Application filed February 9, 1878.
"The word 'INDEPENDENT.'"

5,722.—CIGARS, CIGARETTES, AND CHEWING AND SMOKING TOBACCO.—*John R. Sutton*, New York, N. Y. Application filed February 16, 1878.
"The word-symbol 'BUCKINGHAM.'"

5,723.—CIGARS.—*Simon Salomon*, New York, N. Y. Application filed February 15, 1878.
"The word-symbol 'AROUND THE WORLD.'"

5,724.—MEDICINAL PREPARATION.—*William R. Warner & Co.*, Philadelphia, Pa. Application filed February 21, 1878.
"The fanciful word 'INGLEWIX.'"

5,725.—MILK.—*William O. Wheeler*, Sharon, Conn. Application filed February 21, 1878.
"The fanciful title 'SWEET CLOVER FARM.'"

5,726.—SNUFF.—*B. Frank Weyman*, Pittsburg, Pa. Application filed February 2, 1878.
"The figures and village scene, as represented."

5,727.—DRY-GOODS.—*Andrew Zerban*, New York, N. Y. Application filed February 12, 1878.
"The representation of a ring in a rectangular border."

5,728.—FOOD FOR FOWLS, &c.—*W. H. Bowker & Co.*, Boston, Mass. Application filed February 6, 1878.
"The representation of the egg of a fowl, the shell of which is seen as broken away in the center."

5,729.—SPOOL-COTTON OR COTTON THREAD.—*J. & P. Coats*, Paisley, Scotland, and Pawtucket, R. I. Application filed February 4, 1878.
"The representation of a spool of thread on a red background, and lying with one end in view, as shown."

5,730.—SMOKING AND CHEWING TOBACCO AND CIGARETTES.—*F. W. Felgner & Son*, Baltimore, Md. Application filed February 5, 1878.
"The symbol formed of the two triangular-shaped figures—one in gilt and the other in green—used in connection with the words 'Extra Mixed.'"

5,731.—STEEL PENS.—*Joseph Gillott & Sons*, Birmingham, England, and New York, N. Y. Application filed January 30, 1878.
"The number '604.'"

5,732.—STEEL PENS.—*Joseph Gillott & Sons*, Birmingham, England, and New York, N. Y. Application filed January 30, 1878.
"The number '332.'"

5,733.—STEEL PENS.—*Joseph Gillott & Sons*, Birmingham, England, and New York, N. Y. Application filed January 30, 1878.
"The number '351.'"

5,734.—STEEL PENS.—*Joseph Gillott & Sons*, Birmingham, England, and New York, N. Y. Application filed January 30, 1878.
"The number '170.'"

5,735.—CIGARS.—*Gillen Brothers*, Galesburg, Ill. Application filed February 6, 1878.
"The word-symbol 'TRUE BLUE.'"

5,736.—LEATHER BELTINGS AND LACINGS.—*Anton Heim*, New York, N. Y. Application filed January 4, 1878.
"The word 'STANDARD.'"

5,737.—COUGH-MIXTURES.—*William H. Jacobs*, Hamilton, Ohio. Application filed April 7, 1877.

"The figure of diamond form, including the representation of the hop, and having the representations of the foliage around the figure."

5,738.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed February 7, 1878.

"Of certain pictorial matter comprising a portrait of Dr. David Jayne, and front and rear view of our place of business."

5,739.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed February 7, 1878.

"Of certain pictorial matter, comprising a front view of our place of business and a medallion portrait of Dr. David Jayne."

5,740.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed February 7, 1878.

"Of certain pictorial matter representing the south front of our place of business."

5,741.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed February 7, 1878.

"Of pictorial matter comprising certain figure views, together with front and rear views, of our place of bnsiness."

5,742.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed February 7, 1878.

"Of certain pictorial matter, representing a group of women and children, as shown in the fac-simile."

5,743.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed February 7, 1878.

"A medallion portrait of Dr. David Jayne."

5,744.—SOAP, CANDLES, AND BORAX.—*Joseph I. Keefe*, Philadelphia, Pa. Application filed January 14, 1878.

"The representation of the woodman's ax and the auger crossed."

5,745.—CORDIALS.—*Marius Lang*, Brooklyn, N. Y. Application filed December 19, 1877.

"The representation of a circular saw, in the center of which is a monogram composed of the letters 'M. L.,' and on the left side of said saw the letter 'J,' and on the right side of the same the letter 'B.'"

5,746.—WASH-BLUE.—*Nürnberger Ultramarine Fabrik, (Johannes Zeltner,)* Nürnberg, Bavaria, Germany. Application filed February 7, 1878.

"The words and figures 'Medaille D'Or, Paris, 1867,' the monogram composed of the letters 'N. U.' within the shield, surmounted by a crown, and the representations of the gold medal."

5,747.—FISH OF ALL KINDS.—*Potter & Wrightington*, Boston, Mass. Application filed December 14, 1877.

"The shield, lion, and unicorn, as shown."

5,748.—MEDICINAL PREPARATION.—*William T. Peck*, Westfield, N. J. Application filed December 21, 1877.

"The vignette shown."

5,749.—SALTED, PICKLED, AND CURED OR SMOKED PORK.—*J. Rawson & Sons*, Cincinnati, Ohio. Application filed December 29, 1877.

"The word-symbol 'OLD RELIABLE.'"

5,750.—FERTILIZERS AND FERTILIZING MATERIALS.—*Rafferty & Williams*, New York, N. Y. Application filed February 4, 1878.

"The word-symbol 'AMERICUS.'"

5,751.—PLUG-TOBACCO.—*Robert McF. Smith*, Ludlow, Ky. Application filed January 17, 1878.

"The term or designation 'ANCHOR.'"

5,752.—NEWSPAPERS.—*John H. Taggart & Son*, Philadelphia, Pa. Application filed February 14, 1878.

"The words 'PHILADELPHIA SUNDAY TIMES.'"

5,753.—SUGARS.—*Abram Wakeman, Jr.*, and *Edward A. Thompson*, New York, N. Y. Application filed December 21, 1877.

"The arbitrary symbol of a cylinder or drum and the firm-name 'Wakeman, Thompson & Company's.'"

DESIGNS.

[Each design bearing date March 12, 1878.]

10,513.—STATUETTE.—*George S. Barkentin*, Meriden, Conn., assignor to *E. Miller & Co.*, same place. Application filed February 18, 1878. Term of patent 14 years.

10,514.—CARPETS.—*Etienne Guiraud*, New York, assignor to *William B. Kendall*, Brooklyn, N. Y. Application filed March 1, 1878. Term of patent 3½ years.

10,515 and 10,516.—OIL-CLOTHS.—*James Hutchison*, Newark, N. J., assignor to *Thomas Potter, Sons & Co.*, Philadelphia, Pa. Applications filed February 25, 1878. Term of patents 3½ years.

10,517 and 10,518.—FONTS OF PRINTING-TYPES.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Applications filed February 16, 1878. Term of patents 14 years.

10,519.—CARPETS.—*William B. Kendall*, Brooklyn, N. Y. Application filed March 1, 1878. Term of patent 3½ years.

10,520.—PIANO-CASE.—*John R. Lomas*, New Haven, Conn., assignor to *B. Shoninger*, same place. Application filed February 18, 1878. Term of patent 14 years.

10,521.—SPOON-HANDLES.—*Samuel J. Ladd*, Providence, R. I., assignor to *J. B.* and *S. M. Knowles*, same place. Application filed February 26, 1878. Term of patent 7 years.

10,522.—BUTTONS, STUDS, &c.—*James W. Miller* and *Isaac M. Miller*, Newark, N. J. Application filed February 18, 1878. Term of patent 3½ years.

10,523.—BROW-BANDS FOR BRIDLES.—*Franz Meinberg*, New York, N. Y. Application filed February 6, 1878. Term of patent 7 years.

10,524.—SPOON AND FORK HANDLES.—*Edward C. Moore*, Yonkers, assignor to *Tiffany & Co.*, New York, N. Y. Application filed February 11, 1878. Term of patent 7 years.

10,525.—OIL-CLOTHS.—*Cornelia M. Post*, Plainfield, N. J., assignor to *Thomas Potter, Sons & Co.*, Philadelphia, Pa. Application filed February 25, 1878. Term of patent 3½ years.

10,526 and 10,527.—OIL-CLOTHS.—*Thomas E. Pennell*, Brooklyn, N. Y., assignor to *Thomas Potter, Sons & Co.*, Philadelphia, Pa. Applications filed February 25, 1878. Term of patents 3½ years.

10,528.—BADGE.—*Richard Rinckweitz*, New York, N. Y. Application filed September 8, 1877. Term of patent 3½ years.

10,529 and 10,530.—CARPETS.—*Thomas J. Stearns*, Boston, Mass., assignor to *Roxbury Carpet Company*, same place. Applications filed February 23, 1878. Term of patents 3½ years.

10,531.—FUR TRIMMING.—*Gotthilf F. Wilhelm*, New York, N. Y. Application filed February 19, 1878. Term of patent 7 years.

10,532.—SHOVEL-HANDLES.—*Calvin T. Beebe*, Jackson, Mich. Application filed March 24, 1877. Term of patent 7 years.

10,533 and 10,534.—OIL-CLOTHS.—*Henry J. Hofman*, Philadelphia, assignor to *Thomas Potter, Sons & Co.*, Philadelphia, Pa. Applications filed March 4, 1878. Term of patents 3½ years.

10,535.—CUFF.—*Rowland S. Norton*, Troy, N. Y. Application filed January 14, 1878. Term of patent 3½ years.

10,536 and 10,537.—SPOON AND FORK HANDLES.—*Charles F. Richers*, New York, N. Y., assignor to *Wood & Hughes*, same place. Applications filed February 13, 1878. Term of patents 3½ years.

LABELS.

[Each certificate bearing date March 12, 1878.]

1,439.—Title: "WM. G. BELL & CO., BOSTON, MASS., U. S. A., MANUFACTURERS AND PROPRIETORS OF BELL'S CELEBRATED SAUSAGE SPICE."—*William G. Bell*, Boston, Mass. Application filed December 15, 1877.

1,440.—Title: "BUCKLEN'S ARNICA SALVE."—*Herbert E. Bucklen*, Elkhart, Ind. Application filed February 14, 1878.

1,441.—Title: "DR. SHONTO'S GERMAN BITTERS."—*Eastman & Fitch*, Concord, N. H. Application filed March 4, 1878.

1,442.—Title: "HERRSHAW'S CURE."—*Lyndon A. Hastings*, Lawrence, Mass. Application filed February 28, 1878.

1,443.—Title: "STERLING SILVER POLISH."—*Samuel F. Howard* and *Lyman E. Wardell*, Springfield, Mass. Application filed March 5, 1878.

1,444.—Title: "THE AMERICAN POPULAR FIVE CENT SEGAR."—*George P. Lies & Co.*, New York, N. Y. Application filed February 21, 1878.

1,445.—Title: "MERCHANTS' TOBACCO COMPANY, BOSTON."—*Merchants' Tobacco Company*, Boston, Mass. Application filed March 5, 1878.

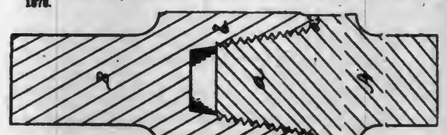
1,446.—Title: "PNEUMONIC COMPOUND MEDICINES FOR SWINE."—*Thomas O. Raymer*, Chicago, Ill. Application filed January 26, 1878.

1,447.—Title: "THE AMAZON STEEL."—*Thompson, Langdon & Co.*, New York, N. Y. Application filed March 1, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

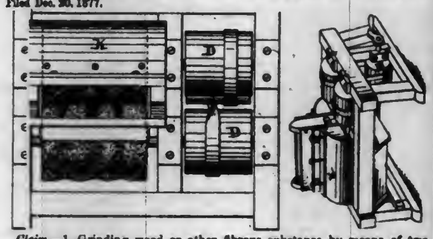
MARCH 12, 1878.

201,082. JOINTS FOR OIL-WELL TOOLS. John L. Alexander, Edenburg, Pa. Filed Jan. 29, 1878.



Claim.—In a joint for oil-well tools, sucker-rods, &c., the combination of the solid box or socket having a tapering threaded cavity and the tapering threaded pin, substantially as specified.

201,083. MANUFACTURE OF PAPER-PULP FROM WOOD. Stephen M. Allen, Duxbury, Mass. Filed Dec. 20, 1877.



Claim.—1. Grinding wood or other fibrous substance by means of two grinding-rollers revolving in opposite directions and supporting wood, as described.

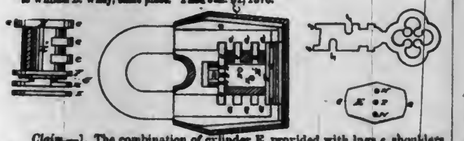
2. Grinding wood or other fibrous substance by means of undulating or transversely-corrugated rollers, as and for the purposes set forth.

3. In combination, a feed-hopper arranged over and between the two rolls, with adjustable plates extending partially round the grinding-cylinders, as and for the purposes set forth.

4. The screens or casings, in combination with the rollers, adjustable plates, and hopper, substantially as shown and set forth.

5. In combination, a machine or parts thereof for grinding wood and other fibers, composed of two grinding-rollers, corrugated or indented, as described, with plain or angular dressing on their face, for operation substantially as herein set forth.

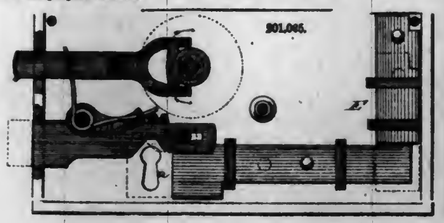
201,084. PADLOCKS. William F. H. Anwyle, Lancaster, Pa., assignor of one-half his right to William B. Wiley, same place. Filed Jan. 31, 1878.



Claim.—1. The combination of cylinder E, provided with lugs *e*, shoulders F G, and holes in the bottom for contact with the key, the lock-case, having pivot *d*, the shackle, and spring K, substantially as and for the purpose specified.

2. In combination with the cylinder E, the stationary plate or tumbler H, having lugs h, and a central compound slot, L, as shown, for the purpose mentioned.

3. The combination of the cylinder E, stationary slotted disk H, the movable covering-disk I, all within the case C, and the pins B, which penetrate only to the center of said cylinder, the whole arranged and operating as and for the purpose set forth.

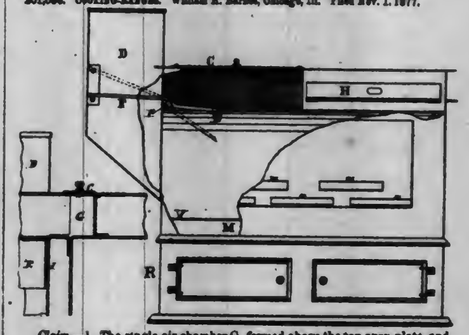


201,085. KEY-HOLE GUARDS. William H. Avery, Cherokee, Ala. Filed Feb. 25, 1878.

Brief.—The usual key-hole guard-plate is operated by hand by a pin working in a slot in the lock-case, and is itself locked by a perpendicular sliding bolt operated in the same way.

Claim.—A door-lock provided with a key-hole slide, in combination with the vertical locking-bolt E inside the case, and operated from the inside by pins in slots of the lock-case, substantially as and for the purpose set forth.

201,086. COOKING-RANGE. William H. Barnes, Chicago, Ill. Filed Nov. 1, 1877.

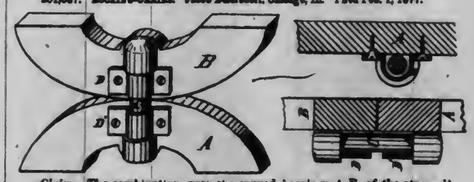


Claim.—1. The single air-chamber C, formed above the top oven-plate, and between it and the long center, and having an open side, facing the fire-box, and coming even with the back wall thereof, and extending about one-half the length of said box, in combination with the damper H, placed at the end of the air-chamber, and suitable register C, as and for the purpose set forth.

2. The feeder D, placed wholly exterior to the stove, and provided with an inclined stationary bottom, and combined with an adjustable compress-plate, E, placed above the incoming coal, and hinged so as to present its smooth flat surface thereto, and operated by the lever F, as and for the purpose set forth.

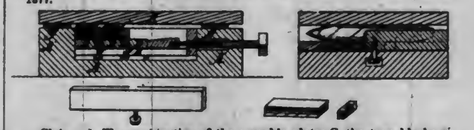
3. The feeder D, placed exterior to the range and at the end of the fire box, in combination with the protecting-plate V, as specified.

201,087. ROCKING-CHAIRS. Jacob Beierstorf, Chicago, Ill. Filed Feb. 1, 1877.



Claim.—The combination, with the curved bearings A B, of the straps D D' and the double-headed rubber link C, whereby such link is held in the said straps entirely by its enlarged ends or heads, constructed and arranged substantially as described and shown.

201,088. PRESSES FOR MAKING CIGARS. Oliver O. Bird, New York, N. Y. Filed June 20, 1877.

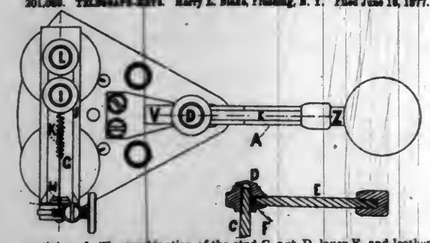


Claim.—1. The combination of the movable plates C, the type blocks or bearers D, the screw F, bar G, and follower K, the whole constructed and arranged to compress the cigars within the receiver provided above the type blocks or bearers and between the movable plates, substantially as and for the purpose herein set forth.

2. The elastic cushion *g*, in combination with the type blocks or bearers D, the movable plates C, the screw F, and the follower K, all substantially as and for the purpose herein set forth.

3. The combination of the broad-headed screw *f* with the movable plates C, the false bottom B, provided with the slot *e*, and the type blocks or bearers D, all substantially as and for the purpose herein set forth.

201,089. TELEGRAPH-KEYS. Harry E. Blake, Flushing, N. Y. Filed June 16, 1877.



Claim.—1. The combination of the stud C, nut D, lever E, and leather F, arranged substantially as and for the purposes specified and shown.

2. The combination of the yoke J, magnet-cores P P, back armature O, base Q, and screw N, all arranged substantially as and for the purposes specified and shown.

201,090. WATER-TRAPS. Ludwig Brandeis, Brooklyn, N. Y. Filed Jan. 19, 1878.

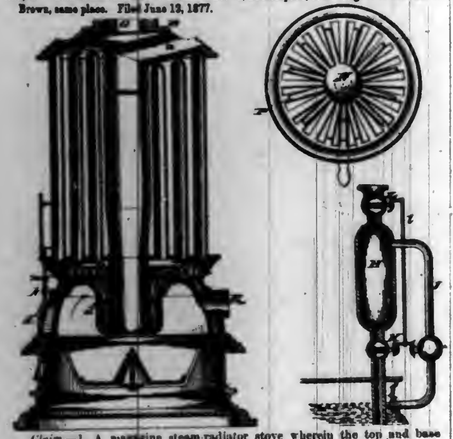


Claim.—1. A trap having branches *a a'*, flat sides *c c*, and enlarged intermediate chamber, with straight flat sides and ends, as set forth.

2. The trap cast with its body A and branches *a a'* in one piece, with parallel partitions *h h'* and detachable cap *e*, as set forth.

3. The trap having the chamber *x* and branches *a a'*, provided at the top with a cap, *e*, of either transparent or opaque material, as and for the purpose set forth.

201,091. STEAM-RADIATORS. William H. Brown, Indianapolis, Ind., assignor to Isabella S. Brown, same place. Filed June 13, 1877.



Claim.—1. A magazine steam-radiator stove wherein the top and base portions are connected by the fuel-magazine, and the latter is surrounded by a series of steam-chambers, which serve as the radiating-surface of the body portion of the stove, substantially as described.

2. A steam-radiator stove consisting of one or more series of upright steam-chambers supported upon and connecting with a boiler formed in its base-section, said boiler being made with a downwardly-projecting central body, having a central feed-opening and a side extension, the two together forming an annular area in its bottom, substantially as described.

3. In a steam-radiator stove, a boiler located above the fire-chamber in its entire area, and having both a downwardly-projecting central and side ring formations, the two latter forming, as described, a continuous annular fire-arch between their opposite sides, substantially as described.

4. In a steam-radiator stove, the reservoir attachment H, provided with steam-pipe J, the two having valves, and adapted, in the manner described, to maintain a constant water-level in the boiler, substantially as set forth.

5. The reservoir attachment H, provided with the water-feet h and side steam-pipe J, the same having valves or stop-cocks, and adapted, substantially as described, to be readily applied to the outer or marginal body of the boiler of a steam-radiator stove, substantially as set forth.

6. In a steam-radiator stove, the independent concave-convex top plate secured upon the upright steam-chambers, and having a side feed-opening, which connects with the upper diagonal passage of the fuel-cylinder, substantially as described.

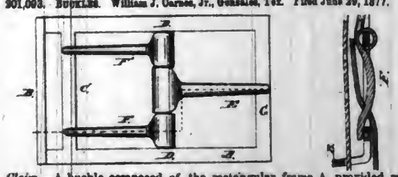
7. In a steam-radiator stove, the concave-convex top plate, suitably secured upon the upright steam-chambers, and provided with the feed-opening and the hot-air-flue opening, substantially as described.

201,092. BRACELET-JOINTS. Frank E. Capron, Providence, R. I., assignor to himself, Harford A. Capron, and Herbert S. Capron, same place. Filed Jan. 16, 1878.



Claim.—In a bracelet, the combination of the U-shaped hinge-piece D D^1 D^2 with the pintle H and parts *a* and B, substantially as described, and for the purpose set forth.

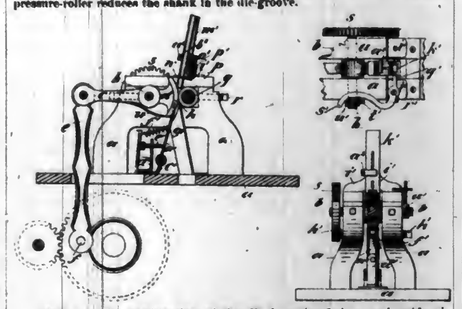
201,093. BUCKLES. William J. Carnes, Jr., Gonzales, Tex. Filed June 20, 1877.



Claim.—A buckle composed of the rectangular frame A, provided with the raised loop B, at right angles with the frame A, the cross-bars C and G, and the central cross-bar D, to which are pivoted the tongues F F^1 and the tongue E, all opening on the upper side of the buckle, and the under side of said buckle being in the same plane, substantially as shown and described, and for the purposes herein set forth.

201,094. MACHINES FOR REDUCING THE SHANKS OF HORSESHOE-NAIL BLANKS. George P. Clapp, Montreal, Quebec, Canada, assignor of two-thirds his right to John A. Pillow and Randolph Horsey, same place. Filed Mar. 8, 1877.

Brief.—One of the two detents for arresting the passage of the blanks in the feed-tube is forked at its end, and, after receding sufficiently to allow the head of the blank to pass, immediately returns to support and steady the shank as it is drawn between the rolls. A spring with an upwardly-bent forked end, attached to the arm of the segmental die-roll, comes under the head of and supports the blank while in the die-groove, and a stripper passing through the fork of said arm ejects the blank from said groove. A smooth pressure-roller reduces the shank in the die-groove.



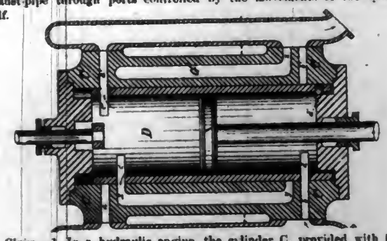
Claim.—1. The combination of the die *h*, spring-fork *r*, and guide a^1, substantially as and for the purposes set forth.

2. The combination of the die *h*, roller *p*, with spout k^1, having spring *m'*, provided with fork *n'*, and spring-arm a^3, having projection b^3, substantially as and for the purposes set forth.

3. The combination of the spout k^1, spring *m'*, having spring-arm a^3, and fork *n'*, with lever r^1 s^1, operated by projection t^1 of the shaft *b*, substantially as described.

201,095. HYDRAULIC ENGINES. William H. Clark, Chicago, Ill. Filed July 18, 1877.

Brief.—The exhausting capacity of the engine is increased by surrounding the working-cylinder with an annular space, communicating with it and the exhaust-pipe through ports controlled by the movements of the cylinder itself.



Claim.—1. In a hydraulic engine, the cylinder C, provided with inlet-openings *a b* and the outlet-openings *a' b' x y, x y* being connected with *c* by the passage around the cylinder, in combination with the cylinder D, having inlet and outlet ports, substantially as and for the purposes specified.

2. In a hydraulic engine, the interposed secondary discharge-space G, having interior inlets *x y* and one or more outlets, *z*, substantially as described.

201,096. APPARATUS FOR PLACING ELASTIC TUBING UPON SPINDLES. Walcott Cowles, Syracuse, N. Y., assignor to himself and Saml. A. Seager, same place. Filed Nov. 14, 1877.



Claim.—1. An apparatus for placing elastic tubing upon rolls and spindles, consisting substantially of a hollow drawing-mandrel, upon which the tubing is drawn, and which holds the spindle or core, an abutting-stop for the tubing, a bed or box therefor, and a drawing power to withdraw the mandrel from the tubing and leave the latter upon the core.

2. In the above-described apparatus, the combination of the mandrel D, rod E, knob *m*, swivel-eye *d*, cord O, and winding-roll B with the elastic tubing *g*, back piece H, and the spindle *c*, operated together to place the tubing upon the spindle, substantially as and for the purposes above specified.

3. In the above-described apparatus, the combination of the holding-clamp *a b*, having thereon the springs *x x*, the side-box pieces C C', the back piece H, the notched lugs *s s*, and locking-levers *o o*, with the elastic tubing *g*, mandrel D, and spindle *c*, constructed and operating together substantially as and for the purposes above set forth.

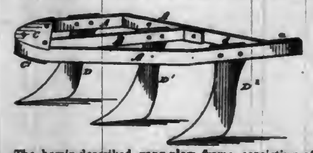
4. The above-described self-adjusting device for holding the elastic tubing *g*, composed of the concave grooved parts *o b*, springs *x x*, locking-levers *s o*, and notched lugs *s s*, constructed and operating together substantially as above set forth.

5. The combination, with the drawing and transferring mandrel, its holding-box, and the tubing end stop H, of the said piece provided with slot *f*, to allow of the adjustment of the mandrel as it is drawn into and through the tubing.

6. In an apparatus for placing elastic tubing upon rolls, the combination, with the yielding holding-bed for said tubing, of the self-adjusting head-stop H and the drawing-mandrel, as described.

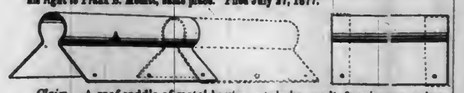
201,097. GANG-PLOW FRAMES. John Currie, London, Ontario, Canada. Filed Aug. 8, 1877.

Brief.—The nature of invention is set forth in claim and shown in drawing.



Claim.—The herein-described gang-plow frame, consisting of the single wrought-iron bar A, bent as shown, in combination with the brace B, top and bottom plates *c c'*, and the standards D D^1 D^2, secured to the bar and brace, as specified.

201,098. RIDGE-SADDLES FOR ROOFS. William Darby, Chillicothe, Ill., assignor of one-half his right to Frank B. Mellit, same place. Filed July 27, 1877.



Claim.—A roof-saddle of metal having a tubular vault, forming a continuous open passage along the same from end to end of a roof, and provided with lateral flaps, attached immediately to the surface of the shingles or roof, without intermediate foundation, substantially as and for the purposes described.

201,099. RIFLING-PLOWS. George A. De Long, Woodport, N. Y. Filed Jan. 22, 1878.

Brief.—The double mold-board is cast with a central seat and side projections to receive the point, which is held by a single bolt cast into the latter. The mold-board has also a socket and ears to receive the beam, secured by one bolt. A branch of the beam forms a rear support having an adjustable shoe.



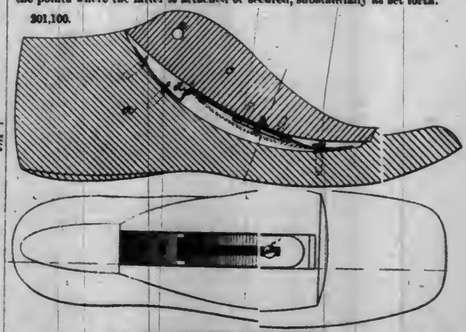
Claim.—1. The mold-board *a*, having ears *f f* on the inner face for embracing the beam, and a boss or projection, *b*, forming a socket for securing the lower end of the beam, substantially in the manner and for the purposes specified.

2. The beam constructed as herein specified, and combined with the mold-board by locking into the ears *f* and socket *b*, so that they can be firmly united by a single bolt, substantially as herein set forth.

201,100. LAST-BLOCK FASTENERS. Frank M. Elms and John Mills, Stoughton, Mass. Filed Jan. 26, 1878.

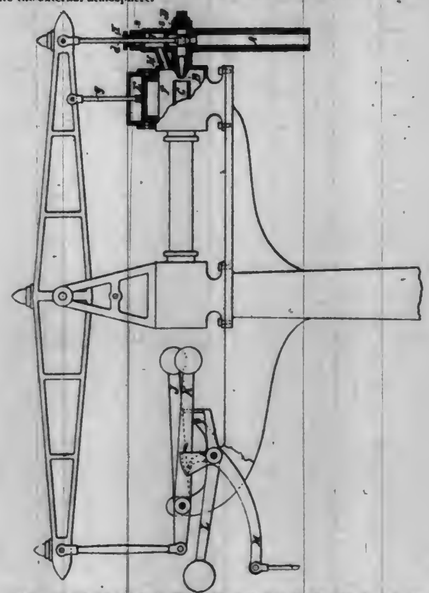
Claim.—A last-block fastener consisting of a spring-plate, *c*, attached or secured to the last at both ends, and a stud, *b*, or its equivalent, applied to the under surface of the block, and adapted to engage with the plate *c* between the points where the latter is attached or secured, substantially as set forth.

201,100.



201,101. VAPOR-JET GAS-MACHINES. Thos. B. Fogarty, Jersey City, N. J. Filed Dec. 20, 1876.

Brief.—An extra chamber and connecting-passage are placed above the valve-box in the vapor-pipe, for conducting vapors that may leak from the valve-box during excessive pressure into the eduction-pipe extending to the holder, and thus preventing such vapors from leaking through the stuffing-box into the external atmosphere.



Claim.—1. The chamber I, placed between the stuffing-box T and the vapor-valve D.

2. The combination of the chamber I with the pipe H and the air-chamber F, substantially as described.

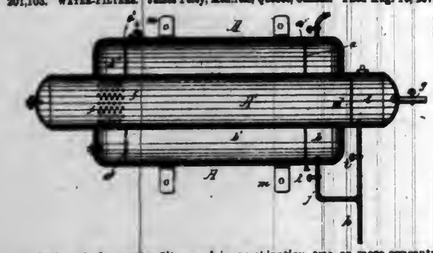
201,102. WATER-FILTERS. James Foley, Montreal, Quebec, Canada. Filed Aug. 27, 1877.



Claim.—1. In a water-filter, the tank or receptacle A, having the perforated partitions C^1 C^2 and imperforated partition C^3, in combination with the tube E, having the perforated receptacles F F^1, substantially as and for the purpose specified.

2. The tank or receptacle A, having perforated partitions C C^1 C^2 and imperforated partition C^3, in combination with tube E, having perforated receptacles F F^1, air-tube G, and faucets or cocks *a a'*, substantially as and for the purpose set forth.

201,103. WATER-FILTERS. James Foley, Montreal, Quebec, Canada. Filed Aug. 16, 1877.



Claim.—1. In a water-filter, and in combination, two or more concentric tanks, A A', having the perforations *f f* and perforated partitions or diaphragms *a a' d*, substantially as and for the purpose set forth.

2. In a water-filter, and in combination, two or more concentric tanks, A A', having perforations *f f*, perforated partitions *a a' d*, pipes *h j*, and cock *l*, substantially as and for the purpose set forth.

3. In a water-filter, and in combination, two or more concentric tanks, A A', having perforations *f f*, perforated partitions *a a' d*, pipes *h j*, and cock *g*, substantially as and for the purpose set forth.

201,104. MACHINES FOR CUTTING LABELS. Henry H. Peary and Louis Hellman, Chicago, Ill. Filed Nov. 30, 1877.



Claim.—1. In a paper-cutting device, the combination of the cutter or cutters A with the chase C, of corresponding shape, arranged substantially in the manner described, and for the purpose specified.

2. In combination with the changeable cutter or cutters A, and chase C, of corresponding shape, the spring-follower D, as and for the purpose set forth.

201,105. CLUTCHING DEVICES. Henry Fache, Chicago, Ill., assignor to Arthur M. Barnhart, George W. Barnhart, Alson E. Barnhart, and Charles E. Spindler, same place. Filed Dec. 31, 1877.

Brief.—The clutch is designed for special use in type-casting machines, and is an improvement on the invention of the same party patented April 3, 1877, No. 189,210. The shifting part is herein made separate from the drive-pulley, with catches projecting through openings in the latter, for intermittent engagement with catches on the clutch-wheel secured to the shaft. A star-wheel having uniform radiating arms for being engaged by a catch on the drive-wheel intermittently operates, by side projections, the shifting part.

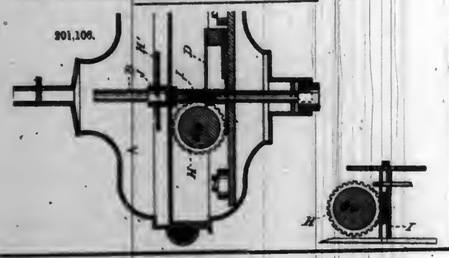
Claim.—1. The combination, in a clutch, of the drive-pulley and a shifting collar, loosely mounted upon the same shaft, and carrying a catch or catches which project through openings in the pulley, substantially as specified, whereby the necessity for shifting the pulley is obviated.

2. The clutch consisting of the non-shifting drive-pulley, the shifting collar carrying the catch or catches, the clutch-wheel carrying a catch, and a suitable device for shifting the collar, substantially as set forth.

3. The clutch for automatically converting motion, consisting of the non-shifting drive-pulley, the shifting collar carrying the catch or catches, the clutch-wheel carrying a catch, a device for shifting the collar, and a spring acting to close the clutch, substantially as set forth.

4. The clutch consisting of a non-shifting drive-pulley, a shifting collar carrying the catch, the clutch-wheel carrying a catch, a device for shifting the collar, and a star-wheel connected with the collar, having projections upon its face which prevent contact of the parts of the clutch during a portion of its revolution, and rotated by a dog upon the drive-pulley, and a spring whose pressure is exerted to force the shifting collar into engagement with the clutch-wheel, substantially as set forth.

201,106.



201,106. MUSICAL TOPS. Chas. Gorsert, Philadelphia, Pa., assignor to Eliza Ockford, same place. Filed June 27, 1877.

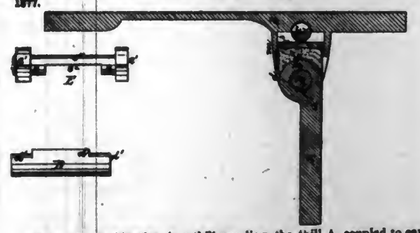
Brief.—Of the kind in which a music-box concealed within the body of the top is set playing by the rotation of the top's central spindle.

Claim.—1. The musical top hereinbefore described, provided with spindle B, having a striker, J, arranged to operate in combination with the striking-cylinder G, substantially as set forth.

2. The combination of the worm-shaft I, having a toothed wheel, H', with the toothed wheel H of the cylinder G, and with the spindle B, having a striker, J, substantially as set forth.

3. The spindle B of a spinning-top, having a foot made of leather or other material of an elastic nature, substantially as and for the purpose set forth.

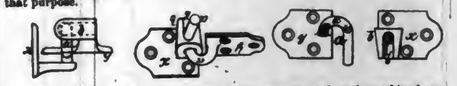
201,107. THILL-COUPLINGS. Rienza A. Goldsmith, Washingtonville, N. Y. Filed Aug. 1, 1877.



Claim.—In combination, in a thill-coupling, the thill A, coupled to ears *a* by a suitable bolt, the elastic block C, and the independent cam-shaft E, arranged to revolve in bearings in said ears at the rear of said elastic block, and to thus be operated to compress or release said block, as and for the purpose specified.

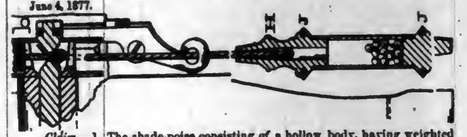
201,108. HINGES FOR AWNING-BLINDS. John J. Greenough, Syracuse, N. Y. Filed Dec. 31, 1877.

Brief.—The hinge when it is in a certain position, (and in no other,) permits the blind to be thrown outward. A projection upon the end of the pintle prevents the unshipping of the hinge, except when expressly manipulated for that purpose.



Claim.—The upper awning-blind hinge, constructed and combined as herein specified, consisting of a socket, *b*, having a slot therein, through which the pintle *a* can pass at its lower end, while its upper end is locked with said socket by means of a projection on the pintle, so that the two parts cannot separate, substantially as and for the purposes specified.

201,109. CURTAIN-TASSELS. Levi B. Griffith and Nathan B. Griffith, Philadelphia, Pa. Filed June 4, 1877.



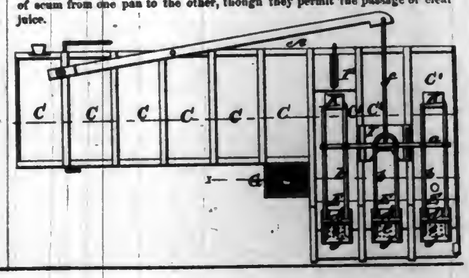
Claim.—1. The shade-poise consisting of a hollow body, having weighted caps at opposite ends, substantially as and for the purpose set forth.

2. The hollow body with caps at opposite ends, said caps being weighted and ornamented, and one of them perforated, substantially as and for the purpose set forth.

3. The hollow body, in combination with caps H, fitted thereto at opposite ends, and weighted and grooved, and with the rubber rings J sprung on said caps, all constructed and operating as stated, to form an improvement in shade-poises, for the purpose described.

201,110. EVAPORATING-PANS. John Griswold, Tandem, Ill. Filed July 7, 1877.

Brief.—The flow of juice to the pan is regulated by a float and valve. The juice is warmed in passing to the pan by flowing through a conduit in contact with the bottom of the cooling-sections, which project beyond the furnace-wall, whereby the juice in these sections is cooled, permitting the collection of scum for ready removal by the skimmers. Blocks P, supported upon pins placed at the openings connecting adjoining pans, prevent the passage of scum from one pan to the other, though they permit the passage of clear juice.



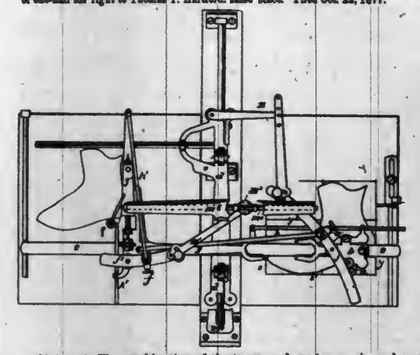
Claim.—1. The cooler H, extending from the feeder G under the extended skimming-sections C^1 C^2 C^3, for the purposes herein set forth.

2. The skimmers J, constructed as hereinbefore described, and suspended from the spring-arms *h*, substantially as herein set forth.

3. The combination of the skimmers J, arms *h*, shaft *a*, carriage I, weights K, and operating-lever L, substantially as and for the purposes herein set forth.

4. The blocks P, supported upon pins *s* in the inner ends of the skimming-sections, for the purposes herein set forth.

201,111. APPARATUS FOR GRADING PATTERNS. David F. Hartford, Boston, Mass., assignor of one-half his right to Thomas T. Hartford, same place. Filed Oct. 22, 1877.



Claim.—1. The combination of the tracer and marker carriages by means of the cross-bar *j* and radius-bar *h*, substantially as described.

2. In combination, the tracer-carriage *b*, marker-carriages *g* and *g'*, cross-bars *j* and *j'*, and radius-bars *h* and *h'*, substantially as described.

3. In combination, the tracer-carriage *b*, marker-carriage *g*, radius-bar *h*, and cross-bar *j*, when the latter is connected to the support *d*, substantially as described.

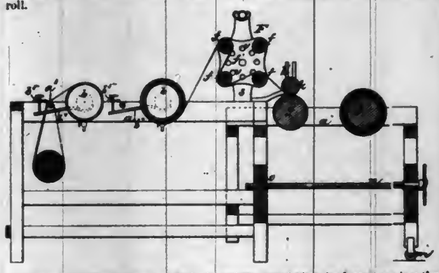
4. In combination, the carriages *g* and *g'*, radius-bar *h'*, cross-bar *j'*, connecting-rod *m*, and stationary bracket m^1, substantially as described.

5. The tracer above described, consisting of the parts a^1, a^2, and a^3, constructed and operating substantially as described.

6. In combination, the supports *c* and *d*, carriages *b*, *g*, and *g'*, and suitable devices for controlling the motion of the carriages, all substantially as described.

201,112. PROCESSES AND APPARATUS FOR FINISHING CLOTH. Herbert Hebden, Boston, Mass., assignor to Lydia Hebden, same place. Filed Oct. 16, 1877.

Brief.—The cloth is steamed while wound upon a perforated steam-cylinder, rewound upon another cylinder, and again steamed. It is then smoothed, while hot, by stationary bars, again wound, and allowed to cool while in a roll.



Claim.—1. The process of finishing cloth, consisting in first steaming the entire roll by steam passed radially through the roll, then subjecting the cloth, while hot and under tension, to the action of smoothing-bars to smooth the nap, winding, and then cooling the same while in the form of a roll, as specified.

2. The combination of the series of smoothing-bars *ffff*, the steaming-cylinders *b*, and cooling-rollers *g*, as set forth.

3. The cylinder *b*, perforated throughout its whole extent, provided with inclined partitions extending from opposite ends, and with outlets receiving the water at the lower ends of the partitions, as specified.

4. A perforated cylinder, *b*, for steaming cloth, provided on its interior with tubes or guards *t*, to prevent the escape of water through the perforations, and with outlets *t'*, communicating with the outlets *d*, as set forth.

5. In combination with the frame *a* and locking devices, as described, the smoothing-frame F, composed of the bars *f* and plates *f'*, journaled in suitable standards, substantially as set forth.

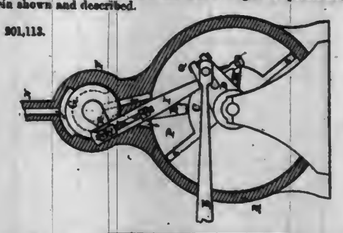
6. The combination, with the main frame, its steaming and smoothing appliances, of a vertically-sliding roller, *k*, and an adjustable frame, a^1, having bearings for a series of detachable rollers, as set forth.

7. The combination of the stationary frame *a*, the sliding frame a^1, having rollers *m*, and the screw-shaft *n*, all arranged and operating substantially as described.

201,113. ROTARY ENGINES. Richard B. Kidder, Columbus, Wis. Filed Oct. 22, 1876.

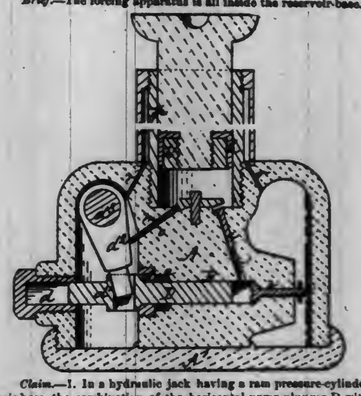
Claim.—The combination of the cylinder A, having abutment B, rotating reciprocating winged piston D *e e*, cranks D M, pitman-rod E, slotted connecting-rod I, blocks K, crank H, valve G, and cylinder F, with its supply and exhaust ports N O, all constructed and arranged to operate substantially as herein shown and described.

201,113.



201,114. HYDRAULIC JACKS. Robert H. Lewis and George T. Lewis, Pittsburg, Pa. Filed Jan. 9, 1878.

Brief.—The forcing apparatus is all inside the reservoir-base.



Claim.—1. In a hydraulic jack having a ram pressure-cylinder and reservoir-base, the combination of the horizontal pump-plunger D with the pump-chamber B, having valves *b* and *c*, and with guide-cap *d*, the whole arranged and constructed substantially as described.

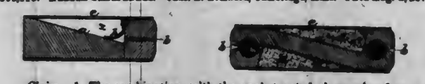
2. In a hydraulic jack, the combination, with the pump-plunger, of the packing *e* and annular screw-follower *e'*, let into the walls of the pump-chamber and flush with the reservoir-wall, substantially as and for the purpose specified.

3. In a hydraulic jack, the reservoir provided with an expansion or relief air-chamber, substantially as and for the purpose specified.

4. The combination, with the pressure-cylinder and reservoir, of a return-channel connecting the upper part of the pressure-cylinder and the reservoir, substantially as and for the purpose specified.

5. In combination with the pressure-cylinder and reservoir of a hydraulic jack, a discharge-valve constructed and adapted to be held on its seat by the pressure within the cylinder, and a hollow screw trip or tap, substantially as and for the purpose specified.

201,115. NEEDLE-SHARPENERS. Chas. E. Lombard, Cambridge, Mass. Filed Aug. 2, 1877.



Claim.—1. The combination, with the unobstructed sharpening-face *a*, of a guide having an opening, *b*, at an angle to said face, with an intervening space greater than the thickness of the needle, the whole relatively arranged to insure the bending of the needle at the shank in proportion to the extent to which it is thrust beyond the inner end of the guide-opening, as specified.

2. The inclined grinding-surface *a* and the needle-guide *b*, having an expansible packing, *f*, combined with the inclosing-shell *e* and a powdered filling held in the space between the grinding-surface and the inclosing-shell, substantially as and for the purpose specified.

3. The combination of the spring *h* with the grinding-surface *a* and needle-guide *b*, substantially as described.

201,116. COMBINED BOX AND VASE. Wm. A. Marble, New York, N. Y., assignor to Worcester Corset Company. Filed Feb. 11, 1878.

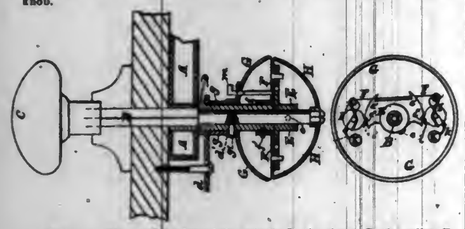
Brief.—Two vases of paper, or of coiled and glued rattan lined with paper, and having wooden bottoms, which may have edges shaped to imitate rattan coils, are made into a box by a movable paper thimble held by expansion of its larger end, or by being slightly attached and shoved into one vase when the parts of the box are used as vases.



Claim.—The combination, with the ends C C, provided with bases F H, of the movable tubular or telescopic piece D, substantially as and for the purposes set forth.

201,117. DOOR-KNOB ALARMS. George W. McGovern, Richmond, Va. Filed Mar. 1, 1878.

Brief.—One or the other of the side hammers is operated by turning the knob.

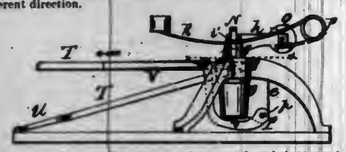


Claim.—1. The combination of the spindle B, the sleeve D, the collar E, having the radial flange *e'* and teeth *e''*, the plate F, the pivoted disks I, provided with peripheral teeth *i*, and having attached thereto the bell-hammers K, and springs for returning said hammers to their normal positions, substantially as and for the purpose shown.

2. The hereinbefore-described alarm, in which the sleeve D *d*, the collar E *e' e''*, the flanged plate F, the casing-plate G, the bell H, the pivoted disks I *i*, bell-hammers K, and springs to return said hammers to their normal positions, are constructed as shown, and combined with each other and with the spindle B, in the manner and for the purpose substantially as set forth.

201,118. BALL-TARGET THROWERS. John G. Mole, Batavia, Ill. Filed Nov. 6, 1877.

Brief.—Each time the strap is pulled to trip the device, the revolving support is turned a part of a revolution, in order to throw each succeeding ball in a different direction.



Claim.—1. The axle F, with hub *g*, long arm A, and short arm *i*, with recess *i'*, in combination with the strap T, spring U, cylinder D, standard B, and platform A, substantially as and for the purpose set forth.

2. The spring-thrower E, provided with cap S, and fastened to arm A, in combination with the trip-lever N, rod *k*, trigger-lever P, straps V and T, axle F, standard B, and cylinder D, substantially as and for the purpose set forth.

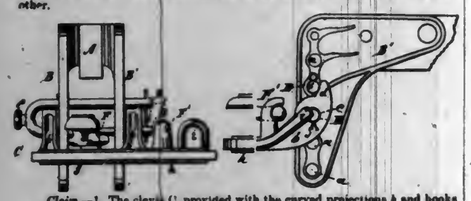
201,119. ATMOSPHERIC PROPELLERS FOR VESSELS. Thomas H. Neal, Philadelphia, Pa., assignor of one-half his right to Marcus F. Richardson, same place. Filed Feb. 6, 1878.



Claim.—The boat having a pilot-house or engine-room, D, formed with curved or angular sides *c c*, in combination with the air-propeller C C, mounted in said house, substantially as and for the purpose set forth.

201,120. PLOW-CLEVISES. Henry T. Noble, Dixon, Ill. Filed Nov. 26, 1877.

Brief.—Clevis held level by rearward hooks and two bolts, and having limited vibration upward. Two series of laterally-adjusting holes and a hammer-strap held by hooks and adapted to be changed from one series to the other.



Claim.—1. The clevis C, provided with the curved projections *b* and hooks *d*, in combination with the beam-plates B B', having a single row of vertical holes, *a*, and the pins D E, adjustable in such single row of holes, substantially as described.

2. The clevis C, having the circular series of holes *g* and A, in combination with the hooked studs F F' and the interchangeable strap G, substantially as and for the purpose specified.

201,121. HEATERS FOR SHOE-MAKERS' TOOLS FOR FITTERING SOLES. George A. Osgood, Stoneham, Mass. Filed Feb. 15, 1878.

Claim.—1. The sole-finishing-tool heater, substantially as described, consisting of the heating-cylinder, its pipes C D, and the perforated table B, arranged as set forth.

2. The heating-cylinder A, provided with the flange *a* and the inlet C and educt D, in combination with the rotary perforated table B and its supporting-brackets *b*, arranged with such cylinder and flange, as set forth.



201,121.

201,122. METALLIC CANS. Geo. H. Perkins and Jas. H. Perkins, Philadelphia, Pa., assignor of part of their right to Jos. Le Conte, New York city, and the Le Conte & Perkins Manufacturing Company, (limited,) Philadelphia and New York. Filed Aug. 21, 1876.

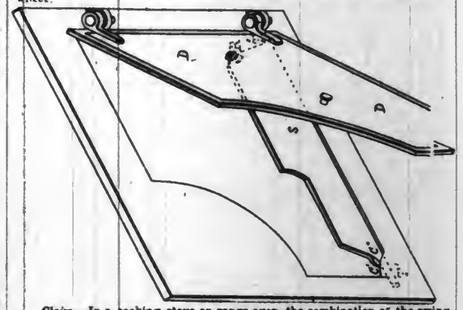


Claim.—1. A can having its parts which are to be separated to open the can joined by solder, and having such parts intentionally constructed and arranged to move toward each other upon the application to either of such parts of force properly directed and sufficient to break the solder, for the purpose set forth.

2. A sheet-metal can the top of which is united to the body by solder, designedly of such frangibility as to yield to direct violence, and provided with an interspace between the upper chine and the inner surface of the cover, which permits the cover and body to approach each other when sufficient force is applied to either to part the solder, substantially as and for the purposes set forth.

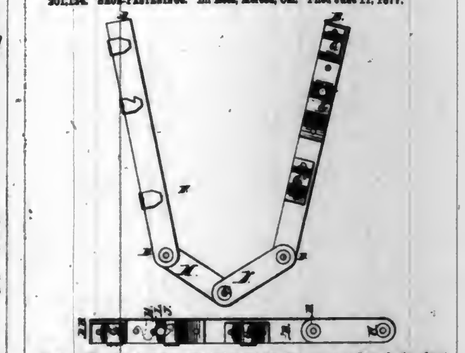
201,123. DROP SWITCHES OVEN-SHELVES. George H. Phillips, Troy, N. Y. Filed Jan. 23, 1878.

Brief.—The curved arms of the shelf extend backward and outward, forming the journals. A wheel upon the corner of the shelf nearest the door engages therewith and operates the shelf. The shelf has also a slight lateral movement upon two oppositely-disposed cam-surfaces, to avoid choking of the wheel.



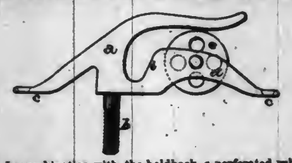
Claim.—In a cooking-stove or range oven, the combination of the swing drop-shelf S, oven-door D, wheel E, cam-surfaces C' and C'', journals T' and T'', curved arms A A, and the bearings G' and B, arranged to operate as and for the purposes set forth.

201,124. SHOE-FASTENINGS. Eli Ross, Merced, Cal. Filed June 11, 1877.



Claim.—The shoe-fastener consisting of the long arms A B and the short arms M N, pivoted together at D D C, and provided with the fastening devices shown and described.

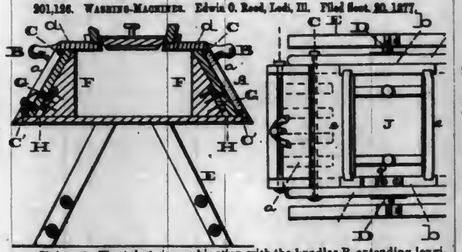
201,125. HOLDBACKS FOR VEHICLES. Orrill M. Robinson, Upper Jay, N. Y. Filed Feb. 2, 1878.



Claim.—1. In combination with the holdback, a perforated rubber roller, substantially as shown.

2. The combination of the holdback *a*, provided with the screw *b*, bearing-points *c*, perforated rubber roller *e*, and shoulder *i*, substantially as shown and described.

201,126. WASHING-MACHINES. Edwin C. Reed, Lodi, Ill. Filed Sept. 20, 1877.



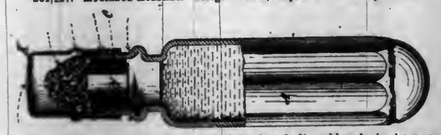
Claim.—1. The tub A, in combination with the handles B, extending longitudinally on the sides of the tub, and with the bolts C, passed through said handles and sides, substantially as and for the purpose set forth.

2. The side pieces *b*, with upward extensions *b'*, the upwardly-projecting transverse pieces *e* fitted thereto, and the top pieces *d*, combined and operating substantially as and for the purpose set forth.

3. The lid J, provided with handles on its upper side, and a soap-holder, J', on its lower side, in combination with the tub formed with the projecting top pieces *c*, and having the fixed hook *g'*, whereby the lid may be supported in a reversed position by said hook *g'*, and the handles bearing on one of the said pieces *c* of the tub, substantially as and for the purpose set forth.

4. In a washing-machine, the bars F, in combination with the strip G, said bars being recessed upon their rear edges to receive said strip, so as to secure a flush rear surface with an opening, H, below, the bars G being connected to the tub, substantially as and for the purpose set forth.

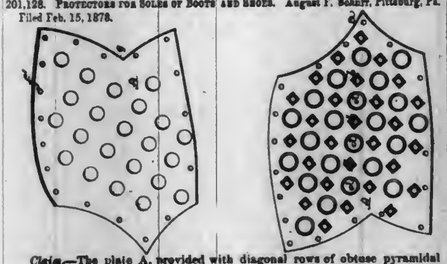
201,127. MUCILAGE-HOLDERS. George W. Ross, Troy, N. Y. Filed Sept. 7, 1877.



Claim.—1. A bottle-stopper consisting of an india-rubber body, having a tube or hole cut through it, one end of said hole being covered by the sponge which is attached to said stopper, and is used for the application of the contained liquid, the other end of said hole being closed by an elastic punctured diaphragm, which acts as an automatic valve, substantially as described.

2. The combination of a rubber bottle-stopper, C, having a hole or tube cut through it, punctured elastic diaphragm N, sponge S, and punctured cap K, substantially as and for the purposes described.

201,128. PROTECTORS FOR SOLES OF BOOTS AND SHOES. August F. Schurr, Pittsburg, Pa. Filed Feb. 15, 1878.



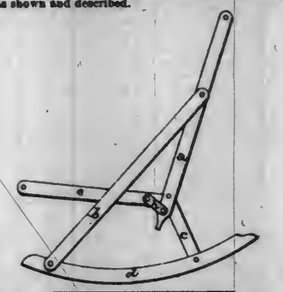
Claim.—The plate A, provided with diagonal rows of obtuse pyramidal protuberances, having holes *d* between them, and a flange, *f'*, at its inner edge, to protect the soles of shoes or boots from the effects of heat, substantially as set forth.

201,129. FOLDING ROCKING-CHAIRS. David H. Selleg, Newburg, N. Y. Filed Feb. 9, 1878.

Claim.—1. In a folding chair, rigid side bars for the seat, in combination with the back, rear legs, and the two connecting-links, the back and rear legs being made in separate pieces, and the lower ends of the legs being pivoted to the rockers *d*, substantially as shown.

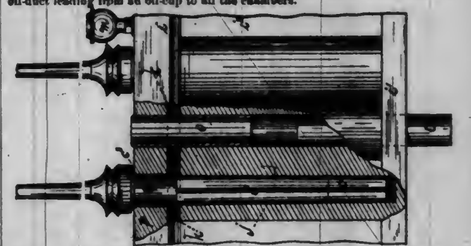
2. The combination of the back *a*, front legs *b*, rear legs *c*, rockers *d*, side bars *e*, and connecting-links *g h*, for connecting the rear ends of the side bars of the seat with the lower end of the back and the upper end of the rear legs, substantially as shown and described.

201,130.



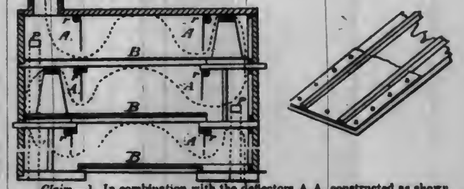
201,130. SPINNING-MACHINES. James O. Stanley, New Hartford, Conn. Filed Apr. 11, 1877.

Brief.—The bolster and step rails are combined in one that contains within itself chambers for the reception of the bolsters and spindles, and an oil-duct leading from an oil-cup to all the chambers.



Claim.—A solid metallic spindle-rail, *i i' i''*, containing within itself the series of chambers *j* and the oil-duct *k*, the series of bolsters *a*, fitting into said chambers, and the series of spindles *e*, all combined and designed to operate substantially as shown and described.

201,131. FRUIT-DRIERS. Oscar F. Tiffany, Syracuse, N. Y. Filed Nov. 30, 1877.



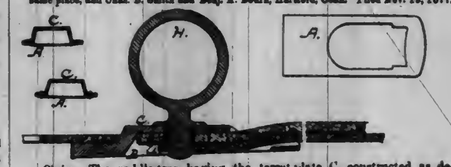
Claim.—1. In combination with the deflectors A A, constructed as shown, the floors B B, covered with material having power of conducting and reflecting heat, substantially as described, for the purpose specified.

2. In an apparatus for drying or curing fruit and other substances, the combination, with the drying-compartments, provided with means for passing a current of hot air through them, as described, of the barriers or deflectors A A, substantially as described and shown, for the purpose set forth.

3. In the within-described fruit-drier, the combination and arrangement, with the upper drying-compartments, of the direct hot-air conductors P P, substantially as described and shown, for the purpose set forth.

4. The combination and arrangement, with the drying-chamber E, provided with means for passing a current of hot air through it, of the cold-air exits S S, substantially as and for the purpose specified.

201,132. GIG-SADDLE TREES. George Theobald, Newark, N. J., assignor to George E. Trask, same place, and Chas. B. Smith and Benj. A. Bourn, Hartford, Conn. Filed Nov. 10, 1877.



Claim.—The saddle-tree having the terret-plate C, constructed as described, and adapted to project through the skirt above the plane of the frame A, so that the upper surface shall be visible, and having a recess on its under side for the reception of the back-strap G, substantially as and for the purposes specified.

201,133. TURBINE WATER-WHEELS. Thomas Tripp, East Stoughton, Mass. Filed Aug. 12, 1877.

Brief.—To prevent the flow of water between the pads and case, the openings in the ring are closed, thus interposing a solid body between the outside

of the pads and the water. Rubber packing is placed between the outer face of each pad and the face of gate-frame.

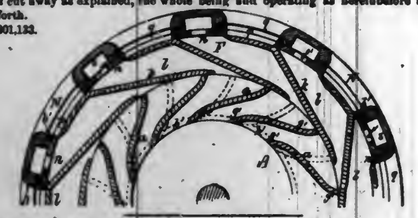
Claim.—1. The elastic or semi-elastic packing b^1 between the pads O and ring-frame N, substantially as and for purposes stated.

2. The ring-frame N and pads O O, &c., in combination with the wheel-case F, substantially as described, whereby water is shut out from contact with the outer face of each pad, essentially as and for purposes stated.

3. The pad O and packing b^1, as formed with the opening f^1, substantially as and for purposes stated.

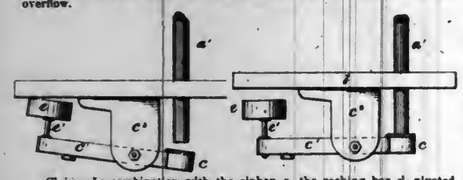
4. The wheel comprising the buckets *a a*, &c., *b b*, &c., of the curvature and disposition as stated, and with the upper inner face of the band or shelf *d* cut away as explained, the whole being and operating as hereinbefore set forth.

201,133.



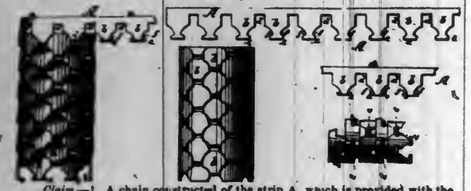
201,134. SIPHONS. Elias Ulrich, Uhrichsville, Ohio. Filed Jan. 23, 1878.

Brief.—To open the siphon when the water gets too high, and prevent overflow.



Claim.—In combination with the siphon *a*, the rocking bar c^1, pivoted intermediately between its ends to the log c^2, and having on one end the valve *e* and on its opposite end the float *c*, supported on the stem or arm c^3 above the plane of the mouth of the inlet-arm a^1 of said siphon, substantially as and for the purposes set forth.

201,135. ORNAMENTAL CHAINS. Emile Verpillier, Newark, N. J. Filed Aug. 10, 1877.



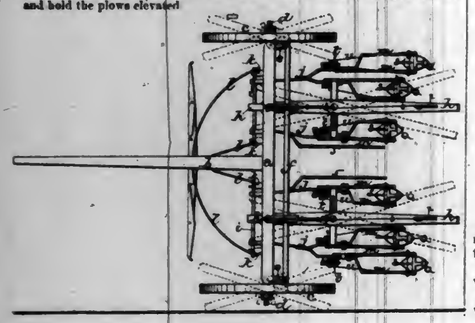
Claim.—1 A chain constructed of the strip A, which is provided with the projecting agraffes *e* and notches or recesses *d*, substantially as herein shown and described.

2. The strip A, made with projecting agraffes *e* and intervening recesses *d*, substantially as herein shown and described.

3. As a new article of manufacture, a tubular chain made of one continuous strip, A, which is coiled spirally and interlocked by projections *e*, formed at intervals on said strip, substantially as herein shown and described.

201,136. CULTIVATORS. David S. Wagner, Carlisle, Pa. Filed Jan. 30, 1878.

Brief.—A double-pointed revolving shovel, the draft-strain sustained by spring-catches which yield upon the shovel striking an obstruction. From the center of the shovel fingers project at right angles, and by contact with the ground cause the shovel to make a half-revolution, bringing the other point in working position. Direction of the wheels changed by manipulating the handles, which are pivoted upon the bent upturned ends of the plow-beams. Curved notched bars from the handle slide through slotted arms upon the axle and hold the plows elevated



Claim.—1. In a cultivator, the combination of the double standards *m*, double-pointed shovel *g*, rods *s*, catches *r*, rods *u*, and spring *t*, substantially as shown.

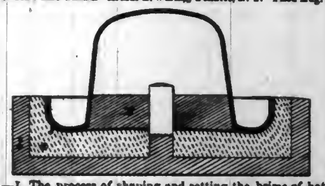
2. In a cultivator, a double-pointed shovel, *g*, provided with the rods *s*, in combination with the spring-catches *r* and double standards *m*, the parts being combined to operate in such a manner that the point of the shovel remains in the earth until it strikes an obstruction, when it automatically revolves half-way around, and at once enters the earth with its other point, substantially as described.

3. The combination of the connecting-rod *f*, pivoted spindles *e*, loops *g*, levers *h*, rods *i*, and connecting devices for uniting the beams *f* to the handles, substantially as set forth.

4. The combination of the revolving shovel, catches to hold it in position, connecting-rods, and spring, substantially as shown.

5. The adjustable stop *p*, in combination with the standards and the turned-up end *o* of the beam, substantially as described.

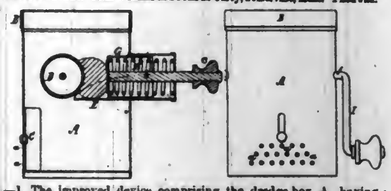
201,137. CURLING HAT-BRIMS. Arthur B. Waring, Yonkers, N. Y. Filed Aug. 15, 1877.



Claim.—1. The process of shaping and setting the brims of hats by first hot-pressing them into an approximately flat shape, and subsequently subjecting them to pressure, while hot, in an open mold of the required shape of the brim, and afterward allowing them to cool and set in said mold, substantially as specified.

2. The combination of the detachable crown-block with the mold, constructed with a cavity to receive the brim of the hat, and the center pin or stud for holding the crown-block in position, essentially as and for the purpose herein set forth.

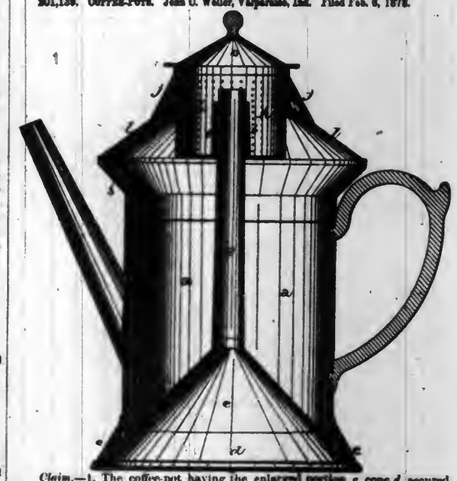
201,138. NUTMEG-GRATERS. John Watkins and John B. Carey, Somerville, Mass. Filed Jan. 22, 1878.



Claim.—1. The improved device comprising the dredge-box A, having cover B, perforations *a*, and gate C, and the grater D, with its nutmeg-supporter E and presser G, united as described.

2. The grater provided with one or more holes of discharge located in the periphery of the cylinder outside of the grating-surface.

201,139. COFFEE-POTS. John C. Weller, Valparaiso, Ind. Filed Feb. 6, 1878.

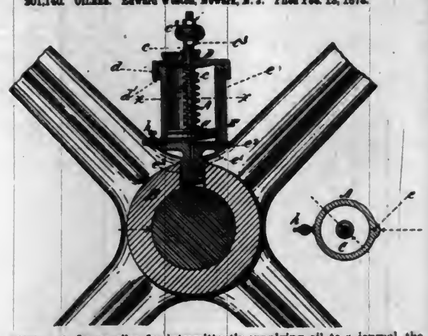


Claim.—1. The coffee-pot having the enlarged portion *c*, cone *d*, secured rigidly therein, removable cone *e*, pipe *g*, and a strainer surrounding the top of the pipe, substantially as specified.

2. The strainer *h* provided with the conical flange *j*, which projects downward and rests upon the top of the cover *i*, substantially as described.

3. A coffee-pot having its upper edge flared outwardly, in combination with the cover *i*, having its flange formed substantially as set forth.

201,140. OILERS. Edward Weston, Newark, N. J. Filed Feb. 13, 1878.

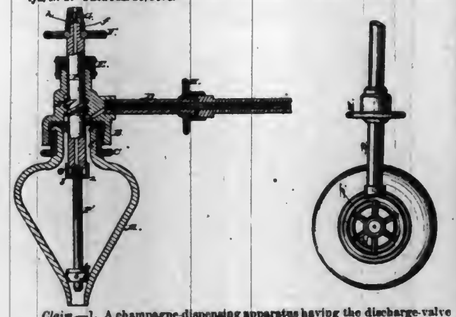


Claim.—1. In an oiler for intermittently supplying oil to a journal, the oil-cylinder A, provided with the piston C and the passages $a\ a^1\ a^2$, constituting the channel of communication to the journal, substantially as described.

2. In an oiler, substantially such as described, the cylinder A, provided with the passages $a\ a^1\ a^2$, the piston C, and the stop-cock *h*, substantially as described.

3. In an oiler, substantially such as described, and operating as set forth, the valve-plug a^3, for adjusting the capacity of the outlet from the oil-cylinder to the journal, substantially as described.

201,141. EFFERVESCENT-LIQUID-DRAWING APPARATUS. Frederick W. Wiesebrock, Brooklyn, N. Y. Filed Jan. 28, 1878.

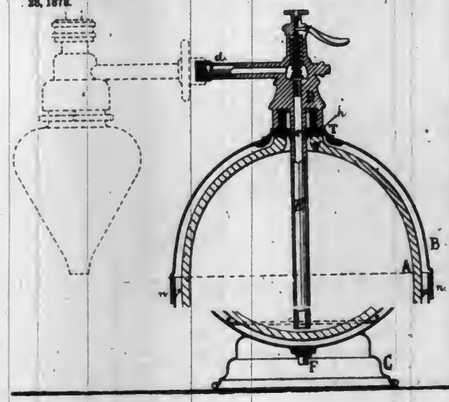


Claim.—1. A champagne-dispensing apparatus having the discharge-valve 5, pressure escape-valve 3, and air-vent 4, united and worked substantially as described.

2. In a champagne-dispensing apparatus, the combination of the hollow spindle P and P, united by socket 2, said socket being provided with perforations 8, said spindle being provided with elastic plug 5, valve 3, air-vent G, and wheel or handle F, working through stuffing-nut E, the whole being operated by a screw-thread, P'', in top B, substantially as herein described, and for the purpose set forth.

3. In a champagne-dispensing apparatus, the combination of the glass vessel A, provided with neck C', collar C'', the metallic ring C, top B, provided with inlet D, having coupling H, stuffing-nut E, substantially as arranged and described, and for the purpose herein set forth.

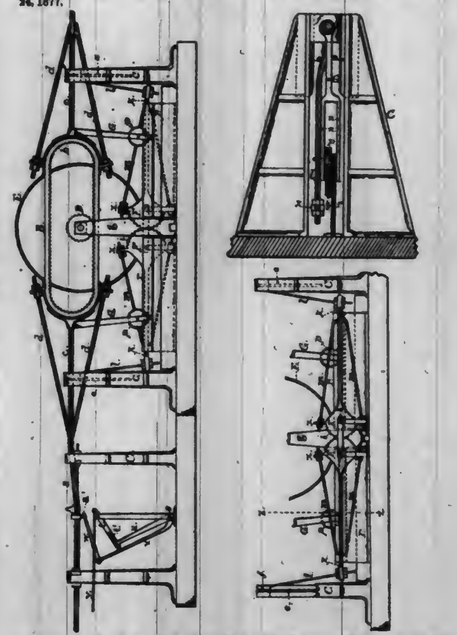
201,142. GLASS-LINED FOUNTAINS. Frederick W. Wiesebrock, Brooklyn, N. Y. Filed Jan. 28, 1878.



Claim.—1. The fountain, the combination of the perforated disk *c*, fastened to the interior of the metallic shell B, said shell being provided with an opening into which fits plug F, substantially as described, and for the purpose herein set forth.

2. In a fountain, the combination of the shell B, provided with the bung T, the opening and plug F, the sweating-lap *a*, the perforated disk *c*, the elastic washer *h*, the glass lining A, the tube E, provided with elastic collar *e*, the space *p* being filled in with a liquid, substantially as described, and for the purpose herein set forth.

201,143. APPARATUS FOR CONVERTING MOTION. Walter H. Willis, Trappe, Md. Filed Oct. 24, 1877.



Claim.—1. The frame B, the long sides of which are parallel and the ends curved, having cogs *b* around the inner sides, and horizontal rods *c* attached to the ends and connecting with the piston-rod, with bearings *f* moving in vertical guides *e*, and the pinion D, keyed to a shaft having a fly-wheel attached, as shown and described.

2. The pivoted levers F F, having arc-shaped ends, provided with teeth which gear, and with the long arms jointed to the upward-extending reaches *l*, which are attached to the vertically-sliding boxes or bearings *f*, as shown and described.

3. The gages G G, secured to the horizontal rods or to the frame, having their lower ends forked, in which a friction-roller is attached, in combination with guide-plates *q* and plates *r*, as shown and described, and for the purpose specified.

4. The mechanism to be connected with the cut-off, consisting of standard H, lever *t*, having one end pivoted to the standard and the other end slotted, in which plays a pin on the end of arm *x*, which is attached to the rock-shaft *s*, and the lever *v* and rod *w*, connecting with sliding box *a'*, and the connecting-rod *y*, as shown and described.

201,144. NUT-LOCKS. Nathan B. Acheson, Youngstown, Ohio. Filed Sept. 19, 1877.



Claim.—The improved nut-lock herein described, consisting of the grooved nut and tapered locking-pin, the latter adapted to be driven into the groove in the nut, and to cut into the threads of the bolt, and provided with a head, C, for driving between the threads of the bolt, to prevent the withdrawal of the pin, as and for the purpose set forth.

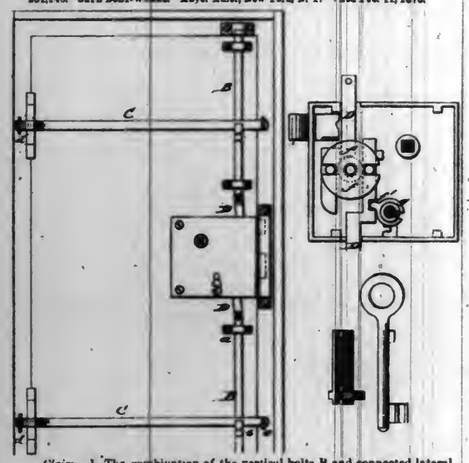
201,145.



201,145. CORSETS. Max Adler, New Haven, Conn., assignor to Mayer, Stevens & Co., same place. Filed Dec. 11, 1877.

Claim.—In a corset, in combination with the three front sections A B C, cut as described, the diagonal stays in the said parts A B and vertical stays in the said part C, substantially as described.

201,146. SASH BOLT-WORKS. Mayer Adler, New York, N. Y. Filed Feb. 11, 1878.



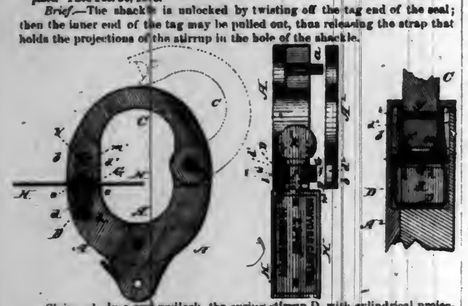
Claim.—1. The combination of the vertical bolts B and connected lateral bolts C with the pivot-rods D of the lock, in such a manner that the bolts are thrown or withdrawn simultaneously with the locking or opening of the door-lock, substantially as and for the purpose set forth.

2. The combination of the additional locking bars or bolts of the door with the crank-connected pivot-rods D, that are actuated by the cam of a slotted key-socket and ing or projection on the key-stem simultaneously with the door-lock, substantially as and for the purpose set forth.

3. The combination of the vertical sliding bolts or bars that are operated by the lock, and of the swinging lateral bolts supported on seats of the vertical bolts, with top and bottom sockets and side plates and staples of the door-casing, substantially as described.

201,147. SEAL-LOCKS. Herman Ahrend, Newark, N. J., assignor to Romer & Co., same place. Filed Feb. 20, 1878.

Brief.—The shackle is unlocked by twisting off the tag end of the seal; then the inner end of the tag may be pulled out, thus releasing the strap that holds the projections of the stirrup in the hole of the shackle.



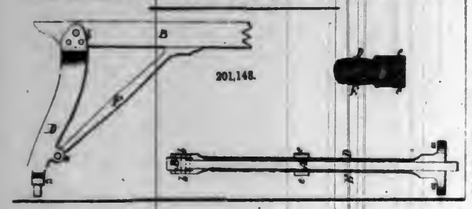
Claim.—1. In a seal-padlock, the spring-stirrup D, with cylindrical projections *a a* upon its arms, to form a lock or latch on each side of the shackle C, substantially as herein set forth.

2. The sliding plate G, in combination with the spring-arms, having bends *i i*, substantially as and for the purposes herein set forth.

3. The sliding plate G, provided with lugs *b b* on its upper surface, at or near one edge, for the purposes set forth.

4. The combination of the spring-stirrup D, with bends *i i* and projections *a a*, the plate G, having lugs *b b*, and the seal H, with the padlock A C, substantially as and for the purposes herein set forth.

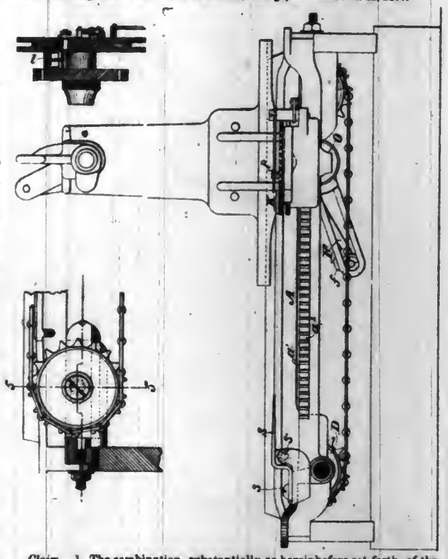
5. The seal H, constructed, as described, with shoulders a^1 a^1, concealed within the recess of the shackle when closed, for the purposes herein set forth.



201,148. BLEIGH-STANDARDS. Samuel R. Bailey, Boston, Mass. Filed Mar. 13, 1876.

Claim.—The wooden standard A and the plates D and E, in combination with the bar B, the plates serving to strengthen and stiffen the standard, and to overlap and protect the joint between the bar and standard, substantially as shown and described.

201,149. GRAIN-BINDERS. Wm. R. Baker, Chicago, Ill., and Charles H. Withington, Janesville, Wis., assignors to C. H. & L. J. McCormick, Chicago, Ill. Filed Dec. 21, 1877.



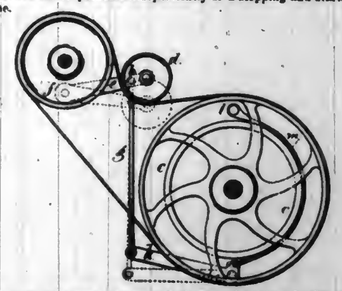
Claim.—1. The combination, substantially as hereinbefore set forth, of the reciprocating binding-carriage, the slotted intermittingly rotating crank mounted thereon, the traversing driving-chain carrying a pin working in a slot of the crank-arm, the locking-latch pivoted upon the crank-arm, and simultaneously acting upon the pin of the driving-chain, and the pitman which actuates the binding-arm, whereby the binding-carriage and binding-arm are automatically locked in position and released at the proper moment by a single instrumentality.

2. The combination, substantially as hereinbefore set forth, of the lug on the turning-plate, and mechanism for securing said plate when adjusted, mounted upon the differential gear, whereby the proper relation of the parts of the twister is preserved, notwithstanding variations in the length of the driving-chain.

3. The combination, substantially as hereinbefore set forth, of the reciprocating intermittingly-rotating differential gear actuating the twister, and the laterally-yielding push-bar, whereby breakage of the twister-gearing is prevented.

201,150. BRAKE MECHANISMS FOR HOISTING APPARATUS. Seth H. Bevins, New York, N. Y., Joseph Weis, Jersey City, N. J., and Wm. H. Phillips, New York, N. Y. Filed Aug. 28, 1877.

Brief.—If by accident the belt should break, the belt-tightener will fall and operate the brake mechanism, and stop the rotation of the hoisting-drum and arrest the car or platform independently of a stopping and starting lever or engine.

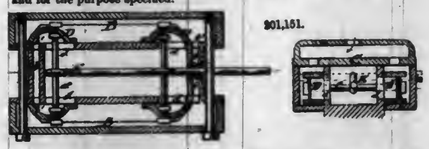


Claim.—In a hoisting apparatus, the brake *m*, lever *k*, and rod *g*, connected with the arm *e* and tightening-pulley *d*, the said brake and lever being independent of, and additional to, the ordinary brake of the hoisting apparatus, substantially as set forth.

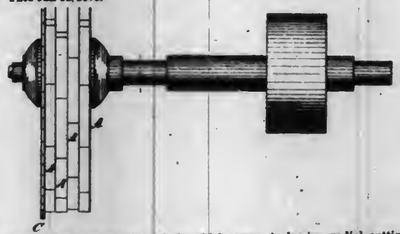
201,151. BALANCED SLIDE-VALVES. Rufus G. Bishop, Chetopah, Kans. Filed Jan. 2, 1878.

Claim.—The combination of a center chest, having transverse end chamber, with bottom and side ports of side chests applied tightly to both sides of the center chests, and of laterally-connected and balanced slide-valves, moving along outer seats of the center chest, for conducting the steam from

top openings of the side chests and end chambers to the cylinder, and exhausting the same through the side openings of the end chambers of the center chest, and exhaust-openings of the center chest, substantially in the manner and for the purpose specified.



201,152. MACHINES FOR REDUCING WOOD TO PAPER-PULP. Norman Ely, Crown Point, N. Y. Filed Jan. 31, 1878.



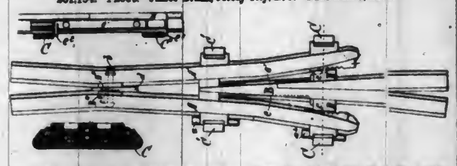
Claim.—The combination of the thick saws A, having radial cutting-edges, and the larger guide-saw C, all clamped on the same mandrel, as and for the purpose specified.

201,153. PLOWS. Samuel M. Bogwist and Wm. Pattison, St. Cloud, Minn. Filed Dec. 6, 1877.



Claim.—As an improved article of manufacture, the plowshare D, the line of whose back edge or end A is parallel with the land-side E, and designed as described, so that it may be joined to the mold-board, and form, when so joined, a continuous line from the lower back point of the share to the upper back point *b* of the mold-board.

201,154. PRESS. James Brahn, Jersey City, N. J. Filed Feb. 5, 1878.

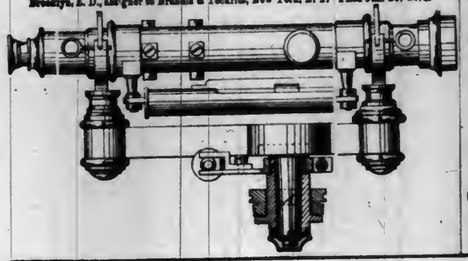


Claim.—1. A space-block in a railway-frog, formed of two or more parts, one of which is wedge-shaped and provided with notches on its face contiguous to the other part, the latter having a rib or projection fitted to engage the said notches, as and for the purpose described.

2. The combination, in a railway-frog formed of separate rails secured together by a clip or clips, of the clip C and stay-bars *c c*, fastened to the rails and provided with the arm or projection c^3, as and for the purpose described.

3. In a railway-frog made of separate rails, a binding-clip, a stay-block, constructed as described, and the dowel pin or bolt *h*, constructed and combined to operate as and for the purpose described.

201,155. SPINDLE ATTACHMENTS FOR SURVEYING-INSTRUMENTS. Frederick E. Brasin, Brooklyn, E. D., assignor to Brasin & Tockrin, New York, N. Y. Filed Jan. 26, 1878.

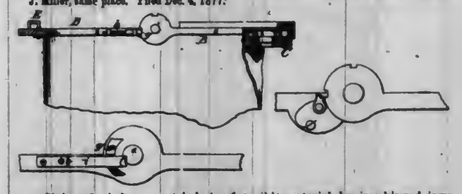


Claim.—1. The combination, in a surveying-instrument, of the spindle, having flanged sleeve and revolving screw-nut, with the adjustable threaded socket-plate on the tripod, substantially as described, and for the purpose specified.

2. The combination, in a surveying-instrument, of the spindle of the same, having flanged sleeve retained thereon and a revolving screw-nut sliding on sleeve, with the adjustable socket-plate on tripod, the socket-plate having thread and seat, respectively, for nut and flange of sleeve, substantially as specified.

3. The combination, with the seat on flanged sleeve, of the clamp and tangent-screw, arranged below the base-bar, as and for the purpose specified.

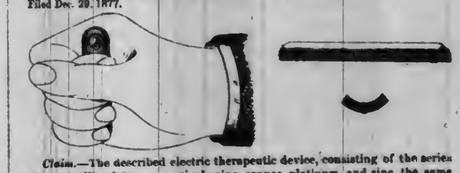
201,156. MAIL-BAGS. Albert Call, Santa Fé, N. M., assignor of one-half his right to David J. Miller, same place. Filed Dec. 4, 1877.



Claim.—1. A bag or satchel, A, of flexible material, having hinged jaws B B', provided with means for keeping the jaws open, consisting of notches or depressions in the cheeks of the hinges attached to or forming a part of one jaw, and a spring-detent on the other jaw to engage the same, substantially as set forth.

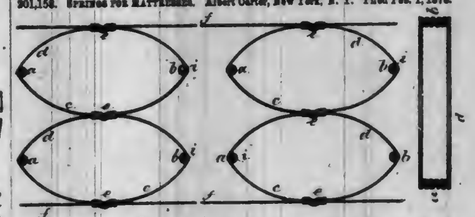
2. As an improved article of manufacture, a bag or satchel, A, of flexible material, provided with a detent device, forming a part of each hinge, as shown, to keep the jaws open, and with duplicate fastenings E E *b b*, arranged, to be simultaneously actuated by one motion of the key, substantially as and for the purposes set forth.

201,157. GALVANIC ELECTRODES FOR CURATIVE PURPOSES. Wales A. Condee, Bristol, Conn. Filed Dec. 29, 1877.



Claim.—The described electric therapeutic device, consisting of the series of four metallic plates, respectively zinc, copper, platinum, and zinc, the same being of oblong concavo-convex form, fitted together one within the other, and adapted to receive the tips of the fingers as the same is held in the hand, substantially as set forth.

201,158. SPRINGS FOR MATTRESSES. Albert Carter, New York, N. Y. Filed Feb. 1, 1878.



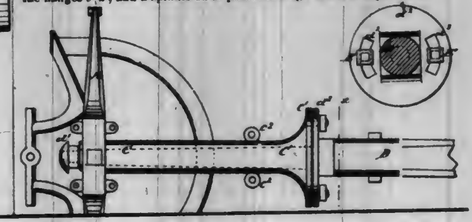
Claim.—1. The elliptical spring formed of one piece of wire, having the upper and lower arches *d e* and the helices *a b*, that connect such arches, substantially as set forth.

2. The combination of the elliptic spring-arches *e d* and helices *a b* with the connecting-rods or wires *i*, passing through the helices, substantially as set forth.

3. The connecting wires or rods *i* and clasps *e*, in combination with the elliptical spring-arches *e d*, helices *a b*, and connecting-wires *f*, substantially as set forth.

201,159. RUNNING-GEARS FOR VEHICLES. Hugh V. Caton, Fredericksburg, Ind. Filed Dec. 23, 1878.

Brief.—The reach is in sections, which are connected by bolts through the flanges c^1 d^1, and a spindle on D passes through the hollow part of C.



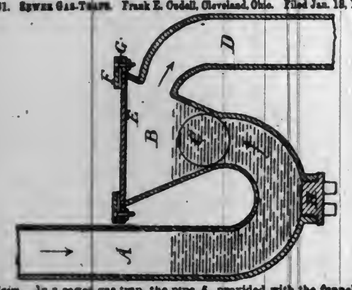
Claim.—The tiered part U of the reach, having flange d^2, and the spindle portion D, having flange d^3, provided with curved slots d^4, and the bolts E E, all combined and arranged as shown and described, for the purpose specified.

201,160. CIGAR-PACKAGES. Pierre Casbapt, New York, N.Y. Filed Nov. 27, 1877.



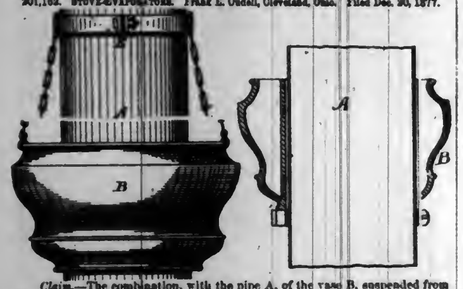
Claim.—A cigar-package inclosed by a separate but hermetically-sealed and moisture-proof envelope or capsule of gelatinous material, substantially as and for the purpose set forth.

201,161. SEWER GAS-TRAPS. Frank E. Ondell, Cleveland, Ohio. Filed Jan. 18, 1878.



Claim.—In a sewer gas-trap, the pipe A, provided with the funnel-shaped chamber B, the top of which is covered with glass E, secured by a ring, F, and suitable packing G, the lower part of said chamber constituting the seat for the valve C below the line of overflow to outlet-pipe D, all constructed, combined, and operating substantially as and for the purpose set forth.

201,162. STOVE-EVAPORATORS. Frank E. Ondell, Cleveland, Ohio. Filed Dec. 20, 1877.



Claim.—The combination, with the pipe A, of the vase B, suspended from a ring, E, said vase surrounding the pipe, and provided with lugs b, to retain it at a uniform distance from the pipe, substantially as and for the purpose set forth.

201,163. FASTENERS FOR COFFINS, &c. Andw. B. Davis, Ithaca, N.Y. Filed Feb. 14, 1878.



Claim.—The described fastening device, consisting in the combination of the hook which fastens the lid or cover to the main body of the case, and the staple, one arm of which latter passes through the body of the hook into the side of the case, while the other arm is secured to the lid and bears against the edge of the free end of the hook, the same being adapted to prevent the unfastening of the hook until the staple is first withdrawn, substantially as set forth.

201,164. PUMPS. William S. Davis, Pittsfield, Me., assignor of one-half his right to Warren L. Parks, same place. Filed Nov. 21, 1877.

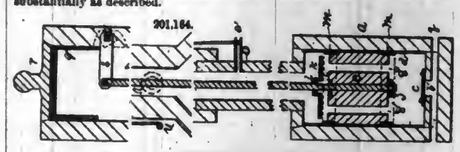
Claim.—1. A pump formed of sections a a and connecting-tube c, and provided with the air-chamber p and internal operating-lever s, connected to the handle by a packed rod, t, substantially as set forth and shown.

2. The plunger g, having vertical ports g' and packing m, in combination with the rod h, nut j, and nut i, recessed in said plunger, and annular valve k, as set forth.

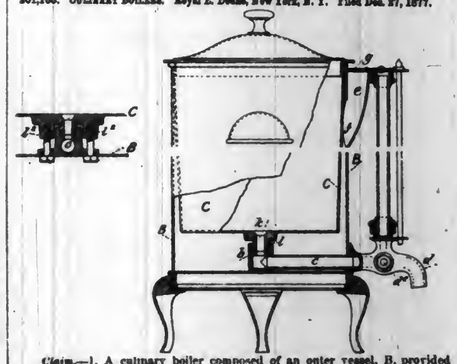
3. The plunger g, formed of a cylindrical block, having vertical ports g' arranged around the central rod h, as shown, provided with an annular valve, k, moving vertically on said rod, and annular packing m at top and bottom, in combination with the metal lining d, within which it works, substantially as set forth.

4. In combination with the section n, the imperforate metal box q, open at the lower end only, and extending around and over the top of the piston-rod, substantially as described.

201,164.



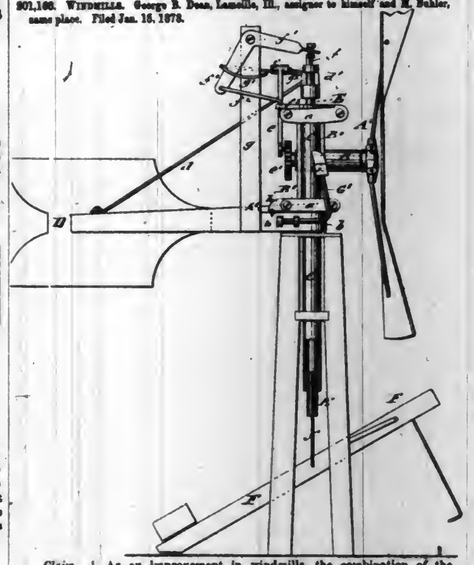
201,165. CULINARY BOILERS. Royal E. Deane, New York, N. Y. Filed Dec. 27, 1877.



Claim.—1. A culinary boiler composed of an outer vessel, B, provided with a tube, b, threaded upon its interior, and an inner vessel, C, provided with a collet, i, threaded upon its exterior, substantially as and for the purpose set forth.

2. In a culinary boiler composed of an inner vessel, C, and an outer vessel, B, connected substantially as shown, the combination, with the outer vessel B, of a supply-chamber, c, a faucet, d, and a water-glass, f, communicating with the faucet d, substantially as and for the purposes indicated.

201,166. WINDMILLS. George B. Dean, Lasalle, Ill., assignor to himself and M. Bahler, same place. Filed Jan. 16, 1878.



Claim.—1. As an improvement in windmills, the combination of the revolving wheel, horizontally-movable sleeve, having horizontal box, and separately-swinging vane, with mechanism to set the wheel parallel to, or at right angles, or at any other angle to the vane, substantially as and for the purpose set forth.

2. The combination of the horizontally-movable sleeve B', having wheel-shaft-supporting box B, upper crank-arm f^2, and lower ear or extension h, with the vane D, a lever or treadle acted bell-crank lever, f^3, and a guard device, g^4, of the same, substantially as specified.

3. The horizontally-movable sleeve B', being cast in one piece with the horizontal wheel-shaft box B, and having a lower ear or extension, h, in combination with the revolving wheel-shaft, having pump-operating crank-wheel g^4, and with a friction-brake, D, and fixed brake-rod G' of the vane-arm, substantially as and for the purpose set forth.

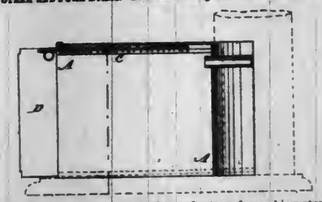
201,167. AUTOMATIC FIRE-ALARMS. José M. De Odin, New York, N. Y. Filed Feb. 8, 1878.



Claim.—1. The combination, with arm E, hung in bearings of plate A, of a button at one end, a coiled band-spring at the other, and a retaining-block of tallow or equivalent in a box, D, as and for the purpose specified.

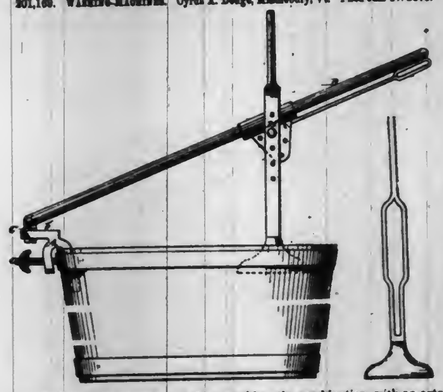
2. The combination, with an electric or other alarm, of a hinged and spring-acted arm, retained at a position at that side of its pivot opposite to the alarm device by a block of wax or other materials melting at a low temperature, the block being seated and supported in a slotted casing or box, substantially as and for the purpose described.

201,168. STEAM AND FUME BOXES. Elizabeth Delong, Stone Church, Pa. Filed Jan. 8, 1878.



Claim.—The box A, adapted to fit on the top of a cooking-stove, and having the slides C D at the top and sides, for the purpose specified.

201,169. WASHING-MACHINES. Cyrus A. Dodge, Middlebury, Vt. Filed Jan. 17, 1878.



Claim.—1. In a pounder washing-machine, the combination, with an actuating-lever, of a vertically-adjustable pounder-shaft, the same constructed and arranged to be moved to and from the free end of said actuating-lever, substantially as set forth.

2. In a pounder washing-machine, the combination, with an actuating-lever provided with a sliding sleeve, of a pounder-shaft pivoted to said sleeve, substantially as set forth.

3. In a pounder washing-machine, the combination, with an actuating-lever provided with a sliding sleeve, of a vertically-adjustable pounder-shaft pivoted to said sleeve, substantially as set forth.

4. In a pounder washing-machine, the combination, with an actuating-lever provided with a sliding sleeve, of a slotted pounder-shaft adapted to be pivoted in a vertically-adjustable manner to said sleeve, substantially as set forth.

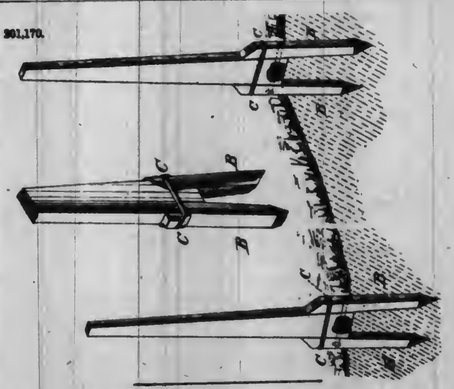
5. In a pounder washing-machine, the combination, with an actuating-lever provided with a sliding sleeve, and a vertically-adjustable pounder-shaft pivoted to said sleeve, of a rod, one end of which is secured to said sleeve, while the other end is provided with a handle, substantially as set forth.

6. In a pounder washing-machine, the combination, with an actuating-lever provided with a sliding sleeve, the latter having a series of holes formed in a depending plate attached thereto, of a slotted pounder-shaft adapted to be secured to said plate by means of a removable pin, substantially as set forth.

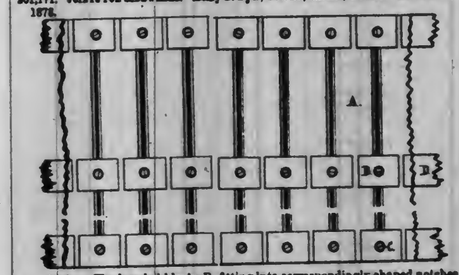
201,170. FENCE-POSTS. Fayette Dyer and Geo. Adair, Rock Falls, Ill. Filed Aug. 30, 1877.

Claim.—The improved fence-post represented in Fig. 1 of the drawing, composed of the post proper, the stakes B B, and the band C, substantially as and for the purpose specified.

201,170.

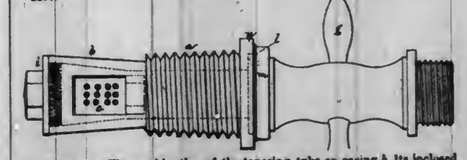


201,171. JOINTS FOR SIDEWALKS. Henry B. Dyer, Toronto, Ontario, Canada. Filed Jan. 7, 1878.



Claim.—The beveled blocks B, fitting into correspondingly-shaped notches cut in the planks A, and secured to the sleepers D by the screws C, or their equivalent, substantially as shown and described, for the purpose of binding the planks A together, and at the same time holding them to the sleepers D.

201,172. COMBINED TAP AND FAUCET. Michael A. Farrell, Boston, Mass. Filed Aug. 11, 1877.

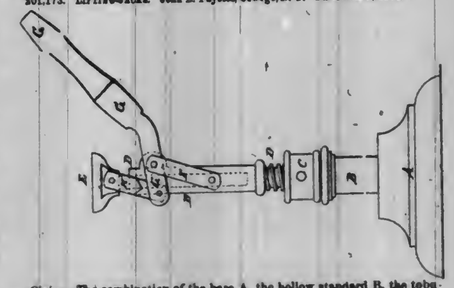


Claim.—1. The combination of the tapering tube or casing b, its inclosed plug c, and the screw-tap e, carrying the screw-plug f, for the purpose of holding and crowding plug c to its seat, substantially as and for the purpose specified.

2. The combination, with the tapering plug c, of the hollow key or wrench f, provided with rim m, adapted to crowd a packing-gasket within the recess l of the screw-tap, substantially as and for the purposes set forth.

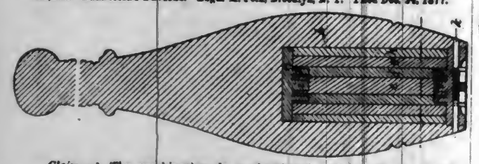
3. The combination of the wrench or key f, provided with a projection, p, with the screw-tap e, provided with the rectangular and inclined recess k, as and for the purpose set forth.

201,173. LIFTING-JACKS. John B. Fayette, Oswego, N. Y. Filed Feb. 8, 1878.



Claim.—The combination of the base A, the hollow standard B, the tubular shouldered nut C, the screw-slide D, the upper slide E, the two pairs of pivoted connecting-bars F H, and the forked lever G with each other, substantially as herein shown and described.

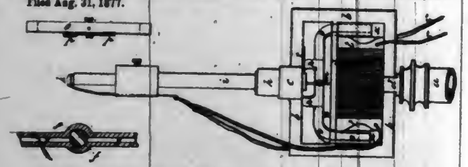
201,174. EXERCISING DEVICES. Edgar M. Folk, Brooklyn, N. Y. Filed Dec. 24, 1877.



Claim.—1. The combination, in a chambered club, of the concentric weights and the heads having studs and rims, as herein shown and described.

2. The combination of the spring-bolts *k* with the head *d*, substantially as herein shown and described.

201,175. ELECTRIC GAS-LIGHTING DEVICES. Saint George Lane Fox, London, England. Filed Aug. 31, 1877.



Claim.—1. In combination with the gas or stop cock of each lamp, a permanent magnet, *a*, made to turn on an axis or pivot by means of an electric current, so as to open or close the cock, substantially as and for the purpose herein described and shown.

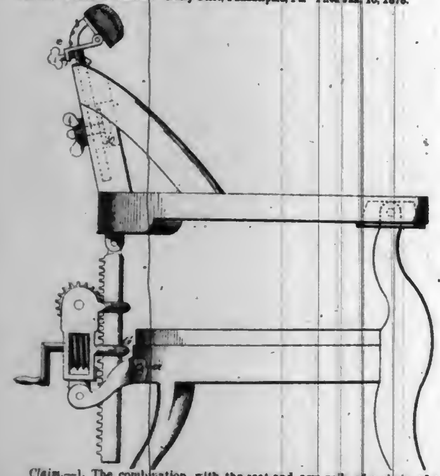
2. In combination with the burner *k* and plug *e* of the cock, the pivoted permanent magnet *a* and the induction-coil *t*, with its primary and secondary coils of wires, substantially as and for the purposes herein described and shown.

3. In combination with the pivoted magnet *a*, induction-coil *t*, and plug *e*, the hollow frame *b*, for conducting the gas-pipe to the cock, substantially as herein described and shown.

4. The projections *p p* on the magnet *a*, in combination with the pin *l*, or equivalent, on the plug *e*, substantially as and for the purpose herein described and shown.

5. The tapered plug *e*, supported by the pin or pivot *m*, and with or without the groove *n*, substantially as and for the purpose herein described and shown.

201,176. BARBERS' CHAIRS. Henry Geiss, Philadelphia, Pa. Filed Jan. 10, 1878.



Claim.—1. The combination, with the seat and arm rails of a chair, of a rack-bar pivoted to the arm-rail, and a boxing or frame pivoted or hinged to the seat-rail, said frame provided with a spur-gear wheel, which engages with said rack bar, and with a worm for actuating the spur-gear wheel, substantially as set forth.

2. The combination, with the rack-bar, of a frame having spur and worm gears journaled therein, said frame constructed with loops or guides for retaining the spur-gear in mesh with said rack-bar, substantially as set forth.

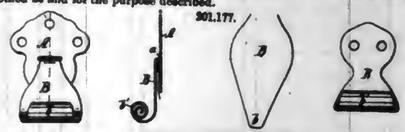
3. The combination, with a swinging rack-bar, of a frame or boxing pivoted to a bracket attached to the seat-rail of a chair, said frame being provided with a gear-wheel arranged to mesh with the teeth of the rack-bar, and also provided with a worm-gear for actuating the spur-gear, substantially as set forth.

201,177. GARMENT-SUPPORTERS. Catharine A. Griswold, New York, N. Y. Filed Feb. 4, 1878.

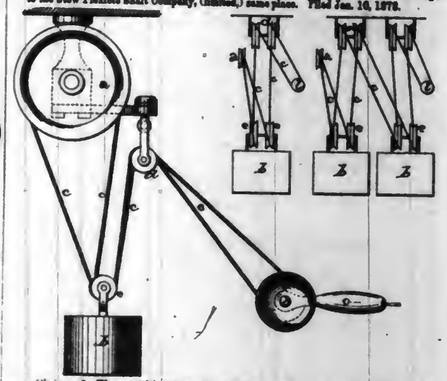
Claim.—1. A garment-supporter adapted for attachment to a supporting-garment, consisting of the plate B, having the end *b* rolled into the scroll *b'*, as and for the purpose described.

2. The scroll-supporting plate A, provided with the loop *a*, and the plate B, provided with the shank *a* and the scroll-hook *b'*, constructed and combined as and for the purpose described.

201,177.



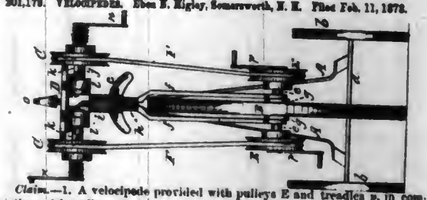
201,178. DEVICES FOR TRANSMITTING POWER. John F. Heathe, Philadelphia, Pa., assignor to the Stow Flexible Shaft Company, (limited,) same place. Filed Jan. 16, 1878.



Claim.—1. The combination of a driving pulley and cord or belt with a weight or weights provided with pulleys, and a swiveled pulley, whereby the pulley *i* may be extended outward a distance which is always a multiple of the rise of the weight or weights, substantially as specified.

2. The combination of the pulley *a*, weight or weights *b*, cord *c*, pulleys *e*, swiveled pulley *d*, and a pulley, *i*, on the tool, whereby the tool may be always extended two or more times as far as the weight or weights are raised, substantially as shown and described.

201,179. VELOCIPEDES. Eben H. Higley, Somersworth, N. H. Filed Feb. 11, 1878.

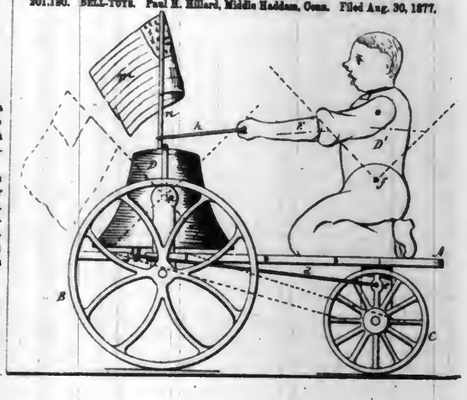


Claim.—1. A velocipede provided with pulleys E and treadles *p*, in combination with pulleys C and handles *s*, and a mechanism for disconnecting said pulleys with the pulleys E, whereby either set of pulleys may be used separately or in connection with each other, substantially as and for the purpose set forth.

2. The pulleys C, having projections *k* and the springs *m*, in combination with the clutch-collars *l* and cam D, substantially as and for the purpose specified.

3. The pulleys E and chains F, in combination with the pulleys C, projections *k*, springs *m*, clutch-collars *l*, bearing *i*, and cam D, constructed to operate substantially as and for the purpose described.

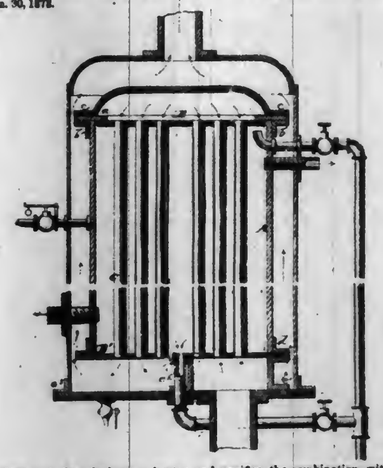
201,180. BELL-TOYS. Paul H. Hillard, Middle Haddam, Conn. Filed Aug. 30, 1877.



Claim.—1. The combination, in a mechanical toy, of the bell D, mounted on pivots on a carriage, combined with an arm, *b*, extending down inside of the bell, the crank *c* on the wheel, and a connecting-rod, *d*, between said crank and arm *b*, substantially as described.

2. In a mechanical toy, the combination of a swinging bell mounted on a carriage, operated from the running-gear, with a staff and flag, in connection with said bell, substantially as described.

201,181. FEED-WATER HEATERS AND PURIFIERS. Samuel Hughes, Charleston, S. C. Filed Jan. 30, 1878.



Claim.—1. In a feed-water heater and purifier, the combination, with an inner cylinder provided with a series of steam-tubes, of a steam-jacket surrounding said inner cylinder, and a closed steam-chamber attached to one end of the inner cylinder, the parts being arranged substantially as described, whereby steam is first conveyed through the tubes in the water-cylinder, and then conducted to the outlet-opening through the annular space between the steam-jacket and water-cylinder, substantially as set forth.

2. In a feed-water heater and purifier, the combination, with an inner cylinder provided with a series of tubes and a cover attached to one end of said cylinder, of a steam-jacket surrounding said inner cylinder, and a steam-conduit for conducting the steam to only a portion of the tubes of the inner cylinder, whereby the exhaust-steam is allowed to pass upwardly through a portion of said tubes into the chamber at the upper end of said cylinder, and from thence downwardly through the remaining portion of said tubes, and thence to the outlet through the annular space between the steam-jacket and water-cylinder, substantially as set forth.

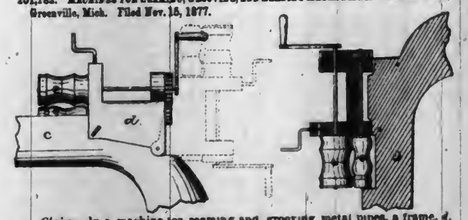
3. In a feed-water heater and purifier, the combination, with an inner cylinder provided with a series of steam-tubes and an outer steam-jacket, of a safety-valve attached to the inner cylinder by a pipe, and connected with the well by an overflow-pipe, substantially as set forth.

4. In a feed-water heater and purifier, the combination, with the inner cylinder having a flange secured to its upper end, of a tube-sheet secured to said flange by means of an annular ring or plate, substantially as set forth.

5. In a feed-water heater and purifier, the combination, with the inner cylinder having a flange secured to its upper end, of a tube-sheet having an annular plate or ring bolted to its outer edge, the outer edge of said annular plate being bolted between the flange on the cylinder and the cover over the end of the same, substantially as set forth.

6. In a feed-water heater and purifier, the combination, with the cylinder, of the tube-sheet, having an annular, ring or plate attached thereto, said ring being secured to the cylinder by means of plain and collared bolts, substantially as set forth.

201,182. MACHINES FOR SEAMING, GROOVING, AND BEADING METAL PIPES. Frank M. Ives, Greenville, Mich. Filed Nov. 15, 1877.



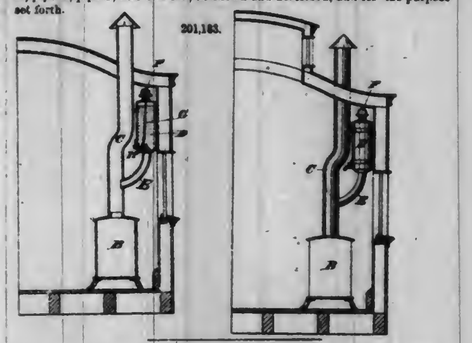
Claim.—In a machine for seaming and grooving metal pipes, a frame, *d*, hinged or pivoted upon the rear end of the arm *c*, substantially as and for the purpose shown and described.

201,183. FIRE-EXTINGUISHERS. John C. Lester and Chas. J. Fox, Chicago, Ill. Filed Mar. 15, 1877.

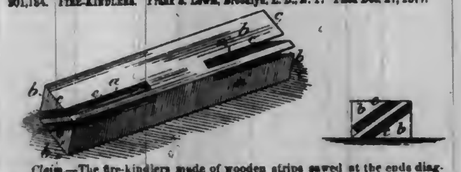
Claim.—1. The combination of the ball F with the chain G, the valve H, the tank D, the pipe E, and the stove B, as shown and described, and for the purpose set forth.

2. The combination of the ball F with the chain G, the valve H, the tank D, pipe E, pipe C, and stove B, as shown and described, and for the purpose set forth.

201,183.

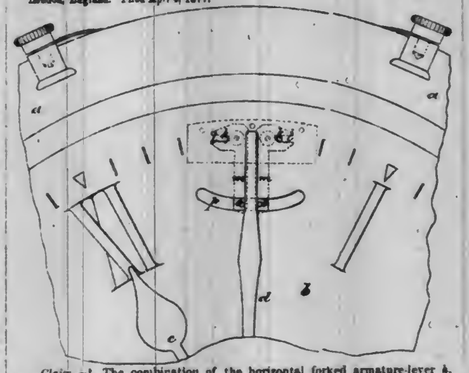


201,184. FIRE-KINDLERS. Frank S. Lewis, Brooklyn, E. D., N. Y. Filed Dec. 27, 1877.



Claim.—The fire-kindlers made of wooden strips sawed at the ends diagonally, so as to present sharp angles *c* and triangular corners *b*, substantially as set forth.

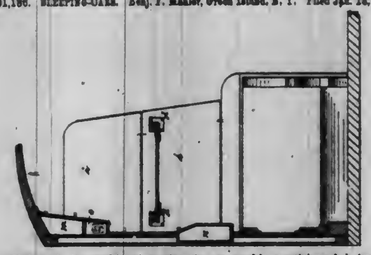
201,185. ELECTRO-MAGNETIC APPARATUS FOR SYNCHRONIZING CLOCKS. John Alex. Lund, London, England. Filed Apr. 4, 1877.



Claim.—1. The combination of the horizontal forked armature-lever *h*, bent levers *m m*, provided with the pins or projections *o o*, and the block or projection *q* on the minute-hand *d*, substantially as and for the purpose herein specified.

2. In combination with the dial-plate *b* of a clock, having a slot, *p*, as described, a synchronizing-magnet and its transmitting-levers *h m m*, arranged behind the dial-plate, and communicating with the minute-hand through the said slot, substantially as and for the purpose herein specified.

201,186. SLEEPING-CARS. Benj. F. Manier, Green Island, N. Y. Filed Jan. 16, 1878.



Claim.—1. In combination with the removable partitions *h h*, having the slotted plates *d d*, the detachable bed-rails *e e*, extending the entire length of the berth, and provided with the end pieces *e e* and bottom rail *k*, for supporting the mattress, substantially as shown and described.

2. In combination with the removable rails *c c*, the elastic pad *g*, substantially as and for the purposes set forth.

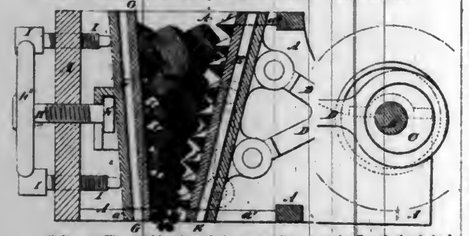
3. In combination with the several slats adapted to be supported upon the bed-rails of the upper berth in a sleeping-car, the hooked springs *i i*, located at each end of said slats, substantially as shown and described.

4. In combination with the bed-rails of the upper berth in a sleeping-car, the herein-described folding mattress, composed of a series of slats having hooks or other means for supporting them upon the bed-rails, the said slats being enveloped in a flexible cloth covering, substantially as and for the purposes explained.

5. In a sleeping-car, the receptacle, safe, or pocket *m*, located between the chamber which receives the detachable bed-rails and the roof of the car, substantially as shown and described.

6. In a sleeping-car, the removable safe or pocket *n*, located within a recess cut in the car-casing between the upper and lower berths and between the windows, substantially as shown and described.

201,187. COAL-BREAKERS. George B. Markle, Jeddo, Pa. Filed Dec. 1, 1877.



Claim.—1. The combination of the eccentrics or cranks C and the forked arms D with the breaker-plate E, the box or frame A, and the shaft B, substantially as herein shown and described.

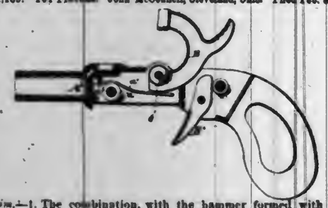
2. The combination of the swiveled screw H and the set-screws I with the breaker-plates G and the box or frame A, substantially as herein shown and described.

201,188. COFFIN-FASTENERS. John McCarthy, Syracuse, N. Y. Filed June 26, 1877.



Claim.—The metallic plates secured in recesses flush with the upper edge of a coffin-body, and having central rectangular apertures, in combination with the rectangular pins passing through the coffin-lid, and having their edges constructed to engage the metallic plates beneath the central apertures, substantially as shown and described.

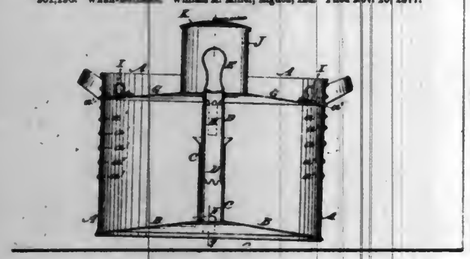
201,189. TOY PISTOLS. John McConnell, Cleveland, Ohio. Filed Feb. 6, 1878.



Claim.—1. The combination, with the hammer formed with the curved rear body, of the trigger adapted to operate as a lever of the first order in engaging therewith, and the spring, which latter has a flat bearing against the hammer when set, substantially as set forth

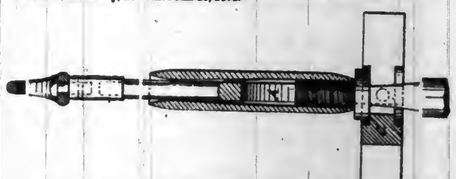
2. The combination, with the spring *a'*, bearing *a*, and lug *a²*, all located in the recess formed in the central body of the casing, of the hammer B, provided with the flat spring-bearing *h*, and the trigger B', substantially as set forth.

201,190. WASH-BOILERS. William A. Miller, Rigdon, Ind. Filed Nov. 10, 1877.



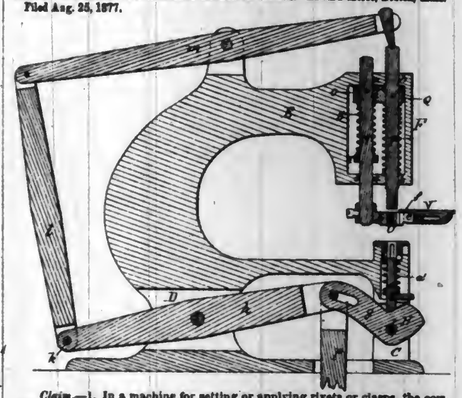
Claim.—The combination of the cover G, provided with the springs or arms H, the spring-bolts I, and the dome J K, with the boiler A, provided with the recesses *a'*, substantially as herein shown and described.

201,191. COMBINED ELEVATOR AND CLAMP FOR SUCKER-RODS OF OIL-WELLS. James A. Morrison, Karns City, Pa. Filed Jan. 26, 1878.



Claim.—A combined elevator and clamp for the sucker-rods of oil-wells, consisting of a forked main lever, a recessed clamp, fulcrumed to the fork of the same, and a safety-slide, guided along the shank of the main lever, substantially as and for the purpose described.

201,192. MACHINERY FOR APPLYING RIVETS OR CLASPS. Edward Mayo, Boston, Mass. Filed Aug. 25, 1877.



Claim.—1. In a machine for setting or applying rivets or clasps, the combination, substantially as set forth, of two oppositely-arranged reciprocating drivers, the one having an invariable and the other having a variable length of stroke, as and for the purposes set forth.

2. The combination, substantially as set forth, of two oppositely-arranged reciprocating drivers, the one having a variable and the other an invariable length of stroke, with mechanism, substantially as described, for operating the same simultaneously.

3. The combination of two oppositely-arranged drivers, the one having an invariable and the other a variable stroke, as described, with a presser-foot operating to hold the material with a yielding pressure against the table or support while the drivers operate on the same, substantially as set forth.

4. The yielding presser-foot, provided with a passage for the variable driver, and operated by said driver, as set forth.

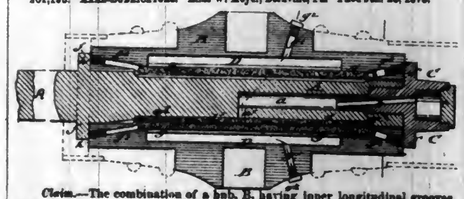
5. The combination, with the reciprocating variable driver, of the yielding presser-foot operated by said driver, and provided with a guide-plate, for properly presenting the upper clasp to the action of said driver, as set forth.

6. The guiding trough or shelf V, for presenting the lower clasp in such manner that its prongs shall interlock those of the upper clasp, substantially as and for the purposes stated.

7. The combination of the driver P and carrier-foot L, substantially as explained, whereby they travel together until the foot reaches the material, and the driver completes its movement alone, substantially as and for purposes stated.

8. The combination, substantially as set forth, of these elements: the two oppositely-arranged reciprocating drivers, the presser and carrier-foot, provided with a guide-plate for delivering clasps to the upper driver, and the lower guide-plate for delivering to the lower driver clasps in such positions that their prongs shall be opposite the spaces between the prongs of the upper clasps, the combination being and acting as set forth.

201,193. AXLE-LUBRICATORS. Elias W. Meyer, Berwille, Pa. Filed Jan. 28, 1878.



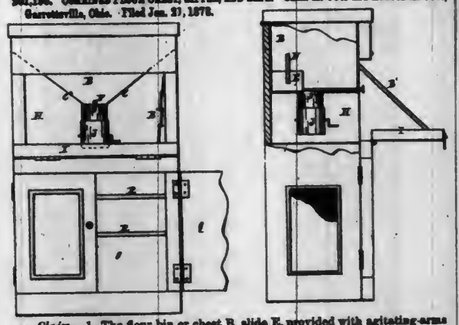
Claim.—The combination of a hub, B, having inner longitudinal grooves *g*, supply-channels *g'*, plugged extension-ducts *g²*, and reservoirs D with the vehicle-axle A and screw-cap C, having retaining-flanges *f*, substantially as and for the purpose specified.

201,194. MEDICATED OILS. John H. Barnard and Leon Soulié, Natchitoches, La. Filed Sept. 6, 1877.

Brief.—Macerates three ounces of trifolium, (*Menyanthes*,) five ounces of arnica-flowers, and three ounces of angelica-root in three gallons of olive-oil as long as desired.

Claim.—An oil or compound consisting of olive-oil, trifolium, arnica-flowers, and angelica-root, in about the proportions named, and for the purpose specified.

201,195. COMBINED FLOUR CHEST, SIFTER, AND SAFE. Chas. H. Ober and Reuben H. Ober, Garretsville, Ohio. Filed Jan. 21, 1878.



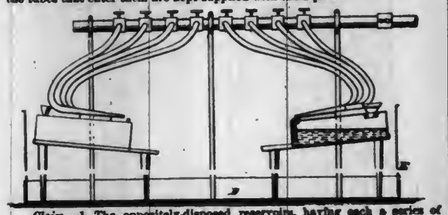
Claim.—1. The flour bin or chest B, slide E, provided with agitating-arms N, in combination with the sifter J and agitator L, substantially as described, and for the purpose specified.

2. In combination with the flour-bin B and sifter J, the chamber H and hinged door or molding-board I, and safe O, in the manner as described, and for the purpose set forth.

3. The herein-described combined flour bin, sifter, and safe, consisting of the chest or bin B, for holding flour, meal, &c., and provided with a slide and agitating-screen for sifting the flour, and a molding-board or door and safe, arranged in relation to each other substantially as herein described, and for the purpose specified.

201,196. APPARATUS FOR SPRAYING TOBACCO. Charles S. Philips, New York, N. Y. Filed Nov. 26, 1877.

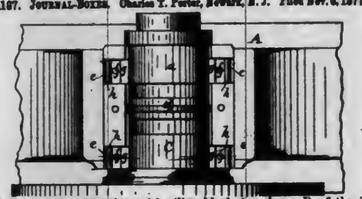
Brief.—The reservoirs being inclined, the spray crosses between them, and the tubes that enter them are kept supplied with the liquid.



Claim.—1. The oppositely-disposed reservoirs, having each a series of spray-tubes, as herein shown and described.

2. The pan D and guard E, in combination with the spraying apparatus, as herein shown and described.

201,197. JOURNAL-BOXES. Charles T. Porter, Newark, N. J. Filed Nov. 6, 1877.



Claim.—The combination, with pillow-block A and cap B, of the journal-box having externally-inclined cheeks *e*, the wedges *f*, and the gibs *h*, arranged as shown and described.

201,198. GANG-EDGERS. Simon P. Randolph, Seattle, Wash., assignor to Lane & Bodley Company, Cincinnati, Ohio. Filed Nov. 6, 1877.

Brief.—One or more of a series of circular saws in a "gang-edger" can be shifted longitudinally of the arbor by means of guides which embrace each saw on opposite sides near its periphery, each saw having no connection with its arbor other than that which is necessary for maintaining the concentricity and co-rotation of the saws and arbors, so that while holding the saw to its proper axis of rotation, it will permit its central portion to be self-adjustive to follow the lead of the cutting-edge.

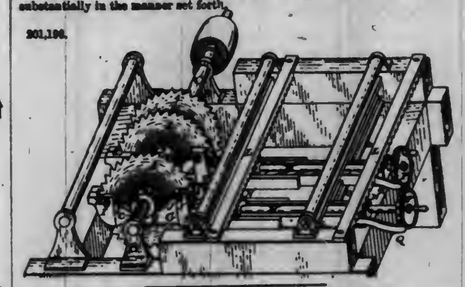
Claim.—1. In combination with a circular saw which is free to slide along its arbor, the guide-yoke G, which embraces the saw and confines the same near its rear and front edges, substantially as set forth.

2. In combination with a circular saw which is free to slide along its arbor, the guide-yokes G, so formed and arranged, as described, as to grasp the blade near its front and rear edges by studs I I, and to support the lumber both in front and rear of the saw, said guides being disconnected from the saw-center, and capable of adjustment, by the means and in the manner substantially as set forth.

3. The combination, with a series of circular saws, of which one or more are capable of sliding freely along their arbor, of the guide and shipping yokes G, which embrace the saw-blades near their edges, and the adjusting mechanism, consisting of pinions N and racks L, so as to be capable of being locked to any specific adjustment by means of the spring-catches Q and notched hand-wheels P.

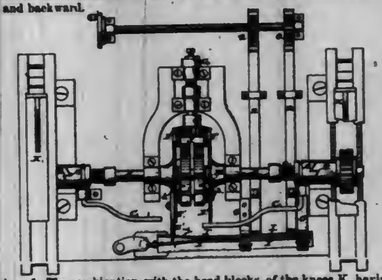
4. In combination with a circular saw which has free play along its arbor, an adjustable guide-yoke, G, which is disconnected from the saw-center, and which grasps the blade, near its front or cutting edge, by means of studs I I, substantially in the manner set forth.

201,199.



201,199. SAW-MILL HEAD-BLOCKS. Alfred S. Richards, Grand Rapids, Mich. Filed Nov. 1, 1877.

Brief.—The knees may be advanced or retracted by hand or an inclined grooved guide so arranged that said knees may be moved independent of the setting-shaft and of each other, and one knee may be set in advance of the other any required distance, and moved simultaneously. The log can be set forward with one movement of a lever, either forward or backward, or both forward and backward.

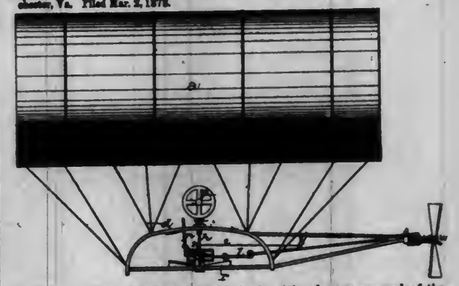


Claim.—1. The combination, with the head-blocks, of the knees K, having racks in their under sides, loose pinions B, and clutches A A, arranged on shaft S, whereby the knees are adapted to be moved by hand or automatically, substantially as specified.

2. The combination, with the head-blocks, of the knees K, having racks in their under sides, pinions B B, shaft S, having clutches A A, bevel-gears E E', pinion J, ratchets and pawls D D' F F', and levers H H', the several parts constructed and relatively arranged to operate substantially as herein shown and described.

3. The combination, with the set-work mechanism, of the lever H' and movable grooved incline I, substantially as and for the purpose herein shown and described.

201,200. FLYING-MACHINES. Charles F. Rischel, Corry, Pa., assignor to G. H. Ross, Winchester, Va. Filed Mar. 2, 1878.



Claim.—1. The combination of the wheel w, jointed upon one end of the frame c, with the wheel 4, rack 3, and a connecting-rod, 2, whereby the wheel w may be turned in any desired direction, substantially as described.

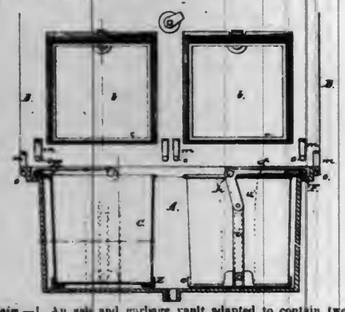
2. In a flying-machine, the combination of a balloon, a, an operating mechanism, substantially as described, a propeller-wheel, c, for raising and lowering the machine, and a jointed wheel, w, upon one end of the machine, for both steering it and moving it back and forth, substantially as set forth.

201,201. SPECIE-PURSE. James O. Randlett, Portland, Me. Filed Feb. 7, 1878.



Claim.—A specie-purse of flexible material, having a deep pocket for containing coin, and a shallow pocket for receiving the deep pocket when the purse is folded, and having a space between the two pockets for exhibiting coin, substantially as herein shown and described.

201,202. ASH AND GARBAGE VAULTS. Moses Samelson, New York, N. Y. Filed Aug. 11 1877.



Claim.—1. An ash and garbage vault adapted to contain two or more removable buckets, with suitable mechanism for elevating and lowering said buckets, and provided with a hinged cover having independent openings communicating with the respective buckets, surrounded with internal depending flanges, and provided with auxiliary hinged covers, substantially as described.

2. The combination of the false bottom E, bail F, and connecting mechanism with the vault A, provided with the open trunnion-bearings *p p*, whereby the bucket and elevating mechanism may be elevated entirely clear of the vault, substantially as described.

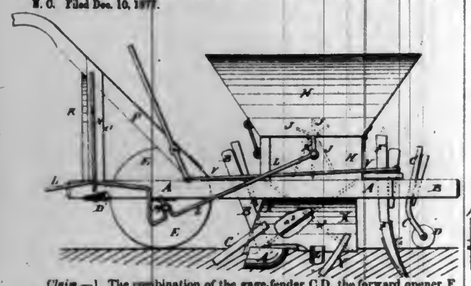
3. The removable cover B *b b*, having the curved arms *m*, provided with the lugs or stops *o*, forming an integral part thereof, arranged upon the under side of said covers, and operating through openings in the adjoining parts, substantially as and for the purpose specified.

201,203. BRUSH-BINDERS. William H. G. Savage, Kingston, Ontario, Canada. Filed Jan. 30, 1878.



Claim.—A brush-binder having straps *e* fastened in the plate *g* by passing the straps through slits cut in the head *f*, and bending them upward in the head, as set forth.

201,204. COTTON-PLANTER AND FERTILIZER-DISTRIBUTER. Joseph A. Shinn, Mount Olive, N. C. Filed Dec. 10, 1877.



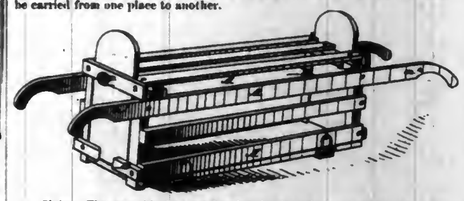
Claim.—1. The combination of the gage-fender C D, the forward opener F G, the forward blades or teeth Y, the coverer Z, the rear opener A', and the rear blades or teeth C', substantially as herein shown and described.

2. The combination, with hopper H, of two parallel end-pivoted strips, S, the short middle-pivoted strip T, and the strip U, pivoted at the forward end of the discharge-opening, and connected with hand mechanism, substantially as described.

3. The combination, with hopper H, of a longitudinally-divided wedge-shaped spout, X, having oppositely-inclined boards x^2 x^3, as and for the purpose specified.

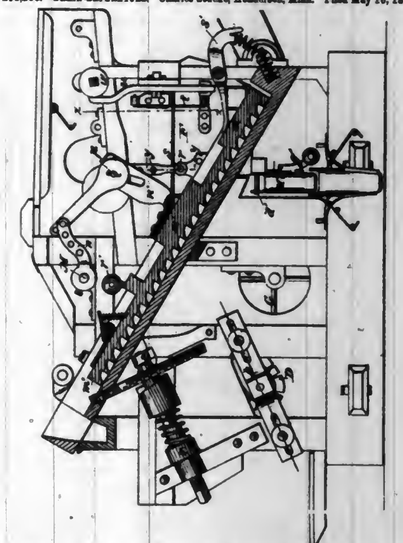
201,205. HOG-CATCHERS. Fredrick M. Smith, Vermillion, Dak. Filed Nov. 10, 1877.

Brief.—The device is placed over the animal when the bottom is off, and afterward the bottom is fastened on, when, by means of the handles, he may be carried from one place to another.



Claim.—The portable hog-catcher herein described, consisting of a cage or box having a detachable bottom, sliding end panels or doors, and transporting-handles, as and for the purpose set forth.

201,206. GRAIN-SEPARATORS. Charles Stacke, Henderson, Minn. Filed May 16, 1877.



Claim.—1. In a grain-separator, the combination of an elevator-apron, D, and a series of horizontal arms, *m*, attached to a rock-shaft, and arranged to act flatwise upon the grain with a quick whipping action, as described.

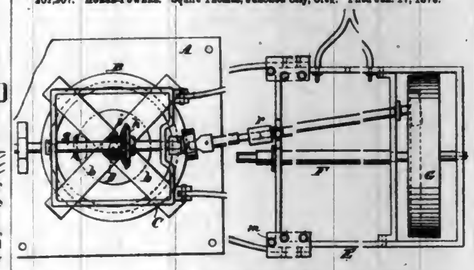
2. In a thrashing-machine having a thrashing-cylinder in one end and screens in the other, an outside inclined trough or spout, and the toothed bar *m'*, filling the same from side to side, and arranged to rise and fall and move endwise therein, as shown.

3. In a thrashing-machine, a returning spout or trough for the tailings, the toothed bar *m'* mounted therein, slotted arm *n'*, crank *p*, arms *p'*, and pivoted slops *o'*, urged upward by springs, said parts being arranged to operate in connection with and driven by the thrasher.

4. In combination with the pivoted reversible delivery-spout and the bar *c'*, having the holes therein, the locking device *g'*, provided with the retaining lip and the weighted end.

5. The shoe or shaker F, sustained by the eyes *r*, and studs or pins *s* and the rods *t*, and arranged to vibrate transversely, as described.

201,207. HORSE-POWERS. Squire Thomas, Junction City, Oreg. Filed Jan. 17, 1878.



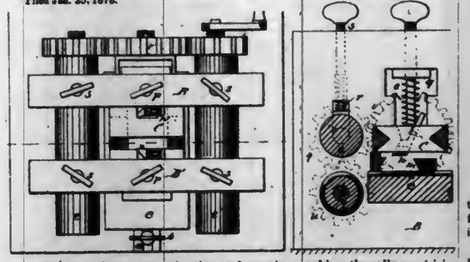
Claim.—1. The combination of the ground-wheel G, the frame E, the rotating frame C, and a train of gearing actuated by the ground-wheel G, substantially as herein shown and described.

2. The combination of the arms *k* with the frames C E, said arms being pivoted or jointed to the frame C and detachably secured to the frame E, as and for the purpose specified.

3. The combination of the auxiliary wheel *s* with the shaft F, for supporting the frame E, substantially as herein shown and described.

4. The combination, in a horse-power, of the movable frame C, having clips *a*, and the annular support B, secured to the bed A, for confining the moving parts of the power to a common center, as herein shown and described.

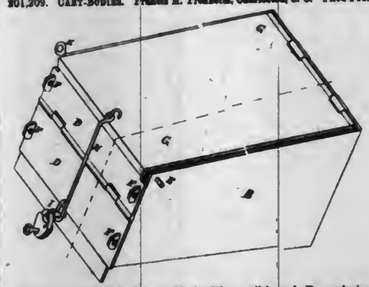
201,208. TRACE TRIMMING AND CREASING MACHINES. Thos. H. Thompson, Benson, Minn. Filed Jan. 25, 1878.



Claim.—1. In a trace trimming and creasing machine, the rollers *e e' i j*, journaled at one end in a fixed support, and journaled at the other end in a movable support, and the knife-holder C and table *c*, in combination, substantially as herein shown and described.

2. The knife-holder C, carrying knives *n*, the supports B B', having knives *l m*, and the table *c*, in combination, for trimming the edges and corners of the trace, substantially as herein shown and described.

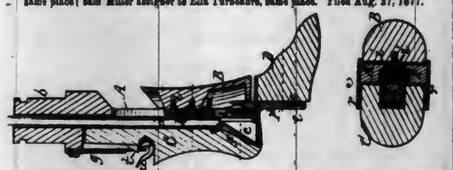
201,209. CART-BODIES. Francis H. Trenholm, Charleston, S. C. Filed Feb. 16, 1878.



Claim.—1. A cart-body provided with a tail-board, D, made in two parts, hinged to each other at their adjacent edges, hinged at its upper edge to the rear upper corners of the side-boards B, and having its ends slotted to receive the lugs F, by which it is secured to the said side-boards, substantially as herein shown and described.

2. A cart-body provided with a cover, G, hinged at its forward end to the upper edge of the front end-board C, and provided with a hinged rod, bar, or hasp, H, to pass down across the tail-board D, and be locked to an eye or staple, I, below the bottom of the said cart-body, substantially as herein shown and described.

201,210. SHOE-TREES. Robert Turnbaure, Rochester, N. Y., assignor to Oliver A. Miller, same place; said Miller assignor to Ella Turnbaure, same place. Filed Aug. 27, 1877.



Claim.—1. In a shoe-tree, as described, the center piece A, constructed with the slot *a* extending its whole length, and forming a bearing for the expanding-cam *c* on one side, and the front piece B on the other, as shown and described, and for the purpose specified.

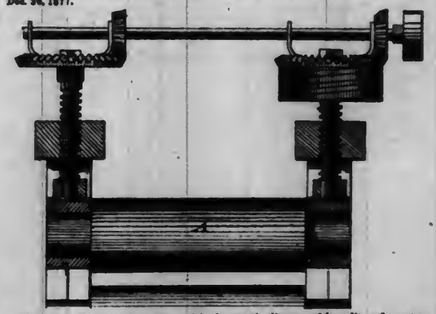
2. In a shoe-tree, the combination, with the center piece A, provided with the longitudinal slot *a*, of the front piece B, having a block, *b*, sliding up and down in the groove, said front piece being permanently attached, but capable of sliding sufficiently to bring the foot below the heel of the back piece, as shown and described, and for the purpose specified.

3. In a shoe-tree, the sliding front piece B, constructed with the flat extension B', provided with a slot, *s*, to receive the plate *p* of the foot, as shown and described, and for the purpose specified.

4. The combination, with the slotted extension B', provided with the catch *o*, of the plate *p*, secured on the back of the foot, and provided with the reverse-catch *q*, the whole arranged to operate in the manner and for the purpose specified.

5. The combination, with the reacting spring *y*, of the hook *t*, projecting from the back piece C, and the cam *u*, resting against the back of the spring, as shown and described, and for the purpose specified.

201,211. ROLLS FOR ROLLING PLATE METAL. Samuel T. Wellman, Cleveland, Ohio. Filed Dec. 26, 1877.

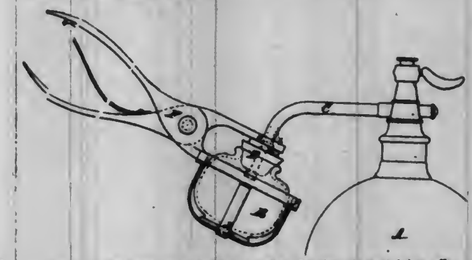


Claim.—1. The combination, with the vertically-movable roller of a set or train of rolls, of an indicating-cylinder secured to one of the screws employed for adjusting the roller, said cylinder provided with spirally-arranged figures, indicating different gages, substantially as set forth.

2. The combination, with the vertically-adjustable roll in a train or set of rolls, and one of its adjusting-screws, of the indicating-cylinder, adapted to rotate with said screw, and the fixed pointer, which is secured to the frame of the rolls, substantially as set forth.

3. The combination, with the upper roll, the vertically-adjusting screws at either end thereof, and the horizontal shaft, which connects with said screws by independent gearing at their respective upper extremities, of the indicating-cylinder, formed with or secured to one of the adjusting-screw gears and provided with a pointer, substantially as set forth.

201,212. APPARATUS FOR DRAWING EFFERVESCENT LIQUIDS. Frederick W. Wiesbrook, Brooklyn, N. Y. Filed Sept. 17, 1877.

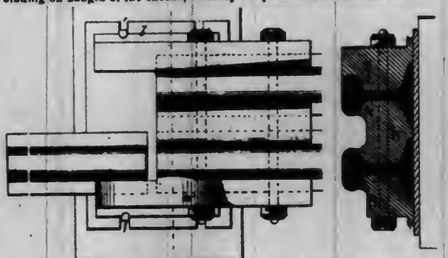


Claim.—1. The combination of a vessel or chamber, A, containing effervescent liquid, a receiving-vessel, E, and an elastic washer or stopper, D, attached air-tight together by means of tongs F, in the manner substantially as described.

2. The tongs F, supporting a receiving-vessel, E, in a suitable frame or basket, J, in combination with an elastic stopper, D, attached to the end of the discharge-pipe C, arranged and operating substantially in the manner and for the purpose set forth.

201,213. SWITCH HEAD-CHAIRS. George S. Winslow, Cedar Rapids, Iowa. Filed Jan. 24, 1878.

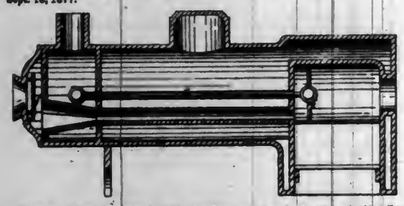
Brief.—A base-plate, side bearing-chocks independent of each other and of the base-plate, and intermediate spacing-block and rails are rigidly secured together by horizontal bolts and spikes through recesses in the base plate binding on flanges of the chocks, whereby the parts are interchangeable.



Claim.—1. In a railway switch-chair whose side bearings are adapted to support, respectively, the tread and flange of a wheel in passing over the main and side track rails, the combination, with the chocks made as independent castings, having chilled treads, the rails, and the intermediate block, of the bolt or bolts which pass in horizontal transverse line through and secure the same together, substantially as set forth.

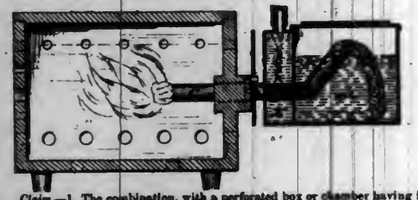
2. In a switch-chair, the combination, with the bed-plate having recesses in its longitudinal sides, of the side castings provided with base-flanges, whereby the two may be readily connected by spikes or similar engaging mechanism, substantially as set forth.

201,214. LOCOMOTIVE AND FIRE-BOX BOILERS. Joseph L. Winslow, Portland, Me. Filed Sept. 18, 1877.



Claim.—In combination with the flues, as set forth, the air-distributing devices shown in Figs. 3, 4, and 5, made, as described, with tubes to fit into the flues, and removable therefrom, and located just in front of the mouths of the flues, as set forth.

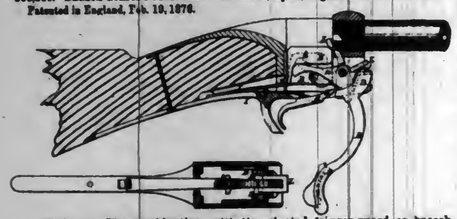
201,215. FLAT-IRON HEATERS. John A. J. Ashew, Colerain, N. C. Filed Feb. 2, 1878.



Claim.—1. The combination, with a perforated box or chamber having its top adapted to receive a tailor's goose or sad-iron, of a removably-attached lamp, having wick-tubes leading into said box or chamber through an intermediate water-chamber, substantially as and for the purpose set forth.

2. The combination, with a lamp having horizontally-projecting wick-tubes and a shield surrounding the same, so as to leave an air-space between it and the lamp, of a box or chamber having one of its sides pierced to receive said wick-tubes, and provided with suitable pins to project into holes in said shield, substantially as and for the purpose set forth.

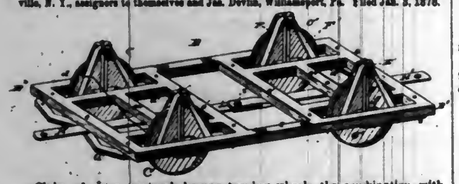
201,216. BREECH-LOADING FIRE-ARMS. Jas. Aston, Hythe, England. Filed Nov. 26, 1877. Patented in England, Feb. 19, 1876.



Claim.—1. The combination, with the pivoted trigger-guard or breech-block operator, of the shell-extractor L and spring *d*, substantially as and for the purpose set forth.

2. The combination of the breech-block B, reciprocating in a right line, and provided with lugs *a*, fitting in suitable guides in the breech-block passage, the swinging forked trigger-guard D, and the pivoted hammer C, swinging between the forwardly-separated side walls of said breech-block, substantially as described.

201,217. CAR-TRUCKS. George S. Beagle, Williamsport, Pa., and Lorenzo D. Hurd, Wellsville, N. Y., assignors to themselves and Jas. Devlin, Williamsport, Pa. Filed Jan. 3, 1878.



Claim.—1. In a car-truck having turning wheels, the combination, with the truck-frame, provided with a pair of longitudinal bars, *a a'*, for supporting the bearing-plates of each axle, of the wheels, each mounted upon a short independent axle between the said longitudinal bars, and segmental plates at each end of the axles resting upon the bearing-plates on the longitudinal bars, whereby the wheels are turned from a central point directly over the truck, substantially as and for the purpose set forth.

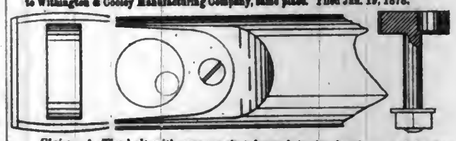
2. In a car truck having turning wheels, the combination of the wheels C and the short independent axles D, upon which the wheels are mounted, with the segmental bearing-plates at each end of the axles, and the frame or standard connecting the bearing-plates of each axle, with a pivotal bearing directly above the center of the wheel, substantially as and for the purpose set forth.

3. The combination, with the segmental bearing-plates *f* and the wheels of the car, of the forked standards E, bearing-plates E', and braces F F', substantially as described and shown.

4. The combination, with the wheels C C' and segmental bearing-plates *f'*, of the forked arms G, connecting-bars G', and center bars H H', substantially as described and shown.

5. The truck-frame B, constructed in two parts, B^1 B^2, hinged together by rigid links *c*, arranged so that the two parts of the frame can move independently in a vertical direction, but not laterally, substantially as described.

201,218. CRAW-SOCKETS FOR SCYTHE-FASTENINGS. C. T. Boobe, Jackson, Mich., assignor to Withington & Cooley Manufacturing Company, same place. Filed Jan. 19, 1878.

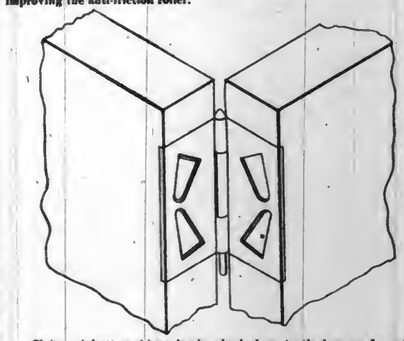


Claim.—1. The bolt with craw-socket formed in its head, as and for the purpose shown and described.

2. The combination of bolt and socket with heel-plate, as shown and described.

201,219. HINGES. Thomas T. Bishop, Atlanta, Ga. Filed Feb. 21, 1878.

Brief.—The shell or case is formed with four short inwardly-projecting studs on the inside of each of the side carrying-plates, and the detachable axle has in each end corresponding holes or sockets, the construction permitting the ready removal of the axle to change the wearing-surface and improving the anti-friction roller.



Claim.—A butt or hinge having barbed or toothed spurs formed upon each leaf, struck up or cut from the body of the hinge-leaf to form the fastenings, substantially as herein set forth.

201,220. DEVICES FOR HANDLING HOGSHEADS OF TOBACCO. Willis Black, Cincinnati, Ohio, assignor to John A. Crawford, Covington, Ky. Filed Feb. 6, 1878.

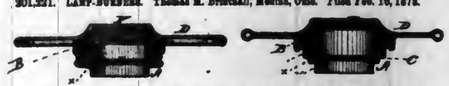
Brief.—A net and tackle hold the tobacco into the hogshead, and serve to upset it and permit the hogshead to be raised off from the tobacco to inspect it.



Claim.—1. The several devices herein described and shown, jointly, for manipulating hogsheads of tobacco.

2. The mode of inverting a hogshead of tobacco, removing the hogshead from the tobacco, replacing it upon the tobacco, and reinverting it, herein described.

201,221. LAMP-BURNERS. Thomas M. Bristall, Medina, Ohio. Filed Feb. 16, 1878.



Claim.—1. In a lamp, a non-conductor formed of compressed paper or paper-pulp, and interposed between the burner and reservoir, substantially as herein set forth.

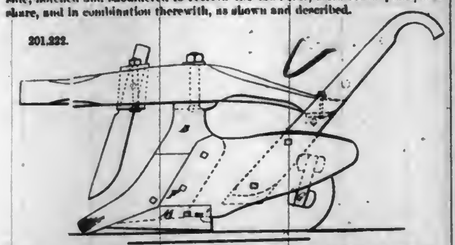
2. The ferrule A, having annular interior shoulders *x* and *z*, in combination with the non-conductor B and the loose flat and slotted plate C interposed between the non-conductor and shoulder *x*, and capable of freely rotating on its seat, substantially as herein set forth.

3. The deflector D, formed as a part of the screw-collar, in combination with and connected to the non-conductor B, and in combination with the ferrule A, also connected to the non-conductor, all substantially as set forth.

201,222. PLOWS. Patrick H. Burns and William G. McElhany, Indiana, Pa., assignors to said Burns. Filed June 11, 1877.

Claim.—The standard B, made convex on one and concave on the other side, notched and shouldered to receive the land-side, mold-board point, and share, and in combination therewith, as shown and described.

201,222.



201,223. BURNING FUEL IN METAL-WORKING FURNACES. Samuel Cuddick, Pembroke, Me. Filed Oct. 23, 1877.



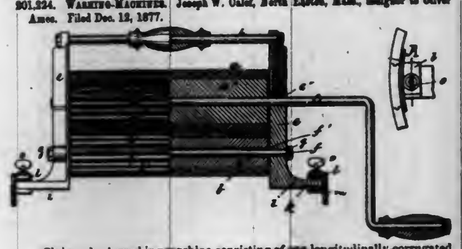
Claim.—1. The method of burning fuel and consuming the smoke and gases resulting therefrom in a metallurgic furnace, consisting in burning the partly-consumed coals discharged from the main grate in cleansing in a supplementary fire-box, admitting the blast into the said supplementary fire-box, and forcing by the blast the hot gases of combustion and surplus heated air from such supplementary fire-box into the main fire-box above the grate in the same, substantially as described.

2. In a metal-working furnace, the combination, with the main fire-box, of the supplementary fire-box placed directly below the same, and adapted to receive the coals and ashes therefrom, and pipes connecting the said supplementary fire-box with the main fire-box above the grate, whereby the products of combustion and surplus heated air from the supplementary fire-box are discharged into the main fire-box above its grate, substantially as and for the purposes set forth.

3. In a metal-working furnace, the combination, with the main fire-box, of the supplementary fire-box situated directly below the same, a horizontal dividing-wall, having central opening, and a damper for closing such opening, substantially as described.

4. The combination, with the fire-box C', of the supplementary fire-box D', situated directly below the same, and receiving the coal and ashes therefrom, the blast-pipe *f*, leading into the supplementary fire-box, and the pipes F F', connecting the two fire-boxes, substantially as described and shown.

201,224. WARMING-MACHINES. Joseph W. Calef, North Easton, Mass., assignor to Oliver Ames. Filed Dec. 12, 1877.

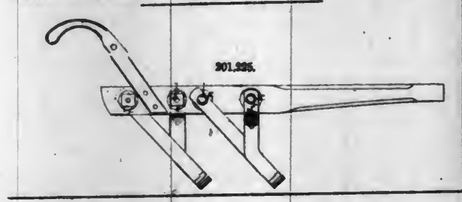


Claim.—1. A washing-machine consisting of one longitudinally-corrugated rubber roller, *a a' a'*, firmly secured to its shaft *c*, in combination with the longitudinally-corrugated rubber roller *b b' b'*, provided with a central hollow metallic tube or sleeve, *f'*, running loosely on its stationary shaft *f*, substantially as and for the purpose set forth and described.

2. In combination with the upright frames *d e* and foot-pieces *i i*, having notches *k k*, the holding-pieces *l l*, adapted to be arranged with the jaws opening in opposite directions, to permit of the removal or insertion of the frame therein by a half-turn of the frame, and provided with projections *n n* and the thumb-screws *o o*, to prevent lateral, vertical, or horizontal displacement, substantially as and for the purposes set forth.

3. The combination of frame *e*, having yielding bearings *e'*, with shaft *c*, to which is firmly secured roller *a a' a'* and roller *b b' b'*, sleeve *f'*, and shaft, *f*, substantially as and for the purpose set forth.

201,225.

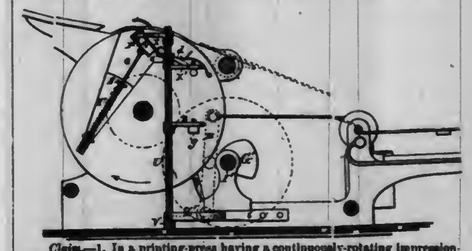


201,225. PLOWS. Edmund J. Camp, Alpharetta, Ga. Filed Feb. 23, 1878.

Brief.—One arm bent at a different angle from the other, instead of a brace, also bent laterally to attach to the same side of the beam, and allow change to form a double-furrow plow or a subsoiler.

Claim.—The plow-standard formed of a bar doubled at or near the middle of its length, the rear arm being straight or parallel to a vertical plane, and the front arm having two bends or angles, as shown and described, whereby the standards are adapted to fasten on the same side of the beam, and to be changed in position to adapt the plow for use, for the purpose specified.

201,226. PRINTING-PRESSES. Andrew Campbell, Brooklyn, N. Y. Filed July 27, 1877. Patented in England, Jan. 18, 1872.



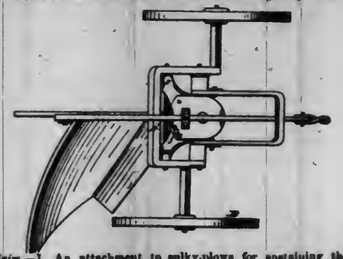
Claim.—1. In a printing-press having a continuously-rotating impression-cylinder, the combination, with the cylinder, of a fly arranged substantially as described, so that the sheet will be stripped by the fingers of the fly from the cylinder, after the impression, head first, and with the printed side up, substantially as and for the purposes described.

2. The combination of the sheet-lifters with the fly and impression-cylinder, substantially as hereinbefore set forth.

3. The combination, with the griper-shaft and cam, lifting-finger shaft, and crank-arm *d*, of the vertical rock-shaft U, bolts *y y' g*, spring *i*, and double incline F, substantially as and for the purposes described.

201,227. SULKY-PLOWS. Thomas B. Chamberlin, Clarinda, Iowa. Filed July 3, 1877.

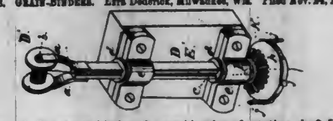
Brief.—Plow-beam secured to a plate, which turns upon another plate hinged to the frame. The plow-beam and its plate may oscillate freely in a horizontal plane upon the other plate, or its movement may be limited or made rigid. One plate is made convex, to rock upon the other, and allow either wheel to rise over small obstructions without disturbing the plow in its furrow.



Claim.—1. An attachment to sulky-plows for sustaining the plow in proper working position, consisting of two bearing-plates pivoted together, one being secured to the axle or frame, and the other to the plow-beam, substantially as set forth, said plates having the devices, substantially as described, to lock the plow in position or allow its limited or unlimited lateral oscillation.

2. An attachment to wheel-plows consisting of two bearing-plates pivoted together, substantially as described, one or both plates being beveled or made convex, so that the carriage-frame may have a rocking motion, and may oscillate without affecting the position of the plow, substantially as set forth.

201,228. GRAIN-BINDERS. Ezra Dederick, Milwaukee, Wis. Filed Nov. 24, 1877.



Claim.—1. In a grain-binder, the combination of rotating shaft E', having longitudinal groove *e*, journals *d d*, and opening P', with devices for supplying the cord which is to be used for binding the grain, substantially as set forth.

2. The disk A, provided with springs *j*, in combination with the shaft E', substantially as shown and described.

3. The tension-springs *s*, as combined with the shaft E' and the spool D', substantially as shown and described.

201,229. MACHINES FOR PRESSING SUGAR. Albert De La Montagnie, New York, N. Y. Filed Oct. 22, 1877.

Brief.—Sugar to be pressed into cubes is fed by a revolving meter-cylinder into a sliding frame, from which it is deposited in the dies. These dies, with their plungers, after a quarter-revolution, are forced, by the presser-plate, down upon the plungers, compressing the sugar into compact blocks. The presser-plate is operated by a revolving shaft, crank, and rod. A plate moving between the presser-plate and dies prevents the removal of sugar by suction when the presser-plate is withdrawn. At the end of a half-revolution the

dies are forced by a skeleton-frame and lever clear up on the plungers, by which the sugar blocks are removed, and by which the opposite upper set of dies are raised from their plungers and opened to receive another charge of sugar. By means of suitable cams, levers, and notched wheels, the operation of the parts is mostly automatic.

Claim.—1. The combination, in a sugar-press, with the sets of plungers a fixed at right angles on the intermittingly-rotating shaft B, with sets of dies a' fitted on the plungers, the sets of dies on opposite sides of said shaft being coupled together, of the horizontally-reciprocating presser D and the vertically-reciprocating frame f^3, carried by levers F, all constructed, arranged, and operating substantially as and for the purpose specified.

2. In combination, in a sugar-press, the sets of plungers and their dies A, as described, on the shaft B, the ratchet G, dog g, lever g^2, and crank-rod g^3, the pawl g^4, guide g^5, and eccentric-rod g^6, together with the ratchet H, lever h, and pin h', all constructed, arranged, and operating as described, and for the purpose specified.

3. The combination, in a sugar-press, of the plungers and their dies A on the intermittingly-rotating shaft B, with the presser D on block d, working in ways d^2, rod d^3, and crank e on shaft B, together with plate d^4, lever d^5, slotted rod d^6, and pin d^{10}, all constructed, arranged, and operating as and for the purpose specified.

4. The combination, in a sugar-press, with the dies and plungers A on the intermittingly-rotating shaft B, of the frame f^3, levers F, and cams e^2 on the shaft E, all arranged and operating as and for the purpose specified.

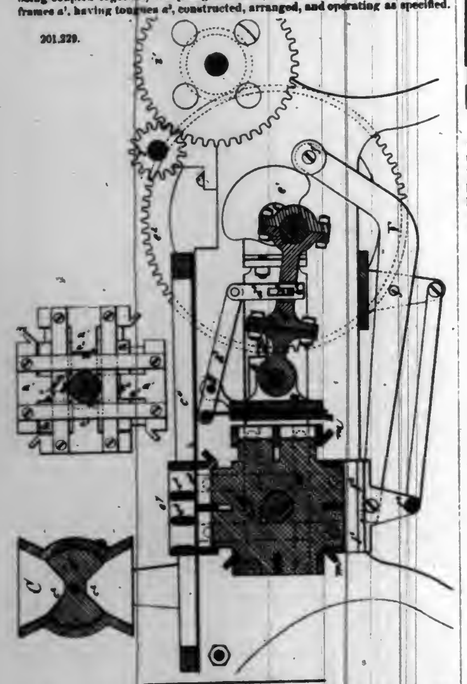
5. The combination, in a sugar-press, with the plungers and dies A on the shaft B, actuated to intermittingly rotate by the ratchet G and dog g in vibrating lever g^2, controlled by guides g^5, traversed by pawl g^4, of the releasing-lever h, actuated by pin h', the ratchet H, and the hinged loading-tray e^4, having lateral arm e^5, as described, and for the purpose specified.

6. In combination, in a sugar-press, with the die-frames a', the same being fitted on plungers a on rotating shaft B, and the opposite sets thereof being coupled together, so that the forcing of the dies upon the plungers of one set will withdraw the dies of the opposite set from the plungers, the lips m, constructed, arranged, and operating as and for the purpose specified.

7. In combination with the dies and plungers A on rotating shaft B, the hopper C, with its contained revolving cylinder c^1, having the diametrically-opposite recesses c^2, the tray c^4, with openings c^5, and the sliding frame c^7, with its partitions c^8, all constructed, arranged, and operating as and for the purpose specified.

8. In combination with the dies and plungers A, the dies being fitted on the plungers, mounted on rotating shaft B, and the opposite sets of plungers being coupled together, the plunger-block a, having channels a^2, and the die-frames a', having tongues a^2, constructed, arranged, and operating as specified.

201,229.

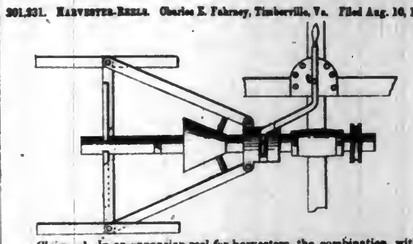


201,230. IMPLEMENTS FOR HOLDING HOT COINS. John De Yeugh, New York, N. Y. Filed Oct. 26, 1877.



Claim.—The coin-holder herein described, consisting of the handle A, disk C, elongated central point B, and the short supplementary points D D, substantially as described.

201,231. HARVESTER-REELS. Charles E. Fahrney, Timberville, Va. Filed Aug. 10, 1877.

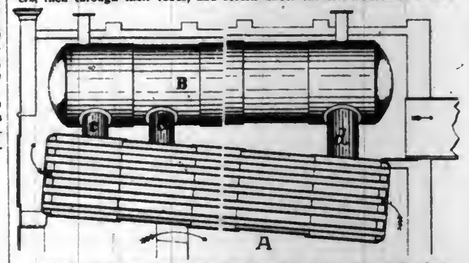


Claim.—1. In an expansion-reel for harvesters, the combination, with the reel-shaft, expansible reel-arms, having reel-bars secured thereto, of reel-braces having their inner ends pivoted to a sliding collar, and mechanism, substantially as described, for connecting the inner ends of the braces to the reel-shaft or cone, secured thereto between the sliding collar and reel-arms, for expanding the inner ends of said braces, substantially as set forth.

2. The combination, with the reel-shaft, arms, and bars, of a sliding collar, braces pivoted thereto, a supporting-cone on the reel-shaft, and connections between the cone and braces, substantially as set forth.

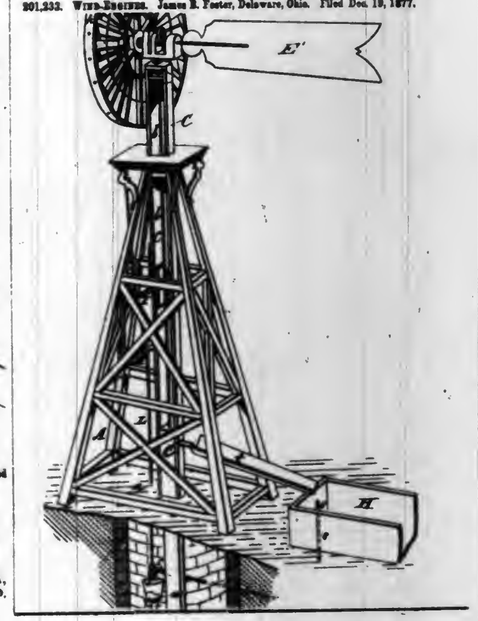
201,232. STEAM-BOILERS. John T. Fanning, Manchester, N. H. Filed Aug. 1, 1877.

Brief.—A double-inclined cylindrical fire-tube boiler in placed under a horizontal steam cylindrical drum the entire length of the boiler, and connected by tubes of different lengths. A horizontal diaphragm divides the flame-chamber, by which the flame is first made to pass under the lower boilers, then through their tubes, and return under the steam-chamber to the



Claim.—In a steam-generating apparatus, the combination of the single main boiler or separating-chamber B with two inclined tubular boilers, A A, mounted near together, and extending the whole length of the main boiler, with liberal connections c d at the ends, adapted to serve with a horizontal partition, M', between, and with a grate at a lower level, as and for the purposes herein specified.

201,233. WIRE-REELERS. James R. Foster, Delaware, Ohio. Filed Dec. 19, 1877.

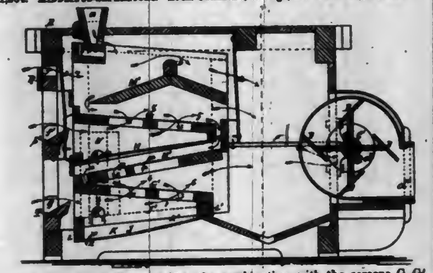


Claim.—1. The combination of the pitman b, pitman-box C, having stationary friction-block v', brake-shoe v, and operating-lever I, having cam or eccentric w, substantially as and for the purpose herein shown and described.

2. The combination of spring K, lever I, cord L, and bucket N, having perforation x, substantially as and for the purpose herein shown and described.

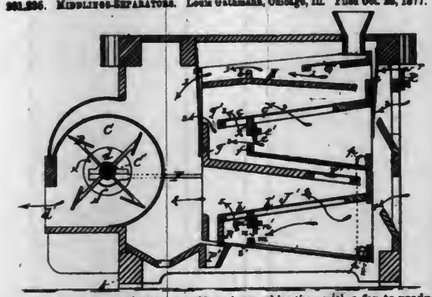
3. In combination with the tank H, having induct-pipe t and overflow-pipe s s', the perforated bucket N, cord L, brake mechanism I w v', spring K, and pitman b, with its operating mechanism, substantially as and for the purpose herein shown and described.

201,234. MIDDLINGS-SEPARATORS. Louis Gathmann, Chicago, Ill. Filed Aug. 9, 1877.



Claim.—In a middlings-purifier, the combination, with the screens G G' and carrier-board H, of the screen H', interposed between the carrier-board and screen G', and delivering upon the latter, substantially as and for the purpose specified.

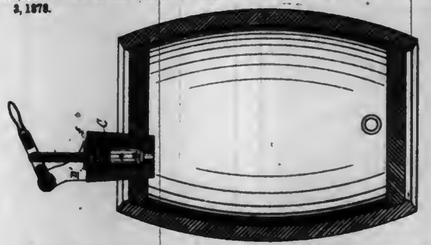
201,235. MIDDLINGS-SEPARATORS. Louis Gathmann, Chicago, Ill. Filed Oct. 25, 1877.



Claim.—1. In a middlings-purifier, the combination, with a fan to produce an air-current and a series of valves to regulate said air-current, of the screen J, covered with bolting-cloth c and c' of different degrees of fineness, the opening e under said screen, and the opening g' at the discharging end of said screen, substantially as and for the purpose specified.

2. In a middlings-purifier, the combination, with a fan to produce an air-current and a series of valves to regulate said air-current, of the bottom board M, the screen J', covered with bolting-cloth h and h', of different degrees of fineness, and the opening n between the said screen and the bottom board, substantially as and for the purpose specified.

201,236. APPARATUS FOR PRESERVING BEER. Louis Gathmann, Chicago, Ill. Filed Jan. 3, 1878.



Claim.—The combination, with an air-exhaust pump, of the removable stopper C, having the opening or bore c, arranged to form the cylinder of the pump, and provided with the check-valve D, located within the bore thereof, substantially as specified.

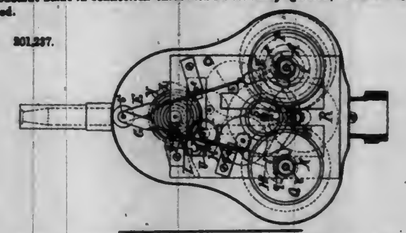
201,237. AUTOMATIC DEVICES FOR RAISING AND LOWERING ILLUMINATING-FLAMES. Geo. F. Gaston, Reading, Pa. Filed Aug. 20, 1877.

Claim.—1. The separate adjustable cams V W, with their respective arms V' W' traversed over separate arcs, in combination with a clock mechanism, and with means for actuating a valve by the latter to let on and suppress the flow of illuminating material to the burner C, as herein specified.

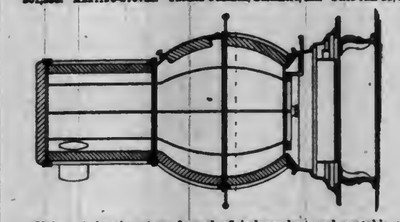
2. The valve B, formed with collars or stops b' b^2, in combination with two independently-operated levers, E G, and their controlling cams V W, arranged to let on and cut off the supply of illuminating material to a burner, C, as and for the purposes herein specified.

3. A clock mechanism in combination with means for admitting a strong flow of gas or oil to the burner during a predetermined period, and suppressing it for another period, in combination with provisions for maintaining a constant flame in connection therewith for its ready ignition, as herein specified.

201,237.

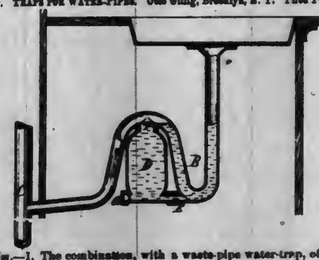


201,238. HEATING-STOVES. Thomas Gemmell, Baltimore, Md. Filed Jan. 23, 1878.



Claim.—A heating-stove formed of independent and portable sections, each of which is constructed of blocks of terra-cotta or similar substance, embraced by metallic ribs, and upper and lower metallic rings secured to said ribs, substantially as specified.

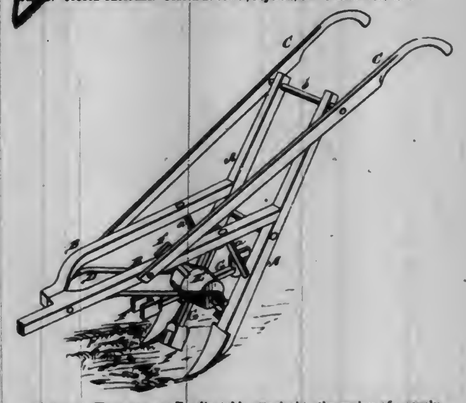
201,239. TRAPS FOR WATER-PIPES. Otto Gillig, Brooklyn, N. Y. Filed Feb. 25, 1878.



Claim.—1. The combination, with a waste-pipe water-trap, of a reservoir, connected with said trap both at the bottom and top or discharge end thereof, substantially as and for the purpose set forth.

2. The combination, with the trap B, of the reservoir D, connected to the bottom of said trap by a pipe, E, and to the top of said trap by a neck or passage-way, F, substantially as described.

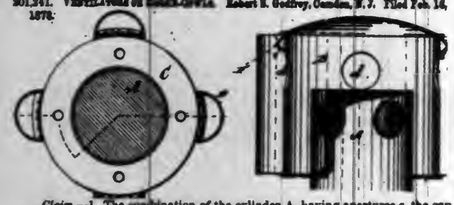
201,240. COTTON-CHOPPERS. Francis E. Glover, Reynolds, Ga. Filed Jan. 19, 1878.



Claim.—1. The open cups F, adjustably attached to the spokes of a revolving wheel, mounted in spring-arms and arranged between two plows, for the purposes set forth.

2. The combination of the plow-frame A B C, the double or U-shaped spring D, wheel E G, and the adjustable open cups F, substantially as and for the purpose set forth.

201,341. VENTILATORS OR SMOKE-JUVES. Robert S. Godfrey, Camden, N. J. Filed Feb. 14, 1878.



Claim.—1. The combination of the cylinder A, having apertures *a*, the cap B, having apertures *d*, and the exterior casings D, open at both ends, substantially as and for the purpose herein set forth.

2. The combination of the cap B, having apertures *d*, the exterior casings D, and the deflectors F, all substantially as and for the purpose set forth.

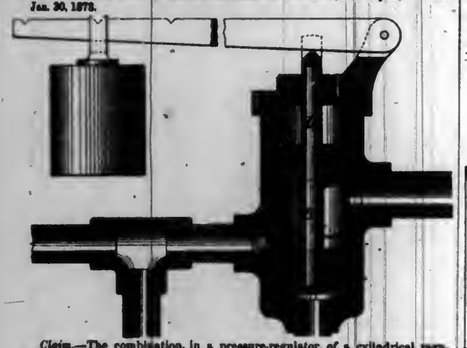
201,342. SPRINKLING-PIPES. Frederick Grinnell, Providence, R. I. Filed Nov. 6, 1877.



Claim.—1. A sprinkling-tube having the holes bushed with non-corrodible material, substantially as herein specified.

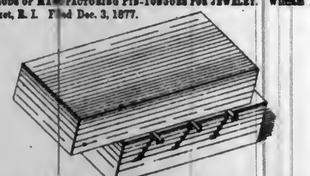
2. The non-corrodible washer B, in combination with the perforated pipe A, having a hole, *a a'*, of different diameters, and with means, A', for firmly confining the washer, as herein specified.

201,343. DIFFERENTIAL-PRESSURE REGULATORS. Saml. A. Head, Philadelphia, Pa. Filed Jan. 30, 1878.



Claim.—The combination, in a pressure-regulator, of a cylindrical regulating-chamber, two balance-pistons fitted to and movable coincidently therein, a supply and a delivery pipe communicating with the regulating-chamber between the balance-pistons, a pipe or channel connecting the delivery-pipe with the regulating-chamber at one of the ends thereof, and a weight or spring by which pressure is applied to the balance-pistons in reverse direction to that exerted by the fluid in the connecting pipe or channel, constructed and arranged as shown, and for the purpose set forth.

201,344. METHODS OF MANUFACTURING PIN-TONGUES FOR JEWELRY. William H. Hathaway, Pawtucket, R. I. Filed Dec. 3, 1877.



Claim.—The method of manufacturing pin-tongues for jewelry, substantially as hereinbefore set forth, the same consisting, essentially, in soldering the heads to the tongues before hardening the latter, and then subjecting said tongues to a rolling action between suitable plates or dies, whereby they are hardened and stiffened, substantially as set forth.

201,345. PACKAGES FOR PLUG-TOBACCO. Edwin R. Mears, Jersey City, N. J. Filed Dec. 24, 1877.



Claim.—A package of plug-tobacco, consisting of the plugs A, pasteboard wrapper B, and wood ends, the pasteboard being lapped and secured, substantially as herein specified.

201,346. SOFA-BEDSTEADS. August Hentzel, Cincinnati, Ohio. Filed Jan. 15, 1878.



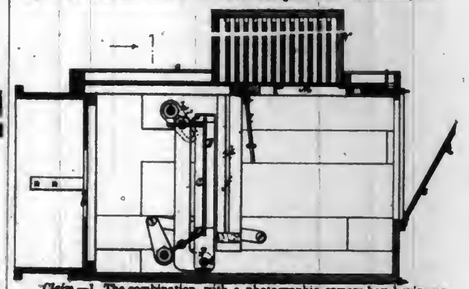
Claim.—In combination with the sinking frame of an extension bed-lounge, the two pairs of levers, L L' M M', and the two eccentrics, J K, upon a common rod, I, journaled longitudinally in the stationary frame, the whole being arranged and operating substantially as set forth.

201,347. BOOT AND SHOE HEELS. Wm. Hill, Newark, N. J. Filed Sept. 7, 1877.



Claim.—A boot or shoe provided with a revolving heel, attached by means of a single screw passing down through the sole into the heel, its head being sunken in the sole, whereby the heel is held firmly in place from frictional contact of the sunken head with the sole, and permits the heel to be revolved, when desirable, to change the worn surface, all substantially as set forth.

201,348. PHOTOGRAPHIC CAMERAS. A. L. Hodson, Hingham, Mass. Filed Jan. 12, 1878.



Claim.—1. The combination, with a photographic camera-box having on its top the perforated guide-bars *c*, of the drop-box N, provided with grooves for holding the sensitive plates, and having bolts *g*, arranged to take into the perforations of the guide-bars, and the slide M, substantially as and for the purpose set forth.

2. The combination, with a camera-box and with its ground-glass holder, of three or more points projecting from an adjustable frame, which serves to bring said points in contact with the ground glass after the same has been adjusted in the required position, and an adjustable frame for the reception of the sensitive plates, all constructed and adapted to operate substantially as and for the purpose set forth.

201,349. INKSTANDS. Walcott A. Hull, Meriden, Conn. Filed Feb. 20, 1878.



Claim.—In combination with an ink-reservoir hung upon pivots, a self-adjusting cover for closing the mouth when the reservoir is turned to bring the mouth against the same, as herein set forth.

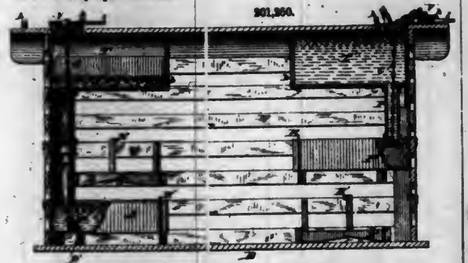
201,350. TANKS FOR STOCK-CARS. Samuel Johnson, Philadelphia, Pa. Filed Feb. 12, 1878.

Claim.—1. The combination, in a car for the transportation of animals, of the tank T, located as described, pipe P, trough A, valve V, and plug F, connected by chain C, all constructed, arranged, and operating substantially as described.

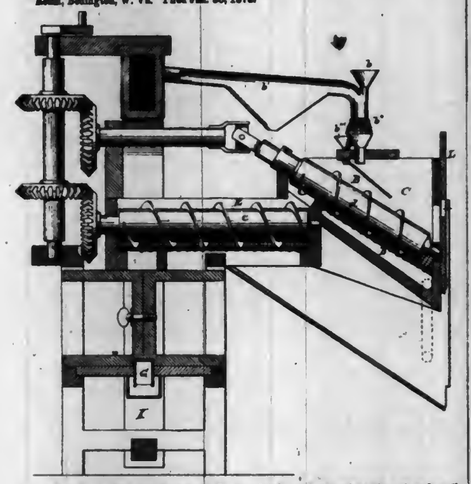
2. The combination of the hinged valve V, lever *l*, hooks *h h'*, chain C, plug F, tank T, and pipe P, in the manner and for the purpose specified.

3. The combination, with the tank T and trough A, of the pipes P P' and brackets D E D' E', all constructed, arranged, and operating in the manner and for the purpose set forth.

201,350.



201,351. GRAIN CLEANERS AND SCOURERS. David H. Karns, Williamsport, Md., and John Keas, Bolington, W. Va. Filed Jan. 30, 1878.



Claim.—1. The compartment B, provided with the cleansing-chamber C, having an inclined wire-cloth bottom, D, adjustable sluice-gate L, and inclined conveyer *d*, in combination with its operating mechanism, substantially as and for the purpose set forth.

2. The suction-fan I, in combination with the pipe *b'*, having depression *b''''*, and hopper *b*, provided with the air-openings *b''*, the several parts being relatively arranged and operated substantially as and for the purpose set forth.

201,352. ORNAMENTING WOOD. William King, Philadelphia, Pa. Filed Oct. 1, 1877.

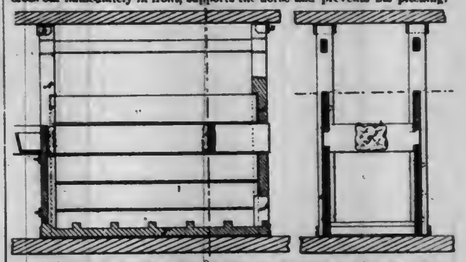


Claim.—1. The mode herein described of ornamenting wood—that is to say, by first indenting letters, figures, &c., in the wood at right angles, or thereabout, to the direction of the grain, then sizing and gilding or painting the sunken letters or ornaments, and finally varnishing the same, all as set forth.

2. The mode herein described of making a number of precisely similar wooden signs—that is to say, first, making an original sign by carving in the same the desired sunken letters and ornaments; second, making a plaster cast therefrom; third, casting a die from the plaster pattern; and, fourth, using the die for indenting a number of boards preparatory to finishing the signs, all as described.

201,353. HORSE-STALLS FOR VESSELS. Henry P. Kirkham, New York, N. Y. Filed Nov. 3, 1877.

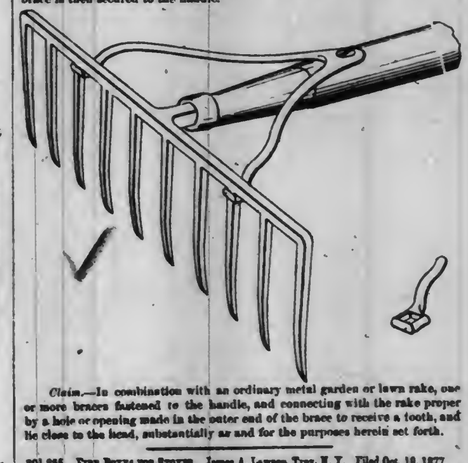
Brief.—The chock claimed is a sliding and adjustable frame, which, by a cushioned cross-bar in the rear of the horse, jointly with another cushioned cross-bar immediately in front, supports the horse and prevents his pitching.



Claim.—In a stall for the transportation of horses on shipboard, a horizontally-adjustable chock with a series of holes in the sliding bars thereof, in combination with a bolt, substantially as and for the purpose described.

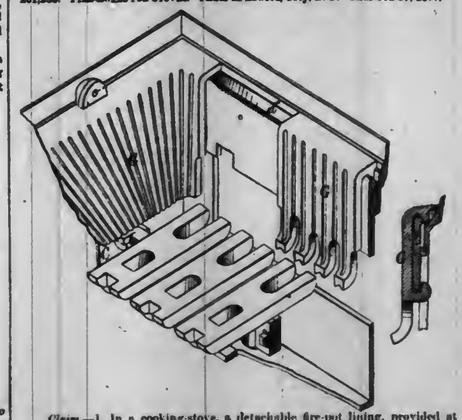
201,354. RAKES. William H. Kreisinger, Fort Madison, Iowa. Filed Feb. 9, 1878.

Brief.—The rake-teeth are first placed in the eyes of the brace, and the brace is then secured to the handle.



Claim.—In combination with an ordinary metal garden or lawn rake, one or more braces fastened to the handle, and connecting with the rake proper by a hole or opening made in the outer end of the brace to receive a tooth, and lie close to the head, substantially as and for the purposes herein set forth.

201,355. FIRE-BOXES FOR STOVES. James A. Lawson, Troy, N. Y. Filed Oct. 10, 1877.



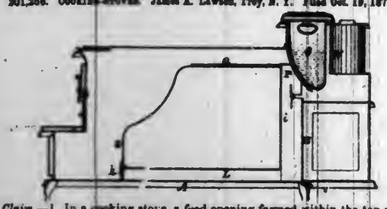
Claim.—1. In a cooking-stove, a detachable fire-pot lining, provided at its upper end with an outward and downward projecting lip, and at or near its lower end with an outward and an upward projecting lug, by means of which said lining is secured to or upon its supporting-frame, substantially as and for the purpose specified.

2. In a cooking-stove, a frame for supporting the lining of the fire-box, constructed in interlocking pendent sections, and detachable through the boiler-hole without interference with or derangement of other portions of the stove, substantially as and for the purpose shown.

3. As an improvement in fire-boxes for cooking-stoves, the detachable

frame-plates D, having at their upper edges the V-shaped grooves *d'''*, and at their lower edges the notches *d''''*, in combination with the lining-plates G, each provided at its upper edge with an overhanging lip, *g*, and near its lower edge with an outward and upward extending lug, *g'*, substantially as and for the purpose set forth.

201,256. COOKING-STOVES. James A. Lawson, Troy, N. Y. Filed Oct. 19, 1877.



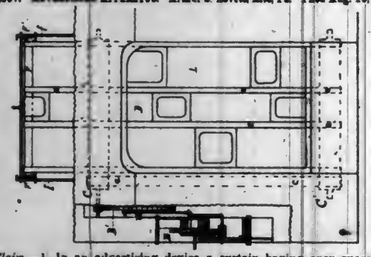
Claim.—1. In a cooking-stove, a feed-opening formed within the top plate and inclosed by means of a pivoted edgewise-swinging door, which is contained wholly within the ordinary lines of said plate, and when opened is upon a line horizontally with the same, substantially as and for the purpose specified.

2. In a cooking-stove, a supplemental hearth-slide, which rests upon and incloses the ash-pit and entire upper side of the ordinary hearth, substantially as and for the purpose shown.

3. In a cooking-stove provided with an ash-chamber in front of its bottom oven-flues, a flue step or plate which incloses the entire front ends of said flues within said ash-chamber, and is capable of being drawn longitudinally outward through the side plate, so as to entirely uncover said flue ends, substantially as and for the purpose set forth.

4. In combination with the reservoir O and with the flues N', R, and S, the guard-plate P, which extends downward and rearward in a curve, and is constructed and relatively arranged in the manner and for the purpose set forth.

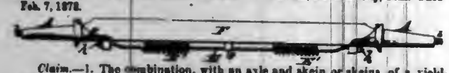
201,257. ADVERTISING APPARATUS. Arthur S. Lovett, Erie, Pa. Filed Aug. 16, 1877.



Claim.—1. In an advertising device, a curtain having open spaces and spaces filled with advertising matter, made to move in front of a screen on which are attached ornaments or attractive objects, enabling the observer to see the ornaments through the spaces, and cutting off his view at times by the passage before him of an advertising-card, as and for the purposes mentioned.

2. The clock-work B, rollers C and C', and open-work curtain c, in combination with the screen D, as and for the purposes mentioned.

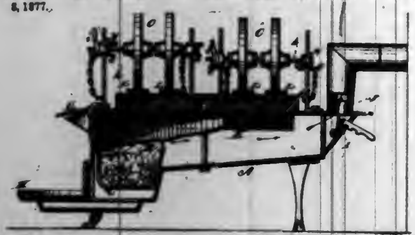
201,258. TIE-RODS FOR VEHICLE-AXLE SKEINS. J. W. Lovell, Salt Lake City, Utah. Filed Feb. 7, 1878.



Claim.—1. The combination, with an axle and skein or skeins, of a yielding tie or brace rod or rods, serving to hold said skein or skeins in position, and to brace the axle, substantially as set forth.

2. The combination of axle F, skeins A, and rod E, having coils E' E' formed therein, substantially as and for the purpose set forth.

201,259. DEVICES FOR SETTING WAGON-WHEELS. Charles Mann, Danville, Pa. Filed Dec. 8, 1877.



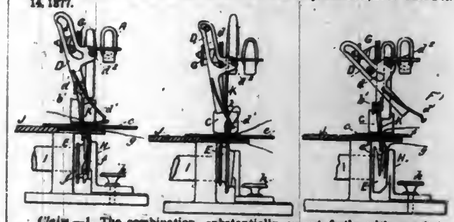
Claim.—1. As a means for saturating the follies and tenons of a wheel, the combination of a stove, a water-vessel, and horizontally-adjustable oil-pans, arranged substantially as described.

2. The stove A, constructed, as described, with an open top, fire-box B, grate C, fire-brick D, doors E G, and damper I, all substantially as and for the purposes set forth.

3. The combination of the pan K, having shoulder *a*, and the pans L L, having flanges *b d* at each end, substantially as and for the purposes set forth.

4. The perforated standard M, with pins *e*, levers N, and rod h, with nut *i*, in combination with a stove, A, water-pan K, and oil-pans L, substantially as and for the purposes set forth.

201,260. TAKE-UPS FOR SEWING-MACHINES. John McCloskey, New York, N. Y. Filed Dec. 14, 1877.



Claim.—1. The combination, substantially as set forth, with a stitch-forming mechanism, of a take-up which engages the needle-thread between the needle-eye and the fabric, and operates to take up the slack of and tighten one stitch after the needle has entered the fabric for the next succeeding stitch.

2. The combination, in a sewing-machine, of these elements: an eye-pointed needle, a take-up which engages the needle-thread between the needle-eye and the fabric, and operates to tighten one stitch after the needle has entered the cloth for the next succeeding stitch, and a rotating hook arranged to draw the slack thread as it is given up or released by the take-up, the combination being and acting substantially as set forth.

3. The combination of a stitch-forming mechanism and a take-up, arranged for joint operation substantially as set forth, whereby the loop of needle-thread is taken up between the needle-eye and the fabric, and while the needle during the whole or major part of the taking up of said loop is in the cloth.

4. In a two or more thread sewing-machine, the combination, with the stitch-forming mechanism, of a take-up arranged to take up direct, between the needle-eye and the fabric, the slack needle-thread of the loop cast off or released by the hook or shuttle, or equivalent thereof, substantially as and for the purpose set forth.

5. In a sewing-machine, the combination, with the needle, of a take-up which moves in a path intersecting the path of the needle, and is operated to cross the needle-path to engage the needle-thread between the eye of the needle and the fabric, for the purpose of tightening the stitch when the needle is descending for the next succeeding stitch.

6. In combination with a stitch-forming mechanism, the take-up hook D, constructed and arranged to take up the slack needle-thread, then to disengage from it, and then to shoulder past the last needle-thread to resume its first position, substantially as and for the purpose herein set forth.

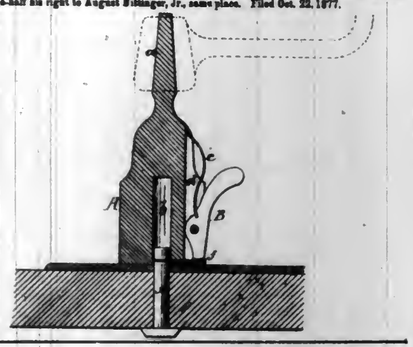
7. The combination of the take-up hook D, rotating hook E, bobbin F, and eye-pointed needle K, all arranged for operation substantially as and for the purpose herein set forth.

201,261. MANUFACTURING COUPLING-LINKS. James Mann, Buffalo, N. Y., assignor of one-half his right to W. A. Mann and D. Mann, same place. Filed Feb. 6, 1878.



Claim.—The method of manufacturing connecting-links, consisting, essentially, in subjecting bars of metal to the action of dies to produce the blank A in the shape and contour described, then bending the shanks D, and finally subjecting the parts so produced to the action of drop-dies, whereby the correct shape is imparted to said blanks, substantially as and for the purpose specified.

201,262. TOOLS FOR CUTTING RIVETS. Abraham S. McDougall, Philadelphia, Pa., assignor of one-half his right to August Bittinger, Jr., same place. Filed Oct. 22, 1877.

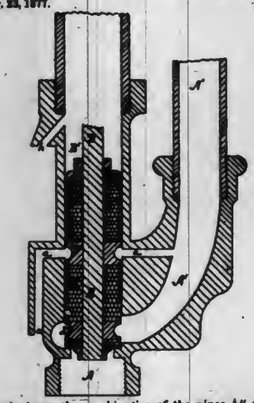


Claim.—1. The within-described tool for cutting bolts or rivets, said tool consisting of a block, A, having a central opening, *b*, for receiving the end of the bolt or rivet, a sliding bit, *f*, for acting on the same, and an angular extension, *a*, adapted to the hub of a brace, as set forth.

2. The combination of the block A, having a central opening, *b*, with the sliding bit *f*, adapted to a recess in the block A, and acted upon by a spring which tends to force its cutting end into the opening *b*, as specified.

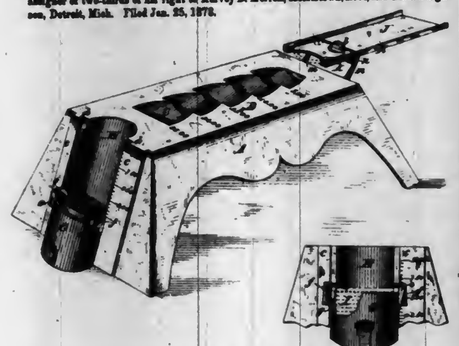
3. The combination of the block A, its central opening *b*, and sliding bit *f* with the spring-lever B, pivoted to the block, and serving to impart movement to the said bit *f*, as set forth.

201,263. HYDRANTS. William McNamara, Erie, Pa., assignor to Jarecki, Hayes & Co., same place. Filed Aug. 23, 1877.



Claim.—In a hydrant, the combination of the pipes A'' and H', leading from the surface, the shell of one casting, and containing the chambers A A' B', valve-seat formed by a ledge between the chambers A and A' and B', and the waste *a*, with its mouth deflected down the side of the shell, by which combination and construction the hydrant is adapted to be used without a surrounding casing or box, as set forth.

201,264. APPARATUS FOR HOLDING AND COUNTING COIN. John W. Meaker, Chicago, Ill., assignor of two-thirds of his right to Harvey B. Merrell, Morristown, N. J., and Thos. Ferguson, Detroit, Mich. Filed Jan. 25, 1878.



Claim.—1. A tray provided with one or more series of inclined semi-cylindrical recesses, each series forming one continued recess, with its bottom broken up into inclines, as shown and described, for holding coin in adjoining groups, as set forth.

2. The combination of the semi-cylinder E and the movable semi-cylinder G, provided with the dogs *f*, constructed and arranged substantially as and for the purpose set forth.

3. The apparatus herein described, consisting of the tray A, cast with the inclined semi-cylindrical recesses C on its upper surface and the semi-cylindrical recess E on its end, in combination with the movable cylinder G, provided with dogs *f*, and the metallic plate J, supporting arms *m*, and cross-bar *n*, all constructed and arranged substantially as and for the purpose set forth.

201,265. ICE-VELOCIPEDES. Vincent A. Maness, Michigan City, Ind. Filed Feb. 11, 1878.

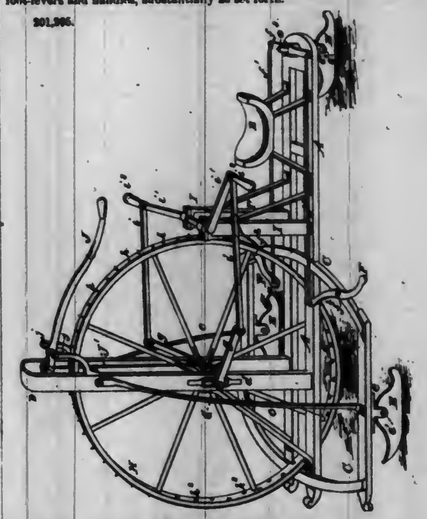
Claim.—1. The combination of the frames A C, having the two vertically-rocking front runners on opposite sides of the central propelling-wheel H, and a vertically-rocking and horizontally-swinging rear runner, substantially as and for the purpose set forth.

2. In the described ice-velocipede, the combination of the wheel H, shaft G, having cranks *g*, connecting-rods *i*, and shaft I, having cranks *i'* and handles P, substantially as and for the purpose set forth.

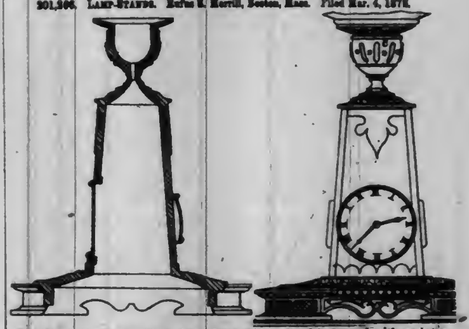
3. In the described ice-velocipede, the combination of the yoke D, having slots *d*, the propelling-wheel H, having crank-shaft G, and the elevating-lever J, having connecting-rods J', substantially as set forth.

4. In the described ice-velocipede, the combination of the foot-levers F, the revolving handles P, and the horizontally-adjustable seat B, whereby the operator may place himself in the most convenient position opposite the said foot-levers and handles, substantially as set forth.

201,266.



201,266. LAMP-STANDS. Rufus B. Merrill, Boston, Mass. Filed Mar. 4, 1878.

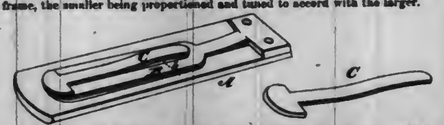


Claim.—1. A portable or hand lamp whose stand is formed with an internal receptacle or chamber adapted to contain a clock-movement, and with an aperture or opening for displaying the clock-dial, or for the passage of the hand arbors of the clock-movement, as shown and set forth.

2. A portable or hand lamp in which the lamp-stand, formed with an internal receptacle or chamber and dial or hand arbor aperture, as described, is combined with an independent clock-movement susceptible of being bodily fitted into and removed from said chamber, as set forth.

201,267. ORGAN-REEDS. William L. Morris, Fredericktown, Ohio, assignor of one-half his right to William Sturgeon. Filed Aug. 27, 1877.

Brief.—The vibrating reed-tongue of an ordinary organ-reed is slotted and provided with a smaller reed-tongue, to which latter it serves as reed-frame, the smaller being proportioned and tuned to accord with the larger.



Claim.—1. An organ-reed composed of two or more tongues of differing sizes, the smaller tongue vibrating in the larger, and the whole vibrating in the reed-block, substantially as herein set forth.

2. The combination of the slotted reed-block A, the slotted tongue B, and the tongue C, substantially as and for the purposes herein set forth.

201,268. BUTTONS. Arnold Mosher, Providence, R. I. Filed Sept. 10, 1877.

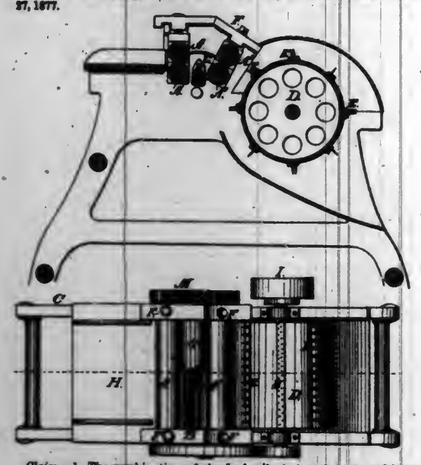


Claim.—1. The combination, with the hollow shank A, provided with the disk B, of the two-part disk C, centrally hinged to the shank, the sections *b b'* of disk C, provided with arms *c*, the follower D, fingers *g*, spring G, rods E E', and cross-bar F, substantially as described.

2. The combination, with the sections *b b'*, provided with arms *c* and spring-catch *e*, of the spring-pressed follower D and fingers *g*, substantially as described.

3. The combination, with the sections *b b'* and spring-catch *e*, of the projections *f*, substantially as described.

201,269. MACHINES FOR TREATING PALMETTO-LEAVES, &c. George F. Miller, Jacksonville, and W. G. Benedict, Orange Park, Fla.; said Miller assignor to said Benedict. Filed Dec. 27, 1877.



Claim.—1. The combination of the feed-rolls A A and A' A' and intermediate slitting-knives B, adapted to make a continuous cut, constructed substantially as described.

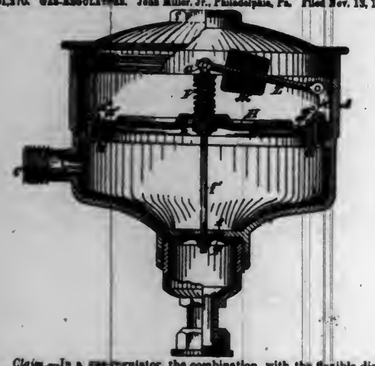
2. The combination of the slitting-knives B, the rollers A A, and the guide or shield G, to hold the leaves, &c., or other material, down to the knives.

3. The combination of the feed-rolls A A and A' A', the slitting-knives located between them, and the shield or guide G, substantially as described.

4. The combination of the slitting-knives and the combing-drum, substantially as described.

5. The combination of the feed-board, two sets of feed-rolls, with slitting-knives between them, the shield or guide over these knives, and the combing-drum, when all are constructed, arranged, and operated substantially as described.

201,270. GAS-REGULATOR. John Miller, Jr., Philadelphia, Pa. Filed Nov. 13, 1877.



Claim.—In a gas-regulator, the combination, with the flexible diaphragm D and plate H, of the central valve-stem *f'*, attached to the valve F, the spring I, encircling said stem, the pivoted steadying-bar attached to the valve-stem, and the weight M, adjustable on said bar, as shown and set forth.

201,271. SAW-SHARPENING MACHINES. John A. Miller, Oshkosh, Wis. Filed June 26, 1877.

Brief.—A vertical saw-carriage is adjustable toward and from the grinding-wheel support in two directions at right angles to each other—one adjustment being by a lever with a pawl working in a ratchet on the base, and the other by a feed-screw. The arbor for circular saws serves also for attaching the table which carries a clamp for straight saws. The arbor is adjustable up and down by feed-screw. The vertical support is horizontally adjustable about its axial line.

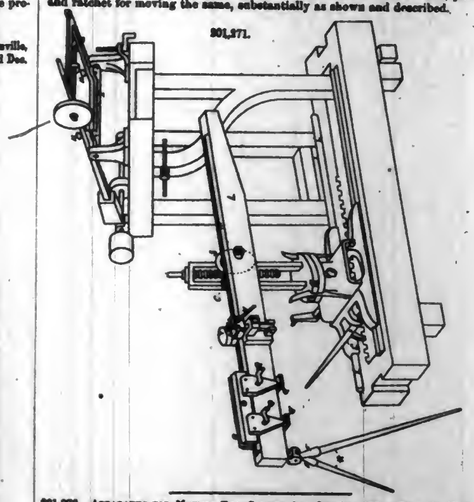
Claim.—1. The shouldered spindle O', in combination with corresponding box in C, bearing-bowl S, with set-screw S', cone T, and nut T', substantially as set forth, for the purpose specified.

2. The table L, having spindle-eye E, and legs attached by a universal joint, A B E F, in combination with the vertical carrier C and C', substantially as and for the purpose specified.

3. The toothed friction-roller N, adjusting-screw X, lever V, and pivoted fulcrum-block U, in combination with the adjustable counter-rollers Y Z and set-screw Z', substantially as and for the purpose specified.

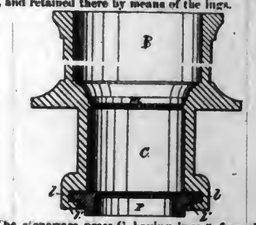
4. The round way L' and shoe L'', in combination with the lever, pawl, and ratchet for moving the same, substantially as shown and described.

201,271.



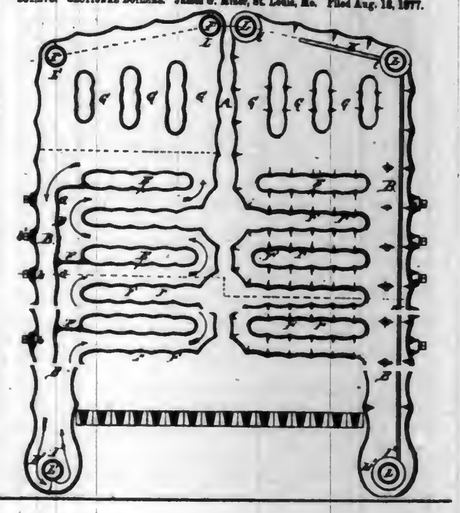
201,272. APPARATUS FOR MAKING TEA, COFFEE, &c. Jonathan Miller, Elmsford, N. Y., assignor to Pressure Extract Company, Trenton, N. J. Filed Apr. 5, 1877.

Brief.—The removable plate is inserted in the bottom of the press or coffee-receptacle, and retained there by means of the lugs.



Claim.—The stoneware press C, having lugs *l'*, formed in one piece with the liquid-receptacle B, and separated therefrom by a perforated diaphragm, in combination with a perforated removable bottom plate, P, having lugs *l*, substantially as and for the purpose described.

201,273. SECTIONAL BOILERS. James G. Minar, St. Louis, Mo. Filed Aug. 18, 1877.



Claim.—1. The boiler-section provided with upright pipe B, having partition D, in combination with the bent pipes E, having extensions F, substantially as set forth.

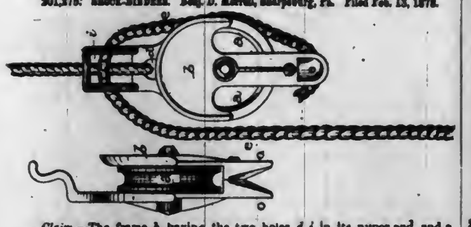
2. The combination, in a boiler-section, of the upright pipe B with division D, bent pipes E, and water-leg B', extending beneath the fire-grate, as set forth.

3. The boiler composed of sections containing the elements B B' D E G, connected together by pipes L L', with nuts M M', substantially as set forth.

201,274. PLASTIC COMPOUNDS FOR PAVING AND OTHER PURPOSES. James S. Merrell, Savannah, Ga., and David B. Fletcher, Chambersburg, Ohio, assignors of one-third their right to James A. Watterson, Mercer's Bottom, W. Va. Filed Apr. 14, 1877.

Claim.—As a new article of manufacture, a compound consisting of coal-tar treated by heat so as not to be softened at a temperature of 190°, and mixed with woody fiber, substantially as described, and for the purpose set forth.

201,275. SHOCK-BENDERS. Benj. D. Merrell, Sharpsburg, Pa. Filed Feb. 13, 1878.



Claim.—The frame *b*, having the two holes *d d* in its upper end, and a V-shaped frictional holding device in its lower end, in combination with the pulley *a* and rope *c*, substantially as set forth.

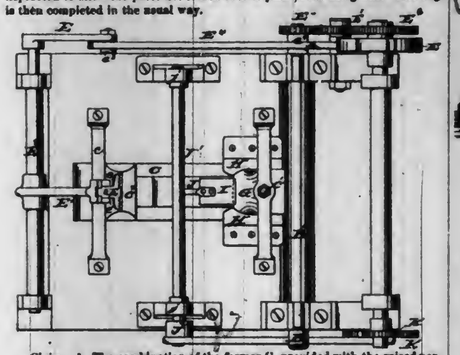
201,276. SPIRIT-LEVEL AND PLUMB. Josh Morse, Philadelphia, Pa. Filed May 7, 1877.



Claim.—The combination of the block B, having a ledge, *e*, with the casing A, having at one end a rounded projection and retaining-screw, and at the other end an arm, *a*, adjusted and secured by opposing screws *b* and *b'*, all substantially as described.

201,277. PAPER-BAG MACHINES. Rufus W. Murphy and Merrick Murphy, St. Louis, Mo., said Rufus W. Murphy assignor to M. F. Murphy, same place. Filed Nov. 26, 1877.

Brief.—Slits are made in the inner edges of the tube by the knife striking down into the slot in the elevated portion of the former. The slit-edges are raised by the spring-plate, so as to come in contact with the guide, which folds them back toward the outside edges of the tube, the spring-plate being depressed to allow the parts not folded over to pass under the guide. The bag is then completed in the usual way.



Claim.—1. The combination of the former C, provided with the raised portion C', having the slot *c'* and the slitting-knife E, as and for the purpose described.

2. The combination of the spring-plate F and the presser-plate I, for the purpose described.

3. The combination of the former C, the spring-plate F, and the presser-plate I, substantially as described.

4. The former C, provided with the spring-plate F, for the purpose of deflecting the edges of the paper upward, as described.

5. The combination of the plate F, guide G, and formers H H, substantially as described.

6. The combination of the former C, part C', having the slot *c'*, plates F and I, guide G, and formers H H, substantially as described.

201,278. PAPER-BAG MACHINES. Rufus W. Murphy and Merrick Murphy, St. Louis, Mo., said Rufus W. Murphy assignor to M. F. Murphy, same place. Filed Nov. 26, 1877.

Brief.—Upon the driving-shaft is attached an arm having a spring-bolt, which engages with a lug upon the knife-disk, and causes it to partially rotate until the friction of the bolt is overcome, when the knife is retracted by a spring, making the slits in the edges of the bag. These edges are supported by the slides that afterward fold the cut edges down, they being operated by another crank upon the driving-shaft.

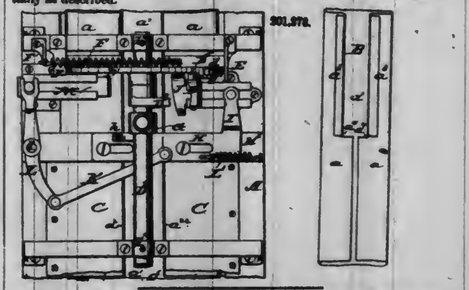
Claim.—1. The combination of the knife D, head D', shaft D'', crank D''', pin D', bolt D', spring D'', projection *d'*, stop E, and spring F, substantially as described.

2. The combination of the shaft D'', arm G, pin *h*, slide H, arm I, and support J, substantially as described.

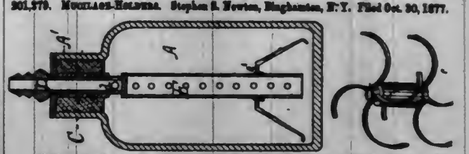
3. The combination of the shaft D'', arm G, pin *h*, slide H, pitman K, lever L, and slide M, substantially as described

4. The combination of the plate C, support J, and the knife D, substantially as described.

201,278.



201,279. MUCILAGE-HOLDERS. Stephen S. Newton, Binghamton, N. Y. Filed Oct. 30, 1877.

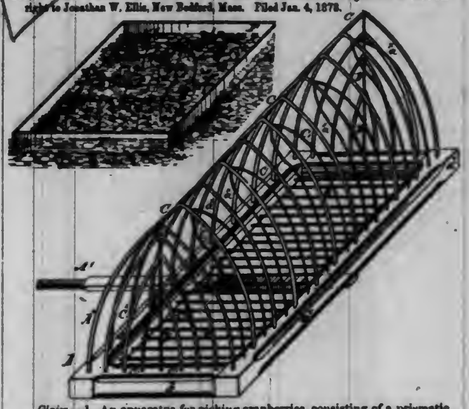


Claim.—1. In combination with the bottle A A', an agitator having the central support E and the elastic metallic arms *e e*, adapted to operate over an area whose diameter is greater than that of the bottle-neck, substantially as set forth.

2. The combination, with a liquid-blacking bottle, of an agitator for mixing the contents of the bottle, and a gate for controlling the discharge of the liquid, substantially as set forth.

3. The combination, with a liquid-blacking bottle, of tube C, delivery-tube D, provided with ports *d*, and an agitator attached to said delivery-tube D, substantially as set forth.

201,280. CRANBERRY-PICKERS. Andrew C. Hickerson, Barnstable, assignor of one-third his right to Jonathan W. Ellis, New Bedford, Mass. Filed Jan. 4, 1878.



Claim.—1. An apparatus for picking cranberries, consisting of a prismatic wire cage provided with a suitable handle, the space between the wires on one side or parallelogram being greater than that between the wires of all the other sides, substantially as described, for the purpose specified.

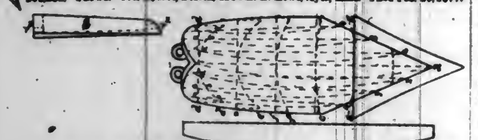
2. An apparatus for picking cranberries, consisting of a prismatic wire cage provided with a suitable handle, the wires on one of its sides or parallelograms being so arranged as to form wedge-shaped or tapering slots, substantially as described, for the purpose specified.

3. The combination of the frame A, wires B C C' C'' D, and the handle A', all arranged and combined substantially as described, for the purpose set forth.

4. The combination, with the arm *a'*, the frame A, and the wires C, of the wires C', substantially as described, and constructed as specified.

5. The wires C and C', bent to shape as described, and provided with suitable apertures or holes, in combination with the vertical wires D and the curved or triangular wires C', passing through said wires C C', and the frame A, all constructed substantially as described, for the purpose specified.

201,281. PLOWS. Joel Reeves, Boston, and Jas. A. Howe, Ayer, Mass. Filed Feb. 26, 1877.



Claim.—1. The construction of the mold-board for swivel-plows, in which the face is formed to fit the same curved ruler on the face of the mold-board along the lines a 1 and 2 2 3 3, &c., on both sides of the axis-line, said lines being at equal distances apart on the face of the mold-board at each end, substantially as described.

2. The construction of the mold-board for swivel-plows, in which, if the face be cut by planes perpendicular to the axis-line, the resulting curve at the rear end of the mold-board shall be an arc of a circle, and the section at or near the forty-five-degree angle or front edge of the standard shall be a straight line, the curves varying in regular succession, forming arcs of circles of gradually increasing radii from the arc at the rear to the straight line in front, substantially as described.

3. The mold-board for swivel-plows formed with convex center and concaved extreme edges for a short distance back from the standard, substantially as described.

4. The shoe S, when constructed to be held in position only by the lower portion of the land-side L, upon which it is fitted with projections and recesses within the shoe, and by the brace extended from the heel of the shoe to the mold-board, substantially as described.

201,282. WARDROBE-BEDSTEAD. Harrison Ogborn, Richmond, assignor of one-half his right to Samuel Watson, Dublin, Ind. Filed Feb. 26, 1878.



Claim.—1. A wardrobe-bedstead consisting of the hinged sections B C, head-section O, having cord *n*, spring-bolts and ratchets *k l*, and guides *r w*, folding brackets J, having angle-irons *f* and rods K, and book-case E, having hinged drawer F and door G, constructed and arranged substantially as and for the purposes set forth.

2. In a folding cabinet-bed the sections B C of which, hinged at their lower ends, are capable of being folded and extended, the receptacle E, arranged within the upper inner end of the section B, and partly surrounded by a casing, B, arranged to form a recess, N, in the rear of the receptacle E, to be occupied only by the pillow or pillows when the bed is folded, as set forth.

3. In a folding cabinet-bed the sections B C of which, hinged at their lower ends, are capable of being folded and extended, the adjusting-rods K, pivoted to the side rails D and hooked into the angle-plates *f*, secured to the hinged brackets J of the section C, substantially as and for the purposes set forth.

4. In combination with the rear section of a folding cabinet-bed the sections B C of which are capable of being folded and extended, a pair of hinged brackets, J, automatically operated by a pair of adjusting-rods, K, and provided with casters *t*, projecting from the outer corners of the scrolls *s*, to support the weight of said rear section when the bed is being opened and closed, substantially as and for the purposes set forth.

201,283. COMPOSITION FOR CRAYONS. Charles C. Parsons, New York, N. Y. Filed Nov. 9, 1877.

Claim.—A crayon composed of clay, fatty matter, resin, and coloring matter, thoroughly mixed by being melted together, substantially as specified.

201,284. CHISELS. Oscar J. Pennell, Williamsport, Pa. Filed June 29, 1877.



Claim.—1. The combination of the body, to which is attached the countersink chisel A, with the clevis or clamp *a a*, substantially as and for the purpose specified.

2. The combination of the countersink-chisel bit A, with its attachments, and clevis *a a*, with the wedge-shaped mortising-chisel B and the adjusting set-screws *b b b*, substantially as and for the purpose specified.

201,285. MACHINES FOR TURNING BUNGS. Rafael Pentlarge, Brooklyn, N. Y. Filed Dec. 10, 1877.

Brief.—Tapering bungs are formed from a previously prepared strip of wood, placed in a vertical hopper having a slot in its lower part, through which a circular saw enters to cut the bung blank the required length, while the strip is intermittingly fed by gravity or otherwise in direction of its length. Each blank is then forced into and through a hollow chisel, which gives it the circular form, into a reciprocating conveyer, which carries it to a tapering hollow compressor having a bung holder and ejector, for giving the blank the tapering form and increased solidity, and ejecting the finished bung from the holder.

Claim.—1. The combination of a saw for cutting square bung-blanks from a stick, and a hollow chisel for cutting such blanks to a circular form, of a reciprocating stick guide or carrier, which, arranged between the said saw and cutter, by its movement in one direction, presents the stick to the saw for the sawing off of the square blanks, and by its movement in the other direction carries and presents the squared blanks to the chisel, substantially as herein described.

2. The combination of the stick guide and holder P, the reciprocating bar or plunger O, carrying the same, and a saw arranged to enter within or intersect said guide and holder during or by the reciprocating stroke of the plunger, essentially as described.

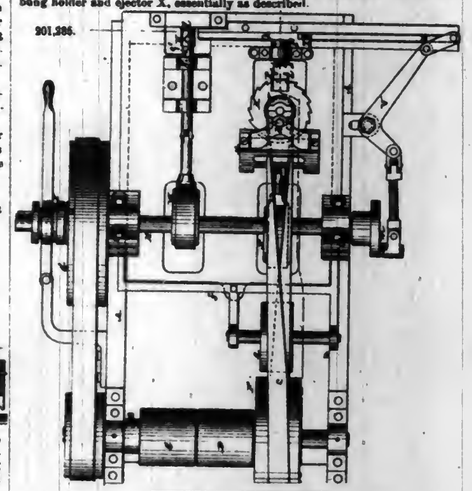
3. The spring-gage R, in combination with the stick guide and holder P, the plunger O, and the hollow chisel S, substantially as specified.

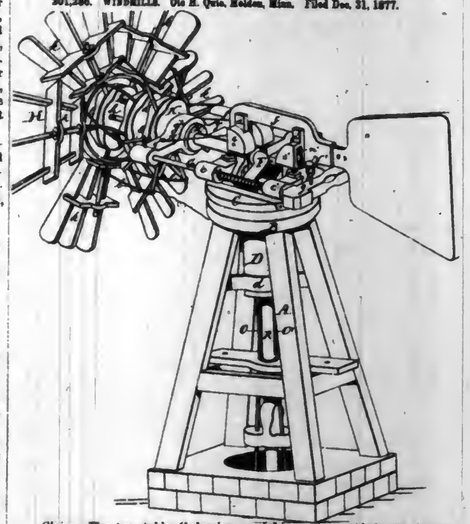
4. The reciprocating bung-blank conveyer T, in combination with the hollow chisel S and the hollow tapering compressor U, essentially as described.

5. The combination of the bung holder and ejector X, controlled by spring and stop, with the hollow tapering compressor U and the plate or resistance-surface *l*, substantially as specified.

6. The combination of the reciprocating bung-blank conveyer T, the hollow chisel S, the plunger O, the hollow tapering compressor U, and the bung holder and ejector X, essentially as described.

201,286. WINDMILLS. Ole H. Orie, Holden, Minn. Filed Dec. 31, 1877.





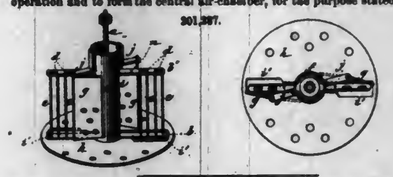
Claim.—The turn-table C, having uprights *a a'*, provided with lateral brackets *c c'*, sliding frame G *g g'*, crank-shaft F, sliding disk K, having arms *k'* and pivoted hooks *l*, and wind-wheel H, composed of pivoted sections *h h*, all combined and operating substantially in the manner and for the purpose herein shown and specified.

201,287. ROTARY CHURN-DASHERS. Stephen B. Rathbun, Dundee, Mich. Filed Mar. 4, 1878.

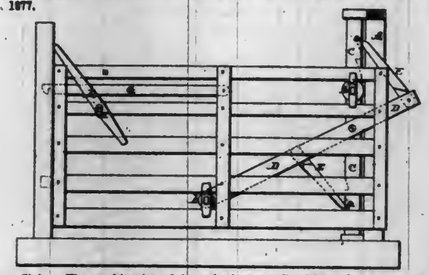
Claim.—1. A churn-agitator consisting of the shouldered and screw-threaded shaft *a c*, the cross-bars *b b'*, the wires *c*, strung between them and secured as stated, and the adjusting and clamping nuts *c c'*, for the purpose stated.

2. The combination, with the wire-strung agitator herein described, of the central tube *f* and its vertically-hinged and perforated wings *g*, adapted for operation and to form the central air-chamber, for the purpose stated.

201,287.

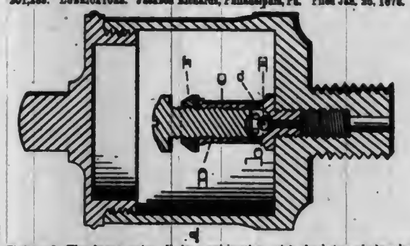


201,288. GATES. Adam Eckert, Jennings Township, Putnam County, Ohio. Filed Dec. 14, 1877.



Claim.—The combination of the swinging post C, with ratchets *a*, and the pivoted lever D, with pawls E, for supporting and adjusting the gate, substantially as herein set forth.

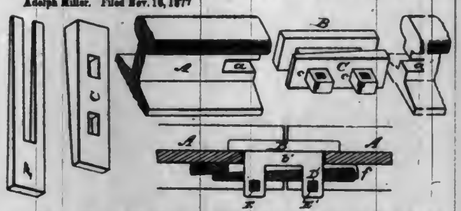
201,289. LUBRICATORS. Jackson Richards, Philadelphia, Pa. Filed Jan. 26, 1878.



Claim.—1. The loose valve E, in combination with the internal chamber C, with openings *a* near its bottom and a valve-seat at its base, substantially as and for the purpose set forth.

2. The loose valve E, in combination with the threaded chamber C, having openings *a* at or near its bottom and a valve-seat in its base, and with the set-screw D and the nut F, said parts being inclosed within the cup A, substantially as and for the purpose set forth.

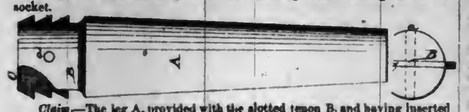
201,290. RAIL-JOINTS. Edward J. Roberts, Ashland, Ky., assignor of a part of his right to David A. Fisher, Geo. P. Long, Elza Maring, Jerry Moynihan, L. E. Veyssie, Geo. Millard, John Lauterbach, Wm. R. Moore, L. T. Moore, Benj. W. Singer, Samuel S. Savage, Edward F. Tracy, George Bergruff, Charles F. Bartell, Patrick Mcnarity, Jr., Jacob Arthelmer, and Adolph Miller. Filed Nov. 16, 1877.



Claim.—The combination, with the notched rails A A', of the T-formed perforated block B, spikes or keys E E', mortised fish-plate C, and wedge F, substantially as and for the purposes set forth.

201,291. FASTENINGS FOR CHAIR-LEGS. James Scarrit, Jr., Prophetstown, Ill., assignor of one-half his right to Harvey C. Hull and Chas. W. Hull, same place. Filed Jan. 16, 1878.

Brief.—The serrations prevent the chair-leg from working out of its socket.



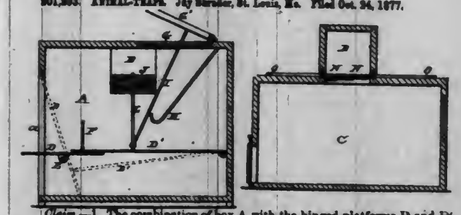
Claim.—The leg A, provided with the slotted tenon B, and having inserted and secured therein the serrated plate C, as and for the purpose set forth.

201,292. COMBINED SIDEBOARD AND DINING-TABLE. John R. Shisley, Philadelphia, Pa., assignor of one-half his right to John A. Hinckle, same place. Filed July 16, 1877.



Claim.—A combined sideboard and dining-table, consisting of the base or cupboard part A and the back portion B, hinged or pivoted together at *a*, the part B having the folding leaves C C', with suitable supports therefor when placed horizontally, substantially as shown and described.

201,293. ANIMAL-TRAPS. Jay Shrader, St. Louis, Mo. Filed Oct. 24, 1877.



Claim.—1. The combination of box A with the hinged platforms D and D', bearing-bar E, and fence F, the platform D being hinged to the bar E, and forming the door of the trap, while the platform D' overlies D, to insure the tilting of both platforms on the animal jumping over the fence F, substantially as described.

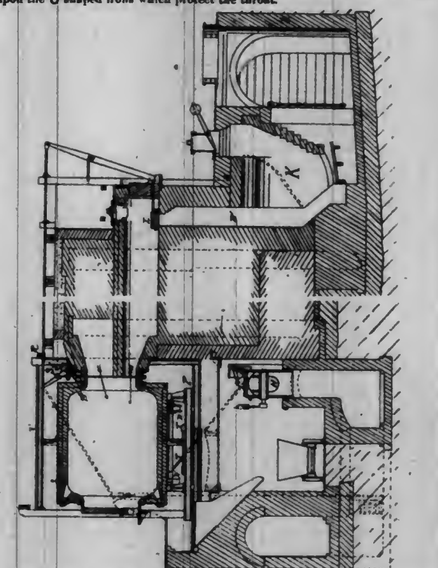
2. The combination, with the box A, platforms D and D', and bearing-bar E, of the tilting platform J and rod L in passage B, substantially as set forth.

3. The combination of box A, hinged platforms D D', rod I, window G, and shutter or cover G', substantially as set forth.

4. The combination of the boxes A C, passage-way B, hinged platforms D D', connecting-rod L, tilting platform J, gate M, and trip or trips N O, substantially as set forth.

201,294. REVOLVING FURNACES WITH REGENERATORS. Charles W. Siemens, Westminster, England. Filed June 20, 1876.

Brief.—Gas enters the revolving furnace directly from the producer. A water-pipe sprinkles water upon a semicircular angle-iron, from which it drops upon the U shaped irons which protect the throat.



Claim.—1. A rotative regenerative furnace in which air only passes through the reversible regenerators to the furnace, and gas enters the rotative chamber in a continuous manner from the source of supply.

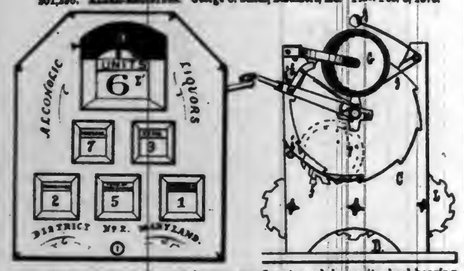
2. A rotative regenerative furnace in which the gas-inlet at the rotator-mouth is situated below and between the air and combustion-product passages.

3. The combination, with the regenerators, of a horizontal flue passing between the upper part of the two regenerators, and communicating with the gas-supply, whereby the gas is heated by the outgoing products of combustion, as and for the purposes described.

4. The combination of the water-discharge pipe, the semicircular screening-plate, and the circumferential grooves on the end of the rotator and the flue-mouth, as described.

5. The semicircular angle-iron, in combination with the perforated pipe, whereby the water is prevented from entering the neck joint, as and for the purposes described.

201,296. ALARM-REGISTERS. George C. Smith, Baltimore, Md. Filed Feb. 6, 1878.

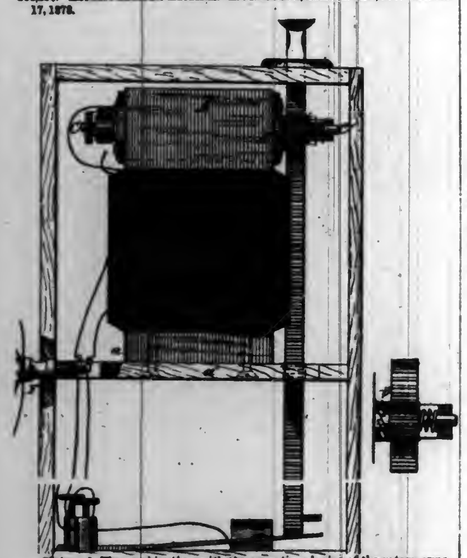


Claim.—1. In an alarm-register, a prominent revolving unit-wheel bearing numerals upon its face, and having on one side a single pin for actuating a tens-wheel at each complete revolution, and on the other a number of pins corresponding to the numerals for actuating a gong-hammer at each registration, substantially as described.

2. A register contained in a case adapted to be secured from within to a suitable support, and subsequently sealed, whereby the unauthorized change of position or removal of the register is prevented, substantially as set forth.

3. In combination with the plate C, having sleeve r, and wheel K, having sleeve p, the bolt s, washers t u, nut o, and spring m, substantially as described.

201,297. MAGNETO-ELECTRIC MACHINES. H. Julius Smith, Mountain View, N. J. Filed Jan. 17, 1878.



Claim.—1. The combination, with the operating device of the rotary armature of a dynamo-magneto-electric machine, of a bridge or switch arranged in the condensing-circuit of said machine, and in the path of said operating device, and adapted to be opened by direct impingement of said device thereupon, substantially as and for the purpose set forth.

2. The combination, with the operating rack-bar of the rotary armature of a dynamo-magneto-electric machine, of a shunt or bridge consisting of a spring-bar terminal of the condensing-circuit and a rigid terminal plate, with which said spring-bar is kept in contact by its elasticity, said spring-bar being arranged in the path of the rack-bar, so as to be struck and removed from the rigid terminal by said rack-bar at or near the completion of its armature-operating stroke, substantially as described, whereby the condensing-circuit of the machine is broken and the developed current of electricity caused to pass wholly to a working-circuit for application to its intended purpose.

3. The combination, with the rotating armature of a dynamo-magneto-electric machine, of a loose pinion arranged upon the arbor of said armature, a rack-bar gearing with said pinion, and a clutch for engaging with and disengaging from said pinion, causing the arbor and armature to revolve therewith when rotated in one direction, but which disengages therefrom and permits said pinion to revolve in the opposite direction independently of the arbor and armature, substantially as described, whereby is secured a rotation of the armature in one direction only, and depolarization of the magnet prevented.

201,297. STUMP-PULLERS. Joseph D. Smith, Rockford, Ill. Filed Feb. 14, 1878.

Claim.—1. In a stump-puller, the combination of a frame carrying the windlass or gears, a sprocket-wheel, an endless chain, and a separate pulley with pulley-frame, said main frame and pulley-frame being anchored to the ground, substantially as herein set forth.

2. The combination of the main frame, the shafts a b, casting B, with sweep C and pivoted bar C', gear-wheels F G, sprocket-wheel H, pulleys e f, endless chain I, the short chains O, with hooks i, and the pulley J, with frame K and bar L, all constructed substantially as and for the purposes herein set forth.

3. The shield or guard P, in combination with the endless chain I and the sprocket-wheel H, substantially as and for the purposes herein set forth.

201,298.



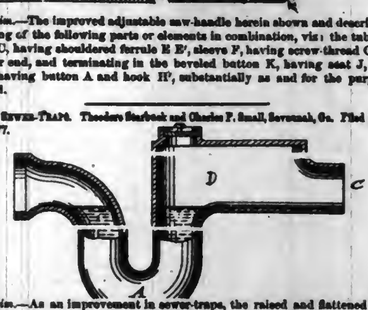
201,299. CROSSCUT-SAW HANDLES. Rufus P. Sprague, Greenville, Mich. Filed Dec. 19, 1877.

Brief.—The saw is attached to a tubular handle, provided with a ferrule having a shoulder on its upper part and a screw-thread upon its lower end, by a sleeve having an interiorly-threaded lower part, an interior upper smooth part, and a beveled end provided with a seat for the edge of the saw, and a hooked end passing through the sleeve and handle, and secured in position by a button on the upper end of the handle.



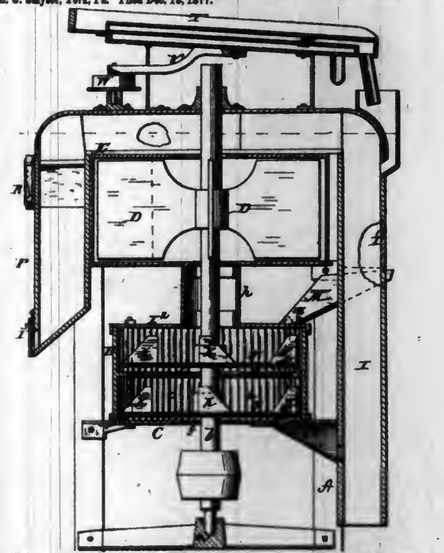
Claim.—The improved adjustable saw-handle herein shown and described, consisting of the following parts or elements in combination, viz: the tubular handle C, having shouldered ferrule E E', sleeve F, having screw-thread G' at its lower end, and terminating in the beveled button K, having seat J, and rod H, having button A and hook H', substantially as and for the purpose specified.

201,299. SEWER-TRAPS. Theodore Starbuck and Charles P. Small, Savannah, Ga. Filed Mar. 12, 1877.



Claim.—As an improvement in sewer-traps, the raised and flattened air-chamber D, rectangular in shape, and cast or made in one piece with the trap or bend A over its heel or outlet C, the said chamber being of no greater width than the trap, so as to form at all times an air-cushion in the upper part of the chamber, substantially as and for the purpose herein shown and set forth.

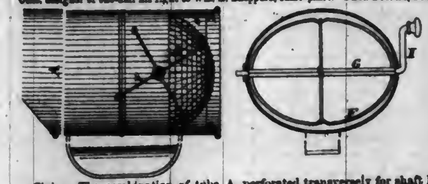
201,300. GRAIN CLEANING AND SCOURING MACHINES. John H. Teahl, Reading, assignor to E. G. Smyser, York, Pa. Filed Dec. 19, 1877.



Claim.—1. The horizontal solid rotating plates J, provided at their edges with the angular polishers K K, set tangential to their arc of revolution, and dressed as shown and described, in combination with the corrugated cylinder H, substantially as and for the purposes herein set forth.

2. The doors I², with slides i, arranged over the openings in the discharge-spouts of the box F, for the purposes herein set forth.

201,301. FLOUR AND MEAL SCOOP, MEASURE, AND SIEVE. Christopher C. Tittle, Cincinnati, Ohio, assignor of one-half his right to Wm. B. Sheppard, same place. Filed Feb. 14, 1878.



Claim.—The combination of tube A, perforated transversely for shaft B, the pin I, clips D, strainer E, and tubular agitator F G, the whole being arranged for the easy withdrawal and replacement of the parts, in the manner explained.

201,302. SPINNING-RINGS. Charles E. Trowbridge, Whitinsville, Mass., assignor to himself and Arthur F. Whitin, same place. Filed Feb. 12, 1878.

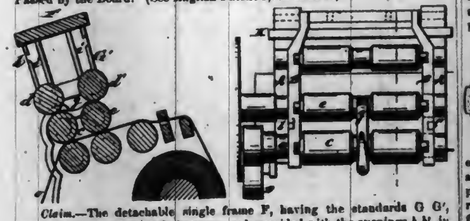
Brief.—The ring at either end or both ends is provided with an auxiliary or additional raceway, so that when the upper raceway becomes worn by the centrifugal action of the traveler the lower raceway may be used.



Claim.—A spinning-ring provided at its end or ends with duplex traveler-races, to operate substantially as described.

201,303. CLEANER-ROLL FRAMES FOR DRAWING AND SPINNING MACHINES. F. Twitchell and C. A. Richardson, Keene, N. H. Filed Apr. 19, 1877.

Brief.—A grooved and removable frame supports the "scavenger-rolls." Passed by the Board. (See English Patent 2,972 of 1858.)



Claim.—The detachable single frame F, having the standards G G', grooved at i, closed at their bottoms, and provided with the openings h h', in combination with the scavenger-rollers d d', having journals p p', working in the grooves i of the frame, and adapted to be applied to a ring-spinning frame, substantially as described, and for the purposes set forth.

201,304. CULTIVATOR-TEETH. Willard A. Van Brunt and Spencer K. Davis, Horicon, Wis. Filed Apr. 4, 1877.

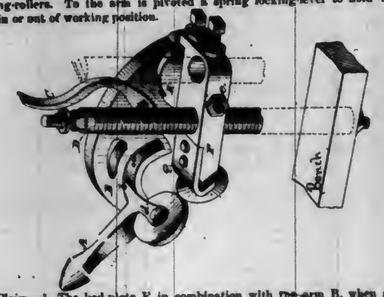
Brief.—The upper half of the tooth is flat in cross-section, and the lower half is convex.



Claim.—A cultivator-tooth diamond-shaped in outline, the surface of its lower or penetrating portion made laterally convex or rounded, and formed with sharp cleaving-edges, and its upper or securing surface made transversely flat, substantially as and for the purpose described.

201,305. SHEET-METAL-FLANGING MACHINES. Alvin W. Vanderstea, Salem, Oreg., assignor of one-half his right to John W. Crawford, same place. Filed May 24, 1877.

Brief.—The flanging-arm is pivoted so as to rotate vertically, and may be adjusted horizontally to accommodate the thickness of the metal between the flanging-rollers. To the arm is pivoted a spring locking-lever to hold the parts in or out of working position.



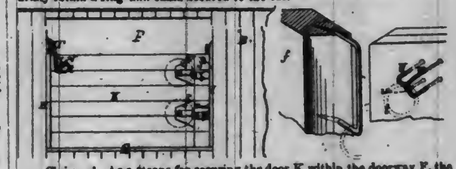
Claim.—1. The bed-plate F, in combination with the arm B, when said arm is provided with the lever C, as and for the purpose set forth.

2. In combination with the bed-plate F and arm B, the hand-lever A and lever C, as and for the purpose set forth.

3. The edging-machine, as described, composed of bed-plate F, arm B, lever C, hand-lever A, and wheels G and H, to turn the edges of sheet-metal blanks as they are fed from a circular cutter, for the purpose set forth.

201,306. GAS-DOORS. Dennis F. Van Liew, Aurora, Ill. Filed Feb. 16, 1877.

Brief.—Door sets in a metallic groove on one side, and rabbeted piece on the other. Grooved side has a vertically-adjustable stop; and latches and bolt on the rabbeted side retain the door in place. Crossed staples on the door firmly retain a ring and chain secured to the car.



Claim.—1. As a means for securing the door K within the doorway F, the metal socket or jamb H, which contains its rear end, the double-rabbeted jamb I, for receiving the front end of said door, and bolts or latches L and M, arranged upon the outer face of the latter, and capable of engagement with said jamb I, substantially as specified.

2. As a means for limiting the vertical motion of the rear end of the door K, the plate Q, provided with the elongated opening q and shoulder q', fitted within the opening h' at the upper end of the socket H, and secured to or upon the post f by means of the screw R, substantially as shown.

3. In combination with the latch L, the locking-latch N, pivoted to or upon the door K, and provided within its forward end with a notch, n, which embraces the correspondingly-shaped upper rear corner l of said latch, substantially as and for the purpose set forth.

4. As a means for connecting the guard-chain T to or with the door K, the staples U and V, secured to or within the latter, with their bows arranged at a right angle to each other and interlocked, substantially as and for the purpose shown and described.

201,307. CORSET-CLASPS. John M. Van Orden, New York, N. Y. Filed Feb. 16, 1878.

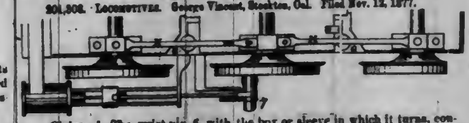


Claim.—1. A corset-fastening consisting of two busks, arranged flatwise one upon the other, and having their ends adapted for engagement, so as to slip longitudinally with relation to each other, while their center or middle portions, by means of correspondent fastening devices, are prevented from relative longitudinal displacement, substantially as and for the purpose set forth.

2. In a corset, the combination of the inner busk, having rearwardly-open hooks and an intermediate fastening device, with a top or outer busk, having its opposite ends uncovered by the fabric of the corset, and provided at its middle portion with a rigid fastening device, for engaging with the corresponding fastening device of the inner busk, substantially as described, and for the purpose set forth.

3. In a corset-fastening, the combination of the top or outer busk A, having its ends uncovered by the fabric of the corset, but covered with celluloid or similar material, and provided with a central fastening device, with the inner busk, provided with the hooks c c', and the central fastening device, adapted to engage with that of the top or outer busk, substantially as described, and for the purpose set forth.

201,308. LOCOMOTIVES. George Vincent, Stockton, Cal. Filed Nov. 12, 1877.



Claim.—1. The wrist-pin C, with the box or sleeve in which it turns, constructed to operate in combination with the laterally-moving driving-wheels, substantially as and for the purpose herein specified.

2. The guard I, in combination with connecting-rod S, wrist-pin C, and the laterally-moving driving-wheels, substantially as and for the purposes herein set forth.

3. The swinging stirrup 3, jointed to the axle-box, in combination with the equalizing-bars H, both in locomotives and other railroad-trucks, substantially as and for the purpose herein set forth.

201,309. CAR-TRUCKS. George Vincent, Stockton, Cal. Filed Nov. 12, 1877.



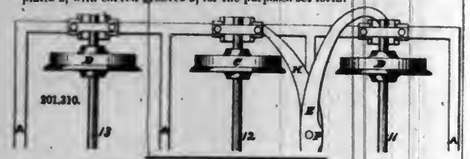
Claim.—In a railroad-truck having a central laterally-movable truck-frame and two pivoted end frames, all connected as described, the equalizing-bars 1 1, pivoted at their inner ends to an extension of the boxes for the center axle, and sliding over the boxes for the end axles, substantially as and for the purposes herein set forth.

201,310. CAR-TRUCKS. George Vincent, Stockton, and Milton A. Wheaton, San Francisco, Cal. Filed Dec. 24, 1877.

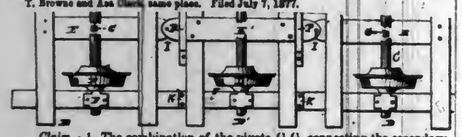
Claim.—1. The combination of the outer case 5, plate 2, with curved groove 3, slide 4, and box 9, with journal 9, whereby the car-axle obtains a compound lateral and backward and forward movement, substantially as herein set forth.

2. The frame E, pivoted centrally between the axles, and connected at its

end with the journals f of the boxes S, in combination with the slides 4 and plates 2, with curved grooves 3, for the purposes set forth.



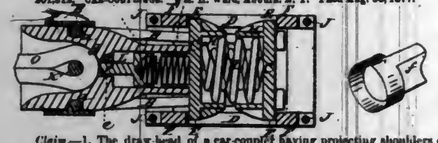
201,311. CAR-TRUCKS: George Vincent, Stockton, Cal., assignor of a part of his right to W. T. Browne and Asa Clark, same place. Filed July 7, 1877.



Claim.—1. The combination of the pivots G G, connecting the secondary frames B to the main frame, the guide-pins I I, and the plates E, provided with slots H, substantially as and for the purposes herein set forth.

2. In combination with the main frame A, provided with the keepers P P and guide-plates K, the secondary frames B B and B', connected together and operating substantially as described.

201,312. CAR-COUPLINGS. Wm. H. Ward, Auburn, N. Y. Filed Aug. 30, 1877.



Claim.—1. The draw-head of a car-coupler having projecting shoulders a a on its opposite sides, as a means for connecting said draw-head with the spring-followers.

2. The draft-yokes B, in combination with side projecting shoulders a a and the spring-followers C, as herein set forth.

3. The followers having segmental end bearings E E, for the purpose stated.

4. The combination, with the convex or segmental bearings of the followers and the draft-yokes, of the vertical housing-bearing, substantially as set forth.

5. The combination, with the projecting side shoulders at or near the front end of the draw-head, and the draft-yokes interlocking therewith, of the retaining-strap, as set forth.

6. The draw-head having the projecting side shoulders, the draft-yokes interlocking therewith and connected with the followers, in combination with the fixed housing, as set forth.

7. The draw-head having the concave socket-bearing g, and the coupling-link O, having a corresponding bearing fitting end, in combination with the ping or detent f L, whereby lost motion of the coupling is obviated.

8. The followers C C, having the cups H, in combination with the inclosed spring I and the coupling draw-head, whereby the spring is prevented from being crushed by the followers, as set forth.

9. The draw-head having a through-opening, shouldered to form the ping-seat, in combination with the follower-neck, fitting in said opening, whereby the draw-head is braced and supported, and the ping and its spring inserted at the rear end thereof.

10. The housings provided with dogs, in combination with the fastening-bolts, as set forth.

11. The coupling-link having its sides closed together and strapped, for the purpose set forth.

12. The headless coupling-pin K, in combination with the seat d, as and for the purpose described.

201,313. CAR-BRAKES. Wm. H. Ward, Auburn, N. Y. Filed Sept. 1, 1877.

Claim.—1. The cross-levers N N, their flexible evener-connection p, and their winding-connection n, in combination with a winding-wheel, j A, adapted to be turned in either direction to apply the friction-wheels, as herein set forth.

2. The combination, in a friction power-brake, of the axle and arbor friction-wheels A and B, the arbor-lever E, and the arbor-pinion I with the winding device and its connecting-gear, adapted for operation substantially as herein set forth.

3. The friction-wheel hub or web r, fixed upon the arbor D, and the frictional rim-surface B, fixed by screw-bolts to said web, in combination with the arbor D and the friction-wheel A, the arbor being removable from its hangers, and the friction-surface from the arbor-web, as set forth.

4. The friction-wheel arbor D, movable at its frictional end, in combination with the bearing-box a at its fixed end, secured by a flanged base-plate, b, to admit of removal and displacement.

5. The frame or housing, consisting of the hanger G, the cap or hood G^2, the sleeve-bearing K, and the bearing i, in combination with the winding-wheel and its operating-gear, as set forth.

6. The combination, with the winding device, of the evener-bar L, the cross-levers N N, and the brake-shoe connections, adapted for joint operation with the friction-wheels A and B, substantially as herein set forth.

7. The combination, with the friction-wheels A and B of a friction-brake, of a winding-wheel, j b, having top radial ribs a a a', of varying height, for the purpose stated.

8. The combination, with the friction-wheels A and B of a friction-brake, of the winding-wheel j, having a hollow hub, h, its hollow securing-pin k, and the securing eyed cross-pin m, to which the winding-chain is connected, as herein set forth.

9. The winding-wheel j h, the fixed end of the friction-wheel arbor D, the gear g f, and the bearings of these several parts arranged and supported in the hanger-frame G, in combination with the bridge-timbers H, to which said frame is secured, as herein set forth.

10. The combination, with the car-wheel and the axle-bearing box evener-bar S, of a brake-shoe, its lever, and intermediate connecting-devices, operating to apply the braking force upon the top of the tread of said wheel, substantially as herein set forth.

11. The brake-shoe s, arranged upon the top of the tread of the wheel, in combination with the downwardly-curved levers Q, the elbow-lever P, pivoted to one of said levers Q, and the adjustable rod or bar T, connecting one of said levers with said elbow-lever, the long end of which connects with the winding devices, whereby the brake-levers are raised and lowered at their short or shoe ends.

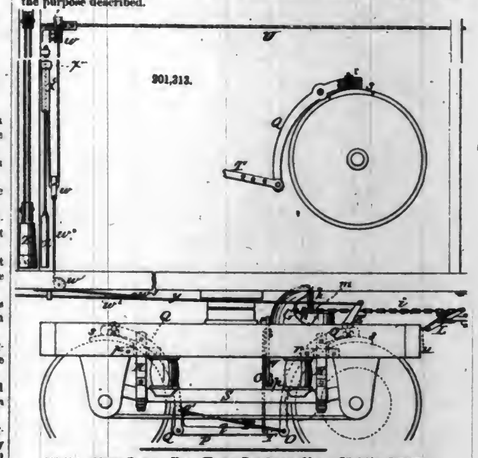
12. The brake-shoes arranged to operate upon the top of the wheels, in combination with the curved levers Q Q, the axle evener-bars S, and the standards R, supporting said brake-levers, whereby the brake-shoes are maintained an equal distance from the axles, regardless of the action of the truck-supporting springs.

13. The brake-lever Q, having an under inclosing recess, the brake-shoe s, having lugs inclosed by said recess, and the eyed pin t, jointed to said lugs within said recess, and secured by a top nut, as and for the purpose set forth.

14. The combination, with the train-cord U and the branch line v, of the eyed brake-lever, connecting-rod y, and the intermediate flexible connection v^2 and its pulley-blocks w and w^1, operating with said branch cord, for the purpose stated.

15. The combination, with the train-cord U, the branch line v, having a knot, x', and an intermediate connection with the winding device, and carrying the weight x, of an automatic pawl or detent, z, arranged for operation between the train-cord connection and said weight, for the purpose stated.

16. The combination, with the train-cord U, the branch line v, its weights x, and brake-connecting devices, of the supplemental suspended weight x^1, for the purpose described.



201,314. MUSIC-RACKS. Henry Warner, East Boston, Mass. Filed May 7, 1877.



Claim.—1. A music-rack consisting of a single ornamental plate, pivoted upon feet secured to the instrument, and provided with stops to hold the rack in position, in combination with retaining-arms, adjustable laterally upon the rack by means of slots and clamping-screws, substantially as set forth.

2. The clamping mechanism herein described, consisting of the flanged block I i, plate K, and set-screw H, in combination with the rack A and adjustable arm, F, substantially as set forth.

201,315. SASH-HOLDERS. Wm. J. Way, Berlin Heights, Ohio, assignor of one-half his right to Theodore C. Chapman, same place. Filed Jan. 21, 1878.

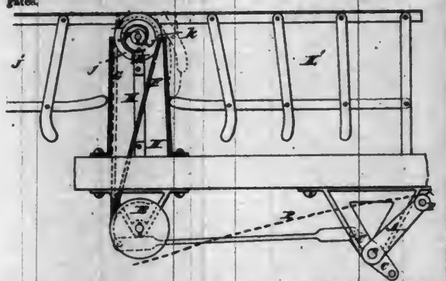
Brief.—A bifurcated lever, carrying a rubber roller pivoted therein, is provided at or near its center with transverse arms, whereby it is hung in a recess cut in the edge of the sash, the arms serving as a fulcrum for the vibration of the lever, there being also an adjusting-screw at the upper end of the lever, which forces the roller outward against the window-frame, thus holding the sash in desired position.



Claim.—The improved sash-holder consisting of the adjusting-screw F, in combination with the bifurcated lever A, having arms B, extending into the sash or frame, forming the fulcrum of said lever, and a roller, D, pivoted in the bifurcated end thereof, and said spring at the other, and placed within a cavity in the sash or frame, constructed and arranged to operate conjointly substantially as and for the purpose set forth.

201,316. DRAW-BRIDGE GATES. Peter B. Wight, Chicago, Ill., assignor of one-half his right to Harvey B. Merrill, Morristown, N. J. Filed Jan. 9, 1878.

Brief.—A cam upon the end of the draw actuates, by a crank, a yielding shaft connection, pulleys, and cords connected to vertically rising and closing gates.



Claim.—1. In automatic gates for draw-bridges, the combination of the inclined plane or cam P on the bridge with the lever A, shaft Q, crank C, spring B, rod D, pulley E, cable F, pulley J, and gate J', arranged, as described, upon the abutment, for operating the gate J' automatically, as set forth.

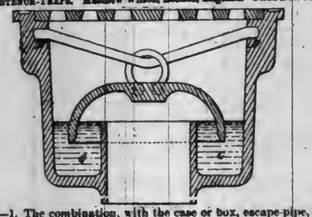
2. In combination with the devices for operating the gate J', the cable G, pulley K, and gate K', for operating the latter automatically, and at the same time with gate J', as set forth.

3. In combination with mechanism for actuating the gates, substantially as described, spring R, shaft Q, and crank C, as and for the purpose set forth.

4. The double pulley E, in combination with the cables G and F and pulleys J and K, constructed and arranged to operate as and for the purpose set forth.

5. The double crank C, arranged loosely upon the shaft Q, and connected thereto by the coiled spring R, for operating a set of gates from each end of the crank.

201,317. STENCH-TRAPS. Matthew Wilson, London, England. Filed Dec. 21, 1877.



Claim.—1. The combination, with the case or box, escape-pipe, and annular water-space of a stench-trap, of an inverted cup or bell, suspended over the escape pipe, and adapted to be rotated to remove it from over said pipe, substantially as described.

2. The combination, with the case or box, escape-pipe, and water-space around the mouth of the said pipe, of an inverted cup or bell and a rotating cross-bar, to which the bell or cup is connected, substantially as and for the purpose described.

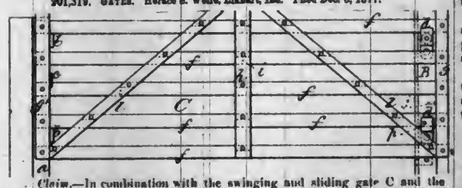
201,318. FAN ATTACHMENTS. George F. Wilson, Athens, Tenn. Filed Oct. 17, 1877.



Claim.—1. The combination of the table A, having perforation a and perforated cross-piece c, perforated plate b, shaft b', having arms a c and crank d, and operating mechanism f g D G, all constructed, arranged, and operating substantially as described, for the purpose herein set forth.

2. The combination of the table A, having perforation a, perforated plate b, tube B, rotating disk C, and central rotating shaft b', all constructed, arranged, and operating substantially as described, for the purpose herein set forth.

201,319. GATES. Horace B. Wolfe, Elkhart, Ind. Filed Dec. 6, 1877.



Claim.—In combination with the swinging and sliding gate C and the post A, the stop a, the transverse cleats b, and the pivoted latch c, secured to said post, the stop and cleats serving to support the free end of the gate in a position when closed, and the latch to lock the same, substantially as specified.

REISSUES.

6,115. BIT-STOCKS. Harry S. Bartholomew, Bristol, Conn., assignor to himself and George W. Bartholomew. Patent No. 95,048, dated May 26, 1867. Filed Feb. 11, 1878.

Brief.—A boring-bit can be firmly held in the brace by means of two wedge-shaped companion jaws having griping-over clamps, angular depressions on their meeting faces, and depressions in their lower ends, which receive corresponding projections formed upon the inner part of a threaded socket having a slot through the center, in which the jaws are placed, and secured in position by a threaded sleeve-nut traversing the socket longitudinally.



Claim.—1. That improvement in the holding part of a bit-stock which consists in the combination of the following instrumentalities: first, a socket having a slot cut through the center thereof, in which the jaws fit closely and work freely, so that either end of said jaws may come together when within the slot; second, companion jaws carrying angular depressions and griping-over clamps on their inside faces, adapted to grasp the bit-shank throughout its whole extent and over its shoulders, as described; and, third, a threaded sleeve-nut traversing the socket longitudinally and closing the jaws directly upon the shank and over its shoulders, substantially as described, and for the purpose specified.

2. In a bit-stock, the protuberance a, taking into a corresponding depression, a', in the jaws, substantially as and for the purpose described.

6,116. STAIR-CARPET PADS. George W. Chipman, Boston, Mass. Patent No. 53,573, dated Apr. 3, 1866. Filed Dec. 19, 1877.

Brief.—One or more layers of fibrous material, each layer covered on both sides with sheets of paper, are inclosed in a case of textile material. The several parts are held together by quilting or stitches.

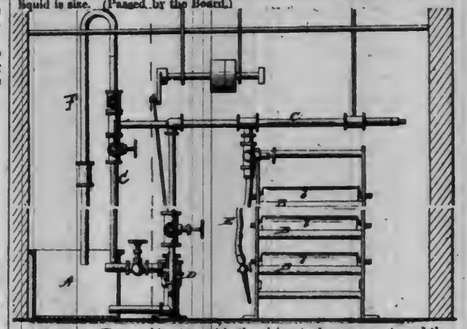


Claim.—1. As a new article of manufacture, a stair-carpet pad constructed of one or more layers of fibrous material, covered outside with sheets of paper, and strengthening material outside of and next to the paper, the whole being quilted through all the materials composing the pad, substantially as described.

2. The fibrous material b and sheets of paper c above and below the fibrous material, combined with a strengthening-layer next the paper to receive the stitches which unite the paper and fibrous material, to prevent the stitches cutting into the paper c, substantially as described.

6,117. MACHINES FOR DRESSING OR SIZING YARN. Benjamin Saunders, Nashua, N. H., assignor, by mesne assignments, to A. H. Saunders. Patent No. 43,627, dated July 19, 1864. Filed Feb. 8, 1878.

Brief.—Avoids the use of tubs, buckets, pails, &c., for conveying the liquid, by the employment of a pump and pipe, in the ordinary manner. The alleged invention consists in pumping size instead of other liquids. For this purpose the mechanism shown and described in Patent No. 10,677, granted March 21, 1854, is adopted, with slight changes in form. The liquid, however, to be used in that machine was stated to be dye. In the present case the liquid is size. (Passed by the Board.)



Claim.—1. The combination, with the sizing tank or reservoir and the dresser-boxes of a sizing-machine, of a pump and suitable pipes for conveying the sizing from the tank or reservoir to the boxes, substantially as herein set forth.

2. A return-pipe, C, in combination with the pump D and size-tank A, or a reservoir connected therewith, substantially as herein specified, for the purpose of keeping the size in continuous motion and distributing it in a simple and easy manner.

3. The bent tube F, in combination with the return-pipe C, pump D, and tank A, substantially as herein specified, for the purpose of giving the requisite pressure at the moment of opening the branch valves to let the size into the various boxes or troughs.

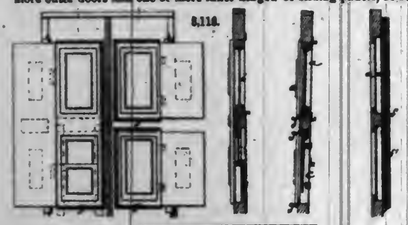
6,118. SHUTTERS. August G. Haussam, Chicago, Ill. Patent No. 102,506, dated June 26, 1877. Filed Feb. 11, 1878.

Brief.—The shutter has one or more inner panels, which may be either hinged or sliding, and has glass for the admission of light, or mosquito-netting for ventilation, and it also has outside imperforate sub-shutters, which may be closed over the inner panels to exclude the light. When the inner panels are closed, a body of non-conducting air is formed between them and the window-sash.

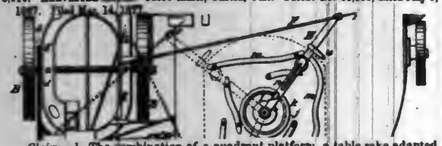
Claim.—1. A hinged window-shutter provided with one or more lighting or ventilating panels, and one or more sliding or hinged panels of known construction on the inside of the same, substantially as set forth.

2. A shutter consisting in the combination, with a shutter-frame, of one or more outer doors and one or more inner hinged or sliding panels, as set forth.

8,119.



8,119. HARVESTER-RAKES. Jacob Miller, Canton, Ohio. Patent No. 66,809, dated July 9, 1867. Filed May 24, 1877.



Claim.—1. The combination of a quadrant-platform, a table-rake adapted to collect the cut grain in gavels suitable for tying, and mechanism controlling said rake and moving it at intervals, with its load, outward against the divider and around to the delivery-point.

2. In a harvester, a mechanism to give motion to a rake placed centrally upon the platform, around which the rake-teeth revolve, in combination with a swivel-post placed on the inner side of the platform, substantially as shown and described.

3. The combination of a quadrant-platform, a rake adapted to collect the cut grain in gavels suitable for tying, mechanism for imparting to said rake, with its load, a motion outward against the divider, backward, and around to the delivery-point of the platform, and mechanism controlling the rake-teeth, and causing them, at the moment of withdrawing from the gavel, to assume a position practically parallel with the path of the machine and athwart the gavel.

4. In a harvester, in combination with a rake moving grain outward, compressing it against the divider-board in bundles, then moving backward and around, delivering it at the side of the path of the machine on its next round, an outer grain-board so arranged as to present no obstacle in the path of removal of the cut grain, substantially as shown and described.

5. The combination of a quadrant-platform, a rake adapted to collect the cut grain in gavels suitable for tying, and mechanism controlling said rake, and causing it to approach and enter the cut grain from and through the open space on the platform between the driving-wheel and the falling grain, and to sweep the same from the inner toward the outer side of the platform, compressing it against the divider-board in bunches, then moving it around to the delivery-point of the platform.

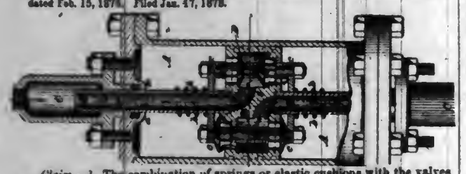
6. The combination of swivel-post, the sweep-rod, fork, and driving-arm with the cam-ledges, for giving said fork its projecting and retreating motions in connection with its revolving motion, substantially as described.

7. In combination with the fork, the post or tnog on the driving-arm, for guarding the end of the teeth of the fork, and for aiding in moving the grain from the platform, substantially as described.

8. The combination of the driving-arm D, fork S, and sweep-arm F, so arranged that the teeth of the fork, in withdrawing from the gavel and moving forward to the point marked 5, will pass over the driving-arm, substantially as shown and described.

9. The combination of the sweep-arm F, driving-arm D, and fork S, when arranged so that the rake-teeth, in moving from the point of delivery of the gavel to the position marked 5, and in passing the minor drive-wheel, will point toward the outer or grain side of the machine, substantially as shown and described.

8,120. PISTON WATER-METERS. Andrew Borgerum, Minneapolis, Minn., assignor of part interest to Wm. J. Fowler, Wm. L. Bassett, and Sylvester B. Chase. Patent No. 173,579, dated Feb. 15, 1876. Filed Jan. 17, 1878.



Claim.—1. The combination of springs or elastic cushions with the valves in a reciprocating piston, for the purpose of adjusting or setting them at each stroke of the piston.

2. The combination of springs or elastic cushions with the hollow piston-rods, the hollow piston, and the puppet-valves in the piston.

3. The combination of springs or elastic cushions with the cylinder and the piston-valves, for the purpose of compressing the springs to set the valves by the movement of the piston.

4. The two sets of piston-valves, connected to each other to insure their simultaneous movement in or through the piston.

5. The hollow piston D, having the diaphragm *g*, and valves *n*, *s*, *p*, and *q* on the valve-stems *d d*, connected by the yokes *e e*, substantially as described, for the purpose set forth.

6. The hollow piston D, constructed as set forth, in combination with the elastic cushions or springs *b b*, bearing on the yokes *e*, and counterbalancing the pressure of the water by reversing the valves, substantially as described, for the purpose specified.

7. The cylinder A, provided with the stuffing-box C, in combination with the hollow piston D, having the diaphragm *g*, and puppet-valves, connected by yokes and springs *b b*, substantially as described, and for the purpose set forth.

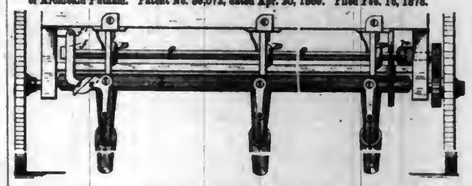
8,121. DRIVE-SCREWS. David F. Potter, New York, N. Y., assignor, by mesne assignments, to Excelsior Drive Screw and Bolt Company, same place. Patent No. 110,839, dated Jan. 10, 1871. Filed Dec. 31, 1877.



Claim.—1. A drive-screw having an angular thread of the character shown, and a conoidal point, the base of which is of the same diameter as the lower end of the shank, with which it immediately connects.

2. A drive-screw having an angular thread of the character shown, and a point which extends by a gradual taper from its base *c* to its extremity *e*.

8,122. SEEDING-MACHINES. Thos. D. Gere, Owego, N. Y., assignee, by mesne assignments, of Archibald Putnam. Patent No. 89,073, dated Apr. 20, 1869. Filed Feb. 16, 1878.



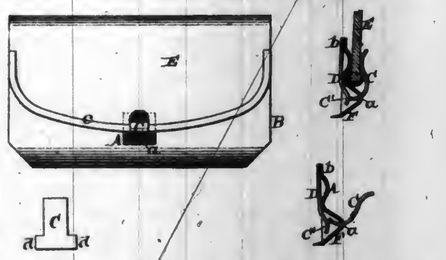
Claim.—1. The round longitudinally grooved distributing-wheel shaft, in combination with the distributing-wheels of a grain-drill, provided with spurs or teeth engaging with said grooved shaft, substantially as and for the purpose set forth.

2. The grooved distributer-wheel shaft, having its bearings directly in the face or casing plates, in combination with the distributing-wheels supported upon and driven by said shaft, substantially as described.

3. The channeled or laterally-flanged distributing-wheel D, provided with the vertical rib or flange *d* on its periphery, substantially as and for the purpose set forth.

4. The grooved sliding rod or shaft O, divided at the clutch *n*, in combination with the lever *f* and inclines *e e'* on the lever and lifting-roller, for throwing the distributing-wheels out of and into action simultaneously with the raising and lowering of the hoes or teeth, as described.

8,123. FASTENINGS FOR POCKET-BOOKS. Louis Mosser, New York, N. Y., assignor to Zinn & Mosser, same place. Patent No. 163,794, dated May 25, 1875. Filed Mar. 5, 1878.



Claim.—1. The combination, in a spring-clasp, of a supporting-case, a cap having a tail-piece which is adapted to engage with the supporting-case, and which allows the cap to swing in and out, and a spring which is secured to the supporting-case and bears on the tail-piece of the cap, said case and cap being connected together without the use of a pintle, substantially in the manner and for the purpose herein shown and described.

2. The combination, in a spring-clasp, of the cap C, supporting-case A, spring D, and the abutment *c*, all constructed and adapted to operate substantially as described.

8,124. STEAM OR WATER PRESSURE REGULATORS. Jos. E. Watts, Lawrence, Mass. Patent No. 161,917, dated Apr. 13, 1875. Filed Feb. 7, 1878.



Claim.—1. The combination, with a pressure-regulator and a drum, distributing-pipe, or receiver, (the pressure in which is to be governed by such regulator,) of an independent pipe, connecting said regulator and drum, pipe, or receiver, and serving to operate the regulator by pressure from such pipe, drum, or receiver at the point where the independent pipe connects with the latter, wherever this connection with the drum, &c., may be, substantially as and for purposes stated.

2. In a steam or water pressure regulator, as described, the combination, with the regulating-valve, the rigid chamber A, and the well-tube H, of the closing-partition *a* and the pipe *c*, leading from the distributing pipe or drum, and entering the well-tube below partition *a*, substantially as and for purposes stated.

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COMMISSIONER'S DECISIONS.

JOHN BURGE.—*Interlocutory Appeal.*

[*Appeal from the decision of the Principal Examiner in the matter of the application of John Burge for the reissue of Letters Patent No. 194,506, granted August 21, 1877, for* "IMPROVEMENT IN TIME-LOCKS," *filed October 4, 1877.—Decided December 17, 1877.*]

The party against whom final interference judgment was rendered, and who accepted a limited patent, cannot set up claim, on reissue, to subject-matter awarded his adversary under the judgment.

An Office judgment unexcepted to is conclusively binding upon the principals touching every matter which it decided. Particularly is this true where the parties by their subsequent acts acquiesce in its findings.

[*M. S. Hopkins*, attorney for applicant.]

SPEAR, *Commissioner:*

The appeal involves the question of the admissibility of certain clauses of claim presented in the reissue application. The Examiner criticises the claims also for defectiveness in form; but, as there is no difficulty in understanding exactly what the applicant designs to cover by them, the consideration of this objection may be deferred to that of the other point involved, which is of much more importance.

The Examiner holds that certain of the claims come within the finding of the Commissioner in *Sargent* vs. *Burge* (11 OFFICIAL GAZETTE, 1055); and that as a consequence, since Burge was the defeated party in that cause, he is precluded from again setting up title within the Office to any subject-matter which was properly determined therein. So far as he is concerned, the questions which then lawfully passed into judgment have become *res judicata*, and their full force can be neither questioned nor evaded.

It becomes important, in the first place, to ascertain exactly what was decided in the Sargent and Burge interference; and with that fixed clearly in mind, we will be able to judge how far the objection of the Examiner to the claims is well founded.

Attorney for the present applicant, Burge, has dwelt with much stress upon the rules of law to be followed in construing the Commissioner's opinion in that cause, and has urged in effect that the first matter presented for his determination was whether the issue as declared upon was a proper one; that, having decided this question in the negative, to proceed to consider the question of priority of invention upon the evidence taken, or, indeed, to discuss any other matter, was premature, and should, in proper practice, have been delayed until a new issue had been declared and approved.

Generally speaking, I do not think there can be any question as to the propriety of this practice; but the applicant would be as little benefited by the rigid adherence thereto on the part of the Commissioner as he deems himself to have been by the extrajudicial act of the Commissioner in declaring a feigned issue, and proceeding to determine the question of priority of invention upon it. For, if the judgment adverse to the correctness of the issue stated necessarily operated to place all other matters in abeyance until it was correctly settled and defined, then the announcement upon which applicant so confidently relies, that there could be no interference between the inventions of Sargent and Burge, was as much a dictum as anything touching priority of invention, patentability, &c.

Regarded, then, in the strict light of applicant, the decision gave him no more immunity from possible future interference with Sargent than it awarded priority in the latter's favor. To my mind, however, the opinion in that case had much broader scope than is admitted for it. With the case regularly before him, and arguments addressed by common consent of counsel to both the formality of the issue and to priority of invention, the Commissioner, in passing upon both of these matters, departed in no essential from a course of procedure tacitly approved by counsel at the hearing.

The Commissioner in proceeding to try the question of priority on a new issue declared by himself was strictly within the letter of the law, and administered substantial justice as seemed right to him, according to the voluminous evidence and exhaustive arguments that had been presented. Instead of remanding the matter to the Primary Examiner for the purpose of redefining the issue, he took cognizance of the interfering matter in the first instance; and having ascertained the nature and scope of the conflicting subject-matter, adjudged priority in accordance with the law and with the evidence adduced.

If either side was dissatisfied with the course he

adopted, if it was desirable to obtain new and material evidence bearing upon the issue as redefined, the saving remedy lay in a motion to rehear or to amend judgment. No such motion was ever made. On the contrary, Burge withdrew the claims upon which the controversy turned, and accepted from the Office a limited patent, and, by this course of action, conclusively acquiesced in the lawfulness and propriety of the course adopted by the Commissioner. While, as to third parties not in privity with the principals, the decision in *Sargent* vs. *Burge* may have settled nothing definitely other than that the issue declared upon was defective, yet, as to the principals themselves, and to all parties that may hereafter claim under them, that decision unexcepted to, is, by the very act of the parties, conclusive upon them within the Office with relation to every subject which is discussed, and cannot now be questioned or assailed.

The claims upon which appeal is taken read as follows:

1. A time-lock for application on a safe or vault door provided with a notched dog or obstruction which is integral with the lock, but is isolated from the time mechanism, and stationary, except during the brief periods of movement for locking or unlocking, substantially as set forth; said dog being so arranged as to be automatically oscillated on its pivot for unlocking or undogging the bolt-work at a time indicated by the time mechanism, but by an agency other than the time mechanism.

2. The combination, in a time-lock, for application on a safe or vault door, of (1) a wheel rotated by the time mechanism for unlocking, but capable of being rotated independently of the time mechanism in order to set it for determining the time that shall elapse before the unlocking takes place; (2) a fixed pin or stud projecting from said wheel; (3) a tripping-lever, one arm of which stands within the circular path of said pin to be struck by it to move the lever on its pivot and cause its other arm to effect tripping or releasing, so as to permit unlocking by a separate agency; (4) a spring acting upon the tripping-lever and tending to keep its upper arm in the circular path of the fixed pin.

These claims are clearly broad enough to construe with the invention of Sargent, and as between himself and Burge the property therein has been adjudged to be his, Burge cannot be permitted to present the new claims.

The action of the Examiner in requiring that they be stricken out is affirmed.

DECISIONS OF THE COURTS.

Circuit Court of the United States—District of Massachusetts.

HIRAM W. BROOKS *vs.* JOHN MOORHOUSE.

[*In Equity.—No.* 559.]

OPINION OF THE COURT.—*February* 4, 1878.

The defendant in a suit at law for infringement agreed with the plaintiff, for a valuable consideration, to discontinue the manufacture of the infringing article, and subsequently suffered interlocutory judgment to be entered against himself by default. Afterward he continued to make and sell an article differing but slightly from the former, and a clear infringement of the one patented. A bill in equity having been brought to restrain the unlicensed manufacture, and it appearing that the defenses set up in the answer were within the defendant's knowledge at the time of the action at law: *Held*,

1. His agreement cannot be repudiated. It was made for a valuable consideration, with a full knowledge of the facts, and there is nothing to show that it was either unconscientious or unreasonable.

2. An equity court will not entertain jurisdiction of a matter which the person has had opportunity to litigate in another court, and which has there been decided against him, unless it appears that circumstances beyond his control prevented his making the defense or trying the question.

3. The defendant, both by the proceedings in the action at law and the agreement signed by him, is concluded from contesting the validity of the patent.

[*Charles T. Russell* and *Charles T. Russell, Jr.*, for complainant; *Ambrose Eastman*, for defendant.]

SHEPLEY, *J.*:

An action of law was commenced in this court by this complainant against this defendant, alleging infringement of the same patent now in suit in this case in equity for an injunction and account. The defendant was personally served with process in that suit, and allowed a default to be entered on the 10th day of November, 1874. After the commencement of the suit, an arrangement was made between the plaintiff and the defendant that if plaintiff would buy the stock of boot and shoe buttoners the defendant had on hand, defendant would stop the manufacture of the infringing articles. Accordingly defendant gave to plaintiff a receipted bill for manufactured goods and for wires and handles for the manufacture, amounting to $157.90. which goods plaintiff received and paid for at the agreed price. Across the face of the receipted bill, Moorhouse, the defendant, wrote "I agree not to make any more of the Goldthwait buttoner from this date of our Lord, October 6, 1874," and signed it with his name. He afterward continued to manufacture and sell buttoners differing very slightly in form from those previously made by him, but clearly embodying the invention described in the Goldthwait patent, of which complainant is the assignee. When the bill in equity in this case was filed, final judgment had not been entered in the suit at law, no assessment of damages having been made.

The defendant's answer denies that Goldthwait was the first and original inventor, and alleges that prior to the date of the alleged invention great numbers of buttoners embodying the invention described and claimed by Goldthwait had been imported from England and France, and were in common use and on public sale in this country more than two years. Defendant in reply to the allegations in the bill in relation to the suit admits the commencement of the action, and the voluntary default, but avers that when the suit was brought the defendant was ignorant of the facts he now sets up in relation to the prior manufacture, use, and sale of the buttoners before Goldthwait's invention, and was ignorant of the law and not advised that those facts would constitute a defense. The averment in the answer of ignorance of the facts does not correspond with defendant's testimony in the case, from which it would appear that before the default he ascertained that the article had been imported many years, and that the patentee had stolen the patent from a French patent by simply reversing.

Defendant now relies for his defense upon the evidence tending to show an importation from France and Germany, and the public sale and common use in this country more than two years before the application for the patent, of articles embodying the invention. The complainant, while contending that the evidence is not sufficient to establish prior invention and use, contends that it is not open to the defendant after the default in the action at law to interpose that defense in this proceeding in equity, and also that the defendant cannot in a court of equity deny the binding obligation upon him of the agreement.

The agreement not to make any more of the Goldthwait buttoners was founded upon a valuable consideration. It was a part of the arrangement between the

parties for the purchase of the stock and materials Moorhouse had on hand. Such an agreement made with full knowledge of the facts, and not under duress, and with no evidence that it was unconscientious or unreasonable, a court of equity will enforce. In *Sargent* vs. *Larned*, 2 Curtis, C. C., 340, where the facts are very similar to the facts in this case, this court, Mr. Justice Curtis presiding, refused to allow such an agreement to be repudiated, and enforced its observance by injunction.

Nor will a court of equity ordinarily entertain jurisdiction of a matter which the person has had an opportunity of litigating in another court, and which had there been decided against him, unless it appears that circumstances beyond his control prevented his making the defense, or trying the question. (*Le Guen* vs. *Gouverneur et al.*, 1 Johns. Cas., 436; 3 Atk. 224; 1 Atk. 293; 7 Term Rep., 269. *Baker* vs. *Whitney*, 1 Story, 218.)

The defendant, both by the proceedings in the action at law and the agreement signed by him, is concluded from contesting the validity of the patent.

Decree for injunction and account according to the prayer in the bill.

U. S. Circuit Court—Southern District of New York.

R. HOE & CO. *vs.* R. F. COLE & CO.

[*In Equity.—October Term*, 1877.]

A printer's galley in which the metal facing-strips are secured to the wooden rails without perforations or roughness in the smooth metal surface (Reissue Letters Patent No. 6,326) is infringed, although the patentee shows and describes the metal face-strips, with top and bottom flanges, having projecting ledges which engage with corresponding grooves in the wooden rails, while the defendant uses an L-shaped metal face, to which the wooden back or rail is secured by screws passing through the foot of the L.

[*Munson & Philipp* for complainants; *Daily & Perry*, for defendants.]

WHEELER, *J.*:

This cause has been heard on pleadings, proofs, and argument.

The orators own a patent originally issued to Alexander T. De Puy, in Letters No. 60,151, dated December 4, 1866, and reissued to them in Letters No. 6,326, dated March 9, 1875, for an improvement in printers' galleys for holding type set up in them for use, which they claim the defendants infringe, and they pray appropriate relief for infringement.

Among other defenses, the defendants allege that De Puy was not the original and first inventor of the device described in the patent, and that they do not infringe upon the patent. The issue made upon the pleadings and proofs, the decision of which is decisive of the case, is well stated in the concluding paragraph of the defendants' brief to be "Whether Alexander T. De Puy was the original and first inventor of improvements in printers' galleys, which were and are being made and sold by these defendants."

It appears that such galleys are oblong, of various sizes, with metal bottoms, and with ledges on each side and at one end, high enough to hold upright and in place set-up type. That it is necessary to make them strong, desirable to have them light, and essential to their convenient use that the inner surfaces of the ledges next to the type be smooth.

The earliest style shown was made with wooden ledges having metal facings, with screws or nails through the facings extending into the wood. This afforded lightness and strength, but the nail or screw heads and their sockets made the faces of the ledges rough and troublesome.

The next style was a ledge of metal without wood. This obviated the roughness, but made them heavy.

In 1859 De Puy invented the style, described in his patent, of galleys with wooden ledges faced with metal, secured by fastenings back of, and not interfering with, the smooth faces of the ledges.

This afforded permanently smooth faces to the ledges, combined with lightness and strength as far as has been shown to be practicable.

This is the first, so far as has been made to appear, that any one has accomplished these combined results.

In the specification of the patent he described the mode of applying his invention and its advantages, and in doing so he stated:

It is obvious that this invention may be embodied in various forms without departing from the gist or spirit of it.

Then he described a particular method of fastening the metal face of the ledges to the wood by extending the metal back at the top and bottom, and turning flanges on the extensions to be forced into corresponding groves in the wooden rail; and added:

The ledges may be attached to the bed-plate in any well-known manner.

The first claim in the patent is for—

The combination of the edge-rail and its metallic facing or lining by means which secure their union and leave the metallic facing or lining smooth or free from perforations or similar interruptions, substantially as and for the purpose set forth.

The defendants use an L-angle metal facing for ledges, with smooth unperforated face, supported by a wooden rail attached to it by screws through the bed-plate and the bottom part of the L.

This is a mode of fastening the metal face to the wooden rail different in form from that which De Puy specifically described in his patent, but his leading idea, as set forth in the patent, of fastening the face-plate to the rail by an attachment back of the plate without perforating the face, is followed.

The screws through the L into the wood take the place of the lower flange and the upper one is dispensed with. The screws were well-known substitutes for flanges in such fastenings, and that change was one of form and not of substance.

According to the rules of law relating to this subject, De Puy was the original and first inventor of the invention described in the patent, and of the device made use of by the defendants, and the question stated as being decisive of the case must be answered in the affirmative.

This makes it unnecessary to make any decision upon the questions made by the orator's counsel with reference to evidence bearing upon the question.

Let a decree be entered for a reference and accounting and an injunction, according to the prayer of the bill.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

TRADE-MARKS.

[Each certificate bearing date March 19, 1878.]

5,754.—GROS GRAIN RIBBONS.—*William P. Gill*, Brooklyn, N. Y. Application filed February 1, 1878.

"The letters 'G. R.'"

5,755.—CHAMPAGNE WINE.—*Krug & Co.*, Reims, France. Application filed February 2, 1878.

"KRUG & CO."

5,756.—CHAMPAGNE WINE.—*Krug & Co.*, Reims, France. Application filed February 2, 1878.

"A representation of a shield surmounted by a crown, as shown."

5,757.—COCOA.—*Henry Maillard*, New York, N. Y. Application filed February 1, 1878.

"The word-symbol 'BREAKFAST.'"

5,758.—CIGARS.—*Rohlfing & Rabenstein*, Cincinnati, Ohio. Application filed January 31, 1878.

"The word 'Bullion' and the picture representing a treasure-vault displaying gold coin in sacks, and having as accessories two cornucopias (or horns of plenty) likewise disgorging gold coin. The whole has printed upon it the word and letters 'Bullion,' 'R. & R.'"

5,759.—CIGARS.—*Simon Eliel*, Bloomington, Ill. Application filed November 9, 1877.

"The metallic disk bearing the letter E, as shown.

5,760.— MATERIAL FOR COVERING ROOFS, STEAM-BOILERS, AND PIPES, COMPOSED WHOLLY OR IN PART OF ASBESTUS.—*Henry W. Johns*, Brooklyn, N. Y. Application filed December 29, 1877.

"The parallelogram having a fringed or fibrous appearing edge, containing the word 'Asbestos' in letters of a fibrous appearing or fringed edge, as shown."

5,761.—WOOL DETERGENT AND BLEACHING COMPOUND.—*Myers & Co.*, Philadelphia, Pa. Application filed August 13, 1872.

"A star."

5,762.—GAS AND WATER REGISTERING APPARATUS.—*The American Meter Company*, New York, N. Y., and Philadelphia, Pa. Application filed February 11, 1878.

"A rising eagle carrying a banner over the representation of a globe or a portion of a globe."

5,763.—GAS AND WATER REGISTERING APPARATUS.—*The American Meter Company*, New York, N. Y., and Philadelphia, Pa. Application filed February 11, 1878.

"The representation of an eagle."

5,764.—GAS AND WATER REGISTERING APPARATUS.—*The American Meter Company*, New York, N. Y., and Philadelphia, Pa. Application filed February 11, 1878.

"The representation of a globe, or a portion of a globe, as shown."

5,765.—FLOUR.—*Red Wing Mills*, Red Wing, Minn. Application filed February 6, 1878.

"The cipher ('0') or letter 'O.'"

5,766.—BRAID.—*Spielmann, Wolf & Co.*, New York, N. Y. Application filed September 13, 1877.

"A symbol of three stars within a circle in form of a triangle with point down, as shown."

5,767.—MEDICINAL COMPOUND.—*T. A. Smurr*, Ottawa, Ill. Application filed September 17, 1877.

"The word-symbol 'NONE SUCH' and name 'DOCTOR T. A. SMURR.'"

5,768.—SPOOL-COTTON.—*The Willimantic Linen Company*, Hartford, Conn. Application filed February 1, 1878.

"The letters 'W. L. Co.' formed into a monogram."

5,769.—SPOOL-COTTON.—*The Willimantic Linen Company*, Hartford, Conn. Application filed February 1, 1878.

"A five-pointed star."

5,770.—SPOOL-COTTON.—*The Willimantic Linen Company*, Hartford, Conn. Application filed February 1, 1878.

"The words 'Willimantic Linen Co.' and the figure of the eagle."

5,771.—CIGARS.—*Charles A. Ahrens*, New York, N. Y. Application filed February 14, 1878.

"The word-symbol 'ECLIPSE.'"

5,772.—YEAST-POWDER.—*Philo M. Goodwyn*, New Orleans, La. Application filed February 16, 1878.

"The word 'Eureka,' and of a quadrangular figure, which is divided into four equal parts, in one of which is represented an eye, in another the letter H, in a third the letter F, and in the fourth an eye, with the letter T in rear thereof."

5,773.—MEDICINE FOR CHILLS.—*E. W. Grove*, Paris, Tenn. Application filed February 11, 1878.

"The word-symbol 'FERRINE.'"

5,774.—FLOUR.—*George V. Hecker & Co.*, New York, N. Y. Application filed September 26, 1877.

"Two bands or stripes arranged parallel with each other, but diagonal to their background, and an intermediate stripe connecting the opposite ends of the parallel stripes, as shown."

5,775.—WASH-BLUE.—*Nürnberger Ultramarine Fabrik*, (*Johannes Zeltner*,) Nürnberg, Bavaria. Application filed February 7, 1878.

"The fanciful words 'MEDAILLE D'ORE.'"

5,776.—LAGER-BEER.—*Robert Portner*, Alexandria, Va. Application filed February 20, 1878.

"The word-symbol 'TIVOLI.'"

5,777.—PIANO-FORTES AND ORGANS.—*Freeborn G. Smith*, New York, N. Y. Application filed February 16, 1878.

"The word-symbol 'IMPERIAL.'"

5,778.—EDGE-TOOLS.—*The Collins Company*, Collinsville, Conn. Application filed February 20, 1878.

"The written signature of Samuel W. Collins, as illustrated."

5,779.—EDGE-TOOLS.—*The Collins Company*, Collinsville, Conn. Application filed February 20, 1878.

"The letter and word 'B. Swift' accompanied by a cross in the form of an X."

5,780.—WOODEN WARE.—*David H. Wilder*, Corry, Pa. Application filed February 18, 1878.

"The word-symbol 'CORRY.'"

5,781.—GLOSSING OR POLISHING SOLUTION.—*William B. Wolf*, Baltimore, Md. Application filed February 18, 1878.

"The fanciful name 'HOUSE-KEEPERS' FRIEND.'"

DESIGNS.

[Each design bearing date March 19, 1878.]

10,538.—HANDLES FOR COVERED DISHES.—*James Barlow* and *James Moses*, Trenton, N. J. Application filed March 1, 1878. Term of patent 7 years.

10,539.—HINGES.—*Archibald Culbert*, New York, N. Y. Application filed March 7, 1878. Term of patent 3½ years.

10,540.—BADGE.—*James Fallows*, Philadelphia, Pa., assignor to *F. Gutekunst*, same place. Application filed February 8, 1878. Term of patent 7 years.

10,541.—CARPETS.—*Henry Nordman*, New York, N. Y., assignor to *Hartford Carpet Company*, Hartford, Conn. Application filed March 11, 1878. Term of patent 3½ years.

10,542.—CADDY.—*Edwin Norton*, Chicago, Ill. Application filed March 13, 1878. Term of patent 3½ years.

10,543.—CARPETS.—*William McCallum*, Yonkers, assignor to *Bigelow Carpet Company*, New York, N. Y. Application filed March 9, 1878. Term of patent 3½ years.

10,544.—CARPETS.—*George W. Piggott*, New York, N. Y. Application filed March 11, 1878. Term of patent 3½ years.

10,545 and 10,546.—CARPETS.—*William H. Smith*, Enfield, assignor to *Hartford Carpet Company*, Hartford, Conn. Applications filed March 11, 1878. Term of patents 3½ years.

10,547 and 10,548.—CARPETS.—*John H. Smith*, Enfield, assignor to *Hartford Carpet Company*, Hartford, Conn. Applications filed March 11, 1878. Term of patents 3½ years.

LABELS.

[Each certificate bearing date March 19, 1878.]

1,448.—Title: "ALLEN'S COMPOUND EXTRACT OF BUTTERNUT FOR THE BLOOD."—*William Allen*, Fort Edward, N. Y. Application filed March 7, 1878.

1,449.—Title: "ANGOSTURA AROMATIC BITTERS."—*C. W. Abbott & Co.*, Baltimore, Md. Application filed December 1, 1877.

1,450.—Title: "BENNETT'S GREAT RHEUMATIC COMPOUND—THE LAME MAN'S FRIEND."—*William W. Bennett*, Little Cooley, Pa. Application filed March 9, 1878.

1,451.—Title: "STRIPPED, SAMPLE WARRANTED."—*Bensel & Co.*, New York, N. Y. Application filed March 11, 1878.

1,452.—Title: "DR. HALPRUNER HEALING SALVE."—*Winfield S. Halpruner*, San Francisco, Cal. Application filed March 8, 1878.

1,453.—Title: "MERINO FINISH."—*William Simpson, Sons & Co.*, Philadelphia, Pa. Application filed March 11, 1878.

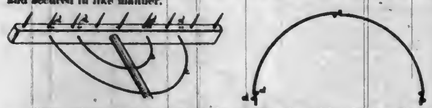
1,454.—Title: "CHILDS' PRIZE-MEDAL ROOFING-FELT."—*William H. H. Childs*, New York, N. Y. Application filed March 12, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

MARCH 19, 1878.

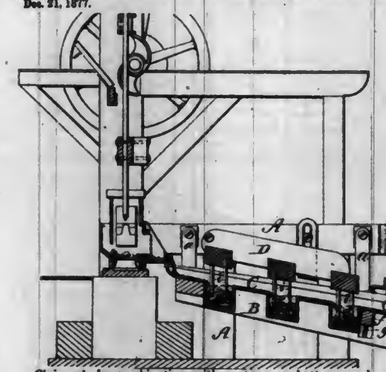
201,220. HAND-RAKE. Jacob Bowdish, Pinkwood, Mich. Filed Feb. 10, 1873.

Brief.—The bow of the rake is made from wire, cut to the proper length and bent into the desired form. Near each end, and in the middle, is formed a short obtuse angle. The bow is inserted through a hole in the handle, and the angle in the middle of the bow brought to the center, and two small nails or brads are driven, one upon each side of the wire, so as to bring the angle between them, and this secures the bow. The ends are inserted into the head and secured in like manner.



Claim.—As an improvement in the construction of hand-rakes, the wire bows *c*, being provided with a crimp or offset at or near each end and in the center, and secured in position in the head and handle, by a nail or pin, *d*, driven through the said head and handle on each side of each crimp, and on opposite sides of the wire, substantially in the manner and for the purposes set forth.

201,321. AMALGAMATORS FOR STAMP-MILLS. Lorenzo M. Boardman, St. Peter, Minn. Filed Dec. 21, 1877.



Claim.—1. In combination with a stamp or battery amalgamator, substantially such as shown, an inclined reciprocating pan, C, provided with transverse depressions or pockets in its bottom, and arranged to receive the pulp from the amalgamator, as shown.

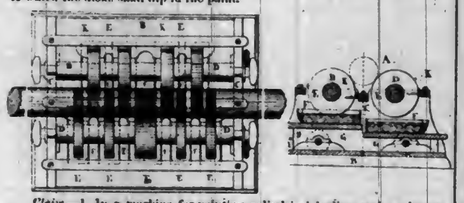
2. In combination with the inclined reciprocating pan having transverse pockets or depressions in its bottom, fixed agitators extending downward within the pockets, as shown.

3. The separator or pulp-treating machine, consisting of the main frame, the reciprocating frame H, carrying the removable and adjustable pan C, and the hinged frame D, provided with the agitating fingers.

4. In combination with the pan C and hinged frame D, the adjustable steps, applied as shown, to regulate the position of the agitator-fingers in relation to the pan.

201,322. PAINTING-MACHINES. Charles T. Brandon, Toronto, Ontario, Canada. Filed July 31, 1877.

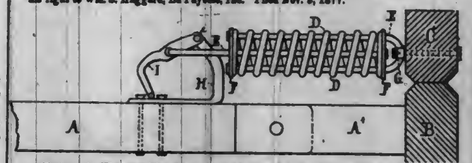
Brief.—A pair of shafts provided with alternately-placed disks, each disk provided with a separate color pan, and capable of transmitting as many colors as there are disks. The pans rest on an adjustable table to regulate the depth to which the disks shall dip in the paint.



Claim.—1. In a machine for painting cylindrical bodies, such as broom-handles, the alternately-placed color-disks E, supported by fixed bearings, and each deriving its color from its separate trough or vessel, and arranged to rotate by direct contact with the cylinder to be painted, which cylinder is revolved by a horizontal movement of the hands of the operator, substantially as shown and described.

2. The frame A, shafts D D, with alternately-arranged color-disks, scrapers K, pans F, and adjustable table, all combined and arranged to form a machine for painting cylindrical bodies, such as broom-handles, croquet-pins, &c.

201,323. WAGON-TONGUE SUPPORTS. Lorenzo D. Brown, Montezuma, assignee of one-half his right to Wm. S. Haggard, La Fayette, Ind. Filed Nov. 9, 1877.



Claim.—1. The combination, with the tongue A of a wagon, of a support the rear of which shall be fastened to some suitable point on the wagon, consisting of the spring D, staples E E, caps F F, device H, and lever I, substantially as herein shown and described.

2. A wagon-tongue support attached at one end to the bolster, or other suitable point on the front of the wagon, and at the other end to the lever I, by which the device is operated to support the tongue, which lever is, in turn, attached to the device H on the top of the wagon-tongue, all in combination with each other, substantially as herein shown and specified.

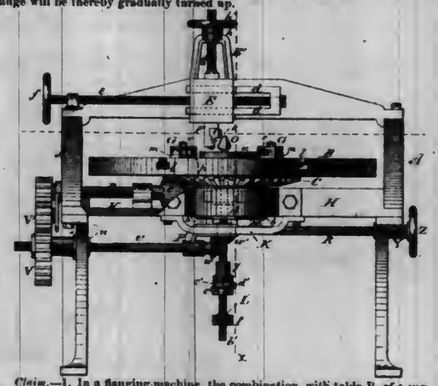
201,324. MANUFACTURE OF CULTIVATOR-SLEEVES. Catharanus P. Buckingham, Chicago, Ill. Filed Aug. 17, 1876.



Claim.—The herein-described improvement in the art of manufacturing wrought-metal sleeves for cultivators, consisting in first bending the shank in suitable dies, so that the sides will be left flaring and the front edge concave or depressed, and then straightening up the sides so that they will be parallel to each other, and thereby forcing outward the front portion by said lateral compression of the sides alone, so that the sleeve will be rectangular in cross-section, substantially as set forth.

201,325. PLANING-MACHINES. Loudon Campbell and James F. Richards, Pittsburg, Pa., assignors of one-third their right to Wm. M. Ross, same place. Filed July 13, 1877.

Brief.—The disk is clamped upon the rotating table, the face-holes are cut, and the cutting-tool gives place to the vertical roller, which is adjusted so as to leave the proper depth of flange, and which presses the disk down upon the table and supports the flange against the finishing work of the former. The former is adjusted to such a position below the disk that, rising therefrom, the flange will be thereby gradually turned up.



Claim.—1. In a flanging-machine, the combination, with table B, of a vertical roller, I, in a carrier, F, capable of vertical and lateral adjustment, and a revolving former, O, having positive independent motion and capable of vertical feed, substantially as described.

2. In a hanging-machine, the combination, with table B, of a vertical roller, *k*, in a carrier, F, capable of vertical and lateral adjustment, and a revolving former, O, capable of both vertical and lateral adjustment, substantially as described.

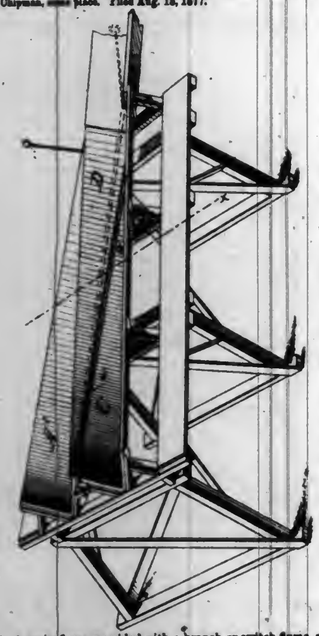
3. The combination of carrier F and block *l*, having its outer face cut away to permit the protrusion of the periphery of the roller *k*, and both grooved and recessed substantially as described, and adapted to receive either the vertical friction-roller *k* or the fixed cutter *r*.

4. The combination, in the dogs G, of the slide *m*, having shoulder *o* and groove *p*, or either, with the clamp *n* and tightening-screw, said groove having a retaining-face or back wall for the plate to abut against, substantially as shown and described.

5. In combination with the arch L, or an equivalent stop, and the shaft *s*, or its fixed sleeve *y*, the loose collar *c'* and its spring-catch *d'*, substantially as described, whereby revolution of the collar is permitted in one direction and prevented in the other.

6. The combination of the loose collar *c'*, having a cam face or groove, and a pivoted spring-catch, *d'*, with the sleeve *y* or shaft *s*, having the spring-dog *e'*, with its end *f'*, and the notched-headed screw *b'*, let into the recessed sleeve or shaft, and operating in bearing *t*, substantially as shown.

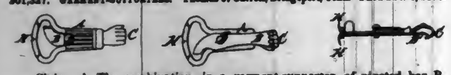
201,326. FLUMES. Remembrance H. Campbell, Red Bluff, Cal., assignor of one-half his right to Horton P. Chipman, same place. Filed Aug. 18, 1877.



Claim.—1. A main flume provided with a branch or switch flume, substantially as and for the purpose herein set forth.

2. The combination of a main flume, a branch flume, and a separator, operated substantially as described, and for the purpose set forth.

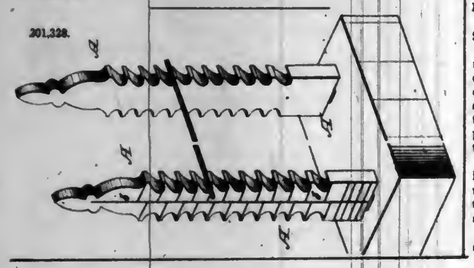
201,327. GARMENT-SUPPORTERS. Thomas J. Carroll, Bridgeport, Conn. Filed Feb. 6, 1878.



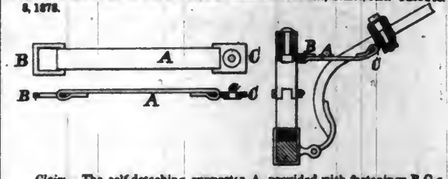
Claim.—1. The combination, in a garment-supporter, of pivoted bar B, corrugated hook C, and tangs H H, arranged upon the ring, constructed and operating together substantially as and for the purposes set forth.

2. A garment-supporter provided with a ring having pointed tangs, for fastening it to the connecting-band, with which it is to be used, substantially as described.

201,328.

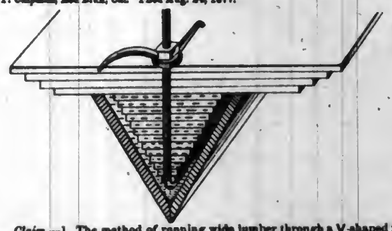


201,329. STRAP-SUPPORTERS FOR VEHICLES. Elias L. Chamberlin, Monroe, Ohio. Filed Feb. 8, 1878.



Claim.—The self-detaching supporter A, provided with fastenings B C *a*, in combination with carriage-gearing, substantially as and for the purpose described.

201,330. MODES OF BUCKING LUMBER FOR RUNNING THROUGH V-SHAPED FLUMES. H. P. Chipman, Red Bluff, Cal. Filed Aug. 24, 1877.



Claim.—1. The method of running wide lumber through a V-shaped flume, which method consists in building the lumber in the shape of a V-raft, then securing the ends by means of clamps, and passing the same through the watered V-shaped flume, as described.

2. A clamping device, substantially as described, consisting of a bar, B, upper arm C, lower arm D, and adjusting-screw E, for the purpose set forth.

201,331. DUST-CONVEYERS FOR THRASHING-MACHINES. Edward S. Churchman, Plain City, Ohio. Filed Sept. 20, 1876.

Claim.—In a thrashing-machine, the combination, with the feed-hopper B and cylinder C, of the cap D, having aperture *a*, the removable screen F, box G, with hinged side door *d*, and the fan-case H, with fan I and discharge-spout J, all constructed and arranged to operate substantially as and for the purposes herein set forth.

201,332. LUBRICATORS. Wm. A. Clark, Westville, Conn. Filed Feb. 13, 1878.

Claim.—1. A lubricator composed of the combination of the following elements, viz: a cylinder for containing the lubricant, and having a passage, as described, for the injection of the same into the engine, a piston fitted to said cylinder and under an equilibrium of pressure, as described, and mechanism, substantially as described, connecting the piston with a moving member of the engine, whereby the quantity of oil discharged by the movement of the piston shall be regulated and proportioned by the speed or number of revolutions made by the engine, as set forth.

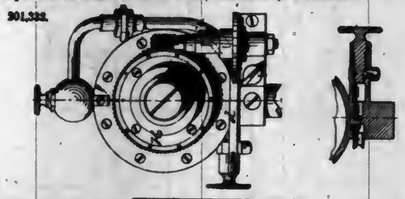
2. In a lubricator, the combination, with the moving piston of an oil-injector, of a graduated disk, H, which is attached to the nut, giving movement to the piston, and is combined, as described, with a moving member of the engine, whereby the number of revolutions of the engine can be observed and the quantity of oil discharged be measured.

3. The combination, with the piston and its rod, of the slotted graduated sleeve *b'*, within which the piston-rod moves, and the sliding sleeve or casing

b', substantially as described, whereby the position of the piston and the quantity of oil discharged may be readily determined and the piston-rod protected from abrasive matter, as set forth.

4. In a lubricator, the combination of a cylinder, A, and piston B, which latter has a movement given to it dependent upon the movement of the engine, as described, and a discharge-passage, *g*, for the oil, whose upper end is elevated to prevent the outflow of the oil by gravity, and which is provided with a trap to prevent the inflow of steam or air, substantially as described.

201,333.

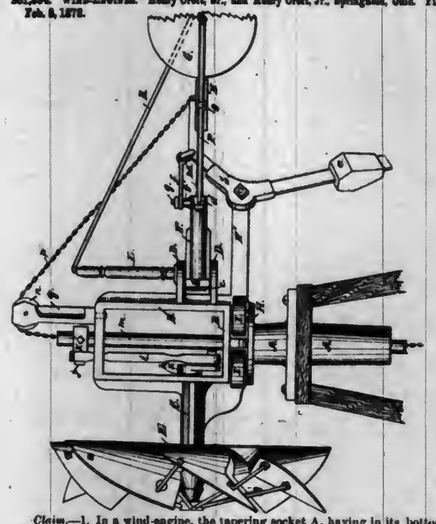


201,333. WAGON BOLSTER-PLATES. Silas S. Crocker and Alva Wilcox, Clarence, Iowa. Filed Sept. 15, 1877.



Claim.—As an improvement in sand-boards or wagon bolster-plates, the cushioned removable sand-board herein shown and described, consisting of the plank A, having dovetailed step A' and end notches C, and cushion B, having beveled sides *b b*, substantially as and for the purpose set forth.

201,334. WIND-ENGINES. Henry Orth, Sr., and Henry Orth, Jr., Springfield, Ohio. Filed Feb. 8, 1878.



Claim.—1. In a wind-engine, the tapering socket A, having in its bottom a chilled box, in which the spindle-sleeve of the turn-table rests and rotates, substantially as set forth.

2. The turn-table B, consisting of a rectangular frame-work, carrying on opposite sides the brackets C and D and the arm F', and having the integral annular disk H and wheels I, and provided with a spindle-sleeve, J, which has its bearing in the socket A, as and for the purpose set forth.

3. In combination with the turn-table, the pivoted standard *q*, carrying a sheave, *n*, arranged to convey the chain *p* in a vertical line through the center of the hollow rod *m*, substantially as set forth.

4. The vane-support F, pivoted between the ears of the bracket D, and having the right-angular shoulders *h*, provided with rubber buffers *e*, and having on its recessed rear end the ears *d* and lug *g'*, substantially as set forth.

5. The standard L, carrying the pivoted end of the vane-supporting rod E, and coincident with the tail-vane pivot, substantially as set forth.

6. In combination with the tail-vane, the lateral brace-rods P, sleeve N, and arms O, arranged substantially as and for the purpose set forth.

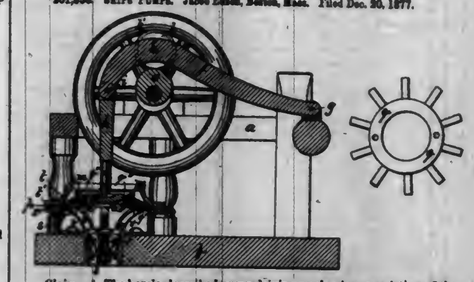
7. The combination, with the turn-table, constructed as described, of the spindle *h*, crank *h'*, pitman *i*, adjustable box K, and hollow rod *m*, the whole arranged substantially as and for the purpose specified.

201,335. ATTACHING CALKS TO HORSESHOES. Wm. Dickinson, Rockford, Ill. Filed Aug. 16, 1877.



Claim.—1. A horseshoe constructed with a T-formed mortise, with lengthwise and transverse enlargement on its upper side, beveled inward, forming the dovetailed mortise herein described, the removable toe-calk, constructed with an upward-projecting tenon, provided with dovetailed enlargements on the sides and edge of its upper end, and the hook-headed key herein described, these parts constructed, arranged, and operating as and for the purpose hereinbefore set forth.

201,336. SHIPS' PUMPS. Jacob Edson, Boston, Mass. Filed Dec. 20, 1877.



Claim.—1. The herein-described pump-driving mechanism, consisting of the curved lever *p*, with its pin or bolt *l* and anti-frictional rollers *k k*, the rotary shaft *c*, with its cam or eccentric *q*, located between the fulcrum *g* and pump connecting-rod A, substantially as and for the purpose set forth.

2. In combination with the flexible diaphragm *p*, the pump-chamber *s*, with its ribs *v v v*, the holding-ring *q*, with its bars or ribs *q' q' q'*, as and for the purpose set forth.

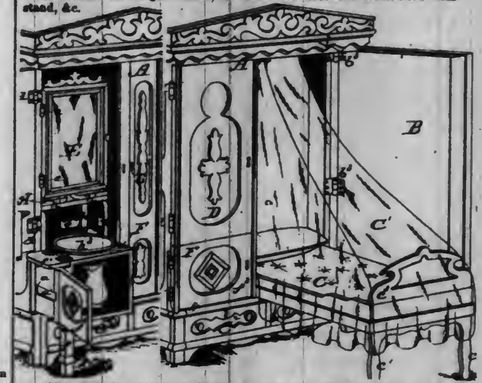
3. The holding-ring *q*, with its supporting-bars *q' q' q'*, the flexible diaphragm *p*, having its inner edge *q''* projecting inside of the ring *m*, and resting upon the ring *q*, in combination with the valve *r*, as and for the purpose set forth.

4. The herein-described box, consisting of annular ring 1, sustaining-bars 2 2 2, and the conical packing 3 3, as and for the purpose set forth.

5. The combination of the annular ring 1, sustaining-bars 2 2 2, conical packing 3 3, and the holding-bolt 4, with its head 5, nut 6, and steady-pins 7 7, with their recesses 8 8, as and for the purpose set forth.

201,337. WARDROBE-BEDSTEADS. Wm. Fay, St. Louis, Mo. Filed Dec. 14, 1877.

Brief.—One side of the structure contains the bedstead, hidden, when the structure is closed, by the wardrobe, while the other side contains the bureau, hidden behind the hinged mirror, and below the bureau is located the wash-stand, &c.

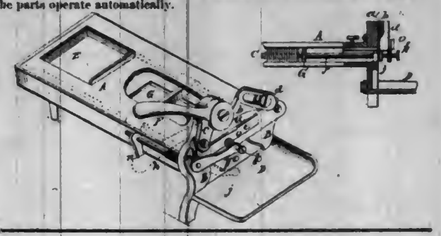


Claim.—1. As a new manufacture, the herein-described bed-room set, consisting of the wardrobe B, bedstead C, wash-stand F, table-top H, and bureau I, substantially as described.

2. The combination of the wash-stand F, table-top H, and arms *h h*, substantially as described.

201,338. TOBACCO-CUTTERS. John Farrar, Montreal, Quebec, Canada, assignor of one-half his right to John C. Hobel, same place. Filed Dec. 29, 1877.

Brief.—Springs press the plug forward, while an adjustable gage is operated by the cutter to determine the size of the pieces to be severed. The plug can be cut into any-sized pieces or slices desired after once setting the gage, as the parts operate automatically.



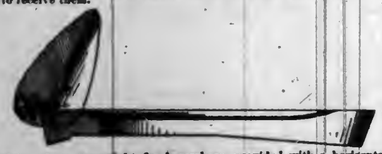
Claim.—1. The oblong rectangular hollow frame A, formed with upright carriage B, planed or wrought to a true surface on its outer face, and with channels C C and opening *c*, in combination with the cross-head G, guides *f f*, and spiral springs *g g*, substantially as shown, and for the purposes set forth.

2. The projection *m* on the inner end of the knife-holder *h*, in combination with the spindle *k*, arm *j*, screwed pin *k*, spring *l*, and stop *n*, substantially as and for the purposes represented and described.

3. The combination of the cross-head G, with its guide-rods and operating-springs, and an adjustable automatically-moving gage, *j k*, and a suitable moving knife, substantially as described.

201,339. TOE-WEIGHTS FOR HORSES. Charles Farrar, Minneapolis, Minn. Filed Oct. 30, 1877.

Brief.—The improvement consists in having the lugs on the weight adapted to enter recesses or depressions in the shoe, instead of cutting the hoof to receive them.

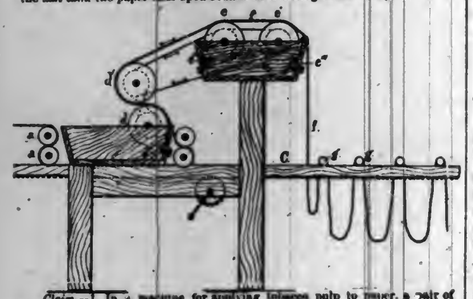


Claim.—1. A toe-weight for horseshoes, provided with a horizontal, or nearly horizontal, securing-screw, and two or more short spurs, adapted to enter correspondingly shaped depressions in the shoe, for the purpose of preventing any vibratory movement of the weight when secured in position.

2. In combination with a horseshoe having a screw-hole in its front end or clip, and two or more depressions below the plane of the screw-hole, a toe-weight provided with a securing-screw and two or more spurs, the whole arranged and coacting substantially in the manner and for the purposes described.

201,340. MACHINES FOR COATING PAPER WITH TOBACCO PULP. Thos. J. Ferguson, Pikesville, Md. Filed Jan. 26, 1878.

Brief.—The tanks that hold the pulp are so arranged that the rolls in them coats the paper first upon one side and then upon the other, and from the last tank the paper falls upon rounds on a sliding frame to dry.

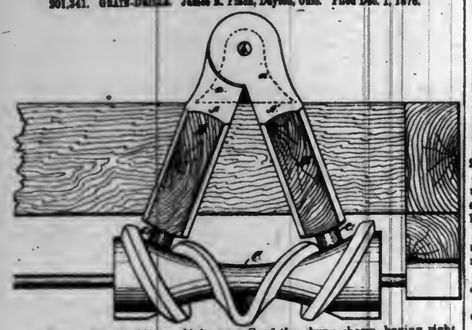


Claim.—1. In a machine for applying tobacco pulp to paper, a pair of tanks for containing the pulp, each having a coating-roller, in combination with an intermediate roller for directing the paper from one coating-roller to the other, so that the sheet is coated successively on both sides, substantially as described.

2. The combination, with the coating-rollers *d c c'*, of the scrapers *d'' c'' c'''* and reversing-roller *d'*, substantially as described.

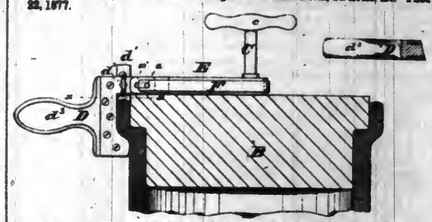
3. In a machine for applying tobacco pulp to paper, the movable frame C, having reels *g*, adapted to receive the sheet directly from the coating-rollers, substantially as described.

201,341. GRAIN-DRILLS. James R. Finch, Dayton, Ohio. Filed Dec. 1, 1876.



Claim.—The double conoidal screw C, of the shape shown, having right and left threads, operating, in connection with the rollers *c*, upon the beams B B', whereby the latter, upon a common axle, can be turned to shift the ranks of the hoes, substantially as and for the purpose specified.

201,342. DEVICE FOR FINISHING THE SOCKETS OF SEWER-PIPES. Alfred Y. Foster, Alton Junction, Ill., assignor of one-third his right to Marianne Davis, St. Louis, Mo. Filed Oct. 22, 1877.



Claim.—1. The combination of the plug B, bearing C, finisher D, and arm E, substantially as described.

2. The finisher D, having the adjustable part *d'*, as and for the purpose described.

3. The finisher D, having the beveled face *d*, substantially as and for the purpose described.

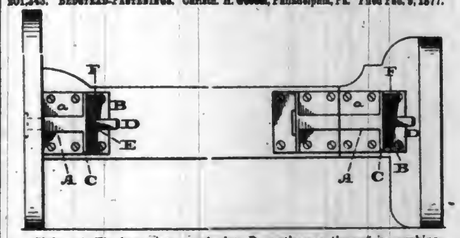
4. The combination of the arm E, having the elongated bearing *e'*, the pin *e*, the finisher D, and the elastic band F, substantially as described.

5. The combination of the finisher D and the arm E, substantially as described.

6. The combination of the bearing C, arm E, and finisher D, substantially as described.

7. In making sewer-pipes, a finisher, D, arranged to swing around the center of the pipe, and to compress and finish the socket, substantially as described.

201,343. BEDSTEAD-FASTENINGS. Christn. H. Goebel, Philadelphia, Pa. Filed Feb. 9, 1877.



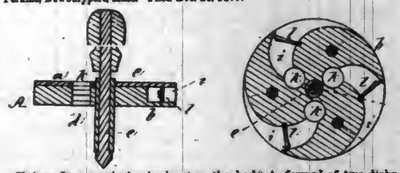
Claim.—1. The base-plate *a* and plate B, continuous thereof, in combination with the box A and plate C on the face of said plates *a* B, and with bolt D and key F, substantially as and for the purpose set forth.

2. The plates *a* B, with box A and plate C, formed together, in combination with the bolt D, having the key-slot E on its inner side, whereby the key is in contact with the plate B, plate C, and two walls of said slot E, substantially as and for the purpose set forth.

201,344. POWDERS FOR CURING MEATS. Edouard Gorgu, Paris, France. Filed June 26, 1877.

Claim.—A powder for preserving animal food, composed of chloride of sodium, acetate of soda, azotate or nitrate of potash, and chlorohydric acid, or their specified chemical equivalents, in substantially the relative proportions above set forth.

201,345. MUSICAL TOPS. Thomas W. Harthen, Boston, assignor to himself and Henry B. Perkins, Newburyport, Mass. Filed Dec. 26, 1877.



Claim.—In a musical spinning-top, the body A, formed of two disks, *a b*, provided with air-passages and apertures *i k*, and with reeds I located within the former, in combination with the elongated hub or sleeve *d* and shaft *e*, constructed and operating substantially in the manner and for the purpose set forth.

201,346. GRAIN-BINDERS. Albert S. Hoyt, Winona, Minn. Filed May 21, 1877.

Claim.—1. In a grain-binder, a twisting mechanism, in combination with mechanism for imparting a gradual forward movement to the twister, substantially as shown and described, all arranged and operating to produce a kink in the tying material after the same has been twisted.

2. A grain-binder having a twister to which is imparted a rotary motion, a gradual horizontal movement in one direction, and a sudden horizontal return movement, substantially as and for the purpose specified.

3. A band for grain-gavels, consisting of a waxed, sticky, or glutinous cord, with its ends twisted and kinked, substantially as shown and described.

4. The combination of the movable member N', the spring-jaw *b'*, the rod O, the rim P, and the wheel A, substantially as and for purpose set forth.

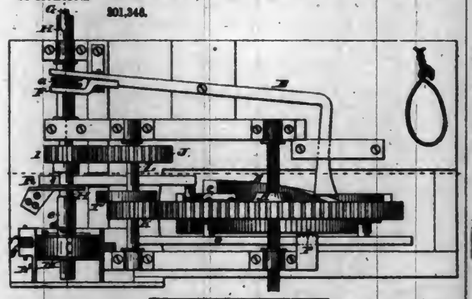
5. The partial gear-wheel A, in combination with the revolving twister M, having a gradual horizontal forward movement and a sudden return movement, all arranged and operating substantially as described, and for the purpose set forth.

6. A twisting device having a rotary motion and a gradual horizontal movement in one direction, in combination with a partial gear-wheel, A, provided with cam B, whereby said twisting device is given a sudden horizontal retracting movement, substantially as described.

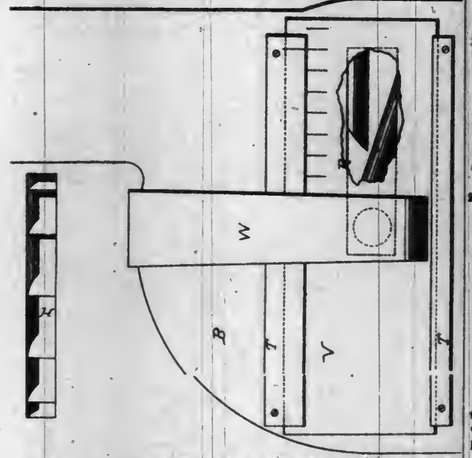
7. A sliding and rotating shaft, G, a slotted revolving shaft, H, and twisting-nippers M, combined and operating substantially as described.

8. A sliding and rotating shaft, G, slotted revolving shaft H, nippers M, spring-lever E, and an incline or cam, B, combined and operating substantially as described.

201,346.



201,347. MILLS FOR PULVERIZING. John W. Hyatt, Newark, N. J. Filed Aug. 28, 1877.



Claim.—1. As a means of feeding material to a mill, a hopper-spout adjustable with relation to the center of the reducing mechanism, substantially as set forth.

2. The hopper-spout W, adjustable by means of the plate V and guides T, substantially as specified.

3. The inlet-aperture R, in combination with means for moving the position of the outlet of the hopper spout, substantially as set forth.

4. In a pulverizing-mill, a delivery-shaft provided with shelves deflecting in a direction transversely toward the movement of the material being delivered, substantially as specified.

5. In a grinding-mill, the combination of a rotating mechanism producing a blast, a feed-aperture, adjustable to the center of the rotating mechanism, for regulating the blast, and a delivery-shaft placed over the outer edge of the revolving mechanism, substantially as specified.

6. The disk H, operating in a closed chamber provided with a hopper-spout, adjustable with relation to the center of the disk, and a delivery-shaft provided with shelves deflecting downward across the blast, substantially as specified.

201,348. SILICIOUS MATERIAL TO IMITATE IVORY AND SIMILAR SUBSTANCES. John W. Hyatt, Newark, N. J., and Charles M. Hyatt, Albany, N. Y. Filed Dec. 13, 1877.

Claim.—1. An alkaline silicate, as a means of aggglutinizing a solid animal tissue, substantially as specified.

2. A composition formed of bone, or horn, or hoof, or ivory, or any two or more, or any equivalent thereof, in combination with an alkaline silicate, substantially as set forth.

3. The new material herein described, which is produced by treating the composition aforesaid with chloride of calcium, substantially as specified.

4. The process above described, which consists, first, in forming the composition of the ingredients specified, and, second, in treating such composition with the chloride of calcium, substantially as set forth.

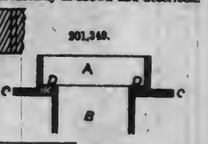
5. The process above described, which consists, first, in forming the composition as specified; second, shaping such composition by means of dies or molds, or other suitable appliances; and, third, treating the product of the step last aforesaid with chloride of calcium, substantially as expressed.

201,349. MAN-HOLE AND COVER. Thomas Kerr, Milwaukee, Wis. Filed July 20, 1877.

Claim.—The improved man-hole and cover, consisting of the thimble A B, provided with flange C and shoulder D, in combination with the hollow cover E, adapted to receive paving material, substantially as shown and described.

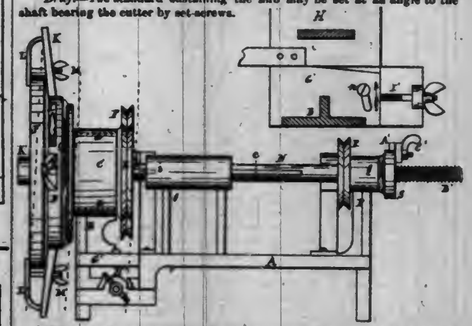


201,349.



201,350. HUB-BORING MACHINES. Jacob Kritch, Cleveland, Ohio. Filed Dec. 20, 1877.

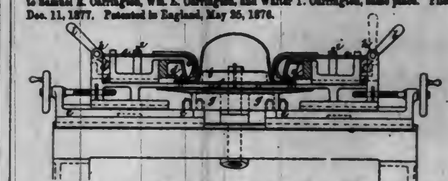
Brief.—The standard sustaining the hub may be set at an angle to the shaft bearing the cutter by set-screws.



Claim.—1. In combination with the non-revolving boring-bar N, provided with a screw, B', the wheel B, collar S, sliding segmental nut A', and set-screw and nut C', substantially in the manner as described, and for the purpose set forth.

2. In combination with the obliquely-adjustable standard B, the transversely-adjustable slide H' and screw I', in the manner substantially as described, and for the purpose specified.

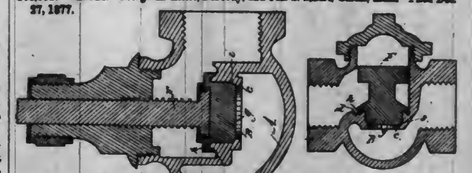
201,351. MACHINES FOR CURLING HAT-BRIMS. Thomas Lees, Stockport, England, assignor to Samuel R. Carrington, Wm. E. Carrington, and Walter T. Carrington, same place. Filed Dec. 11, 1877. Patented in England, May 25, 1876.



Claim.—1. In a machine for curling the brims of hat-bodies, the combination of a plow or brim-curler, a dummy or brim-flattener, a breaker or breakers working inside the curl or bend of the brim, and a revolving table or hat-supporter, substantially as shown and described.

2. In combination, the revolving hat-supporter, the slides *c e*, the presser-irons *d d*, and the hinged breaker or breakers *s s*, substantially as shown and described.

201,352. VALVES. George H. Little, Peabody, and Jas. S. Smart, Salem, Mass. Filed Dec. 27, 1877.



Claim.—1. A valve provided with an expansion-chamber of diameter greater than the valve-opening, and with a plug or stem adapted to fit tightly in such chamber, substantially as and for the purpose described.

2. A double-seated valve having one opening for both seats, and both seating-surfaces adapted to seat simultaneously, in combination with a tight or nearly tight-fitting plug for the chamber between such seats, substantially as and for the purpose set forth.

3. The two valve-seats *e* and *d*, and the expanding chamber provided with the opening B therein, substantially as shown and described.

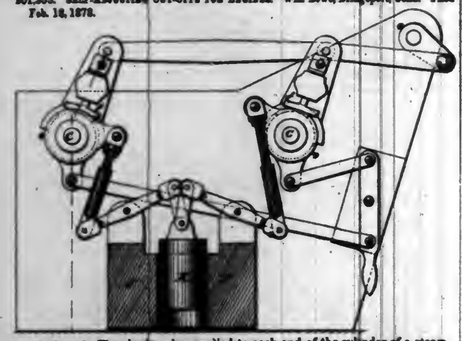
4. The plug-valve *g*, constructed with its two seating-surfaces *h* and *i*, and the tight-fitting plug portion *g*, in combination with the spindle for operating the valve, substantially as shown and described.

5. A valve having a tight-fitting plug in an expanding chamber located above the valve-opening.

6. A valve provided with an opening or chamber, *r*, of larger diameter than that of the hole through the valve, and provided with a tight or nearly tight fitting plug, operating to prevent the steam from passing beyond it until it is removed from such expanding chamber, for the purpose described.

7. A double-seated valve and plug, either with a bevel or a flat seat, and provided with an expansion-chamber between the seats, substantially as shown and described.

201,353. SELF-ADJUSTING CUT-OFFS FOR ENGINES. Wm. Lowe, Bridgeport, Conn. Filed Feb. 16, 1878.



Claim.—1. The single valve applied to each end of the cylinder of a steam or gas engine, and said valves operated as differential self-adjusting cut-off valves, while admitting steam or gas to the cylinder, and operating the same valves to exhaust the steam or gas with a fixed positive motion, constructed and arranged as shown and described.

2. The liberating valve-gear herein described, applied to two valves of a steam or gas engine, which shall operate them as self-adjusting cut-off valves and positive exhausting-valves, constructed substantially as herein set forth.

3. The liberating valve-gear, constructed as described, and operating both cut-off valves with one dash-pot and weight, substantially as herein set forth.

201,354. FILTERS. George H. Moore, Norwich, Conn. Filed Aug. 9, 1877.

Claim.—A filter made of a moistened mixture of hydraulic cement and sand, substantially as and for the purpose herein described.

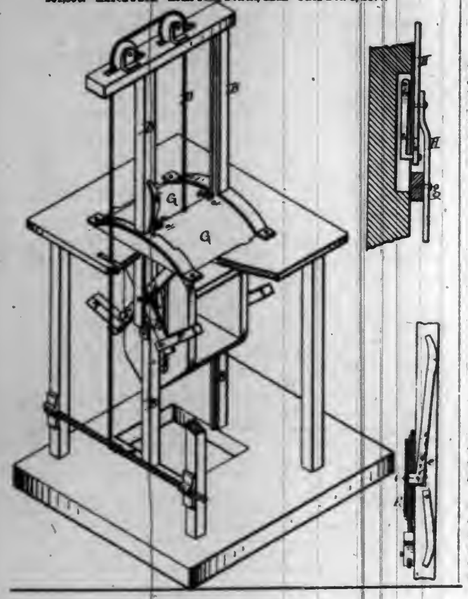
201,355. PLOWS. Joseph Pollock, Selma, Ala. Filed Dec. 7, 1877.

Brief.—A cast-iron mold-board with dovetailed grooves upon its surface, which are filled with strips of wood.



Claim.—A mold-board for plows, consisting of the backing a and the strips s, substantially as shown and described.

201,356. HATCHWAYS. Louis Paul, Detroit, Mich. Filed Dec. 8, 1877.

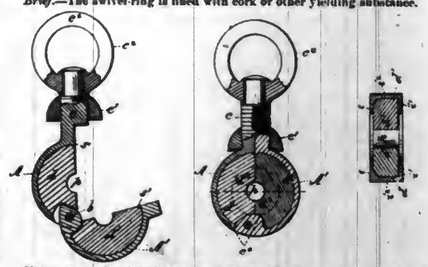


Claim.—1. An elevator-hatchway consisting of two segmental covers or hatches, G, secured to the ends of crossed levers E, which are pivoted to the guide-posts below the hatchway, and have counter-weights on their lower ends, substantially as described.

2. In combination with said counterbalanced lever and segmental covers, the compound-lever locking device, actuated by the passage of the elevator-cab, substantially as set forth.

201,357. SWIVELS FOR WATCHES AND LOCKETS. Beverly T. Pace, Salem, Ind. Filed Feb. 3, 1877.

Brief.—The swivel-ring is lined with cork or other yielding substance.



Claim.—1. A chambered portion, A, formed on a swivel-stem, *c*, in combination with a chambered portion, A', formed on a section of the swivel-stem, substantially as and for the purpose described.

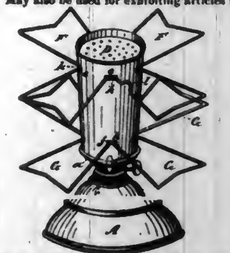
2. In combination with the chambered portions A A' of the swivel, the yielding packing-pieces *d d'*, substantially as and for the purpose described.

3. The combination of the cam-face *c'*, formed on the portion A' of the swivel, the projections *x x'*, and side walls *i i'*, formed on the portions A A' of the same, and the packing-pieces *d d'*, substantially as and for the purpose described.

4. A watch or locket swivel provided with a yielding or expansible eye, *p*, substantially as and for the purpose described.

201,358. GRUB-MAKERS' LAMPS. Anders Rosenstjerna, New York, N. Y. Filed Aug. 31, 1877.

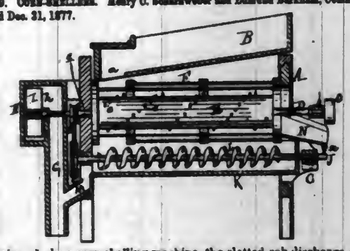
Brief.—Shelves for holding tools to be heated are made by bending a wire into the shape of a Maltese cross, and springing into horizontal slots in the tapering chimney. May also be used for exhibiting articles in show-windows.



Claim.—1. A heating attachment for lamps or gas-light, consisting of a tapering chimney, B, having one or more series of circumferential slots, *e f*, in combination with the foraminated top plate D and removable wire shelves or brackets F G, substantially as and for the purpose herein shown and described.

2. The combination of the lamp or heater A, having vertical rod C, chimney B, having circumferential slots *e f* and bail E, and adjustable and removable shelves or brackets F G, all constructed and combined to operate substantially as and for the purpose hereinbefore set forth.

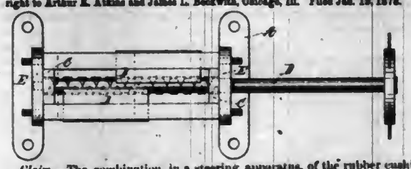
201,359. CORN-SHELLERS. Henry C. Scharnweber and Edmund Barkham, Commerce, Mich. Filed Dec. 21, 1877.



Claim.—1. In a corn-shelling machine, the slotted cob-discharge apron N, projecting from one end of the machine, and vibrated by a knocker, *n*, upon the end of the conveyer-shaft situated below it, substantially as described and shown.

2. In a corn-shelling machine, the combination of the carrier-trough K, situated longitudinally below the shelling-cylinder and inclosing-cage, and extended at one end beyond the same, the spiral conveyer L, having its shaft J passing through the end of the carrier-trough, with the slotted cob-discharge apron N, vibrated by the conveyer-shaft, and having its slots arranged directly over the extended end of the carrier-trough, constructed and arranged substantially as described and shown.

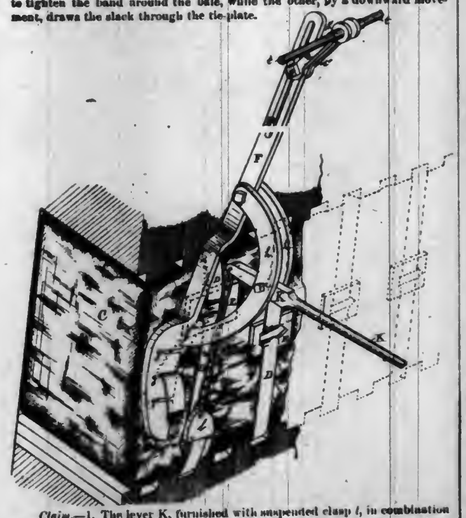
201,360. STEERING APPARATUS. Thomas Spear, Green Bay, Wis., assignor of one-half his right to Arthur R. Atkins and James L. Beckwith, Chicago, Ill. Filed Jan. 19, 1878.



Claim.—The combination, in a steering apparatus, of the rubber cushions C C, applied inside the frame A, diamond-screw boxes B B, bed-plates E E, and diamond-screw shaft D, substantially as and for the purposes described.

201,361. BALE-BAND TIGHTENERS. Wm. S. E. Sevey and Philip C. Mass, New Orleans, La. Filed Oct. 20, 1877.

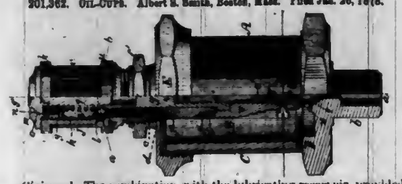
Brief.—By the depression of the lever-handle, one clamp is drawn upward to tighten the band around the bale, while the other, by a downward movement, draws the slack through the tie-plate.



Claim.—1. The lever K, furnished with suspended clasp *l*, in combination with the bar F, provided with side slots *g* and curved plates or fulcrums *h*, as described, and for the purpose specified.

2. In a bale-band-tightening apparatus, a lever or bar, F, provided with an elongated slot, *f'*, for the passage of a bolt, *q*, connected with the lower ends of a pair of arms, *r r'*, that project from a sleeve, *s*, operating on a horizontal rod, *t*, as described, and for the purpose set forth.

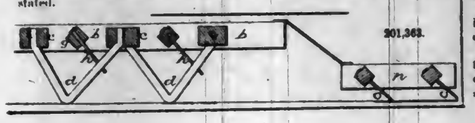
201,362. OIL-CUPS. Albert S. Smith, Boston, Mass. Filed Jan. 26, 1878.



Claim.—1. The combination, with the lubricating-reservoir, provided with an escape-orifice surrounded by a valve-seat, as described, of two valves arranged concentrically, or one within the other, and operating in connection with said valve-seat, but independently of one another, the one to open and close the escape-orifice of the reservoir, and the other to regulate the flow of lubricating material through said orifice when open, the combination being and acting substantially as set forth.

2. The two valves arranged concentrically, or one within the other, to operate in connection with a valve-seat around the discharge-conduit of the reservoir, and adjustable independently of one another from the exterior of the reservoir, as set forth.

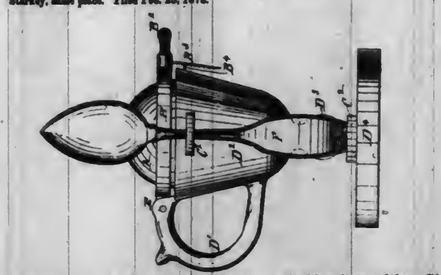
3. The construction of the cup as a whole, substantially as herein explained, consisting of the body A, formed in a suitable manner, the plug *e*, with its ports *f f* and tubular head *j*, and the valve-tube *r*, screwed upon said plug, and operating with the orifice *a*, the rod *g*, with its chamber *i* and ports *l l*, and its valve-stem *o*, sliding in the tube *e*, and with its valve *s*, operating also with said orifice *a*, and the whole being substantially as and for purposes stated.



201,363. HARROWS. Sidney B. Smith, Eminence, Ky., and A. B. McCulley, Decatur County, Tenn. Filed Dec. 21, 1877.

Claim.—In combination with a harrow provided with V-shaped teeth, the removable cross-bars provided with the straight teeth, substantially as shown and described.

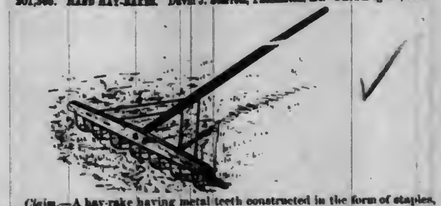
201,364. EGG-CUPS. Wm. Starkey, Pittsburg, Pa., assignor of one-fourth his right to Elias Starkey, same place. Filed Feb. 26, 1878.



Claim.—1. In an egg-cup, the combination of the hinged curved hoop B^1 and handle B^2, spring B^3, and catch B^4, substantially as described.

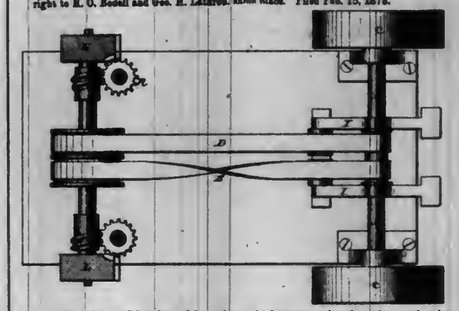
2. The combination of handle D^1, hinge E, loop or ring C^1, and cup C^2 on base D^4, to hold the spoon F, substantially as set forth.

201,365. HAND HAY-RAKES. David J. Starrett, Thomaston, Me. Filed Aug. 17, 1877.



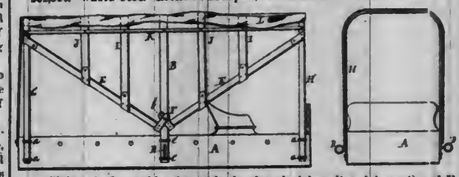
Claim.—A hay-rake having metal teeth constructed in the form of staples, the space between the two legs of each staple being substantially the same as the space between two proximate staples.

201,366. PLANING-MACHINES. Jerome B. Stockham, Jackson, Mich., assignor of one-half his right to H. O. Bedell and Geo. H. Lathrop, same place. Filed Feb. 15, 1878.



Claim.—In combination with a planer-head or cutter-head, and a mechanism for adjusting it up and down, the two loose belts D E, one of which is twisted, and each of which is provided with a tightening device, substantially as set forth.

201,367. WAGON-TOPS. Robert W. Thompson, Cleveland, Ohio. Filed Feb. 4, 1878.



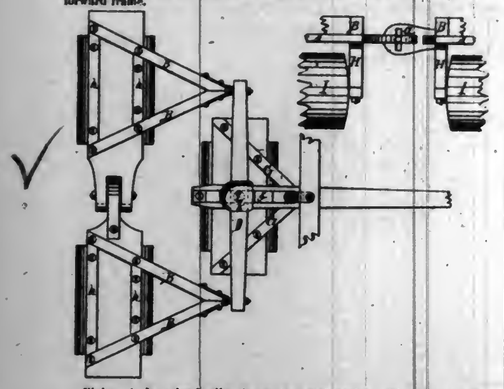
Claim.—1. In combination with the detached bow B and bows G and H, the diagonal braces E, hinged or pivoted to each other, substantially as described, and for the purpose specified.

2. In combination with the bows B, G, and H and diagonal braces E, the intermediate bows I and J and stretcher K, arranged to operate, in relation to each other, substantially as described, and for the purpose set forth.

3. In combination with a wagon or other vehicle, the herein-described frame, consisting of the bows B G H, diagonal braces E, bows I and J, pivoted to each other, and stretcher, all arranged to operate substantially as described, and for the purpose specified.

201,368. LAND-ROLLERS. Alfred H. Ufford, Rockford, Ill. Filed Feb. 5, 1878.

Brief.—The rear coupling is slotted to admit of vertical motion, and the rear frames are loosely coupled to an eyener secured with a king-bolt on the forward frame.



Claim.—1. In a land-roller frame, the combination, with the converging braces, having their forward ends attached to the equalizing-bar, of the bed-pieces of each rear-roller frame and braces *h*, located on the front and rear edges of said bed-plates, whereby said braces *h* serve to strengthen the converging braces, and also constitute the sides of the weight-boxes, substantially as set forth.

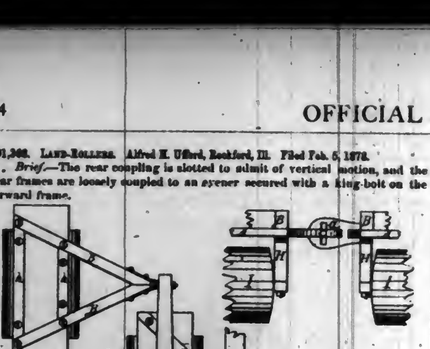
2. A land-roller composed of three independently-adjustable rollers, the rear and front roller frames having no connection with each other, the rear rollers being adjustably secured to the end of the equalizing-bar, and adjustably secured to each other by means of a single joint, located in line with the tongues of the roller, substantially as set forth.

201,369. MEDICINE-SPOONS. Edward K. Walker, Exeter, N. H. Filed Feb. 16, 1878.



Claim.—A spoon, A B, provided at its end with the perforation *x* and grooved lip C, and having a series of numbered notches, *b*, on its handle, with a rubber ring, *d*, placed around the same, substantially as set forth.

201,370. DEVICES FOR STRETCHING BOOT-LEGS. Joseph H. Walker, Worcester, Mass. Filed Feb. 15, 1878.



Claim.—1. A device for stretching and supporting boot-legs while their side seams are being trimmed and rubbed, provided with grooves at or near the junction of the foot and leg for receiving the surplus leather at the lower end of the leg or counter, whereby the strain upon the leg-seams at such points can be adjusted as desired, and for the purposes set forth.

2. The combination, with the leg-stretching device, of a cam for forcing the fingers or arms into the grooves, substantially as described.

3. The fingers or arms *g g*, hinged or pivoted to the boot-leg stretcher, as described.

4. The combination of the fingers *g g* with the rod E and cam-arm G, substantially as described.

5. The combination of spring *i* with the fingers *g g*, for the purposes set forth.

6. The combination, with the parts A, B, and F, of the fingers *g g*, cam-arm G, and spring *i*, substantially as and for the purposes set forth.

7. The combination, with a boot-leg stretcher, of holding or clamping fingers.

201,371. COMBINED BEVEL, SQUARE, AND LEVEL. Wm. P. Walter, Philadelphia, Pa. Filed Feb. 14, 1878.

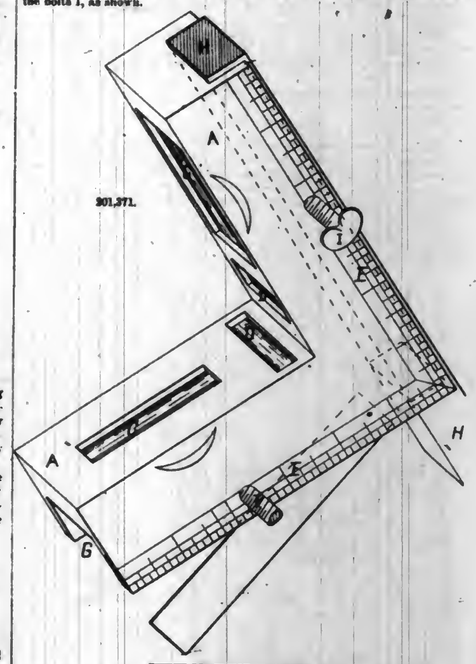
Claim.—1. The combination, with the slotted legs A, of the longitudinal and transverse levels C D, as shown.

2. The combination, with the legs A, of the levels C D and the rules E, as shown.

3. The combination, with the slotted lengths A, of the rules E and the bevel F, as shown.

4. The combination, with the slotted legs A, of the straight-edge H and the bolts I, as shown.

201,371.



201,372. SCREW-DRIVERS. Jonathan B. West, Genesee, N. Y. Filed May 4, 1877.

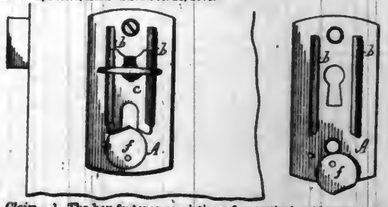


Claim.—1. In a screw-driver, the combination, with the spiral shank B, of the rollers D D, provided with shafts *b b*, set obliquely and inclined upward to the threads of the shank, in the manner and for the purpose specified.

2. In a screw-driver, the combination, with the rollers D D, provided with the shafts *b b*, of the screws *p p*, inclosing the shafts, and serving to adjust said rollers in and out to fit the threads of the spiral shanks, as shown and described, and for the purpose specified.

3. In a screw-driver, the swiveled blade or driver E, constructed with the slots or notches *a a* in its top, and provided with a socket, in combination with the spiral shank B, constructed with lips *k k*, which strike into the slots, and provided with a stem, *h*, which enters the socket of the blade, as shown and described, and for the purpose specified.

201,373. KEY-FASTENERS. John T. White, Arlington, assignor of one-half his right to Rufus S. Merrill, Boston, Mass. Filed Feb. 26, 1878.



Claim.—1. The key-fastener consisting of a vertical guide attached to the plate on each side of the key-hole, and the upward-sliding clamp *c*, provided on its upper end with a slot, as described, and the cam-shaped lever *f*, pivoted on the lower part of the plate, as shown and described.

2. In a detachable sliding clamping-plate of a key-fastener, providing one end with a slot, *d*, to embrace the notches on key-stem to fasten the key, and providing the other end with a slot, *e*, to allow key to turn, but prevent it from falling out, as set forth.

201,374. APPARATUS FOR NEUTRALIZING THE EFFECTS OF INDUCED ELECTRICAL CURRENTS. Charles E. Wilcox, Chicago, Ill. Filed Jan. 15, 1878.

Claim.—1. The method herein described of neutralizing the effects of induced electrical currents, the same consisting in interposing condensers between the derived circuits, and making their discharge equivalent to that of the line by means of resistance and retardation coils, substantially as described.

2. The condenser E E', connected with the derived circuits of two or more telegraph-lines, in combination with the retardation-coils *s s'*, substantially as described.

3. The condenser E E', connected with the derived circuits of two or more telegraph-lines, in combination with the rheostats F F' and retardation-coils *s s'*, substantially as described.

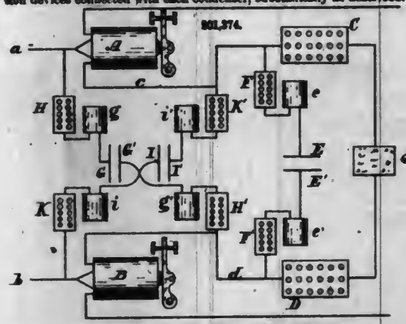
4. A condenser arranged between two telegraph-lines, and connected therewith, so that the effect of its discharge will be felt on only one of the lines, substantially as described.

5. A condenser arranged between the relays of two different telegraph-wires, and connected to the derived circuit of one and the transmitting-wire of the other relay, substantially as described.

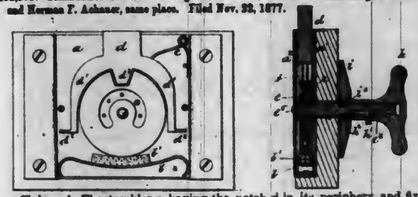
6. The main condenser E E', connected with the derived circuits, as set forth, in combination with a supplementary condenser connected with the lines, so that its discharge will be felt in but one of the relays, and resistance and retardation devices connected with each, substantially as described.

7. The condenser E E', connected with the derived circuit, in combination with the condensers G G' and I I', connected, respectively, with one of the derived circuits and one of the transmitter-wires, and resistance and retardation devices connected with each condenser, substantially as described.

201,374.



201,375. PERMUTATION-LOCKS. George W. Yeomans, Zanesville, Ohio, assignor to himself and Herman F. Achauer, same place. Filed Nov. 22, 1877.

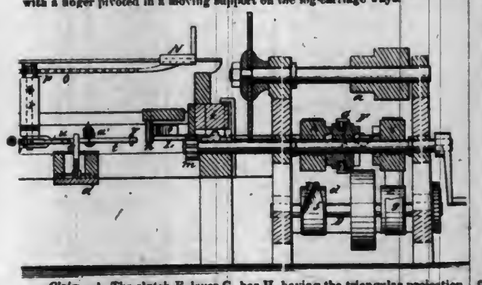


Claim.—1. The tumbler *c*, having the notch *c'* in its periphery and fixed on the arbor *c²*, having the guide-groove *c³*, dial *i*, sliding on the arbor *c²*, and having holes *i'* formed around its central opening, knob *k*, with guide and set-screw *b'*, all constructed and arranged, relatively to each other, to operate substantially as and for the purposes set forth.

2. The bolt *d*, having the arms *d'* *d²* and central locking projection *d³*, springs *e* and *b*, and tumblers *e*, *f*, and *g*, having the notches or recesses *e' f' g'* in their peripheries, and the semicircular slots *f'' g''* and set-screws or stops *e'* *f'*, all arranged in combination, and operating as and for the purposes set forth.

201,376. SAW-MILL HEAD-BLOCKS. W. H. Abrams, Eugene City, Oreg. Filed Feb. 7, 1878.

Brief.—The log carriage is "gigged back," after each cut, by means of a clutch operated by a lever pivoted to a bar having a diagonal ledge, which is struck by a stud on the rear end of the carriage, which movement shifts the clutch. The knees are advanced and retracted by racks, to which they are attached, and which mesh with pinions mounted on vertical shafts journaled in hinged frames in the blocks, and all operated by levers pivoted to said shafts, and to a rod connected to the inner ends of the levers, in connection with a finger pivoted in a moving support on the log-carriage ways.

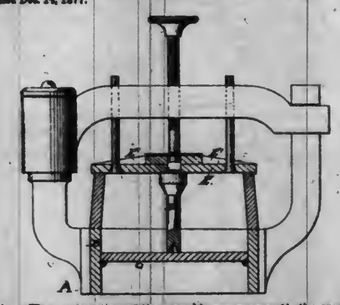


Claim.—1. The clutch F, lever G, bar H, having the triangular projection *k*, the bar L, having a diagonal ledge, *o*, and the studs *n o* on the carriage K, in combination, substantially as herein shown and described.

2. The head N, rack O, pinion *p*, hinged frame *r*, and lever *s'*, in combination, substantially as shown and described.

3. The ratchets *s*, levers *t*, having pawls *u*, rod *v*, and finger *c'*, in combination, for moving the pinion *p*, substantially as shown and described.

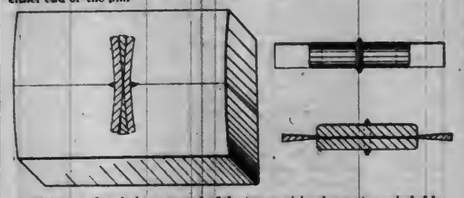
201,377. MACHINES FOR MOLDING IN SAND. Wm. Allen and Wm. W. Drummond, Louisville, Ky. Filed Dec. 14, 1877.



Claim.—The combination of the movable compressor C, the sprue or gate sticks D set thereon, and a binder-plate, E, having aperture D', through which the gate-stick or sprues pass while sand is being compressed, for the purpose of forming sprue or gate holes in molds to receive molten metal, substantially as set forth.

201,378. DOWEL-PINS. Benj. F. Allen, Boston, Mass. Filed Feb. 26, 1878.

Brief.—The pin is formed of two semicircular pieces of wood encircled by a ring, and will expand as it is driven into the holes made for its reception in the pieces of material to be united. It is secured in position by a wedge at either end of the pin.



Claim.—A dowel-pin composed of the two semicircular parts, encircled by a ring, and provided at one or both ends with wedges, for the purpose of securing the pin in an orifice into which it is driven, substantially as described.

201,379. BIT-BRACES. Charles H. Amiton, Buffalo, N. Y., assignor of one-half his right to Elijah R. Sarten, same place. Filed Feb. 4, 1878.

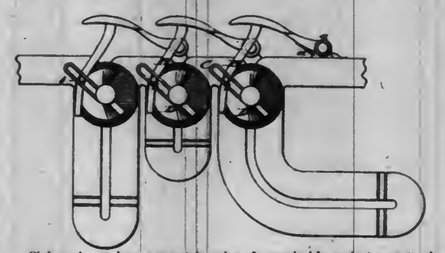


Claim.—1. A bit-brace provided with a socket, B, made curved or concave on the side against which the shank of the bit is pressed by the screw-fastening, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the socket B, provided with threaded extension D, of the sliding bolt or chisel I and hollow thumb-nut F, substantially as and for the purpose set forth.

3. The combination, with the socket B, provided with threaded extension D, having a square opening, of the square bolt *e*, provided at its inner end with an edge, *i*, substantially as and for the purpose set forth.

201,380. VALVE-ACTIONS FOR BRASS MUSICAL INSTRUMENTS. Theodore Artaud, Jackson, Miss. Filed Dec. 29, 1877.



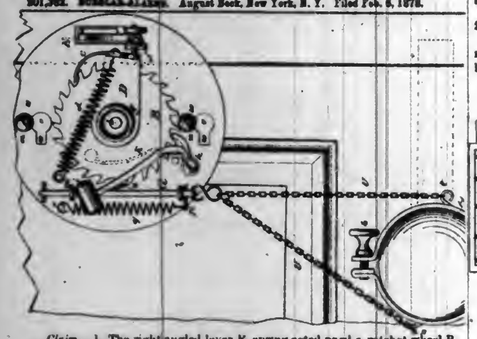
Claim.—As an improvement in valves for musical brass instruments, the combination of the spring-acted key, having curved arm and fixed pin, with a slotted lever of the rotary valve, substantially as and for the purpose set forth.

201,381. CARRIAGE-SPRING COUPLING. Martin L. Ballard, Canton, Ohio, assignor to Hattie W. Ballard, same place. Filed Feb. 11, 1878.



Claim.—The herein-described carriage-spring coupling, having its two parts united by means of a ball-and-socket joint, substantially as set forth.

201,382. BURGLAR-ALARM. August Beck, New York, N. Y. Filed Feb. 6, 1878.



Claim.—1. The right-angled lever E, spring-acted pawl *c*, ratchet-wheel B, and spring-actuated hammer-lever *h*, in combination, for striking the bell, substantially as herein shown and described.

2. The split band D, having eyes *t*, the chains *u*, and the spring-actuated pawl *s*, in combination with the ratchet-wheel B, for tripping the alarm-hammer by the rotation of the knob, substantially as herein shown and described.

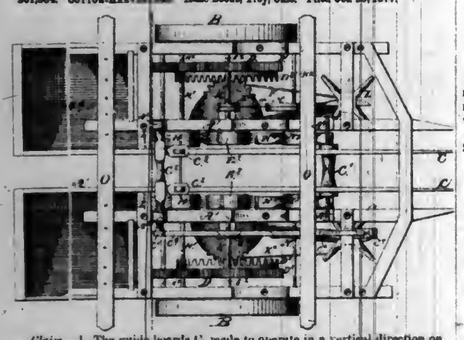
201,383. SASH-FASTENER. James G. Beecher, Grand Rapids, assignor of one-half his right to Caroline C. Bowling, Marshall, Mich. Filed Aug. 17, 1877.

Brief.—A double-ended vibrating latch, with pointed ends, works on an arbor, and is pivoted below its center of gravity within a mortise of the window-sash, being operated from without by a suitable key; the construction being such that the weight of the latch will hold either end thereof in contact with a series of notches in the window-casing, thus locking the sash in desired position.



Claim.—The combination, with a notched window-casing, of a double-ended catch-bolt or vibrating latch, A *a a'*, on arbor B, pivoted below its center of gravity, inserted in a mortise of the window-sash, and operated from without, whereby the weight of the catch-bolt or latch will hold either end thereof upon or in contact with the notches in the window-casing when thrown against them, substantially as herein shown and described.

201,384. COTTON-HARVESTER. Isaac Boone, Troy, Ohio. Filed Oct. 29, 1877.



Claim.—1. The guide-boards C, made to operate in a vertical direction on pivots situated at their upper central part, substantially as and for the purpose set forth.

2. In a cotton-picking machine, the combination of the picker-belt F with the wheel H and strippers or clearers I, substantially as and for the purpose set forth.

3. In a cotton-picking machine, the clearers or strippers I, arranged substantially as and for the purpose set forth.

4. The combination of the picking devices F H I with the gear E', shaft E², pulley E³, pulley G, and shaft H' and shaft H², all being operated by the main drive-wheel D, substantially as and for the purpose set forth.

5. A cotton-picking machine made in two parts, each part having similar mechanism, and with a narrow open passage between, to allow the ripened cotton to stand between said parts without injuring the said cotton as the machine advances, substantially as and for the purpose set forth.

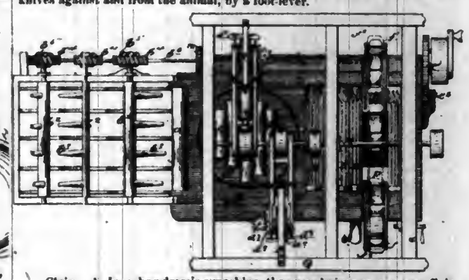
6. The combination of the guide-boards C, stay-bolt C', shaft C², with its projecting arms C³ C³, connecting-rod C⁴, and lever C⁵, all the parts mentioned being arranged substantially as and for the purpose set forth.

7. In a cotton-picking machine, the feeder N², having radiating arms N³, for pressing the branches of the plant against the picking devices, and holding the same thereto while being picked, substantially as described.

8. In a cotton-picking machine, the combination of the cross-beams O with their supports, said supports being adjustably connected to cross-beams O by bolts or their equivalents, substantially as specified.

201,385. HOG-DRESSING MACHINES. Isaac Boone, Troy, Ohio. Filed Oct. 30, 1877.

Brief.—The scrapers are so arranged on an endless belt that they can be removed when necessary. The belt can be raised and lowered, to bring the knives against and from the animal, by a foot-lever.



Claim.—1. In a hog-dressing machine, the open knives or scrapers *f*², in combination with the endless belt F and pulleys for operating the same, substantially as and for the purpose set forth.

2. In a hog-dresser, the foot-lever O', suitably connected with pivoted frame O, in combination with pulley *f*' and belt F, said belt provided with knives or scrapers, all substantially as described, and for the purpose set forth.

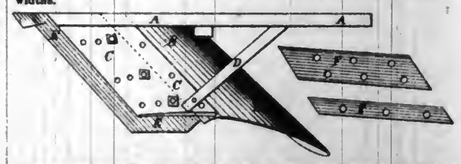
201,386. SUCKER-ROD SOCKETS OR DRILL-GRABS. Reuben Brissy, Kittanning, Pa. Filed Oct. 6, 1877.



Claim.—The continuous tube or socket C, having the slot *a*' near its lower end, and the slot *a*, with teeth *a'*, near its upper end, and diametrically opposite the slot *a*', and hook B, placed in the slot *a*', and having the enlarged shank B' extending upward in the socket, and secured immediately opposite the slot *a'*, substantially as and for the purpose set forth.

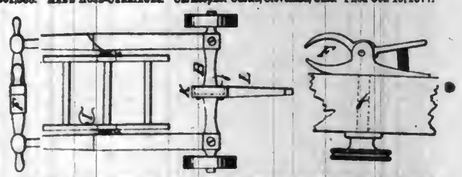
201,387. PLOWS. James C. Carpenter, Council Grove, Kans. Filed Dec. 24, 1877.

Brief.—Arranged to slide the share forward as it becomes worn, and to fill the space between it and the mold-board with strips of steel of different widths.



Claim.—The combination of the strip F, of steel, with the land-side A, the mold-board B, the plate C, and the share E, whereby the space between the mold-board B and the share E is filled when the said share is moved forward, substantially as herein shown and described.

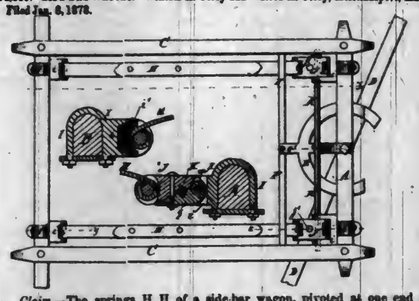
201,388. HAND HOSE-CARRIAGE. Christopher Castle, Cleveland, Ohio. Filed Oct. 19, 1877.



Claim.—1. The hose carriage and reel mounted upon wheels, provided with an adjustable arm or brace, by means of which the carriage-frame may be adjusted at any desired angle of inclination, thereby giving a corresponding direction to a jet of water, substantially as shown and described.

2. The combination of the adjustable arm or brace K L, turning upon the shaft B, and the nozzle-clasp F, provided with its spring, screw, and nut, substantially as and for the purpose set forth.

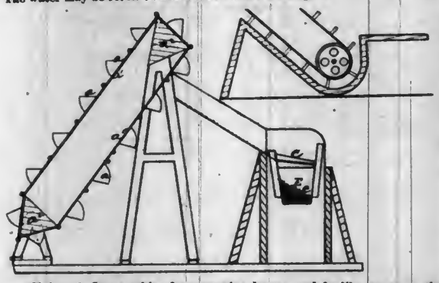
201,389. SIDE-BAR WAGONS. William H. Colby and Warren H. Colby, Merrimacport, Mass. Filed Jan. 6, 1878.



Claim.—The springs H H of a side-bar wagon, pivoted at one end to clamps J, rigidly attached to a rock-shaft or rod, K, in combination with clips I, having block *i*, with recessed lugs and butt-springs *i'*, as shown and described.

201,390. APPARATUS FOR SEPARATING BREEZE FROM ASHES. John Coyne, Pittsburg, Pa. Filed Nov. 17, 1877.

Brief.—The ashes containing the breeze are delivered by the elevator upon the inclined screen. The clinkers and breeze pass to the screen over the water-tank, which separates out the large clinkers. The small clinkers and breeze drop through into the water-tank, where they are washed. The water enters the tank at a point lower than its outflow, thus producing agitation. The water may be returned and used over and over again.

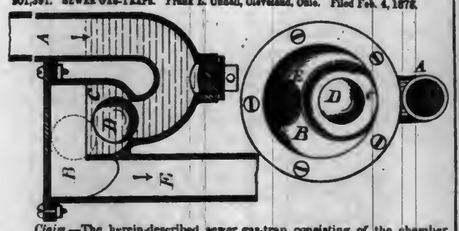


Claim.—1. In a machine for recovering breeze, and for like purposes, the combination of an inclined screen or riddle for separating the ash and dust, an inclined riddle for separating the breeze and fine clinkers, and a tank arranged beneath the riddle, and supplied with a current of water for separating the breeze from the fine clinkers, substantially as specified.

2. The combination, with a riddle for separating breeze from clinkers, &c., of a tank arranged beneath the riddle, a double-inclined race or chute for delivering the breeze and overflow-water, and a water-inlet arranged in the tank somewhat lower than the overflow or highest part of the race, substantially as and for the purpose specified.

3. In combination with the water-tank and its riddle C, the race having the perforated bottom and retaro-coudnit, substantially as and for the purpose specified.

201,391. SEWER-GAS-TRAPS. Frank E. Cudell, Cleveland, Ohio. Filed Feb. 4, 1878.

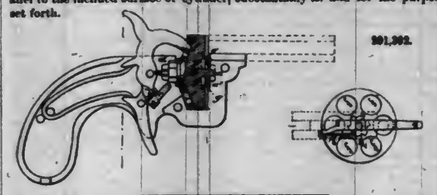


Claim.—The herein-described sewer gas-trap, consisting of the chamber B, having the inner valve-chamber C, the chamber B receiving the overflow from the chamber C, the proportion of said chambers being such that the ball D cannot escape over into the outer chamber, in combination with the pipe A and pipe E, substantially as shown and described.

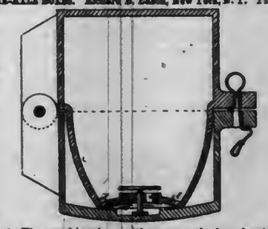
201,392. TOY REVOLVERS. August Dahler and Friedrich W. Hoffmann, New York, N. Y., assignors to Anton Weidmann, same place. Filed Jan. 24, 1878.

Claim.—1. A toy pistol whose hammer has a curved extension, *b*, to which is pivoted a spring-pawl, *c*, to press against the ratchet *d* on the cylinder B, as shown and described.

2. In a toy revolver, a cylinder or drum having rear part of flat conical shape, and recesses for the paper caps, the bottoms of the recesses being parallel to the inclined surface of cylinder, substantially as and for the purpose set forth.



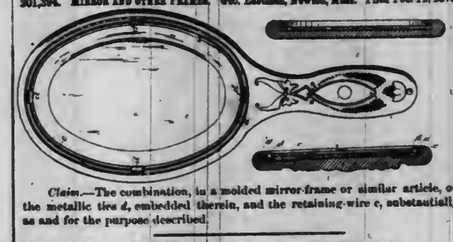
201,393. CAR-AXLE BOXES. Richard B. Eason, New York, N. Y. Filed Feb. 23, 1878.



Claim.—1. The combination, with a car-axle box having a front casing, B, of a hinged oil-chamber having bottom opening and sliding valve, and a concave or dished portion around the bottom opening, substantially as and for the purpose set forth.

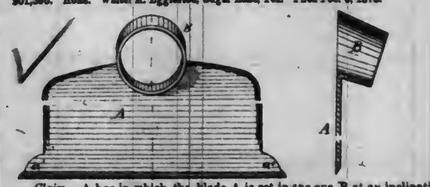
2. In a car-axle box, the combination of the swinging oil-chamber, having slotted lug and spring catch or clasp, with the slotted lug of the front casing of the box, substantially as specified.

201,394. MIRROR AND OTHER FRAMES. Geo. Eastman, Newton, Mass. Filed Feb. 11, 1878.



Claim.—The combination, in a molded mirror-frame or similar article, of the metallic ties *d*, embedded therein, and the retaining-wire *c*, substantially as and for the purpose described.

201,395. HOES. Walter H. Eggleston, Sugar Land, Tex. Filed Feb. 6, 1878.



Claim.—A hoe in which the blade A is set in the eye B at an inclination with the plane of the handle, is plated with steel upon its lower side, has its forward edge beveled upon the upper side, has its side edges beveled, and has projecting points formed upon its forward corner, substantially as herein shown and described.

201,396. MOWERS. Rudolf Eickemeyer, Yonkers, N. Y. Filed June 22, 1877.

Claim.—1. In a mowing-machine, the combination, with the drive-wheel and axle, of an internal gear mounted on the axle, a stationary internal geared ring, a crank with its axis coincident with the axle, two gears mounted on said crank, which mesh with the movable and the stationary internal gears, and a pitman which connects the crank with the cutting apparatus, substantially as described.

2. The combination, with the stationary and the driven internal gears, of the crank, the two gears, and the bushing on the wrist-pin of the crank, substantially as described.

3. The combination, with the crank and its rotative gearing, of the balance-weight, substantially as described.

4. The combination, with the drive-wheel and a portion of the main frame which occupies the space inclosed by the rim of the wheel, of a finger-bar which is hinged to the frame within the wheel adjacent to its rim, substantially as described, whereby the driving-wheel operates as an inner shoe, and its rim serves to protect the hinge-joints, the pitman, and its connection with the cutters, as set forth.

5. The combination, with the finger-bar, of a rectangular hinge and an oblique-angled hinge, by which the finger-bar is attached to the frame, and a bell-crank lever for operating the knife-bar, which has its pitman-bearing located at the intersection of the axial lines of both hinge-joints, substantially as described, for the purposes specified.

6. The bell-crank lever mounted on an inclined stud on the inner shoe or

finger-bar head, in combination with the cutter-bar and a link connected with the cutter-bar and lever by pin-joints which are parallel with the inclined stud, substantially as described.

7. The combination, with the double hinged finger-bar, supported by the frame of the machine within the drive-wheel, and having its inner end located within the rim of the drive-wheel, so that the latter operates as an inner shoe, of a lifting-lever for raising the finger-bar and cutters to a perpendicular position, and means for holding it in that position, substantially as described.

8. The combination, with a finger-bar which is hinged to the frame, with a rectangular joint and an oblique-angled joint, of a lifting-lever provided with bolt and catch, and connected with the finger-bar head at its outer side opposite the point at which the axial lines of both joints intersect, as and for the purposes specified.

9. The combination, with a drive-wheel which performs the function of an inner shoe, of a finger-bar which is hinged within the rim of the drive-wheel, and inclines downward from its rear edge, and a cutter-bar which occupies a plane angularly upward and forward from the finger-bar, as and for the purposes specified.

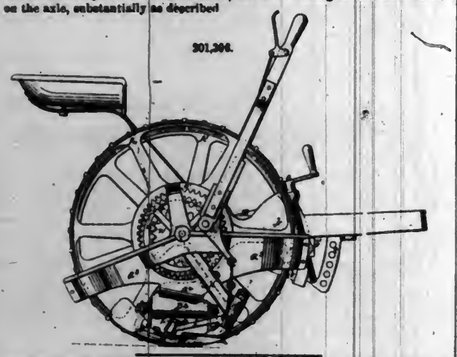
10. The combination, with a drive-wheel which performs the function of an inner shoe, of a finger-bar which is hinged within the rim of the drive-wheel, and is adjusted in an arc concentric with said wheel, and an outer shoe which has an outline or bearing-surface corresponding with the periphery of the drive-wheel, as set forth.

11. A solid finger-bar head or inner shoe, recessed to receive the end of the finger-bar beneath the inner portion and above the outer portion of the head, substantially as described.

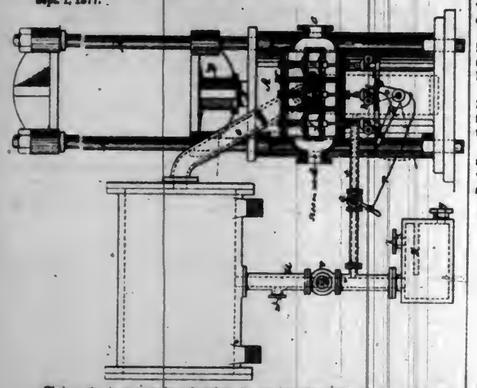
12. The combination, with the ratchet-wheel and pawls, of the spring-pawl holders and the pawl-lifter, its rod, and lever, substantially as described.

13. The combination, with the main frame, a pole-frame, and an adjusting-screw for changing the relative positions of the two frames, of a cutting apparatus which is attached to the main frame, and is rendered adjustable with reference to the height of cut by a forward or backward movement within the circumferential plane of the drive-wheel, due to the tilting of the main frame on the axle, substantially as described

201,396.



201,397. STEAM-ENGINES FOR COTTON-PRESSES. Charles E. Emery, Brooklyn, N. Y. Filed Sept. 1, 1877.



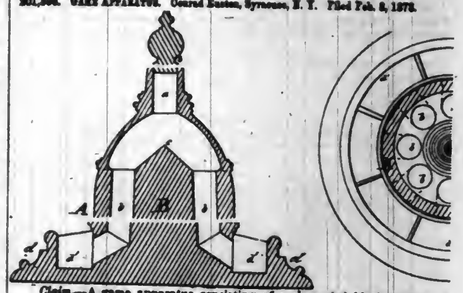
Claim.—1. A conserving-chamber, in combination with a steam-cylinder and piston, the latter connected to overcome a progressively-increasing load, and the cylinder and chamber provided with suitable valves and connections to secure conserving action, substantially as shown and described.

2. The combination of a conserving-chamber, operating as described, and a heater with a steam-cylinder, substantially in the manner shown and described.

3. In combination with a conserving-chamber, operating as described, and a steam-cylinder and necessary attachments and connections to secure conserving action, the outlet *w* in the chamber, whereby the steam saved may be used both in the cylinder supplying it and for other purposes.

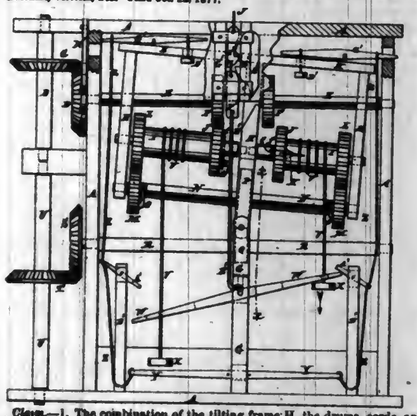
4. The combination of a lever-arm, *o*, and links *l*, *j*, and *m*, with mechanism operating steam, intermediate, and exhaust valves to perform the successive operations mentioned.

201,398. GAME APPARATUS. Conrad Easton, Syracuse, N. Y. Filed Feb. 6, 1878.



Claim.—A game apparatus consisting of a chambered block or case, A, provided with a vertical entrance at the top, a core, B, having its upper end in conical form, the apex *c* thereof being vertically concentric with said entrance, and having the channels *b* and outlets *d'*, substantially as and for the purpose described.

201,399. DEVICES FOR DRIVING LIGHT MACHINERY FROM AN IRREGULAR POWER. Martin Everhart, Victoria, Tex. Filed Oct. 12, 1877.



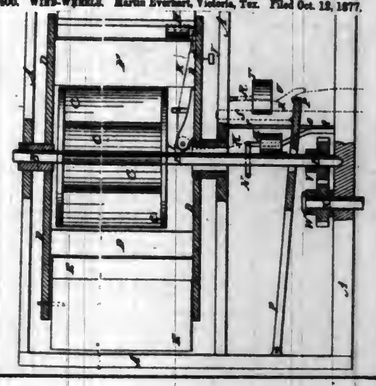
Claim.—1. The combination of the tilting frame H, the drums, cords, and weights I V X, the shafts E N R, and the gear-wheels C D F J L M P Q S T with each other, with the frame A G, and with the shafts B U, leading to the wind-wheel and the machinery to be driven, substantially as herein shown and described.

2. The combination of the lever Y, the cords or wires Z, and the weighted lock-levers C' D' with the frame-work A G and the tilting frame H, to enable said frame H to be tilted by the descent of the weights X, substantially as herein shown and described.

3. The combination of the lever W, the short levers A', the cords or wires Z, and the weighted lock-levers C' D' with the frame-work A G and the tilting frame H, to enable the said frame H to be tilted by the upward movement of the weights X, substantially as herein shown and described.

4. The combination of the rod E', the trip-block F', the catches H' I', and the rope J' with the lever W, to enable the upward movements of the weights X to throw the wind-wheel out of the wind, substantially as herein shown and described.

201,400. WIND-WHEELS. Martin Everhart, Victoria, Tex. Filed Oct. 12, 1877.



Claim.—1. The pivoted frame D, the pair of adjustable rudders E, the two pairs of adjustable wings G, and the guide-aprons F, in combination with the wheel C, the shaft B, and the supporting-frame A, substantially as herein shown and described.

2. The combination of the system of cords and weights I J K M R T, the hinged bar P, and the segmental gear-wheels H with the pairs of adjustable wings G, the pivoted frame D, and the supporting-frame A, substantially as herein shown and described.

201,401. NUMBERING-MACHINES. Charles Ewing, Washington, D. C. Filed Dec. 3, 1877.

Brief.—One rack-bar meshes with a pinion on a shaft, which latter carries a series of pinions, which mesh with the under side of a series of double rack-bars, the upper sides of which mesh with all the unit-wheels. A second rack-bar operates in the same manner to move all the "tens-wheels," and so on.



Claim.—1. In a machine for printing several series of numbers or other characters at one impression, the combination, with the printing-wheels, of simultaneously-operating ratchets, constructed substantially as shown and described, whereby the ratchets are adapted at all times to move the several wheels of any one denomination independently of all the other wheels, for the purposes explained.

2. The combination of two or more numbering or printing heads with operating wheels and ratchets, connected substantially as shown and described, said ratchets serving to move all the wheels of one denomination simultaneously, but independently of all the other wheels, and also serving at all times to adjust misplaced or other desired figure-wheels without disturbing the wheels and ratchets corresponding to a different denomination, for the purposes explained.

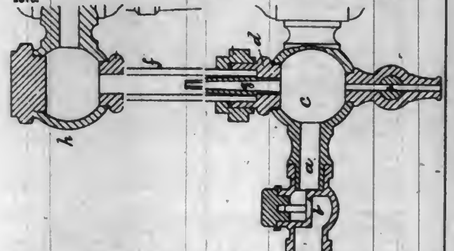
3. The combination, with the several printing-wheels in a numbering-head, of a ratchet-bar located beneath each wheel, and adapted to turn its corresponding wheel forward or backward, at pleasure, but independently of all the other wheels, substantially as shown and described.

4. In combination with the operating-ratchets of a numbering or printing machine adapted to print a series of numbers or other characters at one impression, a stop-spring controlled by a movable key, substantially in the manner and for the purposes set forth.

5. In combination with the springs which arrest the motion of the operating ratchets, a series of keys arranged alternately upon opposite sides of the movable ratchet, substantially as shown and described.

6. The combination, with the ratchet F, of two or more operating-wheels, E, mounted upon a single shaft, and the ratchet-bars D, resting upon said wheels, whereby said ratchet-bars are simultaneously moved, substantially as set forth.

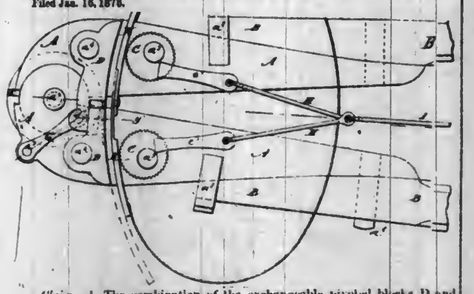
201,402. STEAM-ENGINE LUBRICATORS. George W. Farnham, Lowell, Mass. Filed Feb. 19, 1878.



Claim.—1. In a sight feeder and indicator for steam-lubricators, the combination of the transparent cylinder *f* with the central internal oil-feed pipe *g*, as and for the purpose set forth and described.

2. The combination of the oil-supply pipe *a*, its check-valve *b*, the transparent water-receptacle *f*, and central oil-feed pipe *g*, substantially as herein described, and for the purpose set forth.

201,403. MACHINES FOR EXPANDING AND CONTRACTING METAL. Geo. W. Ford, Elba, N. Y. Filed Jan. 16, 1878.

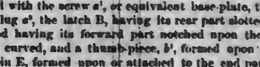


Claim.—1. The combination of the exchangeable pivoted blocks D and the exchangeable pivoted eccentric or cam wheels C, provided with the arms *c'*, and the rods H I, with the hinged levers A, provided with the handles B, substantially as herein shown and described.

2. The combination of the pivoted guide-bar G with the pivoted blocks D and the hinged levers A, substantially as herein shown and described.

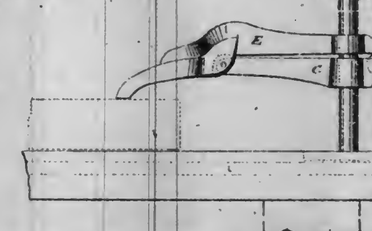
3. The combination of the plates K and their spring *k'* with the eccentric or cam wheels C, the blocks D, and the hinged levers A, substantially as herein shown and described.

201,404. SOLDERING-TWEEZERS FOR JEWELERS. Chas. F. George, Fairfield, Iowa, assignor of one-half his right to Albert A. Jackson, same place. Filed July 18, 1877.



Claim.—The soldering-tweezers consisting of the spring-arms having slots, one having a grooved T-shaped point, the other a cup-shaped point, and a slide playing in the slots and bearing on the outside of the spring-arms, substantially as and for the purpose described.

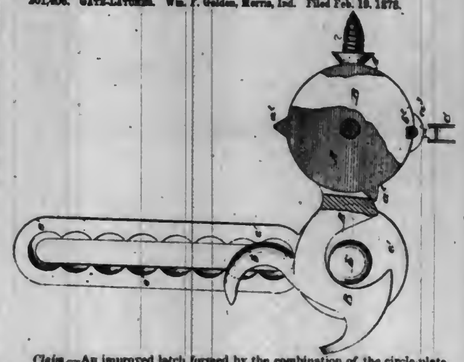
201,405. VALVES FOR WASH-BASINS. John S. Gilbert, New York, N. Y. Filed Feb. 6, 1878.



Claim.—1. The hollow valve C, attached to the side of a wash-basin, A, connected with the sewer, said valve being kept in place by means of a hinge, or its equivalent, and opened by its own buoyancy, when the water is let on through the faucet, and to close air-tight when the water is let off through the plug in the bottom of the basin.

2. The valve C, attached to the side of the basin, connected to the faucet B by means of a chain, D, whereby when the faucet is opened the chain will wind around the faucet and lift the valve, and when the faucet is closed the valve will fall against the side of the basin and become air-tight, substantially as specified.

201,406. GATE-LATCHES. Wm. P. Golden, Morris, Ind. Filed Feb. 19, 1878.



Claim.—An improved latch formed by the combination of the circle-plate A, provided with the screw *a'*, or equivalent base-plate, the stops *a²*, and the perforated lug *a³*, the latch B, having its rear part slotted and its lower edge notched, and having its forward part notched upon the lower side, its end inclined or curved, and a thumb-piece, *b'*, formed upon its upper edge, and the catch-pin E, formed upon or attached to the end part of a long, narrow, and slotted base-plate, *c'*, substantially as herein shown and described.

201,407. CLAMPS. Edwd. F. Gordon, Concord, N. H., assignor to John A. White, same place. Filed Jan. 17, 1878.

Claim.—The combination, with the standard A, the strip B, and the sliding arm C, of the eccentric-lever D and the jaw E, both pivoted in said arm, as shown and described, for the purpose specified.

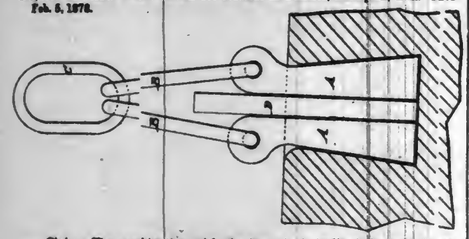
201,408. SASH-HOLDERS. George W. Grafflin, Jr., Baltimore, Md. Filed Aug. 20, 1877.

Brief.—A suitable case or shell, mortised into the sash, is provided with a peculiar adjustable frame having oblique slots, in which a rubber roller is journaled.



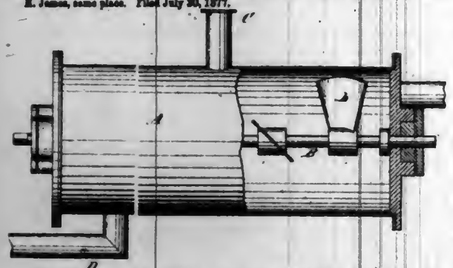
Claim.—The improved sash-holder having the adjustable frame herein described, with oblique slots *e* for the journals of the rubber roller *f*, as shown and described, and for the purpose specified.

201,409. LEVELER. Walter Graham and Jonathan A. Dennison, Annisquam, Mass. Filed Feb. 5, 1878.



Claim.—The combination, with the jaws A A, inclined downwardly on their outer edges, to fit under an undercut portion of the rock, and the intermediate key D, of the links B B, connected with the upper ends of the jaws A, and converging to a link, C, in which they are held, as and for the purpose specified.

201,410. MUD-PIPE CLEANERS. Henry Groce, Chilton, Wis., assignor to himself and Stephen E. James, same place. Filed July 30, 1877.



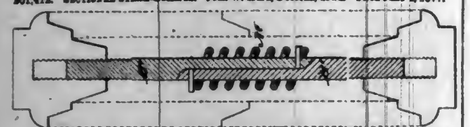
Claim.—The shaft B, having a series of plates or blades, *b*, separated from each other and normally removed from the bottom space of the mud-drum, in combination with the mud-drum A, provided with and stuffing-boxes, and having the inlet-pipe C and blow-off pipe D, as and for the purpose set forth.

201,411. LAMP-EXTINGUISHERS. Albert Hall, Cypress Hill, N. Y. Filed Feb. 8, 1878.



Claim.—The combination of the slide-tube A, the lever-frame B, hinged to its lower edge, having cam *a* at one end, the eye *b* at the middle, and the cut-off C at the other end, the crank-frame D, attached to the frame B, and extended in front of slide-tube, and the operating-cord E, passed through a perforation in the bottom plate of burner, as shown and described, to form a detachable extinguisher for lamp-burners.

201,412. SECTIONAL STEAM-BOILER. John W. Hard, Decorah, Iowa. Filed June 4, 1877.

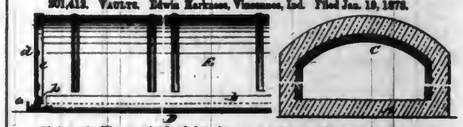


Claim.—1. In a sectional steam-boiler, a yielding spring bolt or rod, constructed substantially as described.

2. A yielding spring bolt or rod for sectional steam-boilers, composed of two parts united together at their inner ends by means of a spring, and having their outer ends screw-threaded, substantially as and for the purposes set forth.

3. The combination, with a sectional steam-boiler, jointed at the intersections and provided with screw-threaded bosses, of the yielding sectional bolt, screw-threaded at its outer ends, and provided with a spring for connecting the sections together, substantially as described.

201,413. VAULTS. Edwin Harkness, Vincennes, Ind. Filed Jan. 19, 1878.



Claim.—1. The method of forming a concrete vault by first forming in the grave a concrete floor, and placing thereon a form of wood or iron over the casket, and building upon the form the sides, ends, and top of the vault, substantially as herein shown and described.

2. The method of rendering the top separable from the walls by placing on the walls a layer of paper or other similar material, and building thereon the cover of the vault, as herein shown and described.

3. A sheet-metal vault consisting of the bottom D, having flanges *a b*, the corrugated and flanged top E, and the flanged end pieces *d*, substantially as herein shown and described.

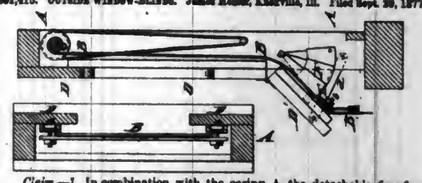
201,414. BOBBIN-SOCKETS FOR SPINNERS. Watson F. Hastings, Bridgeport, Conn. Filed July 31, 1877.

Brief.—For securely retaining the bobbin in its place upon the spindle when the spindle is revolved at a high rate of speed. The socket is encircled by a polygonally-shaped spring, the flattened sides of which pass through slots in the socket and compress the base of the bobbin.



Claim.—The combination of an annular spring with a bobbin-socket, wherein the base of the bobbin is subjected to compression and retained therein at high speeds of revolution, substantially as described.

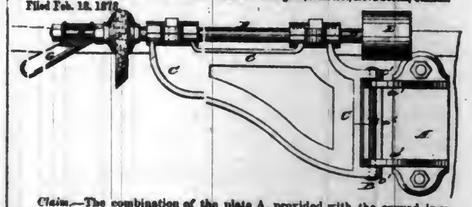
201,415. OUTSIDE WINDOW-BLINDS. James Hester, Knoxville, Ill. Filed Sept. 20, 1877.



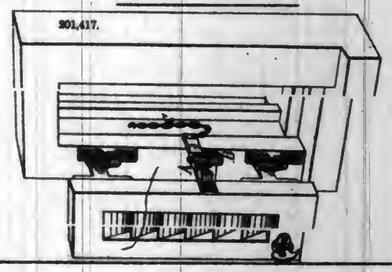
Claim.—1. In combination with the casing A, the detachable face-frame D, having the grooves *a a* on its inner side, and the hinged sections D', substantially as described.

2. The combination of the outer protecting face-frame, grooved at the inside, and having hinged lower parts, with the adjustable outside blind, curtain, or screen, having lower stretching-piece, with guide and set screws, and with or without folding and fan-shaped side sections, to form an awning, substantially as specified.

201,416. SAW-SHARPENING MACHINES. Theodore Hodgson, Amherst, Nova Scotia, Canada. Filed Feb. 18, 1878.



Claim.—The combination of the plate A, provided with the curved lugs a^1 and the strengthening-bar a^2, the pivoting-bolt B, the pivoted arm C, provided with the lugs c^1 and the bearings c^2, and the sliding shaft D, provided with the pulley E, the emery-wheel F, and the handle G, with each other, substantially as herein shown and described.



201,417. SHUTTER-FASTENINGS. Peter H. Hanlay, Jersey City, N. J. Filed Feb. 14, 1878.

Brief.—A plate or strap similar to a hinge-plate, having an upwardly-projecting pivot or pintle, is provided with a detached cross-bar pierced or socketed near the center to fit upon the pivot, the construction making a supplementary fastening for attachment between the two hinges of a shutter, the cross-bar being suspended by a chain for convenience in using.

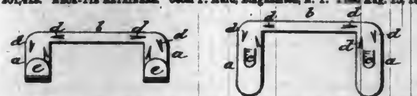
Claim.—As a new article of manufacture, the blind-fastener consisting of the plate or bar B, provided with the pivot *b*, and the plate or bar A, provided with the socket *a*, when constructed, combined, and operating as herein shown and described.

201,418. CALENDARS FOR WATCHES. Elias H. Hull, Warren, Ohio. Filed Feb. 1, 1878.



Claim.—In a calendar-watch, the combination, with ring-dial B, provided with notches on its inner periphery and cogs on its outer periphery, of the wheel D, which engages with said outer periphery by a stud or pin, D', and is actuated by cog engagement with a pinion-gear, which latter moves in unison with the usual hour-hand wheel, substantially as set forth.

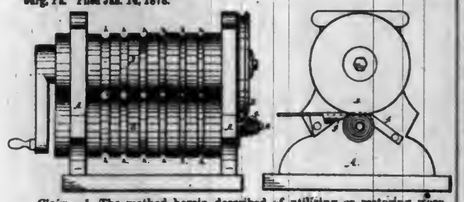
201,419. NECK-TIE RETAINERS. Oscar F. Hard, Binghamton, N. Y. Filed Aug. 15, 1877.



Claim.—1. The within-described neck-tie retainer, consisting of the lapped ends *a a*, connected by strip *b* and struck-up spring-lips *c* between said lapped ends, for grasping the collar, and the barbs or points *d* on the opposite side of the plate, for holding the tie.

2. A neck-tie retainer having barbs or points *d* struck up in opposite directions from the plate, for piercing and holding the tie in place, all constructed substantially as herein set forth.

201,420. UTILIZING WORN-OUT SPRINGS. Frank Hutchinson and Wm. H. Graham, Pittsburg, Pa. Filed Jan. 14, 1878.

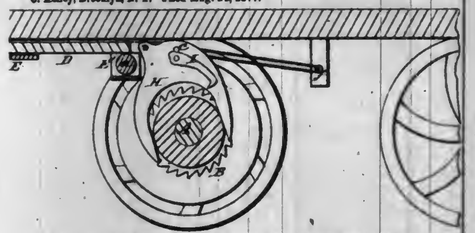


Claim.—1. The method herein described of utilizing or restoring worn-out springs, the same consisting in preparing the spring for recoiling by heating and uncoiling the spring between a suitable roll and mandrel, and then rerolling and recoiling the same, substantially as and for the purposes specified.

2. The roller D, mandrel *e*, guide *g*, spring *f*, combined, arranged, and operating with relation to each other, substantially as herein described, and for the purpose set forth.

3. The roller D and mandrel *e*, respectively arranged upon the axes of the grooved rolls, for rerolling the bars after they have been straightened between the said roller and mandrel, which are also located with relation to the spring *f* and guide *g*, substantially as set forth.

201,421. CAR-STARTERS. Wilhelm Jasper, Morrisania, assignor of one-half his right to John C. Kelley, Brooklyn, N. Y. Filed Aug. 24, 1877.



Claim.—1. In a starter for railway-cars, the combination, with the draw-bar and the axle-ratchets, of the open yoke H, pivoted to said draw-bar, and the pawls I I, pivoted to said yoke, for operation as described.

2. The combination, with the draw-bar D and the axle-ratchets B, of the open yoke H, pivoted to said draw-bar, the pawls I I, pivoted to said yoke, and the detents *c*, arranged on the yoke and moving with it, for conjoint operation as set forth.

3. The detents carried by the pivoted yoke, combined with the pivoted pawls, and adapted to automatically carry and hold the pawls free from engagement with the ratchets, and to present and hold the pawls in positions for engagement therewith, substantially as herein set forth.

4. The combination, with the double or divided ratchets, having a groove, C, between them, of a pivoted yoke having its ends open, and held in position for the operation of its pivoted pawls by means of said groove between said ratchets, as herein set forth.

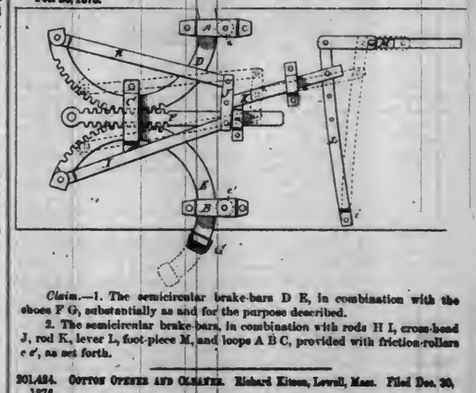
5. The combination, with the draw-bar and its retracting spring or springs, of the pivoted yoke, its pivoted pawls, its detents, and the axle-ratchets, whereby the draw-bar and the pivoted pawls are automatically operated to release the pawls from engagement and present them for action with the axle-ratchets.

201,422. FENCE-POSTS. Darley C. Johnson, New Providence, N. J. Filed Oct. 6, 1877.



Claim.—The improved post A, composed of the central vertical bar, divergent limbs or braces, with parallel extremities, and the cross-bar, the same being integral and of malleable iron, as shown and described.

201,423. WAGON-BRAKES. Fred. A. Keene and Cyprian Van Order, Marengo, Iowa. Filed Feb. 20, 1878.

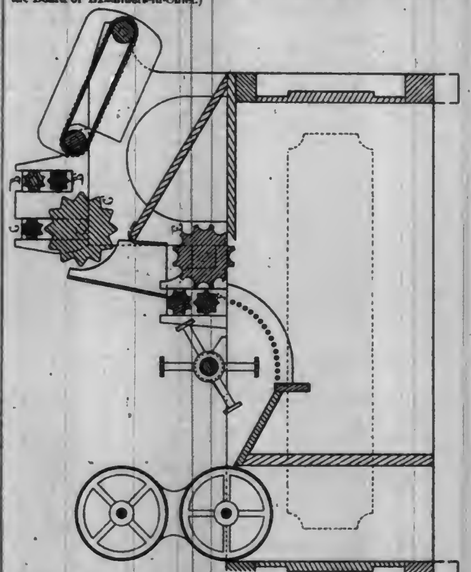


Claim.—1. The semicircular brake-bars D E, in combination with the shoes F G, substantially as and for the purpose described.

2. The semicircular brake-bars, in combination with rods H I, cross-head J, rod K, lever L, foot-piece M, and loops A B C, provided with friction-rollers *c c'*, as set forth.

201,424. COTTON OPENER AND CLEANER. Richard Kitson, Lowell, Mass. Filed Dec. 30, 1876.

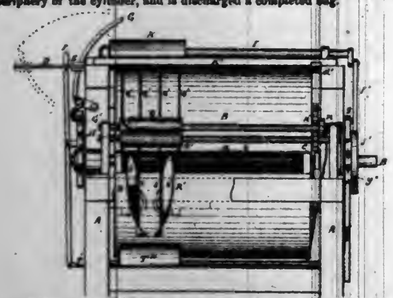
Brief.—The invention consists in increasing the size of the lower dividing-roll a little more than that shown in Letters Patent No. 193,094. (Passed by the Board of Examiners-in-Chief.)



Claim.—In combination with the lower grasping-roll B', the lower dividing-roll C', placed substantially as described, so as to strip the grasping-roll, as and for the purpose set forth.

201,426. BAG-MACHINES. O. Oram Lackey, Akron, Ohio. Filed May 4, 1877.

Brief.—The blanks are fed forward under a plate, which determines the first bottom fold, by a reciprocating carriage provided with feed-fingers and an arm, which enters one end of the blank, which has been opened by air-exhaust pipes above and below the table, and holds it open for the entrance of the reciprocating folding-bar, which gives the first or diamond fold. A vibrating holder now descends upon the folded portion of blank and holds it flat, while the folding-bar recedes, and until the gripers upon the revolving cylinder take hold of the blank and carry it under the paste-roll, and thence to the stationary molded or curved folding-blades, which form the final bottom folds. The bag now passes between an endless traveling presser-band and the periphery of the cylinder, and is discharged a completed bag.



Claim.—1. In a paper-bag machine, the combination of devices, such substantially as described, for opening the end of the paper tube, a longitudinally-moving bar adapted to enter the open end of said paper tube and fold over the same, a revolving cylinder having griping devices for carrying the bag along sidewise, and folding devices, arranged adjacent to the cylinder, for folding over the two corners of the paper tube formed by the longitudinally-moving bar, the whole being organized to operate as herein set forth.

2. In a paper-bag machine, a shaft provided with a wheel in its forward end, and having a longitudinally-reciprocating movement parallel with the bag, and operated by mechanism, such substantially as described, for causing the bar, with its wheel, to enter the end of the bag, in combination with a plate arranged across the bag at the line of the bottom fold, as set forth, separating the sides of the bag, and folding the upper side of the same over the edge of the before-mentioned plate, substantially as described.

3. In a paper-bag machine, the combination of the molded blades *a'* with the rigid and inflexible bars *e*, substantially as shown, whereby the molded blades shall pass under the point of the first folds of the bag as it is carried forward, and the rigid bars rigidly ride over the same and form lines, over which the paper is folded by the molded blades, as set forth.

4. In a paper-bag machine, the bar P, adapted to engage the end of the bag and hold the same open, in combination with mechanism, substantially as described, for carrying said bar, with the bag, forward for the action of the longitudinally-reciprocating bar F to make the first fold, as set forth.

5. The pipe Y and branches Y' Y'', in combination with the traveling bar P, substantially as described, whereby the suction through the pipes will open the end of the bag, and permit the entrance of the bar P, for carrying the bag to the action of the longitudinally-moving bar F to form the first fold, as set forth.

6. In combination with the bar F, cross-head E, and guides D D, the curved arm G, operated by devices substantially as shown, for the purpose of moving the bar F, substantially as described.

7. In combination with the bar F, cross-head E, and guides D D, the cam H and sway-bar G', for the purpose, by means of intermediate connections, substantially as shown, of moving the bar F, substantially as herein described.

8. The combination, with the revolving cylinder, of the folders R R', consisting of the bars *s* and molded blades *a'*, shaped to conform to the cylinder, and adapted to be adjusted, substantially as and for the purpose described.

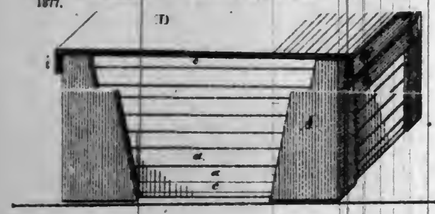
9. In a cylindrical paper-bag-bottoming machine, the revolving cylinder having the rounded-edge orifice, upon which the side of the bag is held by the fingers *b b*, for the purpose of curving inward the edge of the bag, and preventing the point of the folder-blade passing between the bag and the periphery of the cylinder, substantially as herein described.

10. The combination, with the bar P, attached to and moving with the feeding device, of the latch *b'* and fixed bar *p*, substantially as and for the purpose described.

11. The combination, with the hinged bar N', moving beneath the platform C, and having pins *i i* projecting through slots in the latter, of the devices, such substantially as described, for moving the hinged bar, and the pin *a'* and spring *c'*, for governing the said bar, as and for the purpose set forth.

12. In a cylindrical paper-bag-bottoming machine, the combination of the bar P and shaft F, substantially as and for the purpose hereinbefore set forth.

201,426. EGG-CARRIERS. Matthew Loftin and Sterling Elliott, Chicago, Ill. Filed Mar. 20, 1877.

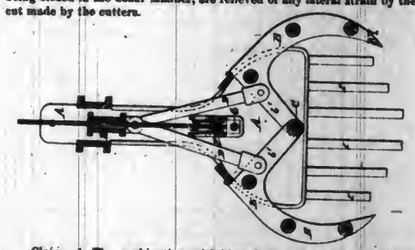


Claim.—1. The body of an egg-carrier, having its sides and ends open to permit lifting the trays without toppling, in combination with the cover or lid D, having end strip *d*, covering the outer ends of the top of the carrier and trays, and holding said cover and trays together, all constructed and operating substantially as specified.

2. The half trays or frames *c*, of less depth than the full trays, whereby space is economized, the eggs kept from contact with the outer case, and the lower layers relieved from weight, in combination with the full trays and case, substantially as described.

201,427. GRAPPLES. Alfred L. Larvill, Port Royal, assignor to himself and Gen. W. Roberts, Beaufort, S. C. Filed Dec. 22, 1877.

Brief.—A grapple for excavating rock, provided with ribbed chisel-cutters at the ends thereof, the cutters being held in the end frames of the grapple by webs and plates on the end frames. The grapple descends open, and the cutters, striking the rock, cut the same at each end of the grapple. The jaws then, being closed in the usual manner, are relieved of any lateral strain by the end cut made by the cutters.



Claim.—1. The combination, with hinged claws B, of the side frames having chisel-cutters I, arranged to operate as and for the purpose described.

2. The cleats J, in combination with the feathered chisels I, and with the frame A, provided with webs a^3 a^3, substantially as and for the purpose specified.

201,428. SUSPENDER-SOCKETS. Charles J. Lauderbach, Allegheny, Pa., assignor to himself and Robert C. Albree. Filed Jan. 29, 1878.



Claim.—1. The suspender-socket herein described, wherein the fiber of the metal in that portion of the socket between the arms of the loop is transversely arranged with relation to the axis of the socket, and the fiber of the metal in the loop or bail is parallel to the axis of the socket or line of draft, substantially as specified.

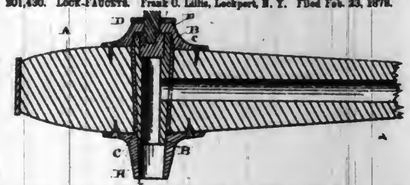
2. The method herein described for forming suspender-sockets, by first forming an initial blank having body and arms, substantially as shown; secondly, capping the body of the initial blank to form the socket; and, finally, bending and welding the arms to form the bail or loop of the socket, substantially as specified.

201,429. STEAM-CYLINDERS WITH STEAM-JACKETS. Erasmus D. Leavitt, Jr., Cambridge, Mass., and Washington Jones, Philadelphia, Pa. Filed Jan. 15, 1878.



Claim.—The combination of an expansion-joint with the steam-jacket, when the jacket and cylinder are cast in one piece.

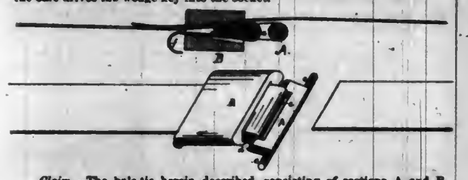
201,430. LOCK-FAUCETS. Frank C. Lillis, Lockport, N. Y. Filed Feb. 23, 1878.



Claim.—The combination of the stock A, plug B, provided with key-seat D, of hard metal, packing C, top guard E, and bottom guard H, provided with a spout, I, all constructed and arranged substantially as shown and described.

201,431. BALE-TIES. Francis M. Logue, Vicksburg, Miss. Filed Aug. 17, 1877.

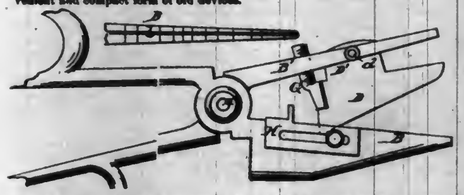
Brief.—One end of the band is first passed through in the socket and through the slot in the wedge-key. The band is then tightened, and the loose end passed through the aperture in the opposite direction. The expansion of the bale drives the wedge-key into the socket.



Claim.—The bale-tie herein described, consisting of sections A and B, the latter provided with a tapering aperture, and the former with a band-slot, *c*, projection *d*, and lugs *e e*, for the purpose set forth.

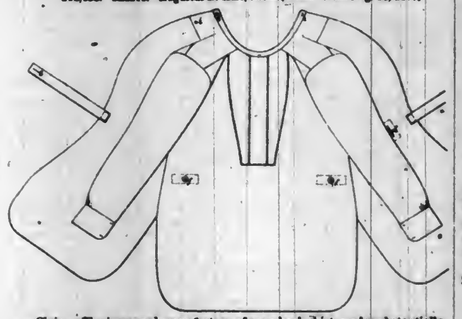
201,432. BUTTON-HOLE CUTTERS. Andrew J. Lyle, Hillsborough, Ohio. Filed Aug. 29, 1877.

Brief.—A slight novelty, in the combination and arrangement in convenient and compact form of old devices.



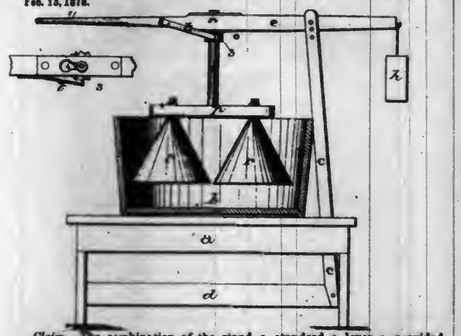
Claim.—In a button-hole cutter, an adjustable straight blade or cutter, D, provided with a shank, D', inserted in a mortise in one jaw of the shears, and held by a set-screw, *d*, in combination with the tubular adjustable cutter G, slotted jaw B, and adjustable gage H, all constructed substantially as and for the purposes herein set forth.

201,433. SKIRTS. Augustus D. Marr, Boston, Mass. Filed Aug. 14, 1877.



Claim.—The improved manufacture of open-back shirt, made substantially as described, with each of the edges of its back opening curved concavely, as set forth, such edges being provided with fastening devices at the neck, and with straps to extend from them, the said edges, to the sides of the shirt, and to fasten or button thereto, as explained.

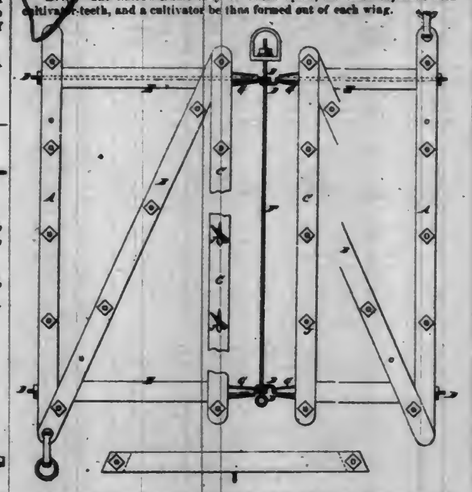
201,434. WASHING-MACHINES. Adolphus McGraw and John Gilbaugh, Anita, Iowa. Filed Feb. 13, 1878.



Claim.—The combination of the stand *a*, standard *c*, lever *e*, provided with weight *h* and slot *i*, rod *o*, rod *l*, having the pounders attached thereto, a ratchet upon its upper end, and pawl *t*, substantially as shown and described.

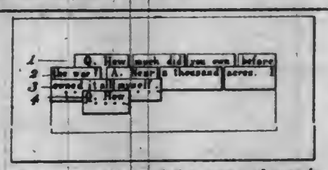
201,435. HARROWS. John K. Miller, Pleasant Hill, Mo. Filed Aug. 11, 1877.

Brief.—The harrow-frame may be taken apart, the teeth replaced with cultivator-teeth, and a cultivator be thus formed out of each wing.



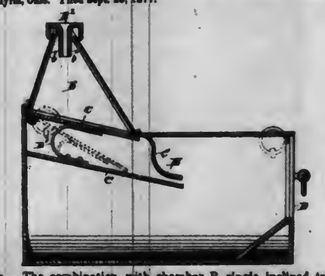
Claim.—The harrow-frame formed of the bars A B C, the bolts D, the rod F, and the washers G, to adapt the said bars A B C to be arranged in different ways, substantially as herein shown and described.

201,436. METHODS OF PREPARING TRANSFER-SHEETS OR MATRICES FOR PRINTING. Chas. T. Moore, White Sulphur Springs, W. Va., assignor of one-half his right to Lewis Clephane and J. M. Ormsman, Washington, D. C. Filed Nov. 12, 1877.



Claim.—The herein-described method or process of preparing transfer-sheets or matrices for producing printed sheets—that is to say, by first printing or indenting the characters on strips, then severing said strips, so as to separate the words or syllables, and spacing or justifying them, so as to form lines of uniform length, and securing the words and syllables thus arranged to a supporting-sheet or to each other, substantially as shown and described.

201,437. PANS-BAILS. Moses M. Moore, Cleveland, assignor of one-half his right to Winslow L. Fay, Elyria, Ohio. Filed Sept. 20, 1877.



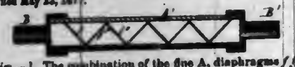
Claim.—The combination, with chamber B, single inclined trap C, and semi-elliptical spring B', of the passage E, said passage being formed by the curved wall *d* and the incline *e*, the latter also serving to support the spring B', substantially as described.

201,438. CHURNS. Oliver O. Moore, Medina, N. Y. Filed Oct. 6, 1877.



Claim.—The combination of the cross-piece B, having stop *d*, the end pieces C, and the perforated dash D, the latter hung eccentrically to dash-rod, as shown and described.

201,439. APPARATUS FOR THE PRODUCTION OF HOT AIR. Eugine Hovem, San Francisco, Cal. Filed May 23, 1877.



Claim.—1. The combination of the fine A, diaphragms *f*, *f'*, *f''*, and diathermanous cover A', substantially as and for the purpose described.

2. The combination of the fine A, provided with cover and diaphragms, with the adjusting mechanism composed of the bearings B B', plate C'', bed-plate D, and set-screw E, substantially as and for the purpose described.

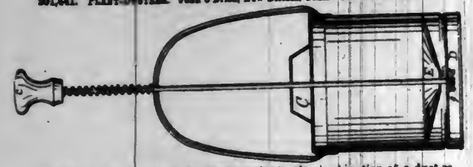
201,440. ROCKING-CHAIRS. Clifford C. Nichols, Cincinnati, Ohio. Filed Aug. 6, 1877.



Claim.—1. The chair composed of rockers A, back B, ogee braces D, front legs G, and seat I, the said members being formed, arranged, and combined substantially as set forth.

2. The members A, B, D, G, and I, pivoted to one another, and secured in the rigid condition by means of the detachable bolt F, the whole being constructed and combined in the manner set forth.

201,441. PLANT-DUSTERS. John O'Brien, New Britain, Conn. Filed June 6, 1877.

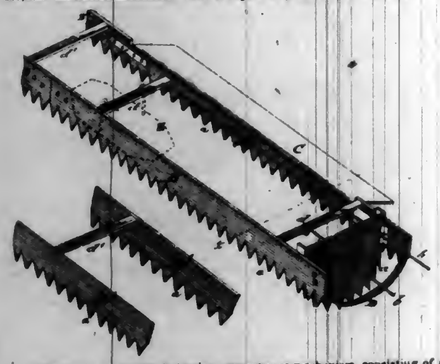


Claim.—1. In a machine for dusting plants, the combination of a dust-receptacle open at its lower end, a movable sieve filling said lower end, and a vertically-moving agitating-rod, substantially as described, and for the purpose specified.

2. In combination with a dust-receptacle open at its lower end, a movable sieve filling said lower end, and a vertically-moving agitating-rod, a spring to move the rod and sieve in one direction, substantially as described, and for the purpose specified.

3. The combination of a false bottom with a dust-receptacle open at its lower end, movable sieve, and a vertically-moving agitating rod, substantially as described, and for the purpose specified.

201,442. IRRIGATING APPARATUS. Caleb D. Page, Greeley, Colo. Filed Nov. 20, 1877.



Claim.—1. A portable irrigating apparatus or mechanism, consisting of a movable gate, A, and adjustable side pieces B, constructed and operating substantially as herein set forth.

2. The combination, with the said irrigating apparatus or mechanism A B, of one or more flood-boards, C, substantially as and for the purpose set forth.

3. The float E, in combination with the side pieces B, substantially as and for the purpose specified.

4. The gate A and side pieces B, with teeth or serrations *a*, substantially as and for the purpose specified.

5. The levers *b*, in combination with the gate A and side pieces B, substantially as set forth.

6. The combination of the foot-piece D with the side pieces B, substantially as herein shown, so that the weight of the operator in raising or lowering of the gate will securely hold the side piece in place.

201,443. HYPODERMIC SYRINGES. Thomas B. Parker, Oshoe, N. Y. Filed Sept. 3, 1877.

Brief.—Piston is forced forward by thumb-pawl acting upon a rack, and its hollow upper end is adapted to carry a vial of medicine.



Claim.—1. In a hypodermic syringe, the combination, with the piston or plunger, of a pawl and rack for propelling the same.

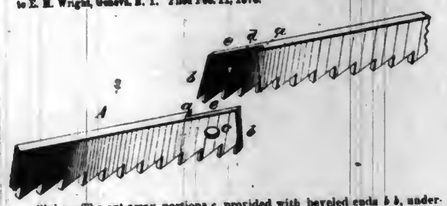
2. The combination, with the rack on the stock of the piston, of a scale on the outside of the case or barrel, graduated to correspond with the teeth of such rack.

3. The combination of the rack on the piston or piston-rod, the spring-pawl F, and the slide I, substantially as and for the purpose set forth.

4. The combination, with a solid piston or plunger, of a chambered piston-stock adapted to store and hold a second or reserve vial of medicinal solution, or a duplicate needle or probe or a supply of the same, substantially as shown and described.

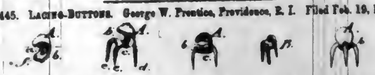
5. In combination with the needle or probe, a protecting cover or shield for the same, made in two parts, *s* and *w*, adapted to be connected together or disconnected at a point between the butt and tip of the needle, as and for the purposes set forth.

201,444. FASTENING THE ENDS OF BAND-SAWS. Orrin Frost, Northampton, Mass., assignor to E. M. Wright, Geneva, N. Y. Filed Feb. 11, 1878.



Claim.—The cut-away portions *c*, provided with beveled ends *b b*, undercut shoulders *a a*, opening *c*, and pin *d*, for the purpose set forth.

201,445. LACING-BUTTONS. George W. Prentice, Providence, R. I. Filed Feb. 19, 1878.

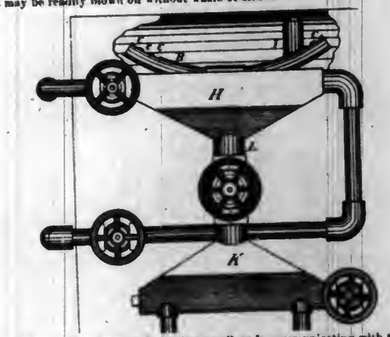


Claim.—1. The herein-described lacing-button, consisting of the head A, having curved neck or shank *b*, with central opening *a*, and base-plate *c*, provided with the projection *f*, the whole being formed of a single piece of material, and adapted for operation in connection with the metallic connection or fastening B, substantially as and for the purpose specified.

2. In a lacing-button, the head A, constructed as described, in combination with a suitable metallic connection or fastener, substantially as and for the purpose specified.

201,446. APPARATUS FOR REMOVING SEDIMENT FROM STEAM-BOILERS. Thomas C. Purves, Chicago, Ill. Filed Dec. 27, 1877.

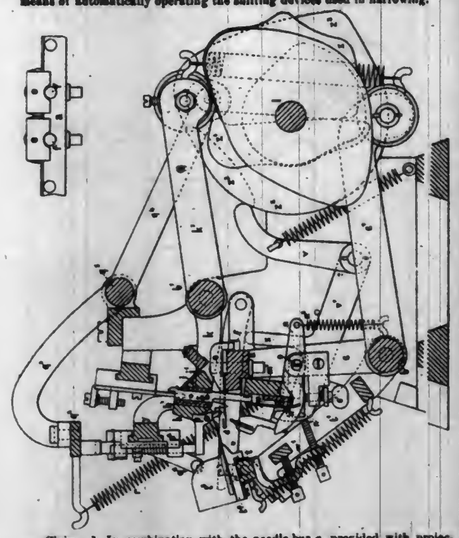
Brief.—The sediment is trapped in a vessel having an incline bottom, communicating with another vessel of the same construction by means of a cock. The shape of said bottoms has a tendency to concentrate the sediment, when it may be readily blown off without waste of steam.



Claim.—The receiver H, having small ends communicating with the exit and inlet pipes to the boiler, and a double inclined bottom, which, at its lower extremity, by means of pipe L, connects with the highest part of the receiver K, the said receiver being provided with cocks, as and for the purpose set forth.

201,447. KNITTING-MACHINES. Adolf Reichenbach, Limbach, near Chemnitz, assignor to Gustav H. Neumann, Osdorn, near Chemnitz, Saxony. Filed Dec. 13, 1877. Patented in Saxony, June 1, 1877, for five years.

Brief.—An improved means of fastening the needles to the needle-bar, improved means for assisting the descent of the sinkers after they have sunk the loops between the needles, improved thread-guide holder, and improved means of automatically operating the shifting devices used in narrowing.



Claim.—1. In combination with the needle-bar *a*, provided with projections or studs *f*, needles, and covers *d*, each cover resting at the back on one of said studs or projections, as and for the purpose described.

2. The sinker-frame *h i* and sinkers guided therein, in combination with the shaft *b'*, a cam, *c*, and arms *k k'*, as and for the purpose specified.

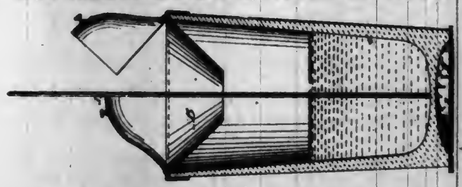
3. The sinker-lifting bar *m*, in combination with the levers *n*, provided with the inclines n^2, and the stops n^1, adjustable by screws *o'*, substantially as described, and for the purpose stated.

4. The sinker-guide bar *h*, in combination with the thread-guide holder *p*, the saddle p^2, and spring p^1, as and for the purpose described.

5. The adjustable stops *q* and the saddle p^2, in combination with the racks q^1 and mechanism for operating the latter, the pawls *s s'*, having two teeth each, and the springs s^2, substantially as specified, and for the purpose stated.

6. The racks q^1, mechanism, substantially as described, for operating the same, the pawls *s s'*, and the adjustable stops *q*, having the arm q^4, in combination with the slides t^2 on the tickler-bar *t*, as and for the purpose specified.

201,448. MOLASSES-SAMPLING GLASSES. Wesley M. Rich, Rome, N. Y. Filed Mar. 7, 1878.



Claim.—1. A sampling-vessel for molasses, sirups, &c., consisting of a vessel with a funnel-shaped top, hinged cover-sections, and a removable spatula, guided in a slot of the cover-sections, substantially as and for the purpose set forth.

2. A sampling-vessel for molasses, sirups, &c., consisting of a funnel-shaped top part with hinged protecting lid-sections, substantially as and for the purpose set forth.

201,449. DRILL-GRINDERS. Alex. K. Rider, Walden, N. Y. Filed Dec. 13, 1877.

Brief.—The point of the drill is projected below the face of the gage-plate to the extent to be removed by the grinder.



Claim.—1. In a device for grinding and sharpening drills, a stock for holding the drills, said stock consisting of a perforated grinding-gage provided with a grooved shank angularly disposed relatively to said perforated gage, and suitable means for holding the drill within said grooved shank, substantially as set forth.

2. In a device for grinding and sharpening drills, a stock for holding the drills, consisting of a perforated grinding-gage provided with a shank having a V-shaped groove, said shank constructed with a through-slot at right angles to said groove, in connection with a clamp which is adapted to fit within said through-slot, said clamp serving to hold the drill firmly in place, substantially as set forth.

3. In a device for grinding and sharpening drills, the perforated face and grooved shank, in combination with means for holding the drill in place, and also with means to regulate the end and axial adjustment of the drill, substantially as set forth.

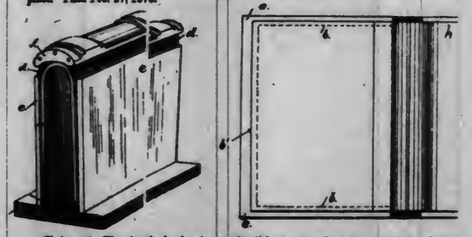
4. The combination, with a stock consisting of a perforated grinding-gage provided with a shank having a V-shaped groove, of a collet adapted to be adjustably secured to the drill and to said shank, substantially as set forth.

5. The combination, with a stock consisting of a perforated grinding-gage provided with a shank having a V-shaped groove and a recessed end, of a collet having two projections arranged diametrically opposite each other, substantially as set forth.

6. The combination, with a stock consisting of a perforated grinding-gage provided with a shank having a V-shaped groove and a recessed end, of a collet having two projections, which engage with the recessed end of said shank, said collet also provided with an adjusting-screw for securing the same to the drill, substantially as set forth.

7. In a device for grinding and sharpening drills, the stock consisting of a grinding-gage and a grooved shank, said face being provided with a diamond or other shaped opening, into which merges the V-groove formed in the shank, substantially as set forth.

201,450. BOOK-BINDING. Ira Reynolds, Dayton, Ohio, assignor to Reynolds & Reynolds, same place. Filed Feb. 27, 1878.



Claim.—1. The book A, the inner flexible cover of which consists of an outer stiffening-board, *b*, smaller than the book proper, and an inner finishing-sheet, *b'*, the edges of which project beyond the stiffening-board *b*, whereby it may be attached to the finishing-cover *c*, in the manner shown and described.

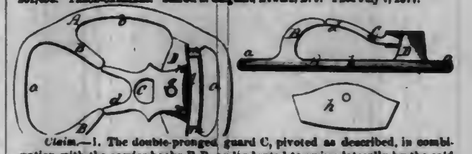
2. The herein-described former or substitute book *b'*, having the appendages *a a*, whereby the formation of the outer finishing-cover *c* is accurately and quickly accomplished, substantially as shown and described.

201,451. FASTENINGS FOR SHOES. Samuel T. Sanford, Norton, Mass. Filed Feb. 8, 1878.



Claim.—The combination, with a shoe, of the two pieces of leather B C, slotted to form alternate strips and spaces, arranged with the strips of the one piece passing through the spaces of the other, and formed upon or secured to the upper of the shoe, upon the opposite sides of its opening, adapted to form a fastening for the shoe, all substantially as herein shown and described.

201,452. TRACK-CLEARERS. Samuel S. Sargent, Newark, N. J. Filed July 7, 1877.



Claim.—1. The double-pronged guard C, pivoted as described, in combination with the carrier-hooks B B, and adapted to swing laterally by the said hooks in both directions, substantially as and for the purpose herein specified.

2. The pivot cross-bar D and bottom plate A, constructed substantially as described, in combination with the guard C, substantially as and for the purpose herein specified.

201,453.

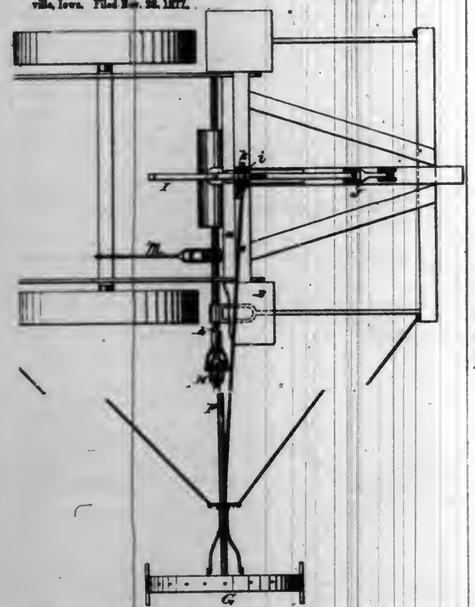


201,453. EGG-CARRIER. Paul Schulze, Washington, D. C., assignor of one-half his right to Charles E. Noble, same place. Filed Feb. 26, 1878.

Claim.—1. In a carrier for eggs, &c., the spherical or elliptical elastic balls C, secured to pins or a frame-work, as shown, and for the purpose set forth.

2. A carrier for eggs, &c., consisting of the plate A, the pins or blocks B, and the spherical or elliptical balls C, all constructed and arranged as shown, and for the purpose herein described.

201,454. CORN-PLANTER. Oscar B. Seaman, Valorus A. Bryant, and Hugh Dorling, Coalville, Iowa. Filed Nov. 26, 1877.



Claim.—The combination of the lever having the pin *m*, lever J, spring *l*, post *i*, having pulleys *k*, and the rope *o*, for raising the wheel G, substantially as herein shown and described.

201,455. FIRE-ESCAPES. Cornelia A. Sheldon, Amity, N. Y. Filed Dec. 13, 1877.



Claim.—The open canvas carrier A, in combination with the bars or rollers B C and the bar or roller D and endless band E, when arranged for operation substantially as shown and described.

201,456. ROTARY STEAM-ENGINES. August Siegrist, Buffalo, N. Y. Filed Sept. 6, 1877.



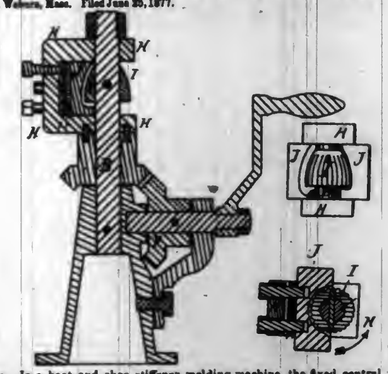
Claim.—1. The combination, with the cylinder A, provided with valve-chamber E, having ports A^2 A^3, of the eccentric motor-wheel C, provided with piston M, double-faced slide-valve I, having cavities *i i*, concave bearing-piece K, pivoted to the lower end of the slide-valve, and reversible throttle-valve G, all arranged as shown and described, for the purpose set forth.

2. The eccentric motor-wheel C, constructed with crescent-shaped flanges *l*, the surfaces of which lie in the same circle with the remaining surface of the motor-wheel, and are described from the center I, and having the surface between the flanges *l* curved from the center 2, in combination with the piston-block M, slide-valve I, and pivoted bearing-piece K, substantially as and for the purpose set forth.

3. The combination, with the cylinder A and cover B, having its flange provided with bolt-holes made inclined on the inside, of the fastening-bolts *r*, provided with inclines *r'*, substantially as and for the purpose hereinbefore set forth.

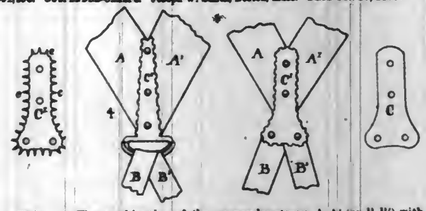
4. The combination, with the driving-shaft *c*, provided with conical end and collar *s*, of the spring-bearing *t t'*, cross-head *u*, springs *u'*, and adjusting-screws u^2, substantially as and for the purpose hereinbefore set forth.

201,457. MACHINES FOR MOLDING HEEL-STIFFENERS FOR BOOTS AND SHOES. Nathan J. Simonds, Woburn, Mass. Filed June 25, 1877.



Claim.—In a boot and shoe stiffener molding machine, the fixed central former I, the female mold J, adjustable toward or from the axial line of the former, the revolving holder H, for supporting and carrying the mold in its orbit around the former, and devices for transmitting and imparting the driving-former to the traveling mold, all substantially as described and shown.

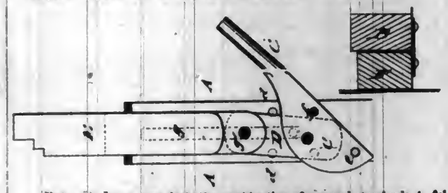
201,458. SUSPENDER-CLASPS. Joseph W. Smith, Boston, Mass. Filed Oct. 27, 1877.



Claim.—1. The combination of the suspender-straps A A' (or B B') with the toothed plate C and shield-plate C, united and held together by the rivets, as shown.

2. The device composed of the plates C C', provided with holes for the eyelet or rivet and a loop at or near one end, as shown.

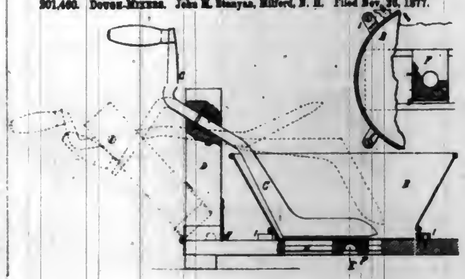
201,459. WAGON-JACKS. Simeon Smith, Deersville, Ohio. Filed Feb. 13, 1878.



Claim.—1. In a wagon jack, the combination of grooved standards A, fulcrumed lever C, connecting pivot-links D, and guided lifting-post E, having side projecting pivot-pin, substantially as and for the purpose set forth.

2. The combination of grooved side standards A, having holes at different height, and hinged supplementary bottom block B', with a fulcrumed lever, C, connecting pivot-links D, guided center post E, and detachable cross-pins *e* and *f*, substantially as and for the purpose specified.

201,460. DOUGH-MIXERS. John M. Stanyan, Milford, N. H. Filed Nov. 26, 1877.



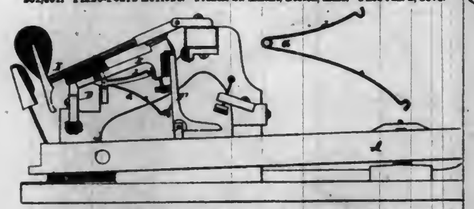
Claim.—1. A dough mixing and kneading blade having its lower portion conforming to the interior of the pan, and its upper portion projecting obliquely upward from the lower, so as to revolve in an inclined bearing in a standard arising from the pan-supporter, substantially as shown and described.

2. In a dough mixing and kneading machine, a pan supported upon a horizontal support, and a mixing and kneading blade, resting in an inclined bearing in an upwardly-projecting standard, and by its revolution causing the turning of the pan on a vertical axis, substantially as shown and described.

3. The combination of the revolving stirrer C, hinged post D, and pan B, as and for the purposes above described.

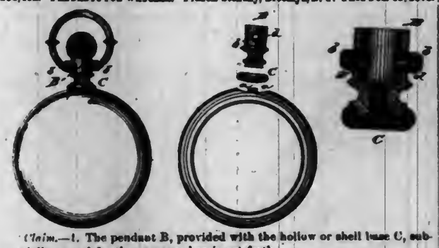
4. The combination of the pivoted pan and sliding bridge F, as and for the purposes above described.

201,461. PIANO-FORTE ACTIONS. Francis St. Amant, Boston, Mass. Filed Jan. 2, 1878.



Claim.—In combination with the key A, hammer-rest rail D, elevator E, and fly F, arranged as set forth, the duplex spring G, connected with the said fly, elevator, and rail, and disposed underneath the elevator, and between the fly and the rear end of the key, and having its pivot in close contiguity with the elevator, essentially as represented.

201,462. PENDANTS FOR WATCHES. Francis Steffany, Brooklyn, N. Y. Filed Feb. 19, 1878.



Claim.—1. The pendant B, provided with the hollow or shell base C, substantially as and for the purposes herein set forth.

2. The combination of the pendant B, having holes *b*, with the recessed cups *d*, substantially as herein set forth.

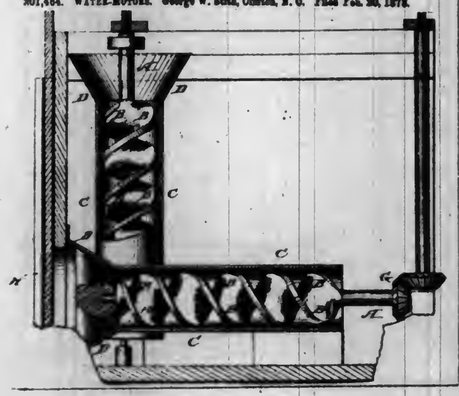
201,463. CAMP-BEDS. Moody A. Stevens, Cohasset, Mass. Filed Dec. 24, 1877.



Claim.—1. The combination of the folding crosses A and the support-bars B, provided with the cheek-pieces D and the screw C, all being arranged and applied substantially as set forth.

2. The combination of the folding sacking E and its four side bars F with the notched folding crosses A and the support-bars B, provided with the cheek-pieces D and the connection-screw C, all being arranged and applied substantially as set forth.

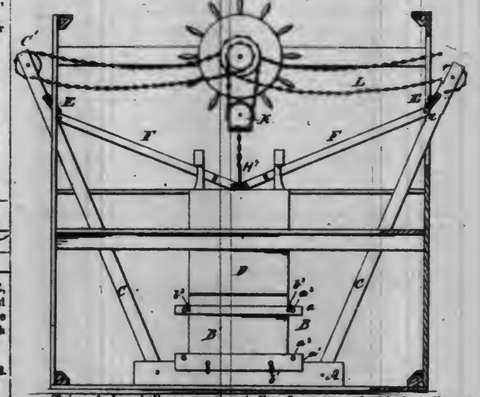
201,464. WATER-MOTORS. George W. Stith, Clinton, N. C. Filed Feb. 20, 1878.



Claim.—1. A chimney-cap consisting of the domes B and C and disk D, arranged, in relation to the pipe A, substantially as herein shown and described.

2. In combination with the disk D, domes B and C, and pipe A, the standards *i* and screw-bolts *o*, as and for the purpose set forth.

201,465. COTTON AND HAY PRESSES. Geo. W. Seals, Morton, Miss. Filed Feb. 13, 1878.



Claim.—1. In a baling-press, the windlass I, constructed with the pulleys I^1 I^2 of different diameters, and arranged immediately over the press-box, in combination with the operating-levers, chain or rope, and follower-block, as set forth.

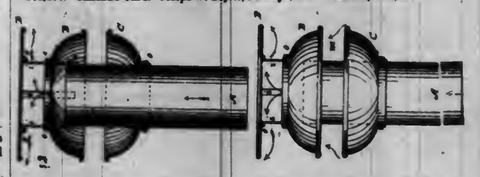
2. In a baling-press, the follower-block H, suspended on the actuating-cable L, and pivoted to the arrows F and levers C, with capability of lateral movement when withdrawn from the press-box, substantially as and for the purpose set forth.

3. The follower-block constructed with the central block H^1, and side pieces H^2 H^3, and corner recesses H^2 H^3, for the reception of the guides H^4, all arranged substantially as set forth.

4. The follower-block having the beveled edges H^2 H^3, provided with the vertical guides H^4, having the beveled recesses H^2 H^3, as and for the purpose set forth.

5. In a press-box for baling-machines, the pins *b*, projecting from the sills A, and constructed with the hooks b^1, and adapted to support and serve as hinges for the side doors B', having the curved holes or recesses b^2, substantially as set forth.

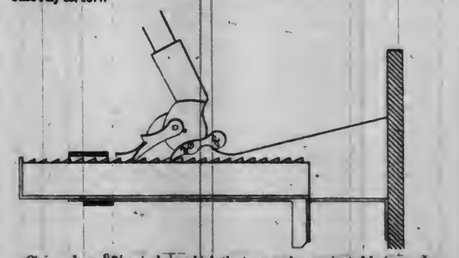
201,466. CHIMNEY-CAPS. Joseph W. Taylor, Brooklyn, N. Y. Filed Sept. 17, 1877.



Claim.—1. A chimney-cap consisting of the domes B and C and disk D, arranged, in relation to the pipe A, substantially as herein shown and described.

2. In combination with the disk D, domes B and C, and pipe A, the standards *i* and screw-bolts *o*, as and for the purpose set forth.

201,467. LIFTING-JACKS. Jas. M. Tiebout, Irvington, and Henry L. Dexter, Roselle, N. J. Filed July 13, 1877.



Claim.—In a lifting-jack in which the two pawls are pivoted between the bifurcated ends of a lever, and arranged so as to engage with the rack-teeth and to operate the adjustable support, the combination therewith of the lower pawl *d*, formed with an extension-arm and counter-balance, d^1, extending below its pivotal point, and below the bifurcated ends of the lever, substantially as and for the purpose specified.

201,468. PUMP-VALVES. John Tregoning and Michael Hastings, Brooklyn, N. Y. Filed Aug. 24, 1877.

Brief.—An extended half-cylinder valve has its seat upon a slot longitudinal in a concave of like proportions, a piston at each end, surrounded by a coil-spring, serving to hold the valve to its seat except against the pressure of a forced stream.



Claim.—1. The combination, with a pump-valve, of two pistons working in cylinders formed at the ends of the water-way in the valve-seat, substantially as shown and described.

2. The combination of the pistons E with the valve A and the valve-seat B, having formed in it cylinders or chambers D, substantially as shown and described.

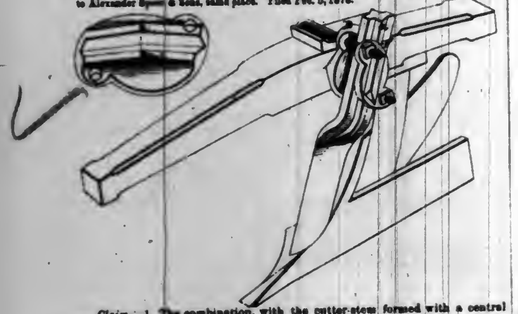
201,469. CAR-AXLE BOXES. John A. F. Vanclain, La Fayette, Ind., assignor of one-half his right to Harry Harrison, Nashville, Tenn. Filed Sept. 10, 1877.



Claim.—1. A car-axle box provided with the catch-pin C, spiral spring D, catch-chamber H I, and recess E in cap B, substantially as shown and described.

2. The box A, catch-pin C, spiral spring D, and catch-chamber H I, in combination with cap B, provided with recess E and groove G, all constructed, arranged, and operating substantially as described and shown.

201,470. PLOW-STOCKS. Edmund Wansbrough and Wm. W. Spear, Pittsburg, Pa., assignors to Alexander Speer & Sons, same place. Filed Feb. 5, 1878.

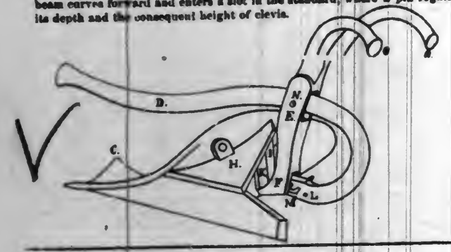


Claim.—1. The combination, with the cutter-stem formed with a central rib upon one or both of its sides, of the counterpart grooved plate or plates, and mechanism for adjustably clamping the same to a plow-beam in inclination to or from the land, substantially as set forth.

2. The combination, with the cutter formed with a central rib upon both its sides, of the two clamping-plates made with counterpart grooves, the clamp, and screw-bolts, or their equivalent, said inner clamping-plate having a rocking bearing, and provided with eye formations at its diagonally-opposite ends, substantially as set forth.

201,471. PLOWS. Clinton A. Wood, Reaton, Wis., assignor to Case, Whiting & Co., same place. Filed Nov. 1, 1877.

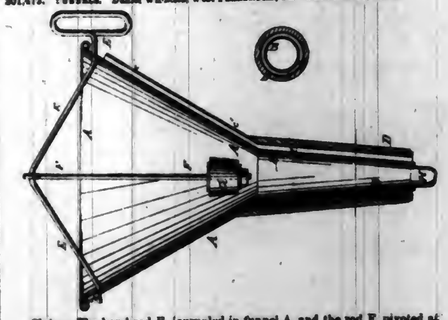
Brief.—A block fills the under space between the mold-board and land-side, and a dovetailed socket on its bottom receives the standard. The plow-beam is pivoted in an enlarged mortise in the standard. The rear end of the beam curves forward and enters a slot in the standard, where a pin regulates its depth and the consequent height of clevis.



Claim.—1. The plow-beam D, pivoted in the enlarged slot of the handle-post E, and having its rear end curved downward and forward to enter the mortise at F, its penetration into said mortise being limited by holes L and pin M, substantially as shown and described.

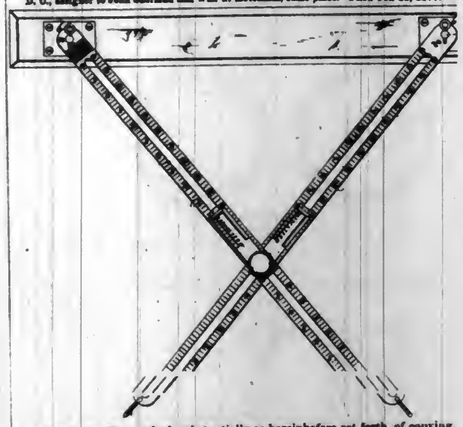
2. The combination of the adjustable beam D, slotted handle-post E, provided with cover H, and dovetailed frog F, all constructed substantially as described.

201,472. PENDULS. Daniel Williams, West Philadelphia, Pa. Filed Jan. 30, 1878.



Claim.—The hand-rod E, journaled in funnel A, and the rod F, pivoted at an equal distance from said journals in the obtuse angle of said hand-rod, in combination with a tapering cork, G, and nozzle B, for the purpose specified.

201,473. INSTRUMENTS FOR TRANSMITTING DIAGRAMS. John M. Wolbrakt, Washington, D. C., assignor to John Sherman and Wm. T. Hotchkiss, same place. Filed Oct. 12, 1877.



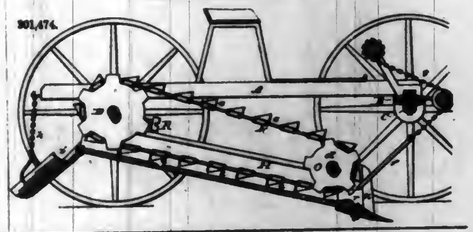
Claim.—1. The method, substantially as hereinbefore set forth, of copying and transmitting diagrams, the same consisting, essentially, in designating the several angles of the diagram by the words or figures indicated on a measuring-instrument, and then transmitting this transcript, made up of as many groups of such figures or words as there are angles to be transmitted, and translating the message at the receiving-station by means of an instrument in duplicate of the one employed by the sender, substantially as set forth.

2. The combination, with a bed-plate, of the intersecting graduated bars, the intersecting verniers, and the indicator located at the point of intersection of the graduated bars, substantially as set forth.

3. The combination, with the bed-plate and intersecting graduated bars pivoted thereto, of the verniers and the indicator upheld by a spring, substantially as set forth.

4. The combination, with a bed-plate, of the intersecting graduated bars pivoted thereto, and movable supports attached to the free ends of said graduated bars, substantially as set forth.

201,474.



201,474. DITCHING-MACHINES. John F. Woring, Ogden Centre, Mich. Filed Dec. 28, 1877.

Brief.—Journal bearings or boxes, adjustable for purpose of tightening the belt of carriers, carry the main axle, and are formed upon the upper rear edges of the trough. A ridge on the rear upper part of the scraper regulates the delivery of the soil into the trough.

Claim.—1. In a ditching-machine, the scraper J, provided with the elevation r, in combination with an endless chain and trough, substantially as shown and described.

2. In a ditching-machine, a trough having a plate, G, provided with an arm, *c*, and a bearing device composed of slotted parts *a* and *b*, overlapping dovetail flange *c*, and set-screw *l*, in combination with an axle, D, substantially as shown and described.

3. In a ditching-machine, an adjustable bearing for sustaining the trough from the axle, substantially as set forth, composed of a slotted bearing-piece, *a*, in combination with a slotted piece, *b*, having a dovetail flange, *c*, overlapping the bearing-piece *a*, and screw or bolt *l*, substantially as shown and described.

4. In a ditching-machine, the combination of the bearing device hereinbefore set forth with the trough, axle, sprocket-wheels, and endless chain, substantially as shown and described.

201,475. SCISSORS. Thomas E. Wright, Philadelphia, Pa. Filed Aug. 22, 1877.

Brief.—The blades and handle of a pair of pocket-scissors are so formed and pivoted that the extreme points open out in line, and when thus thrown back are protected by the bows acting as a guard. There is also, preferably, a small projection and recess arranged on the blades, serving as a locking-catch.



Claim.—1. The blades A A', pivoted at or near their center, and formed, substantially as described, in such manner that the points of the same can be thrown back over and be protected by the bows, as specified.

2. The combination, with the blades A A', of the projection *c* and recess *d*, forming a lock or catch, as specified.

201,476. LOCK-HINGES. Peter Adams, Jr., Buffalo, N. Y., assignor to Charles G. Shepard and Walter J. Shepard, same place. Filed Jan. 15, 1878.

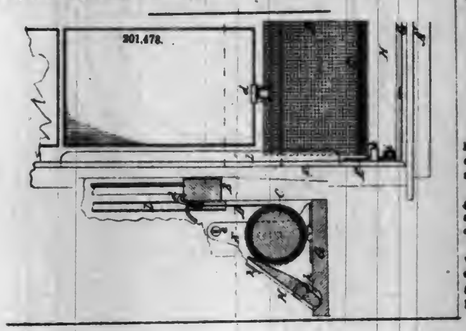
Brief.—The claim points out the essential novelty and degree of invention. The projecting stops on each leaf meet and hold the locking-inclines in close contact with each other when the blind is open, thereby holding it securely against movement in either direction.

Claim.—A blind-hinge provided with inclines *e f*, for locking the blind in an open position, and having its leaves provided with projecting stops *g g'*, constructed so that their faces will come in contact when the locking-inclines are engaged, thereby holding the latter in close contact with each other when the blind is open, and preventing the blind from moving in either direction, substantially as and for the purpose set forth.

201,477. INSULATED TELEGRAPH-WIRES. Morris E. Allegre, Philadelphia, Pa., assignor of one-half his right to Silas W. Pettit, same place. Filed Feb. 23, 1878.



Claim.—The mode herein described of making telegraph-wires—that is to say, the reducing of a compound bar, consisting of an iron tube, wire core, and intervening vitreous substance, by subjecting it to heat, and then reducing it by stretching, rolling, or drawing, as set forth.



201,478. WINDOW-SCREENS. Augustus Altenburg and Wallace G. Hill, Buffalo, N. Y. Filed Feb. 23, 1878.

Brief.—A plate on the window-sill, removable side-bracket plates, and U-shaped grooves on the side window-casings, together with a guard-plate pivoted and swinging by its lower edge in a groove in the sill, and held against the roller by gravity, insure a tight fit of the screen to the window-casing.

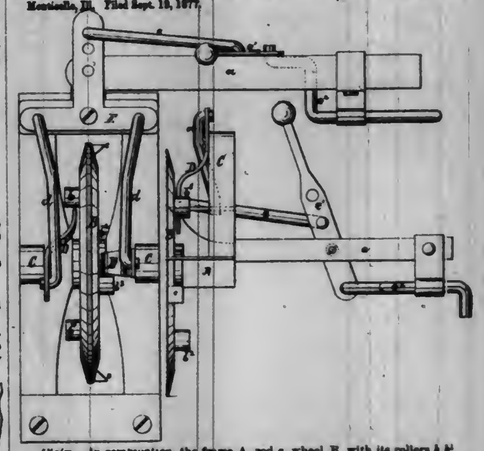
Claim.—1. The combination, with the sash-rail B, spring-roller C, and screen D, of the pivoted strip H, held in contact with the roller by gravity, substantially as and for the purpose set forth.

2. The combination, with the sash-rail B, spring-roller C, and screen D, of the brackets E, bottom strip G, and pivoted plate H, arranged and operating as shown and described.

3. The combination, with the sash-rail B, spring-roller C, and screen D, of the brackets E, provided with overlapping ears *k*, bottom strip G, provided with groove *h*, and pivoted plate H, resting in said groove, substantially as and for the purpose set forth.

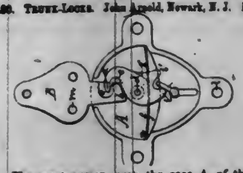
4. The combination, with the sash-rail B, spring-roller C, and screen D, of the brackets E, bottom strip G, pivoted plate H, and U-shaped vertical ways I, substantially as and for the purpose set forth.

201,479. CHECK-ROW-PLANTER ATTACHMENTS. Willis Armsworth and James Hull Brown, Monticello, Ill. Filed Sept. 19, 1877.



Claim.—In combination, the frame A, rod *a*, wheel B, with its rollers *b' b' b'*, (one or more,) and its cheeks *c*, (one or more,) levers D on uprights C, rods *d*, double bell-crank lever E, rod *e*, weighted lever *e'*, and slide-rod *e''*, as described, and to operate for the purpose specified.

201,480. TRUNK-LOCKS. John Arnold, Newark, N. J. Filed Jan. 26, 1878.



Claim.—The combination, with the case A, of the bolt *a*, turning on a pivot attached to the case, having lugs *i i'*, arranged to be struck by the key, and with beveled faces adapted to a spring-plate, as set forth.

201,481. SAW-SETS. George W. Atkins, Milton, Del. Filed Nov. 9, 1877.

Brief.—Guards on one of the pivoted arms prevent the tool from descending too far on the blade by striking against the points of the teeth. Clamps (one cast with each arm) hold the blade firmly while the setting is being effected. Two saw-teeth are set by the projecting nibs of the flat dies each time the arms are pressed together.



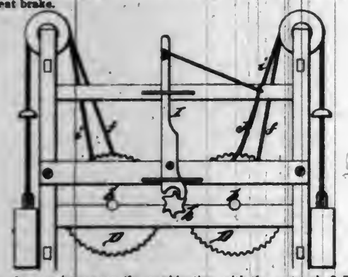
Claim.—1. In combination with pivoted arms A A', formed with lugs I I', holding set-screws *k k*, slotted dies G G', pivoted thereon to permit their being swung to and from each other to vary the extent of set, substantially as shown and described.

2. The tool herein described, consisting of pivoted arms A A', having guards E E', clamps F F, and lugs I I', with pivoted adjustable dies G G', screws *k k*, curved rod C, and spiral spring D, constructed and arranged for operation substantially as shown and described.

3. The saw-setting tool having the arms A A' pivoted together, and provided with the head enlargement shown, and having recesses cut or formed in said head and at the rear end of the arm A, as shown, for the reception of the guards E E', the said guards being formed on the arm A', as and for the purpose set forth.

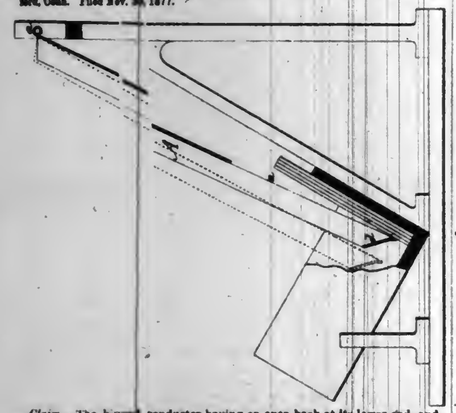
201,482. WEIGHT-MOTORS. Arnold Barter, Bloomfield, Iowa. Filed Sept. 1, 1877.

Brief.—The two master-wheels are driven by weights and regulated by an intermittent brake.



Claim.—In a motive power, the combination, with the center shaft B and its pinion *a*, operated by the two master-wheels D D, having independent operating mechanisms, of the verge A, intermittent lever I, and check-spring J, all constructed substantially as and for the purposes herein set forth.

201,483. DEVICES FOR RECEIVING AND ARRANGING BLANKS. Herman W. Bennett, Wallingford, Conn. Filed Nov. 30, 1877.



Claim.—The hinged conductor having an open back at its lower end, and terminating in a downward incline toward the back, combined with a receptacle or support for the blanks passing through the conductor, substantially as described.

201,484. FLUTE. Henry B. Bosh, Hannibal, Mo., assignor of two-thirds his right to Melvin T. Lowry and Henry V. P. Draper, same place. Filed Jan. 7, 1878.



Claim.—The combination of the flue A and the detachable part B, the latter consisting of the conical frustums *b b*, arranged and extended inward from the shell of the flue, which otherwise is of uniform cross-section, substantially as described.

201,485. LIGHTING DEVICES. William W. Batchelder, New York, N. Y. Filed Mar. 9, 1878.

Claim.—1. The combination of two or more substances or compounds which in themselves are non-explosive, but which, if mixed or united and rubbed, or otherwise mechanically acted upon, will explode or burn rapidly, said substances or compounds being separated and arranged substantially as described, to produce a flash or flame, or a succession of flashes or flames, without danger of igniting the mass.

2. The combination, in a suitable casing, of two or more separate substances or compounds which will not explode when separate, but will burn violently or explode when mixed or brought in contact with each other and rubbed, or otherwise mechanically acted upon, and a suitable device for accomplishing such mixing or uniting and ignition of said substances or compounds, substantially as set forth.

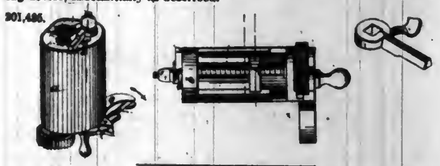
3. A suitable casing divided into adjacent chambers, each of which is adapted to contain a compound or substance which produces explosion or combustion when brought in frictional contact with that of the other or others, and provided with a suitable device for traversing the mouths or open ends of said chambers, and bringing small portions of said compounds or substances in such contact with each other, substantially as and for the purpose set forth.

4. A suitable case divided into adjacent chambers, each having one end open, and adapted to contain a compound or substance which will produce combustion when brought in contact with the compound or substance of the other chamber or chambers, in combination with a suitable scraping or conveying and igniting device adapted to traverse the open ends of said chambers, for bringing small portions of the said compounds or substances in frictional contact with each other, and an automatic feeding device for forcing said compounds or substances into position to be operated upon by the said scraping or conveying and igniting device, substantially as and for the purpose set forth.

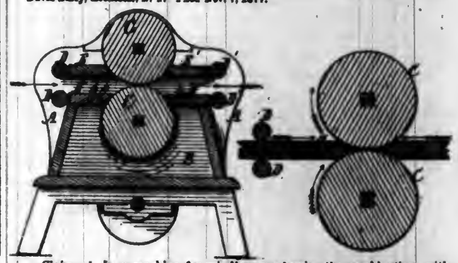
5. A novel case for a repeating match or igniter, the same consisting of two separate adjacent chambers with open ends, connected by a flush platform or plate, a spring-scraper, or conveying, rubbing, and igniting device, adapted to play across said platform, and followers or pusher fitting within said chambers, and adapted to move automatically therein simultaneously with the operation of the scraper, conveyer, and rubbing and igniting device, substantially as described.

6. As a new article of manufacture, a suitable case divided into two adjacent chambers, each of which contains a compound or substance which will produce combustion when brought in contact with that of the other, and provided with a suitable scraper, or conveying, rubbing, and igniting device, for bringing small portions of the compounds or substances in contact with each other, and an automatic feeding device for forcing said compounds or substances into the path of the said scraper, conveyer, or rubbing and igniting device, substantially as described.

201,486.



201,486. MACHINES FOR REDUCING WOOD TO PULP FOR PAPER. William J. Burnsdale and David Barry, Rochester, N. Y. Filed Nov. 7, 1877.



Claim.—1. In a machine for grinding wood-pulp, the combination, with the two cylindrical grinding-stones C C, placed one over the other and running in the same direction, of the two sets of feed-rollers, D D and D′ D′, and the two sets of plates, E E and E′ E′, located on opposite sides of the stones, and arranged to feed two pieces of wood into the opposite angles of the stones, as shown and described, and for the purpose specified.

2. In a machine for grinding wood pulp, the combination, with the grinding-stones C C and a tank, B, below the stones, of the plates E E′, provided with perforations *b b*, for discharging the pulp from the stones into the tank without interfering with the feeding of the blocks inward, as herein described.

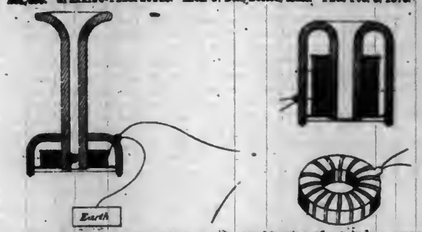
201,487. LOOSE-PULLEY LUBRICATORS. Wm. G. Bosh, New Haven, Conn. Filed Jan. 24, 1878.



Claim.—1. The herein-described lubricator, consisting of the concentric reservoir, open, one end to the bearing and the other to the atmosphere, the latter provided with a valve for automatically closing the aperture, and substantially as specified.

2. The concentric reservoir, open, one end to the bearing and the other to the atmosphere, the latter provided with a valve for automatically closing the aperture, and valve to adjust the flow, substantially as described.

201,488. SPEAKING-TELEPHONES. Alex. G. Bell, Boston, Mass. Filed Feb. 8, 1878.



Claim.—1. In an electric telephone, the combination of a tubular magnet with a plate of iron or steel, or other material capable of inductive action, substantially as set forth.

2. In an electric telephone, the combination of a plate of iron, or other material capable of inductive action, with a tubular magnet, so that the plate of iron is in contact with one pole of the tubular magnet, and is free to vibrate in the neighborhood of the other pole, the whole for operation substantially as herein shown and described.

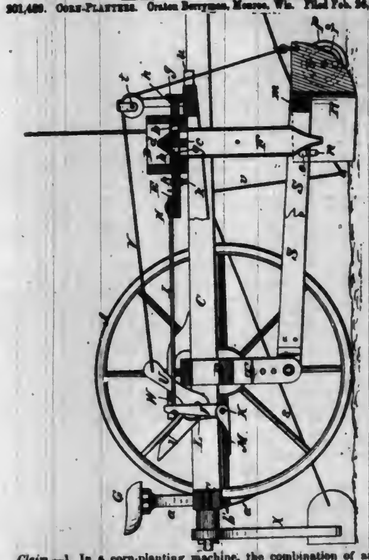
3. In an electric telephone, substantially as herein shown and described, a tubular magnet for use as a speaking or hearing tube, for the purpose of conveying sounds to or from the plate.

4. In an electric telephone, substantially as herein shown and described, the tubular magnet constructed as a handle, whereby the telephone can be lifted to the mouth or ear, as required.

5. In an electric telephone, the combination, with a tubular magnet and metal plate, of a coil of insulated wire completely filling the interior of the telephone, substantially as herein shown and described.

6. In an electric telephone, a compound tubular magnet, substantially as herein shown and described.

201,489. CORN-PLANTERS. Orsten Berthun, Monroe, Wis. Filed Feb. 26, 1877.



Claim.—1. In a corn-planting machine, the combination of an axle, B, provided with rigid depending arms T, and inclined arms or bars S, pivoted at their rear ends to the arms T, and provided at their forward ends with runners R, adapted to open the furrows, as shown and described.

2. In a corn-planting machine, the longitudinal inclined arms S, having their forward ends provided with the furrow-opening runners R, and their rear ends mounted on vertically-adjustable pivots, substantially as shown, whereby they may be caused to produce more or less downward pressure on the runners, as the nature and condition of the soil may require.

3. The combination of the arms or bars S, having their ends pivoted and made vertically adjustable with the runners R, attached to and made adjustable on said bars, substantially as shown.

4. In combination with the pivoted adjustable bars or arms S, the runners R, provided with the slots *u*, the pivots *w*, and the fastening-bolt *o*.

5. In a corn-planter having the driver's seat G on the rear end, the combination of the feed-slides connected by the bar H, having the arm I, with the rock-shaft K, provided with the arm J, and the two pedals L M, the latter arranged in position to be actuated directly by the feet of the driver, as shown and described.

6. In combination with the reversible marker X, the cord *s* and the arched rod F, mounted on the front of the machine, as shown.

7. The indicator consisting of the rods *v v w*, mounted in the middle of the machine, as shown.

8. In combination with the feed-slides E, the gage-slides *g*, bands or clamps *h*, and screws *i*, as shown.

9. In combination with the rock-shaft *b*, provided with the scrapers *a* and arm *c*, the spring *d*, and the hand-lever *e*, with its locking devices, as shown.

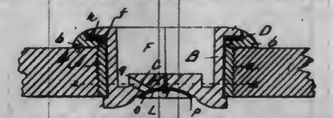
10. In combination with the runners R, the wheels *p*, provided with the annular flanges *r*, as and for the purpose shown and described.

201,490. CORSETS. Isaac W. Bickeye, Birmingham, Conn. Filed Oct. 26, 1877.



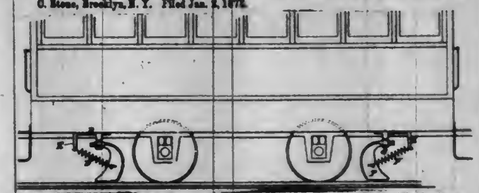
Claim.—The combination of the two flaps *a* and *d* with the steel *c* between said two flaps and the auxiliary stay *f* in the flap *d*, substantially as described.

201,491. BUNG AND BUSH. John Blair, Boston, Mass. Filed Aug. 11, 1877.



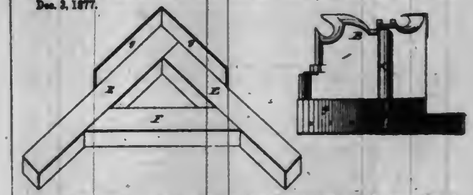
Claim.—In combination with the bush A, provided with a recess, D, at its upper edge, and having grooves *f f* and an inclined lower edge, the bung B, having an annular rim and packing, *h*, and provided with a vent-opening, G, and concave-convex valve I, the whole constructed and arranged substantially as and for the purposes specified.

201,492. TRACE-CLEANERS. Christ. Bopp, Jersey City, N. J., assignor to himself and Henry C. Stone, Brooklyn, N. Y. Filed Jan. 3, 1878.



Claim.—The combination, with the truck-frame B, provided with the legs D, having eyes for the reception of the rock-shaft C, of the scrapers P, bolts E, having eyes at their lower ends, and spiral springs F, attached to the eye-bolts and near the lower ends of the scrapers, substantially as described, and for the purpose set forth.

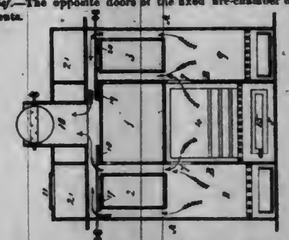
201,493. MOLDS FOR RUNNING PLASTER CORNICES. Jas. Y. Brinkey, Lexington, Ky. Filed Dec. 3, 1877.



Claim.—The combination of the support E, provided with the braces F and the flanges *g* at the corner, with the mold A D B C, the two parts being constructed and arranged for operation substantially as shown and described.

201,494. COOKING AND HEATING RANGES. J. Briggs, Montreal, Quebec, Canada. Filed Dec. 4, 1877.

Brief.—The opposite doors of the fixed fire-chamber open into separate apartments.

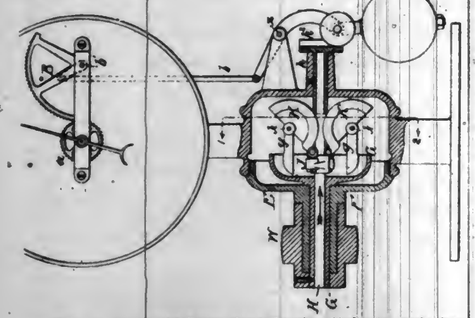


Claim.—1. The range A, constructed with a fixed fire-chamber, 4, provided with doors 14 14 and 6 6, all arranged as shown and described.

2. The range A, constructed with a central fire-chamber, 4, broiling-chambers 8 and 9, ovens 1, 2, and 3 above said chambers, and pot-holes above said ovens, as and for the purpose set forth.

3. The range A, constructed with a chamber, 21, at top, subdivided to form a water-chamber and a warming-chamber, as and for the purpose set forth.

201,496. TACHOMETERS OR SPEED-INDICATORS. Edward Buss, Magdeburg, Prussia. Filed Dec. 8, 1877.

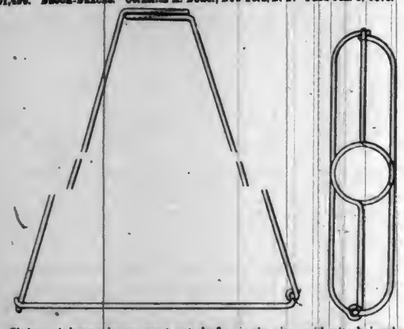


Claim.—1. In a speed-indicator, the combination of indicating mechanism with a sliding spindle or rod, controlled in one direction by centrifugal force derived from revolving weights, and in the contrary direction by a lever pivoted to the frame, and carrying a weight at one end, and connected at the other end to the said indicating mechanism, substantially as set forth.

2. The combination of the tubular shaft G and weights pivoted to the same with a sliding rod, H, having a cross-bar connected to the said weights, all substantially as set forth.

3. The combination of the sliding rod H, the sleeve A, and its head, having a rib, *h*, with the weighted lever and its anti-friction rollers.

201,496. BROOM-BRACES. Cornelius K. Butler, New York, N. Y. Filed Jan. 5, 1878.



Claim.—A broom-brace constructed of a single wire, said wire being bent so as to form a spring top or socket for the broom-handle and an elongated loop for the bristles, in the manner substantially as herein set forth, shown, and described.

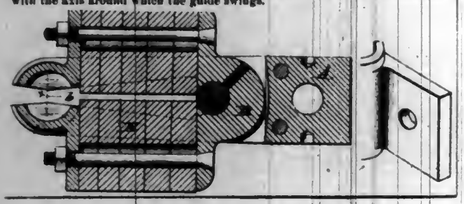
201,497. METHODS OF SILVERING GLASS MIRRORS. Thomas Carney, St. Louis, Mo. Filed Feb. 18, 1878.

Claim.—1. The process of preparing a compound suitable for use in silvering glass, by heating an aqueous solution of soda, potassa tartrate, or Rochelle salts, and nitrate of silver, until dark spots appear on its surface, adding thereto a solution of sulphate of copper, then boiling the mixture until precipitation begins, when it is allowed to cool, and then adding thereto a solution of nitrate of silver, distilled or rain water, and aqua-ammonia, substantially as set forth.

2. In the process herein described of preparing a compound for use in silvering glass, the same consisting in heating an aqueous solution of soda, potassa tartrate, or Rochelle salts, and nitrate of silver, until dark spots appear on its surface, the addition of a solution of sulphate of copper, after which the mixture is boiled until precipitation begins, when it is allowed to cool, and is then ready for use, substantially as hereinbefore explained.

201,498. SAW-GUIDES. Francis Clark, Springfield, Mo., assignor to J. A. Fay & Co., Cincinnati, Ohio. Filed Dec. 3, 1877.

Brief.—For maintaining the direction of the saw in line with the feed-rolls, and to permit any deviation from the determined path of the saw at the line of the points of the teeth, a loosely-swinging guide is pivoted to its holder in such a manner that the line of the teeth of the saw-blade will be coincident with the axis around which the guide swings.

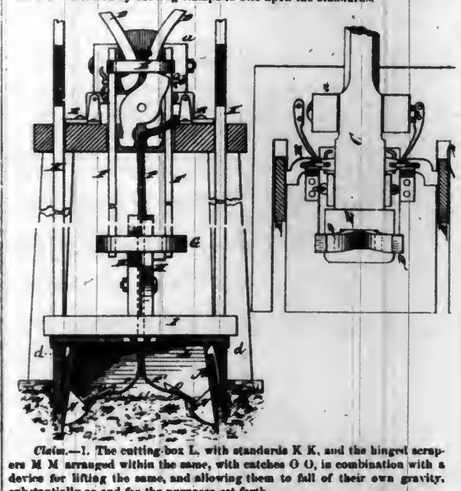


Claim.—1. A saw-guide self-adjusting when in operation, and pivoted or hung at the front with its axis in the plane of the saw-slit, so that the axis around which the guide moves in adjusting itself when in use on a machine will be coincident with or near the line of the front of the saw-blade, substantially as and for the purpose specified.

2. The combination, substantially as specified, of the holder having slotted and annularly-grooved jaws, and the guide provided at the front with segmental journals adapted to and turning in the annular grooves of the said jaws.

201,499. DIGGING-MACHINES. Joseph Coast, Hammonton, N. J. Filed Jan. 28, 1878.

Brief.—The cutting-box, falling by gravity from an elevated position, forces the cutting-scrapers arranged within it into the ground. The scrapers are then drawn together by the lever and shearing gripers acting on a rope, and held in position by catches. The rope is then disconnected, a pin inserted, and the box raised by causing clamps to bite upon the standards.



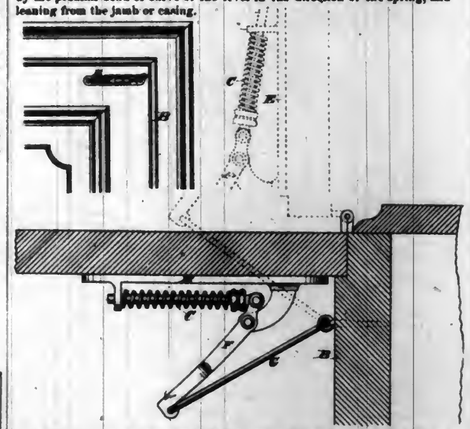
Claim.—1. The cutting-box L, with standards K K, and the hinged scrapers M M arranged within the same, with catches O O, in combination with a device for lifting the same, and allowing them to fall of their own gravity, substantially as and for the purposes set forth.

2. The lever C, hangers F F, yoke G, jaws H H, and clamps I I, in combination with the cutting-box L and its standards K, as and for the purpose set forth.

3. The lever C, yoke E, pieces D D, and ropes or chains P P', in combination with the hinged scrapers M M, substantially as and for the purposes set forth.

201,500. DOOR-SPRINGS. James Cobb, Chicago, Ill. Filed Sept. 5, 1877.

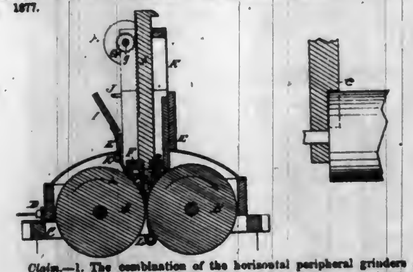
Brief.—A strong spring is fixed against the door, crosswise of the same, and operated by means of a lever connected at its top by a bar with the jamb or casing, and so arranged as to form an acute angle with the lever. The long arm of the lever is also bent at its pivoted point, and connected at one end to a spring-encircled rod, which passes through and slides freely in a projecting lug of the bed-plate, and at the other end to the connecting-bar, the construction being such that the force necessary to overcome the resistance of the spring is greatest at the first opening of the door, and gradually diminishes, while the force necessary to overcome the resistance is still further increased by the peculiar bend or curve of the lever in the direction of the spring, and leaning from the jamb or casing.



Claim.—In combination with the spring C and lever F, attached to a door, substantially in the manner described, the bar G, connecting the extremity of the long arm of the lever to the jamb, and so arranged as to form an acute angle with the said lever, whereby the force necessary to overcome the resistance of the spring is greatest at the first opening of the door, and gradually diminishes, by reason of the increase of the angle, and hence of the leverage, as the door is swung outward, as set forth.

2. The combination of the bed-plate E, having projecting lug *e*, the guide-rod B, carrying spring C, and passing through and sliding freely in lug *e*, and the lever F, bent at its pivoted point, and connected at one end to rod D and at the other to bar G, whereby the force necessary to overcome the resistance of the spring at the first opening of the door is still further increased, substantially as set forth.

201,501. WOOD-PULPING MACHINES. Francis A. Cushman, Lebanon, N. H. Filed Dec. 20, 1877.



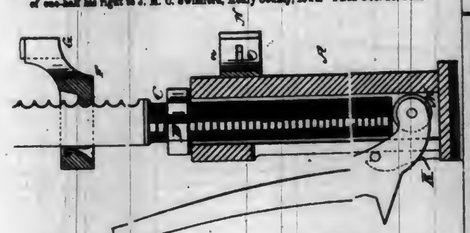
Claim.—1. The combination of the horizontal peripheral grinders A B with the pocket E and curved end guides *e*, substantially as and for the purposes set forth.

2. The combination of two horizontal peripheral grinders with a pocket and guides adapted to receive and retain the material to be disintegrated, and suitable pressure mechanism, substantially as and for the purposes set forth.

3. The combination of two horizontal peripheral grinders, adapted to rotate in the same direction, with their peripheries in close proximity, and a water-supply for each grinder, located relatively thereto, substantially as and for the purpose set forth.

4. The combination of the spray-pipes K and L with the peripheral grinders A B and suitable adjusting mechanism for their bearings, substantially as and for the purpose set forth.

201,502. LIFTING-JACK AND TIRE-TIGHTENER. A. W. Comstock, Mount Pleasant, assignor of one-half his right to J. M. C. Swinford, Henry County, Iowa. Filed Feb. 18, 1878.

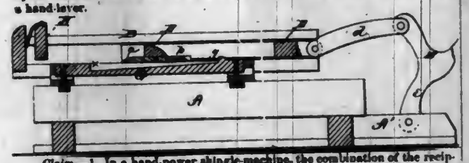


Claim.—1. The combination of the hollow standard A, the movable threaded standard C, and the operating-lever I with the locking-nut D, adapted to rest upon the standard A and prevent inward thrust of standard C, as specified.

2. The combination of the standard A and its base and the clamp N, the screw-threaded and ratcheted standard C and its screw-nut D, and the adjustable head F, provided with extensions G G and a spring-pawl, the whole constructed to operate substantially as shown and specified.

201,503. SHINGLE-SHAVING MACHINES. John W. Davenport, Cumberland City, assignor of one-half his right to J. E. Sullivan, Shiloh, Tenn. Filed Jan. 16, 1878.

Brief.—The shingles are placed upon fixed inclined beds, and are shaved by two knives fastened to a sash, to which reciprocating motion is imparted by a hand-lever.



Claim.—1. In a hand-power shingle-machine, the combination of the reciprocating sash D with knives *a b*, beds G G, and operating-lever E, substantially as and for the purposes herein set forth.

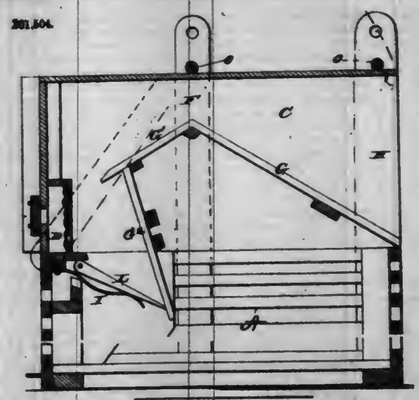
2. The abutment H, in combination with the sash D and knife *a*, as and for the purposes herein set forth.

201,504. FISH AND ANIMAL TRAPS. General Davis, Silver Run, assignor to R. G. Jenkins, Talladega County, Ala. Filed Feb. 16, 1878.

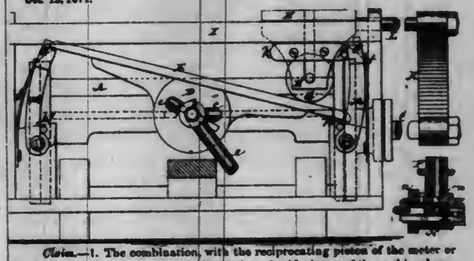
Brief.—The trap is completely submerged in the water, and the fish caged by passing through and below the spring-fingers. The trap is used on land for animals.

Claim.—The within-described trap, consisting of the coop A, hinged box C, with opening H and bait-basket D, the series of slats G, G', and G², and the spring-fingers L, substantially as and for the purposes herein set forth.

201,504.



201,505. PISTON WATER METERS AND MOTORS. Johann G. Dunser, Altona, Germany. Filed Oct. 13, 1877.

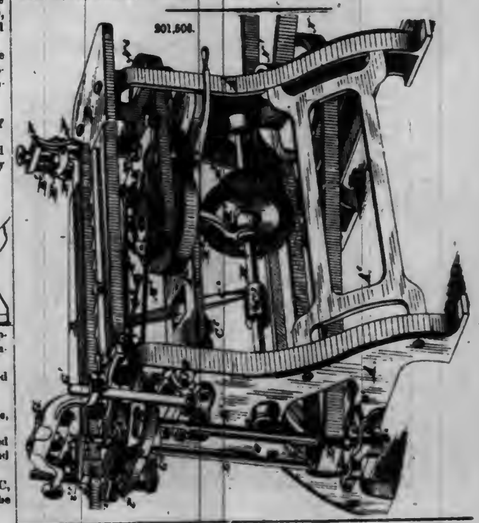


Claim.—1. The combination, with the reciprocating piston of the meter or motor and valve which controls the motion of said piston, of the rocking beam or bar E, the trip-levers M M, and the sliding box or frame H, actuated by the piston and provided with a loose or free weight, G, for operation on the beam or lever E when tripped or released at the end of the piston's stroke, substantially as specified.

2. The combination, in an automatic regulator for controlling the supply of liquid by the pressure thereof, of the cylinder N, with its weighted piston O arranged to control an aperture, *a*, in communication with the inlet *b* of the meter, the opening or pipe *l*, through which the incoming liquid is admitted to said cylinder and caused to press upon one end of the piston therein, the rod or connection R, and the valve S, controlled by said piston, substantially as specified.

3. The combination of the cylinder N, having an aperture, *a*, in communication with the inlet *b* of the meter or motor, the piston O, the weighted lever Q, the rod or connection R, and the valve S in or controlling the inlet to the cylinder N, substantially as and for the purpose herein set forth.

201,506.



201,506. MACHINES FOR BORING AND MORTISING BLIND-STILES. Wm. H. Dunn and Geo. W. Bogbee, Cincinnati, Ohio, assignors to J. A. Fay & Co., same place. Filed Dec. 3, 1877.

Brief.—Two blind stiles are secured to a notched feed-bar, one upon either side, by a duplex clamp composed of a yoke carrying two pairs of spring-tongs and an adjustable wedge-frame, by which said tongs are simultaneously closed, and fed to suitable cutters mounted on spindles, having their lower ends pivoted in a vertically-moving bearing-block, and their upper ends working in bearings in a horizontally-reciprocating journal-box, whose line of motion is determined by a guide-block arranged upon a loose shoe-bracket provided with curved slots. The spindles are connected by rods to a T-shaped lever with a slotted arm, and operated upon by an adjustable crank-pin, adapted to either hold said lever in a fixed position or vibrate it, so as to hold the journal-box rigidly, or reciprocate it for boring or mortising. The momentum of feed is counteracted by a friction device arranged to bear forcibly on the stiles.

Claim.—1. A machine for boring and mortising blind-stiles, organized with an endwise-moving cutter-spindle, which is pivoted at one end, in order that it may also be vibrated to move the cutters at its other end to and fro in mortising.

2. In a machine for boring and mortising blind-stiles, the combination, substantially as specified, of the pivoted cutter-spindle, the vertically-moving bearing-block for the lower pivoted end thereof, and the journal-box near its upper end, adapted to be reciprocated horizontally.

3. In a machine for boring and mortising blind-stiles, the combination, substantially as specified, of the cutter-spindle, the vertically-moving bearing-block for the lower end thereof, the journal-box near its upper end, adapted to be reciprocated horizontally, and the guide-block which determines the line of motion of the said journal-box when reciprocated.

4. In a machine for boring and mortising blind-stiles, the combination, substantially as specified, of the cutter-spindle, the vertically-moving bearing-block for the lower end thereof, the journal-box near its upper end, the guide-block which determines the line of motion of the said journal-box when reciprocated, and a mechanism of the character described adapted to either hold the said journal in a fixed position or to reciprocate it, according as it is desired to bore or mortise the stile.

5. In a machine for boring and mortising blind-stiles, the combination, substantially as specified, of the cutter-spindle, the vertically-moving bearing-block for the lower end thereof, the journal-box near its upper end, the guide-block which determines the line of motion of the said journal-box when reciprocated, the lever operated upon by an adjustable crank-pin, adapted to either hold said lever in a fixed position or to vibrate it, and a connecting-rod which connects said lever to the said journal-box.

6. The combination, substantially as specified, of the pair of cutter-spindles, the journal-boxes for the tool-carrying ends thereof, the T-lever, whose center stem is operated upon by an adjustable crank-pin, adapted to either hold said lever in a fixed position or to vibrate it, and the rods which connect the limbs of the T-lever to the said journal-boxes and move the latter in opposite directions when the T-lever is vibrated.

7. The combination, substantially as specified, of the bed, the presser-bar, the lever and slide-bars for supporting the presser-bar, and the cam and spring acting adversely on said lever.

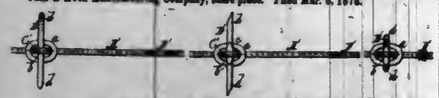
8. The duplex clamp composed of a yoke carrying two pairs of spring-tongs, and an adjustable wedge-frame for simultaneously closing said pairs of tongues, substantially as and for the purpose specified.

9. The combination, substantially as specified, of the feed-bar and the duplex clamp.

10. The combination, substantially as specified, of the feed-bar, a clamp for securing the stile thereto, the side guide for the stile, and the friction-lever for pressing on the stile.

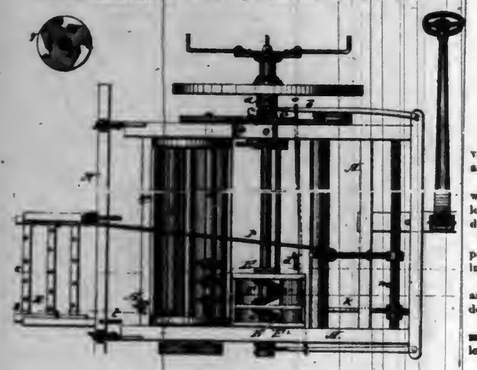
11. The combination, substantially as specified, of the cutter-spindle, the bearing-block for the lower end thereof, the adjustable lifter-rod, and the lifting-cam.

201,507. BARBED FENCE-WIRE. Thomas H. Dodge, Worcester, Mass., assignor to Washburn & Moen Manufacturing Company, same place. Filed Mar. 6, 1878.



Claim.—An improved method of making wire-fence material—namely, securing barbs to the wire, and then drawing the wire and attached barbs through a bath of molten metal.

201,508. BEE-PLANTER. Peter B. Doty, Conneaut, Ohio. Filed Feb. 4, 1878.

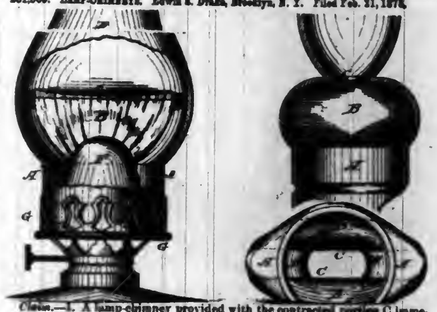


Claim.—1. In a seed-planter, a revolving cylinder, in combination with hopper E, the roughened cylinder e, shaft w, and the feeding-cylinder, all constructed and arranged as and for the purpose set forth.

2. In a corn-planter, the feed-cylinder having cavities *x*, with inclined bottoms *z* and runs *y*, in combination, with the roughened cut-off *v* and spout K, substantially as described.

3. The combination of the conductor J with tube K and the adjustable plow L, having tubular shank, secured by a clamp, A, substantially as set forth.

201,509. LAMP-CHIMNEYS. Edwin S. Drake, Brooklyn, N. Y. Filed Feb. 21, 1878.

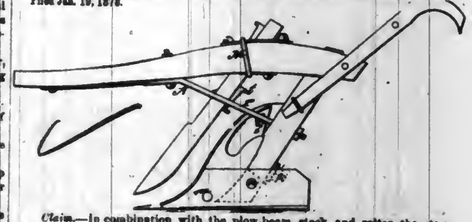


Claim.—1. A lamp-chimney provided with the contracted portion C immediately above the combustion-chamber B, whereby the air passing through it is caused to impinge on the flame above the deflector, as herein set forth.

2. A lamp-chimney consisting of the base A, combustion-chamber B, contracted portion C, and upper part D, substantially as and for the purposes herein set forth.

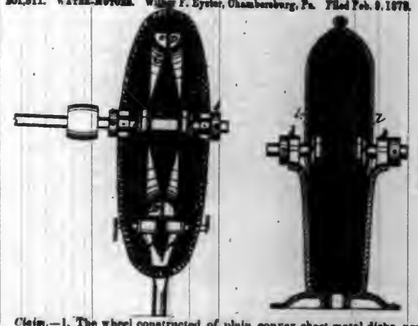
3. The combination of a chimney having the contracted portion C with a burner, G, having cone or deflector F, substantially as and for the purposes herein set forth.

201,510. PLOWS. Louis Eberlé, Sr., Emil Eberlé, and Louis Eberlé, Jr., Mabelvale, Ark. Filed Jan. 19, 1878.



Claim.—In combination with the plow-beam, stock, and colter, the stay-bar N, with slot and rod, as described, the keys *q t*, and set-screw *s*, substantially as and for the purposes herein set forth.

201,511. WATER-MOTORS. Wilbur F. Eyster, Chambersburg, Pa. Filed Feb. 9, 1878.



Claim.—1. The wheel constructed of plain convex sheet-metal disks, provided with a trough-shaped peripheral rim containing buckets, substantially as described.

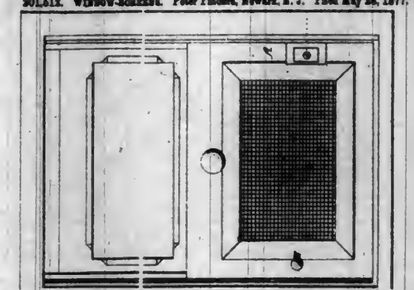
2. The case divided horizontally, and having the lower half flared outwardly at its upper edge, and the upper half flanged or flared inwardly at its lower edge, combined with each other for easy removability, substantially as described.

3. The lower half of the case having its upper edge flared outwardly, and provided with a lining of rubber, combined with the upper half having an inward flange, to form a tight joint, substantially as described.

4. The wheel-shaft provided with disks *h h*, interposed between the wheel and the bearings of the shaft, to exclude the water from the latter, as described.

5. The upper half of a horizontally-divided case, made slotted to accommodate the shaft, and provided with undercut strips *i* about such slots and its lower edges, to keep the water from passing out at these points, as described.

201,512. WINDOW-SCREENS. Peter Finders, Newark, N. J. Filed May 28, 1877.



Claim.—The combination, with the screen-frame A, of the block C, having a recess-cushion, *i*, screw *o*, and recess *r*, all adapted to the window-frame and to the rib *c* thereof, as specified.

201,513. SPOUTS FOR OIL-CANS. Alvin L. Fisher, Orange, N. J. Filed Feb. 13, 1878.



Claim.—The spout-section *a*, composed of the screw-threaded portion *e*, having the collar *c* and the conical plain portion *a'*, in combination with the perforated valve *d*, fitting within the recess *e* between said portions, and the screw-threaded front section *b*, having its edge turned inward to form a seat for said valve, substantially as set forth.

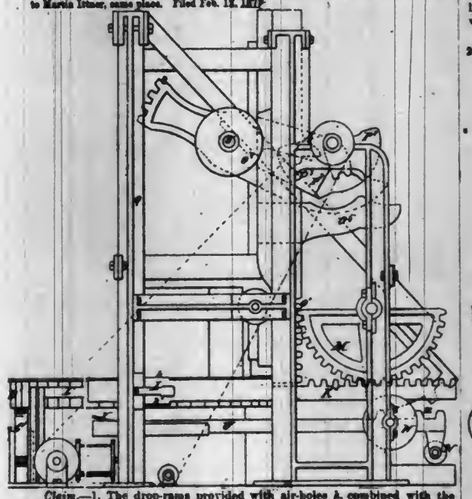
201,514. STUMP-EXTRACTORS. Williston K. Fuller, Modena, Ill. Filed Nov. 26, 1877.

Brief.—The frame is constructed with an open end, having in its side timbers slots to receive a cross-bar, to lock it when the open end is placed around the tree.



Claim.—In a machine for extracting trees or stumps, the frame A, constructed with an open end, having slots *f*, adapted to receive the slotted ends of the cross-bar F, and provided with the windlass B and flanged drum C, having the circular ratchet D and pawl E, the several parts being adapted for operation substantially as shown and described.

201,515. BRICK-MACHINES. John A. Gunewell, St. Louis, Mo., assignor of one-half his right to Martin Ittner, same place. Filed Feb. 12, 1878.



Claim.—1. The drop-rams provided with air-holes *h*, combined with the anvil, provided with air-holes *g*, and the bottomless and topless molds, substantially as set forth.

2. The combination, with a wheel provided with a ratchet, D', of pawl K', working in guide-grooves *l P*, and transferred from groove to groove at the ends of the strokes by springs L L', substantially as set forth.

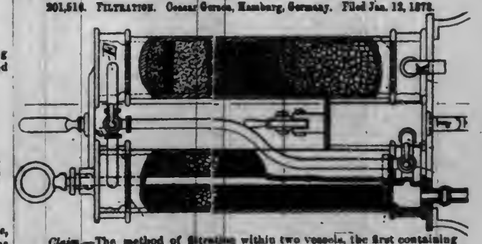
3. The combination, with rams H, standing in a curved series and operated by a cam-shaft common to all the rams, of the inclined tappet and racks, made to conform in inclination and position with the cams and sectors on the shaft, substantially as set forth.

4. The combination, with the rams having combined tappet H' and rack H', of the cam P' and cog-sector P' on shaft P, substantially as and for the purpose set forth.

5. The combination of cam-shaft P, operating the rams, with the cams P' P', lever S, bar R, and mold-wheel D, substantially as and for the purpose set forth.

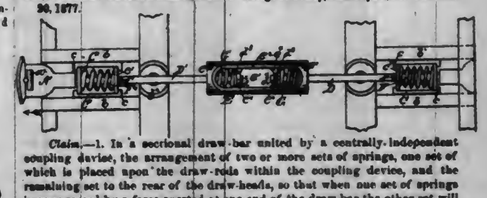
6. The combination of wheel D with the ratchet D', pawl K', engaging said ratchet, a cog-sector, M, engaging rack on pawl-bar K, with a rod, O, operated by cams upon the shaft P, which also operates the rams, substantially as set forth.

201,516. FILTRATION. Cesar Gerez, Hamburg, Germany. Filed Jan. 12, 1878.



Claim.—The method of filtration within two vessels, the first containing sponges and pumice-stone prepared with iron salt and tannic acid, and the second containing Swedish iron ore and sand or powdered glass, all substantially as herein described.

201,517. DRAW-BARS FOR RAILWAY-CARS. George F. Godley, Philadelphia, Pa. Filed Oct. 30, 1877.

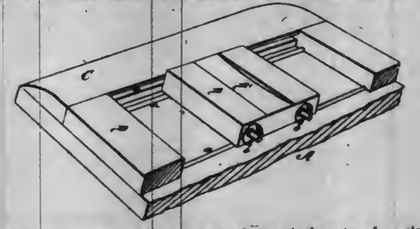


Claim.—1. In a sectional draw-bar united by a centrally-independent coupling device, the arrangement of two or more sets of springs, one set of which is placed upon the draw-rods within the coupling device, and the remaining set to the rear of the draw-heads, so that when one set of springs is compressed by a force exerted at one end of the draw-bar the other set will be free to be compressed by a force exerted at the opposite end of the draw-bar, so as to obtain an elastic pull at both ends of the same, substantially as set forth.

2. In a draw-bar for connecting the draw-heads of railway-cars, consisting of the rods D and D', united by the coupling E, the springs G and G', placed on the ends of the rods D and D' within the coupling F, substantially as shown and described, and for the purpose set forth.

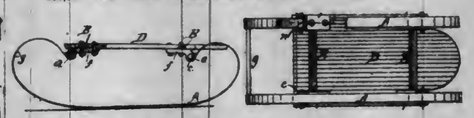
3. The combination of the draw-heads A A', rods D D', and connecting-link E, and springs F F' and G G', the latter being placed upon the rods D D' within the coupling E, substantially as shown and described.

201,518. OILED WHEEL-AXLES. H. D. Goodrich, Fitchburg, Mass. Filed Mar. 2, 1878.



Claim.—A movable platform, B, arranged upon wheels on top of a main platform, A, and confined by means of bars C C and D D, substantially in the manner and for the purposes herein set forth.

201,519. SLEDS. Theo. Groether, Rochester, N. Y. Filed Nov. 30, 1877.



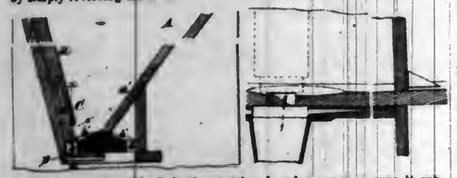
Claim.—In a spring-runnered sled, the combination of the platform D and cross-beams or plates B with the coupling-jaws *f* and runners A, substantially in the manner and for the purposes set forth.

201,520. BLASTING-POWDER. William Graham, Utah County, and Emery Ward, Salt Lake County, Utah. Filed Dec. 13, 1877.

Claim.—A compound consisting of the yellow prussiate of potash, chlorate of potash, white sugar, and red lead, prepared in the manner, and in the proportions, and for the purposes substantially as specified.

201,521. CORN-PLANTER. Oliver C. Green, Dublin, assignor to the Keystone Drill Company, Milton, Ind. Filed Apr. 26, 1877.

Brief.—The seed-slide has formed in and on it notches and cavities of different sizes, that renders it capable of discharging one or more kernels of corn by simply reversing the slide.



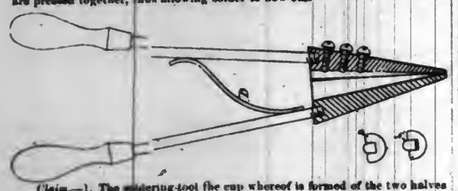
Claim.—1. The slide B, having notches *b* and recesses or cups *b'*, substantially as and for the purpose specified.

2. In combination with the hopper A, the seed-slide B, having a double incline on its upper face and notches in both its edges, substantially as and for the purpose specified.

3. In combination with the hopper A and cut-off C, the notched slide B and spring or springs D, substantially as and for the purpose specified.

201,522. SOLDERING-TOOLS. Peter P. Haines, Chicago, Ill., assignor to the Wilson Packing Company, same place. Filed Mar. 5, 1878.

Brief.—The cup is hinged a little above its center. The meeting edges above the hinges are cut away, so that a slight inward motion is allowed at the top, and a corresponding outward motion at the bottom, when the handles are pressed together, thus allowing solder to flow out.



Claim.—1. The soldering-tool the cup whereof is formed of the two halves of an inverted hollow cone, hinged together and provided each with a handle, substantially as specified.

2. The soldering-tool the cup whereof is formed of two halves of an inverted hollow cone, hinged together and provided each with a handle, and the point whereof is opened to allow the solder to flow by pressing the handles together, substantially as specified.

3. The soldering-tool provided with a cup the capacity whereof can be regulated to suit the work in hand, substantially as specified, and as a new manufacture.

201,523. GAS-BRACKET. Walter P. Hansell, Pittsburg, Pa. Filed Jan. 26, 1878.



Claim.—1. The arrangement between two spiral springs, one imposed on the other, of a rubber disk, P, in combination with cup-holders F E', adapted to meet under heavy loads, and prevent the crushing of the rubber disk, as set forth.

2. The spirals A B, seated upon the cupped bearing-plates E E', the interposed rubber disk protected by meeting edges of the said bearing-plates, in combination with the end bearing-plates and rubber disks, all constructed and arranged as specified.

201,524. FIRE-ARMS. Alex. Henry and Daniel Fraser, Edinburgh, North Britain; said Fraser assignor to said Henry. Filed Aug. 15, 1877.

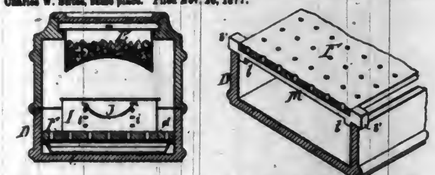


Claim.—1. In a fire-arm, the combination of two triggers, arranged one in advance of the other, and connected by a suitable rod or coupling, by which the arm is adapted to be fired by pressing either trigger, as and for the purpose set forth.

2. A rear stock for fire-arms, provided with a cut or recess, N, in its under side, to fit over the shoulder of the operator, by which the front trigger is placed within reach of the hand, as and for the purpose set forth.

3. The combination of the pad H, sliding block K, bolt L, and a suitable spring, as and for the purpose set forth.

201,525. CHURN-COOLER. George C. Hill, Salisbury, Md., assignor of one-half his right to Charles W. Bates, same place. Filed Nov. 26, 1877.



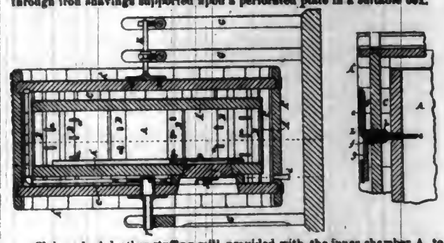
Claim.—1. The combination of the detachable casing I, adapted for the reception of ice, and having a curved recess for the reception of the head, with the head-rest attached to the casing, all substantially as set forth.

2. The combination of the casing I and its eyes *i* with the head-rest J and its hooks *m*, as described.

3. The combination of the lower portion D of the casing with the perforated platform P and shouldered strips M, as set forth.

201,526. LEATHER-STUFFING MACHINES. Joseph W. Hildreth, Boston, Mass. Filed Jan. 11, 1878.

Brief.—Oil vaporized in one chamber of the retort is burned beneath it. Steam generated in another chamber is superheated in a coil extending around the retort, which coil, being perforated, permits the escape of steam, which mingles with the hydrocarbon-vapor flame and intensifies the heat. Oil vaporized in another chamber of the retort is passed through a coil extending around the retort, where a fixed gas is produced, which is strained by passing through iron shavings supported upon a perforated plate in a suitable box.



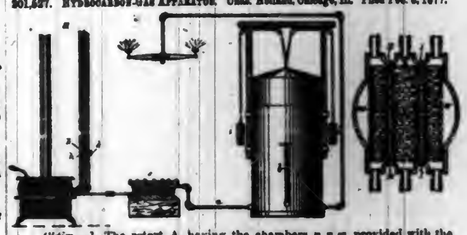
Claim.—1. A leather-stuffing mill provided with the inner chamber A, to receive the leather, and the steam-chamber C, surrounding and enveloping the chamber A and revolving therewith, in combination with a device for admitting steam to the chamber C during its revolution, substantially as described.

2. A leather-stuffing mill provided with the inner chamber A, to receive the leather, and the steam-chamber C, surrounding and enveloping the chamber A and revolving therewith, in combination with the door I and the hollow shaft F, all arranged and adapted to operate substantially as and for the purposes described.

3. The combination, in a leather-stuffing mill, of the chamber A, to receive the leather and the stuffing material, the steam-chamber C, surrounding and enveloping the chamber A, hollow shaft F, having its inner end closed, and one or more perforated pipes, *b b*, communicating with said hollow shaft F, and extending radially therefrom to the outer periphery of the chamber C, all arranged and adapted to operate substantially as and for the purposes described.

4. In combination with a steam-heated revolving chamber, the bent thermometer-tube *e*, sleeves *f* and *h*, and the weighted plate *g*, all arranged and adapted to operate substantially as and for the purposes described.

201,527. HYDROCARBON-GAS APPARATUS. Chas. Holland, Chicago, Ill. Filed Feb. 6, 1877.



Claim.—1. The retort A, having the chambers *u v w*, provided with the wire-gauze mats, in combination with the condenser or gas-strainer *f*, having the plug *g*, and provided with the perforated plate, and containing iron shavings, substantially as and for the purpose described.

2. The gas-strainer or condenser *f*, provided with the horizontally-arranged perforated plate, and containing iron shavings at the upper part, and with the plug *g* at the bottom of the same, substantially as and for the purpose described.

201,528. CHURNS. John Hostetbal, Salineville, Ohio. Filed July 2, 1877.

Claim.—1. The crank-arms *h h*, having the slots *j j* and the face-grooves, in combination with the tongue-sections *g g*, the clamp-screws *i i*, the crank-shaft G, and the churn-dashers, as and for the purpose herein set forth.

2. The combination, with churn-power driving mechanism, of an extensible fan device on the crank-shaft, for the purpose stated.

3. The extensible fan-wings N, lapped upon each other, and secured to the crank-shaft by means of slots and clamp-screws, as described.

4. The combination, with the crank-shaft and the balance-wheel of a power-churn, of an extensible fan-regulating device, as described.

5. The guide-piece J for the dasher-staffs, combined with the side springs *f*, for the purpose stated.

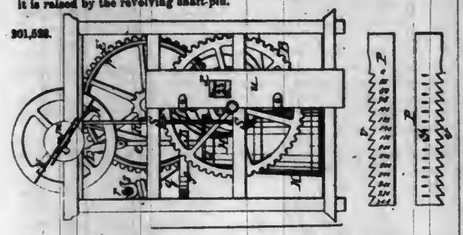
6. The combination, with spring or weight churn-driving mechanism, of an indicator operated by the churn-motor, for the purpose set forth.

7. An indicator for churn-driving mechanism, consisting of a toothed and gaged slide, P, fitted in a case, and adapted to be operated by a pin, *o*, on the driving-shaft, the rotation of which lifts said slide intermittingly, as set forth.

8. The combination, with a gaged indicating-slide, P, of an inclosing-case, *u*, therefor, and a show-opening, *x*, to expose the slide-numbers as they are intermittingly brought opposite said opening by the interval elevations of the slide, as set forth.

9. The combination of an intermittingly-rising indicating gage-slide with an inclosing-case and a detent, *z*, whereby said slide is held and supported as it is raised by the revolving shaft-pin.

201,529.



201,529. WAGON-JACK. Martin J. Hurd, Rochester, Minn. Filed Sept. 20, 1877.

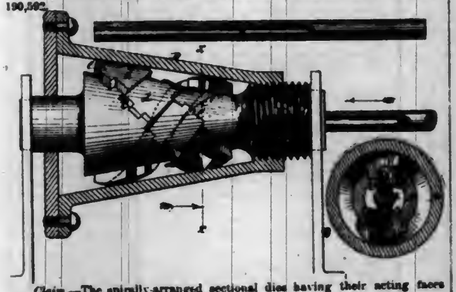
Brief.—Legs are cast on the side of the standard, having recesses to receive and support the fulcrum axle of the lever.



Claim.—The bands *f f*, in combination with the lever D, axle *e*, stop *n*, casing A, with lugs *b b'*, having sockets *b² b²*, substantially as and for the purpose set forth.

201,530. MACHINES FOR MAKING TWIST-DRILLS. Christian F. Jacobsen, New York, N. Y., assignor to himself and James C. Jones, same place, and George E. Maltby, Norfolk, Va. Filed Feb. 20, 1878.

Brief.—Improvement on machine patented to patentee May 8, 1877, No. 190,502.



Claim.—The spirally-arranged sectional dies having their acting faces composed of rollers, substantially as and for the purpose herein set forth.

201,531. SKIRT-SUPPORTERS. Joel Jenkins, Brooklyn, N. Y. Filed Oct. 19, 1877.



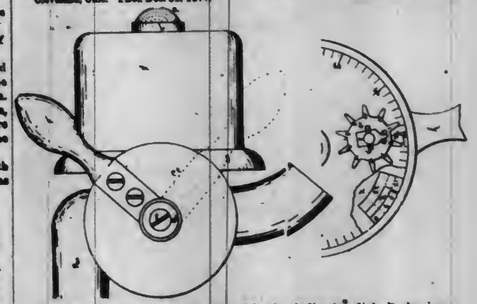
Claim.—A skirt-supporter consisting of a wire pin and loop, combined with a guard which is retained in position by the unsharpened end of the wire supporter on one side, and by inclosing the wire on the other side, substantially as and for the purpose described.

201,532. STOCKING-SUPPORTERS. Joel Jenkins, Brooklyn, N. Y. Filed Nov. 6, 1877.



Claim.—A stocking-supporter consisting of a V-shaped spring-clamp, in combination with a metallic fastening-loop, constructed with two inclined sides, terminating in two eyes or bends, forming locks for retaining the clamping device in a closed position, one of such eyes being left open for unlocking the clamp, substantially as and for the purpose described.

201,533. MEASURING AND INDICATING FAUCETS. Andrew J. Johnson and Charles O. Evarts, Cleveland, Ohio. Filed Dec. 31, 1877.



Claim.—1. A measuring-faucet with the indicating-dial *d'*, having a ratchet, in combination with pawl *s*, lug *n*, cap *c²*, handle *h*, and slot *x'* in disk *x*, connected with faucet-cock *a'*, substantially as described.

2. The cock *a'*, having the shank or shaft *a*, in combination with cap *c²*, having lug *n* and pawl *s*, disk *x*, having pawl *s²* and slot *x'*, and dial *d'*, having a ratchet, all arranged to operate substantially as described.

3. The index-wheel *c'*, in combination with the projection of guide *a*, dial *d'*, pawls *s s'*, disk *x*, cap *c²*, and cock *a'*, substantially as described.

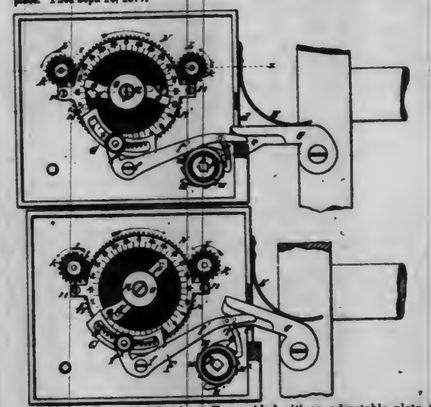
4. The grooved spring *c*, in combination with pins *i* and *c'*, index-wheel *c'*, and rotating dial *d'*, substantially as described.

201,534. SPRING-HEADS FOR PICTURE-NAILS. Whitfield E. Jones, Brooklyn, N. Y. Filed Mar. 2, 1878.



Claim.—The nail-head A, consisting of the metal back *a*; formed with slot *b*, and the spring-plate *c*, the latter pressing against the head of the nail or screw, by which the head A is firmly held thereon, substantially as and for the purpose set forth.

201,535. TIRE-LOCKS. Phineas P. King, St. Louis, Mo., assignor to Beard & Brother, same place. Filed Sept. 10, 1877.



Claim.—1. The unlocking-lever F, provided with an adjustable plate, G, and pawl T, in combination with the hands Q, safety-wheel U, and drop-latch C.

2. The adjustable plate or slide G, attached to the unlocking-lever F, in combination with the hands Q Q and forty-eight-hour wheel M.

3. A forty-eight-hour gear-wheel, M, with hands Q, operating alternately on the lever F, to unlock every twenty-four hours, said hands being adjustable in such manner that when they are placed together the lock will run forty-eight hours, or over one day, without unlocking.

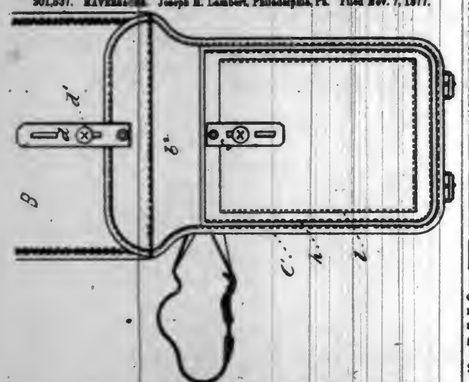
4. The safety-wheel U, having ratchet-teeth *u* and cams or arms *u'*, in combination with the unlocking-lever F and pawl T, substantially as and for the purpose set forth.

5. The two adjustable hands Q, two pointers, P, and double twenty-four-hour indicator N, in combination with the unlocking-lever F and gear-wheel M, revolving once in forty-eight hours, and one or more clock-movements, for the purpose set forth.

201,536. BROWNE ALLOYS. Edward C. Kirk, Philadelphia, Pa. Filed Nov. 6, 1877.

Claim.—The bronze metal alloy herein described, composed of copper, tin, and arsenic, in the proportions of seventy-five to ninety parts of copper, ten to twenty-five parts of tin, and of one-fifth of one per cent. to ten per cent. of arsenic, substantially as and for the purpose set forth.

201,537. HAVERSACKS. Joseph H. Lambert, Philadelphia, Pa. Filed Nov. 7, 1877.



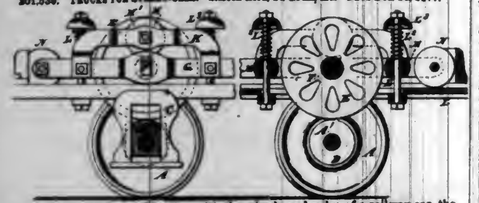
Claim.—The combined clothes-bag and haversack, consisting of the clothes-bag B and the provision-sack C, united by the fold b^2, and provided with inside sheaths *f*, an exterior pocket, *h*, for a plate, and a pocket, *i*, connected to the outside thereof, as and for the purpose specified.

201,538. CAKE HOLDER AND COOLER. S. W. Larrabee, Salem, Mass. Filed Jan. 16, 1878.



Claim.—As a new article of manufacture, a cake or bread cooler, consisting of a wooden frame supporting a screen of wire-gauze, which is attached to the edges thereof, said frame being provided with feet or legs for supporting it, so that a fresh-air passage will be secured under the said screen, substantially as described.

201,539. TRUCKS FOR STREET-CARS. Simeon Lord, St. Louis, Mo. Filed Dec. 14, 1877.



Claim.—1. In combination with the wheels and axles of a railway-car, the wheels D D and E E and parallel spring-beams G G, so extended as to support the truck mechanism of both wheels on the same side of the car, substantially as set forth.

2. In combination with the wheels and axles of a railway-car, the wheels D D and E E, and parallel spring-beams G G, and wheels H H and brackets K K, substantially as set forth.

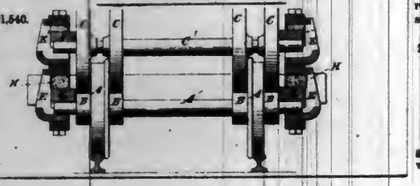
3. In combination with the wheel A and axle A^1, carrying the wheels D D, arranged on each side of the wheels A, the wheels E E, having a tubular axle carried on rods F, which pass through slots in the parallel spring-beams G, substantially as set forth.

4. In combination with the wheels, axle, and train of friction-wheels D D E E, the parallel spring-beams G G, carrying the bolsters M, rod L^1, and springs L^2, substantially as set forth.

5. In combination with the wheels, axle, and train of friction-wheels D D E E, the parallel spring-beams G G, carrying the bolster M, rods L, and springs L^2, together with the brackets K and wheels H, whereby the friction-wheels are maintained in an unvarying relation to one another while the car-body is allowed to play freely on its springs, substantially as set forth.

6. In combination with the wheels, axle, and train of friction-wheels, the parallel spring-beams G G, carrying the truck mechanism of both wheels on the same side of the car, and wheels N N and guideways O O, by which the spring-beams are retained in position, while the car yields freely and vertically upon its springs, substantially as set forth.

201,540.

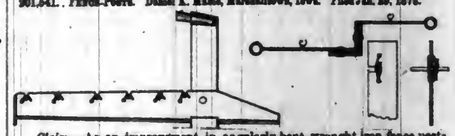


201,540. CAR-TRUCKS. Simeon Lord, St. Louis, Mo. Filed Dec. 14, 1877.

Claim.—1. In combination with the wheels of a railway-car and the axles thereof, friction-wheels B B and C C, the former being placed close to and on each side of the car-wheels, so as to form at each wheel a double bearing for the support of the load, substantially as set forth.

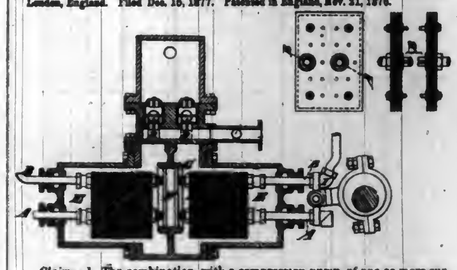
2. Combination of the wheels A, and axles A^1, and friction-wheels, for supporting the car independently of the journals of said axle, the oil-boxes E, and journal-boxes G^1, and cushion or spring H, for confining the axle in position, substantially as set forth.

201,541. FENCE-POSTS. Daniel K. Hahn, Marshalltown, Iowa. Filed Jan. 29, 1878.



Claim.—As an improvement in angularly-bent wrought-iron fence-posts of the form substantially as shown and described, the wrought-iron brace *c*, made in two parts, fitted and bolted to the flanges of the post, and terminating at their outer ends in tubes, through which stakes may be driven into the ground, as set forth.

201,542. PUMPS AND CONDENSERS FOR MOTIVE-POWER ENGINES, &c. Robert M. Marchant, London, England. Filed Dec. 16, 1877. Patented in England, Nov. 21, 1876.



Claim.—1. The combination, with a compression-pump, of one or more surface-condensers placed within said pump, the interior or interiors of which condenser or condensers receive cold air, or a mixture of cold air and water, that circulates through said condensers, substantially as and for the purpose set forth.

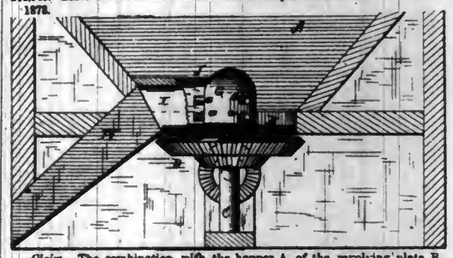
2. The combination, with the pump-chambers E E and pump-piston F, of one or more tubular piston-rods, A B, with attached condenser-compartments, the interiors of which communicate with the interiors of said rods through the slots in said rods, substantially as and for the purpose specified.

3. The combination of one or more slotted pipes A B, and one or more condenser-compartments, H, the interiors of which communicate with the interiors of said pipes through the slots in the said pipes, substantially as described.

4. The combination, with a pump or pumps for compressing a gaseous mixture of air and saturated steam, and a pump for forcing said mixture into a steam-boiler, of a pipe, port, or passage for the introduction of air into said compression pumps, substantially as and for the purpose set forth.

5. The production of a gaseous mixture of air, steam, and water, by pumping air first into a compression-pump supplied with hot water and steam, and then pumping the said mixture forward for motive-power purposes, or back into the steam boiler or generator, substantially as and for the purpose set forth.

201,543. EAR-CORN-ELEVATOR FEEDERS. Robert Marquis, Kokomo, Ind. Filed Feb. 26, 1878.



Claim.—The combination, with the hopper A, of the revolving plate B, revolving toothed cylinder G, shield J, discharge-board I, and chute H, substantially as and for the purposes herein set forth.

201,544. INSULATORS FOR TELEGRAPH-WIRES. Emma Matthewman, Brooklyn, N. Y., administratrix of Joseph Matthewman, deceased. Filed Aug. 7, 1877.



Claim.—The insulator herein described, provided in its interior with grooves or ridges *a a*, adapted to be applied on a wooden pin by a direct endwise force, and to cling thereon, as herein specified.

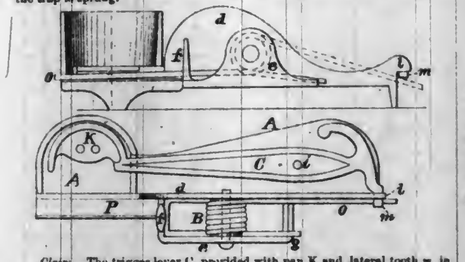
201,545. CARRIAGE-WHEEL GUARDS. Geo. B. Mangham, Philadelphia, Pa. Filed Dec. 26, 1877.



Claim.—The within-described portable shield for carriage-wheels, said shield consisting of a curved plate, *a*, and segmental side plates *b*, the whole being arranged for application to a wheel, and being provided at the bottom with a supporting and steadying foot, *d*, all substantially as and for the purpose herein set forth.

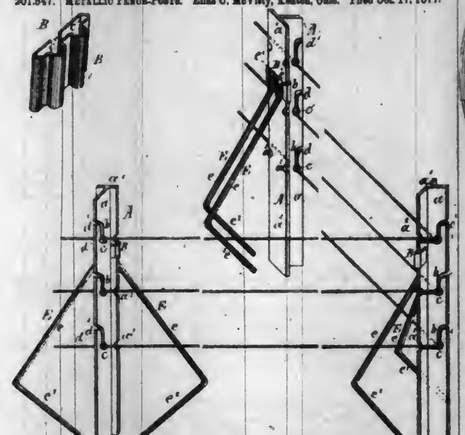
201,546. ANIMAL-TRAPS. John McMahel, Cincinnati, Ohio. Filed Jan. 11, 1878.

Brief.—To set the trap, the spring having the striker is caught under the lateral tooth of the trigger-lever, which is provided with a pan for the bait, shielded at the rear by a curved flange or hood. That portion of the trap in front of the pan has a recess containing a cushion to receive the striker when the trap is sprung.



Claim.—The trigger-lever C, provided with pan K and lateral tooth *m*, in combination with spring B, having striker O, and the frame A, provided with guard flanges and guide *f*, substantially as and for the purpose described.

201,547. METALLIC FENCE-POSTS. Elias C. McVisty, Kenton, Ohio. Filed Oct. 17, 1877.

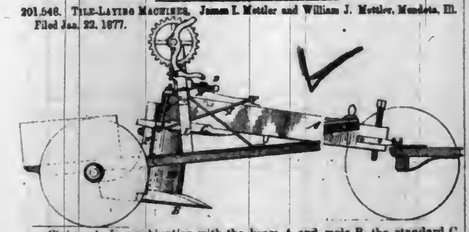


Claim.—1. In a wire fence, the slotted post A, constructed as described, in combination with the clip or clamp B, provided with recesses *a'*, as described, and the brace-rods E, substantially as and for the purposes set forth.

2. A metallic T-shaped fence-post, provided with slots *b a* on one flange or plate, and semicircular notches or recesses upon the other flanges or plate, substantially as described, for the purpose set forth.

3. The T-shaped post A, in combination with the clip or clamp B and the brace-rods E, having their opposite ends bent at opposite angles to each other, substantially as described, for the purpose set forth.

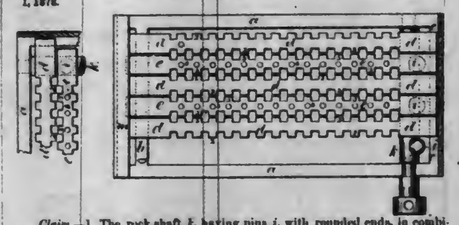
201,548. TILE-LAYING MACHINES. James L. Mettler and William J. Mettler, Mendota, Ill. Filed Jan. 22, 1877.



Claim.—1. In combination with the beam A and mole B, the standard C and casing E, inclosing the standard, and tube F, hinged to the shoe and beam in rear of the standard, and within the overlapping sides of casing E, substantially as set forth.

2. The beam and tubular tile-deliverer, and means for lifting the rear end of the beam, in combination with the truck M, swinging behind the beam, so as to perform the double function of a truck for transporting the beam, and the tile-carrier for supplying when the machine is in operation, substantially as set forth.

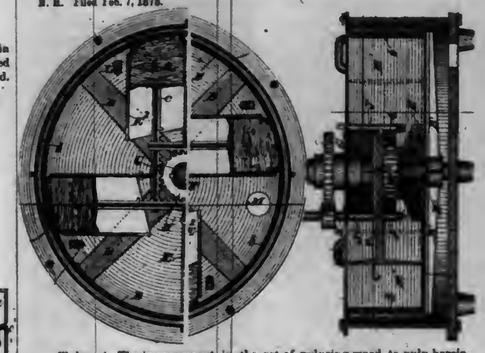
201,549. GRATES FOR FIRE-PLACES, &c. Jonathan Moore, Jr., Brooklyn, N. Y. Filed Feb. 1, 1878.



Claim.—1. The rock shaft *k*, having pins *i*, with rounded ends, in combination with the movable grate-bars, having cavities in the under surfaces near the ends, substantially as set forth.

2. The combination, with the rock-shaft *k* and projecting round-headed pins *i*, of the movable grate-bars *c*, having cavities in their under surfaces near the ends, and projecting teeth 3 at their edges, and the stationary intermediate grate-bars *d*, also provided with teeth 2 on their edges, substantially as set forth.

201,550. MACHINES FOR REDUCING WOOD TO PULP FOR PAPER. James G. Moore, Lisbon, N. H. Filed Feb. 7, 1878.



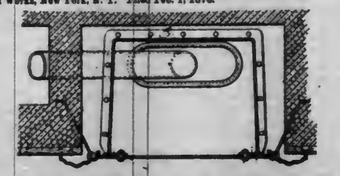
Claim.—1. The improvement in the art of reducing wood to pulp herein described, which consists in attacking first the exposed ends of all the fibers, and then pulling and tearing out the remainder of the fiber by means of a grinding-surface acting in relation to the fibers, substantially in the manner hereinbefore set forth.

2. A concave grinding-surface, in combination with feed-boxes or troughs therein inclosed, when said boxes are so located, substantially as represented, with reference to the concave grinding-surface, that blocks of wood held and forced forward therein may be reduced to pulp, in the manner specified, not intending to claim, broadly, a concave grinding-surface in combination with feed-troughs inclosed therein, as I know that combination to be old.

3. The combination of feeding-boxes and plungers acting therein, and racks on the plunger-rods, with a cog-wheel on a common shaft, whereby the plungers may be forced to feed blocks to the concave grinding-surface, the combination being and operating substantially as described.

4. Feeding-plungers operated by rack-rods, in combination with a contrivance, substantially such as described, for holding the racks in gear and permitting them to move out of gear, the combination being and operating substantially as described.

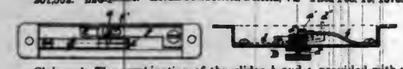
201,551. REGISTER-BOXES FOR HEATERS. Jonathan Moore, Jr., Brooklyn, assignor to J. L. Mott Iron Works, New York, N. Y. Filed Feb. 1, 1878.



Claim.—1. In combination with a separate register-border adapted to a grate-frame, a cast-iron register-box provided with an opening in the bottom for the air-pipe, and bolts for connecting the said box removably to the register-border, substantially as and for the purposes set forth.

2. The register-box made of cast-iron, with an opening through the bottom plate for the hot-air pipe *b*, and an opening through the side plate, in combination with the smoke-pipe passing through the hot-air flue and laterally to the chimney, and the register-border secured to the grate-frame, substantially as set forth.

201,552. BAG-HOLDER. Abram Oberndorfer, Norfolk, Va. Filed Feb. 19, 1878.



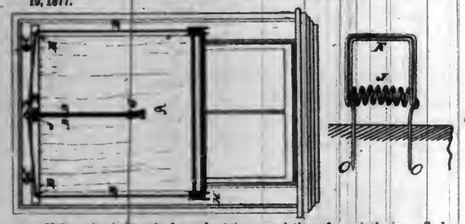
Claim.—1. The combination of the slides *b* and *c*, provided with notches *b'* and *c'*, the spring-catch *d d'*, and turning spindle with its cam *e*, substantially as and for the purpose described.

2. The double spindle D, having an interior stem, *d''*, with the button *d'''*, and the outer part *D'*, with its cam *e*, substantially as and for the purpose described.

3. The combination of the stem *d''* with its button *d'''* and the spring-catch *f*, substantially as and for the purpose described.

4. The combination of the slide *b*, with its lip *a'*, the spring-catch *f*, the double spindle D, with the button *d'''*, and cam *e*, spring *d*, provided with detent *d'*, all substantially as and for the purpose described.

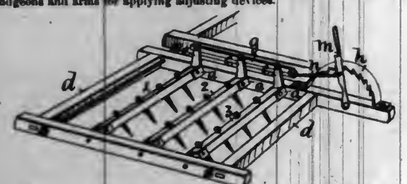
201,553. WINDOW-SHADES. Thomas H. Paling, Woodstock, Ontario, Canada. Filed Nov. 19, 1877.



Claim.—A window-shade cord-retainer consisting of a spiral wire coil, J, bent to form the loop K, and the prongs O, by which latter the retainer is directly attached to the window, substantially as set forth.

201,554. HARROWS. John W. Pearson, Des Moines, Iowa. Filed Sept. 26, 1877.

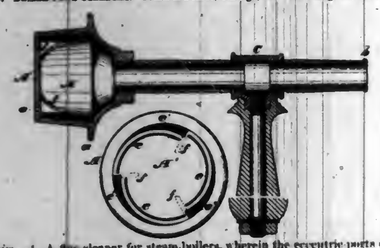
Brief.—The tooth-bars are rigidly secured in cast-iron sockets which have gudgeons and arms for applying adjusting devices.



Claim.—1. In the construction of a harrow, the rock-bar socket *a*, having a gudgeon, *b*, and an arm, *c*, formed integrally therewith, substantially as and for the purposes shown and described.

2. The bar-sockets *a b c*, each rigidly fixed to the end of a rock-bar carrying harrow-teeth, in combination with the rigid harrow-frame *d d* and the operating mechanism *g h* as *a*, substantially as and for the purposes shown and described.

201,555. BOILER-FLUE CLEANERS. Frank I. Pearce, Chicago, Ill. Filed Aug. 27, 1877.



Claim.—1. A flue-cleaner for steam-boilers, wherein the eccentric ports *e e* are made in the forward face of a hollow plug, substantially as and for the purposes specified.

2. A flue-cleaner for steam-boilers, the said cleaner consisting of a hollow plug cast in one piece, and having its rear face adapted to receive a steam-induction flue, and its front face consisting of the flat wall *N*, having therein ports for the escape of the steam from the plug into the flues, substantially as and for the purposes specified.

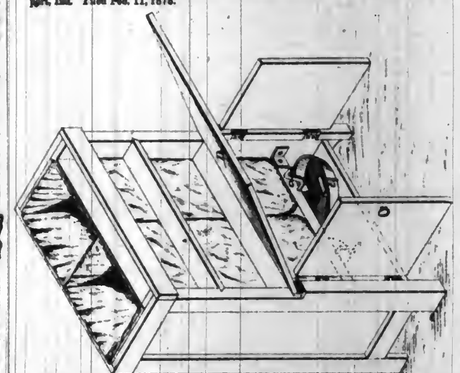
201,556. SLEDGES. John W. Post, New York, N. Y. Filed Mar. 6, 1878.



Claim.—1. In combination with the runners, the braces F F, connecting the forward part of the runners to the front cross-bar, the rayes B B, fastened to the front ends of the runners, and extending rearward through the cross-bars *c c c* by means of drilled holes, the slightly-curved brace *e*, connecting the forward part of the runners, and the screw-eyelets *f f*, all substantially as and for the purposes specified.

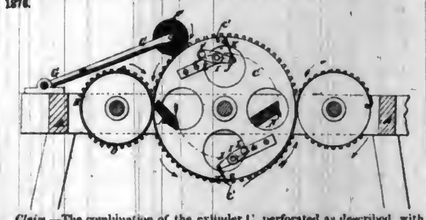
2. In a sleigh or sled made of tubular or solid metal, the combination of the runners A A, curved in the manner specified, the knees *a b*, the braces *d d*, and cross-bars *c c c*, with the braces F F, connecting brace *e*, and eyelets *f f*, constructed substantially as shown and described.

201,557. FLOUR AND MEAL CHEST WITH SIFTING ATTACHMENT. Cyrus Bemis, Williamsport, Ind. Filed Feb. 11, 1878.



Claim.—In a meal and flour chest holding bags, a chamber with which the bottoms of said bags communicate, which is provided with a semicircular gauze bottom and a wire coil on journals, as and for the purpose set forth.

201,558. ROTARY PRINTING-MACHINES. George Rosquist, Brooklyn, N. Y. Filed Oct. 23, 1876.



Claim.—The combination of the cylinder C, perforated as described, with the rock-shaft I, having arm J, and needles K, pivoted to the said arms, and operating as and for the purpose specified.

201,560. DREDGING-TONGS. Charles A. Scanlan, Charleston, S. C., assignor of one-fifth his right to Elisha L. Halsey, same place. Filed Oct. 10, 1877.



Claim.—The dredging-tongs constructed with handles A A, teeth C C, bolts D D, sleeves E E, braces F F, eyes G G, and rope or chain H, as and for the purposes set forth.

201,560. WINDMILLS. Flavius W. Shellabarger, Miami County, Ohio. Filed Dec. 13, 1877.

Claim.—1. A windmill provided with adjustable vanes, and with a regulator for governing said vanes, having a self-adjusting fan, C'', substantially as set forth.

2. In a wind-wheel, A, the wings *a a*, of nearly quadrilateral form, having the upper right or exit corner 4 rounded, the face of the wing dished or concaved at the point 1, and the forward edge *a''*, from angle 2 to angle 3, curved backward, substantially as shown and specified, as and for the purpose set forth.

3. In the wings or fans for windmill-wheels, having the forward edges *a''*, from 2 to 3, in tangential lines, and curved backward from the face, as described, a spherical triangular concavity, 1, struck up or formed by cutting and lapping the edges of the cut parts at the rounded corner 4 of said wing, said concavity being formed to concentrate the air-current at the point where the greatest amount of effective power may be given.

4. A wing or fan for wind-wheels, *a*, having a curve, 1, in its cross-section, and a scroll edge through line *x*, as shown and described, as and for the purpose hereinbefore set forth.

5. Arm or lever *d* of the wing *a*, constructed in a single piece with the eye-plate *e*, as shown and specified.

6. Hub *b'*, having web-plates *a''* on each side of the same, cast between the two pairs of its sub-arms, provided with holes for supporting the guide-rods *e e*, inserted through them, as and for the purpose hereinbefore set forth.

7. A wind-wheel provided with radial adjustable vanes, hollow shaft B, inner rod *f*, connected to the vane-adjusting devices, and governor, provided with self-adjusting vanes, connected to said rod, as specified.

8. The combination, with the shaft B and eccentric *i*, of the forked vibrating guide-frame *i'*, attached to the pump-rod, as set forth.

9. Fork B', having a curved side arm, *h*, a horizontal balance-arm, *j*, and an upper angular arm, *n'*, having a fork, *o*, and attached to its box *n''*, constructed substantially as set forth.

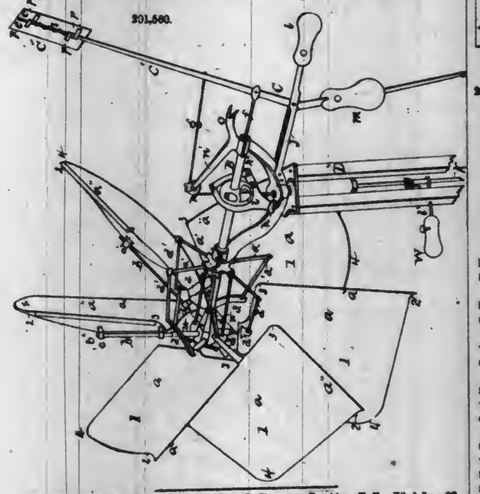
10. The combination, with the adjustable vanes, of an independent adjustable governor, with a fan which shall double up or shut together gradually in the direction of the wind-current as the latter increases in velocity, and open out again automatically as it decreases in velocity, as hereinbefore set forth.

11. Fan C'', having sections *c'' c''*, eye-plates *p p*, and spiral spring *e*, for securing it to the governor-rod C', and operating it automatically as it is released from the pressure of the wind-current.

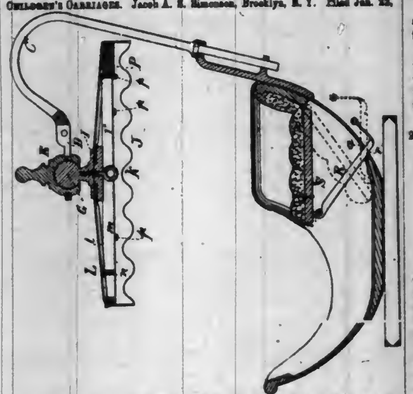
12. In a governor for windmills, a vertically-pivoted angular rod, C', having an adjustable folding fan, C'', with a stop, S', upon its upper limb, and an adjustable weight, *m*, on its lower limb, said rod being pivoted to an arm, *j*, of the main fork B', for the purpose of operating the wheel A through lever *f*, substantially as described.

13. The pivoted lever I'', having an adjustable counter-weight, W, constructed and arranged, in relation to the derrick of a windmill, and its pump-rod and swivel or collar, as shown and described, as and for the purpose set forth.

201,560.



201,561. CHILDREN'S CARRIAGES. Jacob A. S. Simonson, Brooklyn, N. Y. Filed Jan. 22, 1878.



Claim.—1. The combination of the ball G, split socket E, and clasp D, consisting of the end of the arm C, bent around said socket, and the thumb-screw *d*, substantially as described.

2. The combination of the curtain P, fastenings *p*, and the canopy, constructed, as shown, with recesses wherein said curtains may be secured and concealed, substantially as described.

3. The combination, with the hinged seat S, of the adjustable prop R, having shoulder *r*, and the slotted back of the carriage-body, substantially as described.

201,562. STALK-PULLERS. James H. Smith, Monticello, Ark. Filed Aug. 29, 1877.

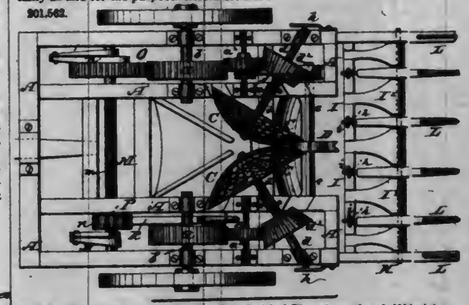
Brief.—A reel operates near the rear inner edge of the disks to throw off the stalks. The broad surface guides direct the stalks between the disks. The rake serves to gather up the stalks.

Claim.—1. In a stalk-puller, the disk-shaped and corrugated wheels C C, arranged at an angle with the line of motion of the machine, for the purposes herein set forth.

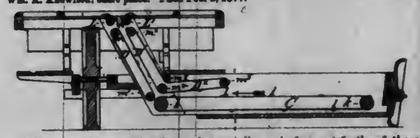
2. The combination of the wheels C C, arranged and operated as described, and the reel D, substantially as and for the purposes herein set forth.

3. The rake composed of the side bars H H, pivoted as described, the cross-bar I, with blocks I', independently-pivoted bars K K, and the teeth L L, in combination with a stalk-pulling mechanism, all constructed substantially as and for the purposes herein set forth.

201,562.



201,563. HARVESTERS. George H. Spaulding, Rockford, Ill., assignor of one-half his right to Wm. A. Knowlton, same place. Filed Feb. 5, 1877.



Claim.—1. The combination, substantially as before set forth, of the collecting-conveyer and the inclined extension of the elevator-belt arranged above the said conveyer.

2. The combination, substantially as before set forth, of the conveyer and the extension of the elevator-belt arranged above the said conveyer, and constructed of greater width than the latter.

3. The combination, substantially as before set forth, of the slatted elevator-aprons and the two smooth-surfaced delivery-rollers, which form a smooth-surfaced mouth at the upper end of said elevator-aprons.

4. The combination, substantially as before set forth, of the two narrow receiving-boards arranged at the opposite sides of the upper end of the elevator, and the binders' tables arranged crosswise of the length of the said receiving-boards.

5. The combination and arrangement, substantially as before set forth, of the fixed binders' tables and a sheaf-carrier, arranged parallel with each other, whereby the bound sheaves can at any moment be pushed directly from the former to the latter without the necessity of turning the sheaves longitudinally.

6. The combination and arrangement of the binders' support, the reel, the adjustable reel-standard, and the holding device thereof, whereby the binder is enabled to adjust the position of the reel.

7. The combination, substantially as before set forth, of the belt-rollers constructed with sprocket-wheels, the endless driving-chain extended from one belt-roller to the other within the belt, and the belt made fast by its forward end only to the said driving-chain, and free to extend or contract relatively to said chain.

201,564. PADLOCKS. William D. Spencer, Middletown, assignor to Norwalk Lock Company, South Norwalk, Conn. Filed Jan. 24, 1878.



Claim.—1. In a lock, the combination, substantially as described, of an outer cylinder having a notch or slot on its inner surface, an inner cylinder fitted to rotate within the outer cylinder, and having a key-hole longitudinally therein, a key having an irregular working edge, and one or more lever-tumblers arranged in said inner cylinder, in a plane at right angles to the axis of said cylinder, and so as to be moved with it, one point of the said levers constructed to engage the said slot or notch in the outer cylinder, and one end of the said levers in such relative position to the key-hole that the insertion of the said key will cause the tumblers to be turned in the said plane and disengage the inner cylinder from the outer.

2. The combination of the outer cylinder, the shackle hinged thereto, the inner cylinder constructed so as to engage the shackle, and one or more tumblers arranged in said inner cylinder to engage the inner cylinder with the outer, and a key having an irregular edge, all substantially as described.

201,565. LAMPS. Fergus B. Squier, Cleveland, Ohio. Filed Dec. 24, 1877.

Claim.—1. The hollow stem B, extending from the base of the lamp to the burner, and strengthened by a suitable filling at and below the point of connection of the said stem and reservoir, substantially as and for the purposes specified.

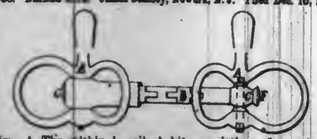
2. In combination with the fluid-reservoir G, the pressure-equalizing pipe or siphon D, placed within the same, and communicating with the upper portion of its interior, and with the outer air near the bottom of said reservoir, substantially as specified.

3. Combined with the fluid-reservoir C, the siphon D, having its ends covered by wire-gauze or its equivalent, substantially as set forth.

201,565.



201,566. BRIDLE-BIT. James Stanley, Newark, N. J. Filed Dec. 10, 1877.

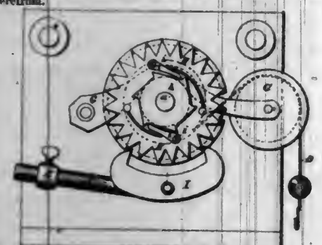


Claim.—1. The within described bit, consisting of a series of sections having tongues and recesses, and pivoted together by parallel pins, as set forth.

2. The combination, with the bit, consisting of tongues and recessed sections, pivoted by parallel pins and having bosses E, of a loose sleeve of rubber, as specified.

201,567. FIRE-ESCAPES. Jost Stengel, Big Rapids, Mich. Filed July 27, 1877.

Brief.—A lever-brake is applied to the drum by the weight of the person suspended therefrom.

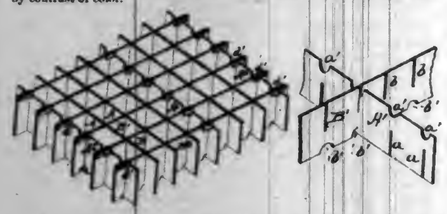


Claim.—1. In a fire-escape, the combination of a drum, secured upon a shaft, a band attached to and wound around said drum, a lever pivoted at one end and passing over the drum shaft, and a pulley mounted at the other end of the lever, and having the band passing over it, all substantially as and for the purposes herein set forth.

2. The combination of the drum C, slotted casing E, band D, flanged pulley G, lever G', the drum-shaft a, toothed wheel H, pawl and ratchet i k, escapement I, arm J, and weight K, all constructed and arranged to operate substantially as and for the purposes herein set forth.

201,568. EGG-CARRIERS. John L. Stevens, New York, N. Y., assignor to Nicholas Schroder and Henry C. Beavers, same place. Filed Feb. 26, 1878.

Brief.—The strips are notched opposite slits, and small pieces of cloth, paper, or straw-board are pasted over the slits, where they project into notches. The strips are made of colored or black straw-board, so as to show off the eggs by contrast of color.



Claim.—1. In an egg-carrier tray composed of two series of strips, A and B, having interlocking slots a and b, the central strips A^1 and B^1, provided with the notches a' b' in their uncut edges, and the locking-strips d, arranged over or across the slits that project in said notches, substantially as and for the purposes herein set forth.

2. In an egg-carrier tray composed of two series of strips, A and B, having interlocking slots a and b, the end or side strips A^2 A^2 and B^2 B^2, provided with the notches a' b' in their uncut edges, and the locking-strips d', arranged over or across the slits that project in said notches, and extending to the ends of the various strips, substantially as and for the purposes herein set forth.

201,569. APPARATUS FOR SUBAQUEOUS DRILLING, LAYING FOUNDATIONS, &c. Julius H. Striedinger, New York, assignor to F. F. Kelly, Brooklyn, and Kellog Kerwin, Green Point, N. Y. Filed Feb. 20, 1878.

Claim.—1. The combination, with a frame or staging provided with sliding legs or struts, and intended to support the mechanism to be employed in a subaqueous operation, of an independent float or scow, adapted to support said frame when the legs or struts are raised, substantially as shown and described.

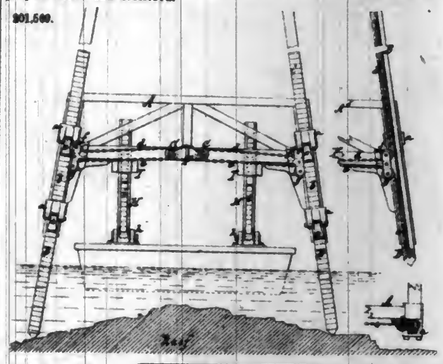
2. The combination with a frame or staging, with the sliding legs or struts fitted to said frame, and with a float or scow intended for the support of said staging, of suitable standards fastened to the scow and supporting-timbers, adapted to slide up and down on said standards, and to bear under traverses of the frame or staging, substantially as set forth.

3. The combination, with a frame or staging, with the sliding legs or struts fitted to said frame, and with a float or scow, of standards fastened to said scow, and adapted to be raised or lowered at will, and of supporting-timbers adapted to be adjusted on said standards, to facilitate the operation of floating the scow, with its standards and supporting-timbers, under the frame or staging, substantially as described.

4. The combination, with the frame or staging A and with its sliding legs or struts B, of windlasses C C, each connecting by ropes or chains with the opposite ends of one of the legs or struts, substantially as and for the purpose set forth.

5. The combination, with the frame or staging A, of legs or struts B, placed in an inclined or flaring position, and adapted to slide in suitable guides attached to the frame or staging, and be held in the desired adjusted position by friction between the sliding parts, substantially as and for the purpose shown and described.

201,569.



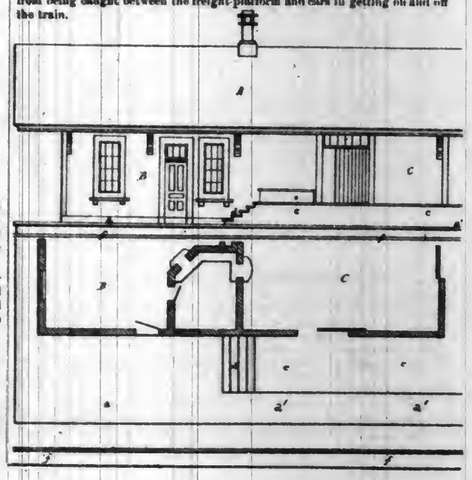
201,570. LAMP-EXTINGUISHERS. Lawrence W. Swan, West Liberty, Iowa. Filed Feb. 11, 1878.



Claim.—The combination, with a wick-tube, of a spur-wheel with extinguisher attached, independent of and entirely disconnected from the wick-raising mechanism, said wheel passing through a slot in the tube, and operated by the downward action of the wick to extinguish the light, substantially as herein set forth.

201,571. DEPOT-PLATFORMS. Levi J. Scott, St. Albans, Vt. Filed Jan. 26, 1878.

Brief.—In a combined freight and passenger depot having a low platform for passengers and a high one for freight, a narrow extension of the passenger-platform is placed in front of the freight-platform, to prevent passengers from being caught between the freight-platform and cars in getting on and off the train.

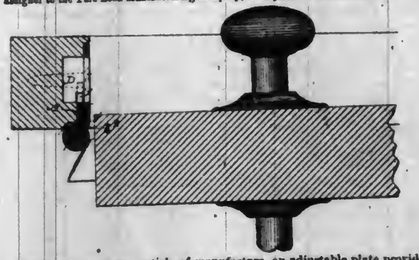


Claim.—1. The platform a', of suitable width, extended along the front of the platform c, substantially as and for the purpose set forth.

2. The two platforms a' and c, of different heights and widths, and the former extended in front of the latter, in combination with passenger and freight rooms B and C in single depot A, substantially as described.

3. The arrangement of the two platforms a and c, as described, by which the narrow and low platform a' intervenes between the high and wider platforms c and the railroad-track f, substantially as set forth.

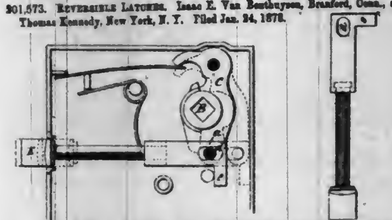
201,572. STRIKERS FOR SPRING LOCKS AND LATCHES. Warren H. Taylor, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Mar. 9, 1878.



Claim.—1. As a new article of manufacture, an adjustable plate provided with a striker-roller, adapted to be applied to the jamb of a door, in connection with an ordinary striker plate or keeper, substantially as described.

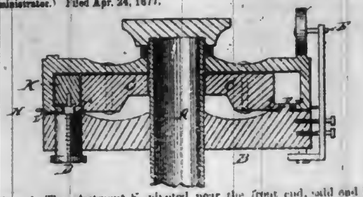
2. The combination of an adjustable plate provided with a striker-roller and a keeper-plate, substantially as described.

201,573. REVERSIBLE LATCHES. Isaac E. Van Benthuysen, Branford, Conn., assignor to Thomas Kennedy, New York, N. Y. Filed Jan. 24, 1878.



Claim.—The combination, in a knob-latch, of the hub and swiveled latch-bolt with an intermediate lever, the inner end of the said latch-bolt constructed with a slot, and the lever with a corresponding stud, and a spring acting upon the latch bolt independent of and in opposition to the mainspring, substantially as and for the purpose described.

201,574. ROTARY ENGINES. Lansing Van Doren, Washington, D. C., (Wm. T. Van Doren, Jr., administrator.) Filed Apr. 24, 1877.



Claim.—1. The abutment K, pivoted near the front end, said end being beveled, as shown, and both the outer and inner surfaces curved to form automatically steam-tight joints with the surface of the disk against which it bears, substantially as herein set forth.

2. The disk C, provided with the underhanging annular flanges I P, to form the annular chamber or channel P^1, for the purposes herein set forth.

3. The combination of the segmental plate F and the disks B and C, substantially as and for the purposes herein set forth.

4. The combination of the stationary disk B, revolving disk C, segmental plate F, pistons J, abutments K, cut-off valve G, and pins or projections H B, all constructed substantially as and for the purposes herein set forth.

201,575. SWEAT-LEATHERS FOR HATS AND CAPS. Wm. J. Van Horne, Schenectady, N. Y. Filed Feb. 7, 1878.



Claim.—The combination, with a sweat-leather, of a sheet-metal binding-strip which extends the entire length of the band, is bent crosswise, and embraces the edge to be bound, substantially as shown and described.

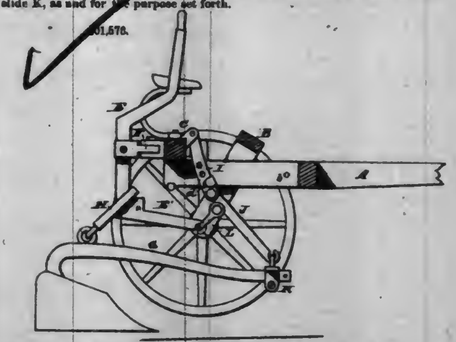
201,576. PLOWS. Thomas L. Wade, Stilson, Kans., assignor of one-half his right to Theo. A. McCormick. Filed Aug. 24, 1877.

Brief.—Lever fulcrumed on a cross-piece, which is moved forward and back to set the depth. The fulcrum is both hinged and swiveled to move the plow from side to side or raise it from the ground. The bent and toggle levers attached to front and rear ends of plow-beams.

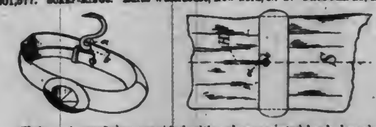
Claim.—1. In combination with the plow-carriage hereinbefore described, the lever E, link H, arms I J, and slide K, all arranged to carry the plow and hold it in position when plowing, substantially as described.

2. The combination of the cross-piece C, adjustably arranged on the tongue A, and arms I J, adjustably connected together, with lever E, link H, and slide K, as and for the purpose set forth.

201,576.



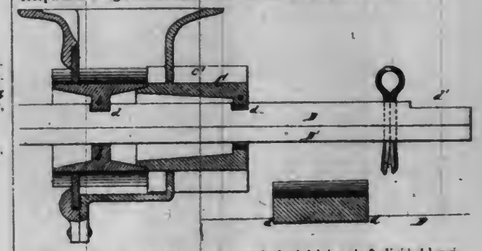
201,577. SCARF-RINGS. Rufus Waterhouse, New York, N. Y. Filed Jan. 30, 1878.



Claim.—A scarf-ring provided with a sharp-pointed hook, loosely attached to the back of the ring at its upper edge, and in central position, substantially as herein shown and described, for the purpose set forth.

201,578. SEEDING-MACHINES. John M. Westcott and J. L. Haltenman, Milton, Ind., assignors to the Hoosier Drill Company, same place. Filed Feb. 9, 1878.

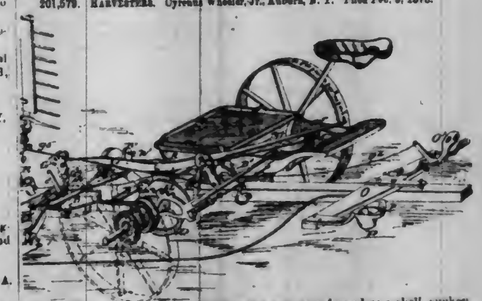
Brief.—One half of the divided shaft is provided with notches for the reception of flanges on the seed wheel and sleeve to render them adjustable.



Claim.—1. A seed-drill having a seed-wheel driving-shaft divided longitudinally, one part being notched or recessed at each wheel to fit corresponding projections from the interior of the wheel and its accompanying cut-off sleeve, or either of them, so that a series of wheels may be connected to the shaft for longitudinal adjustment with the shaft without the use of any other fastening than the shaft itself, substantially as and for the purpose specified.

2. The driving-shaft D D', divided longitudinally, one half being of greater sectional area than the other, to provide for the formation of notches for the wheels without rendering the area of the sections unequal at the weakest point, substantially as and for the purpose specified.

201,579. HARVESTERS. Cyrenus Wheeler, Jr., Auburn, N. Y. Filed Feb. 9, 1878.



Claim.—1. The one-piece cover to the gear case, formed as a shell, sunken in front to form a foot-board, domed toward the center to bridge the gearing, and having a pocket at the rear to form a tool-box, and being suitably flanged to shut upon the gear-case, substantially as and for the purpose described.

2. The one-piece metal seat-frame and tool box, formed with the elevated shell-socket for the adjustable seat-spring holder, in combination with the flanged connecting-ring for holding said seat-holder in place while permitting its adjustment, as described.

3. The combination, with the beam G, of the adjustable catch-plate G', adapted to hold the lifting-lever locked in a forward position for reaping, and in a backward position for mowing.

4. The lifting-lever G^2, in combination with the adjustable catch-plate G', substantially as and for the purpose described.

5. The adjustable block G^1 on the rear end of beam G, for setting and holding the inner end of the cutting apparatus at different heights in reaping, and with which the chain for actuating the gag-crank is connected in mowing.

6. The combination, with the platform, of adjusting-block G^1 on the vibrating beam G, for adjusting and holding the inner end of the cutting apparatus at different heights, and the adjustable grain-wheel at the outer end of the platform, adapted to effect a corresponding adjustment of said outer end, as described.

7. The gag-dog c, for limiting the upward throw of the adjustable cutter-frame, in combination with the tilting lever D', for releasing said dog, as described.

8. The hinge and pivot piece E, for connecting the finger-bar with the main frame, made in one piece, of the form and substantially as described.

9. The combination, with the inner shoe, of the adjustable sole or runner K, provided with the grooved standard, and bolted to the shoe by the gag-block, substantially as described.

10. The removable transverse bar O, applied to the tongue, and provided with the conical or tapering socket-piece P, for holding the divider-point when the platform is folded.

11. The socket-piece P, provided with the locking-button, in combination with the shoulder on the divider-point, for holding the divider securely when the platform is folded.

12. The transferable rake-stand, in combination with bearing lugs or supports on the crank-frame, for holding said stand when not in use, and when the platform is folded for transportation, as described.

201,580. ARTIFICIAL MARBLE. John O. Williams, Toledo, Ohio. Filed Feb. 8, 1878.

Claim.—An artificial marble consisting of alum, sugar, cream of tartar, water, and cement, in substantially the proportions specified.

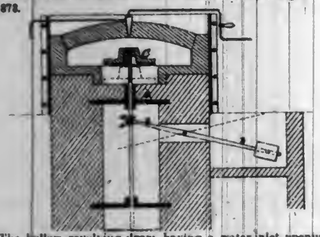
201,581. GAS-BURNING FURNACES. Nicolaus Will, Brooklyn, N. Y. Filed Feb. 20, 1878.

Brief.—The air passes entirely around the furnace and boiler casing, through passages in which it is heated; then to an air-receiving chamber in rear of the bridge-wall; thence through a perforated diaphragm in fine jets into the flame flue, where it mixes with and assists in the consumption of the gases.



Claim.—The combination, in a furnace, of an air-receiving chamber which is formed behind the bridge-wall, a perforated tile or plate which covers said air-receiving chamber, and the perforations of which form a communication between said air-receiving chamber and the combustion-chamber, and a series of air-spaces which are formed in the furnace-walls, provided with suitable inlets, and arranged to communicate with each other, and with said air-receiving chamber, substantially as shown and described.

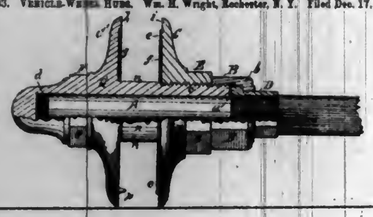
201,582. APPARATUS FOR MANUFACTURING WIRE. Wilhelm Wilmsmann, Hagen, Prussia. Filed Feb. 16, 1878.



Claim.—1. The hollow revolving drum, having a water-inlet opening at the top and a hollow supporting-shaft at the bottom, to permit the flow of water through said drum and shaft, in combination with a furnace having means for supporting the drum and for supplying water to the latter, substantially as and for the purpose set forth.

2. The furnace having an aperture in the bottom of its heating-chamber, in combination with a vertically-adjustable revolving sawdusting-drum, as and for the purpose set forth.

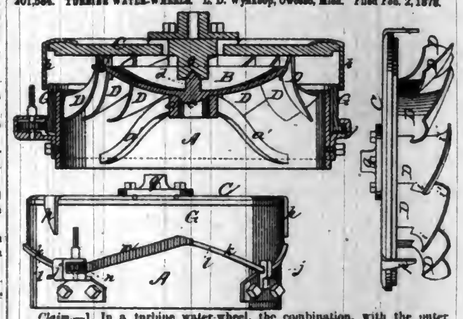
201,583. VEHICLE-WHEEL HUBS. Wm. H. Wright, Rochester, N. Y. Filed Dec. 17, 1877.



Claim.—1. A metallic hub embracing in its construction a fixed collar, C', and a running-collar, C, the latter being threaded upon the tube of the hub, and provided with a convolute screw-thread, *c*, formed upon its face, as shown and described, whereby a concentric draft upon the spokes is produced by screwing the collar to its place upon the tube, as set forth.

2. In combination with the coupling-nut B of a metallic hub, the detachable threaded collar D on the axle-arm A, the said threaded collar D having one of its ends always exposed beyond the inner end of the hub and the coupling-nut B, as shown and described, whereby the wheel may be detached by unscrewing either the collar-nut D or the said coupling-nut B, as set forth.

201,584. TURBINE WATER-WHEELS. L. D. Wynkoop, Owosso, Mich. Filed Feb. 2, 1878.



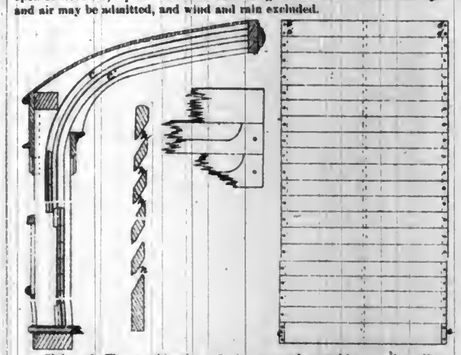
Claim.—1. In a turbine water-wheel, the combination, with the outer casing A, carrying the wheel-base and pivot *d*, and having the brackets *j* and the wheel-disk C arranged above the casing, to leave a water-space of the annular rotary gate G between said casing and disk, having its lower edge formed with the double inclines *k*, flanged to engage with the brackets *j* of the outer casing, to raise and lower the gate to and from the disk, substantially as specified.

2. The combination, with a casing and a cup within said casing, of a water-wheel journaled in said cup, with its bearings below the upper edge thereof, and water-conduits in said wheel, substantially as specified.

3. A turbine water-wheel consisting of the flanged disk C and the buckets D, secured thereto, the said buckets being concave transversely, as well as from their attachments downward and outward, their upper portions in the transverse curvature being at an angle of forty-five degrees to the disk, and the lower portion at an angle of twenty-two and a half degrees thereto, substantially as specified.

201,585. RAILWAY-CARS. John C. Paul, Swinsville, Pa. Filed Jan. 16, 1878.

Brief.—Vertically-sliding and flexible doors and shutters are arranged between the stanchions, whereby the car can be converted at will into an open or close car, a part of said shutters being of such form of slats that light and air may be admitted, and wind and rain excluded.



Claim.—1. The combination of the grooved stanchions and curlines, arranged as shown, with the flexible blinds or doors for closing the entrance-ways, and the window-blinds having their slats chamfered, as shown, whereby an open car can, at will, be transformed into a close car, and supplied with the necessary light and air, substantially as set forth.

2. As an improvement in railway passenger-cars, the blinds for covering the windows, made by joining together the wooden strips by means of the steel or other metallic ribbon, the said slats being provided with chamfered edges, whereby openings are provided for the admission of light and air, substantially as described.

REISSUES.

8,125. STREET-RAILWAYS. John R. Beckett, Cushing, Me., assignor, by mesne assignments, to himself, Calvin B. Payson, Darius W. Payson, and Solomon S. Rowe. Patent No. 142,888, dated Sept. 9, 1873. Filed Oct. 4, 1877.

Brief.—A superstructure for street-railway tracks, consisting of longitudinal stringers united by bifurcated transverse metallic tie-bars, the extreme ends of the upper horizontal portion of which enter and are secured to the stringers to prevent spreading, and lie flush with their upper surfaces, and the ends of the other arms of the tie-bar abut against the inner surfaces of the stringers below their median line, thereby preventing their being forced inward.

Claim.—1. The within-described road-bed for street-railways, consisting of the longitudinal stringers A A, united by bifurcated metallic braces *b*, extending transversely between them, substantially in the manner and for the purpose described.

2. In a road-bed for street-railways, the braces b, securely fastened to each of the stringers at or near its top, and provided with a projection or arm, 5, upon the inside of each of the stringers A A abutted against them, substantially as described.

3. In a road-bed for street-railways, the combination of a metallic brace, having a projection or arm, 6, which lays hold of the body of the stringers upon their upper side and prevents them from spreading apart, and another projection or arm, 5, which abuts against the stringers and prevents them from approaching each other, with the stringers A A, substantially as described.

4. The combination, below the surface of the street, for the substructure of a street-railway, of stringers A A and horizontal metallic braces extended transversely between them, and having abutments bearing against the said stringers near their base, and provided with projections or arms 6, extended into the body of the stringers near their upper side, all combined substantially as shown and described, and for the purpose stated.

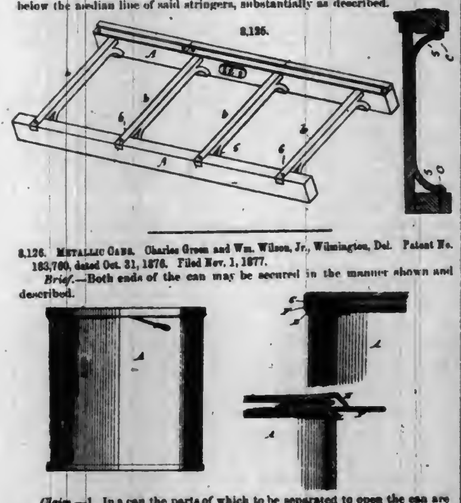
5. The combination of the stringers A A, the horizontal metallic transverse braces located in line with the top of said stringers just below the rails, and then spiked to said stringers, substantially as and for the purpose described.

6. In a road-bed for street-railways, the combination of the sleepers A A with each other at a permanent gage by means of the transverse metallic brace extended horizontally between them, in line with the upper portion of said stringers, and securely confined to said stringers at or near the base of the rail laid upon said stringers, and below the surface of the street-pavement, and provided with an abutment bearing on the inside of each stringer below its median line, substantially as described.

7. In a road-bed for street-railways, a horizontal metallic brace, extended transversely between the stringers A A above their median line, and laying hold of said stringers above their median line, said brace being located below the surface of the pavement, and having abutments against said stringers below the median line of said stringers, substantially as described.

8,126. METALLIC CANS. Charles Green and Wm. Wilson, Jr., Wilmington, Del. Patent No. 183,760, dated Oct. 31, 1876. Filed Nov. 1, 1877.

Brief.—Both ends of the can may be secured in the manner shown and described.



Claim.—1. In a can the parts of which to be separated to open the can are joined by solder, and which is provided with a ripping-wire inclosed in such relation to said parts and the solder joining them that when traction is exerted upon the wire it is caused to bear against and break the solder, a circumferential groove or corrugation, C, in the chine or portion of the top body of the can which is covered by the rim of the cover, bulging into the interior of the can and opening outward, adapted to receive and hold the said ripping-wire, substantially as shown and described, and for the purpose specified.

2. In combination, a can-body, A, provided with a corrugation, C, a cover, D, provided with a rim, E, and secured to the body by solder L, and a free wire, F, laid in the corrugation C, so as to be between the can-body and the rim of the cover, fastened to the can-body at one end, and terminating in an eye, G, at the other, the eye projecting from beneath the rim, the whole arranged so that the wire, when seized by its eye and forcibly drawn, will sever the solder.

8,127. BRICK-MACHINES. Philip H. Kells, Adrian, Mich. Patent No. 177,861, dated May 23, 1876. Filed Feb. 16, 1878.

Claim.—1. The main-shaft supports A A^3, secured together by bolts a^2 a^4, passing through girts A^3 A^3, in combination with a base, 1, as and for the purpose set forth.

2. The combination, with the supports A A^3, bolts a^2 a^4, girts A^3 A^3, and front support A^4, of the lower bolts *l l*, as and for the purpose set forth.

3. The combination of the support A^3, having removable upper portion B^4, bolts a^2 a^4, girts A^3 A^3, front support A^4, and bolts *l l l*, as and for the purpose set forth.

4. The rear and front casing-supports A^3 A^4, the front support A^4, constructed with a ledge, C^4, for a removable cap, C, as and for the purpose set forth.

5. The combination of rear support A^3, having ledge C'', the front support A^4, having ledges C^4 C^4, and the horizontally-divided cylinder or casing B C, supported by said ledges, as and for the purpose set forth.

6. The horizontally-divided casing B C, the end supports A^3 A^4, having ledges C^4 C^4 C'', and suitable bolts *l l*, as shown and described.

7. The removable girts A^3, bolts a^4, cap-plates a^1 B^4, and casing-cap C, constructed and applied substantially as described, to facilitate the removal of the shaft and master-wheel.

8. The two-part support and back plate A^3 B^4, in combination with the shaft F and collar I, the latter fitting within a chamber in the support.

9. The carrying-frame, adjustable on the front leg, as shown and described.

10. The combination of the frame S, supported adjustably by means of brackets Q, with rollers to carry the columns of clay, and dies N, removable and changeable, to produce brick or tile columns of different sizes or sections, as explained.

11. The combination of the supporting-frame S, having rollers *r s*, and the longitudinally-sliding roller-frame T, as and for the purposes set forth.

12. The combination of the nose-piece M, the dies N N, and the roller-frame T, provided with parallel independent sets of cylindrical carrying-rollers *t t*, receiving the columns of clay advancing independently of each other, all constructed and operating as and for the purposes set forth.

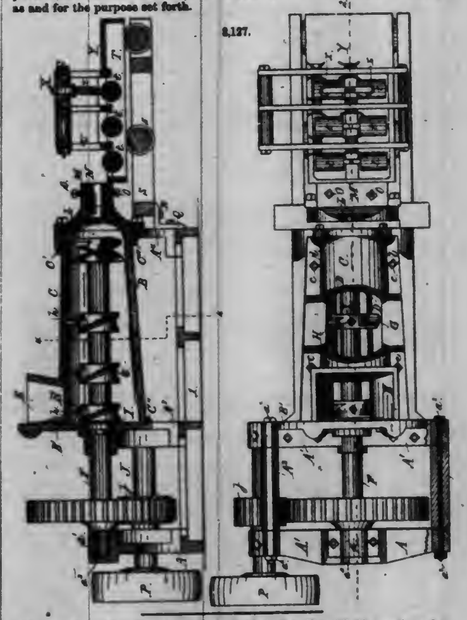
13. The combination of the longitudinal carrying-frame T, the transverse cutting-frame U, and the clamp X, for holding the clay while being cut, as explained.

14. The combination, in the cutting-frame U, of the vertical wires W, horizontal keys V, and jam-nuts V^1, as and for the purposes set forth.

15. The combination of the elastic forming-dies N and set-screws O O, bearing on the upper and under sides of said dies, to compress and contract their central parts, as explained.

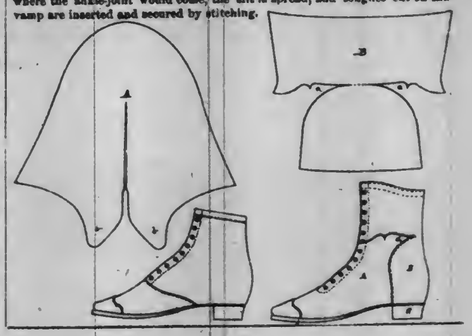
16. The combination of the tapering horizontal casing B C, longitudinally-grooved shaft F, oblique knives G G, heads H, lugs *h* and screws *h'*, nose-piece M, and the delivery-dies N N, all constructed and arranged to operate as and for the purpose set forth.

8,127.



8,128. BALMORALS OR LACED BOOTS. Lyman R. Stockbridge, Haverhill, Mass., assignor, by mesne assignments, to Adelbert B. Crafts, Edward T. Stella, and Andrew A. Cass. Patent No. 114,724, dated May 9, 1871. Filed Dec. 17, 1877.

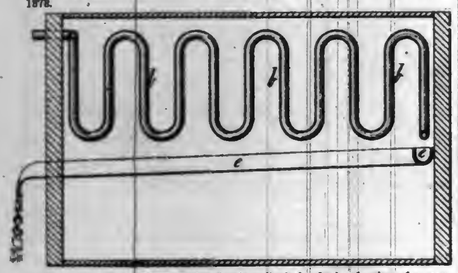
Brief.—The quarters are slitted from the front back to near the point where the ankle-joint would come, the slit is spread, and tongues cut on the vamp are inserted and secured by stitching.



Claim.—1. My improved balmoral or laced boot, having its upper or parts A and B formed and applied together substantially in manner as described and represented, the said part A being formed with extensions or tongues *b b*, to extend back of the ankle-joint of the boot, and into corresponding openings *a a*, made in the part B, as and for the purpose set forth.

2. A shoe wherein the quarters are made of a continuous piece, cut, spread, and held apart by inserted filling, substantially as shown and described, to give the desired form and contour to the leg and ankle at the back without crimping.

8,129. METHODS OF DRYING LUMBER. George Woods, Cambridgeport, Mass., assignor to himself and George P. Carter. Patent No. 154,205, dated Aug. 18, 1874. Filed Feb. 14, 1878.

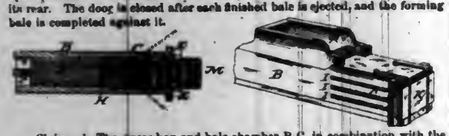


Claim.—1. The process, as herein described, for drying lumber, &c., consisting in forcing water through a receptacle or condenser in the heated drying chamber, on the surface of which condenser the moisture from the lumber, &c., is condensed and conducted from the drying-room, in a manner as herein shown and set forth.

2. The process for drying lumber, &c., consisting in forcing water through a condenser to which the moisture that passes off from the lumber, &c., is accessible, and in contact with which such vapors or moisture are condensed and removed in a liquid form.

8,130. HAY AND COTTON PRESSES. Peter K. Dederick, Albany, N. Y. Patent No. 132,566, dated Oct. 29, 1872; Reissue No. 7,961, (Division A.) dated Dec. 11, 1877. Filed Feb. 26, 1878.

Brief.—The press-box and bale-chamber occupy a lying-down or prostrate position. The hay is compressed by the reciprocating plunger and compacted against the door, which is closed in forming the first bale, after which it is opened to admit of the finished bale being ejected by the next forming bale in its rear. The door is closed after each finished bale is ejected, and the forming bale is completed against it.



Claim.—1. The press-box and bale-chamber B C, in combination with the receiving-box or hopper A, having an adjustable bottom, substantially for the purpose set forth.

2. The combination of the roller D with the press-box B and traverser E, for the purpose set forth.

3. The slots I, in combination with the bale-chamber C, provided with shoulders, substantially for the purpose set forth.

4. The above-described method of successively ejecting finished bales from a press by means of additional charges of material forced within the chamber.

5. The procumbent or horisontal press-box and bale-chamber B C, constructed with a feed-orifice at the top, as at A, and provided with horisontal side tying-slots I, substantially for the purpose set forth.

6. A press for baling hay, cotton, and other fibrous material that is bound into bales, so constructed, combined, and operated that the hay is fed in or pressed at one end of the chamber and forced out at the other end by a common traverser and simultaneous operation, as set forth.

7. A press for baling hay, cotton, and other fibrous material that is bound into bales, so constructed, combined, and operated that the finished bale is forced out of one end of the chamber as the loose material is fed in or pressed at the other end by a common traverser and simultaneous operation, as set forth.

8. The traverser E, constructed with a contracting or yielding front, to wedge together when the hay overlaps it, substantially for the purpose set forth.

9. The bands used in binding the bales as a partition or separation between the completed and forming bales, as set forth.

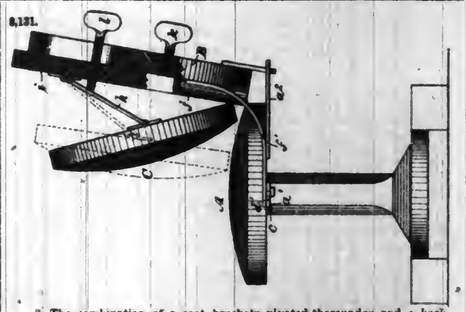
10. The retaining shoulder H, in combination with the bale-chamber C and traverser E, for the purpose set forth.

11. In a procumbent press, in which the hay and other loose material is pressed in sections into bales, the slots I, in combination with the press-case B C and traverser E, for the purpose set forth.

8,131. ADJUSTABLE BACKS FOR STOOLS. Thomas J. Ross, Union, N. Y., assignor to John F. Paret, Washington, D. C. Patent No. 69,457, dated Nov. 6, 1866. Filed Jan. 29, 1878.

Brief.—To the under side of the seat are pivoted horizontally-swinging brackets, which form the supports on which the bed, or back proper, is mounted. Attached to the back by means of a vertically-adjustable dovetailed slide, and a hinged link attached to said slide, is a supplemental back, adjustable, by virtue of such connection, vertically, horizontally, and on its horizontal pivot.

Claim.—1. The combination of a seat with swiveling brackets pivoted to the under side thereof, the brackets being adapted to receive the supports of a chair-back when swung from under the seat, substantially as described.



2. The combination of a seat, brackets pivoted thereunder, and a back detachably connected with the brackets by arms extending below the seat, substantially as described.

3. The combination, substantially as hereinbefore set forth, of a bed, back, or support, a supplemental back vertically adjustable relatively thereto, and hinged or pivoted so as to be capable of a rocking movement, and a detent for locking the supplemental back in its adjusted position.

4. The combination, substantially as hereinbefore set forth, of a bed, back, or support, and a supplemental back adjustable to or from said support, as well as vertically relatively thereto.

5. The combination, substantially as hereinbefore set forth, of a bed, back, or support, a slide movable vertically therein, a detent for locking said slide in any desired position, and a supplemental back hinged to the slide, and having an oscillating or swiveling movement upon its supports.

6. The combination, substantially as hereinbefore set forth, of a bed, back, or support, a slide, a detent for locking the slide, a supplemental back hinged to the slide, and a set-screw for adjusting the supplemental back toward or from the stationary back.

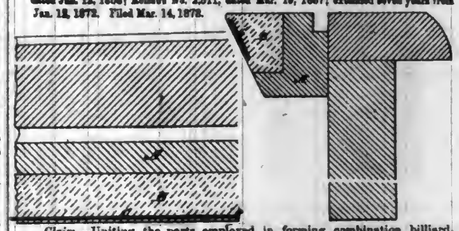
7. The combination, substantially as hereinbefore set forth, of a bed, back, or support, an endwise-moving slide, a supplemental back or pad, and a link hinged both to the back and slide, whereby the supplemental back is capable of rocking on its hinges, to accommodate the movements of the occupant.

8. The combination, substantially as hereinbefore set forth, of a bed, back, or support, and a vertically-adjustable, oscillating, supplemental back.

9. The combination, substantially as hereinbefore set forth, of a bed, back, or support, and a supplemental back adjustable toward or from the bed or support, and capable of rocking upon its hinges, whereby it is enabled to accommodate itself to the position of the occupant.

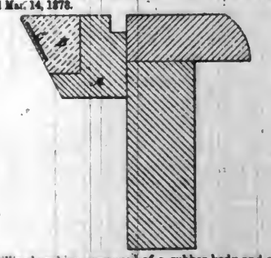
10. The combination, in a chair, substantially as hereinbefore set forth, of a bed, back, or support, a seat portion separable therefrom, and a supplemental back capable of adjustment horisontally relatively to the seat, to insure the ease and comfort of the person occupying the chair, as set forth.

8,132. BILLIARD-TABLE CUSHIONS. H. W. Collender, New York, N. Y. Patent No. 19,074, dated Jan. 12, 1858; Reissue No. 2,511, dated Mar. 19, 1867; extended seven years from Jan. 12, 1872. Filed Mar. 14, 1878.



Claim.—Uniting the parts employed in forming combination billiard cushions by placing the harder or more dense and less elastic substances in a mold, and allowing the melted rubber to flow against, around, or into the harder or more dense and less elastic substances, or causing the plastic rubber, by pressure, to unite with the same, and then vulcanizing the india-rubber, substantially as and for the purposes set forth.

8,133. BILLIARD-CUSHIONS. H. W. Collender, New York, N. Y. Patent No. 19,074, dated Jan. 12, 1858; Reissue No. 2,511, dated Mar. 19, 1867; extended seven years from Jan. 12, 1872. Filed Mar. 14, 1878.



Claim.—A billiard-cushion composed of a rubber body and a face-hardening strip, the latter being arranged and held in a cavity molded in the former, substantially as set forth.

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THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE

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COMMISSIONER'S DECISIONS.

W. H. HARRISON—*Reference.*

[*In the matter of the application of W. H. Harrison for letters patent for* "IMPROVEMENT IN RAILROAD SWITCH-LIGHTS," *filed February 4, 1878.—Decided March 25, 1878.*]

A power of attorney to prosecute an application for letters patent is irrevocable if it forms part of a contract entered into for a valuable consideration, which creates a beneficial interest in the patent in favor of the party appointed by the power.

DOOLITTLE, *Acting Commissioner:*

The above-named application was filed February 4, 1878, and in the petition thereto the applicant appointed Charles E. Shedd, of Jamestown, New York, his attorney, "with full power of substitution and revocation, to prosecute this application; to make alterations and amendments therein; to receive the patent, and to transact all business in the Patent Office connected therewith."

The model, drawings, and fees were deposited by the attorney. February 19 the Office notified applicant, through his attorney, that the patent would be allowed upon putting his claim in the form suggested. March 13 a revocation of the above power of attorney to Shedd was forwarded by applicant. The day following a new specification and claim were substituted by the applicant. March 15 a letter was received from the attorney inclosing a contract of assignment, accompanied by the proper fee for recording the same, in which the attorney requests that, in view of said contract, the patent be sent to him when issued. The Examiner, in view of this state of facts, asks for instructions.

The contract received for record reads as follows:

Whereas William H. Harrison has invented what he supposes to be an improvement for railroad switch-lights, to be used in switch lanterns or cases, and is about to make application for a patent for the same;

And whereas William W. Willson and Charles E. Shedd have agreed to defray all expenses necessary for the efforts to obtain said patent—

Now, therefore, in consideration of the course as represented to be pursued by said Willson and Shedd, I, the said William H. Harrison, do agree with said Willson and Shedd that just as soon as the said Willson and Shedd may have obtained said letters patent, and the letters patent are issued to me, (said Harrison,) I will at once assign and set over to them, their heirs and assigns, each one-third interest in and to said patent, excepting and reserving to myself, my heirs, and assigns, the railroad known as the Atlantic and Great Western Road. Said expenses are to include all drawings and specifications connected with such patent.

Witnesseth our hands and seals this 12th day of December, A. D., 1877.

WILLIAM H. HARRISON, [L. S.]
W. W. WILLSON. [L. S.]
C. E. SHEDD. [L. S.]

From this contract it appears that Willson and Shedd were to obtain letters patent for this invention, and to defray all expenses appertaining thereto. In consideration for these services and payments of money, the inventor agrees to assign and set over to them each one-third interest in said patent, with the reservation therein mentioned.

It is a general rule that a letter of attorney may at any time be revoked by the party making it. But this general rule is subject to some exceptions and modifications, which are stated as follows in the leading authorities on this subject:

Where a letter of attorney forms a part of a contract, and is a security for money or for the performance of any act which is deemed valuable, it is generally made irrevocable in terms, or, if not so, is deemed irrevocable in law. Although a letter of attorney depends, from its nature, on the will of the person making it, and may, in general, be recalled at his will, yet, if he binds himself for a consideration in terms, or by the nature of his contract, not to change his will, the law will not permit him to change it.—*Hunt* vs. *Rousmanier*, 8 Wheaton, 174.

Where an authority or power is coupled with an interest, or where it is given for a valuable consideration, or where it is a part of a security, there, unless there is an express stipulation that it shall be revocable, it is, from its own nature and character, in contemplation of law, irrevocable, whether it is expressed to be so upon the face of the instrument conferring the authority or not. * * * * * * * * *

The ground of this doctrine is that a party shall not be at liberty to violate his own solemn engagement, or to vacate his own security by his own wrongful act, for that would be to enable him to perpetrate a fraud upon innocent persons who have placed implicit confidence in him, which is against the clearest principles of justice and equity.—*Story on Agency*, § 477.

The contract in question was made two days after the petition for the patent was drawn, in which was contained the power of attorney already cited. The two transactions were cotemporaneous, and must be considered as constituting conditions in the same contract. The contract was made by the applicant to secure the attorney in the matter of the assignment of a certain interest in the patent when obtained, and it was for the performance of an act which was deemed valuable by both parties. Although the interest to be carved out of the patent existed *in futuro* and dependent upon the obtaining of the patent, thus rendering the power not one known as "a power, coupled with an interest," still the letter of attorney was given for

a valuable consideration, formed part of a security, and by its character became, in contemplation of law, as set forth by the above authorities, irrevocable.

It is not shown or pretended that the attorney in this case was not performing his duty in a creditable manner, in view, especially, of the fact that the Office was about to allow the patent upon certain formal changes in the claim. If, however, the attorney was not proceeding in a manner acceptable in all respects to his principal, still, in view of the nature of the contract and the power of attorney forming part thereof, the Office could not regard that as sufficient cause for enforcing the revocation.

The Examiner is, therefore, instructed to continue to recognize the power of attorney originally granted in the petition of applicant.

DECISIONS OF THE COURTS.

Circuit Court of the United States—District of Massachusetts.

AUGUSTUS H. WONSON *vs.* BENJAMIN D. PETERSON *et al.*

[*In Equity.*—*No.* 462.]

An objection to the validity of a patent because of an insufficient specification, raised in argument, but not set up as a defense in the answer, cannot be considered. (*Rubber Co.* vs. *Goodyear*, 2 Fisher, 509; 9 Wall., 793.)

Letters Patent No. 4,599, (reissue division B,) granted Tarr and Wonson October 17, 1871, are valid, and are for substantially the same invention as the original patent, viz: A marine paint composed of oxide of copper, an earthy or mineral basis, and a vehicle or medium.

The earthy or mineral base serves to retard the dissolution of the oxide of copper. It is not anticipated in function by the pulverized antimony with which the oxide is mixed in the Wetterstedt patent, (No. 8,275, granted August 5, 1851.)

Sulphuret of antimony comes within the description of the retarding earthy or mineral basis with which the copper oxide is mixed according to the terms of the patent, and its use is an infringement, notwithstanding small quantities of the arsenite and the arsenate are added to the oxide of copper by defendants.

[*Causten Browne, Browne, Holmes & Browne*, for complainant; *Chauncey Smith, Shattuck, Holmes & Munroe*, for defendant.]

OPINION OF THE COURT.—*March* 11, 1878.

SHEPLEY, *J.:*

In the case of *Tarr et al.* vs. *Folsom*, (1 Holmes, 313,) this court decided that Division B of the reissued patent to Tarr and Wonson was not void by reason of describing an invention different from the one described and claimed in the original patent, because the original patent clearly suggested a marine paint composed of oxide of copper, an earthy or mineral base, and a vehicle or medium. A doubt was then entertained by the court, which it has since had occasion, on a motion in another case for a preliminary injunction, to express that Division A could not be sustained for a paint compounded of two only of the ingredients, viz: Oxide of copper and a vehicle or medium. But, after careful re-examination in the light of the more elaborate discussion of the question in this case, the court adheres to the opinion that the invention substantially, though not accurately and fully described in the original patent, is the one more accurately and clearly described in the reissue Division B. The object of the reissue was to correct this inadvertence in the original description. There is no ground to conclude that it was intended to embrace something not invented by or known to the patentee at the time of his original application. The marine paint he described and made and sold had the three ingredients described and claimed in Division B.

The substance he mixed with the vehicle or medium was a substance produced by roasting the pyritous friable ores, the exposure to air and heat converting the contained copper into an oxide, and the other mineral and earthy substances remaining after the roasting serving in the paint to interpose between the particles of oxide of copper, substances which dissolve in sea-water more slowly than they do.

An objection is raised in argument against the validity of the reissue on the ground that the patent does not contain a sufficient specification of the proportions of the ingredients to meet the requirements of the law. This defense is not set up in the answer and cannot be considered. (*Rubber Co.* vs. *Goodyear*, 2 Fisher, 509; 9 Wall., 793.)

The defense of the anticipation of this patent by the Wetterstedt patent was fully considered in *Tarr et al.* vs. *Folsom*. The disclaimer in the Tarr and Wonson patent of such mixtures as are referred to in the Wetterstedt patent should be construed as the Wetterstedt patent itself is to be construed. That patent describes a ship's paint to be made of pulverized antimony and pure oxide of copper, in which a protective influence of the antimony upon the copper is incorrectly ascribed to a supposed galvanic action. The antimony in the Wetterstedt paint was not so used that it performed the function of a base retarding the dissolution of the copper by itself dissolving more slowly than the oxide of the copper.

The testimony of Brown and Gardner, when carefully considered, does not prove an anticipation of the Tarr and Wonson invention.

Sulphuret of antimony, used by defendants in their paint, is an earthy or mineral matter, which dissolves in water more slowly than the oxide of copper. It comes within the description of the retarding earthy or mineral basis described in the Division B, and the use of it, in combination with oxide of copper and a suitable vehicle or medium, constitutes infringement, notwithstanding to the oxide of copper is added a small quantity of arsenite of copper or arsenate of copper, or both.

Decree for injunction and account as prayed for in the bill.

GEORGE K. SNOW *vs.* GEORGE W. TAPLEY.

[*In Equity.*—*No.* 293.]

Applying paste or other adhesive material to the cloth alone, by passing the cloth through or past the paste in the manner and by the instrumentalities described, is a material and essential step of the process disclosed in Letters Patent No. 134,105, granted December 17, 1872, to G. K. Snow, for continuously uniting paper and cloth.

This step being regarded as an essential the process as a whole is novel in the art.

The invention disclosed by the letters patent is not anticipated by the English patent to Eugene Carless.

A machine temporarily disused under circumstances connected with the demand and supply of its product, and independent of the efficiency of the mechanism, is not an abandoned experiment.

On motion made before final argument, leave was given to amend the answer so as to set up the new defense of public use and sale. Interlocutory decree entered in accordance with the findings of the Court, with leave to take testimony relating strictly to the new defense in event the amended answer was filed within a time limited.

[*Chauncey Smith* and *Benjamin F. Thurston*, for complainant; *Charles F. Blake, Edmund Wetmore*, and *William A. Jenner*, for defendant.]

OPINION.—*February* 4, 1878.

SHEPLEY, *J.:*

In this case, upon a review of the evidence, I find—

First. That the letters patent issued to complainant, December 17, 1872, numbered 134,105, are not void by reason of any anticipation of the invention therein described by the description in the English letters patent to Eugene Carless, or by any use proved in the case of the Carless machine.

Second. That the Gibson machine, set up in the answer of the defendant, was not an abandoned experiment or an abandoned machine, the disuse of the machine for a time, proved in the case, being satisfactorily accounted for by proof of circumstances connected with demand and supply of the product and independent of the efficiency of the mechanism, and therefore that the use of the Gibson machine was, and is, open to the defendant.

Third. That a material and essential step in the process of continuously uniting paper and cloth taken from separate rolls or packages, described in the patent of the complainant and in the first claim of the letters patent issued to him, is the process of applying paste or other adhesive material to the cloth alone, by passing the cloth through or past the paste in the manner and by the instrumentalities described in the specifications and drawings of said patent.

Fourth. I do not find in any contrivance proved to exist prior to Snow's invention, or in any process proved to have been practiced prior to the invention of his process or art, any anticipation of Snow's process as a whole, treating his mode of applying the paste to the cloth, as I have in the third clause, as an essential element in his process.

Fifth. I allow the defendant to amend his answer, (motion for leave so to do having been made before final argument,) to allege that the patentee has forfeited his right to a patent by allowing the invention to be in public use and on sale in this country for more than two years before the application for the patent was made.

Sixth. An interlocutory decree will be drawn up and submitted to the court in accordance with these findings; the case, after the amended answer is filed, will be opened for the taking of testimony by either party for the space of sixty days thereafter, on the issue solely of prior public use and sale, and on no other issue, such amended answer to be filed within ten days.

RUBBER STEP MANUFACTURING COMPANY *vs.* METROPOLITAN RAILROAD COMPANY *et al.*

[*In Equity.*—No. 648.]

A vulcanized-rubber undulating surface covering, with projections of rubber, for the tread of carriage-steps, does not infringe the Chaffee door-mat, (13 OFFICIAL GAZETTE, 369,) and is not anticipated by it, or by the use of rubber as a soling for stirrups and shoes, or by the iron treads used for door, stair, and carriage steps.

In the metal treads the projections become slippery, instead of adhesive, to the foot by wear, and there is no resiliency under pressure to effect the removal of ice and snow. These qualities distinguish them from the rubber treads of the complainants.

A rejected application for letters patent is no bar to a patent, there being no evidence to show that the alleged prior invention which it discloses was ever perfected or brought to practical use, or that it was not abandoned and never revived by the original inventor.

[*Thos. Wm. Clarke* for complainant; *Benjamin Dean* and *Thomas Dean* for defendant.]

OPINION OF THE COURT.—*March* 11, 1878.

SHEPLEY, *J:*

To avoid the Keene patents for improvements in carriage-steps, defendants rely upon the Chaffee patent for door-mats. This has already been decided in this court in the case of *Brown et al.* vs. *Rubber Step Manufacturing Company et al.*, not to anticipate the Keene invention, for the reasons fully stated in that case.

The Keene invention consists in covering the tread of a carriage-step with a vulcanized-rubber clothing, having an undulating surface, whereby projections of rubber are presented upward to receive the pressure of the foot, and also in providing a permanent surface to the step resilient under the foot, the coating of rubber being somewhat adhesive to the foot, thereby having a tendency to prevent slipping in either dry or wet weather; and in snowy or sleety weather, when trodden upon, adhering ice or snow is broken by the yielding of the rubber projections under pressure, and loosened upon the removal of the pressure of the foot, by reason of the resiliency of the rubber, so as to be readily brushed off.

The fact that rubber had been used as a soling to stirrups, and applied to shoe-soles, does not establish any anticipation of this invention. The use of iron treads, with channels running to the margin, for door-steps and stairs, or for carriage-steps, did not anticipate this invention. The metal projections became slippery, instead of adhesive, to the foot by wear, and there was no resiliency, under the pressure of the foot, to effect the removal of the snow and ice. The rejected application for a patent of Charles Ray is not of itself a bar to the patent of Keene, there being no evidence in the case that the alleged prior invention of Ray was ever perfected or brought to actual use, and not abandoned and never revived by the original inventor. (*The Corn-planter Patent*, 23 Wall., 181, 210.)

Decree for injunction and account as prayed for in the bill.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

TRADE-MARKS.

[Each certificate bearing date March 26, 1878.]

5,782.—CUTLERY.—*Gustavus V. Brecht*, St. Louis, Mo. Application filed February 26, 1878.

"A symbolic figure representing a crescent."

5,783.—MEDICINAL PREPARATION.—*Sydney H. Chapin*, Garden City, N. Y. Application filed February 26, 1878.

"Words 'DR. CHAPIN'S SPECIFIC,' and the nicked shield, having arranged on its face a five-pointed star."

5,784.—MUSTARD.—*William G. Dean*, Brooklyn, N. Y. Application filed February 16, 1878.

"The representation of a globe surrounded by flashes of lightning and the word-symbol 'ARDENTER.'"

5,785.—TONIC BITTERS.—*James Y. Kelly*, Georgetown, Ky. Application filed February 25, 1878.

"The fanciful word 'SANWIBS.'"

5,786.—MEDICINAL PREPARATION.—*Emil C. Luks*, Shenandoah, Pa. Application filed December 14, 1877.

"The word 'MOREAU'S' and the vignette, as described, consisting of a steer's head between two sheaves of grain."

5,787.—MEDICINAL PREPARATION.—*William M. Ollife*, New York, N. Y. Application filed February 26, 1878.

"The fanciful words 'BIG SIX' and the numeral '6.'"

5,788.—MEDICINAL PREPARATION.—*Samuel A. Richmond*, St. Joseph, Mo. Application filed December 20, 1877.

"The figure of a man, as shown in the accompanying fac-simile, the same being represented as in an epileptic fit, falling backward, with his arms extended, and his cane and hat dropping to the ground."

5,789.—WHISKY.—*Sattler & Co.*, Baltimore, Md. Application filed September 24, 1877.

"The word 'DIPLOMA,' and the symbol of the barrels, as shown."

5,790.—ARTIFICIAL FERTILIZERS.—*Lewis Seldner & Sons*, Baltimore, Md. Application filed February 25, 1878.

"The word-symbol 'CANTON.'"

5,791.—CIGARS.—*Joseph Schmitt*, New York, N. Y. Application filed February 27, 1878.

"The word-symbol 'CONTINENTAL.'"

5,792.—HATS.—*W. C. Waring, Belknap & Co.*, Yonkers, N. Y. Application filed January 24, 1878.

"The spread-eagle, the shield, and the letters "W. C. W., B. & Co.,' formed and arranged in connection with each other as described."

5,793.—TOILET AND OTHER BRUSHES.—*Meyer Brothers & Co.*, St. Louis, Mo. Application filed March 1, 1878.

"The figure of a lion with a crown upon its head."

5,794.—TRUSSES FOR THE TREATMENT OF HERNIA, &c.—*Isaac B. Seeley*, Philadelphia, Pa. Application filed January 23, 1878.

"The symbol shown in the accompanying fac-simile—to wit, the representation of a truss, beneath which is arranged a series of detached pads."

5,795.—INSTRUMENTS FOR THE TREATMENT OF HERNIA, &C.—*Isaac B. Seeley*, Philadelphia, Pa. Application filed January 23, 1878.

"The symbol shown in the accompanying fac-simile, to wit, the representation of a collection or grouping of trusses and remedial supporters, arranged in columns."

5,796.—ELASTIC SURGICAL BANDAGES.—*Isaac B. Seeley*, Philadelphia, Pa. Application filed January 23, 1878.

"The symbol shown in the accompanying fac-simile, to wit—the representation of human limbs with, respectively, an applied knee-cap, anklet, and stockings, and of a human body with an applied abdominal belt, sometimes known as 'elastic surgical bandages.'"

5,797.—BASE-BALL SUPPLIES.—*A. G. Spalding & Brother*, Chicago, Ill. Application filed December 20, 1877.

"The word-symbol 'SPALDING.'"

DESIGNS.

[Each design bearing date March 26, 1878.]

10,549.—STOVES AND RANGES.—*William Burrows*, Brooklyn, assignor to *J. L. Mott Iron Works*, New York, N. Y. Application filed January 3, 1878. Term of patent 14 years.

10,550 to 10,576, inclusive.—CARPETS.—*James L. Folsom*, Brooklyn, N. Y., assignor to *Hartford Carpet Company*, Hartford, Conn. Applications filed March 11, 1878. Term of patents 3½ years.

10,577 to 10,582, inclusive.—CARPETS.—*Otto Heinigke*, New Utrecht, N. Y., assignor to *Hartford Carpet Company*, Hartford, Conn. Applications filed March 11, 1878. Term of patents 3½ years.

10,583 to 10,592, inclusive.—CARPETS.—*Henry Horan*, East Orange, N. J., assignor to *Hartford Carpet Company*, Hartford, Conn. Applications filed March 11, 1878. Term of patents 3½ years.

10,593.—ORGAN-CASE.—*John R. Lomas*, New Haven, Conn., assignor to *B. Shoninger*, same place. Application filed February 18, 1878. Term of patent 14 years.

10,594 to 10,597, inclusive.—CHAIRS.—*Charles Penchard*, New York, N. Y., assignor to *William M. Watson*, *John M. Karsch*, and *William E. Watson*, same place. Applications filed February 4, 1878. Term of patents 3½ years.

10,598 to 10,603, inclusive.—CARPETS.—*John E. Rollings*, New York, N. Y., assignor to *Hartford Carpet Company*, Hartford, Conn. Applications filed March 11, 1878. Term of patents 3½ years.

10,604.—ORGAN-CASE.—*John R. Lomas*, New Haven, Conn., assignor to *B. Shoninger*, same place. Application filed February 25, 1878. Term of patent 14 years.

10,605 and 10,606.—CARPETS.—*Thomas J. Stearns*, Boston, Mass., assignor to *Roxbury Carpet Company*, same place. Applications filed March 15, 1878. Term of patents 3½ years.

10,607.—PERFUMERY-BOTTLES.—*Gustavus Storm*, Philadelphia, Pa. Application filed March 12, 1878. Term of patent 3½ years.

10,608.—CRAYONS.—*J. Wilson Swarts*, Philadelphia, Pa. Application filed February 14, 1878. Term of patent 7 years.

10,609.—HANDLES FOR SPOONS, FORKS, &C.—*George Gill* and *Edwin L. Brittin*, Derby, Conn. Application filed March 13, 1878. Term of patent 14 years.

10,610.—CARPETS.—*Henry Horan*, East Orange, N. J., assignor to *Hartford Carpet Company*, Hartford, Conn. Application filed March 11, 1878. Term of patent 3½ years.

10,611.—BURIAL-CASKET MOLDING.—*Albert H. Nirdlinger*, Rochester, N. Y., assignor to *The Stein Manufacturing Company*, same place. Application filed September 10, 1877. Term of patent 7 years.

LABELS.

[Each certificate bearing date March 26, 1878.]

1,455.—Title: "ANY LADY USING OUR SILK WILL BE PRESENTED WITH ONE OF THESE BY SENDING ONE OF OUR EMPTY SPOOLS TO EITHER OFFICE."—*Brainard, Armstrong & Co.*, New York, N. Y., and Philadelphia, Pa. Application filed March 1, 1878.

1,456.—Title: "STANNOU'S GOLD FOR PERMANENT FILLINGS."—*Henry S. Chase*, St. Louis, Mo. Application filed March 15, 1878.

1,457.—Title: "CONVERY, THE SIGN PAINTER."—*John R. Convery*, Baltimore, Md. Application filed March 20, 1878.

1,458.—Title: "DEUSNER'S TICKET SYSTEM."—*Philip Deusner, Jr.*, Kokomo, Ind. Application filed March 20, 1878.

1,459.—Title:—"DUDLEY'S EMULSION OF PURE COD-LIVER OIL."—*Dudley & Co.*, Brooklyn, N. Y. Application filed March 5, 1878.

1,460.—Title: "G. V. HOWE'S CHERRY TONIC."—*G. V. Howe*, Otwell, Ind. Application filed February 1, 1878.

1,461.—Title: "THE GREAT NOVELTY OF THE AGE, &C."—*John L. Miller & Co.*, New York, N. Y. Application filed March 15, 1878.

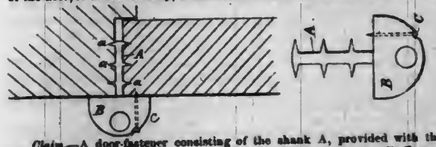
THE DECISIONS FOR 1877.—The decisions of the United States courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

MARCH 26, 1878.

201,566. DOOR-FASTENERS. George W. Alexander, Washington, D. C. Filed Feb. 12, 1878.

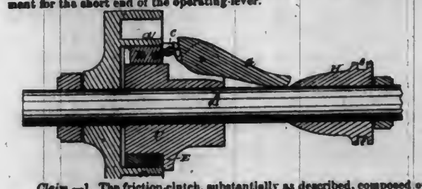
Brief.—The detachable fastening-pin, adapted to be driven into the face of the door, or added security, is the sole novelty in construction of the device.



Claim.—A door-fastener consisting of the shank A, provided with the teeth or prongs a on opposite sides thereof, and having the handle B, provided with the right-angular shoulders c, and the detachable fastening-pin C, adapted to be driven into the face of the door, substantially as described, and for the purpose set forth.

201,567. FRICTION-CLUTCHES FOR LATHES, &c. James W. Anthoine, Miller's Falls, Mass. Filed Feb. 15, 1878.

Brief.—The divided and expansive ring is provided with a band of leather for an engaging surface. The screw for adjusting the wedge affords an abutment for the short end of the operating-lever.



Claim.—1. The friction-clutch, substantially as described, composed of the head C, encompassing hoop E, wedge D, and its operative spring b, lever G, and frustum H, all being arranged and applied to the shaft A and the pulley B, essentially in manner and to operate as set forth.

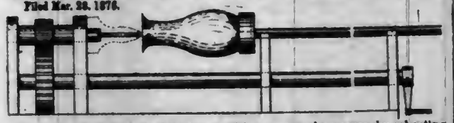
2. The combination of the adjusting-screw *c* with the wedge D, hoop E, lever G, and frustum H, applied to the head C and the shaft A, as set forth.

201,568. LOW-WATER SIGNALS FOR STEAM-BOILERS. Thomas Bingham and Thomas J. McTighe, Pittsburg, Pa. Filed June 21, 1877.



Claim.—In a low-water signal apparatus having the float and valve connected by a system of levers, substantially as shown, the combination, with the valve-lever *e*, pivoted to the valve *v*, and the lever A, pivoted to the float, of the depending fulcra *d d'*, integral with the cap B, the fulcrum *d* supporting the lever *e*, and the fulcrum *d'* supporting the lever A, as shown and described.

201,569. METHODS OF FLARING AND CRIMPING GLASSWARE. Geo. W. Blair, Pittsburg, Pa. Filed Mar. 23, 1876.

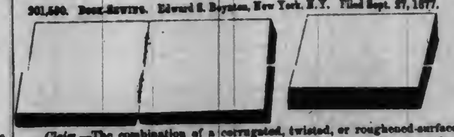


Claim.—1. The method of flaring without external pressure, by reheating the end to be flared, and then pressing it over a tapering former having two or more convergent ribs or edges, while either former or article is rotated upon a fixed center, the other being stationary, substantially as specified.

2. The method of flaring and crimping hollow glassware at one operation, by pressing the open end over a tapering tool or former having ribs or edges against a crimping device, while either article or former is rotated upon a fixed center, the other being still.

3. A tapering flaring tool or former having ribs or edges, combined with a crimper, said tool or crimper being capable of rotation while the other is still.

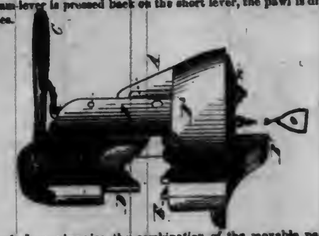
201,590. DOOR-SAVERS. Edward S. Boynton, New York, N.Y. Filed Sept. 27, 1877.



Claim.—The combination of a corrugated, twisted, or roughened-surface securing-pin with the cord of which the loops are formed, operating together to bind a book, substantially in the manner described.

201,591. PIPE AND ROD VISES. Orlo Brockbridge, Westfield, Mass. Filed Feb. 1, 1878.

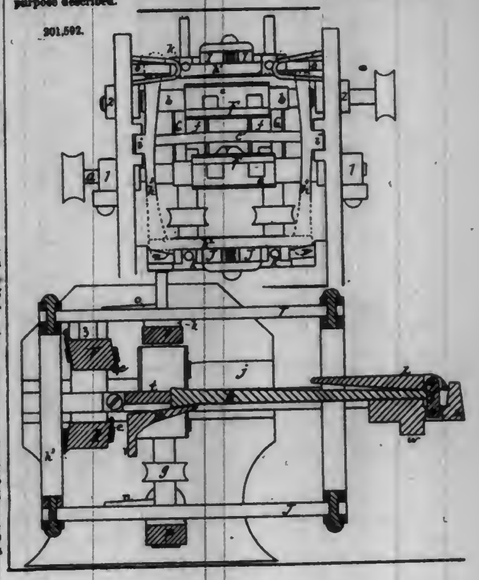
Brief.—The vise is attached to a bench; the movable jaw is pulled down by the foot set in the loop of the chain; then the gripe is further tightened by throwing the cam-lever forward and bearing down. When the cam-lever is lifted, a spring-pawl engages the ratchet to hold the movable jaw in position. When the cam-lever is pressed back on the short lever, the pawl is disengaged and jaw rises.



Claim.—1. In a pipe-vise, the combination of the movable part B, provided with the disengaging-lever F, pawl *c*, jaw D, sliding in B, and lever C, with the stationary part A, provided with the ratchet *a* and jaws E, substantially as described.

2. In a pipe-vise, the stationary part A, provided with jaws E and ratchet *a*, combined with the movable part B, the spring-actuated pawl *c*, lever F, jaw D, sliding in B, lever C, rod *m*, and spring *m'*, substantially as and for the purpose described.

201,592.



201,592. SPOKE-DRESSING MACHINE. Jacob L. Brown, Amesbury, Mass., assignor to E. F. Briggs, same place. Filed Dec. 22, 1877.

Brief.—The vertical cutters are independently adjustable, either at top or bottom, or both, by means of top and bottom formers on the spoke-carrying frame.

Claim.—1. In combination with the fixed and vertically-adjustable parallel rotary cutters, the carrying-frame, as provided with the forked spoke-tenon holder *t*, the brake *x*, and the shaping-guides *j j*, for adjusting the upper roller to the required form of the spoke-tenon, substantially as described and shown.

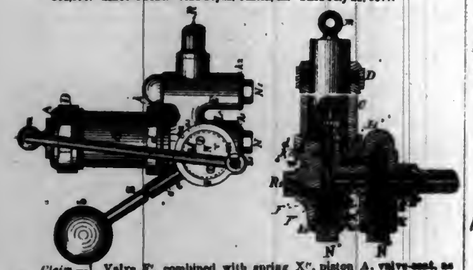
2. In combination with the spoke-carrying frame provided with its adjusting bars I J, the laterally-adjustable vertical cutters, substantially as described and shown.

3. In combination with suitable adjusting devices, constructed substantially as described, two rotary cutters, each provided with and susceptible of adjustment at either end independent of the other end of such cutter bar, or of the other cutter, substantially as described and shown.

4. In a spoke-dressing machine, and in combination with the spoke-carrying frame, the forked spoke-tenon holder *t* and the vertically-adjusting finger *w*, substantially as described and shown.

5. The combination of the fixed and adjustable horizontal cutters, the independently-adjustable vertical cutters, and the spoke-carrying frame provided with the adjusting-guides I I and J J, substantially as described and shown.

201,593. BENT-GAUGE. John Bryan, Canton, Ill. Filed July 21, 1877.



Claim.—1. Valve F', combined with spring X', piston A, valve-seat, as W, and spring-seat, as N''.

2. Valve E', constructed as described, and combined with spring X, valve-seat, as W, and spring seat, as N''.

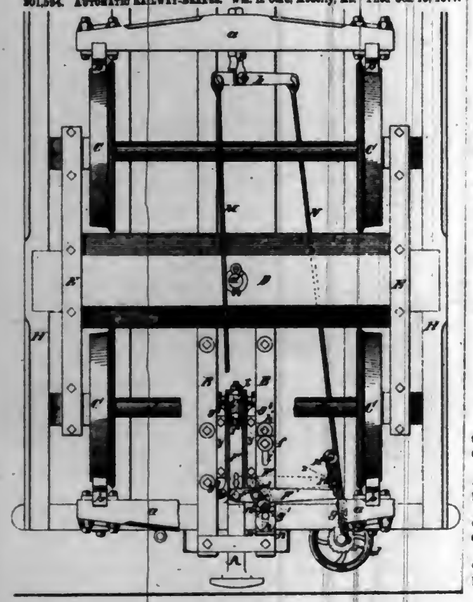
3. The combination of valves E and E''' and springs X and X', substantially as set forth.

4. Combination of valve-seat W, provided with passages R, R', H, and H', valve-chambers, constructed as described, valves F', E', and E''', provided with springs X, X', and X'', cylinder C, provided with any suitable piston A, operated by any suitable mechanism, substantially as set forth.

5. Combination of lever S, handle *b*, ring *a*, disk *r*, plate N, curved pitman M, substantially as and for the purposes set forth.

6. Combination of lever S, handle *b*, ring *a*, disk *r*, plate N, pin *a*, stab *c*, pitman M, substantially as set forth.

201,594. AUTOMATIC RAILWAY-BRAKE. Wm. L. Card, Moberly, Mo. Filed Oct. 15, 1877.



Claim.—1. In an automatic car-brake, the combination, with the draw-bar A, of the connecting-bar F', provided with a shoulder, *s*, and the take-up spring C', with tension-nut *t*, said devices being connected with the draw-bar through the medium of an angle-plate, C', substantially as shown, and for the purposes described.

2. In combination with the connecting-bar F', the brake-lever F', pivoted thereto, and the fulcrum-plate F, attached to lever F' by the strap *f'* and center-pin F', substantially as shown and described.

3. In combination with the brake-lever F' and a mechanism for automatically operating the same when the draw-bar is forced backward, the connecting-links *n'* and loop or eye *n*' upon the said rod, which also connects with the rod of an ordinary hand brake-wheel, substantially as shown and described.

4. The movable fulcrum-plate F, secured upon one of the draft-timbers B by the guide pin or bolt *f* through slot *i*, and carrying the brake-lever F', in combination with the cam-eccentric A between abutments *a a'*, adapted to be operated by the rotation of its rod or spindle *r*, substantially as shown and set forth.

5. The rods M and N, connected with the brake-lever, in combination with an elastic cushion, *a'*, and tension-nut upon the forward end of rod M, and with an ordinary hand-braking mechanism and an automatic braking apparatus, composed essentially of bar F', connected with the draw-bar through the medium of an angle-plate and spring, and a lever-bar, F', connected with rod N, all constructed and adapted for adjustment substantially in the manner as herein shown and described, and for the purposes set forth.

6. The connecting-bar F', provided with check-shoulder *c*, in combination with the angle-plate C', with its stop-plate *f'*, substantially as shown and specified.

7. The take-up spring C' and connecting-bar F', in combination with the bar F, with a joint at the slotted portion of bar F', through which the bolt *f'* is passed, and adapted to have a limited movement, substantially as herein shown and specified.

8. The locking-disk K, with spring-catch, in combination with cam A and fulcrum plate F, substantially as shown and set forth.

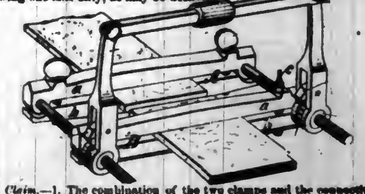
201,595. POCKETS. Yung Chow, San Francisco, Cal. Filed Jan. 14, 1878.



Claim.—The pocket C, stitched to the edges of the pocket-opening B, and arranged to have its seam intermediate of the sides, leaving the fabric of the pocket continuous and without seam at the sides and corners, and extending up over the corners, so as to form a re-enforce, substantially as described.

201,596. BELT-TIGHTENERS. David L. Croft, Springfield, Ohio. Filed Feb. 25, 1878.

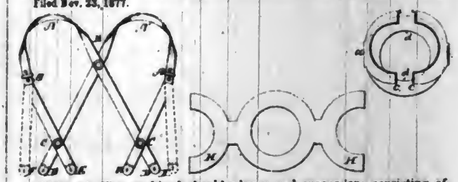
Brief.—The nuts on both screws may be operated at the same time or each separately, so as to tighten the band by drawing each side alike, or by drawing one side only, as may be desired.



Claim.—1. The combination of the two clamps and the connecting-screws with the two ratchet-nuts, the two levers and pawls, and the connecting-bar, substantially as shown.

2. In combination with the two heads and their connecting-screws and nuts, the two levers connected by the cross-bar, and provided with the independently adjustable and reversible pawls, substantially as and for the purpose described.

201,597. COMBINED SHOULDER-BRACE AND SUSPENDERS. Charles H. Cushman, Erie, Pa. Filed Nov. 23, 1877.



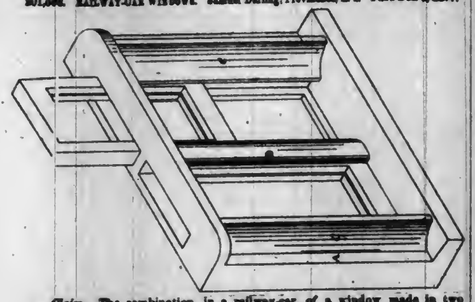
Claim.—1. The combined shoulder-brace and suspenders, consisting of the straps A B C D E, constructed and arranged to operate substantially as and for the purpose set forth.

2. The combined shoulder-brace and suspenders, consisting of the straps A B C D E F, constructed and arranged to operate substantially as and for the purpose set forth.

3. The double guide-clasp, composed of two parts, each consisting of the disk G and half-disks H H, constructed and combined to operate substantially as described, and for the purpose set forth.

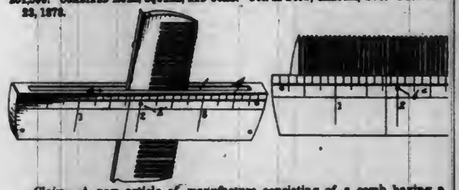
4. In combination with shoulder-brace or suspender-straps, arranged to cross on the back, the double guide-clasp, constructed as described, for the purpose set forth.

201,598. RAILWAY-CAR WINDOWS. Samuel Darling, Providence, R. I. Filed Dec. 6, 1877.



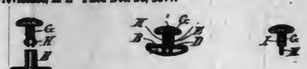
Claim.—The combination, in a railway-car, of a window made in two parts, or narrow windows having a dividing-bar between them, and two spark-fenders, one fender being placed at the outer edge or margin of one part of the window, and another fender placed at the outer edge or margin of the other part of the window, two parts of a window or two narrow windows being thus placed between two fenders, the sides of the window standing parallel with the wall of the car, and no fender being placed between the two parts or narrow windows, substantially as described.

201,599. COMBINED RULE, SQUARE, AND COMB. Geo. R. Drew, Millburn, N. J. Filed Feb. 23, 1878.



Claim.—A new article of manufacture consisting of a comb having a straight back or edge, and pivoted at its center, and the cross *c*, having a straight-edge and rule or scale, arranged substantially as set forth.

201,600. COLLAR AND SLEEVE BUTTONS AND STUDS. P. S. Eddy and Oliver P. Coggeshall, Providence, R. I. Filed Dec. 26, 1877.



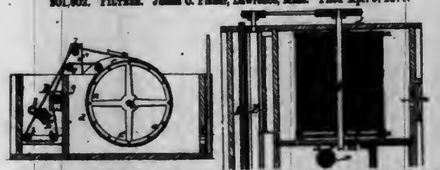
Claim.—The post G and spring H, curved at its outer end, as shown, combined with the tubular post E and disk B, provided with the central orifice D, all arranged and operating substantially as described.

201,601. EGG-BOXES. R. L. Edwards, Brooklyn, and John Lee, New York, N. Y., assignors to A. H. Lents and L. P. Prince, St. Louis, Mo. Filed Feb. 17, 1877.



Claim.—The combination, with the perforated egg box or case D and perforated drawers or trays G, fitting therein, of the perforated boards or diaphragms H, fitted to said case, and serving both to keep the eggs down to their places in the drawers, and to form supports for and partitions between the drawers, essentially as described.

201,602. FILTERS. James G. Fisher, Lawrence, Mass. Filed Apr. 9, 1877.



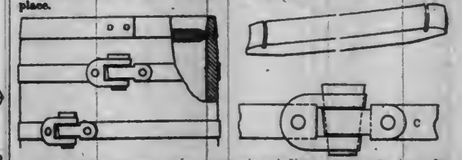
Claim.—1. In combination with the filtering-chamber and the filtering-apron and its supporting carriage or cylinder contained in said chamber, the well, and the float operated by water supplied to said well to govern the admission of water to the filtering-chamber, substantially as described.

2. In combination with the traveling filtering-apron, the cleansing apparatus arranged in a chamber separate from the filtering-chamber, and consisting of a rotating beater and a sprayer, which discharges water directly upon the apron at a point in advance of where the beater operates on said apron, as shown and set forth.

3. In combination with the cleansing-chamber and the rotating beater and sprayer arranged in said chamber, each to operate directly on the apron, as described, the traveling apron and its power-driven supporting-cylinder, mounted in the filtering-chamber and imparting movement to the apron, as set forth.

201,603. BARRELS. Henry M. Fleiugh, Bay City, Mich. Filed Sept. 4, 1877.

Brief.—The barrel is formed of staves having a common width and a uniform thickness, except at the ends, which are tapered exteriorly to a point just below the cross to receive the end hoops. The ends of the hoops are secured by a locking device which admits of the shortening of the hoops when in place.

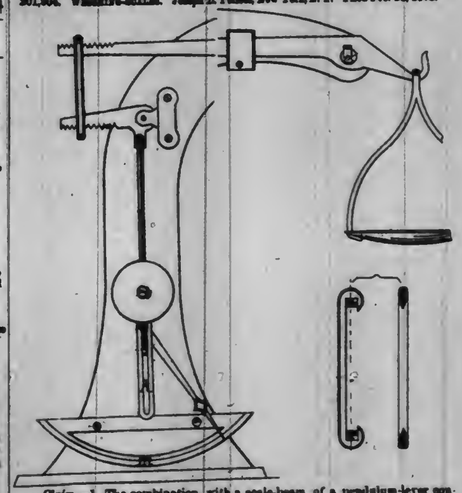


Claim.—1. As a new article of manufacture, a barrel-stave having a common width and a uniform thickness, except at the ends thereof, which are tapered exteriorly to a point just below the cross, substantially as shown in Fig. 1 and herein described.

2. As a new article of manufacture, a barrel composed of staves of a common width, the said barrel being cylindrical in form, except from just below the cross and beyond the first of the intermediate hoops, it being tapered exteriorly from said point to the extremities to receive the end hoops, substantially as specified.

3. A practically cylindrical barrel formed of staves having a common width, and tapered at each end from just below the cross and beyond the first intermediate hoops to the extremities, as described, combined with hoops having tightening and locking devices, substantially as specified.

201,604. WEIGHING-SCALES. Joseph L. Follett, New York, N. Y. Filed Feb. 26, 1878.



Claim.—1. The combination, with a scale-beam, of a pendulum-lever connected therewith, and provided with a weight adjustable for the purpose of varying the resistance, substantially as set forth.

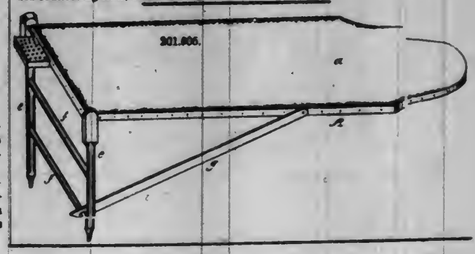
2. The combination of the scale-beam, the slide or weight adjustable thereon, the pendulum-lever connected with said scale-beam, and the weight adjustable on said pendulum-lever, substantially as set forth.

3. The combination of the scale-beam and the pendulum-lever adjustably connected together, substantially as and for the purposes set forth.

4. The combination of the scale-beam, the pendulum-lever adjustably connected therewith, and the adjustable weights carried by the scale-beam and the pendulum-lever, or either, substantially as set forth.

5. The combination of the scale-beam, the pendulum-lever, and the movable connecting-link, substantially as set forth.

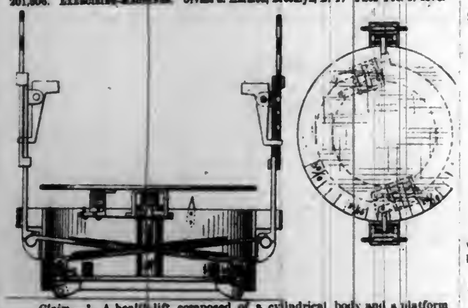
201,605.



201,606. COMBINED IRONING-BOARD AND CUTTING-TABLE. William M. Foskett, La Mars, Iowa. Filed Mar. 4, 1878.

Claim.—The legs *c*, pivoted to the edges of the board A, and at the extreme end thereof, in combination with the detachable brace *g*, pivoted to the edge of the board, and engaging with the bars *f* on legs *c*, said board A being provided with a detachable strip, B, adapted to be secured to the side thereof, as and for the purpose set forth.

201,606. EXERCISING-MACHINES. Orville S. Harmon, Brooklyn, N. Y. Filed Feb. 1, 1878.

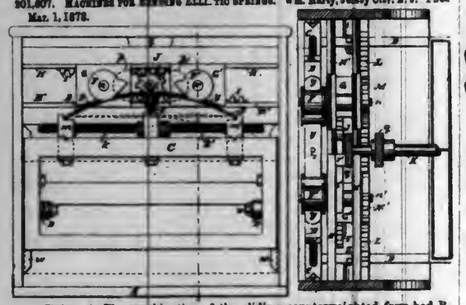


Claim.—1. A health-lift composed of a cylindrical body and a platform elevated by means of two circular levers operated by pull-handles at the sides, substantially as described.

2. A revolving platform of a health-lift made adjustable as to weight by means of the revolution of said platform upon the circular levers, which operate it, substantially as described.

3. The revolving platform of a health-lift having self-adjusting supports, in combination with circular levers faced with rubber, substantially as described.

201,607. MACHINES FOR BENDING ELLIPTIC SPRINGS. Wm. Harty, Jersey City, N. J. Filed Mar. 1, 1878.

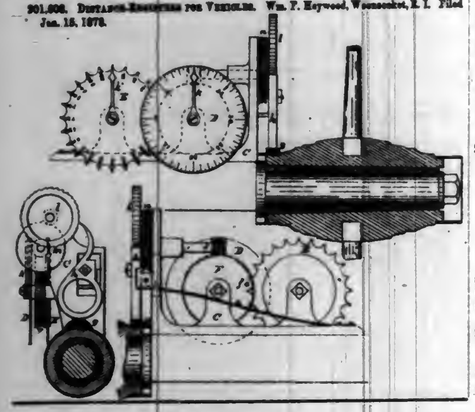


Claim.—1. The combination of the sliding counterweighted form-bed B, bending-rollers F F', sliding carriers G G', stationary ways H H', separate racks I I', parallel to the ways and fastened to the carriers, and driving-pinion J, as shown and described.

2. The combination of the sliding form-bed B, rollers F F', carriers G G', ways H H', racks I I', pinion J, fixed rack L, and gears M M', as described.

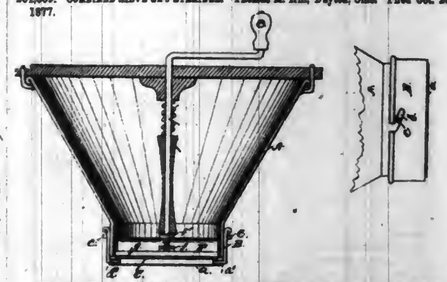
3. The combination of the curved bed B, traversing rollers F F', rack L, and gears M M', engaged with that rack and secured to the rollers, and of greater radius than the latter, whereby the rollers are compelled to turn at a slower surface-speed than that at which they are moved along the bed, as set forth.

201,608. DISTANCE-REGISTERS FOR VEHICLES. Wm. P. Haywood, Woonsocket, R. I. Filed Jan. 18, 1878.



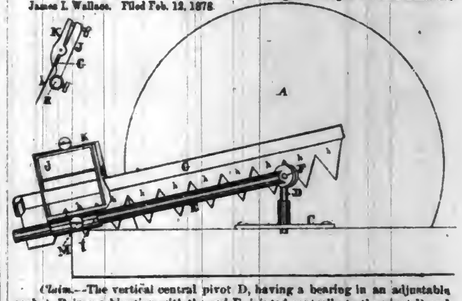
Claim.—The combination, in a register of distances for vehicles, substantially as described, of the cam *g*, pawl and spring *h* and *e*, stationary hand or pointer *k k'*, and revolving dials D and E.

201,609. COMBINED SIEVE AND STRAINER. Thomas M. Hill, Dayton, Ohio. Filed Oct. 29, 1877.



Claim.—The combination of the body A, having pins *c*, the cap B, provided with slots *b* and bottom flange *a'*, and the sieve C, clamped between body A and flange *a'*, as and for the purpose herein shown and described.

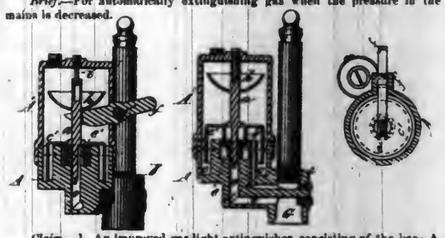
201,610. SICKLE-GRINDERS. Austin D. Hoffman, Chicago, Ill., assignor to John J. Baker and James I. Wallace. Filed Feb. 12, 1878.



Claim.—The vertical central pivot D, having a bearing in an adjustable socket, P, in combination with the rod E, jointed centrally to the pivot D and relatively to the axis of the stone A, and with the clamp J K, provided with set-screws, as and for the purpose set forth.

201,611. GAS-LIGHT EXTINGUISHERS. William H. Hovey, Springfield, Mass. Filed Jan. 10, 1878.

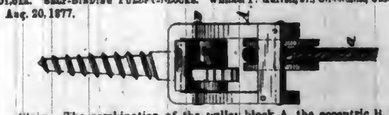
Brief.—For automatically extinguishing gas when the pressure in the mains is decreased.



Claim.—1. An improved gas-light extinguisher, consisting of the base A, having the cells *c* and *c'* arranged to contain quicksilver or other sealing-fluid, and the passages *a* and *a* made therein, combined with the inverted cups *c'* and *c'*, the stem *e*, arranged to be suitably weighted, and the lever *f*, all substantially as described.

2. In a gas-light extinguisher, the base A, provided with the cells *c* and *c*, and with the passages *a* and *a*, in combination with the inverted cups *c'* and *c'* and the stem *e*, arranged to be weighted, and adapted to be raised by a force applied outside the case, substantially as described.

201,612. SELF-BINDING PULLEY-BLOCKS. William F. Harrell, Jr., Cincinnati, Ohio. Filed Aug. 20, 1877.



Claim.—The combination of the pulley-block A, the eccentric B, having a semicircular corrugated surface and a knuckle-joint, D, and the sliding pulley C, the whole constructed and arranged to operate substantially as and for the purpose described.

201,613. UTILIZING WASTE HEAT OF FURNACES. John Hutton, St. Louis, Mo. Filed Feb. 21, 1878.

Brief.—Ribs or projections are raised on the floor of the flame-bed, upon which air-tubes rest, thus forming channels between the tubes, by which the product of combustion is made to better impinge on all their sides.

Claim.—1. The combination of the furnace A, flue D, flue H, pipe F F', and blower G, substantially as described.

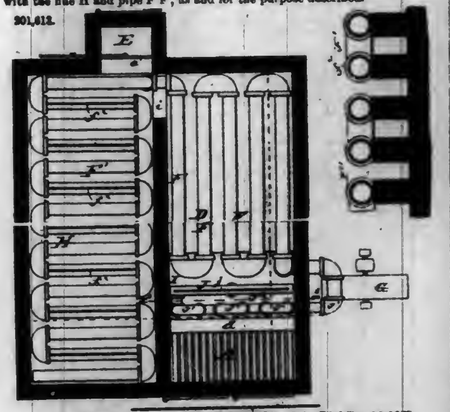
2. The combination of the furnace A, boiler C, flues D and H, pipe F F', and blower G, substantially as described.

3. The combination of the furnace A, boilers B and C, flues D and H, pipe F F', and blower G, substantially as described.

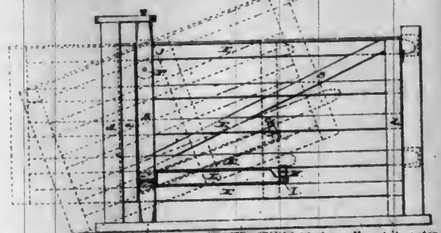
4. In a boiler-furnace, the pipe F, raised upon the supports *f f* to form the spaces *f' f'*, as and for the purpose described.

5. The combination of the flue E, having the damper *e*, in combination with the flue H and pipe F F', as and for the purpose described.

201,613.

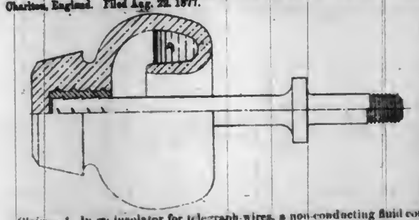


201,614. GATES. Mortemer Jeffries, Collins, Ind. Filed Nov. 19, 1877.



Claim.—The supporting-bar I, carrying an anti-friction roller at its outer end, on which the gate may rest, said bar being hinged to and within a mortise in the rotable post B, in such manner that the pintle of the hinge and the bottom of the mortise jointly shall prevent the bar from sagging at its outer end, so as to permit it to follow the movement of the gate when the latter is raised at its far end, all substantially as described and shown.

201,615. INSULATORS FOR TELEGRAPH-WIRES. Walter C. Johnson and Samuel E. Phillips, Chariton, England. Filed Aug. 22, 1877.

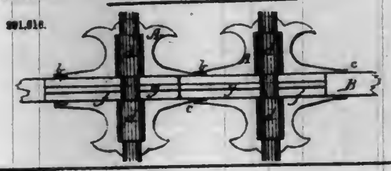


Claim.—1. In an insulator for telegraph-wires, a non-conducting fluid contained in a suitable cup or receptacle, and cutting off the surface connection between the wire and the exterior of the insulator, substantially as shown.

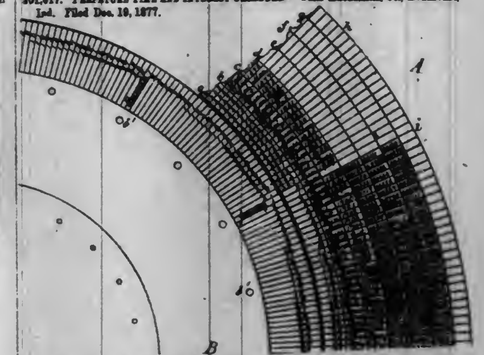
2. A telegraph-insulator having paraffine-oil or similar non-conducting fluid mounted therein, substantially as and for the purpose described.

3. A telegraph-insulator having a rotating cap, provided with a vane, substantially as shown, for the purpose of causing the wind to move the cap and break the continuity of any surface film of moisture which may form upon the insulator.

201,616.



201,617. PERPETUAL TIME AND INTEREST CALENDARS. John Kashelman, Jr., Evansville, Ind. Filed Dec. 10, 1877.



Claim.—1. The combination of two concentric tables, A B, the one a revolving table, B, having the twelve months, with their corresponding dates, upon its margin, and the other a stationary table, A, having arranged between concentric circles *a b c d e f g h* the number of days in a common year, beginning with 0 and ending with 364, the names of days in a whole year in consecutive order, the numbers of years from 1700 to 1992, or equivalent, with the name of each 29th day of February marked after each leap-year, and the computations of interest for capitals of various amounts, as $100 and upward, and for various interests, as 3 per cent. and upward, whereby calculations of time and interest, or determinations of weekly days for a given time, are pointed out, and can be read off from the table A by means of one movement each of the table B, substantially as set forth.

2. In the described time and interest computing calendar, the combination of the stationary columns *b c* and *c d*, whereby the names of the days for each January 1 are found in columns *b d* opposite the corresponding years in column *c d* of the perpetual calendar, substantially as set forth.

201,618. IRON FENCES. Henry L. Jones, Buffalo, N. Y. Filed Dec. 31, 1877.

Claim.—1. In an iron fence, the combination of the picket and rail-holder A, the cross-rail B, picket C, and the key *f g*, all constructed substantially as specified.

2. The combination of the picket C, having one or more right-angled slots, *e*, therein, the key or keys *f*, with the feather *g* to fit therein, and the picket and rail-holder A, all substantially as and for the purpose specified.

201,618. MEANS FOR ATTACHING FORE-ENDS OF GUN-STOCKS. Charles A. King, Meriden, Conn. Filed Feb. 1, 1878.



Claim.—1. In a fore-end lock for fire-arms, the tumbler F, provided with the recess *i*, combined with the lever I, provided with the projection *i'* and the spring *n*, as a means of locking the stock to the barrel and unlocking it therefrom, substantially as described.

2. The tumbler F, provided with the recess *i* and projection *f*, combined with the lever I, provided with the projection *i'* and the spring *n*, as a means of locking the stock to the barrel, and also of separating the stock from the barrel, substantially as described.

201,619. OIL-WELL SPRINKLERS. John C. Lorenz, St. Petersburg, Pa. Filed Dec. 20, 1877.



Claim.—1. An oil-well tube provided at a point or points between its ends with a series of perforations, in combination with a loose perforated sleeve, provided with yielding devices to engage with the walls of the well and prevent the rotation of the sleeve, substantially as shown and described.

2. The combination of the tubing B and sleeve C, both provided with perforations, and the spring retaining devices to prevent the rotation of the sleeve.

3. In combination with the sleeve C, arranged as shown, the spring-arms F, provided with the wheels or rollers *b*.

4. The oil-well tube B, having the inserted perforated length or section, in combination with the collars or thimbles D and the loose perforated sleeve C, having yielding devices to retain it in place.

5. In an oil-well tube, two concentric perforated sections, one capable of a rotary motion in relation to the other, in combination with yielding devices, arranged to engage with the walls of the well and hold one of the sections from rotating, substantially as described.

201,620. RACK-MOLDING. Roderick D. MacLennan, Los Angeles, Cal., assignor of one-half his right to Angus S. McDonald, same place. Filed Nov. 16, 1877.

Brief.—An open-end box, having inclined slots and rubber or other elastic facing, is recessed in a groove of the window-frame. This friction-box is attached to, and held in contact with, the sash by a suitable spring, in such manner that when the window is raised the box presses but lightly, and is carried with it as far as the slots allow, but when lowered the tension of the spring is increased, and the box is pressed against the sash with sufficient force to hold the window in desired position.

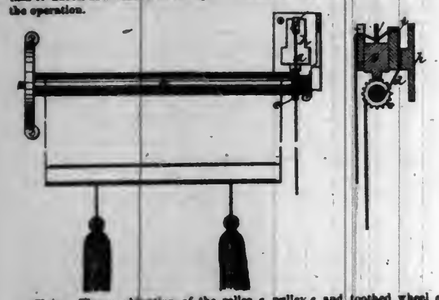


Claim.—1. The open-ended box G, with its outside friction-face I, supported in a recess in the window-frame, opposite the edge of the sash, by a spring, E, substantially as and for the purpose described.

2. The open-ended box G, having the inclined slots H and outside friction-face I, in combination with the spring E, with its gudgeons, said box being secured in a recess, C, opposite the sash-frame, substantially as above described.

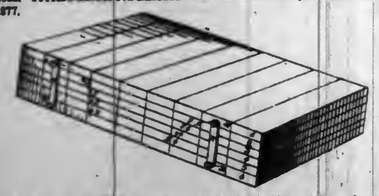
201,621. CURTAIN-ROLLERS AND BRACKETS. Jas. P. Harris, Paris, Tex. Filed Feb. 1, 1878.

Brief.—The curtain and the operating-cord are wound in opposite directions, and the cord passes through holes in a bracket, and a weighted stop sliding within the bracket, and engaging with a ratchet on the roller. A slight pull on the cord withdraws the stop from the ratchet, allowing the curtain to unroll and wind the cord up. A second and continuous pull reverses the operation.



Claim.—The combination of the roller *c*, pulley *e*, and toothed wheel *c* with the frame *h*, having holes for the passage of the cord *d*, and weight *g*, provided with a hole, *l*, and teeth to catch in the wheel to lock the roller in position, substantially as shown.

201,622. CUTTING-BLOCK FOR LEATHER-WORK. E. Nicholson, Lynn, Mass. Filed Oct. 5, 1877.



Claim.—1. An improved cutting-block for leather-work, made up of a series or layers of boards, and secured together by a fastening device, so that the upper or worn surface may be turned under, or the upper layer removed for the exposure of a new surface, all as shown and described.

2. A cutting-block for leather-work, composed of a series or layers of boards, each board made up from transverse sections of wood cut across the grain, all secured together by a suitable adjustable fastening, as shown and described.

3. In a leather-cutting block, the fastening device *a a*, adapted to secure together a series of boards, as shown and described, and by its being moved in the arc of a circle to allow the thickness of the block to be increased or diminished for the purpose of removing a worn surface, all as set forth.

201,623. WATCH-CASE SPRINGS. Peter F. Wilson, Santa Rosa, Cal. Filed Feb. 5, 1878.

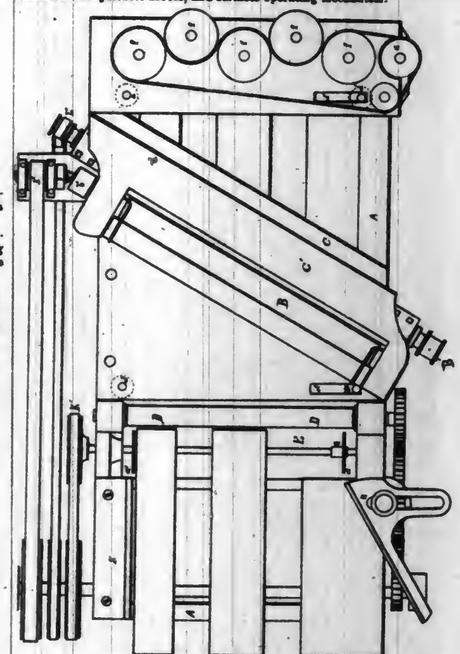


Claim.—1. The improvement in watch-case springs consisting of a flat torsional spring, E, extending through the interior of the hinge, and secured to its opposite ends, substantially as herein described.

2. The hinge B, having the hollow pin D and the end pieces turned to enter the pin, as shown at I, said pieces being slotted to receive the ends of the spring F, substantially as herein described.

201,624. PLANING-MACHINES. Wm. B. Harris, Fort Ann, N. Y. Filed May 18, 1878.

Brief.—Doors and similar articles can be planed on both sides, and papered upon both sides, and wedges cut from both side edges while it is passed once through the machine, by means of two obliquely-cutting cutter-heads—an upper and a lower one—two series of revolving disks provided with suitable polishing material for smoothing the upper and lower surfaces of the door as it comes from the cutters, a suitable guide, a pair of circular saws mounted on adjustable arbors, and suitable operating mechanism.



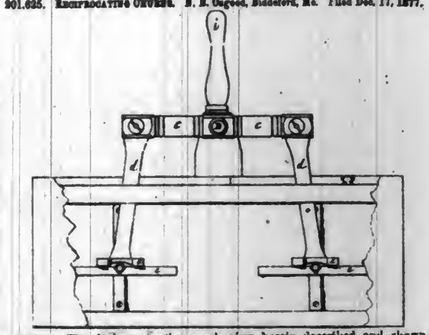
Claim.—1. The combination of the cutting-cylinder, a flat revolving sand-papering-surface, and suitable feeding mechanism to carry the work to both simultaneously, substantially as and for the purpose herein set forth.

2. In combination with the oblique cutter-heads B B′, vertical feed-rolls acting upon the edges of the door or other article, substantially as and for the purpose herein specified.

3. The combination of saws *a a′* and guides R S, arranged in a planing-machine, and operating substantially as and for the purpose herein specified.

4. The revolving sand-papering-disks *g g′ g″*, in combination with the feeding device of a planing-machine, substantially as herein specified.

201,625. RECIPROCATING CHURNS. H. B. Osgood, Biddeford, Me. Filed Dec. 17, 1877.

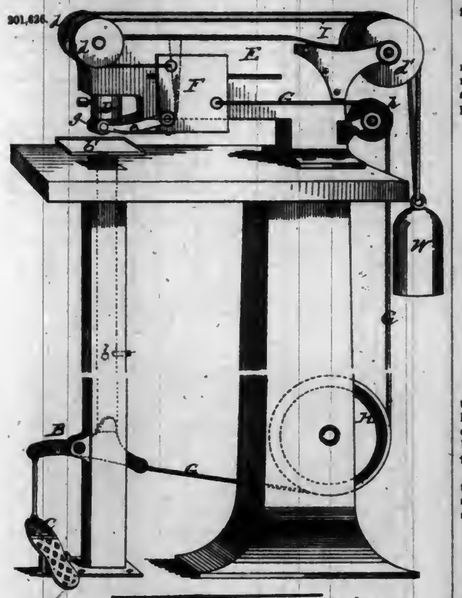


Claim.—The dasher-actuating mechanism herein described and shown, consisting of the rocking bar or brake *a*, the rods or bars *d*, hinged to the rocking bar and to the dashers, and the vertical hand-lever *i*, as set forth.

201,626. MACHINES FOR STAMPING LETTERS. Anthony G. Paquet, Philadelphia, Pa. Filed Feb. 2, 1878.

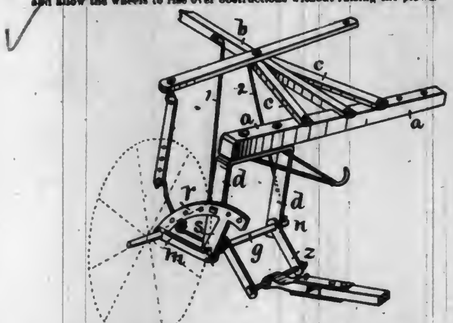
Claim.—The combination, with a stationary stamping-die, D, its angular supporting-arm E, and a carriage, F, reciprocating on said arm, and containing a spring ink-roller, *g*, of a vertically-movable platform, *b′*, an angular lever, B, cords G and I, and an overbalancing-weight, W, the whole constructed and arranged to operate substantially as specified.

201,626.



201,627. CORN-CULTIVATORS. Davis Patton, Des Moines, Iowa. Filed May 9, 1877.

Brief.—A swinging coupling to carry the beams above or below the axle, and allow the wheels to rise over obstructions without raising the plows.



Claim.—1. The swinging stirrup-form couplings *e*, in combination with a cultivator-carriage and plow-beam, substantially as and for the purposes set forth.

2. In a wheel-cultivator, the combination of the carriage-frame *a b c*, the axle-bearers *d d*, the stub-axle *g*, having cranks *m*, the segmental racks *r s*, and the stirrup-form beam-couplings *e*, substantially as and for the purposes shown and described.

201,628. SYRINGE. Samuel Peters, Cohoes, N. Y. Filed Feb. 27, 1877.

Brief.—A graduated barrel is used as a reservoir to contain the liquid medicament after it has been drawn in and forced between the piston-head and the inner end of said barrel. In use, a measured portion is passed through the piston-head to the outer end of the barrel, and then injected.



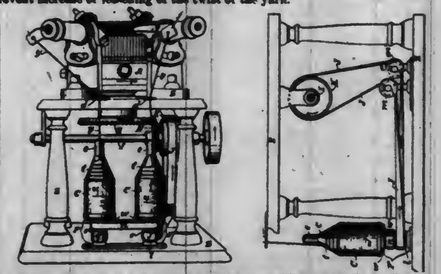
Claim.—1. The piston-barrel of a syringe, constituting the supply-chamber, and provided with a scale of minims, in combination with a piston furnished with devices to measure from said graduated barrel an ascertained portion of said liquid into and through the piston-plug.

2. The combination, in a syringe, of a graduated barrel having a hollow piston-head with side opening, and a hollow plug on the piston-stem with side opening, and having a rotary movement independent of the piston with a sight on the stem-head E, whereby to show when the lateral openings are coincident.

3. In a syringe, the piston-head *c*, having way-openings *d*, in combination with the hollow shouldered plug *e* of the stem D, having way-opening *i*, and the piston-head screw-cap *g*, or equivalent securing device, whereby the two parts are united for operation, as set forth.

201,629. YARN-DELIVERY ATTACHMENTS FOR KNITTING-MACHINES. Archibald Paul, Cohoes, N. Y., assignor of one-half his right to Campbell & Clute, same place. Filed Jan. 22, 1878.

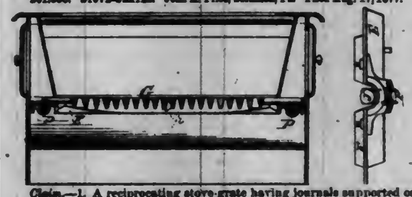
Brief.—Upon supports are mounted conical bobbins, which derive their motion by means of belting from the driving mechanism of the knitting-machine proper, whereby said bobbins are caused to revolve about their own axes in a direction contrary to that in which the yarn is unwound, so as to prevent increase or lessening of the twist of the yarn.



Claim.—1. In combination with a knitting-machine, mechanism, substantially as described, for supporting a conical bobbin and connecting it with the knitting-machine, whereby said bobbin is revolved about its own axis in a direction contrary to that in which the yarn is unwound from the bobbin in being drawn off along the stem of the bobbin by the knitting-machine, as set forth.

2. In combination with a knitting-machine, the support F, connected with the knitting-machine by mechanism substantially as described, whereby said support is adapted to hold and revolve a conical bobbin, C, about its own axis, as set forth.

201,630. STOVE-GRATE. John A. Price, Scranton, Pa. Filed Aug. 17, 1877.

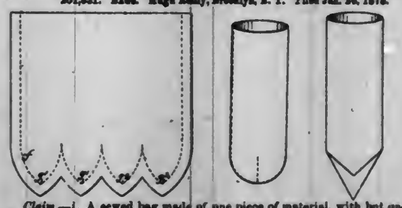


Claim.—1. A reciprocating stove-grate having journals supported on pulleys located outside the fire-pot, whereby the grate is enabled to be reciprocated and turned for dumping on the said pulley-bearings, substantially as described.

2. The sheave-pulleys P P, mounted in the grate-frame E, behind the end walls of the fire-box, in combination with grate G, having journals J, substantially as described.

3. The pulley *p*, supporting the rear side of the grate, in combination with the grate, grate-frame, and sheave-pulleys P P, substantially as described, for the purposes specified.

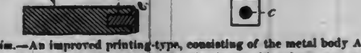
201,631. RACE. Hugh Reilly, Brooklyn, N. Y. Filed Jan. 26, 1878.



Claim.—1. A sewed bag made of one piece of material, with but one long seam, and with the bottom formed by uniting the edges of two or more projections extending from the piece of material, substantially as described.

2. A blank for a bag made of one piece of material, and with two or more projections from one side of the material, as and for the purposes set forth.

201,632. ELASTIC-FACED PRINTING-TYPES. Arthur H. Rogers, Springfield, Mass. Filed Dec. 13, 1877.



Claim.—An improved printing-type, consisting of the metal body A, having a recess, *c*, made in one end, and the elastic or rubber face *c*, pressed into said recess and secured, substantially as herein described.

201,633. ROCKING CHURNS WITH VIBRATING DASHERS. Nelson Rowe, Oswego, Kans. Filed Dec. 20, 1877.

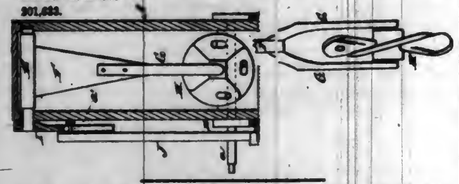
Brief.—The plan a serve for attachment to a rocking-chair.

Claim.—1. The combination, with the rocking-churn-body, of the journaled shaft E, the blade F, arms G, and the propeller dasher-wheel H, journaled between said arms, substantially as described.

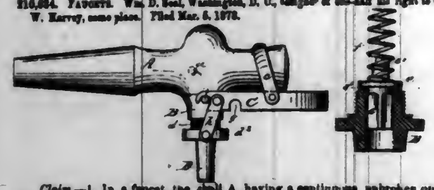
2. The combination, in a rocking churn, of the churn-body A, mounted on

rockers, the cross-shaft E, with dasher and wheel H secured thereto, the forked arm I, and standard J, with pin a', all operating in the manner as hereinbefore described.

201,633.



216,634. FAUCETS. Wm. D. Seal, Washington, D. C., assignor of one-half his right to Geo. W. Harvey, same place. Filed Mar. 5, 1878.

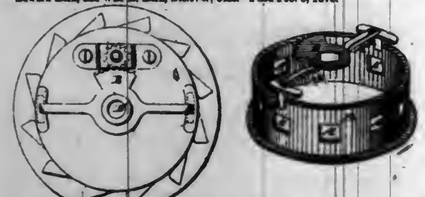


Claim.—1. In a faucet, the shell A, having a continuous unbroken opening, in combination with a lever-handle, C, and the stop a, for limiting the movement of said lever-handle, as described and set forth.

2. The shell A, with the double-faced valve-casing H, lugs b, in combination with the fluted guide c', thin rubber packing c', circular valve c, projection c', and spiral spring f, all arranged and operating substantially as set forth.

3. The lever-handle C, loop e, notches g, pivoted side bars h, in combination with the nozzle D, nozzle-collar d', rubber packing d, and tubular projection d', arranged and operating substantially as described.

201,635. TURBINE WATER-WHEELS. Isaac Shenck, Fremont, assignor to himself, Isaac Kern, Edward Kern, and Wm. H. Kern, Bellevue, Ohio. Filed Feb. 5, 1878.



Claim.—1. A turbine water-wheel the valve-ring of which has two or more points of attachment for the power that moves it to open or close the ports admitting water to said wheel, substantially as and for the purpose specified.

2. The valve-ring A, in combination with two or more arms, A^2, or their equivalent, substantially as and for the purpose shown.

3. The combination, with the deck of a turbine water-wheel provided with a slot in which the angular extremity of the valve-ring arm has movement, of the shield formed on said arm, and adapted to cover said slot, substantially as set forth.

4. In a turbine water-wheel, the two valve-ring arms formed, respectively, with shields or covers at their ends, adapted to protect the slot-openings in the deck of the wheel in which the angular extremities of said arms work, substantially as set forth.

5. The combination of the wheel or geared collar B, two or more arms, A^1, and valve-ring A, substantially as and for the purpose shown.

201,636. FOUNDERS' MOLDING-MACHINES. George E. Smith, Racine, Wis., assignor to Wm. Aitch and Wm. Whyte Drummond, Louisville, Ky. Filed June 27, 1877.

Brief.—Sift "first" sand; tuck by hand; sift drag full; strike off; cover with bottom board; put on yoke and hold its free end by hand; lift locking-pawl; semi-revolve frame on inclosed drag; drop locking pawl to hold all horizontal. By hand-lever lower frame and drag till clears of bottom board rest on supports on the outer frame; release and drop yoke; again use lever to further depress frame and drag to pack sand, and reversely to draw frame and pattern upward, leaving drag on the frame-supports. Remove drag. Upper half of match-plate is in position for cope, which treat likewise. Half-patterns used, or whole patterns, one half being embedded in plaster or mold material, the whole pattern being transferable to opposite sides of match-plate.

Claim.—1. A reversible and vertically-movable match and pressure plate, applied and operating substantially as described, whereby the sand is packed around the patterns by downward pressure while supported below, as set forth.

2. A reversible and vertically-movable match and pressure plate, applied and operating substantially as described, whereby the patterns affixed to it are withdrawn upwardly from the molds and the molds are supported below during such withdrawal, as set forth.

3. A revolving or reversible and vertically-sliding and pressure pattern, in combination with a stationary follow board or platform, whereby the said pattern is molded in sand by downward pressure and the mold supported below, substantially as set forth.

4. The frame G, clamp G', and match-plate H, combined, whereby the match-plate is kept rigidly in form and position, substantially as set forth.

5. A revolving vertically-sliding frame, in which patterns are supported by either match-plates, plaster or sand matches, in combination with a platform, substantially as described.

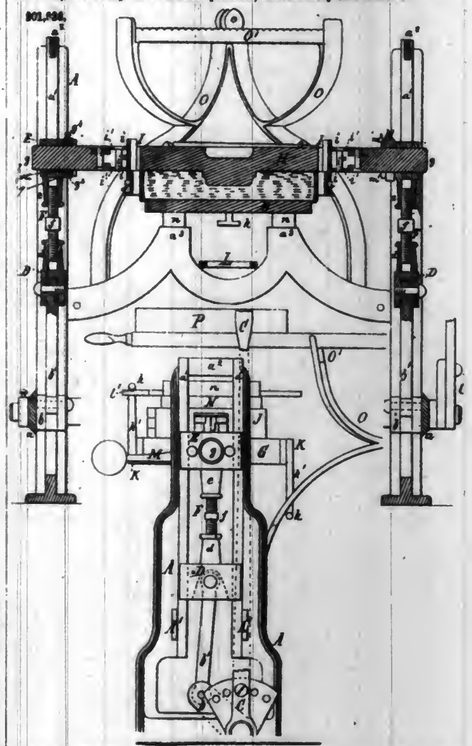
6. The combination of the match-plate H, having triangular or V-shaped and horizontally-adjusted outer guides i, and cope and drag J, having inner guides j to fit the said outer guides, substantially as and for the purpose set forth.

7. The riddle F, applied to the molding-machine, and held loosely in connection therewith by a joint, as at e, whereby it is movable laterally, or up and down, or is reversible, substantially as and for the purpose described.

8. The combination, with the frame G, of the pitmen b', the bearings E, sliding blocks D, and the screws F, having each a right screw-thread on one end and a left screw-thread on the other end, whereby the stroke of the lever is regulated, or the altitude of the frame G adjusted with respect to the different heights of the flasks or copes and drags thereof, substantially as described.

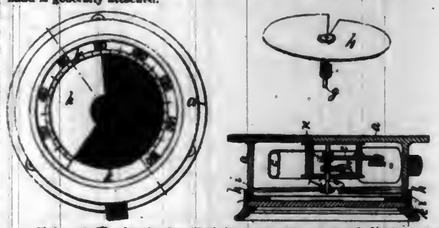
9. The frame G, having a rim, n, and notches n^1, in combination with the pawl M, having a lateral tooth, m^2, whereby the said frame is permitted to be reversed, and is kept in horizontal position, substantially as described.

201,636.



201,637. INDICATORS FOR PRESSURE-GAGES. Jas. E. Trout, Boston, Mass. Filed Aug. 28, 1877.

Brief.—Indicator consists of a fixed and movable disk of contrasting colors. Movable disk is attached to the pinion-shaft, to which the pointer or index-hand is generally attached.



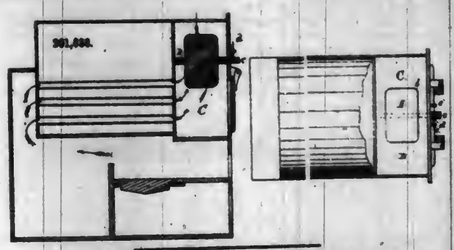
Claim.—1. The herein-described improvement on gage-indicators, consisting of the movable helix-shaped disk h, the stationary helix-shaped disk i, and stationary index k, as and for the purpose set forth.

2. The combination, with the movable disk h and stationary disk i, of the shaft g, with its screw-thread l and screw-threaded bearing m, as and for the purpose set forth and described.

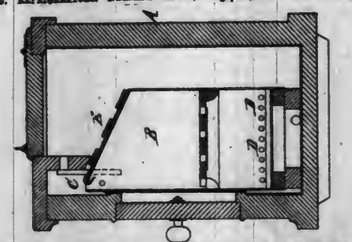
201,638. STEAM-BOILERS. Caleb C. Walworth, Boston, Mass. Filed Mar. 30, 1876.

Claim.—In a return-flue boiler, the combination, with the uptake-chamber C, of the diaphragm D, arranged above the tubes, and provided with the damper E, having the index d, all constructed and arranged substantially as shown and described.

201,639.

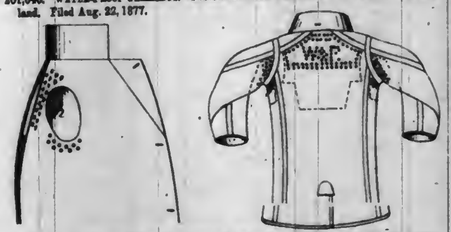


201,639. REFRIGERATORS. Nathaniel Wheeler, Bridgeport, Conn. Filed Dec. 26, 1877.



Claim.—The combination, in a refrigerator having practically no inlet for external air, of outer case A and inner independent removable chamber B, having between them, on all sides, a free space for ice and air, said chamber B being provided with air-escape C and air-inlets D D, constructed and operating together substantially as described, to promote and sustain a constant circulation of the air of the provision-chamber out at the top and in at the bottom thereof.

201,640. WATER-PROOF GARMENTS. Samuel L. Worth and Jos. H. Pentifex, London, England. Filed Aug. 22, 1877.



Claim.—1. A water-proof garment consisting of an inner and an outer fabric, provided with an air-passage extending through the outer fabric, thence a greater or less distance between the two, and finally emerging through the inner fabric, substantially as shown and described.

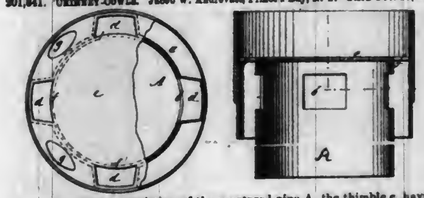
2. A water-proof garment consisting of two fabrics or thicknesses of material, provided with an air-passage lying between the two fabrics, and air-inlets passing from said space through the two fabrics, respectively, at points distant from each other.

3. A water-proof garment having two thicknesses or fabrics, provided with an air-passage extending through the outer fabric at a point covered and protected by a water-proof portion of the inner fabric, and thence through the inner fabric at a point covered and protected by a water-proof portion of the outer fabric.

4. A water-proof garment having an air-passage which emerges through the inner and the outer surfaces at different points, with the opening through each surface covered and protected by a water-proof portion of the other surface.

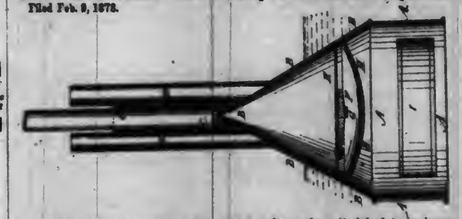
5. In a water-proof garment, the combination of an outer fabric of water-proof material, having its meshes left pervious to air at one or more points, an air-space between the two fabrics, and an inner water-proof fabric having perforations or a pervious portion to permit the passage of air inward from the central portion.

201,641. CHIMNEY-COWLS. Jacob W. Andrevati, Prince's Bay, N. Y. Filed Feb. 15, 1878.



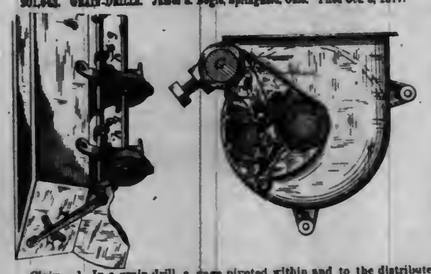
Claim.—A cowl consisting of the apertured pipe A, the thimble c, having the passages d, the apertured disk c, and thimble h, combined and arranged substantially as herein shown and described.

201,642. CLOTHES-POUNDERS. Wm. E. Armstrong and David Gleason, Ludington, Mich. Filed Feb. 9, 1878.



Claim.—The combination of the shell A B, made cylindrical in its lower part and conical in its upper part, the tubular handle-socket C, the air-tubes D, the horizontal partition E, provided with a rubber valve, F, the concave-convex partition H, having a hole formed through its middle part, and the braces I, with each other, substantially as herein shown and described.

201,643. GRAIN-DRILLS. James S. Bogle, Springfield, Ohio. Filed Oct. 8, 1877.



Claim.—1. In a grain-drill, a gage pivoted within and to the distributer-wheel casing, and operated by means of a slotted arm connecting it with a rock-shaft arranged without the periphery of the feed-wheel.

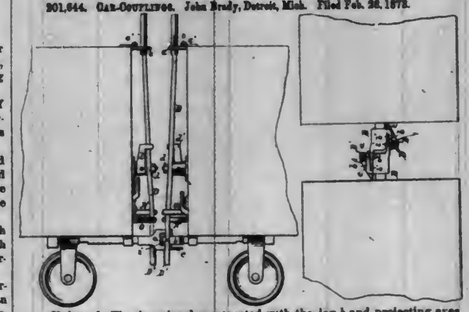
2. A gage pivoted within and to the casing of the distributer-wheel at a point above the driving-shaft bearing, and operated by means of a slotted arm and rock-shaft, substantially as described.

3. The pivoted gage provided with a tapering stud or pin, engaging with a slotted actuating-arm for obviating loss of motion between said parts, as described.

4. The combination of a series of pivoted gages, E, and adjustable actuating-arms g, arranged and operating substantially as described.

5. The rock-shaft G, provided with the adjustable arms for actuating the separately-pivoted gages, mounted in open bearings in the casing-plates, in combination with the removable hangers or half-boxes h, attached to the seed-box, substantially as and for the purpose set forth.

201,644. CAR-COUPLINGS. John Brady, Detroit, Mich. Filed Feb. 26, 1878.



Claim.—1. The draw-head constructed with the leg b and projecting eyes a, provided with spurs c, substantially as and for the purpose set forth.

2. In combination with a draw-head provided with the leg b, projecting eyes a, and spurs c, the vertical spring-lever D, bearing a horizontal coupling-pin, and provided with a rounded elongation, D', substantially as described.

3. Side levers N O, provided with holding-dogs, in combination with lever D, spring d', and draw-heads constructed as described, all arranged and operating substantially as set forth.

201,645. HORSE-HOES AND CULTIVATORS. Thomas J. Brown, Fairfield, Tex. Filed Jan. 18, 1878.

Brief.—In front is a circular frame, which rotates freely. It carries the tongue and a pair of scrapers and easter-wheels, the two latter made adjustable. At the rear of the carriage is a frame carrying plows, which is hinged at the rear and lifted at its front by levers. Both sets of plow-beams slide to or from each other.

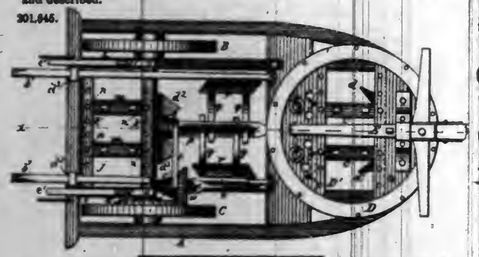
Claim.—1. The rotating circular plow-supporting frame D', for supporting the forward plows of the cultivator, in combination with the frame A, as herein shown and described.

2. The rotating frame D', with tongue E rigidly secured thereto, and pro

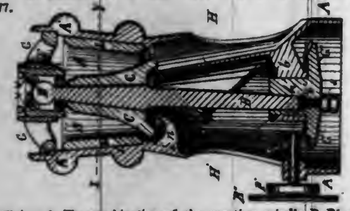
vided with sliding notched bars *e*, for receiving the plow-shanks, and having adjustable caster-wheels *i*, substantially as herein shown and described.

3. The pivoted frame *j*, having movable bars *m*, for supporting the rear plows, in combination with the main frame A, substantially as herein shown and described.

201,645.



201,646. ORE CRUSHERS AND GRINDERS. Charles M. Brown, Chicago, Ill. Filed June 28, 1877.



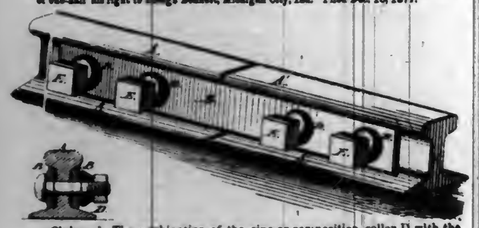
Claim.—1. The combination of the gyrating spindle B B' and conical breaking-head C C with the exterior breaking-surface L L, the sliding socket-bearing *s s*, the eccentric bearing at the bottom of the spindle B B', and the adjusting-screw *s*, substantially as described.

2. The breaking-head C, constructed with a concave base, as shown, combined with the inner edge of trough *n*, which said base overhangs to prevent the escape of fragments of ore into the driving-gears, substantially as described.

3. The circular concave die L, combined with the conical breaking-die C, mounted upon an eccentrically-gyrating spindle B, the upper end of which has a sliding bearing, *s*, for the spherical head B', and a vertically-adjustable step at the bottom.

4. In an ore-breaking machine, a shell or case frame, A A', inclosing at its upper part the concave breaker L, and provided with the oblique trough *n*, integral with the frame, the inner edge of which extends upward and within the concave base of the breaker C all around, and having a low-down discharge at one side, as shown.

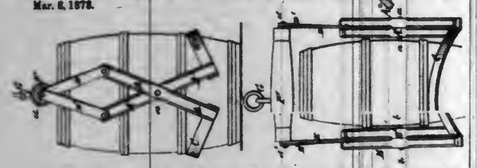
201,647. FASTENINGS FOR RAILROAD-RAIL JOINTS. Jas. M. Bucklin, Knightsville, assignor of one-half his right to Enoch Bennett, Michigan City, Ind. Filed Dec. 10, 1877.



Claim.—1. The combination of the zinc or composition collar D with the square-headed bolts E, fish-plates B, and rails A A', substantially as and for the purpose specified.

2. The zinc or composition collar D, in combination with transverse bolts constructed of a material capable of expanding proportionately with the said collar, substantially as and for the purpose specified.

201,648. BARREL-HOISTING CLAMPS. Worthington Bulkeley, Ballston Spa, N. Y. Filed Mar. 8, 1878.

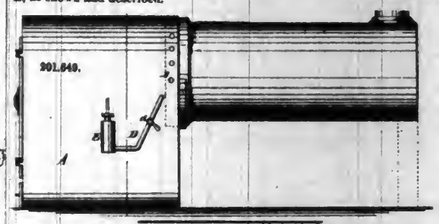


Claim.—The combination of the two pairs (A A' and B B') of pivoted levers, connected at their lower ends to the two curved or semicircular cross-bars C C', and connected at their upper ends to the opposite ends of the common cross-bar F by two pairs (D D' and E E') of connecting bars or links, substantially as and for the purpose set forth.

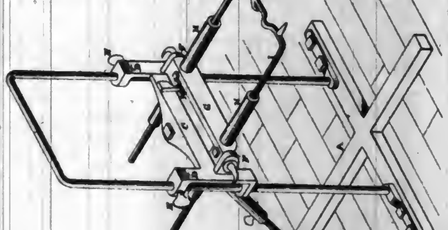
201,649. FEED-WATER HEATERS. Henry G. Cody, Belleville, Ark. Filed Jan. 23, 1878.

Claim.—The combination, with the fire-chamber A, of the coiled pipe C, connected at one end with the boiler at the water-line *c*, in front of tube-plate B, and connected at the other end by a valved tube, D, with a supply-pump, E, as shown and described.

201,649.

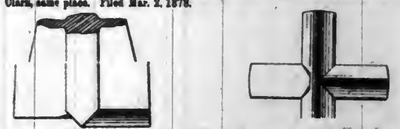


201,650. SCREW-PROPELLERS. John O. Ospers, New York, N. Y. Filed Aug. 18, 1877.



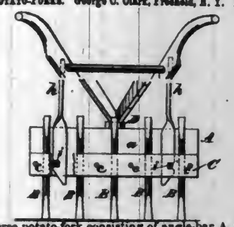
Claim.—A propeller the blades of which are formed of a section of a hollow semi-cone, substantially as herein shown and described.

201,651. ROCK-DRILLS. Charles H. Chandler, Foxcroft, Me., assignor to himself and Wm. W. Clark, same place. Filed Mar. 2, 1878.



Claim.—A rock-drill point having one of its wings squared, as and for the purpose herein shown and described.

201,652. HORSE POTATO-FORKS. George C. Clark, Freehold, N. Y. Filed Aug. 11, 1877.



Claim.—A horse potato-fork consisting of angle-bar A, teeth B, clamp-bar C, handles *f*, and supports A, all connected and relatively arranged substantially as shown and described.

201,653. SAD-HOLDERS. John S. Covert, Monroe D. Garner, and L. B. Walthall, Modesto, Cal. Filed Jan. 14, 1878.

Claim.—1. The axis G, having the tubes H, passing through the same, in combination with the sliding rods I, substantially as and for the purpose described.

2. The frame C and spring M attached thereto, in combination with the journaled bar G and holding device H I, as set forth.

3. The slotted base A, frame C, and bag-holding device G H I, in combination with the swinging telescopic support K J and set-screw L, substantially as described.

201,654. DEVICES FOR SIZING RINGS. Edward Davies, Brooklyn, N. Y. Filed Jan. 17, 1878.

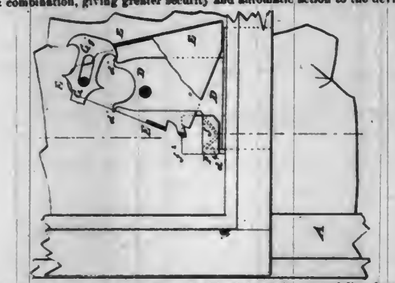
Brief.—To expand the ring, drive the punch down through it into the tapering hole, the ring resting on the smaller end of the hole. To contract the ring, drive it into the larger end of the die-hole by using the larger end of the punch.



Claim.—The jeweler's ring-adjuster consisting of the plate A, having conical holes, and the conical plugs E, having an annular groove at each end, said plugs being reversible, to operate in the holes, as shown and described.

201,655. FASTENERS FOR THE MEETING-RAILS OF SASHES. Wm. T. Dorsmus, New York, N. Y. Filed Jan. 11, 1878.

Brief.—As an improvement on Patents Nos. 189,085 and 189,197, dated, respectively, April 3, 1877, and January 15, 1878, the slotted catch-plate is pivoted in front of its central line, and is weighted at one lower corner and notched at the other in such manner as to coact with the stationary standard and with the catch-bar, there being also a standard with beveled and notched extension and a peculiar hooked and slotted cross-bar, all in a somewhat complex combination, giving greater security and automatic action to the devices.

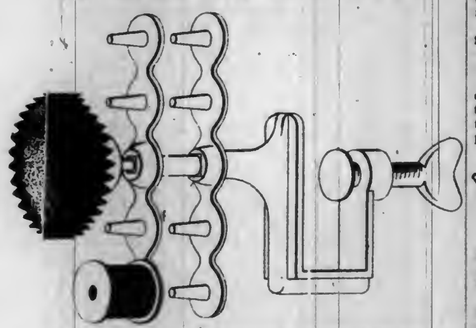


Claim.—1. The catch-plate E, pivoted in front of its central line, having its rear lower corner the heavier, and having its forward lower corner notched, in combination with the stationary standard D, and with the catch-bar F, substantially as herein shown and described.

2. The extension d^5 of the standard D, provided with the beveled V-shaped notch, in combination with the V-shaped lower side of the catch-bar F, and the beveled cross-head formed upon the end of the said catch-bar F, substantially as herein shown and described.

3. The combination of the pivoted slotted latch G, having a hook cross-head, g', formed upon one or both ends, with the pivoted catch-plate E, and with the hooks d^5, formed upon the concaved upper end of the standard D, substantially as herein shown and described.

201,656. THREAD-HOLDERS. John Dunn, Portland, Conn. Filed Jan. 14, 1878.



Claim.—The herein-described thread-holder, consisting of the arms carrying several spool-spindles, combined with a base and clamp for attachment to the table, substantially as described.

201,657. MITERING-MACHINES. Wm. E. Eastman, Worcester, Mass., assignor to Sarah H. Eastman, same place. Filed Feb. 8, 1878.

Brief.—The knife falls with a draw-cut and with a slight rotation on its pivotal support.

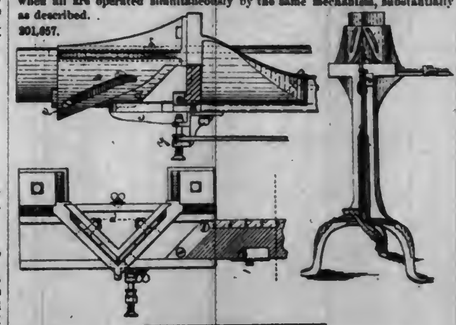
Claim.—1. A reciprocating knife having a guiding projection, in combination with a guide provided with a curved slot, substantially as described.

2. The triangular carrier and knives pivoted thereto, in combination with the guide having the curved slot, whereby a partial rotation, as well as a drawing cut, is given to the knives, substantially as described.

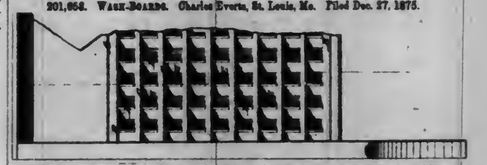
3. The combination of the triangular carrier, the pivoted knives, the slotted guides, and the front guide, all constructed and relatively arranged as shown and described.

4. The boring-tool *g*, in combination with reciprocating cutting-knives, when all are operated simultaneously by the same mechanism, substantially as described.

201,657.



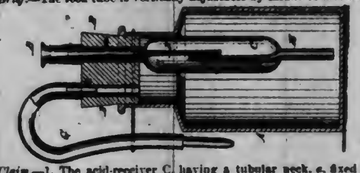
201,658. WASH-BOARDS. Charles Everts, St. Louis, Mo. Filed Dec. 27, 1875.



Claim.—A sheet-metal wash-board having transverse continuous ridges and intermediate longitudinal separated ridges, the lines of direction of said ridges being at right angles to each other, and between which ridges inclined rubbing-surfaces and soap-pockets are formed, substantially as shown and described.

201,659. INHALERS. Louisa E. Felton, Potsdam, N. Y. Filed Sept. 14, 1877.

Brief.—The feed-tube is vertically adjustable by means of a rubber band.

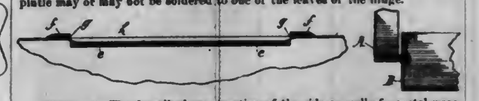


Claim.—1. The acid-receiver C, having a tubular neck, *a*, fixed into the stopple B, and a tube, E, extended above and below its lower end, in combination with the adjustable feed-funnel D and inhaling-tube G, substantially in the manner and for the purpose described.

2. In combination with the receiver C, having the neck *a* extending up through the cork B, the funnel D, made vertically adjustable by means of the rubber tube *b*, as shown and described.

201,660. HINGES FOR SHEET-METAL WARE, BOXES, AND OTHER ARTICLES. William W. Flint, Chicago, Ill., assignor to the Chicago Stamping Company, same place. Filed Feb. 26, 1878.

Brief.—May make the hinge of the two pieces of sheet metal and the wire, and solder it and affix it to the cover and body of a box, or may make each of the parts of the hinge in one piece, respectively, with the cover and body of the box. Makes one leaf of hinge by cutting and stamping with a die. The plate may or may not be soldered to one of the leaves of the hinge.



Claim.—1. The described construction of the side or wall of a metal-ware box and other articles, with the inward ridge or corrugation *c*, the two outward ridges or seats *f f* at the ends of such inward one, and the transverse breaks or cuts *g g*, substantially as and for the purpose shown and described.

2. The wall or side constructed, as described, with the inward ridge *c*, the inward depression *h* above the same, and the two outward ridges or seats *f f*, substantially as shown, and for the purposes set forth.

3. The wall or side constructed with the inward ridge or corrugation *c*, the depression *h*, the two outward ridges or seats *f f*, and the wire *e*, lodged in such corrugation and seats, and connecting the same to the female part A of the hinge, substantially as shown and described.

201,661. PISTONS FOR STEAM-ENGINES. Nathaniel Foust, Edenburg, Pa. Filed July 19, 1877.

Claim.—The combination of the hollow piston A B, provided on its under

side with ports *b*, and in its exterior with grooves *d*, tapering from the bottom toward both sides, and extending only partially around the piston, the packing-rings C, and interior valve G, all constructed substantially as and for the purposes herein set forth.

201,861.



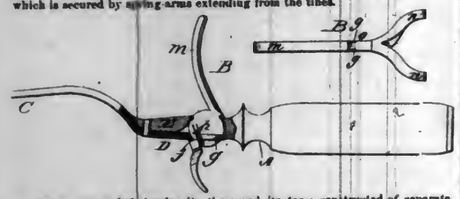
201,862. BOTTLE-STOPPER FASTENERS. Francis N. Frost, New Britain, Conn., assignor of one-half his right to George Swain, same place. Filed Feb. 7, 1878.



Claim.—The combination of the cover attached to the bottle by a fixed hinge, having a soft or elastic packing upon its under side, a cross-bar pivoted to said cover, with cam-shaped ends, provided with means for turning said bar, and a hook at each side of the bottle, with which the said cams will engage, substantially as described.

201,863. CARVING-FORK. Joseph W. Gardner, Shelburne Falls, Mass. Filed May 10, 1877.

Brief.—The tines and shank are of separate pieces and riveted together. A vertical mortise in the shank carries the hub of combined guard and rest, which is secured by spring-arms extending from the tines.



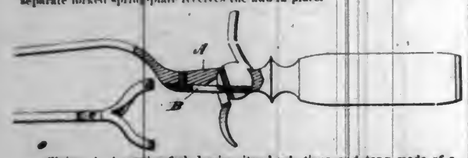
Claim.—1. A fork having its tines and its tang constructed of separate pieces and riveted together, substantially as set forth.

2. The combination of the tang A, provided with the socket *i*, the guard B, provided with the circular body *o*, and the tines C, provided with the slotted extension D, all constructed and arranged to operate substantially as shown and described.

3. The guard B, provided with the grooves *g* and *h*, in combination with the spring-arms *i*, arranged to operate as described, whereby the guard is held in place, as set forth.

201,864. CARVING-FORK. Joseph W. Gardner, Shelburne Falls, Mass. Filed Aug. 7, 1877.

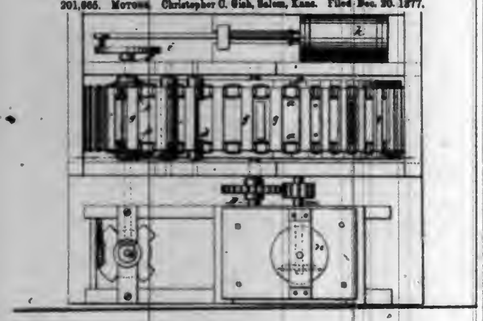
Brief.—The shank and tines are of one and the same piece, and in the former a vertical mortise carries the hub of a combined guard and rest. A separate forked spring-plate receives the hub in place.



Claim.—1. A carving-fork having its shank, tines, and tang made of a continuous piece, and provided with a vertical mortise, with the combined guard and rest, having the circular hub *c* and the separate plate or piece B, all constructed and arranged to operate substantially as described.

2. In combination with the shank A and spring-piece B, the eccentric-hub *c*, as and for the purpose set forth.

201,865. MOTOR. Christopher C. Gish, Salem, Kans. Filed Dec. 20, 1877.



Claim.—1. The combination of the heavily-weighted chains, the chain-wheel, and a motor for elevating the chains, substantially as herein shown and described.

2. The chain-wheel B, the chains *a*, carrying weights *g*, the chain-wheels *b b*, and a series of guide-rollers, in combination, substantially as and for the purpose herein shown and described.

201,866. METALLIC CANS. Chas. Green and Wm. Wilson, Jr., Wilmington, Del. Filed Feb. 23, 1878.

Brief.—Sheet-iron breaking-ring is held by frictional contact only; when driven down, breaks the soldered joint between can-flange and rim of cover.



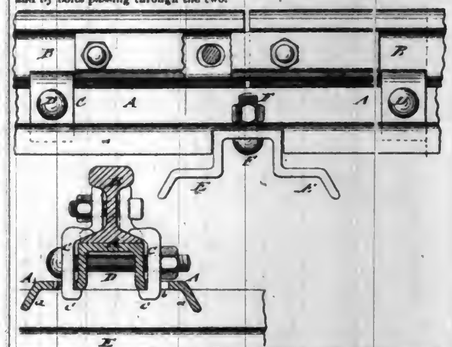
Claim.—1. The combination, with a can, of an outwardly-projecting annular flange, *b*, and corrugation *a*, and a cover resting upon and soldered to said flange, substantially as and for the purposes set forth.

2. In combination with a can-body, A, provided with an outwardly-projecting flange, *b*, and a cover resting upon and soldered to said flange, a driving-hoop surrounding said cover, substantially as and for the purposes set forth.

3. The circumferential corrugation *a*, in combination with the can-body A and the flange *b*, substantially as described.

201,867. RAILWAY-TRACKS. Hermann A. Haarmann, Osnabruck, Prussia. Filed Feb. 11, 1878.

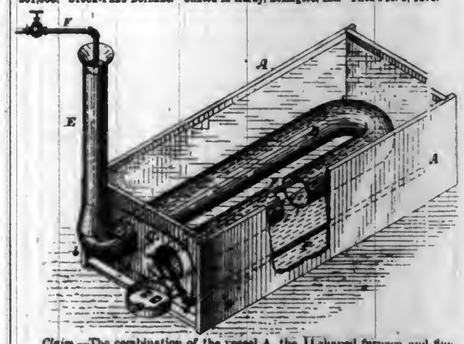
Brief.—The rails are secured upon longitudinal metallic sleepers, having box-shaped top, broad base, and sloping lower sides, by means of clamps, whose lower jaws enter apertures in the sleeper, and whose upper jaws bear upon the foot of the rail. The sleepers are supported by cross-ties of like form, the two being united by recesses in the lower sloping sides of sleeper, and by bolts passing through the two.



Claim.—1. The longitudinal metallic bearer A, having box-shaped top part, broad apertured base, and sloping inner sides, and the removable rail-clamps C and transverse bolts D, in combination with the rail B and cross-tie or sleeper E, as and for the purpose set forth.

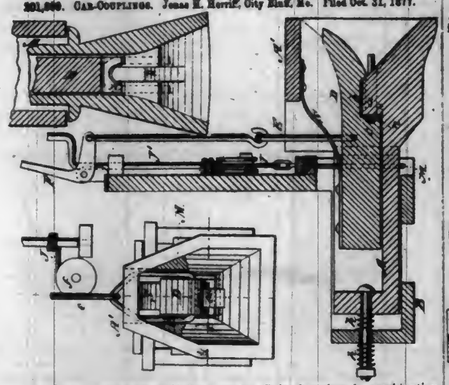
2. The hollow metallic cross-tie or sleeper E, in combination with the longitudinal rail-bearer A, seated thereon and secured thereto, as and for the purpose set forth.

201,868. STOCK-FEED BOILERS. Clinton R. Hardy, Lexington, Ind. Filed Feb. 9, 1878.



Claim.—The combination of the vessel A, the U-shaped furnace and flue B, arranged therein as shown, the chimney F, forming a prolongation upward of one extremity of the furnace-flue, and the pipe F, entering the chimney at the top, as shown, passing thence down the same entirely through the furnace and flue B, out at the mouth *a*, and back into the vessel A below the water-line, as and for the purposes set forth.

201,869. CAR-COUPLINGS. Jesse H. Herrif, City Bluff, Mo. Filed Oct. 31, 1877.

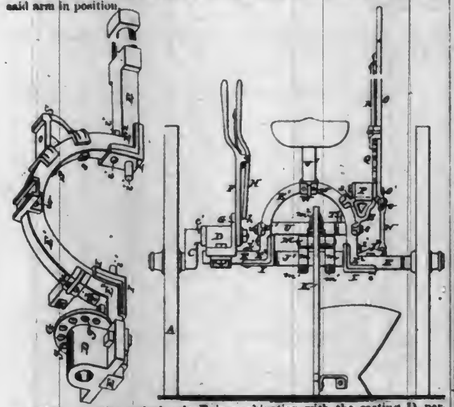


Claim.—1. A hook, D, held by a spring, S, in draw-bar, in combination with bail E, rod *e*, and bent lever F, as and for the purpose set forth.

2. The draw-bar A, suspended by a stirrup, M, chain J, passing over pulley, and rotary rod J', as and for the purpose specified.

201,870. SULKY-PLOWS. Horace L. Hewitt, Alton, Ill., assignor of one-half his right to Lewis M. Ramsey and Moses Ramsey, St. Louis, Mo. Filed Jan. 14, 1878.

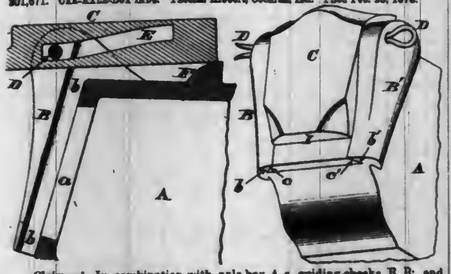
Brief.—Corner-brackets having pins for pivotal attachment of plow-beam frame, and constructed to embrace and strengthen the corners of the arched axle. Casting attached to axle, and formed with a socket, in which the crank-arm carrying the land-wheel has its bearing, the crank-arm having a lever secured thereto, and operating in connection with a perforated plate to hold said arm in position.



Claim.—1. The arched axle E, in combination with the casting D, perforated plate G, axle-crank C, lever F, and spring-catch lever H, all constructed and arranged to operate substantially as described.

2. The arched axle E, having knees E', in combination with the corner-brackets I, having pivot-pins *i'*, the said corner-brackets constructed to embrace and strengthen the axle at the knees E', and serve as a pivotal connection for the frame J, all substantially as and for the purpose set forth.

201,871. CAR-AXLE-BOX LIDS. Thomas Hibbert, Cochran, Ind. Filed Feb. 26, 1878.



Claim.—1. In combination with axle-box A *a*, guiding-cheeks, B B', and slotted sliding lid C E, the readily-detachable retaining device D, as herein described, and for the purpose set forth.

2. The combination of axle-box A *a*, undercut guiding-cheeks B *b* B' *b'*, slotted sliding cover C *o o'* E, and retaining device D, as herein described, and for the purpose set forth.

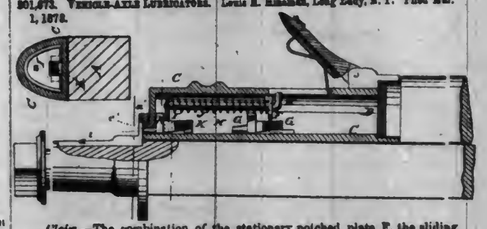
3. The combination of axle-box A *a*, downwardly-converging undercut guiding-cheeks B *b* B' *b'*, tapering and slotted sliding lid C *o o'* E, and retaining device D, as herein described, and for the purpose set forth.

201,872. PENCIL-HOLDERS. Samuel Hill, San Francisco, Cal. Filed Feb. 26, 1878.



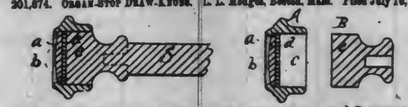
Claim.—A pencil-pocket consisting of the tube A, having the sides slotted or formed with openings at E, said sides being also elastic, so as to retain the pencil, substantially as herein described.

201,873. VEHICLE-AXLE LUBRICATORS. Louis H. Hinsman, Long Eddy, N. Y. Filed Mar. 1, 1878.



Claim.—The combination of the stationary notched plate F, the sliding block G, the rod H, the movable notched plate I, the coiled spring J, and the sliding block K, provided with the set-point *k'*, with each other and with the tube C, provided with the small discharge-tube *c'*, to adapt the device for use as an axle-oiler, substantially as herein shown and described.

201,874. ORGAN-STOP DRAW-KNOBS. L. L. Hodges, Boston, Mass. Filed July 16, 1877.

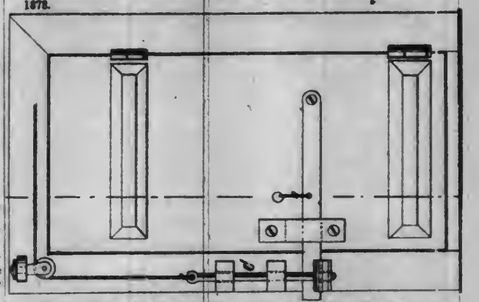


Claim.—1. An organ-stop knob made in two parts, A and B, part A being formed with a tablet-chamber, *c*, wherein the tablet, when inserted, is seated against a ledge surrounding the diminished opening *b*, and part B being formed with a cylindrical body, *e*, adapted to fit the chamber *c*, and thus complete the knob and retain the tablet therein, as and for the purposes specified.

2. The combination of shell A, plug B, and tablet *a* in a stop-knob, substantially as specified.

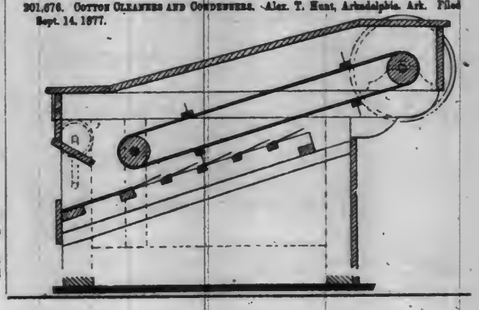
3. The combination of shell A, plug B, tablet *a*, and cushion *d*, substantially as and for the purposes specified.

201,875. FASTENINGS FOR LATCHES. Benj. Hollingsworth, Sigourney, Iowa. Filed Feb. 25, 1878.



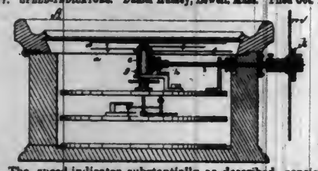
Claim.—The combination of a barn or other door, having the usual latch, and operating-string passing through a hole of the door to the outside of the same, with perforated catch and guide-blocks of the door-casing, and with a pendent bolt that is raised or lowered by a suitable cord-and-pulley mechanism, substantially as and for the purpose described.

201,876. COTTON CLEANERS AND CONDENSERS. Alex. T. Hunt, Arkadelphia, Ark. Filed Sept. 14, 1877.



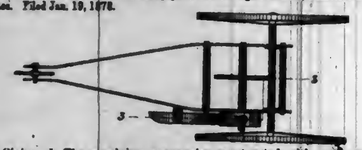
Claim.—In a cotton cleaner and condenser, the combination of an inclined screen, formed of a lower perforated section and upper sections with inclined parallel fingers, with an endless belt arranged parallel thereto, and having lateral combs or rakes, substantially in the manner described, and for the purpose specified.

201,677. SPEED-INDICATORS. Daniel Hussey, Lowell, Mass. Filed Oct. 16, 1877.



Claim.—The speed-indicator substantially as described, consisting of a clock or time-piece, A, an auxiliary hand, *f*, and mechanism for moving the latter relatively to one of the clock-hands, essentially in manner and for the purpose as explained, by means of an engine, water-wheel, or machine, such mechanism, as represented, consisting of the arbor *e*, gears *g h*, shaft *i*, ratchet-wheel *k*, pawl *l*, and disk *m*, all being arranged and applied as set forth.

201,678. TOYS. Edward S. Ives, Bridgeport, Conn., assignor to Ives, Blakeslee & Co., same place. Filed Jan. 19, 1878.



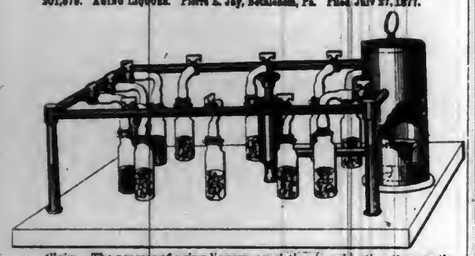
Claim.—1. The revolving cap-carrier constructed with arms or tappets and cap-receptacles, substantially as and for the purpose set forth.

2. The combination, substantially as hereinbefore set forth, of the supporting-frame, the revolving cap-carrier having tappets, and the spring-hammer.

3. The combination, substantially as hereinbefore set forth, of the supporting-frame, the revolving axle, the gearing, the cap-carrier, and the hammer.

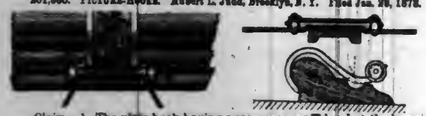
4. The hereinbefore-described toy, consisting of the elongated frame, the supporting-wheel, the axle, the gearing, the cap-carrier, and the spring-hammer.

201,679. AGING LIQUORS. Pierre E. Jay, Bethlehem, Pa. Filed July 27, 1877.



Claim.—The process of aging liquors, consisting in subjecting them to the action of wood shavings in a vacuum, substantially as and for the purpose described.

201,680. PICTURE-HOOKS. Hubert L. Judd, Brooklyn, N. Y. Filed Jan. 28, 1878.



Claim.—1. The plate-hook having a cross-piece or T-head at the lower end for retaining the cord, substantially as specified.

2. The combination, with the plate-hook and cross-piece, of the knobs at the ends of the cross-piece, substantially as set forth.

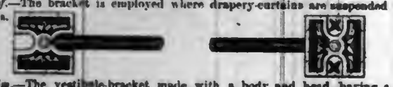
201,681. PICTURE-NAILS. Hubert L. Judd, Brooklyn, N. Y. Filed Feb. 14, 1878.



Claim.—The ornamental nail-head, made with a sheet-metal back, having the inclined incisions, forming lips *c c*, and the recessed portion between acting as a spring, substantially as set forth.

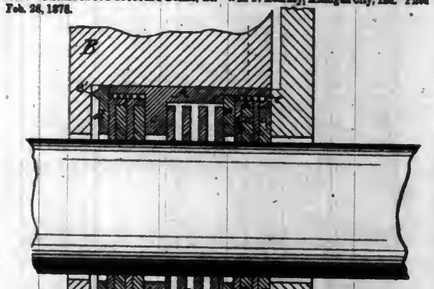
201,682. CURTAIN-BRACKETS. Hubert L. Judd, Brooklyn, N. Y. Filed Jan. 28, 1878.

Brief.—The bracket is employed where drapery-curtains are suspended from rods.



Claim.—The vestibule-bracket made with a body and head, having a socket at one or both edges of the head, in combination with the notched cap-plate, that may be turned to secure the rod within the socket, substantially as set forth.

201,683. PACKINGS FOR STUFFING-BOXES, &c. Wm. F. Kearney, Michigan City, Ind. Filed Feb. 26, 1878.



Claim.—1. The combination, in a packing, of series of two or more L-shaped segments, *b*, arranged with their flanges *i* toward the gland, segments *a* fitting within the segments *b*, and arranged to break joint with the latter, and an imperforate ring behind the rear segment, all substantially as specified.

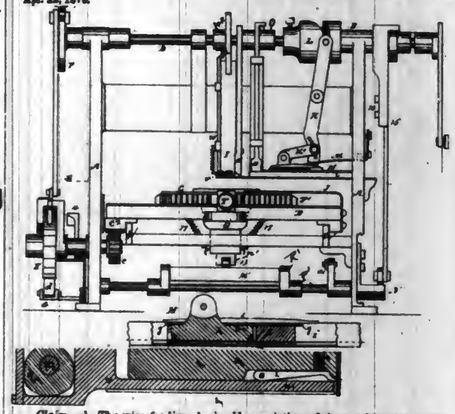
2. The combination of the segments *a b*, clamping-rings *c*, and shell A, adapted to the stuffing-box, and to be confined by, but separate from, the gland, as set forth.

3. The combination, with the shell and packing, of the ring *d*, having a sharp-edged rib, *e'*, as and for the purpose specified.

4. The combination of the shell and segments *a b* with the gland and cylinder-head, all constructed and arranged to admit of a slight radial movement of the rod and packings without contact with any fixed bearing-surface, as and for the purpose described.

5. The combination of the series of segments *a b*, spring *i*, and shell A, having an internal flange, *e*, and shoulder *e'*, substantially as and for the purpose specified.

201,684. MACHINES FOR MAKING WIRED TICKETS. Alonzo Kimball, New York, N. Y. Filed Apr. 22, 1878.



Claim.—1. The wire-feeding device H, consisting of the combination of the shuttle *f*, having the tongue *h* pivoted therein, the stop-pins *k* and *k'*, the box *i*, and the slotted plate *l*, as and for the purpose set forth.

2. In combination with the forming device I, the presser-rod *w* and pivoted lever *v*, as herein shown and described, for the purpose set forth.

3. The table-frame C', arranged to slide on the movable frame D, and provided with a graduated plate, 18, in combination with the ratchet-wheel E', spring-bar J, and handle T, the latter being provided with the spring 9, piston 7, and pawl 6, as and for the purpose set forth.

4. In combination with the table C, the rod *x'* and oscillating platform M', as and for the purpose set forth.

5. In combination with the oscillating platform M' and rock-shafts P' P', the adjustable rest N', and adjustable rod 15, as and for the purpose set forth.

6. The combination of the table C, frame D, ratchet-wheel E, pawls *b* and *d*, rack *c'* and pinion *c*, and cam F with the forming device I, as shown and described, for the purpose set forth.

7. In combination with the sliding frame D, provided with the adjustable plate 1, the lever 2, the lever 3, provided with a pin, *e'*, and the incline 4, substantially as described, to operate in connection with the pawls *b* and *d*, in the manner set forth.

8. In combination with the sliding frame D, provided with the adjustable plate 10, the lever 12, constructed as described, and the levers 2 and 3, as and for the purpose set forth.

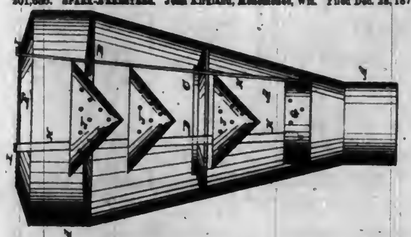
9. In combination with the table C, the pronged bars *y' y'*, pivoted to the table-frame C', and actuated by springs in the manner set forth, for the purpose of holding the block S, as described.

10. In combination with the tongue *r* of the forming device I, the slotted plate Q, provided with the projections *t t* and with the sliding piece *u*, the latter being made adjustable by a set-screw, *u'*, as and for the purpose set forth.

11. The knife N, formed in sections and made adjustable by set-screws *m' m''*, in combination with the stationary knife *n*, made adjustable by set-screws *o o'*, as and for the purposes set forth.

12. The block S, provided with mortises or perforations *y* at regular intervals, the said mortises being filled with cork or similar material, as and for the purpose set forth.

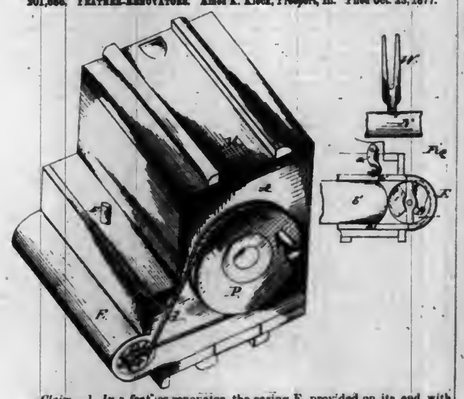
201,685. SPARK-ARRESTERS. John Kirtland, Menomonee, Wis. Filed Dec. 29, 1877.



Claim.—1. The combination, in smoke-stacks or chimneys, of perforated cones J and annular diaphragms B and C, with or without rims D, in a manner substantially as described, and for the purposes set forth.

2. Shell A, annular diaphragms B and C, rim D, top E, opening F, perforated cylinder G, rods H, ends I, and cones J, constructed, combined, and operating in a manner substantially as described, and for the purposes set forth.

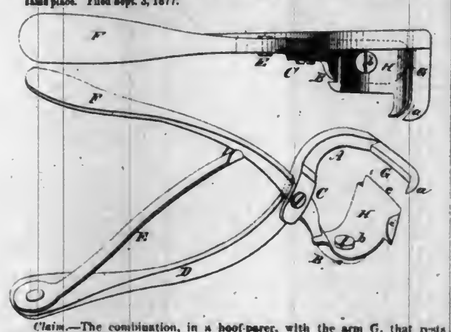
201,686. FEATHER-RENOVATORS. Amos K. Kleck, Freeport, Ill. Filed Oct. 23, 1877.



Claim.—1. In a feather-renovator, the casing E, provided on its end with the aperture *c'* and guides *a'*, in combination with the slide *b'*, fan D, and chamber *d'*, substantially as shown and described.

2. The casing E, provided on its end with the aperture *x'* and guides *a'*, in combination with the slide *b'*, fan D, apertures *b*, and bowl B, and agitating device T, substantially as specified.

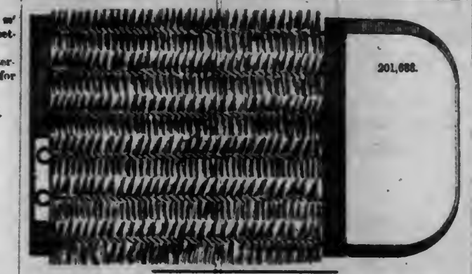
201,687. HOOF-PARERS. Jakob Künstler, Thomas Hill, Mo., assignor to William W. Vasse, same place. Filed Sept. 3, 1877.



Claim.—The combination, in a hoof-parer, with the arm G, that rests against the hoof, of a knife, H, concaved in the arc of a semicircle, and turned on the inner edge *c'* at an angle of about thirty degrees, as shown and described, so that in paring the hoof the chip is cut out clean at every stroke of the knife.

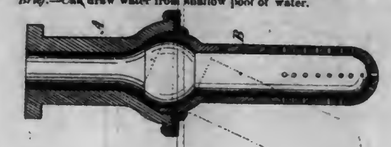
201,688. BRUSHES. Moritz Lainer, New York, N. Y. Filed Sept. 1, 1877.

Claim.—A series of brushes connected at the bent ends of twisted wires by a flexible material, B, as and for the purpose specified.



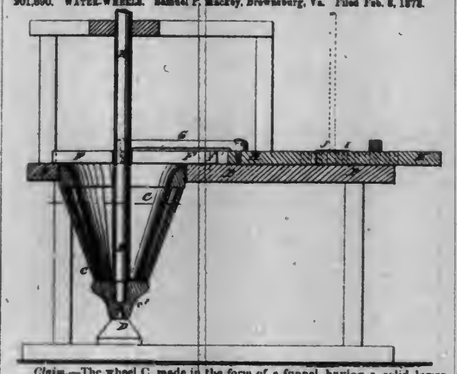
201,689. PUMP SUCTION-PIPES. Eric G. Leerus, Gold Hill, Nev. Filed Jan. 16, 1878.

Brief.—CAN draw water from shallow pool of water.



Claim.—The suction-pipe of a pump, connected with a nozzle-pipe, B, by securing the spherical end *a* of the nozzle loosely in a corresponding socket at the end of pipe A, as shown and described.

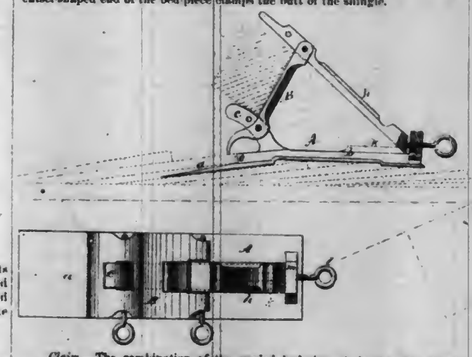
201,690. WATER-WHEELS. Samuel P. Mackey, Brownsburg, Va. Filed Feb. 8, 1878.



Claim.—The wheel C, made in the form of a funnel, having a solid lower end, *c'*, with a socket in its bottom, and provided with buckets *c'* in its inclined sides, extending through one-quarter, more or less, of its circumference, in combination with the pivot D, the vertical shaft E, and the floor H of the penstock, substantially as herein shown and described.

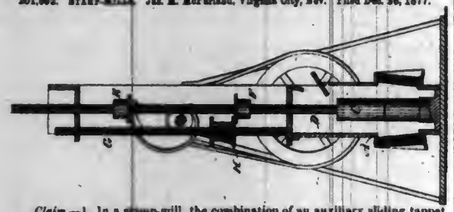
201,691. SHINGLING-BRACKETS. Thomas M. McClelland and Jas. A. Grant, Mount Pleasant, Iowa. Filed Dec. 26, 1877.

Brief.—A serrated arm pivoted to a bracket on an angular bed-piece is adjustable by means of a second pivoted arm and set-screw, and with the chisel-shaped end of the bed-piece clamps the butt of the shingle.



Claim.—The combination of the angled bed-piece A, having the chisel-shaped end *a*, the curved and serrated lever B, the bar *h*, and adjusting-screw *i*, substantially as shown and described.

201,692. STAMP-MILLS. Jas. M. McFarland, Virginia City, Nev. Filed Dec. 26, 1877.



Claim.—1. In a stamp-mill, the combination of an auxiliary sliding tappet or weight and a guide-rod for the same with the ordinary cam-shaft and the stamp-stem, as herein shown and described.

2. The combination, in a stamp-mill, of the guide-rod G, tappet H, and stamp-stem D, having fixed tappet F, as herein shown and described.

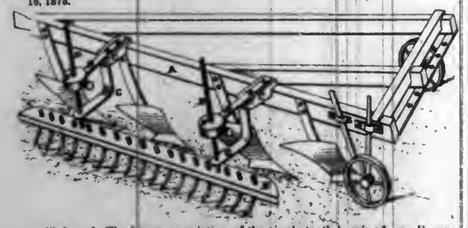
3. A corrugated metal screen for the mortars of stamp-mills, as herein specified.

201,693. INDEXES. John R. McKnight, Chicago, Ill. Filed Mar. 26, 1877.



Claim.—The index-leaves A, in combination with letter-tabs B, folded on an inclined line, whereby the ends of the tabs, when applied to the leaves, are caused to lap by each other, substantially as shown in the drawings, and for the purpose set forth.

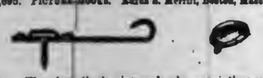
201,694. HARROW ATTACHMENTS FOR PLOWS. John M. McPike, St. Helena, Cal. Filed Feb. 18, 1878.



Claim.—1. The harrow consisting of the single-tooth bearing-beam E, supported from the plow-beam by means of the spring-arms B C and the vertical standards D, substantially as herein described.

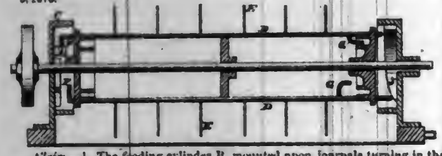
2. The single-beam harrow E, with its vertical standards D, guided and supported by the spring-arms B C, and provided with the adjusting collars and screws F, substantially as herein described.

201,695. PICTURE-HOOKS. Rufus S. Merrill, Boston, Mass. Filed Mar. 6, 1878.



Claim.—The described picture-hook, consisting of a plate or strip of wrought or cast metal, turned up at one end to form the hook proper, and having formed in its opposite end a nail or screw hole, provided with a movable cap or cover, substantially as set forth.

201,696. FEEDERS FOR TERRAPIN-MACHINES. Michael L. Mory, Chico, Cal. Filed Feb. 5, 1878.



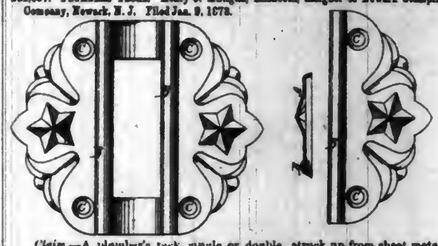
Claim.—1. The feeding-cylinder B, mounted upon journals turning in the end castings C, and provided with the shafts D, having picker arms or teeth E, said shafts being movable endwise, and combined with a locking device, so as to lock or free the shafts, substantially as herein described.

2. The shafts D, having the operating and locking arms F and G, in combination with the recessed cylinder-heads B', the lugs H, and cam I, by which the shafts are first turned and then moved endwise, so as to be locked in position, substantially as and for the purpose herein described.

3. The longitudinally moving and rotating picker-shafts D, with the turning and locking arms F and G, in combination with the shaft and a releasing device, so as to unlock it, substantially as herein described.

4. The cylinder B, having the longitudinally-moving and rotating shafts D, armed with teeth E, said shafts being adapted, by means substantially as described, to be locked with the teeth projecting or unlocked, so that the shafts may rotate and the teeth may lie close to the cylinder during a part of its revolution, substantially as herein described.

201,697. PLUMBERS' TACKS. Henry C. Milligan, Elizabeth, assignor to Newark Stamping Company, Newark, N. J. Filed Jan. 9, 1878.



Claim.—A plumber's tack, single or double, struck up from sheet metal, so as to embody an embossed face and hollow back, and with embedding edges, as an improved article of manufacture.

201,698. DRIVING CHAINS AND PULLEYS. John D. Outcot, Springfield, Ohio. Filed Feb. 18, 1878.

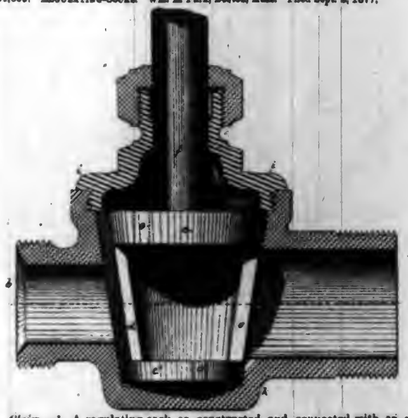


Claim.—1. The links E, provided with the squared ends, in combination with the intermediate connecting-links or double hooks C, having the oblique opening in one of its side bars, substantially as and for the purpose described.

2. The sprocket-wheel A, having its teeth or sprockets arranged on opposite sides of a central groove, with their working faces at right angles to the groove, and parallel with the axis of the wheel, whereby wedging action on the links of the driving-chain is avoided, as described.

3. The combination of the sprocket-wheel, having the working-faces of its teeth at right angles to the central groove, and parallel with the axis of the wheel, and the chain having the rectangular actuating-links E, as described, whereby the strain of the teeth upon the link is brought directly into line with the parallel side bars of said link, as described.

201,699. REGULATING-COCKS. Wm. R. Park, Boston, Mass. Filed Sept. 3, 1877.



Claim.—1. A regulating-cock so constructed and connected with an enlarged supply-pipe and a diminished discharge-pipe that the water in the cock will completely cover all the joints and exposed portions of the plug, so as to prevent the admission of air to the discharge-pipe, substantially as set forth.

2. A regulating-cock consisting of a plug having its upper and lower heads *a a'* perforated, and provided with the gate *d* and post or support *e*, and fitted within the enlargement of a water-pipe, substantially as and for the purpose set forth.

3. The plug *a a'*, constructed as described, in combination with the enlarged supply-pipe *a* and diminished discharge-pipe *b*, and the spaces or chambers above and below the plug, substantially as and for the purpose specified.

201,700. CAR-STARTERS. James Pritchard, San Francisco, Cal. Filed Sept. 27, 1877.

Claim.—1. The axle B, with its ratchet-wheel D, in combination with the dog E, pivoted lever F, draw-bar G, draw-lever R, bar S, pawl W, and whiffletree.

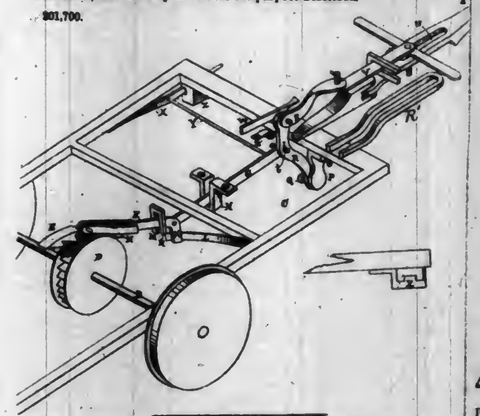
2. The dog or pawl E, having the enlargement H on its rear end, and pivoted at its middle to the end of the lever F said lever F having the arm or projection K, in combination with the spring L and draw-bar G, substantially as and for the purpose described.

3. The upright lever R, arranged to pass through a slot in the platform, and having its lower end secured to a bearing, Q, below the platform, while its upper end is connected by a bar, S, with the whiffletree, in combination with the draw-bar G, pivoted lever F, and dog or pawl E, substantially as and for the purpose described.

4. The upright lever R, provided with a detachable connection at its lower end and hole I at or near its middle, in combination with the slide-lever X and a spring-rod, Y, substantially as and for the purpose described.

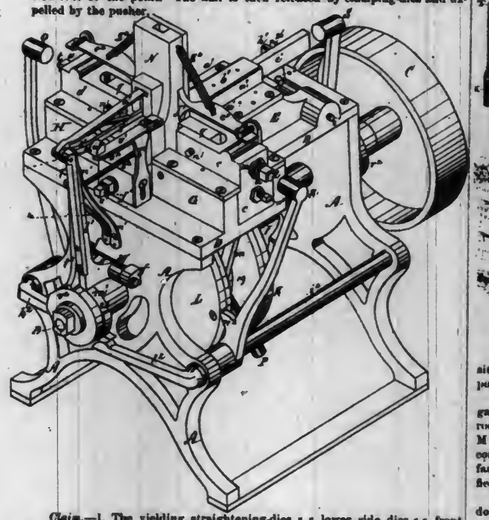
5. The pole T, provided with the slot U at its rear end, in combination with the whiffletree-plate V, bar S, lever R, draw-bar G, and pawl-and-ratchet mechanism, substantially as and for the purpose described.

201,700.



201,701. MACHINES FOR POINTING AND FINISHING HORSESHOE-NAILS. Silas B. Putnam, Boston, Mass., assignor to the Putnam Nail Company, same place. Filed Nov. 1, 1877.

Brief.—The blanks are dropped into the hopper one at a time, head uppermost. The blank rests upon a movable stop, which, receding at the proper time, allows it to drop upon a lower stop, which brings it in position to be operated upon. At the same time that the first stop resumes its place in the hopper, an arm advances and, by a vertical movement imparted thereto, forces the blank down, if necessary, and prevents its rebound until clamped against the stationary die and on each side of its head. The upper and lower side dies advance in turn, and shape and condense the edges of the blade and point, and finally the front die advances and strikes, forming the front beveled side of the point. The nail is then released by clamping-dies and expelled by the pusher.



Claim.—1. The yielding straightening-dies *s s*, lower side dies *a a*, front die *b*, and stationary die *d'*, in combination with the conductor N, and one or more clamping devices for holding the nail while being acted upon by the dies, substantially as and for the purpose set forth.

2. The griping-levers f^2, with their spring-arms e^2 arranged upon opposite sides of the conductor N, in combination with the dies *s s*, *a a*, *b*, and d', operating substantially in the manner and for the purpose described.

3. The finger s', having both a vertical and horizontal travel, in combination with the conductor N and stop *p*, operating substantially as described, for the purpose specified.

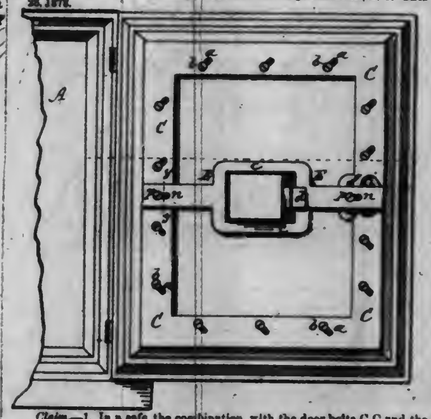
4. The combination of the finger s' with the yielding spring-lever l', substantially as and for the purpose described.

5. The combination of the lever F', finger s', pin t', spring v', with its projection w', having a lip, 29, and the springs u^1 and e^2, all constructed to operate substantially as described.

6. The straightening-dies *s s*, with their slides *q*, arranged to move horizontally in the blocks *c d*, in combination with the independent pins *t*, springs *v*, and hollow screws *u*, for adjusting the pressure of the springs, substantially as described.

7. The horizontally-sliding blocks *c d*, the cams K L, and levers *m p*, in combination with the dies *s s* and *a a*, as set forth.

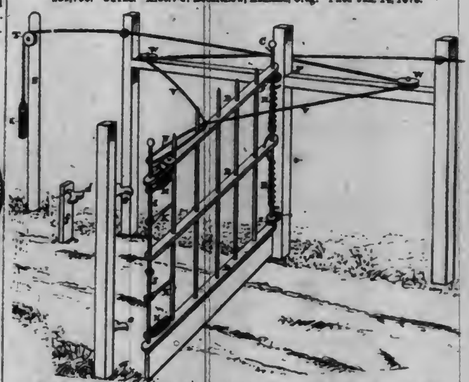
201,702. SAFE BOLT-WORKS. Joseph Rippin and Wm. Troyer, Rochester, N. Y. Filed Feb. 26, 1878.



Claim.—1. In a safe, the combination, with the door-bolts C C and the tie-plate E, of the slots *g g* in the ends of the door-bolts, with the lugs *h h* of the tie-plate resting therein, and the cam G, connecting with the tie-plate by the socket *k* and pin *l*, the whole arranged to operate as and for the purpose specified.

2. The combination, with the door-bolts C C, divided in the center, and arranged to rise and fall, and with the tie-plate E, for operating said door-bolts, the cam G, provided with the square end *m*, arranged to strike into and close the open space between the ends of the door-bolts when expanded, as shown and described, and for the purpose specified.

201,703. GATES. Albert G. Rockfellow, Ashland, Oreg. Filed Jan. 14, 1878.



Claim.—1. The collars D D', in combination with the pintle C and oppositely-coiled springs B H, having their ends secured as described, for the purposes specified.

2. The latch-rods I J, linked together at or near the mid-height of the gate, and having the fulcrums or bearings K at or near the middle of each rod, with the link-shaped slotted eyebolts Y and the pressure or latch springs M N coiled around the link-shaped eye near the opposite ends of the rods, in combination with the catches O O and the hinged lock R, making two perfect fastenings, all combined and arranged to operate substantially as above specified, and also the hinge-shaped lock R, for the purpose set forth.

3. An adjustable catch for latches, consisting of the screw-bolt Z and double-inclined catch O, substantially as and for the purpose described.

4. The catch-head O, provided with the notch P and secondary notches or offsets Q, substantially as and for the purpose described.

5. In combination with the above-described gate-latch, the endless cord U and draw-rope V, which is arranged to pass over pulleys W, thence to and over pulleys T on the upper end of posts S, distant from the gate, substantially as and for the purpose described.

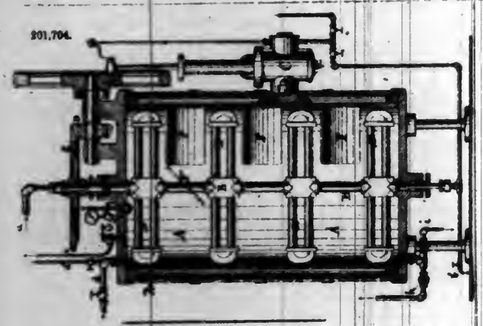
201,704. APPARATUS FOR OBTAINING GLYCERINE FROM FATS. Fredk. Schlieb, New York, N. Y., assignor to himself and George Pantzaches, Hoboken, N. J. Filed Feb. 11, 1878.

Brief.—A vertical cylindrical jacketed vessel, inclosed in wood, has a revolving hollow shaft bearing horizontal hollow stirrers, coupled at the ends, to form a channel for the steam. The escaping steam is conducted to a cylinder, C, where it exerts its power in driving the gearing which actuates the revolving stirrers.

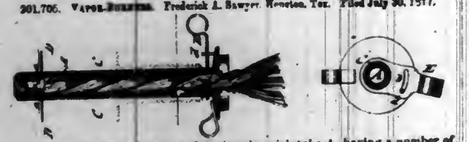
Claim.—1. The combination, with a vertical jacketed cylinder having inclined plates F, of the vertical hollow shaft B, the horizontal tubular stirrers B', and the steam-pipes *a b*, all arranged substantially as shown and described.

2. The combination, with vessel A, having hollow shaft B, with exit-pipe *b*, of the steam-cylinder C, connected with said pipe and hollow shaft by intermediate mechanism, substantially as shown and described.

201,704.

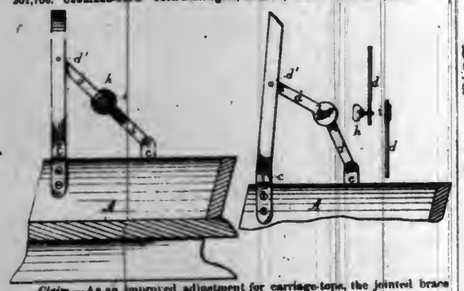


201,705. VAPOR-BURNER. Frederick A. Sawyer, Newton, Tex. Filed July 30, 1877.



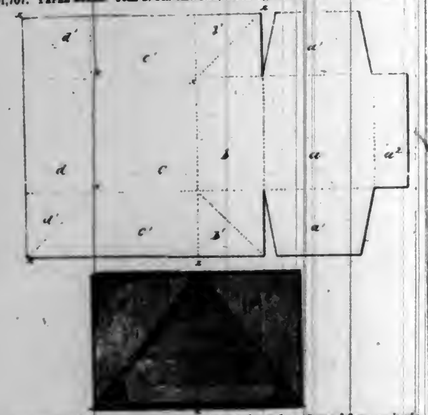
Claim.—The combination of the interior wick-tube A, having a number of exit holes or slots, with the outer tube C, having a number of jet-holes registering therewith, a disk-shaped flange, D, below the same, and a fixed lever-arm, E, and suitable stop devices, for setting the outer tube into open or closed position, substantially as specified.

201,706. CARRIAGE-TOPS. Theo. Scattergood, Mankato, Minn. Filed Mar. 4, 1878.



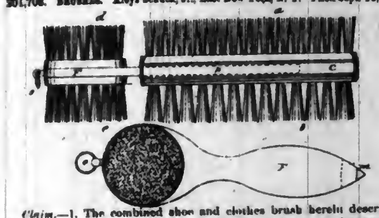
Claim.—As an improved adjustment for carriage-tops, the jointed brace *d*, pivoted to the bow and to irons secured to the seat, one part being provided at the joint with a circular-shaped face, *f*, having serrations *i*, and the other part with a thumb-screw, *k*, to engage with the serrations, as and for the purpose specified.

201,707. PAPER BOXES. John G. Schermerhorn, Mossmagten, Ill. Filed Feb. 6, 1878.



Claim.—The herein-described paper knock-down box, formed from a single blank of paper, card-board, or other similar substance, cut as shown, with its sides *a b c d* folded and secured together by the strip a^3, the ends *b'* *d'* creased and folded on the diagonal lines *x x*, and the ends *c'* folded over the diagonal folds, between which (said folds and the ends *c'*) the single or end flaps a^1 are tucked to close the box, substantially as specified.

201,708. BRUSHES. Aloys Schrack, Jr., East New York, N. Y. Filed Sept. 10, 1877.



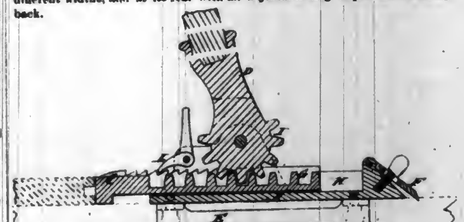
Claim.—1. The combined shoe and clothes brush herein described, consisting of the polishing-brush *a* and clothes-brush *b*, arranged upon the back *c*, provided with a slot, *p*, as and for the purpose set forth.

2. The brushes *d* and *e*, arranged upon the handle F, as shown, the latter being provided with a scraper, *w*, and fitting into the slot *p*, as set forth.

3. As an improved article of manufacture, a combined shoe and clothes brush, having a polishing-brush, *a*, a clothes-brush, *b*, a mud-brush, *d*, a brush, *e*, for applying blacking, and a scraper, *m*, constructed and arranged, in relation to the handle F and slot *p* in the back *c*, as and for the purposes herein set forth.

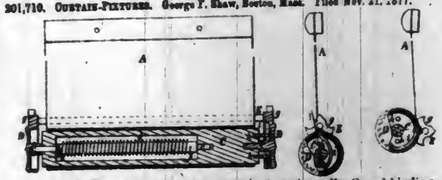
201,709. FLOORING-CLAMPS. John Schofield, Cheyenne City, Wyo. Filed Mar. 13, 1878.

Brief.—A sliding presser provided with a toothed shank, and operated by a toothed segmental lever, is mounted on a base-plate, provided upon its under side with two adjustable cleats, for fitting against the sides of joints of different widths, and at its rear with an adjustable dog to prevent it sliding back.



Claim.—The combination of the base-plate having cleats E, dog F, groove H, and detent L, the clamps C, having toothed shank G and ratchet K, and the lever D, having toothed head I, all constructed and arranged as and for the purpose specified.

201,710. CURTAIN-FIXTURES. George F. Shaw, Boston, Mass. Filed Nov. 21, 1877.



Claim.—1. The combination of the curtain A, spring-roller C, and binding-rod E, substantially as and for the purpose hereinbefore set forth.

2. The combination of the spring-roller C, attached to the lower end of the curtain, to move up and down as the curtain is rolled or unrolled, with the rod or binder E, stops or pins *h*, and hook or latch *i*, substantially as hereinbefore described.

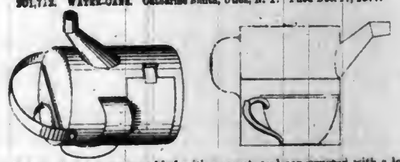
3. The combination of the curtain A, roller C, rod or binder E, and disks or connecting-pieces D, which may be rotated or swung, substantially as and for the purpose hereinbefore set forth.

201,711. SHOVELS. Isaac Shoemaker, Williamstown Township, assignor of one-half his right to Wm. M. Johnson, Tredyffrin, Chester County, Pa. Filed Feb. 16, 1878.



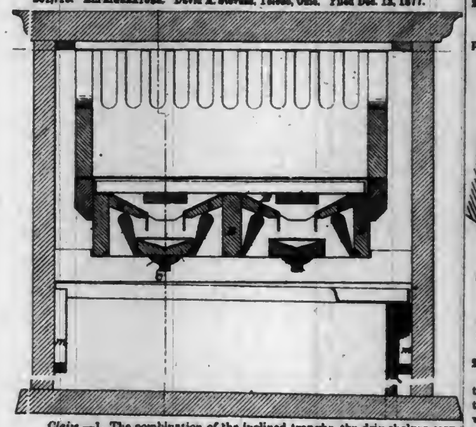
Claim.—A shovel having a blade or scoop provided with a knob or rounded edge, A, on its under side, constructed substantially as described, and a rib, B, extending therefrom to the edge next the handle.

201,712. WATER-JARS. Catharine Smith, Utica, N. Y. Filed Dec. 17, 1877.



Claim.—A water-can provided with a spout, and constructed with a lower receptacle having a door connected therewith, substantially as set forth.

201,713. REFRIGERATORS. David A. Stevens, Toledo, Ohio. Filed Dec. 13, 1877.

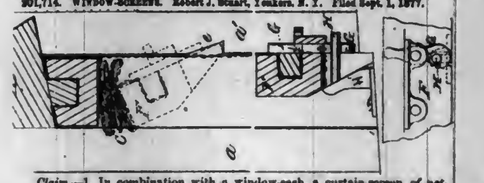


Claim.—1. The combination of the inclined troughs, the drip-shelves serving to cover and protect the joists of the ice-floor main frame, and the valves or pivoted wings between the shelves and troughs, all arranged, as described, between the joists, and within the space occupied by the main frame, whereby space is economized and compactness of structure secured, as set forth.

2. The combination of the ice-floor rack, provided with cross-pieces over the troughs, with the drip shelves and troughs, whereby the spattering of the drip is prevented, substantially as described.

3. The combination of the ice-cage, the ice-floor rack with its cross-pieces, the drip shelves and troughs, and the conduit and exit pipes, whereby the drip is prevented from contact with the frame-work and walls, substantially as described.

201,714. WINDOW-SCREENS. Robert J. Stuart, Yonkers, N. Y. Filed Sept. 1, 1877.



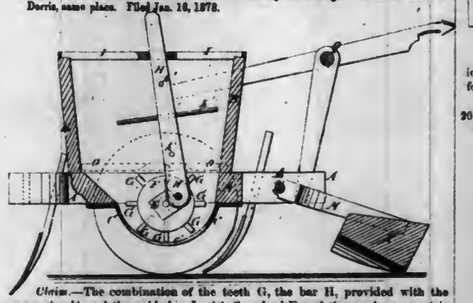
Claim.—1. In combination with a window-sash, a curtain-screen, of netting, gauze, or other suitable material, of the width of the window, attached to the lower bar of the upper or outer sash, and provided at its lower edge with a bar, F, and latch G, for keeping it (the curtain) properly extended over the space to be covered by the same, constructed and operating substantially in the manner described and specified.

2. In combination with the window-sash, a curtain-screen, of netting, gauze, or other suitable material, of the width of the window, attached to the rail of the sash by one edge, and having at the opposite edge a bar, F, extending across the window and guided between the beading of the window-frame, constructed and operating substantially in the manner described and specified.

3. The combination, with the netting or gauze screen B and bar F, of the latch G and pin H, standard H', and stop-bead *a*, constructed and operating substantially in the manner described and specified.

4. The combination, with the beading-strips *a a'*, one of which, *a'*, is notched, as described, of the bar F, of a thickness less than the space between the beading-strips, whereby, when its lower edge is supported by the shoulder of the notch, its upper edge may incline and rest against the other bead, constructed and operating substantially in the manner described and specified.

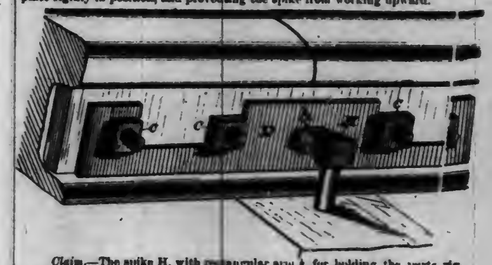
201,715. SEED-PLANTERS. Thos. B. Swan, Forest City, Ark., assignor to himself and O. E. Derris, same place. Filed Jan. 16, 1878.



Claim.—The combination of the teeth G, the bar H, provided with the cross-pins *h'*, and the guide-bar I, with the wheel F, and the crank or eccentric upon the axle E, and with the frame A, the hopper B, and the slotted semi-tubular bottom C, substantially as herein shown and described.

201,716. NUT-LOCKS. Peleg Swan, Litchfield, and Benj. E. Biggs, Homer, Mich. Filed Nov. 20, 1877.

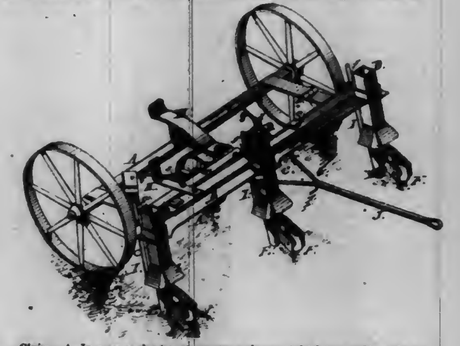
Brief.—The arm of the spike serves the double purpose of holding the plate rigidly in position, and preventing the spike from working upward.



Claim.—The spike H, with rectangular arm *h*, for holding the parts rigidly in position, and plate D, with rectangular aperture for securing the nuts G, substantially as shown, and for the purpose described.

201,717. CORN-PLANTERS. Linnens V. Swisher, Maple's Mill, Ill. Filed Sept. 20, 1877.

Brief.—The seed-tubes have each an independent vertical movement through guides, and are provided with rods secured in slotted pieces attached to their rear sides. These rods pass through slots in the pivoted seed-slides, which work in enlarged portions of the tubes that form the hoppers. Motion is given to the rods and slides by a transverse bar, to which they are attached.



Claim.—1. In a corn-planter, the rectangular upright hoppers D, each provided with leg *f* and rod I, and having an enlarged portion, *b*, provided with seed-opening *c*, slide *d*, having openings *c' c'*, and spout E, provided with wheel F, in combination with the sliding bar G, moving in guides *e* on beam B, and lever H, substantially as and for the purpose specified.

2. The combination of the upright sliding hoppers D, constructed as described, with the beam B, pivoted to the frame A, substantially as and for the purpose specified.

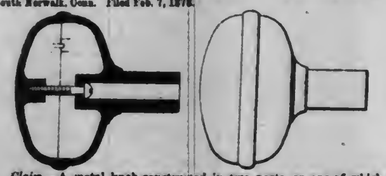
3. The vertically-sliding hoppers D, each having an enlarged part, *b*, provided with seed-opening *c*, slide *d*, having openings *c' c'*, and spout E, provided with wheel F, the several parts being adapted for operation substantially as and for the purpose specified.

201,718. TYPE-HOLDERS. Lewis P. Taylor, South Orange, N. J., assignor to Jessie C. Taylor and Ira C. Kilburn, same place. Filed Jan. 23, 1878.



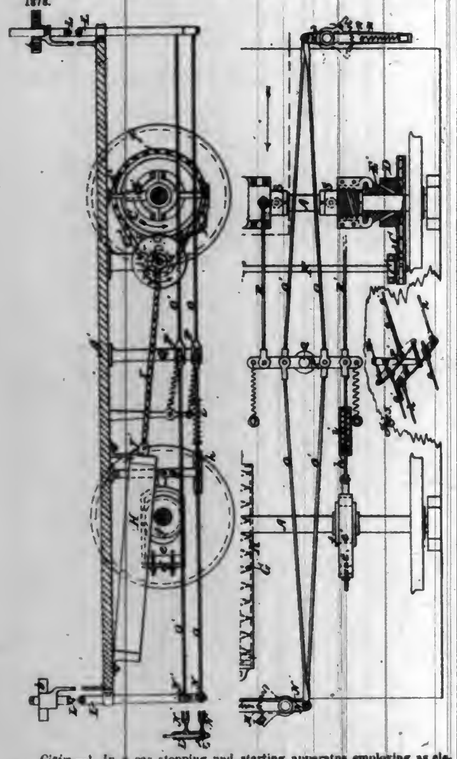
Claim.—The combination, with slotted divided box A^1 A^2, having followers B, of the spring-retracted lifter C *c*, arranged as shown and described, for the purpose specified.

201,719. DOOR-KNOBS. Thomas Taylor, Norwalk, assignor to the Norwalk Lock Company, South Norwalk, Conn. Filed Feb. 7, 1878.



Claim.—A metal knob constructed in two parts, on one of which is the neck containing the spindle-seat, the said two parts secured together through the neck from the inside, substantially as described.

201,720. CAR BRAKES AND STARTERS. William C. Thaxtwall, Boston, Mass. Filed Feb. 2, 1878.



Claim.—1. In a car stopping and starting apparatus employing as elements a spur-wheel, B, and a chain-wheel, C, both adapted to revolve loosely on an axle of the car, a secondary shaft, F, connected, as described, to the wheels B C, and a spring, G, connected, as described, to the secondary shaft, the combination, with said elements, of the independent clutches E E', arranged on the car axle, and mechanism, substantially as described, for operating and holding said clutches separately and independently, whereby one of the loose wheels B C is first locked to the rotating car-axle, and then held to retain the spring G in the compressed condition induced by the locking of said wheel until the other loose wheel is locked to the axle to impart thereto the recoiling power of the spring, substantially as described.

3. In a car-stopping apparatus, the combination of the spur-wheel B and chain-wheel C, both adapted to revolve loosely on an axle of the car, and the secondary shaft F, connected, as described, to the wheels B C, with the independent clutches E E', arranged on the car axle, and mechanism, substantially as described, for operating and holding said clutches simultaneously, whereby the car-axle is suddenly locked and prevented from rotating, substantially as described, for the purpose specified.

3. In a car brake or stopping apparatus, the combination of the axles A A, the wheels B C, loose upon one axle, the mechanism for locking the wheels B C to the axle, the secondary shaft F, and the supplementary brake *e*, all arranged and operating as set forth.

4. In a car stopping and starting apparatus, the combination of the axles A A, the loose wheels B C, mechanism for locking the wheels B C, the secondary shaft F, the spring G, and the supplementary brake *e*, all arranged and operating as set forth.

5. The clutch-operating mechanism, consisting of the crank-shafts L L', provided with locking devices, substantially as described, and the intermediate mechanism, whereby the crank-shafts are connected to the clutches E E', substantially as set forth.

6. The combination of a sliding clutch, a sleeve, S, supporting clutch-operating devices, substantially as described, located on the shaft or axle which carries the clutch, and devices, substantially as described, whereby the sleeve S is connected to a body or support adjacent to the shaft or axle in such manner as to be prevented from rotating or moving endwise without being affected by the independent vertical movement of said body or support, as set forth.

7. The sleeve S, having the tubular arm S', combined with the bolt or rod S'', entering said tubular arm, and adapted to move up and down therein, substantially as and for the purpose specified.

201,721. SHELF STEPS OR BRACKETS. Jos. C. Thomas, Milroy, Ind. Filed Sept. 14, 1877.

Claim.—1. The combination, with the mortised upright or other support of shelves, &c., of a sliding and turning step or bracket that may be drawn out for use as a step or support, or pushed back out of the way, substantially as and for the purpose set forth.

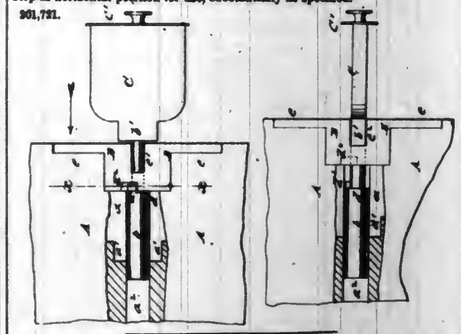
2. The combination of a mortised upright, A, having slotted and recessed front casting B, with a sliding and turning step, O, having guide-shaft *b*, substantially as and for the purpose specified.

3. The upright A, having a mortise, *a*, extension-recess *a'*, and shaft-socket *a''*, in combination with the sliding and guided shelf C, having angular rear part *b'* and shaft *b*, substantially as described.

4. The combination of mortised upright A and casting B, having center slot and side recesses *d''*, with the shelf C, having shaft *b*, with shoulder *d* and stop *d'*, substantially as set forth.

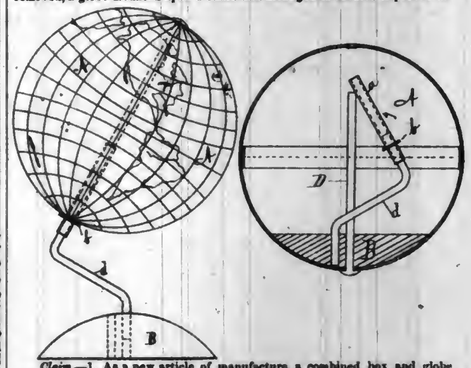
5. The combination of the mortised upright A and casting B, having lateral recess, with shelf C, having rear part *b'* and shaft *b*, to support the step in horizontal position for use, substantially as specified.

201,721.



201,722. COMBINED BOX AND GLOBE. William H. Topham, Springfield, Mass. Filed Dec. 17, 1877.

Brief.—The box is adapted for a collar-box, the contents of which being removed, a globe mounted upon a stand and arranged to revolve is provided.

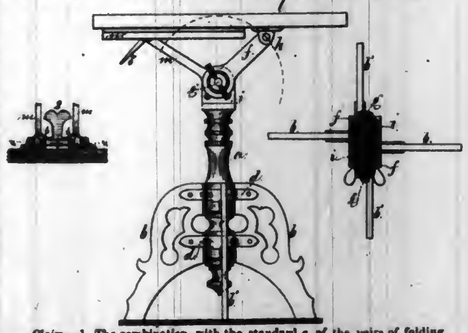


Claim.—1. As a new article of manufacture, a combined box and globe composed of the globe A, divided transversely to form a body and a cover of a box, in combination with the foot B, angular support *d*, joint-tube *e*, and center shaft D, substantially as and for the purpose set forth.

2. A combined box and globe in which the center shaft D is adjustable to varying lengths, substantially as and for the purpose set forth.

3. The globe A, divided transversely to form the body and the cover of a box, and arranged as a receptacle both for its mountings and for articles of merchandise, combined substantially as set forth.

201,723. FOLDING TABLES. John E. Wakefield, Worcester, Mass. Filed Feb. 21, 1878.



Claim.—1. The combination, with the standard *a*, of the pairs of folding legs *b b'* and the rings *d*, for uniting such legs in pairs and connecting them to the standard *a*, substantially as set forth.

2. The segmental rings *d*, provided with the flanges 2 and 3, in combination with the legs *b b'*, that are received between such flanges, and united in pairs, substantially as set forth.

3. The combination, with the table-top *l* and standard *a*, of the links *f*, connected at one end by joints to the table-top, and at the other end to the top of the standard, substantially as set forth.

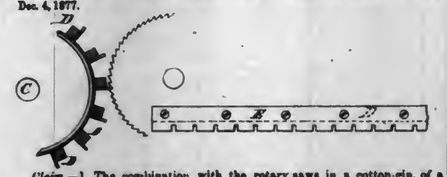
4. The plates *i*, having interlocking circular flanges, in combination with the standard *a*, table-top *l*, links *f*, and clamping-bolt *g*, substantially as set forth.

5. The combination, with the standard *a* and table-top *l*, of the links *f* and *m*, connected at their respective ends to such standard and table, and allowing the table to be raised, lowered, or tipped, substantially as set forth.

6. The slides *n*, cross-bolt *g*, cam-lock *o*, and links *m*, in combination with the standard *a*, table-top *l*, and links *f*, substantially as set forth.

7. The combination, in a folding table, of a standard, folding legs connected in pairs at opposite sides of the standard, a table-top, and links connecting the standard and table-top, substantially as set forth, whereby the parts can be folded, substantially as set forth.

201,724. SAW-CLEANERS FOR COTTON-GINS. Henry A. Walker, Lenoirsburg, N. C. Filed Dec. 4, 1877.

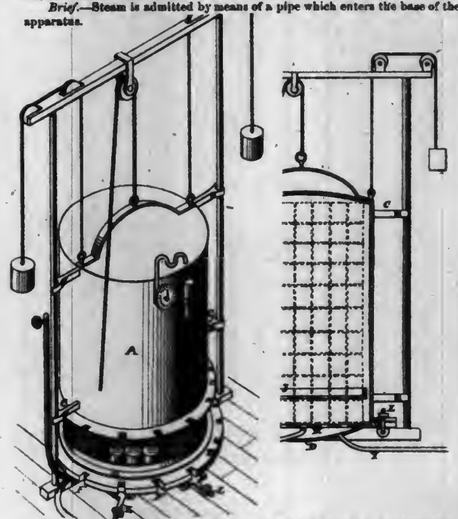


Claim.—1. The combination, with the rotary saws in a cotton-gin, of a drum, B, placed in the immediate rear thereof, and having longitudinal edge-slitted strips of leather to form wipers, as shown and described.

2. The combination of drum D, strips E, and wipers D, constructed, arranged, and adapted to operate in connection with the rotary saws of a cotton-gin, as and for the purpose specified.

201,725. COOKING APPARATUS. Geo. J. Ward, Jr., San Francisco, Cal. Filed Feb. 5, 1878.

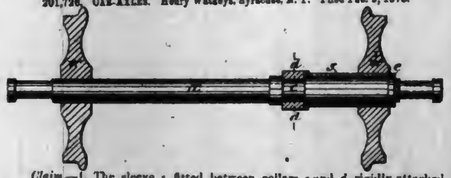
Brief.—Steam is admitted by means of a pipe which enters the base of the apparatus.



Claim.—1. The vertically-moving open-bottomed chamber A, counterbalanced and capable of resisting steam-pressure, in combination with the stationary base D, with securing bolts or clamps L, and packing-ring, so that the chamber may be rendered steam-tight or released and opened, substantially as herein described.

2. The vertically-moving chamber A and the base D, having the flanges slotted, as shown at F, in combination with the hinged or swivel bolts L, for rapidly locking the parts and making them steam-tight, or releasing the chamber, substantially as herein described.

201,726. CAR-AXLES. Henry Watkeys, Syracuse, N. Y. Filed Feb. 9, 1878.

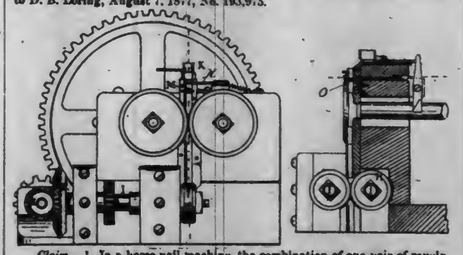


Claim.—1. The sleeve *s*, fitted between collars *c* and *d*, rigidly attached to the axle, the collar *c* at its outer end having a smaller circumference than the exterior of said sleeve, and the wheel *w'* pressed onto the latter, substantially as described, for the purpose specified.

2. The combination and arrangement of the wheel *w'*, provided with sleeve *s*, the axle *a*, having rigid collar *c* at the outside of said wheel, and the circumferential recess *e* at the inner end of the sleeve, the collar *d*, constructed of two longitudinal sections clamped in said recess by bolts *b*, and provided with the circumferential flange *f* and anti-friction metal bearings *r*, all constructed and combined substantially in the manner specified and shown, for the purpose set forth.

201,727. MACHINES FOR FINISHING HORSESHOE-NAILS. John E. Wheeler, Lynn, and David B. Loring, Boston, Mass. (said Wheeler assignor to himself, J. E. Russell, Leicester, Mass., and Charles W. Russell, New York city, trustees. Filed July 13, 1877.

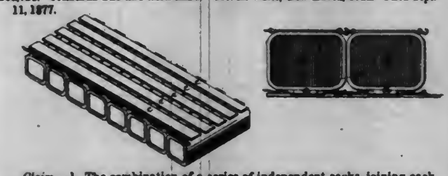
Brief.—A machine designed to carry into execution the method patented to D. B. Loring, August 7, 1877, No. 193,975.



Claim.—1. In a horse-nail machine, the combination of one pair of revolving dies, shaped to completely form the head, and to somewhat thicken and lengthen the shank by a lateral pressure exerted upon the edges of a blank, another pair of revolving dies at right angles to and immediately below the first pair, shaped to operate upon the face and back of the shank of the blank, either with or without means for indenting the end of the blank, and means for simultaneously operating said dies, whereby the head and shank of a cold blank are successively completed by their joint adaptation and operation, but one direct pressure successively exerted upon the sides and edges of the blank, whereby substantially a uniform density is given the completed nail, substantially as described.

2. The combination of the feed-tunnel M with the centering device described, the same consisting of reciprocating plate O and detent W, all arranged to feed substantially as described, and for the purpose set forth.

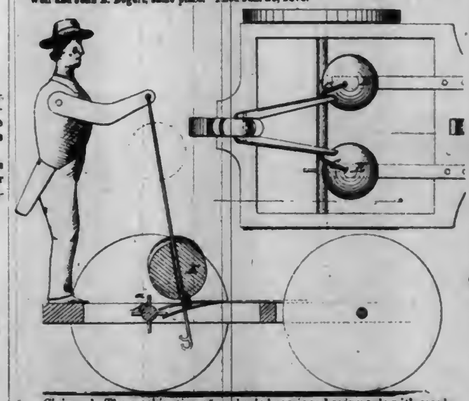
201,728. COMBINED BED AND LIFE-RAFT. Geo. M. White, New Haven, Conn. Filed Sept. 11, 1877.



Claim.—1. The combination of a series of independent sacks, joining each other, so as to form a continuous elastic bed-surface on one side of a rigid bar extending from end to end of each of said sacks, and secured thereto, substantially as and for the purpose described.

2. The herein-described combined bed and raft, consisting of a series of independent air-sacks, joining each other, so as to form a continuous elastic bed-surface on one side, combined with transverse and longitudinal bars or slats upon the other side, and substantially as described.

201,729. WHEELED TOYS. John H. Wygant, Hackensack, N. J., assignor to William H. De Wolf and John B. Bogert, same place. Filed Jan. 26, 1878.

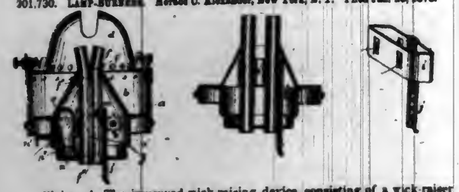


Claim.—1. The combination of a wheeled carriage having axle with crank-pins with the free ends of alternately-acting band-springs and guided reciprocating bells, substantially as and for the purpose set forth.

2. The combination of the revolving crank-pins, actuating band-springs, loosely-sliding guide-wires, and reciprocating balls playing on the wires, substantially in the manner and for the purpose specified.

3. The combination of the revolving and alternately-acting crank-pins of the axle with the ball-actuating band-springs, having guide-holes, and with the loosely-sliding wires, having stops or eyes to prevent escape of wires from springs, substantially as set forth.

201,730. LAMP-BURNERS. Horace C. Alexander, New York, N. Y. Filed Jan. 23, 1878.

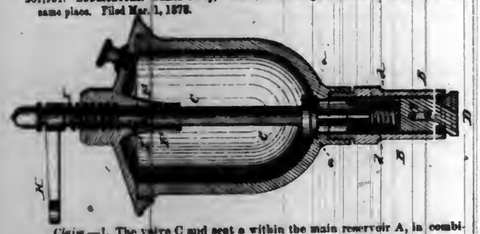


Claim.—1. The improved wick-raising device, consisting of a wick-raiser encircling the wick-tube, and having teeth, which engage with the wick through openings in the wick-tube, with mechanism for raising and lowering it, and for holding the wick when the wick-raiser is to be lowered to a new position on the wick, substantially as and for the purposes set forth.

2. The combination of two or more wick-tubes placed in contact with each other, with portions of the sides of the tubes removed, as and for the purpose set forth.

3. The improved take-up *n*, operating through the sides of the wick-tube, and having points which can be pressed into the wick or through it, and a spring for withdrawing it, in combination with a wick-tube and a wick-raising device, substantially as and for the purpose set forth.

201,731. LUBRICATORS. James Barry, Auburn, N. Y., assignor to himself and Jos. Barry, same place. Filed Mar. 1, 1878.

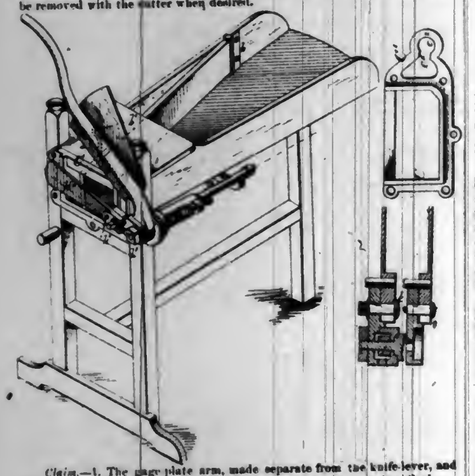


Claim.—1. The valve C and seat *a* within the main reservoir A, in combination with the cylinder B, projection F, screw-stem I, and lever H, substantially as and for the purpose set forth.

2. The combination, in a lubricator, of the lower valve D, having a socket, *x*, in its upper end, the spring *d* resting in said socket, and the upper valve C, having its lower end inserted in the socket *x* on top of the spring-pin *y*, and slot *z*, substantially as and for the purposes herein set forth.

201,732. FEED-CUTTERS. Warren S. Bartle, Newark, N. Y. Filed Jan. 3, 1878.

Brief.—The gage-plate has four adjustments upon its arm. The mechanism for drawing the knife to the mouth of the box is so arranged that it can be removed with the cutter when desired.



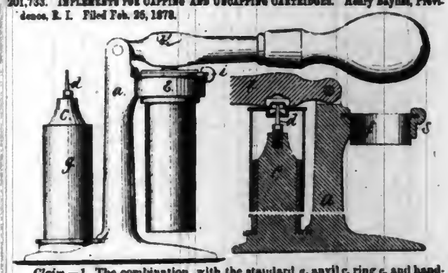
Claim.—1. The gage-plate arm, made separate from the knife-lever, and adapted to be applied thereto, and to receive the gage-plate, as described.

2. The shouldered gage-plate, jointly with and adapted to be applied to either side of the gage-plate arm.

3. The knife-shaft carrying the devices for effecting its longitudinal adjustment jointly with the open bearing in an arm of the face-plate, substantially as described, whereby the shaft is locked in its bearing when the knife is in working position, while at the same time it is adapted to be removed from the machine, together with the knife and its adjusting devices, when the knife is turned out of working position, as described.

4. The laterally-adjustable compressing-board, by means of which the stalks to be cut can be forced up toward the heel of the knife, as described.

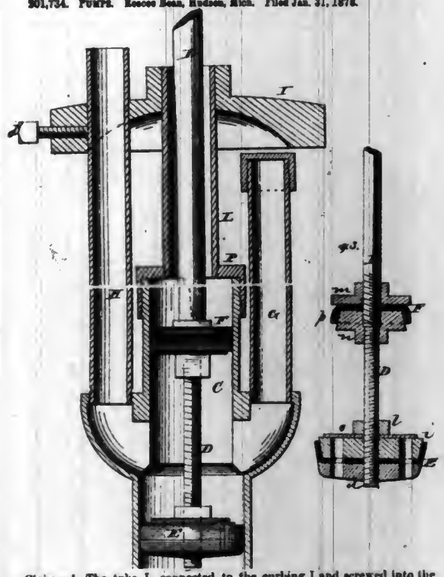
201,733. IMPLEMENTS FOR CAPPING AND UNCAPPING CARTRIDGES. Henry Bayles, Providence, R. I. Filed Feb. 26, 1878.



Claim.—1. The combination, with the standard *a*, anvil *c*, ring *e*, and hand-lever *b*, of the sleeves *g* and *f*, arranged to fit the caliber of cartridge-cases of various size, substantially as and for the purpose described.

2. The combination, with the anvil *c* and ring *e*, provided with the lugs *i*, of the sleeves *f* and *g*, provided with flanges, and arranged to fit the interior and exterior of cartridge-cases of various caliber, in a capping and uncapping device, substantially as and for the purpose described.

201,734. PUMPS. Roscoe Bean, Hudson, Mich. Filed Jan. 31, 1878.

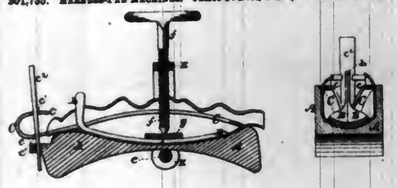


Claim.—1. The tube L, connected to the curbing I and screwed into the cap P at its lower end, said cap being screwed to the top of the cylinder C, and said cylinder being connected by screw-threads to the lower ends of the pipes H G, the said parts being combined substantially as and for the purposes herein set forth.

2. In a pump, a divided plunger-rod, D D', each having one part of a divided plunger, F, secured on it, with packing *p* inserted between the two, and the parts screwed together, substantially as and for the purposes herein set forth.

3. The combination of the divided plunger-rod D D', the plunger E on the lower end of the rod D, the upper plunger F, made in two parts, *m n*, secured, respectively, on the adjacent ends of the two rods, and the packing *p*, clamped between the parts *m n* by uniting the two parts of the rod, as described.

201,735. HARNESS-PAD MACHINES. James F. Best, Galva, Ill. Filed Nov. 8, 1877.



Claim.—1. The block or former A, hollowed out from its convex side, in combination with the plates B B and bars C C, substantially as and for the purpose set forth.

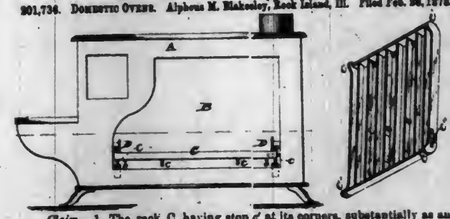
2. The combination, with the hollow block A, of the curved plates B B and bowed bars C C, having recesses or slots *c*' *c*' and wedge *c*', substantially as and for the purpose set forth.

3. The former A, plates B B, bars C C, wedge *c*', bridge E, and screw or key *f*, in combination, substantially as and for the purpose set forth.

4. The concavo-convex block A, having its upper surface concave and its lower surface straight in cross-section, substantially as shown and described.

5. The concavo-convex block A, having its upper surface concave and its lower surface straight in cross-section, in combination with the bridge E and screw *f*, substantially as shown and described.

201,736. DOMESTIC OVENS. Alpheus M. Mahoney, Rock Island, Ill. Filed Feb. 26, 1878.



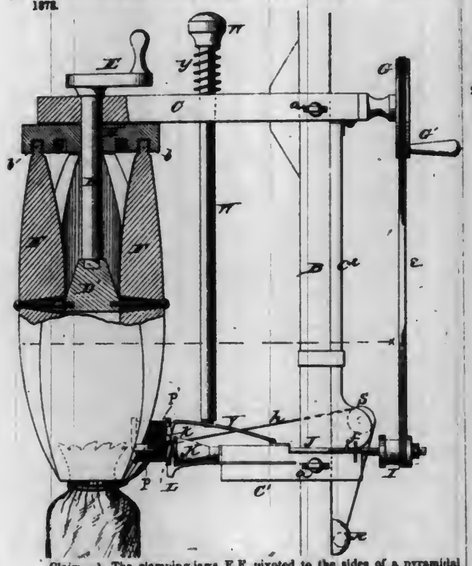
Claim.—1. The rack C, having stop *c*' at its corners, substantially as and for the purposes set forth.

2. The combination of rack C, having stop *c*', with oven B, having hooked nibs, guides, or studs D, substantially as and for the purposes set forth.

3. In combination with oven B, having rollers *b* in its floor, and nibs or studs D, the rack C, substantially as and for the purposes set forth.

4. The rack C, having guide-flanges *e* on its under side, and side rollers *e*' and stop *c*', substantially as described.

201,737. BAG-FASTENING APPARATUS. Brice X. Blair, Huntingdon, Pa. Filed Feb. 26, 1878.



Claim.—1. The clamping-jaws F F, pivoted to the sides of a pyramidal hub, D', and opened and closed by the tenons *b b* on their upper ends working in a worm-groove, *d*, substantially as herein set forth.

2. The combination of the shaft D, with crank E and pyramidal hub D', the pivoted jaws F F, having tenons *b b* at their upper ends, the clamp P, and the disk H, with worm-groove *d*, substantially as and for the purposes herein set forth.

3. The combination of the screw-shaft J, with arms M and rod N, carrying the spool O, the nut *f*, and the twister L, substantially as and for the purposes herein set forth.

4. The combination of the spring-rod W, having hinged plate V and knife *k*, with the twisting device L and K, substantially as and for the purposes herein set forth.

201,738. MACHINES FOR GRINDING, SMOOTHING, AND POLISHING GLASS. Ishmel Boger and Wm. H. King, Louisville, Ky., assignors of one-third their right to Louis Kastel, same place. Filed Feb. 2, 1878.

Claim.—1. In a machine for grinding, smoothing, and polishing glass, the combination of a rotating table and grinding or polishing devices, having a reciprocating and a lateral motion, substantially as herein set forth.

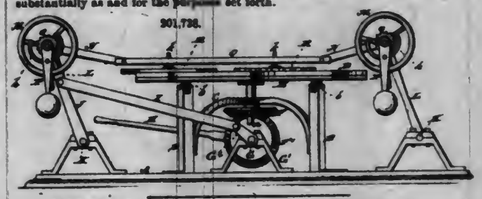
2. The combination of the posts B, with rollers *b* and frame C, the table D, frame E, with shaft *a*, having bevel-gearing F, and the movable gear-wheel F', feathered on the driving-shaft G, substantially as and for the purposes set forth.

3. The combination, with the table A, of the rocking shafts K K, with arms L L, carrying shafts *d d*, the arms N N on said shafts, and connected together, as described, and the driving-shaft G, with crank G', pitman I, and arms J, all substantially as and for the purposes set forth.

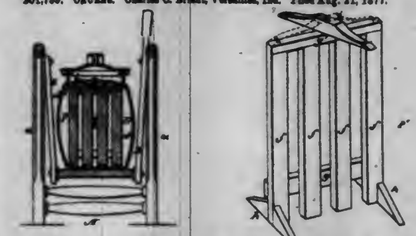
4. The combination, with the screw-shaft *d*, of the hand-wheel M, with ratchet-wheel *c*, pendulum P, with pins *i i*, and the double pawl A, substantially as and for the purposes set forth.

5. The polishing-boxes B, lined as described, and provided with weights V, the links *n n*, and couplings *m m*, in combination with the arms N N, all substantially as and for the purposes set forth.

201,739.

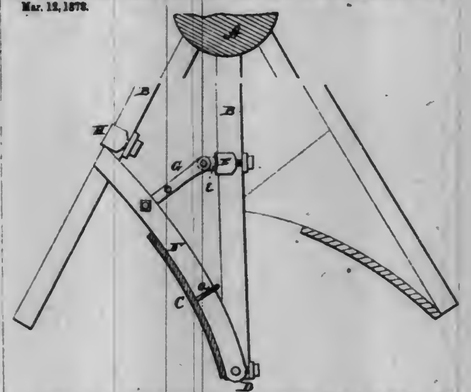


201,739. CHURNS. Charles C. Briant, Versailles, Ind. Filed Aug. 21, 1877.



Claim.—In combination with the churn-box D, having rim *f*, the dasher F, having pivoted brace *i*, substantially as and for the purpose herein shown and specified.

201,740. ADJUSTABLE FLOATS FOR PADDLE-WHEELS. Geo. Brown, Washington, Pa. Filed Mar. 12, 1878.

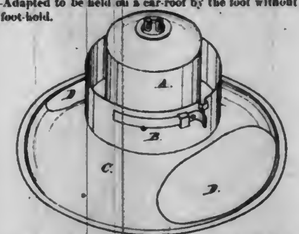


Claim.—1. In combination with the wheel-arm B and bucket C, the adjustable clips D and E, pivoted braces F F, with bolt *b*, and the pivoted arm G, connecting the bolt *b* with a lug, *c*, on the clip E, substantially as and for the purposes herein set forth.

2. The combination, with the adjustable bucket C, of the adjustable clip H and the braces F F, abutting against the same, as herein set forth.

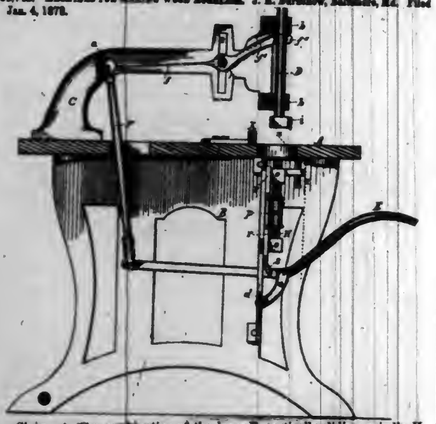
201,741. RAILWAY-LANTERNS. Myron M. Buck, St. Louis, Mo. Filed Feb. 16, 1878.

Brief.—Adapted to be held on a car-roof by the foot without seriously impairing the foot-hold.



Claim.—A lantern having a bottom, C, provided with foot-openings D D, substantially as shown and described, for the purpose set forth.

201,742. MACHINE FOR MAKING WOOD BOBBINS. J. H. Burnham, Baltimore, Md. Filed Jan. 4, 1878.



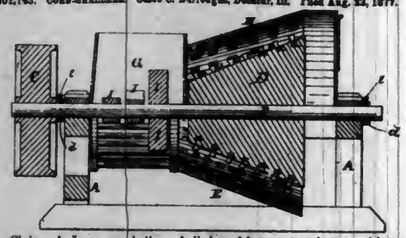
Claim.—1. The combination of the lever H, vertically-sliding spindle H, carrying the cutter, connecting-rod F, spring-lever *f*, and presser-bar D, whereby the wood is held to the table and the cutter raised and pressed into the wood.

2. The spring-lever *f*, having its pivotal point and movement in the double bracket-arm C, with its stiff end *f'* attached to the vertically-sliding presser-bar, and its spring end to a connecting-rod passing through the table, and receiving motion from any suitable mechanism.

3. The vertically-sliding plate *p*, provided with a projection on the upper end, through which the set-screw *t* passes, and at the lower end connected by the joint *s* to the hand-lever, as shown and described, and for the purpose specified.

4. The double bracket-arm C, having the transverse vertical slots *c*, in combination with the bolt A, forming the pivotal point of the lever, whereby the spring-lever may be vertically adjusted to suit the varying thickness of the wood stuff.

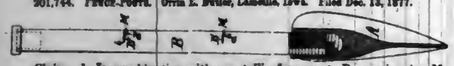
201,743. CORN-SHELLERS. Caleb C. Burroughs, Decatur, Ill. Filed Aug. 22, 1877.



Claim.—1. In a corn-sheller, a bell-shaped hopper, or a hopper with larger diameter at the bottom than at the top, in combination with rotating beaters or feeders, for the purposes herein set forth.

2. The combination of the hopper diminishing in diameter toward the top, the feeders, and conical sheller, substantially as and for the purposes herein set forth.

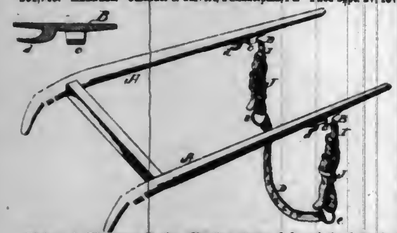
201,744. FENCE-POSTS. Orrin E. Butler, Lamoille, Iowa. Filed Dec. 13, 1877.



Claim.—1. In combination with a metallic fence-post, B, a main wire, M, the tie D D^1 D^2 engaging with the main wire, and engaging in a hole or holes in said post, as herein specified.

2. The fasteners D D^1 D^2, with their hooks d^1 d^2 constructed and arranged, relatively to the post B and wire M, so as to hold the latter in a bent condition, as herein specified.

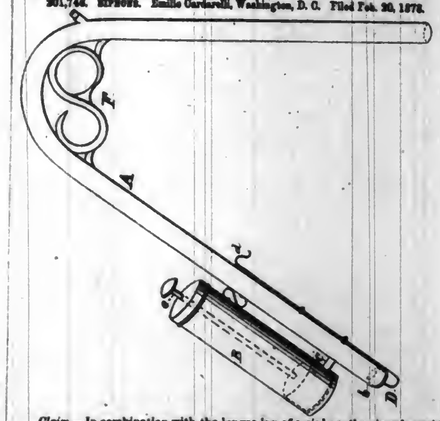
201,745. HARNESS. Calender I. Calvert, Philadelphia, Pa. Filed Sept. 27, 1877.



Claim.—1. The strap D, the adjusting-straps J J, and the fastening-straps I I, connected and constructed substantially as and for the purpose set forth.

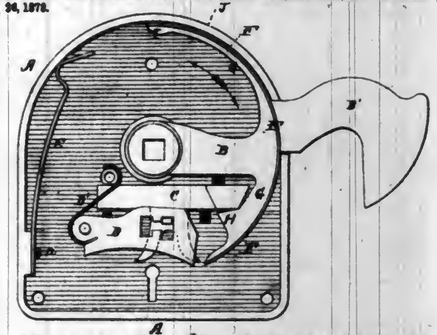
2. The holders B B, secured to the thills and provided with loops *a a* and hooks *d d*, in combination with the straps I I, as constructed, for the purpose specified.

201,746. REPEOUS. Emilio Carbarelli, Washington, D. C. Filed Feb. 20, 1878.



Claim.—In combination with the longer leg of a siphon, the air-exhausting pump B *a* and stopper D, having the guided operating-rod *d*, substantially as set forth.

201,747. LATCHES FOR SLIDING DOORS. William S. Carlisle, Watertown, N. Y. Filed Feb. 26, 1878.



Claim.—1. The latch B, provided with the segments G G, flanges F F, lug I, and catch H, and rotating within the case A, the end of the latch projecting beyond the casing, and terminating in a hook, B', all as herein set forth.

2. The combination of the bolt C, tumbler D, and the catch H on the lower segment of the latch, for the purposes described.

3. The spring E, in combination with the lug I on the upper segment of the latch, for the purposes herein set forth.

201,748. DENTAL PLATES. Samuel C. Carter, Liberty, Ind. Filed Dec. 27, 1877.

Brief.—Vulcanite is molded to fit the gums in the usual way, but is furnished centrally with a metal diaphragm embedded in the edge of an opening in the vulcanite plate. This metal diaphragm is not covered upon either side.

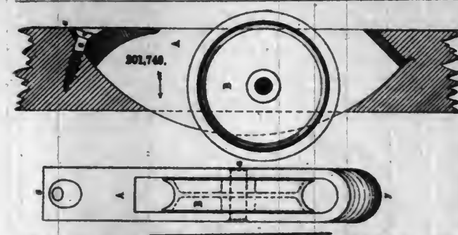


Claim.—The composite dental plate, consisting of a vulcanite or equivalent marginal portion, molded to the wearer's gums, and surrounding a thin metallic diaphragm naked on both surfaces, substantially as and for the purpose set forth.

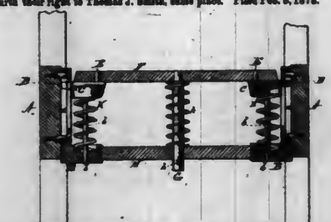
201,749. SASH-PULLEYS. E. H. H. Clarkson and Wm. H. H. Kesler, Baltimore, Md. Filed Aug. 23, 1877.

Brief.—A slight change, mainly in configuration of the shell or sheave holder, by which the use of screws, or other fastening devices for retaining it in position, may be dispensed with, the sustaining-point of the pulley being so placed with reference to the center of the sheave as to cause the pulley to press more closely within the slot when the weighted cord draws upon it, and the shell, being devoid of flanges, is readily fitted in place by the use of an auger-bit.

Claim.—In a sash-cord guide, the sheave-holder A, void of flanges, having its inner edge circular, and terminating in the point *x* and incline *y*, in combination with the sheave B, the pin *a* of which is located farther from the face of the holder than in the lower point or incline *y*, substantially as and for the purposes hereinbefore set forth.

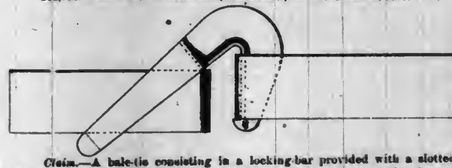


201,750. BED-BOTTOMS. Geo. R. Clements and Joel C. Decker, New Lexington, Ohio, assignors of one-fourth their right to Thomas J. Smith, same place. Filed Feb. 6, 1878.



Claim.—In combination with the sides A A of a bedstead and the slotted faced supports B, the cross-slat F, provided with the fixed guide G, having the stop *h*, the cross-bar H, the guides *b b*, head-plates C, provided with the flanged tenons D and vertical pins E, and the springs K K *k*, all constructed to operate substantially as and for the purpose set forth.

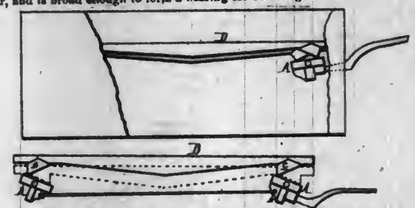
201,751. BALE-TIES. Frederic Cook, New Orleans, La. Filed Mar. 20, 1878.



Claim.—A bale-tie consisting in a locking-bar provided with a slotted diagonal brace, the latter attached to the band in such a manner that it may be moved to and from the edge of the band, and when the tie is secured the diagonal brace secures one end of the band, and the locking-bar the other end of the band, said brace and locking-bar being constructed and arranged in such a manner that the strain will be exerted in line, or nearly in line, with the opposite ends of the band, substantially as set forth.

201,752. BRAKING GRATE-BARS FOR STEAM-BOILERS. Reye J. Cram, Detroit, Mich. Filed Feb. 7, 1878.

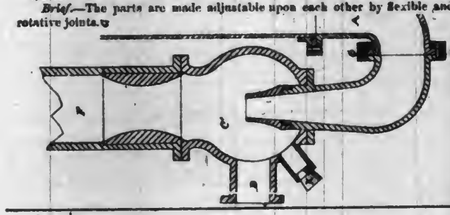
Brief.—The grate-bars are all alike, but by turning each alternate bar end for end the angle of bearing is changed. The rocking bar is also the bearing-bar, and is broad enough to form a bearing for both angles.



Claim.—The combination with the alternately-reversed grate-bars D, having lugs *c*, all of the same construction, of the rocking supports A, connected together, and having broad upper surfaces, upon which the lugs *a* of the grate-bars rest without being connected thereto, the several parts being constructed, arranged, and operated substantially as described and shown.

201,753. SAND OR EARTH ELEVATORS. Geo. W. Cranston, San Francisco, Cal. Filed Mar. 7, 1878.

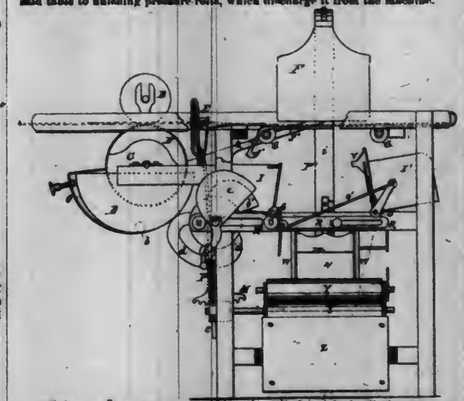
Brief.—The parts are made adjustable upon each other by flexible and rotative joints.



Claim.—The pipes A and B, connected by a flexible vertical joint, C, in combination with upright pipe G, connected thereto by a rotative joint, globular section C', with its opening D, and discharge-pipe F, substantially as and for the purpose described.

201,754. PAPER-BAG MACHINES. Otis E. Davidson, Clarksville, Tenn. Filed Sept. 28, 1877.

Brief.—A web of paper is creased by feed-rolls, (supported on a shaft, which also carries pasting-segments, one at each end thereof, and revolving in paste-boxes connected by a pipe,) when it is cut into bag-lengths by a vertically-acting knife at its upward movement, such lengths being supported by weighted and pivoted skids beneath a vertically-acting former, which descends and is embraced at its edges by pivoted side-folders, and met at its lower edge by a hinged table, which creases the bottom folds, and gives place by falling for the operation of hinged flap-folders attached to the base of the side-folders, when the bag now formed is guided by hinged arms just above said table to finishing pressure-rolls, which discharge it from the machine.



Claim.—1. In a paper-bag machine, the cylindrical feed-roll, the segments C C, for pasting the edges of the paper strip, the segment M, for intermittently engaging the pinion *a*, and the rotating shaft N, all combined to operate as shown and described.

2. In a paper-bag machine, the vertically-reciprocating former F, consisting of a flat metal plate, the hinged vibrating folders I I', so constructed as to receive or embrace the former, as described, and the hinged table H, adapted to maintain a horizontal position when the former descends and the said folders act on the blank, all combined as specified.

3. In a paper-bag machine, the hinged side-folders I I', the flaps V V, the hinged table H, and toothed arms *k*, for acting on the pinions fixed on the rock-shafts *f f* of the flaps, all combined as shown and described, to operate as specified.

4. In a paper-bag machine, the vertically-acting former, having a slotted shank, F', and the hinged table, having an arm, *h'*, combined and operating substantially as shown and described.

5. In a paper-bag machine, the spring-arms *j*, pivoted to the base of the folders I, and the fingers or studs *k*, projecting from the folders I', all combined and operating as shown and described.

6. In a paper-bag machine, the combination of the vertically-acting former, having the slotted shank F', the hinged table, having arm *h'*, racks *k*, and the corner-folders V, all combined to operate as shown and described.

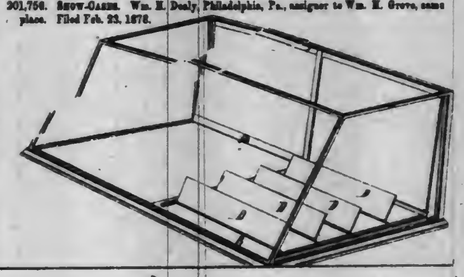
7. In a paper-bag machine, the combination of the hinged spring-arms W and table H, having arms *h'* *h''*, with the former F and the slotted shank F', constructed as shown and described, to operate as specified.

201,755. PAPER BAGS. Otis E. Davidson, Clarksville, Tenn. Filed Jan. 28, 1878.



Claim.—The seamless bottom bag herein described, having oppositely-disposed lapped side seams and bottom corners which are folded, lapped, and secured exteriorly upon said seamless bottom, all as shown and specified.

201,756. SNOW-GUARDS. Wm. H. Healy, Philadelphia, Pa., assignor to Wm. H. Grove, same place. Filed Feb. 23, 1878.



Claim.—1. A show-case door having on the inside a mirror inclined in respect to the outer face of the door, as set forth.

2. A door for show-cases having on the inside a mirror rendered adjustable at the lower end, substantially as set forth.

3. A show-case having a bottom pivoted at the front end, and combined with devices for sustaining it in an inclined position, substantially as described.

4. A show-case the bottom of which is provided with one or more slats, D, substantially as specified.

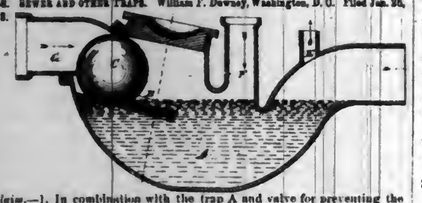
201,757. PAPER-MAKING MACHINES. John W. Dixon, West Manayunk, Pa. Filed Feb. 26, 1878.



Claim.—1. The combination, with the upper couch-roll and upper first press-roll, of an endless upper felt passing around beneath each of them, and from one to the other, traversing with these rolls, so as automatically to carry the web of paper from the wire-cloth to the first press-felt and through the first press-rolls, substantially as described.

2. In a Fourdrinier paper-machine, the combination, with the upper couch-roll, the wire-cloth, and the first press-felt, and of an additional endless upper felt, passing beneath and upon the upper couch-roll, and in about a horizontal line away from it, to carry the web of paper from the wire-cloth to the first press felt, substantially as described.

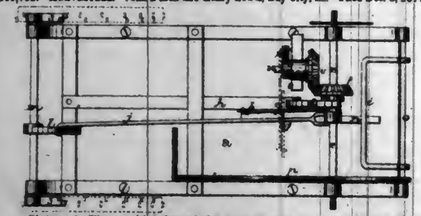
201,758. SEWER AND OTHER TRAPS. William F. Downey, Washington, D. C. Filed Jan. 26, 1878.



Claim.—1. In combination with the trap A and valve for preventing the inflow of water through the pipe G, the induction-pipe F, through which water may flow freely through the pipe when the pipe G is closed by the valve, substantially as set forth.

2. In combination with the trap A and induction-pipe G, the ball-valve C and the valve-seat thereof, having forward inclination, so that the valve shall close the induction-pipe before the backwater can flow back therethrough, substantially as set forth.

201,759. HARVESTERS. John Dusch and Henry Lewis, Bay City, Ill. Filed Dec. 3, 1877.

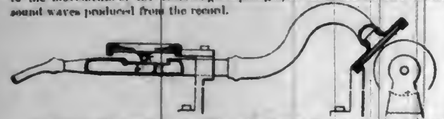


Claim.—1. The combination of the lever *p*, shaft *o*, seat *i*, segments *d n l*, rods *e j*, shafts *c m*, and brakes, substantially as shown.

2. The combination of the three segments, gearing-lever, connecting-rods, driver's seat, and brakes, substantially as described.

201,760. SPEAKING-MACHINES. Thomas A. Edison, Menlo Park, N. J. Filed Mar. 4, 1878.

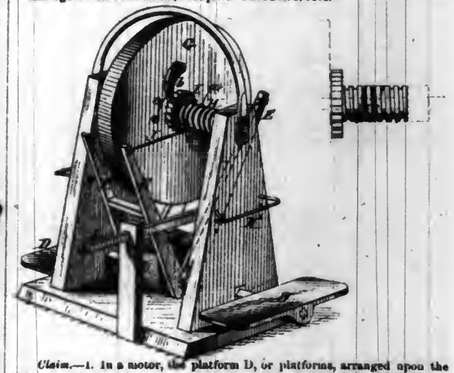
Brief.—"For reproducing the human voice, or other sounds, with greatly-increased volume or force"—an improvement applicable to the speaking-machine patented February 19, 1878, No. 200,521, serving to give increased force to the movements of the recording diaphragm, or increased volume to the sound waves produced from the record.



Claim.—1. The combination, with a diaphragm, or the record produced therefrom, of a valve and a supply of air, gas, steam, or other fluid under pressure, for reproducing sounds, substantially as set forth.

2. The method herein specified of producing sound, by causing primary sounds or articulations to act upon a diaphragm, and then controlling the exit of a fluid under pressure in harmony with the primary sounds, to produce consonary sounds corresponding with the primary sounds, but of different volume, substantially as set forth.

201,761. MOTORS. William D. Edgar and Wm. S. Day, Ottawa, Kans., assignors of one-third their right to Simeon H. Merrill, same place. Filed Feb. 2, 1878.



Claim.—1. In a motor, the platform D, or platforms, arranged upon the end or ends of a rock-shaft or rock-shafts, substantially as described, in combination with the hub H, fixed on said shaft, and the long levers F, fixed to said hub, and adapted for operating the driving-shaft, as set forth.

2. The combination, with the rock shaft or shafts, end platform or platforms, and the frame, of grasp-holds for the operator or operators.

3. The combination, with the rock shaft or shafts, end platform or platforms, and the frame, of adjustable grasp-holds for the operator or operators.

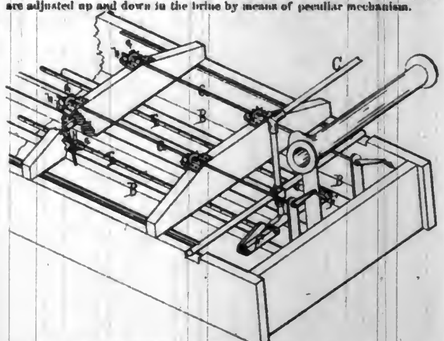
4. The combination, with the rock-shaft hub arms or levers and the driving-shaft grooved ratchet-sleeves which they operate, as described, of the engine connecting-rod I, pivoted to one of said hub rock-shaft arms or levers, for the purpose set forth.

5. The motor hereinbefore described, consisting of the rock-shaft, an operating-platform at one or both the ends thereof for the operator or operators to stand upon, a fixed hub on said shaft, from which long arms or levers rise outwardly, ratchet-sleeves connecting with said arms or levers, and driving the band-wheel or main shaft by pawls carried thereby, all constructed for operation substantially as hereinbefore set forth.

6. The combination, with the main rock-shaft, its platforms, and power-transmitting levers, arranged for operation as described, of the supplemental platforms connected with said levers, for operation as herein set forth.

201,762. APPARATUS FOR THE MANUFACTURE OF SALT. William W. Elmer, Bay City, Mich. Filed Aug. 27, 1877.

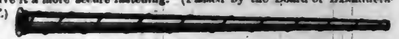
Brief.—The brine is evaporated by steam heat through the medium of coils of pipes, and by currents of dry air blown from perforated pipes up through the brine for causing agitation, by means of which the crystallization is facilitated and the size of the crystals regulated. The perforated air-pipes are adjusted up and down in the brine by means of peculiar mechanism.



Claim.—The combination, with the supply-pipe C and branch pipes E, connected by hollow cranks F, of the shafts G, vertical screw-shafts H, nuts *c*, and gear *a b*, constructed, arranged, and operating substantially as described and shown.

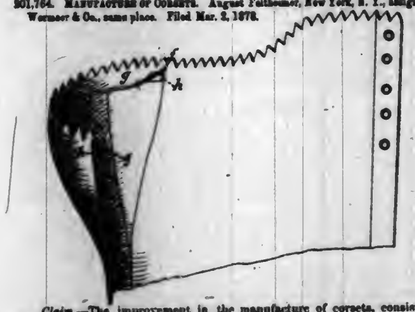
201,763. COP-TUBES. Jeremiah Esser, North Bennington, Vt. Filed Jan. 2, 1878.

Brief.—An improvement upon Patent No. 174,505 to present inventor, consisting in winding the wire in close coils at the bottom and top of the tube, so as to give it a more secure fastening. (Passed by the Board of Examiners-in-Chief.)



Claim.—A metallic cop-tube with solid walls, hollow throughout its entire length, having a flange at its larger end, and having a wire secured around it, first in close coils at the larger end, then spirally toward the top end, with regularly-diminishing coils, then in close coils at the top end, substantially as and for the purposes set forth.

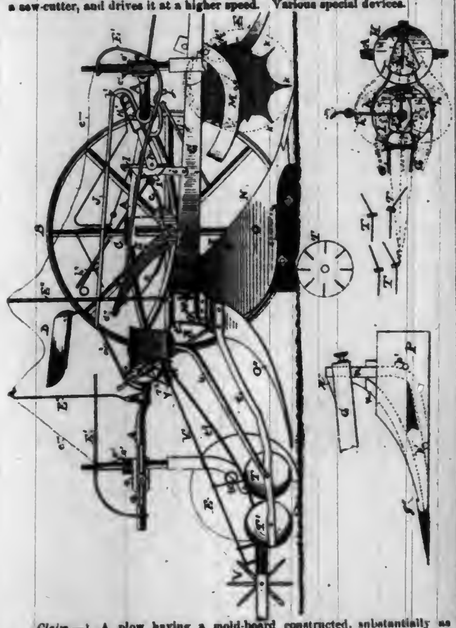
201,764. MANUFACTURE OF CORSETS. August Feltheimer, New York, N. Y., assignor to S. Wormser & Co., same place. Filed Mar. 2, 1878.



Claim.—The improvement in the manufacture of corsets, consisting in constructing a corset with its bosom stiffened and kept in shape by turning in a portion of the spare material within the selvage of the woven web, to form a hem or pocket, *g*, and inserting a stiffening-piece into the hem or pocket so formed, substantially as herein described.

201,765. SULEY-PLOWS. Jay Bostwick Fisher, Davenport, Iowa. Filed Feb. 2, 1878.

Brief.—The irregular frame with slotted box and spring for the wheel-shaft, and levers to adjust the wheel more or less dishing. The mold-board has spiral extension, reaching the bottom of the last furrow, to receive the turning furrow. Attached to the mold-board are two pairs of concave disks, to cover the joint between the furrow, and also to cover the seed dropped. A seeding device and spur-wheel to operate its seed-slide are also attached to the mold-board. A revolving coiter, with concave cutting-edges, is geared to a saw-cutter, and drives it at a higher speed. Various special devices.



Claim.—1. A plow having a mold-board constructed, substantially as described, with the parts O O' O'', so as to turn over the furrow-slice smoothly and evenly without breaking, substantially as set forth.

2. In combination with a plow having a mold-board constructed substantially as described, the concave revolving mold-boards T, arranged to scrape smooth and fill up the crevice or joint between the furrows, substantially as set forth.

3. In combination with a plow, N, constructed substantially as described, and with the revolving mold-boards T, a seeding device, U, consisting of the rimless wheel V, rod V', spring *s'*, and seed-cup slides W W', constructed and operating substantially as and for the purpose specified.

4. The combination, in a plow, of the mold-board O O' O'', plates P P'', point Q, post *n*, and beam G, substantially as and for the purpose specified.

5. The sulky-frame consisting of the bent bar A, wheel B, spindle *b*, and caster-wheels E E, substantially as and for the purpose set forth.

6. In combination with the bar A, wheel B, and spindle *b*, the slotted plate C, which permits of the wheel rising without affecting the working position of the plow, substantially as set forth.

7. In combination with the bar A, wheel B and spindle *b*, and plate C, the spring *c*, operating substantially as and for the purpose specified.

8. The combination of the plate C, bar A, spindle *b*, and spring *c* with the levers *c'* and *c''*, substantially as and for the purpose specified.

9. The plow-post *n* and plow-beam G, constructed, as described, of two plates, one passing through between the doubled portion of the post and the other overlapping it, as described, in combination with the adjusting-screw, substantially as and for the purpose specified.

10. In combination with the frame A and plow-beam G, the adjusting devices H H' and I I', which also constitute the means for hinging the beam to the frame, substantially as set forth.

11. The combination of the coiter K and circular-saw cutter K', geared together, so as to operate substantially as and for the purpose specified.

12. The lever J, having the forward-bent portion *j'*, operating in combination with the frame A and devices H H' and I I' to raise and lower the plow, and with the rod *j* to limit its forward swinging movement, substantially as set forth.

13. The combination of the plate H and adjustable cap-plate H', having bifurcated journal-bearing arms, substantially as and for the purpose specified.

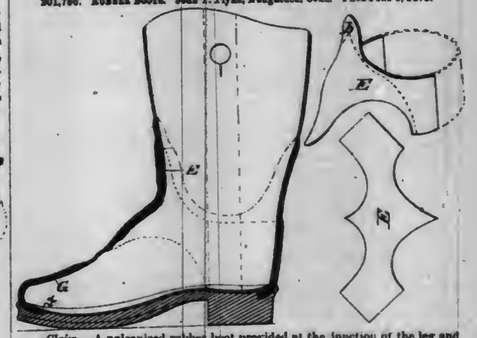
14. The revolving coiter K, constructed with arc-shaped knives or indentations, and so as to leave flat propelling-points arranged at right angles to the cutting-edges, substantially as set forth.

15. The serrated rod R, pivoted sleeve *r'*, and spring-pawl S, in combination with plate *r''*, and with the frame A and plow, substantially as and for the purpose specified.

16. In combination with a perforated plate, H, and adjustable cap H', spring-pin *h'*, for the purpose of adjustment, substantially as set forth.

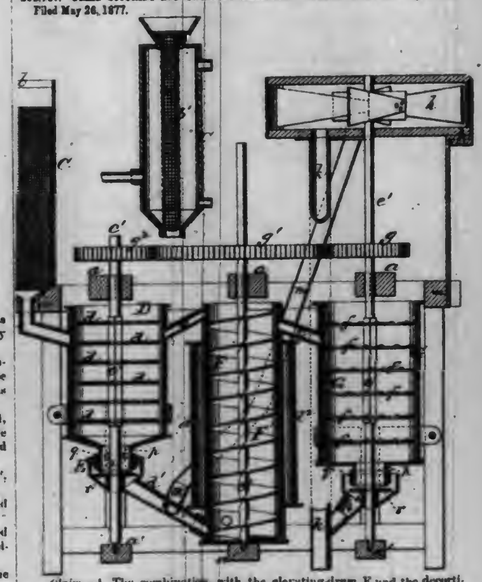
17. The lever Z, in combination with the frame A and adjustable devices H' and I', for the purpose of adjusting the lateral movement of the beam while the point remains in its proper position, substantially as set forth.

201,766. RUBBER BOOTS. John T. Flynn, Naugatuck, Conn. Filed June 3, 1875.



Claim.—A vulcanized-rubber boot provided at the junction of the leg and upper with a re-enforce, F, embedded between the two, and extending to the sole at the sides, and with an inner toe-piece, G, whereby the upper is stiffened and its form preserved, as and for the purpose set forth.

201,767. GRAIN SCOURING AND CLEANING MACHINES. Madison Forman, Memphis, Mo. Filed May 26, 1877.



Claim.—1. The combination, with the elevating-drum F and the decorticating and polishing drums, of the valved induct *d* and overflow-pipe *e*, respectively connecting the decorticating-drum at bottom and top with the

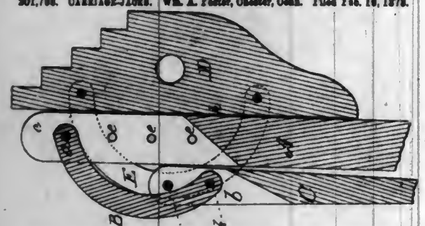
elevating-drum, and the discharge-pipe *e* connecting the latter with the polishing-drum, substantially as specified.

2. The elevator-drum F, having the elevator F', and the steam-jacket *d*, surrounding said drum, to dry the grain in its ascent, substantially as specified.

3. The combination, in grain-cleaning apparatus, with a suspended fixed receiving-drum, having a neck, *p*, at its lower end, and a rotating shaft working in said drum and through said neck, of the horizontal annular flange *r*, the spout-hopper *t*, and the adjustable ring-valve *q*, substantially as specified.

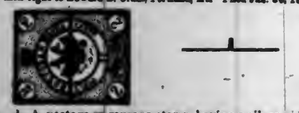
4. The grain-cleaning apparatus described, consisting, mainly, of the upright steam-jacketed and reticulated feed, the steam-jacketed elevator-drum F, the decorticator-and polisher, respectively delivering to and receiving from said drum, the suction-fan, valved conduits *d*' *h*', elevator-conduit *e*, and draft-pipes *k* and *m*, leading to the fan-case from said conduits, as specified.

201,769. CARRIAGE-JACKS. Wm. A. Foster, Chester, Conn. Filed Feb. 19, 1878.



Claim.—The combination, in a lifting-jack, with a head-block, D, and round-end lever C, respectively bearing against the standard in front and rear, of the cheek-connections E and the swinging fulcrum B, substantially as specified.

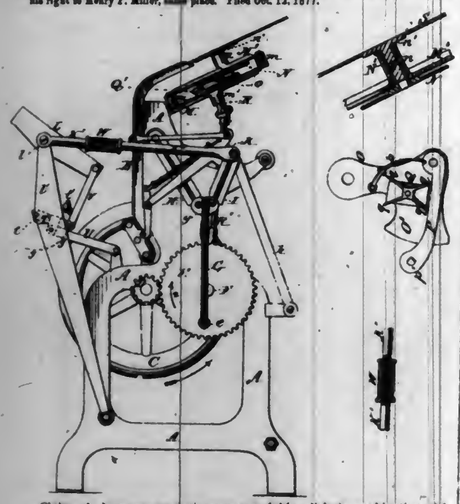
201,770. POSTAGE AND REVENUE STAMPS. Addison C. Fox, Baltimore, Md., assignor of one-half his right to Thomas P. Eigelberner, same place; said Fox and Eigelberner, assignors of one-third their right to Edward B. Oram, Portland, Me. Filed Jan. 26, 1878.



Claim.—1. A postage or revenue stamp having a rib or ridge, consisting of a double thickness of the material of the stamp, substantially as described.

2. A postage or revenue stamp having a plait or ridge formed in the material of the stamp, the sides of the said plait being attached together, substantially as described.

201,770. PRINTING-PRESSES. George T. Fraser, West Mitchell, Iowa, assignor of one-half his right to Henry F. Miller, same place. Filed Oct. 12, 1877.



Claim.—1. In a power printing-press, an inking-disk, in combination with mechanisms, substantially as described, whereby alternately greater and less partial rotations of said disk are made continuously in the same direction, and by which the space moved under the rolls shall lap to more perfectly distribute the ink, as set forth.

2. The combination, with the inking-disk, of the revolving arm O, pivoted spring-dog P, having pin *p*', pivoted oblong trip Q, stud Q', and ratchet-wheel N, substantially as set forth.

3. The combination, with the inking-disk, of the ratchet-wheel N with the revolving pivoted dog P and mechanism, substantially as described, by which said dog is adapted to move eccentrically thereto and vibrate alternately toward and from its center of motion, substantially as set forth.

4. The combination, with the inking-disk, of the shaft R' and bevel-gear wheels *r* and *f*, shaft R, revolving arm O, carrying-dog P, and ratchet-wheel N, substantially as set forth.

5. The combination of swinging journaled plates L, links V V, arms T T, plates supporting arms F F, and rods U U, pivoted to frame A, as described.

6. The combination of adjustable slides T' T' on arms F F, pivoted arms T T, links V V, and platen L with the rods U U, connecting the main frame, as set forth.

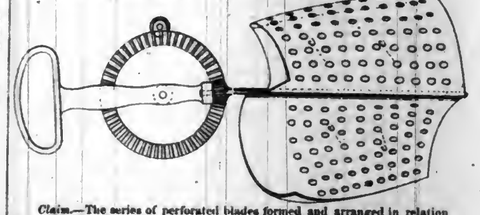
7. The long and short platen-arms H I, connected to the pitman cross-head *g* at a point to bring said pivoted connection in rear of a vertical line through the crank-pins *e e*', when the toggles are horizontal and the crank-pins are on the dead-centers, in combination with the pitman-rods G G' and the oscillating platen, whereby to give the maximum power to the platen when said cross-head is on an oblique line with said toggle-arms, and to give the "dwell" of the platen during the movement of said cross-head to a horizontal position, as set forth.

8. The combination, with an oscillating power printing-press and an ink-disk making alternately greater and less partial rotations, of an automatic trip and a dog which automatically engages with and leaves the disk-operating device.

9. The platen L, arranged upon its journals *l l*, above its center or middle, and connected at its lowest and longest part to the arms V V, in combination with the pivoted arms T T and the frame-connecting arms U U, whereby the upward movement of the lower and longest part of the platen will not produce a corresponding depression of its top or shortest part, as herein set forth.

201,771. MILK-STIRRERS. Henry O. Freeman, Sherburne, N. Y., assignor to American Dairy and Commercial Company, New York city. Filed Mar. 4, 1878.

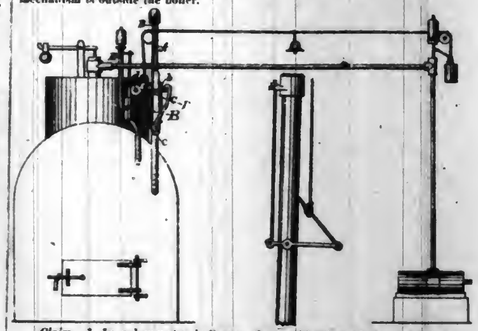
Brief.—The blades are perforated and so set that they throw the liquid downward and inward when revolved in an open pan, to prevent the liquid in being mixed from being thrown over the edges of the pan.



Claim.—The series of perforated blades formed and arranged in relation to each other and to the axis of the stirrer, substantially in the manner herein before described, so as to cause the contents of the vat to move inward, downward, and in part through the holes, and thereby produce a more perfect emulsion of the oleaginous matters and the milk.

201,772. LOW-WATER INDICATOR AND ALARM. Frederic C. Gilfillan, St. Petersburg, Pa. Filed Mar. 30, 1878.

Brief.—When the steam-tube expands, it, by means of a rod, releases the tripping devices; the weight then falls, and, by its velocity, a sudden jar is given to the cords or chain connecting them to the alarm devices, immediately indicating the dangerous condition of the water in the boiler. The whole mechanism is outside the boiler.

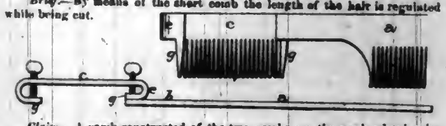


Claim.—1. In a low-water indicator, the combination of the expansion-tube A, rod B, double lever C *c*, and hooked horizontal lever D and weight *e*, constructed and operating as described.

2. The expansible tube A, adjustable sleeve and arm *d*, double lever C *c*, hooked horizontal lever D, rod B, and weight *e*, and alarm attachments, combined and arranged to operate in the manner and for the purpose set forth and described.

201,773. BARBERS' COMBS. Thomas E. Gravatt, Port Royal, Va. Filed Feb. 2, 1878.

Brief.—By means of the short comb the length of the hair is regulated while being cut.



Claim.—A comb constructed of the two combs *a c*, the comb *c* having its ends bent over and provided with the teeth *g*, substantially as shown and described.

201,774. CAP-EXTRACTORS. George W. Hadley, Chicopee, Mass., assignor to the Massachusetts Arms Company, same place. Filed Mar. 11, 1878.



Claim.—1. The tool for removing caps or primers from cartridges, consisting of a base-plate or stirrup, A, adapted to engage with the flange of the cartridge, and the pointed lever B, pivoted to said plate, substantially as shown and described.

2. The base-plate A, adapted to engage with the head of the cartridge, in combination with a slotted pointed lever B, pivoted thereon.

3. In a cap-extractor, the combination of the base-plate or stirrup, adapted to engage with the head of the cartridge, and a lever or extractor, B, pivoted thereon, and arranged to engage with the outer edge of the primer, substantially as shown.

201,775. CIGAR-MOLDS. George W. Hamilton, Fredericksburg, Va. Filed Aug. 30, 1877.

Brief.—The matrices are in two parts, and can yield laterally to permit the plunger to enter when necessary.

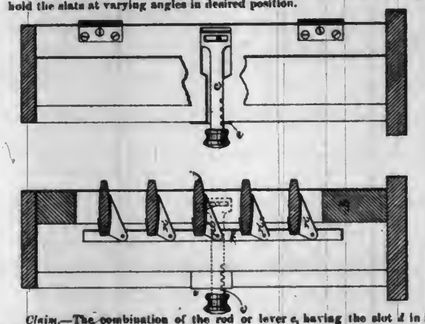


Claim.—1. The combination of the elastic blocks with the two-part or sectional molds, the same being placed between each two molds, and the latter confined in such a manner as to allow lateral adjustment of each mold part or section with respect to its counterpart, all as shown and described.

2. The parts *a a* of the matrix having end projections, and a bar or wire for confining them to the bed-plate, combined substantially as described.

201,776. WINDOW-BLIND CLOSERS. Austin S. Hammond and Daniel W. Hammond, Independence, Iowa. Filed Feb. 9, 1878.

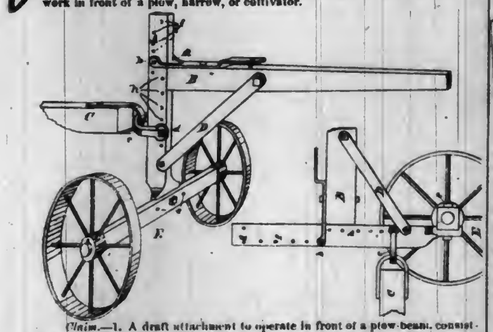
Brief.—A push rod or lever, formed with a rectangular slot on its inner end, is detachably connected, and coacts with a crank-pin attached to the end of one of the blind-slats, and the lower edge of the rod is notched, serving to hold the slats at varying angles in desired position.



Claim.—The combination of the rod or lever *c*, having the slot *d* in its inner end, with the shaft *g* and crank *h*, the inner end of the shaft being fastened to a slat, *j*, substantially as shown.

201,777. DRAFT ATTACHMENTS FOR PLOWS. Milo Harris, Jamestown, N. Y. Filed Mar. 1, 1878.

Brief.—Draft attachment having all its parts adjustable, and adapted to work in front of a plow, harrow, or cultivator.

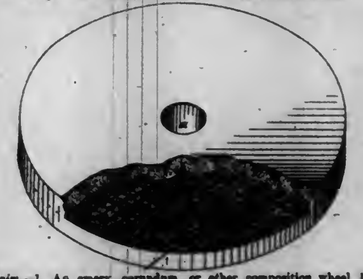


Claim.—1. A draft attachment to operate in front of a plow-beam, consisting of the truck E, the perforated and laterally adjustable standard A, and vertically adjustable pole B, constructed and arranged substantially as shown and described.

2. The combination of truck E, standard A, pole B, brace D, and plow-beam F, all combined and arranged substantially as shown and described.

201,778. EMERY-WHEELS. Gilbert Hart, Detroit, Mich. Filed Mar. 5, 1878.

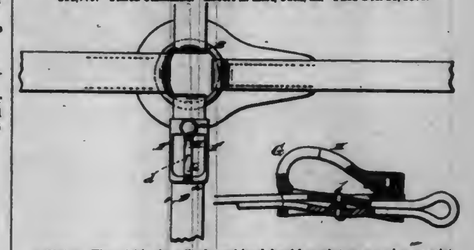
Brief.—Prefers copper or brass for material of the brace.



Claim.—1. An emery, corundum, or other composition wheel, having embedded therein and extending from center to circumference thereof a brace or braces formed of a substance as easily, or more easily, worn away by friction than the body of the wheel, whereby the composition of which such wheel is formed is braced against the centrifugal strain resulting from a rapid rotation, and an even wear of the periphery of said wheel secured, substantially as set forth.

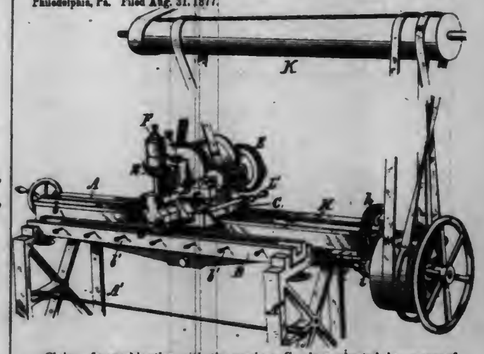
2. An emery, corundum, or other composition grinding or polishing wheel, having embedded therein a concentric, reticulated, or foraminous metal disk or disks, equally subject to wear by friction as the body of the wheel, whereby said wheel is re-enforced in all directions, substantially as set forth.

201,779. TRACE CARRIERS. Robert B. Hart, Odell, Ill. Filed Feb. 23, 1878.



Claim.—The within-described combined buckle and trace-carrier, consisting of the side-bars F F, center cross-bar F', with the tongues *b b* in opposite directions, the end cross-bars *a a*, hook G, and snap or spring-arm H, with lip *d*, all constructed substantially as and for the purposes herein set forth.

201,780. MILLING-MACHINES FOR DRESSING PRINTERS' CHASES. Richard W. Hartnett, Philadelphia, Pa. Filed Aug. 31, 1877.



Claim.—In combination with the carriage C, when adapted, by means of the screw H and its actuating mechanism, to be reciprocated longitudinally upon the shears A in relation to the chuck B, the head D, when provided with the back gear E, bevel-gear E', spindle F, and cutter G, and adapted, by means of the cross-feed screw I, to be reciprocated transversely upon the carriage C in relation to the chuck B, substantially as shown and described, and for the purpose specified.

201,781. OVAL-TURNING LATHES. Henry C. Heckendorn, Reading, Pa. Filed Feb. 4, 1878.

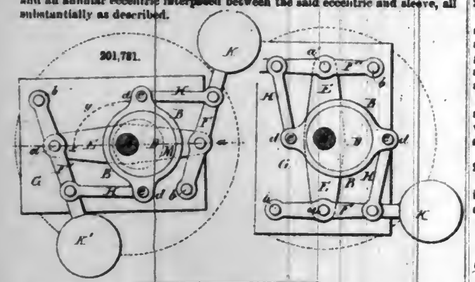
Claim.—1. The combination, in an oval-turning lathe, of a face-plate, G, levers F F', carrying the said face-plate and carried by the rotating shaft A, and a fixed eccentric, D, for controlling the said levers, all substantially as set forth.

2. The combination of the reciprocating and rotating face-plate of an oval-lathe, the counterbalancing weights, the eccentric to which the said face-plate owes its reciprocation, and devices whereby the said weights are placed under the control of the eccentric, all substantially as set forth.

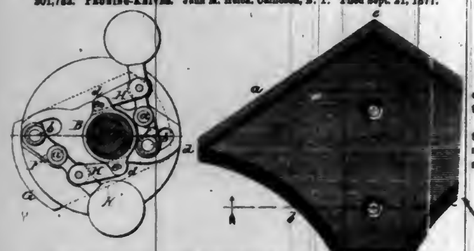
3. The combination, in an oval-turning lathe, of the eccentric which reciprocates the face-plate, the eccentric-sleeve, connected to the said face-plate,

and an annular eccentric interposed between the said eccentric and sleeve, all substantially as described.

201,781.

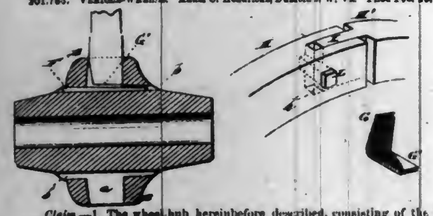


201,782. PRUNING-KNIVES. John M. Holck, Callioon, N. Y. Filed Sept. 21, 1877.



Claim.—The pruning-knife herein described, having beveled angular cutting-edges *a a*, meeting at the center *c*, and the curved beveled edges *b b*, extending from the handle to the points *d d*, all constructed as and for the purpose set forth.

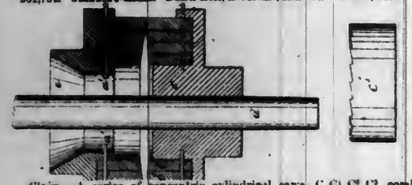
201,783. VEHICLE-WHEELS. Adam C. Hendricks, Duffield's, W. Va. Filed Feb. 23, 1878.



Claim.—1. The wheel-hub hereinbefore described, consisting of the hub proper, A, flanges B E, partitions C C, constructed to form the mortises *a a* wider at the inner ends than the outer ends, with wedges G, the flanges B provided with the holes *b b*, and the detachable wedges F, substantially as and for the purposes herein set forth.

2. In combination with a hub having the spoke-mortises *a* made larger at their inner ends than at the outer, the wedges G, formed with the arms G', and the wedges F, substantially as and for the purposes herein set forth.

201,784. GRINDING-MILLS. Daniel Moss, Evansville, Ind. Filed Oct. 17, 1877.



Claim.—A series of concentric cylindrical saws, C C' C² C³, combined with a flanged disk, and secured thereto by pins or bolts passing through the flanges of the disk and the plain end of the cylindrical saws, substantially as described.

201,785.



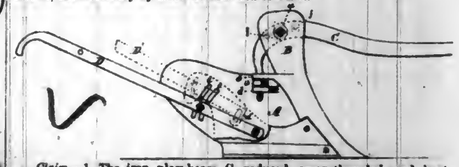
201,785. GRAIN-DRIERS. Oliver Holden, St. Louis, Mo. Filed Jan. 4, 1877.

Claim.—In a grain-drying machine adapted to operate upon the grain in a continuous stream, the combination, with the revolving conical cylinder A and the inner independently-revolving steam-cylinder B, between which the grain passes continuously, of the radial and longitudinal steam-pipes C C', attached to and revolving with the said inner cylinder, constructed and arranged substantially as described and shown.

2. The combination, with the revolving cylinder A, having spiral blade H and longitudinal lifters H', of the inner revolving steam-cylinder B, provided with catch-plates L, constructed and arranged substantially as described and shown.

201,786. PLOWS. Cornelius Koppenhoffer, Halifax, Pa. Filed Jan. 31, 1878.

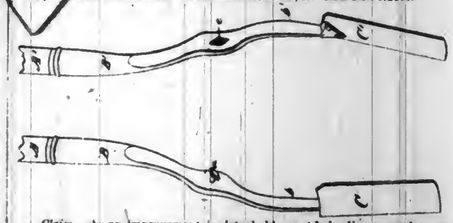
Brief.—The handle adjusts on undercut ribs cast on the mold-board, forming flanges for the screw-head. The beam is adjusted laterally by the set-screws, and vertically by screw on rear end of beam.



Claim.—1. The iron plow-beam C, reduced, screw-threaded, and bent down at its rear end, and combined, by means of the bolt *a* and nut *c*, with the plow having extension B and lips *b b*, substantially as shown and described.

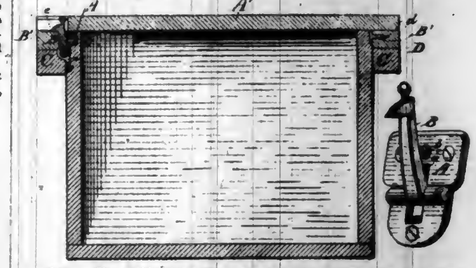
2. In combination with the plow having extension B and slotted lips *b b*, the plow-beam pivoted to said extension, and bent down and inserted into the slots of said lips at the rear end, and having a fastening-nut, *c*, and adjusting-screws *f f*, substantially as and for the purpose described.

201,787. POST-HOLE SPADES. Zenos L. Hoover, Moline, Ill. Filed Nov. 6, 1877.



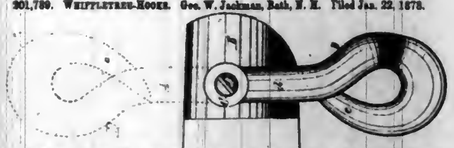
Claim.—As an improvement in detachable post-hole diggers and transplanters, the part A B *b* C, having the lug *a* permanently secured thereupon, in combination with the part A' B' *b'* C', having perforation *c* of a size and shape to fit over the head of lug *a*, substantially as and for the purpose herein shown and described.

201,788. BOX-FASTENERS FOR EGG-CASES, &c. Anthony Hurst and Frederic W. Smith, Louisville, Ky. Filed Feb. 12, 1878.



Claim.—The combination of the egg-case, having pin D, cover A', having braces B' B', recess *d* and slot *e*, and the fastener, consisting of plate A, catch B, and spring *b*, all arranged and operating substantially as described, for the purpose herein shown and specified.

201,789. WHIFFLETREE-HOOKS. Geo. W. Jackman, Bath, N. H. Filed Jan. 22, 1878.

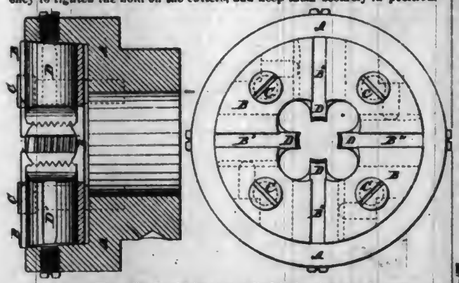


Claim.—1. The combination of the rounded-end collar B, provided with the bearing-ears *a a*, and the bolt C, with the duplex-shanked hook D, constructed and arranged therewith substantially as set forth.

2. The combination of the rounded-end whiffletree A and collar B, provided with the bearing-ears *a a*, with the bolt C and the duplex-shanked hook D, arranged therewith substantially as shown and described.

201,790. SCREW-CUTTING DIES. M. Carlyle Johnson, Hartford, Conn. Filed Sept. 26, 1877.

Brief.—The collet is provided with cylindrical grooves for the reception of the cutters, and when the said collet is forced down in the chamber of the shell, both being conical, the spring of the sections of the collet has a tendency to tighten the hold on the cutters, and keep them securely in position.



Claim.—1. The collet B, with its open cylindrical sockets for the cutters and beveled circumference, substantially as and for the purpose herein described.

2. The combination of the shell A, with its beveled chamber, the flexible taper collet B, and the screws C, as a clamping device for the cutters D, substantially as set forth.

3. The cylindrical cutters D, in combination with the clamping-collet B, substantially as herein described.

201,791. CARRIAGE-AXLE BOXES. James F. Johnson, Boston, Mass. Filed Sept. 1, 1877.

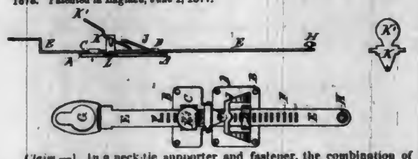


Claim.—1. The combination, with the axle, the box *g*, its shoulder *h*, and spring *c*, of a chambered collar, *c d*, to receive within it the end of the spring, and permit the movement of the end of the box within the spring, substantially as described.

2. The combination of the box, its shoulder, the spring *c*, arranged to extend beyond the end of the box, and the axle, and its collar chambered to receive the end of the spring projected beyond the box.

3. The combination, with the axle-arm, provided with a seat, *i*, and a projecting portion to enter the cylindrical opening in the interior of the spring, of a spiral spring arranged about the outside of the box, and extended beyond the end of the box, substantially as described.

201,792. NECK-TIE FASTENERS. Thomas Wm. Jones, Jr., London, England. Filed Jan. 4, 1878. Patented in England, June 1, 1877.



Claim.—1. In a neck-tie supporter and fastener, the combination of the following elements: a supporting-plate adapted to receive and support the tie, an adjustable suspending-bar adapted to be suspended from the neck of the wearer, a locking-lever to lock said bar into the desired position, and a spring-pawl to lock the locking-lever to the bar, and means for releasing said pawl from the latter, substantially as described.

2. In a neck-tie supporter and fastener, the base-plate A, of a single piece of metal, struck up to form the loops or bridge-pieces C D, the standards L, and the elastic tongue or click J, substantially as described, for the purpose specified.

3. In a neck-tie supporter and fastener, the rack-bar or runner E, provided at its upper end with a hook or eye for the reception of the stud or button whereon the tie or scarf is suspended, in combination with the base-plate A, constructed as described, and a locking device to lock the rack-bar to the plate, substantially as described, for the purpose specified.

4. The rack-bar or runner E, provided at its lower end with a stud or button, in combination with the base-plate A, provided with a suitable stop to prevent the runner or rack-bar E from slipping through said plate, and to provide a hold whereby the plate and tie may be adjusted on the bar, as described.

5. The rack-bar or runner E, provided with a series of transverse slots, F, and the plate A, having loops or bridge-pieces C D and the standards L, of a pivoted locking-lever, K, adapted to lock the bar E and plate A in the desired position, substantially as described.

6. The combination, with the plate A and its elastic tongue or click J and the runner E, of the pivoted locking-lever K, provided with a thumb-piece, K', to release the locking-lever from the rack-bar E, when locked thereto by the click J, substantially as described.

7. The combination, with the rack-bar or runner E and the locking-lever K, of the supporting-plate A and the elastic tongue or click J, to hold the locking-lever to the rack-bar, substantially as described.

8. The combination of the supporting-plate A, constructed substantially as described, the rack-bar or runner E, and the locking-lever K, having thumb-piece K', with a neck-tie or scarf, said thumb-piece K' being constructed and adapted to pass through the back of the tie and project therefrom, to enable the wearer to adjust the tie, substantially as set forth.

201,793. BOMB-LANCES. Daniel Kelleher, New Bedford, Mass. Filed Feb. 16, 1878.



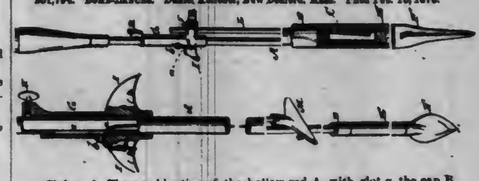
Claim.—1. In a gun for shooting a bomb-lance, the perforated boss E, formed on the side of the gun, the primer F, rubber packing or tube *b*, and the cap G, substantially as and for the purposes herein set forth.

2. The combination, with the harpoon A B, of the sliding clamp J, connected to the primer F, for exploding the same, in the manner as hereinbefore set forth.

3. The combination of the sliding rod I with head-piece H, the adjustable casting K, hook L, and latch M, substantially as and for the purposes herein set forth.

4. The combination, with a gun, D, of the bomb N, head O, having interior chamber *n*, and fuse-tube R', the primer F', wire *p*, and projection S on the side of the gun, substantially as and for the purposes set forth.

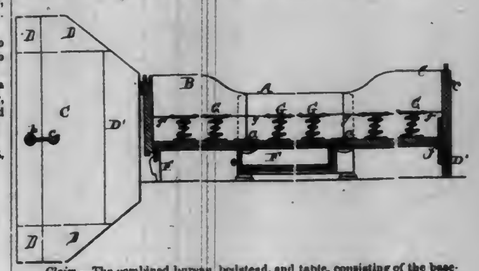
201,794. BOMB-LANCES. Daniel Kelleher, New Bedford, Mass. Filed Feb. 16, 1878.



Claim.—1. The combination of the hollow rod A, with slot *x*, the cap B, with arm C, having head C', the bomb E, spear F, primer D, with wire or cord *s*, and the sleeve G, with wings *l l* and aperture *b*, all substantially as and for the purposes herein set forth.

2. In combination with the sleeve G, connected, as described, with the primer for exploding the charge in the bomb E, the adjustable rod L, with head M, for the purposes herein set forth.

201,796. TABLE-BEDSTEADS. Emerick Kiss, New York, N. Y. Filed Jan. 19, 1878.



Claim.—The combined bureau, bedstead, and table, consisting of the base-frame A, having the drawer F arranged beneath it, and sliding on cleats attached thereto, and the hinged sections provided with the springs G, connected with each other by bands or cords *g*, and the end springs of each row connected to the walls of the sections by bands *g'*, the leaves D and D', and brackets *e*, all constructed and arranged substantially as described.

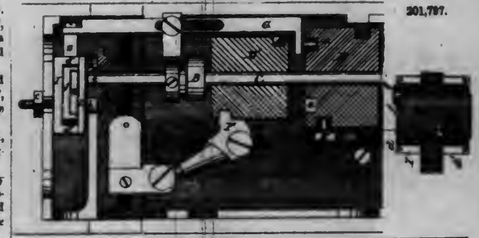
201,796. COUNTER-STIFFENERS FOR BOOTS AND SHOES. Frederick S. Dawes, Hudson, Mass. Filed Jan. 2, 1878.



Claim.—1. The counter-stiffener of a boot or shoe constructed with a tongue to cover or lie against the back seam, substantially as described, for the purpose specified.

2. A counter-stiffener of leather, leather-board, or other analogous material, and provided with a metallic or rawhide tongue, all substantially as described.

201,797.

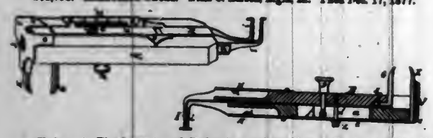


201,797. SEWING-MACHINES. Peter Langlois, Port Henry, N. Y. Filed Oct. 23, 1877.

Brief.—The upward and downward movements of the swiveling feed-step are caused by means of a projection on the bar, by which it is carried, that works in a cam-groove formed in a hub on the end of the driving-shaft. The bar is carried in a frame reciprocated horizontally by means of a lever, one end of which works in a cam-groove in another hub on the shaft. A four-motioned feed is obtained with positive motion in each direction.

Claim.—The vertically-reciprocating bar K, carrying a horizontally-swiveling perforated feed-step, *g*, and having a projection, *i*, in combination with the horizontally-reciprocating frame J, the beam H, having cam-groove *h*, the lever G, and the beam D, having cam-groove *a*, substantially as and for the purpose described.

201,798. HEATING-GRATES. Elsin G. Larson, Elgin, Ill. Filed Dec. 17, 1877.



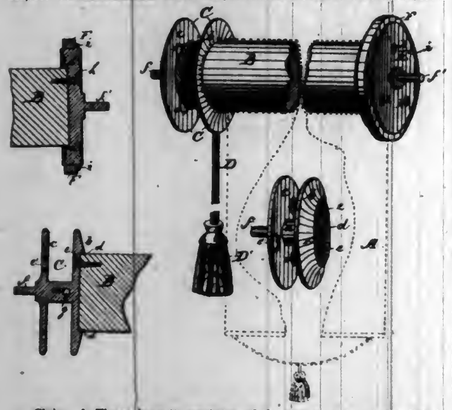
Claim.—1. The bars A and B, having points E and G, removable points I and *i*, and set-screw D, all constructed, arranged, and operating substantially as described, for the purpose specified.

2. The bars A and B, having points E and G, set-screw D, and springs H H, each with a nose, *h*, in combination with the points I *i*, all constructed, arranged, and operating substantially as described.

3. The bar A, having point E, removable point I, and index-plate K, in combination with bar B, having point G, removable point *i*, set-screw D, and index-finger L, all constructed, arranged, and operating substantially as herein set forth.

4. The bars A and B, having points E and G, removable point *j*, and set-screw D, in combination with the foot-rest M, having spring *m*, all constructed, arranged, and operating as and for the purpose set forth.

201,799. CURTAIN-FIXTURES. John P. Lash, Toronto, Ontario, Canada. Filed Nov. 20, 1877.



Claim.—1. The reel-cap C, consisting of the stem or axle *a*, inner disk *b*, recessed at *d* and having screw-holes *e e e*, and outer disk *c*, having corresponding but larger perforations *c' c' c'*, substantially as described, for the purpose herein shown and specified.

2. The combination of the improved reel-cap C, provided with operating-cord D and weight D', roller B, having curtain A, and wheel E, having friction-band F, all constructed and combined to operate substantially as and for the purpose hereinbefore set forth.

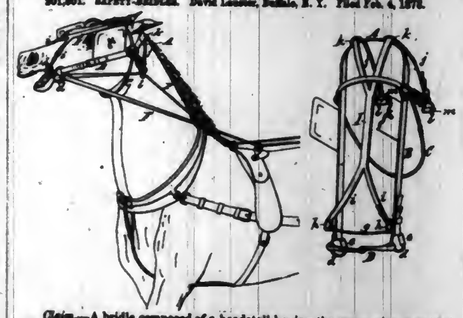
201,800. OVERALLS. Stephen Lackey, Chicago, Ill. Filed Feb. 6, 1878.



Claim.—1. A pantaloon garment, such as pants, drawers, and overalls, provided with a horizontal waistband and independent riser, *c*, substantially as and for the purposes set forth.

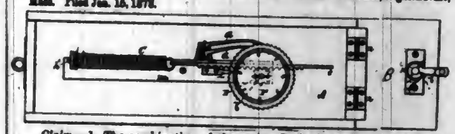
2. A pantaloon garment, such as pants, drawers, and overalls, provided with an independent riser, *c*, and with a waistband, the ends of which form the tabs for the adjustment of the garment to the person of the wearer, substantially as described.

201,801. SAFETY-BRIDLES. David Leaster, Buffalo, N. Y. Filed Feb. 4, 1878.



Claim.—A bridle composed of a headstall having the crown-piece provided with loops *h h*, the main bit D, attached to the cheek-pieces, the auxiliary bit *g*, attached to the overdraw-strap I, the rear ends of which pass loosely through the loops *h h* and are provided with loops *i i*, and the reins F, attached to the saddle, and passing through the loops *i i* of the strap I and the rings *d d* of the main bit, substantially as and for the purpose set forth.

201,802. DYNAMOMETERS FOR TESTING THE STRENGTH OF YARN. Mark Lee, Highlandville, Mass. Filed Jan. 15, 1878.



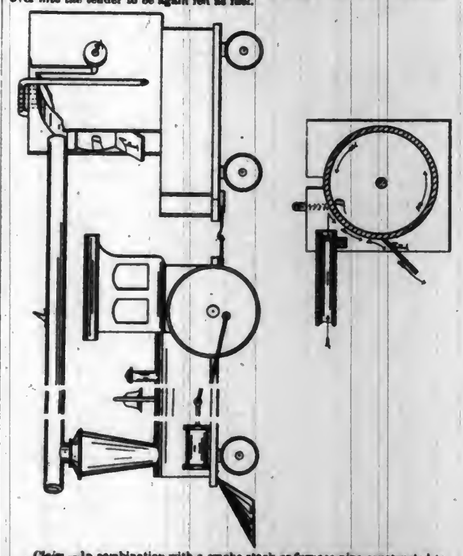
Claim.—1. The combination of the spring C, the hooked rack-bar D, the pinion E, the ratchet-wheel F, index L, and one or more pawls, G, such being to operate with a rotary barrel or windlass, H, all being arranged substantially as and for the purpose as set forth.

2. The box-body A and cover B, arranged and connected as described, in combination with the windlass or barrel H, the spring C, hooked rack-bar D, pinion E, graduated ratchet-wheel F, index L, and one or more pawls, G, all being essentially as set forth.

3. The combination of the pin K with the cover or plate *i*, provided with the hole *e*, and with the windlass or barrel H, having the hole *g* and recess *i*, as set forth, and with the hooked rack-bar D, its spring C, pinion E, ratchet-wheel F, index L, and pawl or pawls G, all being substantially as specified.

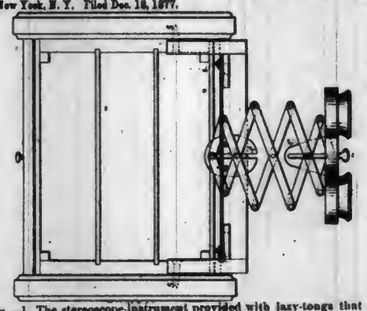
201,803. SPARK ARRESTERS AND EXTINGUISHERS. John W. Ledyard, Detroit, Mich. Filed Jan. 24, 1878.

Brief.—A revolving drum having its surface wet meets the sparks as they issue from exit end of the conveying-pipe. A jet of water also falls on said drum at this point, completely saturating the sparks, when they are carried over into the tender to be again fed as fuel.



Claim.—In combination with a smoke-stack or furnace-pipe constructed to discharge the products of combustion thereon, a rotating drum or wheel revolving in a water-tank, and provided with devices for spraying or showering water upon its upper surface, substantially as and for the purposes set forth.

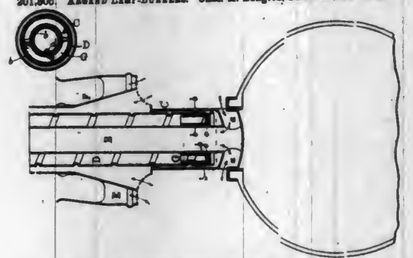
201,804. STEREOSCOPES. Wm. H. Lewis, Brooklyn, E. D., assignor to E. and H. T. Anthony & Co., New York, N. Y. Filed Dec. 18, 1877.



Claim.—1. The stereoscope-instrument provided with lazy-tongs that are pivoted at their ends to the middle of the picture-holder and lens-holder, respectively, and provided with guides *c*, as and for the purposes set forth.

2. A case for holding stereoscope-pictures, provided with a box in the lower part for the pictures, and a movable cover, in combination with a folding stereoscope-instrument, connected to said case, and folding beneath the cover thereof, substantially as set forth.

201,805. ARGAND LAMP-BURNERS. Chas. M. Longren, Baltimore, Md. Filed Feb. 9, 1878.

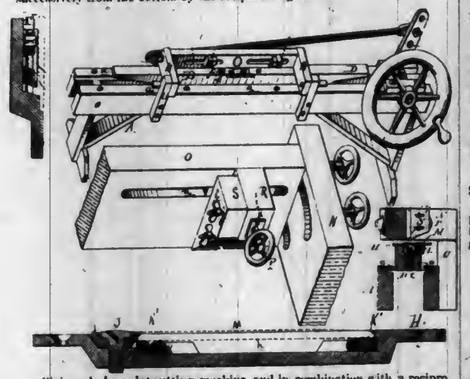


Claim.—1. The burner-supporting tube C, the lower portion of which is adapted to screw into the neck of the lamp, combined with the central air-tube B and lateral air-passages *a*, substantially as described.

2. The burner-supporting tube C, central air-tube B, and lateral air-passages *a*, combined with the revolnble threaded pipe D and wick-carrier G, the latter consisting of the shells *b*, united by ribs *c*, substantially as specified.

201,806. SPLINT-CUTTING MACHINES. Wm. Lynch, Detroit, Mich. Filed Dec. 8, 1877.

Brief.—The blank is clamped against the back-support, and splints cut successively from the bottom by the reciprocating cutter.



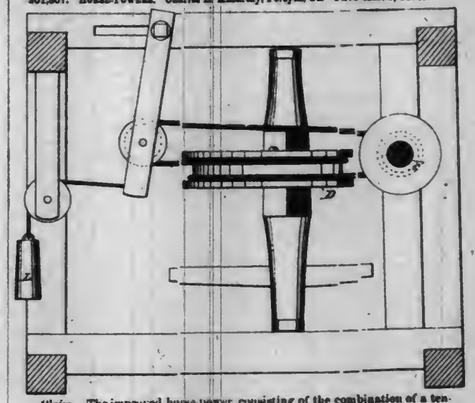
Claim.—1. In a slat-cutting machine, and in combination with a reciprocating knife-stock, an adjustable knife-bearing plate, pivoted at one end and adjustable at the other end by means of a slot in said plate, and a screw passing through the same into the knife-stock, substantially as and for the purposes set forth.

2. In a slat-cutting machine, a knife bed-plate, recessed as described and shown, in combination with the adjusting wedges and screws, substantially as and for the purposes set forth.

3. In a slat-cutting machine, and in combination with a reciprocating knife-stock and a recessed bed-plate, constructed as described, a knife substantially of the form shown, with its ends beveled for adjusting and holding it in the bed, substantially as set forth.

4. In a splint-cutting machine, and in combination with the frame thereof, a slotted back-rest, O, provided with end rests R, adjustable laterally by means of said slots and suitable bolts, the adjustable guide-blocks S, constructed to operate substantially as and for the purposes set forth.

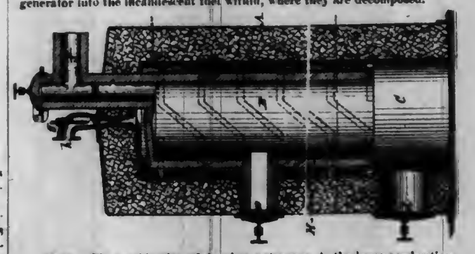
201,807. HORSE-POWERS. Charles E. Macarthy, Forsyth, Ga. Filed Mar. 8, 1878.



Claim.—The improved horse-power, consisting of the combination of a tension-pulley, a horizontal band-wheel on the king-post, a speed-pulley, and an endless rope belt wrapped once around the king-post wheel, and then distended about the speed-pulley and tension-pulley, substantially as described.

201,808. FURNACES FOR PRODUCING GASES FOR HEATING AND OTHER PURPOSES. Philip W. Mackenzie, Blaenavon, N. Y. Filed May 26, 1877.

Brief.—Air is injected by a steam-jet into the space in the furnace-walls, where the two are superheated, and are then passed near the bottom of the generator into the incandescent fuel within, where they are decomposed.



Claim.—The combination of the close outer case A, the inner combustion-chamber B, the interposed circuitous channel H, formed by flanged projections *k*, the steam and air injector G, and the outlet E for the resulting gases, essentially as shown and described.

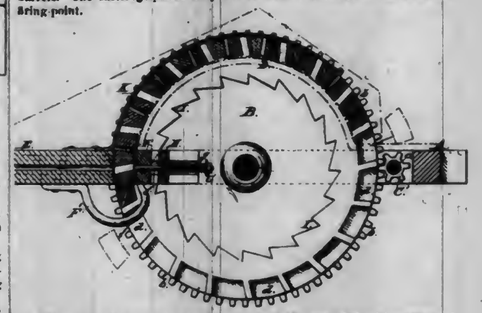
201,809. PROCESSES FOR MANUFACTURING COFFEE-SUGAR. Frank O. Matthiessen, Irvington, N. Y. Filed Aug. 24, 1877.

Brief.—Vacuum-pan sugar-magma, subjected to a prolonged boiling in vacuo until it contains only about nine per cent. of moisture, is mechanically mixed with a drier sugar, or a dry powdered white sugar, or both, in such proportion that the resulting product shall contain only the quantity of moisture usually present in coffee-sugar.

Claim.—The process of manufacturing coffee-sugar herein described, which consists in mechanically mixing with vacuum-pan magma a sufficient quantity of drier sugar to obtain a product containing the quantity of moisture usually present in coffee-sugar.

201,810. MACHINE-GUNS. Albert H. MacAlister, Cotton Plant, Miss. Filed Mar. 18, 1878.

Brief.—The cartridges are held in plates, which are adjusted in their proper seats in the revolving wheels, and fired by volley when in line with the barrels. The cartridge-plates drop out of their own weight when past the firing-point.



Claim.—1. In a machine-gun, the wheels B B', provided with recesses *d* for the reception of the cartridge-bars D, constructed substantially as shown, and for the purpose specified.

2. In a machine-gun, the wheels B B', provided with recesses *d* for the cartridge-bar D, and the ratchet-teeth I for operating the firing-bars H, constructed substantially as shown and described.

3. In a machine-gun, the wheels B B', provided with recesses *d* and ratchet-teeth I, in combination with the curved bars K, cartridge-bars D, and firing-bars H, constructed substantially as shown, and for the purpose described.

4. In a machine-gun, the wheels B B', provided with teeth *b*, recesses *d*, and ratchet-teeth I, in combination with pinion C, curved bars K, cartridge-bars D, firing-bars H, and barrels F, all arranged substantially as and for the purpose set forth.

5. The combination of the wheels B B', provided with teeth *b*, recesses *d*, and ratchet-teeth I, with the pinion C, curved bars K, cartridge-bars D, firing-bars H, guide-bar F, and barrels E, all constructed substantially as shown, and for the purpose described.

6. In a machine-gun, the combination of the barrels E with the guide-bar F, firing-bar H, provided with pins *f*, and guide-bars G, having springs *g*, and the wheels B B' and cartridge-bar D, constructed as shown, and for the purpose set forth.

7. The machine-gun herein described, consisting of a frame, A, wheels B B', pinions C C', barrels E, guide-bar F, firing-bar H, curved bars K, and suitable running-gear, all constructed and arranged for operation as herein shown, and for the purpose specified.

201,811. SOLUTIONS FOR PRESERVING MEATS. Franklin McCulley, McKinney, Tex. Filed Nov. 27, 1877.

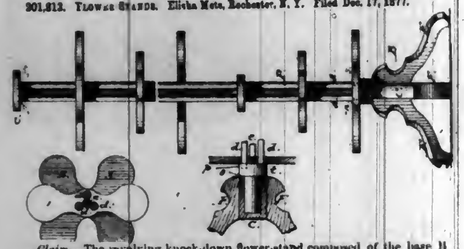
Claim.—A composition of matter for preserving perishable articles of food, consisting of water, sugar, charcoal, saltpeter, and salt, in about the proportions herein set forth.

201,812. CAR-COUPLINGS. John McCoshen, Fort Wayne, Ind. Filed Feb. 19, 1878.



Claim.—The combination, with the draw-head, of guides *e* on the lower side, sloping up and back from entrance, with the inner ends *e'* rounding off, as shown, and guides *f* on the upper side, and the gravity-dog, arranged to swing down between the guides, and keyed to the bolt *d*, to which the rod *k* connects and extends to the side of the car, being supported by a stud or otherwise, as set forth.

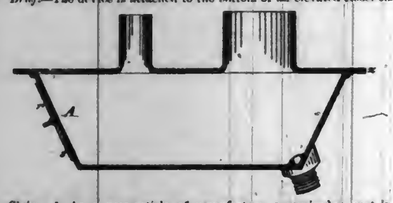
201,813. FLOWER STANDS. Elisha Mets, Rochester, N. Y. Filed Dec. 17, 1877.



Claim.—The revolving knock-down flower-stand composed of the base B and socketed cylindrical body C, the washer *s*, having the round tenon *n*, and supporting the structure in the perforations *p*, the pillar P, composed of the vertical rods *d*, inclosing the shelf-rod support *e*, and capped with the shelf *c*, and the perforated shelves 1 2 3, or more, arranged spirally on the pillar, all as and for the purposes set forth.

201,814. SERVICE-BOXES. Edward W. Meyer, New York, N. Y. Filed Aug. 20, 1877.

Brief.—The device is attached to the bottom of an elevated closet-cistern.



Claim.—1. As a new article of manufacture, a service-box cast in one piece, substantially as herein described.

2. A service-box provided with one or more spuds, so that the pipe leading from said box may be attached by a screw-coupling.

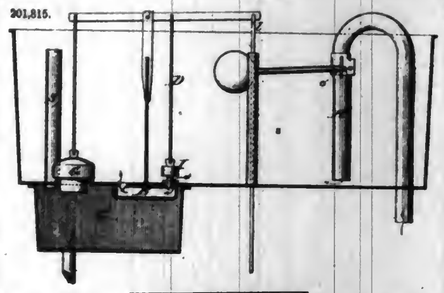
3. A cast-metal service-box provided with an opening, A, in its front end to provide for cleaning the same, said opening having a frame, *a*, cast in the body of the box, and fitted with a cap, *c*, substantially as herein shown and described.

201,815. WATER-CLOSET-SUPPLY APPARATUS. Henry C. Meyer, New York, N. Y., assignor to Henry C. Meyer & Co., same place. Filed Jan. 16, 1878.

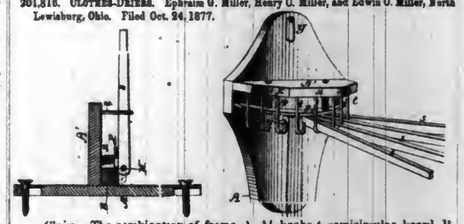
Claim.—1. The combination of the main and auxiliary tanks with a passage-way, E, located at, or joined in, the common bottom or floor of the tanks, substantially as set forth.

2. The combination of the two tanks having a passage-way or channel of communication, such as specified, with the service-box and system of valves, the whole arranged and operating as and for the purpose specified.

201,815.

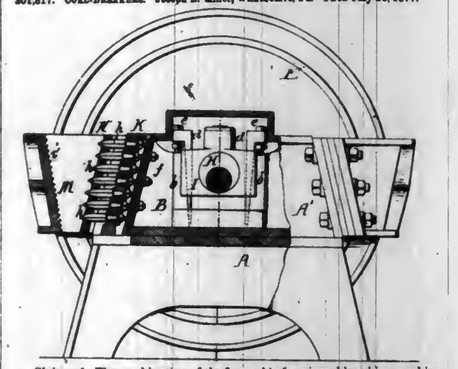


201,816. CLOTHES-DRIERS. Ephraim C. Miller, Henry C. Miller, and Edwin O. Miller, North Lewisburg, Ohio. Filed Oct. 24, 1877.



Claim.—The combination of frame A A', hooks *t*, semicircular board P, spiral springs *x*, block B, with wire H, and hinged arms *z*, substantially as and for the purpose set forth.

201,817. COAL-BREAKERS. Joseph B. Miller, Wilkesbarre, Pa. Filed July 26, 1877.



Claim.—1. The combination of the frame A' of a mineral-breaking machine with a box, B, armed with teeth and adapted to slide on said frame, and with the hopper M, bounded on one side by the perforated plate N, all substantially as described.

2. The combination of the reciprocating box or frame B and the detachable plate K, carrying the teeth, with the hopper M and perforated plate N.

3. The combination of the box or frame, its guides, and adjustable taper keys with the driving-shaft D, and eccentric B on the same, and the sliding block I.

201,818. REVERSIBLE CUFFS. Charles H. Morse, Minneapolis, Minn., assignor of one-half his right to Charles A. Fuller and George H. Simpson, same place. Filed Feb. 16, 1878.



Claim.—1. The central reversible fly B, attached to and forming an integral part of a reversible cuff, for the purposes set forth.

2. As a new article of manufacture, a reversible cuff, A, provided with a central reversible fly, B, substantially as and for the purposes herein set forth.

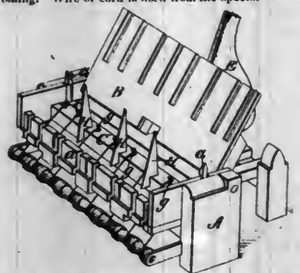
201,819. PRINTERS' GALLEYS. John W. Munday, Chicago, Ill. Filed Mar. 4, 1878.



Claim.—The galley consisting of a metal bed-plate, having the facing-strips C soldered thereto, and the wooden ledges placed outside of the facing-strips, and independently secured to the bottom or bed plate, substantially as specified.

201,820. MACHINES FOR PRESSING STRAW, CORN-STALKS, &c., FOR FUEL. Edwin R. Murdock, York, Nebr., assignor of two-thirds his right to O. W. Williams, Sr., Eau Claire, Wis., and Rachel Godding, Beaver Crossing, Nebr. Filed Feb. 15, 1878.

Brief.—The knives are attached to the presser-head, and serve to cut the bale into sections while being pressed. Upon the retraction of the presser-head they are automatically elevated to admit the free access of fresh material for baling. Wire or cord is used from the spools.



Claim.—1. In a press for preparing straw, &c., for use as fuel, the combination of a sliding presser-head and one or more automatic knives for dividing the material into short lengths or blocks.

2. In a fuel-press, the combination of an inclosing body or frame, a sliding presser-head therein, and one or more knives connected with the head and arranged to operate in connection therewith, substantially as shown, whereby the two operations of cutting and pressing the material are performed automatically.

3. In a fuel-press, a series of knives or blades arranged to divide the entire body of material contained in the press into small blocks or lengths at a single operation, substantially as shown and described.

4. The combination of the bed A, lid or top B, presser-head C, and knives H.

5. In combination with the knives pivoted to the movable head, the studs or pins to elevate the knives when they are drawn back.

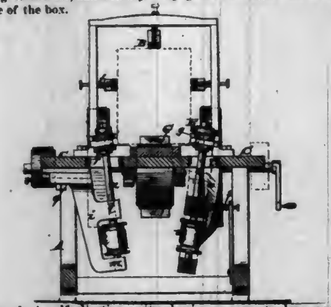
201,821. WASH-BOARDS. Joseph Murphin, Malaga, N. J., assignor of one-half his right to Alfred B. Richman, same place. Filed Mar. 2, 1878.



Claim.—The combination, with a wash-board having the longitudinally-ribbed rollers and the grooves *l* at each side of the said rollers, of the drip-plate C, adapted to be shifted from one side to the other of the board, substantially as specified.

201,822. MACHINES FOR TRIMMING WOODEN BOXES. Frederick Myers, New York, N. Y. Filed Jan. 8, 1878.

Brief.—Woolen boxes of different sizes are placed upon a carrier formed of an endless belt having projections on it to prevent the boxes from slipping, and mounted on rollers arranged at either end of a flanged table, and fed between cutters mounted on spindles, one of which is yielding or self-adjusting, the other adjustable by a slot and set-screw, the yielding spindle carrying above the cutter a gage, which bears against the work to limit the extent of the cutting of the bit, and self-adjusting guides arranged above and upon either side of the box.



Claim.—1. A self-adjusting cutter having a gage to bear against the work, to limit the cutting of the blade, substantially as shown and described.

2. The combination of a self-adjusting cutter having a gage to bear against the work, a carrier, and driving mechanism, substantially as shown and described.

3. The combination of a self-adjusting cutter having a gage to bear against the work, an adjustable cutter, a carrier, and driving mechanism, substantially as shown and described.

4. The combination of a self-adjusting cutter having a gage to bear against the work, an adjustable cutter, a self-adjusting guide, and driving mechanism, substantially as shown and described.

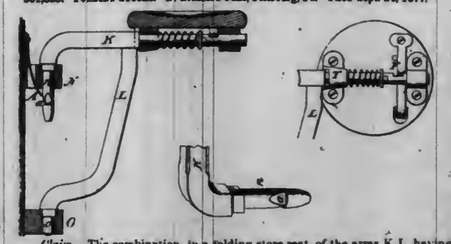
5. The combination of a self-adjusting cutter having a gage to bear against the work, a self-adjusting guide, a carrier, and driving mechanism, substantially as shown and described.

6. The combination of a self-adjusting cutter, an adjustable cutter, a carrier, self-adjusting guides, and driving mechanism, substantially as shown and described.

7. A self-adjusting cutter having a gage to bear against the work, an adjustable cutter, a carrier, a self-adjusting guide or guides, and operating mechanism, substantially as shown and described.

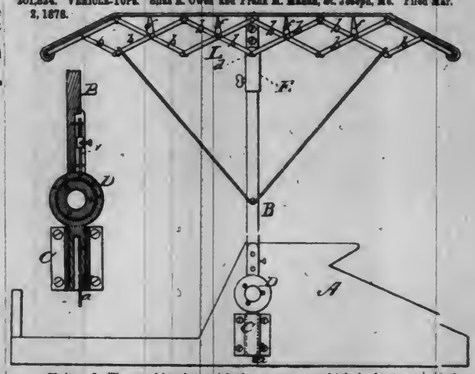
8. The combination of a supporting-frame, a table having a chute and guards, a self-adjusting cutter, an adjustable cutter, a carrier, self-adjusting guides, and driving mechanism, substantially as shown and described.

201,823. FOLDING STOOLS. D. Brainard Oaks, Pittsburg, Pa. Filed Sept. 24, 1877.



Claim.—The combination, in a folding store-seat, of the arms K L, having the pintles n o, the lower part of said pintles being round and the upper portion square, to fit the butts N O, and the spring A, adapted to engage in the notch *a* in the upper pintle, substantially as set forth.

201,824. VEHICLE-TOPS. Silas R. Owen and Frank M. Mahan, St. Joseph, Mo. Filed Mar. 2, 1878.



Claim.—1. The combination, with the wagon or vehicle body A, provided with suitable uprights B B, of the extensible and contractible lazy-tongs frames L and a canopy secured thereto, substantially as specified.

2. The combination, with the lazy-tongs extensible frames L L and the supporting-bow or uprights B B thereof, of a slide or thimble on said uprights, pivoted to the said frames by means of bolts *c* and pins *d*, substantially as specified.

3. The combination, with the uprights B B and the extensible lazy-tongs frame L L pivoted thereto, and the slides or thimbles actuating said frames and applied on said uprights, of a system of block and tackle adapted to raise or lower said slides, thereby extending or contracting the canopy frame, substantially as specified.

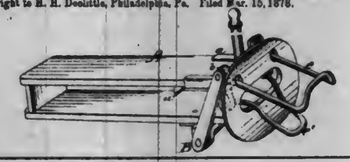
4. The combination, with the sockets C on the wagon or vehicle body sides, of the uprights or bows B B, adapted to enter said sockets, and having spring-catches adapted to engage said sockets, substantially as specified.

5. The combination, with a vehicle-body having sockets C and a catch, *a*, of the uprights or bows B B, having a ratchet-and-pawl joint, D, above said socket, substantially as specified.

6. The combination, with the extensible and retractible lazy-tongs frame L L and a tilt or covering secured thereto, of the flexible thongs *f*, substantially as specified.

7. The combination, with the lazy-tongs frames L L, of the transverse bracing-rods and a tilt or covering secured thereto, substantially as specified.

201,825. CAR-COUPLINGS. Henry H. Potter, Sterlingville, N. Y., assignor of one-half his right to H. H. Doolittle, Philadelphia, Pa. Filed Mar. 15, 1878.



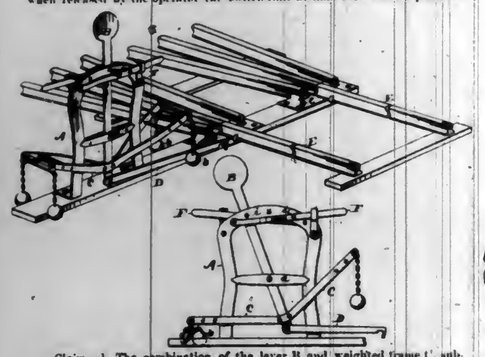
Claim.—1. The combination of the sliding plate *a*, arms B and *b*, rod *c*, and loop *c'*, substantially as described.

2. The combination of the plate *a*, arms *b*, rod *c*, and loop *c'*, substantially as described.

3. The draw-head A and plate *a*, in combination with the arms B *b*, rod *c*, and loop *c'*, substantially as described.

201,826. RAILWAY-SWITCHES. Henry M. Potter, Sterlingville, N. Y., assignor of one-half his right to H. H. Doolittle, Philadelphia, Pa. Filed Mar. 15, 1876.

Brief.—Near the lower end of the operating-lever is secured a rocking frame, weighted at both ends, said weights being suspended from the frame by flexible connections, whereby, when vibrated to shift switch-rails to siding, the weights on depressed end of frame rest upon the platform and cease to act, and when the lever is released the weight on elevated end of frame causes the rails to assume their former position in line with main-line rails. A spring-lever is employed to hold the switch-rails in line with the siding, and when released by the operator the switch-rails assume their normal position.

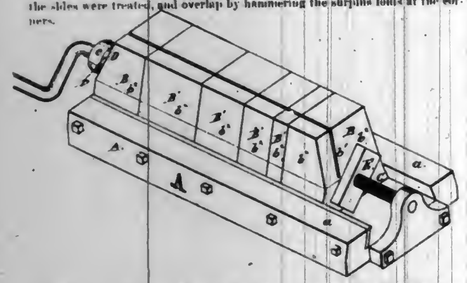


Claim.—1. The combination of the lever B and weighted frame C', substantially as and for the purposes set forth.

2. The lever B and weighted frame C, in combination with the frame A, and spring-bar F, and connecting-bar D, and switch-rail, substantially as described.

201,827. SHEET-METAL-PAN MACHINES. Thomas M. Powers, St. Louis, Mo. Filed Dec. 10, 1877.

Brief.—One edge of blank is inserted in groove and remainder of blank hammered down onto top of former. Opposite edge so treated. Remove the end bearing of the shaft and the nut, and slide off parts of the former till the former is as long as the ends of the pan. Treat the ends of the blank as the sides were treated, and overlap by hammering the surplus folds at the corners.



Claim.—1. The block B, having the oblique side or sides *b'* and oblique slot *b'*, for the purpose set forth.

2. The combination of two or more blocks, B B', having slots *b'*, and clamping screw C, for the purpose set forth.

3. The combination of bed-plate A, two or more blocks, B B', having slots *b'*, and the clamping screw C, for the purpose set forth.

201,828. STUMP-EXTRACTORS. Benjamin F. Price, Moline, Ill. Filed Mar. 18, 1876.

Claim.—1. The grabs made of different lengths, and having claws upon their extremities opening upon the same side, to adapt them to operate upon the same side of the chain, combined with a lever fulcrumed between the grabs, and with a grab-chain, substantially as described.

2. The short grab B, having its seat for the chain closer in to its shank than the grab B', in combination with the said longer grab, the lever, and the chain, substantially as described.

3. The combination, with the grab-chain C and the cable-chain D, of a rod-chain, E, and a separable or disconnecting clevis-coupling, *l* to *l*, arranged at the end of the said rod-chain, substantially as and for the purpose described.

4. The combination, with the cable-chain, of the lever *b*, having a cockeye adapted to receive the said chain at one end, and a pivoted clevis at the other, connected with the end of said chain, substantially as and for the purpose described.

5. The combination, with the anchor-chain and the lever A, of the clevis *a*, having its end reduced and perforated, and a removable clevis secured thereto by a bolt, substantially as described.

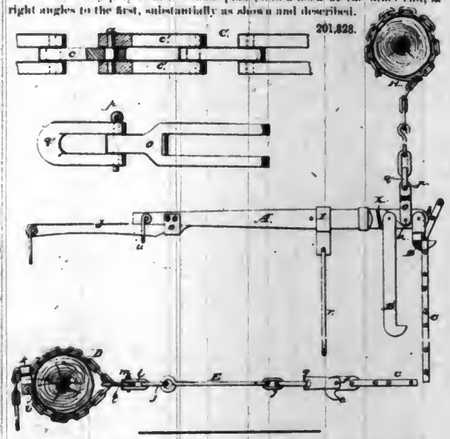
6. The metal shank X, recessed at its fulcrum upon both sides, and combined with the clevis and the grabs, to remove the said clevis from range of contact with the grabs, substantially as described.

7. The collar or band I, arranged about the lever, and adapted to slide thereon, in combination with said lever and a removable rod, *r*, as and for the purpose described.

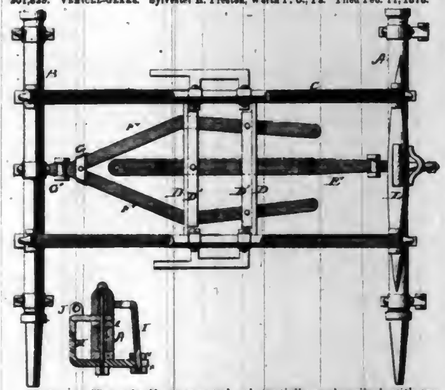
8. The combination, with the lever A, having a strap-socket, *s*, and a clevis, *s*, of the supplemental section J, arranged in said socket and clevis, substantially as shown and described.

9. The tree-hook consisting of a metal rod having a hook at one end, a bend in the body portion in the same plane, and a hook at the other end, at right angles to the first, substantially as shown and described.

201,828.



201,829. VEHICLE-GEARS. Sylvester H. Preston, Worth P. O., Pa. Filed Feb. 11, 1878.



Claim.—1. The yoke B, constructed substantially as described, with one end inserted between the head-block and the plate *e*, which covers the fel-piece, together with its rod I, in combination with the head-block, the axle, and the king-bolt, as and for the purpose specified.

2. The clamp G near the rear ends of the springs F F, secured in place by means of a rivet or bolt, which passes through, or partially through, said springs, for the purpose set forth.

3. The combination of the springs C C, the stay-springs F F and E, and the stirrup-frame D, as and for the purpose specified.

201,830. CORN HARVESTERS AND MOWERS. Frank J. Randall, Aurora, Ill. Filed Feb. 25, 1878.

Claim.—1. The gathering-fingers, the reel-carrying frame, and the revolving toothed separators, constituting a single structure, having for its hinge the axis-shaft of the toothed separators, and adapted to be turned upon said axis-shaft to adjust the height of the fingers, for the purpose specified.

2. The hinged finger-gathering device, having the under extension H, in combination with the eccentric or cam device I and the hand-lever J, pivoted to the main frame, for the purpose specified.

3. The gathering-fingers A, beveled or pointed on one side each way from the middle fingers, for the purpose specified.

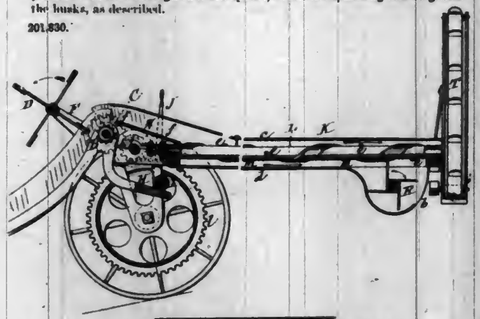
4. The husking-rolls O, having unbroken elastic surfaces, in combination with the rolls P, having spirally-wound elastic strips Q and intervening pins *e*, as set forth.

5. The finger-carrying frame A G H and the revolving toothed separators B, arranged upon and carried by the same shaft C, said finger-frame being adapted to be oscillated upon said shaft, while preserving its relation to said toothed separators, as set forth.

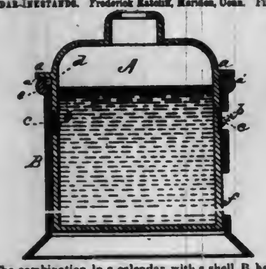
6. The case K, closed at the top and bottom, and the husking-rolls, arranged to divide its interior into two separate and distinct longitudinal spaces, L M, the lower one of which is closed at its front end, and provided with an exhaust-fan, R, at its open rear end, and the upper space having an open receiving end and an open discharging end, all constructed and adapted for operation as specified.

7. The combination, with the casing and with the husking-rolls O P, having contracting surfaces to form intervening spaces, opening into a bottom passage, M, as described, of an exhaust-fan, R, arranged and operating to produce a suction through said roll-spaces, to aid in separating and to gather the husks, as described.

201,830.

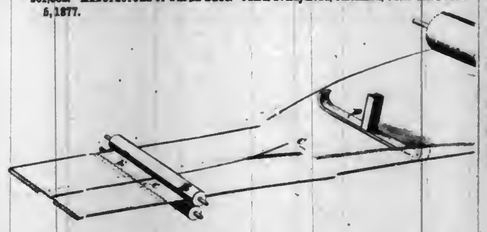


201,831. CALENDAR-HEADSTANDS. Frederick Ratcliff, Meriden, Conn. Filed Dec. 15, 1877.



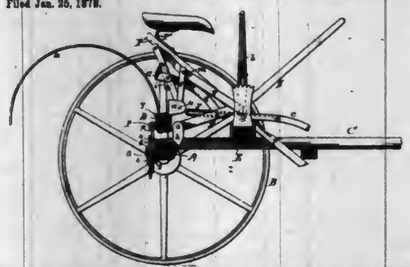
Claim.—The combination, in a calendar, with a shell, B, having the spaced notches *e* and view-slots *f f'*, of the vessel A, having a pin, *d*, adapted to be received in the said notches, substantially as specified.

201,832. MANUFACTURE OF PAPER BAGS. James P. Raymond, Cincinnati, Ohio. Filed June 5, 1877.



Claim.—As a new and useful improvement in the art of making notched-mouth paper tubes or bags from a continuous strip of paper, the cutting of a curved or angular slit, C, in the paper before the tube is formed, and after the tube has been formed severing the same in a single cut through both plies of paper across the extremities of the curved or angular slit, substantially as specified.

201,833. HORSE HAY-RAKES. Edmund D. Reynolds and Oliver B. Reynolds, Brockton, Mass. Filed Jan. 26, 1878.



Claim.—1. The toggle raising, lowering, and locking device, in combination with the foot-lever e and connecting-rod R, substantially as described.

2. The adjustable hinge, consisting of the plates 3 and 5, constructed as described, U-shaped rod *p*, and hook-plate O, substantially as set forth.

3. The slotted seat-standard I'', in combination with seat-supporting spring I''', provided with a bent tongue, *x*, for the purpose set forth.

201,834. PRESERVING TOGETHER CURED FISH AND POTATOES. Shubuah Rich, Boston, assignor to Wm. W. Trent, Wauwatosa, Mass. Filed Nov. 23, 1876.

Brief.—Cured fish and potatoes are chopped into a hash, to which are added tallow and saltpeter. The compound is then placed in a can, hermetically sealed, and boiled according to the well-known Appert process. (Passed by the Board of Examiners-in-Chief.)

Claim.—The process herein described of permanently preserving cured fish and potatoes together, as a commercial article of food for all climates, consisting in first washing the fish in tepid water and cleansing it of superfluous salt and other impurities, then reducing it to pulp, then mixing it with cooked hashed potatoes and raw chopped onions, tallow, condiments, and saltpeter, in substantially the proportions specified, and then, while warm, sealing the compound hermetically in cans and boiling, as described.

201,835. TAPE-HOLDERS. Elakim Rice, Cassnovia, N. Y. Filed Dec. 21, 1877.

Brief.—Improvement upon English Patent No. 496 of 1863, and patent to A. C. Gould, No. 191,581, June 5, 1877. (Passed by the Board of Examiners-in-Chief.)

Claim.—The combination of the metallic spool *a*, having a circumferential flange, *c*, at each end, and the bent metal guard *d*, forming eyes at its ends to fit loosely over the spool inside of the end flanges, leaving the center bore of the spool perfectly free, substantially as herein set forth.

201,836. BURGLAR-ALARMS. Alfred Ridge, Meadow, Mich. Filed Mar. 2, 1878.

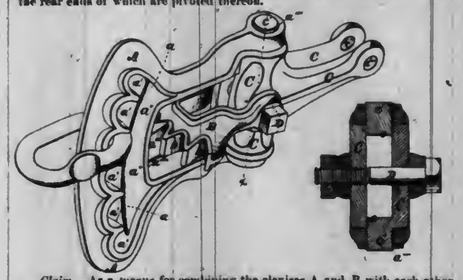
Brief.—A spring of the horseshoe form has a screw upon one end, which is screwed into the frame of the door. A lever pivoted to a projection of one branch of the spring pries the other branch. The opening of the door releases the second branch, which explodes a cap upon a nipple projecting from the first branch.



Claim.—The combination of the spring *a*, having the screw *b* formed upon one end, with the nipple *c* and lever *g*, the lever being pivoted upon a projection extending out from the side of the spring, substantially as shown and described.

201,837. PLOW-CLEVISES. Clark Robinson, Eau Claire, Wis., assignor to Smith & French, same place. Filed Aug. 2, 1877.

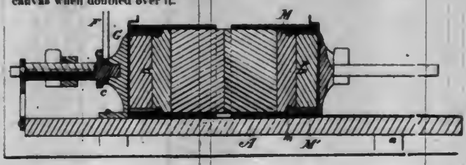
Brief.—Two T-shaped plates having each a lug and pintle are fitted between the rear ends of the vertical clevis, said lugs serving to separate the plates sufficiently to admit of their passage over the end of a plow-beam. A bolt passing through the vertical centers of the plates binds them together, and its projecting ends serve as a pivotal bearing for the horizontal clevis, the rear ends of which are pivoted thereon.



Claim.—As a means for combining the clevises A and B with each other and with a plow-beam, the plates C, provided each with a lug, *c*, pintle *c'*, and openings *c''* and *c'''*, and the bolt D, passing horizontally through said parts, substantially as and for the purpose specified.

201,838. GANG CHEESE-PRESSES. Oliver B. Rose, Monticello, Iowa. Filed Jan. 29, 1878.

Brief.—The draw-bars are provided with slots for keys for the adjustment of the head and the foot blocks. Brackets are placed on the legs, to receive the bars when not in use. The recess in the follower admits the folds of the canvas when doubled over it.



Claim.—1. The inclined bed A, in combination with the metallic bed-plate B, provided with longitudinal groove *b* along its lower edge, as specified.

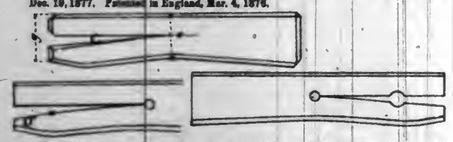
2. The draw-bars H, provided with mortises or slots *i*, as and for the purpose specified.

3. The draw-bars H, provided with keys I, in combination with the bar E and foot-block O, as and for the purpose set forth.

4. The block M, having recess *m* and pin *p*, in combination with block M', substantially as specified.

5. A cheese-press formed by the combination of the following elements, viz: an inclined bed, a longitudinally-channeled bed-plate, an operating-screw acting upon a bar, which, in turn, acts upon two slotted draw-bars, the stationary head-block, movable foot-block, hoops, and followers, all constructed and arranged for joint operation substantially as set forth.

201,839. WOODEN KEYS FOR SECURING RAILWAY-RAILS. James Sample, John Grantham, and William M. Ward, Blyth, and Matthew Waddle, Newsham, near Blyth, England. Filed Dec. 19, 1877. Patented in England, Mar. 4, 1876.

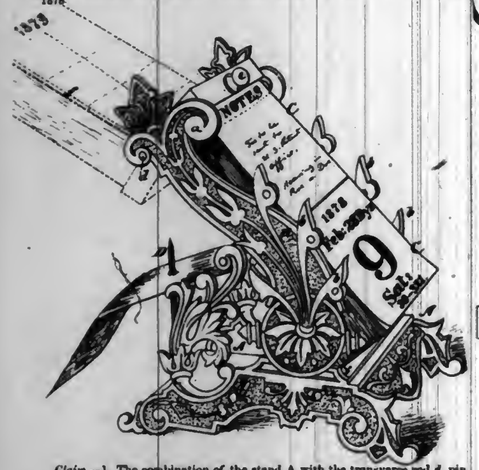


Claim.—1. A wooden railway-key provided with the V-shaped slot, substantially as and for the purpose described.

2. A wooden railway-key having one of its sides straight and one curved, substantially as and for the purpose described.

3. A wooden railway-key having one of its sides straight and one curved, provided with the V-shaped slot, substantially as and for the purpose described.

201,840. CALENDAR AND PEN-RACK. Constantin Schmidt, New York, N. Y. Filed Feb. 26, 1878.



Claim.—1. The combination of the stand A with the transverse rod *d*, pin or bolt B, and pad C, which pad, when applied to the rod *d*, can be turned thereon, substantially as herein shown and described.

2. The frame A, containing the pivoted pad C between its cheeks *a a*, and provided with projecting prongs *b*, all arranged so that the pad can be placed and held in proper position for writing by a pin resting on the prongs *b*, substantially as specified.

3. As a new article of manufacture, a combined pad, frame, and file, consisting of the frame A, flat pad C, and pin D, substantially as and for the purpose specified.

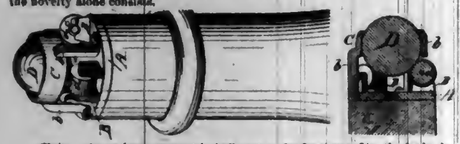
4. The combination of the frame A with the pivoted tablet *f* and pivoted and reversible pad C, substantially as and for the purpose specified.

201,841. PROCESSES FOR TESTING PIPES. Edward P. Smith, Toledo, Ohio. Filed Jan. 7, 1878.

Claim.—The mode or method, substantially as described, of testing pumps, pipes, and tubes by introducing into the same a steam-pressure, as explained.

201,842. FURNITURE-CASTERS. Thomas S. Smith, Fair Haven, Conn., assignor of one-third his right to Wm. H. Moore, same place. Filed Feb. 4, 1878.

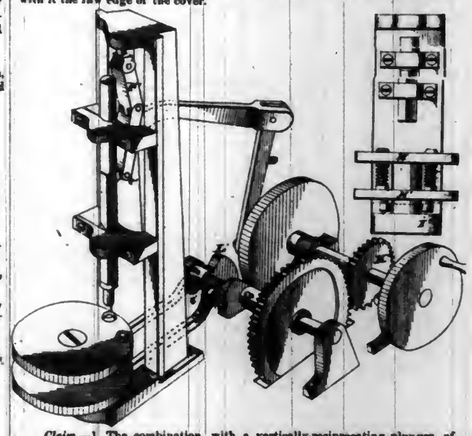
Brief.—The claim sufficiently points out details of construction, in which the novelty alone consists.



Claim.—As an improvement in ball casters for furniture, &c., the body A, having brackets B B, provided with bearings *a a*, ball D, retaining-ring C, having lugs or brieces *b b*, and axles *e e*, having rollers *d d*, all combined and operating substantially as described, for the purpose herein set forth.

201,843. MACHINES FOR MAKING METAL BUTTONS. H. C. Smith, New York, N. Y., assignor to Ellen R. Smith, same place. Filed July 11, 1877.

Brief.—The button-shell, provided with fabric or other cover, is placed upon the convex die and the button-back in the concave die. As the table oscillates, the dies are brought under the plunger alternately, the shell and cover are picked up by the plunger, and the back forced into the shell, carrying with it the raw edge of the cover.

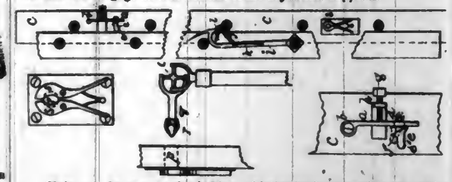


Claim.—1. The combination, with a vertically-reciprocating plunger, of an oscillating or reciprocating table or disk provided with two dies, which are moved in and out of line with the plunger alternately, substantially as set forth.

2. In a machine for the manufacture of buttons, the combination, with a single plunger, of a table or disk provided with two dies, and means for imparting a reciprocating movement to said table, substantially as set forth.

201,844. EXTENSION-LADDERS. Joseph S. Smith and James M. Davis, Bangor, Me.; said Davis assignor to said Smith. Filed Feb. 4, 1878.

Brief.—A friction device upon the stationary ladder consists of a dog or pawl loosely mounted at the lower free end of a spring, and having an angular shoulder inclined upwardly, thus admitting free passage of the sliding parts in the extension of the ladder. A tripping device consists of a pivoted hook, having a pivoted arm held at right angles to it by a spring, and acting automatically to clear the point of the hook from the rounds. Spring-jaws on the side bars engage an arm and nut of the adjustable supports.



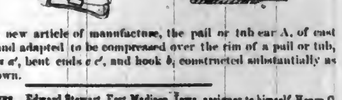
Claim.—1. In an extension-ladder, a friction-brake secured to the stationary ladder, and acting upon the extension only when the same is descending, substantially as and for the purposes set forth.

2. The combination of the spring *a*, movable dog *c*, and adjusting-screw *g*, constructed and operating substantially as set forth.

3. The combination of the hook *i* and arm or tripper *j*, pivoted upon the shank of said hook, and spring *k*, whereby frictional drag upon said tripper is sustained entirely by the pivot, substantially as and for the purposes specified.

4. The combination of the ladder *c*, poles *n*, and connecting-joint with the rod *q*, attached to said joint, nut *r*, and spring-jaws *s*, arranged and operating substantially in the manner and for the purposes set forth.

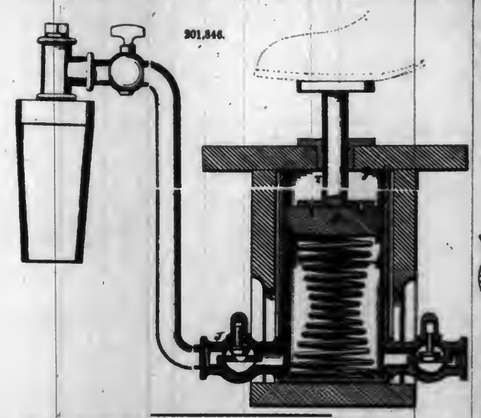
201,845. PAIL AND TUB EARS. George W. Stark, Wacona, assignor to himself and David G. Arnold, West Bay City, Mich. Filed Feb. 25, 1878.



Claim.—As a new article of manufacture, the pail or tub ear A, of cast malleable metal, and adapted to be compressed over the rim of a pail or tub, having the studs *a a'*, bent ends *c c'*, and hook *b*, constructed substantially as described and shown.

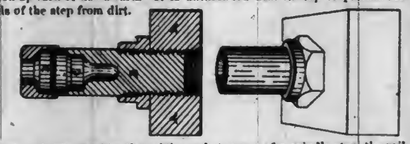
201,846. BEER-PUMPS. Edward Stewart, Fort Madison, Iowa, assignor to himself, Henry C. Spreen, and Wm. Heising, same place. Filed Feb. 16, 1878.

Claim.—In a beer-pump, a piston provided with a flexible packing extending below the surface of the piston, and a spring, the upper end of which is interposed between the piston and packing, while the lower end of the spring rests on the lower head of the pump-cylinder, substantially as set forth.



201,847. SPINDLE-STEPS FOR SPINNING-MACHINES. William M. Steele, Philadelphia, Pa. Filed Jan. 2, 1878.

Brief.—The base of the step is screw-threaded, and fits into corresponding screw-threads in the rail. Above the rail, and fitting upon the screw-threaded base of the step, is a jam-nut, which serves to retain said step in position when adjusted upward or downward. It is unthreaded near its top to protect the threads of the step from dirt.



Claim.—1. The combination of the socket or cup of a spindle-step, the rail into which the adjustable step containing the socket or cup acts by means of a screw-thread, and a jam-nut upon this step acting against the surface of the rail to wedge the screw-thread of the step, to keep the step stationary at whatever height it is set, substantially as described.

2. The combination, with the rail and step, of a jam-nut, the upper edge of the latter projecting in a plain cylindrical form upward to cover and protect the upper part of the thread of the step, which would otherwise be exposed, substantially as described.

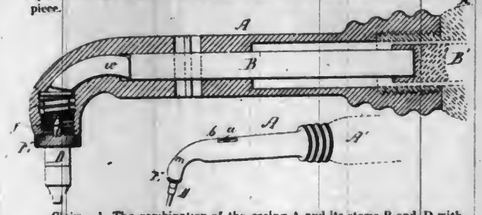
3. The combination of the socket or cup of a spindle-step, the body of the step having a male screw-thread upon its lower convexity, with the step-rail in which it sets, the latter constructed with a female screw to receive the step, and a jam-nut having a plain cylindrical construction, substantially as described.

201,848. PRESERVING GREEN COFFEE. Joshua S. Stewman, Baltimore, Md. Filed Dec. 31, 1877.

Claim.—The process of treating green coffee, for the purpose set forth, which consists in coating the green coffee-beans with a vegetable gum in aqueous solution, and subsequently drying the coating thus applied, substantially as described.

201,849. ATTACHMENTS FOR DENTAL PLUGGING-INSTRUMENTS. Samuel D. Stream, Philadelphia, Pa., assignor of one-half his right to W. H. Wright, same place. Filed Feb. 2, 1878.

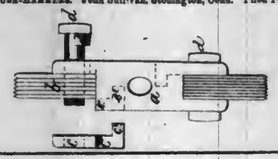
Brief.—Motion is conveyed from the reciprocating hammer to the plugger by a curved rod sliding freely in the curved end of the case of the dental hand-piece.



Claim.—1. The combination of the casing A and its stems B and D with the curved rod *e*, adapted to a curved opening in the casing, all substantially as specified.

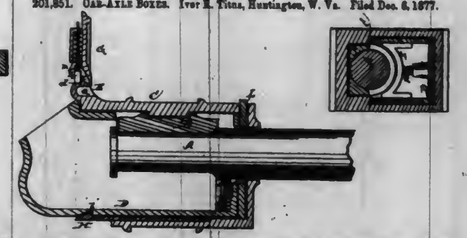
2. The combination of the stem D and its lug *f* with the plug E, having a recess, *i*, as specified.

201,850. BURR-HAMMERS. John Sullivan, Stonington, Conn. Filed Feb. 6, 1878.



Claim.—In a bush-hammer, the combination, with the stock or gib *a*, provided with the recess *c'* and *c''*, of the bits *b*, resting squarely on the stock the whole of their width, the clamp *c*, provided with the shank *c'* and dowel-piece *c''*, the whole secured together by the bolt *d*, substantially as and for the purpose described.

201,851. CAR-AXLE BOXES. Ivor K. Titus, Huntington, W. Va. Filed Dec. 6, 1877.



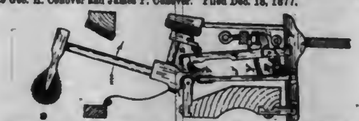
Claim.—1. The combination of the outer shell C, the removable box D, with recess *i*, and the spring-catch H, for the purposes herein set forth.

2. The projections *n n* on the inner side of the lid G, in combination with the shell C and removable box D, for the purposes herein set forth.

3. The back liner constructed in two parts, L and L', the part L being provided with side arms J, having inclines *t* and offsets *s*, and the part L' formed with corresponding inclines *t* and offsets *s*, substantially as and for the purposes herein set forth.

4. The combination, with the back liner, constructed in two parts, L L', as described, of the projection *r*, attached to the lower section L', and extending inward under the journal, for the purposes set forth.

201,852. PIANO-ACTIONS. Wm. T. Waite, Kansas City, Mo., assignor of two-thirds his right to Geo. H. Conover and James F. Conover. Filed Dec. 18, 1877.



Claim.—1. The combination, with arm F, repeater J, and jack L, of the adjustable cheek A B, tapped into a projection from said arm and vibrating therewith, substantially as and for the purpose set forth.

2. In the described combination with the vertically-vibrated lifter F, the jack L, having the hook Z, the repeating-lever J, spring Y, and oscillating and adjustable cheek A B, the whole being arranged and adapted to operate as set forth.

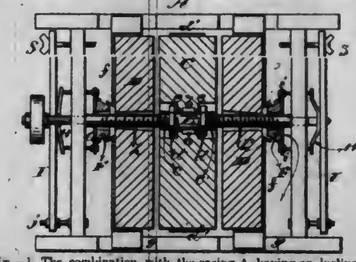
201,853. WORKING-BARRELS FOR OIL-PUMPS. Chas. E. Weible, St. Petersburg, Pa. Filed Mar. 20, 1878.

Brief.—When worn the lining can be replaced or reversed.



Claim.—In combination with the working-barrel of an oil-pump, the inner solid reversible lining D, the length of the piston-stroke, made in one piece, and held at the top by the thimble B, having the tapering guide *x*, to prevent the drop-valve striking the top of the lining, and at the bottom by the thimble C, provided with the drop-valve tapering socket, substantially as set forth.

201,854. DOUBLE VERTICAL MILLS. Jacob Weimer, West Alexandria, Ohio. Filed Jan. 8, 1878.



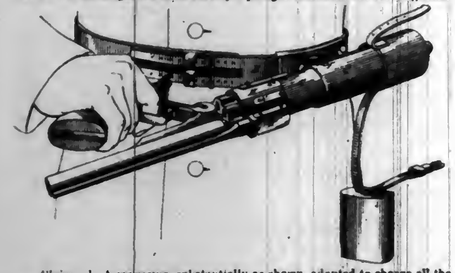
Claim.—1. The combination, with the casing A, having an inclined bottom, *a*, the transverse partition *a'*, and the distinct delivery-apertures *a''*, of the running stone C, arranged over said partition, and the fixed supported stones D at each side thereof, substantially as specified.

2. The combination, with a running stone, C, having the side recesses *e e*, of the driving shaft H, having the ears *b* and the opposite screw-threads *c c'*, and the nuts *d d*, substantially as specified.

3. The combination, with the running stone C and the non-rotating bed-stones D, having casing *f*, with flaring inlet *x*, of the conical rubber springs F, closing said inlets and forming receptacles for the grain, the bridges H, secured to said springs, the vibrating levers I, and the adjusting-screws S, substantially as specified.

201,855. CHARGING-MAGAZINES FOR REVOLVERS. Rollin White, Lowell, Mass. Filed Feb. 27, 1878.

Brief.—The magazine is strapped to the person like a cartridge-box. The cylinder of a break-down revolver is placed in the open end of the magazine, and all the cartridges fed in at once by a plunger mechanism in the magazine.



Claim.—1. A magazine, substantially as shown, adapted to charge all the chambers of a fire-arm at the same time, substantially as described.

2. A magazine, substantially as shown, capable of holding many charges of ammunition, and adapted to charge all the chambers of a revolver at the same time, substantially as described.

3. A magazine adapted to be secured to the belt of a person, with a swivel-connection, so as to be capable of presentation at any desired angle, substantially as described.

4. A magazine, substantially as shown, adapted to receive and retain in place the cylinder of a revolver while the same is loaded from the magazine, substantially as described.

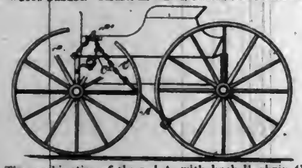
5. A magazine containing an ammunition-case provided with chambers corresponding to the chambers in the cylinder of a revolver, substantially as described.

6. A magazine or an ammunition-case having a plunger, by means of which all the cartridges for one charge of a cylinder are ejected at one time, substantially as described.

7. A magazine or ammunition-case provided with means to eject one series of cartridges at a time, and to hold the remaining cartridges from movement in any direction, substantially as described.

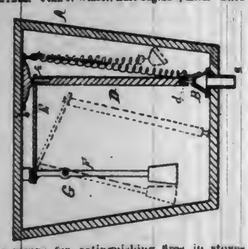
8. A magazine or ammunition-case provided with means, substantially as shown, to hold its chambers in line with the chambers of the cylinder in the act of charging, substantially as described.

201,856. WAGON-BRAKES. Gardner M. Wilson, Saleski, Ohio. Filed Mar. 2, 1878.



Claim.—The combination of the rod A, with hook B, chain C, with rings D D', chain C', with ring D', and the plate E, with peg F, all substantially as and for the purposes set forth.

201,857. CAR-HEATERS. John J. Winsor, East Saginaw, Mich. Filed Feb. 25, 1878.



Claim.—As a means for extinguishing fires in stoves or heaters, the water-tank A, communicating with the interior of said stove or heater, the valve H, spring C, strut D, tie-bar E, and the weighted pendulum-bar F, hung in the hangers G, substantially as described.

201,858. APPARATUS FOR APPLYING BUTTON-STAPLES TO SHOES, &c. Albert Wisner, Bridgeport, Conn. Filed Feb. 26, 1878.

Claim.—1. The clamping-tool provided with a central slot for the eye of the button, and a side recess for delivering the staple to the latter, the arrangement being such that the eye will be held in proper position to receive the staple as the latter falls through the recess, as and for the purpose described.

2. In combination with the plate D, having a recess, as described, a movable clamping-piece for securing the staple therein, substantially as described.

3. In combination with the sliding piece E, the lever G and handle B, for actuating the lever, substantially as described.

4. In combination with the plate D, having a central recess adapted to hold a button-eye, the spring I, adapted to draw the eye through the recess for the purpose of holding the staple in proper position, substantially as described.

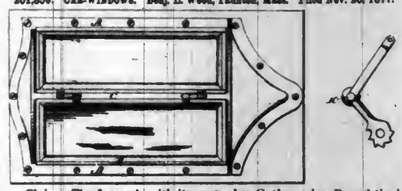
5. In combination with the sliding piece and actuating-lever, the return-spring, substantially as described.

6. In combination with the plate E and block F, the actuating-lever G, and handle B, substantially as described.

7. The tool described, consisting, essentially, of the jaws A and B, the jaw A having a central recess and sliding piece, E, actuated by the lever G and the spring I, combined and arranged as and for the purpose set forth.

8. The feeding-gage having the central slot and flanges, substantially as described.

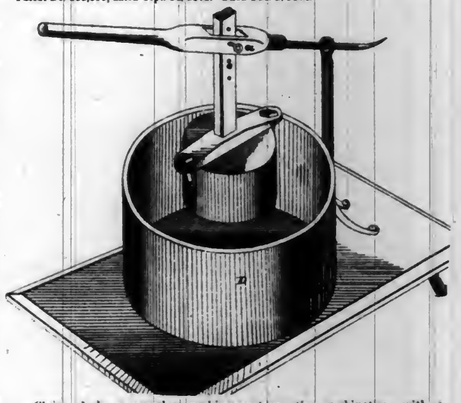
201,859. CAR-WINDOWS. Benj. L. Wood, Taunton, Mass. Filed Nov. 20, 1877.



Claim.—The frame A, with its center bar C, the sashes B, and the jointed lever K, or its equivalent, when combined together for the purpose and in the manner substantially as herein set forth, forming a detachable car-window, as a new article of manufacture.

REISSUES.

8,134. WASHING-MACHINES. Levi Coldwell, Burgettstown, Pa., assignor to Cyrus A. Dodge. Patent No. 131,050, dated Sept. 24, 1872. Filed Feb. 1, 1878.



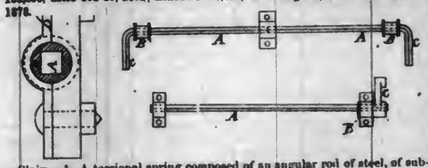
Claim.—1. In a pounder washing-machine, the combination, with a pounder-shaft having a pounder secured thereto, of an actuating-lever fulcrumed in such a manner that said lever may be freely moved in a longitudinal, lateral, and vertical direction, and carry the pounder to any part of the tub, substantially as set forth.

2. In a pounder washing-machine, the combination, with a vertically-adjustable pounder-shaft having a pounder secured thereto, of an actuating-lever fulcrumed in such a manner that said lever may be freely moved in a longitudinal, lateral, and vertical direction, and carry the pounder to any part of the tub, substantially as set forth.

3. In a pounder washing-machine, the combination, with a vertically-adjustable pounder-shaft having a pounder secured thereto, of an actuating-lever fulcrumed in such a manner that said lever may be freely moved in a longitudinal, lateral, and vertical direction, the pounder-shaft being pivoted to said lever, whereby said pounder is adapted to have a rocking movement, substantially as set forth.

4. In a pounder washing-machine, the combination, with a pounder-shaft having a pounder consisting of inverted cups or vessels secured thereto, of an actuating-lever fulcrumed in such manner that said lever may be freely moved in a longitudinal, lateral, and vertical direction, and carry the pounder to any part of the tub, substantially as set forth.

8,135. TORSION-SPRINGS FOR VEHICLES. Cyrus W. Salador, Wolcottville, Conn. Patent No. 122,895, dated Oct. 29, 1872; Reissue No. 7,855, dated Aug. 21, 1877. Filed Mar. 13, 1878.



Claim.—1. A torsional spring composed of an angular rod of steel, of substantially uniform size and shape throughout the entire length, including the bearings, as and for the purpose set forth.

2. A torsional spring of angular steel, uniform in size and shape at the bearings with the body of the spring, or nearly so, and having a central attachment, from which the twist extends in opposite directions, substantially as set forth.

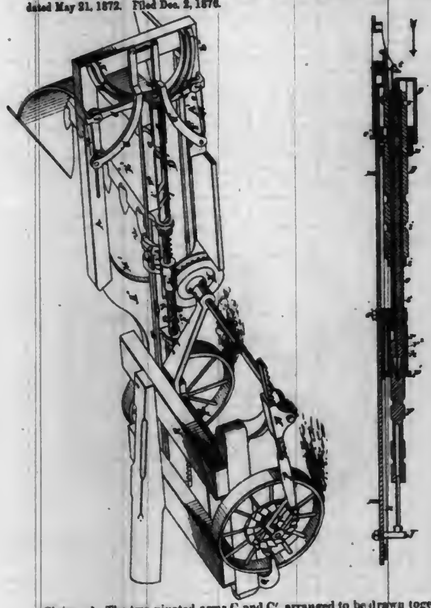
3. A torsional spring consisting of the central straight body A, extended to form the arms C at right angles to the body on the same side, and provided with a central attachment, secured immovably upon the spring, and from which the spring is twisted toward each end, substantially as set forth.

4. A torsional spring having a straight body and two arms on the same side, each a continuation of the body, as set forth.

5. A torsional spring composed of an angular rod of steel extending through a cylindrical bearing, substantially as set forth.

6. The loose sleeve-bearing B, for supporting and operating angular torsional springs, substantially as and for the purpose set forth.

8,136. GRAIN-BINDERS. Nelson B. Fassett, St. Louis, Mo., assignor, by mesne assignments, to himself, Alfred K. Fassett, Charles F. Fassett, and Giles F. Filley. Patent No. 127,036, dated May 21, 1872. Filed Dec. 2, 1876.



Claim.—1. The two pivoted arms C and C', arranged to be drawn together by the action of the string when the bundle is pressed between them, in combination with the curved groove *b*, as described.

2. The combination of the arms C and C' and the groove *b*, operating substantially as described.

3. The combination of the head B, provided with the shoulder *q* and the rib *b'*, and the arm C, provided with the flange *a''* and the pin *c*, substantially as described.

4. The cylinder D, having the groove *e*, extended, as described, the grooves *i i'*, and hook *d*, as set forth and described.

5. The combination of the cylinder D, having the hook *d* and the spindle *r*, and tube *o*, substantially as described, for the purpose of carrying the string around the spindle to come in contact with the tube, in the manner set forth.

6. The combination of the rotating cylinder D, hook *d*, and the independently-rotating hook *t*, the latter taking the string from the hook *d*, substantially as described.

7. The combination of the cylinder D, the hook *t*, having a rotative as well as reciprocating movement in said cylinder, and independently thereof, and the spindle *r*, substantially as described.

8. The combination of the cylinder D, provided with the groove *e*, extended as described, and the grooves *i i'*, constructed as described, hook *d*, pin *c'*, and sliding bar *n*, having the elbow *n'*, substantially as described.

9. The combination of the rotating shaft F, provided with one or both of the grooves Y Y', constructed as described, and the hook *t*, substantially as described.

10. The grooved shaft F, in combination with the wire hook *t*, thimble A, and stops 1" 2 3, in the manner set forth and described.

11. The stops 1" 2 3, in combination with the shaft F, thimble A, and sliding bar *n*, in the manner set forth and described.

12. The combination of the hook *t*, held diagonally in the spindle *r*, and tube *o*, substantially as described, as the latter is withdrawn into the tube.

13. The combination of the hook *t*, spindle *r*, tube *o*, and hook *f*, substantially as described, to unhook the loop of the string.

14. The combination of the thimble A, stops 1" 2 3, and the spindle *r*, substantially as described.

15. The combination of the thimble A and the stops 1" 2 3, substantially as described.

16. The combination of the thimble A, shaft F, and stops 1" 2 3, substantially as described.

17. The combination of the thimble A, shaft F, stops 1" 2 3, hook *t*, and spindle *r*, substantially as described.

18. The combination of the thimble A, shaft F, stops 1" 2 3, hook *t*, spindle *r*, and cylinder D, having hook *d*, substantially as described.

19. The combination of the shaft F, thimble A, and stops 1" 2 3, substantially as described.

20. The combination of the lug P', shaft F, thimble A, stops 1" 2 3, and the spindle *r*, substantially as described.

21. The sliding bar *n*, in combination with the grooved cylinder D and spiral shaft F, in the manner set forth and described.

22. The combination of the sliding bar *n* and shaft F, substantially as described.

23. The combination of the sliding bar *n*, shaft F, lug P', and thimble A, substantially as described.

24. The sliding bar *n*, provided with the depressions *y y'*, in combination with the stops 1" 2 3, substantially as described.

25. The sliding bar *n*, having the depressions *y y'*, in combination with the stops 1" 2 3, and the thimble A, having the projection A^2, substantially as described.

26. The sliding bar *n*, in combination with the long rack-bar *m*, for operating the cylinder D, as set forth and described.

27. The pivoted slotted latch r^1, in combination with the spring *o*, wheel K, dog V, and rack-bar *m*, for the purpose set forth and described.

28. The combination of the wheel K, long rack-bar *m*, provided with the latch r^1, having pin *p*, and dog V, substantially as described.

29. The combination of the head B, bar *m*, frame A A' A'', and wheel K, substantially as described.

30. The combination of the rack-bar *m* and tube *o*, substantially as described.

31. The combination of the rack-bar *m*, lug *o'*, tube *o*, and cylinder D, substantially as described.

32. The combination of the spindle *r* and the independent and rotating hook *t*, held diagonally in the spindle, substantially as described.

33. The combination of the spindle *r*, tube *o*, hook *f*, thimble A, and shaft F, to keep the spindle from twisting, in consequence of friction, when the sliding bar *n* is being moved forward and backward, substantially as described.

34. The combination of the tube *o*, hook *f*, and spindle *r*, having groove *f'*, substantially as described.

35. The combination of the head B, provided with the shoulder *q*, the arm C, provided with the flange *a''*, the hook *d*, and the string T, substantially as described.

36. The combination of the head B, provided with the shoulder *q*, the arm C, provided with the flange *a''*, the hooks *d* and *t*, and the string T, substantially as described.

37. The spring-catches Z Z, in combination with their respective arms C and C, in the manner set forth and described.

38. The compressors G and G', in combination with the pivoted arms C and C', as set forth and described.

39. The combination of the compressors G G', spring w^2, and springs *w* and w^1, substantially as described.

40. The combination of the nose-piece *g*, the spindle *r*, having the head r^2 and feather *s'*, the thimble A, having the notch *s''*, to arrest the forward movement of the spindle, in order to provide for the disengagement of the feather from the notch, substantially as described.

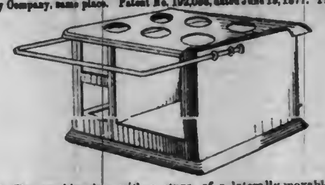
41. The combination of the revolving hooks *t* and *d*, operating in combination, and the hook *t* taking the string directly from the hook *d*, substantially as described.

42. The combination of the arm C, jaw X, head B, hook *d*, and spindle *r*, substantially as described, to take the upper end of the string from the arm C to form the noose around the spindle.

43. The combination of the arm C, jaw X, head B, hook *t*, and spindle *r*, substantially as shown, to form the loop.

44. The combination of the arm C, the jaw X, shoulder *q*, hooks *t* and *d*, and spindle *r*, to form the noose around the spindle, and then to form the loop, substantially as described.

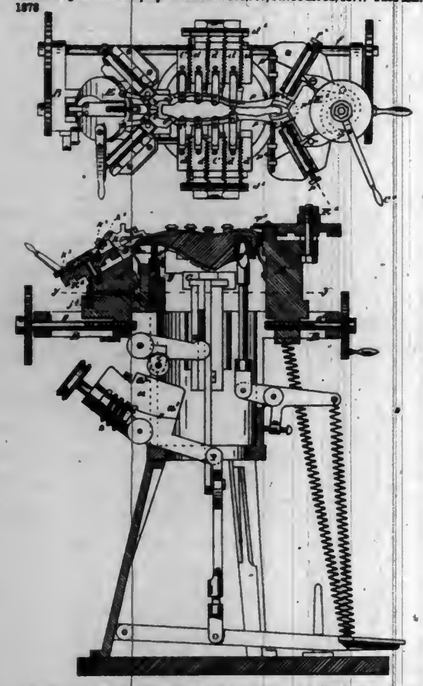
8,137. STOVES. Robert Simpson, Boston, Mass., assignor, by mesne assignments, to the Highland Foundry Company, same place. Patent No. 192,068, dated June 19, 1877. Filed Mar. 16, 1878.



Claim.—1. The combination, with a stove, of a laterally-movable cloth and towel drying support, adjustable to and from the body of the stove, substantially as described.

2. The combination, with a stove, of a laterally movable cloth and towel drying support, adapted to be shut under a projecting portion of the stove, substantially as described.

8,138. LASTING-MACHINES FOR BOOTS AND SHOES. Geo. W. Copeland, Malden, and Erastus Woodward and Matthias Brock, Boston, Mass., assignors, by mesne assignments, to the Copeland Lasting Machine Company. Patent No. 191,937, dated June 12, 1877. Filed Mar. 16, 1876



Claim.—1. In a lasting-machine, the combination of a girth composed of unyielding straps rigidly secured at one end to the pivoted and adjustable fingers of a vamp-lasting apparatus, and at the other end to a set of springs or weights, with toe and heel lasting mechanism, automatically adjustable with reference to the girth while moving to clamp the boot or shoe, substantially as and for the purposes described.

2. In combination with an elastic heel-pad, embracing and supporting the quarters of the shoe, and with reciprocating folding-plates, the spring-rods p^3 p^3, all arranged and operated substantially as described.

3. A spring toe stretching and smoothing pad having a vertical motion, and also adapted to move against the upper at the toe, in combination with suitable devices for folding the upper over upon the sole, substantially as shown and described.

4. For toe-lasting devices, the combination of wrinkle-sweeping fingers with oscillating turning and smoothing finger-plates moving in unison therewith, substantially as described.

5. In a lasting-machine, the right and left screws, as shown, in combination with gears operating to bring the shoe, without regard to its size, into the proper position with reference to the girth, for the purpose and operating substantially as described.

6. The automatically-acting heel and toe supports, consisting of a post resting upon a cam or wedge, the cam or wedge being actuated at the commencement of the upward rise of the girth-carrying cross-head, substantially as and for the purposes described.

7. The tapering square spindle, in combination with a last mortised or bored for the reception of the spindle at right angles with a line across the tread of the toe portion of the last, for the purposes shown and described.

8. The combination of the cam *a*, adjusting-screw *b*, and arc *c* with the secondary lever of the train actuating the girth-carrying cross-head, substantially as and for the purposes described.

9. In combination, the vibrating toe-rest, post, and set-screw, substantially as described.

10. The vibrating or oscillating toe-rest, in combination with the toe-lasting mechanism, substantially as shown and described.

11. The combination, with reciprocating toe-lasting plates, of a reciprocating toe-clamp arranged to operate between such plates, acting alternately, substantially as shown, and for the purposes described.

12. The automatically-removable toe-clamp, forming an abutment for the toe of the boot or shoe to rest against when adjusted in place, and also serving as a clamp to prevent the boot or shoe from rising when acted upon by the girth, substantially as shown and described.

13. In combination with the cam or other actuating mechanism, the folding plates provided with an oscillating or rocking motion, for the purposes substantially as set forth.

14. In a lasting machine, oscillating plates for lasting the heel or toe, provided with fingers controlling the position of the wrinkles or folds, substantially as described.

15. In a lasting-machine, oscillating finger-plates provided with fingers for sweeping the wrinkles or folds into the desired position, substantially as and for the purposes described.

16. The combination, with oscillating finger-plates, of the reciprocating toe-clamping device, substantially as shown and described.

17. In a lasting-machine, the combination of the arm h^1, the spring h^2, wedge or cam h, spring h^3, post g, and oscillating toe-support g^1.

18. In a lasting-machine, the combination of the lever j, arm j^1, combined arm and slide j^2, rack j^3, gear i^2, crank i^3, and toe stretching and smoothing pad i.

19. In a lasting-machine, the combination of the right and left screw *a a* and shaft f, suitably geared to produce motions of the heel and toe lasting mechanism, substantially as and for the purposes described.

20. In a lasting-machine, the combination of the toe-clamp k, connection k^1, nut k^2, slide k^3, and cam-path E^2.

21. In a lasting-machine, the combination of the finger-plates l^1, oscillating plates l, barrels *n*, carriages n^1, levers n^2, and cam-paths E^3.

8,139. SILVERED-GLASS DOOR-KNOBS. John W. Kaiser, Cambridgeport, Mass. Patent No. 141,504, dated Aug. 5, 1873. Filed Nov. 16, 1877.



Claim.—A silver-lined glass knob having a mass of cement placed within the same for the purpose of protecting the silver lining and attaching the shank securely to the knob.

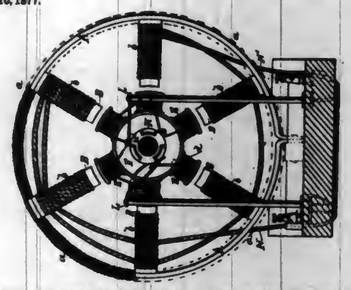
8,140. LUBRICATING COMPOSITIONS FOR JOURNAL-BEARINGS. John Johnson, Brooklyn, N. Y., assignor to the Empire Lubricating Company, New York city. Patent No. 192,710, dated July 31, 1877. Filed Feb. 27, 1878.

Claim.—1. A new composition of matter, consisting of plumbago and asbestus, together with an indurating binding medium, substantially as herein shown and described.

2. As a new article of manufacture, the lubricating journal-bearings, consisting of asbestus, forming the body of the same, and being a non-conductor of heat, plumbago as the lubricant or anti-friction ingredient, and an indurating binding medium, the whole being compounded and molded substantially as herein described and set forth.

3. A lubricating compound consisting of plumbago, soluble glass, asbestus, and whiting, in about the proportions named, the whole adapted to be molded into any desired form, for the purposes set forth.

8,141. DYNAMO-ELECTRIC MACHINES. Edward Weston, Newark, N. J., assignor of one-half interest to Roberts & Havell, same place. Patent No. 190,062, dated July 10, 1876. Filed July 10, 1877.



Claim.—1. A ring or hollow cylinder of iron or other magnetic material, wrapped or unwrapped, having affixed to its inner side a group of radially-converging magnets, substantially as described.

2. In a dynamo-electric machine having a single circuit, a ring or hollow cylinder of iron or other magnetic material, wrapped or unwrapped, provided interiorly with a group of radially-converging magnets, forming a part of the cylinder, in combination with a group of armatures projecting radially from and forming part of a central rotating hub of iron or other material, substantially as described.

3. A dynamo-electric machine provided with a group of radially-converging stationary electro-magnets, and a group of armatures radially affixed to and projecting from a central hub, when so arranged that the current generated in all the armatures is conducted through the coils surrounding all the stationary electro-magnets, as and for the purposes set forth.

4. The commutator H H', made in two parts, as described, placed upon the shaft C, the ring J, and nut K, all constructed substantially as and for the purposes set forth.

5. In a dynamo-electric machine provided with a group of armatures radially affixed to a revolving hub, the detachable top plates or caps E' on the armatures, substantially as and for the purpose set forth.

6. The radially-projecting cores and plates E and E', independently detachable, substantially as and for the purposes set forth.

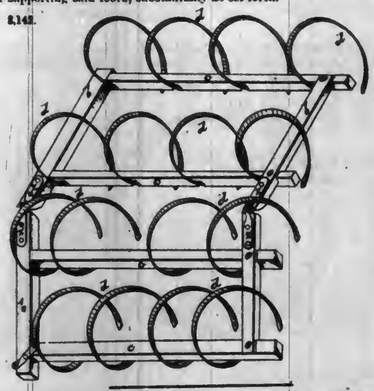
8,142. HARROWS. David L. Garver, Hart, Mich. Patent No. 95,458, dated Oct. 5, 1869. Filed Aug. 31, 1877.

Claim.—1. A spring-metal harrow-tooth attached to the harrow-frame, and curved so that the main portion of the tooth shall be located above the horizontal plane of the lower surface of said harrow-frame, substantially as described.

2. A harrow-tooth of spring metal, curved upward from its point of attachment to the harrow-frame, thence rearward over the same, and downward to its point of contact with the ground, substantially as set forth.

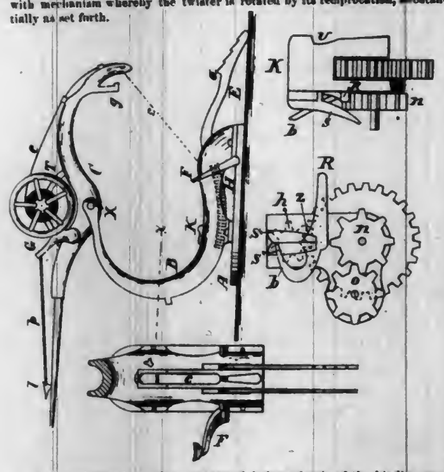
3. A harrow-tooth made of spring metal, curved forward and upward in an arch extending well above the horizontal plane of its attachment to the harrow-frame, and free from contact therewith, except on the lower side of the bar supporting said tooth, substantially as set forth.

8,143.



8,143. GRAIN-BINDERS. Henrietta L. McCormick, Chicago, Ill., assignee, by mesne assignments, of Andrew J. Smith. Patent No. 61,272, dated Jan. 15, 1867; Reissue No. 7,042, dated Nov. 24, 1877. Filed Feb. 6, 1878.

Claim.—1. In a grain-binder, a reciprocating twister supported independently of the binding-arm, moved back and forth in the same path, and carrying the bundle with it during the operation of twisting, in combination with mechanism whereby the twister is rotated by its reciprocation, substantially as set forth.



2. A reciprocating twister supported independently of the binding-arm, and traveling back and forth in the same path, in combination with a rack by means of which the twister is rotated as it is reciprocated, and a wire-carrier which delivers the wire to the twister, substantially as described.

3. A reciprocating twister, in combination with a vibrating wire-carrier, the end of which is carried down around the bundle to place the wire in the twister, and travels with the latter during the twisting of the band, substantially as described.

4. In a grain-binder, a slotted grain-receptacle, in combination with a twister-head extended up through the slot of the receiver, and mounted on a support which permits it to be reciprocated, substantially as described.

5. A reciprocating head or block, K, mounted upon ways on which it is free to move back and forth, in combination with a twister and gearing for rotating the latter, mounted on said carrier-block, substantially as described.

6. A reciprocating block, K, moving on ways, in combination with a twister, *h*, and driving-pinion *m*, mounted on its upper side, and a driving-pinion, *n*, supported on its under side, and connected with the upper pinion *m*, substantially as and for the purpose set forth.

7. A twister traveling back and forth in the same path, in combination with a binding-arm, a wire holder and cutter, either or both, moving bodily with the twister, and cams or stops, whereby the holder or cutter is operated by the reciprocation of the carrier, substantially as and for the purpose set forth.

8. The projections or stops *a*, to prevent the grain from receding, arranged upon arms or supports, between which and the wire the grain is held as the binding-arm comes down to place the wire around a fresh gavel, substantially as described.

8,144. HARVESTERS. John F. Seiberling, Akron, Ohio. Patent No. 196,018, dated Jan. 21, 1873. Filed Jan. 25, 1878.

Claim.—1. In combination with a rake that moves across the front of the platform, as described, and sweeps the grain to the ground by pressing the gavel against the side board or fender of the platform, an adjustable reel that can readily be operated by a lever from the driver's seat, substantially as described.

2. In combination with a front-cut hinge-joint machine and a quadrant-shaped platform, the jointed rake-staple hinged on the inner side of the platform, at or near midway of its length, whereby the rake-staple is adapted to swing in an unobstructed space behind the main frame, and to vibrate with the movements of the platform when the gavel is delivered, substantially as described.

3. The combination of a finger-beam arranged in front of the drive-wheel, a platform attached thereto, a rake that moves across the front end of the platform, as described, an adjustable reel operated by a lever, and the driver's seat located behind the main axle on the machine, substantially as described.

4. The combination of the jointed rake-staple, the rotating driving-arm P, the connecting-links *r r'*, pivoted to the driving-arm and staple, and the guide-cam, these members being constructed and operating in combination substantially as set forth, to impart the requisite movements to the rake.

5. The combination of the revolving rake-arm and the stationary elastic shield, constructed as set forth, between which and the platform the rake-arm traverses, which shield rises to allow the rake-arm to pass, and then sinks to prevent the mechanism from clogging.

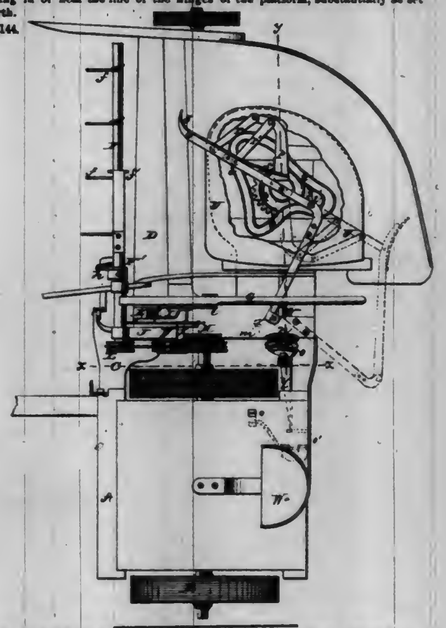
6. The rake-guard *w'*, formed by turning up of the inner side of the shield, for the purpose set forth.

7. The combination of a supporting-fulcrum for the reel-supporting lever and the pivoted guiding-link connecting the reel-post and lever, substantially as and for the purpose set forth.

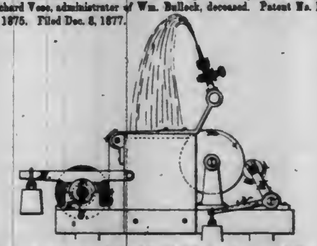
8. The centrally-pivoted rocking-lever K, constructed substantially as set forth, with two sets of tension-pulleys pivoted thereon, and having an adjustable link-connection with the reel-support, for the purpose set forth.

9. The combination of the sprocket-wheel on the inner end of the main axle, the rake-driving chain, and the sprocket-wheel on the inner end of the rake-driving shaft, which extends beneath the platform, the sprocket-pulley being in or near the line of the hinges of the platform, substantially as set forth.

8,144.



8,145. MACHINES FOR DAMPING PAPER. Bullock Printing Press Company, Philadelphia, Pa., assignee of Richard Vose, administrator of Wm. Bullock, deceased. Patent No. 171,092, dated Dec. 14, 1875. Filed Dec. 6, 1877.



Claim.—1. A machine for dampening printing-paper, consisting, essentially, of a spool upon which the paper is wound, an apparatus for throwing a spray of water on the paper, and an apparatus for winding up the paper upon a spool when dampened, substantially as hereinbefore set forth.

2. The process, substantially as hereinbefore set forth, of converting a web-roll of dry printing-paper into a web roll of dampened paper suitable for printing upon, by means of unrolling, spraying upon the paper as it moves along, and rerolling the web of paper into a dampened roll, said process being continuous, as described.

3. The combination, substantially as described, of the spool of dry paper, a tension apparatus adapted to control the unwinding of the dry paper, an apparatus for throwing a spray of water upon the paper, and an apparatus for winding up the paper upon a spool when dampened.

4. The combination, substantially as described, of a spool upon which the dry paper is wound, a tension apparatus adapted to control the unwinding of the dry paper, an apparatus for throwing a spray of water upon the paper, and a driving-cylinder and winding-up spool, arranged with relation to each other substantially as described, so as to adjust themselves so as to permit the axis of the spool of paper to recede from the axis of the driving-roll while their peripheries are in contact.

5. The combination, substantially as hereinbefore set forth, of a delivery-spool of dry printing-paper, an apparatus for throwing a spray of water on said paper, a driving-roller, and a winding-up spool for holding the dampened paper, mounted on bearings, arranged substantially as described in reference to the driving-roller, so that part of its weight is sustained by the driving-roller and part by the journals of its own shaft, said journals being so supported as to adapt themselves to the increase in diameter of said dampened paper roll, for the purposes described.

6. The combination of a delivering-spool, a driving-roller, and a winding-up spool mounted on arms whose axes are arranged with reference to the driving-roll, as described, with an apparatus for throwing a spray of water upon the paper in its passage from the delivering-spool to the winding-up spool, the combination being and acting substantially as set forth.

7. The combination of a delivering-spool, a driving-roller, and a winding-up spool mounted on arms whose axes are arranged with reference to the driving-roll, as described, with a table or platform located between the delivery-spool and the winding-up spool, the combination being substantially such as set forth.

8. The combination, substantially as described, of a delivering-spool, a table, a jet-nozzle, a driving-roll, and winding-up spool mounted on arms whose axes are arranged with reference to the driving-roll, as described.

9. The combination of the following elements, viz: a winding-up roll, weights to regulate the pressure thereof upon a driving-roll, a delivery-roll, and nozzles and jet-pipes, the combination being substantially as described.

8,146. GARTERS. Charles Coester, Jr., and James L. Moore, Bridgeport, Conn., assignors, by mesne assignments, to Frank Armstrong, same place. Patent No. 106,326, dated Aug. 16, 1870. Filed Jan. 23, 1878.



Claim.—1. An uncovered longitudinally elastic metallic spring-garter or sleeve-elastic, as hereinbefore set forth.

2. A metallic spring-band longitodinally elastic, having a clasping device formed of the bent ends of the band, substantially as described.

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COMMISSIONER'S DECISIONS.

JAMES W. SCHOONMAKER.—*Interlocutory Appeal.*

[*In the matter of the application of James W. Schoonmaker for letters patent for an* "IMPROVEMENT IN SLIDING DOOR-LOCKS," *filed September* 28, 1877.—*Decided January* 23, 1878.]

There must be substantial correspondence between the description, drawing, and model respecting all the essentials of an invention which it is sought to patent.

So, too, the specification and drawing must fully and clearly reveal some practicable means of carrying the invention into effect.

Though an applicant may suggest or illustrate modifications of an invention, yet he is required to disclose in entirety some one means of practicing it.

DOOLITTLE, *Assistant Commissioner:*

In this application, which is for an "improvement in sliding door-locks," applicant shows, in his drawing, a construction of his invention not shown in his model nor set forth in his specification.

He claims—

1. The lock for sliding doors herein described, consisting of the casing A, bolt B, provided with the projection b^5 formed therein, and spring C, in combination with the key F, forming a connection with and operating the bolt B, in the manner herein specified.

The model shows the bolt constructed in two pieces.

In the specification the bolt is described as made cylindrical in form, and having, "at its axial line," a hole, which extends nearly to the bottom of the bolt, at the lower end of which is fixed a pin, b^4, which serves as a center for the key to turn upon, and having, in connection therewith, a segmental shelf, b^5, under which the bit of the key engages when the bolt is to be withdrawn.

No description of the mode of constructing this combination is given. In the drawing, Fig. 1, the bolt, pintle, and projecting shelf are shown as made in one piece. In the model the pintle and shelf are attached to a separate piece fastened in the bottom of the bolt by a screw.

This construction in one piece of three elements, as if cast, as shown by the drawing, the Examiner declares a mechanical impossibility.

The specification describes the spring C as inserted in the bolt, and as projecting therefrom a sufficient distance to bear against the cap of the casing. This cap is shown in the model as screwed down upon the casing, holding the coiled spring in position, and thus controlling its action. In the drawing the cap is omitted.

The question to be settled is, simply, whether applicant shall describe in his specification the means of constructing and operating his device, and illustrate the same by his drawing. The law and the Office rules are perfectly clear on this point, requiring the specification to fully, clearly, concisely, and in exact terms describe the invention, so that one skilled in the art to which it appertains may "make, construct, compound, and use the same."

The drawings are required to illustrate this description, and are part of the patent. As to models, their requirement is intrusted to the discretion of the Commissioner, but, when required, the law provides that they shall exhibit advantageously the several parts of the invention or discovery; and the rule of the Office is "that the model must clearly exhibit every feature of the machine which forms the subject of a claim of the invention." The Examiner is right in stating that the model should correspond with the drawing and specification. One of the greatest advantages of a model for the purposes of examination is to assist in the reading of the drawing, and if its construction varies materially from the drawing it might as well be dispensed with altogether. So far as constituting a satisfactory exhibit of the invention, or a valuable record of the Office, it would be entirely worthless if such correspondence did not exist.

When an applicant is entitled to claims covering a device broadly he need not restrict his specification to any particular mode of construction, and he is permitted sometimes to show in his drawing one or more modifications of the device itself. But, nevertheless, he must describe a construction of some kind by which a mechanic not dependent upon his knowledge of the art alone, but guided by such description, aided by the drawing, can make and use the invention in the manner set forth in the patent. It is opposed to the very meaning of the term for a patent to set forth in a loose ambiguous way the construction of an invention.

It is the duty of the Office, when possible, to require specifications and their accompanying drawings and models to be, in the first place, so full and clear, and their correspondence so accurate, that the public may not be surprised by reissued patents setting forth inventions springing from obscure and careless defects in the original records.

Reissues of patents of late years have become so frequent it would appear that ambiguity in a specification, indefinite and so-called broad claims, and a lack of correspondence between the specification, drawing, and model were sometimes intentional trickery for the very purpose of allowing an applicant to cover by reissue that which was not originally contemplated by him or his attorney, but what they had strained to anticipate by a hint.

The decision of the Examiner is affirmed, and applicant will be further required to describe in his specification a particular manner of constructing his device. If he insists upon the construction now set forth in his drawing, he must amend his specification and model accordingly.

G. W. RADER & CO.—*Trade-Mark.*

[*Interlocutory appeal.—Decided April* 16, 1878.]

[*In the matter of the application of G. W. Rader & Co. for the registration of a* "TRADE-MARK FOR DRAIN AND WATER PIPES," *filed December* 11, 1877.]

A proposed trade-mark in which words descriptive of quality, characteristics, &c., are inclosed in a simple outline border is not sufficiently distinctive from the descriptive words used alone to entitle the mark to registration.

[*A. v. Briesen*, for applicant.]

SPEAR, *Commissioner:*

Applicants state that their "trade-mark consists of the word-symbol 'iron stone,' in connection with an oval figure." This mark is printed upon labels, which are to be affixed to the clay drain-pipes, or is painted, stamped, or otherwise applied directly to the pipes themselves.

The fac-similes filed with the application show a printed label, the words "iron stone" being arranged in a curved line above, while the words "drain and water pipes," together with the probable place of sale or manufacture, are beneath, the whole allocation being inclosed within an oval border.

The applicants have very properly relinquished all claim to the words "iron stone" as a mark, since they undoubtedly come within the finding of the Supreme Court:

Nor can a generic name, or a name simply descriptive of an article of trade of its qualities, ingredients, or characteristics, be employed as a trade-mark, and the exclusive use of it be entitled to legal protection."—*Canal Co.* vs. *Clark*, 13 Wall., 311.

It is to such words as these that the language of the statute applies, that no mark shall be received and recorded "which is not and cannot become a lawful trade-mark." The only question to determine is whether such words, when associated with the oval figure exhibited by the applicants, constitute a registrable mark.

A number of cases has been cited by attorney wherein the Office has granted certificates for words descriptive of quality or characteristics when used in connection with arbitrary symbols to designate the individual origin or ownership of certain classes of goods.

Whether in any of these cases, however, the descriptive words are an essential portion of the mark may well be questioned. The language of Judge Duer, in *The Amoskeag Manufacturing Co.* vs. *Spear*, (2 Sandford, Superior Court N. Y., 599,) would indicate that they cannot be so regarded. I do not consider, however, that the application before me need be decided upon any such ground. The marked difference between the present case and those cited by attorney in support of his right to registration lies in the character of the distinctive symbol with which the descriptive words are associated.

I do not concede the general proposition that geometric figures can always be registered. Simple circles, ellipses, scrolls, borders, and the like, marked in plain outline, are commonly employed in the trade as inclosures for trade or descriptive names, and for terms designating quality, place of manufacture, and other information appropriate to particular classes of goods.

The outline figures in such case serve more to direct the eye to the lettering or symbols they inclose than to suggest of themselves, or by association, any idea of individual origin or ownership. Were they stamped in solid color the case might be different, for this would replace the simple directive function of the plain outline figure, whose value in this regard is well understood, and in its stead substitute a character of a far more suggestive and arbitrary nature.

I am well aware that plain outlines, such as a diamond, &c., have been registered, but only when the characters they inclose were proper trade-marks of themselves. When they are simply indicative of quality, of properties, of ingredients, &c., it is a harsh rule which would permit an individual manufacturer to inclose these words or signs in the outline figures, constantly resorted to, and say that the association constitutes a distinctive mark of which he can have the exclusive monopoly.

But the applicants have not made out even such a favorable case as this. The oval is no more associated with the words "iron stone" than it is with the others indicative of the nature of the ware, place of manufacture, &c.

The allocation he claims is not an independent, exclusive, and distinctive one; at least the fac-similes do not so exhibit it, for the oval could just as well be regarded as associated solely with the words setting forth the nature of the ware, place of manufacture, &c., as with the words "iron stone." In this particular alone there is a clear line of distinction between the cases which attorney regards to be in point, and the one which he now seeks to register. Because a simple outline figure surrounding words purely descriptive of quality are not sufficiently distinctive from the words used alone, and because, in the present case, the juxtaposition of the two is not an exclusive one, I do not consider that the mark is sufficiently arbitrary or well defined to permit its registration.

The action of the Examiner in refusing the application is affirmed.

ROGERS AND HUGGINS.—*Interlocutory Appeal.*

[*Appeal from the decision of the Principal Examiner in the matter of the application of C. B. Rogers and James S. Huggins for* "IMPROVEMENT IN DESIGN FOR CASKET-SCREW," *filed February* 18, 1878.—*Decided April* 2, 1878.]

An application for a design patent in analogy to an application for a mechanical patent need not be divided if the separate subordinate designs to which claim is made form, when united, one principal and complete design.

Nor is there objection to making claim to each subordinate feature, provided it is of a distinct and separable part of the whole design.

SPEAR, *Commissioner:*

This appeal is taken from the ruling of the Examiner requiring a division of the application. The application is for a patent for a design, consisting of a screw-head formed to represent a crown surmounted by a a cross, together with a base of peculiar shape and configuration, to which the screw-head is fitted.

Two claims are made: one for the design of the screw-head, and the other for a design of the base-plate. It is represented that although the two are especially fitted for each other, and form, when in place, one complete design, yet that the screw-head may be used with an entirely different shape of base, and the base may be used with an entirely different shape of screw-head.

The Examiner, following the decision of the Acting Commissioner in *ex parte* Brower, C. D., 1873, p. 151, required a division of the application, holding that the subject-matter was such as to be properly in two distinct applications. The decision quoted may possibly go to that extent, but I cannot agree with it, and think that it would be unnecessary hardship to require the applicant to make two separate applications and take out two separate patents, both parts forming, when united, one complete design, while, as has been stated, they are separable, and can be used each without the other with good effect.

If each design is patentable at all I do not see why they might not be claimed as parts of one whole.

The law relating to design patents provides "that any person who, by his own industry, genius, efforts, and expense, has invented or produced any new or original design, &c., * * * may, upon payment of the fee required by law and other due proceedings had, the same as in cases of invention or discoveries, obtain a patent therefor."

The law plainly indicates what seems in itself reasonable, that the same principle should be applied in the issue of design patents, so far as they may be applicable, as those which govern in the issue of patents on what are called mechanical subjects.

I cannot conceive of any reason for refusing to allow particular claims for the particular elements of a design any more than for refusing to grant claims for subordinate elements and combinations in a machine, provided the parts are distinct and separable, and at the same time go to make up with beneficial effect the whole design.

The decision of the Examiner is reversed.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of New York.

JOHN O. MERRIAM AND EDWIN CHAMBERLAIN *vs.* ABRAHAM R. VAN NEST, ALEXANDER T. VAN NEST, AND ALEXANDER MURDOCK.

[*In Equity.—October Term*, 1877.]

Reissue letters patent, No. 5,713, granted Merriam and Chamberlain December 30, 1873, construed to be for the combination, with whip-sockets, of the particular means described for attaching them to carriages.

The means employed by the defendant being different in the essential elements of organization from that of the patentee, no infringement occurs, although the several devices are alike in accomplishing a common result.

[*Josiah P. Fitch, Esq.*, for complainants; *Charles J. Hunt, Esq.*, for defendants.]

OPINION OF THE COURT.—*February* 2, 1878.

WHEELER, *J.:*

This cause has been heard on pleadings, proofs, and argument.

The plaintiffs own reissued patent, No. 5,713, dated December 30, 1873, which they allege the defendants infringe.

The defendants, among other defenses, deny any infringement.

The invention is of an attachment to whip-sockets for fastening them to carriages. Not of whip-sockets, nor of the attachment of them to carriages, for those things were long before known, but of the combination, with whip-sockets, of the particular means described for attaching them to carriages. This is all that is claimed of the patent, and all the patent the invention would bear.

The device used is a clamp, one arm of which is formed of projections on the side of the socket and the other of a lever of the third order, both curved to fit the dash-rail of a carriage; and it will fasten to the rail without reaching round it, and is worked by a screw and nut.

The defendants have sockets, with two different attachments, for fastening them to carriages. Each consists of a clamp, and so far in name their methods are like the plaintiffs. But each of their clamps is quite different from the plaintiffs. One is made up of projections from the socket, a bar to go behind the dash-rail, and two screws, with nuts, one each side of the rail. The other, of like projections and bar to go behind the rail, with the bar hinged to a projection at one side of the rail, and worked by a nut and screw at the other side of the rail. Both extend around the rail.

If the patent had been for the result of attaching a whip-socket to a carriage by the means described, it might be said that the defendants accomplished a result of which the plaintiff had a monopoly by means mechanically equivalent to the plaintiff, and that they thereby infringed. But here the whole field of attaching sockets to carriages was left open, except as to the use of the means described, and the monopoly of the use of those could not be infringed by the use of others not the same.

From the comparison of the two methods of the defendants with those of the plaintiffs they do not appear to be the same. They may be equivalents in accomplishing a result, but not in methods of accomplishing it, so there does not appear to be any infringement.

This result makes the consideration of the other defenses set up wholly unnecessary for the purposes of this suit. Let a decree be entered dismissing the bill of complaint, with costs.

TRADE-MARKS.

[Each certificate bearing date April 2, 1878.]

5,798.—LAUNDRY-POWDER.—*Benjamin T. Babbitt*, New York, N. Y. Application filed December 27, 1877.

"The word-symbol 'Clearwhite' and the five-pointed star, as shown."

5,799.—CREAM OF TARTAR.—*Benjamin T. Babbitt*, New York, N. Y. Application filed December 28, 1877.

"The pictorial representation of a loaf of bread, upon which a vase-shaped vessel having an overflowing sponge of aerated dough surmounting it is represented."

5,800.—COLLARS AND CUFFS.—*Benjamin T. Babbitt*, New York, N. Y. Application filed January 4, 1878.

"A pictorial representation of an open-worked or outlined star, with a second, but solid and smaller, star within the center or otherwise blank field, as shown."

5,801.—MEDICINAL COMPOUND.—*George Washington Appleton*, Haddonfield, N. J., and Philadelphia, Pa. Application filed February 28, 1878.

"The word-symbol 'CUREINE.'"

5,802.—MIXED PAINTS.—*Gutta Percha Paint Company*, Cleveland, Ohio. Application filed February 9, 1878.

"The word-symbol 'Floated.'"

5,803.—BISCUIT.—*Holmes & Co.*, New York, N. Y. Application filed February 14, 1878.

"The oblong-shaped design or figure with rounded and ornamented ends, and with the word 'Sago.'"

5,804.—RUBBER GOODS.—*Hodgman & Co.*, New York, N. Y. Application filed February 14, 1878.

"The words and letters 'Standard Rubber Works' and 'H. & Co.,' arranged in the form of a monogram."

5,805.—STOOL COTTON OR THREAD.—*Mount Tom Thread Company*, East Hampton, Mass. Application filed June 25, 1877.

"The Indian word 'AGAWAM.'"

5,806.—CARPET-WARP.—*James E. Reynolds*, East Orange, N. J. Application filed February 23, 1878.

"The word-symbol 'TRI-STATE.'"

5,807.—CIGARS.—*Sullivan & Burk*, Detroit, Mich. Application filed February 5, 1878.

"The representation of the cigar resting on a pivot and the word-symbol 'Pivot.'"

5,808.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed January 8, 1878.

"The representation of a donkey looking at a picture, as shown."

5,809.—COD-FISH.—*George P. Trigg & Co.*, New York, N. Y., and Gloucester, Mass. Application filed February 15, 1878.

"The letters 'L X C R' and the word-symbol 'Excelsior Brand.'"

5,810.—HORSE HAY-RAKES.—*Benjamin C. Taylor*, Dayton, Ohio. Application filed February 25, 1878.

"The word-symbol 'AMERICAN.'"

5,811.—FANCY DRY-GOODS.—*Fox & Plaut*, Newark, N. J. Application filed February 28, 1878.

"The designation 'BEE HIVE,' whether expressed pictorially or by the written or printed word 'bee-hive.'"

5,812.—CIGARS.—*H. Myers & Brothers*, Savannah, Ga. Application filed March 6, 1878.

"The word-symbol 'Ambassadress,' used in connection with the representation of a yacht."

5,813.—BOOTS, SHOES, AND SLIPPERS.—*Ordway & Clark*, Haverhill, Mass. Application filed February 12, 1878.

"The arbitrarily-selected word 'DONGOLA.'"

5,814.—WHISKY.—*Charles F. O'Donnell*, New York, N. Y. Application filed March 8, 1878.

"The symbol 'O. K.'"

5,815.—SMOKING AND CHEWING TOBACCO.—*Whitfield W. Phillips*, Richmond, Va. Application filed March 1, 1878.

"The word-symbol 'RAG-TAG.'"

5,816.—FERTILIZERS.—*Patapsco Guano Company*, Baltimore, Md. Application filed February 21, 1878.

"The word 'GRANGE.'"

5,817.—PRINTED PUBLICATIONS.—*Cassius H. Read*, New York, N. Y. Application filed February 23, 1878.

"A representation of ornamental and artistic designs of cookery, forming a border, the top of which represents a cold ornament or Bellevue piece, ('Galantine de Faisan,') surmounted by a figure of Plenty holding a cornucopia. On the sides of the stand or dish, and forming a part thereof, are the upper portions of human figures, each holding a plate of salad or jelly. On one side of the border or cut is a dish representing 'Filet de Volaille à la Vilmorol,' a string of fish, vase of fruit, and Chinese temple. On the other side of the border or cut is a dish representing 'Côtelette de Chevreuil à la St. Hubert,' together with fowl or game, vase of flowers, and Gothic temple, the base comprising fruit and vegetables, which surround a deer's head on one side, a soup-tureen with calf's head cover in the center, and boar's head on the other side. All the foregoing designs or representations are interspersed with grape-vines, clusters of grapes, and other artistic ornamentations. Underneath all is suspended a net containing lobster, prawn, crawfish, and shrimp.

5,818.—MINERAL WATERS.—*C. D. Swain & Co.*, Boston, Mass. Application filed February 25, 1878.

"A device consisting of Maltese cross, having within a circle the center of the cross a sponting spring, small brook, foliage, and a sky in the background, while on the outer rim of the circle is entwined a wreath of flowers, consisting principally of roses and rose-buds, as shown."

5,819.—PLUG-TOBACCO.—*The Pioneer Tobacco Company*, Brooklyn, N. Y. Application filed December 21, 1877.

"A tag made of wood essentially of the form shown in the facsimile, called in the trade 'a wood tag.'"

5,820.—EYE-WATER.—*Ann E. Brady*, New York, N. Y. Application filed February 21, 1878.

"The symbol of a diamond and an eye, and the word 'Diamond.'"

5,821.—CIGARS.—*James W. Crowell*, Philadelphia, Pa. Application filed December 31, 1877.

"The fanciful title 'PRIDE OF PHILADELPHIA.'"

5,822.—CIGARS.—*M. J. Cohn & Co.*, Memphis, Tenn. Application filed March 6, 1878.

"The word-symbol 'OURS.'"

5,823.—FLOUR.—*Geo. V. Hecker & Co.*, New York, N. Y. Application filed February 11, 1878.

"The word-symbol 'GRIDDLE CAKE.'"

5,824.—CIGARS.—*William Niessing*, New York, N. Y. Application filed March 2, 1878.

"The word-symbol 'RAPID TRANSIT.'"

5,825.—MEDICAL COMPOUND.—*Frederick Reinecke*, Allegheny, Pa. Application filed March 4, 1878.

"The Austrian eagle with outstretched wings and with my monogram, 'F. R.,' on the breast thereof."

5,826.—REFRIGERATORS.—*Smith Refrigerator and Manufacturing Company*, Michigan City, Ind. Application filed March 2, 1878.

"The word-symbol 'ALASKA.'"

5,827.—MEDICINAL COMPOUND.—*R. E. Sellers & Co.*, Pittsburg, Pa. Application filed March 2, 1878.

"The ornamental figure or bordering and the words 'Sellers' Imperial.'"

DESIGNS.

[Each design bearing date April 2, 1878.]

10,612.—BRACELET.—*William Byron*, New York, assignor to *Vulcanite Jewelry Company*, New York, N. Y. Application filed February 15, 1878. Term of patent 7 years.

10,613.—CASSIMERES.—*Francis Carpenter*, Burrillville, R. I. Application filed March 21, 1878. Term of patent 3½ years.

10,614.—SAMPLE-BOX.—*Erich L. Witthaus*, Baltimore, Md. Application filed February 4, 1878. Term of patent 7 years.

10,615.—HANDLES OF FORKS, SPOONS, KNIVES, &c.—*William C. Beattie*, Taunton, Mass., assignor to *Reed & Barton*, same place. Application filed March 9, 1878. Term of patent 7 years.

10,616.—UMBRELLA-HANDLES.—*F. Julius Kaldenberg*, New York, N. Y. Application filed March 6, 1878. Term of patent 7 years.

10,617.—MUFF.—*Christian Stattmann*, Chicago, Ill. Application filed February 28, 1878. Term of patent 3½ years.

10,618.—VASE.—*William Tweeddale*, Brooklyn, N. Y., assignor to *North American Iron Works*, same place. Application filed January 8, 1878. Term of patent 14 years.

LABELS.

[Each certificate bearing date April 2, 1878.]

1,462.—Title: "D'OSSONE'S LONDON WRITING AND COPYING FLUID." *C. V. D'Ossone*, Philadelphia, Pa. Application filed March 1, 1878.

1,463.—Title: HIGGINS' GERMAN LAUNDRY SOAP."—*Charles S. Higgins & Co.*, Brooklyn, N. Y. Application filed March 23, 1878.

1,464.—Title: "OLD MILL."—*Heppenheimer & Maurer*, New York, N. Y. Application filed March 23, 1878.

1,465.—Title: "POW-WOW."—*Heppenheimer & Maurer*, New York, N. Y. Application filed March 23, 1878.

1,466.—Title: "AMERICAN COUSIN."—*Heppenheimer & Maurer* New York, N. Y. Application filed March 23, 1878.

1,467.—Title: "PARVULES."—*William R. Warner & Co.*, Philadelphia, Pa. Application filed December 26, 1877.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

APRIL 2, 1878.

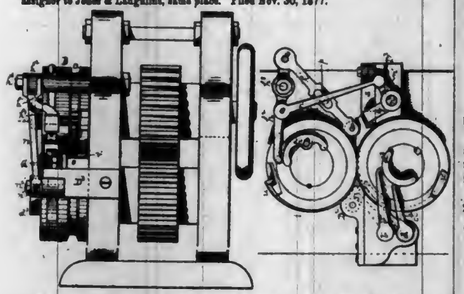
201,860. EYE-BARS FOR BRIDGES, &c. Morris H. Alberger, Philadelphia, Pa. Filed Feb. 12, 1878.

Brief.—A T-iron is bent upon itself at both ends, "back to back," and is welded or riveted, the ends meeting. Eyes to receive bolts or pins are formed in the ends within the fold of the back.



Claim.—An eye-bar consisting of a double T-body between the eyes and a single T around and forming the eyes, substantially as described.

201,861. MACHINES FOR ROLLING SUCKER-ROD BLANKS. John H. Alker, Pittsburg, Pa., assignor to Jones & Laughlins, same place. Filed Nov. 30, 1877.



Claim.—1. In a machine having revolving forging-dies for the progressive reduction of concave-convex blanks by two or more successive passes, the combination of grooves *a a' c c'*, adapted to the feeding of the blanks on the delivery side, the tongue and groove dies *c c'*, adapted to the partial reduction of the blank, and the tongue and groove dies *i i'*, adapted to further reduce the same blank when the two sets of dies are arranged with the beginning of their points of bite not in the same line, whereby the two sets of dies may be employed in succession or the same blank, and also simultaneously on different blanks, substantially as set forth.

2. The combination of the grooves *c c'*, for feeding in the blank from the delivery side, the tongue and groove dies *i i'*, for finishing the concavo-convex body of the blank, and the removable male and female steel shearing and trimming dies *n n'*, for shearing off to a finished form the end of the finished blank, substantially as set forth.

3. In combination with tongue and groove rolling-dies for shaping irregular blanks, a swinging scraper-guide having a recessed operative face corresponding to that of one side of the blank, a cam, *d*², and a guide fixed in position during the rolling operation on the opposite side, substantially as set forth.

4. A scraper attached to a rock-shaft, and a lifting-arm attached to the same shaft, in combination with a lifter, *d*², attached to one of the rolls, substantially as described.

5. As a device for delivering or straightening (or both) blanks of irregular form from rolling-dies, guide-seats *g*, adapted to vary their position automatically with the varying form of the article produced, substantially as set forth.

6. In combination with revolving forging-dies and rear guides, a pair of pivoted jaws, G G, adjusted to and from each other automatically with the varying form of the blank, substantially as described.

7. A straightening device on the delivery side of a pair of rolls or rolling-dies, which, by the automatic movement of one or more of its moving parts toward the central line of delivery, is adapted to gripe the blank on all sides, and thereby bring twisted or bent parts of the blank into line, substantially as set forth.

8. An automatically-operating griping device on the delivery side of a pair of rolls or rolling-dies, in combination with an automatically-operated scraper or guide on the opposite side, substantially as described.

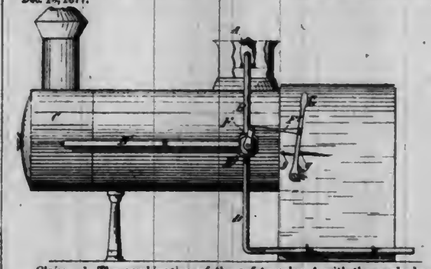
9. The eccentric lifter *h*², as a device for operating, by means of suitable interposed connections, one or more of the movable straightening-gripers *g g h* on the delivery side of the rolls, and in combination with such gripers, substantially as set forth.

10. The pivoted jaws G G, adapted to open sufficiently for the insertion of the tongs between them in feeding, and at the same time free to close more or less while the reducing or shaping operation is in progress, in combination with mechanism for effecting such movements automatically at the proper times, substantially as set forth.

11. The combination of lifter *h*², arm *h*², connecting-rod *n*, cranked shaft *n*¹, studs *q q*, inclines *g*² *g*², and jaws G, substantially as described.

12. The shoulders *r r*, made on and as a part of the jaws G G, and in combination therewith, substantially as set forth.

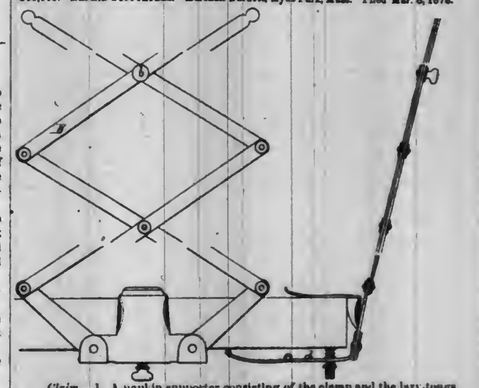
201,862. EXHAUST MECHANISMS FOR LOCOMOTIVES AND OTHER STEAM-ENGINES. Henry O. Ashton, Somerville, Mass., assignor to Ashton Valve Company, Hartford, Conn. Filed Dec. 19, 1877.



Claim.—1. The combination of the safety-valve A with the smoke-box C by means of the pipes B B', as and for the purposes set forth.

2. The combination of the safety-valve A, pipe B, cock E, and pipes B and D, constructed and arranged as shown, in order that the escape-steam from the safety-valve may be carried in either one of two directions, as set forth.

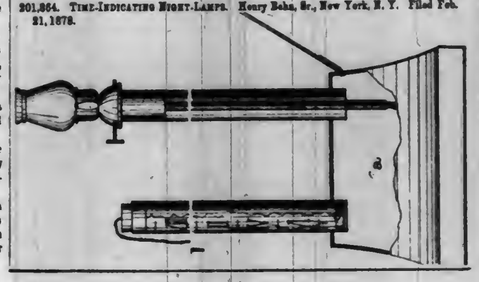
201,863. NAPKIN-SUPPORTERS. Marshall Burnett, Hyde Park, Mass. Filed Mar. 8, 1878.



Claim.—1. A napkin-supporter consisting of the clamp and the lazy-tongs, applied essentially as set forth.

2. A napkin-supporter, substantially as described, consisting of the clamp, the lazy-tongs, and the clasp, arranged and applied in manner and to operate as and for the purpose or purposes specified.

201,864. TIME-INDICATING NIGHT-LAMPS. Henry Behn, Sr., New York, N. Y. Filed Feb. 21, 1878.



Claim.—1. A night-lamp provided with a tube upon which the hours are marked, and in which the time is indicated by the falling of the oil or a float, substantially as set forth.

2. In a night-lamp, the combination of one or more transparent tubes, base or reservoir *a*, and a reflector, substantially as shown.

201,865. MILLSTONE-DRESSERS. Thomas P. Benton, Prairie Du Sac, assignor of two-thirds his right to J. K. Mansfield, Eau Claire, and David Mansfield, Baraboo, Wis. Filed Feb. 25, 1878.

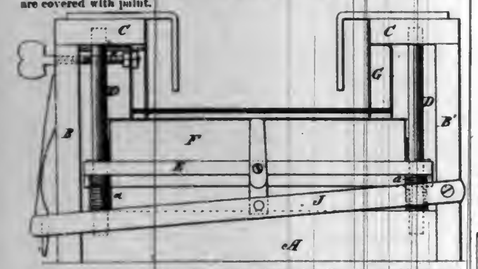


Claim.—1. The combination of the carriage C, slide F, adjustable holder L, and pivoted pin P, substantially as and for the purposes herein set forth.

2. The combination of the bed-frame A, the frame or ways B, hung upon central end pivots *b b'*, the slide D, adjusted vertically by the screw E, and provided with the slotted flange *d*, the set-screw *e*, the sliding carriage C, and the laterally-movable slide F, carrying the dresser-tool, and operated by the screw-shaft G and the feed devices, substantially as herein described.

201,866. MACHINES FOR PAINTING BROOM-HANDLES. Henry Brady and Nicholas Van Slyck, Schenectady, N. Y. Filed Feb. 16, 1878.

Brief.—Improvement in the class of painting-machines in which broom-handles or other similar articles are striped by rolling them over wires which are covered with paint.



Claim.—1. In a machine for striping broom-handles, the combination of the pigment-boxes with the vertically-adjustable table, as and for the purpose specified.

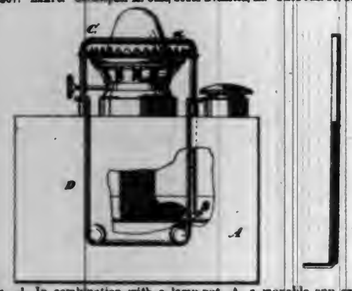
2. In a machine for striping broom-handles, the vertically-adjustable pigment-boxes, in combination with the removable painting-wires, as set forth.

3. In a machine for striping broom-handles, the painting-wires, in combination with the slotted supporting-plates and stationary and adjustable end bearing-plates, as described and shown.

4. In a machine for striping broom-handles, the horizontally-adjustable guards, in combination with the stationary caps, to which they are attached, and painting-wires, as described, and for the purpose specified.

5. In a machine for striping broom-handles, the base A, side pieces B, caps C, and posts D, in combination with the adjustable table E, springs *a*, and lever J, substantially as and for the purpose set forth.

201,867. LAMPS. Christopher M. Case, South Evanston, Ill. Filed Jan. 16, 1878.



Claim.—1. In combination with a lamp-pot, A, a movable cup or shelf and the supporting-wire C, substantially as and for the purposes set forth.

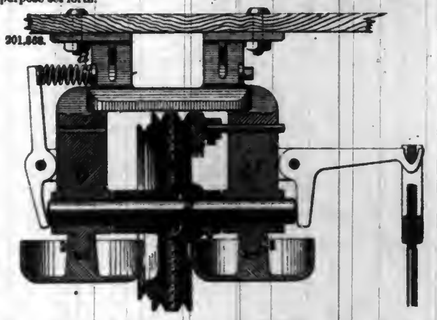
2. In combination with a lamp-pot, A, a movable cup or shelf, supporting-wire C, and holding-wire D, substantially as and for the purposes set forth.

201,868. DEVICES FOR TRANSMITTING AND ARRESTING MOTION. Benj. F. Cloud, Philadelphia, Pa. Filed Mar. 11, 1878.

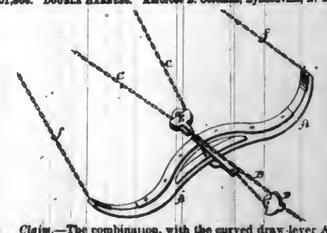
Brief.—Within the hanger is mounted the counter-shaft in bearings. Said shaft has end motion, and carries two pulleys, one of which is loose, the other fixed. By means of the friction-disk, brake, and spring-lever, the driving-pulley may be set in motion or at rest.

Claim.—The combination of a supporting-frame, a counter-shaft mounted and having the capacity of end motion in bearings therein, and carrying a fast pulley and frictional disk and a loose pulley, a stationary friction-brake secured upon the frame, and a spring and pivoted levers, by which the frictional disk and fast pulley are moved endwise and maintained in contact either with the friction-brake or the loose pulley, substantially as and for the purpose set forth.

201,869.

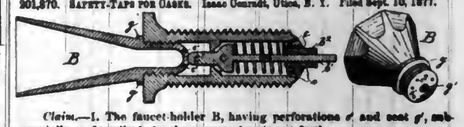


201,869. DOUBLE HARNESS. Ambrose B. Coleman, Lyndonville, N. Y. Filed Aug. 7, 1877.



Claim.—The combination, with the curved draw-lever A and its traces *f f*, and the pulley E and its draw-trace C, of the pulley D and its draw-trace B, all constructed and arranged as shown and described, and for the purpose stated.

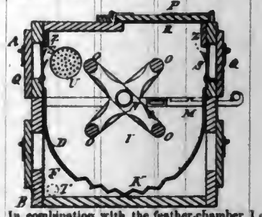
201,870. SAFETY-TAPS FOR CASKS. Isaac Comradt, Utica, N. Y. Filed Sept. 10, 1877.



Claim.—1. The faucet-holder B, having perforations *c'* and seat *g'*, substantially as described, for the purpose herein set forth.

2. The combination of the safety-tap A, having spring-valve *c*, the head of which, *c'*, projects beyond its seat, with the faucet-holder B, having seat *g'* for the valve-head, the said tap and holder being fitted with screw-threads, by which they may be connected together, substantially as and for the purpose herein set forth.

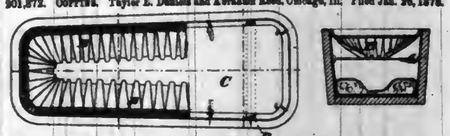
201,871. FEATHER-RENOVATORS. Elijah H. Cowles, Newcastle, Pa. Filed Feb. 8, 1878.



Claim.—1. In combination with the feather-chamber I of a feather-renovator, the doors Q Q and screens S S, provided with the pockets Z, substantially as and for the purposes set forth.

2. In a feather-renovator, the steam-chamber F, provided with the inlet T, and the perforated opening L, having slide M, in combination with the feather-chamber I, having corrugations K, doors P, H, and Q Q, perforated screens R and S S, the latter having pockets Z, outlet and valve U V, and the agitator N O, substantially as and for the purposes set forth.

201,872. COFFINS. Taylor E. Daniels and Abraham Reed, Chicago, Ill. Filed Jan. 26, 1878.

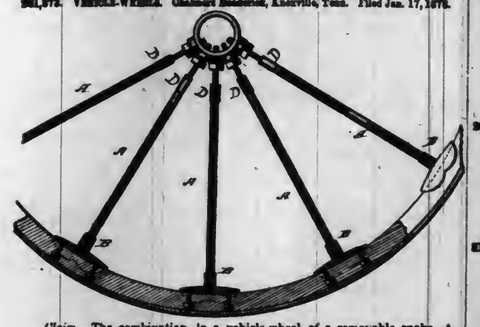


Claim.—1. In a coffin, the device for supporting the trimmings or headlinings B at any desired angle, consisting of the false bottom C, of satin or any other suitable fabric or material, placed below the line of fastening of the said trimmings, and held in position by any suitable means capable of resisting a moderate pressure, but which will yield or break under the weight of the body as the latter is placed within, substantially as described.

2. The combination of the false bottom C with the elastic straps *s*, connecting the edges of the same to the walls of the coffin, substantially as described, for the purpose set forth.

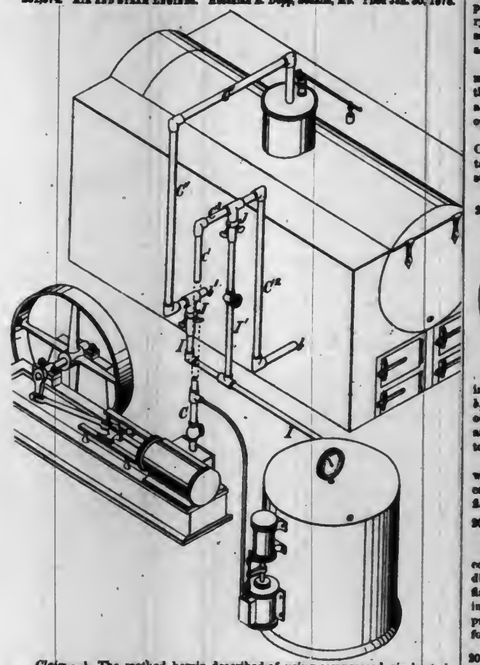
3. The elastic strap D, extending across the interior of the coffin, near the upper end, below the false bottom C, for the twofold purpose of limiting the subsidence of the said false bottom and the trimmings at this point, and forming a rest and holder for the head, substantially as described.

201,873. VEHICLE-WHEELS. Chalmers Bookwick, Knoxville, Tenn. Filed Jan. 17, 1878.



Claim.—The combination, in a vehicle-wheel, of a removable spoke, A, having socket B and ferrule or socket D, terminating in a screw having a nut, substantially as set forth, and for the purposes specified.

201,874. AIR AND STEAM ENGINES. Hezekiah E. Depp, Sedalia, Mo. Filed Jan. 30, 1878.



Claim.—1. The method herein described of using compressed air heated by friction at the point where the air commingles with the steam, and introduced on an angle into the steam-pipe or steam-chamber, substantially as described.

2. The connecting-joint J between air-pipe, steam-pipe, or steam chest or cylinder and boiler, or directly into the boiler, constructed substantially as described.

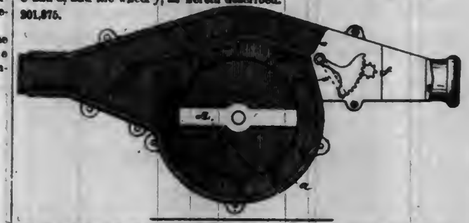
3. The combination of the steam-pipe C, air-pipe I, and a suitable check valve or valves, substantially as described.

201,875. UTILIZING POWER OF WATER IN PIPES. John C. Estey, San Francisco, Cal. Filed July 18, 1877.

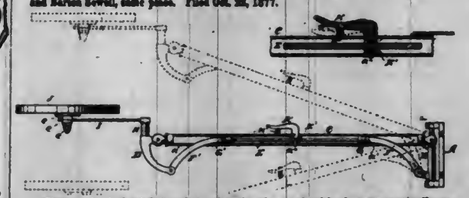
Brief.—The object of the invention is to utilize the power of water in pipes or flumes without wasting the water. A wheel provided with buckets is inclosed in a casing of the same area of the pipe or flume to which it is connected—the casing having two compartments, with a gate to direct the water to No. 1 when the wheel is in use, and to No. 2 when it is not.

Claim.—The cylindrical wheel A, provided with oblong buckets *a*, working in the chamber No. 1, constructed in water-pipes, currents, or streams, as herein described, having in combination therewith the passage No. 2, the gates C and *d*, and the wheel *f*, as herein described.

201,876.



201,876. DENTAL BRACKETS. Wm. D. Ewart, Chicago, Ill., assignor to Abner H. Thomas and Barton Sewell, same place. Filed Oct. 22, 1877.

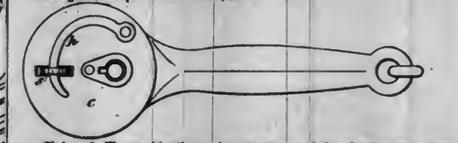


Claim.—1. A dental bracket wherein the tool-table is automatically retained in a horizontal position during its adjustment vertically, by means of the combination of a vertically-vibrating arm, C, a sliding connecting-rod, E, carried by the said arm, and arranged in or nearly in the same horizontal plane therewith, and a vibrating lever, also carried by the said arm, and carrying the table, the said rod being linked at one end to the lower end of the said lever, and at the other to a point below the plane of the rod, substantially as specified.

2. In a dental bracket, the tool-table J, clamped to a horizontal arm by means of the finger-nut *s'*, the said arm mounted freely on a vertical pin, for the purpose of thereby admitting of the adjustment of the table on its arm, and of the adjustment of the arm on its pin or supporting-post, by one act or operation, substantially as specified.

3. The combination of the wall-plate A, the pivoted vertical post B, arm C, jointed to the said post, lever D, jointed to the arm A, and carrying the table-supporting arm, the sliding rod E, links F and F', and the lever K, substantially as and for the purposes specified.

201,877. HASP-LOCKS. Conrad Fichter, Syracuse, N. Y., assignor of one-half his right to John Lighton, same place. Filed Nov. 2, 1877.



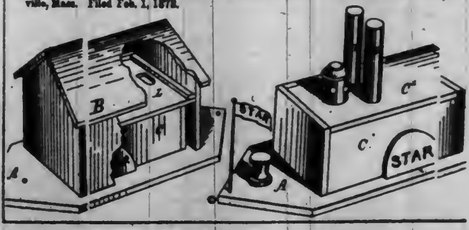
Claim.—1. The combination and arrangement of the circular case *c*, having the staple-entrance near the inner edge of its back plate, the annular bolt *b*, having opening *d*, and, opposite the same, the teeth *i*, the tumblers *r*, pivoted to the bolt and having notches *n*, the spring *v* at the rear of the tumblers, and the stationary guard *g* at the front of same, all constructed and arranged to operate substantially as specified and shown.

2. The staple *a*, protruding through the cover of the case *c*, and provided with eye *e* at the outside thereof, and the hook *h*, pivoted to the cover of the case, constructed and arranged as described and shown, for the purpose specified.

201,878. COMPRESSED FOOD. Emile Grivel, Paris, France, assignor to Albert L. De Pages, Hoboken, N. J. Filed Nov. 4, 1876.

Claim.—The herein-described preserve composition for food, the same consisting of raw meal or flour; lean meat, previously prepared and finely divided; clear fat of meat; salt; vegetables, finely divided, and suitable flavoring and seasoning materials, the whole being united, without chemicals, in about the proportions and in the manner specified, whereby an article is produced which is adapted to form a gelatinous compound by boiling in water, for the purposes explained.

201,879. TOY AXES. George E. Ireland, Springfield, assignor to Horace Partridge, Somerville, Mass. Filed Feb. 1, 1878.



Claim.—1. A combination toy consisting of the parts A C C', and forming a mimic steamboat, with the part B L K forming a mimic stable, all substantially as described, and for the purpose set forth.

2. In combination with the toy ark, the partition-floor L, provided with openings M M M, substantially as described, and for the purpose set forth.

201,880. COMPRESSIBLE PUMP AND CHECK VALVE. Albert W. Johnson, New Haven, Conn., assignor to Edwin F. Mersick, Robert B. Bigelow, and Frederic Ives, same place. Filed Oct. 6, 1877.

Brief.—A flexible tube within the barrel has a thickened delivery end to resist compression. The port at the other end is smaller than the barrel, and narrows inwardly as a funnel, the mouth of the flexible tube being secured between the funnel and the cylinder, and a conoidal enlargement being formed on said flexible tube by pressure from without.



Claim.—1. In combination with a tubular elastic valve, a fixed projecting metal flange, forming a seat for a portion of the closed end of said valve, substantially as and for the purpose described.

2. In a tubular elastic valve, a conoidal protuberance of its elastic material upon the inner surface of its port-closing portion, substantially as and for the purpose described.

3. In a tubular elastic valve, an elastic rib extending around the inner surface of the valve at its open end, substantially as shown and described, and for the purpose specified.

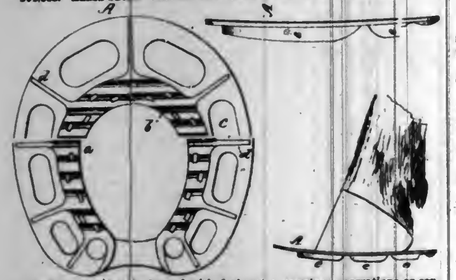
201,881. CAR-AXLES. Nathaniel Jones, Syracuse, N. Y. Filed Mar. 18 1878.



Claim.—1. The solid axle A, having groove or recess *b* in combination with a hollow axle provided with an opening or openings, *c*, and a collar and pin or pins, substantially as and for the purpose set forth.

2. The solid axle A, having journals or bearings *a a*, groove or recess *b*, and the wheel B, in combination with the hollow axle C, provided with the wheel D and openings *c*, and a collar and means for locking the parts, as and for the purpose herein set forth.

201,882. MARSH-SHOES. Robert K. Jordan, Oakland, Cal. Filed May 22, 1877.



Claim.—The shoe A, formed with foot-rest *a*, opening *p*, serrations or corrugations *b*, radial ribs *d*, and calks *c*, substantially as and for the purpose specified.

201,883. BAKING OVENS. John Kohnle, Dayton, Ohio. Filed Feb. 25, 1878.



Claim.—1. In an oven, the supporting-tubes I, passing through the outer walls, and open at their ends to permit the free circulation of the outside air, substantially as set forth.

2. The herein-described bake-oven, consisting of the outer walls A, dome B, furnace E, division-wall D, tubes I, oven-chamber L, vents *d* and flues *a'*, and dampers *b*, the whole constructed and arranged substantially as specified.

201,884. EXTRACTING OIL FROM FISH. Harrison Loring, Boston, Mass. Filed Jan. 21, 1876.

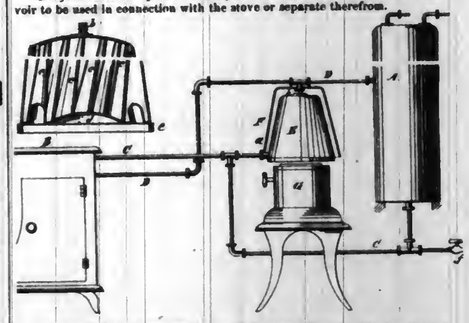


Claim.—1. The improved process for expressing the fluids from fish, consisting in filling the curb shown in Fig. 3 with a layer of fish, a mat of the kind described, another layer of fish, another mat, and so on, as above described, and subjecting the whole to heavy pressure, all substantially as set forth.

2. A mat made of bundles or layers of wire, so arranged that as the pressure is increased the individual wires will change their relative positions, thus freeing the coarses or spaces between the wires and allowing the fluids to pass out readily, when used in combination with the curb in expressing fluids, all substantially as described.

201,885. WATER-HEATERS. Charles Matthews and Wm. Holt, Chicago, Ill. Filed July 21, 1877.

Brief.—An auxiliary heater interposed between the stove and the reservoir to be used in connection with the stove or separate therefrom.



Claim.—1. The interposed heater E G, in combination with the stove or range B, reservoir A, and circulating-pipes C D, substantially as and for the purpose specified.

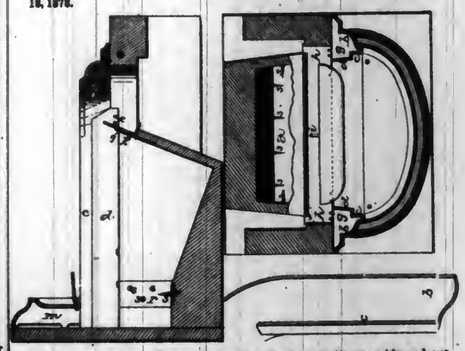
2. The water-heating attachment and pipes *a b*, in combination with the circulating-pipes C D, substantially as described.

3. The water-heating attachment E, in combination with the air-jacket F, to hold the hot air and prevent circulation around the heater E, substantially as specified.

4. The suspended heater E, in combination with the removable stove or lamp G and circulating-pipes C D, substantially as described.

5. The movable band *e*, in combination with the suspended heater E and removable oil stove or lamp G, substantially as and for the purpose set forth.

201,886. FIRE-PLACES. Oscar F. Meharin and Oscar G. Meharin, Newark, Ohio. Filed Jan. 18, 1878.

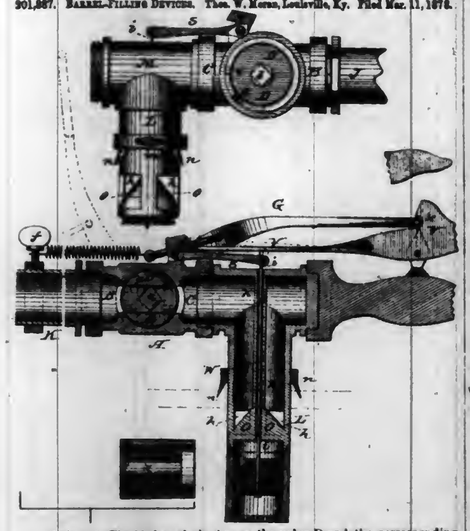


Claim.—1. A grate-front, *b*, having the flanges *c* on its rear side and outside of the mantel, the front and flanges being cast together in a single piece, and the flanges made to extend up above the lower edge of the arch, substantially as shown.

2. The grate-front *b*, having the flanges *c* on its rear side and outside of the mantel extending above the top of the lower edge of the arch, in combination with the side jambs *d*, whereby a neat and perfect finish is obtained, substantially as described.

3. The side jambs *d*, having the notches *e* in their upper ends, in combination with the supporting-plate *h*, substantially as set forth.

201,887. BARREL-FILLING DEVICES. Thos. W. Moran, Louisville, Ky. Filed Mar. 11, 1878.



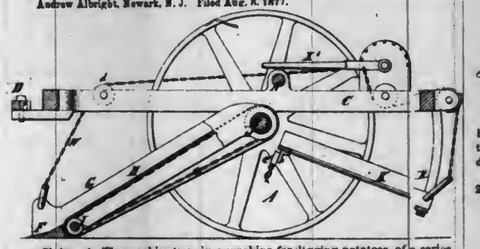
Claim.—1. The V-shaped pin *d* upon the valve D and the corresponding shoulder *a* on the valve-case, for the purposes herein set forth.

2. In combination with the valve D, the lever G, ball H, spring I, and adjustable collar K and set-screw *f* on the inlet-tube, for the purposes herein set forth.

3. The cage L, with side openings *h*, cone O, and tube *k*, for the purposes herein set forth.

4. The double trigger S V, in combination with the float, float-wire, and lever-frame, for the purposes herein set forth.

201,888. POTATO-DIGGERS. David B. Muchmore, Madison, assignor of one-half his right to Andrew Albright, Newark, N. J. Filed Aug. 8, 1877.

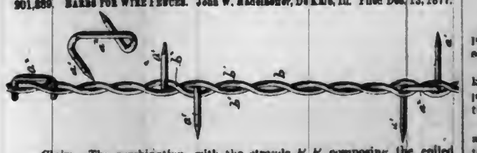


Claim.—1. The combination, in a machine for digging potatoes, of a series of inclined shovels or diggers, arranged at the forward end of an inclined frame, supported at its rear end upon the axle of the machine, and an inclined endless apron or carrier, passing at its lower end over a roller at the lower end of the inclined frame, and at its upper end over a sleeve surrounding the axle of the machine, whereby the shovels and belt may be elevated or depressed together without changing their relative positions, substantially as specified.

2. The combination, in a machine for digging potatoes, of the adjustable frame G, secured to the axle B and carrying the shovels F at its lower end, the endless apron H, passing over the roller I at the lower part of the frame G and over the sleeve J, surrounding the axle B, and the reversely-inclined oscillating shaker K and its actuating mechanism, the whole constructed to operate substantially as specified.

3. In a machine for digging potatoes, the combination, with a shaker, of a track supporting its forward part, rollers on the said part fitting the said track, and a vertically-adjustable hanger, to which the rear part of the shaker is pivoted, substantially as set forth.

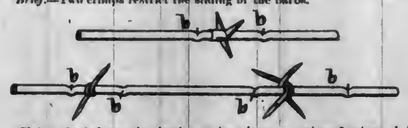
201,889. BARBS FOR WIRE FENCES. John W. Hadelhoffer, De Kalb, Ill. Filed Dec. 13, 1877.



Claim.—The combination, with the strands *b' b'*, composing the coiled cable *b*, of the barb *c*, made from a single straight wire, having its ends or points a^1 a^1 bent at right angles to the body a^2, and passed through between the strands of different coils of the cable, and bent in opposite directions over the upper strand and down to the same plane, forming shoulders a^3 a^3, which brace against the opposite or under strand, substantially as and for the purposes set forth.

201,890. BARBED FENCE-WIRES. Thomas G. Orwig, Des Moines, Iowa, assignor of three fourths of his right to Albert Snook, Oswego, Ill. Filed Aug. 30, 1877.

Brief.—Two crimps restrict the sliding of the barbs.

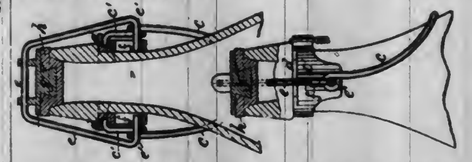


Claim.—1. A fence-wire having twin crimps or pairs of crimps *b b* at intervals to mark the location for barbs, and to restrict the sliding of barbs placed between the distinct crimps, substantially as shown and described.

2. As an improved article of manufacture, a fence-wire having crimps *b b* and barbs placed on the wire between said crimps, to rotate and slide upon the wire, in the manner and for the purposes set forth.

201,891. BOTTLE-STOPPERS. Noah Prescott, Westford, Mass. Filed Feb. 21, 1878.

Brief.—The bearings for the short arms of the lever and the grooves in which the pivoted ends of the yoke slide are on and in the neck-band, but may be formed in the bottle itself.



Claim.—1. In a bottle-stopping device, the combination of the pivoted cams *e' e'*, hinged to the movable fulcrums *e' e'* and projecting into the slotted guides *f f*, and the stationary projections or inclines *d d*, as and for the purpose set forth.

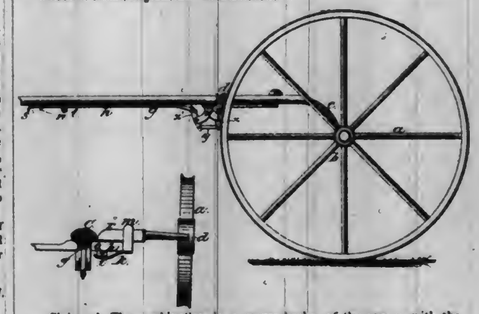
2. The herein-described bottle-stopping device, consisting of the cams *e' e'*, stationary projections or inclines *d d*, pivots *e' e'*, projecting within the slots or grooves *f f*, the yoke *a*, elastic stopper *b*, and curved cam-rod *c*, as and for the purpose set forth.

201,892. DEVICES FOR SPLICING CARRIAGE-SHAFTS. Silas H. Raymond, Grand Rapids, Mich. Filed Jan. 17, 1878.



Claim.—The metal socket A, provided with the hickory or wooden filling B, in combination with the wedge, partition, and dowel C, and the front end of the carriage-shaft D, when constructed substantially as and for the purpose described.

201,893. VEHICLE-BRAKES. Charles E. Rice, Somerville, assignor of one-fourth his right to Winfield S. Choate, Augusta, Me. Filed Nov. 3, 1877.



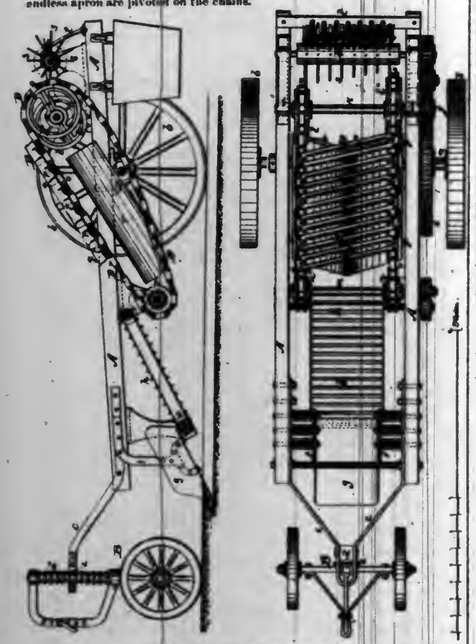
Claim.—1. The combination, in a wagon-brake, of the arm *e*, with the pad *d* thereon, and the spring-rod *h*, with the guide *m* and spring *i* thereon, as set forth and specified.

2. A wagon-brake composed of the rod *g*, with the loop *t* therein and knob *s* thereon, in combination with the spring-rod *h*, having the arm *e* and pad *d* and spring *i* thereon, all constructed, applied, and operated substantially as described, and for the purposes set forth.

3. A brake for wagons and other vehicles, consisting of the spring-rod *h*, arm *e*, and pad *d*, in combination with the rod *g*, with loop *t* and knob *s* thereon, as described and set forth, and operating with the levers *x* and *x'*, to increase the pressure on the wheel, as fully described and specified.

201,894. POTATO-DIGGERS. William Schwarz, Koenigsberg in the Neumark, Prussia. Filed Jan. 28, 1878.

Brief.—Upon the shaft *k* are fastened eccentric-cams, which are set so that the largest radius of one will be diametrically opposite the largest radius of the other, whereby an oscillating motion is imparted to the endless apron. The arms of the reel are of different length, and so set that the shortest revolve opposite to the largest radius of the cams, thus maintaining an equal distance between the arms and the screen or apron. The cross-bars *p* of the endless apron are pivoted on the chains.



Claim.—1. In a potato-digger, the combination of the frame A with the shaft *k*, having cams *l l'*, and with the shaft *n* and screen D, all arranged so that a combined rotary and oscillating motion is imparted to the screen D, substantially as and for the purpose specified.

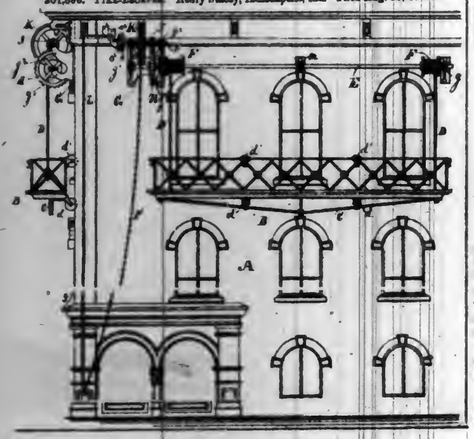
2. The combination, in a potato-digger, of the frame A with the shaft E, having arms *s s* of unequal lengths, and with the screen D, hung on the eccentrics *l l'*, substantially as specified.

3. The combination of the wheeled frame A, having a yoke, *c*, with the carriage B, having stem *d*, said stem being provided with series of grooves to receive the fastening-pin *e*, substantially as specified.

201,895. METALLIC FILLING FOR TEETH. Nelson B. Slayton, Rochester, N. Y. Filed Sept. 5, 1877.

Claim.—As a new manufacture, a fibrous and textile metallic filling for teeth, consisting of metal shreds cut or shaved from ingots, substantially as described.

201,896. FIRE-ESCAPES. Henry Stacey, Indianapolis, Ind. Filed Aug. 10, 1877.



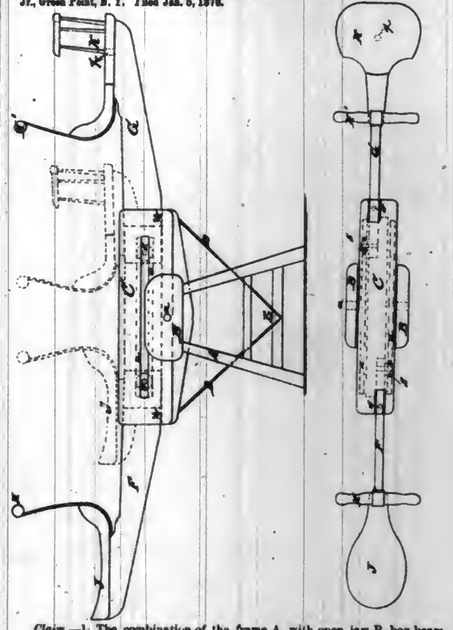
Claim.—1. The combination of the frame A, with open jaw B, box-beam C, springs D, and sliding or extending arms F G, arranged to operate in the manner and for the purpose described.

2. The box-beam C, provided with grooves *a a*, in combination with wheels *z z*, attached to the sides of the sliding arms F G, substantially as specified.

3. The pins *w* in the ends of the beam C, in combination with the sliding arms F and G, for the purpose set forth.

4. In combination with sliding arms F and G, arranged to operate for the purpose described, the saddle-seat J on the end of one arm, and the chair-seat K, capable of turning on its center-pin *x* at the end of the other arm, and the projecting cross-arms H and H', substantially in the manner and for the purpose herein specified.

201,897. SEESAWS. John B. Tyler, Brooklyn, assignor of one-half his right to Theo. Davies, Jr., Green Point, N. Y. Filed Jan. 5, 1878.



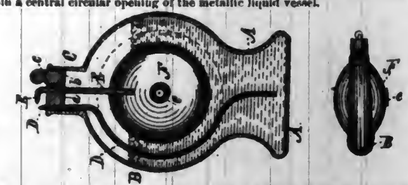
Claim.—1. The combination, with the movable balcony, of a shaft extending below the cornice of the building, wire ropes D, passing from the balcony to drums on the shaft, and a chain or hoist wheel, K, and gears J H, arranged and operating as shown.

2. In combination with an elevator-balcony, the bracket-plate G, bracket-hangers g^1 g^2 g^3 g^4, and bracket *g*, the shaft E, provided with spur-wheel H and drums F F, the shaft *r*, provided with pinion J, sheave-wheel K, and brake-disk *o*, and brake-disk *o'*, lever *p*, and chain L, in the manner and for the purposes specified.

3. In combination with an elevator fire-escape balcony, B, the shaft *r* and brake-disk *o*, the movable brake-disk *o'*, lever *p*, and rope or chain L, in the manner and for the purposes described.

201,898. ATOMIZERS. Lewis Wilkinson, Brooklyn, N. Y. Filed Aug. 29, 1876.

Brief.—The usual rubber air-bulb is circular and grooved, to be inserted within a central circular opening of the metallic liquid vessel.



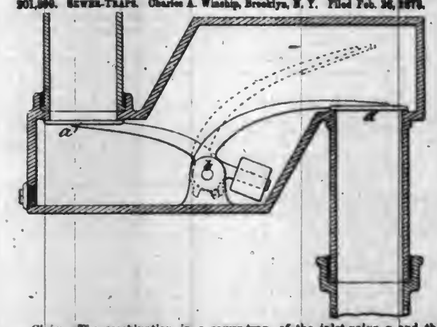
Claim.—1. In an apparatus arranged for converting liquids into vapor or spray, the combination of a vessel provided with the usual air and liquid tubes, having an opening through its body for the reception of a collapsible bulb, and a collapsible bulb provided with an air-valve, both being arranged, applied, and operating conjointly, as herein shown and set forth.

2. The combination of the ring-shaped vessel B, liquid-tube D, air-tube E, cap J, provided with packing A, and rubber bulb F, arranged, applied, and operating as and for the purposes as herein shown and set forth.

3. The collapsible rubber bulb F, provided with the depression or recess *d* and air-valve *e*, arranged for insertion in an opening in the body of a liquid-vessel, as and for the purposes as herein shown and set forth.

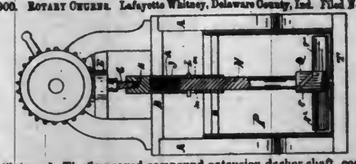
4. The cap J, provided with packing A, having projection *f*, in combination with an atomizer, arranged and operating substantially as herein shown and set forth.

201,899. SEWER-TRAPS. Charles A. Winship, Brooklyn, N. Y. Filed Feb. 26, 1878.



Claim.—The combination, in a sewer-trap, of the inlet-valve *a* and the outlet-valve *d*, connected to be opened together by a downward flow, and one at least to remain closed to an upward pressure or to suction, substantially as described.

201,900. ROTARY CHURNS. Lafayette Whitney, Delaware County, Ind. Filed Nov. 18, 1877.

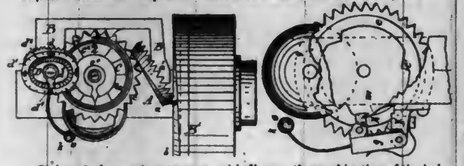


Claim.—1. The improved compound extension dasher-shaft, consisting of the shaft N, the sleeve J, provided with slots *m m* and coupling H, the pin L, and the spring K, constructed in the manner substantially as shown, for the purposes specified.

2. In combination with the compound dasher-shaft, constructed as specified, the dasher-wings *r* r^1 r^2 r^3, arranged and adapted to be operated in a churn-box, substantially as shown and described.

3. In combination with the compound dasher-shaft, constructed as described, the dashers *r* r^1 r^2 r^3, the box P, and the frame A A T B, provided with gear mechanism, all in the manner substantially as shown and described.

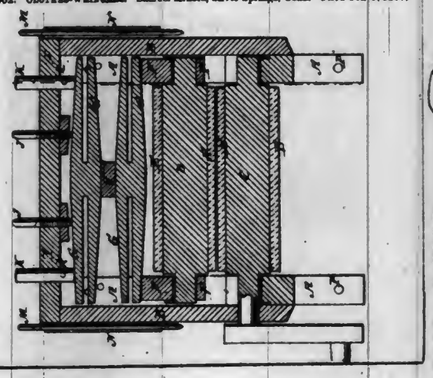
201,901. ODOMETERS. Stephen T. Whittier, East Corinth, Me. Filed June 25, 1877.



Claim.—1. In an odometer or speed indicator, the combination of the hub-plate, provided with the snail *b*, with the train of wheels described, the same consisting, first, of a crown-wheel so inclined in relation to the snail *b* that its teeth mesh with it, and which is itself provided with a snail on its face, that meshes with the teeth of an inclined spur-wheel having a dial and snail on its face, which snail actuates the second crown-wheel, which is also provided with a dial, the bracket B, and the indices c^2 d^2, all arranged, in relation to each other, as set forth.

2. The combination of the wheel G, provided with groove *e* and cam-recesses *e'*, swinging arm *h*, hinged to swinging arm *g*, and having the hammer *k* and projection *h'*, the springs *l m*, and the gong *o*, all arranged to operate as described.

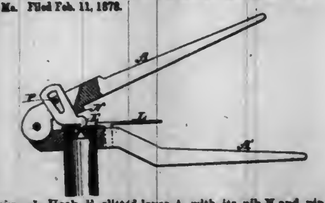
201,902. CLOTHES-WRINGERS. Samuel Arnold, Silver Springs, Tenn. Filed Oct. 6, 1877.



Claim.—1. In a clothes-wringer, the wooden spring G, formed of two bars attached at the center to the opposite sides of a block, *g'*, each bar being slotted to form forks or double plates at each end, and thus made reversible, as and for the purpose described.

2. The combination of the eyebolts J, the push-pins K, the lever L, and the pins M with the top board I, the spring G, the slotted and perforated standards A, the bearing-blocks F, and the rollers C E D E, substantially as herein shown and described.

201,903. IMPLEMENTS FOR CAPPING AND UNCAPPING CARTRIDGES. Gilbert L. Bailey, Portland, Me. Filed Feb. 11, 1878.

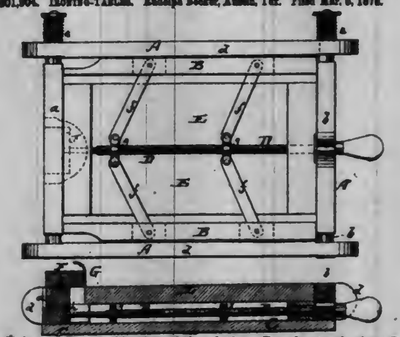


Claim.—1. Hook E, slitted lever A, with its nib N and pin P, lever A', and stop L, combined and operating as and for the purposes herein set forth.

2. The device for extracting a primer, said device consisting of pivoted slotted hook E and lever A, with its pin P, in combination with any suitable means of holding a cartridge-shell, substantially as described.

3. In an implement for uncapping shells, lever-stop I, made in one piece, substantially as described, and having a threaded fulcrum, so that it can be adjusted to the varying thicknesses of the heads of shells by turning the lever to the right or left, as and for the purpose herein set forth.

201,904. IRONING-TABLES. Rudolph Bosse, Austin, Tex. Filed Mar. 6, 1878.



Claim.—1. The combination of the platform E and extension-bars B B with the toggle-levers *f f*, nuts *g*, and screw D, substantially as and for the purpose described.

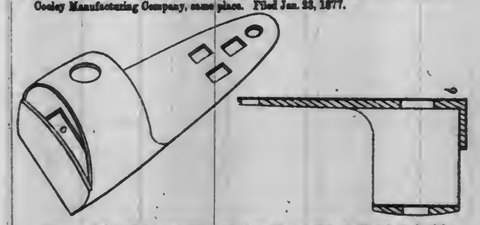
2. In combination with the extension-bars B B and levers *f f*, nuts *g*, and screw D, the movable bars *d d* and springs *e*, substantially as herein shown and described.

3. In combination with the screw D, nuts *g g*, levers *f f*, and extension-bars B, the sliding block F, substantially as herein shown and described.

4. The sliding block F, applied to shirt-ironing machines, and provided with a semicircular vibrating plate, G, for clamping the collar part of the shirt, substantially as specified.

3. The screw D, constructed with inversely-threaded end, for combination with the nuts *g g* and levers *f*, and with the sliding block F, substantially as herein shown and described.

201,905. SCYTHE-FASTENINGS. Orlvin T. Beebe, Jackson, Mich., assignor to Withington & Cooley Manufacturing Company, same place. Filed Jan. 23, 1877.



Claim.—The scythe-fastening provided at its outer or ferrule end with a bar, covering said end wholly or in part, and uniting with the bar *b*, to form an L-shaped support, which receives and confines the end of the snath-stick, and resists the crushing action thereon of the scythe-clamping device, as set forth.

201,906. DOOR-KNOB AND SHANK ATTACHMENTS. Patrick Brady, Cambridgeport, Mass. Filed Feb. 15, 1876.

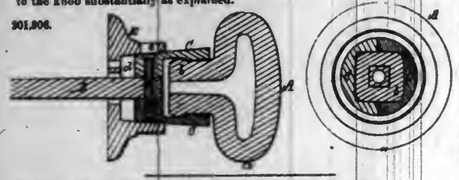
Claim.—1. In combination with the knob A, constructed or provided with the head and neck, substantially as described, the socketed metallic semi-frustums or parts C C, applied to it as set forth.

2. In combination with the shank or spindle B, and with the knob A, constructed or provided with the head and neck, substantially as described, the

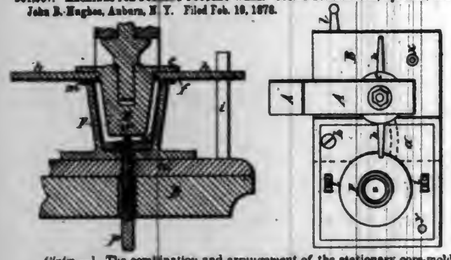
connection-screw D and the two socketed semi-frustums or parts C C, applied to such knob and spindle, essentially as specified.

3. The combination of the chambered cap B, provided with the hole *e*, leading through the side of its chamber, with the shank or spindle B, the connection-screw D, and the semi-frustums or parts C C, arranged and applied to the knob substantially as explained.

201,906.



201,907. MACHINES FOR FORMING POTTERY-WARE. Conrad Breitschwerth, Syracuse, and John B. Hughes, Auburn, N. Y. Filed Feb. 16, 1878.



Claim.—1. The combination and arrangement of the stationary core-mold E, table B, provided with means for elevating and lowering, and the bed-plate *a*, having attached thereto the female mold F, and being pivoted eccentric to the table B, substantially as described and shown, for the purpose set forth.

2. The combination and arrangement of the stationary core-mold E, provided with flange *d*, the annular plate *f*, connected with flange *d* by studs *g* and springs *s*, and projections *h h*, the bed-plate *a*, provided with means for elevating and lowering it, and with vertical limbs *i i*, having springs *k*, with catch *r*, all constructed and arranged to operate substantially in the manner and for the purpose specified.

3. The core-mold E, provided with flange *e*, annular plate *f*, held yieldingly underneath flange *e*, and provided in its under side with a circumferential concave elastic facing, *m*, and the female mold F, having a beveled top edge, all constructed and combined as described and shown, for the purpose set forth.

4. The punch *w*, when connected with the follower, as described, for the purpose specified.

5. In combination with the female mold F, the sleeve *n*, as and for the purpose set forth.

201,908. COMBINED AUGER AND REAMER. Atwater E. Brockett, Branford, assignor to H. L. Harrison, Guilford, Conn. Filed Feb. 20, 1878.

Brief.—Hung-holes are cut by the auger and smoothed by the leading-tool, consisting of segmental cutters preceded by screw-threads, and the tapering form is given to the hole by cutters adjustably secured to a skeleton frame. An adjustable gage determines the diameter of the hole.



Claim.—1. The combination, in a borer or reamer, of a skeleton-frame, comprising end pieces and longitudinal ribs, and a knife or cutter secured to the end pieces by screws or their equivalents, fitting in slots, and adjusted by means of set-screws impinging against the back, substantially as specified.

2. The combination, in a borer or reamer, of knives or cutters and a leading-tool, consisting of parallel segmental-shaped cutters, for trimming a hole preparatory to the entrance of said knives or cutters, substantially as specified.

3. The combination, in a borer or reamer, of knives or cutters, a leading-tool, consisting of parallel segmental-shaped cutters, for trimming holes preparatory to the entrance of the said knives or cutters, and a screw-threaded portion, substantially as and for the purpose specified.

4. The combination, in a borer or reamer, of knives or cutters, a leading-tool, consisting of parallel segmental-shaped cutters, for trimming holes preparatory to the entrance of the said knives or cutters, and an auger, substantially as and for the purpose specified.

5. The combination, with a borer or reamer having a skeleton-frame, of a gage, consisting of a stock-piece bearing against the inner sides of ribs, forming part of the skeleton-frame, a gage-plate, and a screw passing through said gage-plate and stock-piece, substantially as and for the purpose specified.

201,909. PUMPS. William Barlington, Baltimore, Md. Filed Jan. 31, 1878.

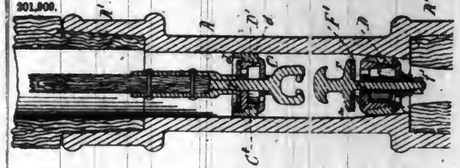
Claim.—1. The intermediate metallic cylinder A, having the contraction in its bore, forming a seat or support for the check-valve, and provided with the end sockets A' A', substantially as and for the purpose set forth.

2. The valve-seat composed of the plates C C' and central tubular clamping bolt or screw, in combination with the valve having the central stem and the hook or button, adapting the valve-seat to be withdrawn, substantially as described.

3. The valve-seat composed of the clamping-plates C C', packing-ring D, and central tubular connecting bolt or screw, in combination with the valve F, with its stem *f*, arranged and operating substantially as described.

4. The clamping-plates C' C' of the plunger, united by the central bolt or screw, as described, in combination with the shouldered rubber packing-ring D', forming both the packing and the plunger-cup, as described.

201,909.

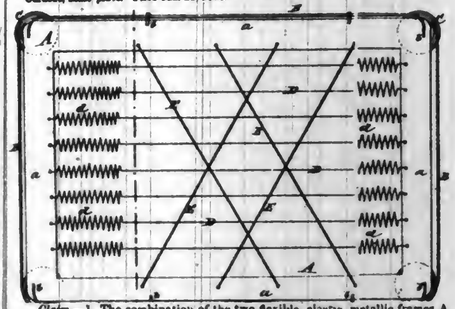


201,910. FLUX COMPOSITIONS FOR EMERY-TOOLS. August Cassar, New York, N. Y. Filed Feb. 5, 1878.

Brief.—With the flux use an abradent, and a binder consisting of putty powder, pipe-clay, and magnesia. Mix dry, wet to paste, mold, dry, bake in muffle from low gradually to red heat, and cool slowly.

Claim.—A flux compound for emery-tools, consisting of quartz, red lead, glass, saltpeter, and borax, in about the proportions specified.

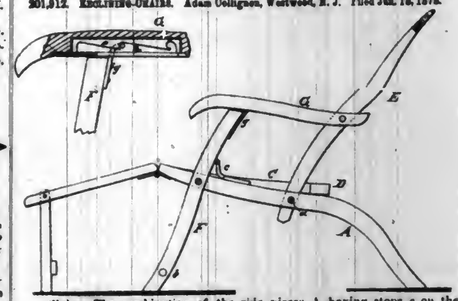
201,911. SPRING-PILLOWS. Thomas W. Cardose, Brooklyn, N. Y., assignor to Laura Jane Cardose, same place. Filed Jan. 22, 1878.



Claim.—1. The combination of the two flexible, elastic, metallic frames A A, edged with the wires B, for attaching the ticking of the pillow, with the spiral corner springs C, connecting and supporting the frames A A at suitable distance apart, substantially as and for the purpose set forth.

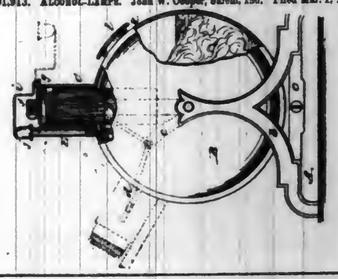
2. The combination of crossed wires D E, flat side strips *a*, and wire-binding B, as and for the purpose specified.

201,912. RECLINING-CHAIRS. Adam Colligeon, Westwood, N. J. Filed Jan. 19, 1878.



Claim.—The combination of the side pieces A, having stops *c* on the upper surface, cross-bar D, back pieces E, arms G, having ratchet-bars *e*, and legs F, having pawls *g*, substantially as herein shown and described.

201,913. ALCOHOL-LAMPS. John W. Cooper, Salem, Ind. Filed Mar. 1, 1878.



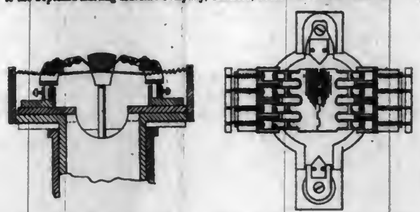
Claim.—1. An alcohol-lamp having a pivoted reservoir, a movable wick-tube, and a fixed wick-tube, substantially as shown and described.

2. The combination of the stationary extinguishing-plate *g* and the lamp having the pivoted reservoir B, as shown and described.

3. The combination of the supporting-frame A, pivoted reservoir B, having the fixed tube C, sliding wick-tube D, and wire *d*, substantially as shown and described.

4. The combination of the hinged arm *i*, cap *j*, and wick-tube E, substantially as shown and described.

201,914. BOOT AND SHOE LASTING MACHINES. Geo. W. Copeland, Malden, Mass., assignor to the Copeland Lasting Machine Company, Hartford, Conn. Filed Feb. 16, 1878.

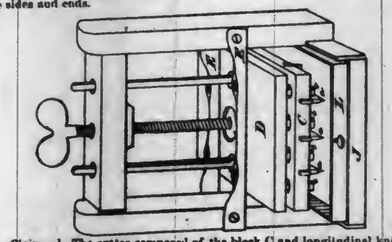


Claim.—1. A girth for lasting the vamps of boots and shoes, consisting of unyielding straps, connected or disconnected, rigidly secured at one end to the fingers of the vamp-lasting apparatus, and at the other end to a set of springs or weights on the opposite side of the machine, substantially as described.

2. In a lasting-machine, the combination of unyielding straps, connected or disconnected, and intersected, as described, means for lifting the same against the sides of a last in straining and fitting the upper thereon, and yielding devices for opposing said lifting movement, all arranged to operate substantially as described.

201,915. PLUG-TOBACCO CUTTERS. Sampson P. Dick and David B. Musselman, Louisville, Ky. Filed Feb. 15, 1878.

Brief.—The cutters are arranged to cross each other at a right angle, and to make corresponding incisions in the plug, but leaving uncut margins at the sides and ends.

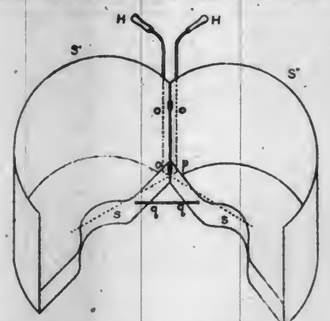


Claim.—1. The cutter composed of the block C and longitudinal knives *b* and the cross-knives *a*, arranged and operated substantially as and for the purpose specified.

2. The stationary block D, having the fingers *c*, in combination with the cutter composed of block C, having its knives *a* and *b* adapted to stop the plugs of tobacco from rising with the knives after they are operated upon, substantially as described.

3. The drawer L, in combination with the bed J, adapted to confine the plugs snugly together while they are operated upon, and to facilitate their introduction into and removal out of the machine, substantially as described.

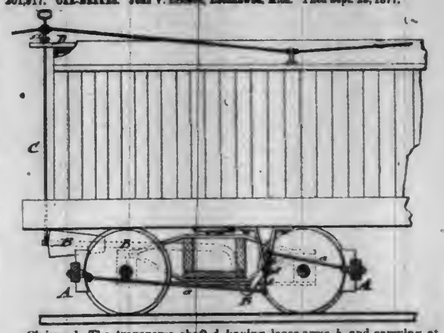
201,916. POTATO-BUG CATCHERS. William D. Ensign, Mechanicsville, N. Y. Filed July 12, 1877.



Claim.—1. The bisected parts of the pan or vessel S' and S'', hinged to each other, so as to open and close, and, when closed, forming the central walled opening S''', arranged to operate as and for the purposes described.

2. The bisected parts of the pan or vessel S' and S'', hinged to each other, so as to open and close, and, when closed, forming the central walled opening S''', with the handles H H and protecting-wire *q q*, all arranged to operate as and for the purposes described.

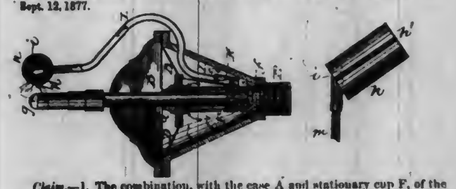
201,917. CAR-BRAKES. John V. Erisman, Escanaba, Mich. Filed Sept. 29, 1877.



Claim.—1. The transverse shaft *d*, having lever-arms *b*, and carrying at its outer end a curved and weighted longitudinal lever, B, and the vertical locking and releasing rod C, and a suitable retaining device for the latter, in combination with the car-truck, brake-beams A, and connecting-rods *a*, all constructed and relatively arranged as herein set forth.

2. The combination of the upright handle-rod C, having projecting shoulders or notches, the slotted guide-plate D, and the guided and lever-operated slide-piece of the locking device, for retaining the upright rod in raised or lowered position, substantially as specified.

201,918. GAS-LIGHTERS. Matthew Falcon and Daniel H. Iseminger, Bloomington, Ill. Filed Sept. 12, 1877.



Claim.—1. The combination, with the case A and stationary cup F, of the automatically vertical adjustable tube and burner G *g* and flexible diaphragm D, substantially as and for the purpose specified.

2. The combination, with the tube and burner G *g* and flexible diaphragm D, of the cup H and tube and burner I *i*, substantially as herein shown and described.

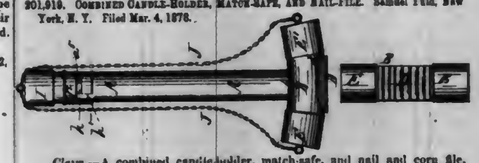
3. The combination, with the case A, of the flexible diaphragm D, mercury-cups F H, gas-tubes G I, and burners *g i*, the several parts constructed and arranged to operate substantially as specified.

4. The combination, with the vertically-adjustable tube and burner G *g*, of mechanism, substantially as described, whereby the tube and burner are held in a raised position, substantially as and for the purpose specified.

5. The combination, with the adjustable tube and burner G *g*, of the rod J, having pivoted catch *j* and arm *k*, and bent arm M, provided with pivoted catch *m*, and disk L, having pins *l l'*, substantially as and for the purpose specified.

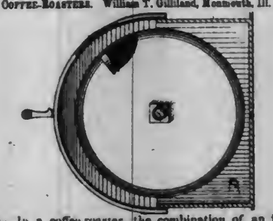
6. The combination, with the burner *i*, of the screen A, having a slit or elongated opening, *k'*, substantially as and for the purpose specified.

201,919. COMBINED CANDLE-HOLDER, MATCH-SAFE, AND NAIL-FILE. Samuel Fuld, New York, N. Y. Filed Mar. 4, 1878.



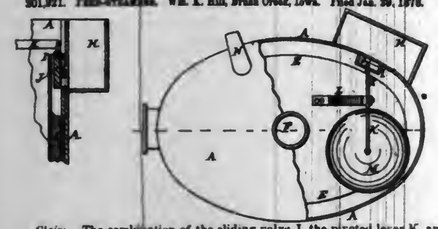
Claim.—A combined candle-holder, match-safe, and nail and corn file, consisting of tube A, with spring G, pin *a*', the sleeve H, with slots *h* and *h'*, the cap I, the horizontal tube B, with circular file C and match-lighter D, caps E and E', and chains J J, substantially as and for the purpose set forth.

201,920. COFFEE-ROASTERS. William T. Gilliland, Monmouth, Ill. Filed Oct. 12, 1877.



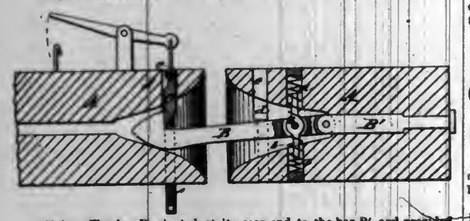
Claim.—In a coffee-roaster, the combination of an interior wire cylinder, provided with a wire pocket, with an exterior casing, having a concave reflector on the inside of its top, and a suitable opening, closed by some transparent medium, substantially as set forth.

201,921. FEED-SYRINGES. Wm. K. Hill, Brush Creek, Iowa. Filed Jan. 29, 1878.



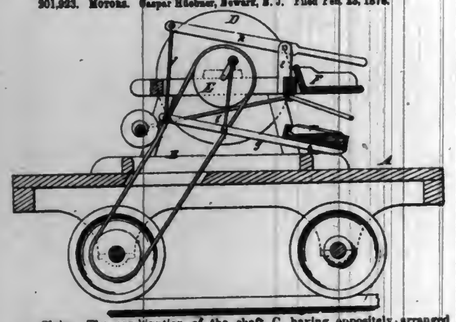
Claim.—The combination of the sliding valve J, the pivoted lever K, and the float M with the fluid-water tank H, having pipe I extended to the bottom of the vessel A, and curved so as to deliver under the bottom of the heater B D E, whereby the opening between the tank and the vessel may be automatically closed and opened, as specified.

201,922. CAR-COUPLINGS. John Hogan, Fort Worth, Tex. Filed Jan. 8, 1878.



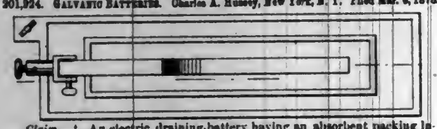
Claim.—The bar B, pivoted at its rear end to the bar B', and provided with a vertical slot, as shown and described, in combination with the springs *a a*, arranged in recesses of draw-head, and coiled about the opposite arms of the cross-pin *b*, fastened in said slot of the bar B, for the purpose specified.

201,923. MOTORS. Caspar Hübner, Newark, N. J. Filed Feb. 23, 1878.



Claim.—The combination of the shaft C, having oppositely-arranged cranks *d d'* and fly-wheels D, the levers *g*, having the vessels *p* partly filled with mercury, and the hand-levers *k*, in combination, substantially as herein shown and described.

201,924. GALVANIC BATTERIES. Charles A. Hussey, New York, N. Y. Filed Mar. 6, 1878.



Claim.—1. An electric draining-battery having an absorbent packing interposed between the zinc and porous cups, substantially as and for the purpose set forth.

2. An electric draining battery having an absorbent packing interposed between the zinc and porous cups, and an absorbent filling around the carbon pole of the porous cup, substantially as and for the purpose described.

3. An electric battery composed of an outer zinc cup with open bottom, an interior porous cup with perforated bottom, and of an interposed absorbent packing, substantially as described.

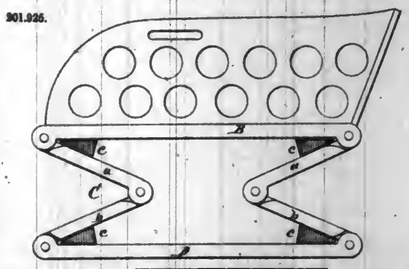
4. An electric battery made of an outer zinc cup and of an inner porous cup, with an absorbent packing interposed between the zinc and porous cups, and with a filling of absorbent material in the inner cup, the cups being arranged to drain off the exciting and oxidizing liquids at the bottom, substantially as specified.

201,925. SPRING-SEATS FOR WAGONS. James F. King, Edwardsville, Kans. Filed Jan. 26, 1878.

Brief.—Blocks of elastic are interposed between the bars and the toggle-levers at their internal angles.

Claim.—The combination, with bars B D, of the intermediate toggles *a b*, supported at their internal angles on springs *c*, substantially as shown and described, for the purpose specified.

201,926.



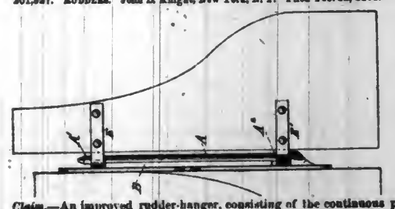
201,926. CLOTHES-WASHERS. Samuel Knight, St. Louis, Mo., assignor to Henry K. White, same place. Filed Jan. 2, 1878.

Brief.—When the cylinder is revolved by means of the reciprocation of the piston-rod in the slotted guide-neck, the studs on the bottom frame of the cylinder whirl the clothes around, and this, with the action of the water forced through them by the piston, thoroughly cleanses them.

Claim.—1. The combination, with the cylinder A, piston F, and spring J, of the spirally-slotted guide-neck D and rod E, the latter provided with the lugs M, substantially as and for the purposes set forth.

2. In combination with the cylinder A, provided with orifices *g*, the rod E, piston F, flaring flange G, having radial division-plates I, and the frame B, having radial bars, carrying studs *b b*, substantially as and for the purpose set forth.

201,927. RUDDERS. John L. Knight, New York, N. Y. Filed Feb. 12, 1878.



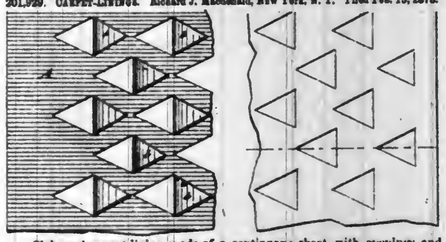
Claim.—An improved rudder-hanger, consisting of the continuous pintle A, joined to its base by the guiding-web B, the latter being so constructed as to allow the pintle to receive at its upper end an uncut eye, E, and at its lower end an eye, E', which is slotted at right angles to the rudder, so as to readily slide down the web, and yet allow of the latter acting as a stop when the rudder is turned in its working position, all constructed and arranged substantially as specified, and for the purpose set forth.

201,928. LABEL-HOLDERS. Sylvester L. Lewis, Fort Wayne, Ind. Filed Sept. 3, 1877.



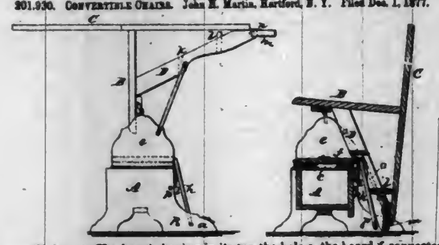
Claim.—A label-holder consisting of the plate A, with flanges F F, constructed with a groove, *b*, mortises *i i* and *h h*, with spring B, resting in a groove, *b*, passing through the mortises *i i*, and under the plate A, with folded ends *a a*, fitting in the mortises *h h*, and projecting above the plate A sufficiently to secure at each end and hold in position the label, for the purposes and substantially as described in the above specification and accompanying drawing.

201,929. CARPET-LININGS. Richard J. Macdonald, New York, N. Y. Filed Feb. 13, 1878.



Claim.—A carpet-lining made of a continuous sheet, with openings and downwardly-bent or lapped portions, substantially as specified.

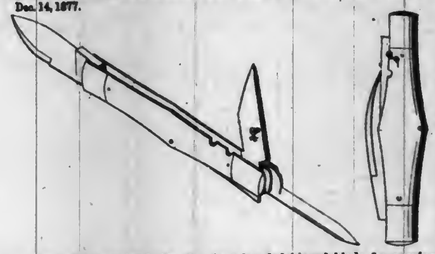
201,930. CONVERTIBLE CHAIRS. John H. Martin, Hartford, N. Y. Filed Dec. 1, 1877.



Claim.—1. The box A, having in its top the hole *c*, the board *f*, connected by rods *h* with the box A and having end pieces *e*, and the bottom B and back C, in combination substantially as shown and described.

2. The pivoted board *m*, having the button *n*, in combination with the back C and step *l*, substantially as herein shown and described.

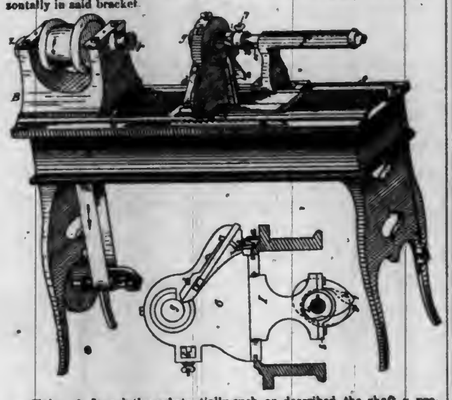
201,931. POCKET-KNIVES FOR OPENING CANS. Daniel Martin, Reschkiesville, Conn. Filed Dec. 14, 1877.



Claim.—In a pocket-knife, the short beveled hinged blade for opening cans, furnished with the screw *a*, to serve both in opening the blade and as a stop in opening cans, all arranged as described.

201,932. CANE-LATHES. James May, Cambridge, Mass. Filed Dec. 28, 1877.

Brief.—The cutter-head is mounted upon the end of a yielding and horizontally-sliding shaft adjustable in an arm formed on a vertical bracket upon an automatically-operating lathe-carriage. The head is prevented from turning or revolving in said shaft by a collet provided with a laterally-projecting arm, and having a spline which works in a grooved bar firmly secured horizontally in said bracket.



Claim.—1. In a lathe substantially such as described, the shaft *y*, provided with spline 12, sleeves 14, 16, and 4, in combination with the cams 20 and 21, pawl 18, and carriage C, provided with arms H I, the former having a coiled spring disposed in an opening in its lower part, all constructed and arranged to operate substantially as set forth.

2. In a lathe substantially such as described, the cam 1, vertically-reciprocating bar *c*, having an inclined or cam-shaped head, collet L, having arm 10, and the cutter-head D, combined to operate substantially as and for the purpose set forth and specified.

3. The shaft *y*, provided with spline 12, sleeves 4, 14, and 16, in combination with the cams 20 21, pawl 18, pawl *i*, rack *c*, and carriage C, provided with arms H I, the former having a coiled spring disposed in an opening in its lower part, substantially as and for the purpose set forth.

201,933. SURGICAL OPERATING-TABLES. Thomas Mellroy, Jersey City, N. J. Filed Mar. 31, 1877.

Brief.—The perforated table-top, which is made of glass or other non-conducting material, is supported upon a hollow vertically-adjustable screw, serving as a discharge-pipe for fluids, and provided with a trap, and also with a ventilating-flue for the escape of odors or gases. The whole device is mounted upon a weighing-scale.

Claim.—1. An operating or dissecting table supported on a weighing-scale.

2. An operating or dissecting table mounted on a hollow screw, serving as a duct for the discharge of liquids from the table.

3. An operating or dissecting table constructed with a telescopic duct, for conducting off fluids through suitable discharge-pipes at different heights of the table.

4. An operating or dissecting table connecting, through a suitable duct, with an exhaust apparatus, for carrying off deleterious odors and gases.

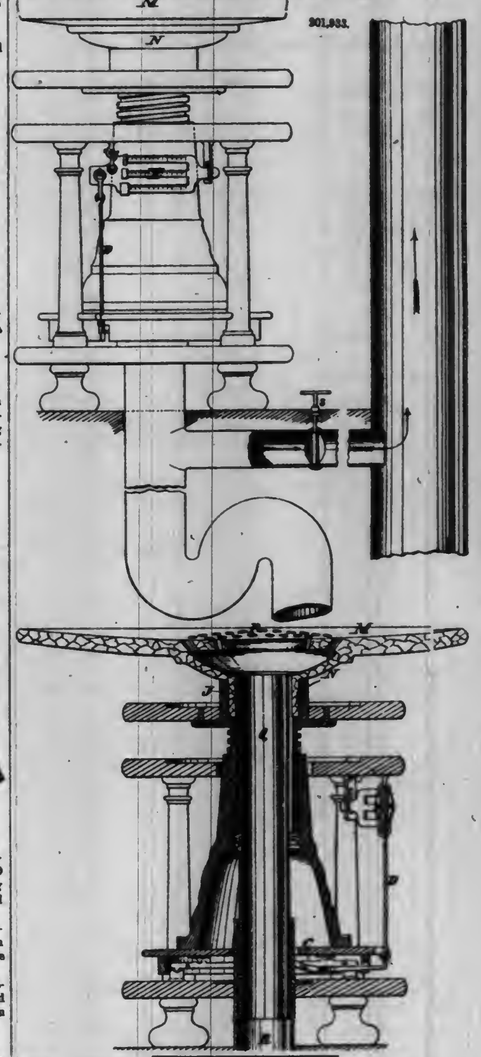
5. An operating or dissecting table with a scale attachment, for weighing the patient or subject, said scale admitting a central ventilating and discharge pipe, connecting through a trap with an outlet for fluid, and above the trap with a ventilating or suction flue.

6. The top M of a surgical operating-table, constructed of glass, and concave upon its upper surface, as and for the purpose set forth.

7. The top M of a surgical operating-table, constructed of glass, concave on its upper surface, and provided with perforations P, as and for the purpose set forth.

8. The table-top M, constructed of glass or analogous material, and provided with a neck, N, and perforations P, as set forth.

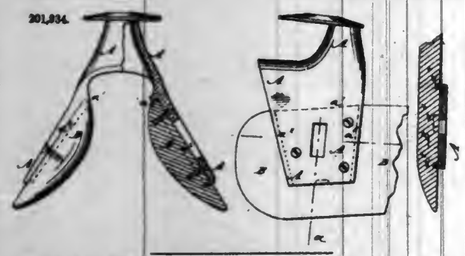
201,933.



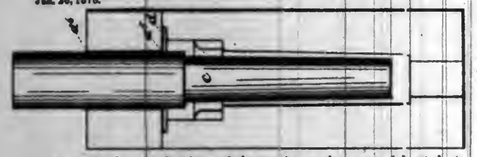
201,934. SADDLE-TREES. Benj. F. Melton, Gainesville, Tex. Filed Feb. 25, 1878.

Claim.—An improved saddle-tree, in which the arms of the pommel A have lips a^1 formed upon the upper parts of their inner surfaces to receive the upper edges of the side bars B, and inwardly-projecting flanges a^2 formed upon their side edges to fit into saw-kerfs in the outer surface of the said side bars B, substantially as herein shown and described.

201,934.



201,935. DIES FOR MAKING AXLE-BOXES. Gilbert A. Morse, South Egremont, Mass. Filed Jan. 26, 1878.



Claim.—In dies for forming axle-boxes, the surplus-recess *d*, located at the large end of the matrix, in combination with the stock-support a^1 a^2.

201,936. COFFIN-SHIELDS. Alten H. Moore, North Ridgeville, Ohio. Filed Feb. 14, 1878.

Brief.—An outer case of metal covers the coffin, and is anchored by its flanges in the dirt around the coffin.



Claim.—The metal shield A, provided with a flange, C, and arms D, in combination with a coffin, substantially as and for the purpose specified.

201,937. WEIGHTS FOR HORSESHOES. John Myers, St. Louis, Mo. Filed Feb. 11, 1878.

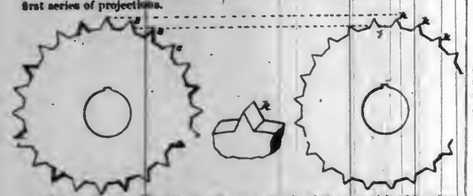


Claim.—1. The combination of a horseshoe, A, constructed with lugs a a and dowel-pin D, and the weight B, constructed with rabbeted recesses *b b*, recess or hollow *b'*, and a hole, *d*, for said dowel-pin, the whole secured together by screws C C, as and for the purpose set forth.

2. The horseshoe-weight B, constructed with a recess, *b'*, adapted to receive fusible metal, as and for the purpose set forth.

201,938. CUTTERS FOR RESTORING BARK. William E. Nickerson, Somerville, Mass. Filed Dec. 26, 1877.

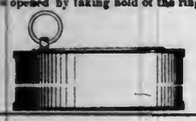
Brief.—Two sets of projections are arranged upon the surface or periphery of a cylinder for restoring bark, one set acting as cutting-teeth. The other set do not extend so far from the cylinder as the first named, but strike the bark flatwise, scraping off the ridges that remain between the kerfs made by the first series of projections.



Claim.—The combination, on the cylinder C, of the set of kerf-forming teeth *c c c* with the ridge-reducing scrapers *k k k*, of less projection, substantially as described, and for the purpose set forth.

201,939. SEALED CANS. Augustus J. Nelty Chattanooga, Tenn. Filed Feb. 19, 1878.

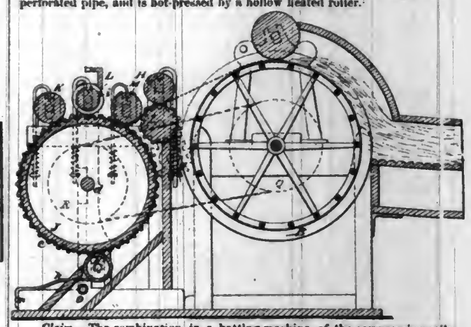
Brief.—The can is opened by taking hold of the ring *c* and pulling it out of the soft solder.



Claim.—A sealed can having a top part with circular opening or slot, separated at one point by a solid portion or bridge, the top having raised beads along both sides of the slot, in combination with a ring-shaped strip soldered over the slot, and having a ring or other device at one of its ends, substantially as set forth.

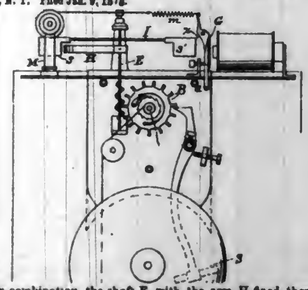
201,940. MACHINES FOR MAKING COTTON BATTING. John L. Horton, Memphis, Tenn. Filed Jan. 10, 1878.

Brief.—As the cotton leaves the condenser connected with the flue of a cotton-gin, it is compressed between rolls, and wound on an accumulating-cylinder under the pressure of rollers, is moistened by steam escaping from a perforated pipe, and is hot-pressed by a hollow heated roller.



Claim.—The combination, in a batting-machine, of the compressing-rolls H I, the cylinder J, a series of pressure-rolls, K L M, a heated roll, N, and a moistening device, substantially as herein shown and described.

201,941. TELEGRAPHIC FIRE-ALARM APPARATUS. Augustus C. Palmer and Augustus H. Palmer, Utica, N. Y. Filed Jan. 9, 1878.



Claim.—In combination, the shaft E, with the arm H fixed thereto in a horizontal position, the rod I, provided with stops *s* and *s'*, and connecting with the armature G, and the spring *m*, substantially as and for the purposes described.

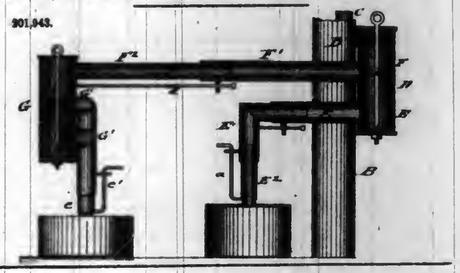
201,942. BARK-FASTENERS. Charles W. Penfield, New Britain, Conn., assignor to F. & F. Corbin, same place. Filed Jan. 30, 1878.

Brief.—As an improvement on Patent No. 190,074, dated April 24, 1877, and on this generic class of devices, the bolt is formed with two parallel arms fitted to the inner walls of the shell or case, and projecting laterally only so far as the solid body of the bolt, and one of these arms has a shoulder on its inner face, which coacts as a stop with a transverse pin when the bolt is in advanced position, there being also the usual spiral spring chambered between the bolt-heads and end of the case to secure automatic action.



Claim.—The bolt B, having arms *c c* fitted to the inner walls of the case, and projecting laterally no farther than the body of said bolt, one of which arms has the shoulder *d* on its inside face, in combination with the transverse pin *m*, spring *b*, and the case A, having spring-socket *a*, all substantially as described, and for the purpose specified.

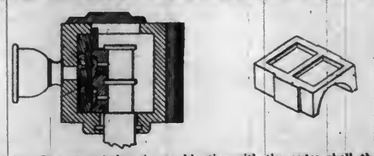
201,943.



201,943. VAPOR-ESCAPE ATTACHMENTS FOR COOKING APPARATUS. Samuel W. Poland, Monson, Mass. Filed Feb. 26, 1878.

Claim.—The combination, with the lids of the cooking-vessels, of horizontally and vertically adjustable escape-pipes, swinging on intermediate steam-drums connected to stove-pipe, the escape-pipes being supported so as to be readily adjusted to one or more cooking-vessels or swung out of the way, substantially as and for the purpose set forth.

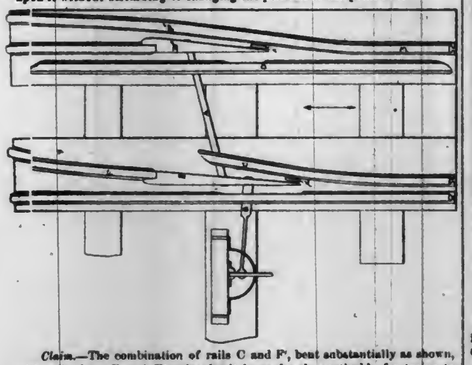
201,944. CAR-AXLE BOXES. Isaac H. Randall, Boston, Mass. Filed Oct. 6, 1877.



Claim.—In a car-axle box, in combination with the outer shell, the perforated bearing-saddle in one or two parts, having a transverse groove on its inner bearing side to receive a corresponding rib on the journal, upon which the bearing-saddle rests, about midway between the shoulders at each end of the journal-bearing, and an oil-passage from an oil-tank located on or in the box above the bearing-saddle, so filled with wick or other porous substance that the downward flow of oil will be regulated by it with precision, and an oil-tank, all arranged substantially as and for the purpose specified.

201,945. RAILROAD-SWITCHES. Jacob C. Rantz, Minooka, Ill. Filed June 12, 1876.

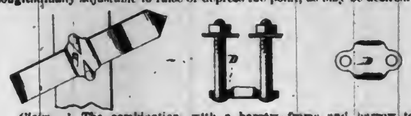
Brief.—The movable point-rails are so located relative to the unbroken outer rails that when the main line is open a train can come out of the siding upon it without disturbing or changing the position of the point-rails.



Claim.—The combination of rails C and F', bent substantially as shown, with point-bars E and E', whereby it is rendered practicable for trains to move along the main track and from the siding onto the main track without any change of switch.

201,946. HARROWS. Dewitt C. Reed, Kalamazoo, Mich. Filed Dec. 26, 1877.

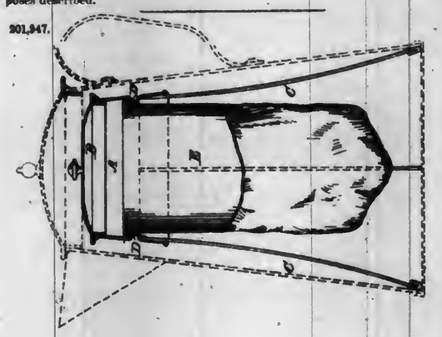
Brief.—The tooth is secured to the lower side of the harrow-beam, and is longitudinally adjustable to raise or depress the point, as may be desired.



Claim.—1. The combination, with a harrow-frame and harrow-tooth secured thereon, so as to be longitudinally adjusted, of a fastening-clip, formed as described, whereby only its two transverse edges have bearing against the tooth, substantially as set forth.

2. The combination, with a harrow-frame provided with a curved seat, of a curved tooth and clip or its equivalent, D, substantially as and for the purposes described.

201,947.

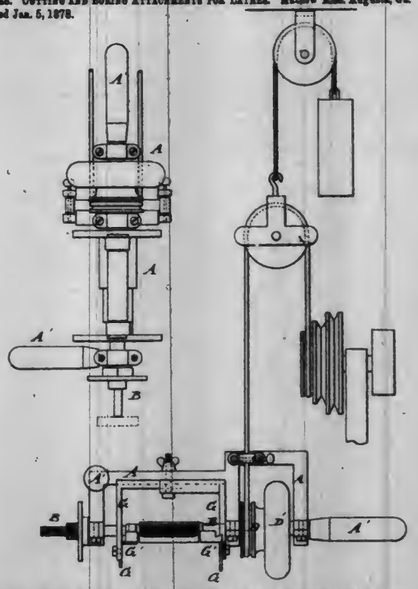


201,947. FILTER AND CLARIFIER FOR TEA, COFFEE, &c. Henry C. Rice, Louisiana, Mo. Filed Oct. 17, 1877.

Claim.—1. An improved article of manufacture, consisting of, first, a metal hoop having a cover and elastic or spring legs, whereby it is retained in a vessel; and, second, a bag of some textile material, provided with a distending-ring at its mouth, said ring being arranged to fit into the hoop and rest upon projections therefrom, the two parts being readily separable, and the whole readily removable from the vessel, all substantially as and for the purposes set forth.

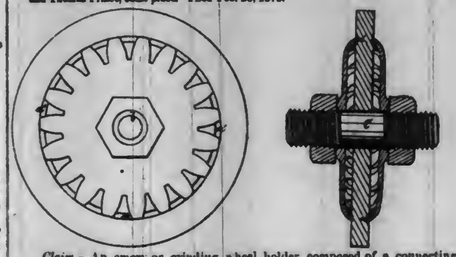
2. The combination of the hoop A, provided with a ledge, D, or its equivalent, the lid or cover B, the spring-legs C C, attached to the hoop, and the bag E, all substantially as set forth.

201,948. CUTTING AND BORING ATTACHMENTS FOR LATHES. Mathew Rice, Augusta, Ga. Filed Jan. 5, 1878.



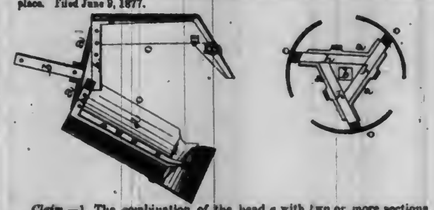
Claim.—The lathe attachment consisting of the supporting-frame A, having handle A', the shaft B, the pulley D, balance-wheel D', adjustable gages G, and guides G', as shown and described.

201,949. EMERY-WHEEL CLAMPS. Andrew J. Robinson, Boston, Mass., assignor to himself and Thomas Prince, same place. Filed Feb. 28, 1878.



Claim.—An emery or grinding wheel holder, composed of a connecting screw-bolt or arbor and a nut or nuts thereto, as set forth, and two metallic concavo-convex disks, and a series of jaws to each of them, as specified, all being arranged and to operate substantially as shown and described.

201,950. WELL-AUGERS. Datus M. Root, Dubuque, Iowa, assignor to O. F. Hodge, same place. Filed June 9, 1877.



Claim.—1. The combination of the head *a* with two or more sections, *c*, each section having a number of holes made through its shank, so that it can be adjusted outward or inward, substantially as shown.

2. In a well-auger, the combination of the head *a*, provided with clamping-screws and sections *c*, each section being provided with the shank *h*, having a series of holes, whereby they are given two separate and independent movements—a lateral adjustment at their upper ends, and a swinging movement at their lower ends, substantially as set forth.

3. The head *a*, having recesses in its under side, in combination with the shanks *h* of the sections, substantially as set forth.

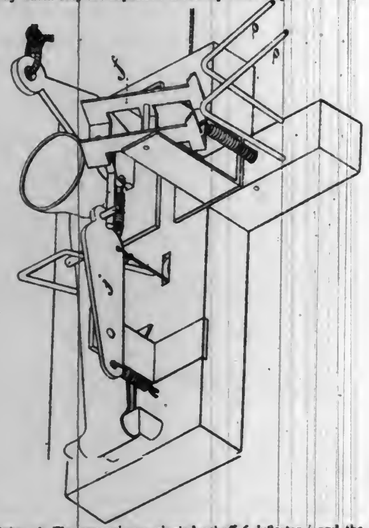
201,951. FENCE-POSTS. Wm. H. Roundy, Marshalltown, Iowa. Filed Aug. 8, 1877.



Claim.—The flange F, provided with the retainer D and gate-slot E, substantially as and for the purpose specified.

201,952. BALL-TRAPS. J. Lee Schroder, Hamilton, Ohio, assignor of one-half his right to Jarvis Hargitt. Filed Aug. 31, 1877.

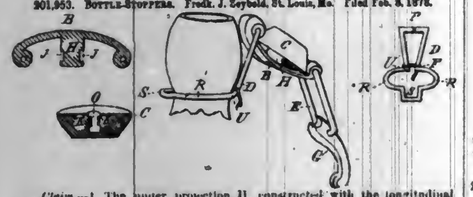
Brief.—The balls to be used are placed on an inclined guideway, which allows them to feed forward by their own gravity onto a pivoted oscillating cut-off, by which they are deposited in the cup of the trap.



Claim.—1. The reservoir *a a*, pivoted cut-off *f*, deflector *j*, and the essential elements of a ball trap, all combined substantially as described.

2. The reservoir *a a*, pivoted cut-off *f*, combined with the essential elements of a ball trap, substantially as described.

201,953. BOTTLE-STOPPERS. Fredk. J. Seybold, St. Louis, Mo. Filed Feb. 8, 1878.



Claim.—1. The inner projection H, constructed with the longitudinal slot or orifice J in one or more portions of its perimeter, as and for the purpose set forth.

2. The flexible pad C, constructed with the orifice O and one or more longitudinal protuberances, K, in combination with the longitudinally slotted under projection H, the slots and protuberances being in portions of the perimeter, as and for the purpose set forth.

3. The neck-wire R, constructed so that the two ends of the wire form a hinge or pivot, on which the top plate of the stopper or fastener turns, and constructed with a bend opposite the points U U on the neck-wire R, so that the bend forms a fulcrum, on which the locking-lever of the fastener may turn, as and for the purpose set forth.

4. The combination of a binding-plate, having eye connections, with the link E, lever G, and neck-wire R, having bend S, bends U U, extensions D, and ends P, as and for the purpose set forth.

201,954. BOTTLE-STOPPER FASTENERS. Frederick J. Seybold, Chicago, Ill. Filed May 13, 1877.

Claim.—1. In a stopper and fastener for bottles and other receptacles, the lever H, constructed with two or more lugs or prongs, K, as shown and described, and for the purpose set forth.

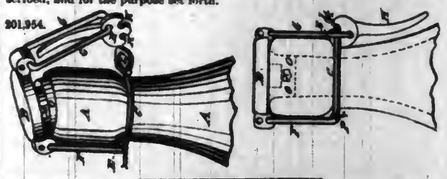
2. The neck-wire C, constructed with the loop or bend L, adapted to afford lateral support as well as vertical resistance to a lever, and having standard F, as shown and described, and for the purpose set forth.

3. In combination with a hinged stopper and a neck-wire having loop or bend L, the lever H and link G, as and for the purpose set forth.

4. The combination, with a binding-plate, of the neck-wire C, the lever H, and the link G, as and for the purpose set forth.

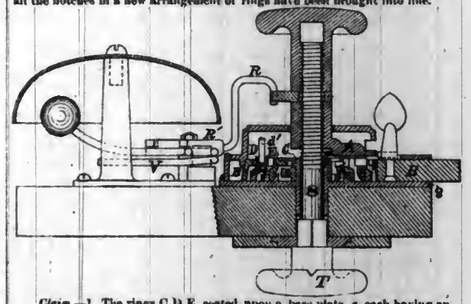
5. The combination of the neck-wire C with the lever H, the link G, the binding-plate B, and the pad O, substantially in the manner shown and described, and for the purpose set forth.

201,954.



201,955. COMBINATION-LOCKS. Peter Shellenback, Hamilton, Ohio, assignor of one-half his right to Wm. E. Dreyer, same place. Filed May 8, 1877.

Brief.—A small spring prevents any possibility of moving the bolt until all the notches in a new arrangement of rings have been brought into line.



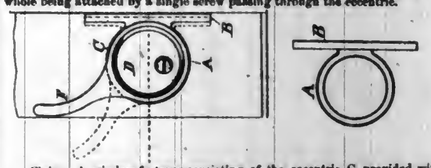
Claim.—1. The rings C D E, seated upon a base-plate, *g*, each having an independent bearing, free from friction with each other, in combination with the spindle S, driver A, and bolt B, constructed, arranged, and operated substantially as shown and described.

2. In a combination-lock in which the rings are brought into position for operating the lock by quarter and half revolutions of the knob-spindle, the combination of the rings C D E, driver A, spindle S, and knob T, the latter having a notch or other mark, so that by the sense of touch the spindle may be turned to bring the rings into position, substantially as shown and described.

3. The combination of the spring *p* with the bolt B and driver A, to prevent the throwing of the bolt until the rings are brought into position, substantially as shown and described.

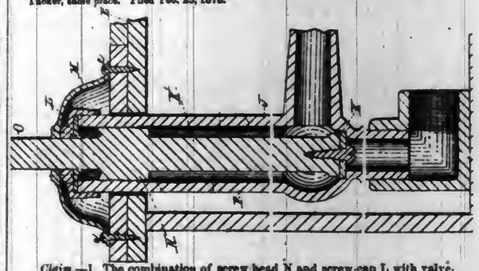
201,956. HAIR-HOLDERS. Edson E. Shepard, Buffalo, N. Y. Filed Sept. 10, 1877.

Brief.—A ring and pressing-plate, formed in one piece, are actuated by a handled and recessed or cup-shaped eccentric, which sets within the ring, the whole being attached by a single screw passing through the eccentric.



Claim.—A window-fastener consisting of the eccentric C, provided with the depression D, outwardly-projecting flange E, and handle F, in combination with a ring, A, provided with the pressing-plate B, as described.

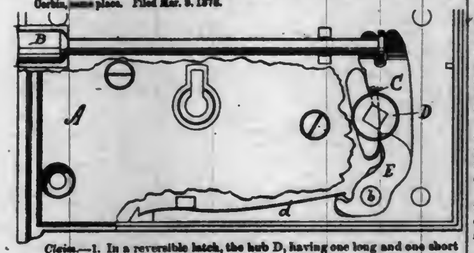
201,957. WATER-CLOSET COCKS. Jacob D. Sisson, Worcester, Mass., assignor to Sisson & Tucker, same place. Filed Feb. 25, 1878.



Claim.—1. The combination of screw-head N and screw-cap L with valve-stem K K', neck J, and rod O, arranged in relation to each other substantially as and for the purposes set forth.

2. The combination, with the top E of the water-closet box, and neck J, screw-head N, and screw-cap L, of the convex cover or cap M, as shown and described.

201,958. REVERSIBLE LATCHES. Wm. E. Sparks, New Britain, Conn., assignor to P. & F. Corbin, same place. Filed Mar. 9, 1878.



Claim.—1. In a reversible latch, the hub D, having one long and one short arm, and slotted as described, in combination with the lever C, having the latch-bolt swiveled thereto, and hung so as to engage the arms of said hub, but at a distance therefrom which will allow the necessary forward movement for the reversal of the bolt, substantially as described, and for the purpose specified.

2. In a reversible latch, the combination of the slotted hub D, oscillating lever C, with the latch-bolt swiveled thereto, the supplementary lever E, and the spring *d*, all operating together substantially as described, and for the purpose specified.

201,959. CORN-POPPERS. P. E. Stockwell and Jos. Missinghoff, Covington, Ky., assignors to Frederick J. Meyers, same place. Filed Aug. 27, 1877.

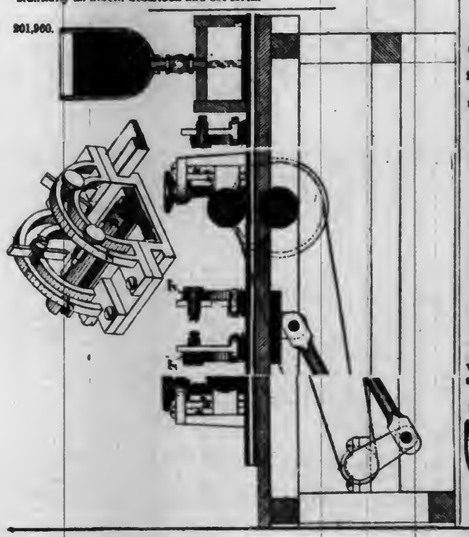


Claim.—1. The corn-popper basket or receptacle A, of non-circular shape in its horizontal section, and having outwardly-flaring sides and ends joined by the rounded portions C, the upper edge of said basket being bound with a sheet-metal rim, B, bent at *b* to fit said rounded portions C, as herein described.

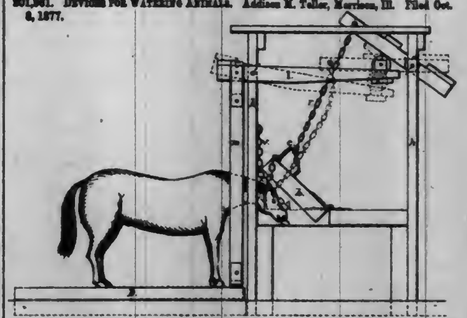
2. The two wire supports I I', applied to the bottom and opposite ends of basket A in the manner described, and having their extremities twisted together spirally, so as to produce a male screw, M, capable of engagement with handle N, as herein described and set forth.

3. An improved corn-popper consisting of basket A B *b* C, hinged lid D D' E F G, supporting-wires I *i* I' *i'*, clip-plate J J' K L, and male screw M, which screw is formed by twisting together the ends of said wires I I', substantially as herein described and set forth.

201,960.



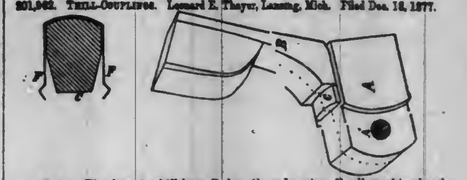
201,961. DEVICES FOR WATERING ANIMALS. Addison M. Teller, Morrison, Ill. Filed Oct. 8, 1877.



Claim.—1. The combination, with the hinged platform and hinged tank-cover, of the vertical connecting-rods *w*, levers *t* and *u*, and the chains *r*, as set forth.

2. The looped uprights *c*, fastened to the cover near its front edge, jointly with the lifting-chains *r*, connected to the cover at points distant from the front edge equal to about one-third of its width, as set forth.

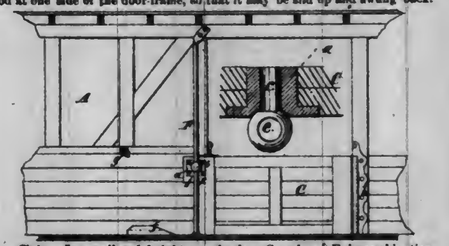
201,962. TRUSS-COUPLINGS. Leonard E. Thayer, Lansing, Mich. Filed Dec. 18, 1877.



Claim.—The box A, thill-iron B, key C, and spring F, all combined substantially as shown and described.

201,963. GRAIN-CAR DOORS. Dennis F. Van Liew, Aurora, Ill. Filed Mar. 14, 1878.

Brief.—The door is pivoted at one corner to an eye sliding on a vertical rod at one side of the door-frame, so that it may be slid up and swung back.



Claim.—In a railroad freight-car, the door C and rod F, in combination with the headed pin or pivot *e*, provided with a hole, *e*, and the socket *a*, substantially as and for the purposes set forth.

201,964.



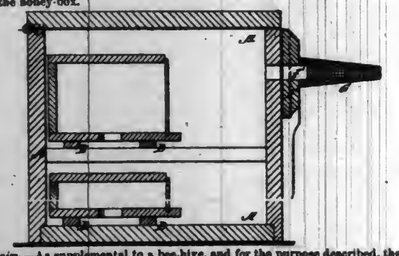
201,964. BEE-RIVERS. James Wash, Mount Sterling, Ill. Filed Sept. 22, 1877.

Brief.—The scoop is placed under the swarm as it hangs from the limb of a tree, and is struck against the limb, which causes the swarm to fall into the scoop. The bees are then taken to the hive.

Claim.—The sheet-metal cup or vessel A, constructed as described, and provided with a socket, B, to receive a handle, C, substantially as herein shown and described.

201,965. DEVICES FOR REMOVING BEES FROM HONEY-BOXES. James Wash, Mount Sterling, Ill. Filed Sept. 22, 1877.

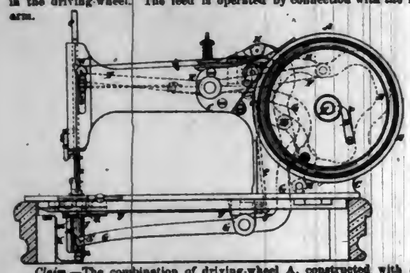
Brief.—The honey-box, filled with honey, is set into this box, and the bees pass out through the nozzle on the side to the light, and cannot return to rob the honey-box.



Claim.—As supplemental to a bee-hive, and for the purpose described, the box A, provided with the nozzle G, as set forth.

201,966. SEWING-MACHINES. Peter Waterston, Edinburgh, Scotland. Filed Aug. 24, 1877. Patented in England, Jan. 17, 1877.

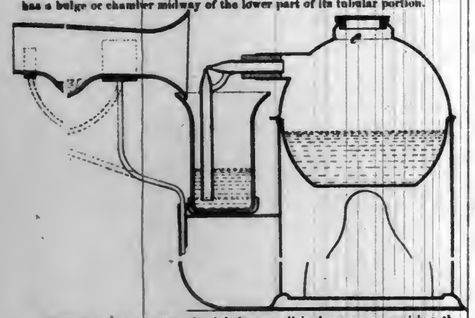
Brief.—Shuttle, needle-arm, and take-up are operated by one cam-groove in the driving-wheel. The feed is operated by connection with the needle-arm.



Claim.—The combination of driving-wheel A, constructed with a cam-groove, E, needle-lever F, looper-lever G, and take-up lever H, as and for the purpose set forth.

201,967. ATOMIZERS. Henry Weinhagen, Brooklyn, N. Y. Filed Jan. 19, 1878.

Brief.—The handle is upon the same side as the face-shield, which latter has a bulge or chamber midway of the lower part of its tubular portion.



Claim.—1. An atomizer for inhaling medicinal vapors, comprising the combination of a base or stand, a steam-generator, a vessel for medicinal liquids, suction and supply tubes, a face-shield, and a handle extending from the base or stand on the side nearest the face-shield, and connected with the bracket supporting the vessel for medicinal liquids, substantially as and for the purpose specified.

2. A face-shield for an atomizer, comprising a flaring mouth, a tubular portion, and a bulge, cavity, or chamber in one side of said tubular portion, and entirely isolated from the said flaring mouth, substantially as and for the purpose specified.

201,968. DYNAMO-ELECTRIC MACHINES. Edw. Weston, Newark, N. J., assignor to Weston Dynamo Electric Machine Company, same place. Filed Mar. 4, 1878.

Brief.—A series of independent and fixed coils are wound with their convolutions in planes which intersect in the axis of rotation of a revolving magnet revolving within the coils. The several independent coils constitute a complete cylinder, wholly inclosing the revolving magnet. The direction of the wires at the ends of the cylinder are parallel to the plane of rotation. The coils are wound on a diamagnetic skeleton.

Claim.—1. In a dynamo-electric machine, a system of stationary coils wound in cylindrical form, in combination with a rotating magnet inclosed within the coils, substantially as described.

2. A magnet rotating upon its neutral axis, in combination with a stationary coil, a portion of which is arranged in close proximity to the side of the magnet, and parallel with the plane of rotation of the magnet, substantially as described.

3. A skeleton-frame adapted to support a system of stationary coils in a dynamo-electric machine in close proximity with a rotating magnet, substantially as described.

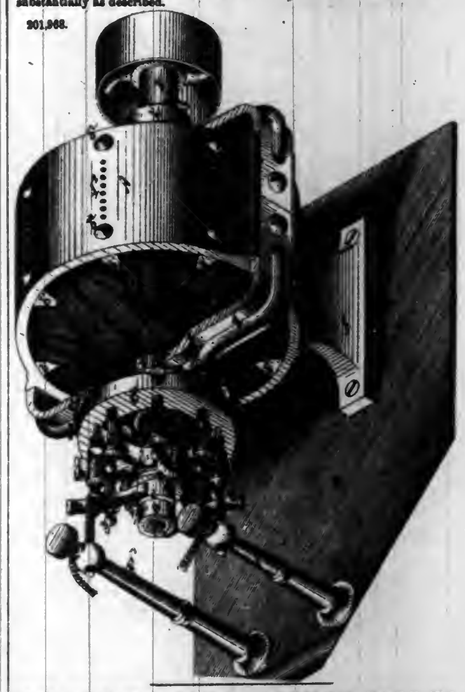
4. A skeleton-frame adapted to support a system of stationary coils, in combination with a hollow cylindrical iron shell, exteriorly surrounding the coils, substantially as and for the purposes described.

5. A rotating magnet inclosed within a system of coils wound in the form of a cylinder upon a stationary frame, in combination with apertures in the ends of the cylinder for admitting air into the space within the coils, and apertures in the periphery of the cylinder for allowing the expulsion of such air, substantially as described.

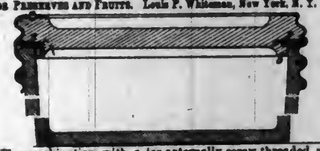
6. Two or more coils wound in diametrically-separate divisions upon a stationary cylindrical support, and inclosing a rotating magnet and a system of concentrically-placed brushes respectively connected with the free ends of the coils, in combination with a commutator in two parts, one of which is electrically connected with one binding-post and the other electrically connected with the other binding-post, substantially as described.

7. A stationary coil or coils, the convolutions of which inclose a rotating electro-magnet the coil of which is in circuit with the stationary coil or coils, substantially as described.

201,968.



201,969. JARS FOR PRESERVES AND FRUITS. Louis P. Whiteman, New York, N. Y. Filed Feb. 12, 1878.



Claim.—1. The combination, with a jar externally screw-threaded at the mouth, of an externally screw-threaded plate-like cover, and a sheet-metal internally screw-threaded band overlapping the top of said cover, substantially as and for the purpose specified.

2. The combination of a jar externally screw-threaded at the mouth, an externally screw-threaded plate-like cover, an internally screw-threaded sheet-metal band overlapping said cover, and a packing-ring fitting in a groove in the exterior of the cover, substantially as and for the purpose specified.

201,970. BREECH-LOADING FIRE-ARMS. James M. Whittemore, Bridesburg, Pa. Filed Feb. 2, 1878.

Brief.—A lever pivoted in the lower part of the breech-block operates a locking cam or shoulder, by which the breech-block is locked into position for firing. Said lever also cocks the hammer by bearing against a shoulder on the latter. A pull backward upon said lever cocks the hammer, unlocks the breech-block, and opens the breech at a single operation.

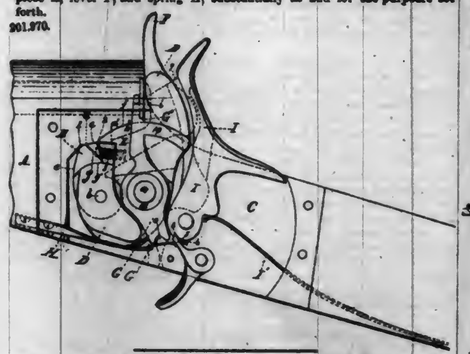
Claim.—1. The combination, with the notched breech-block D, receiver C, and hammer I, of locking-cam E, said parts being constructed and relatively arranged as shown and described.

2. The combination, with breech-block D and hammer I, of locking-cam E and lever F, substantially as and for the purposes set forth.

3. The combination of the hinged cam E, provided with projection g, with the cartridge-extractor G and breech-block D, substantially as and for the purposes set forth.

4. The combination, with extractor G and breech-block D, of hinged cam-piece E, lever F, and spring H, substantially as and for the purposes set forth.

201,970.



201,971. PRINTERS' DISTRIBUTING-GALLEYS. Horace G. Wilson, Cincinnati, Ohio. Filed Dec. 13, 1877.

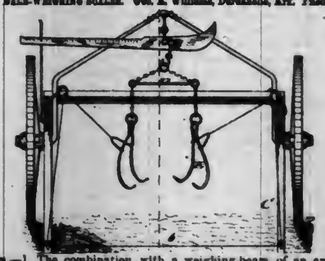


Claim.—1. The type-galley bed A B B', having the movable rest K, supports C C' D, and clamp F, for attachment to the type-case, substantially as set forth.

2. In combination with the galley-bed A, having the slotted sides B B', the movable head K, having the studs J, legs L, slides M, and nuts N, or their equivalents, substantially as set forth.

3. The galley-bed A B B', adapted to be fixed in the described sloping position, and having the tank or receptacle G at its lower end, substantially as set forth.

201,972. BALE-WEIGHING SCALES. Geo. R. Williams, Dardanelle, Ark. Filed Mar. 6, 1878.

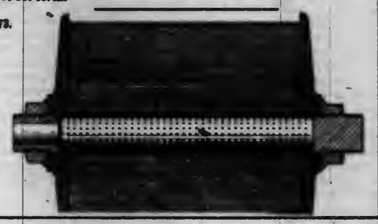


Claim.—1. The combination, with a weighing-beam, of an angular axle with central yoke supported on wheels, and of an operating handle-frame, substantially as and for the purpose described.

2. The combination of a weighing-beam, suspended from the central or highest point of the angular yoke of the axle, with adjustable suspension-hooks, connected by cross-bar and chains to beam, substantially as described.

3. The combination of the weighing-beam, suspended from the angular yoke of a wheeled handle-frame, with suspension-hooks operated by connecting-cords from the front part of the handle-frame, substantially as and for the purpose set forth.

201,973.

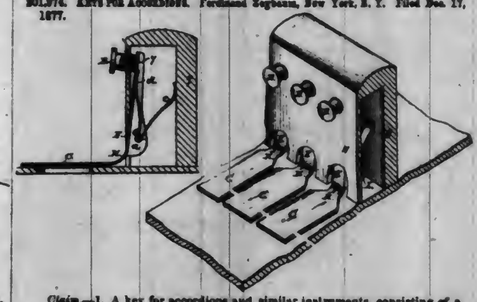


201,973. APPARATUS FOR BLEACHING OR DYEING. Lemuel W. Wright, Brooklyn, N. Y. Filed Dec. 5, 1877.

Brief.—The perforated tube is provided with heads or disks, both of which are removable and adjustable. This construction admits of the clamping of the heads firmly against the fabric, and thereby preventing the escape of fluid from the ends of the roll.

Claim.—In apparatus for subjecting woven fabrics to the action of bleaching or dyeing fluids, the perforated pipe or drum upon which the fabric is wound, in combination with detachable and adjustable heads or disks, adapted to act as valves for closing the ends of the roll of fabric and preventing the escape therefrom of liquor injected into the roll from the perforated pipe.

201,974. KEYS FOR ACCORDEONS. Ferdinand Seybeam, New York, N. Y. Filed Dec. 17, 1877.

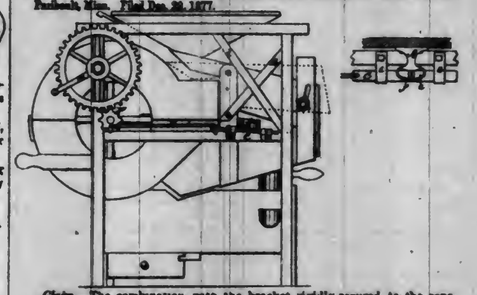


Claim.—1. A key for accordions and similar instruments, consisting of a valve, C, and lever E, the latter bent at the neck H, constructed in one piece, substantially as described.

2. A key for accordions and similar instruments, having its lever E provided with wings *a a*, in combination with the spring *d*, substantially as described.

3. In combination with the lever E of a key, the screw *i* and finger piece D, having a screw-socket, substantially as described.

201,975. GRAIN-SEPARATORS. Samuel E. Adams, Plain View, assignor to Cornelius Allison, Faribault, Minn. Filed Dec. 20, 1877.



Claim.—The combination, with the bracket rigidly secured to the separator-shoe, and formed with the curved slot, of the fan-shaft, link, and bar C, provided with pin *f*, and reciprocating in guides, substantially as shown and described.

201,976. FURNITURE-CASTERS. Joseph J. Adgate, New York, N. Y., assignor to Charles E. Parent, same place. Filed Dec. 14, 1877.



Claim.—1. In a furniture-caster composed of the glass ball A and holder having the arms D, the swells or projections *d*, of solder or other soft metal, attached to the inner sides of the arms, substantially as and for the purposes herein set forth.

2. In a furniture-caster composed of a glass ball, A, and a metallic holder, an ivory tip or point, *b*, inserted in the holder for forming the top bearing for the ball, as herein set forth.

3. The combination of the ball A, plate B, with stem C and ivory tip *b*, and the arms D, with inner projections *d*, all substantially as and for the purposes herein set forth.

201,977. MACHINES FOR TRIMMING THE EDGES OF BOOT AND SHOE SOLES. Chas. J. Addy, Boston, Mass., assignor of one-half his right to Ezra S. Abbott, same place. Filed Feb. 12, 1878.

Claim.—1. An edge-trimming knife to trim the sole, and a foot to bear upon the trimmed edge of the sole, combined with a blade to remove the edge of the sole next the upper.

2. The oscillating handle, supported and made movable, as described, in combination with a trimming-knife for the edge of the sole, and a separate blade to cut away the corner of the trimmed edge of the sole next the upper, substantially as described.

3. An edge-trimming knife and oscillating handle, supported as described, and a blade to cut the trimmed edge of the sole, combined with a rand-gage, to operate substantially as described.

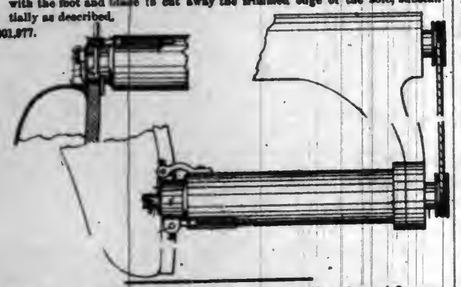
4. The oscillating handle, supported and made movable substantially as described, in combination with the rand-gage, foot, and blade to cut the trimmed edge of the sole.

5. The oscillating handle, adapted to be moved universally, as described, in combination with an edge-trimming knife, and a gage to bear upon the untrimmed sole-edge in advance of the cutter, the gage being carried by the handle, substantially as described.

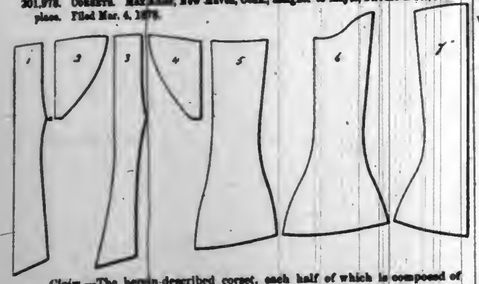
6. The oscillating handle, supported and adapted to be moved universally, as described, in combination with a trimming-knife to trim the edge of the sole, a rand-gage, and a gage to bear against the upper, substantially as described.

7. The gage to bear against the upper and the rand-gage, in combination with the foot and blade to cut away the trimmed edge of the sole, substantially as described.

201,977.

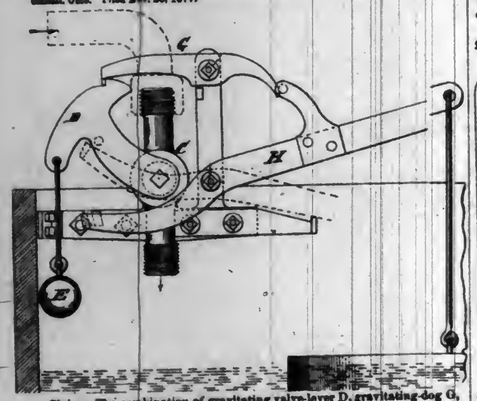


201,978. CORSETS. Max Adler, New Haven, Conn., assignor to Mayer, Stevens & Co., same place. Filed Mar. 4, 1878.



Claim.—The herein-described corset, each half of which is composed of the parts 1 2 3 4 5 6 7 constructed and arranged as described.

201,979. AUTOMATIC CUT-OFF VALVES FOR WATER-TANKS, &c. Samuel G. Anderson, Cincinnati, Ohio. Filed Nov. 26, 1877.



Claim.—The combination of gravitating valve-lever D, gravitating-dog G, and float-lever H, connected with and operating to open and close valve C, substantially as and for the purpose specified.

201,980. HYDRAULIC ELEVATORS. Cyrus W. Baldwin, Brooklyn, N. Y. Filed Feb. 8, 1878.

Brief.—When very heavy work is required, the water acts on the same side of both pistons.

Claim.—1. In a hydraulic elevator, the combination of two or more cylinders arranged in line, a corresponding number of piston-heads (one in each cylinder) on a common stem, a valve-governed conduit connecting the adjacent ends of the two cylinders, a water-supply port and a water-discharge port to each cylinder, and a valve in one of such water-supply ports, substantially as and for the purposes set forth.

2. In a double-cylinder and double-piston hydraulic elevator, a valve-governed water-passage connecting the adjacent ends of the two cylinders, and a valve-governed water-supply to each other cylinder, combined substantially as described, with reference to the automatic opening and closing of the valve between the cylinders, accordingly as the water-supply valve may be closed or opened.

3. In a double-cylinder and double-piston hydraulic elevator, in which one piston is continuously subject to water-pressure, the combination of a pipe or conduit, P^2, for transmitting such pressure, a valve-governed conduit from or connected with the same source of pressure leading to the same side of the other piston, and a valve device for bringing the discharge-ports of both cylinders into communication with the pressure pipe or conduit, substantially as set forth.

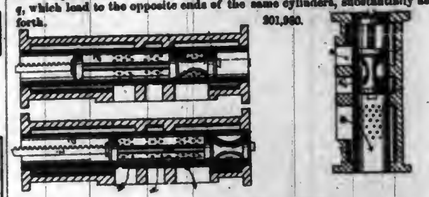
4. In a hydraulic elevator, the combination of two or more cylinders arranged in line, a corresponding number of piston-heads (one in each cylinder) on a common stem, an arrangement of water-supply ports for applying water-pressure simultaneously to and exhausting it from the same side of the piston-heads, such ports being opened and closed for supply and escape by successive movements of a series of valves on a single stem, substantially as set forth.

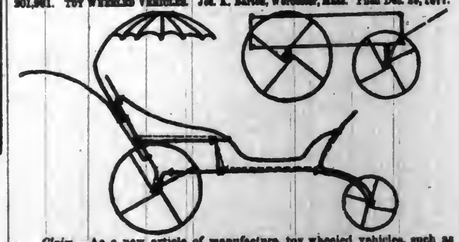
5. In combination with two cylinders and two pistons (one in each cylinder) on a common stem, a valve-governed circulation-pipe, P^3, arranged in one adjustment of the valves to connect the main water-supply with one end of its cylinder, and in another adjustment to bring the opposite ends of its cylinder into communication, substantially as set forth.

6. The pipes P^1 P^2, leading from the upper ends of the water-chambers a^1 through a common valve-case, in combination with pipes or passages P and q, which lead to the opposite ends of the same cylinders, substantially as set forth.

201,981. TOY WHEELED VEHICLES. Jos. K. Barton, Worcester, Mass. Filed Dec. 20, 1877.

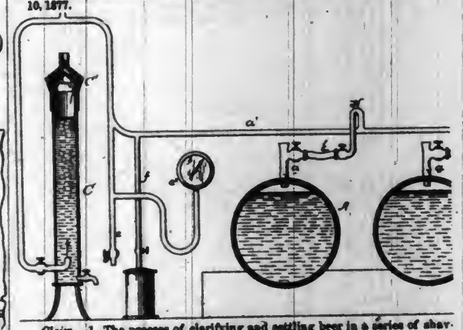
201,980.





Claim.—As a new article of manufacture, toy wheeled vehicles, such as wheelbarrows, carts, velocipedes, phaetons, and similar articles, when made of wire, substantially as described and shown, and for the purpose set forth.

201,982. PROCESSES FOR FERMENTING BEER. Geo. Bartholomae, Chicago, Ill. Filed Dec. 10, 1877.



Claim.—1. The process of clarifying and settling beer in a series of shaving-casks, and equalizing the rate of fermentation in all of them, whereby the beer is more rapidly and thoroughly clarified, and will be ready for racking off in all the casks at the same time, and can be kept so, which consists in holding the beer in closed connected shaving-casks, under automatically-controlled low pressure of the generated carbonic-acid gas, substantially as described.

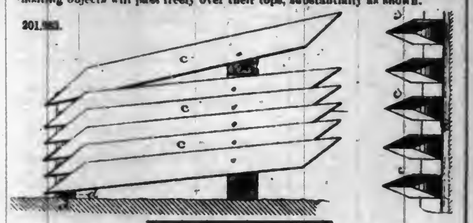
2. Casks A A, provided with cocks a e, flexible sections k, and tape N N, in combination with main pipe a', water-column C, and pressure-gage c^3, all constructed, arranged, and operated as and for the purposes set forth.

201,983. WATER-BED FENCES. Jacob F. Belce, Iuka, Miss., assignor of one-half his right to John A. Wiley, same place. Filed Jan. 23, 1878.

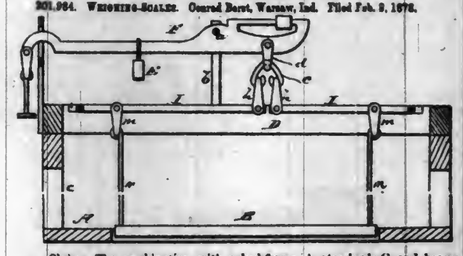
Claim.—A water-bed fence composed of sharp-edged rails e, which are

secured to suitable sills or timbers, arranged in such relation to each other that the rails will be supported in an inclined position, whereby water and all floating objects will pass freely over their tops, substantially as shown.

201,983.



201,984. WEIGHING-SCALES. Conrad Barst, Warsaw, Ind. Filed Feb. 9, 1878.



Claim.—The combination, with a bed-frame, A, standards C, and beams D D, of the platform B, rods a a, links m m, levers I I, scale-beam F, and connections d e k between the scale-beam and the inner ends of the levers, all substantially as herein set forth.

201,985. PEN-HOLDERS. Garnett R. Bickers, Farmville, Va. Filed Feb. 16, 1878.



Claim.—1. A pen-holder attached to its handle by means of a solid section of rubber, the same constituting a resilient medium between them, as and for the purpose described.

2. A pen-holder attached to its handle by means of a section of rubber, in combination with means, as set forth, for adjusting the stiffness of the rubber, substantially as described.

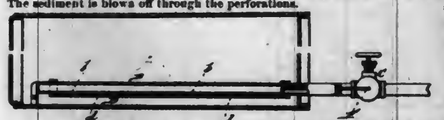
3. In combination with the handle A, holder D, and spring C, the sleeve B, adapted to clamp the spring C at any desired point, substantially as described.

4. In combination with the holder D, having headed rivet G, the pen E, having slot H, as described.

5. The combination, with a pencil and pen-holder, of an eraser, situated between the same, and constituting an intermediate resilient medium, as and for the purpose described.

201,986. BOILER-CLEANERS. Abner W. Bishop, Berea, Ohio. Filed Mar. 2, 1878.

Brief.—When the slide is moved to either end of the perforated pipe it uncovers the holes in one half the pipe and opens the holes in the other half. The sediment is blown off through the perforations.



Claim.—In combination with a boiler, A, interior perforated pipe B, and blow-off C, the slide or cut-off D, having perforations d arranged to uncover the holes in one half of the pipe only at a time, substantially as and for the purpose set forth.

201,987. BOOT AND SHOE SEWING MACHINES. Lyman R. Blake, Boston, Mass. Filed June 6, 1877.

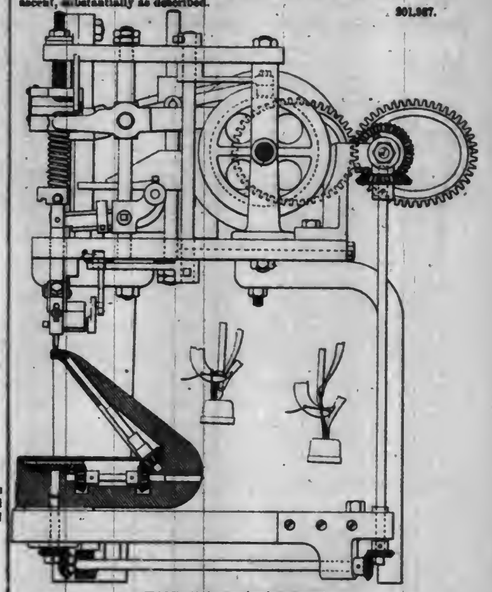
Brief.—Improvement on Letters Patent Nos. 36,163 and 75,422. A continuous rotating motion in one direction, at variable speed, is given to the whirl by eccentric-gears, while a reciprocating looper, supported by the presser-bar and carrying a second thread, acts above the work, in connection with the hooked needle, and forms the ordinary Grover & Baker stitch. The material is fed forward by the needle, which is carried by a frame pivoted at its upper end to the frame of the machine, and is vibrated by a cam and suitable connections.

Claim.—1. The combination, with the horn and the whirl and the hooked needle, of the eccentric-gears and connecting mechanism, substantially as specified, whereby the whirl is caused to revolve continuously in one direction at a varying speed, substantially as described.

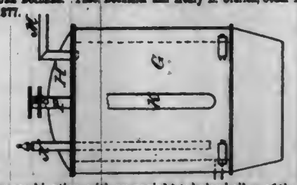
2. The thread-carrying looper and thread-carrying whirl, in combination with the hooked needle, and mechanism, substantially as described, to impart to the needle vertical and horizontal movements, for the purpose set forth.

3. The needle fulcrum-post, in combination with the griper, and mechanism to operate it, to lock the fulcrum-post just before the needle completes its ascent, substantially as described.

201,987.



201,988. FIRE-TUBE BOILERS. Theo. Beckmier and Henry E. Olbrich, Cedar Falls, Iowa. Filed Dec. 22, 1877.



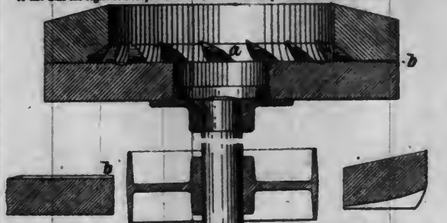
Claim.—The combination, with an upright tubular boiler, of the jacket G, surrounding its sides, the dome H, extending over a portion of the top of the boiler, the low-water indicator N, safety-valve P, pipe K, and eduction-pipe M, extending through the upper part of the boiler at one side of the dome, substantially as specified.

201,989. HARNESS-LOOPS. Charles B. Bristol, New Haven, Conn., assignor to W. & E. T. Fitch, same place. Filed Mar. 4, 1878.



Claim.—The herein-described loop, consisting of the flat loop proper, with a projection at each end and stud upon its under side, substantially as described.

201,990. GRINDING-STONES FOR PAINT-MILLS. Richard Byrne, Brooklyn, N. Y., assignor of one-half his right to Joseph J. Marvin, New York city. Filed Oct. 12, 1877.



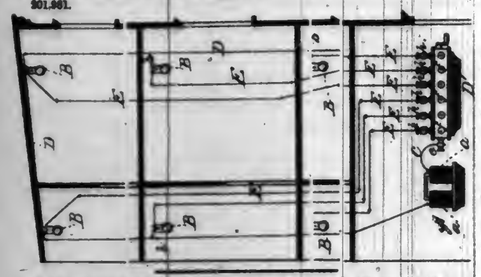
Claim.—The millstone-dress consisting of a series of straight furrows, a and b, in combination with the chamber in the upper stone and the circular groove c in the lower stone, substantially as described.

201,991. CIRCUIT-CLOSERS FOR ALARMS. James F. Callaway, Louisville, Ky. Filed Mar. 2, 1878.

Claim.—1. In an electric alarm, the key-board D', with the eccentric-shaft G, in combination with the flexible circuit-closers e g, the press-buttons f, the circuit-wires, and the electric bells H, as and for the purpose set forth.

2. The combination, with the battery A, of the electric bells B', the circuit-wires D C E *b*, the key-board D', the flexible circuit-closers *c g*, and the press-buttons *f*, substantially as specified.

201,901.

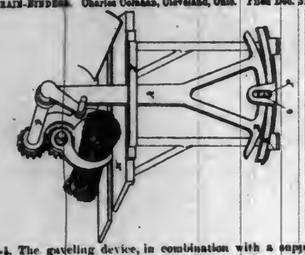


201,902. TREATING LINSEED-OIL. Henry A. Clark, Boston, Mass. Filed Jan. 14, 1878.

Brief.—Improved treatment of vegetable oils, chiefly linseed-oil, which have been previously treated with sulphur.

Claim.—The process of treating vegetable oils which have, by previous treatment with sulphur, been brought to a gummy condition, said process consisting, first, in mixing benzine or petroleum naphtha with said gummy oils, allowing the mixture to settle, and then pouring off the benzine; second, mixing with the residuum benzole or coal-tar naphtha in sufficient quantity to bring the same to a consistence for application, as desired, and as hereinbefore set forth.

201,903. GRAIN-BINDERS. Charles Colshan, Cleveland, Ohio. Filed Dec. 31, 1877.



Claim.—1. The gaveling device, in combination with a support formed and arranged to rock and roll upon a bed at its lower end, substantially as described.

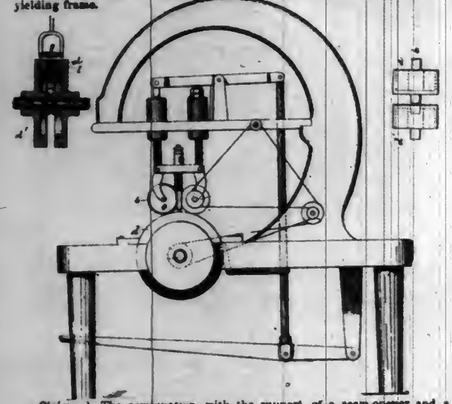
2. The standard A, constructed and supported on base B, in combination with pin P, concave way or track C, and slot O, constructed substantially as shown, and for the purposes described.

3. A grain-binding device supported on a rocking reciprocating standard, in combination with ratcheted base B and toothed support C, whereby the gaveling-arm is reciprocated on a horizontal table, substantially as set forth and described.

4. A concave stationary way or track, in combination with a convex moving support to a grain-binding apparatus, the stationary concave track being described on different radius from the convex moving support.

201,904. SEAM-PRESSING MECHANISMS. Charles W. Collyer, Lynn, Mass., assignor of two-thirds his right to Lyman A. May and A. Edwin Withey, same place. Filed Feb. 18, 1878.

Brief.—This machine is provided with a rotary seam-opener, a rotary ironing-cylinder, and an intermediate rotary presser, all suspended from a yielding frame.



Claim.—1. The combination, with the support, of a seam-opener and a rotating ironer, to operate substantially as described.

2. The support combined with the rotary seam-opener, having a rib, *d*, substantially as described.

3. The support, rotary seam-opener, and rotating surfaces *d d'* at the sides of the support, to operate substantially as described.

4. The support and rotary seam-opener, combined with the intermediate presser, to operate substantially as described.

5. The support and ironer combined with the presser-roller, made largest at or near its center, substantially as described.

6. The support and rotary seam-opener, combined with a lever to lift the seam-opener for the introduction of the material under it, substantially as described.

7. The seam-opener and ironer, and their carrying-frames and depressing-springs, in combination with the link connecting the frames, substantially as described.

8. The seam-opener combined with the support grooved for the reception of a welt or corded seam, substantially as described.

9. The support provided with a welt-baking device, combined with a seam-opener, to operate substantially as described.

10. The ironing-roller, in combination with the independent rollers *d d'*, to hold up and assist in feeding the material.

11. A seam-opener and ironer combined with the support and welt-trimming mechanism, to operate substantially as described.

12. The support *l*, seam-opener and ironer, in combination with mechanism to heat the support, substantially as described.

201,905. HEATERS FOR SAD-IRONS. John Conrad, Burlington, Iowa. Filed Dec. 19, 1877.



Claim.—1. A vapor-burner tube provided with a wire-filling heat-distributer, and curved at its end, so that the tip of the burner will direct its flame against that portion of the tube which is filled with the wire heat-distributer, arranged transversely with the flame, substantially as described.

2. In a sad-iron heater, the combination of an oil-reservoir, a siphon-tube passing up through the bottom of the reservoir, the asbestus filling in the siphon-tube, and the gas-generating burner tube, these parts being combined and arranged and operating as and for the purpose described.

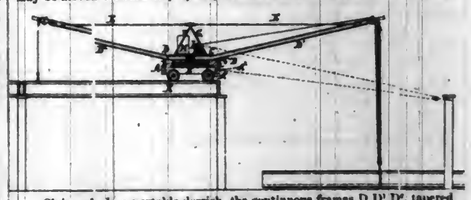
201,906. STOP-COCKS AND BOXES FOR WATER-PIPES. [illegible] Connelly, Brooklyn, N. Y. Filed Jan. 9, 1878.



Claim.—The metallic check-washer G, having the stud *f* on its circumference, in combination with the pipe E, having a recess in its upper end, rod D, key C, and stop-cock A, as herein specified.

201,907. PORTABLE DERRICKS. Watts Cooke, Paterson, N. J. Filed Mar. 11, 1878.

Brief.—In the construction of elevated railways, bridges, &c., the derrick may be moved forward step by step on the structure which it aids in erecting.



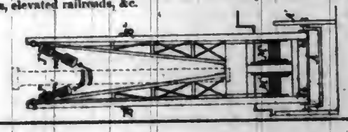
Claim.—1. In a portable derrick, the continuous frames D D' D², tapered and inclined as shown, in combination with a tie or ties, E, supporting carriage and wheels A' A', and provisions for engaging one end with the ground or the structure already completed, while the other serves as a jib or crane for hoisting, as herein specified.

2. In a portable derrick, the combination of the bearing-plates or broad swiveling-plates *a b* with the carriage A A', frames D D' D², tie E, and holding and hoisting means, as specified.

3. The central supporting-frame G, in combination with the tie E, frames D D' D², carriage A A', and holding and supporting means, as and for the purposes herein specified.

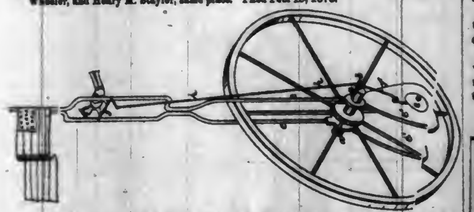
201,908. PORTABLE DERRICKS. Watts Cooke, Paterson, N. J. Filed Mar. 1, 1878.

Brief.—The mass lifted may be suspended either midway between or partly or entirely over toward either of the jibs. The jibs are separate, and are specially adapted for hoisting telegraph-poles, uprights of trestle-work, bridges, elevated railroads, &c.



Claim.—The portable derrick described, having, in combination with the frame or carriage A and wheels A', the forked or compound jibs B B', with independent windlasses M' M' and connecting-tackle J' J', adapted to serve as and for the purposes herein specified.

201,909. TOY TRUNDLER. George W. Craig, Baltimore, Md., assignor to himself, Charles A. Wheeler, and Henry M. Stayler, same place. Filed Feb. 15, 1878.

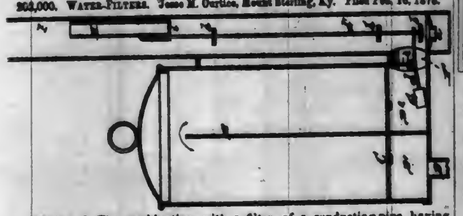


Claim.—1. In combination with a trundling-hoop, a balanced bar, *c*, supported upon the central and laterally-projecting arms thereof, and carrying a toy figure, which is operated by the rotation of the hoop, substantially as specified.

2. In combination with the hoop and the bar, counterbalanced as specified, the gong or signal having a hammer-handle arranged to be moved by an eccentric or tappet attached to the hoop, as shown and described.

3. The combination of the gong, hammer-handle, and weighted bar with the hoop, having a trunnion or arm provided with an eccentric wrist-pin, the toy figure, the crank-shaft, and connecting-rod, all as shown and described, to operate as specified.

202,000. WATER-FILTERS. Jesse M. Curtice, Mount Sterling, Ky. Filed Feb. 16, 1878.



Claim.—1. The combination, with a filter, of a conducting-pipe having the cup H, the valve *b*, rods *d d'*, and weight G, all constructed and operated in the manner substantially as described, and for the purpose set forth.

2. In combination with a filter, the inlet-pipe F, with branch F' and outlet *a*, the valve *b*, rod *d*, with weight G, and the rod *d'*, with cap H, having drain-hole *i*, all constructed substantially as and for the purposes set forth.

202,001. UNDER-GARMENTS. Abram A. Dunzig, New York, N. Y. Filed Feb. 25, 1878.

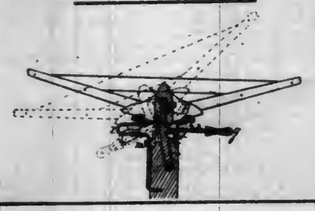


Claim.—1. The improved under-garment herein described, the same being formed of the two parts A A, united at two points—namely, in front, at the lower portion *a* of the body of the garment where the hemmed edges are lapped and stitched together, and at the back—by a single shoulder-seam, *b*, the part above the point *a* being adapted to be closed by buttoning, and the part between points *a* and *b* left open, all constructed and arranged as shown and described, for the purpose specified.

2. In combination with an under body-garment, constructed substantially as described, and having loops at the waist, the belt provided with flaps, as and for the purpose specified.

3. In combination with the under-garment, the pad-pockets attached at the sides thereof, and unattached at top and bottom, as and for the purpose specified.

202,002.



202,003. CLOTHES-DRIERS. Edwin C. Darling, Rockton, Ill. Filed Aug. 16, 1877.

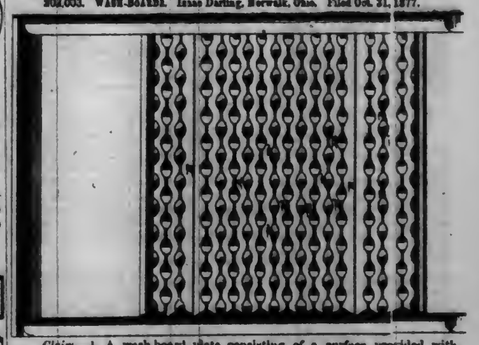
Brief.—By means of the bent spindle and the lever and spring-brake, the reel may be inclined from a horizontal position, at a greater or less angle, and held in such position with greater or less force, as required.

Claim.—1. In a clothes-drier, substantially as herein described, the post with inclined socket and the bent spindle, in combination with the clothes-reel, substantially as and for the purpose hereinbefore set forth.

2. In combination with the clothes-drier, substantially as herein described, the spring-brake adapted to hold the reel with more or less force as it is inclined more or less, as and for the purpose hereinbefore set forth.

3. The combination of the bent spindle, the adjusting-lever, and the upward-projecting ears on the cap, for the purpose of inclining the clothes-reel mounted on the bent spindle more or less as the lever is more or less turned toward the spring-brake, substantially as and for the purpose set forth.

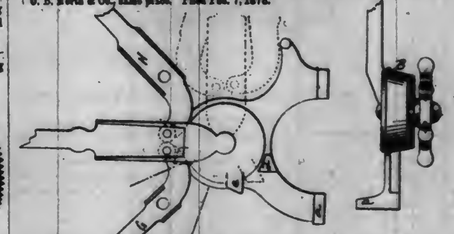
202,003. WASH-BOARDS. Isaac Darling, Norwalk, Ohio. Filed Oct. 31, 1877.



Claim.—1. A wash-board plate consisting of a surface provided with abrupt elevations and depressions, in combination with plain transverse ridges or flutes at intervals, substantially as and for the purposes described.

2. A wash-board surface consisting of abrupt elevations D, arranged in rows across the board and broken by shallow depressions D', extending transversely of the board, in combination with plain ridges B, substantially as and for the purposes described.

202,004. ADJUSTABLE CARRIAGE-TOPS. Charles Dudley, New Haven, Conn., assignor to O. B. Forth & Co., same place. Filed Feb. 7, 1878.



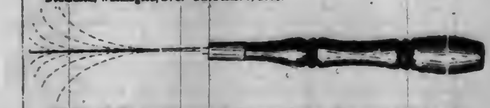
Claim.—The combination of the socket B, provided with a stop, *d*, the hub C, provided with projecting arm *s*, and clat-iron attached thereto, with a device to clamp or release the said hub within the said socket, substantially as described.

202,005. HATS AND CAPS. Mark Davis and Sale Simonson, New York, N. Y. Filed Mar. 13, 1878.



Claim.—The combination, with a hat or cap having ventilating-holes in the lower part of its crown, of a perforated sweat-leather and a corrugated hat-band, respectively applied to the interior and exterior of the article, contiguous to said ventilating-holes, substantially as shown and described.

202,006. MANUFACTURE OF DENTISTS' TOOLS FOR CLEANING NERVE-CAVITIES. Robert B. Donaldson, Washington, D. C. Filed Mar. 9, 1878.

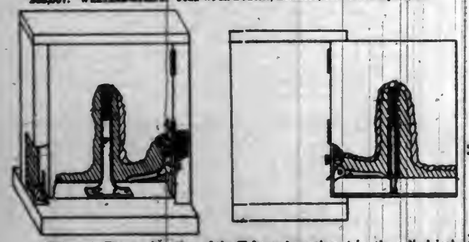


Claim.—1. The improvement in the manufacture of dental bristles herein described, which consists in shearing or cutting from a thin strip of suitably-

tempered steel wedge-shaped blanks of the desired size, and in then rounding the corners of the blanks by filing or grinding them with moderate pressure, and, finally, in forming the thinner ends of the blanks into the usual points, hooks, or barbs, and attaching them by the thicker ends to suitable handles, in the usual manner, substantially as described.

2. As a new article of manufacture, a dental bristle having a spring-temper, substantially as described.

202,007. WEATHER-STRIPS. John W. H. Doubler, Rockford, Ill. Filed Sept. 1, 1877.



Claim.—1. The combination of the T-formed weather-strip, the cylindrical socket, and the spiral spring, as herein described, adapted to be inserted in the lower end of a door, as and for the purpose hereinbefore set forth.

2. The combination, with a weather-strip, a socket adapted to receive and guide the stem of the strip, and spring connected therewith, serving to guide and uphold said strip, of a bell-crank lever, one end of which rests on the weather-strip, while the other end is provided with an adjusting-screw, which projects from the door, and operates to depress the strip when the door is closed, substantially as described.

202,008. DEVICES FOR CLEANING ROPS FOR PAPER-MAKING. Wm. H. Bowring and Oliver W. Chamberlain, Fairview Township, Butler County, Pa. Filed Mar. 9, 1878.

Brief.—A cylinder, with a pipe for the admission of steam, is provided with bushings and pipes fitted into its ends, through which rope is passed and cleaned of oil and dirt by the steam and hot water in the cylinder.



Claim.—1. A cylinder, *a*, in combination with a steam or water pipe, *c*, and bushes or pipes for inserting into the ends of the cylinder, substantially as shown.

2. The combination of the cylinder *a*, bushes *b*, and adjustable pipes *c*, substantially as described.

202,009. FIRE-EXTINGUISHER AND ESCAPE-TOWER. Albert C. Ellithorpe and Christian Haas, Chicago, Ill. Filed Jan. 2, 1878.

Brief.—A fire-proof tower within a building, having communication with each story, and being provided with stairs, said tower extending above the building, and its lower end being connected with the street or space outside the building by means of an archway or tunnel. Within the tower is a perforated ventilating-shaft, and within the latter is the gas-main and a stand-pipe having hose-connections with each floor, said pipe being connected with the water-main by pipes leading through the tunnel. There is also a connection with a dry hydrant, whereby steam-engines may assist to raise the water in the stand-pipe. There are fire-proof safety-rooms in connection with the doors of the tower.

Claim.—1. A fire-proof tower erected within or adjacent to a building, and forming communication with each and every story of the building, and provided with suitable means for ascent and descent, and its base connected by an archway or tunnel with the street or space around the building, substantially as and for the purposes herein set forth.

2. In combination with a fire-proof tower erected within or adjacent to a building, and provided with one or more doors leading into every story of the building, one or more safety-chambers arranged upon each floor outside of the doors leading into the tower, substantially as herein set forth.

3. The air-column C, perforated as described, and arranged within the fire-proof tower, for the purposes herein set forth.

4. The water-pipe E, connected through the bottom archway or tunnel with the main, and arranged within the fire-proof tower, and provided with suitable hose-connections, substantially as and for the purposes herein set forth.

5. The combination of the tower A, tank D, air-column C, and water stand-pipe E with air-chamber V, substantially as and for the purposes herein set forth.

6. The fire-proof archway or tunnel I, in combination with the tower A and air-entrance E, for the purposes herein set forth.

7. One or more outer dry hydrants, H, connected with the column stand-pipe E by means of a pipe leading through the archway, and arranged for connection with fire-pipes by means of fire-engines, to provide increased force and volume of water in said stand-pipe, substantially as herein set forth.

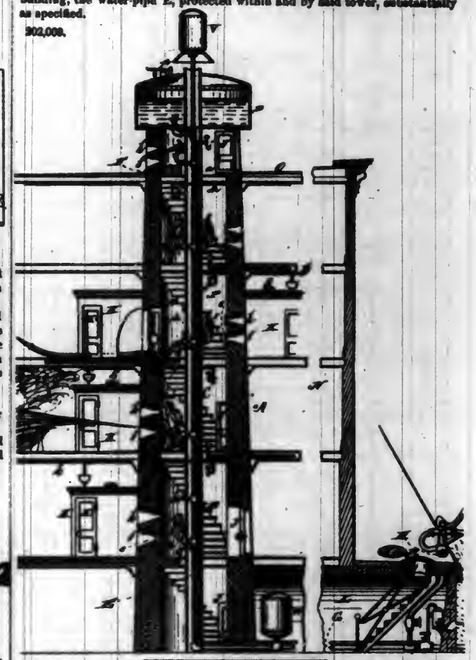
8. The combination of the stand-pipe E, horizontal connection-main G, with cut-off valve *d*, and hydrants H, substantially as and for the purposes herein set forth.

9. As a means for protecting life and property from fire, a fire-proof tower, with means of ascent and descent, erected within or adjacent to a building, with an archway or tunnel leading from its base to the street, an interior ventilating-shaft, water and gas pipes passing up through the tower, and having independent valves and pipes for each floor, doors leading from each floor into the tower, and pipe-holes and observation-holes through the walls thereof, all substantially as and for the purposes herein set forth.

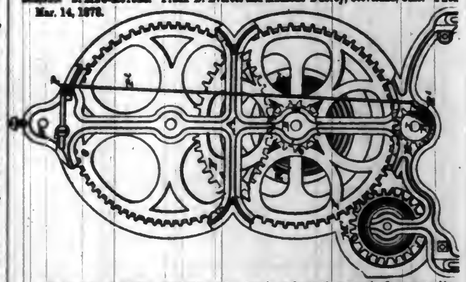
10. The hose-elevator, as described, consisting of the endless chain A, pulleys B' B', and spring-clamps *c' c'*, arranged on suitable shafts inside the ventilating-shaft C, substantially as and for the purposes specified.

11. In combination with a fire-proof tower erected within or adjacent to a building, the water-pipe E, protected within and by said tower, substantially as specified.

202,009.



202,010. STEREO-MOTORS. Frank D. Everett and Anthony Dubroy, Cleveland, Ohio. Filed Mar. 14, 1878.



Claim.—1. A motor consisting of a fixed and stationary shaft or spindle and a surrounding revolving drum or its equivalent, and a driving-spring connecting said fixed spindle and the rim or periphery of the drum, substantially as and for the purposes shown.

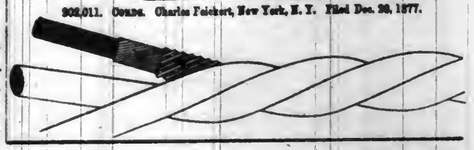
2. The stationary spindle B, the spring R', drum C, and suitable gear-connections with drum C, for utilizing its revolutions when driven by spring R', substantially as and for the purposes shown.

3. The fixed spindle B, spring R', drum C, and gear E M O G F H, or its equivalent, substantially as and for the purposes shown.

4. The combination, with the friction-pulley K, placed on any suitable shaft of the machine, the friction device P, P', P², and P³, substantially as and for the purposes shown.

5. In connection with suitable gear for utilizing the force and motion imparted by a spring, a cog-wheel, drum, or their equivalents, at or near the rim or periphery of which is attached the moving end of said spring, while the other end of this spring is attached to a fixed and stationary axle, substantially as and for the purposes shown.

202,011. CORDS. Charles Faickert, New York, N. Y. Filed Dec. 26, 1877.



Claim.—A twisted cord composed of two or more twisted strands of fibrous material, each of which is covered by a series of parallel coiled wires, which are separated to expose to view intermediate portions of the surface of said strands, substantially as described, and for the purpose set forth.

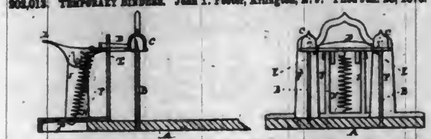
202,012. WATCH GOING-BARRELS. Frederic Fitz, Ottawa, Ontario, Canada. Filed Nov. 23, 1877.



Claim.—1. A closed watch going-barrel, A, provided with dogs or catches *a a a* on its face-plate inside of its rim or periphery, substantially as and for the purpose herein shown and specified.

2. The combination of the closed watch going-barrel A, having dogs *a a a* and central annular recess *d*, with the flanged great wheel B, having beveled perforations *b b b* and central raised cylindrical boss *c*, substantially as and for the purpose herein shown and described.

202,013. TEMPORARY BINDERS. John T. Foster, Arlington, N. J. Filed Jan. 26, 1878.



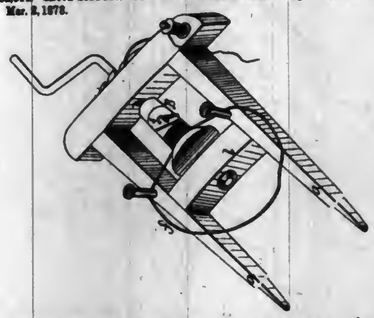
Claim.—1. The bed or base A, clamping-lever D, having lugs H and thimble C, standards F, having shoulders K, in combination with the tubular needles B, secured in the said bed, with their lower ends opening through the lower side of the same, as and for the purposes set forth.

2. The thimbles C and clamping-lever D, having lugs H, in combination with the standards F, having shoulders E, as a means of protecting the points of the tubular needles B, substantially as described.

3. The combination of the clamping-lever D, having lugs H, with the standards F, having shoulders E, substantially as described.

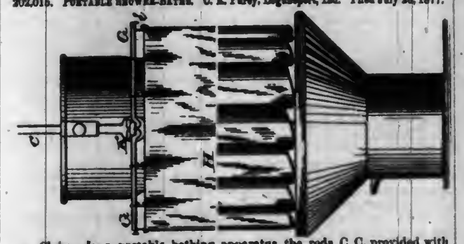
4. The combination of the axial standards J with the clamping-lever D, having lugs M and tongue L, and reacting-spring N, as and for the purposes set forth.

202,014. SHOCK-BINDERS. Thos. J. Fulmer and Frederick Wiegman, De Graff, Ohio. Filed Mar. 2, 1878.



Claim.—The combination of the revolving drum B, its handle, ratchet and pawl, and the frame A, having side pieces to clasp the shock, and the cord *f*, detachably connected to the drum, all as set forth.

202,015. PORTABLE SHOWER-BATH. C. R. Furey, Logansport, Ind. Filed July 26, 1877.



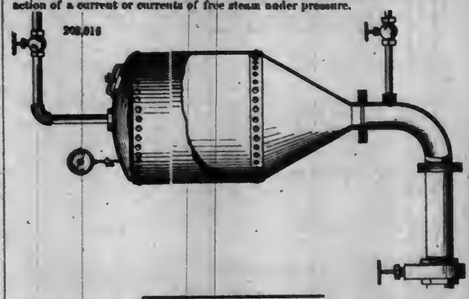
Claim.—In a portable bathing apparatus, the rods C C, provided with the heads E E, to which are hinged the wire guards G G, in combination with a curtain, H, substantially as and for purpose set forth.

202,016. PROCESSES OF REDUCING VEGETABLE SUBSTANCES TO PREPARE THEM SAME FOR SACCHARIFICATION. James W. Gaff, Cincinnati, Ohio. Filed Mar. 6, 1878.

Brief.—The substance to be reduced is mixed with water in the closed boiler-cylinder and steam is admitted to the required pressure, when the valve in the steam-escape pipe is opened, permitting a movement of the steam, which maintains an active ebullition and agitation of the substance under treatment, though the steam-pressure is kept up.

Claim.—The process of reducing crude vegetable substances, to prepare the same for saccharification, by subjecting them to the agitating and solvent action of a current or currents of free steam under pressure.

202,016



202,017. CANISTERS. Wm. Gardner, New York, N. Y. Filed Feb. 7, 1878.

Brief.—The canister is formed of two or more layers of veneer, an intermediate layer of textile material glued together at their lapping edges, a metallic lining, and a suitable bottom.

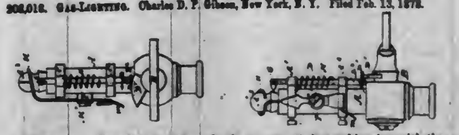


Claim.—1. A tube composed of layers of metal, textile material, and veneer, fastened together, substantially as shown and described.

2. A receptacle consisting of two or more layers of veneer and an intermediate layer of textile material, glued together at their meeting or lapping edges, and the tubular receptacle thus formed provided with the bottom G and a metallic lining, substantially as set forth.

3. A receptacle consisting of two or more layers of veneer and an intermediate layer of textile material, glued together at their meeting or lapping edges, and the tubular receptacle thus formed provided with a cover, F, bottom G, and a metallic lining, substantially as set forth.

202,018. GAS-LIGHTING. Charles D. P. Gibson, New York, N. Y. Filed Feb. 13, 1878.



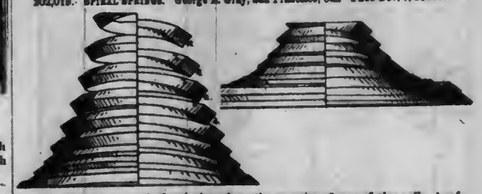
Claim.—1. The slide D, with a beak or arm, G, in combination with the cock B, wiper B', and with suitable electrical connections to itself and to an insulated piece, M, so as to break and make connections by a direct rising and sinking motion, as herein specified.

2. The turning pivot *g*, in combination with the beak G, slide D, and spring E, adapted to allow the beak to yield in both directions in rubbing past the piece M, as specified.

3. In an electrical gas-lighter, the slide D and its arm D', capable of both sliding axially and turning on its axis, in combination with the cock B and wiper B', and with means for inducing a prompt return after the turning and axial motion, as specified.

4. In a gas-lighting apparatus, the electrode D, provided with the spring H, adapted to perform the double functions of returning the electrode D to its position after either a turning or an endwise motion, as herein specified.

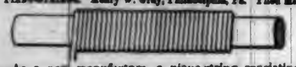
202,019. SPIRAL SPRINGS. George E. Gray, San Francisco, Cal. Filed Nov. 7, 1877.



Claim.—1. A conical spiral spring, the meeting faces of the coils A of which are inclined inwardly at every point, so that when the spring is compressed the coils will slide upon each other, substantially as and for the purposes set forth.

2. In combination with the spiral conoidal spring A, constructed substantially as herein described, the conoidal bed-plate B, of the shape and operating substantially as herein described, for the purposes set forth.

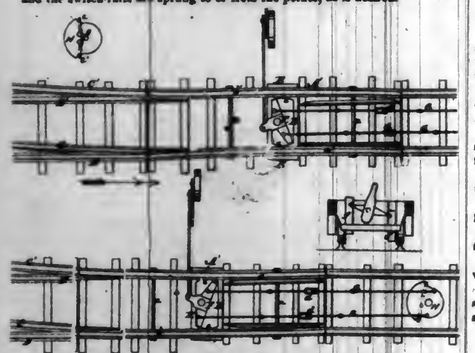
202,020. PIANO-STRINGS. Henry W. Gray, Philadelphia, Pa. Filed Mar. 3, 1876.



Claim.—As a new manufacture, a piano-string consisting of steel wire closely wrapped with copper wire, and subsequently electro-gilded, as set forth.

202,021. RAILWAY-SWITCHES. Richard Gray, Bloomington, Ill., assignor to himself, Jefferson Dunn, and James B. Sargent, same place. Filed Mar. 28, 1876.

Brief.—The switch-rails are rigidly secured at their ends, and are capable of being curved or sprung at their centers. The point-rails extend forward of the point of junctures of the switch-rails with the main and side track rails, and the switch-rails are sprung to or from the points, as is desired.



Claim.—1. In combination with the main and side track rails, a pair of switch-rails, which are fastened at their ends, and not elsewhere, throughout their length, and a suitable device for bending or carving them laterally, and for locking them in either position.

2. In combination with the switch-rails fastened at the ends only, and with the outer rails of the main and side tracks, the tapered rails, the same being fixed in position, as and for the purpose specified.

3. In combination with the switch-rails fastened at their ends only, the frame having end bars, which are curved on the inner side, the lever pivoted eccentrically within the frame, substantially as shown and described, for the purpose of bending or shifting the rails and locking them in either position.

4. I do not claim, broadly, a pivoted lever and connecting-wires for use in operating a switch automatically, but the combination, with the switch-rails fastened at their ends only and the lever pivoted eccentrically, of the wires, and the broad lever provided with arms, for engagement with the pendent arms of the locomotive, all as shown and described.

5. In combination with the pivoted lever H, the pivoted arms *f* and the spring *g*, as shown and described.

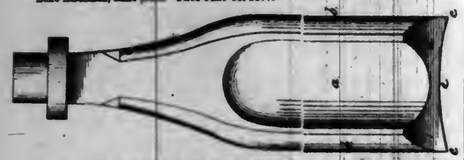
202,022. PERMUTATION-PADLOCKS. Geo. W. Grove, Lionville, Ohio. Filed Mar. 8, 1878.



Claim.—1. In a combination-lock, the combination, with the case A B and shackle C, of the spring-latch D and thumb-piece E, with arm *d*, substantially as and for the purposes set forth.

2. In a combination-lock, the hinged plate or door *J*, with screw *m*, in combination with the lock-case A B and the shackle C, having shoulder *n*, substantially as and for the purposes set forth.

202,023. OIL-DRILL BITS. John Grube, Lickingville, Pa., assignor of one-fourth his right to Luke Eleeman, same place. Filed June 18, 1877.



Claim.—The improved drill combining the functions of bit and reamer, having the acute-angled side points *c c*, and the concave cutting-edge *c*, extending between said points, the flutes or grooves *a*, and the convex sides *b b*, as shown and described.

202,024. TYPE-WRITING MACHINES. Benton Halstead, Cincinnati, Ohio. Filed Mar. 28, 1876.

Brief.—The key-levers play in slots in the front plate, before which latter is secured an adjustable toothed plate. The depression of a key forces the cord connected with the carriage into the notches between the teeth of the adjustable plate, and since there is less friction at the left side of the slot by reason of its formation, and by reason of the weight and numerous friction-pulleys to the right of the machine, the carriage is drawn to the left. The ink-ribbon is placed transversely to the line of printing, above it, and on yielding supports. The spacing-key acts by pawl and ratchet to move the inking-ribbon.

Claim.—1. The ribbon stretched across the machine at right angles to the lines of printing, at a distance above the paper to be printed, and supported by yielding supports, and adapted to receive the impingement of the face of the type forced down to be printed, and be carried down by said type against the paper, printing thereon the character of said type, and, upon the retraction of said type, assuming its original position at a distance above the paper, substantially as and for the purposes set forth.

2. The combination of ribbon M, spool U, guide n^2, loop *m*, elastic cord m^2, and spool m^3, substantially as and for the purposes set forth.

3. The combination of spacing-key P^1, lever D^1, pawl m^1, ratchet-wheel m^2, axis m^3, and spool m^2, the latter preferably made loose on said axis, and provided with set-screw m^4 and ratchet-wheel and pawl, substantially as and for the purposes set forth.

4. The device for regulating the resistance to the rotation of the spool U, consisting of sleeve n^1 and sleeves n^2 and set-screws n^3 on rod *n*, substantially as set forth.

5. The combination of spool U, sleeve n^1, arms n^1 n^2, set-screws n^3 and n^3, and guide n^2, provided with loops n^2, substantially as and for the purposes set forth.

6. The cord S, weight T, and friction devices t^1, t^2, t^3, and t^4, and brake t^5, substantially as and for the purposes set forth.

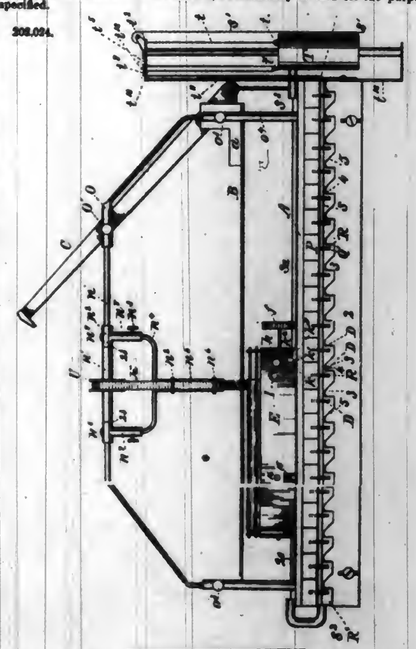
7. The combination of the adjustable toothed plate 2, cord S, and key-lever P R, substantially as and for the purposes set forth.

8. The combination of the upright plate and the adjustable toothed plate, for the purposes set forth.

9. The combination of cord S^2, paper-carrier E, tube S^2, pulleys t^1 t^2, and weight, substantially as and for the purposes set forth.

10. The combination of upright O^1, with set-screws O^2, arms O, with set-screws O^3, and guard O^4 N and arm *n*, substantially as and for the purposes specified.

202,024.



202,025. BALANCED SLIDE-VALVES. Henry M. Hamblin, Greenville, Pa. Filed Mar. 11, 1878.

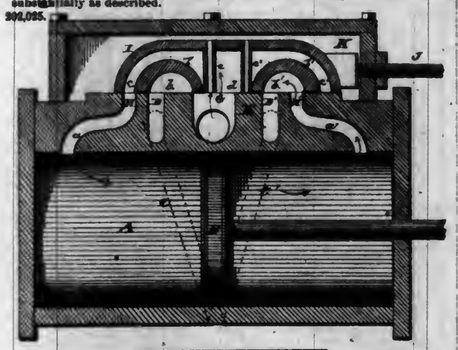
Claim.—1. In a balanced valve, the combination, with a hollow valve provided with independent exhaust-steam passages, of independent steam-passages *a a'*, extending from the face of the valve upward through the back of the valve, substantially as set forth.

2. The combination, with a valve-seat provided with steam-ports G H H' and exhaust-ports D D', of a hollow valve formed with steam-ports *d e e'*, independent exhaust-passages *b b'*, and steam-passages *a a'*, substantially as set forth.

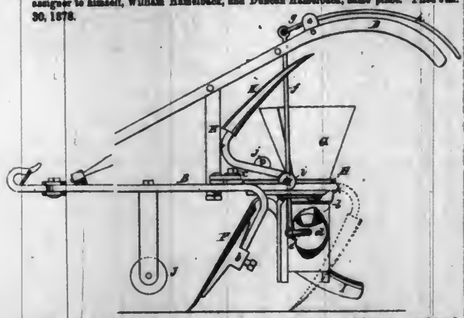
3. A hollow balanced valve provided with two independent exhaust-passages, and with steam-passages located in the main steam-induction passage of the valve, said steam-passages arranged and adapted to supply steam intermittingly to the back of the valve, substantially as set forth.

4. A balanced hollow valve having one main central inlet-port and two discharge-ports leading therefrom, and having two independent exhaust-passages located on either side of the main inlet-port, and between said inlet-port and the said discharge-passages, and having independent live-steam passages in the back of the valve, said passages located in the live-steam passages, and constructed so as to admit live steam intermittingly to the back of the valve, said valve adapted to have free vertical movement in the valve-chest, substantially as described.

202,025.



202,026. COMBINED CULTIVATOR AND CORN-PLANTER. Jacob Hamelback, Hopewell, Ohio, assignor to himself, William Hamelback, and Duncan Hamelback, same place. Filed Jan. 30, 1878.

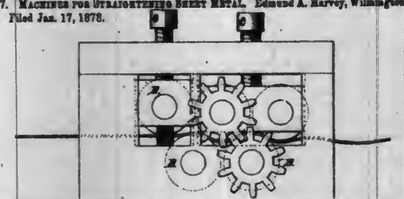


Claim.—1. The supporting-arms H, carrying the seed-boxes, combined with and fastened to the slotted bar C of an adjustable cultivator, substantially as described.

2. The supporting-arm H, carrying the seed-boxes, and the coverer I, combined with the slotted bar C of an adjustable cultivator, and secured thereto by a single bolt, *c*, substantially as and for the purpose described.

3. The combination, with the adjustable cultivator, having slotted bars C, of the supporting-arms H, seed-box G, having a roller with seed-cups, the connecting-rod *f*, crank-shaft *g*, and hand-lever *h*, substantially as and for the purpose described.

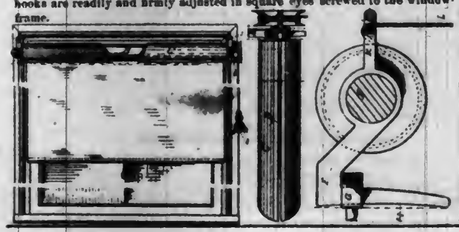
202,027. MACHINES FOR STRAIGHTENING SHEET METAL. Edmund A. Harvey, Wilmington, Del. Filed Jan. 17, 1878.



Claim.—An independently-adjustable roller, D, in combination with a double series of adjustable rollers, B B', substantially as and for the purpose described.

202,028. CURTAIN ROLLERS AND BRACKETS. John S. Henry, North Belle Vernon, Pa. Filed Nov. 9, 1877.

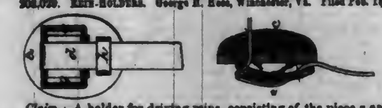
Brief.—Slotted cylinders pivoted to brackets with curved hooks are slid over the ends of the roller, about which the curtain is wrapped. The curved hooks are readily and firmly adjusted in square eyes screwed to the window-frame.



Claim.—1. The cylinder C, the pivot F, the bracket F, and square eye G, all in combination, for the purpose set forth.

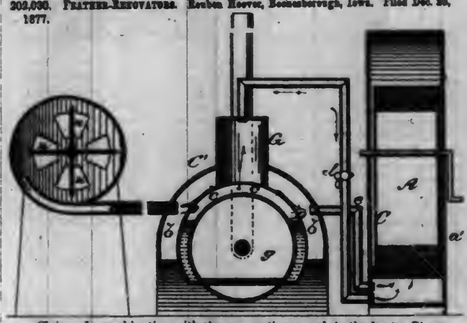
2. The removable bracket F, having a curved hook, H, in combination with a square eye adapted to receive it, applied to curtain-fixtures, substantially as set forth.

202,029. REIN-HOLDERS. George H. Hess, Winchester, Va. Filed Feb. 19, 1878.



Claim.—A holder for driving-reins, consisting of the piece a and padding *c*, having the rein-hole *d*, in combination with a clamping-buckle, *g*, substantially as shown.

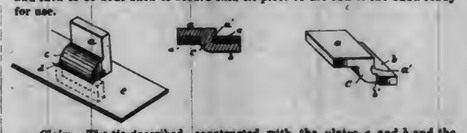
202,030. FEATHER-RENOVATORS. Reuben Heever, Boonsborough, Iowa. Filed Dec. 29, 1877.



Claim.—In combination with the renovating-vessel A, the heater C', provided with central fire-box *g*, and surrounding steam-space *c* and air-space *b*, the said boiler and air-space being connected to the vessel A by means of suitable pipes, and the air-space D with a suitable blowing device, the whole constructed and arranged to operate substantially as specified.

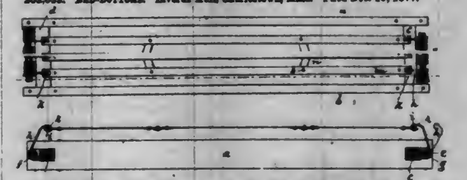
202,031. BALE-TIES. Wm. H. Howard, San Antonio, assignor of one-fourth his right to Camille E. Dreyssard, Galveston, and Rush M. Hutchins, Houston, Tex. Filed Nov. 9, 1877.

Brief.—The sides of the slot in the band are extended so that a piece may be bent down to permit the shoulders of the tie-piece to pass through the slot, and then to be bent back to secure said tie-piece to the end of the band ready for use.



Claim.—The tie described, constructed with the plates *a* and *b* and the curved connection *a*, attached to the band, substantially in the manner described, with the connection *c* parallel with the length of the band, so that the movements for fastening and unfastening the tie are in a plane perpendicular to the line of strain, as and for the purpose set forth.

202,032. BED-BOTTOMS. Livera Hall, Charlestown, Mass. Filed Dec. 18, 1877.



Claim.—1. The combination, with the thin sheet-metal flexible slats, longer than the distance between the head and foot bars, of the hooked sustaining-springs *b*, applied to the head and foot of the bed-frame, and projecting upward from the cross-pieces at the head and foot, as described, to operate substantially as set forth.

2. The frame *a b c d*, and metallic slats and hooked springs A, in combination with the rods *e f*, arranged behind and parallel with the bars *a d*, all substantially as shown and described.

202,033.



202,033. DOOR-SPRINGS. Hezekiah C. Jones, Winona, Miss. Filed Nov. 15, 1877.

Brief.—A toothed or notched semicircular disk, attached by flattened ears to the jamb or frame above the door, serves as a tension-ratchet, the torsion-spring arranged on the door-frame having a hook or looped end passing through the ratchet, while its opposite end has a crank-connection with a flattened spring on the door, the tension-ratchet serving as a convenient means of adjusting the tension of the spring.

Claim.—The combination of the torsion-spring G, provided with a hook, H, on one end, the tension-ratchet B, consisting of a toothed semicircle, and the lever C, connected to the crank D on the other end of the torsion-spring, the rod or spring G and lever C being secured to the door-frame and door, respectively, by means of the tension-ratchet B and the staples F E, all substantially as and for the purposes herein set forth.

202,034. ANTI-FRICTION BEARINGS FOR JOURNALS AND AXLES. Thomas H. King, San Francisco, Cal. Filed Feb. 2, 1878.



Claim.—1. An anti-friction bearing provided with two or more series of alternately-arranged rollers, each roller guided by central guide-pins, and bearing in rims or grooves in the bushing or box, substantially as described.

2. In an anti-friction bearing, a loose annulus interposed in the bushing between two adjacent sets of friction-rollers, as and for the purpose described.

3. The ring F, having the pins G projecting from opposite sides, each set alternating with those upon the opposite sides of the ring, for the purpose of retaining the rollers in their relative positions, substantially as herein described.

4. The annulus F, provided on its opposite sides with alternating guide-pins G, and the alternating friction-rollers E, in combination with the bushing B, constructed with lip D and flanges C C', forming intervening grooves, substantially as described.

5. The method of forming a steadying-center by having the plane of their faces projecting slightly beyond that of the pulleys, substantially as shown and described.

202,035. AUTOMATIC FIRE-EXTINGUISHERS. Francis Leclere, Philadelphia, Pa., assignor to himself, Glaenes H. Rosenfeld, and George E. Buckley, same place. Filed Jan. 17, 1878.



Claim.—1. The combination, with a box or case containing chemicals for evolving gases for the extinguishing of fires, of a thermostat, which, when operated by heat, will light a fire to free the gases in such case, substantially as described.

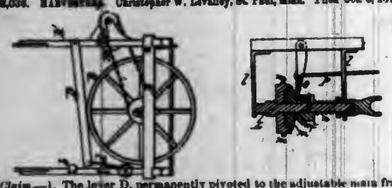
2. The combination of a thermostat with fulminate and a fuse, the former being so arranged as to drop a weight to ignite the fulminate and fire the fuse, substantially as and for the purposes described.

3. The combination of a thermostat with a box or case containing chemicals which, by ignition, will evolve gases to extinguish fires, the former being arranged to actuate a mechanism, substantially as described, to light the said chemicals, substantially as and for the purposes set forth.

4. The combination of a thermostat, B D, constructed as described, fulminate-base I, to receive the fulminate, and case A, to hold the chemicals to be ignited, substantially as described.

5. An apparatus, Fig. 1, for the extinguishment of fires, formed of the combination of case A, to contain the extinguishing compound, tube B within the same, weight D, held suspended in said tube by a waxy compound, fulminate-base I, the explosion of the fulminate upon which will fire the extinguishing compound, substantially as and for the purposes described.

202,036. HARVESTERS. Christopher W. Lavalley, St. Paul, Minn. Filed Oct. 6, 1877.



Claim.—1. The lever D, permanently pivoted to the adjustable main frame of a harvester, in position overhanging the drive-wheel, and adapted to be let down upon and used in combination with the driving-wheel as a fulcrum, for adjusting the frame, as described.

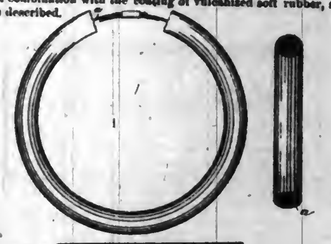
2. The adjusting-lever D, permanently pivoted to the frame, and employing the driving-wheel as a fulcrum, as described, in combination with the chain and windlass for operating said lever and adjusting the main frame, as described.

202,037. PESSARIES. Elisha Lockwood, Boston, Mass. Filed July 30, 1877.

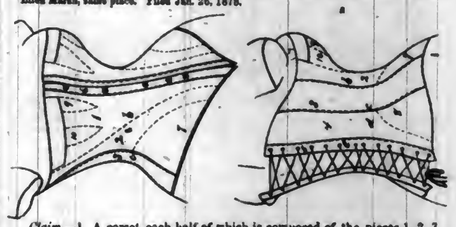
Brief.—The flat springs, which serve as a core upon which the rubber is superimposed, are joined by lapping and adding a strengthening-strip, which breaks joints, and is inclosed in a band or sleeve.

Claim.—The spring *a*, lapped as described, and the strengthening-strip and band, in combination with the coating of vulcanized soft rubber, all substantially as described.

202,037.



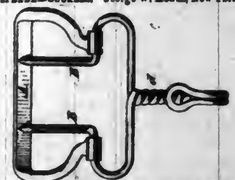
202,038. CORSETS. Henry T. Marsh, Hartford, Conn., assignor, by mesne assignment, to Ellen Marsh, same place. Filed Jan. 26, 1878.



Claim.—1. A corset each half of which is composed of the pieces 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10, constructed and arranged substantially as described.

2. A corset composed of alternate sections of cloth and leather, combined and arranged substantially as shown and described.

202,039. SUSPENDER-BUCKLES. George W. McGill, New York, N. Y. Filed June 21, 1877.



Claim.—In an improved suspender-buckle, the buckle-tongue B, provided with the twisted extension *d*, terminating in the hook *e*, all made of one piece of wire, in combination with the buckle-frame A, as herein shown and described, for the purposes specified.

202,040. FENCE-POSTS. Robert W. McPherrin, Keotar, Kans. Filed Feb. 6, 1878.



Claim.—1. The iron fence-post having the central strengthening-rib on the lower part of its front or face, extending from below the ground line to or above said line, and terminating in the wide shoulder or offset provided with the series of holes near its top, substantially as and for the purpose set forth.

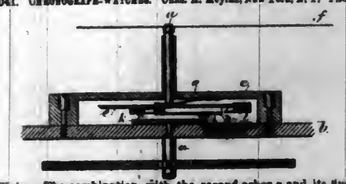
2. The combination, substantially as hereinbefore set forth, of the post, the strengthening-rib, terminating in the offset, the brace-bar and board-clamp, adjustably connected to the strengthening-rib offset, and the securing-bolts.

3. The combination, substantially as hereinbefore set forth, of the post, the adjustable clamping-bar, and the detachable rail-supporting yoke, between the arms of which the clamping-bar fits.

4. The rail-supporting yoke constructed, as described, with the lug F and the lip *f*, for the purpose specified.

5. The combination, substantially as hereinbefore set forth, of the posts, shouldered at their lower parts, the pin-jointed adjustable clamp bars and braces, the detachable rail-supporters, and the rails secured between the posts and the clamp-bars and braces, and resting upon said shoulders and supporters.

202,041. CHRONOGRAPH-WATCHES. Chas. H. Meylan, New York, N. Y. Filed Dec. 7, 1877.



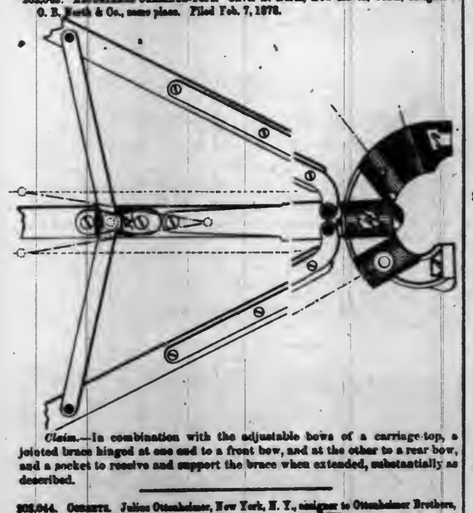
Claim.—The combination, with the second-arbor *a* and its finely-grooved wheel *k*, of the independent arbor *d*, second-hand *f*, spring *o*, wheel *e*, slide or wedge *l*, heart-cam *h*, and point *i*, substantially as and for the purposes set forth.

202,042. FRUIT-PICKERS. John G. Miller, Bridgewater, Va. Filed Feb. 23, 1878.



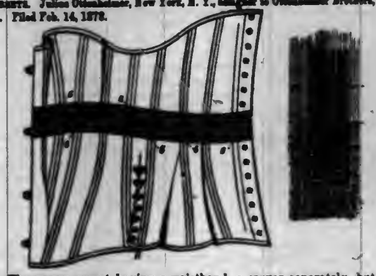
Claim.—In a fruit-conveyor, the combination, with the funnel A, having an extended neck portion, *a*, of a flexible folding tube, C, adapted to be run up on the neck *a* in annular folds, and having at its lower end a cushion suspended therefrom by cords or tapes spaced to allow egress to the apples after striking the cushion, substantially as specified.

202,043. ADJUSTABLE CARRIAGE-TOPS. Oliver B. North, New Haven, Conn., assignor to O. B. North & Co., same place. Filed Feb. 7, 1878.



Claim.—In combination with the adjustable bows of a carriage-top, a jointed brace hinged at one end to a front bow, and at the other to a rear bow, and a pocket to receive and support the brace when extended, substantially as described.

203,044. CORSETS. Julius Ottenheimer, New York, N. Y., assignor to Ottenheimer Brothers, same place. Filed Feb. 14, 1878.



Claim.—The woven corset having a waistband, *a*, woven separately, but connected with the fabric of the corset at intervals by the interlocking of the warps and weft-threads, substantially as set forth.

202,045. DUST-BRUSHES. Elias G. Patterson, Rochester, N. Y. Filed Feb. 6, 1878.



Claim.—1. A dust-brush in which a fleece-covered strip, B, is wound about a stud of the handle and upon itself continuously in the same plane, and abuts against a shoulder, *y*, of the handle, as and for the purpose set forth.

2. A dust-brush in which the fleece-covered strip B is wound upon itself on the stud of the handle, abuts against the shoulder *y*, and part of the coiled portion extends beyond the stud, as and for the purpose set forth.

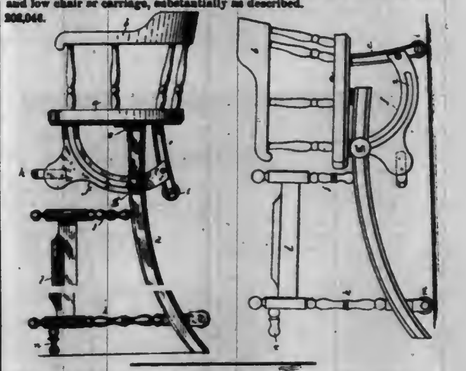
202,046. CHILD'S CHAIR AND CARRIAGE. Charles A. Perley, Baldwinsville, Mass., assignor to Thompson, Perley & Weiss, same place. Filed May 19, 1877.

Brief.—Convertible from a child's high chair into a carriage having a table in front of it, by adjusting the pivoted long legs.

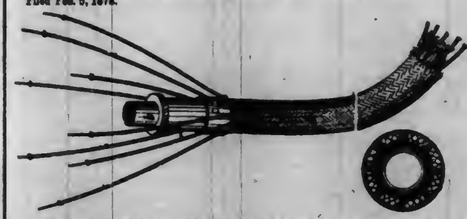
Claim.—1. The seat and fixed short and pivoted long legs, in combination with adjusting devices and fastening devices to hold the adjusting devices and long legs together, substantially as described.

2. The seat, the short legs *c*, the hinged long legs, the rollers or wheels *i m*, and the legs *f h*, fixed with relation to the long legs, to form a high chair and low chair or carriage, substantially as described.

202,046.



202,047. COMBINED GAS AND ELECTRIC CONDUCTORS. Eugene F. Phillips, Providence, R. I. Filed Feb. 5, 1878.



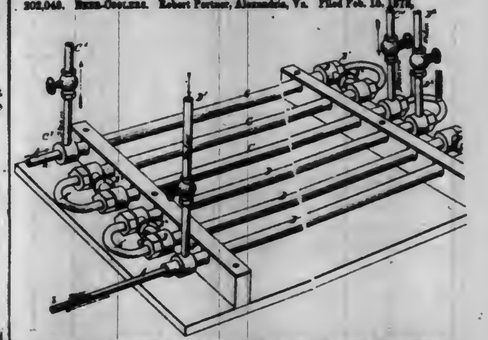
Claim.—A complex gas and electric conductor for elevators, composed of a flexible gas-tight tube and insulated electric conductors inclosed within a jacket, substantially as described.

202,048. WORK-BOXES. Pulaski B. Pinkum, New York, N. Y. Filed Feb. 20, 1878.



Claim.—The box B, provided with the removable cover A, having in its opposite sides the recesses *d* and *e*, of unequal diameters, and containing, respectively, the pin-cushion C and box D, substantially as described.

202,049. BEER-COOLERS. Robert Portner, Alexandria, Va. Filed Feb. 15, 1878.



Claim.—1. The method of lessening the deterioration of beer or other fermented liquors incident to heating and cooling them for preserving purposes, consisting of successively heating and cooling the same while flowing in a continuous stream through a pipe or pipes or other closed vessels, substantially as specified.

2. The combination, substantially as specified, of the continuous pipe for beer or other fermented liquor, the heating-pipe C, surrounding one section or portion thereof, and the cooling-pipe D, surrounding the other section or portion thereof, so that the beer, on flowing through the apparatus, will be heated during the first part of its passage and cooled during the remainder.

202,049. PROCESSES OF MANUFACTURING ILLUMINATING-GAS. Alonzo G. Rand, Minneapolis, Minn. Filed Jan. 16, 1878.

Brief.—The oil vapors passed through the coal during the early stages of distillation are produced from a light oil, such as naphtha, mixed with sawdust, coal or coke dust contained in a thick heavy pot at the rear of the coal-retort, or from such oil dropped into the retort; or the oil vapors only are admitted to the retort. After the charge of coal has been distilled, superheated steam is admitted to the remaining coke and decomposed for a short time.



Claim.—In the manufacture of illuminating-gas, the process of lessening the condensation of coal-tar vapors and preventing the deposition of dry carbon, thereby increasing the yield and candle-power, which consists in passing the vapors of light hydrocarbon liquids through the retort containing the charge of coal during the earlier stages of the distillation of the coal, substantially as set forth.

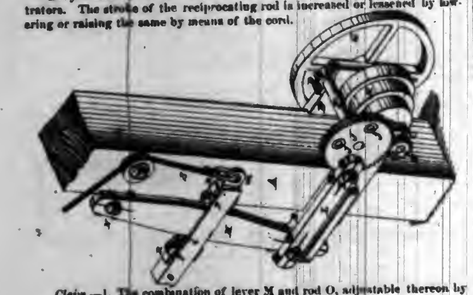
202,051. TRASH-GATHERERS. Benj. F. Barick, Wm. P. Barick, and Jonas Barick, Lincoln Township, Republic County, Kans. Filed Aug. 13, 1877.



Claim.—A trash-gatherer formed by the horizontal cross-bar *a*, the vertical bars *b b'*, the horizontal bar *c*, and the curved bar *c'*, carrying the roller *d* and the clamp *f*, all constructed substantially as shown and described, and for the purpose set forth.

202,052. APPARATUS FOR REGULATING RECIPROCATING MOTION. Albion M. Keene, Boulder, Colo. Filed Mar. 27, 1878.

Brief.—The device is designed to operate percussion-table ore-concentrators. The stroke of the reciprocating rod is increased or lessened by lowering or raising the same by means of the cord.



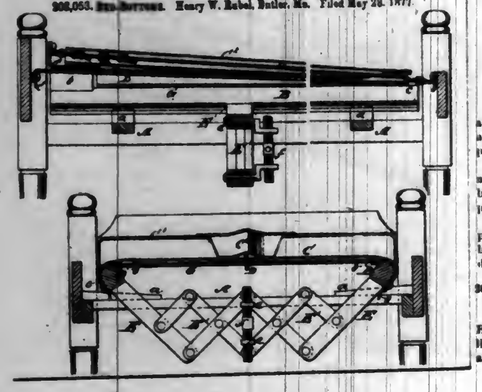
Claim.—1. The combination of lever M and rod O, adjustable thereon by means of a cord, S, substantially as and for the purpose set forth.

2. The combination of rod O, cord S, lever M, rod L, and crank-wheel J, substantially as and for the purpose set forth.

3. The combination of rods O and L, lever M, crank gear-wheel J, with adjustable wrist-pin K, pinion I, shafts E and F, cone-pulley H, and fly-wheel G, substantially as set forth.

4. In combination with the rod O and lever M, the blocks P Q, to receive the impingement of the lever, substantially as set forth.

202,053. STRAW-SPREADER. Henry W. Rabel, Butler, Mo. Filed May 28, 1877.



Claim.—1. In combination with a bed-bottom composed of canvas C, secured to rails B B, the arms E E, extension-joints E', and adjusting-screw *f*, substantially as described.

2. The central cushioned ridge C', combined with the canvas C and tightening-rope D, substantially as described.

3. A canvas bed-bottom provided with a ridge or cushion extending longitudinally through the center, on the upper side thereof, substantially as described.

4. The combination of side rails, a canvas bottom attached to said rails and supported thereby, and a quilt resting against the under side of said canvas bottom, and consisting of sheets of cloth and paper suitably tacked together, said quilt being attached to the side rails by means of elastic strips, whereby it is allowed to yield in conformity to the sinking or stretching of the bed-bottom, substantially as described.

202,054. EDDLING-TREAD HORSE-POWER LINKS. Wm. Samson, Berkshire, Vt. Filed Dec. 20, 1876.

Brief.—The corrugated portion of the link for meshing in cogs of the wheel to which power is communicated is fastened by rivets in the depressions, and by a staple and band mortise to the lag or tread.



Claim.—1. The mortise G', formed of iron, and serving as a backing in securing the corrugated link C' to the tread or lag, substantially as shown.

2. The mortise G', having the lap E as means for protecting the corner, substantially as described.

3. The corrugated or crimped link C', having a rivet passed through it at each bend or depression, substantially as set forth, so as to prevent elongation.

4. The mortise G', having the ends united by the rivet G, which rivet enters the tenon in a direction vertical to the strain.

5. The staple A, having one of its ends made sharp and the other one provided with a hole, through which is passed a screw or bolt, B, in combination with the link C', whereby the link is held in position, substantially as shown.

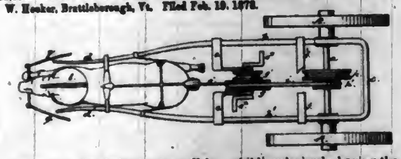
202,055. CANISTER-SHOT. Addison M. Sawyer, Athol, Mass. Filed Feb. 9, 1878.



Claim.—1. A canister-shot provided with a casing of malleable or wrought iron, or other hard metal of such strength and stiffness that it will not be forced outward against the bore or into the grooves of the gun, divided transversely into two or more sections, held together by an exterior tie or ties of sheet metal of sufficient strength to hold the sections in place till placed in the gun, but too weak to resist the explosion of the charge of powder which discharges the shot from the gun, substantially as and for the purposes described.

2. The combination, in a canister-shot, of two or more tubes of malleable iron, or other hard metal of such strength and stiffness that they will not be forced outward against the bore or into the grooves of the gun, placed end to end, a thick metal head at one end, a light metal cap at its other end, a mass of small balls filling the chamber so formed, and a thin sheet-metal envelope or tube surrounding said hard-metal tube, substantially as and for the purposes described.

202,056. VELOCIPEDE. Samuel B. Scharf, Washington, D. C., assignor to himself and Geo. W. Hooker, Brattleborough, Vt. Filed Feb. 19, 1878.



Claim.—1. The imitation horse F for a child's velocipede, having the head and neck portion *l* and the forward legs *m* severed from the body of the horse, and connected together by a rod, *n*, passing loosely through the intervening portion of the body, substantially as described and shown.

2. In a velocipede, the combination, with the movable head and neck and movable forward legs, connected together, of the guiding-wheel G, secured between the lower ends of such legs, with its axis arranged in rear of the pivot to the legs, substantially as described and shown.

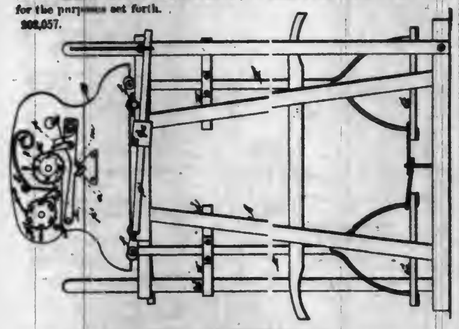
3. The combination, with the body of the horse and the movable forward portion *m m'*, of the spring *p*, concealed in the body and attached to the movable portion, for throwing the same into line with the body, substantially as described and shown.

202,057. SACK-SCALES. Sylvanus P. Schweitzer and Gottlieb Kinsey, Lock Berlin, Ohio. Filed Mar. 9, 1878.

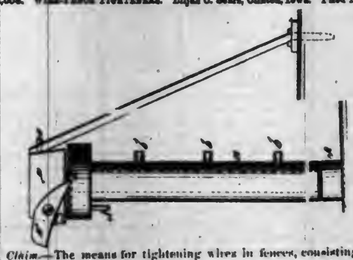
Claim.—1. The combination of the shafts D, with beams D' and weights E, hangers F, with platforms G and bag-holders H *i*, the arms I, with slotted hooks J, and the shifting-valve C, with shaft *b* and crank *d*, all substantially as and for the purposes set forth.

2. The combination of the shifting-valve C, with rod *b*, having arms *a*, the lever L, with V-shaped projection *m*, spring *n*, and spring-pawl *p*, the toothed index-wheel M, with cam *s*, the lever N, with pawl *p'* and spring *t*, and the second toothed index-wheel M', all constructed substantially as and for the purposes set forth.

202,057.

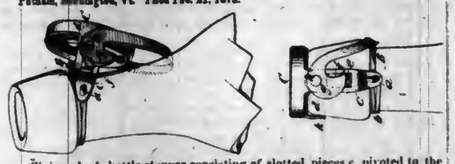


202,058. WIRE-FENCE TIGHTENERS. Elijah C. Sears, Clinton, Iowa. Filed Feb. 9, 1878.



Claim.—The means for tightening wires in fences, consisting of a loose thimble, B, with ratchet-cap *c* and fastening plug *b*, arranged around a stationary fence-post provided with a spring-pawl, substantially as shown and described.

202,059. BOTTLE-STOPPERS. Charles Bedgwick, New York, N. Y., assignor to Henry W. Putnam, Bennington, Vt. Filed Feb. 21, 1878.

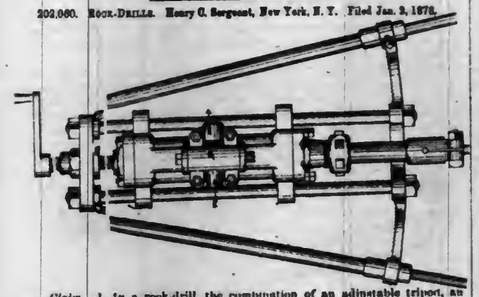


Claim.—1. A bottle-stopper consisting of slotted pieces *c*, pivoted to the neck-wire, a cap, C, having ears *d* and lips *e*, extending through the slots of the pieces *c*, and a yoke having cam-shaped ends, pivoted to the pieces *c*, and bearing on the lips, substantially as set forth.

2. The cap provided with a stop, *k*, as specified.

3. The flanged cap C, provided with a ring of rubber, and central bevel-edged disk *l* of cork, as set forth.

202,060. ROCK-DRILLS. Henry C. Sargeant, New York, N. Y. Filed Jan. 2, 1878.



Claim.—1. In a rock-drill, the combination of an adjustable tripod, an adjustable cylinder supported upon said tripod, and guide-rods for giving direction to said cylinder, substantially as set forth.

2. A cylindrical sliding valve having its ends of slightly less diameter than the bore of the cylinder in which it moves, in combination with a rod which passes through the center of said valve, thereby guiding the same and presenting a wearing surface therefor, substantially as set forth.

3. The combination of a valve for controlling the ingress and egress of steam, a bolt passing through the center of said valve, a steam-chest, and cushions for receiving the valve at the end of its stroke.

4. The combination and arrangement of the steam-ports C^1 and C^2, D^1 and D^2, for regulating the exhaust of steam from the ends of an automatically-operating valve, substantially as set forth.

5. The combination and arrangement of the exhaust-ports D^1 and D^2, cavity F in the body of the piston, and ports C^1 and C^2, substantially as and for the purpose set forth.

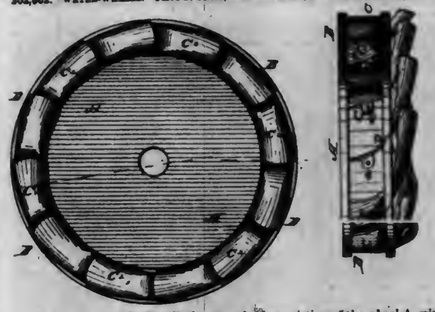
202,061. AUGERS. Mary L. Keator, Deep River, Conn. Filed Feb. 20, 1878.

Brief.—The screw-threads on the worm extend from the point to within a little below the cutting-edge. The remainder of the worm, being smooth and of undiminished diameter, acts like a tunnel center to produce a true circular hole.



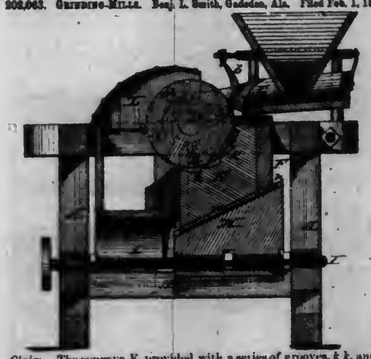
Claim.—An auger provided with spurs and a worm extending above the cutting-edges thereof, said worm having a plain surface, without screw-threads below the spurs or opposite thereto, and of full diameter, or as large in circumference as the largest part of the screw-threaded portion of the worm, substantially as and for the purpose set forth.

202,062. WATER-WHEELS. Caleb F. Smith, Mount Pleasant, N. C. Filed Oct. 11, 1877.



Claim.—The within-described water-wheel, consisting of the wheel A, with top flange B, the independently-removable buckets C C, constructed, as described, with concave extensions C^1 C^1 and the surrounding band D, all substantially as and for the purposes herein set forth.

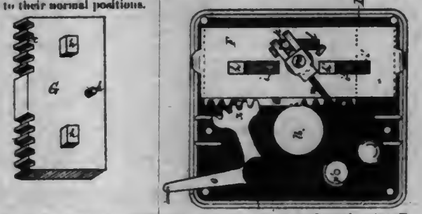
202,063. GRINDING-MILLS. Benj. L. Smith, Gadsden, Ala. Filed Feb. 1, 1878.



Claim.—The concave E, provided with a series of grooves, *k k*, and secured in box F, inclined forward on the bottom, and provided with offset *n*, in combination with the inclined bed H, having ways *m*, the single screw-rod I, and the rotating cylinder D, substantially as and for the purpose set forth.

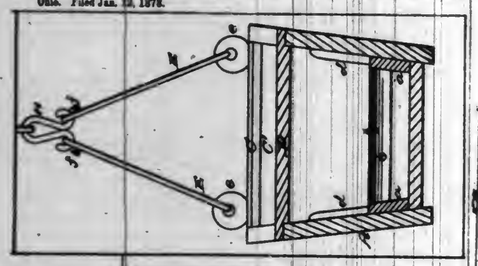
202,064. DOOR-BELLS. John W. Snider, New Orleans, La. Filed Sept. 24, 1877.

Brief.—Springs are dispensed with, and a weight is used to return the parts to their normal positions.



Claim.—In combination with a gong, A, strap B, plate D, and casing F, a weight, *i*, hammer-lever *m*, and bell-crank O, as described, and for the purpose specified.

202,065. WASHING-MACHINES. David Spain and Bascomb H. Reynolds, North Lewisburg, Ohio. Filed Jan. 12, 1878.



Claim.—1. The box A, constructed with high end chambers A^1, and provided with side ribs *d* and transverse ribs *b*, elevated above the bottom, as herein set forth.

2. The combination, with the swinging washing-machine box A, constructed as described, of the side bails E E_2, having at their upper ends the loops *f f*, and the double hook H, suspended from the beam O, for the purposes hereinbefore described.

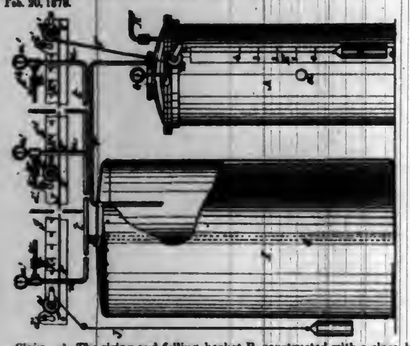
202,066. VAPOR-BURNERS. Christian G. Spengler, Hoboken, N. J. Filed Feb. 26, 1878.



Claim.—1. The combination, with an oil-fountain, of a gas-burner supported by a pipe which extends through the fountain, a wick-tube, D, secured in the mouth of the fountain and rising to level with the gas-burner, or nearly so, and a deflector, E, resting on the top of the wick-tube, so that when the gas is lighted the oil which rises through the wick is evaporated, and the hydrocarbon vapors thus produced are thrown into the gas-flame by the deflector, all combined substantially in the manner and for the purpose described.

2. The combination, with an oil-fountain, a gas-burner, and a wick-tube surrounding said gas-burner, of a shield, F, which rests on the deflector E, extends downward, and protects the wick-tube against the cooling influence of the air, all combined substantially as set forth.

202,067. APPARATUS FOR EXTINGUISHING FIRES. John W. Stanton, Brooklyn, N. Y. Filed Feb. 20, 1878.



Claim.—1. The rising and falling basket B, constructed with a close bottom, *s*, in combination with the flange or projection *f* within the cylinder A, essentially as and for the purpose herein described.

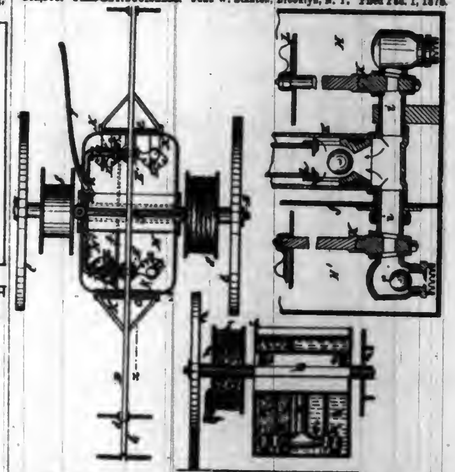
2. The rising and falling basket, having perforated sides, a perforated upper bottom, and one or more perforated distributing cylinders or tubes within it, substantially as and for the purpose specified.

3. The rising and falling basket B, having a close bottom, *s*, and constructed with a vent or escape-tube, *g*, essentially as described.

4. In an apparatus for extinguishing fire by the joint action of carbonic-acid gas and a liquid expelled by the pressure of said gas, the combination, with the adjustable cage or vessel containing one of the agents used in the generation of the gas, of means separately controllable from different points or places to liberate and control the action of said cage, and distributing pipes or branches, also separately controllable from said points or places, for regulating the discharge at said points or places of the liquid expelled by pressure of the gas, essentially as described.

5. The combination of the gas-generating cylinder or vessel A, the rising and falling basket B within said cylinder, the windlass C, the ratchet *m* and its pawl *n*, the tank I, the pipes *r s*, the liquid-distributing pipe *t*, having branches leading to different points or places, the wire-rope J, the pulleys *h'*, the ratchet *o'*, and the pawls *d'*, substantially as and for the purpose herein set forth.

202,068. FIRE-EXTINGUISHERS. John W. Stanton, Brooklyn, N. Y. Filed Feb. 1, 1878.



Claim.—1. A fire extinguisher or engine fitted with one or more discharge-pumps, separate receptacles or chambers for containing different fire-extinguishing liquids, and connected with said pump or pumps by separate inlets, a discharge pipe or outlet from the pump or pumps for said liquids, either separately or when mixed, and means for separately controlling or regulating the supply of either liquid to the pump or pumps, the whole combined substantially as specified.

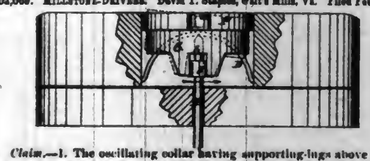
2. The combination, with either pump E, having duplicate inlets *i i*, of the chambers H H^1, with which said inlets separately connect, the adjustable cocks K, for controlling and regulating the supply of liquids to the pump from either of said chambers, and the indicator L, for determining the relative discharges from the chambers, substantially as specified.

3. The combination, with the tank A and wheels C, of the hose-drums S, arranged to freely turn on the axle of said wheels between the latter and the tank, essentially as described.

4. The combination, with the axle B of the running-wheels of the vehicle, of the drum or drums S, arranged upon said axle, each of said drums having its interior constructed to form a reservoir for the supply of the fire-extinguishing liquid, and provided with a lateral discharge-nozzle, *r*, and having its exterior constructed to form a reel for the hose, substantially as shown and described.

5. The combination, with the pump-brake D and tank A, of the pivoted opposite end draft bars or poles G G, constructed to form braces for hobbling the engine when at work, and means for locking said brake by the bars or poles, substantially as specified.

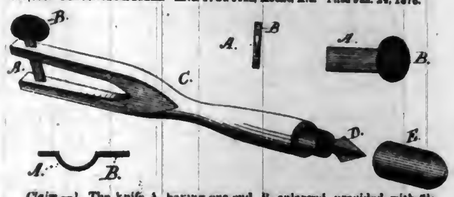
202,069. MILLSTONE-DRIVERS. David T. Staples, Galt's Mills, Va. Filed Feb. 8, 1878.



Claim.—1. The oscillating collar having supporting-lugs above and seats for the driver below, arranged in the upper portion of the eye of the runner upon its lugs, and combined with the said runner and the driving-iron, substantially as described.

2. The frame F, rigidly fixed in the upper portion of the eye of the runner, and having recesses *a a*, the oscillating collar having supporting-lugs *c*, resting in said recess, and seats *b* below, and the spindle, having a driver arranged with its ends in said seats, all combined substantially as shown and described.

202,070. PENCIL-SHARPENERS. Alex. F. St. John, Mobile, Ala. Filed Jan. 24, 1878.



Claim.—1. The knife A, having one end, B, enlarged, provided with file-like corrugations, and attached to a forked handle, C, substantially as shown and described, and for the purposes set forth.

2. An article of manufacture consisting of the knife A B, forked handle C, ink-eraser D, and guard or cap E, substantially as and for the purposes set forth.

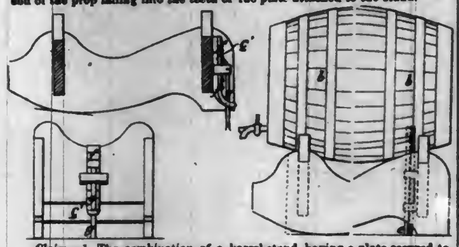
202,071. GAME APPARATUS. Emerson C. Strange, Taunton, Mass. Filed Dec. 6, 1877.



Claim.—In a game apparatus having removable figures S S on opposite sides and the fortresses or towers A A, the parapets or wings B B, diverging from such towers, and inclosing the area or field of the figures, and serving as converging gatherers of the projectiles employed to overturn the figures, substantially as described and shown.

202,072. STANDS FOR CASES OR BARRELS. Jas. Swindells, Stockport, Great Britain, assignor to James Kirk, same place. Filed Jan. 26, 1878.

Brief.—Two forms of the self-adjusting props—one sliding diagonally in the lugs of the plate, and the other sliding perpendicularly in a lug, the upper end of the prop falling into the teeth of the plate attached to the stand.

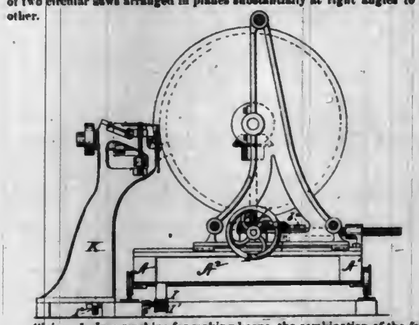


Claim.—1. The combination of a barrel-stand having a plate secured to its rear end with a self-accommodating and self-retaining prop adapted to slide in said plate, all substantially as set forth.

2. The combination of the barrel-stand and its plate *c*, having lugs *d d*, with the diagonal props *e e*, substantially as described.

202,073. MACHINES FOR MAKING BARREL-HOOPS. Clark W. Thompson, Wells, Minn. Filed May 1, 1877.

Brief.—Two hoops of uniform width, thick at one edge and thin at the other, are cut at each reciprocation of the log-carriage, upon which the log is supported between centers mounted on a laterally-adjustable frame, by means of two circular saws arranged in planes substantially at right angles to each other.

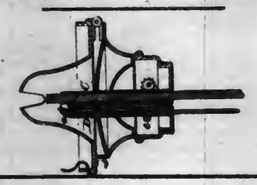


Claim.—1. In a machine for making hoops, the combination of the following elements, namely: a log-support, on which the log is rotated upon its own axis, two cutters in planes substantially at right angles to each other, and a third cutter at a different angle, to cut hoops from the log by means of a bastard cut, and mechanism, substantially as described, which moves the log past the cutters on a line parallel to its own axis.

2. In a machine for sawing hoops, two cutters arranged substantially at right angles to each other, and a cutter arranged at an angle to said two saws, whereby two hoops are cut from the log at one operation, substantially as set forth.

3. In a machine for making hoops, the combination of the reciprocating bed A A^1 A^2, the standards B B', sliding transversely of the bed, the saw-bearing standard K, the rack I, and pinion I^1, substantially as set forth.

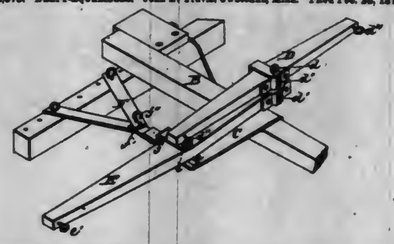
202,074.



202,074. LAMP-BURNERS. Edward E. Townsend, Thibodeaux, La., assignor of one-third his right to Hercule Dunezan, same place. Filed Feb. 11, 1878.

Claim.—In combination with the main wick-tube C of a lamp-burner and its wick therein, the supplemental wick-tube D, of smaller size, having its upper end curved at *a* toward the main wick-tube, and provided with a wick independently raised and lowered, as set forth.

202,075. DRAFT-EQUALIZERS. John H. Travis, Owatonna, Minn. Filed Feb. 26, 1878.



Claim.—1. In a draft-equalizer, the combination of tongue B, having strap C rigidly fixed thereto, with the auxiliary and adjustable tongue F and triple-tree E and double-tree D, mounted on the same, substantially as and for the purposes set forth.

2. The triple-tree E, combined with the auxiliary and adjustable tongue F, having hammer-strap *f*, and, by means of bolt *s* and slot *e*, with strap C, which is rigidly fixed to tongue B, substantially as described.

3. The double-tree D, mounted upon and combined with the triple-tree E by eyes *w* and draft-bolt *d* on their front faces, substantially as and for the purposes set forth.

202,076. LAMP-EXTINGUISHERS. Knut G. Tunk, Brooklyn, N. Y. Filed Feb. 15, 1878.

Brief.—The act of lifting the chimney out of the spring-nipper G raises the lever F, and causes the lids to close together above the wick-tube.



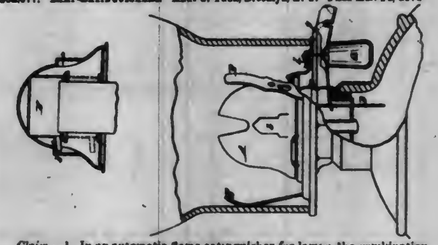
Claim.—1. In a lamp-burner, the combination of a lid or lids adapted to extinguish the flame with a nipper adapted to clamp the chimney between its projecting arms, said lids and nipper being connected through the medium of a suitable lever, substantially as and for the purposes set forth.

2. In a lamp-extinguisher, the combination, with the extinguishing-lids, which are hinged to a suitable carrier, of the projecting tangs or pikes, adapted to bear against the interior of the burner-cone for the purpose of effecting the closing of said lids, substantially as described.

3. The herein-described burner-cone, the same being provided with a rounded portion, *d*, adapted to direct the extinguishing-lids toward each other when elevated, substantially as shown and described.

4. The combination of extinguishers E E, slotted carrier D, lever F, stirrup *g*, and chimney-nipper G, substantially as shown and described.

202,077. LAMP-EXTINGUISHERS. Knut G. Tunk, Brooklyn, N. Y. Filed Mar. 14, 1878.



Claim.—1. In an automatic flame-extinguisher for lamps, the combination, with the carrier supporting the extinguisher-lids, of an operating-lever hinged at or near one end, and a weight located thereunder, said weight being suspended by a flexible medium between the hinged and free ends, and adapted at all times to bear against the under side of said lever, substantially as and for the purposes set forth.

2. In a lamp-extinguisher, the combination of lids E E, carrier D, hinged lever F, and weight G, suspended by cord or flexible medium *h*, passing through said lever, substantially as and for the purposes set forth.

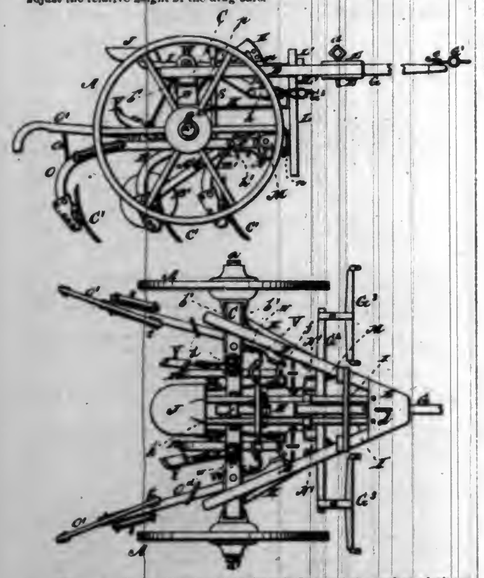
3. In combination with the hinged extinguisher-lids, made vertically adjustable, as explained, the projecting tangs connected therewith, and bent or curved in the direction of their length, said tangs being made to operate in connection with a recessed cone, substantially in the manner and for the purposes set forth.

202,078. PROCESSES FOR BLEACHING FEATHERS. Adolphe Viel and Cosaire F. Duflot, Paris, France. Filed Aug. 30, 1877.

Claim.—The herein-described process for bleaching feathers, consisting in the immersion of the feathers in a resinous bath of regulated temperature, and at the same time exposed to both light and air, substantially as specified.

202,079. CULTIVATORS. Thadeus P. S. Weems, Youngers, Md. Filed Dec. 8, 1877.

Brief.—The tongue slides forward and back in sockets upon the axle and the hounds, and is secured by a bolt in any desired position. The seat-bars and draft devices are attached to the tongue and move with it. The evener adjusts up or down. A combination coupling for the drag-bars, the removable center shovel-bar, and the fender-bars. A curved plate to spread and also adjust the relative height of the drag-bars.



Claim.—1. The combination of the hounds D D and the perforated plates E E, forming a socket, with the longitudinally-adjustable tongue G, carrying a draft device, and the seat I J, the pin *d*, and axle C, substantially as shown and described.

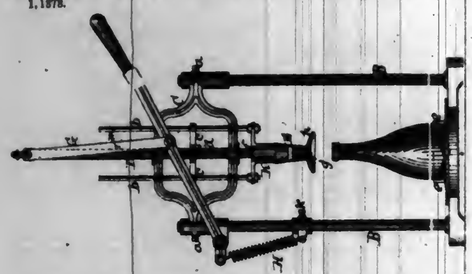
2. The segmental adjustable perforated clevis H, provided with the loop *h*, in combination with the adjustable tongue G and double-tree G', for the purposes herein set forth.

3. The combination, with the tongue, of the adjustable clevis H, pin *f*, loops *n n*, and seat supporting bars I I, substantially as and for the purposes herein set forth.

4. The combination of the plow-beams O and R and the curved slotted iron V, substantially as and for the purposes herein set forth.

5. The combination of the main clevis N, clevis *h'*, and adjustable arm A', carrying the revolving fender B', substantially as and for the purposes set forth.

202,080. BOTTLE-STOPPING MACHINES. Albert B. Weiss, Brooklyn, E. D., N. Y. Filed Mar. 1, 1878.



Claim.—1. The combination, in a bottle-stopping machine, of a stop, *m*, attached to the plunger D, which stop acts on the connecting-bar *e*, and prevents the plunger from descending too far, and a spring or weight, H, which raises the lever F, all combined and operating substantially as set forth.

2. The combination, in a bottle-stopping machine, of a weight or spring, H, to raise the lever F, a stop, *m*, attached to the plunger D, which stop prevents it from descending too far, and a stopper-guide, K, to lead the corks into the stopper-receiving funnel E, all combined and operating substantially as set forth.

3. The combination, in a bottle-stopping machine, of a sliding frame which allows the stopper-receiving funnel to descend until it rests on the top of the bottle, a stop, *d*, attached to the plunger, for lifting the frame, and a spring or weight, H, for raising the lever F, all combined and operating substantially as set forth.

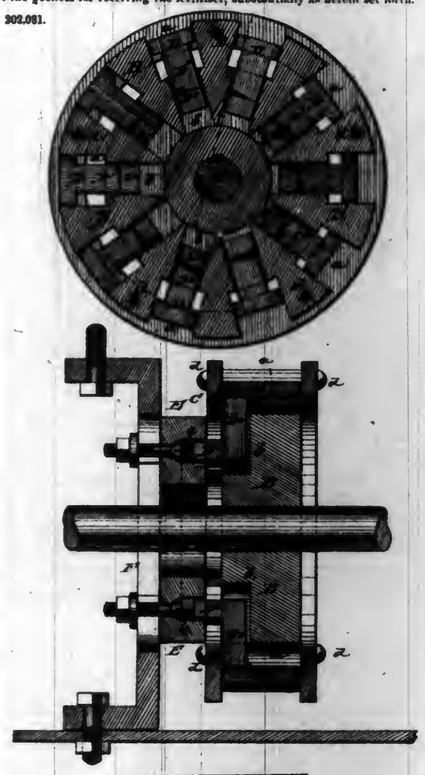
202,081. FERTILIZER-DISTRIBUTERS. J. W. Wheatley, Rappahannock Station, Va., assignor to himself and Burford D. Embrey, same place. Filed Feb. 28, 1878.

Brief.—Distributing-wheel having pockets provided with movable plungers, which are operated by an annular circularly-grooved plate. Said plate may be adjusted eccentric to the wheel, so as to regulate the depth of the pockets.

Claim.—1. The combination of the wheel B, formed with the pockets *a* and grooves *b*, the plungers D, each having an arm, D^1, and foot D^2, and the adjustable casting E, with circular groove *c*, all substantially as and for the purposes herein set forth.

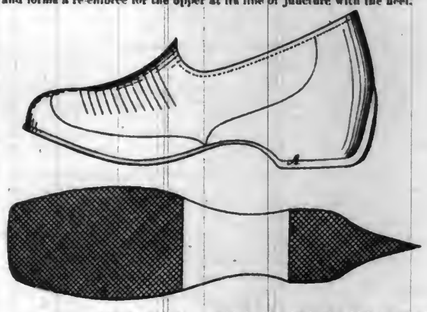
2. In a fertilizer-distributer, the combination, with a wheel provided with a series of pockets, and movable plungers therein, of a circularly-grooved plate, adjustable more or less eccentric to the wheel, for regulating the depth of the pockets for receiving the fertilizer, substantially as herein set forth.

202,081.



202,082. RUBBER BOOTS AND SHOES. Samuel E. Whittemore, Bristol, R. I. Filed Jan. 12, 1878.

Brief.—The heel portion of the sole is extended upward on the counter, and forms a re-enforce for the upper at its line of juncture with the heel.

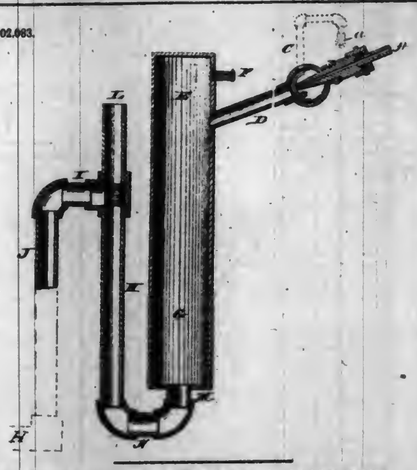


Claim.—A rubber boot or shoe provided with a heel-sole which is extended vertically at its rear, and is attached to the counter, substantially as described.

202,083. MACHINES FOR PURIFYING AND COMPRESSING AIR. Richard Wilson, Toledo, Ohio. Filed Jan. 16, 1878.

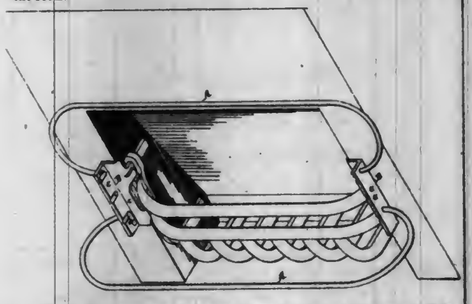
Claim.—The combination of the water-pipe A, with nozzle or jet B, pipe D, air-inlet C, chamber E G, with air-discharge F, water-pipes M, N, I, and J, and the column H, with outlet L, all constructed and arranged substantially as and for the purposes herein set forth.

202,083.



202,084. GRATE-FENDERS. Thomas F. Wilson, Rochester, Pa. Filed Sept. 20, 1877.

Brief.—A plate provided with a flange and a notched arm. When in position the notched arm extends into the fire-place, while the flange projects at right angles to the face of same. A clamp-bar catches the teeth on the arm, and, bearing against the grate, holds the attachment in position. Bent fender-bars are pivoted to the attachments, and project beyond the grate into the room.

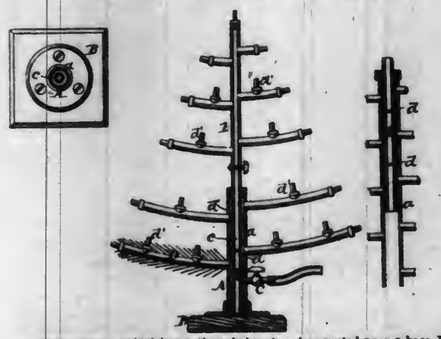


Claim.—1. A fender consisting of a bent bar, A, and attachments B B, jointed to the ends of the bar, and adapted to be secured to the grate or fire-place, as set forth.

2. The combination of the attachments B B, their holes and grooves, and the bent bar A, bent at the ends, as set forth.

3. The combination of the bent bar A, the attachments B B, having arms *d*, and the clamp-bars *f*, adjustable on the said arms, as set forth.

232,085. ARTIFICIAL TREES. John G. Wolf, New York, N. Y. Filed Feb. 13, 1878.

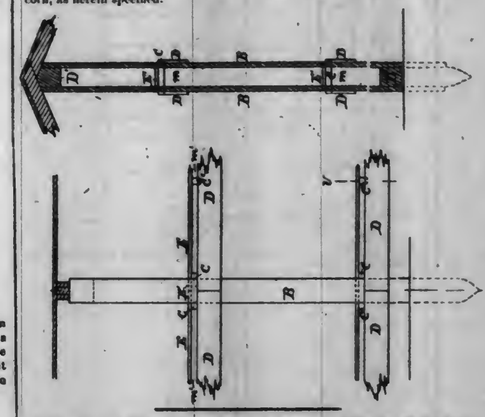


Claim.—In an artificial tree, the tubular stem A, mounted upon a base, B, and provided with radiating pipes having attached gas-burners, in combination with a tube of smaller diameter, having apertures *d* extending through and beyond the upper end of said stem, and also provided with radiating branch pipes having burners, and the gas-cock extending through the walls of both of said tubes and opening into the inner tube, substantially as shown and described.

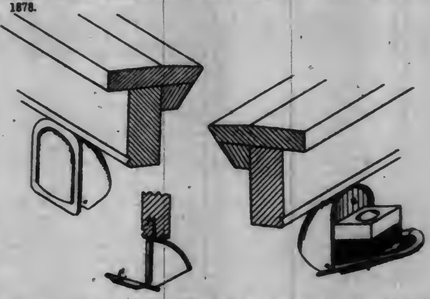
202,086. VENTILATORS FOR CORN-CRIBS. Wm. L. Wright, Hudson, N. Y. Filed Jan. 31, 1878.

Claim.—1. A ventilating-framing for corn-cribs, having uprights B, sliding to support the roof, in combination with longitudinal pieces E D D, forming inverted troughs or clear spaces *w*, with narrow apertures *w'*, adapted to conduct and distribute the air, as herein specified.

2. In a corn-crib ventilating-frame, the uprights B, arranged in pairs, the longitudinal pieces D D, placed on edge at each side, and the longitudinal pieces E, lying horizontally, in combination with each other and with intermediate pieces C C', adapted to support the parts against the pressure of the corn, as herein specified.



202,087. BILLIARD-CHALK HOLDERS. William Koehringer, New Orleans, La. Filed Jan. 28, 1878.



Claim.—1. In a billiard-chalk holder, a case containing a lid and bottom, made integral and practically at right angles, and pivoted therein, substantially as described.

2. In a billiard-chalk holder, a case containing a pivoted bottom plate, adapted to tilt the chalk forward upon the covering-plate when the case is opened, substantially as described.

REISSUES.

CORRECTION.

[In THE OFFICIAL GAZETTE, No 10, current volume, issue of March 12, 1878,] the claims of Reissue Patent No. 8,117 were published, together with a brief of the invention calculated to injure the patentee and bring discredit upon the Office. This brief was inserted without the knowledge or approval of the Commissioner, or of the Examiner of the Class to which the invention belonged.

In justice to the inventor, the drawing and claims are republished, with a brief which is thought to properly represent the invention.]

8,117. MACHINES FOR DRESSING OR SIZING YARN. Benj. Saunders, Nashua, N. H., assignor, by mesne assignments, to A. H. Saunders. Patent No. 43,627, July 19, 1864. Filed February 9, 1878.

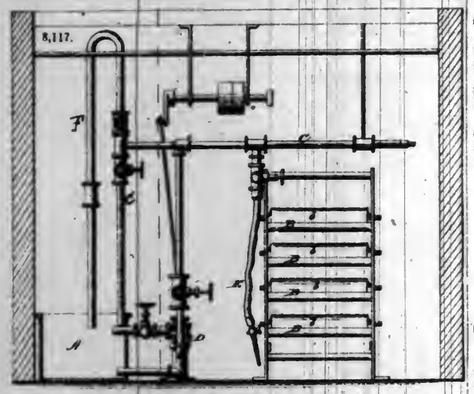
Brief.—Combination of a tank, means for forcing liquid, means for conveying the same, and the dresser-boxes of a sizing-machine, constituting an automatic apparatus for supplying the machine with size.

Claims.—1. The combination, with the sizing tank or reservoir and the dresser-boxes of a sizing-machine, of a pump and suitable pipes for conveying the sizing from the tank or reservoir to the boxes, substantially as herein set forth

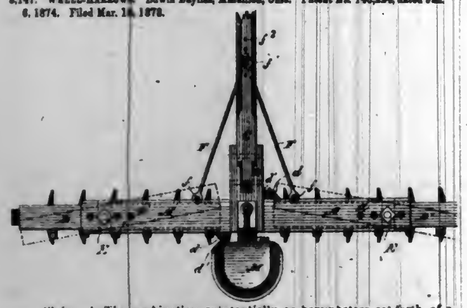
2. A return-pipe, C, in combination with the pump B and size-tank A, or a reservoir connected therewith, substantially as herein specified, for the purpose of keeping the size in continuous motion and distributing it in a simple and easy manner.

3. The bent tube F, in combination with the return-pipe C, pump D, and tank A, substantially as herein specified, for the purpose of giving the requisite pressure at the moment of opening the branch valves to let the size into the various boxes or troughs.

8,117.



8,147. WHEEL-HARROW. Edwin Hoylins, Macedon, Ohio. Patent No. 146,324, dated Jan. 6, 1874. Filed Mar. 18, 1873.



Claim.—1. The combination, substantially as hereinbefore set forth, of a main frame (or main transverse bar) and wheel or disk gangs connected therewith by interposed swiveling hinge-connections, which permit the gangs to vibrate freely relatively to the main frame to conform to uneven surfaces over which they pass.

2. The combination, substantially as hereinbefore set forth, of a main frame, (or main transverse bar,) a tongue connected therewith, wheel or disk gangs, united with the main frame by interposed swiveling hinge-connections, and an adjustable connection between the tongue and wheel or disk gangs, whereby the angle of the gangs relatively to the line of draft may be varied without interfering with their vibrations on their hinge-connections.

3. The combination, substantially as hereinbefore set forth, of a main frame, (or main transverse bar,) wheel or disk gangs connected with the main frame by interposed swiveling hinge-connections, and chains or stops, for limiting the vibrations of the gangs relatively to the main frame.

4. The combination, substantially as hereinbefore set forth, of a main frame, (or main transverse bar,) a tongue connected therewith, a driver's seat, wheel or disk gangs connected with the main frame by interposed swiveling hinge-connections, and adjustable connections between the gangs and tongue, to adjust the angles of the disks relatively to the line of draft, and to limit their vibrations relatively to the main frame.

5. Harrow disks provided with polygonal sockets, or an equivalent adjusting device, in combination with the spacing-ferrule constructed with projections interlocking with the disk-sockets, substantially as shown, and for the purposes described.

6. The combination, substantially as hereinbefore set forth, of gang-bars, hangers having bearings enlarged at one end to constitute lubricating-chambers, friction-washers inclosed in said lubricating-chambers, and disk-gang spindles inclined to the line of draft, whereby wear of the spindles is prevented and lubrication insured.

8,148. BASKETS. Bernard G. Meinlhheim, Newtown, and Wm. D. Chase, New York, N. Y., said Chase assignor to said Meinlhheim. Patent No. 170,755, dated Dec. 7, 1875. Filed Mar. 12, 1878.



Claim.—1. A basket constructed with metallic uprights A A and wooden hoops B B, woven around said uprights, substantially as shown and described.

2. The basket constructed with metallic uprights A A, wooden hoops B B, and top rim C, said rim serving to join the upper ends of the metallic uprights, substantially as specified.

3. The metallic bottom D, combined with and fastened to the metallic uprights A A of a basket-frame, substantially as specified.

8,149. GATES. Karl B. Rodd, Chassopolis, Mich. Patent No. 195,583, dated Sept. 25, 1877. Filed Jan. 10, 1878.

Brief.—The claims and drawing must be relied on to explain the new invention.

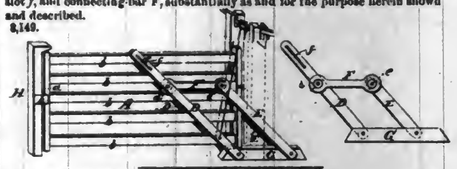
Claim.—1. The pivoted tilting bars D E, having wheels or rollers *d e* and slot *f*, substantially as and for the purpose herein shown and described.

2. The combination of a sliding or tilting gate, A, with the pivoted tilting bars D E, having wheels or rollers *d e*, substantially as and for the purpose herein shown and described.

3. The combination of the gate A, having pin *g*, with the pivoted bar D, having roller *d* and slot *f*, substantially as and for the purpose herein shown and described.

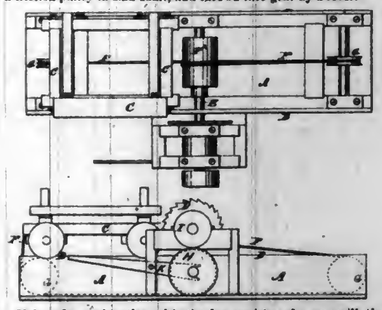
4. The combination of the gate A, having pin *g*, with the tilting frame, consisting of the parallel pivoted bars D E, having wheels or rollers *d e* and slot *f*, and connecting-bar F, substantially as and for the purpose herein shown and described.

8,149.



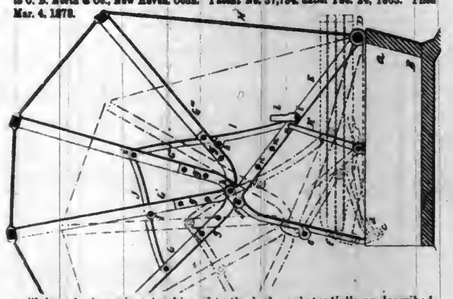
8,150. LOG-CARRIAGES FOR SAW-MILLS. Willard Lamb, Green Bay, Wis. Patent No. 132,066, dated Oct. 8, 1872. Filed Feb. 28, 1878.

Brief.—The carriage is moved to and fro by a wire rope or chain running over pulleys at each end of the carriage, and connected at each end of the same, and wound around a drum mounted on a saw-shaft having its bearings in the middle of the main frame, and operated by the drum, it being driven by a friction-pulley in said shaft, and thrown into gear by a lever.



Claim.—In combination with the log-carriage of a saw-mill, the rotary drum, the rope or chain wound around said drum, the guide-sheaves, the friction-pulleys, and the lever, substantially as shown and described, for the purpose specified.

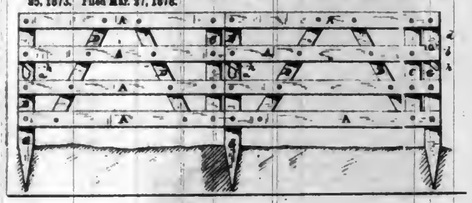
8,151. CARRIAGE-TOPS. Ira Cogswell, Jr., Englewood, Ill., assignor, by mesne assignments, to O. B. North & Co., New Haven, Conn. Patent No. 37,734, dated Feb. 24, 1863. Filed Mar. 4, 1878.



Claim.—1. A carriage-top hinged to the body, substantially as described, so as to be dropped forward of the seat, and combined with a device to hold it in upright or intermediate positions, substantially as described.

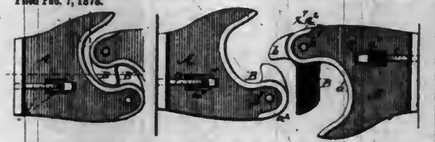
2. The combination of the inclined arms E E, hooks K, and folding bars F F with the bars I J, bows G G' G'' G''', and seat B, all in the manner herein shown and described.

8,152. PORTABLE FENCES. Horace M. Dake, Hunda, N. Y. Patent No. 136,217, dated Feb. 25, 1873. Filed Mar. 27, 1878.



Claim.—The stake-post G, provided with hook A and pin *d*, mortised cross-piece B, and a portable panel, provided with notched board A, and vertical and inclined cross-pieces C and D, all constructed and arranged to form a portable fence, as and for the purposes specified.

8,153. CAR-COUPLINGS. Eli H. Janney, Alexandria, Va., assignor, by mesne assignments, to the Janney Car Coupling Company, same place. Patent No. 138,405, dated Apr. 29, 1873. Filed Feb. 7, 1878.



Claim.—1. A twin coupling having each part provided with a shank, *a*, and pivoted nose B, substantially as described.

2. The combination of a pivoted nose and rigid shank with a guard-arm, substantially as described.

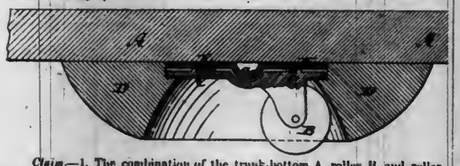
3. The combination, with the shank of the draw-head, of a pivoted nose having a lever-arm, substantially as described.

4. In combination with a draw-head or shank, a pivoted nose and lever-arm and automatic locking mechanism, substantially as and for the purpose described.

5. The draw-head having the horizontal recess, in combination with the lever-arm, adapted to swing back into the recess, as described.

8,154. CASTERS. Thomas L. Rivers, St. Louis, Mo., assignor, by mesne assignments, to Wm. B. Gould, New York city. Patent No. 81,873, dated June 29, 1869. Filed Feb. 16, 1878.

Brief.—The caster-frame is clamped between the trunk-bottom and a mortised outer plate. The wheel of the caster, being within the recess, is protected from injury.



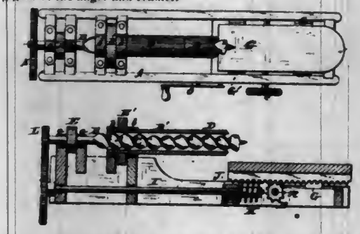
Claim.—1. The combination of the trunk-bottom A, roller B, and roller-plate C, to which the roller is attached by ears, with the mortised plate D, through which the roller is passed from above, and which is attached to the under side of the trunk, substantially as herein shown and described.

2. The combination of the plate C, in which the roller is attached by ears, and roller B with the mortised plate D, for attachment to a trunk, substantially as specified.

3. The combination of the roller B and its attached plate C, with the mortised surrounding-plate D and bearing-plate E, substantially as and for the purpose specified.

8,155. WOOD-BORING MACHINES. James D. Sheets, Horseheads, assignor of three-fourths interest to Robert Colwell and Stoddard D. Conkling, Horseheads, and Charles E. Vinton, Elmira, N. Y. Patent No. 192,793, dated July 3, 1877. Filed Mar. 12, 1878.

Brief.—The auger is surrounded by a revolving reamer, both mounted in a frame which supports the log-carriage, the same gear operating the auger, reamer, and carriage. The carriage can be thrown in or out of gear with the driving-gear of the auger and reamer.



Claim.—1. In a machine for boring logs, an auger, C, revolving inside of a revolving sleeve or case, and projecting beyond the same, substantially as herein set forth.

2. In a machine for boring logs, an auger, C, revolving inside of a sleeve or case, D', said sleeve being provided with a reamer, D, and the auger projecting beyond the sleeve and reamer, substantially as herein set forth.

3. The combination with the table G, provided with rack-bar *d*, of the feed-shaft I, run from the auger-shaft, the worm H, secured on said shaft, and the hinged bar J, with the lever O, for throwing the worm in and out of gear, substantially as and for the purposes herein set forth.

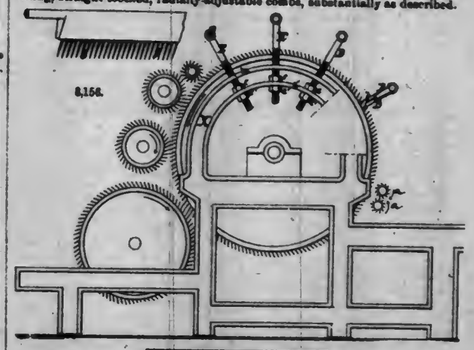
8,156. WOOL-CARDING MACHINES. Peter L. Klein, Werden on the Ruhr, Prussia, Germany. Patent No. 185,332, dated Dec. 12, 1876. Filed Nov. 30, 1877.

Brief.—A series of stationary combs, with straight elastic teeth, is arranged radially about the main cylinder in place of top rolls or flats.

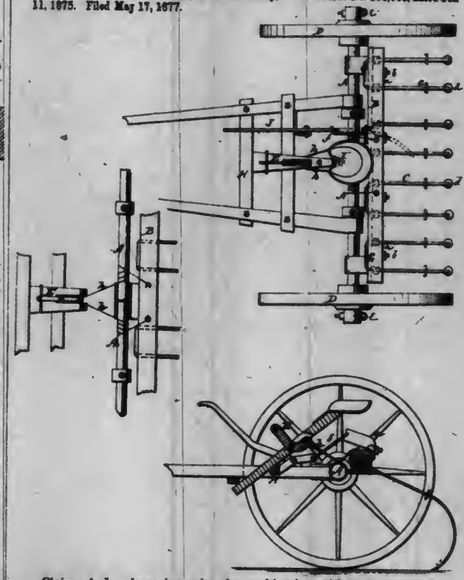
Claim.—1. The combination, in a carding-machine, of a series of non-rotating combs, having pointed straight elastic teeth, with the main carding-cylinder, said combs extending across the entire length of said cylinder, and having their teeth pointing toward the center thereof, substantially as and for the purpose set forth.

2. The combination of the main carding-cylinder and the series of non-rotating, straight-toothed, radially-adjustable combs, substantially as described.

8,156.



8,157. HORSE HAY-RAKES. Charles La Dow, Albany, N. Y. Patent No. 163,648, dated Oct. 11, 1875. Filed May 17, 1877.



Claim.—1. In a horse hay-rake, the combination, with parts rotating permanently with each traveling wheel, of a controllable friction dumping device, acted upon by each wheel in its forward movement only, and a lever for causing said friction device to bite the rotating surface at will.

2. A friction gripe applied spirally to the revolving portion of a wheel-rake, in combination with suitable mechanism to determine its stress upon said revolving portion, for the purpose of raising and lowering the teeth.

3. The combination of a revolving axle, a rake-head hung in rear thereof, a friction-gripe connected with the rake-head and passed around the circumference of the axle, and a lever for tightening said gripe around the axle.

4. The combination of a friction device and a divided axle having the wheels rigidly affixed thereto.

5. The reversible button, in combination with the rake teeth and head.

6. The rubber or equivalent stop to rake-teeth.

7. The longitudinally-grooved button G, pivoted to the front of the rake-head, in combination with the bent rake-teeth and grooves in the head, whereby the teeth are secured to the head and a free hinge movement of the same permitted, substantially as herein set forth.

8. The lever-handle, curved to hook under one of the teeth, in combination with the friction-gripe, substantially as herein described, the axle carrying the wheels, the rake-head, and the rake-teeth, for the purposes herein set forth.

9. The combination of a friction-gripe with the axle and rake-head, for locking them together, for the purposes set forth.

8,158. LOCKS. Silas B. Brooks, Chicago, Ill., administrator of Linus Yale, Jr., (deceased,) assignor to Yale Lock Manufacturing Company, Stamford, Conn. Patent No. 48,475, dated June 27, 1865. Filed Nov. 30, 1877.

Brief.—The lock-case with its bolt, and the escutcheon with its tumbler pins and key-cylinder, are independent of each other, the escutcheon being adjustable for different thicknesses of doors. The sheet-metal key has a corrugated edge, which, when inserted in the key-cylinder, slides over the ends of the pins and adjusts them.

Claim.—1. The combination of a set-screw with an elastic bolt-guide and bolt, substantially as described, for detachably securing a bolt in a lock-case.

2. The combination of a pointed set-screw, operating like a wedge, a slotted elastic bolt-guide, and a bolt provided with a lug or projection, substantially as described.

3. The combination of a lock-case containing a bolt and a separate tumbler-case or escutcheon containing the tumblers or locking mechanism to be actuated by the key, the tumbler-case being adjustable with respect to the lock-case, to adapt the lock to varying thicknesses of doors, or to either a right or left hand door, substantially as described.

4. An independent escutcheon or tumbler-case carrying all the key mechanism, screw-threaded, for the purpose of adjusting and securing it to a lock-case, substantially as described.

5. The combination of a lock-case containing a bolt, a tumbler-case or escutcheon containing tumblers or the locking mechanism to be actuated by the key, and a fastening device, located between the escutcheon and the face-plate of the lock-case, for securing the escutcheon in its position when properly set or adjusted relatively to the lock-case, said fastening device, when the lock is in use, being accessible only when the door is open, substantially as described.

6. The combination of a screw-threaded lock-case containing a bolt, a screw-threaded escutcheon or tumbler-case containing tumblers or the locking mechanism to be actuated by the key, and a set-screw and one or more internally screw-threaded sockets, located between the escutcheon and the face-plate of the lock-case, so as to be accessible when the lock is in use only from the edge of the door when the door is open, substantially as described.

7. The combination of an independent escutcheon or tumbler-case and a key-cylinder contained and revolving therein, each provided with one or more transverse coincident tumbler-recesses, substantially as described.

8. The combination of an independent escutcheon or tumbler-case, a key-cylinder contained and revolving therein, and one or more transverse tumblers contained partly within the tumbler-case and partly within the key-cylinder, whereby the key-cylinder is interlocked with the fixed part of the lock, substantially as described.

9. The combination of an independent escutcheon or tumbler-case, a key-cylinder contained and revolving therein, and one or more transverse tumblers, I J, one of which is contained wholly within the key-cylinder, and revolves with it, and the other of which projects from its recess in the tumbler-case into the key-cylinder, except when the key is in place, substantially as described.

10. The combination of a tumbler-case and a key-cylinder contained and revolving therein, both provided with one or more coinciding transverse tumbler-recesses, the key-cylinder having a key-slot intersecting its tumbler-recesses of a lateral width less than the corresponding dimension of said recesses, substantially as described.

11. The combination of a case containing tumblers, a flat sheet-metal key for setting the tumblers, and a key hub or cylinder contained within the case and having a radial eccentric key-slot, which guides and supports the flat key during its insertion and rotation, substantially as described.

12. The combination of an escutcheon or tumbler-case for containing the tumblers or locking mechanism to be actuated by the key, and a rotating key cylinder or hub contained within the same, when the axis of the key-hub is parallel with but eccentric to the axis of the escutcheon, substantially as described.

13. The combination of a key-cylinder having a longitudinal key-slot cutting its periphery parallel with its axis, and extending radially to about its center, so as to be on one side of or eccentric to the cylinder, with a surrounding stationary case, forming one wall of the key-slot, whereby the key is retained in the slot during its revolution, substantially as described.

14. The combination of a key-cylinder, radially slotted upon one side for the reception of a sheet-metal key, and sliding tumblers wider than the keyway, which normally rest across the keyway upon bearings which limit their downward throw, so as to be adjusted by the insertion of the key, and then to turn with it and the key-cylinder, substantially as described.

15. A key cylinder or hub containing a key way for a sheet-metal key, provided at one end with a projecting head or flange, and at the other with a wing, arm, or cam, whereby said cylinder is secured longitudinally in its place in the lock, substantially as described.

16. The combination of an annular knobbed ring with a grooved key-cylinder, substantially as described.

17. A flat key composed of a single piece of metal, beveled or inclined at its forward end, or on the front side of its first bit, and between its bits, for easy insertion and withdrawal under tumblers, substantially as described.

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THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE

VOL. 13—No. 15. TUESDAY, APRIL 9, 1878. PRICE—$6 per year.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of New York.

I. C. FRESE & CO. *vs.* EDWARD BACHOF.

[*In Equity.—October Term*, 1877.]

Long-continued use of a particular form of package and of particular colors for its wrappers, papers of directions, and labels having served to distinguish the complainants' article in the trade, the appropriation of such peculiarities in form and color by another dealer for packages of the same article will be restrained.

A meritorious cause of action properly brought in the firm-name for violation of firm-rights being established, leave was given to move within a time limited before final decree to join a member of the firm who had been omitted as a party to the suit.

MOTION TO AMEND BILL.

Upon leave given before entry of final decree, motion was made and granted to join as party to the cause a firm-member who had been previously omitted in an action brought and maintained in the firm-name.

Costs were disallowed, except so far as they had accrued since curing the defect of non-joinder by the appearance of the omitted partner.

[*Test suit. Similar judgment entered by stipulation against Th. Briedenfeld and Klein, Fleet & Co.*]

[*Arthur v. Briesen*, for complainants; *Brodhead & Wright, Elliott F. Shepard*, and *Simon Sultan*, for defendant.]

OPINION.—*March* 22, 1878.

WHEELER, *J.*:

This cause has been heard on bill, answer, replication, proofs, and argument.

The bill is brought by Christel F. H. Frese alone, claiming to stand upon rights acquired by a firm of methods of identifying their wares, of which he alleges himself to be now the sole member. The defendant does not admit any right to the orator, but leaves him to his proof. The proof shows Johann Siegmund Schroeder to be a member of the firm equally with the orator, and whatever right it does show in respect to the matter of the bill it shows to belong to the firm. As the case stands, the orator has no right to be protected in this form, and if it should proceed to a decree the bill would have to be dismissed.

But the bill is brought in the firm name and right, and has been litigated in that right, and the want of the other member is a defect that can be cured by amendment. (*Lewis & Co.* vs. *Locke*, 41 Vt., 11.) Under such circumstances, where a case appears to be meritorious, it is not usual to proceed to a decree without affording an opportunity to amend upon some terms. (*Story's Eq. Pl.*, section 236.) This consideration makes it necessary to inquire into the merits of this case.

The orator's firm has not any patent on the compound called Hamburg tea. The manufacture and sale of that article are open to all persons. Nor is it in the bill directly alleged, nor does the bill appear to proceed on the ground that this name was appropriated and used by them to identify their production. So, for aught that appears, all persons are at liberty to apply that name to their own manufactures. The proof shows clearly that the name of the orator's firm has long been used in this business, and that the wares of the firm of this sort came to be known by it. It also shows that this firm is a successor of the former one. Whether it is or not is a question of fact, and this fact could be and has been established by parol proof. The trade-marks of the firm were partnership property, and would pass to the successors. (Coll. Part, section 165.) The defendant does not claim the right to use the firm-name of the orator's firm, nor their registered trade-mark, and there is no question made about those. But the orator claims that his firm and their predecessors have long been accustomed to pack this article in long cylindrical packages with pink wrappers, and to have crimson papers of directions, and yellow ones of warning, tied in with each package, and their firm-name printed across a white label within a circle pasted across the ends of the string, and the same embossed with the words "Hamburg, Hoffensack, 6" on another white label pasted on the package, so that the package by its form and colors would be at once known by its general appearance without taking time to read anything on it, and that their wares have come to be well known as theirs by the appearance of the packages. They have the exclusive right to sell their wares as their own, and no other person has any right, by any means, to palm off any other wares than theirs as theirs. And if any person does utter any other wares than theirs as theirs an action at law would lie. And when-

ever there is danger that this would be done so often as to occasion multiplicity of suits, or so as to work irreparable injury, a court of equity would interfere by injunction. The orator's proof shows that the firm has long used this style of package.

It also appears that the defendant at first openly used the style of package, and firm-name; that, in obedience to warning, he discontinued the use of the name on the outside of the package, and that, under the pressure of legal proceedings, he has stopped the use of that altogether, and that of the words "Hofensack 6," but that he still continues the exact form and style of package, substituting his own name merely for that of the firm on the labels. The exact question is, whether this is a simulation of his wares for those of the orator's firm calculated to have them pass for the orator's firm's wares. Probably no mere form of a package would ever alone amount to a representation capable of allowing that the wares contained in it were those of any particular make. But when the form of these packages, the color of the wrappers and papers done up with them, and the form and color of the labels are considered all together, it is quite apparent that when they had been so long used by the orator's firm for holding this particular compound when offered for sale the mere appearance of the packages would amount to a representation that they contained that article of manufacture.

It is equally obvious that the very slight changes made by the defendant in the general appearance of his packages used by him now would not put the general public purchasing such articles on their guard, and that the use of such packages for a similar article would amount to a forcible representation that it was the same article that the orator's firm had been accustomed to pack in that way. And when the mode in which the defendant commenced using such packages, and the various steps by which he has been brought to his present method are considered, there does not seem to be any fair question but that his use of them now is for the purpose of passing off his wares for those of the orator's firm.

Upon this view of the case it seems that, with the proper parties before the court, the defendant should be restrained by injunction from making the use he does of these symbols.

Let the cause stand, with leave to the orator to move for an amendment if he shall see cause within thirty days; otherwise let a decree be entered dismissing the bill of complaint with costs, but without prejudice.

OPINION.—*Motion to amend bill.*

This cause has been further heard on the motion of the orator for leave to amend the affidavit of A. v. Briesen, solicitor, in support thereof and briefs of counsel.

From the whole case it appears that the firm of I. C. Frese & Co. consisted of two members. This cause was brought by one member, in the name of the firm, without joining the other member. The whole litigation has been carried on with reference to a right of the firm to protection and relief against the defendant; and it has been carried on in precisely the same manner that it would have been if the other member had joined in the bill as an orator, so far as has been made to appear or is claimed. The cause of action that has been litigated is exactly the same that the bill will cover if the amendment is allowed and made. It is urged in opposition that the court has no power to permit an amendment to be made that will change the cause of action. This is considered to be true when the amendment would bring in a cause of action not before involved; and that is the sense in which the remark of the supreme court of Vermont, in *Lewis & Co.* vs. *Locke*, 41 Vt., 11, quoted in the defendant's brief, was used. A necessary amendment always changes a cause of action in another sense, as when it changes what would be no cause of action to a good one, or one that the proof will not support to one that it will, or one imperfectly described to one well described. In this case the cause of action in the name of the firm is well set forth, but the firm itself is not properly described and represented. The amendment will cure that imperfection, which is precisely what was done in the case cited. And it may be done at this stage of the cause. (*Tremaine & Co.* vs. *Hitchcock*, 23 Wall., 518.) It is also argued that the orator should not be favored because he seeks to restrain dealing in the well-known compound involved called "Hamburg Tea." But that is not the relief sought, nor that to which the firm is thought to be entitled; but it is that the defendant shall not pass off tea of this sort, of his own or others' manufacture, for that of the orator's firm. This is not claiming any monopoly, nor fostering one, but is merely claiming and protecting a right of that firm that is common to all persons.

On the whole, it is considered that the amendment should be allowed, but that the orator should recover no costs of the proceedings in the cause while it was so situated that it could not proceed to a final decree in his favor; and the defect was one of which he must have had knowledge, although probably he had no knowledge of its effect.

Let an order be entered granting leave to amend the bill of complaint by permitting said Johann Siegmund Schroeder to appear as a party complainant therein in his right as a member of the firm of I. C. Frese & Co. at any time before the 15th day of May, 1878; and, upon such appearance, let a decree be entered for the orators according to the opinion hereinbefore filed, with costs to the orators after the appearance; and if he does not so appear, let a decree be entered dismissing the bill of complaint with costs, but without prejudice.

DECREE.

This cause having come on to be heard upon the bill of complaint herein, the answer of the defendant, E. Bachof, the replication of the complainants to such answer, the amendment to the bill of complaint duly entered in the order-book, and the proofs—oral, documentary, and written—taken and filed in said cause, and the same having been argued by counsel for the respective parties:

And it appearing that the firm of I. C. Frese & Co. is exclusively entitled to the style and arrangement of packages mentioned in the bill of complaint for containing the medical compound known as "Hamburg Tea," manufactured and sold by said firm, and also to the exclusive use of its registered trade-mark, mentioned in said bill of complaint, and that the defendant has infringed the rights of the complainants by manufacturing, using, and selling what purports to be "Hamburg Tea," in packages of substantially the same style and arrangement as those to which the complainants' firm, of I. C. Frese & Co., is exclusively entitled, and also by applying to said packages the complainants' said registered trade-mark—

Now, therefore, in consideration thereof, it is ordered, adjudged, and decreed, and the Court doth hereby order, adjudge, and decree as follows, viz:

1. That the said complainants do recover of the defendant those costs and charges and disbursements in this suit—to be taxed—which accrued after Johann Siegmund Schroeder has been made a party complainant herein in his right, as a member of the complainants' firm of I. C. Frese & Co.

2. That the said complainants do recover of the defendant the damages which the complainants have sustained by, and compensation for the, manufacture, use, and sale by said defendant of medical or other goods contained in packages made in imitation of the style and arrangement of complainants' packages, set forth in the bill of complaint, or resembling the same so nearly as to be calculated to deceive.

3. That the said complainants do recover of the defendant the damages which the complainants have sustained by, and compensation for, the manufacture, use, and sale by the defendant of medicinal or other goods contained in packages to which the complainants' registered trade-mark No. 1946, or substantially the same, or so nearly resembling it as to be calculated to deceive, was affixed.

4. That Joseph M. Deuel, of the city of New York, N. Y., be appointed master to ascertain and take and state and report to the court the number of packages containing medical or other goods manufactured or put up, and the number sold, by the defendant, or on his behalf, in infringement of the style and arrangement of the complainants' package, and the number of such packages now on hand; and also the number of packages manufactured or put up, and the number sold by the defendant, or on his behalf, having the complainants' registered trade-mark No. 1,946, or substantially the same, or so nearly resembling the same as to be calculated to deceive, affixed thereto, and the number of such packages on hand; and also the gains, profits, and advantages which the said defendant has received, or which have arisen or accrued to him by reason of such infringements, and the damages suffered by the complainants, and the compensation due the complainants by virtue thereof.

5. That the said master, on such accounting, shall have the right to cause an examination of said defendant, and of other witnesses, to be had *ore tenus* or otherwise, and shall have the right to order the production of the books, vouchers, and documents, and other memoranda of said defendant, his agents, servants, and attorneys; and that the said defendant and other necessary witnesses attend for such purpose before said master from time to time, as such master shall direct.

6. That a perpetual injunction be issued in this suit forthwith against the said defendant, restraining him, his clerks, agents, servants, attorneys, and workmen, and all claiming or holding under or through him, according to the prayer of the bill of complaint for such injunction, but in accordance with the opinion filed in this cause.

U. S. Circuit Court—Eastern District of Missouri.

CALVIN L. HERRING *vs.* GAS CONSUMERS' ASSOCIATION.

[*In Equity.—Demurrer to the Bill.—Decided March* 28, 1878.]

Action for infringement may be maintained against a joint owner of a patent for the unauthorized use of a device which infringes it.

Damages recovered for such infringement will be proportioned to the respective interests of the parties.

The case distinguished from that in which the joint owner uses the device secured by the common patent.]

DILLON and TREAT, *JJ.*:

The plaintiff avers substantially that he is owner of an undivided two-thirds interest in the patent described, and that the defendant is owner of the other individual one-third interest; that the defendant is using a device which is an infringement upon their common patent, and that he is so doing under cover of their common patent. Hence the claim for damages for said infringement; not for the entire amount thereof, but for plaintiff's proportion, to wit: two-thirds. The direct question presented is whether an infringer of a patent can escape liability for his infringement because he is a joint owner of the original patent upon which the infringement occurs. The cases cited do not reach the precise point raised by this bill. It is evident that if a stranger was guilty of the infringement he would be compelled to respond in damages. Can a part owner infringe the common patent and escape all liability? If he can, it is obvious that however small his aliquot part he can make the enjoyment of the patent valueless to his joint owners. He has, by virtue of the joint ownership, a right to use the patent, but he has no right more than a stranger to infringe the same. If there is an infringement the right of recovery is in the party wronged. All the joint owners should ordinarily be parties plaintiff, but if the wrong-doer is one who is guilty to the damage of the other joint owners the latter should not be left remediless. As to such infringement they are strangers. All the joint owners are on the record, and the amount of the recovery determines their respective interests. The infringer cannot escape the consequences of his wrong to his joint owners by averring that he was by his infringement injuring not his joint owners alone, but himself also. In other words, he cannot, under cover of his interest in the common patent, shield every wrong-doer who may infringe the patent. He can as to the other part owners, by infringing, become liable to them for the wrong done. The amount of the recovery will be in proportion to their respective interests. Were this so, the door would be open to the grossest frauds by one joint owner against all the other joint owners. The case of *Pitts* vs. *Hall* (3 Blatchf., p. 204,) and the comments thereon in Curtis on Patents, sections 108 *et seq.*, do not cover this case. The questions there discussed pertain to the use by one joint owner of the common property. The difficulties in maintaining an action for an infringement against a joint owner who merely uses the common patent may be insurmountable. As to that no opinion is expressed. In this case an entirely new and distinct proposition is presented, viz: One of the several joint owners is not using the common patent, but an infringing patent. His defense is that inasmuch as he had a right to use the original patent without question from his joint owners, despite the decision in *Pitt* vs. *Hall*, *supra*, he has a right, also, to use any infringing patents on the ground that his right to use the original being vested in him, his use of other and infringing patents did not cause any wrong or injury to himself as joint owner. In other words, the defendant contends that as one joint owner he could use the common patent without being liable to account to the other joint owners; that he could not be sued as an infringer for using what he had a right to use by virtue of his proprietary interest, and therefore if he used an infringing device he was only injuring himself in what he had a proprietary right to forbid. This would be correct if no interest except his own were involved, for a man may do what he pleases with his own, and *volenti non fit injuria* would be *a fortiori* applicable in such a case. If a stranger were using the infringing patent, this action would unquestionably be against him, and the question before us is whether it will be against a joint owner, or, in the language of the bill, whether he, "under cover" of his joint ownership, can infringe and escape liability. So far as he acts outside of his interests or rights or powers as a joint owner, there is no adequate reason for treating him *quoad hoc* otherwise than as a stranger. If this be not so then one joint owner may destroy without remedy the rights of the other joint owner. The demurrer is overruled.

TRADE-MARKS.

[Each certificate bearing date April 9, 1878.]

5,828.—FLOUR.—*Geo. V. Hecker & Co.*, New York, N. Y. Application filed February 11, 1878.
"The arbitrarily-selected word 'SELF-RAISING.'"

5,829.—HORSESHOE-NAILS.—*Ausable Horse Nail Company*, Keeseville and New York, N. Y. Application filed March 12, 1878.
"A capital letter A, formed of three horseshoe-nails, of which two form the sides or legs of the letter A, and the third the cross-bar or bridge of the same."

5,830.—CIGARS, CIGARETTES, AND CHEROOTS.—*John Blakely*, New York, N. Y. Application filed March 16, 1878.
"The word-symbol 'BUENA VISTA.'"

5,831.—MEDICINES FOR THE RELIEF OF CATARRH, &c.—*Rush B. Heintzelman* and *Charles B. Coe*, New York, N. Y. Application filed March 9, 1878.
"The fancifully-formed symbolic word 'CATAREBA.'"

5,832.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Spiess*, New York, N. Y. Application filed March 6, 1878.
"The representation of a man sitting in a grotto, which is embellished with snail-like ornaments at the sides."

5,833.—YEAST.—*Richard & Wood*, Woodberry, Md. Application filed March 13, 1878.
"The word 'Maryland,' used arbitrarily, and the representation of the Maryland coat of arms."

5,834.—BAKING-POWDER.—*Smith, Hanway & Co.*, Baltimore, Md. Application filed March 7, 1878.
"The word-symbol 'MORNING GLORY.'"

5,835.—LOCKS AND KEYS.—*The Smith & Egge Manufacturing Company*, Bridgeport, Conn. Application filed March 14, 1878.
"The word-symbol 'GIANT.'"

5,836.—ESSENCE OF PETROLEUM FOR MEDICINAL PURPOSES.—*Weeks & Potter*, Boston, Mass. Application filed February 21, 1878.
"The word-symbol 'DEODOROLEIN.'"

5,837.—SMOKING-TOBACCO.—*Robert M. Chambers*, Lynchburg, Va. Application filed March 15, 1878.
"The fanciful words 'Peaks of Otter' and the landscape within an oval figure."

5,838.—PLUG CHEWING-TOBACCO.—*Hugh M. Cochran*, McConnelsville, Ohio. Application filed March 1, 1878.
"The letter C in triplet, the three C's overlapping each other, and equidistant, and forming a group."

5,839.—PRINTING-PRESSES.—*J. W. Daughaday & Co.*, Philadelphia, Pa. Application filed March 7, 1878.
"The word-symbol 'MODEL.'"

5,840.—WOOLEN OR WORSTED YARNS.—*J. C. Graham*, Philadelphia, Pa. Application filed March 11, 1878.
"The representation of an eagle."

5,841.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Edward Hilson*, New York, N. Y. Application filed March 12, 1878.
"The word-symbol 'DOCTOR'S PRESCRIPTION.'"

5,842.—SMOKING-TOBACCO.—*B. Leidersdorf & Co.*, Milwaukee, Wis. Application filed March 25, 1878.
"The names 'B. Leidersdorf & Co.' and the word-symbol 'Nigger Hair.'"

5,843.—TONIC.—*George W. M. Reed*, New Haven, Conn. Application filed February 25, 1878.
"The words 'GILT EDGE.'"

5,844.—SPOOL-COTTON.—*Charles T. Smith*, New York, N. Y. Application filed March 12, 1878.
"The representation of a sitting lion, (lion sejant.)"

5,845.—FLOUR.—*Franklin W. Brickey*, Prairie du Rocher, Ill. Application filed February 26, 1878.
"The fanciful words 'SAINT LUKE'S.'"

5,846.—ADHESIVE MATERIALS.—*Daniel D. Comes*, Ridgefield, N. J. Application filed February 14, 1878.
"The word-symbol 'GLUTINA.'"

5,847.—LINIMENT.—*Clark & Co.*, Baltimore, Md. Application filed March 13, 1878.
"The word-symbol 'GREEK.'"

5,848.—PILE-OINTMENT.—*Coussens & Tabler*, Nashville, Tenn. Application filed March 11, 1878.
"The word-symbol 'BUCKEYE.'"

5,849.—MOUTH OR TOOTH-WASH AND TOOTH-POWDER.—*Carl D. S. Früh*, Philadelphia, Pa. Application filed March 5, 1878.
"The word-symbol 'DENZOTINE.'"

5,850.—LEAD-PENCILS.—*Eagle Pencil Company*, New York, N. Y. Application filed March 9, 1878.
"The word-symbol 'COIN.'"

5,851.—CHEWING-TOBACCO.—*J. W. & C. G. Holland*, Danville, Va. Application filed January 25, 1878.
"The words 'PRIDE OF AMERICA.'"

5,852.—CHEWING-TOBACCO.—*J. W. & C. G. Holland*, Danville, Va. Application filed January 25, 1878.
"The word-symbol 'MAGNOLIA.'"

5,853.—SMOKING AND CHEWING TOBACCO.—*J. W. & C. G. Holland*, Danville, Va. Application filed January 25, 1878.
"The word-symbol 'THE STYLE.'"

5,854.—CHEWING-TOBACCO.—*J. W. & C. G. Holland*, Danville, Va. Application filed January 16, 1878.
"The word-symbol 'JUNIOR.'"

LABELS.

[Each certificate bearing date April 9, 1878.]

1,468.—Title: "DR. E. B. HALLIDAY'S BLOOD PURIFIER."—*S. Blackford*, St. Paul, Minn. Application filed March 11, 1878.

1,469.—Title: "FASCINATION."—*Heppenheimer & Maurer*, New York, N. Y. Application filed March 30, 1878.

1,470.—Title: "DISPATCH."—*Heppenheimer & Maurer*, New York, N. Y. Application filed March 30, 1878.

1,471.—Title: "MARTIN'S READY PRINTED PERFORATED ADDRESSES."—*Charles S. Martin*, New York, N. Y. Application filed March 26, 1878.

1,472.—Title: "DR. B. HASELTON'S INDIAN LINIMENT."—*Charles T. Newman*, Manchester, N. H. Application filed March 22, 1878.

1,473.—Title: "DR. KAUFMANN'S SULPHUR BITTERS."—*Aaron P. Ordway*, Lawrence, Mass. Application filed April 1, 1878.

1,474.—Title: "DR. J. E. ROSEBOROUGH'S COMPOUND FOR STOMACH AND HEART."—*J. E. Roseborough*, Shiloh, Ohio. Application filed March 14, 1878.

1,475.—Title: "DR. BUTTON'S COFFEE."—*Robert H. Sherman*, Norwich, Conn. Application filed March 14, 1878.

1,476.—Title: "TARR'S PAIN CURE."—*C. A. Tarr*, Biddeford, Me. Application filed March 5, 1878.

1,477.—Title: "NO. 1 LAUNDRY BLUEING, &c."—*The Western Manufacturing Company*, San Francisco, Cal. Application filed March 26, 1878.

1,478.—Title: "ECONOMY WORKS, CAST STEEL FILES."—*Western File Company*, (limited,) Beaver Falls, Pa. Application filed October 17, 1877.

1,479.—Title: "WESTERN FILE WORKS."—*Western File Company*, (limited,) Beaver Falls, Pa. Application filed October 17, 1877.

1,480.—Title: "BEAVER FILE WORKS."—*Western File Company*, (limited,) Beaver Falls, Pa. Application filed October 17, 1877.

DESIGNS.

[Each design bearing date April 9, 1878.]

10,619.—ORNAMENTAL CHAIN.—*Daniel A. Beam*, Newark, N. J., assignor to *Wheeler, Parsons & Hayes*, New York, N. Y. Application filed February 20, 1878. Term of patent 3½ years.

10,620.—BREASTPIN.—*William Britton*, Providence, R. I., assignor to *John T. Mauran*, same place. Application filed December 20, 1877. Term of patent 3½ years.

10,621.—PISTOL-HANDLES.—*Gilbert H. Harrington* and *William A. Richardson*, Worcester, Mass. Application filed March 21, 1878. Term of patent 14 years.

10,622.—FONT OF PRINTING-TYPES.—*George Giesecke*, Leipzig, Saxony, Germany. Application filed March 25, 1878. Term of patent 14 years.

10,623.—FONT OF PRINTING-TYPES.—*Andrew Little*, New York, N. Y. Application filed March 7, 1878. Term of patent 7 years.

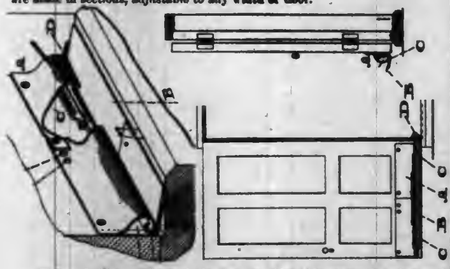
10,624.—WALL-POCKETS.—*Frederick E. Porter*, Baltimore, Md. Application filed January 28, 1878. Term of patent 3½ years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

APRIL 9, 1878.

202,088. WEATHER-STRIPS. Hubbel B. Alvord, Vineland, N. J. Filed Feb. 23, 1878.

Brief.—The connecting-plate and swinging, laterally-shifting sill-piece are made in sections, adjustable to any width of door.



Claim.—1. The weather-strip having an adjustable connecting-plate and adjustable sill-piece, substantially as and for the purpose set forth.

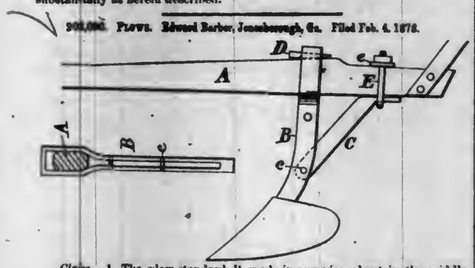
2. The adjustable connecting-plate A and adjustable sill-piece B, hinged thereto, in combination with the springs C C', and with the incline D, the several parts being constructed and operating as described, and forming an improvement in weather-strips or thresholds, for the purpose specified.

202,089. PIPE-TONGS. Henry Bedcock, St. Petersburg, Pa. Filed Jan. 2, 1878.



Claim.—A pipe-tongs consisting of the jaws A and B, both pivoted to the lever D, and coupled together by the arm C, which is pivoted to the jaw A, substantially as herein described.

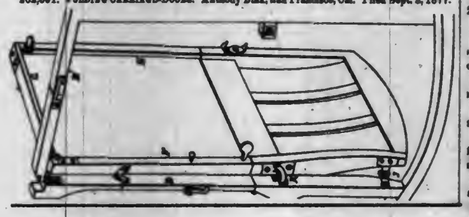
202,090. PLOWS. Edward Barber, Jonesborough, Ga. Filed Feb. 4, 1878.



Claim.—1. The plow-standard B, made in one piece, bent in the middle so as to encircle the beam, extending parallel below and joined at the ends, substantially as and for the purpose set forth.

2. In combination with the standard B, constructed substantially as described, the beam A, brace C, and clamp E, substantially as and for the purpose set forth.

202,091. FOLDING CARRIAGE-DOORS. Anthony Bink, San Francisco, Cal. Filed Sept. 3, 1877.



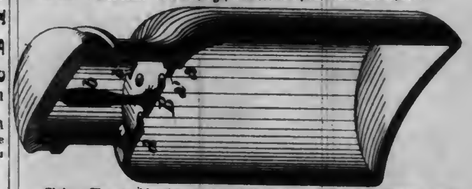
Claim.—1. The rear pillar F of the door, provided with the supplemental hinges L, connecting it with the standing pillar D, and united with the lower part of the door by a detachable catch, so that the pillar F and rail G may be folded back, substantially as herein described.

2. The front pillar E, so constructed as to fold inward across the door-panel, covering the sash and forming a finish therefor, in combination with the backwardly-folding rear pillars and top rail G, said parts capable of being united to form a door-frame, substantially as herein described.

202,092. COMPOUNDS TO INCREASE THE COMBUSTION OF FUEL. De Witt C. Reed, Buffalo, N. Y. Filed June 19, 1876.

Claim.—The compound of soda-ash, coal-ashes, and charcoal, substantially in the manner and for the purposes set forth.

202,093. FRUIT-JARS. Levi Clabaugh, Warrior's Mark, Pa. Filed June 20, 1877.



Claim.—The combination, with a fruit-jar having internal supports and stops, of a removable perforated separating-plate, fitting between and maintained in position by said supports and stops independently of the lid or cover, substantially as set forth.

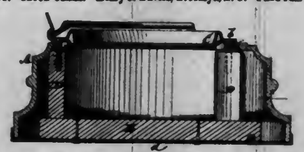
202,094. CANES. George P. Clarke, New York, N. Y. Filed Feb. 6, 1878.



Claim.—1. As a new article of manufacture, a cane with a galvanic battery arranged in its head, as herein specified.

2. The dry battery described, composed of the alternate rings M' H 1st H M' H 1st H, in combination with the knob or button E, insulating-ring D, and cap or cane-head C, and adapted to apply on a cane or portable rod, A, as herein specified.

202,095. CLOCK-CASES. Henry J. Davies, Brooklyn, N. Y. Filed Jan. 17, 1877.



Claim.—The combination, with the dial or dial-frame C and the band or body A, of the metal cap or capped plate *d*, fitting and overlapping the exterior of said body at its rear edge, the inner back or frame B, attached to said plate, the studs D on the front or face of the back B, and the front screws *b*, substantially as shown and described.

202,096. ELECTRO-MAGNETIC PIANO-ACTIONS. Matthew Delaney, New York, N. Y. Filed Aug. 16, 1877.

Claim.—1. The combination, with a vibrating string, of an electrical striker, which automatically strikes repeated blows during the passage of the current, substantially as described.

2. The combination of the armature *a* with the adjustable supporting retractile spring *d*, substantially as described.

3. The combination of the armature *a*, supporting retractile spring *d*, and adjustable cylinder *c*, substantially as described.

4. A piano-striker which consists of a hammer formed of a bundle of fibers laid longitudinally, when the blow between the string and the striker is struck by the ends of said fibers, substantially as described.

5. The combination of an electric hammer and a piano-striker which consists of a hammer formed of a bundle of fibers laid longitudinally, when the

blow between the string and the striker is struck by the ends of said fibers, substantially as described.

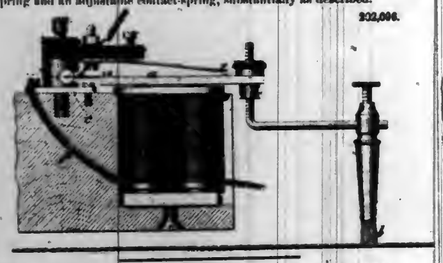
6. The combination of a piano-string, struck by an electric hammer, with the magnet which actuates it, and with apparatus, substantially as described, whereby the length of the stroke of the hammer may be varied.

7. The combination of the electric striker, the magnet which operates it, and apparatus, substantially as described, whereby the distance between the hammer and its support may be varied.

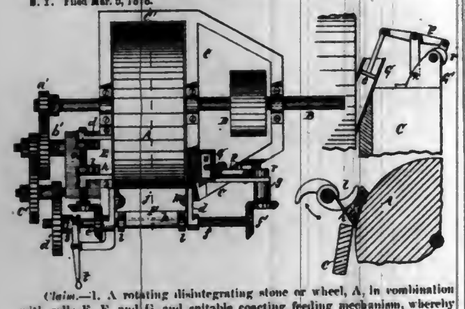
8. The combination of an electric striker with the magnet which operates it, and apparatus, substantially as described, whereby the length of stroke and the distance between the hammer and its support may be varied.

9. An electric striker combined with an adjustable retractile supporting-spring and an adjustable contact-spring, substantially as described.

202,096.



202,097. MACHINES FOR MAKING PAPER-PULP FROM WOOD. Willard A. Deane, Rochester, N. Y. Filed Mar. 5, 1878.



Claim.—1. A rotating disintegrating stone or wheel, A, in combination with cells E, F, and G, and suitable coacting feeding mechanism, whereby reduction of material to pulp is performed upon both sides and the periphery of the stone or wheel, substantially as described.

2. In combination with a grinding stone or wheel, cell or cells E F, and feed-shafts *e f*, the automatically-acting feeding-cams *l*, arranged with reference to each other to feed at alternate intervals, whereby stock is kept continuously in contact with the grinding surface, substantially as set forth.

3. A revolving cam, *l*, in combination with a suitable feeding-cell, F, and a grinding stone or wheel, for the purposes set forth.

4. In combination with a feeding cam or cams, *l*, and incline k, the presser-plate *j*, for the purposes set forth.

5. In combination with a cam or cams, *l*, and shaft *f*, the incline *k*, provided with slots *m n*, for the passage of the cams, substantially as set forth.

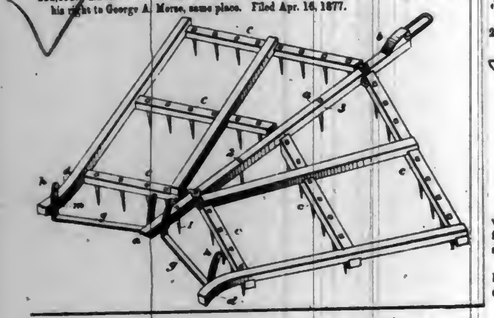
6. In combination with a grinding stone or wheel, A, and feeding-cell G, with plunger *o*, the crank-shaft *g* and suitable connections for operating the plunger, substantially as set forth.

7. In a feeding-cell for pulping wood, the combination of the incline k, the adjustable presser-plate *j*, and side plates *d*, the whole made adjustable toward the grinding wheel or stone, for the purposes set forth.

8. In combination with a grinding wheel or stone, the feed-shafts *e f g* and cells E F G, operating conjointly, for the purposes set forth.

9. The combination of a grinding stone or wheel, A, the gear-train *a' b' c' d' e' f'*, the feeding-shafts *e f g*, and clutch *x*, arranged to operate conjointly, substantially in the manner set forth.

202,098. HARROW AND WEED-CUTTER. Jacob W. Foss, Corning, Iowa, assignor of one-half his right to George A. Morse, same place. Filed Apr. 16, 1877.

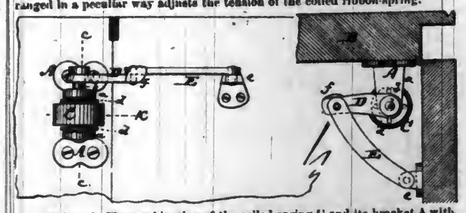


Claim.—1. The central straight beam *a a*, having the drag-bar carrier *b* and a series of teeth, 1 2 3, the diagonal hinged harrow-wings *c c*, having rear extensions *d d*, and the horizontal cutting-blades *g g*, arranged and combined to operate substantially as and for the purposes shown and described.

2. In a drag-harrow, the weed-cutting blades *g*, having perforated handles *h*, pivoted to the rigid harrow-frame, to vibrate and drag in the soil in an oblique position relative to the line of advance, substantially as and for the purposes shown and described.

202,099. DOOR-SPRINGS. Carl Forshlandt, New York, N. Y. Filed Feb. 15, 1878.

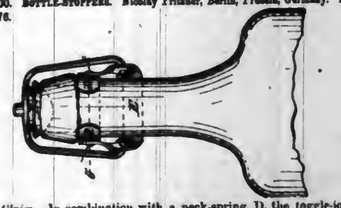
Brief.—A fixed stop is placed at the joints of the levers, and a pin arranged in a peculiar way adjusts the tension of the coiled ribbon-spring.



Claim.—1. The combination of the coiled spring C and its bracket A with the shaft or arbor *b*, levers D and E, hinged together, the lever E, which connects with the door, being made twice as long as the lever D, so that the lever D will describe half a circle whenever the door is moved ninety degrees, substantially as herein shown and described.

2. In combination with the bracket A, shaft or arbor *b*, and spring C, the lever D and lever E, said levers being joined together, and the lever D being provided with a lip, *f*, which constitutes a stop, substantially as herein shown and described.

202,100. BOTTLE-STOPPERS. Nicolay Fritzner, Berlin, Prussia, Germany. Filed May 17, 1878.



Claim.—In combination with a neck-spring, D, the toggle-joint lever E, made from sheet metal, and hinged together by rivets, as described, and for the purpose specified.

202,101. WINDOW-CLEANERS. Wm. C. Gayton, Chicago, Ill. Filed Feb. 8, 1878.

Brief.—A long handle may be applied to the brush by a clamp held by a screw passing through the short handle.



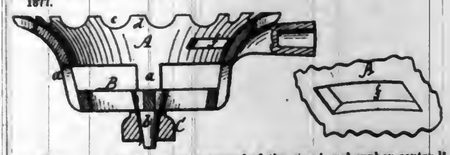
Claim.—1. The elastic cushion formed of the rubber strip C, doubled over in the form of an arch and set into the square-cut groove in the holder A, as described, and held in place by the wooden strip E, substantially as set forth and shown.

2. The end plates D of rubber, forming a backing or cushion for the strip B at the extremities of the holder, and provided each with the notch or gap 1, for the purpose set forth.

3. The combination, as a fastening for the handle H, of the ring G, eye *o* in the holder, and clamp-screw *p*, passing through both the handle F and ring G, substantially as described.

4. The window-cleaning device, consisting of the combination of the following elements, viz: the body A, rubber strip B, elastic cushion C, rubber end plates D, fixed handle F, and removable handle H, substantially as described.

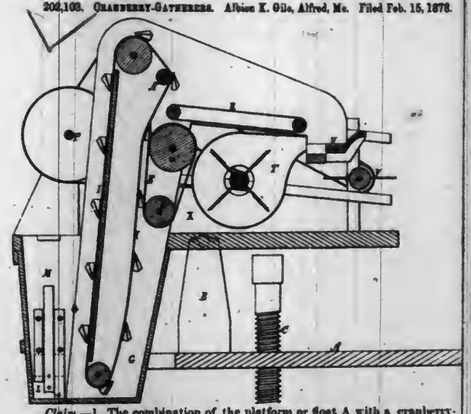
202,102. STOVE AND FURNACE GRATES. Wm. B. Geddes, Rochester, N. Y. Filed July 14, 1877.



Claim.—1. A basket-grate composed of the rim A and sunken center B, when said rim is made closed or imperforate, except the poke-holes *f f* in front, and provided at its periphery with notches and lugs *c d*, of sufficient size to form sifters, as shown and described, and for the purpose specified.

2. In a basket-grate having a closed or imperforate rim, except the poke-holes *f f* in front, the notches *c* and lugs *d*, made of sufficient size to form a sifter at the periphery, as shown and described, and for the purpose specified.

202,103. CRANBERRY-GATHERERS. Albion K. Gile, Alfred, Me. Filed Feb. 15, 1878.



Claim.—1. The combination of the platform or float A with a cranberry-gatherer, X, applied thereto so as to be adjustable therewith, substantially as set forth.

2. In combination with the cranberry-gatherer X and the platform or float A, connected as explained, the series of screws C, arranged with or applied to the platform or float, substantially as and for the purpose described.

3. In combination with the receiving-chamber of a cranberry-gatherer, X, the paddle O, provided with mechanism for moving it in the water, so as to impel the berries forward therein and into the receiving-chamber of the machine, as set forth.

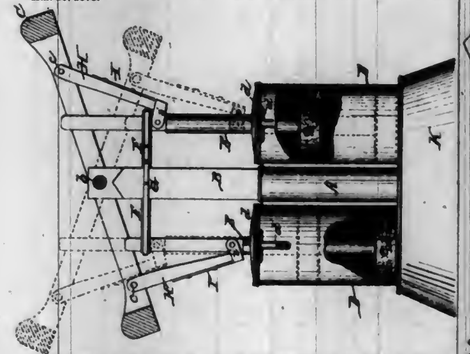
4. In the cranberry-gatherer, the main and auxiliary gates E F L, combined with and applied to the receiving-chamber G of the elevator, as and for the purpose substantially as described.

5. In the cranberry-gatherer, the combination of a pump or endless band, *b*, and its series of buckets, applied to the backwater-flume and receiving-chamber, and provided with suitable operative mechanism, such pump being to cause or increase the flow of water through the flumes and receiving-chamber, as set forth.

6. The combination of the perforated or slotted desiccating-chute W with the machinery for winnowing the berries, as set forth.

7. In combination with the bucketed elevator I and the endless raising-apron R, the auxiliary roller A' and the endless belt B', arranged with such elevator and carrying-apron, substantially as specified.

202,104. WARMING-MACHINES. John W. Gladwell and Joseph R. White, Keys, N. C. Filed Mar. 13, 1878.



Claim.—The combination of the cylinders D D, base K, tubular support A, shaft B, lever C, pistons E *e* E *e*, guide F G, and arms H I *i*, all constructed and arranged as described, and for the purpose set forth.

202,105. TOOL-HANDLES. Porter A. Gladwin, Boston, Mass. Filed Mar. 4, 1878.

Brief.—The handle is provided with one flat side and a suitable opening to receive a plane-bit, and a socket for different tools at one end, so that it can be used as plane or tool holder.



Claim.—The hereinbefore-described improvement in tool-handles, consisting of the handle *a*, provided with the described arrangement for holding different tools, and having the opening *d* cut therein for the purpose of accommodating the plane-iron *b*, the said handle being made flat, or nearly so, upon the under side, all substantially as described.

202,106. INVALID-BEDSTEADS. Asahel J. Goodwin, Brooklina, Mass. Filed Feb. 1, 1878.

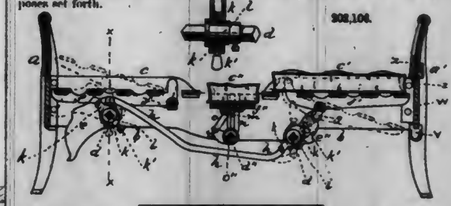
Claim.—1. The combination of the rising upper section *f* and the falling lower section *f'* of the bedstead, said sections being operated simultaneously by means of the reverse cams *e* and *e''* and connecting-rod *h*, substantially as and for the purpose set forth.

2. The combination of the rod *h*, sleeves *k k'*, socket-piece *l l*, set-screws *l' l'*, and shafts *d d*, all arranged substantially as and for the purpose herein described.

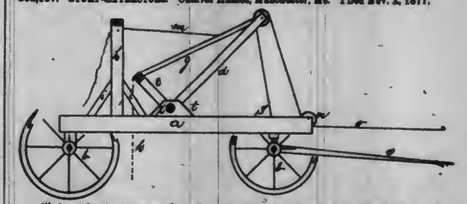
3. In a bedstead, the central section *f''*, extending the width of said bedstead, and adapted to be moved vertically up and down by means of the shaft *d''*, levers *e e'*, hubs *e''*, and projection *m*, moving in groove *n*, substantially as and for the purpose specified.

4. The combination of the shaft *d''*, hub *e''*, levers *e* and *e'*, projection *m*, and side rail, having groove or track *n*, all substantially as and for the purposes set forth.

202,108.



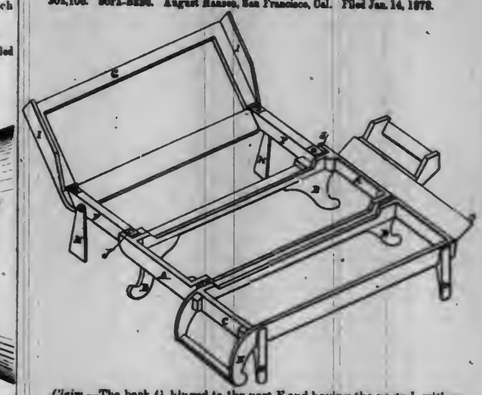
202,107. STUMP-EXTRACTORS. Charles Haines, Manchester, Me. Filed Nov. 2, 1877.



Claim.—1. A stump and rock extractor composed of the body *a*, having the upright *h* and box *t* thereon, in combination with the chain K, levers *e* and *d*, connected by rod *g*, all operated by rope *o* and pulleys *n' n*, in substance as set forth and specified.

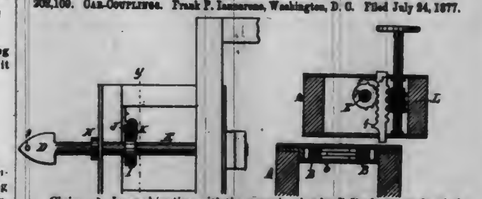
2. The combination of the body *a*, box *t*, trunnion *x*, levers *e* and *d*, brace or rod *g*, upright *h*, ropes *n* and *o*, and pulleys *n* and *n'*, for the purposes set forth, specified, and described.

202,109. SOFA-BEDS. August Hansen, San Francisco, Cal. Filed Jan. 14, 1878.



Claim.—The back G, hinged to the part F and having the posts I, with an extended base, in combination with the extension J, by which the posts are supported and braced, substantially as and for the purpose herein described.

202,110. CAR-COUPLINGS. Frank P. Iannarone, Washington, D. C. Filed July 24, 1877.



Claim.—1. In combination with the grasping-hooks B B, the spear-headed coupler D E, provided with mutilated gear I and rack J, substantially as and for the purposes set forth.

2. The hooks B B, adapted to vibrate toward and from each other, and having formed thereon stops *d d*, approaching and abutting against each other, for maintaining a given space, *s*, for the passage of the spear-head in uncoupling, as hereinbefore set forth.

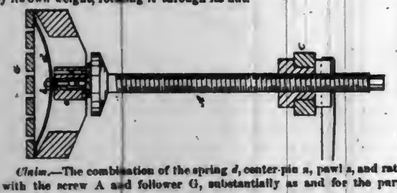
3. In combination with the spear-head D and its shank E, the rack J and mutilated gear I, substantially as and for the purposes described.

4. The rack J, provided with stops *f f*, substantially as and for the purpose hereinbefore set forth.

5. The combination of the rack J, pinion I, and worm-shaft M L, constructed and operating substantially as and for the purposes described.

202,110. BALING-PRESS FOLLOWER. Edmund M. Ivens, New Orleans, La., assignor to Emily Louise Ivens, same place. Filed Aug. 31, 1877.

Brief.—When the bale is removed the follower is lifted by the spring supported on the center of the screw, whereby the pawl of the follower is disengaged from the ratchet of the screw, thus allowing the screw to run down by its own weight, rotating it through its nut.



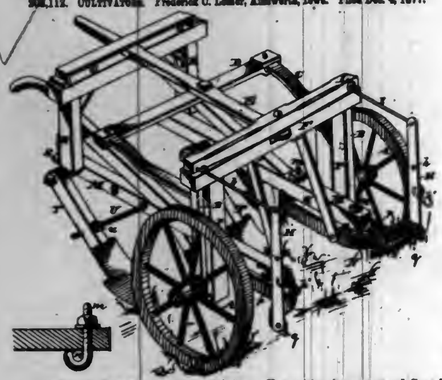
Claim.—The combination of the spring *d*, center-pin *n*, pawl *s*, and ratchet *a* with the screw A and follower G, substantially as and for the purpose specified.

202,111. ROSETTE FOR BRIDLES. Napoleon Le Blond, Farmington, Minn. Filed Feb. 20, 1878.



Claim.—A bridle-rosette constructed as described, and consisting of foundation A, having the groove *a*, screw *b*, slide B, and cap C, as set forth.

202,112. CULTIVATOR. Frederick C. Loeffler, Ainsworth, Iowa. Filed Dec. 4, 1877.



Claim.—1. The combination, with lever E, working in rear guard G and engaging with the intermediate bar D, of the forward vibratory bar L, which connects with the draft apparatus, said lever and vibratory bar being pivoted to the fixed bar F, and adapted with reference to the rock-shafts B so that the vibratory bar may have free sliding bearing upon the fixed bar, substantially as set forth.

2. The combination, with the cultivator-beams and draft-frames rigidly secured to each other, of the hook-bolts, by which the said beams are adapted to be laterally adjustable, the draft-frames having their outer side pieces secured to the respective uprights of the main frame, while their inner side pieces are connected by braces to the rigid cross-bar of said frame, substantially as described.

3. The combination, with the draft-frames N, made as shown, of the draft-bars H, pivoted to the outwardly-projecting extremities of the curved side pieces *q*, substantially as set forth.

202,113. MECHANISM FOR UTILIZING WAVE-POWER. Charles W. Lord, Boston, Mass. Filed Mar. 2, 1878.

Claim.—1. The combination of the pendulum J, oscillating lever N, and walking-beam I, substantially as and for purposes stated.

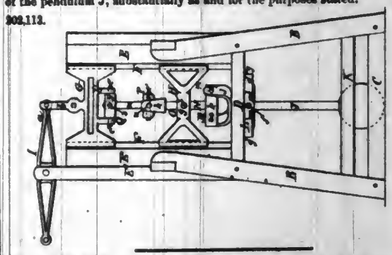
2. A mechanism for utilizing wave-power, consisting of the following: a weighted pendulum suspended from a suitable frame or stage by a universal joint, so as to be permitted universal freedom of swinging motion, the upper part of the pendulum, which extends above the point of suspension a distance corresponding with the desired power of leverage, being connected with a walking-beam or other transmitter of power by an intermediate rod or lever connected to a sliding cross-head, which traverses vertical slides affixed to the frame of the machine and over the pendulum, the said intermediate rod being swiveled at some point between its extremities by a universal joint to a second cross-head, disposed below the first, and sliding upon the same guides or in the same path of movement, and the whole being so arranged that swinging movements of the pendulum in any direction shall, by means of its upper arm and the intermediate rod, impart oscillating movements to the walking-beam, substantially as and for the purposes set forth.

3. The combination of the pendulum J, lever N, and cross-head H with the frame A and its slides F F, under the arrangement substantially as described, whereby swinging movements in any direction of said pendulum effect corresponding oscillating movements of the lever and the cross-head, and vertical movements of the lever and cross-head together, essentially as and for the purposes stated.

4. In combination with the cross-head H and lever N, the cross-head G, pivoted to the lever by a suitable universal joint, substantially as and for the purposes stated.

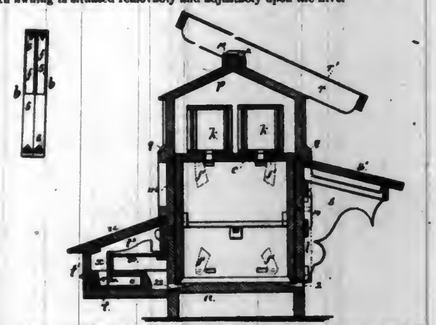
5. The annular guard K, to determine or restrict the swinging movements of the pendulum J, substantially as and for the purposes stated.

202,113.



202,114. BEE-HIVE. Chas. R. Macy, Lamington, assignor to himself and Isaac M. Holcomb, Plainfield, and John A. Thickstun, North Plainfield, N. J. Filed Dec. 20, 1877.

Brief.—The comb-frame has a zigzag upper strip and a vertical support for the honey-comb. The hive has a feeding-chamber with a sliding drawer. An awning is situated removably and adjustably upon the hive.



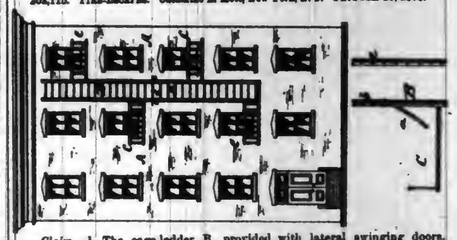
Claim.—1. The frames *b*, made with beveled and zigzag edges upon the lower surfaces of the cross-bars *c*, and provided with the vertical tongues *f*, substantially as and for the purposes set forth.

2. The feeding-chamber *x* at one side of the hive, and provided with a sliding feeding-trough, *v*, partition 20, and frame and glass *w*, substantially as set forth.

3. Jointly, the front *i*, the bracket-frame *z*, cover *x'*, and buttons 14, as described.

4. The frame *v*, provided with a central cross-piece, 16, and covered with muslin or similar material, jointly with the ridge-pole of the roof of the bee-hive, having buttons 11, for the purposes and as set forth.

202,115. FIRE-ESCAPE. Catharine R. Mott, New York, N. Y. Filed Jan. 16, 1878.



Claim.—1. The cage-ladder B, provided with integal swinging doors, adapted to admit persons escaping from windows, and constructed to form an inclosed upright passage, to constitute a fire-escape, substantially as herein shown and described.

2. The combination of the cage-ladder B, which is constructed to form an inclosed upright passage, with the balconies or platforms C and doors *a*, substantially as herein shown and described.

202,116. INVALID-MATTRESS. Charles B. Price, Louisville, Ky. Filed Nov. 26, 1877.

Claim.—1. The mattress C, constructed with the recess F in its under side, and having the casing P, constituting a covered way, integral with the mattress, and adapted to receive, and in combination with, the evacuation-pan G, substantially as shown and described.

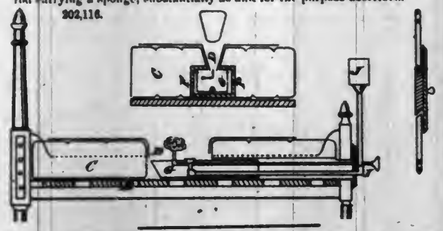
2. The invalid-mattress C, having in its under side, as an integral part thereof, the cased recess or groove F P, leaving the top of the mattress over said recess intact, and having the opening D leading into said recess from above, substantially as shown and described.

3. In an invalid-mattress, the combination of a reciprocating arm or rod and a sponge or equivalent cleaning device, substantially as and for the purpose described.

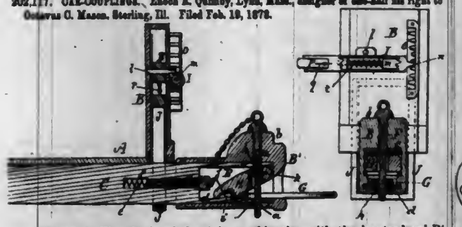
4. In an invalid-mattress, the combination of a movable sponge and means for supplying it with water, substantially as and for the purpose described.

5. The combination of the evacuating-pan, a water-supply reservoir, and a rod carrying a sponge, substantially as and for the purpose described.

202,116.



202,117. CAR-COUPLINGS. Enoch R. Quimby, Lynn, Mass., assignor of one-half his right to Octavus C. Mason, Sterling, Ill. Filed Feb. 19, 1878.



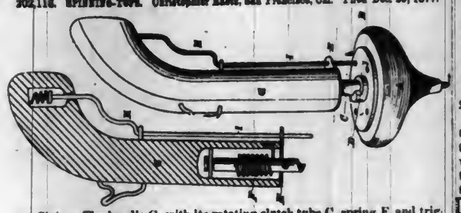
Claim.—1. The sloping ledge *i*, in combination with the hunter-head B' and keeper H, as constituting a stop to limit the entrance of the link, and an inclined plane to raise and lower the rear end of the keeper H, substantially as and for purposes stated.

2. The keeper or block H, in combination with the sliding hunter-head B' and forked draw-bar C, and operating with the inclined ledge *i* in such manner that when the head B is forced rearward upon the draw-bar such keeper shall descend upon the link, and when the head slides forward upon the draw-bar the keeper rises from off the link, substantially as and for purposes stated.

3. As a means of raising or lowering the draw-bar and hunter-head, the yoke J and latch I, the latch being supported by the shaft *l* and provided with the bolt *m*, to engage the rack *n*, and the yoke supported and operated by the chain *r*, attached to it and to a pulley on the shaft *l*, the whole being substantially as and for purposes stated.

4. The latch I, with its bolt *m*, operated by the handle *p* and spring *t*, in combination with the rack *n*, as a means, in combination with the yoke J, or its equivalent, of operating and holding the draw-bar at any desired altitude, substantially as and for purposes stated.

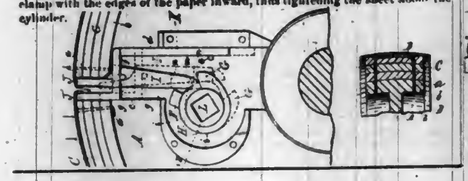
202,118. SPINNING-TOPS. Christopher Roots, San Francisco, Cal. Filed Dec. 29, 1877.



Claim.—The handle G, with its rotating clutch-tube C, spring F, and trigger H I, in combination with the top A, with its stem B, and provided with the clutching-shoulder D, the top having perforations J, to receive the rod I and retain the top, or allow it to be released, substantially as herein described.

202,119. SAND-PAPER ROLLS. Charles R. Rathbun and Frederick W. Adams, Worcester, Mass. Filed Jan. 9, 1878.

Brief.—Within the wheel is a rotating hub provided with two radial lugs, one of which lugs engages with the inner end of one of the clamp-levers to slide the clamp radially outward, when the clamp is in condition to receive the two ends of a sheet of paper which surrounds the cylinder. The rotation of the hub is now reversed, when a cam on its surface closes the jaws of the clamp, after which the other lug enters a hole in the lever and draws the clamp with the edges of the paper inward, thus tightening the sheet about the cylinder.



Claim.—1. The combination, with wheel A, of hub E, provided with cogs or teeth F and G, cam H, cam-lever or swinging part I J, provided with slot *h*, and sliding part J' K, substantially as and for the purposes set forth.

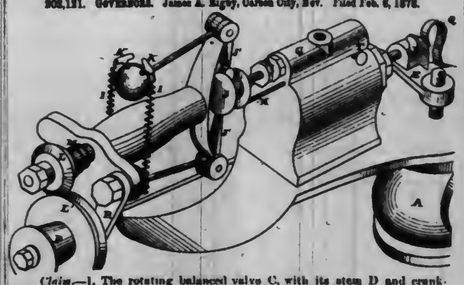
2. A hinged locking device for holding sand-paper, &c., upon wheels or rolls for polishing purposes, consisting of the parts I J J' K, operated by a hub, E, provided with suitable cogs F and G, and a cam or cams, H, substantially as shown and described.

202,120. BUTTER-MOLDS. Horace A. Rose, Louville, N. Y. Filed Sept. 8, 1877.



Claim.—A compress and mold for forming balls of butter of a definite weight, consisting of the two parts P P', connected together at one end by the hinge U, each part having a depression, S T, which conjointly constitute the mold, the respective depressions being surrounded by the rins and channel R, substantially as shown and described.

202,121. GOVERNORS. James A. Rigby, Carson City, Nev. Filed Feb. 6, 1878.



Claim.—1. The rotating balanced valve C, with its stem D and crank-arm E, in combination with the steam-cylinder G, with its piston and rod, for the purpose of operating said valve, constructed and arranged as shown, substantially as herein described.

2. The balanced piston-valve H, with its stem and grooved wheel J, in combination with the governor having the arms J' entering the groove, so as to give the valve a reciprocating motion by its action, substantially as shown and herein described.

3. The pulley L', mounted upon the crank R, so that the tension of the driving-ball will retain it in contact with the pulley L, but will allow it to swing out of contact when the belt breaks, substantially as shown and herein described.

4. In combination with the horizontal sliding governor-spindle controlling the valve H, the corresponding V-shaped pulleys L L', constructed as shown and described, and acting to hold the valve open while driving the governor, but allowing it to be closed by a spring when the pulleys are out of contact.

5. The shifting-bar O, operated directly from the main valve by a finger, N, so that a change in the valve-openings will move the driving-belt upon the cone-pulley F, substantially as shown and herein described.

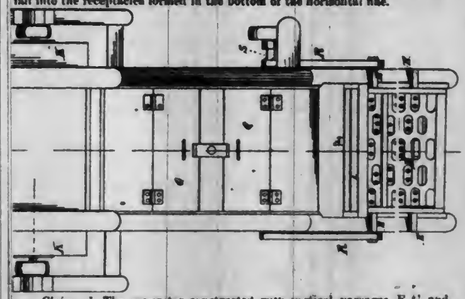
6. The spring-bumper Q, acting against the crank-arm E, so as to open the valve promptly when the pressure from the cylinder G is reduced, substantially as shown and herein described.

7. A governor consisting of the rotating valve C, with its operating-engine G, the valve of said engine being controlled by the governor-balls and pulleys L L', substantially as shown and herein described.

8. The main valve-spindle D, having the ground joint at D', in combination with the spring U, to hold the joint to its bearing and prevent leakage, substantially as shown and herein described.

202,122. ORE-SEPARATOR. De Witt C. Roberts, Chicago, Ill. Filed Oct. 2, 1877.

Brief.—The auriferous earth that passes through the upper screens upon the lowest screen passes therefrom into the vertical flue, where it is met by the blast, which draws it up this flue along the horizontal flue and out the vertical side flues. The heavy particles of metal not affected by the blast fall to the bottom of the first flue. The fine particles carried along with the earth fall into the receptacles formed in the bottom of the horizontal flue.



Claim.—1. The separator constructed with vertical passages F G and horizontal passage H, and provided with a fan, I, substantially as and for the purpose set forth.

2. In an ore-separator, the combination of the passage G, throat *f*, horizontal passage H, and fan I, with the valves *e g*, substantially as and for the purpose set forth.

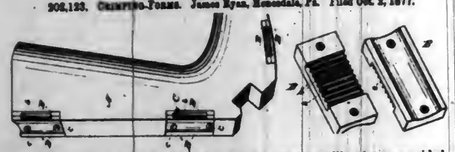
3. The combination of the vertical passage G, throat *f*, and horizontal passage H, with one or more valves, P, and fan L, substantially as and for the purpose set forth.

4. The vertical passage G, horizontal passage H, with the side passages K, fan-case M, and fan L, substantially as described.

5. The combination of the screen B C D with the passage F and receptacle or chute *a*, for separating the grosser parts from the material before it reaches the air currents, substantially as and for the purpose set forth.

6. The combination of an open screen for first separating the grosser parts with the passages G H and fan L, for the further separating of the finer parts, substantially as specified.

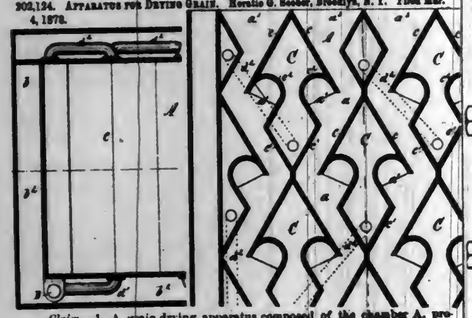
202,133. CRIMPING-FORMS. James Ryan, Mesondale, Pa. Filed Oct. 2, 1877.



Claim.—1. A crimping-form for boots having metallic plates provided with holes or sockets, into which the tacks are driven to secure the leather thereon, substantially as described.

2. The combination, with the crimping-form A, of the grooved metallic plates B B', substantially as described and shown.

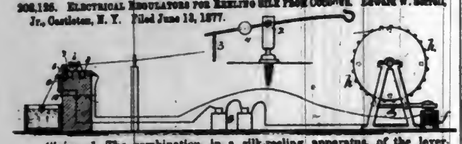
202,134. APPARATUS FOR DRYING GRAIN. Horatio G. Seober, Brooklyn, N. Y. Filed Mar. 4, 1878.



Claim.—1. A grain-drying apparatus composed of the chamber A, provided with the steam-cells C, having the outwardly-inclined upper faces *c* and inwardly-turned curves *c'* in the lower faces *c'*, arranged as described, to form the distinct and continuous irregular vertical channels *a* and the spaces *a'*, communicating therewith, together with the apertures *a²* in one or both of the end walls of said chamber, all constructed and arranged to operate as and for the purpose specified.

2. In a grain-drying apparatus, the chamber A, provided with the steam-cells C, constructed with the inclined faces *c* and *c'* and curves *c'*, as described, and arranged to form the distinct and continuous irregular vertical channels *a* and spaces *a'* communicating therewith, together with the apertures *a²* in the end walls of the chamber, in combination with an inclosing-chamber, B, having the partition *b*, arranged as described, and to operate as and for the purpose specified.

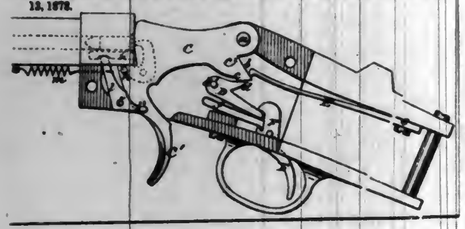
202,135. ELECTRICAL REGULATORS FOR REELING SILK FROM COCOONS. Edward W. Serrell, Jr., Carleton, N. Y. Filed June 13, 1877.



Claim.—1. The combination, in a silk-reeling apparatus, of the lever-guides between the reel and the water-vat, the electric-circuit closers, actuated by such levers, and an electro-magnetic brake to stop the reel when a filament breaks or runs out, substantially as set forth.

2. The combination of the lever-guides for the silk filament, the circuit-closers, the electro-magnetic brake, and the switch, substantially as set forth, whereby the operator can liberate or bring the brake into action regardless of the tension of the silk upon the circuit-closing lever.

202,136. BREECH-LOADING FIRE-ARMS. Charles W. Sneider, Baltimore, Md. Filed Feb. 13, 1878.



Claim.—1. In combination with breech-loading fire-arms, a breech-block hinged in line with the bore, and provided with a shelf, *b*, to receive the front end of the mainspring, by which it is actuated, said breech-block being formed in one piece with an extension, handle, or finger-piece at the front, projecting through the under side of the frame, by means of which the front of the breech-block can be depressed to cock the fire-arm or to open the barrel, introduce a cartridge in, or extract a cartridge-shell from, said barrel, substantially as described.

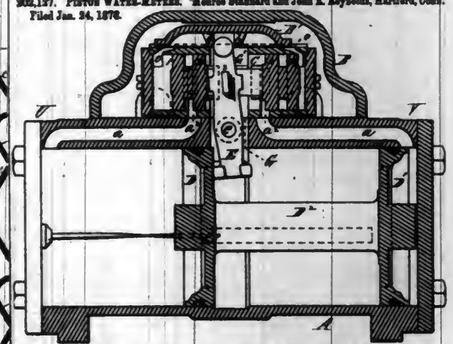
2. In combination with a breech-block formed in one piece, with an extension or finger-piece, as described, a cartridge-shell extractor and bell-crank lever operated by the said breech-block in its downward motion, substantially as described.

3. In combination with a breech-block hinged at the rear, a striker or cartridge-exploder pivoted to the frame, and thrown forward, by the breech-block in its upward motion to close the breech, by a projection or shoulder formed on the breech-block, substantially as and for the purpose set forth.

4. The combination of a breech-block formed in one piece, with an extension or finger-piece, C³, a segment, C², and shoulder C³, with a mainspring, a spring-sear, and trigger, by which it is operated and released, substantially as described.

5. In combination with a breech-block formed with an extension or finger-piece projecting under the frame, as described, a cartridge-exploder pivoted to the frame to strike upon the rim of the cartridge, and a cartridge-exploder pivoted to the breech-block to strike upon the center of the cartridge, both operated by the breech-block in its upward motion, substantially as described.

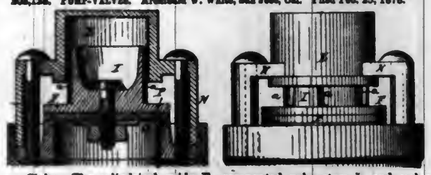
202,137. PISTON WATER-METERS. Monroe Stannard and John E. Reynolds, Hartford, Conn. Filed Jan. 24, 1878.



Claim.—1. The valve-case C, provided with the inlet-ports a^1, the ports a^2 and *o*, the valve C', the oscillating lever E, and the slide-valve B', combined with a cylinder provided with ports *a* and a chest, B, and containing a double piston, D², to operate said lever and measure the water, substantially as described.

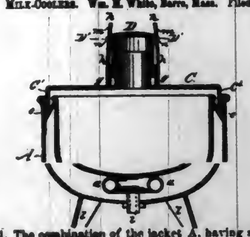
2. In a water-meter, in combination with the valve-case C, provided with ports a^1, a^2, and *o*, the valve C, made substantially as described, and the slide-valve B', as a means of controlling the flow of water into the measuring-cylinder, substantially as set forth.

202,138. PUMP-VALVE. Archibald W. White, San José, Cal. Filed Feb. 25, 1878.



Claim.—The cylindrical guide E, corrugated valve-stem I, and valve F, in combination with the valve-seat G, piston, and supports N, all constructed and arranged as set forth.

202,139. MILK-COOLERS. Wm. H. White, Barre, Mass. Filed Jan. 16, 1878.



Claim.—1. The combination of the jacket A, having a trough, *e*, notched or perforated at *d* at its upper edge, with the flange C' of the milk-pan cover C, substantially as and for the purpose shown and described.

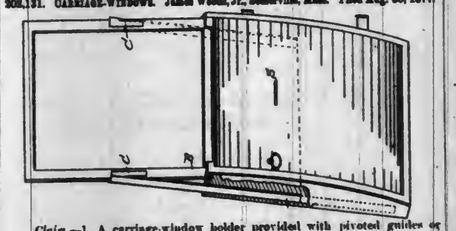
2. The combination of the milk-pan cover C with the ventilating-cover D, having pivots D' D', the uprights h h, provided with holes therein, *m m n n*, and the trough *g*, composed of the rims *e* and *f*, projecting from the cover C, substantially in the manner and for the purpose shown and described.

202,130. AIR-VALVES. Edwin A. Wood, Utica, N. Y. Filed Dec. 14, 1877.



Claim.—The spring E, in combination with case or yoke A, expanding pipe C, valve F, and set-screw G, or their equivalents.

202,131. CARRIAGE-WINDOWS. James Weeks, Jr., Somerville, Mass. Filed Aug. 30, 1877.

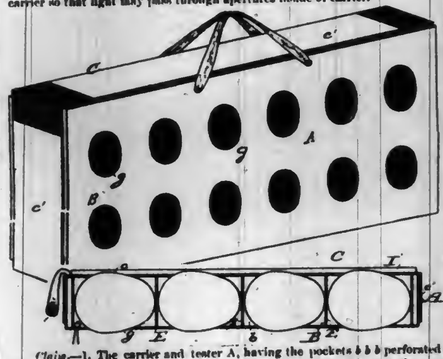


Claim.—1. A carriage-window holder provided with pivoted guides or channel-ways, in which the sash has a vertical and pivotal movement independent of the movement of the U-shaped frame, the whole arranged to move in and through the body of the door, as shown and described.

2. The combination and arrangement of the U-shaped frame with its pivoted guides or channel-ways C C, stop S, and the sash B, as shown and described.

202,132. EGG CARRIER AND TESTER. Charles H. Wyman, St. Louis, Mo. Filed Feb. 18, 1878.

Brief.—The carrier is so made that the eggs cannot only be safely transported, but also inspected, without removing from carrier, by holding up the carrier so that light may pass through apertures inside of carrier.

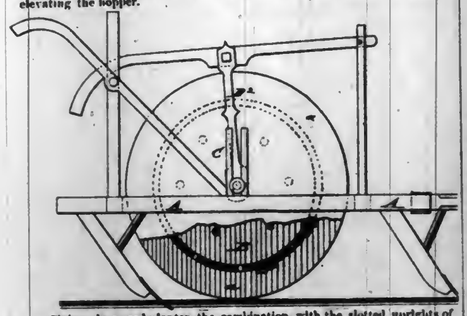


Claim.—1. The carrier and tester A, having the pockets *b b b* perforated only at the sides of said pockets, and as and for the purposes described.

2. The carrier and tester A, consisting of the parts B and C, and having the pockets *b b b*, which are inclosed, saving the perforations *g c* in the sides thereof, as and for the purposes described.

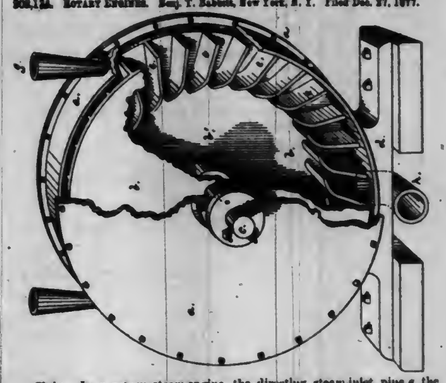
202,133. CORN AND COTTON-SEED PLANTERS. Benj. F. Adams, Burton, Tex. Filed Dec. 14, 1877.

Brief.—The frame is rectangular, having a tongue at its forward center, one share in the front center, and one on each rear corner. A flanged rotating hopper is mounted in slotted standards, with a lever and connecting-rods for elevating the hopper.



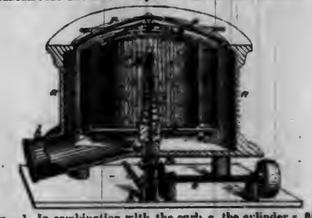
Claim.—In a seed-planter, the combination, with the slotted uprights of the supporting-frame, of a flanged revolving drum, and of a hand-lever connected to the shaft of the drum, to raise or lower the drum for interrupting or continuing the dropping of the seed, substantially as specified.

202,134. BOTARY ENGINES. Benj. T. Babbitt, New York, N. Y. Filed Dec. 27, 1877.



Claim.—In a rotary steam-engine, the directing steam-inlet pipe *g*, the prime mover or wheel *b*, with its open-bottomed blades *c*, and central steam-space, with the exhaust-ports *h*, in combination, substantially as set forth.

202,135. CENTRIFUGAL MACHINES. Benjamin T. Babbitt, New York, N. Y. Filed Dec. 27, 1877.



Claim.—1. In combination with the curb *a*, the cylinder *c*, fitting loosely in the cylinder *e*, and having its bottom extended and cut away to form plates or valves, which slide over ports, and the cylinder *e*, provided with said ports, substantially as described.

2. The curb *a*, provided with a discharge-sluice, *b*, inclined downward through the bottom from the center, as shown, in combination with the scraper *d*, as set forth.

3. The combined washing and drying-machine herein described, having rotating cylinders *e* and *c*, provided with covers *p r*, with central perforated hollow shaft and spindle *i j*, arranged to transmit, by centrifugal force and pressure, water and hot air through the materials to be treated, in combination with the conduit-pipes l and m at the bottom, substantially as described.

202,136. COMBINED GUN-TOOL AND WHISTLE. Albrecht E. Barthel, Detroit, Mich. Filed Apr. 11, 1877.



Claim.—The combined whistle, screw-driver, socket-wrench, shell-extractor, and corkscrew, constructed substantially as represented and described.

202,137. BOTTLE-STOPPER FASTENERS. Albrecht E. Barthel, Detroit, Mich. Filed Feb. 7, 1878.



Claim.—1. In a bottle-stopping device, and in combination with a yoke hinged to a locking-lever, the neck-band of two pieces, the ends of which are secured by thimbles, which, with the curved flanges in the ends of the segments of the neck-band, form bearing-surfaces for the pivotal connection of the locking-lever to said band, substantially as described.

2. The locking-lever *d* of a bottle-stopping device, having the flattened bearing-surfaces *h h'*, substantially as and for the purposes set forth.

202,138. BOTTLE-STOPPERS. Albrecht E. Barthel, Detroit, Mich. Filed Feb. 8, 1878.

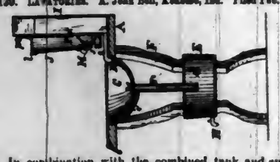
Brief.—The stem, to which the cam-lever is pivoted, is screw-threaded, and by turning it in the nut the rubber ring is still more expanded than it would be by simply locking the lever.



Claim.—1. In a bottle-stopper, the combination, with the disks A and F, elastic ring P, and rod C, of the cam-lever G, pivoted to said rod C, and extending, when the stopper is locked, down the side of the bottle, substantially as and for the purpose set forth.

2. In a bottle-stopper, the combination, with the disk A, of the disk F, having a screw-threaded stem, C, the cam lever G, plate E', and the nut *d*, substantially as and for the purposes set forth.

202,139. LAVATORIES. A. John Bell, Kokomo, Ind. Filed Feb. 28, 1878.



Claim.—1. In combination with the combined tank and splash-board I, the charging-funnel J, capable of being temporarily isolated from the tank I by means of gate or valve I'.

2. In a lavatory, substantially as described, the funnel J, communicating with and capable of isolation from the tank I, and having the downwardly-prolonged sides *j*, for use in connection with a lamp or heater, N, for the purposes designated.

3. The lavatory, substantially as described, consisting of stand A, combined tank and splash-board I, bowl C, receptacle E, combined funnel and hot-water vessel J, capable of disconnection from the tank by means of valve P, and the faucets K M H, the several members aforesaid being combined and adapted to operate in the manner designated.

202,140. UMBRELLA-HOLDERS. John H. Bowers, Cowan, Tenn. Filed Jan. 3, 1878.

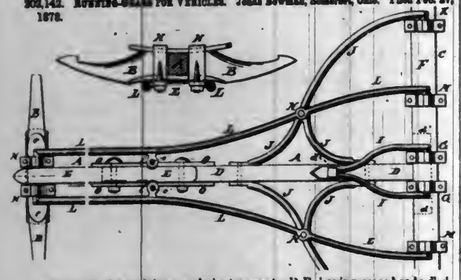


Claim.—An umbrella-holder having a single shoulder-strap fastened to the belt and inclosed by the chest-strap, as and for the purpose specified.

202,141. MEDICAL COMPOUNDS. Henrietta Bovis, Keuna, La. Filed Jan. 15, 1878.

Claim.—A medical compound made by mixing together gum arabic, boarhound, St. John's wort, rhubarb, and Ipecacuanha, with sugar and water, in the proportions and manner substantially as specified.

202,142. RUNNING-GEARS FOR VEHICLES. Jonas Bowman, Somerset, Ohio. Filed Feb. 27, 1878.



Claim.—1. A perch-iron made in two parts, D E, having cross-heads d^1 e^1 formed upon their outer ends, and having their inner ends overlapped, in combination with the perch A, the head-block B, the rear-axle cap C, and the spring-clips G H, substantially as herein shown and described.

2. The combination of the side plates O and the bolts and yoke o^1 o^2, or equivalent clip, and the lugs P of the side stays L, with the perch A, the overlapped inner ends of the parts D E of the perch-irons, and the said side stays L, substantially as herein shown and described.

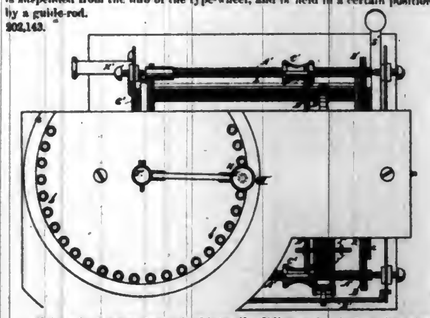
3. A running-gear in which the side stays L and the rear stays J are connected with each other at the points of crossing by bolts N, substantially as herein shown and described.

4. The combination, with the perch A D, of the clip-yokes G, V-stay I, forked stay J, and side stay L, all constructed and arranged substantially as and for the purpose specified.

202,143. TYPE-WRITING MACHINES. Gilbert A. Brady and Francis P. Warner, Chicago, Ill. Filed Nov. 17, 1877.

Brief.—A crank-arm having a yielding pin is secured to a vertical shaft over a face-plate having a series of lettered apertures for the passage of said pin. Said shaft is connected by gearing to the horizontal shaft, which carries the type-wheel feathered thereon. The platen is placed under the type-wheel, and connected with a frame or platform under the face-plate, on which platform the yielding pin acts. To print a certain letter the crank is turned until the said pin is over the correspondingly-lettered aperture. The type-wheel has thereby been turned to bring the required letter opposite the platen. Then the yielding-pin is depressed through the aperture, and the platform forced down, which latter, by its connection, causes the platen to be raised against the type-wheel to make the impression. The hub of the type-wheel is connected by an arm or rod to two screw-threaded nuts, in which revolve two screw-threaded shafts arranged opposite each other. By depressing a key carrying a pawl, motion is communicated to a ratchet-wheel fixed to the side of a gear-wheel, which meshes with the pinions on the screw-shafts. The rotation of the said shafts causes the type-wheel to be moved laterally on its shaft, since the said nuts are prevented from rotating by their fixed connection to the rod extending from the hub of the type-wheel. An inking-roller is suspended from the hub of the type-wheel, and is held in a certain position by a guide-rod.

202,143.



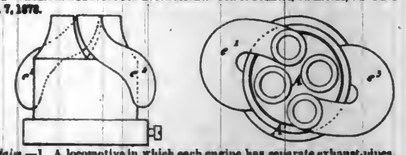
Claim.—1. A rotary type-wheel laterally sliding on its shaft, a face-plate graduated and marked to correspond to the type, and a vibrating paper-holder or platen, for the purposes specified.

2. The combination of a rotary type-wheel laterally sliding on its shaft, a face-plate graduated and marked to correspond to the type, an index arm or crank in connection with gearing for rotating the type-wheel, a vibrating paper-holder or platen, and mechanism for actuating the same, and mechanism, substantially as described, for sliding the type-wheel laterally on its shaft, for the purposes set forth.

3. A type-writing machine wherein a rotary type-wheel laterally movable on its shaft is moved thereon by means of one or more nuts, mounted on one or more screws or worms and connected to the type-wheel, for producing space between the printed characters, substantially as specified.

4. The combination, in a type-writing machine, of a rotary type-wheel, a graduated and perforated or open face-plate, a crank and gearing for rotating the type-wheel, a yielding pin in the crank, and a vibrating paper-holder or platen, having connected thereto a yielding platform, arranged to be struck by the yielding pin at the several graduated points on the face-plate, substantially as and for the purposes specified.

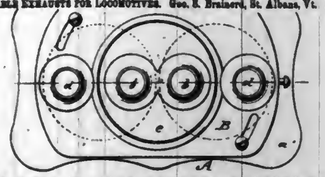
202,144. VARIABLE EXHAUSTS FOR LOCOMOTIVES. Geo. S. Brainerd, St. Albans, Vt. Filed Mar. 7, 1878.



Claim.—1. A locomotive in which each engine has separate exhaust-pipes, provided with relief-pipes equal to the exhaust-passages of the cylinders, the vertical nozzles, and the cone, having one or more ports, in combination with the sleeve having the vertical permanent exhaust, as shown and described.

2. The combination of the double-walled cone B, having ports *f*, and divided by the partitions *d* into two or more compartments, *e* e^1, and the double nozzle A, having the ports *g*, substantially as herein shown and described.

202,145. VARIABLE EXHAUSTS FOR LOCOMOTIVES. Geo. S. Brainerd, St. Albans, Vt. Filed Mar. 7, 1878.



Claim.—The combination, with the casting A, having the fixed exhaust-nozzles *b* and ports *c*, of the nozzles *d*, arranged on plates B and made adjustable to said ports, as and for the purpose specified.

202,146. WOODEN-TRAY MACHINES. John S. Brown, Fisherville, N. H., and Lewis Kimball, Jr., East Richford, Vt. Filed Feb. 13, 1878.

Brief.—The tray-block is attached to a holder-plate, which is pivoted by two pairs of adjustable pivotal arms in adjustable bed-plates attached to the top of a sliding carriage. By a system of levers two pairs of bars, sliding in suitably-slotted boxes, do alternately bind and release one pair of pivotal arms. When the holder-plate is properly turned and the carriage moved, the tray is shaped by a revolving cutter attached to the body of the machine.

Claim.—1. In combination with the cutting-cylinder, attached to the body of the machine, the sliding carriage C D and pivotal holder-plate F, substantially as described.

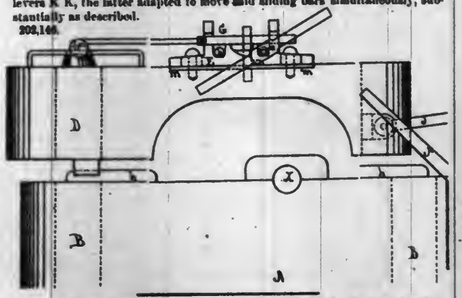
2. The combination of the movable carriage C D, block-holder F, pivotal arms *a a b b*, boxes E E, and sliding gates G G with the cutting-cylinder, attached to the body A B, substantially as described.

3. In combination with the block-holder F, the adjustable pivotal arms *a a b b* and adjustable boxes E E, substantially as described.

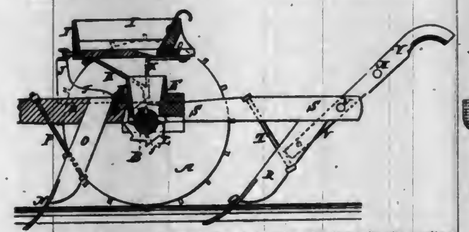
4. In combination with the pivotal arms *a a b b* of the block-holder F, the sliding gates G G, substantially as described.

5. The combination of the sliding bars G G, the connecting-arms L L, and levers K K, the latter adapted to move said sliding bars simultaneously, substantially as described.

202,146.



202,147. SEED-PLANTERS. George L. Butler, Morristville, S. C. Filed June 25, 1877.

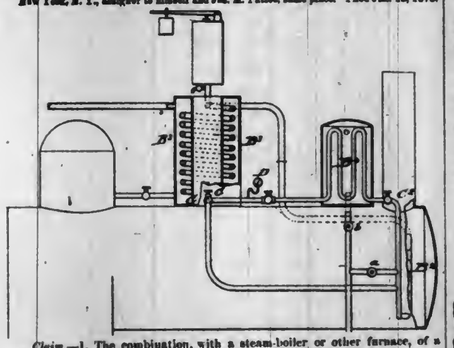


Claim.—1. In a seed-planter, the combination of a frame for the seeding mechanism, that is provided with the wheels A, with the two beams S, having their front ends pivoted upon the axle B, and their rear ends provided with the handles V, whereby the beams S may be raised upward without affecting the other part of the machine, substantially as shown.

2. In a seeder, the combination of ratchets L, a suitable supporting-frame, a box, E, having its upper edge formed to receive the hopper H, whereby a rigid or a vibrating hopper may be used, substantially as shown.

3. The combination of the toothed dropping-cylinder F, ratchets L, box E, supports K, shoe I, and standards J, to pivot the end of the shoe to, substantially as described.

202,148. HEATING ATTACHMENTS TO BOILER AND OTHER FURNACES. Sciambi M. Carvalho, New York, N. Y., assignor to himself and Jos. M. Patten, same place. Filed Jan. 12, 1878.

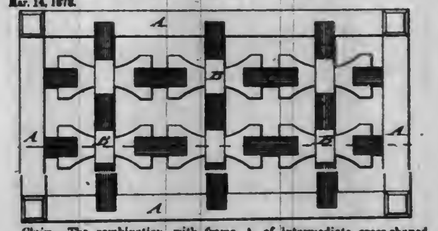


Claim.—1. The combination, with a steam-boiler or other furnace, of a closed system or circuit of pipes filled with water, and composed of three sections or coils, of which one is exposed to the heat of the fire-gases of the furnace, the second used for superheating steam or for other heating purposes, and the third arranged to be cut out from the main section for regulating the pressure and heat in the main circuit, substantially as and for the purpose described.

2. The combination, with a steam-boiler or other furnace, of a closed system or circuit of pipes filled with water, and arranged with one section or coil that absorbs the heat of the furnace, and with a second section or coil, that is employed for superheating steam or for other heating purposes, substantially as specified.

3. The combination, with a steam-boiler or other furnace, of a closed system or circuit of pipes filled with water, provided with an expansion-chamber, and composed of three sections or coils, of which one absorbs the heat of the fire-gases, while the second is used for superheating steam or for other heating purposes, and the third for regulating the heat and pressure in the pipe-circuit, the last section being thrown in or out of the system by suitable valves, substantially as described, and for the purpose specified.

202,149. BED-BOTTOMS. Henry S. Cate, Millerstown, (Barnhart's Mills P. O.,) Pa. Filed Mar. 14, 1878.



Claim.—The combination, with frame A, of intermediate cross-shaped pieces or links B, connected longitudinally and transversely by elastic strips C, with each other and with the frame, substantially as and for the purpose set forth.

202,150. CIGAR-LIGHTERS. I. Neal Clawson, Philadelphia, Pa. Filed Feb. 6, 1878.



Claim.—1. A pellet-exploder having an opening for the passage of the flame from an exploded pellet, in combination with a spring-pawl, substantially as shown and described.

2. The combination, with the slide bar, of a pellet-feeder and pawl-operating cam, substantially as described.

3. The combination of the lid, having a slotted bracket and flanges upon its under side, with the post *c*, substantially as described.

4. The combination of the cover, having a bracket, *i*, at its hinge, and the pin or projection *k*, with the spring K, substantially as described.

5. The combination, with the slide-plate, of an anchor or hook for moving the wick into position, and a slide-bar for raising the cover of the case, having a pawl-operating cam and pellet-feeder, substantially as described.

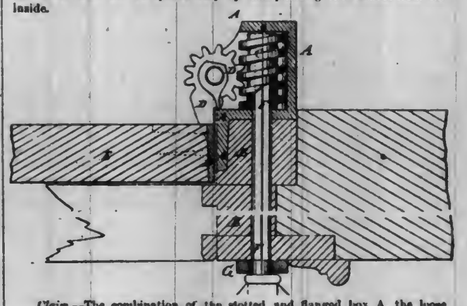
6. The combination of a pellet-exploder having an opening for the passage of the flame from an exploded pellet, an impelling-spring capable of being removed and replaced independently of the exploder, and a spring-pawl arranged to act against and raise the exploder when moved in one direction, but freed from the exploder in its movement in the opposite direction, substantially as described.

7. The case for pocket cigar-lighters having opposite parallel sides and rounded corners, a hinged cover with a pin or projection, *k*, upon the inside, a bracket at the hinge, and a spring secured to the case, acting upon the bracket, substantially as described.

8. The combination of a pellet-exploder having a vibrating movement and flame-conductor moving therewith, with a tube, through which a wick is extended transversely to the line of flame from an exploded pellet, substantially as shown and described.

202,151. SHUTTER-WORKERS. Philip C. Close, Augusta, Ga. Filed Jan. 11, 1878.

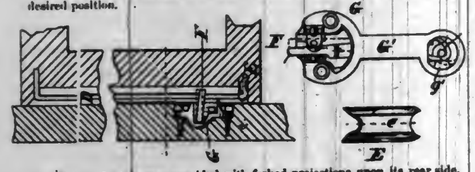
Brief.—A base-flanged wheel, a slotted and flanged box, a loose screw, and a suitable handled shaft are placed in novel combination, so that the shutter or door can be opened only by manipulating the devices from the inside.



Claim.—The combination of the slotted and flanged box A, the loose screw C, the base-flanged wheel D, and the shaft F with a window-frame, B, and blind E, as shown and described.

202,152. SASH-FASTENERS. Osborn R. Cooke, Chicago, Ill. Filed Feb. 21, 1878.

Brief.—A sliding bolt or cam-lever is operated by means of a key. Said bolt or cam lever acts upon the biting-catch, which, in turn, acts upon the sash-rod, which passes through it in such a manner as to fasten the sash in any desired position.



Claim.—1. A keeper provided with forked projections upon its rear side, in combination with the biting-catch F, pin *f*, and rod D, substantially as described.

2. A keeper provided with projections on its rear side, within which the catch is secured, in combination with the catch and bolding-pin, the parts being arranged within a recess in the side of the window-frame, so that the pin is prevented from falling out by the walls of the frame-opening, substantially as described.

3. A keeper constructed substantially as described, in combination with the biting-catch F, secured thereto by the pin *f*, the sash-rod D, and a vibrating lever arranged to be operated by a key, substantially as described.

4. The keeper G, provided with a pin or stud, *g*', in combination with the lever H, constructed and arranged to rest upon the stud, substantially as described.

5. The keeper G, provided with an extension, G', having an opening in its outer end and a bent perforated lug, *g*', substantially as described.

6. The socket E, constructed as set forth, in combination with the sash-rod, substantially as described.

7. The keepers and vibrating levers for the upper and lower sash, arranged with their outer ends beneath the stop-bead, which is provided with key-holes, through which only the levers can be operated, substantially as described.

202,153. WIRE-ROPE HANGER-TRACES. Frederick M. Collier, Boston, Mass., assignor of one-half his right to Oliver L. Roberts, Thomas H. Roberts, and Samuel H. Roberts, same place. Filed Mar. 20, 1878.



Claim.—1. In combination with the cable-wire rope A, having the head G, the tubular piece B, having the external flange E and internal rib F, its opposite end having the external groove I, forming the flange J, and adapted to fit within the bore L of the tubular portion M of the eye K, and connected therewith by means of the projections N, as and for the purposes set forth.

2. In combination with the cable-wire rope A, having a head, G, formed as described, the piece B, having the eye K, the hook S, guard-piece T, and ring W, substantially as and for the purposes set forth.

3. The swivel-eye as made, consisting of the tubular piece B, having the flange E, groove I, and flange J, in combination with the eye K, having the tubular portion M and projections N, all being constructed and arranged to operate substantially as and for the purposes set forth.

202,154. SASH-FASTENERS. Osborn R. Cooke, Chicago, Ill. Filed Feb. 21, 1878.

Brief.—A pair of dogs or catches are mounted on the sashes, and are arranged to bite at one end upon the rod which is attached to the frame, thus preventing the sash from being moved in either direction. Said catches are free, however, to move along the rod when their outer ends are pressed together.



Claim.—1. An upright stationary rod, C, attached to the window-frame, in combination with a pair of catches or dogs pivoted to the sash, with their inner ends embracing the rod, and constructed and arranged so that when these ends are closed together they will slide freely on the rods, and when opened will bite or gripe the latter in opposite directions, substantially as set forth.

2. The stationary rod C, attached to the window-frame, in combination with the sash B, having a groove, *b*, the pivoted catches E, and a separating-spring, G, substantially as described.

3. The shield F, provided with a projection or stop, *f*', in combination with the pivoted catches E and the spring G, substantially as described.

4. The bent rod C, having its lower bent end flattened and widened, as specified, in combination with the keeper D, provided with an elongated slot, *d*, substantially as described.

202,155. COMBINED WASH-BENCH AND WRINGER. Patrick H. Cooney, Erie, Pa. Filed Dec. 17, 1877.

Claim.—1. In a combined wash-bench and wringer, the frame composed of the parts A B, &c., with rungs D^2 D^3 D^1, and hooks M, N, and O, and hook-brace *b*, said parts being arranged as and for the purposes set forth.

2. A tub-bench provided with legs C, which are provided with means whereby they may be detached from the top of the bench by swinging them from the position they occupy when sustaining the bench, for the purposes mentioned.

3. In combination with the legs C and hooks N O and rungs D^2 and D^1, the horizontal bars A, as and for the purposes set forth.

4. The drip-trough of a wringer-machine, composed of the parts J, K, and L, arranged together substantially as and for the purposes set forth.

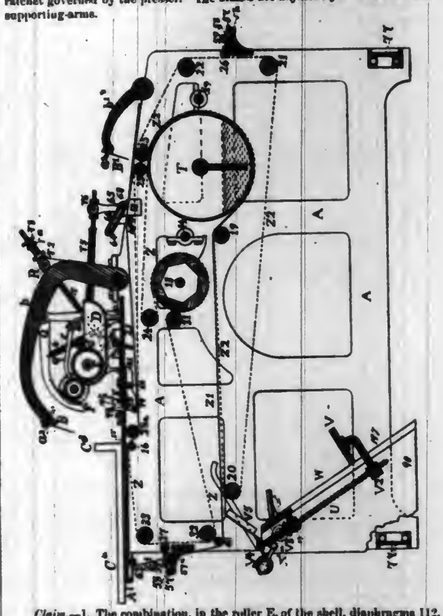
5. The combination, within a combined wash-bench and wringer, of the bars A, uprights C and B, rungs D^1, D^2, D^3, D^4, and D^5, hooks M N O, hook-brace *b*, levers E and A', hooks *o* and *a*, and *g* and *h*, stirrup-irons H, and rollers I I', as and for the purposes set forth.

202,156.



202,156. MACHINES FOR PREPARING FLY-LEAVES FOR BOOKS. Edwin Crowley, Newport, Ky., assignor to John R. Davey, Cincinnati, Ohio. Filed May 16, 1877.

Brief.—Sheets of paper for fly-leaves of books are successively fed to and partially wrapped on a paste-roller in vibrating arms, thence twice centrally folded by vibrating blades between folding rollers, carried round a drying-drum, and dropped down before an oscillating presser, by which they are thrown upon a table gradually lowered by screw, gears, and a pawl and ratchet governed by the presser. The blades are adjustably attached to their supporting-arms.



Claim.—1. The combination, in the roller E, of the shell, diaphragms 112, disks 114, hub 113, and nut 115, all arranged within the shell, substantially as set forth, for the purpose specified.

2. The combination, with the pasting-roller, of the pivoted rack-arm Q and spur-gear k^1, ratchet k^2, and pawl k^3, for the purpose of causing the roller to free itself from the ridge of paste.

3. The combination, with the pasting-roller, carried by vibrating arms and feed-roller E, of the device for adjusting the distance between said rollers, and consisting of the arm G, socket *g*, and adjustable box g^2, substantially as set forth.

4. The device for adjusting the folding-plate B upon the termination *a* of arm *b*, consisting of the set-screws a^1 a^2, bolt a^3, plate B^3, and knife B, and arm A, combined together substantially as described.

5. In combination with spur-rod L, the arms a^1 and trigger *o*, stop o^2, springs o^3, and lever K, substantially as and for the purposes set forth.

6. The combination of devices for causing the teeth of spur-wheel *j* to mesh with the teeth of spur M, and consisting of wheel *i*, spur-rod L^1, spring 73, arms a^1, trigger *o*, stop o^2, spring o^3, and lever K, arranged substantially as described.

7. The combination of pinions *i* and j^1, segment-gear M, and spur L, substantially as and for the purposes set forth.

8. The combination of lever K, provided with slot *p*, pitman S, provided with slot 111, pivot 7, arm P, provided with slot o^5, bolt b^2, and nut b^3, substantially as and for the purposes specified.

9. The combination of the pasting-roller and devices, substantially as described, and as shown in Figs. 5, 6, 9, or their equivalents, for raising and lowering the roller and for turning it in different directions, as and for the purpose specified.

10. The tripper-cams n^2 n^1, in combination with the lever b^1, springs b^2, bolt b^3, extension b^4, bolt b^5, lever J, shaft 3, set-screw b^6, and pin b^7, substantially as and for the purposes set forth.

11. The tripper-cams n^2 n^1, in combination with the lever b^2, springs b^4, bolt b^5, extension b^4, bolt b^6, lever J, shaft 3, set-screw b^7, pin b^8, arms 49, springs 68, and roller F, substantially as and for the purposes specified.

12. The combination of the pasting-roller, folding-knife, and devices, substantially as described, and shown in Figs. 5, 6, 9, or their equivalents, whereby the paper is wound upon the roller thus pasted, and then folded by the knife, substantially as specified.

13. The combination of the roller F, arms 49, springs 68, the tripper-cam; n^2, lever b^2, springs b^4, bolt b^5, extension b^4, bolt b^6, lever J, shaft 3, set-screw b^7, and pin b^8, substantially as and for the purposes specified.

14. In combination with pasting-roller F, the scrapers *s c*, adjustable on rod c^2, for the purposes set forth.

15. In combination with roller 78, the holder 81, bolt 82, bolt 83, nut 84, and table A', for the purposes set forth.

16. The combination of pitman W^1, lever W^2, shaft X^1, provided with presser V^2, arm W^3, weight W^4, arm X, spring W^7, lever X^1, pin X^2, lever W^1, pallet W^3, pins 91 and 92, shaft X^1, ratchet X^3, pallet-arrester X^2, standard W^5, beveled gears 88 V^3, screw U, and table V V^4.

17. The combination of pitman W^1, lever W^2, shaft X^1, presser V^2, ratchet X^3, pallet W^7, pin 92, pin 91, pallet-arrester X^2, standard W^5, shaft X^1, arms X, X^1, and W^3, weight W^4, lever W^1, provided with pin X^2, and spring W^7, substantially as set forth.

18. The combination, with the screw-shaft, nut and gears of the adjustable arm X, of shaft X^1, spring W^7, pitman W^1, lever W^2, and pawl and ratchet-wheel, substantially as and for the purposes set forth.

19. The devices for retracting the guide on the descent of the roller, consisting of the combination of roller F, projection F^1, arm T^4, lever I^2, spring I^3, guide-rod I, provided with guide-piece I^4, substantially as and for the purpose specified.

20. The shaft 3, its arms 49 r^2, roller F, rock-sleeve r^1, sleeve r^2 *a*, and set-screw r^3, with rod *r* and lever R, all combined substantially as and for the purposes specified.

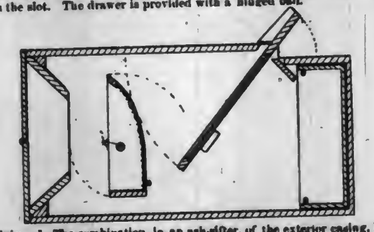
21. The slotted rod r^2, provided with spring r^3, thimble r^{11}, nut r^{12}, and nuts r^3, and combined with rock-sleeve r^1, rocking on lever r^5, and rock-sleeve r^{10}, attached to fixed standard r^5, substantially as and for the purpose set forth.

22. The devices consisting of the rollers 63 and 64, provided with tapes 65, and with the slotted arms 66 and set-nuts, in combination with twines Z' and folding-knife B^1, substantially as and for the purposes specified.

23. The combination of foot-lever *s*, spring 102, rod s^3, lever s^4, lever 72, pulleys 35 and 36, cord 71, and spring 87, substantially as and for the purposes set forth.

202,157. ASH-SIFTERS. Josiah E. Comings, Utica, N. Y. Filed Mar. 21, 1878.

Brief.—During the operation of sifting, the lower screen is held vertically against the side of the box by a pin attached thereto, which passes through the arc-shaped slot in the box, and is held by the curved arm-catch, which covers the slot. The drawer is provided with a hinged bail.



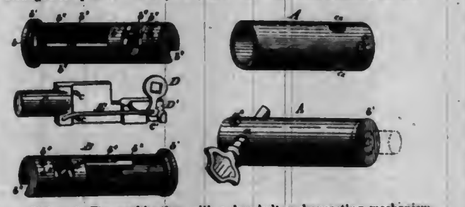
Claim.—1. The combination, in an ash-sifter, of the exterior casing, having top lid and hopper, bottom ash-receptacle, and interior reciprocating and tilting screen, with a pivoted front screen, having lower exit-spout, extending through a discharge-opening to the outside, the front screen being so arranged as to be retained in vertical position during the screening operation, and in inclined position for discharging the screened coal, substantially as and for the purpose described.

2. The combination of an ash-sifter having a swinging front screen, with lower spout extending through an opening to the outside of the sifter, and projecting side pin at upper end, with a guide-slot of the side wall, interior legs or seats, and exterior locking pivot-arm, to retain the front screen in vertical or inclined position, substantially as specified.

3. The combination, with the casing A, having a reciprocating and tilting screen, E, of the swinging front screen F, having lower extension-spout F', and of an inclined deflecting-plate, G, arranged below the lower part of the front screen, to conduct any screened-off ashes into the ash-receptacle, substantially as set forth.

202,158. DOOR-BOLTS. Frank Davis, North Adams, Mass. Filed Jan. 30, 1878.

Brief.—As an improvement on Patent No. 190,581, May 8, 1877, the bolt-case is formed of two separate cylindrical casings, an outer and inner one, combining to inclose the operating mechanism, and to form a fulcrum and guide therefor, there being also a bolt, pitman, and flat hub having a crank-arm, all arranged to operate without pivot-pins or any additional fastening devices.



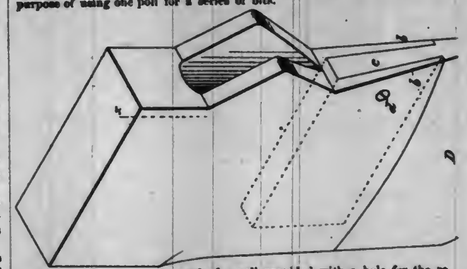
Claim.—1. The combination, with a door-bolt and operating mechanism, of a cylindrical exterior casing and a recessed inner casing, said casings combining to inclose the operating mechanism, and to form a fulcrum and guide therefor, substantially as set forth.

2. The combination of casing A, having opposite holes *a a*, with inner casing B, having transverse groove b^2 and slot b^3, flat hub D, having crank-arm D^1, and the bolt and pitman, substantially as set forth.

3. The combination of cylindrical outer casing A with inner casing B, having annular front flange b^1, side walls b^2 b^1, transverse partitions b^2 and b^3, transverse groove b^2, and slot b^3, said casings being securely fastened together, and adapted to receive the bolt and working mechanism, substantially as set forth.

202,159. AXES. Thomas K. Downing, Okalona, Miss. Filed Mar. 20, 1878.

Brief.—The poll of the ax is provided with a dovetail recess, extending from the inner side of the ax nearly to its outer edge, leaving a rib at the outer edge for the reception of a corresponding tongue upon the bit, which is secured in position by a screw passing through the poll and bit, for the purpose of using one poll for a series of bits.



Claim.—1. An ax composed of a poll provided with a hole for the reception of a handle, and a dovetail recess extending nearly across the width of the poll, and receiving the correspondingly-shaped tongue of a removable bit, as and for the purpose set forth.

2. The ax-poll provided with the dovetail recess and edge-connection *a*, in combination with the bit D, having a tongue, *c*, and the securing-screw *d*, substantially as specified.

202,160. SKYLIGHTS. Michael T. Durkin, New York, N. Y. Filed Dec. 29, 1877.

Brief.—A box-body to the rib, with a gutter and upturned edge of metal, to form a rest for the glass on each side thereof, and all of a single piece of sheet metal, and with clips and cap to cover the joint.



Claim.—The combination of the bar A, made as described, the cap B, and the clips *d*, substantially as specified.

202,161. COMBS-COMBS. John E. Finley, Memphis, Tenn. Filed Jan. 5, 1878.

Brief.—The handle can be detached and used with the blades in it for other purposes. Between the rigid comb-bars flexible plates are arranged to assist in the grooming.

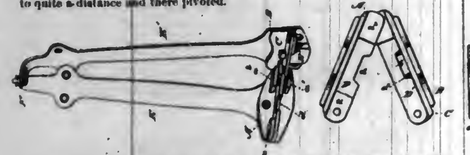


Claim.—1. The rubber or other elastic or yielding plates or bars alternating with the metallic conch-bars.

2. The handle H, containing horse-grooming implements, detachably connected to the currying device.

202,162. HINGES. Thaddeus Fowler, Seymour, Conn. Filed Oct. 12, 1877.

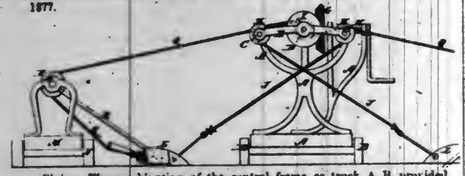
Brief.—To the usual link-connected gate-hinge is added a rocking plate and pivot-block to prevent binding, and the back plates are extended upward to quite a distance and there pivoted.



Claim.—1. The combination of straps A and B with link-bars D and D', upright straps E and E', and upper hinge F, substantially as set forth.

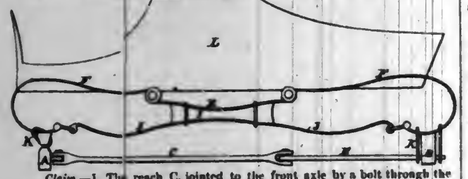
2. The combination of strap A, having lugs a a', with strap B, having recessed pivot-block B', rocking plate C, having lugs c' c', and link-bars D D', substantially as and for the purpose set forth.

202,163. GRADING-MACHINES. William L. Frease, Mohawk Village, Ohio. Filed Oct. 9, 1877.



Claim.—The combination of the central frame or truck A B, provided with the three shafts C D C', the side frames or trucks M N, provided with the shafts O, the double drums I, the guide-pulleys K P, the ropes J Q, the scrapers L, and the braces R, with each other, substantially as herein shown and described.

202,164. WHEELS-GEARS. Joseph J. Gallagher, Davisville, Cal. Filed Feb. 6, 1878.

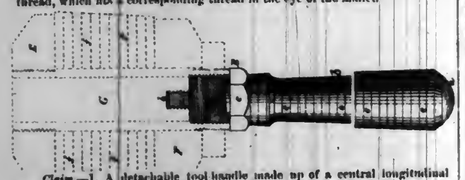


Claim.—1. The reach C, jointed to the front axle by a bolt through the plate D, and to the rear axle by means of the brace E, substantially as herein described.

2. The springs F F, extending from the bars G to the axle and bolster, in combination with the spring J, clipping to the bar H and block I, and connected with the bolster and rear axle-bed by shackles K, substantially as herein described.

202,165. MALLET-HANDLES. George B. Goddard, Brockton, Mass., assignor to Alice M. Goddard, same place. Filed Mar. 7, 1878.

Brief.—The handle is formed of a bolt carrying a firmly-clamped sleeve of a non-metallic substance, provided with a head at its outer end and a screw-thread on its inner end, upon which is supported a nut having an exterior thread, which fits a corresponding thread in the eye of the mallet.



Claim.—1. A detachable tool-handle made up of a central longitudinal bolt, provided with a head at one end and a male screw-thread at the other end, a sleeve or tubular handle surrounding said bolt, and a nut fitted to the threaded end of said bolt, and clamping said sleeve firmly between it and the head of the bolt, and provided with an exterior or male screw-thread as a means of attaching said handle to the mallet or other tool, substantially as and for the purposes described.

2. The combination, in a detachable tool-handle, of the bolt A, provided with a head, *a*, and screw-thread *b*, the nut B, provided with a female thread to fit the thread *b* on the bolt, and an exterior or male screw-thread, *d*, and a sleeve, D, composed of a series of disks, *c*, of leather, leather-board, paper, or other non-metallic material, clamped firmly between the head of the bolt A and the nut B, substantially as and for the purposes described.

202,166. LINKS FOR VALVE-MOTIONS. Saml. Hamblin, Groenville, Pa. Filed Jan. 28, 1878.

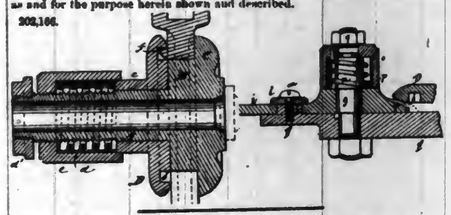
Claim.—1. The link-support consisting of the flanged sleeve A, the flange D, the spring *d*, and cap *e*, in combination, substantially as herein shown and described.

2. The grooved spring-actuated flange D, in combination with the link having the nib *f*, substantially as herein shown and described.

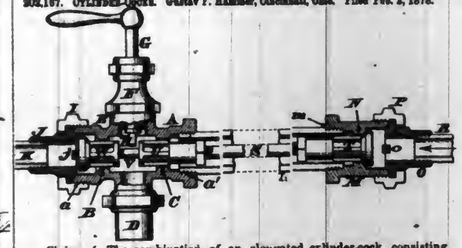
3. The combination, with the flange D and link E, of the lever *i*, having a wedge-shaped end, *r*, as and for the purpose described.

4. The combination, with link-block, of the stud *g*, having a polygonal portion, the cap *e*, and spring *a*, in combination with the lever *i*, substantially as and for the purpose herein shown and described.

202,166.



202,167. CYLINDER-COCKS. Gustav F. Hammer, Cincinnati, Ohio. Filed Feb. 9, 1878.



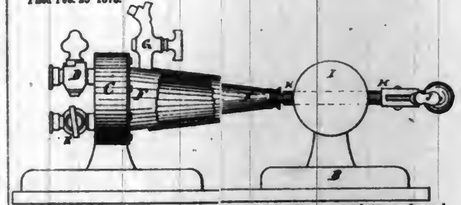
Claim.—1. The combination of an elongated cylinder-cock, consisting, essentially, of a barrel, A B, and shell M N, connected together by an intermediate section or housing, L, which latter is traversed by the stem S of the loosely-coupled reciprocating valves T and W, all constructed and arranged as herein described, and for the purpose set forth.

2. In combination with an automatic cylinder-cock, the loose adjusting-bar V, whose opposite ends traverse the chambers *u'* and *w'* of guide U and valve W, respectively, for the purpose set forth.

3. In combination with an automatic cylinder-cock, the valve-stops *j o*, attached to the inner ends of tail-pieces J O, constructed and arranged substantially as shown, and for the purpose specified.

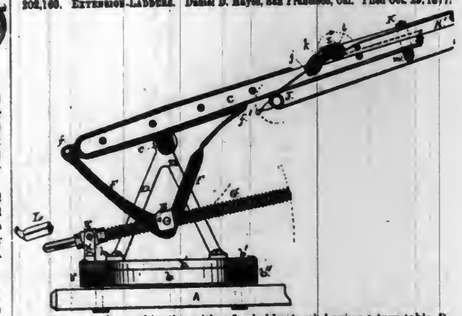
4. The combination of barrel A B C D, housing L, shell M N, stem S, valves T W, guide U, chambers *u' w'*, loose adjusting-rod V, and controlling device G H, as herein described.

202,168. MACHINES FOR EYELETING UMBRELLA-CASES. Wm. Harnah, New York, N. Y. Filed Feb. 25 1878.



Claim.—The stand C, the hollow cone F, having a round tenon formed upon its forward end, and provided with the inlet, outlet, and air faucets D E G, the hollow follower H and its stand I, lever J, and supporting-arm K, in combination with each other, to adapt the machine for use for turning and eyeleting cases, substantially as herein shown and described.

202,169. EXTENSION-LADDERS. Daniel D. Hayes, San Francisco, Cal. Filed Oct. 29, 1877.



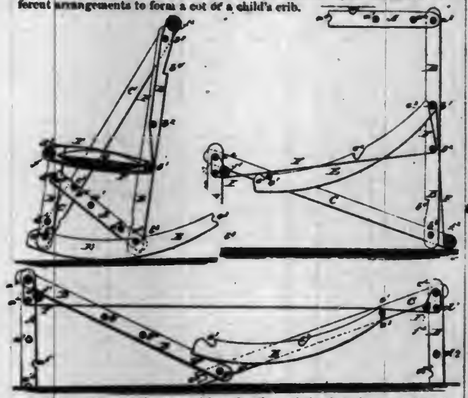
Claim.—1. In combination with a fire-ladder truck having a turn-table, B, and pivoted ladder C, the mechanism for raising, and lowering, and holding the said ladder in any position, composed of the parts E F G *g* H, by which the power employed to operate it is applied to the ladder on both sides of its axis or center of motion, substantially as described, for the purpose set forth.

2. In combination, the screw-rod G, held in a pivoted bearing, *g*, at one end between the brackets H H, and being free at the other end to move in the arc of a circle, the nut E, and the rigid radial arms F F, secured to the ladder-frame at the points *f f' f' f'*, which are on both sides of the center of motion or axis of the ladder, the whole arranged substantially as and for the purpose set forth.

3. The pawl I on the end of the extension-ladders of a fire-truck, pivoted at *i*, and provided with a suitably-curved end, *j*, and a notch or depression, *k*, for holding said pawl out of play, constructed and applied to operate as and for the purpose set forth.

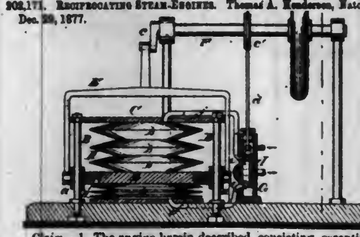
202,170. CONVERTIBLE CHAIRS. Henry C. Hayman, Van Buren, Ark. Filed July 9, 1877.

Brief.—The parts composing the rocking-chair are capable of several different arrangements to form a cot or a child's crib.



Claim.—The combination, with each other, of the four frames A B C D, with their rounds and notches, the rockers E, with their notches, and the canvas F, with its rounds, substantially as herein shown and described.

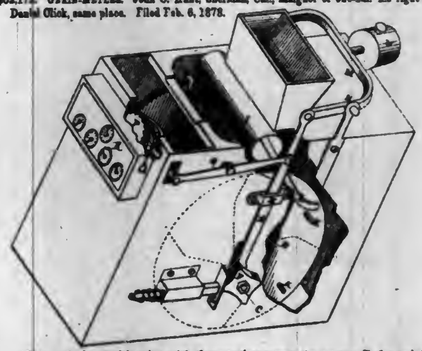
202,171. RECIPROCATING STEAM-ENGINES. Thomas A. Henderson, Natchez, Miss. Filed Dec. 26, 1877.



Claim.—1. The engine herein described, consisting, essentially, of the bellows-shaped vessels H H', movable head D, fixed head C, bed-piece A, standards B, pipes *f*, and slide-valve I, all constructed, arranged, and operating substantially as specified.

2. The combination of the vessels H H', movable head D, fixed head C, bed-piece A, standards B, guides *a*, pipes *f*, slide-valve I, eccentric *c'*, shaft F, crank *e*, and forked connecting-rod E, all constructed, arranged, and operating as and for the purpose specified.

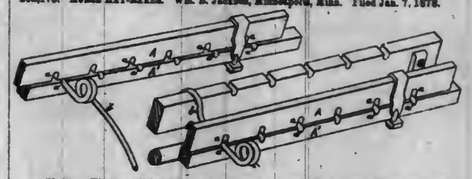
202,172. GRAIN-METERS. John C. Hunt, Sheridan, Cal., assignor of one-half his right to Daniel Click, same place. Filed Feb. 6, 1878.



Claim.—1. In combination with the rotating compartment-pan B, for weighing and discharging, the block F and the spring-plate G, to steady and bring the parts into position at each rotation, substantially as herein described.

2. The semi-rotating gate or valve I, with its spring J and lever-arm L, in combination with the pins K K upon the weighing-pan, to open and close the gate automatically, substantially as herein described.

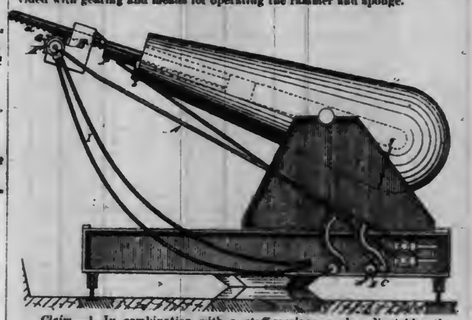
202,173. HORSE HAY-RAKES. Wm. B. Jackson, Minneapolis, Minn. Filed Jan. 7, 1878.



Claim.—The tooth-bar formed in two sections, A A', and provided with slots or notches *a a'*, one section being made adjustable longitudinally, and adapted to either hold the teeth rigidly in place or allow them a vertical movement, in the manner and for the purpose substantially as hereinbefore set forth.

202,174. LOADING ATTACHMENTS FOR ORDNANCE. David D. Johnson, U. S. Army. Filed Feb. 27, 1878.

Brief.—Two sets of arms are attached to the rear part of the gun-carriage, at the sides thereof, which arms are raised and lowered by means of rack-and-pinion gearing. At the front ends of said arms are carriages for the ammunition and for the sponge or loading-staff, the latter carriage being provided with gearing and means for operating the rammer and sponge.



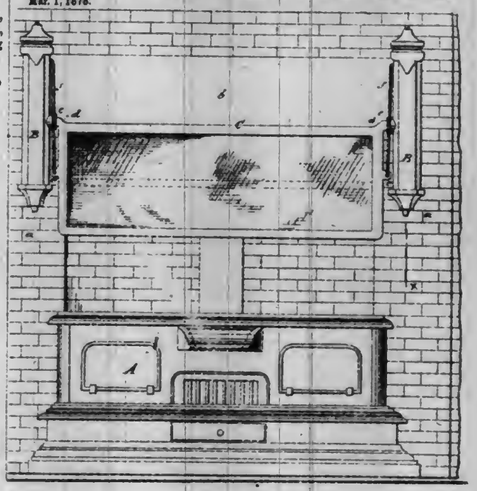
Claim.—1. In combination with a staff-carriage made adjustable, the operating-drum H, ratchet-wheel G, and sustaining-spring c, substantially as shown and described.

2. In combination with the sponge-staff, the operating-drum K, mounted thereon and movable, substantially in the manner and for the purposes set forth.

3. In combination with the staff-carriage, having a ratchet-wheel mounted therein, a sponge-staff provided with a circular ratchet at one end, arranged to permit the rotation of said staff upon the wheel, substantially as and for the purposes set forth.

4. In combination with the supporting-arms of the staff-carriage, which are pivoted or journaled at one end, a curved rack-bar and operating-pinion, located between the carriage and journal, substantially as and for the purposes set forth.

202,175. PLATE-GLASS FACE-PROTECTORS. Charles A. Kirtland, New York, N. Y. Filed Mar. 1, 1878.



Claim.—The frame C, containing a sheet of glass, and having pivots *d*, the weight-casings H, having sockets *e*, and the counterbalance-weight h, in combination, substantially as herein shown and described.

202,176. STENCH-TRAPS. Thomas G. Knight, Brooklyn, N. Y. Filed Mar. 21, 1878.



Claim.—1. An automatic stench-trap valve having the part H covering the inlet-pipe and the part I closing the outlet, permitting the downward passage of water, but cutting off the downward passage of air, thereby preventing the siphonage of the water-seal below, substantially as described.

2. An automatic stench-pipe valve, the part H covering the inlet, and the part I covering the outlet, the said parts H and I connected by the hinged joint *a*, substantially as described.

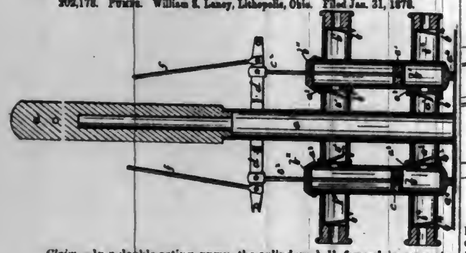
3. An automatic stench-trap valve, the part H covering the inlet, and the part I covering the outlet, the two parts pivoted on opposite sides, and the lower part of the upper flap H projecting under the free edge of the flap I, whereby any movement of the upper flap raises the lower flap and permits the passage of fluid, substantially as described.

202,177. SKIDS. Clarkson A. Koehler and James A. Koehler, East Saginaw, Mich. Filed Feb. 7, 1878.



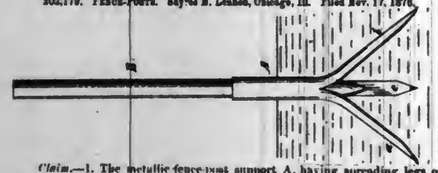
Claim.—As a new article of manufacture, a metallic skid wherein the pipes or tubes are made with solid ends, and provided with chords, guards, and struts, substantially as described.

202,178. PUMPS. William S. Laney, Lithopolis, Ohio. Filed Jan. 31, 1878.



Claim.—In a double-acting pump, the cylinders *b b'*, formed in separate pieces from the stock *a*, and provided with lugs *a'*, whereby they may be secured together and to said stock *a*, and having the valves *b' b'* and the removable valves *b'' b''* arranged above and below the pistons, substantially as and for the purposes set forth.

202,179. FENCE-POSTS. Sayre H. Leanse, Chicago, Ill. Filed Nov. 17, 1876.

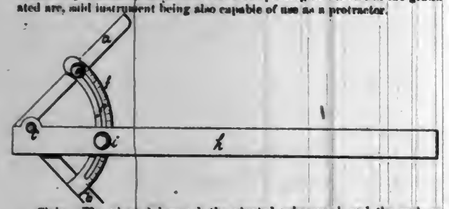


Claim.—1. The metallic fence-post support A, having spreading legs or roots *a b c*, in combination with a wood or metal post, B, driven through or into the same, substantially as described.

2. A fence-post formed of the metallic support A, having spreading legs or roots *a b c*, and the center post of metal or wood B, driven into or through the same, substantially as shown in Fig. 3.

202,180. ADJUSTABLE CENTERING-SQUARES. Horace B. Little, Hartford, Conn. Filed Sept. 27, 1877.

Brief.—A centering-square in which the movable arms are held at the desired adjustment by means of a set-screw passing in the slot in the graduated arc, said instrument being also capable of use as a protractor.



Claim.—The pivoted legs *a b*, the pivoted ruler-arm A, and the rack or segmental arc *f*, all combined and designed for operation and use substantially as shown and described.

202,181. ICE-ELEVATORS. John Macomb, Chicago, Ill. Filed Dec. 17, 1877.

Brief.—The carrier-platform is pivoted near its center, and tilts to discharge its load when elevated to the chute, and tilts back again when lowered to receive another load. The chute may be elevated or lowered, as desired, by means of a windlass and ropes.



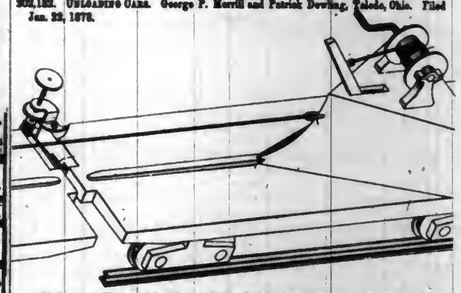
Claim.—1. An elevator wherein are combined the tilting platform R, the rigid frame or car-base R', and a support and trip device pivoted to one of the said parts for supporting and releasing the said platform, substantially as and for the purposes specified.

2. The combination of the platform R, supported on bearings arranged behind its center of gravity, and provided with a stop or catch, S', the counterbalanced trip-arm *f'*, and supporting-arm *f*, a platform-tilter arranged at the lower end of the route of the car, and a tripper arranged to strike the arm *f'* at the upper end of the route, substantially as and for the purposes specified.

3. The combination, in an elevator, of the vertically-adjustable chute J, the tilting platform R, pivoted behind its center of gravity, the rigid frame or car-base R', and a counterweighted trip device, substantially as and for the purposes specified.

4. The combination, in an elevator, of the chute J, ropes or chains M and M' M', windlass O, rope or chain P, ratchet Q, catch Q', and guides L L, substantially as and for the purposes specified.

202,182. UNLOADING OARS. George P. Merrill and Patrick Dowling, Toledo, Ohio. Filed Jan. 22, 1878.

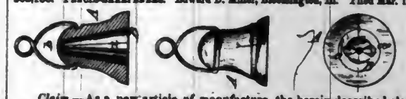


Claim.—1. The combination, substantially as hereinbefore set forth, of the plow, the rocking elevating-lever, and its roller, adapted to pass over and be caused to bear upon the central rails of the cars, to lift the front of the plow in passing from one car to another.

2. The combination, substantially as hereinbefore set forth, of the plow provided with a platform, the elevating-lever, and the lever-operating devices mounted on the plow-platform.

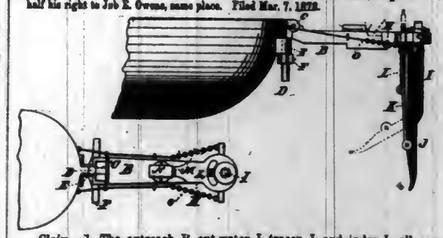
3. The combination of the central rails on the cars, the plow having a short heel-groove to admit of its being swung sidewise on the rail, and devices, substantially such as set forth, for elevating the front end of the plow, for the purpose specified.

202,183. PENCIL-SHARPENERS. Edward D. Miller, Bloomington, Ill. Filed Mar. 13, 1878.



Claim.—As a new article of manufacture, the herein-described slate-pencil sharpener, consisting of the shell A, having the hole *b* and the recess B, made conical in shape, and the inner wall coated with a composition or lining of cement and emery or sand, and provided with one or more grooves, *c*, as specified.

202,184. SHOAL-INDICATORS FOR SHIPS. Charles C. Miller, Hamilton, Ohio, assignor of one-half his right to Job E. Owens, same place. Filed Mar. 7, 1878.



Claim.—1. The outreach B, cut-water I, tracer J, and index L, all combined substantially as specified.

2. The outreach B, cut-water I, tracer J, index L, and hinge-joint D, all combined substantially as specified.

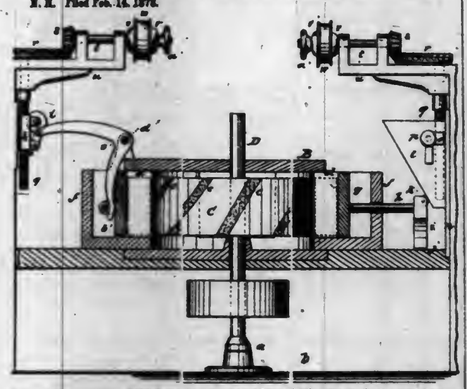
3. The outreach B, cut-water I, tracer J, index L, and hinge-joint C, all combined substantially as specified.

4. The outreach B, cut-water I, tracer J, index L, hinge H, and latch M, all combined substantially as specified.

5. The outreach B, cut-water I, lever P, and chains O O, all combined substantially as specified.

6. The spring-latch M, with its flexible shank R, combined with its end spring T, substantially as specified.

202,185. MACHINES FOR MAKING WOOD PULP FOR PAPER. Robert D. Newman, Bristol, N. H. Filed Feb. 16, 1878.



Claim.—1. A grindstone having corundum-filled grooves in its periphery, as and for the purpose specified.

2. The pockets of a wood-pulping machine arranged directly opposite each other on the outside of curb and pressing toward the center, in combination with a four-section curb, whose sections fit severally between the pockets, and are provided with ears, as shown and described.

3. The screw *q*, wedge *l*, having the shear-nut *o*, and the follower *g*, having the rod *h* and head *i*, in combination, substantially as herein shown and described.

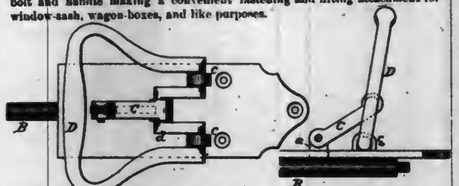
4. In a wood-pulping machine, fixed collar *c*, movable collar *c'*, nut *a'*, pulley *w*, and shaft *t*, in combination, substantially as herein shown and described.

5. The combination of the right-angled lever *c'*, shear-nut *b'*, screw *q*, and follower *b'*, as herein shown and described.

6. The stone formed with narrow grooves, filled with emery, whereby the wood is first roughed up and then rubbed off, thus making a very fine and strong pulp.

202,186. COMBINED LOCK-BOLT AND HANDLE. Wm. S. Montgomery, Marshalltown, Iowa. Filed Mar. 9, 1878.

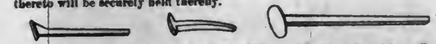
Brief.—An ordinary pivoted handle is provided with a downwardly-projecting bolt, moving in a recess back of the handle-plate, and this bolt is connected by a link with a crank-extension of the handle in such manner that the swinging of the handle on its pivot moves the bolt in and out, the combined bolt and handle making a convenient fastening and lifting attachment for window-sash, wagon-boxes, and like purposes.



Claim.—A lock-bolt consisting of the handle D, having the crank *d*, the link C, and bolt B, substantially as specified.

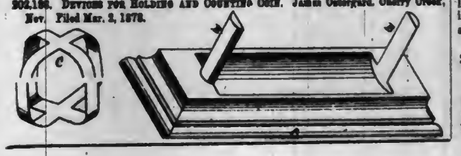
202,187. MODES OF LAYING FLOORING. Carson Mudge, Bay St. Louis, Miss., assignor of two-thirds his right to Ephraim K. Converse and Thomas B. Johnson, New Orleans, La. Filed Jan. 2, 1878.

Brief.—Square-edged boards are secured by "toeing" nails provided with obliquely-projecting heads through the lower exposed corner, and leaving the head projecting in such manner that the edge of the next board driven up thereto will be securely held thereby.



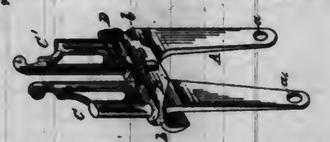
Claim.—As a new article of manufacture, a nail provided with a tilted head, one or more edges of which are so formed as to project beyond the edge of the board when the nail is driven to its place, so as to form a means for securing square-edged boards, as described, and for the purpose specified.

202,188. DEVICES FOR HOLDING AND COUNTING COIN. James Ostergard, Cherry Creek, Nev. Filed Mar. 2, 1878.



Claim.—The device consisting of the concave base A with the standards B B, having a space between them to receive a specified quantity of coins, said standards being fitted to receive and apply the holder C, substantially as herein described.

202,189. REIN-HOLDERS. Gustav Piper and Henry Piper, New Holstein, Wis. Filed Feb. 15, 1878.



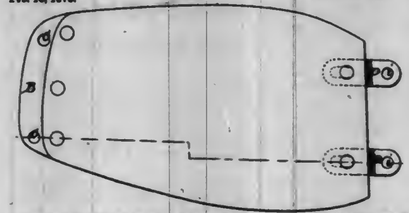
Claim.—The combination of the fastening-plate A, having curved head *b* and screw-holes *c c*, with the rein-holder C C' B, the base-plate B of which is slotted and curved to fit the curvature of head *b* of plate A, upon which it is secured adjustably by a set-screw, *d*, projecting up through the slot *e*, substantially as and for the purpose herein shown and specified.

202,190. FIFTH-WHEELS FOR VEHICLES. Moses Powe, Phillipsburg, N. J., assignor to himself and John Bitters, Easton, Pa. Filed Mar. 16, 1878.



Claim.—The king-bolt C, having a screw-thread cut upon its lower part, and provided with the jam-nut *c'* and the collar *c''*, the collar *c'*, formed upon the enlarged center of the bar A, having a screw-thread cut in its inner surface, and fitting into a hole in the enlarged center of the bar B, and the sleeve D, having its lower end enlarged to fit upon the collar *c''*, in combination with the said bars A B, substantially as herein shown and described.

202,191. TAP-SOLES FOR BOOTS AND SHOES. David R. Proctor, Gloucester, assignor to A. G. Hill, East Saugus, and Emma F. Perkins and Alice F. Proctor, Gloucester, Mass. Filed Feb. 18, 1878.

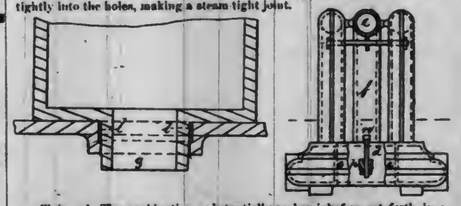


Claim.—1. As an article of manufacture, a tap for boots and shoes, adapted to be rigidly attached to the sole at its forward end, and provided with means, substantially as described, whereby its rear end is held in contact with and permitted to slide on the sole, as set forth.

2. The combination, in the bottom of a boot or shoe, of the sole S and the tap A, rigidly connected at their forward ends, and connected at their rear ends by plates D D, secured, as described, to the tap and sole, whereby the rear end of the tap is adapted to slide lengthwise on the sole in both directions, substantially as and for the purpose specified.

202,192. STEAM-RADIATORS. John B. Reed, Westfield, Mass. Filed Dec. 27, 1877.

Brief.—The upper plate of the base is provided with recessed holes, into which, and resting on the shoulders of said recesses, are placed soft-metal packing-rings, and the tapering legs of the circulating-tubes are then driven tightly into the holes, making a steam-tight joint.



Claim.—1. The combination, substantially as hereinbefore set forth, in a steam-radiator, of the reservoir-base, provided with recessed holes in its upper plate, and double-legged circulating-divisions, cast in one piece, having tapering end tubes, with soft-metal packing-rings to seal the joints, all constructed and arranged to operate substantially in the manner described.

2. The combination, substantially as described, in a steam-radiator, of a reservoir-base having two or more recesses in its upper plate, adapted to support and hold the packing-rings, with one or more circulating-divisions, having tapering chilled end tubes cast in one piece with said divisions, and the soft-metal packing-rings for uniting said parts, as set forth.

202,193. SWINGING BASINS AND URINALS. John Reid, Brooklyn, assignor to the J. L. Mott Iron Works, New York, N. Y. Filed Mar. 7, 1878.

Claim.—1. A basin or receiver swinging upon horizontal trunnions or pivots, and having a straight back edge, forming a dam, over which the water flows as the basin is emptied, in combination with the front plate *a* and back *b*, substantially as set forth.

2. A basin or receiver swinging upon horizontal pivots, and provided with a flange, *i*, in combination with the wall-plate *a*, having an opening into which such flange *i* passes, substantially as set forth.

3. The combination, with the basin or receiver swinging on horizontal pivots, of a front plate, a back plate, and a waste-pipe and trap connecting with the container formed by the space between the front and back plate below the basin, substantially as set forth.

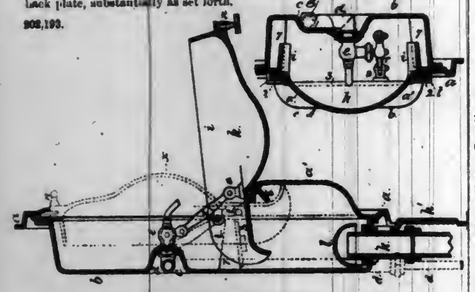
4. The combination, with the swinging basin and front and back plate, of the deflector 5, substantially as and for the purposes specified.

5. The projections 7 at the sides between the front and back plates, in combination with the swinging basin, the edges of the plate of which project below such projections 7, for the purposes and substantially as set forth.

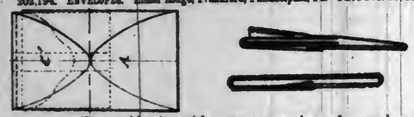
6. The combination, with the swinging basin and the faucet, of the connecting-link *r*, hinged to the respective parts, substantially as set forth.

7. The back plate *b*, having the recessed channel *c*, in combination with the water-supply pipe *d*, faucet *e*, and coupling *g* below the edge of the said back plate, substantially as set forth.

202,193.



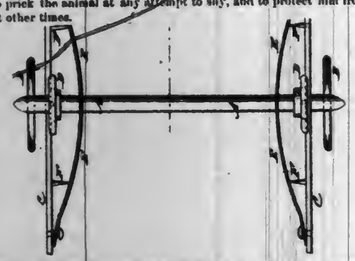
202,194. ENVELOPES. Elmer Ridge, Frankford, Philadelphia, Pa. Filed Feb. 25, 1878.



Claim.—The combination, with a common envelope, of a supplementary piece that has no end flap at the open end, and is gummed to the interior of the envelope, so as to form a pocket for the sealing-flap, while the flap of the supplementary piece is sealed, substantially as and for the purpose described.

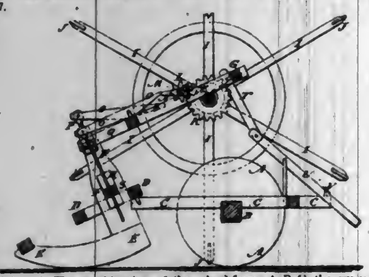
202,195. BITS FOR HORSES. John H. Robinson, Manchester Bridge, N. Y. Filed Feb. 25, 1878.

Brief.—A slotted bow-spring attached to the side bars allows projecting spurs to prick the animal at any attempt to shy, and to protect him from the spurs at other times.



Claim.—The combination of the bars C, the curved or arched springs E, and the points F with the mouth-piece A of the bit, substantially as herein shown and described.

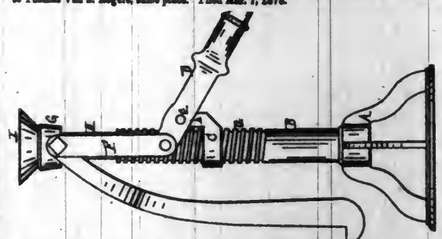
202,196. CORN-PLANTER ATTACHMENTS. Wm. F. Sauter, Marshall, Mo. Filed Nov. 23, 1877.



Claim.—1. The combination of the wheel-frame A B C, the superposed frame G, the runner-frame D E F, pivoted to both frames, and the marker-wheel shaft H, the said shaft being connected by intermediate mechanism with dropper-slide S, as shown and described.

2. The combination, with drop-slide S, of lever P, having arm R pivoted therewith, levers O O, and tappet-shaft M, the latter operated substantially as and for the purpose set forth.

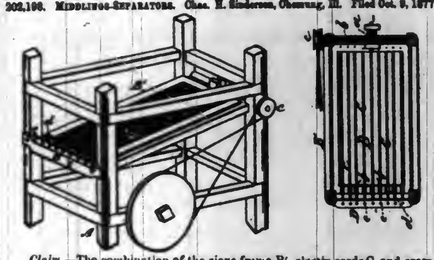
202,197. LIFTING-JACKS. Benjamin M. Sherman, Flint, Mich., assignor of one-half his right to Thomas Van S. Rogers, same place. Filed Mar. 7, 1878.



Claim.—1. In a lifting-jack adjustable to varying heights, and in combination therewith, the revolving bearing-plate I on the top of the plunger-rod H, for the purpose of allowing said lifting-jack to be employed as a jack-screw when desired.

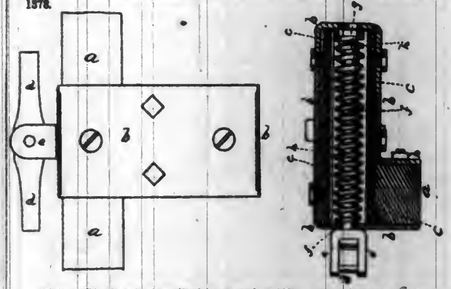
2. In a lifting-jack, the combination, with the hollow standard B, having male screw-thread *a'*, of the nut C, lever D, arms F, plunger-rod H, and revolving bearing-plate I, constructed and arranged substantially as described and shown.

202,198. MIDDLINGS-SEPARATORS. Chas. H. Sinderson, Chemung, Ill. Filed Oct. 9, 1877.



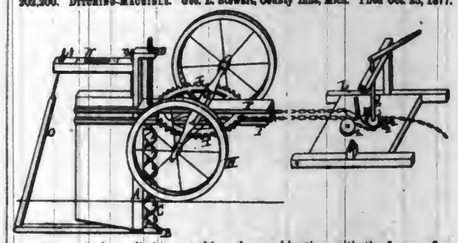
Claim.—The combination of the sieve-frame B', elastic cords C, and cross-piece D, having keys *e*, substantially as and for the purpose herein shown and specified.

202,199. WHIFFLETREE ATTACHMENTS. Rolan W. Smalley, Salem, Mass. Filed Jan. 22, 1878.



Claim.—The herein-described improved whiffletree attachment, consisting of the open strap or box *b*, securely attached to the cross-piece *a*, in combination with the tube *c*, fixed in said box *b*, rod *f*, nut *g*, spring *h*, and clasp *e*, all combined, constructed, and arranged substantially as above set forth.

202,200. DITCHING-MACHINES. Geo. E. Stewart, County Line, Mich. Filed Oct. 23, 1877.



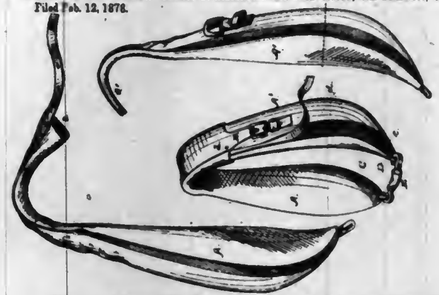
Claim.—1. In a ditching-machine, the combination, with the frame, of a long auger, C, of uniform size throughout its length, and adapted to excavate the earth and raise the same to the surface, substantially as described.

2. In a ditching-machine, the combination, with the frame, of the cutting-foot B and the long auger C, substantially as described and shown.

3. In a ditching-machine, and in combination with the standard A, the spirit-level N, adjusting-rod O, and adjustable extension-foot P, arranged to operate substantially as and for the purposes set forth.

4. In a ditching-machine, and in combination with the standard A, the frame consisting of the slide E and bars F, provided with suitable bearing-surfaces, and carrying the driving-wheel 1, when arranged to operate substantially as and for the purposes herein set forth.

202,201. HORSE-COLLARS. Charles T. Staufenbeil and John Staehli, San Francisco, Cal. Filed Feb. 12, 1878.



Claim.—1. A horse-collar formed in two separate halves or sections, with a pocket, *a*, on the upper end of one section, and the flattened neck *a'* on the like end of the other section, of such size as to fit and slide into the said pocket, the two parts being held and secured together by means of the strap and buckle, substantially as herein described, for the purpose set forth.

2. A horse-collar in two separate halves or sections, A A', formed over a metal rib or rim, C', without sewing or stitching, the leather covering thereof being held by means of metal pins or rivets *d d*, formed within and of the same metal as the rib, substantially as herein described, for the purposes set forth.

3. In combination with a horse-collar formed in two separate halves or sections, substantially as herein described, and with the loops or eyes on the ends thereof, the extension hook-fastening composed of the parts F F, the spring-catches *g g*, and the screw-thimble E, constructed and arranged to operate substantially as herein described and shown.

4. The metal rib C, formed with a groove, *c*, and curved sides, with a loop or eye at its bottom end, and a series of pins, *d d*, projecting vertically from and along the bottom of the groove *c*, substantially as herein described, for the purposes set forth.

202,202. NAPKIN-HOLDERS. Lucius Thompson, San Francisco, Cal. Filed Feb. 5, 1878.



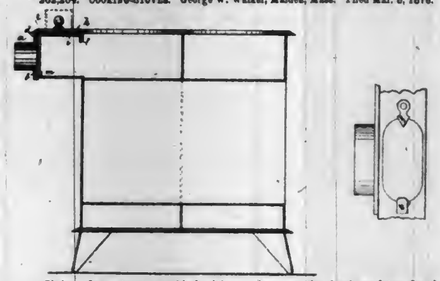
Claim.—The plate A, with its hook-extension B, slot C, and rearward-projecting points or teeth E, in combination with the hinged swinging plate G, with its points or teeth I, and latch-fastening, substantially as and for the purpose described.

202,203. PERCUSSION-SHELLS. John M. Urquhart, Jefferson, Tex. Filed Feb. 6, 1878.



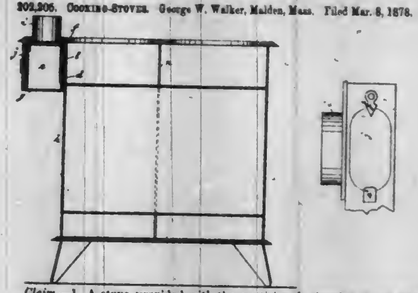
Claim.—A percussion-shell made of jointed and separately-charged sections, connected by a fuse, and of a hollow point, having capped anvils and sheet-metal casing, substantially as described, and for the purpose specified.

202,204. COOKING-STOVES. George W. Walker, Malden, Mass. Filed Mar. 8, 1878.



Claim.—In a stove provided with openings at the back and top for the pipe-collar, a pipe-collar and a covering-plate, and a duplex damper adapted to open and close the passage leading to the pipe-collar in either of its positions, substantially as described.

202,205. COOKING-STOVES. George W. Walker, Malden, Mass. Filed Mar. 8, 1878.



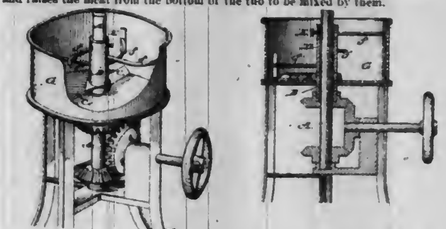
Claim.—1. A stove provided with the partition *k*, chamber *c*, and openings for the removable pipe-collar and covering-plate, in combination with a single damper to close or open the main passage leading into chamber *c*, to operate substantially as described.

2. A stove provided at its back with a chamber, *c*, separated from the fire-space of the stove by a partition, *k*, provided with a passage, *d*, therein, in combination with a damper to open or close such passage, and with a removable pipe-collar and covering-plate, interchangeable, as and for the purpose described.

3. In a stove provided with a chamber, *c*, at its back, the combination, with a damper located therein, of a partition, *k*, provided with a main passage to be closed, as described, by the damper, and a passage uncovered by the damper when covering the passage in the partition, to admit external air into the chamber as the damper is closed.

202,206. MACHINES FOR MIXING MEATS. Orrin E. Walker, Jamestown, N. Y. Filed Jan. 12, 1878.

Brief.—The lower arm rotates in opposite direction from the upper arms, and raises the meat from the bottom of the tub to be mixed by them.



Claim.—1. The lower arm C, having the central aperture through the same, with splice to removably connect said arm to the hollow shaft B.

2. The combination of the shaft A, carrying the hollow shaft B, with its mixing-arms, with the shaft B, carrying the removable arm C, all in connection with the cylinder G, the shafts to be actuated by gear or other proper device placed under the cylinder G, all substantially as shown and described.

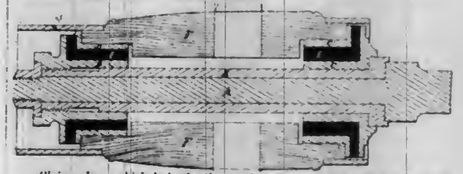
202,207. HOSE-NOZZLES. Adolph Weber, Detroit, Mich. Filed Feb. 27, 1878.



Claim.—1. In combination with a hose-nozzle, a cap provided with perforations tangential to the axis of the nozzle, substantially as and for the purposes set forth.

2. The combination of a hose-nozzle and cap, forming the chamber *d*, said cap being provided with tangential orifices through the head, and opening out of said chamber, substantially as and for the purposes set forth.

202,208. VEHICLE-HUBS. James M. Whiting, Providence, R. I., assignor of one-half his right to Julius Carroll, same place. Filed Dec. 20, 1877.

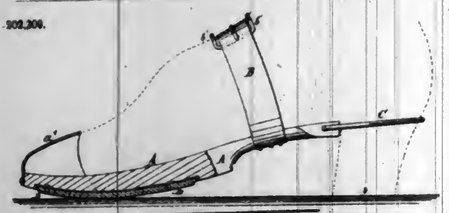


Claim.—In a vehicle-hub, the elastic sleeve E, provided with an annular flange at right angles thereto, in combination with the rigid sleeves C and C', provided with corresponding annular flanges, substantially as shown and described.

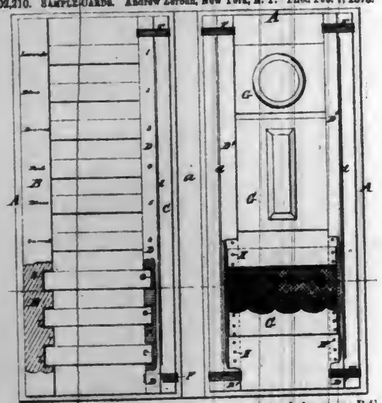
202,209. SANDALS. Anne M. Woodhull, Freehold, N. J. Filed Nov. 6, 1877.

Claim.—The sole A, provided with the toe-tip *a'* and strap B, in combination with the loop C and the rubber piece D, to adapt it for use as a sandal, substantially as set forth.

202,209.



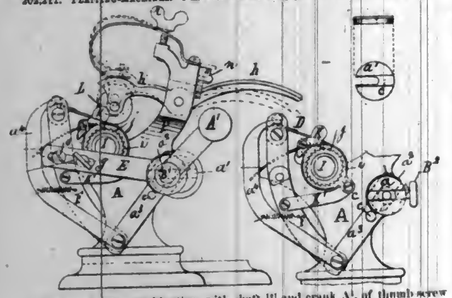
202,210. SAMPLE-CARDS. Andrew Zerban, New York, N. Y. Filed Feb. 7, 1878.



Claim.—1. The combination, in a sample-card, of the strips B C D, the sockets *b* and recesses *c* being provided, as and for the purpose described.

2. The combination, in a sample-card, of two oppositely placed bars, B C, one of which is provided with a series of sockets, *b*, and the other with corresponding recesses *c*, with the hinged slat D and elastic band or spring F, substantially as and for the purpose specified.

202,211. PLAITING-MACHINES. James E. Wilson, Bridgeport, Conn. Filed Oct. 8, 1877.



Claim.—1. The combination, with shaft B¹ and crank A¹, of thumb-screw B³, cam *a'*, grooved disk *a*, eccentric *a'*, connecting-rod E and *f*, thumb-screw *g*, forked cam-lever *a²*, pin *c*, bent knife-bar lever *a³*, knife-bar *a⁵*, knife D, swinging knife-bar frame F, and spiral spring *x*, substantially as and for the purpose set forth.

2. The apron H, as and for the purpose set forth.

3. The combination of knife D, apron H, roller I, and roller L, substantially as and for the purpose set forth.

4. The swinging knife-bar frame F, connecting-strap K², pawl-carrier *i*, pawl K, ratchet *j*, and rollers I and L, combined and arranged to operate substantially as and for the purpose set forth.

5. The combination of cam *a'*, forked cam-lever *a³*, pin *c*, bent knife-bar lever *a⁴*, knife-bar *a⁵*, and knife D, substantially as and for the purpose set forth.

6. The combination of eccentric *a'*, connecting-rod E and *f*, thumb-screw *g*, and swinging knife-bar frame F with knife-bar *a⁵* and knife D, substantially as and for the purpose set forth.

7. The slide-jointed connecting-rod in two pieces, E and *f*, in combination with thumb-screw *g*, and the graduating-marks *b* on said rods, substantially as and for the purpose set forth.

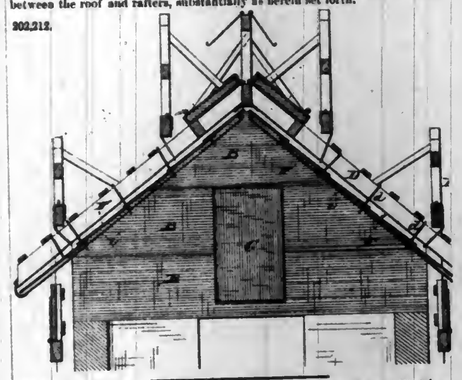
8. The disk *a*, with its groove *c'*, in combination with the eccentric *a'*, substantially as and for the purpose set forth.

202,212. BRICK-KILN ROOFS. Thomas F. Adams, Philadelphia, Pa., assignor to the Peerless Brick Company, same place. Filed Mar. 12, 1878.

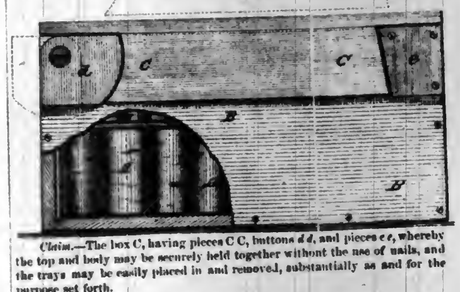
Claim.—1. A brick kiln provided with a permanent iron roof and iron gable ends, provided with doors both in the roof and gables, for the purposes herein set forth.

2. In combination with the ordinary frame-work of a brick kiln, truss-frames connected thereto above the kiln, rafters secured under said truss-frames, and an iron roof suspended below the rafters, leaving an air-space between the roof and rafters, substantially as herein set forth.

202,212.

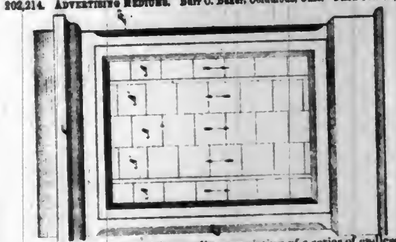


202,213. FASTENINGS FOR EGG-CARRIERS. Noah G. Amadon, Dubuque, Iowa. Filed Aug. 17, 1877.



Claim.—The box C, having pieces C C, buttons *d d*, and pieces *e e*, whereby the top and body may be securely held together without the use of nails, and the trays may be easily placed in and removed, substantially as and for the purpose set forth.

202,214. ADVERTISING MEDIUMS. Barr C. Baker, Columbus, Ohio. Filed Oct. 26, 1877.



Claim.—1. An advertising medium consisting of a series of endless belts, carrying advertisements or other matters to be exhibited, and caused to travel side by side in opposite directions, substantially in the manner described, and for the purpose specified.

2. The fixed pulleys B B¹ B² and loose pulleys D D on the upper shaft, and the loose pulleys F F F F F on the lower shaft, combined with the cords G G and small pulleys *a a*, for moving the advertising-belts in opposite directions, substantially as described.

3. The cords or belts E, carrying the advertising-belts, combined with the grooved supporting pulleys, substantially as described, for the purpose specified.

4. The fixed pulleys B B¹ B² on the upper shaft, and corresponding pulleys on the lower shaft, constructed of larger diameter than the upper loose pulleys D D and corresponding lower ones, whereby the belts on the former are allowed to overlap the latter without arresting or interfering with the movements of the belts, substantially as described.

202,215. VALVE-GEARS FOR HYDRAULIC ELEVATORS. Cyrus W. Baldwin, Brooklyn, N. Y. Filed Jan. 30, 1878.

Brief.—To allow the water by a single throw of the valve to escape from beneath the piston or run around on top of it.

Claim.—1. In a hydraulic elevator apparatus, the combination of a hollow cylinder, having outlet and inlet ports at or near its ends, a piston working therein between such ports, an operating stem, plunger, or ram connected to the piston, a valve-case containing main supply and discharge ports, two

ports connected with one cylinder-port, a third port connected with the other cylinder-port, and an arrangement of piston-valves, substantially as set forth, for covering and uncovering such ports with reference to raising, lowering, and stopping the car.

2. The by-pipe and port P¹, connecting at one end with the main conduit P², and at its other end with the valve-chamber in relationship to the port P, substantially as described, whereby, in connection with a piston valve or valves, communication may be established between the opposite ends of the cylinder for the flow of water from one side of the piston to the other.

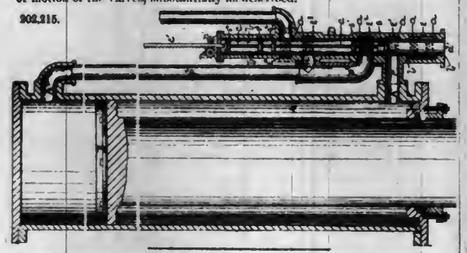
3. A series of piston-valves arranged on a common stem in a valve-case, and suitably spaced with reference to main supply and discharge ports *d d'*, and three intermediate ports, two of which communicate with the port of a hydraulic-elevator cylinder, and the third with the other, substantially as set forth.

4. In combination with cylinder, piston, piston-stem, valve-case, and connecting pipes and ports, a valve device arranged by a single throw or motion to close the supply and bring the discharge into communication with both of the end cylinder-ports, whereby a portion of the water in one end of the cylinder will be free to pass into the other end and the residue to escape, substantially as set forth.

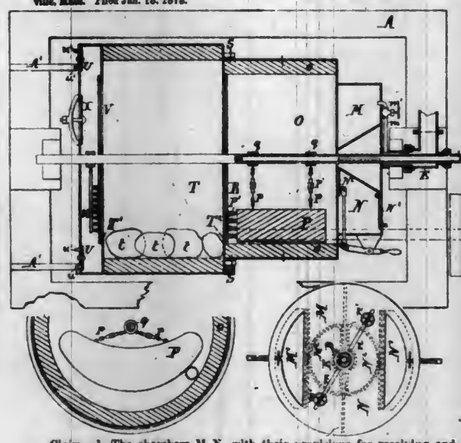
5. In combination with a cylinder piston and stem, a valve-case having at least two ports and pipe-connections thence to the cylinder ports, and a valve device, substantially as described, arranged to close the discharge entirely, or to bring it into communication with the supply, in either case operating by a single motion or stroke.

6. Valves *s s' s²*, arranged substantially as described, with reference to the supply and discharge ports, and a system of ports and pipes leading to the opposite ends of a hydraulic cylinder, and from one end of such cylinder to the other, whereby all ports may be closed simultaneously by a single throw or motion of the valves, substantially as described.

202,215.



202,216. MACHINES FOR MAKING PAPER-PULP FROM WOOD. Benjamin F. Barker, Curtisville, Mass. Filed Jan. 18, 1878.



Claim.—1. The chambers M N, with their provisions for receiving and discharging material, in combination with the grinding-chamber O and the controlling-valves M² N², as herein specified.

2. The stone P, adjustable chains *p*, and rings *q*, inclosed within a revolving chamber, O, in combination with provisions for the reception and discharge of material, as specified.

3. The stone lining *o* of the revolving case O, in combination with the suspended stone P, as and for the purposes herein specified.

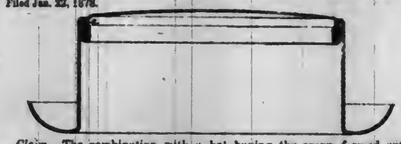
4. The foraminous partition R between the chambers O and T, and their inclosed grinding means P *t*, and with a clearing brush or brushes, P', as herein specified.

5. The revolving case T, with its loose stones *t*, in combination with provisions for the reception and discharge of the fluid or semi fluid material, as specified.

6. A revolving casing and grinding means with provisions for introducing paper-stock and fluid, in combination with discharge-valves U and their operating means *u' u²*, and with stops A', adapted to serve as and for the purposes specified.

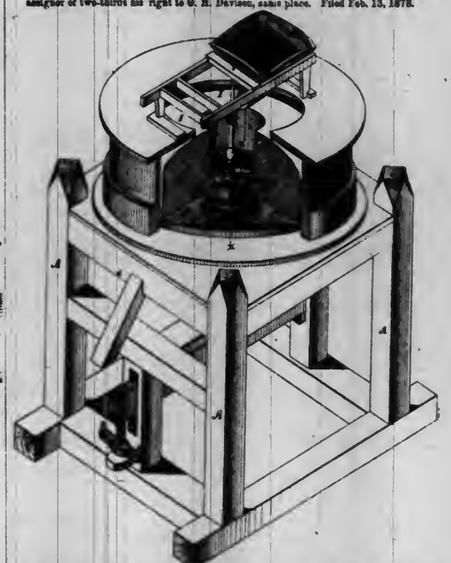
7. The partial partition T', in combination with the revolving chamber T, screen R, and tumbling-stones *t*, arranged to serve as and for the purposes herein specified.

202,217. HATS. William A. Bate, Yonkers, N. Y., assignors to Eben Baldwin, same place. Filed Jan. 22, 1878.



Claim. The combination, with a hat having the crown formed with a brim and with a turned-in margin, of a separate tip having a turned-over margin, said margin of the crown and of the tip being constructed and connected together substantially as herein described.

202,218. LUBRICATING BEARINGS FOR MILLSTONES. Joseph W. Batty, Baltimore, Md., assignor of two-thirds his right to O. H. Davison, same place. Filed Feb. 13, 1878.



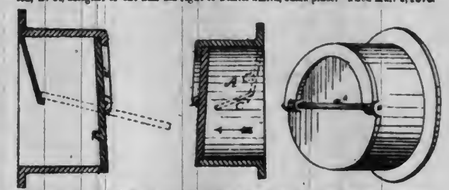
Claim.—1. In combination with the stone C and with the spindle E, the bushing D, provided with a central opening, *d*, and within its upper end with oil-recesses *d'* and notches *d''*, that extend between the latter and said opening, and the collar G fitting around said spindle and over said bushing, substantially as and for the purpose specified.

3. In combination with the oil-recesses *d'* of the bushing D and with the spindle E, the wicks F, extending from said recesses through the notches *c'* to said spindle, substantially as and for the purpose shown.

3. In combination with the stone C and spindle E, the collar G, provided with the grease-cup *g'*, and secured to said stone, and the cap H, attached to and revolving with said spindle and fitting over said grease-cup, substantially as and for the purpose set forth.

4. In combination with the stone C and spindle E, the bushing D, provided with the oil-recesses *d'*, the wicks F, the collar G, having the grease-cup *g'*, the gasket M, and the cap H, said parts being constructed and arranged to operate in the manner and for the purpose substantially as shown and described.

202,219. GAS AND WATER VALVES FOR SEWERAGE-CONNECTIONS. Wm. L. Bolt, Washington, D. C., assignor of one-half his right to Daniel Smith, same place. Filed Mar. 4, 1878.



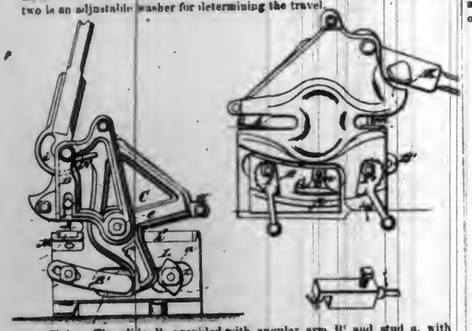
Claim.—1. A valve to prevent the flow of backwater, pivoted approximately in the middle, and having the portions upon opposite sides of its axis of unequal area, in combination with a trap case or shell, substantially as described.

2. A valve to prevent the flow of backwater, pivoted approximately in the middle, and having the portions upon opposite sides of its axis of unequal area, in combination with the shell having the corresponding parts of its valve-seat formed upon opposite surfaces, substantially as described.

3. The combination of a valve pivoted upon its opposite sides, the casing, and a deflector-plate so arranged as to direct the water against one side only of the axis of the valve, substantially as described.

202,220. TIRE-UPSETTERS. John W. Bodge, Canisteo, N. Y. Filed Jan. 5, 1878.

Brief.—The sliding jaw has two arms extending through the frame of the machine and embracing one arm of the lever, and on the straight arm of the two is an adjustable washer for determining the travel.



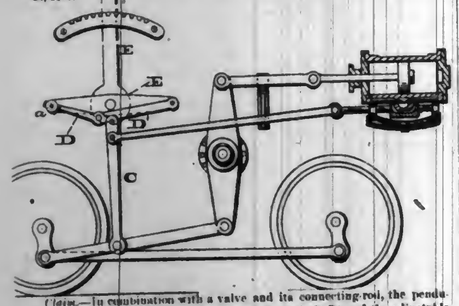
Claim.—The slide B, provided with angular arm B' and stud *a*, with washer L, in combination with the arm C' of the lever C, all constructed as and for the purposes set forth.

202,221. FLOOD-GATES. David Bowles, Miser's Station, Tenn. Filed Dec. 7, 1877.



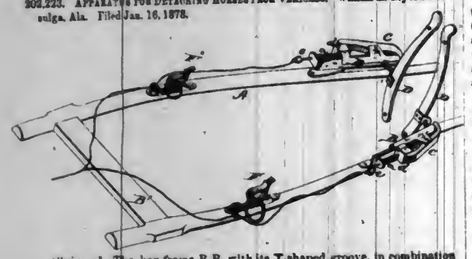
Claim.—The combination of a falling flood-gate, C, with hinged braces G, the lap-board D, with bearings *b*, and the lugs *d* on said bearings, all arranged between abutments B on a platform, A, substantially as and for the purposes herein set forth.

202,222. VALVE-GEARS FOR ENGINES. Chas. Brown, Winterthur, Switzerland. Filed Aug. 24, 1877.



Claim.—In combination with a valve and its connecting-rod, the pendulum-lever C, receiving a positive movement, the rods D D', and the adjustable lever E, all connected as shown, whereby the movement of the engine may be changed, substantially as described.

202,223. APPARATUS FOR DETACHING HORSES FROM VEHICLES. William A. Bryant, Notasulga, Ala. Filed Jan. 16, 1878.



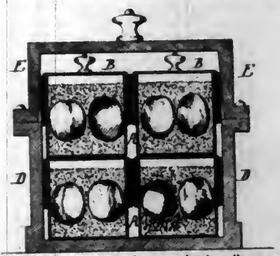
Claim.—1. The box-frame B B, with its T-shaped groove, in combination with the headed rods upon the hames D D, as and for the purpose set forth.

2. The levers C' C and the blocks *d d*, with their spring and cord attachment, in combination with the frames B B, provided with the groove, as and for the purpose set forth.

3. In combination with the boxes B B, as constructed with their grooves and levers, the spring-jaws F F for freeing the breeching-rings, substantially as herein set forth.

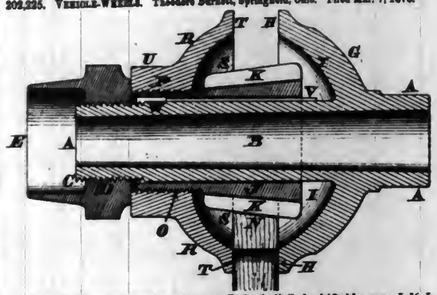
202,224. PACKING BOX AND CASE FOR FRUITS. Patrick O. Burke, Philadelphia, Pa. Filed Dec. 20, 1876.

Brief.—Packs in chopped corn-husks, and seals the joints between covers and bodies of inner metal boxes by pressure of the outer case against flanges of the bodies.



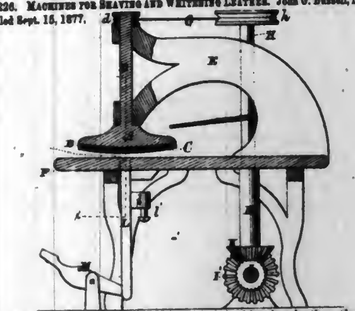
Claim.—The combination of the boxes A, having ribs *c*, and the lids B, having flanges *b*, with the tightly-fitting case D E, all substantially as set forth.

202,225. VEHICLE-WHEELS. Theodore Burnett, Springfield, Ohio. Filed Mar. 7, 1878.



Claim.—The combination of box A B C, shell G I, shiftable cone J K L O, clamping-plate R S, and nut D E, said shell and plate being provided, respectively, with smooth walls H T, that bear against the spokes, substantially as herein described, and for the purpose set forth.

202,226. MACHINES FOR SHAVING AND WHITENING LEATHER. John G. Bussell, Lynn, Mass. Filed Sept. 15, 1877.



Claim.—1. In a machine for shaving and whitening leather, the combination of the disk A, covered upon its face with abrasive material, and arranged to rotate in a horizontal plane, the slotted supporting-table F, and the bar L, arranged to be moved positively and vertically by means of the lever M, whereby any portion of the surface of a skin may be raised into contact with said disk at the will of the operator, substantially as and for the purpose specified.

2. In combination with the presser-bar L, the set-screw *l'*, passing through the lug *l* of said bar, and arranged to impinge upon a fixed stop, so as to limit the upward motion of said bar, substantially as and for the purpose shown.

3. The hereinbefore-described machine, consisting of the abrasive disk A, shafts D and I, table F, arm E, pulley *d*, belt G, hand-wheel *h*, bar L, having the lug *l* and set-screw *l'*, treadle M, fan N, belt O, and duct P, said parts being combined to operate in the manner and for the purpose substantially as shown and described.

202,227. LOCOMOTIVE HEAD-LIGHTS. Christopher Byrne, Cormeant, Ohio. Filed Feb. 4, 1878.

Claim.—1. In locomotive head-lights, the concave reflector B, secured in position by adjusting-screws H', and partially supported on springs A', arranged wholly in the rear of the lamp, substantially as described, and for the purpose set forth.

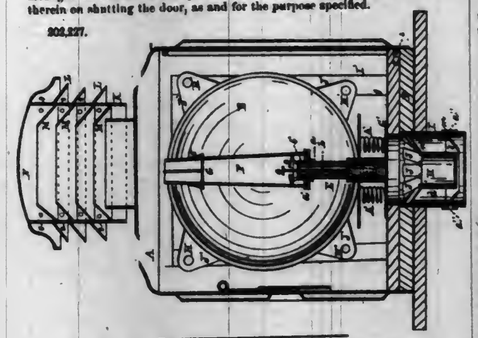
2. The ventilator I, damper *m*, and shield *t*, as arranged in relation to and in combination with the lamp and body A of a locomotive head-light, substantially as described, and for the purpose specified.

3. In combination with the ventilator I and lamp, the drip-cup H, provided with air-openings *e''* and conductors J, in the manner set forth, and for the purpose specified.

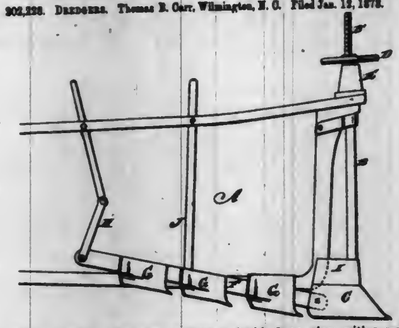
4. In locomotive head-lights, a dome consisting of the perforated fine K, deflectors L, cap N, and shields M, arranged in relation to each other substantially as described, and for the purpose set forth.

5. In locomotive head-lights, the door O, provided with a tongue or rib, *i*, arranged in relation to the groove *g'* of the doorway of the body A as to fit therein on shutting the door, as and for the purpose specified.

202,227.



202,228. DREDGERS. Thomas B. Carr, Wilmington, N. C. Filed Jan. 12, 1878.

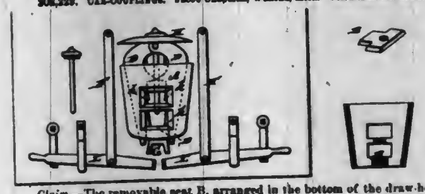


Claim.—1. In a submarine excavator, a double front plow, with a series of single plows flexibly connected to each wing of the front plow, and attached to the bow and sides of the boat by means of the bar B and jointed levers H, substantially as described, for the purposes set forth.

2. The combination, with a vessel, A, of the front plow C, bar B B', screw-wheel D, pivoted bars F F, side plows G G, and the jointed levers H H, all substantially as and for the purpose set forth.

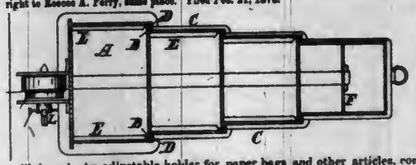
3. The combination, with the vessel A and side plows G, arranged upon vertical adjustable bar F, of the bars J, arranged on the side of the vessel, to keep the side plows from swinging under the boat, substantially as described.

202,229. CAR-COUPLINGS. Jacob Chapman, Wenona, Mich. Filed Mar. 16, 1878.



Claim.—The removable seat B, arranged in the bottom of the draw-head entrance, substantially as and for the purposes set forth.

202,230. PAPER-BAG HOLDERS. Stanley L. Chapman, Chicago, Ill., assignor of one-half his right to Rocco A. Perry, same place. Filed Feb. 21, 1878.



Claim.—1. An adjustable holder for paper bags and other articles, composed of a series of cases of different sizes, connected together and adapted to slide one within another, substantially as described.

2. The cases A, provided with the outside flanges B and C, and the inside lips or flanges D and E, substantially as and for the purpose set forth.

3. A series of cases, A, connected together so as to slide within each other, in combination with the strap or cord G, substantially as described.

4. The cases A, arranged in a series, and adapted to slide within each other, in combination with the strap G and a device attached to the outer end thereof, whereby the strap is always held under tension, substantially as described.

202,231. MEDICAL COMPOUNDS. Thomas P. Childs, Troy, Ohio. Filed Jan. 24, 1878.

Claim.—The within-described medical compound, consisting of balsam of tolu, balsam of fir, balsam of copaiba, white-pine gum, oil of hemlock, and alcohol, substantially as and for the purposes herein set forth.

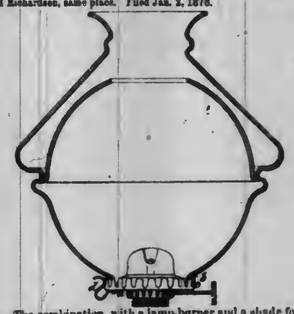
202,232. LAMP-SHADES. George H. Chinnock, Brooklyn, N. Y. Filed Feb. 17, 1877.



Claim.—1. A translucent or transparent holder or base having a flaring body, a lip or outwardly-projecting portion at the bottom for attachment to a lamp-burner, and an inwardly-extending flange at the top, provided with devices made of translucent or transparent material for interlocking with a shade supported thereon, substantially as and for the purposes specified.

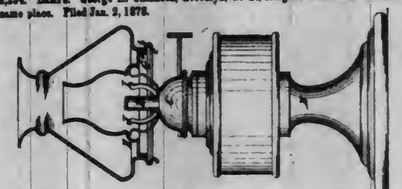
2. The combination of a translucent or transparent holder or base and a shade or other device supported thereby, both provided with interlocking parts made of translucent or transparent material, substantially as described, whereby, without occasioning any shadows, the said devices may be secured together and separated at pleasure.

202,233. COMBINED LAMP SHADE AND BASE. Geo. H. Chinnock, Brooklyn, N. Y., assignor to Leonard Richardson, same place. Filed Jan. 2, 1878.



Claim.—The combination, with a lamp-burner and a shade for diffusing the light therefrom, of a translucent or transparent holder or base fitting upon said lamp-burner, extending therefrom upwardly and outwardly, provided with an offset, shoulder, or flange for supporting the said shade, and with an upwardly and inwardly extending portion fitting within said shade, and terminating near the top thereof, substantially as and for the purpose specified.

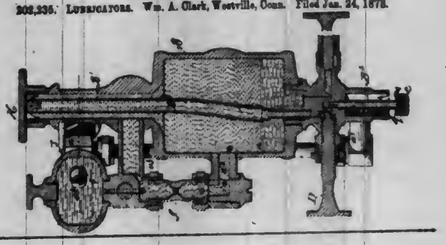
202,234. LAMPS. George H. Chinnock, Brooklyn, N. Y., assignor to Leonard Richardson, same place. Filed Jan. 2, 1878.



Claim.—1. The combination of a chimney and a translucent or transparent holder or base for a shade formed in one piece, substantially as and for the purpose specified.

2. The combination of a chimney, a deflector, and a translucent or transparent holder or base for a shade formed in one piece, substantially as and for the purpose specified.

202,235. LUBRICATORS. Wm. A. Clark, Westville, Conn. Filed Jan. 24, 1878.



Claim.—1. In a lubricator for automatically feeding oil in regulated quantity, a chamber or vessel containing oil, constructed with a siphon discharge-pipe, the said oil-chamber being in combination with a water-chamber for maintaining by the inflow of water into the oil-chamber the surface of the oil at a given height, substantially as described.

2. In a lubricator for automatically feeding oil in regulated quantity, the combination, with the water-chamber and with the oil-chamber, of a glass tube for observing the quantity of water which is flowing into the oil-chamber when a portion of such tube is contracted to facilitate the observation of the water, substantially as described.

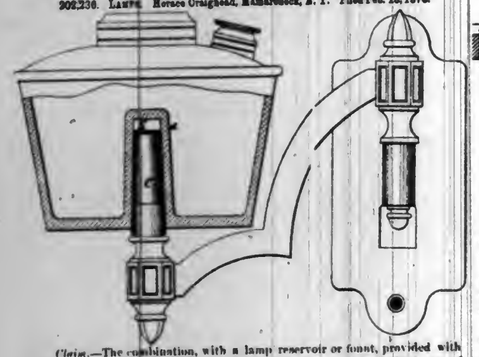
3. The combination, with the condenser or water-chamber in a lubricator, of an inlet steam-pipe, a^1, whose end is trapped, as described, to prevent the condensed water which stands above the opening of such pipe from flowing back into the steam-chest or cylinder, as specified.

4. The arrangement of the oil-delivery pipe B^2 and the neck a, which connects the apparatus with the steam-chest or portion of the engine to be supplied with oil, so that the former shall be concentric with or within the latter, be extended below the opening, and afford an annular steam-passage, substantially as described.

5. The combination, with the oil-delivery pipe in a lubricator, of a trap, c, to prevent the entrance of air or steam into such delivery-pipe, substantially as described.

6. The combination of the steam-pipe a^1, the vertical extension B^1 of the oil-chamber, and a conducting-bar, J, which connects said extension and pipe, and which bar performs the double office of a brace or support to the steam-pipe and a conductor of heat to the oil-chamber, substantially as described.

202,236. LAMPS. Horace Craighead, Mamaroneck, N. Y. Filed Feb. 18, 1878.



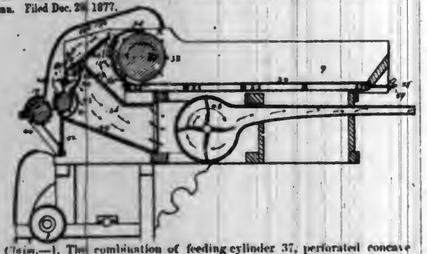
Claim.—The combination, with a lamp reservoir or font, provided with a cavity or recess, and a support entering the same, of a nipple or cap, of india rubber or analogous material, fitting between said reservoir and support, and overlapping the tip of the latter, substantially as and for the purpose specified.

202,237. SEWING-MACHINE NEEDLES. William C. Cross, Boston, Mass. Filed Feb. 2, 1878.



Claim.—A sewing machine needle having two eyes arranged in relation to each other and to the axial line of the needle, to dispose the threads, in the operation of sewing, alongside of one another, substantially as described, and for the purpose specified.

202,238. COMBINED FEEDER AND CLEANER FOR COTTON-GINS. Wm. L. Cravens, Memphis, Tenn. Filed Dec. 28, 1877.



Claim.—1. The combination of feeding-cylinder 37, perforated concave 53-53, comb 46, apron 45, and means, substantially as described, for creating air-currents through concave and over apron.

2. The combination of toothed cylinder 37 38, comb 46, apron 45, receiving cotton from comb, arranged with space intervening to allow upward passage of air, and means, substantially as described, for producing air-currents.

3. The combination, with the feeding-cylinder 37 and beaters 39 41, of the partitions 47 49, forming inlet air-passage 13^a and outlet air-passage 13^b, and the cover 17, forming connecting passage 13^c, as set forth.

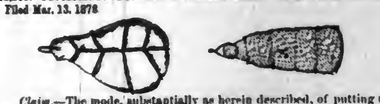
4. The combination, with a feeding-cylinder and comb, of the concave 53, having a screen, 54, as and for the purpose set forth.

5. The adjustable apron 45, for regulating the passage of air between the feeding-cylinder and beaters, as and for the purpose set forth.

6. The combination, with beaters 39 and 43 and perforated concaves, of covers 17 17 above the feeding devices, forming a passage, 13^c, connecting the inlet and outlet passages, so as to cause air to pass with and through the cotton, as set forth.

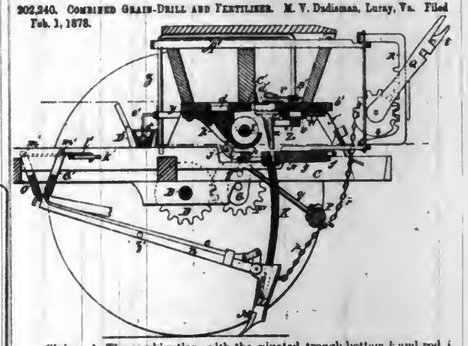
7. The feeder herein described, consisting of a trough, 9, carrying-apron 54, feeding-cylinder 37, comb 46, apron 45, beaters 39 and 43, and brush 44, as set forth.

202,239. PROCESSES FOR PUTTING UP BONELESS HAMS. Tuttle Culver, New York, N. Y. Filed Mar. 13, 1878.



Claim.—The mode, substantially as herein described, of putting up boneless ham for the market and for domestic use, the same consisting in passing around the ham a series of transverse loops of cord, which are made to intersect with a vertical loop embracing the sides of the ham, and knotted or tied together, whereby the ham can be cut from either end without destroying the integrity of the binding medium existing around the remaining portions of the ham, as set forth.

202,240. COMBINED GRAIN-DRILL AND FERTILIZER. M. V. Dudleman, Leray, Va. Filed Feb. 1, 1878.



Claim.—1. The combination, with the pivoted trough-bottom k and rod j for the grain feed, of the inclined forks i, continuous bar h, slide-bars g, and connected levers f, substantially as shown and described.

2. The combination, with the draft-bars a a and the tubes L, of the spring-bar o, made continuous throughout the length of said draft-bars, and arranged to fulcrum or bear upon the connecting-bolt x' of said draft-bars, as shown and described.

3. The tube-lifting bar P, pivoted upon cranks, and having one of its cranks extended through and bent upon the opposite side of its bearing, in combination with the swinging arm G and its gear-wheels, to secure the simultaneous lifting of the tubes and disconnection of the driving devices, substantially as described.

4. The vertically pivoted clevis-shaped frame R, having rack-teeth, combined with the independent toothed head and rigid lever located in said frame, the chain r, and lifting-bar P, substantially as and for the purpose described.

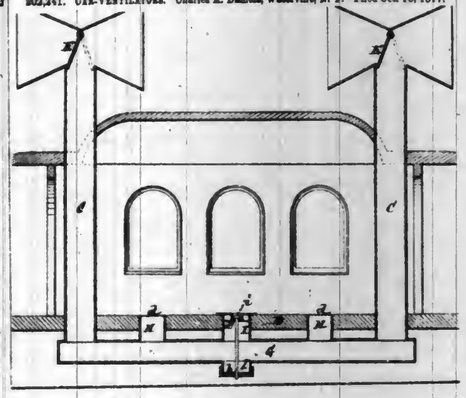
5. The feeding devices for the fertilizer, consisting of the shaker-bar W, having bent stirrers c, for supporting the bar and forming fast-motioned stirrers for the throats, and a longitudinal rake, R^1, arranged in the hopper, and having a slow motion, all combined with each other and with the mechanism for driving the same, substantially as described.

6. The combination, with the continuous gage-bar C^1 and gage-slides d^1, for regulating the amount of the fertilizer, of the means for operating the same, consisting of the connected levers b^1 and the slide-bars c^1, attached to said gage-bar, substantially as shown and described.

7. The land-measurer, combined with and operated by the rock-arm y of the slow-motioned rake, for the purpose described.

8. The worm X on the feed wheel shaft, combined with the wheel Y, having segmental pinion, the yoke-bar Z, the rock-arm y, the vertical rock-shaft x, rake-supporting rack-arm a', and rake B^1, substantially as shown and described.

202,241. CAR-VENTILATORS. Charles A. Daniels, Waterville, N. Y. Filed Oct. 10, 1877.



Claim.—1. The combination of the double-headed receiving funnels or hoods A A and A' A', arranged on opposite sides of the longitudinal center line of the car at reverse ends of the latter, the valves E E, automatically controlling the heads of either funnel, and ducts for conveying the air in reverse directions from the funnels to the car, substantially as specified.

2. The duct G beneath or in the floor of the car, constructed to branch at its reverse ends to opposite sides of the car, in combination with the distributing branches H H and the ducts C C of the double-headed receiving funnels or hoods, essentially as described.

3. The combination, with the duct G, through which the air is admitted in reverse directions, of the chamber of duct I, having a register or valve, h, and means for operating said valve from the interior of the car, substantially as and for the purpose herein set forth.

202,242. BALE-TIES. Waters S. Davis, Galveston, Tex. Filed Mar. 16, 1878.

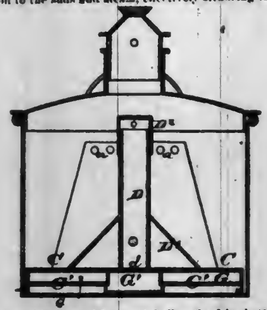


Claim.—1. The combination of the hinged or pivoted movable bar f with the stationary bar e of the slotted tie-plate or fastening B, essentially as described.

2. The tie-plate or fastening B, constructed with a fixed cross-bar at one end, a pivoted cross-bar at the other end, and an intermediate fixed cross-bar, substantially as and for the purpose herein set forth.

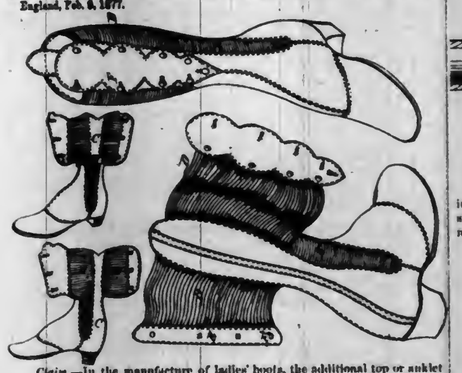
202,243. STEAM WASHING-MACHINES. David J. H. Davies, Ogdensburg, N. Y. Filed Aug. 25, 1877.

Brief.—The peculiar arrangement of the false bottoms and passages and the tube and cone, perforated as shown, gives a violent agitation and constant circulation to the suds and steam, effectively cleansing the clothes.



Claim.—In combination with a wash-boiler, the false bottom C, auxiliary bottom C^1, forming passages G G and G^1, center tube D, and cone D^1, all constructed substantially as and for the purposes set forth.

202,244. LADIES' BOOTS. James Dean, Derby, England. Filed Jan. 4, 1878. Patented in England, Feb. 6, 1877.



Claim.—In the manufacture of ladies' boots, the additional top or anklet D, attached above the usual gaiter-top by extending the heel-piece or providing it with a narrow projecting tongue, as shown and described, to which tongue the elastic material of the additional top or anklet D is sewed, so that the latter will overlap the usual gaiter-top, said elastic material being provided with suitable facings to adapt it to be buttoned in front of the leg and over the gaiter-top, substantially as shown and described.

202,245. MANUFACTURE OF PLUG-TOBACCO. David W. De Forest, Brooklyn, N. Y. Filed Apr. 1, 1878.



Claim.—1. The process of preparing plugs of tobacco for sale, consisting in first embedding portions of their wrappers at intervals in the faces of the lumps, and then compressing the latter to close up the openings of the embeddings and finish said lumps into plugs, substantially as described.

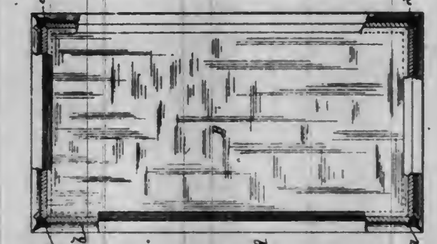
2. A plug of tobacco having portions of the wrapper embedded in its face or faces, and the openings caused by said embedding closed, substantially as described.

202,246. MEDICAL COMPOUNDS. George P. Delisser, Brooklyn, assignee of two-thirds his right to Adams & Sadler, New York, N. Y. Filed Aug. 31, 1877.

Claim.—1. The new and improved compound, consisting of hemlock bark, black-oak bark, charcoal, (preferably willow-charcoal,) glycerine, and carbolic acid, in about the proportions hereinabove named.

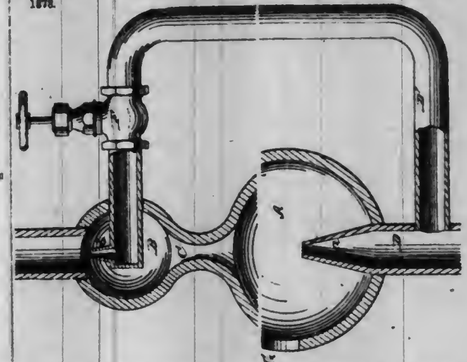
2. The hereinbefore-described process of producing the said new and improved compound by mixing, in about the proportions above named, the extracts of hemlock and oak bark with the charcoal-paste while the latter is warm, then adding pure glycerine, and subsequently allowing the mass to cool, afterward adding the carbolic acid, heating the mass, and finally depositing the mass in a tightly closed vessel, where it is allowed to remain until all parts have become thoroughly commingled and incorporated, substantially as specified.

202,247. WIRE-WORK-HANGER. George W. Dickinson, Charlestown, Ill. Filed Sept. 27, 1877.



Claim.—A metallic sash fornest of the rails A A, formed, as described, with the interior grooves a and outer concaves b, and fastened at the mitered corners by screws d, substantially as herein shown and described.

202,248. STEAM WATER-ELEVATORS. William B. Doty, Chillicothe, Ohio. Filed Jan. 24, 1878.



Claim.—The combination of the large globe or chamber A, with water-inlet tl, the smaller globe or chamber B, the neck C, connecting the two globes, steam-pipe D, with nozzle a, and the branch steam-pipe D^1, with valve F and nozzle b, all constructed substantially as and for the purposes herein set forth.

202,249. NUT-LOCKS. Robert Dunn, Wyiam, England. Filed Jan. 24, 1877.

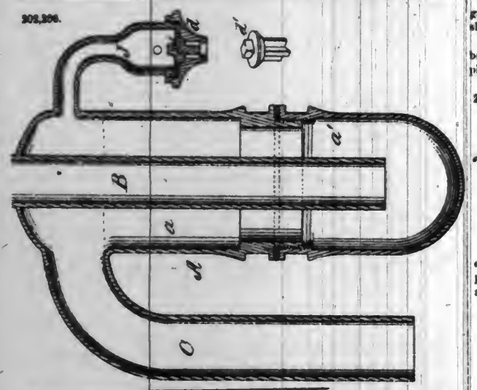


Claim.—The combination of a rail fastening and a chair, C, with a cheek-plate, D, passing through said chair, and having openings adapted to fit over the nuts of the fastening, and with a set-screw or wedge adapted to an arm of the said chair, and serving to retain the cheek-plate in position, all substantially as described.

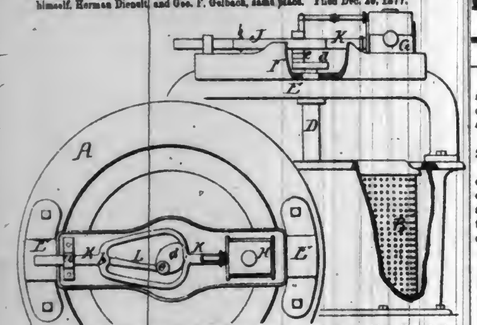
202,250. SEWER-TRAPS. John Dunn and T. K. Birdsall, New York, N. Y. Filed Mar. 16, 1878.

Claim.—In combination with the vessel A, the induct-pipe B and the educt-pipe C, constructed and arranged as described, the pipe J, opening into the vessel A above the educt C, and provided with a valve-seat, d, and valve d', opening upward, substantially as specified.

202,250.



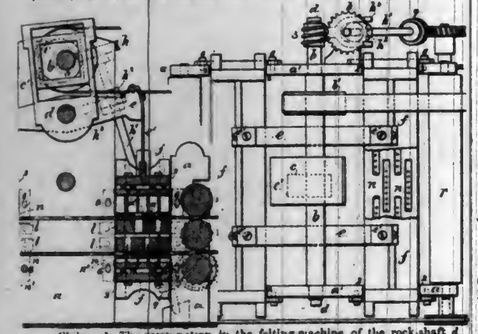
202,251. CENTRIFUGAL MACHINES. George F. Eisenhardt, Philadelphia, Pa., assignor to himself, Herman Diecuh and Geo. F. Gelbach, same place. Filed Dec. 29, 1877.



Claim.—The combination, in a hydro-extractor, of the bridge E and the vertical shaft D with a steam-engine arranged on the said bridge within the limits of the base of the casing A, the crank on the said shaft D being situated between the steam-engine cylinder and the pin, by which the connecting-rod is jointed to the piston-rod, all substantially as described.

202,252. FELTING-MACHINES FOR MAKING FELTED AND NAPPED FABRICS. Geo. B. Field, St. Louis, Mo., assignor to Woolen Fabric Company, (limited,) New York, N. Y. Filed Feb. 21, 1878.

Brief.—Improvement on Patents Nos. 123,136 and 173,704, to equalize the action of the felting-needles, balance the machine, and obtain increased speed, by the use of a working-beam and double felting mechanism.



Claim.—1. The combination, in the felting-machine, of the rock-shaft *d*, double arms *e*, followers *f*, with felting-needles, and the slotted bed-plates *l*, substantially as set forth.

2. The slotted bed-plates *l*, guard-plates *n*, followers *f*, double arms *e*, and rock-shaft *d*, in combination with mechanism, substantially as set forth, for giving a progressive end movement to the rock-shaft and followers, substantially as set forth.

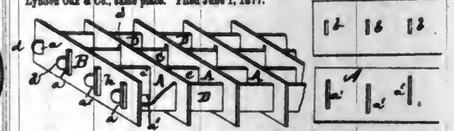
3. The combination of the two followers *f* with the bed-plates *l*, guard-plates *n*, and mechanism for actuating the followers, whereby the felting-needles are made to operate in succession upon one sheet of fabric passing between the two pairs of bed and guard plates, substantially as set forth.

4. The combination, with the followers, needles, bed-plates, and guard-plates, of the feeding-rollers *r* and screw-pinion 9, for actuating the same and moving the material, substantially as set forth.

5. In combination with the reciprocating followers and felting-needles in gangs or interrupted rows, the bed-plate *l* and guard-plates *n*, provided with slots, for the purposes set forth.

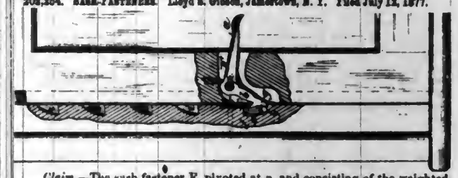
6. The two pairs of followers, each provided with felting-needles, in combination with the rock-shaft *d*, actuating-levers *s*, bed-plates *l*, and guard-plates *n*, the parts being arranged and acting substantially as set forth.

202,253. EGG-CARRIERS. Jason T. Fogg, Garland, Me., assignor of one-half his right to Lyndon Oak & Co., same place. Filed June 1, 1877.



Claim.—A tray for egg-carriers composed of the pieces A, having slots *a a'*, pieces B, having slots *b*, pieces C, having slots *c* and tenons *d*, and the pieces D, having tenons *d* and the strips A, all constructed substantially as and for the purposes herein set forth.

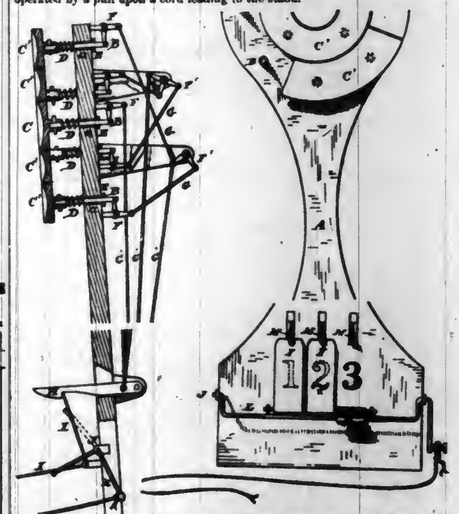
202,254. SASH-FASTENERS. Lloyd S. Gibson, Jamestown, N. Y. Filed July 13, 1877.



Claim.—The sash-fastener F, pivoted at *p*, and consisting of the weighted arm *a* and arm *b*, when said arm *b* is provided with the sides *e* and *v*, and curved side *d*, and points *f* and *g*, in combination with the sharpened plate *r s*, and notches *i* and *o*, substantially as described.

202,255. TARGETS. Joseph Gobbels, St. Johns, Ky. Filed Dec. 13, 1877.

Brief.—Separate catches, to hold hinged covering-plates over numbers corresponding with the several sections of the target, are connected by means of crank-arms and connecting-rods with said several sections, so that when any section is struck its plate will be released and allowed to drop and expose the corresponding number. The plates are returned by means of a crank-rod operated by a pull upon a cord leading to the stand.



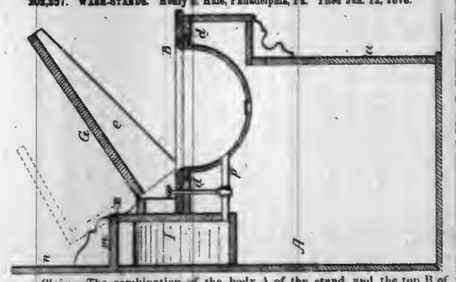
Claim.—The combination of the concentric target-plates C C', stems B B, springs D D, bell-cranks F F, connecting-rods G G', latches H H, and blinds I I, substantially as and for the purposes set forth.

202,256. BOOTS AND SHOES. Frederick Goff, Chicago, Ill. Filed Nov. 23, 1877.



Claim.—The combination, with the inner and outer soles and upper A, of the filling F, composed of particles of cork and caoutchouc, mixed and pressed into the cavity bounded by the flap and welt, as shown and described.

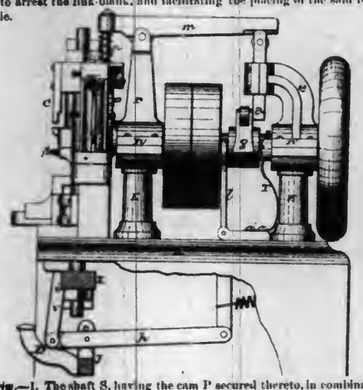
202,257. WASH-STANDS. Henry S. Hale, Philadelphia, Pa. Filed Jan. 12, 1878.



Claim.—The combination of the body A of the stand, and the top B of the same, with the lid G and the strips *e e*, secured to the said lid, and constituting, when the latter is depressed, part of the desk, all substantially as set forth.

202,258. MACHINES FOR WELDING CHAIN-LINKS. John Haley, New Brighton, Pa. Filed Mar. 9, 1878.

Brief.—The die is an improvement on the one patented to patentee November 13, 1877, No. 197,123. The lip of the upper die is prolonged, so that when said die is raised to its highest point it still remains in contact with and forms a guard around the movable half of the matrix, serving as a check or stop to arrest the link-blank, and facilitating the placing of the said blank in the die.



Claim.—1. The shaft S, having the cam P secured thereto, in combination with the cross-piece R, a friction-roller, stop *q*, spring *p*, lever *m*, lifter *a*, and cam *g*, substantially as shown.

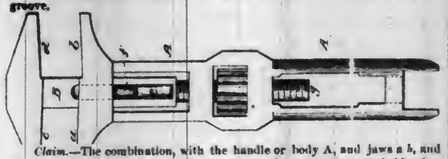
2. The lifter *a*, with a friction-roller at its upper end, in combination with the lever *m*, cam *g*, cross-head R, and springs *p p*, substantially as shown and described.

3. In a machine for welding chain-links, the combination of the levers *r*, *h*, and *l*, cam *g*, lifter *a*, lever *m*, and springs *p*, with the journaled cross-piece J, treadle D, and spiral spring, the lever *r* being provided with the shoulder *i*, for supporting the gate, substantially as set forth and described.

4. In a machine for welding chain-links, a swaging-die provided with an elongation or lip beveled at its inside and extending around it, and of a length to remain in contact with the matrix when the dies are separated to place a link between, substantially as and for the purpose set forth.

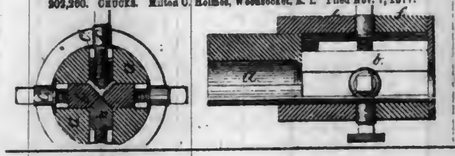
202,259. WRENCHES. Charles W. Hilton, Bacon Hill, assignor of one-half his right to J. H. Thompson, Northumberland, N. Y. Filed Mar. 26, 1878.

Brief.—An additional guide for the sliding jaw is provided by a finger attached to the stationary jaw, or cast in one therewith and bent into the groove.



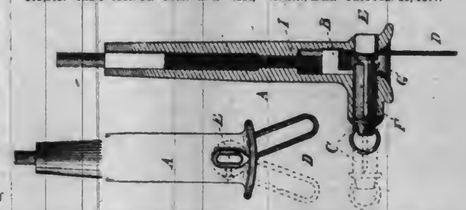
Claim.—The combination, with the handle or body A, and jaws *a b*, and the guard or finger *f*, of the bar B, groove *c*, and jaws *c d*, the jaws *b d* having the offset, as described, and for the purpose set forth.

202,260. CHUCKS. Milton C. Holmes, Woonsocket, R. I. Filed Nov. 7, 1877.



Claim.—The chuck consisting of the tube *a*, the front end of which is slotted to receive the jaws *b b*, (three or four of them,) and the sleeves *e f* and front plate *g*, arranged to secure and protect the parts, and the adjusting-screws *c*, arranged and operating substantially as and for the purpose described.

202,261. CAR-COUPLINGS. Esther A. Howland, Worcester, Mass. Filed June 25, 1877.



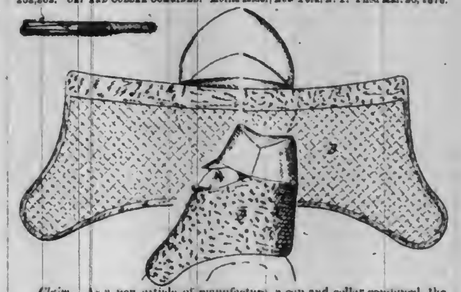
Claim.—1. The coupling described, consisting of the bar A, round weight-pin C, having the oval point E and shoulder, the slide B, and link D, when constructed and operating as one, for the purposes above set forth.

2. The combination, in a car-coupling, of the round pin C, having the oval point E and square shoulders, with the L-shaped groove and its pin, substantially as and for the purposes described.

3. The combination, in a car-coupling, of the round pin C, having an oval point, E, and square shoulders, with the spring-slide B, substantially as and for the purposes set forth.

4. The combination, in a car-coupling, of the round pin C, having the oval point E and square shoulders, with the spring-slide B and L-shaped groove F G, when constructed and operating substantially as and for the purposes described.

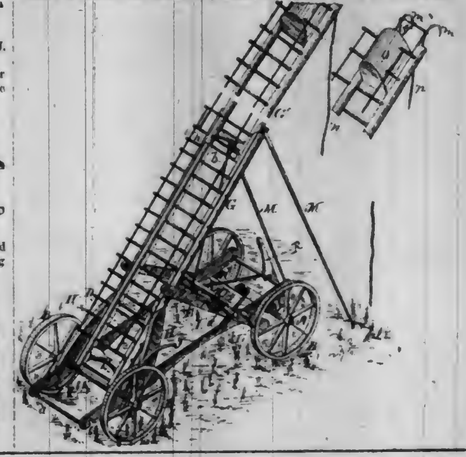
202,262. CAP AND COLLAR COMBINED. Moritz Isidor, New York, N. Y. Filed Mar. 20, 1878.



Claim.—As a new article of manufacture, a cap and collar combined, the collar being provided with a pocket for the reception of the cap when the latter is folded up, substantially as set forth.

202,263. FIRE-ESCAPES. Joseph F. B. James, Pepin, Minn., assignor to Frank H. Bernard, Chippewa Falls, Wis. Filed Aug. 16, 1877.

Brief.—Near the forward end of the side beams of the truck is pivoted a frame, the upper end of which is pivoted to the ladder, and upon the hind axles are pivoted arms, which are also pivoted to the ladder just below the point where the above frame is secured. The side beams being notched to fit over the hind axles, the ladder is given more or less angle or inclination, as required, by securing the axles in said notches. A locking-lever swings across the side beams to prevent it rising from the axle, and it also enters a notch in bottom of ladder when in certain position, thereby preventing it from falling.

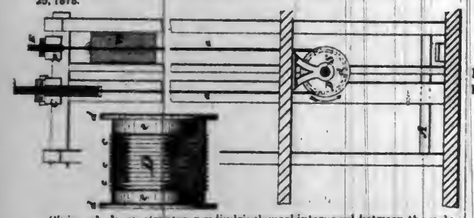


Claim.—1. In combination with the axles A A' and wheels B, the bars D D, notched, as seen at *a a*, to fit over the axle A', frame E, arms H H, and ladders G G', all constructed substantially as and for the purposes herein set forth.

2. The lever or arm J, in combination with the arm H, ladder G, and axle A', as and for the purposes herein set forth.

3. The combination of the extensible ladders G G', constructed as described, and provided with notch *x* on one side at the bottom, the axles A A', notched bars D D, hinged frame E, cord *b*, windlass I, arms H H, and pivoted lever J, all substantially as and for the purposes herein set forth.

202,264. ELEVATORS. James M. Johnston and Robert Marshall, Pittsburg, Pa. Filed Mar. 25, 1878.



Claim.—1. In an elevator, a cylindrical spool interposed between the ends of the rope, and having a spiral half-round groove on a portion of its surface, vanishing into a plain cylindrical surface, even with the bottom of the spiral groove, and a flange at the end, substantially as described, whereby stoppage of the rope permits free revolution of the spool, and causes the rope to travel onto the plain surface, to reduce friction and prevent cutting of the rope.

2. The combination of platform A, rope *a*, and weight W with a spool, D, having a flange, *d*, smooth portion *c*, and spiral groove *e*, rope *a* being wound one and a half or more times around the spool, substantially as and for the purposes described.

3. The combination of platform A, rope *a*, and weight W with a spool, D, having the end flanges *d*, plain surfaces *c* at each end, and spiral groove *e* at the middle, rope *a* being wound one and a half or more turns on the spool, substantially as described.

4. In combination with platform A, rope *a*, weight W, and spool D, a stop placed at the downward limit of movement of the platform, the relations being such that the platform ceases to move before the weight reaches its upper limit, as described.

5. In combination with platform A, rope *a*, weight W, and spool D, a stop placed at the downward limit of movement of the weight, the relations being such that the weight ceases to move before the platform reaches its upper limit, substantially as shown.

202,265. CONGEALING-PLATES FOR ICE-MACHINES. John P. Jones, Gold Hill, Nev. Filed Oct. 10, 1877.

Brief.—The plate may be constructed with three independent chambers or spaces, and the refrigerant passed through pipes, or otherwise, through the central chambers, while a non-congealable liquid fills the outer chambers, or it may be constructed with but two chambers, separated from each other by the refrigerating-coil of pipe itself. In the first instance the refrigerating pipes or passages are surrounded by a non-congealable liquid. The non-congealable liquid in one or both of the chambers, which are on opposite sides of the plate, may be withdrawn, and a warmer liquid substituted, to detach the ice from the outer surface.



Claim.—A congealing plate for ice-machines which has freezing-surfaces on its opposite sides, and is provided with a separate chamber at the rear of each freezing-surface, substantially as described.

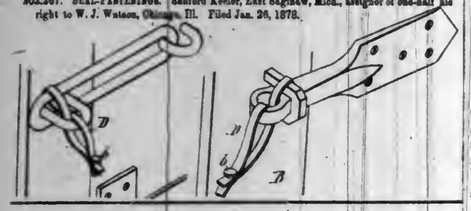
202,266. FILES FOR RESHARPENING OLD RAILS. Lewis Jones, Wheeling, W. Va. Filed Mar. 11, 1878.



Claim.—1. The bars B B', as described, and adapted to fit the sides of a railroad-rail, and having their grain and fibrous iron arranged substantially as described and shown, to form a pile for reducing old rails.

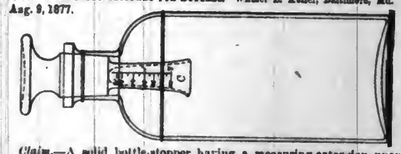
2. The side bars B, in combination with a railroad-rail, the said bars having their fibrous iron next to the grain iron of the rail, and vice versa, substantially as described.

202,267. SEAL-FASTENINGS. Sanford Keeler, East Saginaw, Mich., assignor of one-half his right to W. J. Watson, Chicago, Ill. Filed Jan. 26, 1878.



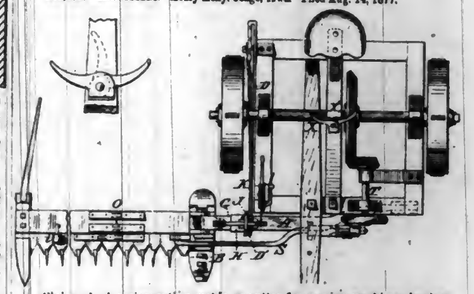
Claim.—The combination of the hasp and staple, the sheet-metal strip D, arranged to embrace both hasp and staple, and having openings near its opposite ends, and the soft-metal rivet *b*, having a shank adapted to the openings in the strip, all substantially as set forth.

202,268. MEASURING-STOPPERS FOR BOTTLES. Wilmer L. Keller, Baltimore, Md. Filed Aug. 9, 1877.



Claim.—A solid bottle-stopper having a measuring-extension upon its lower end, and clear from contact with the neck of the bottle when the stopper is placed therein, substantially as specified.

202,269. HARVESTERS. Henry Kelly, Osage, Iowa. Filed Aug. 14, 1877.



Claim.—1. A reciprocating sickle or cutter for mowing-machines, having a double hinge at or near the middle of its length, the sickle-section between said hinges being separated from the other sections and secured to the connecting-bar of said double hinge, for the purpose stated.

2. The ring termination D' of the push-bar D, in combination with the cylindrical bearings H I of the coupling-bar, substantially as described.

3. The combination, with the coupling-bar, of the castings upon the opposite sides, forming a cylindrical bearing, the ring-end brace-bar, and the lever pivoted to and passing through the upper casting, as herein set forth.

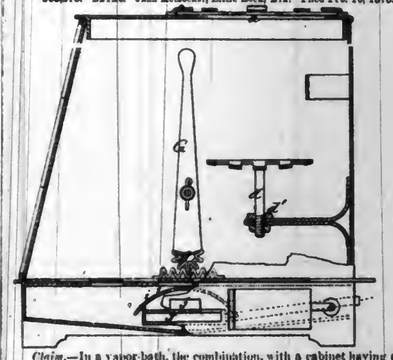
4. The combination, with the coupling-bar provided with the castings H I, the cutting apparatus, and the ring-end brace-bar, of the slotted extension J on the coupling-bar, and the hand-lever connecting-rod K, substantially as and for the purpose set forth.

5. The lever G, pivoted upon the coupling-bar, having one end passing through a slot therein, and the other through a slot in the casting H thereon, in combination with the shoe-extension F and the lifting device for lifting the divider end of the finger beam, as set forth.

6. The ring termination D' of the brace, in combination with the cylindrical bearing around the coupling-bar, the collar *d'* of the lower casting, and the upward extension J of the top casting, whereby the ring termination is held upon its bearing.

7. A mowing-machine having a cutting apparatus hinge-jointed at or near the middle of its length, a coupling-bar hinged to the shoe and to the frame, as described, a slotted extension, J, of the device for oscillating the finger-beam, and a swiveling pitman, whereby the cutting apparatus may adjust itself at either end and oscillate to elevate or depress the points of its guard-fingers.

202,270. BATHS. John Ketzscher, Little Rock, Ark. Filed Feb. 16, 1878.



Claim.—In a vapor-bath, the combination, with a cabinet having a slatted bottom and a furnace under said bottom, of an endwise-sliding grating having a rack bar, and a lever having a segmental toothed end, substantially as specified.

202,271. VEHICLE-WHEELS. Thomas H. King, San Francisco, Cal. Filed Feb. 2, 1878.

Claim.—1. The axle A, provided with lateral bearing-faced flanges B B', and the spindle S, with a curved upper surface, in combination with a hub provided with lateral bearing faces to receive the lateral thrust, substantially as set forth.

2. The metallic wheel-hub C, having the lateral bearing-faces grooved or toothed, as shown, and the rigid flanges H upon the axle, having corresponding bearing-faces, in combination with the anti-frictional balls or rollers E, with their supporting-frame or spider, substantially as and for the purpose herein described.

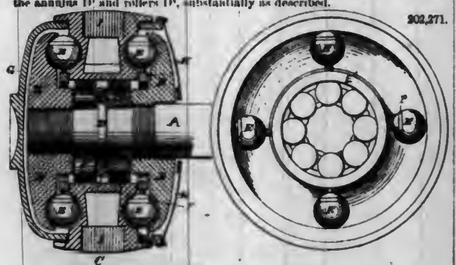
3. The convex elastic disk H, secured to the hub C, and extending behind the flange B or the axle-collar, so as to exert a constant lateral pressure and serve as a dust-cap, substantially as shown and herein described.

4. A hub provided with mortises I, in combination with the transverse ribs K and slotted spokes *q*, substantially as set forth.

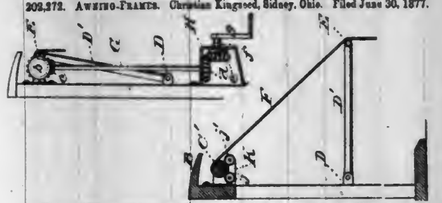
5. In a vehicle-wheel having anti-frictional bearings, balls or rollers E, having grooves for the reception of an elastic substance to prevent noise and rattling, substantially as shown and herein described.

6. The axle A, provided with the guiding-flange D, in combination with the annulus D' and rollers D', substantially as described.

202,271.



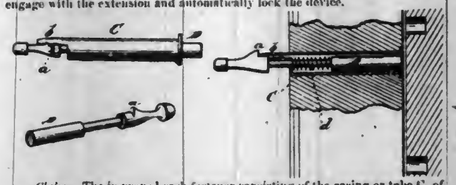
202,272. AWNING-FRAMES. Christian Kingseed, Sidney, Ohio. Filed June 30, 1877.



Claim.—The combination, with a bracketed sheltered roller, C', having gear *b*, the vibrating prop-rods D', longitudinal brace-rod E, friction-rollers *j j'*, and awning F, said friction-rollers adapted to support the roller and awning, the shaft G, having gears *c d*, meshing respectively with the gear *b* of the roller-gear *c* of casing H, key-post *f*, ratchet *i*, and pawl J, substantially as specified.

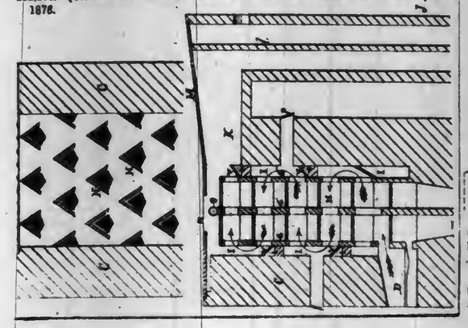
202,273. SASH-FASTENERS. Maning L. Kingsley, Kendall Creek, Pa. Filed Jan. 26, 1878.

Brief.—As an improvement on an old and well-known sash-fastener, the sheet-metal shell or case is made with an extension or projecting shoulder integral therewith, and the spring-bolt is provided with a suitable catch to engage with the extension and automatically lock the device.



Claim.—The improved sash-fastener consisting of the casing or tube C, of sheet metal, having the extension *b* integral therewith, and the spring-bolt D, having a catch, *a*, to engage with the extension *b*, for the purpose set forth.

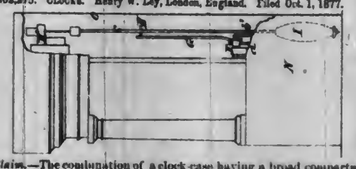
202,274. QUICKSILVER-FURNACES. Richard F. Knox, San Francisco, Cal. Filed Sept. 9, 1878.



Claim.—1. A quicksilver-reducing furnace consisting, essentially, of the central ore-chambers provided with a series of inverted, V-shaped shelves alternately spaced, side flues or chambers separated by alternating partition strips, and a fire-grate, D, the several parts being relatively located as described, whereby the hot combustion products from the fire pass to and fro across the furnace, and upward through the body of the contained ore, substantially as set forth.

2. In a quicksilver-reducing furnace, and in combination with the central ore chamber, the perforated escape-pipe O, located at the top of and across the said chamber, whereby the generated steam is withdrawn and the clogging of the ore prevented, as set forth.

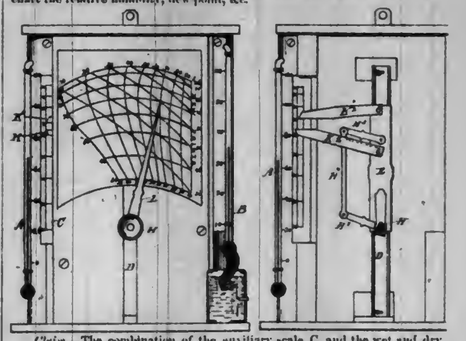
202,275. CLOCKS. Henry W. Ley, London, England. Filed Oct. 1, 1877.



Claim.—The combination of a clock-case having a broad compartment, O, in its base, and a narrow compartment, N, in the upper ornamental part, with a clock-movement having the crutch turned upward, and the pendulum suspended above the fork of the crutch, all substantially as set forth.

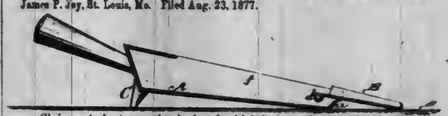
202,276. PSYCHROMETERS. Nathaniel M. Lewis, Boston, Mass. Filed July 27, 1877.

Brief.—Combination of a pair of wet and dry bulb thermometers with an auxiliary scale having proportionable graduations. A movable set of pointers, two of which move over the auxiliary scale, while the third indicates on a chart the relative humidity, dew point, &c.



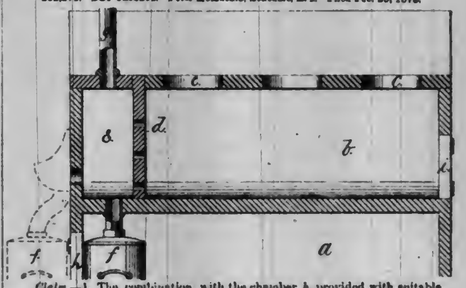
Claim.—The combination of the auxiliary scale C, and the wet and dry bulb thermometers A B, with the pointers K K' L and the graphic table, all operating together substantially as described, and for the purpose set forth.

202,277. DUST-PANS. George Macardle, Pittsfield, Ill., assignor of one-half his right to James P. Joy, St. Louis, Mo. Filed Aug. 23, 1877.



Claim.—A dust-pan the body of which is turned up at its front end to form the lip *a*, in combination with the folding drop-apron B, pivoted in rear of the lip, overlapping the same, substantially as shown and described.

202,278. DRY-CLOSETS. Peter McMackin, Lonsdale, R. I. Filed Feb. 25, 1878.

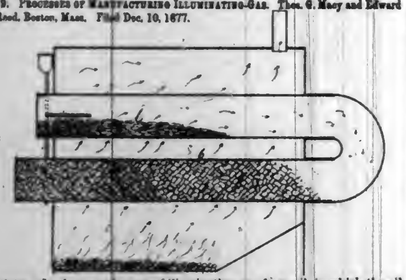


Claim.—1. The combination, with the chamber *b*, provided with suitable seats, and the door *i*, of the perforated partition *d*, space E, and portable liquid-receiving vessel *f*, arranged and operating substantially as and for the purpose described.

2. The combination, with the vault *a*, of the receiving-chamber *b*, the perforated partition *d*, space E, portable liquid-vessel *f*, and ventilating-flue *g*, arranged substantially as and for the purpose described.

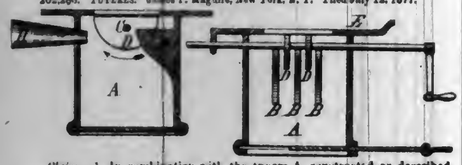
3. In a dry-closet, the combination, with the receiving-chamber *b*, of the perforated partition *d*, arranged to drain the liquid from the solid feces, and the door *i*, for removing the same, substantially as and for the purpose described.

202,279. PROCESSES OF MANUFACTURING ILLUMINATING-GAS. Thos. G. Macy and Edward F. Reed, Boston, Mass. Filed Dec. 10, 1877.



Claim.—In the manufacture of illuminating-gas from oil, in which the oil is fed into a heated retort, the process of preventing the deposition of carbon within such retort by causing the oil, as it is fed, to drop upon a mass of oyster or clam shells within the retort, substantially as described.

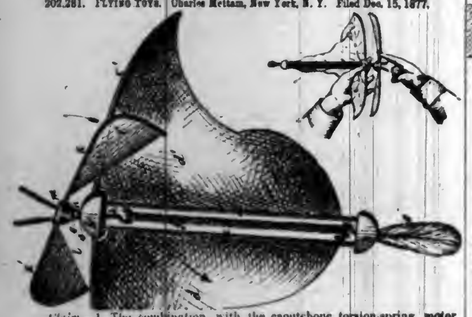
202,280. TUYERES. James F. Maguire, New York, N. Y. Filed July 12, 1877.



Claim.—1. In combination with the tuyere A, constructed as described, the shaft C and the plates D, of semicircular or approximate form, constituting a rotating or oscillating grate, and also a clearing device, substantially as set forth.

2. In a tuyere, the combination of the fins or brackets B, situated below the top plate, and the plates D, constructed substantially as described, and operating, in connection with each other, after the manner of a pair of shears, for cutting, crushing, and clearing away the refuse, substantially as set forth.

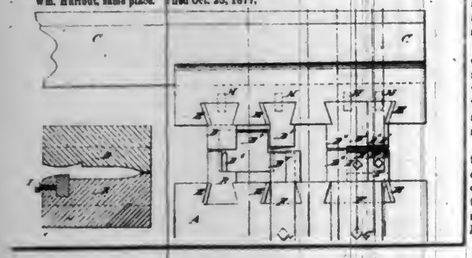
202,281. FLYING TOYS. Charles Mettam, New York, N. Y. Filed Dec. 15, 1877.



Claim.—1. The combination, with the caoutchouc torsion-spring motor *f* and the hook *h*, the shank of which forms a shaft for the propeller-screw and passes through the part *b* of the frame, of the loose perforated glass or porcelain ball or bead *n* and the loose washers *o o*, to form a friction-bearing for said shaft, substantially as and for the purpose described.

2. The combination of the frame *a a' b b'*, the kite *d d'*, supported partly by said frame and by arms *c c'*, which extend laterally from the front of said frame, and are bent substantially as described, with the torsion-spring motor *f* and the screw propeller *k k' l l'*, substantially as and for the purpose set forth.

202,282. MANUFACTURE OF KNIFE-BLADES. Silas M. Moore, Canastota, N. Y., assignor to Wm. Harbut, same place. Filed Oct. 25, 1877.



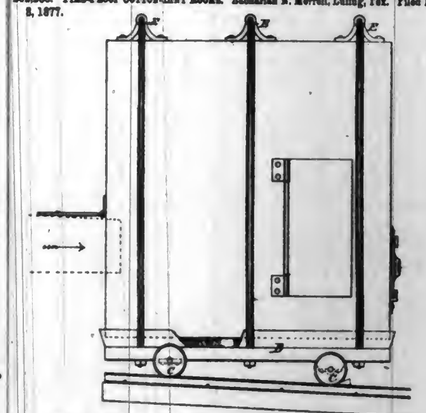
Claim.—1. In the manufacture of knife-blades, the combination of the series of dies, substantially as herein described, for producing by successive forgings knife-blades, in the manner set forth.

2. The combination, with bed and anvils, of the bars F, applied as and for the purpose set forth.

3. The combination of the dowel-pins H with the dies D and the hammer-head C, substantially as herein shown and described.

4. The combination, with the dies B, of interchangeable pieces, secured therein for varying the size and shape of the tang of the blades, as set forth.

202,283. FIRE-PROOF COTTON-LINT ROOMS. Zachariah N. Morrell, Luling, Tex. Filed Feb. 8, 1877.

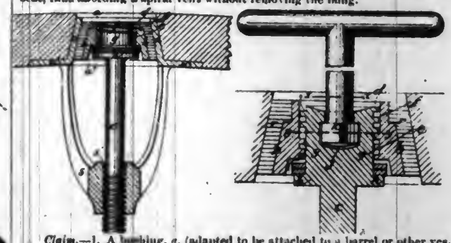


Claim.—1. A lint-room for receiving the cotton from the gin, constructed of sheet metal, and provided with the supporting-rods, arranged out of contact with the lint-room, and connected therewith by loops or brackets, substantially as and for the purpose set forth.

2. A metallic lint-room provided with automatically-closing valve at its receiving-opening, and mounted upon wheels moving upon an inclined track, substantially as and for the purpose specified.

202,284. BUNGS AND BUSHINGS. Patrick K. O'Lally, Boston, Mass. Filed Mar. 11, 1878.

Brief.—By turning the stem down slightly the valve is removed from its seat, thus affording a spiral vent without removing the bung.



Claim.—1. A bushing, *a*, (adapted to be attached to a barrel or other vessel,) contracted at its outer end, and provided at its inner end with a socketed bridge or spider, *s*, projecting into the barrel, combined with a bung, *b*, adapted to enter the bushing from the inside of the barrel, and provided with a stem, *c*, socketed at its outer end to receive a wrench, and threaded at its inner end to engage with the socket of the spider *s*, as set forth.

2. The combination, in a beer-barrel or other vessel, of the seat or orifice *a*', contracted at its outer end, the fixed threaded socket *s*', located inside of the barrel, and the bung *b*, adapted to enter the seat *a*' from within the barrel, and provided with the threaded stem *c*, adapted to engage with the socket *s*', all as set forth.

3. The combination of a bung having a central opening, *d*, with a stem, *c*, having a shoulder or seat, *h*, and adapted to play longitudinally in the bung, said stem being provided with a screw-thread working in a fixed socket, *s*', substantially as described.

4. The stem *c*, having the screw-thread *f* on its upper end, and a shoulder, *h*, separated from said screw-thread by a space, *g*, combined with the bung *b*, having a central opening, *d*, provided with an internal thread, *e*, which is adapted to be contained in the space *g*, and form a stop which will permit the spindle to have a slight longitudinal play independently of the bung, substantially as and for the purpose specified.

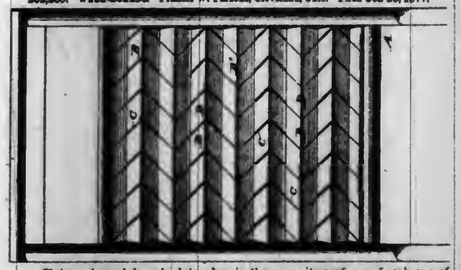
5. The stem having at one end a right-handed screw-thread, and at its other end a left-handed screw-thread and an intermediate shoulder, *h*, separated from the thread at the upper end by an intervening space, *g*, combined with a fixed threaded socket, *s*', in which the lower threaded end of the stem works, and a bung, *b*, having a central opening, which is internally threaded at its lower end, said internal thread being adapted to be contained in the space *g*, substantially as described.

6. The combination of a bung, *b*, adapted to enter its seat from within the barrel, a fixed threaded socket, *s*', located inside of the barrel, and a stem, *c*, projecting inwardly from the bung, said stem being threaded at its inner end to engage with the socket *s*', reduced in size between its threaded end and the bung, to slide freely in the socket *s*', and provided in its outer end with a socket, *j*, adapted to be engaged, as described, with a suitably-formed wrench, *k*, substantially as and for the purposes specified.

7. The stem having the roughened or corrugated shoulder *h*, combined with the bridge or spider *s*, having the correspondingly roughened or corrugated seat *h*', substantially as and for the purpose specified.

8. The bushing *a*, contracted at its outer end, and provided with a flange, *a*', adapted to bear against the inner side of a barrel, and prevent the bushing and its bung from being forced outwardly, as set forth.

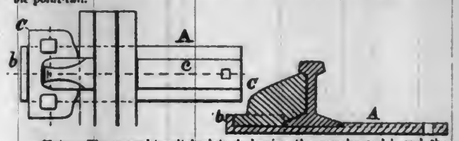
202,285. WASH-BOARDS. Francis W. Parsons, Cleveland, Ohio. Filed Oct. 23, 1877.



Claim.—A wash-board plate wherein the opposite surfaces of each one of the main corrugations B' are provided with a single series of crimps or indentations, C, the same being arranged to form a series of zigzag lines extending the length of the wash-board plate, substantially as set forth.

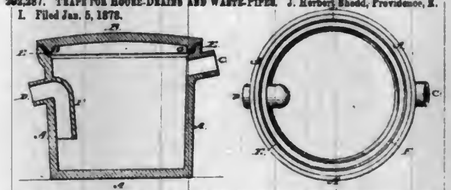
202,286. BRACES AND PLATES FOR POINT-SWITCHES. John T. Richardson, Harrisburg, assignor to the Pennsylvania Steel Company, Steel Works, Pa. Filed Feb. 21, 1878.

Brief.—In a "point-switch" the end of the plate has an upward projection, which serves as support for a brace. The brace fits into and supports the outer or fixed rail, and has downward projections fitted to the sides of the plate. The spikes are driven, through holes in the brace and notches in the sides of the plate, into the tie. A portion of the plate is raised on the inner side of the fixed rail, serving to retain that rail, and for bearing off the movable point-rail.



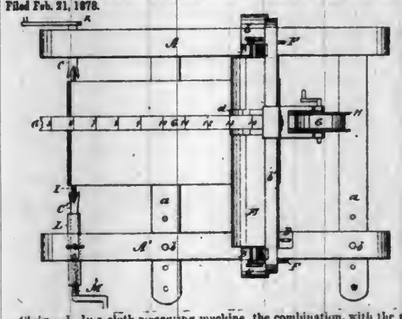
Claim.—The wrought switch-plate A, having the angular end *b*, and the raised plate *c*, adapted to form the bearing for the switch rail and the lateral bearing for the inner flange of the fixed rail, in combination with the separate brace C, adapted to fit between the angular end of the plate and the side of the rail, substantially as and for the purposes described.

202,287. TRAPS FOR HOUSE-DRAINS AND WASTE-PIPES. J. Herbert Shedd, Providence, R. I. Filed Jan. 5, 1878.



Claim.—The combination of the pot or vessel A, having inlet-pipe C and outlet-pipe D, and bend F on said outlet-pipe, with the cover H, having conical rim G, the upper edge of the pot A being also conical and grooved for the packing, substantially as specified.

202,288. CLOTH MEASURING AND ROLLING MACHINES. Charles Q. Smith, Maryville, Mo. Filed Feb. 21, 1878.

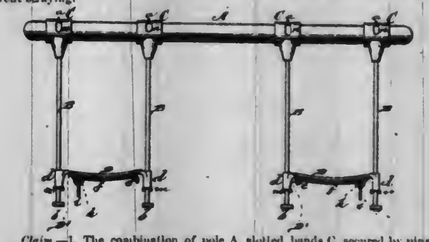


Claim.—1. In a cloth-measuring machine, the combination, with the rolls, of the reel attached to the upright frame on the front side of the rolls, and the tape-line passing from the reel between the rolls, as shown and described, for the purpose specified.

2. In a cloth-measuring machine, in combination with one of the two measuring-rolls and the tape-line, the rubber band, applied as and for the purpose specified.

202,289. HERDERS. Rice D. Soper, Owatonna, Minn. Filed Jan. 12, 1878.

Brief.—Two or more adjustable yokes suspended from and turning upon a bar to confine the heads of two animals facing in opposite directions, to prevent straying.

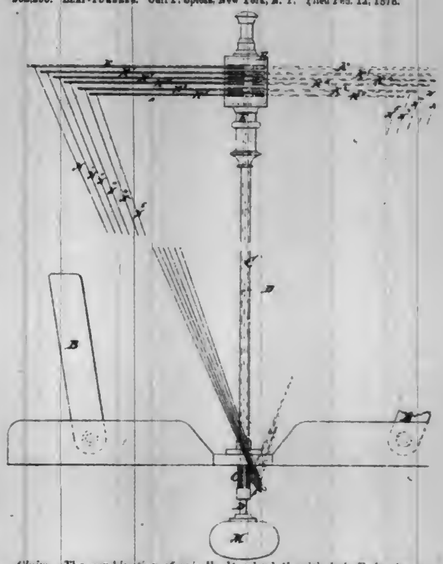


Claim.—1. The combination of pole A, slotted bands C, secured by pins *a*, the arms B, and the straps D D', substantially as and for the purposes specified.

2. The arms B B, with slotted bands C C and heads *b b*, as and for the purposes set forth.

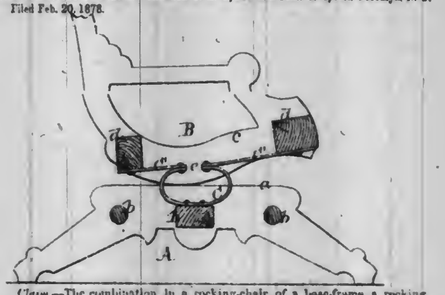
3. The straps D D', with tubes *d d*, staples *e e*, key *f*, and fastening-device *i*, in combination with the arms B B, as and for the purposes set forth.

202,290. LEAF-TURNERS. Carl F. Spiess, New York, N. Y. Filed Feb. 12, 1878.



Claim.—The combination of spindle D, wheel G, with hub F, having a thread-groove, *s*, working in a suitable nut, *u*, pinions J, J', J'', J''', J⁴, and J⁵, arms K, K', K'', K''', K⁴, and K⁵, strings or cords N, N', N'', N''', N⁴, and N⁵, with rings *z* at their lower ends, and the hook L, the whole being constructed and arranged to operate in the manner and for the purpose substantially as herein described.

202,291. ROCKING-CHAIRS. Christian G. E. Speerl and John G. Speerl, Brooklyn, N. Y. Filed Feb. 20, 1878.

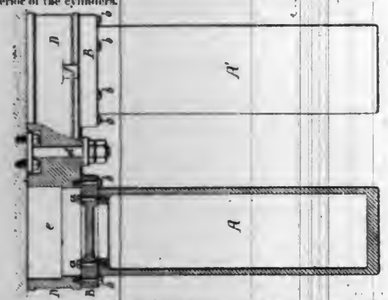


Claim.—The combination, in a rocking-chair, of a base-frame, a rocking frame resting on said base-frame, and one or more elliptical or C-shaped

springs, C', secured at their middle portions to the base, and provided with outwardly-projecting arms C' C', the outer ends of which are secured to the rocking frame, substantially as and for the purpose set forth.

202,292. HYDRAULIC PRESSES. John O. Steen, Reading, Pa., assignor to Seyfert McManus & Co., same place. Filed Sept. 8, 1877.

Brief.—The press has two or more cylinders connected with a block hung to a cross-head so as to be capable of moving thereon, so as to carry the piston away from the mouths of the cylinders, and giving ready access to the interior of the cylinders.



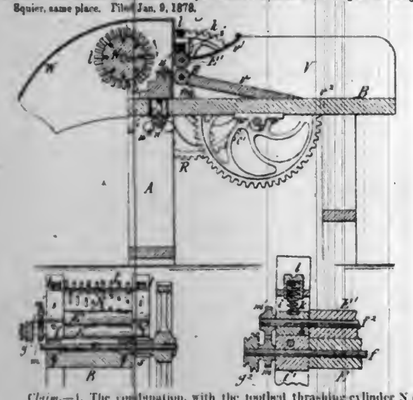
Claim.—1. In a hydraulic press having two or more cylinders, the combination of the pistons and their plates B with a block, D, hung to the cross-head of the press so as to be capable of moving thereon to an extent necessary to carry the pistons away from the mouths of the cylinders, as set forth.

2. The combination of the pistons and their plates B with a block, D, pivoted to the cross-head, as set forth.

3. The combination of the pistons A A', the block D and its openings c, the plates B, and the bolts a and b, as specified.

4. The combination of the pistons and their yokes I, the block D, its openings e and lugs f, and the bolts i, as described.

202,293. THRASHING-MACHINES. Henry B. Stevens, Buffalo, N. Y., assignor to George L. Squier, same place. Filed Jan. 9, 1878.



Claim.—1. The combination, with the toothed thrashing-cylinder N and feed-rollers E E', arranged parallel therewith, and rotating with less speed than the thrashing-cylinder, of the feed-chamber arranged at an oblique angle with the feed-rollers and thrashing-cylinder, substantially as and for the purpose set forth.

2. The combination, with the thrashing-cylinder provided with teeth t, arranged in spiral rows, of a feed-chamber arranged at an oblique angle to the cylinder, substantially as and for the purpose set forth.

3. The combination, with the toothed thrashing-cylinder N and feed-rollers E E', of the adjustable block e, provided with two or more angular ledges, the upper one of which is arranged in line with the feed-rollers, or nearly so, substantially as and for the purpose set forth.

4. The combination with the toothed cylinder N and feed-rollers E E', of the adjustable ledge a, provided with adjustable top plate a', substantially as and for the purpose set forth.

5. In a thrashing machine, the combination, with the toothed cylinder N, of the adjustable ledge a, stationary feed-roller E, and upper feed-roller E', rendered self-adjusting by means of springs, the feed-rollers rotating with less speed than the thrashing-cylinder, substantially as set forth.

6. The combination, with the toothed cylinder N and fixed feed-table B, of a removable feed-chamber composed of side pieces V V, inclined bottom c, and top plate c', substantially as set forth.

202,294. COMBINED DINING AND LAUNDRY TABLE. Shepherd W. Sieves, New Bedford, Mass. Filed Mar. 6, 1878.

Claim.—1. In combination with the bed or frame of the table, the top E, provided with the hinge-joint piece E'', and hinged near one end to or upon said bed, substantially as and for the purpose specified.

2. In combination with the rails C' of the bed, the swiveled stud I, hinged bar K, and reversible ironing-board L, substantially as and for the purpose shown.

3. The hereinbefore-described table, in which the top E E' E'', slides F, hook H, swiveled stud I, hinged bar K, ironing-board L, stud M, sheaves N, brackets O, and drawers Q are constructed and combined with each other and with the frame or bed in the manner and for the purpose substantially as shown and described.

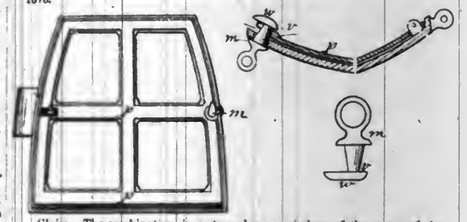
202,294.



202,295. COMPOUNDS FOR DEFECATING SACCHARINE LIQUIDS. Francis L. Stewart, Marryesville, Pa. Filed Mar. 20, 1878.

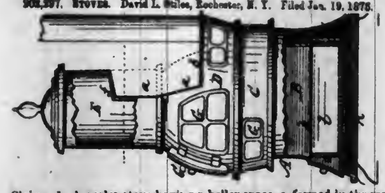
Claim.—A compound for defecating saccharine liquids, consisting of a solution of tannic acid united with liquid sulphurous acid and with hydrate of alumina, substantially as and for the purpose specified.

202,296. STOVE DOORS AND WINDOWS. David L. Stiles, Rochester, N. Y. Filed Mar. 20, 1878.



Claim.—The combination, in a stove door or window, of the seat a of the mica lining p with the bit e of the key w, whereby said key is seated and held in position, said key being removable by removing the lining, as herein shown and described.

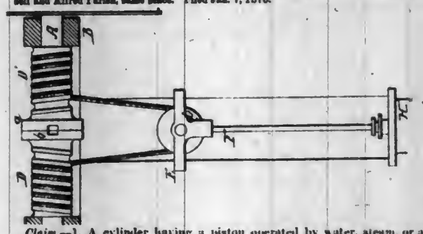
202,297. STOVES. David L. Stiles, Rochester, N. Y. Filed Jan. 19, 1878.



Claim.—1. A parlor-stove having a boiler-space, a, formed in the rear and directly above the fire-pot in the mica-section D and magazine-section E, as shown and described, and for the purpose specified.

2. In combination with the boiler-space a, formed in the back of the mica and the magazine sections, the swinging or sliding covers G' G', arranged to open and close, and when closed to cover and hide the boiler-space and preserve the proper form of the stove, as herein shown and described.

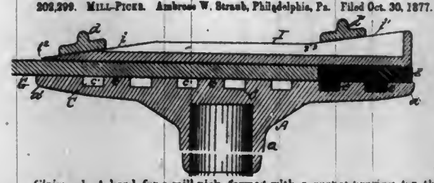
202,298. HOISTING MECHANISMS. Samuel E. Stokes, Jr., Philadelphia, Pa., assignor to himself and Alfred Parish, same place. Filed Jan. 7, 1878.



Claim.—1. A cylinder having a piston operated by water, steam, or air pressure, and a cross-head secured to the piston rod, and carrying a pulley, d, in combination with the hoisting-shaft A, the two drums D and D', one loose and the other fast on the said shaft, devices for locking the loose drum either to a frame or to the fast drum, and a chain or rope, the ends of which are attached, one to each drum, and which passes round the said pulley d, all substantially as set forth.

2. A cylinder having a piston operated by water, steam, or air pressure, and a cross-head secured to the piston-rod and carrying a pulley, d, in combination with the hoisting shaft A, the disk K, secured to the said shaft, the two barrels D D' loose thereon, and devices whereby either of the barrels may be locked to the disk or to the frame, all substantially as set forth.

202,299. MILL-PICKS. Ambrose W. Straub, Philadelphia, Pa. Filed Oct. 30, 1877.



Claim.—1. A head for a mill-pick, formed with a socket-bearing for the reception of a handle, two upright sides united by cross-bars, and a rack or serrated surface, substantially as shown and described.

2. The head A, provided with a socket-bearing, a, upright sides D D, united by cross-bars d and d', and a rack, C, having square or rectangular teeth and recesses e and e', substantially as shown and described.

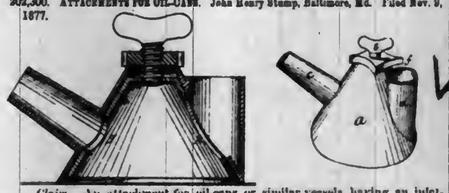
3. The wedge I, having the longitudinal recess f', and inclines i and i', substantially as shown and described, and for the purpose set forth.

4. In a mill pick, the combination of the straight blade G and adjustable anvil-block E, having teeth upon it which mesh into a rack, C, formed permanently in the head of the pick, substantially as shown and described.

5. The combination of the head A, having upright sides D D, united by cross-bars d and d', and the wedge I, having the inclines i and i', substantially as shown and described.

6. The combination of the head A, formed substantially as described, the blade G, anvil-block E, and wedge I, substantially as and for the purpose set forth.

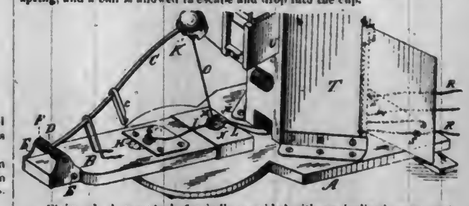
202,300. ATTACHMENTS FOR OIL-CANS. John Henry Stamp, Baltimore, Md. Filed Nov. 9, 1877.



Claim.—An attachment for oil-cans or similar vessels, having an inlet-port, and an outlet port and spout, in combination with an internal rotatable sleeve of corresponding conformation, having similar openings or ports, and a projecting screw provided with a nut, by means of which the ports can be opened and closed and secured, substantially as set forth.

202,301. BALL-TARGET THROWERS. Peter Tattarall, Washington, D. C. Filed Mar. 22, 1878.

Brief.—The spring carrying the cup is set by means of a cord passing through guides and over pulleys to the rear of the trap. A spring-gate is automatically opened by the cup in the act of depressing the latter to set the spring, and a ball is allowed to escape and drop into the cup.

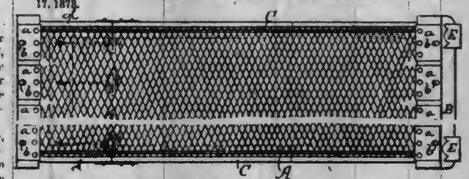


Claim.—1. A receptacle for balls provided with an inclined spout, and with a vertically reciprocating double spring-gate or cut-off, in combination with the spring-arm of a ball-thrower, arranged as shown and described, whereby the gate is operated to admit a ball to the cup when the arm is depressed, substantially as specified.

2. In combination with the receptacle and reciprocating double slide or gate, an agitating-arm extending into the receptacle, and operated by said slide or gate to deliver the balls from within the spout, substantially as specified.

3. In a ball-trap, the combination of a base or platform, A, a swiveled or pivoted plate, B, carrying a spring, C, and pivoted at a point directly under the cup when the arm is depressed, a receptacle for balls provided with spout and cut-off, all relatively arranged as shown and described, so that the parts will operate together to drop a ball into the cup in whatever position the plate B is turned, substantially as specified.

202,302. BED-BOTTOMS. Thomas Tracy and John H. Tracy, New Britain, Conn. Filed Jan. 17, 1878.



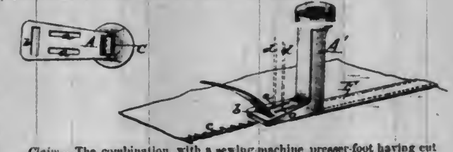
Claim.—1. In a bed-bottom, the fabric of which is composed of long helical strands, with the coils of the strands taking into each other, the woven wire fabric having the helical strands divided into groups at the end, and each group provided with clasps for attachment to the end rails, substantially as described, and for the purpose specified.

2. The peculiar corner-irons E, provided with sockets m and n, opening into each other, in combination with the cam p, whereby the shrinkage of the side rails may be compensated for, substantially as described.

3. The combination of the corner-irons having sockets m and n, the socket m embracing only the outer edge of the end rail, the end rails B B, side rails C C, having shoulder o, and the fabric, substantially as described, and for the purpose specified.

202,303. SEWING-MACHINE PRESSER-FEET. Wm. F. Trowbridge, Hudson, Mass., assignor of two-thirds his right to Wilbur F. Brigham and Henry J. Watkins, same place. Filed Feb. 1, 1878.

Brief.—The presser-foot is adapted to machines sewing two parallel seams. A transverse slot across the toe of the presser-foot permits the introduction of, and acts as a guide for, a stay-piece. The bottom of the presser-foot being flat and provided with one or more rollers permits the stay-piece to be laid upon and sewed to the material in more or less abrupt curves.



Claim.—The combination, with a sewing-machine presser-foot having cut through it two longitudinal parallel slots a suitable distance apart for the passage therethrough of the needles or awls of a double-needle sewing-machine, and a transverse slot across the toe thereof for the passage of stay-strap, of a transverse friction roller or rollers, projecting below the bottom surface of the said presser-foot in the rear of the needle-slots, substantially as and for the purpose set forth.

202,304. SULKY-PLOWS. Argyle W. Tucker, Waxahachie, assignor to Alford & Sorley, Dallas, Tex. Filed July 28, 1877.

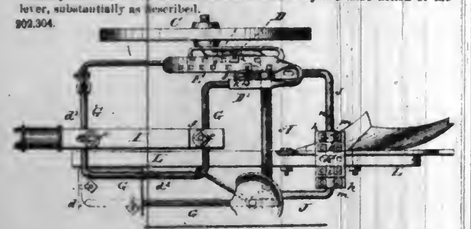
Claim.—1. The reversible bail or clevis J, pivoted on the ends of the axle A, adapted for the reception of plow-beams or cultivator-beams, and operated by means of the adjustable lever D', locking-pin g', spring-handle b', and perforated segment E, substantially as and for the purposes herein set forth.

2. In a sulky plow and cultivator, the frame G, constructed of a single rod, bent substantially in the manner shown and described, and forming the seat supporting arm, as well as the parallel parts d' d', to which the adjustable tongue I is fastened, substantially as herein set forth.

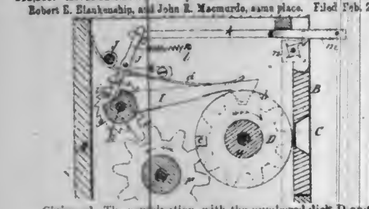
3. The combination of the reversible clevis J, with its operating-lever D', the plow-beam L, clamp h h', and cuffs or clips w w, with the pins or lugs s on the clevis, substantially as and for the purposes herein set forth.

4. The bent or curved axle, provided with a rigid crank or arm at each end, projecting in opposite directions, in combination with a lock-lever, whereby one wheel is raised and the other lowered by the same action of the lever, substantially as described.

202,304.



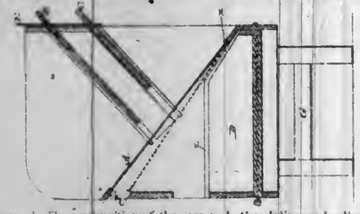
202,305. REVENUE-REGISTERS. Sylvester J. Tucker, Richmond, Va., assignor to himself, Robert E. Blankenship, and John E. Macmurdo, same place. Filed Feb. 25, 1878.



Claim.—1. The combination, with the numbered disk D and the secondary wheels F, constructed and arranged as described, of the crank-shaft G, having arm H, adapted to strike and turn the secondary wheel, and the spring-actuated and double-headed stop-pawls I, pivoted upon the crank-shaft and arranged to engage with the teeth of the numbered disks, substantially as and for the purpose described.

2. The combination, with the crank-shaft of the registering device, of a polygonal roller, *o*, having different-colored faces, and a ratchet and pawl mechanism for operating the same, substantially as described.

202,306. COAL AND POTATO SCREENS. William Van Houten, Falls, Iowa. Filed Nov. 21, 1877.

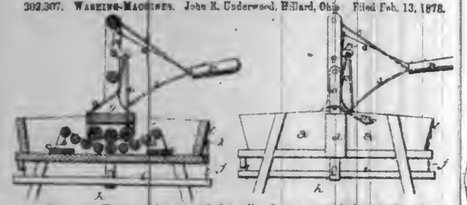


Claim.—1. The combination of the screen A, the sliding and adjustable screen B, and the sliding board C, as and for the purpose shown and described.

2. The combination of the drawer D with the sliding and adjustable screen B and sliding board C, substantially as specified.

3. The sliding standard G G, in combination with the frame B of the screen, substantially as shown and described.

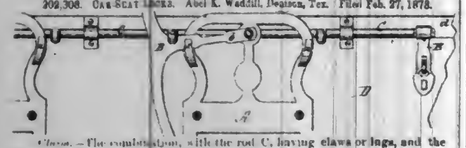
202,307. WASHING-MACHINES. John R. Underwood, Hilliard, Ohio. Filed Feb. 13, 1878.



Claim.—1. The combination of the roller-frame, provided with the rollers *r*, having holes or notches in one end, the locking-rods *o*, lever *p*, rod Q, and handle *r*, substantially as described.

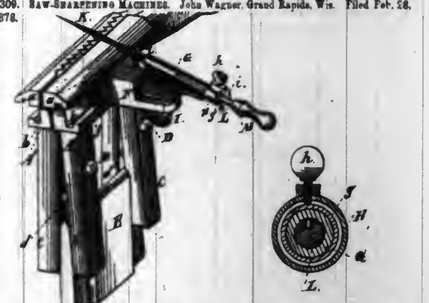
2. The combination of the tub *a*, guides *d*, standards *e*, cross-bar *h*, lever *i*, chain *j*, lever *k*, and springs *m*, whereby the rubber frame is made vertically adjustable above the roller frame *b*, substantially as set forth.

202,308. CAR-SEAT LOCKS. Abel K. Waddill, Denison, Tex. Filed Feb. 27, 1878.



Claim.—The combination, with the rod C, having claws or lugs, and the reversible seat-backs B, of the slotted lever-arm F and the locking device, said arm being rigidly attached to the rod, so as to serve both as a means for operating it and locking it in a fixed position, all as shown and described.

202,309. SAW-SHARPENING MACHINES. John Wagner, Grand Rapids, Wis. Filed Feb. 28, 1878.



Claim.—1. The saw-clamp consisting of bars *a a*, legs *c c c c*, having projections *d d*, and bolts D D, in combination with the wedge-plate E, substantially as and for the purpose set forth.

2. In combination with a saw-clamp, substantially as described, and having T-shaped grooves, the holder F, guide G, ring H, set-screw *h*, radial plate *i*, bar L, handle M, and screw I, all constructed and arranged substantially in the manner and for the purpose set forth.

3. The saw-clamp consisting of bars *a a*, having T-shaped grooves *b b*, legs *c c*, projections *d d*, bolts D D, and wedge-plate E, in combination with the holder F, guide G, ring H, set-screw *h*, radial plate *i*, bar L, handle M, and screw I, all constructed, arranged, and operating substantially in the manner and for the purpose set forth.

202,310. NUT-LOCKS. William Walter, Latrobe, Pa. Filed Mar. 18, 1878.

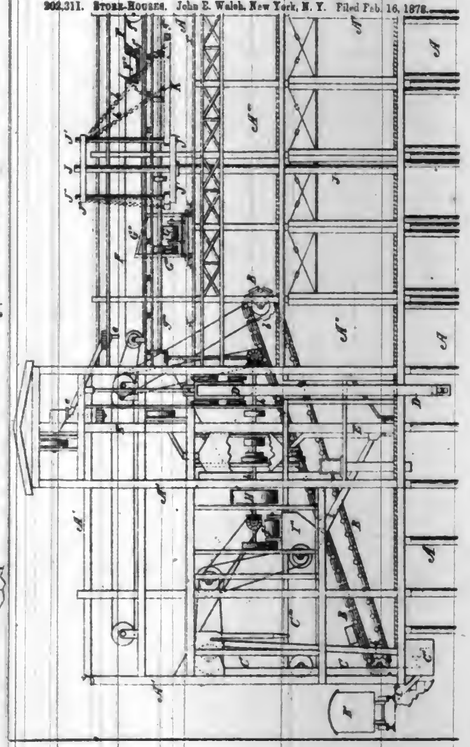
Brief.—After the nut is screwed on the bolt the catch is passed over the square end of said bolt, when the projection on the catch is made to engage with the shoulder on the nut, thus locking each by the other, the whole being secured by the pin, as shown.



Claim.—1. The combination of the bolt *a*, having a head, *b*, screw-thread *c*, and square portion, *d*, with the nut *e* and stop *l*, substantially as shown.

2. The stop *l*, having the projection *x*, in combination with the shoulder *y* on the nut, and the pin *h*, substantially as described.

202,311. STOVE-HOUSES. John E. Walsh, New York, N. Y. Filed Feb. 16, 1878.



Claim.—1. In a dock store-house, the swinging elevators or ship's legs D and intermediate devices, in combination with the high elevators E and spouts *e*, and devices for directing the grain into the hold of a vessel for stowing the grain for transportation, substantially as described.

2. In a dock store-house, the combination of the high elevators E, spouts *e*, and the longitudinal endless-belt conveyer F, in the manner and for the purpose substantially as described.

3. The endless-belt conveyer F, in combination with the movable frame F' and pulleys *f* and *f'*, as and for the purposes described.

4. The combination of the conveyer F and frame F', carrying pulleys *f* and *f'*, with the hopper F'', as and for the purpose described.

5. The transverse endless-belt conveyer G, in combination with the conveyer F and movable hopper F', substantially as described.

6. The transverse endless-belt conveyer G, operated in a movable protecting frame and cover, G', that is moved by wheels *x x* on ways *x'* in a direction parallel with the conveyer F, and at right angles with the direction in which the conveyer G travels, as and for the purposes described.

7. In a dock store-house, the combination of the conveyer F, conveyer G, receiving-hopper G', and spout *g*, whereby the grain passed by conveyers F and G is directed into ships to be stowed as freight, substantially as described.

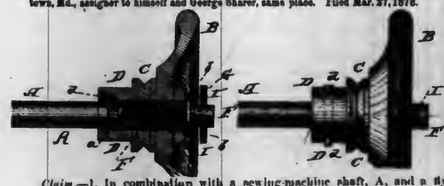
8. In a dock store-house, the double derricks J, situated at the sides thereof, and each provided with two booms or swinging arms, K, moving independently, as and for the purposes described.

9. In a dock store-house of two or more stories in height, the platform-doors L in the sides of the upper stories, to be swung out and down to form platforms to receive and discharge goods upon and therefrom, constructed and operating as described.

10. In a dock store-house, the combination of the derricks J K and platform-doors L, substantially as described.

11. In a dock store-house of two or more stories in height for mixed freight, the combination of the inclined elevators B, upright elevators C and E, ship swinging elevator D, conveyers C'', F, and G, with their intermediate operating devices, and side derricks J K, all arranged and constructed to operate substantially as described.

202,312. FRICTION-CLUTCHES FOR LOOSE AND TIGHT PULLEYS. James B. Warner, Hagerstown, Md., assignor to himself and George Sharer, same place. Filed Mar. 27, 1878.

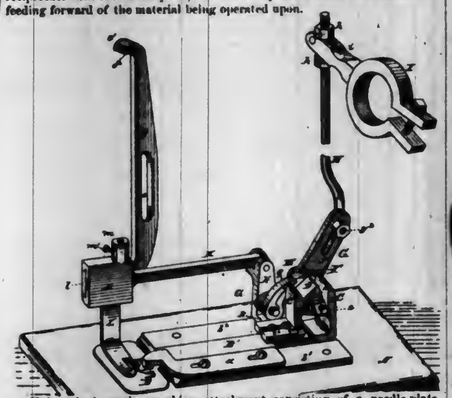


Claim.—1. In combination with a sewing-machine shaft, A, and a fly-wheel, B, with devices, as described, for preventing lateral motion of the wheel on the shaft, a screw, F, provided with flange G, for locking the wheel on and unlocking it from the shaft, substantially as herein set forth.

2. The combination of the shaft A, with circumferential groove *a*, the fly-wheel B, with pulley C and hub D, the pin *d*, and the screw F, with flange G, all constructed substantially as and for the purposes herein set forth.

202,313. OVERSEAMING ATTACHMENTS FOR SEWING-MACHINES. Henry J. Watkins, Hudson, Mass., assignor to himself, William F. Trowbridge, and Wilbur F. Brigham, same place. Filed Jan. 9, 1878.

Brief.—A needle-plate adapted to work in guides above the bed-plate of the machine is provided with bearings, by means of which a cam operates a shaft above or below the bed-plate, and gives such plate a lateral reciprocating movement each alternate stitch. The presser foot, which is constructed to reciprocate with the needle-plate, is raised every other stitch to facilitate the feeding forward of the material being operated upon.



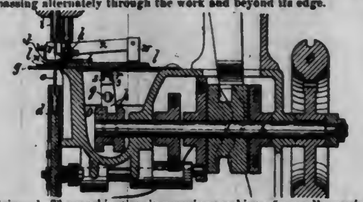
Claim.—1. A sewing-machine attachment consisting of a needle-plate having a laterally-projecting arm provided with a cam bearing or bearings, and moving in suitable guides, combined with a cam operating against said bearing or bearings, and mounted upon a shaft, and adapted to receive motion from a sewing-machine shaft, a presser-foot connected to a standard on the arm of the needle-plate by a pivoted link, a guide-block fitted loosely to a horizontal slide firmly attached to the shank of a presser-foot, and adapted for attachment to the presser-foot bar of a sewing-machine, and a lifting-bar jointed to the presser-foot, and adapted for attachment to a sewing-machine and operation by a suitable moving part thereof, whereby an overseam may be formed and the presser-foot lifted to allow the material in process of sewing to be fed at alternate stitches, substantially as described.

2. The combination, in a sewing-machine attachment, of a needle-plate and a connected presser-foot, both adapted for lateral reciprocation in overseaming, with a presser-bar and a lifting-bar connected with the presser-foot, and adapted for attachment to a sewing-machine, as described, whereby said presser-foot is lifted automatically at every other forward movement of the feeding device of the machine, substantially as set forth.

3. In a sewing-machine attachment, the combination of the needle-plate B, having arm B', arranged to move longitudinally in suitable guides, and provided with the cam-faced standards *c c*, rotary cam D, adapted to receive motion from a sewing machine shaft, presser-foot L, adapted for lateral movement, and connected with plate B, and a suitable device for lifting said presser-foot, substantially as and for the purpose set forth.

202,314. WAX-THREAD SEWING-MACHINES. Henry J. Watkins, Hudson, Mass., assignor of two-thirds his right to William F. Trowbridge and Wilbur F. Brigham, same place. Filed Aug. 11, 1877.

Brief.—The needle-plate and presser-foot of an ordinary wax-thread sewing-machine are caused to reciprocate together in a lateral direction through the medium of a lever pivoted to the frame, and acted upon at one end by a cam on the driving-shaft of the machine. The other end engages by a pin with a forked projection on the under side of the needle-plate, for the purpose of producing an overseaming-stitch on the edge of the work, by the awl and needle passing alternately through the work and beyond its edge.



Claim.—1. The combination, in a sewing-machine, of a needle moving vertically to make its stitch, and vibrating to feed the fabric, and a slotted feed-plate and presser-foot, both adapted to reciprocate horizontally at right angles to the line of the feed, for the purpose of moving the fabric alternately away from and across the needle-path, as set forth.

2. In a sewing-machine adapted for overseaming leather, the combination of a perforating-awl, a vertically-moving needle adapted to vibrate to feed the fabric, a horizontally-reciprocating needle-plate, and a presser-foot adapted to move coincidently therewith, substantially as and for the purpose set forth.

3. The combination of a reciprocating needle-plate, *l*, arm *x*, pivoted upon said plate, a vertically and horizontally reciprocating presser-foot, *t*, and a vibrating sewing and feeding needle, substantially as and for the purpose set forth.

4. The combination of cam-grooved cylinder *o*, lever *p*, having a pin projecting into the groove of said cylinder, the horizontally-reciprocating needle-plate *l*, pivoted arm *x*, and presser-foot *t*, substantially as described.

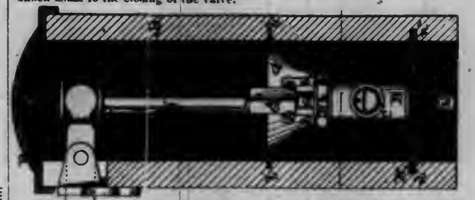
202,315. VEHICLE-WHEEL HUBS. Carl Theodor Wenker, Offenbach, Germany. Filed Mar. 20, 1878.



Claim.—The hollow wheel-hub having the annular depressed socket-chamber, the inwardly-extending, bracing, and gasket-supporting flanges, and the open spaces or chambers between said flanges and the walls of said chamber, substantially as set forth.

202,316. HYDRANTS. Peter White and J. C. Kupferle, St. Louis, Mo. Filed Mar. 21, 1878.

Brief.—The groove in the upper part of the valve-barrel is to prevent the shock usual to the closing of the valve.



Claim.—1. The chamber B, having the groove *b'*, in combination with the stem G, valve E, and disk J, substantially as described.

2. The chamber B, having the groove *b'*, opening *c*, and inlet C, in combination with the stem G, valve E, and disk J, substantially as described.

3. The combination of the chamber B, cap B', stem G, washers H H', and washer I, substantially as described.

4. The combination of the chamber B, inlet C, seat F, stem G, valve E, disk E', and washer E'', substantially as described.

5. The combination of the stem G, disk J, washer J', thimble K, valve E, disk E', washer E'', and nut L, substantially as described.

6. The chamber B, having the inlet C and outlet D, arranged as shown, the extension *b'*, waste-opening *b''*, stem G, valve E, seat F, and valve M, combined and operating substantially as described.

7. The combination of the hydrant-box A, valve-chamber B, and the foot-plate N, having the openings a^1 a^1, as and for the purpose described.

8. The hydrant-box A, having the grooves a^2 and q', in combination with the plates N and Q and the valve-chamber B, substantially as described.

9. The valve-chamber B, having the extension b^1, provided with the waste-opening b^2, in combination with the stem G and valve M, substantially as described.

202,317. WASHING-MACHINES. John Will, Long Point, Ill. Filed Feb. 21, 1878.



Claim.—The journals *e*, having the disks *i* formed upon one end and the sockets *l* upon the other, in combination with the frame *a*, bars *d*, and washer *g*, substantially as set forth.

202,318. GAME APPARATUS. George L. Witsil, Philadelphia, Pa., assignor of one-half his right to H. M. Bennett, same place. Filed Oct. 31, 1877.

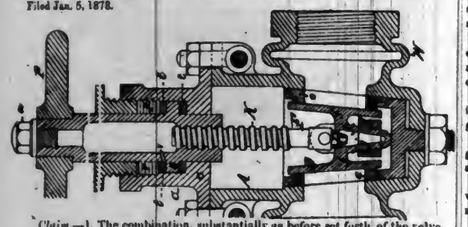


Claim.—1. A table provided with a bed and channel surrounding the same, said bed having numbered spots located at each end thereof, and numbered lines extending transversely across the table, substantially as described.

2. A table-game apparatus consisting, essentially, in a bed, the opposite ends thereof being furnished with numbered spots, while the remaining portion of said bed is subdivided by numbered transverse lines, and sliding weights, having curved peripheries, substantially as described.

3. A table-game apparatus consisting of the following parts: the bed E, provided with the numbered spots *c* and lines G, the cues D, pins I, and weights H, substantially as described.

202,319. STOP-VALVES. William E. Worthen and Richard S. Gillespie, New York, N. Y. Filed Jan. 5, 1878.



Claim.—1. The combination, substantially as before set forth, of the valve-case and the stationary but removable cage.

2. The combination, substantially as before set forth, of the valve-case, the removable cage, and a ring valve-seat separable from said cage.

3. The combination, substantially as before set forth, of the valve-case, the duplex and jointless but expansible gate, and the screw whereby said gate is moved crosswise of the line of the water-way of the valve-case.

4. The combination, substantially as before set forth, of the valve-case, the duplex and jointless but expansible gate, the screw for moving said gate, and the expander whereby said gate is expanded.

5. The combination, substantially as before set forth, of the expansible gate, the screw for moving said gate, and the yoke whereby the expansible gate may be contracted.

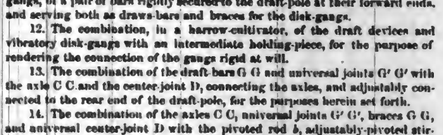
6. The combination, substantially as before set forth, of the expansible gate, the screw for moving said gate, the gate-expander, and the yoke for contracting said gate.

7. The combination, substantially as before set forth, of the valve-case, the gate-screw for moving the gate thereof, and the tubular screw-standard, constructed with both an oil-hole, through which oil can be introduced into it, and a lateral oil-hole, to permit the oil to pass to the external collar of the screw-standard.

8. The valve-case constructed, substantially as before set forth, with an expansion-zone for one of its nozzles.

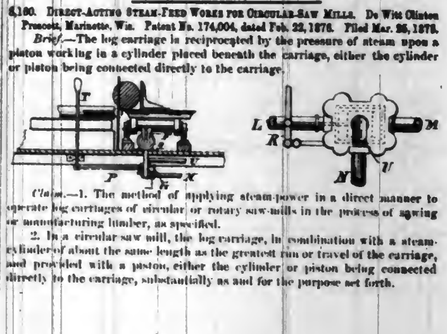
202,320. BOTTLE-STOPPERS. William G. Whitman, Chicago, Ill., assignor of a part of his right to John A. Lemax and Martin I. Whitman, same place. Filed May 25, 1877.

Claim.—In a bottle stopper, the combination of the metal stopper D, bail G, passing and returning over the stopper and secured thereto, hinged at *i i* to link J, the opposite end passing through slotted lever K, the clasp C, having stirrup *b*, and the connecting-link *c*, all constructed and operating as shown and described.



REISSUES.

8,159. HARROW-CULTIVATORS. Charles La Dow, Albany, N. Y. Patent No. 107,302, dated Feb. 13, 1877. Filed Mar. 22, 1876.



Claim.—1. In a harrow-cultivator, the disk-gangs having the inner ends of their axles flexibly connected together.

2. In a harrow-cultivator, the disk-gangs jointed at their inner ends to allow both vertical and horizontal vibration.

3. In a harrow-cultivator, the disk-gangs connected at their inner ends by universal joints, substantially as set forth.

4. In a harrow-cultivator, the disk-gangs bearing directly against one another at their inner ends, for the purpose set forth.

5. In a harrow-cultivator, the disk-gangs having their pivotal bearings directly upon their axles and at points between their ends, for the purpose of preventing bodily endwise swing of the gangs when vibrating, as set forth.

6. In a harrow-cultivator, the disk-gangs doubly pivoted at points between their ends, and having their inner ends flexibly connected, so that opposite ends of both gangs may have corresponding vertical and horizontal vibration, substantially as set forth.

7. In a harrow-cultivator, the vibratory disk-gangs having the draft devices connected directly to their axles.

8. In a harrow-cultivator having gangs of disks mounted on through-axles, a draft-tongue connected, by lateral extensions or bounds, directly to said axles, and having vertical vibration independent thereon, substantially as described.

9. The combination, in a harrow-cultivator, of the adjusting devices, the draft-tongue and connections, and the adjustable disk-gangs, whereby the angles of the gangs may be adjusted at will for wide or narrow furrows without disconnecting any of the parts, as herein set forth.

10. The combination, in a harrow-cultivator, of the disk-gangs, an adjusting-rod, and a pivoted bracket or holder, by which said rod and the disk-gangs may be adjusted, for the purpose set forth.

11. In a harrow-cultivator, the combination, with the adjustable disk-gangs, of a pair of bars rigidly secured to the draft-pole at their forward ends, and serving both as draws-bars and braces for the disk-gangs.

12. The combination, in a harrow-cultivator, of the draft devices and vibratory disk-gangs with an intermediate holding-piece, for the purpose of rendering the connection of the gangs rigid at will.

13. The combination of the draft-bars G G and universal joints G' G' with the axle C C and the center-joint D, connecting the axles, and adjustably connected to the rear end of the draft-pole, for the purposes herein set forth.

14. The combination of the axles C C, universal joints G' G', braces G G, and universal center-joint D with the pivoted rod *b*, adjustably-pivoted stirrup H, pole E, and nuts *a a*, substantially as set forth.

15. The combination of the draft-bars G, boxes G', braces J, pole E, and seat I with the flexibly-jointed axles C C and wheels A of a harrow-cultivator.

8,160. DIRECT-ACTING STEAM-FEED WORKS FOR CIRCULAR-SAW MILLS. De Witt Clinton Prescott, Marinette, Wis. Patent No. 174,004, dated Feb. 22, 1876. Filed Mar. 26, 1875.

Brief.—The log carriage is reciprocated by the pressure of steam upon a piston working in a cylinder placed beneath the carriage, either the cylinder or piston being connected directly to the carriage.

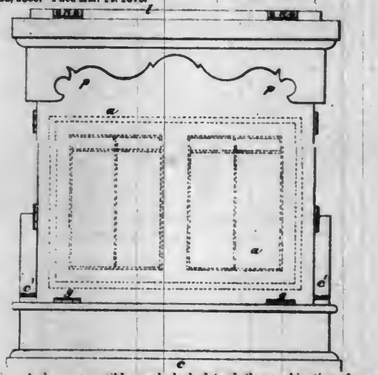
Claim.—1. The method of applying steam-power in a direct manner to operate log carriages of circular or rotary saw-mills in the process of sawing or manufacturing lumber, as specified.

2. In a circular saw mill, the log carriage, in combination with a steam-cylinder of about the same length as the greatest run or travel of the carriage, and provided with a piston, either the cylinder or piston being connected directly to the carriage, substantially as and for the purpose set forth.

3. The log-carrier, in combination with a steam-cylinder of about the same length as the greatest run of the carriage, a piston fitted within the cylinder and connected directly to the carriage, and mechanism whereby the travel of the carriage and operation of the steam-feeding device may be regulated, substantially as described.

4. The steam-cylinder A, in combination with the piston-head D, piston-rod E, bracket F, attached to the log-carriage, and steam-chest G, provided with valve H and supply and exhaust ports, lever P, connected to the valve-stem, and hand-lever T, connected to the lever P, substantially as and for the purpose set forth.

8,161. WARDROBE-BEDSTEADS. Andrew Stark, Topeka, Kans. Patent No. 40,568, dated Aug. 22, 1865. Filed Mar. 14, 1878.



Claim.—1. In a convertible wardrobe-bedstead, the combination of a permanent head-board, *b*, and box or base *e f*, attached at the bottom thereof, and receiving into it the lower end of the bed when raised, the bed hinged to said base, and foot-piece hinged thereto in such manner that when the bed is folded up the foot-piece can be turned down so as to form the entire cornice or top of the apparent wardrobe, substantially as set forth.

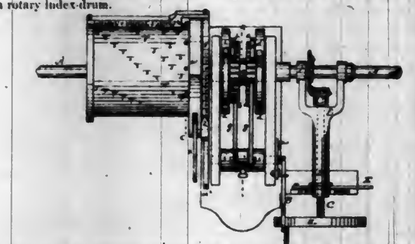
2. In a convertible or wardrobe bedstead, in combination with the folding bed, a downwardly-folding foot-piece hinged thereto, which is extended around the corners of the bed, so as to form, when the bed is folded up and the foot-piece is turned down, the entire cornice on both the front and two ends of the apparent wardrobe, substantially as set forth.

3. In a convertible or wardrobe bedstead, in combination with the head-board *b* and box *e*, the side brackets *c'*, forming a support for the head-piece, and also, in combination with the sides of the bed-box and end of the folding foot-piece, forming the sides of the apparent wardrobe, substantially as set forth.

4. The combination of the hinged bed portion *a*, hollow base *e*, the two-part foot-boards *l m*, and the double-hinged side pieces *s t*, when arranged in the manner and for the purposes herein described.

8,162. HEAD-BLOCKS FOR SAW-MILLS. John Cain, Sandy Lake, assignor, by mesne assignments, to Stearns Manufacturing Company, Erie, Pa. Patent No. 131,061, dated Sept. 3 1872. Filed Feb. 20, 1878.

Brief.—The head and tail blocks are set by an intermittingly-revolving shaft, which is operated by a lever and two ratchets, the feed being registered by a rotary index-drum.



Claim.—1. The combination, within the setting mechanism of a saw-mill head-block, of a ratchet device which is operated upon by a pawl which is attached to a carrier which is concentric with said ratchet, and is operated by being connected with a counter-shaft, which is operated by the attendant, substantially as and for the purposes mentioned.

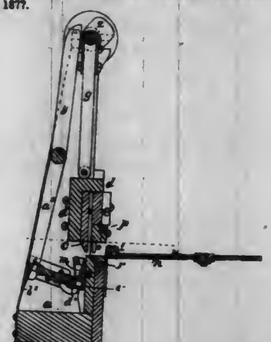
2. The combination, within the setting mechanism of a saw-mill head-block, of a ratchet device which is operated upon by two pawls, which are attached, respectively, to carriers which are concentric with said ratchet, and are operated by being connected with a counter-shaft in such a manner that the said pawls shall oscillate toward and from each other alternately, substantially as and for the purposes mentioned.

3. The combination, within the setting mechanism of a saw-mill head-block, of a ratchet-wheel upon a shaft, a pawl-carrier, an actuating-lever, and mechanism for operating said carrier from said lever, substantially as and for the purposes described.

4. The log-setting apparatus composed of the shaft A, ratchet-wheel *a b*, loose disks *d c*, rods *g g*, pawls *h h*, shaft *i*, and lever H, all arranged to operate substantially as herein shown and described.

5. The shaft C, hanging in the vibrating frame D, and carrying a friction-wheel, *n*, when arranged to gear into the shaft A, substantially as herein shown and described.

8,163. MACHINES FOR MAKING METALLIC SHOE-SHANKS. John Hyslop, Jr., Abington, assignor, by mesne assignments, to Hiram H. Jenkins and George O. Jenkins, South Abington, Mass. Patent No. 130,347, dated July 16, 1872; Reissue No. 6,167, dated Dec. 24, 1872. Filed Aug. 10, 1877.



Claim.—1. In a machine for making metallic shoe-shanks, the combination, substantially as described, of the punching mechanism, the cutting mechanism, and the bending mechanism, arranged to operate as set forth.

2. In a machine for making metallic shoe-shanks, the plate d^2, the convex-faced bender-plate *r*, and the concave face *s*, in combination, for the purpose above specified.

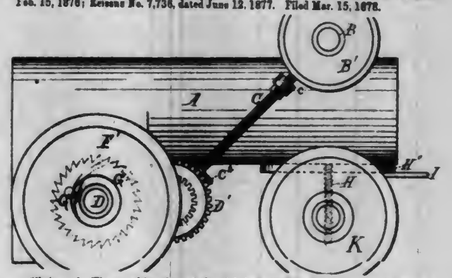
3. In a machine for making metallic shoe-shanks, the combination, with the fixed or stationary bending-die and movable bending-die, of a pair of stop-pins, e^2, secured to the top, and plate d^2 at the bottom, of the movable die, for arresting and holding the blanks, as described.

4. In a machine for making metallic shoe-shanks, the combination, with the fixed or stationary bending-die and movable bending-die, of a pair of pins or projections, e^2, extending from the bender-plate, whereby the middle and reverse bends of a metallic shoe-shank are formed at one and the same operation, as described.

5. In a machine for making metallic shoe-shanks, the combination of the cutting and punching mechanism, chute *a b*, stop-pins e^2, dies *v x*, and projections d^2, all arranged and operating in relation to each other substantially as described, whereby the shoe-shank is cut and punched, conducted to the dies, pressed into shape, and discharged automatically.

6. In a machine for making metallic shoe-shanks, in combination with the concave-faced stationary die *r*, the reciprocating convex-faced bender-plate or die *s*, with stop-pins e^2, projections c^2, and plate d^2 secured thereto, as described, for the purposes specified.

8,164. TRACTION-ENGINES. Geo. Rogers, Mount Vernon, Ohio. Patent No. 173,496, dated Feb. 15, 1876; Reissue No. 7,736, dated June 12, 1877. Filed Mar. 15, 1878.



Claim.—1. The combination of the driving-shaft and the rear axle, having truck-wheels adapted to be loosely or rigidly secured to it, with the supplemental shaft, provided with cog-wheels, gearing with wheels on the rear axle, and the intermediate connecting-shaft, engaging at one end the driving-shaft, and at the other end the supplemental shaft, as herein shown and set forth.

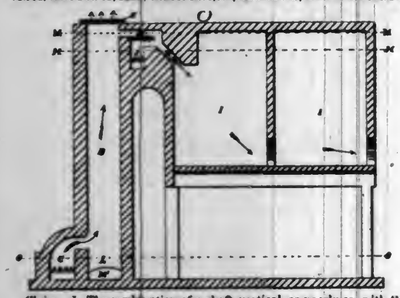
2. In a traction-engine, the combination, substantially as set forth, of the truck-wheels with the independent spur or gear wheels for driving the same, mounted on the same axis with the truck-wheels, and engaging the same, substantially in the manner described, so that each truck-wheel may, when occasion requires, move independently both of the spur-wheel by which it is driven and of the other truck-wheel.

3. In a traction-engine, the combination, with the rear truck-wheels, and the independent spur or gear wheels for driving the same, mounted on the same axis with the truck-wheels, and engaging them, substantially as described, of the front truck or axle, adapted to turn upon a vertical pivot independently of the boiler, which it in part supports, substantially as set forth.

4. In a traction-engine, a boiler supported so as to be capable of oscillatory movement upon its power-driven axle as an axle, and means for so moving said boiler, in combination with a rotary supplemental shaft, which derives its rotary movement from the driving-shaft of the engine, is carried by and partakes of the movement of the boiler, and gears with wheels on said axle, substantially as shown and set forth.

5. The combination, with the boiler and the driving-shaft, of the rear axle, having truck-wheels adapted to be loosely or rigidly secured to it, and the supplemental shaft, operated, substantially as specified, from the driving-shaft, and provided with cog-wheels that gear with wheels on the said axle, substantially as set forth.

8,165. FURNACES FOR ROASTING PULVERIZED ORES. Chas. Stetefeldt, San Francisco, Cal., assignor, by mesne assignments, to Stetefeldt Furnace Company, same place. Patent No. 72,931, dated Dec. 31, 1867; Reissue No. 3,907, dated Jan. 25, 1870. Filed Feb. 16, 1878.

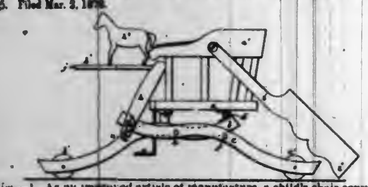


Claim.—1. The combination of a shaft, vertical, or nearly so, with the fire-place at or near the bottom, a flue leading from the upper part of the shaft, and an auxiliary fire-place for heating said flue.

2. An auxiliary fire-place and a flue or chamber through which the dust passes escaping from the stack, in combination with a roasting-furnace for roasting or chloridizing said dust.

3. A supplemental or auxiliary fire-place, J, combined with a furnace, B, fire-place C, dust-flue D, and dust-chamber I, said auxiliary fire-place being arranged to roast the fine ore which is carried out of the furnace B after it has left the main furnace-chamber, substantially as and for the purpose above described.

8,166. COMBINED CARRIAGE AND CHAIR. Charles F. Tenney and Thomas J. Hobbs, Baldwinsville, Mass., assignors to Thompson, Perley & Waite. Patent No. 184,782, dated June 22, 1875. Filed Mar. 2, 1878.



Claim.—1. As an improved article of manufacture, a child's chair convertible into a high chair or carriage, it being provided with a pair of hinged legs, and rollers carried by and movable with the legs, the rollers being adapted to bear upon the floor when the seat is lowered, to thereby form a carriage, substantially as described.

2. A child's chair seat, combined with rollers and seat-supporting legs, connected with such seat and with each other, and a foot-rest so attached as to permit the legs to be extended more or less at the front and rear of the seat, to convert the chair into a high chair or carriage, substantially as described.

3. In a child's chair convertible into a high chair or carriage at will, the combination of a seat and a pair of hinged roller-carrying legs, connected with the frame of the seat, the legs, by their change of position with reference to the seat, enabling the seat to be elevated to form a high chair for use with a dining-table of usual height, and to lower the seat for a carriage, the same set of legs serving to sustain the seat in both its elevated and lowered position.

4. The combination, with a chair seat and legs hinged to the seat-frame, of rollers placed near the ends of the legs to permit the ends of the legs to rest upon the floor when the seat is elevated, and the rollers to bear upon the floor when the seat is lowered, by changing the position of the legs with relation to the horizontal portion of the seat.

5. The combination, with the seat and arms of a child's chair, of a table connected therewith, and adapted to be turned backward over the back of the seat when not in use as a table.

6. In a child's high chair and carriage, the combination of a seat-frame, hinged legs and rollers, and a holding device, to hold the upper ends of the legs fixed with relation to the seat when in its elevated position as a high chair, the disengagement of the holding devices permitting the legs to turn on the connection joining them with the seat, to thereby permit the high chair to be used as a carriage.

7. In a combined child's high chair and carriage, rigidly-connected seat, arms, and back, combined with hinged legs and rollers, and a foot-rest and table, adapted to be placed in front of the seat when in use, and to be suspended at the back of the seat when not in use, substantially as described.

8. A combined child's high chair and carriage, provided with pivoted roller-carrying legs, adapted to be extended in front and behind the seat as the latter is lowered to form a carriage, and with a stop to check the outward spreading of the legs, to thereby retain the lowered seat at the desired level to form a carriage, substantially as described.

9. In a child's high chair and carriage, the combination of legs hinged to the seat-frame at one side of a line drawn laterally through the center of the seat frame, such legs supporting the seat in its high and low positions, and a holding device to connect such hinged legs with the seat-frame at a point at the opposite side of such central line, to hold such hinged legs in proper position to firmly support the seat each side such central line.

10. A child's carriage composed of a seat, *a a'*, legs *b*, connected with the seat, legs *c*, pivoted to legs *b*, and wheels, all combined to operate substantially as described, and to be converted into a high chair, as set forth.

11. The combination, with the seat and its hinged legs *b*, of the legs *c*, pivoted to legs *b*, and the pivoted guard connected with legs *c*, as described, whereby downward pressure on the guard throws it back against the seat, substantially as described.

8,167. SIGNAL-CARTRIDGES. Edward W. Very, Annapolis, Md. Patent No. 190,362, dated May 1, 1877. Filed Sept. 4, 1877.



Claim.—1. A percussion-capped signal cartridge or shell having a charge of gunpowder, and being provided with one or more signal-balls, directly ignited by the flame of the burning gunpowder, and showing their light from the time they leave the cartridge-case and pistol until they are entirely consumed, substantially as and for the purpose set forth.

2. The pyrotechnic signal herein described, consisting of a combustible material formed into signal masses or stars, capable of emitting colored masses of light when propelled by an explosive charge of gunpowder, in connection with a primed and charged cartridge-shell, adapted for use in an ordinary fire-arm, as and for the purpose set forth.

8,168. BARREL-PITCHING MACHINES. Henry Lohmann, Cleveland, Ohio. Patent No. 171,672, dated Jan. 4, 1876. Filed Nov. 3, 1877.



Claim.—1. The nozzle F of a barrel-pitching machine provided with an air-box, G, constructed, arranged, and operating substantially as shown and described.

2. In a barrel-pitching machine, the combination of a nozzle entering the barrel to be treated, a heating-furnace, an air-box or sleeve having perforations therein and surrounding the nozzle, but not communicating therewith, and a fan-blower arranged to deliver its blast beneath the fire in the furnace, and thereby drive live flame into the barrel, substantially as described.

8,169. COLLARS. Washington Wilson, New York, N. Y. Patent No. 187,807, dated Dec. 4, 1877. Filed Mar. 11, 1878.



Claim.—1. A collar provided with a band composed of the parts B B, curved and tapered, or decreasingly graduated from the ends toward the middle, as shown and described.

2. A collar having short or sectional bands starting from the center of the collar, or any point between the center and ends thereof, and continuing with a graduated curve to and beyond the ends of the same, substantially as and for the purpose set forth.

3. The combination, with a collar having short bands graduated on a curve and decreasingly toward the middle, of a band connecting bend or binding along the lower edge, as set forth.

4. A collar having curved and graduated bands that extend along the top or body of the collar from the center, or any other point between the center and ends thereof, to and beyond the ends of the collar, and having the rear button-hole placed above the band or binding into the top or body of the collar, substantially as shown and described.

8,170. TOY MONEY-BOXES. John W. Heard, Providence, R. I. Patent No. 182,836, dated Oct. 3, 1876. Filed Feb. 9, 1878.



Claim.—1. A transparent or translucent glass money-box or savings-bank, made integral, and having a slit or slot, *a*, therein, as described and shown.

2. A transparent or translucent money-box having a depressed portion, *b*, and having a slot for the admission of money made in such depressed portion.

8,171. CASTERS FOR TRUCKS. Morris Schwerin, Newark, N. J., assignor to Geo. M. Ballard and George Minshin, same place. Patent No. 108,193, dated Oct. 11, 1870; Reissue No. 5,775, dated Mar. 2, 1874. Filed Jan. 3, 1878.

Brief.—The fixed caster-plate, to which the roller-ears are secured, is clamped between the trunk and a mortised cleat. The sides of the mortise bear against the roller and keep it steady.



Claim.—1. The non-rotating frame of a caster, from which ears directly project, carrying a pivoted roller, clamped in a stationary position between the trunk and a supporting-strip, the latter being perforated to allow the passage through it of the caster-ears, substantially as set forth.

2. The frame of a caster clamped between the trunk and a supporting-strip, the latter being perforated, and bearing against the ears of the frame, substantially as described.

3. The combination of the recessed cleat, roller pivoted on a separate frame, and independent perforated corner-strap, the parts being arranged for operation substantially as shown and described.

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DECISIONS OF THE COURTS.

Circuit Court of the United States—District of Massachusetts.

WILLIAM WILKENS *vs.* NATHAN H. SPAFFORD.

[*In Equity.*—*No.* 579.]

An exclusive license for the use of certain patented machinery, invented and constructed during the term of service, results to an employer where the workman agreed to give the employer the exclusive benefit of his inventive faculties and of such inventions as he should make in a particular class of machinery during the period of employment.

So, too, an agreement that the employer was to have the exclusive benefit of the workman's services in making machinery and improvements in the employer's premises operates to license the use of machinery perfected and constructed, or in course of construction, during the term of service, although it had actually been invented and patented by the workman prior to such service.

[*J. H. B. Latrobe* and *Causten Browne*, for complainant; *Chauncey Smith* and *George E. Betton*, for defendant.]

STATEMENT OF THE CASE.

This bill seeks relief upon an alleged contract and certain equities arising in favor of complainant upon the transactions between the parties relating to improvements made by the defendant in machinery for the treatment of bristles.

The bill alleges:

1. That the complainant being then, as now, largely engaged at Baltimore in the manufacture of curled hair and bristles, a business involving many operations which could be facilitated by the use of machinery, entered into a certain agreement with the defendant by which the defendant was to come into the complainant's employment, and, "for the term of one year, devote his whole time and attention and abilities to inventing and constructing machinery and improvements in machinery, such as should be applicable to and facilitate the manufacture of curled hair and bristles," in which the complainant was engaged; and that whatever improvements or inventions should be so made during such employment should be free to the complainant to use as long and as much as he wished in his own business; also, that the exclusive right to make, use, and sell any or all of said improvements should belong to the complainant, and that so far as the inventions or improvements embodied in a certain machine for dragging bristles, which the defendant already had and had shown to the complainant at Providence, (patented in 1863,) were applicable to the said business, they should, in like manner, be free to the complainant to use and belong exclusively to him. The consideration of these promises was that the complainant engaged to employ the defendant for one year, and pay him $2,500, and furnish him, at the complainant's place of business in Baltimore, with all the room, stock, machinery, tools, and other facilities required to enable him to carry out his undertaking to the best advantage, and at the complainant's sole cost. As to the machine exhibited to the complainant at Providence, the bill alleges that, although embodying new and useful contrivances, it was not satisfactory and not capable of being usefully employed for the purposes for which it was designed.

2. That the defendant entered the complainant's employment about June 1, 1864, accordingly, and made inventions there in bristles machinery, not only during a year from that date, but afterward, by verbal understanding, continuing the contract in existence down to December, 1866, when the contract and employment were terminated by the parties, the complainant paying the $2,500 per year, and furnishing facilities, as agreed; and that the improvements so made by the defendant during this time became the subjects of the following patents of the United States granted to the defendant, viz: No. 52,763, dated February 22, 1866; No. 54,033, dated April 17, 1866; No. 54,034, dated April 17, 1866; No. 59,286, dated October 30, 1866; No. 61,480, dated January 22, 1867.

3. That the defendant, though requested, has refused to assign any of these patents to the complainant.

4. That the complainant has expended not less than $30,000 in stock, tools, labor, &c., on his part of the contract, which will be wholly or in great part lost, unless he is relieved as prayed.

5. That the defendant, since the termination of the contract, has procured to be granted to himself, as alleged assignee of one Burt and one Butterfield, by assignment taken after the contract was made, a reissue, in two divisions, of letters patent originally granted February 7, 1854, and extended for seven years, for an alleged improvement in machines for cleaning and assorting bristles; and that these reissues are invalid, but that the defendant pretends and claims that they cover as infringements the machines which were constructed by him for the complainant under the contract before mentioned. And the complainant insists that, if the reissues are valid and infringed, the defendant cannot be allowed, against the equities heretofore appearing, to enforce the same, as proposed.

6. That the defendant has filed a bill on the equity side of this court, charging complainant with infringement of each and all of the patents before mentioned.

The relief prayed is that the defendant may be decreed to execute to the complainant an assignment of each of the patents, except the Burt and Butterfield patent, and that as to that, he may be decreed to execute a release and discharge of all claim of infringement, and that he may be enjoined from disposing of any of them, (except the Burt and Butterfield,) to any one else, or from undertaking to enforce them against the complainant, or from granting any license to any other party under any of the patents, and that he may be decreed to grant and confirm to the complainant a license to make, use, and sell machinery under all the patents, and for general relief.

The answer denies, alleges, and admits as follows:

1. Denies the allegation of the bill in regard to the Providence machine, and alleges that it was "a complete, perfect, and practical machine."

2. Denies the agreement between the complainant and respondent, as stated in the bill, and alleges that after the complainant had examined the Providence machine, and at a subsequent conference of the parties at New York, it was agreed that the respondent should go to the complainant's place in Baltimore and "superintend his works generally, and, as soon as respondent had time, should make a machine for him to be used in his business, both being free to terminate their relations with each other at any

time; and after he, said Wilkens, had seen what respondent could do, we were to make a bargain;" that "the only agreement actually made by and between said Wilkens and himself was that he was to have the sum of $2,500 for superintending the business of said Wilkens for one year from July 1, 1864, and was to fit up a machine-shop, said Wilkens to furnish shop-room, stock, and tools for the same." Elsewhere the answer says, "It was understood and agreed that respondent was to engage in complainant's service for one year, to superintend the machinery of complainant and make improvements therein, to fit up a machine-shop, and erect such new machines as respondent believed would be valuable to complainant's business;" "and the only agreement or understanding between us was that complainant should have the use and benefit of such particular machines as should be erected by said respondent during his engagement of one year with said complainant."

3. Denies that he invented any machines or improvements applicable to Wilkens' business during his employment by Wilkens, except the bundler, and alleges that all the improvements constructed during that time had been invented before making any agreement with him.

4. Denies that he was ever requested to assign any patents to Wilkens.

5. Admits that, as assignee of the Burt & Butterfield patent, he has obtained a reissue thereof, as alleged in the bill, and alleges that it is valid and is infringed, without license or authority of defendant, by the complainant using machines built by him since respondent was in his employment.

6. Admits that respondent has brought suit against complainant in this court for alleged infringement, as charged in the bill, and justifies such suit, and "denies that said complainant has any right to make or use in his business, or sell, any of the improvements covered by said letters patent, and he denies that complainant is entitled to have any conveyance from him or any of said letters patent."

7. "The respondent sets up the statute of frauds, and prays to be allowed the benefit thereof as though specially pleaded herein."

8. "The respondent sets up the statutes of limitations of the Commonwealth of Massachusetts, and prays to be allowed the benefit thereof as though specially pleaded herein."

9. The respondent claims that the suit is barred by dismissal, without prejudice, of a previous suit of the complainant against the respondent, relating to the same matters in the circuit court of Baltimore city.

OPINION OF THE COURT.—*April* 18, 1878.

SHEPLEY, *J.*:

It is clear from the evidence in this record that no contract was made until the conference took place between the parties in New York. Although no written contract was there made between the parties, it is not difficult, from the attending circumstances and the previous correspondence between the parties, and their subsequent conduct and dealings with each other, to determine with substantial accuracy what that contract was. Spafford had written, May 5, 1864, to Wilkens, proposing to go to Baltimore, "and go to work for you for a year, if you desire it, making improvements in your machinery." Wilkens' answer, May 19, 1864, contains the following passage:

> Supposing you write me on what terms, or how much compensation you would ask me to go to work and make inventions and improvements on my place in machinery, such as is used in my business, for my only benefit, and not to be used by any one without my permission, say for one year," &c.

On the 24th of May Spafford replies—among other things—

> And to this end am ready to engage my services to you for one year, as you have named in your letter, and to give you the exclusive benefit of the same in machinery and improvements about your premises. * * * You wished me to name my price. I think your having the exclusive benefit of my invention that it would not be unreasonable to name twenty-five hundred dollars for a year. This sum may seem large to you, but in case I could improve your machinery, so as to save double that amount annually in your business, then it would seem small. * * *

May 30 Wilkens replies to this letter, inviting Spafford to meet him in New York at his (Wilkens') expense, to "talk everything over," and saying, "I don't want anything except what is fair and right, and think we may agree, as I see nothing unreasonable in your proposition." The parties met in New York, and it appears clearly that the interview ended in an acceptance of Spafford's written propositions. The result follows that the contract was that Wilkens agreed to pay Spafford twenty-five hundred dollars a year; that Wilkens was to have the exclusive benefit of Spafford's services in making machinery and improvements in Wilkens' premises; that he was to have the exclusive benefit of his inventive faculties, and of such inventions as he should make during the term of service. And it also appears clearly that the engagement of Spafford was made with reference to the fact that Spafford had been engaged in inventing and experimenting upon machinery for working bristles, Wilkens being very extensively engaged in the business of manipulating bristles and manufacturing brushes from bristles. It clearly was in the contemplation of both parties that Wilkens should have the use of such machines as Spafford during the term should construct, with the skill acquired in his previous experiments, and also the exclusive use of such inventions as Spafford should make after the commencement and during the term of his employment, so as to give Wilkens "the exclusive benefit of the same," (Spafford's services,) "in machinery and improvements," and "the exclusive benefit of my (Spafford's) invention"—that is, his inventive faculties during the year. Immediately upon the acceptance by Wilkens of Spafford's propositions, Spafford proceeds to purchase, on Wilken's account and at his expense, the necessary tools and fittings for a shop for the experimenting upon and making machinery for manipulating bristles and spinning hair. Among other things, Spafford prepared drawings for a combing-machine. He charged Wilkens for the cost of the drawing-paper on which these drawings were made, and for his time and expenses during the eighteen days in which he was engaged in making the drawings and in the purchase of tools, and in visiting "places they spin hemp and manilla" to fit him to "make a machine for spinning the hair that will be an improvement on your (Wilkens') present ones." That Spafford perfectly understood that he was employed to experiment on making inventions for Wilkens' benefit is fully proved by his own letter of June 21 to Wilkens, at the close of which he writes:

> I have some patterns and small pieces of machinery, such as gears, springs, &c., which will be useful in experimenting, and are not of much value to me, which I will bring on or send on by express, if you think best.

On the 1st of July Spafford reached Baltimore, and his salary and services commenced under the contract for a year's time. At the expiration of the year Wilkens was in Europe, and Spafford continued his services under the original contract and at the same salary until December 8, 1865, when Spafford wrote from Baltimore to Mr. Wilkens, in Germany, suggesting "that after one year from the time I (Spafford) came here we had no agreement, the old one having expired, and that it would be well for us to come to an understanding in regard to my patents and inventions." In this letter he "described the three new machines—dragger, comber, and separator—and gave their results," and told him he thought he could make three new labor-saving machines—rifling-machine, mixing-machine, and tampico and horse-hair machines—also, spinning-machine for curled hair. Wilkens replied to this letter that he expected to start soon for home, and that, therefore, it would be useless for him to say anything in his letter in relation to Spafford's proposition, suggesting to him to go on slowly with as little expense as possible, until he (Wilkens) arrived, when they could talk everything over what to do next, adding, "I don't want you to stop until I come." Spafford remained without any modification of the contract at the same salary until after Wilkens' return, and the parties not agreeing upon a new contract, he left Wilkens' employment in May, 1867. During this time he invented and constructed the combing-machine, patented April 17, 1866; the separator, patented February 20, 1866; the bundler, patented April 17, 1866; the leveler, or small dragger, patented October 30, 1866, and the rifler, the model of which appears to have been completed September 15, 1866. These inventions were made and patented while Spafford was "experimenting" under a salary paid him to experiment upon, invent, and construct such machines, and under his own agreement to give Wilkens "the exclusive benefit of the same (services) in machinery and improvements," and "the exclusive benefit of my (Spafford's) invention." They were made in shops and with machinery and tools furnished by Wilkens and at his expense, for the purpose of such experiments, inventions, and constructions, at a cost variously estimated at from twenty-one to thirty thousand dollars, and estimated by Spafford at over twenty thousand dollars.

It appears very clearly that Wilkens is entitled to an exclusive license for the use of these machines during the existence of the patents, and any extensions, renewals, or reissues of the same. (*McClurg* vs. *Kingsland*, 1 Howard, 202; *Whiting* vs. *Graves*, 13 OFFICIAL GAZETTE, 455.)

Before Spafford entered into the service of Wilkens he had invented and patented a dragging-machine for dragging bristles. This machine he afterwards perfected during his service with Wilkens. The original machine exhibited to Wilkens at Providence, regarding it in the light in which Spafford and Wilkens regarded it, and looking at its subsequent history, was evidently not a practically useful machine. On the other hand, its deficiencies apparently were rather structural than functional. It needed more mechanical perfection as a whole, and in some of its operative parts, and such a substitution of better equivalents for some of the devices as a skilled mechanic could easily make, to render it practically useful. It needed the work of the skilled artisan more than the thought of the inventor. It needed only the crucial test of experience, of a trial test, to see how to make the mechanical devices perform their intended functions in the machine, rather than experiment as a step in invention. One or more of these machines were constructed by Spafford during his employment by Wilkens for him and at his expense. That he should construct such machines for Wilkens was contemplated by both parties at the time of his employment. Wilkens is entitled to a license for the use of such machines so constructed, or whose construction was commenced by Spafford during the term of service.

A decree for the complainant, in accordance with these views, may be drawn up and submitted to the court.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

THE DECISIONS FOR 1877.—The decisions of the United States courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

TRADE-MARKS.

[Each certificate bearing date April 16, 1878.]

5,855.—BISCUITS.—*E. J. Larrabee & Co.*, Albany, N. Y. Application filed March 16, 1878.
"The word-symbol 'CHAMPAGNE.'"

5,856.—BISCUITS.—*E. J. Larrabee & Co.*, Albany, N. Y. Application filed March 16, 1878.
"The word-symbol 'KINDERGARTEN.'"

5,857.—SOAP.—*Benjamin T. Babbitt*, New York, N. Y. Application filed March 21, 1878.
"The fanciful title 'NINETY-NINE,' and figures '99,' connected with a fac-simile of my signature."

5,858.—WINES AND BRANDIES.—*J. Calvet & Co.*, Bordeaux, France. Application filed March 12, 1878.
"The shield or medallion, bearing the inscription mentioned, with the figures of a dog and eagle or other bird, one on each side of the shield."

5,859.—TOYS.—*Jesse A. Crandall*, Brooklyn, N. Y. Application filed March 21, 1878.
"The word-symbol 'CHILD'S BENEFACTOR.'"

5,860.—ORGAN MECHANISM OR ACTIONS.—*Edwin P. Carpenter*, Worcester, Mass. Application filed March 29, 1878.
"The word 'Carpenter' in connection with a circular musical staff with music written thereon."

5,861.—COFFEE.—*Paula Coelho & Mohlfeld*, New York, N. Y. Application filed March 19, 1878.
"The bust of Mr. Paula Coelho, on which are inscribed the letters 'P. C.'"

5,862.—CIGARS.—*G. Fehl & Co.*, St. Louis, Mo. Application filed March 30, 1878.
"The words 'BLUE RIBBON.'"

5,863.—RIBBONS.—*Meyer & Dickinson*, Philadelphia, Pa. Application filed March 30, 1878.
"A pictorial representation of a bell."

5,864.—LEATHER.—*Ordway & Clark*, Haverhill, Mass. Application filed March 25, 1878.
"The arbitrarily-selected word 'DONGOLA.'"

5,865.—ESSENTIAL OILS.—*Josef J. Quetting*, New York, N. Y. Application filed April 3, 1878.
"The letter 'Q.'"

5,866.—BUILDERS' HARDWARE.—*Russell & Erwin Manufacturing Company*, New Britain, Conn: Application filed April 1, 1878.
"The representation of a strap and buckle, as shown."

5,867.—CIGARS, CIGARETTES, AND SMOKING TOBACCO.—*Straiton & Storm*, New York, N. Y. Application filed April 3, 1878.
"The words 'OUR DADDIES.'"

5,868.—WRITING-PAPER.—*Byron Weston*, Dalton, Mass. Application filed March 25, 1878.
"The word 'Defiance.'"

5,869.—COFFEES, SPICES, AND MUSTARDS.—*Weikel & Smith Spice Company*, Philadelphia, Pa. Application filed March 5, 1878.
"The word-symbol 'TRADERS.'"

5,870.—PLAYING-CARDS.—*Victor E. Mauger*, New York, N. Y. Application filed April 4, 1878.
"The word-symbol 'POINTERS.'"

5,871.—READY-MIXED PAINTS.—*Norton & Wieder*, St. Louis, Mo. Application filed April 6, 1878.
"A monogram placed in the center of a four-cornered shield."

5,872.—SALT.—*H. K. & F. B. Thurber & Co.*, New York, N. Y. Application filed March 7, 1878.
"The word-symbol 'EUREKA.'"

5,873.—PILLS.—*Emory E. Barnum*, New York, N. Y. Application filed January 8, 1878.
"The word-symbol 'CREAM COATED CURE.'"

5,874.—LOUNGES.—*William E. Buser*, Chillicothe, Ohio. Application filed March 18, 1878.
"The word-symbol 'CHAMPION.'"

5,875.—BAKING-POWDER.—*Cleveland Brothers*, Albany, N. Y. Application filed March 16, 1878.
"The pictorial representation, surrounded by the words 'Clevelands' Superior.'"

5,876.—SAWS AND FILES.—*Emerson, Smith & Co.*, Beaver Falls, Pa. Application filed February 23, 1878.
"A representation of a cimeter with a Damascus blade."

5,877.—ROASTED AND GROUND COFFEE.—*Fink, Brother & Co.*, Baltimore Md. Application filed April 8, 1878.
"The word 'Crescent' and the pictorial representation of the symbol known as a 'crescent' or new moon."

5,878.—MINERAL WATER.—*Thomas F. Goode*, Boydton, Va. Application filed April 8, 1878.
"The symbol of the woman, as shown."

5,879.—CASSIMERES.—*Franklin Glazier*, Hartford, Conn. Application filed March 11, 1878.
"The word-symbol 'SHAKER.'"

5,880.—WRENCHES.—*Girard Wrench Manufacturing Company*, Girard, Pa. Application filed April 8, 1878.
"The word-symbol 'STANDARD GIRARD.'"

5,881.—FINE-CUT CHEWING TOBACCO AND CIGARS.—*Annie E. Irwin*, Brooklyn, N. Y. Application filed March 19, 1878.
"The word-symbol 'OLD FRIEND.'"

5,882.—DENTAL SUPPLIES.—*Henry D. Justi*, Philadelphia, Pa. Application filed January 21, 1878.
"The figure of a star."

5,883.—GLOVES.—*George Lisner*, New York, N. Y. Application filed January 14, 1878.
"The word-symbol 'PALAIS ROYAL.'"

5,884.—SMOKING-TOBACCO.—*B. Leidersdorf & Co.*, Milwaukee, Wis. Application filed March 18, 1878.
"The name 'B. Leidersdorf & Co.,' and the word-symbol 'Tax Payers.'"

5,885.—WOVEN COTTON FABRICS.—*Minot, Hooper & Co.*, New York, N. Y. Application filed March 7, 1878.
"The combination in a trade-mark, of the medallions representing the vignette of George Washington and scene at Mount Vernon."

5,886.—CIGARS.—*Daniel E. Rose*, Brooklyn, N. Y. Application filed April 6, 1878.
"The word 'LEO.'"

5,887.—SMOKING AND CHEWING TOBACCO.—*Rowland & Newbrandt*, Philadelphia, Pa. Application filed April 8, 1878.
"The fanciful word 'NANCY.'"

5,888.—MEDICAL COMPOUND.—*C. T. Swift*, Atlanta, Ga. Application filed February 2, 1878.
"The monogram composed of the letters 'S S S' and the facsimile of my signature 'C. T. Swift.'"

5,889.—MINERAL AND METALLIC PAINTS.—*Lawson B. Stone*, Boston, Mass. Application filed April 6, 1878.
"The diamond-shaped label, the eagle with spreading wings, and the bar drawn at right angle across the label, upon which is inscribed the word-symbol 'Original.'"

5,890.—CHAINS.—*The Smith & Egge Manufacturing Company*, Bridgeport, Conn. Application filed March 22, 1878.
"The word-symbol 'GIANT.'"

5,891.—ROASTED AND GROUND COFFEE, SPICES, AND MUSTARD.—*Weikel & Smith Spice Company*, Philadelphia, Pa. Application filed February 28, 1878.
"The word-symbol 'Bohsemeem' and the Hebrew characters בְּשָׂמִים"

5,892.—TEA.—*John R. Walsh*, Chicago, Ill. Application filed April 8, 1878.
"The word-symbol 'MANTCHOO.'"

DESIGNS.

[Each design bearing date April 16, 1878.]

10,625.—CLOCK-FACE.—*George Ager*, Thomaston, Conn., assignor to *Seth Thomas Clock Company*, New York, N. Y. Application filed March 5, 1878. Term of patent 14 years.

10,626.—CROCHET FABRIC.—*Caroline A. Burnham*, West Somerville, Mass., assignor to *Edwin J. Lane*, Boston, Mass. Application filed March 1, 1878. Term of patent 3½ years.

10,627.—PENDULUM-WEIGHT.—*George Hoyting*, Thomaston, Conn., assignor to *Seth Thomas Clock Company*, New York, N. Y. Application filed March 5, 1878. Term of patent 7 years.

10,628.—CLOCK-CASE.—*Merwin C. Jones*, Thomaston, Conn., assignor to *Seth Thomas Clock Company*, New York, N. Y. Application filed March 5, 1878. Term of patent 7 years.

10,629.—BADGE.—*Henry Moesinger*, Buffalo, N. Y. Application filed February 19, 1878. Term of patent 7 years.

10,630.—BURIAL-CASKETS.—*William J. Noble*, New York, N. Y. Application filed April 3, 1878. Term of patent 7 years.

10,631.—CASKET-SCREW.—*Cephas B. Rogers* and *James S. Huggins*, West Meriden, Conn., assignors to *C. Rogers & Brother*, same place. Application filed February 18, 1878. Term of patent 7 years.

10,632.—SHEET-METAL WATER-PIPE.—*John F. Starr, Jr.*, Camden, N. J. Application filed February 28, 1878. Term of patent 14 years.

10,633.—CARPETS.—*Thomas J. Stearns*, Boston, Mass., assignor to *Roxbury Carpet Company*, same place. Application filed April 3, 1878. Term of patent 3½ years.

10,634.—CHILD'S DRESS.—*John McNeven*, New York, N. Y. Application filed February 27, 1878. Term of patent 3½ years.

10,635.—ORGAN-CASE.—*Samuel Hayward*, Boston, Mass., assignor to *J. Estey & Co.*, Brattleborough, Vt. Application filed March 22, 1878. Term of patent 7 years.

10,636.—BADGE.—*Rosto O. Wood*, Buffalo, N. Y. Application filed February 18, 1878. Term of patent 7 years.

10,637.—BILLIARD-TABLE LEG.—*Hugh W. Collender*, New York, N. Y. Application filed March 23, 1878. Term of patent 7 years.

10,638.—BILLIARD-TABLE LEG.—*Henry H. Holly*, New York, N. Y. Application filed March 23, 1878. Term of patent 7 years.

10,639.—BILLIARD-TABLE LEG.—*Oscar Norman*, Boston, Mass. Application filed March 23, 1878. Term of patent 7 years.

10,640 and 10,641.—WRITING-PAPER.—*Martin H. Pirie*, Stoneywood, near Aberdeen, Scotland, assignor to *Alexander Pirie & Sons*, same place. Applications filed March 23, 1878. Term of patents 14 years.

10,642.—BRACELET.—*John A. Hedstrom*, New York, N. Y. Application filed March 25, 1878. Term of parent 3½ years.

LABELS.

[Each certificate bearing date April 16, 1878.]

1,481.—Title: "YOKE BAND."—*Beiermeister & Son*, Troy, N. Y. Application filed April 10, 1878.

1,482.—Title: "AMATEURS."—*Heppenheimer & Maurer*, New York, N. Y. Application filed April 5, 1878.

1,483.—Title: "AROMATIC EXTRACT OF JAMAICA GINGER."—*Holbrook & Co.*, Salem, Mass. Application filed April 8, 1878.

1,484.—Title: "THE DEODORIZING GARBAGE AND ASH BOX."—*Wm. C. Kittredge & Co.*, Whitehall, N. Y. Application filed April 9, 1878.

1,485.—Title: "ST. LOUIS VILLA AND COTTAGE PAINTS.—*Norton & Wieder*, St. Louis, Mo. Application filed April 6, 1878.

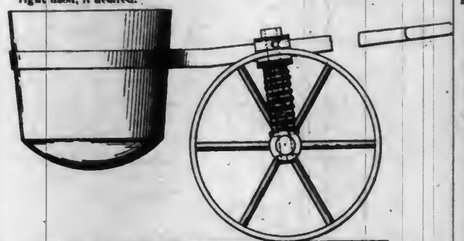
1,486.—Title: "MINERAL OLIVE OIL."—*Thompson & Bedford*, New York, N. Y. Application filed April 6, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

APRIL 16, 1878.

202,221. APPARATUS FOR MOUNTING AND TRANSPORTING LADLES FOR MOLTEN METAL. William Aikin and William W. Drummond, Louisville, Ky. Filed Feb. 27, 1878.

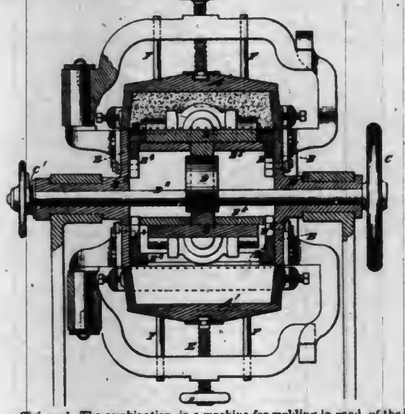
Brief.—The springs may be dispensed with and a bent axle or rigid upright used, if desired.



Claim.—A ladle-shank having a journal on its body, and a cross-head with bearing to receive the journal, in combination with wheels, axle, uprights, and springs, as herein described, whereby the ladle is made self-adjusting.

202,222. SAND-MOLDING MACHINES. William Aikin and William W. Drummond, Louisville, Ky. Filed June 20, 1877.

Brief.—On a rotating shaft are placed a cam and a two-part plunger-box, which carries on its opposite sides the pattern-plates and the two halves of the pattern. Surmounting the opposite ends of the two-part box are the mud-boxes, closed by their respective follow-boards. The cam operates the pistons alternately in opposite directions, compressing the mud in the part above it, and at the same time withdrawing from below.



Claim.—1. The combination, in a machine for molding in sand, of the box B and double plungers, for forming a mold by compression of sand about the patterns in a half-flask on one end of the box at the same time that the mold is being completed in another half-flask on the opposite end of the box by the withdrawal of the patterns and follower, substantially in the manner set forth.

2. The combination of the wheel C, shaft D', eccentric D, and double-plunger sections B' B', arranged so that one pattern-section shall be drawn from the sand at the same time that the other pattern-section of the double plunger is forcing the sand into another flask to form the mold by compression, substantially as set forth.

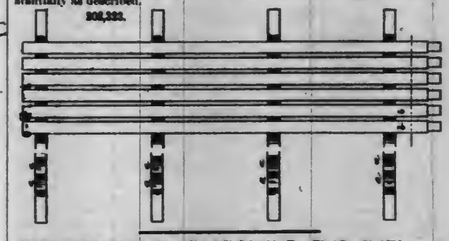
3. In a machine for molding in sand, the sand box B, long substantially as set forth, so as to permit the box to be reversed and the mold made partly in one half-flask and partly in the other half-flask.

202,223. FURNACE-GRATES. John Ashcroft, Brooklyn, N. Y., assignor to Sarah J. Ashcroft, same place. Filed Apr. 16, 1876.

Claim.—1. The combination, in furnace-grates, of the semicircular grooved bearing-bars a a and the square grate-bars b b, whereby said square bars are held in position when revolved or shaken, constructed and arranged to operate as set forth.

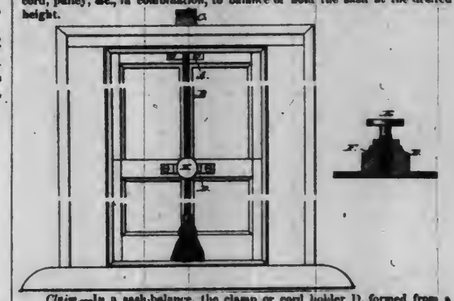
2. The combination of the semicircular grooved bearing-bar and the square grate-bars, fixed in position so as to form the air-spaces c regardless of the position of the bar, for the admission of air to the furnace, and to keep the bearing-bars cool and prevent them from fusing, constructed and operating substantially as described.

202,232.



202,234. SASH-BALANCES. Wilson K. Ashill, Columbia, Ky. Filed Jan. 21, 1878.

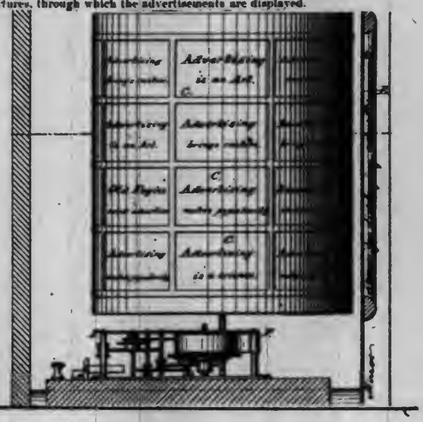
Brief.—A perforated plate attached to the meeting-rail carries a detached follower, which has its inner side hollowed or tube-shaped, and acts by means of a set-screw as a clamp or cord-compressor, there being the usual plate, cord, pulley, &c., in combination, to balance or hold the sash at the desired height.



Claim.—In a sash-balance, the clamp or cord holder D, formed from a perforated plate attached to the surface of the meeting-rail, and having the set-screw E acting upon the detached follower F as a cord-compressor, in combination with the plate A, cord B, and pulley C, all constructed, arranged, and operating substantially as described and shown, for the purposes set forth.

202,325. ADVERTISING APPARATUS. Edward Bostock, New York, and Louis T. Simm, Williamsburg, Brooklyn, N. Y. Filed July 30, 1877.

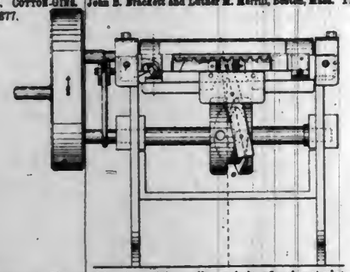
Brief.—An illuminable cylinder mounted in a suitable frame-work and intermittently rotated by clock-work is laid off into sections for advertisements. The sides of the frame-work are covered by screens having bordered apertures, through which the advertisements are displayed.



Claim.—1. The combination of the screen with a vertical illuminable cylinder divided into longitudinal sections, and having a continuously intermittent rotation, said screen being so arranged as to successively expose and conceal each longitudinal section of said cylinder, the whole being constructed and arranged substantially as and for the purpose described.

2. The combination, with a spring driving mechanism, of the spring-stop and its operating cam-wheel, for giving an intermittent motion to the train-work and the advertising cylinder within the frame.

202,326. COTTON-GINS. John B. Brackett and Luther M. Merrill, Boston, Mass. Filed Sept. 17 1877.



Claim.—1. The combination, with a roller or belt, of a throat-plate having a cross-bar, *c*, and a series of teeth, between which the cotton may pass, substantially as described.

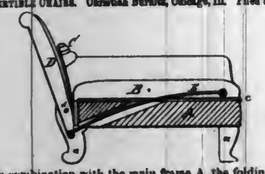
2. The combination, with a roller or belt, and a cross-bar, *c*, extended across the upper side of the cotton being ginned, of a set of teeth having a combined up-and-down and lateral reciprocation with relation to the lower edge of the cross-bar and the axis of rotation of the roller or belt, to operate upon the cotton being drawn forward by it, substantially as set forth.

3. The combination of the roller or belt and a throat-plate having a combined up-and-down and lateral reciprocation to loosen the seeds, as set forth.

4. The combination of the roller or belt, the presser-bar, and the throat-plate, having a combined up-and-down and lateral reciprocation, substantially as set forth.

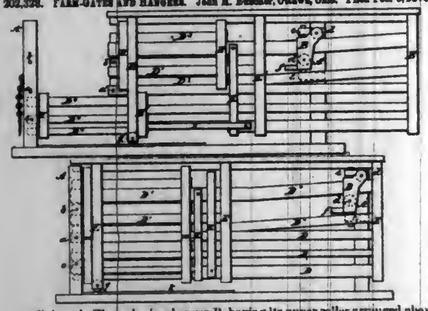
5. The combination, with the roller or belt, of a presser-bar and throat-plate connected therewith, and a single set of adjusting-screws, to adjust them simultaneously to or from the roll, substantially as described.

202,327. CONVERTIBLE CHAIRS. Christian Burwitz, Chicago, Ill. Filed Sept. 13, 1877.



Claim.—In combination with the main frame A, the folding frame B, having projecting legs C, and back D, having elongated side rails, frame B and back D being connected together by rods E, all constructed, arranged, and operating substantially as described, for the purpose set forth.

202,328. FARM-GATES AND HANGERS. John H. Boucher, Ottawa, Ohio. Filed Feb. 6, 1878.



Claim.—1. The swinging hanger B, having its upper roller arranged above and in the rear of the lower one, as and for the purpose set forth.

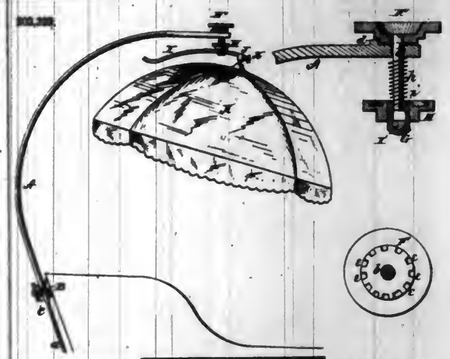
2. The tongue *f*, in combination with the hanger B and mortise in post E, substantially as and for the purpose specified.

202,329. CANOPY-ADJUSTERS FOR CHILDREN'S CARRIAGES. Alson Clarke, Sheboygan, assignor of one-half his right to Charles A. Spencer, Sheboygan Falls, Wis. Filed Mar. 18, 1878.

Claim.—1. In an adjustable canopy-holder, the combination of the standard A, having lower flattened portion *a*, with the plate B, slotted post or stem C, having exterior screw-threads, and the screw-knob D, substantially as and for the purposes herein set forth.

2. The combination, with the standard A, of the knob F, with notches *e*, the lug *d* on the standard, the pin *b*, spring *b*, eye G, with exterior screw-threads, are shaped sliding arm I, and the screw-knob H, all constructed substantially as and for the purposes herein set forth.

202,330.

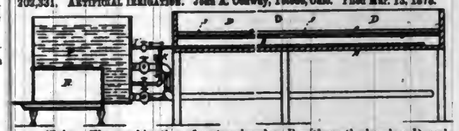


202,330. CANVAS-STRETCHERS. Edward H. Collins, Denver, Colo. Filed July 26, 1877.



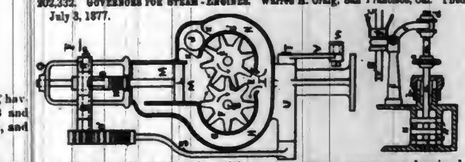
Claim.—In a stretcher-frame, the miter-joint B, combined with the metallic loop D and adjusting screw-heads A, substantially as and for the purpose set forth.

202,331. ARTIFICIAL IRRIGATION. John A. Conway, Toledo, Ohio. Filed Mar. 13, 1878.



Claim.—The combination of water-chamber B with earth-chamber D and heating-pipes I and K, for the purpose as substantially set forth.

202,332. GOVERNORS FOR STEAM-ENGINES. Warren H. Craig, San Francisco, Cal. Filed July 3, 1877.

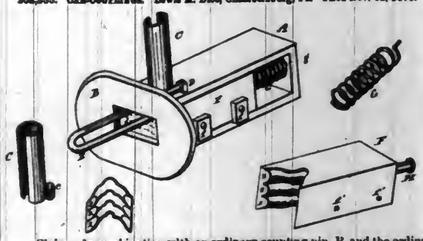


Claim.—1. In combination with a rotary pump governor, as herein described, consisting of the gears F F', with their spindles, chambers, and passages, chamber M and piston L, valve J and ports K, the governor C, secured upon the main spindle B, connecting with and operating the valve J, to effect a contraction or enlargement of the passage-way through which the fluid is forced by the pump, as and for the purpose described.

2. In combination with the rotary pump governor herein described, consisting of the gears F F', with their spindles, chambers, and passages, chamber M and piston L, valve J and ports K, the toothed rack N, segment-gear O O', cross-shaft P, with its bearings R R', lever S, with its segment-gear, horizontal shaft T, bearing U, and lever V, as and for the purpose described.

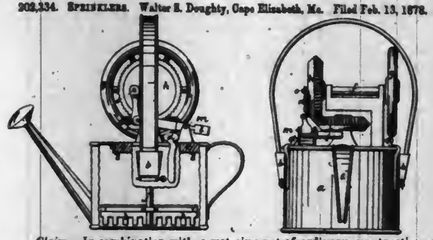
3. In combination with the notched lever X and weight Y, secured on the shaft P, the swinging lever Z, with its attached pulley, resting on the driving-belt, arranged and operating as and for the purpose described.

202,333. CAR-COUPLINGS. Lewis M. Dice, Chambersburg, Pa. Filed Nov. 13, 1876.



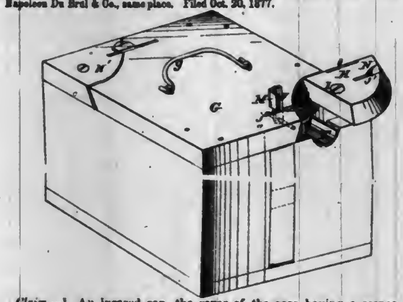
Claim.—In combination with an ordinary coupling-pin, P, and the ordinary open-sided case or bell-nose A B, the hinged tube C, the independent corrugated block F, to be inserted and held by side guide-plates *f*, and having a beveled check-rod, H, within the coiled spring G when said bolt drops automatically to couple, the whole combined and arranged as and for the purpose specified.

202,334. SPRINKLERS. Walter S. Doughty, Cape Elizabeth, Me. Filed Feb. 13, 1878.



Claim.—In combination with a watering-pot of ordinary construction, or any similar vessel, the piece *e*, shaft *f*, gears h *i*, shaft *j*, agitator *k*, thumb-lever *l*, and link *a*, to operate as herein set forth.

202,335. TRANSPORTATION OIL-CANS. Napoleon Du Brul, Cincinnati, Ohio, assignor to Napoleon Du Brul & Co., same place. Filed Oct. 20, 1877.



Claim.—1. An incased can, the cover of the case having a corner, H, separated therefrom and pivoted to the case, as and for the purpose set forth.

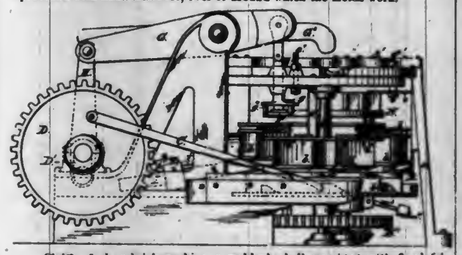
2. An incased can provided with a cover, G, having a pivoted corner, H, and a latch, J, as and for the purpose set forth.

3. An incased can, the can secured to the case by a metal band or strip passing entirely around one side between the cover and the bottom of said case, as and for the purpose set forth.

4. The cover G, having a pivoted portion or corner, H, said cover and corner provided with an overlap-joint, in combination with an incased can, as and for the purpose set forth.

202,336. BRICK-MACHINES. William T. Duvall, Georgetown, D. C., assignor of two-thirds his right to Richard L. Cropley and Arthur B. Cropley, same place. Filed Mar. 19, 1878.

Brief.—The clay, whether dry or tempered, is forced by a pug-mill into an auxiliary mold-wheel, and from thence to the mold-wheel proper, which is provided with fixed followers, over or around which the molds work.



Claim.—1. In a brick-machine, a mold-wheel, B, provided with fixed followers *b'*, upon which the mold *b* slides, as shown and described.

2. In a brick-machine, the adjustable cams E E' in combination with a mold-wheel, B, provided with fixed followers *b'*, and the sliding molds *b*, substantially as shown and specified.

3. In a brick-machine, the auxiliary mold-wheel N, provided with glut-molds *n*, plungers *n'*, and cam-plates O O', arranged as shown and specified.

4. In a brick-machine, the pug-mill M, provided with the safety apparatus m^2 m^3 m^4, constructed substantially as shown, and for the purpose specified.

5. In a brick-machine, the combination of a mold-wheel, B, provided with fixed followers *b'* and sliding molds *b*, with an auxiliary wheel, N, provided with glut-molds *n* and suspended followers *n'*, arranged substantially as shown and specified.

6. In a brick machine, the counterbalanced levers I I' I'', in combination with the mold-wheel B, provided with fixed followers *b'* and sliding molds *b*, substantially as shown, and for the purpose described.

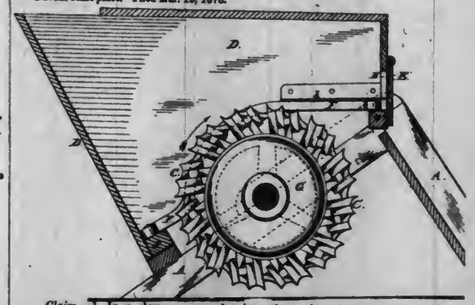
7. The combination of the pawl C and wheel D with the mold-wheel B, provided with ratchet-teeth *b''*, fixed followers *b'*, and sliding molds *b*, all arranged and operating as shown, and for the purpose set forth.

8. The combination of the mold-wheel B, constructed, as described, with the plungers *g* and *g'*, stripper *g''*, and the beams G G' G'', arranged as shown and herein specified.

9. The combination of the mold-wheel B with the auxiliary mold-wheel N, vertical pug-mill M, and horizontal pug-mill K, arranged for operation substantially as shown, and for the purpose specified.

10. The brick-machine herein described, consisting of the frames A A' A'', the mold-wheel B, auxiliary mold-wheel N, vertical pug-mill M, horizontal pug-mill K, beams G G' G'', plungers *g g'*, stripper *g''*, cam-plates E E' O O', and suitable gearing, all arranged substantially as shown, and for the purpose specified.

202,337. CLAY SAWING AND PULVERIZING MACHINES. William T. Duvall, Georgetown, D. C., assignor of three-fourths his right to R. L. Cropley, Arthur B. Cropley, and Alfred Duvall, same place. Filed Mar. 19, 1878.

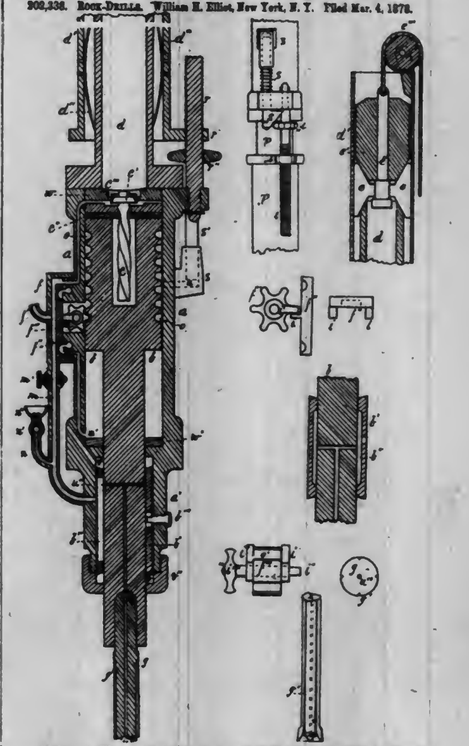


Claim.—1. In a clay saw or pulverizer, the series of saws or wheels C, roughened on their sides and provided with points or teeth on their periphery, and arranged substantially as shown and described.

2. In a clay-saw, the combination of the hollow shaft B, provided with perforations *a*, with the saws C and grate or curved bars F, arranged substantially as shown, and for the purpose herein described.

3. The clay saw or pulverizer herein described, consisting of the frame A, hopper D, provided with plate *b* and opening E, door E', the saws C, and grate or curved bars F, all constructed and arranged for operation substantially as shown and specified.

202,338. ROCK-DRILLS. William H. Elliot, New York, N. Y. Filed Mar. 4, 1878.



Claim.—1. The combination, in a rock-drill, of the flexible guideway or spring *d''* with the shank *d* and the vertical shaft *d'*, substantially as shown and described.

2. The combination, in a rock-drill, of wedge *e* and weight *d'* with the shank *d* and vertical shaft *d'*, substantially as and for the purpose set forth.

3. The combination, in a rock-drill, of pinion *f''*, having arms *i*, with piston *b*, having groove *o*, and slide-valve *f''*, having arms *i*, operating substantially as and for the purpose set forth.

4. The combination, in a rock-drill, of passage *m*, provided with stop-cock *m'*, chamber *b''*, and passages *n''* and *n'''*, for conducting the steam, air, or gas to the bottom of the hole in the rock, substantially as specified.

5. The combination, in a rock-drill, of water-passage *n*, provided with check-valve *n'*, with the passage *m*, substantially as and for the purpose specified.

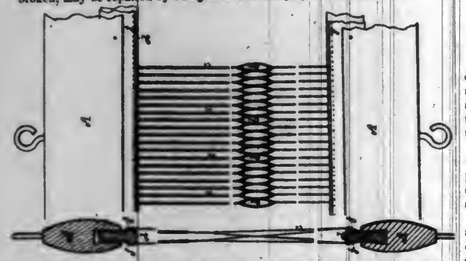
6. The combination, in a rock-drill, of passage *m*, having stop-cock *m'*, passage *n*, having check-valve *n'*, with chamber *b''* and passages *n''* and *n'''*, substantially as specified, whereby water and steam or air may be conducted alternately to the bottom of the hole in the rock, for the purpose set forth.

7. The combination, in a rock-drill, of sleeve *b'* with the two stuffing-boxes *c* and *c'*, the piston-rod *b*, and the screw-cap *c''*, substantially as set forth.

8. In rock-drills, the combination of the chamber *b''* with the neck of the cylinder, the connection *m*, and the passage *n''* in the piston-rod, whereby the latter passage is at all times in connection with the chamber *b''*, as and for the purpose set forth.

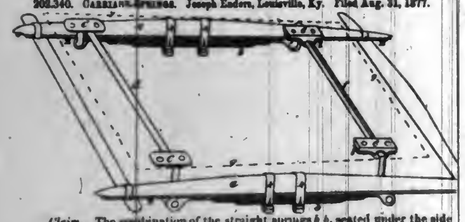
202,339. LOOM-HARNESS. Thomas A. Emmons, Lawrence, Mass. Filed Apr. 30, 1877.

Brief.—The loops of the twines that support the mails or eyes pass around a bar dovetailed in each of the main bars of the frame. A strip of cloth partially covers the auxiliary-bar, and the loops and the twines, when broken, may be repaired by being affixed to the projecting parts thereof.



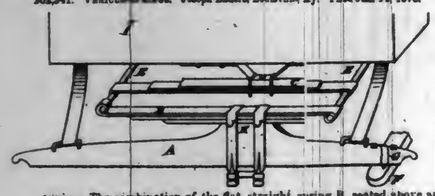
Claim.—In combination with the main and auxiliary harness, supporting-bars A *d*, arranged and having the twines disposed with them as described, the strips *f* of cloth placed in or applied to the main bars A and adapted to extend therefrom, substantially in manner and for the purpose as set forth.

202,340. CARRIAGE-SPRINGS. Joseph Enders, Louisville, Ky. Filed Aug. 31, 1877.



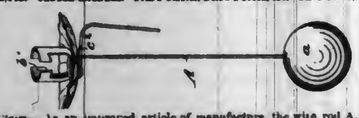
Claim.—The combination of the straight springs *b b*, seated under the side bars *a a*, and the equalizing-rods *d* and *f*, placed bow upward, the rod *d* rigidly attached to the body of the vehicle, while the rod *f* is attached thereto by the hinge device *e l*, adapted to afford free endwise action to the springs, substantially as described and set forth.

202,341. VEHICLE-SPRINGS. Joseph Enders, Louisville, Ky. Filed Jan. 14, 1878.



Claim.—The combination of the flat straight spring B, seated above and upon the side bar A, the ends of which yield downwardly and the like spring C, seated under the body I and within the side bar A, and yielding downwardly from its middle portion, the ends of both of said springs being mounted upon the same cross-rods E E, and in the same plane, substantially as shown and described.

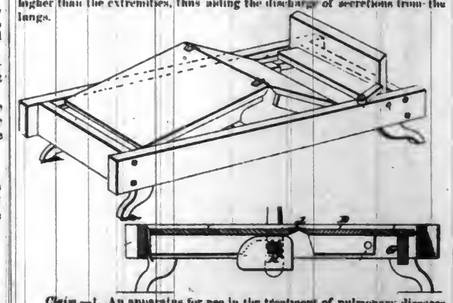
202,342. CANDLE-HOLDERS. Frank Galster, Below's Creek, Md. Filed Oct. 5, 1877.



Claim.—As an improved article of manufacture, the wire rod A, having its upper extremity passing through the holes at *c c'* of the saucer *b* and socket *b'*, and the hook consisting of the horizontal and vertical parts *c² c³*, in combination with the ball below, forming the candle-holder, substantially as set forth.

202,343. INVALID-BEDSTEADS. Martin Gillespie, East Liverpool, Ohio, assignor of one-half his right to A. J. McDonald, same place. Filed Aug. 2, 1877.

Brief.—An apparatus for use in the treatment of pulmonary diseases. The patient is laid upon the hinged supporting-sections face downward, the head resting upon a pivoted support. By turning a cam-shaft the hinged sections are raised, lifting the middle part of the patient's body somewhat higher than the extremities, thus aiding the discharge of secretions from the lungs.



Claim.—1. An apparatus for use in the treatment of pulmonary diseases, consisting, essentially, in a bed made with vertically-adjustable body-sections and an independent head-supporting section, the same being made and adapted to be adjusted as described, whereby a space or opening suitable for the discharge from the lungs of the patient is formed between the head and the body sections, substantially as described.

2. In apparatus for use in treating pulmonary diseases, the combination, with suitable adjusting mechanism, of the upper body-section of the bed, pivoted to the supporting frame-work, and the lower body-section, the two sections being hinged together, and the said lower body-section having free sliding bearing upon the supporting-frame, substantially as described.

3. The combination, with the body-sections of the bed, hinged together, and adapted to be adjusted in opposite planes of angular inclination, as described, of the lever-handle, the transverse rock-shaft, and the cam formed on the latter, substantially as described.

4. The combination, with the pivoted head-section, provided with a head-rest, of the catch or pawl for locking the same, substantially as described.

5. The combination, with the body-sections of the bed, suitably hinged together, of the spring or springs, giving a cushioned or elastic end bearing thereto, substantially as described.

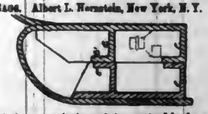
202,344. ADJUSTABLE WATER-KETS. Wm. Haines, Philadelphia, Pa. Filed Jan. 31, 1878.



Claim.—1. The jaws fitted to transverse bars and provided with an operating-screw, so as to have parallel motions, substantially as and for the purpose set forth.

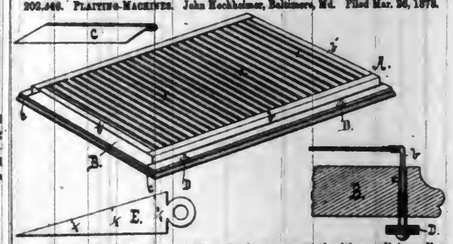
2. The jaws C and tube A, in combination with the gearing *b d* and right-and-left screw D, substantially as and for the purpose set forth.

202,345. SADDLE-BAGS. Albert L. Nernstein, New York, N. Y. Filed Aug. 10, 1877.



Claim.—A saddle-bag consisting of the central body *a*, provided with pockets having flanges and bottoms, side flaps *c c*, having similar pockets, and hinged to fold inward laterally upon the body *a*, bringing all the pockets into juxtaposition and inclosing the contents, a flap, C, covering the whole.

202,346. PLAITING-MACHINES. John Hochheimer, Baltimore, Md. Filed Mar. 26, 1878.



Claim.—1. A plaiter consisting of a frame provided with parallel needles, and having devices for adjusting it to any desired height above a suitable base, substantially as described.

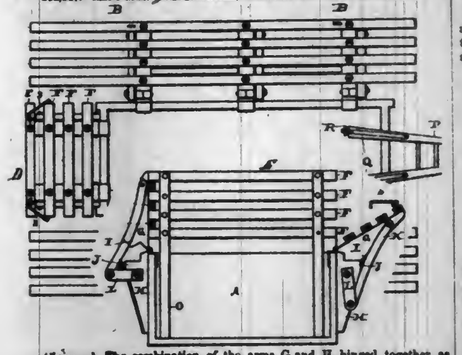
2. The plaiter A, vertically adjustable upon the base B, in combination with the folder C, substantially as described.

3. In combination with the plaiter A, having side pieces *b*, the base B, having grooves *c*, and set-screws D, substantially as described.

4. A plaiter-needle having in cross-section the form of an oblate oval, substantially as described.

5. In combination with the base B, the vertically-adjustable plaiter A and gage E, substantially as described.

202,347. HAY-RACKS. John B. Hoffman, Waterloo, Iowa. Filed Feb. 21, 1878.

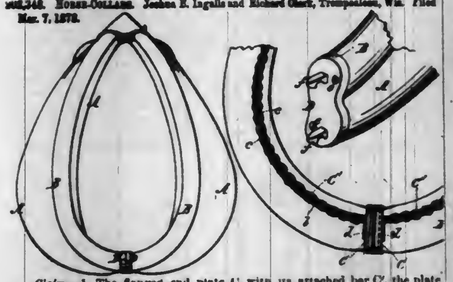


Claim.—1. The combination of the arms G and H, hinged together, as shown, and constructed with knees I J, substantially as described, with the brace K and arm L, all arranged substantially as shown, and for the purpose set forth.

2. The combination of the body A, racks B, C, and D, adjustable and detachable, with the standard F, for the purpose set forth.

3. The combination of the adjustable and detachable racks B C D and front rack E, provided with hooks S, substantially as described.

202,348. HORSE-COLLARS. Joshua B. Ingalls and Richard Clark, Trempealeau, Wis. Filed Mar. 7, 1878.



Claim.—1. The flanged end plate C, with its attached bar C', the plate and bar being perforated, so as to be sewed in position in the collar, substantially as and for the purpose described.

2. The capping-plates for covering the sewing around the lower ends of the collar, and serving as supports for a self-fastening contrivance, in combination with the flanged inner plates C, to which the ends of the collar are sewed, substantially as and for the purpose described.

3. In combination with the inner flanged plates C, the cap D', with straight-moving fastening-bolt, having thumb-piece attached, and a cap, D, having a latch or latches, substantially as described.

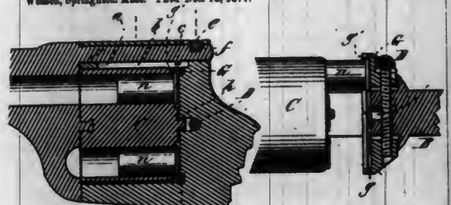
4. The horse-collar constructed with inner and outer end plates, and shaping and stiffening bars, substantially as described.

202,349. SULKY-PLOWS. Henry F. Jerauld and James W. Stolle, Vandalia, Ill. Filed Jan. 31, 1877.



Claim.—The combination of draft-bars I I, with pulleys J and chains K, equalizer or distance-bar G, with clevis G', and hook F, substantially as and for the purpose set forth.

202,350. REVOLVING FIRE-ARMS. Benjamin F. Joslyn, Worcester, assignor to Daniel B. Wesson, Springfield, Mass. Filed Dec. 13, 1877.



Claim.—1. The combination, in a revolving fire-arm, of the two parts of a divided annular flange, *g'*, with a right-and-left-hand operating-screw, D, substantially as and for the purposes herein set forth.

2. In a revolving fire-arm, the stem F, provided with a recess, *f*, in combination with the socket F and its catch *e*, whereby the barrel is locked to the frame, substantially as described.

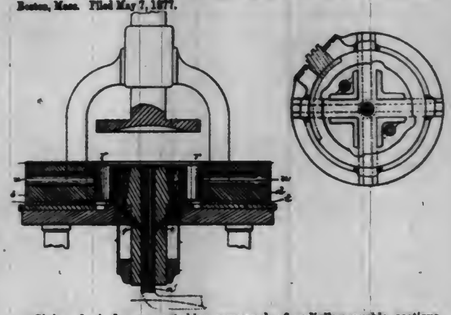
202,351. REVOLVING FIRE-ARMS. Benj. F. Joslyn, Worcester, assignor to Daniel B. Wesson, Springfield, Mass. Filed Dec. 13, 1877.

Brief.—Construction and combination specified for the purpose of operating the extractor, which is effected by seizing and turning the cylinder after the barrel has been turned to the proper position relatively to the frame or stock.



Claim.—In a revolving fire-arm, the combination of the cylinder C, the extractor-stem E, provided with a spiral groove, *f*, and annular groove *e*, and a stationary pin or screw, *i*, projecting into said groove, substantially as and for the purpose described.

202,352. MACHINES FOR THE MANUFACTURE OF PAPER BOXES FROM PULP. Wm. J. Keefe, Boston, Mass. Filed May 7, 1877.



Claim.—1. A former or holder composed of radially-movable sections adapted to sustain a hollow article made from paper-pulp, in combination with a series of surrounding movable dies, to permit the article of pulp to be compressed and to be removed from the former, substantially as described.

2. A contractile former or holder to sustain a hollow article formed of paper-pulp, in combination with encircling dies and a cylindrical india-rubber diaphragm, to operate substantially as described.

3. The pervious sections *e f g h*, fitted together and to a wedge-shaped core, whereby the diameter of the former or holder may be changed to permit the removal or application of a box or other hollow article, substantially as described.

4. The combination, in a machine for making hollow articles from paper-pulp, of dies having their faces curved and the edges in contact with each other, beveled so that as the dies are contracted or expanded such beveled edges are kept in contact to prevent the passage of pulp between the adjacent dies.

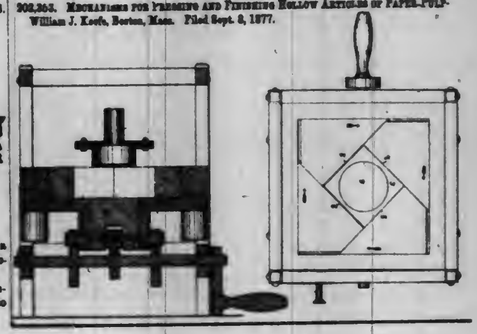
5. A sectional former or holder and a core to expand and contract it, in combination with a pipe to be connected with a suction-pump or apparatus to withdraw the water from the interior of the holder after compressing the pulp article, substantially as described.

6. A sectional interior perforated die having a pervious covering, in combination with mechanism to expand the die-sections radially to press a hollow article of paper-pulp against an outside surface surrounding the outer portion of the hollow article.

7. An interior die composed of sections having their contiguous faces beveled to maintain contact between the sections as they are moved radially to change the diameter of the die.

8. In the manufacture of paper boxes from pulp, forming the bottom of the box bulging, and subsequently pressing and expanding the same, the bulged bottom permitting the expansion of the sides outward, substantially as described.

202,353. MACHINERY FOR FINISHING AND FINISHING HOLLOW ARTICLES OF PAPER-PULP. William J. Keefe, Boston, Mass. Filed Sept. 8, 1877.



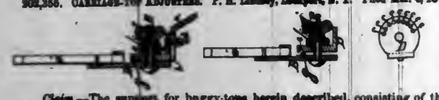
Claim.—In a paper-box finishing or pressing machine, an interior expansible die, in combination with a matrix having its parts movable with relation to each other to contract the area of the matrix, to thereby press from the outside inward the angular portions of the hollow article, after pressing it from the inside outward.

202,354. LIFTING-JACK. Samuel Lesher, Sharon, Pa., assignor of one-half his right to J. M. Wilson, same place. Filed Aug. 30, 1877.



Claim.—The combination of curved lever C, eccentric C', frame B, having strip b^3 and rectangular recess b^4 in its under side, and lifting-bar D, provided with lug d^2, substantially as and for the purpose set forth.

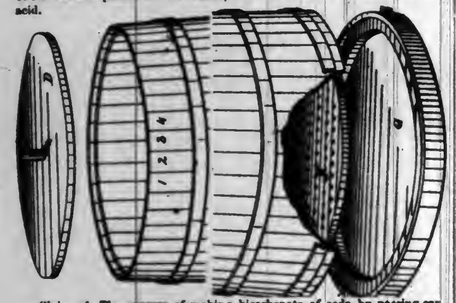
202,355. CARRIAGE-TOP ADJUSTERS. P. M. Lindsey, Lockport, N. Y. Filed Mar. 4, 1878.



Claim.—The support for buggy-tops herein described, consisting of the parts A, D, and B, so constructed that the movable part B is locked into the permanent part D by the stud *g*, which fits corresponding holes in the permanent part D, the parts being held together by the bolt E, and provided with a rubber cushion, *h*, to prevent looseness or rattling, all combined as shown and described.

202,356. MANUFACTURE OF BICARBONATE OF SODA. George T. Lewis, Philadelphia, Pa., and William J. Mennie, St. Helen's, England; said Mennie assignor to said Lewis. Filed Oct. 4, 1876.

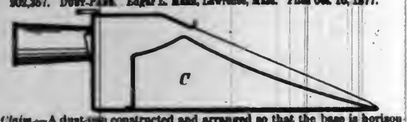
Brief.—The bicarbonate is made from a basis mixture of soda-crystals of Le Blanc process, and the carbonate of soda of the ammonia-soda process. The material is placed in a carbonizer, and submitted to a current of carbonic acid.



Claim.—1. The process of making bicarbonate of soda by passing carbonic-acid gas through a mixture of sal-soda and carbonate of soda made by the ammonia process, as above described.

2. An apparatus for applying carbonic-acid gas in the manufacture of bicarbonate of soda from a mixture of sal-soda and carbonate of soda made by ammonia process, consisting of a tank or vessel having removable sides and removable orificed heads D and G and a perforated head, F, substantially as shown and described.

202,357. DUST-PANS. Edgar E. Mann, Lawrence, Mass. Filed Oct. 10, 1877.



Claim.—A dust-pan constructed and arranged so that the base is horizontal, and resting firmly upon the floor or carpet, when in use, with its inclined plane, and containing within it, and combined therewith, the dust-chamber B and brush and cloth receptacle C, in the manner and for the purpose described.

202,358. LAMP-WICK. Oscar Mayo, Evanston, Ill. Filed Jan. 4, 1878.



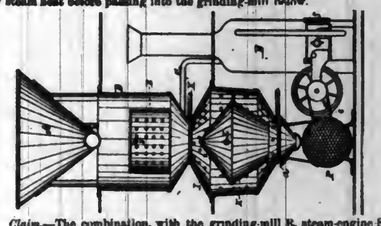
Claim.—A sectional lamp-wick, the upper section made of paper prepared as described, and the lower section made of other fibrous material, the parts being united by plate *b*, having the fastening-points *c*, substantially as and for the purpose set forth.

202,359. APPARATUS FOR LOWERING COFFINS INTO GRAVES. James W. McOmie, Vinton, Iowa. Filed Mar. 18, 1878.

Claim.—The movable folding derrick, composed of the uprights A A, provided with extensible feet, cross-support B, upright *a*, diagonal braces *b b*, supporting-rods *b' b'*, windlass *x*, cords C *c*, and catches *n*, all constructed, arranged, and operated as and for the purposes set forth.

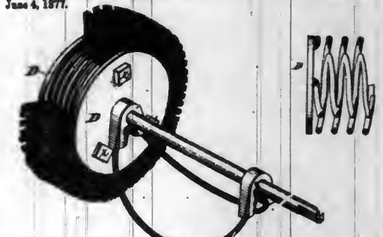
202,360. APPARATUS FOR PREPARING FOOD FOR ANIMALS. Wm. McKee, Lawrence, Mass., assignor to himself, Henry M. Bickford, and H. H. Berry, same place. Filed Jan. 26, 1878.

Brief.—The grain is steamed in the hopper and chamber, and then dried by steam heat before passing into the grinding-mill below.



Claim.—The combination, with the grinding-mill R, steam-engine S, and boiler B, of one or more hoppers, A, the steaming-tank D and its steam-distributer E, the kiln I, and its radiator K, adapted to operate substantially as described, and for the purpose set forth.

202,361. BRUSHES FOR CLEANING BOILER-FLUES. Chas. C. Miller, Hamilton, Ohio. Filed June 4, 1877.



Claim.—The combination of spiral wires, having their ends fastened to one of the disks D, with the disks clamped by screw-bolts *x*, in brushes for cleaning boiler-flues, substantially as described.

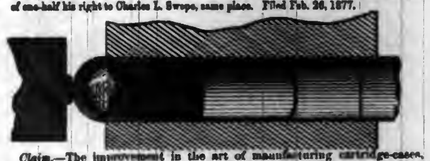
202,362. DEVICES FOR CUTTING SCREW-THREADS. Michael Minahan, Portland, Oreg. Filed May 11, 1877.



Claim.—1. The die-stock A, having the lever *a*, ratchet C, journal-bearing *d*, and threaded neck *f*, in combination with the collar F, pipe-guide G, and screw H, and power-lever B, journaled between said ratchet and collar, and having a spring-pawl for engagement with said ratchet, substantially as specified.

2. The combination, with the die-stock A, having a circular ratcheted flange, C, and journal *d*, of the power-lever B, its disengaging-pawl, pivoted spring E, and back pin or bearing *e*, substantially as specified.

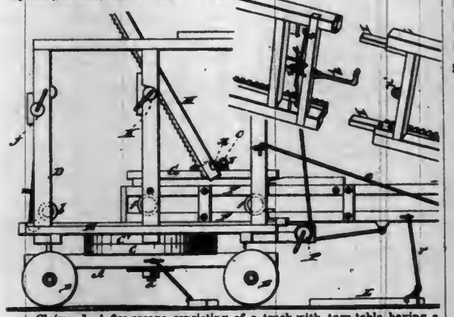
202,363. MANUFACTURE OF CARTRIDGE-SHELLS. Thos. B. Moore, Frankford, Pa., assignor of one-half his right to Charles L. Swope, same place. Filed Feb. 26, 1877.



Claim.—The improvement in the art of manufacturing cartridge-cases, which consists in upsetting the thickened end of the case to form the head and pocket, and by displacing the metal from the bottom of the pocket to form the solid anvil of increased thickness, in the manner and by the means substantially as set forth.

202,364. FIRE-ESCAPE LADDERS. James P. Morris, Paris, Tex., assignor of two-thirds his right to Gilbert C. Wright and Joseph K. Bywaters, same place. Filed Mar. 23, 1878.

Brief.—The ladder, mounted upon a truck which is provided with a turn-table, is elevated by means of a traveling car or truck, to which its lower end is secured, said car being drawn along its way by a rope wound upon a windlass, the under side of the ladder being provided with a rack-bar and engaging-pinions, which assist in elevating the same. To the upper end of the ladder are secured stay-ropes, which engage with folding hooks upon each section. The sections are united by inside splice-pieces upon one end of one section, which enter behind a cross-bar and projecting pin at a lower end of adjoining section, and by a hook and eye.



Claim.—1. A fire-escape consisting of a truck with turn-table having a frame-work erected thereon, a carriage movable upon a way, a sectional ladder, and hoisting devices, substantially as herein set forth.

2. The combination, with the truck A B, the turn-table C', with frame-work D, having rails F F on each side, the extension-rail frame F', with hooks or braces *s s*, and the carriage G, with wheels *f*, operated by the windlass J and rope *m*, substantially as and for the purposes herein set forth.

3. The combination, with the sections of a fire-ladder, the projecting side pieces *l*, front bar *s*, pins *i*, hook *k*, and eye K', for the purpose explained.

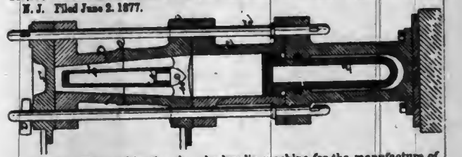
4. In combination with the sectional ladder, the windlass I', guy-ropes *t t*, pulleys *s s*, and the hooks R R, as and for the purposes herein set forth.

202,365. CARTRIDGES. Robert Morris, Kansas City, Mo. Filed Aug. 14, 1877.



Claim.—The partially-closed or contracted end of the cylinder, substantially as herein shown and described.

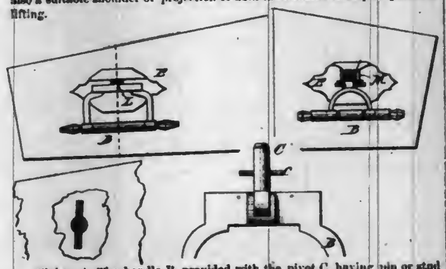
202,366. MACHINES FOR MAKING RETORTS, CRUCIBLES, &c. William Morgan, Jersey City, N. J. Filed June 2, 1877.



Claim.—The combination, in a hydraulic machine for the manufacture of crucibles, retorts, muffles, &c., of a single hydraulic press, with a charging-cylinder fixedly attached to the end of the press, and a mold-cylinder, movably attached to the charging-cylinder, substantially as described.

202,367. COFFIN-HANDLES. Peter A. Mowers, Shippensburg, Pa. Filed July 31, 1877.

Brief.—A slotted plate, in connection with a revolving shank and cross-pin, allows the handles to be removed and replaced at pleasure, and there is also a suitable shoulder or projection to hold the handle securely in place for lifting.

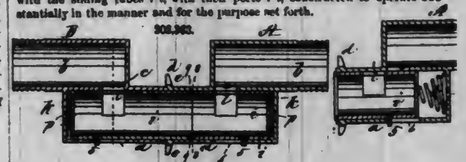


Claim.—1. The handle B, provided with the pivot C, having pin or stud *c*, in combination with the plate E, having a slotted aperture, G, substantially as and for the purpose set forth.

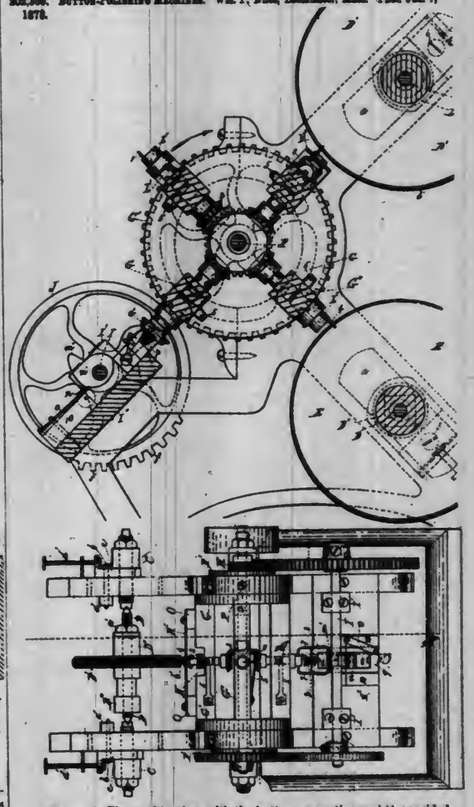
2. The handle B, having a projection or shoulder, L, and pivot C, provided with pin or stud *c*, in combination with the slotted or recessed plate E, substantially as and for the purpose set forth.

202,368. COUPLINGS FOR AIR-BRAKES. Geo. H. Newton, South Framingham, Mass. Filed Mar. 1, 1878.

Claim.—A self-closing coupling for vacuum and air brakes, composed of the two halves or portions A B, each provided with a part, *c*, in combination with the sliding tubes *i i*, with their ports *l l*, constructed to operate substantially in the manner and for the purpose set forth.



202,369. BUTTON-POLISHING MACHINES. Wm. F. Niles, Leominster, Mass. Filed Jan. 7, 1878.



Claim.—1. The combination, with the button-supporting reel H, provided with a series of button supports or stands, L, of one or more adjustable polishing-wheels, D', substantially as and for the purposes set forth.

2. The rotating button-supporting reel G, provided with rotating button-supports L_1, substantially as and for the purposes set forth.

3. The combination, with the rotating button-supporting reel G, of an adjustable button-support, L_1, substantially as and for the purposes set forth.

4. The combination, with the rotating button-supporting reel G, of the automatic adjusting button-discharging device 7 8 9 10 w', substantially as described.

5. The combination, with the button-discharging device shown, of the central brush *h*, as and for the purposes set forth.

6. The combination, with the button-supporting stand L, of a square or cornered tapering button-holding pin, 4, substantially as and for the purposes set forth.

7. The combination, in a machine for polishing buttons, of a rotating button-supporting reel, G, provided with a series of button-supporting stands, L, an automatic button-discharging device, as shown, and one or more button-polishing bulls or wheels, D', substantially as and for the purposes set forth.

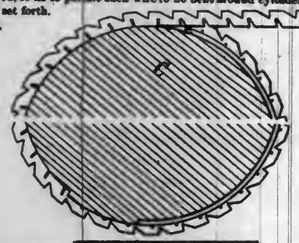
8. The combination, with the reel-arms G'', of plate N', slotted as described, and hinged button-supporting head L'', as and for the purposes stated.

202,370. WIRE CLOTHING FOR BURRING AND OTHER CYLINDERS. Frank P. Pendleton, Philadelphia, Pa. Filed Aug. 14, 1877.

Brief.—The toothing is made of a steel wire or strip, and is notched at the base of the teeth or back of the wire, so that it can be bent around the cylinder without being broken.

Claim.—Steel wire or toothing for clothing cylinders for treating fibrous material, notched or nicked at the base or back, substantially as shown and described, so as to permit such wire to be bent around cylinders without breaking, as set forth.

202,370.



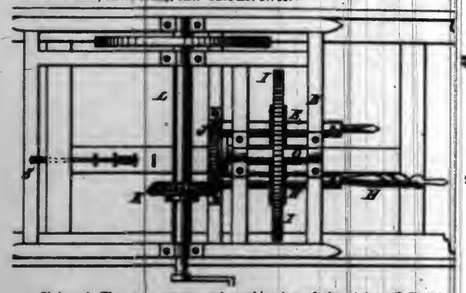
202,371. METALLIC CANS. George H. Perkins and Sarah A. J. Perkins, (administratrix of James H. Perkins, deceased,) Philadelphia, Pa.; said Sarah A. J. Perkins assignor to said George H. Perkins. Filed Mar. 26, 1878.



Claim.—1. In a sheet-metal can of the class herein described, the cover B, constructed with the rim C arranged at an oblique angle or curve to the sides of the can, the said rim being united to the said sides by a frangible seam or joint, and there being an interspace, D, between the upper chine of the body and the inner side of the cover, substantially as and for the purpose specified.

2. In a sheet-metal can of the class herein described, the cover B, constructed with the rim C depending vertically, and having its lower portion arranged at an angle or curve to the sides of the can, the said rim being united to the said sides by a frangible seam or joint, and there being an interspace, D, between the upper chine of the body and the inner side of the cover, substantially as and for the purpose specified.

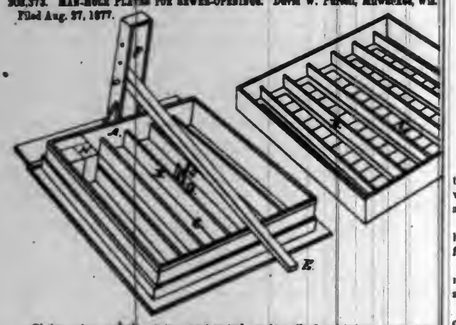
202,372. COAL-DRILLING MACHINES. John Price, Leavitt, assignor to Andrew M. Price and James C. Price, Carroll County, Ohio. Filed May 17, 1877.



Claim.—1. The arrangement and combination of the pinions F F and shafts E E, the gear-wheel I, its shaft O, the bevel-gear wheels J and K, and the driving-shaft L, all operating together substantially in the manner and for the purposes set forth.

2. The lever D and spring S, for gently pressing the machine and drills to the work, substantially as set forth.

202,373. MAN-HOLE PLATES FOR SEWER-OPENINGS. David W. Purcell, Milwaukee, Wis. Filed Aug. 27, 1877.



Claim.—A man-hole plate constructed, as described, with iron partitions H and openings in the bottom for ventilation, with hook D, with which the same can be removed, substantially as described.

202,374. PROCESS AND APPARATUS FOR MANUFACTURING ILLUMINATING-GAS. George Ramsdell, Detroit, Mich. Filed Mar. 11, 1878.

Claim.—1. The process for the manufacture of illuminating-gas, substantially as herein described, which consists of the following steps: first, distilling gas from wood and separating the pyroligneous acid therefrom; then washing the said gas by passage through a body of water; and, finally, subjecting the same to a reheating treatment in connection and together with hydrocarbon vapor, which latter has been previously washed in water, substantially as set forth.

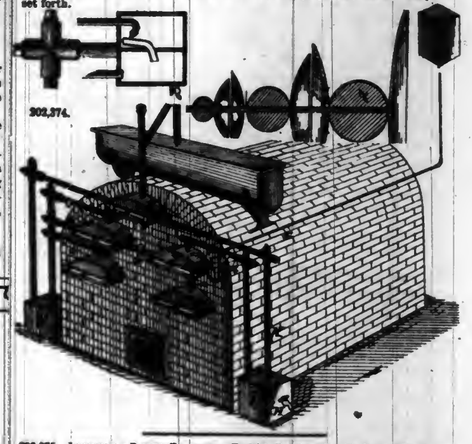
2. In apparatus for the manufacture of gas, the combination, with a hydrocarbon-retort, of one or more removable vaporizing-standards, the latter being respectively made with the described system of balls and plates arranged in vertical alternate series upon the supporting-upright, substantially as set forth.

3. In apparatus for the manufacture of gas, the combination, with one or more wood-retorts, A, and suitable connections, of the double-compartment chamber B, in which the pyroligneous acid is separated from the gas and the latter passed through the water, together with the reheating-retort D and the connection therewith, substantially as set forth.

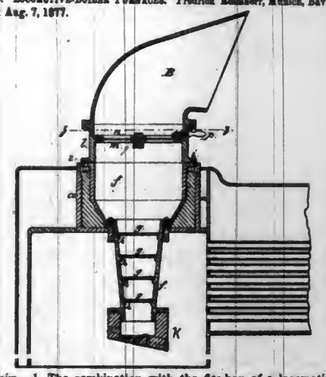
4. In apparatus for the manufacture of gas, a hydrocarbon-retort provided with one or more removable vaporizing-standards made with an alternate series of balls and a system of convex and concave plates, said concave plates being perforated, substantially as set forth.

5. In a hydrocarbon-retort, a vaporizing-standard made with the series of balls arranged intermediately between a system of vaporizing-plates, the upper one of which is convex and smaller than its corresponding lower concave plate, which latter is perforated, said balls and plates being independent of each other and removable from the supporting-upright, substantially as set forth.

202,374.



202,375. LOCOMOTIVE-BOILER FURNACES. Fredrick Reinherr, Munich, Bavaria, Germany. Filed Aug. 7, 1877.



Claim.—1. The combination, with the fire-box of a locomotive-boiler, of the air-distributing device projecting vertically into the furnace, and provided with air-heating perforated diaphragms and a perforated spraying-nozzle, arranged to operate as herein set forth.

2. The combination of the air-distributer *f*, provided with perforated air-heating diaphragms *g*, and the adjustable flaring hood B, in the manner and for the purpose set forth.

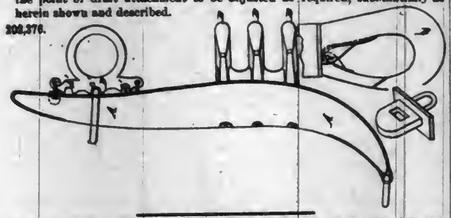
3. The combination of the air-distributer *f*, the adjustable hood B, the registering-disks *m n*, and the sloping perforated nozzle K, arranged and operating substantially as described.

4. The air heating and distributing device *f*, having an enlarged upper chamber and a tapering downwardly-projecting nozzle, provided with perforated diaphragms, and the cylinder *a*, packed with refractory material, combined and arranged to operate in the manner and for the purpose specified.

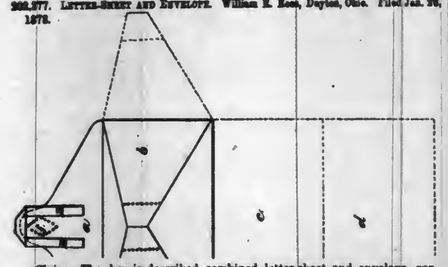
202,376. HAMES. Albert P. Ross, Berwyn, Nev., assignor to himself and Thomas Babington, same place. Filed June 26, 1877.

Claim.—The triple hook B, in combination with the hame A, to enable the point of draft attachment to be adjusted as required, substantially as herein shown and described.

202,376.



202,377. LETTER-SHEET AND ENVELOPE. William R. Ross, Dayton, Ohio. Filed Jan. 26, 1878.



Claim.—The herein-described combined letter-sheet and envelope, consisting of the rectangular folds *c*, *d*, and *e*, the latter provided with the top flap *a*, having a perforated portion, *f*, and a surrounding loop, B, of tape or strong paper, and also the side flaps *b*, perforated near their ends, the whole constructed and arranged substantially as and for the purpose specified.

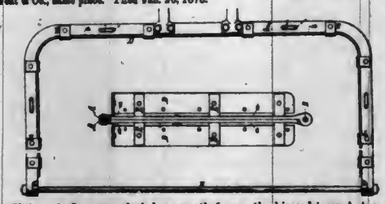
202,378. WHIPS. Thomas W. Rounds and Thomas L. Rood, Providence, R. I. Filed Jan. 16, 1878.



Claim.—1. As an improved article of manufacture, a whip consisting of a rattan or other suitable body inclosed in a wrapping formed from the intestines of animals, substantially as set forth.

2. The combination, in a whip, of a suitable central body, a wrapping formed from the intestines of animals, and an outer covering of fibrous material, substantially as set forth.

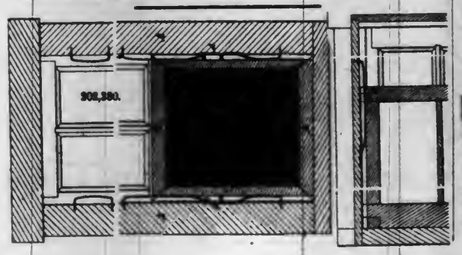
202,379. FRAMES FOR TRAVELING-BAGS. M. C. Schutz, Boston, Mass., assignor to Nathan Neat & Co., same place. Filed Jan. 26, 1878.



Claim.—1. In a traveler's bag-mouth frame, the hinged jaws A A and the body-fastening bows D D, combined and arranged substantially in the manner as shown and described, wherein the jaws, when closed, are projected edgewise beyond, and arranged between and at right angles with, the bows, and close together flatwise, as represented.

2. The hinged jaws A A, provided with the slots *s* and eyes *t*, and arranged to close flatwise together, and when closed to be between and at right angles to the bows, and to extend outwardly beyond them, as set forth.

202,380.



202,380. SASH-HOLDERS. James F. Severance, Brockton, Mass., assignor to O. P. Severance, same place. Filed Aug. 14, 1877.

Brief.—The sash is removable by slipping out the upper ends of the lower springs and lower ends of middle springs.

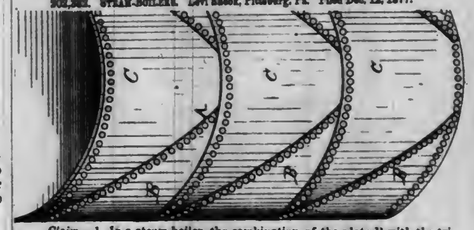
Claim.—In combination with a sash or screen, grooved at or throughout both of its vertical edges, as explained, springs, as described, secured in the window-frame, and arranged therewith and with the grooves of the sash or screen, substantially and to operate in manner and for the purposes as specified.

202,381. CELLAR-GRATINGS. David B. Shirk, Brunnerville, Pa. Filed Jan. 26, 1878.



Claim.—The combination, with the wall-plate A *e*, of a cellar-grate, the movable circular valves B and C, with their appliances, when combined centrally by a headed bolt, L, with an intermediate plate, F or A, having six radiating arms in an open circle, the whole arranged and operating as and for the purpose specified.

202,382. STEAM-BOILERS. Levi Shook, Pittsburg, Pa. Filed Dec. 12, 1877.

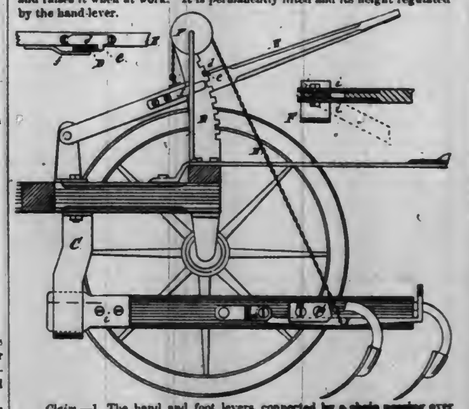


Claim.—1. In a steam-boiler, the combination of the plate B with the triangular plate C, arranged substantially as shown and described.

2. The steam-boiler A, constructed from the plates B C, the plate B almost completely encircling the boiler, and having its ends cut at an angle, and the plate C being of triangular form, and completely filling the space between the ends of the plate B, substantially as expressed.

202,383. RIDING CORN-CULTIVATORS. Geo. W. Starr, Monroe, Wis. Filed June 15, 1877.

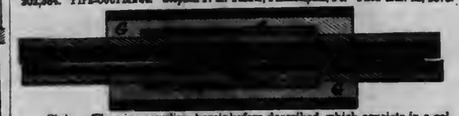
Brief.—A chain attached to a foot-lever upon the drag-bar passes over a pulley, and its other end is secured to a hand-lever. The foot-lever passes under the standard-bracket, and limits the downward play of the drag-bar, and raises it when at work. It is permanently lifted and its height regulated by the hand-lever.



Claim.—1. The hand and foot levers, connected by a chain passing over a pulley direct to each, and so arranged that the foot-lever carries the drag-bar.

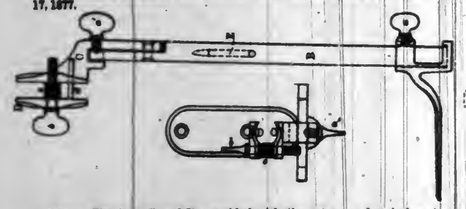
2. The lever E, provided with the spring *f* upon one side of the standard D, and the projection *e* upon the opposite side, in combination with wheel F, chain H, and foot-lever, substantially as and for the purpose set forth.

202,384. PIPE-COUPLINGS. Stephen P. M. Tasker, Philadelphia, Pa. Filed Mar. 12, 1878.



Claim.—The pipe-coupling hereinbefore described, which consists in a collar jammed upon the ends of the pipe, a sleeve surrounding the whole in such manner as to leave an annular interspace between, and an intermediate layer of solder, adapted to unite and hermetically seal the whole, substantially as described.

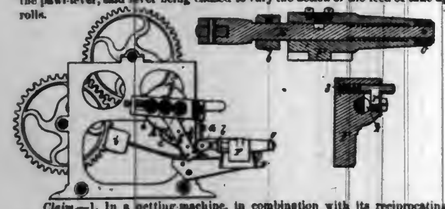
202,385. UMBRELLA-HOLDERS FOR VEHICLES. Evan Thomas, Jackson, N. C. Filed Sept. 17, 1877.



Claim.—The jaws C and D, provided with the set-screw *b*, spiral spring *c*, and pin *d*, combined with the standard B and set-screw *a'*, the said standard having at its upper end the curved bar with a series of depressions, substantially as described.

202,386. NETTING-MACHINES. Henry W. Thurston, Cambridge, assignor to John W. Fairbanks, Waltham, Mass. Filed Dec. 11, 1877.

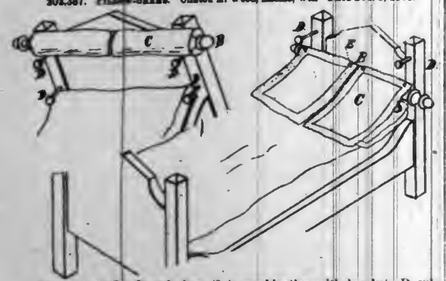
Brief.—Improvement on Patent No. 43,888, dated August 16, 1864. The meshes of the net are equalized by the improved mechanism which operates the pawl-lever, said lever being caused to vary the action of the feed or take-up rolls.



Claim.—1. In a netting-machine, in combination with its reciprocating shuttle-carriage, and with the take-up rollers and their operative mechanism, as described, (viz., their connecting-gears, pawl-lever, pawl, and weighted arm,) and with the comb-bar and its mechanism for imparting to it variable movements, as set forth, the mechanism for varying the taking up or feeding of the net, so as to cause the four sides of each mesh thereof to be equal in length on its production, such mechanism for such purpose applied to the frame and the shuttle-carriage, and to operate with the comb-bar, substantially as explained, being the bracket F, bent lever G, notched tappet E, stops *l e*, spring *p*, and the bolt *r* and its operative spring *s*, arranged and applied essentially as set forth.

2. The combination of the bracket F, lever G, sliding and notched tappet E, stops *l e*, spring *p*, bolt *r*, and the operative spring *s* of such bolt, all being arranged essentially as set forth.

202,387. PLOW-SHARE. Clinton A. Wood, Racine, Wis. Filed Feb. 9, 1878.



Claim.—1. Roller B and sham C, in combination with brackets D, substantially as described.

2. The roller B, having pins E and sham C attached to the roller, substantially as and for the purposes described.

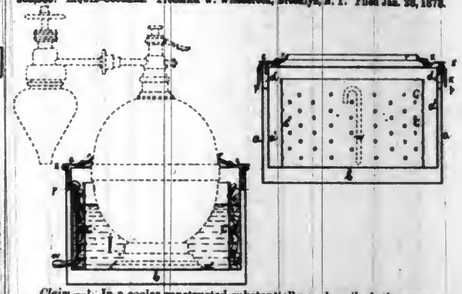
202,388. LOCKS FOR FIRE-ARMS. Daniel B. Wesson, Springfield, Mass. Filed Jan. 24, 1878.

Brief.—The construction and combination claimed is for producing a rebound of the hammer to the half-cock notch.



Claim.—The combination of the stirrup, the tumbler, and an intermediate piece or link attached to the tumbler or its pivot, and extending around to the rear side, so that the stirrup may have a bearing against said intermediate piece or link, substantially as and for the purpose described.

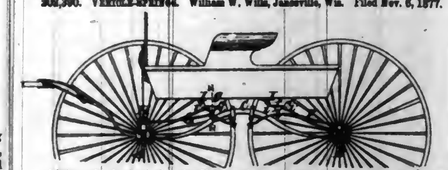
202,389. LIQUID-COOLERS. Frederick W. Wiesbrock, Brooklyn, N. Y. Filed Jan. 28, 1878.



Claim.—1. In a cooler constructed substantially as described, the cover *c*, having an opening, the rubber ring *r*, overlapping the opening, and the rim *s*, fitting loosely into the water-compartment *d*, as described, and for the purpose herein set forth.

2. In a cooler constructed as described, having two shells, and provided with a water-seal, the combination of the cover *c*, provided with an opening, the rubber ring *r*, and the rim *s*, as described, and for the purpose herein set forth.

202,390. VEHICLE-SPRINGS. William W. Wills, Janesville, Wis. Filed Nov. 6, 1877.



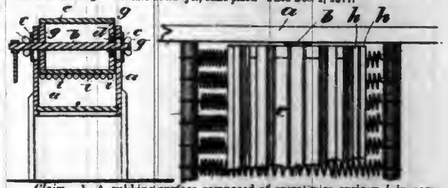
Claim.—1. A single longitudinal spring extending between the front and rear axles, and constituting the only connection between them, in combination with the vehicle-body D, supported entirely by the said spring and connecting devices, substantially as described, which hold it in a level position.

2. The platform-supports F and G, secured to the axles at one end, so as to prevent tilting sidewise, in combination with a longitudinal supporting-spring, centrally arranged beneath the body, and connected to the axles and the free ends of the platforms by joints or hinges, substantially as and for the purpose set forth.

3. The box or casing *i*, secured to the body, in combination with the T headed bars *i*, elastic packing J K, and platforms F G, substantially as and for the purpose set forth.

4. The fifth-wheel H, composed of upper and lower plates, secured together by bolts countersunk in the lower face of the under plate, in combination with the platform G, the forward ends of which are secured between the plates of the wheel, substantially as described.

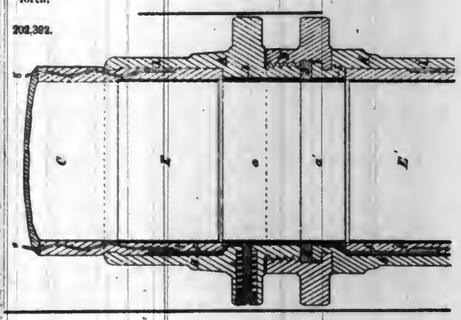
202,391. WASHING-MACHINES. William F. Wilkins, Montreal, Quebec, Canada, assignor of one-fourth his right to James F. Sawyer, same place. Filed Dec. 1, 1877.



Claim.—1. A rubbing-surface composed of spiral-wire springs *i*, in combination with the revolving drum or cylinder *c*, constructed substantially as and for the purposes set forth.

2. The slotted plates *e*, bolts *p*, thumb-screws *g*, plate *d*, and spindle *b*, in combination with the tub *a*, having slotted sides, the spiral-spring rubbing-surface *i*, and cylinder or drum *c*, substantially as and for the purposes set forth.

202,392.



202,392. ELECTRIC HOSE-COUPLINGS. Alanson Work, Providence, R. I., assignor to Benj. F. Goodrich, Akron, Ohio. Filed Mar. 22, 1876.

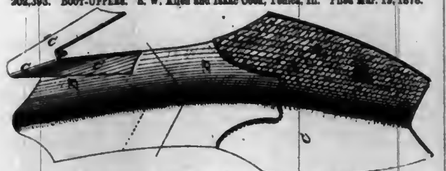
Claim.—1. In a coupling for telegraph-hose, the insulated rings *a* and *a'*, or their equivalent, connected with wires in the hose, and so arranged and constructed that they will make an electric contact when the coupling is joined together, substantially as shown.

2. The combination of the ring *a*, the connecting-wire *c*, the elastic insulating-tube *b*, and the coupling, substantially as described.

3. In a coupling for telegraph-hose, the metallic circuit *e e a*, *a' e' e'*, and *g A N' g'*, insulated the one from the other, and arranged to operate substantially as described.

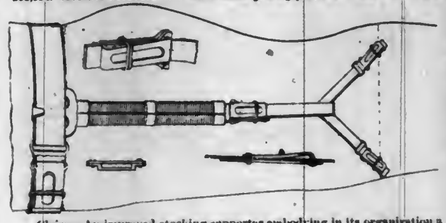
4. The combination of the insulated circuit *e e a* and the pin *k*, or an equivalent device, whereby an electric connection may be readily made and broken between the coupling and the circuit, substantially as shown.

202,393. BOOT-UPPERS. S. W. Allen and Isaac Cook, Tonica, Ill. Filed Mar. 19, 1878.



Claim.—Boot-uppers in which the forward part of the leg is made in two pieces, seamed to each other at their forward edges, and seamed at their lower ends with a lap-seam to the vamps C, substantially as herein shown and described.

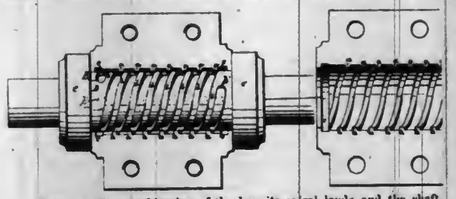
202,394. STOCKING-SUPPORTERS. Frank Armstrong, Bridgeport, Conn. Filed Feb. 15, 1878.



Claim.—An improved stocking-supporter embodying in its organization a suitable waistband or equivalent, and spreading or diverging loops for securing the top of the stocking, connected by an intermediate spring-band, composed of one or more strands of coiled wire, provided at either end with fastening or securing hooks or loops, substantially as set forth.

202,395. SHAFT-JOURNALS AND BOXES THEREFOR. William H. Atkinson, New York, N. Y., assignor to Samuel S. White, Philadelphia, Pa. Filed Dec. 22, 1877.

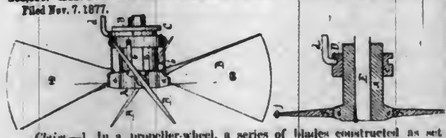
Brief.—The grooves in the shaft and box serve to hold and distribute the lubricant, while the lands between them present diminished friction-surfaces.



Claim.—1. The combination of the box, its spiral lands, and the shaft, having corresponding lands of opposite pitch, substantially as set forth.

2. The shaft-journal having a series of grooves terminating abruptly at their ends *b'*, and the corresponding series of lands of like pitch, substantially as and for the purpose set forth.

202,396. MEANS FOR REVERSING PROPELLER-BLADES. Charles M. Bailey, Baltimore, Md. Filed Nov. 7, 1877.



Claim.—1. In a propeller-wheel, a series of blades constructed as set forth, and adapted to swivel upon rods rigidly secured to the hub, substantially as described.

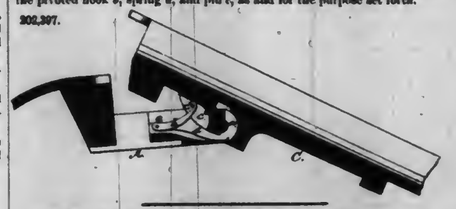
2. In combination with the sleeve C, the blades B, adapted, by means substantially as described, to be secured directly thereto, as and for the purpose described.

202,397. BREECH-LOADING FIRE-ARMS. William H. Baker, Syracuse, N. Y. Filed Mar. 21, 1878.

Claim.—1. In breech-loading drop-down guns, the combination of the frame, the barrel or barrels, and an intermediate spring-hook, by which the barrels and frame are detachably connected, in the manner and for the purpose hereinbefore set forth.

2. In combination with the frame A and fore-piece C, hinged together, the pivoted hook *b*, spring *d*, and pin *c*, as and for the purpose set forth.

202,397.

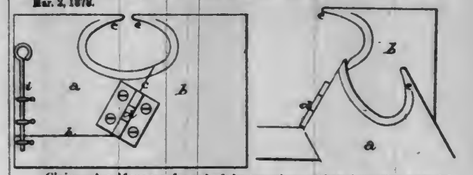


202,398. BOSOM-FORMS. Julia D. Banfield, Boston, Mass. Filed Mar. 18, 1878.



Claim.—As an article of manufacture, a bosom-form composed of the two connected half-portions *a b*, each contracted at its lower end, curved, substantially as described and shown, in the directions of its length and width, and broadened at its upper end to conform to the breast of the wearer, substantially as described.

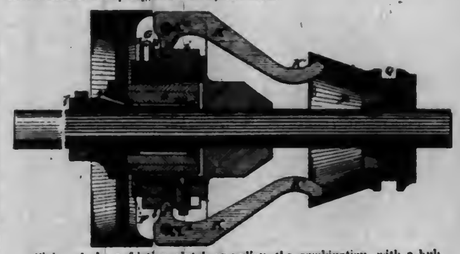
202,399. CALF-WEANERS. Wm. C. Banks and George L. Banks, Gomer's Mills, Ohio. Filed Mar. 2, 1878.



Claim.—A calf-weaner formed of the two pieces of board or other material *a b*, united together by the hinge *d*, and locked in position by means of the pin *i*, or other suitable fastening device, each of the pieces *a b* having a projection, *c*, for catching in the nose of the calf, substantially as shown and described.

202,400. FRICTION-CLUTCHES. Henry Barnes, Orange, Mass. Filed Mar. 5, 1878.

Brief.—A coiled band or spring, inclosed in a false hub provided with bell-crank levers and carried by the shaft, is brought into frictional contact with the hub of the loose pulley by means of sliding wedges engaging the ends of the spring, and operated by the short ends of the levers, whereby the pulley-wheel is clutched and rotated with the shaft. A reverse movement of the levers releases the spring, and thereby the wheel.



Claim.—1. In a friction clutch or pulley, the combination, with a hub attached to a loose pulley, gear-wheel, or shafting, of a false hub provided with a friction-ring and means, substantially as set forth, for drawing the opposite ends of said ring toward each other simultaneously, substantially as set forth.

2. In a friction clutch or pulley, the combination, with a hub attached to a loose pulley, gear-wheel, or shafting, of a false hub provided with a spiral friction ring or spring, and suitable means connected to the opposite ends of said ring or spring, for drawing them toward each other simultaneously and forcing said spring in frictional contact with the hub, substantially as set forth.

3. In a friction clutch or pulley, the combination, with a hub attached to a loose pulley, gear-wheel, or shafting, of a false hub provided with a spiral friction ring or spring, and suitable packing interposed between the coils of the spiral friction-ring, substantially as set forth.

4. In a friction clutch or pulley, a hub attached to a loose pulley, gear-wheel, or shafting, the periphery of said hub consisting of wood, leather, rawhide, or equivalent material, substantially as set forth.

5. In a friction clutch or pulley, a hub attached to a loose pulley, gear-wheel, or shafting, said hub consisting of a tubular journal provided with a detachable friction hub, said parts provided with an inclosed oil-chamber, substantially as set forth.

6. In a friction clutch or pulley, the combination, with a loose pulley provided with a friction-hub, of a false hub provided with a spiral friction ring or

spring, the latter having studs attached to its opposite ends, and wedges adapted to draw said studs toward each other, substantially as set forth.

7. In a friction clutch or pulley, the combination, with a spiral friction ring or spring, of anti-friction rollers journaled on studs attached to the opposite ends of said spring or ring, and wedges adapted to impart the requisite movement to said studs, substantially as set forth.

8. In a friction clutch or pulley, the combination, with a hub attached to a loose pulley, gear-wheel, or shafting, and a false hub provided with a spiral friction spring or ring, of bell-crank and suitable wedges and studs for drawing said spiral spring or ring in close frictional contact with said hub, substantially as set forth.

9. In a friction clutch or pulley, the combination, with a false hub provided with lugs on opposite sides thereof, of wedges placed between said lugs and bell-crank levers pivoted to the false hub, substantially as set forth.

10. In a friction clutch or pulley, the combination, with studs attached to the opposite ends of a spiral friction ring or spring, of laterally-adjustable wedges, substantially as set forth.

11. In a friction clutch or pulley, the combination, with wedges provided with open grooves, of bell-crank levers constructed to engage said grooves and actuate said wedges, substantially as set forth.

12. In a friction clutch or pulley, the combination, with a false hub provided with a spiral friction ring or spring, of an annular plate or collar secured to the end of the false hub, for retaining the lubricating material in the false hub, substantially as set forth.

13. In a friction clutch or pulley, the combination, with a ring or spring for binding the hub of the loose pulley, gear-wheel, or shafting, of bell-crank levers and wedges, the several parts arranged substantially as hereinbefore set forth, whereby the spring is contracted by forcing the outer ends of the bell-crank levers toward the shafting, substantially as set forth.

14. The combination, with a false hub and a spiral friction-ring located therein, of wedges engaging with studs attached to the opposite ends of said ring, bell-crank levers adapted to actuate said wedges, and a sliding collar having an outwardly-flaring recess formed therein, substantially as set forth.

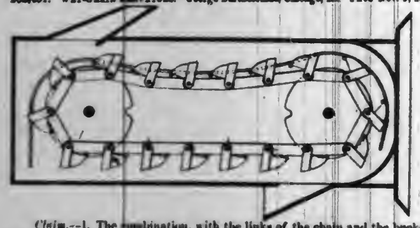
15. In a friction clutch or pulley, the combination, with a loose pulley, of a sleeve having annular grooves formed in its periphery, and wooden strips secured therein, substantially as set forth.

16. In a friction clutch or pulley, the combination of a removable hub with the loose pulley, substantially as set forth.

17. The combination, with the spiral friction ring or spring and the false hub, of set-screws (one or more) projecting into grooves formed in the friction ring or spring, substantially as set forth.

18. The combination, with the spiral friction ring or spring and operating-wedges, of stop-screws arranged to prevent the displacement of the wedges and bell-crank lever, substantially as set forth.

202,401. WET-GRAIN ELEVATORS. George Bartholomew, Chicago, Ill. Filed Nov. 6, 1877.



Claim.—1. The combination, with the links of the chain and the buckets, of the rods or shafts *a*, for connecting the links together and securing the buckets to the chain, substantially as herein described.

2. The combination, with the chain, of the buckets provided with the pins *d*, substantially as described.

202,402. SETTINGS FOR GEMS. William A. Bates, Boston, Mass. Filed Jan. 23, 1878.



Claim.—1. A setting for gems, the main body of the prongs of which are composed of gold or its compounds, the ends of the prongs being formed of platinum, or a metal of lighter color than gold, substantially as and for the purpose set forth.

2. In a gem setting, the shouldered prongs *b*, in combination with the points *d*, supported thereon and united with the prongs, substantially as described.

202,403. BOLTS FOR FASTENING BOILERS. Francis A. Bidwell, Norwich, Conn. Filed Jan. 16, 1878.



Claim.—A bolt for soft patching boilers and other analogous purposes, furnished with an opening in its end, in combination with a detachable eye-piece to be inserted in said opening, said eye-piece serving for the attachment of a cord or wire, as and for the purposes set forth.

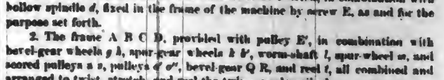
202,404. DOOR-LATCHES. Samuel Black, Union Grove, Iowa. Filed June 3, 1877.

Claim.—Latch-bar B, provided with parallel bars B' B'', and with an upward extension having a V-shaped recess in its front end, in combination with casing A, slotted on top, and dog E, having a handle which extends up through said slot, the locking-dog being shaped so as to engage with the V-shaped recess in said upward extension, substantially as set forth.

202,404.



202,405. METALLIC RAILINGS. William H. Brinc, Philadelphia, Pa., assignor of two-thirds his right to Brown & Owen, same place. Filed Feb. 23, 1878.

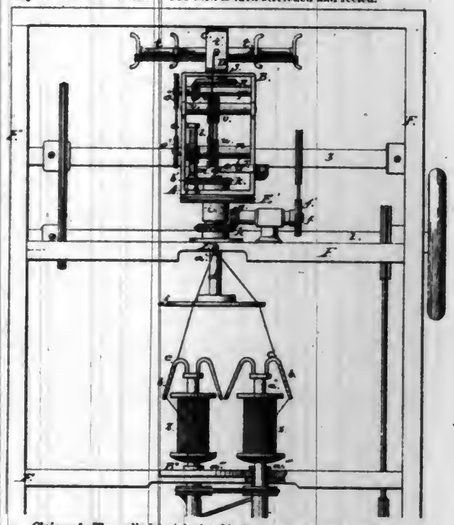


Claim.—1. The combination, in a metallic railing, of an upper and a lower horizontal rail, a series of sockets fitted to and having the capacity of longitudinal adjustment on said rails, and a series of vertical posts, each of which has a right-hand thread upon one of its ends and a left-hand thread on the other, said threads respectively engaging nuts formed in the sockets of the upper and lower rails, substantially as and for the purpose set forth.

2. The combination, in a metallic railing, of an upper and a lower rail, connected by posts having right and left hand screws, engaging nuts formed on sockets fitted to said rails, and panel-work interposed between the posts, and supported against lateral displacement by hooks or staples on sockets fitted to the rails, substantially as set forth.

202,406. MACHINES FOR MAKING CORDAGE. Geo. L. Brownell, East Haddam, Conn. Filed Sept. 21, 1877.

Brief.—A grooved block is placed at the upper end of a stationary hollow spindle, through which the twisted strands pass before they are united to form the cord. An adjustable compressor steadies the cord and corrects any tendency of the strands to ride. The cord is then stretched and reeled.



Claim.—1. The cylindrical laying-block *c*, provided with vertical grooves of a number to suit the number of threads to be twisted, in combination with hollow spindle *d*, fixed in the frame of the machine by screw E, as and for the purpose set forth.

2. The frame A B C D, provided with pulley E', in combination with bevel-gear wheels *g h*, spur-gear wheels *k k'*, worm-shaft *l*, spur-wheel *m*, and grooved pulleys *n n*, pulleys *o' o''*, bevel-gear Q R, and reel *t*, all combined and arranged to twist, stretch, and reel the twine, as described.

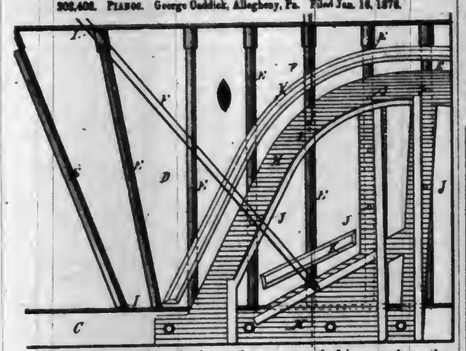
3. The compressor J, having elastic arms, and provided with adjusting-screw *j*, in combination with frame A B C D, and mechanism for twisting, stretching, and reeling the twine, as and for the purpose set forth.

202,407. NUT-LOCKS. Gorie Brunow, Baston Harbor, assignee of one-half his right to J. O. Andrain, Muskegon County, Mich. Filed Feb. 16, 1878.



Claim.—As a means for preventing the loosening or the turning back of nuts on bolts threaded to fit each other, a coating of soft metal, *b'*, applied to the threads of either the bolt A or to the threads *c* of nut C, or to both, substantially as and for the purpose set forth.

202,408. PIANOS. George Caddick, Allegheny, Pa. Filed Jan. 16, 1878.



Claim.—1. A number of tubes or bars, composed of iron, steel, or other metal, placed between the sound-board D and strings of the instrument to resist the strain of the strings, and having screw-threaded sockets on their ends for distending the sound-board D, substantially as shown and specified.

2. The screw-threaded pins J, screwed through the plate and into the tubes, for the purpose set forth.

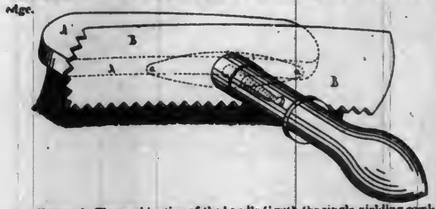
202,409. COUNTER-SUPPORTS FOR BOOTS AND SHOES. Brunton W. Campbell, Cincinnati, Ohio. Filed June 9, 1877.



Claim.—As an article of manufacture, the solid counter-support D, having screw-threaded tapering shank E and shoulders *a*, substantially as set forth.

202,410. CURRY-COMBS. Moses Cole, Lowell, Mass. Filed Sept. 26, 1877.

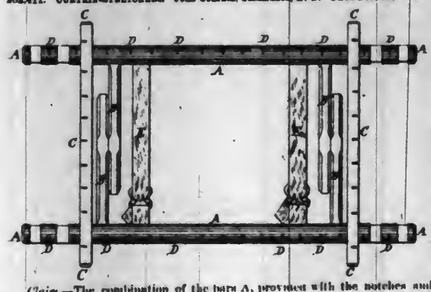
Brief.—The handle is held to the graph by a screw-spindle upon the latter, which holds one or more elastic metal blades, having teeth at the bottom edge.



Claim.—1. The combination of the handle C with the single yielding comb-blades B and spindle D, substantially as set forth.

2. The combination of the separate and removable brush A with the comb by means of the spindle D, substantially as described.

202,411. CURTAIN-STRETCHERS. John Conrath, Salamanca, N. Y. Filed Feb. 26, 1878.



Claim.—The combination of the bars A, provided with the notches and the hooks D, the pivoted legs B, the cross-bars C, provided with the hooks D, and the straps E, with each other, substantially as herein shown and described.

202,412. BUTTONS. Shubael Cottle, New York, N. Y. Filed Mar. 16, 1878.

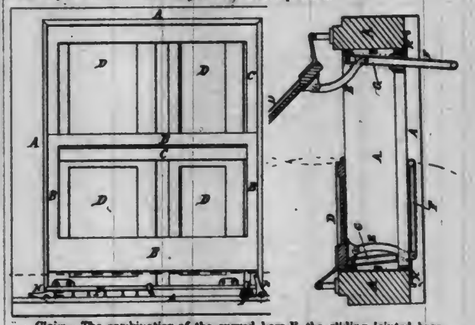


Claim.—1. The improved process of constructing a collar or sleeve button herein described—to wit, striking up and drawing out the central portion of a circular metal disk to form the hollow post A, then severing the conical end of said post, and soldering the head C to the body of the same, as shown and described.

2. The collar or sleeve button whose tubular post A and back B are formed in one piece, and having the metal thickened at the base a of the post, as shown and described, for the purpose specified.

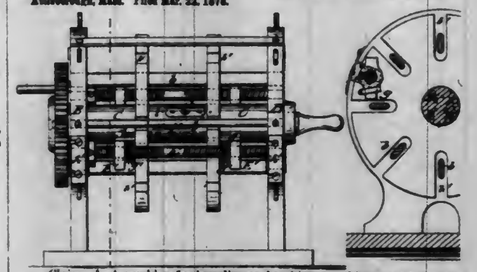
202,413. SHUTTER-WORKERS. Thomas Corrigan, Brooklyn, N. Y. Filed Feb. 7, 1878.

Brief.—As an improvement on shutter-working devices of this general description, there are eccentrics pivoted to the casing, and fitting in notches formed in the edge of the jointed bars, as constructed and adapted that the bars may be securely held or adjusted in desired position.



Claim.—The combination of the curved bars E, the sliding jointed bars F, the slides G, and the eccentrics H with each other, and with the blinds D and the casing A of a window, substantially as herein shown and described.

202,414. MACHINES FOR BOARDING AND BREAKING RAW HIDES. William Coupe, South Attleborough, Mass. Filed Mar. 22, 1878.



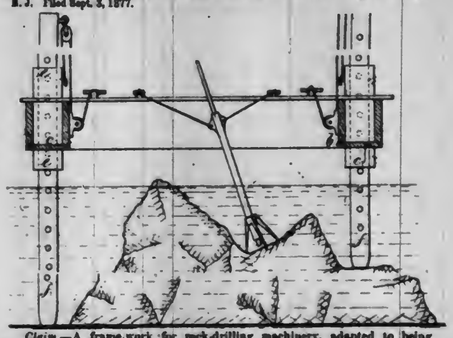
Claim.—1. A machine for boarding or breaking raw hides, consisting of stationary outer heads, with radially-adjustable connecting cross-bars, inner adjustable and spring-cushioned false heads, and a central revolving shaft, with clamping devices for attaching the hides, substantially as and for the purpose set forth.

2. The combination, with the revolving center shaft and stationary outer heads, having radially-adjustable cross-bars, of recessed and spring-cushioned false heads, adjusted simultaneously by right and left hand screw-bolts and traversing nuts, substantially as specified.

3. The combination of the stationary outer heads, having detachable journal-boxes and retaining devices, and of the adjustable inner false heads, having hook-arms, with right and left hand screw-bolts and traversing screw-nuts, to allow removing and replacing of bolts and nuts for attaching or detaching hides, substantially as set forth.

4. The combination of the central revolving shaft, having concaved recesses in the middle portion, said recesses being placed alternately nearer to one or to the opposite head, with clamping dogs or sections, having retaining-spurs and fastening-screws, substantially as shown and described.

202,415. PLATFORMS FOR SUBMARINE ROCK-DRILLING. Thomas Cumming, Hackensack, N. J. Filed Sept. 3, 1877.

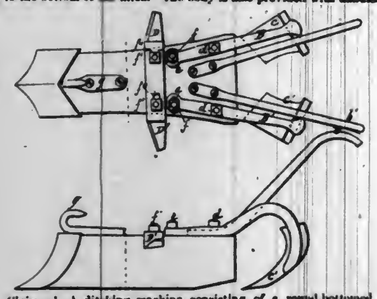


Claim.—A frame-work for rock-drilling machinery, adapted to being floated, and provided with vertical, or nearly vertical, tubes, in combination

with levers or spuds passing through such tubes, and a platform supported by the frame, substantially as set forth.

202,411. DITCHER AND CULTIVATOR COMBINED. Owen T. Davies, Brighton, Cal. Filed Nov. 26, 1877.

Brief.—The body of the plow consists of a half-round body, widening upon the sides rearwardly. The front end is provided with right and left hand mold-boards. At the middle of the body, upon the top, are mounted horizontal adjustable knives, and at the rear end are adjustable beams with blades reaching to the bottom of the ditch. The body is also provided with handles.



Claim.—1. A ditching-machine consisting of a round-bottomed body, widened toward its rear end, and having at its front end a right and left handed mold-board, and provided with handles, substantially as specified.

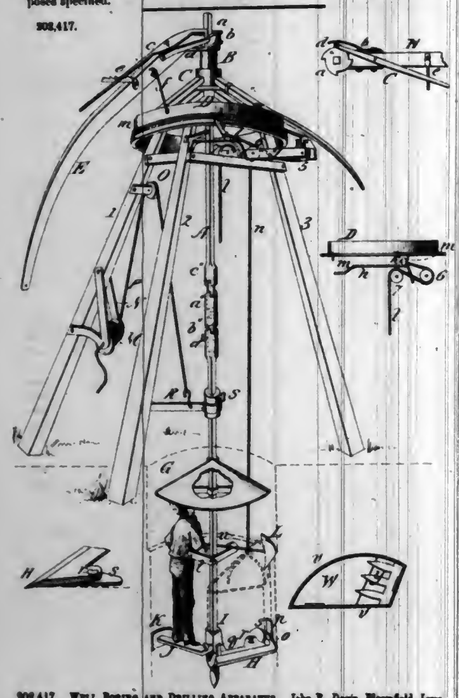
2. The body A, having its bottom rounded and its rear end flared, and provided with right and left handed mold-boards at its front end, as described, combined with laterally-extensible weed-knives, substantially in the manner and for the purposes specified.

3. The body A, provided with a rounded bottom and flaring rear end, as described, combined with front right and left handed mold-boards and rear adjustable plow beams and blades, substantially as herein set forth.

4. In a ditching machine, a round-bottomed body having a widened or flaring rear end, and carrying plow beams and blades, as described, the upward-inclined part A, whereby the blades, when the front end of the implement is raised in being drawn, are allowed to sink into the earth.

5. A compound implement consisting of a round-bottomed body having a widened or flaring rear end, a right and left handed mold-board at the front end, a pair of extensible weed-cutting knives, a pair of adjustable plow beams and blades, and suitable handles, combined substantially as and for the purposes specified.

202,417.



202,417. WELL BORING AND DRILLING APPARATUS. John R. Davis, Bloomfield, Iowa. Filed June 18, 1877.

Brief.—A horizontally-revolving drum actuates a hoisting-rope. A sweep connected by an adjustable clutch actuates the boring-shaft. The latter, at its lower end, carries a wall-presser and stand for an attendant, and a hood or roof for his protection; also, a single cutter with adjustable plate for regulating depth of cut; also, a dirt-bucket and reamer.

Claim.—1. The derrick having the tubular head B, the drum C D, the sweep E *a c*, and the shaft A, arranged and combined to operate substantially as and for the purposes shown and described.

2. The drill-operating device A *b*, the rope *l*, the pulleys 6 and 7, and the drum D, having the fixed cams or pins *m*, arranged and combined to operate substantially as and for the purposes set forth.

3. The cover, roof, or hood G, in combination with an auger-shaft, substantially as and for the purposes set forth.

4. The single horizontal auger-cutter H, having the vertical projections *o p q*, adapting it to receive and retain the movable sector-formed bucket *v r e*, substantially as and for the purposes shown and described.

5. The hinged or flexible plate *s*, in combination with an auger-cutter, substantially as and for the purposes set forth.

6. The combined bracket and wall-pressing device J K, in combination with an auger-shaft, substantially as and for the purposes set forth.

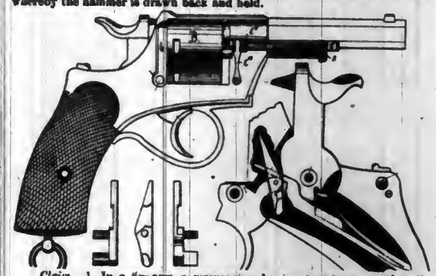
7. The auger-shaft A, having a fixed bearing, *t*, and the adjustable reamer L, having a bent shaft, *n*, arranged and combined to operate substantially as and for the purposes shown and described.

8. The sector-formed bucket *v e*, adapted to operate with a single cutter, H, and a bracket and wall-press, J K, substantially as shown and described.

9. In an auger-bucket, the combination of the adjustable hinged bottom *v* and the hinged grate *y*, substantially as and for the purposes set forth.

202,418. LOCKS FOR FIRE-ARMS. Amédée Thorens de Monnetie, London, England, assignor of one-fourth his right to Michael Kaufmann, same place. Filed Nov. 27, 1877.

Brief.—The lower leaf of the mainspring extends forward and acts as trigger-spring and pawl-spring. When the arm is cocked said lower leaf of the spring is raised, and held in that position during the fall of the hammer. When released and allowed to fall to its normal position, a shoulder engages a downward extension or tail-piece of the tumbler, and presses it forward, whereby the hammer is drawn back and held.



Claim.—1. In a fire-arm, a mainspring having two leaves, as described, one of which actuates the descent of the hammer, the other having a safety-stop, which is carried, in the act of cocking the weapon, to a position clear of the hammer in its fall, and operating, when the trigger is released, to raise the hammer clear of the cartridge, and there securely retain it, as set forth.

2. In a fire-arm, a hammer provided with a tail-piece, in combination with a mainspring having an offset to engage therewith and effect the rebound and locking of the hammer, substantially as described.

3. In a fire-arm, the hammer thereof having a projection or ing engaging with the trigger as the hammer is raised, and thereby compressing the mainspring, which latter is provided with a safety-stop, which engages with the hammer upon the release of the trigger, substantially as described.

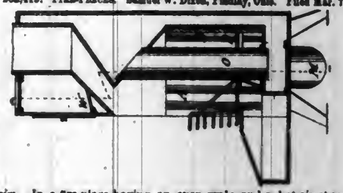
4. In a fire-arm, a trigger adapted to effect the self-cocking of the weapon, in combination with a mainspring provided with a safety-stop, which engages with the hammer upon the release of the trigger, as set forth.

5. In a revolving fire-arm, and in combination with its mainspring, a cylinder-pawl thereby actuated, as described.

6. In a revolving fire-arm, and in combination with its hammer and trigger, a cylinder-pawl, constructed as described, and engaging with the hammer upon the retraction of the trigger, and thereby effecting the self-cocking of the weapon, substantially as set forth.

7. In a revolving fire-arm, a lock consisting of hammer, pawl, trigger, and mainspring, the latter provided with a safety-stop for the hammer, and actuating all of the parts named, substantially in the manner and for the purposes set forth.

202,419. FIRE-PLACES. Samuel W. Dixon, Findlay, Ohio. Filed Mar. 7, 1878.

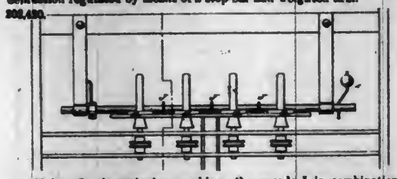


Claim.—In a fire-place having an open grate and a hot-air chamber provided with a fresh-air communication, the removable cast-iron pipe O, having the grate-bars P cast therewith, said pipe O being passed vertically through the fire-place proper near its center, in order that a portion near its bottom may be entirely surrounded by the incandescent coal in the grate, substantially as and for the purpose set forth.

202,420. THREAD-GUARD SUPPORTS FOR FIRE-SPINNING FRAMES. James Doyle, Lowell, Mass. Filed Aug. 18, 1877.

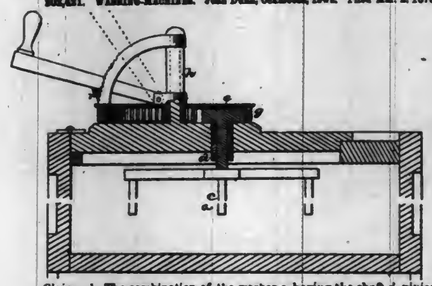
Brief.—The guards are held in a pendent position, and their elevation and depression regulated by means of a stop-bar and weighted arm.

202,420.



Claim.—In ring-spinning machines, the guards J, in combination with a pivoted hanging shaft, provided with a weight and stop to regulate the position of said guards, as shown and described.

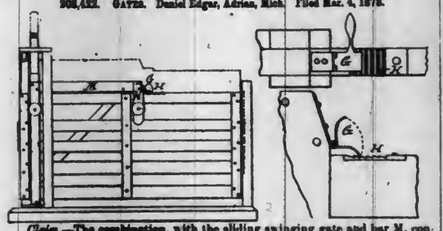
202,421. WASHING-MACHINES. John Dunn, Oskaloosa, Iowa. Filed Mar. 2, 1878.



Claim.—1. The combination of the washer *c*, having the shaft *d*, pinion *e*, large wheel *g*, having internal gears that are concealed from sight, and an operating handle or lever, substantially as shown.

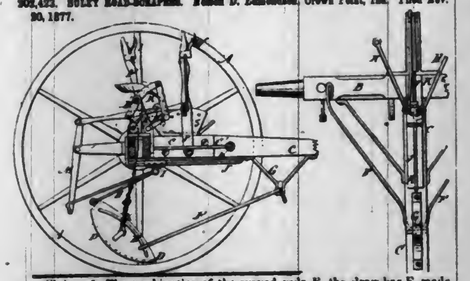
2. The combination of the pivoted handle, provided with the dog *r*, notched guides, large wheel *g*, provided with the sleeve *h*, and internal cogs, pinion *e*, shaft *d*, washer *c*, and box or tub *a*, substantially as set forth.

202,422. GATES. Daniel Edgar, Adrian, Mich. Filed Mar. 4, 1878.



Claim.—The combination, with the sliding swinging gate and bar M, connected therewith, of the catch G and rack H, for securing the gate, whether in an elevated or its natural closed position, substantially as specified.

202,423. SULKY ROAD-SCRAPERS. Nelson D. Edmondson, Crown Point, Ind. Filed Nov. 20, 1877.



Claim.—1. The combination of the curved rods E, the draw-bar F, made in one piece, with eyes upon its ends and a loop in its center, and the loop-bracket G, with the scraper D and the tongue C of the sulky A B C, substantially as herein shown and described.

2. The combination of the connecting-rods H, the sliding block I, and the slide J with the rear side of the scraper D, and with the axle and tongue B C of the sulky A B C, substantially as herein shown and described.

202,424. SPARK-ARRESTERS. Austin Elliott, Warrensburg, Mo. Filed Sept. 21, 1877.

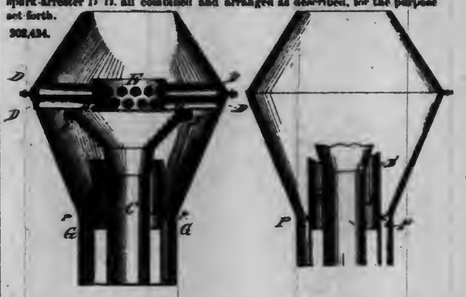
Claim.—1. In a spark-arrester for steam-engines, the smoke-stack as described, when composed of the still-draft flue C, the flue B″, and steam-pipes B, in combination with the smoke-stack jacket, all substantially as and for the purpose set forth.

2. The still-draft flue C, having at the outer edge of its mouth the ring or flange K, forming the cinder-check, in combination with flue B″, as and for the purpose set forth.

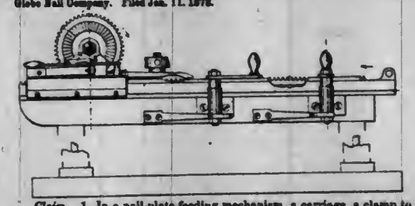
3. The spark-arrester formed of the curved plates D D, joined by an annular plate on their outer edges, and terminating inward with the perforated cylinder F, as and for the purpose set forth.

4. In a smoke-stack for steam-engines, the still-draft flue C, provided with ring or flange K, the steam-draft flue B″, the jacket of smoke-stack, and spark-arrester D D, all combined and arranged as described, for the purpose set forth.

202,424.



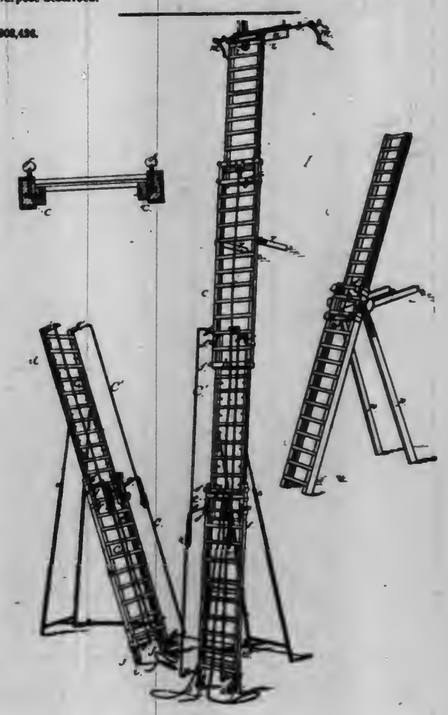
202,426. NAIL-PLATE-FEEDING MECHANISMS. Charles Ellis, Boston, Mass., assignor to Globe Nail Company. Filed Jan. 11, 1878.



Claim.—1. In a nail-plate-feeding mechanism, a carriage, a clamp to hold the nail-plate, a ratchet and connected pinion, a pawl to engage the ratchet, a device to withdraw the pawl, and a reciprocating rack to rotate the pinion intermittingly, they being combined to operate substantially as described.

2. The combination, with a carriage and clamp to move the nail-plate forward intermittingly, of holders to keep the nail-plate down upon the bed, the holders being constructed to be automatically turned aside from over the nail-plate for the passage of the carriage beyond them, substantially as and for the purpose described.

202,426.



202,426. EXTENSION-LADDERS. George M. Evans, Pittsburg, Pa. Filed Jan. 23, 1878.

Brief.—Alternate grooved sections of the ladder embrace tongued sections. A bracketed rail adapted to rest beneath the window-sill is attached to the upper end of upper section. Removable hand-rails fold up with the sections by sleeve-connections.

Claim.—1. The ladder constructed in sections, each alternate section having tongues formed on the sides to slide in grooves in the side pieces of adjoining section, so that each alternate section shall inclose the adjacent sections, as herein set forth.

2. The hand-rails C and C', adjustable lengthwise and coupled to the ladder, as shown, and provided with the standards *g* and *g'* and sleeve-connections *h*, as and for the purposes described.

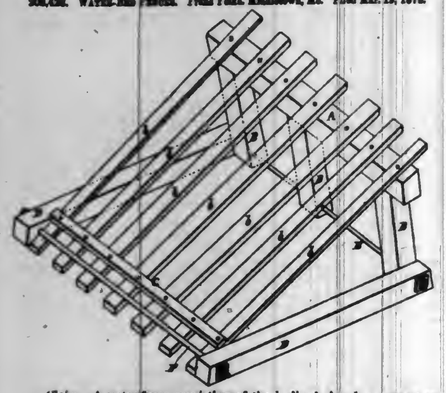
3. The adjustable rollers *i*, provided with yokes *j*, pivoted to the foot of the ladder, and provided with pins to fix them in position, as herein set forth.

4. The bar *l*, supported by the brackets *m*, in combination with the sectional ladder herein described, whereby the ladder may be swung in close proximity to a window, and used as occasion may require, substantially as described.

202,427. ARTIFICIAL SHEEP-SKINS. Charles A. Evans, Revere, Mass. Filed Oct. 15, 1877.

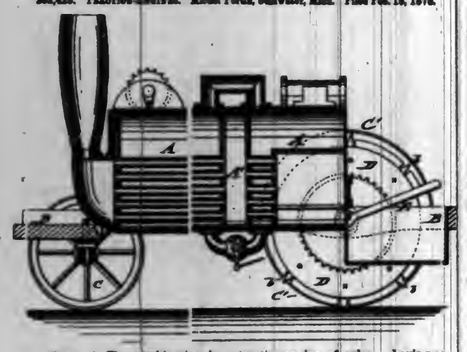
Claim.—The improved product described, constituting an imitation sheep-skin, composed of close-textured fabric coated with one or more layers of caoutchouc solution and mineral matter, as described, surface-colored by aniline and magnesia compound, and pebbled, substantially as hereinbefore set forth.

202,432. WATER-BED FENCES. Franz Falke, Middletown, Md. Filed Mar. 19, 1878.



Claim.—A water-fence consisting of the inclined slats *b*, a support composed of the timber *A* and posts B, the anchor-timbers D, and bolts E F, substantially as shown and described.

202,429. TRACTION-ENGINES. Michel Fortin, Stillwater, Minn. Filed Feb. 16, 1878.



Claim.—1. The combination, in a traction-engine, of axles *a*, having eccentric portion *a'*, with the detachable side extensions B' of the frame B, as and for the purpose specified.

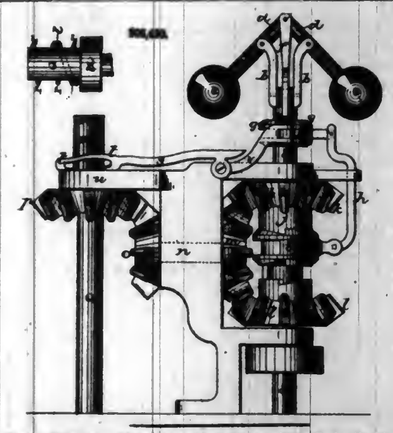
2. The combination, in a traction-engine, with the wheels C D, of the separate rear axles *a*, having eccentric section *a'* and squared inner ends, provided with hand-levers, as and for the purpose set forth.

202,430. GOVERNORS. Henry W. Fouts, Bellefonte, Pa. Filed Mar. 18, 1878.

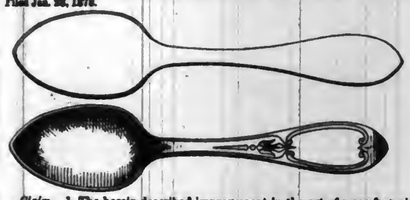
Claim.—1. In a governor, the combination of the shaft to which the balls are connected, a connecting and reversing mechanism, and the shaft Q, the shaft Q having a valve or gate connected to its lower end, substantially as shown.

2. The combination of the double clutch *i*, wheels *k l m*, shaft *n*, pinion *o*, wheel *p*, shaft Q, provided with studs *r*, and lever *s*, having the loop *t*, substantially as set forth.

3. In a governor, the combination of the mechanism, substantially as herein described, for reversing the shaft Q, with the shaft Q, provided with studs *r*, and lever *s*, having the loop *t*, the short end of the lever *s* being made to connect with the collar *g* by means of the lever *v*, substantially as specified.



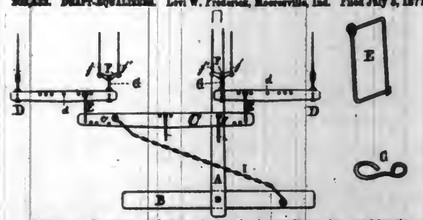
202,431. PROCESSES OF MAKING SHEET-METAL SPOONS. Maisby Fowler, Northford, Conn. Filed Jan. 26, 1878.



Claim.—1. The herein-described improvement in the art of manufacturing tinned-iron spoons having faced bowls and edged handles, consisting, substantially, in punching blanks from sheet metal, in facing, edging, and tinning the blanks, in stamping the handles, raising the bowls, and forming the spoons by dies, all the aforesaid several operations in the order and manner substantially as set forth.

2. A sheet-metal blank for spoons, having the edge of the part forming the bowl, when raised, beveled at such an angle as to make the facing of the bowl, as set forth.

202,433. DRAFT-EQUALIZERS. Levi W. Frederick, Mooresville, Ind. Filed July 3, 1877.



Claim.—1. In a two and three horse draft-equalizer, the combination of the hook G with the single-tree D and lever F, said hook being for the purpose of allowing said lever to be readily detached from said single-tree, all substantially as herein shown and described.

2. The combination, with the pole A and double-tree C, said double-tree being attached to the pole in the ordinary manner, of the chain I, to operate as a stay or guide, substantially as herein shown and described.

3. The combination of the two bolts, constructed as described, forming the link or clevis E, as herein shown and described.

4. The combination of the double-tree C, having holes *e e*, and the single-trees D D, having holes *d d*, with the link or clevis E, said arrangement of holes being for the purpose that the device may be so changed that it shall be suitable for two instead of three horses, or vice versa, and as herein shown and described.

202,422. DISTANCE AND VELOCITY RECORDERS. Georg Gobel, Darmstadt, Germany. Filed Dec. 10, 1877.

Claim.—1. In combination with the air-pump A, the bell M, immersed in mercury, and provided with an outlet on the top, regulated by a sliding or vibrating valve, D, in the manner and for the purpose substantially as set forth.

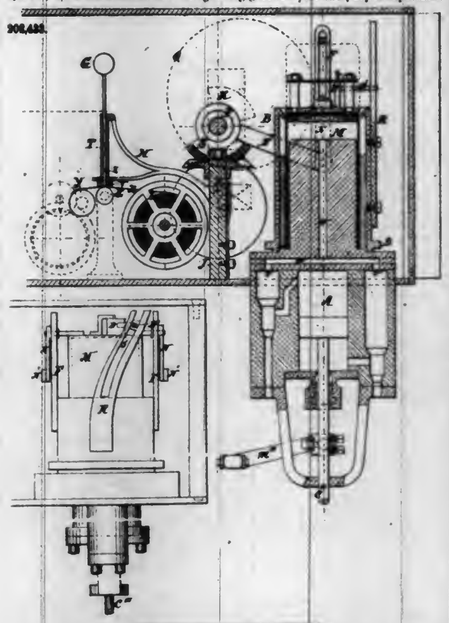
2. The valve D, covering the outlet on top of the bell M, with arm D', in combination with a diagonal slot, *s*, in the stationary arm R, arranged to operate substantially as and for the purpose described.

3. The combination of an immersed bell, M, with a dial, Q, indicating the velocity corresponding with the position of said bell, substantially in the manner specified.

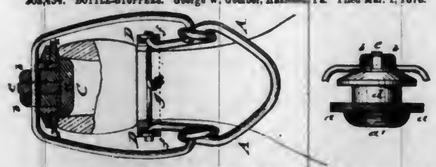
4. The bell M, levers N N', shafts P and J, and arm H, with pencil at its end, in combination with an endless strip of paper, X, having a uniform motion, arranged to operate together in the manner and for the purpose substantially as set forth and described.

5. The hinged socket T at the end of the arm H, provided with a weighted pencil, Z, in combination with the guiding-groove V, for the purpose specified.

202,435.



202,434. BOTTLE-STOPPERS. George W. Gomber, Hazleton, Pa. Filed Mar. 1, 1878.

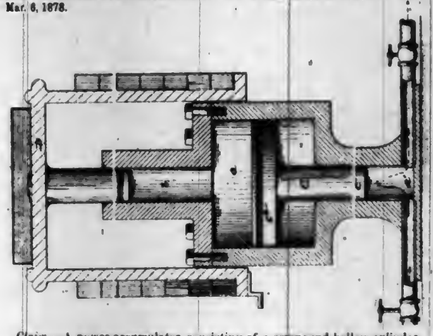


Claim.—1. A bottle-stopper consisting of the elastic disk *a*, having vertical recess and lateral perforated stem *b*, and the cap *d*, having laterally-perforated diametrical partition *c*, raised a little above the stem, as shown and described.

2. The metallic neck-band consisting of semicircular piece D, provided with bent ears *f*, perforated to receive the end of lever A, and a twisted wire, *g*, drawn through perforations in the piece D back of said ears, as and for the purpose set forth.

3. In a bottle-stopper, the combination, with the stem-disk *a b* and cap *d*, of the partition *c*, supported in a slot of said stem, as and for the purpose specified.

202,435. HYDRAULIC POWER-ACCUMULATORS. Wm. D. Grimshaw, New York, N. Y. Filed Mar. 6, 1878.

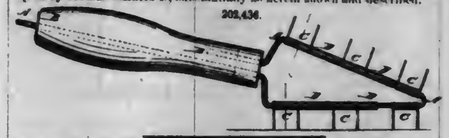


Claim.—A power-accumulator consisting of a compound hollow cylinder, provided with a weighted plunger, a differential piston arranged between said plunger and the inlet and discharge openings of the cylinder, and an intermediate fluid, substantially as described.

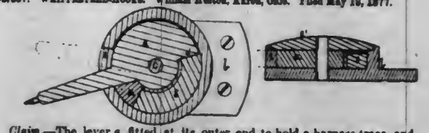
202,436. CURRY-COMBS. Lewis A. Griswold, Marshfield, Ohio. Filed Feb. 2, 1878.

Claim.—An improved curry-comb formed of the wire A, bent to form a V-shaped frame, and a hanging-loop, the handle B, and the comb-plates C, having their ends bent around the wire A, and kept at the proper distance apart by tubular washers D, substantially as herein shown and described.

202,436.

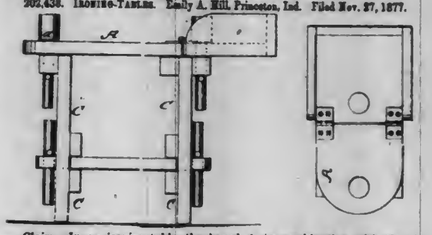


202,437. WRIST-STRAP-HOOKS. William Heston, Akron, Ohio. Filed May 16, 1877.



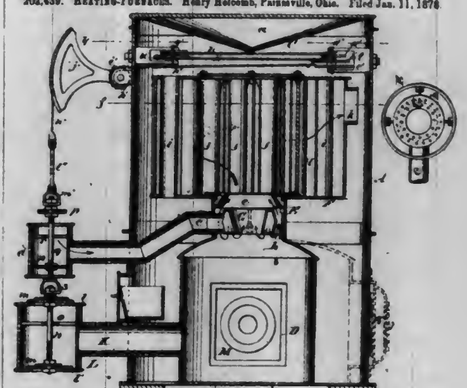
Claim.—The lever *a*, fitted at its outer end to hold a harness-trace, and having the short arm *a'*, in combination with the rubber spring *c*, pivot *c*, and box *b*, having the abutment *x* at one end of slot *e*, the lever *a* being fitted to turn in contact with abutment *x* and the interior of box *b*, substantially as described.

202,438. IRONING-TABLES. Emily A. Hill, Princeton, Ind. Filed Nov. 27, 1877.



Claim.—In an ironing-table, the board A, in combination with the pivoted tray B and the frame or standard C, said board being hinged at one end to the tray, as shown and described, whereby the tray will remain horizontal when the board is raised or turned upon its hinge, as and for the purpose set forth.

202,439. HEATING-FURNACES. Henry Holcomb, Painesville, Ohio. Filed Jan. 11, 1878.



Claim.—1. In a hot-air furnace, the double walled or jacketed air-distributing ring G, having a central opening for the passage of the gases of combustion, bottom air-discharge openings, and a surrounding space; in communication with the combustion and air-heating chambers, the fire E, surrounding the air-distributer, and the superposed ring *e*, in combination with the combustion-chamber D, heating-drum F, and air-inlet pipe, as and for the purpose set forth.

2. The air-inlet casing I, having apertured end heads *l l'*, valves *m*, and valve-rod *n*, and the upper air-inlet casing *d*, having apertured ends, valves *p*, valve-rod *q*, and swivel or slide connection *s*, with the lower valve-rod, in combination with the combustion-chamber D and air-supplying pipes K *e*, as and for the purpose set forth.

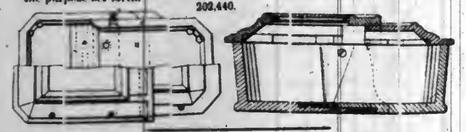
3. The combination of the levers *a' b' c' e' f* and the expansion-strips h^1 h^2 h^3 h^4 h^5 with the brackets or supports *t u*, the casing A, the chain *i'*, and a valve mechanism for supplying air to the furnace, as and for the purpose set forth.

202,440. BURIAL-CASKETS. John Heinrichsen, Royalton, Ohio. Filed Mar. 16, 1878.

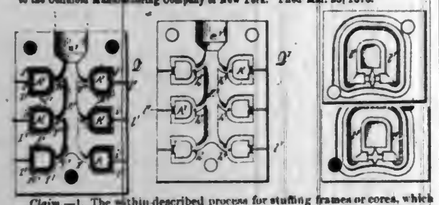
Claim.—1. A casket made of a head-section and sliding foot-section connected by side and bottom screws, and having recessed overlapping bottoms and filling-strips, substantially as and for the purpose described.

2. An adjustable burial casket made of a head section and of a foot section sliding in the same, and being secured thereto, substantially as and for the purpose set forth.

202,440.



202,441. COATING ARTICLES WITH CELLULOID, &c. John W. Hyatt, Newark, N. J., assignor to the Celluloid Manufacturing Company of New York. Filed Mar. 25, 1878.



Claim.—1. The within described process for stuffing frames or cores, which consists in forcing a plastic composition about a core suspended in a cavity, substantially as specified.

2. As a new article of manufacture, a buckle-frame, ring, or analogous structure coated with a homogeneous seamless coating, substantially as specified.

3. A die provided with a channel through which the plastic material may flow, and gates through which it may be distributed into forming-cavities, substantially as shown and described.

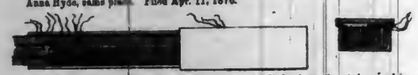
4. A die having a forming cavity wherein an open or hollow core or frame is sustained from impact with the surfaces of the cavity, substantially as specified.

5. A forming-cavity, H', provided with the studs f', substantially as specified.

6. A forming-cavity, H', provided with the pins h', substantially as set forth.

7. The within described process of coating a core with plastic composition, which consists, first, in stuffing the core with a homogeneous seamless covering, and then pressing it in a warm die to remove the marks left in the coating by the devices which sustained the core while it was being stuffed, substantially as specified.

202,442. UNDERGROUND TELEGRAPHS. J. Burrows Hyde, New York, N. Y., assignor to Anna Hyde, same place. Filed Apr. 11, 1876.



Claim.—1. A series of straight and parallel wires for telegraphic uses, united by weaving together by span or other threads of cotton or proper material, and saturated, and coated to constitute an insulated band-like form, the edges of said bands being enveloped or coated with paper or cloth to protect them against friction in handling.

2. A band of united insulated telegraph wires, placed in a vertical position, so that it may be raised and replaced in its proper rest or seat without disturbing any other wire or wires except those combined in the band required.

3. The forked or comb-like rest for holding and securing bands of telegraphic wires in a vertical position, so that the band can be readily lifted and replaced, and the other wires be conducted up the spaces formed by the width of the teeth, as described.

202,443. SEPARATING SULPHUR FROM ITS ORES. Robert G. Lockie, Acton Vale, Quebec, Canada. Filed Nov. 4, 1877.



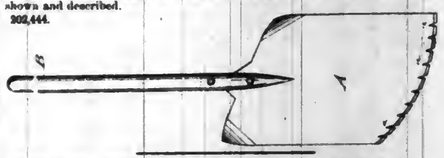
Claim.—1. The herein-described process of recovering sulphur from sulphur-containing ores, consisting in burning such ores, as pyrites, in separate chambers, into some of which is injected steam, and into others air, whereby sulphurous acid and sulphuretted hydrogen are produced, which gases are then passed into a mixing chamber, where they unite and liberate sulphur, which, by the excision of air therefrom, or by the admission of moist steam, is prevented from burning, the sulphur passing from this chamber into a condensing chamber, where it is collected.

2. In an apparatus for roasting sulphur-bearing ores, the combination, with two sets of kilns, arranged back to back, of pipes to conduct separately, at will, either superheated steam or air to the different kilns alternately, and a flue, *b*, between them, to receive sulphurous acid from one set of kilns, and sulphuretted hydrogen from the other set of kilns, and lead such gases through the flue *b* to the condensing chamber, substantially as described.

202,444. SCRAPING-TOOLS. Louis F. A. Lagenge, St. Georges-la-Tretoire, France. Filed Dec. 6, 1877.

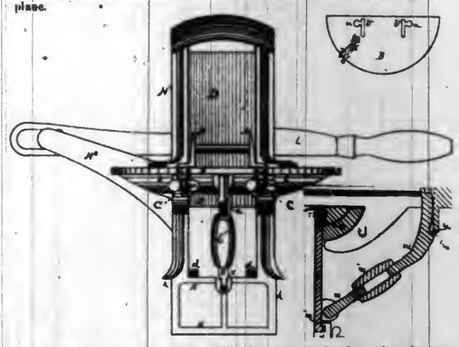
Claim.—A tool consisting of blade A and handle B, both being in the same plane, and the edge of blade being notched and convexly curved, as shown and described.

202,444.



202,445. MITER-MACHINES. Gustaves Leonardson, Erie, Pa. Filed Sept. 26, 1877.

Brief.—The material to be planed is placed upon a hinged and flanged table, adjustable to any desired angle by a curved and notched brace, while it is operated upon by a knife mounted in a vertically-reciprocating frame attached to a lever, the outer end of which is pivoted in a frame-arm extending upward and angularly from one of the standards. Rubber buffers are set in sockets in the uprights and cross-pieces to receive the downward stroke of the plane.



Claim.—1. The combination, within the frame-work of a miter-planing machine, of the uprights H' H', cross-pieces H H, arm H'', extending from uprights H', brackets C, and tenon-shaped foot A, all said parts being arranged substantially as and for the purposes set forth.

2. In combination with the vertical acting plane D, the lever L and frame-arm H'', extending from uprights H', as and for the purposes mentioned.

3. In combination with the plane D, uprights H' H', and lower cross-piece H, the rubber buffers *d d*, as shown, and for the purposes mentioned.

4. The cast-iron table B, with slots U and openings *a*, and ribbed periphery B', in combination with the guides A and clamps *a*, with L-shaped lugs for reaching over said rib B', as and for the purposes mentioned.

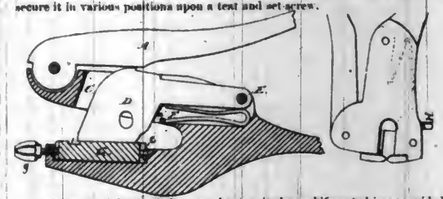
5. In combination with the adjustable table B and vertical acting plane D of a miter-planing machine, the curved and notched brace E and its support E'', for adjusting said table to the face of said plane, as set forth.

6. In combination with the adjusting-nut E', the gage-clip *e*, as shown, and for the purposes mentioned.

7. The combination, within a miter-planing machine, of the cast-iron frame, composed of grooved uprights H' H', cross-pieces H, arm H'', brackets C, and tenon-shaped foot A, to which frame are attached the table B and adjusting and sustaining brace E, the operating-lever L, and plane D, and the rubber bumpers *d*, all being arranged to operate as and for the purposes set forth.

202,446. BUTTON-HOLE CUTTERS. F. G. Leypoldt, Philadelphia, Pa. Filed Nov. 14, 1877.

Brief.—The knife and its spring are concealed within the recess of the bifurcated jaw. The cutting-block has intersecting grooves, which serve to secure it in various positions upon a test and set-screw.



Claim.—1. A button-hole cutter having its lower bifurcated jaw provided with a slot, C, in which is formed a check, *a'*, in combination with the vibrating knife D, pivoted near its rear end, spring F, arranged in front of the pivot, and concealed in the slot, and lever A, all arranged to operate as and for the purposes set forth.

2. The cutting-block G, formed with intersecting grooves *a b* at either end, in combination with the test C and thumb-screw *g*, substantially as and for the purpose set forth.

3. The knife D, extended rearward, and provided with a set-screw, H, operated upon by the lever A, substantially as and for the purpose set forth.

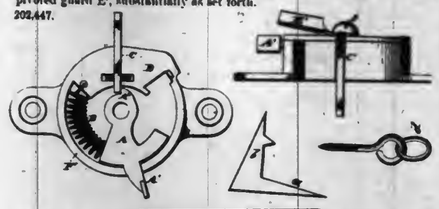
202,447. BURGLAR-ALARMS. Arthur L. Linn, Cleveland, Ohio. Filed Dec. 5, 1877.

Claim.—1. The combination, with the rotary hammer A A', abutment D, and trigger C, of the coiled spring B, one end of which is seated against the case, and the other against the hammer, substantially as set forth.

2. The combination, with the rotary hammer A A', abutment D, trigger C, and coiled spring B, of the cover F, provided with an opening, E, substantially as set forth.

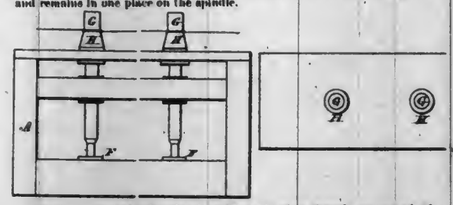
3. The combination, with the rotary hammer A A', abutment D, trigger C, and coiled spring B, of the cover F, provided with an opening, E, and the pivoted guard E', substantially as set forth.

202,447.



202,448. SPINDLES FOR CLEANING AND SMOOTHING SILK AND OTHER THREADS. Elisha J. Martin, Rockville, Conn. Filed Oct. 31, 1877.

Brief.—The thread runs continuously in one direction, and has one or more turns given to it around each spindle, so that it shall tend to run upon the conical portion, the inclination of which continually slips it back toward the cylindrical portion. The thread thus assumes a position of equilibrium, and remains in one place on the spindle.



Claim.—A spindle for cleaning silk and other threads, composed of a cylindrical part, G, and an inclined or conical part, H, substantially as and for the purpose herein described.

202,449. STOVE-GRATES. William McClave, Pittston, and John A. Price, Scranton, Pa. Filed Feb. 21, 1878.



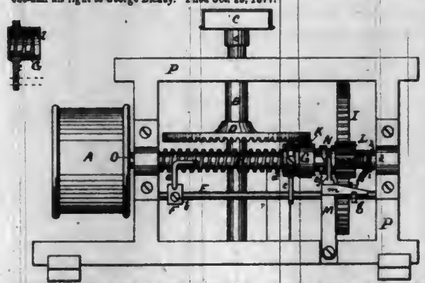
Claim.—1. The revolving grate-sections, constructed with ~-shaped grate-bars, connected by longitudinal strips, substantially as described.

2. The combination, in a stove or furnace, of the two grate-sections, constructed, as described, of the ~-shaped grate-bars, connected together, and adapted to be reversed by gear-wheels attached to their journals, so as to present like surfaces to the fire above at each complete reversal, substantially as described, for the purpose specified.

3. The curved plates, grates, or fingers, combined with the two reversible grate-sections, substantially as described, for the purpose specified.

4. The revolving grate-sections, constructed with ~-shaped grate-bars, connected by longitudinal strips, and made in cross-section substantially as shown in Fig. 4, for the purpose specified.

202,450. HAY ELEVATOR AND UNLOADER. Alex. H. McKitrick, Tiffin, Ohio, assignor of one-half his right to George Dickey. Filed Oct. 19, 1877.



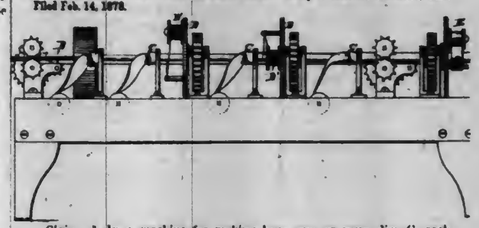
Claim.—1. The wheel L, with groove N and beveled clutches *f*, operated by the spiral spring I, substantially as and for the purpose set forth.

2. The collar G, with the arm *e*, in combination with shaft O, screw H, and the rod F, substantially as and for the purpose set forth.

3. The block F, crooked arm *a*, rod E, arm *g*, and spiral spring *i*, in combination with arms M and *m*, substantially as and for the purpose set forth.

4. The wheel L, with groove N, beveled clutches *f*, pin *e*, shaft O, screw H, collar G crooked arm *a*, arms M and *m*, spiral spring *i*, in combination with wheels D, I, and K, and shafts B and Q, substantially as and for the purpose set forth.

202,451. MACHINERY FOR MANUFACTURING HOSE. Henry J. Morrow, Cleveland, Ohio. Filed Feb. 14, 1878.



Claim.—1. In a machine for making hose, one or more dies, C, each formed in a continuous annular piece, and adapted to receive a strip of material in a flat or opened condition, and to deliver it to the mandrel, substantially as shown.

2. The combination of the mandrel B and one or more dies, C, substantially as and for the purpose shown.

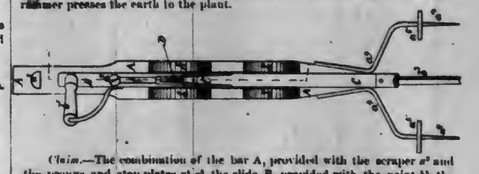
3. The combination of mandrel, dies, and cord or wire wrapper, substantially as and for the purpose shown.

4. The hose-making machine herein specified, consisting, essentially, of the mandrel B, the dies C, of sufficient number, and the cord or wire wrapping devices, all arranged to perform their functions in such order that a hose is finished to the stage of vulcanization, substantially as and for the purpose shown.

5. In combination with the mandrel B, dies C, and cord or wire wrappers D, the envelope-wrapper E, substantially as and for the purpose shown.

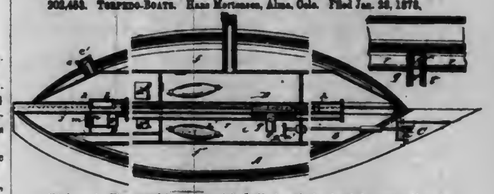
202,452. MACHINES FOR SETTING TOBACCO-PLANTS. Francis M. Moyer, Shannondale, Mo. Filed Jan. 29, 1878.

Brief.—The plants are placed where they are to be set, and then pressed into the ground by the point b^2. The scraper a^3 cleans the point, and the rammer presses the earth to the plant.



Claim.—The combination of the bar A, provided with the scraper a^3 and the prongs and stop-plates a^4 a^5, the slide B, provided with the point b^2, the rammer C, provided with the curved slot c', and the lever D, provided with the enlarged pear-shaped slot d', with each other, substantially as herein shown and described.

202,453. TORPEDO-BOATS. Hans Mortensen, Alma, Colo. Filed Jan. 26, 1878.



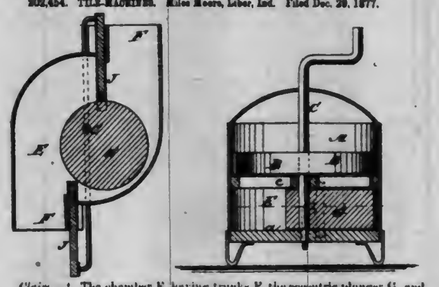
Claim.—1. The combination, with hull A, of the keel B, extending its whole length, projecting at the stern, and having rudder pivoted thereto, as and for the purpose described.

2. In a torpedo-boat, a cylinder, D, having valve *q*, with the passages *r w* and pipes *s*, in combination with the chamber f'', connected therewith by pipes, as and for the purpose specified.

3. The combination of the water-escape valve *p* with the chamber *j*, having the discharge-opening *a*, substantially as shown and described.

4. The combination of the screw-rods *b* with the rudder *c*, having arms *a*, substantially as herein shown and described.

202,454. TILE-MACHINES. Miles Moore, Liber, Ind. Filed Dec. 20, 1877.

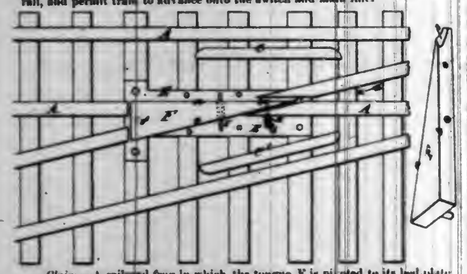


Claim.—1. The chamber E, having trunks F, the eccentric plunger G, and the connected slides J, in combination, substantially as herein shown and described.

2. In combination with a mixing-mill and the eccentric rotating plunger G, arranged inside of the chamber E, from which extend trunks F F, the slides J J, arranged substantially as and for the purpose described.

202,455. RAILWAY-FROG. Leander Murphy, Greensburg, Pa., assignor to himself and E. C. Keagh, same place. Filed Mar. 8, 1878.

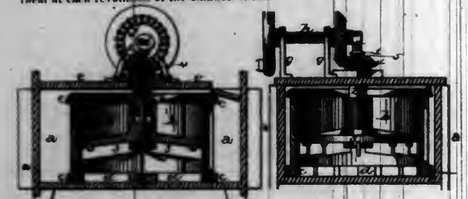
Brief.—The frog-point is pivoted to a bed-plate at its rear, and its point is held to one of the main-line rails by a spring, so that the main line is always open; and the extreme point is so notched or beveled off as to cause the flanges of wheels approaching it upon the switch to force the frog over, thereby permitting train to keep the side track. The distance between the side-track edge of frog, near its point, and the outer rail of the siding opposite being a little less than the ordinary gage, the wheel-flanges, coming out of the siding toward the heel of the frog, will push the point clear of the main rail, and permit train to advance onto the switch and main line.



Claim.—A railroad-frog in which the tongue F is pivoted to its bed-plate E, and its point is held to one of the main rails A by a spring, H, to keep the main track open, substantially as shown and described.

202,456. WASHING-MACHINE. Johann G. Oesterle, Francisco, Mich. Filed Jan. 26, 1878.

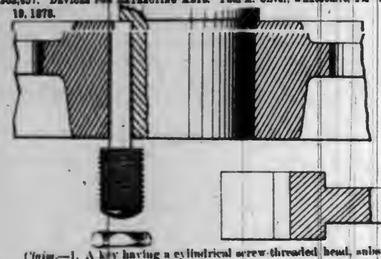
Brief.—By means of an eccentric on the end of the horizontal driving-shaft, which carries one of the bevel-gear wheels, operating on the spring-pressed vertical shaft, which carries the other bevel-gear wheel, and the rubbing-frame, the washer is made to turn the clothes, rub them, and pound them at each revolution of the balance-wheel.



Claim.—1. The combination of the frame *a*, having the spider *d*, with the cylinder *b*, for holding the clothes, and a washer which has a combined revolving and pounding motion, as set forth.

2. The combination of the hollow shaft 2, swiveled to the cover, bolt 1, and washer 3, with a mechanism for revolving and depressing the washer at the same time, substantially as shown.

202,457. DEVICES FOR EXTRACTING KEYS. Paul A. Oliver, Wilkesbarre, Pa. Filed Mar. 19, 1878.



Claim.—1. A key having a cylindrical screw-threaded head, substantially as and for the purpose specified.

2. The combination of an internally-threaded sleeve or nut with a key having a screw-threaded head, substantially as herein shown and described.

202,458. CENTER RIMS FOR WATCH-CASES. David B. Pearce and Alanson W. Taft, Providence, R. I. Filed July 5, 1877.



Claim.—In a center rim for watch cases, the combination, with the two side bands *b* and *b'*, made of one piece of drawn or rolled metal, of the center bead *a*, substantially as and for the purpose described.

202,459. CROWN-PUSHER FOR STEM-WINDERS. John J. Pons, Brooklyn, assignor to Robbins & Appleton, New York, N. Y. Filed Mar. 23, 1878.

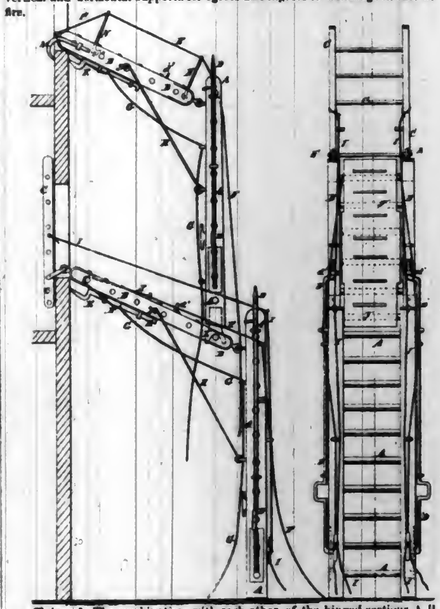


Claim.—1. The combination, with the pendant and crown of a stem-winding watch, of a spring-acted key-pipe and fixed socket-sleeve secured at the interior of the pendant, substantially as shown and described.

2. The combination, with the pendant of stem-winder, of a crown and key-pipe, the latter having a shoulder and spiral spring, and of an interior socket-sleeve of the pendant, secured by set-screw passing through the pendant, substantially as and for the purpose set forth.

202,460. FIRE-ESCAPES. William C. Phillips, Norwalk, Conn., assignor to himself, Charles M. Tooker, and Charles E. Ransom, same place. Filed Oct. 6, 1877.

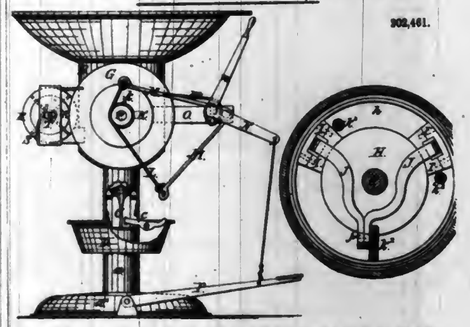
Brief.—Hinged ladder-sections capable of being employed as a straight ladder, by means of locking-bolts operated by ropes, or can be used to form vertical and horizontal supports for egress and ingress to buildings in case of fire.



Claim.—1. The combination, with each other, of the hinged sections A B C, the bolts D E, the cords F G I, and the hook-braces H, substantially as herein shown and described, to adapt it for use, as set forth.

2. The combination, with each other, of the hinged sections A B, the bolts D E, the cords F G, the hook-braces H, the forked feet L, the hooks M, and the hinged arms N, substantially as herein shown and described, to adapt the device for use in connection with a lower supporting part, as set forth.

202,461.



202,461. PORTABLE FORGES. George B. Phillips, Bath-on-the-Hudson, N. Y. Filed Nov. 15, 1877.

Brief.—The fly-wheel, revolving freely on its journal, is provided with a disk with annular groove therein, in which are placed split clamp-pieces having openings in their joints to receive the cam-ends of two levers. When to the other ends of these levers pressure is applied by the treadle movement, the clamp-pieces are spread apart, so as to produce frictional contact between them and the walls of the groove. As the pressure is removed, the jaws are released from frictional contact with the groove by play upon the loose spool, and brought in position for the next movement.

Claim.—1. The driving mechanism herein described, consisting of the fly-wheel G, provided with the annular grooved disk H, split clamp-pieces I, levers J, and spool K, provided with the disk *k*, flange k^1, and studs k^2, in combination with the driving-cord L and levers M, constructed to operate substantially as herein described.

2. The combination of the driving mechanism hereinbefore described with the blowing apparatus of a forge, as herein set forth.

202,462. RUBBER CLOGS. Joseph Fiesavi, Newark, N. J. Filed Mar. 25, 1878.



Claim.—1. A rubber shoe or clog having, in contradistinction to an upper extending over the joints, a toe-cap, narrow sides, but gradually increasing in height from the toe toward the heel, substantially as shown and set forth.

2. The combination, in a rubber shoe, with a toe-cap, and toward the front decreasing sides, of a stiff and comparatively high heel, substantially as herein shown and set forth.

3. The combination, in a rubber shoe, with a toe-cap and narrow sides, of a stiff and comparatively high and studded heel, as set forth.

4. The combination, in a rubber shoe or clog, with a toe-cap, of a thin curved metal spring or blade of other suitable elastic material, as set forth.

5. A rubber clog having a narrow toe-cap, held in shape by a metal spring, sides gradually widening from the toe to the heel, a stiff studded heel, with sole-shank and heel of otherwise ordinary or suitable construction.

202,463. CARTRIDGE-HOLDERS. Rhoshia H. Pooler and Wm. T. Jones, Berone, Ill. Filed Feb. 15, 1878.

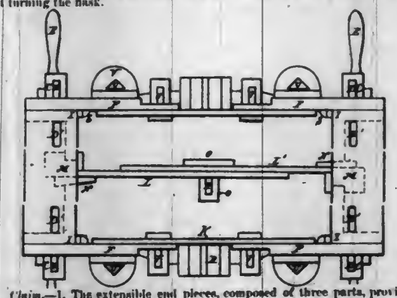


Claim.—1. The herein-described sheet-metal blank for cartridge-holders, the same being composed of a single piece, and having the ten elastic side pieces A A, intended to encircle the cartridge, the disk B, for sustaining the wad or ball, united with said side pieces, the blank being perforated, as at *a a*, for the reception of ordinary rivets, substantially as shown and described.

2. In combination with the belt D, the herein-described cartridge-holder, made from sheet metal, as described, and having the extended elastic sides A A, for encircling the cartridge, and the disk B, adapted to enter the cartridge-case and support the wad, said holder and belt being united by means of ordinary rivets, as and for the purposes explained.

202,464. MOLDERS' FLASKS. Charles H. Porter, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. Filed Feb. 1, 1878.

Brief.—The ends of both cope and drag are extensible. Sides are of different lengths, and are provided to be interchangeably used with the more or less extended ends. Sides have flanges entirely around them. Through the vertical parts of the flanges pass slotted bolts having handles, which, when keyed, hold sides and ends of flask together. Through horizontal parts of flange, cope and drag may be keyed together. The center pieces of the extensible ends have hollow bosses cast on them, to receive levers used in lifting and turning the flask.



Claim.—1. The extensible end pieces, composed of three parts, provided with slots and secured together with bolts and keys, substantially as herein described.

2. The adjustable double cross-bar L L', provided with slots and secured by a bolt and key, O P, substantially as herein described.

3. The notched tenon and wedge M N, in combination with the cross-bar and side for securing them together, substantially as herein described.

4. A molder's flask constructed of interchangeable side pieces, all of the same size and shape, of which any desired number can be used, to vary the length and depth of the flask, and extensible ends to vary the width, the whole being locked together with bolts and keys, substantially as herein set forth.

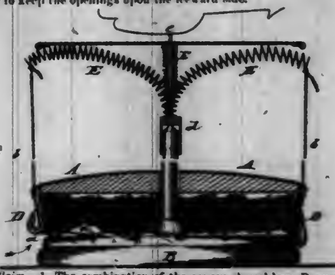
202,465. PENS. William McKinnon, Pittsfield, Mass. Filed Feb. 2, 1878.



Claim.—The ruling-pen herein described, consisting of an ordinary steel pen having a supplementary nibbed pen-plate attached to the under side thereof, with the points of the two pens placed nearly in the same plane, and a small distance apart from each other, as and for the purpose set forth.

202,466. ARTIFICIAL CHICKEN-MOTHERS. Johan Rabenberg, Brookfield, Mo. Filed Dec. 19, 1877.

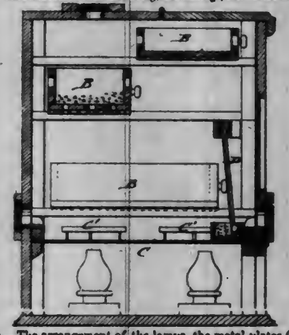
Brief.—The protector or upper part has a curtain with openings, through which the chickens can enter the device. A vane at the top turns the protector to keep the openings upon the leeward side.



Claim.—1. The combination of the canopy A and base B, cushioned with soft material on their opposite faces, and provided with the encircling curtain D, as shown and described.

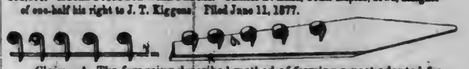
2. The combination, with the canopy A, of the straps *b*, the springs E, and the socket *d* on the center post C, to suspend said canopy, in the manner set forth.

202,467. INCUBATORS. Johan Rabenberg, Brookfield, Mo. Filed Dec. 19, 1877.



Claim.—The arrangement of the lamps, the metal plates C, the deflectors C', and the trays B within a case, substantially as and for the purpose specified.

202,468. METAL POSTS FOR WIRE FENCES. Charles H. Rand, Cedar Rapids, Iowa, assignor of one-half his right to J. T. Riggan. Filed June 11, 1877.

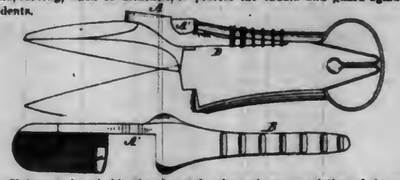


Claim.—1. The foregoing-described method of forming a post adapted for wire fences—to wit, making flexible wire-fastening devices *a b c*, and placing them on a wrought-iron rod or bar, *d*, and then casting iron around said rod to form a complete rigid post, substantially as shown and described, and for the purposes set forth.

2. A wire-holding fence-post composed of the series of wire-fastening devices *a b c*, the re-enforcing wrought metal rod *d*, and the cast-iron body *g k*, in the manner and for the purposes set forth.

202,469. THUMB-RESTS FOR SHEEP-SHEARS. John Richardson, Jr., Pomona, Cal. Filed Sept. 14, 1877.

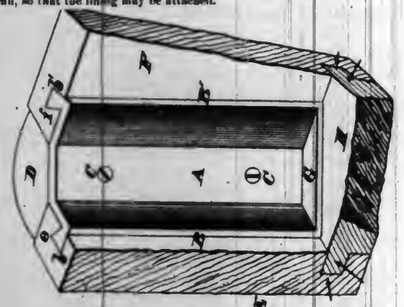
Brief.—A supplementary detachable shank is notched, and so shaped as to adapt it to fit on the upper handle or grasping portion of a pair of sheep-shears, serving, when so attached, to protect the thumb and guard against accidents.



Claim.—A detachable thumb-rest for sheep-shears, consisting of the concave rest A, the arch A', and the shank B, all shaped substantially as shown and described.

202,470. COFFINS AND BURIAL-CASKETS. James Richey, Cincinnati, Ohio. Filed Mar. 7, 1878.

Brief.—The angle-piece may stop a short distance below the top of the coffin, so that the lining may be attached.

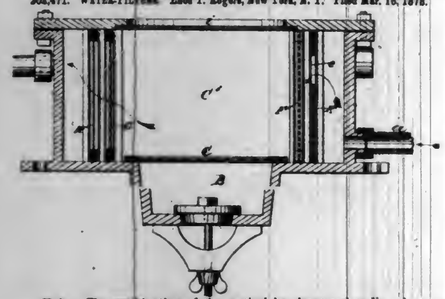


Claim.—1. An angle-iron consisting of a web, A, having wings or extensions B B', the latter being provided with outwardly-projecting dovetail flanges *b b'*, as herein described and set forth.

2. The combination of web A, wings B B', outwardly-projecting dovetail flanges *b b'*, and perforated lugs I I', as herein described and set forth.

3. The combination, in a coffin or burial-case, of web A *a*, wings B B', outwardly-projecting dovetail flanges *b b'*, retaining devices C, corner-piece D, grooved end E *e*, and grooved side F *f*, as herein described and set forth.

202,471. WATER-FILTERS. Enos T. Rogers, New York, N. Y. Filed Mar. 16, 1878.



Claim.—The combination of the vertical breakwater-plate E, and one or more vertical screens, F, at the inlet end of the filter, and one or more vertical screens, G H, at the outlet end of the filter, with the central charcoal-chamber C', and the sub-central sediment-receptacle B, substantially as and for the purpose set forth.

202,472. CAR-BRAKES. Albert Rosenfield, Detroit, Mich., assignor to Louis E. Rosenfield, same place. Filed Aug. 24, 1877.



Claim.—1. The within-described brake, consisting of two long beams or boards extending on the outside of the truck or trucks, on the right and left hand side, when so arranged that the friction-surfaces upon said beams or boards shall press directly and equally against the outer sides of the truck-wheels, substantially as shown and described.

2. The springs H H, to relieve the wheels of the friction by withdrawing the brakes, as set forth.

202,473. SHAFT-COUPLINGS. Curtis G. Rowell, Dallas, Oreg. Filed Feb. 18, 1878.



Claim.—1. A shaft-coupling the jaws of which have steel bearing-surfaces, substantially as described.

2. A shaft-coupling the jaws of which are tapering and have steel bearing-surfaces, substantially as described.

3. A shaft-coupling the jaws of which are tapered and beveled and have steel bearing-surfaces, substantially as shown and described.

202,474. LATCHES. Robert B. Raggio, Windsor, Conn. Filed Nov. 13, 1877.

Claim.—1. The combination, with the catch pivoted upon the free end of the rod *a* and spring to throw it outward, of a lever pivoted to the latch-case to hold or release the catch, to guide it in a right line or permit it to turn, substantially as described.

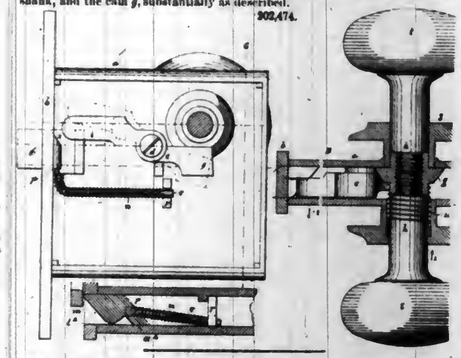
2. The catch 6 and the guide-rod *e*, guided as described, and the vibrating lever *e*, pivoted to the latch-case, in combination with the cam *g*, to operate the lever, all substantially as described.

3. The guide-rod *e*, guided only at its rear end, and spring to advance or throw out the catch, in combination with the catch 6, pivoted to the outer end of the rod, the catch being provided with inclined faces *l l'*, and a rear portion, *x a'*, to operate substantially as and for the purpose set forth.

4. The knobs *l h s h*, provided with screw-threaded ends, and the cam-hub *g*, screw-threaded to receive such threaded ends, in combination with the lever *e*, pivoted upon the latch-case.

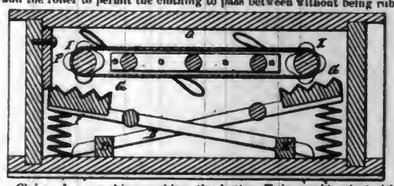
5. The latch-case, the catch 6 screwed therein, and the spring *n*, in combination with the longitudinally movable and rotatable knob, having a divided shank, and the cam *g*, substantially as described.

202,474.



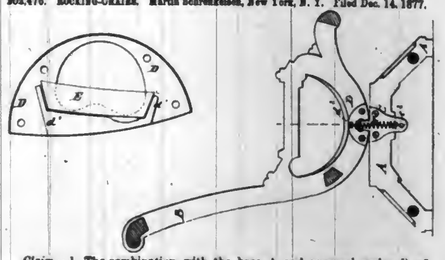
202,475. WASHING-MACHINES. Samuel Russel, Lewisville, assignor of one-half his right to Alfred Cox, Spiceland, Ind. Filed Feb. 12, 1878.

Brief.—When heavy pieces of clothing are to be washed, and it is desired to use only one corrugated roller and one wash-board, the button may be turned against the other wash-board, and thus a space may be created between it and the roller to permit the clothing to pass between without being rubbed.



Claim.—In a washing-machine, the button F, in combination with the reciprocating wash-board G and corrugated roller I, substantially as and for the purpose set forth.

202,476. ROCKING-CHAIRS. Martin Schrenkeisen, New York, N. Y. Filed Dec. 14, 1877.



Claim.—1. The combination, with the base A and recessed rocker B, of the plates D, having curved grooves, the plates C, having guide-pins *c'*, and the rubber block E, as shown and described.

2. The combination, with the chair-sections, having intermediate rubber E, of the boxes *d'* on plates D, and the pins *c'* on plates C, extended through the plates D, as and for the purpose specified.

202,477. WOOD-BORING MACHINES. Thomas O. Selfridge, U. S. Navy, Washington, D. C. Filed Mar. 30, 1878.

Brief.—An iron stem is provided with a centering-point, which rests upon the head of the bolt which secures the planks to the vessel, while the adjoining wood is bored or cored by means of suitable cutters secured in a head upon a sleeve on the stem, and operated by suitable mechanism.

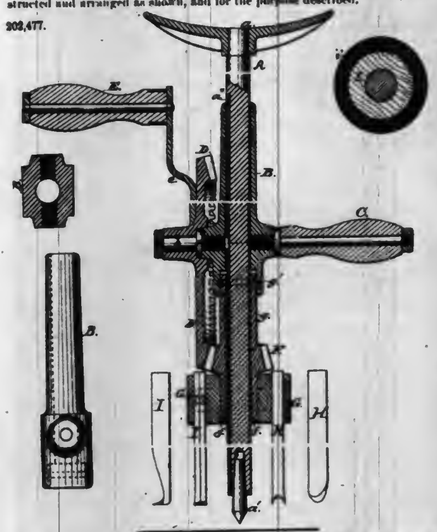
Claim.—1. The auger herein described, consisting of a standard, A, sleeve B, bevel-wheel D, pinion F, and cutter-head G, provided with bits H I, constructed substantially as shown, and for the purpose specified.

2. An auger for boring around bolts securing the plank to the frame of a vessel, provided with a cutter-head, G, having cutting-bit H, a reaming-bit, I, and a centering-point, *a'*, arranged as shown and described.

3. In an auger for boring around bolts, the combination of a standard, A, sleeve B, and handle C, with a bevel-wheel, D, handle E, pinion F, and cutter-head G, provided with cutters H and I, constructed substantially as and for the purpose specified.

4. The auger herein described, consisting of the standard A, having breast-plate *a* and point *a'*, the cylinder B, provided with handle C and stud *b*, bevel-wheel D, handle E, pinion F, cutter-head G, and cutters H I, all constructed and arranged as shown, and for the purpose described.

202,477.

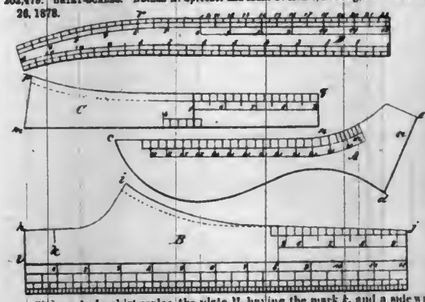


202,478. CHANNELING-TOOLS FOR BOOTS AND SHOES. Charles K. Sharood, Detroit, Mich., assignor to himself and Hazen S. Pingree, same place. Filed Feb. 19, 1878.



Claim.—The combination of the tubular cutter *b*, the tubular adjusting screw *c*, and the slotted casting A, having the socket B, substantially as herein shown and described.

202,479. SHIRT-SCALES. Nathan M. Sprecher and Isaac B. Keller, Reading, Pa. Filed Jan. 26, 1878.



Claim.—1. In shirt-scales, the plate B, having the mark *k*, and a side with the curves *h i* and graduated curves *i j*, as and for the purpose set forth.

2. In shirt-scales, the plate C, having straight edge *m n*, diagonally cut end *n p*, curved edge *p q*, and graduations, as and for the purpose specified.

3. The curved and tapered graduated pattern D, for forming neck-bands of different sizes, as herein specified.

4. A set of patterns consisting of plates A B C D, made substantially as described, for cutting the necks, neck-bands, yokes, and shoulder-pieces of shirts, as herein specified.

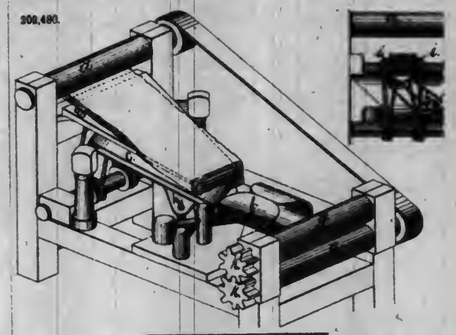
202,480. MACHINES FOR FOLDING COTTON-BATTING. Henry A. Stearns, Pawtucket, R. I. Filed May 20, 1878.

Brief.—The sheet of wadding passes over a tapering guide-board, under which are arranged two belts, one below the other, and converging toward the narrow end of the board. The edges of the sheet lap over the board, and are carried inward and folded under by the belts. The folding is completed by passing the sheet through a chute and between rollers.

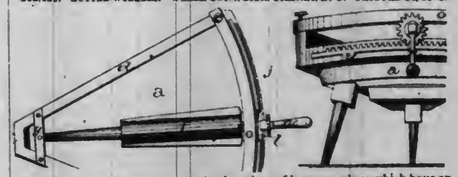
Claim.—1. In a machine for folding cotton batting or wadding, the combination of the guide E, the endless belts *c* and *d*, and chute *f*, arranged and operating substantially as and for the purpose set forth.

2. In a machine for folding cotton batting or wadding, the combination, with the guide E and endless belts *c d*, of the chute *f* and rollers *g g*, substantially as described.

202,480.

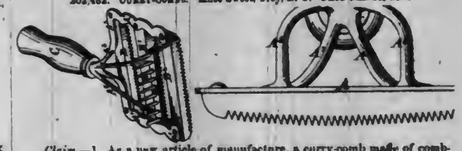


202,481. BUTTER-WORKERS. William Sweet, South Granville, N. Y. Filed Jan. 24, 1878.



Claim.—As an improvement in that class of butter-workers which have an inclined triangular table and a roller working over the same, the rod *h*, swiveled in a cross-bar, *g*, above the lower end of the table, and the roller *f*, provided with journal *i*, inserted in an eye in the lower end of the rod *h*, and operated by means of the pinion *l* and rack-bar *j*, arranged at the upper end of the table, as and for the purposes set forth.

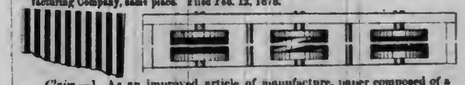
202,482. CURRY-COMBS. Miles Sweet, Troy, N. Y. Filed Jan. 31, 1878.



Claim.—1. As a new article of manufacture, a curry-comb made of comb-bars united together and to the handle by means of a single piece of cast metal, having V-shaped braces projecting over the first comb-bar, a tang for the handle, and diagonal braces of wire form located over and across the comb-bars, substantially as shown and described.

2. In combination with curry-comb bars and a handle, the frame made of a single piece of cast metal, having V-shaped braces projecting over the first comb-bar, a tang for the wooden handle, diagonal braces of wire form located over and across the comb-bars, and a raised handle formed with projections *n*, as a mane-comb, substantially as described.

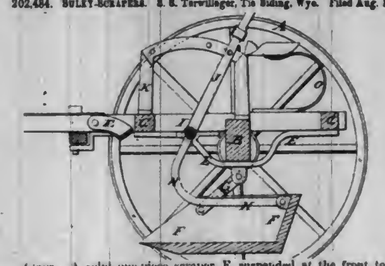
202,483. ORNAMENTAL PAPER. Wm. E. Syms, Holyoke, Mass., assignor to Crocker Manufacturing Company, same place. Filed Feb. 12, 1878.



Claim.—1. As an improved article of manufacture, paper composed of a ground-web of one color, and ornamented in design by the addition to the ground web of numerous independent pulp-webs, substantially as described.

2. The herein-described process of forming paper with its face ornamented in design, consisting in placing upon a broad pulp-web formed on one cylinder or belt other smaller pattern pulp-webs of different colors or stock, or both, produced on a second cylinder or belt, and pressing and forming such webs into one web, all substantially as described.

202,484. SULEY-SCRAPERS. S. S. Terwilleger, Tin Siding, Wyo. Filed Aug. 18, 1877.



Claim.—A solid one-piece scraper, F, suspended at the front to axle by hinged straps, and at the rear to a crooked bar, H, of rock-shaft I, as shown and described.

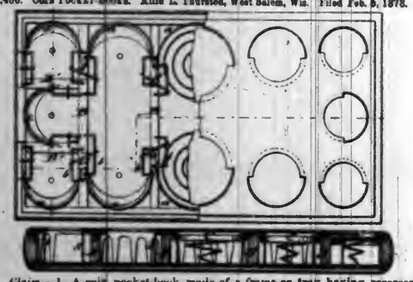
202,485. GAFFS FOR VESSELS. Thomas C. Thompson, Evanston, Ill. Filed Feb. 19, 1878.



Claim.—1. The combination of the end socket of gaff, having suitable recess and locking device, with a swinging arm or standard of boom, to lock gaff to boom, substantially as and for the purpose specified.

2. The combination of the gaff-socket, having locking devices, with a hinged arm or standard of the boom, that is secured by bottom projections to recesses of the bearing on the boom, to secure rigid position of arm when locked, substantially as and for the purpose set forth.

202,486. COIN POCKET-BOOKS. Alfie L. Thurston, West Salem, Wis. Filed Feb. 5, 1878.

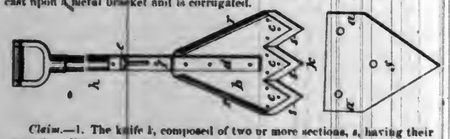


Claim.—1. A coin pocket-book made of a frame or tray having recesses of different sizes for the various denominations of coins, spring-acted caps, and retaining catch-wires projecting at one part of the circumference of the recesses, substantially as and for the purpose set forth.

2. The combination of the recessed coin frame or tray, having spring-cushioned caps in the recesses, and retaining catch-wires, with a bank-note pocket and closing flap at the opposite side of the frame, substantially as and for the purpose specified.

202,487. HAY-KNIVES. Henry O. Turner, Oneonta, N. Y. Filed Feb. 19, 1878.

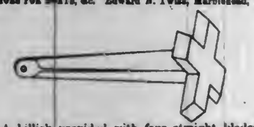
Brief.—The teeth are separately secured to a rubber plate, and the handle passes down between this plate and a brace secured to it. The foot-rest is cast upon a metal bracket and is corrugated.



Claim.—1. The knife *b*, composed of two or more sections, *s*, having their respective divergent cutting-edges terminating with the parallel square shoulders *s*, and united with the latter abutting against that of the adjacent section, in combination with the blade *b*, having its bottom edge formed with a series of V-shaped extensions, *c*, fitted to the back of sections *s*, substantially as described and shown, for the purpose set forth.

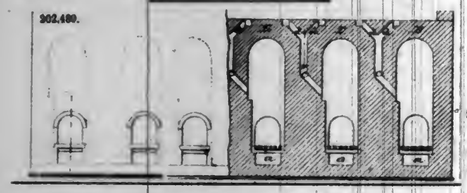
2. The triangular blade *b*, re-enforced at its sides by ribs *r*, and provided at the center with shank *d*, permanently attached thereto at its lower extremity, and free from same from thence up, and extending above the same, in combination with the handle *h*, inserted between the shank *d* and blade *b*, and attached by rivets or bolts passing through said parts, constructed and combined substantially as described and shown, for the purpose set forth.

202,488. ANCHORS FOR BOATS, &c. Edward H. Twiss, Marblehead, Mass. Filed Mar. 21, 1878.



Claim.—A killick provided with four straight blades beveled at their outer ends, and a shank having a hole near its smallest end, through which to connect a cable or its equivalent, substantially as set forth in the specification.

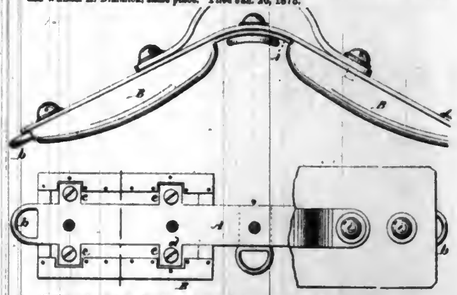
202,489.



202,489. BRICK-KILNS. Stephen W. Underhill, Croton Point, N. Y. Filed Mar. 5, 1878.

Claim.—In a permanent base for a brick-kiln, under the brick to be burned, a series of hot-air reservoirs, extending through from one side to the other, having exit-openings only on the side, at or near the bottom, substantially as and for the purpose described.

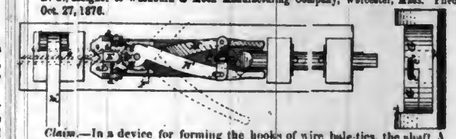
202,490. HARNESS-PADS. Limbrick W. Vandenburg, Honesdale, Pa., assignor to himself and William H. Dimmick, same place. Filed Jan. 26, 1878.



Claim.—1. A tree for harness-pads, consisting of a flat bar of iron having end loops for receiving the trace-supporting straps, and having ears on each edge for receiving the pad-fastening screws, substantially as herein shown and described.

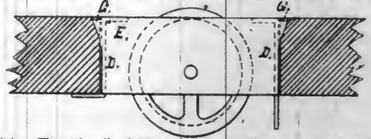
2. The combination of the rectangular convex-faced pads B with the tree A, consisting of a plain flat bar having ears *c* and end loops *b*, substantially as herein shown and described.

202,491. MACHINES FOR FORMING BALE-TIE HOOKS. Philip L. Van Derzee, New Baltimore, N. Y., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Filed Oct. 27, 1876.



Claim.—In a device for forming the hooks of wire bale-ties, the shaft A, capable of being rotated, and loop-forming block E, in combination with crimping-jaws G G', carried by the turning plate F, hinged to table D, substantially as and for the purpose set forth.

202,492. SASH-CORD GUIDES. Thomas Van Wagoner, Newark, N. J. Filed Mar. 21, 1878.



Claim.—The sash-pulley frame made from a single piece of sheet metal, as described, with the rectangular sides E, registering with the sides of the mortise in the jamb, and furnished with the stop projections G, and the end pieces D, extending beyond the jamb, to serve, when turned down, for securing the frame in position, substantially as specified.

202,493. GRAVEL ROOFS. Ebenezer B. Warren, Philadelphia, Pa. Filed Jan. 28, 1878.



Claim.—1. The surfacing of old gravel roofing with a composition of native asphaltum, softened with petroleum-tar, and mixed with a sufficient quantity of fine sand, so that the asphaltum and the sand will pack solidly together by tamping or rolling when hot, and thus be prevented from becoming soft by the action of summer heat, the surface to be washed, or not, with a solution of hydraulic cement or other wash, substantially as set forth.

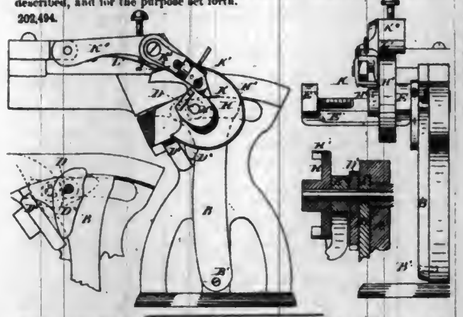
2. A roofing composed of a layer or layers of felting or paper saturated with any preparation of asphaltum, petroleum-tar, or coal-tar, upon which is spread asphaltic pitch, coal-tar pitch, pine-pitch, or rosin, softened by mixing it with other substances, into which is embedded clean-washed gravel, free from sand, or, in place of gravel, broken stone, slag, or other material of a similar nature; then, after removing the gravel which has failed to become embedded, applying a surface coating of any above-described composition of asphaltum, softened with petroleum-tar, mixed with fine sand, and making this surface compact and smooth by tamping or rolling while hot, which may be washed with hydraulic cement or other wash, substantially as set forth.

202,494. HEEL-TRIMMING MACHINES. Albion K. Washburn, Bridgewater, Mass. Filed Dec. 15, 1877.

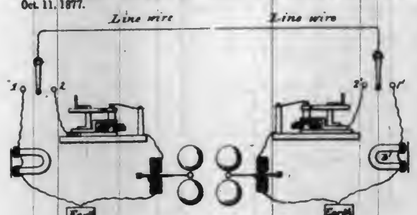
Claim.—1. The arbor D, hung on a laterally-swinging frame, B C, in combination with the cam D^2 and the jack E E^1 E^2, all operating together substantially as described, and for the purpose set forth.

2. In a heel-trimming machine, the combination of the cam D^2, the swinging shaft D, the pattern H^2, and the snail-cam H^1 with the knife K, tangentially directing lever K^2, and lever K^4, all operating together substantially as described, and for the purpose set forth.

202,494.



202,495. TELEPHONE CALL-SIGNAL APPARATUS. Thomas A. Watson, Boston, Mass. Filed Oct. 11, 1877.



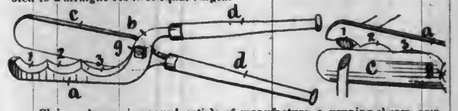
Claim.—1. The combination, with a system of electric telephones and upon the telephonic circuit, of signaling apparatus and a supplemental electric generator in a branch circuit independent of that containing the telephone, the whole being arranged and adapted to call the attention of distant operators, substantially as shown and described.

2. The combination, with a system of electric telephones, of a supplemental magneto-electric inductor in an independent branch circuit, substantially as shown and described.

3. The combination, with a system of electric telephones, of magneto-electric inductors and call-bells with polarized armatures, the whole being operated substantially as shown and described.

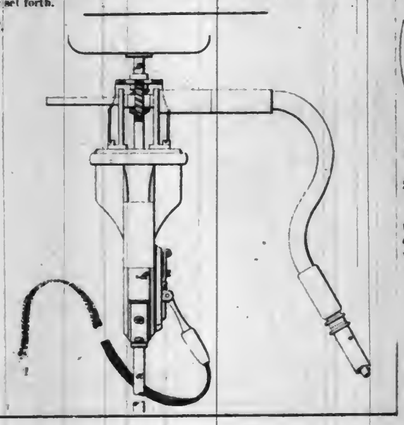
202,496. PRUNING-SHEARS. John W. Weymouth, Des Moines, Iowa, assignee of two-thirds his right to D. R. Ewing and L. M. Sandford, same place. Filed Sept. 6, 1877.

Brief.—One of the blades has a series of graduated concaves, and is pivoted to a straight blade of equal length.



Claim.—As an improved article of manufacture, a pruning-shears composed of the curved blade *a b*, having a series of graduated concaves, 1 2 3, adapted to receive branches of different sizes at different points from the center of motion, the straight blade *c*, the fixed fulcrum *g*, and the straight lever handles *d d*, substantially as shown and described, to be operated in the manner set forth.

202,497.

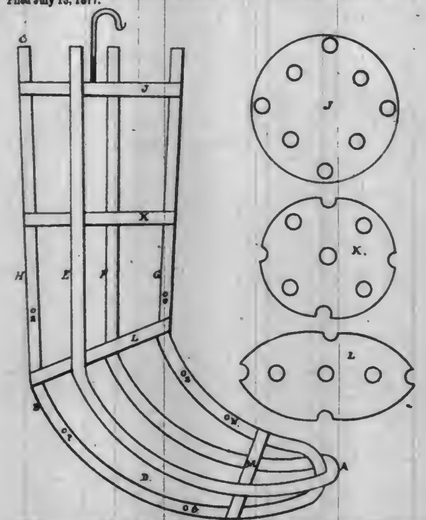


202,497. ELECTRO-MAGNETIC DENTAL ENGINES. Samuel S. White, Philadelphia, Pa. Filed Oct. 24, 1876.

Claim.—1. An electro-magnetic dental engine adapted to be mounted and turn upon a flexing support, substantially as described.

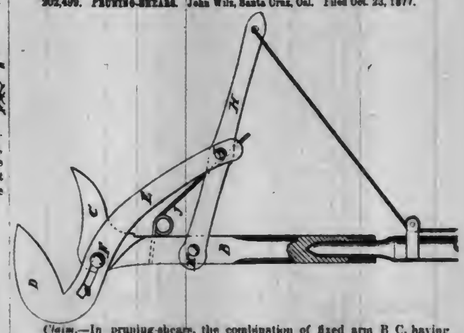
2. The combination, substantially as hereinbefore set forth, of an electro-motor adapted for application to a flexing support, mechanism mounted upon and driven by said motor, a flexible shaft driven by said mechanism, and a flexible sheath and hand-piece enveloping the shaft, whereby a tool inserted in said hand-piece is free to be turned in all directions without interruption to the driving-power.

202,498. STOCKING DRIER AND STRETCHER. Perry W. Whitcomb, Washington, D. C. Filed July 13, 1877.



Claim.—A stocking drier and stretcher consisting of a frame of wicker or lattice work, of wicker, rattan, wood, or any other suitable material, cylindrically formed similar to the shape of a stocking, constructed of one or more pieces, perforated as desired, composed of the pieces A B C D E F G H, in combination with their supports J, K, L, and M, substantially as herein described and specified, so as to admit air throughout the whole stocking to be dried, as set forth.

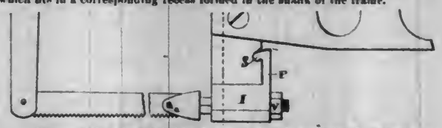
202,499. PRUNING-SHEARS. John Wile, Santa Cruz, Cal. Filed Oct. 23, 1877.



Claim.—In pruning-shears, the combination of fixed arm B C, having pivot F, slotted movable arm D E, spring J, and lever H, to adapt them to be operated by a cord and pulley, in connection with pole, as specified.

202,500. HANDSAWS. James B. Woodrough, Cincinnati, Ohio, assignor to himself and Woodrough & McParlin, same place. Filed Mar. 11, 1878.

Brief.—The buckle-holder, in addition to the hole through its lower part to receive the extension of the holder, is provided with a groove for the lower end of the shank, and a vertical extension having a hook-shaped projection which fits in a corresponding recess formed in the shank of the frame.



Claim.—1. The buckle-holder I, provided with extension P, hooked projection S, and groove L, substantially as and for the purposes set forth.

2. The buckle-holder 1, substantially as described, in combination with buckle E H, nut V, and shank C, substantially as and for the purposes set forth.

202,501. STOVE-PIPE-JOINT LOCKS. James W. Woolsey, Henderson, Minn. Filed Feb. 16, 1878.



Claim.—The combination, with the sections A B, of the overlapping metallic strips C D, the former having cross-slits, through which the latter is passed and then bent upon itself, as shown and described.

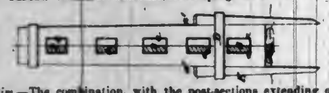
202,502. TRACE-CARRIERS. Melancthon E. Zeller, Bluffton, Ohio. Filed Dec. 6, 1877.



Claim.—1. A trace-carrier consisting of the plate or frame A, raised flange or guard C, and hook B, all substantially as shown and described.

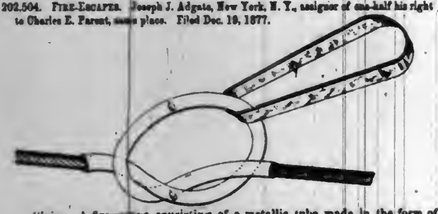
2. The open plate or frame having side and end loops, and provided with an open hook or eye, and a raised flange or guard partially surrounding said hook, all substantially as and for the purpose set forth.

202,503. FENCES. Michael S. Zimmerman, Indian Spring District, Md. Filed Feb. 14, 1878.



Claim.—The combination, with the post-sections extending only to the ground or to a base-piece on the ground, and clamped together near both ends, of the two drive-stakes E, forced between the lower band or clamp and the post, and thence into the ground, as shown and described.

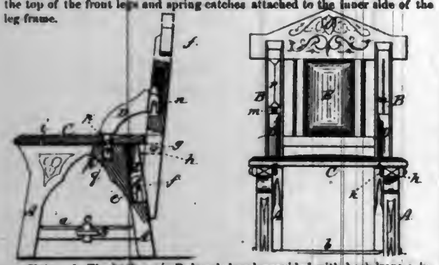
202,504. FIRE-ESCAPES. Joseph J. Adgate, New York, N. Y., assignor of one-half his right to Charles E. Parent, same place. Filed Dec. 19, 1877.



Claim.—A fire-escape consisting of a metallic tube made in the form of an open knot—that is, with the two ends of the tube passed over and under, and extended above and below the ring—in combination with the rope passing through the same, and the belt for carrying the descending person, as set forth.

202,506. CHAIRS. Justus Ash, Salem, Ohio. Filed July 18, 1877.

Brief.—The legs of the two sides are framed together with the side rail. These sides are held in place by a cross-rail framed into a mortise of each of the side rails, and secured by keys. Hook-irons are secured to the lower end of the back posts, which engage with pins in the legs, thus securing the back posts firmly to the chair. The seat-frame is held in place by dowel-pins in the top of the front legs and spring-catches attached to the inner side of the leg-frame.



Claim.—1. The back posts B, beveled and provided with hook-irons *s*, in combination with the rear posts A, having slits *d*, substantially as described.

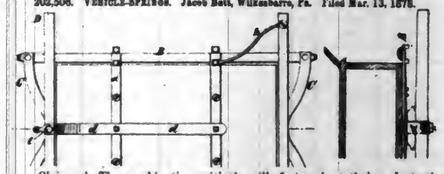
2. The back posts, beveled and provided with hook-irons, in combination with the rear posts, having slits, and the grains *j* of the seat-frame C, through which said back posts B pass, substantially as described.

3. The leg-frame A, with the catches *k*, and the seat-frame C, with the bearing-straps *l*, in combination with dowel-pins *i*, as and for the purpose described.

4. The chair-arms D, provided at one end with a hook-iron, *n*, adapted to fit in a slit, *w*, in the back posts B, and at the other end with a tenon, *o*, adapted to be held in a mortise, *p p'*, through the seat and in the leg-frame.

5. The covering-piece *r* for the back-post slit, dovetailed and adapted to slide up and down to permit of the arm's adjustment, as described.

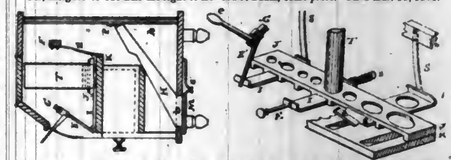
202,508. VEHICLE-SPRINGS. Jacob Batt, Wilkesbarre, Pa. Filed Mar. 13, 1878.



Claim.—1. The combination, with the sills fastened at their ends to the springs C C, of a reach constructed, as herein described, so as to form a king-bolt brace and a spring, all combined and operating substantially in the manner set forth.

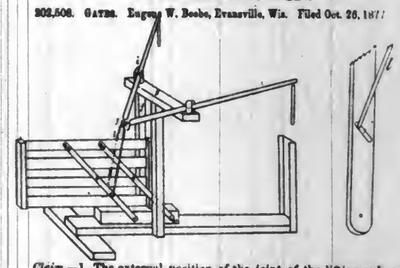
2. The combination, in a buggy, as above described, of sills B B, fastened to springs C C, which springs are edge-bent, so as to prevent the axles from rolling in the wheels, substantially in the manner above described.

202,507. DEVICES FOR HOLDING COIN AND MAKING CHANGE. George S. Ball, Lancaster, Pa., assignor of one-half his right to Edward J. Zahm, same place. Filed Mar. 19, 1878.



Claim.—A series of tubes or cylinders, T, attached to a cross-plate, J, which has coin-openings in the upper face and flanges across beneath to form guideways, the valves or drop-plates I, sliding between said guides, and also provided at one end with openings to receive the coin, sheet K, springs *a*, rods or elbowed levers E, hopper H, discharge-opening *b*, and spring-trap or sliding door M, the whole arranged and operated substantially as and for the purpose specified.

202,509. GATES. Eugene W. Beebe, Evansville, Wis. Filed Oct. 26, 1877.

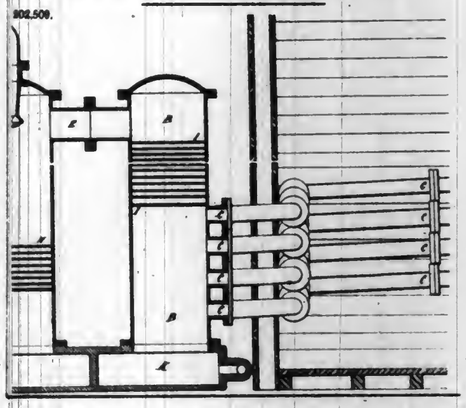


Claim.—1. The external position of the joint of the lifting-rods with the hand-levers, in relation to a transverse vertical plane passing through the lower hinge of the rear parallel bars, in virtue of which the force communicated through the hand-levers to elevate and retract the gate may, after the parallel bars have attained to a vertical altitude, be continued so as to carry the gate beyond the dead-center.

2. In a gate supported upon parallel bars and operated by hand-levers connected to the parallel bars by rods, the connecting of the rods to the parallel bars by means of oblique slots in such bars, in which the ends of the rods work, substantially as described.

3. In a gate supported upon parallel bars, the combination of the operating-levers extended to the rear of the gate, the connecting-rods, and the oblique slots in the rear set of parallel bars, substantially as described and shown.

202,509.



202,509. REFRIGERATING APPARATUS. Henry Bell, James Bell, and Joseph James Coleman, Glasgow, Scotland. Filed Oct. 1, 1877.

Claim.—1. In a refrigerating structure cooled by the expansion of compressed air, a series of pipes conveying the compressed air and passing through the refrigerating-chamber, substantially as and for the purpose set forth.

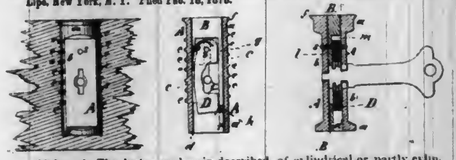
2. In a refrigerating apparatus, the combination of a vessel in which the compressed air is saturated with water with a drying-chamber and pipes C, inclined upward from said drying-chamber and passing through the refrigerating-chamber, all substantially as described.

202,510. HARVESTER CUTTER-BARS. Miller O. Bell, Glen Gardner, N. J. Filed Mar. 2, 1878.



Claim.—In a cutter-bar for reapers and mowers, the bar-section A, having the front rise or rest-flange B and the cap-section C, combined with the knife-sections C, having the rear flange E, the rounded upward bend F, and the blade D, said bend and blade being supported, respectively, in front and underneath by said rest-flange, substantially as specified.

202,511. LOCKS. George E. Bendix, Brooklyn, assignor to Solomon P. Stoddard and Walter Lips, New York, N. Y. Filed Feb. 19, 1878.



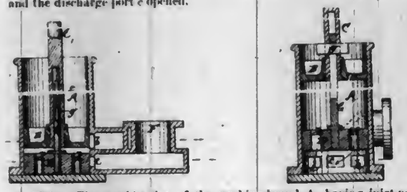
Claim.—1. The lock-case herein described, of cylindrical or partly cylindrical form, and having upon its exterior surface two opposite segments of a screw-thread, to permit the said lock-case to be driven into the wood for inserting the same, and to be screwed out for removing the same, substantially as and for the purpose specified.

2. The lock-case cast in a single piece, having the cylindrical parts *a a* and the intervening part *b b c c*, connecting said cylindrical parts, the sides *b b* of said intervening part being nearer the center than the sides *c c*, and the sides *c c* having thereon opposite segments of a screw-thread, substantially as and for the purpose specified.

3. The combination, with the lock-case A, of the bolt B, having therein a slot, *l*, the tumblers D, and the pivot *s*, common to said tumblers, and passing through the slot *l* in said bolt, to form a stop for said bolt, substantially as described.

202,512. PUMPS. Heinrich Berg, Meinhardt, near Hard-on-the-Seig, Germany. Filed Feb. 20, 1878.

Brief.—The supply-port *b* is closed at the end of the piston-stroke upward, and the discharge-port *c* opened.



Claim.—The combination of the working-barrel A, having inlet-ports *b* and outlet-ports *c*, arranged one in advance of the other, the main working-piston B, having a hollow rod, C, and provided with a cross-piece or key, *g*, and the supplementary perforated piston D, having a slotted rod, G, arranged to enter the hollow piston-rod C, and receiving the key *g* through it, essentially as and for the purposes herein described.

202,513. PIER-GUARDS FOR WATER-PIPES. John G. L. Boettcher, Brooklyn, E. D., N. Y. Filed Apr. 3, 1878.



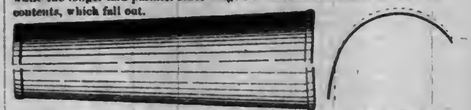
Claim.—1. The combination, with the mouth of a service-pipe connection, of a partition or partitions situated in the interior of said mouth, and apertures formed in the sides of the connection near its mouth, the edges of the partition or partitions being opposite to the centers of said apertures, substantially as and for the purpose shown and described.

2. The combination, with the mouth of a service-pipe connection, of a cross-shaped partition situated in the interior of said mouth, and apertures formed in the sides of the connection near its mouth, the edges of the partition being opposite to the centers of said apertures, substantially as and for the purpose shown and described.

3. The combination, with the mouth of a service-pipe connection, of a plug supporting a partition or partitions and fitting into said mouth, and apertures formed in the sides of the connection near its mouth, the edges of the partition or partitions being opposite the centers of said apertures, substantially as and for the purpose set forth.

202,514. SHEET-METAL CANS. Moses Bronner, Baltimore, Md. Filed Feb. 15, 1878.

Brief.—To empty the can of its compressed contents, cut off the larger head. Press the rounded ends toward each other. They keep their form, while the longer and parallel sides bulge outward and are detached from the contents, which fall out.



Claim.—A sheet-metal can for preserving meats, having a flat ranged bottom with parallel sides and rounded ends, a flat flanged top of similar shape, but reduced in length and width, and a body connecting said bottom and top, having straight surfaces longitudinally of the can, substantially as herein shown and described.

202,515. BLANKS FOR BANK-CHECKS. Franklin W. Brooks, New York, N. Y., assignor to Edward J. Brooks, same place. Filed Sept. 4, 1877.

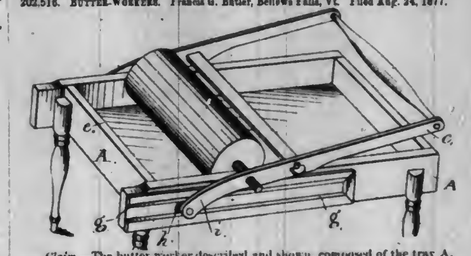


Claim.—1. As a new article of manufacture, a sheet of paper having one or more detective numbers or other distinguishing characters inclosed within the body thereof, and provided with corresponding identifying numbers or characters, said detective and identifying numbers or characters being so located as to occupy suitable positions, respectively, within the check or other instrument for which the paper may be used, and within or upon a coupon or coupons thereof, substantially as herein shown and described, for the purpose set forth.

2. A blank for a bank-check or other evidence of value, the paper of which is provided, in the course of its manufacture, with one or more detective numbers or other distinguishing characters incorporated within the body of the paper, and concealed from view by means of any design printed on the blank opposite the place where the distinguishing character is applied, substantially as herein before described, the same to be exposed by tearing open the paper when the occasion arrives.

3. A blank for checks or other evidences of value, containing one or more distinguishing numbers or other characters incorporated within its body in the process of manufacturing the paper, and concealed from view by a suitable design printed on the blank opposite the place where the distinguishing mark is applied, said paper being also coated or impregnated with chemical or coloring matter of such a character as to change on the application of chemicals or moisture.

202,516. BUTTER-WORKERS. Francis G. Butler, Bellows Falls, Vt. Filed Aug. 24, 1877.



Claim.—The butter-worker described and shown, composed of the tray A, having the open-ended guide-tracks *g* secured to the exterior surface of its solid undotted sides, and the levers or arms *e*, provided each with a grooved friction guide-roll, *h*, running severally upon such outside tracks, these arms also carrying a squeezing-roller, whose journals may rest or run upon the top edges of the tray, as set forth.

202,517. METHODS OF UTILIZING SCRAP-STEEL. Thomas M. Carnegie, Pittsburg, Pa. Filed Feb. 11, 1878.

Claim.—The method herein described for converting carburets of iron into homogeneous bar, the same consisting in inclosing the carburet of iron, together with an oxide of iron, in a practically tight wrought-iron case, heating the same to a welding heat or above, as with fagots, and rolling or hammering the mass, substantially as specified.

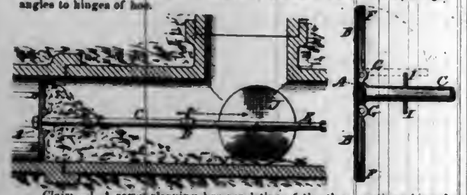
202,518. SMOKE AND CINDERS CONVEYERS FOR RAILROAD-TRAINS. John Casey, Jersey City, N. J. Filed Mar. 9, 1878.



Claim.—In a smoke and cinders conveyer for railroad trains, the combination of the sections of pipe A, rubber sleeves F F, pipe ends *a a*, and chained sleeve-couplings E E, provided with loose chains *c' c'* for securing them, all substantially as and for the purpose specified.

202,519. SEWER-CLEANING DEVICES. Erastus M. Chapin, Washington, D. C. Filed Feb. 25, 1878.

Brief.—A hoe in formed of two semicircular sections hinged to either side of a central rectangular section. The central section is permanently fastened at its center to the handle, and at right angles thereto. Stops are placed in the hinges, or in the handle near the hoe, to prevent the hinged sections from closing on the handle. The hinged sections have bearing-rims to prevent the hoe from catching in the joints of the sewer. The handle is formed in sections. In the second from the handle is a fulcrum-wheel or runner, at right angles to hinges of hoe.



Claim.—1. A sewer-cleaning hoe consisting of the three sections, hinged together, the middle section, A, carrying a stiff handle formed of coupled sections.

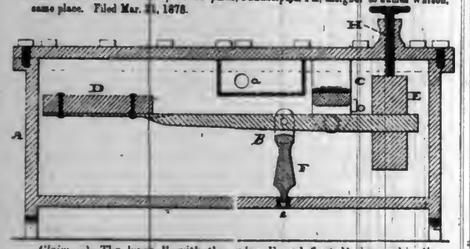
2. A sewer-cleaning hoe having hinged sections with bearing-rims, for the purpose stated.

3. In a sewer-cleaning hoe consisting of the hinged sections B B and a middle handle-section, A, the pin-stops I, arranged as described, and for the purpose stated.

4. The combination, with a sewer-cleaning hoe, constructed substantially as hereinbefore set forth, of a fulcrum-wheel or runner.

5. A sewer-cleaning hoe consisting of the hinged hoe-sections provided with bearing-rims, a stiff operating-handle of coupled sections, a fulcrum-wheel, and a spherical rearmost termination on said stiff handle, for operating within a sewer, as stated.

202,520. STEAM-TRAPS. Joseph L. Chapman, Philadelphia, Pa., assignor to James Watson, same place. Filed Mar. 21, 1878.



Claim.—1. The lever B, with the valve F and float D, in combination with the removably-suspended saddle C, substantially as and for the purpose set forth.

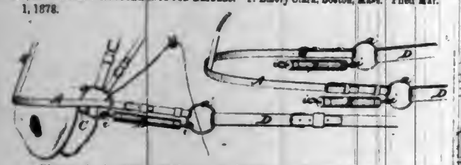
2. The valve-lever B, with float D and counterpoise E, in combination with the valve-operating screw H, passing through the top plate of the box A, and disconnected from the valve-lever, substantially as and for the purpose set forth.

3. The solid float D and counterpoise E, in combination with the lever B, carrying said float and counterpoise at opposite ends, and the valve F intermediate thereof, the lever being suspended from the saddle C by means of the screw-pivots *b*, substantially as and for the purpose set forth.

202,521. PROCESSES OF DESICCATING COCOA-NUT. Samuel T. Chase, Brooklyn, N. Y. Filed Jan. 23, 1878.

Claim.—The process of preparing cocoa-nut, which consists in incorporating a proportion of sugar with the grated meat, and subjecting it to a temperature of about 300° Fahrenheit in a vacuum, and finally drying the product, substantially as described.

202,522. SAFETY ATTACHMENTS FOR BRIDLES. T. Emory Clark, Boston, Mass. Filed Mar. 1, 1878.



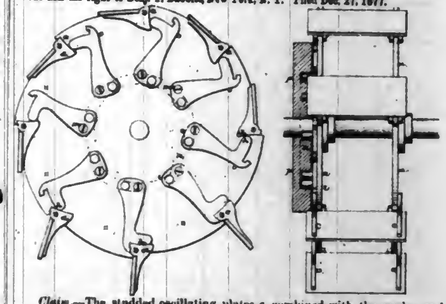
Claim.—1. A safety attachment for bridles, consisting of a nose-strap, A, adapted to be connected to the reins and form a continuation thereof over the nose of the animal, and the spring couplings B B, adapted to connect the reins to the ends of the bit, as set forth.

2. The safety attachment consisting of the nose-strap, A, the rings *a'*, attached to the ends of the said strap, and adapted to receive the ends of the reins, and the spring couplings B, each connected at one end to one of the rings *a'*, and provided at the other end with means for attachment to the bit, as set forth.

3. The combination of the reins D, connected, as described, to the bit, and the nose-strap A, connected to the reins, and forming a continuation thereof over the nose of the animal.

4. The combination of the reins D, the bit C, the spring couplings B, connecting the reins with the bit, and the nose-strap A, connected to the ends of the reins, and forming a continuation thereof over the nose of the animal, as set forth.

202,523. FEATHERING PADDLE-WHEELS. Thomas Cullen, San Francisco, Cal., assignor of one-half his right to Benj. T. Babbitt, New York, N. Y. Filed Dec. 27, 1877.



Claim.—The studded oscillating plates *g*, combined with the comb a and the paddle, carrying oscillating and locking lugs *c*, constructed and operated in the manner substantially as set forth.

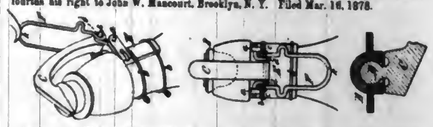
202,524. SHOVELS. Thomas B. De Forest, Birmingham, Conn. Filed Jan. 14, 1878.



Claim.—1. A shovel-blade made from a single piece of wood, bent both longitudinally and transversely into shape to form the blade complete, substantially as described.

2. A wooden shovel having the blade formed complete from a single piece of wood, bent both longitudinally and transversely into the required shape to form the blade complete, combined with one or more metallic stays, with a handle attached to the blade, substantially as described.

202,525. BOTTLE-STOPPERS. Willard D. Dorsman, Washington, D. C., assignor of three-fourths his right to John W. Mancourt, Brooklyn, N. Y. Filed Mar. 16, 1878.



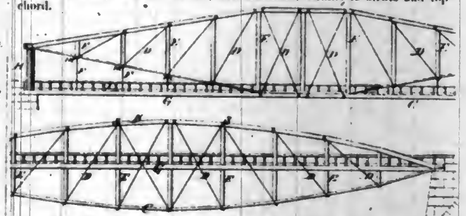
Claim.—1. The combination of the stopper, the operating-arm rigidly attached thereto, and the lever, the latter being pivoted to the neck-fastening and to the operating-arm, and being provided with a portion adapted to bear against the operating-arm, whereby, by vibrating the lever upon its connection with the bottle, it will (through the medium of the arm) automatically carry the stopper to its proper location over the mouth of the bottle, for the purposes set forth.

2. The combination of the stopper-disk rigidly connected to the operating-arm, the single operating arm provided with pivots at its lower end, the lever receiving said pivots, and being hinged to the collar which is attached to the bottle, substantially as shown and described.

3. The combination, with the stopper carrying the rigid arm C, having projections *c c*, with lever F, pivoted to arm C and to collar E, having hinge-arms *a a* and neck-wires *b b*, substantially as described.

202,526. TAUNS-BRIDGES. Wm. O. Douglas, Binghamton, N. Y. Filed Mar. 28, 1878.

Brief.—Parabolic chords are separated by vertical struts. A diagonal tie extends from the lower chord, at the foot of each strut, to the top chord at the top of strut next toward the center. Top chord is compressive. Lower chord is tensile. Diagonals are tensile, and distribute strains to struts and top chord.



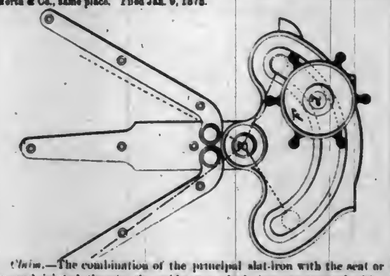
Claim.—1. An elliptical bridge-truss consisting of the chords B C, united at their ends, with the struts E and diagonals D between them, substantially as described, for the purpose specified.

2. In combination with the elliptical truss, constructed as described, the suspension or tension rods F and floor-girders G, substantially as described, for the purpose specified.

3. In combination with the elliptical truss, constructed as described, the suspension or tension rods F, floor-girders G, and end posts H, substantially as described, for the purpose specified.

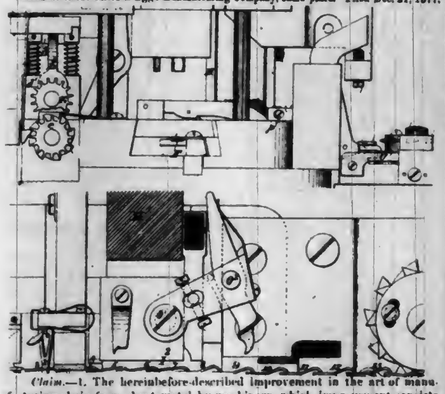
4. The combination of two or more elliptical trusses, constructed as herein described, with the floor girders and joists, and the necessary flooring to form a through, deck, or sway bridge, substantially as described.

202,527. CARRIAGE-TOP ADJUSTERS. Charles Dudley, New Haven, Conn., assignor to D. B. Heath & Co., same place. Filed Jan. 9, 1878.



Claim.—The combination of the principal slat-iron with the seat or body iron, and jointed thereto, the said seat or body iron constructed with a segmental slot below the joint, and concentric thereto, and the said slat-iron provided with an arm extending below the joint, and over said slot on one side, and with a set screw or nut on the opposite side, to clamp the said slat-iron to and permit its adjustment on the said body or seat iron, substantially as described.

202,528. MANUFACTURE OF SHEET-METAL CHAINS. Fredrick Eggs, Bridgeport, Conn., assignor to the Smith & Eggs Manufacturing Company, same place. Filed Dec. 21, 1877.



Claim.—1. The hereinbefore-described improvement in the art of manufacturing chain from sheet metal by machinery, which improvement consists in forming the partially-shaped flat links from a plate, bringing these links (flatwise or with their broad surfaces horizontal) to the point at which they are to be connected with each other, successively threading the separate flat links through the eyes of previously-bent and partially-formed links, (the broad surfaces of which are vertical or at right angles to the sides of the flat links,) turning the flat links, bending them to interloop and unite them with the previously-bent links, and subsequently completely shaping the links and forming the finished chain, substantially as set forth.

2. As an improvement in the art of manufacturing chain from sheet metal by machinery, the hereinbefore-described method of automatically adjusting a flat link in a previously-bent link preparatory to bending, which consists in feeding forward the flat link endwise, threading it through the eyes of the bent link intersecting its line of travel at right angles, and turning it as it is fed along after its forward widened end has passed through said eyes, substantially as set forth.

3. As an improvement in the art of manufacturing chain from sheet metal by machinery, the hereinbefore-described method of connecting and uniting the links, which consists in feeding forward the flat and partially-shaped links flatwise or with their broad surfaces horizontal in a path intersected at right angles by that traversed by the previously-connected links, threading the flat links successively through the eyes of the previously bent and united links, the broad surfaces of which are vertical and at right angles to the sides of the flat links, giving a partial turn to the flat links, and then bending them at their middles to respectively unite them with the previously bent and united links, substantially as set forth.

4. As an improvement in the art of manufacturing chain from sheet metal by machinery, the hereinbefore-described method of completely forming and finishing the bent interlooped links, which consists in intermittingly feeding forward the links, compressing them sidewise, and then upsetting or compressing them endwise, substantially as set forth.

5. The combination, substantially as hereinbefore set forth, of the blank feeding rolls, the yoke connected with the adjustable bearings of the upper roll, and the cam-lever for actuating the yoke.

6. The combination of the flat-link-feeding mechanism, the chambered bending block, and link turning devices, substantially such as described.

7. The dies formed in sections and having a feed-channel for the flat links, recessed at the top and bottom of its inner end to facilitate the turning of the link, substantially as set forth.

8. The combination, substantially as hereinbefore set forth, of the punches, the dies, the flat-link-feeding mechanism, the chambered bending block, to which the links are delivered from the feedway or channel, which is recessed at its inner end, and the turning-springs, which operate upon the link and begin to turn it when its rear end reaches the recesses in the guideway, as specified.

9. The bending-block provided with the bending-cavity, having narrow top and bottom portions and a wide central portion, in combination with a bender, substantially as and for the purpose specified.

10. The combination of the reciprocating bender and the chambered bending-block, having a bending-cavity with a wide central part and contracted top and bottom portions in its wall, into which the bender-head is projected to bend the flat links and connect them with the previously-bent links, substantially as hereinbefore set forth.

11. The combination of a bending-cavity or die and the bending-head, provided with spring-dips, as described, whereby it is adapted to engage the ends of a previously-bent link on the advance stroke and withdraw the last-bent link on the retraction of the bender, substantially as set forth.

12. The combination of the reciprocating carrier-bar of the flat-link-feeding mechanism, the lever for reciprocating the bar, and the spring tripping-arm, pivoted to the bar and operated upon by the lever, substantially as and for the purpose set forth.

13. The combination, substantially as hereinbefore set forth, of the bending-block provided with a bending-cavity, the bender which forces a link into said cavity and then partially withdraws it, and a stop or pawl, K', for releasing the link from the bender-head to limit its retrograde movement and leave it in position to receive the next link through its eyes.

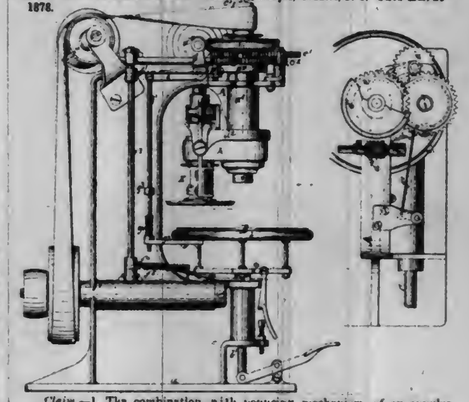
14. The combination, substantially as hereinbefore set forth, of a nose, N', the stationary anvil located on one side of the way traversed by the chain, and the compressor operating from the opposite side of said way, to compress the links sidewise at their flat ends and form the bows.

15. The combination, substantially as hereinbefore set forth, of the chain-feeding mechanism and a swinging arm or pawl, N, provided with a nose to engage the links and hold them in turn in proper position to be compressed after being fed forward.

16. The combination, substantially as hereinbefore set forth, of a self-adjusting arm or pawl, K, having a nose to engage the links as fed forward, the compressor acting against the sides of the links, and the compressor for upsetting or compressing the links endwise.

17. The combination, substantially as hereinbefore set forth, of mechanism for intermittingly feeding forward the chain and connected links, swinging arms or pawls K K', to limit retrograde movement of the links, the bending head, the sidewise compressor, and the endwise compressor.

202,529. HAT-POUNCING MACHINES. Rudolf Eickemeyer, Yonkers, N. Y. Filed Mar. 26 1878.



Claim.—1. The combination, with pouncing mechanism, of an annular bed, on which a hat is supported by its brim, and feeding mechanism, by which the entire surface of one side of a hat brim is progressively subjected to the pouncing mechanism, substantially as described.

2. The combination, in a hat-pouncing machine, of an annular brim supporting bed and pouncing mechanism, which, while in pouncing operation, is also moved in a circular path around the annular bed, substantially as described.

3. The combination, with the annular bed, of pouncing mechanism and means, substantially as described, for placing the bed and pouncing devices, with a hat interposed between them, into co-operative relation, for maintaining them in said relation, and separating them for the removal of the hat, as set forth.

4. The combination, with pouncing mechanism, of an annular bed for supporting a hat by its brim, of a treadle and a catch, substantially as described, whereby the bed, with a hat thereon, may be lifted to the pouncing devices for operating on the hat-brim, secured in its elevated position during the pouncing operation, and lowered for the removal of the hat, as set forth.

5. The combination, with pouncing mechanism, of an annular bed, a treadle for moving the bed toward the pouncing devices, and a stop-screw for limiting the movement of the bed, substantially as described.

6. The combination, in a hat-pouncing machine, of a supporting-bed for the hat, the pouncing mechanism, and feeding mechanism, with stopping mechanism, substantially as described, whereby, when a hat has been pounced to a certain predetermined degree, the pouncing operation will be automatically terminated, as set forth.

7. The combination, with pouncing mechanism and a hat-supporting bed, of automatic mechanism for separating the bed and pouncing devices, and thereby terminating the pouncing operation substantially as described.

8. The combination, with pouncing mechanism, feeding mechanism, and a bed for supporting a hat, of mechanism for placing the bed, with a hat thereon, into and out of working relation with the pouncing devices, and mechanism which controls the feeding operation, substantially as described, whereby the feed-motion will operate only while the pouncing devices are at work upon a hat, as set forth.

9. The combination, with pouncing mechanism and feeding mechanism, of an annular bed, a treadle for lifting the bed, and a catch for maintaining the bed when lifted, of a series of rods and levers controlled by the feeding mechanism for tripping the catch and dropping the bed, substantially as described.

10. The combination, with the pouncing mechanism and feeding mechanism, of a vertically moving annular bed provided with a treadle, and a series of rods and levers connecting the bed with the feeding mechanism, substantially as described, whereby the feeding mechanism will be operated or terminated as the bed is raised or lowered, as set forth.

11. The combination, in a hat-pouncing machine, of an annular hat-supporting bed, mounted in a frame provided with a bearing at right angles to the surface of the bed, a sleeve within said bearing, which supports the pouncing device, a spindle within said sleeve for driving the pouncing device, and gearing for driving said spindle and sleeve respectively at high and low speed, substantially as described.

12. A pouncing head or frame containing, in combination, a pair of rollers, frictionally mounted in said frame, and a back plate, substantially as described, whereby sheeted pouncing material may be coiled on said rollers, supported when in service by the back plate, and delivered from one roller to the other, as set forth.

13. The combination, in a pouncing head, of a roller for receiving a coil of sheeted pouncing material, and a clamping collar which prevents the backward rotation of the roller, substantially as described.

14. A pouncing roller divided centrally into two longitudinal sections, hinged axially, and provided with an expanding device, located between the sections on one side of the axis, substantially as described, whereby the roller may be readily clad with sheeted pouncing material, as set forth.

15. The combination, with a pouncing device, of a yielding presser foot or plate, substantially as described.

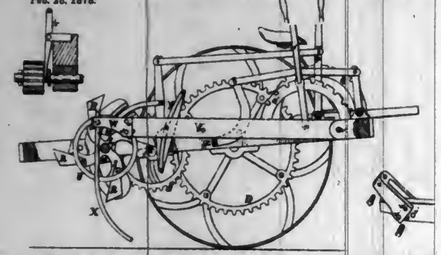
16. The combination, with a pivoted frame containing a rotating pouncing device, of a yielding abutment and set-screws, which permit the pouncing surface to be adjusted to the surface of hat brims of uneven thickness, substantially as described.

17. The annular bed consisting of the recessed annular plate, in combination with the annular disk, substantially as described.

202,530. CONVERTING NON-CHILLING IRON INTO CHILLING IRON. Samuel A. Ford, Allegheny, Pa. Filed Dec. 20, 1877.

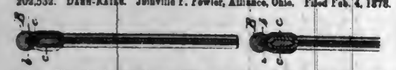
Claim.—The method herein described for converting non-chilling irons into chilling irons, and for increasing the chilling capacity in light chilling iron, which consists in subjecting a charge of the melted metal to the action of an air-blast for a limited time only, the blow being cut off either immediately before or immediately after the appearance of the carbon flame, and before the disappearance of the silicon flame, substantially as specified.

202,531. MACHINES FOR CUTTING UP CORN-STALKS. Jacob Forlow, Eaton, assignor of two-thirds his right to Levi Bernhart, same place, and William Lantis, Winchester, Ohio. Filed Feb. 26, 1878.



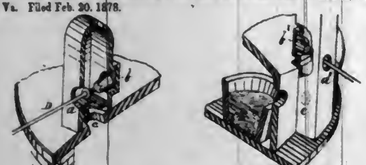
Claim.—In the described combination with the series of knife-whirls R, the vertically-adjustable fingers X on the ends of arms V, hinged to the bed-front, in the manner set forth.

202,532. DASH-RAILS. Joinville F. Fowler, Alliance, Ohio. Filed Feb. 4, 1878.



Claim.—The rigid metallic molding or dash-rail B, having longitudinal groove *b*, rectangular in its cross-section, and clips *c c*, made in one piece with the rail, substantially as and for the purpose herein shown and described.

202,533. GLORY-HOLES OR REHEATING-FURNACES FOR GLASSWARE. Wm. Fox, Wheeling, W. Va. Filed Feb. 20, 1878.



Claim.—1. In a glory hole for fire-polishing glassware, the ware hole constructed with a recess or shield, substantially as described, so that the thicker portions of the ware receive the greater degree of heat, as set forth.

2. A ware hole flue, B, having an opening, *a*, in one side, and a recess, *b*, in the opposite side, substantially as herein shown, and for the purpose set forth.

3. The combination of a ware hole flue, B, having a ware hole, *a*, in one side, and a recess, *b*, in the opposite side, and the furnace A, substantially as herein shown, and for the purpose set forth.

202,534. MANUFACTURE OF HORSESHOE-NAILS. Carlos French, Seymour, Conn. Filed July 21, 1877.

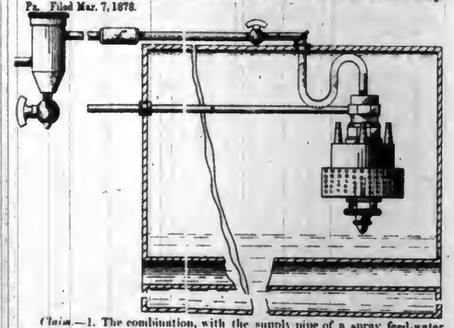
Brief.—Improvement on patent to A. Holcomb, July 14, 1846, No. 4,674, in making the blank a little wider at the head, and severing it from the plate at two instead of a single cut.



Claim.—1. The described improvement in the art of making horseshoe-nails, consisting in forming a plate or bar with projections for the heads of the nails, but thinner than the finished nail at the shank and neck, cutting said plate into blanks by a single straight diagonal cut, each blank being wider at the shank and neck than the nail, and subsequently, by lateral compression, upsetting, bending, and finishing the nail, as and for the purpose set forth.

2. The blanks of horseshoe-nails cut from plates into bars, or from bars of alternate uniform or nearly uniform thickness for the body, and with projections for the head, said blanks being thinner and wider at the shank, but of a length equal to a finished nail, and formed by dividing the bars by a single straight diagonal cut, substantially as shown and described.

202,535. DEVICES FOR SUPPLYING FEED-WATER TO BOILERS. Saml. M. Fulton, Pittsburg, Pa. Filed Mar. 7, 1878.

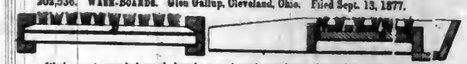


Claim.—1. The combination, with the supply pipe of a spray feed-water device arranged within the boiler, of a trap arranged thereon exterior to the boiler, substantially as specified.

2. The combination, with a spray feed-water device, of a trap arranged within the boiler, and formed by the end of the delivery tube *a*, and inclosing chamber *b*, the whole constructed substantially as and for the purpose specified.

3. In a feed-water heater, the combination of the supply tube, adapted to deliver the water in fine spray or jets, an inclosing hood provided with steam-jets, and a perforated box or plate, with perforated flange inclosing the free edges of the hood, substantially as and for the purpose specified.

202,536. WASH-BOARDS. Glen Gallup, Cleveland, Ohio. Filed Sept. 13, 1877.



Claim.—A wash-board having a brush surface, the bristles of which are arranged in rows, and, in combination therewith, slats or partitions located between the rows, and disconnected from the base that supports the bristles, and adapted to yield bodily as the clothes are rubbed over the board, and thereby limit the free back spring of the bristles and prevent the spattering of water, substantially as and for the purposes described.

202,537. BRICK-MACHINES. Emery R. Gard and Walter E. Gard, Croton Landing, N. Y. Filed July 11, 1877.

Claim.—1. A brick-machine provided with a tempering shaft, having two sets of tempering-arms and two clay-forcing screws respectively at its two ends, in combination with two clay-tempering receptacles and two mold-wheels, substantially as and for the purpose herein specified.

2. In a double brick-machine, as herein described, a single tempering-shaft, C, mounted solely in two bearings, *a a*, at its middle part, and provided with a cog-wheel, *b*, between the said bearings, substantially as and for the purpose herein specified.

3. A divided driving-shaft, H, having driving cog-wheels *c d d* thereon, for driving the tempering apparatus and the two mold-wheels, its parts being coupled together so as to be readily separated, arranged in combination with the tempering shaft and two mold-wheels, substantially as and for the purpose herein specified.

4. Rods *i i*, connecting the supporting-heads I J of each pug-mill, in combination with bars or rods connecting the adjacent heads of the two pug-mills, substantially as and for the purpose herein specified.

5. Two sets of crushing-rollers, M M, situated respectively in the two hoppers of the pug-mills, and mounted on the same shafts, driven by the same pinion gearing into the cog-wheel on the tempering shaft, substantially as and for the purpose herein specified.

6. The device composed of the conical opening *p* in the countersunk hub of each clay-forcing screw, the conical washer-head *q*, and its screw, screwing into the end of the tempering shaft C, substantially as and for the purpose herein specified.

7. Solid mold-followers W W, provided with curved cam backs *y y*, in combination with stationary cam-rollers N O Q S, substantially as and for the purpose herein specified.

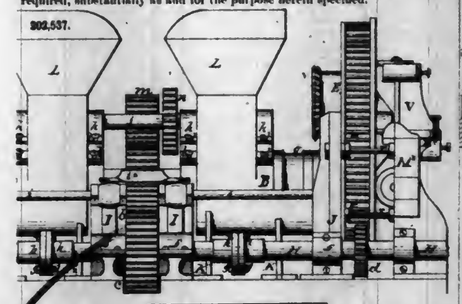
8. A follower-receding roller, N, operating as described, in combination with the followers W W, substantially as and for the purpose herein specified.

9. Adjusting-pins *z z z z*, mounted in lugs of the mold-wheel, and provided with removable washer-plates *a' a'*, in combination with the followers W W, substantially as and for the purpose herein specified.

10. The separate removable plates W' W', forming part of the outer heads of the pug-mill, substantially as and for the purpose herein specified.

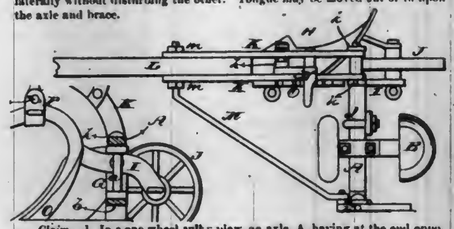
11. The follower-oiling roller Y, covered with lamb-skin or its equivalent, and arranged to be driven by a mandrel, so as to be reversed in position, as required, substantially as and for the purpose herein specified.

202,537.



202,538. SULKY-PLOWS. Joseph F. Glidden and Phineas W. Vaughan, De Kalb, Ill. Filed Jan. 10, 1878.

Brief.—The plow-beam, carrying a small furrow-wheel, is vertically swiveled to the furrow end of the axle, allowing either plow or sulky to vibrate laterally without disturbing the other. Tongue may be moved out or in upon the axle and brace.



Claim.—1. In a one-wheel sulky-plow, an axle, A, having at the end opposite the wheel a pin or rod, *s*, extending downward at right angles with the axle, and at its lower end supported in an angular bracket, *b*, in combination with a swiveled frame, G, and a plow, substantially as and for the purposes set forth.

2. The swiveled frame G, the lower end of which is attached to the land-side of a plow, and having the brace I secured to the plow-beam, and extending rearward to form one of the bearings for the wheel J of the plow, substantially as described, and for the purposes set forth.

3. The combination of the axle A, with elongated screw-rod at the end, the arms K K, nuts *k k*, tongue L, and brace M, with screw-rod and nuts *m m*, whereby the tongue can be adjusted on or off the land, for the purposes set forth.

202,539. ELECTRO-HARMONIC TELEGRAPHS. Frederic A. Gower, Providence, R. I., and M. J. Matthews, Boston, Mass. Filed Jan. 23, 1878.

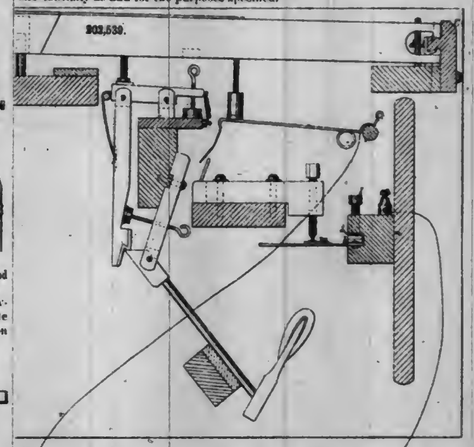
Claim.—1. In combination with a musical instrument provided with a series of metallic reeds or tongues, each tuned to a different pitch, a series of keys, and a piano, organ, or other mechanical action, adapted to be operated by said keys, and to mechanically impart a vibratory motion to said reeds or tongues, a series of adjustable contact-points, each in electric connection with the main circuit of wire, through which the musical tones are to be transmitted, and a series of secondary or supplementary metallic tongues, secured one upon each of said primary reeds or tongues in close proximity to one of said adjustable contact-points, but not touching it until it is thrown in contact therewith by the vibration of the primary reed or tongue, substantially as and for the purposes described.

2. In combination with a musical instrument provided with one or more metallic reeds or tongues, one or more keys, and one or more sets of piano, organ, or other mechanical action, adapted to be operated by said keys, and to impart a vibratory motion to said reeds or tongues, one or more adjustable contact-points, so arranged relative to said reeds or tongues that contact will be made between one of said points and a reed or tongue at each vibration of said reed or tongue, and one or more circuit-closers, each connected with and operated by one of the keys of the instrument, and adapted to connect one of said adjustable contact-points electrically with the main circuit of wire through which the musical tones are to be transmitted, substantially as described.

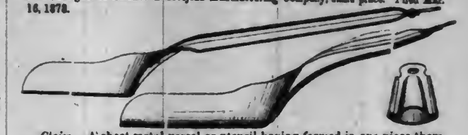
3. In combination with a musical instrument provided with one or more metallic reeds or tongues, one or more keys, and one or more sets of piano, organ, or other mechanical action, adapted to be operated by said keys and to impart a vibratory motion to said reeds or tongues, one or more secondary or supplementary metallic tongues, secured one upon each of said primary reeds or tongues, one or more adjustable contact-points, so arranged relative to said supplementary tongues that contact will be made between one of said points, and a supplementary tongue at each vibration of its primary reed or tongue, and one or more circuit-closers, each connected with and operated by one of the keys of the instrument, and adapted to connect one of said adjustable contact-points electrically with the main circuit of wire through which the musical tones are to be transmitted, substantially as and for the purposes described.

4. The combination of a line of wire, a galvanic battery connected therewith, a transmitting instrument provided with a series of primary metallic reeds or tongues, each having secured thereon a secondary metallic tongue, a series of keys, a piano, organ, or other mechanical action, connected with and operated by said keys and adapted to impart motion to said reeds or tongues, a series of adjustable contact-points, so arranged relative to said supplementary tongues that contact will be made between one of said points and a supplementary tongue at each vibration of a primary reed or tongue, and a series of circuit-closers, each connected with and operated by one of said keys, and adapted to close and break the circuit between one of said points and the main line of wire and a telephone receiving-instrument located at and connected with the opposite end of said line of wire, all arranged and adapted to operate substantially as and for the purposes specified.

202,539.

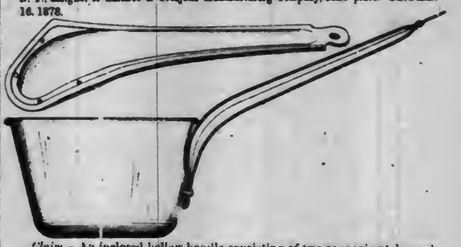


202,540. HANDLES FOR SHEET-METAL VESSELS OR UTENSILS. Florian Grosjean, New York, N. Y., assignor to Lalance & Grosjean Manufacturing Company, same place. Filed Mar. 16, 1878.



Claim.—A sheet-metal vessel or utensil having formed in one piece therewith a handle having attached to its under side a concavo-convex sheet-metal brace or shell, the longitudinal edges of which are folded over the adjacent edges and closely upon the opposite margins of the upper side of said handle, while the inner end of said shell rests against and is riveted to the outer surface of the vessel or utensil, substantially as and for the purpose set forth.

202,541. HANDLES FOR SHEET-METAL VESSELS OR UTENSILS. Florian Grosjean, New York, N. Y., assignor to Lalance & Grosjean Manufacturing Company, same place. Filed Mar. 16, 1878.



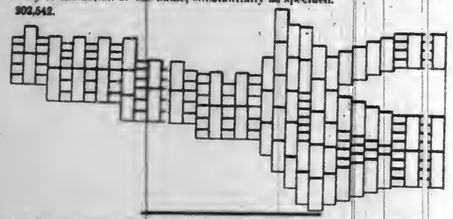
Claim.—An inclosed hollow handle consisting of two approximately semi-cylindrical shells with facing concave surfaces, one of which shells has lips or flanges bent over from opposite longitudinal edges and end edge, and embracing the edges of the other, both of said edges flaring and bent to form an elbow at the wider portion of the handle, which is adapted for attachment to the wall of a sheet-metal vessel or utensil by riveting, substantially as described.

202,542. BRICK-KILNS. Joseph Haas, Delaware, Ohio. Filed Mar. 3, 1877.

Claim.—The method herein described of building the arches of a brick-kiln, by arranging the bricks composing the walls of each arch alternately in

a longitudinal and a transverse direction, the longitudinally-laid bricks forming a row four deep, whereby a series of three bricks in each row is interposed between the arches in a position out of contact with the fire, and the bricks in the transverse courses and those above the ninth course present their ends only to the action of the flame, substantially as specified.

202,542.



202,543. APPARATUS FOR DISPENSING EFFERVESCENT LIQUIDS. August Habernicht, New York, N. Y. Filed Mar. 18, 1878.

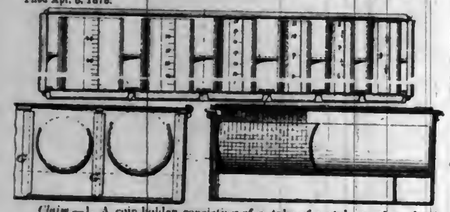


Claim.—The combination, with the glass vessel A, valve-rod *f*, extending up through said vessel, glass valve *e*, and valve-depressing spring *h*, of a glass jacket, *l*, and shield *k*, all combined and adapted to operate substantially as and for the purpose shown and described.

202,544. TEMPERING GLASS. George E. Hatch, West Meriden, Conn., assignor to Meriden Flint Glass Company, same place. Filed Mar. 20, 1878.

Claim.—The herein-described method of tempering glass, consisting in arranging the glass free in a closed box and subjecting it to the heat directly upon the box, but so as to exclude the smoke or gas from the box, substantially as described.

202,545. DEVICES FOR HOLDING AND COUNTING COIN. Frederick H. Holmes, Detroit, Mich. Filed Apr. 8, 1878.



Claim.—1. A coin-holder consisting of a tube of metal or other elastic material, elliptical in cross-section, open at one end, and provided with a longitudinal opening at one side, whereby the coins may be readily inserted and removed from the same, substantially as specified.

2. The combination, with a tube of elastic material, elliptical in cross-section, and provided with openings at the top and sides, of the graduated indicator for determining the number of coins in the tube.

3. In combination with the tubes for holding the coins and the box or case for holding said tubes, the flanges at the ends of said tubes, adapted to fit in ways in one edge of the box or case, and the longitudinal strip, provided with seats for the tubes, whereby the tubes are detachably held in the case, substantially as herein specified.

202,546. BAND-CUTTING FEEDERS FOR THRASHERS. M. M. Hooton, Brookside, assignor of one-half his right to Mark M. Pomeroy, Chicago, Ill. Filed Feb. 23, 1878.

Claim.—1. In a band-cutter for thrashing-machines, the combination of one set of intermittingly-rotating toothed belts for carrying the sheaves in succession to the cutting mechanism, and one set of continuously-rotating toothed belts for carrying the loosened grain to the thrasher, substantially as herein set forth.

2. In a band-cutter for thrashing-machines, a slotted table carrying two systems or sets of toothed belts, a cutting mechanism, and an adjustable feed-board, over which the sheaves are fed to the machine, as herein set forth.

3. The combination of the system or set of belts *b'*, provided with teeth *a'*, arranged to have an intermittent rotary motion, and the rotating cutter L, having an up-and-down motion, substantially as and for the purposes herein set forth.

4. The combination of the frame K, pitmen *p p*, shaft D', with cranks *d d*, cutter L, pulleys *e*, *t t*, and *t'*, and belt *a*, all constructed and arranged substantially as and for the purposes herein set forth.

5. The horizontal toothed arms I I, having a vertically-reciprocating motion, in combination with the continuously-rotating endless toothed belts *b*, for the purposes herein set forth.

6. The combination of the rotating shaft D', with cranks *d d*, cross-bar J, posts *a a*, pitmen *a a*, and toothed arms I I, substantially as and for the purposes herein set forth.

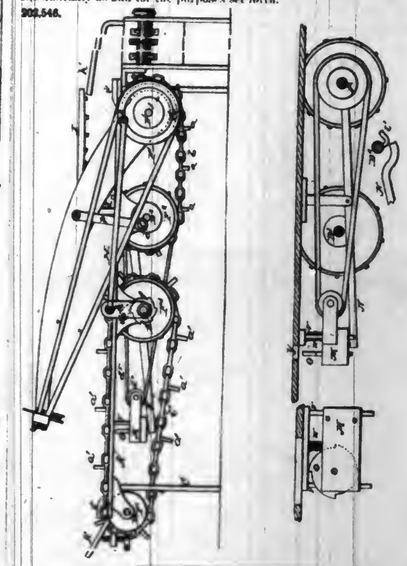
7. The guides *i'*, arranged upon the receiving end of the table A in the relation described to the feed-board A', and toothed chains *b' b'*, for the purposes specified.

8. The rods *h'*, arranged over the throat of the thrasher, in combination with the reciprocating arms I and belts *b*, for the purposes herein set forth.

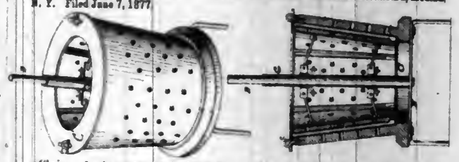
9. The combination, with the band-cutting knife L, of the rotating hooked disk O, arranged under the table, and having an up-and-down movement, for the purposes herein set forth.

10. The combination of the sash M, guide-pins *e e*, hooked disk O, with devices for rotating the same, spring *n*, lever N, and tooth *c'* on the shaft D', substantially as and for the purposes set forth.

202,546.



202,547. MACHINES FOR MAKING PAILS FROM PAPER-PULP. Marshall E. Hubbard, Medina, N. Y. Filed June 7, 1877.



Claim.—1. An outer conical perforated form in a single piece, having the inner walls covered with suitable perforated material to form a strainer, substantially as and for the purpose specified.

2. The combination of the outer perforated form, having the removable ring C' and central vertical rod D, and the sectional inner conical form, constructed substantially as described, and having the jointed arms and central tube or sleeve, substantially as and for the purpose specified.

202,548. BIT-STOCKS. William A. Ives, New Haven, Conn. Filed Oct. 26, 1877.



Claim.—1. In a bit-brace, the combination of an outwardly-threaded socket having a central rectangular-shaped cavity formed therein, the bottom of said cavity in a plane at right angles to the axis of the socket, a pair of loose jaws resting on the bottom of said cavity, their outer ends inclined and recessed upon the faces, with an internally-threaded sleeve, contracted at its mouth, substantially as described.

2. In a bit-brace, the combination of an outwardly threaded socket having a cavity formed therein, and a central rib upon opposite sides, a pair of loose jaws in said cavity, one each side of said rib, their outer ends inclined and recessed upon the faces, with an internally-threaded sleeve, contracted at its mouth, substantially as described.

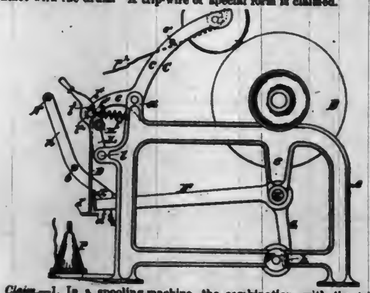
3. In a bit-brace, the combination of an outwardly-threaded socket having a central rectangular-shaped cavity formed therein, the bottom of said cavity in a plane at right angles to the axis of the socket, a pair of loose jaws in said cavity, their outer ends inclined and recessed upon their faces, with a spring or springs applied at their backs, and an internally-threaded sleeve, contracted at its mouth, all substantially as described.

4. In a bit-brace, the combination of an outwardly threaded socket having a cavity formed therein, and with a central rib upon opposite sides, a pair of loose jaws in said cavity, their outer ends inclined, recessed upon their faces, and inclined outwardly at the lower end of their faces, with springs in rear of said lower inclines, and an internally-threaded sleeve, contracted at its mouth, substantially as described.

5. In a bit-brace having a pair of jaws arranged to gripe the tang of the bit, operated by a sleeve passing over said jaws, a head, *c*, arranged in said sleeve around the shank of the brace, above the socket, substantially as described.

202,549. BROOMING-MACHINES. Thomas Kershaw, Philadelphia, Pa. Filed June 3, 1877.

Brief.—When the yarn breaks, the spooling is stopped by the guide-wire falling into vertical positions, so as to be struck by the vertically-reciprocating bar and depressed, whereby the forward end of the spool-frame is drawn down and the rear end elevated, thus lifting the spool off the driving-drum. When the spool becomes filled the forward end of the frame is depressed and falls into a notch in the spring-actuated lever, thus holding the spool out of contact with the drum. A trip-wire of special form is claimed.



Claim.—1. In a spooling-machine, the combination, with the trip-wires and spooling-frame, of rock-shaft E, having arms F and G, with the crank-pulley H, said arms F F sustaining the bar K, and the arm G being slotted at *g* for the reception of the crank-pin *h*, substantially as shown and described.

2. The spring-actuated lever L, having its upper and inner side curved for the purpose of pressing the spool against the driving-cylinder, as set forth.

3. In combination with the lever L, the bar or rod M, for moving the trip-wires out of a vertical line and out of contact with the reciprocating bar K, substantially as shown and set forth.

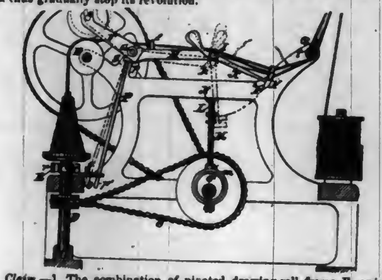
4. The combination of pivoted spool-frame C with the trip wire or wires D, hung upon said frame, and a bar, K, that engages with and depresses said wires when one of the latter is swung to a vertical line, as set forth.

5. The combination of spool-frame C, trip wire or wires D, notched lever L, and bar K, substantially as shown and described.

6. The trip-wire D, adapted for suspension in a spooling or equivalent machine, and formed with an eye, *d'*, for the passage of the bobbin-thread and lip *d''*, substantially as and for the purposes set forth.

202,550. STOP-MOTIONS FOR DOUBLING AND TWISTING MACHINES. Thomas Kershaw, Philadelphia, Pa. Filed Oct. 12, 1877.

Brief.—When a strand breaks, the latch through which it passes falls into vertical position and is struck by the reciprocating bar, which has the effect to draw downward the end of the frame, to which said latch is attached, and elevate the opposite or forward end, supporting the drawing-roll. The elevation of the forward end of the frame causes the lower end of an arm pendent therefrom to press the pawl against the cam or ratchet on the spindle, and thus gradually stop its revolution.



Claim.—1. The combination of pivoted drawing-roll frame F, swinging latches K, bar L, pawl O, arm P, and ratchet or cam R with the twisting spindle D, substantially as shown and described.

2. In combination with the locking frame F, twisting-spindle D, cam or ratchet R, held thereon by friction or clamping, and pivoted lever or pawl O, the arm P, secured to said frame and engaging with said lever, substantially as shown and described.

3. The combination of pivoted drawing-roll frame F and twisting-spindle D, having a ratchet or shoulder, with intermediate mechanism attached to said frame, and operating to stop the spindle by being brought into contact with said ratchet or shoulder when the frame is rocked and the drawing-roll raised, substantially as described.

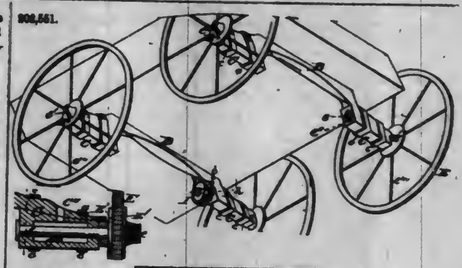
202,551. CARRIAGE WHEELS AND AXLES. William H. Kister and Benj. F. Williams, Coolport, Pa. Filed Jan. 3, 1878.

Claim.—1. The axle-box C, having lubricating-aperture *c'* and chamber *c''* and combined with axle B, substantially as and for the purposes set forth.

2. The combination, with the shaft *e* and axle-box C and wheel E, constructed as described, the drum H and brake I, substantially as and for the purposes set forth.

3. The thimble *h*, combined with shaft *e*, and wheel E, substantially as and for the purposes set forth.

202,552.



202,552. BALE-TIES. John Knipschoer, Weimar, Tex. Filed Dec. 12, 1877.



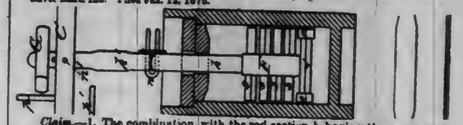
Claim.—In wire bale-ties, the combination of a link, A, and the peculiar double loop, constructed as described, substantially as specified.

202,553. FODDER-CUTTERS. Gleason Knoth, Reading, N. Y. Filed Feb. 2, 1878.



Claim.—The combination, in a fodder-cutter, of a series of circular knives secured to a suitable shaft, and having recesses in their peripheries, with oblique knives, which are inserted in said recesses and fastened at their opposite ends, substantially as shown and described.

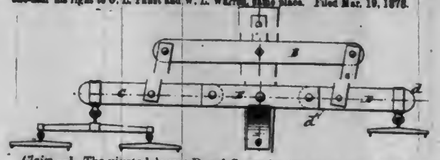
202,554. CHURNS WITH SWINGING BODIES AND RECIPROCATING DASHERS. Saml. Kreiter, Silver Lake, Ind. Filed Jan. 12, 1878.



Claim.—1. The combination, with the rod-section A, having the eye *m*, and the rod-section A', having the eye *m'*, of the U-coupling *n*, substantially as specified.

2. In a churning apparatus composed of a swinging churn-vessel and its supporting-standard, a rock-shaft, and flexible dash-rod, the dash-rod A A', adjustable with reference to said rock-shaft, substantially as specified.

202,555. THREE-HORSE DRAFT-EQUALIZERS. William A. Laird, Ossian, Iowa, assignor of one-half his right to G. L. Faust and W. L. Warren, same place. Filed Mar. 19, 1878.



Claim.—1. The pivoted levers D and C, one having equal and the other unequal arms, and connected directly to a cross-bar, B, which is attached to the wagon-tongue by the pivoted link F, substantially as described, and for the purpose set forth.

2. In a three-horse equalizer, the combination of the lever D, having unequal arms, the shorter of which is pivoted to a projection from the wagon-tongue, and the outer end of its outer arm provided with a single-tree, the links *a'*, connecting said lever with the cross-bar B, the lever C, having equal arms, the inner of which is pivoted to a projection from the wagon-tongue, and the outer provided with a double-tree, the links *a*, connecting said lever with the cross-bar B, and the bar F, pivoted to the center of said cross-bar and to the wagon-tongue, substantially as and for the purpose set forth.

202,556. COUPLINGS FOR TELEGRAPH-WIRES. Augustus R. Lane, New York, N. Y. Filed Aug. 24, 1877.

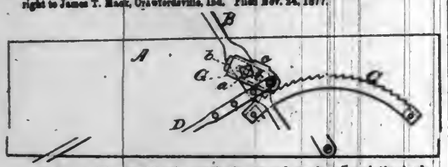


Claim.—1. A coupling for telegraph-wires, consisting of a main section, A, open at one side, and having end holes and interior recess, and of a locking-section sliding in guides of the main section, substantially as and for the purpose set forth.

2. The combination of the bent wire ends C with the main portion of the coupling, having end holes and interior recess for the wire ends, and with the binding or closing section, sliding in guides of the main portion, substantially as specified.

3. The combination of the bent wire ends with the connecting-coupling, having side holes for the projecting ends of the wires, substantially as described.

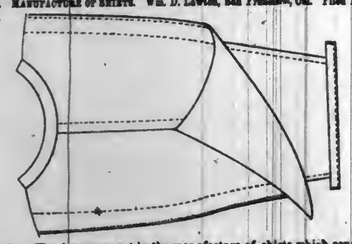
202,557. WAGON-BRAKE LEVERS. Theodore C. Lawrence, Ludegs, assignee of one-half his right to James T. Mack, Crawfordsville, Ind. Filed Nov. 24, 1877.



Claim.—1. The combination, with the curved ratchet C and the brake-lever B, of the pawl-box G, having reciprocating gravitating-pawl b, and connecting-rod D, substantially as specified.

2. The combination, with the curved ratchet C and the brake-lever B, of the swinging pawl-box G, having stop c and gravitating reciprocating pawl b, and a connecting-rod adjustably pivoted to said box, substantially as specified.

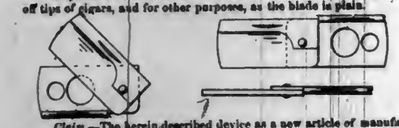
202,558. MANUFACTURE OF SHIRTS. Wm. D. Lawton, San Francisco, Cal. Filed Feb. 19, 1878.



Claim.—The improvement in the manufacture of shirts which consists in cutting the lining of the bosom shorter than the outside linen, and in carrying the linen over the edge of the lining and stitching it to the shirt, substantially as and for the purpose described.

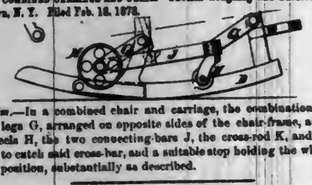
202,559. POCKET CIGAR-CUTTERS. Lewis E. Lipman, Philadelphia, Pa. Filed Jan. 25, 1878.

Brief.—The knife is made flat for the pocket, and can be used for cutting off tips of cigars, and for other purposes, as the blade is plain.



Claim.—The herein-described device as a new article of manufacture.

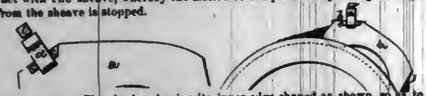
202,560. COMBINED CARRIAGE AND CHAIR. Thomas Longting and Thomas P. Longting, Brooklyn, N. Y. Filed Feb. 18, 1878.



Claim.—In a combined chair and carriage, the combination of the two pairs of legs G, arranged on opposite sides of the chair-frame, and provided with wheels H, the two connecting-bars J, the cross-rod K, and the hook i, adapted to catch said cross-bar, and a suitable stop holding the wheels in their lowered position, substantially as described.

202,561. SAFETY-CHECKS FOR ELEVATORS. John Marshall, Pittsburg, Pa. Filed Nov. 26, 1877.

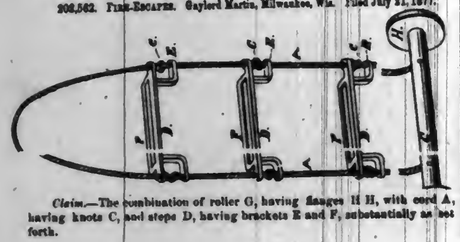
Brief.—The check attached to the ascending elevator-rope comes in contact with the sheave, whereby the motion of the platform by lifting the rope from the sheave is stopped.



Claim.—1. The check a, having its inner edge shaped as shown, so as to impinge upon the sheave only at two points, substantially as described.

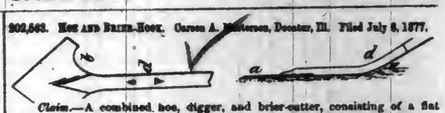
2. The check a, having a groove in its outer edge to receive the rope, and a clamping device, l, to secure it to the rope at any desired point, substantially as set forth.

202,562. FIRE-ESCAPES. Gaylord Martin, Milwaukee, Wis. Filed July 31, 1877.



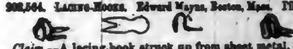
Claim.—The combination of roller G, having flanges H H, with cord A, having knots C, and steps D, having brackets E and F, substantially as set forth.

202,563. HOE AND BRIER-HOOK. Carsen A. Mikkelsen, Decatur, Ill. Filed July 6, 1877.



Claim.—A combined hoe, digger, and brier-cutter, consisting of a flat blade having converging edges a a in front, and the curved cutting-edges b b at the rear, in combination with the handle d, having a curved angle, forming a heel or fulcrum, by means of which the blade of the instrument may be readily elevated or depressed when employed as a hoe, and brought into proper position for digging when reversed, substantially as specified.

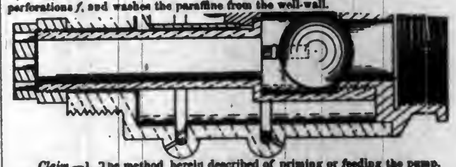
202,564. LACING-HOOKS. Edward Mayer, Boston, Mass. Filed Mar. 21, 1878.



Claim.—A lacing-hook struck up from sheet metal, one end of which constitutes the hook portion, and the opposite end terminating in a fastening prong or prongs, substantially as shown and described.

202,565. OIL-PUMPS. Cornelius McCarthy, Petrolia, and Charles Giles, Summit City, Pa. Filed Mar. 23, 1878.

Brief.—On the downstroke of the piston, the oil rushes out through the perforations f, and washes the paraffine from the well-wall.



Claim.—1. The method herein described of priming or feeding the pump, consisting in forcing out of the perforated sides of the pump at the downstroke of the piston a portion of the oil which had been previously raised above the standing valve, so that it may flow back into the well, substantially as described.

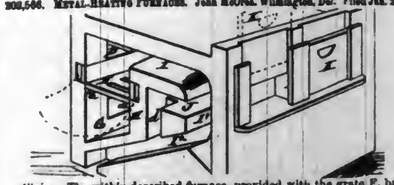
2. The combination of the standing valve and the standing-valve chamber with a surrounding chamber having perforated wall, and a valve controlling the communicating ports between the said chambers, operating substantially as and for the purposes set forth.

3. The combination of the cap e with the stand-pipe of the lower valve-chamber and the shell d, substantially as and for the purposes described.

4. An oil-well pump having a lower chamber provided with an outer perforated shell, and a valve which shall be raised by the downward stroke of the piston, so that a portion of the oil in said lower chamber shall be ejected through the said perforations, substantially as and for the purposes described.

5. The combination of the ball-valve and the cup with funnel-shaped extension, forming a valve-seat, perforated at the apex, whereby the size of the passage may be enlarged, substantially as and for the purpose specified.

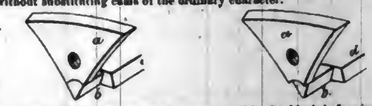
202,566. METAL-HEATING FURNACES. John McOrea, Wilmington, Del. Filed Jan. 26, 1878.



Claim.—The within-described furnace, provided with the grate F, bridge-wall H, with bed J in the back part thereof, the flues I I¹ I², and rear doors K, all substantially as and for the purposes herein set forth.

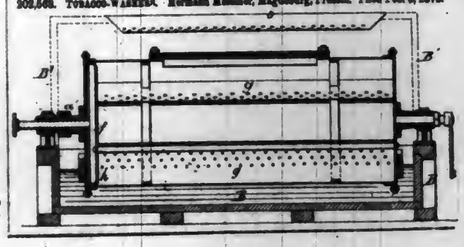
202,567. CAMS FOR KNITTING-MACHINES. Wm. J. McDevitt, Philadelphia, Pa. Filed Jan. 26, 1878.

Brief.—The cam is cut away at its lower end, and a transversely-adjustable block fitted thereto, so as to enable a change from plain to "tuck" work without substituting cams of the ordinary character.



Claim.—The combination of the cam a with the block b, forming part of the cam, but rendered adjustable transversely, all substantially as and for the purpose set forth.

202,568. TOBACCO-WASHERS. Hermann Mummer, Magdeburg, Prussia. Filed Feb. 6, 1878.

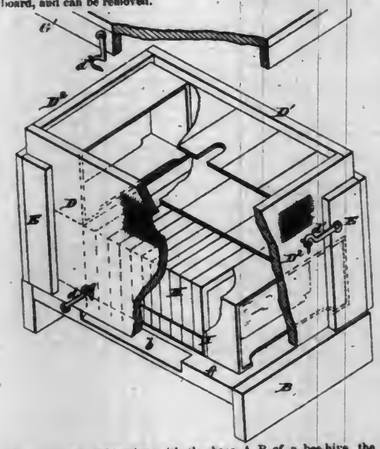


Claim.—1. The within-described method of loosening and moistening tobacco—that is to say, by first subjecting the lumps to the action of steam and agitation in a closed vessel, and, secondly, quickly cooling the contents of the cylinder as soon as the supply of steam is cut off, all substantially as described.

2. The combination of the cylinder with a box, B, and a cover, B', having a perforated receptacle, b, substantially as specified.

202,569. BEE-HIVES. David P. Miller, Ledi, N. Y. Filed Jan. 16, 1878.

Brief.—The stripe along the bottom serve to hold the comb-frames upright. The four sides of the hive are hooked to corner-pieces and to the base-board, and can be removed.

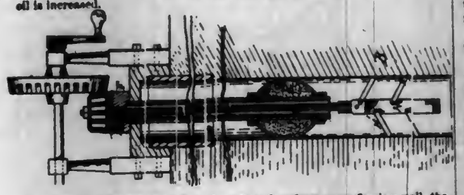


Claim.—1. In combination with the base A B of a bee-hive, the body which incloses the frames and honey-boxes, made of four independent pieces, D D¹ and D² D³, the parts D and D¹ being provided with L-shaped corner-pieces E E, and connected to the end pieces D² and to the base by hooks and staples, as herein set forth.

2. The base A, provided with the strip i and the comb-frames H, each provided with an L-shaped metallic foot, k, extending under the strip i, to prevent the frames from being raised, the parts being combined and used as set forth.

202,570. METHODS OF AND APPARATUS FOR OBTAINING OIL FROM OIL-WELLS. Nathan S. Mimms and David A. Wray, Bradford, Pa. Filed Oct. 4, 1877.

Brief.—By giving a rotary motion to the agitator the gas is disengaged from the oil, paraffine is removed from the sides of the well, and the flow of oil is increased.

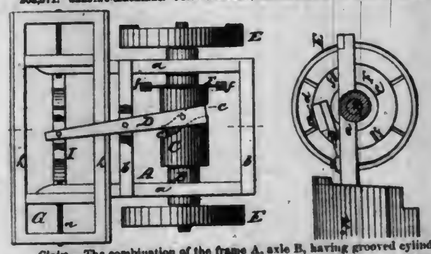


Claim.—1. The method of causing oil to flow from a non-flowing well, the same consisting in agitating the oil at or near the bottom of the well, substantially as specified.

2. The combination, with an oil-well, of an agitator arranged and adapted to be operated within the well, substantially as and for the purpose specified.

3. The combination, with an oil-well, of a tubing extending down to or near the oil-bearing rock, a packer or seed-bag arranged upon the lower end of the tubing, and an agitator, substantially as and for the purpose specified.

202,571. SEEDING-MACHINES. Jacob C. Mundel, Arrowsmith, Ill. Filed Aug. 13, 1877.



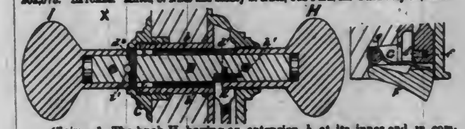
Claim.—The combination of the frame A, axle B, having grooved cylinder C, detachable wheels E E, and solid wheel F, of less diameter, with the hinged seed-boxes, slide 1, and lever D, all arranged and operating substantially as described, for the purpose shown and specified.

202,572. WATER-BED FENCES. John R. Mynatt, Easta Boga, Ala. Filed Feb. 11, 1878.



Claim.—The within-described water-bed fence, consisting of the logs A A, triangular rails B B, and strip C, substantially as and for the purposes herein set forth.

202,573. LATCHES. Milton C. Niles and Sidney S. Niles, Oak Park, Ill. Filed July 18, 1877.



Claim.—1. The knob H, having an extension, h, at its inner end, in combination with the cam d on the spindle D, fitting closely under the extension on the knob-shank, substantially as and for the purpose set forth.

2. The spindle D, provided with a cam, d, in combination with the knob H and loose pin or piece h', resting in the outer lock-plate, whereby the parts are fastened together and held from slipping back and forth in the case, substantially as described.

3. The lock-case B, in combination with a spring, G, attached outside of the case, the free end of which is arranged to retract the bolt, substantially as and for the purpose set forth.

4. The spindle D, provided with a stud, d', in combination with the knob I, having slots i in the inner end of its shank, and the pin i', substantially as described.

5. The lock-case B, in combination with the pin g, attached to the outside of the back plate, the spring G, and the pivoted bolt F, substantially as and for the purpose set forth.

202,574. SPINDLES AND FASTENINGS FOR DOOR LOCKS AND LATCHES. Milton C. Niles and Sidney S. Niles, Oak Park, Ill. Filed Jan. 7, 1878.



Claim.—1. The tube E, provided with a transverse slot, e', near the end thereof, in combination with a pin or lug on the spindle, substantially as and for the purpose set forth.

2. The spindle F, provided with a spring-pin, H, in combination with the tube E, having a transverse slot, e', substantially as and for the purpose set forth.

3. The tubular spindle F, in combination with the pin H, the tube E, and the loop-spring h, substantially as described.

4. The tubular spindle provided with lateral opening f, in combination with the loop-spring h, whereby the edge of the spindle at the opening serves as a stop to hold the spring from slipping back, substantially as described.

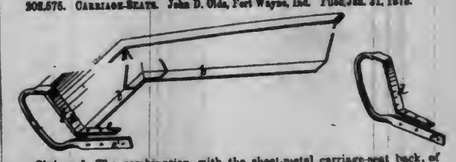
5. The back plate B, provided with an aperture, b, opposite the knob-shank aperture in the opposite case, in combination with the independent tube E, provided with a flange, c, and with a projection, as described, entering the back plate, whereby the opening through the tube is held in line with the apertures in the lock, substantially as described.

6. The independent tube E, provided at the lock end with a flange, c, outside of the back plate, and a projection, b, as shown, to enter the opening in said plate, in combination with the shank-spindle F, held thereto and provided at its inner end with a cam projection for operating the bolt, substantially as described.

7. The back plate having an aperture, in combination with the independent tube E, provided at the lock end with a flange, c, and a centering back plate of lock projection, as shown, and having lugs on the back of the flange, whereby the tube is held from turning in the door, substantially as described.

8. The back plate having an aperture, b, in combination with the flange or ring c, resting against the wood of the door, and provided with a projection entering the back plate, the shank-spindle F passing through the ring, and provided at its inner end with a cam projection for operating the bolt, substantially as described.

202,575. CARRIAGE-SEATS. John D. Olds, Fort Wayne, Ind. Filed Jan. 21, 1878.



Claim.—1. The combination, with the sheet-metal carriage-seat back, of a handle the body of which is secured to the inner surface of the standing metal, substantially as described.

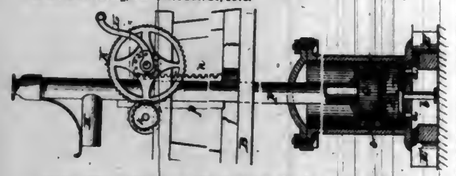
2. The combination, with a sheet-metal carriage-seat back, of a handle the body of which is inclosed within a folded portion of the standing metal, substantially as described.

202,576. OSCILLATING CHAIRS. Robert Otto, Cortland, N. Y. Filed Feb. 12, 1878.



Claim.—In a chair, the combination and arrangement of the springs P and P', risers, as described, frame-work A, A', B, and C, projecting pieces D and D', with rubber buffer s on D, hinge-joint N, and seat H, all made, combined, arranged, and used substantially in the manner and for the purposes shown and specified.

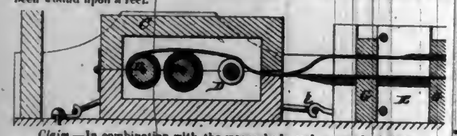
202,577. PUMPS. John W. Palmer, Port Republic, assignor of one-half his right to Geo. W. Berlin, Harrisonburg, Va. Filed Feb. 23, 1878.



Claim.—The combination of the discharge-pipe F, provided with the rack s and rib p, the shaft k, with pinion m, the shaft k', with pulley l, the gears K k, and crank L, all substantially as and for the purposes herein set forth.

202,578. MACHINES FOR MAKING LIGHTNING-RODS. Theodorus H. Pates, Boonville, Mo. Filed Jan. 18, 1878.

Brief.—The measure of the building having been taken, the amount required for any particular occasion may be manufactured on the spot, avoiding the straightening necessary where the article previously manufactured has been wound upon a reel.



Claim.—In combination with the wagon-body and means for holding the end of the rod, the box C, for holding the spools, and the detachable frame E, with its dies or guides, as and for the purposes set forth.

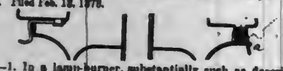
202,579. CARPET-LININGS. Claudius A. Pease, Boston, Mass. Filed Mar. 29, 1878.

Brief.—The filling is placed between two sheets of paper, the edges of which are wetted and subjected to heavy pressure, by which they become firmly united.

Claim.—1. The improvement in the art of making carpet-lining, consisting in bringing the fibrous bat between sheets of formed paper previously moistened on their interior opposite faces, then subjecting the same to strong pressure to effect their union, and subsequently drying the lining thus formed, substantially as set forth.

2. Carpet-lining made from sheets of formed paper, in combination with an intermediate fibrous bat or filling united therewith, substantially in the manner herein specified.

202,580. LAMP-BURNERS. Russell B. Perkins, Meriden, Conn., assignor to E. Miller & Co., same place. Filed Feb. 18, 1878.



Claim.—1. In a lamp-burner, substantially such as described, the hinge constructed by knuckles formed by striking up from the body, an intermediate knuckle struck down from the chimney-holder, and a wire pintle through between the said knuckles, substantially as described.

2. In a lamp-burner, substantially such as described, the hinge constructed by knuckles formed by striking up from the body, an intermediate knuckle struck down from the chimney-holder, and a wire pintle through the said knuckles, and a stop, e, on the body outside the hinge, substantially as described.

202,581. SELF-OILING CAR-WHEELS. Thomas H. Phillips, Orwin, Pa. Filed Mar. 14, 1878.



Claim.—1. In a car-wheel, the hub B, cast with recesses d in each end, to receive wooden plugs e, for the purposes herein set forth.

2. The combination of a car-wheel, having wooden plugs e driven into holes or recesses in the ends of its hub, the packing b, washer D, and wood-screws i, substantially as and for the purposes herein set forth.

3. In combination with a car-wheel having a metal washer, D, secured upon each end of the hub by wood-screws, as described, the lugs or projections k, cast on the hub and fitting in notches in the washer, substantially as and for the purposes herein set forth.

202,582. WRENCHES. Thomas H. Phillips, Orwin, Pa. Filed Mar. 14, 1878.

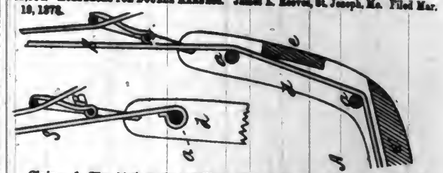


Claim.—In a wrench having a frame, A, with handle B, and removable jaws C D, held in place in the frame by a single loose rod, e, the combination of the jaw D, having dovetailed recess, as shown, the slotted dovetailed plate h, and screw F, formed with the point b and circumferential shoulder d, all substantially as and for the purposes herein set forth.

202,583. HOG-CHOLERA COMPOUNDS. Jacob H. Rose, Hawthorn, Tenn. Filed Feb. 26, 1878.

Claim.—The within-described medical compound, consisting of turpentine, soap, soda, syrup of blackberry-brier root, molasses, vinegar, musk, coal-oil, and linseed-oil, substantially as and for the purposes herein set forth.

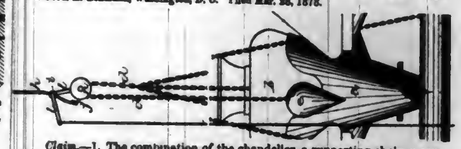
202,584. HOLDBACKS FOR DOUBLE HARNESS. James E. Reeves, St. Joseph, Mo. Filed Mar. 19, 1878.



Claim.—1. The V-shaped metallic holdback, having the end buckles B and the bars a, adapted for use substantially as specified.

2. The V-shaped metallic holdback A, consisting of the spaced plates d, connected by the spaced braces a e, and provided with the end buckles B, substantially as specified.

202,585. OIL-CHANDELIERS. Frank Rhind, Brooklyn, N. Y., assignor of one-half his right to Fred. A. Lohmann, Washington, D. C. Filed Mar. 26, 1878.



Claim.—1. The combination of the chandelier, a supporting chain, a counter-weight, an automatic brake, a brake chain or rod, and a supporting pulley or block, substantially as set forth.

2. The combination of the brake h and a bent rod, l, with a cord or chain for operating the brake, and a supporting-chain of a chandelier, substantially as described.

3. In an oil-chandelier, the combination of the reservoir b, the conical receiving-body a, and plug r, having the hole s through it, the plug being kept submerged in the oil in the body, so that the oil will be fed down in a few drops at a time, just as it is needed by the wicks, substantially as specified.

202,586. FLUSHING-BOXES FOR WATER-CLOSETS. Wm. G. Rhoads, Philadelphia, Pa. Filed Mar. 18, 1878.

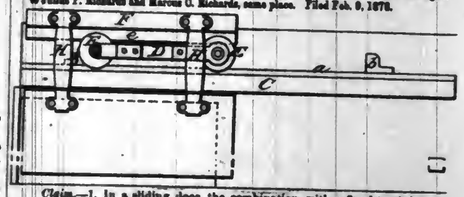


Claim.—1. The combination, with a tilting tank, of a siphon arranged to be charged and brought into action by the tipping of the tank when full, substantially as and for the purpose herein set forth.

2. The combination, with the upper portion of a tilting tank, A', of an offset, H, projecting inwardly at one end thereof, and serving to suddenly reduce the area of the tank upon one side of its axis, substantially as and for the purpose herein set forth.

3. The combination, with the upper portion of a tilting tank, A', of an offset, K, projecting outwardly at one end thereof, and serving to suddenly enlarge the area of the tank upon one side of its axis, substantially as and for the purpose herein set forth.

202,587. DOOR-HANGERS. Henry E. Richards, Oswego, Ill., assignor of two-thirds his right to Julius F. Richards and Marcus C. Richards, same place. Filed Feb. 9, 1878.



Claim.—1. In a sliding door, the combination, with a fixed track-bar, c, over the entrance-way, and a door having a rider-bar, F, above and connected to it, of a carriage, D, independent of the door and building, substantially as specified.

2. The sliding-door carriage D, consisting of the wheels E, having the spaced flanged disks d and the connecting cylindrical bar d', and a reach, c, connecting said wheels, in combination with a door having a track-bar, c, attached to the rider-bar F, bearing on the cylindrical part of said wheels, and a track-bar, c, supporting the carriage, and received between the flanges j j of the disks, substantially as specified.

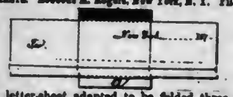
202,588. FINGER-RINGS. William Riker, Newark, N. J. Filed Mar. 2, 1878.



Claim.—1. The method herein described of ornamenting solid finger-rings, which consists in inlaying a strip for the exterior of the ring, and applying to the same, by soldering, a separate back of plain solid gold, the said strip being bent to form a ring, substantially as described.

2. As a new article of manufacture, a solid finger-ring made in two circumferential pieces, having the outer piece cut through and inlaid, and having an inner piece or backing soldered to the same, and made of the same quality and color of metal as the ground-work of the outer piece, as set forth.

202,589. LETTER-SHEETS. Lobbeus H. Rogers, New York, N. Y. Filed Jan. 26, 1878.



Claim.—1. The letter-sheet adapted to be folded three times, with sectional sealing-borders arranged in pairs on opposite sides of the letter-sheet, and so that when the sheet is folded said sealing-flaps shall come opposite to each other, and constitute an extension or continuation of the outside of the folded sheet along the whole width or length of said folded sheet, substantially as shown and described.

2. The combination, with a sealing letter-sheet constructed and arranged for operation as before stated, of a line or lines of perforations between the sealing-borders and the letter-sheet proper, substantially as herein shown and set forth.

3. A letter-sheet having, as described, upon opposite sides sealing-flaps, either or both of which are gummed, as set forth.

4. A letter-sheet constructed and arranged for operation as stated, having sealing-borders which are separated from the letter-sheet by perforations, and gummed, as herein set forth.

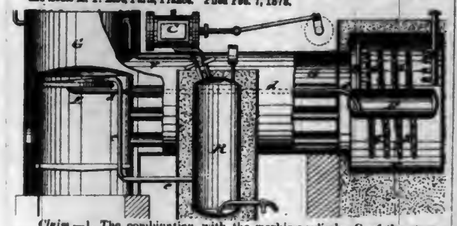
202,590. TELLURIANS. Joseph Schedler, Jersey City Heights, N. J. Filed Mar. 1, 1878.



Claim.—1. The combination, with a terrestrial globe and its supporting-column, of a swivel-arm, which is detachably clamped to said column and adapted to carry a light, and a reflector, the whole being adapted to operate substantially as shown.

2. The combination, with a terrestrial globe, its supporting-column, a swivel-arm which is detachably clamped to said column, provided with a device for the reception of a light, and with a reflector, of a secondary swivel-arm, which is connected to the clamp of the light and reflector-carrying arm, and provided with a globe representing the moon, the whole being adapted to operate substantially as described.

202,591. APPLICATION OF SUPERHEATED STEAM TO STEAM-ENGINES. Raymond Sailliere and Louis M. T. Riot, Paris, France. Filed Feb. 7, 1878.



Claim.—1. The combination, with the working-cylinder C, of the steam-generator G and superheating-coils S E, as and for the purpose described.

2. The combination, with the working-cylinder C, the superheating-coils S E, and the steam-generator G, of the reservoir R for superheated steam, arranged substantially as and for the purpose specified.

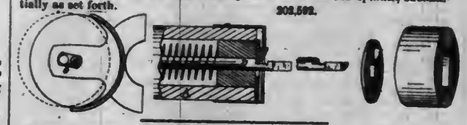
3. The combination, with a steam-generator and cylinder, of a superheating attachment formed of a number of small tubes placed in the smoke-box, of a secondary superheating-coil in the fire-box, and of a storage-reservoir, substantially as and for the purpose set forth.

202,592. CURTAIN-ROLLERS AND BRACKETS. Ai B. Shaw, Medford, Mass. Filed Dec. 7, 1877.

Claim.—1. In a spring curtain-fixture, the roller A, operated by the curtain and by the internal spring, in combination with the bracket B, provided with a nearly horizontal traversing-slot, as a bearing for the roller-journal when the shade is being rolled up by the recoil of the spring, and having also a flanged frictional bearing for the roller-head during the downward movement of the shade, substantially as set forth.

2. A roller-spindle suitably recessed on its upper side, or having a cam formed upon it, as described, in combination with a locking-plate adapted to be raised into engagement with the ferrule, or some other fixed part of the roller, by the action of the cam in the quick rotation of the spindle, substantially as set forth.

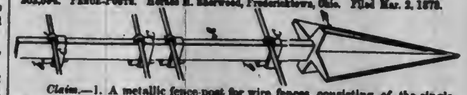
202,593. HAND CORN-PLANTERS. Jacob Shew, Baltimore County, Md. Filed Mar. 14, 1878.



Claim.—1. The combination of the frame c, rigid handle b, movable handle e, rods f g, levers h, bail i, lever j, slide k, and flat spring l, substantially as shown.

2. The combination of the lever j, connecting-rod o, valve p, rod q, and valve r, with an operating mechanism, substantially as described.

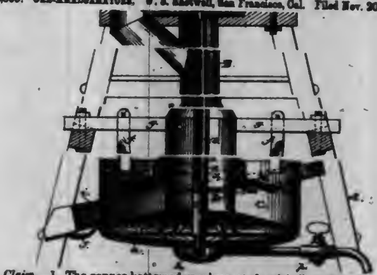
202,594. FENCE-POSTS. Horace H. Sherwood, Fredericktown, Ohio. Filed Mar. 2, 1878.



Claim.—1. A metallic fence-post for wire fences, consisting of the single flat wrought-iron bar A, with the double-spear-shaped base B cast solid thereon, as shown and set forth.

2. The improved metallic fence-post for wire fences, consisting of the flat wrought-iron bar A, double-spear-shaped base B, formed in one piece, and the metallic clips C, with keys b, adapted for use substantially as described.

202,595. ORE-AMALGAMATORS. W. S. Shotwell, San Francisco, Cal. Filed Nov. 30, 1877.



Claim.—1. The copper-bottomed amalgamated quicksilver-containing pan C, the vertical hollow feed-column B, extending to near the bottom, provided with the projecting perforated disk or flange a, in combination with the shaft D, rotating within the column, and provided with the screw b and the agitator c beneath the disk a, the whole constructed and operated substantially as herein described.

2. In combination with the containing-pan C and the vertical hollow feed-column B, with its bottom disk a, the hollow perforated shaft D, to receive a column of water and discharge it into the earthy contents of the column B above the screw b, substantially as and for the purpose herein described.

3. In combination with the pan C, column B, with its flange a, and the interior rotating shaft D, with its screw and agitator, as shown, the oscillating amalgamated agitator k, situated above the perforated flange a, and operating substantially as and for the purpose herein described.

4. The copper-bottomed quicksilver-containing pan C, having a central amalgam-concentrating depression, h, in combination with the upwardly-projecting feed-column B and shaft D, placed centrally above the depression, substantially as shown, and for the purpose herein specified.

5. In combination with the quicksilver-containing pan C and the column B, and hollow rotating shaft D, as shown, the surrounding inclined trough i, with its depression j and discharge, substantially as and for the purpose herein described.

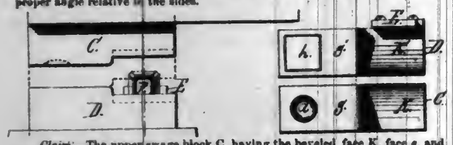
202,596. INSOLES. Marks Silverberg, New York, N. Y. Filed Feb. 23, 1878.



Claim.—As an improved article of manufacture, an insole composed of a thickness of leather-board, varnished on its under side to render it water-proof, and a thin leather covering, substantially as herein shown and described.

202,597. SWAGES FOR FORMING JEWELERS' DIES. Gilbert Sisson, Providence, R. I. Filed Oct. 4, 1877.

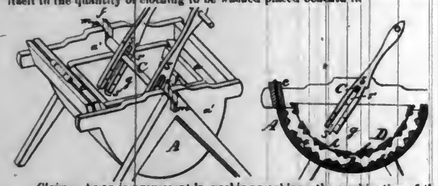
Brief.—The swages are adapted, in a succession of operations, to reduce the iron to a pyramidal form, weld the steel face on, and give the same the proper angle relative to the sides.



Claim.—The upper swage-block C, having the beveled face K, face *g*, and cup *i*, in combination with the lower swage-block D, having beveled face K' and face *g'*, to correspond with K and *g* of the block C, and a recessed seat, *h*, to correspond with cup *i*, and the removable and adjustable base-block E, all constructed as and for the purpose described.

202,598. WASHING-MACHINES. William H. Stein, Garnett, Kans. Filed July 3, 1877.

Brief.—The handle of the reciprocating rubber is permanently secured to the sides of the rubber-frame, and its legs are slotted, so as to straddle and loosely ride upon a stationary shaft, and permit the rubber to rise and adjust itself to the quantity of clothing to be washed placed beneath it.



Claim.—As an improvement in washing-machines, the combination of the reciprocating rubber D, having slotted handle-pieces *s s* permanently secured to its sides, and riding loosely on shaft C, said shaft having flattened tenons *m m*, and tab A, having vertical slots *f f*, all constructed and combined to operate as described, for the purpose specified.

202,599. WINDOW-SCREENS. Wellington D. Stevens, Springfield, Mass. Filed July 14, 1877.

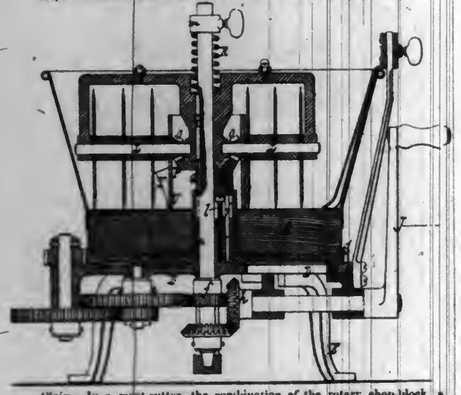
Brief.—The indentations may engage with suitable catches in the screen-frame.



Claim.—1. In combination with frame A, the slide C, having indentations substantially as and for the purposes stated.

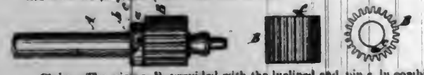
2. The frame A, covering E, and slide C, having indentations *i*, in combination with casing D, substantially as specified.

202,600. MEAT-CHOPPERS. Michael J. Stein, New York, N. Y. Filed Dec. 26, 1877.



Claim.—In a meat-cutter, the combination of the rotary chop-block, a vertical spindle extending eccentrically through the stationary hollow axis, about which said block revolves, and giving motion through intermediate gears to two independently-rotating series of cutters arranged to travel in different paths, substantially as and for the purpose set forth.

202,601. SAFETY-WHEELS FOR WATCHES. Benj. F. Stoner, Rockford, Ill., assignor to Rockford Watch Company, same place. Filed Mar. 11, 1878.



Claim.—The pinion B, provided with the inclined end pin *c*, in combination with the staff or arbor A, provided with a shoulder or hub having an inclined slot or opening, *b*, for interlocking the parts, substantially as and for the purpose specified.

202,602. SEWING-MACHINE SHUTTLES. Hewitt D. Stoops, Philadelphia, Pa. Filed Jan. 21, 1878.

Brief.—The shuttle is of a nearly cylindrical shape, but is provided on one side with a hinged lid or slide, which projects beyond the heel of the shuttle. On the upper or outer side of this lid is a forked spring, the longer arm of which is caught in a recess in the rear end of the lid, and beyond the heel of the shuttle, while the other arm is firmly fastened to the lid. At the junction of the two arms of the spring the same is broader, and is attached by means of a screw passing freely through the lid to a latch on the under side of the same. When the lid is shut the latch is caught on a screw in the body of the shuttle, and the tension is formed between the broad part of the spring and the lid. By depressing this screw the tension is increased.

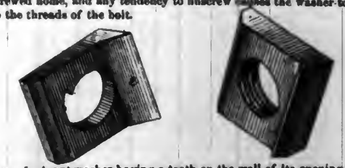


Claim.—1. The combination, with a shuttle-shell, substantially as herein described, of a pivoted lid having a flat spring arranged upon and attached by one end to its upper surface, and a tension-spring and latch connected with said spring and attached to the lower surface of the said lid, and adapted to be moved by an adjusting-screw extending through the shell of the shuttle, substantially as and for the purpose set forth.

2. The combination, with a sewing-machine shuttle, of a pivoted or hinged lid, forming part of the bobbin-case, and provided with a tapering extension projecting beyond the heel of the shuttle, and a slack-thread guard-spring, also extending beyond the shuttle-heel and along a portion of the lid, substantially as and for the purpose set forth.

202,603. NUT-LOCKS. Hiram C. Stouffer, Canfield, Ohio, assignor of one-half his right to C. C. Trout, Sharon, Pa. Filed Nov. 8, 1877.

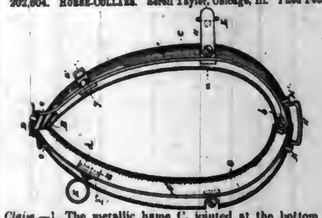
Brief.—The washer is provided with an inwardly-projecting tooth, and has its face beveled. The nut has a corresponding bevel on its face; and the nut and washer being screwed on together, the washer is pushed aside after being screwed home, and any tendency to unscrew causes the washer-tooth to bite into the threads of the bolt.



Claim.—1. A nut-washer having a tooth on the wall of its opening, to be forced into and upon the threads of the bolt, to make a lock therewith, in combination with a nut forming a lock with the washer, as herein set forth.

2. The combination, with a washer having a tooth upon the wall of its opening, and inclined bearing-surfaces upon its face, of a nut having corresponding face bearing-surfaces, whereby the washer, bolt, and nut are locked together.

202,604. HORSE-COLLARS. Sorell Taylor, Chicago, Ill. Filed Feb. 23, 1878.



Claim.—1. The metallic hame C, jointed at the bottom by means of a hinge, admitting of the upper ends of the sections being separated laterally from each other, and the said ends terminating in the loops *c c*, the fastening-strap D, applied to the said loops, and the body A, made in sections, rigidly applied to the hame C, and having their upper ends connected by means of the flexible connection B, all combined and arranged substantially as and for the purposes specified.

2. The draft-eyes H H, consisting of the part H', bent at its inner end to pass between the hame and body of the collar, and hooked at its forward end, the latter having therein the hole *f*, and of the removable part H'', provided at its forward end with the post or pin K, substantially as and for the purposes specified.

3. The draft-eyes H H, opening in front, in combination with the hame-clips L L, applied to the sides of the tug-straps M M, and so bent that the eyes of the said clips will stand vertically and in the same plane with the broad faces of the said straps when the eyes of the clips are arranged in the draft-eyes, substantially as and for the purposes specified.

202,605. CUPOLA-FURNACES AND PROCESSES OF WORKING IRON. David Thomas, St. Louis, assignor of six-tenths his right to Wm. L. Reynolds and Frederick W. E. Best, same place, and Chas. D. Moody, St. Louis County, Mo. Filed June 14, 1877.

Brief.—The hot gases from the cupola are deflected by the crown down into the jacket and heat the blast. Chemicals are introduced through the tuyeres.

Claim.—1. The herein-described process of making pure homogeneous iron and steel, which consists in melting wrought-iron and cast-iron with carbonaceous fuel until said metals are thoroughly melted, and then passing through the molten metal highly-heated air, meanwhile excluding the outer atmosphere and introducing chemicals, substantially as described.

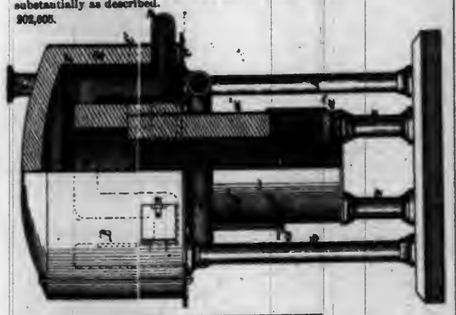
2. The combination of the furnace A, casing B, flue C, and pipe D, substantially as described, and for the purpose of keeping the upper portion of the furnace warm and heating the incoming air-blast.

3. The combination of the furnace A, casing B, flue C, pipe D, and tuyeres *g'' g'' g'' g''*, substantially as described, and for the purpose of conducting the air-blast into the furnace after it has been heated by the escaping products of combustion.

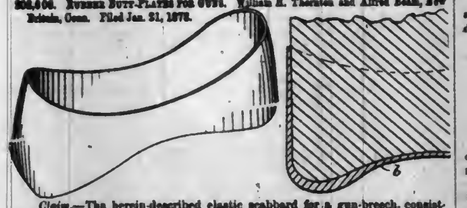
4. The combination of the furnace A, casing B, flue C and *c'*, and plate F, whereby the products of combustion are directed around the furnace before escaping into the open air, substantially as described.

5. The combination of the furnace A, casing B, flues C and *c'*, and pipe D, whereby the products of combustion from the furnace, after being utilized for warming the upper part of the furnace and the air-blast, are allowed to escape, substantially as described.

202,606.



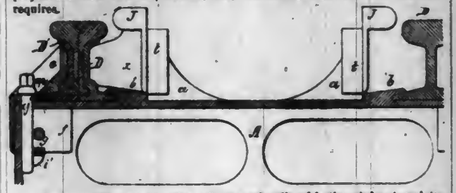
202,606. RUBBER BUTT-PLATES FOR GUNS. William H. Thornton and Alfred Beam, New Britain, Conn. Filed Jan. 21, 1878.



Claim.—The herein-described elastic seabboard for a gun-breech, consisting of the sides *a*, converging toward each other at the top, and the bottom *b*, curved on its interior surface to conform to the following end of the gun-breech, substantially as described, and for the purpose specified.

202,607. RAILWAY-TRACKS. Thomas W. Travis, Philadelphia, Pa., assignor of one-half his right to John A. Pollock, same place. Filed Feb. 15, 1878.

Brief.—The rails are secured to metallic ties by inner stationary lugs and outer detachable clamps, with flanges overlapping the end of the tie, and having downwardly-projecting tongues adapted to recesses in in the tie, said clamps being secured by longitudinal pins passing through openings in the tie and tongue, the pins being held in place by a lug thereon, which, when the pin is turned, engages the side of the tongue. The clamps are adjusted to the rail, and additionally secured by vertical bolts having a cam-surface and a retaining-lug, whereby, when placed in position in the clamp and tie and properly turned, the clamps are forced against the rail. Guard-rails having spacing-plates are secured to the ties by means of angle-ribs, which engage projections from the ties, whereby they are readily replaced when occasion requires.



Claim.—1. The combination of recessed rails with the girder A and its blocks *b* and *c*, having lugs *d*, as specified.

2. The combination of the girder A, the rails; the adjustable clamping-blocks *c*, having tongues *f*, and the retaining-pin *g*, as set forth.

3. The combination of the rails, the girder A, the adjustable clamping-blocks *c*, and the pin *g'*, having a cam, *m*, as specified.

4. The combination of the recessed girder A with the clamping-block *c*, having a wedge-shaped tongue, *f*, adapted to a recess in the girder, as described.

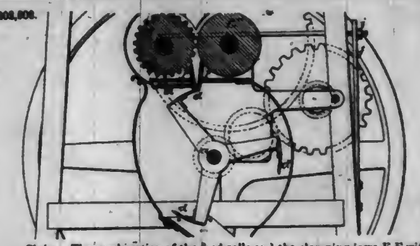
5. The combination of the rails, the girders A, and the guard-bars J, having bent ribs *t*, adapted to projections on the girders, substantially as specified.

6. The combination of the rails with the bars J, from which project plates *x*, adapted to bear against the insides of the rails, but not secured thereto, as set forth.

202,608. MACHINES FOR CUTTING TOBACCO. James F. Tych, Philadelphia, Pa., assignor to himself and Patrick McCrossin, same place. Filed July 16, 1877.

Brief.—The tobacco to be cut into shreds is fed to the cutters between the rolls, and the jaws that hold it while being cut are capable of yielding to conform to irregularities in the thickness of the mass.

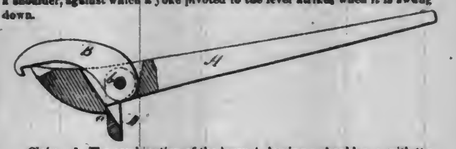
202,609.



Claim.—The combination of the feed-rolls and the clamping-jaws F F with a rotating shaft, *a*, parallel to the axes of the rolls, and carrying one or more cutting-knives, *d*, substantially as set forth.

202,609. SPIKE-EXTRACTORS. Wm. Upton, Philadelphia, Pa., assignor of one-half his right to Charles R. Kohl, John W. Kohl, and Wm. S. Kohl, same place. Filed Mar. 7, 1878.

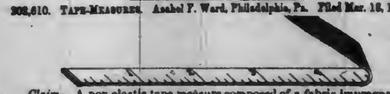
Brief.—The lever is provided with a curved fulcrum-face, terminating in a shoulder, against which a yoke pivoted to the lever strikes when it is swung down.



Claim.—1. The combination of the lever A, having a shoulder, *c*, with the pivoted yoke D, adapted to the said shoulder, all substantially as set forth.

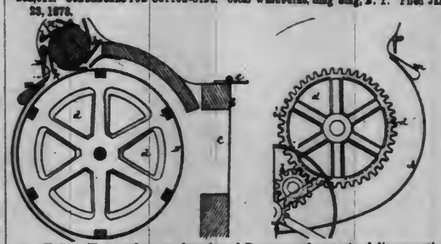
2. The combination of the lever A, the arm B pivoted thereto, and having a hooked end, and the yoke D, pivoted to the lever, and adapted to swing down below the same, as set forth.

202,610. TAPE-MEASURES. Asahel F. Ward, Philadelphia, Pa. Filed Mar. 16, 1878.



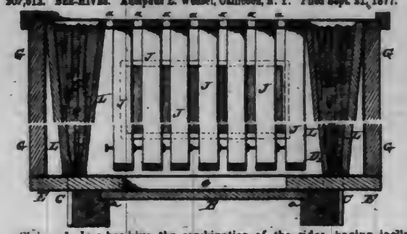
Claim.—A non-elastic tape-measure composed of a fabric impregnated and coated with rubber, and having figures and graduation-marks printed on its rubber surface, all as set forth.

202,611. CONDENSERS FOR COTTON-GINS. Oscar Washburn, Sing Sing, N. Y. Filed Jan. 23, 1878.



Claim.—The pendent or drop board D, arranged over the delivery-outlet *l* of the condenser-case, in combination with the reticulated cylinder B and compressing or condensing roller C, essentially as and for the purpose herein set forth.

202,612. BEE-HIVES. Adolphus E. Wenzel, Cullicoen, N. Y. Filed Sept. 21, 1877.



Claim.—1. In a bee-hive, the combination of the sides, having inclined slats *b*, and the angle-irons *b*, substantially as and for the purpose set forth.

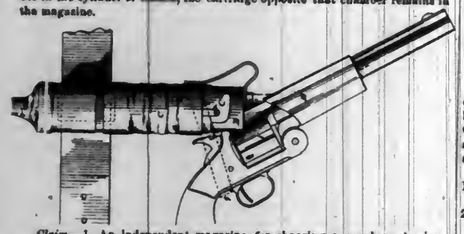
2. In a bee-hive, a flexible angular pocket, L L', arranged within the hive, substantially as and for the purpose set forth.

3. In combination with a bee-hive, the supplementary sides K K, supported by posts C, and the flexible pockets L L', substantially as and for the purpose set forth.

4. As an improvement in bee-hives, the system of joints of the external walls or inclosure herein described and represented, by which alone the several parts are firmly interlocked and held together, yet so, nevertheless, as to be easily and without injury taken apart and remitted, as occasion may demand, substantially as specified.

202,613. CHARGING-MAGAZINES AND HOLSTERS FOR REVOLVERS. Rollin White, Lowell, Mass. Filed Mar. 4, 1878.

Brief.—The holster is so attached to the charging-magazine that the cylinder of a break-down revolver may be presented to the mouth of the magazine without withdrawal from the holster. Cartridges are fed forward in the magazine, to fill all the empty chambers in the cylinder at once. If any chamber in the cylinder is loaded, the cartridge opposite that chamber remains in the magazine.



Claim.—1. An independent magazine for charging a revolver, having attached to it a holster, substantially as shown, adapted to hold a pistol, substantially as set forth.

2. An independent magazine for charging a revolver, having a holster attached to it in such a way, substantially as shown, that the cylinder of the pistol may be charged while the pistol is in the holster, substantially as set forth.

3. An independent magazine for charging a revolver, having a holster attached to it in such a way, substantially as shown, that the pistol while in the holster may be secured to the magazine for safe carriage, substantially as set forth.

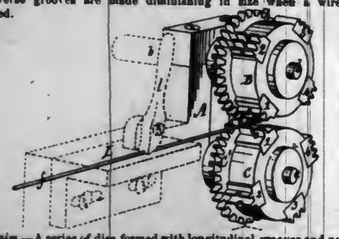
4. An independent magazine for charging a revolver, adapted to charge at the same time the chambers of the cylinder by a positive spring motion, substantially as set forth.

5. An independent magazine for charging a revolver, adapted to charge all the empty chambers of the cylinder, substantially in the manner set forth, without disturbance of the charges already in such chambers, substantially as set forth.

6. An independent magazine for charging a revolver, having means by which the plunger may be operated by spring-pressure or by hand, as may be desired, substantially as set forth.

202,614. MACHINES FOR REDUCING AND POINTING WIRE. William S. Whiting, Oxford, assignor to Carlos French, Seymour, Conn. Filed Sept. 20, 1877.

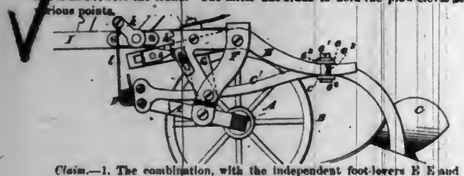
Brief.—The rolls rotate continuously, and the series of dies in succession act upon the end of the firmly-clamped wire, and reduce it so that it can be inserted in the hole of the draw-plate. The rolls may rotate intermittingly, in which case the wire is introduced in one of the transverse grooves before the dies come in contact, the wheels turned until the dies pinch the wire, and then held stationary while the wire is pulled back by the attendant. The transverse grooves are made diminishing in size when a wire is to be pointed.



Claim.—A series of dies formed with longitudinal grooves and projections, and one or more transverse grooves, to receive and reduce in size a wire or other article, said dies being arranged in pairs upon two rollers geared together, substantially as and for the purpose described.

202,615. WHEEL-PLOWS. Wm. H. Whitlesey and Charles T. Noble, Russell, Iowa. Filed Jan. 16, 1878.

Brief.—The foot-levers are independent, and either may be used to level the plow. The plow-beam has a cross-yoke, through which the free rear ends of the levers slide, and support the plow in any position. The plow-clevis is upon the crank-axle, which is bent horizontally to the front. An elbow-lever raises and lowers the crank. The latter has studs to hold the plow-clevis at various points.



Claim.—1. The combination, with the independent foot-levers E E and plow-beam C', of the transverse slotted plates *c c*, or other equivalent mechanism, to attach the free rear ends of said levers to the plow-beam and allow the latter to slide thereon, whereby the plow-beam may have free longitudinal movement when being raised, and the plow may be leveled, substantially as shown and described.

2. The foot-levers E, provided with spring-pawls and ratchets *i i* A, in combination with the parallel plates *c c*, between which slide the free rear ends of the levers E E and plow-beam C', substantially as and for the purpose set forth.

202,616. CLOTHES-SPRINKLERS. David Whittaker, Milwaukee, Wis., assignor of one-half his right to Mary C. Whittaker, same place. Filed Jan. 16, 1878.

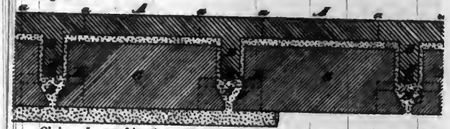


Claim.—1. As a new article of manufacture, a device for sprinkling clothes, consisting of cylinder A, provided with head B, to which is attached rod D, head B', provided with ring E, as temporarily attached to the cylinder A, pad C, provided with wire-cloth, as arranged to vibrate forward and backward against the heads upon the rod D, all substantially as and for the purpose specified.

2. In combination with the sprinkler consisting of the cylinder A, heads B B' and pad C, substantially as and for the purpose specified.

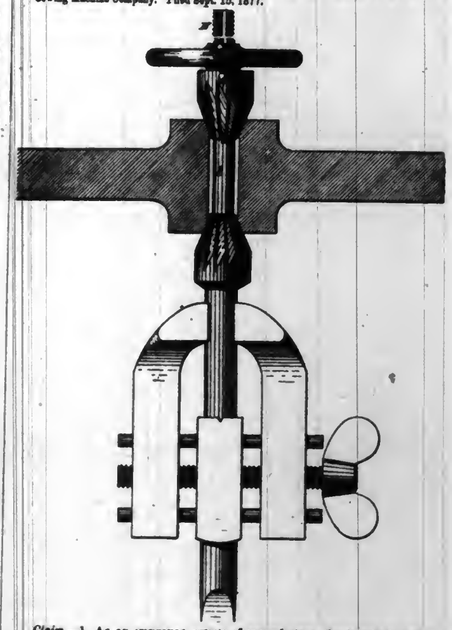
202,617. FIRE-PROOF CEILINGS. Peter B. Wight, Chicago, Ill., assignor of one-half his right to Harvey B. Merrell, Morristown, N. J., and Thomas Ferguson, Detroit, Mich. Filed Dec. 31, 1877.

Brief.—The fire-proof blocks are retained in their places by square buttons applied to each four meeting corners, which are recessed to receive them, both extending through said buttons into the depending flanges of the iron-work, making all fast. By this device any one block may be removed without disturbing the rest.



Claim.—In combination with iron plates A, provided with downwardly-extending ribs or flanges B, the fire-resisting blocks C, made with overlapping edges, the countersunk plates or buttons B, and cement filling E, all constructed and arranged as described, and for the purpose set forth.

202,618. HAND-REAMERS. Frederic W. Wild, Baltimore, Md., assignor to the Domestic Sewing Machine Company. Filed Sept. 15, 1877.



Claim.—1. As an improved article of manufacture, the herein-described hand-reamer, provided with a stem by which it may be held in a fixed conical cutter, an adjustable conical-shaped device or cutter, and a threaded feed-wheel, substantially as and for the purposes set forth.

2. In a reamer adapted to be used without the aid of machinery, the combination of a stem for holding said reamer, a fixed cutter, an adjustable cutter or cone, a threaded stem, and a feed-wheel, substantially as set forth.

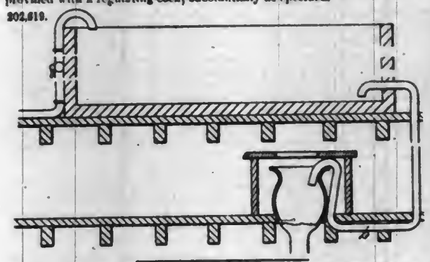
202,619. WATER-CLOSETS. Joseph M. Wilson, Philadelphia, Pa. Filed Mar. 19, 1878.

Claim.—1. The combination, with a water-closet basin and an elevated tank having a continuous water-supply, of a tube entering the tank with a siphon-bend, and entering the basin, whereby the said basin is periodically flushed, substantially as specified.

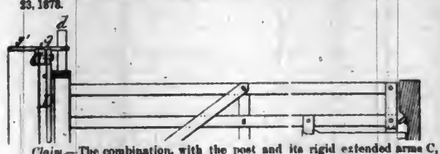
2. The combination, with a basin and an elevated tank having a continuous water-supply, of a tube entering the tank with a siphon-bend, dipping in a U-bend below the basin, and then entering the same, substantially as specified.

3. The combination, with a basin, an elevated tank, and a siphon-tube connecting the said basin and tank, of a supply-pipe feeding the tank and provided with a regulating-cock, substantially as specified.

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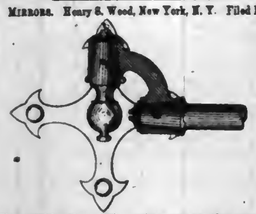


202,620. GATES. Thomas O. Williams and Wilbur F. Hubbell, Wauseon, Ohio. Filed Feb. 23, 1878.



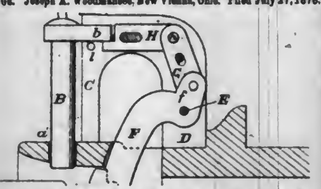
Claim.—The combination, with the post and its rigid extended arms C, and the angularly-slotted plate *g*, of the gate having the hinge-pintle *d*, extending through said plate, the levers D, pivoted to the rigid extended arms of the gate-post, and the connections G, pivoted to said lever D, adapted to engage the pintle, substantially as specified.

202,621. MIRRORS. Henry S. Weed, New York, N. Y. Filed Dec. 18, 1877.



Claim.—The combination, with a mirror-supporting standard, of a curved arm provided with a tapering socket, to which the mirror is secured, and a tapering plug, which is attached to said bracket, and fits the tapering socket of the curved arm, substantially in the manner and for the purpose herein shown and described.

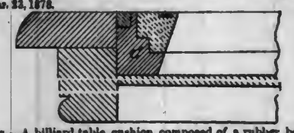
202,622. CAR-COUPLINGS. Joseph A. Woodmansee, New Vienna, Ohio. Filed July 27, 1876.



Claim.—The coupling herein described, consisting of T-headed bolt B *b*, standard D, guides C C, catch H, toggle G *f*, and trigger F.

REISSUES.

8,172. BILLIARD-TABLE CUSHIONS. James E. Boyle, Brooklyn, N. Y., assignor, by mesne assignments, to H. W. Collender, New York city. Patent No. 154,743, dated Sept. 8, 1874. Filed Mar. 23, 1878.

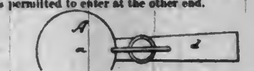


Claim.—A billiard-table cushion composed of a rubber body, and a steel or other suitable face-hardening strip, and having the face-hardening strip arranged about parallel with the upper surface of the rubber body, substantially as and for the purposes set forth.

8,173. GAS-LIGHTERS. John B. Scattergood, Newark, N. J., assignor, by mesne assignments, of one-half interest to George H. Kitchen & Co. Patent No. 186,747, dated Jan. 30, 1877. Filed Mar. 20, 1878.

Brief.—The tube is to be filled with gas, which is forced out of the nozzle *b*, when air is permitted to enter at the other end.

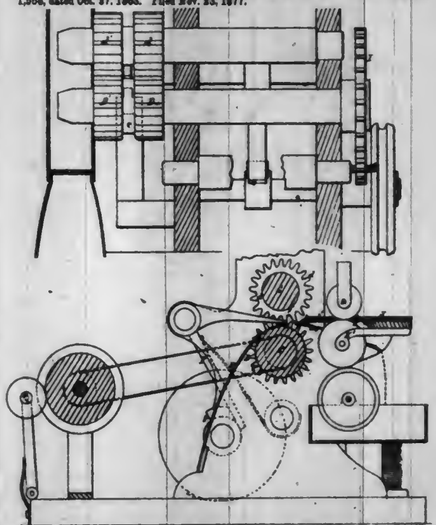
8,173.



Claim.—1. The tube A, provided with the nozzle *b* and air-opening *d* at or near opposite ends, to constitute a gas-lighter of which the flame is supplied by gas, substantially as specified.

2. The combination of the tube A, having the nozzle *b* at one end and the air-opening *d* at or near the other end, with the cock *c*, substantially as and for the purpose specified.

8,174. FLUTING-MACHINES. Geo. H. Wooster, New York, N. Y., assignee, by mesne assignments, of Thomas Rohjohn, deceased. Patent No. 30,238, dated July 31, 1860; Reissue No. 1,556, dated Oct. 27, 1863. Filed Nov. 23, 1877.



Claim.—1. The combination of two pairs of rotating fluting-rollers and an interposed presser, to operate substantially as and for the purpose herein set forth.

2. In a fluting-machine, the combination of two rollers arranged to flute the fabric passing between them with mechanism to impart to such rollers an intermitting motion.

3. A pair of fluting-rollers, in combination with a presser to press the flutes and form plaits, substantially as described.

4. The combination of a pair of fluting-rollers and a presser with mechanism adapted to actuate the rollers and presser intermittingly, substantially as described.

5. The combination, with the two pairs of fluting-rollers, of an interposed stripper, operating substantially as and for the purpose herein set forth.

6. The combination of two pairs of fluting-rollers and a gage to guide a strip of muslin or other material to both pairs of rollers, substantially as and for the purpose herein specified.

7. The flat tubular guide J, constructed with two slits, *i i*, and a tongue, *j*, substantially as and for the purpose herein set forth.

8. The combination of two pairs of fluting-rollers, a presser, a stripper, and a guide, to operate substantially as herein set forth.

9. The combination, with a guide to conduct a strip of muslin or other fabric to the fluting-rollers, of a starching-roller, substantially as described.

10. A thread-conductor, in combination with starching mechanism, fluting-rollers, and a presser, substantially as and for the purpose herein set forth.

11. In a fluting-machine, a pair of rollers provided with fluting-ridges, rounded at the ends of the flutes, to prevent tearing or breaking of the fabric, substantially as described.

12. In a fluting machine, the combination of intermittingly actuated rollers and mechanism to operate them, with a plaiter and mechanism to operate it, to press the plaits while the rollers are at rest, substantially as described.

13. In a fluting-machine, a pair of fluted rollers having the raised fluting-ridges rounded at one end, in combination with a support for such rollers, and a gage or guide for the material, one edge of such gage being located in a line between the rounded ends of the rollers and the support, substantially as described.

14. The combination, with the pair of rollers and a gas-burner to heat them, of a chimney to create a draft, substantially as described.

15. In the process of making ruffling, the starching a formed ruffle to a thread to hold the plaits together, substantially as described.

16. In an apparatus for making ruffling, the combination, with a plaiter and a pair of fluting-rollers, of mechanism to impart to such rollers an intermitting motion.

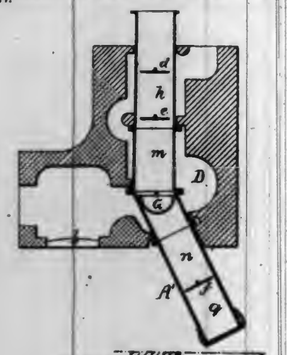
17. In combination with a pair of fluting-rollers, an auxiliary roller for the purpose of pressing the fluted material flat along some part of its surface after the same has been fluted, substantially as described.

18. In combination, a pressing mechanism and a device for delivering a thread to the pressed part, where, by starch, it is caused to adhere, substantially as described.

19. In combination with a fluting-machine, mechanism, substantially as described, to press the flutes by a flexible pressure, substantially as described.

20. In a machine for the manufacture of fluted or frilled trimming, a roller to operate upon the material being made into trimming, and means to conduct a gas flame for heating the roller against a portion of the roller other than its acting periphery, to thereby avoid soiling or blacking the acting face or surface of the roller, substantially as described.

8,175. AMALGAMATORS. Joseph W. Bancroft and Thomas Walker, Philadelphia, Pa., assignors of part interest to S. H. Safford. Patent No. 170,329, dated Nov. 23, 1876. Filed Dec. 26, 1877.



Claim.—1. The mode herein described of amalgamating pulverized ore, which consists in subjecting the ore to a gradually-increasing heat while it is subjected to the action of the vapors of mercury, all substantially as set forth.

2. The mode herein described of preventing the escape of the vapors of mercury from an amalgamating-retort, which mode consists in maintaining in the path of the vapors and within the retort a mass of ore cool enough to effect the condensation of the vapors, all substantially as specified.

3. An amalgamating-retort extending beyond the fire-place of the furnace, and provided with means, substantially as described, for permitting the gradual passage of the amalgamated ore through the same, so that the latter is cooled before its discharge from the retort, as set forth.

4. An amalgamating-retort combined with a furnace, and having a movable valve, G, for supporting a charge of ore while it is being subjected to a vapor of mercury, and for discharging the ore, all substantially as set forth.

5. The cup-shaped valve G, hung within the retort, in combination with the pipe J, through which mercury may be introduced into the receptacle of the valve, all substantially as set forth.

6. The combination, in the retort, of a tight-fitting ore-supporting valve, G, with valves *e* and *f*, for supporting the ore without obstructing the outward passage of the vapor of mercury, as specified.

7. The combination, in the retort, of the valves G and *f* and a stopper or cap detachable from the lower end of the retort, as set forth.

8,176. BUFFLING ATTACHMENTS FOR SEWING-MACHINES. Job A. Davis, Watertown, N. Y. Patent No. 62,063, dated July 27, 1860. Filed June 30, 1873.

Brief.—The ruffling-blade is moved back from the needle by an elbow-lever acted upon by the needle-bar, and thrown forward as the needle-bar ascends by a helical spring. The amount of motion communicated to the ruffling-blade by the elbow-lever is regulated by a screw, and thus the size of the gathers may be controlled. The attachment is provided with guides for smoothing the material as it is fed toward the needle, and an additional presser-foot to smooth and press the completed work. When gathers are to be sewed to a band or other form of material, the guides and smoothers serve to keep the pieces apart and the upper out of the reach of the ruffling-blade.



Claim.—1. The combination, in a gathering or ruffling attachment for sewing machines, of a supporting-frame, a vibratory elbow-lever adapted to be operated from or by the needle-bar, and a reciprocating gathering-blade, substantially as set forth.

2. The combination, with the gathering-blade and elbow-lever adapted to withdraw said gathering-blade, of a spring arranged to advance said blade and assist in the formation of gathers, substantially as set forth.

3. A ruffling attachment adapted to be secured upon the cloth-plate of a sewing-machine, and operated by the needle-bar thereof, consisting of a frame, elbow-lever, gatherer, and a spring to assist the latter in its action, substantially as and for the purposes set forth.

4. The combination, in a gathering attachment for sewing-machines, adapted to be operated by a bell-crank lever, of a reciprocating gathering-blade, and a supplemental presser foot or pad adapted to extend beneath the presser-bar of said machine, substantially as and for the purposes set forth.

5. In a ruffling attachment adapted to be operated by an elbow-lever from the needle-bar of a sewing-machine, the combination, with its frame, reciprocating gathering-blade, and lever, of an adjusting mechanism for varying the width of the gathers to be formed, substantially as set forth.

6. In a gathering or ruffling attachment operated by a bell-crank lever from a needle-bar of a sewing-machine, a gathering-blade adapted to be held in suspension above the material operated upon, to prevent the formation of gathers when desired, substantially as set forth.

7. In a ruffling or gathering attachment operated by a bell-crank lever from the needle-bar of a sewing-machine, the combination of an elastic or yielding plate with a gathering-blade, which plate serves as a supplemental presser and stop, against which the gathers are formed, and by which means said gathers may be smoothed, substantially as set forth.

8. In a ruffling attachment adapted to be operated through the medium of an elbow or bell-crank lever and the needle-bar of a sewing-machine, the combination, with the gathering-blade and the frame of the attachment, of an adjusting-screw and connecting mechanism, whereby the fullness of the ruffles or gathers is regulated, substantially as described.

9. A ruffling attachment adapted to be secured to the cloth-plate of a sewing-machine, and to be operated from or by the needle-bar through the medium of a bell-crank lever, having a reciprocating gatherer, a plate for separating the materials operated upon in advance of the needle, and a frame, the several parts being constructed and united as a unit, substantially as and for the purpose set forth.

10. In a ruffling attachment adapted to be operated by the needle-bar of a sewing-machine through the medium of an elbow or bell-crank lever, the combination, with its frame, of a horizontally arranged reciprocating gathering-blade, substantially as set forth.

11. The combination, with a gathering attachment for sewing-machines, consisting of an elbow-lever adapted to be operated from the needle-bar, and a reciprocating gathering-blade, of a plate arranged in the rear of said gathering-blade, for separating the stripe which are to form the ruffle from the material to which said ruffle is to be secured in advance of the formation of the gathers and the stitches for securing the same, substantially as set forth.

12. In a ruffling or gathering attachment adapted to be operated from the needle-bar of a sewing-machine, the combination of the frame, elbow-lever, reciprocating gathering-blade, and mechanism for adjusting the width of the gathers, of a plate arranged in the rear of said gathering-blade, substantially as and for the purpose set forth.

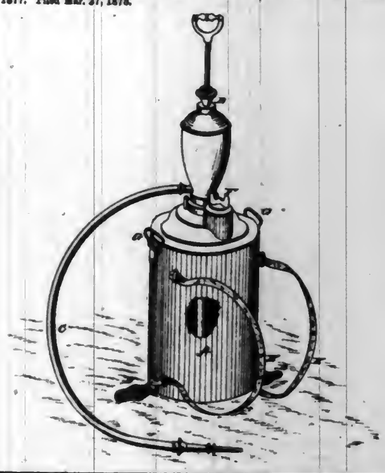
13. In a ruffling attachment for sewing-machines, the combination of a frame, an elbow-lever adapted to be operated by the needle-bar thereof, a reciprocating gathering-blade, mechanism for regulating the fullness of gathers, a plate arranged in rear of gathering-blade, and a supplemental presser or pad; substantially as and for the purpose set forth.

14. In a gathering or ruffling attachment for sewing-machines, the combination of frame, elbow-lever, gathering-blade, screw and gage for regulating the fullness of gathers, a plate arranged in rear of the gathering-blade, and a supplemental presser or smoother, substantially as and for the purposes set forth.

15. In a ruffling or gathering attachment adapted to be held detachably upon a sewing-machine, the combination, with the reciprocating ruffler and the frame of the attachment, of an actuating elbow-lever adapted to be operated by a projection upon the needle-bar, substantially as and for the purposes set forth.

16. In a ruffling attachment for sewing-machines, the combination of its frame, elbow-lever, gathering-blade, screw and gage, separating-plate, supplemental presser, and mechanism for suspending the gathering-blade, substantially as and for the purpose set forth.

8,177. KNAPSACK FIRE-ENGINES. Joseph W. Douglas, Middletown, Conn., assignor to W. & B. Douglas. Patent No. 93,974, dated Aug. 24, 1869; Reissue No. 7,774, dated July 2, 1877. Filed Mar. 27, 1878.



Claim.—1. The reservoir A, armed with one or more foot-pieces, D, projecting from the reservoir at the bottom, for the purposes herein set forth.

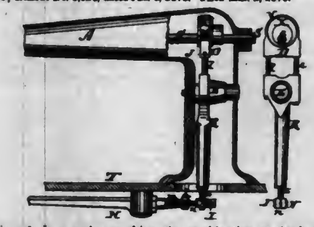
2. In combination with a portable reservoir carrying a pump, the straps E E, for attaching the same to the body, substantially as herein set forth.

3. The reservoir A, armed with foot-pieces D D and belts E E, in combination with the force-pump B and pipe C, arranged and operated substantially in the manner and for the purposes herein set forth.

4. The combination of a portable vessel adapted to be carried by a single person, and having a closed top which is water-tight, with a hand force-pump and a hose, for the purpose specified.

5. A portable vessel adapted to be carried by a single person, and having a water-tight top to prevent the escape of liquid, and provided with either straps or handles, or both, in combination with a hand force-pump and a hose, as and for the purposes set forth.

8,178. SEWING-MACHINES. George Hancock, Passaic, N. J. Patent No. 169,988, dated Oct. 19, 1875; Reissue No. 8,028, dated Jan. 8, 1878. Filed Mar. 2, 1878.



Claim.—1. In a sewing-machine, the combination of the lever R, having pivot I, with the split clasping-socket N, applied to the lever H, which socket grasps said pivot, and is adjustable thereto through the medium of the set-screw I, substantially as and for the purpose specified.

2. In a sewing-machine, the combination of the vertical lever R, provided with the pivot I, with the lever H, having the clasping-socket N, and with the block D, provided with the rods *d* and *e*, and the eccentric-strap V, overlapping the eccentric X, substantially as and for the purpose set forth.

3. In a sewing-machine, the combination of the lever H, having split tapering sleeve *n*, with the split pin *n*, having socket N, and with the nut *b* and lever R, provided with the pivot I, substantially as herein shown and described.

8,179. BUTTER-DISHES. George E. Savage, West Meriden, Conn., assignor to the Meriden Britannia Company, same place. Patent No. 176,358, dated Apr. 18, 1876. Filed Apr. 3, 1878.

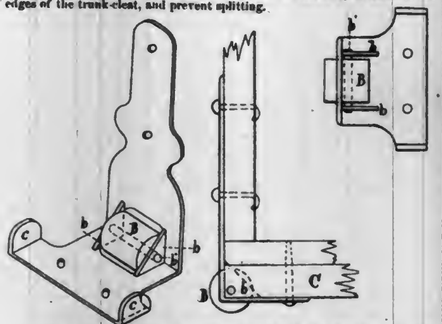
Brief.—The glass disk serves to cut against, and protects the plate from defacement, and by its transparency admits of viewing the metal plate underneath.



Claim.—In articles of silver or plated ware consisting of a flat metal plate and border, the combination therewith of a glass disk to cover and protect the said flat plate, substantially as described.

8,180. TRUNK-CASTER FRAMES. George B. Jenkinson, Newark, N. J., assignor to George M. Ballard and George Minchin. Patent No. 80,548, dated Aug. 4, 1868. Filed Dec. 19, 1877.

Brief.—The bottom side-edges of the frame are turned up to embrace the edges of the trunk-cleat, and prevent splitting.



Claim.—1. A caster-frame carrying the roller B, and provided with ears *c c*, for clasping the sides of the cleat, as set forth.

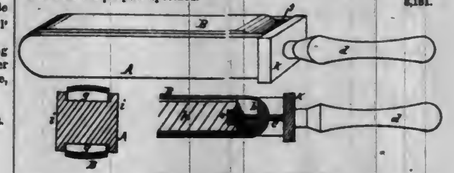
2. The combination of the frame, its clamping-ears *c c*, and braces *b b*, arranged on opposite sides of the roller-opening, and supporting the roller-pin, and the cleat recessed to receive the roller and bearings, all as set forth.

8,181. RAZOR-STROPS. John Lamont and Alex. Lamont, Rochester, N. Y., assignees of Jas. Lamont, deceased. Patent No. 173,477, dated Feb. 15, 1876. Filed Feb. 13, 1878.

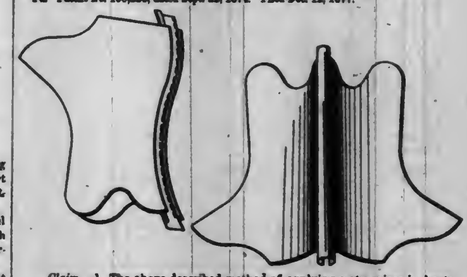
Claim.—1. A rectangular block provided with opening *f*, bone-surfaces *f i*, block *k*, handle *d*, screw C, nut *b*, and screw-stop *c*, inserted in the end of block *k*, in combination with the continuous strap B, substantially as and for the purpose specified.

2. The stock A, constructed with bone-sides *i i*, opening *f*, and channels *g g*, in combination with strap B, screw C, handle *d*, and nut *b*, substantially as and for the purpose specified.

8,182.



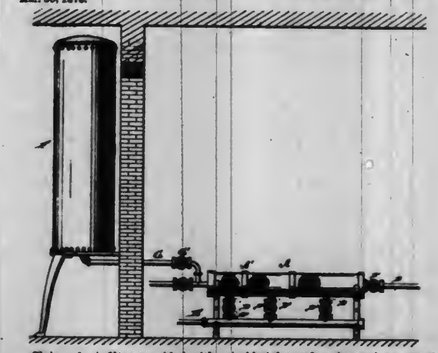
8,182. MANUFACTURE OF BOOTS AND SHOES. Laurens Emmanuel de Wurz, Philadelphia, Pa. Patent No. 155,228, dated Sept. 22, 1874. Filed Dec. 12, 1877.



Claim.—1. The above-described method of applying a stay-piece in boots or shoes, the same consisting in stitching the stay on the parts to be united by a blind seam, substantially as and for the purpose set forth.

2. The improved article of manufacture consisting of a boot or shoe the seam or seams of which are protected by an outside stay or stays, the edges of which are turned under and sewed to the parts by a blind-stitch seam or seams, substantially as and for the purpose set forth.

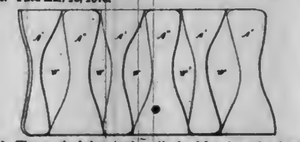
8,183. FILTERS. Ralph S. Jennings, New York, N. Y., assignor, by mesne assignments, to the New York Filter Company, same place. Patent No. 188,144, dated Mar. 6, 1877. Filed Mar. 30, 1878.



Claim.—1. A filter provided with suitable inlet and outlet, and connected with the boiler F, whereby a reverse current of hot water may be forced through such filter for cleansing, substantially as specified.

2. The combination of the filter A with inlet B, outlet C, and waste-water pipes D, the boiler F, and hot-water pipe G, the various pipes being provided with suitable cocks, substantially as set forth.

8,184. MANUFACTURE OF STIFFENERS FOR BOOTS AND SHOES. Watson M. Sprague, South Framingham, Mass., assignor to himself and Wm. W. Potter. Patent No. 174,164, dated Feb. 29, 1876. Filed Mar. 13, 1878.

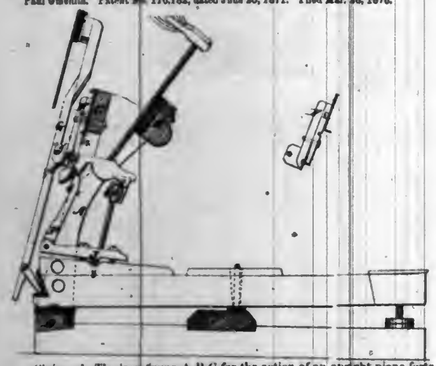


Claim.—1. The method herein described of forming shank-stiffeners for boots and shoes, consisting in first beveling or scarfing the opposite edges of a strip of leather-board at its opposite sides, as at *e e'*, to produce toe-forming ends, and then cutting through such strip transversely at an inclination to its face, on curved lines *g h*, thereby dividing such scarfed strip into separate stiffeners, with scarfed toes wider than their heels, and with beveled sides,

the toes of the stiffeners extending to each edge of the strip, substantially as shown and described.

2. The improved mode, substantially as herein described, of forming shank stiffeners for boots and shoes, consisting in separating a sheet of leather board or other material into strips having scarfed edges, then cutting through the strip transversely on the curved lines *g h*, and on the lines *f* in the opposite direction, thereby dividing the strip into separate stiffeners, beveled on their opposite longer edges, scarfed at their toes, and squared at their heels, essentially as shown and described.

8,185. UPRIGHT PIANO-FORTE ACTIONS. A. Horace Hastings, New York, N. Y., assignor to Paul Gmehlin. Patent No. 116,182, dated June 20, 1871. Filed Mar. 26, 1876.



Claim.—1. The iron frame A B C for the action of an upright piano-forte, composed of two or more standards and of two horizontal rails or stretchers, all cast in one piece, substantially as specified.

2. The cast-iron frame A B C, constructed as described, to form the key-rest rail and the hammer and damper rail, and to support the hammer rest rail, substantially as described.

3. The wooden plugs *a a*, in combination with the iron key-rest rail, for the purpose of receiving the tacks by which the cushion is secured to the rail, substantially as herein specified.

4. The detached wooden strip *e*, in combination with the grooves in the hammer-flanges, the screws S S, the hammer-rail C, and the interposed cloth *c*, substantially as described.

5. The combination of the projections *i* on the front jaws of the hammer-flanges, the notch *e* in the said jaw, and the recesses *l* in the back jaws, substantially as and for the purpose herein set forth.

6. The arrangement of the damper lever in oblique positions, in which that for each note is supported by the flange which supports the hammer of the next or a neighboring note, substantially as and for the purpose described.

7. The head *b* of the hammer-check, constructed of continuous bands of cloth, leather, or other material, through which the shank passes, and which are each lapped twice over or around the head of the shank, substantially as and for the purpose herein described.

8,186. PROCESSES FOR RENDERING LEATHER AND OTHER FIBROUS SUBSTANCES SOFT AND FLEXIBLE AND IMPERVIOUS TO GAS, AND COMPOSITION FOR SAME. Enoch Osgood, Boston, Mass., assignor, by mesne assignments, to Elliott P. Gleason, New York city. Patent No. 129,901, dated July 30, 1872. Filed Oct. 22, 1877.

Claim.—1. As a new article of manufacture, leather or skin, or their equivalent, saturated with glycerine, whereby said article is rendered impervious to gas, and soft and flexible, substantially as described.

2. The herein-described process of rendering diaphragms, tubes, and vessels of leather, skin, or other fibrous and porous material impervious to gas, soft and flexible, by saturating or treating the same with glycerine, substantially as set forth.

8,187. FERTILIZERS. George J. Popplein, Baltimore, Md., assignor to the Popplein Silicated Phosphate Fertilizer Company, same place. Patent No. 174,566, dated Mar. 7, 1876. Filed Mar. 21, 1876.

Claim.—1. A fertilizing composition containing tripoli and an alkaline salt, substantially as described.

2. A fertilizing composition containing tripoli and a salt of potash, substantially as described.

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Nos. 205 and 236.—October Term, 1877.

[*Appeals from the Circuit Court of the United States for the Eastern and Western District of Pennsylvania.*]

The construction given reissued Letters Patent No. 1,177, granted W. H. Seymour, May 7, 1861, (No. 72,) in *Seymour* vs. *Osborne*, 11 Wallace—viz: A quadrant or sector shaped platform for a reaping-machine, placed just behind the cutting apparatus, and in such relation to the main frame that the cut grain is swept around on the arc of a circle and dropped heads foremost on the ground, at such distances from the standing grain as to avoid taking up the gavels between swaths—approved, and its validity sustained.

Since a patent may be invalid for several reasons under the law, an assignment of error which gave no more explicit cause than "that the patent is invalid" was overruled.

To improve the efficient operation of the mechanism described in the patent (Reissue No. 1,682, May 31, 1864,) by the simple exercise of mechanical skill does not constitute invention. The patent is for a practical and useful invention, although the particular improvement is not suggested, and is infringed, notwithstanding the described mechanism is used only in connection with such improvement.

Reissued Letters Patent No. 1,682 and No. 1,683, granted May 31, 1864, for improvement in harvesting-machines, examined and sustained.

It is an infringement where the sweep-rake operates in combination with the quadrant platform to remove the cut grain in substantially the same way and for the same purpose as in the complainants' patent, even though the mode of attaching the rake-arm to the machine and the means employed for retaining it in position for another sweep are different.

Damages of a compensatory character may be allowed to a complainant in an equity suit where it appears that the business of the infringer was so improvidently conducted that it did not yield any substantial profits.

Mr. Justice CLIFFORD delivered the opinion of the Court:

Owners of a patent, whether patentees or assignees, may seek redress for the unlawful use of the improvement which it secures, in the circuit court, by a suit at law or in equity, at their option; but in either form of proceeding they must allege and prove that they or those under whom they claim are the original and first inventors of the improvement, and that the opposite party or parties have infringed their exclusive right to make or use the same, or vend it to others to be used. Both allegations must be proved; but the letters patent, if introduced, and in due form, afford a *prima facie* presumption that the first allegation is true, which casts the burden of proof upon the defending party.

Patents, when inoperative or invalid, may in certain cases be surrendered and reissued, but the new patent in such cases must be for the same invention as the original patent; and if it is for a different invention, the reissue is invalid, for the reason that it was granted without authority of law.

Redress is sought in two suits in equity by the complainants for the infringement of five of the patents which they own, their title to the same not being in controversy. Service was made, appearance entered, answers and replications filed, proofs taken, hearing had; and the circuit court entered a decree sustaining the validity of three of the patents, and that the complainants recover of the respondents the profits, gains, savings, and advantages they made in consequence of the infringement, together with the damages they sustained thereby, with costs and charges.

Such a decree was entered in each case, with a further decree that the cause be referred to a master to compute the profits, gains, savings, and advantages made by the respondents. Both parties excepted to the re-

port of the master in each case, and the court overruled their respective exceptions, and decreed that the complainants do recover of the respondents, in the first case, the sum of six thousand two hundred and eighty dollars damages for machines made and sold, adding six cents as nominal damages for machines not sold, with costs as taxed; and that the complainants do recover of the respondents, in the second case, the sum of thirteen thousand and eighty-five dollars and six cents, with costs as taxed—the master having allowed five dollars (a sum equal to a license fee) for each machine sold, amounting to thirteen thousand and eighty-five dollars, and six cents nominal damages for machines manufactured and not sold.

Immediate appeal was taken by the respondents to this court, and they now assign the following errors: (1) That the first two, to wit, No. 1,682 and No. 1,683, are invalid, and that the circuit court erred in not sustaining the defense that the respective inventions were neither useful nor practical. (2) That the Patent No. 72 is invalid, and that the circuit court erred in not sustaining the defence that the patentee was not the original inventor of the improvement. (3) That the circuit court erred in holding that the reissued Patent No. 72 was for the same invention as the original patent. (4) That the circuit court erred in overruling the exceptions of the respondents to the master's report.

Three patents only are involved in the present investigation, as exhibited in the assignment of errors, as follows: (1) Reissue No. 72, which has but a single claim, to wit, for—

A quadrant-shaped platform of a reaping-machine arranged relatively to the cutting apparatus, substantially as described, and for the purpose set forth.

(2) Reissued Patent No. 1,683, the charge of infringement being limited to the second claim, which is as follows:

The combination in harvesting-machines of the cutting apparatus with a quadrant-shaped platform in the rear of the cutting apparatus, a sweep-rake mechanism for the operating of the same, and devices for preventing the rise of the rake when operating on the grain, those five members being and operating substantially as set forth.

(3) Reissue No. 1,682, the charge of infringement extending only to the first claim of the patent, which is as follows:

The combination of the cutting apparatus of a harvesting-machine with a quadrant-shaped platform arranged in the rear thereof, a sweep-rake operated by mechanism in such a manner that its teeth are caused to sweep over the platform in curves when acting on the grain, these parts being and operating substantially as set forth in the specification.

Two of the patents, to wit, the first and the second, are reissues from the original patent granted to the first-named complainant—No. 72, dated May 7, 1861, being a reissue of one of the three parts of a prior reissue of the original patent, and No. 1,683, dated May 31, 1864, being a reissue of another of the three parts of the prior reissue of the same original patent granted to the original patentee. Reissue No. 1,682, dated May 31, 1864, is a second reissue from a prior reissue when the original patent granted to Palmer and Williams was divided into two parts and reissued on an amended specification.

Properly construed, the defenses to the charge of infringing patent No. 72 are as follows: (1) That the patentee was not the original and first inventor of the improvement. (2) That the reissued patent is not for the same invention as the original patent. (3) That the respondents have not made, used, or sold machines constructed in accordance with the mechanism described in the complainants' patent.

Attempt is not made to call in question the correctness of the construction given to the patent when the court here was required, five years ago, to define its specification, and being satisfied that the views then expressed were correct, they are adopted in the present case.

Number seventy-two consists in constructing the platform of a reaping-machine, upon which the cut grain falls as it is cut, in the shape of a quadrant or of a sector of a circle, placed just behind the cutting apparatus, and in such relation to the main frame that the grain, whether raked off by hand or by machinery located behind the cutting apparatus, can be swept around on the arc of a circle, and be dropped heads foremost on the ground far enough from the standing grain to leave room for the team and machine to pass between the gavels and the standing grain, without the necessity of taking up the gavels before the machine comes round to cut the next swath.

Infringers, if they give due notice of such a defense, may show that the patentee is not the original and first inventor of the improvement; and if they establish that allegation the prosecuting party is not entitled to recover, but the burden to prove the defense, if the patent is introduced in evidence, is cast upon the defending party to prove the affirmative of the issue.—(*Seymour* vs. *Osborne*, 11 Wall., 538.) Apply that rule to the case and it is clear that the burden of proof under this issue is upon the respondents, as the patent of the complainants is made an exhibit in the record.

Appellants set up want of novelty, and refer, in the first place, to the machine of Nelson Platt in support of their theory. Precisely the same defense was set up in the prior case founded on this patent, in respect to which decision the respondents admit that it is an authority in this case to the extent that the issues and facts are the same. Properly understood, say the court in that case, the machine referred to does not contain a combination of the quadrant-shaped platform with the cutting apparatus in any practical sense. On the contrary, it has a square platform combined with the cutting apparatus, and the quadrant-shaped platform is combined with the square platform; nor does it contain any quadrant-shaped platform to receive the grain as it falls, the court holding that the ingredients of the patent in that case, as well as the combination, are different from those exhibited in the complainants' machine, and that the mode of operation is also different.

Support to that theory of a decisive character is also found in the testimony of the expert witness called by the respondents. He admits in his cross-examination that there are material and substantial differences between the machine represented in the respondents' exhibit and that of the complainants; that he does not find in the respondents' exhibit the quadrant or sector shaped platform arranged as in the complainants' machine, so that the grain falls thereon as it is cut by the cutting apparatus; that the quadrant-shaped part of the platform shown in the respondents' exhibit has the grain conveyed to it from a rectangular platform which is in the rear of the cutting apparatus, the quadrant-shaped part being immediately connected to the rectangular platform.

2. They, the respondents, refer also to the machine of Obed Hussey as anticipating the patented quadrant-shaped platform of the complainants, which is also the same defense as that made in the prior suit founded on this patent. Hussey, as the court remarked in that case, was much engaged for a time in the manufacture of reaping-machines of various kinds. Most of his machines, however, were constructed without any reel and with square platforms, so as to drop the cut grain at the rear of the platform, differing so widely from the patented machine of the complainants as to require no argument to show that they do not afford support to the present defense.

Apart from these he made the one set up as a defense in this case, which has a square or rectangular platform, to which is bolted an angular addition, giving the rear part when the addition is attached an angular form. Examined when the addition is bolted to the main platform, irrespective of the other ingredients of the combination, it approaches much nearer to the invention of the complainants than the other exhibit given in evidence. Undoubtedly it was built during the autumn prior to the harvest-season during which the inventor of the complainants made his invention of the quadrant-shaped platform, but the proofs introduced by the respondents show that the square platform of Hussey, to which was bolted the angular addition, was not used for cutting grain during the harvesting-season of its manufacture.

Proofs were introduced in the former case to support the theory that that exhibit anticipated the complainants' patent for the quadrant-shaped platform, but the court overruled that defense upon two grounds: (1) That the two machines were substantially different. (2) That the machine as constructed was merely an experiment, and that it was never reduced to practice as an operative machine.

In support of the latter proposition the court in that case remarked that the evidence showed that it was sent to the railroad-depot to be transported to some other place for trial; that there was no positive evidence that it was ever forwarded or used, or that it was capable of any beneficial use; that when it was transported from the depot, if at all, did not appear; but that it did appear that it was returned the next year and was set against the wall by the side of the street in front of the shop, where it remained for some time; that it was then removed to the new shop of the maker, where it remained until it was taken to pieces and broken up by his order, and that it was never restored till long subsequent to the complainants' patent.

Three witnesses established the views there expressed, but the respondents contend that one of the three witnesses has since recalled certain important facts which he did not recollect at the time of his examination in the prior case. Proof was introduced by the respondents tending to show that the witness had seen, in the manufactory of the party last named, certain machines having an extra platform with an angular guide-board bolted to the rear of the original platform, prior to the date of the complainants' invention, as shown in the evidence. Being asked whether he was not examined in the prior suit, the witness answered that he was, and he admits that he then stated that he did not remember but one machine with such a platform, and that he then stated that he had no knowledge what became of it, and he now testifies that those answers are correct.

During his examination-in-chief he testified to the effect that when it became necessary to have more room between the gavels and the standing grain, so as to employ two horses abreast, an additional angular piece was attached to the back part of the platform, which finally developed itself into a part of a circle, the guide-board being sawed so that it could be easily bent.

In respect to that he was asked if he made any statement of the kind in his deposition in the prior case, and his answer was that he did not; and when asked why he did not, his answer was that he did not think of it. Suffice it to say that the subsequent explanations given by the witness as to the inconsistency of his statements, when one deposition is compared with the other, are not entirely satisfactory.

Taken as a whole we are all of the opinion that the evidence of that witness is not sufficient to warrant the conclusion that the patent of the complainants is invalid, for at least two reasons: (1) Because the facts stated by the witness are, in view of the circumstances, too indefinite and uncertain to show that the machines which the witness saw embodied the same principle and mode of operation as the mechanism described in the complainants' patent. (2) Because the statements of the witness do not show that the machines were anything more than abandoned experiments.

Two or three observations will be sufficient to show that the defense set up by the respondents, that the McCormick machine anticipates the complainants' invention of a quadrant-shaped platform, is entirely without merit. Both the specifications and the drawings of the patent afford abundant evidence to support that proposition. From these it appears that the grain cut by the machine is raked by the operator transversely across the machine, and that the raker, when in the act of discharging the cut grain upon the ground, endeavors to sweep it as near as possible into a position with the heads from the machine, but the platform is not so configured as to aid him in accomplishing that result, everything in that regard depending upon the skill of the operator and his physical ability to give the rake the right sweep at the right moment. Further discussion of the matter is deemed unnecessary, and the defense depending upon that machine is overruled.

(3) Patents in a proper case may be surrendered and reissued, but the reissued patent must be for the same invention as the original patent, else the reissue is invalid, but the patentee may redescribe his invention and include in the description and claims of the specification not only what was well described before, but whatever else was suggested or substantially indicated in the old specification, drawings, or Patent Office model, which properly belonged to the invention as actually made and perfected. Corrections may be made in the description, specification, or claims of the patent where the patentee has claimed as new more than he had a right to claim, or where the description, specification, or claim is defective or insufficient, but he cannot under such an application make material additions to the invention which were not described, suggested, nor substantially indicated in the original specifications, drawings, or Patent Office model.

Extended discussion of these principles are unnecessary, as they are well settled by the repeated decisions of this court, and when properly applied to the case before the court they show that the third assignment of error must be overruled, for the reason that the new patent does not contain anything beyond what was well described or suggested in the specification of the original patent.

II. Passing for the present the question of infringement, the errors assigned in respect to the Reissue Patent No. 1,682 will next be considered. They are as follows: (1) That the patent is invalid. (2) That the invention is neither useful nor practical.

Much discussion of the first error assigned cannot be required, as it is too indefinite to convey any distinct idea as to what is meant. Patents may be invalid because the patentee is not the original or first inventor of the improvement, or for the reason that the written description of the same is not in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains to make, construct, compound, or use the same; or a reissued patent may be invalid because it is not for the same invention as the original. None of these defenses, however, if made, could be supported; and, in view that no more explicit cause of error is assigned, the first assignment of error must be overruled.

2. Explicit explanation is made in the brief as to what is meant by the second assignment of error, which is that the patent does not in terms describe any device to prevent the rake from rising when operating upon the grain, and enough appears to show that the rake in the first machine made by the complainants was not of sufficient weight to prevent it from rising when the teeth came in contact with heavy grain. Brief experiment, however, was sufficient to disclose the defect, which was immediately remedied by adding a spring of proper stiffness to hold the rake down without impairing the other operating devices to enable the rake to perform the function of removing the cut grain from the platform and causing it to drop in gavels in the proper place.

None of these facts are controverted, but the respondents contend that the spring was a new invention, and that any one may make and use the patented machine or vend the same to others to be used without the spring and not be liable as infringers, but the court is entirely of a different opinion, as the addition of the spring for the purpose suggested is nothing more than any practical mechanic or operator would supply as soon as the difficulty was discovered.

Viewed in the light of these suggestions, it is clear that the defense to the second patent must be overruled.

III. Like defenses are set up to Patent No. 1,683, which must also be overruled for the same reasons, the opinion of the Court being that all three of the patents described in the bill of complaint are valid.

Suppose that is so, still it is insisted by the respondents that they have not been guilty of infringement as charged in the respective bills of complaint.

Conclusive evidence is reported in the record showing that the respondents were largely engaged in manufacturing machines of the description referred to by the two expert witnesses examined in the case. Exhibit 1, it is conceded by the respondents, is an accurate representation of the machines which they made and sold, and the complainants accept the admission as correct. Great certainty therefore attends the present inquiry, and there is very little, if any, more difficulty in ascertaining the proper construction of the complainants' machines, so that the principal matter of investigation under this issue is whether the machines made and sold by the respondents infringe the patented machines of the complainants in the respect charged in the bill of complaint.

Reissue No. 72 has but one claim, and the charge is that that claim is infringed by the respondents; and the complainants also charge that the respondents infringe the first claim of the Patent No. 1,682 and the second claim of 1,683.

Investigations of the kind are ordinarily best conducted by comparing the machine made by the respondent with the machines described in the complainants' patent, or patents, where more than one is embraced in the same suit. Due comparisons of the kind have been made, and the court is of the opinion that the several inventions of the complainants, excepting the claims pointed out as not infringed, are embodied in the machines made and sold by the respondents.

Decided support to that proposition is derived from the testimony of the expert witnesses examined by each of the contesting parties. Direct testimony to that effect is given by the complainants' expert witness. He says that he finds in Exhibit 1 the improvement described and specified in Reissue No. 72; that the exhibit mentioned shows the quadrant-shaped platform arranged relatively to the cutting apparatus, substantially as described in Reissue No. 72, for the purpose of receiving the cut grain as it is severed and falls upon the platform, and is swept in a circular form, heads foremost, upon the ground in the arc of a circle, out of the way of the team on the next round.

Speaking of the other two reissued patents, the witness says that he finds in that exhibit of the respondents the combination of a cutting apparatus of a harvesting-machine with a quadrant-shaped platform arranged in the rear thereof, and a sweep-rake operated by mechanism in such a manner that its teeth are caused to sweep over the platform in curves when acting on the grain, substantially as described in the complainants' reissued patents. When specially interrogated, he said he applied those remarks to both the other patents, and the expert witness examined by the respondents in his cross-examination fully confirms the substance and effect of those statements, and they accord with what this court decided in the former case, and are believed to be correct. (*Seymour* vs. *Osborne*, 11 Wall., 559.)

Grant that, and still it is insisted by the respondents that the rake which they employ does not infringe the rake of the complainants; but the court is not able to sustain the proposition, as the rake of the respondents is combined with a quadrant-shaped platform, and performs the same functions in substantially the same way as it sweeps over the platform to remove the cut grain from the same and to cause it to be deposited in gavels, as described in the complainants' patents.

Differences exist in the mode of attaching the arm to the machine and in the means employed for its return preparatory for another sweep; but in the performance of the function of removing the cut grain and depositing the same in gavels the two devices are substantially the same in the sense of the patent law. Nor can it benefit the respondents if their mode of returning the device for a second operation is better than the complainants', as that cannot give them any right to make, use, or vend what is patented to another.

Nothing remains but to examine the exceptions to the master's report as confirmed by the circuit court.

Separate decrees were entered in the two cases and the master made separate reports. He found, in the first case, that all claim for profits was waived by the complainants, the respondents contending and offering proofs to show that they made no profits. Hearing was had, and the master also found that the respondents had made fourteen hundred and sixty machines which infringed the complainants' patents, two hundred and six of which had not been sold. Of course they made and sold twelve hundred and fifty-six machines, for which the master estimated the damages on the basis of the license-fee of five dollars each machine, amounting to six thousand two hundred and eighty dollars, to which he added six cents as nominal damages for the machines made by the respondents and not sold.

Pending the proceedings before the master in the second case the complainants also withdrew their claim for profits, for the same reason as in the other case, and made claim for damages as for a license-fee. Accordingly, the master found that the respondents had built twenty-eight hundred and seventy machines which infringed the complainants' rights, of which two hundred were not sold. Adopting the same rule as in the other case he found as damages the license-fee of five dollars on each of the machines made and sold, amounting to thirteen thousand and eighty-five dollars, to which he added six cents as nominal damages for the machines made and not sold.

Damages of a compensatory character may be allowed to a complainant in an equity suit where it appears that the business of the infringer was so improvidently conducted that it did not yield any substantial profits, as in the case before the court. (16 Stat. at Large, 206; Rev. Stat., sec. 4921; *Birdsall* vs. *Coolidge*, 3 Otto, 69.)

Without more, these explanations are sufficient to show that none of the exceptions to the master's report can be sustained, and they are respectively overruled.

Decree in each case affirmed.

Supreme Court of the United States.

THE RUBBER COATED HARNESS TRIMMING COMPANY, ANDREW ALBRIGHT, AND LUTHER C. VOORHEIS, APPELLANTS, *vs.* WILLIAM M. WELLING.

[*No. 221.—October Term.*]

[*Appeal from the Circuit Court of the United States for the District of New Jersey.*]

Letters patent, No. 37,941, granted William M. Welling, March 17, 1863, construed to be for a product, viz: A martingale-ring, consisting of a metal ring enveloped in a composition ring of artificial ivory or similar material.

The dies employed to complete the solidification and ornamentation of the ring form no essential of the patented invention, and since metal rings enveloped in plastic compositions and the particular composition used by the patentee (artificial ivory) are both old in the art, the patent is void for lack of novelty and of invention.

[*Joseph C. Clayton*, and *A. Q. Keasbey*, for appellants; *Frederick H. Betts* for appellee.]

Mr. JUSTICE HUNT delivered the opinion of the court:

William Welling brought his action in the circuit court against the plaintiff in error, alleging an infringement of his patent for an improvement in rings for martingales, and recovered his damages.

Welling's patent bears date of March 17, 1863, and recites that a previous patent to him described a particular mode of making factitious ivory, out of which billiard-balls and rings of various kinds were manufactured, and states that his present invention does not relate to that particular composition, but that—

The nature of my said invention consists in the employment of a metallic ring within a ring formed of artificial ivory or similar materials for giving strength to the same, thereby producing a new article of manufacture.

His method of proceeding is as follows:

In order to make my improved rings, I take a ring of metal, such as shown at *a*, or said ring may be formed by punching out a washer from a sheet of metal, or in any other suitable way. I take the amount of artificial-ivory composition, and by dies or by hand cause the said composition to completely envelop the said ring with as much uniformity as possible, as at *b*, and to give the exterior finish to the same, press and solidify the mass of composition around the ring by means of dies, and in so doing any plain or more or less ornamental shape may be given to the said ring or the surface thereof. My ring is thus made of the desired ornamental appearance, while great strength is attained at very little cost.

His claim is in these words:

What I claim, and desire to secure by letters patent, is the ring for martingales, &c., manufactured, as set forth, with a metal ring enveloped in composition, as and for the purposes specified.

In ascertaining the construction to be put upon this patent, the state of the art is a legitimate and necessary subject of consideration:

1. The fact that metallic rings covered with a composition such as lacquer or varnish, rubber, enamel, or glass, had been in use for many years before plaintiffs' invention is clearly proved, and is conceded in the briefs on both sides. In most instances these coverings were applied and secured, first, by the hand of the operator, and then by machinery.

2. It is proved by witnesses, and shown by the patents hereafter referred to, that prior to the plaintiffs' invention dies were also made use of in the manufacture of pipes or rings upon iron cores. Mr. Eliot, an expert witness, says:

Is it a part of your knowledge of the state of the art of manufacturing articles of composition or plastic materials that pipes of lead composition have been formed upon iron cores by pressure in dies? Ans. It is.

Again he says:

Do you mean to say, in the manufacture of rings, that dies were well known prior to the invention in suit? Ans. I believe rings were formed in dies prior to that time, but without metal cores.

Mr. Hedrick says:

It was not new two years before the date of Welling's application to make a martingale-ring by covering a metallic ring with a shell of plastic material, which could be molded or pressed thereupon, and afterward hardened.

The English patent issued to Moses Poole, dated October 1, 1852, and of which the specification is dated March 30, 1853, was referred to by a witness, but was not given in evidence. We therefore pass it without comment.

The English patent of 1851, to Newton, referred to in the testimony, recites:

When it is desired that the compound of caoutchouc or gutta percha shall serve as a covering to the iron or other substance, a thin sheet of the compound, sometimes one thirty-second part of an inch in thickness, or less, is pressed with great care upon the iron or other substance so as to expel all air from between the adjoining surfaces and to cause the most perfect union and adhesion. The coated article is bound with strips or ribbons of cloth or other suitable material, whereby the compound is kept in close contact with the article during the process of hardening. The combined materials thus treated will be found to possess the qualities desired, the iron or other substance giving strength, and the compound giving a hard and durable surface. In this way may be

produced many articles used in and about harness or carriages, such as saddle-trees, buckles, terrets, bits, stirrups, martingale-rings, dasher-irons, and articles intended to be used as furniture, &c.

Another plan consists in so treating the compositions while in a plastic state that they will harden into any desired shape. * * For this purpose, the compounds of caoutchouc or gutta percha, before described, are taken in the plastic state and cut or pressed or otherwise formed into the exact shapes which it is desired they shall retain after vulcanization.

In the English patent to Edward Benton, of 1843, the rings, terrets, and other parts are covered with an enamel or vitreous composition, of which the composition and the manner of applying to the ring are described, and, in speaking of these linings, it is said "the said linings are formed in molds by processes well understood," &c.

Similar language is used in the English patent to Barnwell and Rollauson, dated 1860:

We make toys, &c., by employing molds or dies of any suitable material for which our composition has no affinity, or to which it will not adhere.

A die is a piece of metal on which is cut a device which by pressure is to be placed upon some softer body. A mold is a receptacle into which a softer material is injected to take its shape when hardened. Both dies and molds are there spoken of; and it thus appears that not only were these well known and in extensive use, before Welling's patent, iron rings, tubes, pipes, toys, and other articles of manufacture enveloped in and surrounded by glass, enamel, rubber, and other like substances, but these coverings had been applied and ornamented by means of molds or dies.

As we read Welling's patent of 1863 it is for a product and not for a process.

In 1857 he obtained a patent for the manufacture of artificial ivory. He gives the proportions of white shellac, of impalpable white, of ivory-dust and camphor, which are to be heated, thoroughly incorporated, and brought into heated molds for the manufacture of various articles. His claim in that patent is for forming artificial ivory by thoroughly mixing the articles specified, or others having equivalent properties, while under the operation of heat, substantially as specified. (No. 17,999.) The patent was for a product resulting from the materials and proportions described, to wit: factitious ivory.

Having the advantages of his manufactured ivory strongly impressed upon his mind, he makes, in 1863, a more specific application of this invention of ivory to the production of martingale-rings.

He says in his description:

I have invented and applied to use a certain new and useful improvement in rings for martingales.

He does not here claim to have invented a substance or material or composition; he claims no benefit of any process to reach his result, but claims a ring only. He claims a product, and all else is a description of the mode of obtaining that product, which would enable a skilled mechanic to make the article, and which the law requires him to set forth in his patent. Of this character is the statement that the composition envelops the ring by means of dies or the hand, and that an exterior finish and ornament are produced by solidifying by the means of dies.

Again he says:

The nature of my invention consists in the employment of a metallic ring within a ring formed of artificial ivory, or similar materials, for giving strength to the same, thereby producing a new article of manufacture.

A metallic ring within a ring of factitious ivory is the article to be produced, and that is the nature of the invention.

Nothing can be more specific than the summing up as to the nature of his invention by the patentee when he says:

What I claim, and desire to secure by letters patent, is the ring for martingales, manufactured, as set forth, with a metal ring enveloped in composition, as and for the purposes specified.

A metal ring enveloped in composition would seem to be the plain subject of the monopoly, the other language being merely illustrative of or supplemental to the main idea.

What, then, is the product thus secured by his patent?

The plaintiff, Welling, gives this construction to his patent:

I claim (under my patent) all compositions for covering martingale-rings or rings for harness.

Do you claim that all metallic harness-rings covered with composition of any kind are subject to your patent? I do, most certainly.

If this is the true construction of the patent it cannot be sustained under the evidence showing the use of covering of harness-rings by various compositions, and patents providing for such use prior to Welling's patent.

Another construction claims that the patent covers a ring having an iron core covered with a plastic composition, if and provided the article is finished by dies. This is the view of the plaintiffs' expert witness, Mr. Eliot, who states expressly that, if made without the use of dies, he does not consider the article within the patent.

Nearly allied to this idea, if not identical with it, is that of the judge who tried this case at the circuit. He says of Welling's patent:

His instrumentalities were all old—an iron ring, a plastic composition, and a die—but, so far as appears in the case, they were new in combination. If his patent had been simply for a metallic ring covered with any compound capable of being molded, or with factitious ivory or similar materials, it would have been void for want of novelty. If it had been for the use of the die in pressing and solidifying plastic substances generally, it would have been probably anticipated in this regard by the English letters patent to Barnwell and Rollauson of 1860, in which such use of dies is plainly indicated. But the invention is for a combination, and the combination is a metal ring surrounded with some plastic composition like artificial ivory of such a nature that it is capable of being compressed, solidified, and polished by the action of the dies, and which is, in fact, subjected to such action whereby a martingale-ring is produced with an exterior surface more durable and more highly polished than had before been obtained by different processes of manufacture and at greater cost.

We think the evidence shows that this combination, if it is entitled to that rank in mechanics, as well as the ring and the compound, is old. There is, in truth, no combined action. The iron core is used as a basis; the covering is of a pliable composition, and it is pressed or stamped by dies or molds. All this is done separately by no combined action.

This is just as much and nothing more than is described by the witnesses and by the patents prior to Welling's. It is simply the application and the action of old and well-known modes and materials in an accustomed manner. It is a case of aggregation, not of combination.

Can the plaintiff recover in this action upon a patent for this product, to wit: A metal ring enveloped in a composition of artificial ivory or of a similar material? It is evident, from what has already been said, that a patent for the manufacture of a metal ring enveloped in a composition of ivory or similar material is void for the want of novelty.

Such is the testimony of the expert witnesses on both sides, as well as the inevitable result from an examination of the English patents heretofore referred to. Indeed, we do not understand the counsel as contending that the patent can be sustained if this is held to be its construction.

Upon the whole case we are of the opinion that the decree must be reversed, and the case remitted to the circuit court, with directions to enter a decree dismissing the bill of complaint, with costs.

PRICE OF THE GAZETTE.—The price of THE OFFICIAL GAZETTE is still fixed at $6 per annum, and there is no reduction from that price except where five subscriptions are included in one order, when the subscription is $5; and subscribers can be added to this club, by the party or parties forming it, any time during the year, at the reduced price.

The Annual Index will not be furnished to subscribers hereafter without extra charge; but immediately after the expiration of each volume a Half-yearly Index will be given without charge, and should additional copies of the Half-yearly Index be desired, they will be furnished upon the payment of fifty cents for each additional copy required.

BOUND VOLUMES FOR 1877.—The bound volumes of THE OFFICIAL GAZETTE for 1877 are now ready for distribution, and can be procured, in full law binding, for $8, and in half-calf for $7. The Annual Index for 1877 will not be ready for distribution, either to subscribers or purchasers of the bound volumes, before the 1st of May, 1878.

TRADE-MARKS.

[Each certificate bearing date April 23, 1878.]

5,893.—COTTON GOODS.—*John Cassell & Co.*, New York, N. Y. Application filed March 8, 1878.
"A seated figure of the god Buddha, who is represented as laughing."

5,894.—COTTON YARN.—*Lewis G. Hansen*, New York, N. Y. Application filed April 12, 1878.
"The word 'UNION.'"

5,895.—SEWING-MACHINES.—*Providence Tool Company*, Providence, R. I. Application filed April 10, 1878.
"The word symbol 'HOUSEHOLD.'"

5,896.—SCRAP-BOOKS.—*Slote, Woodman & Co.*, New York, N. Y. Application filed March 12, 1878.
"The words 'MARK TWAIN.'"

5,897.—PAPER BAGS.—*Smith, Dixon & Co.*, Baltimore, Md. Application filed April 10, 1878.
"The words 'UNION STANDARD' and the figure of Justice."

5,898.—BRONCHIAL LOZENGES.—*C. F. Asche*, Hamburg, Germany. Application filed February 19, 1878.
"The coat of arms of the city of Hamburg and the letters 'C. F. A.,' as shown."

5,899.—CIGARS, CIGARETTES, CHEWING AND SMOKING TOBACCO, AND SNUFF.—*Lichtenstein Brothers & Co.*, New York, N. Y. Application filed March 27, 1878.
"The words 'TOWN TALK.'"

5,900.—CIGARS, CIGARETTES, FINE-CUT AND PLUG CHEWING-TOBACCO, SMOKING-TOBACCO, AND SNUFF.—*Lichtenstein Brothers & Co.*, New York, N. Y. Application filed April 9, 1878.
"The word-symbol 'Phonograph.'"

5,901.—AXES.—*Markley, Alling & Co.*, Chicago, Ill. Application filed March 8, 1878.
"The words 'WOOD CHOPPER'S PRIDE.'"

5,902.—MEDICINE.—*Robert S. Powell* and *John J. Turner*, New York, N. Y. Application filed January 21, 1878.
"The designation 'The Sun.'"

5,903.—SHIRTS.—*Chester L. Smith*, Plymouth, Pa. Application filed October 19, 1877.
"The circle with the ornamentation on its inner circumference and the eagle in the center."

5,904.—PAPER CARPETS AND PAPER OIL-CLOTHS.—*T. Seymour Scott & Brother*, Philadelphia, Pa. Application filed February 25, 1878.
"The word-symbol 'PAPOLEUM.'"

5,905.—BOOTS AND SHOES.—*E. H. Stark & Co.*, Worcester, Mass. Application filed December 12, 1877.
"The medallion inclosing the letter K."

5,906.—PREPARED CALCIMINE.—*George I. Stevens*, Brooklyn, N. Y. Application filed February 28, 1878.
"The word-symbol 'CALCICAKE.'"

5,907.—ITALIAN PASTE.—*H. K. & F. B. Thurber & Co.*, New York, N. Y. Application filed February 18, 1878.
"The word-symbol 'LA FAVORITA.'"

5,908.—PILE CURE.—*S. J. Cox & Co.*, Chelsea, Mass. Application filed February 9, 1878.
"The word 'AMERICAN,' the fac-simile of our signature 'S. J. Cox & Co.,' and the monogram composed of the letters 'A. P. C.'"

5,909.—MEDICAL PREPARATION.—*Wilmer L. Keller*, Baltimore, Md. Application filed March 27, 1878.
"The word-symbol 'ST. JAKOBS.'"

5,910.—COMPRESSED YEAST.—*Oscar King*, New York, N. Y. Application filed March 27, 1878.
"My name, 'Oscar King,' and the monogram composed of the letters 'O. K.,' within a circle, on each side of which are sheaves of grain."

5,911.—WHISKY.—*A. & H. Myers*, Philadelphia, Pa. Application filed March 4, 1878.
"The word-symbol 'SCHUYLKILL.'"

5,912.—CHEWING AND SMOKING TOBACCO.—*James B. Pace*, Richmond, Va. Application filed March 1, 1878.
"Yellow and black squares, having in each the name 'J. B. PACE.'"

5,913.—CIGARS.—*Theodore Schunemann*, Detroit, Mich. Application filed April 13, 1878.
"The red seal, with the monogram and words 'Red Seal.'"

5,914.—OSTRICH-FEATHERS AND FANCY FEATHERS GENERALLY.—*Welch & Creighton*, New York, N. Y. Application filed January 22, 1878.
"The pictorial representation of an Ostrich, together with the pictorial representation of a person seated or riding upon the latter."

5,915.—CAPS FOR TOY PISTOLS, &c.—*Ernest H. Wander*, New York, N. Y. Application filed March 1, 1878.
"The word 'UNION.'"

5,916.—STEAM-ENGINES.—*Armington & Sims*, Lawrence, Mass. Application filed February 18, 1878.
"A garter or buckle and strap, the latter being arranged in a circle, and all being as shown."

5,917.—GENTLEMEN'S SHIRTS.—*Chauncey H. Buck*, Toledo, Ohio. Application filed January 5, 1878.
"The fanciful title 'Corn City.'"

5,918.—LACE ARTICLES AND LACE EDGINGS.—*George Cox*, Paterson, N. J. Application filed March 11, 1878.
"The dragon and the word 'Princess,' as arranged and inclosed in the circle."

5,919.—PAPER.—*Crane Brothers*, Westfield, Mass. Application filed March 19, 1878.
"The figure of a crane."

5,920.—MEDICAL COMPOUND.—*Dundas Dick*, New York, N. Y. Application filed March 30, 1878.
"The new and arbitrary word 'LAXATINE.'"

5,921.—CORSETS AND WAISTS.—*James G. Fitzpatrick*, New York, N. Y. Application filed March 7, 1878.
"The word-symbol 'TRIUMPH.'"

5,922.—BURNING-FLUIDS.—*John G. Gorrell*, Ossian, Ind. Application filed February 26, 1878.
"My portrait."

5,923.—CHEWING-TOBACCO.—*J. W. & C. G. Holland*, Danville, Va. Application filed January 16, 1878.
"The word-symbol 'GOLDEN CHARM.'"

5,924.—WORSTED BRAID.—*Archibald C. Haynes*, Philadelphia, Pa. Application filed March 1, 1878.
"The representation of a crown."

5,925.—MEDICINAL PREPARATIONS OF WITCH-HAZEL.—*Frederick Humphreys*, New York, N. Y. Application filed March 25, 1878.

"The figure of a girl, represented as running and holding above her head branches. Above these branches are the words 'The Marvel of Healing.'"

5,926.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Joseph Loewenherz*, Hoboken, N. J. Application filed March 16, 1878.

"The word-symbol 'OSMAN.'"

5,927.—SMOKING-TOBACCO.—*Oliver & Robinson*, Richmond, Va. Application filed March 26, 1878.

"The symbol composed of the red, white, and blue, or tricolor stripes."

5,928.—LIQUID DRIER.—*A. W. Pratt & Co.*, New York, N. Y. Application filed February 4, 1878.

"The word 'CRYSTAL.'"

5,929.—STANDING COLLARS MADE OF LINEN.—*Pine, Adams & Dunham*, Troy, N. Y. Application filed March 8, 1878.

"The arbitrarily-selected word 'SULTAN.'"

5,930.—CIGARS.—*Celestino Palacio*, New York, N. Y. Application filed March 25, 1878.

"The arbitrarily-selected word 'EUDORA.'"

5,931.—CIGARS.—*Celestino Palacio*, New York, N. Y. Application filed March 25, 1878.

"The representation of a sphere surmounted by an eagle, as shown."

5,932.—COUGH-MIXTURE.—*Rhodes & Lewis*, San José, Cal. Application filed January 10, 1878.

"The figures '38' inclosed in a symbol."

5,933.—CHEMICAL SOLUTION FOR PRESERVING DEAD BODIES.—*Rodgers Allekton Company*, San Francisco, Cal. Application filed February 14, 1878.

"The word-symbol 'ALLEKTON.'"

5,934.—BREAD-RAISING PREPARATIONS.—*D. & L. Slade*, Chelsea and Boston, Mass. Application filed January 17, 1878.

"The word 'Congress.'"

5,935.—MEDICINAL PREPARATION.—*Charles W. Scott*, Hartford, Conn. Application filed March 5, 1878.

"The word-symbol 'WYOMOKE.'"

5,936.—BITTERS.—*Alphonse Walz*, New Orleans, La. Application filed February 18, 1878.

"The word 'MALAKOF' and the engraving representing the Malakof tower."

5,937.—TOWELING.—*Wemerding, Biddle & Bisset*, New York, N. Y. Application filed March 8, 1878.

"The arbitrarily-selected word 'KNICKERBOCKER.'"

5,938.—AGUE-CURES.—*Miranda C. White*, New York, N. Y. Application filed March 21, 1878.

"The word-symbol 'ASIATIC.'"

5,939.—FILES.—*Western File Company*, (limited,) Beaver Falls, Pa. Application filed March 25, 1878.

"The monogram formed from the letters 'W' and 'F,' as shown and described."

5,940.—FILES.—*Western File Company*, (limited,) Beaver Falls, Pa. Application filed March 25, 1878.

"The emblem or symbol of the beaver."

5,941.—FILES.—*Western File Company*, (limited,) Beaver Falls, Pa. Application filed March 25, 1878.

"The bronze or gilt bee-hive surrounded by bees and flowers, accompanied with a collection of fruit, the whole constituting a symbol picture."

5,942.—DOOR-SPRINGS.—*Van Wagoner & Williams*, New York, N. Y. Application filed March 27, 1878.

"The words 'Shoo Fly.'"

5,943.—CATARRH REMEDY.—*Frederick W. Wei De Meyer*, New York, N. Y. Application filed April 15, 1878.

"The pictorial representation of a horseshoe-magnet."

5,944.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*S. Jacoby & Co.*, New York, N. Y. Application filed April 16, 1878.

"The word 'UNICUM.'"

5,945.—SMOKING-TOBACCO.—*Oliver & Robinson*, Richmond, Va. Application filed March 25, 1878.

"The symbol 'POWHATAN,' with the two pipes having their stems crossed."

5,946.—CERTAIN CHEMICAL PRODUCTS.—*Solvay & Co.*, Bouffioulx, Belgium, and Varangeville, Dombasle, France. Application filed February 18, 1878.

"An arrow traversing a capital letter S, the head or point of the shaft of said arrow being formed by an inverted letter V, and the feathers of said arrow being represented in the usual manner, or by a series of thick lines projecting diagonally from each side of the lower end of the shaft."

5,947.—SCREW-CAPS FOR FRUIT-JARS, &c.—*The Consolidated Fruit Jar Company*, New York, N. Y. Application filed April 3, 1878.

"The letters 'C. F. J. Co.,' formed into a monogram."

5,948.—SMOKING-TOBACCO.—*B. Frank Weyman*, Pittsburg, Pa. Application filed April 1, 1878.

"The title or designation 'WEYMAN & BRO.'"

LABELS.

[Each certificate bearing date April 23, 1878.]

1,487.—Title: "MALARIAL CURE."—*William G. Atwater*, New York, N. Y. Application filed March 27, 1878.

1,488.—Title: "YOKE BAND COLLAR."—*Beiermeister & Son*, Troy, N. Y. Application filed April 15, 1878.

1,489.—Title: "CAIRO CITY COAL CO."—*Cairo City Coal Co.*, Cairo, Ill. Application filed April 11, 1878.

1,490.—Title: "BLAKE'S BELT STUD."—*Greene, Tweed & Co.*, New York, N. Y. Application filed April 16, 1878.

1,491.—Title: "KIMBALL'S METALLIC ROOFING PAINT."—*D. B. Kimball*, Syracuse, N. Y. Application filed April 1, 1878.

1,492.—Title: "WORM OIL."—*E. S. Lyndon*, Athens, Ga. Application filed April 13, 1878.

1,493.—Title: "PARISIAN DRESS RENOVATOR."—*George V. Magee*, Philadelphia, Pa. Application filed April 8, 1878.

1,494.—Title: "THE STOCK OINTMENT."—*Painter & Calvert*, San Francisco, Cal. Application filed April 13, 1878.

1,495.—Title: "PLACE'S SALUS ILLUMINATING GAS."—*Francis B. Place*, Sedalia, Mo. Application filed April 12, 1878.

1,496.—Title: "HOUSEHOLD MIXED PAINT."—*Alfred T. Stevens*, Brooklyn, N. Y. Application filed April 13, 1878.

1,497.—Title: "WESTERN FILES."—*Western File Company*, (limited,) Beaver Falls, Pa. Application filed March 25, 1878.

1,498.—Title: "BEAVER FILE WORKS."—*Western File Company*, (limited,) Beaver Falls, Pa. Application filed March 25, 1878.

1,499.—Title: "ECONOMY WORKS, SUPERIOR FILES."—*Western File Company*, (limited,) Beaver Falls, Pa. Application filed March 25, 1878.

1,500.—Title: "WARRANTED AXE LINES."—*Crane Brothers*, Westfield, Mass. Application filed June 2, 1877.

1,501.—Title: "JAPANESE MILLS."—*Crane Brothers*, Westfield, Mass. Application filed March 19, 1878.

DESIGNS.

[Each design bearing date April 23, 1878.]

10,643.—GLASSWARE.—*Thomas B. Atterbury*, Pittsburg, Pa. Application filed April 12, 1878. Term of patent 3½ years.

10,644.—MATCH-SAFES.—*James H. Davis*, Ypsilanti, Mich. Application filed April 3, 1878. Term of patent 3½ years.

10,645.—SCARF-PIN.—*Henry Griffith*, Brooklyn, N. Y. Application filed April 5, 1878. Term of patent 3½ years.

10,646.—PISTOL-HANDLES.—*Gilbert H. Harrington* and *William A. Richardson*, Worcester, Mass. Application filed March 29, 1878. Term of patent 14 years.

10,647.—PACKAGES.—*Samuel Kimberly*, Norfolk, Va. Application filed April 5, 1878. Term of patent 7 years.

10,648.—SET OF JEWELRY.—*Abraham Steinan, Jr.*, Cincinnati, Ohio. Application filed March 27, 1878. Term of patent 7 years.

10,649.—ADVERTISING-MONUMENTS.—*James B. Turner*, Rochester, N. Y. Application filed March 23, 1878. Term of patent 3½ years.

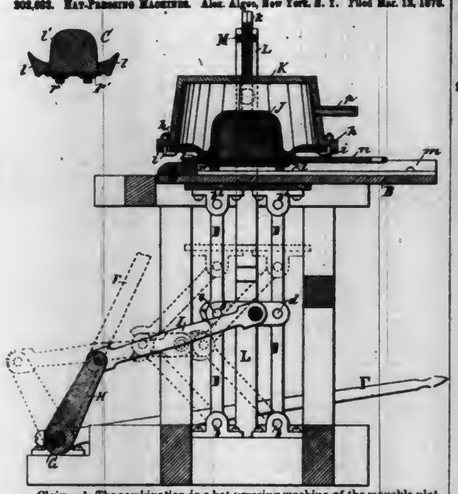
10,650.—CABINET-JEWELRY.—*William A. L. Miller*, San Francisco, Cal. Application filed November 6, 1877. Term of patent 7 years.

10,651.—JEWEL-CASE.—*Ernst H. Zoepfel*, New York, N. Y. Application filed April 4, 1878. Term of patent 7 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

APRIL 23, 1878.

203,623. HAT-PRESSING MACHINES. Alex. Algeo, New York, N. Y. Filed Mar. 12, 1878.

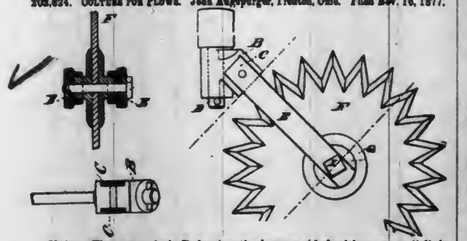


Claim.—1. The combination, in a hat-pressing machine, of the movable platform or bed H, provided with ways *n n'* and stop *o*, the die C, provided with grooves fitting onto said ways, and the die J, all constructed and arranged to operate as and for the purpose described.

2. The combination, in a hat-pressing machine, of the dies J and C, the movable platform or bed B, the four toggle-joint levers to be actuated by one and the same hand-lever F, rock-shaft G, arm H, connecting-bars I P, and the connecting-links *e e'*, all constructed and arranged to operate as and for the purpose described.

3. The male die C, composed of the rim or annulus *l*, the crown *i*, and the bars *r r'*, constructed and combined to operate as and for the purpose described.

203,624. COLTERS FOR PLOWS. John Augspurger, Trenton, Ohio. Filed Nov. 16, 1877.



Claim.—The caster-hub B, having the lug provided with recesses C C, in combination with wrought-metal straps E, for supporting rotary cutter F, in the manner substantially as described.

203,625. CORN-PLANTERS. Robert H. Avery, Galesburg, Ill., assignor of one-half his right to Cyrus M. Avery, same place. Filed July 28, 1877.

Brief.—The concave feeding-disk is provided with elongated seed-cups, that move over an elongated discharge-hole for dropping the seed. Above and resting on the disk and between vertical walls is confined a series of cut-offs, that are limited in their up-and-down movement by an angle-arm that rests on one of the walls, and by a rod passing over all.

Claim.—1. In a seed planter, seed-cup plates D, having elongated seed-cups E, combined with an elongated discharge, C, substantially as and for the purposes specified.

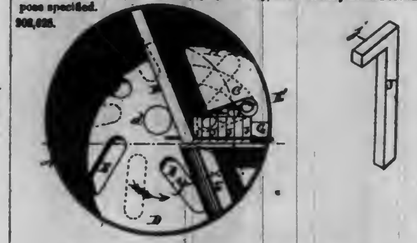
2. The disk D, having elongated seed-cups E and a concave upper surface, combined with the discharge-opening C, substantially as described, and for the purpose specified.

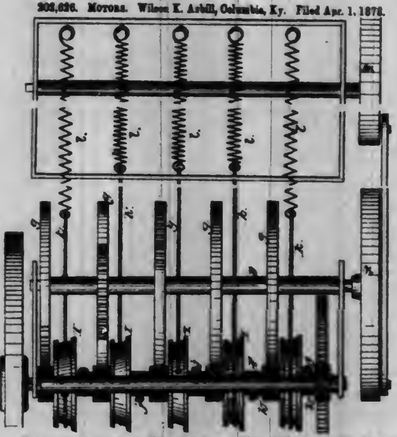
3. The series of independent cut-offs J, combined with the disk D, having elongated seed-cups E, which extend the full width of the series of cut-offs, substantially as described, and for the purpose specified.

4. The series of independent cut-offs J, combined with the disk D, having elongated seed-cups E, which extend the full width of the series of cut-offs, and with correspondingly-elongated discharge-opening C, substantially as described, and for the purpose specified.

5. The slotted partition G, operating in combination with the series of gravitating cut-offs, having stop projections *j*, substantially as and for the purpose specified.

203,626. MOTORS. Wilson K. Arbill, Columbia, Ky. Filed Apr. 1, 1878.





Claim.—1. In a motor, the actuation of the shaft of a drive-wheel, C, by the joint action of springs *e*, which are successively reduced by means of levers *b*, substantially as described and shown.

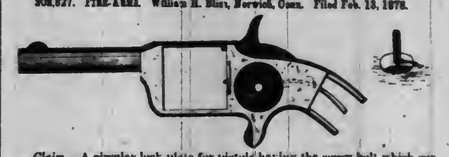
2. In a motor, the combination of cams *a* and levers *b*, terminating with segmental cogs *c*, for the successive reduction of springs *e*, substantially as set forth.

3. In a motor, the combination of a series of springs, *e*, and levers *b* with a shaft, C, by means of pinions *d* and ratchets *f*, and for the purposes aforesaid, substantially as shown.

4. In a motor, the combination of segmental cog-wheels *g* with pinions *h*, ratchets *f*, and beveled drums or fuzees I, for the successive reduction of springs *i*, for the purposes aforesaid, substantially as described.

5. In a motor, the accumulation of power by the combination of cams *a*, levers *b*, springs *e*, segmental cogs *c*, pinions *d*, and ratchets *f*, and the combination of the parts one and two, having the segmental cogs *g*, pinions *h*, fuzees I, ratchets *j*, cords *k*, and springs *l*, substantially as set forth.

203,627. FIRE-ARMS. William H. Bliss, Norwich, Conn. Filed Feb. 13, 1878.



Claim.—A circular lock-plate for pistols having the screw-bolt which carries the hammer permanently attached to the center thereof, and having an outside slot or perforation for the application of the screw-driver, all substantially as shown.

202,628. CIGAR-MACHINE. Richard A. Bright, Jr., Providence, R. I. Filed Feb. 26, 1878.

Brief.—The tobacco to be formed into the bunch is fed along by an endless apron under it and a reciprocating pushing-slide above it.



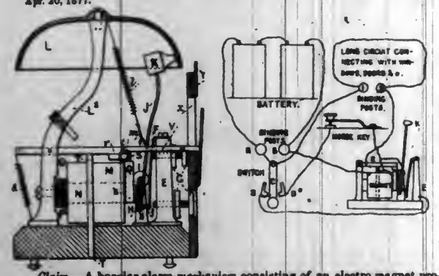
Claim.—The combination of the endless belt A with the doubly-hinged arm E, feeding-slide *e*, and suitable devices for giving reciprocating intermittent action to the same, substantially as and for the purpose set forth.

202,629. VALVES FOR BARRELS, KEGS, &c. Joseph Byrne, Boston, Mass., assignor to himself, Sullivan M. Warren, and James McGrath, same place. Filed Oct. 10, 1877.



Claim.—The tubular plug A, composed of three sections constructed and connected together as described, valve *e*, and spring-follower C, provided with valve *k* and enlarged head *c*, in combination with a faucet having a screw-thread, *7*, to engage with the thread 6 in the mouth of the plug, the several parts constructed and relatively arranged with each other, whereby the spring follower is adapted to be operated directly by the faucet, substantially as specified.

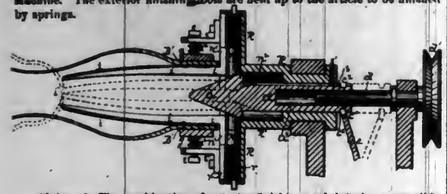
202,630. ELECTRO-MAGNETIC BURGLAR-ALARM. Chas. H. Carter, Brooklyn, N. Y. Filed Apr. 20, 1877.



Claim.—A burglar-alarm mechanism consisting of an electro-magnet provided with two armature-levers, one of which carries the bell-hammer and the automatic break, and the other of which carries the annunciator-card, and is provided with an armature arranged opposite a rectangular extension from the magnet's core, in combination with a circuit-closing stop or anvil, T, and a bell, L, all arranged substantially as described.

202,631. MACHINES FOR FINISHING OPEN-ENDED GLASSWARE. David Challinor, Pittsburg, Pa., assignor to himself, John Lowery, and David P. Evans, same place. Filed Feb. 6, 1878.

Brief.—The inside finishing and expanding tool is divided into two parts, kept closed by springs, and is opened by a wedge-shaped central plug operated by mechanism connected by rods to tool-holding standards on the front of the machine. The exterior finishing-tools are held up to the article to be finished by springs.



Claim.—1. The combination of exterior finishing-tool, interior expansible opening and finishing tool, and a longitudinally-moving tapering plug, substantially as set forth.

2. The combination of interior tool *i i*, attached to stems *n n*, bored and bored head R, springs a^3, exterior tool *g*, plug *a*, and stem a^1, substantially as described.

3. The combination of carriage P P, connecting-rod *b*, lever *c*, driving-shaft, plug and stem, revolving head, and interior and exterior finishing-tools, substantially as set forth.

4. A device for opening the perforated end of articles of glassware, consisting of tools *i i*, movable toward and from each other inside the article of glassware, and tapering plug *a*, combined with suitable mechanism for giving the plug a forward and backward motion, substantially as set forth.

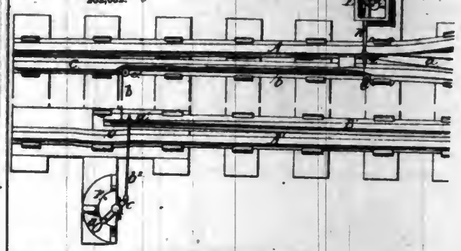
202,632. RAILWAY-SWITCHES. John W. Cloos, Buffalo, N. Y. Filed Dec. 21, 1875.

Claim.—1. The pulleys *a a'*, in combination with the rope or chain *b*, points *a a'*, operating lever or crank-shaft, and weight *d*, substantially as and for the purpose hereinbefore described and set forth.

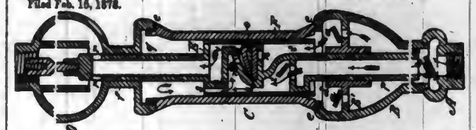
2. The pivoted link *q*, in combination with the point of a switch, to which it is attached, and the rod, chain, or cord connecting it with the operating device, substantially as and for the purpose hereinbefore described and set forth.

3. The torsion-shaft D, in combination with the lever *d'*, connecting-rod b^1, and rail-point *a'*, all constructed and operating as and for the purpose specified.

202,632.



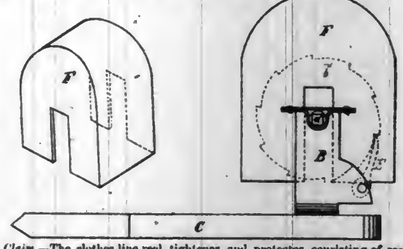
202,633. DOUBLE-ACTING SUCTION AND FORCE PUMPS. Nicholas Otto, Schenectady, N. Y. Filed Feb. 16, 1878.



Claim.—1. A pump-case composed of the lower section A, provided with the inlet-valve *b*, section B, having a valved diaphragm, B', forming a guide for the lower end of the plunger E, and forming a water-way around the same, the working-barrel C, and the air-chamber D, provided with the contracted neck *f*, forming a guide for the upper end of the plunger, all constructed, arranged, and attached together in the manner and for the purpose specified.

2. The combination of the inlet-valve and its case with the divided valve-chamber above the inlet-valve, as described, the working-barrel, the air-chamber, and reciprocating tubular plunger, forming a water-way, as and for the purpose set forth.

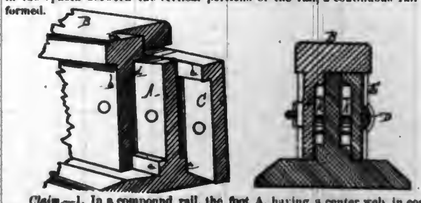
202,634. CLOTHES-LINE TIGHTENERS. Samuel Conner, Washington, Iowa, assignor of one-half his right to Joseph G. Stewart, same place. Filed Oct. 3, 1877.



Claim.—The clothes-line reel, tightener, and protector, consisting of reel A, journaled in bracket H, sharp-pointed spike C, for securing the device in position, and removable cover F, with slotted sides which fit down over the square portion of the shaft of the reel, all as and for the purposes specified.

202,635. COMPOUND RAILS. Charles Conrad, Genoa, Mich. Filed Feb. 7, 1878.

Brief.—A compound rail consisting of a broad base having a central vertical web, a tread portion having a downwardly-projecting flange, and a side plate which supports one edge of the tread, the said plate and the flange of tread resting upon the base, and being spaced from the vertical flange thereof by shoulders upon the several parts. At the rail ends the several parts project one beyond the other, the tread being provided with lap or shouldered portion, whereby, when the sections are abutted together, and the rails are united by bolts passing through the several parts, and through washers located in the spaces between the vertical portions of the rail, a continuous rail is formed.



Claim.—1. In a compound rail, the foot A, having a center web, in combination with the head B, provided with the downwardly-projecting flange *b*, the plate C, and the offsets *a d b* on the several parts, substantially as described and shown.

2. A compound rail consisting of parts A B C, extended different distances from the body of the rail, the head of the rail being provided with projection *m*, substantially as described and shown, for the purpose set forth.

3. A compound railway-rail wherein the parts A B C are combined and secured together by the bolts D and intermediate washers, substantially as described.

202,636. COMPOSITIONS FOR MANUFACTURING MOLDED ARTICLES. Wm. H. Dibble, Elizabeth, N. J. Filed Mar. 17, 1877.

Claim.—A dry pulverulent composition of matter consisting of powdered blood and one or more of the hereinbefore-mentioned animal, vegetable, or mineral solids, the said composition forming a permanent powder for manufacturers' or other use, substantially as specified.

202,637. FIRE LININGS AND BACKS FOR FURNACES, &c. Otto Earnshaw, Chicago, Ill., assignor of one-half his right to Edward Johnson, Jr., same place. Filed Jan. 12, 1878.

Claim.—As a new article of manufacture for fire-linings, to be applied raw or molded into form, crushed or pulverized Au Sable or analogous sandstone, made plastic with water, substantially as and for the purposes specified.

202,638. ROCK-DRILLING ENGINES. Wm. H. Elliot, New York, N. Y. Filed June 16, 1877.



Claim.—1. In combination with a rock-drill and vertical shaft rigidly fastened together, and adjustable vertically in ways *c*, the device, as described, for lowering and elevating the shaft and drill by means of the propelling-power, and independent means for feeding and operating the drill, as shown and described.

2. A vertical shaft and rock-drill, suspended, substantially as described, by a suspending device, through which positive vertical movement is given to said vertical shaft and rock-drill by connection with the propelling-power to raise and lower the same, and through which automatic movement is given to the same by the devices *o*, *o'*, and *o''*, to feed the same downward as the hole deepens, substantially as specified.

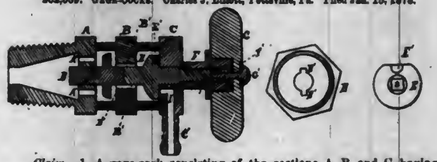
3. The combination, with a rock-drill cylinder which discharges its exhaust or dead steam or air through an eduction-passage, with which it is provided, to the open air, of valve *s*, through which a portion of said dead steam is admitted to the hollow drill-carrier and hollow drill-tool, whereby it is utilized, substantially as and for the purpose specified.

4. In a rock-drilling machine having the vertical shaft and cylinder rigidly fastened together, the combination of the induction and eduction pipes, arranged as shown in relation to each other, and to the vertical shaft and cylinder, with the piston *c'* and drill-carrier *c''*, so that the induction and eduction pipes, piston, and carrier reciprocate and rotate together as one piece, substantially as set forth.

5. In a rock-drilling machine having the vertical shaft and cylinder rigidly fastened together, the combination of the induction and eduction pipes and piston, arranged as shown, with the fixed chamber *g''* within the vertical shaft, and connection *g'*, so that the induction and eduction pipes can reciprocate and rotate together within the chamber *g''*, as and for the purpose set forth.

6. The combination of the elastic packing r with the vertical shaft and the rock-drill cylinder, substantially as and for the purpose specified.

202,639. GAGE-COCKS. Charles J. Elliott, Pottsville, Pa. Filed Jan. 15, 1878.



Claim.—1. A gage-cock consisting of the sections A, B, and C, having the valves D and E, the outlets A' A', B' B', and 1, the sleeve F, handle G, and screw G', substantially as described.

2. The valve E, having a flat face bearing on a flat metal seating, and having the passage-way E', as herein shown and described.

202,640. GRINDING-MACHINES. Albert E. Elmer, Shelburne Falls, Mass. Filed Aug. 21, 1877.



Claim.—1. In the machine as explained for grinding cutlery-blades, the rotary blade-carrier K, constructed and applied so as to be capable, on being revolved, of presenting to the stone, in succession, either a side or the back of a blade, when such blade is clamped to it, as set forth.

2. The combination of the retractive spring G with the two carriages D E, the rotary carrier K, and the lever H, applied to such carriages, as set forth.

3. The combination of the inclined abutments *a'* with the carriage E and the rotary shaft K, and the blade-clamps thereof, all being substantially as described.

202,641. AMMONIACAL-GAS PUMPS. John Enright, Cleveland, Ohio. Filed Mar. 5, 1878.

Brief.—The water, in running from the top tank to the bottom one, floods the cylinder and keeps it cool.

Claim.—1. An improvement in gas-pumps for manufacturing ice, consisting of the cylinder provided with heads having tanks or water-basins, and arranged in such relation as to admit of a flow of water from one basin to the other, and to flow over the exterior surface of the cylinder in the transit of the water from one basin to the other, substantially as and for the purpose described.

2. An improvement in gas-pumps, consisting of the cylinder with heads having therein the valves, in open relation with the induction and eduction passages and water-basins T V, arranged in said heads, with one or more outlet-pipes, U', substantially as described, and for the purpose set forth.

3. The cylinder P, surrounded at its upper and lower parts, respectively, by a water tank or basin, in combination with one or more pipes, U, in open relation with each basin, to admit the flow of water from one to the other, substantially as described, and for the purpose set forth.

4. An improvement in gas-pumps, consisting of the valves D' F and their ports or openings, arranged within the head P of the cylinder, in combination with the guide-screws E, and induction and eduction pipes A and B, substantially as described, and for the purpose set forth.

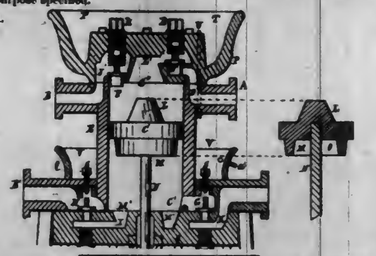
5. In gas-pumps, an improvement consisting of the head Q, arranged to surround the lower part of the cylinder, with a water-basin forming part of said head, and having the valves G and H, with their ports or openings, within said head, and in open communication or connection with the inlet and outlet passages to and from the lower end of the cylinder, substantially as described, and for the purpose set forth.

6. The annular groove M' and port I, arranged within the cylinder-head, in combination with the valve H, outlet B, and the piston provided with the annular rim M, substantially as and for the purpose described.

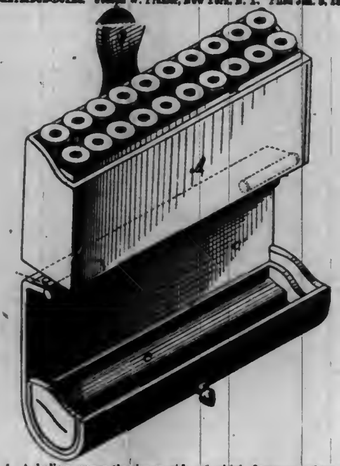
7. In gas-pumps, an improvement consisting of a cone upon one side of the piston and the annular rim upon the other, in combination with the cylinder-heads, one having a cavity or recess to receive said cone or projection, and the other an annular groove for the reception of said rim of the piston, substantially as and for the purpose described.

8. In gas-condensing engines, one head of the cylinder having the annular groove M', and the other a conical recess, L', in combination with inlet-valve D', outlet-valve H, and piston C, constructed substantially as described, and for the purpose specified.

202,641.



202,642. CARTRIDGE-BOXES. Joseph W. Frazier, New York, N. Y. Filed Jan. 5, 1878.

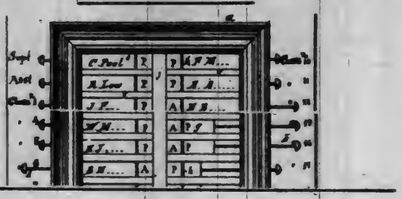


Claim.—1. A hollow cover the inner side of which forms a spring-strip, which bears with an elastic pressure upon the ends of the cartridges contained in the box, substantially as described.

2. A cartridge-box adapted to receive a package of cartridges, provided with a hollow cover for the top of the box, combined with a shield for its front side, which is hinged to the bottom of the box, and adapted to swing outwardly and downwardly in opening the box, substantially as and for the purposes set forth.

3. The yielding strip or cushion *c* on the inner side of the cover, suitably shaped to adapt it to engage the ends of cartridges respectively projecting in variable degrees from the box which contains them, substantially as described.

202,643.



202,643. IRRIGATOR. John Freeman, Chicago, Ill. Filed Aug. 7, 1877.

Claim.—1. The frame *a*, provided with the receptacles for cards *e*, and slides *g*, arranged to pass under the cards and over the indicators A, thereby utilizing space, whether the slide is out or in, substantially as specified

2. The combination of the frame *a*, card-receptacles *e*, slide-grooves *f*, with the slide-pins *k*, and slides *h*, operated from the sides or edges of the frame, substantially as described.

202,644. BUCKLES. Josiah B. Gathright, Louisville, Ky. Filed Nov. 6, 1877.



Claim.—1. A buckle adapted to be automatically attached to straps by having one or more under bars cast upon its under frame, in addition to or supplementary to the tongue or center bar, and having rivets or clinching-spikes cast upon these supplementary bars, substantially as herein shown and described.

2. The buckle-frame A, provided with the tongue-bar S, and supplemental bar or bars provided with an attaching rivet or rivets, all constructed and adapted to operate substantially as shown and described.

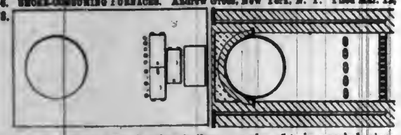
202,645. HORSE-CAR BELLS. John M. Gaughen, Philadelphia, Pa. Filed Mar. 9, 1878.



Claim.—1. As an attachment to a bell of the construction substantially as hereinbefore described, the detachable shank D, provided with the female screw-threaded stem *k* and openings *e f*, for the purposes set forth.

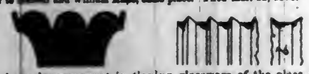
2. The horse street-car bell consisting of the bell-case A, having its upper end perforated, the connecting screw-threaded stem or bolt C, and the double eye or shank D, substantially as and for the purpose set forth.

202,646. SMOKE-CONSUMING FURNACES. Andrew Gross, New York, N. Y. Filed Mar. 13, 1878.



Claim.—In a furnace for heating boilers, a series of twin coupled pipes, E, alternately perforated and imperforated, arranged horizontally over the entire fuel-chamber, the rear joints of said pipes resting on the bridge-wall, whereby the ascending flames are mingled with sprays of heated air for the more perfect combustion of the fuel, substantially as described.

202,647. ORNAMENTING GLASSWARE. Andrew Haroun, Scott Township, Allegheny County, Pa., assignor to himself and William Hope, same place. Filed Mar. 13, 1878.



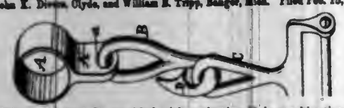
Claim.—As an improvement in tipping glassware of the class specified, forming the tipping-piece independently, then reheating the same and attaching it to the article to be ornamented, subsequently reheating or warming in the parts thus brought together to cause them to weld or unite, and finally finishing the article in the usual manner, substantially as specified.

202,648. SHELTERS FOR ANIMALS. William Heaton, Lee Township, Madison County, Iowa. Filed Dec. 10, 1877.



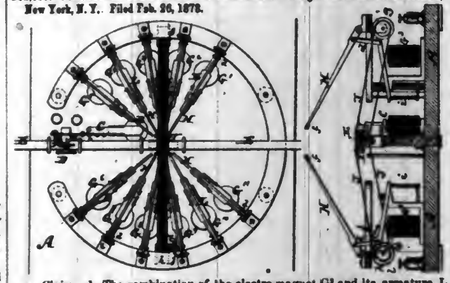
Claim.—The improved animal shield or shelter having sides *a b c*, arranged as described, to form sheds alternating in and out, and of a semi or half hexagonal shape, and provided with the feed-racks *d d*, grain-hopper *e e*, fount-trough *f f*, swine-shelter *h h*, the double ways or rods J K, and double sliding suspended doors *i i*, substantially as specified.

202,649. WEEPING-HOODS. Nathan Hill, Bravo, assignor of three-fourths his right to John K. Dixon, Clyde, and William B. Tripp, Bangor, Mich. Filed Feb. 15, 1878.



Claim.—The hook H, provided with projection D, in combination with the ferrule A A' *a* and cockeye C, as shown and set forth.

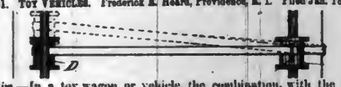
202,650. ELECTRO-MAGNETIC PRINTING APPARATUS. George Milton and John Crockett, New York, N. Y. Filed Feb. 26, 1878.



Claim.—1. The combination of the electro-magnet G² and its armature L and printing-lever H, which marks the period, with the pawl *j*, ratchet-wheel *l*, and with the drum *k* and inking-strip J, all arranged so that the inking-strip is moved whenever the period is printed, substantially as and for the purpose specified.

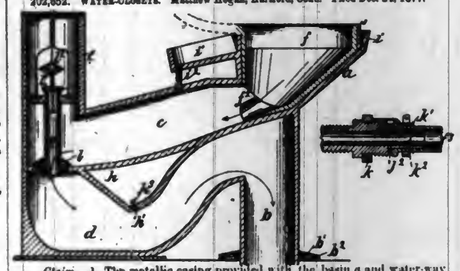
2. The combination of the printing-levers H H and paper E with the inking-strip J and cushion I, and with independent and separate feeding devices for the paper E and strip J, the strip J being placed at right angles to the paper, substantially as specified.

202,651. TOY VEHICLES. Frederick E. Heard, Providence, R. I. Filed Jan. 16, 1878.



Claim.—In a toy wagon or vehicle, the combination, with the driving-axle, or with a barrel rigidly affixed thereon, of an elastic band or cord and a self-adjusting guiding spool or reel, D, placed upon a separate axle or rod, and adapted to shift on said axle or rod, substantially as shown and described, and for the purpose set forth.

202,652. WATER-CLOSETS. Matthew Hogan, Hartford, Conn. Filed Dec. 24, 1877.



Claim.—1. The metallic casing provided with the basin *a* and water-way *c*, in combination with the earthen basin *f*, provided with the delivery-spout *f*¹, opening into said water-way.

2. In combination with the trap *d* the reservoir *h*, and the proportionately small communicating orifice *h*¹.

3. In combination, the delivery-pipe *b*, provided with the pins *b*¹, and the loose collar *b*², provided with the slots *b*³.

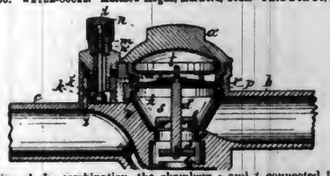
4. In combination, the flanged nozzle *f*², the coupling-half *j j*², the coupling-half *k*, provided with the fingers *k*², and the hand *k*³.

5. In combination, the water-way *c*, the trap *d*, the hollow valve *l*, and the valve *l*², provided with the float *l*³.

6. In combination, the reservoir *m*, the plug *n*, with chambers *n*² *o* attached thereto, the lever *n*³, and the valve *n*⁴.

7. In combination, the pull-wire *p*¹, diaphragm *r*¹, rod *s*, and the overhead lever and valve.

202,653. WATER-COCKS. Matthew Hogan, Hartford, Conn. Filed Dec. 24, 1877.



Claim.—1. In combination, the chambers *e* and *f*, connected by the balance-conduit *h*, the valve *d*, connected to the diaphragm *f*, the escape-conduit *i*, provided with a subsidiary valve, and the entrance and exit pipes.

2. In combination, the valve-rod *l*, the rubber spring *m*, and the interposed helical spring *n*.

3. In combination, the valve *d*, disk *o*, and disk-seat *o*¹.

4. In combination, the diaphragm *f*, the shoulder *p* on the case *a*, and the cap *a*¹, provided with the concaved and perforated flange *r*.

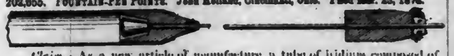
202,654. PENCILS. John Holland, Cincinnati, Ohio. Filed Mar. 23, 1878.

Claim.—The combination, substantially as specified, of the pencil-holder,

the slotted case thereof, and the set-screw for adjusting and securing the pencil-holder.

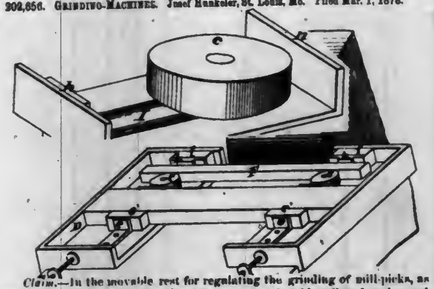


202,655. FOUNTAIN-PEN POINTS. John Holland, Cincinnati, Ohio. Filed Mar. 23, 1878.



Claim.—As a new article of manufacture, a tube of iridium composed of a number of grains soldered together, substantially as and for the purpose specified.

202,656. GRINDING-MACHINES. Josef Hunkeler, St. Louis, Mo. Filed Mar. 1, 1878.



Claim.—In the movable rest for regulating the grinding of mill-picks, as herein shown, the movable bar F, the support and guide-rollers I and *e*, and the weight-bar C, as inclosed between brackets *e'*, *g*, and *h*, as set forth.

202,657. BOILER-FURNACES. James Jenks, Detroit, Mich., assignor of one-half his right to George A. Jenks, same place. Filed Sept. 2, 1877.

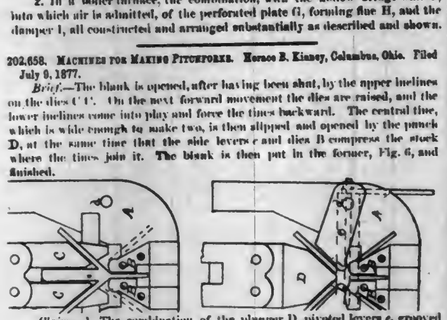


Claim.—1. In a boiler-furnace, the combination, with the air-flue H, formed below the combustion-space, of the perforated damper I at the rear end of such flue, constructed and arranged substantially as described and shown.

2. In a boiler-furnace, the combination, with the hollow bridge-wall C, into which air is admitted, of the perforated plate G, forming flue H, and the damper I, all constructed and arranged substantially as described and shown.

202,658. MACHINES FOR MAKING PITCHFORKS. Horace B. Kinney, Columbus, Ohio. Filed July 9, 1877.

Brief.—The blank is opened, after having been shut, by the upper inclines on the dies C C'. On the next forward movement the dies are raised, and the lower inclines come into play and force the tines backward. The central tine, which is wide enough to make two, is then slipped and opened by the punch D, at the same time that the side levers *c* and dies B compress the stock where the tines join it. The blank is then put in the former, Fig. 6, and finished.



Claim.—1. The combination of the plunger D, pivoted levers *c*, grooved die B, and yoke A, capable of a vertical movement, substantially as set forth.

2. The combination of the dies *c*, having reversed angles *b* and *z i*, grooved die B, and adjustable yoke A, as described.

3. The combination of the plunger D, die B, pivoted levers *c*, bolts *d*, cross-piece *k*, and rock-shaft *l*, having the arms X and weighted lever, substantially as described.

202,659. PUMPS. Ary Lacaase and John A. Newell, Kalamazoo, Mich. Filed Feb. 27, 1878.



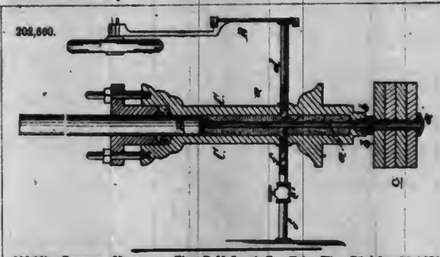
Claim.—1. In pumps, the adjustable fulcrum-rod G, to lengthen or shorten the stroke of the pump-rod, arranged to operate substantially in the manner and for the purposes set forth.

2. In pumps, the cap B, standard C, fulcrum-rod G, adjustable by means of the clip E and collar H, in combination with the pump-rod D and handle I, substantially as and for the purpose specified.

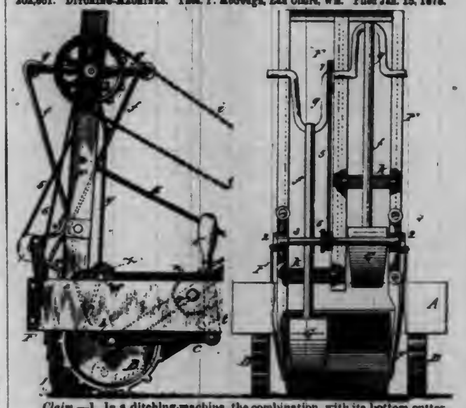
202,660. HYDRAULIC POWER-ACCUMULATORS. Thomas M. Maguire, Corona, N. Y. Filed Jan. 5, 1878.

Claim.—The power accumulator and regulator herein described, composed of the barrel C, piston D, rod *a*, weight or weights *e*, and pipes *d f*, for connecting the barrel with a pump and hydraulic cylinder, the whole combined and arranged for use, substantially as herein set forth.

202,660.



202,661. DITCHING-MACHINES. Thos. F. McGough, Eau Claire, Wis. Filed Jan. 15, 1878.



Claim.—1. In a ditching-machine, the combination, with its bottom cutter, of two or more cutting implements arranged and operating to strike and cut the ground in advance of said bottom cutter, and as they return to approach and remove the excavated earth from said cutter to enable the dirt or earth to be elevated, substantially as set forth.

2. In combination with the bottom cutter E, the spades or cutting implements G G, having the beat handles or rods *f f* connected to the crank-shaft *g*, and guided in the frame F, substantially as and for the purpose set forth.

3. The saw-tooth-shaped side cutters F F', arranged and operating substantially as and for the purpose set forth.

4. The toothed cutters F F', in combination with the eccentrics or cranks 2 2, shaft 3, belt 3, and crank-shaft *g*, substantially as and for the purpose set forth.

5. The combination of the bottom cutter E, having a dirt-elevator, spades or cutting implements G G, having their handles connected to a crank-shaft driven by suitable mechanism, and side cutters F F', operated as set forth, substantially as and for the purpose specified.

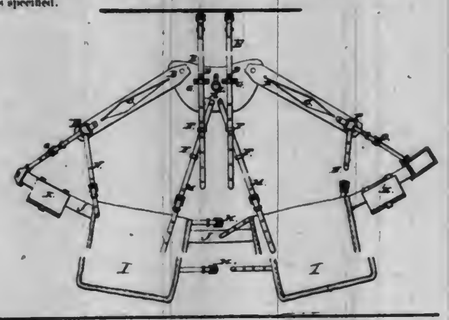
6. The steering mechanism consisting of the hand-lever C, connected to the axles of the wheels by the plates or connections *c c*, and said axles provided with slotted or enlarged bearings *b b'*, substantially as shown and set forth.

203,062. TREATMENT OF COCOA-NUT FIBER FOR MANUFACTURE OF VARIOUS USEFUL PRODUCTS. Eug. Falks, Paris, France, assignor to Société Anonyme des Seychelles, same place. Filed Jan. 18, 1878.

Brief.—Improvement on Patents Nos. 139,731 and 147,337.

Claim.—1. The process of treating cocoa-nut fiber by forming the same into slivers, then bleaching the slivers, next drying them by a current of hot air charged with sulphur vapors, and finally dyeing the same, substantially as specified.

2. The process of making cocoa-nut fiber into imitation horse-hair by twisting the same before bleaching and drying, and also after the fibers have been dried by a current of hot air charged with sulphur vapors, substantially as specified.



203,863. MILITARY ACCOUTERMENTS. George H. Palmer, Monmouth, Ill. Filed Sept. 13, 1877.

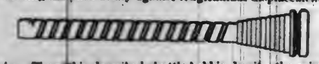
Claim.—1. The single shoulder-straps B H, having slits C C, in combination with the back-pad A, substantially as specified, and for the purposes set forth.

2. The combination of single shoulder-straps B B, having slits C C, back-pad A, bags I I, and waist-belt J, substantially as set forth.

3. The combination of blanket-straps E E, having knots D, back-pad A, loops F F, and straps M, substantially as specified, and for the purposes set forth.

203,864. SHUTTLE-BOBBIN. Roger W. Porter, Nashua, N. H. Filed Mar. 19, 1877.

Brief.—The bobbin has a spiral groove cut in its periphery for the purpose of holding the yarn firmly against longitudinal displacement.



Claim.—The within-described shuttle-bobbin, having the spiral groove cut in its periphery, for the purpose of securing the cop against longitudinal movement, and determining the lay or direction of the cotton or yarn as it passes off from the bobbin, and also having the grooved shoulder at its lower end, by which, in conjunction with the ordinary latching-spring of the shuttle, the bobbin can be fastened in the shuttle and prevented from turning while the shuttle is moved back and forth, and the yarn or cotton unwound, all as described.

203,865. VELOCIPEDE. Henry F. Parsons, New York, assignor to himself and Martha J. Dodge, Brooklyn, N. Y. Filed Sept. 3, 1877.



Claim.—1. The rocking seat E, turning on an axis, D, central or nearly central under it, and the rod H, connecting therefrom to the crank F, as combined with the driving-wheels A A by gearing F' A' as to give a slow and strong motion, as herein specified.

2. The rocking shaft D, having the two arms D^1 D^1, in combination with the seat E and springs *e e*, as and for the purposes herein specified.

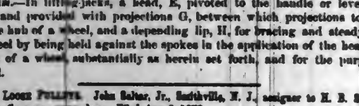
3. The screw *g*, in combination with the rocking seat E, connecting-rod H, and suitable impelling-gear F' A', as herein specified.

4. The treadle M and connection L, quick shaft *k*, belt J, and slow shaft *i*, in combination with the rocking seat E, and suitable stops adapted to sustain it when set free from its connections with the driving-wheels, as herein specified.

5. The combination of the rocking seat E, adjustable connections H, gearing F' A', belt J, fly-wheels K^1 K', connection L, and treadle M, substantially as and for the purposes herein specified.

203,866. LIFTING-JACK. Orlando V. Price, Mount Vernon, Ohio. Filed Mar. 30, 1878.

Brief.—The jack is applied to the front of the wheel, and while lifting said wheel draws it partially from off the axle, so that it can be greased without taking the wheel entirely off.



Claim.—In lifting-jacks, a head, E, pivoted to the handle or lever D thereof, and provided with projections G, between which projections to receive the hub of a wheel, and a depending lip, H, for bracing and steadying said wheel by being held against the spokes in the application of the head to the hub of a wheel, substantially as herein set forth, and for the purpose specified.

203,867. LOOSE PULLEYS. John Baltar, Jr., Smithville, N. J., assignor to H. B. Smith Machine Company, same place. Filed Apr. 5, 1878.



Claim.—1. The pulley-faced flange placed between a tight pulley and a loose pulley of lesser diameter, substantially as and for the purpose described.

2. One or more steps or projections upon a loose pulley, for the purpose of lifting the belt, substantially as described.

203,868. CIRCULAR SAWING MACHINES. Gustav Schleicher, Mount Vernon, N. Y. Filed Feb. 27, 1878.

Brief.—The material to be sawed is automatically fed to the saw between an adjustable gage and a horizontally-adjustable pressure-block by means of a hinged frame provided with a vertically-adjustable pressure-bar and a series of dogs operated by a cord, a hook for holding the end of the stuff, and a cord attached to the pressure-bar and operated by a falling weight.

Claim.—1. In a bench or circular saw machine, the combination, with the yielding pressure-bar, gage, and yielding adjustable pressure-block, of a cord for feeding the stuff to the saw, operated by a falling weight, constructed and operating substantially in the manner described and specified.

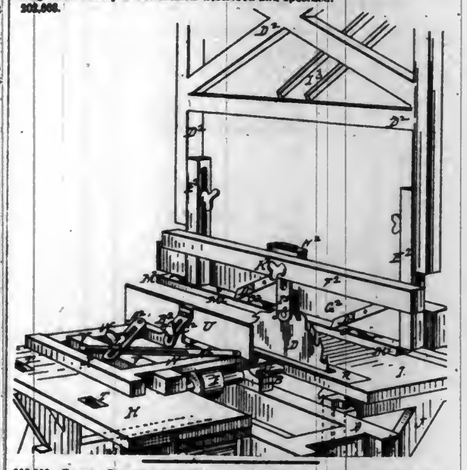
2. In a bench or circular saw machine, the combination of the hinged frame D^3, provided with vertically-adjustable pressure-bar G^3 M^3 and horizontally-adjustable spring pressure-block Y^3 A^3, with the weighted feed-cord F^3, provided with hook G^1, constructed and operating substantially in the manner described and specified.

3. In a bench or circular saw machine, the combination, with a weighted-cord feeding device, of the dogs D^3, for preventing or arresting the feeding of the stuff, constructed and operating substantially in the manner described and specified.

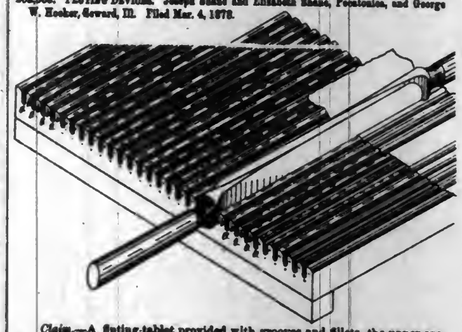
4. The combination, with table H, of the gage-plate U, frame W X, bar V, slotted arms A^3, set-screw Z, and guide-strip Y, constructed and operating substantially in the manner described and specified.

5. The combination, with the spring-pressure adjustable block Y^3 A^3, adjustable gage U, and adjustable pressure-bar G^3 M^3, constructed and operating substantially in the manner described and specified.

203,869.

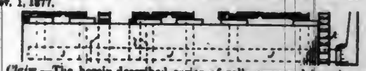


203,869. PLOTTING DEVICES. Joseph Shane and Elizabeth Shane, Pountains, and George W. Hooker, Seward, Ill. Filed Mar. 4, 1878.



Claim.—A fluting-tablet provided with grooves and fillets, the upper surfaces of the latter being of inclined oval form, whereby one edge of the fillet projects above the other, and thus serves to impart the desired form to the fabric, substantially as set forth.

203,870. WIRE-ROLLING MACHINES. David Shaw and David Spence, Pittsburg, Pa. Filed Nov. 1, 1877.



Claim.—The herein-described series of rolls arranged in pairs, each pair having two intermeshing gear-wheels, in combination with shaft *f*, and gear-wheels mounted thereon with reference to the said pairs of rolls, and adapted by means of their varying sizes to impart an increase of speed successively to the respective sets of rolls which they operate, the said gear-wheels upon the shaft alternately engaging with a third gear-wheel mounted upon the axis of the upper roll of one pair, and with the lower one of the aforesaid two intermeshing gear-wheels of the next pair, substantially as herein shown and described, and for the purposes set forth.

203,871. HARROWS. Roswell M. Skinner, Tontogany, Ohio. Filed Jan. 27, 1878.



Claim.—The hinge bar or rod B, running along between the harrows or wings, and curved at the head of the harrow or one of the wings, and secured by the cleat *a* at one end, forming the bar to which the draft is attached, substantially as and for the purposes set forth.

203,872. SEPARATING WOOL AND COTTON AND SIMILAR ANIMAL AND VEGETABLE FIBERS FROM FABRICS. John Y. Slater, Baltimore, Md. Filed Mar. 26, 1878.

Claim.—1. The process herein described of recovering animal fiber from fabrics of mixed animal and vegetable fiber, the same consisting in subjecting the mixed fiber in a revolving cage to the action of heated dilute acid, and finally washing and drying the residual animal fiber, as set forth.

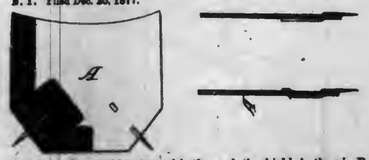
2. In combination with the lead-lined tank A, the cage B, brazen throughout, substantially as described.

3. In combination with the tank A, the cylindrical cage B, having hinged cover B' and longitudinal supporting-rods D, substantially as described.

203,872.

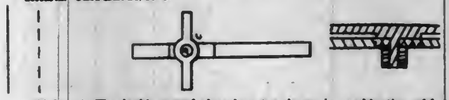


203,873. NECK-TIE SHIELDS. Albert M. Smith, Brooklyn, and Hiram H. Thayer, New York, N. Y. Filed Dec. 20, 1877.



Claim.—In combination with the neck-tie shield A, the pin B, when constructed and arranged to operate substantially as and for the purpose set forth.

203,874. BENCH-PLANES. Charlotte Smith, Chelsea, Mass., administratrix of John P. Smith, deceased. Filed Mar. 26, 1878.

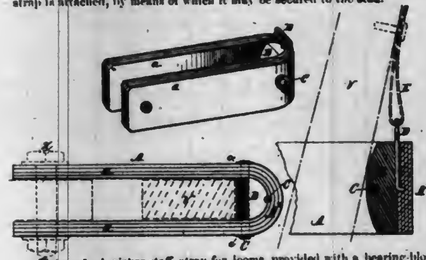


Claim.—1. The double-curved plane-iron top shown, in combination with the plane-iron, the shoulder, the screw D, and a nut, all when constructed and fitted for use substantially as described and shown.

2. The combination of the thumb-screw with its arms, the screw D, the shoulder seen, a plane-iron, and a plane-iron top, all when constructed and arranged substantially as described and shown.

203,875. PICKER-STAFF STRAPS FOR LOOMS. Edward S. Stone, Worcester, Mass. Filed Jan. 21, 1878.

Brief.—The strap may be formed of remnants, waste-scrap, or pieces of old card-clothing leather, cemented together, and crimped into proper form, and in the bend or loop a metal or other bearing-block or re-enforce is secured, to protect the strap from wear by the sharp corners of the staff, and a loop or strap is attached, by means of which it may be secured to the staff.



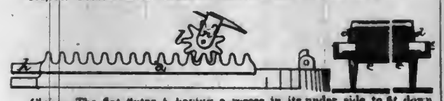
Claim.—1. A picker-staff strap for looms, provided with a bearing-block or re-enforce fitted within the back or looped portion of the strap which surrounds the picker-staff, and against which the picker-staff works, substantially as and for the purpose set forth.

2. The improved picker-staff strap, consisting of the leather portion A, having a metallic re-enforce block, B, at the inner side of its loop A', substantially as described.

3. In combination, the strap A, re-enforce B, bolt or rivet C, and suspension-loop E, substantially as and for the purposes set forth.

4. A picker-staff strap made from remnants, waste-scrap, or pieces of old card-clothing leather, cemented together, crimped into proper form, and secured around a metal re-enforce piece or bearing-block, in the manner substantially as hereinbefore described.

203,876. FLUTING-IRONS. Nelson B. Streeter, Groton, N. Y. Filed June 3, 1877.



Claim.—The flat finter A, having a recess in its under side to fit down over the top of an iron or a core, and provided with a handle or catch at one end, adapted to engage with a handle that has a projection at one end for catching in the handle of the finter, substantially as set forth.

203,877. WELL-BORING AND ROCK-DRILLING MACHINES. John P. Summers, Tiffin, Ohio. Filed Sept. 19, 1877.

Claim.—1. The combination of the large bevel-wheel e', bevel-wheel h, and clutches f' on collar e, when the same are constructed, arranged, and operated by the means and in the manner herein described.

2. The combination of the hoisting-gear U, T, and *l* with bevel-wheel V and clutches e', secured to the collar e, in the manner and for the purpose herein described.

3. The combination of the drive-wheel e' with the hoisting-gear U, T, and *l*, pinions h and V on shaft H, controlled by the clutches e' and f', secured on collar e, and lever *g*, in the manner and for the purpose herein described.

4. The grooved or plane-faced loose wheel M, with the pin N and steel key O secured to the same, said wheel being upon the driving-shaft H, combined with the spring-catch O' and trip-finger *x*, in the manner and for the purpose herein described.

5. The combination of the collar W, with the shaft H, wheel M, with its catch-spring O' and pin N, chain P^4, and drill F^4, in the manner and for the purpose herein described.

6. The combination of the wheel M, pins N and O, spring O', collar W, with trip-finger *x*, and chain P^4, substantially as set forth and described.

7. The combination of the wheel a with trip-finger *x* and wheel M, chain P^4, and drill F^4, in the manner and for the purpose herein described.

8. The combination of the wheel M, with its pins N and O, with chain P^4, walking-beam Q, post R, pulleys *y* A' C', and rope E^1, in the manner and for the purpose herein described.

9. The wheel M and pins N and O, in combination with wheel a, chain P^4, walking-beam Q, post R, gin-pole G', rope E^1, and drill F^4, all constructed and arranged as and for the purpose set forth.

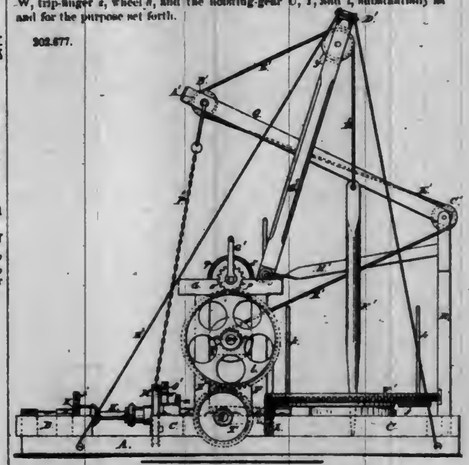
10. The wheel M and pins N, in combination with pinions J and K and the balance-wheel L, arranged substantially as and for the purpose set forth.

11. The wheel M, with pins N and O, in combination with chain P^4, walking-beam Q, post R, gin-pole G', pulleys A', *y*, and C', rope E^1, pinions J and K, and the balance-wheel L, substantially as and for the purpose described.

12. The brake *r*, in combination with the hoisting-gear U, T, *l*, and a, substantially as and for the purpose set forth.

13. The wheel M, with pins N and O, in combination with hook d^2, collar W, trip-finger *x*, wheel a, and the hoisting-gear U, T, and *l*, substantially as and for the purpose set forth.

203,877.

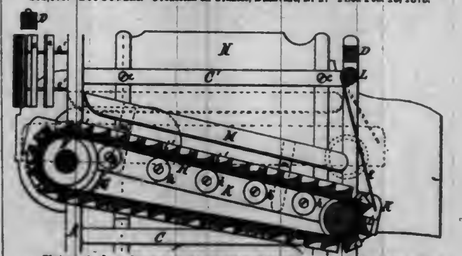


203,878. PROCESSES FOR PRESERVING TIMBER. Waldemar Thilmany, Cleveland, Ohio. Filed May 17, 1877.

Brief.—Claim as on substitute specification of December 17, 1877.

Claim.—The above-described process of preserving wood by saturating the fibers of timber by treatment with solutions of sulphate of zinc and chloride of barium, substantially in the manner set forth.

203,879. DOG-POWERS. Frederick K. Trarler, Dansville, N. Y. Filed Feb. 12, 1878.



Claim.—1. In a dog-power, the combination of the adjustable belt or platform H, having the blocks *i*, the roller F, gear-wheels G and *o*, fan G, swinging roller *s*, boards K, having rollers *k*, and windlass L, substantially as described.

2. The combination of the guard-boards M, swinging boards K, and driving-belt or platform H, substantially as and for the purpose set forth.

3. The combination of the within-described dog-power, having connection C', side N of a fanning-mill, and removable coupling-bolts or screws *r*, whereby the said dog-power and fanning-mill are coupled together, so as to be in operating condition with respect to one another, and can be readily uncoupled at will, substantially as shown and described.

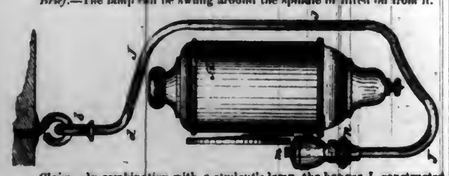
4. In a dog-power, the combination of the driving-belt H, having stepping-blocks *i*, provided with longitudinally and transversely carved depressions *l*, the longitudinal curvature of which causes the dog to tread in the center of the said blocks *i*, and the transverse curvature of which corresponds with the shape of the sole of the dog's feet, substantially as and for the purpose set forth.

202,680. COMPOSITIONS FOR TREATING TOBACCO. John Trost, Mays Forge, Va. Filed May 4, 1877.

Claim.—The composition for curing tobacco, consisting of brimstone, soda, copperas, and wheat-bran, in about the proportions specified.

202,681. LAMPS. Wm. M. Walton and Joseph J. Walton, New York, N. Y. Filed Apr. 8, 1876.

Brief.—The lamp can be swung around the spindle or lifted off from it.



Claim.—In combination with a student's lamp, the hanger J, constructed as shown, with the ring *b* at its upper end, then bent substantially as shown, and the lower end forming the vertical spindle *m*, with collar *n*, the said spindle being in a different vertical plane from that of the ring *b*, as and for the purposes herein set forth.

202,682. CAR-AXLES. Henry Watkeys, Syracuse, N. Y. Filed Mar. 6, 1878.



Claim.—1. The sleeve *a*, composed of two or more longitudinal sections, secured to each other by the wheel W, pressed onto one end, and a collar or supplemental sleeve, *b*, fitted to its exterior at the opposite end, in combination with a car-axle having rigid shoulders at the ends of said sectional sleeve, substantially as described.

2. The combination and arrangement of the sleeve *a*, composed of two or more longitudinal sections, fitted between shoulders *s s'*, forged or shrunk on the axle, so as to be permanently attached thereto, and of a smaller circumference than the exterior of the sleeve *a*, the wheel W, pressed onto the outer end of said sleeve, and having its hub projecting over the collar *s*, the packing-ring *r*, interposed between the rear end of the sleeve *a* and collar *s'*, and the supplemental sleeve *b*, fitted to slide over collar *s'*, packing-ring *r*, and end of sleeve *a*, and clamped to the latter, all constructed and arranged substantially as described and shown, for the purposes set forth.

202,683. BUCKLE LOOP AND FASTENER FOR CARRIAGE-TOPS, HARNESS, &c. John Watters, New York, N. Y. Filed Mar. 23, 1878.



Claim.—1. The strap or curtain loop C, made of one single piece of sheet metal, and provided with downwardly-projecting contiguous lugs *a a* at or near the middle of its bottom, substantially as herein shown and described.

2. The combination of the metal clasp *b*, which laps over top and bottom of the strap, with the buckle B, and with a loop, C, provided with the projecting lugs *a a*, substantially as specified.

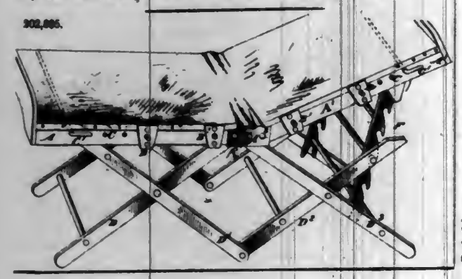
202,684. BUTTONS. William West and Wm. P. Spittle, Birmingham, England. Filed Oct. 2, 1877.



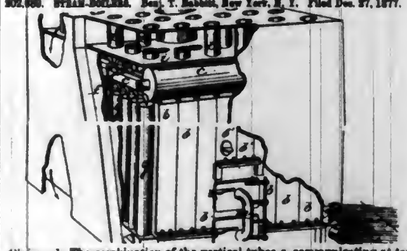
Claim.—1. The pushers *a*, with their inner ends formed to close against the central part, which connects the parts A and B, said pushers being provided with projections *a* and *a'*, to hold the spiral springs *S*, substantially as and for the purposes described.

2. In combination with the box *b*, the pushers *a*, each being provided with a projection, *b*, to extend into a slot, *l*, in said box *b*, as set forth.

202,685.



202,686. STEAM-BOILERS. Benj. T. Babbitt, New York, N. Y. Filed Dec. 27, 1877.



Claim.—1. The combination of the vertical tubes *g*, communicating at top with the steam-space, and at the bottom with the water-base, and the vertical water-walls *b*, provided with the inward-projecting generating-tubes *c*, constructed and arranged to operate as set forth.

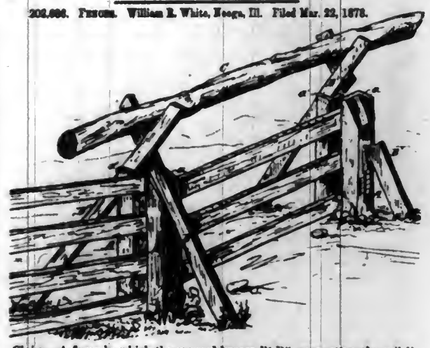
202,685. CAMP-BEDS. Orsamus A. White, Norwalk, Ohio. Filed Jan. 31, 1878.

Claim.—1. In a folding cot-bedstead, the combination of jointed side rails, a covering made fast to said rails throughout portions of its length, and secured thereto throughout the remaining portion by means of metallic plates or buttons and pins, and folding legs, substantially as and for the purpose set forth.

2. The combination of the folding rails A A, the detachable legs D^1 D^2, the clamps E E, buttons E' E', and the frame F, the parts being constructed and arranged to operate substantially as and for the purpose described.

3. In a folding cot-bedstead, the combination of the jointed rails A A, plates A^3 A^3, and pins A^3, arranged to operate substantially as and for the purpose set forth.

202,686. FENCES. William B. White, Neogo, Ill. Filed Mar. 22, 1878.



Claim.—A fence in which the crossed braces B' B'', supporting the rail C, are supported by the posts A A', having inclined faces *a'* and flanges *a a'*, between which the braces are confined, all as set forth.

202,687. GELATINE LANTERNS. Francis J. Whitaker and G. Albert Whitaker, Hyde Park, Mass. Filed Sept. 6, 1877.

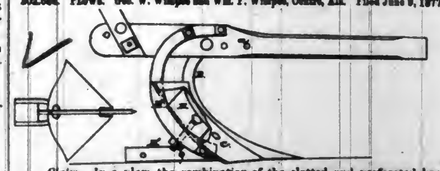


Claim.—1. A lantern, emblem, or design for decorative purposes, provided with the step or projection *a* and the rivet *b*, for the purposes set forth.

2. A lantern for decorative purposes, having a base, a central, and an upper band, in separate sections, of pasteboard or other light and suitable material, and colored sheets of transparent or translucent gelatine fastened at their upper and lower edges only to two of said sections, and exteriorly reënforced at their junction by strips of fibrous material cemented over the edges, substantially as described.

3. A lantern, emblem, or design for decorative purposes, in which sheets of colored gelatine are pasted at one or more of their edges to a light interior frame-work of pasteboard strips or bands, or other suitable material, and reënforced exteriorly along their juncture by strips of fibrous material.

202,688. PLOWS. Geo. W. Wimpee and Wm. P. Wimpee, Centre, Ala. Filed June 9, 1877.

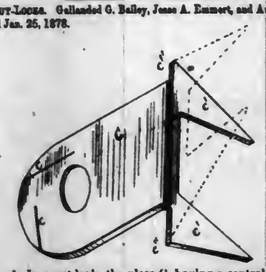


Claim.—In a plow, the combination of the slotted and perforated beam A, cutting-standard and land-side B B', formed in one piece, and curved, slotted, or double brace H, the standard and brace arranged to be placed at different positions on beam A, to adapt it to carry a turn-plow or a sweep, or to be used without either as a root or sod cutter, substantially as shown and described.

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2. The double heat flues *u*, combined with the fire-door and ash-pit, the hot-air flue *l*, and heating-chamber, substantially as described.

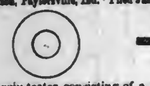
202,689. NUT-LOCKS. Gallandet G. Bailey, Jesse A. Emmert, and August L. Cappe, Minier, Ill. Filed Jan. 25, 1878.



Claim.—1. In a nut-lock, the plate C, having a central aperture or orifice, and slitted, as at *c c*, and provided with the pointed arm or extension *c'*, shouldered or headed, as at *c''*, substantially as and for the purpose set forth.

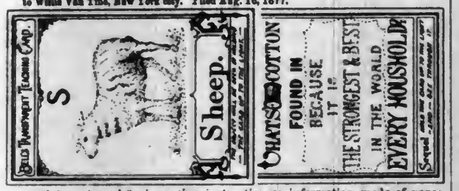
2. The combination, with the bar D, bolt B, and nut A, of the plate C, perforated and slitted, as aforesaid, and provided with a pointed extension or extensions, *c'*, shouldered or headed, as at *c''*, substantially as and for the purpose specified.

202,691. DEVICES FOR DETECTING COUNTERFEIT COIN. Aaron J. Baker, Edinburg, and John W. Simonton, Taylorsville, Ind. Filed Jan. 7, 1878.



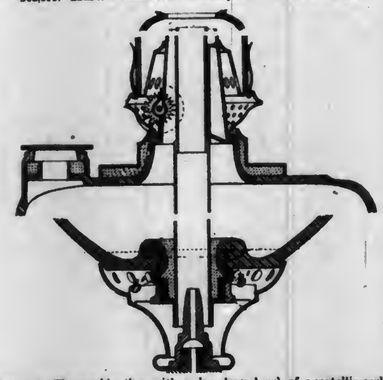
Claim.—A coin-tester consisting of a disk of zinc having an opening in the center, substantially as and for the purpose specified.

202,692. EDUCATIONAL AND ADVERTISING CARDS. Geo. C. Ball, Brooklyn, N. Y., assignor to Willis Van Tine, New York city. Filed Aug. 16, 1877.



Claim.—A card for imparting instruction or information, made of paper or other translucent material, having imprinted or otherwise placed upon its face a word, or word and picture, to be viewed by reflected light, and beneath its face a word or picture responsive to or explanatory of the inquiry on the face, to be viewed by transmitted light, substantially as described, and for the purpose set forth.

202,693. LAMPS. William Bockel, Philadelphia, Pa. Filed Apr. 6, 1878.



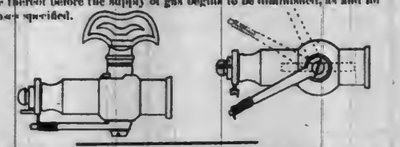
Claim.—1. The combination, with a glass lamp-bowl, of a metallic socket secured to the base of the bowl by being blown in in forming the same, and a central draft-tube passing through the bowl and secured at bottom to the socket, substantially as set forth.

2. A metallic socket having an upper flange, and a projecting portion or swell below said flange for connection with a lamp-bowl, a threaded portion below the swell for attachment to the lamp-base, and a cylindrical connecting-tube below the threaded portion to receive a central draft-tube, substantially as set forth.

202,694. ELECTRIC GAS-LIGHTING BURNERS. A. Livingston Bogart, Jamaica, N. Y., assignor to Abraham L. Bogart, same place. Filed Dec. 27, 1877.

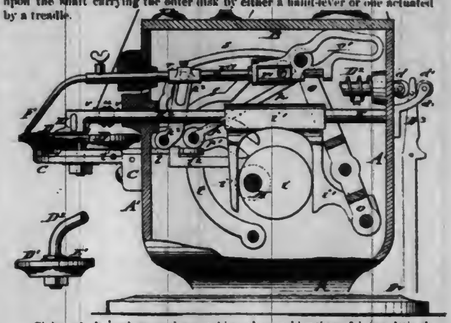
Claim.—An electric gas-lighting burner having one fixed electrode and one vibrating electrode, the latter being attached directly to the stem of the plug, substantially as described, in such position in relation to the opening through the plug that when the gas is fully turned on, the said vibrating electrode will be carried some distance beyond the said fixed electrode, and so that in turning off the gas it must pass beyond the said fixed electrode on the other side thereof before the supply of gas begins to be diminished, as and for the purposes specified.

202,694.



202,695. GLOVE-SEWING MACHINES. Glanda M. Boland, New York, N. Y. Filed Sept. 23, 1877.

Brief.—The working mechanism is placed in a casing or head. The needle-bar works in a horizontal plane, and, with the aid of a looper, operated by a peculiar and novel combination of devices, makes the usual glove-stitch. The feeding device consists of two horizontal disks of unequal sizes, held in contact by a spring upon the shaft of the outer one, which is of such form that the space beneath the feeding-disks is left free for the introduction of the materials to be sewed. The feeding-disks may be separated for the introduction of the work by means of a wedge-shaped lever, operated so as to act upon the shaft carrying the outer disk by either a hand-lever or one actuated by a treadle.



Claim.—1. In a glove-sewing machine, the combination of intermittingly-revolving feed-disks, a reciprocating stitching-needle, a binding-off looper, and an adjustable guide-arm for laying over the seam one or more ornamental face-threads, substantially as and for the purpose set forth.

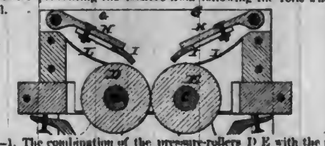
2. The combination of the intermittingly-revolving feed-disks, reciprocating stitching-needle, and binding-off looper with a revolving bend-disk, to clear the edges of fur from hairs in sewing, substantially as specified.

3. The combination of the adjustable feed-disk D^1, horizontal supporting-arm D^2, encircling spiral spring *s*, and adjusting-lever D^4 with the feed-disk D^1 and frame or casing A, having guide-sockets for the supporting-arm, as and for the purpose set forth.

4. The combination, in a sewing-machine, of the lever *a*, loop *a'*, lever-rod *p*, curved and recessed arm p^1, having forked upright post p^2, and the swinging lever *t*, having guide-loop *s* and spring-pressed guide-piece *s'*, the looper-rod F, having arms *r r'*, the shaft and eccentric H *i*, the needle-bar F^3, provided with the yoke *f*, and the casing A^4, having the rocking bearing *g*, as and for the purpose herein set forth.

202,696. TOBACCO-STEM CRUSHERS. Nicholas H. Borgfeldt, New York, N. Y. Filed Feb. 27, 1878.

Brief.—The hopper has adjustable vibrating sides to regulate the amount of material fed to the rolls and for forcing it forward. Under these sides are metal clearers for preventing the tobacco from following the rolls when they are reversed.



Claim.—1. The combination of the pressure-rollers D E with the pivoted guide-plates H H in the open feed-box G, substantially as herein shown and described.

2. The pivoted guide-plate H, provided with the extension-slide I, for combined use with pressure-rollers D E, substantially as herein shown and described.

3. The combination of the plates I I with the pivoted guide-plates H and pressure-rollers D E, substantially as and for the purpose specified.

4. The removable box G, combined with the pressure-rollers D E and guide-plates H, substantially as and for the purpose shown and described.

5. The combination of the toothed wheels *d e* and pressure-rollers D E with the agitating-cranks J J and vibrating guide-plates H, substantially as and for the purpose specified.

202,697. GRAIN-BANDS. George A. Brickett, Minneapolis, Minn. Filed Mar. 7, 1878.

Claim.—1. A paper grain-band having its edges turned or folded inward, substantially as shown.

2. A paper grain-band having a thin body, with edges of increased or double thickness, substantially as shown and described.

3. A paper grain-band having thickened or folded edges, with thread or cord inserted therein, substantially as and for the purpose described.

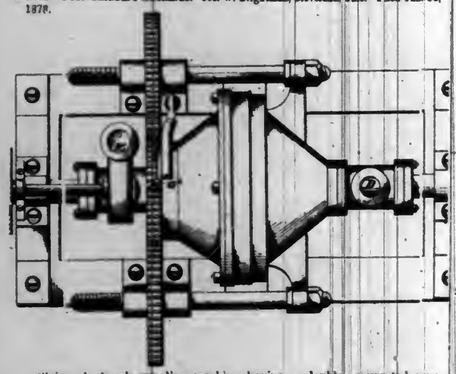
4. A prepared band for binding grain, consisting of a narrow strip of water-proof paper, having threads, woven material, or long fiber incorporated longitudinally therewith, substantially as shown and described.

5. A prepared paper band for binding grain, having its edges strengthened by cord or its described equivalent.

202,697.



202,698. PULP-GRINDING MACHINES. Jos. W. Brightman, Cleveland, Ohio. Filed Jan. 16, 1878.



Claim.—1. A pulp-grinding machine having a double corrugated cone attached to a shaft, and made to revolve within a double cone shaped cylinder, the interior surfaces of which are corrugated, together with an entrance-pipe for the stock at the apex of one of the interior cones, and the outlet-pipe at the apex of the other interior cone, substantially in the manner and for the purpose specified.

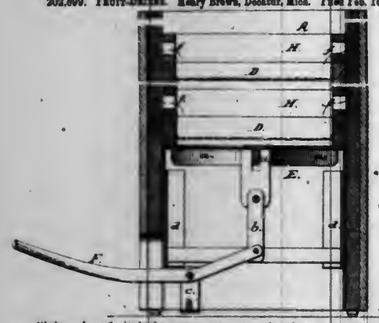
2. In a conical pulp-grinder, an inlet-port for feeding stock to the machine, said inlet-port being at the apex and surrounding the shaft or axle, substantially in the manner and for the purpose specified.

3. The combination, with a conical pulp-grinder, of an inlet-port located at the apex of the cone, and surrounding the axle on which the cone revolves, and an outlet-port located at the apex of the opposite cone, and also surrounding the axle on which the cone revolves, substantially as set forth.

4. The combination, with a double-conical pulp-grinder, of a series of spur-gears and a lever, by which the machine may be adjusted to grind fine or coarse, or by which the interior may be rendered accessible, substantially in the manner and for the purpose specified.

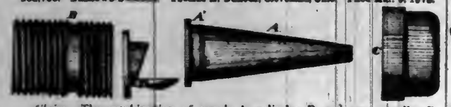
5. The combination, with the reverse cones and laterally adjusting mechanism of a conical pulp-grinder, of an inlet-port located at the apex of one of the cones and surrounding the axle, and outlet-port located at the apex of the opposite cone and surrounding the shaft or axle, and a pump attached to a pipe leading to said outlet-port, substantially as set forth.

202,699. FRUIT-DRIERS. Henry Brown, Decatur, Mich. Filed Feb. 16, 1878.



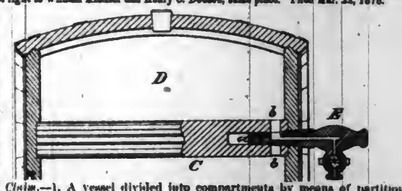
Claim.—In a fruit-drying apparatus, the chamber A, provided with side doors B, and opening at the bottom for introduction of fruit-trays, and having the movable platform E, operated by the lever F, in combination with the trays D and frames H, having openings *f*, the several parts being constructed, arranged, and combined to operate substantially as and for the purpose specified.

202,700. BELLOWS-BOOSTER. Thomas H. Bullock, Cleveland, Ohio. Filed Mar. 9, 1878.



Claim.—The combination of nozzle A, cylinder B, and cap or collar C, constructed and combined substantially as shown.

202,701. COMPARTMENT-VESSELS. Joseph Butcher, New York, N. Y., assignor of two-thirds his right to William Klauser and Henry C. Dobson, same place. Filed Mar. 22, 1878.



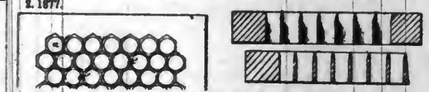
Claim.—1. A vessel divided into compartments by means of partitions meeting at a point common to all, and having an outlet which communicates with all the compartments, so arranged that the contents may be drawn from each, and all at the same faucet, without removing the same, substantially as specified and shown.

2. The combination of a suitable vessel with a post, C, provided with a faucet-cavity and ports *b b*, and the partitions D D, arranged to divide the vessel into compartments which have the faucet-cavity in common, substantially as set forth.

3. A vessel divided into compartments which communicate, normally, with each other through a faucet-cavity common to all, and having a common outlet, with a faucet, E, arranged to fit the said faucet-cavity, and having a side inlet to communicate with the compartments, substantially as herein set forth.

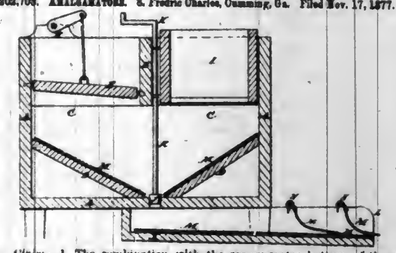
4. The center post C', provided with a faucet-cavity and ports *b b*, opening into the same, and a cock-cavity, *a*, substantially as and for the purpose specified.

202,702. DIES FOR CUTTING WOODEN PINS. Brantly Chalfant, Williamsport, Pa. Filed Oct. 2, 1877.



Claim.—A die for the manufacture of match-sticks and dowel-pins having a cutting-edge of hexagonal or many-sided form on its working face, and of cylindric or other form beneath said face, the die-holes being constructed to adjoin each other, substantially as described.

202,703. AMALGAMATORS. S. Fredric Charles, Cumming, Ga. Filed Nov. 17, 1877.

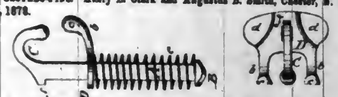


Claim.—1. The combination, with the ore-separator bottom, of the cloth M, charged with electricity, as described.

2. The combination, with the tank A B C, having inclined and valved bottoms, of the plungers E, the sieve I, the amalgamated cloth M, and the trough L, as set forth.

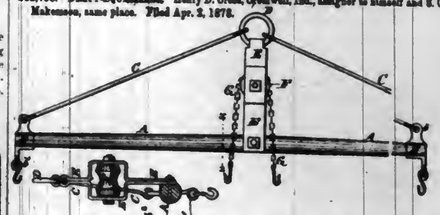
3. As a new article of manufacture, an amalgam-cloth having silver amalgam and gutta-percha in its interstices, as set forth.

202,704. CLOTHES-PINS. Henry L. Clark and Augustus B. Smith, Chester, N. Y. Filed Feb. 18, 1878.



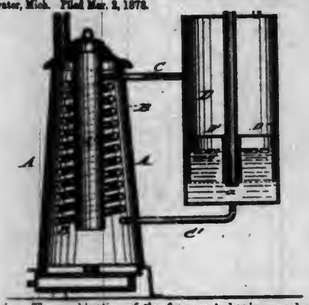
Claim.—The combination, with the straight-shanked hook A C, having thumb-piece B and stop *f*, with the spiral spring *e* and follower D, having the two ball-ended fingers *c b*, as shown and described.

202,705. DRAFT-EQUALIZERS. Henry D. Cross, Cromwell, Ind., assignor to himself and S. C. Makemson, same place. Filed Apr. 2, 1878.



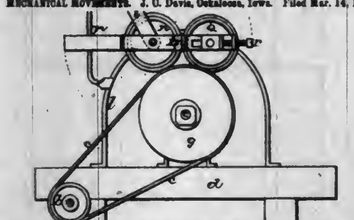
Claim.—The combination of the bar A, the clips B, the braces C', the ring D, the bar or plate E, the pulley F, and the chain D with each other, substantially as herein shown and described.

202,706. FEED-STRAINERS. Daniel D. Darling, Lewy L. Pankhall, and Fred H. Wendell, Coldwater, Mich. Filed Mar. 2, 1878.



Claim.—The combination of the furnace A, having pendent tube A', the tank D, having float and water-supply pipe below it, and the coiled pipe B, connecting by pipes C C' with the tank, as shown and described, for the purpose specified.

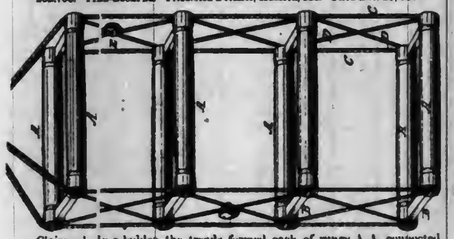
202,707. MECHANICAL MOVEMENTS. J. G. Davis, Ostaloosa, Iowa. Filed Mar. 14, 1878.



Claim.—1. The combination of the broad pulley a, narrow pulley Q, driving-belt c, loose pulley g, and fast pulley h, substantially as shown.

2. The combination of the pivoted frame m, broad pulley a, narrow pulley Q, and set-screws r, whereby the two pulleys may be adjusted in relation to each other, substantially as described.

202,708. FIRE-ESCAPES. Friederick Dettmer, Madison, Ind. Filed Dec. 26, 1877.

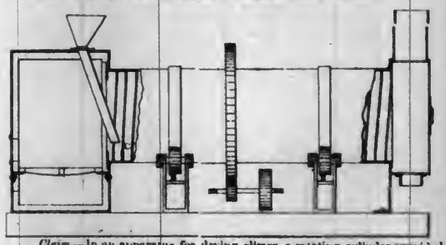


Claim.—1. In a ladder, the treads formed each of rungs A A, connected at their ends by yokes B B, substantially as shown and specified.

2. In a ladder, the combination of the chains C C and D D, or their equivalents, arranged as shown, with treads or steps arranged to form a flexible ladder, as and for the purposes specified.

3. The combination, in a flexible ladder, of the treads formed of the rungs A A and yokes B B, the suspending chains or ropes C C, and the diagonal chains or ropes D D, substantially as and for the purposes herein set forth.

202,709. MACHINES FOR DRYING SLIMES. James W. Dillon, Virginia City, Nev., assignor of one-third his right to E. L. Buckingham, same place. Filed Feb. 4, 1878.



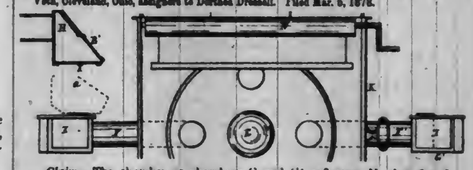
Claim.—In an apparatus for drying slimes, a rotating cylinder provided with an interior spiral flange, in combination with a furnace having one of its ends journaled in the wall thereof, so that it is entirely open to the fire-chamber, while its opposite end connects with the smoke-stack, whereby the products of combustion remain in constant contact with the material to be dried in their passage through the cylinder, substantially as described, and for the purpose specified.

202,710. UMBRELLA TIP-CUPS. Adolph Dittrich, St. Luke's, England. Filed Feb. 12, 1878.



Claim.—In combination with the stick B, part *d*, screw *e*, and the detachable handle C, the tip-cup A, having the reduced portion *f* and extension *a*, the spiral spring *g*, acting against the shoulder *c*, and the neck *d*, which latter also abuts the shoulder *b* of the stick, as shown and described, for the purpose specified.

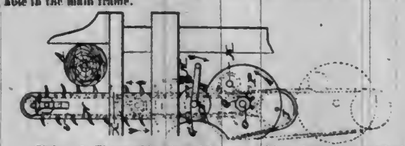
202,711. HEAD-LIGHTS FOR LOCOMOTIVES. Andrew Dressell, Ernst H. Voth, and John G. Voth, Cleveland, Ohio, assignors to Dorthea Dressell. Filed Mar. 5, 1878.



Claim.—The chamber or chambers G and G', reflectors H, glass face I, and glass back B', substantially in the manner as described, and for the purpose specified.

232,712. LOG-TURNERS. James H. Driscoll and Luke Balcom, Oconto, Wis. Filed Jan. 19, 1878.

Brief.—The log is turned by an endless toothed chain provided with tongues on its sides, and running in a grooved bar, which is vertically adjustable in the main frame.



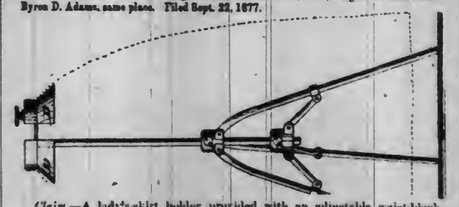
Claim.—1. The combination of the grooved bar, the endless toothed chain, and the chain-pulleys, one of which is adjustable upon the grooved bar, for the purpose of enabling slack upon the chain to be taken up, substantially as and for the purpose herein set forth.

2. The combination of the grooved bar N, the toothed chain, the shaft O, having ratchet-wheel R, and the pawls S, all arranged and operating substantially as herein described, for the purposes shown and specified.

3. The combination, in a log-turner, of an endless toothed chain, traveling upon a grooved bar, with friction mechanism, substantially as described, for raising or elevating the said grooved bar with its toothed chain, and additional friction mechanism for operating the said toothed chain, the grooved bar being, in the meantime, held to work by the first friction mechanism, pressure upon which is adjustable by a hand-lever, all constructed substantially as and for the purposes herein shown and specified.

4. In a log-turner, constructed substantially as herein described, the bar N, arranged to vibrate upon the shaft O at its lower end, the said shaft sliding in vertical guides T T, substantially as and for the purpose herein set forth.

202,713. SKIRT-EXHIBITORS. George W. Everett, New York, N. Y., assignor to himself and Byron D. Adams, same place. Filed Sept. 22, 1877.



Claim.—A lady's-skirt holder provided with an adjustable waist-block and retaining flanges, as shown and described.

202,714. BOTTLE-STOPPERS. Nathan Fox, Savannah, Ga., assignor to himself and James Ray, same place. Filed Feb. 8, 1878.

Brief.—To be used in filling the bottle on the filling-machine, and for ordinary stoppering.



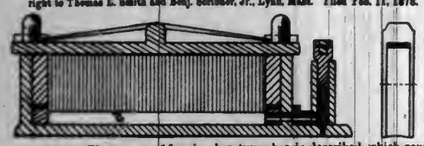
Claim.—An improved stopper, formed of the collar B, having a screw-thread cut upon the outer surface of its upper part, and provided with a packing, D, the cap C, having a screw-thread cut upon the inner surface of its lower part, and provided with the arms or projections *c'* and the nozzle *c*, and the ball E, provided with the frame *c'*, in combination with each other, substantially as herein shown and described.

202,715. CHILDREN'S CARRIAGES. Constant Ollis, Brooklyn, N. Y. Filed Mar. 22, 1876.



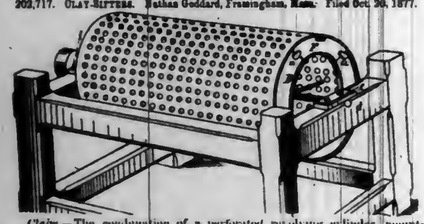
Claim.—The crossed handles A, the sectional axles B, and the rigid reach C, combined in a child's carriage, and detachably bolted together, as and for the purpose specified.

202,716. MANUFACTURE OF LOGOTYPES. George W. Glazier, Salem, assignor of one-half his right to Thomas E. Smith and Benj. Scribner, Jr., Lynn, Mass. Filed Feb. 11, 1878.



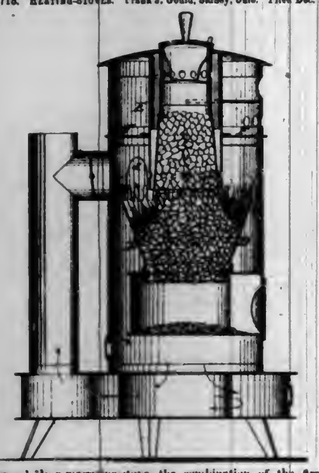
Claim.—The process of forming logotypes herein described, which consists in setting up in the ordinary manner, without cement, types having the longitudinal groove open at the base, and extending upward on one side of each type, confining the same in a chase or frame with said open ends of the grooves exposed within a suitable chamber, and then forcing the rubber or equivalent cement under pressure up into the grooves in the sides of the types, substantially as described, and for the purpose specified.

202,717. CLAY-SIFTERS. Nathan Goddard, Framingham, Mass. Filed Oct. 20, 1877.



Claim.—The combination of a perforated revolving cylinder, mounted upon its axis by means of the disk C and the spider E, with the centrally-perforated diaphragm D, which is provided with a gate, F, at its margin, substantially as shown, and for the purpose described.

202,718. HEATING-STOVES. Frank J. Gould, Sidney, Ohio. Filed Dec. 21, 1877.

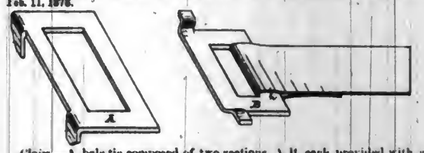


Claim.—1. In a magazine-stove, the combination of the fire-pot with a double-walled magazine having a double cover, the inner wall of the magazine having holes near the upper part, and the cover-holes in the upper or top part, while the lower part or bottom of said cover is fitted to the inner wall of the magazine below the holes of the same, substantially as and for the purpose described.

2. In a magazine-stove, the combination of the fire-pot with a double-walled magazine, of which the inner wall has draft-holes at the upper part, and the outer wall draft-holes at the lower part, and with a double perforated cover, to admit the passage of a continuous current of air through the stove, substantially as specified.

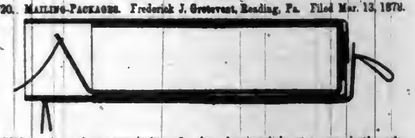
3. In a magazine-stove, the combination of the fire-pot, double-walled magazine having interior draft-holes at upper part and exterior draft-holes at lower part, and double cover having upper air-register, substantially as described, and for the purpose specified.

202,719. BALE-TIES. Leocardia W. P. Gray and Thos. S. Johnson, New Orleans, La. Filed Feb. 11, 1878.



Claim.—A bale-tie composed of two sections, A B, each provided with a rectangular slot, and the latter section with side projections, as and for the purpose set forth.

202,720. MAILING-PACKAGES. Frederick J. Grotevent, Reading, Pa. Filed Mar. 13, 1878.



Claim.—A package consisting of a box having lids at one or both ends, and provided with an inner and an outer wrapper, and a fastening device, substantially as shown and described.

202,721. WORK-TRIMMERS FOR SEWING-MACHINES. Harvey H. Hallett, Rockland, Mass. Filed Aug. 2, 1877.

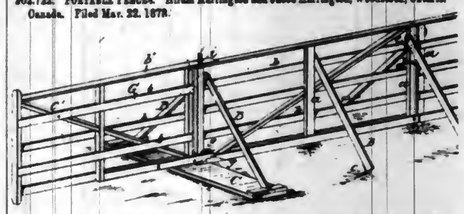
Brief.—The work-trimmer, which operates in a guide-slot in the presser-foot and a corresponding cavity in the work-plate, is provided with a slot, through which is inserted a pin adjustably securing it to a horizontal arm extending from the needle bar, whereby said trimmer can, when desired, be raised out of contact with the material being operated upon.



Claim.—1. In combination with the needle-carrier, the work-support plate, and the carrier B, the pivoted work-trimmer A, having a slot, *a*, arranged in it, and with its support ing-pivot *b*, in manner essentially as specified, to enable the said trimmer to vibrate within and to be raised out of the slot of the said work-support plate, all being substantially as set forth.

2. In combination with the work-trimmer, mechanism for elevating it out of the track of the shuttle after each descent of the said trimmer in the work, such mechanism, as shown, being the spring D, affixed to the carrier B.

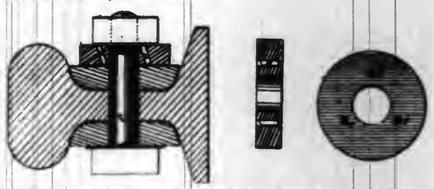
202,722. PORTABLE FENCES. Hiram Harrington and Jacob Harrington, Woodstock, Ontario, Canada. Filed Mar. 22, 1878.



Claim.—The combination, with a portable fence, constructed substantially as herein described, of the gate G, having perforated projection *h*, and catches *g g*, and the plank C, all constructed, arranged, and operating substantially as described, for the purpose herein shown and specified.

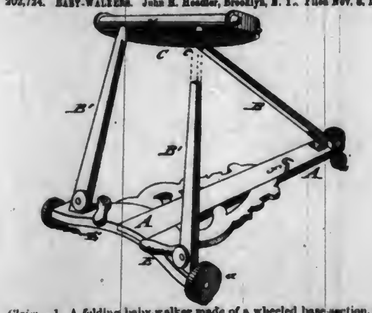
202,723. NUT-LOCKS. Jacob L. Hayward, South Framingham, Mass. Filed Mar. 27, 1878.

Brief.—A rubber washer is provided with several steel pins, arranged in said washer parallel to its axis, so that when the washer is compressed by screwing on the nut the pins incline to the direction taken by the nut in screwing, and act as pawls against the surfaces of the washer and fish-plate when the nut attempts to unscrew.



Claim.—A nut-lock consisting of an elastic washer having steel pins extending through it parallel with its axis, substantially as herein shown and described.

202,724. BABY-WALKERS. John H. Headley, Brooklyn, N. Y. Filed Nov. 6, 1877.



Claim.—1. A folding baby-walker made of a wheeled base-section, hinged folding legs, and of a table swinging on the top of the rear legs, and adapted to being locked to or released from the legs, substantially as and for the purpose set forth.

2. In a folding baby-walker, the combination of the folding rear legs, having lateral top piece, with a swinging table-section pivoted to a top piece, and locked by suitable devices to the cross-piece and to the folding front legs, to support the table in horizontal position, substantially as specified.

3. In a folding baby-walker, the combination of a wheeled base-section, having a suitable locking device, with the folding legs and swinging table, to lock the device into folded position, substantially as described.

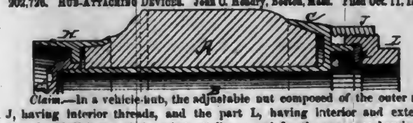
4. In a folding baby-walker, the wheeled base, having pivoted handles and stops to use the device in folded-up state as wheelbarrow and toy wagon, substantially as described.

202,725. DOUBLE-ACTING PUMPS. Christa, Kaister, Hanover, Prussia. Filed Feb. 13, 1878.



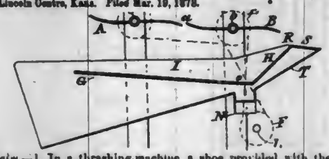
Claim.—The plate *g* and the upper and lower series of pivoted flaps or plates *h i*, having the hinge-joints thereof located in the same horizontal plane, and their edges made to overlap each other, in combination with the piston *f* and the pump-cylinder, substantially as and for the purpose set forth.

202,726. HUB-ATTACHING DEVICES. John C. Hendry, Boston, Mass. Filed Oct. 11, 1877.



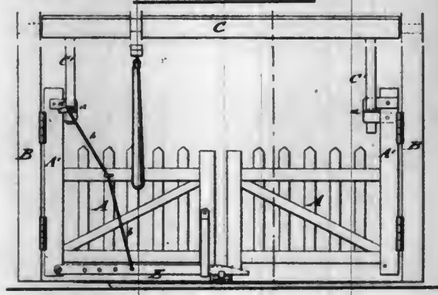
Claim.—In a vehicle-hub, the adjustable nut composed of the outer ring J, having interior threads, and the part L, having interior and exterior threads of different pitch, substantially as and for the purposes herein set forth.

202,727. GRAIN-SEPARATORS. John M. Herman, Frederick W. Herman, and Chas. V. Herman, Lincoln Centre, Kans. Filed Mar. 19, 1878.



Claim.—1. In a thrashing-machine, a shoe provided with the horizontal screen G, elevated screen S H, rods *o*, and chute N, as herein specified.

2. In combination with a shoe having the horizontal screen G and elevated screen S H, the revolving pickers B, operating both on the horizontal and elevated screens, as herein specified.



202,728. GATES. Benj. B. Huntington, New Richmond, Wis. Filed Mar. 5, 1878.

Claim.—The combination, with a gate having side pieces A', of the rock-shaft C, provided with a lever having pendent handles D' and rigid arms C', that connect with gate and latch, substantially as and for the purpose specified.

202,729. MACHINE-OILERS. Samuel Hutchinson, Jr., Salem, Mass. Filed Mar. 3, 1875.

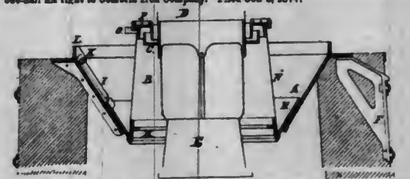


Claim.—1. In an oiler-case constructed as herein described, the wick-tube A, adjustable lengthwise in or with respect to the reservoir C, and in combination with the adjustable wick-compressor *g*, as and for the purpose explained.

2. The wick-tube A, projecting through and beyond the neck B and C, adjustable lengthwise therein, as set forth.

3. The wick-tube A, arranged in and projecting from the case, as described, and up within the oil-reservoir, and provided with a male screw, *e*, to screw into the outer case or its cap, or the neck thereof, all substantially as set forth.

202,730. GAS-OBENS FOR BLAST-FURNACES. Daniel H. Jones, Johnstown, Pa., assignor of one-half his right to Cambria Iron Company. Filed Oct. 6, 1877.

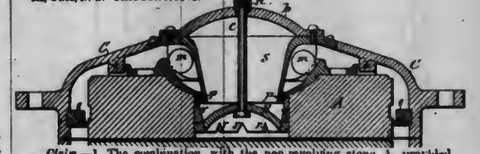


Claim.—1. A closed-top furnace with elevating-bell sealed on a central gas-conduit pipe, substantially as set forth.

2. The combination of a central gas-conduit pipe, D, having upon its periphery a ring-shaped cup, C, containing water, sand, or other suitable material, to obstruct the passage of gases, with a bell, B, and hopper A, substantially as set forth.

3. The combination of a hopper, A, a bell, B, and central gas-conduit pipe D with the distributer E, substantially as and for the purpose hereinbefore set forth.

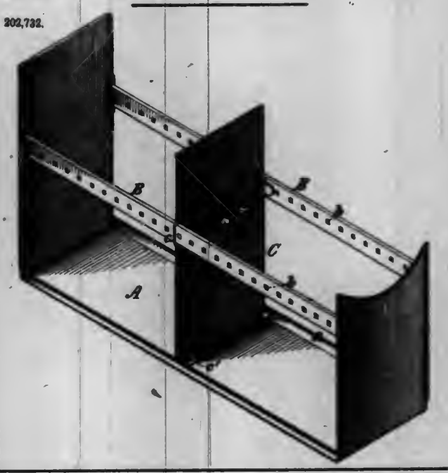
202,731. BALANCING MILLSTONES. Hiland H. Kendrick, Oswego, assignor to Munson Brothers, Utica, N. Y. Filed Feb. 9, 1878.



Claim.—1. The combination, with the non-revolving stone A, provided with the notched plate, of the case C, having legs *l*, the balls *b* and *b'*, connected by rod *e*, having ball-and-socket connection therewith, whereby the stone is provided with a suspensory balance, substantially in the manner set forth, and for the purpose described.

2. The combination, with a non-revolving upper stone of a mill, of the rod *e*, connected to balls *b* and *b'* by ball-and-socket joint, substantially as described and shown, for the purpose set forth.

202,732.

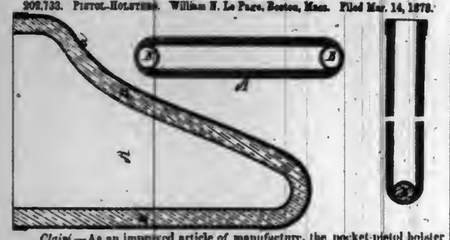


202,732. BILL-FILES. Thomas Loss, Chester, Pa. Filed Mar. 11, 1878.

Claim.—1. In a document or file holder, a base-piece having vertical ends, united by notched or perforated guide-bars, combined with a movable clamping-plate, provided with spring catches or bolts to engage the notches or perforations of the guide-bars, substantially as set forth.

2. As a document or file holder, a base-piece having side flanges and vertical ends, united by notched or perforated guide-bars, combined with a movable clamping-plate, provided with a foot and spring catches or bolts to engage the notches or perforations of the guide-bars, substantially as set forth.

202,733. PISTOL-HOLSTERS. William H. La Page, Boston, Mass. Filed Mar. 14, 1878.



Claim.—As an improved article of manufacture, the pocket-pistol holster consisting of the water-proof case A and a flexible or elastic stiffener, B, arranged therein substantially as set forth, the whole being lined with napped cloth or other suitable material.

202,734. FUNNELS. Daniel B. Lester, Savannah, Ga. Filed Apr. 3, 1878.

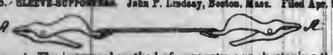


Claim.—1. The flat spring F, secured exteriorly of the funnel and within the handle, in combination with the thumb lever E and the valve-rod *b*, secured to the side of the funnel by bearing-strips *c*, whereby displacement and derangement of the said rod and spring are prevented, substantially as described.

2. The flat spring F, secured exteriorly of the funnel and within its handle, and combined with the valve-actuating mechanism, substantially as described.

3. In a funnel, a spring valve mechanism having an actuating-lever, in combination with a ring, *f*, attached to the handle and adapted to engage the end of the said lever, substantially as and for the purpose described.

202,735. SLEEVE-SUPPORTERS. John P. Lindsay, Boston, Mass. Filed Apr. 9, 1878.



Claim.—1. The improved method of supporting or shortening the sleeves of shirts and other garments without compression, to avoid interference of the free circulation of the blood of the wearer incidental to the use of encircling bands, by means of a holder consisting, essentially, of a short piece of elastic or non-elastic webbing, provided at each end with an automatic clamping device applied to the sleeve in the direction of its length, substantially as described and shown.

2. As a new article of manufacture, a sleeve-supporter consisting of the strip B, provided at its ends with the clamping-jaws A A, all combined and adapted for use substantially as described.

202,736. LUBRICATORS. Charles D. Lynch, Detroit, Mich. Filed Feb. 14, 1878.

Claim.—1. In a lubricator having connected oil and water chambers, substantially as shown, a check-valve arranged in the oil-delivery passage, in combination with a hand-valve arranged to close the oil-delivery, and at the same time raise the check-valve from its seat, substantially as shown.

2. In a hydraulic displacement-lubricator, the combination of an oil-chamber, a condenser water-chamber connected therewith, a passage through which the oil may escape as it is displaced by the water, and an oil-delivery pump, substantially as shown, whereby the lubricator is adapted to feed either by the condensation or by hand, at will.

3. In a hydraulic displacement lubricator, one or more check-valves located in the oil-delivery passage, and an intermediate stem or spindle, arranged substantially as shown, so that it may be used at will as a stop-valve or as a delivery pump.

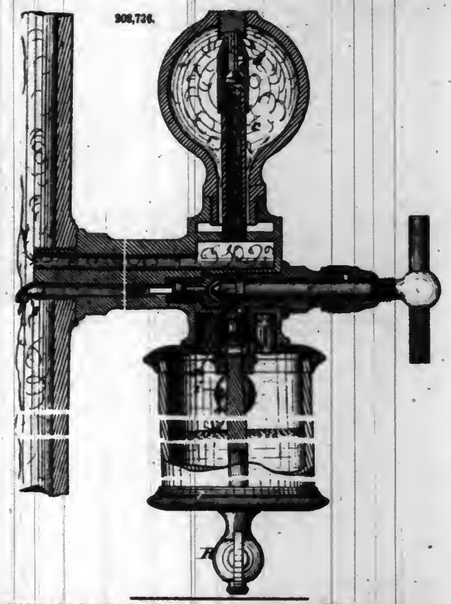
4. In a displacement-lubricator, a water tap or seal consisting of a hollow globe or body provided with one or more outlets, and a tube extending downward therein, substantially as shown.

5. In combination with the glass cylinder and its two heads or caps, the rod or tube *p*, having its upper end pointed loosely to the lubricator, whereby a free adjustment of the cylinder and caps is permitted.

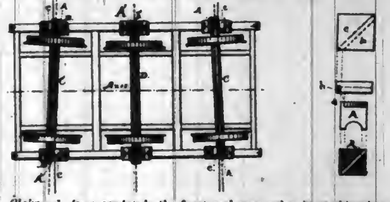
6. In a displacement-lubricator, an oil-delivery pump or piston arranged to receive the oil from the top of the oil chamber or reservoir.

7. A hydraulic displacement-lubricator, embracing water and oil chambers, and an oil-delivery pump or piston, arranged so that the water causes the oil to flow into and constantly fill the pump, substantially as shown and described.

202,736.



202,737. CAR-TRUCKS. Enoch J. Marsters, Stockton, and Robert A. Fisher, Sacramento, Cal.; said Fisher assignor to said Marsters. Filed Nov. 7, 1877.



Claim.—1. In a car-truck, the front and rear axles, in combination with the pedestals, boxes, and means, substantially as described, whereby such axles are adapted to move bodily in the pedestals on diagonal lines.

2. The combination of the axle-boxes A, having diagonal ribs *a*, and the diagonal grooves *b* in the housings, substantially as described and shown.

3. In a six-wheel car truck, the combination, with the front and rear axles, moving bodily in the direction of their length on diagonal lines, of the central axle D, moving on a straight line, substantially as described and shown.

202,738. SEWING-MACHINES. John McCloskey, New York, N. Y. Filed June 5, 1876.

Claim.—1. In a sewing-machine, a revolving double hook made fast to or in one piece with its shaft, and having its hooks or hooked portions arranged to project in the same circular direction for successive operation, in combination with a reciprocating or vibrating needle, whereby the loop is caused to pass the hook only on its face, and the nose of the hook shall hold the loop until the cast-off of the hook is reached by the back thread of the loop, in order that both threads of the loop shall pass over the face of the hook, and the loop then slip back reversely from the nose, all substantially as and for the purpose set forth.

2. The revolving double hook H H′, constructed with outwardly-projecting wings or guards *k* in the rear of its hooked portions or hooks proper, essentially as and for the purposes herein set forth.

3. In a sewing-machine, a revolving double hook rigidly fixed upon its shaft, in combination with a bobbin, an eye-pointed needle, and connecting mechanism for operating the said parts in unison, whereby the needle is caused to make two descents to one rotation of the said double hook and form a lock-stitch.

4. A thread carrier or looper, I, bowed at *f*, and constructed with an eye at its forward end for passage of its thread in a loop form through the loop of the needle-thread, in combination with a rotary hook, a reciprocating or vibrating needle, and operating mechanism whereby in its operation a forward and inward motion and an outward and backward motion of the thread-carrier with reference to the needle and rotary hook are secured, substantially as and for the purpose set forth.

5. The combination of the revolving double hook H H′, the sewing-needle C, reciprocating secondary thread carrier or looper I, and a feeding dog or device, and operating mechanism, substantially as described, whereby the proper motions are imparted to the said devices, as set forth.

6. In a sewing-machine feed, the combination of two cams, having their longer axes at an angle to one another, and a compound strap, which receives positive rising and forward movement from said cams, and operates to give like movement to the feed-dog, substantially as set forth.

7. In a sewing-machine feed, the combination, substantially as set forth, of two cams having their longer axes at an angle to one another, and a compound strap which receives positive up-and-down and to-and-fro movement from said cams, and operates to give motion to the feed-dog.

8. In a sewing-machine feed, the combination, with the feed-bar and a spring which tends to move the same backward or backward and downward, of two cams having their longer axes at an angle to each other, and a compound strap which receives positive movement from said cams, and operates the feed-bar against the stress of the spring, substantially as set forth.

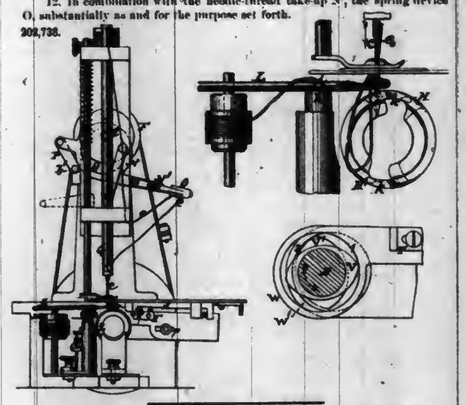
9. In a sewing-machine, the combination, with the feed-actuating shaft, of the compound cam, the corresponding compound strap, the feed-dog, and connecting mechanism, whereby two complete feeding movements are effected by one revolution of the shaft.

10. The compound cam V² V², in combination with the compound strap W² W² T², the lever Y, and the reciprocating secondary thread-carrier I, substantially as described.

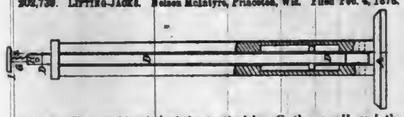
11. The needle-thread take-up N N′, attached in its rear to a rocking arm, P, and in combination with an eccentric, Q, on the needle-shaft, essentially as described.

12. In combination with the needle-thread take-up N′, the spring device O, substantially as and for the purpose set forth.

202,738.



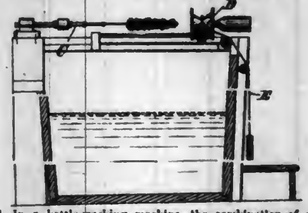
202,739. LIFTING-JACKS. Nelson McIntyre, Princeton, Wis. Filed Feb. 4, 1878.



Claim.—The combination of the toothed bar G, the cap H, and the top plate I with the upper end of the sliding bar D, substantially as herein shown and described.

202,740. BOTTLE-WASHING MACHINES. Chas. Michel, La Crosse, Wis. Filed Jan. 30, 1878.

Brief.—The movable guide consists of two funnel-shaped mouths joined at their apices, one forming a guide to hold the mouth of the bottle, and the other to reduce the size of the brush and guide B into the interior of the bottle, the guide being mounted on a suitable track and provided with cords and weights to withdraw it from the revolving brush when the bottle is washed.



Claim.—1. In a bottle-washing machine, the combination of a rotary brush adapted to enter the bottles, and a movable guide, D, having flaring mouths or openings on its opposite sides to receive the brush and the bottle, respectively.

2. In a bottle-washing machine, the combination of a rotary brush and a conical or flaring guide, adapted to reduce the end of the brush and guide the same into the mouth of the bottles, substantially as shown and described.

3. In a bottle-washing machine, the combination of a rotary brush and a guide having a flaring or conical mouth, arranged to receive the mouth of the bottle and retain the same in line with the axis of the brush.

4. In a bottle-washing machine, the combination of a rotary brush and a guide or support to hold the mouth of the bottle in line with the axis of the brush, the brush and guide being movable only in relation to the other, for the purpose of permitting the introduction and withdrawal of the brush.

5. In a bottle-washing machine, the combination of a rotary brush and movable guide, D, and the weighted cords E, or their equivalent.

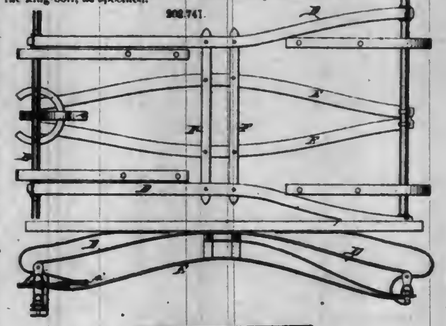
202,741. SIDE-SPRING VEHICLES. Patrick F. Milligan and John F. Wood, Washington, D. C. Filed Aug. 29, 1877.

Claim.—1. In a spring-jersch wagon, the combination, with the side springs D D, of the spring-perch consisting of two laterally-curved semi-elliptic springs, E E, converging from the center toward the ends, and the cross-bars F F, connected to the body, side springs, and spring-perch, all arranged as specified.

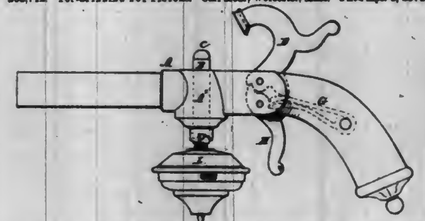
2. The combination, with the body and bolster, of side springs D D, parallel from the front ends to the center, and diverging outward from the center to the rear ends, as and for the purpose set forth.

3. The combination of the bolster, front axle, fifth-wheel, bar *a*′, and lugs *c*, arranged as set forth, to prevent the detaching of the axle on the breaking of the king-bolt, as specified.

202,741.



202,742. TOP-SPINNING TOY PISTOLS. Carl Mohr, Worcester, Mass. Filed Apr. 2, 1878.



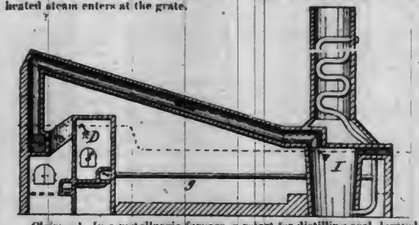
Claim.—1. The combination, with a toy-pistol frame, of a top-spinning mechanism, arranged to be thrown into action for spinning the top by the stroke of the lock-hammer, substantially as hereinbefore set forth.

2. A toy pistol provided with a top-spinning mechanism and a cap-holding device arranged for simultaneously cracking a cap and discharging a spinning-top by the action of the hammer or lock mechanism released by pulling the trigger, substantially as set forth.

3. In combination, substantially as shown and described, the pistol-frame A, spindle B *c*, volute spring F, cap-holding hammer D D′, lock-spring G, trigger H, and spinning-top L, for the purposes set forth.

202,743. METALLURGIC FURNACES. T. D. Morgan, Pittsburg, Pa. Filed Feb. 5, 1878.

Brief.—Coal is placed in the retort at the base of the stack, and also in the retort formed by the bridge-wall. Superheated steam enters both, and the gases, passing from the rear retort, mingle with those from the bridge-retort in a transverse flue at the front of the fire-box and enter the fire-box. Superheated steam enters at the grate.



Claim.—1. In a metallurgic furnace, a retort for distilling coal, located in rear of the hearth, so as to be heated by the waste heat which escapes into the stack, in combination with the fire-chamber and a flue for conducting the hydrocarbon gases from the retort into the fire-chamber, and also a steam-supply pipe for the admission of superheated steam into the retort, all substantially as shown and described.

2. The bridge-wall forming a retort for distilling coal, in combination with the fire-chamber and side flues for the passage of gas from the retort into the same, and also a pipe or flue for the admission of superheated steam into the retort, substantially as described, and for the purpose set forth.

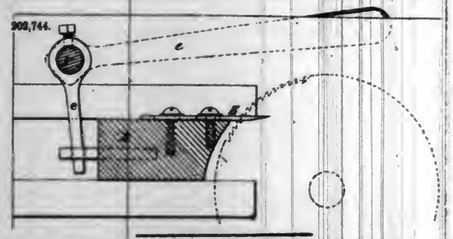
3. The combination of the retorts D and I with steam-pipes *g h* and flue F, substantially as shown and described, and for the purposes set forth.

202,744. COTTON-GIN-SAW CLEANERS. Robert S. Mangor, Mexia, Tex. Filed Mar. 13, 1878.

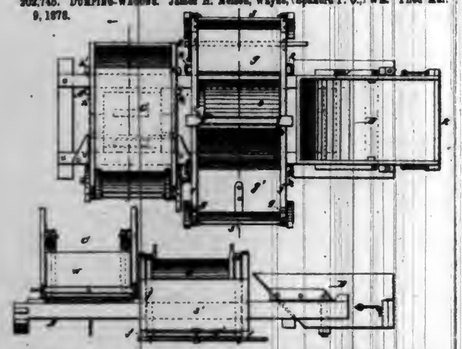
Claim.—1. The tapering knives E, adjustably attached to the movable support D and placed in guides in the gin frame, substantially as and for the purpose specified.

2. The combination of the rock-shaft F, having arms *c* and the operating-lever *c*, with the knife-support D, substantially as shown and described.

202,744.



202,745. DUMPING-WAGONS. James H. Nelson, Wayne, (Spafford P. O.,) Wis. Filed Mar. 9, 1878.

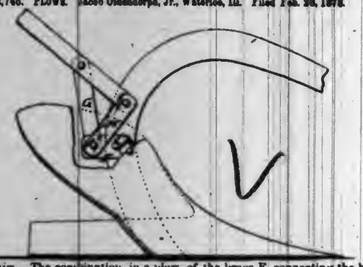


Claim.—1. The frame A, having cross-bars *f*, the boards *f*, cross-bar *m*, boards *o n*, doors *g g'*, and end-gates *z z'*, in combination, substantially as herein shown and described.

2. The combination of the box C, having the end-gate *w* and cleats *h' h' c' c'*, the roller *g''*, and frame A, substantially as shown and described.

3. The combination, with the frame A, having extension-pieces *k*, of the box D, having the side cleats *m*, substantially as shown and described.

202,746. PLOWS. Jacob Oldendorph, Jr., Waterloo, Ill. Filed Feb. 26, 1878.



Claim.—The combination, in a plow, of the brace F, connecting the beam and mold-board, with the braces G H, bolted to said brace F and to the landside, as shown and described.

202,747. GRAIN-BINDERS. David Olmsted, Charles L. Travis, and Charles R. Clute, Minneapolis, Minn., assignors to George A. Brackett, same place. Filed Jan. 16, 1878.

Claim.—1. In a machine for binding grain with paper or similar bands, the combination of a binder-arm or band-carrier to carry the band around the grain, and punching mechanism for securing the applied band upon the grain, substantially as shown and described.

2. In a grain-binding machine, the combination of a reel or guide, B, a binding or band-carrying arm, D, and a mechanism, C, adapted and arranged to sever the band and punch the ends of the applied band in such manner as to fasten them directly together, substantially as shown.

3. In a grain-binding machine, the combination of a reel or guide, B, band punching and cutting mechanism C, and a binding or band-carrying arm, D, arranged to carry the band around the grain and between the dies of the punching mechanism, and then disengage therefrom, substantially as shown.

4. In a grain-binding machine, a binder-arm provided with a laterally-projecting pin or band-carrying device arranged to disengage laterally from the band after passing the same around the grain.

5. In a grain-binding machine for applying paper and similar bands, the combination of two band-fastening dies with a binder-arm or band-carrier arranged to pass the band around the grain and between the dies, and then disengage therefrom.

6. The rotating and laterally-moving binding-arm D, provided with the lateral pin or roller *k*, and arranged to operate substantially as shown.

7. In combination with the shaft E, the binding-arm D, provided with the sleeve *c* and cam *e*, the fixed cam *f*, and the spring *d*.

8. In combination with the continuously-rotating shaft E, the binder-arm D, having the sleeve *c*, with slot *g* and cam *e*, the pin or roller *k*, and cam *f*, and spring *d*, whereby the binder-arm is caused to move laterally and backward, and then to its original position again, during the rotation of the shaft.

9. In a grain-binding machine for applying paper and similar bands, male and female dies arranged to act directly upon the lapped ends of the applied band, for the purpose of fastening the same together.

10. The laterally-sliding die G, in combination with the vertically-moving die H, substantially as shown.

11. In combination with the dies G H, the vertically-moving clamp I, arranged to rise in advance of the lower die.

12. The combination of the vertically-moving die H, clamp I, hook *p*, and releasing-spring *r*, substantially as shown.

13. In a grain-binding machine, the combination of a binding-arm or band-carrier, male and female dies for punching and fastening the ends of the applied band, and a stripper, K, arranged to remove the band from the male die after being punched.

14. In a grain-binding machine, the combination of a binding or band-carrying arm, male and female dies to fasten the band, and a carrier, L, to pass the first end of the band between the two dies.

15. In combination with the dies G and H and binder-arm D, the rotary band-cutter K, substantially as shown.

16. In combination with the band-cutting device K, the eccentric *t* and spring *u*, arranged to assist the same in holding the severed end of the band.

17. In a grain-binding machine, two movable dies, a cutting and retaining device, a carrier, L, and a binder-arm, combined and arranged to operate substantially as shown and described.

18. In a grain-binding machine, the combination of two dies to punch the ends of the applied band, with a binder-arm arranged to carry the end of the band between the dies, and a clamp to hold the lapped ends of the band prior to their being punched.

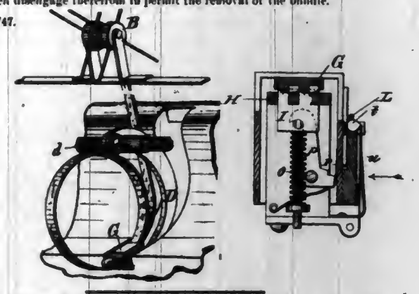
19. The grain-band of paper or similar material, having one end doubled and laid upon the other, and locked thereto by tongues, lips, or shoulders, substantially as shown and described.

20. The combination of the two dies G H and the binder-arm D, all connected with and actuated by the single shaft E.

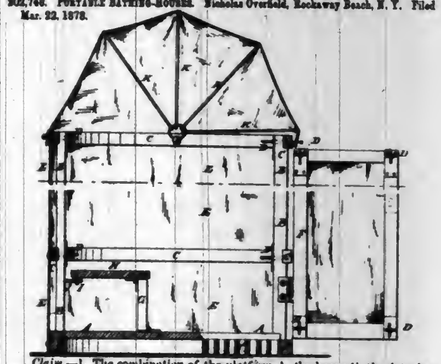
21. In a machine for binding grain with paper and similar flat bands, male and female dies arranged to act one inside and the other outside of the applied band, to fasten the same in place.

22. In a machine for binding grain with paper and similar bands, punching devices arranged to act upon the inside and outside of the applied band, and then disengage therefrom to permit the removal of the bundle.

202,747.



202,748. PORTABLE BATHING-HOUSES. Nicholas Orenfeld, Rockaway Beach, N. Y. Filed Mar. 22, 1878.



Claim.—1. The combination of the platform A, the hoops C, the detachable uprights B, the clamping-screws D, and the canvas covering E with each other, substantially as herein shown and described.

2. The combination of the pivoted bars K and their canvas cover L with the upper hoop C of the bathing-house A B C E, substantially as herein shown and described.

3. The combination of the hinged standards G, the hinged seat H, and the hooks and eyebolts I J with the base-platform A and the uprights B, substantially as herein shown and described.

202,749. BROOM-SEWING MACHINES. Charles Palmer, Springfield, Tenn., assignor to Edwin A. Hicks, Samuel D. Ogburn, George W. Davis, and Thomas K. Davis, same place. Filed Oct. 30, 1877.

Brief.—The broom is clamped, and piercing-tools pass through it, followed by binding-wires, that are bent over the surrounding wires and cut off.

Claim.—1. The movable bench H, provided with movable notched side pieces *s* and hooks *q*, for supporting the wire band, in combination with the concaved bar G, as herein shown and described.

2. The levers *g*, pivoted to the bars *c*, and connected with the movable frame C and the connecting-rods *h*, in combination with the broom-holder G, as herein shown and described.

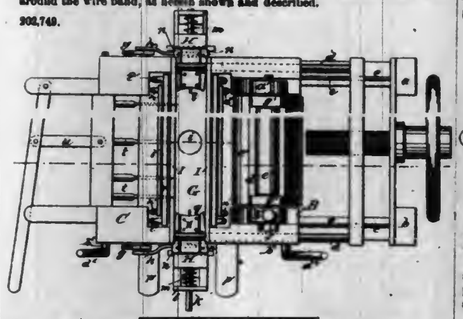
3. The drum *c'*, clamping-piece *d'*, and tubes *b'*, in combination, for carrying the wire forward through the broom, as herein shown and described.

4. The movable grooved needles *t*, in combination with the broom-clamping and wire-carrying devices, for piercing the broom and guiding the wires, as herein specified.

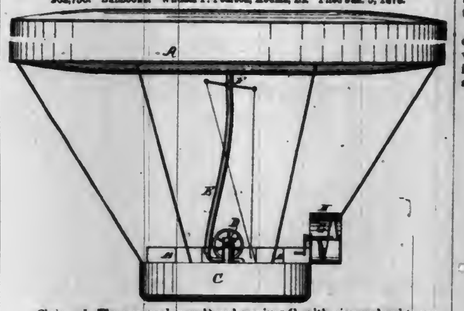
5. The plates J, having angled grooves J, for supporting the wire bands *b'*, in combination with the frames B C, as herein shown and described.

6. The clamping-fingers *v'*, connected with the bar *o'* by a yielding connection, and the bending-fingers *w'*, connected with the said bar by a rigid connection, and the fingers *v' w'*, in combination, for bending the binding-wires around the wire band, as herein shown and described.

202,749.



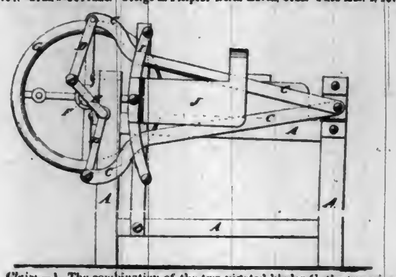
202,750. BALLOONS. William F. Pearce, Houma, La. Filed Jan. 5, 1878.



Claim.—1. The gas-condenser D and receiver C, with pipe and valve connection E F, in combination with the balloon A, for regulating its buoyancy by the expansion and compression of a constant quantity of gas, substantially as specified.

2. The combination of the screw-propeller G with the oblong balloon A, and the similarly-shaped receiver C, placed directly underneath the car D, substantially as specified.

202,751. STRAW-CUTTERS. George R. Pierpont North Haven, Conn. Filed Mar. 4, 1878.



Claim.—1. The combination of the two pivoted blades C, the two pivoted connecting-bars D, the double crank E, the shaft F, and the crank fly-wheel G with each other, and with the frame A and the feed-box B, substantially as herein shown and described.

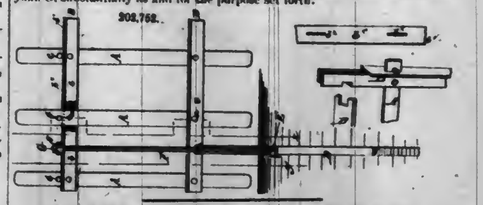
2. The combination of the gage-plate J with the two pivoted blades C and the feed-box B, substantially as herein shown and described.

202,752. FENCES. Charles H. Phelps, Williamsfield, assignor to himself and Jaynes S. Beal, Andover, Ohio. Filed Feb. 11, 1878.

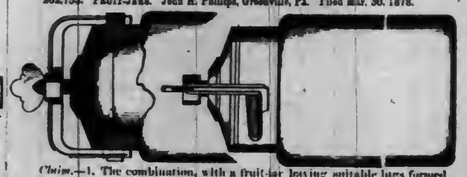
Claim.—1. The combination, with the fence-pickets A, of the T-rails B, formed of the two side bars *b*, riveted to the pickets, and the slotted top bars *b'*, secured to the side bars by the keys C through the pickets, substantially as specified.

2. The combination, in a picket-fence, of the pickets A, keyed and riveted T-rails B, constructed as described, the post D, anchor E, brace-rods F, and yoke G, substantially as and for the purpose set forth.

202,752.



202,753. FRUIT-JARS. John H. Phillips, Greenville, Pa. Filed Mar. 30, 1878.



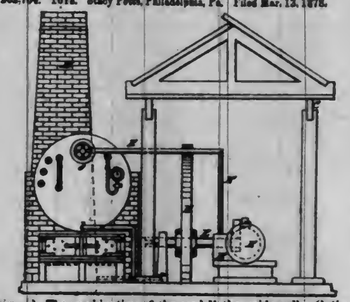
Claim.—1. The combination, with a fruit-jar having suitable lugs formed on its neck, of a clamp provided with lug-engaging formations which project laterally from the main body of the clamp, substantially as set forth.

2. The combination, with a fruit-jar having lugs formed on its neck, which are made with square end faces, of a clamp whose lug-engaging extremities project laterally from its main body, and whose sides have bearing against the said end faces of the lugs, substantially as set forth.

3. The combination, with a fruit-jar having suitable lugs formed on its neck, of a clamp whose angular extremities project laterally on opposite sides thereof and engage with said lugs, substantially as set forth.

4. The combination, with the fruit-jar whose top is provided with the chamfered edge and inner rim, of the lid or cover, correspondingly provided with a similar chamfered edge and inner rim, whereby the interposed gasket is prevented from coming in contact with the contents of the jar, substantially as set forth.

202,754. TOYS. Stacy Potts, Philadelphia, Pa. Filed Mar. 13, 1878.



Claim.—1. The combination of the cord F, the guide-pulley G, the sliding bar H, the spiral spring I, the collar J, the latch K, and the trip-pin *h'* with a clock-work, D, for projecting the said bar H at a fixed time, substantially as herein shown and described.

2. The combination of the cord F, the guide-pulley G, the sliding bar H, the spiral spring I, the collar J, the angular lever L, the rod M, the latch K, and the trip-pin *h'* with the clock-work D, for projecting the bar H and the rod M together and at a fixed time, substantially as herein shown and described.

3. The combination of a clock-work provided with the device F G H I J K *h'* L M with an imitation boiler, A, an imitation engine, E, and a knock-down structure put together with loose unfastened joints, substantially as herein shown and described.

202,755. CLASPS FOR POCKET-BOOKS. Louis Prahar, New York, N. Y. Filed Oct. 6, 1877.

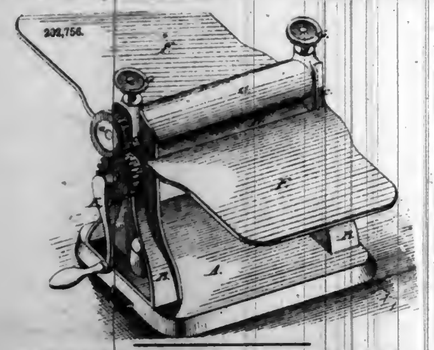


Claim.—The cap-plate D of a pocket-book fastener, provided with hooks *d' d'* on edges of the tail thereof, and at right angles thereto, but not extending laterally beyond said edges, allowing the tail to be sprung in between the plate A and spring D, as shown and described.

202,756. COPYING-PRESSES. Edward H. T. C. Rath, Newark, N. J. Filed Apr. 3, 1878.

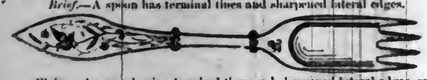
Claim.—In a copying-press constructed as herein described, the combination of the base A, provided with vertically-slotted standards H, having recesses *d* on both sides, the detachable platforms F F, having lugs *e e*, upper flexible roller C, and lower wooden roller D, cog-gearing *a b*, regulating thumb-screws G, and crank E, the several parts being adapted for operation in connection with each other, substantially as and for the purpose specified.

202,756.



202,757. TABLE-CUTLERY. Charles Reese, Baltimore, Md. Filed Feb. 28, 1878.

Brief.—A spoon has terminal tines and sharpened lateral edges.



Claim.—A spoon having terminal tines and sharpened lateral edges, substantially as described.

202,758. HORSESHOES. Jas. A. Risden, Sycamore, assignor of one-half his right to Marcellus Winters, Freeport, Ill. Filed Sept. 21, 1877.

Brief.—The shoe is made in two pieces, hinged at the toe, and provided with overlapping flanges. The flanges have openings of different diameters, through which a bolt passes to secure them together. In the larger opening works an eccentric cam-disk secured to the bolt. The sections of the shoe are adjusted by turning the cam with a suitable wrench.



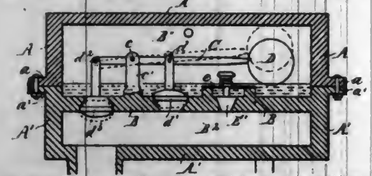
Claim.—1. A horseshoe for contracted hoofs, consisting, essentially, in a toe-jointed shoe whose sections are provided with adjustable plates, operated by suitable cam mechanism, substantially as described.

2. The plates formed on the respective sections of a toe-jointed shoe, and provided with slots of different diameter, in combination with the cam-disk and locking-plate, the said parts being secured together by rivet, bolt, or other suitable engaging means, substantially as described.

3. The combination, with the sectional shoe-adjusting plates and the cam-disk, of the locking-plate, the three being suitably fastened together, and the said locking-plate having a projecting finger or catch, which latter is adapted to engage with a graded series of notches formed in the top surface of the upper adjusting-plate, substantially as described.

4. In a horseshoe, the detachable heel-clips, in combination with the grooves, substantially as described.

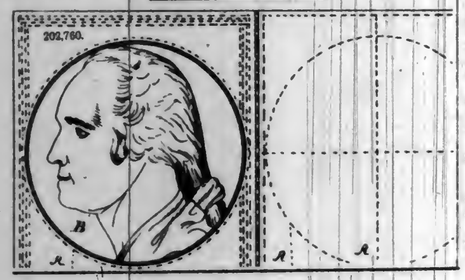
202,759. STEAM-TRAPS. Joseph Ryan, St. Louis, Mo. Filed Nov. 10, 1876.



Claim.—1. The air-valve E', as shown and described, in combination with the bottom B, the upper chamber B', and lower chamber B², said valve being kept open by its spring, and closing by the pressure of steam or water in said upper chamber, substantially as set forth.

2. The combination of the side pipe or core E, sections A A', having flanges *a a'*, water-chamber B', discharge-chamber B², bottom B, and the valves *d d'*, lever C, float D, and air-valve E', all arranged to operate in the manner and for the purpose set forth.

202,760.

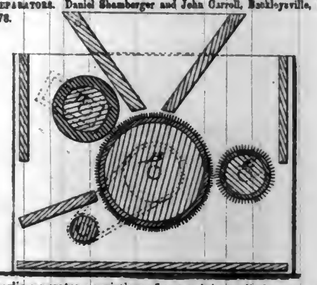


202,760. POSTAGE-STAMPS. James Saugster, Buffalo, N. Y. Filed Feb. 11, 1878.

Claim.—1. A postage or other stamp having printed and unprinted portions, the latter being treated with an alkali or its equivalent, so that the fiber of the paper may be loosened, softened, or rendered more absorbent in such portions, substantially as specified.

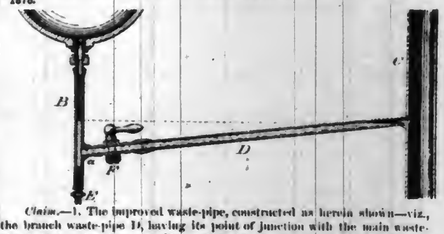
2. The method of preparing paper for printing postage-stamps or other similar articles, by first treating a part of its surface, A, with an alkali or other chemical, whereby the fiber is rendered more loose and absorbent in the parts so treated, and afterward washing the same or neutralizing the chemical used, so that the ink employed to cancel the stamp will be more firmly fixed in the stamp, as described.

202,761. GARLIC-SEPARATORS. Daniel Shamberger and John Carroll, Bucklyesville, Md. Filed Mar. 20, 1878.



Claim.—A garlic-separator consisting of a revolving cylinder with teeth or cards, and of a revolving pressure-roller at one side, and of a clearing-brush at the other side thereof, substantially as and for the purpose described.

202,762. WASTE-PIPES FOR BASINS, &c. Isaac A. Singer, New York, N. Y. Filed Mar. 20, 1878.



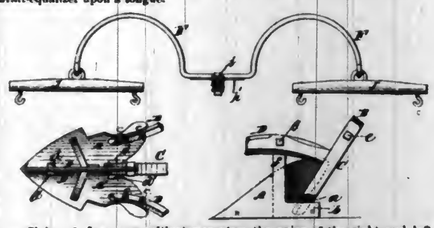
Claim.—1. The improved waste-pipe, constructed as herein shown—viz., the branch waste-pipe D, having its point of junction with the main waste-pipe C higher than its point of junction with the trap or pipe B, so that it may remain full, or substantially full, of water from the trap E to the pipe C, substantially as set forth.

2. The branch waste-pipe D, arranged to enter the pipe C at an upward angle, and at a point above all other parts of said pipe, substantially as and for the purposes herein set forth.

3. The combination of the pipe B, the sediment-trap E, pipe D, stop-cock F, and main waste-pipe C, all arranged substantially as herein set forth.

202,763. CORN-CULTIVATORS. Josiah Smith, Oswego, Ill. Filed Feb. 11, 1878.

Brief.—A right and left plow bolted together for a shovel-plow. Either may be detached and its handle bolted to the other plow. A double-arched draft-equalizer upon a tongue.



Claim.—1. In a corn cultivator or plow, the union of the right and left plows A A', provided with the perforated bars or plates *b b*, detachably connected together by beaded screw-bolts *d d* and nuts *d² d²*, with the pair of handles B B and the slotted central upright C, all detachably secured to the plows A A', substantially as shown and described, and for the purpose set forth.

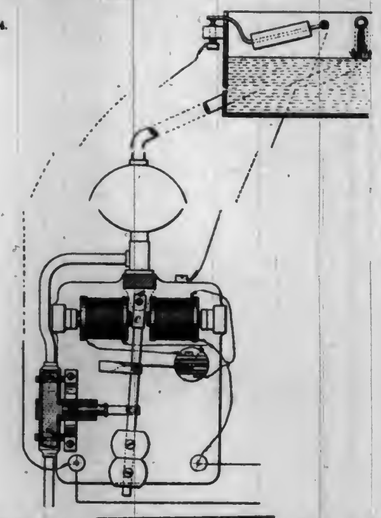
2. The double-bowed equalizer F and disk or plate A', pivoted to and in combination with the tongue of the cultivator or plow, and confined under the flange or plate *i*, and possessing a limited horizontal movement in the arc of a circle, substantially as and for the purpose specified.

202,764. ELECTRO-MAGNETIC WATER-RAISING APPARATUS. David M. Smyth, East Northwood, N. H. Filed Sept. 4, 1877.

Claim.—1. The combination, with a pump, of a pendulous lever, armature, and electro-magnets, and a loose connection between the pump and the lever, substantially as set forth.

2. In a water-raising apparatus, the combination of the electro-magnets, armature, pendulous lever, spring circuit-changer, circuit-connections, and pump, substantially as set forth.

202,764.

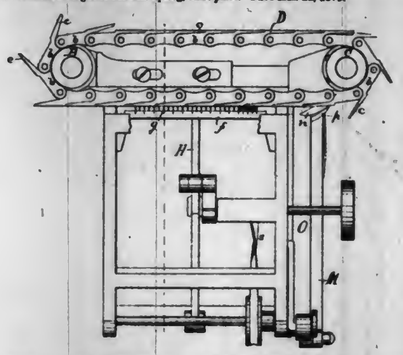


202,765. LOUVER-VENTILATORS. John F. Starr, Jr., Camden, N. J. Filed Mar. 11, 1878.



Claim.—The combination, in a ventilator, of a supporting frame, a series of inclined slats or partitions extending across the same, and deflecting plates upon the upper and lower sides of the partitions, respectively, said plates being out of contact with each other at their edges, so as to admit of the passage of air between the partitions while intercepting foreign matters, substantially as set forth.

202,766. MACHINES FOR MAKING FIBER. Louisa F. Summers, New Britain, Conn., assignor of one-third his right to John M. Spring, same place. Filed Mar. 22, 1878.



Claim.—1. The endless chain D, formed of links *b* and arms *c*, operating to close upon each other, with their meeting faces in a longitudinal direction to the straight parts of the chain, substantially as described, and for the purpose specified.

2. The series of knives *g* and bar *f*, in combination with tongs or equivalent operating mechanism, substantially as described, whereby said bars and knives are held apart in making their upward movement, and together in making their downward movement.

3. The endless chain D, having jaws which open and close automatically by the movement of the chain, in combination with the series of knives *g* and bar *f* and their operating mechanism, substantially as described, and for the purpose specified.

4. The arms *d* and *e*, carrying knives *g* and bar *f*, in combination with the sliding block *h*, to which arms *d e* are pivoted, said block being fitted in suitable ways, and the oscillating lever H, with cross-arm connected to the arms of the tongs, substantially as described, and for the purpose specified.

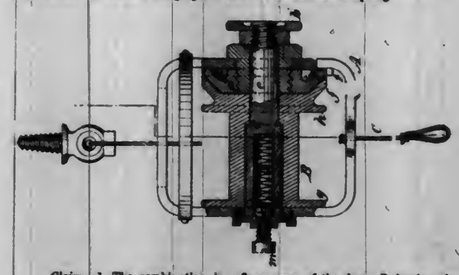
5. The endless chain D, having jaws which open and close automatically, in combination with knives *g*, bar *f*, shears *a a*, and mechanism for operating the foregoing parts, substantially as described, and for the purpose specified.

6. The combination of the endless chain D, carrying holding-jaws, sprocket-wheel C, shaft *c*, ratchet-wheel N, reciprocating bar M, carrying spring pawl *k*, and shear-blade *a*, connected to the bar M, all substantially as described, whereby the shears and chain are operated by means of a single bar to cut when the chain is at rest.

7. The combination of jaws, carrying the material to be reduced with an intermittent motion, the series of knives operating to reduce said material, the shears *a a*, and endless apron O, all provided with suitable operating mechanism, substantially as described, and for the purpose specified.

202,767. FIRE-ESCAPES. John Swank and Arnold Jehnke, Dover, Ohio. Filed Aug. 11, 1877.

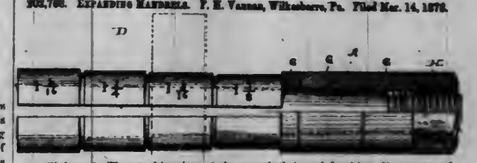
Brief.—The friction-flanges are caused to bear against each other by the thumb-nut on end of drum-axis, and also by a spring in said axis, which is graduated by a screw acting upon a follower on one end of spring.



Claim.—1. The combination, in a fire-escape, of the drum B, having the conical flange *f*, the movable pin *e*, nut *b'*, fixed conical part *d*, and washer *f'*, substantially as shown and described.

2. The frame A, the drum B, having the flanges *g*, h, and *f*, the movable pin *e*, having the shoulder *e*, the spring *i*, adjusting-screw *m*, and the conical fixed part *d*, in combination, substantially as shown and described.

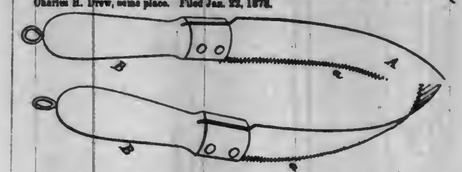
202,768. EXPANDING MANDRELS. F. H. Vannan, Wilkesbarre, Pa. Filed Mar. 14, 1878.



Claim.—1. The combination of the mandrel A and bushing D, composed of two or more separate sections adapted to slide on the mandrel A, with washers G and nut H, as specified.

2. The improved bushing for expanding mandrels, consisting of separate sections, and adapted to slide lengthwise upon the surface of the mandrel, as set forth.

202,769. HORSE-CLEANERS. Martin P. Washburn, Kingston, Mass., assignor to himself and Charles H. Drew, same place. Filed Jan. 22, 1878.



Claim.—The combination of the flexible plate A, having a toothed edge, *a*, with the rigidly-connected handles B B, as herein specified.

202,770. KNIFE-SCOURERS. H. A. Wiseman, Bordentville, Pa. Filed Jan. 22, 1878.

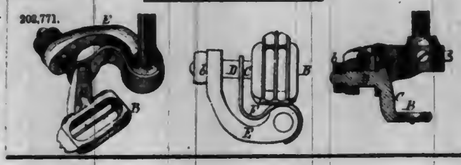
Brief.—The rubber blocks may be rectangular. There may be a pressure-plate beneath the lower rubber. Both rubbers are to be clasped together by the plates, and these plates and rubbers slid together into the guides in the sides of the case.



Claim.—1. An improved knife-scourer, formed by the combination of the removable rubber blocks A A with the flanged sliding plates B B, substantially as herein shown and described.

2. The combination of the pressure-plate C with the rubber blocks A A and the flanged sliding plates B B, substantially as herein shown and described.

202,771.



202,771. SEWING-MACHINE PRESSER-FOOT. Thomas P. West, Danvers, Mass. Filed Feb. 4, 1878.

Brief.—The presser-foot is provided with a removable plate fitted to the bottom thereof, having a central pin having slots on either side of the same. The under side of the plate is grooved on each side of the pin. The foot is mounted in a bracket fitted to the lower end of the presser-foot bar, and is capable of adjustment laterally with respect to the needle.

Claim.—1. A sewing-machine presser-foot provided with a rib or fin to enter the crease of a seam, and adjustable laterally in a line transverse to the line of feed, substantially as set forth.

2. A sewing-machine presser-foot provided on its under side with a longitudinal central fin or rib, and with grooves, one on each side of said fin, as set forth.

3. The removable plate or slide formed with a longitudinal central fin or rib, and with grooves, one on each side of said fin, in combination with a presser-foot formed to receive said plate, as set forth.

4. The plate grooved and ribbed and provided with longitudinal openings, one on each side of the rib or fin, as set forth.

5. The combination of the presser-foot B, arm C, shaft D, bracket E, spring F, and nut *b*, as set forth.

202,772. BRAKE-SHOES FOR RAILWAY-CARS. Richard H. Allen, Hudson, N. Y., assignor of one-half his right to James C. Beach, Bloomfield, N. J. Filed Jan. 16, 1878.

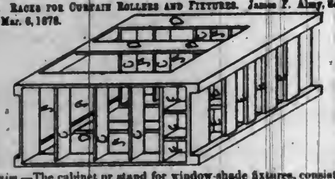


Claim.—1. A brake-shoe whose bearing face or surface is made of compressed paper, substantially as and for the purpose set forth.

2. A brake-shoe whose bearing face or surface is made of compressed paper and metal, substantially as and for the purpose set forth.

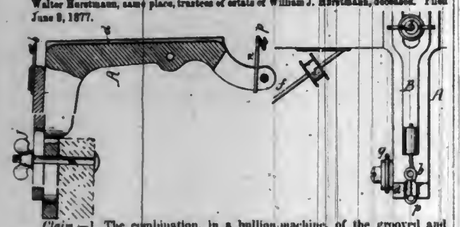
3. A brake-shoe made of one or more blocks of compressed paper, fitted into a metal frame, and secured in place by a wedge-shaped piece or pieces, substantially as and for the purpose set forth.

202,773. RACKS FOR CURTAIN ROLLERS AND FIXTURES. James F. Almy, Salem, Mass. Filed Mar. 6, 1878.



Claim.—The cabinet or stand for window-shade fixtures, consisting of the roller-racks A and the pockets E and F, for the reception of brackets, screws, &c., substantially as described.

202,774. MACHINES FOR COVERING STRANDS FOR MAKING BULLION. Richard C. Alton, Philadelphia, Pa., assignor to F. Oden Horstmann, Samuel Clarkson, William P. Ellison, and Walter Horstmann, same place, trustees of estate of William J. Horstmann, deceased. Filed June 9, 1877.

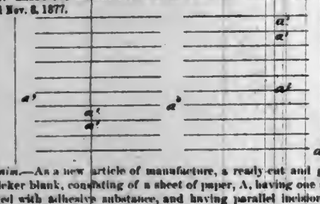


Claim.—1. The combination, in a bullion-machine, of the grooved and inclined plate A with the adjustable eye *b* above the groove, as set forth.

2. The combination, in a bullion-machine, of the grooved plate A with an adjustable eye, *p*, below the groove, as specified.

3. The plate A, having a grooved and inclined face, in combination with the eyes *b* and *p*, as described.

202,775. READY-CUT BLANKS FOR ELECTION-STICKERS. James Arnold, Philadelphia, Pa. Filed Nov. 6, 1877.

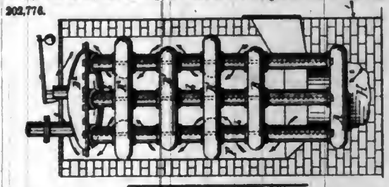


Claim.—As a new article of manufacture, a ready-cut and gummed election-sticker blank, consisting of a sheet of paper, A, having one side gummed or coated with adhesive substance, and having parallel incisions a^2, forming two rows of parallel divisions or slips a^1, the rows being separated by a central dividing-space, a^3, and the divisions a^1 being integral therewith, and with a margin, a^4, surrounding the two rows, as shown and described, and for the purpose set forth.

202,776. HEATING APPARATUS. John F. Avery, Norwich, Conn., assignor of one-half his right to Ansel Clark, same place. Filed Feb. 4, 1878.

Claim.—The two sets or series of heating drums, A A^1, B B^1, those of one series being made annular and of a diameter to fit snugly against the walls of the combustion-chamber, and having an unobstructed central opening, the other of less diameter than the combustion-chamber, and made in a closed cylindrical form, or with the closed centers, the two being connected by vertical pipes or flues, and having the alternate arrangement shown and described.

202,776.

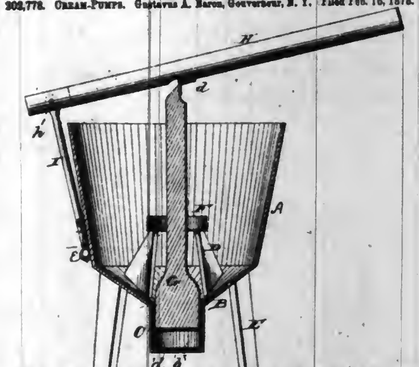


202,777. PORTABLE STOVE-BACKS. Wm. C. Barkalow, New London, Ind. Filed Mar. 8, 1878.



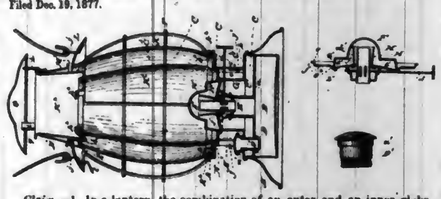
Claim.—The curved back-plate A, provided with the tongues *b b*, in combination with the drum B, provided with open ends and a central opening, *a*, substantially as set forth.

202,778. CREAM-PUMPS. Gustavus A. Baron, Gouverneur, N. Y. Filed Feb. 16, 1878.



Claim.—In a cream-pump, the vessel A, with conical bottom B, from which depends a cylinder, C, with an interior flange, *a*, and the removable wire-cloth strainer *b*, loosely resting on the flange *a*, in combination with the plunger G, the operating-lever H, having the plunger hinged to it, and the removable rod I, pivoted at its lower end to an eye, *c*, on the outside of the vessel A, and its upper end pivoted in a slot in the end of the operating-lever, all constructed as and for the purposes herein set forth.

202,779. LANTERNS. Alfred L. Baron, Evan F. Cash, and David Rankin, Bellaire, Ohio. Filed Dec. 19, 1877.



Claim.—1. In a lantern, the combination of an outer and an inner globe with a metallic chimney, whose bottom is supported on clips in the space between the tops of the globes, substantially as described.

2. In a lantern, the combination of the metallic chimney K^3, the metallic air-deflector N^1, forming the A-shaped space between the same, and the clips *h*, substantially as and for the purpose set forth.

3. In a lantern, the combination of the metallic chimney K^3, having attached thereto the clips *h*, as described, and the inner globe or chimney, to form the adjusted space between the bottom of chimney K^3 and top of inner globe, substantially as and for the purposes described.

4. In a lantern, the combination of the metallic chimney K^3, the air-deflector N^1, clips *h*, top O, and reflector L, forming the spaces *q* and M, substantially as and for the purposes described.

5. In a lantern, the combination of the clips *h*, the guard-fastener, metallic ear *j*, the inner globe or chimney, and the supporting-plate N, for the purpose of holding the various parts in position, substantially as and for the purposes set forth.

6. In a lantern, the combination of the outer globe and inner globe or chimney, of about the same height, the clips *h*, and the metallic chimney K^3, substantially as described.

7. In a lantern, the combination of the threaded screw-plug D', having shoulder *a'*, the screw-threaded opening D, the air-chamber *c'*, the diaphragm *b*, and the opening J, substantially as and for the purpose described.

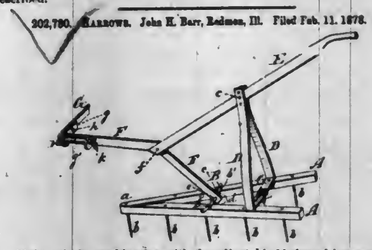
8. In a lantern, the combination of the openings J J with the perforated annular supporting-plate N, substantially as described.

9. In a lantern, the perforated supporting-plate N, substantially as and for the purposes set forth.

10. In a lantern, the combination of the cone H, the deflector H', and the perforated supporting-plate N, substantially as and for the purpose set forth.

11. In a lantern, the combination of the perforated supporting plate N, the deflector H', the cone H, the burner, and the opening O, substantially as described.

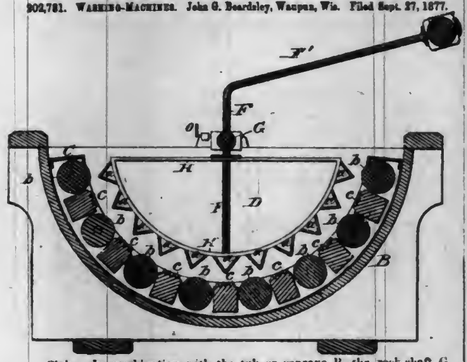
202,780. HARROWS. John H. Barr, Ledmen, Ill. Filed Feb. 11, 1878.



Claim.—1. In combination with the adjustable V-shaped harrow-frame A A, armed with teeth *b*, and having the staples or keepers *b' b'*, the curved bar B, having annular shoulders *d d* and tongue F, extension-plates C C', braces D D, and handle E, the latter being pivoted adjustably to the braces D D at *e*, and to the bend of tongue F at *f*, substantially as and for the purpose herein shown and described.

2. The combination, with the cross-bar G, having clevis *i*, of the adjustable bracket-plates *g g' g g'* and tongues F, having plates H, substantially as and for the purpose herein shown and described.

202,781. WASHING-MACHINES. John G. Beardsley, Waupun, Wis. Filed Sept. 27, 1877.



Claim.—In combination with the tub or concave B, the rock-shaft G, mounted in fixed bearings, and the rubber D, having the rigid arms F F', extended vertically and loosely through the rock-shaft, and thence laterally to the end of the machine, so that the rubber is permitted to rise and fall, while an up-and-down motion of extension F' causes a rocking motion of the rubber.

202,782. STILTS. Louis Bordewich, Chicago, Ill. Filed Mar. 4, 1878.



Claim.—1. As an improvement in stilts, the props A, divided by scribable marks into sections of equal length, substantially as and for the purpose hereinbefore set forth.

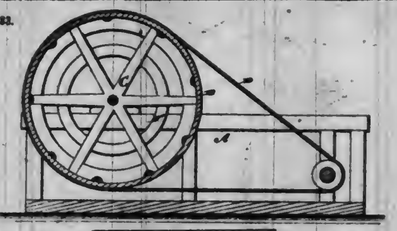
2. The combination, in an adjustable stilt, of the prop A, sliding foot-bracket B, having perforation *d*, sleeve C, having screw-threaded shank *e*, and thumb-nut *e*, substantially as and for the purpose herein shown and described.

3. The combination of the foot-bracket B, hinged foot-plate D, having fastening-straps *f* and downward-projecting arm *g*, and spring *h*, all constructed and arranged substantially as and for the purpose herein shown and described.

202,783. TREAD-MILLS. Robert A. Brown, Burke Centre, N. Y. Filed Mar. 9, 1878.

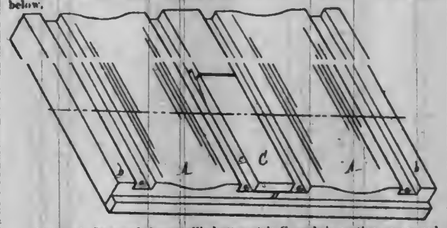
Claim.—The cylindrical animal-power B, having an unbroken tread, and provided with drum-belts of different diameters, and brake G, operating upon the outer surface of the cylinder, substantially as described, and for the purpose set forth.

202,783.



202,784. ROOF-BATTENING. Nathan H. Brown, Detroit, Mich. Filed Mar. 7, 1878.

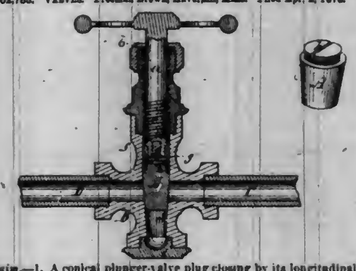
Brief.—A metallic batten-strip for board roofing is constructed with a bevel on one end of the turned-down sides, and a turned-up lap on the other end, so that when the sections are placed in position they interlock, and the lower end of one section covers the nails in the upper end of the section below.



Claim.—1. In a roof, the metallic batten-strip C, made in sections, arranged end to end, the wedge-formed sides *d* of the end of one section being interlocked with the upturned sides of the end of the next section, substantially as described and shown.

2. The combination, with the roofing-boards A, having shoulders *b*, of the batten-strip C, made in sections, adapted to lock together in the manner substantially as set forth.

202,785. VALVES. Freeman Brown, Haverhill, Mass. Filed Apr. 2, 1878.



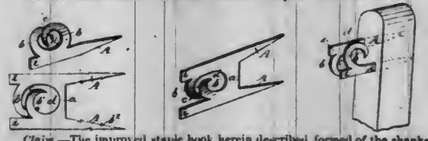
Claim.—1. A conical plunger-valve plug closing by its longitudinal movement into a surrounding seat of the same form, and being free to turn on its own axis, substantially as and for the purpose herein specified.

2. A conical plunger-valve plug closing by its longitudinal movement into a seat surrounding it, in combination with two or more eduction pipes or passages, either at its sides or at its inner end, substantially as and for the purpose herein specified.

3. The conical valve-plug A, swiveled to its stem *e*, substantially as and for the purpose herein specified.

4. The valve-plug A, made detachable from its cap or holder *g*, substantially as and for the purpose herein specified.

202,786. STAPLE-HOOKS. Nathaniel Burnham, Amboy, Ill. Filed Jan. 7, 1878.

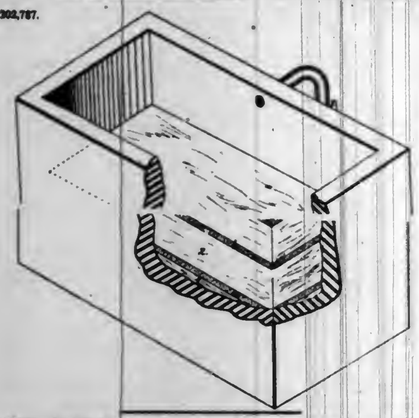


Claim.—The improved staple-hook herein described, formed of the shanks A A, connected by the strip *d*, and having hooks *b b'*, facing each other, and with their points twisted or turned in opposite directions, and having shoulders *i i*, projecting beyond the hooks, for convenience in driving, substantially as and for the purpose herein shown and specified.

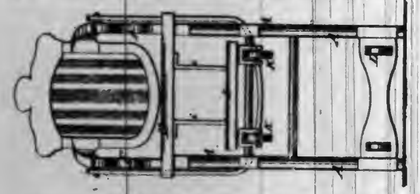
202,787. METHODS OF FORMING ICE IN SEPARATED LAYERS. Asa C. Call, Algona, Iowa. Filed Jan. 14, 1878.

Claim.—The method of forming ice in separate layers, which consists in forming a cake or tablet of ice in the bottom of the box or tank, then covering this ice with a layer of snow, then sprinkling the snow with water, and allowing the same to freeze to form a film of ice on the surface of the snow for the support of the water which is to form the next cake of ice, and so on, as set forth.

202,787.



202,788. NURSERY-CHAIRS. Frederick Cuahlr, Philadelphia, Pa. Filed July 27, 1877.



Claim.—1. A combined high chair and trundle, the seat thereof hinged to the upper part of the front legs, with rollers secured to the lower part of the legs, or to a stretcher between the same, and with rollers secured beneath the foot-rest of the chair, substantially as and for the purpose described.

2. In a combined high chair and trundle, rollers fixed to the lower part of the front legs or their braces, in combination with caster-wheels having vertical and horizontal axes of rotation affixed to the under side of the foot-rest, so that said rollers and said caster-wheels will come in contact with the floor when the legs of the chair are in a horizontal position, substantially as and for the purpose described.

202,789. BUTTONS. Charles B. Chaffee, Toledo, Ohio. Filed Jan. 16, 1878.



Claim.—1. In a button, the tapered screw C, in combination with the threaded and slotted bolt B, and the washer D, provided with a tapered hole, substantially as shown and described.

2. In a button, the flange A' A', in combination with the button-head A and the washer D, provided with a concave surface, all substantially as and for the purpose herein set forth.

202,790. BOOK-RACKS. John M. Clark, Dayton, Ohio, assignor of one-half his right to Wm. L. May, same place. Filed Sept. 26, 1877.

Brief.—To the lower side of the body of the book-rack is hinged a wire having its outer ends bent into the form of hooks, which may be engaged with the bent portions of the wire standard, and thus lock them in their unfolded position.



Claim.—In a book-rack, the combination of a body, A, and hinged standards B with the hinged locking-wire d, pivoted to the lower portion of the body, as and for the purpose specified.

202,791. IMPLEMENTS FOR HOLDING AND OPERATING OIL-CANS. Michael W. Collins and O. Frank Boughton, Brooklyn, N. Y. Filed Sept. 6, 1877.

Claim.—1. A ring-shaped oil-can holder having a long support provided with claws, fingers, or griping-pieces, extending from its face, and a catch adapted to be adjusted toward and from said claws, substantially as described, whereby an oil-can may be inserted from the front.

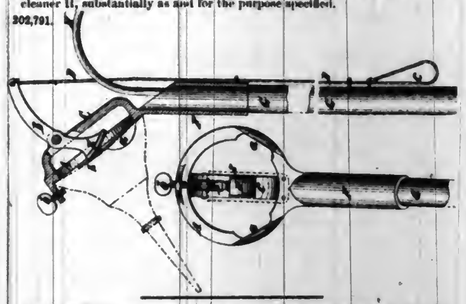
2. The combination, with an oil-can holder, of a bridge-piece extending across the back thereof, and a lever pivoted thereto, so that one end may be made to impinge with a wedge-like action against the bottom of the oil-can, the other extending over the top of the support for said holder, so that the lever may be operated by a direct pull on a cord, chain, or wire attached thereto, substantially as specified.

3. The combination, with an oil-can holder provided at the back with a bridge-piece, of a lever pivoted to said bridge-piece, and having at the inner end a toe whose face is eccentric to its line of motion, adapted to impinge against the bottom of an oil-can arranged in the holder, substantially as and for the purpose specified.

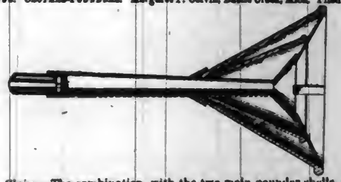
4. The combination, with a holder for an oil-can and a lever adapted to operate an oil-can therein, of a push-piece for receiving the impact of the lever and transmitting it to the can.

5. The combination of the holder A, socket F, and support G, claws, fingers, or griping-pieces *a*, screw *b*, bridge-piece C, lever H E, cord D, and cleaner H, substantially as and for the purpose specified.

202,791.

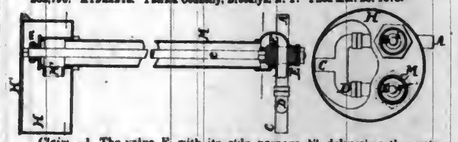


202,792. CLOTHES-POUNDERS. Margaret P. Colvin, Battle Creek, Mich. Filed Jan. 26, 1878.



Claim.—The combination, with the two main pounder shells, of the inner shell formed on the lower extremity of the tubular shaft, said shell being made conical, and the rims of the inner and outer shells being rigidly connected together by the inclined braces, substantially as set forth.

202,793. HYDRANTS. Patrick Connelly, Brooklyn, N. Y. Filed Mar. 25, 1878.



Claim.—1. The valve E, with its side passage E', delivering the water through the same case, M, which incloses the rod *c*, substantially as and for the purposes herein specified.

2. In combination with the single connection A from the street, the valve B, controlling the house-pipe C, and the valve E, connected by the branch D, and delivering the water through the pipe M, subject to the control of both valves E and B, as herein specified.

3. The casing H, cover H', pipes G and M M', with their valves B E and operating-rods *b c*, in combination with each other and with the single street-connection A and pipes C D, as and for the purposes herein specified.

4. The rod *c*, formed in a separate piece from the plug of the cock E, and united by a socket, as shown, adapted to serve with the receiving branch D, side passage E', pipe M, stuffing-box *m*, and delivering-passage M', as and for the purposes herein specified.

202,794. WHIP-RACKS. Samuel A. Darrach, Newark, N. J. Filed Feb. 13, 1878.



Claim.—1. In a whip-rack, the combination of a base and of rotary nipples placed in close proximity to each other, said nipples being made of india-rubber or other elastic material, substantially as shown and described.

2. In a whip-rack, the combination of a base and of nipples placed in close proximity to each other, said nipples being made of india-rubber or other elastic material, and being mounted on pins, which form their axles and allow them to revolve, substantially as and for the purpose set forth.

3. In a whip-rack, the combination of a base and of nipples placed in close proximity to each other, said nipples being made of india-rubber or other elastic material, and being placed in a downwardly-inclined position, substantially as and for the purpose shown and described.

202,795. CLOCKS. Henry J. Davies and Walter D. Davies, Brooklyn, N. Y. Filed Mar. 5, 1878.



Claim.—1. The main wheel of the clock, having attached to it the inner end of the mainspring, and arranged in concentric relation with the center arbor of the clock, substantially as specified.

2. The loose back or back-piece of the clock-case, having attached to it a ratchet, in combination with the main wheel arbor, around which, as a center of motion, said back or back-piece is free to rotate when winding up the clock, and one or more clicks to prevent back action of the mainspring, essentially as specified.

3. The combination, with the loose back or back-piece having attached to it the outer end of the mainspring, of the main wheel, with its tubular arbor *d*, having attached to it the inner end of the mainspring, and the stationary concentric arbor *s*, essentially as described.

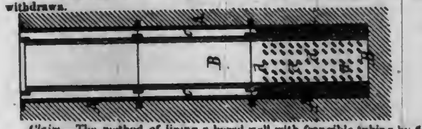
4. The combination of the loose back or back-piece D, the main wheel, with its tubular arbor *d*, and the center or minute-wheel arbor *f*, constructed to extend through a stationary arbor, around which the main wheel rotates, for adjustment of the hands from the rear of the clock, substantially as specified.

5. The combination of the loose back or back-piece D, constructed to form a box for the mainspring, and the case A, constructed to receive said back or back-piece within it, and to form a bearing therefor, essentially as described.

6. The combination of the case A, the pillars *c*, and the screws *b*, arranged to pass through the sides of said case, and serving to secure the pillars to the case, and clock-frame to the latter intermediately of its front and back, substantially as specified.

202,796. METHODS OF LINING BORED WELLS. James Dellard, Babylon, N. Y. Filed Mar. 20, 1878.

Brief.—A temporary metallic tube is first put down, and the permanent frangible tubing then placed inside the first tube. The space between the two tubes is then filled with gravel or other porous material, and the metallic tube withdrawn.



Claim.—The method of lining a bored well with frangible tubing by first introducing therein a temporary pipe, of iron or like material, then inserting the perforated frangible tube, and filling the space between it and the temporary tube with gravel or equivalent substance, to form a porous jacket around the perforated portion of said frangible tube, and finally removing the temporary pipe, substantially as explained.

202,797. BURIAL-CASES. Leander K. Dutton, Oskaloosa, Iowa. Filed Mar. 21, 1878.



Claim.—1. As an improvement in burial vaults or caskets, the metallic shell A, having outwardly-bent ridges *a a*, and cement or artificial-stone lining, having at the top a V-shaped groove, *c*, in combination with the arched cover, consisting of a shell, the cement or artificial-stone lining of which is provided with a V-shaped ridge, *c*, substantially as and for the purpose herein set forth.

2. In a burial vault or casket consisting of a metallic shell having a lining of artificial stone, the beveled or bent strips *b b*, attached permanently to the metallic shell, substantially as and for the purpose herein shown and specified.

202,798. BURGLAR-ALARMS. George W. Eddy, New Britain, Conn. Filed Jan. 19, 1878.



Claim.—As a new article of manufacture, a portable burglar-alarm, consisting of the elongated metal frame A, with an eye, *a*, at one end, and a spur, *i*, at the other end, said frame being slotted at *b* to receive the journals *d d* of the plate D, and the flat spring H, for holding the said plate in position, substantially as and for the purpose described.

202,799.

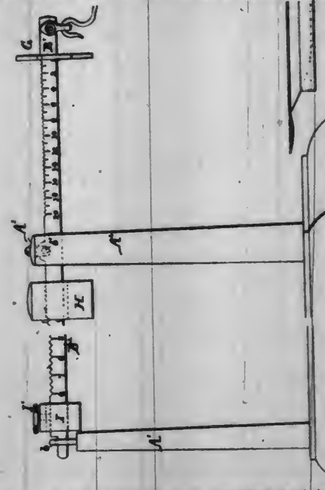


202,799. FIRE-FRONTS. John A. Ewing, Berlin Cross-Roads, Ohio, assignee of one-half his right to I. V. Sherwood, same place. Filed Mar. 16, 1878.

Claim.—1. In a fire-front, the grooves *b b*, formed on the sides of the front B, substantially as and for the purposes set forth.

2. The combination of the front B, having side grooves *b b* and lugs *a a*, the basket C, cheek D, and gradually-sloping bridge F, substantially as and for the purposes set forth.

202,800. WEIGHING-SCALES. Thaddeus Fairbanks, St. Johnsbury, Vt. Filed Feb. 19, 1878.



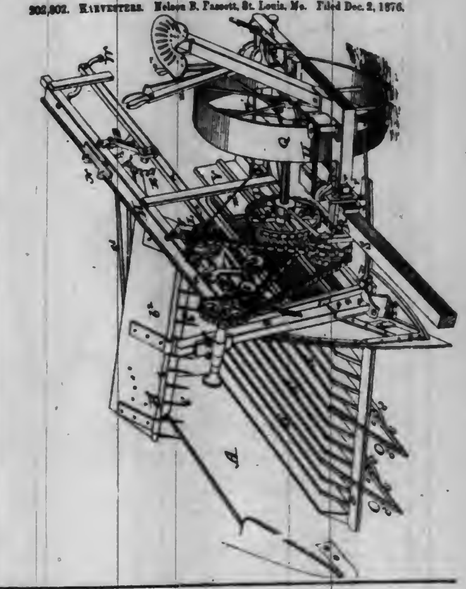
Claim.—The dispensing-scales herein described, consisting of the post or posts A^1 A^2, graduated beam B^1 B^2, suspended near its center, the part B^1 of the beam being graduated in a reverse direction, and of a less denomination than the part B^2, balancing-weight I, and poises G H, as herein specified.

202,801. MEDICAL COMPOUNDS. Herman Falk, Nashville, Tenn. Filed May 27, 1878.

Brief.—An extract is made of the leaves of corn (*Zea mays*) by boiling the dry leaves in water until a thick gum is formed. Of this extract of *Zea mays*, or Indian corn, take fifty grains; sulphate of quinine, thirty-four grains; sulphuric acid, eighteen drops; extract of garlic, ten grains, and powdered licorice sufficient, and form thirty-six pills.

Claim.—The remedial composition for chills and fever, consisting of extract of *Zea mays*, sulphate of quinine, sulphuric acid, and extract of allium sativum, substantially as described.

202,802. HARVESTERS. Nelson B. Fassett, St. Louis, Mo. Filed Dec. 2, 1876.



Claim.—1. The rake B, arm C, chain D, frame H, ways a a, wheels E, E', F, and G, and slide N, combined and operating substantially as described.

2. The continuous hold-down b^1, extending downward and backward from the rake-head *b*, as and for the purpose set forth.

3. The rake B, having the fender b^2 and the continuous hold-down b^1, substantially as described.

4. The oscillating grain-lifters O O, as and for the purpose described.

5. The combination of the guards *o o* and the oscillating lifters O O, substantially as described.

6. The combination of the oscillating lifters O O, rods o^1 o^2, bearings o^3 o^4, cranks o^5 o^6, bar o^8, lever o^7, rod o^9, and lever o^{10}, substantially as described.

7. The combination of the oscillating wheel I', the thimble-bearing *p*, the elongated bearing p^1, and brackets p^2 and p^3, constructed and operating substantially as described.

8. The combination of the tongue-yoke R, shank *r*, key r^1, washer r^2, and the holder T, substantially as described.

202,803. GRAIN-BINDERS. Nelson B. Fassett, St. Louis, Mo., assignor of one-half his right to Silas F. Filley, same place. Filed Dec. 2, 1876.

Claim.—1. The shears W W', shear-lever W^1, and shear-prong W^2, combined and operating substantially as described and shown.

2. The combination of the shear-prong W^2, the shear-lever W^1, and the shear-dog W^4, with a suitable device for operating the shear-prong, substantially as described.

3. The movable blade W, shear-lever W^1, shear-prong W^2, and shear-dog W^4, combined and operating substantially as shown and described.

4. The combination of the fixed blade W^1 and the fender W^3, substantially as and for the purpose set forth.

5. The combination of the lower arm C, latch-finger r^1, hook r^2, and shears W W^1, substantially as described.

6. The arm C, having the latch-finger r^1, provided with the lever r^3, the spring r^6, hook r^2, and latch *e*, substantially as shown and described.

7. The combination of the arm C, latch-finger r^1, latch *e*, latch-lever r^3, and stop r^4, substantially as shown and described.

8. The latch-finger r^1, provided with the latch *e* and hook r^2, substantially as and for the purpose set forth.

9. The combination of the arm C, latch-finger r^1, and hook r^2, to draw the string into the shears, substantially as shown, and for the purpose set forth.

10. The latch-finger r^1, provided with the latch-lever r^3 and spring r^6, substantially as shown and described.

11. The combination of the arm C, latch-finger r^1, latch-lever r^3, and rib b^2, substantially as set forth and described.

12. The combination of the hook r^2, finger r^1, string T, and upper arm-finger p^2, substantially as shown, and for the purpose set forth.

13. The combination of the string T, latch-finger r^1, latch *e*, hook r^2, lever r^3, and stop r^4, substantially as set forth and described.

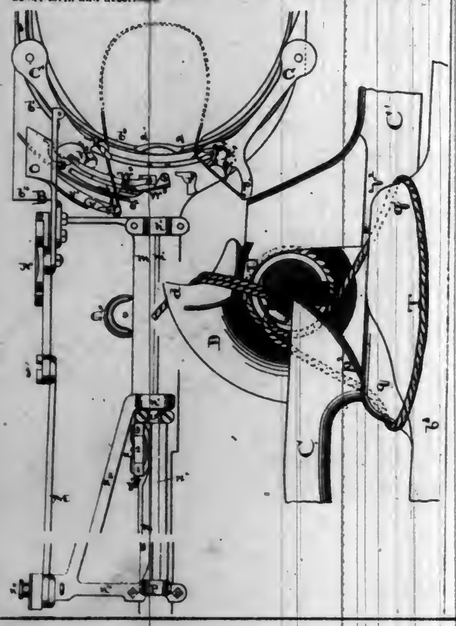
14. The combination of the jaw X^1, string T, finger r^1, latch *e*, hook r^2, stop r^4, and hook *d*, substantially as set forth and described.

15. The combination of the jaws X X^1, string T, arms C and C', and hook *d*, substantially as shown and described.

16. The cap G^1, having the corrugations g^2, to receive the hook *d*, substantially as shown and described.

17. The upper arm C, having the knuckles k^1 k^2, to depress the strings beyond the line of the finger p^2 and jaw-prong p^3, and within the field of the hook *d*, substantially as set forth and described.

18. The combination of the knuckle-prong k^2 and the stop c^4, substantially as set forth and described.



19. The combination of the arm C, having the jaw-prong p^2 and knuckle-prong k^2, and the rib b^1, substantially as set forth and described.

20. The combination of the arm C, jaw-prong p^2, jaw-finger *q*, and rib b^1, substantially as shown and described.

21. The combination of the arm C, jaw-prong c^3, jaw-finger q^1, and rib b^1, substantially as shown and set forth.

22. The cylinder D, having the hook *d* and the groove d^1, substantially as shown and described.

23. The combination of the arm C, jaw-prong p^2, string-finger p^1, and hook *d*, substantially as set forth and described.

24. The combination of the arm C, having the jaw-prong p^2, latch *e*, and hook r^2, and the arm C, having the jaw-prong p^3, and string-finger p^1, substantially as set forth and described.

25. The combination of the arm C, projection c^2, tension-reliever S, and spring r^5, substantially as set forth and described.

26. The combination of the arm C, projection c^2, and tension-reliever S, substantially as described.

27. The combination of the tension-wheel R, spring r^5, shoe r^4, and tension-reliever S, substantially as shown and described.

28. The hold-down r^3, spring r^5, and string T, combined and operating substantially as shown and described.

29. The combination of the tension R, spring r^5, and arm C, substantially as set forth and described.

30. The tines G G and rods *w w*, combined and operating substantially as set forth and described.

31. The combination of the tines G G, rods *w w*, and coil-spring G^3, substantially as set forth and described.

32. The combination of the tines G G, rods *w w*, lever G^1, bar *m*, pin w^1, and spring G^3, substantially as shown and described.

33. The combination of the tines G G, rods *w w*, lever G^1, having beveled offset w^1, pin w^2, bar *m*, and spring G^3, substantially as set forth and described.

34. The shaft F, having the grooves Y Y', widened at their outer ends, for the purpose set forth.

35. The combination of the shaft F, having the grooves Y Y', widened at their outer ends, and the elbow I^w, substantially as shown and described.

36. The thimble A, provided with the circular rim h^1, in combination with the stop 2, substantially as set forth and described.

37. The beveled feather s^1 on the spindle *r*, in combination with the thimble *h*, substantially as and for the purpose set forth.

38. The combination of the spindle *r*, having the recess r^1, and the intermediate stud o^1, substantially as set forth and described.

39. The combination of the binder-head B, sliding bar *n*, pitman *k*, and endless chain K, substantially as set forth and described.

40. The combination of the sliding bar *n*, rod M, oscillating cam N, and stop x^2, substantially as shown and described.

41. The combination of the connecting-rod M, way *e*, switch e^2, guide *j*, and oscillating cam N, substantially as shown and described.

42. The combination of the grooved cam N, stop x^2, and stool O, substantially as set forth and described.

43. The combination of the head B, stool O, cam N, and rod M, substantially as set forth and described.

44. The combination of the head B, stool O, grooved oscillating cam N, and stop x^3, substantially as set forth and described.

45. The combination of the cam N, guide *j*, switch e^2, rod M, and stop x^3, substantially as set forth and described.

46. The combination of the grooved oscillating cam N and the stop x^3, substantially as set forth and described.

47. The combination of the oscillating cam N, guide *j*, and switch e^2, substantially as shown and described.

48. The combination of the head B, stool O, and bed-plate A^1, substantially as set forth and described.

49. The combination of the cap $(1)^2$, and the rib c^4 on the bed-plate A^1, substantially as set forth and described.

50. The combination of the head B, having the stop b^4, the plunger-crank V, plunger-rod V^1, inclined plane L, and spring V^2, substantially as shown and described.

51. The combination of the trip-lever Q, basin-plate B^1, inclined plane L, ratchet *a*, and hook *l*, substantially as set forth and described.

52. The combination of the ratchet bevel-wheel B^1, wheel I, dog a^1, and inclined plane L, substantially as set forth and described.

53. The combination of the plunger-rod V^1, plunger-crank V, head-stop b^4, inclined plane L, and dog a^1, substantially as shown and described.

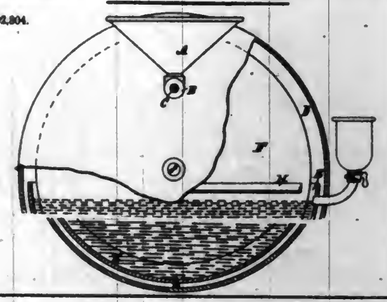
54. The combination of the rod V^1, inclined plane L, and dog a^1, substantially as shown and described.

55. The combination of the trip-lever Q, ratchet *a*, inclined plane L, having the hook *l*, and the rod V^1, having the beveled forward end, substantially as shown and described.

56. The combination of the pivoted inclined plane L and the pivoted dog a^1, substantially as set forth and described.

57. The combination of the jaw-prong c^3 and the compensating set-screw c^5, substantially as and for the purpose set forth.

202,804.



202,804. AMALGAMATORS. George J. Firmin and Thomas A. D. Forster, Norristown, Pa. Filed Jan. 14, 1878.

Claim.—1. The process herein described for amalgamating metals, consisting in forcibly projecting the pulverized ore containing them, by means of a blast, upon or against an amalgamated disk or plates, or upon the surface of a body of mercury, substantially as described.

2. In combination with the ore-conveyer tube or cylinder B, the revolving disk or plate F and mercury-bath E, arranged and operating substantially as shown and described.

3. The combination of tube or cylinder B, mercury-bath E, revolving disk or plate F, and brush or scraper H, substantially as shown and described.

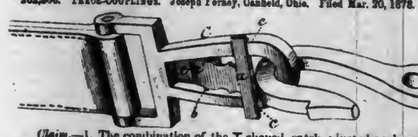
4. The combination of hopper A, tube or cylinder B, steam, air, or water pipe C, mercury-bath E, and revolving disk F, substantially as shown and described.

5. In combination with the mercury-bath E and revolving disk F, the water inlet I and discharge, substantially as shown and described.

202,805. FELTING PROCESSES. Howard W. Flagg and Geo. Jackson, Yonkers, N. Y. Filed Mar. 22, 1878.

Claim.—The herein-described improvement in the art of felting, the same consisting in subjecting the material to the action in the felting-mill of an alkali or alkaline substance subsequent to the treatment of said material with oil of vitriol, substantially as herein set forth, for the purpose specified.

202,806. TRACE-COUPLINGS. Joseph Forney, Canfield, Ohio. Filed Mar. 20, 1878.

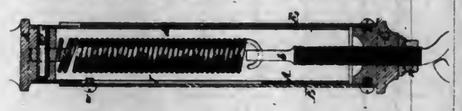


Claim.—1. The combination of the T-shaped catch, pivoted as described, and having a short arm, a', with a spring-plate, *c*, and the cockeye, as set forth.

2. The combination of the T-shaped catch, pivoted as described, and having a short arm, a', with a spring-plate, *c*, seat-notches *c*, and the cockeye *c*, as set forth.

3. A trace-coupling device consisting of the cockeye-frame, the pivoted T-shaped catch $a\,a'$, and the spring *c*, said catch being adapted, by its short arm a', to be turned over upon said spring and to be held in its open or closed position, as described.

202,807. SPRING-BALANCES. Charles Forschner, New York, N. Y. Filed Apr. 3, 1878.

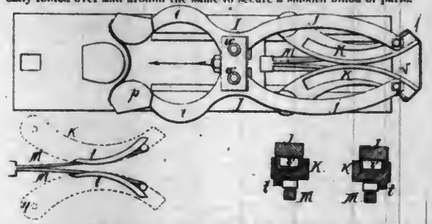


Claim.—1. A spring-balance consisting of the inner case A, outer case E, and spring B, with the index-scale marked or cut upon the face of the inner casing A, in combination with the upper edge of the outer casing E, arranged to operate in the manner and for the purpose substantially as set forth and described.

2. In a spring-balance, the slot J in the inner casing A, in combination with the pin *w*, attached to the outer casing E, substantially in the manner and for the purpose set forth.

202,808. MANUFACTURE OF HEELS FOR BOOTS AND SHOES. Belden T. Gates, Philadelphia, Pa., assignor to Edward P. Knipe, same place. Filed Oct. 16, 1877.

Brief.—The leather cover, to which cement has been applied, is first wrapped around the solid blank, when an elastic strip or band is automatically folded over and around the same to secure a smooth union of parts.



Claim.—1. The method herein described of applying a leather cover to heel blanks, by first cementing the leather to the blank, and then applying an elastic strip, while in a stretched condition, to the edge and under and over the blank, as set forth.

2. The combination of a support and retainer of the heel-blank with reciprocating jaws carrying the elastic strip, as set forth.

3. The combination of the cross-head, the levers I I, and slotted and ribbed arms K K, and the [illegible] arms M M.

202,809. ANNEALING GLASS AND GLASSWARE. Hugo Gerike, Berlin, Prussia, Germany. Filed Feb. 14, 1878.

Brief.—The articles to be annealed are taken from the blow-pipe or mold in a hot state, placed as quickly as possible upon heated metallic plates, and each separate article is covered with a thin metallic form, open at the bottom only, so as to exclude the atmosphere. The base plate and forms are made so as to conform to the thickness of the article to be annealed, so that the thicker and thinner portions of the glass will be uniformly annealed.

Claim.—1. The process or method of annealing glass, consisting in annealing the same in an initial temperature proportionally graduated to the thickness of such glass, and allowing it to cool therein gradually, substantially as described, for the purpose specified.

2. In the process or method of annealing glass, consisting in annealing the same in a temperature proportionally graduated to the thickness of the glass, and shielding it from contact with the outer surrounding atmosphere, substantially as described, for the purpose specified.

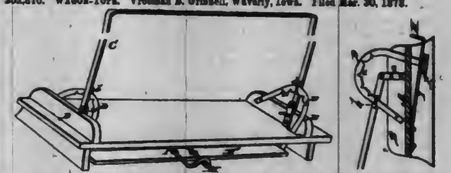
3. In the process of annealing glass, shielding the same from contact with atmospheric air by transferring each article direct from the blow-pipe or mold into a previously heated and practically air-tight receptacle, so constructed that the article to be annealed will not come in contact with the walls of said receptacle, substantially as described, for the purpose specified.

4. In the process or method of annealing glass, graduating the initial temperature proportionally with that of the thickness or varying thicknesses of the glass, by inclosing each article in a practically air-tight and previously-heated receptacle, whose walls conform to or nearly conform to the thickness or varying thicknesses of the article therein contained, and allowing each article to cool gradually, substantially as described, for the purpose specified.

5. In the process of annealing glass, graduating the initial temperature proportionally with that of the thickness or varying thicknesses of the glass, by inclosing each article in a practically air-tight and previously-heated receptacle, whose walls conform not only proportionally to the thickness of the contained article, but also to its shape or configuration, or nearly so, to form a matrix in which the article is annealed, substantially as described, for the purpose specified.

6. In the process of annealing glass, consisting in taking each separate article direct from the blow-pipe or the mold and shield it from contact with the surrounding atmosphere by rapidly inclosing it, while yet very hot, in a practically air-tight and previously-heated form or matrix, in configuration like, or nearly like, that of the object to be annealed, and whose walls are proportionate in thickness to that or the varying thickness of the object, to provide a variable temperature, as set forth, and allowing said object to gradually cool in and with the matrix, as described, for the purpose specified.

202,810. WAGON-TOPS. Freeman B. Grinnell, Waverly, Iowa. Filed Mar. 30, 1878.



Claim.—1. The curved notched and movable arms D, pivoted at their rear ends, and their front ends connected under the front of the seat by a cross-bar, F, for simultaneous manipulation of the two bars, as set forth.

2. One or more springs, I, connecting the bar F with the slat, in combination with the curved arms D D, substantially as and for the purposes set forth.

3. The handle H, attached to and projecting in front of the bar F, in combination with the spring I and curved arms D, substantially as and for the purposes set forth.

4. The staples *b b* on the sides of the bow C, in combination with the curved and notched movable bars D D, substantially as and for the purposes set forth.

202,811. HOG-CHOLERA COMPOUNDS. Andrew J. Guinn, Jackson, Tenn. Filed Mar. 8, 1878.

Claim.—The within-described compound, consisting of sulphur, black antimony, charcoal, arsenic, and water, in about the proportions named, for the purpose set forth.

202,812. WIRE ROPES AND CABLES. Theodor Hager, Mayence, Germany. Filed Jan. 8, 1878.

Brief.—The wires are arranged parallel in a series of loosely-fitting sleeves, within which the component wires have free play, the ends being inserted in a metallic socket, and secured there either by being bent around a wedge or by soldering.

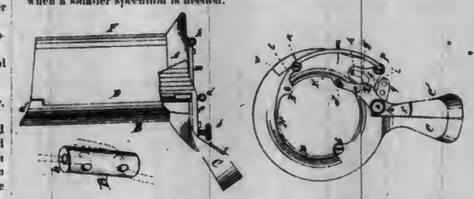


Claim.—1. A wire rope or cable having its wires arranged parallel to each other, in combination with a series of loosely-fitting metallic sleeves, forming a sectional and pliable casing for said rope or cable, substantially as described, for the purpose specified.

2. The combination, with the binding device and the wire rope, constructed as shown and described, of the binding-sleeve *b'*, substantially as described, for the purpose specified.

202,813. SPECULUMS. John C. Hall, Monroe, Wis. Filed July 14, 1877.

Brief.—The body of the instrument is made up of valves hinged longitudinally, and operated by lever-connections. The outer valve is removable when a smaller speculum is needed.



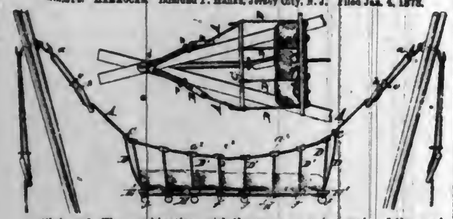
Claim.—1. The fixed leaf B and handle C, in combination with the hinged valves D E, arm *c*, and handle C', substantially as and for the purposes set forth.

2. The fixed leaf B and handle C, in combination with the hinged leaves or valves E F, arms *e* and *l*, slotted plate *f*, bar *m*, and handle C', substantially as and for the purposes set forth.

3. The ring A, fixed leaf B, and handle C, in combination with hinged valves D E and operating devices, substantially as and for the purposes set forth.

4. In a speculum, the fixed leaf B and one or more hinged valves, E F, in combination with the removable rod *l*, substantially as and for the purposes set forth.

202,814. HAMMOCKS. Edmund P. Hanks, Jersey City, N. J. Filed Jan. 4, 1878.



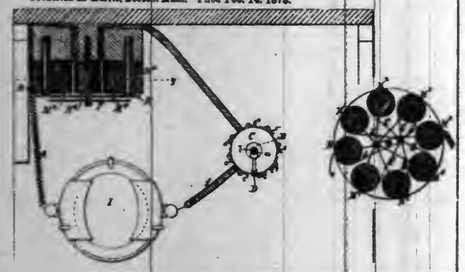
Claim.—1. The combination, with the top suspension-cords, of the pendent cords inserted between the strands, split, and bent around the sides thereof, and the metal clasps embracing the junction of said cords, substantially as described.

2. A slat for a suspension-bed, having a series of holes near each end and an intermediate groove in its top, in combination with two depending cords, bent through said holes, and having their free ends lying within said groove, substantially as set forth.

3. The cord-clutch, having transverse holes through it near each end, and a longitudinal socket in one end, intersecting one of said transverse holes, substantially as described.

4. The combination of the bottom cords F, having attached rings *f*, cross-slats E, and depending cords D', attached to said cross-slats, substantially as and for the purpose set forth.

202,815. APPARATUS FOR INDICATING THE DIRECTION OF THE WIND. Angel J. Harris and Frederick E. Harris, Boston, Mass. Filed Feb. 14, 1878.



Claim.—1. In an apparatus for indicating the direction of the wind, the combination of a wind-vane adapted to revolve about a vertical axis, a wire leading from said axis to and connected with one pole of a battery, a magnetic needle or index-hand, a disk or dial having engraved, painted, or otherwise affixed thereon the principal points of the compass, a series of electro-magnets, one end of each of the coils of which is connected with said battery, a series of wires leading from the other ends of said coils to a point near said vane, and a circuit closing and breaking device adapted to cause the electric current to pass through one or another of said electro-magnets, according to the position of said vane, substantially as and for the purposes described.

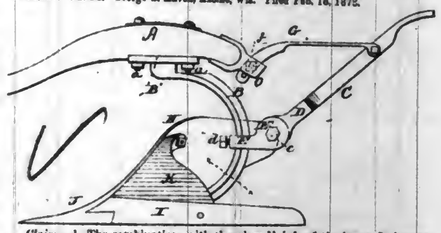
2. The combination of the vane A, provided with a tubular socket, and adapted to be revolved about a vertical axis, and provided with the radial spring circuit closer and breaker D, a series of plates, c^1 c^2 c^3, &c., arranged in a circle concentric to the axis of said vane, and insulated therefrom by the collar of non-conducting material C', a series of electro-magnets, arranged as set forth, and connected by the wires d^1 d^2 d^3, &c., to the plates c^1 c^2 c^3, &c., a dial, E, having marked thereon the principal points of the compass, a magnetic needle or index-hand, F, the battery I, wire *c*, leading from one pole of said battery to and connected with one end of each of the wires forming the coils of said magnets, and a wire leading from the opposite pole of said battery to and electrically connected with the axis about which said vane revolves, substantially as and for the purposes described.

202,816. ENVELOPES. Oliver P. Hatfield, New York, N. Y. Filed Feb. 21, 1878.



Claim.—A letter-envelope perforated through its face with an aperture sufficiently large to admit of writing the address and stamping the postmark upon the exposed portion of the letter, but otherwise completely enveloping the letter, and the margin of the envelope around said aperture provided with mucilage to attach it to the letter.

202,817. PLOWS. George S. Haven, Racine, Wis. Filed Feb. 16, 1878.



Claim.—1. The combination, with the plow H I J, of the brace L, having slot *a* and notches *x*, the standard B, clip K, fastened to the standard with a set-screw, *k*, and provided with the flange *p*, tooth *t*, and bolt *t*, and the nut *s*, substantially as and for the purposes herein set forth.

2. The combination, with a plow-beam, A, of the slotted casting O, handles O C, with rod *h*, the forked brace G, and set-screw *f*, for the purposes set forth.

3. The combination, with the handles O C, of the standard B, clip E, with plate F' and set-screw *d*, the forked iron D, with plate D', and the bolt *c*, substantially as herein set forth.

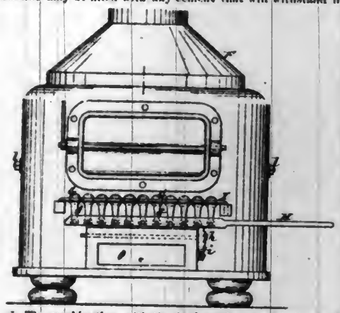
202,818. FISHING APPARATUS. Oscar Neese, West Hoboken, N. J. Filed Dec. 26, 1877.



Claim.—In a spring fishing apparatus, the combination of the lever *e*, provided with two or more notches, the trigger *f*, and spring *d*, with the line *a* and the reel *b*, substantially as described.

202,819. FIRE-BOXES FOR STEAM-BOILERS. George H. Hoagland, Port Jervis, N. J. Filed Jan. 10, 1878.

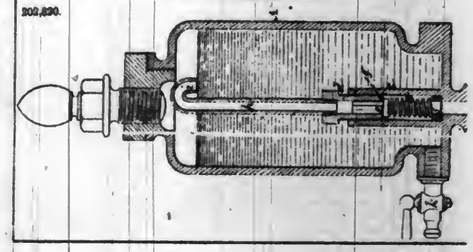
Brief.—The T-shaped elbow-joints by which the lining-tubes are fastened to the sides of the fire-box are provided with countersinks for the reception of bolt-heads, by means of which they are protected from the heat of the fire. Said countersinks may be filled with any cement that will withstand intense heat.



Claim.—1. The combination, with the fire-box of a steam-boiler or heater having a surrounding or inclosing water-space or chambers, of lining-tubes constructed with elbows at their opposite ends, for establishing communication with said water-space, and bolts or fastenings for said tubes, arranged to pass through said elbows, and protected by the water circulating through the elbows and water-space with which said elbows connect, substantially as specified.

2. The lining-tubes R, having T-shaped elbows S at their opposite ends, and constructed with countersinks *k* on the inner ends of said elbows, in combination with the fastening-bolts T, for application to fire-boxes having water-jackets, essentially as described.

202,820.

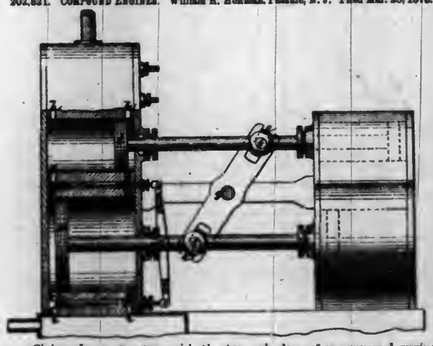


202,820. LUBRICATORS. George H. Hoagland, Port Jervis, N. Y. Filed Jan. 11, 1878.

Claim.—1. The combination, with the oil or grease cup A, of the bent tube *h*, the spring-balanced valve *c*, and one or more ducts, allowing for the escape of steam to the cup past the valve *c* when closed, substantially as specified.

2. The combination of the adjustable hollow plug *d* with the neck *c* in the cup, the bent tube *h*, the leaking valve *c*, and its spring *f*, essentially as and for the purposes herein set forth.

202,821. COMPOUND ENGINES. William H. Hoffman, Passaic, N. J. Filed Mar. 25, 1878.



Claim.—In combination with the two cylinders of a compound engine, arranged side by side, and having ports communicating between their corresponding or adjacent ends, a reciprocating connection between the piston-rods of said cylinders, whereby the strokes of the two pistons are caused to take place in opposite directions synchronously, substantially as herein described.

202,822. MANUFACTURE OF ULTRAMARINE COLORS. Reinhold Hoffman, Marienberg, Germany. Filed Feb. 1, 1878.

Claim.—The process of manufacturing violet and red ultramarine herein described, consisting in exposing the blue or so-called white ultramarine or mixtures of the same, while heated, substantially as herein stated, to the action of the vapors of acids derived from the halogen group of elements, and afterward washing out the soluble salts, substantially as and for the purpose specified.

202,823. TABLE-BEDSTEADS. Anthony A. Hoffman, New York, N. Y. Filed Feb. 9, 1878.



Claim.—1. In combination with the main frame A, having the ways A^1, provided with slots a^2 and notches a^1, the frames G H, hooks I, removable top D, and hooks C', adapted to serve as a table or bed, as herein specified.

2. The frame H, in combination with the frame G and with the main frame A, having the cross-bars A^2 A^3, so as to allow the frame H, by simply changing the cross-piece at its foot from one side to the other of the cross-piece A^3, to be held at changed inclinations, as herein specified.

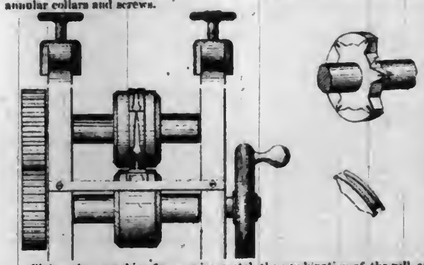
3. The knuckle-joints with their locking means b^1 b^2, connecting the legs H with the frame A, in combination with frames G H, for supporting a mattress, and with a removable top, D, adapted to serve as a table or bed at will, as herein specified.

4. The top piece D, with its pins or eyes d^1 d^2, in combination with the frame A, hooks C *c*, and frames G H, adapted to support a bed when the top is removed, as herein specified.

5. The main frame A, having the ways A^1, provided with the notches *a'*, in combination with the frames G H and hooks I, as herein specified.

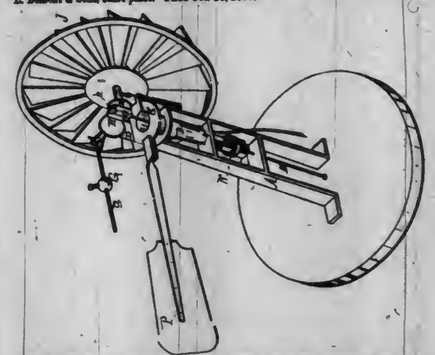
202,824. HORSESHOE-NAIL MACHINES. John T. Hough, Pittsburg, Pa. Filed Apr. 3, 1878.

Brief.—The dies and cutters are both removable, and are held in place by annular collars and screws.



Claim.—In a machine for swaging metal, the combination of the roll and its segmental seats, the detachable dies and cutters, and the annular collars for securing said dies and cutters to the roll, substantially as specified.

202,825. WINDMILLS. Samuel E. Jarvis, Lansing, Mich., assignor of one-half his right to E. Bement & Sons, same place. Filed Oct. 24, 1877.



Claim.—1. In a windmill, the combination, with the tipping main shaft I and crank-plate K, of the ball crank pin *k* and the forked arm O on the upper end of the pump-rod M, constructed and arranged substantially as described and shown.

2. In a windmill having a tipping wind-wheel, the combination, with the turn-table C, of the bracket D at the side thereof, and the angular bracket H, supported by the said bracket D, and adapted to turn thereon, and the main shaft I, journaled in the said bracket H, constructed and arranged substantially as described and shown.

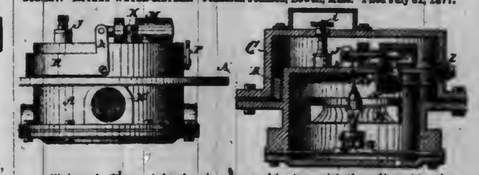
3. The combination of the wheel J, shaft I, and tail-vane P, the latter being set at an angle to said shaft, substantially as described.

4. The combination of the standard A, turn-table B C, counter-weight G, bracket H, shaft I, wheel J, plate K, connecting-rod L, and tail-vane P, constructed and arranged to operate substantially in the manner and for the purposes specified.

202,826. LAPPING FOR PRINTING-MACHINES. Charles D. Jillson and Hudson Smith, Providence, R. I. Filed Oct. 16, 1877.

Claim.—Printers' lapping composed of a woolen-faced fabric, a thin cotton or linen fabric, and an intervening layer of vulcanized gum, substantially as described.

202,827. ROTARY WATER-METERS. Jonathan Johnson, Lowell, Mass. Filed July 31, 1877.



Claim.—1. The weighted valve, in combination with the adjustable pipe N, as and for the purpose specified.

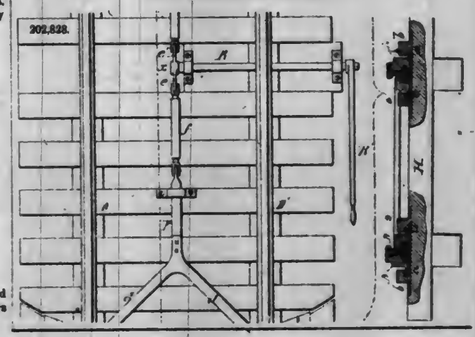
2. The adjustable pipe N, provided with stem O and segment-gear P, or their equivalents, in combination with the case N', as and for the purpose set forth.

3. The supporting-bar attached to the case A, and carrying the step *a*, provided with pintle *a'* and openings *c*, substantially as and for the purpose specified.

4. In a water-meter, the combination of the constant jet, the weighted plate-valve, and the adjustable regulating-chute with the measuring-wheel and its attached registering devices, substantially as and for the purpose set forth.

5. In a meter for measuring water or other fluids, the measuring-wheel, constructed as shown and described, and running loosely in the chamber, in combination with adjustable chutes or supply-pipes, operating as set forth.

202,828.



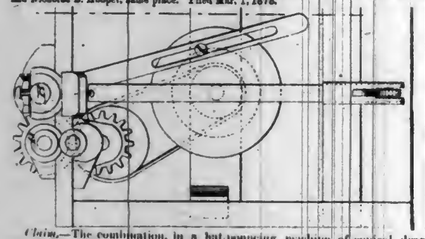
202,828. LOCKING DEVICES FOR RAILROAD TURN-TABLES, &c. Edwd. H. Johnston, Philadelphia, Pa., assignor to the Wharton Railroad Switch Company, same place. Filed Mar. 21, 1878.

Brief.—A turn-table or swinging bridge is secured in position and prevented from tilting by means of sliding blocks adapted to embrace the meeting ends of the rails of the turn-table or bridge and those of the permanent way. Said blocks reciprocate in guideways secured upon the bridge or turn-table, and also upon the permanent way. The blocks are withdrawn to permit the table to be turned, or projected into locking position by suitable operating-levers.

Claim.—1. The combination of guiding-plates on the pivot bridge, draw-bridge, or turn-table of a railroad, and similar plates on the permanent structure adjoining the same, with sliding blocks adapted to the said guiding-plates, and to the rails of the bridge or turn-table and those of the permanent track, all substantially as set forth.

2. The combination, in a pivot or draw bridge or turn-table, of sliding blocks adapted to the rails and guiding-plates of the said bridge or turn-table and permanent track with the shaft R, its arms *c c'*, and devices for connecting the arms to the said blocks, all substantially as specified.

202,829. HAT-FOUNCING MACHINES. William Keenan, Brooklyn, N. Y., assignor to himself and Nicholas B. Hooper, same place. Filed Mar. 1, 1878.



Claim.—The combination, in a hat-pouncing machine, of conical draw rolls with a pouncing block, having a uniform rotary reciprocating motion, and with a hinged and treadle-acted table or holder below the block, substantially as and for the purpose specified.

202,830. INSECT-POWDER GUNS. William Kennish, Philadelphia, Pa. Filed Feb. 4, 1878.



Claim.—The closed conical spout t, in combination with the cylinder A, provided with an elastic top, substantially as and for the purpose described.

202,831. IMPLEMENTS FOR CAPPING AND UNCAPPING CARTRIDGES. Hugh A. Kingsland, Newark, N. J. Filed Mar. 1, 1878.

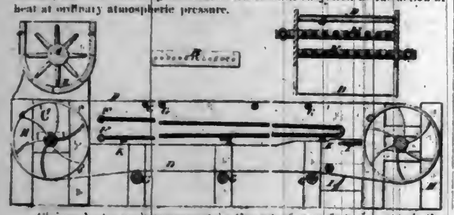


Claim.—1. The combination of the stock A, shell-holder B, hinged to the stock at one end, slide C, which is guided on the stock and constructed with a capping head, D, and suitable means for actuating the slide, the whole being adapted to operate substantially as described.

2. The combination of the stock A, shell-holder B, hinged to the stock at one end, movable rod F, located in a central hole extending throughout the shell holder, the slide C, which is guided on the stock and conjuncted with a capping-head, D, and uncapping head E, and suitable means for actuating the slide, the whole being adapted to operate substantially as described.

202,832. PROCESSES AND APPARATUS FOR DRYING STARCH. Thomas Kingsford, Oswego, N. Y. Filed Oct. 16, 1877.

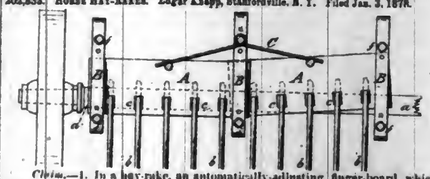
Brief.—Invention consists in subdividing the semi-liquid starch, while in a plastic state, into small particles, by passing it through a tank with perforated bottom, and over a moving absorbent surface while subjected to the action of heat at ordinary atmospheric pressure.



Claim.—1. As an improvement in the art of manufacturing starch, the method of treatment hereinbefore described, the same consisting in delivering the liquefied material in drops or small masses upon a moving absorbent surface while subjecting it in this state of subdivision to the action of heat at ordinary pressure of air, in the manner and for the purpose specified.

2. In a machine for drying starch, the combination of the tank *a a*, provided with the stirring-shaft A, and perforated bottom plate B, with the endless belt D, supporting and operating mechanism, as described, and steam-heating pipes F, all constructed and arranged to operate substantially as and for the purpose described.

202,833. HORSE HAY-RAKES. Edgar Knopp, Stanfordville, N. Y. Filed Jan. 3, 1878.



Claim.—1. In a hay-rake, an automatically-adjusting finger-board, which controls a series of teeth, and which is so hung in its supports as to be capable of rising bodily, and of yielding obliquely at either end to the action of the teeth, in correspondence with the irregularities of the ground over which they pass, substantially as herein set forth.

2. In combination with the axle *a* and teeth *b b*, an adjusting sectional finger board or boards, A A, capable of rising bodily or obliquely, and depressed by springs C, pivoted at their centers, and bearing at each end on the centers of the adjoining finger-boards, substantially as and for the purpose herein set forth.

3. The combination, with the axle *a* and teeth *b*, of the adjusting finger-boards A and slotted arms B B, substantially as herein set forth.

4. The combination, with the axle *a* and teeth *b*, of the adjusting finger-board A, springs C, and slotted arms B B, substantially as herein set forth.

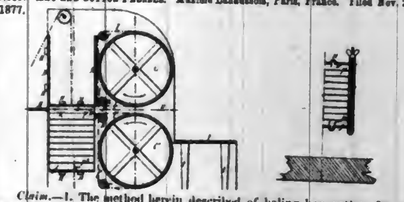
5. In a hay-rake, the centrally-pivoted and oppositely extending spring C, in combination with the movable finger-boards A A, substantially as set forth.

202,834. COMPOUNDS FOR LINING BARRELS, &c. Matthew Laffin, Chicago, Ill. Filed Mar. 15, 1878.

Brief.—Mixes by heat eight parts paraffine and one part bees-wax.

Claim.—A composition of paraffine and bees-wax for lining or coating barrels, packages, or other vessels or pipes, and coating eggs, fruits, and other articles, substantially as specified.

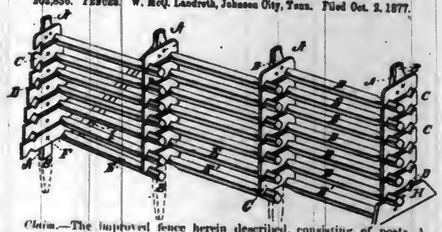
202,835. HAY AND COTTON PRESSES. Maxime Lahoussois, Paris, France. Filed Nov. 22, 1877.



Claim.—1. The method herein described of baling hay, cotton, &c., consisting in a succession of compressed layers delivered successively to a collector, and each layer held in its compressed condition until the requisite number of layers are delivered, then bound into one common bale, and substantially as specified.

2. In a baling press, the combination of the two compressing-cylinders, the carrying and delivering bands around them, a collector composed of a series of compartments, arranged so as to be successively presented to the delivery to receive the material compressed by the rolls and hold the same until the compartments are successively filled, substantially as described.

202,836. FENCES. W. McQ. Landreth, Johnson City, Tenn. Filed Oct. 2, 1877.



Claim.—The improved fence herein described, consisting of posts A, cross-pieces C, having notches D at each end, and rails E, extending from one side of one post to the opposite side of the next, and received by the cross-pieces, as and for the purpose set forth.

202,837. CURRY-COMBS. Wm. E. Lawrence and O. E. L. Holmes, New York, N. Y. Filed Apr. 10, 1878.

Brief.—A curry-comb having a grasp over the back is provided with a mane-comb, which can be detached and replaced or used in different positions.

Claim.—1. A curry-comb provided with a detachable mane-comb, substantially as set forth.

2. The combination of the curry-comb, a grasp or support for the hand at the back, and a mane-comb, as described.

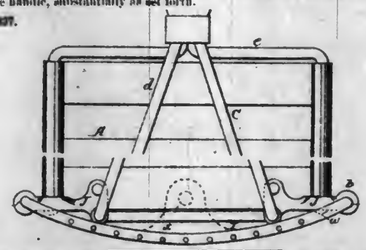
3. A curry-comb having a grasp or support for the hand at the back, and provided with attachments for connecting the mane-comb below the teeth, substantially as specified.

4. The combination of the comb and connecting-brackets J, adapted to support the mane-comb, and recessed to receive the wires forming the back frame, as set forth.

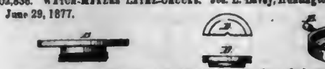
5. The combination, with the comb, of brackets J, secured thereto and connected to the wires *d*, as specified.

6. The brackets secured by riveting at *e* to the ends of the rods extending to the handle, substantially as set forth.

202,837.

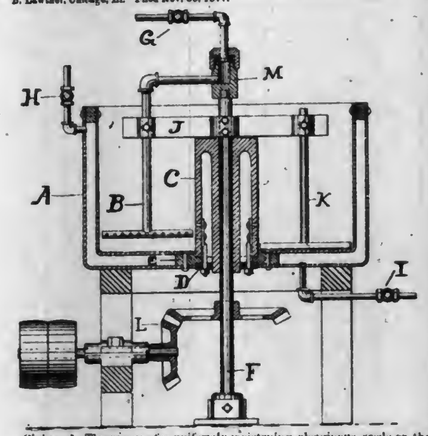


202,838. WATCH-MAKERS' LATHE-CHUCKS. Jos. E. Levey, Huntington County, Ind. Filed June 29, 1877.



Claim.—The combination of the internally-threaded cup C, set-screw E, jaws D, and disk B, having the threaded extension, substantially as specified.

202,839. MACHINES FOR TREATING OLEAGINOUS SEEDS FOR THE EXTRACTION OF OIL. A. B. Lawther, Chicago, Ill. Filed Nov. 30, 1877.



Claim.—1. The process for uniformly moistening oleaginous seeds or the meal thereof for the extraction of oil therefrom, which consists in giving to the seeds or meal a rapid rate of velocity, in circles and up and down, and subjecting the seeds or meal while thus in motion to heated vapors introduced into the cavities or wakes formed amidst the body of the mass of seeds or meal during the rapid motions of the seed or meal, substantially as and for the purposes set forth.

2. The combination of the relatively-enlarged central hub C, the relatively-shortened arms of the perforated stirrer B, and the reservoir A, substantially as and for the purpose described.

3. The steam-stirrer B, provided with perforated horizontal arms, which are caused, by suitable gearing, to revolve between the walls of the reservoir A and the hub C, near the bottom of the reservoir containing the seeds or other oleaginous substances, substantially as described.

4. The combination of the reservoir A, partially surrounded with a steam-chamber, and provided with an enlarged hub, C, the central portion of which serves as a bearing box for the shaft F, the steam-stirrer having perforated horizontal arms, which are caused to revolve between the wall of the reservoir A and the hub C, and suitable steam-supplying pipes and valves, substantially as described.

5. Pendent stirrers B and K, with perforated horizontal arms, which are set at different altitudes with respect to the bottom of the reservoir A, and both in near proximity to said bottom, and both provided with perforations for the discharge of steam backward, and both revolving between the wall of the reservoir A and the enlarged hub C, substantially as described.

202,840. KNITTING-MACHINES. Wm. T. Lemon, Detroit, Mich. Filed Mar. 30, 1876.

Brief.—For counting the rows of stitches knit, either in plain work or narrowing, by means of an index graduated to correspond with the number of teeth in the ratchet-wheel, which latter is controlled by a double pawl on the bed of the machine coming in contact with a pivoted lever, which operates to turn the said ratchet-wheel in whichever direction the cylinder of the machine is revolved.

Claim.—1. In a knitting-machine, the bifurcated arm N, pivoted lever M, and pawl O, in combination with the ratchet-wheel H and pawl P, provided with the spring Q, whereby the ratchet wheel is rotated when the lever M is moved in either direction, substantially as and for the purpose set forth.

2. The bifurcated arm N, carrying the pawl O, in combination with the pivoted lever M and ratchet wheel H, all being constructed and relatively arranged substantially as and for the purpose set forth.

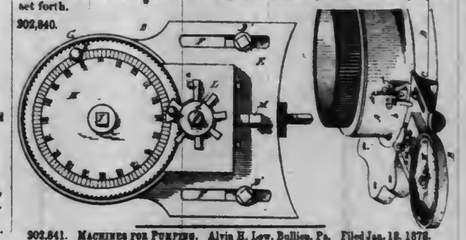
3. In a knitting-machine, the bifurcated arm N, pivoted lever M, pawls O and P, and ratchet-wheel H, in combination with the double pawl T, and mechanism for supporting and operating the same, all constructed and relatively arranged substantially as and for the purpose set forth.

4. In a knitting-machine, the main plate E, provided with the rim G and slots F, in combination with the bed C, provided with the adjusting-screws D' D', all constructed and arranged substantially as and for the purpose set forth.

5. The ratchet-wheel H, with its knob K and operating mechanism, in combination with the toothed wheel L, whereby the said knob serves to revolve and aid in setting the said ratchet, as well as to revolve the wheel L, substantially as and for the purpose set forth.

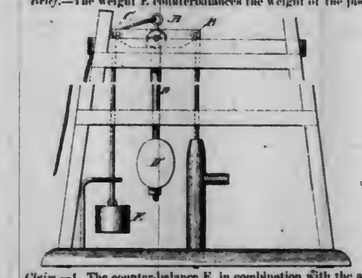
6. The ratchet-wheel H, with its knob K and operating mechanism, in combination with the wheel L and stop *e*, substantially as and for the purpose set forth.

202,840.



202,841. MACHINES FOR PUMPING. Alvin H. Low, Bullion, Pa. Filed Jan. 18, 1878.

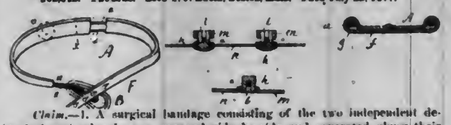
Brief.—The weight E counterbalances the weight of the piston-rods.



Claim.—1. The counter-balance E, in combination with the axle A, lever-pendulum D, levers B and C, with sucker-rods of pump, substantially in the manner and for the purpose herein set forth and shown.

2. The combination of the rock-shaft A, the levers B and C, the balance-weight E, and balance-lever pendulum D with sucker-rods of pump, substantially in the manner and for the purpose herein set forth and shown.

202,842. TRUSSES. Leon T. J. Lubin, Boston, Mass. Filed July 13, 1877.



Claim.—1. A surgical bandage consisting of the two independent detached spring-bands *a a*, arranged side by side and separated along their length, and constructed to act automatically and independently of each other in a transverse and horizontal direction, and being inclosed in a suitable casing or confining device for the separated ends thereof, the whole constructed and combined substantially as and for the purpose set forth.

2. The combination of the slotted screw-stud *h* and screw-nut *n* with the bandage, all substantially as described, for the purpose specified.

202,843. TRUSSES. Leon T. J. Lubin, Boston, Mass. Filed Aug. 16, 1877.

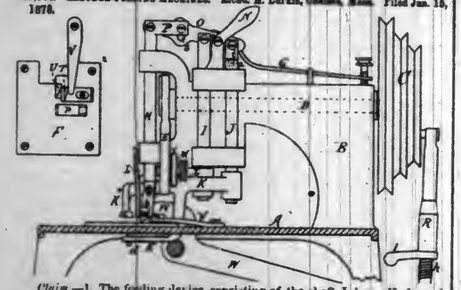


Claim.—1. The back bearing-plate C, constructed of a skeleton-frame, D, composed of longitudinal and transverse spring-bands *f g*, cushioned on one side, in combination with the two diverging elastic straps F, connected at one end to the top and bottom parts of the back bearing-plate, and attached at their other end to a pad-holder, B, substantially as shown and described.

2. A junction-piece, G, having a button-hole, *q*, buckle *c*, and loop *s*, substantially as described, for the purpose specified.

3. The skeleton-frame D, composed of a longitudinal spring-band, *f*, and transverse spring-bands *g*, substantially as and for the purpose described.

202,844. LEATHER-FOLDING MACHINES. Richd. H. Laffin, Chelsea, Mass. Filed Jan. 15, 1878.



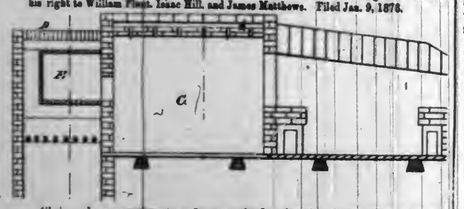
Claim.—1. The feeding device consisting of the shaft J, lever K, formed with the branches K′ and K″, plate *p*, and eccentric E, combined and operated together as and for the purposes specified.

2. In a cutting and folding machine, the shafts H I J and arms K and L, constructed, combined, and arranged to operate together as and for the purposes specified.

3. The combination of shaft J, arm K, with its branches K′ and K″, plate *p*, and spring G, operating together substantially as and for the purposes specified.

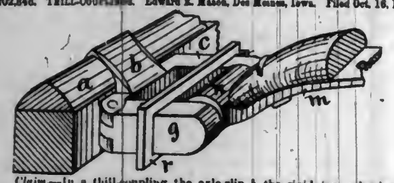
4. The spring G, shafts H I J, and connector O, in combination with arms L and K, plate *p*, and eccentric E, as and for the purposes specified.

202,845. REVERBERATING FURNACES. William Mann, Newcastle, Pa., assignor of one-half his right to William Fleet, Isaac Hill, and James Matthews. Filed Jan. 9, 1878.



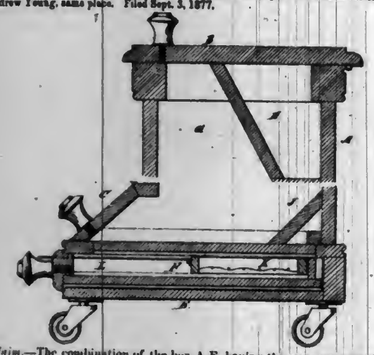
Claim.—In a reverberatory furnace, the fire-chamber C, surrounded by air-spaces opening below the grate and into said fire-chamber, in combination with the retort E, arranged above the level of the grate, and opening laterally into the fire-chamber, and the supplemental furnace D, arranged to discharge its gases into the retort, substantially as and for the purpose described.

202,846. THILL-COUPLING. Edward E. Mason, Des Moines, Iowa. Filed Oct. 16, 1877.



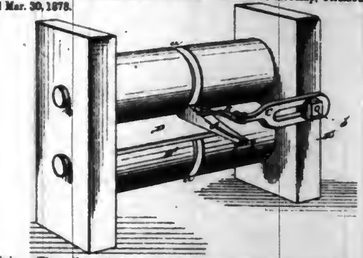
Claim.—In a thill-coupling, the axle-clip *b*, the rigid jaw *c*, having the fixed pintle *d*, the hinged jaw *g*, the sliding loop *r*, and the removable thill-iron *m n*, when arranged and combined in the manner shown and described, and for the purposes specified.

202,847. FUEL-BOXES. William McCarroll, Chicago, Ill., assignor of one-half his right to Andrew Young, same place. Filed Sept. 3, 1877.



Claim.—The combination of the box A E, having the compartments G H and lids B C, with the drawer F, substantially as and for the purposes described.

202,848. GUIDES FOR WIRE-ROLLING MACHINES. William W. McCallip, Columbus, Ohio. Filed Mar. 30, 1878.



Claim.—The trilateral-shaped guide A, having its inner end *x* flaring, and then tapering to the outer smaller end *y*, and said guide connected, by a spring, B, with the arm C, substantially as and for the purposes set forth.

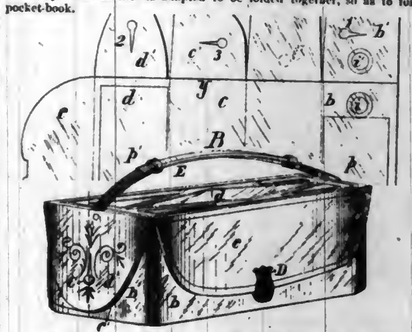
202,849. LIFTING-JACKS. Joel M. McClintock, Duvall's Bluff, Ark. Filed Mar. 6, 1878.



Claim.—The standard A, having groove *b*, and plate C, hinged at the top thereof and covering the said groove, in combination with the standard A′, having projecting rack B and lever D, the said standards being provided each with a metallic ball or band encircling the other, substantially as described, for the purpose herein shown and specified.

202,850. FOLDING SATCHELS. Alexander McKinnon, Chicago, Ill. Filed Oct. 4, 1877.

Brief.—The satchel is adapted to be folded together, so as to form a pocket-book.

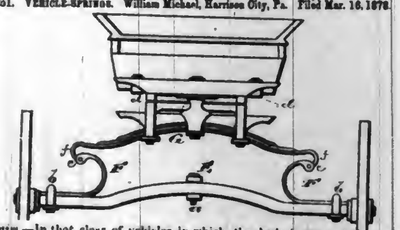


Claim.—1. The satchel-blank B, cut substantially as described, and adapted to fold in the manner set forth, and form a satchel having outside flaps *d d e*, as shown.

2. The blank B, composed of four subdivisions or portions, *a*, *b*, *c*, and *d*, provided with end pieces, one of said end pieces having buttons C, and the other end pieces having button-holes to button thereon, substantially as and for the purpose specified.

3. The front *b*, end pieces *b′*, provided with eyelets, in combination with the end pieces *a′*, provided with studs C, as and for the purposes specified.

202,851. VEHICLE-SPRINGS. William Michael, Harrison City, Pa. Filed Mar. 16, 1878.



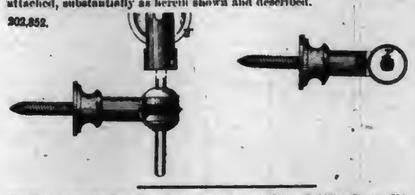
Claim.—In that class of vehicles in which the body is supported on a combination of semi-elliptical and C-shaped springs, the semi-elliptical spring G, curved inward at its ends and pivoted within the heads of the C-shaped end spring F, the latter being curved inward, as shown, from their heads, and secured to the axle in such manner that the combined springs shall have both an outward and downward movement when weight is applied, substantially as described.

202,852. CURTAIN-CORD TIGHTENERS. John F. Meichardt, Brooklyn, N. Y. Filed May 10, 1877.

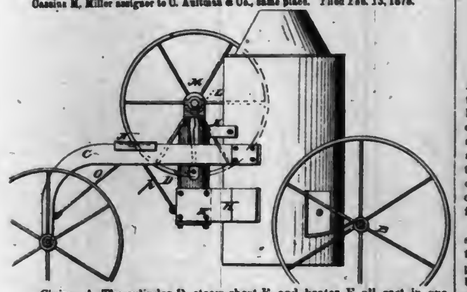
Brief.—To raise or lower the tightening-rod the nut is embraced between the two lips that guide it.

Claim.—The combination of a plate having projecting lips, an intermediate screw-nut, and a non-rotating vertically-adjustable screw-rod passing through both the nut and lips, to the upper end of which the curtain-cord is attached, substantially as herein shown and described.

202,852.



202,853. PORTABLE ENGINES. Cassius M. Miller and Edgar E. Miller, Canton, Ohio; said Cassius M. Miller assignor to C. Aultman & Co., same place. Filed Feb. 13, 1878.



Claim.—1. The cylinder D, steam-chest E, and heater F, all cast in one piece, and arranged, relatively to each other, substantially as described, for the purpose specified.

2. The heater-cover constructed with the case or box I, to project into the heater, substantially as described, for the purpose specified.

3. The heater-cover constructed with the box or case I, and adapted to receive the water-pipes, in the manner substantially as described, for the purpose specified.

4. The heater and steam-chest cast with the internal end flanges *h h*, substantially as described, for the purpose specified.

5. The cylinder, steam-chest, and heater, cast in one piece, in combination with the braces H H, connecting them to the upright boiler, substantially as described.

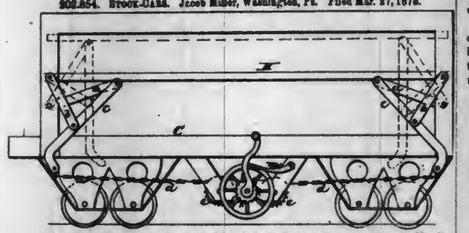
6. The cylinder, steam-chest, and heater, cast in one piece, in combination with the braces H H and arms L L, substantially as described, for the purpose specified.

7. The steam-chest and heater, connected to the reach C, so as to equalize the strain between them and the reach, by means of suitable stays or ties.

8. The combination of the tie-rods *o p* and bridge N with the reach C and the steam-chest and heater, substantially as described, for the purpose specified.

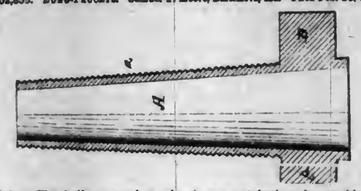
9. The bridge N, adapted for adjustment upon the reach C, substantially as described, for the purpose specified.

202,854. STOCK-CARS. Jacob Miller, Washington, Pa. Filed Mar. 27, 1878.



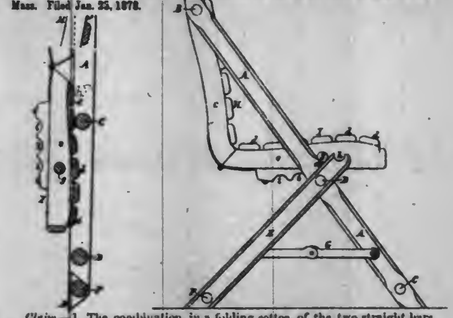
Claim.—In combination with the adjustable and movable bottom H, the bars *a*, *b*, and *c*, and their connection with the chains *d d*, the shafts G G′, and shaft F, with their wheels, all operating as and for the purpose set forth.

202,855. BUNG-FAUCETS. Samuel T. Moore, Baltimore, Md. Filed Feb. 26, 1878.



Claim.—The hollow tapering tube A, open at both ends, provided with the exterior screw-threads *a*, and at its larger end with the outwardly-projecting wings or hand-holds B B, the screw-threads extending the entire length of the tube from the wings B to the smaller end, substantially as and for the purposes herein set forth.

202,856. FOLDING SETTEES. Henry T. Morse, Leander B. Morse, and Frank F. Morse, Athol, Mass. Filed Jan. 25, 1878.



Claim.—1. The combination, in a folding settee, of the two straight bars A A, connected together by suitable tie-rods; the rear legs E E, connected together at their lower ends by a tie-rod, and pivoted to the bars A A, and held in position, when extended, by the jointed braces G G; the back H, pivoted at or near its upper edge to the upper ends of the bars A A; and the seat I, hinged or pivoted by its rear edge to the lower edge of the back, and adapted to rest upon and be supported by the central pivoted tie-rod, and to be adjusted horizontally to two or more different positions thereon, without materially changing its height from the floor or affecting the position of the several parts of the frame relative to each other, substantially as and for the purposes described.

2. The combination, in a folding settee, of the two straight bars A A and suitable tie-rods, connecting them together; the rear legs E E, connected together at their lower ends by a tie-rod, and pivoted to the bars A A, and projecting above or beyond said bars when extended; folding braces G G; the back H, pivoted to the upper ends of the bars A A by its upper edge, and adapted to be vibrated about said pivotal connection; and the seat I, hinged or pivoted at its rear edge to the lower edge of the back H, and provided with a stud, bolt, or lug, *g*, at each end, adapted to rest in the angular bearings *a a*, substantially as and for the purposes described.

3. The combination of the bars A A, legs E E, braces G G, and suitable tie-rods for connecting said bars and legs together, as set forth; the back H, pivoted by its upper edge to the upper ends of the bars A A; the seat I, hinged by its rear edge to the lower edge of the back H, and provided at each end with a stud, bolt, or lug, *g*, projecting therefrom; and two or more bearings, *a* and *b*, on each end frame, to receive said studs, bolts, or lugs, substantially as and for the purposes described.

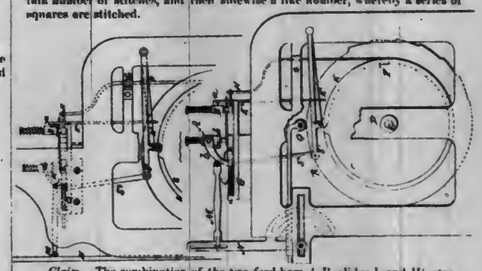
4. In a folding settee, the back H, pivoted at or near its upper edge to the end frames of the settee, and depending therefrom, and adapted to be vibrated about said pivotal connection, in combination with the seat I, hinged at its rear edge to the lower edge of said back, and provided with a projecting stud, bolt, or lug, *g*, at each end thereof, and two or more bearings, *a* and *b*, on each end frame, to receive said studs, bolts, or lugs, substantially as and for the purposes described.

5. The combination, in a folding settee, of the bars A A, legs E E, tie-rods B, C, D, and F, braces G G, back H, pivoted at or near its upper edge to the upper ends of the bars A A, and the seat I, hinged to the back, as set forth, and provided with one or more bearings, *i i*, at each end thereof, adapted to engage with and rest upon the tie-rod D, substantially as and for the purposes described.

6. In a settee, the back H, pivoted to the upper ends of the end frames, in combination with the seat I, hinged by its rear edge to the lower edge of said back, and provided with one or more bearings, *i i*, at each end thereof, and the tie-rod D, connecting the end frames, and adapted to support the seat in one or more positions, substantially as and for the purposes described.

202,857. SEWING-MACHINES. Robert W. Merrell, Thos. Parkinson, and Joseph Parkinson, Bradford, England. Filed July 1, 1876. Patented in England, July 9, 1874.

Brief.—The invention is for quilting fabrics. The materials are fed forward and laterally by two bars pressing upon the fabric, and operated alternately by cams from beneath the table. The materials are fed forward a certain number of stitches, and then sidewise a like number, whereby a series of squares are stitched.



Claim.—The combination of the two feed-bars A B, slides L and H′, step-cams E and R, and cam S, with their levers and connections, substantially as described.

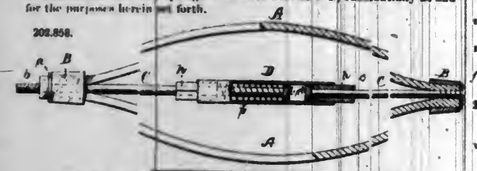
202,858. VEHICLE-SPRINGS. George F. Muldoon and Edgar P. Davis, Omaha, Nebr.; said Davis assignor to said Muldoon. Filed Dec. 18, 1877.

Claim.—1. The combination, with the springs A A, having their ends connected by ferrules B B, of the rods C C′, having their inner ends surrounded

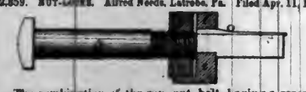
by a closed casing, D, and a spring, *i*, placed around the inner end of one or both rods, within the casing, for the purposes herein set forth.

2. The sleeve D, with hollow screw plugs *h h*, rods C C, with heads *d d*, one or more springs, *i*, and the regulating-nuts *b b*, all constructed as described, and combined with the springs A A and ferrules B B, substantially as and for the purposes herein set forth.

202,858.

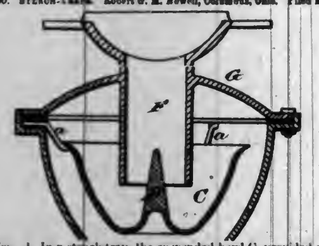


202,859. NUT-LOCKS. Alfred Nords, Latrobe, Pa. Filed Apr. 11, 1878.



Claim.—The combination of the cap, nut, bolt, having a recess in its side, and a locking device to keep the cap in place, substantially as described.

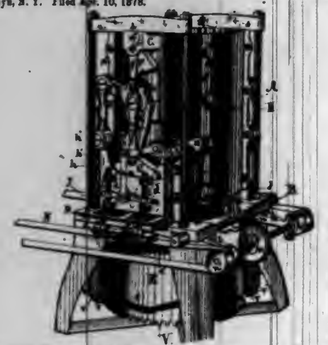
202,860. STENCH-TRAPS. Robert G. M. Newell, Columbus, Ohio. Filed Mar. 30, 1878.



Claim.—1. In a stench-trap, the suspended bowl C, provided with projection D, forming a water seal, in combination with the pipe F, arranged substantially as shown.

2. The combination, substantially as described, of the casing A, provided with outlet B at its lower end, the cover G, having inlet-pipe F, which extends downward within said cover, and the suspended bowl C, substantially as described, and for the purposes set forth.

202,861. BRICK-MACHINES. Henry D. Phillips, Baltimore, Md., and Carmi H. Williams, Brooklyn, N. Y. Filed Apr. 10, 1878.



Claim.—1. In a brick machine, a plunger adapted at each stroke to compress the clay to a point within the mold, and be then withdrawn flush with the surface of the same, as set forth.

2. In a brick-machine, a movable mold adapted to automatically force a cover-plate into close contact with one of its sides as the bricks are formed, the said plate being subsequently released, substantially as described.

3. In a brick-machine, a reciprocating plunger actuated by a series of cogged cams connected by straps, substantially as described.

4. In a brick-machine, a reciprocating plunger actuated by means of a series of cogged cams, in combination with mechanism for adjusting the throw of the same, as set forth.

5. In a brick-machine, a reciprocating mold having a lubricating-roller, which at each stroke of the mold traverses the face of the releasing-plate, substantially as described.

6. In a brick-machine, a releasing-plate having on its upper surface a felt or fibrous cover saturated with oil, the same being adapted to wipe and lubricate the interior of the molds, substantially as described.

7. In combination with the cogged cams and plunger, the eccentric-pin *e'*, as described.

8. In combination with the plunger and cogged cams, the arms H H' J and intermediate sleeve *k*, substantially as described.

9. In combination with the mold M, the wedge *u* and set-screws *o'*, as set forth.

10. In combination with the mold M, having roller P, the plates F, having felts F', substantially as described.

11. In combination with the cylinder E, having cam-races, as described, the rods I J, actuating, respectively, the plunger and releasing-plates by intermediate connections, substantially as described.

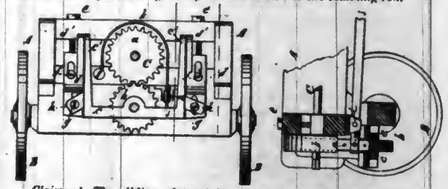
12. In combination with the cylinder E, the gear-wheel V, having flange *v'* and the rollers *v*, substantially as described.

13. In combination with the plunger G and cogged cams F F' F'', the mold M and cam T, substantially as described.

14. In combination with the plunger G and cams F F' F'', the straps *f f' f''*, block *f'''*, and guides *v*, substantially as described.

202,862. MOUNTED HORSE-POWERS. Marcellus H. Pitts, Chicago, Ill., assignor to H. A. Pitts' Sons Manufacturing Company, same place. Filed Apr. 10, 1878.

Brief.—The adjustable plates and frame are raised or lowered to use various sizes of pinions to give any desired motion to the tumbling-rod.

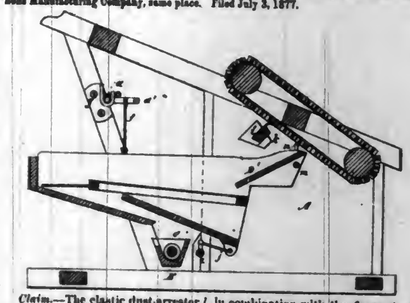


Claim.—1. The sliding plates *d*, in combination with the frame *c c'*, adjusting-screws *e*, and set-screws *f*, substantially as specified.

2. The combination of the plates *d*, adjusting-screws *e*, and set-screws *f* with the frame *c c'*, ears *h*, and set-screws *g*, substantially as described.

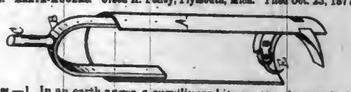
3. The brake-band *k*, lever *j*, and pinion *a*, in combination with the rod *i*, tubular center pin *S*, and bar W, substantially as and for the purpose set forth.

202,863. GRAIN-SEPARATORS. Marcellus H. Pitts, Chicago, Ill., assignor to H. A. Pitts' Sons Manufacturing Company, same place. Filed July 3, 1877.



Claim.—The elastic dust-arrester *l*, in combination with the frame A and carrier C, for preventing a return air-current by the movement of the under portion of the carrier, substantially as described.

202,864. EARTH-AUGERS. Orson H. Polley, Plymouth, Mich. Filed Oct. 23, 1877.

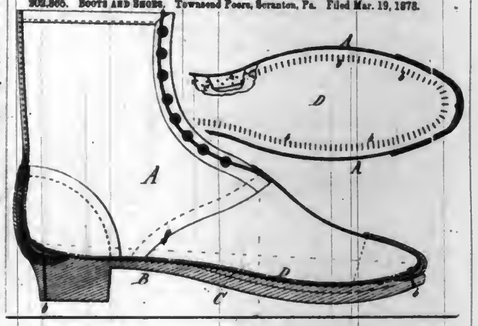


Claim.—1. In an earth-auger, a curvilinear bit or cutter, D, attached to the cylinder by a dovetail triangular-shaped flange, *a*, inserted in a similarly-shaped slot, *b*, in the cylinder, and by a bolt, *d*, passing through the said cylinder and cutter, substantially as described and shown.

2. In combination with the cutter D, the hook E, constructed to operate substantially as and for the purpose set forth.

3. In an earth-auger, the combination of the cylinder A, cutter D, and hook E, constructed and arranged to operate substantially as specified.

202,865. BOOTS AND SHOES. Townsend Poore, Scranton, Pa. Filed Mar. 19, 1878.



Claim.—1. A boot or shoe composed of a canvas upper, A, outer sole or soles B, and metal insole C, the different parts united by nails, headed over or clinched on the metallic insole, whereby the canvas upper is clamped and rigidly held in place, all substantially as set forth.

2. The yielding lining D, in combination with the soles B and C, whereby the nails *b* are enabled to penetrate the metal insole and clinch above or upon the metallic insole C, substantially as described.

3. The new article of manufacture herein described, consisting of a boot or shoe with uppers made of canvas saturated with asphaltum, as described.

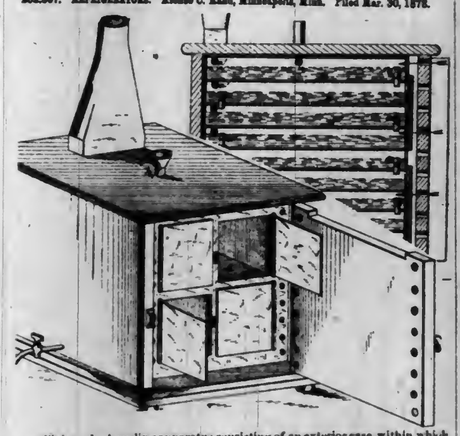
202,866. MICROMETER-GAGES. George M. Pratt, Middletown, Conn., assignor to the Victor Sewing Machine Company, same place. Filed Mar. 22, 1878.



Claim.—1. A gage-screw for measuring instruments, having its end formed by a separate tip of tempered steel, substantially as set forth.

2. A micrometer gage-screw having a socket formed in its end, and provided with a separate tip of tempered steel or similar hard material, substantially as and for the purpose set forth.

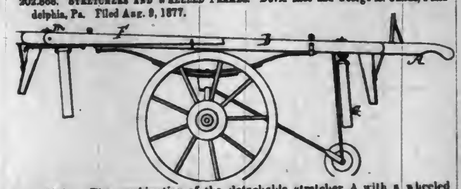
202,867. REFRIGERATORS. Alonzo C. Rand, Minneapolis, Minn. Filed Mar. 30, 1878.



Claim.—1. A cooling apparatus consisting of an exterior case, within which is placed one or more refrigerating receptacles, with a surrounding space between the two containing water, with air-ducts and a flue, whereby evaporation is increased and a lower temperature attained, substantially as set forth.

2. The combination, in a cooling apparatus, of an exterior case, through which air is admitted, and an interior receptacle, the space between being partitioned to form water-tanks, the exterior case being provided with openings to allow the passage of a current of air over and in contact with the surface of the water and the moistened walls of the case and receptacle, substantially as herein set forth.

202,868. STRETCHERS AND WHEELED FRAMES. David Rice and George K. Childs, Philadelphia, Pa. Filed Aug. 9, 1877.



Claim.—The combination of the detachable stretcher A with a wheeled frame, B, having longitudinal side bars *b b* and connecting cross-pieces, on which the said stretcher is adapted to be placed, all substantially as described.

202,869. VENTILATORS FOR HOUSES. Jean Elie Richard, New York, assignor of one-half his right to John S. Hulin, Brooklyn, N. Y. Filed Sept. 29, 1877.

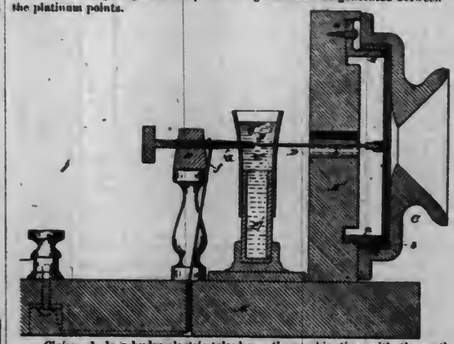


Claim.—1. The ventilator device consisting of the conical main flue A, the discharge-flue C, forming therewith the air-passage *b*, the conical disks E D, having flaring curved partitions *d*, forming air-passages *e*, opening into passage *b*, and the overhanging capping G, substantially as specified.

2. The combination, with the flue C, having projecting hooks *i*, of the capping G, having a peripheral notch or notches, substantially as specified.

202,870. SPEAKING-TELEPHONE TRANSMITTERS. Geo. B. Richmond, Lansing, Mich. Filed Jan. 19, 1878.

Brief.—For giving free escape to the gases that are generated between the platinum points.



Claim.—1. In a hydro-electric telephone, the combination, with the vertical diaphragm, of the horizontal platinum points and the water-tube, substantially as and for the purposes set forth.

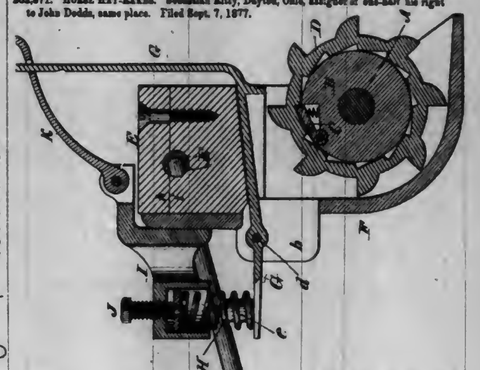
2. In a hydro-electric telephone, the flexible water-tube, substantially as and for the purposes set forth.

3. In a hydro-electric telephone, the combination, with the flexible water-tube E, of the rigid tube E', upon which the flexible tube is mounted, substantially as described and shown.

4. The combination, with the diaphragm, of the flexible water-tube and the platinum points passed through the walls of the flexible tube on opposite sides thereof, and in line with the center of the diaphragm, substantially as described and shown.

5. The frame for a telephone, consisting of the base A, standard A', and cap C, constructed and arranged substantially as described and shown.

202,871. HORSE HAY-RAKES. Sebastian Ritzy, Dayton, Ohio, assignor of one-half his right to John Dodds, same place. Filed Sept. 7, 1877.



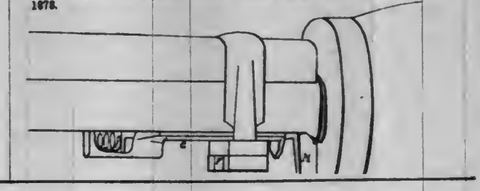
Claim.—1. The cast-metal head F, constructed in the form shown and described, adapted to support the axle, catch G, latch K, and spring H.

2. The metal head F, inclosing the ratchet-wheel and sustaining the ends of the divided axle, in combination with the rake head secured thereto, and the catch G, extending between the head and wheel, and pivoted in the head, as shown.

3. The spring H, in combination with the catch G, arm I, and screw J, arranged in the manner and for the purpose described.

4. The sleeves or thimbles K, arranged within the divided rake-head to receive and hold the rake-teeth.

202,872. SCRAPERS FOR VEHICLE-WHEELS. Martin Robbins, Lowell, Mass. Filed Apr. 1, 1878.

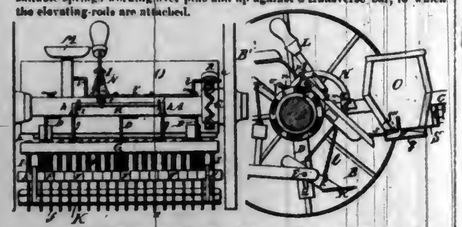


Claim.—1. The spring-scraper M I, as and for the purpose herein specified.

2. The scraper M, in combination with the plate G and spring I, as and for the purpose herein specified.

202,873. COMBINED HARROW AND SEEDING-MACHINE. George W. Roberson and Henry F. Roberson, Steuben, N. Y. Filed Jan. 23, 1878.

Brief.—The drag-bars are pivoted to a transverse bar that is vertically adjustable in slotted standards. These bars are held down to their work by suitable springs working over pins and up against a transverse bar, to which the elevating-rods are attached.

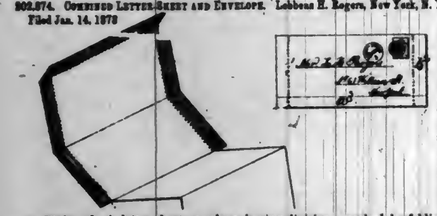


Claim.—1. The drag-bars F, pivoted upon rod E, in combination with the drag or scraper K, having pivoted arms k' and slotted brackets D, substantially as and for the purpose herein shown and specified.

2. The combination of the slotted arms or brackets D, rod E, drag or scraper K, having pivoted arms k', and chains l, for adjusting the pitch or angle of the scraper, substantially as and for the purpose herein shown and specified.

3. As an improvement in combined harrows and seeding-machines, the combination of the perforated cross-bar G, having rods or chains g g, for connecting it with suitably constructed elevating-levers, suspension-rods h, having retaining keys or wedges k and springs I, pivoted drag-bars F, rod E, and pivoted arms k', carrying the drag or scraper K, whereby the drag-bars and scraper may be raised simultaneously by operating the lever for elevating cross-bar G, substantially as and for the purpose herein shown and specified.

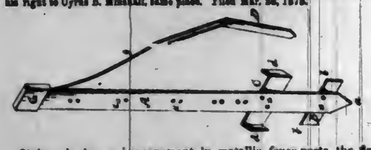
202,874. COMBINED LETTER-SHEET AND ENVELOPE. Lebbeus H. Rogers, New York, N. Y. Filed Jan. 14, 1878.



Claim.—1. A letter-sheet envelope having divisions marked by folding lines or folding-line indications, one of the two head-divisions containing on the face side of the letter-sheet, and as the heading thereof, indications for writing the name and address, and the folding or folding-line indications and gumming being such as described, so that when closed the heading of the letter will become the address of the envelope, substantially as herein shown and set forth.

2. A letter-sheet envelope having folding-lines or folding-line indications, so that the outside of the envelope shall be on the face side of the letter-sheet, allowing the sealing-flaps to be gummed on the rear side, whereby written matter upon the face side of said letter-sheet may be copied upon any suitable sheet of paper which may have been subjected to a dampening process, substantially as herein shown and set forth.

202,875. FENCE-POSTS. Edward D. Bassman, Mount Pleasant, Iowa, assignor of one-half his right to Cyrus B. Minshall, same place. Filed Mar. 26, 1878.



Claim.—1. As an improvement in metallic fence-posts, the flat post A, having plates B C, provided with projecting wings b d, the wings d of plate C being bent at right angles to the post, substantially as described, for the purpose herein set forth.

2. The combination, with the fence-post constructed as herein described, of the rod g, stake D, and cap G, substantially as and for the purpose herein set forth.

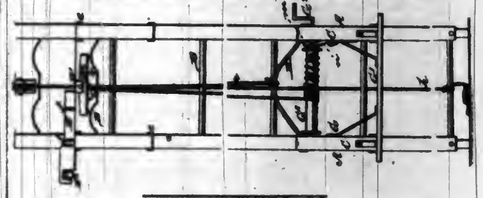
202,876. ELEVATING-LADDERS. Peter Eaton, Sulphur Springs, Ohio. Filed Feb. 2, 1878.

Brief.—The ladder has a sliding platform operated by a windlass, and a sliding sash carrying an arm having a toothed bar pivoted at right angles to it, to secure the ladder to the roof of a building. The adjustable sash is operated by a rope and pulley.

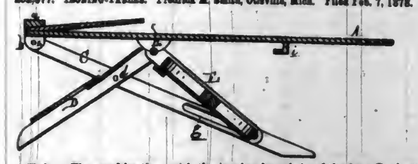
Claim.—1. A ladder for painters and builders, having an adjustable device to engage with the top or roof of a building, in combination with a platform that can be elevated and lowered independently of the engaging device, the latter being at rest, substantially as described.

3. The sliding sash D, provided with the arm D', having the pivoted toothed bar D², substantially as and for the purposes set forth.

3. The combination of the sliding sash G with platform G' and windlass G², the pawl and ratchet s s, the hoisting-rope p, and sliding sash D, with arm D', having pulley s, all substantially as and for the purposes set forth.

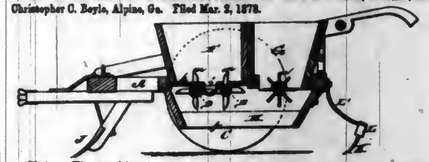


202,877. IRONING-TABLES. Fredrick M. Smith, Otisville, Mich. Filed Feb. 7, 1878.



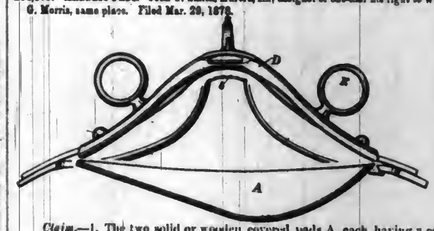
Claim.—The combination, with the ironing-board A, of the legs C, pivoted to the under side of the board, and having slots g near their lower ends, the braces E, sliding at their lower ends in the said slots, the legs D, pivoted to the legs C and to the upper ends of the braces, and the stops h on the board, all constructed and arranged substantially as described and shown.

202,878. SEED-PLANTER AND FERTILIZER-DISTRIBUTER. Thomas B. Smith, Sublette, and Christopher C. Boyle, Alpine, Ga. Filed Mar. 2, 1878.



Claim.—The combination of the hoppers F and G, shafts B D, with knives m m, shafts E, with stirrers n n, slotted trough H, plow J, and coverers K, all constructed as described, and secured to a frame, A, mounted upon wheels, substantially as and for the purposes herein set forth.

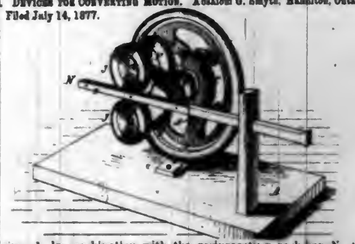
202,879. HARNESS-PADS. John T. Smith, Aurora, Ill., assignor of one-half his right to Wm. G. Morris, same place. Filed Mar. 29, 1878.



Claim.—1. The two solid or wooden covered pads A, each having a concaved upper surface and an under surface convexed, as described, to conform to the back of the horse, in combination with a leather or flexible connection, the same being the only connection between them.

2. The harness-pad described, as made with the two separate wooden or solid pads A, each being convex on its under side and slightly concave on its upper face, in combination with the leather flexible connection b, and with the flexible back-band D, these forming the only connections, all substantially as shown and described.

202,880. DEVICES FOR CONVERTING MOTION. Absalom G. Smyth, Hamilton, Ontario, Canada. Filed July 14, 1877.



Claim.—1. In combination with the reciprocating rack-bar N, the two wheels J J, gearing with said bar, mounted upon the shafts G G, and each provided with rolling locks L, placed in the eccentric-recess K, and the spring M, as set forth and described.

2. The block I, provided with bearings for the two shafts G G, whereon

are mounted the wheels F and J, supported by the spindle E of the wheel B, as set forth.

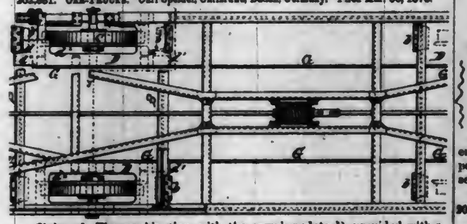
3. The wheel B, mounted upon the spindle E, and provided with the pinion D, combined with the wheels F and shafts G, coupled as shown and described, and the reciprocating rack-bar N, whereby said wheels F F are alternately rotated, and their motion communicated to said wheel B, as described.

4. The wheel J, turning upon the shaft G, and provided with the eccentric-recess K, combined with the roller L and flat U-shaped spring, as shown and described.

5. The wheel J, provided with the eccentric-recess K, and the roller L placed therein, combined with the U-shaped spring M, one blade of which is longer than the other, as and for the purpose set forth.

6. The wheel J, combined with the shaft G, constructed with a head, H, and shoulder h below said head, and the block I, provided with the annular shoulders S, for the purpose of reducing friction, as set forth.

202,881. CAR-TRUCKS. Carl Speidel, Carlsruhe, Baden, Germany. Filed Mar. 20, 1878.



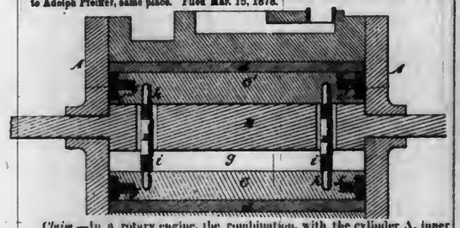
Claim.—1. The combination, with the carrying-plate D, provided with a segmental recess on each end, and the supported wheel and its accessories, of the cross-girts B and brackets b, the upper face of which forms a segment, while the lower face projects under the supporting-plate, all arranged, constructed, and operating substantially as shown and described, for the purpose specified.

2. The combination of the movable plate D, provided with a segmental recess, d, and ears or projections, d', with the bracket b, to limit the motion of the wheel in its vertical rotation, substantially as described, for the purpose specified.

3. The combination, with the movable plates D and their supported wheels, of the spring-bars G, substantially as described, for the purpose specified.

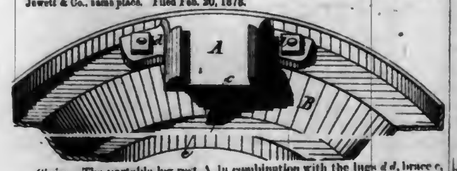
4. The combination, in a car or truck, of the cross-girts B and brackets b, the plates D, hangers E, axle-boxes F, wheels C, and spring-bars G, connecting two wheels and their accessories on the same side of the truck or car, all constructed, arranged, and operating substantially as described, for the purpose specified.

202,882. ROTARY ENGINES. Felix Starkenberg, Neenah, Wis., assignor of one-half his right to Adolph Pfeiffer, same place. Filed Mar. 15, 1878.



Claim.—In a rotary engine, the combination, with the cylinder A, inner cylinder or eccentric B, provided with deep longitudinal grooves g g, and rods D D, having springs i i, and passing through said eccentric, of the pistons C C, provided in their faces with longitudinal concaved grooves e e, and packing d d, adapted or constructed to conform to the concavity of said grooves e e, and provided with coincident faces with the inner circumference of the cylinder A, substantially as and for the purpose set forth.

202,883. STOVE-BOTTOMS. Gaylord S. Stannard, Buffalo, N. Y., assignor to Sherman S. Jewett & Co., same place. Filed Feb. 20, 1878.



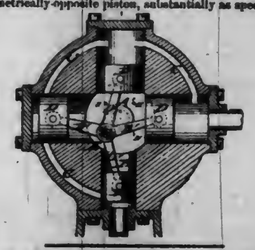
Claim.—The portable leg-rest A, in combination with the lugs d d, brace c, and stove, cast on or bolted to the stove-bottom, all as set forth and described.

202,884. ROTARY ENGINES. Oscar Steuberg, Helsingfors, Finland, Russia, assignor to Julius Blancke, Merseburg, Germany. Filed Mar. 21, 1878.

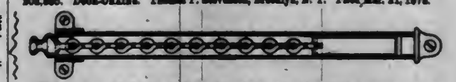
Claim.—1. In a rotary engine, the combination of the solid casing having cylinders radiating from a common center space, also a connecting channel or duct, and supply and discharge ports, with pistons coupled to a common crank-pin, and revolved by the successive action of steam or water upon the same, substantially as and for the purpose set forth.

2. The combination of a casing having cylinders radiating from a center space at right angles to each other, a connecting channel or duct, and supply and discharge ports, with pistons successively acted upon and coupled to a common crank, the piston of the first or entrance cylinder having but half the area of the diametrically-opposite piston, substantially as specified.

202,894.

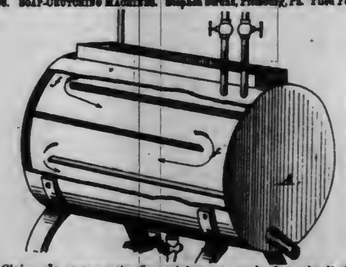


202,895. DOOR-CHAINS. Thomas F. Stevenson, Brooklyn, N. Y. Filed Mar. 21, 1878.



Claim.—A door check or fastening-chain provided with a weight at one end, in combination with the mouth or stop piece through which the chain passes, the vertical case containing the weight, and provided with lugs for securing said case in position, substantially as set forth.

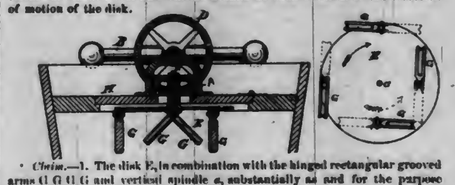
202,896. SOAP-CRUTCHING MACHINES. Stephen Barnes, Pittsburg, Pa. Filed Feb. 18, 1878.



Claim.—In an apparatus for crutching soap, a horizontal cylindrical vessel having centrally mounted therein a shaft provided with a series of flat blades and surrounded by a cylindrical jacket, leaving an intervening annular space having a series of partial longitudinal partitions starting alternately from opposite ends of the vessel, whereby a tortuous passage, extending entirely around the cylindrical vessel, is formed, which is provided with induction-pipes for steam and water, and an eduction-pipe for the escape of the same, substantially as and for the purposes specified.

202,897. WASHING-MACHINES. Jacob J. Brush, Cedarburg, Wis. Filed Aug. 13, 1877.

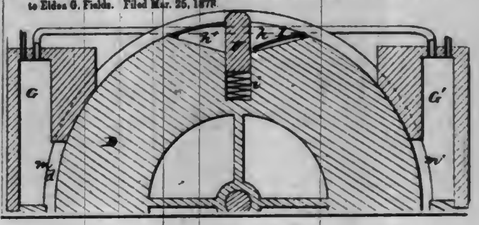
Brief.—By alternately bearing down upon the opposite ends of the brake, the disk carrying the hinged rectangular grooved arms is revolved successively through the beveled gearing in opposite directions, and by means of the arms, which are hinged at different distances from the center of the disk, the clothes are turned over and whirled around at each reversal of the direction of motion of the disk.



Claim.—1. The disk E, in combination with the hinged rectangular grooved arms G G G G and vertical spindle a, substantially as and for the purpose specified.

2. In a washing-machine, the combination of the frame A, cover H, shaft C, provided with brake B, gear D, pinion F, disk E, hinged rectangular grooved arms G, and spindle a, all constructed, arranged, and operating in the manner and for the purpose substantially as herein specified.

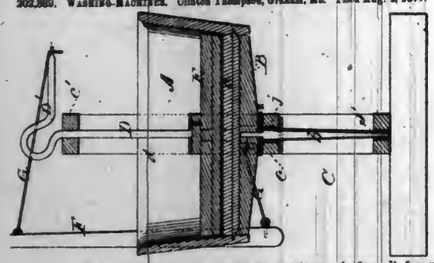
202,898. ROTARY ENGINES. Benj. H. Taylor, Rosedale, Miss., assignor of one-half his right to Elden G. Fields. Filed Mar. 25, 1878.



Claim.—1. The wheel B, having circumferential steam-channel *d*, and provided with radially-arranged spring-abutments F F', pockets *h h'*, and valves I I', all constructed substantially as and for the purposes herein set forth.

2. The combination of the wheel B, having grooves *b b* and *d*, spring-abutments F, pockets *h h'*, and valves I I', the steam-chests G G', casing C, with ribs *a* and packing-rings D, and the inlet and exhaust pipes, substantially as and for the purposes herein set forth.

202,889. WASHING-MACHINES. Clinton Thompson, Graham, Mo. Filed Aug. 4, 1877.



Claim.—In a rotary washing-machine, the cruciform platform B, for supporting the tub, having a central pivot-pin, *b*, extending downward to the sill, washer *a*, and extended arm, having the offset *g* for the lever-connection G', and the curved groove *c*, for the reception of the lower edge of the chine of the tub, against the inner side of which the ends of the other arms are engaged, as specified.

202,890. PAPER BARRELS. Judson L. Thomson, New York, and James Naylor, Jr., Rochester, N. Y.: said Naylor assignor to said Thomson; said Thomson assignor of one-half his right to Christian Feigenspan, Newark, N. J. Filed Sept. 21, 1877.



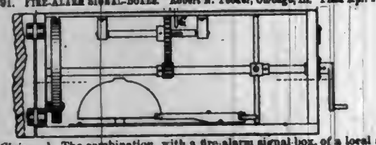
Claim.—1. The paper barrel consisting of the inner cylinder *a*, thick wooden heads *b c*, and outer paper cylinder *h*, having projecting chines beveled inward and secured by suitable hoops, substantially as described.

2. In a paper barrel, the thick wooden upper head *b*, concave on its under side, and provided with the bung-hole at the apex of the concavity, substantially as described.

3. In combination with a cylindrical barrel or other similar structure, the wedge-shaped hoops *m n*, adapted to be tightened against the curved walls by wedging them together, substantially as described.

4. In a barrel having both heads permanently attached during the process of manufacture, the combination of the head *b*, having the bung-hole *e*, with the head *c*, provided with the cavity *d*, for the purpose of enabling the barrel to be mounted on a mandrel or shaft during the work of finishing it, substantially as described.

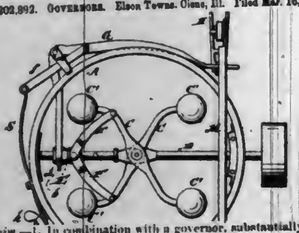
202,891. FIRE-ALARM SIGNAL-BOXES. Robert H. Tooker, Chicago, Ill. Filed Apr. 1, 1878.



Claim.—1. The combination, with a fire-alarm signal-box, of a local alarm which is sounded by the mechanism which turns in the alarm, substantially as set forth.

2. In combination with the signal-giving mechanism and the local alarm of a fire-alarm signal-box, a crank or other operating device placed outside the box, and connected with and operating both the signal and local alarm, substantially as set forth, whereby the opening of the door is rendered unnecessary.

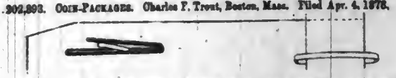
202,892. GOVERNORS. Elson Towns, Cisne, Ill. Filed Mar. 16, 1878.



Claim.—1. In combination with a governor, substantially as described, a sliding sleeve, E, elbow-lever G, and a locking device, constructed and operated substantially as and for the purpose set forth.

2. In combination with the shaft B, cross-arms C, with balls C', rods F, and sleeve E, the lever G, spring S, connecting-rod *f*, fork H, and lever O, substantially as and for the purpose set forth.

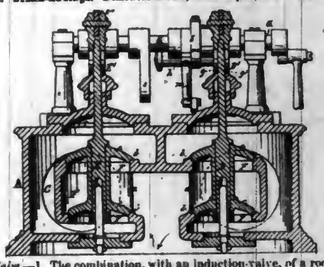
202,893. COIN-PACKAGES. Charles F. Trout, Boston, Mass. Filed Apr. 4, 1878.



Claim.—1. As an improved manufacture, the described coin-package, composed of the strap and loop, arranged substantially as set forth.

2. The elastic ring, and the loop and strap, arranged and combined substantially as and for use as explained.

202,894. STEAM-ENGINES. Demetrius Turner, Grand Rapids, Mich. Filed Dec. 8, 1877.



Claim.—1. The combination, with an induction-valve, of a rock-shaft actuated from the crank-shaft, a spring-bolt mounted on said shaft for opening the valve, and a segmental cam which controls said bolt in permitting it to open the valve, and also in tripping the bolt for allowing the valve to close, substantially as described.

2. The combination, with an induction-valve, of a rock-shaft, a spring-bolt mounted thereon, and an adjustable segmental cam, substantially as described.

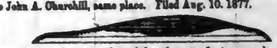
3. The combination, with an induction-valve, of a rock-shaft, a spring-bolt mounted thereon, and a segmental cam which controls the spring-bolt, and is itself controlled by a governor, substantially as described.

4. The combination, with an induction-valve, of a rock-shaft, a spring-bolt mounted thereon, a segmental cam for controlling the bolt, and a cam-lever which at one end lifts the valve on being depressed at the opposite end by the spring-bolt and rock-shaft, substantially as described.

5. The combination, with an induction-valve, of a rock-shaft, a spring-bolt mounted thereon, a cam for controlling the bolt, a cam or toe axially mounted on the rock-shaft, and a stop for limiting the free movement of the toe when released by the bolt, substantially as described.

6. The combination with an exhaust-valve, of a rock-shaft provided with flanges, and a toe for opening and closing the valve, which is adjustably mounted between the flanges, substantially as described.

202,895. HORSE-COLLARS. Marshall Turley, Council Bluffs, Iowa, assignor of one-third his right to John A. Churchill, same place. Filed Aug. 10, 1877.



Claim.—As an improved article of manufacture, a horse-collar the pads of which are filled or stuffed by means of strips of felt having thereon their growth of hair or wool, and arranged as described, for the purposes set forth.

202,896. CHAIN-PUMPS. Gordon B. Valentine, Annville, Pa. Filed Oct. 20, 1877.

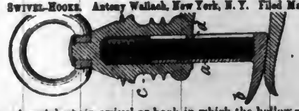


Claim.—In a chain-pump bucket, the combination of the link A, formed with the eyes *e e*, screw-thread *a*, and annular flange D, the conical rubber B, with annular groove *c* in its flat face, and the washer C, formed with the elongated opening *d*, all constructed substantially as and for the purposes herein set forth.

202,897. INKING-ROLLER COMPOSITIONS FOR PRINTERS. Andrew Van Bibber, Cincinnati, Ohio. Filed May 17, 1877.

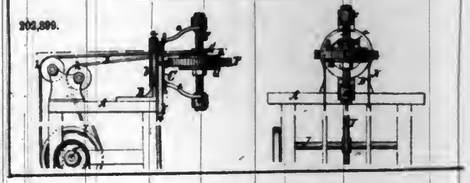
Claim.—A compounded glue, substantially such as described, as a merchantable commodity convertible into printers' inking-roller composition by the admixture of saccharine matter.

202,898. SWIVEL-HOOKS. Antony Wallach, New York, N. Y. Filed Mar. 15, 1878.



Claim.—A watch-chain swivel or hook in which the hollow sliding stem *a*, provided with the lip *b*, is combined with the spring and socket *c*, and the pin *d*, working in a slot, substantially in the manner and for the purpose described.

202,899.



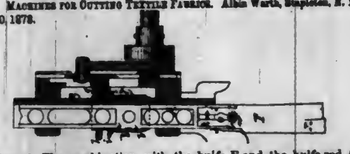
202,899. GRINDING-MACHINES. Albin Warth, Stapleton, N. Y. Filed Mar. 13, 1878.

Brief.—A swiveled foot-lever, by means of two cords, serves to rotate or turn the grinder from a vertical to a horizontal position, &c.

Claim.—1. The combination of the stationary standard B, carrying the annular socket or band *a*, the swiveling head C, having through it a belt-passage, and embraced by said socket or band, the arms *c*, and the grindstone-pulley G, having its shaft-bearings in the ends of said arms, the belt D, stationary guide-pulleys *h h*, and large pulley I, all constructed and mounted upon a stand, A, substantially as described.

2. The combination, with the swivel-head C, carrying the spindle of a grinding stone or disk, of a swivel-pedal, which connects with the swivel-head by means of a belt, substantially as and for the purpose set forth.

202,900. MACHINES FOR CUTTING TEXTILE FABRICS. Albin Warth, Stapleton, N. Y. Filed Feb. 20, 1878.



Claim.—1. The combination, with the knife F and the knife-rod A, of a screw, *q*, having an enlarged part, *p*, a slot, *m*, in the knife, provided with one or more enlargements, *n o*, adapted to receive the enlarged part *p* of the screw *q*, and a hole in the knife-rod provided with a countersink, also adapted to receive the enlarged part of said screw, all constructed and adapted to operate substantially as shown and described.

2. The combination, with the knife-rod A, standard B, and sleeve C, of the lugs *a a*, adapted to engage with corresponding slots in the sleeve, substantially as and for the purpose set forth.

3. The combination, with the knife-rod A, standard B, and sleeve C, of two rims, *h i*, and a fork, *g*, substantially as and for the purpose described.

4. The knife F, having a slot, *m*, with one or more enlargements, *n o*, substantially as and for the purpose shown and described.

202,901. MACHINES FOR CUTTING TEXTILE FABRICS. Albin Warth, Stapleton, N. Y. Filed Feb. 7, 1878.



Claim.—The combination, with the foot-plate O, the knife or cutter M, supported by said foot-plate, and the knife-receiving cloth-lifting socket *c* and handle P, both secured to said foot-plate, of a U-shaped bracket, L, transmitting-shaft *g*, swivel-frame K, arbor *h*, carrying a pulley, *i*, and bevel-wheel *k*, swivel-fork J, rod I, arbor *e*, swivel-frame G, cone-pulley H, U-shaped bracket F, forked rod E, arbor *c*, cone-pulley D, swivel-fork C, and standard or hanger B, all constructed and adapted to operate substantially as herein shown and described.

202,902. ROOFING FABRICS. Cyrus M. Warren, Brookline, Mass. Filed June 21, 1877.

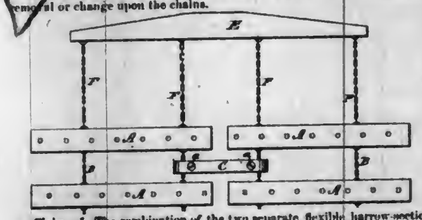
Brief.—Layers of paper or felt are saturated with a compound of native asphaltum and heavy oil or residuum of petroleum, and united by a layer of the same compound.



Claim.—A ready roofing fabric composed of layers of paper or felt saturated with a compound of native asphaltum and heavy oil or residuum of petroleum, or equivalent non-drying material, united by a layer of a compound of native asphaltum and heavy oil or residuum of petroleum, or equivalent non-drying material, substantially as described.

202,903. HARROWS. George Watt, Sr., Richmond, Va. Filed Mar. 2, 1878.

Brief.—The connecting-links are formed of two parts for convenience of removal or change upon the chains.



Claim.—1. The combination of the two separate flexible harrow-sections, each formed of a series of toothed bars, A, connected by chains B, and the rigid bars C, attached to the chains for connecting the said sections and holding them apart, while allowing free or independent movement of each, all as shown and described.

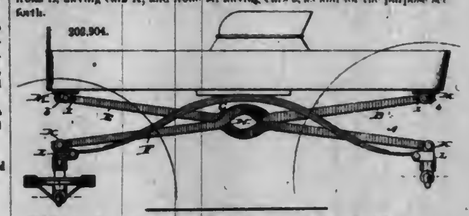
2. In combination with the contiguous chains B B of the respective sections, the connecting-bars, made in two parts, clamped together and upon the chains, as shown and described.

202,904. SIDE-SPRING VEHICLES. Wm. Le Roy Weston, New Milford, Pa. Filed Mar. 19, 1878.

Claim.—1. In a vehicle, the combination of the bars A B, provided with a downward curve and pivoted together, as shown, with bars E F, provided with an upward curve, and pivoted together, substantially as described.

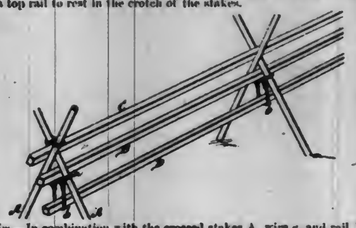
2. The combination of the bars A B and E F, constructed and arranged substantially as described, having their upper end provided with an elongated slot, l, and the lower end provided with a perforation, l', with the irons L, having ears K, and irons M, having ears *b*, as and for the purpose set forth.

202,904.



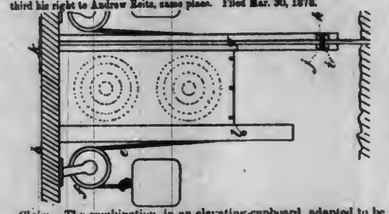
202,905. FENCES. Norman Westcott, Morrisville, N. Y. Filed Mar. 30, 1878.

Brief.—Two stakes cross each other, and are connected below the point of crossing by a wire. This wire supports a rail just below the crotch, the same binding the stakes in such a manner that the fence will be strengthened by adding a top rail to rest in the crotch of the stakes.



Claim.—In combination with the crossed stakes A, wire *a*, and rail B, as described, the top rail C, resting in the crotch of the stakes, and the bottom rail D, suspended by a wire, *b*, from wire *a*, as and for the purposes set forth.

202,906. ELEVATING-CUPBOARDS. John T. Westwood, Wheeling, W. Va., assignor of one-third his right to Andrew Reits, same place. Filed Mar. 30, 1878.



Claim.—The combination, in an elevating-cupboard, adapted to be moved up and down in floor-guides, as described, of the corner guide-rod *g*, the eyed horizontal screw-stem A *i*, and the adjusting-nuts *j j*, arranged and connected for adjustment as specified.

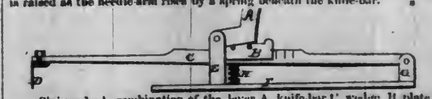
202,907. BUTTONS. Ebenezer S. Wheeler and Jonathan E. Wheeler, Westport, Conn. Filed Mar. 20, 1878.



Claim.—The herein-described improvement in buttons, consisting of the metal disk or back A, with central aperture; combined with the disk E, of pasteboard or analogous material, with the fastening device secured to said disk E, and extending outward through the aperture in both the disks E and A, substantially as described.

202,908. TRIMMERS FOR SEWING-MACHINES. James E. Wilson, Chicago, Ill. Filed Jan. 19, 1878.

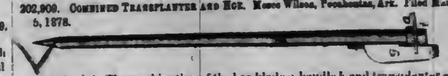
Brief.—The knife-bar and frame of trimmer are so placed that an upward-extending lever is acted upon by the needle-arm to depress the cutter, which is raised as the needle-arm rises by a spring beneath the knife-bar.



Claim.—1. A combination of the lever A, knife-bar C, wedge H, plate F with posts E and G, spring H, and knife D, substantially as and for the purposes herein described.

2. A combination of the knife D, spring H, plate F, with posts E and G, and lever A, and knife-bar C, substantially as and for the purposes herein described.

202,909. COMBINED TRANSPLANTER AND HOE. Moses Wilson, Pocahontas, Ark. Filed Mar. 5, 1878.



Claim.—1. The combination of the hoe-blade *a*, handle *b*, and transplanter *g*, the blade having a notch through its rear edge to allow the transplanter to move in, substantially as shown.

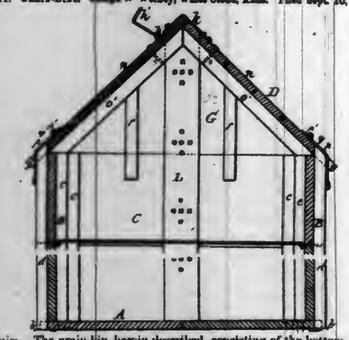
2. The combination of the hoe *a*, handle *b*, and transplanter *g*, one end of the handle being made sharp, and the other end made to project beyond the hoe-blade, for the purpose of pressing the earth against the plant, substantially as set forth.

202,910. TREATMENT OF WASTE FROM THE SEPARATION OF ANIMAL FROM VEGETABLE FIBERS. Joseph Wilkins, Baltimore, Md. Filed Apr. 10, 1878.

Claim.—1. The process herein described for converting into merchantable products the vegetable waste from the separation of animal from vegetable fiber, the said process consisting in treating the vegetable residue with acids for the production of dextrine or its derivatives, as described.

2. The process for converting the vegetable waste from the separation of animal from vegetable fiber into dextrine, the same consisting in heating the said material with sulphuric acid, neutralizing with chalk, decanting the solution, decolorizing, if necessary, and evaporating, as set forth.

202,911. GRAIN-BIN. Joseph A Wolfley, White Cloud, Kans. Filed Sept. 10, 1877.



Claim.—The grain-bin herein described, consisting of the bottom A, sides B, ends C, suitably connected and braced by cleats *c d*, staples *b*, hasps *g*, and ties J, the gable-ends G having extended inside cleats *r*, the sectional roof D, roof-hasps *h'* and *p*, and ventilator I, all constructed and arranged to be readily taken apart and put together, substantially as specified.

202,912. WEATHER-STRIP. David S. Wood, Oswego, Kans., assignor to Margaret Wood, same place. Filed Feb. 11, 1878.

Brief.—The hinged plate is pressed uniformly against the threshold by a stiffening-rod bent at right angles at one end and rigidly secured to the plate.



Claim.—The weather-strip plate C, provided with the angular rod *d*, extending the entire length of the plate and across its outer end, and held thereto by the metal of the plate being wrapped around the rod, in combination with the spring *e*, plate B, with flange *a*, and the beveled plate D, all substantially as and for the purposes herein set forth.

202,913. ATTACHMENTS FOR STENCILING-PENS. Frank P. Woolbury, Rockford, Ill. Filed Oct. 10, 1877.

Brief.—An adjustable handle enables the hand to assume an ordinary and easy position, while a support helps to sustain the weight of the pen.



Claim.—The upright column of support A, in combination with the support D and the holder or handle B, placed at any convenient angle, substantially as shown and described.

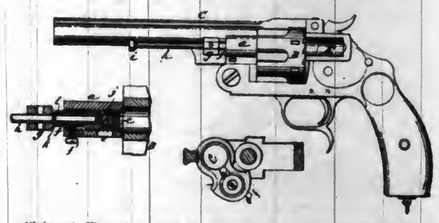
202,914. SPARK-ARRESTER. Charles E. Wyman, Martinsburg, Ind. Filed Mar. 12, 1878.



Claim.—The within described spark-arrester, consisting of the cylinder B, with funnel C and wire-cloth casing D, the inverted conical cap E, and pipe G, with funnel F, all constructed and arranged as shown, and for the purposes herein set forth.

202,915. REVOLVING FIRE-ARMS. Luis Ybarra, Madrid, Spain. Filed Jan. 28, 1878.

Brief.—On the discharge of the arm a portion of the gas evolved by the explosion is conducted through a passage for that purpose into a chamber in front of the chamber of the cylinder previously discharged, and the shell is thereby thrown out. The force with which the shell is thrown out is regulated by the adjustment of an opening in the side of the chamber, through which a portion of the gas, if so desired, may be allowed to escape.

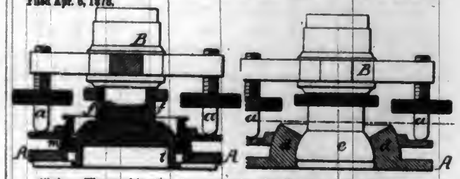


Claim.—1. The combination, in a fire-arm, with the barrel C, of the chamber *a*, connecting with barrel by a narrow groove, *c*, and having the gas-escape *e*, as and for the purpose set forth.

2. The combination of the screw *f* with the chamber *a*, having the aperture *e*, substantially as and for the purpose specified.

3. The combination of the tubular screw *f* and rod *h* with the chamber *a*, as shown and described.

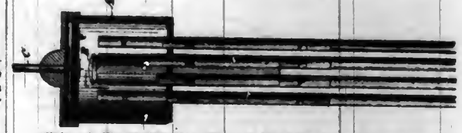
202,916. TRIPOD-HEADS FOR SURVEYING-INSTRUMENTS. Alfred Young, Philadelphia, Pa. Filed Apr. 6, 1878.



Claim.—The combination, in a surveying, leveling, or similar instrument, of the canal block or center B, its ball *e*, and leveling-screws *a* with the plate A, upon which, or upon a plate or plates connected to or resting upon which, are formed a socket for the ball *e*, and a convex surface for the binding action of the screws *a*, all substantially as specified.

REISSUES.

8,188. CONDENSERS FOR ENGINES. Wm. J. Allen, Buffalo, N. Y. Patent No. 103,589, dated July 31, 1877. Filed Apr. 1, 1878.



Claim.—1. The combination, with a condenser-head, of an air-pipe, *a*, and a water-pipe, *b*, the said air and water pipes being so arranged that the latter will discharge into the former below its induction-orifice, substantially as described.

2. The combination, with the condenser-head, of a plurality of water-pipes, *a*, and air-pipes *b*, which pipes are arranged in pairs, so that a water-pipe discharges into an air-pipe, and said water-pipes have their induction-orifices arranged at different heights, substantially as described.

3. The combination, with the condenser-head, of the pipe B, water-pipe C, air-pipes *a*, and the water-pipes *b*, the latter leading from the condenser-head into the pipes *a*, whereby a greater velocity of water and suction of air are obtained where the air and water meet, substantially as described.

8,189. DRIP-TRAYS FOR WATER-CLOSET BOWLS. Chas. Harrison, New York, N. Y. Patent No. 197,629, dated Nov. 27, 1877. Filed Apr. 6, 1878.

Claim.—1. In combination with a water-closet bowl, a drip-tray, substantially such as described, having a central opening provided with a downwardly-projecting flange.

2. A water-closet bowl and a drip-tray, substantially such as described, connected together by a tongue-and-grooved joint, substantially as shown and described.

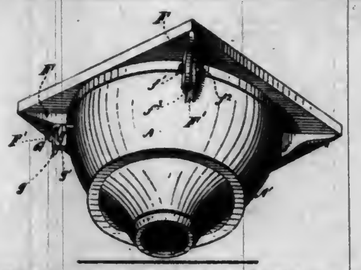
3. A drip-tray, substantially such as described, having a central opening conforming to the shape of the top of a water-closet bowl, and provided upon its under side with an annular projection conforming to the shape of the top of the bowl, for the purpose of affording an excess of material in which a recess can be formed without weakening the tray.

4. The brackets F, extending downward from the under surface of the tray, in combination with the bowl A.

5. The combination of two or more brackets, depending downward from the under side of a drip-tray, with two or more lateral projections or lugs formed upon the exterior of the water-closet bowl, to which the drip-tray is applied, substantially as and for the purposes set forth.

6. A drip-tray, substantially such as described, and a water-closet bowl connected together by a water-tight joint formed by the junction of two surfaces, portions of which are more or less curved or inclined, substantially as shown, and for the purposes set forth.

8,190.



8,190. PAPER PAILS. Augustus Jennings and Isaac Jennings, Fairfield, Conn. Patent No. 82,596, dated Sept. 29, 1868. Filed Jan. 29, 1878.

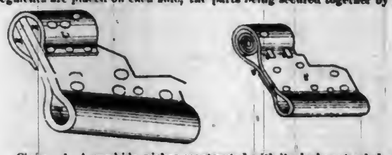


Claim.—1. A pail or vessel having a downwardly-projecting flange upon the bottom or head B thereof, and having also a body, A, and a binding, C, securing the said parts A and B together, substantially as hereinbefore set forth.

2. As an article of manufacture, a paper pail or vessel having a groove around it in proximity to its edge, and a continuous metallic binding or hoop extending across its edge and upon the sides thereof, and secured in place by the said groove, substantially as hereinbefore set forth.

8,191. LOOM-PICKERS. Jerome M. Parker, Leicester, Mass., assignor to Loom Picker Company. Patent No. 111,378, dated Jan. 31, 1871. Filed Nov. 20, 1877.

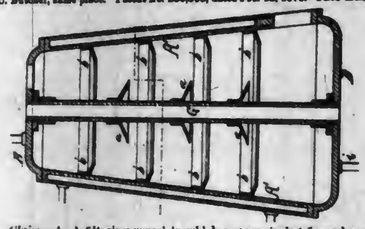
Brief.—The ends of the sheet of material that forms the body of the picker are extended within and nearly across the head, and rawhide filling pieces or segments are placed on each side, the parts being secured together by rivets.



Claim.—1. A rawhide picker constructed with its body extended within and nearly across the head, and secured thereto by rivets passing through both, as set forth.

2. The combination of the looped head-piece C and a filling or segments, B B, with the body *r* extended within and nearly across and making part of the head, such piece C and body being connected as described.

8,192. FILTERING APPARATUS. Anthony Van Haagen, Philadelphia, Pa., assignor to Henry C. Butcher, same place. Patent No. 200,363, dated Feb. 12, 1878. Filed Mar. 11, 1878.



Claim.—1. A filtering-vessel in which a steam-jacket formed on the outer casing is combined with projections on the interior of the said casing, for conducting heat derived from the jacket to the filtering material, all substantially as set forth.

2. A filtering-vessel in which an exterior casing having internal projections is combined with a central steam-chamber.

3. A filtering-vessel having a central tube with flanges or projections, as set forth, for the purpose specified.

4. The combination, in a filtering-vessel, of an outer casing, provided with a steam-jacket and internal flanges or projections, with a central chamber, provided with flanges or projections, as described.

8,193. CONDENSERS FOR STEAM-ENGINES. John Abterdam, New York, N. Y., assignor, by mesne assignments, to Mary R. Alberger. Patent No. 58,362, dated Oct. 2, 1866. Filed Apr. 2, 1878.

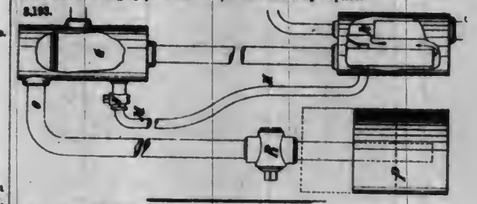
Claim.—1. In a steam-condenser, and in combination with it and its discharge-pipes, the steam-inducting pipe, so arranged as to produce the annular opening *a'*, for the purpose of creating and maintaining a vacuum in the condenser independent of any valve, but solely by a descending column of discharge-water sufficiently high to overcome the pressure of the atmosphere.

2. The combination of the condenser-head C, the exhaust-steam pipe F, water-plate Z', air-pipe M, and water-pipe H, the latter leading from the condenser into or in connection with the air-pipe M, or into the hot-well I, to get a greater velocity of water and greater suction of air when the air and water meet in the discharge-pipe.

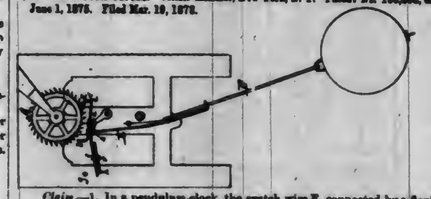
3. The means substantially herein described of creating and maintaining a vacuum in a steam-condenser, consisting of a steam-inducting pipe combined with the condenser or hot-well, and arranged in its discharge-pipe, for the purpose of combining the force of the current of steam into the condenser or discharge-pipe with the gravity of the column of water out of it through the discharge-pipe, or for the purpose of forcing the water and drawing the air out of the condenser by the force of the current of steam alone upon the column of water escaping around the inducting-nozzle at the point of condensation and escape.

4. The means substantially herein described of drawing the air out of the condensing-chamber from above the level of the injection-water, consisting of a pipe, M, having its upper nozzle combined with the condenser, and leading from above the level of the injection-water, and its lower nozzle inserted in the water-discharge pipe or hot-well, as the case may require.

8,193.



8,194. PENDULUM-CLOCKS. Vitalis Himmer, New York, N. Y. Patent No. 103,809, dated June 1, 1878. Filed Mar. 19, 1878.



Claim.—1. In a pendulum-clock, the crutch-wire E, connected by a flexible joint with the anchor C, or a projection thereof, said anchor being hung on a fixed pin, *a*, substantially as described.

2. In combination with the anchor C and jointed crutch-wire E, the projecting pin *f* and the stop-pins *g* and *h*, arranged substantially as and for the purpose described.

8,195. BOOK-BINDING. James S. Lever, Philadelphia, Pa. Patent No. 200,669, dated Feb. 5, 1878. Filed Mar. 20, 1878.



Claim.—1. The combination, in a book, of a pack of sections with a strip, B, of open fabric, extending throughout, or nearly throughout, the entire length of the back, and secured to the sections by staples or stitches, and by glue or other equivalent cement, which will penetrate through the fabric, all as set forth.

2. The combination of the sections and side boards of a book with a strip of fabric having strong transverse threads interwoven with light longitudinal threads, and secured to the folded backs of said sections, all substantially as set forth.

3. The mode herein described of securing the sides of books to the sections—that is to say, securing a strip of open fabric by staples or stitches and glue or other equivalent cement to the sections, cutting away the strips, so as to leave tapes *m*, and securing the latter to the sides, all as set forth.

8,196. MACHINES AND PROCESSES FOR MAKING PAPER TUBES. A. O. Batchelder, Lowell, Mass., assignor, by mesne assignments, to John H. Haworth and Walter R. Watson, same place. Patent No. 156,364, dated Jan. 5, 1875. Filed Oct. 26, 1877.

Claim.—1. The combination, in a machine for making paper cop-tubes, of a mandrel circular in cross-section, with a series of stationary friction-benders, shaped at their bearing ends to conform to the cylindrical mandrel, and adapted to wrap the pasted strip about the mandrel without wrinkles, substantially as set forth.

2. The combination, with a suitable mandrel, of a series of elastic fingers, shaped near their bearing ends to conform, generally, to the mandrel, and adapted to operate successively and from different directions upon the paper strip, substantially as set forth.

3. In a machine for making paper cop-tubes, a cylindrical mandrel, in combination with stationary friction-benders conforming thereto, one of said benders being curved, and adapted to extend between the folds of the pasted strip of paper to the inner edge of the same, so as to lay the inner folds thereof smoothly and firmly upon the mandrel, substantially as set forth.

4. The combination of two tubular outside finishers with tube-forming mechanism, substantially as described.

5. The combination, with a mandrel and a series of strip-benders, of a lap-finishing brush adapted to revolve about the mandrel, substantially as set forth.

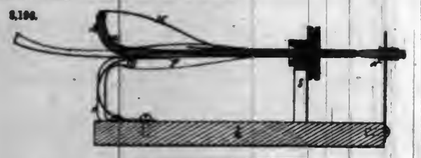
6. A mandrel for paper-tube machines, having a suitable body, upon which the tubes are formed, and an expander or bore-finisher, N O, in combination with a tube-finisher, P, surrounding the bore-finisher, substantially as set forth.

7. The combination, with stationary friction mechanism for forming paper tubes, of apparatus, substantially as described, for simultaneously finishing the inner and outer surfaces of the tubes.

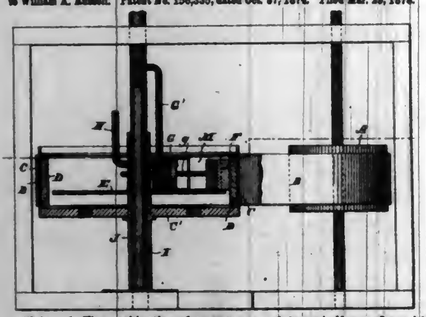
8. In a machine for making paper cop-tubes, an elastic bender shaped to conform at its bearing end to the cylindrical mandrel, and secured to the base or frame, so as to press with friction upon the pasted paper strip and unite the folds thereof, substantially as set forth.

9. The process of producing cop-tubes which consists in folding a suitably-pasted strip of paper between the parts of a stationary friction apparatus, drawing it over a bone raised on the mandrel, and at the same time finishing the outside surface of the tube, all substantially as described, the tube thus formed being afterward divided, as stated.

8,196.



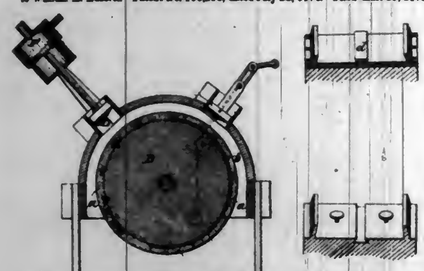
8,197. STOCK-GRINDERS FOR PAPER-PULP. Francis A. Cushman, Lebanon, N. H., assignor to William A. Russell. Patent No. 156,335, dated Oct. 27, 1874. Filed Mar. 29, 1878.



Claim.—1. The combination of a concave revolving grinding-surface with a feed-box so located therein, substantially as specified, that blocks of wood may be supported and fed therein in lines leading from the interior of said concave surface toward the periphery thereof, the combination being and operating substantially as specified.

2. The combination of a concave revolving grinding-surface with a feed-box located therein, and with means, substantially such as are specified, for feeding the wood in said feed-box toward the concave grinding-surface in lines leading from the interior to the periphery thereof, the combination being and acting substantially as hereinbefore described.

8,198. WOOD-GRINDERS FOR PAPER-PULP. Francis A. Cushman, Lebanon, N. H., assignor to William A. Russell. Patent No. 153,190, dated July 21, 1874. Filed Mar. 29, 1878.



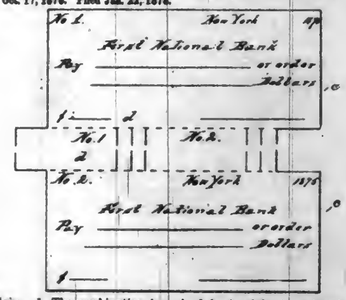
Claim.—1. The herein-described improvement in the art of reducing wood to pulp, said improvement consisting in desfibering a block by a grinding-surface the asperities of which act upon the fibers in lines diagonal to their length, when said fibers are held substantially as described with reference to the grinding surface.

2. In combination with a stone or grinding-wheel, and with a plunger or follower to force the wood in contact with the wheel, a hopper or feed-box arranged with its sides diagonal to the line of motion of the asperities of the grinding-surface, the combination being and acting substantially as described.

3. A grinding-wheel composed of a central pulley of metallic segments, provided with inclined flanges and dovetails, and of a composition applied to the segments, the whole being substantially such as set forth.

4. In combination with a feed-box and plunger, a hydraulic cylinder and piston apparatus, substantially such as described, for filling said cylinder with water under pressure, whereby wood supported in the feed-boxes is forced against a grinding surface by the action of the water, substantially as described.

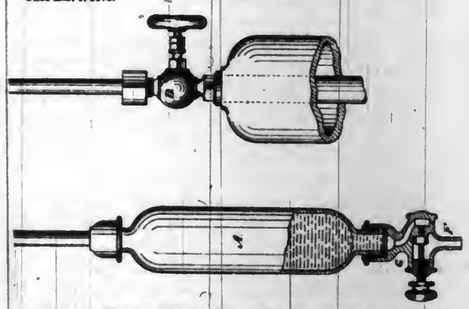
8,199. POCKET CHECK-BOOKS. George E. Waring, Jr., Newport, R. I. Patent No. 153,347, dated Oct. 17, 1876. Filed Jan. 22, 1878.



Claim.—1. The combination, in a check-book, of checks and stub-pieces of substantially the same size, so united that two checks lie between every two stub-pieces, substantially as specified and set forth.

2. A check-book in which the checks are folded in upon the stub-piece, which lies between the checks, and which is alone attached to the back of the book.

8,200. APPARATUS FOR DRAWING EFFERVESCENT LIQUIDS. Thomas Warker, New York, N. Y. Patent No. 144,800, dated Nov. 18, 1873; Reissue No. 7,113, dated May 16, 1876. Filed Mar. 6, 1878.



Claim.—1. The herein-described process of drawing effervescent liquids, by first causing them to pass into a pressure-relieving chamber, where the free or surplus gas is let off from the liquid, and then drawing the said liquid without pressure and by its own gravity from said chamber, substantially as herein set forth.

2. In an apparatus for drawing effervescent liquids, the pressure-relieving chamber A, provided with an inlet passage and valve, and an outlet passage and valve, in combination with the vessel or fountain from which said liquid is supplied, all substantially as and for the purpose herein set forth.

3. The herein-described combination of a pressure-relieving chamber, constructed to permit the escape of surplus gas, and to permit the outflow of the liquid by gravity alone, and a vessel or fountain containing effervescent liquid, the said parts being provided with controlling-valves, all substantially as and for the purpose herein set forth.

4. The described combination of the pressure-relieving chamber A, having a discharge-spout, F, the gas-escape valve E, and the pipe H, having a stop-valve, D, and adapted to a vessel containing effervescent liquid, in the manner and for the purpose specified.

8,201. HAND-STAMPS. Edmund D. Chamberlain, Westfield, N. J. Patent No. 163,300, dated May 16, 1875. Filed Jan. 8, 1878.



Claim.—1. A series of rubber printing-bands, in combination with the cross-bar E, to support the type-bands when being moved and used to print, and the stationary die plate having the enlarged opening, whereby the characters may be changed without moving the die-plate, all substantially as and for the purpose described.

2. In a hand-stamp, a series of rubber printing bands, in combination with spools or reels, finger-pieces for moving the same, and a cross-bar, E, to support the type-bands when being moved, substantially as described.

3. In a hand-stamp, strips of rubber characters, in combination with spools or reels arranged to change the printing-characters by winding the strips from one spool to another, as described.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE

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DECISION OF THE SECRETARY OF THE INTERIOR.

[*In the matter of the petition of Franklin B. Hunt for the completion and delivery of a reissue of Letters Patent No. 68,070, granted Samuel Harpster, August 27, 1867, withheld by order of the Commissioner of Patents June 12, 1877.*]

Until a patent is both signed and sealed, it may, in the exercise of official discretion, be withheld.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., April 29, 1878.

SIR: I have considered the application of Franklin B. Hunt, by his attorney, J. McC. Perkins, for an order directing you to deliver to said attorney the reissue of letters patent granted to Samuel Harpster for an "Improvement in Corn-Planters," No. 68,070, and dated August 27, 1867, on the ground that said reissue has been regularly allowed by your Office, and that the same is now illegally withheld by you.

Upon an examination of the papers in this case, I find that an application for reissue was filed on the 10th of May, 1877, that the same was regularly examined and allowed by an Examiner in your Office, and that the patent was signed by the Secretary of the Interior and the Commissioner of Patents; but the seal of your Office was not attached thereto. It also appears that, before said seal was attached, your attention was called to the specific claims allowed in said reissue, which were alleged to be old, and thereupon you gave the matter a personal examination.

In your letter of June 12, 1877, addressed to Mr. Hunt, you stated:

The result of the examination has satisfied me, beyond a doubt, that the issue of those claims would be without warrant of law, and in effect a fraud upon the public. It appears to me that the combination claimed in every clause is plainly shown in numerous patents long prior to that of Harpster. Although, therefore, the patent has been signed, I must decline to affix the seal thereto and deliver it, and have directed, so far as I was able, the suppression of the official publication relating thereto. I have remanded the case to the Examiner, awaiting such action as you may choose to take.

I find also among the papers an order in said case made by you, in the following words:

[*In the matter of the application for reissue of letters patent of Samuel Harpster, No. 68,070, granted August 27, 1867.*]

I have refused to complete the issue of the patent, and have remanded the case to the Examiner for such action as the applicant may choose to take.

ELLIS SPEAR,
Commissioner.
January 12, 1877.

In the report of the Acting Commissioner upon the application now under consideration, I find the following, among other reasons given, for not reissuing said patent:

The reissue was refused for lack of novelty in the subject-matter of the application, as shown by numerous references.

This is in substance the same reason which was given Mr. Hunt in your letter of June 12, 1877.

It thus appears that Mr. Hunt has been fully advised of the reasons for withholding said patent, viz: a lack of novelty, and that the claims therein specified have been anticipated by other patents issued by your Office.

The right of the Commissioner of Patents to withhold a patent allowed by one of his subordinate officers was expressly decided in the case of *Hull* vs. *The Commissioner of Patents*, 2 MacArthur, p. 90.

Upon this point the court say:

But suppose it should appear to the Commissioner, on his own inspection of the report, that the alleged invention is neither novel nor meritorious, he would be bound in duty under this section (Section 31, Rev. Stat., section 4893) not to issue the patent.

It does not appear in the case above cited that the patent had been signed as in this case; but I know of no reason why the same rule should not be applied for the same reasons until the patent is finally made complete, by affixing the seal of your Office thereto. Until the seal is affixed the patent is not complete, and whether it shall be affixed or not in a given case, or in any case, where the merits of the application are directly brought to your attention, is a question which you must judicially determine in the discharge of your official duty. After a patent is regularly allowed and signed, however, this right to refuse the attaching of the seal, so as to give the patent validity, should not be exercised except in extreme cases, where to attach it would be manifestly a violation of your duty as a

public officer; but where, as in this case, it appears that the patent, erroneously allowed by one of your subordinates, contains claims which are neither novel nor meritorious and are manifestly old, although no fraud has been practiced, I am of the opinion that it is your duty, although the patent may have been signed, to withhold the seal of your Office.

If fraud had been practiced, then it would be clearly your duty to withhold the seal, and, so far as possible, to punish those guilty of such fraud.

While it is true that an applicant for a patent is entitled to have his rights thereto fairly and intelligently passed upon and determined, it is also true that the public, as well as other patentees, is entitled to be protected from the issuance of patents for false, fictitious, and old claims. As to whether the claims in any application are false, fictitious, or old, is a question which you, as Commissioner of Patents, must determine, subject to the right of appeal or review by the party whose claim is rejected to the proper court.

The reasons stated for refusing to deliver the reissue patent in this case, viz: that the claims were not novel nor meritorious, and were manifestly old, are sufficient, in my opinion, to justify the action taken by you. The questions upon which this refusal was based are questions involving the merits of Mr. Hunt's application for a reissue of said patent; upon such questions the right of appeal, or of a review of your action, does not lie to this Department.

This question was fully discussed by my predecessor in the case of *Edison et al.* vs. *Edison et al.*, 9 OFFICIAL GAZETTE, p. 403. The same question was passed upon by me in the matter of the application of James Sargent for a revocation of the order of the Commissioner of Patents, dated July 24, 1877, suspending the issue of his letters patent, in which it was held:

> The second question presented for my consideration is: Have I the legal right to direct you now to issue a patent to Mr. Sargent? This right is denied by Mr. Burgo's counsel. If there were any questions affecting the merits of Mr. Sargent's application still pending before you there could be but one answer to this question, viz: that I have not that right.

After your determination in this case that the patent should not issue, for the reasons stated, it appears that the application was remanded to the Examiner for such further action as the applicant might see fit to take. From that order no appeal has been taken, and the case must, therefore, be considered as still pending before your Office upon its merits.

For the reasons stated, the application for the order requested is denied.

I deem it proper in this connection to call your attention to the provisions of section 4883 Revised Statutes, which provide that—

> All patents shall be issued in the name of the United States of America, under the seal of the Patent Office, and shall be signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, &c.

The signing of such patent by the Secretary of the Interior is not simply a formal matter, but is by the statute made necessary, in order to give the patent validity.

I therefore direct, in all cases which may hereafter arise where, for any reason, you may deem it improper to complete the issuance of a patent after it has been signed, that you forthwith transmit the same to this Department, with all the papers in the case, before taking further action therein, with your reasons for declining to complete the issue of such patent, for consideration and instruction.

The application and papers filed with this motion are herewith transmitted.

Very respectfully,

C. SCHURZ,
Secretary.

To the Commissioner of Patents.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of New York.

ANSON SEARLS AND ERASTUS W. SCOTT, COMPLAINANTS, *vs.* ABRAHAM R. VAN NEST, ALEXANDER T. VAN NEST, AND ALEXANDER MURDOCK.

[*In Equity.—October Term*, 1877.]

Reissue Letters Patent No. 5,400, granted to Anson Searls and Erastus W. Scott, May 6, 1873, for "IMPROVEMENTS IN WHIP-SOCKETS FOR CARRIAGES," are valid, and are for the same inventions as the original patent No. 70,627.

WHEELER, *J.*:

This cause has been heard on bill, answer, replication, proofs, and arguments. The orators are owners of a patent for improvements in whip-sockets for carriages, issued as Letters Patent No. 70,627, dated November 5, 1867, to the orator Scott, and reissued as Letters Patent Reissue No. 5,400, dated May 6, 1873, to both orators, and which they claim the defendants are infringing.

The defendants allege that the reissued patent is not for the same invention as the original, and that it is therefore void; that what they are doing, that is claimed to be an infringement, is covered by a patent issued to Henry M. Curtis and Alvah Worden, dated October 22, 1867, prior to the date of Scott's patent, and they deny that what they are so doing is any infringement of the orators' patent.

From the above cause, it appears that Scott is the original and first inventor of the device set forth in his patent. By the statutes only persons who have "discovered or invented any new and useful art, machine, &c., not known or used by others before his or their discovery or invention thereof," are entitled to patents for their inventions and discoveries, and the fact "that the patentee was not the original and first inventor or discoverer of the thing patented" is a good defense to any suit founded on the patent.

Under these provisions a patent is not conclusive that the patentee has a right to it, nor that no one else has a right to a patent for the invention described in it; but the right, where there are conflicting patents, is left to be settled by determining who is in fact the first inventor. In this case, settling the fact that Scott was the first inventor, has accordingly, as between these parties, settled that he was the rightful patentee of that invention.

On looking through his original patent in the light of what was before known, and of the drawings and model, it appears that his invention consists in contriving a whip-socket with its sides curved inwardly toward the bottom, and a lever in one side pivoted near the middle and weighted on its outside, and curved toward the other side of the socket at each end, and shaped there to fit the whip, so that the weight of the whip would crowd the lower end outward, and thereby move the upper end inward until the whip would be clutched between them and the opposite side of the socket, and held steady until withdrawn, when the upper end would swing outward and the socket remain open, ready to execute it again. In the specification and claim the invention was imperfectly described, and some of its essential features were not mentioned at all. In that condition the patent was just such a one as the statute provides may be surrendered, and be reissued to cover the actual invention. When reissued, this patent was not for anything outside of what could be found in the original, when looked for in all the parts and accompaniments of it. Nothing appears in the reissue that was not somewhere in the original. The only change made was, that what was there in some shape before was set forth more methodically and directly in the specification, and more extensively and definitely in the claims. This was precisely what the law authorized, and the validity of the patent was not thereby affected.

The device which the defendants are using is a socket curved inwardly toward the bottom, and one side of it is a lever pivoted near the middle, made heavy on the outside and curved toward the other side at each end, and shaped to fit the whip, so that the weight of the whip will crowd the lower end outward, and thereby throw the upper end inward until the whip is clutched between them and the other side of the socket, and held steady until removed, when the upper end will swing outward and the socket remain open, ready to receive the whip again.

A comparison of these devices shows that they accomplish the same result in substantially the same way. In the defendants' contrivance the lever forms one side of the socket, and what there is left without it is only one-half of a socket, and the appearance of the two things is thereby made to be quite different; but in the orators' device, although almost the whole of a socket besides the lever is there, in use only the side of it opposite the lever is employed, which is the same part as that employed by the defendants, and the part is employed in the same manner, and for the same purpose, and to the same effect as that part of the defendants' is. In that respect the defendants have taken away the superfluous part of the socket that the orators retained without using. The lever of the defendants is weighted outward by metal composing it and its shape, while that of the orators was by the addition appended to its outside; but the difference in the mode of weighting the lever is not material in the use, nor made so in the patent.

In convenience and appearance the defendants' socket would, in the minds of most persons, probably be an improvement upon the orators', and perhaps it is such an improvement that the patent under which they are operating will cover it; but whether it is so or not, while they employ the patentee's device of the orators in what they use, the use is none the less an infringement.

Let a decree be entered for a reference to a master, an account, and an injunction, according to the prayer of the bill.

U. S. Circuit Court—Eastern District of New York.

CHARLES GUIDET *vs.* THE CITY OF BROOKLYN.

G. Harding and *W. H. Field*, for the plaintiff; *G. Gifford*, *W. C. De Witt*, and *W. C. Witter*, for defendant.

BLATCHFORD, *J.*:

I think the evidence shows that the pavements which were laid down in Rochester and Buffalo prior to the date of the plaintiff's alleged invention of what is covered by the claim of his patent contained the substance and principle of the pavements laid down by the defendant, and alleged to infringe such claim as respects all the points of such infringement. Whatever difference there is, is one of degree, finish, and quality of stone, and not of structure or principle of arrangement, either as respects the stone blocks themselves or the pavement composed of them.

The bill is dismissed with costs.

Dated May 15, 1878.

Narrative of the Polaris Expedition.

Authority having been given the Public Printer to print another edition of the above work, subscriptions will now be received by Mr. A. F. Childs, Chief Clerk, until August 1, 1878, at the following rates: If delivered at the Government Printing Office, $1.60. If sent by mail, $1.75.

TRADE-MARKS.

[Each certificate bearing date April 30, 1878.]

5,949.—MEDICAL COMPOUND.—*J. C. Allan & Co.*, Buffalo, N. Y., assignors to *Ray V. Pierce*, same place. Application filed April 17, 1878.
"Word-symbol 'ANTI-FAT.'"

5,950.—CIGARS AND CIGARETTES, FINE-CUT AND PLUG CHEWING-TOBACCO, SNUFF, AND SMOKING-TOBACCO.—*Buchanan & Lyall*, Brooklyn, N. Y. Application filed April 16, 1878.
"The word-symbol 'DOMINO.'"

5,951.—LUBRICATING-OIL.—*Thomas Brown*, Erie, Pa. Application filed April 15, 1878.
"The word 'MATCHLESS.'"

5,952.—COLOGNE.—*William T. Baetjer*, Baltimore, Md. Application filed April 15, 1878.
"Word-symbol 'HIT A 'OSS.'"

5,953.—BAKING-POWDER.—*Coburn & Co.*, New Haven, Conn. Application filed April 4, 1878.
"The word 'ECLIPSE.'"

5,954.—SPOOL-COTTON.—*Claflin, Larrabee & Co.*, Boston, Mass. Application filed April 18, 1878.
"The word 'Oriental.'"

5,955.—LINIMENT.—*William H. Gregg*, Elmira, N. Y. Application filed April 12, 1878.
"The words 'ELECTRO SILICON.'"

5,956.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *S. Jacoby & Co.*, New York, N. Y. Application filed April 20, 1878.
"The word 'METROPOLITAN.'"

5,957.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Kerbs & Spiess*, New York, N. Y. Application filed April 18, 1878.
"The word-symbol 'GRAND VICTORY.'"

5,958.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Henry Nelson*, Boston, Mass. Application filed April 18, 1878.
"The letters 'A. AND H. A. CO.'"

5,959.—STARCH.—*W. E. Plummer & Son*, Buffalo, N. Y. Application filed April 18, 1878.
"The word-symbol 'MUSLIN.'"

5,960.—HOSE-NOZZLES.—*Everette B. Preston*, Chicago, Ill. Application filed April 18, 1878.
"The word-symbol 'MAGIC.'"

5,961.—CIGAR-BOXES.—*Philipp Schneider*, New York, N. Y. Application filed April 19, 1878.
"The words 'TIT FOR TAT.'"

5,962.—CIGAR-BOXES.—*Philipp Schneider*, New York, N. Y. Application filed April 19, 1878.
"The words 'NO OTHER.'"

5,963.—WHISKY.—*Sperry, Wade & Co.*, Davidson county, Tenn. Application filed April 1, 1878.
"The letters 'S. W. & Co.'s' and the word-symbol 'Belle Meade.'"

5,964.—MEDICAL COMPOUND.—*Woodbury, Weston & Co.*, Whitefield, N. H. Application filed April 17, 1878.
"The letters 'D. K.' and 'O. K.,' and the portrait of the man wearing spectacles placed between them."

5,965.—MEDICINAL PREPARATIONS.—*J. H. Zeilin & Co.*, Philadelphia, Pa. Application filed October 11, 1877.
"The Z-shaped symbol."

5,966.—BAKING-POWDER.—*Joseph Stiner*, New York, N. Y. Application filed April 6, 1878.
"The fancifully-selected words 'HOME COMFORT.'"

5,967.—PLUG-TOBACCO.—*Cullingworth, Gregory & Ellison*, Richmond, Va. Application filed April 20, 1878.
"The obverse of a twenty-dollar gold piece."

5,968.—FLUID CHEMICAL PREPARATION FOR CLEANSING SILK, &c.—*D. W. Gross & Son*, Harrisburg, Pa. Application filed April 18, 1878.

"The fanciful word-symbol 'AQUATHAUMA.'"

5,969.—TROCHES, LOZENGES, PILLS, PASTILLES, AND SIMILAR PREPARATIONS.—*James F. Hayes*, Philadelphia, Pa. Application filed April 6, 1878.

"The words 'Saint George,' and the legendary representation of the combat between St. George and the dragon."

5,970.—BOOTS AND SHOES.—*John Mundell & Co.*, Philadelphia, Pa. Application filed April 22, 1878.

"The words or phrase 'Hard Times.'"

5,971.—SOLID AND FLUID MEDICINAL PREPARATIONS.—*Vogeler, Meyer & Co.*, Baltimore, Md. Application filed April 16, 1878.

"The device as follows: In light lettering on a dark ground, and occupying about three-fourths of a circle, the words 'Dr. Bull's Family Medicines,' and, on a ribbon beneath, the words 'Vogeler, Meyer & Co.,' the central part of the device showing a bull's head, all as shown."

5,972.—FLUID MEDICINAL PREPARATION.—*Vogeler, Meyer & Co.*, Baltimore, Md. Application filed April 16, 1878.

"The arbitrarily-selected words 'DR. BULL'S BABY,' followed by the word 'SYRUP,' as shown."

5,973.—CIGARS.—*Carl Upmann*, New York, N. Y. Application filed April 16, 1878.

"The word 'COMPETENCIA.'"

5,974.—MEDICINAL PREPARATION KNOWN AS "CORRASSA COMPOUND."—*Allison & Hearn*, New York, N. Y. Application filed March 6, 1878.

"The title or designation 'Rev. Joseph T. Inman's,' and the arbitrary or fanciful word 'CORRASSA.'"

5,975.—EXTRACTS AND CARMINES OF DYE-WOODS.—*J. C. Bloomfield & Co.*, New York, N. Y. Application filed April 25, 1878.

"The name 'J. C. Bloomfield and Company' and the monogram composed of the letters 'J. C. B. & Co.'"

5,976.—REMEDIES FOR CATARRH, THROAT, AND PULMONARY DISEASES.—*William N. Deming*, Providence, R. I. Application filed February 20, 1878.

"The words 'The Animator.'"

5,977.—WHISKY.—*J. W. Gaff & Co.*, Cincinnati, Ohio. Application filed October 22, 1877.

"The words 'PLEASANT VALLEY.'"

5,978.—CIGARS.—*S. F. Hess & Co.*, Rochester, N. Y. Application filed March 15, 1878.

"The word-symbol 'PEERLESS.'"

5,979.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Morris Jacoby*, New York, N. Y. Application filed April 16, 1878.

"The representation of a globe surmounted by a female figure."

5,980.—JEWELRY.—*John T. Mauran*, Providence, R. I. Application filed April 11, 1878.

"A sign-symbol, the representation of a heart."

5,981.—SAWS AND SAW ATTACHMENTS.—*Christopher Richardson*, Newark, N. J. Application filed February 21, 1878.

"The representation of a Maltese cross, together with the letters 'B E S T' and the initial letter 'R.'"

5,982.—HORSESHOE-NAILS.—*The Putnam Nail Company*, Boston, Mass. Application filed March 21, 1878.

"The letter 'P,' formed of two horseshoe-nails, one placed vertically and the other bent, as shown, and arranged within the space inclosed by the figure of a horseshoe."

5,983.—MINERAL PRODUCT UTILIZED IN THE MANUFACTURE OF PAPER AND OTHERWISE.—*The Agalite Fiber Company*, New York, N. Y. Application filed April 15, 1878.

"The word-symbol 'AGALITE.'"

5,984.—ANIMAL-TRAPS.—*Robert E. Dietz*, New York, N. Y. Application filed April 23, 1878.

"The words 'CATCH 'EM ALIVE.'"

5,985.—DRY-GOODS.—*Hood, Bonbright & Co.*, Philadelphia, Pa. Application filed April 16, 1878.

"The word-symbol 'WOODBINE.'"

5,986.—SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed April 15, 1878.

"The word-symbol 'VICTORIA.'"

5,987.—SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed April 15, 1878.

"The word-symbol 'SATINET.'"

5,988.—SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed April 15, 1878.

"The word-symbol 'EMPIRE.'"

5,989.—SMOKING-TOBACCO.—*Roundy, Peckham & Co.*, Milwaukee, Wis. Application filed March 15, 1878.

"The names 'Roundy, Peckham & Co.' and the word-symbol 'Boss.'"

5,990.—SMOKING-TOBACCO.—*Girolamo Suich*, San Francisco, Cal. Application filed November 3, 1877.

"The word-symbol 'URBIS ET ORBIS.'"

5,991.—CIGARS.—*Seidenberg & Co.*, Key West, Fla., and New York, N. Y. Application filed March 12, 1878.

"The word-symbol 'SILVER EAGLE.'"

5,992.—MEDICINAL PREPARATION.—*Townsend, Wilson & Co.*, Providence, R. I. Application filed April 23, 1878.

"A sheaf of cereal grains representing wheat, oats, and barley."

5,993.—MEDICINAL PREPARATION.—*Thomas E. Van Dyke*, Philadelphia, Pa. Application filed February 14, 1878.

"The words 'VAN DYKE'S RELIEF' and the letters 'V. J. E.'"

5,994.—MEDICINAL PREPARATION.—*Weeks & Potter*, Boston, Mass. Application filed March 9, 1878.

"The word 'CUTICURA.'"

DESIGNS.

[Each design bearing date April 30, 1878.]

10,652.—BREASTPIN.—*George D. Briggs*, Providence, R. I., assignor to *William C. Greene & Co.*, same place. Application filed April 8, 1878. Term of patent 14 years.

10,653.—FOUNTAIN-PEN CASES.—*Isaac W. Heysinger*, Philadelphia, Pa. Application filed February 26, 1878. Term of patent 14 years.

10,654.—SPOONS.—*Jacob Hammarth*, Wallingford, Conn., assignor to *Wallace Brothers*, same place. Application filed April 19, 1878. Term of patent 7 years.

10,655.—INKSTAND-FRAMES.—*Wolcott A. Hull*, New York, N. Y. Application filed April 2, 1878. Term of patent 3½ years.

10,656.—HAMMERS.—*Henry Hammond*, Hartford, Conn., assignor to *Horace Cornwall*, same place. Application filed April 13, 1878. Term of patent 14 years.

10,657.—OIL-STOVES.—*Frank A. Magee*, Chelsea, assignor to *The Magee Furnace Company*, Boston, Mass. Application filed April 20, 1878. Term of patent 7 years.

10,658 to 10,663, inclusive.—OIL-CLOTHS.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed April 15, 1878. Term of patents 3½ years.

10,664.—SPOONS.—*Henry L. Wallace*, Wallingford, Conn., assignor to *Wallace Brothers*, same place. Application filed April 19, 1878. Term of patent 7 years.

LABELS.

[Each certificate bearing date April 30, 1878.]

1,502.—Title: "WITCH-HAZEL (HAMAMELIS) BITTERS."—*Benjamin W. Dyer*, New York, N. Y. Application filed April 24, 1878.

1,503.—Title: "GRAND VICTORY."—*Kerbs & Spiess*, New York, N. Y. Application filed April 18, 1878.

1,504.—Title: "H. M. MYERS, SOLID STEEL."—*Henry M. Myers*, Beaver Falls, Pa. Application filed August 28, 1877.

1,505.—Title: "MURPHY'S IRISH COUGH SYRUP."—*James J. Murphy*, Baltimore, Md. Application filed April 23, 1878.

1,506.—Title: "WILSON'S SALICYLIATED PURE CASTILE SOAP."—*Townsend, Wilson & Co.*, Providence, R. I. Application filed April 23, 1878.

1,507.—Title: "WILSON'S CARBURETTED ACID PHOSPHATE, &c."—*Townsend, Wilson & Co.*, Providence, R. I. Application filed April 23, 1878.

1,508.—Title: "INTERNATIONAL EXHIBITION UNDERWEAR AND HOSIERY."—*The American Hosiery Company*, New Britain, Conn. Application filed March 22, 1878.

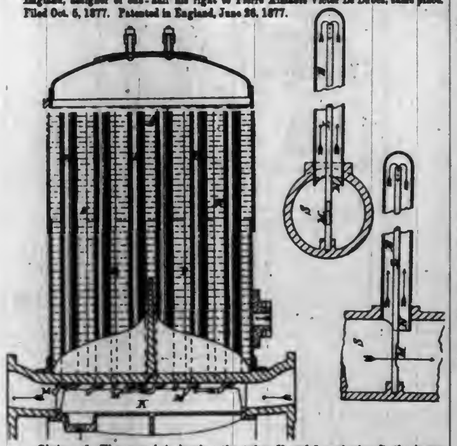
1,509.—Title: "THE CHAUTAUQUA TEN-LINED BUTTER PACKAGE."—*Osborne J. Willard*, Mayville, N. Y. Application filed March 27, 1878.

1,510.—Title: "MICHILL DUSTIN'S CELEBRATED OINTMENT OR SALVE." *Mrs. S. B. Dustin*, Utica, N. Y. Application filed April 24, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

APRIL 30, 1878.

202,917. APPARATUS FOR HEATING WATER AND OTHER FLUIDS. James Atkinson, London, England, assignor of one-half his right to Pierre Aimable Victor Le Lubez, same place. Filed Oct. 6, 1877. Patented in England, June 26, 1877.



Claim.—1. The vessel A, having the tubes E and L and pipe S, the inner tube L being open at its top and bottom, and the vessel being provided with a transverse partition, O, extending upward from its bottom, substantially as shown and described.

2. In combination with the vessel A, tubes E and L, and pipe S, the passage or channel K, the lower ends of the tubes L projecting into said channel for the purpose of carrying off the air or gas, substantially as set forth.

202,918. CARPENTERS' PLANES. Leonard Bailey, Hartford, Conn. Filed Feb. 20, 1878.

Brief.—The bit is adjusted longitudinally by a screw bearing both a right and a left hand thread, thus forming a differential screw.

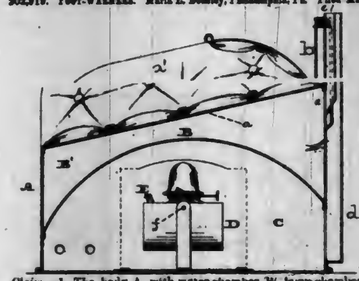


Claim.—1. The double-threaded adjusting-screw *f*, made in one piece, and having a right-hand thread working in its support or bearing, and a left-hand thread working in the bit-carrying nut, in combination with a plane body and bit, substantially as described.

2. In combination, stud *a*, nut *c*, adjusting-screw *f*, button *j*, bearing-pin *k*, and the plane-bit, all substantially as described.

3. The combination of the plane-bit, the button *j*, the stud *a*, and the rotating shaft *f*, provided with the pivoted handle *g*.

202,919. FOOT-WARMERS. Maria E. Beasley, Philadelphia, Pa. Filed Mar. 6, 1878.

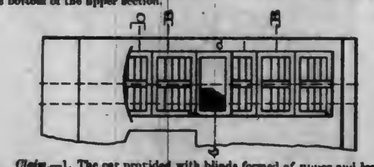


Claim.—1. The body A, with water-chamber B', lamp-chamber C, water-pipe *b*, steam-pipe *c*, and smoke-pipe *d*, all combined and operating as described.

2. The foot-warmer consisting of the body A, with tread *a*, water-chamber B', lamp-chamber C, pipes *b d e*, and self-righting lamp or lamps D, combined and operating substantially as and for the purpose set forth.

202,920. CAR-SHUTTERS. John G. Brill and George M. Brill, Philadelphia, Pa. Filed Dec. 12, 1877.

Brief.—Upper and lower flexible blinds slide in grooved posts in the side of the car, the grooves extending into the cartines. A window is hinged to the bottom of the upper section.

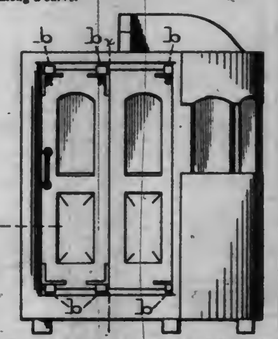


Claim.—1. The car provided with blinds formed of upper and lower flexible sections B B', movable each in its own set of grooves in the uprights and cartines independently of each other, and operating substantially as and for the purpose set forth.

2. The car-blinds formed of upper and lower flexible sections B B', in combination with the windows C, attached thereto and operating substantially as and for the purpose set forth.

202,921. CAR-DOORS. John G. Brill and George M. Brill, Philadelphia, Pa. Filed Dec. 12, 1877.

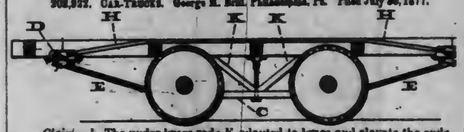
Brief.—Door, composed of hinged sections with swiveled yielding guides, slides on ways along a curve.



Claim.—1. The car-door D, formed of hinged sections, in combination with the transversely and longitudinally extending ways *d*, and swiveled guides *b*, substantially as and for the purpose set forth.

2. The sectional car-door D, ways *d*, swiveled guides *b*, and springs *f*, combined and operating substantially as and for the purpose set forth.

202,922. CAR-TRUCKS. George M. Brill, Philadelphia, Pa. Filed July 30, 1877.



Claim.—1. The under brace-rods E, adapted to brace and elevate the ends of the car truck or frame by the adjustment of nuts, which are located upon the said rods between their respective bearings, in combination with the upper brace-rods H, which are adapted, by means of nuts upon their ends, to take up the strain upon the said car-frame ends when the same are elevated from a sagging position, as above, all substantially as herein shown and described, and for the purposes set forth.

2. The central braces I, provided with tightening-nuts at top or bottom ends, in combination with the under brace-rods C E and the over brace-rods H, all adapted for the herein-described co-operative action of bracing and bringing the truck or frame into proper shape, as shown and set forth.

3. The saddles D, secured upon the truck-frame, and having bearings *a b* for the over and under brace-rods E H, substantially as herein shown and described.

202,923. TYPE-WRITING MACHINES. Byron A. Brooks, New York, N. Y. Filed Dec. 30, 1875.

Claim.—1. A type-bar, for use in a type-writing machine, carrying an upper and a lower case letter, substantially as and for the purpose set forth.

2. The combination, in a type-writer, of a type-bar carrying an upper and

a lower case letter with a platen arranged to vibrate in a line transverse to the line of printing, whereby either of said letters may be printed in line at will, substantially as described.

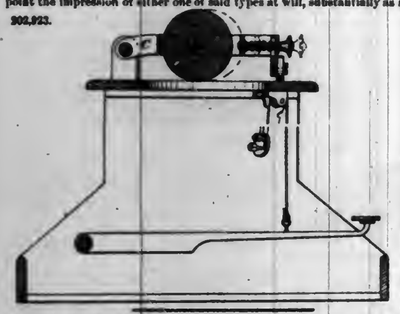
3. The combination of a series of type-bars carrying upper and lower case letters, the letters of each set being arranged to strike or print at a common center, with a platen arranged to vibrate transversely to the line of printing, as set forth.

4. The combination of a series of type-bars, each provided with an upper and lower case letter, with a series of keys for operating the same, and a platen arranged to move in line with the printing, and also at right angles thereto, substantially as described.

5. The sliding frame C, having the transversely-sliding frame *a*, with the platen B mounted therein, and provided with the rod H, or equivalent device, for controlling the transverse movements of the platen, substantially as described.

6. In a type-writing machine, the combination of a swinging type-bar mounted on a fixed pivot, and carrying an upper and a lower case type, with a movable platen, arranged so that it may be adjusted to receive at a given point the impression of either one of said types at will, substantially as shown.

202,923.



202,924. CLASPS. F. Barton Brown, Boston, Mass. Filed Feb. 4, 1878.



Claim.—The improved device described, composed of the jaws A A', the hinge-pin *b*, and spiral spring *a*, with its extended ends *a' a'*, the jaws being connected together by the hinge-pin *b*, passing through the ears *c*, and also through the spiral spring, holding it in place, each jaw having an opening in it to receive the upper and under portions of the spring, all substantially as above described.

202,925. CUSHIONS FOR SULKIES. Thomas H. Brown, Chicago, Ill. Filed Mar. 2, 1878.

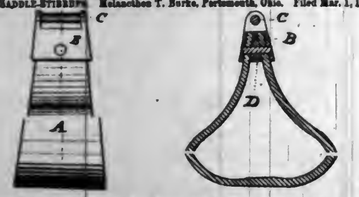
Brief.—The cushion is provided with a pocket for the introduction of the dead-weight the driver is required to carry.



Claim.—1. The combination of the pocket B with the cushion A, substantially as set forth.

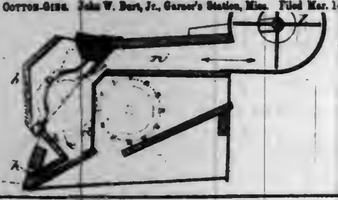
2. The combination of the roll D, cushion A, and pocket B, as shown.

202,926. SADDLE-STIRRUPS. Melancthon T. Burke, Portsmouth, Ohio. Filed Mar. 1, 1878.



Claim.—The sheath B, having bar t', the stirrup A, and wedge D, combined and arranged as shown and described, and for the purpose specified.

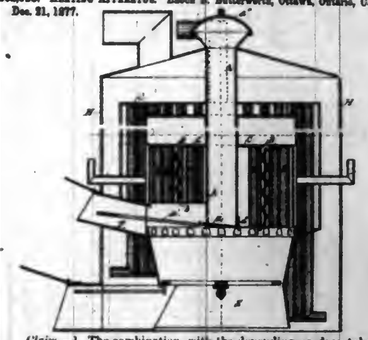
202,927. COTTON-GINS. John W. Burt, Jr., Garner's Station, Miss. Filed Mar. 14, 1878.



Claim.—1. The dirt-chamber *c*, located between the two sets of ribs *c d*, and having a discharge-chute, *g*, leading from its bottom, substantially as described.

2. In a cotton gin, the combination of a fan or blower, *l*, an air-passage, *n*, and a dust-chamber, whereby the dust is blown from the ginned cotton after it has passed through the ribs *c*, substantially as set forth.

202,928. HEATING APPARATUS. Enoch B. Butterworth, Ottawa, Ontario, Canada. Filed Dec. 21, 1877.



Claim.—1. The combination, with the depending or drop tubes B, of the inner pipes *b* and spiral flanges *b'*, as set forth.

2. The combination of magazine A, constructed with flanges *a'''*, and provided with a stop, *a''*, and the shutter or shut-off *a*, provided with a bar, *a'*, substantially as set forth.

3. The heating apparatus herein described, consisting of magazine A, surrounded by shell or casing F, the horizontal partition C, provided with drop-tubes B, the outer shell H, intermediate shell G, and air-tubes O, passing between the inner and intermediate shells F G, all substantially as shown and described.

202,929. BOBBINS FOR LOOM-SHUTTLES. John P. Bussell, Clinton, Mass., assignor to Bigelow Carpet Company, same place. Filed Dec. 7, 1877.

Brief.—The bobbin has a metallic head or base provided with projections that enter grooves in the wooden barrel, which projections serve to unite the barrel and head, and act as stop-pins for driving the bobbin in the spinning-machine.



Claim.—The metallic base *e*, provided with the projections *f*, in combination with the wooden barrel secured in such base, the projections thereof serving to unite the barrel and base, and to act as stop-pins for driving the bobbin, substantially as described.

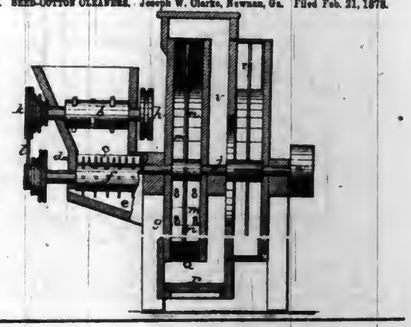
202,930. ICE-CREEPERS. Oscar A. Childs, Cleveland, Ohio. Filed Mar. 27, 1878.



Claim.—1. In an ice-creeper, the combination, with a plate adapted to be secured to the heel of a boot or shoe, of a pivotal shaft having its ends journaled in lugs, and a swinging arm having an enlarged angular-faced end, which is rigidly secured to the central portion of said pivotal shaft, whereby the swinging arm is retained in position by the resiliency of the pivotal shaft, substantially as set forth.

2. In an ice-creeper, the combination, with a plate provided with lugs *a a'* and open slotted guards *b b'*, of a pivotal shaft, C, having its ends journaled in lugs *a a'*, and swinging arm B, provided with an enlarged angular-faced end, which is rigidly secured to shaft C between the guards *b b'*, substantially as set forth.

202,931. SEED-COTTON CLEANERS. Joseph W. Clarke, Newnan, Ga. Filed Feb. 21, 1878.



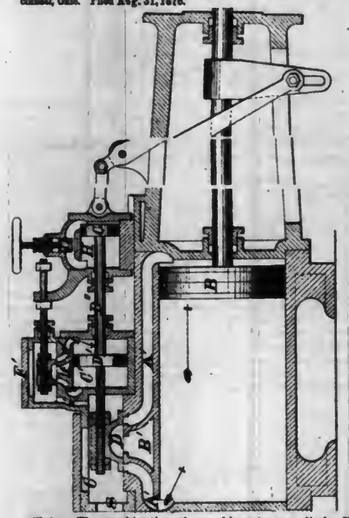
Claim.—1. In a cotton seed cleaner, the combination of a whipper-chamber, *m*, provided with projections *o* on its inner surface, a screen, *q*, at its bottom, and a screen, *s*, at its top, for the passage of air, whipper *n*, slide *r*, air-passage *s*, and the fan, substantially as shown.

2. The combination of the whipper-chamber *m*, having the whipper revolving therein, and provided with the screens *q s*, slide *r*, air-passages *e y*, and the fan-chamber, the whipper and fan chambers being separate and distinct, and the air-passages being placed between them, substantially as described.

202,932. HOG-CHOLERA COMPOUNDS. H. C. Collier, Clarksville, Ark. Filed Jan. 22, 1878.

Claim.—A medicine for hog-cholera, compounded of arsenic, podophyllum, poke-root, flowers of sulphur, saltpeter, sulphate of copper, sulphate of iron, antimony, stramonium-seeds, and asafœtida, in about the proportions named, as and for the purpose herein specified.

202,933. VALVES FOR STEAM-ENGINES. Ezra Cope, Hamilton, and James R. Maxwell, Cincinnati, Ohio. Filed Aug. 31, 1876.



Claim.—The combination of movable cataract-cylinder H and piston G, the stationary auxiliary cylinder C' and piston D', and the main valve D, the auxiliary piston moving the main valve in a direction to admit steam to the main cylinder, and the cataract-cylinder H moving it in a direction to cut off steam, whereby the main valve becomes a regulating and cut-off valve, substantially as shown and described.

202,934. SCHOOL-DESKS. Rowland K. Curtis, Wabash, Ind., assignor to Wabash School Furniture Company, same place. Filed Jan. 25, 1878.



Claim.—1. A school-desk having the rear legs thereof each constructed of a single piece of wood, cut in a slightly-curved form in or nearly in the direction of the grain of the wood, the upper ends of said legs being of sufficient width to directly receive and support the entire top of the desk and any weight brought to bear thereon, substantially as specified.

2. The combination, with the rear legs, constructed and adapted to receive and support the desk-top, of the front legs having recesses formed therein, with the brackets G and seat-lever F, said brackets extending across the front and rear legs, and connected therewith by screw-bolts K K', the former arranged to resist the upward pressure of the end of the seat-lever, substantially as described, whereby the side walls of the recesses are strengthened against lateral pressure of the seat-levers, and the legs braced, as set forth.

202,935. BLIND-AWNINGS. Charles F. Dearborn, Boston, Mass. Filed Sept. 17, 1877.

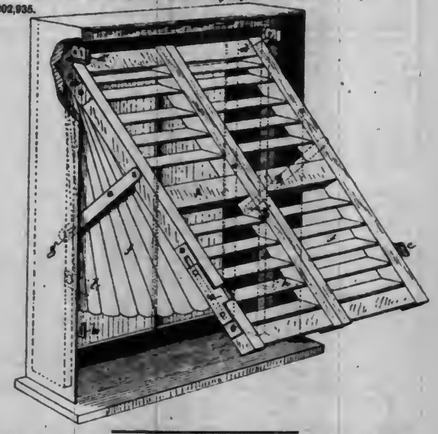
Claim.—1. In combination with a window-awning having a double hinge at top, the sliding lower hinge, adapted to operate substantially as described, so that the blind may be detached from the lower hinge without elevating said blind, for the purposes explained.

2. The combination, with the convertible blind-awning A H, of the slide *f*, made readily detachable and attachable by means of a coupling, *l*, secured to the window-casing, substantially as shown and described.

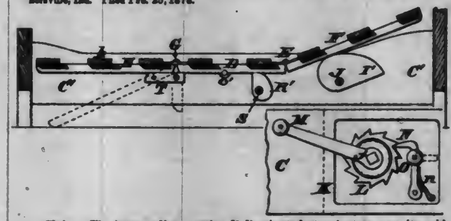
3. The combination, with the convertible blind-awning A H, of the sliding hinge *c* and plate *i*, as and for the purpose described.

4. In combination with a window-blind, a pintle for a hinge attached to the window-casing, and a sliding bar, *c*, adapted to be detached from said pintle, or connected therewith by elevating or depressing said bar independently of the blind, substantially as and for the purposes set forth.

202,935.

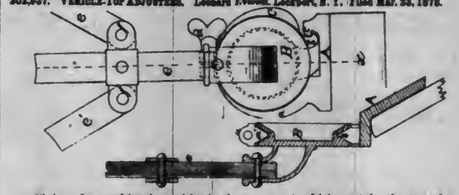


202,936. INVALID-BEDSTEADS. Frank Doll, Martin Rieke, and John G. Diehlmann, Connersville, Ind. Filed Feb. 26, 1878.



Claim.—The intermediate section D D, pivoted at *c c'*, at or near its mid-length, to the side rails C C of an invalid-bed, said intermediate member D D having hinged to it, at E and G, respectively, the head-section F F and foot-section H H, which three sections are adjusted by the eccentrics I I' R R', rock-shafts J S, and cleats T T, and securely retained at any suitable inclination by the locking devices L M N O, the lower end of said foot-section H H being unsupported and capable of depression below the general level of body-section D D, as herein described.

202,937. VEHICLE-TOP ADJUSTERS. Leonard Everett, Lockport, N. Y. Filed Mar. 23, 1878.



Claim.—In combination with the bows *c c c*, which sustain the top of a buggy or carriage, the rotating disk B, and the binding-clamp formed by the parts A, *a*, and C, and thumb-screw *d*, all substantially as shown and described.

202,938. EARS FOR WELL-BUCKETS. Benj. F. Felix, Chicago, Ill. Filed Mar. 23, 1878.



Claim.—The well-bucket ear A, consisting of the plate *a*, provided with the knob *d* and the forked shank *f*, and shanks *g g*, adapted to pass through the stave and admit of being bent or clinched against the inner surface thereof, substantially as specified.

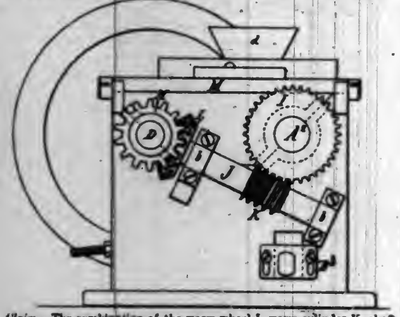
202,939. PATTY-PANS. Samuel J. Frost and Henry T. Smith, Brooklyn, N. Y. Filed Oct. 18, 1877.

Claim.—A patty-pan having the longitudinal grooves I' I' around the edge thereof, and the corrugations C C, extending vertically from the bottom to the edge of the rim, as and for the purpose set forth.

202,939.

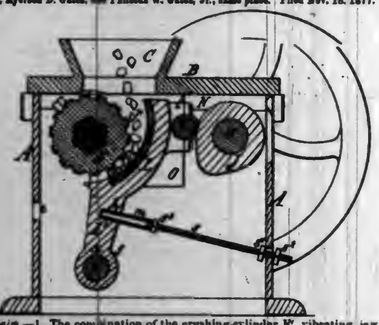


202,940. ORE-CRUSHERS. Philetus W. Gates, Chicago, Ill., assignor to himself, Abigail E. Gates, Ryerson D. Gates, and Philetus W. Gates, Jr., same place. Filed Nov. 14, 1877.



Claim.—The combination of the worm-wheel I, worm-cylinder K, shaft J, and bevel-wheels H L with the crushing-cylinder A, vibrating jaw B, and cam C, substantially as and for the purpose herein described.

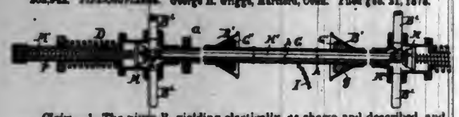
202,941. ORE-CRUSHERS. Philetus W. Gates, Chicago, Ill., assignor to himself, Abigail E. Gates, Ryerson D. Gates, and Philetus W. Gates, Jr., same place. Filed Nov. 18, 1877.



Claim.—1. The combination of the crushing-cylinder F', vibrating jaw L, revolving cam J, ratchet-wheel G, pawl G', and driving-shaft H, substantially as and for the purpose described.

2. The combination of the vibrating jaw L, the pawl G', having a pitman motion, and a crushing-cylinder, F', having a ratchet-wheel, G, on its shaft, for the pawl to take into and turn the cylinder, substantially as described.

202,942. PIPE-COUPLERS. George H. Griggs, Hartford, Conn. Filed Feb. 21, 1878.



Claim.—1. The pipes B, yielding elastically, as shown and described, and formed with spherical-based cavities at their flared ends, in combination with the coupling-piece G, having globular ends adapted to yield in every direction and maintain a tight contact, as herein specified.

2. The connecting-piece G, formed with springs extending beyond the ends thereof, and adapted to serve, in combination with yielding pipes B, as shown and described, on the ends of the cars A, as herein specified.

3. In a coupling, the spring H in two separate thin parts, crossing each other, and held by a rivet, h', adapted to serve the double functions of pushing open the valve M and of elastically supporting the connecting-piece G in any position, as herein specified.

4. The combination of the yielding pipes B with flared ends B', and having spherical-based cavities therein, the coupling-piece G, having spheroidal ends, and the extending springs H, adapted to support the same, as herein specified.

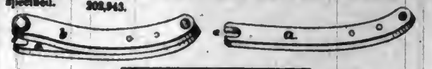
5. The suspending chain or cord I, attaching the connecting-piece G permanently but loosely to one of the cars, in combination with the yielding pipes B B' and their connections, as herein specified.

6. The soft packing g on the spheroidal ends of the coupling-piece G, in combination with the correspondingly-concaved ends of the tubes B B', as herein specified.

202,943. BUTTONS. Joseph Hill, Williamsport, Pa. Filed Mar. 14, 1878.

Claim.—The piece a, provided with slot c, in combination with the arm b, constructed and arranged substantially as described, and for the purpose specified.

202,943.



202,944. SUGAR-COATED BISCUITS. John Holmes, Jersey City, N. J., assignor of one-half his right to George H. Coutes, New York, N. Y. Filed Feb. 25, 1878.

Brief.—Biscuits are formed and hard-baked, then dipped in sirup, and smoothed by revolution in pans in the presence of corn-starch to gloss and polish. This renders them impervious to air.

Claim.—1. A biscuit composed of hard-baked flour and coated with sugar, substantially as and for the purpose described.

2. A sugar-coated biscuit the coating of which is filled and polished by the use of starch or equivalent material, substantially as and for the purpose described.

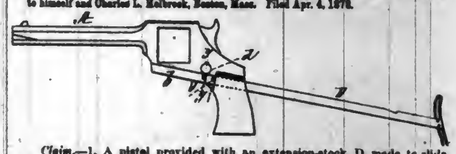
202,945. CURVED STREET-RAILS. Wm. W. Humphrey, Boston, Mass. Filed Jan. 14, 1878.

Brief.—In a slot in the tread of a curved street-rail rollers are inserted to assist the slip of the wheel in passing the curve.



Claim.—A curved street-rail made as described, with rollers inserted in the tread of the rail, as described, and for the purpose set forth.

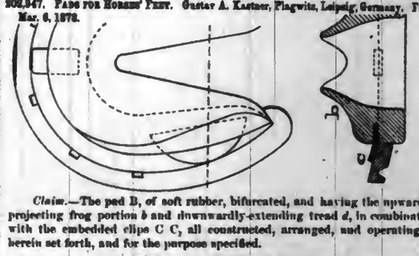
202,946. EXTENSION-STOCKS FOR PISTOLS, &c. Samuel W. Johnson, West Medford, assignor to himself and Charles L. Holbrook, Boston, Mass. Filed Apr. 4, 1878.



Claim.—1. A pistol provided with an extension-stock, D, made to slide through or upon its handle, and having a butt or shoulder plate, E, substantially as and for the purpose set forth.

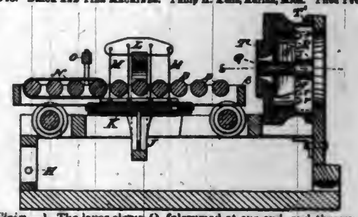
2. A spring-catch, *d*, or other suitable fastening, in combination with the sliding extension-stock D, as and for the purpose described.

202,947. PADS FOR HORSES' FEET. Gustav A. Kastner, Plagwitz, Leipzig, Germany. Filed Mar. 6, 1878.



Claim.—The pad B, of soft rubber, bifurcated, and having the upwardly-projecting frog portion *b* and downwardly-extending tread *d*, in combination with the embedded clips C C, all constructed, arranged, and operating as herein set forth, and for the purpose specified.

202,948. BRICK AND TILE MACHINES. Philip H. Kolb, Adrian, Mich. Filed Feb. 18, 1878.



Claim.—1. The lever-clamp O, fulcrumed at one end, and thrown up by a spring, P, at the other end, operating substantially as described, in combination with the reciprocating frame or table C.

2. The slots and clamp-screws G H, substantially as described, to permit the separate and relative adjustment of the two ends of the carrying-frame, while preventing lateral motion.

3. The bar R, employed to hold the core Q, and provided with projecting teeth *r r*, as set forth.

4. The combination of tile-die T', having recesses *s'*, and core-bar R, having ends *s* inserted in said recesses, as set forth.

5. The bar R', having arms *r' r'*, as and for the purpose set forth.

202,949. FENCES. John H. Kerr, West Greenwood, Pa. Filed Nov. 13, 1877.

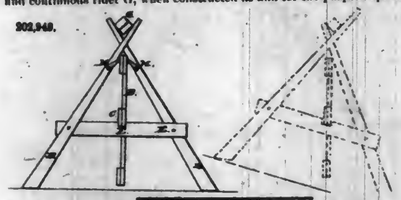


Claim.—1. The trestle A, A, and B, articulated at two points, so that the weight of the fence presses the stakes across the top boards, and binds two panels together, substantially as described.

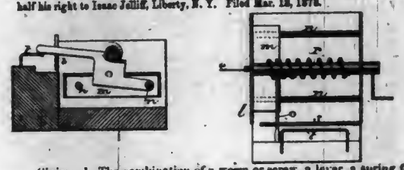
2. In a portable folding fence, the pawls H H upon the stakes A A, to prevent any lateral movement in the parts at the top of the fence.

3. The combination of the trestle A, A, and B, panel C D, pawls H H, and continuous rider O, when constructed as and for the purpose specified.

202,949.



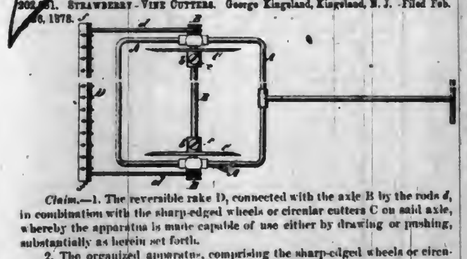
202,950. APPARATUS FOR RAISING WATER. Jarvis C. Kile, Woodbourne, assignor of one-half his right to Isaac Jolliff, Liberty, N. Y. Filed Mar. 18, 1878.



Claim.—1. The combination of a worm or screw, a lever, a spring for forcing the outer end of the lever upward, and a support, *t*, substantially as described.

2. Frame *l*, guide-rods *n*, latch-box *m*, worm-gear *r*, spring *s*, support *t*, and lever *o*, with the weighted piston, substantially as set forth.

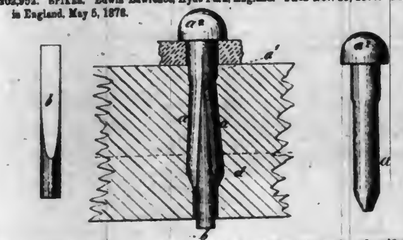
202,951. STRAWBERRY-VINE CUTTERS. George Kingsland, Kingsland, N. J. Filed Feb. 20, 1878.



Claim.—1. The reversible rake D, connected with the axle B by the rods *d*, in combination with the sharp-edged wheels or circular cutters C on said axle, whereby the apparatus is made capable of use either by drawing or pushing, substantially as herein set forth.

2. The organized apparatus, comprising the sharp-edged wheels or circular cutters C, adjustable on the axle B by means of the set-screws *c*, the reversible rake D, and the frame A, provided with a tongue or draft-pole, the whole combined for use and operation substantially as herein set forth.

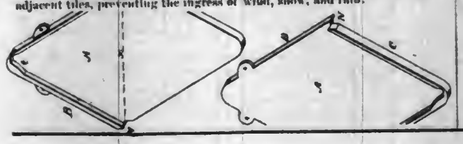
202,952. SPIKES. Edwin Lawrence, Hyde Park, England. Filed Nov. 15, 1877. Patented in England, May 5, 1878.



Claim.—A split bolt, spike, or dog, *a*, having the body of uniform, or nearly uniform, diameter, and a wedge, *b*, applied thereto within a hole extending through the sleeper or other object to which the fastening is to be made, substantially as shown and described, whereby such bolt, spike, or dog and its wedge may be readily forced together, tightened, released, or removed, as may be required, in manner substantially as set forth.

202,953. ROOFING-TILES. Henry E. Merrill, Akron, Ohio. Filed Mar. 13, 1878.

Brief.—An ordinary diamond shaped tile is constructed as if cut in two by a line joining the side corners, and the lower half pushed slightly to one side of the upper half. A break-joint is thereby made at the corners of two adjacent tiles, preventing the ingress of wind, snow, and rain.



Claim.—1. A roofing-tile the upper and lower halves of which, with reference to a line drawn between the side corners, lie in the same plane, and the lower half is offset to the right or left of the top half, substantially as and for the purpose hereinbefore set forth.

2. A roofing-tile having the body A, flanges B and C, and notches N N', substantially as and for the purpose hereinbefore set forth.

202,954. WIRE BALE-BANDS. Lewis T. Howell, Albany, N. Y. Filed May 13, 1877.

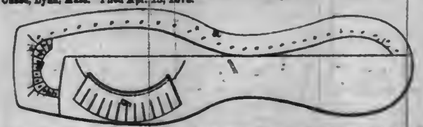


Claim.—1. The wire-holding device D, formed with a web or splicing-bar, *a*, and two series of teeth, bars, or ribs, *c* and *c'*, arranged opposite each other, and continuous with said web, all adapted to grasp, crimp, or corrugate and hold a strand of wire between when said teeth, bars, or ribs are forced inward, substantially as and for the purpose set forth.

2. The combination, with the wire holding device D, composed of a web or splicing-bar and two series of teeth, bars, or ribs, *c* and *c'*, adapted to crimp or corrugate and hold a wire strand when forced inward against said strand, of the hook B or loop C, or their well-known equivalents, substantially as and for the purpose set forth.

3. The method of securing the free end of a wire to a connecting device, which consists in placing the same between toothed jaws of malleable metal, or their equivalents, and then forcing such jaws or equivalents inward, thereby bending and clamping such free end, substantially as specified.

202,955. METHODS OF LASTING BOOTS AND SHOES. Timothy M. Nowhall and Amos F. Chase, Lynn, Mass. Filed Apr. 15, 1878.

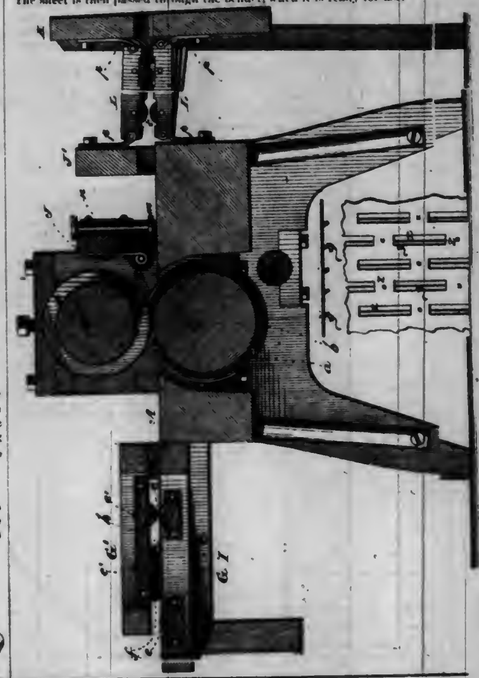


Claim.—1. The improved process of lasting boots and shoes, consisting of first inserting headed tacks in the insole or filling, with their sharpened ends projecting, then folding the edge of the upper over upon the projecting ends, thereby holding the lasted upper in place, substantially as set forth.

2. In the process of lasting boots and shoes, the method of lasting the toe or other portions of the upper by attaching a piece of thin leather or other suitable material thereto, and cutting its outer edge into strips, all substantially as and for the purpose specified.

202,956. METAL-LATH MACHINES. Wesley M. Parker, Rushville, Ill. Filed Sept. 15, 1877.

Brief.—The metal sheet is placed between the frames G and G', which hold it straight while being fed to the rolls, the lower one of which is provided with cutters and punches, which respectively form the ledges to hold the plaster and the holes for the nails. The flanges, partially turned by the bevel on the cutters, is set at right angles to the sheet by the rolls *u* in the frame J. The sheet is then passed through the bender, when it is ready for use.



Claim.—1. In a machine for making metal laths, the roller C, provided with a series of segmental cutters, *b*, each cutter having one of its sides vertical and the other side sloping or inclined, and having arranged about midway between the cutters, in the same vertical plane, the punches *e*, as and for the purposes hereinbefore described.

2. In a machine for making metal laths, a device constructed substantially as described, arranged in front of the cutting or punching dies, for the purpose of straightening the metal before it reaches the dies.

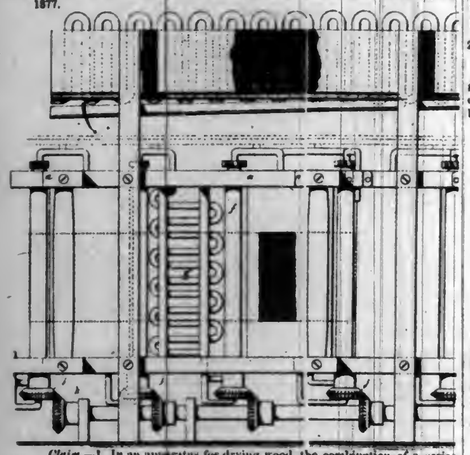
3. The combination of the stationary frame G, with rollers *c*, and the hinged top frame G', with rollers *c'*, substantially as and for the purposes set forth.

4. The slide H, provided with the lug *f*, stop *h*, and eccentric-lever I, in combination with the frames G and G', substantially as and for the purposes set forth.

5. The combination, with the rollers C D, constructed substantially as described, of a frame, J, having a series of vertical shafts, *s*, carrying upon their lower ends rollers *s'*, for the purpose of bending the lips of the lath to the desired angle, substantially as described.

6. The combination of the two series of bars L, provided with rollers *l*, and hinged to the adjustable plates *p*, and the board or frame K, having curved slot *k*, all substantially as and for the purpose set forth.

202,957. WOOD-DRYING APPARATUS. Harrison Parker, Winchester, Mass. Filed Aug. 21, 1877.



Claim.—1. In an apparatus for drying wood, the combination of a series of pairs of heated plates, a series of pairs of rollers, and a series of steam-pipes, arranged with intervening spaces, substantially as and for the purpose described.

2. The combination, with heated plates, of a steam-chest and feeding-rollers, to operate substantially as described.

3. The combination, in a wood-drying machine, of heated press-plates and a series of heated pipes, arranged at such distance apart as to admit of the escape of vapors from the wood, substantially as described.

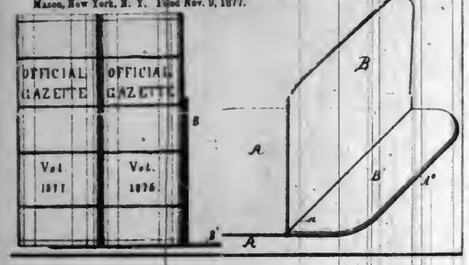
202,958. HINGE. Leonel Patterson, Parker City, Pa., assignor of one-third his right to Samuel H. Creyle, same place. Filed Feb. 20, 1878.

Brief.—The pintle is gradually tapered its entire length, and the knuckles of the hinge is formed a tapering socket of same length, and exactly corresponding to the tapered pintle, the construction enabling the pintle to be more readily withdrawn from the hinge.



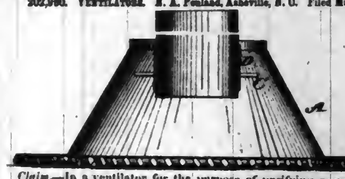
Claim.—In a hinge having a tapering socket, the pintle *d*, made tapering from the head to the point, substantially as shown.

202,959. BOOK-SUPPORTS. Francis W. Pearson, Boston, Mass., assignor to himself and Amasa Mason, New York, N. Y. Filed Nov. 9, 1877.



Claim.—A book-supporter consisting of the base A, formed of a thin sheet, and the upright B, rising at a right angle, or nearly right angle, from said base, intermediate the ends of the said base, the whole being made of suitable size and proportions, as described, for the purpose specified.

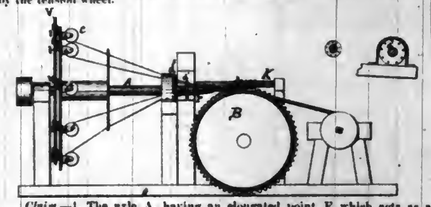
202,960. VENTILATORS. H. A. Pouland, Asheville, N. C. Filed Mar. 9, 1878.



Claim.—In a ventilator for the purpose of purifying rooms or dwelling-houses, an apparatus, A, made in funnel shape, which is provided with inner arms C C C, fastened to a ring, D, which holds the stove-pipe F firmly, and at its proper distance from the inner edge of the ventilator, so as to allow of a free entrant of air to pass from the room through the latter and into the flue or chimney, whence it is carried off, substantially as and for the purpose set forth.

202,961. MACHINES FOR MAKING HOLLOW WIRE CABLE. Othniel Preston, Hornellsville, N. Y. Filed Aug. 27, 1877.

Brief.—The strands of wire are passed through the perforations in the guides, and made to converge around the end of the spindle, which acts as a core or mandrel to the hollow wire cable. The cable is withdrawn therefrom by the tension wheel.

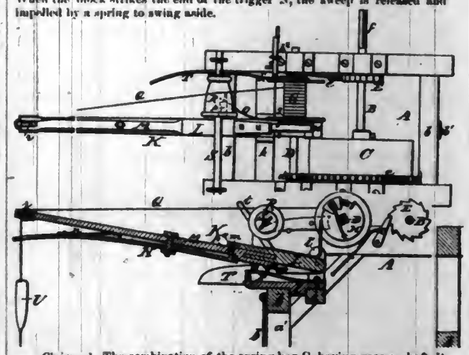


Claim.—1. The axle A, having an elongated point, F, which acts as a core or mandrel to the cable, in combination with the guide-collars and the spool-wheel V, carrying the spools *c*, substantially as described, and for the purpose specified.

2. The axle A, having an elongated point, in combination with the wire-twisting mechanism, the tension-wheel B, and the shaft K, all connected and arranged substantially as described, and for the purpose specified.

202,962. APPARATUS FOR CATCHING FISH. Samuel H. Robertson and Ervin A. Robertson, Hampden, Me. Filed Aug. 9, 1877.

Brief.—The line being unwound from the reel and thrown out, the spring is then wound up. When a bite is had the fish will exert a pressure, through the line, upon the end of the compound rod, which releases the upright from the stop-wheel, when the spring will rotate the reel, thus winding the line. When the block strikes the end of the trigger N, the sweep is released and impelled by a spring to swing aside.



Claim.—1. The combination of the spring-box C, having gear *e*, shaft D, having pinion *d* and stop-wheel H, and revolving reel G, having clutch *g*, by which it may be made to engage with stop-wheel H, substantially as and for the purpose herein shown and specified.

2. The stop-wheel H, having slide I and spring J, substantially as described, for the purpose herein set forth.

3. The combination of the compound rod K, having upright *q*, with the spring P, line Q, reel G, and stop-wheel H, all arranged and operating substantially in the manner and for the purpose shown and specified.

4. The compound rod K, consisting of butt L, horizontally-swinging sweep M, trigger N, and spring *n*, for operating the latter, the sweep M being provided with a pulley, *r*, at the end thereof, substantially as described, for the purpose herein set forth.

5. In combination with the compound rod K, reel G, and line Q, the conical guiding-pulley R and guard *t*, substantially as and for the purpose herein shown and specified.

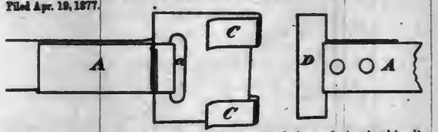
6. The combination, with the swinging sweep M of compound rod K, of the spring O, arranged, as described, to force it aside when the trigger N is released, substantially as and for the purpose herein shown and specified.

7. The curved guiding and supporting bracket T, in combination with the sweep M and spring O, substantially as and for the purpose herein shown and specified.

8. The compound rod K, having swinging part M, spring O, lever-trigger N, having perforations *s*, and pulley *r*, in combination with the line Q, having solid metal block U, winding-reel G, and operating mechanism, as herein described, substantially as and for the purpose herein shown and specified.

9. The herein-described machine or apparatus for catching fish, consisting, essentially, of a stout operating-spring inclosed in case or box C, having gear-edge *e*, shaft D, having pinion *d*, stop-wheel H, and reel G, the latter arranged to engage, when desired, with stop-wheel H by clutch *g*, compound rod K, having upright *q*, springs P O, the latter operating the sweep M, trigger N, forming part of compound rod K, and line Q, having solid metal block U, all combined, arranged, and operating substantially in the manner and for the purpose herein shown and specified.

202,963. BALE-TIES. Joseph W. Reop, Louisville, Ky., assignor to Wm. J. Tapp, same place. Filed Apr. 19, 1877.

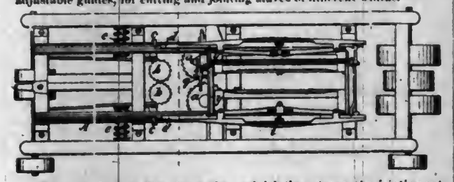


Claim.—1. The within-described bale-tie, consisting of the buckle B, having the slot *a* in one end, and the hooks C, bent back upon it in a plane parallel therewith, and within the edges of the sides of the buckle and underneath the same, in combination with the catch-bar D, of the shape of a block, T, riveted to the band A, and adapted to engage with the hooks C, substantially as specified.

2. In the manufacture of the bale-tie shown and described, the buckle B, hook-tongues C, and the catch-bar D, cut from a single flat piece of metal at one and the same operation, substantially as described.

202,964. MACHINES FOR MAKING STAVES. Harley M. Rounds, Neenah, Wis. Filed Jan. 17, 1877.

Brief.—The stave is cut from the blank, and the edges jointed by passing it once through the machine. The jointing-cutters are mounted on separate laterally-swinging frames, which carry arms working in connection with curved adjustable guides, for cutting and jointing staves of different widths.



Claim.—1. In a machine for sawing and jointing staves, the jointing-cutters *b b*, mounted in separate laterally-swinging frames B B, the arms *c c*, also mounted upon said frames, and the springs *e e*, by which said cutters are held to their work, in combination with the curved adjustable guides of the carriage, for the purpose of jointing staves of different widths at the same bevel or angle, substantially as described.

2. In combination with the arms *c c* of the frames carrying the jointing-cutters, the adjustable guides *i i* on the carriage, by which the cutters are made to curve the edges of the stave proportioned to its width, substantially as described.

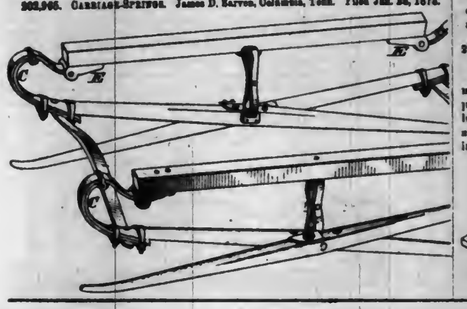
3. The combination of the clamps and spring-guides connected thereto, whereby the guides are kept in proportion to the spread of the clamps, as set forth.

4. The combination of the clamps, made to move in and out in guide-ways, the levers pivoted to the carriage at the inner end, and to the clamp-frame at the outer, and attached to the spring-bars, as set forth.

5. The longitudinal shaft, the equalizing-bars connecting the said shaft to the clamps on both sides, and the wheel and clamping-lever, all constructed and operating together as set forth.

6. The combination of the jointing-cutters *b b*, the separate laterally-swinging frames B B, having the arms *c c*, and springs *e e*, with the two saws *a a*, the bolt-carriage, and the adjustable guides *d d*, substantially as described, and for the purposes specified.

202,965. CARRIAGE-SPRINGS. James D. Sarver, Columbia, Tenn. Filed Jan. 26, 1878.



Claim.—1. In combination with X-springs and C-shaped springs, leather connectors passing over the outside of the C-springs, substantially as and for the purposes set forth.

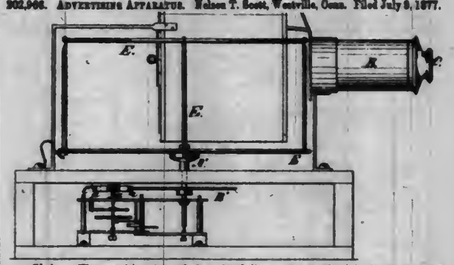
2. In combination with a vehicle employing X-springs and C-springs combined, the short steel springs F, attached to the under side of the carriage-body, so as to furnish a yielding action of the body with the springs, substantially as and for the purposes described.

3. The combination of the X-springs, the C-shaped springs, the leather connectors D D, and the short springs F F, as and for the purposes described.

4. In a vehicle employing X-springs and C-shaped springs, leather connectors passing outside the C-springs, and having a yielding connection with the carriage-body.

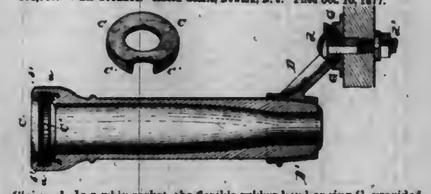
5. The binder-springs M M, in combination with the X-springs, substantially as and for the purposes described.

202,966. ADVERTISING APPARATUS. Nelson T. Scott, Westville, Conn. Filed July 9, 1877.



Claim.—The combination of the wheel C', constructed with the system of sectors *s*, the spur-wheel B', the circular frame E, and the lens and hood of a magic lantern, substantially as and for the purpose herein set forth.

202,967. WHIP-SOCKETS. Anson Searle, Newark, N. J. Filed Oct. 10, 1877.



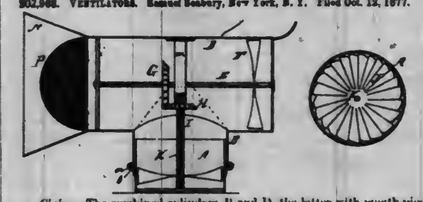
Claim.—1. In a whip-socket, the flexible rubber band or ring C, provided with a rubber rim, C', said parts being made separate from any lining of the socket, in combination with the shoulders *b b'*, formed in the mouth of the whip-socket, as and for the purposes herein set forth.

2. A holder for whip-sockets, consisting of an arm, D, formed with a socket or ring at one end and rounded at the other end, said rounded end being adjustably held by a bolt and nut, substantially as herein set forth.

3. The combination of the socket D' with arm D, the cap G, bolt *d*, and nut *d'*, substantially as and for the purposes set forth.

4. The combination of the curved arm H with fork I and the hinged or pivoted strap J, substantially as and for the purposes herein set forth.

202,968. VENTILATORS. Samuel Seabury, New York, N. Y. Filed Oct. 12, 1877.



Claim.—The combined cylinders B and D, the latter with mouth-piece N, wire-gauze covering P, axle E, with screw-wheel F and bevel-wheel G, in combination with the cylinder A, with axle K, sleeve I, with screw-wheel J, and bevel-wheel H, all arranged substantially as and for the purpose set forth.

202,969. MANUFACTURE OF ARTICLES PRODUCED BY ELECTRO-DEPOSITION. James W. Tufts, Medford, Mass. Filed Jan. 30, 1878.

Brief.—Copper or other metal is deposited, in the usual manner, upon a mold having a ridge surrounding the design, by means of which a groove is produced in the face of the electrotype, and a corresponding ridge upon its back. The groove being filled with soft metal, the back of the plate is cut away till the groove being reached, the article is liberated from the surrounding waste metal.

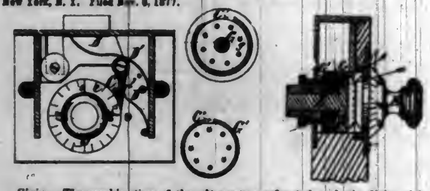


Claim.—1. As an improvement in the manufacture of articles by the electrotype process, the deposition of metal upon a mold provided on its face with a projecting lip or ridge, *b*, extending around the edge or outline of the figure of the article to be produced, and with a similar lip or lips around the edge of the figure of any open-work design to be formed therein, substantially as and for the purpose set forth.

2. The method herein described of making a finished electrotype, consisting in the production of one or more grooves, *d*, in its face, and one or more corresponding ridges, *e*, in its back, by means of a suitable mold, and liberating from the surrounding waste metal the article in a finished state, and producing any open-work design to be formed therein by removing the ridge or ridges *e* from the back of the electrotype, and cutting into the bottom of the groove or grooves *d* in its face, substantially as set forth.

3. The method of supporting the edge or edges of the article and preventing the formation of a burr thereon while being liberated from the surrounding waste metal, by filling the whole or a portion of the groove or grooves *d* of the electrotype with soft metal or other suitable substance, substantially as described.

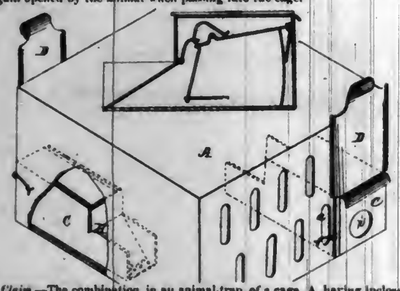
202,970. PERFORATING-LOCK. Wm. G. Van Dusirk, Fishkill Landing, and Gordon May, New York, N. Y. Filed Nov. 6, 1877.



Claim.—The combination of the alternate perforated and pin disks with their beveled notches C, the pivoted dog C, and stamped *i F*, bolt B, and spring D to throw it outward, all arranged and combined as and for the purposes set forth.

202,971. ANIMAL-TRAP. Henry T. Wigginton, Anyrame, Mo. Filed Jan. 31, 1878.

Brief.—The animal, stepping upon the treadle, closes the entrance, which is again opened by the animal when passing into the cage.



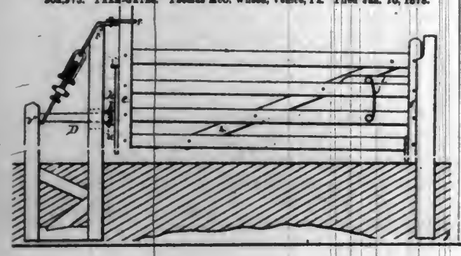
Claim.—The combination, in an animal-trap, of a cage, A, having inclosed therein one or more removable and adjustable catch-boxes, C C, provided with closing and setting devices, and sliding doors D, arranged on the cage for closing the openings when the boxes are removed, substantially as herein set forth.

202,972. PLOWS. Jas. L. Wilson and Robert G. Morrow, Calhoun, Ga. Filed Feb. 16, 1878.



Claim.—In combination with an ordinary plow-beam, the side beam F, formed with the angular lip *e* at its forward end, and arranged for adjustment laterally and forward and back, the bolts *a b*, and notches *c*, formed in the top of the main plow-beam, substantially as and for the purposes herein set forth.

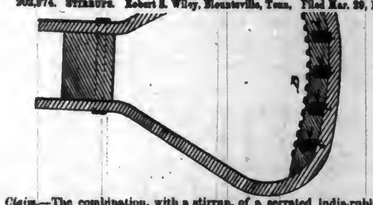
202,973. FARM-GATE. Thomas McC. Wilson, Venice, Pa. Filed Jan. 10, 1878.



Claim.—1. In a farm-gate adapted to be raised from a sagging position, the tightening-screw, suitably connected with and adapted to exert a tightening force upon the upper hinge of the gate, in combination with and adapted to exert a lifting power upon the strap of the lower hinge, said strap being pivoted to a stay-post, and operating as a lever when the screw is tightened up, substantially in the manner as herein shown and described, and for the purposes specified.

2. The herein-described hinge, having a strap, D, pivoted to the rear stay-post, in combination with the slotted bar *k* and gate-stile *c*, with guides *o*, adapted to work within the slot, and also having holes *n* for a stop-pin, substantially as shown and described, and for the purposes set forth.

202,974. STIRRUPS. Robert S. Wiley, Mountsville, Tenn. Filed Mar. 20, 1878.



Claim.—The combination, with a stirrup, of a serrated india-rubber pad or cushion, B, having recesses *d d*, and the coiled springs *e e*, substantially as described, for the purposes shown and specified.

202,975. ARTICLES OF FOOD FROM BEANS. Stephen R. Andrus, Philadelphia, Pa. Filed Feb. 9, 1877.

Brief.—The beans are first hulled, either dry or after being soaked; they are then cooked, by steam or otherwise, and then crushed into pellets, strips, particles, flour, or other form, and finally dried, preferably by a hot-air blast.

Claim.—The described article of food made from beans deprived of their deleterious properties by the removal of the hulls prior to cooking, crushing, and drying, substantially as specified.

202,976. SLEDS. Robert Armstrong, Portland, New Brunswick, Canada. Filed Feb. 6, 1878.

Brief.—The runners have each sufficient mobility to pass over inequalities of road without disturbing the position of its fellow to any material extent.



Claim.—The combination, in a sled, of the runners A, connected with a front roller, B, by braces *d*, the knees C, having bolts that work in vertical slots of the runners, and the bench D, connected with the roller by the pivoted perch D', as shown and described.

202,977. VENTILATORS FOR CHIMNEYS. Wm. B. Austin, New York, N. Y. Filed Apr. 10, 1878.

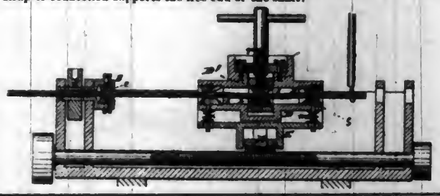


Claim.—1. The combination of the supporting-bars C, the pivoted rod D, the segmental plates E, having the flanges *e'* formed upon the forward part of their convex edges, and tapered to a point toward their rear parts, and provided with collars F and set screws *f'*, with a pipe, A, substantially as herein shown and described.

2. The combination of the head, formed of the two tapering rings G I and the intermediate V-shaped ring H, so connected as to leave ring-spaces between their adjacent edges, with the upper end of the pipe A, substantially as herein shown and described.

202,978. MACHINES FOR STRAIGHTENING SHAFTING. John E. Atwood, Stonington, Conn. Filed Mar. 12, 1878.

Brief.—A chuck holds and revolves the shaft while the straightener is moving longitudinally over it. Trunnions journaled in bearings of the sliding carriage support the straightener transversely to the longitudinal axis of the shaft under operation, and permit said straightener to accommodate itself to deflection or vibratory motion of the shaft. To hold the straightener in a concentric position at the ends of its tubular portion and to provide for the ready entry of the shaft, said ends are supported by springs. Bushes having their ends made flaring, to facilitate the entry of the shaft and gradual release of it, are fitted in the tubular ends of the straightener. A stream of water is directed to the shaft by a hose for the purpose of lubricating it. An elastic strap or connection supports the free end of the shaft.



Claim.—1. The combination, with a longitudinally-traveling straightener, of a rotating chuck, for holding and rotating the shaft as said straightener passes over or along it, substantially as specified.

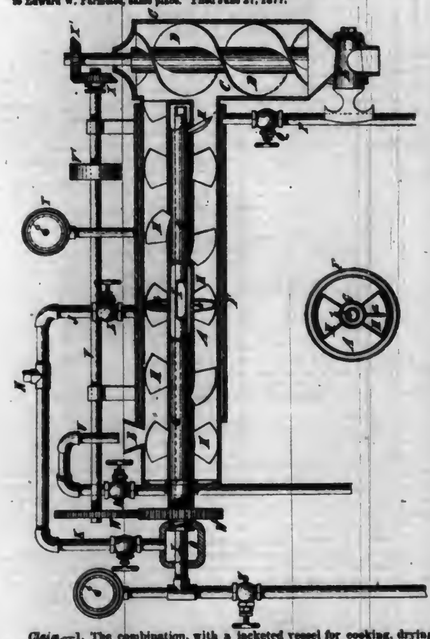
2. The tubular straightener D, provided with side trunnions *i i*, in combination with the longitudinally-sliding carriage E, in which said straightener is freely supported by said trunnions in transverse relation with the direction in motion of the carriage, substantially as and for the purpose herein set forth.

3. The combination, with the tubular straightener D, supported by transverse trunnions *i i*, of one or more springs arranged to automatically adjust said straightener to a fixed or given level, essentially as specified.

4. The elastic supporting strap or connection K for the shaft, in combination with the longitudinally-traveling straightener D and the chuck B, substantially as specified.

5. The tubular presser D' and bushes *n* in the ends of the straightener, constructed with flaring or bell-mouthed extremities *s*, substantially as and for the purpose specified.

202,979. APPARATUS FOR PRESERVING FOOD. Edward F. Bates, Syracuse, N. Y., assignor to Edward W. Parmelee, same place. Filed June 27, 1877.



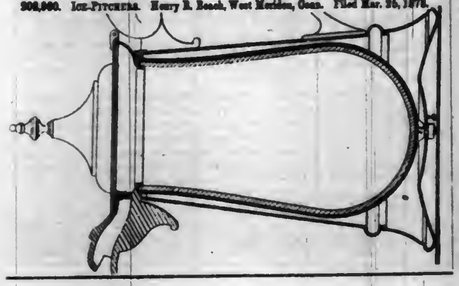
Claim.—1. The combination, with a jacketed vessel for cooking, drying, or cooling, of a hollow rotary shaft and hollow segmental feeder-blades set spirally thereon, though out of line with each other, said blades serving as stirrers, feeders, and heaters.

2. The combination, with a jacketed vessel for cooking, drying, or cooling, of a hollow rotary shaft and hollow segmental feeder and stirrer blades, having an inlet-pipe extending from the shaft to near the stirring-edge of the blade, surrounded by a return-pipe, for the purpose of thoroughly diffusing the heating or cooling agent in said blades.

3. The combination, with a jacketed vessel for cooking, drying, or cooling, of a hollow rotary shaft, bearing upon its surface hollow segmental stirrer and feeder blades, with an outlet-pipe extending nearly the entire length thereof, and commencing near the opposite end of the shaft to that from which it emerges.

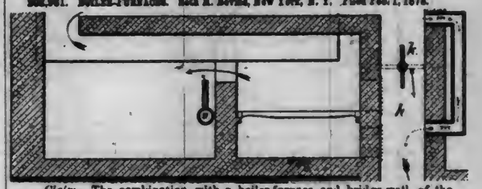
4. The combination of the vessel A, jacket F, hollow rotary shaft G, return-pipe I therein, hollow feeding and stirring blades H, pipes K J N, delivery-cylinder C, and spiral feeder D, substantially as and for the purpose set forth.

202,980. ICE-PITCHERS. Henry B. Beach, West Meriden, Conn. Filed Mar. 26, 1878.



Claim.—The combination of the inner lining, the spun cover, and the body of the pitcher, the two latter connected by screw bolt and nut, as shown and described.

202,981. BOILER-FURNACES. Seth H. Bevins, New York, N. Y. Filed Feb. 1, 1878.



Claim.—The combination, with a boiler-furnace and bridge-wall, of the air-inlet pipes at the back of the bridge-wall, with openings near the top thereof, and the descending flue *h*, with a damper, and the unobstructed auxiliary flue, connecting with the flue *h* above and below the damper *h*, substantially as set forth.

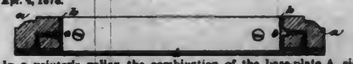
202,982. STOP-COCKS OR VALVES. Charles G. Elias, Berwick, Conn. Filed Nov. 6, 1877.



Claim.—1. The tube *s*, plug *b*, orifice *c*, and lever-valve *f k* within the tube *s*, in combination with the screw *m* outside the said tube *s*, and acting in the manner and substantially as set forth.

2. The combination, with a lever and valve within a closed metallic container, of a screw or other presser outside the same, and acting to spring the metal of the container and operate the valve, substantially as set forth.

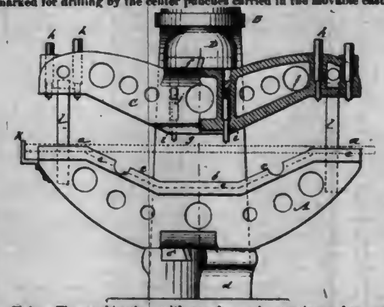
202,983. GALLEYS. Patrick Brennan, Astoria, N. Y., assignor to R. F. Cole & Co., New York, N. Y. Filed Apr. 4, 1878.



Claim.—In a printer's galley, the combination of the base-plate A, side rails *a*, end rail *x*, and metallic lining *b*, bent to form a right angle, and brace *d*, all rigidly fastened together by means of countersunk screws, substantially as herein shown and described.

202,984. MACHINES FOR MAKING FREIGHT-CAR TRUCK-SIDES. Richard H. Briggs and Jas. H. Dougherty, Whistler, Ala. Filed Feb. 26, 1878.

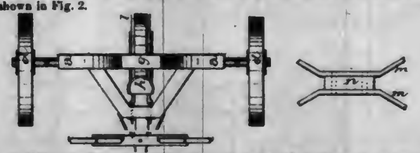
Brief.—Flanges on the upper casting prevent the lateral movement of the bar while it is being bent. After the bending operation is completed the bar is marked for drilling by the center punches carried in the movable casting.



Claim.—The combination, with punches and actuating-wedges, substantially as described, of the casting A, having surfaces *a b c*, flanges *e*, and lug *c'*, hammer B, having anvil-block *d*, and slotted head D, and the casting C, having flanges *g*, as and for the purposes specified.

202,985. CORN PLOW AND MARKER. Charles M. Burns, Hamler, Ohio. Filed Mar. 18, 1878.

Brief.—The axle is double, one portion projecting forward and supporting the tongue and the central marker-wheel, and the other curved upward and supporting the driver's seat. In cultivating, the central wheel is removed, the outer wheels moved inward on the axle, and cultivator-teeth are secured as shown in Fig. 2.



Claim.—1. In a corn-marker, the axle *a*, bent forward at its center, so that the corn-marking wheel *l* will be in a line with the other two wheels, substantially as shown.

2. The combination of the axle *a*, bent forward at its center to receive the wheel *l*, in combination with the bar *p*, raised upward at its center just over the top of the curved part of the axle *a*, and secured to the axle, so as to form a part thereof, substantially as described.

202,866. TRACE-CARRIERS. Willis B. Burns, Syracuse, N. Y. Filed Apr. 16, 1878.



Claim.—1. A trace-carrier consisting of a base ring or frame, having end loops for the attachment of the hip-straps, and provided with inwardly-curved hooks diagonal to a line drawn through the longitudinal center of the frame, said hooks being adapted to receive the cockeyes on the traces, substantially as and for the purpose specified.

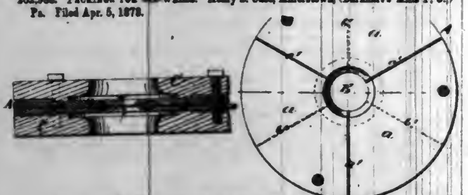
2. A combined back and hip strap fastener and trace-carrier, consisting of a base ring or frame, having end loops for the attachment of the hip-straps, and provided with inwardly-curved hooks diagonal to a line drawn through the center of the frame, and connected by a curved bar, substantially as and for the purpose specified.

202,867. PLOW-STOCKS. Samuel Carnes, Jonesborough, Ga. Filed Mar. 2, 1878.



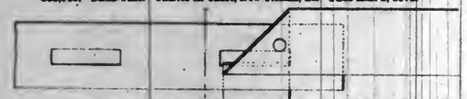
Claim.—The combination, in a plow, with the beam A, of the standard-bar C, passing up and bending over the said beam, and adjustable vertically thereon, and the bar D, bent rearwardly and at right angles to form a brace, as and for the purpose specified.

202,868. PACKINGS FOR OIL-WELLS. Henry S. Cone, Millerstown, (Barnhart's Mills P. O.,) Pa. Filed Apr. 5, 1878.



Claim.—Two or more centrally-perforated disks, A B, formed of circle-sectors *a b*, and clamped together so that the sectors of one disk cover the joint between the sectors of the other disk, in combination with the head and tubing or cable of an oil-well, substantially as and for the purpose set forth.

202,869. BALE-TIES. Charles H. Chase, New Orleans, La. Filed Mar. 2, 1878.



Claim.—A bale-tie consisting of a strip of metal apertured at one end, and bent over at right angles to itself on the other end, and offset or formed into a U-shaped loop, substantially as herein shown and described.

202,870. JUMPING TOYS. Charles E. Chinnock, Brooklyn, assignor to Ives, Blakeslee & Co., New York, N. Y. Filed Feb. 6, 1878.



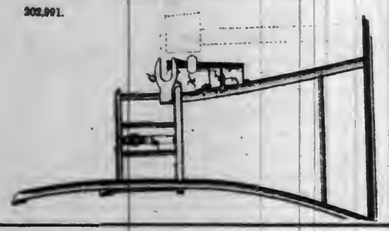
Claim.—1. A toy comprising the combination, with a spring for extending it or a part of it, of a device serving to retard the spring in its initial movement, and controlled in its operation by atmospheric pressure, substantially as and for the purpose specified.

2. A toy comprising the combination, with an extensible portion of the same, of a spring, a piston, and a tube, substantially as and for the purpose specified.

3. A toy snake composed of an extensible body and spring, a piston, and a tube, substantially as and for the purpose specified.

4. A toy snake composed of an extensible body, a spring, a piston, a tube, and an adjustable or swinging head-block, for simulating the opening of the mouth, substantially as specified.

202,991.



202,991. BABIES' SAFETY-CHAIRS. Edward Christman and John Caldwell, Louisville, Ky., assignors to themselves and James Taylor, same place. Filed Feb. 8, 1878.

Claim.—A baby's safety-chair having the clamp G, the strap H, the foot-board J, and the shield K, arranged and made adjustable as and for the purpose specified.

202,992. ROLLS FOR WRINGING-MACHINES. George P. Clark, Windsor Locks, Conn. Filed Mar. 23, 1878.

Brief.—Improvement on applicant's Patent No. 179,309, dated July 4, 1876, consisting in compressing and clamping each section of the roll separately and independently, in addition to the metallic compressing and clamping flanges, bearing against the two end sections, the whole arranged side by side on a common shaft, as in said prior patent.



Claim.—1. A roller for wringing-machines, composed of sectional rings combined with a central shaft, each section consisting of a ring of rubber or equivalent suitable material, provided with and compressed between independent metallic clamps, substantially as described.

2. A roller for wringing-machines, composed of sectional rings, each section consisting of rubber or equivalent elastic material supported centrally upon a metallic hub, and provided with and compressed laterally between independent metallic clamps, the whole series of sectional rings being combined with each other and their common shaft, substantially as described.

202,993. SHOE BOXES AND DRAWERS. Sylvanus M. Closser, La Porte, Ind., assignor of one-half his right to John A. Cutler, same place. Filed Apr. 17, 1877.



Claim.—The combination of the spring B, the box A, and the bearing-strip D, placed inside of the box, substantially as specified.

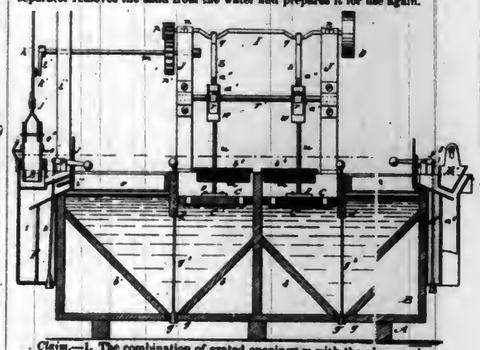
202,994. RIVETS. Patrick Clifford, Cambridgeport, Mass. Filed Nov. 22, 1877.



Claim.—The herein-described method of manufacturing hollow rivets, which consists in first forming, by drawing, a cup-shaped blank, and subsequently reducing the body of the blank by a reversed drawing operation, leaving the closed end of its original diameter to form the head, for the purpose set forth.

202,995. ORE-SEPARATORS. John Collom, Golden, Colo. Filed Jan. 16, 1878.

Brief.—A slow upward and sudden downward movement is imparted to the plungers, and the stroke can be varied according to the requirement of the ore. The water is used over and over again. The scraper at one end of the separator removes the sand from the water and prepares it for use again.



Claim.—1. The combination of grated openings *n* with the plunger-chambers, the receptacles D E F, and the trough H, as and for the purpose described.

2. The combination, with the plungers C, of the rods *u*, plates V, adjustable beads *w*, and oscillators *r*, as and for the purpose specified.

3. The combination of the conveyer B' and curved trough H with the tank B, containing sleeves *s c*', as herein shown and described.

4. The combination, in an ore-concentrator, of the comparted tank B, containing sleeves *s c*' *c*² and plungers C, the conical receptacle D E F, the conduit G, curved trough H, and conveyer B', substantially as specified.

202,996.

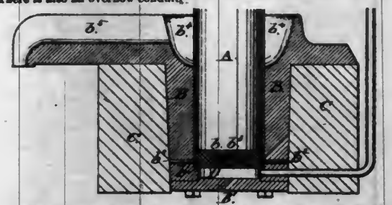


202,996. BUNG-FASTENERS. Emerson Cole, Brooklyn, N. Y. Filed Mar. 25, 1878.

Claim.—A bung-fastener consisting of a tapering strip of sheet metal, provided with a spur at one end and burrs upon one side, as shown and described.

202,997. STEP-BOXES FOR SHAFTS OR SPINDLES. John W. Collet, Upper Alton, Ill. Filed Nov. 23, 1877.

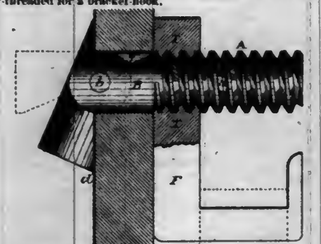
Brief.—An elevated oil-cup communicates with the step, which is provided with a bearing-plate containing an oil-hole which is eccentric to the shaft. There is also an overflow-conduit.



Claim.—The step-box B, having the flat bearing *b*, provided with the oil-hole *b*², eccentric thereto, for supplying oil to the shaft at a point aside from its center and within its circumference, oil-chamber D, and overflow-cup and spout *b*³ *b*⁴, substantially as set forth.

202,998. SCAFFOLD-BRACKET FASTENINGS. Rufus R. Cooley and Alba W. A. Winsor, Willimantic, Conn.; said Winsor assignor to said Cooley. Filed Mar. 11, 1878.

Brief.—A bolt is provided with a pivoted beveled drop-head and recess, and is screw-threaded for a bracket-hook.



Claim.—1. The bolt A, having cylindrical forked part B, with recess *f* and pin or rivet *b*, in combination with the beveled head C, having circular part D, wings *e e*, and curved shoulders *i i*, substantially as and for the purposes herein set forth.

2. In combination with the bolt A B, having beveled pivoted head C D, the square flat hook F, having its arm I provided with an orifice with female threads to fit the bolt, substantially as and for the purposes herein set forth.

202,999. PAPER BASKETS. Robert B. Crane, Westfield, Mass. Filed Mar. 19, 1878.



Claim.—A basket or other analogous article made from a tube formed of successive layers of paper, having a volute rim, formed by rolling the paper on itself, and a bottom of homogeneous material formed on the body without seams, substantially as set forth.

203,000. ART OF MAKING SEAMLESS PAPER BASKETS. Robert B. Crane, Westfield, Mass. Filed Mar. 19, 1878.



Claim.—1. As an improvement in the art of forming seamless baskets and other analogous receptacles from paper, forming the bottoms from a tube composed of successive layers of paper, over a central core, by first slitting and dividing the edge and then folding down successive laminæ thereof, interweaving them with independent pieces, and cementing the whole by working in a mixture of paper-pulp and an adhesive substance and then extracting the water, substantially as set forth.

2. The improvement in the art herein set forth, consisting of first distending a tube of thick moist paper upon a core, form, or pattern, and then turning down the edge to form a volute rim for strengthening the top of a paper basket or other analogous receptacle, which is hardened by drying, substantially as set forth.

203,001. BRIDLE-BITS. Edward H. Crane, Newark, N. J. Filed Dec. 14, 1877.

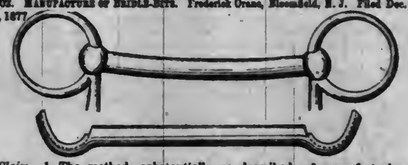


Claim.—1. A struck-up cheek-piece for bits, formed by turning the bar of metal upon itself, so as to form a ring, and subsequently welding the ring thus formed to the bar, all substantially as herein set forth.

2. A struck-up cheek-piece for bits, formed by placing a circular piece of metal in contact with a metal bar, and subsequently welding the parts thus formed, all substantially as herein set forth.

3. A bridle-bit composed of a mouth-piece and struck-up steel or wrought-iron cheek-pieces, having the ring formed and welded to the upright bar, substantially as set forth.

203,002. MANUFACTURE OF BRIDLE-BITS. Frederick Crane, Bloomfield, N. J. Filed Dec. 14, 1877.

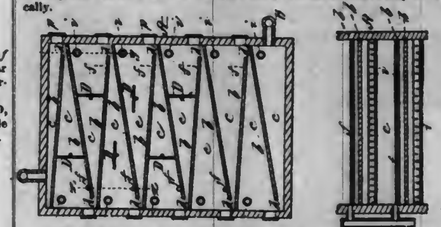


Claim.—1. The method, substantially as described, of manufacturing bridle-bits, consisting in striking up the mouth-piece with open heads, having matched shoulders, and ends adapted to embrace the cheek-piece, and bending the same upon the latter, all as described.

2. An open-headed mouth-piece blank for bits, struck up with matched shoulders, and ends adapted to fit into each other, substantially as set forth.

203,003. APPARATUS FOR WASHING AND CONDENSING COAL-GAS. Robert A. Crane, Boston, Mass. Filed Feb. 23, 1878.

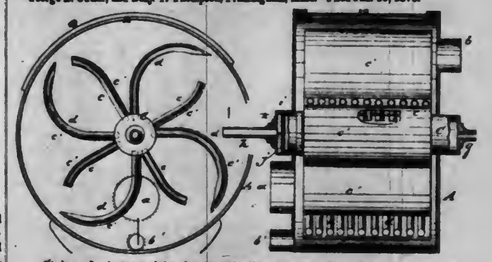
Brief.—The gas is scrubbed and washed by passing upward, back and forth between a series of inclined converging plates, through perforated plates, and through sprays of water or ammonia liquor. Troughs connected with the inclined plates carry off the condensed tar and the spray-water. The perforated plates between the inclined plates may be turned horizontally or vertically.



Claim.—1. The closed receptacle A, provided with inlet and outlet passages for the gas, and a series of inclined partitions, *b*, forming chambers *c*, communicating with each other through apertures *d*, in combination with grooves or gutters *f*, connected with the inclined partitions, and leading to suitable discharge-outlets, substantially as and for the purpose set forth.

2. The combination of one or more perforated partitions, D, with one or more of the chambers *c*, formed between the partitions *b*, substantially as and for the purpose set forth.

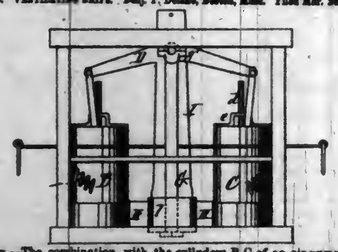
203,004. GRAIN-DRIERS. Henry Cutler, Wilbraham, assignor to himself, Charles F. Cutler, George E. Cutler, and Benj. T. Thompson, Framingham, Mass. Filed Jan. 30, 1878.



Claim.—1. A grain-drier having air-pipes *g h* and steam-pipes projecting from a hollow shaft, said steam-pipes being curved and arranged close together to lift the grain from the hot metallic surface and expose it to a current of air, as and for the purpose specified.

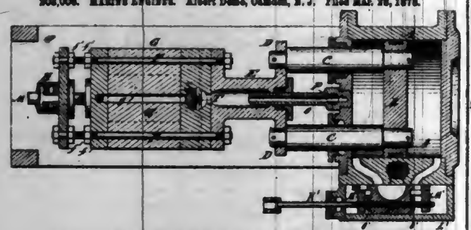
2. The combination, with the cylinder A, having pipes *a b*, arranged as described, of the hollow shaft C, having tubular arms, pipes *g h*, cap *i*, apertured head *j*, and the compartments *l*, formed by the partitions *m*, as and for the purpose specified.

203,006. VENTILATING SHIPS. Benj. F. Delano, Boston, Mass. Filed Mar. 26, 1878.



Claim.—The combination, with the cylinders B C of an air-pump, of the swinging weighted arm G, connected by suitable mechanism therewith, and operated automatically by the motion of the vessel, substantially as described, for the purpose set forth.

203,008. MARINE ENGINES. Albert Dean, Camden, N. J. Filed Mar. 26, 1878.



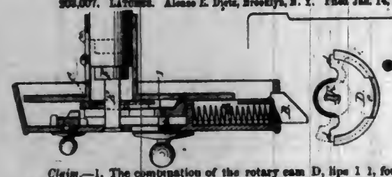
Claim.—1. The combination of the two piston-rods C, the cross-head D, the hollow rods E H, the secondary steam-cylinder G, the vertical cross-head I, the pivot-bars K, and the wings J with the steam-cylinder A and its piston B, substantially as herein shown and described.

2. The combination of the steam-pipe O, provided with the valve P, with the steam-cylinder A, the hollow rod E, and the secondary steam-cylinder G, substantially as herein shown and described.

3. The combination of the chamber U, the valves W, the rods or stems X, provided with the cross-heads Y upon their outer ends, and the spirally slotted or grooved tube Z, with the secondary steam-cylinder G, substantially as herein shown and described.

4. The combination of the adjustable stop Q' and its clamping-bolt R' with the valve-lever H' and the slotted connecting-rod G', substantially as herein shown and described.

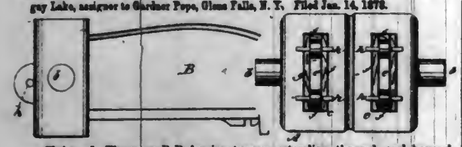
203,007. LATCHES. Alonzo E. Dietz, Brooklyn, N. Y. Filed Jan. 14, 1878.



Claim.—1. The combination of the rotary cam D, lips 1 1, forming seats or bearings for said cam, the stem or shaft E of the key-cylinder, and the talon or cross-bar C of the latch, substantially as and for the purpose set forth.

2. The combination of the longitudinally-adjustable key-cylinder, having the stem E, and the latch-operating cam D, having a central opening arranged to receive said stem, which is adjustable therein, substantially as described.

203,009. HAMMERS FOR CHARCOAL-BLOOMS, CAST BILLETS, &c. Geo. M. Dillon, Chateaugay Lake, assignor to Gardner Pope, Glens Falls, N. Y. Filed Jan. 14, 1878.



Claim.—1. The arms B B, having tenons extending through and beyond the head A, in combination with pins *h*, that pass through transverse holes near the ends of said tenons, and keys *f*, that project from head to form a rest for said pins, as set forth.

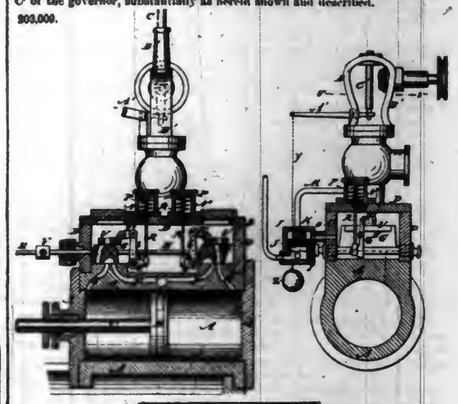
2. The mortised husk A, the tenoned arms B, and the wooden keys *f*, in combination, substantially as and for the purpose herein shown and described.

203,009. AUTOMATIC CUT-OFF FOR PLANE-VALVE ENGINES. Ephraim R. Dingley, New York, N. Y. Filed Apr. 10, 1878.

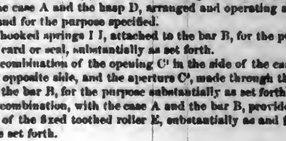
Claim.—1. The combination of the secondary valve-chest I, provided with the valve J, the ports L M, the secondary steam-cylinders N, the springs P, the pistons Q, the piston-rods R, the elbow-levers S, and the adjustable plates U, with the main valve-chest D and the slide-valves G, substantially as herein shown and described.

2. The combination of the arm V, provided with the wedge-shaped head W, the inclined adjustable collars X, the chain Y, the weight Z, and the lever A', with the main valve-stem H, the secondary valve-stem K, and the spindle C' of the governor, substantially as herein shown and described.

203,009.

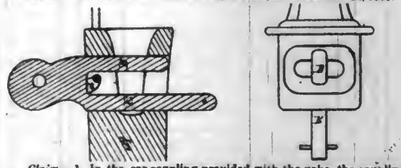


203,010. STALK-CUTTERS. Ezra Dominy, Freedom, Ill., assignor to himself and Milton Davis, same place. Filed May 28, 1877.



Claim.—In a stalk cutter, the combination, with the road-wheels, having radial grooves, of the slotted cylinder, stationary crank-axle, and reciprocating knives attached to outwardly-curved arms that engage in the radial groove in the road-wheels, substantially as set forth.

203,011. CAR-COUPLINGS. Warren Dorr, Gardiner, Me. Filed Mar. 14, 1878.



Claim.—1. In the car-coupling provided with the yoke, the coupling-head fixed to the link-pin, as set forth.

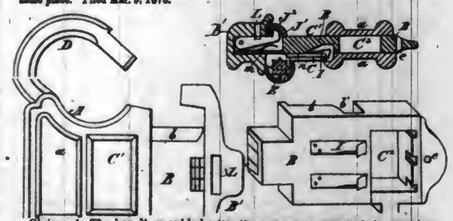
2. In the car-coupling provided with the yoke, the coupling-head fixed to the link-pin and provided with the auxiliary pin, extending down through the draw-bar, as set forth.

3. The draw-bar provided with the yoke-notch, arranged in it as shown, in combination with the yoke-head, fixed to the link-pin or provided therewith, and with an auxiliary pin, arranged as set forth.

4. The combination of the draw-bar provided with the yoke-notch, with the yoke arranged therein, and with the yoke-head fixed to the link-pin, all being substantially as set forth.

5. The combination of the notched draw-bar, the yoke, the yoke-head, and the two pins, all arranged and applied essentially in manner and to operate as specified.

203,012. SEAL-LOCKS. William Dunn, Hamilton, Ontario, Canada, assignor to John Harvey, same place. Filed Mar. 9, 1878.



Claim.—1. The bar B, provided with the groove or recess *b*, in combination with the case A and the hasp D, arranged and operating substantially as described, and for the purpose specified.

2. The hooked springs I I, attached to the bar B, for the purpose of drawing out the card or seal, substantially as set forth.

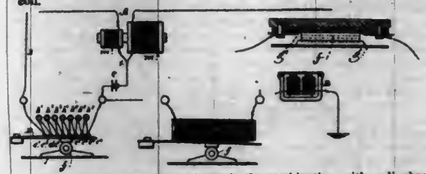
3. The combination of the opening C' in the side of the case, the glass C, fixed in the opposite side, and the aperture C', made through the bar, with the case A and the bar B, for the purpose substantially as set forth and described.

4. The combination, with the case A and the bar B, provided with hooked springs I I, of the fixed toothed roller E, substantially as and for the purpose hereinbefore set forth.

5. The catches J, in combination with the bar B and the case A, constructed and working substantially as described, and for the purpose set forth.

203,013. SPEAKING-TELEGRAPHS. Thomas A. Edison, Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Filed Dec. 13, 1877.

Brief.—Relates to a specific device for varying the resistance to the battery-current; also, to an arrangement of battery, telephones, and induction-coil.



Claim.—1. In a speaking-telegraph, the combination, with a diaphragm, of a rheostat or resistance-coils and a conductor vibrated by the diaphragm, and acting to short-circuit more or less of the rheostat, in proportion to the amplitude of the vibrations, substantially as set forth.

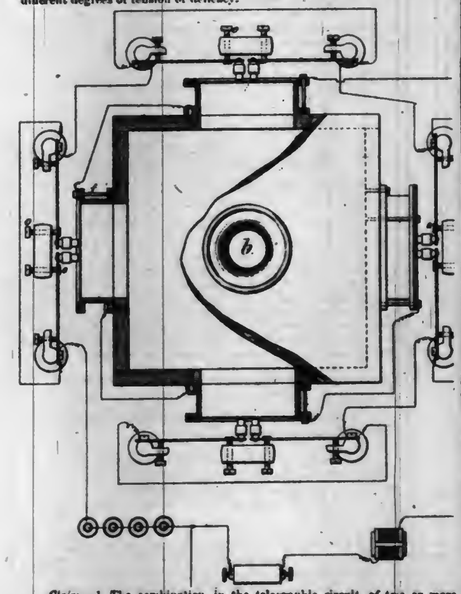
2. In combination with a diaphragm actuated by sound-vibrations and a metallic conductor, an elastic cushion, *f*, interposed between the diaphragm and said metallic conductor, to move the latter in proportion to the movement of the diaphragm, substantially as set forth.

3. In a speaking-telegraph, the combination, with the diaphragm and rheostat, of a local circuit and an induction-coil, substantially as set forth.

4. In a speaking-telegraph, an induction-coil, a rheostat and a battery in a local circuit, and a main-line circuit passing through a second induction-coil, and also through the battery, substantially as set forth.

203,014. SPEAKING-TELEGRAPH. Thomas A. Edison, Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Filed July 30, 1877.

Brief.—Resonant case, with several tympans or diaphragms adjusted to different degrees of tension or delicacy.



Claim.—1. The combination, in the telegraphic circuit, of two or more tympans, a resonant box, and one or more circuit-closers to each tympan, substantially as set forth.

2. The plate *c*, provided with an aperture, an elastic membrane, and circuit-breaking connections, arranged and operated substantially for and in the manner set forth.

203,015. SPEAKING-TELEGRAPH. Thomas A. Edison, Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Filed Aug. 28, 1877.

Claim.—1. In an instrument for transmitting electric impulses by sound, a diaphragm or tympan of mica, substantially as set forth.

2. In an instrument for transmitting electric impulses by sound, the combination, with a diaphragm or tympan, of an electric tension-regulator of fiber and electric conducting material, substantially as set forth.

3. An electric tension-regulator composed of elastic fibrous and electric conducting material.

4. The combination, in an electric instrument actuated by sound, of a diaphragm or tympan, a conductor, and an electric tension-regulator composed of elastic fiber and electric conducting material.

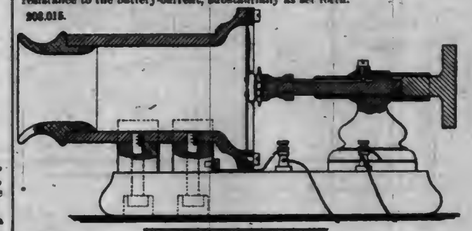
5. The combination, with an electric tension-regulator composed of fiber and electric conducting material, of a variable presser acting upon such fiber, substantially as set forth.

6. The combination, with a diaphragm or tympan of mica, of an electric conductor and pins of solder passing into holes in the mica to secure said conductor, substantially as set forth.

7. In an instrument for transmitting electric impulses by sound, a resonant case having an opening near the mouth-piece, substantially as and for the purposes set forth.

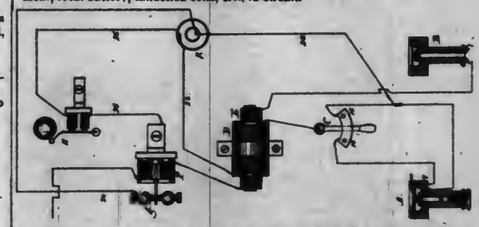
8. In an instrument for transmitting and reproducing the human voice or other sound, a closed telegraphic circuit containing a battery and compressible elastic material operated by the sound, for increasing and decreasing the resistance to the battery-current, substantially as set forth.

203,015.



203,016. SPEAKING-TELEPHONE. Thomas A. Edison, Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Filed Mar. 7, 1878.

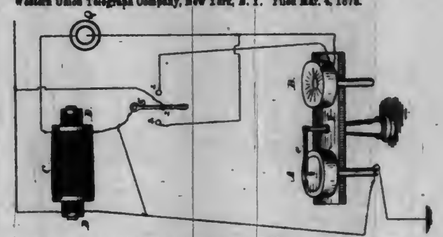
Brief.—Relates to an arrangement of the call-signals, speaking-instrument, local battery, induction-coils, &c., in circuit.



Claim.—1. The combination of transmitter A, coils D E, switch C, polarized relay P, bell H, battery K, and circuits, arranged and operating substantially as herein set forth.

2. In combination with a telephonic and the primary circuit of an induction-coil, the button of lamp-black carbon, prepared as set forth, and placed in the primary circuit, substantially as and for the purposes set forth.

203,017. TELEPHONE CALL-SIGNALS. Thomas A. Edison, Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Filed Mar. 4, 1878.

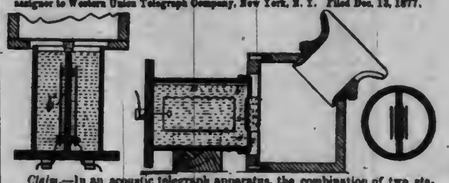


Claim.—1. In combination with a receiving telephone-instrument having a diaphragm and electro-magnet, a swinging lever placed with its moving end in contact with the receiving-diaphragm, and a switch or key for increasing the electric current and operating the lever as a sounder or call upon the diaphragm, substantially as set forth.

2. In combination with the telephone-transmitter B and receiver A, the induction-coil C D, battery Q, local circuit, switch S, and circuit-connections, substantially as and for the purposes set forth.

3. In combination with the main-line circuit and local circuit and the telephonic instrument, the induction-coil composed of two wires, the largest of which is surrounded by a finer insulated wire wound helically, the two being then wound into a helix to form the induction-coil, substantially as set forth.

203,018. TELEPHONE OR SPEAKING-TELEGRAPH. Thomas A. Edison, Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Filed Dec. 13, 1877.

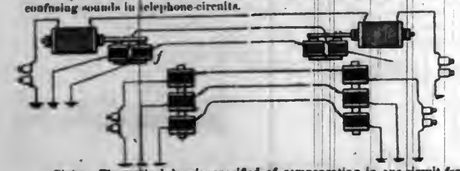


Claim.—In an acoustic telegraph apparatus, the combination of two stationary electrodes immersed in two cells, a conducting-fluid in said cells, and a fluid connection between such cells, and mechanism actuated by a sound-

vibrated laily, for varying the dimensions of such liquid connection and the conductivity of the same, substantially as set forth.

203,019. CIRCUITS FOR ACOUSTIC OR TELEPHONIC TELEGRAPHS. Thomas A. Edison, Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Filed Feb. 21, 1878.

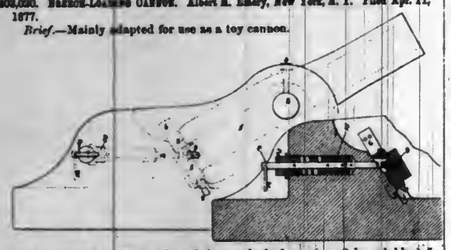
Brief.—For neutralizing the induced currents that give rise to false and confusing sounds in telephone-circuits.



Claim.—The method herein specified of compensating in one circuit for induced currents from adjacent circuits, consisting in setting up a reactionary induction by an induction-coil connected with the adjacent circuit or circuits, substantially as set forth.

203,020. BREECH-LOADING CANNON. Albert H. Emery, New York, N. Y. Filed Apr. 11, 1877.

Brief.—Mainly adapted for use as a toy cannon.

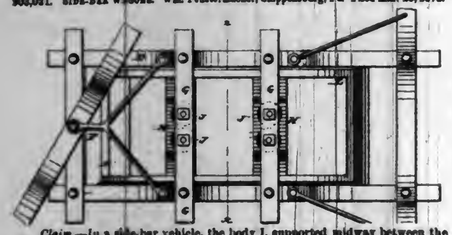


Claim.—1. The combination of the gun-body 1, carriage 2, breech-block 5, and spring 6, substantially as and for the purposes set forth.

2. The combination, with the gun-body 1 and carriage 2, of the sliding breech-block 5, carrying the nipple 9, said block being constructed and applied as herein set forth, to fasten the barrel in firing position, and to receive the impact of the firing-pin 10.

3. The combination of the firing-pin 10, guide-plug 13, and collar 15, for the purposes set forth.

203,021. SIDE-BAR WAGONS. Wm. Frantzmacher, Shippensburg, Pa. Filed Mar. 25, 1878.



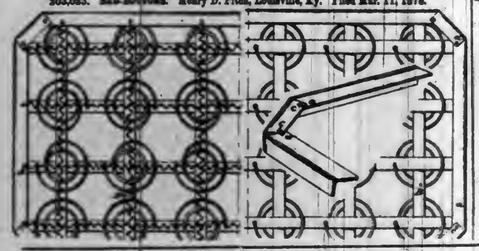
Claim.—In a side-bar vehicle, the body I, supported midway between the side bars and between the axles on the springs H J G, arranged substantially as shown and described.

203,022. BUTTONS. Augustine S. Fernald, Portland, Me. Filed Jan. 28, 1878.



Claim.—A button provided with the disk described and shown at *b*, when furnished with the strips or wires *c*, as set forth, passing up over the top side of the disk *b*, and there held by being compressed between the parts *a b*, as described, and arranged at the bottom so as to protrude through the hole in the bottom part *c*, and adapted to receive the sewing-threads, as specified.

203,023. SEED-SOWERS. Henry D. Fitch, Louisville, Ky. Filed Mar. 11, 1878.



Claim.—1. In a bed-bottom, the combination of a metallic frame and a series of bed-springs, the outer rim of said frame being composed of angle-iron, substantially as described.

2. In a bed-bottom, an inclosing skeleton-frame consisting of a strip of angle-iron having its horizontal arm or flange cut and overlapped at the several points, forming the corners of the bed-bottom, the overlaps being riveted together, substantially as described.

3. In a bed-bottom, the combination of an inclosing skeleton-frame, a series of bed-springs, and two or more intersecting series of spiral-spring bands, one of the intersecting bands at each bed-spring passing under the upper coil of said spring, and the other intersecting band passing over said upper coil and under the former band, the upper coil of the bed-spring resting in the loops or bands of the spirals, substantially as described, whereby the said bands are locked at each bed-spring and said springs held in place.

4. An independent metallic spring bed-bottom, consisting of an under frame composed of intersecting flat metallic straps or bands attached to an inclosing skeleton-frame, an upper frame composed of an inclosing skeleton angle-iron frame, with intersecting spiral-spring bands attached thereto, and a series of bed-springs interposed between said frames at the points of intersection of the said bands, substantially as described.

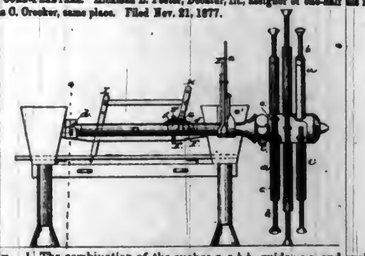
203,024. CORPSE-COOLERS. James Flaherty, Memphis, Tenn. Filed Apr. 3, 1878.



Claim.—1. In a freezing-casket for preserving dead bodies, the combination of the casket A, provided with the drawer D, ice-box L, and head-rest N, whereby the water from the box L is caused to run through the rest N and pipe R into the drawer D below, substantially as shown.

2. The combination of the head-rest N with the ice-chamber L, the two being connected together, so that the water from the melting ice runs through the rest N, substantially as shown.

203,025. CORN-PLANTERS. Hickman E. Foster, Decatur, Ill., assignor of one-half his right to Rufus C. Crocker, same place. Filed Nov. 21, 1877.



Claim.—1. The combination of the spokes *a a b b*, guides *c c*, and springs C C, substantially as shown.

2. The swivel-coupling *d*, in combination with the shaft D, in a check-row corn-planter, substantially as and for the purpose set forth.

3. The combination of the adjustable spoked wheel, hinged shaft D, standard E, collar *e'*, and lever *e*, substantially as shown and described.

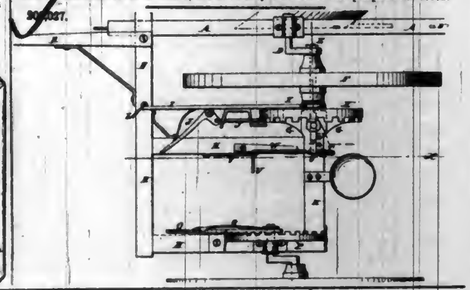
203,026. SLATES. Moris Frankenstein, Chicago, Ill. Filed Feb. 21, 1878.



Claim.—1. A school-slate the frame of which is covered with a muffling material, and is bound together by a band covering the entire edge of such frame, and secured thereto by tacks, substantially as described and shown.

2. In combination with a slate having its frame covered with a muffler, and bound together by a flat or concave band secured by tacks thereto, a pencil-case attached to such frame, substantially as and for the purpose set forth.

203,027.



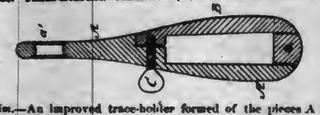
203,027. RIDING ATTACHMENTS TO PLOWS. Marlow M. Freeman, Lathrop, Mo. Filed Feb. 21, 1878.

Brief.—Short axle having inner end bearing in cross-head block pivoted to under side of frame, and provided with operating-lever and a rigidly-attached crank, to which plow-beam is secured, whereby the machine is adapted to turn corners. Curved notched bar, catch-lever, and latch adapted to lock short axle to frame when traveling from place to place.

Claim.—1. The combination of the crank D, the axle E, the pivoted block G, and the lever I with the plow-beam A, the wheel F, and the frame H, substantially as herein shown and described.

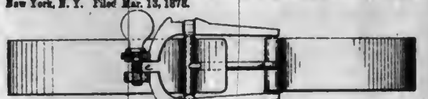
2. The combination of the notched bar S, the connecting-bar T, the catch-lever U, the latch V, and the spring W with the axle E and the frame H, substantially as herein shown and described.

203,028. TRACE-HOLDERS. James Gallaspie, Russiaville, Ind. Filed Sept. 20, 1877.



Claim.—An improved trace-holder formed of the pieces A B, hinged to each other at their lower ends, notched upon their inner sides, and secured to each other by a thumb-screw, C, at the upper end of the part B, the upper end of the part A being extended upward, and having an eye, *a'*, formed in it to receive the supporting-strap, substantially as herein shown and described.

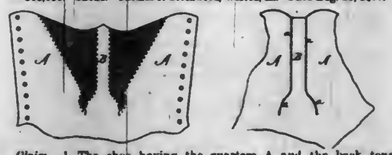
203,029. BUCKLES. Robert J. S. Graham, Brooklyn, assignor to himself and Miles J. Conner, New York, N. Y. Filed Mar. 13, 1878.



Claim.—1. A buckle having a movable tongue-rest bar, substantially as and for the purpose specified.

2. A buckle having its outer end open, its side bars notched to receive a movable cross-bar, and provided with an adjusting-screw, all substantially as and for the purpose set forth.

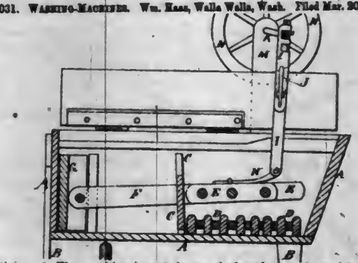
203,030. SHOES. Thomas J. Greenwood, Warren, Ill. Filed Aug. 13, 1877.



Claim.—1. The shoe having the quarters A and the back tongue B extending upward to the top of the shoe, all formed from a single piece of leather, and with a gore, C, inserted between the tongue and each of the quarters, substantially as specified.

2. The quarters A, having the back tongue B extending to the top, formed from a continuous blank by cutting along the lines *a* a upon opposite sides of the center and adjacent thereto, substantially as set forth.

203,031. WASHING-MACHINES. Wm. Haas, Walla Walla, Wash. Filed Mar. 20, 1878.



Claim.—1. The combination of the notched and slotted partition C, the lower stationary beater D, the upper beater E, provided with the pivoted bars F, and the sliding board G, with each other and with the suds-box A, substantially as herein shown and described.

2. The combination of the spring-bar H, the jointed connecting-rod I and its lever-catch J, crank-shaft K, the fly-wheel N, and the driving-gearing O P Q with each other and with the pivoted beater E, substantially as herein shown and described.

203,032. CORN-SHELLERS. William H. Hall, Tiffin, Ohio. Filed Mar. 1, 1878.

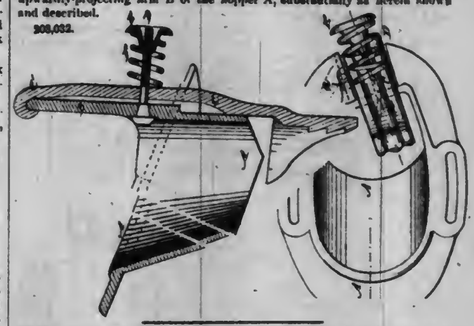
Brief.—Special structural changes of the hopper described in Patent No. 166,771, to Hall & Clingst, August 17, 1875.

Claim.—1. The rub-iron C, provided with a hook, *c'*, upon its upper end, and arranged outside of the hopper A, in combination with said hopper A, formed with projecting recessed rim and upwardly-projecting arm B, substantially as herein shown and described.

2. The combination of the coiled spring F, and a bolt and nut, with the hooked rub-iron C, arranged outside of hopper A, and the arm B of the hopper A, formed with projecting recessed rim and upwardly-projecting arm B, as herein shown and described.

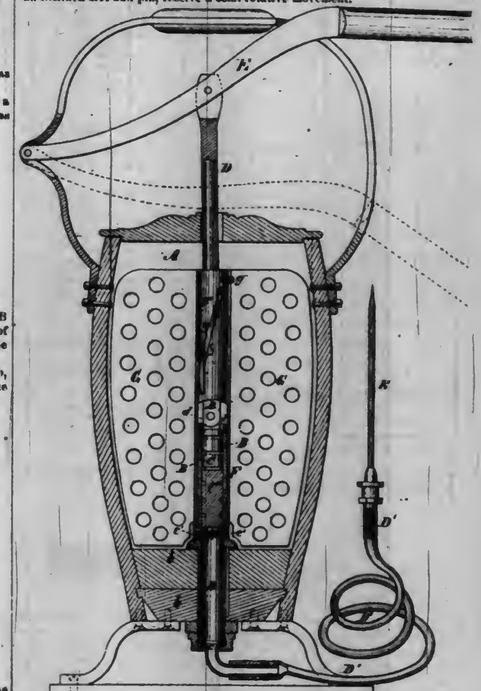
3. The hollow conical-flanged nut E, in combination with the bolt D, the coiled spring F, the rub-iron C, arranged outside of hopper A, and the upwardly-projecting arm B of the hopper A, substantially as herein shown and described.

203,032.



203,033. APPARATUS FOR EMBALMING. Albert H. Hatch, New York, N. Y. Filed Apr. 3, 1878.

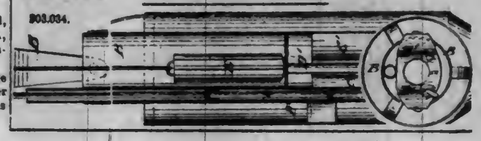
Brief.—Combines a chamber with an injecting-pump placed centrally therein. The cylinder is perforated at its lower part for the inlet of the fluid, which is forced into the injecting-tube by the downward stroke of the piston. Vanes to keep the fluid stirred are mounted on the connecting-rod, and, by an inclined slot and pin, receive a semi-rotative movement.



Claim.—1. The combination of the pump-cylinder B, constructed with the orifice *c'*, the piston C, the flexible tube D', hollow perforated needle E, and bucket A, the whole arranged for use and operation substantially as and for the purpose herein set forth.

2. The combination of the sleeve F, constructed with the spiral slot *f* and provided with the vanes G, in combination with the connecting-rod D, constructed with the stud *g*, the piston, the pump-cylinder, and the bucket A, the whole arranged for use and operation substantially as and for the purpose herein set forth.

203,034.

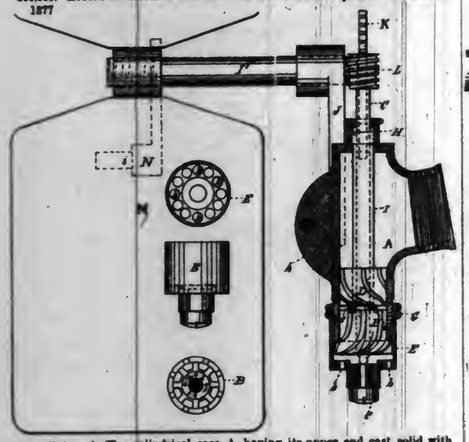


203,034. TORPEDOES FOR OIL-WELLS. Wilson Haas, Church P. O., Pa. Filed Feb. 5, 1878.

Claim.—1. An oil-well torpedo having exterior and interior shells, the former filled with sawdust, and the latter having a loose guide-tube for the cap-exploder, and an anvil-rod that is forced down by the dropping of a weight, as shown and described.

2. In an oil-well torpedo, the charged shell B, having a pivoted bail, B', with center hole and recess, and a pivoted guard or closing device for inserting or removing drop-weight from shell, substantially as described.

203,035. MOTORS FOR SEWING-MACHINES. John Haworth, Philadelphia, Pa. Filed Oct. 8, 1877



Claim.—1. The cylindrical case A, having its upper end cast solid with the cylindrical part, and provided with the stuffing-box H, substantially as and for the purpose set forth.

2. The adjustable cap E, having perforations *b* in its lower side, in combination with the lower end of the case A and the water-wheel B, substantially as and for the purpose set forth.

3. The water-wheel B, enlarged at its lower end to project under the lower end of the case A, in combination with the cap E, substantially in the manner and for the purpose set forth.

4. The adjustable nut G, in combination with the case A and cap E, for locking the latter in its adjusted position, substantially as set forth.

5. The chute D, having a central projection, *c*, in combination with the wheel B, having a corresponding recess, *d*, and perforations *f*, for conducting the water from between the chute and the wheel, substantially as set forth.

203,036. CORN-CRIB VENTILATORS. B. W. Hazen, Fremont, Nebr. Filed Mar. 30, 1878.



Claim.—An improved corn-crib ventilator formed by the combination of the blocks B, the top boards C, and the side boards D with the slotted bottom or floor A of the said crib, substantially as herein shown and described.

203,037. DEVICES FOR HOLDING COILS OF WIRE. Albert E. Heard, Cambridge, Mass., assignor to Stedman & Morse, same place. Filed Apr. 1, 1878.



Claim.—1. A frame or device for holding a coil or coils of wire, provided with three or more radiating arms bent back at their outer ends to clamp and hold the wire, all substantially as shown and described.

2. A device for holding a coil of wire, provided with three or more arms, *a a'*, each arm being bent back at its end into one or more prongs or clasps, *d*, substantially as set forth.

3. A device for holding coils of wire, provided with three or more arms, *a a'*, each arm being slit at its end, and bent back upon its upper and lower sides into prongs or clamps *d* and *e*, substantially as shown.

4. The hereinbefore-described device for holding coils of wire, consisting of the arms *a a'* and *b b'*, and pivot or similar device *c*, all arranged and combined substantially as and for the purpose hereinbefore described and set forth.

203,038. COMPOUNDS FOR DRESSING TEXTILE FABRICS. Wm. Holden, Boston, and Thomas F. Mathews, Malden, Mass. Filed July 31, 1877.

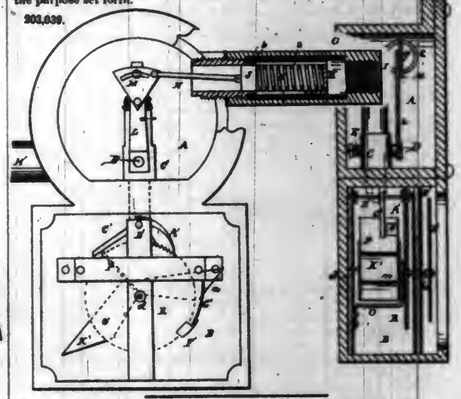
Claim.—A compound for dressing textile fabrics, consisting of alum, chloride of magnesium, starch, and glycerine, mixed with water, substantially as described, for the purpose specified.

203,039. OSCILLATING WATER-METERS. John Heinlich and Louis O. Dehnel, Sandusky, Ohio. Filed Mar. 5, 1878.

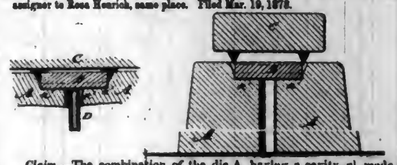
Claim.—1. In combination with the chamber A, the slotted eduction-pipe H, piston J, spring K, and sleeve or shell I, substantially as herein described, and for the purpose set forth.

2. The measuring stop-cock consisting of the pipe C, key D, perforation *i*, provided with grooves or channels F, arranged in relation to or in combination with the piston J and eduction-pipe, substantially as described, and for the purpose set forth.

203,039.

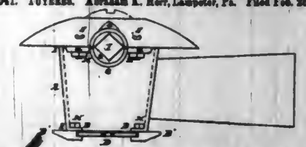


203,040. DIES FOR FORMING SETTINGS FOR LOCKETS. Heinrich Henrich, New York, N. Y., assignor to Rosa Henrich, same place. Filed Mar. 19, 1878.



Claim.—The combination of the die A, having a cavity, *a'*, made with a beveled edge, formed in its face, the block B, inserted into said cavity, and the top die or stamp C, substantially as and for the purpose set forth.

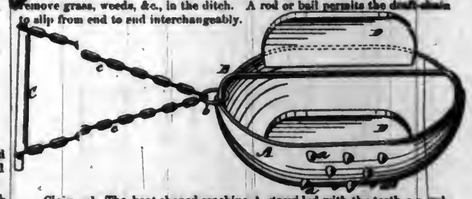
203,041. TUYERES. Abraham K. Herr, Lampeter, Pa. Filed Feb. 25, 1878.



Claim.—The case A, provided with the inner lower ledge or flange B, in combination with the door-frame B', without side lugs, and door D, the whole constructed and operating as and for the purpose described.

203,042. MACHINES FOR OPENING DITCHES. Hugh W. Hill, Decatur, Ill. Filed Mar. 26, 1878.

Brief.—Short teeth upon the sides and bottom of a boat-shaped drag remove grass, weeds, &c., in the ditch. A rod or bail permits the draft-chain to slip from end to end interchangeably.



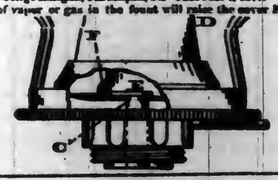
Claim.—1. The boat-shaped machine A, provided with the teeth *a a*, substantially as described, and for the purpose set forth.

2. The rod B and ring *b*, in combination with the boat-shaped machine A, chains *c c*, and spreading-rod C, substantially as described, and for the purpose set forth.

3. The combination of the boat-shaped machine A, teeth *a a*, rod B, ring *b*, and runners D D, substantially as described, and for the purpose set forth.

203,043. LAMP-BURNERS. George Hillegass, Philadelphia, Pa. Filed June 4, 1877.

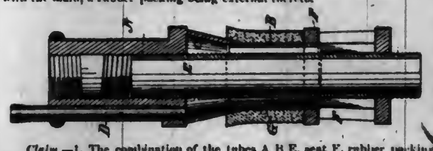
Brief.—An excess of vapor or gas in the fount will raise the cover E up and blow out the lamp.



Claim.—A lamp or other burner provided with a wick-tube, B, and having a gas-escape tube, C, arranged in the neck thereof, with its lower end opening above the surface of the illuminating-fluid in the reservoir, in combination with a valve, E, and the overhanging stop F, substantially as described.

203,044. OIL-WELL PACKERS. Lawrence W. Hoadley, Pendleville, Pa., assignor of two-thirds his right to Isaac W. Hoadley, same place. Filed Oct. 13, 1877.

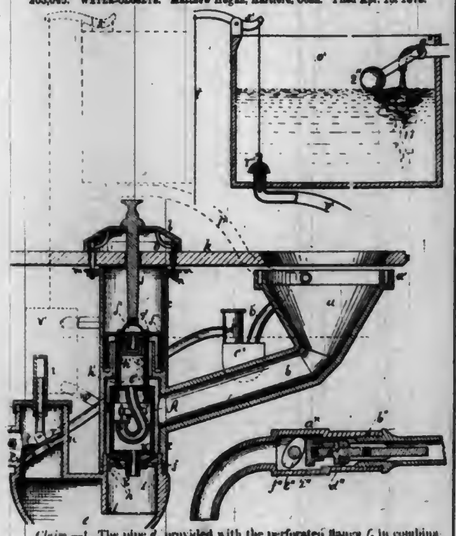
Brief.—The gas escapes through a supplemental tube *c'a* an inverted cone inclosed at its top, and embracing the upper end of an outer tube concentric with the main, a rubber packing being external thereto.



Claim.—1. The combination of the tubes A B E, seat F, rubber packing G, and cone C, as and for the purposes described.

2. The chambered cone C and gas-pipe D connected therewith, constructed and applied substantially as herein described.

203,045. WATER-CLOSETS. Matthew Hogan, Hartford, Conn. Filed Apr. 15, 1878.



Claim.—1. The pipe *d*, provided with the perforated flange *f*, in combination with the valve-seat *i*, provided with the teats *h*.

2. The trap *c*, in combination with the valve *e*, pivoted to the valve-rod *a*.

3. The cap *l*, provided with the traverse-loops *o*, in combination with the bell-rods *n*.

4. In combination, the overflow-receiver *a'*, waste-pipe *b'*, and trap *c'*, provided with the valve *d'*.

5. In combination, the pipe *c*, provided with the cup-flange *g'*, the valve-barrel *c'*, provided with the return-flanges *f' j'*, and the cup *l'*.

6. In combination, the valve A and the valved trap *l'*, contained in or carried on the valve A.

7. In combination, the basin *a'*, stand-pipe *c*, valve A, open tank *o'*, supply-pipe *p'*, valve *e'*, lever *s'*, rod *t*, float *n'*, pipe *v'*, and pipe *w'*.

8. In combination, the barrel of faucet *a''*, the valve-seat *b''*, the valve-rod *c''*, provided with the valve *d''*, and the shaft *e''*, provided with the cam *f''*.

9. In combination, the faucet-barrel *a''*, valve-seat *b''*, valve-rod *c''*, provided with the valve *d''* and adjustable head *j''*, and the shaft *e''*, provided with the cam *f''*.

203,046. CENTER RIMS FOR WATCH-CASES. Thomas A. Hopkins, Providence, R. I. Filed June 11, 1877.

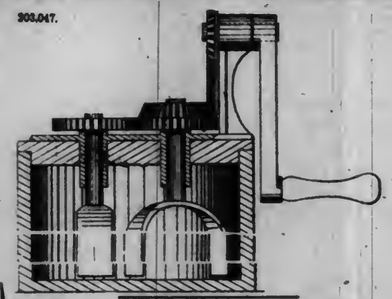


Claim.—The improved center rim for watch-cases herein described, consisting of the inner rim A, in combination with the outer or center band B, the latter fitting upon the former, and being provided internally with a central groove, *b*, for containing the solder which unites the two parts together, substantially as specified.

203,047. CHURNS. Moses A. Howe, Elyria, Ohio, assignor of one-half his right to O. Bowen, same place. Filed Oct. 5, 1877.

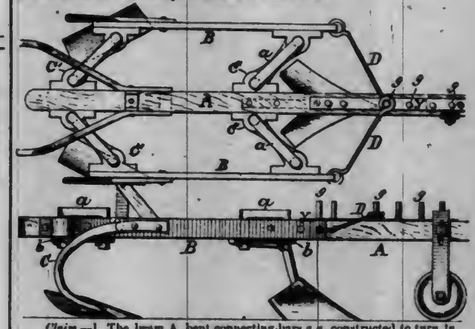
Claim.—In a churn, the combination of U-shaped pendent dashers, each formed of a single bar reduced in thickness from above downward, and terminating in close proximity to the bottom of the churn, the said dashers being arranged tangential to their circle of revolution, and caused to revolve in opposite directions, so that the movement of one dasher will intersect that of the other, substantially in the manner and for the purpose described.

203,047.



203,048. CULTIVATORS. Moses Johnson, Lockport, N. Y. Filed Jan. 17, 1878.

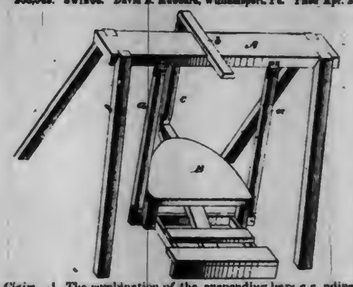
Brief.—Side wings connected to main beam by bent connecting-bars, whose bent end portions work in sockets attached to said wings and beam, said wings being expanded or contracted by means of hooked braces engaging pins attached to a metallic plate secured to main beam.



Claim.—1. The beam A, bent connecting-bars *a a*, constructed to turn in sockets C', and the plates *b b*, in combination with the wings B B, adjustable by braces D, and pins *g*, substantially as shown, and for the purpose described.

2. The adjustable braces D, secured by pins *g*, in connection with plate *g*, to beam A, in combination with the connecting bent bars *a a*, constructed to turn in sockets C', the plates *b b*, and wings B B, substantially as shown and specified.

203,049. SWINGS. David B. Hubbard, Williamsport, Pa. Filed Apr. 26, 1877.



Claim.—1. The combination of the suspending-bars *a a*, adjusting-bar *b*, governing-rod *c*, with the seat B, substantially as specified.

2. The suspending-bars *a a*, adjusting-bar *b*, governing-rod *c*, and seat B, in combination with the supporting-frame A, substantially as specified.

203,050. SHOE-BRUSHES. Frank H. Knox, Cincinnati, Ohio. Filed Feb. 6, 1878.



Claim.—As an improvement in blacking-brushes, the flanged plate *c*, jointly with the screw for guiding and clamping the cutter B, as shown and described.

203,051. SLIDING DOORS. George R. Kidder, Armada, Mich., assignor to himself and Nathan Hurd, same place. Filed Mar. 23, 1878.

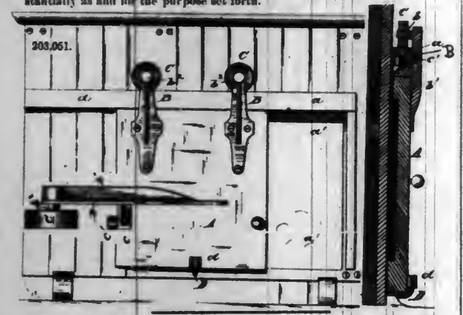
Brief.—The hangers are provided with a roller running on a strip at top of door entrance, and with an arm and guide projection, the latter sliding in a groove in under side of above-mentioned strip. The lower portion of door is guided by a bent arm having friction-roller.

Claim.— The hangers B B, provided with the pulleys C C and brackets

c, having the upwardly-projecting studs or projections c', in combination with the door or gate A and elevated platform a, substantially as and for the purpose set forth.

2. In combination with the door or gate A and elevated platform a, the hangers B B, provided with pulleys C C and brackets c, having projections or studs c', and bent or angular bar D, provided with a frictional roller, d, substantially as and for the purpose set forth.

203,051.



203,052. TOOLS. William M. Leach, Stanardsville, Va. Filed Mar. 21, 1878.

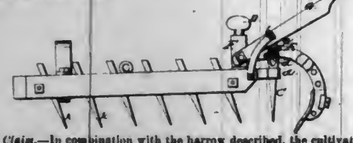
Brief.—A metallic eye for a tool-handle has a dovetailed groove formed in each end of the eye, for the purpose of inserting various tools, each of which is provided with a dovetail tenon or flange.



Claim.—The eye a, having the hole c to receive a handle, and the dovetail groove d in each end to receive variously-shaped tools, each one of the said tools being provided with the dovetail tenons or flanges e, and then fastened in place by means of screws, substantially as shown and described.

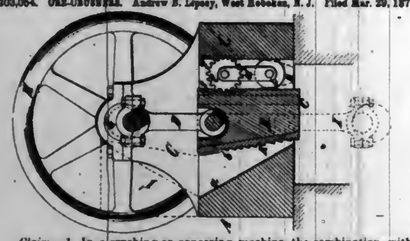
203,053. HARROW AND CULTIVATOR COMBINED. Albert Lee, Charleston, Ill. Filed Jan. 19, 1878.

Brief.—A harrow-tooth with slotted head is secured on the rear of each side beam. This tooth is slotted at the top, in which the hanging cultivator-teeth are adjustable. The handles also are rigidly or adjustably secured at the top of this tooth.



Claim.—In combination with the harrow described, the cultivator-shovels B, adjustable by means of set-screws clamped to the heads of teeth C, the handle being secured on the top of said teeth, as and for the purpose set forth.

203,054. ORE-CRUSHERS. Andrew B. Lipsey, West Hoboken, N. J. Filed Mar. 29, 1877.



Claim.—1. In a crushing or squeezing machine, the combination, with a box like frame provided with a rack, of rollers arranged between said frame and plunger, connected by links and provided with gear-wheels engaging with said racks, substantially as and for the purpose specified.

2. The combination of the frame C, bed or table A, longitudinally reciprocating plunger B, guides e, pitman D, crank E, rollers L L, pinions e, and racks f g, substantially as and for the purpose set forth.

203,055. CARPET-STRETCHERS. John M. Lucas, Hornellsville, N. Y. Filed Apr. 8, 1878.



Claim.—1. The extension-arms B C, the latter having ratchet-teeth g, in combination with the bar A, lever E, carrying pawl F, and the pawl G, with shoulder f and extension h, constructed to operate substantially as set forth.

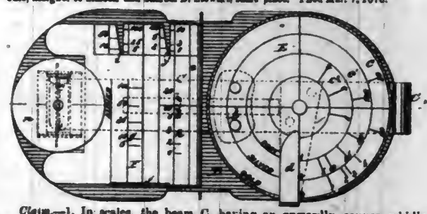
2. The extension-arm C, formed with convexity e and tongue f, in combination with the pivoted foot D, substantially as and for the purpose set forth.

203,056. TUYERES. Jacob Mackey, Steubenville, Ohio, assignor to himself, John Mackey, W. R. E. Elliott, and Henry Opperman, same place. Filed Mar. 18, 1878.



Claim.—A two-part tuyere, A B D E, provided with the closed bottoms e e', as shown and described, to obviate the necessity of joints and prevent leakage.

203,057. POSTAL SCALES AND COUNTERFEIT-COIN DETECTOR. Harvey Maranville, Akron, Ohio, assignor to himself and Samuel D. Stewart, same place. Filed Mar. 7, 1878.

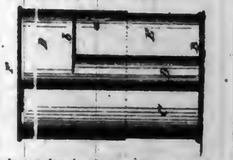


Claim.—1. In scales, the beam C, having an upwardly-convex middle bend that supports on a pivot the disk E, and concavities on each side that allow the passage of a weight, b, as set forth.

2. The combination of the graduated disks E and plates F, supported on beam C, the former having weight h, and the latter a stirrup, as and for the purpose specified.

203,058. POCKET-CASES FOR PIPE AND TOBACCO. Edward S. May, Campbelltown, N. Y. Filed Feb. 27, 1878.

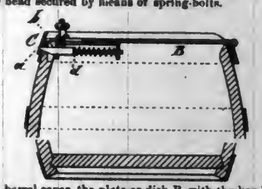
Brief.—This case has separate compartments for holding the pipe, tobacco, and matches, formed by a single strip of bent metal.



Claim.—The smoker's case herein shown and described, having the compartments C, D, and E, arranged as described, match-opening a, and cover F, substantially as and for the purpose hereinbefore set forth.

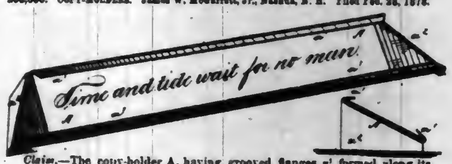
203,059. BARREL-COVERS. Alexander McDougall, Chicago, Ill., assignor to David G. Ross, Toronto, Canada. Filed Oct. 26, 1877.

Brief.—A part of the head may be permanently secured to the barrel, the remaining portion hinged to such permanent part. The hinge might be omitted, and the head secured by means of spring-bolts.



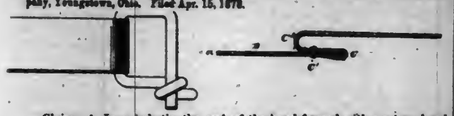
Claim.—In a barrel-cover, the plate or disk B, with the band C projecting on opposite sides to form the flanges a b, and suitable fastening and locking devices, substantially as and for the purpose specified.

203,060. COPY-HOLDERS. James W. McGarrett, Jr., Nashua, N. H. Filed Feb. 26, 1878.



Claim.—The copy-holder A, having grooved flanges a' formed along its upper and lower edges, and bent back diagonally to form feet a², as shown and described.

203,061. BALE-TIES. Wm. S. McKinney, Hamilton, assignor to the United States Iron Company, Youngstown, Ohio. Filed Apr. 15, 1878.



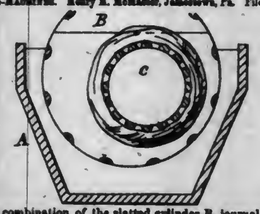
Claim.—1. In a bale-tie, the end of the band formed with a return bend or hook, C, said bent portion or hook re-enforced and strengthened by doubling the end of the band back upon itself and securing the end of the band to the return bend or hook C, substantially as set forth.

2. A bale-tie having a buckle or link attached to one end, while the other end is provided with a return bend or hook, which latter terminates in an extension of greater length than the opening in said link or buckle, substantially as set forth.

3. In a bale-tie, the hook C, re-enforced at and near its end by doubling the same back upon itself, riveting the plates thus bent together, and prolonging the end D, as shown in Fig. 3, substantially as described and shown.

4. In a bale-tie, the combination of the hook C, as described, with the buckle or link B, substantially as described and shown.

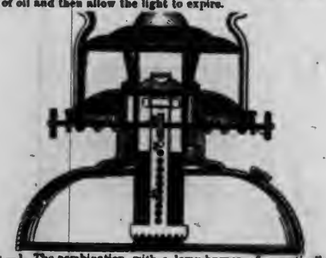
203,062. WASHING-MACHINES. Henry H. McMaster, Jamestown, Pa. Filed Mar. 11, 1878.



Claim.—The combination of the slatted cylinder B, journaled in the tank A, with the slatted roller C, having free motion in the cylinder, the slats of the latter being arranged at sufficient distances apart to allow the inner roller to drop from one slat to the next when the cylinder is revolved, substantially as and for the purpose described.

203,063. AUXILIARY WICK-RAISERS. Edward P. Morse, Plantsville, assignor of one-half his right to J. B. Savage, Southington, Conn. Filed Mar. 21, 1878.

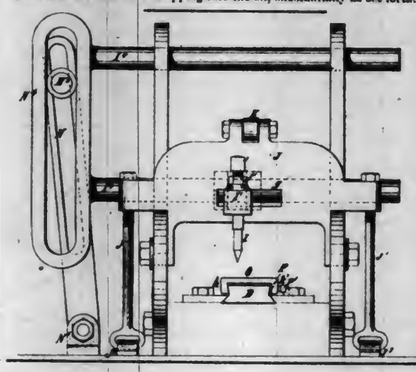
Brief.—Adapted to adjust the lower end of the wick to burn a definite quantity of oil and then allow the light to expire.



Claim.—1. The combination, with a lamp-burner, of a vertically-movable strip, the lower end of which is adapted to be adjustably secured to the wick within the body of the lamp, and an auxiliary adjusting-shaft and ratchet-wheel, for raising and lowering said strip and wick attached thereto, substantially as set forth.

2. In a lamp-burner, the combination, with the auxiliary adjusting-shaft and ratchet, of a perforated metallic strip, provided with a loop for its attachment to the wick, substantially as set forth.

3. In a lamp-burner, the combination, with the perforated metallic strip, of a wick-supporting arm attached thereto, for preventing the central or loop portion of the wick from dropping into the oil, substantially as set forth.



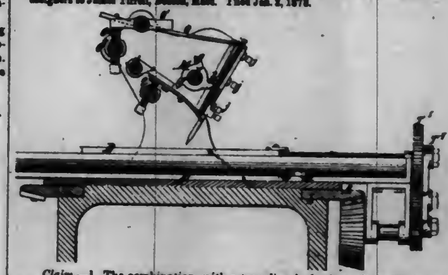
203,064. RAG-MACHINES. Charles F. Mudge and Geo. Whittaker, Brooklyn, N. Y., assignors to James Tirrell, Boston, Mass. Filed Jan. 2, 1878.

Claim.—1. The combination, with a cutter-helve, pivoted loosely to a supporting-shaft of a cross-head, admitting of the traverse and vertical play of said cutter-helve within it, of mechanism for raising said cross-head, and means for impelling it toward the bed, so as to produce the blow of the cutter and allowing it to rebound, substantially as and for the purpose specified.

2. The combination of the cutter-helve I², supporting-shaft I³, cross-head J, with its opening g, tripper-lever K, eyebolts J¹, and springs J², substantially as and for the purpose specified.

3. The combination of the cutter I, supporting-shaft I³, yoke K¹, lever N, frame J, and tripper-wheel L, provided with the peripherically-elongated teeth k', substantially as and for the purpose specified.

203,065. FILE-CUTTING MACHINES. Chas. F. Mudge and Geo. Whittaker, Brooklyn, N. Y., assignors to James Tirrell, Boston, Mass. Filed Jan. 2, 1878.



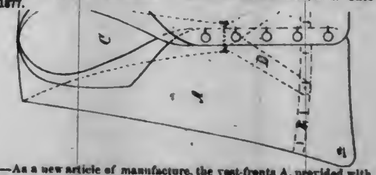
Claim.—1. The combination, with a traveling bed, of an adjustable holder for tangs of different-sized file-blanks adapted to automatically impinge against the side edges and top of said tangs and hold them laterally and vertically in place, substantially as and for the purpose specified.

2. The combination, with the cutter-head, of the slides permitting lateral play of the cutter-head therein, the springs O, and set-screws j, as and for the purpose set forth.

3. The combination, with the cutter-head M, spring O, pivoted saddle O', and adjusting-screw O², substantially as and for the purpose described.

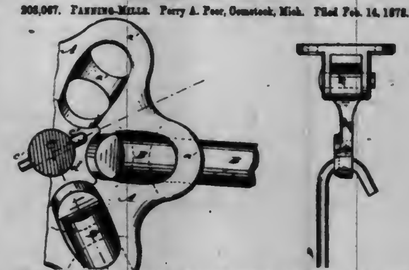
4. The combination, in a file-cutting machine, of a bed, externally of segmental shape, for supporting the file-blank, a carriage corresponding in shape thereto internally, and a feeding worm or screw concentric with said bed, substantially as and for the purpose specified.

203,066. COMBINED VEST AND SUSPENDERS. Leonard Paulson, New York, N. Y. Filed Sept. 17, 1877.



Claim.—As a new article of manufacture, the vest-fronts A, provided with a strap or elongation, C, at the back, in combination with snap-under-straps D and flaps E at the inside of the vest-fronts, constructed and arranged substantially as and for the purpose described.

203,067. FANNING-MILLS. Perry A. Poor, Comstock, Mich. Filed Feb. 14, 1878.



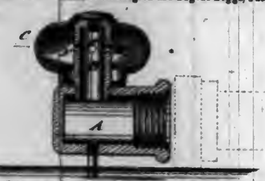
Claim.—The hub or spider A, cast with radial loop-sockets a', to receive the arms B, with a central hole, a², to receive the shaft C, and recesses a³, to receive the pin c', that connects it with said shaft, each arm resting at the rear against a shoulder of the hub, and secured by a nail on the inside of sockets a', substantially as herein shown and described.

203,068. MOLDS OR TRUING PLOWS. Emmerich Pekar, Budapest, Hungary. Filed Dec. 3, 1877.



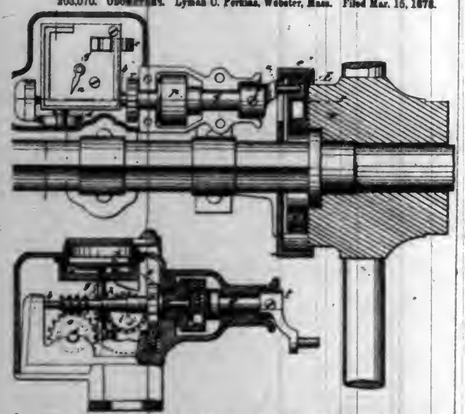
Claim.—The method herein specified of testing flour and meal, consisting in placing samples side by side upon a holder, and subjecting them to pressure by a flat polished transparent glass, substantially as set forth.

203,069. SPRINKLERS. Aaron S. Pennington and Eugene Beggs, Paterson, N. J. Filed Oct. 27, 1877.



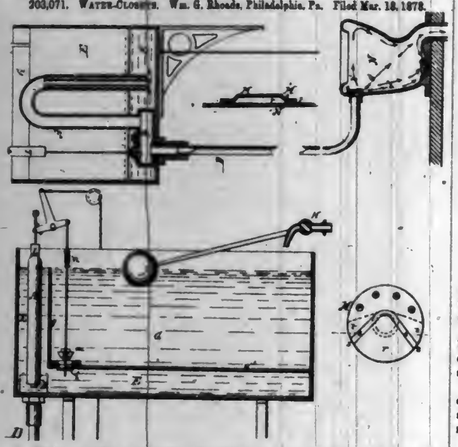
Claim.—The combination of the screw-pipe A, the laterally perforated pipe B, and the revolving rose C, as shown and described.

203,070. ODOMETERS. Lyman C. Perkins, Webster, Mass. Filed Mar. 15, 1878.



Claim.—The combination, in an odometer, of the cam E, having the eccentric slot *e*, the rock-shaft *q*, having the rock-arm *t*, the spindle *b*, having the ratchet *p*, and the index-spindle *g*, and gearing intermediate between the index-spindle and the spindle *b*, substantially as herein shown and described.

203,071. WATER-CLOSETS. Wm. G. Rhoads, Philadelphia, Pa. Filed Mar. 18, 1878.



Claim.—1. The combination of a siphon with the discharge-pipe of a tank or vessel, and with an intervening aperture, which affords, when open, direct communication between the pipe and tank, and, when closed, converts the pipe into an extension of the siphon, all substantially as and for the purpose herein set forth.

2. The combination, with the long leg of a siphon, of an annular or lateral opening therein, governed by a suitable joint or valve, and which, when closed, shall serve to perfect and lengthen the siphon, substantially in the manner and for the purpose herein set forth.

3. The combination of air-passages *a a* with the shorter leg of a siphon, to permit an inflow of air to its bend before the mouth of the siphon is uncovered when in action, substantially as and for the purpose herein set forth.

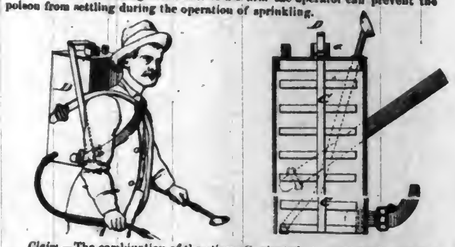
4. The combination, with separate yet communicating tanks E G, and with a supply-pipe, H, feeding the one, of a siphon, A, so connected with the other as that its return-bend shall fall below the highest fluid-level desired therein, and whose discharging capacity shall exceed that of the opening or openings between the tanks, all substantially as and for the purpose herein set forth.

5. The combination, with the siphon A, service-box F, and reservoir G, of an adjustable valve or ring controlling an opening, *i*, between the reservoir and service-box, and operating to regulate and determine, by its adjustment, the volume of water to be discharged by the siphon when in action, all substantially as and for the purpose herein set forth.

6. The combination, with the siphon A, pipe D, and water-closet hopper N, of the distributing-fan M, having upon its under face a segmental depression, *r*, flanked by the radial flaring or beveled shoulders *s s* and lesser radial depressions *t t*, to control and direct the inflow of water into the hopper, substantially in the manner and for the purpose herein set forth.

303,072. BUG-EXTERMINATORS. Silas Baggies, Three Rivers, Mass. Filed Mar. 25, 1878.

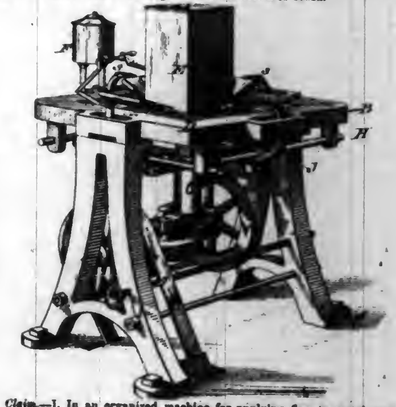
Brief.—By attaching the stirrer C, pivoted at *a*, and the bent lever D, for attachment to the arm of operator, with a rectangular reservoir provided with two sprinklers, and adapted to be strapped to the back, as shown and described, for the purpose specified.



Claim.—The combination of the stirrer C, pivoted at *a*, and the bent lever D, for attachment to the arm of operator, with a rectangular reservoir provided with two sprinklers, and adapted to be strapped to the back, as shown and described, for the purpose specified.

303,073. MACHINES FOR APPLYING FLUX TO CANS. George H. Perkins, Philadelphia, Pa., assignor of a part of his right to Joseph Le Conte, New York, N. Y., and the Atlantic Refining Company, Philadelphia, Pa. Filed Feb. 23, 1878.

Brief.—The brushes are lifted from the gutter by the action of the cam R on the toe P, which carries with it sleeve O. The latter acts on goose-neck J. The cam S serves to oscillate the brushes across the can, the toe Q, sleeve O, arm T, and goose-neck J serving to transmit motion to brush.



Claim.—1. In an organized machine for applying flux to metal cans, a series of flux-applying brushes, G, arranged to face the sides of the can-body to be coated, and adapted to be reciprocated across the edges thereof, substantially as described.

2. In combination with the fluxing-table B, adapted to receive the can-body to be coated and to hold the flux, a series of flux-applying brushes, G, operated as described, and arranged to project into the tank-area of the table, substantially as described.

3. The combination, in an organized machine for applying flux to metal cans, with a series of flux-applying brushes, G, of mechanism, cams R and S, sliding sleeve O, rocker-shaft H, and goose-necks J, for oscillating and reciprocating the same, substantially as described.

4. As a composite device for supporting the brushes G in such a manner that they project into the tank-area of the table, and are permitted to oscillate into the flux-gutter *d* thereof, and to reciprocate across the sides of the can-body, the goose-necks J and sliding rocker-shafts H, arranged and operating substantially as set forth.

5. As a composite device for both oscillating and reciprocating the brushes G, the following instrumentalities in combination, viz: the sliding sleeve O, provided with radial arms T, engaging the goose-necks J, and with toes P and Q, and the cams R and S, rotating against said toes, the whole organized and operating substantially as shown and described.

6. As a device for oscillating the brushes G by means of the goose-necks J and rocker-shafts H, the sliding sleeve O, provided with arms T, acting beneath the feet *s* of the goose-necks, and adapted to be lifted and dropped by means of the lifting-cam R, substantially as described.

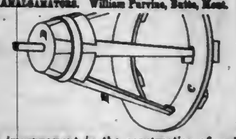
7. As a device for reciprocating the brushes G by means of the goose-necks J and sliding rocker-shafts H, the sliding sleeve O, provided with arms T, acting, by means of shifter-pins *t*, sidewise against the feet *s* of the goose-necks, and adapted to be partially rotated by means of the twisting-cam S, substantially as described.

203,074. SPRINGS FOR HORSESHOES. John R. Pierce, Orfordville, N. H. Filed Mar. 21, 1878.



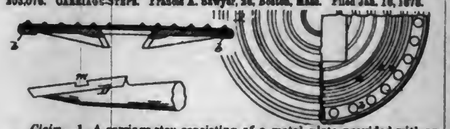
Claim.—A bifurcated spring having its head secured to and flush with the upper surface of a horseshoe, and rising toward the rear, to clear the shoe and press against the hoof of the animal, as shown and described.

203,075. AMALGAMATORS. William Parvins, Butte, Mont. Filed Dec. 5, 1877.



Claim.—The improvement in the construction of mullers for amalgamators, consisting in the upper ends of the bars E, attached to the conical hub D in dovetail or tapering grooves, and the hub provided with a head or ring, G, substantially as above specified.

203,076. CARRIAGE-STEPS. Francis A. Sawyer, 2d, Boston, Mass. Filed Jan. 16, 1878.



Claim.—1. A carriage-step consisting of a metal plate provided with an exterior retaining-wall and a plating of india-rubber or other suitable formative composition, permanently fastened to the plate within said wall by heat and pressure, or by either, substantially as and for the purpose described.

2. In a carriage-step, the combination of a metal pad provided with an exterior retaining-wall, with a plating of india-rubber or some other suitable formative material, vulcanized, molded, and permanently fastened under heat and pressure, or by either, to the plate within said retaining-wall, substantially as described.

3. In a carriage-step, the combination of a metal plate, provided with alternate grooves and ridges or other roughened surfaces, with a plating of india-rubber or other formative material molded thereon by heat and pressure, or either, substantially as described.

4. The combination, in a carriage-step, of a metal pad provided with perforations opening from the surface of the plate, or from a channel enlarged on the under side of said plate, as shown, with or without connecting-channel, with a plating of india-rubber or other formative material, united thereto by heat and pressure, or by either, and filling said holes and channels, or either, for the purpose set forth.

5. In a carriage-step in which the treading-surface of india-rubber or other plating is not extended over the edge of the metal supporting plate or pad, the combination of the metal pad provided with perforations, and the said plating, substantially as described.

6. In a carriage-step, the combination of a metal pad provided with an exterior retaining-wall and the holes *b*, with a plating or tread of india-rubber united thereto by heat and pressure, or by either, substantially as and for the purpose described.

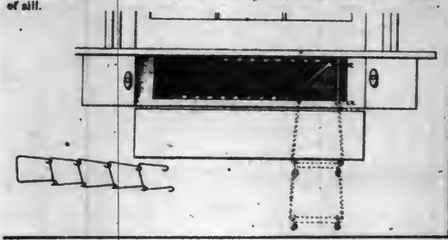
7. In a carriage-step, the combination of a plate provided with the holes *b* and a roughened surface, such as described, with a plating of india-rubber or some other suitable formative material united thereto by heat or pressure, or by either, substantially as described.

8. The combination, in a carriage-step, of a metal pad provided with the holes *b*, with a strip of fibrous material woven in and out of said holes, and a plating of india-rubber or other suitable formative material united to said plate, and incorporated in said step by heat, pressure, or either, substantially as described.

9. The combination of a metal pad provided with ribs, recessed as shown, a shank recessed on its upper surface, as described, and a key for locking said pad to the shank, as set forth.

203,077. FIRE-ESCAPES. John B. Shaw, Joplin, Mo. Filed Jan. 30, 1878.

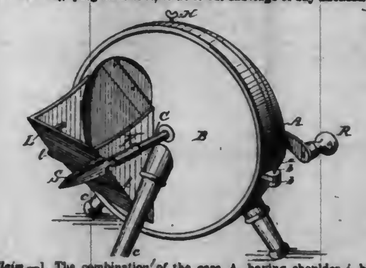
Brief.—A flexible folding ladder, housed in a hollow window-sill, is secured thereto at its upper end by means of a ring attached to one end of the upper link of the ladder, said ring sliding upon a vertical rod in the sill, and the other end of the link being secured to a chain, which is attached to inside of sill.



Claim.—The combination of the vertical rod fixed to the sill, the connecting-chain, and the uppermost link of the folding ladder, the latter being allowed to slide, by means of a ring, along the rod, as and for the purpose specified.

203,078. VEGETABLE-CUTTERS. Albert Senff and Albert Hoefer, Peterville, Pa.; said Senff assignor to said Hoefer. Filed Nov. 19, 1877.

Brief.—The arms of a skeleton-wheel, to which the knives are attached, lie in enlarged slots in the disk that gages the thickness of the shaving, and this disk, while ordinarily held back from the knives by a spring, is adjustable by a cam-ring lying back of it, so as to cut shavings of any fineness.



Claim.—1. The combination of the case A, having shoulder *j*, beveled blocks *i i*, and slanting slot *k*, with the ring G, having slanting cuts or recesses *i' i'*, corresponding to the blocks *i i* on shoulder *j*, and the clamping-screw H, substantially as described, for the purpose herein set forth.

2. The combination of the case A, constructed substantially as herein described, adjustable ring G, having set-screw H, disk D, having radial cuts *e'*, knife-carrying wheel E, and cover B, all arranged and operating substantially in the manner described, for the purposes herein set forth.

3. In a vegetable-cutter, constructed substantially as herein described, the combination of the adjustable disk D, knife-carrying wheel E, and coiled spring G', the latter arranged in such a manner as to force the disk D backward from the wheel, substantially as and for the purpose herein shown and specified.

4. The hopper K, having sliding cover L, held in place by legs *l l*, and forming, when closed, a table upon which material may be placed for chipping or slicing, substantially as described, for the purpose set forth.

5. The improved machine for cutting and slicing vegetables herein described, consisting, essentially, of the case having opening F, detachable cover B, having hopper K, shaft C, adjustable ring G, disk D, spring G', and knife-carrying wheel E, all combined, arranged, and operating substantially in the manner herein described, and for the purposes shown and specified.

203,079. MANUFACTURE OF AUGERS. Henry L. Shaler, Deep River, Conn. Filed Apr. 13, 1878.



Claim.—The method of manufacturing spur auger-bits which consists in first bending outward the metal which is to form the spurs, and then forming the screw-threads on the worm, and afterward bending the metal from which the spurs are formed back to its proper place, and then finishing the bit in the usual manner.

203,080. BOOK-RACKS. Albert R. Sherman, Natick, R. I. Filed Mar. 16, 1878.



Claim.—1. The book-rack consisting, essentially, of the reciprocating rod I, the pins J, the sockets I, and the plates D, constructed and arranged substantially as shown and described.

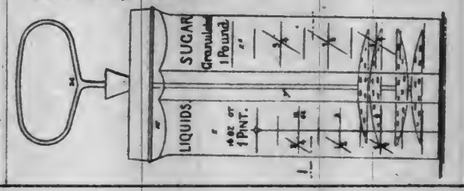
2. The combination of the reciprocating rod I, the holders J, and the spiral springs K with the sockets I, formed upon the base-plates D of a book-rack, substantially as herein shown and described.

3. The combination of the adjustable stops M with the movable holding-rod of a book-rack, substantially as herein shown and described.

4. The combination of the adjustable rod G with the shelf A and the base-plates D of the rack, substantially as herein shown and described.

5. The cushion formed by the combination with each other of the rubber strip Q, the covering-strip R, and the metallic plate P, having its side edges turned over to clasp the edges of the said strips Q R, substantially as herein shown and described.

203,081. DESSERT-MAKERS. Wm. H. Silver, New York, N. Y., assignor to Ann Silver, St. Louis, Mo. Filed Apr. 1, 1878.

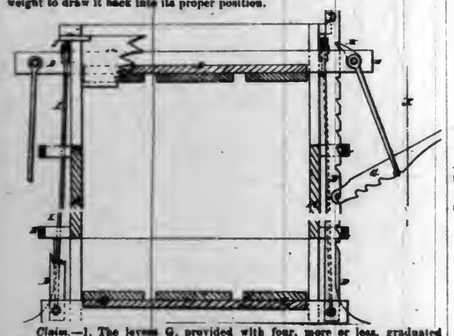


Claim.—1. The combination, in a dessert-maker, of a cylindrical, or nearly cylindrical, vertical receptacle, of transparent glass, having measuring-graduations on its outer surface, and a mixing and beating dasher, adapted to reciprocate within said receptacle, substantially as herein shown and described.

2. The combination, in a dessert-maker, of a cylindrical, or nearly cylindrical, vertical receptacle, of transparent glass, having graduations for different substances on its sides, a close cover tightly fitted to the top of said receptacle, and a reciprocating dasher, for mixing two or more ingredients within said receptacle, substantially as herein specified.

203,082. BALING-PRESSES. John E. Simonson, East Norwich, N. Y. Filed Oct. 16, 1877.

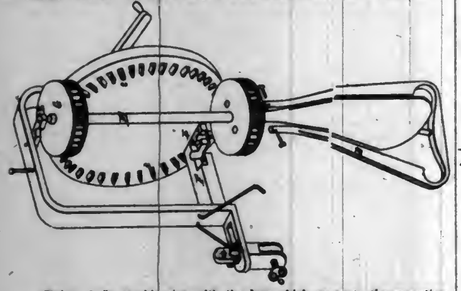
Brief.—In a vertical baling-press, two followers are driven toward each other by means of levers and racks. After the operation of pressing, the lower follower, being attached to the upper by ropes and pulleys, acts as a weight to draw it back into its proper position.



Claim.—1. The levers G, provided with four, more or less, graduated notches in the lower sides of their inner ends, in combination with the loops F, the toothed racks D, and the two movable followers B C, substantially as herein shown and described.

2. The combination of the ropes I and the guide-pulleys J with the upper follower B and the lower follower C, or equivalent weights, substantially as herein shown and described.

203,083. CHURNS. Abraham B. Simpson, Carter's Station, Tenn. Filed Apr. 4, 1878.



Claim.—1. In combination with the bow which supports the operating mechanism of a churn-dasher, the sliding blocks at the feet thereof, provided with set-screws and attaching-screws, as and for the purposes explained.

2. In combination with a churn-dasher having two parts which revolve in opposite directions, the upper and lower pinions, sustained from vertical displacement by the teeth of the crown-wheel, and from horizontal displacement by the removable collars, the whole being arranged substantially as and for the purposes set forth.

3. The herein described churn-dasher, composed of two parts, which revolve in opposite directions, the inner part being in the form of a blade tapered from bottom to top, and stepped in the outer part, which is made parallel with the inner blade, the whole being arranged to operate substantially as shown and described.

203,084. COOKING-STOVES. Homan B. Smith, Minnesota Lake, Minn. Filed Jan. 22, 1878.



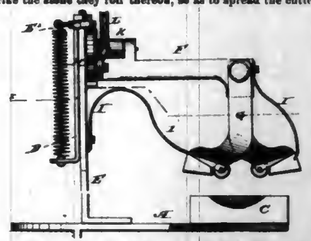
Claim.—1. In a cooking-stove adapted to burn hay and other fuel, the combination, with a fire-place having a grate adjustable to different heights, of a draft-flue with compound damper, that may be set for the larger or smaller fire-place to obtain greater or less draft, substantially as and for the purpose specified.

2. In a cooking-stove, a compound damper made of a convex ribbed plate, and having a smaller opening and smaller hinged damper, in combination with a locking device for securing the larger damper rigidly in position, substantially as and for the purpose specified.

3. The combination, in a cooking-stove, of large convex damper, having toothed wheel keyed to one of its pivots, with a sliding and slotted lock part of the stove to secure the large damper in open or closed position, substantially as described.

203,085. PEACH-CUTTERS. James H. Smith, Monticello, Ark. Filed Apr. 6, 1878.

Brief.—The peach is laid on the concave supports. As the cutters descend the curved edges divide the same, the circular cutters cut into the peach, and as they strike the stone they roll thereon, so as to spread the cutters over the stone.

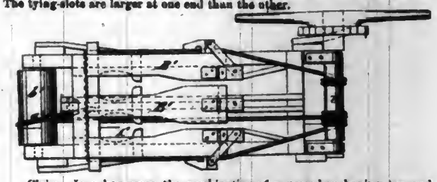


Claim.—1. The combination of the standards E E, secured to a bed-plate, A, the slide D, with arm F, and the cutters G G, with springs I I, substantially for the purposes set forth.

2. The operating-lever L, pivoted to the arm H, in combination with the arm F and the roller k mounted thereon, for the purposes herein set forth.

203,086. HAY-PRESSES. Homan B. Smith, Minnesota Lake, Minn. Filed Jan. 21, 1878.

Brief.—The follower is made in sections, the openings between them, in rear of the pressing-face, being large to facilitate the introduction of bands. The tying-slots are larger at one end than the other.



Claim.—In a hay press, the combination of a press-box having top and bottom, arranged with corresponding slots that are narrower at one end and wider at the opposite end, with a sectional follower having enlarged heads, with intermediate spaces of sufficient width to admit the passage of the bay-bands, substantially as described, and for the purpose specified.

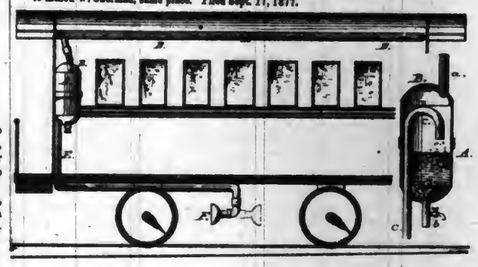
203,087. ANCHORS. Thomas A. Swinburne, Mount Braddon, Torquay, England. Filed Feb. 7, 1877.



Claim.—1. The combination, in an anchor, of a shank having both ends correspondingly formed or shaped, and flukes and a stock, substantially as described, whereby the said shank can be reversed end for end, and any of the said parts may be replaced by another of the same kind if broken or otherwise injured.

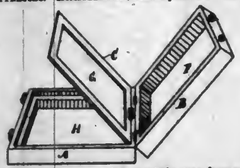
2. The reversible spiral shank A^3, flukes D^3, and the shackle C^3, secured in place by the pin f', flukes E, fitting loosely on said spiral shank, and adapted for use as a stock, the collar d^3, and shackle c^3, secured in place by pin e', and the chains or tackle G G, connected with the loose flukes E and passing up along the sides of the shank A^3, said parts being combined and organized so that any of them may be detached and replaced, substantially as and for the purpose set forth.

203,088. CAR-VENTILATORS. Chas. T. Tatro, Hartford, Conn., assignor of one-half his right to Mason W. Sherman, same place. Filed Sept. 27, 1877.



Claim.—In a car-ventilator, the receptacle A, having the removable top B, provided with pipe a, and concave bottom, provided with stop-cock b, and pipe C, having bend or curve c, when adapted for operation in connection with supply and exhaust pipes, substantially as and for the purpose described.

203,089. MATTRESSES. Hermann Testa, Indianapolis, Ind. Filed Jan. 28, 1878.



Claim.—A mattress-frame consisting of the two frames A and B and partition C, all hinged together and covered with ticking or other cloth F G H, in the manner and for the purpose substantially as shown and described.

203,090. MEDICATED SOAPS. Thomas Taylor, Washington, D. C. Filed Jan. 23, 1877.

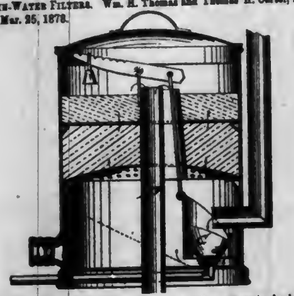
Claim.—An antiseptic disinfecting-soap composed of the ordinary constituents of soap, combined with a small proportion of *Eucalyptus* oil, substantially as described.

203,091. ENVELOPES. Mary J. Taylor, Brooklyn, N. Y. Filed Mar. 2, 1878.



Claim.—As an improved article of manufacture, a change-envelope for street-cars, made from suitable tough uncolored or light-colored paper, having an inscription printed on its face to signify its denomination or proposed contents, and an arbitrary mark or marks printed in black or colors across the fold or edge and on the back flap, significant also of the proposed contents and of the inscription on the face, substantially as set forth.

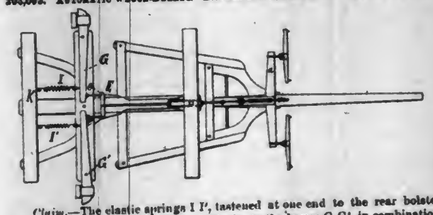
203,092. RAIN-WATER FILTERS. Wm. H. Thomas and Thomas H. Carter, Mount Sterling, Ky. Filed Mar. 25, 1878.



Claim.—1. The combination, with a vessel or receptacle having interior filtering material and water supply and discharge pipes, of an interior hinged and balanced cup, having bottom valve, and of a bottom drain-pipe, substantially as shown and described.

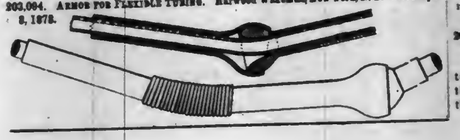
2. The combination of a filtering-vessel, having water-supply pipe, central discharge and bottom drain-pipe, with an interior cup, hinged below the supply-pipe, and having a bottom valve and drain perforation, substantially as and for the purpose set forth.

203,093. AUTOMATIC WAGON-BRAKES. Loren L. Travis, Lemon, Pa. Filed Nov. 30, 1877.



Claim.—The elastic springs I I', fastened at one end to the rear bolster K, and at the other end, each respectively, to the levers G G', in combination with the short connecting-levers e e', the evener E, the series of levers D, and the levers C and B, substantially as shown and described, and for the purposes herein set forth.

203,094. ARMOR FOR FLEXIBLE TUBING. Harwood Wakeman, New York, N. Y. Filed Apr. 6, 1878.



Claim.—The metallic tubular armor-sections, connected together by flexible joints, and applied to and combined with a flexible internal tube, substantially as and for the purposes set forth.

203,095. CHEEK-PIECES FOR HEADSTALLS. James W. Wood, Prescott, Iowa, assignor to himself and Granville E. Currier, same place. Filed Feb. 26, 1878.

Brief.—The metal cheek-piece is provided with a buckle at each end, intermediate loops, and a blind-plate—all integral.



Claim.—The metallic cheek-piece A, having a buckle, a^1, for the crown-strap, a buckle, a^2, for the bit-strap, the loop a^3, and the blind-plate a^4, as shown and described.

203,096. TRILL-COUPLINGS. Wm. L. Wheeler, Birmingham, Ill., assignor to himself and Wm. Beal, same place. Filed Apr. 5, 1878.



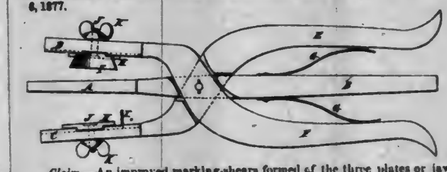
Claim.—The combination of the pin D, provided with the extension E, the pivoted slotted bar F, provided with a key, I, upon its free end, with the extension-yoke G of the axle-clip H, and with the lugs C of the thill-clip, for securing the thill-iron to said clip, substantially as herein shown and described.

203,097. BLASTING ROCKS. Thomas J. Wheatley, Williamsburg, Pa. Filed June 12, 1876.



Claim.—The method herein described of charging a mine or blast, which consists in confining the charge or cartridge at a little distance from the tamping or plug, and leaving an air-space between the powder and tamping, all substantially as set forth.

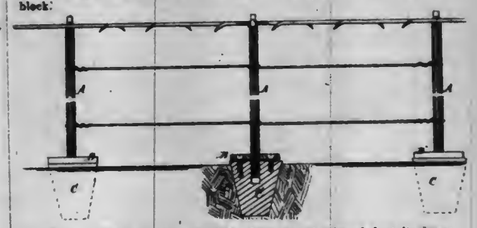
203,098. SHEARS FOR MARKING STOCK. William Wright, Warrior Station, Ala. Filed Oct. 6, 1877.



Claim.—An improved marking-shears formed of the three plates or jaws A C D, the three handles B E F, the springs G, the holding blocks, bolts, and nuts H J K, and the cutters I, substantially as herein shown and described.

203,099. FENCES. Anton Zimmerer, Nebraska City, Nebr. Filed Mar. 26, 1878.

Brief.—The post is threaded at its lower end and provided with a metal plate having a threaded hole secured by screws or nails upon a supporting-block.



Claim.—1. The combination of the fence-post A, threaded at its lower end, with the metallic plate B, provided with a threaded hole, and secured by screws or nails *b* upon the supporting-block C of the fence, substantially as shown and described.

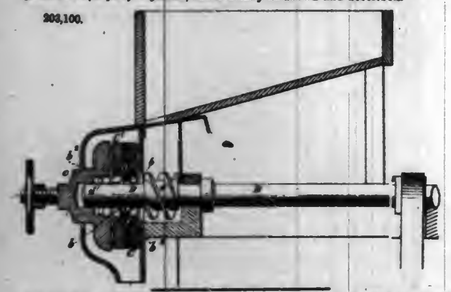
2. The combination of a top rail having oblong slots, posts A, notched at their upper ends and screw-threaded at their lower ends, and the screw-plates B, as shown and described, whereby said posts may be turned to lock the top rails, as specified.

203,100. GRINDING-MILLS. David J. Ames and Ezra J. Ames, Austin, Minn. Filed Jan. 23, 1878.

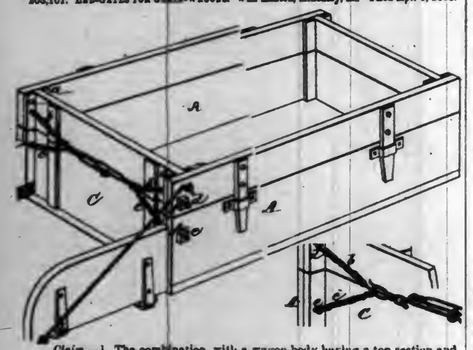
Claim.—1. A mill-burr provided with three series of ribs, *b*, b^1, and b^2, the two latter-mentioned series being arranged closer together, and divided up by the backward or cross-cut grooves or channels b^3 b^3, substantially as and for the purpose set forth.

2. The shaft D, passing through the barrs C C', provided with a pin, *d*, in combination with the driving hub or cap *c*, recessed sufficiently to enable said parts to be properly adjusted, substantially as shown and described.

203,100.



203,101. END-GATES FOR GRAIN-WAGONS. Wm. Ashton, Hinckley, Ill. Filed Apr. 6, 1878.



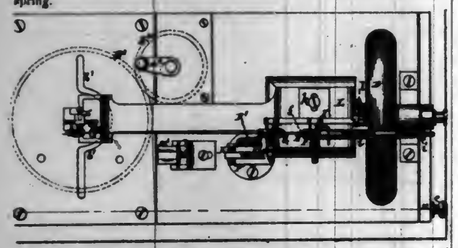
Claim.—1. The combination, with a wagon-body having a top section and an end-gate of corresponding sections sashed therein, of a two-part chain-fastening, connected to the top and fixed body-sides, crossing obliquely the joining of the body and gate sections, and fastened at or near the middle of the end-gate, substantially as specified.

2. The combination, with the wagon-body and the end-gate, of corresponding sections and the two-part chain, connecting the fixed and top body-sections, as described, of the buckle or tie, consisting of a bent tongue and slide-ring, operated as stated.

3. In a wagon end-gate fastening, the chains *c c*, detachable from the chains *b b*, and the latter being provided with a take-up buckle-tie, in combination with the body A and end-gate C, as specified.

203,102. THREAD-CONTROLLERS FOR SEWING-MACHINES. Daniel Barcellos, Williamsburg, Brooklyn, N. Y. Filed Dec. 16, 1877.

Brief.—The take-up is capable of being adjusted laterally, and can be rocked up and down vertically. It is attached to a bracket supporting a disk-tension and tension-pulley, which is also capable of lateral adjustment. The under tension consists of the ordinary disk-tension, a tension-pulley, and a spring.



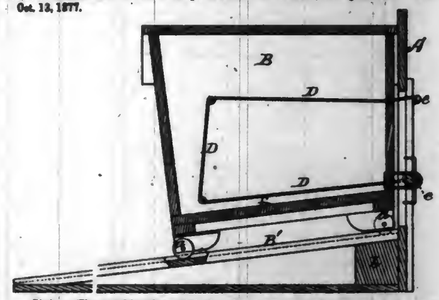
Claim.—1. The take-up H, having its rod which carries the thread extended through opposite ends of its bobber *h*, in combination with the duplicate springs *i i*, essentially as described.

2. The combination of the gear chamber or upright I, tension-carrier I, made adjustable in a lateral or crosswise direction, and the take-up H, independently adjustable in a similar direction on said carrier, and capable of being rocked vertically thereon, substantially as specified.

3. The bobber A of the take-up, provided with a shank, *i*, and supported by said shank, to admit its being rocked vertically and adjusted laterally, in combination with one or more needle-thread leaders in advance of the take-up, and one or more interposed tension devices, essentially as specified.

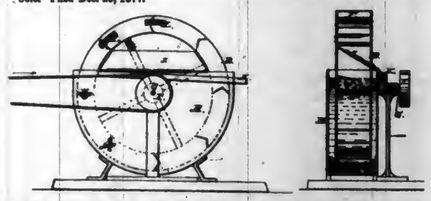
4. The combination, with the eyes or guides *t t'*, which conduct the under thread from its spool, of the intervening tension-leader P, composed of adjustable spring-pressure disks, the forward adjustable tension friction-pulley Q, and the elastic wire guide *v*, essentially as shown and described.

203,103. LINT-ROOMS. Robert F. Baughn and Wm. M. Harrison, Lexington, Miss. Filed Oct. 13, 1877.



Claim.—The combination, with the gin-house A, tracks B', and a wheeled lint-room, B, of the rope D, extending through, across, or around the said lint-room, secured at one end to the gin-house, and passing through the lint-room, the ring *i*, the staple *c*, the latch-lever C, and coupling-pin *j*, substantially as specified.

203,104. APPARATUS FOR SEPARATING SAND FROM WATER. Erastus S. Bennett, Denver, Colo. Filed Dec. 29, 1877.

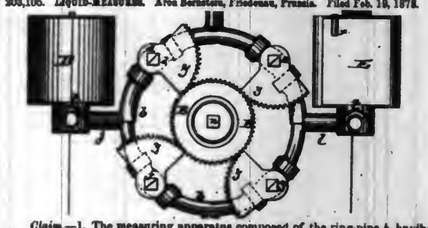


Claim.—1. The elevating-wheel B, provided with the buckets F and the perforations L, in combination with the inclined plate J, extending partly within said wheel, substantially as and for the purpose set forth.

2. The elevating-wheel B, having perforations L and buckets F situated at or about its periphery, in combination with the tank A, substantially as and for the purpose set forth.

3. The elevating-wheel B, having the perforations L and buckets F, in combination with a support or supports placed outside of and independent of the tank A, substantially as and for the purpose set forth.

203,105. LIQUID-MEASURES. Aron Bernstein, Friedenau, Prussia. Filed Feb. 16, 1878.



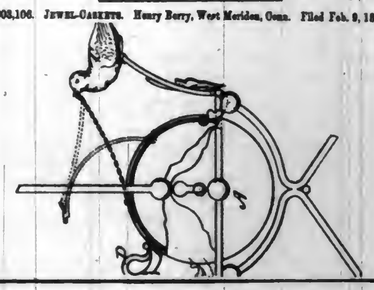
Claim.—1. The measuring apparatus composed of the ring-pipe *b*, having valves *d e f g*, branch pipes *j l*, and measuring-vessels D E, substantially as herein shown and described.

2. The ring-pipe *b*, having the valves *d e f g*, combined with the measuring-vessels D E, said ring-pipe being made larger in diameter in its upper than in its lower half, substantially as and for the purpose specified.

3. The combination of the ring-pipe and its valves *d e f g* with the toothed segments *y*, and with the toothed wheel B and its crank C, said crank moving between stops *h* and *i*, substantially as and for the purpose specified.

4. The combination of the crank-spindle *n* with the pinion *o*, slides *p q*, pawls *r s*, ratchet-wheel F, and index G, substantially as and for the purpose specified.

203,106. JEWEL-CASKETS. Henry Berry, West Meriden, Conn. Filed Feb. 9, 1878.



Claim.—The combination, with the frame A, of a box journaled therein, its hinged lid flexibly connected with the said frame, and a retaining-catch, substantially as specified.

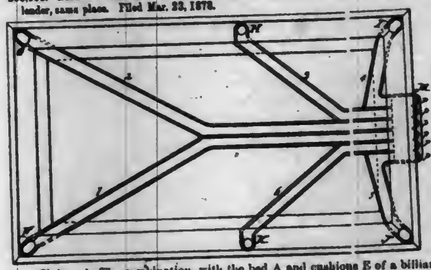
203,107. HORSE-TAIL TIES. Beverly Blackstone, Warren, Ill. Filed Mar. 22, 1878.



Claim.—1. An ornamental tie for a horse's tail, consisting of a disk or plate, A, having a hole or catch for one end of the string, an opening or passage for drawing the free end, and the narrow fastening notch or cleft *d*, substantially as specified.

2. A tie-plate for a horse's tail, having attachment and draw-holes, fastening-notch, and ornamental back piece or cover to conceal the holes and string, substantially as specified.

203,108. BILLIARD-TABLES. James E. Boyle, New York, N. Y., assignor to Hugh W. Colender, same place. Filed Mar. 23, 1878.

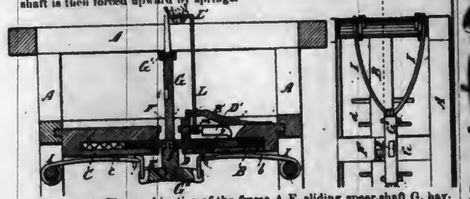


Claim.—1. The combination, with the bed A and cushions E of a billiard-table of usual construction, of bottomless pockets F G, &c., and ball-conduits 1 2 3, &c., leading to a common receptacle, the whole arranged to operate as specified, for the purpose set forth.

2. In combination with the bed A and cushions E of a billiard-table, the bottomless pockets and conductors, arranged to operate as described, and a receptacle, M, formed with compartments communicating, respectively, with the several conductors, as specified, for the purpose set forth.

203,109. ANIMAL-TRAPS. James P. Boyers, Finney's Grove, Mo. Filed Feb. 13, 1878.

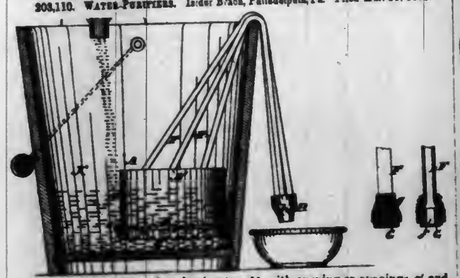
Brief.—Operation: The bolt D is pushed back and caught by the latch. The shaft is then pulled down until the recess in said shaft comes opposite the bolt E, which, impelled by its spring, flies into the recess and locks the shaft. The instant the animal touches the bait the latch is released, and the bolt, forced by its spring, strikes and releases the bolt from the shaft. The shaft is then forced upward by springs.



Claim.—1. The combination of the frame A F, sliding spear-shaft G, having notch *i*, springs I I, and bolts D E, operated by springs *b c*, of unequal strength, all arranged and operating substantially as and for the purpose herein shown and specified.

2. The combination of the frame A F, sliding spear-shaft G, operated by the springs I I and having notch *i*, and bolts D E, sliding in barrels B C, and operated by springs *b c*, of unequal strength, with the trigger L and latch D', all constructed, arranged, and operating substantially as herein set forth, for the purposes shown and specified.

203,110. WATER-PURIFIERS. Isidor Brach, Philadelphia, Pa. Filed Mar. 25, 1878.



Claim.—1. The vessel A, having top A', with opening or openings *a'* and head B, in combination with the foraminated bottom C, with legs *c*, substantially as shown and described.

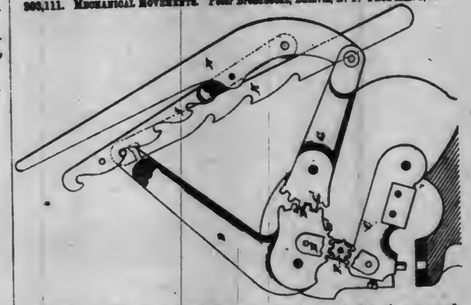
2. In combination with a purifying-vessel, A, having a carbonaceous or mineral filling, two or more conducting tubes or channels, F, for the purpose of drawing water at different points or places from said vessel and distributing the impurities throughout the filtering medium, as set forth.

3. In combination with a series (two or more) of conducting-tubes, F, a union, H, consisting of section *h*, having a transverse diaphragm, with opening *i*, substantially as shown and described.

4. In combination with conducting tube or tubes F, the stiffening-piece *f*, wire-gauze G, and wrapping *g*, substantially as shown and described.

5. The combination of vessel A, having top A' and removable foraminated bottom C, conducting-tubes F, and union H, constructed, arranged, and operating substantially as shown and described.

203,111. MECHANICAL MOVEMENTS. Peter Broadbooks, Batavia, N. Y. Filed Mar. 6, 1877.



Claim.—1. In combination with the jaws C, having on the edges rows of cogs with an intermediate plain surface, and cam-headed lever D, having corresponding cogs and an intermediate plain surface, and jointed straps E, the roller F, having corresponding cogs on the ends, and an intermediate cylindrical smooth surface and bearings in the joint of the straps, substantially as and for the purpose set forth.

2. In combination with the parts C, F, and D, the lever G, having gearing connecting it with lever D at G' D', so that when the ends of levers G and D are drawn together they shall act with their combined force on the pinion, substantially as set forth.

3. In combination with the interengaged levers G and D, the lever H and hook-notched bar I, arranged to operate substantially as set forth.

4. In combination with the levers D, G, and H, and bar I, the notched bar K, arranged to operate substantially as set forth.

5. In combination with the jaw C and lever D, the pinion F, having between the series of cogs a plain cylindrical surface, on which it rolls, bearing upon corresponding surfaces of the lever and jaw, substantially as set forth.

203,112. MECHANICAL MOVEMENTS. Peter Broadbooks, Batavia, N. Y. Filed Apr. 26, 1877

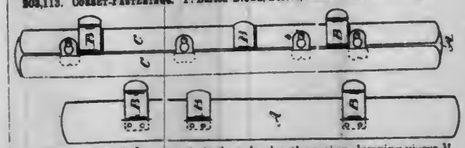


Claim.—1. The combination of the frame A, forming or supporting the fixed jaw B, the lever C, forming or supporting the jaw D, lever E, having on its head the knuckle E', and the sliding wedge F, substantially as set forth.

2. In combination with the frame A and jaw B, the lever C and jaw D, the lever E, with knuckle E', the sliding wedge for forcing the jaws together with a constantly-increasing force, and the spring H, for throwing the jaws apart when released, substantially as set forth.

3. The combination of the frame, the levers, the jaws, and the sliding wedge, for applying a constantly-increasing force to the jaws, and the adjusting-screw G, for regulating the relation of the jaws, substantially as set forth.

203,113. CORSET-FASTENINGS. F. Barton Brown, Boston, Mass. Filed Feb. 4, 1878.



Claim.—A busk for corset fastenings, having the spring clamping-pieces B constructed as shown, in order to connect the busk A with the fastening C, as shown.

203,114. MACHINES FOR WINDING BOBBINS. Joseph Bullock, Cohoes, N. Y., assignor, by mesne assignments, to Joseph Bullock, trustee. Filed July 9, 1877.

Brief.—The characteristic features are: In winding bobbins, variable motion is imparted thereto by means of two plates placed face to face, one of which is provided with a pin for fitting in a radial groove in the other; an annular bearing for supporting, and revolving positively with, the stem of a horizontal bobbin; a stripper located over drawing-off bobbin; an auxiliary cleaner composed of plane surfaces and a number of wire points.

Claim.—1. The combination, in a bobbin-winding machine, of the face-plates A and B—one having a stud to work in a slot in the other—with a cam, b', and yarn-guide D, substantially as described, and for the purpose set forth.

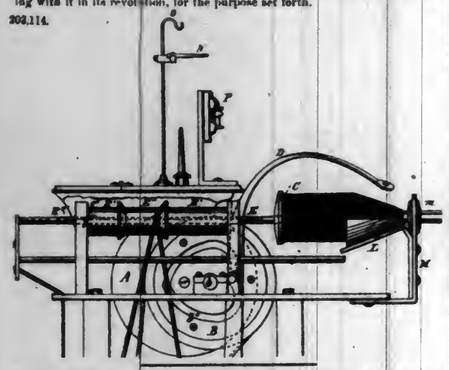
2. The combination of a sliding bobbin with an annular bearing, *m*, arranged substantially as described, to allow the bobbin to move freely in the bearing, and yet compel the two to revolve together, in the manner set forth, and for the purpose specified.

3. The combination of the stripper N with the friction-bar O, the two being arranged substantially as described, so as to trim the yarn before it passes over any frictional surface, for the purpose specified.

4. The auxiliary cleaner P, provided with one or more plane surfaces and a series of wire points, for the purpose specified.

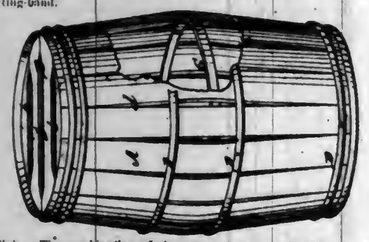
5. The combination of the support M, spindle E, sliding bobbin C, and annular bearing *m*, arranged substantially as described, whereby the bobbin is allowed to move freely through the annular bearing, and yet carry said bearing with it in its revolution, for the purpose set forth.

203,114.



203,115. BARRELS FOR PACKING FRUIT. Augustus Burkard, Crisfield, Md., assignor of one-half his right to Isaac H. Oselborne. Filed Mar. 16, 1878.

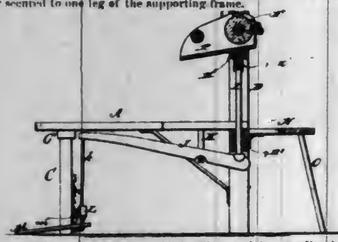
Brief.—A head may be placed in the center of the barrel and held by the augmenting-band.



Claim.—The combination of the staves A, provided with the parallel walled central grooves *a*, the slotted heads B, interior central band C, covering the groove *a*, and exterior hoops D, substantially as and for the purposes set forth.

203,116. CLOTHES-WRINGERS. Chas. B. Camp and Nathaniel Gardner, White Pigeon, Mich. Filed Jan. 26, 1878.

Brief.—The tension of the wringing-rollers is regulated by means of a cross-bar provided with arms which exert a pressure directly upon the journals of the lower roller, and actuated by a lever suspended beneath the frame, and adjusted and secured at different heights by another lever connected by a strap to the first lever, and provided with a projection engaging with a rack-bar secured to one leg of the supporting-frame.



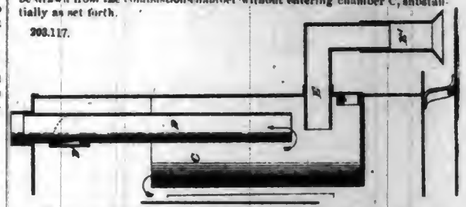
Claim.—1. The cross-bar H, provided with arms *h h*, extending into slots *x x* of the frame, and pendent bar I, or its equivalent, in combination with the suspended lever J and lower roller F, substantially as and for the purpose explained.

2. The combination, with a pair of wringing-rollers, of the lever J, hung upon bail K, attached to frame A, with strap *k*, connected to the lever I, having projection *m*, and the leg C, with ratchet *n*, as described.

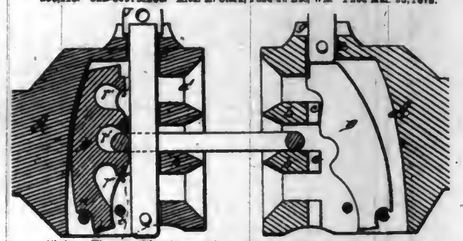
203,117. HEATING-STOVES. Marvin Campbell, South Bend, Ind. Filed Mar. 13, 1878.

Claim.—In combination with the sleeve of a stove, an interior chamber, C, attached thereto, a pipe, D, extending through the chamber C from the lower part thereof and out through the shell of the stove, fitted with a damper, D', placed above the chamber, and a cold-air pipe, E, bent and fitted with a sliding sleeve, E', capable of being extended to the floor, whereby air of the lowest temperature may be discharged into the bottom of the chamber C to check the draft, or, the air-supply being cut off entirely, the direct draft may be drawn from the combustion-chamber without entering chamber C, substantially as set forth.

203,117.



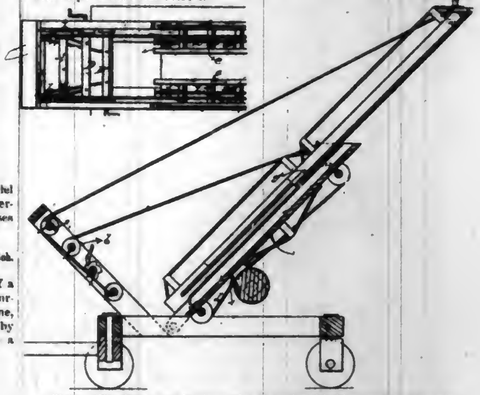
203,118. CAR-COUPLINGS. Alex. H. Clark, Fond du Lac, Wis. Filed Mar. 23, 1878.



Claim.—The combination, with a triple-mouth draw-head, having its mouths arranged one over the other, of the single vibratory rest D, rocking on a fulcrum, *p*, at its lower end, and having recesses *r r' r''* and catches *s s' s''*, one above the other, corresponding to the mouths of said draw-head, substantially as specified.

203,119. FIRE-ESCAPE LADDERS. William W. Clark, Benj. A. Bowman, and Silas Bowman, Kirksville, Mo. Filed Feb. 16, 1878.

Brief.—Closed ladder-sections having hand-rails and a central slideway, with steps on each side thereof.



Claim.—The fire-escape having a closed sectional ladder, each section constructed to form a central slideway, with steps on each side thereof, and the railings on the sides, as shown and described.

203,120. ERASIVE-TABLET HOLDERS. Orestes Cleveland, Jersey City, N. J. Filed Feb. 8, 1878.

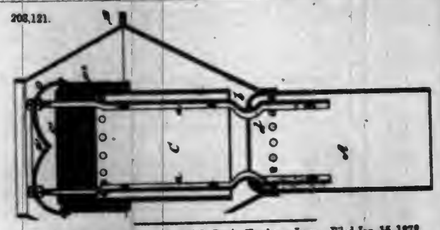


Claim.—An erasive tablet holder consisting of a body having spring sides with projections 7, and a top plate having hooked projections 8, all substantially as described.

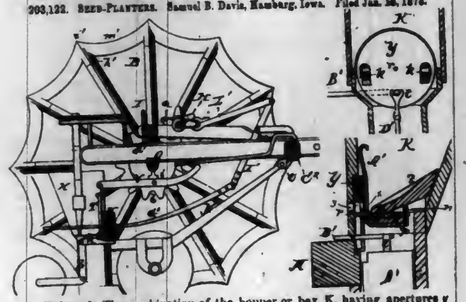
203,121. SPARK-ARRESTERS. James T. Connelly and Henry C. Burton, Connellsville, Pa. Filed Mar. 30, 1878.

Claim.—The combination, with the stack A, provided with flange *d*, and its cap or head B, of the sheet-metal barrel C, having upper wire-netting extension C', and forming a passage, *b*, at its lower end, the cone D D', and wire-netting D'', all constructed and arranged substantially as and for the purposes herein set forth.

203,121.



203,122. SEED-PLANTERS. Samuel B. Davis, Hamburg, Iowa. Filed Jan. 16, 1878.



Claim.—1. The combination of the hopper or box K, having apertures *y* in its front side, the reciprocating rotating dropping-plate Y, perforated as described, and the strips *k k*, adjustably arranged on the plate Y, and in the perforations thereof, by means of the screws *m*, which are opposite the apertures *y* in the box K, whereby the strips *k* may be adjusted from the outside of the box, substantially as herein set forth.

2. The combination of the box K, rotary reciprocating dropping-plate Y, the stationary vertical plate A', inclined bottom Z, and flanged cut-offs *p p*, actuated by the spring *s*, all substantially as and for the purposes herein set forth.

3. The combination, in a planter, of the bar G', operated from the crank-shaft H by the pitman I, and lever I', and provided with the longitudinal slot *a'* and inclined side wings H' H'', the bar M, having pin *b'* passing through the slot *a'* in said bar G', the recessed slide F', having friction-rollers *e e*, the L-shaped rods B', dropping-plates Y, with slots *s*, and the valves D', with forks *t*, all constructed and arranged substantially as and for the purposes herein set forth.

4. The driving-wheel B, having its rim made of one piece, with spoke-tenon sockets *b'*, points *i'*, and concave edges *m'*, as set forth.

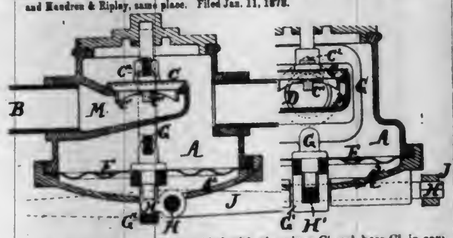
203,123. CAR-WINDOWS. Charles T. Deblois, Boston, Mass. Filed Feb. 12, 1878.



Claim.—1. A swinging car-window provided with eyes *f*, in combination with removable pintles *g* and knobs *h*, substantially as described.

2. In combination with a car-window swinging outwardly, the folding shelf *k* and its support *l*, substantially as and for the purpose described.

203,124. PRESSURE-REGULATORS. Wm. D. Dickey, New York, N. Y., assignor to himself and Hendren & Ripley, same place. Filed Jan. 11, 1878.



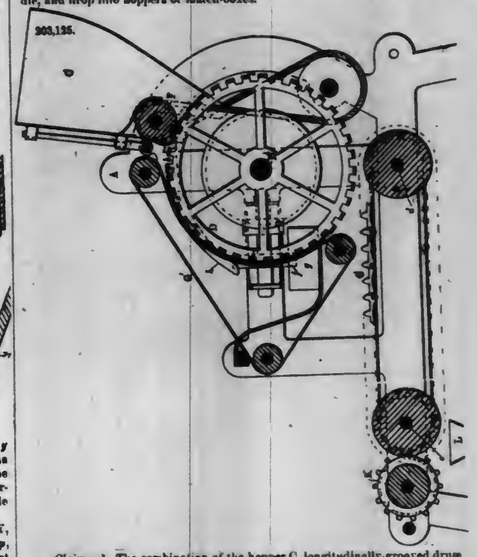
Claim.—1. The valve C, provided with the wings C' and boss C², in combination with the yoke G, casings M and A, diaphragm E, and pipes B H, as herein specified.

2. The rocker-shaft H, arm H', and lever J, in combination with the extension C' of the yoke G, adapted to serve, relatively to the diaphragm E, valve C, and pipes B D and their connected castings, as herein specified.

203,125. MATCH-MACHINES. Charles J. Donnelly, York, Pa., assignor of one-half his right to Peter B. Sprenkle and Abraham B. Sprenkle, same place. Filed Mar. 9, 1878.

Brief.—The match-splints, after having been treated with sulphur, are fed through a hopper into the longitudinal grooves of a revolving drum, where they are held by an endless band, and centrally guided by two arms to a pair of revolving drums, by which igniting compound is deposited on both ends of the splints. The twin matches are then deposited on a pair of endless chains, which carry them to a revolving cutter, by which they are severed in the middle, and drop into hoppers or match-boxes.

203,125.



Claim.—1. The combination of the hopper C, longitudinally-grooved drum B, roll F, tape or belt G', drums *f*, and trays *g*, substantially as specified.

2. The combination of the drum D, tape or belt G', trays *g*, drums *f*, and sliding gages *k*, substantially as described.

3. The combination of the longitudinally-grooved drum D, tape or belt G', and endless chains G, having projections thereon, substantially as and for the purposes specified.

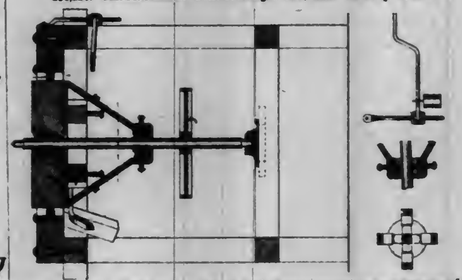
4. The combination of the cutting-disk or circular knife K with the chain-heads and endless chains G, having projections thereon, whereby the splints are severed after they have fallen from the drum D and been deposited on the said chains, substantially as set forth.

5. In combination with the longitudinally-grooved drum D and the drums *f f*, the arms A, having such relation to the said parts as to guide the splints centrally between the drums *f f*, substantially as and for the purpose therein described.

6. The combination of the drum D, tape or belt G', endless chains G, having projections, as described, circular knife K, and hopper or funnel L, leading direct to the match-boxes, substantially as set forth.

7. The shaft D', carrying the drum D, and gear-wheels at each side of the same, combined with the dipping-drums *f*, on their respective shafts bearing gears which mesh with the wheels on the shaft D', substantially as set forth.

203,126. GRINDING-MILLS. Peter T. Eising, Boston, Mass. Filed Sept. 6, 1877.



Claim.—The bed-stone, combined with tramming-scales, or measures of weight or pressure, to set upon the under side of the bed-stone at three or more places, and indicate the variation of pressure, substantially as described.

203,127. GRINDING-MILLS. Peter T. Eising, Boston, Mass. Filed Feb. 1, 1878.

Claim.—1. A bed-stone and liquid support therefor, to operate substantially as described.

2. A bed-stone and liquid-holding vessels, combined with caps or followers fitted thereto, and adapted to be sustained by the liquid within the vessels, substantially as shown.

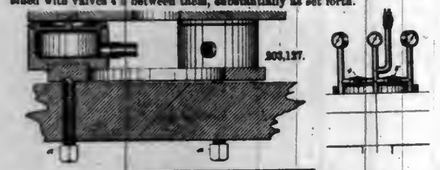
3. The bed-stone, caps, and vessels to contain liquid, combined with pipes to connect the vessels and permit the liquid in them to be in communication, substantially as set forth.

4. In a grinding-mill, vessels to contain liquid, as described, and caps and a bed-stone sustained by the force of the liquid under the caps, in combination with pipes and pressure-gages, to operate substantially as described.

5. In combination, a bed-stone, liquid-holding vessels, a diaphragm therein, and caps adapted to rest against the diaphragms, and be lifted from the vessels with the bed-stone by the pressure of the liquid in the vessels, substantially as described.

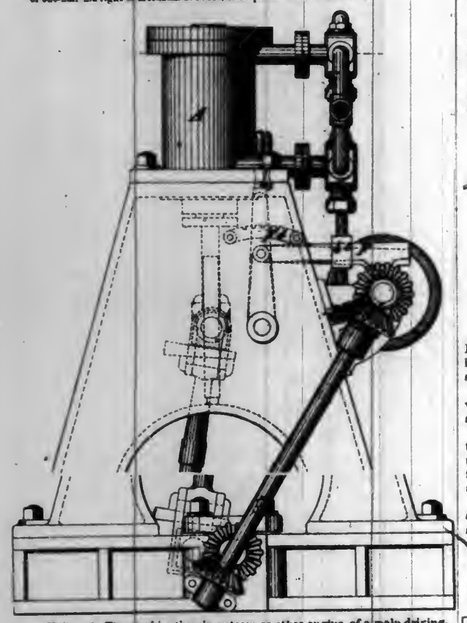
6. In combination, liquid-holding vessels, a bed-stone, caps supported upon a liquid within the vessels, substantially as described, and a leveling-plate and leveling-screws, all to operate substantially as set forth.

7. The liquid-holding vessels, caps, bed-stone, and connecting-pipes, combined with valves 4 3 between them, substantially as set forth.



203,127.

203,128. VALVE-GEARING FOR STEAM-ENGINES. John Ereding, Philadelphia, Pa., assignor of one-half his right to Abraham S. Jenks, same place. Filed Dec. 19, 1877.



Claim.—1. The combination, in a steam or other engine, of a main driving-shaft, a counter-shaft coupled to and rotated by the driving-shaft, a tubular cam-shaft which carries the valve-operating cams, and which is mounted on and rotated by the counter-shaft, and a device for varying and adjusting the position of the cam-shaft relatively to the counter-shaft, substantially as set forth.

2. The combination, with an engine having a separate induction and eduction valve at each end of its cylinder, of a rotating cam-shaft and a separate cam thereon for each of the valves, a series of pivoted cam-levers, by which the movement of the cams is transmitted to the valve-stems, an offset or projecting bearing on the face of each of the admission cam-levers above the face of its cam, and a rock-shaft and lever for varying the position of the offsets relatively to the axis of the cam-shaft, substantially as set forth.

3. The combination of the counter-shaft and its stop-pin, the tubular cam-shaft mounted loosely thereon, and having a circumferential groove fitting the stop-pin of the counter-shaft, valve-operating cams, and a hand-wheel formed on or secured to the cam-shaft, and a nut or friction-collar on the counter-shaft, by which the cam-shaft may be made fast or loose thereon at pleasure, substantially as set forth.

203,129. WASH-BOARDS. James R. Finley, Delphi, Ind., assignor of one-half his right to Wm. F. Lytle, same place. Filed Mar. 26, 1878.



Claim.—1. A wash-board provided with a filter arranged to have the water pass from the wash-board through the filter, for the purposes set forth.

2. A wash-board having a series of slits or perforations, in combination with a filter arranged under the same, for the purposes herein set forth.

3. In a wash-board, a series of wooden bars, D D, provided with metal coverings *a a*, having their ends doubled, substantially as and for the purposes herein set forth.

4. The box or drawer F, skeleton-frame G, and filtering-cloth I, in combination with a wash-board, for the purposes herein set forth.

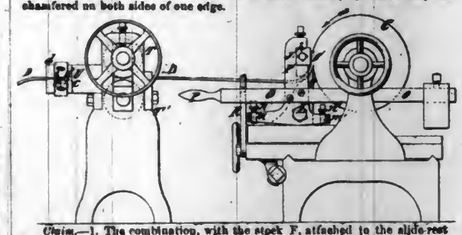
203,130. LAUNDRY BLUING-PACKAGES. Charles H. Fischer, New York, N. Y. Filed Mar. 12, 1878.



Claim.—A bluing-package for laundry use, consisting of a substantially inflexible receptacle containing a bluing-powder, and having secured around its mouth the mouth of a flexible water-pervious bag, in such manner that when said bag is extended the powder, or a portion thereof, may be shaken into it, and then, when folded and inserted into the mouth of the receptacle, said bag forms a stopper therefor.

203,131. MACHINES FOR MAKING SHOE-PEG BLANKS. Alpheus C. Gallahue, Morrisania, New York, N. Y. Filed Mar. 5, 1878.

Brief.—The blank is cut by a stationary cutter from a rotating log, and is simultaneously divided into strips of the required width by a set of adjustable knives, which are pressed against the wood by a weighted lever, which withdraws the knives if the resistance becomes too great on account of knots in the wood. The blanks are then passed by two feeding-rolls, through guiding-channels, between a system of fixed inclined knives, by which they are chamfered on both sides of one edge.



Claim.—1. The combination, with the stock F, attached to the slide-rest E, for carrying the cutter *g*, of the stock F', pivoted to the stock F, for carrying the presser *h* and dividing-cutters *g'*, substantially as and for the purpose specified.

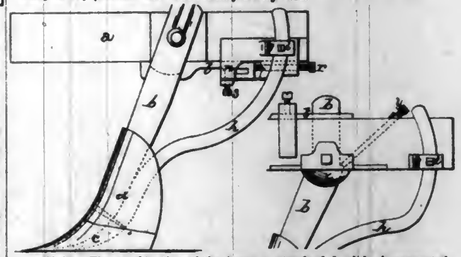
2. The combination, with the stock F', pivoted to the stock F, and provided with an adjusting-screw, *s'*, of the weighted lever O, attached to said stock F', substantially as and for the purpose set forth.

3. The combination of the knives *g* and *g'*, for cutting the ribbons from the wood cylinder, beveling-cutters *c c'* on fixed cutter-stocks *d*, guiding-channels *e*, for guiding the ribbons to the said beveling-cutters, and feed-rolls T T', for receiving the ribbons from the knives *g g'* and feeding said ribbons to the said beveling cutters, substantially as and for the purpose described.

4. The combination, with the cutter-stocks *d*, of slides *e*, fitted in the channels *e*, to regulate the width of channel for the passage of the ribbons D, substantially as and for the purpose set forth.

203,132. CULTIVATORS. Oliver S. Gandy, Newport, N. J. Filed Mar. 12, 1878.

Brief.—A slide moving in a guide and held in position by two set-screws, and a curved brace secured in place by a single set-screw, bold the standard firmly in any position into which it may be adjusted.



Claim.—The combination of the beam *a*, standard *b*, slide *l*, connected directly to the standard, a frame for the slide to move in, brace *h*, guide *g*, set-screw *i*, and the two set-screws *r* and *s*, for securing the standard into any position into which it may be adjusted, substantially as shown.

203,133. RAILWAY-SWITCHES. Charles F. Gunsert, Cincinnati, Ohio, assignor of one-half his right to M. W. Oliver, same place. Filed Oct. 29, 1877.

Brief.—To the point of the movable rail is attached a vibrating arm, which is operated to shift the point by means of rollers or wheels upon the car-truck.

Claim.—1. In combination, the lever-arm B, pivoted in rail A, switch-rail C, and link D, to connect said lever-arm and switch-rail, the parts being constructed to operate substantially as described.

2. In combination with a street-car platform, the switch changing device consisting of yoke E, secured beneath said platform, said yoke carrying wheels F and G in a position to change the switch, and lever H, to operate said yoke, substantially as specified.

3. The combination, substantially as specified, of a railway-switch, composed of the parts A, B, C, and D, and the devices for operating said switch, composed of yoke E, wheels F and G, and lever H, secured to the platform of the car upon stud-pin I.

203,134. CURVE-DRAWERS. George W. Gilbert, Knoxville, Ind. Filed Nov. 22, 1877.

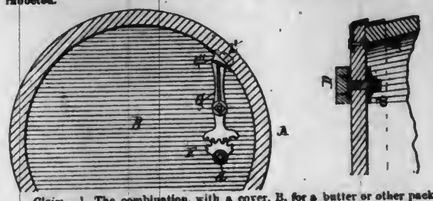


Claim.—1. The combination of the staff A, having recess or perforation *a a'*, with the valve *c* and flap or slide *b*, substantially as described, for the purpose herein set forth.

2. The head or follower B, having pivoted wings F F, in combination with the staff A, having recess or perforation *a a'*, flap or slide *b*, and valve *c*, substantially as described, for the purpose herein shown and specified.

203,135. FASTENINGS FOR BUTTER-TUBS. James Gilberds and Charles S. Jackson, Jamestown, N. Y.; said Jackson assignor to said Gilberds. Filed Aug. 7, 1877.

Brief.—The two cleats are apparently screwed fast to the cover, but one is really screwed while the other is pivoted at its center to the cover. By turning the pivoted cleat the locking device beneath the cover is made to engage or disengage the notch in the tub. The cover may or may not be rabbeted.

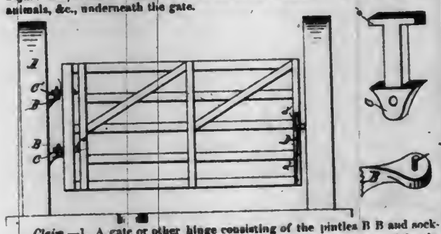


Claim.—1. The combination, with a cover, B, for a butter or other package, of the pivoted cleat D on top of the cover, and a fastening device under neath said cover, operated by the pivoted cleat, substantially for the purposes herein set forth.

2. The combination of the cogged lever G with hook G', the cogged segment E, and the cleat D, with stud *i*, with the package A and cover B, substantially as and for the purposes herein set forth.

203,136. GATE-HINGES. George E. Goodwin, Portland, assignor of one-half his right to James Pierce, Orange Township, Ionia County, Mich. Filed Aug. 1, 1877.

Brief.—The leaves or plates of a pair of gate-hinges are provided with T-shaped bars, reaching through and between parallel bars of the gate, and the lower hinge is preferably inclined or beveled upon either side of its bar, so as to cause its upper edge to impinge or bind against the gate through the weight thereof, the construction providing an easy method of vertical adjustment, to clear temporary obstructions or permit the passage of small animals, &c., underneath the gate.



Claim.—1. A gate or other hinge consisting of the pintles B B and socketed plates C C', having the T-shaped bars *c c' c²*, substantially as and for the purpose set forth.

2. The pintles B B, in combination with the plates C C', having the T-shaped bars *c c' c²*, and beveled shoulders upon either side of the said bars, substantially as and for the purpose set forth.

203,137. COFFEE-POTS. George W. Goodwyn, Petersburg, Va., assignor of one-fourth his right to Henry A. Taylor, same place. Filed Apr. 1, 1878.

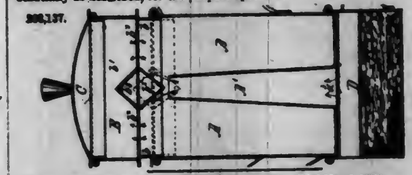
Claim.—1. In an apparatus for making decoctions of tea, coffee, and other like substances, the combination of a fluid-reservoir provided with a steam-duct connected to the bottom of said reservoir and open at both ends, a removable steam-generator, an adjustable perforated receiver, upon which the substances are placed, and an imperforate cone connected to said receiver, and adapted to act as a valve to regulate the admission of steam, substantially as described, for the purpose specified.

2. The combination, with the vessel A, having a central annular steam-tube, A', with the vessel or generator D and the strainer B, provided with a perforated diaphragm and an imperforate conical deflector, b^2, arranged and operating substantially as described, for the purpose specified.

3. The combination, with the vessel A, having a central annular and tapering steam-tube, A', the upper part of which forms a valve-seat, and the vessel or generator D, with the strainer B, adapted to be adjusted upon the vessel A, the diaphragm b^3, and the imperforate cone-valve b^2, all arranged and operating substantially as described, for the purpose specified.

4. The combination, with the tube A', of the imperforate cones b^2 b^3 and the perforated diaphragm b^3 of the strainer B, arranged and operating substantially as described, for the purpose specified.

203,137.



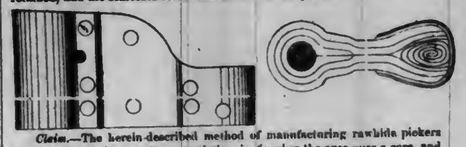
203,138. SHOE-BLACKING. John H. Gordon, Brooks, Me. Filed Mar. 2, 1878.

Brief.—Alcohol, one gallon; water, one gallon; gum-shellac, four pounds; sal-soda, one-half pound; castor-oil, eight fluid ounces; lamp-black, one-fourth pound.

Claim.—The within-described liquid shoe-polish, consisting of alcohol, water, gum-shellac, sal-soda, castor-oil, and lamp-black, in the proportions herein set forth.

203,139. LOOM-PICKERS. Albert A. Gordon, Worcester, Mass., assignor to George Crompton, same place. Filed Nov. 6, 1877.

Brief.—In the manufacture of the picker, the hide is made up into pickers without removing the hair or scarfskin, the full thickness of the hide is retained, and the scarfskin forms the exterior of the picker.



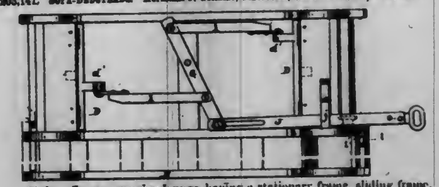
Claim.—The herein-described method of manufacturing rawhide pickers and keeping their eyes true, consisting in forming the eyes over a core, and then placing into the eyes wooden plugs, which are permitted to remain therein while the pickers are dried, whereby the eyes are kept distended, substantially as described.

203,140. DYE-STUFFS OR COLORING MATTER. Leopold Graf, Newark, N. J. Filed Feb. 26, 1878.

Brief.—To obtain this product, waste leather scraps are heated with steam in a close vessel in presence of an alkaline solution. When solution is effected the solution is neutralized with an acid, preferably sulphuric acid. The precipitate is collected, dried, and powdered.

Claim.—As a new manufacture, a dye or coloring matter having the properties herein specified, and prepared from leather scraps by the method herein described, or by any other method which will produce a like result.

203,141. SOFA-BEDSTEADS. Hermann J. Grimme, Cincinnati, Ohio. Filed Sept. 28, 1877.



Claim.—To an extension-lounge having a stationary frame, sliding frame, and a false bottom, the wings D, having the arms *d'*, in combination with the device for operating said wings, composed of lever G, links I, and sliding slotted bar J, said operating device being located below the stationary frame, substantially as specified.

203,142. EMBROIDERING-MACHINES. Isaac Grübl, Waldingen, Carl A. Gubisch, Töss, and John Wahli, Waldingen, Switzerland, assignors to F. A. Kurzhoedt and A. E. Kurzhoedt, New York, N. Y. Filed Dec. 14, 1877.

Brief.—The disk or wheel which actuates the shuttles is provided with two cam-grooves upon its inner face, which are so formed that when the one is brought into operative connection with the shuttle devices the shuttles driven thereby are caused to enter the loops of the needle thread always from the same side; but when the other is brought into operative connection therewith, the shuttles are caused to pass through the loops alternately from opposite sides. The pins which engage with the said grooves to effect the above mentioned movements are operated automatically by means of a cam and operating devices set forth in the third and fourth claims.

Claim.—1. The combination of two cam-pins mounted on a sliding rod with a disk provided with two cam tracks or grooves formed on the same side thereof, substantially in the manner and for the purpose specified, whereby said pins may be shifted from one groove to the other without shifting the disk on its shaft.

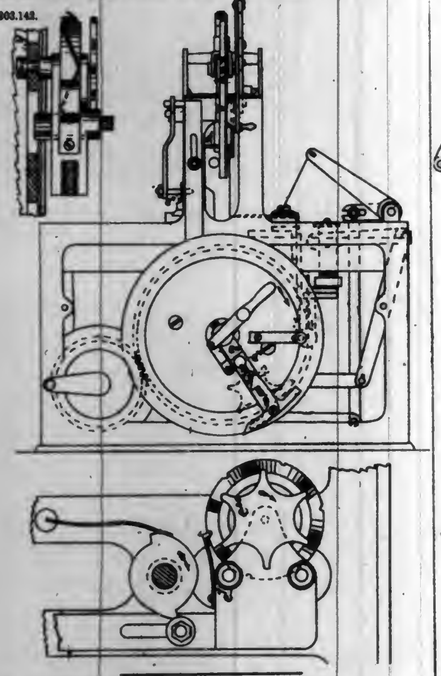
2. In combination with two cam-pins and a disk or wheel provided with two cam tracks or grooves, a cam-wheel which operates to move them pins into and out of their respective tracks, the combination being and acting substantially as hereinbefore set forth.

3. In combination with two cam pins mounted on a sliding rod, and a cam-wheel which operates to move them, a star-wheel and a shifting-pin, mounted substantially as described, so as to be revolved and capable of being slid into or out of gear with the star-wheel, the combination being and operating substantially as specified.

4. In combination with the shifting-pin, mounted as described, and the star-wheel and cam-wheel, the inclined plane and spring for moving the shifting-pin parallel to the axis of its supporting-wheel, the combination operating substantially as specified.

5. In combination with a shifting-pin and its spring, and the inclined plane, mounted substantially as specified, whereby it is capable of motion to act or not to act upon the shifting-pin, the latch, formed substantially as described, so that the shifting-pin shall, in its revolution, unlatch the latch, thereby permitting the inclined plane to drop out of its acting position, the combination being substantially such as before described.

203,142.



203,143. EMBROIDERING-MACHINES. Isaac Gröhli, Waldiagen, Henry Bieter, Jr., Winterthur, and John Wanch, Waldiagen, Switzerland, assignors to F. A. Kunhoeb and A. R. Kunhoeb, New York, N. Y. Filed Oct. 26, 1877. Patented in England, Dec. 20, 1873.

Brief.—The frame which supports the cloth is mounted, by means of staples, on the ends of counterbalanced levers, that are constructed of such form that the centers of the sheaves carried thereby, the fulcra of the levers, and the center of gravity of the counterbalance-weights are all in the same straight line, the two levers being caused to move in unison by means of two metal ribbons applied to their adjacent ends, as pointed out in the first claim. A series of brakes, operated by suitable mechanism, are caused to exert an intermittent pressure upon the bobbins, to assist the take-up in completing the stitch.

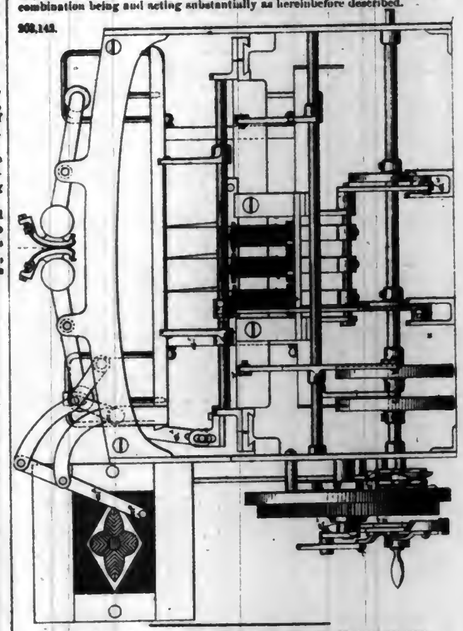
Claim.—1. In combination with a cloth-supporting frame and two levers, (by means of weights on which the cloth frame is counterbalanced,) two ribbons of metal applied to the adjacent ends of these levers, substantially in the manner described, whereby the two levers are forced always to move through the same distances at the same time, and to sustain the same relation each to the other, the combination being substantially such as described.

2. In combination with a cloth-frame and stapler, counterpoise-levers shaped as described, whereby the center of the sheave which supports the frame, the fulcrum of the lever, and the center of gravity of the counterbalance-weight shall all lie in the same straight line, the combination being substantially such as described; and operating so that the frame is counterbalanced to the same extent in every position which it is capable of assuming.

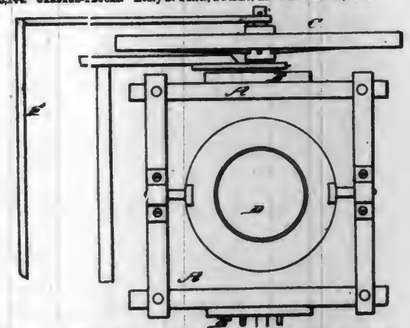
3. The adjustable and removable stay, constructed substantially as specified, in combination with upper and lower rollers, between which fabric to be embroidered is stretched, the combination being and acting substantially as described.

4. In combination with a cloth-frame, a series of bobbins, and a series of needles, a series of brakes, actuated substantially as described, so as at times to press upon the bobbins and at times to relax their pressure thereon, the combination being and acting substantially as hereinbefore described.

203,143.



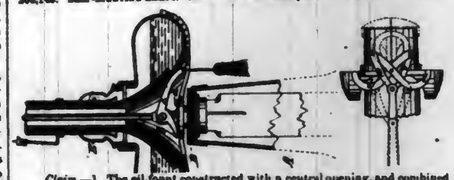
203,144. GARDNER-TRUCKS. Henry B. Gurler, De Kalb, Ill. Filed Mar. 23, 1878.



Claim.—1. The combination of the frame A, with spindles *a a*, having driving-wheels C C thereon, and the barrel D, hung upon journals in the frame at right angles to the axis of said frame, as and for the purposes set forth.

2. In combination with the barrel-frame and wheels, as described, the handle or bail F, connected to the wheel-spindles outside of the wheels, for the purposes set forth.

203,145. SELF-LIGHTING LAMPS. Ella G. Keller, Philadelphia, Pa. Filed Dec. 19, 1877.



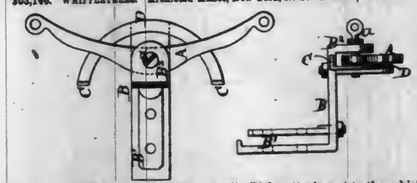
Claim.—1. The oil-fount constructed with a central opening, and combined with an Argand burner and with gas-generating apparatus, substantially as described, having a vent-tube passing up through said tube and burner, as and for the purpose described.

2. The support or basket C, made of a size sufficient to receive and contain the removable oil-fount, and located upon the central vent-tube *a* of the gas-generating apparatus A, in combination with the same and the concentrically-arranged and centrally-perforated oil-fount, substantially as described.

3. The combination, with a tapering tubular burner and a hydrogen-gas tube leading up through the same, of the detachable collar *f*, carrying the platinum sponge, and adapted to be removably secured upon the said burner, substantially as described.

4. The combination, with a tapering tubular burner, of the removable collar *k*, adapted to fit upon the tubular burner, and having pivoted thereto the arms *l*, links *m*, and bar *n*, substantially as and for the purpose described.

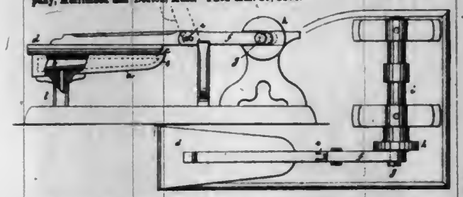
203,146. WHIFFLETREES. Archibald Hance, New York, N. Y. Filed Apr. 10, 1878.



Claim.—1. The frame B, having the clip B^1 for attachment to the vehicle, and clip B^2, provided with the segmental guide-bar D, having rearwardly-extending arms, bent upward to form stops C C, and adapted to receive a whiffletree, substantially as described.

2. The combination, with the frame B, having the clip B^1 for attachment to the vehicle, and clip B^2, provided with the segmental guide-bar D, having rearwardly-extending arms, bent upwardly to form stops C C, of the oscillating whiffletree A and bolt *a*, substantially as described.

203,147. MECHANISMS FOR HARDENING OR FELTING HOLLOW ARTICLES OF WOOL. Alfred A. Hawley, Merrimack, and Robert B. Hawley, Amesbury, assignors to Merino Shoe Company, Merrimack and Boston, Mass. Filed Mar. 29, 1878.



Claim.—1. In a felting or hardening apparatus, a horn-like bed to outer and support a hollow article being hardened, substantially as described.

2. The horn-like pervious steam-heated bed combined with a felting hand or jigger, substantially as described.

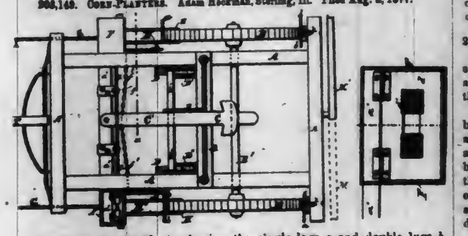
3. The herein-described method of uniting the open end of a wool bat, consisting in slitting the bat to fit about and embrace the lower end of the horn-like felting-bed, and carrying the lower side of the bat upward and backward above the bed toward its rear end, and contracting and lapping the open end of the bat each side the slit, and closing, felting, and hardening the same, substantially as described.

203,148. MANUFACTURE OF FELT FOOT-COVERINGS, &c. Alfred A. Hawley, Merrimack, and Robert B. Hawley, Amesbury, assignors to Merino Shoe Company, Merrimack and Boston, Mass. Filed Mar. 29, 1878.



Claim.—That improvement in the method of manufacturing foot-coverings from wool which consists in winding and crossing the wool fibers on a former to produce a bat, then hardening the main portion of the foot and toe portions of the bat, while the large end thereof is left unhardened and open, so as to permit ready change of the cloth within it, and then subsequently closing the open end of said hardening and shaping the bat at the heel to form a blank, substantially as described.

203,149. CORN-PLANTERS. Adam Hockman, Sterling, Ill. Filed Aug. 8, 1877.



Claim.—1. A corn-planter having the single legs *a* and double legs *b* alternately arranged on the rim of the wheels B B, in combination with the levers L, connected to the feed-bar K, substantially as and for the purposes described.

2. The hinged plates *d*, having rubber bearings or brushes d^2, substantially as and for the purposes described.

203,150. CAR-AXLE BOXES. David A. Hopkins, Park Ridge, N. J. Filed Jan. 17, 1878.

Claim.—1. In a journal-bearing, the removable load-carrying plate B, cast in one piece with the removable stop-bar *b*, so as to form a recess, E, for the reception of the collar of the journal, said recess being of such depth that the collar cannot reach to the top thereof, substantially as specified.

2. The rigid rib *i*, placed across the recess E, and extending from the bearing to the stop-bar, substantially as and for the purpose stated.

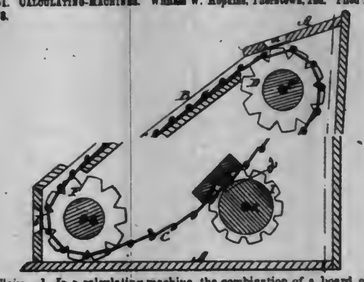
3. In a journal-bearing, the combination of the outer back plate B with the contingent wearing-plate C and main wearing-plate D, substantially as herein shown and described.

4. In a journal-bearing, the back plate B, cast in one piece with the removable stop-bar, and combined with the contingent wearing-plate C and main wearing-plate D, substantially as herein shown and described.

203,150.



203,151. CALCULATING-MACHINES. William W. Hopkins, Thorntown, Ind. Filed Mar. 14, 1878.



Claim.—1. In a calculating-machine, the combination of a board or table inscribed with the nine digits, two series of wheels inscribed with the digits and the cipher, and a series of endless chains, or equivalents, passing around said wheels, in the manner described, to operate as specified.

2. In a calculating-machine, the combination of the endless chains composed of open links, as specified, the notched wheels D and F, and their parallel shafts, the inclined counting-table, and the box or case provided with slots *a* and *b*, all constructed and arranged as shown and described.

203,152. OVERSHOES OR GAITERS. Charles Houghton, Boston, Mass., assignor to Merino Shoe Company. Filed Mar. 2, 1878.



Claim.—1. As an improved article of manufacture, a shoe composed of an upper and bottom felted in one piece, as described, and an india-rubber sole, substantially as and for the purpose set forth.

2. A shoe composed of an upper, *a*, and bottom *b*, in one integral piece, combined with an outer sole of india-rubber, and a foxing, substantially as described.

203,153. EGG-BEATERS. James R. Hughes, Saugus, Mass. Filed Mar. 25, 1878.

Claim.—1. The combination, in an egg-beater, of a ring or curved beater adapted to be rotated alternately in opposite directions about a vertical axis, and a secondary beater located and adapted to reciprocate vertically within the path described by the rotating beater, substantially as described.

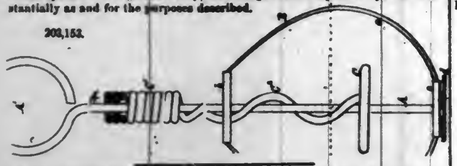
2. The combination, in an egg-beater, of a central rod, a ring or curved beater mounted upon said rod in a plane parallel to the axis thereof, and adapted to be rotated in opposite directions alternately about said central rod, and a second beater located within the path described by said ring or curved beater, and mounted upon said central rod, and adapted to be reciprocated thereon, and connected, by means of a coarse-pitch rigid spiral, with said ring or curved beater, and adapted thereby to impart motion to said beater about said central rod at each reciprocation of said second beater, substantially as described.

3. The beater C, provided with the cylindrical handle C^1 and the quick-pitch spiral C^2, all made from one piece of wire bent and shaped substantially as shown and described, for the purposes specified.

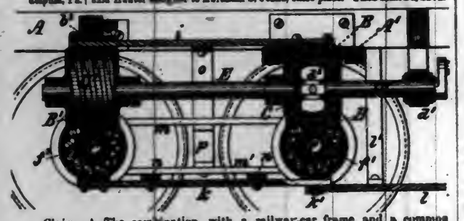
4. The combination, in an egg-beater, of the central supporting-rod A, the ring or curved beater B, the handle C^1, and the quick-pitch spiral C^2, all arranged and adapted to operate as set forth, to cause said ring or curved beater to rotate alternately in opposite directions about said central rod by reciprocating the handle C^1 and the spiral C^2 upon said rod, substantially as described.

5. The combination, in an egg-beater, of the central supporting-rod A, the ring or curved beater B mounted thereon, and adapted to be rotated alternately in opposite directions, and provided with a hole, *f*, eccentric to the rod A, and the beater C, provided with the handle C' and quick-pitch spiral C², made from one piece of wire, and connected with the beater B by the passage of the spiral C² through the hole *f*, all arranged and adapted to operate substantially as and for the purposes described.

203,153.



203,154. RUNNING-GEAR FOR STREET-CARS. Henry C. Hunter and John Everding, Philadelphia, Pa.; said Hunter assignor to Abraham S. Jenks, same place. Filed Nov. 26, 1878.



Claim.—1. The combination, with a railway-car frame and a common driving-shaft mounted in bearings thereon, of two truck-frames, each provided with one or more axles and pairs of wheels, and having a swiveling movement independently of the other relatively to the car-frame, and driving mechanism mounted upon the truck-frames, for imparting rotation from the driving-shaft to one or more of the axles of each truck, substantially as set forth.

2. The combination, in a railway-car, of a main frame supporting a motor and a longitudinal driving-shaft, two swiveling trucks, each pivoted to said frame at a point within or toward the center of the car relatively to its outer axle, and two worm-shafts, each of which is mounted in bearings on one of the trucks and coupled, with the capacity of variation from a right line, to the driving-shaft, said worm-shafts carrying worms meshing into worm-wheels on the truck-axles, substantially as set forth.

3. The combination, with a swiveling truck-frame, of a longitudinal driving-shaft, and casings which form bearings for said shaft and inclose the driving-gears, said casings constituting vertical members of the truck-frame, substantially as set forth.

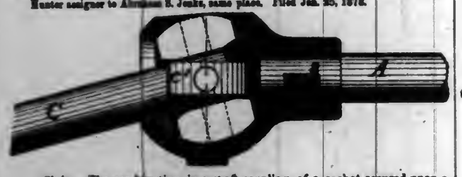
4. The combination, with a truck-frame, of a longitudinal driving-shaft, worms secured upon said shaft, and meshing into worm-wheels on the truck-axles, and a coupling formed within one of the worms of the driving-shaft, substantially as set forth.

203,155. DEVICES FOR TRANSMITTING MOTION. Henry C. Hunter and John Everding, Philadelphia, Pa.; said Hunter assignor to Abraham S. Jenks, same place. Filed Jan. 25, 1878.



Claim.—The combination, with a gear-wheel supported independently of its shaft, of a collar fitted upon said shaft, and having two radial trunnions, and an outer collar having bearings in which the trunnions of the shaft-collar have end motion, and radial trunnions at right angles to said bearings, the trunnions of the outer collar fitting, with the capacity of end motion, in bearings in or near the rim of the gear-wheel, substantially as set forth.

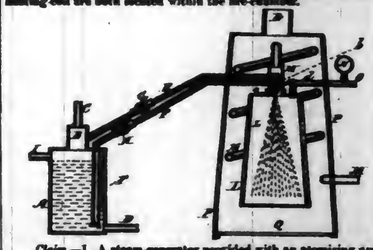
203,156. SHAFT-COUPLINGS. Henry C. Hunter and John Everding, Philadelphia, Pa.; said Hunter assignor to Abraham S. Jenks, same place. Filed Jan. 25, 1878.



Claim.—The combination, in a shaft-coupling, of a socket secured upon a shaft, and having one or more recesses radial to the axis thereof, and blocks fitting into said recesses, and having the capacity of movement therein upon pins radially secured upon the end of another shaft, the combination being and operating as and for the purpose set forth.

203,157. STEAM-GENERATORS. Seaton T. Hyde, Boston, Mass. Filed Sept. 6, 1877.

Brief.—The water is forced out of a reservoir, which is provided in its upper portion with an air-space, to which an air-pipe is attached. The water and air unite in a nozzle common to both. The air flashes the water into spray and both into steam. The steam is superheated by means of a coil of pipe encircling the flashing-chamber. The said flashing-chamber and superheating coil are both located within the fire-chamber.

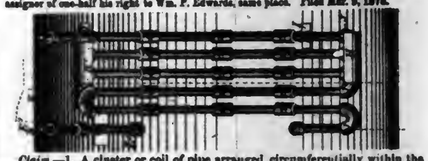


Claim.—1. A steam-generator provided with an atomizing apparatus consisting of an air-chamber and pipe, and a water-pipe connected at the exit, whereby the feed-water is introduced into the generator in the form of a fine spray, substantially as and for the purpose specified.

2. The generator I, with its furnace, in combination with the water-tank A, air-chamber B, air and water pipes E F, with their stop-cocks G H, and a device, 5, for converting the feed-water into spray as it enters the generator, substantially as described.

3. The combination of the heating-pipe or superheater M with the generator I, and the atomizing spray-producing apparatus, an air-chamber and pipe, and a water-pipe connected to form a junction at its exit end, substantially as and for the purpose set forth.

203,158. FEED-WATER HEATERS FOR LOCOMOTIVES. Thompson E. Irvin, Dunmore, Ohio, assignor of one-half his right to Wm. P. Edwards, same place. Filed Mar. 9, 1878.

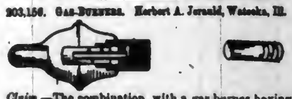


Claim.—1. A cluster or coil of pipe arranged circumferentially within the smoke-box of a boiler, in close proximity to and with all of its folds or coils equidistant from and parallel, or nearly parallel, with the inclosing shell of said smoke-box, the two ends of said pipe projecting through said shell, and adapted to connect at one end with the feed-pump, and at the other with the check-valve, all arranged and adapted to operate substantially as and for the purposes described.

2. A feed-water heater made up of two clusters or coils of pipe arranged upon opposite sides of the interior of the smoke-box of a boiler, with all of their folds or coils in close proximity to and parallel, or nearly parallel, to the cylindrical shell of said smoke-box, and connected together to form one continuous pipe, one end of which is adapted to connect with the feed-pump, and the other end to the check-valve, substantially as and for the purposes described.

3. A feed-water heater consisting of a cluster or coil of pipe, the several folds or coils of which extend circumferentially around, or partially around, the smoke-box, in close proximity to and parallel, or nearly parallel, to the inclosing shell of said smoke-box, and adapted to be connected at one end to the feed-pump, and at the other to the check-valve, substantially as and for the purposes described.

203,159. GAS-BURNERS. Herbert A. Jerauld, Watseka, Ill. Filed Jan. 26, 1878.



Claim.—The combination, with a gas-burner having a detachable base, of a central vertical tube within the base, a graduated sliding check provided with radial gas-passages, which are located at different longitudinal and peripherical points, substantially as described.

203,160. SPINDLE-FASTENERS FOR LOCKS AND LATCHES. Alonzo Johnson, Springfield, Mass. Filed Mar. 18, 1878.



Claim.—The combination, with the spindle *a*, of case A, latch C, and tumbler B, substantially as set forth.

203,161.

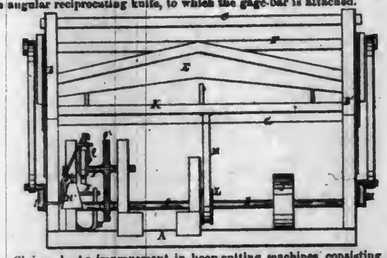


203,161. KEY-FASTENERS. John W. Johnson, Cincinnati, Ohio. Filed July 20, 1876.

Claim.—In combination with the escutcheon A B b E c and swinging guard-plate C c c', the knob G and screw F, which latter engages either with slot *b* or pit I, substantially as described.

203,162. BARREL-HOOP-CUTTING MACHINES. Wm. D. Johnson, Elmore, Ohio, assignor of one-half his right to Lewis Preese, same place. Filed Jan. 21, 1878.

Brief.—The hoops are cut from planks, placed upon an oscillating bed, by an angular reciprocating knife, to which the gage-bar is attached.

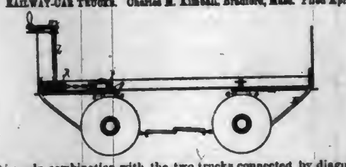


Claim.—1. An improvement in hoop-cutting machines, consisting of the reciprocating angular knife E, gage-bar G, connected to and acting in concert with said knife, in combination with the vibrating table K, pitman M, and eccentric L, constructed and arranged to operate conjointly, substantially as and for the purpose set forth.

2. The ratchet-wheel and pawl *e d*, gearing N O', eccentric L, and pitman, arranged, in relation to and in combination with the table K, in the manner substantially as described, and for the purpose specified.

3. The combination of the cam F', lever A', links S', arms Q, ratchet-wheel and pawl *e d*, gearing N O', eccentric L, pitman M, and table K, substantially as herein described, and for the purpose set forth.

203,163. RAILWAY-CAR TRUCKS. Charles M. Kimball, Bradford, Mass. Filed Apr. 4, 1878.



Claim.—In combination with the two trucks connected by diagonal rods and pivoted to the platform in advance of the two axles, as set forth, the chain *h*, wheels *i k i*, and cranked shaft *l*, applied to each other and to the platform and one of the trucks, as explained.

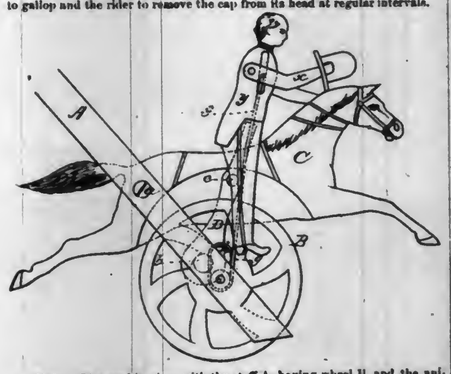
203,164. CIGARETTE-PACKAGES. Francis S. Kinney, New York, N. Y. Filed Apr. 12, 1878.



Claim.—The application to the end of the package of a device indicating the kind of material or materials of which the contained goods are fabricated, substantially as set forth.

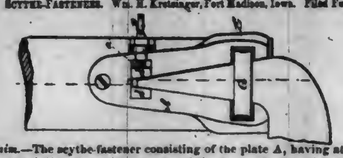
203,165. TREADLE-TOYS. Edward C. Kirkpatrick, Camden, N. J. Filed Sept. 20, 1877.

Brief.—The wheel, upon being pushed on the floor, causes the horse figure to gallop and the rider to remove the cap from its head at regular intervals.



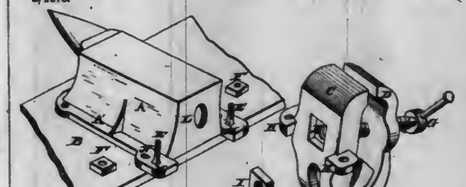
Claim.—The combination, with the staff A, having wheel B, and the animal figure C, pivoted to said staff, of the lever-pitman D, extending through the body of said animal figure, the figure *y* upon the end of said lever, and having the vibrating arm *x* and the angular connecting-rod *g*, engaging said arm and looped around the spindle of said wheel, substantially as specified.

203,166. SCYTHE-FASTENERS. Wm. H. Kretsinger, Fort Madison, Iowa. Filed Feb. 9, 1878.



Claim.—The scythe-fastener consisting of the plate A, having at its lower end the band E, and near its upper end the slot *c*, the clamping-loop G, the movable slides *d d*, and thumb-screw D, adapted to clamp and hold a scythe the heel of which is provided with the crow *b*, turned down at right angles with the extreme end thereof, substantially as described.

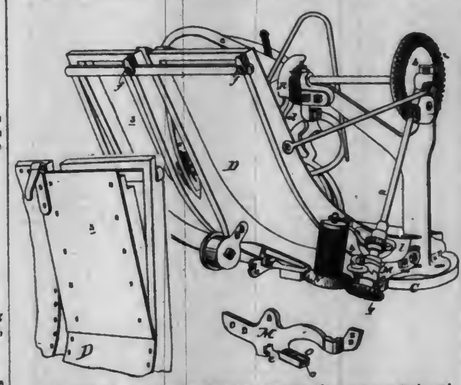
203,167. COMBINED ANVIL AND VISE. Edwin E. Leach, Cedar Rapids, Iowa. Filed Mar. 2, 1878.



Claim.—1. The anvil A having hole L and flanges M, extending beyond the rear bearing-surface of the anvil and carrying screws E, combined with vise C D, having lugs H and screw G, substantially as and for the purposes set forth.

2. The combination of vise-jaw C, having socket K, with vise-screw G, nut I, and anvil A, having hole L, substantially as and for the purpose set forth.

203,168. GRAIN-BINDERS. Sylvanus D. Locke, Keesick Falls, N. Y. Filed Mar. 23, 1876.



Claim.—1. The combination of hooking-feet *e* on the grain-receptacle and flanged rails *g* on the main frame with a removable stop or pin, substantially as described.

2. An automatic binding-machine provided with the forks *f f* at the top and the hooked feet *e e* at the bottom, attached to the main frame of the harvester by the rails *h h* and the flanged rails *g g*, substantially as set forth.

3. The bracket M, substantially as described, comprising in itself one of the feet *e*, a support of the lower box of shaft *s*, and for the spool-stand N and the socket-palm O, as set forth.

4. The pinion *p*, sliding upon the shaft E, and provided with a collar and stud, P, combined with the palm O, secured to the binder-frame, constructed with the socket *o*, to receive and hold said stud and pinion in a fixed relation with the wheel *g*.

5. The wire-spool Q, combined with a stand, N, constructed with a sunken or recessed seat to receive one end of said spool, for the purpose set forth.

6. The binding and compressing arms *a d* and the segment-gears *r* S, provided with the shield R, as set forth.

7. The receptacle D of an automatic binder, constructed with a removable section, *s*, substantially as set forth.

8. The rotary take-up cone V, constructed with the hollow axial stud *n* and laterally-projecting lug *c*, combined with the cover-plate *w*, having a peripheral groove, and the tubular stud X, fitted to rotate within the hollow stud *n*, as set forth.

9. The rotating cover-plate *w*, having a peripheral groove, and a tubular axis-stud, X, combined with the rollers *y y*, mounted upon the detachable axis-plate Y, as set forth.

203,169. NUT-LOCKS. Wm. W. Leager, Anamosa, Iowa. Filed Mar. 16, 1878.

Claim.—1. In a nut-locking device, a nut the inner side of which is formed with a recess, *a*, opening at *b* into the tapped bolt-hole, and a hole, *d*, passing entirely through the nut, in combination with the shaft *h*, its inner end being provided with a spring-pawl, *e*, and resting within the recess *a*, and a cover-

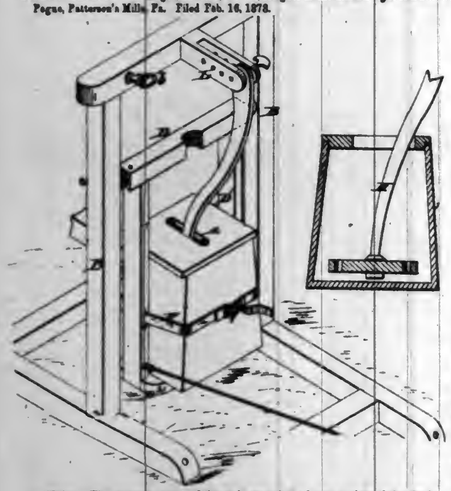
ing plate, C, the whole so arranged as to present no opening through which dirt, &c., might enter and clog the pawl, substantially as shown and described.

2. In combination with the bolt A, nut B, pawl *w*, and shaft *h*, the arm D, with pin *p*, and the recess *s* in the face of the nut, substantially as and for the purposes set forth.

203,169.



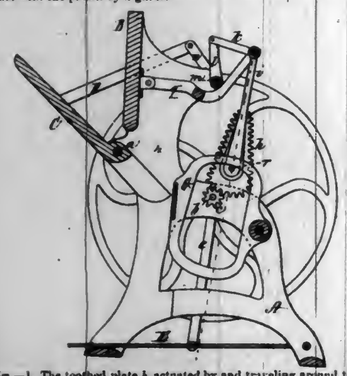
203,170. CHURNS. Wm. Magee, Fowler's, W. Va., assignor of one-half his right to David C. Pogue, Patterson's Mills, Pa. Filed Feb. 16, 1878.



Claim.—The arrangement of the axis or point of suspension of the dasher-rod at some distance outside of a vertical plane passing through the center of the swinging churn body, when the latter is in equilibrium, substantially as set forth.

203,171. PRINTING-PRESSES. Horace A. Manley, Boston, Mass. Filed Apr. 17, 1878.

Brief.—The platen or bed is operated by a toothed plate actuated by and traveling around a pinion on the end of the driving-shaft. The plate is held in contact with the pinion by a guide.



Claim.—1. The toothed plate A, actuated by and traveling around the pinion *c*, in combination with a platen and with a guide for keeping the plate in contact with the pinion for operating the platen or bed of a printing-press, substantially as and for the purpose set forth.

2. The toothed plate A, pinion *c*, and a guide for keeping the plate in contact therewith, in combination with the pitman *i*, guide-lever *q*, link *k*, arm *t*, rocker-shaft *u*, cranks *v*, rods *p*, and platen C, operating substantially in the manner and for the purpose described.

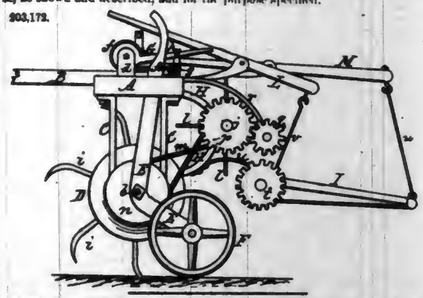
203,172. MACHINES FOR EXTERMINATING NOXIOUS GRASSES. Louis Martin, Lyons, N. Y. Filed Jan. 2, 1878.

Claim.—1. In a machine for exterminating noxious grasses, the cylinder D, constructed of rings or disks *x x*, resting upon the shaft and clamped at the ends, the said rings or disks being bolted together in pairs, and securing the teeth *i i* between them, as shown and described, and for the purpose specified.

2. The disks or rings *x x*, having plane abutting faces, clamped together in pairs by the bolts *z z*, and provided with the sockets *y y*, enlarged at their inner ends to receive and hold the corresponding shanks of the teeth *i i*, as shown and described, and for the purpose specified.

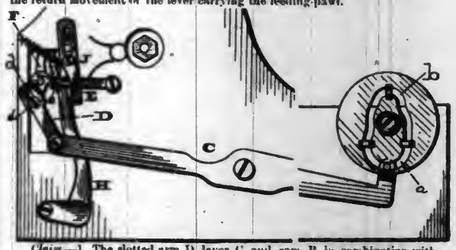
3. The combination, with the cylinder D and clearers *l l*, of the platform I and endless apron K, the platform being attached to the springs *s s* at the inner end, and adjustable both at the inner and outer ends by the levers L M, as shown and described, and for the purpose specified.

203,173.



203,173. FEEDING MECHANISMS FOR BUTTON-HOLE SEWING-MACHINES. William J. Martin, Philadelphia, Pa., assignor to John Brady, same place. Filed Nov. 12, 1877.

Brief.—The invention consists in certain improvements in the feeding mechanism of what is known as the "Union Button-Hole Sewing-Machine." A cam wheel operated from some suitable part of the machine has a cam groove or slot cut therein, which gives an alternate long and short throw to a lever. Said lever is pivoted to the bed-plate, and is connected with and gives motion to the lever carrying the feeding pawl by means of a link or arm. This gives the proper movement to the feed-wheel when sewing the rounded portion of the button-hole. While sewing the straight portions, the requisite reduction in the movement of the feed is effected automatically by a latch, which is operated by a cam groove or slot in the feed-wheel, said latch acting to limit the return movement of the lever carrying the feeding-pawl.



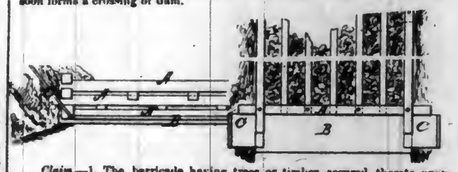
Claim.—1. The slotted arm D, lever C, and cam B, in combination with the elbow-lever E, pawl F, and feed-wheel G, substantially as and for the purpose set forth.

2. The elbow-lever E, with lug *e*, in combination with the shipper H, pins *f g*, and latch J, and with the feed-wheel G, having slots *h h'*, substantially as and for the purpose set forth.

3. The slotted arm D, lever C, and cam B, in combination with the elbow-lever E, latch J, shipper H, pawl F, and feed-wheel G, substantially as and for the purpose set forth.

203,174. ARTIFICIAL FOARDS OR DAMS. John Marshall McCue, Mount Solon, Va. Filed Dec. 22, 1877.

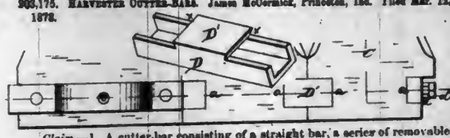
Brief.—A device for damming streams and filling ravines and gullies, consisting of a barricade formed of two or more logs or trees extending across the stream, and arranged one on top of the others, and having a number of trees or timbers, suitably spaced, secured at one end to the up-stream side of the transverse logs, extending up stream therefrom, and filled in with brush-wood and stones, and also having an apron on the down-stream side of the barricade, to prevent the undermining thereof, and lateral guards at the ends of said apron, for the protection of the banks, the apron and guards being suitably anchored or weighted to secure them in position. The whole forms a barrier to the passage down stream of the silt, &c., which, being deposited, soon forms a crossing or dam.



Claim.—1. The barricade having trees or timber secured thereto upon its up-stream side, and filled in with brush-wood and stones, in combination with an apron upon the down-stream side of the barricade, to prevent the undermining thereof, and lateral guards at the ends of the said apron, for the protection of the banks, the apron and guards having suitable anchoring devices, all substantially as described, for the purpose of damming streams and filling ravines and gullies, as set forth.

2. The combination, with a transverse barricade, A, having the logs or trees extending up stream, of the apron B and lateral guards C, substantially as specified.

203,175. HARVESTER CUTTER-BARS. James McCormick, Princeton, Ind. Filed Mar. 12, 1878.



Claim.—1. A cutter-bar consisting of a straight bar, a series of removable sleeves having central top plates with beveled edges, and a series of removable knife-sections having notches to correspond with the top plates, and arranged to break joints, substantially as herein set forth.

2. The combination of the knife-bar A, with bolt *b* at the end, the sleeves D D', with beveled-edge top plates, the knife-section C C, having square bevel-edge notches *a a*, and the holding-nuts *d d'*, all constructed substantially as and for the purposes herein set forth.

203,176. BREASTPINS. William McKnight, Brooklyn, assignor to himself, Woodbury Brothers, and John H. Woodward, New York, N. Y. Filed Nov. 14, 1877.



Claim.—The dress pin formed of one piece of wire, and consisting of the coils *a a'*, connected by an oblique portion, *b*, the coil *a* terminating at its center in a pin, *c*, extending diametrically across both coils, and engaging with an axially-projecting hook formed at one end of coil *a'*.

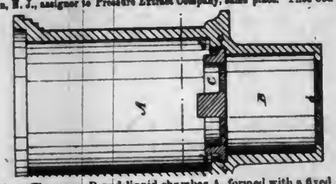
203,177. TREATING PALMETTO FIBER FOR USE IN THE ARTS. George F. Miller, Jacksonville, and Washington G. Benedict, Orange Park, Fla.; said Miller assignor to said Benedict. Filed Mar. 30, 1878.

Claim.—1. As a new article of manufacture, a palmetto fiber, when treated as herein described to produce a fine fiber, kinked or curled, substantially as described, and for the purposes specified.

2. The process herein described of making an elastic fiber of palmetto for upholstering purposes, which consists in stripping the leaves, stalks, or buds of the palmetto into shreds, and then kinking, and afterward twisting the fiber into a rope.

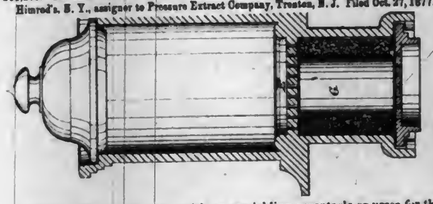
3. The process, &c., which consists in stripping palmetto leaves, &c., into shreds, kinking, and afterward twisting the fiber into a rope while green or wet, then drying, and afterward picking apart for use.

203,178. APPARATUS FOR MAKING COFFEE, TEA, AND OTHER EXTRACTS. Jonathan Miller, Trenton, N. J., assignor to Pressure Extract Company, same place. Filed Oct. 27, 1877.



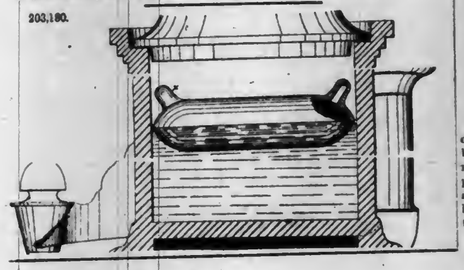
Claim.—The press B and liquid-chamber A, formed with a fixed perforated bottom, *b*, and lugs *d*, in combination with the perforated removable cover C, having lugs *e* arranged between the water-chamber and the press to form the top of the latter, substantially as described, and for the purpose set forth.

203,179. DEVICES FOR MAKING TEA, COFFEE, AND OTHER EXTRACTS. Jonathan Miller, Hinsdale, N. Y., assignor to Pressure Extract Company, Trenton, N. J. Filed Oct. 27, 1877.



Claim.—The combination, with an unyielding receptacle or press for the ground coffee or porous material, of one or more removable displacing bodies, G, substantially as and for the purpose described.

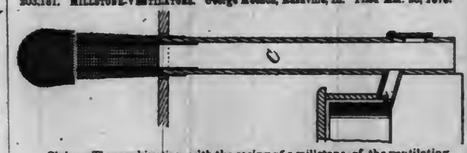
203,180.



203,180. FLOATING COVERS FOR EXTRACT-RECEIVERS. Jonathan Miller, Hinsdale, N. Y., assignor to Pressure Extract Company, Trenton, N. J. Filed Oct. 27, 1877.

Claim.—The combination, with a receptacle for coffee or other liquid, of an automatically-adjustable floating cover, substantially as described, and for the purpose set forth.

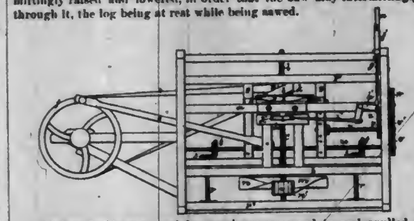
203,181. MILLSTONE-VENTILATORS. George Meench, Rushville, Ill. Filed Mar. 23, 1878.



Claim.—The combination, with the casing of a millstone, of the ventilating-pipe C, extending below said casing, and connected to the lower portion thereof by a short pipe, *a*, and having its upper end above said casing, and terminating in a gauze sack, D, distended by a suitable frame, whereby a draft is secured without a blower or other forcing apparatus, and thorough ventilation of the stones is effected, substantially as specified.

203,182. MACHINES FOR SPIRALLY SAWING LOGS. Sewall T. Moffett, Lisbon, N. H. Filed Apr. 4, 1878.

Brief.—The log to be cut is supported by mechanism by which it is intermittingly raised and lowered, in order that the saw may intermittingly saw through it, the log being at rest while being sawed.

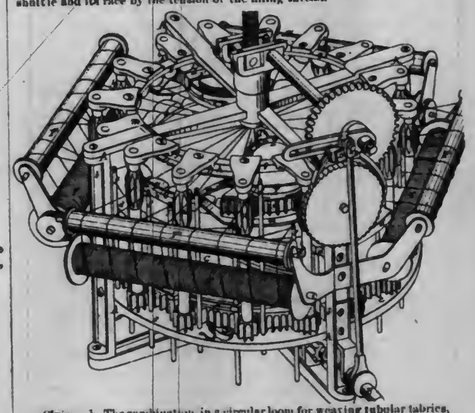


Claim.—1. The saw and log carriages arranged in and applied to the frame as described, and provided with mechanism, substantially as set forth, for revolving and otherwise moving the saw and elevating and turning the log, all as explained.

2. The combination for intermittingly elevating the log-carriage and revolving the log, such consisting of the screws *r r*, bevel-gears *s s t t*, shaft *u*, spur-gears *v v' w*, log-arbors *o p*, ratchet-wheel *y*, draw-pawl *z*, lever *a'*, spring *c'*, series of bent levers *f' h' k'*, and the cam *m'*, all being applied and arranged with the frame and the saw and log carriages, substantially in manner and to operate as set forth.

203,183. CIRCULAR LOOMS. Henry Morris, Providence, R. I., assignor of one-half his right to Thomas L. Reed, same place. Filed May 8, 1876.

Brief.—The warps pass from beams on which they are wound separately through eyes in carriers that are alternately raised and lowered to form the shed, and then to the arbor on which the fabric is formed. Slots or notches in the sections of the shuttle-race are provided for the reception of the warp-threads during the passage of the shuttle, and friction-rollers on the heel of the shuttle, working in grooves in the outer sides of the race, are for the purpose of preventing the friction which would otherwise be created between the shuttle and its race by the tension of the filling-thread.



Claim.—1. The combination, in a circular loom for weaving tubular fabrics, of a cam-ring, a series of sliding warp-carriers alternately raised and lowered by the cam-ring, a set of warp-beams and warp-rollers outside of the cam-ring, one or more continuously-driven shuttles, a race for the shuttles composed of upper and lower sections, which afford bearings for the heel of the shuttle when delivering filling under high tension, and a central hub having its fabric-receiving end in the same plane as the shuttle-race and the tops of the warp-rollers, substantially as and for the purposes specified.

2. The circular shuttle-race composed of upper and lower sections having

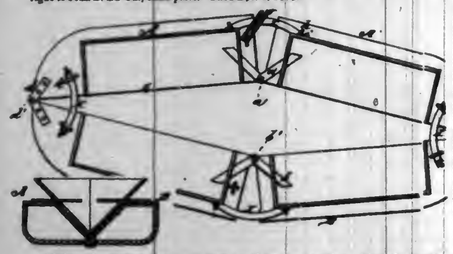
a groove in each extending around the race, in combination with a shuttle provided with friction-rollers in its heel, which occupy the grooves of the race, substantially as and for the purposes specified.

203,184. GUN-REST. Karl Moller, Philadelphia, Pa. Filed Feb. 6, 1878.



Claim.—A rest for the purpose specified, consisting of a horizontal traverse or cross piece supported by legs or frame-work at a height equal to the average distance from the ground of the piece when aimed, and provided with two or more depressions to receive the barrels of the pieces of the instructor and recruit or recruits, substantially as shown and described.

203,185. DUMPING-SCOW. Philetus L. Murphy, New York, N. Y., assignor of one-half his right to John B. La Gar, same place. Filed Apr. 8, 1878.

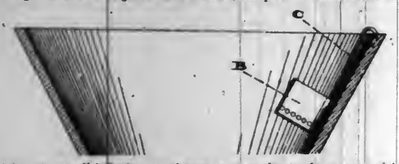


Claim.—1. A dumping-scow composed of four sections, hinged together at the ends and center of the scow, substantially as described, and for the purposes herein set forth.

2. The combination of the sections A A and B B, hinges *a b d*, and pins *a' b' d'*, substantially as and for the purposes set forth.

3. A dumping-scow consisting of the sections A, A, B, and B, hinges *a b d*, and curved bars I, with flanges *i* at their ends, operating in the manner as described.

203,186. DISINFECTING ATTACHMENTS TO WATER-CLOSETS. John F. Nealty, Philadelphia, Pa., assignor of one-half his right to Charles S. Greene, same place. Filed Jan. 19, 1878.



Claim.—1. The disinfecting attachment to water-closets, the same consisting of a pan adjustably suspended from the bowl and detachable therefrom, substantially as and for the purpose set forth.

2. The disinfecting attachment to water-closets, the same consisting of the perforated pan B, with hooked arms C, whereby said pan may be adjustably suspended from the bowl, and it is detachable therefrom, substantially as and for the purpose set forth.

203,187. CLOTHES-SPRINKLERS. James E. Few, Binghamton, N. Y. Filed Oct. 3, 1877.

Brief.—The hollow handle increases the capacity of the sprinkler.



Claim.—The double-conical clothes sprinkler A, having a perforated face for receiving and ejecting the water without additional openings, provided with a hollow handle, B, connecting with the interior of the vessel A, constructed and operated as herein described, for the purpose set forth.

203,188. BRICK-MACHINES. Wm. O. Nightingale, Johnstown, Pa., assignor of one-half his right to John Lysaght, same place. Filed Mar. 27, 1878.

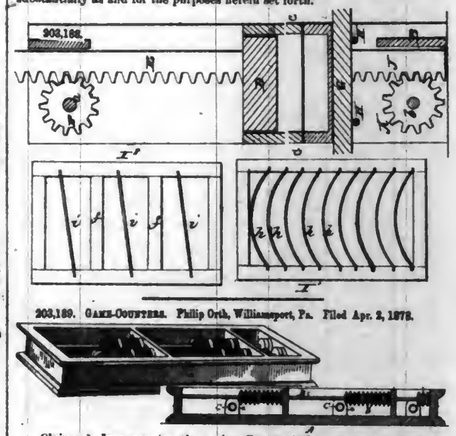
Claim.—1. The combination, with the box C, of the table G, detachable rods H, rack J, and pinion K on the shaft *h*, for raising and lowering the table supporting the molds, for the purposes herein set forth.

2. The mold I', provided with curved sheet-metal partitions *k*, sprung into the sides of the mold, as herein set forth.

3. The mold I', provided with stationary cross-partitions *f* and angling movable sheet-metal partitions *i*, for the purposes herein set forth.

4. In combination with the frame, box, and follower, operated substantially as described, the tray T, for supporting the brick-molds, the table G, belt V, connected to both ends of the tray and passing around the pulleys W, substantially as and for the purposes herein set forth.

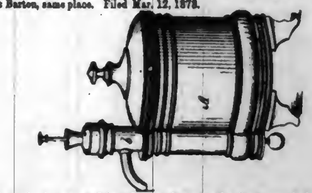
203,189. GAME-COUNTERS. Philip Orth, Williamsport, Pa. Filed Apr. 2, 1878.



Claim.—1. In a counter, the spring C, stretched transversely across the line of movement of the beads or buttons, for keeping them separate, substantially as described.

2. In a counter, the spring C and supports *c* between the lines of beads or buttons, substantially as described and shown.

203,190. BEVERAGE-HOLDERS FOR TABLE USE. Wm. Parkin, Taunton, Mass., assignor to Reed & Barton, same place. Filed Mar. 12, 1878.



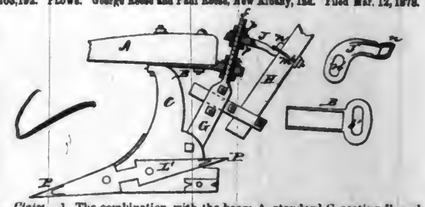
Claim.—1. As an article of manufacture, the beverage-holder formed of the shell or cylinder A, the pump-cylinder *b*, extended above the shell, and the piston, piston-rod, and valve, all as shown and described.

2. In combination with the shell A, the holder or lining B, the pump-cylinder attached to or formed solid with the latter, and the piston and valve, all as shown and described.

203,191. TABLE-BEVERAGES. Silas G. Putnam, Boston, Mass., assignor to the New Era Coffee Company, same place. Filed Apr. 6, 1878.

Claim.—In preparing table-beverages, the process of treating wheat, consisting in first soaking it in an alkaline solution, and then in cold water, and afterward subjecting the wheat to the vapor of heated water for a sufficient length of time to cook the same, whereby the glutinous matter is converted and the oily granules entirely removed, and then drying and finally roasting the wheat, substantially as described.

203,192. PLOWS. George Reese and Paul Reese, New Albany, Ind. Filed Mar. 12, 1878.



Claim.—1. The combination, with the beam A, standard C, casting H, and arm G, with elongated bolt *f*, of the handles H H, clips *k m*, arm I, clip *m'*, arm J, having flange *n* and slot *n'*, and the nuts *p p*, substantially as and for the purposes herein set forth.

2. The reversible double spear-bar L, provided with the points P P, forming recesses at each side, in combination with the reversible filling-bar L', having its ends formed with tenons to fit in the recesses of the points, as and for the purposes herein set forth.

203,193. CHURN. John Rebbein, Hoosdale, Pa. Filed Apr. 2, 1878.

Claim.—1. In a churn, the combination, with the drive-wheel G, of the pitman H, adjustable at its lower end in the slot *g*, and at its upper end in the slot *h* of the walking-beam, substantially as described and shown.

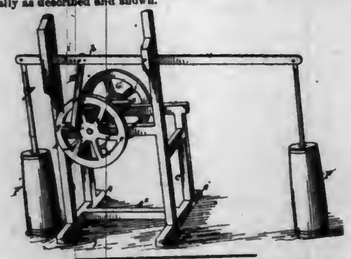
2. In a churn, the combination, with the crank-wheel G', of the handle I, adjustable in the slot *j* in one of the spokes of said wheel, substantially as and for the purposes set forth.

3. The combination, with the beam E, having the slot *h* and holes *i*, of the pitman H, adjustably secured in such slot, and the drive-wheel G, having the slot *g*, by which the lower end of such pitman is adjusted, substantially as described and shown.

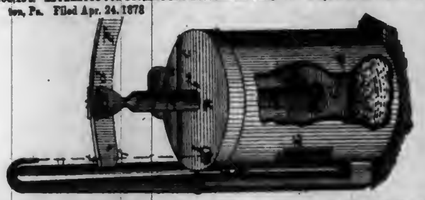
4. In a churn, the combination, with the frame, of the drive-wheel G, having the slot *g*, for regulating the stroke of the pitman, and the crank-wheel G', having the slot *j*, for adjusting the handle I, substantially as described and shown.

5. In a churn, the combination, with the churns F F', of the walking-beam E, pivoted in a standard, and connected at its ends to the plunger-rods of such churns, the pitman H, having its lower pivot adjustable upon the drive-wheel G, and the crank-wheel G', provided with adjustable hand-crank, substantially as described and shown.

203,193.



203,194. APPARATUS FOR STORING AND DISCHARGING LIQUIDS. Stephen H. Rhoades, Pittston, Pa. Filed Apr. 24, 1878.



Claim.—1. The combination, with a can or other vessel, of a piston and suitable means for actuating the same, and a discharge-pipe, one end of which connects with the lower part of the can, and the upper end of which extends above and projects over the cover of the can, substantially as set forth.

2. The combination, with a vessel for storing liquids, and piston provided with an upwardly-closing check-valve, of means for actuating the piston and a discharge-pipe, the lower end of which connects with the lower portion of the storing-vessel, while the upper end extends above and projects over the cover of said vessel, substantially as set forth.

3. The combination, with a vessel for storing liquids, provided with a discharge-pipe extending above and projecting over the top of said vessel, of a piston and suitable means for actuating the same, and a removable cover, having a drip-opening formed therein, substantially as set forth.

4. The combination, with a vessel for storing liquids, provided with a discharge-pipe extending above and projecting over the top of said vessel, and a piston constructed to snugly fit the interior of said vessel, of a removable cover, which latter is provided with a hinged portion, to enable the can to be filled without removing the entire cover, substantially as described.

5. The combination, with the vessel and can and discharge-pipe, substantially as set forth, of the piston, piston-rod, standard, and laterally-adjustable actuating-lever, substantially as set forth.

6. The combination, with the can provided with a discharge-pipe, substantially as set forth, of a piston, piston-rod, lever, and standard, the latter constructed with any desired number of recesses for the engagement of the short end of the actuating lever, substantially as set forth.

7. The combination, with the standard, recessed as set forth, of the piston-rod, provided with elongated transverse bearings, and the actuating-lever journaled in said bearings, substantially as set forth.

8. The combination, with a vessel provided with a discharge-pipe, one end of which connects with the lower portion of said vessel, while the upper end extends above the top of said vessel and is inwardly and downwardly turned, of a piston and means for actuating the same to force the liquid from the vessel upwardly through said discharge-pipe, substantially as set forth.

203,195. EMBROIDERING-MACHINES. Henry Rieter, Winterthur, and John Wehrli and Isaac Grubli, Wulflingen, Switzerland, assignors to F. A. Kurtzedt and A. E. Kurtzedt, New York, N. Y. Filed Oct. 26, 1877. Patented in England, Dec. 3, 1870.

Brief.—The cloth is extended between rollers supported in a frame that is operated by a pantograph, the said frame being suspended from counter-balanced levers, and the embroidering is performed by a series of needles and shuttles, the carriers of both of which, in the operation, move toward and away from the material being embroidered. An independently-operating take-up, having the movements set forth in the fourth and fifth claims, acts in connection with the needles, to take up the thread and complete the stitch.

Claim.—1. The combination of a counterbalanced cloth-supporting frame and a pantograph with a series of needles and a series of shuttles, both actuated by mechanism, as described, the combination being and operating substantially as set forth.

2. The combination, with a cloth-supporting frame, of a series of needles and a series of shuttles, and a shuttle-carriage, on which the shuttles slide, which moves toward, against, and away from the cloth, as described, whereby a needle-carriage with a comparatively small range of motion may be used, the combination being substantially as described.

3. The combination of a series of needles and a series of shuttles with a cloth-supporting frame, a pantograph, and an independent take-up apparatus, the combination being and acting substantially as described.

4. In combination with a series of needles and a cloth-frame, a take-up apparatus which has a motion to slacken the needle-threads immediately after the stitches are tightened, and again tightens the needle-threads before the eye of the needle reaches the cloth, said take-up being operated by mechanism substantially such as is described, and the combination being and acting substantially as set forth.

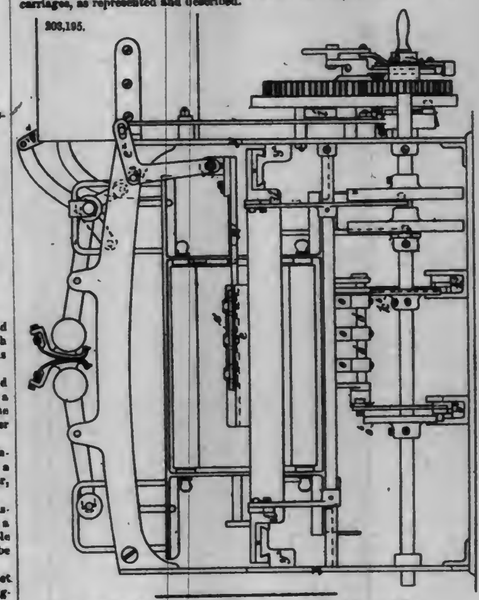
5. In combination, substantially as described, with a series of needles and a series of shuttles, a take-up apparatus which has a slight motion to decrease the size of the loops prior to the passage of the shuttles through them, whereby difficulties arising from the use of nucleastic thread are obviated, as set forth.

6. In combination with a cloth-supporting frame and a series of needles, and a series of double-pointed shuttles, a disk or wheel provided with two cam-grooves for actuating said shuttles by means of two rollers, and connecting mechanism, substantially as described, whereby they may be caused to enter the loop always from the same side, or alternately from opposite sides thereof, substantially in the manner and for the purposes described.

7. In combination with a cloth-supporting frame and a series of needles, and a series of shuttles, and mechanism for operating said needles and shuttles, an alarm apparatus which notifies the attendant when the cloth-frame may be moved, the combination being and acting substantially as set forth.

8. The shuttle-carriage cam and the needle-carriage cams and the take-up cam, in combination with their links, levers, and rock-shaft arms, when the cams are all located on one shaft on one side of the machine and below the carriages, as represented and described.

206,195.



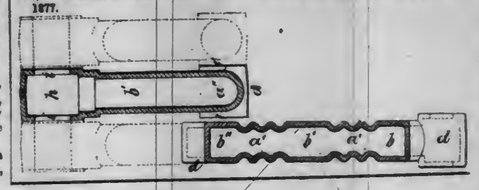
203,196. GATES. George W. Rodebaugh, Jackson, Mich. Filed Jan. 11, 1878.



Claim.—1. In combination with a gate, a bolt, E, having a ball-head, and a grooved wheel, F, socketed in the ball-head, so as to form a ball-and-socket joint therewith, substantially as described.

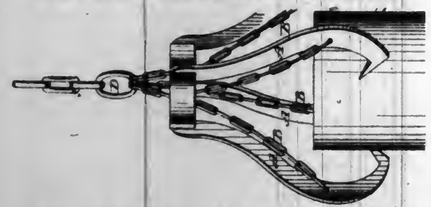
2. A bolt, E, having a ball-head, and a grooved wheel, F, socketed in the ball-head, so as to form a ball-and-socket joint therewith, in combination with a gate having one or more inclined ways, *g' g'*, substantially as described.

203,197. SECTIONAL STEAM-GENERATORS. John J. Roeper, Philadelphia, Pa. Filed Nov. 7, 1877.



Claim.—A steam generator composed of sections, each section having horizontal corrugated pipes, plain vertical pipes, an upper projection, *h*, forming part of the steam-drum, a lower projection, *d*, having a boss on each side, and the said projections of one section being secured to those of the adjoining sections, all as set forth.

203,196. LOG-TONGS. John J. Ryan, Midland, Mich. Filed Jan. 9, 1878.



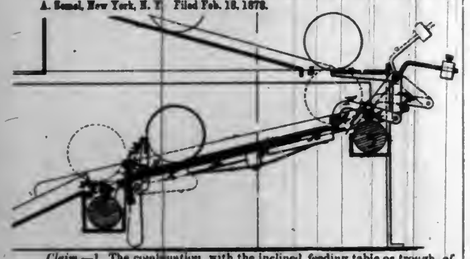
Claim.—The log-tongs composed of the grapples A, pivoted in a slotted head, said grapples being connected by chains B, passing through said head, and fastened to a ring or similar suitable device, substantially as described.

203,199. HYDROCARBON COMPOUNDS FOR FUEL. Silas C. Salisbury, New York, N. Y. Filed Mar. 8, 1878.

Brief.—The compound consists of coal-tar, two parts, and tar of petroleum, shale, or rosin, &c., one part.

Claim.—A liquid or semi-liquid compound consisting of a mixture of coal-tar and the tar-residuum from the distillation of petroleum, shale, or rosin, in proportions substantially as set forth.

203,200. CAN-LABELING MACHINES. Siegmund L. Salomon, Charles F. Knoch, and George A. Semel, New York, N. Y. Filed Feb. 18, 1878.



Claim.—1. The combination, with the inclined feeding table or trough, of a reversely-inclined label trough or holder, arranged at some distance below the feeding-table, and with its upper end beyond the lower end of the feeding-table, whereby the cans or boxes are made to drop from one to the other, and are delivered at the front end of the machine, substantially as and for the purpose herein set forth.

2. The combination, with the upper inclined feeding-table, the lower reversely-inclined label trough or holder, and paste boxes or supplying devices at opposite ends of the label-trough, of automatically-operating movable guards or devices at both the upper and lower ends of the label-trough, provided with paste-distributing rollers for pasting both ends of the label, and having their action controlled by the cans or boxes as they pass through the machine, essentially as described.

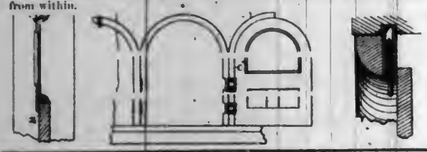
203,201. MEAT-CUTTING MACHINES. Charles Schiller, Baltimore, Md. Filed Feb. 7, 1878.



Claim.—As an improvement upon the class of meat-choppers in which a rotating bed and one or more series of rotating knives are used, the circular cast-iron bed-plate A, cast with a series of concentric grooves, C, in its upper face, filled with strips of hard wood, in combination with one or more series of graduated circular knives, corresponding in number and location with the wood filled grooves of the bed-plate, as and for the purposes herein set forth.

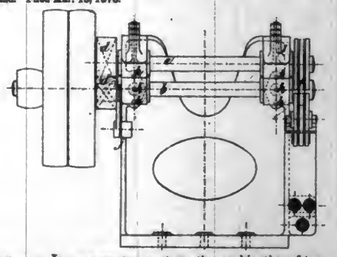
203,202. DOORS. Robert W. Semple, Toronto, Ontario, Canada, assignor of one-half his right to George A. Shaw, same place. Filed Oct. 18, 1877.

Brief.—Door has a divided hinged stop, held in place by a spring-catch. The catch-stops and door give way outwardly upon extraordinary pressure from within.



Claim.—The combination, with a door arranged to swing inwardly and outwardly, of the swinging stops C C', adapted to arrest the ordinary closing movement of the door from within, and to give way outwardly to extraordinary pressure from within, substantially as shown and described.

203,203. MACHINES FOR CUTTING OUT AND REMOVING BEAMS. Wm. S. Shepherd, Leeds, England. Filed Mar. 18, 1878.

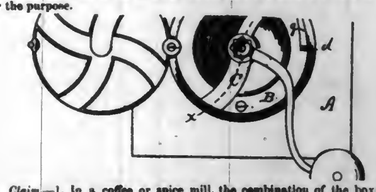


Claim.—1. In a rag-cutting machine, the combination of two circumferentially grooved or slotted co-operative feed-rollers, arranged in the same vertical plane, and a rotary knife or knives playing within the grooves or slots thereof and across the line of feed, substantially as and for the purpose set forth.

2. The combination, with a grooved or slitted rotary tool or member of a rag-cutting machine, of one or more arms, pivoted within and arranged to vibrate through the grooves or slits thereof, substantially as and for the purpose set forth.

203,204. COFFEE-MILLS. Ames Shepard, Plantsville, assignor to Peck, Stow & Wilcox Company, Southington, Conn. Filed Oct. 26, 1877.

Brief.—Raised rim to give free action to the swinging cover and prevent scraping the box-top. The cover swings on hinge-pivot, and when shut the nib locks the same in place, being sprung into the notch provided in the rim for the purpose.



Claim.—1. In a coffee or spice mill, the combination of the box-top A, elevated rim B in the middle of said top, and projecting upward above the same, with the swinging cover, pivoted on said elevated rim, substantially as described, and for the purpose specified.

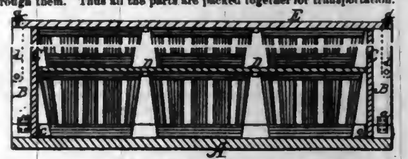
2. In a coffee or spice mill, the elevated rim provided with cross-bar C, united thereto at each end, and with the fastening notch or depression *d*, either with or without the incline *g*, substantially as described, and for the purpose specified.

3. In a coffee or spice mill, the combination of swinging cover provided with a nib or projection, and the rim provided with a corresponding recess or depression, substantially as described, and for the purpose specified.

4. In covered-box mills provided with swinging cover or covers and a supporting-base, the nib on one part and corresponding notch on its fellow part, adapted to spring the cover transversely to the plane on which said cover or covers swing, and retain them in place irrespective of gravity, substantially as described, and for the purpose specified.

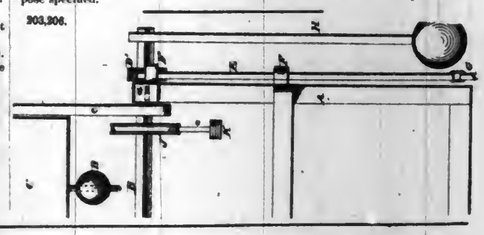
203,205. CRATES. Andrew M. Smith, Drummondville, Ontario, Canada. Filed Feb. 5, 1878.

Brief.—The ends are first folded, then the sides, and then the top placed on top. The straps extend below the bottom sufficient to allow rods to pass through them. Thus all the parts are packed together for transportation.



Claim.—In combination with the top or bottom of a folding fruit-crate A B C E, the straps *d d* and fastening-rods *f f*, substantially as and for the purpose specified.

203,206.



203,206. PUMPING APPARATUS FOR OIL-WELLS. Charles Snyder, Rouseville, Pa. Filed Mar. 1, 1878.

Brief.—The wind, acting on the wind-board, causes the piston to rise. When the wind falls, the weighted pendulum forces the piston down, thus utilizing the variable force of the wind to pump wells producing small quantities of oil.

Claim.—1. A pumping apparatus for oil-wells, consisting, essentially, in the combination, with a rock-shaft, of a wind-board or equivalent device, to be moved by the force of the wind, and a weighted pendulum-lever, substantially as set forth.

2. In a pumping apparatus for oil-wells, the combination, with a rock-shaft provided with a weighted wind-board, of a weighted pendulum-lever, and a rock-bar adapted to be reciprocated by a spur-gear secured to said rock-shaft, substantially as set forth.

203,207. SEED-DRILL TUBES. Henry Springer, Vicksburg, Mich. Filed Feb. 9, 1878.



Claim.—1. A drill hoe or tube having the seed-distributer C extending from the rear portion of the hoe downward and forward, the top of said distributer forming a central V-shaped ridge or flange, *f*, and provided with the curved outlets *e* on opposite sides thereof, as and for the purposes set forth.

2. A drill hoe or tube provided at its rear end with the vertical parallel flanges or guides *h h*, in combination with the slotted inverted-U-shaped spring F and coverer D, as and for the purpose explained.

203,208. BRUSH AND BROOM HOLDERS. Dwight M. Spalding, South Woodstock, assignee of one-half his right to Joel R. Holcomb and E. K. Sperry, Hartford, Conn. Filed Mar. 12, 1878.



Claim.—1. The combination, with the head H and the thimble T, having a groove, 6, of the shank 4, having the arms 7 and clamping-nut 10, substantially as described.

2. The combination, with the head H, provided with the ball 12, and with means for attaching the two together, of the socket 13 and screw-threaded handle B, substantially as described.

203,209. CARPET-FASTENERS. David F. Stambaugh, Casey, Ill. Filed Nov. 17, 1877.



Claim.—The combination of the flexible metallic concavo-convex strip *d*, having feathered edges *x x*, with the pivoted lever *c*, having forwardly-projecting curved wing *e*, as set forth.

203,210. DEVICES FOR TEACHING MUSIC. Christian M. Stauffer, Berne, Ind. Filed Feb. 26, 1878.



Claim.—In a device for teaching music, a board containing two scales of musical notes, said notes being indicated by letters and numerals opposite differently-colored squares, in combination with a tablet bearing on one side numbers corresponding with those shown on the board, and on its other surface syllables do, re, mi, fa, sol, la, si, and provided with a pin which projects on both sides, said pin fitting into holes provided for its reception in the board, combined and arranged to operate substantially as described and shown.

203,211. CORN AND PUMPKIN PLANTERS. Philip B. Still, Woodstock, Ill. Filed Mar. 13, 1878.

Brief.—The main or corn slide is provided with teeth on one side, that engage with a horizontally-journaled cog-wheel, that, in turn, meshes with a slide moving at right angles thereto, for dropping pumpkin-seed.



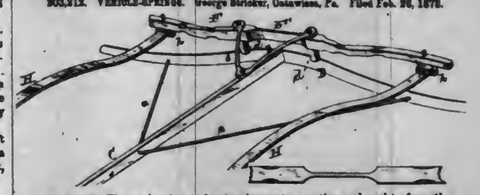
Claim.—1. The seed-box A, divided into two parts to contain the corn and pumpkin seed, in combination with the seed-slides B E, moving at right angles to each other over a common seed-opening, substantially as described.

2. The corn-seed slide B, reciprocated by connection with the power of the machine, in combination with the pumpkin-seed slide E, operated at right angles to the corn-seed slide by connection with such slide, substantially as described and shown.

3. In a corn and pumpkin planter, the combination, with a two-compartment seed-box, of the corn-slide B, having two seed-openings, so as to drop seed at each stroke, and the pumpkin-slide E, operated at right angles to the corn-slide over the same seed-opening, and provided with a single seed-opening, adapted to drop the pumpkin-seed only on the forward stroke, substantially as described and shown.

4. The combination of the seed-slides B E, racks C E', and cog-wheel D, substantially as and for the purpose set forth.

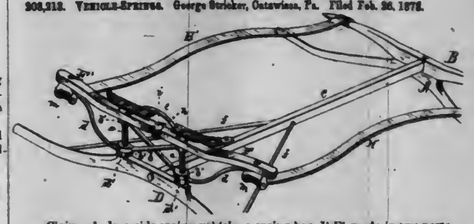
203,212. VEHICLE-SPRINGS. George Strieker, Catawissa, Pa. Filed Feb. 26, 1878.



Claim.—1. The spring-bar F, having its center portion reduced to form the spring F', and pivoted upon two studs or posts, *d d*, substantially as and for the purposes herein set forth.

2. In a side-spring vehicle, the combination of the side springs H H, clips *h h*, spring-bar F, having its center portion reduced to form the center spring F', and the stationary posts or studs *d d*, substantially as and for the purposes herein set forth.

203,213. VEHICLE-SPRINGS. George Strieker, Catawissa, Pa. Filed Feb. 26, 1878.

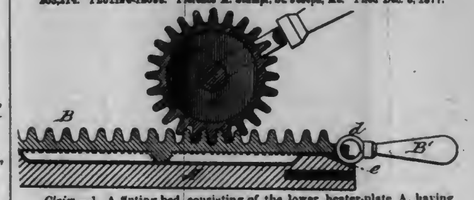


Claim.—1. In a side-spring vehicle, a spring-bar, F F', made in two parts, mounted upon separate posts and their inner ends jointed together, substantially as herein set forth.

2. The combination of the side springs H H', the bars F F', with center joint *h i*, and the posts *a a*, substantially as and for the purposes herein set forth.

3. The combination of the posts *a a*, jointed bars F F', cross-braces *b b*, with collars *b' b'*, and the end braces *d d*, with collars *d' d'*, substantially as and for the purposes herein set forth.

203,214. FLUTING-IRONS. Florence H. Stumpf, St. Joseph, Mo. Filed Dec. 8, 1877.



Claim.—1. A fluting-bed consisting of the lower heater-plate A, having grooves *a* in its upper surface, and the lifting-recess *c* in its edge, and the fluting-plate B, transversely corrugated on its upper side, and having ridges *a'* on its under side, to register with the grooves *a* of the heater-plate, for the purpose of holding the two together against lateral or endwise displacement, substantially as specified.

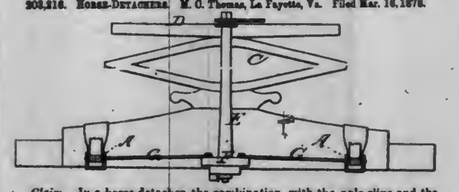
2. The corrugated fluting-roller C, having a central web, *w*, and a double-conical hub, *h h*, projecting therefrom, and separated from the shell of the roller by a conical space, *r*, substantially as specified.

203,215. BOSOM-BOARDS. Jerome B. Swestland, Pontiac, Mich. Filed Jan. 16, 1878.



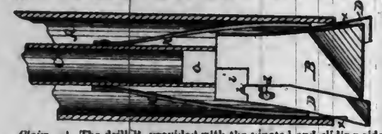
Claim.—In combination with an ironing-board, the pivoted or hinged frame H, bosom-board I, hinged door or cleat J, and pivoted clamping-button *i*, substantially as and for the purposes herein set forth.

203,216. HORSE-DETACHERS. M. C. Thomas, La Fayette, Va. Filed Mar. 16, 1878.



Claim.—In a horse-detacher, the combination, with the axle-clips and the thill or pole eyes, of the vertical rock-shaft E, spring *x*, and stop *v*, the horizontal cross-head F, and the rods G, pivoted to the ends of the said head, and extending through the thill and clip eyes, substantially as specified.

203,217. WELL-BORERS. Thomas P. Thompson, Portage, Wis. Filed July 27, 1877.



Claim.—1. The drill B, provided with the pivoted and sliding side cutters D D, substantially as herein set forth.

2. The combination of the drill B, the side cutters D D, having slots *e* and tenons *h*, the recessed stops *i*, and the springs K, all constructed substantially as and for the purposes herein set forth.

3. In a well-borer, the combination of the drill B, having shank *a*, the pivoted and sliding side cutters D D, springs K K, interior pipe C, and exterior pipe A, all constructed substantially as and for the purposes herein set forth.

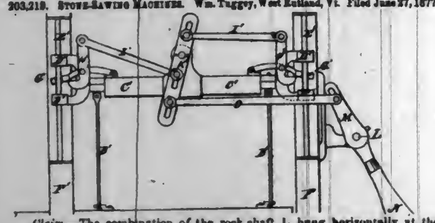
203,218. MEAT-TENDERERS. Lafayette L. Truman, Ithaca, N. Y. Filed Feb. 5, 1878.



Claim.—1. In an improved meat-tendering tool, the plate *c* about the teeth *e*, and held to the block *b* by the rod *d*, and thrust downward to the ends of the teeth by the spring *d'* about the rod *d*, and operating in relation to the block *b*, teeth *e*, and meat when punctured, substantially as and for the purpose set forth.

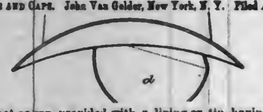
2. The shield *c'*, fast to the plate *c*, and thereby connected to and operating with the rod *d*, block *b*, and teeth *e*, substantially as and for the purposes set forth.

203,219. STONE-SAWING MACHINES. Wm. Tuggey, West Rutland, Vt. Filed June 27, 1877.



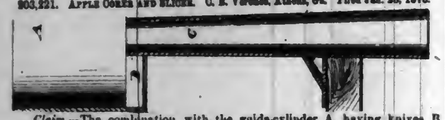
Claim.—The combination of the rock shaft L, hung horizontally at the side of the machine, and the radial lever N, arms M M, and connecting-rods O O, with lever K', rods I', elbow-levers H', pivoted gripers G', and bars C', housings D', and guide-rods E', all constructed and arranged as shown and described, to operate as specified.

203,220. HATS AND CAPS. John Van Gelder, New York, N. Y. Filed Apr. 23, 1878.



Claim.—A hat or cap provided with a lining or tip, having the muff *d* made as a part of it, and which muff can be folded into the hat so as to form a part of the lining, substantially as shown and described.

203,221. APPLE CORER AND SLICER. C. B. Vernon, Athens, Ga. Filed Jan. 28, 1878.



Claim.—The combination, with the guide-cylinder A, having knives B and coring-tube C, secured to its lower end, of an independent plunger provided with a central prong, substantially as set forth.

203,222. MASTER-KEY LOCKS. Herbert Wadsworth, Hoboken, N. J., assig.or to Wm. H. Rockwell, New York city. Filed Feb. 7, 1878.

Brief.—The stump which dogs the bolt is turned out, and a separate stump is turned into the way of the tumblers by the master-key. Said key is fitted to arrange the tumblers for the passage of the second stump.



Claim.—1. In a lock, the combination of a set of tumblers and a pivoted stump, which may be turned out of the way of the tumblers by a key, substantially as and for the purpose set forth.

2. In a lock, the combination of a set of tumblers, a pivoted stump, which is turned out of the way of said tumblers, and a second pivoted stump, which is thrown up to guard the bolt until the tumblers are raised into the proper position, substantially as described.

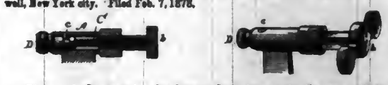
3. In a lock, the bolt provided with a pivoted stump, swinging on its pivot at right angles to the movement of the said bolt, substantially as described and shown.

4. In a lock, the combination, with the sliding plate D, of the pivoted stumps carried by the bolt, substantially as and for the purposes set forth.

5. The combination, with the sliding plate D, of the pivoted stumps and the gated tumblers, substantially as described and shown.

6. In a lock, the combination, with the horizontally slotted sliding plate, of the pivoted stumps on the shank of the bolt, having projections *i i'*, substantially as described and shown.

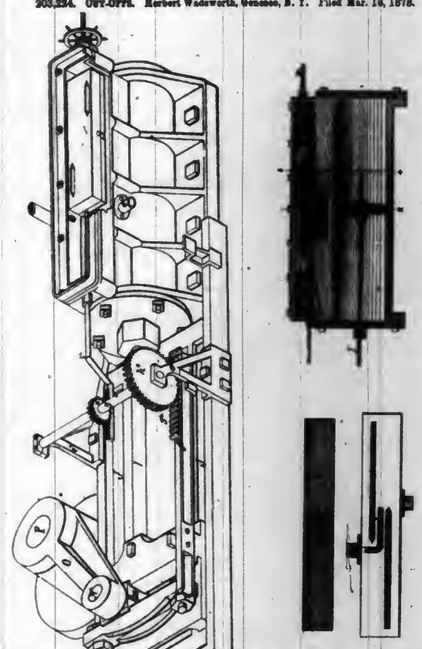
203,223. EXTENSION-KEYS. Herbert Wadsworth, Hoboken, N. J., assignor to Wm. H. Rockwell, New York city. Filed Feb. 7, 1878.



Claim.—1. In an extension key made in two parts, the screw C, for adjusting the length of the key, substantially as described.

2. In a key, the combination of the shank and stem, adapted to slide one upon the other, with the screw C, having head D, substantially as and for the purposes set forth.

203,224. CUT-OFFS. Herbert Wadsworth, Geneseo, N. Y. Filed Mar. 16, 1878.



Claim.—1. The combination, substantially as set forth, with an admission valve or cock, of a cut-off arranged to follow the movement of said admission valve or cock at a speed so proportioned to the movement of the rendering-shaft or other object whose motion is to be controlled that its journey to close the passage opened by the admission valve or cock shall be completed at the time when the rendering-shaft completes the work or travels the distance required of it.

2. The combination, substantially as set forth, with the rendering-shaft or other object whose movement is to be controlled, of a valve or cock through which passes the motor fluid that drives the mechanism by which said object is moved, and a cut-off connected with and operated by said object to arrest the movement of the driving mechanism at any desired point.

3. The cut-off arranged and operating, in connection with the admission and exhaust ports, substantially in the manner set forth, so that the engine, in case it should work or travel beyond the predetermined point, will be caused to reverse its action until brought back to that point.

203,225. WATER-CLOSET SEATS. Alex. Waldron, New York, N. Y. Filed Apr. 13, 1878.

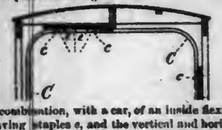


Claim.—The combination, with a water-closet seat, A, of a cast-metal plate, B, secured to the under side of the rear of the seat, and provided on

opposite edges with horizontal pivots *b*, in axial line, to adapt the seat to be hinged on lugs cast on the hopper, said plate B extending behind the seat A and beyond the pivotal line, and being increased in weight along its extreme edge, so as to overbalance and raise the seat A, relieved from counter-pressure, substantially as set forth.

203,226. GRAIN-CAR DOORS. Chauncey R. Watson, Indianapolis, Ind. Filed Feb. 23, 1878.

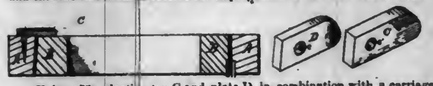
Brief.—Improvement on patent to Crooker, No. 78,188, May 26, 1868. Removes the upper portion of the flexible door, and guides and supports the same by bent rods and staples embracing the same.



Claim.—The combination, with a car, of an inside flexible or yielding sliding grain-door, having staples *c*, and the vertical and horizontal bent guiding-rods C, extending from the floor of the car upwardly and under the roof of the car, as herein shown and described, whereby said door, when not in use, can be carried up on the horizontal portions of said guiding-rods out of the way, substantially as specified.

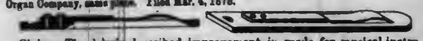
203,227. DOOR-CHECKS FOR CARRIAGES, &c. Columbus West, Pittsburg, Pa. Filed Feb. 23, 1878.

Brief.—A small iron plate faced with rubber is screwed upon the jambs, and extends therefrom to receive the impingement of the door when closed.



Claim.—The elastic stop C and plate D, in combination with a carriage-door and lock-pillar thereof, adapted to serve as a door-check when the rabbet on door or lock pillar is dispensed with, substantially as described and shown, for the purpose set forth.

203,228. ORGAN-REEDS. Henry K. White, West Meriden, Conn., assignor to Wilcox & White Organ Company, same place. Filed Mar. 4, 1878.



Claim.—The herein-described improvement in reeds for musical instruments, consisting in the tongue reduced from a point distant from the rear end of the opening in the body, and so as to leave substantially full thickness of tongue between the rear end of opening and the point where said reduction commences, substantially as described.

203,229. LEMON-SQUEEZERS. Barnett B. Whaley, Brooklyn, N. Y., assignor to himself and John Tiebout, same place. Filed Mar. 20, 1878.



Claim.—A lemon-squeezer having the cut-lemon holder A, cheeks C, perforated bottom, and concave wall B, with the convex presser E hinged to the upper edge of said concave wall, in line with the surface of the perforated bottom, and provided with the handle F, all constructed substantially as described, and arranged in such manner that a cut lemon may be placed in the squeezer with its cut surface directly over and upon the perforated bottom, and compressed in such position by the presser for the purpose of expressing the juice.

203,230. SEPARATING ANIMAL FROM VEGETABLE FIBER. Joseph Wilkins, Baltimore, Md. Filed Apr. 23, 1878.



Claim.—1. In a process for separating animal from vegetable fiber in mixed fabrics, a coincident or preliminary treatment of the same, for preventing the discharge of their dyes or colors, substantially as described.

2. The process of separating animal from vegetable fiber in mixed fabrics, consisting in treating the same with a bath of dilute acid and a suitable mordant, whereby the contamination of the bath is prevented, as set forth.

3. A bath for the purpose described, consisting of sulphuric acid and sulphate of alumina, as set forth.

4. In combination with the tank A, having leaden lining and perforated coil B, the cage C, substantially as described.

203,231. SEPARATING ANIMAL FROM VEGETABLE FIBER. Joseph Wilkins, Baltimore, Md. Filed Apr. 23, 1878.

Claim.—1. In a process for separating animal from vegetable fiber in mixed fabrics, submitting the same, while moistened with a dilute acid, to dry heat, so as to disintegrate the vegetable fiber, substantially as described.

2. The process herein described for separating animal from vegetable fiber in mixed fabrics, consisting in moistening the same with dilute acid, subjecting to dry heat, and agitating, as described.

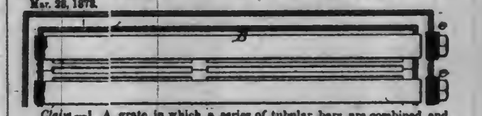
203,232.



203,232. SASH-HOLDERS. Hugo Worthington, Liverpool, Great Britain. Filed Jan. 5, 1878. Patented in England, Jan. 15, 1877.

Claim.—The combination of the bolts *a a'*, provided with the curved arms *c c'*, constructed as described, with the cam *d*, by means of which the bolts are both operated and rigidly held in a thrown position.

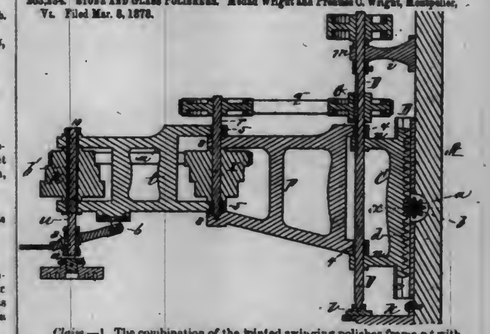
203,233. GRATES FOR STEAM-BOILER FURNACES. John E. Wootten, Philadelphia, Pa. Filed Mar. 28, 1878.



Claim.—1. A grate in which a series of tubular bars are combined and alternate with ordinary fixed solid bars, which are in contact with the said tubular bars, all substantially as and for the purpose herein set forth.

2. The combination, substantially as described, of a series of tubular bars with ordinary fixed solid bars, the upper edges of which are below the tops, and the lower edges below the bottoms of the said tubular bars, as described.

203,234. STONE AND GLASS POLISHERS. Medad Wright and Prentice C. Wright, Montpelier, Vt. Filed Mar. 5, 1878.

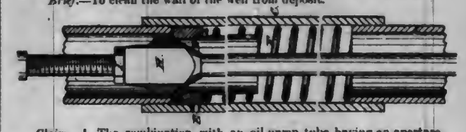


Claim.—1. The combination of the jointed swinging polisher-frame *p t* with the frame C, sliding in the fixed guide B, rack *d*, pinion *e*, shaft *b*, ratchet-wheel *g*, pawl *h*, and the vertical driving-shaft D, revolving in a bearing, *m*, and a step, *l*, in the bracket *k*, attached to the stationary post A, all constructed, arranged, and operating substantially in the manner and for the purpose set forth.

2. In a machine for polishing stone, the cone-pulley K, secured to the hollow shaft *b'*, surrounding the vertical splined polisher-shaft *n*, and arranged within the jointed swinging polisher-frame, composed of two portions, *p t*, pivoted together by means of socketed ends, and projections *5*, in combination with the cone-pulley 1, secured to the shaft *r*, revolving in bearings *s* in the outer end of the inner portion *p* of the swinging frame, all constructed, arranged, and operating substantially in the manner and for the purpose set forth.

203,235. OIL-WELL VALVES. Lemuel W. Young, Elk City, Pa. Filed Mar. 5, 1878.

Brief.—To clean the wall of the well from deposit.



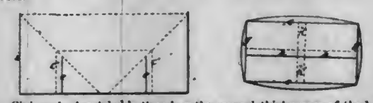
Claim.—1. The combination, with an oil-pump tube having an aperture, as described, of a valve depressed at each reciprocation of the pump-rod, whereby an intermittent stream of oil is discharged from the aperture, as and for the purpose specified.

2. The combination of the coupling C, having a port, E, with the hollow valve D and spring F, substantially as specified.

3. The combination of the coupling C with the hollow valve D, spring F, and tappet H, substantially as described.

REISSUES.

8,202. PAPER BAGS. Jal. Artzell, Benj. Smith, and Adam Smith, Canajoharie, N. Y. Patent No. 47,376, dated Apr. 25, 1865; Reissue No. 4,749, dated Feb. 13, 1872. Filed Mar. 8, 1878.



Claim.—1. A satchel-bottom bag the several thicknesses of the bottom of which are so formed and disposed in the structure of the bag as to present each a substantially rectangular contour, as shown and described.

2. The described method of forming the bottom of a satchel-bottom bag or sack, consisting, essentially, in breaking down or tucking in and folding over and pasting up the end of the tubular blank in substantial conformity to creases or guide-marks previously formed in or made on the paper composing the flattened tubular bag-blank.

8,203. FEEDING AIR TO FURNACES. James Jenks, Detroit, Mich., assignor of one-half interest to George A. Jenks. Patent No. 188,913, dated Mar. 27, 1877. Filed Feb. 7, 1878.



Claim.—1. In a boiler-furnace, a flue in the wall thereof provided with a flue-strip in rear of the opening to the outer air, in combination with the imperforated upper part and perforated lower part of said flue, substantially as and for the purposes set forth.

2. In a boiler-furnace, the combination of the flue A, provided with opening *a* and flue-strip *b*, with the perforated side of the furnace-wall and the perforated bridge-wall, constructed and arranged to operate substantially as described and shown.

8,204. REMOVING BARS OF RIVERS. Henry F. Knapp, New York, N. Y. Patent No. 195,896, dated Oct. 9, 1877. Filed Apr. 11, 1878.

Brief.—Walls or barriers are arranged in one or more lines across the mouth of a river or harbor and outside the bar thereof, and the tops of said walls are some distance above the bottom, but not above the line to which it is desired to reduce the bar. The walls or barriers prevent the deposit of sand on the bar by the action of the sea-waves, while the full force of the current of the river can be exerted on the bar to erode it. The piles used are firmly secured in place by injecting a quantity of cement in a semi-fluid state into the sand around them, which solidifies the sand.

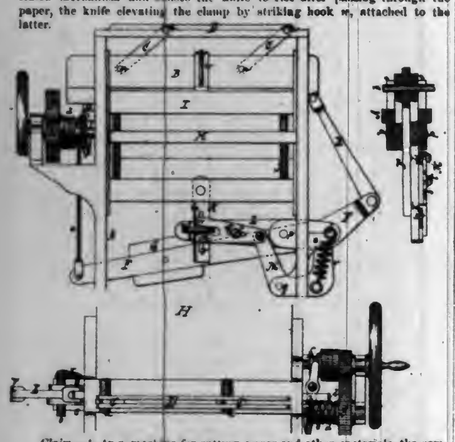


Claim.—1. The method herein described of reducing or cutting away bars at the mouths of rivers and harbors, which consists in arranging obstructions, walls, or barriers in one or more lines directly across the mouth on the outside of the bar, in order to prevent the sea-waves washing up sand or sediment onto the bar, and permit the river-current to erode the bar.

2. The process of injecting a cement in a semi-fluid state into the mud or sand around piles, for the purpose of more firmly securing them.

8,205. MACHINES FOR CUTTING PAPER. Edwin R. Sheridan and Theodore W. Sheridan, Brooklyn, N. Y. Patent No. 190,069, dated Apr. 24, 1877. Filed Mar. 13, 1878.

Brief.—The clamp descends upon the paper to be cut, by gravity, after which it receives a pressure commensurate to the resistance which the knife has to overcome in cutting, by means of lever F, which has a movable fulcrum, *b*, resting on lugs *c*, and acted upon by the lever L, which latter, in its downward movement, together with slide *s*, throws the locking mechanism into gear, and thus induces the aforesaid pressure. Projection *l* on the knife trips the clutch mechanism and causes the knife to rise after passing through the paper, the knife elevating the clamp by striking hook *n*, attached to the latter.

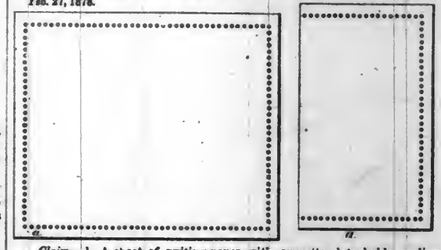


Claim.—1. In a machine for cutting paper and other materials, the combination, with the knife and the clamping-frame, of a lever and mechanism, substantially as described, whereby said lever is caused to act on the knife, and when said knife meets with sufficient resistance causes the clamping-bar, which is independent of and not connected with the knife, to be depressed upon the material to be cut with a pressure commensurate to the resistance to be overcome by said knife.

2. The combination, with the knife, the clamping-bar, the levers imparting motion to the same, and the movable fulcrum *b*, of a locking mechanism consisting of a rack-bar, *N*, and dog *n*, substantially as and for the purpose set forth.

3. The combination, with the knife B and platform H, driving-shaft *f*, clutch *i*, and clutch-lever *j*, of a pin or projection, *l*, secured in the knife, and a releasing-lever, *k*, all constructed and operating substantially as and for the purpose set forth.

8,206. LETTER-SHEET ENVELOPES. Lebbeus H. Rogers, New York, N. Y., assignee, by mesne assignments, of Charles Foster, deceased. Patent No. 123,389, dated Feb. 6, 1872. Filed Feb. 27, 1878.

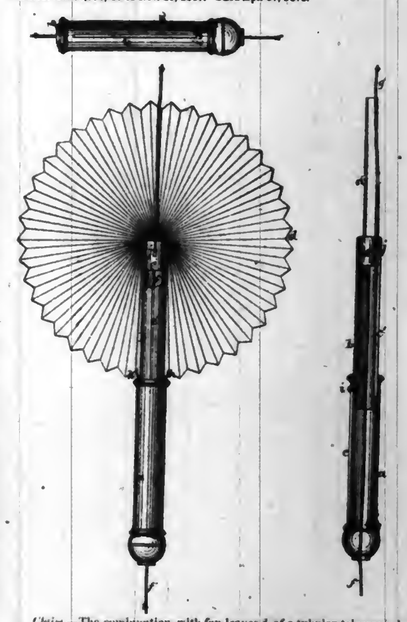


Claim.—1. A sheet of writing-paper with opposite detachable sealing-borders.

2. A sheet of writing-paper having opposite sealing-borders and perforations so applied to admit of the severing and detaching of the sealed border.

3. As a new article of manufacture, a letter-sheet of paper gummed and punched, substantially as and for the purposes herein set forth.

8,207. FANS. Otto Brueck, Union Hill, N. J., assignor to Gustav Brueck, New York city. Patent No. 70,962, dated Nov. 19, 1867. Filed Apr. 17, 1878.



Claim.—The combination, with fan-leaves *d*, of a tubular telescopic handle, composed of two sections, one of which slides in the other, the inner secondary section being adapted to receive the fan-leaves in their folded state, said fan-leaves being connected at their outer ends to the main section of the handle, and at their inner ends to a head, which slides in the secondary section, the whole being adapted to operate substantially in the manner herein shown and described.

8,208. PICTURE-ROD MOLDINGS. L. J. Baker, Boston, Mass., assignor to J. Otis Wetherbee. Patent No. 194,952, dated Sept. 11, 1877. Filed Apr. 17, 1878.

Brief.—The picture-rod molding is formed with a bead, a cornice, and an intermediate nail groove, which extends downward behind the bead.



Claim.—1. A picture-rod molding consisting of the molding portion A, formed with a picture-hook-receiving bead, B, and the cornice C above the bead, substantially as and for purposes stated.

2. A picture-rod molding containing upon its front face a channel for reception of nails when the bottom of such channel is obscured by the portions of the molding below it, substantially as and for purposes stated.

3. A picture-rod molding consisting of a molding proper, a cornice disposed above such molding, and an intermediate nail-receiving channel, substantially as and for purposes stated.

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THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE

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COMMISSIONER'S DECISIONS.

A. E. SHELDON.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of A. E. Sheldon for Letters Patent for* "IMPROVEMENT IN PASSENGER-TICKETS," *filed October* 16, 1877.—*Decided February* 12, 1878.

A passenger ticket consisting, in addition to the usual matter, of a personal description of the purchaser and an executed contract, is simply a contract, or method of doing business, and is not patentable.

DOOLITTLE, *Acting Commissioner:*

The subject-matter of this application consists in incorporating in a railway passenger-ticket a contract with, and a personal description of, the purchaser. The ticket is one of that class which is good for a certain trip and for a certain length of time, and is not transferable. The contract is to be signed by the purchaser in the presence of the person who sells the ticket, and provides that in consideration of selling the ticket at a reduced rate it shall be good only for the person named and described, for the passage and time mentioned therein; that if transferred to any other person it shall be forfeited; that the execution of the holder's signature shall be made in the presence of the conductor when required, &c. This contract is followed immediately by a form or schedule containing the personal description of the purchaser, together with his signature. This personal description and the requirement that the purchaser shall sign his name in the presence of the conductor upon the delivery of the ticket, when requested by the conductor, are means of identification adopted by the applicant.

The claim is as follows:

I claim and desire to secure by letters patent the ticket A', with description C and executed contract B, arranged substantially as shown and described.

Considered as a mere structure, we find that it is made up of three elements, all of which are old, and each of which performs the same function that it has performed in other places and in other kinds of business. A non-transferable ticket is old; the contract signed by the purchaser is old; the personal description of a person holding a contract or other paper by which he may be identified is also old. It is a common means of identifying depositors at banks to require the depositor, upon drawing from the bank, to write his signature, for the purpose of identification by comparison with the signature already recorded in the books of the bank. It is a common method in the military service, upon giving a discharge to a soldier, to incorporate therein a personal description of his person for the purpose of subsequent identification. A personal description is also incorporated in passports.

Viewed, then, as a structure, this consists of a mere collection of old devices, each performing its appropriate function without regard to the other. Omitting the personal description, the contract signed by the purchaser, and the requirement that he should give his signature upon request, operate for the purpose of identification independently of the personal description; and if the contract had been omitted, the personal description would have the same value that it now has. These features are simply conditions of a contract, and amount to a series of checks to prevent fraud.

Considered as a structure, the case appears to me to be substantially met by the patent of A. S. Chittenden, No. 47,798, May 23, 1865. In that patent the ticket is a non-transferable one, and contains a contract and a personal description, and a photograph of the purchaser. The only difference between that device and the present one is the omission therein of the additional check of requiring the re-signing of the passenger's name in the presence of the conductor. This additional check being, as has been seen, an old device used for the same purpose, its adoption in the present instance evinces no exercise of the inventive faculty.

But I do not think the matter should be regarded as a structure; but if patentable at all, it is as a new method of doing business.

The primary object of this railroad-ticket, like all other similar tickets, is to grant the privilege of a purchaser thereof to travel on a certain railroad over a certain distance. It is the token of a contract entered into between the railroad company and a passenger, which indicates that in consideration of a certain amount paid by the passenger he has the right to ride on the road mentioned thereon the distance therein indicated. Any conditions other than this are simply additional to that contract.

The ticket, as an article of manufacture, is a preparation of card-board paper and printing-ink, and to effect the object of giving a ride to a passenger for so much money no ticket at all is necessary. As to means of identification, the company might require the passenger to be identified by an agent in person present at the time of the sale, and such a method would be just as patentable as the present one.

The essence of this so-called invention is a contract. The making of the original signature, the re-signing, and the submitting to a personal inspection and description on the part of the passenger, are all conditions of one and the same contract. An ordinary ticket without any signatures, such as is generally sold to passengers for a single trip, is a contract, and the present ticket is the same thing, with additional conditions annexed thereto. So that the whole question is, simply, does a business contract constitute a proper subject of a patent? If so, the conditions of such contracts become essential elements in a combination composing the entirety, and such combinations can only be limited by the range of matters which can be made subjects of contracts.

I have found no statement in any law or treatise on patents, or in any decision of the courts, authorizing the grant of a patent for a method of doing business, consisting in following certain directions and agreements entered into between contracting parties. Patents granted by this office for substantially such methods have been cited in this case; but bad patents are not precedents.

Allusion has been made to the Mitchell patent, granted for a hotel-register, and sustained by the United States district court, in the case of *Hawes* vs. *Washburne*, 5 OFFICIAL GAZETTE, 490. This patent (No. 63,889) has spaces arranged on the margin of a blank page for the insertion of advertisements opposite the space used for the traveler's signature. But there the court expressly declared that the *use* the book was intended to serve did not form one of its patentable qualities; that its *purpose* was not patentable. It consisted, the court said, of a combination of a page prepared for the insertion of names with a page arranged for advertising—a new arrangement of material—a new mode of bringing things together. Now, the material or particular arrangement thereof has nothingt to do with the value of this railroad-ticket; but the things to be done in accordance with the directions thereon, like the directions on a bottle of medicine to be given to a particular purchaser, are the important matters.

The decision of the Board of Examiners-in-Chief is affirmed.

R. D. SANDERS.—*Appeal.*

[*Interlocutory appeal in the matter of the application of Richard D. Sanders for letters patent for* "IMPROVEMENT IN CONTINUOUS BRAKES FOR RAILWAY-CARRIAGES."—*Decided April* 11, 1878.]

Ordinarily the examination of an application should be had before division is required.

The most pertinent references should be cited at the outset.

SPEAR, *Commissioner:*

I do not approve of the Examiner's action:

First. In making up an issue on the division of an application when the examination of the application would have been as easy with all the claims retained as if the application were divided. When an applicant comes before the Office in evident good faith, not evidently seeking to procure an examination on several different inventions in one application, and especially when the labor involved is no greater, the examination should be made first. In the present case it would doubtless have spared all this controversy and vexation.

Second. In not citing at once the most pertinent references and no other. A prolonged and partial examination is extremely vexatious to the applicant or his attorney, since it compels him not only to keep the case fresh in mind, but to call up the papers repeatedly, thus consuming much time. I am well aware of the difficulty in always avoiding this, and am not disposed to censure the Examiner severely, since I do not impute to him any wrong motives whatever.

The remedy for his adverse decision lies in appeal to the Board. I criticise here only the manner of examination.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Western District of Pennsylvania.

ARTHUR PICKERING *et al. vs.* MCCULLOUGH, DALZELL & CO.

[*Decided May* 13, 1878.]

Abandonment of the use of a machine is not evidence that it was a mere abandoned experiment.

Abandonment of the use of a mechanical structure which has been brought to such a degree of maturity, and whose operative merit has been demonstrated by trial, will inure to the benefit of the public, and not to that of even an original but subsequent inventor.

J. E. Maynadier and *R. Robb*, for complainants; *Bakewell & Kerr*, for defendants.

MCKENNAN, *Cir. J.:*

In deciding this case it is unnecessary to go beyond the proofs presented by the respondents touching the existence and use of a machine at Kier's works, in Pittsburg, for the manufacture of plumbago crucibles. That such machine was constructed before the date of Nimmo's patent is clearly established by the proofs. That it was capable of successful operation is the result of a decided preponderance of the evidence. That it was so constructed as to perform the distinguishing function of Nimmo's machine—viz., the guidance of the rib toward the axis of revolution of the mold, so that it could be withdrawn therefrom without touching the sides of the mold—is manifest from the drawing prepared from the description of those who operated and saw the machine. In a word, in the mechanical forces employed, in mode of operation in so far as the essential feature of Nimmo's machine is concerned, and in the results produced, the machines are undistinguishable.

Why, then, is not the Kier machine an effectual anticipation of Nimmo's?

The argument against this hypothesis is, that it was an abandoned experiment. But the proof is, that it was a complete machine, that it operated for nearly a year that crucibles were made upon it without any imperfection in form, and that the rib was removed from the mold by guiding it to the center, and thence withdrawing it without touching the sides. True it is that it was not produced in evidence, and that it was not shown what had become of it. But these considerations tend rather to discredit the testimony touching the existence, construction, and operation of the machine than to impress upon it the character of a mere experiment. If that testimony is believed, there can be no doubt that the machine was neither incomplete in construction nor ineffective in adaptation to the work for which it was intended. And it is now too well settled to admit of controversy that an abandonment of the use of a mechanical structure which has been brought to such a degree of maturity, and whose operative merit has been demonstrated by trial, will inure to the benefit of the public, and not to that of even an original but subsequent inventor. (*Bedford* vs. *Hunt*, 1 Mass., 305; *Reid* vs. *Cutter*, 1 Story, 600; *Gayler* vs. *Wilder*, 10 How., 498; *Coffin* vs. *Ogden*, 18 Wall., 124.) There is no sufficient reason to reject that testimony, and the result necessarily is, that—

The bill must be dismissed with costs.

SPECIAL ORDER.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 19, 1878.

By direction of the Secretary of the Interior, HENRY GERNER, of New York city, is disbarred from practice before this Bureau because of "gross misconduct," (Section 487, Revised Statutes,) and will not be recognized, from and after this date, as an attorney in the prosecution of cases before this Office.

ELLIS SPEAR,
Commissioner of Patents.

TO SUBSCRIBERS.—Great care will hereafter be taken in mailing THE OFFICIAL GAZETTE to subscribers, and in case of its non-receipt the fault will not be in the Patent Office. When each issue shall have been mailed, the Office will assume that it has done its duty by the subscribers, and will not send extra numbers except upon receipt of 10 cents for each copy ordered.

Narrative of the Polaris Expedition.

Authority having been given the Public Printer to print another edition of the above work, subscriptions will now be received by Mr. A. F. Childs, Chief Clerk, until August 1, 1878, at the following rates: If delivered at the Government Printing Office, $1.60. If sent by mail, $1.75.

TRADE-MARKS.

[Each certificate bearing date May 7, 1878.]

5,995.—LINIMENTS, OINTMENTS, AND EYE-WATERS.—*Sterling C. Buchanan*, Camden, Ark. Application filed February 28, 1878.
"The representation of a buck having horns or antlers."

5,996.—APPARATUS FOR CURLING HAIR.—*Ehrich & Co.*, New York, N. Y. Application filed April 1, 1878.
"The arbitrarily-selected word 'MANIFOLD.'"

5,997.—CIGARS.—*S. Fuguet & Sons*, Philadelphia, Pa. Application filed April 24, 1878.
"The words 'SPRING FLOWERS.'"

5,998.—SILICATE ERASIBLE-SURFACE MATERIAL FOR MEMORANDUM-BOOKS, &c.—*Albert H. Jocelyn*, New York, N. Y. Application filed April 2, 1878.
"The arbitrarily-selected word 'IVORINE.'"

5,999.—HAIR-RESTORATIVES.—*J. M. Keyes & Son*, Medford, Mass. Application filed March 27, 1878.
"The fanciful and newly-coined word 'CRINOGEN.'"

6,000.—GRANULATED PEPSIN, A REMEDY FOR DYSPEPSIA.—*Darius Stone Orton*, Northampton, N. Y. Application filed February 28, 1878.
"The representation of the stag, with mountains in the background."

6,001.—PRINTERS' GALLEYS.—*R. F. Cole & Co.*, New York, N. Y. Application filed April 4, 1878.
"The arbitrary letter-symbol 'X L.'"

6,002.—CIGARS.—*S. Lowenthal & Co.*, Cincinnati, Ohio. Application filed April 3, 1878.
"The word 'SPECTATOR.'"

6,003.—CHAMPAGNE WINE.—*Chapin & Gore*, Chicago, Ill. Application filed April 12, 1878.
"The arbitrarily-selected number '47.'"

6,004.—WHITE AND RED LEAD.—*Davis, Chambers & Co.*, Pittsburg, Pa. Application filed April 18, 1878.
"The term or designation 'GREEN SEAL.'"

6,005.—MEDICAL PREPARATION.—*Nathaniel S. Driggs* and *Winfield S. Lynn*, Indianapolis, Ind. Application filed March 2, 1878.
"The Brazilian coat of arms and the word 'BRAZILIAN.'"

6,006.—CIGARS.—*Henry Eggert*, New York, N. Y. Application filed March 16, 1878.
"The fanciful words 'THE BRAND I SMOKE.'"

6,007.—CIGARS.—*Foxen, Newman & Co.*, Detroit, Mich. Application filed December 31, 1877.
"A round wax seal, of green color, having impressed upon it the red monogram shown, composed of the letters 'G' and 'S.'"

6,008.—FLOUR.—*Geo. V. Hecker & Co.*, New York, N. Y. Application filed March 9, 1878.
"The representation of a griddle, as represented."

6,009.—RAGS AND PAPER-STOCK.—*Lee & Sturges*, New York, N. Y. Application filed April 8, 1878.
"The letter 'P,' with three crosses, as represented."

6,010.—CIGARS.—*John D. Loomis*, Suffield, Conn. Application filed April 15, 1878.
"The words 'TEMPERANCE WAVE.'"

6,011.—CANNED MEATS AND FISH.—*J. G. Megler & Co.*, Brookfield, Wash. Application filed February 14, 1878.
"A recumbent dragon on a green field; over said dragon a plunging horse and rider."

6,012.—CANNED MEATS AND FISH.—*J. G. Megler & Co.*, Brookfield, Wash. Application filed February 14, 1878.
"The representation of the stag's head with antlers."

6,013.—SHIRTS, OVERALLS, AND UNDERWEAR.—*Jacob Miller & Son*, Philadelphia, Pa. Application filed April 22, 1878.
"The designation 'OWL.'"

6,014.—BRANDY.—*E. Remy Martin & Co.*, Rouillac, France. Application filed April 26, 1878.
"The representation of a centaur, as shown."

6,015.—CHEWING AND SMOKING TOBACCO.—*Newins & Griswold*, Holbrook and Riverhead, N. Y. Application filed January 25, 1878.
"The words 'PRIDE OF THE ISLAND.'"

6,016.—SALT.—*R. Nelson Gere*, Geddes, N. Y. Application filed April 17, 1878.
"The figure representing a barrel, with an eagle mounted upon the top of the barrel."

6,017.—WASHING-MACHINES.—*Oakley & Keating*, New York, N. Y. Application filed March 14, 1878.
"The word 'NONPAREIL.'"

6,018.—SMOKING-TOBACCO.—*E. H. Pogue*, Hillsborough, N. C. Application filed March 7, 1878.
"The words 'SITTING BULL.'"

6,019.—KID GLOVES.—*Pinge & Pinner*, New York, N. Y. Application filed April 10, 1878.
"The fac-simile of the French Exposition medal and the word-symbol 'ALEXANDER.'"

6,020.—KID GLOVES.—*Pinge & Pinner*, New York, N. Y. Application filed April 10, 1878.
"The shield with the diagonal band, upon which the word 'PARIS' is placed, and the representation of a griffin resting upon the shield."

6,021.—WHISKY.—*Emil Stern*, New York, N. Y. Application filed April 10, 1878.

"The words 'OLD VETERAN' and the symbol of a soldier."

6,022.—CIGARS.—*Woodside, Green & Labaree*, Cincinnati, Ohio. Application filed January 25, 1878.

"Words 'Two Orphans.'"

6,023.—CIGARS.—*E. S. Allen & Co.*, Cleveland, Ohio. Application filed March 11, 1878.

"The words 'GILT EDGE.'"

6,024.—PREPARED COFFEE, SPICES, AND MUSTARD.—*C. E. Andrews & Co.*, Milwaukee, Wis. Application filed February 4, 1878.

"The device consisting of two disks, one above the other, and an arc-shaped ribbon below the disks, said disks and ribbons being adapted to be printed upon, the whole being inscribed on an ornamental curtain having a fanciful border composed of cords and tassels, and the words 'CROCKER MILLS.'"

6,025.—REMEDY FOR PILES.—*John E. Butler*, Golconda, Ill. Application filed April 17, 1878.

"The fancifully-formed word 'HEMORRHOIDINE.'"

6,026.—FERTILIZERS.—*H. Brown & Co.*, Hamilton, N. C. Application filed April 5, 1878.

"The fancifully-selected words or phrase 'ECONOMICAL PLANTER'S FRIEND.'"

6,027.—COFFEE.—*Coyle, Laughlin & Co.*, Philadelphia, Pa. Application filed April 11, 1878.

"The word-symbol 'GEM' and a female figure holding a lyre."

6,028.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO, *J. D. Culp & Co.*, San Francisco Cal. Application filed March 20, 1878.

"The word-symbol 'YELLOW JACKET.'"

6,029.—SOAP.—*Joseph S. Elkinton* and *Thomas Elkinton*, Philadelphia, Pa. Application filed January 16, 1878.

"The word-symbol 'PLANTATION.'"

6,030.—BURNISHING-INK.—*Nathan Barnes Fletcher*, Lynn, Mass. Application filed April 22, 1878.

"The representation or picture of a standard or staff and a flag applied thereto and arranged as shown."

6,031.—LINEN GOODS.—*O. Jaffe & Pinkus*, New York, N. Y. Application filed April 20, 1878.

"The figures of the spinning-wheel and the loom inclosed in a diamond-shaped design."

6,032.—BUTTONS.—*Joseph Jaff & Sohn*, Vienna, Austria. Application filed December 4, 1877.

"A plan view of a compass arranged between two sphinxes, in side view."

6,033.—CLOTHING FOR MEN'S, YOUTHS', AND BOYS' WEAR.—*Naumburg, Kraus, Lauer & Co.*, New York, N. Y. Application filed February 20, 1878.

"The letters 'N. K. L. & CO.'"

6,034.—FILES.—*Nicholson File Company*, Providence, R. I. Application filed April 8, 1878.

"The word-symbol 'DOUBLE-ENDER.'"

6,035.—MEDICINAL PREPARATION.—*Denison Smith*, Philadelphia, Pa. Application filed April 2, 1878.

"The fanciful word 'Arbozlinctus.'"

6,036.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Thomas H. Hall*, New York, N. Y. Application filed April 30, 1878.

"The word 'DRAMATICO.'"

6,037.—INSECT-DESTROYING POWDER.—*Giovanni N. Milco*, Stockton, Cal. Application filed February 14, 1878.

"The word-symbol 'BUHACH.'"

6,038.—SODA-ASH, CAUSTIC SODA, BLEACHING-POWDER, &c.—*J. L. & D. S. Riker*, New York, N. Y. Application filed April 25, 1878.

"The word 'EXCELSIOR' inscribed upon a banner carried by a man ascending a mountain."

6,039.—CANNED MEAT, FISH, FRUIT, AND VEGETABLES.—*Fitzpatrick, Davis & Co.*, Fishetton, Wash. Application filed February 7, 1878.

"The words 'THISTLE BRAND' and the figure of a thistle."

LABELS.

[Each certificate bearing date May 7, 1878.]

1,511.—Title: "CHEMICAL SPIRIT GAS."—*L. H. Abrams*, Philadelphia, Pa. Application filed March 27, 1878.

1,512.—Title: "BAIRSTOW'S IVORYTYPE COLORS."—*William A. Bairstow*, Warren, Pa. Application filed April 27, 1878.

1,513.—Title: "BEEF TONIC."—*Caswell, Hazard & Co.*, New York, N. Y., and Newport, R. I. Application filed April 27, 1878.

1,514.—Title: "BEEF TONIC."—*Caswell, Hazard & Co.*, New York, N. Y., and Newport, R. I. Application filed April 27, 1878.

1,515.—Title: "ON ALL CASH SALES OF TWENTY-FIVE CENTS," &c.—*Walter A. Ezekiel*, Cincinnati, Ohio. Application filed May 1, 1878.

1,516.—Title: "KAMILLEN SEIFE, CHAMOMILE SOAP."—*Carl D. S. Früh*, Philadelphia, Pa. Application filed April 30, 1878.

1,517.—Title: "EL BOCA."—*Heppenheimer & Maurer*, New York, N. Y. Application filed April 30, 1878.

1,518.—Title: "HILL'S CREAMED CASTOR-OIL."—*Hill & Buss*, Boston, Mass. Application filed April 25, 1878.

1,519.—Title: "FLUID HYDRASTIS."—*William S. Merrell & Co.*, Cincinnati, Ohio. Application filed February 2, 1878.

1,520.—Title: "OIL GEM."—*James B. Medlar*, Rockford, Ill. Application filed April 17, 1878.

1,521.—Title: "INK PHOTO."—*James B. Medlar*, Rockford, Ill. Application filed April 17, 1878.

1,522.—Title: "OUR FAVORITE NURSING-SHIELD."—*John W. Patch*, Boston, Mass. Application filed April 29, 1878.

1,523.—Title: "PURO HABANA."—*Schmidt & Co.*, New York, N. Y. Application filed April 30, 1878.

1,524.—Title: "SCOTT'S COCOANUT MACAROONS."—*Charles L. Scott*, Philadelphia, Pa. Application filed April 30, 1878.

1,525.—Title: "ROCK CITY SHEETING."—*The Tennessee Manufacturing Company*, Nashville, Tenn. Application filed April 22, 1878.

1,526.—Title: "WHITLOCK'S KEY WEST."—*P. Whitlock*, Richmond, Va. Application filed April 25, 1878.

1,527.—Title: "DR. CASE'S COUGH CORDIAL."—*P. W. Ziegler* and *M. W. Case*, Philadelphia, Pa. Application filed March 23, 1878.

1,528.—Title: "DOCTOR CASE'S LINIMENT AND CANCER CURE."—*P. W. Ziegler* and *M. W. Case*, Philadelphia, Pa. Application filed March 23, 1878.

1,529.—Title: "DR. CASE'S LIVER REMEDY."—*P. W. Ziegler* and *M. W. Case*, Philadelphia, Pa. Application filed March 23, 1878.

1,530.—Title: "WOOD TAG."—*The Pioneer Tobacco Company*, Brooklyn, N. Y. Application filed May 1, 1878.

DESIGNS.

[Each design bearing date May 7, 1878.]

10,665.—FONT OF PRINTING-TYPES.—*James M. Conner*, Greenville, N. J. Application filed April 25, 1878. Term of patent 14 years.

10,666.—CARPETS.—*Etienne Guireau*, New York, N. Y. Application filed April 20, 1878. Term of patent 3½ years.

10,667 and 10,668.—FONT OF PRINTING-TYPES.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Applications filed April 12 and 25, 1878. Term of patents 14 years.

10,669.—FONT OF PRINTING-TYPES.—*William W. Jackson*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed April 12, 1878. Term of patent 14 years.

10,670 to 10,672.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed April 25, 1878. Terms of patents 3½ years.

10,673.—FONT OF PRINTING-TYPES.—*Richard Smith*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed April 13, 1878. Term of patent 14 years.

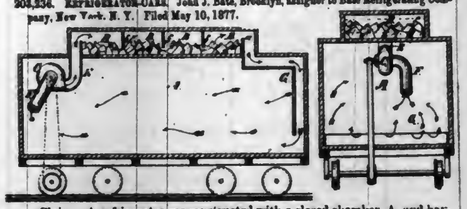
10,674.—CARPETS.—*Thomas J. Stearns*, Boston, Mass., assignor to *Roxbury Carpet Company*, same place. Application filed April 22, 1878. Term of patent 3½ years.

10,675 and 10,676.—BOTTLES.—*Charles A. Tatum*, New York, N. Y., assignor to *himself, James Whitall, R. Pearsall Smith, John Mickle, Jr., Charles Roberts*, and *William H. Nicholson*. Applications filed April 12, 1878. Term of patents 7 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

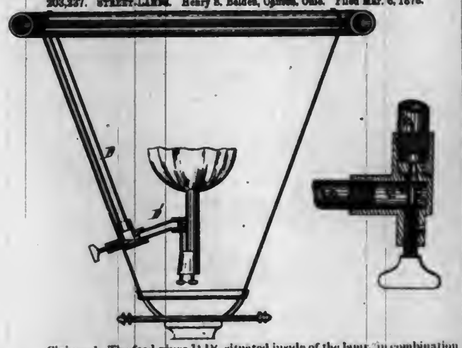
MAY 7, 1878.

203,236. REFRIGERATOR-CARS. John J. Bate, Brooklyn, assignor to Bate Refrigerating Company, New York, N. Y. Filed May 10, 1877.



Claim.—A refrigerator-car constructed with a closed chamber, A, and having the horizontal ice-box B provided centrally in its roof, a fan-blower, C, at one end of the car, and a vertical partition at the other end, having one or more openings for the passage of air, the air-fan C being located at the end, to insure the repeated and continuous circulation of the air of the aforesaid chamber lengthwise and horizontally through the ice-box and from end to end of the closed chambers, the whole combined for operation substantially as and for the purpose herein set forth.

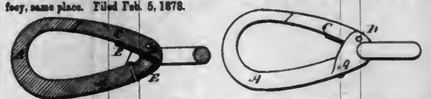
203,237. STREET-LAMPS. Henry S. Bolden, Canton, Ohio. Filed Mar. 6, 1878.



Claim.—1. The feed-pipes D D', situated inside of the lamp, in combination with a valve-rod projecting through the wall of the lamp to control from the outside the flow of oil, as set forth.

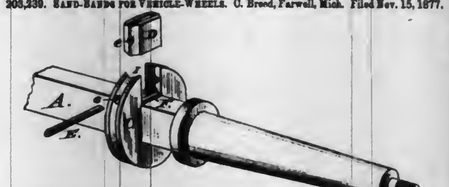
2. In combination with the feed-pipe, a chamber situated upon the inside of the lamp for collecting impurities, and a duct extending through the wall of the lamp to withdraw such impurities on the outside, as set forth.

203,238. SNAP-HOOKS. Clarence P. Bonfoey, Middletown, Conn., assignor to Emma G. Bonfoey, same place. Filed Feb. 5, 1878.



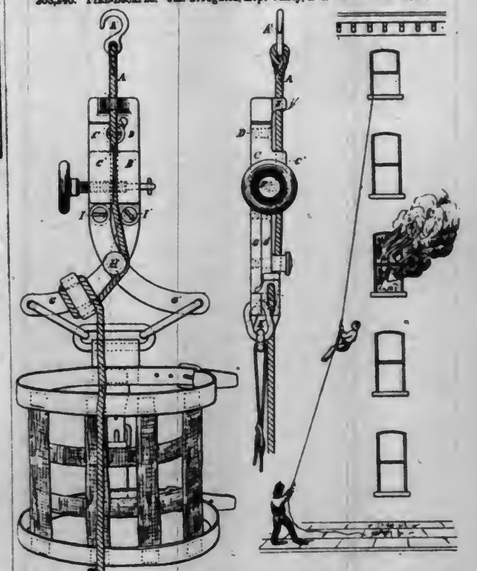
Claim.—The spring E, of the form described, in combination with the shank A and the hinged tongue C, when attached to the outer side of the shank and operating upon the inner side of the tongue, substantially as herein set forth.

203,239. SAND-BANDS FOR VEHICLE-WHEELS. C. Brod, Farwell, Mich. Filed Nov. 15, 1877.



Claim.—The combination of the axle A, slotted disk or band C, key-block D, and pin E, operating substantially as and for the purpose specified.

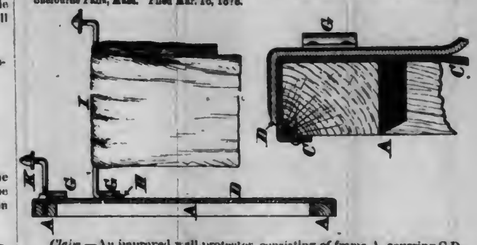
203,240. FIRE-ESCAPES. Jas. Broughton, Hope Valley, R. I. Filed Nov. 1, 1877.



Claim.—1. In a fire-escape, the combination of a suspending-rope, a pair of pivoted gripers operated by hinged levers, and a regulating-screw with a secondary friction apparatus, adapted to engage with the free end of the rope, substantially as set forth.

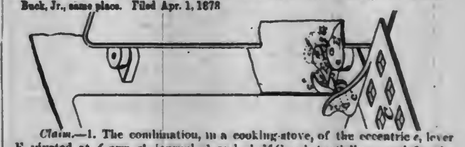
2. The combination of the rope A, gripers B' C', levers G G', and screw F with a suitable seat and harness for the operator, and secondary friction device, enabling said operator to control the speed of descent, substantially as and for the purposes set forth.

203,241. WALL-PROTECTORS. Geo. C. Bovey, Columbus, Ohio, assignor to Abner Woodward, Shelburne Falls, Mass. Filed Mar. 16, 1878.



Claim.—An improved wall-protector, consisting of frame A, covering C D, sockets G, readily-detachable swinging arms H I, and fixed ring-support K, as herein described and set forth.

203,242. STOVE-OVEN SHELVES. Benjamin F. Clement, St. Louis, Mo., assignor to Chas. H. Beck, Jr., same place. Filed Apr. 1, 1878

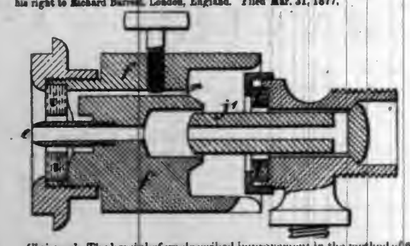


Claim.—1. The combination, in a cooking-stove, of the eccentric *e*, lever F, pivoted at *f*, arm e^3, journal e^2, and shelf C, substantially as and for the purpose described.

2. The combination, in a cooking-stove, of the eccentric *e*, lever F, pivoted at *f*, and having the part *f'*, the arm *e'*, journal *e²*, and shelf C, substantially as and for the purpose described.

3. The combination, in a cooking-stove, of the eccentric *e*, lever F, pivoted at *f*, and having the part *f'*, and beveled at *f²* and *f⁴*, the arm *e'*, journal *e²*, and shelf C, substantially as and for the purpose set forth.

203,243. APPARATUS FOR FILLING BOTTLES. Hiram Codd, Camberwell, assignor of one-half his right to Richard Barnes, London, England. Filed Mar. 31, 1877.



Claim.—1. The hereinbefore-described improvement in the method of filling bottles having internal stoppers, which consists in placing the bottle in a sliding holder, adjusting its head to the filling-nozzle, and, when filled, quickly withdrawing it endwise from the nozzle by a sudden movement of the holder, which causes the stopper to come up to the mouth of the bottle and close it.

2. The combination, substantially as hereinbefore set forth, of a sliding bottle-holder, a filling-head or nozzle, and means for imparting to the holder a sudden movement away from said nozzle.

3. The combination, substantially as hereinbefore set forth, of a sliding bottle-holder, a sliding filling-head or nozzle, toward and away from which said holder moves, carrying the bottle endwise, the valve-stem to admit liquid to said sliding head, and its valve, automatically opened by the pressure of the bottle-head and closed by its sudden withdrawal.

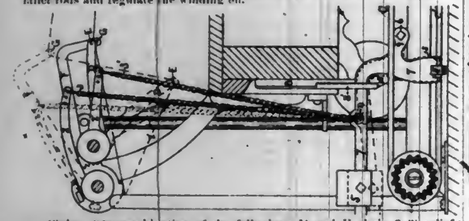
4. The combination of the bottle-holder *c*, the valve *j*, and movable block *f* in front of valve, and pressed forward by springs or equivalent means, the whole acting substantially as herein described.

5. The combination, substantially as hereinbefore set forth, of the sliding head or nozzle, its springs, its front packing ring, its back packing-ring, the fluid pipe, the valve-stem, and the valve.

6. The combination of the inclined table, the rods, the bottle-holder sliding thereon, the sliding head, its springs, the packing, and the valve, these members being constructed and operating substantially as herein before set forth.

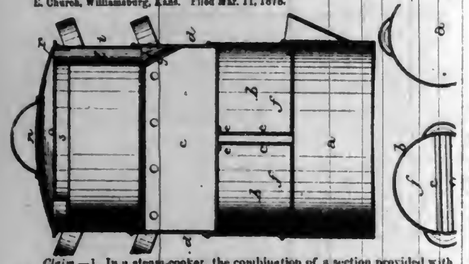
203,244. WINDING-ON REGULATORS FOR SPINNING MULES AND JACKS. Chas. H. Colbrook, Millbury, assignor of a part of his right to William Whitworth and Moses W. Wheeler, same place, and Jonathan Lothe, Worcester, Mass. Filed Nov. 9, 1877.

Brief.—By the arrangement of the adjustably-weighted lever and its accessories, acting upon the relief-cord, any resistance from the gear-head will be in a direction out from the gripe, and thus control the tension of the yarn on the faller-rods and regulate the winding on.



Claim.—The combination of the faller-bars H and F, chain 3 3', relief-cord C C', lever 7, provided with the gripe portion 13, and the adjustable weight 5, with the hanger 8, having the slot 8' and hook portion 11, substantially as described, whereby the said lever is hung, with reference to the direction of its swing and the movement of the relief-cord, so that the resistance from the gear-head through the cord shall be in a direction outward from the gripe, all as specified.

203,245. STEAM-COOKERS. Cyrus Corning, Lawrence, assignor of one-half his right to George E. Church, Williamsburg, Kans. Filed Mar. 11, 1878.



Claim.—1. In a steam-cooker, the combination of a section provided with the partitions *c*, having the cut-away portion or end *g* and walls A, with a section having a tube, *l*, leading up through one side, substantially as shown.

2. In a steam-cooker, a cover or section provided with a perforated bottom, *o*, substantially as described, in combination with a steam-tube, *l*, as and for the purposes specified.

3. In a steam-cooker, a cover or section provided with a projection, r, in combination with a lower section, having the partitions *c* cut away at one end, and the walls *h*, substantially as specified.

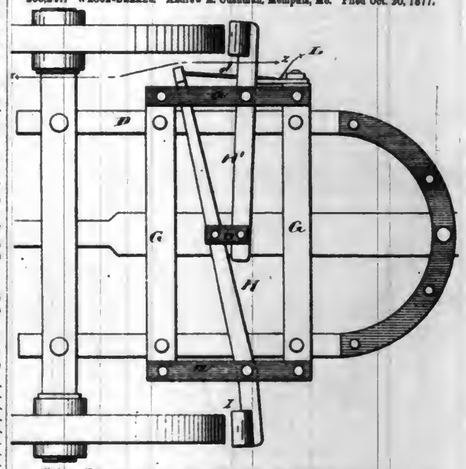
4. In a steam-cooker, the combination of the water-section *a*, sections *b d*, each having partitions *c*, holes *e*, walls *h*, section *i*, having tube *l*, and cover *u*, having a bottom, *o*, the parts being arranged and combined for operation substantially as set forth.

203,246. CARRIAGE-TOP PROPS. Henry S. Crandal, Binghamton, N. Y. Filed Apr. 6, 1878.



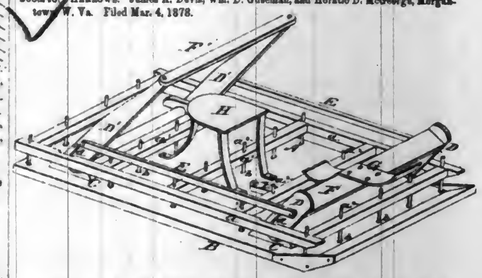
Claim.—The plate-socket having opposite notches, and the screw-bolt collar having notches adapted to coincide therewith, in combination with the covering washer or cap having interior ribs or projections adapted to fit in said coinciding notches, and to cross the shoulder and socket junction or lap, to lock the parts together, as specified.

203,247. WAGON-BRAKES. Andrew R. Cushman, Memphis, Mo. Filed Oct. 20, 1877.



Claim.—The frame G *a*, secured to the rear bounds of a wagon, in combination with pivoted levers H H', brake-shoes I I, and operating mechanism, substantially as shown and described.

203,248. HARROWS. James A. Davis, Wm. D. Guseman, and Horatio D. McGeorge, Morgantown, W. Va. Filed Mar. 4, 1878.



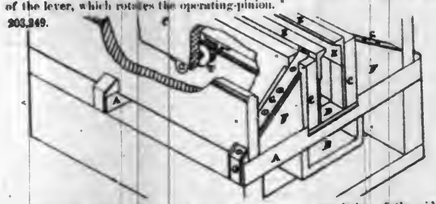
Claim.—1. The combination, with the perforated runner or base B and vertically-adjustable harrow-frame A, of the levers D D', pivoted, respectively, to the forward and rearward portions of said runner, cross-bars F F, the links *d d*, connecting said levers to the frame A, and the side bars E, coupling the levers, for conjoint operation substantially as described.

2. The winged foot-plate G, in combination with the connecting-bar F, levers D D', harrow-frame A, runner B, and links *d*, substantially as described, and for the purpose set forth.

203,249. ROPE TRAMWAYS AND APPARATUS. Thomas H. Day, San Francisco, Cal. Filed Sept. 3, 1877.

Brief.—The vertical side timbers of tube rest upon metal shoes in upper surface of ties, and have angle-irons attached to their upper edges, forming slot for griper-stem. Where it is desired to leave one track and cross onto another, an inclined horizontal plane or projection is situated in tube, and as the hinged or pivoted griper bears against it, it is turned upon its pivot and caused to lie in almost a horizontal position, thereby clearing the tube (which at this point is open on top) and permitting car to pass unobstructed to other line. A drain-gutter is provided just below the cross-ties. The griper-jaws are operated by hand-wheel on screw-rod, which takes into a link-nut on end of the lever, which rotates the operating-pinion.

203,249.



Claim.—1. An improved rope-tramway, consisting of the side timbers C, seated upon the shoes D on the surface of the ties, and having the angle-iron girders E bolted to them, so that the flange will form the slot for the travel of the gripe-stem, substantially as herein described.

2. In combination with the rope channel or tube C, built upon the surface of the ties, as shown, the gutter B beneath the tube and ties, substantially as herein described.

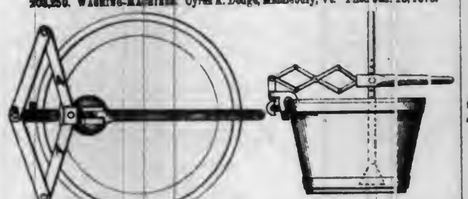
3. The rope channel or tube C, built upon the surface of the ties A, and provided with the gutter B beneath, in combination with the pulleys T, having their journal-boxes secured beneath the timbers C, substantially as herein described.

4. The inclined lug or projection H upon the rope tube or channel, in combination with the griping apparatus, hinged to the dummy at J, so that the lug will throw it out of contact with the rope and out of the tube, substantially as and for the purpose herein described.

5. The vertically-moving jaws K and L, with their rack-bars M N, operating-pinion O, and lever Q, in combination with the nut P and screw R, substantially as herein described.

6. A rope-griping device hinged to the car or dummy I so that it may move with its jaws within the tube, so as to gripe the rope or be thrown out of the tube and sever the connection, substantially as herein described.

203,250. WASHING-MACHINES. Cyrus A. Dodge, Middlebury, Vt. Filed Jan. 18, 1878.



Claim.—1. In a pounder washing-machine, the combination, with a pounder-shaft having a pounder attached thereto, of an actuating-lever pivoted to a stationary fulcrum attached to the tub, said lever composed of two or more parts, which parts are arranged and combined in such a manner that that portion of the lever between the pounder-shaft and fulcrum may be expanded or contracted in length, whereby the pounder may be carried to any part of the tub by means of a lever, one end of which is pivoted to a fulcrum and maintains a fixed relative position thereto at all times, substantially as set forth.

2. In a pounder washing-machine, an actuating-lever consisting of bars or levers pivoted to each other and to a swiveled or pivoted fulcrum at one end, while their opposite ends are pivoted to a handle carrying the pounder-shaft, substantially as set forth.

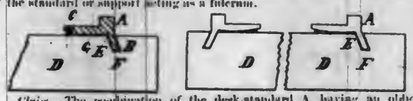
203,251. COMPOSITION FRAMES FOR HAND-MIRRORS, BRUSHES, &c. Geo. Eastman, Newton, Mass. Filed Feb. 11, 1878.



Claim.—The combination of a molded plastic material surrounding or partially surrounding metallic ornamental inlays, with said metallic ornamental inlays strengthened around their exterior upon their inner surface by a continuous wire or other continuous projection, and fastened to said molded material by rivets passing through the same and clinched upon the other side, or pins passing well into the material, substantially as and for the purpose described.

203,252. SCHOOL-DESKS. George Elsey, Springfield, Mass., assignor of one-half his right to Elisha Risley, same place. Filed Apr. 4, 1878.

Brief.—The opposite standards or seat-irons are formed with oppositely-inclined flanges, to be inserted in corresponding slots or grooves in the seat or back slats, and may be tightened therein by a screw, and the rounded portion of the standard or support acting as a fulcrum.



Claim.—The combination of the desk-standard A, having an oblique tenon, B, running parallel with the standard, and being a part of the same, also constructed with the rocking surface at G, and the slats D D, having a transverse angular slot, E F, corresponding with and fitting the tenon B on standard A, the same being held firmly together and in position by a screw, pin, tack, or nail at the point designated as C in the annexed drawing, for the purpose substantially as specified.

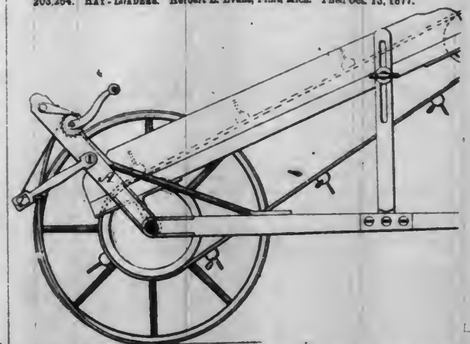
203,253. STEAM-BOILER FURNACES. Joseph Enright, San José, and John L. Heald, Vallejo, Cal. Filed Mar. 11, 1878.



Claim.—1. In a steam-boiler and furnace for burning straw as fuel, the grate G, supported centrally in the chamber W, so as to form the furnace F and ash-box G', bridge-wall W, arranged at the rear end of the grate, door D, hinged to the under edge of the bridge-wall, so that it will swing freely inward or outward, and extended combustion-chamber C, all arranged substantially as and for the purposes set forth.

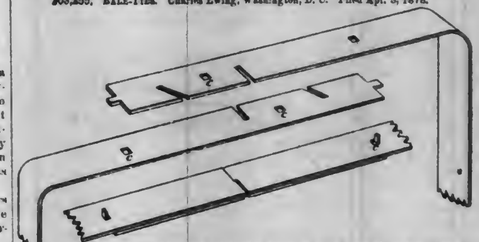
2. The door D, provided with the slot A, and hinged to the under edge of the bridge-wall W, adapted to have a free automatic swinging movement in either direction, and arranged to separate the combustion-chamber C from the ash-box G', substantially as set forth.

203,254. HAY-LOADERS. Herbert E. Evans, Flint, Mich. Filed Oct. 13, 1877.



Claim.—The loose rake teeth and their adjusting-drums, both mounted on the same shaft, in combination with intermediate connecting devices, substantially such as shown.

203,255. BALE-TIES. Charles Ewing, Washington, D. C. Filed Apr. 3, 1878.



Claim.—The herein-described bale-tie, made of sheet metal, in one piece, the same being provided with slits at the sides, adapted to receive and hold the inner portions of the band, said band being also provided with projecting tongues, which oppose a barrier to the lateral displacement of the ends when locked, substantially as and for the purposes set forth.

203,256. BRUSHES. Benjamin C. Frobisher, Brockton, assignor to Begelow C. Morse, Boston, Mass. Filed May 19, 1877.



Claim.—The combination of the brush, provided with screw-threaded thimble F and tube H, with cylinder A, piston B, casing J, and cap J', substantially as described.

203,257. MECHANICAL MUSICAL INSTRUMENTS. M. Gally, New York, N. Y. Filed Jan. 16, 1878.

Claim.—1. The combination, with the perforated music-sheet and mechanism for moving the same, of the roller I, provided with slipping gear, to cause the winding of the roll to correspond with the proper movement of the sheet, substantially as specified.

2. The combination, with a musical instrument and perforated or other music-sheet, of a rewinding mechanism, which is operative while music is being performed by the instrument, substantially as specified.

3. The combination of follower Y, air-chamber *a'*, and air-duct P with sheet O or other cut-off, substantially as specified.

4. The pneumatic key action, consisting, essentially, of follower Y, air-chamber *a'*, and air-duct P, with sheet O or other cut-off, in combination

with reeds, strings, bells, stops, pipes, or other devices for producing or effecting musical tones.

5. The pneumatic key action, consisting, essentially, of follower Y, air-chamber a^2, and air-duct P, with sheet O or other cut-off, having an inlet to the air-chamber, adapted to be closed, or a loose joint between the air-chamber and air-duct, adapted to be held closed by atmospheric pressure during the continuance of the exhaust, but which is thrown open by the momentary counteraction of such pressure by the recoil of the air in the partially-exhausted chamber a^2 when the exhaust is suddenly cut off, substantially as and for the purpose specified.

6. The combination, with an air-passage of a musical instrument, of a perforated music-sheet, in which perforations for the passage of air through the sheet, arranged in a single group, represents a single continuous tone, substantially as specified.

7. In a musical instrument, the tremolo, consisting of a flexible wall of the air-duct to or from the reed or pipe of a wind musical instrument, and a vibrator for vibrating the flexible wall, substantially as specified.

8. The valve-door or doors D E, operated directly or indirectly by the music-sheet, substantially as and for the purpose specified.

9. The valve-doors, (one or more,) in combination with the pneumatic key or keys Y, substantially as specified.

10. The tabs D', attached to or formed of a portion of the music-sheet, substantially as and for the purpose specified.

11. The tabs D', attached to or formed of a portion of the music-sheet, in combination with the recessed roller and stop N, substantially as specified.

203,257.



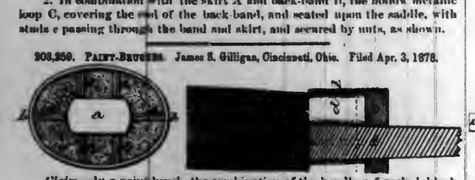
203,258. SADDLE-LOOPS. Algernon Gilliam, Pittsburg, Pa. Filed Mar. 16, 1878.



Claim.—1. The metal saddle-loop constructed with the hollow back to cover the end of the back-band, and with the studs located in said hollow back, as shown and described.

2. In combination with the skirt A and back-band B, the hollow metallic loop C, covering the end of the back-band, and seated upon the saddle, with studs e passing through the band and skirt, and secured by nuts, as shown.

203,259. PAINT-BRUSHES. James S. Gilligan, Cincinnati, Ohio. Filed Apr. 3, 1878.



Claim.—In a paint-brush, the combination of the handle *a*, ferrule *b*, block *c*, and partitions *d*, all the partitions being made to radiate from the center, whereby the act of driving in the handle into position will tighten the bristles in place in every section, substantially as shown and described.

203,260. PUMP-ROD ATTACHMENTS FOR DEEP WELLS. Vasco C. Gilmore, Petrolia, Pa. Filed Oct. 9, 1877.



Claim.—1. The combination of the adjustable piston-rod D, sleeve C, having seats *f f* and set-screws *d d*, tube B, and cross-head A, substantially as and for the purpose herein shown and specified.

2. In combination with an adjustable piston-rod for working deep wells, the cross-head A, having trunnions A' A' and eye *a*, substantially as and for the purpose herein shown and specified.

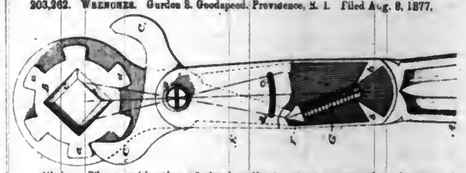
203,261. PIPE-WRENCHES. Lawrence Glynn, Cambridgeport, Mass. Filed Mar. 25, 1878.

Brief.—The shape of the nut and the slot in which it works allows the movable jaw to vibrate laterally.



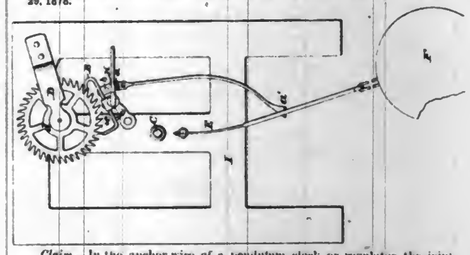
Claim.—The within-described wrench, consisting of the stationary jaw and shank *a b*, the stationary frame *d*, with its slots *e i i*, the egg-shaped nut *f*, the movable shank and jaw *h g*, and spring *k*, as and for the purpose set forth.

203,262. WRENCHES. Garden S. Goodspeed, Providence, R. I. Filed Aug. 8, 1877.



Claim.—The combination of the handle A, rotating cogged and grooved nut-holder D, double pawl C, pivot D, stem E, dog F, springs G and I, and catch H, arranged and operating substantially as described.

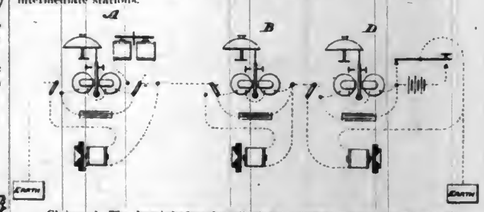
203,263. PENDULUM-ADJUSTMENTS FOR CLOCKS. H. O. Grawe, St. Louis, Mo. Filed Mar. 29, 1878.



Claim.—In the anchor-wire of a pendulum clock or regulator, the joint composed of the following parts: the strap H as attached to the anchor B, pivot *b*, adjustment-screw *a*, together with the radial slot *g* in the flattened and center-hung anchor-wire head *e*, as intermediate to the anchor B, and the pendulum F, combined with check-pins *c c*, for the purposes set forth, and as described.

203,264. CIRCUITS FOR SPEAKING-TELEPHONES. Elisha Gray, Chicago, Ill. Filed Mar. 11, 1878.

Brief.—For facilitating the transmission through the alarm-magnets of intermediate stations.



Claim.—1. The hereinbefore-described art of transmitting vocal sounds or spoken words through a bell-magnet or other signal-magnet and condenser arranged in branch circuits in a main line.

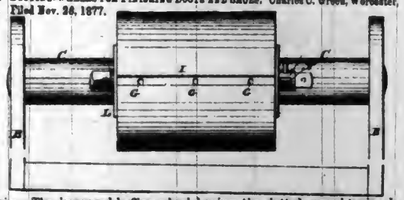
2. The hereinbefore-described art of transmitting vocal sounds or spoken words through a series of bell-magnets or other signal-magnets and condensers arranged in branch circuits in a main line.

3. The combination, substantially as hereinbefore set forth, in a speaking-telephone, of a bell-magnet or other signal-magnet and its actuating apparatus, a condenser shunting said magnet and actuating apparatus, and a telephone-magnet shunting said bell-magnet, actuating apparatus, and condenser, and a switch controlling the shunts.

4. The combination, substantially as hereinbefore set forth, in a Morse circuit, of a series of condensers shunting the relays at each station, telephone-magnets at two or more stations, and switches which simultaneously shunt the telephone-magnets into line and throw off the batteries.

5. The combination, substantially as hereinbefore set forth, in a single electric circuit, of a series of stations, each provided with a bell-magnet or other signal-magnet and its actuating apparatus, a condenser shunting them, a telephone-magnet shunting the bell-magnet, actuating apparatus, and condenser, and switches controlling the shunts, whereby the signal-magnet, actuating mechanism, and condenser at the transmitting-stations are cut out of circuit which passes through the corresponding apparatus at the intermediate stations, shunting the telephones.

203,265. BUFFING-WHEELS FOR FINISHING BOOTS AND SHOES. Charles C. Green, Worcester, Mass. Filed Nov. 26, 1877.



Claim.—The improved buffing-wheel having the slotted curved spring I, and the cam-shaft, with hooks G, adapted to and operated in said slotted spring, substantially as and for the purpose herein shown and described.

203,266. MANUFACTURE OF MANGANESE ALLOYS. Richard Hale, Ledyard, N. Y. Filed Nov. 30, 1877.

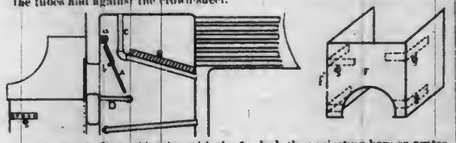
Claim.—1. The process of producing alloys of manganese with copper and other metals, as described, which consists in reducing manganese from its oxides, salts, or ore by means of reducing agents and fluxes, in the proportions as specified, in the presence of the metal to be alloyed, the proportion referred to being about one-sixth part of carbon and cryolite to one part of black oxide of manganese, when these materials are used, and, in general, such that nearly all the carbon is consumed in the operation, and the remainder floats upon the top of the flux, as set forth.

2. In the art of making manganese alloys, the process which consists in maintaining, in a furnace, a suitable body of melted metal to float the slag, to protect the hearth, and to prevent chilling, and in adding from time to time a mixture of manganese ore, oxide, or salt, flux, and carbon, as described.

3. The continuous process for making alloys of manganese with the described metals, which consists in maintaining a suitable body of melted metal and adding thereto proper quantities of the mixture of manganese ore, carbon, and flux, and of the metal to be alloyed with manganese, as described, and drawing off from time to time the slag from the top and the alloy from beneath without reducing the body of metal below the point necessary to protect the furnace-hearth and prevent chilling, as specified.

203,267. STRAW-BURNING FURNACES. Cofran I. Hall, Vallejo, Cal. Filed Dec. 6, 1877.

Brief.—A series of grate-bars project into the furnace just below the doorway, over which the straw is fed. A deflector is hinged over the doorway, and in conjunction with an arch the cold air is prevented from passing into the tubes and against the crown-sheet.

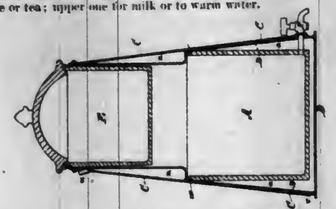


Claim.—1. In combination with the fire-bed, the projecting bars or grates D, having wide spaces between them, so as not to obstruct the entrance of air through the perforated door or doorway into or deflect the fire immediately below them, when applied to straw-burning furnaces, to prevent the fuel from falling on the fire-bed directly underneath, as and for the purpose herein described.

2. The plate A, when depending in front of the doorway from hinges attached above within the interior of the furnace, said plate acting in combination with the plates B and perforated fire-door or doorway, as and for the purpose herein described.

203,268. COFFEE-POTS. Chas. Halstead, New York, N. Y. Filed Oct. 19, 1877.

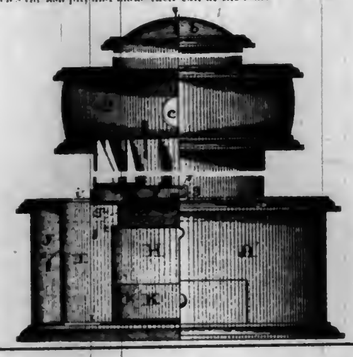
Brief.—A lower china vessel, inclosed by a jacket of tin, with perforated bottom and air-space, combined with an upper vessel of similar construction, provided with a water-space between the jacket and vessel. Lower vessel for coffee or tea; upper one for milk or to warm water.



Claim.—The combination of the china or earthenware vessel A, casing B, provided with perforated bottom D, and forming an air-chamber, *a*, around the inner vessel, and the outer casing C, with water-chamber *a* in its upper part, arranged substantially in the manner and for the purpose described.

203,269. HEATING-STOVES. Melville C. Hawley, St. Louis, Mo., assignor of one-eighth his right to John G. Ross, same place. Filed Feb. 27, 1878.

Brief.—The products of combustion dive through the grate into the ash-pit, pass to the front thereof, divide and pass into the flue, which partly encircles the ash-pit, and make their exit at the rear.



Claim.—1. The fire-pot D, having the corrugations E E, in combination with the grate F, the latter being of the size and arranged substantially as described.

2. The combination of the air-passages I I, hollow cross-plate G, hollow grate F, and hollow handle *f*, substantially as described.

3. The base A', having the ash-pit H, circular flue J, and air-passages I I, the latter being arranged between said flue and ash-pit, substantially as described.

4. The air-passages I I, having the inlet *l* and outlet *l'*, and the cross-plate G, having its upper plate *g'* extended partly across the passages I I, as and for the purpose described.

203,270. CURTAIN-FIXTURES. Hermann Herit, New York, N. Y. Filed Apr. 2, 1878.

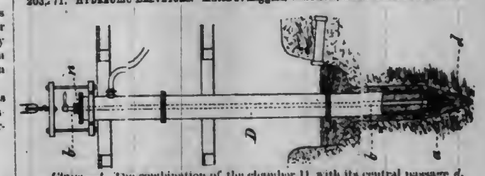
Brief.—A round bar, for support of a double curtain, is secured by set-screws in brackets at each end. The rings which support the curtains slide on the bar, and have on their lower sides clamps, consisting of two jaws, which are brought together by a sliding ring. The two central rings have at their upper inner part downwardly-projecting arms, which are attached to cords passing over pulleys at each end of the bar, whereby the curtains may be drawn together or pulled apart.



Claim.—1. A curtain-fixture composed of a roll or bar, A, in combination with sliding rings D D, having clamps E E, substantially as herein shown and described.

2. The roll or bar A, having the groove *a*, combined with the pulleys *i j*, rings D' and D', having arms *b b*, and clamps E E, and with the cord C, substantially as herein shown and described.

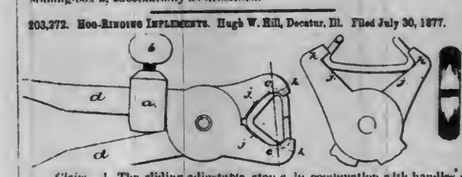
203,271. HYDRAULIC ELEVATORS. Milton P. Higgins, Worcester, Mass. Filed Feb. 1, 1876.



Claim.—1. The combination of the chamber D, with its central passage *d*, valve *a*, and rod *b*, substantially as described.

2. The combination of the chamber D, passage *d*, valve *a*, rod *b*, and stuffing-box *n*, substantially as described.

203,272. HOG-RINGING IMPLEMENTS. Hugh W. Hill, Decatur, Ill. Filed July 30, 1877.



Claim.—1. The sliding adjustable stop *a*, in combination with handles *d d*, as and for the purpose set forth.

2. Inclined planes *j j*, in combination with projections *h h*, as and for the purpose set forth.

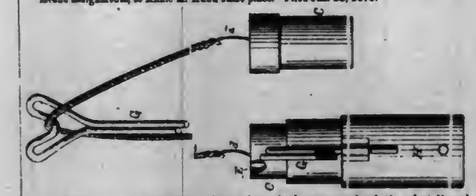
3. The combination, in the jaws of a hog-ringing implement, of a double groove, one within the other, and adapted to close ring-blanks whose contour differs in cross-section, as shown and described.

203,273. BOX-LOOPS FOR HARNESS. Wm. G. Hull, Sing Sing, N. Y. Filed Aug. 13, 1877.



Claim.—The box-loop for harness provided with a row or rows of holes through the outer part thereof, in line, or nearly so, with the stitches or other attaching devices at the back of the box, substantially as shown and described, and for the purpose specified.

203,274. LINE-THROWING APPARATUS. Edward S. Hunt, Weymouth, Mass., assignor, by mesne assignments, to Annie M. Hunt, same place. Filed Jan. 25, 1878.



Claim.—1. The projectile above described, composed of the shot B and coil-case C and coil D, the coil-case being open in front, and the shot B being much heavier than the coil-case and coil, the whole constructed and arranged

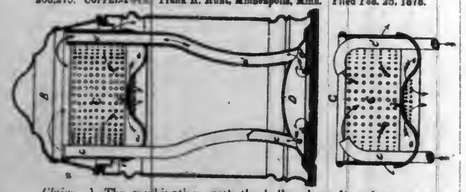
substantially as shown, and adapted to be fired with the mouth of the coil-case outward, and to reverse itself as soon as it leaves the gun.

2. The coil composed of a series of coils, packed with paraffine or its equivalent, substantially as described.

3. The supporter G, in combination with the gun H, substantially as and for the purpose specified.

4. The improved mode of throwing a line above described, consisting in using a hand-coil in connection with a shot-coil, the latter coil being in a case or holder, forming a part of and traveling with the shot, and the former coil being held stationary, the lines composing the two coils being joined together at their contiguous ends, all as above described.

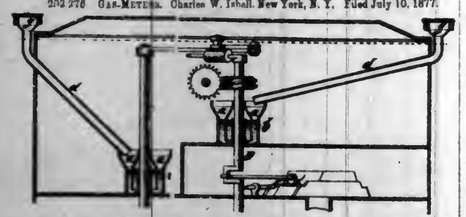
203,275. COFFEE-POTS. Frank H. Hunt, Minneapolis, Minn. Filed Feb. 26, 1878.



Claim.—1. The combination, with the hollow base D and one or more tubes *c c'*, of the accelerating plate or plates *d d'*, in the manner substantially as hereinbefore specified.

2. The combination, with the perforated basket C, of the sediment-trap *e*, arranged in the bottom thereof, substantially as hereinbefore specified.

203,276. GAS-METERS. Charles W. Isball, New York, N. Y. Filed July 10, 1877.



Claim.—1. The combination, with the spindles of a dry gas-meter, of a dip attached to said spindles, and revolving with them, and an annular cup attached to the partition-plate, through which said spindles pass, the dip being arranged to play in the cup, which is filled with mercury, substantially as and for the purposes set forth.

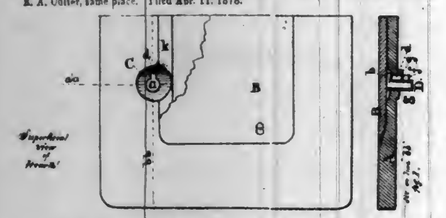
2. The combination, with the meter-case and the annular mercury-cups, of the tubes *d*, passing through said meter-case, and provided with stoppers outside of the case, substantially as and for the purpose specified.

203,277. DUST-SHOVELS. Jacob A. Johntry, Brooklyn, N. Y., assignor to Edward W. Owen, same place. Filed Dec. 6, 1877.



Claim.—As a new article of manufacture, the improved implement described, composed of the shovel A and brush B, jointly, the two devices being permanently attached together by means of suitable arms C, inclined or at an angle to the surface of the shovel, substantially as described.

203,278. STOVE-HEARTHS. Samuel A. Kinsey, Peoria, Ill., assignor to David C. Proctor and R. A. Colter, same place. Filed Apr. 11, 1878.

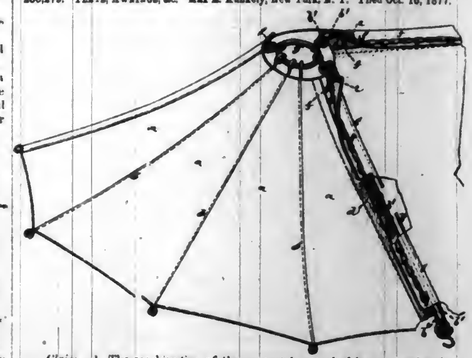


Claim.—1. In a swinging hearth plate, a pivotal socket and pin, in which the plate is caused to swing at a uniform horizontal position by means of an inclined surface around the pivot-hole above, with a corresponding inclined surface parallel therewith below, on the other side of the socket, both surfaces respectively traversed by corresponding bearing surfaces or lugs *f b*, the combined action of which surfaces and bearings, in swinging said plate open, to raise the latter out of its marginal recess by the passage of said bearings up the respective inclines C *g*, substantially as and for the purposes described.

2. In a stove-hearth, the inclined bearing-socket C and parallel lower incline *g*, in combination with lug *f* of pin D and bearing or lug *b* of plate B, substantially as and for purposes described.

3. In a hearth and swinging stove-hearth plate, the obverse bearing-socket C, inclined toward the inner edge of the plate, and reverse bearing *g*, parallel to each other, in combination with the socket-hole *a d*, pin D, lug *f*, and bearing *b* of the plate B, substantially as and for the purposes described.

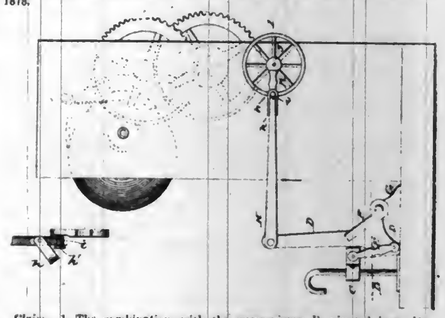
203,279. TENTS, AWNINGS, &c. Max R. Kunkely, New York, N. Y. Filed Oct. 16, 1877.



Claim.—1. The combination of the separately-attached lap or overlapping piece S on the edge of either one part of the cover or awning, and having lacing-holes in it along or near its free edge, with the underlapping edge or portion of the adjacent part of the cover or awning or strip secured thereon, and the lacing-line or key *f* arranged back of the edge of said underlapping portion, substantially as specified.

2. The section-ropes *b' b'*, secured along the edges of two meeting parts of the cover or awning, and united at their opposite ends to the poles or supports of the tent, in combination with the lap or overlapping piece S and the lacing-line or key *f*, essentially as shown and described.

203,280. MOTORS FOR OPERATING PUMPS. John W. Law, Bloomington, Ill. Filed Apr. 15, 1878.



Claim.—1. The combination, with the pump-piston B, pivoted lever D, and intermediate connecting mechanism, of the clock work and intermediate connecting mechanism, consisting of the pitman-rod H, crank K, fly-wheel I, and shaft J, the several parts constructed and relatively arranged to operate substantially as herein shown and described.

2. The combination of the pitman-rod H, provided with the concavity *i* in one end thereof, and pivoted strap *h*, and the crank K, provided with the headed pin *h'*, whereby said pitman-rod and crank can be easily and readily connected or disconnected, substantially as herein shown and described.

203,281. DRAW-BARS FOR STREET-CARS. John W. Law, Bloomington, Ill. Filed Jan. 25, 1878.



Claim.—The link-shoe D, as described, with opening *d*^{2} and hole *d*^{3}, in combination with beam B of whiffletree A, coupling-pin G, with arms *g g'*, and coupling-head F, substantially as and for the purpose set forth.

203,282. MACHINES FOR MAKING HORSESHOE-NAILS. David B. Loring, Boston, Mass. Filed Mar. 16, 1878.

Brief.—The position on the nail-plate, which the dog for tripping the clutch-actuating mechanism is to occupy, is accurately determined by a hooked lever pivoted to the dog. This lever is swung up out of the way after the dog has been attached to the plate.

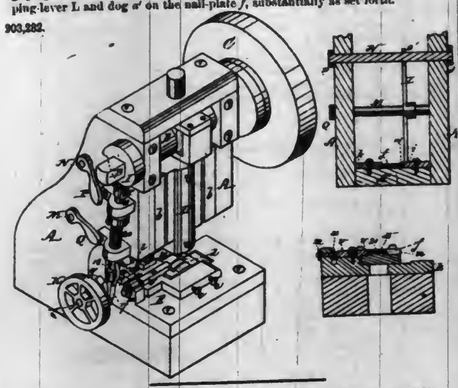
Claim.—1. In a machine for making horseshoe-nails, the combination of the plane-surfaced feed-roll G with the feed-roll H, provided with a central roughened portion, *t*, and two grooves, *s s*, for the reception of the ribs or flanges of the nail-plate passing between the rolls, but of greater depth than the thickness of said ribs, whereby the plate is fed forward positively, and also prevented from moving laterally with relation to the dies, substantially as described.

2. The adjustable guide and clearer *c*, arranged at one side of the line of feed and projecting out over the edge of the nail-plate between the dies, in combination with the bar *u* and its clearer 21, substantially as and for the purpose set forth.

3. The dog *a'*, with its gage *c'* and clamp *b'*, attached to the nail-plate *f*, in combination with a mechanism to be operated by the dog for stopping the machine when the connecting-joint between two nail-plates has been severed by the punch, substantially as described.

4. The rock-shaft N, with its catch or projection *d'* and arm *f'*, for disengaging the clutch mechanism of the pulley C, in combination with the tripping-lever L and dog *a'* on the nail-plate *f*, substantially as set forth.

203,282.

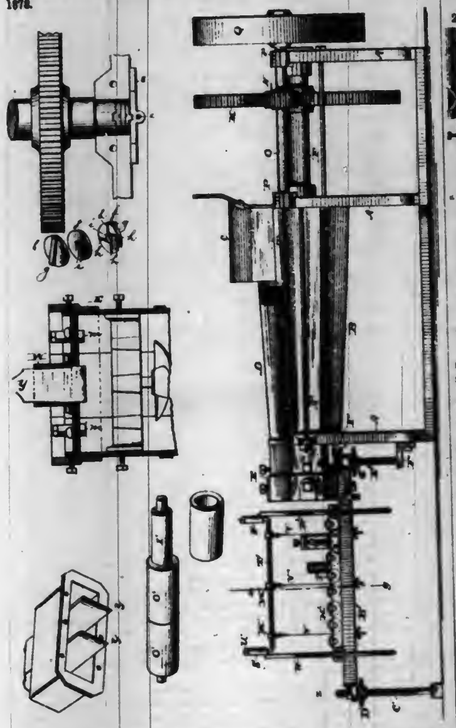


203,283. HAIR-BRUSHES. Daniel B. Lovejoy, Reading, Mass. Filed Mar. 11, 1878.



Claim.—A brush composed of a supplementary back, A', a sheet of elastic material, *s*, united or otherwise secured to the edges of the back A', and studded with wire teeth or points, and a back, A, having a recess, I', to receive the supplementary back A' and cover the fastenings and edges of the sheet *s*, the supplementary back A' being suitably secured to the back A, as set forth.

203,284. BRICK AND TILE MACHINES. Joseph C. McKenzie, Adrian, Mich. Filed Mar. 14, 1878.



Claim.—1. In a brick or tile machine, the combination of the extension E and an adjustable dod-plate, substantially as described.

2. The combination of the guard *p* and dod-plate, said guard being constructed and arranged to prevent clay from passing around the sides of the dod-plate, substantially as described.

3. The core-bar G, adjustable and removable, which also serves as a bearing for the front end of the grinding-shaft, substantially as shown and described.

4. In a brick and tile machine, a tapering shaft, F, substantially as described, provided with an angular end, and gradually enlarging in its diameter as the point is receded from, so as to facilitate the removal of the sleeves.

5. The combination of a tapering grinding-shaft having a flattened or angular end, substantially as described, with the sleeve K, constructed with spiral blades L, as shown, and for the purpose set forth.

6. The collar F^w, rigidly attached to the shaft, and provided with an interlocking lug, in combination with the sleeve I, substantially as shown and described.

7. The combination of the carriage H', vertical arms J', roller K', and spring L', substantially as shown and described.

8. The combination of a tapering grinding-shaft having a flat end, and provided with detachable radial grinding-knives, and a forcing-screw with the cap *e*, for holding the sleeves in place, and serving as a spindle for supporting this end of the grinding-shaft, substantially as described.

9. The combination of the washers *f*, *j*, and *k*, constructed substantially as described, with the shaft F and bearing G, provided with a perforated cap, H, as and for the purpose set forth.

10. The combination of the grinding-shaft, in a brick or tile machine, with the counter-shaft O, supported by bearings and arranged a suitable distance above the grinding-shaft, substantially as shown, and for the purpose set forth.

11. In a brick or tile machine, a tapering grinding-chamber, provided with a hopper, C, extension E, and detachable back D, all constructed and arranged substantially as shown and described.

12. A brick-mold provided with partitions Y, extending out of the mold, substantially as described, for the purpose set forth.

13. The combination of the screw-posts C' and E', provided with nuts D' and G', for adjustably supporting the cutting-table, as set forth.

14. The combination of the table-frame B' with the carriage H' and rollers I', provided with one or more sleeves, O', substantially as described.

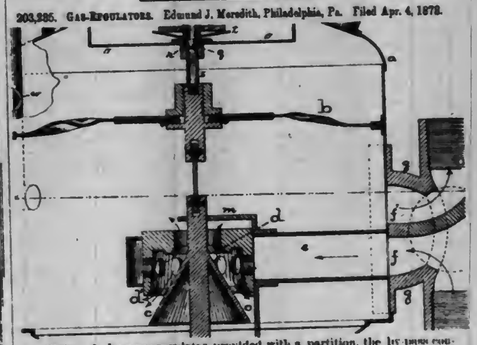
15. The combination of the carriage H' with the bar Q and frame R', substantially as shown and described.

16. The combination of the frame R', handle S', adjustable bar T', and movable collars W' with the table-frame B', carriage H', bar Q', collars X', thumb-screws Y', and wires V', all constructed, arranged, and operating substantially as shown, and for the purpose set forth.

17. In a brick or tile machine, a tempering-chamber, B, provided with a removable top, D, substantially as described.

18. The brick-molds W, having the center mold constructed with projecting sides, and of a smaller size than the section on either side, substantially as described.

203,285. GAS-REGULATORS. Edmund J. Meredith, Philadelphia, Pa. Filed Apr. 4, 1878.

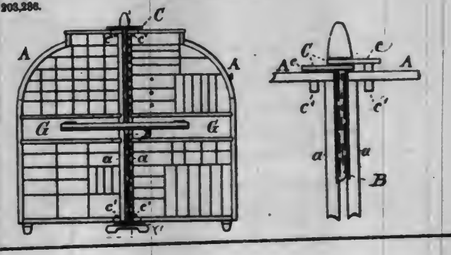


Claim.—1. In a gas-regulator provided with a partition, the by-pass consisting of the body *g*, having the apertures *f f'*, and the recessed plug *h*, constructed and operated substantially as set forth.

2. The combination of the gas-regulator, having the channel *e*, with the by-pass, consisting of the body *g*, provided with the apertures *f* and *f'*, and the recessed plug *h*, constructed and operating substantially as set forth.

3. The combination of the partition *s*, small cone-valve *q*, leather diaphragm *b*, and a regulating-valve, whether inserted in the channel *e* or in a partition located horizontally below the leather diaphragm between the apertures *f* and *f'*, all constructed and operating in the manner and for the purpose substantially as set forth.

203,286.

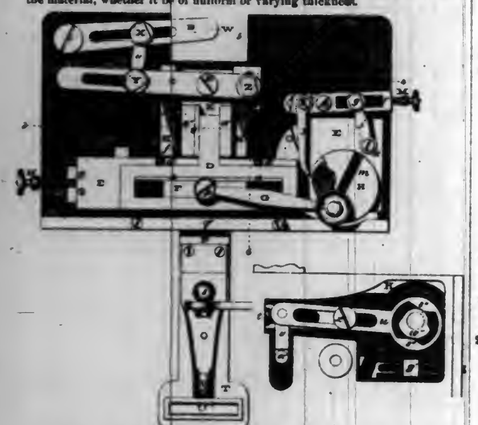


203,266. MINDER FOR CABINET-DESKS, &c. Joseph A. Moore, Indianapolis, Ind. Filed Jan. 28, 1878.

Claim.—In combination with the folding wings A A, the upright B and metallic plates or arms C C, attached to each end of said uprights, each of which may be made in either one or two parts, and is connected to bearings on said wings by the pins *c c*.

203,267. BUTTON-HOLE ATTACHMENTS FOR SEWING-MACHINES. George M. Morris, Cohoes, and Joseph P. Hollenbeck, Troy, assignors to Edward O. House, Troy, N. Y. Filed Nov. 2, 1877.

Brief.—The button-hole receives a lateral reciprocation from a cam on the sewing-machine, acting through a series of levers, and is fed to the stitching devices by means of a crank and connection, the former of which is adjustable, to adapt the attachment to stitch button-holes of different lengths. A cam, acting through a lever and suitable connections, serves to change the position of the button-hole under the needle to stitch the opposite side of the same after it has completed the first, the button-hole being held by a clamp pivoted to the end of a lever in such a manner that the said clamp will securely hold the material, whether it be of uniform or varying thickness.



Claim.—1. The combination, with the bed plate A of a button-hole attachment and the sliding plate E, gibbed thereon, and carrying the cloth carrier or clamp, of levers C and B, and mechanism, substantially as described, for operating the same, whereby the proper lateral reciprocating movement is imparted to the cloth carrier or clamp, substantially as specified.

2. The combination, with the laterally-reciprocating feed-bar, provided with a cloth clamp or carrier and a revolving crank-wheel, of a pitman for connecting the two, and mechanism, substantially as described, for operating said crank-wheel, whereby the proper longitudinal reciprocating motion is imparted to the cloth clamp or carrier, essentially as explained.

3. The combination of the crank-wheel H, and mechanism, substantially as described, for operating the same, with the longitudinally and laterally movable feed-bar P and the pitman G, uniting the two parts, as at *p* and I, substantially as shown.

4. The combination, as before set forth, of a crank-wheel having feed-teeth arranged therein in circular form, one or more feed-dogs engaging with said teeth, and a feed-lever having an adjustable arm, connecting it with the sliding plate E, by means of which a uniform motion is imparted by the crank-wheel and pitman to the feed-bar, for the purposes explained.

5. The combination, as before set forth, of the feed-bar, a revolving crank-wheel, having teeth arranged upon arcs of circles having different chords, feed-dogs engaging with said teeth, and mechanism, substantially as described, for operating said feed-dogs, and a pitman uniting said feed-bar and crank-wheel, for the objects named.

6. The combination of the crank-wheel, mechanism for revolving the same, and the change-plate D, with the cam *w*″, attached to the shaft of said wheel, and a lever connected with the said change-plate D by an arm, substantially as herein described, for the purpose of moving the change-plate, in order to bring the unstitched side of the button-hole under the needle at the proper time, for the objects named.

7. The combination, with the change-plate D and cam *w*″, of the cam-lever *z*, having an adjustable fulcrum, whereby the movement of the change-plate may be regulated, substantially as and for the purposes set forth.

8. The combination, as before set forth, of change-plate D, lever *w*, cam *w*″, knee arm *v*, levers G H, and sliding plate E, for the purpose of carrying the unstitched side of the button-hole under the needle.

9. The combination, as before set forth, of feed-lever C″, dogs J′ J″, toothed crank wheel H, and the adjustable arm *j*, by which the fineness or closeness of stitch may be regulated, as explained.

203,268. CURRY-COMBS. Noah W. Mottinger, Massillon, Ohio. Filed Sept. 22, 1877.



Claim.—1. A curry-comb back formed or provided with grooves, or their equivalents, along its ends to receive the comb-card, which is slid in from the side of the back, substantially as described.

2. A curry-comb back formed or provided with grooves, or their equivalents, along its ends, and a shoulder or offset along the front end, substantially as described, and for the purposes hereinbefore set forth.

3. In a curry-comb, the back formed or provided with grooves, or their equivalents, along its ends to receive the comb-card, which is slid in from the side of the back, and the card secured thereto by a single screw or rivet, to prevent the same from displacement, substantially as described.

203,269. SOFA-BEDSTEADS. Wm. J. Myers, Hartford, Conn. Filed Aug. 13, 1877.



Claim.—The detachable arm H, sliding upon inclined grooves at its ends, for covering and concealing the wire pillow F G, substantially as herein described.

203,290. SCALE-BEAMS. Alonzo R. Pearson, St. Louis, Mo. Filed Dec. 8, 1877.

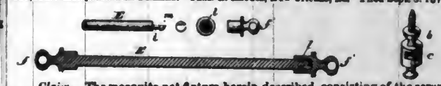


Claim.—1. The counterpoise B, attached to the scale-beam A by a swivel, as and for the purpose set forth.

2. The scale-beam A, formed with a transparent face of glass, mica, or other suitable substance, behind which is placed a printed scale, as and for the purpose set forth.

3. The counterpoise B, formed with a transparent face of glass, mica, or other suitable substance, behind which is placed a printed scale, as and for the purpose set forth.

203,291. MOSQUITO-BAR FRAMES. Chas. E. Rhodes, New Orleans, La. Filed Sept. 3, 1877.



Claim.—The mosquito-net fixture herein described, consisting of the screw-studs *b*, provided with slots *c*, the side rods *d d*′, eye-pieces *f f*′, and cross-rod E, the two latter joined together by a groove, *i*, and key *l*, as described, and for the purpose specified.

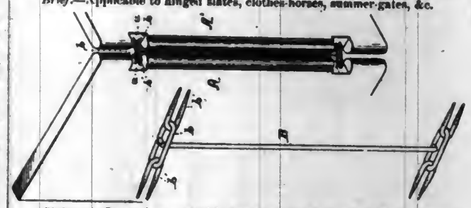
203,292. HORSE-POWER MILLS. Wm. C. Pitts, San Marcos, Tex., assignor of one-half his right to J. M. Bishop, same place. Filed Mar. 28, 1878.



Claim.—The track *a*, having both a cogged and a smooth surface, *c*, in combination with the wheels *f*, having corresponding surfaces, shafts *l*, wheels *l*, pinion *n*, and mill *o r*, the mill being supported at its inner end upon a pivot, substantially as shown and described.

203,293. REVERSIBLE HINGES. Christian F. Rapp, Cincinnati, Ohio. Filed Oct. 2, 1877.

Brief.—Applicable to hinged slates, clothes-horses, summer-gates, &c.



Claim.—1. In combination with the parts A A′, the wire link B, having an eye, *b*, at each end, and the securing-staples *b*′.

2. In combination with the parts A A′, having the recesses *a a*, the wire link B, having the projecting eyes *b* and the staples *b*′, as described.

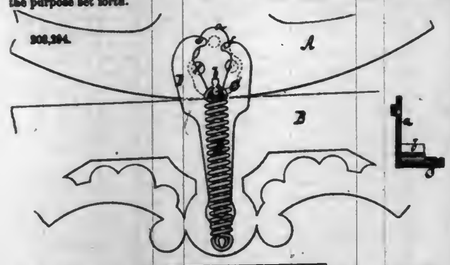
3. As a new article of manufacture, the wire link B, having an eye, *b*, at each end, substantially as described.

203,294. ROCKING-CHAIRS. Frank Ebener and Siegfried Willershausen, New York, N. Y. Filed Mar. 28, 1878.

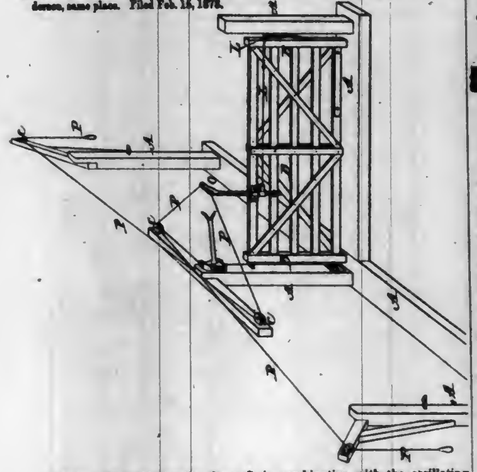
Claim.—1. A stop for rocking-chairs, consisting of a stop-pin projecting laterally from a suitable plate, and having secured thereto a cushion of india-rubber or similar material, and two counter-stops or arms projecting from a separate plate and arranged on each side of said pin, both of said plates being adapted for attachment to the rocker and base-frame, respectively, of a rocking-chair.

2. The combination of the rocker A and base-frame B of a rocking-chair with the plate *a*, having the projecting pin C, provided with the cushion *b*, the plate D, having the hooked forks *a f* extending above the stop-pin, and the spring connecting the stop-pin with the base-frame, substantially as and for the purpose set forth.

203,294.



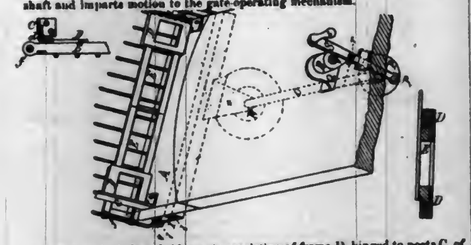
203,295. GATES. Peter H. Rada, Clinton, Wis., assignor of one-half his right to Oliver Anderson, same place. Filed Feb. 15, 1878.



Claim.—The self-adjusting lever S, in combination with the oscillating lever O, latch L, pull-cords P, and pulleys C, substantially as and for the purpose specified.

203,296. DRAW-BRIDGE GATES. Peter Schaefer, Lake, (Chicago P. O.,) Ill. Filed Apr. 1, 1878.

Brief.—The gates slide and swing in hinged frames by means of pivoted levers connected to racks in a guide-frame, said racks operated by a pinion which is operated by a clutch on a horizontal shaft by intermediate bevel-gearing. A clutch at the end of a horizontally-moving shaft below the draw-span engages with the gate-clutch by means of a lever extending up through the draw-span, and having a crank-arm. Pulling back the lever slides forward the shaft and engages the clutches. Pulling up the crank-arm rotates the shaft and imparts motion to the gate-operating mechanism.



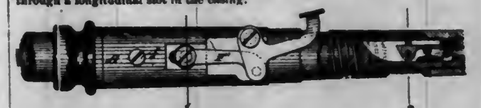
Claim.—1. A draw-bridge gate consisting of frame D, hinged to posts C, of sliding gates E, pivoted to levers F, racks G, guide-plate I, having stops *j*, and pinion H, in combination with a suitable operating mechanism, all of which is to operate substantially in the manner herein set forth.

2. A bridge-gate actuated from a shaft, M, having clutch *a*, in combination with the clutch N, attached to the laterally-moving shaft O, having crank-disk P, and being suspended in suitable journal-boxes under the draw-span of the bridge, in connection with the crank R, stand Q, and bar S, all of which to be constructed and arranged substantially as herein described, and to operate as specified.

3. The gate herein described, and arranged upon the approaches of a draw-bridge, consisting of the posts C, swinging frames D, sliding gates E, levers F, racks G, guide-plate I, pinion H, spindle *h*, bevel-gears *l* and L, shaft M, and clutch *a*, in combination with the draw-span R, having clutch N, shaft O, cranks P and R, and connecting-bar S, all of which to be constructed, arranged, and operating substantially as herein set forth.

203,297. DENTAL-ENGINE HAND-PIECES. Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place. Filed Dec. 14, 1877.

Brief.—The clutch is operated by an elbow-lever pivoted upon the casing, and acting through the medium of a link carrying a pin or projection working through a longitudinal slot in the casing.



Claim.—The combination, substantially as hereinbefore set forth, of a casing, a divided spindle or chuck mounted therein and carrying tool-locking mechanism, a clutch between the sections, and an elbow-lever pivoted upon the casing, and acting upon the clutch through the medium of a link carrying a pin or projection working through a longitudinal slot in the casing.

203,298. DENTAL-ENGINE HAND-PIECES. Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place. Filed Dec. 14, 1877.

Brief.—The pivoted locking-latch, which secures the tool, has its inner end slotted, so that it may be operated by a pin and endwise-moving thimble.



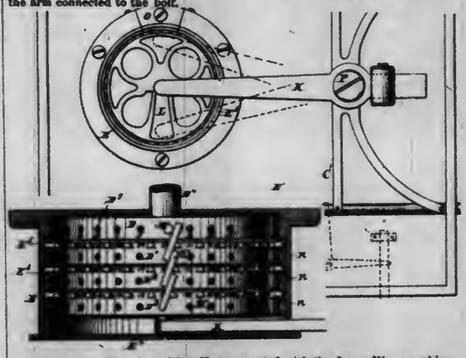
Claim.—1. In the hand-piece of a dental engine, a locking-latch constructed, substantially as hereinbefore set forth, with a locking-lug, an inclined slot, and a pivot, on which the latch is rocked by means of the inclined slot, to engage or disengage the lug and tool-shank.

2. The combination, substantially as hereinbefore set forth, of the tool-chuck, the pivoted slotted latch mounted therein, the endwise-moving thimble mounted on the chuck, to operate said latch, and a spring keeping the thimble thrown normally forward, to depress the front end of the latch.

3. The combination, substantially as hereinbefore set forth, of the casing, the chuck, the pivoted slotted latch, the thimble operating the latch, the spring acting upon the thimble to keep it normally thrust forward, and the finger-piece operating through a slot in the casing upon the thimble, to retract the latch from engagement with the tool-shank.

203,299. PERMUTATION-LOCKS. Benj. F. Stewart, New Philadelphia, Ohio. Filed Aug. 3, 1877.

Brief.—The disk-tumblers have internal slots, in which works the finger of the arm connected to the bolt.



Claim.—1. The pivoted bar K, constructed with the finger K′, in combination with the bolts of a permutation-lock, and the tumbler D, having cam S, and tumbler D′, having the internal slot I, substantially as set forth.

2. The tumbler D, constructed with the cam-groove S, having enlargement Y on its transverse plate, and supported on the arbor D² of the dial B, and provided in its rim with a series of indexed holes, D′, and stop M, substantially as and for the purpose set forth.

3. The tumbler D′, constructed with an internal radial slot, I, formed about its center and within the circumference of its periphery, and provided with the rim D², perforated with a series of indexed holes, D′, for the reception of the pin of the swinging pawl T, and provided with the series of wedge-shaped teeth H, standing out at right angles to the rim, and arranged in alternate positions with and on a line in front of the holes D′, substantially as and for the purposes set forth.

4. The combination, with the dial A of a permutation-lock, and the tumbler D′, provided with a series of indexed holes, D′, and teeth H and pawl T, of an actuating-tumbler, D, having a rim, D², perforated by a series of indexed holes, D², and arbor D³, stop M, and dial B, substantially as and for the purpose set forth.

5. A series of tumblers, D′ D² D′, constructed with corresponding radial guide-slots L, and arranged and supported in the casing E, as described, and adapted, when the unlocking combination is disarranged, to support the finger K′ of the finger-bar K in their center of motion, and engaged with the cam-groove of the tumbler D, substantially as set forth.

6. The casing E, constructed with the guide grooves E^1, slot or opening E^2, cap E^3, and removable section D, substantially as and for the purposes set forth.

7. These following elements in combination: the bar K, provided with the finger K^1; tumblers D^1 D^2 D^3, constructed with slots L, and having their rims perforated and indexed, and provided with teeth H and supported in the casing E, as described; tumbler D, constructed with the cam groove S, and with its rim perforated and indexed, as described; arbor D^4; revolving dial B, and stationary dial A, all arranged so that the lock and bolts are operated by a single knob, B^1, as set forth.

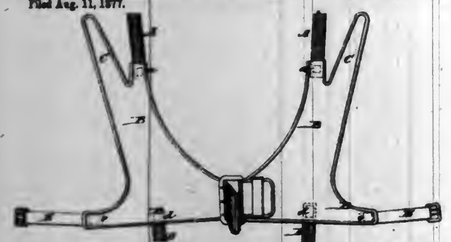
8. The removable and swinging pawls T, provided with stems, and adapted to be applied to the rims of the tumblers D^1 D^2 D^3, constructed with wedge-shaped te h H, substantially as set forth.

203,300. STAYS FOR SEAMS OF BOOTS AND SHOES. Geo. Stribley, Cincinnati, Ohio. Filed Oct. 16, 1876.



Claim.—A boot or shoe in which the parts of the upper are united by a line of stitching, as described, and the seam then covered by a stay-piece, which is secured to the upper by lines of stitches c c on the outside, and the diagonal locking-stitches E on the inside, substantially as and for the purposes specified.

203,301. COMBINED SHOULDER-BRACE AND SUSPENDERS. Noah Van Allen, Chicago, Ill. Filed Aug. 11, 1877.

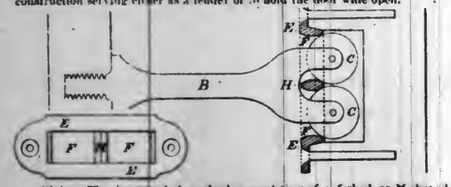


Claim.—1. A shoulder-brace consisting of the two sections B B, adjustably connected, provided with the tabs C, and having the buckle-straps E, all constructed and arranged as shown and described.

2. The combination, with a shoulder-brace, of front straps A and rear straps D, all constructed and arranged as and for the purpose specified.

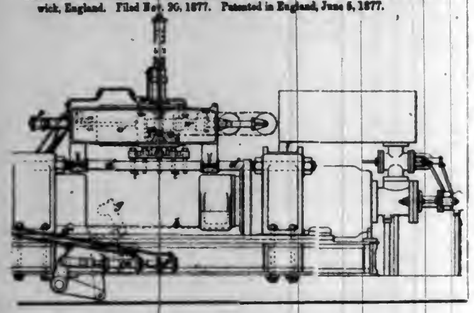
203,302. DOOR-CHECKS. John R. Watkins, Baltimore, Md. Filed Nov. 13, 1877.

Brief.—A Y shaped shank attached to the base-board carries at its free end two rubber rollers, which nearly touch each other, and these rollers engage with a suitable plate mortised in the door, and divided into two openings or compartments, into which the rubber rolls enter by moderate pressure, the construction serving either as a feuder or to hold the door wide open.



Claim.—The improved door-checks, consisting of a forked or Y-shaped shank, B, carrying two rubber rollers, C C, in combination with recessed plate E, divided into openings or compartments F F, substantially as shown and described, for the purpose set forth.

203,303. MACHINERY FOR WORKING MASSES OF METAL. Percy G. B. Westmacott, Elswick, England. Filed Nov. 30, 1877. Patented in England, June 5, 1877.



Claim.—1. The combination, substantially as hereinbefore set forth, of the supporting-table, the anvil against which the metal is compressed, and the flap for turning the metal and allowing the escape of scoria.

2. The combination, substantially as hereinbefore set forth, of the supporting-table upon which the metal is openly worked, the anvil, the compressing-ram, mechanism for turning the metal sidewise, and mechanism for turning the metal endwise, such mechanisms being and operating substantially as described.

3. The combination, substantially as hereinbefore set forth, of the supporting-table, the carriage or saddle above said table, the fork carried by the carriage, mechanism for reciprocating the carriage lengthwise of the table, mechanism for adjusting the fork vertically, and mechanism for turning the fork, such mechanisms being and operating substantially as described.

4. The combination, substantially as hereinbefore set forth, of the supporting-table upon which the metal is worked, and the hydraulic pusher and carrier, constructed and operating substantially as described.

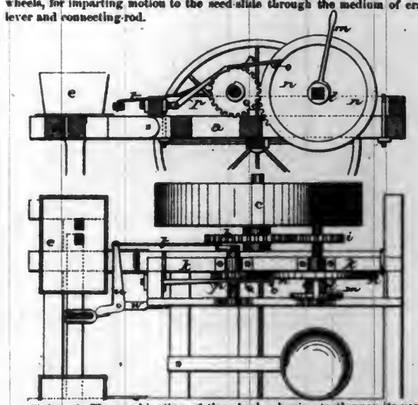
5. The combination, in machinery for squeezing and working blooms and masses of metal, of the hydraulic pusher, the hydraulic compressing-ram, the flap for turning the metal sidewise, the fork for turning the metal endwise, the platform for the attendant, and mechanism, substantially such as described, controlled by levers and treadles upon said platform, whereby all the moving parts of the machine can be controlled by a single workman, as set forth.

203,304. COMPOUNDS FOR FILLING THE GRAIN OF WOOD. Nathaniel Wheeler, Bridgeport, Conn. Filed Feb. 21, 1878.

Claim.—A filler for the pores of wood, composed of finely-ground Indian corn, linseed oil, and Japan varnish, substantially as described.

203,305. CORN-PLANTERS. Aller Wilber, Belknap, Iowa, assignor to himself and J. S. Huffman, same place. Filed Mar. 25, 1878.

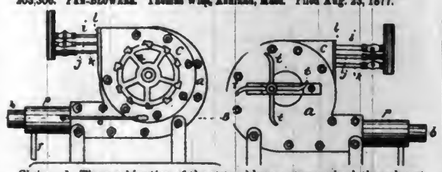
Brief.—The mutilated gear-wheel has pins on one side, that engage and elevate a locking-lever simultaneously with the engagement of the two cogged wheels, for imparting motion to the seed-slide through the medium of crank-lever and connecting-rod.



Claim.—1. The combination of the wheel n, having teeth upon its periphery and a stud or studs upon its side, with a pinion which operates the seed-slide, and a latch or lock for allowing the pinion to revolve, substantially as shown.

2. The combination of the wheel n, having teeth upon its periphery and a stud or studs, o, upon its side, with a clutch, *l*, lever m, spring-latch *p*, pinion q, shaft r, having the shoulder or stops upon it, crank s, and connecting-rod and lever for operating the seed-slide, substantially as set forth.

203,306. FAN-BLOWERS. Thomas Wigs, Ashland, Mass. Filed Aug. 23, 1877.



Claim.—1. The combination of the steam-blower, steam-wheel, the exhaust-pipe a, and the steam-jacket p, combined and arranged so that the air-blast, in its passage through the pipe b, shall be heated by the exhaust-steam, substantially as and for the purpose described and shown.

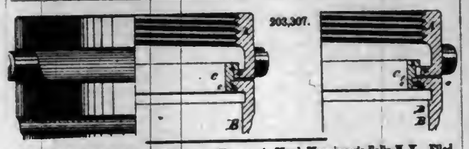
2. The steam-wheel herein described, provided with a plurality of pipes, *i j k*, each having an independent stop-cock, in combination with the blower, the exhaust-pipe a, and the steam-jacket p, all constructed, arranged, and operating as shown and described.

3. In combination with the steam wheel and steam jet pipes, the adjustable dash-plates y, substantially as and for the purpose herein shown and described.

203,307. SWIVEL-JOINTS. Alanson Work, Providence, R. I. Filed Oct. 27, 1877.

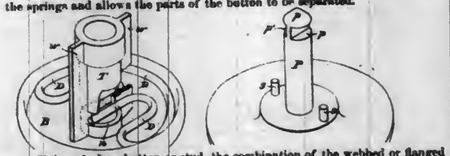
Claim.—1. The method herein described of attaching a swivel by expanding the independent ring C into interlocking position with the swivel and with the band B, or other base, substantially as and for the purposes herein set forth.

2. The combination of the swivel A, provided with shoulder a, band B, with grooved shoulder *d*, and ring C, with the shoulder b and tongue c, as herein set forth.



203,308. SLEEVE OR COLLAR BUTTONS. Clarence A. Wood, Wappinger's Falls, N. Y. Filed Oct. 15, 1877.

Brief.—A flange on the post, engaging with pins on the inner disk, releases the springs and allows the parts of the button to be separated.



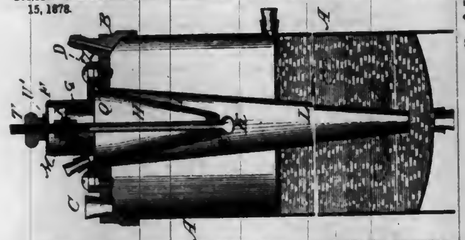
Claim.—1. In a button or stud, the combination of the webbed or flanged tube T and the double spring D, adapted to work in opposite notches of the tube, for the purpose of holding the two parts of the button together, substantially as described.

2. In a button or stud, the combination of the flanged and notched tube, the double spring, and the notched and capped post and pins, substantially as described.

203,309. STOVE-POLISHING COMPOUNDS. Henry S. Ziegler, Philadelphia, Pa. Filed Mar. 5, 1878.

Claim.—A compound for stove-polish made of the following ingredients, viz: plumbago, three hundred and fifty pounds; tallow-oil, twenty-five pounds; spermaceti, twenty-five pounds; caustic soda, five pounds; oil of turpentine, ten pounds; and water, eighty gallons, in the manner substantially as described.

203,310. CARBONIC-ACID-GAS GENERATORS. Otto Zwietusch, Milwaukee, Wis. Filed Jan. 15, 1878.



Claim.—1. A carbonic-acid-gas generator constructed with the generating-vessel A, cover H D, acid-chamber I, and gas-cylinder L, depending from the cover, substantially as specified.

2. Gas-cylinder L, attached to the cover of the generating-chamber between the acid-chamber I and the outermost shell of apparatus A, substantially as shown and specified.

3. In a carbonic-acid-gas generator, the combination of the cone-shaped acid-chamber I and the cone-shaped gas-cylinder L, substantially as shown and described.

4. In a carbonic-acid-gas generator, the combination of acid-chamber I, having openings Q and gas-cylinder L surrounding it, so arranged that the gas which serves as equalizing pressure enters into acid-chamber I through openings Q from gas-cylinder L, substantially as specified.

5. In a carbonic-acid-gas generator, the combination of the cone-shaped gas-cylinder L, depending from the cover of generator A, with flange N, somewhat above the lower termination of said cylinder, substantially as specified.

6. In a carbonic-acid-gas generator, the combination of acid-chamber I, valve K, stem H, diaphragm E, capsule F, and weight-nut T with the gas-cylinder L, substantially as specified.

7. In a carbonic-acid-gas generator, the combination of valve K, stem H, diaphragm E, capsule F, dial U, and weight-nut T, arranged so that stem H and weight-nut T counterbalance the pressure against diaphragm E, substantially as described.

8. In a carbonic-acid-gas generator, the combination, with acid-chamber I, of the valve K, closing from the under side of the acid-chamber, the valve-stem H, weight-nut T, pointer U', and capsule F, having a dial on its upper surface, substantially as and for the purpose hereinbefore set forth.

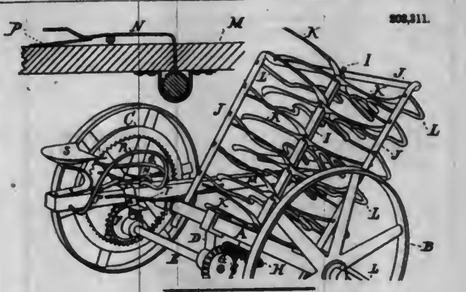
203,311. STALK-CUTTERS. Stephen B. Adams and Henry J. Adams, Demeith, Ind. Filed Jan. 28, 1878.

Brief.—The frame is carried at about an angle of forty-five degrees, and the higher knives cut the tops of the stalks, while the lower gather and cut nearer the ground. The cutter-bars serve to divide the stalks into portions and hold them for cutting. The frame is raised or lowered by adjustment immediately on the axle.

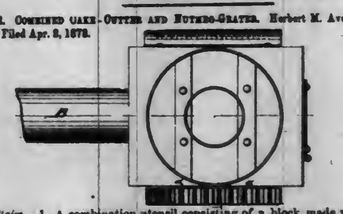
Claim.—1. In combination with the inclined shaft I and the knives K of a stalk-cutter, the series of cutter-bars L, having projections formed to divide the stalks into several portions, substantially as herein shown and specified.

2. The combination of the shaft A, having a circular bearing provided with several holes, with the tongue M, having a similar hole, the lever-pin n, and the spring P, all substantially as shown, and for the purpose specified.

3. The combination of the master-wheel C, pinion F, shaft E, gear G H, shaft I, sets of knives K K, cutter-bars L L, and frame J, all suitably mounted on wheels, and forming a stalk-cutting machine, substantially as herein shown and specified.



203,311.

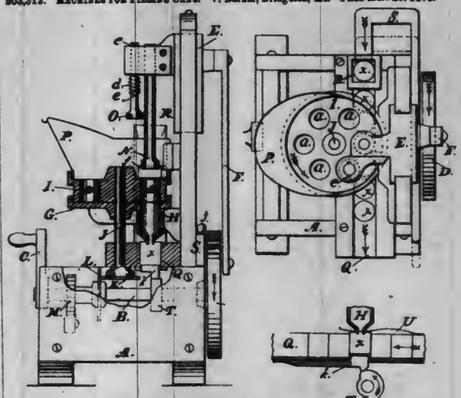


203,312. COMBINED CAKE-CUTTER AND NUTMEG-GRATER. Herbert M. Avers, Chicago, Ill. Filed Apr. 9, 1878.

Claim.—1. A combination utensil consisting of a block made with a handle at one end, and a storage-receptacle and lid for the nutmegs at the opposite end, and arranged with cake and other cutters and a nutmeg-grater at the sides of the block, substantially as shown and described.

2. The combination, in a combination utensil, of a supporting-block with cake and other cutters, applied by cross strips and fastening devices in such a manner as to admit the escape of air between the cutters and blocks when cutting out the cakes, &c., substantially as set forth.

203,313. MACHINES FOR FILLING CANS. V. Barker, Bridgeton, Me. Filed Mar. 20, 1878.



Claim.—1. In a machine for filling cans, the revolving plate I, arranged in connection with the plunger N and stationary plate G, substantially as described, and pierced at regular intervals with chambers a, to receive each the exact quantity necessary to fill one can, and provided with means, substantially as shown, for imparting intermittent rotary motion, for the purpose of presenting said chambers in regular succession for the passage of the plunger through them, by which their contents are forced into the cans, in the manner specified.

2. The horizontal sliding bar S, having a short reciprocating motion imparted to it by the driving parts, arranged and operated in connection with the plunger N and channel Q, for propelling the cans through the latter, substantially in the manner herein described, and for the purpose specified.

3. The combination, with the tunnel H and plunger N, of the bar S, tube R, channel Q, and lifting-plate *k*, when constructed and operated substantially as herein described.

4. The combination of the tunnel H, plunger N, revolving plate I, stationary plate G, hopper P, ring *f*, plunger O, channel Q, tube R, bar S, spring U, lifting-plate *k*, flange L, and wheel K, arranged and operating substantially as herein set forth and described.

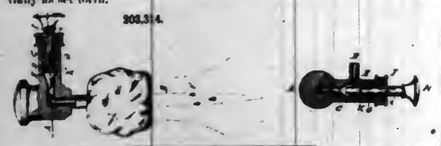
203,314. CHAMPAGNE-TAPS. William Bentley and Richard Bentley, Newark, N. J. Filed March 19, 1878.

Claim.—1. As a new article of manufacture, a champagne-tap composed of a perforated tube, B, solid upright head A, and lateral branch tube C, provided with a spring-valve, K, substantially as set forth.

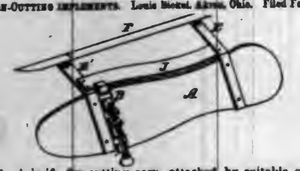
2. In combination with the perforated tube B, head A, and branch tube C, provided with the outlet-tube D and screw-cap L, the valve-stem G, inclosed within the branch tube C, passing through the screw-cap, and provided with the knob H and the collar E, the said collar being fixed to the valve-stem,

fitting the aperture of the branch pipe, and receiving the contact of the seating-spring K, which is held between the said collar and screw-cap, substantially as set forth.

203,314.



203,315. CORN-CUTTING IMPLEMENTS. Louis Biegel, Akron, Ohio. Filed Feb. 11, 1878.



Claim.—1. A knife for cutting corn, attached by suitable connections, such substantially as shown, to a sole, by which it may be fastened to the foot, and lying parallel with the foot, with its edge projecting outward and downward, substantially as shown.

2. The combination of the knife F, sole A, and uprights E E', all arranged and operating substantially as and for the purpose hereinbefore set forth.

3. The shield J, in combination with the knife F, substantially as and for the purpose specified.

203,316. BUNGS. Geo. Barut, Rochester, N. Y. Filed Apr. 14, 1878.

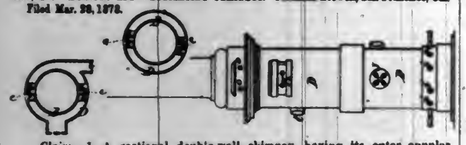
Brief.—The part of the bung that is cut around is left in till faucet is inserted.



Claim.—1. A vent-bung having upon one or both of its faces a groove or incision, extending partially through the same and surrounding the portion to be removed, substantially as and for the purpose set forth.

3. A vent-bung having formed upon one of its faces a cavity, and upon the opposite face a groove or incision surrounding the portion to be removed, substantially as and for the purpose specified.

203,317. HEATING AND VENTILATING CHIMNEYS. Jeremiah Brownell, San Francisco, Cal. Filed Mar. 26, 1878.



Claim.—1. A sectional double-wall chimney, having its outer annular space divided by partitions *c c* into two or more independent passages, which receive air through holes *i i* at or near the bottom, and discharge it above the roof of the house, substantially as and for the purpose above described.

2. The inside pipe-sections B, each of which is provided with the opposite external ribs *c c*, in combination with the outside pipe-sections D D, with their internal parallel ribs *c c* arranged in pairs on opposite sides, the spaces between said ribs being rendered impervious by a filling of cement, substantially as and for the purpose herein described.

203,318. THRASHING-MACHINES. Jonathan Brown, Elgin County, Canada, assignor to Daniel Stewart, same place. Filed Mar. 30, 1878.



Claim.—1. The combination of the cylinder *b*, concave *c*, and the two blocks *f*, the concave and blocks being provided with the oppositely-inclined spiral ribs *d*, whereby the seed are discharged at both ends of the cylinders, substantially as shown.

2. In a clover-huller, the combination of the shaker *h*, the door *j*, having the adjustable slide *l*, and the thrashing-cylinder, the door being adapted to be adjusted back and forth over the riddle, substantially as shown.

3. The grating *m* under the cylinder *b*, provided with the removable cover *n*, substantially as specified.

203,319. HOG-CHOLERA COMPOUNDS. Harry B. Budd and Wm. H. Budd, Bunker Hill, Ill. Filed Aug. 13, 1877.

Claim.—A composition for treatment of hog-cholera, consisting of one pound of red madder, one pound of flowers of sulphur, one-half pound green copperas, one-quarter of a pound of black antimony, one-quarter of a pound of nitrate of potassa, and one quarter of a pound of soda bicarbonate, each of the ingredients finely powdered and thoroughly mixed together.

203,320. HORSE-POWERS. George E. Burt and E. A. Ainsworth, Harvard, Mass. Filed Mar. 30, 1878.

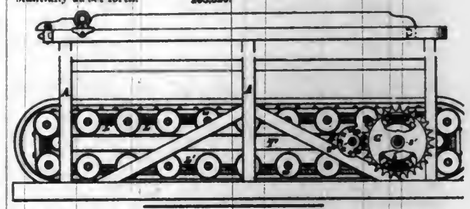
Claim.—1. In combination with the platform and rack attached thereto, and spur-wheel *b*, meshing into said rack above and below, the shaft S', spur-wheel G, and pinion H, having rolling cogs, and counter-shaft S', for giving rotation to the driving-pulley B, substantially as set forth.

2. The links L L', cast with an open rack, leaving open spaces between the cogs, substantially as described, and for the purpose set forth.

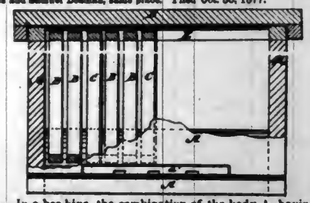
3. The combination and arrangement, with the link L, of the posts *p p* on the upper face and near the two extremities of the link, and the rib *r* on the inner edge of the link, both being formed to fit into grooves in the lugs to hold the links in position, substantially as described.

4. In combination with the tread *t* of an endless-chain horse-power platform, the truss-rods *q*, passing through the ends of the tread and outside of the path of the horse, and support for supporting the tread at the middle, substantially as set forth.

203,320.



203,321. BEE-HIVES. Benjamin Bussard and Andrew P. Snyder, Ashland, Ohio, assignors to themselves and Samuel Leaman, same place. Filed Oct. 30, 1877.



Claim.—In a bee-hive, the combination of the body A, having its bottom inclined and provided with the removable notched bar *a'* at the entrance, the comb-frames B B, adjustable and removable wire-gauze screens C C, the detachable cover D, and the wire-gauze screen E, interposed between the cover and the comb-frames, all arranged substantially as and for the purposes herein set forth.

203,322. LASTS. Joseph E. Chenette, Hillsborough, Oreg. Filed Feb. 21, 1878.



Claim.—1. A last split out to the toe, the upper section receiving in groove a stop-spring, *b c*, whose turned-up end passes under a cross-bar of slot, as shown and described.

2. The combination of the screws *a* with the last having sockets *a*, substantially as and for the purpose specified.

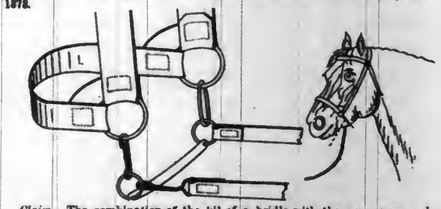
203,323. FINGER-RINGS. Wm. B. Closson, Boston, Mass. Filed Nov. 27, 1877.



Claim.—1. A finger-ring having eye and sight openings leading out of its socketed head, and also having within the socket *a* of the head, and between such openings, a lens and a picture, all being substantially as described.

2. A ring having an eye-opening, *b*, leading out of its socketed head, and also having within the socket *a* of such head a lens, B, and a picture, *c*, held in place in the said socket by a perforated cup or guard, *d*, inserted in the inner end thereof, and provided with a light-aperture *e*, all as set forth.

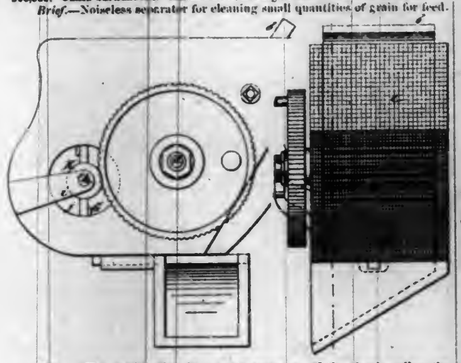
203,324. COMBINED BRIDLE AND HALTER. Elihu Cox, Plainfield, Ind. Filed Apr. 10, 1878.



Claim.—The combination of the bit of a bridle with the nose-strap and upper portion thereof, said bit being constructed and attached so as to be readily removed from the mouth of the animal and refastened under the lower jaw, so as to form a continuous nose-strap, substantially as herein shown and described, and for the purpose specified.

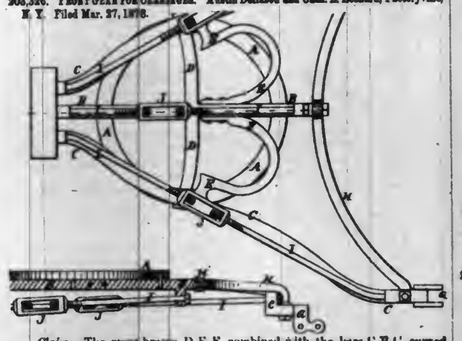
203,325. GRAIN-SEPARATORS. Joshua Davies, Muskegon, Mich. Filed Feb. 15, 1878.

Brief.—Noiseless separator for cleaning small quantities of grain for feed.



Claim.—The combination, in a grain-separator, of the elastic pulley, the fluted feed-roll, and the hopper B, the latter having a side, *b*, provided with a strip, *c*, of rubber or other elastic material, substantially as and for the purpose specified.

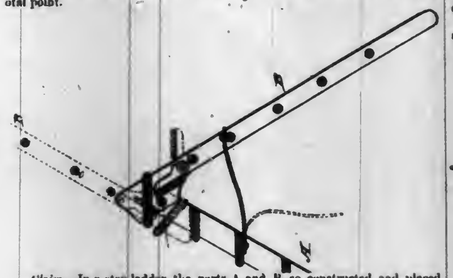
203,326. FRONT GEAR FOR CARRIAGES. Austin Dellasco and Chas. L. Leonard, Factoryville, N. Y. Filed Mar. 27, 1878.



Claim.—The cross-braces D E E, combined with the bars C B C, curved bar H, tension-rods I I, and nuts J, substantially as and for the purpose specified.

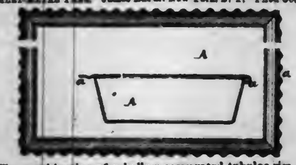
203,327. STEP-LADDERS. Fayette Dyer, Rock Falls, Ill. Filed Feb. 21, 1878.

Brief.—The top of one section of the extension step-ladder abuts upon the upper step of the other section. One section incloses the other at their pivotal point.



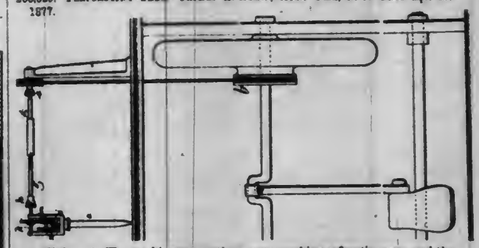
Claim.—In a step-ladder, the parts A and B, so constructed and placed relatively that the top of B shall abut upon the upper step of A and the part A partially inclose the part B, substantially as and for the purpose described.

203,328. SHEET-METAL PANS. James Edgar, New York, N. Y. Filed Oct. 26, 1877.



Claim.—The combination of a hollow corrugated tubular rim, *a*, with the body A of a pan or other article of sheet metal, substantially as and for the purpose herein shown and described.

203,329. PERFORATING-PENS. Thomas A. Edison, Menlo Park, N. J. Filed Apr. 23, 1877.

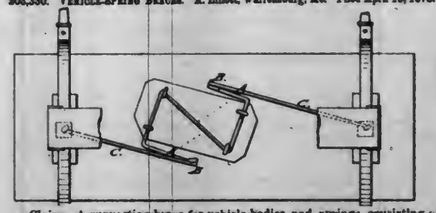


Claim.—1. The combination, with an autographic perforating-pen, and the cam or eccentric to operate the same, of the universal joints and shaft *g*, connecting and giving motion from a motor to the mechanism upon the pen, substantially as set forth.

2. The extension-shaft *g*, made in two parts, one sliding within the other, and provided with universal joints at the ends, in combination with a motor and a pen formed of a reciprocating needle, a holder, and mechanism for moving the pen, substantially as set forth.

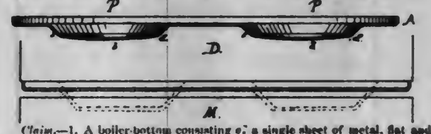
3. In combination with the autographic perforating-pen, the train of gearing upon the pen to increase the speed of the pen, and a motor connecting with the train of gearing upon the pen, substantially as set forth.

203,330. VEHICLE-SPRING BRACES. A. Elliott, Warrensburg, Mo. Filed April 15, 1878.



Claim.—A supporting-brace for vehicle bodies and springs, consisting of the Z-shaped brace A, rigidly secured to the under central part of the vehicle body, and having bent or twisted ends B, terminating in projecting arms C, which are secured at their outer ends to the upper central part of the front and rear axles of the vehicle, substantially as and for the purpose specified.

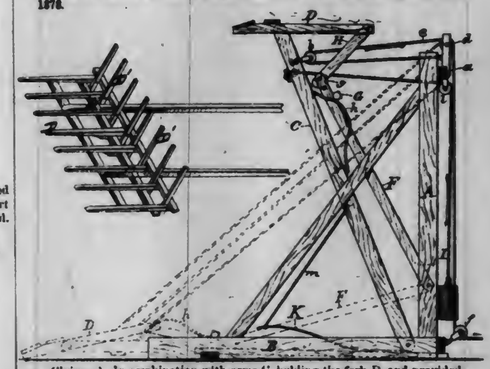
203,331. WASH-BOILER BOTTOMS. Charles R. Everson, Macedon, N. Y., assignor of an undivided one-half of his right to Jerome Woolsey, same place. Filed July 19, 1875.



Claim.—1. A boiler-bottom consisting of a single sheet of metal, flat and unwrinkled at *a*, and having two pits, P P, as set forth.

2. The dies D M, having circular projections and recesses and flat faces, as specified.

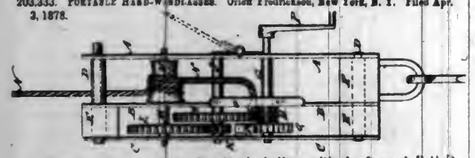
203,332. HAT LOADER AND STACKER. Peter F. Fleming, Elk Wayland, and Saml. R. Gilliland, Salisbury, said Fleming assignor to A. W. Terrill, Marion, Mo. Filed Feb. 26, 1878.



Claim.—1. In combination with arms C, holding the fork D, and provided with guides *h*, the jointed arms F, coupled to the frame and provided with cross-piece G, and pieces H, the latter connecting with the fork D, as and for the purposes described.

2. The spring K, secured at the base and connecting with arms C, as and for the purposes described.

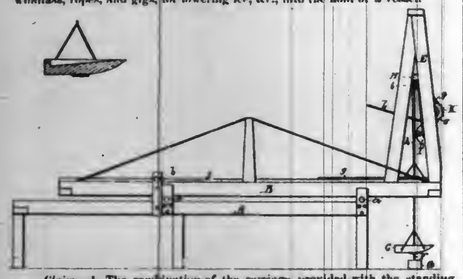
203,333. PORTABLE HAND-WINDLASSES. Orieff Fredrickson, New York, N. Y. Filed Apr. 3, 1878.



Claim.—The combination, in a hand-windlass, with the frame A B C D, having belaying-pin O, of the shaft G, having the gear-wheel H, shaft J, having the gear-wheels I K, the shaft M, having the gear-wheel L, and the rope N, as shown and described.

203,334. VESSEL-LOADING APPARATUS. Nels C. Gielstrup, Bath, and Isaac A. Field, Phipsburg, Me. Filed Apr. 16, 1878.

Brief.—A stationary wharf is provided with a movable carriage having a windlass, ropes, and gigs, for lowering ice, &c., into the hold of a vessel.



Claim.—1. The combination of the carriage, provided with the standing frame and bunter, as described with the pair of gigs, their guides, supporting-ropes, windlass, and brake, all being arranged and to operate substantially as set forth.

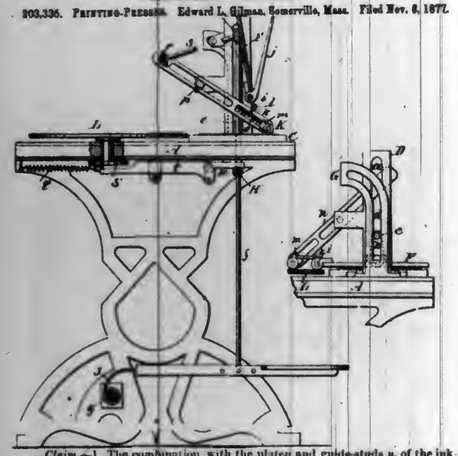
2. The movable traveler and its supporting-lines and windlass, in combination with the movable carriage and its standing frame, and the two gigs and their supporting lines, windlass, and brake, all being arranged, applied, and to operate essentially as specified.

3. The combination of the stationary wharf or platform and the movable carriage, its stand-frame and bunter, applied substantially as described, with the two gigs, their guides, supporting lines, windlass, and brake.

4. The combination of the stationary wharf or platform, the movable carriage, and its stand-frame and bunter, applied substantially as described, with the gigs, their supporting-lines, windlass, and brake, and with the traveler and its supporting lines and windlass.

5. The gigs arranged between their guides, and so as to discharge in opposite directions relatively to the keelson or the foot-frame of the guides, as set forth.

203,335. PRINTING-PRESSES. Edward L. Gilman, Somerville, Mass. Filed Nov. 6, 1877.



Claim.—1. The combination, with the platen and guide-studs *p*, of the ink-roller K, journaled in movable spring-held boxes *m* at the lower ends of slotted arms *n*, said arms being pivoted at their upper ends to a cross-bar, *r*, rigidly connected by a post, *s*, to the back of platen, as shown and described.

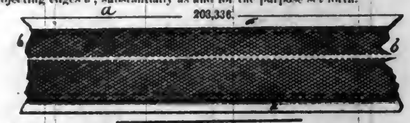
2. The platen having slide trunnions and arms, the latter provided with pins *p*, in combination with two sets of posts, one having perpendicular and the other curved slots, as and for the purpose set forth.

203,336. DEVICES FOR TRAPPING THE APPLE-WORM. A. Grossman, Lockport, N. Y. Filed Jan. 10, 1878.

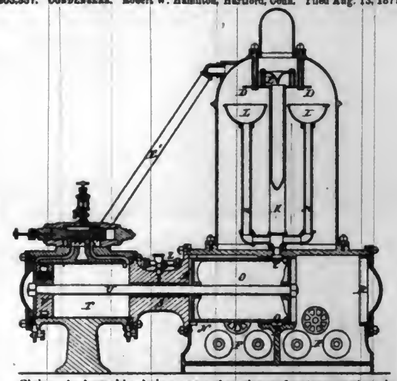
Claim.—1. The apple-worm trap consisting of a flexible outer band, *a*, of pasteboard, sheet metal, or similar material, and the inner band of cotton flannel, having its napped surface arranged to come in contact with the tree, substantially as and for the purpose set forth.

2. The combination, in an apple-worm trap, of the strap *b*, of cotton flannel, and the strap *a*, of pasteboard, sheet metal, or similar material, having projecting edges *a'*, substantially as and for the purpose set forth.

203,336.



203,337. CONDENSERS. Robert W. Hamilton, Hartford, Conn. Filed Aug. 13, 1877.



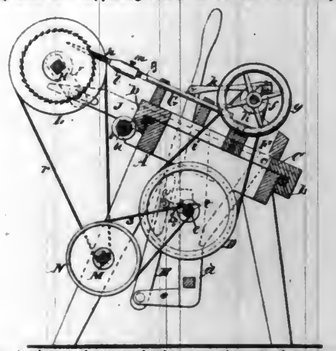
Claim.—1. A combined air-pump and condenser for steam-engines, in which the air-pump, constructed and arranged as set forth, is contained in the base of the condenser, and which is provided with an independent steam cylinder for operating said pump, substantially as herein described.

2. The stand-pipe M, with its catch-basin L, in combination with the sprinkler within the condenser, and the water-packing space Q around the plunger of the air-pump, for supplying water to the packing-space, substantially as herein described.

3. In a condensing mechanism, the air-pump provided with the chambers R, whereby the plunger is cushioned at the end of each stroke, substantially as and for the purpose set forth.

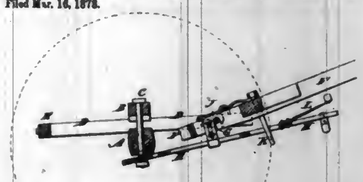
203,338. GIN-SAW FILERS. Edward L. Harris, Red Banks, Miss. Filed Jan. 5, 1878.

Brief.—The crank of the drive-wheel works in a slot in a vertical hand-lever. One endless band communicates reciprocating motion to the file, and another a slow rotary feed-motion to the saw-cylinder. The file-frame is pivoted, and by means of a supporting-frame is moved back and forth by a feed-screw.



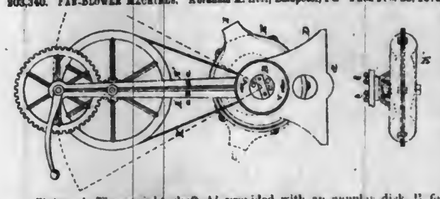
Claim.—A gin-saw sharpener having a carriage, C, that supports the drive-wheel shaft and lever E in two downwardly-projecting arms, as shown and described.

203,339. WAGON-TONGUE SUPPORTS. Daniel B. Hart and Wm. P. Webster, West Mentor, Ohio. Filed Mar. 16, 1878.



Claim.—The combination, in wagon-tongue supporters, with the tongue F and bar H, of the loop or U bar I, having slotted arms, the hooks having slotted shanks, and the tongue-bolt G, as shown and described, so that by loosening the attaching bolts the hooks may be removed from the tongue-bolt, as set forth.

203,340. FAN-BLOWER MACHINES. Abraham K. Herr, Lampeter, Pa. Filed Feb. 25, 1878.

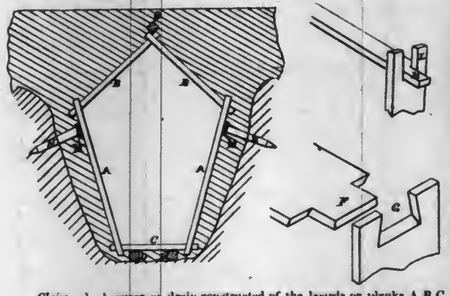


Claim.—1. The upright shaft A', provided with an annular disk, B', for shifting, in combination with the base D, having an annular flat groove, R, with shouldered sides T T, curved slots S for the screw-bolts, and nuts U V, as and for the purpose specified.

2. The central circular plate or disk C W, forming a pivot for the annular disk B, and covering the inner annular flange of the base D, on which it sets, and is secured by screws *w* to the cap N, connected with the fan-case E, combined to form a common center for the motions of the shaft and fan-case, as and for the purpose set forth.

203,341. CONSTRUCTION OF WOODEN SEWERS. A. T. Herrmann and Wm. Bertoe, San José, Cal. Filed Mar. 26, 1878.

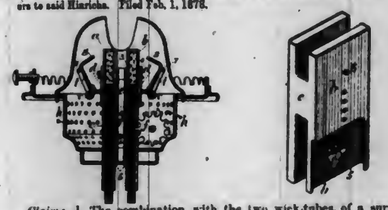
Brief.—A sewer-pipe is constructed of rings of plank, each ring consisting of five or more pieces, the pieces being dovetailed into the next piece of the same ring, and also into the next piece of the next adjacent ring.



Claim.—1. A sewer or drain constructed of the boards or planks A B C, placed at right angles with the axis of the sewer, in the desired form, and united by tenons and shoulders or dovetails, without frames, so that they may be removed and replaced from the interior of the sewer, substantially as herein described.

2. The sides A, top B, and bottom C, supported upon a suitable foundation, D, said boards A B C standing at right angles with the axis of the sewer, and united by the dovetail joints F G, or the tenons and shoulders H I, so as to resist external or internal pressure, without sulling or timbering of any kind, substantially as herein described.

203,342. LAMP-BURNERS. Charles F. A. Hinrichs and Charles Reistle, Brooklyn, N. Y., assignors to said Hinrichs. Filed Feb. 1, 1878.



Claim.—1. The combination, with the two wick-tubes, of a surrounding case, *d*, and a case, *c*, between the two wick-tubes, and means for raising and lowering the wick-tubes relatively to the case, substantially as set forth.

2. The combination, in a burner, of two wick-tubes having an intermediate air-space, and their inner sides removed near the upper ends, the case *c*, two non-combustible mineral wicks, and two cotton or supply wicks, substantially as set forth.

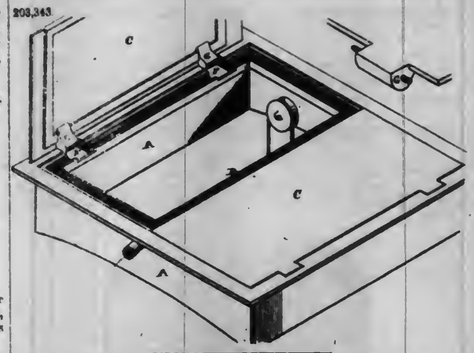
3. Two flat wicks adjacent to each other, in combination with the cut-off plates *c* between them, and the case around such wick-tubes, substantially as set forth.

203,343. SIDEWALK HATCHWAY AND DOOR. Peter H. Jackson, San Francisco, Cal. Filed Apr. 10, 1878.

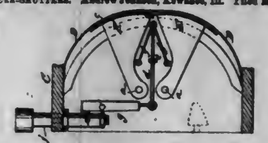
Claim.—1. The frame A, with its doors C C, in combination with the receiving gutters or grooves B and a discharge-opening, substantially as shown, and for the purpose herein described.

2. The doors C C, meeting at the center, and having the combined gutter and bearing-bar D, forming a part of one door and supporting the other, substantially as shown, and for the purpose herein described.

203,343



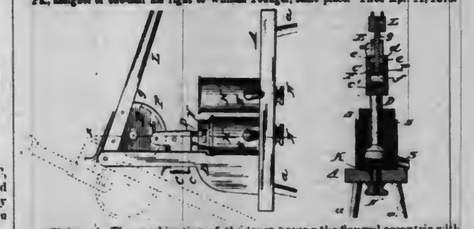
203,344. CAMERA-SHUTTERS. Andrew Johnson, Kewanee, Ill. Filed Mar. 22, 1878.



Claim.—1. A camera-shutter consisting of a curved apertured plate, D, the curved shutters E, and means for opening and closing the shutters simultaneously, substantially as specified.

2. The box C, having the curved and apertured plate D, the shutter E, links *f*, rod *d*, lever *g*, and rock-shaft *j*, in combination, substantially as shown and described.

203,345. LARD AND FRUIT PRESS AND SAUSAGE-STUFFER. Simon J. Keim, Catasauqua, Pa., assignor of one-half his right to William Younger, same place. Filed Apr. 11, 1878.



Claim.—1. The combination of the lever having the flanged eccentric with the forcer or plunger having slotted head, provided with ears or lugs *d d*, and rollers or casters *e e f*, substantially as and for the purpose herein shown and specified.

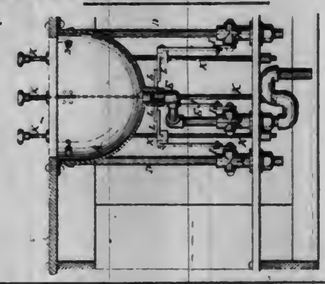
2. In a fruit or lard press and sausage-stuffer, the combination, with the table A and hopper H, having spout S and interior perforated vessel V, of the standard B, having slot *b b'*, pivoted lever L, having flanged eccentric E, and plunger D, having head C, provided with projections *e e*, lugs *d d*, and rollers *e e f*, all arranged and operating substantially as herein described, for the purpose set forth.

3. The combination of the standard B, having slot *b b'*, with the plunger-head C, having projections *e e*, lugs *d d*, and rollers *e e f*, and the pivoted lever L, having eccentric E, provided with a flange, F, broken at *g*, so as to permit the removal of the plunger, substantially as and for the purpose herein set forth.

203,346. PROCESSES OF WIRE-DRAWING. Virgil D. F. Kenerson and Chas. H. Morgan, Worcester, Mass. Filed Mar. 16, 1878.

Claim.—An improved method of drawing wire, consisting of coating or covering the wire, preparatory to being drawn, with a solution of salt, substantially as and for the purposes set forth.

203,347.

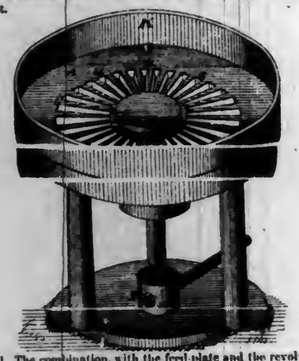


203,347. VALVE ATTACHMENTS FOR THE PIPES OF WASH-BASINS, &c. Francis E. Kenrechan, Pittsfield, Mass. Filed Apr. 17, 1878.

Claim.—The combination of the washers or arms I I, with the slide-rods K, that operate the valves H of the inlet and outlet pipes D E of a wash-basin or other receiver, in such a way as to prevent either inlet-valve from being opened without opening the outlet-valve, while allowing the outlet-valve to be opened alone, substantially as herein shown and described.

203,348. GRAIN-CUTTING MACHINES. Volney P. Kimball, Watertown, N. Y. Filed Mar. 15, 1878.

Brief.—The rotation of the radial knives, set upon the vertically-adjustable spindle in a cutter-head, slices the grain as it is fed through the radial bevel-sectioned openings in the feed-plate. Sweeps or scrapers, acting also as fans, work in a circular channel surrounding the cutter-head, to remove the sliced product.



Claim.—1. The combination, with the feed-plate and the revolving system of knives, of the fan-shaped arms, adapted to revolve in a recess or channel of the cutting-chamber, which is formed in a circular plane about the vertical side of the cutter-head, substantially as set forth.

2. The combination, with a feed-plate formed with any number of radial openings, of a system of radial knives located below said feed-plate, and adapted to be revolved in close proximity thereto, substantially as set forth.

3. The combination, with a feed-plate formed with any desired number of bevel-shaped radial openings, of a system of radial knives located below said feed-plate, said knives being secured to a vertically-adjustable spindle, substantially as set forth.

4. The combination, with a stationary feed-plate formed with any desired number of bevel-shaped radial openings, of a guard-plate removably secured thereto, a system of radial knives located below said feed-plate, and one or more fans adapted to revolve within the cutting-chamber, substantially as set forth.

5. The combination, with the system of knives adapted to be revolved about its vertical central axis, of the feed-plate located above the same, and formed with the radial openings, made bevel-shaped in their entire transverse section, substantially as set forth.

6. The combination, with the feed-plate having the bevel-shaped radial openings and the revolving system of knives, of the fan or fans adapted to revolve within the cutting-chamber, substantially as set forth.

203,349. BARBED FENCE-WIRE. Ole O. Kittleson, Milan, Ill. Filed Mar. 29, 1878.



Claim.—The barb B, having projecting points *b'* and central bight, and the point *b*, secured by passing through said bight and around one of the fence-strands, while the part *b'* passes between the fence-strands, substantially as set forth.

203,350. MOTIVE POWERS. Marcus O. Kummerer and Charles W. Widney, Polo, Ill.; said Widney assignor to said Kummerer. Filed Sept. 12, 1877.

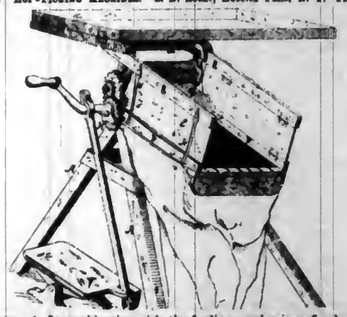


Claim.—1. The combination of the arms W W', the studs c' c², carrying the rotating arms F F' and bar I, the arms G G, carrying the eccentric-shaft T and its rod, and the crank-shaft *a*, connected to the arms V V' by the rods *a'*, all constructed, arranged, and operating as set forth.

2. The combination, with the floor E and its converging sides, of the revolving arms F F', having at the ends the stationary bar I, its hinged pieces H, and springs *a*, all constructed, arranged, and operating as set forth.

3. The combination, with the carrier J, sliding in a slot in the floor L, and with the wheels D² D', carrying an endless chain, of the two jointed links J' J², connected to the carrier and to the chain, and operating as set forth.

203,351. HOP-PICKING MACHINES. S. D. Locke, Hoosick Falls, N. Y. Filed Apr. 4, 1878.



Claim.—1. In combination with the feeding mechanism of a hop-picking machine, a fluted or ribbed picker roll or rolls, as and for the purpose set forth.

2. In a hop-picking machine provided with two feeding-rollers to draw the stalks and leaves, a picking device which is placed in front of said feeding-rollers, and acts in a direction opposite to them, combined with a reciprocating or shaking perforated or sieved separator and receptacle, also in front of the picking device, so that as the leaves and stalks are propelled in one direction, the hops are broken off and thrown in the opposite direction upon said separator, as set forth.

3. The combination, in a hop-picking machine wherein the hops are removed at the head of the screen before the vines and leaves reach the feeding-rollers, of a fixed frame projecting from the frame which supports the picker and feeder, to support the suspended riddle or sieve and the detachable receiving sack, as set forth.

4. The riddle or separator, combined with the rotating cam at one end of the same and the hinged side-boards, whereby the separator is suspended from the fixed frame and caused to vibrate laterally uniformly at all parts when actuated at one end only.

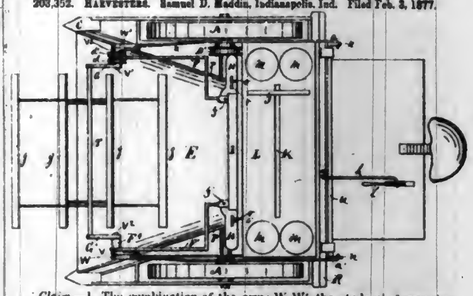
5. The combination, in a hop-picking machine, of pickers outside and in advance of the feeding-rollers, a riddle or separator with a receptacle, also outside and in advance of the picker, combined with a vine or branch receptacle supported at the top of the frame at the side opposite the picker and separator, as shown.

6. In a hop-picking machine, a vine or branch receptacle, either pivoted or united by a detachable hinge to the supporting-frame, as and for the purpose set forth.

7. In combination with the feeding and picking mechanism, a shield, *g*, attached to the screen, and extending under said picking mechanism, to prevent entanglement of the hops with said feeding mechanism, as set forth.

8. The combination, with the frame E, projecting from the head-blocks and supporting the shaking-screen, of the depending hooks attached thereto and supporting the bag beneath the screen.

203,352. HARVESTERS. Samuel D. Maddin, Indianapolis, Ind. Filed Feb. 3, 1877.



Claim.—1. The combination of the arms W W', the studs c' c², carrying the rotating arms F F' and bar I, the arms G G, carrying the eccentric-shaft T and its rod, and the crank-shaft *a*, connected to the arms V V' by the rods *a'*, all constructed, arranged, and operating as set forth.

2. The combination, with the floor E and its converging sides, of the revolving arms F F', having at the ends the stationary bar I, its hinged pieces H, and springs *a*, all constructed, arranged, and operating as set forth.

3. The combination, with the carrier J, sliding in a slot in the floor L, and with the wheels D² D', carrying an endless chain, of the two jointed links J' J², connected to the carrier and to the chain, and operating as set forth.

203,353. FASTENING ROOFING-SLATES. Galusha Maranville, Rutland, Vt., assignor to Edward Bowman and O. B. Leach, same place. Filed Feb. 16, 1878.

Brief.—A soft-metal collar prevents the nail-head from sliding through the hole in the slate, fills up the concavity made by the puncture of the slate, and renders the slate less liable to break from its yielding slightly when the last blow is struck on the nail-head.

Claim.—A soft-metal collar, C, in combination with slating A and the fastening-nail B, for the purposes herein set forth.



203,353. A



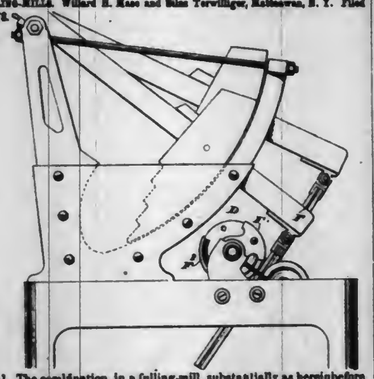
203,354. FASTENINGS FOR HORSE-COLLARS. James Martin, Peoria, Ill., assignor of one-half his right to J. Perrin Johnson, same place. Filed Aug. 15, 1877.



Claim.—1. A metal clasp for a horse-collar, having the hollow or saddle which receives the hame-straps or fastenings of the hames formed in front by a peak, *h*, or projection, and the rear part of said hollow formed by the tongue or catch-socket *b*, substantially as and for the purposes described.

2. The combination of the clasp B, having pivoted spring-catch *d* set in the slot *g* in the surface of clasp, and perforated tongue *i* and clasp C, both clasp-divisions separating vertically down the peak *h*, substantially as and for the purposes described.

203,355. FULLING-MILLS. Willard H. Mase and Silas Terwilliger, Matteawan, N. Y. Filed Apr. 10, 1878.



Claim.—1. The combination, in a fulling-mill, substantially as hereinbefore set forth, of two sets of simultaneously-operating hammers, the one set acting quickly and striking light blows, and the other set operating at longer intervals and striking harder blows, with separate beds or receptacles for the goods, whereby the goods are prepared by the one set of hammers to be finished by the other without injury, as set forth.

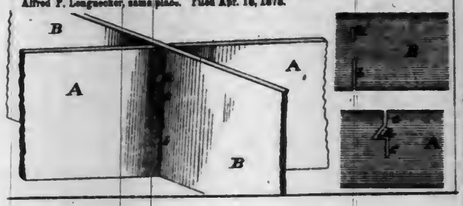
2. The combination, substantially as hereinbefore set forth, of the hammer-arm hinged at one end, and the yielding or compressible thrust-bar or pendent compound link pivoted to the other end of said arm, for the purpose specified.

3. The combination of the hammer-arm, the pendent compound link or thrust-bar, and the roughened cam, substantially as set forth.

4. The combination of the hammer-arm, the pendent link, the cam D, and the adjustable cam-face F', acting directly upon the link, substantially as and for the purpose set forth.

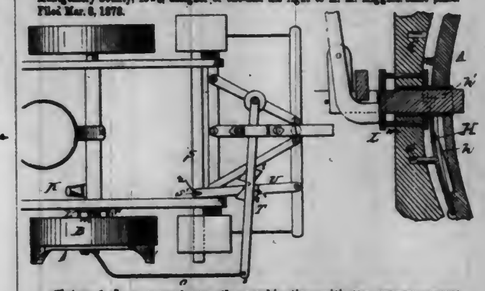
5. A fulling-mill constructed, substantially as hereinbefore set forth, with a series of hammers, arranged in two sets, one set for starting and the other for finishing the fulling, the hammer-arms, the pendent links, the cams for operating the starting set of hammers twice for each revolution of the cam-shaft, the cams for operating the finishing set of hammers once for each revolution of said shaft, and the anti-friction rollers, between which and the cams the links are griped.

203,356. EGG-CARRIERS. John H. McCarren, Cincinnati, Ohio, assignor to himself and Alfred P. Longnecker, same place. Filed Apr. 16, 1878.



Claim.—The side A, having projection *a*, formed by making incision *a'*, in combination with the side B, with its incision *a'* and *b*, substantially as and for the purpose specified.

203,357. CHECK-ROWERS FOR CORN-PLANTERS. H. N. Mcgeoughey, Douglas Township, Montgomery County, Iowa, assignor of one-half his right to H. M. Higgins, same place. Filed Mar. 6, 1878.



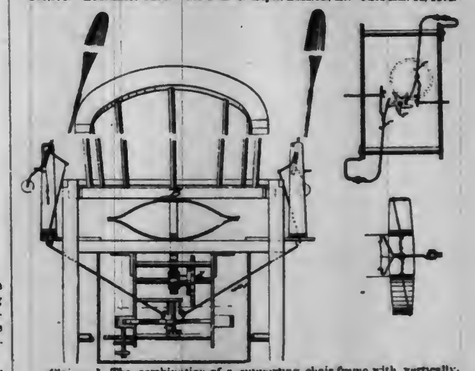
Claim.—1. In a corn-planter, the combination, with the covering-wheel, having a ratchet-wheel, or its equivalent, of the laterally-adjustable marking bar or disk, having a hinged or pivoted spring-pawl lever arranged between said marking bar or disk and covering-wheel, and a hand-lever, and intermediate mechanism, substantially as and for the purpose herein shown and described.

2. The combination, with the adjustable marking bar or disk, of the forked pawl-lever H, having the points *h' h'*, and the stationary washer D, provided with the lugs *d d*, substantially as and for the purpose specified.

3. The combination, with the laterally-adjustable marking bar or disk A and dropping-bar S, of the intermediate connecting mechanism, consisting of the pitman-rod O, pivoted lever T, and cross-lever U, substantially as and for the purpose herein shown and described.

4. The combination of the pivoted lever provided with the cams *s s*, pivoted slotted cross-lever U, having friction-roller *u*, and the dropping-bar S, provided with the stud *s'*, substantially as herein shown and described.

203,358. AUTOMATIC FANS. Gustav A. O. Meyer, Hannibal, Mo. Filed Mar. 12, 1878.

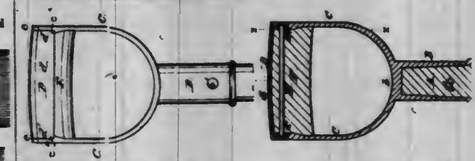


Claim.—1. The combination of a supporting chair-frame with vertically-sliding and spring-supported seat-frame, having downward-extending rack-bar, and with transmitting mechanism for setting fans or other light machinery in motion, substantially as and for the purpose described.

2. A vertically movable and guided seat-frame, supported on springs, and having a fixed rack-bar, in combination with transmitting mechanism and swinging and balanced fans, hung to spring-supports at the sides of the supporting-frame, substantially as specified.

3. The combination, with a vertically movable and guided seat-frame, having fixed rack-bar, with steadying-roller bearing on its rear side, and with driving and speed-regulating mechanism attached to the supporting-frame of the chair, substantially as and for the purpose specified.

203,359. SHOVEL-HANDLES. John F. Milligan, St. Louis, Mo., assignor of one-half his right to Ezra H. Linley, same place. Filed Apr. 2, 1878.



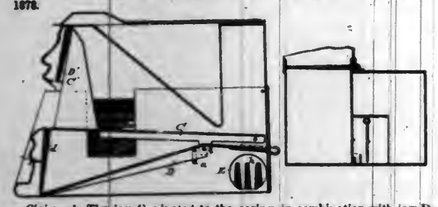
Claim.—The shovel-handle composed of the close-ended and outwardly-flaring socket B, side pieces C C, recessed at *c*, and the hand-bar, composed of the metallic outer piece, whose corners *d'* fit in notches *c'*, to prevent lateral displacement, and wooden inner piece F, all substantially as set forth.

203,360. DOOR-BOLTS. Howard M. Moffet, Cleveland, Ohio, assignor to himself, John C. Mathaway, and J. A. Moffet, same place. Filed Apr. 4, 1878.



Claim.—The combination, with a revolving double cam having centrally-recessed and raised cylindrical portion and key-hole, of guided bolts pivoted thereto and locked by end recesses or seats at their inner ends, substantially as and for the purpose set forth.

203,361. ANIMAL-TRAPS. John H. Morris and Wm. Morris, Seward, Nebr. Filed Mar. 16, 1878.



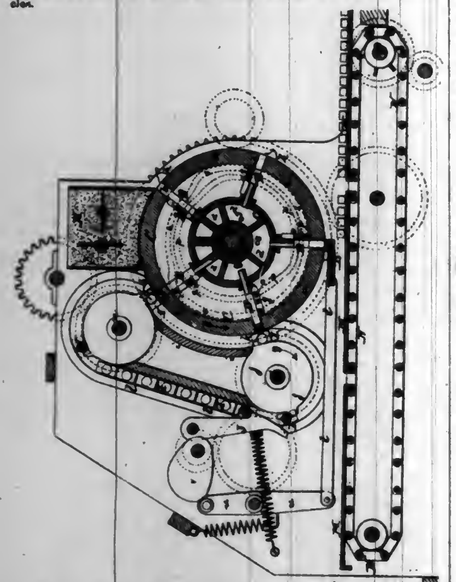
Claim.—1. The jaw C, pivoted to the casing, in combination with jaw D, having its rear end pivoted to C, and stirrup *a*, substantially as and for the purpose described.

2. In an animal-trap, the jaws D C, in combination with stirrup or swing-ing pivot *a*, substantially as set forth.

3. The lower jaw D, provided with the turned-up portion or lip *d*, in combination with the casing and jaw C, as and for the purpose described.

203,362. MACHINES FOR PRESSING AND MOLDING SUBSTANCES INTO BLOCKS. William Measer, New York, N. Y. Filed Feb. 23, 1878.

Brief.—A series of reciprocating plungers are placed radially in a rotary drum, in the outer shell or periphery of which are openings which constitute the molds. The plungers, at their inner ends, enter an inner cylinder or water-chamber, and are forced out by hydrostatic pressure, the rotation of the drum being utilized to open and shut the water-supply. The plungers are moved outward by hydraulic pressure, and are retracted or drawn in by mechanical means. Traveling abutments or anvils are provided to cover the outer ends of the molds the moment the plungers begin to be operated upon by the hydraulic pressure. By this means a uniform pressure is imparted to the articles.



Claim.—1. The machine for pressing substances into blocks, the plungers whereof are moved within a rotary drum, by hydraulic pressure, into molds carried by the same rotary drum, substantially as herein shown and described.

2. In a machine for pressing substances into blocks, the combination of the plunger or plungers D with a rotary drum, C, and with a hydraulic chamber or chambers, *d*, into which said plungers extend, substantially as herein shown and described.

3. In a machine for pressing substances into blocks, the combination of the hydraulic plunger or plungers D, whose motion is regulated by the amount of charge in the mold, with a rotary drum, C, and with a traveling abutment, I, substantially as herein shown and described.

4. In a machine for pressing substances into blocks, the drum C, containing the hydraulic chamber or chambers *d* in its central part, and the mold or molds *b* in its outer part, substantially as herein shown and described.

5. The combination of the drum C, containing the mold or molds *b* and the hydraulic chamber or chambers *d*, with the plunger or plungers D, each plunger extending into a chamber, *d*, and into a mold, *b*, substantially as herein shown and described.

6. In a machine for pressing substances into blocks, the combination of the hydraulic chamber or chambers *d*, which receive the plunger or plungers, with the inlet-pipe E and outlet-pipe F, for alternately applying and releasing hydraulic pressure, substantially as herein shown and described.

7. The method of pressing substances into blocks by means of a plunger or plungers alternately exposed to hydraulic and to mechanical action, whereby the plungers are moved in the same direction outwardly for first compressing and next discharging the blocks, substantially as herein shown and described.

8. The combination of the drum C, which has the hydraulic chamber or chambers *d* and the plunger or plungers D, with the branch pipes *f g* and inlet and outlet pipes E and F, substantially as herein shown and described.

9. The drum C, carrying the rotary plunger or plungers D, in combination with a series of separated traveling abutments, I, and with the teeth *h*, which are formed on the drum, for moving each abutment separate from all the others, substantially as herein shown and described.

10. In a machine for pressing substances into blocks, the combination of the series of separated traveling abutments I I with the molding-drum C, and with the feed-disks *j* and *m*, said drum and said disks having teeth for alternately and separately moving the single abutments, substantially as herein shown and described.

11. The combination of the traveling abutments I with the feed-disks *j* and *m*, guide-channel *l*, and snap-hook J, substantially as and for the purpose herein specified.

12. In combination with the drum C, which has the hydraulic plungers D D and means for moving them by hydraulic pressure, the rod *o*, moving in the stationary guide-groove *p*, for the purpose of actuating the plungers after the hydraulic action has ceased to affect them, substantially as specified.

13. The combination of the rod *r*, moving in the guide-groove *s*, with the rod *o*, moving in the guide-groove *p*, with the hydraulic chamber *d*, and with the rotary drum C and its plungers D, substantially as and for the purpose herein shown and described.

14. The plunger D, placed radially into the rotary drum C, and extended into the hydraulic chamber *d*, said plunger being provided with a projecting pin, *q*, for mechanical contact with devices for moving it in and outward distinct from the hydraulic action, by which it is partly moved outward, substantially as specified.

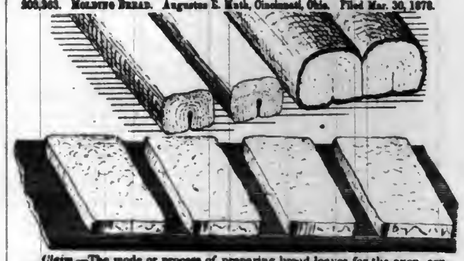
15. The pusher or slide L, combined with the rod *t*, lever *u*, and cam *v*, and with a rotary drum, C, having plungers D and molds *b*, substantially as and for the purpose shown and described.

16. The combination of the endless chain or apron N with its shaft O, ratchet-wheel *x*, pawl *b'*, and loose toothed wheel *w*, substantially as and for the purpose herein shown and described.

17. The ratchet-wheel *x*, made with one or more teeth, A^1, longer than the remaining teeth, and combined with the pawl *b'*, shaft O, chain or apron N, and trays M M, substantially as herein shown and described.

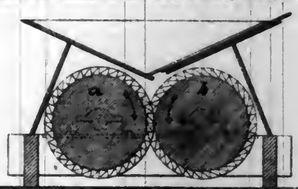
18. The machine for pressing substances into blocks, having separate and distinct rows of plungers, all the plungers of one row being moved simultaneously by hydraulic pressure, but independent of all the other rows of plungers, substantially as herein shown and described.

203,363. MOLDING BREAD. Augustus E. Muth, Cincinnati, Ohio. Filed Mar. 30, 1878.



Claim.—The mode or process of preparing bread-loaves for the oven, consisting of rolling the dough into a thin slab, then dividing the same into blocks and bending them into the form of an inverted U, substantially as and for the purpose set forth.

203,364. CRUSHING AND GRINDING ROLLS. Darius O. Newell, Yonkers, N. Y. Filed Nov. 12, 1877.



Claim.—The combination of a grinding-roller, *a*, and a feed-roller, *b*, geared to run at different speeds in opposite directions, and having teeth or detents on the sides of the angular ridges, substantially as described.

203,365. SAFE-CHECK BOOKS. H. H. Herrington, West Bay City, Mich. Filed Feb. 1, 1878.

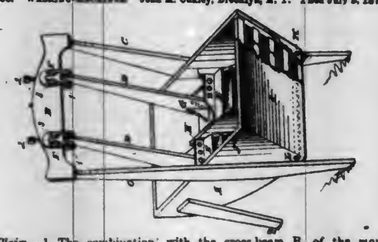
Claim.—A check, draft, or other book of similar character, made without stubs or stub-blanks, and consisting of a leaf marked or printed on one side

to form a blank for keeping a compact continuous record of the business to which the book relates, followed by a series of leaves of blank checks for use in connection with it, as shown and described, the whole arranged and bound as shown and set forth, so that the index or condensed record, when the book is open, shall be opposite the check to be filled, as specified.

203,365.



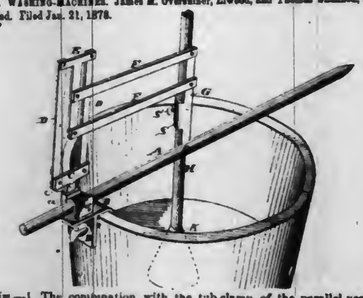
203,366. WASHING-MACHINES. John M. Oakley, Brooklyn, N. Y. Filed July 9, 1877.



Claim.—1. The combination, with the cross-beam B, of the movable bracket or clevis F and adjusting screw 2, for regulating the height of the swinging plungers, substantially as described.

2. In combination, the plungers, the heating-pipes arranged in front of the plungers, the protecting open-work interposed between the heating-pipes and the plungers, and the tub, having ingress and egress openings arranged at opposite sides thereof, for the entrance of the fresh water and escape of the suds, respectively, as set forth.

203,367. WASHING-MACHINES. James M. Overshiner, Elwood, and Thomas Shannon, Anderson, Ind. Filed Jan. 21, 1878.



Claim.—1. The combination, with the tub-clamp, of the parallel vertical bars, provided with the T connecting-piece at their lower extremities, which has detachable engagement with said clamp, substantially as set forth.

2. The combination, with the swivel-clamp which secures the attachment to a tub, of the parallel vertical bars, pivoted at their lower extremities to a connecting-piece, which latter has detachable engagement with said clamp, substantially as set forth.

3. The combination, with the two systems, respectively, of parallel vertical bars and parallel horizontal bars, of the connecting T-bar, to which the same are severally pivoted, and the bar which engages the same with the lever and the pounder-shaft, substantially as set forth.

4. The combination, with the actuating-lever and pounder-shaft, of the connecting-bar provided with a sleeve which embraces the latter, said bar being pivoted to the respective connecting extremities of the horizontal parallel bars, and to the actuating-lever, substantially as set forth.

5. The combination, with the parallel horizontal bars, the pounder-shaft, and actuating-lever, of the intermediate connecting-bar, formed with a sleeve which embraces said pounder-shaft, and is adapted to be vertically adjusted thereon, substantially as set forth.

6. The combination, with the actuating-lever, pounder-shaft, and parallel horizontal bars, of the connecting-bar, pivoted, respectively, to said lever and horizontal bars at opposite end extremities, and formed with an intermediate sleeve, which engages with the pounder-shaft, substantially as set forth.

7. The combination, with the tub-clamps, one of whose ears is formed with a vertical recess, of the T-bar, which connects the lower extremities of the parallel vertical bars, and is adapted to slide in and out of said recessed ear, substantially as set forth.

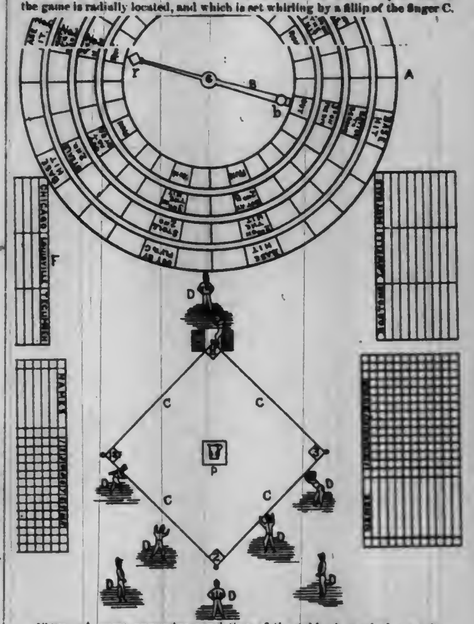
8. The combination of the two systems of horizontal and vertical parallel bars, respectively pivoted to the connecting T-bar, the sleeve-bar, which connects with the pounder-shaft, the actuating-lever, and the lower connecting T-bar, which engages with the tub-clamp, substantially as set forth.

9. In a pounder washing-machine, the combination, with the parallel horizontal bars of the vertical bar provided with the sleeve, in which the pounder-shaft is adapted to have vertical adjustment, substantially as set forth.

10. In a pounder washing-machine, the combination of the two systems of parallel bars, respectively adapted to swing in a vertical and a horizontal plane, and the vertically-swinging connecting-bar, substantially as set forth.

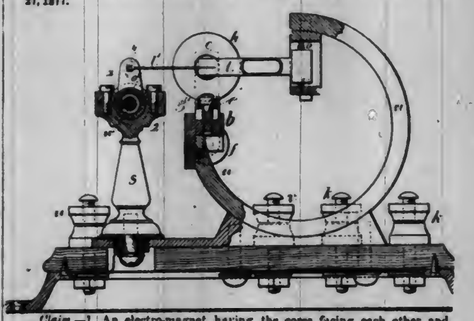
203,368. GAME-BOARDS. Edward B. Peirce, Lowell, Mass. Filed Sept. 12, 1877.

Brief.—The moves are determined from the chance resting point of a pivoted indicator, about the pivot of which a scale of different positions in the game is radially located, and which is set whirling by a flip of the finger C.



Claim.—A game apparatus consisting of the table A, marked upon its face with a list of movements of a base-ball game, radially arranged, and having at its center the revolving pointer B, in combination with the miniature field C and movable figures D, substantially as specified.

203,369. POLARIZED ELECTRO-MAGNETS. Geo. M. Phelps, Brooklyn, N. Y. Filed June 27, 1877.



Claim.—1. An electro-magnet having the cores facing each other and polarized by a permanent magnet, substantially as described.

2. The combination, with the tubular armature in a polarized electro-magnet, of a flat extension, *f'*, substantially as set forth.

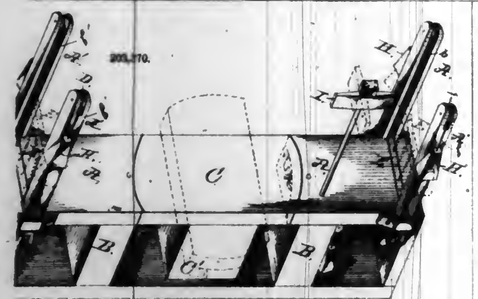
3. An electro-magnet having the cores facing each other and polarized by one pole of the permanent magnet, in combination with an armature attached to and polarized by the other pole of the permanent magnet, substantially as specified.

203,370. DRAW-BRIDGE GATES. Wm. A. Pringle and Henry Pringle, Belleville, Ontario, Canada. Filed Jan. 9, 1878.

Claim.—1. The belt F, provided with eye *r* and cords or chains *f' f'*, attached to gate E, in combination with suitable pulleys and counter-weights H, and hook *g*, substantially as described, and for the purpose set forth.

2. The belt F, provided with eye *r* and cord or chain K, attached to lever *m* of signal I, in combination with cord or chain *n* and pulley O and counter-weight, and with hook *g*, substantially as described, and for the purpose set forth.

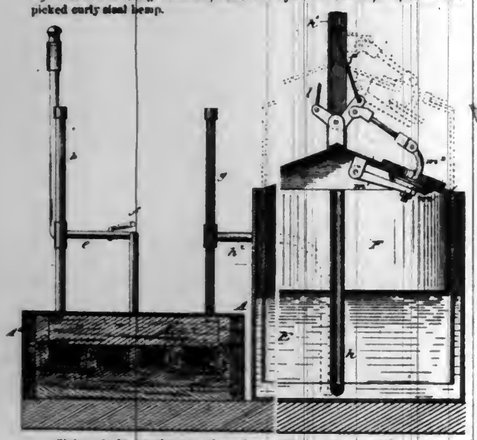
3. The hook *g*, in combination with the draw C and the eye *r*, as and for the purpose indicated.



203,370.

203,371. CARBURETERS. Josiah Reed, Troy, Ohio. Filed Mar. 29, 1878.

Brief.—The raising of the air-blowing cylinder by a cord passing over a pulley opens the air-valve by the cord drawing upon a lever-arm attached thereto. The valve is closed, as the cylinder falls, through the medium of a cord and weight attached to another lever-arm of the valve and passing over a pulley. The carbureting-chambers, incased in hydraulic cement, are packed with picked curly steel hemp.



Claim.—1. In a carbureter, the cells A, with vent *g*, cement B, and adjusting pipe *e*, with cut-off *f* and eduction-pipe *s*, substantially as shown, and for the purpose described.

2. The cells A A, as receptacles for gasoline, steel hemp, and, for the passage of air, inclosed in a casing of cement, B', and vault A', in combination with adjusting-pipe *e*, eduction-pipe *s*, tank E, and air-receptacle F, substantially as shown, and for the purpose specified.

3. The tank E and air-holder F, having an automatic valve, *m*, weighted cord or chain *f*, cord *l*, and crank K, connected to said valve, in combination with the carbureter A A, connected by pipe A' to said air-holder F, substantially as and for the purpose set forth.

4. The automatic valve consisting of the valve-disk *m*, provided with a lever, *m'*, and stem *m²*, in combination with the weighted cord or chain *f'*, chain or cord *l*, and crank K, substantially as shown and described.

5. The combination of adjusting-pipe *e*, having cut-off *f*, eduction-pipe *s*, cells A A, vent *g*, steel hemp B', tank E, and air-receptacle F, substantially as shown, and for the purpose described.

203,372. CANCELING AND WRITING INKS. Herbert Richmond and Walter S. Richmond, New York, N. Y. Filed Mar. 13, 1878.

Brief.—In the class of indelible aniline inks formed of aniline-black are added aniline colors with the metallic and oxidizing salts necessary to slowly produce aniline-black, which production is further delayed by the addition of oil.

Claim.—1. An ink for writing or canceling having as ingredients an aniline, an oxidizing agent, an oil, and a cupric salt, substantially as described.

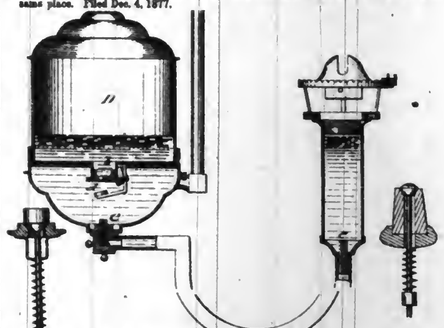
2. The ink herein described, consisting of cosine, black and blue aniline, cupric chloride, sodium chlorate, ammonium chloride, glycerine, and oil, substantially as and for the purposes set forth.

203,373. LAMP-WICKS. Chas. C. Richmond, Boston, Mass. Filed July 13, 1877.



Claim.—A lamp-wick composed of an outer woven tubular wick, *a*, in combination with one or more auxiliary woven wicks, *b*, placed within and extending up through it, substantially as and for the purpose set forth.

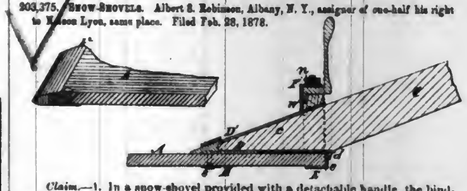
203,374. LAMPS. Nicholas L. Rigby, Winfield, Kans., assignor to himself and John D. Pyne, same place. Filed Dec. 4, 1877.



Claim.—1. As an improvement in lamps, the combination of a central bowl, having a horizontal top and circumferential flange, with a fountain fitted thereto, and having a valve that opens automatically when the fountain is placed in position on the bowl, substantially as and for the purpose set forth.

2. As an improvement in lamps, the combination of a bowl, with flat top and circumferential flange, with a fountain fitting the flanged top of the bowl, to prevent any dripping or escape of oil, substantially as described.

203,375. SNOW-SHOVELS. Albert S. Robinson, Albany, N. Y., assignor of one-half his right to Marcus Lyon, same place. Filed Feb. 28, 1878.

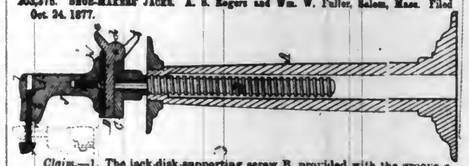


Claim.—1. In a snow-shovel provided with a detachable handle, the binding-strap E, provided with the notched vertical flange *e*, and the stop *d*, secured to the base of the detachable handle, substantially as and for the purpose set forth.

2. In a snow-shovel having a detachable handle, the binding-strap E, having a notched vertical flange, *e*, in combination with the binding-piece F, having a notched vertical portion, *n'*, and the bolts *f f*, when all are arranged for operation in the manner described.

3. In a snow-shovel, the combination, with the blade A, having an opening for receiving a detachable handle formed by the notched vertical portion *e* of binding-strap E, and notched vertical portion *n'* of binding-piece F, secured to the back-stop by bolts, of the handle having the metallic covering D D', and the stop *d*, substantially as and for the purpose set forth.

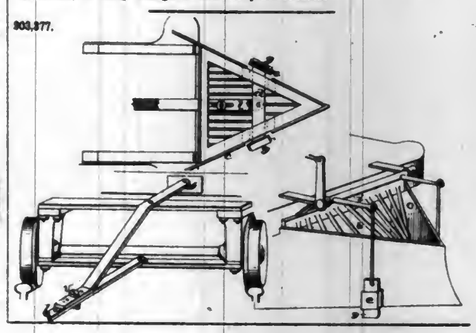
203,376. SHOE-MAKERS' JACKS. A. S. Rogers and Wm. W. Fuller, Salem, Mass. Filed Oct. 24, 1877.



Claim.—1. The jack-disk-supporting screw B, provided with the groove *a*, in combination with the column A, having the gib *b* and the socket *c* therefor, all being arranged as set forth.

2. The combination of the jack J with the column A and screw B, and with the cap C and disk D, hinged together and furnished with cam *e f*, as described, all being arranged substantially as set forth.

203,377.



203,377. TRACK-CLEARERS. George Royal, Truckee, Cal. Filed Feb. 26, 1878.

Brief.—Two cutters, for detaching ice and snow from the inside of the rails, are raised and lowered by rocking shaft and connecting-rods reaching to the cab. The cutters slide up and down in loops in the end of a transverse bar, which slides in bearings on the pilot. The center of this bar is connected to the truck by a longitudinal bar, which last is supported by another bar reaching over the top of the truck.

Claim.—1. In a snow-plow, the combination of the beam *d*, having the knives or cutter *g* embraced by its ends, a supporting-frame for the beam to move in, and a lever for adjusting the beam back and forth across the track, substantially as shown.

2. The combination of the slide-rod, knives or cutters, guides for the knives to move in, connecting-rods, rocking shaft, and connecting-lever, substantially as described.

3. The combination of the horizontally-adjustable slide-beam *d* and rods *l* and *s*, whereby the knives may be automatically adjusted by the truck or locomotive, substantially as set forth.

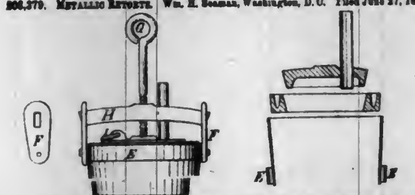
203,378. MOP HOLDER AND WRINGER. Jas. L. Sandford and Wm. P. Sampson, Binghamton, N. Y. Filed Jan. 10, 1878.



Claim.—1. The supplementary roller B, working within the mop-roller A, substantially as described.

2. The combination of the mop-roller A and supplementary roller B, wringing-roller C, crank D, stop-pin E, and latch F, all constructed substantially as herein described, for the purpose set forth.

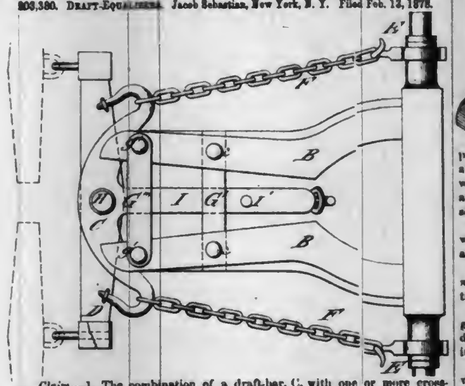
203,379. METALLIC RETORTS. Wm. H. Seaman, Washington, D. C. Filed June 27, 1877.



Claim.—1. A metallic retort consisting of a head and detachable kettle, united to the head by a conical or driven joint, as shown and described.

2. The hoop E, with the ears F, in combination with the bar H and screw G, used to unite the two parts of a retort, as shown and described.

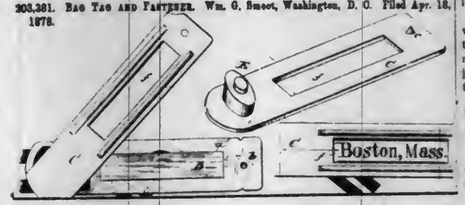
203,380. DRAFT-EQUALIZERS. Jacob Sebastian, New York, N. Y. Filed Feb. 13, 1878.



Claim.—1. The combination of a draft-bar, C, with one or more cross-pieces, G^1 G^n, provided with slots to receive the shank I of the draft-bar C, the said cross-pieces being attached to the hounds B B, substantially as specified.

2. The combination, in a draft-equalizer, of the whiffletree D, the bolt H, the slotted cross-pieces G^1 G^n, the draft-bar C, the draft-chains F F, the hooked cross-pieces E E, the whiffletree bolt keeper J, attached to the hounds, substantially as herein set forth.

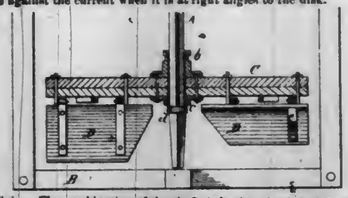
203,381. BAG TAG AND FASTENER. Wm. G. Smoot, Washington, D. C. Filed Apr. 18, 1878.



Claim.—A combined bag tag and fastener, consisting, essentially, of the box A A^1, having recess *a'* for the insertion of a label-slip, and perforations *a a* for the cord to pass through, in combination with the pivoted cover C, having slot or opening *f*, and cam E, substantially as and for the purpose herein shown and described.

203,382. CURRENT-WHEELS. Estill H. Smith, Keeler, Mich. Filed Mar. 2, 1878.

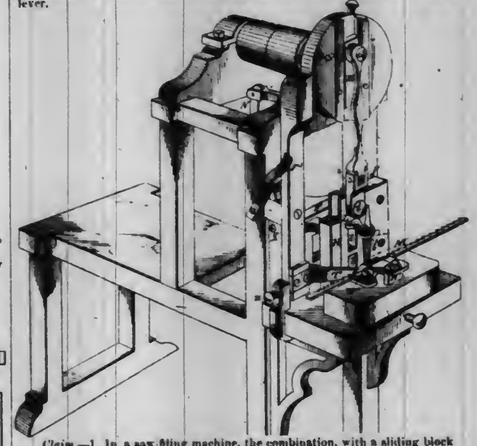
Brief.—To the rear side of each paddle is a bracket, which holds the paddle against the current when it is at right angles to the disk.



Claim.—The combination of the shaft A, having shoulder *d*, frame B, disk-wheel C, hinged paddles D, and brackets *c*, as shown and described.

203,383. SAW-FILING MACHINES. Wm. T. Smith, Baltimore, Md. Filed Mar. 25, 1878.

Brief.—The crank-wheel is provided with a cam on its rear face, which, through pivoted levers and a strap, swings the vertically-sliding file-rush to one side, out of contact with the saw during the upward stroke. A cam on the perimeter of the crank-wheel operates a feeding-pawl attached to a pivoted lever.



Claim.—1. In a saw-filing machine, the combination, with a sliding block provided with file-holders, of a swinging frame the lower end of which is adapted to have an oscillating or swinging movement imparted thereto, whereby the file may be removed clear of the saw during its upward stroke, and forced against the saw-teeth during its downward stroke, substantially as set forth.

2. In a saw-filing machine, the combination, with a sliding block provided with file-holders, said block mounted in a swinging frame, of a wrist-pin actuated by the driving shaft and a jointed pitman, substantially as set forth.

3. In a saw-filing machine, the combination, with the cam O, lever N, rod *n*, and strap P, of the swinging frame H and one or more springs, Q, substantially as set forth.

4. In a saw-filing machine, the combination, with a pivoted or hinged guide-frame, of a cam secured or formed on the rear surface of the eccentric-disk, and intervening mechanism, substantially as set forth, for imparting an intermittent lateral movement to said guide, substantially as set forth.

5. In a saw-filing machine, the combination, with a revolving disk provided with an adjustable abutment, of spring-pressed lever having a saw-feeding finger attached to its lower end, substantially as set forth.

6. In a saw-filing machine, the combination, with a revolving disk provided with an adjustable abutment, of a spring-pressed lever provided with a saw-feeding finger and an adjustable stop to regulate the feed, substantially as set forth.

7. In a saw-filing machine, the combination, with a swinging guide-frame, of a cam and mechanism for moving the frame away from the saw, and one or more springs or equivalent means engaging with the lower end of the swinging frame for forcing the file against the saw-teeth, substantially as set forth.

8. In a saw-filing machine, the combination of the following elements, to wit: a sliding block, one or more springs for moving the lower end of the block toward the saw, cam on the disk attached to the driving shaft, and intervening mechanism for moving the lower end of the block away from the saw, an adjustable saw-block, and automatic feeding mechanism, substantially as set forth.

203,384. HOLLOW AUGERS. George F. Stearns, Syracuse, N. Y. Filed June 15, 1876.

Brief.—The cutter is attached to one of a pair of hinged jaws; the other as a gage to determine the size of the tenon to be cut.

Claim.—1. The jaws B G, pivoted at a point, *d*, in combination with each other and the cutter-head of a hollow auger, substantially as and for the purposes specified.

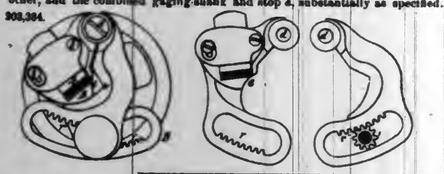
2. In combination with two jaws, pivoted at any point, *d*, on the cutter-head of a hollow auger, the segments *r r'*, provided with racks having graduated teeth, and pinion P, operating to center the jaws automatically at any degree of adjustment, and for the simultaneous opening and closing of the jaws, as herein set forth and specified.

3. The pinion P, provided with an axial pin passing through a boss on the frame of the center-head of a hollow auger, gearing into the segmental rack *r r'* of the expanding and contracting jaws, in combination therewith, and the auger-frame A, as herein set forth, and for the purposes specified.

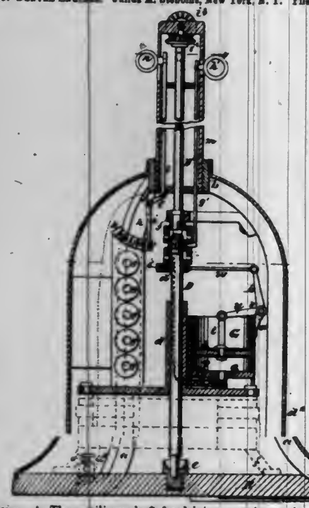
4. The projection *i* and recess or indentare V in the jaws, substantially as and for the purposes specified.

5. The adjusting divided hub and binding-screw, in combination with each other, and the combined gaging-shank and stop *e*, substantially as specified.

203,384.



203,385. DENTAL ENGINE. Julius M. Stebbins, New York, N. Y. Filed Jan. 14, 1878.



Claim.—1. The auxiliary shaft for driving rotating tools, and a clutch for engaging the said shaft, in combination with an electro-magnetic engine, arranged to drive a pneumatic plugger, substantially as shown and described.

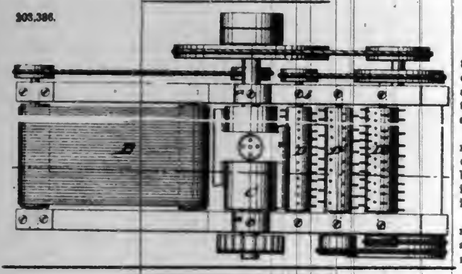
2. The dome-shaped case d^3, containing the driving mechanism, and the surmounting tubular portion *m*, in combination with the vertical independent shafting D D', extending through the same, and provided with a coupling, and the vertical clutch-operating rod *g'*, extending up through the portion *m*, and having a projecting handle, *h'*, substantially as and for the purpose described.

3. The combination, with the electro-magnetic engine and the resistance-coils *g*, arranged in circuit, as described, and having contact-points 1 2 3 4 5, of the case d^3 and tube *m*, the elbow-lever *i i'*, and the rod *l*, extending up through the tubular case, and having projecting handle *m*, substantially as and for the purpose described.

4. The combination, with the vertical rotating shaft D, having an eccentric, d^2, of the eccentric-rod *w*, elbow-lever *b' u*, piston and rods *s t*, and the pneumatic cylinder G, substantially as and for the purpose described.

5. In a dental engine, the air-forcing cylinder G, arranged to communicate with the plugger, and provided with an inwardly-opening loaded valve, substantially as described.

203,386.



203,386. MACHINES FOR MASHING YUCCA. Abraham Stoner, Stony Point, La. Filed Jan. 29, 1878.

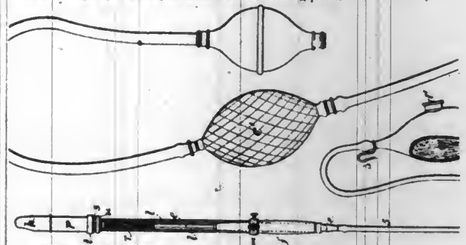
Claim.—1. A machine for mashing yucca-blades, consisting of an endless feed-belt, revolving mashing-rollers, and of a series of revolving and toothed brushing-cylinders, that work on a metallic plate, substantially as and for the purpose set forth.

2. A machine for mashing yucca-blades, consisting of an endless feed-belt, revolving mashing-rollers, a series of revolving brushing-cylinders, and of a moistening or sprinkling device, substantially as described, above the mashing-rollers, substantially as and for the purpose set forth.

3. A machine for mashing yucca-blades, consisting of an endless feed-belt, of revolving mashing-rollers, and of a series of revolving and toothed brushing-cylinders, working in connection with a metallic plate, the brushing-cylinders increasing in size from the mashing-roller outwardly, substantially as specified.

203,387. CAUTERIZERS. F. A. Stohlmann and Edwd. Pfarre, Brooklyn, N. Y. Filed Apr. 12, 1878.

Brief.—The different cauterizing-points are interchangeably secured to the body of the instrument, and are adjustable to and from the point of the flame, which is fed by hydrocarbon vapor. In place of the usual receptacle for the liquid hydrocarbon, a chamber containing some fibrous material saturated therewith is provided. A blast of air forced through the hydrocarbon-chamber keeps up a flame just under the cauterizing point.



Claim.—1. The combination, with the cauterizing-instrument, of a carbureting-vessel containing fibrous material and a vaporizable liquid hydrocarbon and an air-forcing bulb, substantially as set forth.

2. The cauterizing-tip, made hollow, in combination with the jet-pipe *e*, shield *p*, and means for moving the cauterizing-tip toward and from the jet, substantially as set forth.

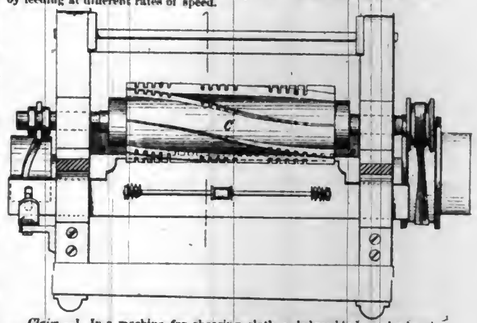
3. The combination, with the cauterizing-tip, of the helix *s* and jet-pipe *e*, substantially as set forth.

4. The combination, with the cauterizing-tip *b* and the shield *p*, of the spring *r*, to keep the end of the shield in contact with the tip, for the purposes set forth.

5. The changeable cauterizing-tips provided with the side rods *l*, in combination with the handle *f*, tube *e*, and clip *m*, substantially as set forth.

203,388. CLOTH-FINISHING MACHINES. Dwight C. Sumner, Millbury, Mass. Filed Jan. 18, 1878.

Brief.—A cloth-rest and revolving blade-cylinder (both longitudinally reciprocating) operate in combination with a fixed ledger-blade, (the latter and the blade-cylinder having alternating cutting-sections,) to produce simultaneously two independent dissimilar series of line ornamentations (undulating or zigzag and straight) lengthwise of the cloth. The figures may be varied by feeding at different rates of speed.



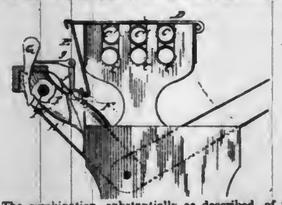
Claim.—1. In a machine for shearing cloth, a ledger-blade and a longitudinally-reciprocating revolver or blade-cylinder, both of which have a series of cutting edges or sections, arranged in relation to each other substantially as described, whereby their combined action will impart to the fabric or face thereof, in a direction with its length, two distinct and dissimilar series of stripes, alternating with each other, substantially as specified.

2. In a machine for shearing cloth, a ledger-blade and a longitudinally-reciprocating revolver or blade-cylinder, each of which has long and short cutting-sections, alternating with each other, the long sections of one blade being disposed on a line opposite the short sections of the other, whereby two independent dissimilar series of line ornamentations are simultaneously formed in longitudinal direction on the face of the fabric, substantially as set forth.

3. In a machine for shearing cloth, the combination, with a longitudinally-reciprocating revolver or blade-cylinder, provided with cutting-sections and a recessed ledger-blade, of a longitudinally-reciprocating cloth-supporting rest, substantially as and for the purpose described.

203,389. STOP-MOTIONS FOR RAILWAY DRAWING-HEADS. Frank E. Taber, Rockville, R. I. Filed Mar. 28, 1878.

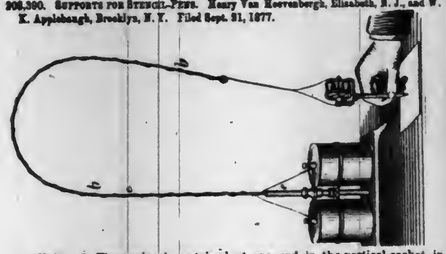
Brief.—When the roving breaks and becomes wound around any of the upper rolls, they will rise and press against the horizontal bars resting thereon, which, through the system of intermediate levers, operate to throw a catch into the notches of the ratchet-wheel on the operating-shaft, and thus stop the machine.



Claim.—1. The combination, substantially as described, of the compact rollers C C', levers D D D D, rods E E E E, and rock-shaft F, having the upright *f* and trigger *g* working against the notched catch G, whereby the rock-shaft F is turned and its arm tilted, so as to operate the stop-catch G and stop the machine when the roving breaks, substantially as and for the purpose set forth.

2. In combination with the operating-shaft F', having ratchet-wheel I, the stop mechanism herein shown and described, consisting of levers D D D D, rods E E E E, rock-shaft F, having upright *f*, trigger *g*, and catch G, all constructed and combined to operate substantially as and for the purpose herein shown and set forth.

203,390. SUPPORTS FOR STENCIL-PENS. Mary Van Hoevenburgh, Elizabeth, N. J., and W. K. Applebaugh, Brooklyn, N. Y. Filed Sept. 21, 1877.



Claim.—1. The spring *b*, sustained at one end in the vertical socket, in combination with the suspending-cords and perforating-pen, substantially as set forth.

2. The combination, with a perforating-pen and its electro-magnet, of the flexible conductors *c* and the spring *b*, for suspending the pen, as set forth.

203,391. PISTON-ROD PACKINGS. Adolphus H. Witt, Union, Mo. Filed Mar. 23, 1878.



Claim.—The combination, with the piston-rod A, of the sectional shell B, receiving in recesses the cut rings C at each end, the band-springs D in the middle, the end rings E, and the medium sleeve D', arranged as shown and described.

203,392. APPARATUS FOR HEATING WATER. Alex. R. Walker, Melbourne, assignee of one-half his right to John McFadyen, Statham, in the British colony of Victoria. Filed Sept. 4, 1877.

Brief.—Water is delivered to the heater in the form of spray, and the products of combustion pass upward through the falling spray, thus heating the water.

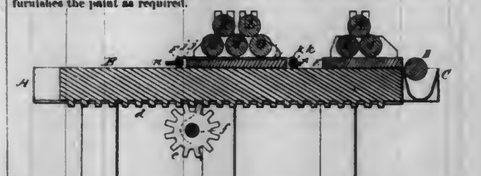


Claim.—1. In combination with the discharge-pipe for the products of combustion, the overhanging shield H, for receiving and discharging the water-current, and the inclined annular plate J, for interrupting the current and directing it upon the discharge-pipe for the products of combustion, substantially as described.

2. The apparatus described, consisting essentially of the outer casing A, the inner casing B, the gas-supply pipe C D, the basin E, having the discharge-pipe G; the water-supply pipe K, and the diaphragm M, all combined and arranged substantially as described.

203,393. PAINTING-MACHINES FOR FLAT SURFACES. Jas. Warner, Brooklyn, N. Y. Filed Mar. 16, 1878.

Brief.—Flat articles, as sheets of metal, are carried by a reciprocating table under a series of painting-rollers, whereby they become coated with the desired color. A suitable arrangement of distributing-rollers and color-bed furnishes the paint as required.

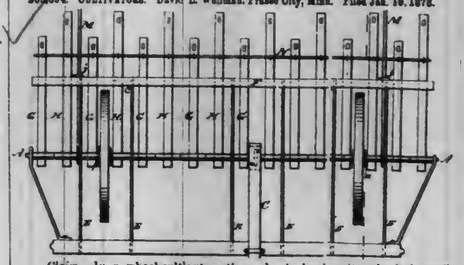


Claim.—1. In a machine for coating flat surfaces with color, the trough C and roller D, provided with the toothed wheel *h*, in combination with the rollers I J K, reciprocating table B, frame A, and toothed plate *i*, substantially as and for the purpose set forth.

2. The frame A and rollers H I J K L M N O, in combination with the reciprocating table B, trough C, roller D, and slab E, substantially as and for the purpose specified.

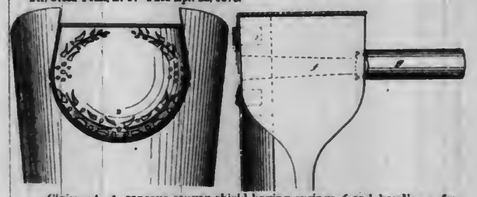
3. The frame F, consisting of the clamping-plates *j k* and screws *l a*, said frame being hinged or pivoted to the table B, substantially as and for the purpose set forth.

203,394. CULTIVATORS. David L. Wellman, Fraser City, Minn. Filed Jan. 10, 1878.



Claim.—In a wheel-cultivator, the axle A, having its wheels laterally adjustable thereon, and carrying a series of drag-bars, G H, arranged on both sides of said wheels, in combination with the tongue and frame C D E, the elevated cross-bar F, the lifting-frame N, levers M, guides *j*, and hooks *k*, substantially as shown and described.

203,395. APPARATUS FOR ENGRAVING GLASS BY MEANS OF A SAND-BLAST. John Whittaker, Green Point, N. Y. Filed Apr. 12, 1878.

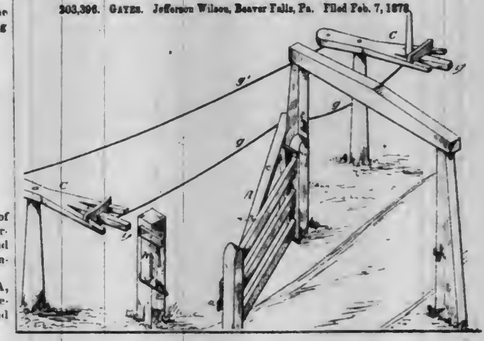


Claim.—1. A concave-convex shield having springs *f* and handles *g*, for securing it to the piece to be engraved, substantially as herein shown and described.

2. A concave-convex shield having removable stencils *a b*, substantially as herein shown and described.

3. A shield having a fixed stencil-pattern, and provided with spring-handles, substantially as herein shown and described.

203,396. GATES. Jefferson Wilson, Beaver Falls, Pa. Filed Feb. 7, 1878.



Claim.—1. The combination, with the hinged gate A, its catch *a*, and post B, arranged as usual, of the keeper *b'* and swinging plate *b*, arranged and operating in connection with the latch, as set forth.

2. The combination, with the gate, levers C C, and wires *g g'*, of the cross lever C', arranged as set forth.

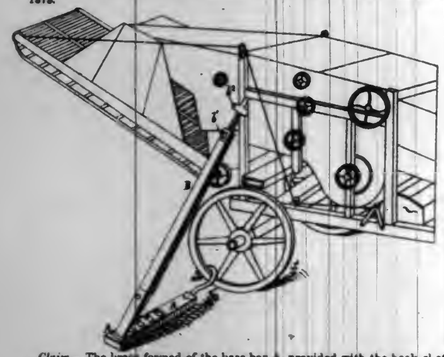
3. The combination of the gate, inclined arm *c*, crank *e*, carried beneath the end of the arm, levers C C, wires *g g'*, and wire *f*, operated by the wire *g* and connected to the latch, as set forth.

203,397. RETORT-LIFTERS. Frank W. Wilson, Manchester, N. H. Filed Mar. 27, 1878.



Claim.—A lifting device for gas-retorts, made of an outer part, with bolt-holes fitting the bolts on the face of the retort, of an inner shoulder or seat corresponding to the inside shape of the retort, and of an exterior staple or handle, substantially as and for the purpose described.

203,398. BRACES FOR THRASHING-MACHINES. John Wisda, Defiance, Ohio. Filed Apr. 2, 1878.



Claim.—The brace formed of the base-bar A, provided with the hook *a'* at its inner end and the notches *a'* in its upper side, and the inclined bar B, having its lower end made wedge-shaped, and provided at its upper end with a nut, *b'*, and hand screw *b'*, substantially as herein shown and described.

203,399. BUOYS. George D. Wykoff, Philadelphia, Pa. Filed Sept. 11, 1877.



Claim.—1. A safe buoy constructed with outer and inner shells A B and diaphragms *b b*, so as to divide the interior space into separate compartments, as set forth.

2. A safe-buoy constructed with outer and inner shells A B, inclosing a chamber for the reception of papers or valuable articles, a ballast-chamber, a, water-chamber D, and air or provision chamber C, as set forth.

3. The safe-buoy A, provided with the chain H, secured in a chamber at the bottom of said buoy, said chamber having no opening to the body of the buoy, combined with the disk-shaped counterpoise I, secured to the free end of said chain, and adapted to close the opening in said chamber, as set forth.

4. The safe-buoy A, provided with a cable, H, attached to its lower end, combined with the disk-shaped counterpoise, provided with anchor-flukes, radially placed along the edge of said disk.

5. A safe-buoy provided with a cable and combined with a counterpoise, I, constructed with anchor-flukes, as shown in Fig. 3.

203,400. CORSET-BUSKS. Julia D. Banfield, Boston, Mass. Filed June 16, 1877.

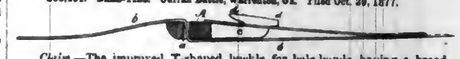


Claim.—1. The steel or busk made broader at or near the lower portion of the bust, substantially as and for the purpose described.

2. The steel or busk made broadest at or near its center, and narrow at its upper end, at the sides of the bust, to operate with the bust, substantially as described.

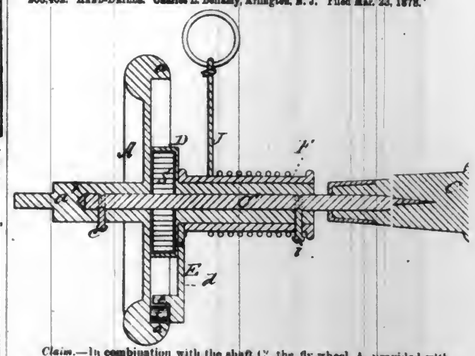
3. The combination, with a full bust corset, substantially as described, of a steel made broader at or near the lower portion of the bust, to operate substantially as set forth.

203,401. BALE-TIES. Curran Battle, Warrenton, Ga. Filed Oct. 29, 1877.



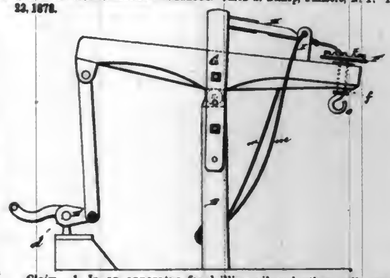
Claim.—The improved T-shaped buckle for bale-bands, having a broad head provided with a slot, *a*, having angular edges to adapt it to bite and hold the band by friction when the end *b* of the same is extended beneath the buckles, and the narrow shank *c*, bent upward and provided with the lugs *d d*, all as shown and described, to operate as specified.

203,402. HAND-DRILLS. Charles L. Bellamy, Arlington, N. J. Filed Mar. 23, 1878.



Claim.—In combination with the shaft C, the fly-wheel A, provided with a socket for the tool, and having a flange, *a*, at its perimeter, and the rotating drum F and its arm *d*, provided with a roller, *f*, adapted to jam against the flange *a*, whereby the fly wheel is rotated by the motion imparted to the drum, substantially as specified.

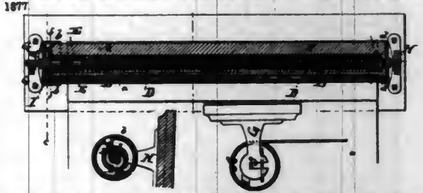
203,403. OIL-WELL-DRILLING APPARATUS. Jason S. Bishop, Fillmore, N. Y. Filed Feb. 23, 1878.



Claim.—1. In an apparatus for drilling oil and other wells, the pivoted pawl H, standard N, with arms I J, and the cords or chains *m m*, in combination with the cogged wheel F and shaft *f*, substantially as and for the purposes set forth.

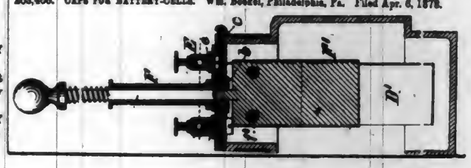
2. In apparatus for drilling oil and other wells, the combination of the adjustable arm G, stud *i*, clip *h*, and pivoted pawl H, whereby said pawl can be turned laterally, for the purposes herein set forth.

203,404. SPRING SHADE-ROLLERS. Christian Biesmann, New York, N. Y. Filed June 22, 1877.



Claim.—The combination of the roller A and its spring D with the arbor E, having a gudgeon, *g*, with two notches or recesses, and with the two separated sliding detents J and L, and slotted cap I, all arranged so that one of the two detents will, by gravity, be locked against the notched gudgeon, substantially as specified.

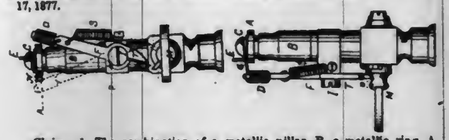
203,405. CAPS FOR BATTERY-CELLS. Wm. Bockel, Philadelphia, Pa. Filed Apr. 6, 1878.



Claim.—1. The combination, in a battery, of a non-conducting cap having a central hub or boss, a bridge-piece for supporting the carbon plates, secured to the lower side of said cap and fitting over said hub or boss, a screw passing through the cap and securing the bridge-piece and negative post thereto, and a positive post secured to the cap by a screw resting in a recess in the top of the cap, said screw being separated, by the non-conducting material of the cap, from the interior of the cell, and connected by a plate on the upper surface of the cap to a socket fitted within the central hub, and supporting the zinc element, substantially as and for the purpose set forth.

2. The combination, with a jar or cell, of a collar having an inwardly-projecting flange, and a bridge-piece secured to the cap, and provided with spring-catches, which fit beneath the flange of the collar, substantially as and for the purpose set forth.

203,406. ELECTRIC GAS-LIGHTING BURNERS. A. L. Begart, New York, N. Y. Filed May 17, 1877.

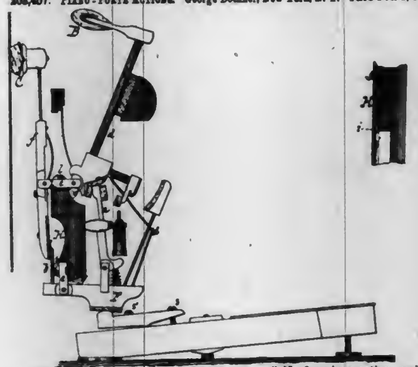


Claim.—1. The combination of a metallic pillar, B, a metallic ring, A, secured upon a non-conducting gas-tip, C, and carrying the fixed electrode E, and a vibrating electrode, arranged to alternately close and break the galvanic current with the said electrode E, as and for the purposes set forth.

2. In an electric gas-lighting burner, the mechanical device for the purpose of operating the arm F, consisting of the lever T, flat spring O, rotating short arm V, stop-pin P, and spring S, or its equivalent, when combined with the stop-cock M and gas-burner, substantially as and for the purpose specified.

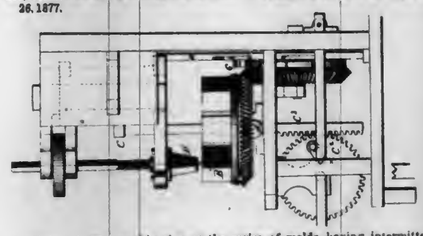
3. In an electric gas-lighting burner, the combination of the non-conducting gas-tip C, ring A, with its set-screw, electrode E, movable arm F, which carries the second electrode, spring S, stop-pin P, lever T, spring O, stop-cock N, short arm V, and pillar B, substantially as and for the purpose specified.

203,407. PIANO-FORTE ACTIONS. George Bothner, New York, N. Y. Filed Feb. 2, 1878.



Claim.—The combination, with the cross-rail H of a piano action, and the block *c*, resting thereupon and supporting the pivot of the hammer-lever *d*, and a strip of oil-cloth, *g*, or other flexible material arranged between said rail and block, of the metal wire *h*, lying between said block and rail, and embraced by coincident grooves therein, so as to force said strip of oil-cloth or other material into one of said grooves, substantially as described, and for the purpose set forth.

203,408. MACHINES FOR MAKING FLOWER-POTS. J. Brealin, Fair Haven, Conn. Filed Oct. 26, 1877.

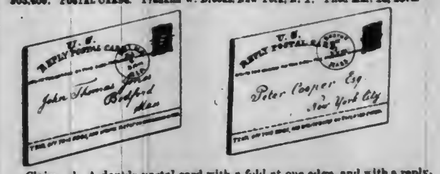


Claim.—1. The combination of the series of molds, having intermittent rotary movement imparted thereto, with one or more reciprocating formers, to one of which a rotary motion is imparted, all substantially as and for the purpose described.

2. The combination of the series of molds, having intermittent rotary movement imparted thereto, with one or more reciprocating formers, to one of which a rotary motion is imparted, and a false bottom, *b*, arranged to be raised after the completion of the pot, substantially as and for the purpose described.

3. The combination of the series of molds, having intermittent rotary movement imparted thereto, with one or more reciprocating formers, to one of which a rotary motion is imparted, and with the loose follower *e*, attached to the carriage, all substantially as and for the purpose described.

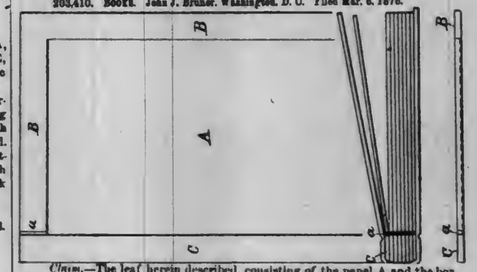
203,409. POSTAL CARDS. Franklin W. Brooks, New York, N. Y. Filed Mar. 18, 1878.



Claim.—1. A double postal card with a fold at one edge, and with a reply-card inclosed within said double card, each card being adapted to carry a full-sized message, and with the message of each card permanently connected with its address and postmark.

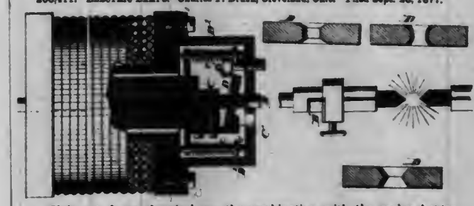
2. A double postal card with a fold at one edge, and with a reply-card inclosed within said double card and united therewith at one edge, this edge being perforated, so that by tearing it off the inclosed card will be simultaneously disclosed and severed, as herein specified.

203,410. BOOKS. John J. Bruner, Washington, D. C. Filed Mar. 6, 1878.



Claim.—The leaf herein described, consisting of the panel A and the border or frame B C, provided with the incisions *a a* inside of the part C to form hinges, substantially as and for the purpose set forth.

203,411. ELECTRIC LAMPS. Charles F. Brush, Cleveland, Ohio. Filed Sept. 26, 1877.



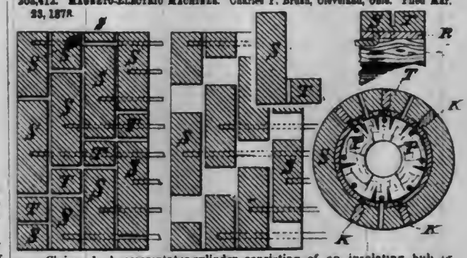
Claim.—1. In an electric lamp, the combination, with the carbon-holder and core, of a clamp surrounding the carbon-holder, said clamp being independent of the core, but adapted to be raised by a lifter secured thereto, substantially as set forth.

2. In an electric lamp, the combination of the clamp D and adjustable stop D', or their equivalents, by means of which the carbon points are prevented from becoming so far separated as to break the electric current and extinguish the light, substantially as specified.

3. In an electric lamp, the combination of the core or armature C, the clamp D, and adjustable stop D', or their equivalents, whereby the points of the carbons are separated from each other when an electrical current is established, prevented from separating so far as to break the current, and gradually fed together as the carbons are consumed, substantially as described.

4. In combination with the core C, one or more sustaining springs, c, substantially as and for the purpose shown.

203,412. MAGNETO-ELECTRIC MACHINES. Charles F. Brush, Cleveland, Ohio. Filed Mar. 23, 1878.



Claim.—1. A commutator-cylinder consisting of an insulating hub or body, to which are attached sub-segments, placed in proper electrical connection with the general machine in which the commutator is employed, and wearing-segments detachably attached to said sub-segments, substantially as shown.

2. The combination of sub-segments R, wearing-segments S or T, and screws K, substantially as shown.

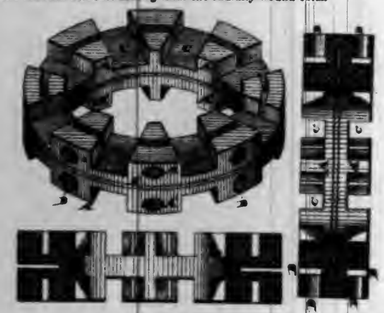
3. A commutator having metallic insulating segments T, substantially as shown.

4. A commutator having metallic insulating segments T attached to and forming part of the adjoining conducting segments S, substantially as shown.

5. A commutator having two conducting-segments, S, two opposing ends of which said segments are separated by an intervening insulator, T, the other ends of said segments, while insulated from each other, being closely associated, and not provided with an insulator, T, or its equivalent, substantially as shown.

203,413. ARMATURES FOR DYNAMO-ELECTRIC MACHINES. Charles F. Brush, Cleveland, Ohio. Filed Jan. 23, 1878.

Brief.—An annular ring, employed as an armature, is made of insulated parts, which are also grooved in various ways, for the purpose of destroying the induced currents arising from the radially-wound coils.



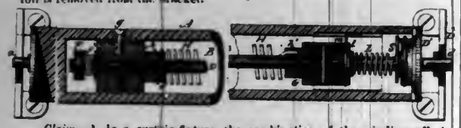
Claim.—1. An annular armature constructed from a single solid piece of metal, and grooved upon its periphery or sides, or both, substantially as and for the purpose shown.

2. An annular armature consisting of two or more plates formed with grooved sides or peripheries, or both, and insulated from each other, substantially as set forth.

3. An annular armature provided with holes, perforations, or depressions D, or their equivalents, substantially as and for the purpose shown.

203,414. CURTAIN-ROLLERS AND BRACKETS. Chauncey Buckley and L. L. Sowyer, Meriden, Conn. Filed Nov. 30, 1877.

Brief.—A stirrup loosely mounted in the roll has an external projection, which engages with a recess in the inner surface of the roll, and by an internal pawl engages with a ratchet in a collar engaging frictionally with the shaft. A stirrup having an internal pawl is pivoted to a fixed arm on the shaft, and surrounds a ratchet fixed to the roller-head, which engages the pawl when the roll is removed from the bracket.



Claim.—1. In a curtain-fixture, the combination of the winding-roll A, stationary shaft D, and winding-spring H with a bearing, E, stationary in the roll at the inner end of the shaft, and through which the shaft passes, but so that the said bearing will turn freely on said shaft, a spring, *f*, on the inner end of said shaft resting against the inner end of the said bearing, and a collar, *e*, stationary on the said shaft, and against the other end of the bearing, all substantially as described.

2. In a curtain-fixture, the combination of the winding-roll, stationary shaft, winding-spring, and a frictional device between said shaft and roll, consisting of a ratchet, loose on said shaft, but in frictional engagement therewith, and a pawl, in connection with the roll, and so as to revolve freely around the ratchet in one direction, and engage the said ratchet in the opposite direction, substantially as and for the purpose described.

3. The combination of a circular toothed ratchet, a stirrup around said ratchet, arranged to revolve concentrically around, but suspended loosely at a single point eccentric to the said ratchet, and with a pawl upon the inner side of said stirrup to engage said ratchet in one direction, but so as to allow said stirrup to revolve in the opposite direction without engagement with said ratchet, substantially as described.

4. In a curtain-fixture, the combination of the winding-roll, stationary shaft, spring between said shaft and roll, a ratchet stationary upon said roll, an oscillating stirrup outside and around said ratchet, but in connection with said shaft at a point eccentric to said ratchet, and with a pawl inside said stirrup, substantially as and for the purpose described.

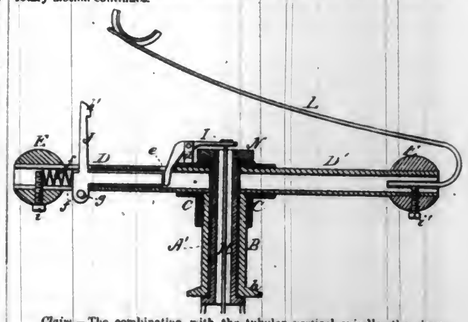
203,415. CARVING-FORKS. Edwin Cody, West Meriden, Conn., assignor to Meriden Cutlery Company, same place. Filed Apr. 19, 1878.



Claim.—The herein-described guard for carving-forks, consisting of the bifurcated piece, one leg extending each side of the shank and hinged thereto, combined with a spring-tongue in the guard and shoulder on the shank above the hinge, over which the said spring-tongue works, and so as to hold the guard in either its closed or open position, substantially as described.

203,416. BALL-TARGET THROWERS. Milton E. Card, Owasco, N. Y. Filed Mar. 9, 1878.

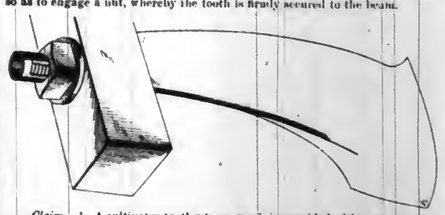
Brief.—One end of a cord is wound around or upon a spool or sleeve, and the other end is attached to the releasing mechanism. By pulling upon one end of the cord, rotary motion is imparted to the device, and then by pulling upon the other end the spring is released and the ball is thrown, while the rotary motion continues.



Claim.—The combination, with the tubular vertical spindle, the sleeve rotating thereon and having the tubular arms D D', the right-angular catch J, having one branch in arm D, and the other projecting through slots therein, and the spring *s*, of the projecting spring L, attached to arm D' and adapted to engage catch J, the angular lever I, engaging the said catch, the rod H, extending through the spindle, and the cord F, attached at one end to said rod and at the other to the said sleeve, substantially as specified.

203,417. CULTIVATOR-TEETH. Hugh Carson, Pittsburg, Pa., assignor to Alexander Speer & Sons, same place. Filed Apr. 8, 1878.

Brief.—A key or cross-bar is inserted in the slotted tubular shank of the tooth, and has its ends threaded and projecting from the sides of the latter, so as to engage a nut, whereby the tooth is firmly secured to the beam.

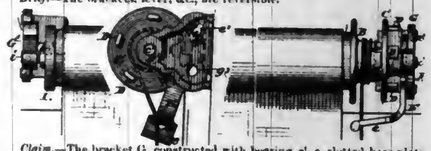


Claim.—1. A cultivator-tooth whose shank is provided with a key or cross-bar having threaded transverse ends, which project through its sides and are adapted to engage with a nut or similar fastening device, substantially as set forth.

2. The combination, with a cultivator-frame, of a cultivator-tooth, the two secured together by the engagement of a nut or similar fastening device with a key or bar, which latter has threaded transverse ends projecting through the sides of the tooth's shank, substantially as set forth.

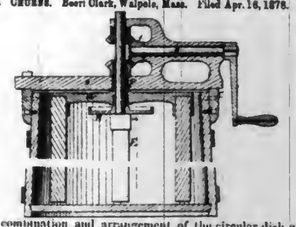
203,418. CURTAIN-ROLLER AND BRACKET. Charles B. Clark, Buffalo, N. Y. Filed Dec. 20, 1877.

Brief.—The brackets, lever, &c., are reversible.



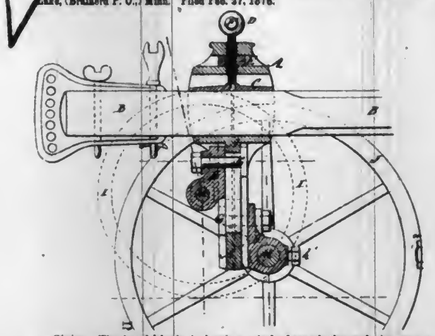
Claim.—The bracket G, constructed with bearing g', a slotted base-plate, *g*, and openings g^2 g^3 at the upper and lower parts of said bracket, near the base thereof, in combination with the pendulum-lever E, having a lip, e^3, at its upper end and a stop, F, and the disk C, having laterally-projecting studs D, substantially as and for the purpose described.

203,419. CHURNS. Beeri Clark, Walpole, Mass. Filed Apr. 16, 1878.



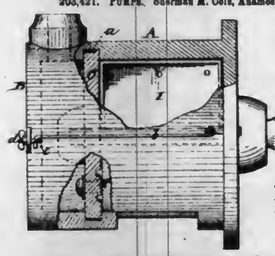
Claim.—The combination and arrangement of the circular dish with the two rotary dashers, their operative mechanism, and supporting frame, all being substantially as shown and described.

203,420. WHEEL ATTACHMENTS FOR PLOWS. John Clayton, The Grange Farm, Clayton Lake, (Brainerd P. O.,) Minn. Filed Feb. 27, 1878.



Claim.—The head-block A, having a hole formed through its upper part to receive a plow-beam, and grooves and slots formed in its lower part, and provided with the plate C and the screw D for clamping the plow-beam, and with the bolts G and the bearings H for the wheel shafts or axles, substantially as herein shown and described.

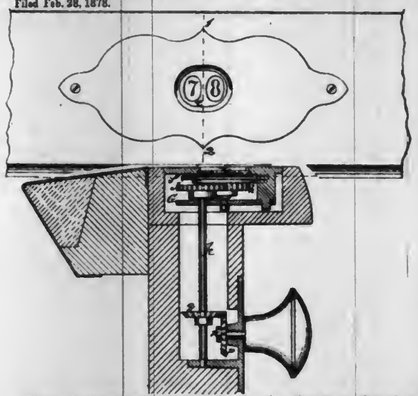
203,421. PUMPS. Sherman M. Cole, Anamosa, Iowa. Filed Apr. 15, 1878.



Claim.—1. The combination of the casings or chambers A B, with interposed disk C and rubber packing *n*, the hooked rods *b*, eyes *c*, and thumb-nuts *d*, as and for the purposes herein set forth.

2. The combination of the chambers A B, disk C, with valves D D, abutment F, valves G G, and shaft A, with wing I, all constructed and arranged to operate substantially as and for the purposes herein set forth.

203,422. GAME-COUNTERS FOR BILLIARD-TABLES. Hugh W. Callender, New York, N. Y. Filed Feb. 28, 1878.



Claim.—1. A register mechanism for counting the game, adapted to be let into the top of the cushion-rail, and provided with means for manipulating its dials by a handle, knob, or other device projecting from the side of the table or cushion-rail, substantially as set forth.

2. A billiard table register adapted for insertion in the top of the cushion-rail, and having its top plate so shaped as to serve also the purposes of one of the usual angle-sights of the table, as set forth.

203,423. ISOCHRONOUS AND SYNCHRONOUS MOVEMENTS FOR TELEGRAPHIC AND OTHER LINES. Poul la Cour, Copenhagen, Denmark. Filed Apr. 9, 1878.

Brief.—One prong of a tuning-fork is employed as an automatic circuit-breaker, while the other prong vibrates in unison with the first, and breaks and closes the main-line current. The main-line vibrating current operates an electro-magnet, which regulates the movement of a spur-wheel by attracting the magnetic spur-teeth of said revolving wheel.

Claim.—1. As an improvement in isochronous and synchronous movements operated by electricity, the reed, lamel, or tuning-fork *n p s*, having adjustable weights Y Z, whereby its tune or key may be changed, thereby changing the electrical impulses or pulsations, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the tuning-fork *n p s*, of the adjustment-levers *u r u' e'* and set-screws V V', substantially as and for the purpose hereinbefore set forth.

3. In combination with the tuning-fork *n p s* and adjustment-levers *u r u' e'*, operated by the set-screws V V', respectively, the tension-springs *c c'*, substantially as and for the purpose hereinbefore set forth.

4. The combination of the reed, lamel, or tuning-fork *n p s* and socket-block K, having binding-screw K', with the contact-springs *c c'* and adjustment-levers *u r u' e'*, whereby, with the aid of a connecting insulated wire between the isolated contact-spring *c'* and the isolated binding-screw H, an intermittent bridge is formed between H and K when the apparatus is operated, substantially as and for the purpose hereinbefore set forth.

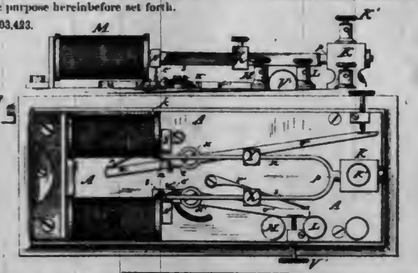
5. The combination of the adjustable tone-giver or tuning-fork *n p s*, having free ends or poles, with the poles S N of electro-magnets M M and adjustable contact springs or points *c c'*, substantially as and for the purpose hereinbefore set forth.

6. The toothed regulator-wheel R, in combination with the regulating electro-magnet *m* and impulse-producing reed or tuning-fork *n p s*, substantially as and for the purpose hereinbefore set forth.

7. The motor or regulator-wheel R, pivoted horizontally in a base-plate, A', and provided with a concentric cylindrical chamber, S, containing mercury or similar inert fluid of considerable gravity, substantially as and for the purpose hereinbefore set forth.

8. The wire-connection B H K *m* B, Fig. 3, whereby the circuit passes from one of the poles of the battery B to the binding-screw H, then through an isolated wire to the isolated contact-point *c'*, then through the branch *s* of the tuning-fork to the binding-screw K', then through the electro-magnet *m*, and back to the other pole of the battery, or to earth, substantially as and for the purpose hereinbefore set forth.

203,423.



203,424. FLIER-BEARINGS FOR SPINNING-MACHINES. Edward A. Cowper, Westminster, England. Filed Jan. 16, 1878. Patented in England, Mar. 12, 1877.

Brief.—The boss of the flier and its seat on the capping-rail are made conical or semicircular in cross-section. There is an interposed packing between the bearing surfaces for containing oil for lubrication, and for producing the necessary degree of friction. The flier, by means of its bearings, is held in proper concentricity with the spindle.



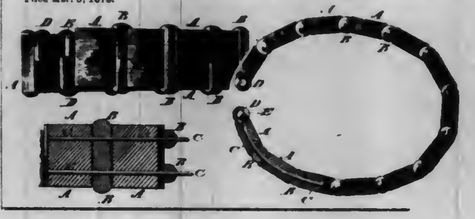
Claim.—In a throstle spinning and doubling machine, a flier having a concave or convex bearing-surface, in combination with a correspondingly-shaped seat on the capping-frame, and an interposed packing of soft or elastic material, substantially as and for the purposes specified.

203,425. LOCKETS. S. P. Cox, Brooklyn, assignor to Cox & Sedgwick, New York, N. Y. Filed Mar. 5, 1878.



Claim.—The combination of the hinged dovetailed strips of metal C with the eye or loop D, the central ring B, and the grooved inner surfaces of the side plates A A, substantially as herein shown and described.

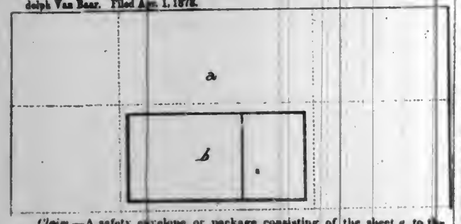
203,426. BRACELETS. S. P. Cox, Brooklyn, assignor to Cox & Sedgwick, New York, N. Y. Filed Mar. 5, 1878.



Claim.—1. In a bracelet consisting of a series of plates articulated or jointed together, the spring connecting-wires C, upon which said bracelet-sections are strung, as and for the purpose set forth.

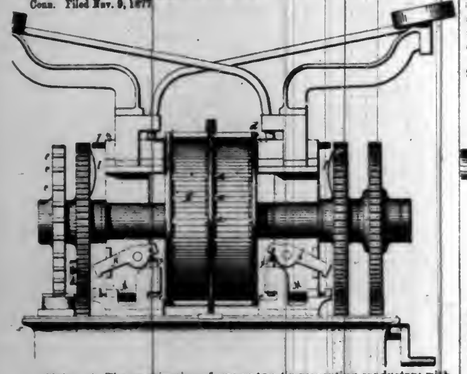
2. The fastenings formed of the half blocks or beads D D and the pins E, in combination with the end blocks of the bracelets A B C, substantially as herein shown and described.

203,427. ENVELOPES. Antony Dael, Newark, N. J., assignor of one-half his right to Rudolph Van Baar. Filed Apr. 1, 1878.



Claim.—A safety envelope or package consisting of the sheet *a*, to the center of which is fastened the bag *b*, in which the article is to be placed, the sheet *a* serving to inclose the bag and receive the address, substantially as shown and described.

203,428. MACHINES FOR TIPPING CORSET-SPRINGS. Thomas H. De Forest, Birmingham, Conn. Filed Nov. 9, 1877.



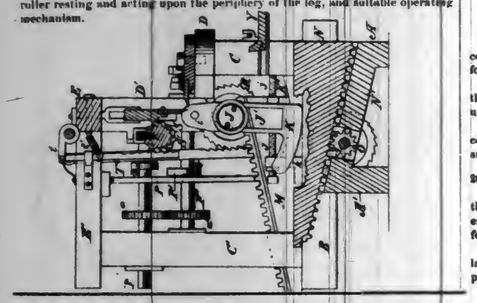
Claim.—1. The combination of one or two tip-presenting conductors with an intermittent feeding device, to successively present the stays or steels to receive the tip or tips from the said conductor or conductors, substantially as described.

2. The combination of one or two tip presenting conductors with an intermittent feeding device, to successively present the stays or steels to receive the tip or tips from the said conductor or conductors, and stamping devices, substantially such as described, to subsequently close the said tip or tips upon the stay or steel as they are successively presented by the said intermittent feeding device, substantially as described.

3. The combination of an intermittent feeding device adapted to receive and transfer the stays or steels, and the stamping or closing device or devices to close the tip or tips which may have been introduced to the said feeding device, and thereby presented to said stamping or closing device, substantially as specified.

203,429. MACHINES FOR CUTTING HOOPS FROM THE LOG. John B. Dougherty, Rochester, assignor to Burrell, Iven & Co. and D. H. Burrell, Little Falls, N. Y. Filed Mar. 19, 1878.

Brief.—Wooden hoops are cut directly from the log, so as to allow the grain to be continuous from end to end of the hoop, and have a bevel which will compensate for the taper of the barrel, the sides of the hoop forming radii from the log-center, and the hoop made thinner at one edge than at the other, by means of two reciprocating and alternately advancing and retreating cutting-knives, one horizontal and the other vertical, two log-holding centers, vertically adjustable in swinging frames, a spring-pressed and fluted feed-roller resting and acting upon the periphery of the log, and suitable operating mechanism.



Claim.—1. The horizontally-moving knife-carrier and knife and its supports and guides, in combination with the universal-jointed connecting and crank shaft F', for the purpose of cutting the narrow edge of the hoop from the log, as set forth.

2. The vertically-moving knife, its carrier, the connecting-rod *d*, and shaft F, provided with spur-gear *a*, in combination with the shaft F', carrying spur-gear *a'*, connecting-rod *g*, and horizontally-moving carrier and knife, for the purpose of severing one side and the edge of a hoop from the log, as described.

3. The spring-pressed and fluted feed-roller S, resting and acting upon the periphery of the log, in combination with its operative mechanism, consisting of the cam P upon the shaft F, rod Q, rock-shaft R', and ratchet-bar T', acting upon the ratchet-wheel S', substantially as specified.

4. The crank-shaft F, cam P, lifting-bar Q, and rock-shaft R', in combination with the toothed bar T and ratchet S', for the purpose of rotating the feed-roller, as described.

5. The toothed inclines M, in combination with the vertically-adjustable center-chucks, for the purpose of raising the log as it rotates, substantially as described.

6. The central wedge N, in combination with the pinion *l* and shaft O, for the purpose of affording a solid central support to the log, as set forth.

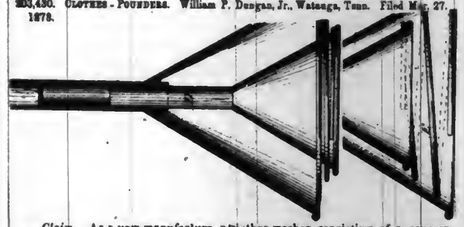
7. The slotted swinging supports K, in combination with the vertically-adjustable center-chucks H and H', as set forth.

8. The swinging support K, in combination with the arc-shaped shoes K' and adjusting-screws *f* and *f'*, as and for the purpose specified.

9. A machine for cutting hoops embodying the following instrumentalities, namely: a vertically-reciprocating knife, a horizontally-moving knife, a feed-roller operating upon the periphery of the log to be cut, and a central log-support, all constructed and operating substantially as shown and described.

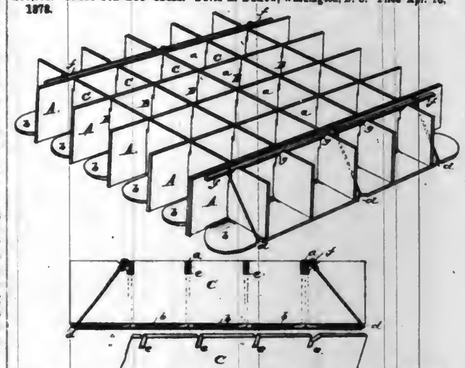
10. In a hoop-cutting machine, log-holding centers or chucks sustained in swinging supports, in combination with the mechanism employed for adjusting and rotating the centers as the log becomes smaller, all as and for the purpose specified.

203,430. CLOTHES-POUNDERS. William P. Dungan, Jr., Watauga, Tenn. Filed May 27, 1878.



Claim.—As a new manufacture, a clothes-washer consisting of a cone or cup and a wire spring, the coils of which are arranged in the same plane with and across the mouth of the cone, and attached thereto at its outer end, and terminating in a yielding center, whereby all the coils of the spring act at the same time, and the central coil yields under pressure, as specified.

203,431. TRAYS FOR EGG-CASES. David E. Dutrow, Washington, D. C. Filed Apr. 16, 1878.



Claim.—1. Removable trays in a case for transporting eggs or other goods, consisting of a series of cells, formed of dividing-strips interlocked by the folded up bottom, substantially as described.

2. The combination of the strips A, having slots *e* extending partially through the bottom *b*, and the strips C, having notches *c*, whereby the folding up of the bottom *b* locks the sides together, substantially as described.

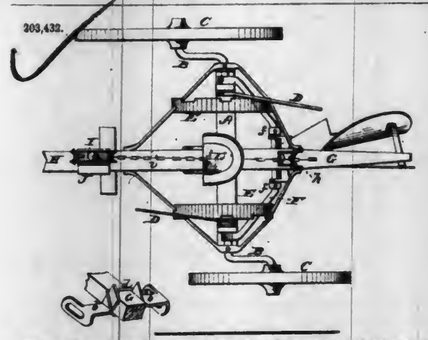
3. The series of cells B, having opening bottoms *b*, and provided with cords *d*, detachably secured to the tray, for keeping them closed for handling, substantially as described.

203,432. SULKY-PLOWS. Jacob W. Eberhart, Mishawaka, Ind. Filed Mar. 27, 1878.

Claim.—1. The arched axle A, provided with the bearings *a a* at each end, through which the cranks B B pass, the levers D D, connected to the inner ends of said cranks, and the stirrup F, all constructed substantially as and for the purposes herein set forth.

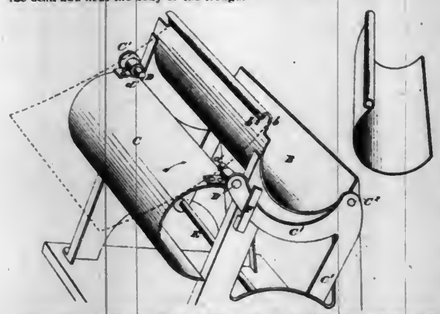
2. The combination of the swinging stirrup F, plow beam G, slotted angular plates *b b*, clip *d*, and adjustable collars *f f*, substantially as and for the purposes herein set forth.

203,432.



203,433. EAVES-TROUGH FORMERS. George Eckel, Richmond, Ind. Filed Feb. 21, 1878.

Brief.—Places edge of blank in the volute of the former. By lever brings hinges of presser against volute. By its handle rotates presser to form first the bend and next the body of the trough.



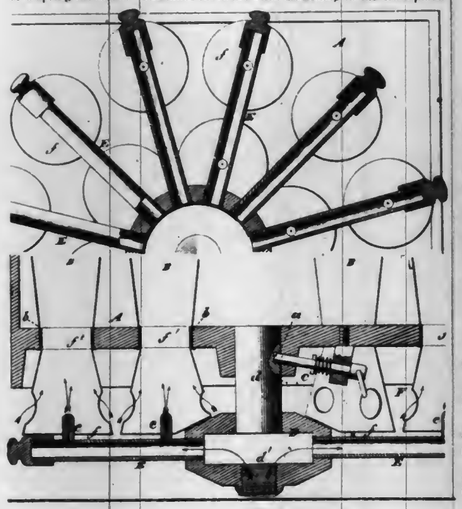
Claim.—1. A concave die or former having a volute edge on one side, whereby the metal to be bent may be beaded in the operation of forming guttering, substantially as set forth.

2. In combination with the concave die B, having a volute edge, the swinging convex former, having its axis in the line of the center of the volute, for forming the gutter by compression, substantially as set forth.

3. The combination of the concave die B, the swinging convex former C, and the levers C', to which the former is pivoted in such manner as to swing with the levers until the axis of the former coincides with the volute, and then swinging forward on pivots attached to the levers in line with the volute, substantially as set forth.

203,434. DEVICES FOR SUPPLYING STEAM AND AIR BLASTS TO FURNACES. David S. Elstner, Canton, Ohio. Filed Jan. 2, 1878.

Brief.—The outer series of tubes and the central receiving-drum, with its branch pipes and nipples, are capable of being removed and adjusted by means of a spring set-screw. The inner tubes are fixed stationary in the cross-plate.



Claim.—1. In a steam and air blast, the combination of the perforated plate A, having conical tubes B, with their small ends fastened into its perforations, and the removable drum D, steam-pipes E, having nipples *e*, and conical tubes F, having their small upper ends loosely fitted into the small lower ends of the tubes B, whereby the said latter parts may be removed from the plate A and reinserted, substantially as set forth.

2. In the described steam and air blast, the combination of the stationary steam and air mingling tube B and the removable steam and air receiving tube F, steam branch pipe E, and nipples *e*, substantially as set forth.

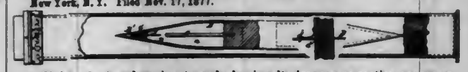
3. In a boiler-furnace steam and air blast, E E, the steam-blast device consisting of the removable and readjustable steam-drum D, steam-pipes E, and nipples *e*, substantially as set forth.

4. The combination of the plate A, having a socket, *a*, and a spring-bolt, *c*, and the steam-distributing drum D, having a head, *d*, whereby the lower parts of the blast apparatus are kept in position and may easily be removed and replaced, substantially as set forth.

5. The combination of the stationary tube B and the removable receiving-tube F, having a closed bottom, *f*, and lateral openings *f'*, branch pipe E, and nipples *e*, substantially as and for the purpose set forth.

6. In a furnace steam and air blast, the combination of the steam-drum D and radiating steam-distributing branch pipes E, and a series of tubes in the ash-pit wall for receiving separately the steam from the steam-jets, substantially as shown and described.

203,435. SUBMARINE TORPEDOES AND MEANS OF PROPELLING THE SAME. John Ericsson, New York, N. Y. Filed Nov. 17, 1877.



Claim.—1. A submarine torpedo having its transverse section square or rectangular, its top and bottom flat and parallel, its sides vertical throughout their length, and its ends sharp, substantially as herein described.

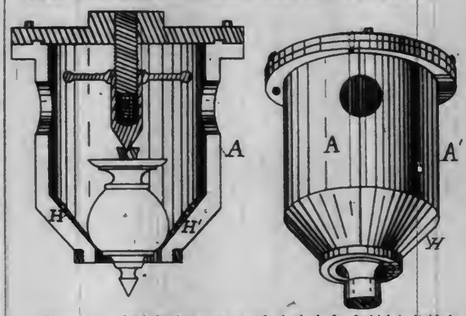
2. In a submarine torpedo having inclosed within it a firing-pin for igniting fulminate priming to produce the explosion of the charge, a hollow head or cap having a sharp cutting end, and capable of being broken or split by striking the vessel or body assailed.

3. The combination, with the firing-rod D and the head B or cap B', of the spring locking-guard *b*, for locking the firing-pin, substantially as herein described.

4. The guide-tube having an internal transverse sectional area larger than the transverse sectional area of the torpedo, in combination with the torpedo and detached piston, substantially as described.

5. The combination, with the guide-tube and an outer valve for closing the end of the same, of an inner stationary valve composed of a disk of water-proof textile fabric held between two metallic rings, substantially as and for the purpose herein described.

203,436. LATHE STONE-CHUCKS. Jos. Evans, Cleveland, Ohio. Filed Feb. 28, 1878.



Claim.—1. A chuck for the purpose set forth, the body of which is divided longitudinally into two parts, A A', substantially as described and shown.

2. In a chuck for the purpose set forth, the combination of the longitudinally-divided body with the adjustable center within such body, substantially as described and shown.

3. In a chuck for the purpose set forth, the stationary screw-threaded center F, inclosed in the body of the chuck, adapted to receive adjustable centers B of various lengths, substantially as described and shown.

4. In a chuck for the purpose set forth, the elastic cushion H' in the bevel-neck of the chuck, substantially as described and shown.

5. In a chuck for the purpose set forth, the combination, with the divided body of the reducer, Fig. 4, adapted to be placed in the opening in the end of the body, substantially as described and shown.

203,437. REDUCING WOOD TO PULP FOR PAPER. A. H. Fisher, Bellows Falls, Vt., assignor to A. B. Burbank, Lawrence, Mass. Filed Feb. 21, 1878.

Claim.—As an improvement in the art of reducing wood to pulp, heating the wood in the presence of water during the process and by the act of grinding, substantially as described.

203,438. ORGAN-PIPES. Anselmo A. M. Gavioli, Paris, France. Filed Apr. 9, 1878.

Claim.—1. The combination, with an organ-pipe, of a diaphragm interposed in the path of the air-current at the emission-orifice, between the upper and under lips, substantially as described, for the purpose set forth.

2. The combination, with an organ-pipe, of a diaphragm arranged as described, and adjustable vertically upon and along the emission-orifice of said pipe, substantially as described, for the purpose set forth.

3. The combination, with an organ-pipe, of a diaphragm arranged as described, and adjustable horizontally to and from the emission-orifice, substantially as described, for the purpose set forth.

4. The combination, with an organ pipe, of a diaphragm interposed in the path of the air at the emission orifice, and made adjustable vertically along said orifice, and horizontally to and from the orifice, substantially as described, for the purpose specified.

5. The combination, with the mouth of an organ pipe, of the diaphragm E, provided with or connected to a tongue, *e*, having slots e^1 e^2, and the set-screws F F^1, substantially as described, for the purpose specified.

203,438.

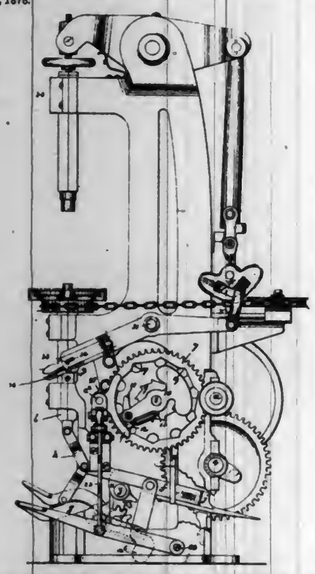


203,439. SHOES. Benjamin M. Gibson, Monmouth, Ill. Filed Apr. 8, 1878.



Claim.—A shoe having its quarters A A each cut with a flap, B, which is separated from the quarter by a slit from *a* to *b*, and leaving it united to the quarter from *b* to *d*, and the two quarters then sewed together, with the lower portions of the flaps overlapping each other, and the upper portions united together and to the opposite quarters, substantially in the manner and for the purposes herein set forth.

203,440. HEELING-MACHINES FOR BOOTS AND SHOES. Chas. W. Glidden, Lynn, Mass. Filed Feb. 16, 1878.



Claim.—1. In a heeling-machine provided with mechanism to nail a heel to a shoe, the last-spindle and last-spindle-adjusting mechanism, to automatically change the position of the last-spindle to permit the application of the main body of the heel, and then of the blind top-lift, substantially as described.

2. In a heeling-machine, the nailing-spindle, last-spindle-adjusting mechanism, and a connecting-lever to operate them in unison, substantially as and for the purpose described.

3. The combination, in a heel nailing and trimming machine, of the following instrumentalities, viz: the trimming-shaft, its arms, the trimming-lever connected with the carriage, the loose gear-wheel provided with internal teeth 19, clutching mechanism to engage such gear-wheel, and a continuously-rotating shaft and loose pinion, and friction devices to operate the loose pinion, substantially as and for the purpose described.

4. In combination in a heel nailing and trimming machine, the trimming-shaft, its loose gear-wheel, and clutching mechanism, to engage the wheel and rotate the trimming-shaft at suitable intervals, substantially as described.

5. In combination in a heel nailing and trimming machine, a trimming-shaft, a loose gear-wheel, clutching mechanism to engage them, and a pawl-holding device, to hold the pawl of the clutching mechanism from contact with the loose gear-wheel, substantially as described.

6. The pawl-holding device, trimming-shaft and its fixed arm, in combination with a stop to arrest the motion of the trimming-shaft as the pawl-holder removes the pawl from engagement with the loose gear of the trimming-shaft, substantially as described.

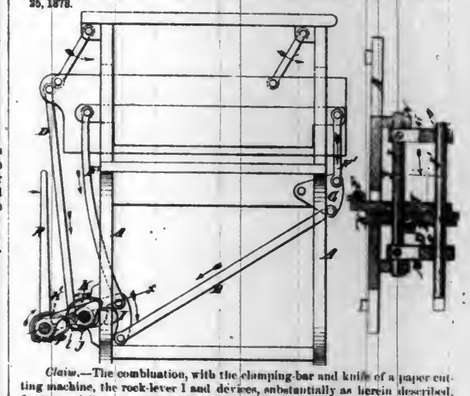
7. The continuously-rotating shaft, its loose pinion, and friction devices, combined with devices to adjust and regulate the amount of friction between the friction devices and loose pinion, according to the resistance offered to the movement of the trimming mechanism.

8. The combination, with the toggle-joint and nailing-spindle, of a shouldered lever and a connected treadle to lift it, in order that the link may be operated to straighten the toggle-joint, substantially as and for the purpose set forth.

9. The combination, with a treadle and teeth located at its fulcrum, of a gear and cam, or equivalent, to break the toggle-joint of and lower the nailing-spindle, substantially as described.

10. The combination, with the connecting-lever, located between the nailing-spindle and last-spindle-adjusting mechanism, of a hand-lever to permit the connecting-lever to be disconnected from the nailing-spindle, substantially as described.

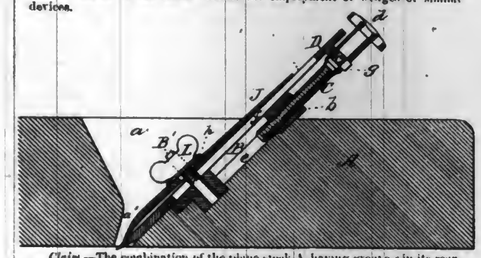
203,441. PAPER-CUTTING MACHINES. T. S. Grossman, Mystic Bridge, Conn. Filed Mar. 25, 1878.



Claim.—The combination, with the clamping-bar and knife of a paper-cutting machine, the rock-lever I and devices, substantially as herein described, for transmitting motion from the said rock-lever to the said clamping-bar and knife, of a shaft for imparting motion to the working parts of the machine and connected cams K K', or equivalent transmitters of motion, which intervene between the said shaft and clamping-bar and knife, and which have a varying radial velocity ratio, increasing the purchase upon the said clamping-bar and knife toward the end of their downward movement, substantially as and for the purpose specified.

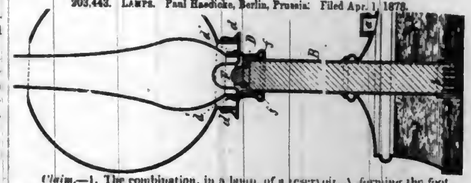
203,442. REMOR-PLANES. Robert S. Griffin, Worcester, Mass. Filed Apr. 6, 1878.

Brief.—The plane-bit is adjustable to cut shavings of various thicknesses, and is secured to the stock without the employment of wedges or similar devices.



Claim.—The combination of the plane-stock A, having groove *c* in its rear wall, the back plate B, carrying screw B', and the screw-threaded offset *b*, and the adjusting-screw C, having annular groove *c*, and working in said offset, with the longitudinally-slotted bit D, having forked offset *g* upon its under side, near its upper end, the slotted cap L, and thumb-nut L, substantially as specified.

203,443. LAMPS. Paul Haedicke, Berlin, Prussia. Filed Apr. 1, 1878.



Claim.—1. The combination, in a lamp, of a reservoir, A, forming the foot of said lamp, the supporting-column B, having ports *b* at its lower extremity, and being filled with a non-combustible but highly capillary material, and the burner D, substantially as described, and operating as set forth.

2. The combination of the reservoir A, provided with filling-orifice *a*, and a sleeve, C, having ports *c*, the supporting-column B, having ports *b*, registering with ports *c* of the sleeve C, a non-combustible but highly capillary material contained in said column B, the burner D, and the incombustible wick-section or tip F, all combined, constructed, and operating substantially as described.

203,444. BALE-TIES. Daniel Hall, Covington, Ky. Filed Feb. 23, 1878.



Claim.—1. A bale-tie having a swiveling link, B, carrying a pin, over which, in a certain position of the link, any one of the holes in the free end of the tie may be engaged, and a turned-down ear or ears, under which the free end of the tie passes when the link is swung into line by the expansion of the tie.

2. The link B, formed of two pieces of metal, *b b'*, between which the head of a rivet, C, is secured, substantially as shown and described.

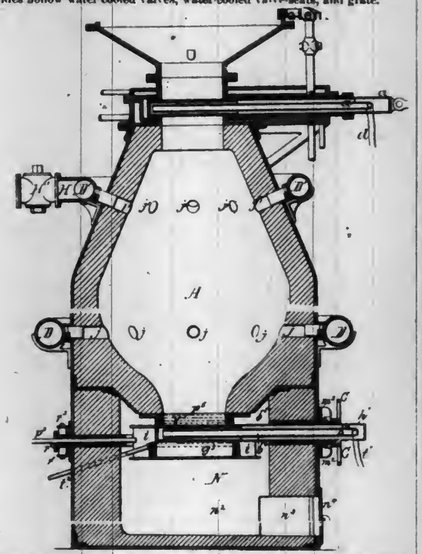
203,445. CARVING-FORKS. Robert W. Hallan, West Meriden, Conn., assignor to Meriden Cutlery Company, same place. Filed Apr. 19, 1878.



Claim.—The herein-described guard for carving-forks, consisting of the bifurcated piece hinged to the shank, with a leg extending down each side to form the rest, a spring-tongue, *f*, in the guard above, bearing on the flat upper surface of the shank of the fork, and hook on the end of the guard, for engaging the guard with the body of the fork when closed, substantially as described.

203,446. METALLURGIC GAS-GENERATORS. Mark J. Hamilton, Whitemarsh, Pa. Filed Jan. 26, 1878.

Brief.—Improvement on the generator described in Patent No. 195,891. Provides hollow water-cooled valves, water-cooled valve-seats, and grate.



Claim.—1. The combination of the generator and the grate at the bottom of the same with a water-cooler valve between the generator and grate, all substantially as set forth.

2. The combination of the hollow wedge-shaped valve V' with the ring p^2 and the grate.

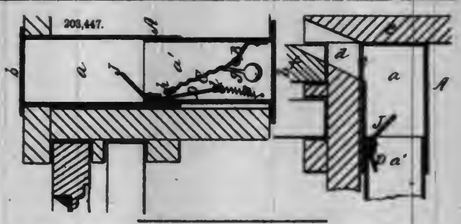
3. The combination of the valve V' and its hollow spindle, threaded externally, with the wheel C, having an internally-threaded hub adapted to the said spindle, the bracket-plate m^3, and clamping-bars m^4, for confining the said hub to the bracket, all substantially as set forth.

4. The combination of the ash-pit N and grate p^2 with the case r'', secured to the casing of the generator, the poker p^3, and the packed vertical stopper r', through which the poker passes, and which permits the lateral vibration of the said poker, all as described.

203,447. VENTILATORS. Chas. M. Handover, Brooklyn, N. Y. Filed Apr. 12, 1878.

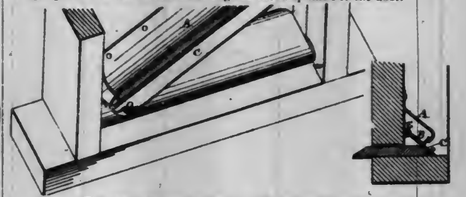
Claim.—In a house-ventilator, the combination, with the air-tube A, having the end screens *b*, and the horizontally-vibrating valve C, having edge-cushion *h* and weighted arm *g*, of the yielding bearing H and current-breaker J, substantially as specified.

203,447.



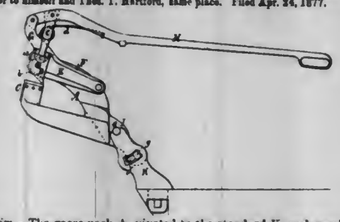
203,448. WEATHER-STRIPS. Benj. C. W. Harris and Frank M. Williams, Mount Gilead, Ohio. Filed Nov. 15, 1877.

Brief.—The hinged strip has its corner next to the hinged side of the door turned up to ride over the sill, and is also provided with a strip, which forms a tight joint with the turned-down edge of the strip fixed to the door.



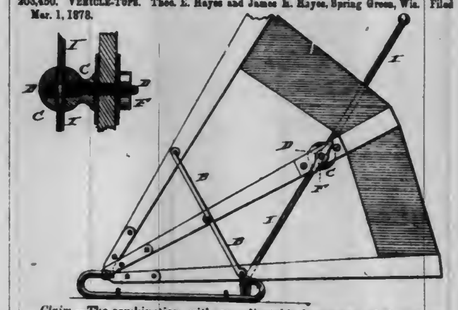
Claim.—The combination of strip C, having upturned corner D, and plate H, with plate A, secured to the door, substantially as shown.

203,449. SHEARS FOR CUTTING SHEET MATERIAL. David F. Hartford, Boston, Mass., assignor to himself and Thos. T. Hartford, same place. Filed Apr. 24, 1877.



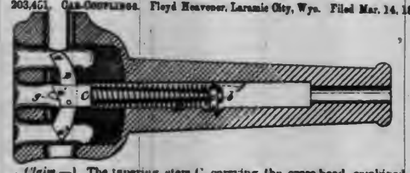
Claim.—The goose-neck A, pivoted to the standard K, and provided with adjusting devices, as shown, and with one stationary and one movable knife, and mechanism for operating the latter, all being essentially as described and represented.

203,450. VEHICLE-TOPS. Theo. E. Hayes and James R. Hayes, Spring Green, Wis. Filed Mar. 1, 1878.



Claim.—The combination, with an adjustable buggy-top, of the cylinder or knob C, bolt D, thumb-screw F, and hinged brace I, all constructed substantially as and for the purposes herein set forth.

203,451. CAR-COUPLINGS. Floyd Heavener, Laramie City, Wyo. Filed Mar. 14, 1878.



Claim.—1. The tapering stem C, carrying the cross-head, combined with the draw-bar, the concentric spring D, having convolutions of uniform diameter, and the block *e*, substantially as and for the purpose described.

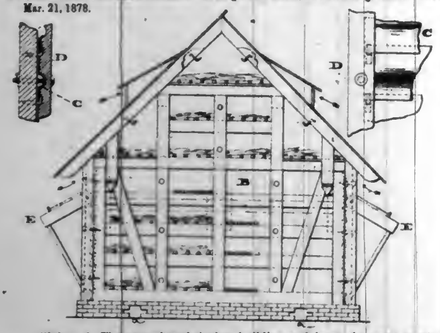
2. The cross-head B and stem C, having a head, *b*, to limit its movement,

in combination with the spring D, the draw-bar, and the removable block c, fixed in said draw-bar, substantially as and for the purpose described.

3. The combination, with the draw-bar having notch e, of the stem C, having head b, the spring D, the open slotted and grooved block c, and the transverse bolt f, substantially as and for the purpose described.

4. The forwardly-curved cross-head B, made of substantially uniform transverse dimensions, combined with the spring-seated receding stem, having a closed slot or mortise and an inclined forward end, substantially as described.

203,452. AGRICULTURAL BUILDINGS. Ludwig Julius Hesse, St. Petersburg, Russia. Filed Mar. 21, 1878.

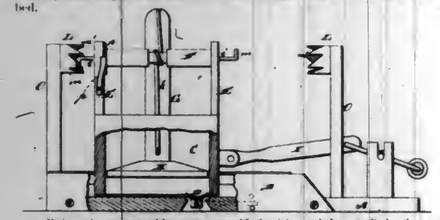


Claim.—1. The agricultural drying building and barn, the same consisting of the floor with ventilators *a a*, fixed skeleton-frame B, with a roof having trap-doors, and the removable side pieces or sheets C, with securing boards D, said pieces C being adapted to serve as temporary drying-floors, all as set forth.

2. The agricultural building A, constructed of the skeleton-frame B, provided with hinged bars E, with supporting pieces or props, and adapted to hold the removable pieces C as roofs, substantially as and for the purposes set forth.

203,453. VEGETABLE-CUTTERS. Henry E. Hewitt, Georgetown, Ill. Filed Apr. 6, 1878.

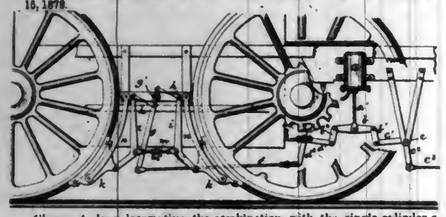
Brief.—At the end of each stroke one of the small cranks strikes one of the inclined teeth on the circular rim and turns the roller a certain distance, whereby the plunger is fed down to hold the vegetables at all times upon the bed.



Claim.—1. A vegetable-cutter provided with uprights O O, having circular rims L L, with inclined teeth *m'*, in combination with roller-shaft F, having arms *m m*, and a plunger, operated substantially as shown, and for the purpose set forth.

2. The combination of the roller F, strap *k*, plunger H, with bar G, journal *i*, with arms *m* and the circular rims L, with inclined teeth *m'*, substantially as and for the purposes set forth.

203,454. STEAM-BRAKES FOR LOCOMOTIVES. John Hickey, Sheboygan, Wis. Filed Mar. 15, 1878.

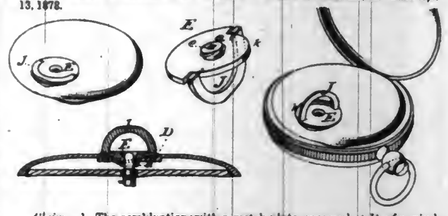


Claim.—1. In a locomotive, the combination, with the single cylinder *a*, piston-rod *a'*, and rods *f* and *e*, and the brake-shoes of both engine and tender, of the intermediate systems of expanding levers and equalizing bars, substantially as and for the purposes set forth.

2. In a locomotive, the combination, with the brakes of the engine and the cylinder *a* and piston-rod *a'*, of the equalizing-bar *b*, rock-shaft *c d*, equalizing bar *e*, and rods *f*, all arranged and connected to operate substantially as set forth.

3. The combination, with cylinder *a* and the brake-shoes *k*, suspended on hangers *s*, of the levers *i i*, connected together intermediately between their ends by the fulcrum-rod *m*, arms *h h*, and lever *g*, all arranged as described, and connected by rods *f* and other suitable devices with the piston-rod, substantially as set forth.

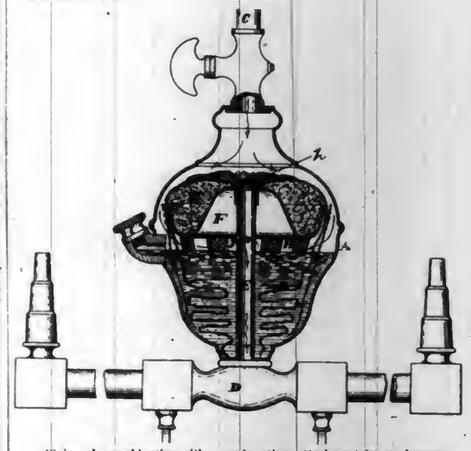
203,455. WINDING ATTACHMENTS FOR WATCHES. C. W. Hoehn, Carlinville, Ill. Filed Apr. 13, 1878.



Claim.—1. The combination, with a watch-plate, recessed at D, of a winding-disk, E, having a pivoted folding bail, J, and a central screw-tang or attachment, connecting it to said plate in a detachable manner, substantially as specified.

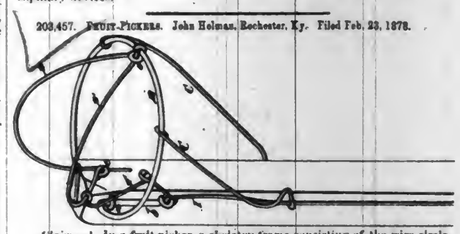
2. The winding-disk E, recessed in arc form, at *k*, on one side, and having the central attachment-tang *a* on its under side, and on its face the pivoted bail J, folding into the arc-shaped side recess, substantially as specified.

203,456. CARBURETING ATTACHMENTS FOR GAS-BURNERS. Charles Hoff, Cincinnati, Ohio. Filed Mar. 21, 1878.



Claim.—In combination with a carbureting attachment for gas-burners, the pendent gasoline-holder A, communicating by stop-cock B with service-pipe C, the inclosed hollow stem of tube E communicating below with burner-arms D and above with said holder, and surmounted by the annular vaporizing trough F, for the reception of sponge G and wicks H, or other suitable capillary devices.

203,457. FRUIT-PICKERS. John Holman, Rochester, Ky. Filed Feb. 23, 1878.



Claim.—1. In a fruit-picker, a skeleton-frame consisting of the wire circle H, having its ends bent downward along the side of the staff, the extreme ends being bent into the wood and secured thereto by staples *a*, and supported in a horizontal position by means of wire braces C C, the wire semicircular stationary jaw with eyes *e*, one end of which is attached to the center of the circle, and the other end passing down the front of the staff to which it is secured, and the semicircular movable jaws D', connected to the eyes of the stationary jaw, substantially as described.

2. The combination, with the skeleton-frame, constructed substantially as hereinbefore described, of the elbow-lever F, made of a single piece of wire, bent to form an eye for the passage of the pivoting-screw and connected to the movable jaw D', and operating-wire I, substantially as described, and for the purpose set forth.

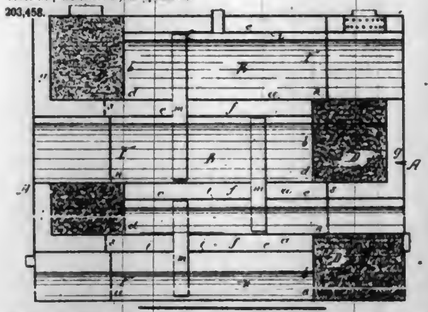
203,458. CARBURETERS. Smith E. Hughes, Philadelphia, Pa. Filed Feb. 15, 1878.

Claim.—1. The combination, in a carbureting apparatus, of a series of receptacles, D, containing absorbent material, and a series of hydrocarbon-reservoirs, B, each communicating with one of said receptacles through openings *d*, the reservoirs and receptacles being arranged, substantially as described, one above the other, and provided with passages for the air or gas, all substantially as specified.

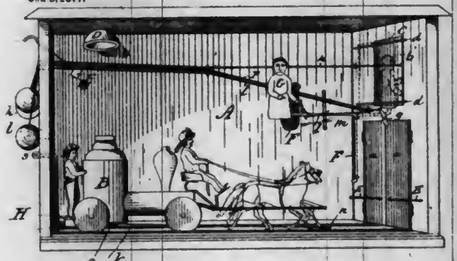
2. The combination of the casing A and its chambers B with partitions c near the tops of the chambers, as set forth.

3. The combination of the casing A and its horizontal partitions with the vertical partitions F, as specified.

203,458.



203,459. TOY STEAM FIRE-ENGINE APPARATUS. G. H. Ireland, Springfield, Mass. Filed Oct. 5, 1877.



Claim.—1. The combination of the engine-house A, having doors *a a* and lookout window *b*, with a sentinel figure of a man and a steamer, B, the whole being arranged for operation substantially as described.

2. The combination of the engine-house A, steamer B, having knob *e*, the ring F, pin H, and reaction-spring I, constructed and arranged for operation as herein shown and described.

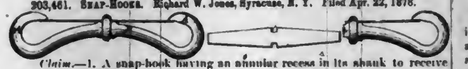
3. A toy consisting of the engine-house A, having doors *a a*, springs E, and catch *g*, the whole constructed and combined for operation substantially as described.

203,460. PEN-HOLDERS. Joseph F. Johnson, Yocum Station, Va. Filed Feb. 6, 1878.



Claim.—The pen-holder consisting of a slotted and notched tubular case, provided with a sliding pen-socket having a projection to engage with the notch in the case, and a spiral spring in the tubular case, arranged in the rear of the pen-socket, and under a compressed tension for all positions of said socket, substantially as described.

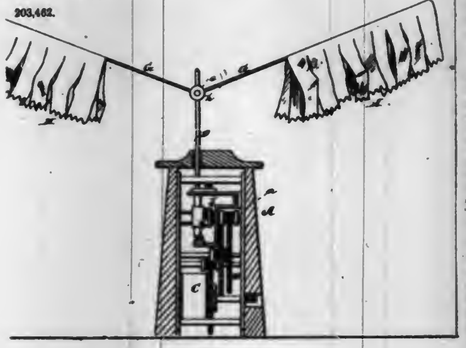
203,461. SNAP-HOOKS. Richard W. Jones, Syracuse, N. Y. Filed Apr. 22, 1878.



Claim.—1. A snap-hook having an annular recess in its shank to receive the band or ring which secures the spring in place, substantially as and for the purpose specified.

2. A snap-hook having an annular recess in its shank, and a spring provided with recesses or slots in its sides, to prevent displacement thereof, substantially as described.

203,462.



203,462. AUTOMATIC FLY-BRUSHES. Jas. P. Kelso, Morgantown, Ind. Filed Mar. 20, 1878.

Claim.—1. In a vibrating fly-brush, or other vibrating machinery operated by clock-work, the combination, with the train of gearing B and its operating-spring C, of the wheel or disk *b*, having a semicircular row of cogs, *x*, on the face, and the shaft D arranged at right angles to the axis of the wheel *b*, and provided with two series of cogs, *y* and *z*, substantially as and for the purposes set forth.

2. In combination with the shaft D, the perforated block F, provided with set-screw *d*, bolt *e*, washer *i*, and thumb-nut *h*, and the hooked arms G G, with brushes H H, substantially as and for the purposes set forth.

203,463. STREET-RAILWAY TRACKS. Jas. A. Kirby, Chicago, Ill., assignor of two-thirds his right to W. B. Keep, same place. Filed Mar. 23, 1878.

Brief.—The chairs of a street-railway track have a depending loop, into which is inserted a wrought-iron tie-bar. A spike is passed down through a hole in the loop and tie, and driven into the stringer. The ties have a downward reverse bend next the chair, so that the central portion is depressed, so as to be covered up and protected by the paving.



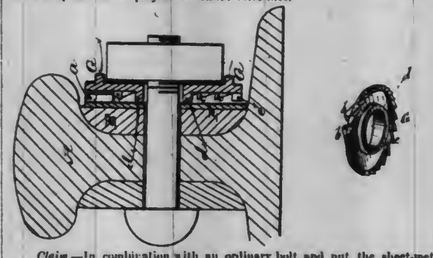
Claim.—1. The combination of the chairs B, having the box loops *b* below, and the bent tie-rod C, inserted in the loops and locked therein by the spikes *d*, substantially as shown.

2. The tie-rods having the central portion thereof depressed by gradual bends, as shown, in combination with the chairs of a street-railway track.

3. The tie-rod C, having the gradual bends shown, in combination with the chairs, to which they are secured, the bent portions being wholly under the cover of the chairs, as shown.

203,464. NUT-LOCKS. Richard A. Kelly, Manchester, Iowa. Filed Feb. 2, 1878.

Brief.—The washer is provided with a circular collar on its inner face, extending beyond the teeth, and holding the spring-plate securely against the fish-bar, while the ratchet-teeth on the washer engage with a spring-pawl on the plate, and thus prevent the nut turning back. The nut is secured to the washer by the ribs or projections on its outer face.



Claim.—In combination with an ordinary bolt and nut, the sheet-metal washer F, forming a spring-pawl, *a*, and the cast-metal washer G, formed on its inner face with a series of radial teeth, *e*, and a central projecting collar, *d*, and having upon its outer face an inclosure to receive the nut, all substantially as and for the purposes herein set forth.

203,465. PLATE-PRINTING MACHINES. Thomas C. Kenworthy and Archibald McGregor, New York, N. Y., assignors of a part of their right to John F. Baker and Geo. W. Clark, same place. Filed Dec. 1, 1877.

Claim.—1. In a plate-printing press, the combination of the following instrumentalities: a plank or bed having a positive reciprocating movement, and carrying upon its face the plate from which the impression is to be taken; an impression-roller, or segmental section thereof, having the following stated movements: first, a forward movement, which advances it to contact with the plate, during which movement it is rocked on its shaft preliminary to its impact with the plate; second, a rocking movement on its shaft in unison with the movement of the bed and its plate while the impression is being taken; third, a retiring movement after its contact with and at the completion of the rise of the bed and plate; a device for applying ink to the plate and for cleaning and polishing the same, such device reciprocating between the bed and impression-roller; and mechanism for operating such instrumentalities in unison, all substantially as and for the purposes as herein shown and described.

2. The combination, in a plate-printing press, of the following instrumentalities: a plank or bed having a positive reciprocating movement, and carrying upon its face the plate from which the impression is to be taken; an impression-roller, or segmental section thereof, having the following stated movements: first, a forward movement, which advances it to contact with the plate, during which movement it is rocked on its shaft into position for its impact with the plate; second, a rocking movement on its shaft in unison with the rise of the bed and plate while the impression is being taken; third, a retiring movement after its contact with and at the completion of the rise of the bed and plate; a device for applying ink to the plate and for cleaning and polishing the same, such device reciprocating between the bed and impression-roller, and at the completion of its movement retiring from the plate and returning to its first position without touching the plate; and suitable mechanism for operating such instrumentalities in unison, all arranged, applied, and operating substantially as and for the purposes as herein shown and set forth.

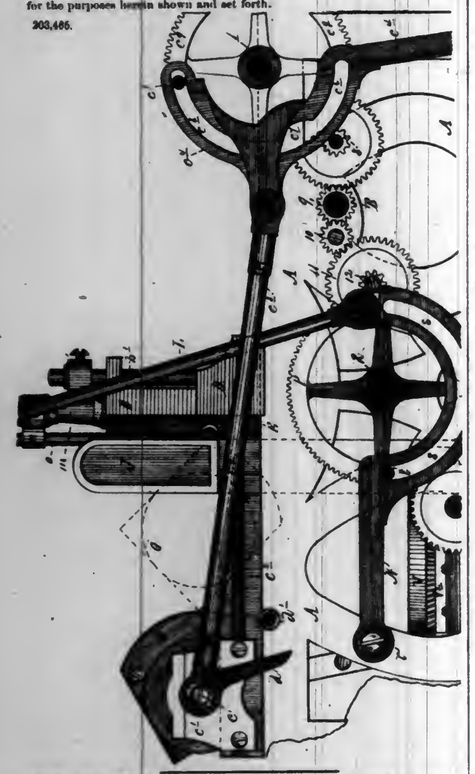
3. In a plate-printing press, the combination of the following instrumentalities: a plank or bed having a positive reciprocating movement, and carrying upon its face the plate from which the impression is to be taken; an impression-roller, or segmental section thereof, having stated movements, as fol-

lowe: first, a movement advancing it to contact with the plate, during which movement it is rocked forward on its shaft prior to its impact with the plate; second, a rocking movement on its shaft in unison with the rise of the bed and plate while the impression is being taken; third, a retiring movement after its contact with and at the completion of the rise of the bed and plate; a device for applying ink to the plate and for cleaning and polishing the same, such device reciprocating between the bed and impression-roller; a back roller hung in the frame in which the bed is reciprocated and upon which the bed rides during its movements; and mechanism for operating such instrumentalities in unison, all substantially as and for the purposes as herein shown and set forth.

4. The combination of the plank E, either hollow or solid, moving in ways cut in the bed D, and operated by means of rods b', levers b^2, and cams b^3, roller F, impression-roller G, reciprocated by means of levers c^2 and cam-lever c^1, and oscillated by means of depending arm d and pin d^2, also by contact with the moving plank E and inking-carriage H, moving in ways k and l, cut in stands J, and operated by means of rod, o o, lever L, and cam-lever N, all arranged, applied, and operating as and for the purposes as herein shown and set forth.

5. The combination of the reciprocating inking-carriage H, having guide pins n at the apex, moving in ways k and l, cut in the stands J, actuating-springs e and e', by means of which said carriage is thrown alternately from and to the impression-plate C, and the levers o o, attached to the base of the carriage, by means of which said carriage is actuated, all substantially as and for the purposes herein shown and set forth.

203,465.



203,466. TOOLS FOR REMOVING PINTLES FROM HINGE-JOINTS. Henry Knickmann, East New York, N. Y. Filed Mar. 28, 1878.

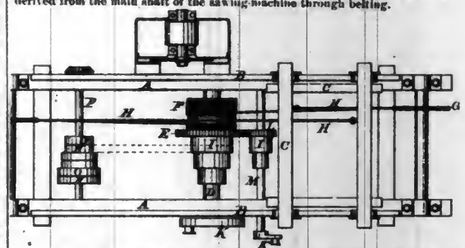
Brief.—The tool is provided on one jaw with various screws, whose ends are formed into round, square, or other shaped punches. The other jaw is slotted and provided with a perforated plate to allow the punched-out metal to fall through.



Claim.—The combination, in a tool for removing pintles from hinge-joints, of a plate, a, provided with one or more fingers, which plate is attached to the front of one of the jaws of the tool, and a plate, c, attached to the other jaw, said latter plate having perforations corresponding to the fingers of the other plate a, all combined and operating substantially in the manner set forth.

203,467. LOG-CARRIAGE GEARS FOR SAW-MILLS. Willard Lamb, Green Bay, Wis. Filed Mar. 30, 1878.

Brief.—In a saw-mill carriage gearing where the movement is produced by a chain or rope passing over a drum, the power of an independent steam-engine can be applied direct to the shaft of the winding drum, instead of being derived from the main shaft of the sawing-machine through belting.

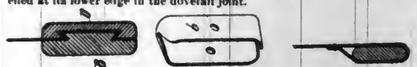


Claim.—1. The combination of the shafts D M, connected by the gears E L, the shaft D carrying the spirally-grooved drum F, with the cranks K K', adapted to be connected with steam or analogous engines, whereby a log-carriage may be driven by the power of independent engines operating through the chains or ropes H H, substantially as specified.

2. The combination, with the shaft D, of the cone-pulleys I, fast and loose pulleys O N, and the governor-shaft P, substantially as described.

203,468. WINDOW-SHADES. Atlas W. Lane, Philadelphia, Pa. Filed Feb. 11, 1878.

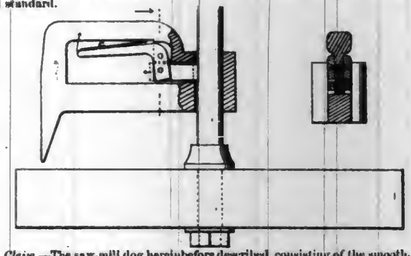
Brief.—The stiffening-strip is in two parts, secured together by a dove-tail joint and metallic caps on the ends, held by screws. The curtain is fastened at its lower edge in the dovetail joint.



Claim.—The combination of the shade and the strips B and D with the caps b, adapted to the ends of the strips, substantially as described, and held in position thereon by means of transverse screws d, as set forth.

203,469. SAW-MILL DOGS. Dennis Lane, Montpelier, Vt. Filed Apr. 25, 1878.

Brief.—The dog is held at any desired position upon a smooth-surfaced vertical standard by a spring-actuated smooth-faced pawl impinging against said standard.



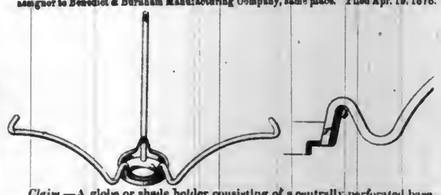
Claim.—The saw-mill dog hereinbefore described, consisting of the smooth-surfaced vertical standard, in combination with the spring-acted smooth-surfaced pawl, for holding the dog in position upon the standard, as set forth.

203,470. SLEIGH-KNEES. Frank Larson and Fredk. D. Livermore, Rochester, Minn. Filed Jan. 19, 1878.



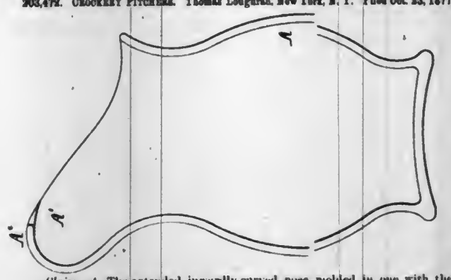
Claim.—A cast-iron sleigh knee having a tubular wrought-iron core for the passage of a through-bolt, substantially as specified.

203,471. GLOBE-HOLDERS FOR GAS-BURNERS, &c. Edward A. Locke, Waterbury, Conn., assignor to Benedict & Burnham Manufacturing Company, same place. Filed Apr. 19, 1878.



Claim.—A globe or shade holder consisting of a centrally-perforated base, combined with supporting-springs extending from the base to the globe or shade, the said base constructed with upward projections, over which the said springs are engaged, and thence extend down and secured to the base, substantially as described.

203,472. CROCKERY PITCHERS. Thomas Loughran, New York, N. Y. Filed Oct. 23, 1877.

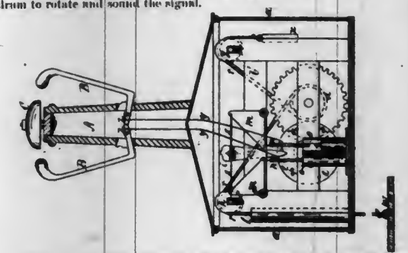


Claim.—1. The extended inwardly-curved nose molded in one with the body of the pitcher, giving freedom for contraction and allowing free access for working, cleansing, and wiping.

2. The crockery vessel A A^1-A^2, having the perforations a, and adapted to serve as and for the purposes herein specified.

203,473. FOG-SIGNALS. Sobrus C. Maine, Boston, Mass., assignor to Rufus H. Spaulding, same place. Filed Mar. 12, 1878.

Brief.—As the vessel carrying the signaling mechanism rises and falls by the movement of the water, the chain passing around the drum causes said drum to rotate and sound the signal.

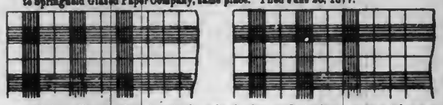


Claim.—1. In combination with the floating vessel o, the drum d, mounted within said vessel and connected by suitable mechanism to a signaling apparatus, a weight, w, adapted to rest on the bed of the water, a chain passing around the drum and connected at one end to the weight w and at the other end to a movable counter-weight, x, substantially as described, for the purpose specified.

2. The combination of the disk c, provided with the pins p, the pivoted lever i, and the weighted bell-crank levers m m, as and for the purpose described.

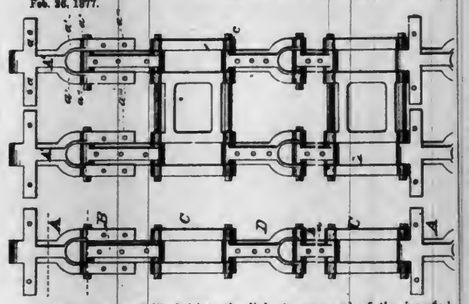
3. The combination of the weighted levers m m, the connecting-wires y y, and the striking apparatus B C, attached to the frame A, as and for the purpose specified.

203,474. MANUFACTURE OF ORNAMENTAL PAPER. J. F. Marsh, Springfield, Mass., assignor to Springfield Glazed Paper Company, same place. Filed June 20, 1877.



Claim.—The method herein described of manufacturing ornamental papers, the same consisting in first coating the surface, next pressing or smoothing such coated surface, then either ruling or printing, or both ruling and printing, the same, and, finally, polishing by frictional action.

203,475. METALLIC BELTING FOR ELEVATORS, &c. Fred. H. C. Moy, Buffalo, N. Y. Filed Feb. 26, 1877.



Claim.—1. In metallic belting, the link A, composed of the inverted-U-shaped body A', top eye A'', cross-bar a, branches a', with eyes a'', and the tail-pieces a''', substantially as and for the purpose described.

2. In metallic belting, the link A, having two forks, a', each provided with an eye, a'', and a tail-piece, a''', as and for the object stated.

3. In metallic belting, a link having its body formed in an inverted U shape, and provided with eyes for attachment, substantially as and for the purpose specified.

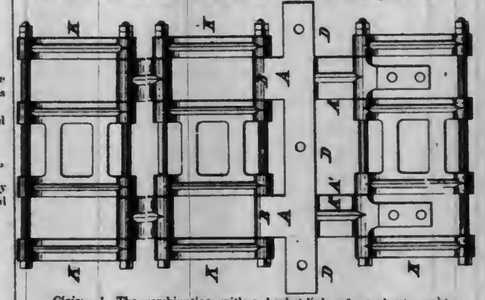
4. The combination, with the link A, of the links B and C, with or without the substitute link D, as and for the use and purpose stated.

5. In metallic belting, a link having a tail-piece or rest projecting beyond the point of attachment of the intermediate links, as specified.

6. A bucket-link having the cross-bar a formed in one piece with the body of the link, and raised above the base-line, as and for the object stated.

7. A bucket-link having the cross-bar a and one or more bodies, A', provided with solid eyes, all formed entire in the process of casting, as specified.

203,476. METALLIC BELTING. Fred. H. C. Moy, Buffalo, N. Y. Filed Apr. 1, 1878.



Claim.—1. The combination, with a bucket-link, of an elastic cushion secured to said link, in the manner as and for the purpose specified.

2. A bucket-link having the cross-bar D, provided with the projecting rib E, as and for the object stated.

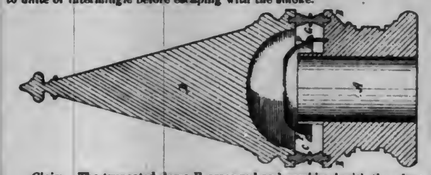
3. An elevator-belt composed of links having a T-shaped body and solid eyes on both extremities, said links being produced entire in the process of casting, as and for the purpose specified.

4. A bucket-link consisting of the cross-bar D and one or more bodies, A', having the rib or ribs A'', said bodies A' being provided with solid eyes B B' and the cross-bar raised above the base-line, as specified.

5. The combination, with the bucket-link A, of the side links K, as stated, said links forming a repeating series in belting, as stated.

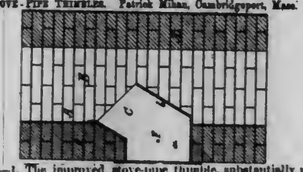
203,477. CHIMNEY-CAPS OR VENTILATORS. Patrick Mihan, Cambridgeport, Mass. Filed Jan. 2, 1878.

Brief.—An arrangement within the dome and the open space between it and the deflector, and above the upper end of the discharge-pipe, of a truncated dome, open at top as well as at the bottom, and serving to separate or divide into two currents an inrushing current of air, and to subsequently cause them to unite or intermingle before escaping with the smoke.



Claim.—The truncated dome F, arranged and combined with the educt A, the deflector B, and the stationary dome D, substantially as set forth.

203,478. STOVE-PIPE THIMBLES. Patrick Mihan, Cambridgeport, Mass. Filed Jan. 2, 1878.



Claim.—1. The improved stove-pipe thimble, substantially as described, provided with the deflector b, and with the extension C, arranged therewith and with the top of the tubular portion a, as set forth, whereby the upper side of the extension and the upper part of the said portion a are adapted to sustain the breastwork of the chimney, and other advantage, as described, is attained.

2. The stove-pipe thimble provided with the rod F, extended across its portion a, as set forth, and also the tubular deflecting extension C, arranged with such rod and part a, as represented.

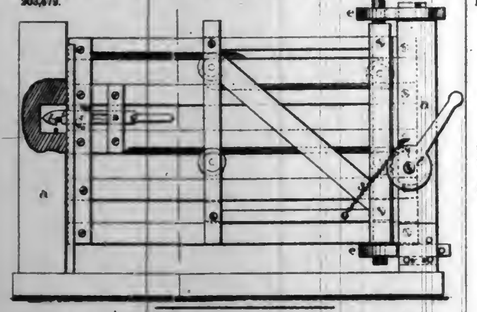
203,479. GATES. Thomas J. Miller, Scotland County, Mo. Filed Mar. 28, 1878.

Brief.—The lower bearing of the gate is vertically adjustable in the post from which the gate is pivoted. The adjustable bearing is operated by a cam-lever and chain, which serves to raise the gate upward, and swings it open after it has been unlatched.

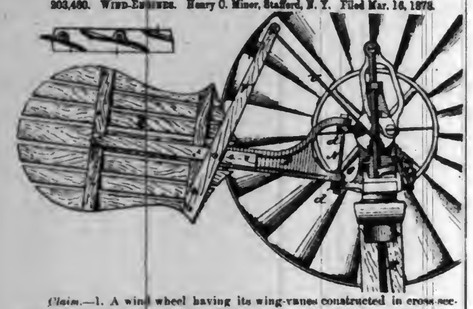
Claim.—1. A latch, g, provided with a slot, and having the two notches i made in its lower edge, in combination with a pin, o, and pin q, passed through the gate to lock it in position after it has caught upon the post or pin l, substantially as shown.

2. The post *a*, having a mortise cut through it for the movable bearing *c* to move vertically, in combination with the pins for supporting the bearing in position, and the cam-lever and chain for raising the bearing and pivoted frame *c* vertically upward, substantially as shown.

203,479.



203,480. WIND-ENGINES. Henry C. Miner, Stafford, N. Y. Filed Mar. 16, 1878.

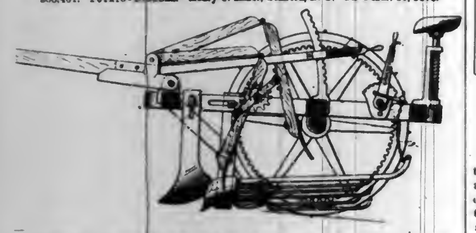


Claim.—1. A wind wheel having its wing-vanes constructed in cross-section of a double or approximately S-shaped curve, whereby, when said vanes are arranged in proper position, the front edges will be presented directly to the path of the wind, and the rear edges will stand at an angle thereto, substantially as and for the purposes specified.

2. In a wind-wheel, the wing-vanes provided with ears projecting laterally in opposite directions from opposite corners of the outer ends of said vanes, and arranged in the wheel in such position that the ears of each lap those of the vanes on both sides, and two lapping ears may be attached to the rim of the wheel by a single bolt, substantially as specified.

3. The turn-table provided with ears or lugs *d d*, in combination with the main vane Q, bifurcated beam P, and pivot N, constructed and arranged substantially as described, whereby said main vane is held by gravity in a position parallel with the wheel, and automatically returned to said position when released, after being swung to the wind for the purpose of shifting the wheel, as set forth.

203,481. POTATO-DIGGERS. Henry C. Miner, Stafford, N. Y. Filed Mar. 16, 1878.



Claim.—1. In combination with the shovel of a potato-digger, a separator consisting of two sections, each composed of a series of parallel longitudinal bars, alternately of different lengths, bent upward at their ends, secured to a transverse bent arm, provided with a backwardly-extending arm parallel with the longitudinal bars, and hinged to the rear of the shovel, substantially as and for the purposes specified.

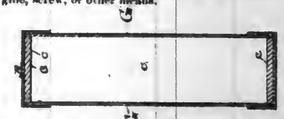
2. The combination, with the truck, of a draft-pole pivoted to the forward part thereof and provided with a backward extension, with a pawl attachment engaging a graduated sector, and the levers connected to the supporting-section of said draft-pole by means of suitable link, and secured to reversely-set cranks on a rotating shaft, operated by the driving wheels of the machine, whereby the potatoes upon the separator are separated from the soil and vegetation, substantially as herein specified.

203,482. EXPLOSIVE COMPOUNDS. Edward Monakay, Minerville, N. Y., assignor of one-half his right to W. H. Taft, same place. Filed Jan. 19, 1878.

Claim.—A composition of matter or explosive compound consisting of nitro-glycerine combined with a modifying liquid, hydrocarbon diluent, substantially as and for the purposes specified.

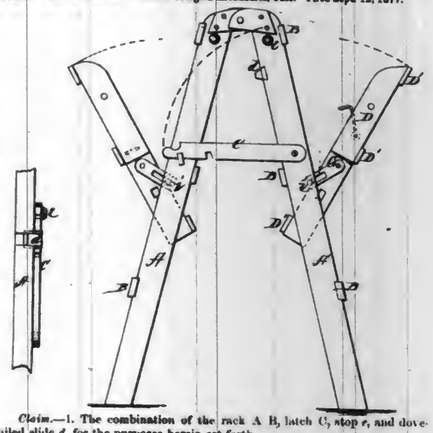
203,483. HONEY-BOXES. John E. Moore, Byron, N. Y. Filed Oct. 12, 1877.

Brief.—The frame, full of honey, is removed from hive. Glass is placed loosely on both sides, and a cap put on each end. The cap, made of paper or other suitable material, serves to hold glass onto frame, and is fastened to frame by glue, screw, or other means.



Claim.—A honey-box consisting of the comb-frame C, the glass sections G G, and the covering-caps A A, combined and arranged to operate as and for the purpose specified.

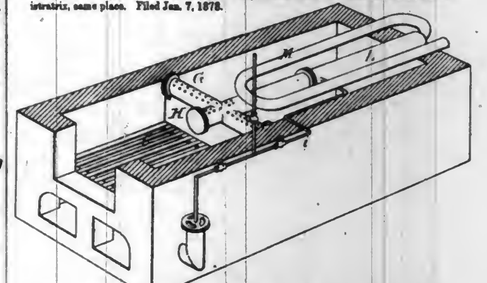
203,484. CLOTHES-DRIERS. Wm. K. Morgan, Alexandria, Ohio. Filed Sept. 12, 1877.



Claim.—1. The combination of the rack A B, latch C, stop *e*, and dovetailed slide *d*, for the purposes herein set forth.

2. In combination with the main rack A B, the pivoted rack D D', folding within the former, the slotted pivoted brace G, and the pin *i*, substantially as and for the purposes herein set forth.

203,485. COMBUSTION OF FUEL IN STEAM-BOILER FURNACES. George W. Morrison, Philadelphia, Pa., assignor to himself, Henry C. Carey, Abram Hart, and Elizabeth Rich, administratrix, same place. Filed Jan. 7, 1878.



Claim.—The combination, with a steam-boiler furnace, of the air-heating tube M, arranged in the flue, a pipe, L, receiving air from the said tube M, a nozzle in the pipe L, a nozzle, *i*, projecting into the first nozzle and communicating with a steam-pipe, and a perforated distributing-pipe, G, with which the said pipe L communicates, and from which jets of combined air and steam are projected, all as set forth.

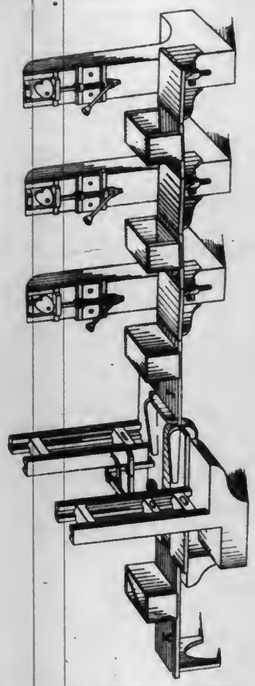
203,486. MANUFACTURE OF PACKING-BOXES. Fredk. Myers, New York, N. Y. Filed Feb. 4, 1878.

Brief.—The nailing-machines and the dressing-machines, or the dressing-machines and the trimming-machines, relatively arranged for successive operation, form a series of nailing-machines for constructing boxes with or without the tops, and further form a series of nailing-machines and a finishing-machine or finishing-machines for constructing and finishing such boxes, the finishing-machine or finishing-machines being one or more dressing-machines or one or more trimming-machines, or one or more dressing-machines and one or more trimming-machines, arranged in any order of succession for convenient operation. (Passed by the Board of Examiners-in-Chief.)

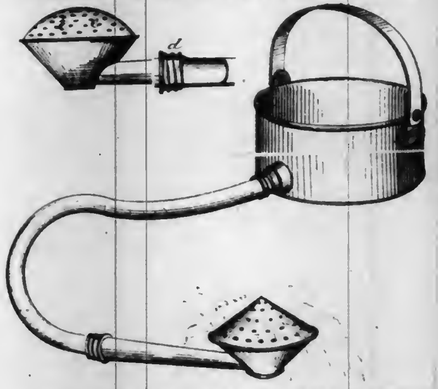
Claim.—1. The method of constructing boxes consisting in successively nailing together the parts thereof, as specified, by nailing-machines relatively arranged for successive operation, substantially as described.

2. The method of constructing and finishing boxes consisting in successively nailing together the parts thereof, as specified, by nailing-machines, and finishing the boxes by one or more finishing-machines, the machines being relatively arranged for successive operation, substantially as described.

203,486.

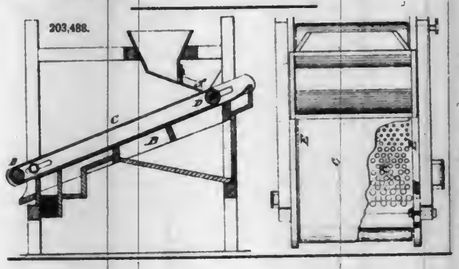


203,487. SPRINKLERS. James E. New, Binghamton, N. Y. Filed Apr. 26, 1878.



Claim.—The herein-described article of manufacture, the sprinkler consisting of the reservoir, and the flexible tube connecting it with a spray-nozzle formed of a double shell cone, having spray-holes in its upper periphery, and adapted to be used as described.

203,488.



203,488. OCKLE-SEPARATORS. George F. Newell Sr., and Joseph Croft, Osseo, Wis.; said Croft assignor to Samuel L. Cox, Jr., and Geo. F. Newell, Jr., same place. Filed Mar. 2, 1878.

Claim.—1. In a grain-separator, the combination of an inclined endless apron, a stationary inclined screen arranged beneath and in contact with the apron, and tension-adjusting devices for the apron, substantially as described.

2. The combination, with the inclined screen B, of the endless apron C, the roller D, journaled fixedly in the frame-work, the side bars E, carrying the lower roller, and having slots at their upper ends embracing the journals of the upper roller, and slots in its lower end embracing a clamping bolt, *e*, substantially as described.

203,489. CARPET-SWEEPERS. Henry F. Noyes, Boston, Mass. Filed Jan. 5, 1878.



Claim.—In a carpet-sweeper case, the side grooves *b* and end grooves *S*, in combination with a metallic curved top or cover, *c*, having its edges turned to stiffen them, and constructed with a downwardly-projecting rib, 6, whereby the cover of the case is rendered dust-tight, substantially as described.

203,490. CHROMATIC-PRINTING BLOCKS. Thomas D. Osborne, Louisville, Ky. Filed May 28, 1878.

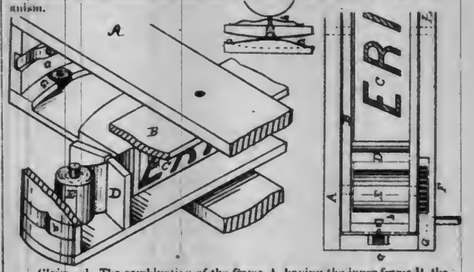


Claim.—1. A form for printing, made in two or more divisions or sections, one or more sections being stationary and provided with separate inking devices, and one part or section being yielding, to be inked by the ordinary rollers, and all the sections coming to the same surface when the impression is being taken.

2. The combination of a stationary frame, carrying portion of the form with its independent inking devices, and a yielding bed carrying another portion of the form, substantially as and for the purposes herein set forth.

203,491. STATION-INDICATORS. Wm. H. Packer and Willard H. Packer, Cleveland, Ohio. Filed Feb. 9, 1878.

Brief.—The belt is secured to rollers in the inside frame. This frame is reversible on trunnions, so that when the belt is wound to one end the frame may swing round and the belt be wound the other way by same driving mechanism.

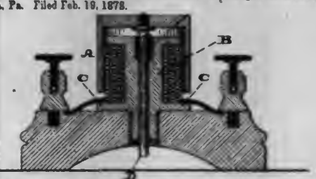


Claim.—1. The combination of the frame A, having the inner frame B, the strip C, guides D D', drums E E', gears F G, and springs *a* and *b*, constructed as and for the purposes described and shown.

2. In a street or station indicator, the combination of the drums E E' and belt C, carried by the swinging frame, with the springs *a b*, operated by said drums, substantially as described and shown.

3. In a street or station indicator, the reversible frame B within the frame A, holding the strip C, as and for the purposes set forth and described.

203,492. ELECTRO-MAGNETS. Henry M. Paine, Newark, N. J., assignor to Daniel S. Robeson, Philadelphia, Pa. Filed Feb. 19, 1878.



Claim.—1. An armature inclosing the bobbin and its surrounding coil, and so spaced at top and bottom, in relation to the top and bottom of the bobbin, that both poles of the bobbin may be utilized, substantially as set forth.

2. The bobbin with projecting base C, in combination with the inclosing armature A, substantially as and for the purpose set forth.

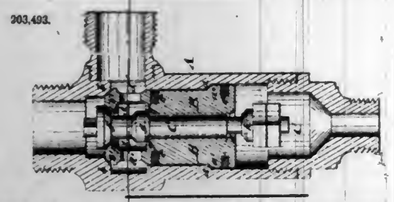
3. The bobbin B and armature A, in combination with the guide-rod D, substantially as and for the purpose set forth.

203,493. SAFETY VALVES AND COCKS FOR STEAM-CYLINDERS. Thomas J. Paradine, Erie, Pa. Filed Feb. 18, 1878.

Claim.—1. The safety-plug B, having the circumferential grooves *e e* filled with cotton wicking, as and for the purpose described.

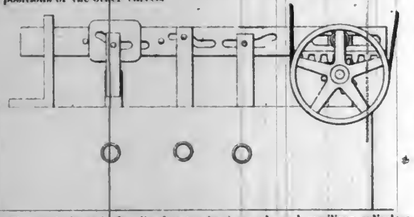
2. The combination of case A, plug B, and spindle C, the plug having projections *a' b'*, that fit against shoulders *a b* of the case A, and seats that receive the valves *f g h* on the spindle, as and for the purpose specified.

203,493.



203,494. VALVE-OPERATING MECHANISM FOR HYDRAULIC ELEVATORS. Francis B. Perkins, Boston, Mass. Filed July 30, 1877.

Brief.—A horizontal bar is reciprocated by a pinion and ratchet at one end. Slots in said bar, being cam-shaped, receive each a pin on the upper end of a valve extension, and are so arranged that a first movement will open the principal valve, and a further movement an auxiliary valve also; a reverse movement closes both at once, these valve-movers being loosely connected. The exhaust-valve is in like manner opened at the proper time in reference to the positions of the other valves.

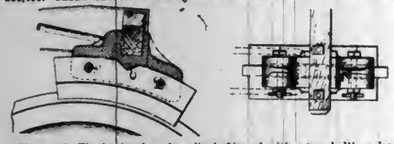


Claim.—1. In a hydraulic elevator having main and auxiliary cylinders, the combination, with a primary cam to open and close the main inlet-valve, of a secondary cam to open the auxiliary inlet valve after the opening of the main inlet-valve, and to close the auxiliary inlet-valve simultaneously with the closing of the main inlet valve, substantially as described.

2. The primary cam for the main valve and its mover, in combination with the secondary cam for the auxiliary valve, the secondary cam being connected loosely with the mover of the primary cam, whereby lost motion is provided for, to operate substantially as described.

3. In a hydraulic elevator having two or more cylinders and separate inlets for each, the combination, with the inlet-valves, of mechanism to open them consecutively through a single hand-rope, and to cut them off simultaneously, thereby stopping the flow of water to each cylinder at the same time, substantially as described.

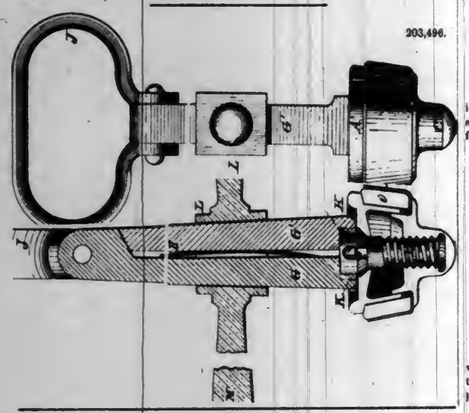
203,495. BRAKE-SHOES. H. Lansing Perrine, Freehold, N. J. Filed Mar. 19, 1878.



Claim.—1. The brake-shoe described, formed with a tread, B', and a web, B'', from a bar of rolled steel or iron, and having a notch or notches, and a bolt-hole or bolt-holes made in the web, in combination with a cast-iron socket or bed-block formed with a step or steps and a bolt-hole or bolt-holes, substantially as shown and specified.

2. A rolled steel or iron brake-shoe, having the notches *b' b'* and bolt-hole *a'*, in combination with a cast-metal socket having steps *c'* and bolt-holes, and the bolt *d'*, substantially as described.

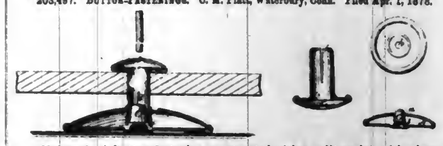
203,496.



203,496. BUNG-WRENCHES. George W. Phillipi, Buffalo, N. Y. Filed Mar. 15, 1878.

Claim.—The bung-wrench hereinbefore described, consisting, essentially, of the two tapering pivoted jaws G G', having the cylindrical socket I, provided with projections K on one extremity, and the bail J on the other end, and the sliding handle-socket L, said socket I being adapted to fit the notched head of the bolt H, for unscrewing and extracting the same, substantially in the manner as and for the purpose specified.

203,497. BUTTON-FASTENINGS. C. M. Platt, Waterbury, Conn. Filed Apr. 1, 1878.



Claim.—1. A button-fastening constructed with a split eyelet, with a burr, recess, or projection on or near the open end of the eyelet, and a detachable conical plug, whereby the eyelet is secured to the button, substantially as described.

2. In a button-fastening, a projection formed in the button, in combination with a detachable plug, and a split eyelet with a burr, recess, or projection on or near its open end, substantially as and for the purpose described.

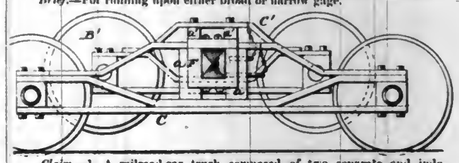
203,498. LEATHER-DRESSING COMPOUNDS. Norman Quinlan and John H. Quinlan, Jr., Glens Falls, N. Y. Filed Mar. 18, 1878.

Brief.—Dissolve in one gallon of alcohol two and one-half pounds of orange shellac. To this add one pint of castor-oil, one-half pound of ivory-black, and one gill of turpentine. When a bronze or other color is required substitute for the ivory-black a suitable coloring ingredient.

Claim.—The leather-dressing composition consisting of alcohol, shellac, castor-oil, ivory-black, or its equivalent, as described, and turpentine, compounded in or about the proportions named.

203,499. CONVERTIBLE CAR-TRUCKS. Wm. L. Rankine, Paris, Ky. Filed Apr. 8, 1878.

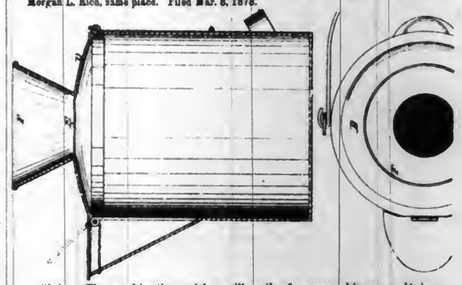
Brief.—For running upon either broad or narrow gage.



Claim.—1. A railroad-car truck composed of two separate and independent sets of axles, wheels, and connecting-frames, one arranged within the other, and both adjustable upon a center cross-beam, substantially as herein set forth.

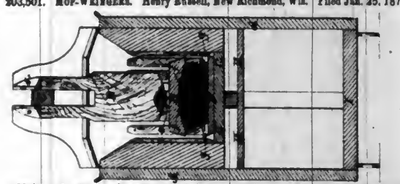
2. The combination of the two connecting-frames C C', having vertical posts *a* and *a'*, and the beam D, having shoulders *d d*, the guides *b b*, and frame F, substantially as and for the purposes herein set forth.

203,500. MILKING-PAILS. Dealton G. Rich, Sand Bank, N. Y., assignor to himself and Morgan L. Rich, same place. Filed Mar. 8, 1878.



Claim.—The combination, with a milk-pail, of a removable cover, D, having in the center of the same a fixed strainer, E, and a hopper, F, made with straight flaring sides, and fixed permanently to the cover, substantially as and for the purpose described.

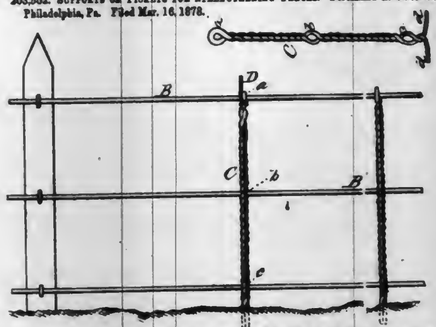
203,501. MOP-WRINGERS. Henry Bussell, New Richmond, Wis. Filed Jan. 25, 1878.



Claim.—1. As an improvement in mop-wringers, the squeezer provided with a dish-shaped presser-surface and with a notch, the one to accommodate the head and the other the handle of the mop, substantially as and for the purpose set forth.

2. The combination, with the dish-shaped or recessed squeezer, of the bar F, substantially as set forth.

203,502. SUPPORTS OR PICKETS FOR STRENGTHENING FENCES. Ferdinand L. Sarmiento, Philadelphia, Pa. Filed Mar. 16, 1878.



Claim.—1. The wire-fence picket consisting of the twisted-wire body, having spaced eye-seats *a b c* for the fence-wires, and the branched prongs *d*, for attachment to the ground or base, substantially as specified.

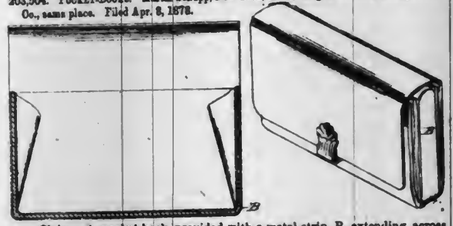
2. The combination, with the fence-wire B and the picket C, of the barb D, having point *i* and spaced strips *i'* at opposite ends, placed astride the wire against the picket, and secured thereto by twisting the said strips around the picket below the wire, substantially as set forth.

203,503. CLOTHES-LINE HOLDERS. Geo. S. Sayers and Thos. Galligan, Hyde Park, Pa. Filed Oct. 26, 1877.



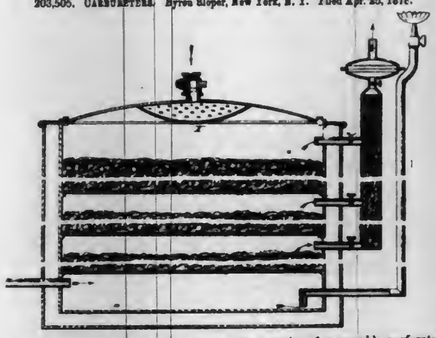
Claim.—In combination with the clothes-line and fixed pulleys C E, the horizontal arms or bracket B, the pulley D, whose axle *d* is adapted to slide on said arm, and the screw G, passing through the axle, and provided with the wheel A, all as shown and described.

203,504. POCKET-BOOKS. Martin Schupp, New York, N. Y., assignor to Weil Livingston & Co., same place. Filed Apr. 8, 1878.



Claim.—A pocket-book provided with a metal strip, B, extending across the back portion and to the top of the sides of the book, and applied between the lining and cover, substantially in the manner and for the purpose herein set forth.

203,505. CARBURETERS. Byron Sloper, New York, N. Y. Filed Apr. 25, 1878.



Claim.—1. A carbureter provided with a series of removable perforated trays for supporting the packing, substantially as specified.

2. In a carbureter, a series of removable trays, in combination with the packing or filling between the trays, extending from one tray to near the bottom of the tray above, thus providing a space between each packing and the tray next above, substantially as and for the purposes specified.

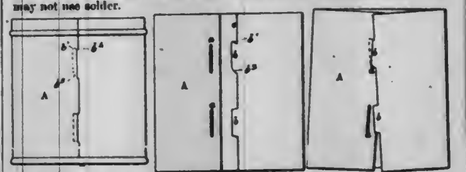
3. In combination with a carbureter, the packing consisting of sawdust commingled with excelsior, the sawdust acting as an absorbent for the hydrocarbon and the excelsior as an elastic support for the sawdust, whereby the sawdust is prevented from becoming soggy and packing too closely in the carbureter, substantially as specified.

4. In combination with a carbureter divided into a series of compartments by means of perforated trays, and the service or delivery pipe of the same, a series of division-pipes provided with cocks and communicating with the compartments of the carbureter and the delivery or service pipe, whereby the gas may be passed through one or more of the compartments, in order to uniformly carburet it throughout the operation of the apparatus.

5. In combination with a carbureter, an open-mouthed gas-pipe extending from the bottom of the carbureter to a point above and terminating in one or more burners, at which the gas may be lighted, whereby, when the carbureter has been properly filled, the surplus hydrocarbon, by trapping the pipe, will extinguish the light, thereby indicating that the carbureter has been sufficiently charged.

203,506. SHEET-METAL CANS. John Solter, Baltimore, Md. Filed Apr. 13, 1878.

Brief.—After can-body is locked together, bottom is crimped on. May or may not use solder.

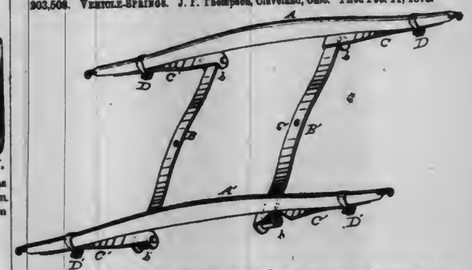


Claim.—The box-body A, formed of a rectangular sheet of metal having slots *a* near one end, and projections *b* at the other end thereof, one or more of said projections having a point, *b'*, and a rounded portion, *b²*, which point *b'*, when the body is formed, stands above the highest part, *b²*, of the slot *a*, and effects a fastening, substantially as set forth.

203,507. PROCESSES FOR CLARIFYING THE JUICES OF SORGHUM AND MAIZE. Francis L. Stewart, Marysville, Pa. Filed Mar. 4, 1878.

Claim.—The final depurating process applied to maize and sorghum juice, additional to and directly following defecation by the action of lime and heat, and neutralization of the excess of lime by sulphurous oxide, and consisting, first, in the reduction of the temperature of the previously-heated juice to 140° Fahrenheit; second, the admixture with it of sulphurous oxide in quantity sufficient to make it strongly acidulous; third, the addition of albumen to the juice in sufficient quantity; fourth, the rapid heating of the juice to the boiling-point and the immediate removal of the scum; and, fifth, the subsequent addition at intervals to the syrup, boiling at the atmospheric pressure, of sulphurous oxide in sufficient quantity to preserve it in an acid condition to the close of the evaporation, substantially as and for the purposes specified.

203,508. VEHICLE-SPRINGS. J. F. Thompson, Cleveland, Ohio. Filed Feb. 11, 1878.



Claim.—In a vehicle-spring, the combination of the spring B, short spring-arms C C', clips D D', and couplings *b b'*, together with the side bars A A', as and for the purposes described and shown.

203,509. MACHINES FOR GORING VENEERS FOR BARRELS. Clark W. Thompson, Wells, Minn. Filed May 1, 1877.

Brief.—The veneer is automatically fed beneath the goring-die until a sufficient length has been gored to form a barrel, when the knife severs the gored portion from the sheet of veneer.

Claim.—1. In a machine for cutting gores in veneers, the combination, with a bed provided with slots or throats corresponding substantially to the desired form of gore, of mechanism for feeding the veneer over said bed, two reciprocating knives or dies, which cut gores in both sides of the veneer, and an independently-acting cutting-off knife, arranged between the inner points of the goring-knives to sever the sheet, substantially as set forth.

2. In a machine for goring veneer, the combination, with goring knives or dies which form gores in the sides of the veneer, and an intermediate independently-acting knife which severs the sheet, of an automatic mechanism which throws said intermediate knife into action at predetermined intervals, substantially as set forth.

3. In a machine for goring veneer, the combination, with the goring knife or dies and the knife which severs the gored sheet from the ungored sheet, of an automatic mechanism which throws said severing-knife into action at predetermined intervals, and which also permits the operator to throw said severing-knife into action at will.

4. The combination, in a machine for goring veneers, of the bed-plate F, provided with throats *f f*, and the cutter-head E, carrying the dies *e e*, provided with converging faces, substantially as set forth.

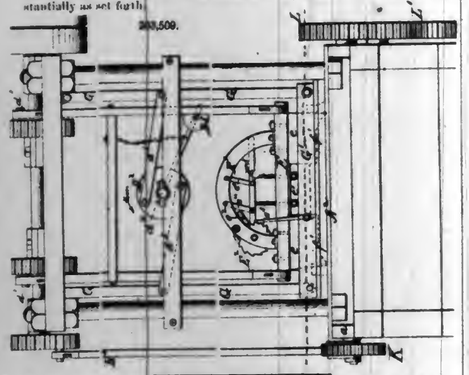
5. The combination of the platen G', toggle-levers G G, rock-shaft d^3, link d^2, and weighted lever with the pitman-frame for actuating the platen, substantially as set forth.

6. The combination, with the slotted platen G', of the goring-knives e and the independently-acting knife e^1, substantially as set forth.

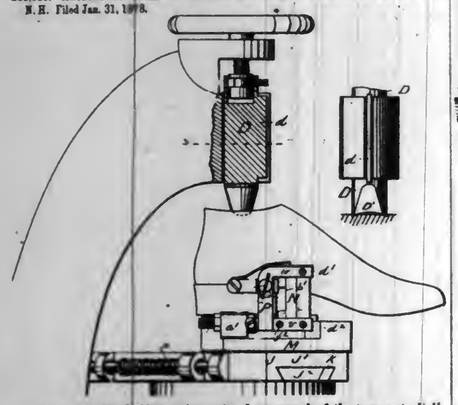
7. The combination, with the knife-carrier E and knives e e^1, of the cam-wheel E^2, carrying the arm e^2, ratchet e^3, and links e^4 e^5, substantially as set forth.

8. In a machine for goring veneer, the combination of the feeding-rollers a a' a a', gear-wheel L L^1 L^2, pawl-lever I, and adjustable pitman H', substantially as set forth.

203,509.



203,510. MACHINES FOR TRIMMING BOOT AND SHOE HEELS. Merrill A. Tyler, New Durham, N. H. Filed Jan. 31, 1878.



Claim.—1. The knife-carrying yoke J, composed of the two parts J^1 J^2, arranged to slide upon each other, and held together by spring-pressure, in combination with the bearing-block G and a suitable operating-handle, substantially as described.

2. The knife-blade swiveled to a carrying-arm, M, which is pivoted to a two-part yoke-bearing, J, having its parts joined together by an elastic connection, substantially as described, for the purpose specified.

3. The combination of the adjustable knife-blade N, its fastening-screws n^1 n^2, and the adjusting-screws d^5 d^6, substantially as and for the purpose set forth.

4. The knife gage or guard D, combined with the knife-frame P, made adjustable in relation to the cutting-edge of the knife, substantially as described.

5. The combination of the swiveling frame P, swiveling ear-piece n^7, and carrying-arm M, substantially as and for the purpose set forth.

6. The combination, with the block f^1, arranged at the lower end of the knife, of the adjusting-screw f^2, substantially as and for the purpose set forth.

7. The heel-plate k, provided with the cam-faces m m, substantially as and for the purpose set forth.

8. The plug D, having its lower or bearing end D' hollowed out, substantially as and for the purpose specified.

203,511. PUMPING-ENGINES. John H. Vails, Dayton, Ohio. Filed Mar. 25, 1878.

Claim.—1. The double bell-crank lever C, to the upper arm of which the valve-rod is connected, having its under side, at each end, concave, in combination with the cross-head block, provided with a pin, J, whereby the vibration of the lever is rendered gradual, as and for the purpose set forth.

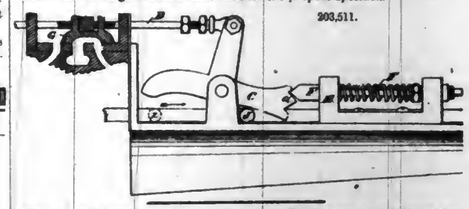
2. In a pumping-engine, a double bell-crank lever constructed of a single piece, having its under side or actuating face formed into concavities diverging from its middle to each end, as and for the purpose specified.

3. The combination, with the double bell-crank lever C, having upon its end the V-shaped projection a, of the wedge-shape-headed plunger F, projected by the spring e or equivalent device, for shifting the valve at the completion of each stroke of the piston-rod, as and in the manner specified.

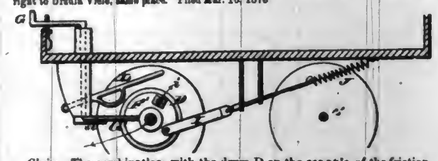
4. The combination, with the double bell-crank lever C, constructed as described, of the valve of a pump or engine having lost motion in itself or its connections, as and for the purpose set forth.

5. The combination of the valve G, having lost motion in itself or its connections, the rod D, double bell-crank lever C, and plunger F, the whole constructed and arranged in the manner and for the purpose specified.

203,511.

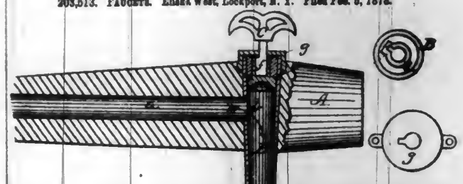


203,512. CAR-STARTERS. Nicholas Van Viele, Elmira, N. Y., assignor of three-fourths his right to Ursula Viele, same place. Filed Mar. 16, 1878.



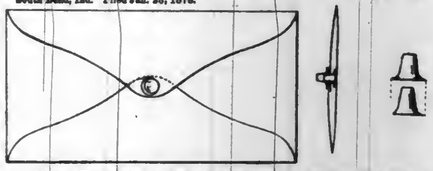
Claim.—The combination, with the drum D on the car-axle, of the friction-disks F F', levers G G', with springs a a, connecting-arms I I', spring J, spring-lever L, and pin i, all constructed and operating substantially as and for the purposes set forth.

203,513. FAUCETS. Elisha West, Lockport, N. Y. Filed Feb. 5, 1878.



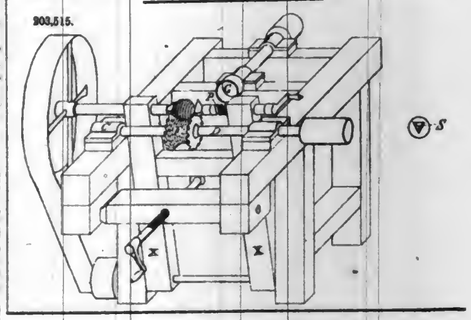
Claim.—The combination, with the faucet-stock A, of the tapering tubular plug B and the screw-threaded cap g, surrounding the upper end of said plug, and engaging in the screw-threaded socket in said stock, substantially as described.

203,514. ENVELOPE AND PAPER FASTENERS. William J. Westwood and George Pflegar, South Bend, Ind. Filed Jan. 28, 1878.



Claim.—The method of fastening envelopes or packages by inserting a flanged cap with closed end through one thickness of the body and flap or flaps of the envelope, and then placing another cap of similar construction over the exposed end of the first cap, and compressing the caps together so as to hold the parts of the envelope or package between their flanges, substantially as set forth and shown.

203,515.



203,515. MACHINES FOR CUTTING SPHERICAL BODIES. Richmond W. Wheeler, Bushnell, Ill. Filed Feb. 11, 1878.

Brief.—A cubical blank is held by opposite corners between revolving chucks having triangular seats in their faces. These chucks are carried by a swinging frame. The blank is first swung against a series of saws arranged so as to present a concave face, and cut to approximate a spherical form. The ball is then swung into the hollow of a tub-saw and there finished.

Claim.—1. The series of saws F, with the face of the series graduated into the semicircular concave form shown.

2. The series of saws F, constructed as described, in combination with the vibrating frame X, having the holding-shafts P R, constructed to hold the tube, as described, as and for the purpose set forth.

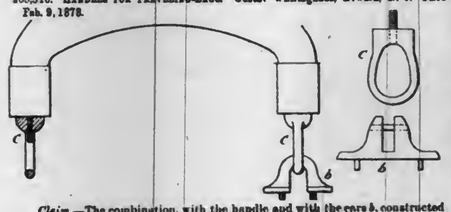
3. The series of saws F, constructed as described, in combination with the vibrating frame, arranged to carry the material to be sawed either to the saws F or cylindrical saw G.

4. The shafts R and P, constructed with the three-cornered cavities S, for the purpose set forth.

5. The hollow cylinder saw G, in combination with the vibrating frame X, for the purpose set forth.

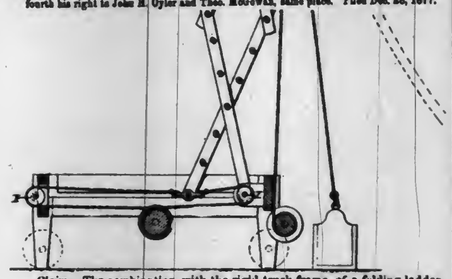
6. The hollow cylinder saw G, in combination with the concaved semicircular-faced series of saws F and the frame X, for the purpose set forth.

203,516. HANDLES FOR TRAVELING-BAGS. Gustav Wilkinghaus, Newark, N. J. Filed Feb. 9, 1878.



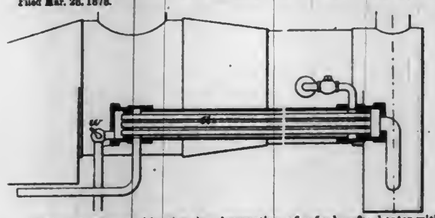
Claim.—The combination, with the handle and with the ears b, constructed substantially as described, of eyes C, provided with male or female screws, adapted to connect them to the handle, all as specified.

203,517. FIRE-ESCAPE LADDERS. Joseph R. Winters, Chambersburg, Pa., assignor of one-fourth his right to John H. Oyler and Theo. McGowan, same place. Filed Dec. 28, 1877.



Claim.—The combination, with the rigid truck-frame, of a folding ladder, consisting of a series of pivoted sections, one of the lower sections of which is pivoted fast in one end of frame, and the other provided with projections adapted to travel in the ways on the rigid truck-frame, and the windlass and the two reversely-wound ropes or chains, each passing around a pulley, I, in the end of the truck-frame, and connected to the lower round of the traveling ladder-section, substantially as described.

203,518. FEED-WATER HEATERS FOR LOCOMOTIVES. John E. Wootten, Philadelphia, Pa. Filed Mar. 28, 1878.



Claim.—1. The combination, in a locomotive, of a feed-water heater with a pipe terminating within the exhaust-chamber of the cylinder, and having its open end turned downward, and directly exposed to the upward course of the exhaust-steam in the said chamber, all substantially as set forth.

2. The combination of the exhaust-chamber and variable exhaust-nozzle of a locomotive-engine with a feed-water heater and a pipe forming a communication between the said heater and the exhaust-chamber, all substantially as specified.

3. The combination of a feed-water heater which derives its heat from exhaust-steam with an outlet or waste pipe and cock or valve w.

4. A feed-water heater consisting of an outer casing for receiving the feed-water, a series of tubes through which the exhaust-steam passes, and two fixed tube-sheets, to one of which are secured the said tubes, which are arranged to slide in the other tube-plate, all as set forth.

203,519. PAWL-AND-RATCHET DEVICES. Jacob D. Wright, Worcester, Mass. Filed Mar. 13, 1878.



Claim.—1. In a ratchet device, a barrel or hollow cylinder provided with internally-projecting teeth e and recesses f, constructed substantially as and for the purposes described.

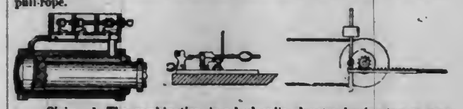
2. The combination of a slide-pawl with the arbor of a ratchet, substantially as and for the purpose set forth.

3. The combination of a sliding pawl, d, having each end beveled on one but opposite sides, with a cylinder or barrel, B, provided with recesses f and internally-projecting teeth e, constructed in the manner substantially as and for the purposes set forth.

4. The combination of a reversible slide-pawl, d, with a cylinder, B, provided with rectangular or axially straight-sided teeth, or their equivalents, substantially as and for the purpose set forth.

203,520. HYDRAULIC ELEVATORS. M. L. Wyman, Boston, Mass. Filed Jan. 11, 1878.

Brief.—The valve-rod l is operated from the car by a lever and the usual pull-rope.



Claim.—1. The combination, in a hydraulic elevator having two or more lifting capacities, depending upon the effective area of piston-surface acted upon by the water coming against it from the main, of valves and mechanism to operate them by a single hand-rope, to control the flow of water to make available the smaller and then the larger lifting capacity of the elevator, and to operate them simultaneously to completely shut off the flow of water for both capacities, to keep the car at rest.

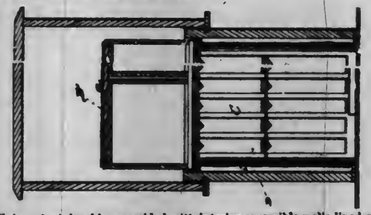
2. In a hydraulic elevator of two or more lifting capacities, substantially as described, the combination, with the hand-rope, of a stop to retard the motion of the hand-rope just before opening the valve for the second or larger capacity, substantially as described.

3. The combination, in a hydraulic elevator of two or more lifting capacities, substantially as described, of a hand-rope, a stop to check its movement, and automatically-operated releasing mechanism actuated by the pressure of the fluid to release the stop, that the hand-rope may be moved to open the valve for the larger capacity, substantially as described.

4. A stop and releasing mechanism, in combination with a piston set in motion by the pressure of the fluid in the cylinder, the piston actuating the releasing mechanism to release the stop, substantially as described.

203,521. BEE-HIVES. James Young, Warsaw, Ind. Filed Feb. 23, 1878.

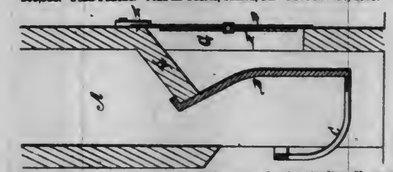
Brief.—The inner walls are covered with cloth on one side, and are reversible, so as to be used for cold or warm weather, either side out, and leave a dead-air space between them and the outer walls.



Claim.—1. A bee-hive provided with interior reversible walls lined on one side, and forming a dead-air chamber between them and the body of the hive, substantially as and for the purposes set forth.

2. The combination, with the hive A B and comb-frames C, of the interior reversible walls D D and top board D', said walls and board being provided on one side with an absorbent lining, substantially as and for the purposes set forth.

203,522. FIRE-PLACES. John M. Yahns, Sharon, Pa. Filed Feb. 16, 1878.



Claim.—The combination of the chimney A, having incline H, as shown, which forms the upper wall of opening G, and serves to deflect and reflect the heat, the fire-back B, and grate C, with the hinged door D E F, abutting against the incline H when closed, as and for the purposes herein specified.

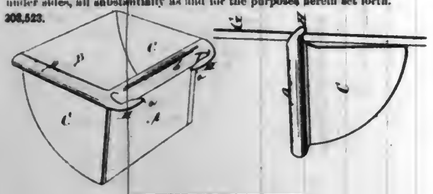
203,523. HOISTING-BUCKETS. William T. Warner, Plattsburg, N. Y. Filed Nov. 10, 1877.

Claim.—1. In combination with an elevator-bucket and its belt, the hooks H H, projecting from the bucket, and formed with the sharp edges *a a* on their inner sides, and the corresponding sharp edge *b* on the back of the bucket,

and clasping the belt, as a mode of fastening, as and for the purposes herein set forth.

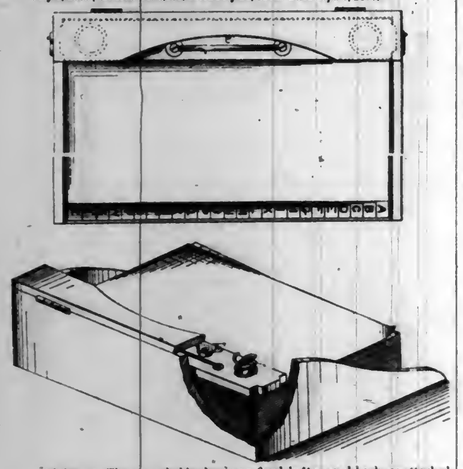
2. The combination of the elevator-bucket A B C, the solid metallic band D, with sharp edge *b*, and the hooks H H, having sharp edges *a a* on the under sides, all substantially as and for the purposes herein set forth.

208,523.



REISSUES.

8,208. TEMPORARY BINDERS. William A. Amberg, Chicago, Ill. Patent No. 92,141, dated July 6, 1869; Reissue No. 4,989, dated July 16, 1872. Filed Sept. 6, 1877.

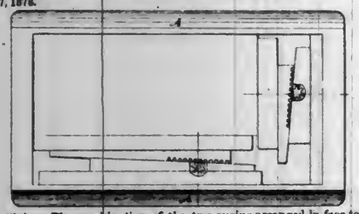


Claim.—1. The paper-holder having a fixed bottom and back, unattached index sheets, and binding-cord openings, constructed and operating substantially as shown and described.

2. A paper-holding case having end guides, in combination with an expansible set of index-leaves, constructed and operating substantially as specified.

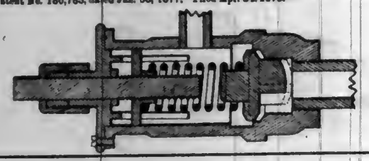
3. The expansible index composed of unattached sheets having uncovered index-letters, between which appropriate matter can be placed to facilitate reference thereto, substantially as described.

8,210. PRINTERS' QUOINS. Edmond A. Warren, Brooklyn, N. Y., assignor of one-half interest to Thomas J. Moore, same place. Patent No. 151,455, dated May 26, 1874. Filed Apr. 27, 1878.



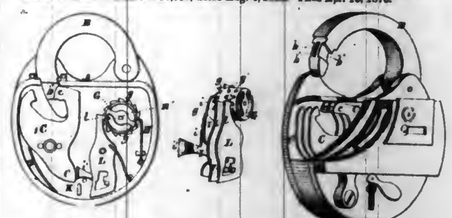
Claim.—The combination of the two quoins arranged in face-to-face contact with each other, and a pinion-key, which gears the said quoins together, substantially as and for the purposes herein set forth.

8,211. SAFETY-VALVE ATTACHMENTS TO UTILIZE ESCAPE-STEAM. Henry G. Ashton, Boston, Mass., assignor, by mesne assignments, to the Ashton Valve Company, Hartford, Conn. Patent No. 186,783, dated Jan. 30, 1877. Filed Apr. 24, 1878.



Claim.—The combination of the pop safety-valve and feed-water tank, as described, in order that the steam which escapes through the valve shall be conducted into the feed-water, as and for the purposes specified.

8,212. INDICATOR-LOCKS. Wm. F. Beasley, Baltimore, Md., assignor, by mesne assignments, of Thomas Lalor. Patent No. 80,637, dated Aug. 4, 1868. Filed Apr. 16, 1878.



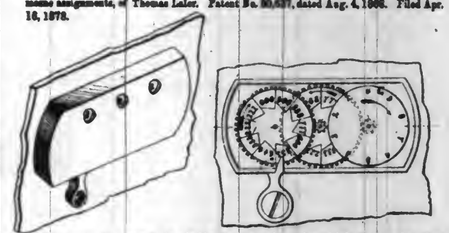
Claim.—1. In combination with the shaft E, the cylinder G, provided with peripheral teeth *g* and openings *g'*, the detent H, and the sliding pawl-plate I, having the spring-pawl *i*, and arranged to be moved longitudinally by the key of the lock, substantially as and for the purpose specified.

2. In combination with the cylinder G, provided with the peripheral openings *g'* and with the sliding pawl-plate I, the tumblers L, having the studs *l*, and arranged to be operated by the key of the lock, in the manner and for the purpose substantially as shown.

3. In combination with the shackle B, provided at its locking end with the central opening *b* and notches *b'*, the pivoted tumblers C, having each a hooked end, *c*, and arranged to be thrown into, and released from, engagement with said shackle, substantially as and for the purpose set forth.

4. In combination with the locking-tumblers C, the slide-plate L provided with a flange, *l'*, which, when said tumblers are engaged with the shackles B, is interposed between said tumblers and the key-hole of the lock, and is only removable from such position by means of the key of said lock, substantially as and for the purpose shown and described.

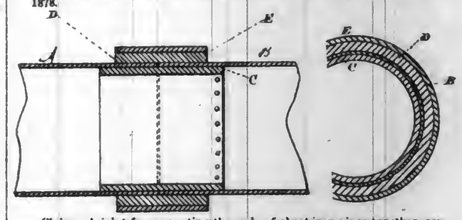
8,213. REGISTERS FOR INDICATOR-LOCKS. Wm. F. Beasley, Baltimore, Md., assignor, by mesne assignments, of Thomas Lalor. Patent No. 80,637, dated Aug. 4, 1868. Filed Apr. 16, 1878.



Claim.—1. A register for indicating numbers in which the registering mechanism is contained within a permanently-closed casing, substantially as and for the purpose specified.

2. A register for indicating numbers, in which the movement of the registering mechanism is arrested at a given point by means of a seal-locked detent, substantially as and for the purpose set forth.

8,214. JOINTS FOR SHEET-METAL PIPES. Jos. Moore, San Francisco, Cal., assignor of one-half interest to Francis Smith. Patent No. 159,439, dated Feb. 2, 1875. Filed Apr. 1, 1878.



Claim.—A joint for connecting the ends of sheet-iron pipes together, consisting of the section A or B, provided with a flange, C, in combination with the opposite section, the surrounding band E, and packing D, for the purpose described.

8,215. BRACES FOR BITS. Nelson Spofford, Haverhill, Mass., assignor to W. A. Ives & Co., New Haven, Conn. Patent No. 25,984, dated Nov. 1, 1859; Reissue No. 2,576, dated Apr. 23, 1867; extended Oct. 31, 1873, for seven years. Filed May 1, 1878.

Brief.—The jaws are adapted to embrace bit-shanks of varying taper.

Claim.—1. In a bit-brace, the combination, substantially as described, of a pair of jaws constructed to move from or toward each other, so that they may conform to the taper of the bit-shank, with a device to force said jaws upon the bit-shank.

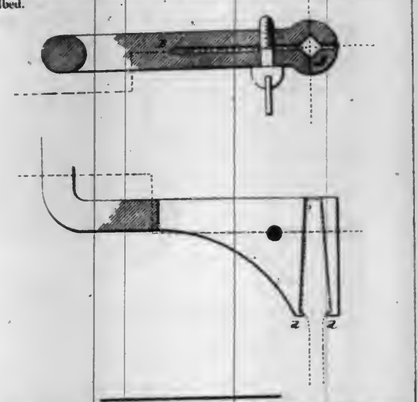
2. In a bit-brace, a pair of jaws constructed with grooves fitted to embrace the taper sides of a bit-shank, and with internal projections *d d* at the mouth of the cavity formed by said grooves for closing over the shoulders of the bit-shank, in combination with a device for forcing such jaws against the bit-shank, substantially as specified.

3. In a bit-brace, a pair of jaws, each constructed with a groove to embrace the taper sides of a bit-shank, and with internal projections at the mouth of the cavity formed by said grooves, substantially as and for the purpose specified.

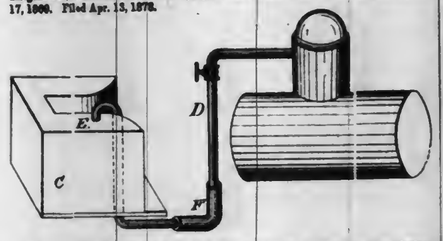
4. A bit-stock constructed with the lower arm slitted along its center in a vertical plane, each of the parts made by the said division carrying one of the pair of jaws, which together form an expanding socket, substantially as described.

5. A bit-stock constructed with the lower arm slitted along its center in a vertical plane, each of the parts made by the said division carrying one of the pair of jaws, which together form an expanding socket, and combined with means for clamping the said jaws upon the shank of the bit, substantially as described.

8,215.



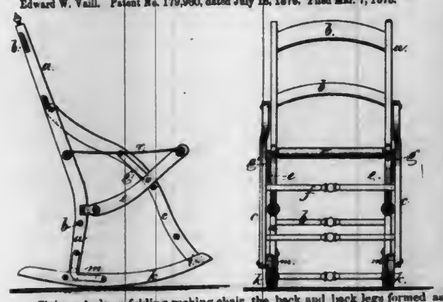
8,216. FEED-WATER HEATERS. Peter C. Wortman, Greenville, Mich., assignor, by mesne assignments, to the Ashton Valve Company, Hartford, Conn. Patent No. 93,790, dated Aug. 17, 1869. Filed Apr. 13, 1878.



Claim.—1. The herein-described feed-water heating apparatus, consisting of the combination of the tank C, pipe E, coupling F, pipe D, and the steam-space of the boiler, substantially as and for the purpose specified.

2. The combination of the tender-pipe E, leading into the water-tank, for the conveyance of steam, with the pipe D, leading into the dome or steam-space of the boiler, and the flexible connection or joint F between the tender and locomotive, substantially as and for the purpose specified.

8,217. FOLDING ROCKING-CHAIRS. John E. Wakefield, Worcester, Mass., assignor to Edward W. Vaill. Patent No. 179,980, dated July 18, 1876. Filed Mar. 7, 1876.

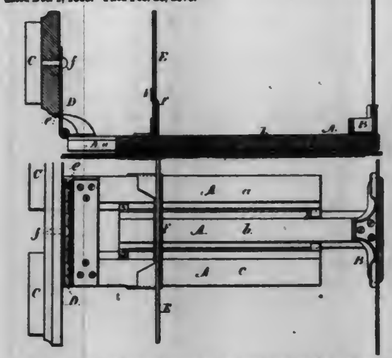


Claim.—1. In a folding rocking-chair, the back and back legs formed as one frame, extending down to the rockers, in combination with the front legs, pivoted to the rockers and extending backwardly to and supporting the back, and the seat-frame and seat supported by the front and back legs, substantially as set forth.

2. The combination, in a folding rocking-chair, of the back legs and frame *a b*, front legs *e*, seat-frame *c*, links *g* and *m*, and seat *r*, and rockers *k*, substantially as set forth.

3. The L-shaped links, in combination with the back legs and rockers of the folding chair, substantially as set forth.

8,218. STEREOSCOPES. Charles H. Wheeler, San Francisco, Cal., and J. A. Bazin, Canton, Mass., assignors, by mesne assignments, to E. & H. T. Anthony & Co. Patent No. 40,796, dated Dec. 1, 1863. Filed Feb. 23, 1878.



Claim.—1. In a stereoscope-instrument, the bed-piece A, in combination with the hinged lens-holder C and longitudinally-sliding picture-holder B, constructed and operating in the manner and for the purpose substantially as shown and described.

2. The longitudinally-adjustable field-piece or septum E, in combination with the bed-plate A, lens-holder C, and adjustable picture-holder B, substantially as and for the purposes set forth.

3. The lens-holder C, connected to the head-piece D by means of a pivot, *f*, substantially as and for the purpose described.

4. The spring-catch *e*, in combination with the hinged head-piece D, bed-plate A, and lens-holder C, constructed and operating as and for the purpose set forth.

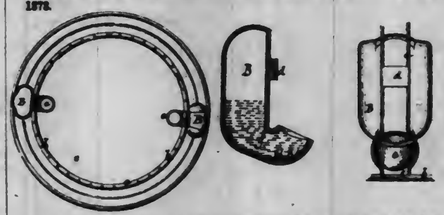
5. The bed-piece formed of the bars *a b c*, in combination with a pair of stereoscopic lenses, substantially as and for the purpose herein set forth.

6. In a stereoscope-instrument, a holder and a bed upon which the holder is movable, in combination with the sheet-metal connecting-pieces that slide upon the bed, substantially as set forth.

7. The combination, in a stereoscope-instrument, of a movable lens-holder, a movable septum or field-piece, and a sliding picture-holder, whereby the stereoscope can be packed in a small compass, substantially as described.

8. In a stereoscope-instrument, the combination, with the bed A, of a movable holder, F, extending down at the sides of the bed and sliding upon the same, and retained in position by friction, substantially as set forth.

8,219. FOUNTAIN-CUPS FOR ANIMAL-CAGES. Otto Lindemann, Edgewater, N. Y. Patent No. 104,694, dated Oct. 30, 1877; Reissue No. 8,018, dated Dec. 25, 1877. Filed Apr. 3, 1878.



Claim.—1. A fountain-cup for a bird-cage, the body of said cup being closed at the top and provided at its bottom with a discharge-opening, *g*, and a curved spout, *c*, which communicates with said discharge-opening, and the mouth of which is on a level, or nearly so, with the upper edge of the discharge-opening, all made together as an integral, and provided with means whereby it can be connected with the body of the cage, substantially as shown and described.

2. A fountain-cup for a bird-cage, the body of said cup being closed at the top and provided at its bottom with a discharge-opening, *g*, which leads into a spout, *c*, the bottom line of the cup and the inner portion of the spout forming an incline, *h h'*, all being made in one piece, and provided with means for connecting it with the body of the cage, substantially as and for the purpose set forth.

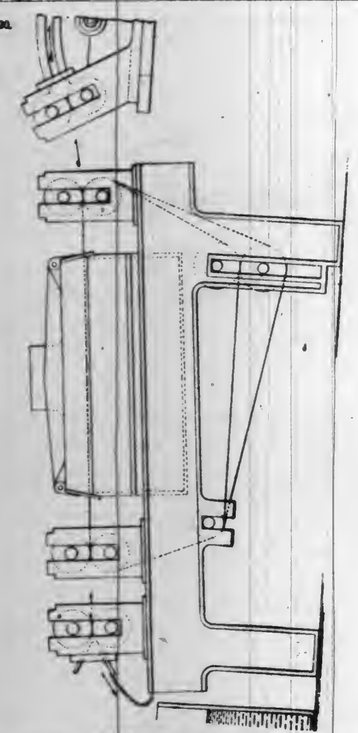
3. The combination, with a bird-cage, of the removable fountain-cup B, having the spout *c*, arranged to pass between two adjacent wires of the cage, and the lug *d*, adapted to engage with said wires, substantially as and for the purpose shown and described.

8,220. PREPARING AND COATING METALS. Jethro J. McCullough, Wilmington, Del. Patent No. 183,196, dated Oct. 10, 1876. Filed Dec. 7, 1877.

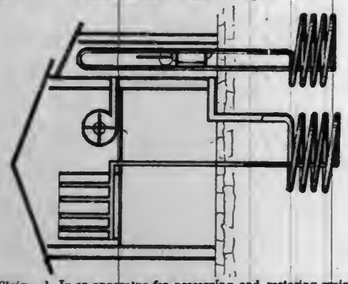
Claim.—1. In an apparatus for cleansing from acid, and subsequently heating and drying, metal plates, the combination, substantially as described, of elastic rollers for removing the excess of acid from the surfaces of the metal and feeding the plates forward, a heating-furnace, and mechanism for transporting the plates therethrough.

2. The described process of coating sheet metals, which consists in subjecting the sheets to an acid-bath to remove the scale, &c., and, finally, after removing the excess acid from withdrawn sheets and preheating, immersing them in the usual coating-bath to complete the process, the various stages of treatment being successive and continuous, substantially as and for the purpose set forth.

8,220.



8,221. APPARATUS FOR VENTILATING AND COOLING GRAIN. Daniel K. Seaton, Washington, D. C. Patent No. 46,950, dated Mar. 21, 1865. Filed Apr. 11, 1878.



Claim.—1. In an apparatus for preserving and restoring grain, the combination of a grain-bin, an air-forcing apparatus, means for cooling air, perforated distributing pipes extending into the bin, and an air-pipe or air-pipes connecting the above.

2. In an apparatus for preserving and restoring grain, the combination of a grain-bin provided with perforated false sides, an air-forcing apparatus, means for cooling air, perforated pipes extending into the bin, and an air-pipe or air-pipes connecting the above.

3. In an apparatus for preserving and restoring grain, the combination of a grain-bin, an air-forcing apparatus, a cooling-chamber containing a system of cold-water pipes, and an air-pipe or air-pipes connecting the above, substantially as described.

4. In an apparatus for preserving and restoring grain, the combination of a grain-bin provided with means, substantially as described, for diffusing or distributing the air discharged thereinto, an air-forcing apparatus, a cooling-chamber containing a system of cold-water pipes, and an air-pipe or air-pipes connecting the above, substantially as described.

5. In an apparatus for preserving and restoring grain, the combination of a grain-bin, an air-forcing apparatus, a cooling-chamber containing a system of cold-water pipes, a subterranean cooler for cooling the water in said cold-water pipes, and an air-pipe or air-pipes connecting the said air-forcing apparatus, cooling-chamber, and grain-bin, substantially as described.

6. In an apparatus for preserving and restoring grain, the combination of a grain-bin provided with means, substantially as described, for diffusing or distributing the air discharged thereinto, an air-forcing apparatus, a cooling-chamber containing a system of cold-water pipes, a subterranean cooler for cooling the water in said cold-water pipes, and an air-pipe or air-pipes connecting the said air-forcing apparatus, cooling-chamber, and grain-bin, substantially as described.

7. In an apparatus for preserving and restoring grain, the combination of a grain-bin, an air-forcing apparatus, a subterranean air-cooler, and an air-pipe or air-pipes connecting the above, substantially as described.

8. In an apparatus for preserving and restoring grain, the combination of a grain-bin provided with means, substantially as described, for diffusing or distributing the air discharged thereinto, an air-forcing apparatus, a subterranean air-cooler, and an air-pipe or air-pipes connecting the above, substantially as described.

9. In an apparatus for preserving and restoring grain, the combination of a subterranean air-cooler, a tank for receiving the water of condensation, and means for withdrawing said water therefrom, substantially as described.

10. In an apparatus for storing grains, the combination of an air-duct, a system of cooling-pipes within said air-duct, which extend into the earth or a body of water or ice, a grain-bin provided with a perforated false bottom, or perforated distributing-pipes, or both, and an air-pipe or air-pipes connecting said air-duct and grain-bin, whereby air in the air-duct, becoming cooled, descends from the air-duct into the air-pipes automatically, and thence into the bin, substantially as described.

11. In an apparatus for preserving and restoring grain, the combination of a grain-bin, an air-forcing apparatus, an air-cooling chamber containing a system of cold-water pipes, a supplemental air-cooler, and an air-pipe or air-pipes connecting the above.

8,222. ROTARY CULTIVATORS. Moses Johnson, Lockport, N. Y., assignor, by mesne assignments, to Chas. La Dow. Patent No. 93,307, dated Aug. 3, 1869. Filed April 27, 1878.



Claim.—1. In a cultivator, the combination of a concavo-convex cutting-disk with a pendent scraper which enters the concavity of said disk.

2. In a cultivator, the combination of a frame, pendent scrapers, axles, and concave cutting-disks with adjusting mechanism, whereby the lateral distance between the scrapers and disks can be either lessened or increased.

3. In a cultivator, the combination of a revolving concavo-convex disk with a support for said disk, having a pendent scraper attached thereto, and adapted to enter the concavity of said disk.

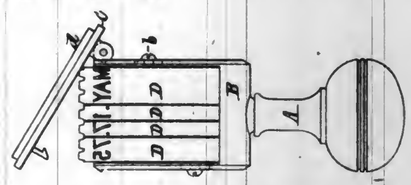
4. In a cultivator, the combination of a supporting frame and a concavo-convex disk with a pendent clearing device, which presents a cutting-edge rearwardly for the purpose of shaving the earth from the disk.

5. In a cultivator, the combination of a revolving axle with a concavo-convex disk and clamping-nuts working on screw-threads, so as to follow said disk and tighten it in place.

6. The combination, in a cultivator, of a draft-frame with two revolving axles attached thereto, and having concavo-convex disks mounted on and firmly clamped to said axles by adjustable nuts.

7. In a cultivator, the combination of a draft-tongue, cross-bar, and revolving disks attached to said bar, said disks being adjustable toward or from each other, and arranged to straddle a row of plants and turn the earth either toward or from the same, as desired.

8,223. HAND-STAMPS. John F. W. Dorman, Baltimore, Md. Patent No. 104,373, dated June 8, 1875. Filed Feb. 2, 1878.



Claim.—1. As a new article of manufacture, an endless rubber printing-band having raised intelligible characters thereon integral with the substance thereof, and adapted for use in a hand-stamp, substantially as set forth.

2. A series of endless rubber bands having raised intelligible characters thereon integral with the substance thereof, and adapted for use in a hand-stamp, combined with a suitable supporting-frame, the said endless bands being adapted to be revolved upon or about their support, substantially as herein specified.

3. A series of endless rubber bands having upon their exterior raised intelligible characters, a frame-work or support for said bands, and a rubber printing-face, containing a fixed arrangement of raised characters, combined in a hand-stamp, substantially as herein described.

4. In a hand-stamp, a series of endless rubber bands having raised printing-characters upon their exterior, combined with a vertically-adjustable support, upon or around which they may be revolved, substantially as herein set forth.

5. A type-case and handle, combined with an adjustable support for a series of endless rubber bands, substantially as set forth.

6. The endless rubber type-bands D, support E, and type-case B, combined substantially as specified.

7. The slotted type-case B, combined with the support E and screw *b*, substantially as set forth.

8. The combination of the type-case B, handle A, vertically-adjustable support E, rubber type-bands D, and self-clasping hinged plate C, having the rubber type-faces *d*, substantially as and for the purposes specified.

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DECISIONS OF THE COURTS.

Supreme Court of the United States.

[No. 266.—*October Term*, 1877.]

EDWARD H. ASHCROFT, APPELLANT, *vs.* THE BOSTON AND LOWELL RAILROAD COMPANY.

[*Appeal from the Circuit Court of the United States for the District of Massachusetts.*]

In the English patent corresponding to the domestic one upon which suit was brought, a disclaimer to certain general features of invention was entered, presumably in view of the fact that such features had already been disclosed by an antecedent patentee: *Held*, that the American patent, to be valid, must be likewise limited to the particular means set forth, even though it did not contain the restricting disclaimer.

Since, under such restriction, the means employed by the respondent to accomplish the common object differ both in construction and mode of operation from those of the patentee, no infringement occurs.

Mr. Justice CLIFFORD delivered the opinion of the court.

Causes of action arising under the patent laws are originally cognizable, as well in equity as at law, by the circuit courts, or the district courts having the power and jurisdiction of a circuit court, subject to the condition that the final judgment or decree in such a case may be removed here for re-examination.

Improvements were made by William Naylor in steam safety-valves, for which, on the 16th of October, 1866, he obtained letters patent of the United States, and it appears that he subsequently assigned the patent to the complainant, and that the complainant, as such assignee, surrendered and obtained the reissued patent which is the foundation of the present suit. Wrongful infringement is charged, and the complainant prays for an account and for an injunction.

Service was made and the respondents appeared and set up certain defenses in their answer, as follows: (1) That the reissued patent is not for the same invention as the original. (2) That the assignor of the complainant was not the original and first inventor of the improvement. (3) That the reissued patent does not cover and embrace the safety-valve used by the respondents. (4) That safety-valves, such as are used by the respondents were described and patented in letters patent granted prior to the patent and supposed invention of the assignor of the complainant, as alleged in the answer.

Proofs were taken, the parties heard, and the circuit court entered a final decree dismissing the bill of complaint.

Due appeal was taken by the complainant, and he assigns the following errors: (1) That the court erred in giving weight to the disclaimer of the supposed inventor, as set forth in his English patent. (2) That the court erred in ruling that the patent of the complainant must be limited to claims for a combination of the valve described in the specification with the annular recess surrounding the central chamber, as explained in the court's opinion. (3) That the court erred in deciding that the assignor of the complainant did not invent the overhanging downward-curved lip, and that he was not the first to use an annular chamber surrounding the valve-seat, into which a portion of the steam is deflected as it issues between the valve and the seat. (4) That the court erred in deciding that the valve used by the respondents is not within the complainant's reissued patent. (5) That the court erred in deciding that there is a substantial difference between the valve used by the respondents and the valve described in the complainant's reissued patent.

Preliminary to the investigation of the inquiries suggested in the errors assigned by the appellant, it becomes expedient to ascertain what is the construction of the patent described in the bill of complaint, and whether the same has been infringed by the respondents. Obvious convenience suggests that these two matters be first determined, for the plain reason that if the proofs fail to establish the charge of infringement, most or all of the errors assigned will become immaterial in disposing of the case.

Persons seeking redress for the unlawful use of letters patent are obliged to allege and prove that they, or those under whom they claim, are the original and first inventors of the improvement described in the patent, and that the same has been infringed by the party against whom the suit is brought. Both of those allegations must be proved by the party instituting the suit; but where he introduces the patent in evidence it affords a *prima facie* presumption that the first allegation is true, and inasmuch as it is not controverted in the answer in this case, the finding in that regard must be in favor of the complainant.

Suppose that is so; still the charge of infringement is denied by the respondents, which issue cannot be satisfactorily determined without first ascertaining the true nature and character of the improvement secured to the complainant in his reissued letters patent.

Three patents—one in England, two in the United States—were granted to the complainant or his assignor for the improvement which is the subject of the present controversy. Naylor, it is claimed, was the inventor of the patented improvement, and he took out his first patent in England, where he resided. As the patentee states, the invention relates to certain improvements in safety-valves, and consists, when using a spring for resisting the valve from opening, in the employment of a lever of the first order, one end resting by a suitable pin upon the safety-valve and the other end of the lever resting upon the spring, the end resting upon the spring being bent downward to an angle of about forty-five degrees from the fulcrum, so that when the valve is raised by the steam the other end of the lever is depressed upon the spring downward, and, at the same time, is moved inward toward the fulcrum, thus virtually shortening that end of the lever, and thereby counteracting the additional load upon the valve as it is raised from its seat by the greater amount of compression put upon the spring.

Exceptional modifications in certain features of the improvement are subsequently suggested, and then the patentee proceeds to explain the functions of the different devices by reference to the drawings, in the course of which he states that he prefers to make the valve project over the edges of the exit-passage, and to curve the projecting edges of the valve slightly downward, so that the steam, on issuing between the valve and its seat, will impinge against the curved projecting part of the valve, which will direct a portion of it downward into the annular chamber surrounding the central passage, while the other portion of the steam ascends past the edges of the valves. By that means the patentee states that he is enabled to avail himself of the recoil-action of the steam against the valve, for the purpose of facilitating the further lifting of the valve when once opened, but he adds what it is important to notice, that he wishes it to be understood that he lays no claim to such recoil action, nor to the extension of the valve laterally beyond its seat.

Prior to that a safety-valve of substantially the same mode of operation had been patented in the same country to Samuel Beyer, and the reasonable presumption is, that the disclaimer was inserted in the patent subsequently granted because it had been previously invented by another.

Letters patent to Charles Beyer were sealed October 16, 1863, and the patentee states that his invention consists in forming a flange round the valve, commencing at the outer edge of the valve-facing, which flange is undercut and concave in shape, and that the concave side is toward the seating of the valve, which has also a flange upon it, commencing at the outer edge of the valve-seating, but that the upper surface of the flange is convex, and corresponds nearly to the concave surface of the flange upon the valve. There is a slight space between the concave and convex surfaces of the two flanges, which diminishes toward the outer edge of the same. When the steam begins to escape from between the surfaces of the valve it gets between the concave and convex surfaces of the two flanges, and thus acts upon a larger area, and reacts upon the concave surface of the valve and causes it to open to a greater extent than the ordinary safety-valve. Such a valve, the patentee states, will lift promptly when the required pressure is obtained, and will open to a much greater extent than the valve in common use prior to that invention. Extra pressure upon the valve will readily close it after it has lifted, but it does not shut self-acting till the pressure in the boiler has diminished several pounds below the pressure at which the valve was lifted.

Without more, these suggestions are sufficient to show that the Beyer patent, which antedates the invention of the complainant, contains substantially the same mode of operation to produce the recoil action of the steam as that disclaimed in the English patent, and shows that the disclaimer was in all probability made because it was well known to the patentee and to the officials who issued the letters patent that another was the original and first inventor of the patented valve. Nothing of the kind is embraced in the claims of the English patent granted to the patentee, nor is there anything in the specification which has any tendency to show that the patentee ever supposed that he invented that feature of the improved valve which he disclaimed.

Two patents for the improvement have been granted in this country—one (the original) to the alleged inventor, and the reissued patent to the complainant, on which the suit is founded. Neither of the patents granted contain any disclaimer of the kind mentioned in the English patent, though it is conceded that both the original and the reissued patent were granted for the same invention as the English patent. Nor could that concession properly be withheld, as it is as certain as truth that the feature of the steam-valve in question was fully and clearly described in that specification, and that the patentee stated that he wished it to be understood that he did not lay any claim to the recoil action, nor to the extension of the valve laterally beyond its seat.

Explicit as that disclaimer is, still it is assigned for error by the complainant that the circuit judge erred in giving weight to it, but the court here is of the opinion that there is no merit in that objection. Instead of that, the court decides that the patent in suit, in order that it may be held valid, must be construed in view of the disclaimer contained in that patent and be limited to the particular devices shown in the specification for effecting such recoil action of the steam.

Taken as a whole, the facts show conclusively that the assignor of the complainant was not the first person to devise means for using the recoil action of steam

to assist in lifting the seat of the steam-valve, for the purpose described, and it follows that the patent in suit must be limited to what he actually invented, which is the devices shown in the specification and drawings, to enable the party to avail himself of such recoil action.

Decided support to that view is found in the specification of the Beyer patent, which shows that the apparatus in question had an overhanging downward-curved lip and an annular recess, into which the steam was directed downward on issuing between the valve and its seat, while a portion of the steam impinged against the projecting part of the valve.

Viewed in the light of that suggestion, it is clear, as decided by the circuit judge, that the assignee of the invention in controversy cannot claim that Naylor was the original and first inventor of that feature of the improvement, nor can it properly be claimed that he invented the combination in a spring safety-valve of every form of a projecting overhanging downward-curved lip in such a device, with the annular recess surrounding the valve-seat, into which a portion of the steam is directed as it issues between the valve and its seat. Limited in that way, as the patent must be in order that it may be upheld as valid, the question remains whether it has been infringed by the respondents.

Throughout the steam-valve used by the respondents is the valve patented to George W. Richardson, whose patent makes a part of the record. He obtained his patent September 25, 1866, nearly a month earlier than the date of the original American patent granted to Naylor. His invention, as he describes it, consists in increasing the area of the head of the common safety-valve, outside of its ground joint, and terminating it in such a way as to form an increased resisting surface, against which the steam escaping from the generator shall act with additional force after lifting the valve from its seat at the ground joint, and so, by overcoming the rapidly-increasing resistance of the spring or scales, will insure the lifting of the valve still higher, thus affording so certain and free a passage for the steam to escape as effectually to prevent the bursting of the boiler or generator, even when the steam is shut off and the damper left open.

Safety-valves previously in use were not suited to accomplish what was desired, which was to open for the purpose of relieving the boiler, and then to close again at a pressure as near as possible to that at which the valve opened. Sufficient appears to show that Richardson so far accomplished that purpose as to invent a valve which would open at the given pressure to which the valve was adjusted and relieve the boiler, and then close again when the pressure was reduced about two and one-half pounds to the inch, even when the pressure in the generator was one hundred pounds to the same extent of surface, which made it in practice a useful spring safety-valve, as proved by the fact that it went almost immediately into general use.

Other inventors prior in date to the Naylor invention attempted to make the desired improvement in the common safety-valve, and it is evident from what appears in the record that the efforts of one or more of them besides Beyer were attended with more or less success; but it is unnecessary to enter into those details, as it is obvious, from what appears in the Beyer patent, that Naylor did not invent the overhanging downward-curved lip of the improved valve, nor was he the first to use an annular chamber surrounding the valve-seat, into which a portion of the steam is deflected as it issues between the valve and its seat; and the court here concurs with the circuit judge that his patent must be limited to the combination of the other elements with such an annular recess as he has described, and operating in the described manner, so far as such recess, separately considered or in combination, differs in construction and mode of operation from the patented steam-valves which preceded it, as shown in the evidence giving the antecedent state of the art. From which it follows that the claims of the reissued patent in suit cannot be held to cover the safety-valve used by the respondents, which in its construction and mode of operation is substantially different, as appears from a comparison of the models and an inspection of the drawings, as well as from the description given of the same in the respective specifications.

Support to that view of a decisive character is also derived from the testimony of the expert witnesses on both sides. Enough appears in the explanations of the specification and the expert testimony to satisfy the court that it was the intention of the inventor of the complainant's valve to use the impact of the issuing steam upon the concave lip of the valve to assist in lifting it without other aid, except so far as it was helped by the diminution of atmospheric pressure on the top of the valve, consequent upon the issuing of a portion of the steam in an upward direction around the periphery of the valve, the annular chamber into which the steam is discharged on leaving the valve serving no other purpose than that of a conduit for the steam, if the valve is constructed in accordance with the drawings of the original patent.

Examined in the light of these suggestions, it is plain that the steam-valve used by the respondents cannot be held to be an infringement of that described in the specification of either of the three patents representing the invention claimed by the complainant.

Coming to the specification that describes the steam-valve used by the respondents, it will at once be seen that its construction and mode of operation are substantially different in important particulars, as follows: When the valve opens, the steam expands and flows into the annular space around the ground joint. Its free escape, which might otherwise be too free, is prevented by a stricture or narrow space formed by the outer edge of the lip and the valve-seat. By these means the steam escaping from the valve is made to act by its expansive force upon an additional area outside of the device, as ordinarily constructed, to assist in raising the valve, the stricture being enlarged as the valve is lifted from its seat, and varying in size as the quantity of the issuing steam increases or diminishes.

Important functions, not very dissimilar in the effect produced, are performed by the two patented valves in controversy; but the means shown in the respective specifications and the mode of operation described to produce the effect are substantially different in material respects, which shows to a demonstration that the complainant cannot prevail, unless it can be held that his assignor invented the overhanging downward-curved lip, and that he was the first to use an annular chamber surrounding the valve-seat, into which a portion of the steam is deflected as it issues between the

valve and its seat. Neither of these conditions can be found in favor of the complainant, and of course it cannot be held that the respondents have infringed his patent.

Confirmation of that conclusion of the most conclusive character is found in the testimony of the experts, which will not be reproduced, as it would extend the opinion beyond a reasonable length.

Experiments almost without number were made by the experts, and the court is furnished with very many exhibits intended to explain the construction and mode of operation of the different steam-valves described in the various patents given in evidence in the case; but the court has not found it necessary to enter into those details, preferring to rest the decision upon the construction of the complainant's patent, and his failure to show that it has been infringed by the respondents.

Decree affirmed.

No. 292.—October Term, 1877.

WILLIAM G. HYNDMAN, APPELLANT, *vs.* PHILANDER H. ROOTS AND FRANCIS M. ROOTS.

[Appeal from the Circuit Court of the United States for the Southern District of Ohio.]

The validity of Reissue Letters Patent No. 3,570, granted P. H. and F. M. Roots, July 27, 1869, for a rotary blower, sustained.

An invention which consists in surface-coating the interior of a blower-case—*i. e.*, its end pieces or head-plates and the concaves—with plaster-of-paris or equivalent, so that the revolving pistons will work true and air-tight, is clearly infringed by the substitution of a composition of litharge and glycerine for the plaster.

For the purposes of the invention, the composition is the substantial equivalent of the plaster, and its use a palpable evasion of the patent.

Where the concave arcs of the blower were made of a certain size, and located in certain relation to the axes of the revolving piston-sweeps, so that the entire casing might be cast in one piece, and yet permit the ready removal of the abutments and pistons: *Held*, that to copy the proportions and relative position of the arcs was none the less an infringement, even though the respondent did not make his casing in one piece.

Wood & Boyd, for appellant; *James Moore*, for appellees.

Mr. Justice SWAYNE delivered the opinion of the court:

This is a case in equity. The bill is founded upon two patents. One of them is Reissue No. 3,570. It bears date on the 27th of July, 1869. The original of this reissue bore date on the 11th of August, 1868. The other patent is dated June 21, 1870. It is numbered 104,585, and was issued to the appellees as the assignees of Hardy and Wood, the alleged inventors.

The bill was dismissed at the hearing as to this latter patent, and no appeal was taken. It may, therefore, be laid out of view, and will not be again adverted to. The other original patent and the reissue are for improvements in cases for rotary blowers.

The bill charges infringement, and prays for an injunction and a decree for profits and damages. The answer denies the novelty of the alleged invention; denies that the reissue is for the same thing as the original patent; denies that the complainants were joint inventors, if inventors at all, and denies infringement.

Such were the issues made by the appellant in the court below. That court found all of them in favor of the appellees, and decreed accordingly.

Here the same points have been insisted upon.

In relation to all of them, except the one last mentioned, we deem it sufficient to say that we concur with the court below. We think the evidence leaves no room for a reasonable doubt as to either of them. The questions are questions of fact. No legal proposition is involved. To analyze the testimony in order to vindicate our conclusions would serve no useful purpose. Our further remarks will be confined to the subject of infringement. That is the hinge of the controversy between the parties.

It is difficult to convey clear ideas of complex machinery by any description that can be given. Drawings are more effectual, and models are still more so. If the model be full and accurate, it is, indeed, the thing itself in miniature.

The appellees, as the case is before us, confine their claims to improvements in the shell or case of blowers. The internal mechanism is in no wise in question. They say the objects of their invention were to avoid the necessity of boring out the interior concave surfaces of the case, and of facing-off or planing the head-plates, and to render it practicable to cast the entire outside casing in one piece. They describe two modes of making the blower-heads true. One is to form them into planes at right angles to the shafts of the abutments, parallel with each other, equidistant from each other in all their parts, by giving to the inner surface of each plate a coating of plaster-of-paris, hydraulic cement, or other material having like plastic properties. This is suited to blowers of the smaller sizes. When this method is used the plaster-of-paris may be put on while in a plastic condition by means of a sweep made to turn in the boxes of the blower-shafts, so that it will shape the linings of the ends as may be desired.

The second method is to use inside or secondary metal plates made in their outlines to conform to the interior of the case, and to face or plane them off, so as to make them perfectly true. A space is left between these secondary plates and the ends of the case, which is filled with plaster-of-paris of the proper consistency. After the plaster has set, the plates are secured in their places in any suitable manner. In making the inner surface of the arcs of the case true, the usual way of the patentees is to work from the center of the shaft-journals as fixed points.

They give the inner part of the concaves a coating of plaster-of-paris, and work it into the proper shape and proportions while it is setting, by means of a sweep attached to a shaft turning in the journal-boxes of the blower, as in the case of the head-plates when plaster is applied to them. While the plaster or other similar material is becoming set, they slowly move the sweep, so as to give the coating exactly the required shape and thickness. Sometimes, instead of using the sweep, they use a cylinder of a diameter corresponding with the sweep or the circles to be described by the pistons. The cylinder is hung on a central shaft resting in the journal-boxes. The plaster is then poured into the intervening space between the cylinder and the case and the "metal guards," which are small projections on the inner surface of the case, intended to support the coating. When the plaster is set the cylinder is removed and leaves the required arcs of a circle.

They do not cast very large blowers in a single piece. Those ordinarily used by blacksmiths and medium-sized foundry-blowers are so cast.

If the case of a rotary blower be cast in one piece,

is necessary that the concave arcs of the case should be of such dimensions and so placed on one side of the plane of the axis of the shafts as to allow the removal of enough of the head-plates of the case to afford a sufficient opening for the introduction or removal of the abutments without interfering with any part of the case otherwise than to remove or replace the boxing which holds the shafts. By making the concave arcs a little more than a quarter of a circle and placing them chiefly on one side of the plane of the shafts, the opening on the opposite side of the plane is correspondingly increased, allowing ample room for putting in and taking out the abutments, and also allowing the reduction of the end plates on the open side of the plane, where they would otherwise interfere. If the concave arcs were materially increased and divided near equally on the two sides of the plane of the shafts, the abutments of a case so made could not be taken out or replaced without taking the case apart, and the case would need to be made accordingly.

The claims are—

1. A rotary-blower case the interior of which is made true by means of plaster-of-paris or its equivalent, applied as described.
2. Such a blower-case the ends of which are made true by the application of plaster, or a like material, as described.
3. Such a blower-case the concaves of which are made true by the use of such material, applied as described.
4. Such a blower-case having the concave arcs, in combination with the end plates, so arranged as to admit of the abutments being introduced or removed without requiring the case to be taken apart, as described.
5. A rotary-blower case the ends of which are made true by the use of secondary inside metal plates, as and for the purposes described.
6. The metal guards in the inside of the concaves, as described.

The schedule sets forth in strong terms the great value of the invention claimed.

There is a marked difference between a fan-blower and a rotary blower. They operate on different principles. The former makes from one hundred to three hundred revolutions per minute; the latter, from three thousand to six thousand in the same time. The appellees are the original inventors of the rotary blower. Such is their proof, and there is none to the contrary. Its value in the useful arts is evinced by its tested capabilities, and the ardor of this litigation. No patent of the appellees is in any wise involved in this controversy but the one we have analyzed.

The appellant has a patent, also. It bears date on the 9th of August, 1870, and covers both the shell or case and the inner machinery. The claims are for—

1. The blower-case made to support the abutting pistons, the circle or sweep of which in the surrounding case is lined with a cement of bees-wax and resin or brimstone, retained without the use of guards or ledges, all substantially as herein set forth.
2. The pistons B B, composed of the blades C C, guards E E, concavities D D, with the lining applied in a liquid condition while heated, to form a continuous contact of the blade-surfaces, all substantially as herein set forth.

The schedule refers three times to the invention of the appellees. It says, with respect to the shell—

The upper section is cast in one piece, without the ordinary guards or ridges used to hold a lining, such as is set forth in the patent of P. H. and F. M. Roots, dated August 11, 1868. * * * I am aware blower-cases have been made all cast in one piece, such as are shown in the patents of P. H. and F. M. Roots. I do not, therefore, claim a blower-case, broadly. I am also aware that plaster-of-paris has been used in lining blower-cases, as described in the patents of P. H. and F. M. Roots, of August 11, 1868. I do not, therefore, claim the lining of blower-cases, broadly. What I do claim is, &c.

He then sets forth his claims as we have quoted them.

It is difficult to read the schedules of the parties in the presence of the models and resist the conviction that the appellant has carefully studied the invention of the appellees as described in their reissue, not with any view to its improvement, but solely for the purpose of evasion. It is not, however, what the appellant has said in his schedule with which we have to do in this controversy. What he has done affecting the rights of the appellees is the material point, and we pass to the consideration of that subject. His patent is not without value as an auxiliary in that process.

The appellees' first, second, and third claims, with respect to the alleged infringement, may be considered together. They are for turning the interior of the case by means of plaster-of-paris, or its equivalent, applied as described; for turning the end plates in the same way, and for turning the concaves or arcs of the circles by the same means. The material to be used is "plaster-of-paris, hydraulic cement, or other material having the properties referred to." These properties are plasticity when the material is applied, and firmness and brittleness afterward. The reducing or turning process is also included in these claims. The appellant did all that is embraced in these claims. What was done differs in nothing from the process and other means employed by the appellees, except that he used a compound of glycerine and litharge instead of plaster-of-paris. The former is a mere equivalent for the latter. Both are plastic when applied. Both become indurated afterward. No chemical change takes place in either, and time alone is necessary to produce the desired hardness of the substance. The compound used by the appellant is clearly within the alternative terms of the schedule of the appellees in this respect. The proofs in the record on all these points are so conclusive that it would be a waste of time to pursue the subject further. The appellant is guilty of infringing these claims.

The essence of the fourth claim is a combination of the arcs with the end-plates, so arranged as to permit the abutments to be put in or taken out without taking the case apart. The peculiar features and advantages of what is embraced in this claim are clearly set forth in the testimony in the record.

The end plates have no contraction at the opening for the admission of air. They therefore permit, without further change, so far as they are concerned, the removal of the pistons. The concave arcs are reduced to less than half a circle, and so provide at the air-entrance a space sufficient to permit the introduction or withdrawal of the pistons without disturbing the case. The introduction of the sweep and its necessary operation upon the plastic material are, also, thus provided for. The air-entrance, which is bounded by the ends of the arcs and the end-plates, permits the lining to be renewed at pleasure. The case, by reason of the contraction of the arcs and the configuration of the end plates, permits the requisite shaping of the plastic material by sweeps or otherwise, so as to make the arcs perfectly true, and the end linings exactly at right angles with them. All the difficulties previously experienced in the construction of double-cylinder rotary blowers are thus obviated. This is regarded as an important result.

Turning now to the appellant's shell or case, the evidence shows that the concaves or arcs are less than half a circle in extent. The revolving pistons act against them in combination with the end plates, which have no interior projections. The entire case is such as to admit of its being cast in one piece, and to

admit also of the introduction and removal of the pistons without the case being taken apart. It is of such a character as to permit in its complete state the introduction of the sweep and its full operation upon the plastic material intended to be applied to the arcs and the end plates. This is regarded as one of the most valuable features of the appellees' invention. The appellant's case is cast in two parts. There is a joint or division on the axial plane through the journal-boxes. It is in proof that this is neither reasonable nor necessary. Where the case is large and too heavy for convenient handling it may be useful, and for such cases it is suggested in the patent of the appellees. The patent of the appellant prescribes it for all his cases, and he so makes them. Why is this, and what are his object and purpose? We can imagine none but to gather where another had sown, and escape by simulation and subterfuge the consequences which the act of Congress has prescribed for the unlawful appropriation of such property. There is scarcely a thought expressed in the work of the appellees, so to speak, that is not found substantially transferred or closely copied in that of the appellant.

The points of identity are palpable and conclusive. The proofs leave no doubt in our minds that the appellant is guilty of the infringement of this claim, as well as of the first, second, and third. This controversy does not concern the appellees' fifth and sixth claims.

The decree of the circuit court is affirmed.

U. S. Circuit Court—District of New Jersey.

CHRISTOPHER REISSNER *et al. vs.* ANNESS & BLAUVELT.

[*In Equity.—Before* NIXON, *J.*]

The presumption of law is always in favor of the validity of a reissue patent.

Features contained in the Patent Office model may be incorporated into the drawings and specifications of the letters patent upon reissue without prejudice. They do not constitute new matter in the sense of the law.

[*B. F. Lee*, for complainants; *A. V. Briesen*, for defendants.]

NIXON, *J.:*

The bill of complainants charges the defendants with the infringement of the reissued Letters Patent No. 7,751, for "improvement in coal-oil stoves," granted to the complainants June 19, 1877.

The defendants have not answered, but have put in a plea founded upon sec. 4916 of the Revised Statutes, which provides that, upon a reissue, no *new matter* shall be introduced into the specification.

The plea is as follows:

That in the specification of the reissued letters patent set forth in the bill of complaint new matter has been introduced which was not shown or described in the original letters patent, and that said reissued letters patent have therefore been wrongfully issued, and are void and of no effect. The new matter so introduced into the specification of said reissue is all matter relating to "tubes," which are therein described as containing the shafts of the wick-wheels.

The complainants have filed a replication, whereby admitting the sufficiency of the plea, but denying its truth in fact. This, therefore, is the only issue between the parties.

The only proofs in the case have been offered by the complainants. They consist of the original letters patent; a certified duplicate of the model filed in the Patent Office upon application for the same; the reissued letters patent; and the testimony of John A. Frey, the patentee and one of the claimants.

The defendants cross-examined this witness, and also exhibited the original letters patent of the complainants, and the reissue on which the suit was brought, and then closed their case.

Unless, therefore, it appears, on a comparison of the reissued letters patent with the original patent, as a matter of legal construction, that the reissue is not for the same invention, and contains matters not described or indicated in the original, or unless the introduction of new matter can be properly inferred from the testimony of the patentee, the defendants have failed to support their plea, and there must be a decree for the complainants.

The presumption of the law is always in favor of the validity of a reissue. Any one alleging the contrary must show that it is for a different invention by satisfactory proof, or point out the new matter which constitutes the difference.

The complainants insist that the drawings and specifications of the original patent show the tubes that contain the shafts of the wick-wheel, which the defendants allege to be the new matter in the reissue, and the testimony of Mr. Frey seems to support the insistment.

But, in addition to this, they produce a certified duplicate of the model which was filed in the Patent Office accompanying the drawings and specifications of the original patent, and this model plainly exhibits the tubes.

The counsel for the defendants objects to a resort to the Patent Office model in determining what was described in the original patent.

But this is clearly allowable. The object of the reissue, and the reason why the right is given, are to correct defective or insufficient specifications, whereby the patent is inoperative or invalid, and anything appearing in the model which is the embodiment by the patentee of his invention can hardly come within the designation of *new* matter in the reissue, because it is not fully described in the claim, specifications, and drawings of the original.

The Supreme Court, in *Seymour* vs. *Osborne*, 11 Wall., 545, in considering the differences between the reissue and the original patent, which would render the former void, say, that the patentee, under an application for a reissue, cannot make "material additions to the invention, which were not described, suggested, nor substantially indicated in the original specifications, drawings, or Patent Office model."

And the justice and judge of this circuit, in *Parham* vs. *Sewing Machine Co.*, 4 Fish., 472, said that the alleged discrepancy between the original patent and the reissue is not to be determined "by a reference exclusively to the two specifications. The drawings and model filed with the original specification are also proper subjects of consideration, and are often of decisive weight."

Nor do I find any evidence in the examination or cross-examination of the witness Frey which tends to establish the truth of the plea.

Upon the issue made by the pleadings there must be a decree for the complainants, with costs, and it is ordered accordingly.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

THE DECISIONS FOR 1877.—The decisions of the United States courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

Narrative of the Polaris Expedition.

Authority having been given the Public Printer to print another edition of the above work, subscriptions will now be received by Mr. A. F. Childs, Chief Clerk, until August 1, 1878, at the following rates: If delivered at the Government Printing Office, $1.60. If sent by mail, $1.75.

TRADE-MARKS.

[Each certificate bearing date May 14, 1878.]

6,040.—TOBACCO-BAGS.—*William J. Cussen*, Richmond, Va., assignor to *The Catlin Tobacco Company*. Application filed March 19, 1878.

"The letters 'P. P.,' inclosed within the representation of the bag, as shown.

6,041.—EMOLLIENT AND REMEDIAL PREPARATIONS OF PETROLEUM.—*Chesebrough Manufacturing Company*, New York and Brooklyn, N. Y. Application filed March 23, 1878.

"The arbitrarily-selected word 'VASELINE.'"

6,042.—BRASS-BAND INSTRUMENTS.—*Henry Distin*, New York, N. Y. Application filed February 12, 1878.

"The figure representation of the American eagle."

6,043.—MEDICINAL PREPARATION.—*John E. Hetherington*, Cincinnati, Ohio, and New York, N. Y. Application filed April 1, 1878.

"The compound word-symbol 'TROPIC FRUIT.'"

6,044.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Lozano, Pendas & Co.*, New York, N. Y. Application filed May 3, 1878.

"The representation of a castle surrounded by flowers, as shown."

6,045.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Lozano, Pendas & Co.*, New York, N. Y. Application filed May 3, 1878.

"The representation of a lady standing on a balcony and a man sitting on the balustrade, as shown."

6,046.—CORSETS.—*Ottenheimer Brothers*, New York, N. Y. Application filed May 2, 1878.

"The representation of a bell."

6,047.—NEEDLES.—*Robert J. Roberts*, West Brighton, N. Y. Application filed May 2, 1878.

"The arbitrarily-selected word-symbol 'PARABOLA.'"

6,048.—NEEDLES.—*Robert J. Roberts*, West Brighton, N. Y. Application filed May 2, 1878.

"A pictorial representation of St. George killing the dragon, as shown."

6,049.—WASHING-BLUE.—*Henry Sawyer*, Chelsea, Mass. Application filed May 1, 1878.

"A red disk."

6,050.—PREPARATIONS FOR FILLING TEETH.—*Quincy A. Scott*, Pittsburg, Pa. Application filed May 3, 1878.

"The words 'WHITE GOLD,' a purely fanciful designation."

6,051.—ARTIFICIAL STONE AND ARTIFICIAL-STONE GOODS, SUCH AS GARDEN-VASES, &c.—*Joseph Willett*, Boston, Mass. Application filed April 8, 1878.

"The arbitrarily-selected word 'HIGHLAND.'"

6,052.—POTASH.—*Weikel & Smith Spice Company*, Philadelphia, Pa. Application filed May 1, 1878.

"The word-symbol 'READY SOAP MAKER.'"

6,053.—FINE-CUT CHEWING-TOBACCO.—*Charles B. Hull*, Detroit, Mich. Application filed March 12, 1878.

"The words 'BIJAH'S JOY.'"

6,054.—ISINGLASS.—*Howe & French*, Boston, Mass. Application filed May 4, 1878.

"The word-symbol 'MANHATTAN.'"

6,055.—CREAM-TARTAR.—*J. Saxon Taylor*, San Francisco, Cal. Application filed May 2, 1878.

"The word-symbol 'CHAMPAGNE.'"

6,056.—LUBRICATING-OILS.—*Thomas Brown*, Erie, Pa. Application filed February 20, 1878.

"The word 'ARROW.'"

6,057.—WHISKY.—*E. H. Chase & Co.*, Louisville, Ky. Application filed March 11, 1878.

"The symbol representing a log cabin and several negroes in the foreground, as illustrated."

6,058.—WRITING FLUID OR INK.—*Thaddeus Davids & Co.*, New York, N. Y. Application filed April 15, 1878.

"The representation of the globe and the name 'DAVIDS.'"

6,059.—MEDICINAL ARTICLES.—*Eugene A. Du Puy*, Brooklyn, N. Y. Application filed December 26, 1877.

"The words, figures, and devices following, namely: 'THE HELVETIC MAN'FG CO.,' in Roman capitals, arranged in a circular form, within which circle is a laurel wreath inclosing within it a Greek cross."

6,060.—LUBRICATING AND ILLUMINATING OILS.—*William L. Elkins*, Philadelphia, Pa. Application filed April 6, 1878.

"The letter 'O.'"

6,061.—LUBRICATING AND ILLUMINATING OILS.—*William L. Elkins*, Philadelphia, Pa. Application filed April 6, 1878.

"The word 'BELMONT.'"

6,062.—EMBALMING PREPARATIONS.—*Egyptian Embalmer Company*, New York, N. Y. Application filed April 29, 1878.

"The fanciful word 'EGYPTIAN.'"

6,063.—LUBRICATING AND ILLUMINATING OILS.—*William L. Elkins*, Philadelphia, Pa. Application filed April 6, 1878.

"The word 'CONTINENTAL.'"

6,064.—COFFEE, SPICES, AND MUSTARD.—*William J. Fell*, Faulkland, Del. Application filed May 6, 1878.

"The pictorial representation of a swimming dolphin with a monkey on its back, in connection with the word 'Fell's.'"

6,065.—CIGARS.—*John P. Goelz & Co.*, Milwaukee, Wis. Application filed March 14, 1878.

"A chart, with two men in the upper left-hand corner of the same, one of them with a tub washing ore and the other standing looking on, and under them the words 'Hunting for Gold;' and below them on the lower left-hand corner, a Chinese and another man playing cards at a table, and under them the words 'The Heathen Chinee;' and in the center of the chart the picture of a man, and under it the words 'Bret Harte;' and on the upper right-hand corner a man standing at a case setting type, and under him the words 'A Type Setter & Editor,' and on the lower right-hand corner the stump of a tree, with a heart card, as a target, tacked on the same, and a man standing at the foot of the stump with a revolver in his right hand, shooting himself, and under him the words 'John Oakhurst.'"

6,066.—LINEN COLLARS AND CUFFS.—*Huestis & Dusenberry*, Troy, N. Y. Application filed April 19, 1878.

"A humorous representation of the artist Thomas Nast holding a card or sheet with the fac-simile of his signature, 'Thomas Nast,' placed thereon."

6,067.—FLOUR.—*Geo. V. Hecker & Co.*, New York, N. Y. Application filed April 30, 1878.

Three leaves having printed thereon the letters 'A. O. T.'"

6,068.—LAGER-BEER.—*Frederick Hinckel*, Albany, N. Y. Application filed May 6, 1878.

"The word-symbol 'Cataract Brewery,' arranged upon a waving ribbon above a group of scientific apparatus used in the manufacture of lager-beer, and consisting of a microscope, a barometer and thermometer, a saccharometer, a graduated glass, and a timepiece displayed in front of a background of growing hops and barley. In the clouds above the field of barley are the chemical symbols for atmospheric air."

6,069.—MEDICINES.—*George G. Kennedy*, Boston, Mass. Application filed March 11, 1878.

"The fanciful title 'PRAIRIE WEED.'"

6,070.—PREPARATION FOR REMOVING FRECKLES, &c.—*George A. Kellogg*, Brooklyn, N. Y. Application filed April 18, 1878.

"The newly-coined word or word-symbol 'FRECKLINE.'"

6,071.—MILLINERY GOODS.—*Lord & Taylor*, New York, N. Y. Application filed April 29, 1878.

"An ermine cloak, a shield, and the monogram composed of the letters 'L T' in the center of the shield."

6,072.—ESSENCE OF MEATS.—*London Manufacturing Company*, New York, N. Y. Application filed May 3, 1878.

"The word-symbol 'PURISSIMA,' used in connection with the words 'London Manufacturing Company.'"

6,073.—MEDICINAL PREPARATIONS.—*David Marshall*, Carthage, Ind. Application filed February 4, 1878.

"A representation of a human hand."

6,074.—CHEWING-TOBACCO.—*Frank M. Morten* and *Eugene C. Morten*, Cincinnati, Ohio. Application filed April 18, 1878.

"The representation of a counter-scale."

6,075.—EXTRACTS FOR MAKING TABLE SAUCES.—*Gerrit Norton*, New York, N. Y. Application filed April 22, 1878.

"The arbitrary word 'Woosterine.'"

6,076.—BISCUITS, CRACKERS, JUMBLES, SNAPS, AND FANCY CAKES.—*John Pollock*, Cleveland, Ohio. Application filed April 24, 1878.

"The fanciful or arbitrarily-selected words 'ICE CREAM.'"

6,077.—MEDICAL COMPOUNDS.—*Partridge Brothers*, Augusta, Me. Application filed May 3, 1878.

"The letters and word-symbol 'U. S. GOLD' and 'U. S.'"

6,078.—PENS.—*Norris H. Spaulding*, Boston, Mass. Application filed April 5, 1878.

"The title or designation 'N. HUBBARD,' in connection with the symbol of two crossed pens, as illustrated."

6,079.—COMPOSITION FOR PRINTERS' INKING-ROLLERS.—*Andrew Van Bibber*, Cincinnati, Ohio. Application filed May 3, 1878.

"The words 'ROUGH AND READY.'"

6,080.—BITTERS.—*Julien Vergnole*, New Orleans, La. Application filed April 16, 1878.

"The representation of a *Eucalyptus* tree."

6,081.—MEDICINAL PREPARATION FOR THE CURE OF NEURALGIA, &c. *Maranda C. White*, New York, N. Y. Application filed January 17, 1878.

"The pictorial representation of a white elephant, used in connection with the arbitrarily-selected words 'WHITE ELEPHANT.'"

6,082.—COFFEE, MUSTARD, AND SPICES.—*Wright Gillies & Brother*, New York, N. Y. Application filed March 18, 1878.

"The word 'HONEST.'"

6,083.—SHIRTS.—*H. Wallach's Sons*, New York, N. Y., and Paterson, N. J. Application filed April 13, 1878.

"The word-symbol 'SOVEREIGN.'"

6,084.—STOVE-POLISH.—*Henry S. Ziegler*, Philadelphia, Pa. Application filed April 29, 1878.

"The word-symbol 'JET PASTE,' with letters intermingled, the letters of the word 'Jet' being in the foreground of the word 'Paste.'"

6,085.—MEDICINES.—*Clin & Co.*, Paris, France. Application filed May 8, 1878.

"A circular medallion bearing upon its face a representation of a human figure leaning upon a club, with a second human figure lying upon a couch in the background, as shown."

6,086.—WATCH-CASES.—*Joseph Fahys*, Brooklyn, N. Y. Application filed May 7, 1878.

"The small shield, shaped as shown, with 'No. 1' printed therein, and radial dashes on top."

6,087.—COLOGNE.—*P. H. Kelley*, Indianapolis, Ind. Application filed February 20, 1878.

"A fac-simile of Goddess-of-Liberty side of silver quarter-dollar piece, coinage of 1831, with the initials 'P. H. K.' in small Roman letters at base of vignette, instead of the date."

6,088.—TOYS.—*Aloys Meisel*, Brooklyn, N. Y. Application filed May 7, 1878.

"The representation of the coat of arms shown in the accompanying fac-simile."

6,089.—CHEWING AND SMOKING TOBACCO.—*Pace, Talbott & Co.*, Danville, Va. Application filed May 8, 1878.

"The side-view representation of a ram's head."

6,090.—CIGARS.—*Warnick & Brown*, Utica, N. Y. Application filed May 8, 1878.

"The word 'Gold-dust.'"

LABELS.

[Each certificate bearing date May 14, 1878.]

1,431.—Title: "COOPER'S GREAT RHEUMATIC CURE."—*Edgar F. Cooper*, East Weymouth, Mass. Application filed May 6, 1878.

1,432.—Title: "J. S. EGGLESTON'S NON-CORROSIVE PREPARATION." *Jesse Scott Eggleston*, Auburn, N. Y. Application filed May 3, 1878.

1,433.—Title: "TUXPAN CHEWING-GUM."—*Robertson F. George*, Galveston, Tex. Application filed May 3, 1878.

1,434, (Print.)—Title: "LA NOBLESA."—*Heppenheimer & Maurer*, New York, N. Y. Application filed May 2, 1878.

1,435.—Title: "SILVER WHITE LEAD."—*Samuel Loag*, Philadelphia, Pa. Application filed May 2, 1878.

1,436.—Title: "DR. ORDWAY'S SULPHUR SARSAPARILLA."—*Aaron P. Ordway*, Lawrence, Mass. Application filed May 4, 1878.

1,437.—Title: "DR. ORDWAY'S SULPHUR MEDICAL DISCOVERY."—*Aaron P. Ordway*, Lawrence, Mass. Application filed May 4, 1878.

1,438.—Title: "DR. ORDWAY'S SULPHUR BLOOD-PURIFIER."—*Aaron P. Ordway*, Lawrence, Mass. Application filed May 4, 1878.

1,439.—Title: "ENGLISH FEED FOR HORSES AND CATTLE."—*O. A. Swart*, Margaretville, N. Y. Application filed April 10, 1878.

1,440.—Title: "HILLSDALE M. 'T.' G. COMPANY."—*Frederick Sweetser*, New York, N. Y. Application filed May 6, 1878.

1,441, (Print.)—Title: "AMOROSIS."—*Schumacher & Ettlinger*, New York, N. Y. Application filed May 3, 1878.

1,442.—Title: "EDWARDS' SUPERIOR LAUNDRY BLUEING."—*The Western Manufacturing Company*, San Francisco, Cal. Application filed May 4, 1878.

1,443.—Title: "MALAKOF BITTERS."—*Alphonse Walz*, New Orleans, La. Application filed February 18, 1878.

1,444.—Title: "KELLEY'S FRENCH EAU DE COLOGNE."—*P. H. Kelley*, Indianapolis, Ind. Application filed February 9, 1878.

DESIGNS.

[Each design bearing date May 14, 1878.]

10,677.—BRACELET.—*William Byron*, New York, N. Y. Application filed May 1, 1878. Term of patent 7 years.

10,678.—LAMP-SHADES.—*Robert Hemingray*, Covington, Ky., assignor to *Hemingray Glass Company*, Cincinnati, Ohio. Application filed April 16, 1878. Term of patent 7 years.

10,679 and 10,680.—SUMMER-PIECE OR REGISTER-FRONT.—*Joseph A. Read*, Philadelphia, Pa., assignor to *Gilbert Combs* and *John Bawden*, Freehold, N. J. Applications filed May 6, 1878. Term of patents 7 years.

10,681.—FONT OF PRINTING-TYPES.—*James M. Conner*, Greenville, N. J. Application filed April 25, 1878. Term of patent 7 years.

10,682 and 10,683.—BUCKLES.—*Dwight L. Smith*, Waterbury, Conn., assignor to *Waterbury Buckle Company*, same place. Applications filed April 30, 1878. Term of patents 7 years.

DISCLAIMER.

192,643.—*Oliver Edwards*, Florence, Mass.; patented July 3, 1877; disclaimer filed May 9, 1878.

Disclaims that part of the claim in said specification which is in the following words, to wit:

"7. A skate whose stud-button, having an annular locking-groove, is cast complete with the heel-plate and runner, substantially as and for the purpose described."

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

MAY 14, 1878.

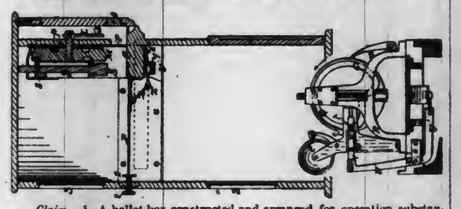
203,524. STEM-WINDING WATCHES. Henry Abbott, Newark, N. J. Filed Mar. 16, 1878.



Claim.—1. The cock or yoke A, or a similar device, for the purpose of holding in position and forming a bearing for the winding pinion or stem of a stem-winding watch outside of the circumference of the movement when it is necessary to place the same opposite the mainspring-barrel or the balance-wheel.

2. The combination of the projecting crown-wheel E with the winding-pinion B and the cock A, substantially as and for the purpose specified.

203,525. BALLOT-BOXES. Stephen T. Bacon, Boston, Mass. Filed Mar. 16, 1878.



Claim.—1. A ballot-box constructed and arranged for operation substantially as shown and described—that is to say, so that no ballot can be deposited without an entire revolution of the crank, which operates successively a slide, a registering or numbering or canceling stamp, and a drop, substantially as herein shown and described.

2. The combination, in a ballot-box, of a horizontal but movable partition or drop with a canceling or registering or numbering stamp, the same being arranged, in connection with mechanism operated by crank, so that each operation of the stamp shall be followed by that of the drop, substantially as described.

3. The combination, with a ballot-box, of mechanism consisting of the following elements, viz: an alarm operated on starting the crank, a slide operated by the same crank to rise and fall after the alarm shall have been given, a canceling or numbering or registering stamp operated by the same crank after the slide shall have been closed, a table actuated by the same crank, to be dropped and raised again after the stamp shall have been operated, said mechanism being operated, as described, during one revolution of the crank, substantially as set forth.

4. In combination, in a ballot-box, with the mechanism for operating the alarm, the slide, the canceling, numbering, or registering stamp, and the drop by means of a crank, the spring-stops for arresting the crank at the end of each revolution, and after it shall have opened the slide for the reception of a ballot, substantially as shown and described.

5. The combination, in a ballot-box, of a slide, a canceling or registering stamp, and drop, all operated by a crank, as described, with a ratchet-wheel and pawl, or the mechanical equivalent of the same, to insure the rotation of the crank in but one direction, as and for the purposes set forth.

6. The combination, in a ballot-box, with the movable partition or drop, of an adjustable plate arranged in the rear of the box horizontally opposite the slide and ballot receiving opening, to arrest the ballot when in position to be stamped, as herein shown and set forth.

7. The combination with, and arrangement in, ballot-boxes constructed with internal counting or registering or canceling stamp, and other mechanism for dropping the canceled ballots into a receptacle and external crank, of a hinged table-flap, which may serve both to incase the crank which operates the internal mechanism and as a table upon which the ballots are deposited when cast.

8. The combination, with a ballot-box having a ballot-receiving opening in one of the vertical sides of a box, of a table upon which the ballot shall be deposited before it is passed into the box, substantially as shown and set forth.

203,526. PICTURE-ROD MOLDINGS. Loring J. Baker, Boston, Mass. Filed Apr. 6, 1878.

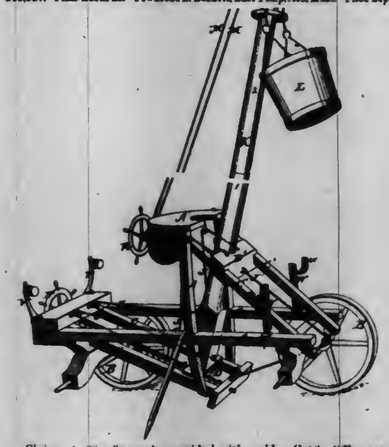
Brief.—In a picture-rod molding, places the nail-receiving groove below the suspension-hook bead.



Claim.—1. In a picture-rod molding containing a cornice portion, as stated, the nail-receiving channel D, as situated below the bead or rod B, substantially as and for purposes stated.

2. A picture-rod molding containing the following elements: a picture-rod molding proper, a cornice whose upper edge slopes away at rear, and a nail-receiving channel disposed below the hook-supporting bead or rod, the whole being substantially as and for purposes stated.

203,527. FIRE-ESCAPES. Townsend L. Bennett, East Templeton, Mass. Filed Sept. 18, 1877.

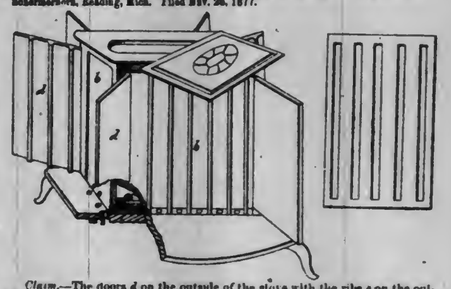


Claim.—1. The frame A, provided with guides C C', sliding cross-heads D D', and means, substantially as described, for moving said cross-heads simultaneously in different directions, combined with the arm K, which is pivoted to the cross-head D, and rests against the cross-head D', substantially as set forth.

2. The arm K, supported on a portable frame, and arranged to be swung vertically and held at any desired angle, combined with the bucket L, and means, substantially as described, for moving said bucket along the arm K in either direction, and holding it at any desired point, as set forth.

3. The bucket L, made in two sections, hinged together, and adapted to inclose the arm K, as set forth.

203,528. STOVES. Stephen N. Betts, Hillsdale, assignor of one-half his right to Wm. S. Schermerhorn, Reading, Mich. Filed Nov. 26, 1877.



Claim.—The doors *d* on the outside of the stove with the ribs *e* on the outside of the plates *b*, or the inside of the doors *d* with the grate G, all of which are made and combined in the way and for the purpose as substantially set forth in the above specification.

203,529. SEEDING-MACHINES. Jirah B. Bigg, Dani. J. Woodard, and Guilford D. Revell, Appleton, Wis. Filed Mar. 21, 1878.

Claim.—1. The cover m, provided with the vertical flange o, for holding the cap in position, and having one of its corners cut away, so as to make a small opening for the downward escape of the seed immediately over the top of the cylinder, whereby the machine may be used for sowing fine seed broadcast, substantially as shown.

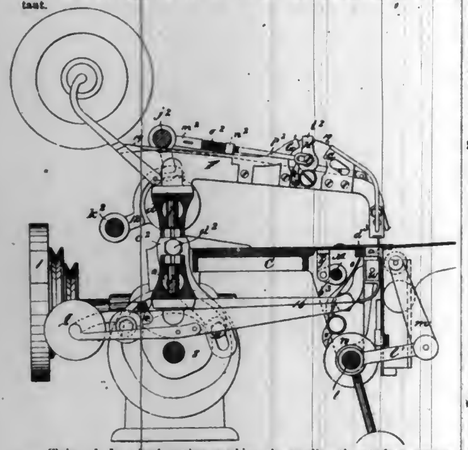
2. The combination of the curved standard *q*, having the ratchet-teeth formed upon it, with the castings *t u*, one upon each side, operating-lever *s*, and spring-pawl *r*, substantially as specified.

203,529.



203,530. BOOK-SEWING MACHINES. E. S. Boynton, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, same place. Filed Dec. 8, 1877.

Brief.—Unites the signatures to form the books by means of band-threads inserted through the saw cuts to form loops, into which, within the signatures, are projected securing-pins to hold the loops, the open signatures being held between pressers and throat-plates, after which the pressers are lifted and the signatures folded upon the book and pressed, and the band-threads drawn taut.



Claim.—1. In a book-sewing machine, the needles, throat-plate, presser-feet, and feeding and cutting mechanism for the material to form the securing-pins, in combination with the folding-blade, to operate substantially as described.

2. The combination, with the throat-plate and needles, of the book-supporting plate and mechanism, substantially as described, to lock and release it, whereby the supporting-plate is held positively, and prevented from descending while the thread is drawn taut, as and for the purpose set forth.

3. The rounded and slotted throat-plates and book-supporting plate, in combination with the needles, whereby the signature last folded is made to rest directly upon a signature below it when the needles draw the band-threads about the securing-pins last projected into their loops, substantially as described.

4. The throat-plates provided with diagonal slots, leading from the needle-openings, to operate upon the band-threads carried by the needles, substantially as described.

5. The throat-plates and book-supporting plate, combined with the movable back plate 22, to permit access to the needles, substantially as described.

6. The rounded and slotted throat-plates, combined with the folder, provided with a lip to operate upon the signatures, substantially as described.

7. The book-supporting plate and mechanism, substantially as described, to hold or release it, in combination with thread-carrying needles, pressers, the curved guides to receive, and the feeding and cutting mechanism to feed forward and sever, the securing-pin material when placed in the loops of the band-thread, substantially as described.

8. The combination, with the presser, of two band-thread-carrying needles and a guide to direct the end of the securing-pin into two loops consecutively, substantially as described.

9. The combination, with the vibrating presser-arm and presser-foot, provided with a pin-directing block and needle-holes, of a cutting-blade attached to the presser-arm, to sever the securing-pin from the length of material, substantially as described.

10. The combination, with the presser-foot and guide thereon, of the spring-stop, substantially as described.

11. The combination, with the presser-foot, of a guide-block, *e*, located thereon as shown, to operate substantially as described with relation to the needles and securing-pin.

12. The combination, with the clamping feed mechanism, of guides curved in different directions, to hold against return movement the material to be cut up into securing-pins, substantially as described.

13. The combination, with the throat-plate and vibrating presser, of the guides curved in different directions and the clamping feed mechanism, substantially as described.

14. The combination, with the clamp feeding mechanism, of the yielding and adjustable connecting-link and a stop for the feeding-clamp, to permit it to remain at rest while the shaft *P* continues its movement to sever a pin from the material, substantially as described.

15. The feeding-clamp composed of the main and auxiliary jaws, and elbow-lever supported upon a hub projecting from the main jaw, substantially as described.

16. The main jaw of the clamp feeding mechanism, in combination with a friction-bolt fitted thereto, to operate substantially as described.

17. In a book-sewing machine, the combination with the throat-plates, of the presser and needle-carrying arms having their centers of vibration in the same axial line, to operate substantially as described.

18. The presser-operating rock-shaft and its bearing portion, combined with a ratchet and spring placed thereon, substantially as and for the purpose described.

19. The presser-operating rock-shaft, its bearing portion, and the ratchet and spring, in combination with the sockets and their connecting-shafts, to actuate the feeding and cutting mechanisms after the presser-feet clamp the open signature upon the throat, substantially as and for the purpose described.

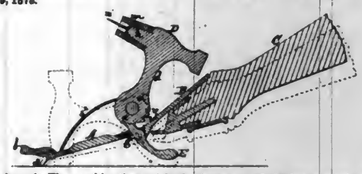
20. The presser-operating rock-shaft and shaft j^3, adapted to move in an arc concentric with the axis of such rock-shaft, and also rock upon an independent bearing of the rock-shaft, in combination with the links J and K, to operate the cutting and feeding devices, substantially as described.

21. In a book-sewing machine, the book-supporting plate and needles grooved on their outer sides next such plate, and threaded from their grooved outer sides, as described, combined with feeding and cutting mechanisms, to place securing-pins into loops formed at the rear sides of the needles, whereby, when the needles are withdrawn to tighten the loops of band-thread and draw the signatures together, the band-thread is made to completely encircle the securing-pins, substantially as described.

22. In a book-sewing machine, the combination, with the shafts to actuate the presser and needle-carrying arms, and the back plate 22, of presser and needle-carrying arms and throat-plates, and set-screws to adjust them laterally to enter the band-slots in various-sized books.

23. The combination, with the throat-plates and book-supporting plate, of the signature-griper, to operate substantially as described.

203,531. CARPET TACKER AND STRETCHER. Charles A. Briggs, Quaker Street, N. Y. Filed Mar. 29, 1878.



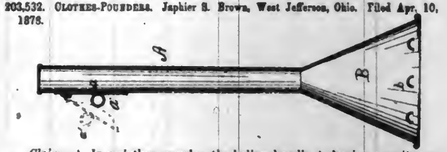
Claim.—1. The combination, with the hammer, of the horn A and elastic tack-holder *m*, substantially as and for the purpose set forth.

2. The hammer provided with the horn A and elastic tack-holder *m*, arm *d*, and trunnions *f f*, in combination with the springs *s* and s^2, yoked together, and trigger E, working in notch *x* or the shoulder of the arm of said hammer, substantially as and for the purpose set forth.

3. The combination, with trunnions *f f*, of the coiled springs *s s*, yoked together and held by notch *v*, and compensating tension-springs s^2 s^2, substantially as and for the purpose set forth.

4. The combination, with handle C, body A, having spurs or points *a a* and gage-points *b b*, of a hammer thrown forward by the action of springs *s s* and s^2 s^2, when released by the depression of the handle, causing a trigger to release the said hammer and permit it to be thrown forward and downward for driving a tack at the same time the carpet is pushed into place and held, substantially as and for the purpose set forth.

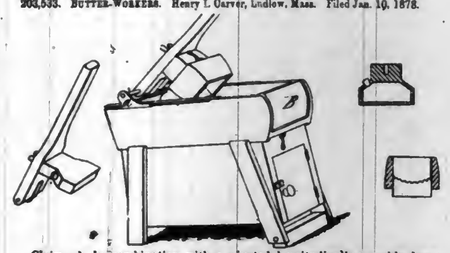
203,532. CLOTHES-POUNDERS. Japhier S. Brown, West Jefferson, Ohio. Filed Apr. 10, 1878.



Claim.—1. In a clothes-pounder, the hollow handle A, having near its top the opening *a*, closed by the valve *a'*, hinged to the outside of the handle, as and for the purposes set forth.

2. In a clothes-pounder, the funnel B and concave parallel bars *b*, arranged as and for the purposes set forth.

203,533. BUTTER-WORKERS. Henry L. Carver, Ludlow, Mass. Filed Jan. 10, 1878.

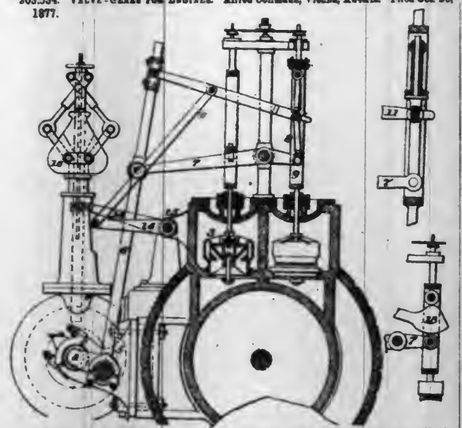


Claim.—1. In combination with a pivoted longitudinally-movable lever and a plunger operated thereby, a tray having one end, B, curved upward, substantially as and for the purpose set forth.

2. In combination with a pivoted longitudinally-movable lever and a plunger operated thereby, a tray having an upwardly-curved end, B, the opposing faces of said plunger and said end B being made correspondingly convex and concave, substantially as and for the purposes set forth.

3. In a butter worker, a hollow plunger provided with an opening for admitting water, substantially as and for the purposes set forth.

203,534. VALVE-GEARS FOR ENGINES. Alfred Collmann, Vienna, Austria. Filed Oct. 26, 1877.

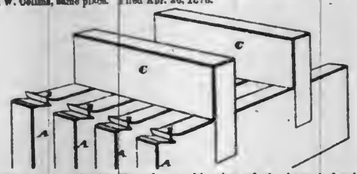


Claim.—1. A valve-gear for engines, constructed substantially as specified, consisting of two systems of levers operated by one or both of the eccentric or operating agent, and connected by a variable or compound joint actuated from the governor, so as to open and again close the admission-valve through two motions, one constant and the other liable to variation, substantially as specified.

2. The toggle-joint having the top joint fixed to the valve-rod, and one of the joints constructed in two pieces, sliding within each other, so as to give free motion to the gear after the valve is closed, substantially as specified.

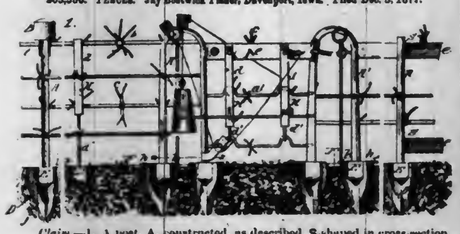
3. The combination of rod 6 and lever 7 with the exhaust-valve, to impart a constant and unvariable motion thereto, and with the variable or compound joint, arranged as specified, and adapted to operate the admission-valve, substantially as specified.

203,535. FIRE-KINDLERS. Edward J. Fenn, Medina, Ohio, assignor of one-half his right to H. W. Collins, same place. Filed Apr. 26, 1878.



Claim.—In a fire-kindler, the combination of the bars A, having a slit or shaving, B, and slotted, as described, with cross-pieces or binders C, said binders or cross-pieces having projections made to fit the slots in the bars A, the whole coated with resin or the like, substantially as and for the purpose described.

203,536. FENCES. Jay Bostwick Fisher, Davenport, Iowa. Filed Dec. 5, 1877.



Claim.—1. A post, A, constructed, as described, S-shaped in cross-section and made tapering, substantially as and for the purpose specified.

2. The foot D, constructed, as described, with the center web-plate *i* and the branches *j j'*, bed E, lug *h*, and lug *p*, substantially as and for the purpose specified.

3. The combination of the post A and foot D, having the web-plate *i*, branches *j j'*, and lugs *h* and *p*, substantially as and for the purpose specified.

4. The double post A', constructed of two uprights, united at their upper ends, as described, and having the feet D, substantially as and for the purpose specified.

5. The combination of the S-shaped post with the boards *c*, arranged as described, so that a single bolt, nail, or screw passed diagonally through them secures all together, in the manner specified.

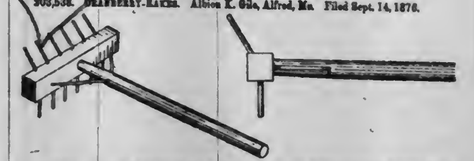
6. The cap B, having dowels *t*, substantially as described, and for the purpose specified.

203,537. CIGARS. Jacob Frey, New York, N. Y. Filed Feb. 16, 1878.



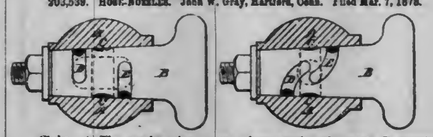
Claim.—A cigar composed of a filler and wrapper, the wrapper being folded, tucked, or turned down upon and over the filler, for the purposes fully described.

203,538. CRANBERRY-RAKES. Albion K. Gile, Alfred, Me. Filed Sept. 14, 1876.



Claim.—As an improved manufacture, the cranberry-rake, substantially as described, having one set of teeth arranged at, or about at, right angles with the handle, and the other set at, or about at, an angle of a hundred and thirty-five degrees with the first set and the handle, all being essentially as shown.

203,539. HOSE-NOZZLES. John W. Gray, Hartford, Conn. Filed Mar. 7, 1878.

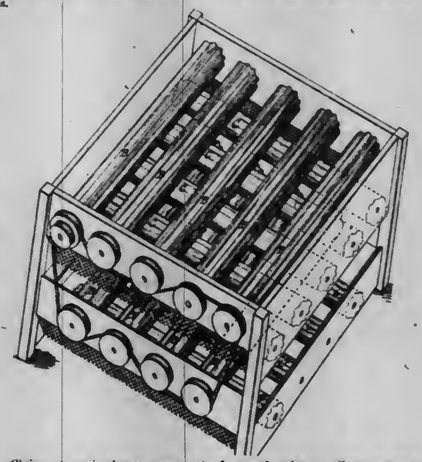


Claim.—1. The combination, with a hose-nozzle, of a cock, B, provided with channels D and E around its outside, which, in one position of the cock, allow the water to pass around it, so as to enter the exit-opening of the nozzle in opposite tangential directions, and in the opposite position, or a half-turn therefrom, shut off the flow, substantially as herein set forth.

2. The combination of the exterior channels D and E with the ordinary central opening C in the cock of a hose-nozzle, substantially as and for the purpose herein described.

203,540. GRAIN DRYING, SCOURING, AND CLEANING APPARATUS. H. B. Hobart, Brooklyn, N. Y. Filed Mar. 8, 1878.

Brief.—Conducts the grain to be treated upon the rotating corrugated rolls.



Claim.—A grain-cleaner composed of several series of rollers, arranged one over another, with the axes of those of each series crossing the axes of those of the next adjacent series, constructed and combined to operate as and for the purpose described.

203,541. COOKING UTENSILS. George H. Henkel, Middletown, Ohio, assignor of one-half his right to Vermont Hatfield, same place. Filed Feb. 1, 1878.



Claim.—1. The ears I, obliquely arranged upon the vessel, in combination with a bail, substantially as and for the purpose described.

2. The bails G and handle C', in combination with cover B and obliquely-arranged ears I, substantially as described.

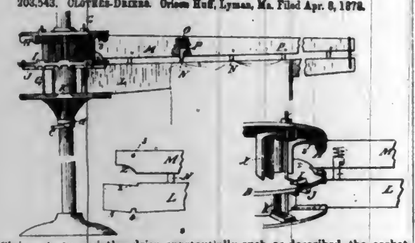
3. The combination of bails G and the ends of handle C', provided with slotted caps or ferrules for supporting the cover in the position shown in Fig. 3, substantially as described.

203,542. LAMP-WICK RAISERS. Joseph Hinks, Birmingham, England. Filed Apr. 26, 1878.



Claim.—The herein-described mechanism for raising and lowering double flat wicks of lamps—that is to say, the parallel pinion-axes of the wick raising and lowering mechanism placed between the two wick holders or cases of the burner, one of which pinion-axes is prolonged beyond the body of the burner, and has placed upon it a second or tubular axis carrying on its end a toothed wheel, which gears with a toothed wheel on the other pinion-axis, both the ends of the prolonged and the tubular axis being provided with milled heads concentric with and situated near one another, so that either or both can be operated, substantially as herein shown and set forth.

203,543. CLOTHES-DRIERS. Orison Huff, Lyman, Me. Filed Apr. 8, 1878.

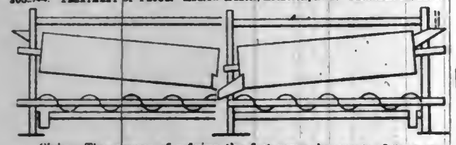


Claim.—1. In a clothes-drier substantially such as described, the socket *x*, hook H, rest I, and arm M, combined to operate substantially as and for the purpose specified.

2. In a clothes-drier substantially such as described, the socket K, runway J, edge r, and arm L, combined to operate substantially as and for the purpose set forth and specified.

3. In a clothes-drier substantially such as described, the arm M, provided with the spring-pin N, substantially as and for the purpose set forth.

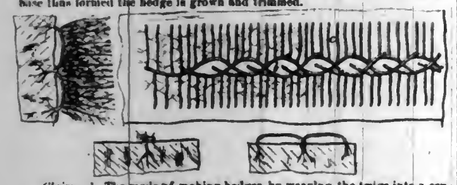
203,544. TREATMENT OF FLOUR. Andrew Hunter, Rochester, N. Y. Filed Mar. 25, 1878.



Claim.—The process of refining the first run or low grade of flour, consisting in first passing it through a bolt to remove fine white flour, then through a purifier to remove fiber or fuzz, then through rolls to flatten the germ and oily substances, through another bolt to remove flattened particles and impurities, and finally running the refined flour from the two bolts together.

203,545. HEDGE FENCES. Perry S. Jenkins, New Liberty, Ky. Filed Feb. 11, 1878.

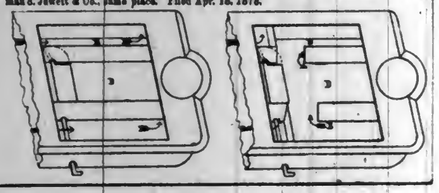
Brief.—The base is composed of a central plat formed by the plants, which are woven together close to the ground, and stay or guy branches are rooted so as to hold the central plats always down to the ground. From the base thus formed the hedge is grown and trimmed.



Claim.—1. The mode of making hedges by weaving the twigs into a central plat and setting the horizontal branches in the ground off from the central plat, as and for the purpose set forth.

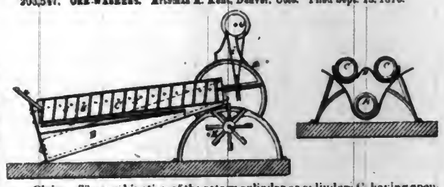
2. The hedge fence consisting of the woven central plat *b* and brace or guy branches *c*, arranged on the surface of the ground, and rooted into three rows, and grown and trimmed into any desired form, as set forth.

203,546. ELEVATED-OVEN COOKING-STOVES. Josiah Jewett, Buffalo, N. Y., assignor to Sherman S. Jewett & Co., same place. Filed Apr. 18, 1878.



Claim.—The combination of the oven-plate G, provided with the openings A A and C, in combination with the side flues E E and the exit-flue D, the said bottom oven-plate forming the upper wall of the said flues, substantially as set forth and described.

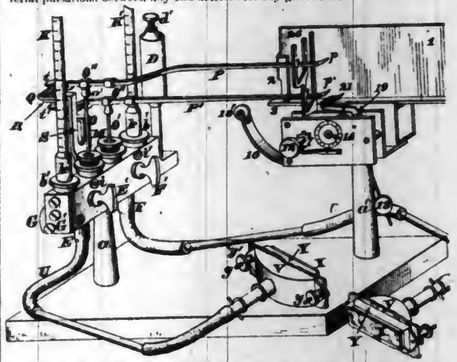
203,547. ORE-WASHERS. Artemas A. Kent, Denver, Colo. Filed Sept. 13, 1876.



Claim.—The combination of the rotary cylinder or cylinders C, having openings in their peripheries, and provided with internal screw-conveyers, the receiving-chute D, and the screw-conveyer B, substantially as and for the purpose described.

203,548. SPHYGMOMETERS. Alonzo T. Keyt, Cincinnati, Ohio. Filed Mar. 23, 1878.

Brief.—Can be used as ordinary sphygmometer, or converted into duplex sphygmograph by means of the diaphragms and chambers communicating motion to the levers P P'. A prepared glass tablet is moved on a carriage by suitable clock-work, and a chronographic attachment shows the difference of arterial pulsations between any two arteries for any given time.



Claim.—1. A duplex sphygmograph capable of simultaneously tracing the pulsations of any two arteries, &c., on a single tablet, substantially as herein described and set forth.

2. In combination with a duplex sphygmograph capable of simultaneously tracing the pulsations of any two arteries, &c., on a single tablet, a chronograph attachment for indicating the time on said common tablet, substantially as herein described and set forth.

3. In combination with a duplex sphygmograph capable of simultaneously tracing the pulsations of any two arteries, &c., on a single tablet, and a chronograph attachment for indicating the time, a clock-movement for advancing said tablet at a uniform speed, substantially as herein described and set forth.

4. In combination with a duplex sphygmograph, the slide 3, carrying the tablet I and the tracers P *p* P' *p'*, operated by elastic diaphragms N, and needles O O' of chambers C C', to which chambers the pulsations are transmitted, substantially as herein described and set forth.

5. In combination with carriage 3, tablet 1, and vibrating tracers P *p* P' *p'* of a duplex sphygmograph, the stylus 21, vibrating arm 19, and operating-wheel 15, said wheel being armed with a series of short teeth, 16, and a set of longer teeth, 17, for indicating seconds and subdivisions of seconds on said tablet, substantially as herein described and set forth.

6. In combination with carriage 3, tracers P *p* P' *p'*, and time-indicator 15 19 21 of a duplex sphygmograph, the rack 3' and clock-movement 5 6, for advancing said carriage at a uniform speed, substantially as herein described.

7. The elastic diaphragm N, secured within chamber C by gland L, and having connected to it the needle O, wherewith said diaphragm communicates motion to the tracing-lever P *p*, substantially as herein described.

8. In combination with the elastic diaphragm N, secured within chamber C in the manner specified, the follower M, traversing gland L, and capable of being adjusted to regulate the tension of said diaphragm, substantially as herein described.

9. In combination with diaphragm N and tension-regulator M, the annulus *m'* at the lower end of said regulator, for the purpose herein described.

10. The needle O, whose head *o* is united to diaphragm N with the cemented disks *n n'*, substantially as herein described.

11. The conical socket *o'*, applied to the tracing-lever P *p*, with sliding clip O', and adapted to receive the point of needle O, which latter communicates with diaphragm N, substantially as herein described.

12. The combination of pivoted tracing-lever P *p q*, hinged leaf Q *q'*, adjusting devices T *t r*, and slide R, substantially as described.

13. The combination of pivoted tracing-lever P *p q*, hinged leaf Q *q'*, slide R, slotted bracket S *s s'*, and adjusting devices T *t t'*, substantially as herein described and set forth.

14. In combination with chamber B *b*, gland *b'*, nipple J, and index-tube K, the flexible coupling *j*, substantially as described.

15. In combination with chamber B *b*, gland *b'*, nipple J, index-tube K, and flexible coupling *j*, the thimble *k*, traversing the bore of said gland, for the purpose set forth.

16. The combination, in a sphygmometer or sphygmograph, of an elevated reservoir, D, for supplying, by gravitation, the various chambers of the instrument with the fluid that transmits the pulsations to the indicating devices, substantially as herein described.

17. The stand A' having channels *a'' a'''*, branch *d*, passages *g' h'*, and cocks G *g* H *h h'''*, for supplying chambers B C B' C' and channels *e e' f f'* from reservoir D, as herein described.

18. The combination, in stand A', of chambers B C, inlet E, channels *e e'*, and three-way cock E', said inlet E being adapted to communicate with the pulse-base of the instrument, substantially as herein described.

19. In combination with a sphygmometer or sphygmograph, a coupling for connecting the pulse-base with the indicating devices, which coupling consists of flexible sections U and transparent sections U', as herein described.

20. In combination with pulse-base V, the yielding membrane X, when adapted to be distended below the general level of said base, for the purpose herein described.

21. The combination of pulse-base V *v*, yielding membrane X, and clamping devices Y *y y'*, substantially as herein described.

22. In combination with pulse-base V *v*, membrane X, and clamping devices Y *y y'*, the adjustable follower W, substantially as herein described.

23. In combination with pulse-base V *v*, membrane X, clamp Y *y y'*, and follower W *w w'*, the adjusting devices Z Z' *z z' z''*, substantially as herein described.

24. In combination with pulse-base V *v*, membrane X, and adjustable follower W, the gutter 27, for retaining the compressible and elastic ring 28, that rests against said membrane X, for the purpose specified.

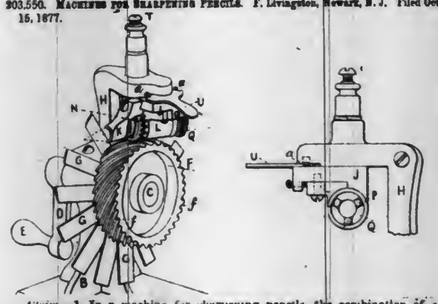
25. The combination, in a sphygmograph, of the carriage 2, having standards 2 and springs 4, which springs enable tablets of various thicknesses being applied to said carriage in such a manner as to insure a uniform action of tracers *p p'* against the prepared surfaces of said tablets, substantially as herein described and set forth.

26. In combination with a sphygmograph, the inclined planes at the lower ends of guides 26, for deflecting tracers *p p'* from the prepared side of the tablet, in the manner herein described, and for the purpose set forth.

203,549. ARTIFICIAL SLATE-PENCILS. Rothfold Landrum, Cincinnati, Ohio, assignor to Jno. G. Isham and Reuben F. Hughes, same place. Filed Apr. 8, 1878.

Claim.—As a new article of manufacture, a slate-pencil composed of the following ingredients: blue calcareous clay or its equivalent, slate, soap-stone, carbonate of lime, kaolin, silicates of soda and potash, in or about the proportions specified.

203,550. MACHINES FOR SHARPENING PENCILS. F. Livingston, Newark, N. J. Filed Oct. 15, 1877.



Claim.—1. In a machine for sharpening pencils, the combination of a revolving knife-head, carrying a series of knives, with a revolving pencil-holding device and a lipped support for the forward end of the pencil, substantially as and for the purposes set forth.

2. In a machine for sharpening pencils, the combination of a revolving knife-head, carrying a series of knives, with a revolving pencil-holding device and a lipped support for the forward end of the pencil, which may be gradually advanced to the knives by means substantially as described, and for the purposes set forth.

3. In a machine for sharpening pencils, the combination of the following elements: a frame, A B, for supporting the shaft C, the knife-head F, and the knives G, with a pencil-holding device composed of a frame, H, upright I, block J, shaft M, pinion N, bars P, button Q, and spring R, constructed and operating substantially as and for the purposes set forth.

4. In a machine for sharpening pencils, the combination of the following elements: a frame, A B, for supporting the shaft C, the knife-head F, and the knives G, with a pencil-holding device composed of a frame, H, upright I, block J, shaft M, pinion N, button Q, and spring R, and the lipped support K, and cam-lever U and stops *s*, constructed and operating substantially as and for the purposes set forth.

203,551. STUDS FOR FRAMES AND FENDER-BARS. W. T. Mercereau, Orange, N. J. Filed Mar. 7, 1878.



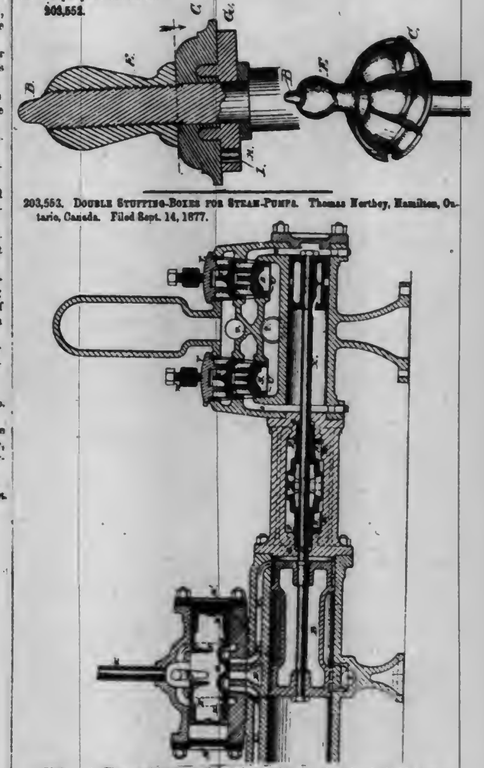
Claim.—As a new and improved article of manufacture, a stud for frame and fender bars, composed of the spherical body A and the conical thimbles D and D', struck up from sheet metal, and combined with a set-screw, B, and a threaded bolt, C, provided with a circular disk or washer, c, for the purposes fully described.

203,552. CUTTER-HEADS FOR PLANING-MACHINES. Rudolph Hanis, Berlin, Prussia, Germany. Filed Jan. 9, 1878.

Claim.—1. In a cutter-head, the combination of the segmental cutters or bits, having straight sides and a rounded or convex back, with the cutter-spindle, bottom or inner supporting-collar, and outer or upper binding-nut or collar, as and for the purpose herein set forth.

2. The combination of the supporting-plate O, having the pivot-pins *d* and arc-shaped or curved slot I, and the bits or cutters C, having rounded backs *b*, holes *c*, and pin H, with the cutter-spindle and binding-nut, as and for the purpose set forth.

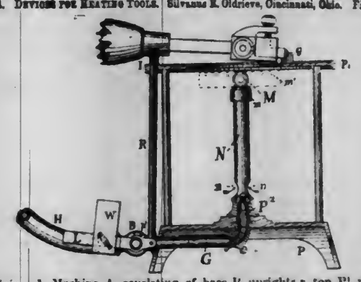
203,553. DOUBLE STUFFING-BOXES FOR STEAM-PUMPS. Thomas Northey, Hamilton, Ontario, Canada. Filed Sept. 14, 1877.



Claim.—1. The combination of double nut M with the glands N N, having projections fitting over guides R R, substantially as set forth.

2. In a double stuffing-box, the glands N, connected by a device for withdrawing them from the stuffing-boxes simultaneously, as described.

203,554. DEVICES FOR HEATING TOOLS. Silvanus B. Oldrieve, Cincinnati, Ohio. Filed Feb.



Claim.—1. Machine A, consisting of base P, uprights r, top P', pipe N, burner M, rod R, lever L, and weight W, substantially as and for the purposes set forth.

2. The detachable holder K, substantially as and for the purposes set forth.

3. The rotating cylindrical burner M, furnished with rows of apertures *m* in its periphery, substantially as set forth.

4. Adjustable rotating burner M, in combination with pipe N, furnished with apertures *n*, substantially as set forth.

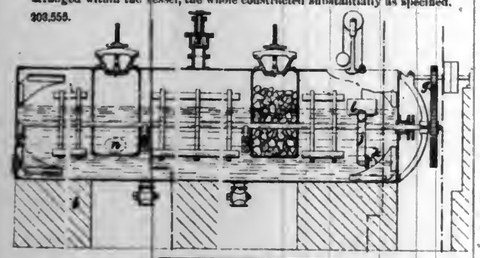
203,555. APPARATUS FOR THE MANUFACTURE OF CAUSTIC ALKALIES. Edward W. Parnell, Liverpool, England, assignor of one-half his right to Jas. Simpson, same place. Filed Mar. 14, 1878.

Claim.—1. The apparatus for the manufacture of caustic alkali, consisting of the closed vessel adapted to sustain steam-pressure, said vessel provided with a valved steam-inlet, an automatically-adjustable draw-off pipe for the

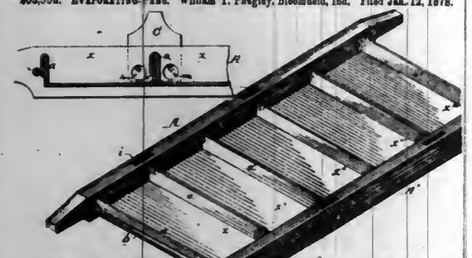
caustic alkali, discharge-cocks for the precipitate, and an agitator arranged within the vessel, substantially as specified.

2. In an apparatus for the manufacture of caustic alkali, the closed vessel provided with the steam-inlet, the charging-orifices and cages arranged thereat, discharge-cocks for the caustic alkali and precipitate, and the agitator arranged within the vessel, the whole constructed substantially as specified.

203,555.



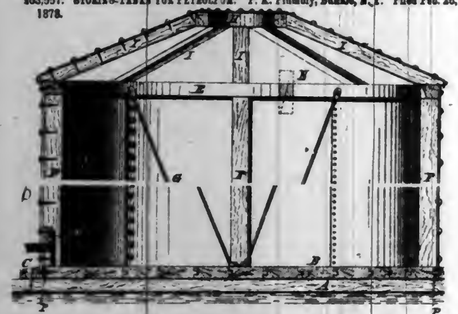
203,556. EVAPORATING-PANS. William T. Pingley, Bloomfield, Ind. Filed Jan. 12, 1878.



Claim.—1. An evaporating-pan having compartments *x x'*, side bars A A', mortised to form recesses *i*, communicating with the compartments through openings *e*, as specified.

2. The combination of the compartments *x x'*, bars A A', having recesses *i* and openings *e*, with gates C, adapted to the recesses *i*, as set forth.

203,557. STORING-TANKS FOR PETROLEUM. F. E. Plumbly, Buffalo, N.Y. Filed Feb. 26, 1878.



Claim.—1. In storing tanks, the combination, with the sheeting D, of the rim E, provided with the wedges N, and the caulked joint P between said sheeting and the bottom B, as and for the use and purpose specified.

2. In storing-tanks, the combination, with the sheeting D, of the rim E, having the wedges N arranged to expand said rim E, substantially as and for the purpose specified.

3. In storing-tanks, the combination, with the multiple bottom A B, arranged in relation to each other as described, of the shell D and the caulked joint P, as specified, for the object stated.

4. A storage-tank consisting, essentially, of the multiple bottom A B, arranged in relation to each other as specified, the shell D, placed over the interior bottom B, posts F, rim E, and the segmental rim C, as and for the purpose described.

203,558. RAFTING-BOOMS. Levi W. Pond, Eau Claire, Wis. Filed Mar. 4, 1878.



Claim.—1. The chain C, in combination with the logs or sections A and wings B, for connecting the sections together and forming a hinge for the wings, substantially as specified.

2. A boom consisting of the logs or sections A, wings B, chain C, and brace D, all constructed and arranged substantially as and for the purposes specified.

203,559. CANES. La Roy W. Reed, Aurora, Ill. Filed Apr. 19, 1878.



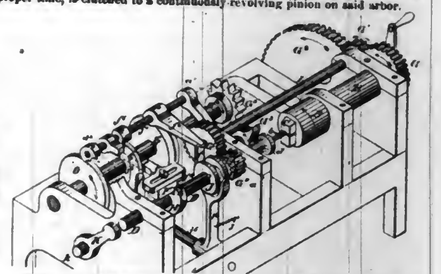
Claim.—1. A tubular walking cane adapted to hold a supply of gas, and provided at its tip with a gas-burner orifice, and with a slot or key, *d*, as and for the purposes described.

2. The tubular cane provided with the burner-orifice, the slot or key *d*, and an air-inlet, as and for the purpose described.

3. The tubular cane provided with the burner-orifice, the slot or key *d*, an air-inlet, *e*, and a removable cap-piece or ferrule to cover and protect the burner and key, substantially as shown and described.

203,560. MACHINES FOR THREADING SCREWS. F. P. Sheldon, Providence, R. I. Filed Apr. 16, 1877.

Brief.—After the blank is threaded the stop which held the die-arbor is raised, and the latter caused to revolve in the same direction as the chuck, but at a greater speed, by means of a sleeve splined to the arbor, which, at the proper time, is clutched to a continuously revolving pinion on said arbor.

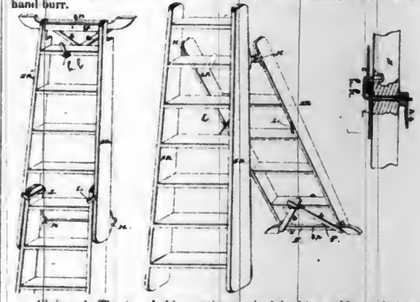


Claim.—1. The mechanism, substantially as described, for holding the die-arbor from rotating while cutting the thread, and for releasing it from the holder at any desired time, and for effecting connection between the die-arbor and the source of rotation immediately consequent upon such release, consisting, essentially, of the adjustable stop F, the collar H, the latch f^2, shaft f', arm f^3, spring f^4, and lever f^5, in combination with clutch J and gear G^2, rotating in the same direction as the screw, but at a greater speed, substantially as set forth.

2. The combination of die-arbor D, clutch J, gear G^2, adjustable stop F, collar H, latch f^2, arm f^3, shaft f', rotating cam-pin *o*, lever f^5, and spring f^4, substantially as set forth.

203,561. STEP-LADDERS. Isaac Q. Sherwood, Bay City, Mich. Filed Sept. 24, 1877.

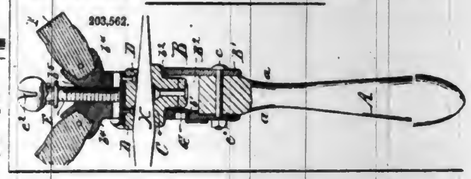
Brief.—Upper end of lower section and lower end of upper section of a folding step-ladder are hinged at their outer edges, so that the ends overlap and form an uninterrupted extension of steps. The two sections may also thereby be closely folded together. An adjustable foot-brace for uneven ground consists of a pivoted foot-piece and braces clamped by a hook and hand-burr.



Claim.—1. The two ladder-sections united by hinges H at what are the rear edges of the side rails when the ladder is extended, and at a distance from the end of one or both sections, whereby the ladder may be completely closed, and when the ladder is extended the sections shall be in the same line, and the lower end of the upper section shall inclose the upper end of the lower section in a manner to allow the free use of steps at the top end of said lower section, all substantially as described.

2. The foot-piece F F, with the braces *b b* fastened to a step or girt by the hook *k k* as a leveling attachment, substantially as described.

203,562.



203,562. MILLSTONE-PICKS. Frederik Soudermeyer, Morrisey, Ill. Filed Jan. 18, 1878.

Claim.—1. The holder consisting of the socket B^1, the recessed seat B^2, the walls b^2, the shoulders b^1 b^4, the diagonal sockets b^3, and screw-bearing b^5, as and for the purposes set forth.

2. The heads F F, in combination with a tool-holder, B, having the sockets b^3, as and for the purpose set forth.

3. The lower platen C, having shoulders *c c'*, as and for the purpose set forth.

4. The intermediate shoulder-plate G, as and for the purposes set forth.

5. The shoulder-plate G, having the shoulder *g*, the bearing g^1, and lip g^2, in combination with the seat B^2 of a holder, B, as and for the purposes set forth.

6. The combination of the lower platen C, the shoulder-plate G, and holder B, having the recessed seat B^2.

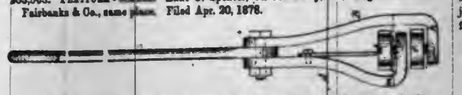
7. The combination of the lower platen C with the holder B, having recessed seat B^2.

8. The holder B, provided with the annular socket B^3, having openings *b*, as and for the purpose set forth.

9. The holder B, provided with the slot or opening *f*, as and for the purpose set forth.

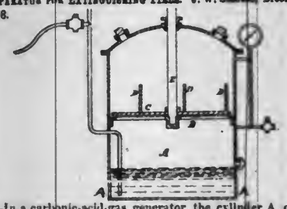
10. The combination of the holder B, the lower platen C, the adjustable slide D, the screw E, the wire fastening, and intermediate shoulder-plate G, all said parts being constructed to operate in the manner and for the purpose set forth.

203,563. PLATFORM-SCALES. Lake G. Spencer, St. Johnsbury, Vt., assignor to Ezek T. Fairbanks & Co., same place. Filed Apr. 20, 1878.



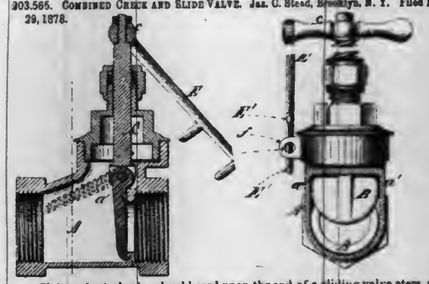
Claim.—A stirrup for the steelyard-rod of platform scales, formed of two pendulous hooks, A B, each independently swiveled to the end of the rod, arranged concentric to each other, and adapted to receive the bearing-points of the platform-levers vertically, one above the other, in line with the rod, substantially as herein shown and described.

203,564. APPARATUS FOR EXTINGUISHING FIRES. J. W. Stanton, Brooklyn, N. Y. Filed May 2, 1878.



Claim.—In a carbonic-acid-gas generator, the cylinder A, divided by the slotted disk B, combined with the cover C, having the breakers or mixers D D D, substantially as described, and for the purposes set forth.

203,565. COMBINED CHECK AND SLIDE VALVE. Jas. C. Stead, Brooklyn, N. Y. Filed Mar. 29, 1878.



Claim.—1. A check-valve hinged upon the end of a sliding valve-stem, and hence, while tending to act as a check in one direction, adapted to be operated as a slide-valve for allowing the passage of fluid through the valve-chamber in the opposite direction.

2. A valve-chamber formed substantially as shown, and a valve hinged to a sliding stem adapted to move in the plane of the valve-seat, in combination with a checking device adapted to hold the valve-stem in variable positions, substantially as and for the purpose set forth.

3. The valve-stem C, cross-bar *c*, and the check-bar E, in combination with the perforated log *f*, provided with the binding-screw F, substantially as and for the purpose described.

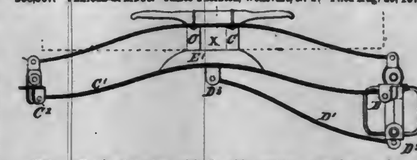
233,566.



233,566. WATER-FILTERS. John H. Stevens, Toledo, Ohio. Filed Apr. 11, 1878.

Claim.—An upward-filtering device, substantially as set forth and described, viz: receiving-chamber A, influent pipe N, discharge-faucet I, perforations L and K, holding-down bar *b*, sponge-chamber D, and perforations *d d*, clear-water reservoir B, in combination with delivery-pipe and faucet H, and air-pipe P.

203,567. VEHICLE-SPRINGS. James Thornton, Wellsville, N. Y. Filed Aug. 29, 1877.

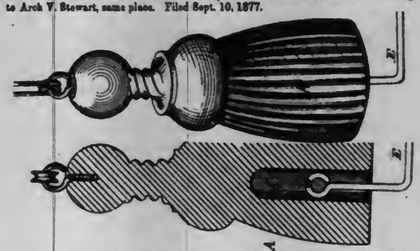


Claim.—The combination, with the side springs, cross bars, and crossed spring C' C', of the X-shaped union-block E', clip D^3, and spring D^4, as specified.

203,568. METHODS OF PRODUCING METALLIC PICTURES. Frank Tuchfarber, Cincinnati, Ohio. Filed Mar. 25, 1878.

Claim.—The improvement in mounting transfer-pictures consisting in applying the sheet carrying the picture to a coated sheet of metal, and subjecting the latter, while the sheet is thereon, to pressure between dies, as set forth.

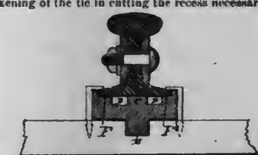
203,569. CURTAIN-CORD TIGHTENERS. Theophilus Van Kannel, Cincinnati, Ohio, assignor to Arch V. Stewart, same place. Filed Sept. 10, 1877.



Claim.—The weight A, having the recess A', in combination with the wire E, the construction being such that the weight is kept from falling when the cord is broken.

203,570. RAILWAY-CHAIRS. Isaac Wells, East Hampton, Conn., assignor of one-half his right to James F. Post, Wilmington, N. C., and David D. Barber, Sumter County, S. C. Filed Feb. 1, 1878.

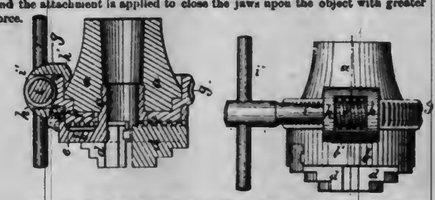
Brief.—A railway-chair is constructed with a rib upon its upper and lower surface, directly below the web of the rail. This gives great strength and supports the rail, so as to require only narrow side bearings to prevent rocking, and allows grooves on either side of the central rib, leaving the chair strong and light. By this construction the lower rib is not so deep as to cause material weakening of the tie in cutting the recess necessary for its reception.



Claim.—A railway-chair constructed with vertical sides, which extend above and constitute side flanges, and provided on its upper surface with central bearing C, side bearings F F', and grooves B B, and having a lower depending flange, E, substantially as set forth.

203,571. DRILL AND LATHE CHUCK ATTACHMENTS. David E. Whiton, West Stafford, Conn. Filed Apr. 15, 1878.

Brief.—The jaws may be opened or closed rapidly by turning the back plate of the chuck by hand, for adapting it to receive large or small objects, and the attachment is applied to close the jaws upon the object with greater force.

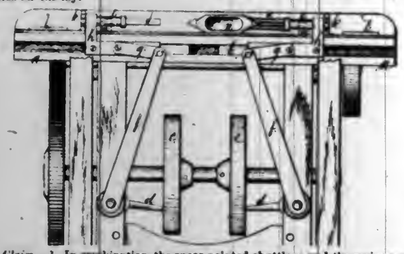


Claim.—1. The herein-described drill and lathe chuck attachment, consisting of the detachable bearing h, with its worm-shaft *i i'* and handle *i''*, in combination with the worm-wheel *g*, as and for the purpose set forth.

2. A detachable bearing, h, carrying a worm-shaft, *i*, having a lip or hooked flange, *h'*, and on the opposite side a projection or plain flange, *h''*, resting in a recess, *b'*, in the front chuck-plate *b*, as and for the purpose set forth.

203,572. SHUTTLE-MOTIONS FOR LOOMS. J. Widmer, New Hartford, Conn. Filed May 15, 1877.

Brief.—The shuttle is released by a quarter-rotation of the transferring arms. The shuttle-heads are notched on the upper and lower edges, but are smooth on their sides, whereby the forks, when vertical, hold the shuttle; but when they are horizontal, the shuttle is released. A gear on the transferring-arm is turned through a quarter-revolution by coming in contact with stationary cam-plates on the lay.



Claim.—1. In combination, the spear-pointed shuttle *n*, and the reciprocating and rotary shaft-rods *i*, bearing the barbed forks *f* and push-rod *p*, the whole arranged to operate substantially as herein shown and described.

2. In combination, the shuttle *n*, the reciprocating shaft-rods *i*, cam gears *k*, and the cam blocks *l m*, all arranged to operate substantially as herein shown and described.

3. In combination, the cams *c*, fingers *d*, shafts *e*, the two vibratory crank-arms *f*, borne upon the lathe, the links *g*, slides *h*, shaft-rods *i*, carrying double-pronged forks *j*, mechanism for partially rotating the same, and the spear-pointed shuttle, whereby the said shaft-rods may be moved toward and from each other simultaneously, and the shuttle alternately transferred from one fork to the other.

203,573. RINGS FOR SPINNING-MACHINES. Nicholas I. Allen, Milford, assignor to George Draper & Sons, Hopedale, Mass. Filed Apr. 15, 1878.

Brief.—The ring has a single raceway, which is common to both ends of the ring. When one side of the raceway becomes worn the ring is reversed and the unworn side of the raceway presented.



Claim.—As an improved article of manufacture, a double ring with a single race common to both ends of the ring, substantially as described.

203,574. APPARATUS FOR MAKING VINEGAR. John C. Appenzeller, Cincinnati, Ohio. Filed Oct. 30, 1877.

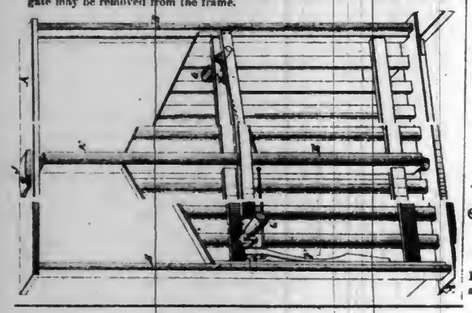
Brief.—Apparatus for heating the juice of fruits under pressure and agitation in the process of vinegar-making.



Claim.—The hereinbefore described apparatus for making vinegar, consisting of the vessel A, having inlet-pipe B, drain-pipe F, safety-valve D, man-hole G, and provided with a central longitudinal shaft, *f*, carrying dashers G, and a series of bent pipes, E, having inlet *e* and outlet *d*, substantially as and for the purpose described.

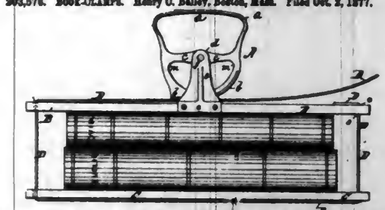
203,575. GATES. John Arun, Sullivan Township, Sharp County, Ark. Filed Sept. 3, 1877.

Brief.—By turning the button on the crown-nill to the right or left the gate may be removed from the frame.



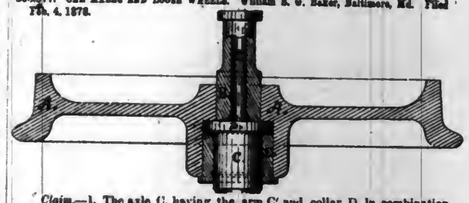
Claim.—In a swinging gate, the combination of the frame B A B, having pivoted button J, with the central pivoted and removable shaft *E*, carrying the gate, substantially as and for the purpose herein shown and described.

203,576. BOOK-CLAMPS. Henry O. Bailey, Boston, Mass. Filed Oct. 2, 1877.



Claim.—The cam-handle A, consisting of the handle *a* and cam *c*, constructed substantially as described, as combined and arranged to operate in connection with the standards *e*, strap D, and clamp-plate B, for the purpose set forth.

203,577. CAR AXLES AND LOOSE WHEELS. William S. G. Baker, Baltimore, Md. Filed Feb. 4, 1878.

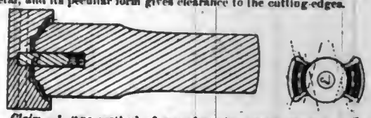


Claim.—1. The axle C, having the arm C′ and collar D, in combination with the counterbored hub and loose journal B, firmly fixed in or forming part of the wheel, the axle being secured in the hub by means of the collar fitting in the recess or pocket formed by the counterbore, and revolving therein, substantially as specified.

2. The axle C, having the arm C′ and collar D, in combination with the counterbored hub, loose journal B, fixed therein, and loose thimble E, forced into the hub and retained by friction to secure the axle in the hub, substantially as specified.

203,578. ROTARY CUTTERS. William F. Barnes and John Barnes, Rockford, Ill. Filed Mar. 25, 1878.

Brief.—The cutter is struck up from a previously-shaped blank of sheet metal, and its peculiar form gives clearance to the cutting-edges.



Claim.—1. The method of manufactoring rotary cutters, substantially as hereinbefore set forth, which consists in first cutting a sheet-metal blank of the desired form and size, and then striking up the wings of the blank, thereby imparting a concave form thereto, and forming the outer curve of the wings on a circle having a radius greater than the radius of the cutter, and afterward tempering the cutter, substantially as set forth.

2. A sheet-metal rotary cutter of uniform thickness throughout, provided with cutting-wings, each of which is concave, and provided with an outer curve the radius of which is of greater length than the radius of the cutter, substantially as set forth.

203,579. CARBURETERS. David C. Battey, Marion Centre, Kans. Filed June 4, 1877.



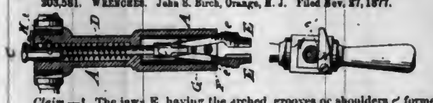
Claim.—The carbureter herein shown and described, consisting of the closed cylindrical vessel A, inlet air-pipe *a a′*, bent at a right angle below the water-line, and said bent part provided with a single line of perforations, *c c*, on each side, reaching to the closed end of the pipe, supply-pipe B, and outlet-pipe C, the whole constructed and arranged as and for the purpose specified.

203,580. VENTILATING-BUNGS. Josef Borsch, Baden, Austria, assignor of one-half his right to Henry Gath, New York, N. Y. Filed Apr. 9, 1878.



Claim.—The barrel-vent herein described, consisting of the plug A, tube B, provided with pistons *b b′*, cylinder C, having rod D, and the weights *d d*, all constructed and arranged as shown, and for the purpose herein set forth.

203,581. WRENCHES. John S. Birch, Orange, N. J. Filed Nov. 27, 1877.

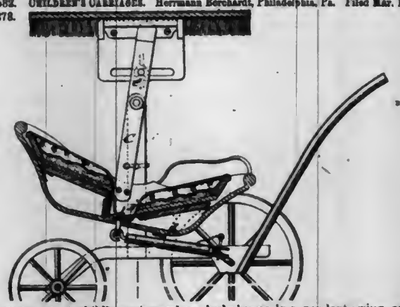


Claim.—1. The jaws E, having the arched grooves or shoulders *c′* formed upon the rounded outer sides of their inclined middle parts to fit and rest upon the inner side of the edge of the barrel A, substantially as herein shown and described.

2. The combination of the small pin G with the larger ordinary pin F, with the jaws E, the stem C, and the barrel A, substantially as herein shown and described.

3. The combination of a locking-catch, H, with the stem C and the barrel A, the jaws E, and the spring D, substantially as herein shown and described.

203,582. CHILDREN'S CARRIAGES. Hermann Borchardt, Philadelphia, Pa. Filed Mar. 18, 1878.

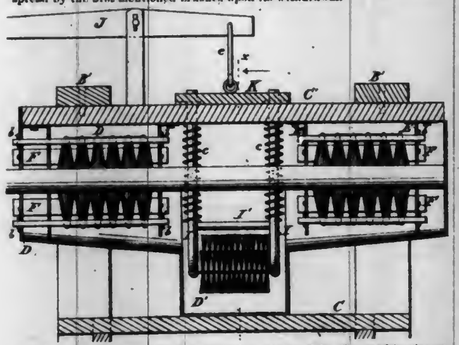


Claim.—1. A child's carriage whose body hangs in a pendent swing, and is combined by a crank-rod with the front axle, as and for the purpose specified.

2. The combination, in a child's carriage, of the swinging arms of the body with slotted and flanged side guide-plates of the canopy, and with suitable clamping devices, substantially as shown and described.

203,583. MACHINES FOR VARNISHING BROOM-HANDLES. Henry Brodt, Schenectady, N. Y., assignor of one-half his right to Nicholas Van Slyck, same place. Filed Apr. 3, 1878.

Brief.—The apparatus consists, essentially, of two series of brushes, arranged concentrically, leaving a central opening, through which the handles may be thrust, a series of vertically-movable brushes, and a suitable receptacle for varnish. The handle having been thrust through the concentric brushes, varnish is applied by raising the vertically-movable brushes, and is evenly spread by the first-mentioned brushes upon its withdrawal.



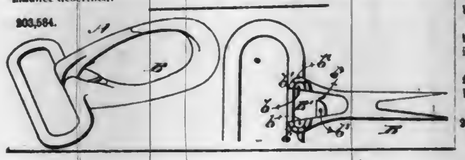
Claim.—1. In a machine for varnishing broom-sticks, the combination of the concentric brushes with the vertically adjustable brushes H and varnish receptacle, as specified.

2. The concentric brushes formed by inserting the brushes F into plates E, as described, in combination with the cap C and case D′, as and for the purpose set forth.

3. The U shaped rods J, attached to plate K and lever J, in combination with the springs *c*, brushes H, and receptacle D′, all constructed and arranged as and for the purpose specified.

4. In a varnishing-machine, the combination of the frame and bed C, constructed as described, case D, with receptacle D′, concentric brushes F, brushes H, rods I, plate K, connection *c*, and bar J, all arranged and operating in the manner described.

203,584.



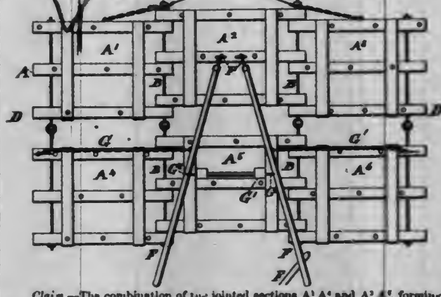
203,584. SNAP-HOOKS. Lambert J. Bristol, New Haven, Conn. Filed Mar. 12, 1878.

Claim.—1. In a snap-hook, projecting lips or ears adapted to be headed down, so as to secure the tongue-pivots in the sockets.

2. Tongue A, provided with lug a^1 for retaining the spring of the snap-hook in position to operate.

3. A snap-hook having a lug, b^2, in its main part B, for preventing the escape of the operating-spring, substantially as set forth.

203,585. HARROWS. Levi Brown, Angola, N. Y. Filed Apr. 9, 1878.



Claim.—The combination of the jointed sections A^1 A^4 and A^2 A^3, forming the outer jointed wings D D′, pivoted on parallel lines B B, frame G, provided with the lugs G^1, and levers F, attached to chains G and swinging freely over the frame G^1, substantially as and for the purposes described.

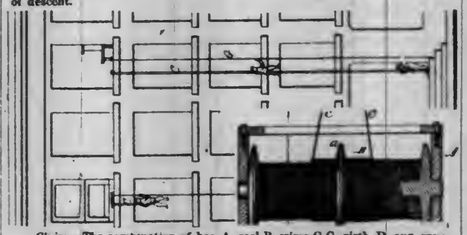
203,586. CONSTRUCTION OF HULLS OF STEAM-VESSELS. Robert C. Brown, Portland, Oreg. Filed June 20, 1877.



Claim.—In a steamboat or other vessel, the combination of the side keels, extending fore and aft of the hull and below the bottom thereof, with the center keel, extending the same vertical distance as the side keels, and the intermediate short keels, all of said keels being provided with orifices for the free passage of water, as and for the purpose set forth.

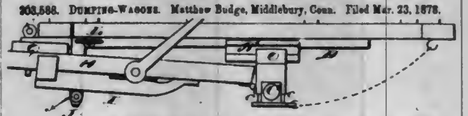
203,587. FIRE-ESCAPES. Francis O. Bryant, Seattle, Wash. Filed Nov. 6, 1877.

Brief.—Two wires wound upon a drum pass out of the remaining-box through a narrow slot in the top of the same, the box being secured inside the room near the window, the friction being created by contact of the wires with the window-sill and the edge of the slot in top of box. A webbing is secured at window, by means whereof the descending party can regulate speed of descent.



Claim.—The combination of box A, reel B, wires C C, girth D, and rope G, as shown and described.

203,588. DUMPING-WAGONS. Matthew Budge, Middlebury, Conn. Filed Mar. 23, 1878.



Claim.—1. The combination of bar I with the thills and body of a dumping-cart, rotating bolt J, and operating-rod L.

2. The combination of slotted bar I with bolt J, having anti-friction rollers *j*, and with the body and thills of a dumping-wagon.

3. A wagon provided with a longitudinally-movable body, in combination with locking devices, substantially as described, whereby said body can be locked in more than one position of said longitudinal adjustment.

4. A dumping-wagon provided with a slotted bar, which serves both as a bearing and guard for the operating gear-wheel, and to engage with the locking-bolt which holds the body and thills together.

5. The combination, with the body and thills of a dumping-wagon, of flanged rail N and flanged guideway O, whereby the body is held to the bolster, substantially as set forth.

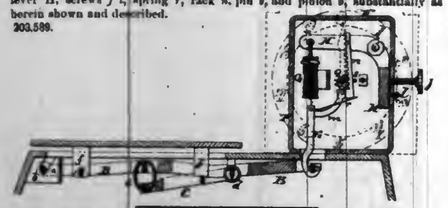
203,589. PLATFORM-SCALES. John P. Chatillon, New York, N. Y., assignor to John Chatillon & Sons, same place. Filed Apr. 19, 1878.

Claim.—1. The combination of the lever B with the runner E, connected to the pivot *h*, and with the spring G and adjustable lever H, substantially as herein shown and described.

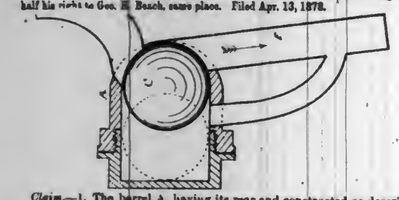
2. The combination of the box F with the two screws *j k*, lever H, spring G, and runner E, for operations substantially as specified.

3. The combination of the runner E, having arm *m*, with the spring G, lever H, screws *j k*, spring *r*, rack *n*, pin *o*, and pinion *p*, substantially as herein shown and described.

203,589.



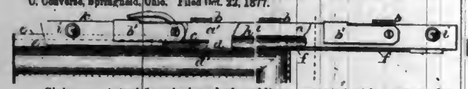
203,590. SEWER-PIPE STENCH-TRAPS. Levi H. Colborne, New York, N. Y., assignor of one-half his right to Geo. E. Beach, same place. Filed Apr. 13, 1878.



Claim.—1. The barrel *A*, having its rear end constructed as described, in combination with the mouths of the induction and eduction pipes, forming a part of the internal curvature thereof, whereby a single spherical gravitating-valve will simultaneously open or close them, substantially as described.

2. The combination of the barrel A, arranged at an obtuse angle to the eduction-pipe F, with the spherical valve C and induction and eduction pipes, all constructed substantially as described, and for the purposes set forth.

203,591. TOOLS FOR TRIMMING AND FINISHING THE EDGES OF DASH-BOARDS. Bolivar C. Converse, Springfield, Ohio. Filed Oct. 22, 1877.



Claim.—1. A tool for placing dash-moldings, provided with a groove for inclosing the molding, guide-jaws for compressing and straightening the leather edges of the dash-board, and a knife for trimming said leather edges, as and for the purpose set forth.

2. Tool A, having its sections *a a'*, hinged together by hinges *b b b*, and provided with groove *g*, stop *s*, guide *k*, throat *t*, knife *c*, and creasers *d d*, for trimming the edges of the facing-leathers of a dash-board and placing the molding thereon at a single operation.

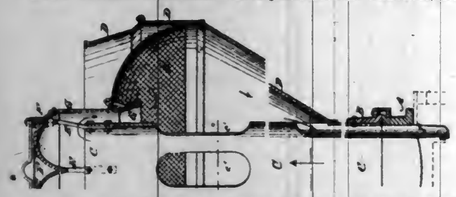
3. Knife *c*, having groove *c'*, deepened at the rear end to give it clearance, substantially as described, as and for the purpose set forth.

4. In a tool for placing dash-molding, the construction of guide *k* with plates *a e*, set slightly inclined, and provided with forwardly-inclined and inwardly-rounded ends, substantially as set forth.

5. The lining *h h*, of chamois skin or its equivalent, in combination with sections *a a'* and groove *g*, for the protection of the polished surface of the rail or molding while being placed upon the dash-board, as hereinabove set forth.

6. In a tool for trimming the edge leathers of a dash-board and placing a molding thereon, the sections *a a'*, hinged together, as shown, and provided with the clasp-plates *l'*, for holding said sections and the inclosed molding together, and the handles *i i*, for operating said tool, as and for the purpose set forth.

203,592. LOCOMOTIVE SMOKE-STACKS. I. H. Congden, Omaha, Nebr. Filed Feb. 26, 1878.



Claim.—1. The combination of the body C, provided with holes *c'*, cone D, pipe I, ring B, and saddle A, all constructed and arranged as shown and described.

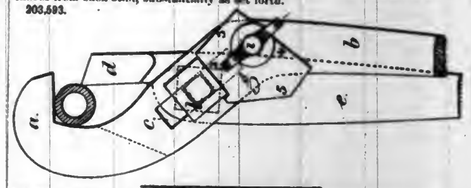
2. The combination, with shell D and netting H, of the body C, having openings *c'*, the cone F, connected therewith by bolts E, and the return-cylinder G, all constructed and arranged as and for the purpose specified.

203,593. PIPE-TONGS. John Corbin, Danbury, Conn., assignor to himself and Adelia J. Cowl, Brooklyn, N.Y. Filed Feb. 4, 1878.

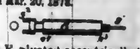
Claim.—1. The combination, with the pipe tongs having the jaws *d a*, handle-levers *b c*, and slot *e*, of the polygonal blocking-piece *g* and its clamping-screw *i* and separate pivot *l*, substantially as set forth.

2. The combination, with the pipe tongs and polygonal blocking-piece, of the fulcrum-stud having a head, the edges of which are at different distances from such stud, substantially as set forth.

203,593.



203,594. IMPLEMENTS FOR CAPPING, UNCAPPING, AND CRIMPING CARTRIDGE-SHELLS. Lewis T. Cornell, Chicago, Ill. Filed Mar. 20, 1878.



Claim.—1. The creaser F, pivoted eccentrically to the end of the arm B by a screw, D, and locked in position by a pin, G, in combination with the rabbeted head C, formed upon the end of the arm A, substantially as herein shown and described.

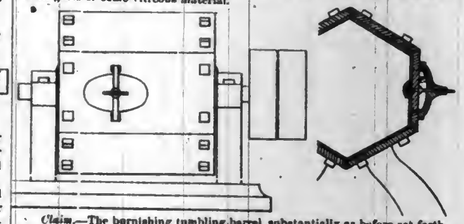
2. The knife F, pivoted eccentrically to the end of the arm B by a screw, and locked in place by a pin, G, in combination with the rabbeted head C, formed upon the end of the arm A, substantially as herein shown and described.

3. The pin G, flattened upon one side, having a fork, *g'*, formed upon the end, and having shoulders *g' g'* formed upon its end parts, in combination with the arm B, the screw D, the cutter E, and the creaser F, substantially as herein shown and described.

4. The combination of the hinged arm A, provided with the rabbeted head C and the hole I, and hinged arm B, provided with the groove K, the hand-screw J, and the cross-head H, having the T-notch L and the holes M N formed in it, the eccentric cutter E, the eccentric creaser F, and the forked, shouldered, and flattened reversible pin G, with each other, to form a tool adapted for use in performing the various operations of uncapping, capping, loading, cutting, creasing, closing, and extracting cartridge-shells, substantially as herein shown and described.

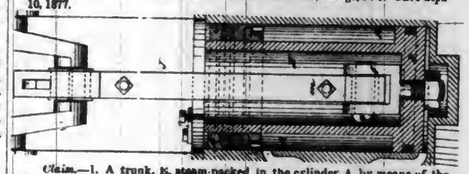
203,595. TUMBLING-BARRELS. Lewis Crooks, New York, N. Y. Filed Apr. 2, 1878.

Brief.—Lined with glass or some vitreous material, or may be made of thick glass or some vitreous material.



Claim.—The burnishing tumbling-barrel, substantially as before set forth, having a smooth vitreous interior burnishing-surface.

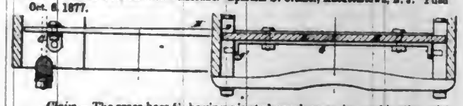
203,596. PACKING FOR PISTON AND OTHER RODS. Wm. Orum, Raleigh, N. C. Filed Sept. 10, 1877.



Claim.—1. A trunk, K, steam-packed in the cylinder A by means of the cut ring F', provided with lugs *b*, and the recessed ring F, constructed and arranged as shown and described.

2. The pressure-ring G and ring F, constructed and arranged to form a chamber to receive a lubricant filling, which may bear against the trunk, in combination with the ring F', substantially as shown and described.

203,597. SPRING-BOTTOMS FOR VEHICLES. Ephraim D. Cramer, Hackettstown, N. J. Filed Oct. 6, 1877.



Claim.—The cross-bars G, having pivoted crank-arms, in combination with the elastic bottom H of a wagon-body, substantially as and for the purpose specified.

203,598.

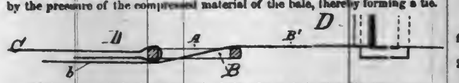


203,598. HOES AND CULTIVATORS. Thomas V. Curtis and A. Milton Andrews, Lemars, Iowa, assignors to said Curtis. Filed Jan. 14, 1878.

Claim.—A garden-hoe consisting of the blade A, formed with straight edge *a*, end *b*, curved edge *c*, and cultivator-point *d*, substantially as and for the purpose set forth.

203,599. BALE-TIES. John M. Cuthf, Albany, Ga. Filed Apr. 29, 1878.

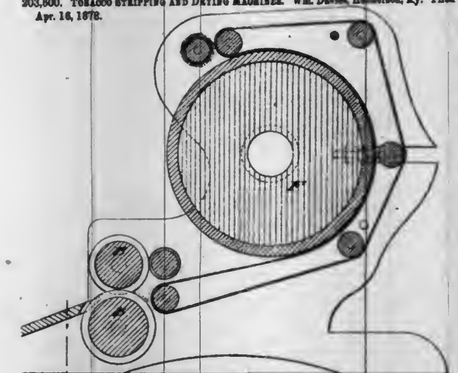
Brief.—The metallic plate, of rectangular form, is provided with a rectangular slot. The ends of the plain hoop—the one looped inwardly through the slot at one end of the clasp, and the other passing diagonally through the slot and underneath the looped end—are held against the clasp and each other by the pressure of the compressed material of the bale, thereby forming a tie.



Claim.—1. A bale-tie composed of the clamp A, having the true rectangular slot B, in combination with the end of the plain strap C, having the hook D and straight end B', constructed and operated substantially as described.

2. A bale-tie in which one end of the plain strap C is hooked into the slot B of the clamp A and bent inwardly, and the other end traverses said slot B from one upper corner diagonally to the opposite lower corner, substantially as and for the purpose set forth.

203,600. TOBACCO STRIPPING AND DRYING MACHINES. Wm. Davies, Henderson, Ky. Filed Apr. 16, 1878.



Claim.—1. A machine for stripping and drying leaf-tobacco, consisting of revolving and heated stripping-rolls, of an endless conducting apron or belt, and of a heating cylinder or drum, over a part of whose surface the belt is lapped and tightly pressed against the same, substantially as and for the purpose set forth.

2. The combination, in a tobacco stripping and drying machine, of revolving stripping-rolls with an endless conducting apron or belt that is lapped around part of the circumference of a heating cylinder or drum, and returned over guiding and stretching rolls, and with clearing devices for removing the tobacco from the cylinder or belt, substantially as specified.

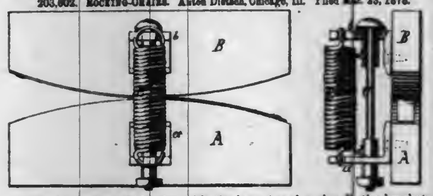
203,601. HORSE HAY-RAKES. Jacob Deusi, Millbrook, assignor to Wm. H. Field, Port Chester, N. Y. Filed Nov. 27, 1877.



Claim.—1. In a horse hay-rake, the combination of a rake-head supported by the main wheels or axle, two friction brakes or clutches at or near the ends of the rake-head for lifting the latter by the power of the team when required, and a rocking-shaft constructed in two parts, connected together by an automatical equalizing device, for the purpose of applying the friction brakes or clutches with substantially equal power.

2. The combination of lever I, gears J J, rock-shafts G G, and friction-brakes, when arranged substantially as and for the purpose described.

203,602. ROCKING-CHAIRS. Anton Dietsch, Chicago, Ill. Filed Mar. 23, 1878.



Claim.—1. In combination with the base A and rocker B, the brackets *a* and *b*, bolt C, having nut *c* and rubber covering *d*, and spring E, all constructed, arranged, and operating substantially as and for the purpose described and shown.

2. In combination with the base A and rocker B, longitudinally coupled together by leaf-spring F, the brackets *a* and *b*, bolts C, and coiled spring E, all constructed, arranged, and operating substantially in the manner set forth.

203,603. MANUFACTURE OF HATS. Geo. H. Dimond, Bridgeport, Conn. Filed Apr. 13, 1878.

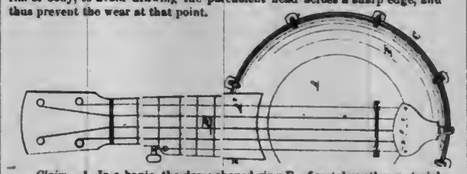
Brief.—Improvement on Patent No. 176,936, dated May 2, 1876, and is designed to give soft hats a more symmetrical appearance.



Claim.—The cord C, when used in the manner and for the purpose set forth.

203,604. BANJOS. Charles E. Dobson, New York, N. Y., assignor of one-half his right to Henry C. Dobson, same place. Filed Apr. 18, 1877.

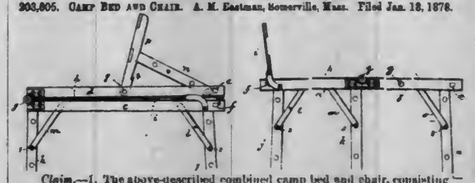
Brief.—A rounded or dome-shaped ring is placed upon or secured to the rim or body, to avoid drawing the parchment head across a sharp edge, and thus prevent the wear at that point.



Claim.—1. In a banjo, the dome-shaped ring F, of metal or other material, in combination with the rim D and head A, substantially as described.

2. In combination with the dome-shaped ring F, the neck E, having the projecting overhang A, substantially as set forth.

203,605. CAMP BED AND CHAIR. A. M. Eastman, Somerville, Mass. Filed Jan. 18, 1878.

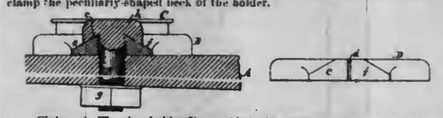


Claim.—1. The above-described combined camp bed and chair, consisting of the main portion *a c f h*, pivoted legs *j k*, and braces *l m*, in combination with the auxiliary portion *b d e*, the pivoted chair-back portion *p*, having notches *i*, and the legs *n*, said legs serving to support the chair-back at different angles or inclines when in use, substantially as described.

2. A combined folding camp bed and chair, the said chair consisting of a seat formed of the main portion of the bed and a notched back pivoted to the auxiliary portion, and supported at different angles or inclines by the upturned legs of said portion, substantially as described.

203,606. STIFFENING-RING HOLDERS, &c. George D. Edmands, Milford, Mass. Filed Apr. 6, 1878.

Brief.—Through the neck of the holder is cut a narrow slit to render it capable of being clamped or sprung upon the ring. A bolt-hole forms an enlargement of said slit, through which passes a clamping-bolt having an oblong head, which is undercut downward from the body of the bolt, so as to fit and clamp the peculiarly-shaped neck of the holder.



Claim.—1. The ring-holder D, provided with a circular seat or rest for the ring, the prongs *e* and *f*, having their upper surfaces inclined in opposite directions, the slotted bolt-hole *c*, and the dividing or separating slit *d*, all arranged, relative to each other, substantially as described.

2. The holder D, divided on one side by the slit *d*, and provided with a slotted bolt-hole, *c*, and beveled prongs *e* and *f*, in combination with the ring-rail A and the bolt B, provided with the nut *g* and hook-shaped head *h*, all arranged and adapted to operate substantially as and for the purposes described.

3. A ring-holder cut open upon one side and adapted to be sprung to gripe the ring, and provided with one or more inclined or beveled surfaces, in combination with a single clamping-bolt adapted to clamp said holder to the rail, and at the same time, by acting upon said inclined surfaces, cause the holder to gripe the ring and hold it firmly in position, substantially as described.

203,607. SKIRTS. Samuel Fullaer, Streator, Ill. Filed Mar. 6, 1878.



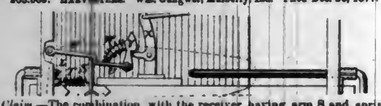
Claim.—As a new article of manufacture, an underskirt consisting of the flannel portion A, combined with a lower portion composed of the rubber-cloth portions *a b* and interposed cotton wadding *c*, the three latter being sewed together, and also to the upper or body part of the skirt A, as shown and described.

203,608. WOOD-SOLE SHOES. William Gampert, Keokuk, Iowa. Filed Apr. 15, 1878.



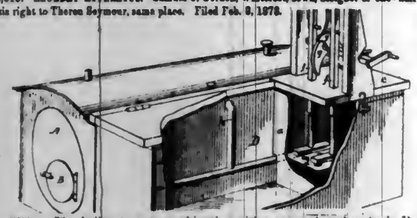
Claim.—A wooden soled shoe in which the sole is made in two parts, A C, clamping the upper B between them, and secured to each other at their forward part by a wedge-block, *a'*, formed upon or attached to the part A, to enter a wedge-slot, *a''*, in the outer portion C, and at their rear part by screws D, substantially as herein shown and described.

203,609. HARVESTERS. Wm. Gangwer, Mulberry, Ind. Filed Dec. 26, 1877.



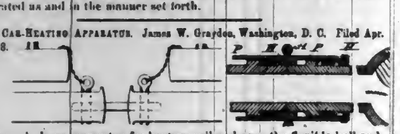
Claim.—The combination, with the receiver having arm S and spring T, of the shouldered perforated lever U, the catch V, having curved arm with spring, the bent lever X, and operative mechanism, substantially as shown and described, for the purpose specified.

206,610. LAUNDRY APPARATUS. Samuel J. Gordon, Winterset, Iowa, assignor of one-half his right to Theron Seymour, same place. Filed Feb. 9, 1878.



Claim.—The boiler A *h*, in combination with a compartment or tank, D, lying in the same plane, and the steam-pipe k and washing device *d e f g*, placed beyond a partition, *a*, between compartments G and D, all arranged and operated as and in the manner set forth.

203,611. CAR-HEATING APPARATUS. James W. Grayden, Washington, D. C. Filed Apr. 25, 1878.

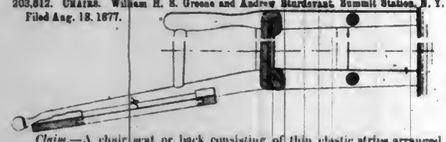


Claim.—1. In an apparatus for heating railroad cars, the flexible ball-and-socket joint, with groove-packing, ring springs, and screws, substantially as specified.

2. The combination, with the two pipe sections, having beveled shoulders P, of the coupling-cylinder A, having beveled shoulders H, and the packing held in the annular groove between said shoulders, as and for the purpose set forth.

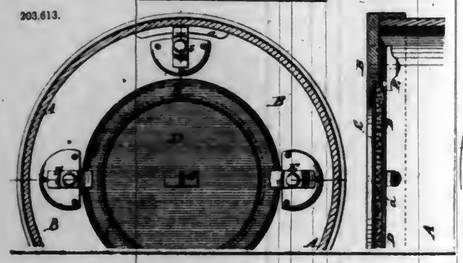
3. In an apparatus for heating railroad cars, the ball and half-socket joint fitted with axles and journals, substantially as specified.

203,612. CHAIRS. William H. S. Greene and Andrew Stardevant, Summit Station, N. Y. Filed Aug. 18, 1877.



Claim.—A chair seat or back consisting of thin elastic strips arranged with their ends in grooves of frame, and connected by a corresponding V-shaped convexity and concavity of their adjacent edges, as shown and described.

203,613.



203,613. BARREL-TOP SHOW-CASES. Wm. H. Grubb, Hannibal, Mo. Filed Mar. 27, 1878.

Claim.—The combination of the barrel-top B, provided with the transparent pane C and the interior bottoms E *b*, with the sample-cup D and with a barrel, A, provided with the inside fastening-cleats *a*, substantially as and for the purpose set forth.

203,614. PREPARED MEATS. Engelbert Gunkel, Chicago, Ill. Filed Mar. 9, 1878.

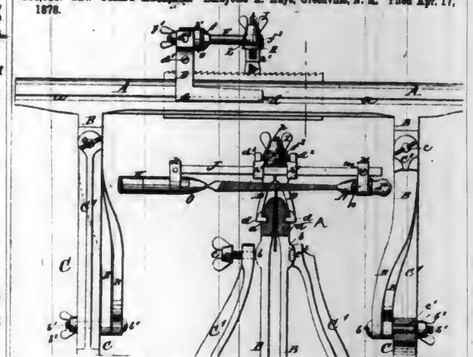
Claim.—The compound described, consisting of pulverized dried meat, to which is added, before powdering, a small portion of tallow which has been flavored by having vegetables and spices boiled therein, substantially as and for the purpose set forth.

203,616. BOTTLE-STOPPER FASTENERS. Charles O. Hammer, Pittsburg, Pa., assignor of one-half his right to William Sonderman, same place. Filed Mar. 7, 1878.



Claim.—The lever *a*, having wire projections *x* and *x'*, combined with the bail-band and the cap *g*, pivoted to the side projection *a'*, said lever *a* being pivoted on the bail at *c*, the whole constructed, arranged, and operating as herein described, and for the purpose set forth.

203,618. SAW-FILING MACHINES. Lafayette A. Hays, Greenville, N. M. Filed Apr. 17, 1878.



Claim.—1. The saw-clamp A B, provided with the convex projections *b*, and compressed between the uprights C of the end frames C by the set-screws *c*, in combination with the slotted frames C and the bolt and thumb-nut *b' b''*, for adjusting the inclination of the saw-blade, substantially as specified.

2. The combination of the slotted jaws A, the sliding bracket D, the pivoted block E, the flanged eyebolt or rod F, and the thumb-nut *f'*, to allow of downward movement of the file and adjust its vertical inclination, substantially as specified.

3. The pivoted guide-bracket H, in combination with the sliding bar J of the file-holder, the eyebolt F, and the thumb-nut I, to adjust the horizontal inclination and insure the rectilinear movement of the file, substantially as specified.

4. The combination, with the bracket *h*, stationary upon the bar J, and the bracket M, adjustable upon the bar J, of the socketed blocks O N, fitted to turn in the said brackets and secured by the handle and knob K P, for the purpose of holding the file and turning it upon its axis, substantially as specified.

5. A saw-filing machine consisting in the combination of the end frames C, the saw-clamp A B, the sliding bracket D, the pivoted block E, eyebolt F and guide-bracket H, the slide-bar J, brackets K M, socket-blocks O N, handle K, and knob P, all constructed, connected, and operating substantially as and for the purposes specified.

203,617. TICKET-CASES. Lewis E. Heaton, Providence, R. I., assignor to himself and Samuel Barr, same place. Filed Feb. 26, 1878.



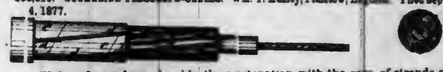
Claim.—A ticket-case consisting of the bottom apertured rectangular case A, top B, sliding in grooves of case, and the false bottom C, the top B having thumb-piece *a* and studs *b*, as and for the purpose specified.

203,618. SLEEVE-BUTTON LINER. Chas. Hein, Corona, assignor to Hale & Mulford, New York, N. Y. Filed Apr. 10, 1878.



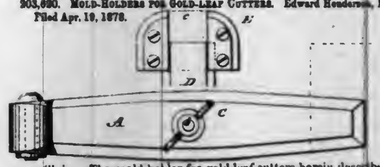
Claim.—A link formed of the double hook C and the locking bar D, pivoted to each other at the center, the ends of the said bar D adapted to rest in grooves in the said hooks and to turn on the pivot, as herein shown and described.

203,619. SUBMARINE TELEGRAPH-CABLES. Wm. T. Henley, Plaistow, England. Filed Sept. 4, 1877.



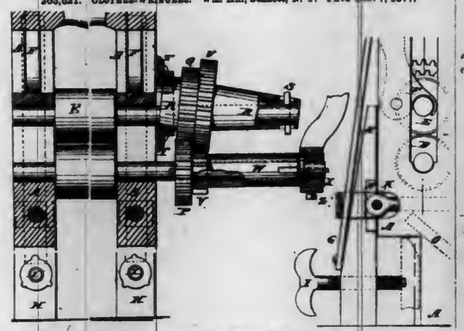
Claim.—In a telegraph-cable, the combination, with the core, of strands of fibrous material covered with a serving of fibrous material, and steel or iron wires laid parallel with the strands and between them, substantially as set forth.

203,620. MOLD-HOLDERS FOR GOLD-LEAF CUTTERS. Edward Henderson, New York, N. Y. Filed Apr. 19, 1878.



Claim.—The mold-holder for gold-leaf cutters herein described, consisting of the hinged jaws A B, spring *a*, clamping bolt and nut *b* C, arm D, and slotted or grooved plate E, substantially as and for the purpose set forth.

203,621. CLOTHES-WRINGERS. Wm. Hill, Bennett, N. Y. Filed Dec. 7, 1877.



Claim.—1. The combination of the conical hub R, the flanged bearing-plate T, and the gear-wheels Q P with the journals of the rollers D E and the standard A of a clothes-wringer, substantially as herein shown and described.

2. The combination of the sleeve W and the gear-wheels V U with the conical hub R, the flanged bearing-plate T, and the gear-wheels Q P, and with the roller-journals and standard of a clothes-wringer, substantially as herein shown and described.

3. The combination, with the gear-wheels P Q U V, conical hub R, and ring-flanged plate T, of the grooved sleeve W, the grooved tube X and the tongued crank Y, the latter adapted to transmit power either through the parts X P Q or the parts W V U, whereby the leverage of the crank or the relative rates of speed of rollers and crank may be changed, as desired, as and for the purpose specified.

4. The combination of the rubber springs M with the bolts and straps L K J, the movable jaws H, the bars G, whether elastic or rigid, the bent levers F, the journal of upper roll E, the hand-screws I, and the standards A, substantially as herein shown and described.

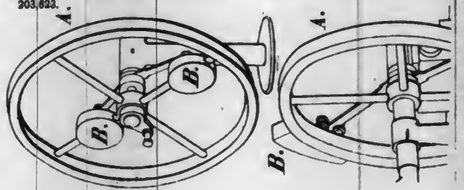
203,622. BRICK-CLEANING MACHINES. Joseph Hyde and Adam Barker, Baltimore, Md. Filed Apr. 12, 1878.



Claim.—1. In a brick-cleaning machine, the rotating disks B, wheel C, gearing with the pinions *i*, and rasping-rollers D, the bearings of which rest in horizontal slots *f*, and are pressed inward by the springs *b*, substantially as shown and described.

2. The combination, in a brick-cleaning machine, of hopper A, having sloping sides *a a*, rotating disks B, having serrations, and the journals of which have a vertical movement in slots *b*, and spiral springs *d*, wheels C, pinions *i*, and rasping-rollers D, arranged to permit a slight lateral movement, as and for the purpose specified.

203,623.

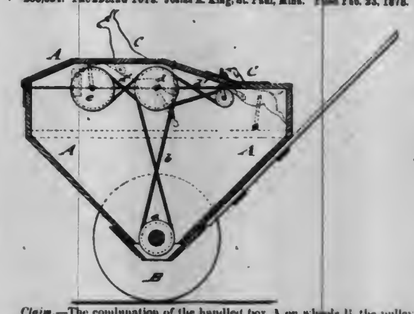


203,623. FLY-WHEELS FOR ENGINES. Pierre E. Jay, Bethlehem, Pa. Filed Apr. 26, 1878.

Brief.—The eccentric sliding weights connected to the wheel are to move the crank off the dead-center when the wheel comes to rest.

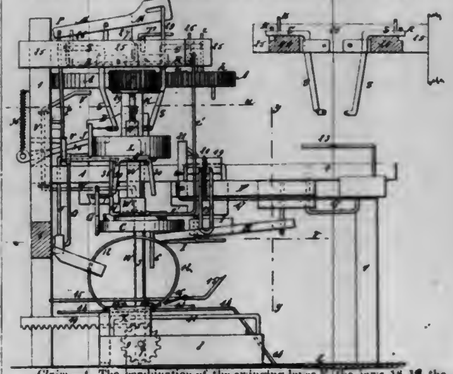
Claim.—In combination with the wheel A, the weights B B, revolving upon an axis eccentric from that of the wheel, either fixed or movable, constructed and operating substantially as and for the purpose described.

203,624. TREADLING TOYS. Josias R. King, St. Paul, Minn. Filed Feb. 23, 1878.



Claim.—The combination of the handled box A on wheels B, the pulleys *a d e*, the belt *b*, and the figures C, the latter having jointed limbs pivoted to the ends of crank-shafts, as and for the purpose specified.

203,625. GRAIN-BINDERS. Reuben O. Kinne, El Dorado, Ill. Filed Dec. 26, 1877.



Claim.—1. The combination of the swinging lever F, the jaws 18 19, the spring 20, the spring-catch 22, the stops 21 23, and the guide-rod 17 with the frame 1, for placing the straw band upon the platform X, that receives the gavel, substantially as herein shown and described.

2. The combination of the push-bar H, the lever I, and the pin 6 with the swinging lever F, that carries the jaws 18 19, with the frame 1, and with the wheel C, attached to the shaft 3, substantially as herein shown and described.

3. The combination of the hinged clamping frames 12 12, the cranks 13 13, and the guides 14 15 16 with the platform X, for drawing the ends of the band together around the gavel, substantially as herein shown and described.

4. The combination of the toothed segments D E, the gear-wheels *g* 9, and the toothed rack 10 with the driving-shaft 3, and with the platform X, that receives the gavel, substantially as herein shown and described.

5. The combination of the guide-rod *c'*, the bent lever V, the spring 37, and the pin 4 with the wheel A and the jaws W, for passing the ends of the straw band into the said jaws W, substantially as herein shown and described.

6. The combination of the pivoted guides S, the rod R, provided with arms upon its end and middle parts, the spring catch T, the inclined block *a*, and the pin *b* with the jaws W and the wheel A, attached to the driving-shaft 3, substantially as herein shown and described.

7. The combination of the tucker 31, the sliding hook G, the springs 33 34, and the projection 5 with the jaws W and the wheel C, attached to the shaft 3, substantially as herein shown and described.

8. The combination of the fingers 30, the lever N, the connecting-rod O, the lever J, and the spring 32 with the arm B, attached to the shaft 3, and with the jaws W and the tucker 31, for holding the band while its ends are being pushed beneath its body by the said tucker 31, substantially as herein shown and described.

9. The combination of the supporting-rod 29, the lever M, the connecting-rod P, the lever N, the connecting-rod O, the lever J, and the spring 32 with the arm B, attached to the shaft 3, and with the gear-wheel *b*, the shaft K, the disk L, and the jaws W, substantially as herein shown and described.

10. The combination of the lever or pin 35 and the spring 36 with the frame 1 and the disk L, that carries the jaws W, substantially as herein shown and described.

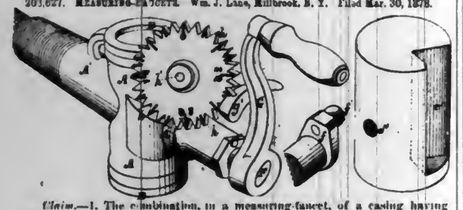
203,626. SADDLE-TREE FORKS. Calvin M. Lane and Mathew C. Franklin, Lockhart, Tex. Filed Mar. 22, 1878.

Claim.—An improved metal saddle-tree fork provided with the detachable wooden pommel B and the wooden side pieces, substantially as and for the purpose set forth.

203,626.



203,627. MEASURING-FAUCETS. Wm. J. Lane, Millbrook, N. Y. Filed Mar. 30, 1878.



Claim.—1. The combination, in a measuring-faucet, of a casing having inlet and outlet ports, and containing a plunger having face ports opening toward opposite ends, and a crank-shaft, whereby the plunger is both reciprocated and turned on its axis to bring each of its ports alternately to coincide with the inlet and outlet ports of the casing, and forcibly remove and expel the liquid, all substantially as set forth.

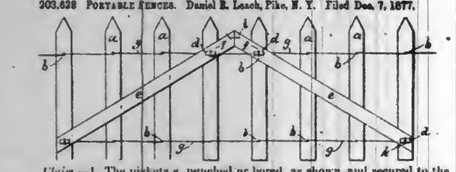
2. The combination of the reciprocating plunger and the driving-shaft F, connected directly thereto, and imparting both a reciprocating and rotary movement to the plunger, as set forth.

3. The combination, in a measuring-faucet, of the casing, its plunger, and the shaft F, arranged opposite and at right angles to the axis of the plunger, and connected directly thereto by a crank or its equivalent, substantially as set forth.

4. The combination, in a measuring-faucet, of the casing, the driving-shaft F, the plunger reciprocating in the chamber of the casing across the end of the shaft, and operated therefrom, and the ports *a a' a''* of the casing, and ports *e e'* of the plunger, relatively arranged as set forth.

5. The casing A, having branches A' A'', and with a transverse chamber, closed by detachable heads B B, substantially as set forth.

203,628 PORTABLE FENCES. Daniel R. Leach, Pike, N. Y. Filed Dec. 7, 1877.

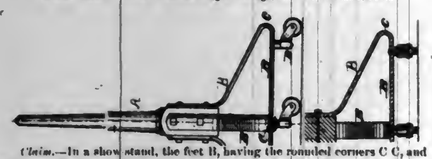


Claim.—1. The pickets *a*, punched or bored, as shown, and secured to the wire rail *g* by the loops *e* and pins *d*, substantially as and for the purpose set forth.

2. The braces *c*, joined at their upper ends by the loop *i*, and connected to the wire rails *g* by the loops *f* and pins *d*, substantially as and for the purpose set forth.

3. In a portable fence, the panel composed of the wire rail *g*, having loops *e* and *f*, punched or bored pickets *a*, and braces *c*, and pins *d*, constructed and arranged substantially as shown and described.

203,629. SHOW-STANDS. Edward Leger, Chicago, Ill. Filed Mar. 9, 1878.



Claim.—In a show-stand, the feet B, having the rounded corners C C, and the casters D, located far enough underneath the feet B to be out of the way, in combination with the standard A, substantially as described.

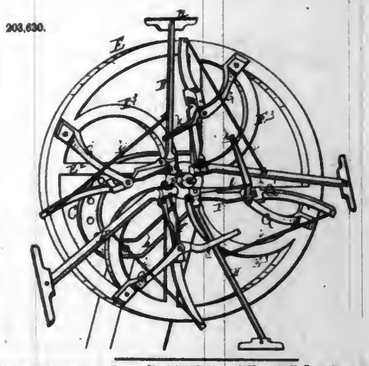
203,630. HARVESTER-RAKES. James H. Lewis, Detroit, Mich. Filed Apr. 13, 1878.

Claim.—1. In a combined rake and reel attachment for reapers, the combination, with the reel-head E, having curved arms projecting outwardly from its center, of the heads F, sliding on such arms, and carrying the reel-arms, and the cam-groove on the standard, substantially as and for the purpose set forth.

2. The cam-plate C, for the purpose set forth, having circular groove *b*, cam-groove *b'*, pivoted plate C', and sliding plate C'', moved by a lever, substantially as described and shown.

3. In a combined rake and reel attachment for reapers, the reel-arm H, sliding from the center of the reel-head in performing the functions of a rake, substantially as described, in combination with the arm F', lever G', rod *i*, and spring *k*, for the purpose of causing said arm H to be presented to the rake-table parallel to the cutter-bar, and retaining it in such position until compelled to make the rake or sweeping movement, substantially as set forth and shown.

203,630.



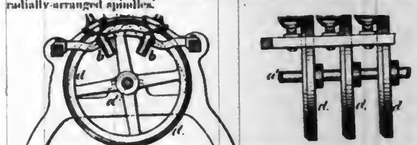
203,631. MARTINGALE-RINGS. David C. Lockwood, Newark, N. J., assignor to the Rubber and Celluloid Harness Trimming Company, same place. Filed Jan. 31, 1878.



Claim.—As an improved manufacture, a harness ring or trimming consisting of a wooden core coated with celluloid, substantially as specified.

203,632. SPINNING-MACHINES. James B. Mackie, New York, N. Y. Filed Nov. 12, 1877.

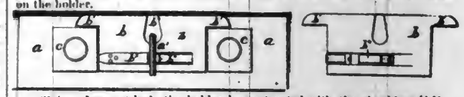
Brief.—Beveled friction-wheels are arranged on a shaft running longitudinally of the machine, and each wheel, by frictional contact, drives two radially-arranged spindles.



Claim.—In a spinning machine, the longitudinal shaft *a'*, in the center, or nearly so, transversely of the machine, and provided with a beveled friction-wheel, *d*, for each pair of spindles, in combination with spindles and their beveled friction-pinions, arranged in the manner shown, so that there are two spindles to each beveled frictional driving-wheel, and said spindles stand radially above the same, as and for the purposes set forth.

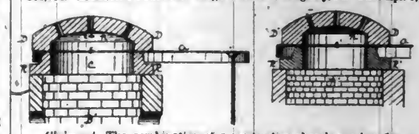
203,633. NUT-LOCKS. Lilburn D. Maupin, Resick, Mo., assignor of one-half his right to J. R. Miles, same place. Filed Apr. 9, 1878.

Brief.—A holder is placed between the two nuts, and thus prevents them from turning. A keeper or key is swiveled to the fish-bar, and turns to engage and keep said holder in place, while it, in turn, is held down by a spring-latch on the holder.



Claim.—In a nut-lock, the holder *b*, constructed with the shoulders *b' b'*, and provided with the spring-latch *b'*, in combination with the keeper *a'*, journaled in the washer *a*, substantially as set forth.

203,634. REHEATING-FURNACES. Hugh McDonald, Allegheny, Pa. Filed Apr. 6, 1878.



Claim.—1. The combination of a combustion-chamber, a low flue, a reverberatory cap or arch, and a space between the top of the flue and the cap or arch for the insertion of a plate, whereby, while a portion of the plate around the flue-hole ent therein shall be exposed to the action of the heat above and below, the rest of the plate will lie outside of the heating-spaces, substantially as set forth.

2. The combination of a combustion-chamber, a low flue, and a removable reverberatory cap or arch, substantially as set forth.

3. Removable and interchangeable throat-pieces R R' and caps or arches D D', as appendages to a heating-furnace, substantially as and for the purposes set forth.

4. The combination of combustion-chamber, low flue, throat-piece, and cap or arch, substantially as set forth.

203,635. PAPER-CARRIERS FOR TELEGRAPHIC STOCK-REPORTERS. Thos. S. McDowell, Davenport, Iowa. Filed Apr. 1, 1878.

Claim.—1. In a stock-reporter, a guide, *b*, for conducting the paper outside of the globe *b*, the said guide being open upon its top, so that the figures

or words upon the paper can be read through the glass from the time the paper leaves the type-wheel down to the opening *g* through the base, substantially as shown.

2. A slide, *b*, for telegraph stock-reporters, having a hinged end, *i*, substantially as set forth.

3. The slide *b*, having the hinged end *i*, brace *j*, and catch *l*, substantially as described.

203,635.



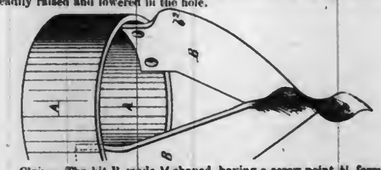
203,636. STEAMERS OR BOILERS FOR FEED. Frank E. Mills and Charlie Olager, Ann Arbor, Mich. Filed Feb. 28, 1878.



Claim.—A submerged furnace provided with crossing inclined pipes F, a portion of them being placed near the bottom of furnace and at a less inclination, to adapt them for use as a grate, and the others are at a greater inclination and elevated, to be in line with the draft, as shown and described.

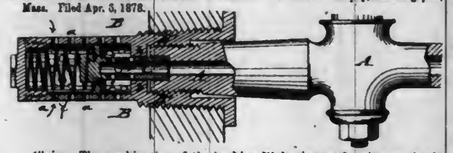
203,637. EARTH-AUGERS. Benjamin F. Mall, Merced, Cal. Filed Mar. 26, 1878.

Brief.—The bit is made V-shaped, with a screw-point to lead it into the earth, and cutting-edges upon its arms or wings, which extend beyond the circumference of the tube to which they are attached, to enable the tube to be readily raised and lowered in the hole.



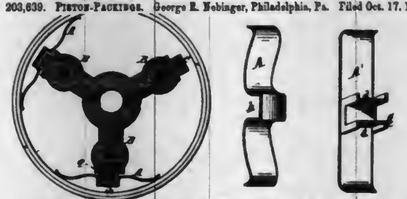
Claim.—The bit B, made V-shaped, having a screw-point, *b'*, formed upon its angle, and having the forward edges *b²* of its arms or wings made sharp, flared, and extended beyond the circumference of the tube A, to which the shanks of the said bit B are attached, substantially as herein shown and described.

203,638. FAUCET-HOLE ATTACHMENTS TO BARRELS. Edward T. Murphy, Cambridgeport, Mass. Filed Apr. 5, 1878.



Claim.—The combination of the bushing B', having perforations *a*, shoulder *b*, and plug at inner end, the spring slide-tube C, having collar *d*, and the faucet A, said tube being guided by shoulder *b* into a socket of the faucet, as shown and described.

203,639. PISTON-PACKINGS. George R. Nebinger, Philadelphia, Pa. Filed Oct. 17, 1877.



Claim.—In combination with the radiating arms B B, the spring A, bowed in the center to form a recess or channel, and adapted to fit over the ends of the said arms, substantially in the manner and for the purpose shown and described.

203,640. CALENDAR-WATCHES. Minor H. Paddock, East Clarkson, N. Y. Filed Oct. 12, 1878.

Claim.—1. The combination of calendar-indexes and arbor-setting devices with the winding mechanism of a time-piece constructed to revolve the arbor in one direction only, for purposes set forth.

2. The combination of an arbor-setting device with the winding-post A', having a ratchet, A'', retained by spring-forced click *x*, or equivalents, substantially as described.

3. The combination of the wheel B, the bar A, and the winding mechanism A', substantially as and for purpose set forth.

4. The lever C, having shoulder *c'*, in combination with spring S, acting as a detent, and having arm *a*, in combination with wheel B, acting as a release, or their equivalents, substantially as described.

5. The combination of the arbor-setting devices A and B, or their equivalents, with the calendar-lever C, substantially as described.

6. The arbor device A, in combination with the calendar-lever C, substantially as and for purpose set forth.

7. The lever C, having arm *c*, pawls *d* and *d'*, shoulder *c'*, and arm *a*, or their equivalents, substantially as and for purpose set forth.

8. In the arbor-setting devices of a combined calendar and time-piece, the wheel B, or equivalent, having its circumference divided proportionally in number to the ends of the device A, or equivalent, and arranged in its daily revolution by A to bring once in twenty-four hours the point *b* into co-operation with calendar devices for the setting of the calendar, substantially as described.

9. The combination of wheel B, lever C, and detent S, substantially as and for purpose set forth.

10. The combination of arbor-setting devices and the daily-acting calendar-lever C with skipping device E, or equivalent, substantially as described.

11. The lever R, or its equivalent, in combination with skip-regulator E, and having working face *a a'*, in combination with *f*, or equivalent, substantially as and for the purpose set forth.

12. The wheel E, having cogs on its circumference, whereby, by action of R or equivalent, to revolve once a year, having its circumference arranged to act as a limit to the daily movement of lever C, or equivalent, for setting the calendar, and provided with slots for increasing the scope of said lever in effecting skips at end of short months, substantially as set forth.

13. The wheel E, or its equivalent, having slot 1 and shoulder 1', for purpose set forth.

14. The lever C, in combination with spring S and shoulder 1' of wheel E, substantially as described.

15. The combination of lever C with calendar index-wheels D and F, lever R, and wheel E, or its equivalent, substantially as described.

16. The combination of lever C, index-wheels D F, lever R, and wheel E with the arbor-setting devices B A, the spring and detent S, and the winding-stem A', substantially as described.

17. The lever R, having arm *r'*, in combination with F, having tooth *f*, or equivalent, substantially as described.

203,640.

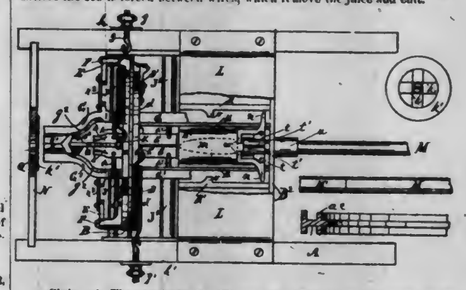


203,641. ART OF CUTTING PRECIOUS STONES SHELLS, &c. Theodore Potter, New York, N. Y. Filed Mar. 18, 1878.

Claim.—The improvement in the art of cutting or engraving stones, shells, and the like, shown and described, which consists in the combination of the cameo and the intaglio, so as to form a cameo-intaglio in one specimen.

203,642. GREEN-CORN CUTTERS. Jas. T. Polk, Greenwood, and Oliver H. Castle, Indianapolis, Ind.; said Castle assignor to said Polk. Filed Mar. 2, 1878.

Brief.—V-shaped cutters are attached to arms pivoted to the rear frame. Said cutters are operated radially from a central line by means of bell-crank levers and links attached to a ring, adapted to partially rotate in a flange, which is provided with friction-rollers. A lever projects above the ring, upon which a spring operates to press the cutters against the cob. Said lever also permits the cutters to be opened. The depth of the cut is regulated by the cutter-frames, which are also provided with knife-edges. After leaving the cutters the cob is forced between wires, which remove the juice and chit.



Claim.—1. The end frame B, with grooved rollers D and bell-crank levers E E', combined with the annular ring C and links *r r r r*, in the manner and for the purpose substantially as shown and described.

2. The end frame B, with grooved rollers D, bell-crank levers E E', combined with the annular ring C, links *r r r r*, and links *r² r² r² r²*, and cutter frames G G' H H, in the manner and for the purpose substantially as shown and described.

3. The cutter-frames H H, with curved cutters o' o', having V-shaped cutting-edges, combined with the links r^1 r^1, the levers E' E', the links r r, and annular ring C, in the manner and for the purpose substantially as shown and described.

4. The cutter-frames G G', with curved cutters a a^1, having V-shaped cutting-edges, combined with the links r^2 r^2, the bell-crank levers E E, the annular ring C, the links r r, the lever k, and the spring d, in the manner and for the purpose substantially as shown and described.

5. The annular ring C, with lever K and spring d, combined with the frame B, in the manner and for the purpose substantially as shown and described.

6. The annular ring C', with lever K' and spring d', combined with the frame B and annular ring C, in the manner and for the purpose substantially as shown and described.

7. The annular ring C, with links r^3 r^3, combined with the levers E' E' and frame H, in the manner and for the purpose substantially as shown and described.

8. The annular ring C', with links r^3 r^3, combined with the bell-crank levers E' E', the frame B, and the horizontal adjustable corn-guides S S, in the manner and for the purpose substantially as shown and described.

9. The horizontal adjustable corn-slides S S, with guides p p p' p', and flexible guides s h, combined with the guide-slides J J J' J', in the manner and for the purpose substantially as shown and described.

10. The movable spring friction-clamps t t', with hinges t t and hook-levers w s, combined with the piston-rod M M' and stop-bars R R', in the manner and for the purpose substantially as shown and described.

11. The piston-rod M, with wooden end M', adapted to force the ear of corn from the hopper L' through the adjustable guides S S and the curved cutters o o^1 o^2 o^3, with V-shaped cutting-edges, in the manner and for the purpose substantially as shown and described.

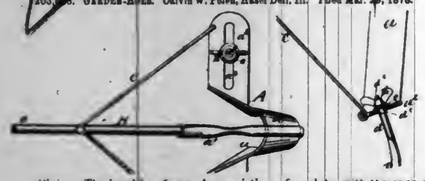
12. The wire scrapers attached to the end board N, and adapted to remove the juice and chit from the cob, when said cob is forced through between them by the piston M M', in the manner and for the purpose substantially as shown and described.

13. The V-shaped corn-guides S S, having a positive connection with the annular ring C and a simultaneous movement laterally from a center line common to each other and to the curved cutters o o^1 o^2 o^3, in the manner and for the purpose substantially as shown and described.

14. The circular cutters o o^1 o^2 o^3, with V-shaped cutting-edges, having a positive connection with the ring C, and a simultaneous movement laterally and vertically from a common center, in the manner and for the purpose substantially as shown and described.

15. The cutter-frames G G' H H, with knife-edges g^2 g^2, adapted to act as guides to the corn while it is passing from the flexible guides s s into the cutters o o^1 o^2 o^3, and to regulate the depth of cut of the cutters, in the manner and for the purpose substantially as shown and described.

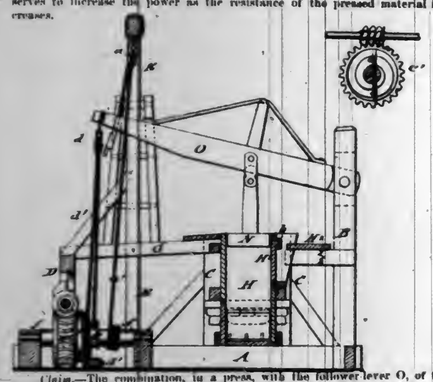
203,643. GARDEN-HOES. Calvin W. Poles, Hazel Dell, Ill. Filed Mar. 29, 1878.



Claim.—The hand-bar frame A, consisting of a plate, with the open arch a, the socket a', and the horizontal slotted arms a^2 a^2, in combination with handle B, braces C, and hoes D, substantially as shown and described.

203,644. COTTON-PRESSES. Sampson Pope, Williamsburg, Miss., assignor to himself and John M. Sims, same place. Filed Mar. 8, 1878.

Brief.—The tapering spiral groove on the wheel turning the winding-shaft serves to increase the power as the resistance of the pressed material increases.



Claim.—The combination, in a press, with the follower-lever O, of the flexibly-suspended pulleys a d, ropes a' d', and spirally-grooved pulley c on the windlass, as and for the purpose specified.

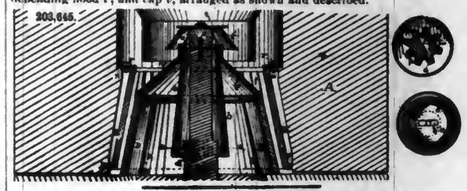
203,645. GRINDING-MILLS. James W. Price, Michigantown, Ind. Filed Feb. 19, 1878.

Claim.—1. The tubular shaped driver b, having a slot, b', in its upper end, and the upwardly-projecting lugs c, embracing the bridge, and its lower end provided with inwardly-projecting cogs d, which engage with the spindle, in combination with a runner-stone balanced on the spindle by a bridge, as shown and described.

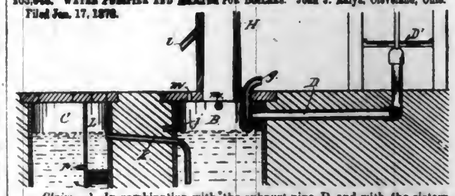
2. The annular iron casing, provided at its lower part with an inwardly-projecting ledge, having set-screws r, and secured in the runner-stone from the upper side, in combination with the eye-grinder E, having at the top an outwardly-turned flange for adjustment by the set-screws, and the bottom face p, which fits in a corresponding part in the stone, as shown and described, and for the purpose specified.

3. In combination with the funnel and the grinding-cone, the plate t, depending hood t', and cap v, arranged as shown and described.

203,646.



203,646. WATER PURIFIER AND HEATER FOR BOILERS. John J. Raiya, Cleveland, Ohio. Filed Jan. 17, 1878.



Claim.—1. In combination with the exhaust-pipe D and with the cistern B, the cold-air tube g, leading from the outer air into the exhaust-pipe near its exit end, and terminating at a point above its mouth and above the surface of the water in said cistern, substantially as and for the purpose described.

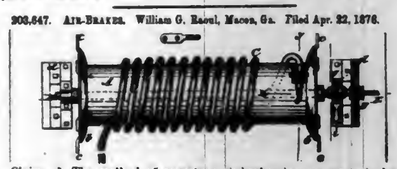
2. In combination, the exhaust-pipe D, the cistern B, and the exhaust chimney or pipe H above the latter, and cold-air inlets l or m, or both, substantially as and for the purpose described.

3. In combination, the exhaust-pipe D, cistern B, chimney H, overflow pipe or opening j, pipe k, and filter L, substantially as and for the purpose described.

4. In combination, the exhaust-pipe D, cisterns B and C, chimney H, the connecting-pipe k, and filter L, substantially as and for the purpose described.

5. The combination, with the exhaust-pipe and water-showering pipe, and with the tank or cistern B, substantially as described, of the overflow-pipe j, the operation being such that the exhaust-steam of a boiler is condensed, and also serves to heat the water, as also to purify the same water for the supply of the boiler, and the combination serving to separate and to discharge the impurities therefrom.

203,647. AIR-BRAKES. William G. Raoul, Macon, Ga. Filed Apr. 22, 1878.

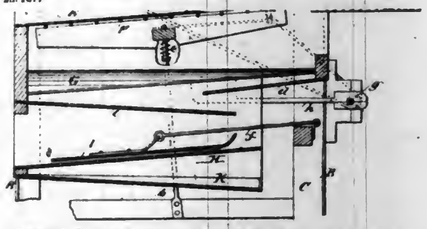


Claim.—1. The method of operating air-brakes in a mixed train by the employment of hose to conduct air over, through, or by such cars as are not provided with air-brake apparatus, substantially as herein shown and described.

2. The cylinder A, mounted in suitable supports, and having a hollow journal, which is in communication with the air-supply pipe of the breaking apparatus and with the hose wound upon the cylinder, substantially as herein shown and described.

3. The cylinder A, having the hollow journal and pipe c, the hose C, steel pipe E, and coupling D, in combination, substantially as shown and described.

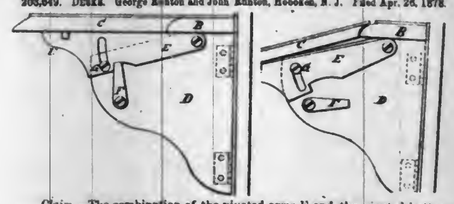
203,648. GRAIN-SEPARATORS. Wm. M. Redd and E. M. Sanford, Dunleith, Ill. Filed June 25, 1877.



Claim.—1. The combination, with screen H, of the cover l, suspended over said screen by a pivot-connection with rod f, to hold the grains flat on the screen, as and for the purpose specified.

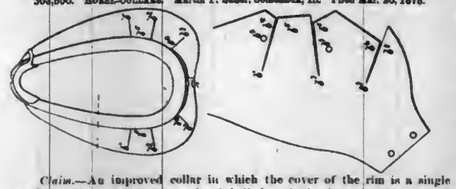
2. The combination of the swing bars b and springs c with the grating F, substantially as shown and described.

203,649. DESKS. George Renton and John Renton, Hoboken, N. J. Filed Apr. 26, 1878.



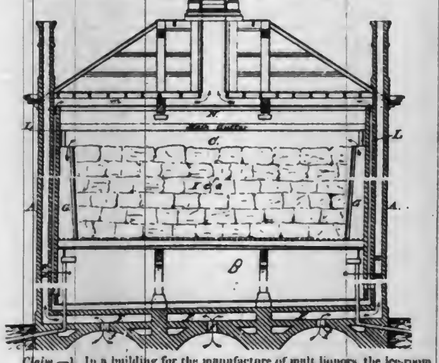
Claim.—The combination of the pivoted arms E and the pivoted buttons F with the hinged brackets D, the stationary top B, and the hinged leaf C, substantially as herein shown and described.

203,650. HORSE-COLLARS. Martin F. Sauer, Somonauk, Ill. Filed Mar. 20, 1878.



Claim.—An improved collar in which the cover of the rim is a single piece of leather, and the cover of each belly is a single piece of leather, having the slits b^1 b^2 formed in its outer or forward edge, and in which the overlapping strips b^1 b^2 are held together, and the belly and rim covers at the lower end of the collar are held together and strengthened by rivets, substantially as herein shown and described.

203,651. ICE-HOUSES. John Schneider, Indianapolis, Ind. Filed Jan. 3, 1878.



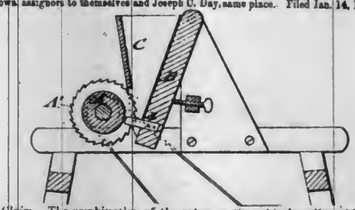
Claim.—1. In a building for the manufacture of malt liquors, the ice-room C, provided with flues G G', having dampers or valves d g in the body of the flues and dampers h i in the sides of the flues, all constructed and arranged as shown, and for the purpose specified.

2. In a building for the manufacture of malt liquors, the combination of the fermenting-room B with the ice-room C, provided with flues G G' and dampers h i in the sides of the flues, having dampers d g in the body of the flues, all constructed and arranged as shown, and for the purpose described.

3. In a building for the manufacture of malt liquors, the wooden troughs l, in combination with the gutters H, pipes k, main gutters I, and spouts K, constructed and arranged substantially as shown, and for the purpose set forth.

4. In a building for the manufacture of malt liquors, the fermenting-room B and ice-room C, having the flue E, provided with suitable ducts and dampers, and made interchangeable with the space or flue L, provided with ducts m, and connected to ventilator M, all constructed and arranged as shown and herein specified.

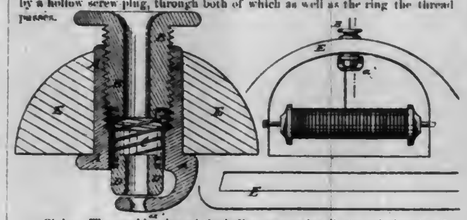
203,652. OATMEAL-MACHINES. Frederick Schramling, Sr., and Eugene S. Day, Sabula, Iowa, assignors to themselves and Joseph C. Day, same place. Filed Jan. 14, 1878.



Claim.—The combination of the rotary cutters A', the adjustable pivoted plate B, having concave teeth d set below the axis of the cutters, and the hopper C, to cut and hull the grains at one operation, in the manner specified.

203,653. LOOM-SHUTTLES. Charles J. Schurbeck and Charles A. Stevenson, New York, N. Y. Filed Feb. 6, 1878.

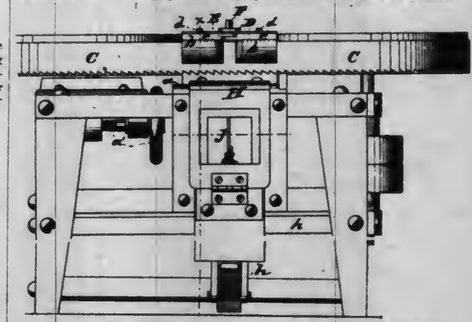
Brief.—The tension on the thread is obtained by passing it between the notched head of the eye of the shuttle and the ring, and then through the ring. The pressure on the thread is created by a spiral spring and regulated by a hollow screw-plug, through both of which as well as the ring the thread passes.



Claim.—The combination of the hollow screw-plug B, the spiral spring C, and the ring D with the eye of a shuttle provided with a notched head, a', substantially as herein shown and described.

233,654. STAVE-JOINTING MACHINES. John A. Seaman, Chicago, Ill. Filed Mar. 18, 1878.

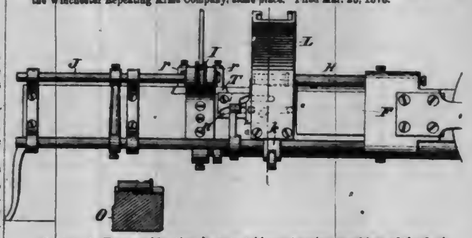
Brief.—The staves are fed to an endless band-saw, which is guided and curved by guide-blocks, by means of a vertically-sliding feed-table actuated by a foot-lever. The bilge produced is proportionate to the width of the staves.



Claim.—1. In a stave-jointing machine, the former D, consisting of the jaws b b, the plate c c, the pivots d d, the pin F, and the cap E, in combination with the endless saw C, the whole being arranged and constructed in the manner set forth, and for the purpose specified.

2. In a stave-jointer, the combination of the saw C, the former D, the pin F, the arm K, with the vertical lever J, the arm L, the adjustable guide-bar H, and the feed-table a, connected and operating in the manner set forth, and for the purpose specified.

203,655. CARTRIDGE-TRIMMING MACHINES. Asa Sessions, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Mar. 23, 1878.



Claim.—1. The combination, in a cartridge-trimming machine, of the feeding-chute L, provided with the stop k, the carrier O, and rotating chuck I, with the reciprocating punches H and J, all arranged to operate substantially as described.

2. The combination of the rotating shell-holder or chuck I, the carrier O, arranged to move in line with the opening of the chuck, and the reciprocating rods J and H, all arranged to operate substantially as described.

3. In combination with the rotating chuck I, the transversely-moving slide T, provided with suitable tool-holders r r, whereby the shells may be automatically trimmed at both ends simultaneously, substantially as described.

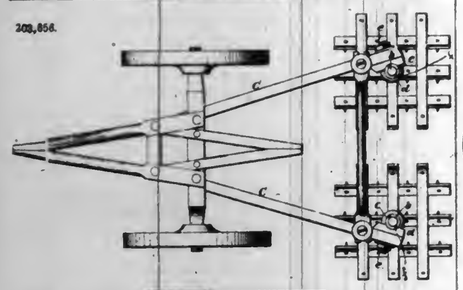
4. In a cartridge-trimming machine, the carrier O, provided with the ledge V, arranged to receive a shell from the chute L, and carry it in a straight line to the chuck I, and after the end of the shell has entered the chuck drop by gravity and allow the shell to be pushed into the chuck, as set forth.

203,656. WHEEL-CULTIVATORS. Chas. Sexton, Janesville, Wis. Filed Aug. 20, 1877.

Brief.—The upright shafts are secured in tubular bearings and set at a slight angle, the tops being inclined outward, to enable the harrows to work uniformly on opposite sides of a ridge.

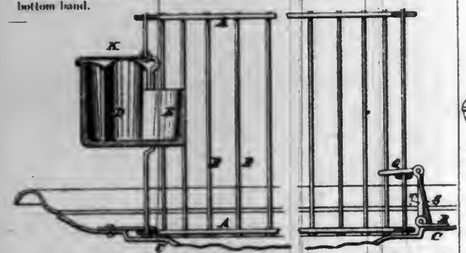
Claim.—The combination of tubular bearings c c, secured to shovel-bars C C by clasps d d, shanks, and nuts e e, with shafts b b, the several parts being arranged and constructed as and for the purposes set forth.

203,856.



203,857. BIRD-CAGES. Geo. Seyfang, Buffalo, N. Y., assignor to Geo. N. Pierce, same place. Filed Apr. 5, 1878.

Brief.—The hook for fastening upright part to bottom may be of cast-iron. The projections may be dispensed with, and the food-cup made to rest on the bottom band.



Claim.—1. The combination, with the base C and body A B, of the self-locking hook herein described, consisting, essentially, of the hook proper, Q, hinged to the part R, and the flap S, pivoted to said hook Q, and arranged to operate in conjunction therewith, substantially in the manner as and for the purpose specified.

2. The combination, with the filling-wires B, having the enlargements G and the projections I, of the cup D, provided with the projection E, having the notched lugs F' F', as and for the object stated.

3. In a bird-cage, a flap having a projecting ledge arranged to engage the food-cup D, said flap being pivoted to the bars J J of the filling-wires B B, and arranged to automatically close the space for the food-cups, as and for the purpose specified.

4. In a bird-cage, a flap, K, pivoted to the cage-body above the food-cup opening, and provided with a downwardly-bent projection or ledge engaging the upper edge of said cup, substantially in the manner and for the use and purpose specified.

203,858. BOLTS. Wm. C. Shipherd, Cleveland, Ohio. Filed Oct. 29, 1877.

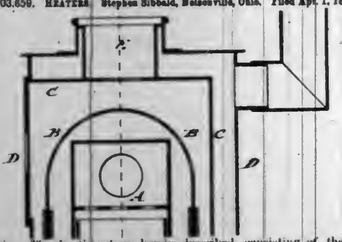


Claim.—1. A bolt having a tapered stem or shaft formed throughout its entire bearing length, in combination with a packing which extends along the said bearing surface, substantially as described.

2. A bolt having a conical stem throughout its entire bearing length, and provided with a packing, the exterior surface of which latter is cylindrical, and extends along the stem, in combination with suitable means, as described, for forcing the said packing against the surface of the bolt and the interior of the hub or eye bearing thereon, substantially as described.

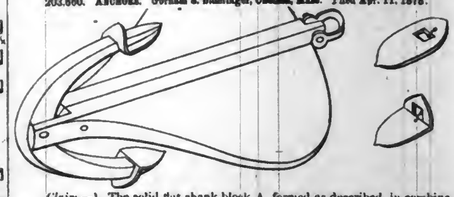
3. The combination, with a cylindrically-bored hub or eye, of a bolt having its entire bearing-surface made singly conical, a packing which is cylindrical and surrounds the said conical bearing, and a common nut or its equivalent, substantially as described.

203,859. HEATERS. Stephen Sibbald, Nelsonville, Ohio. Filed Apr. 1, 1878.



Claim.—The heating-stove herein described, consisting of the interior fire-place A, the arched and perforated distributing-diaphragm B, extending over the same, the inner wall C, outer wall D, and casing E, all constructed and relatively arranged as herein set forth, for the purpose specified.

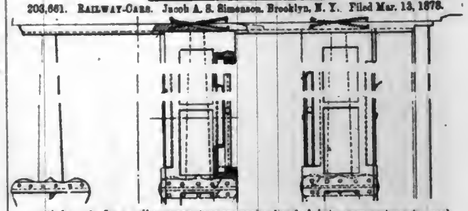
203,860. ANCHORS. Gorham S. Sidelinger, Chelsea, Mass. Filed Apr. 11, 1878.



Claim.—1. The solid flat shank-block A, formed as described, in combination with the fluke or flukes, as set forth.

2. The solid flat shank-block A, formed as described, and divided longitudinally into two parts, detachably connected, in combination with the fluke or flukes, as set forth.

203,861. RAILWAY-CARS. Jacob A. S. Simeson, Brooklyn, N. Y. Filed Mar. 13, 1878.



Claim.—1. In a railway-car transversely divided into compartments, and having the sides of said compartments composed of sliding doors, the construction and arrangement of the sliding doors of two adjacent compartments, to slide one within and one outside of the other, substantially as herein described.

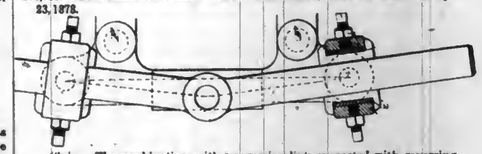
2. The combination, in a railway-car transversely divided into compartments, of sliding doors for closing the said compartments at the sides of the car, latches or fastenings for securing the said doors when closed, and springs for opening the said doors automatically when the catches or fastenings are released, substantially as herein described.

3. In combination with the sliding doors, the movable pieces *f f*, applied to the edges of the said doors, substantially as described, to serve as a means of closing the said doors and of widening the opening thereof, as herein set forth.

4. The combination, with two sliding railway-car doors, arranged to slide one inside and one outside the other, of a slide-connection, *i j*, between the said doors, at a distance from the top and bottom thereof, substantially as and for the purpose herein set forth.

5. The combination, with the sliding door and framing or body of a railway-car, of a sliding connection, *g h*, between the said door and framing or body, at a distance from the top and bottom of the said door, substantially as and for the purpose herein set forth.

203,862. VALVE-GEARS FOR STEAM-ENGINES. Chas. A. Smith, Columbus, Ohio. Filed Apr. 23, 1878.



Claim.—The combination, with a reversing-link connected with reversing mechanism, of an angle-bar, constructed as described, connected with the valve-operating mechanism, and arranged to operate substantially as and for the purpose herein set forth.

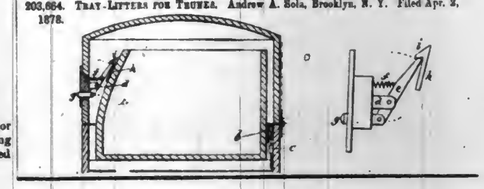
203,863. MOQUETTE CARPETS. Alexander Smith and Halcyon Skinner, Yonkers, N. Y.; said Skinner assignor to said Smith. Filed Dec. 21, 1877.

Brief.—Nearly straight lines of warp-threads bind the fine filling-threads and the tufts to the coarse filling, and divide the latter, the upper part being held in a raised position between the rows of tufts, whereby the latter are kept erect.



Claim.—The improved moquette carpet, substantially as before set forth, composed of rows of tufting material, fine filling, coarse filling, binder warp-threads, and dividing warp-threads, combined and arranged as before set forth, with the fine filling inserted between the divider warp-threads, and also with the coarse filling divided into two portions, one of which is above the divider warp-threads and the other of which is beneath the same.

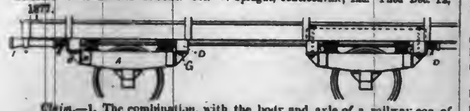
203,864. TRAY-LIFTERS FOR TRUNKS. Andrew A. Sola, Brooklyn, N. Y. Filed Apr. 2, 1878.



Claim.—1. The tray-lifter consisting of the plate C, having ears *d*, the lever *e*, spring *f*, and push-pin *g*, substantially as shown and described.

2. In a trunk, the tray provided with the plate *h*, having the nib *i*, in combination with the spring-acted catch-lever *e*, attached to the body of the trunk, substantially as and for the purpose specified.

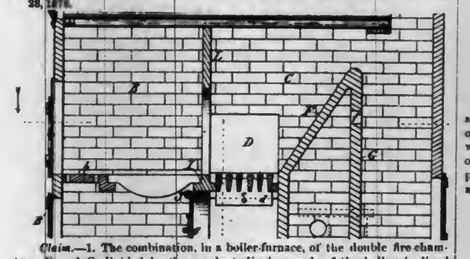
203,865. FREIGHT-CAR TRUCKS. Jos. W. Sprague, Jeffersonville, Ind. Filed Dec. 12, 1877.



Claim.—1. The combination, with the body and axle of a railway-car, of transoms D D, wheel-pieces A A, and springs S S, as and for the purpose described.

2. The transoms D D and wheel-pieces A A, provided with the guides C and slides B, whereby the pieces A A are permitted to have a restricted rotary movement on their axes independent of the car-body, while they are not allowed to have any independent lateral or horizontal movement, as and for the purpose described.

203,866. FURNACES. Patrick J. Stanton and Joseph Hutchinson, Chicago, Ill. Filed Jan. 28, 1878.

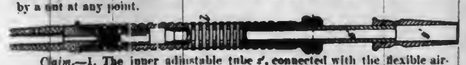


Claim.—1. The combination, in a boiler-furnace, of the double fire-chambers B and C, divided by the pendent diaphragm L of the hollow inclined bridge-wall F, whereby the products of combustion from the front fire is made to dive and deflect against the boiler from the rear fire-place by the bridge-wall, substantially as described.

2. In a boiler-furnace, the combination of the double fire-chamber B C, perforated plate *b*, diaphragm L, bridge-wall F, and the damper J, whereby the quantity of air to the rear fire-place is controlled, in the manner set forth.

203,867. DENTAL PLUGGERS. Julius M. Stebbins, New York, N. Y. Filed Mar. 6, 1878.

Brief.—The air-tube adjusts in a tubular handle, and thus serves to limit the length of the stroke. The outer tube has its end split, and is thus secured by a nut at any point.



Claim.—1. The inner adjustable tube *s'*, connected with the flexible air-tube, and combined with the tubular handle and the mallet, for the purpose of defining the length of the stroke, substantially as described.

2. The nut *n'*, in combination with the split and conically-threaded end of the tubular handle *t'*, and the adjustable tube *s'*, substantially as described.

203,868. COLTERS. Chas. E. Steller, Milwaukee, Wis. Filed Jan. 26, 1878.

Brief.—The colter-shank has two sets of grooves on each side, of varying widths. A block with a tooth to fit each set of grooves adjusts the pitch of the shank. Colter-yoke in two parts, each having a cap and stud, which meet in the colter and form its axle.

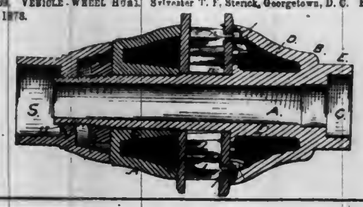


Claim.—1. In rotary caster-colters for plows, the shank C, provided with adjusting-grooves D and E on each of its sides, substantially as and for the purpose specified.

2. The block H, provided with lugs F and G, in combination with the shank C, substantially as and for the purpose specified.

3. The yoke M, constructed in two parts, provided with caps Q, studs S, one of which having its end countersunk, and the other pointed to fit therein, and socket I, for the reception of the shoulder K, in combination with the colter-wheel O and shank C, as secured together by bolt N, all substantially as and for the purpose specified.

203,869. VEHICLE-WHEEL HUBS. Sylvester T. F. Sterick, Georgetown, D. C. Filed Apr. 12, 1878.



Claim.—1. In a metallic hub for vehicle-wheels, the small pointed projections H', situated on the face of disk H, and between the periphery of said disk and projections or lugs L L, substantially as described, and for the purpose set forth.

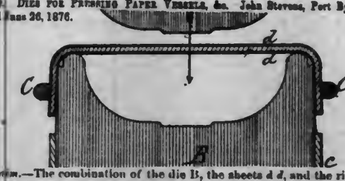
2. In a metallic hub for vehicle-wheels, the spring-pawl S', constructed of spring-wire coiled around screw S', so that end S' will bear against the inner side of cap S, and cause end S' to operate in a ratchet, A', on the end of axle-box A, substantially as described, and for the purpose set forth.

3. In a metallic hub for vehicle-wheels, the small pointed projections H', situated on the face of disk H, and between the periphery of said disk and lugs L L, in combination with disk K and lugs L L, substantially as described, and for the purpose set forth.

4. In a metallic hub for vehicle-wheels, the pointed projections H', in combination with a disk, H, having small holes to permit the passage of projections or lugs L L, substantially as described, and for the purpose set forth.

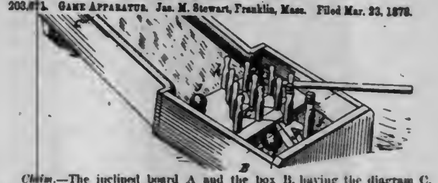
5. In a metallic hub for vehicle-wheels, the axle-box A, ratchet A', cap S, cap P, nut and hub-band S, pawl S', nut R, disks K and H, and projections H', all in combination, substantially as specified.

203,870. DIES FOR PRESSING PAPER VESSELS, &c. John Stevens, Port Byron, N. Y. Filed June 26, 1876.



Claim.—The combination of the die B, the sheets *d d*, and the ring C, the said sheets inclosing the pasteboard between them and resting over the edges of the lower half of the die, and being held loosely thereto by the ring, the whole arranged as described, so that as pressure is applied by the upper half of the die the ring will produce sufficient tension upon the sheets to prevent puckering or wrinkling, but will relax sufficiently to prevent strain or tearing, as herein specified.

203,871. GAME APPARATUS. Jas. M. Stewart, Franklin, Mass. Filed Mar. 23, 1878.



Claim.—The inclined board A and the box B, having the diagram C, recesses *e f*, and elevated triangular piece *g*, in combination, for playing a game with pins and balls, as herein shown and described.

203,872. COMBINED NOZZLE AND TAP. P. S. Swain, New York, N. Y. Filed Apr. 2, 1878.

Brief.—A lip may be formed on end of sliding nozzle in place of escheppiece. The nozzle may be secured to the disk at right angles.



Claim.—1. A disk having an open-ended slotted tube secured thereto, said tube provided with a port located in close proximity to said disk, in combination with a sliding nozzle having a closed inner end, a port located near its inner or lower end, and a pin or projection which enters and engages the slot in the stationary tube, substantially as set forth.

2. The combination, with a disk formed with a cup-shaped center, and provided with a slotted tube, of a sliding nozzle having a side discharge-port, and a pin or projection that engages with the slot in the stationary tube, substantially as set forth.

3. In a tap for oil-cans, the combination, with a disk provided with an open-ended slotted tube having a port located in close proximity to said disk, of a sliding nozzle having a closed inner end, a port located near its inner or lower end, a slotted lining of leather or equivalent material placed within the slotted tube, and a pin or projection attached to the sliding tube, which engages the slot in the stationary slotted tube, substantially as set forth.

203,873. LASTING-MACHINES. Henry G. Thompson, Milford, Conn. Filed Nov. 6, 1877.

Claim.—1. Crimping jaws or pullers to draw over and plait in the uppers of boots and shoes, in combination with an adjusting-lever and locking devices for elevating and depressing the jaws and locking the same fast at any desired position.

2. In combination, the crimping jaws or pullers, the pivoted supporting-plate and its carrying-slide, a lever to adjust the jaws and plate vertically, and locking devices to hold them in adjusted position, substantially as set forth.

3. The crimping jaws or pullers and supporting-plate, pivoted at its inner end, in combination with an adjusting device or screw to turn the plate on its pivot to adjust the jaws or pullers to conform to the shape of the last.

4. In combination, crimping jaws or pullers to draw over and plait in the uppers of boots and shoes, the supporting-plate, pivoted at its inner end, the set-screw or equivalent to adjust the outer end of the plate to give to the pullers any desired elevation or depression requisite to conform the same to the shape of the last, and devices to adjust the position of the jaws vertically and laterally.

5. The combination, in a lasting-machine, of the following instrumentalities, viz: an adjustable, pivoted supporting-plate, crimping-jaws, mechanism to reciprocate the jaws longitudinally and to close them as they move forward, and an adjusting lever adapted to be operated to press the forwardly-moving jaws down upon the upper, so that the pullers bear with a yielding pressure upon the upper while the tacks are being driven, substantially as described.

6. The combination, with the head *h* of the machine, adapted to be supported on a swiveling jack, of shank-lasting mechanism, substantially as described, and mechanism to move all of such shank-lasting mechanism independently with relation to the toe and heel lasting devices, to adapt the shank-lasting mechanism to shoes of different sizes.

7. In a lasting-machine, the head, arms 11, shank-lasting fingers, and springs to bear upon the sides of the upper, in combination with mechanism to simultaneously adjust the arms and their fingers and springs vertically and longitudinally with relation to the head and the height and length of the last, substantially as described.

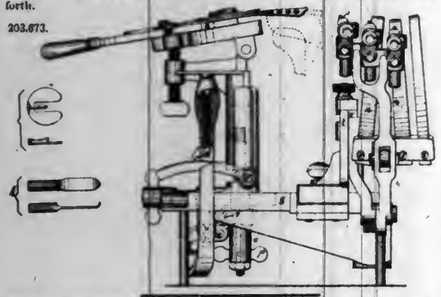
8. In a lasting-machine provided with shank-lasting mechanism, the combination, with the head carrying such shank-lasting mechanism, of a horizontally-movable frame, a vertically-movable slide, and devices to move and adjust such frame and slide horizontally and vertically, to simultaneously place the shoe and the shank-lasting mechanism in operative position, according to the size of the shoe.

9. In combination, the finger-carrying slide, the arms and fingers, and link and lever, to close and open the arms, to operate substantially as described.

10. The jaws curved downward from their fulcra to their points or ends, in order that when pressed down upon the shoe by the adjusting-lever the jaws will yield to permit the entire inner curved portion of both jaws to act with a yielding pressure while they draw over and fit the upper to the configuration of the last.

11. Crimping jaws or pullers made entirely of sheet spring-steel, and curved, as described, from their front ends to their fulcra, to adapt themselves to the folded-over edges of the upper at the toe and heel of the last, as set forth.

203,673.



203,674. COMPOSITIONS FOR PROTECTING TREES. Benj. J. Timby, Ridgeway, N. Y., assignor to himself and David P. Hooker, same place. Filed Feb. 4, 1878.

Claim.—A compound for invigorating trees and protecting them from insects, formed of sulphur, wood-soot, and balm-of-Gilead buds, in the proportions substantially as herein set forth and described.

203,675. MANUFACTURE OF SLEIGH-BELLS. George W. Tucker, Waterbury, Conn. Filed Jan. 21, 1878.



Claim.—The method herein specified of making sheet-metal sleigh-bells, consisting in cutting out the blank in an oval or pointed form, as shown, pressing the same into a cup shape, and at the same operation drawing the metal at the junction of the points or lips to form the base of the slots, and then bending the points or lips toward each other, so as to leave a slot or cross-slot in the face, as set forth.

203,676. SLEEVE-PROTECTORS. Joseph S. Vanhorn, New York, N. Y., assignor to William H. Woglom, same place. Filed Mar. 28, 1878.





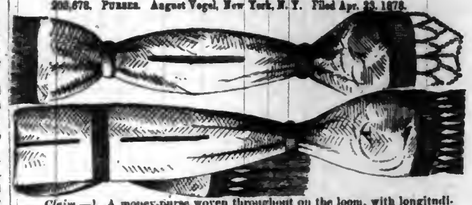
Claim.—As a new article of manufacture, the self-adjusting cuff or sleeve protector, consisting of the cuff A, provided with the elastic band B and fastening devices *c c*, constructed and arranged substantially as described.

203,677. SHOES. William Gray Viall, North Adams, Mass. Filed Mar. 26, 1878.



Claim.—A shoe-upper which is made in two pieces, the vamps A being cut in one piece with the tongue a^1, and with rearwardly-projecting points a^2, and the quarters being cut in one piece, with deep side slits b^1 to receive the points a^2 of the vamps A, substantially as herein shown and described.

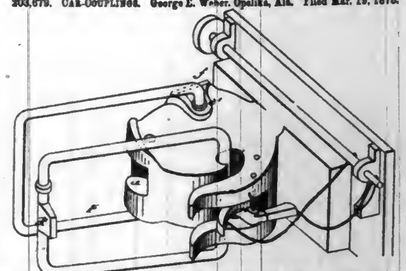
203,678. PURSES. August Vogel, New York, N. Y. Filed Apr. 23, 1878.



Claim.—1. A money-purse woven throughout on the loom, with longitudinal center slit or opening and transverse closing end bars, substantially as shown and described.

2. A money-purse woven throughout on the loom, with a longitudinal center slit or opening, with transverse closing end bars, and with a center partition transversely to the slit or opening, substantially as and for the purpose set forth.

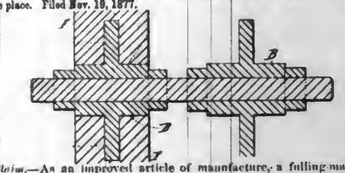
203,679. CAR-COUPLINGS. George E. Weber, Opelika, Ala. Filed Mar. 19, 1878.



Claim.—1. The combination, with a solid draw-head, having a socket-recess with interior cushions, of a permanent coupling-link, having central projection, of retaining wedge-pieces, and of a socket-closing plate, substantially as and for the purpose described.

2. The combination of a solid draw-head, having hook-shaped side recess, with a horizontal extension, with a vertical coupling-link, and with a locking spring hook and a releasing hook, which are both fulcrumed to the horns of the draw-head, and simultaneously actuated by uncoupling mechanism to uncouple the link, substantially as set forth.

203,680. FULLING-ROLLS. Charles C. Webber, Holyoke, Mass., assignor to Joel S. Webber, same place. Filed Nov. 19, 1877.



Claim.—As an improved article of manufacture, a fulling-machine roll composed of the metallic spider B and molded roll part F, substantially as shown and described, and for the purposes set forth.

203,681. SALTING AND CURING MEATS. J. J. Wheat, Indianapolis, Ind. Filed Mar. 26, 1878.

Brief.—Places the cooled meat in a strong metallic receptacle, and admits brine under pressure of sixty to one hundred pounds, preferably seventy-five. This is maintained from two to five hours, then reduced to twenty pounds for several hours, again increased to the former pressure, and alternated until the meat is salted. Discloses vacuum and pressure, as causing extraction of nutritious matters from the meat.



Claim.—The process of treating meat herein described—that is, subjecting it to the action of an impregnating fluid under a pressure alternately increased and reduced, but never below atmospheric pressure, as and for the purpose set forth.

203,682. PROCESSES FOR PRESERVING MEATS. J. J. Wheat, Indianapolis, Ind. Filed Mar. 2, 1878.



Claim.—1. As an improvement in treating meats, immersing the meat immediately after killing, and while retaining its animal heat, in an impregnating fluid at a temperature approximating the natural temperature of the blood of the living animal, and subjecting it to the action thereof until cured, as set forth.

2. The within-described process of treating meats—that is to say, immersing them while they retain the animal heat in an impregnating solution at a temperature of from 90° to 120° Fahrenheit, and subjecting the same to a pressure of from sixty to one hundred pounds to the square inch from the time of immersion until impregnated, as set forth.

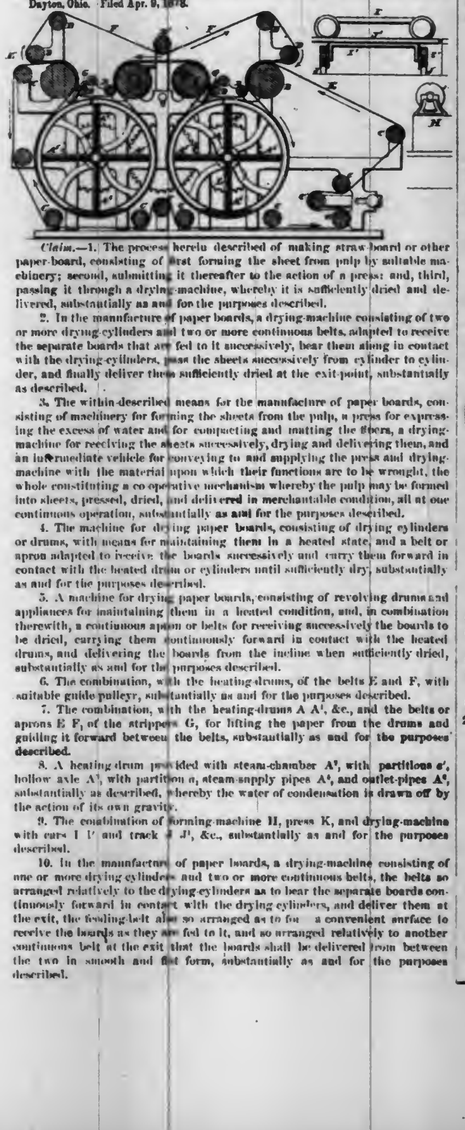
203,683. SPINNING-RINGS. Franklin H. Wheat, Lowell, Mass. Filed Apr. 16, 1878.

Brief.—An annulus is placed within the ring proper, and projects slightly above the same. The tension of the thread between the traveler and bobbin is equalized by passing over the upper surface of said annulus.



Claim.—A spinning-ring and traveler, in combination with a tension-annulus placed within and adapted to move with the ring, to operate upon the fully-twisted thread between the traveler and bobbin, substantially as described.

203,684. MACHINERY FOR MAKING PAPER BOARDS. Charles Wheelen and Lewis Knerr, Jr., Dayton, Ohio. Filed Apr. 9, 1878.



Claim.—1. The process herein described of making straw-board or other paper-board, consisting of first forming the sheet from pulp by suitable machinery; second, submitting it thereafter to the action of a press; and, third, passing it through a drying-machine, whereby it is sufficiently dried and delivered, substantially as and for the purposes described.

2. In the manufacture of paper boards, a drying-machine consisting of two or more drying-cylinders and two or more continuous belts, adapted to receive the separate boards that are fed to it successively, bear them along in contact with the drying-cylinders, pass the sheets successively from cylinder to cylinder, and finally deliver them sufficiently dried at the exit-point, substantially as described.

3. The within-described means for the manufacture of paper boards, consisting of machinery for forming the sheets from the pulp, a press for expressing the excess of water and for compacting and matting the fibers, a drying-machine for receiving the sheets successively, drying and delivering them, and an intermediate vehicle for conveying to and supplying the press and drying-machine with the material upon which their functions are to be wrought, the whole constituting a co-operative mechanism whereby the pulp may be formed into sheets, pressed, dried, and delivered in merchantable condition, all at one continuous operation, substantially as and for the purposes described.

4. The machine for drying paper boards, consisting of drying cylinders or drums, with means for maintaining them in a heated state, and a belt or apron adapted to receive the boards successively and carry them forward in contact with the heated drum or cylinders until sufficiently dry, substantially as and for the purposes described.

5. A machine for drying paper boards, consisting of revolving drums and appliances for maintaining them in a heated condition, and, in combination therewith, a continuous apron or belts for receiving successively the boards to be dried, carrying them continuously forward in contact with the heated drums, and delivering the boards from the incline when sufficiently dried, substantially as and for the purposes described.

6. The combination, with the heating-drums, of the belts E and F, with suitable guide-pulleys, substantially as and for the purposes described.

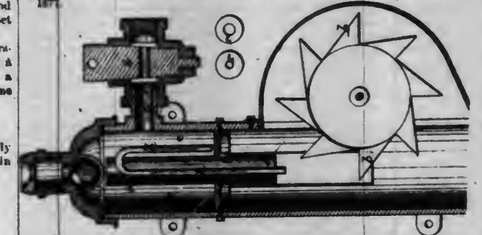
7. The combination, with the heating-drums A A^1, &c., and the belts or aprons E F_1 of the strippers G, for lifting the paper from the drums and guiding it forward between the belts, substantially as and for the purposes described.

8. A heating-drum provided with steam-chamber A^3, with partitions a', hollow axle A^1, with partition a, steam-supply pipes A^4, and outlet-pipes A^5, substantially as described, whereby the water of condensation is drawn off by the action of its own gravity.

9. The combination of forming-machine H, press K, and drying-machine with cars I I^1 and track J J^1, &c., substantially as and for the purposes described.

10. In the manufacture of paper boards, a drying-machine consisting of one or more drying-cylinders and two or more continuous belts, the belts so arranged relatively to the drying-cylinders as to bear the separate boards continuously forward in contact with the drying-cylinders, and deliver them at the exit, the feeding-belt also so arranged as to fee a convenient surface to receive the boards as they are fed to it, and so arranged relatively to another continuous belt at the exit that the boards shall be delivered from between the two in smooth and flat form, substantially as and for the purposes described.

203,685. ROTARY WATER-METERS. Marshal Wheeler, Watertown, N. Y., assignor of one-third his right to Thomas C. Chittenden and John C. Armstrong, same place. Filed Oct. 18, 1877.



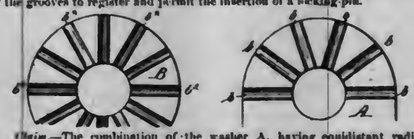
Claim.—1. In a meter, the combination of a chamber, *c*, pipe *d*, siphon *h*, and registering mechanism, substantially as shown.

2. In a meter, the combination of the chamber *c*, inlet *i*, valve *g*, to prevent upward escape of the water, pipe *d*, reaching to top of the chamber, and siphon to empty the chamber, substantially as described.

3. In a water-meter, the disk *r*, placed in the inlet-pipe *i* as a means of regulating the pressure of the water in high and low parts of the town, substantially as set forth.

203,686. NUT-LOCKS. William Whitford, Kendallville, Ind. Filed Feb. 12, 1878.

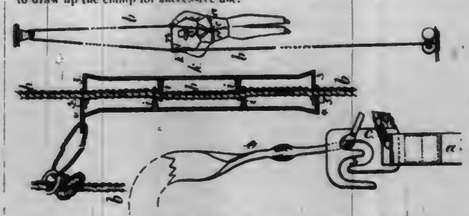
Brief.—The contiguous surfaces of the washers are provided with radial grooves, there being a greater number of grooves in one than in the other, so that the angles will vary, and a slight movement of either will cause some two of the grooves to register and permit the insertion of a locking-pin.



Claim.—The combination of the washer A, having equidistant radial grooves *a a*, with the washer B, having recess *c* and equidistant radial grooves b^2 b^2, and the pin P, the grooves in washer B being closer together than those in washer A, or vice versa, substantially as described, for the purpose herein shown and specified.

203,687. FIRE-ESCAPES. Joseph E. Wildbore, Brooklyn, N. Y. Filed Feb. 4, 1878.

Brief.—A belt to pass around the person, under the arms, is provided at one end with a buckle having an S-shaped slot therein, and the other end is tubular in form, and has enlargements thereon, which will engage with the slots and securely fasten the belt on the person. From the belt a rope passes up over a pulley suitably secured to the building, and extends down to the ground, and on the rope, between the pulley and the ground, is a sliding friction-clamp, consisting of two half-shells having slotted end flanges and internal frictional ribs, by means of which the descent of the person can be regulated. A connection between the clamp and the rope, near the waist-belt, serves to draw up the clamp for successive use.

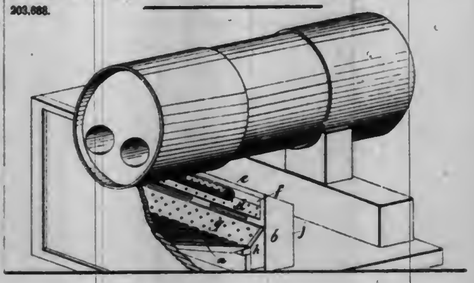


Claim.—1. The friction-clasp for the fire-escape rope, composed of the two shells *k l*, ribs *i*, slotted end flanges 3 4, and rivets or screws 5, substantially as set forth.

2. The belt *a*, having a buckle at one end, formed with an S-shaped slot, and a cord at the other end, having glands or projections at intervals, substantially as set forth.

3. The combination, in a fire-escape, of a belt, *a*, rope *b*, frictional clasp *k l*, and rope or cord *n*, substantially as and for the purposes set forth.

203,688.



203,688. BOILER-FURNACES. Joseph L. Winslow, Portland, Me. Filed June 26, 1877.

Brief.—A tapering chamber is formed by two hollow sides, the inner side of each being perforated. A perforated tube is located longitudinally in front of said chamber, the whole forming the bridge-wall. Air is supplied through the above perforated sides and tubes, which meet the products of combustion on their way under the boiler.

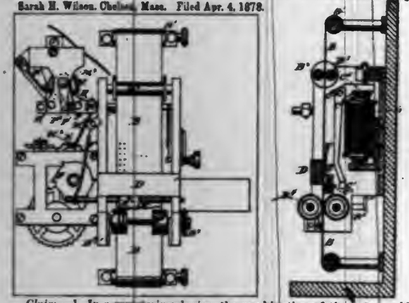
Claim.—1. The combination of the perforated pipe c, grate e, deflector c, inclined surface d, forming the space k, and the slots i and spaces j, as and for the purposes set forth.

2. The hollow perforated deflector, made in two parts, as shown in Fig. 3, in combination with the bridge-wall provided with slots i and spaces j, substantially as described.

3. The combination of the inclined perforated plate g, air-chamber h, cap or deflector c, made hollow, surface d, with proper air-conducting tubes, as herein set forth.

4. The inclined perforated plate g, air-chamber h, slots i, and spaces j, with the bridge-wall proper air-conducting tubes, as herein described.

203,689. ELECTRIC REGISTER AND TIME-RECORDER. Wm. A. Wilson, Boston, assignor to Sarah H. Wilson, Chelsea, Mass. Filed Apr. 4, 1878.



Claim.—1. In a registering device, the combination of the outer guide D and the paper B with the stylus C', said stylus puncturing the paper at a point just clearing the lower edge of said outer guide, whereby the burr made by said puncture will not impede the motion of the paper, all operating together substantially as described and set forth.

2. In a registering device, the combination of the stylus-block E and guiding rod E' with the spur-wheel F and its operating mechanism, substantially as described, and for the purpose set forth.

3. In a registering device, the combination of the differential wheels B' B', the spring-rod T, and guard T' with the puncturing-point T', all operating together substantially as described, and for the purpose set forth.

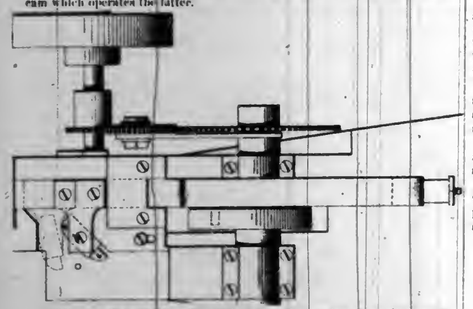
203,690. PLOW-POINTS. David Wolf, Avon, Pa. Filed Mar. 5, 1878.



Claim.—A reversible and invertible plow-point consisting of the double-pointed bar A, tapering from the middle to the two ends, and having opposite rabbets, one on each of its vertical sides, extending uniformly and equally toward both ends from center to shoulders a^3, and being provided with upper and lower opposite recesses *b*, the laterally-opposite recesses *c*, and the oppositely-countersunk oblong hole a^4, to adapt it for being secured to beam, land-side, mold-board, and other parts of plow, as shown and described.

203,691. WIRE-CUTTING MACHINES. John Ash, New Haven, Conn. Filed Apr. 20, 1878.

Brief.—In connection with grooved feed-rolls may have straightening device. The length of the wire sections is determined by changing the intermediate gearing to regulate the relative velocities of the feed-rolls and the cam which operates the latter.

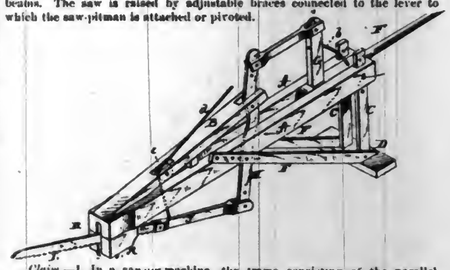


Claim.—1. In a machine for cutting wire, the combination, substantially as described, of a feeding device, an aperture through which the wire is delivered, a sliding bar and cutter hung thereon, and stops to turn the said cutter from and into the line of the aperture through which the wire is fed, substantially as described.

2. In a machine for cutting wire, the combination, substantially as described, of a feeding device, an aperture through which the wire is delivered, a sliding bar and cutter hung thereon, and stops to turn the said cutter from and into the line of the aperture through which the wire is fed, with intermediate gearing between the said feed and the device for operating the cutter-bar, whereby the relative movements of the feed and cutter may be varied, substantially as and for the purpose described.

203,692. DRAG-SAWING MACHINES. Jas. Alexander, Cherry Fork, Ohio. Filed Apr. 15, 1878.

Brief.—The saw works between guide-blocks having points upon their under sides, and attached to the outer ends of two parallel beams, between which work a series of angular levers for operating the saw, said levers being actuated by a lever pivoted between the vertically-adjustable ends of the beams. The saw is raised by adjustable braces connected to the lever to which the saw-pitman is attached or pivoted.

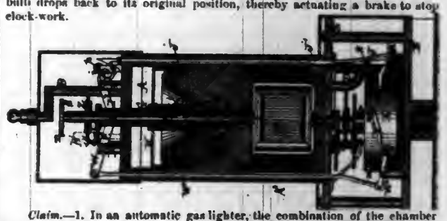


Claim.—1. In a sawing-machine, the frame consisting of the parallel beams A A, having their front ends connected together, and provided with the blocks H, having teeth or points *i*, the adjustable legs C C, foot or sill D, and adjustable braces F F, substantially as and for the purposes herein set forth.

2. In a sawing-machine, the combination, with the adjustable frame A C D F, constructed as described, of the saw and saw-arm, the swinging lever H, connecting-bar I, and operating-lever F, with arm G, substantially as and for the purposes herein set forth.

203,693. AUTOMATIC GAS-LIGHTING. A. H. Allen, Pittsfield, Mass. Filed Mar. 13, 1878.

Brief.—Admission of gas moves a liquid-displacing bulb. The bulb actuates a clock-releasing device, which actuates a magneto-electric machine for generating igniting-sparks. By shutting off the gas the liquid-displacing bulb drops back to its original position, thereby actuating a brake to stop clock-work.



Claim.—1. In an automatic gas lighter, the combination of the chamber A, containing a liquid-seal, the gas-supply pipe D, main burner B, and supplemental burner B', all connected to said chamber, with the liquid-displacing bulb or plunger G, valve H, secured to said bulb or plunger, forked lever I, swinging catch *g*, connecting-rod J, a clock-movement, a brake connecting with said rod and adapted to arrest or release said clock-movement, the arbor *l*, an electro-magnetic machine connecting with said arbor, the commutator S, and spring T, the whole being adapted to operate substantially as described.

2. The combination, with the connecting-rod J, of a bell-crank lever, K, its spring *n*, the spring-barrel L of a clock-movement, and trip-pins *m*, projecting from the side of said barrel, all adapted to operate substantially as described.

3. The combination, with the connecting-rod J and its enlargement J', of a clock-movement and a brake composed of the notched wheel N and friction-wheel Q, each gearing with said clock-movement, the spring impelled lever P, having the brake-shoe *o*, and lever O, having the toe or detent *t*, said levers being united by a link, *u*, and the whole being adapted to operate substantially as described.

4. The combination, with the liquid-displacing bulb or plunger G, of the auxiliary lever W, auxiliary rod W', and trip-lever W', the spring-barrel L of a clock-movement, and cams X, secured to the side of said barrel, all being adapted to operate substantially as described.

5. The combination, with the liquid-displacing bulb or plunger G, of arms z^1, secured to the upper part thereof, and adapted to receive a weight or weights, substantially as and for the purpose described.

6. The combination, with the liquid-displacing bulb or plunger G and the weight-arms z^1, of a supplemental weight, Z, having legs, by which it is supported and held above the plunger when the latter is in its lower position, substantially as and for the purpose described.

203,694. MILK-CANS. Wm. J. Alrich, Elkton, Md. Filed Nov. 12, 1877.

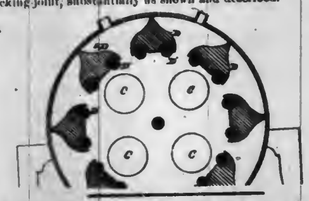


Claim.—1. A milk-can top provided with two depending annular flanges, and having its inner flange *b'* slotted at *c* and *c'*, the slots *c* being vertical, and the slots *c'* inclined, substantially as and for the purpose set forth.

2. In combination with the neck *a*, the rod D fastened therein, substantially as shown and described.

3. In combination with the can-neck *a*, having rod D and staple F, the top B, having annular flanges *b b'*, the latter being slotted at *c c'*, the hasp F, and gasket C, the several parts being constructed and arranged to form a tight locking-joint, substantially as shown and described.

203,694.



203,695. WASHING-MACHINES. Truman Austin, Virginia City, Nev. Filed Dec. 29, 1877.

Brief.—The two-part rollers are withdrawn from the cylinder and clothing secured in them, and then they are replaced and secured by turning the cup-shaped set-screws, into which the rollers are socketed. In the rotation of the machine the clothing upon the different rollers will drop against the buckets, which are secured to the inside of the cylinder in a circle just outside that of the holding-rollers, and prevent the water from running out at once, and the clothes at the same time will rub together and cleanse themselves by the friction.



Claim.—1. The rotating cylinder A, mounted on hollow journals, to be supplied with steam or water, and having the fixed buckets D, together with an interior series of supporting-rollers for clothes, substantially as shown, and for the purpose herein described.

2. The bars or rollers D', formed in two parts, as shown, and having the conical ends E fitting into conical adjusting-sockets at each end, for the purpose of holding the parts together, substantially as shown, and for the purpose herein described.

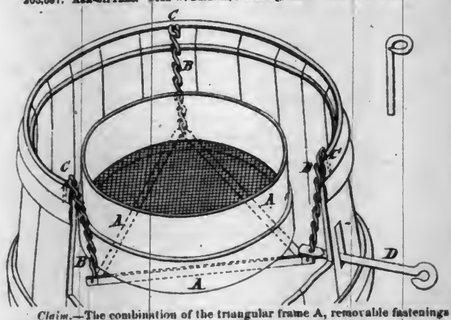
3. The rotating cylinder A, provided at one side with conical sockets and at the other with set-screws C'', having conical sockets formed in their ends, in combination with the divided bar F G, provided with conical ends, substantially as described, and for the purpose set forth.

203,696. SHOE-LACE FASTENERS. Louis Aya, Winona, Minn. Filed Apr. 2, 1878.



Claim.—The shoe-lace fastening consisting of the head *a*, having threaded shank *b*, shouldered at *b'* next said head, the nut *d*, and the concave bearing-plate *c*, substantially as specified.

203,697. ASH-SIFTERS. John W. Baldwin, Fitchburg, Mass. Filed Feb. 6, 1878.



Claim.—The combination of the triangular frame A, removable fastenings C at the ends of the guiding and suspending chains B, horizontal handle H, passing out through the side of the receptacle, joint H, when made with or without swivel P, and employed with or without cover, substantially as and for the purposes herein described.

203,698. STEAM-ENGINE BOILERS. Geo. E. Banner, Newark, N. J., assignor of one-half his right to Anna Gray Fales, Hartford, Conn. Filed Apr. 27, 1878.

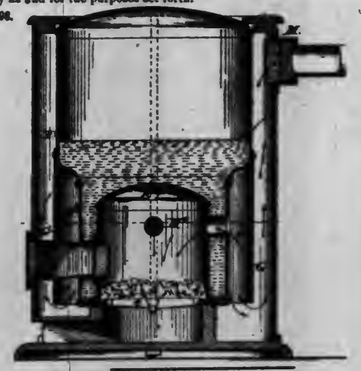
Brief.—An annular pendent partition directs the products of combustion down outside the water-leg, and upward outside the steam-space, the whole inclosed by a jacket.

Claim.—1. In a steam-boiler, the combination, with a fire-box, fire-tubes, shell, and outer casing, of a pendent annular diaphragm, consisting of plates of metal attached to said boiler-shell, and arranged and operating substantially as and for the purposes set forth.

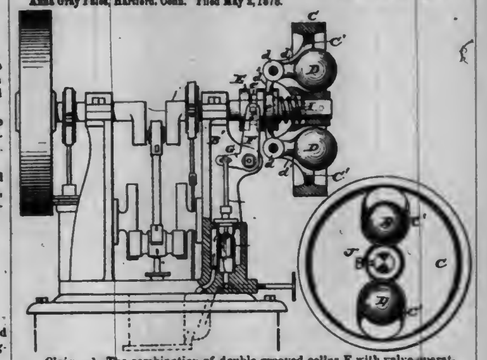
2. In a steam-boiler, the combination, with a fire-box, fire-tubes, boiler-shell, and outer jacket or casing, of an annular diaphragm extending on all sides down to a level with the bottom of the boiler proper, and arranged and operating substantially as and for the purposes set forth.

3. In a steam-boiler, the combination, with a fire-box, fire-tubes, boiler-shell, and outer casing, of a pendent annular diaphragm or partition, consisting of sheets of metal attached to said boiler-shell, extending on all sides down to a level with the bottom of the boiler, and arranged and operating substantially as and for the purposes set forth.

203,698.



203,699. GOVERNORS. Geo. E. Banner, Newark, N. J., assignor of one-half his right to Anna Gray Fales, Hartford, Conn. Filed May 2, 1878.



Claim.—1. The combination of double-grooved collar E with valve-operating yoke F, having pins or studs *f f*, spring I, and governor-balls D, provided with knobs or pins d^2, for engaging with said collar, substantially as set forth.

2. The combination of shaft A, collar E, spring I, and wheel C with set-screw J, operating through the hub of said wheel against said shaft to adjust the tension of said spring, substantially as set forth.

203,700. FRAMES FOR SUPPORTING WIRE MATTRESSES. William J. Boda, Columbus, Ohio. Filed Nov. 21, 1877.



Claim.—As an improvement in frames for woven-wire mattresses, a cross-bar for receiving the end of the fabric, trussed, in the manner and for the purpose substantially as specified.

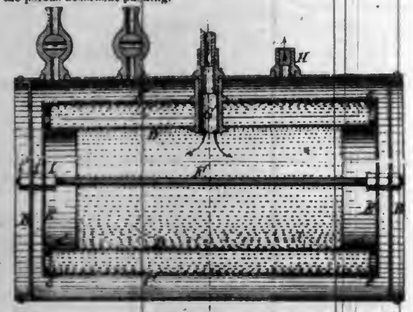
203,701. COMBINED VISE, WRENCH, AND PINCHERS. David F. Brown, Sr., Hawton, Iowa, assignor of one-half his right to Perry Engle, same place. Filed Apr. 1, 1878.



Claim.—As a new article of manufacture, the hand tool composed of the bar *a*, having the perforation *f* and jaws at its ends, the hinged or jointed bar *b c*, having the dowel-pin *d* and jaws at its ends, the spring *g*, and the operating-screws *h* and $h^{\prime\prime}$, substantially as shown and described, to be alternately operated as a vise, a wrench, and a pinchers.

203,702. APPARATUS FOR CARBURETING AIR AND GAS. Madison Buell, Buffalo, N. Y., assignor of one-half his right to Walter B. Moore, New York city. Filed Mar. 7, 1878.

Brief.—Air or gas to be carbureted is forced down upon the surface of the hydrocarbon liquid; thence through perforated cylinders inclosing an absorbent packing of porous material saturated with the liquid. An imperforate plate, partially covering the upper surface of the perforated cylinders, deflects the air or gas in its outward passage, causing it to pass through a greater body of the porous absorbent packing.



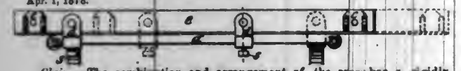
Claim.—1. In a carbureter, as described, the combination of perforated cylinders C and D with the heading E, having annular flanges *e e'*, and with rod F and nuts *f f'*, substantially as and for the purposes set forth.

2. The combination of perforated cylinders C D, having absorbent packing between them, with the imperforate plate K, substantially as and for the purposes set forth.

3. The imperforate cylinder A, having central inlet G and exit H, heads B, rod F, and nuts *f f'*, combined with the perforated cylinders C and D, having an absorbent between and fitted with headings E, having flanges *e e'*, substantially as and for the purposes set forth.

4. In a carbureter, substantially as described, the central air or gas inlet or pipe G, by means of which the incoming current will be impinged centrally and directly upon the hydrocarbon and equally saturated with the vapor thereof, in combination with perforated cylinders C and D and plate K, substantially as set forth.

203,703. ADJUSTABLE DRAFT-BARS FOR SLEIGHS. Wm. Burke, Syracuse, N. Y. Filed Apr. 1, 1878.



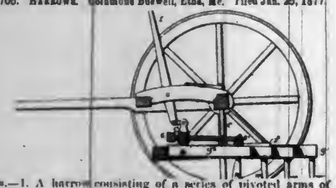
Claim.—The combination and arrangement of the cross-bar *a*, rigidly attached to the sleigh, the draft-bar *c* contiguous thereto, the clips *d*, attached to the latter, and loosely embracing the former, and provided with set-screws *s*, adapted to engage countersinks in the bar *a*, all constructed and arranged substantially in the manner described and shown.

203,704. WASHING-MACHINES. Gustav Burkhardt, Homer, Ill. Filed Feb. 26, 1878.



Claim.—The combination, in a washing-machine, of the flat disk-plunger C, having a series of downward-projecting lugs or pins, *b*, for pounding and turning the clothes to be washed, with the perforated hood B, rod *e*, spring *f*, and the handle D, all constructed and operating substantially as shown and described.

203,705. HARROWS. Columbus Buswell, Etna, Me. Filed Jan. 25, 1877.



Claim.—1. A harrow consisting of a series of pivoted arms of different lengths, provided with pointed teeth and carried by a frame, wheels supporting said frame, a lever, and appliances, substantially as described, whereby the teeth may be either elevated or forced into the ground with a force proportionate to that applied to said lever, all as set forth.

2. The combination of the frame carried by the wheels, the lever I, the rock shaft C, extending over the arms, the cross-bars *s s'*, and the series of tooth-arms pivoted to the frame, as specified.

3. The frame *d f f*, hung adjustably below the frame supported by the wheels and carrying pivoted tooth-arms *g g' g''*, and appliances, substantially as described, for elevating and depressing said arms by pressure on opposite sides of the pivot-rod, as set forth.

203,706. TAPS FOR BARRELS. Robert H. Byrne and E. D. Knight, Camden, N. J. Filed Aug. 9, 1877.

Brief.—When the cock is closed the bevel-faced flange of the tapper is in close contact with the corresponding inner end of the bung. The shoulders prevent the tapper from getting beyond reach of the faucet-pins.



Claim.—The tapper B, constructed with the bevel-faced flange D on its inner end and the shoulder C on its outer end, in combination with the bung A, constructed with the shoulder E and the beveled seat for the flange or valve D, in the manner and for the purpose substantially as set forth.

203,707. REGISTERS. Henry Clarke, Baltimore, Md. Filed Apr. 26, 1878.

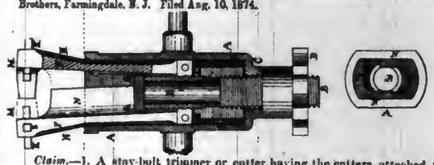


Claim.—1. A register inclosed within a casing, which is secured to or upon a suitable support, and has the mechanism employed for fastening the same thereon locked in place by registering mechanism, substantially as and for the purpose specified.

2. A register inclosed within a casing, which is secured to or upon a suitable support, and has its fastening mechanism locked in place by registering mechanism, and said registering mechanism locked by a seal-locked detent, substantially as and for the purpose shown.

3. A register inclosed within a casing, which is secured to or upon a suitable support, and has its fastening mechanism locked in place by registering mechanism, and said registering mechanism locked by a seal-locked detent, and said detent covered, so as to prevent tampering with or injury to its seal, substantially as and for the purpose shown and described.

203,708. STAY-BOLT TRIMMERS. John Cochrane, New York, N. Y., assignor to Cochrane Brothers, Farmingdale, N. J. Filed Aug. 10, 1874.



Claim.—1. A stay-bolt trimmer or cutter having the cutters attached to the outer ends of vibrating levers arranged on opposite sides of the axis of the instrument, and jointed or pivoted at their inner ends to the feeding mechanism, by which the said levers are made to converge and impinge the cutters against the bolt or object to be severed, or to recede therefrom when so required, constructed and operating substantially as herein described.

2. The combination of the outer shell A, cutter-levers F, cutters K, hollow sliding screw B, and feed-nut D, constructed and operating in the manner and for the purpose substantially as herein described.

3. The stay-bolt trimmer having cutter-levers F, with inclined planes H formed on their outer ends, in combination with the outer shell A and the feeding mechanism for setting in the same, constructed and operating in the manner and for the purpose substantially as herein described.

4. The stay-bolt trimmer having cutter-levers F, and steady-bearings M attached thereto, constructed and operating in the manner and for the purpose substantially as herein described.

5. The stay-bolt trimmer having cutter-levers F, with side bearings N attached thereto, constructed and operating in the manner and for the purpose substantially as herein described.

203,709. SHEET-DELIVERING APPARATUS FOR PRINTING-MACHINES. Calvert B. Cottrell, Westerly, R. I., assignor of one-half his right to Nathan Babcock, same place. Filed Dec. 10, 1877.

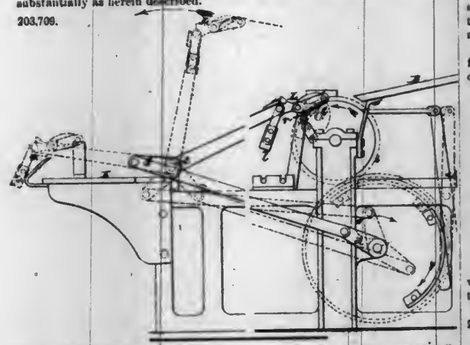
Claim.—1. In a cylinder-press having a reciprocating type-bed, of a feed-table, B, at one end of the press, a receiving-board or table, E, at the opposite end thereof, and a vibrating or swinging fly-frame, provided with gripers and detached from the type-bed, and operating between the impression-cylinder and the receiving-table, to take the sheet from said cylinder and deposit it upon said table, substantially as herein described.

2. The combination, with gripers pivoted into a swinging fly-frame, substantially as herein described, of counterbalancing arms or weights applied to the said gripers, substantially as herein described, whereby they are maintained in a horizontal, or approximately horizontal, position during the whole movement of the fly-frame, as herein set forth.

3. The combination, with the vibrating or swinging fly-frame and counterbalanced gripers pivoted therein, substantially as herein described, of one or more stops, *m*, on the said fly-frame, against which the gripers are brought and held by their counter-balances preparatory to and during their opening to take the sheet, substantially as and for the purpose herein set forth.

4. The combination, with the vibrating or swinging fly-frame and counterbalanced gripers pivoted therein, of one or more fixed stops, *s*, for supporting and directing the said gripers at the time of their delivery of the sheet, substantially as herein described.

203,709.



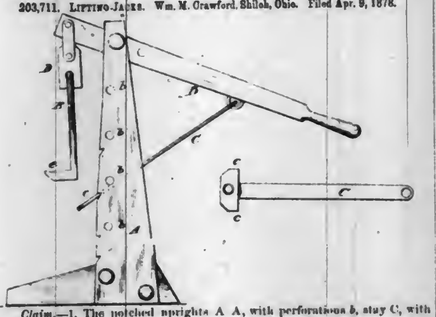
203,710. SHEET-DELIVERING APPARATUS FOR PRINTING-MACHINES. Calvert B. Cottrell, Westerly, R. I., assignor of one-half his right to Nathan Babcock, same place. Filed Oct. 30, 1877.



Claim.—1. The combination, with the impression-cylinder and the rotating transferring cylinder or wheels, of gripers attached to the impression-cylinder, which open in the delivery of the sheet below a line or plane intersecting the axes of the impression-cylinder and transferring cylinder or wheels, and gripers attached to the latter wheels or cylinder, which both open and close below the said line or plane, substantially as herein set forth.

2. The combination, with the impression-cylinder and its gripers, and the transferring-cylinder or griper-wheels and its gripers, opening and closing in the positions or relations described, of a presser, G, arranged to hold the sheet up to the impression-cylinder as or before the sheet is released by the gripers of the latter, and till it is seized by the transferring-gripers by the closing action of the latter below a line or plane intersecting the axes of the impression-cylinder and transferring cylinder or wheels, essentially as described.

203,711. LIFTING-JACKS. Wm. M. Crawford, Shiloh, Ohio. Filed Apr. 9, 1878.



Claim.—1. The notched uprights A A, with perforations *b*, stay C, with arms *a c*, lever B, with block D, and hook E, substantially as shown, and for the purpose specified.

2. The stay-bar C, with arms *a c*, operating in notches *a*, the adjustable lever B, operating, as desired, in apertures *b*, block D, and hook E, substantially as shown and described.

203,712. DITEBERRY COMPOSITIONS. John Daymon, Eddystone, Pa. Filed Feb. 23, 1878.

Claim.—The cleansing and preserving preparation described, consisting of the bran of wheat, rye, or corn, mixed with water and treated by boiling, straining, and fermenting, substantially as described.

203,713. LONG CENTERS FOR STOVES. Ward Devore, California, and Samuel L. Yeartes, Cincinnati, Ohio; said Devore assignor to said Yeartes. Filed June 25, 1877.



Claim.—A long center composed of three pieces, A, A', and B, constructed substantially as described.

203,714. APPARATUS FOR WASHING FILTER-BAGS. Oscar W. Donner, Brooklyn, N. Y. Filed Feb. 20, 1878.



Claim.—1. The combination, with a filter-bag for filtering sugar and other solutions, of a pipe, C, for insertion into the interior of such filter-bag through the nozzle which supports said bag, said pipe having lateral perforations at or near its lower end, substantially as and for the purpose specified.

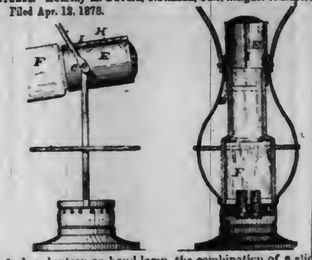
2. The combination, with the pipe C for washing filter-bags, of a stop, *b*, for preventing said pipe from entering the bag so far as to injure the bottom of said bag, substantially as and for the purpose set forth.

203,715. CIGAR-MOLDS. Napoleon Du Brul, Cincinnati, Ohio. Filed Feb. 11, 1878.



Claim.—A cigar-mold whose lower half or member is formed wholly of wood, and whose upper half is formed with sheet-metal matrix-faces, substantially as and for the purpose set forth.

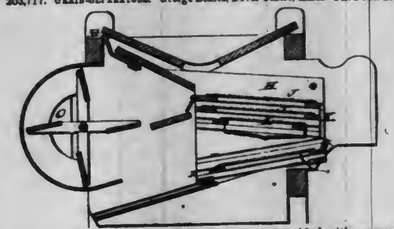
203,716. LANTERNS. Anthony M. Debarn, Cincinnati, Ohio, assignor to Napoleon Du Brul, same place. Filed Apr. 12, 1878.



Claim.—1. In a lantern or hand-lamp, the combination of a sliding globe or chimney with the pivoted swinging dome E, substantially as and for the purpose set forth.

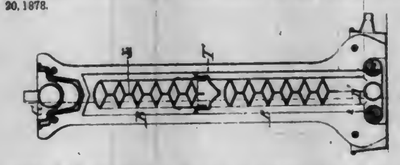
2. In combination with the grooved dome E, the lug H on globe F, substantially as and for the purpose set forth.

203,717. GRAIN-SEPARATORS. George Eckles, Dover Centre, Minn. Filed Oct. 27, 1877.



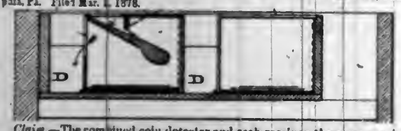
Claim.—The shoe H of a fanning-machine, provided with grooves *x x*, a removable screen, I, having an inclined back, *i*, rigid therewith, screens J J I, pivoted cut-off *w*, and fixed deflector *w'*, for regulating the distribution of the blast upon the upper and lower screens according to the treatment desired for the grain, as herein specified.

203,718. BEER-COOLING APPARATUS. Albert Faulhaber, Heidelberg, Germany. Filed Mar. 20, 1878.



Claim.—The combination of the series of horizontal tubes B with a perforated trough, T, arranged about midway between the top and bottom, substantially as and for the purpose set forth.

203,719. COUNTERFEIT-COIN DETECTER AND COIN-RECEIVER. Saml. A. Field, Philadelphia, Pa. Filed Mar. 1, 1878.



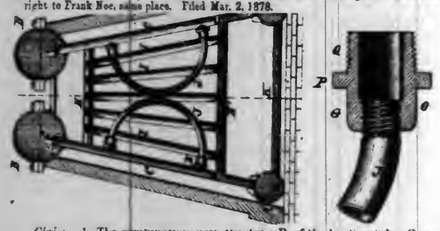
Claim.—The combined coin-detecter and cash-receiver, the same consisting of a series of coin-detecters for various denominations, each inclosed in its own case, and separated by blocks *d*, in combination with the series of boxes D, arranged side by side in front of the outlet-throats of the detecters, all as set forth.

203,720. PLATFORM WAGON-TRESTLES. Lauren M. Fitch, Rome, N. Y., assignor to J. S. Haselton, same place. Filed Nov. 17, 1877.



Claim.—In a platform-trestle for wagons, the combination, with the side, center, and cross bars, of the double re-entrant iron brace E, passing under the center-bar below its intersection with the cross-bar, extending obliquely upward to the cross-bar, forming bearings *b* under the same, and bolted to the fifth-wheel, thence bent downward under the side bars, and bolted through the same to the cross-bar, as specified.

203,721. STEAM-GENERATORS. Theodore P. Franke, Buffalo, N. Y., assignor of one-half his right to Frank Noe, same place. Filed Mar. 2, 1878.



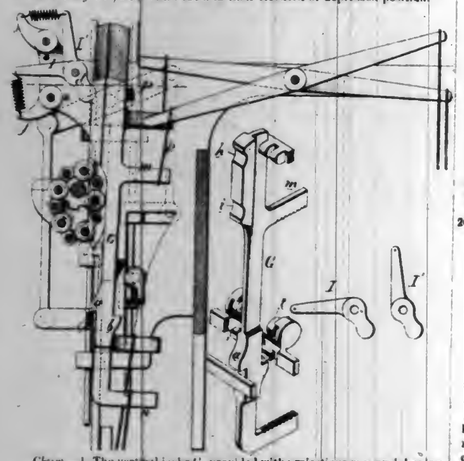
Claim.—1. The combination, with the drum B, of the heating-tubes C, provided with the angular wrench-section N, and the fitting G, consisting of the bell-shaped socket O, wrench-section P, and screw-shank Q, as and for the purpose specified.

2. A steam-generator consisting, essentially, of the horizontal drums A A' and B B', heating-tubes C, transverse tubes H H', with the vertical heating-tubes I, and the curved heating-tubes J, said tubes being secured to each other by the fitting G, as and for the use and purpose specified.

3. In a steam-generator having upper and lower drums, the fitting G, having the threaded socket O and shank Q, in combination with the heating-tubes C, having screw-threads on both ends, the matching of the screw-threads being effected by the fitting G, substantially as and for the use and purpose specified.

203,722. LOOMS. Merrill A. Farbush, Philadelphia, Pa., and Charles H. Knowlton, Camden, N. J., assignors to M. A. Farbush & Son, Philadelphia, Pa. Filed May 21, 1877.

Brief.—A hinged plate carried by the depressor-bar engages the projections on the jacks in the downward movement of the bar and depresses the jacks, but in its upward movement slips over the projections that may happen to be in its path. The ends of spring-acted levers engage in notches in the sides of the jacks, and retain them in their elevated or depressed position.



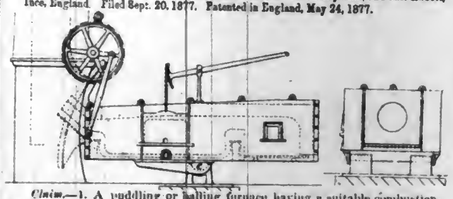
Claim.—1. The vertical jacks G, provided with projections *u a*, each having notches, in combination with the heddle-levers and connecting devices, as set forth.

2. The combination of the vertical jacks, provided with recesses *h* and *i*, and the beating-bar I', with the spring-levers I and I', as specified.

203,723. PROCESSES FOR THE MANUFACTURE OF OAKUM. Wm. E. Geer, Chicago, Ill. Filed Oct. 10, 1877.

Claim.—The process of making oakum by saturating new fiber of flax, hemp, or similar fiber in a solution composed of tar, sal-soda, or similar alkali, and water, in about the proportion of one to two pounds of tar and one to two pounds of soda, or similar alkali, to about three to four gallons of water, and afterward cleansing the soda from the fiber by passing the latter through a second solution, composed of about one to five per cent. of muriatic or other similar acid to ninety-five to ninety-nine per cent. of water, substantially as above set out and specified.

203,724. PUDDLING AND BALLING FURNACES. Thos. Gidlow, Hollywood, and Jas. Abbott, Ince, England. Filed Sept. 20, 1877. Patented in England, May 24, 1877.

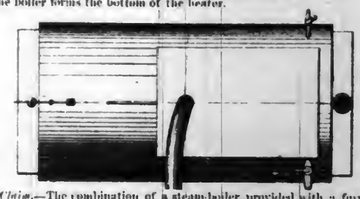


Claim.—1. A puddling or balling furnace having a suitable combustion-chamber, the whole mounted on transverse bearings at or about the center of its length, and adapted to vibrate or oscillate, substantially as and for the purpose specified.

2. The within-described puddling or balling furnace, mounted or suspended on transverse bearings, so that it can rock or vibrate, and provided with a segmental or convex shield for forming a tight joint with the chimney during the vibration of the furnace, substantially as specified.

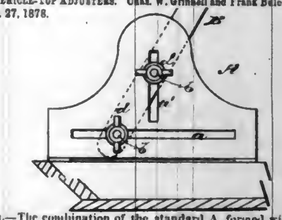
203,725. STEAM BOILER AND HEATER. Enoch T. Gifford and Samuel W. Pyle, Iowa Falls, Iowa. Filed Mar 6, 1878.

Brief.—The furnace and return flues run the entire length of the boiler, and communicate with the uptake by means of outside smoke boxes. The top of the boiler forms the bottom of the heater.



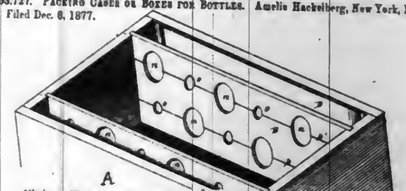
Claim.—The combination of a steam-boiler provided with a furnace and flame-chamber its entire length, and with return smoke boxes and flues, with a feed-water heater resting upon the top of the boiler, so that the top of the boiler forms the bottom of the heater, with its accompanying pipes, substantially as described.

203,726. VEHICLE-TOP ADJUSTERS. Chas. W. Grinnell and Frank Bulekens, Waverly, Iowa. Filed Apr. 27, 1878.



Claim.—The combination of the standard A, formed with the horizontal slot *a* and vertical slot *a'*, the bow B, and the bolts *b b* and thumb-nuts *d d*, or equivalent fastenings, substantially as and for the purposes set forth.

203,727. PACKING CASES OR BOXES FOR BOTTLES. Amelia Hackelberg, New York, N. Y. Filed Dec. 6, 1877.



Claim.—The packing case or box A, provided with racks B B, divided longitudinally into sections, and with the cushions D, of felt or similar material, arranged as shown and described, the said racks having alternate larger openings *n* and smaller openings *o*, placed centrally along the joints *p p'*, and each of the larger openings of one of said racks being opposite to one of the smaller openings in the other rack, as and for the purposes set forth.

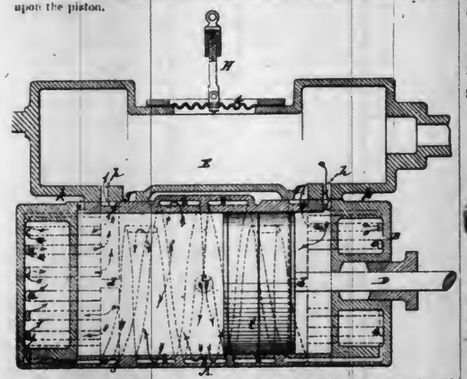
203,728. WARDROBE-BEDSTEADS. John C. Hall, Cincinnati, Ohio. Filed Jan. 16, 1878.



Claim.—The improved folding bedstead consisting of case A, having studs H H, the central or body portion B B C, having grooves *b b* and buttons I I, hinged head-extension J, having rollers M and springs L, hinged foot-extension K, and pivoted legs G G, substantially as shown and described.

203,729. VALVES FOR COMPRESSED-AIR ENGINES. Robert Hardie, Govan, and John James, Edinburgh, North Britain, and Jas. G. Cooper, Brooklyn, assignors, by mesne assignments, to Pneumatic Tramway Engine Company, New York, N. Y. Filed Oct. 17, 1877.

Brief.—Compressed air or gas enters an opening on the side of the cylinder. From thence it passes spirally in a channel around the cylinder to the ends of the cylinder, and is supplied to the valve by a channel which partially surrounds the cylinder at each end. The valve forms a reservoir for the air or gas, and has a continuous supply from either end of the cylinder. By its movement it alternately allows a proper supply to enter the cylinder to act upon the piston.

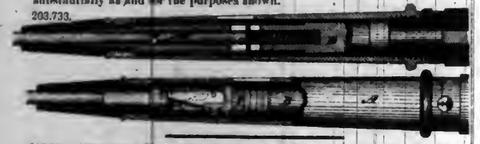

H
I
I
K
K
J
J
J

3. In socketed tool-holders, the pivoted spring-acting lug-nosed tumbler or latch, located at a point outside of the tool, and vibrating in a plane tangential thereto into the socket, to actuate and to lock or to unlock suitably-notched tool-shanks, substantially as and for the purpose described.

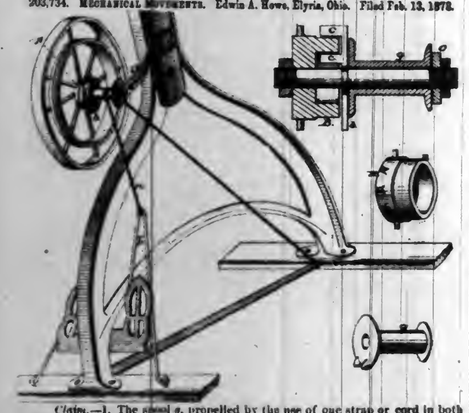
4. In combination with a socketed tool-holder provided with a pivoted spring-acting lug-nosed tumbler or latch, located and operating as described, a tool-shank having an oblique scarfed or inclined end, and a locking-groove or notch, substantially as and for the purpose set forth.

5. In a device, as herein described, the combination of the tumbler or latch E, constructed and operating as set forth, with an auxiliary actuator, F, substantially as and for the purposes shown.

203,733.



203,734. MECHANICAL MOVEMENTS. Edwin A. Howe, Elyria, Ohio. Filed Feb. 13, 1878.



Claim.—1. The spool *g*, propelled by the use of one strap or cord in both directions, the treadle being attached to one end of said strap, and a long wood or metal spring at the other, substantially as and for the purpose set forth.

2. The combination of the treadle with one strap or cord that encircles the spool one or more times and passes to the spring, substantially as and for the purposes set forth.

3. The combination of the treadle L, cord or strap *a*, spring *m*, spool *g*, clutch and lever *b* and c e with spring *h*, annular rim B, and wheel A, when constructed and operated substantially as shown and described, as and for the purpose set forth.

203,735. SAFETY ATTACHMENTS FOR HAND-SATCHELS. Wm. R. Hunter, East Saginaw, Mich., assignor to himself and M. Van Meredith, same place. Filed Apr. 10, 1878.

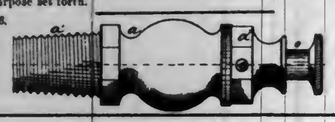


Claim.—1. In combination with the handle of a satchel, a safety-chain which at one end is attached to or upon said handle, and at its opposite end is provided with a hasp-lock, substantially as and for the purpose specified.

2. In combination with a hand-satchel, a handle which has one of its ends connected with the same by means of a spring-catch, and to such detachable end has attached a safety-chain and hasp-lock, substantially as and for the purpose shown.

3. In combination with the hinged jaw A of the hand-satchel, the handle C, provided at one end with a spring-catch, *c*, the connecting-rings D, the safety-chain E, the spring-lock F, and the staple G, substantially as and for the purpose set forth.

203,736.



203,736. GAGE-COCKS FOR STEAM-BOILERS. David Jenkins, Pittsburg, Pa., assignor of one-half his right to James Carson, same place. Filed Apr. 12, 1878.

Claim.—1. The gage-cock provided with the detachable valve-seat section and valve, the valve and its seat being constructed substantially as described, so that the pressure in the boiler shall keep the valve upon its seat.

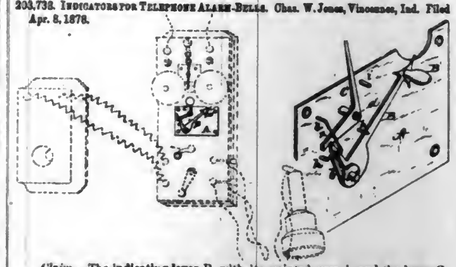
2. The gage-cock herein described, having the stem-section *c*, provided with the water-chamber *b*, in combination with the detachable valve-section *d* and the valve *m*, the whole constructed and operating substantially as specified.

203,737. PROCESSES AND COMPOUNDS FOR PRESERVING FOOD. Henry Malone Jeter, Opelika, Ala. Filed Apr. 2, 1878.

Claim.—1. The process of preserving fruits and vegetables, which consists in immersing them in a solution of alum which has been impregnated with the vapors resulting from the burning of a mixture of sulphur, charcoal, and sugar, substantially as set forth.

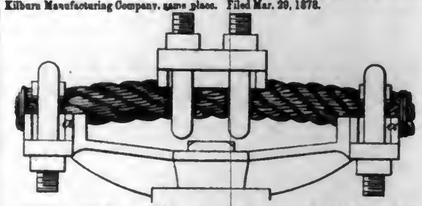
2. A composition for preserving fruits and vegetables, consisting of a solution of alum in water which has been charged with the vapors resulting from the burning of a mixture of sulphur, charcoal, and sugar, as and for the purpose set forth.

203,738. INDICATORS FOR TELEPHONE ALARM-BELLS. Chas. W. Jones, Vincennes, Ind. Filed Apr. 8, 1878.



Claim.—The indicating-lever B, with its pointed arm *b*, and the lever C, having a notch, *x*, in its lower arm, and combined with the alarm of a telephone or other instrument, so that the vibration of the hammer-lever will operate the indicator, for the purposes herein set forth.

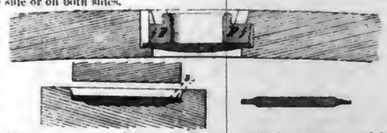
203,739. SPRINGS FOR SEATS. Cheney Kilburn, Philadelphia, Pa., assignor to the Hale & Kilburn Manufacturing Company, same place. Filed Mar. 29, 1878.



Claim.—A spring in which a wire-rope is combined with three or more griping devices, substantially in the manner described, so that on subjecting the said rope to torsion by means of the said griping devices, one portion will always be partly outwisted while another is twisted tighter, as specified.

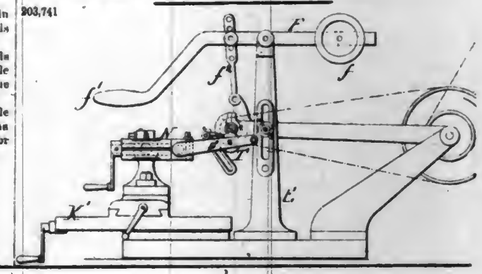
203,740. BUNGS. J. Kirby, Cincinnati, Ohio. Filed Apr. 26, 1878.

Brief.—The grain runs horizontally in the bung. Bung, before compression, is about one-fourth inch in thickness, but is compressed to about one-half that thickness. Bungs are compressed throughout or merely at the edge on one side or on both sides.



Claim.—As a new article of manufacture, a thin bung compressed in the direction of its thickness, substantially as set forth, prior to and in preparation for being used in a bung-hole, for the purposes mentioned.

203,741



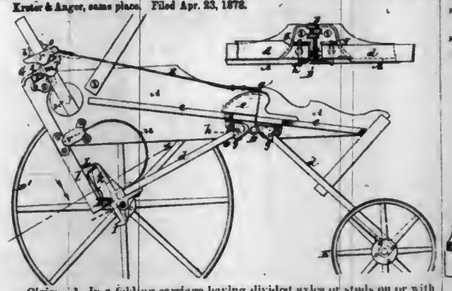
203,741. GRINDING-MACHINES. F. O. Kretzberger, Paris, France. Filed Jan. 2, 1878.

Brief.—The grinder-arbor is mounted in a vertically-swinging frame carrying on one side a clamp-screw, by which the frame is made rigid when desired. Irregular edges gauged by means of the swinging frame and a tool-holder mounted on dovetail sliding supports, moved at right angles to each other by feed-screws, and ball and socket, and swivel joints.

Claim.—1. The combination of the pivoted frame, carrying the grinding-wheel, with a lever, F, and connecting-rod *f'*, and an adjustable tool-holder, substantially as described.

2. The combination of the pivoted frame, carrying the grinding-wheel, with the slotted standard E and retaining devices, and with adjustable tool-holding mechanism, all substantially as specified.

203,742. CHILDREN'S FOLDING CARRIAGES. Rudolph Kreter, New York, N. Y., assignor to Kreter & Anger, same place. Filed Apr. 23, 1878.



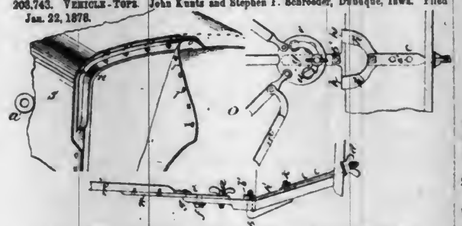
Claim.—1. In a folding carriage having divided axles or studs on or with which the wheels independently rotate, the combination, with either yielding brace *d* and wheels carried by said brace, of a slide and guide, F L, applied to said brace and the side of the carriage to restrain the wheel from tipping or tilting inward at its top, substantially as specified.

2. The hinge B, having ears *g g*, constructed to receive the inner ends of the braces *d d* within them, in combination with the sectionally-constructed side A of the carriage and wheels D, D', and E, carried by said braces, essentially as described.

3. The hinged or pivoted braces *d*, in combination with the springs M, the wheels carried by said braces, the slides and guides F L, and the sides A of the carriage, substantially as specified.

4. The spring-strap R, in combination with either sectionally-constructed and hinged side A, the pivoted back support H, and the catch G, composed of duplicate levers *w r* and locking tooth or projection *s*, whereby the same elastic force in the strap is made available both to relax the side sections when collapsing the carriage and to lock the catch when the carriage is extended or unfolded, essentially as described.

203,743. VEHICLE-TOPS. John Kuntz and Stephen F. Schroeder, Dubuque, Iowa. Filed Jan. 22, 1878.



Claim.—1. The combination, with a carriage-seat, of standards for supporting the bows, having offsets resting upon the top edges of the sides of the seat, and the bolts *c* and nuts *d*, for drawing the standards downwardly, substantially as described and shown.

2. The bolts *c*, for drawing the standards down upon the sides of the seat, having a number of holes *c'*, for securing the bolts to the lower projections of the standards, whereby the standards are adapted for attachment to seats with sides of different heights, substantially as described and shown.

3. The combination, with standards for supporting a carriage-top, having projections extending down on the inside of the seat, of the hook-bolts *b*, not secured to the seat, and projecting down on the outside of the same, and having horizontal arms passing through the standards, and provided with screw-threads and nuts, substantially as described and shown, for the purpose set forth.

4. The combination, with standards *g* and bolts *c*, passing through bottom of seat, of the hook-bolts *b*, constructed and arranged substantially as described and shown.

5. In a carriage-top, the rear bow provided with groove and rib, in combination with the rear curtain O, secured at its upper edge in this groove, and the top covering S, lapping over this groove, substantially as described and shown.

203,744. COMBINED CLUTCH AND BRAKE OF HOISTING-DRUMS FOR ELEVATORS, &c. Julius S. Lane, Akron, Ohio. Filed Apr. 1, 1878.

Brief.—The driving-power is applied directly to the drum shaft, which communicates it to the drum by a band-clutch. A band-brake to engage the drum is so arranged with the band-clutch that both may be operated by a single hand-wheel or each by a separate hand-wheel. A differential device is provided for taking up the wear of the driving and brake bands; also a device for holding the band-clutch from contact with its pulley when not turning the drum.

Claim.—1. In a hoisting-machine, the combination of a band-brake and a driving-band, both operated by one hand-wheel, substantially as herein shown.

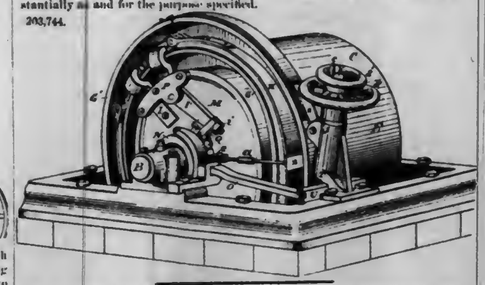
2. In a hoisting-machine, the combination of a band-brake with a driving-band, each operated by an independent hand-wheel, said wheels being adapted to be connected and operated by one motion, substantially as and for the purpose hereinbefore set forth.

3. The combination, in a hoisting-machine, of a hand-wheel for operating the driving-band with a hand-wheel for operating the brake-band, adapted to be operated together, and with a differential device for locking them together, substantially as and for the purpose hereinbefore set forth.

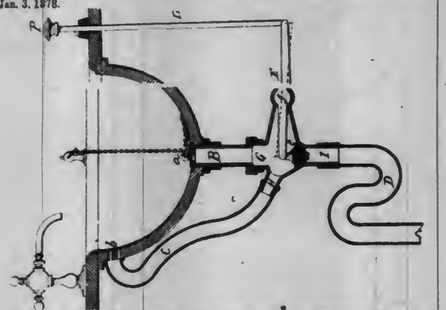
4. In combination with the driving-band of a hoisting-machine, a series of radial arms, attached at one end to the driving-band, and arranged, by encountering inclined surfaces at the other, to raise the band from contact with the surface of the band-pulley, substantially as shown, for the purpose specified.

5. In combination with the drum-heads D D', the flanged cylinder F, substantially as and for the purpose specified.

203,744.



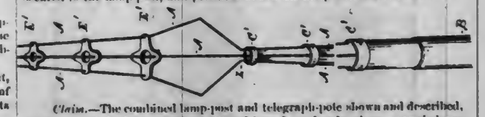
203,745. STENCH-VALVES FOR WASH-BASINS. Alexander Leverty, Bridgeport, Conn. Filed Jan. 3, 1878.



Claim.—In combination with the waste and outflow passages of a wash-basin, the shell constructed with connections G H for said two passages, an outlet-passage, I, and a bearing for the lever E, the said lever E, and valve *e*, substantially as described.

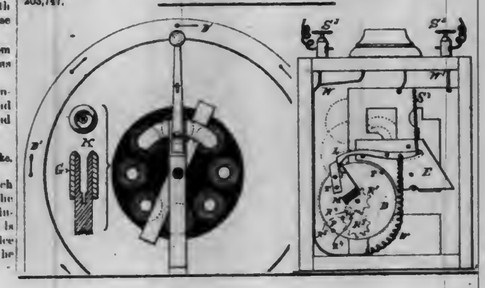
203,746. TELEGRAPH-POLES. W. O. Lewis, Brooklyn, N. Y. Filed Apr. 24, 1878.

Brief.—The telegraph-pole is constructed of rods, pipes, or angle-iron secured to the lamp-post, and provided above the lamp with brace-plates.



Claim.—The combined lamp-post and telegraph-pole shown and described, composed of the lamp-post body B' and base R, and rods, pipes, or angle-irons A, secured to the body of the lamp-post by the bands or clamps C, and provided with the tie or brace-plates E or E'.

203,747.



203,747. ELECTRO-MAGNETIC WATCHMEN'S TIME-CHECKS. W. O. Lewis, Brooklyn, N. Y. Filed Apr. 24, 1878.

Claim.—1. A series of helices, H' H', arranged around the arbor or shaft of a clock-hand.

2. A clock-hand provided with an armature, A, swinging around, over, and within control of electro-magnets during its movement as a clock-hand.

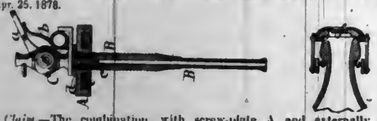
3. A hinged clock-hand, H, provided with an armature, A, for the purpose of operating a marker-point, as shown and described.

4. A clock-hand provided with an armature, within control of electro-magnets as it revolves, and a marker-point, in combination with a removable clock-face with the hours indicated thereon in any usual manner.

5. The key K for winding up the disk and its operating clock-work, and also at the same time opening the circuit by lifting the lever L free from the platina points, provided with the non-conducting guard G, for the purpose set forth.

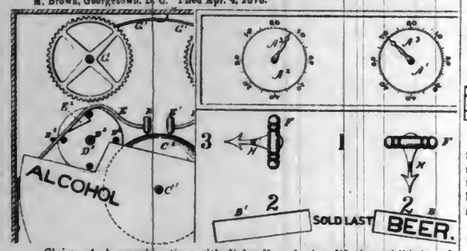
6. The circuit closing disk D, in combination with the stop-wheels R' R', or their equivalents.

203,748. ATTACHMENTS TO BOTTLING-MACHINES. Henry Martin, New York, N. Y. Filed Apr. 25, 1878.



Claim.—The combination, with screw-plate A and externally screw-threaded stem B, of the vent valve V, the finger lever *a*, and the spring *b*, the whole constructed and arranged to operate substantially as specified.

203,749. REGISTERS. Wm. C. McGill, Washington, assignor of one-half his right to Hiram M. Brown, Georgetown, D. C. Filed Apr. 4, 1878.



Claim.—1. In combination with disks D and pins D², the exhibit-board so arranged that at each partial turn of the handle it will be tilted and bring to view the name of the liquor last sold, substantially as shown and described.

2. The combination, with the exhibit-board C, pivoted intermediately between its ends, so that it may be tilted, as described, of the disks D D', having pins D² D², and supported on axes D³, having cranks F, substantially as set forth.

3. The combination, with the tilting exhibit-board C, bell-hammer rods E, having the projections E', and bell C², of the disks D D' on axes D³, having cranks F, substantially as set forth.

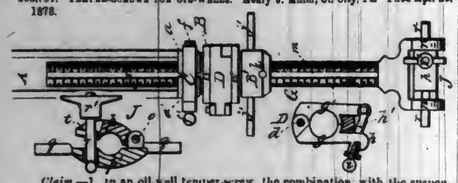
4. In combination, the shaft D³, pointer H, crank-knob F, fixed on said shaft plate, plate D, having pins D', bell C', hammer E', and stop-plate E', substantially as and for the purpose herein described and shown.

203,750. PORTABLE STEAM-BOILERS. C. M. Miller, Canton, Ohio. Filed Mar. 26, 1878.



Claim.—A vertical steam-boiler having a horizontal extension arranged below the line of the crown sheet, through which the smoke, hot air, &c., pass directly from the furnace by means of tubular flues, and thence pass around said extension and the upper part of the vertical boiler through the flue formed by an inclosing jacket, for the purpose of heating the water in the extension and in the vertical boiler above the crown-sheet of the furnace, substantially as described.

203,751. TEMPER-SCREWS FOR OIL-WELLS. Henry J. Miller, Oil City, Pa. Filed Apr. 30, 1878.



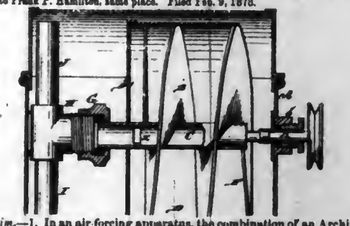
Claim.—1. In an oil well temper-screw, the combination, with the suspension-frame A, having jaws *a a'* and flange *b*, of the nut B D, having sleeve *c*, with edge flange *c'*, and the clamp-yoke C, substantially as specified.

2. The combination, with a suspension-frame, A, of the nut swiveled to the lower end thereof, consisting of the frame B, the clamp-sections *g g'*, hinged thereto, the section *g* having hook *h*, and the section *g'* a vibrating bail, *h'*, with set-screw *i*, substantially as specified.

3. The combination, with the suspension-frame A, a clamp-nut swiveled thereto, and a longitudinally-grooved screw, G, of a manipulating sleeve or cap, B', having handles *f* and the interior key-seat *l*, and swiveled to said nut, and a key or fetter engaged in the said recess and in the groove of the screw, substantially as specified.

4. The combination, with a temper-screw, G, having the spaced parallel end hooks *n*, of a rope-clamp, J, having the journal-arms *q*, the jaw-sections *p p'*, hinged together, the screw *r*, and thumb-nut *r'*, substantially as specified.

203,752. AIR-FORCING APPARATUS. Orson Millard, Flint, Mich., assignor of one-half his right to Frank P. Hamilton, same place. Filed Feb. 9, 1878.



Claim.—1. In an air-forcing apparatus, the combination of an Archimedean screw, B, provided with casing D and cap D', and the hollow perforated shaft C, substantially as herein set forth.

2. The combination of the hollow shaft C, with solid journals *a* and perforations *x*, the screw B, cover D D', stuffing-box G, T-joint H, and pipes I J, all substantially as and for the purposes set forth.

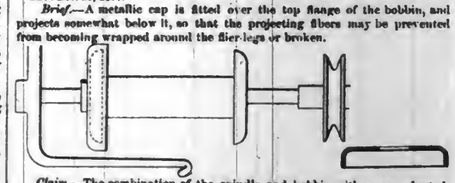
203,753. METALLIC FENCE-POSTS. Samuel Miller, Clinton, Iowa. Filed Jan. 5, 1878.



Claim.—The process of forming opposite holding-lugs in a wrought-iron fence-post, by cutting two parallel vertical slits and one oblique slit joining said vertical slits, bending the angular portions outward, and separating the two prongs thus formed by punching, thereby forming two opposite holding-lugs bent toward each other, and an oblique slit of sufficient width to receive a wire between them, substantially as specified.

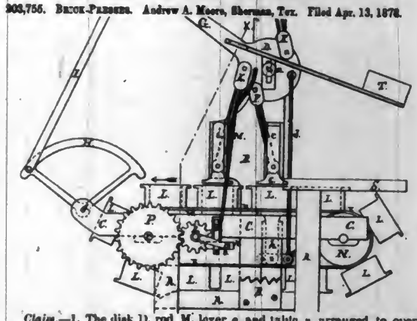
203,754. BOBBINS USED IN SPINNING MOHAIR, &c. Tom Mitchell, Bradford, Great Britain. Filed Nov. 19, 1877.

Brief.—A metallic cap is fitted over the top flange of the bobbin, and projects somewhat below it, so that the projecting fibers may be prevented from becoming wrapped around the flier-legs or broken.



Claim.—The combination of the spindle and bobbin with a cap adapted to fit over the upper flange of said bobbin, and to project below the same, substantially as and for the purpose herein set forth.

203,755. BRICK-PRESSES. Andrew A. Moore, Sherman, Tex. Filed Apr. 13, 1878.



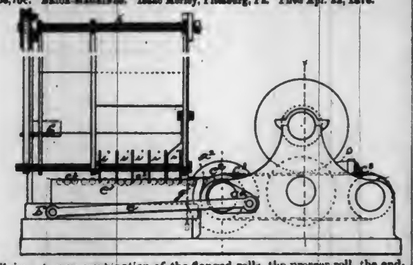
Claim.—1. The disk D, rod M, lever *o*, and table *n*, arranged to operate substantially as set forth.

2. The disk D, lever G, and parallel rods I I, in combination with segment H, substantially as and for the purpose specified.

3. In a brick-press, the combination, with the brick-molds, of the plungers *c k*, lever *e*, rods E F and J J, and the disk D, the several parts constructed and relatively arranged to operate substantially as herein shown and described.

4. In a brick-press, the combination, with the brick-molds, of the plungers *c k*, table *n*, lever *o*, and operating mechanism, substantially as and for the purpose herein shown and described.

203,756. BRICK-MACHINES. Isaac Morley, Pittsburg, Pa. Filed Apr. 22, 1878.



Claim.—1. The combination of the flanged rolls, the presser-roll, the endless belt or carrier, and the reciprocating carriage, substantially as and for the purpose specified.

2. The combination, with the reciprocating truck or carriage, of the suspended saws or cutting-disks, adapted to travel with and across the truck, substantially as and for the purpose specified.

3. The combination, with the fixed molding devices for forming the continuous strips, of the reciprocating cutting carriage or truck and the interposed extensible support for the strips, substantially as specified.

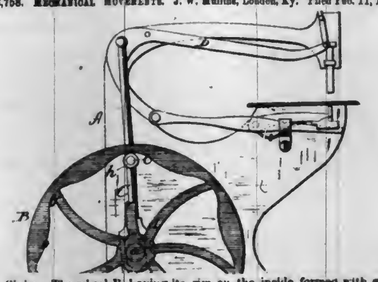
4. The combination of the reciprocating truck for supporting the strip and presenting it to the cutters, the cutters carried by the sliding hanger, the cams or inclines for projecting the hanger, and the slotted arm for causing the cutters to travel with the truck, substantially as specified.

203,757. INKSTANDS. David Mosman and Rodolphus L. Webb, New Britain, Conn., assignors to Landers, Frary & Clark, same place. Filed Apr. 10, 1878.



Claim.—In an inkstand in which the fount is arranged upon pivots, the combination of metallic bearing-disks with the fount and pivots, substantially as described.

203,758. MECHANICAL MOVEMENTS. J. W. Mullins, Louden, Ky. Filed Feb. 11, 1878.



Claim.—The wheel B, having its rim on the inside formed with gradual and alternate mounds and depressions *b* and *b'*, and the single rod or bar C, provided with friction-rollers A A, as set forth.

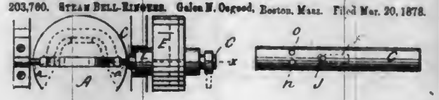
203,759. CURTAIN-ROLLERS. Chas. J. Ortmann and George Kampf, Whitesborough, N. Y. Filed Apr. 6, 1878.

Brief.—A curtain-roller is provided with a longitudinal groove, into which is inserted a lath which has been slid into a loop in the end of the curtain. The lath is kept in place by metal clips sprung over the roller, or by india-rubber bands at the end, the lath being longer than the width of the curtain.



Claim.—The improved curtain-roller consisting of the solid roller A, with the longitudinal groove *a*, the stick B, and spring-bands D D, as shown and described.

203,760. STEAM BELL-RINGERS. Galen H. Osgood, Boston, Mass. Filed Mar. 20, 1878.



Claim.—In combination with a locomotive or other bell, A, the steam-cylinder E, provided with a partition, G, and moving head F, attached to a shaft, C, and with steam inlet and outlet ports *b c J u a*, all arranged together substantially as described, and for the purpose specified.

203,761. MANUFACTURE OF CAUSTIC ALKALIES. E. W. Parnell, Liverpool, England, assignee of one-half his right to James Simpson, same place. Filed Feb. 4, 1878.

Brief.—In the manufacture of caustic alkali from carbonates by treatment with lime in the wet way, solution of carbonate of soda or potash of specific gravity of 1,200° is treated with caustic lime under pressure and at a high temperature, the pressure and temperature being maintained till the caustic alkali is separated from the precipitated carbonate of lime.

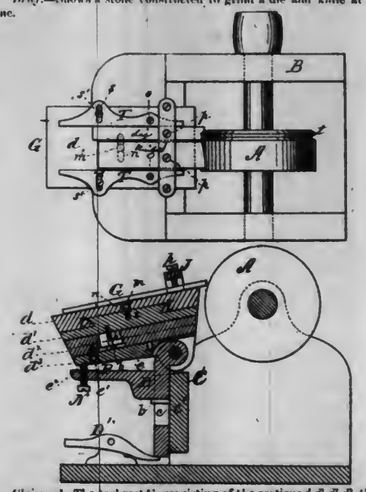
Claim.—1. The process herein described for manufacturing caustic alkalies, which consists in heating carbonates of soda and potash of a greater specific gravity or density than 1,200° with caustic lime under a pressure greater than the ordinary atmospheric pressure.

2. The process herein described for manufacturing caustic alkalies, which consists in agitating the alkaline carbonates and lime while subjected to heat and pressure, substantially as and for the purpose specified.

3. The method herein described, for preventing the reversal of the reaction in the manufacture of caustic alkalies, which consists in maintaining the temperature and pressure until the alkalies and carbonate of lime have been separated, substantially as specified.

203,762. GRINDING-MACHINES. Lewis Patterson, Terre Haute, Ind. Filed Mar. 16, 1878.

Brief.—Shows a stone constructed to grind a die and knife at the same time.

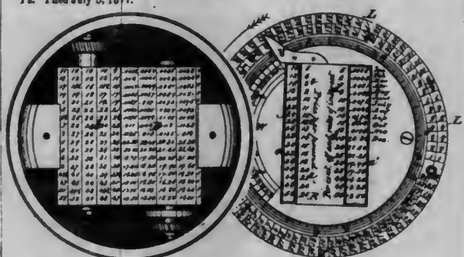


Claim.—1. The tool-rest B, consisting of the sections *d d' d² d³*, the section *d* being laterally movable relative to section *d'*, the section *d'* endwise movable relative to section *d²*, and the section *d³* horizontally vibratory relative to section *d²*, which is vertically vibratory and supports the other sections, substantially as specified.

2. The grinding-stone A, having a bead, *f*, turned in its edge to form the score in the die, as and for the purpose specified.

3. In combination with the rest G, having the raised bridge J, with clamp-screws *p*, the horizontally vibrating and adjustable guides T, substantially as specified.

203,763. CALCULATING-MACHINES. C. E. Patterson, Covington Township, Tioga County, Pa. Filed July 5, 1877.



Claim.—The combination of ribbon H, the two rollers and the gears or toothed wheels, the outside revolving plate I, a gage, and the apertured plate R, said ribbon and plates bearing numbers, as shown and described.

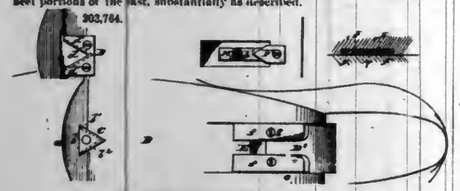
203,764. LAST-BLOCK FASTENERS. George D. Paul, New York, N. Y., assignor of one-half his right to Parker P. Paul, same place. Filed May 4, 1878.

Claim.—1. The combination, with the upper and lower parts of a last, of an angular-shaped tongue, constructed with undercut engaging edges, and a V-shaped socket, likewise provided with undercut edges, substantially as set forth.

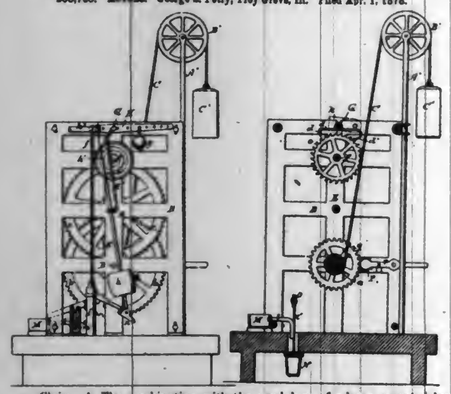
2. The combination, with the upper and lower parts of a last, of a guide-piece having inner undercut edges, and a cross-bar or catch-piece joining the jaws of the guide, a tongue-piece formed with undercut edges, and a spring having a shoulder formed on its free end, substantially as set forth.

3. The combination, with the two parts of a last, of a tongue-piece, C, and socket D, secured to the forward parts of the last, and guide-piece D', provided with the catch-bar E, tongue-piece F, and spring H, secured to the heel portions of the last, substantially as described.

203,764.



203,765. MOTORS. George S. Petry, Troy Grove, Ill. Filed Apr. 1, 1878.



Claim.—1. The combination, with the pendulum, of a lever operated by the water in a trough, for automatically stopping the operation of the pendulum and the mechanism controlled by it, substantially as described and shown.

2. The pivoted foot a on the lower end of the pendulum-arm, substantially as and for the purpose set forth.

3. The combination, with the pendulum having pivoted shoe e, of the spring-lever O, perforated bucket N, and overflow-pipe to water-trough, substantially as described and shown.

4. The combination of rock-shaft G, carrying pallets to engage the escape-wheel, with a pivoted bearing, in which one end of such rock-shaft is journaled, substantially as and for the purposes set forth.

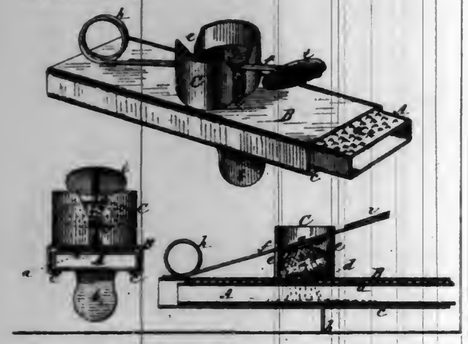
5. The squared shaft P, journaled in sleeve o, and carrying pinion to raise weight, in combination with lever r, substantially as described and shown.

203,766. TREATING PAPER OR OTHER FABRIC WITH TOBACCO FOR USE AS A MOTH-PREVENTIVE. John H. Pickett, Baltimore, Md. Filed Apr. 27, 1878.

Claim.—The new article of manufacture described, consisting of a body of paper or cloth treated in ground tobacco, substantially as and for the purposes specified.

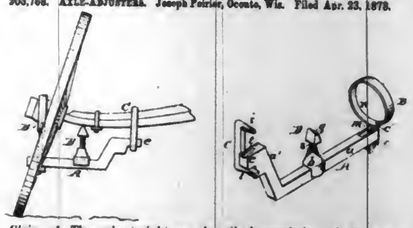
203,767. NUTMEG-GRATERS. Charles H. Pierson and Charles W. Ferguson, Janesville, Wis. Filed Apr. 9, 1878.

Brief.—The construction of the pressure-spring, consisting of coil fastened to the carrying-case and the long rod passing through the slotted holder, and terminating in the finger-piece, gives a continuous direct pressure, and also operates as a lever.



Claim.—In a nutmeg-grater, the presser-carrying spring-rod *f h*, arranged to cross slots *c c* in the holder C, and provided with a finger-piece *i*, at one side of said holder, as and for the purpose set forth.

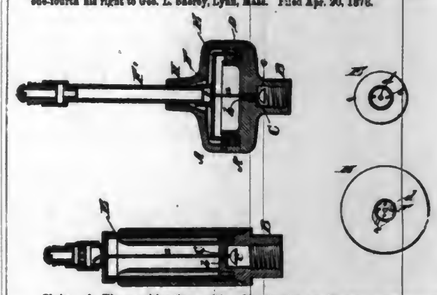
203,768. AXLE-ADJUSTERS. Joseph Poirier, Oconto, Wis. Filed Apr. 23, 1878.



Claim.—1. The axle straightener described, consisting of the lever A, having arms *a a'* and a lug, *c*, the yoke C, adapted to clamp the axle and receive the lug *c*, the link B, and tightening devices *a*, and the adjustable bearing D, all constructed and adapted to operate as set forth.

2. The combination, with the lever A, of the bearing D, consisting of the block *b*, head *q*, and stem *s*, screwing into said block, as set forth.

203,769. STREET-LAMP REGULATORS. Alonzo W. Porter, New York, N. Y., assignor of one-fourth his right to Geo. L. Sherry, Lynn, Mass. Filed Apr. 20, 1878.



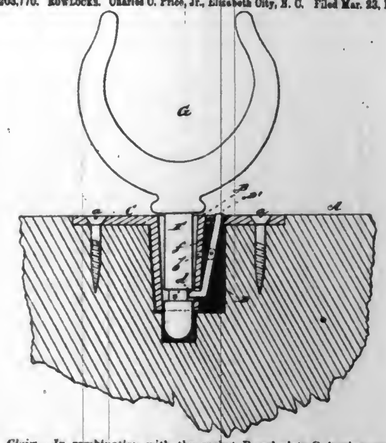
Claim.—1. The combination, with a float having on its upper surface a cup or socket surrounding a series of perforations in the float, of the burner-tube F and valve *c*, arranged substantially as described, and for the purpose set forth.

2. In a gas-burner governor, the burner-tube F', having the float E attached to its lower end, said float being provided with a central perforation for the passage of the rod *a*, bent at its upper end, and provided with the valve *c* at its lower end, substantially as described, and for the purpose set forth.

3. The cup A', provided with a circular receptacle near its circumference for mercury, and a central recess having a central gas-passage, in combination with the burner-tube F', float E, bent valve-rod *a*, with valve *c*, and the inverted cup A, substantially as described, and for the purpose set forth.

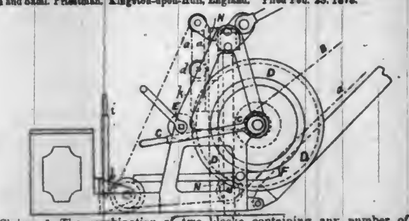
4. In a gas-burner governor, a float having on its upper surface a cup or socket surrounding a series of perforations in the float, in combination with the burner, substantially as and for the purpose set forth.

203,770. ROWLOCKS. Charles C. Price, Jr., Elizabeth City, N. C. Filed Mar. 23, 1878.



Claim.—In combination with the socket B and plate C, having countersunk slot *e*, the pivoted lever D, with thumb-piece D' and catch *d*, the spring *f*, arranged within the chamber I, and the rowlock G, with stem F, having circumferential groove *i*, all substantially as and for the purposes set forth.

203,771. APPARATUS FOR WORKING GRAPPLE BUCKETS, FORKS, OR SKIPS. Wm. D. Priestman and Saml. Priestman, Kingston-upon-Hull, England. Filed Feb. 23, 1878.



Claim.—1. The combination of two blocks containing any number of sheaves, and connected with a sliding weight or weights and a brake, so as to elongate the lift or haul required for the opening or discharging chain of self-acting buckets, or forks, or skips, and to arrest such lift for discharging such bucket, fork, or skip, substantially as set forth.

2. A crane or hoist having a barrel constructed to cant or lift for working the lifting-chain of a self-acting bucket, fork, or skip, and in combination with a block and brake arrangement, such as herein described, for working the opening and discharging chain of self-acting buckets, forks, or skips, substantially as described.

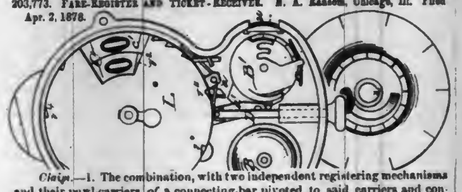
203,772. CAR-COUPLINGS. James B. Raby, Quincy, and Daniel J. Summers, Shady Grove, Pa. Filed Feb. 28, 1878.



Claim.—1. The combination of the sliding spring catch-plate H and shouldered cam K with the pivoted links, substantially as described, for the purpose specified.

2. The combination of the spring-buffer E, sliding catch-plate H, pivoted links C, shouldered cams *k*, and the draw-heads, having horns or catchers B, substantially as described, for the purpose specified.

203,773. FARE-REGISTER AND TICKET-RECEIVER. H. A. Ransom, Chicago, Ill. Filed Apr. 2, 1878.



Claim.—1. The combination, with two independent registering mechanisms and their pawl-carriers, of a connecting-bar pivoted to said carriers and connected to an operating-plunger, whereby the said registers are actuated simultaneously, as and for the purposes specified.

2. The combination, with the registers B' C, the vibrating pawl-carriers *h*, and their connecting-bar, of the ratchet E, fixed to the case and notched upon its under side, the latch E', pivoted to the connecting-bar, and the spring *f*', substantially as specified.

3. The combination, with a register-case and a ticket-receptacle, of a ticket-feeder having a ticket-recess and extending through the receptacle-wall, and an ejector actuated by the movement of the register to discharge the ticket into the receptacle, substantially as set forth.

4. The combination, with a register-case, of a rotating post having spaced recesses, the endwise-yielding catch-pins seated in said recesses, and the numbered registering-disks rotating independently on said post and having inside notches in their hubs, substantially as specified.

5. The combination, with the registering-disks having hubs notched upon their insides, of a rotating axis-post having endwise-yielding catch-pins recessed therein, substantially as specified.

6. The combination, with a trip-register, its case, having a view-slot, and a spring-pawl on said case, of the rotating axis-post, having recesses *o* and spring-projected catch-pins *p* in said recesses, the registering-disks, having notches *a* on the inside of their hubs, and the guard-plate I, having edge serrations and secured on said post, substantially as specified.

7. The combination with a trip-register and zero-gathering device operating thereon, of a rotating guard-plate covering all the figures of the said register in setting the same to zero or to the starting-point, substantially as specified.

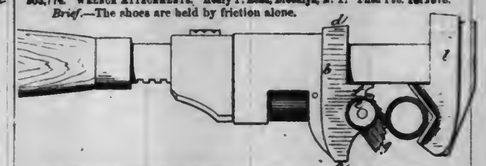
8. In an alarm registering mechanism, the combination, with a rotating ticket-wheel, recessed upon its edge to receive a single ticket, of an ejector throwing the ticket out of the recess into a receptacle, substantially as specified.

9. The combination, with a register-case, a rotating ticket-feeder projecting through the wall of a receptacle on said case, and an ejecting device, of a mechanism connecting said wheel and the register, whereby, as a fare is registered, the wheel is rotated and the ticket deposited into the receptacle, substantially as specified.

10. The combination, in a fare-register, with the primary and secondary registers, their connected pawl-carriers, a plunger actuating the said registers simultaneously, and a ticket-receptacle on the register-case, of a ticket-feeder projecting through said receptacle and provided with a single ticket-recess, a lever and a pitman connecting the feeder and pawl-carrier, and an ejector pivoted at one end to the feeder and extending through a curved slot into the said recess, substantially as specified.

203,774. WRENCH ATTACHMENTS. Henry F. Reed, Brooklyn, N. Y. Filed Feb. 14, 1878.

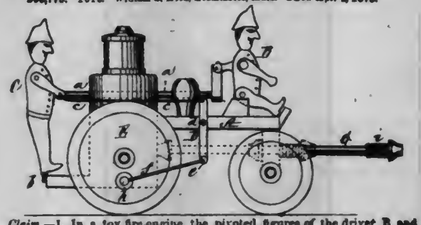
Brief.—The shoes are held by friction alone.



Claim.—1. A wrench attachment consisting of a shoe or runner-plate, A, having a face or bearing plate, *a*, sides *b b*, a nose-piece, *c*, and return-end holds *d d*, being a single casting, and adapted to be secured to the movable jaw of a wrench, and to carry pipe cutting or griping devices.

2. The shoe A, having the pivoted griping device, in combination with the spring *h*, attached to and carried by the hub of said griping-block, and traveling upon the bearing-plate, *a*, as described.

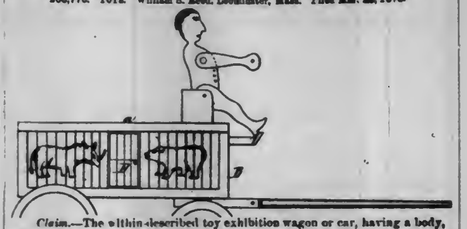
203,775. TOYS. William S. Reed, Leominster, Mass. Filed Apr. 4, 1878.



Claim.—1. In a toy fire-engine, the pivoted figures of the driver B and fireman C, connected by a jointed rod, *e*, in combination with the rod *a*, vibrating lever D, arm *c*, connecting-rod *f*, crank-pin A, and wheel E, all constructed to operate substantially in the manner and for the purpose set forth.

2. In a toy fire-engine, the pole G, arranged to slide thereunder and constructed to revolve on its axis, substantially as and for the purpose set forth.

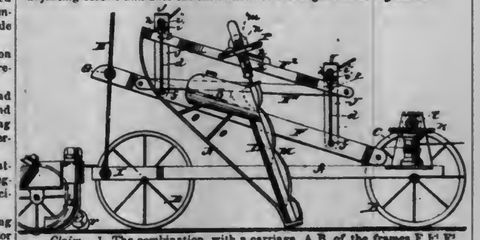
203,776. TOYS. William S. Reed, Leominster, Mass. Filed Mar. 26, 1878.



Claim.—The within-described toy exhibition wagon or car, having a body, B, provided on its sides or tops with cleats, apertures, dowel-pins, or other suitable means for supporting and holding in view figures or pictures of animals or other objects, which, when not in use, can be inclosed within the body B, provided with a cover, C, substantially as and for the purpose described.

203,777. DITCHING-MACHINES. Augustus Beesley, Lincoln, Ill. Filed Mar. 12, 1878.

Brief.—The auger is supported at its upper end by a cross-head resting on the upper one of three adjustable frames, which are connected to each other and to the main frame of the carriage in such manner that by means of adjusting screws and nuts the inclination of the auger can be regulated.



Claim.—1. The combination, with a carriage, A B, of the frames F F' F², the cross-head K, half-casing L, and auger M, with the screw-shaft K, passing through a roller, G, in the rear end of the frame F, and resting in a roller, I, on the carriage, for adjusting the auger, substantially as herein set forth.

2. In combination with the auger M and the adjustable frame F, connected to the carriage A, the frames F' and F², adjustable on the frame F by means of the screw-rods *d*, nuts *e*, bevel-gears *i i'*, and shafts *h*, substantially as and for the purposes herein set forth.

203,778. MOLDING-MACHINES. Henry Reynolds, New Haven, Conn., assignor to Reynolds & Co., same place. Filed Apr. 3, 1878.

Brief.—An independent hand-lever may be applied to operate the swinging platen. The handle for operating the rock-shaft and cams may be applied

to the shaft, dispensing with the slotted arm. The platen may be attached direct to the lever, dispensing with the rod.

203,778.



Claim.—1. In a molding-machine in which the upper platen is arranged to swing backward and forward, the combination, with such platen, of the cams N, slotted arm S, arm R, and lever P with a lever for operating said slotted arm, substantially as described.

2. The combination of the swinging platen, the rods by which it is hung to the frame, cams N, slotted arm S, lever P, arm R, and operating-lever to work in said slotted arm, substantially as described.

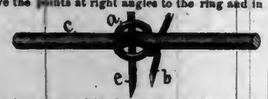
3. The combination, with the swinging platen, of the cams N, arm R, and lever P, with means for turning the said cams, substantially as described.

4. The combination, in a molding-machine, of the upper swinging platen, the lower platen, and a single lever, with intermediate mechanism, whereby a single movement of the said lever operates both the swinging and compressing platens, substantially as described.

5. In a molding-machine, the swinging platen attached at each end to a rod hinged below the lower platen, the said rods being constructed with a horizontal yoke to receive the corresponding ends of the said platen, the said ends being of less area than the opening in the yoke, and so as to leave the platen free therein, substantially as described.

203,779. FENCE-BARBS. Hiram Reynolds, Marshalltown, Iowa. Filed Apr. 22, 1878.

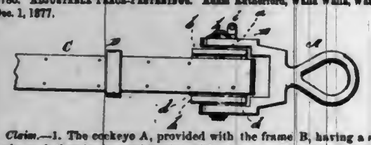
Brief.—The central portion is shaped into a ring and closed in such a way as to leave the points at right angles to the ring and in reverse ways to each other.



Claim.—1. As a new article of manufacture, the ring-form barb-piece *a b*, substantially as and for the purposes shown and described.

2. The combination of the ring-form barb-piece *a b b*, the staple-form barb-piece *d a c*, and the fence-wire *c*, substantially as shown and described, to produce a rigidly-fixed four-pointed fence-barb.

203,780. ADJUSTABLE TRACE-FASTENINGS. Adam Rutherford, Walla Walla, Wash. Filed Dec. 1, 1877.



Claim.—1. The cockeye A, provided with the frame B, having a series of cross-bars, *d*, therein, in combination with the trace C, having a loop, D, on its extreme end, substantially as and for the purposes set forth.

2. The combination of the cockeye A, frame B, shaft *e*, with star-wheel *h*, and arms *b b*, the rods *d d*, and screw *i*, all substantially as and for the purposes set forth.

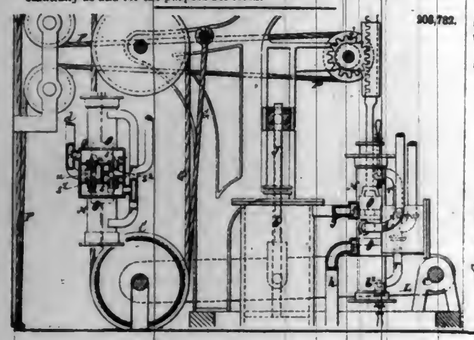
203,781. LEADER-PIPES. Peter Sauerzopf, New York, N. Y. Filed Nov. 23, 1877.



Claim.—1. The combination, with a leader-pipe, of an internal or thawing pipe extending through its entire length, and provided with top and bottom screw-plugs, whereby hot water or steam may be either passed through or injected into and retained in said internal pipe as long as desired, substantially as and for the purpose set forth.

2. The combination, with a leader-pipe and its internal thawing-pipe, of a return-bend adapted to be secured in the upper end of the thawing-pipe, substantially as and for the purpose set forth.

203,782.



203,782. HYDRAULIC ELEVATORS. Rudolph Schmidt, Yonkers, assignor to Otis Brothers & Co., New York, N. Y. Filed Apr. 16, 1878.

Claim.—1. In a hydraulic hoisting apparatus in which a counterbalance-weight or its equivalent is used to raise or assist in raising the car or cage and load or part of the load, and in which the hydraulic power serves the purpose of overcoming the inertia of the moving parts of said apparatus, the combination, with such apparatus, of a perforated disk or piston cut-off valve having its closing action controlled by the difference of pressure in the main cylinder and in the supply-pipe, substantially as specified.

2. In a hydraulic hoisting apparatus in which a counterbalance-weight is used to raise or assist in raising the car or cage, the combination of the automatic auxiliary cut-off valve or loose perforated disk R with the distributing-valve O O, substantially as specified.

3. The gates or valves *b' b'* applied to the exhaust-pipe *r* of the distributing-valve cylinder *N*, in combination with the tubular connection *d'*, or its equivalent, establishing a free communication between the reverse ends of the distributing-valve, whereby a balancing-pressure is obtained for said valve, irrespectively of the adjustment of said gates, essentially as described.

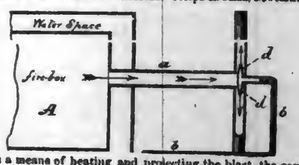
203,783. LOCKING-LATCHES. William Setterberg, Brooklyn, N. Y. Filed Aug. 22, 1877.



Claim.—1. The arbor A, constructed in two parts, adapted to be united by a pin or screw, and formed with the right-angled apertures *b c* and longitudinal recess F, in combination with the right-angled tumblers confined in the apertures of the arbor and between the two parts composing the same, the coiled springs arranged in the recess F and attached to the tumblers and arbor, and the outer cylinder G, having a series of perforations, *g*, substantially as described.

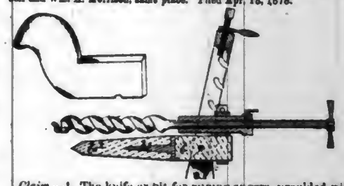
2. The combination, with the fixed cylinder G, having a series of perforations, *g*, on its opposite sides, the arbor A, having a series of vertical and lateral apertures, *b c*, the tumblers *a a'* arranged therein, and the alternately-arranged springs *d*, connected to the arbor and to the tumblers, said tumblers adapted to be projected alternately through the opposite sides of the arbor and fixed cylinder by the action of the attached alternately-arranged springs, substantially as described.

203,784. PROMOTING TRACTION IN LOCOMOTIVES. Joseph A. Shinn, Newcastle, Pa. Filed Oct. 8, 1877.



Claim.—As a means of heating and projecting the blast, the combination of an air-pipe, *a*, passing into or through the fire box A, a steam-pipe, *b*, having nozzle or nozzles *d*, and suitable conductors to the rails, substantially as described.

203,785. COAL-MINING AUGERS. Darius W. Siprall, Monongahela City, Pa., assignor to himself and Wm. H. Morrison, same place. Filed Apr. 18, 1878.



Claim.—1. The knife or bit for mining augers, provided with the leading-point and circular eccentrically-projecting cutting-surface back of the point, substantially as specified.

2. The combination, with the auger and its frame, of the threaded sleeve, the auger being adjustable through and detachable from the sleeve, and the sleeve movable in and detachable from the frame, substantially as and for the purpose specified.

3. The combination, with the auger and its stem, of the threaded sleeve and set-screw for adjusting and securing the stem in the auger, substantially as specified.

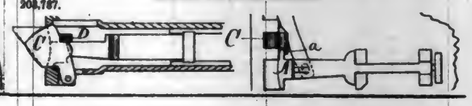
4. The truss-frame for coal-mining augers, having the adjustable screw-rod arranged on one of its bearings, substantially as and for the purpose specified.

203,786. WASH-BOARDS. Mark A. Smith, Evansville, Ind. Filed Apr. 13, 1878.



Claim.—The metallic rubbing-plate B, having transverse rows of spiral corrugations *a*, the directions of the spirals of the rows being alternately right and left handed, substantially as specified.

203,787.



203,787. LATCHES. Charles H. Smith, New Britain, Conn., assignor to P. & F. Corbin, same place. Filed July 27, 1877.

Brief.—The stop-lug on the cam-lever, being near its center of motion, does not come in contact with the bolt until the latter is nearly retracted, and thus avoids friction.

Claim.—1. In combination with a latch-bolt and cam-lever which engages the striker, an intermediate lever having one of its bearings on the latch-case and the other on the latch-bolt, substantially as described, and for the purpose specified.

2. In a latch, the combination of the cam-lever C and the bolt provided with a bearing to be pushed by the said lever, and a lug to come in contact with the cam to act as a stop for the bolt, said lug being located near the pivot of the cam, and the bearing on the bolt being located near the end of said cam, substantially as described, and for the purpose specified.

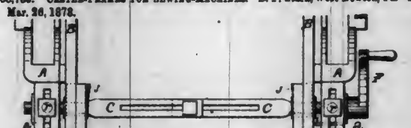
203,788. CLOVER-SEPARATORS. Wm. Segrs, Lyons, N. Y. Filed Feb. 19, 1878.



Claim.—1. In a separating attachment to clover-mills, the combination with the solid bottom B, having an oblique end, and a bar, *d*, at its end, which forms one side of a discharge-trough, of the sieve C, placed above such bottom, and having an oblique end secured to the said bar, the said sieve being perforated throughout its entire length, and receiving the material to be separated on its longest side, substantially as described and shown.

2. In an attachment to a clover-hulling machine, adapted to separate the stems and heads from the seeds and chaff preparatory to being winnowed, the combination of an inclined sieve, C, perforated throughout its entire length, secured to and placed above a solid bottom, B, which is inclined in the same direction, the lower part of both sieve and bottom having similar oblique ends, closed by a bar, *d*, and a stepped lower bottom, D, inclined in an opposite direction from the sieve C, and solid bottom B, seed-discharge opening *d'*, and refuse-exit *e*, whereby the stems and heads are separated from the seeds and chaff, substantially as described.

203,789. CASTER-FRAMES FOR SEWING-MACHINES. B. F. Stark, West Newton, Pa. Filed Mar. 26, 1878.



Claim.—1. In a caster-frame for sewing-machines, the blocks *b*, which serve to unite the two arms A, and serve as journals for the rods C, in combination with the bars B, substantially as shown.

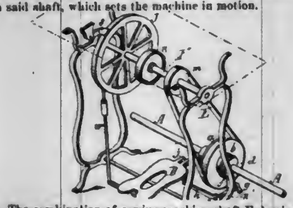
2. The combination of the slotted rods C, provided with the lifters J, blocks *b*, bars B, arms A, slotted at their inner ends, bolts *r*, and crank F, substantially as set forth.

203,790. COMPOSITIONS FOR PRESERVING EGGS. O. A. Stempel, Chamois, Mo. Filed Dec. 18, 1877.

Claim.—The composition for preserving eggs herein described, consisting of fresh slaked lime, common salt, coal or other oil, and water, in about the proportions specified.

203,791. TREADLE APPARATUS FOR APPLYING POWER TO SEWING-MACHINES. Leopold Sternberger, Philadelphia, Pa. Filed Apr. 22, 1878.

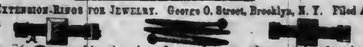
Brief.—By depressing the treadle the arm of the rock-shaft throws the loose pulley-disk on the power-driven shaft into frictional contact with the fixed collar on said shaft, which sets the machine in motion.



Claim.—1. The combination of sewing-machine shaft F, having pulleys *m* and *n* and fly-wheel J, the driving-shaft A, having the fixed collar *a* and loose disk *b*, the rock-shaft B, having arms *f* and *k*, the treadle D, the brake *s*, and the rod *w*, all constructed, arranged, and operating substantially as and for the purpose herein set forth.

2. The combination of the shaft A, its collar *a* and disk *b*, the treadle D, and the rock-shaft B, with its forked arm *f* and adjustable arm *k*, as set forth.

203,792. EXTENSION-RINGS FOR JEWELRY. George O. Street, Brooklyn, N. Y. Filed Apr. 25, 1878.



Claim.—1. The combination, in a finger-ring or other article of a similar nature, of a coil formed of an elastic strand, a cross-head for guiding the end or ends of the coil secured to the strand, and finger-buttons fastened to the ends of the strand, the coil being bent and adapted to operate substantially as shown and described.

2. The combination, in a finger-ring or other similar article, of a coil formed of an elastic strand, a cross-head for guiding the ends of the coil, secured to the strand at about the middle of its length, and slides fastened to the ends of the strand and embracing the coil, substantially as and for the purpose set forth.

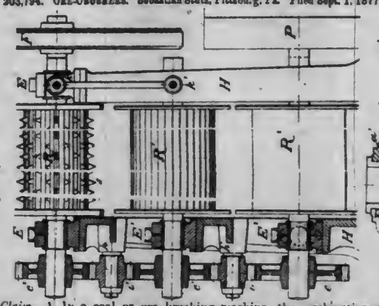
203,793. ORE-CRUSHERS. Sebastian Stotz, Pittsburg, Pa. Filed Apr. 27, 1877.



Claim.—1. In a crushing or pulverizing machine, the combination, with the upper corrugated rolls A A', of equal diameter, the two lower rolls B B', of equal diameter, but larger than the upper rolls, of the pinions *c c' c² c³*, of unequal diameter, substantially as described, for the purpose specified.

2. The combination of the screw-stems *c' c'*, having the nuts *l l*, with the half-boxes *i' i'*, flanged pipe-boxes *u u*, springs *s s*, and boxes or sockets *r r*, substantially as described, for the purpose specified.

203,794. ORE-DRESSERS. Sebastian Stotz, Pittsburg, Pa. Filed Sept. 1, 1877.



Claim.—1. In a coal or ore breaking machine, the combination of the upper set of toothed rollers R, the intermediate set of corrugated or fluted rollers R', and the lower set of smooth rollers R², the three sets of rollers being arranged with the spaces between them in the same vertical plane, substantially as described, for the purpose specified.

2. The housings H H, having brackets *k k* and *k' k'*, spring-boxes *g g*, and hubs *h h* and *h' h'*, in combination with the rolls R R, R' R', and R² R², and cog-wheels *c c' c' c² c³*, as described, and for the purpose set forth.

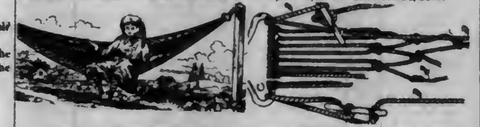
3. The combination of the stem *l*, having shoulder *m*, the spring *n*, flanged sleeve *o*, and bolts *u u*, with the housings H H and pillow-blocks of the lower rolls R², as described, for the purpose set forth.

4. The combination of the screw-stems *f f* and *f' f'*, having grooves *a*, the half-rings *a' a'*, and hand-wheels *t t'*, with the pillow-blocks E E and E' E', as described, and for the purpose set forth.

5. The breaking-bars *b b b*, having points *s s s* and ears *r r*, the plates *o c*, and bolts *d d*, in combination with the rolls R R, as described, and for the purpose set forth.

6. A machine for breaking and crushing coal, coke, ore, &c., consisting, essentially, of one set of adjustable rolls for breaking the large lumps of material, a second set of adjustable rolls for reducing the material broken by the first set, and a third set of adjustable rolls for reducing the material received from the second set to the required size, substantially as described.

203,795. HAMMOCKS. Edward S. Sutton, North Weymouth, Mass. Filed Oct. 24, 1877.



Claim.—1. The combination, with a hammock-body and its suspending-strands, of the regulating pursing-cord D, adapted for adjustment in any desired position, substantially as set forth.

2. The improved hammock herein described, consisting of the netted body A, the suspending-strands B, the angular rings C, and regulating-cord D, substantially as set forth.

203,796. APPARATUS FOR HERMETICALLY SEALING CANS. Thomas Trezise, Baltimore, assignor of two-thirds his right to Jesse Gillmore, same place, and G. W. Cofman, Mount Winans, Md. Filed Apr. 25, 1878.

Brief.—Plug is placed in position, and held in its place by friction with walls of plug-socket. Place device in can. Open valve which communicates with exhaust-chamber. When vacuum is complete, by pressing down lower knob, plunger passing through valve-stem is pressed down, driving home the plug; valve is closed. The pressing down of plunger admits air into recess below valve, restoring equilibrium, allowing device to be easily removed.



Claim.—1. For sealing fruit and food holding vessels, a perpetual vacuum-chamber, in combination with a sealer having a flexible connection with said perpetual vacuum-tank, a valve to open and close communication therewith and to hold the plug or sealing-cap for the can, and a valve-driver to drive the plug into the can-opening or deposit the cap over said opening, to seal the can after the air has been exhausted therefrom, as and for the purpose specified.

2. A sealing device having a plug or cap holding valve arranged to open and close within a bottom chamber of said device, and below its point of connection with the perpetual vacuum chamber, and a plug-driver or cap-layer arranged within the plug-holding valve, for operation in exhausting the air and sealing the can, substantially as specified.

3. A can-sealing device having a plug-driving valve arranged and operating within the hollow stem of a plug or cap carrying valve, in combination with the foot-sealing gasket and a perpetual vacuum chamber, with which said plug-carrying valve opens and closes communication.

203,797. BREECH-LOADING ORDNANCE. David Tatta, Pittsburg, Pa. Filed Mar. 15, 1878.



Claim.—1. In breech-loading ordnance of that class in which the breech is closed by the advancement of a plug or valve, an annular ridge projecting beyond the plane of the valve-face and a corresponding groove cut in the valve-seat in the gun, both ridge and groove being wholly without the circumference of the bore, substantially as described, whereby the valve operates to close the breech for firing, and the ridge and groove operate independently to check the escape of gases.

2. The combination of the breech-block C, having rectangular recess *c*, entering it laterally, the valve E, reciprocating at right angles to the recess *c*, and having the rear of its stem inclined, and the block G, having its forward surface correspondingly inclined, as and for the purpose described.

3. The combination of the breech-block C, having the laterally-extending recess *c*, the valve E, reciprocating at right angles to the recess *c*, and having the rear of its stem inclined, and the block G, having its front edges parallel with its rear edges, and the space or front between said edges inclined, substantially as described.

4. The combination of valve E, having inclined rear surface and inclined dovetailed tongue, with the inclined-faced block G, having inclined dovetail groove, whereby the movement of block G opens the valve.

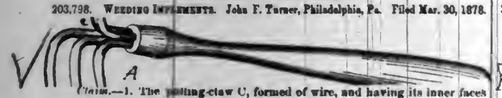
5. The combination of latch *p*, pin *w*, stud *s*, cut-away and slotted bolt *b* in the breech block with a mitable recess in the gun, substantially as described.

6. The combination of bolt *b*, pin *w*, stud *s*, latch *p*, and its detent *r* with the notched collar *g*, substantially as described, for the simultaneous locking of both valve and breech-block.

7. The combination of valve E, stem F, and block G with the recessed breech-block C and gun A, substantially as described, whereby in firing the valve is solidly supported.

8. In combination with the valve E, the sliding block G, having one face inclined, the breech block C, having lateral recess *c*, and the revolving screw H, said block G being wholly within the breech-block, and said screw H secured against end motion, all arranged and operating substantially as described.

203,798. WEEDING INSTRUMENTS. John F. Turner, Philadelphia, Pa. Filed Mar. 30, 1878.



Claim.—1. The pulling-claw C, formed of wire, and having its inner faces rounded, substantially as and for the purpose set forth.

2. In combination with the pulling-claw C, constructed as described, the loosening teeth or blade A, substantially as and for the purpose set forth.

203,799. BREECH-LOADING FIRE-ARMS. Albert C. Vredenburgh, Kingston, N. Y. Filed Jan. 26, 1877.

Brief.—When the hammer is cocked and breech thrown open, the side lever is immediately returned to its normal position.



Claim.—1. The breech-block C, having the slotted projection at one side, the breech-block brace D, having the pin V engaging said slot, and the hammer E, the whole constructed and arranged substantially as shown and specified.

2. The stud B, the jointed levers G and H, and extractor N, when arranged and combined in the manner shown, and for the purpose set forth.

3. The cocking-lever L and cocking-piece M and pin W, operating to open the breech and cock the piece, and the spring O engaging said lever, substantially as specified.

203,800. REVOLVING ORE-ROASTERS. Thos. Walker, Philadelphia, Pa. Filed Oct. 8, 1877.



Claim.—1. A cylinder through which the ore is caused to pass, in combination with a hollow shaft having vanes or stirrers, and orifices for the escape of air from the shaft in jets near the vanes, all substantially as set forth.

2. The combination of the hollow shaft G, the inner shaft H, recessed lips *e*, and vaned plates *f*.

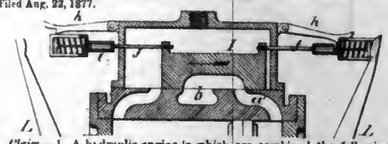
3. The combination of the inner shaft, adapted to bearings, and the outer hollow shaft, having air-orifices, with a short fixed tube at one or both ends of the shaft.

4. The combination of the cylinders E, E', and E'' with the passages *a a' a''* and an exhaust-pipe, through which to carry off the noxious gases, as specified.

5. The hollow shaft G, carrying the vanes or stirrers and communicating with an air-blast, in combination with the hollow internal shaft H, communicating with a supply of water, as and for the purpose set forth.

6. The combination of a furnace and a series of retorts with the lower partition *x*, leaving an opening at the end farthest from the fire-place, and provided with an opening and damper, *y*, at the opposite end, as and for the purpose set forth.

203,801. HYDRAULIC ENGINES. John B. Waring and Jay F. Darrow, New York, N. Y., and Francis Winters, Jr., St. Paul, Minn.; said Waring assignor to said Darrow and Winters. Filed Aug. 22, 1877.



Claim.—1. A hydraulic engine in which are combined the following elements, namely: the valve I, its rods *f f*, springs for actuating the valve, retainers *h*, and levers L, for first compressing the springs and then operating the retainers so as to release the said springs, all substantially as set forth.

2. The combination of the cylinder and its piston with the spring-pin *w*, as specified.

203,802. MEANS OF SUPPLYING WATER TO BUILDINGS. Edmond A. Warren, Brooklyn, N. Y. Filed Apr. 18, 1878.



Claim.—1. In combination with the pipe for supplying water to two or more floors of a house or building, a check-valve arranged in said pipe between the lower and upper draft-cocks, for retaining the water in the upper part of the pipe while drawing off below, substantially as specified.

2. The combination, with the pipe for supplying water to two or more floors of a house or building, and a check-valve arranged in said pipe between the lower and upper draft-cocks, of a removable stop for keeping said check-valve closed when it is desired to empty the pipe or pipes for repairs, essentially as described.

203,803. CLOTHES-WRINGERS. T. R. Way, Springfield, Ohio, assignor to himself, F. K. Way, and Jas. Todd, same place. Filed Mar. 7, 1878.



Claim.—1. In combination with the journal *b* of the roller R', the frame F, fitted within the opening *a*, and provided with the lugs *f* and friction rollers E', and capable of vertical movement within said opening, substantially as and for the purpose specified.

2. In combination with the pressure-screw of a clothes-wringer, a semi-elliptic pressure-spring provided with a central socket for the reception of the end of said pressure-screw, said socket being formed by bending said spring downward at such point, substantially as and for the purpose shown.

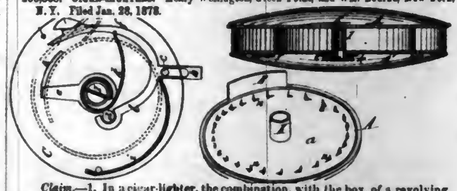
203,804. FENCE-POSTS. Edward S. Webster, Durand, Ill. Filed Apr. 22, 1878.



Claim.—1. A fence-post, substantially as herein described, having a twisted base and a slotted shaft, in which is placed the transverse bracing-bar B, and a horizontal bar, C, slotted lengthwise to receive the main shaft of the post, these parts constructed and operating substantially as and for the purpose hereinbefore set forth.

2. A fence-post having its edge notched to admit the fence-wire, and the clasps surrounding the wires in the notches, and embracing the sides of the post, substantially as and for the purpose hereinbefore set forth.

203,805. CIGAR-LIGHTERS. Henry Wellington, Green Point, and Wm. Bourke, New York, N. Y. Filed Jan. 28, 1878.



Claim.—1. In a cigar-lighter, the combination, with the box, of a revolving cover, adapted to feed the wick forward or backward, substantially as shown and described.

2. In a cigar-lighter, the combination of the top and bottom plates and the vertical wall uniting the two, a portion of said wall being attached to the upper plate for the purpose of closing the opening in the remaining portion, substantially as shown and described.

3. In combination with the top plate of a cigar-lighter, a toothed or indented plate connected therewith, and leaving an opening between the rim of

the first and the perimeter of the second to accommodate the edge of the vertical wall, substantially as shown and described.

4. In a cigar-lighter, the combination, with the top and bottom plates, of a removable intermediate plate, made of thin metal, to which the overlying mechanism is secured in a semi-permanent manner, and from which the underlying parts are readily detachable, said underlying parts being held in place by the bottom plate, and the cover or top plate being secured by a telescopic joint, the whole arranged substantially as shown and described.

5. The combination of the thumb-piece *b*, arm *f*, feed-finger *e*, and the retracting-spring, substantially as shown and described.

6. The combination of the thumb-piece *b*, arm *f*, hammer G, and retracting-spring, substantially as shown and described.

203,806. EDGES FOR UPHOLSTERED SURFACES. George T. Whiting, New York, N. Y. Filed Sept. 27, 1877.



Claim.—An edge for upholstered surfaces, consisting of a strip of quilted felt doubled upon itself and again quilted near the bend, and its lower portion embracing and secured to a wooden core, substantially as shown and described.

203,807. STIRRUPS. Gardner M. Wilson, Zoleski, Ohio. Filed Mar. 2, 1878.



Claim.—1. The stirrup herein described, having upward extension B, transverse slot *a*, and tenon C on the extreme end, and of less width than the extension B, as described, and for the purpose set forth.

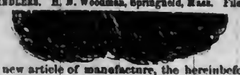
2. In combination with a stirrup-strap having loop F, the stirrup A, provided with upwardly-tapering arm B and transverse slot *a* near its lower end, and tenon C on the extreme end of arm B, having its sides parallel and of the same width as slot *a*, all as described, and for the purpose set forth.

203,808. HOISTING-MACHINES. Wm. C. Williamsen, Philadelphia, Pa., assignor to Williamsen Brothers, same place. Filed Apr. 18, 1877.



Claim.—In a hoisting-machine, the fixed box or collar D, forming a part of the frame of the machine and having a spirally-formed face, as described, and the loose collar E, provided with a correspondingly-formed face, and the lever G, combined with the shaft carrying frictional hoisting-gear and the spring F, substantially as specified.

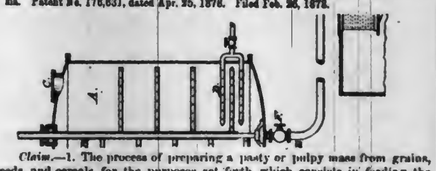
203,809. FIRE-KINDLERS. H. N. Woodman, Springfield, Mass. Filed Aug. 2, 1877.



Claim.—As a new article of manufacture, the hereinbefore-described fire-kindler, consisting of "excelsior" bundled into convenient size and form, wound and retained in shape by its own fibers, and saturated with an inflammable resinous substance, substantially as set forth.

REISSUES.

8,224. PROCESSES FOR MASHING GRAIN. J. D'Heureuse, Schmetzdorf, near Berncn, Prussia. Patent No. 176,631, dated Apr. 25, 1876. Filed Feb. 26, 1878.



Claim.—1. The process of preparing a pasty or pulpy mass from grains, seeds, and cereals, for the purposes set forth, which consists in feeding the material into a close tank containing water, and then and there subjecting the same, under a stirring operation, to heat and pressure, the heat and pressure being discontinued when the material is reduced to a pasty or pulpy consistency, substantially as described.

2. In the reduction of grains, seeds, and cereals, as described, the process of rendering the disintegrated material readily transportable and comparatively free from hulls and the like, which consists in separating the hard from the soft portions by sifting and then drying the mass, substantially as set forth.

3. In the reduction of grains, seeds, and cereals, as described, the process of rendering the disintegrated material readily transportable, which consists in drying the mass subsequent to its reduction to a pasty or pulpy consistency, substantially as set forth.

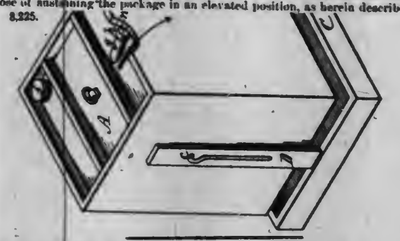
8,225. BOXES AND CANS FOR OILS AND PAINTS. H. B. Everest and Caroline E. Ross, (executrix of Austin P. Ross, deceased,) Rochester, assignors to Vacuum Oil Company, Rochester, N. Y. Patent No. 132,955, dated Nov. 12, 1872. Filed Feb. 26, 1878.

Claim.—1. A package for oils or other liquids having, in combination therewith, a frame with supports which form an attachment to the package, and serve as bearings for the pivots when the package is elevated for pouring the liquid.

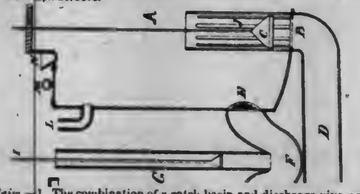
2. The combination, with a package for containing oils or other liquids, of a frame provided with supports, forming an attachment to the package, and fitting closely thereto when packed, but allowing the package to be elevated upon the supports and turn upon its axis in pouring the liquid, as specified.

3. The part C, forming a cover to the package, provided with the supports D D, having slots for receiving the pivots, and made reversible for the purpose of sustaining the package in an elevated position, as herein described.

8,225.



8,226. CATCH-BASINS. Henry Frank, Cincinnati, Ohio. Patent No. 181,931, dated Sept. 5, 1876. Filed Apr. 26, 1876.



Claim.—1. The combination of a catch basin and discharge-pipe, as D, and escape-pipe having a trap between its inlet and exit orifices.

2. The combination of a catch-basin and discharge-pipe, as D, and escape-pipe having a trap between the basin and the main discharge-pipe, with which it communicates.

3. The main discharge-pipe D and escape-pipe F, in the described combination with a catch-basin, A, stand-pipes J and G, and plungers C and I, for the purposes set forth.

4. The pipe G, extending upward from the middle of the trap in pipe F, and provided with suitable plunger I, for the purpose explained.

5. In combination with a catch-basin, the delivery-pipe D, provided with plunger C, and an escape-pipe having a trap between its inlet and exit orifices, substantially as and for the purposes set forth.

8,227. BACK-BAND HOOKS. Josiah B. Gathright, Louisville, Ky. Patent No. 148,606, dated Mar. 17, 1874. Filed Nov. 12, 1877.



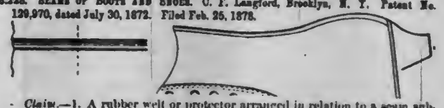
Claim.—1. A combined double-loop buckle and hook for back-bands and similar uses, constructed of two wires bent into the form and connected in the manner herein shown and described.

2. A combined hook and buckle for back-bands and similar uses, in which the hook-bar performs also the function of loop for the end of the band, substantially as herein shown and described.

3. A buckle for back-bands and similar uses, constructed with a central section of the upper parallel bar or loop omitted, substantially as herein shown and described.

4. A combined hook and buckle for back-bands and similar uses, constructed with the hook-bar and tooth-bar in juxtaposition, and the point of the hook in the same plane with or close proximity to the tooth-bar, substantially as and for the purpose herein shown and described.

8,228. SEAMS OF BOOTS AND SHOES. C. F. Langford, Brooklyn, N. Y. Patent No. 129,970, dated July 30, 1872. Filed Feb. 25, 1878.



Claim.—1. A rubber welt or protector arranged in relation to a seam substantially as described, for the purpose set forth.

2. In the manufacture of boots and shoes, a rubber welt or protector applied to the seam, substantially as and for the purpose stated.

8,229. PRESERVING FRUITS. D. M. Mefford, Toledo, Ohio. Patent No. 82,429, dated Sept. 22, 1868. Filed May 3, 1878.



Claim.—The method or process of preserving fruit by treating or charging the same in a raw state with free sulphurous acid gas uncombined with any other chemical antiseptic agent, and then subjecting it to heat, in the manner substantially as set forth.

8,230. FURNACES FOR BURNING-KILNS. George C. Saris, Rochester, Pa., assignor to E. W. Bingham. Patent No. 155,269, dated Sept. 22, 1874. Filed May 1, 1878.



Claim.—1. The combination of the double arch of the furnace and its air-conducting front and rear flues with the kiln-connecting flues, for producing the intermingling and complete combustion of the heated air and the fire-gases at the mouths of the arches of the kiln, substantially as specified.

2. The combination, with two or more kiln-arches and a single furnace separated from the kiln-wall by an intervening space, of two or more flues passing through the intermediate space to the eyes of the kiln, whereby several adjoining arches of the kiln may be heated by one furnace of less width than the combined widths of the arches and intermediate bench or benches, substantially as specified.

3. The combination, with several independent kiln-arches having separate mouths, of a single external furnace-chamber at right angles with the face of the kiln-wall, having independent flues leading to said mouths, substantially as specified.

4. The combination of a furnace built outside of the kiln, and having its rear wall F spaced from the kiln-wall C, with the kiln-arches and straight or diverging flues B^2 B, each flue leading from the furnace-chamber into the outer end of the kiln-arch, substantially as specified.

5. In a brick kiln, the combination, with an exterior furnace, feeding several kiln-arches, of the independent spreading-flues, extending from the furnace to said arches, and the regulating-dampers in said flues, substantially as specified.

8,231. DENTAL DRILLS. Alex. Hartman, Murfreesborough, Tenn., assignor, by mesne assignments, to S. S. White, Philadelphia, Pa. Patent No. 116,237, dated Aug. 22, 1871. Filed May 15, 1877.



Claim.—1. The combination, substantially as hereinbefore set forth, of a power-driven shaft flexible at every point in its length, a non-rotating tube or sheath enveloping said shaft, also flexible at every point in its length, a hand piece or casing connected directly with the free end of the tube, and a tool chuck or holder mounted in said hand-piece and connected with the free end of the driving-shaft.

2. The combination, substantially as hereinbefore set forth, in a dental-engine hand piece, of a casing constructed of detachable sections, with a rotary tool-chuck or holder mounted therein, the rear section of the casing and the rotary chuck being adapted to be connected with a flexible non-rotating sheath and a flexible power-driven shaft, respectively.

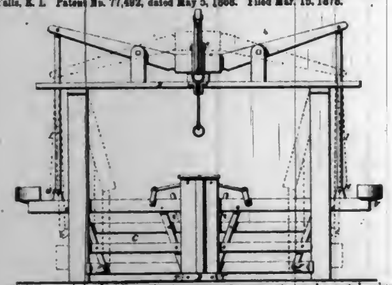
3. The combination, substantially as hereinbefore set forth, in a dental engine, of a hand-piece or casing constructed of detachable sections, a tool chuck or holder mounted therein and adapted for the ready interchange of operating-tools, and a flexible power-driven shaft connected with said chuck and adapted to impart rotary motion thereto.

4. A dental engine hand piece or casing consisting of a main body or tubular portion and a detachable section or nose, in which the tool or chuck has its bearings, whereby the nose, when worn, may be removed and a new one inserted in its place.

5. The combination, substantially as hereinbefore set forth, of the power-driven shaft, the tool chuck or holder, and a screw-nut to connect the chuck and shaft together.

6. A flexible power-driven shaft for conveying motion, composed of rattan, as set forth.

8,232. GATES. Jasper S. Jewett, Sedgwick, Kans., assignor to John E. Goldworthy, Central Falls, R. I. Patent No. 77,492, dated May 5, 1868. Filed Mar. 15, 1878.



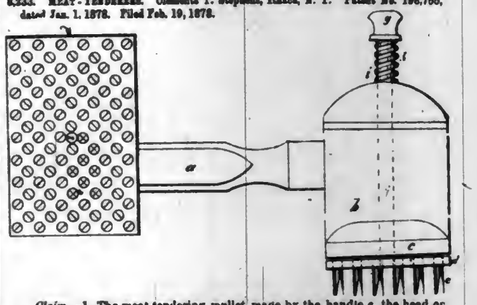
Claim.—1. A vertically-swinging gate of two parts, each part having an extended top rail or bar, which is weighted on the outer end, in combination with posts or standards arranged on opposite sides of the gate-opening, to which the said parts are secured on the respective sides of the gate-opening by journals or shafts, and counterbalanced on the said journals or shafts by means of weights attached to the outer part of the extended top rail or bar, substantially as specified.

2. In combination, substantially as specified, with posts or standards arranged on opposite sides of the gate-opening, two counterbalanced vertically-folding gates, each provided with a projecting top rail secured to the said standards by means of journals or shafts, on which they swing from each other to a vertical position in opening, and toward each other to a horizontal position over the roadway in closing, the said gates being counterpoised on the journals or shafts by means of weights attached to the projecting top rail thereof.

3. In combination, substantially as specified, with two counterbalanced vertically-swinging gates, journaled to posts or standards arranged on opposite sides of the gate-opening, each gate being weighted on the outer end of the projecting top rail thereof, to counterpoise the weight between the standards, interconnecting mechanism, substantially as described, for simultaneously opening or closing them, (the said gates.)

4. In combination, substantially as specified, with the counterbalanced vertically-swinging gates or gate-rails, having pivots or bolts, on which they swing, and provided with mechanism, essentially as described, for simultaneously raising or lowering them, (the said gates,) locking mechanism, substantially as specified, consisting of the tumbler H, chain or rope S, lever-latch Q, springs U R, and bolt T, applied to each gate, the sill D, and rod I, as described.

8,233. MEAT-TENDERERS. Clements T. Stephens, Ithaca, N. Y. Patent No. 196,755, dated Jan. 1, 1878. Filed Feb. 19, 1878.

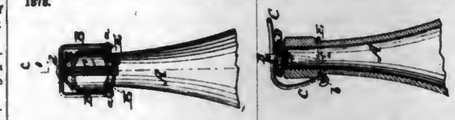


Claim.—1. The meat-tendering mallet made by the handle *a*, the head or weight *b*, tooth-holding base *c*, and cleaning-plate *d*, combined and arranged substantially as set forth.

2. The combination of the handle *a*, the head *b*, tooth-holding base *c*, and cleaning-plate *d* with the rod *i*, extending through the head and provided with a knob, *g*, whereby the cleaning-plate may be operated, substantially as specified.

3. In combination with the mallet-head *b*, the teeth or knives *f*, provided with chisel or incisor cutting-edges *f*, arranged in parallel rows across the face of the head *b*, said chisel or incisor edges in each row being set at right angles to those of the adjoining rows, whereby a series of clear cuts will be given to the meat, substantially as and for the purposes specified.

8,234. BOTTLE-STOPPER FASTENERS. Adolph Lathy, New York, N. Y., assignor, by mesne assignments, to Karl Hutter. Patent No. 100,456, dated Nov. 2, 1875. Filed Apr. 22, 1878.



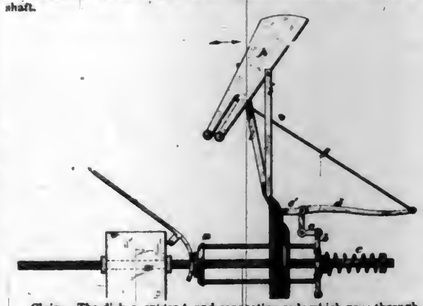
Claim.—1. The neck-wire E, combined by two pivots, *a a*, with the bail, and by one pivot, *b*, with the locking-lever of a bottle-stopping device, substantially as herein shown and described.

2. The combination of the locking-lever C, bail B, and stopper D with the neck-wire E, all arranged so that in a locked condition the stopper will be held down by the lever and bail, which unite with the neck-wire at three different points of the neck-wire, substantially as specified.

3. A bottle-stopping device made of a curved spring-lever, swinging over the mouth of the bottle, and having a suitable stopper attached thereto, in connection with a swinging bail, substantially as and for the purpose set forth.

8,235. WIND-ENGINES. Isaac H. Palmer, Lodi, Wis. Patent No. 192,931, dated July 10, 1877. Filed Jan. 17, 1878.

Brief.—An excess of wind acting on the outer part of the wing will force said wing, by means of rods and levers, against the action of a spring on the shaft.



Claim.—The disk *c*, spider *b*, and connecting rods which pass through the head, in combination with the bell-crank lever *d*, connecting rods or bars *g*, wing *h*, and spring *e*, the parts being arranged to operate as set forth.

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COMMISSIONER'S DECISIONS.

JAMES POWELL.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of James Powell for the reissue of Reissue Letters Patent No.* 6,528, *granted July* 6, 1875, *for* "IMPROVEMENT IN GLOBE-VALVES," *application filed August* 9, 1877.—(*Division B*). —*Decided April* 25, 1878.]

Reissues must be for the same inventions as the originals upon which they are based. A device as patented cannot be disorganized and reissue taken for special constituent parts separated entirely from the remainder of the machine when there is nothing to indicate that such separation was originally contemplated. It is a different invention.

SPEAR, *Commissioner:*

Applicant seeks to reissue in two divisions the reissued Patent No. 6,528, granted to him July 6, 1875, for "Improvement in Globe-Valves." (Division B) of the reissue application, upon which the present appeal is taken, is stated to be for "certain new and useful improvements in coupling-joints," and the question to be decided is whether such application is not for a substantially different invention from anything contained in the original reissue letters patent.

Section 4916 Rev. Stats., in providing for the surrender of defective patents and their reissue in a corrected form, states that—

the Commissioner may, in his discretion, cause several patents to be issued for distinct and several parts of the thing patented upon demand of the applicant.

It is manifest that the words "the thing patented," as used in the context, refer to the invention embodied in the original grant, and that in accordance with the prohibition elsewhere contained in the section, there can be no reissue in several divisions any more than in a single patent of any invention not found in or disclosed by the original patent papers or Office model. As showing the intimate and essential dependence of the reissue grants upon their originals, it is well to recall the language of the Supreme Court in *Seymour* vs. *Osborne*, (11 Wall., 544:)

Reissued letters patent must, by the express words of the section authorizing the same, be for the same invention. * * * Interpolations of new features, ingredients, or devices which were neither described, suggested, or indicated in the original patent, or Patent Office model, are not allowed. * * * Corrections may be made in the description, specification, or claim, but (the patentee) cannot under such (a reissue) application make material additions to the invention.

In the case before me, I find from an examination of the specification and drawing belonging to the reissue letters patent that the invention, as set forth, relates exclusively to certain improvements in globe-valves—the nature of which may be stated briefly to consist in providing the screw-stem, having a loose disk or flexibly-attached valve at its lower end, with guide-wings or bearings which preserve the screw-stem in an axial position relatively to the valve-seat, even after the screw-thread of the stem has become worn from use, and tends by lateral play to misplace the valve upon its seat.

Provision is also made for locking the flexibly-attached valve to the stem, so that while thus rigidly connected the valve may be ground axially true to its seat; which, to still further insure, the patentee provides the valve with a cylindrical prolongation that snugly fits into the straight walls of a corresponding passage in the valve-seat.

A careful examination satisfies me that the patentee had no other object in view, and set forth no other or different invention than that which has just been stated, as one pertaining exclusively to globe-valves.

It appears from the arguments of counsel that the inventor, subsequent to the grant of his patent, discovered that the particular means shown by him for loosely attaching the valve-piece to the screw-stem was capable of very general application, or at least that the combination of these parts, in the manner exhibited, was not confined in benefit exclusively to the single class of globe-valves. Accordingly, the present (Division B) application is drawn with the apparent purpose of covering these later-developed advantages,

the coupling-joint for which it reads being made up of those elements which formed the loose or flexibly-attached valve of the original patent. It is true that the members in the coupling-joint occupy precisely the same relation to one another, and are combined in substantially the same way, as in the original patent, but they are entirely disaggregated, and set forth as an independent organization from the other constituent elements of the globe-valve with which they were formerly associated. Not only this, but the designating descriptive words used to distinguish the various elements have been materially changed; thus, instead of what is called "the lower end of stem E," which of course refers to the screw-stem of the valve, the applicant speaks of "the member or tail-piece A of the coupling;" the guide-wings or bearings which serve to preserve the axial direction of the valve in the original are difficult to identify with "the enlargement B, situated at one end of the tail-piece A of the coupling." "The plug H," constituting a portion of the valve in the patent, is termed "the rotable coupling-swivel or nut," and "the valve proper or disk I," is known as "the member J."

There can be no mistaking the effect of these changes in the technical descriptive words. A component part of a particular kind of globe-valve is bodily separate from the original structure, and, by a careful change in descriptive terms, is made to appear as an independent organization, capable of a very different and much more extended application than the patentee had ever contemplated, so far as can be discovered from an examination of the reissue patent.

The privilege accorded a patentee to appropriate, after discovered uses or effects arising from his invention, is a well-settled principle in law, and never more emphatically pronounced than in the case of *Putnam* vs. *Yerrington*, cited by attorney, and reported in 9 OFFICIAL GAZETTE, 689. But neither that case nor any other ever decided that a patentee, under the plea of after-discovered effects, could disaggregate his old machine, and set up as part of the same invention a special organization of parts, producing some special effects he desires to cover, to the entire exclusion of all other results regularly flowing out of the complete device as originally organized.

The extreme limit of the reissue remedy would seem to be reached when a broad claim to the special elements, producing the special effects, had been made in an application which disclosed the entire machine organization and the relations which the special parts occupy to the remaining portions of the device. As applicant has exceeded this limit, and attempted to engraft upon reissue a distinct device nowhere contained or hinted at in the existing reissue patent, he comes within the statutory prohibition, section 4916 Rev. Stats., in relation to new matter not found in the original invention as patented.

The application must be rejected, and the action of the Board of Examiners-in-Chief is accordingly affirmed.

THOMAS MAYOR.—*Petition to revive application.*

[*In the matter of the application of Thomas Mayor, filed July* 18, 1874, *for* "IMPROVEMENT IN SPINDLES FOR SPINNING-FRAMES.—*Decided March* 29, 1878.]

An application abandoned because of failure to prosecute within two years next after the last Office action will not be revived if the neglect or default of the party himself has caused the loss in *status*.

SPEAR, *Commissioner:*

This application was forfeited by operation of law January 11, 1877, because of applicant's failure to take any action therein within two years next after rejection by the Office. Applicant now seeks to revive his case, and to invest it with all the qualities of a continuing application under that portion of section 4894 Rev. Stat., which allows this to be done in event the failure to prosecute can be accounted for to "the satisfaction of the Commissioner of Patents."

The law in investing the Commissioner with this privilege of revivor did not contemplate that he should exercise the privilege in an applicant's favor unless it was clearly and satisfactorily established that the party seeking relief had acted diligently and had not, by any default of his own, contributed to the forfeiture he seeks to avert.

The evil which Congress sought to remedy by the act of limitation contained in section 4894 is well understood by the profession.

Bona fide investors, and parties in interest under them, having large money investments at stake, have oftentimes been annoyed and unjustly harrassed by the resurrection of old applications within the Patent Office, containing the germ perhaps of the invention they are successfully practising, but which was obviously incomplete and worthless in the applicant's mind, as evidenced by the long-continued attitude of indifference he has maintained toward it.

It was to relieve our industries from these inequitable and oftentimes specious class of claimants that this section of the statute was enacted. If, then, a party seeks to escape from its operation he must establish the utmost of good faith and diligence in his conduct, the onus of which rapidly increases in proportion to the time he has suffered to elapse without effort to revive his claim.

In the case before me, if the party simply contemplated contesting the title to the invention set forth, this could as readily be done by the filing of an entirely new application as by the revival of the present one, particularly since the additional cost would be insignificant. In not choosing to do this, it is hard to escape the conviction that a public use of his invention has, meantime, intervened of such duration as to entirely defeat his right to a patent. This compels even a greater degree of circumspection than might be necessary without it.

It appears from the record that the application, as first presented, was rejected on patents which were confessedly in point; the earliest, bearing date of April, 1871, and the latest in May, 1872—the one more than three years, and the other more than two years, prior to the date of filing the petitioner's application.

Upon an amended claim being presented January 4, 1875, an English patent was cited January 11, which is the last action in the case. No effort has been made to contest the pertinency of these references, nor, indeed, did the applicant or his attorney ask for the simple privilege of a reconsideration of the claim last presented, which he was entitled to do under the rules, and which would have kept the case alive at the present date, if made in time.

The probability of an Interference with the references that had been cited was only prospective in the attorney's mind; and until such an impediment was reached in Office procedure, it is difficult to excuse the applicant for his lack of diligence.

The affidavits that have been presented in his favor, while they establish the fact of his serious sickness from 1870 to 1873, do not show any great amount of infirmity after that time, certainly nothing serious since the date of filing of the application. It is obvious that the lack of diligence cannot be entirely excused on the score of bodily sickness. Nor is the trouble removed by the fact of want of means. With the invention in controversy gone into extensive use, it is inconceivable that the applicant could have met with much trouble in engaging the necessary capital, if he had sedulously labored to bring the merit of his claims to the notice of parties interested.

It is contrary to every-day experience that persons engaged in business will not take up with an inventor who shows himself to be the meritorious one, under the law, rather than to continue to pay royalties and licenses to others, whose patents have already been granted.

All the circumstances considered, I do not regard the affidavits as sufficient in establishing the right of the petitioner to have his application revived under the law, particularly when it is remembered that the first opposing patent has already run seven years of its life, and in all probability has heavy money interests based upon it. It is only upon the clearest showing that I could consent to disturb these vested rights, and there being an utter failure in this regard, the petition is dismissed.

The application will not be revived.

JOHN BIGELOW.—*Appeal.*

[*Appeal from the decision of the Principal Examiner in the matter of the application of John Bigelow for* "IMPROVEMENT IN SEWING-MACHINES," *filed December* 29, 1877.—*Decided April* 6, 1878.]

In a sewing-machine, if the combination of the trimmer and the mechanism for moving the cloth laterally is an invention, then the other subordinate constructions and combinations—improvements upon the two elements of this combination—may be considered as parts of the same invention, and be included in the same application.

SPEAR, *Commissioner:*

The question involved in this appeal is that generally difficult question of the division of an application. The Acting Examiner has set forth his views very clearly and forcibly, and cited numerous decisions to sustain them. It is not a matter easily settled by precedent, since no two cases can by any chance be exactly alike, and it is impossible to lay down any general principle governing in such cases.

The leading element in the application under consideration appears to me to be set forth in the ninth claim. Briefly, it is the combination in a sewing-machine of a trimmer and a moving plate which gives an intermittent motion to the cloth transverse to the line of feed, the construction being such that the trimmer and the cloth move exactly together.

No question is raised, so far as I understand, nor do I now see any occasion to raise any such question, as to the patentability of this combination.

The other claims relate to subordinate improvements: first, upon the laterally-moving plate and its connections; and, second, of subordinate improvements upon the trimming mechanism. There appears to be some force in the reasoning of the Acting Examiner, that these subordinate improvements should be included, on the one hand, in an application for an improvement in the sliding plate or mechanism for overseaming, and, on the other, in an application for improvement in trimmer. But this division would leave out the essential feature—that is to say, the combination of the trimmer and the plate, which, following out logically this idea, should be the subject-matter of a third application. But if this combination of the trimmer and the mechanism for moving the cloth laterally is an invention, then the other subordinate constructions and combinations—improvements upon the two elements of this combination—may be considered as parts of the same invention. Were there no necessary connection between the apparatus for moving the cloth laterally and the trimming mechanism, then the Examiner would be clearly right; the case then would be like that of Hamilton, (Vol. 13, OFFICIAL GAZETTE, 122,) to which he refers.

In view of the facts stated, I am of the opinion that the claims may all be allowed, if the state of the art permit, in one application without injustice, and without inconvenience to the Office or to the public.

In such cases as this, if different elements of the invention are nearly allied to subdivisions in the portfolio, copies of the drawings of the patents, when issued, may be placed in such subdivision.

The decision of the Examiner is overruled.

DECISIONS OF THE COURTS.

Supreme Court of the United States.

JAMES H. McLEAN, APPELLANT, *vs.* COCHRAN FLEMING.

[*Appeal from the Circuit Court of the United States for the Eastern District of Missouri.—Decided October Term*, 1877.]

A trade-mark is infringed if ordinary purchasers buying with ordinary caution are likely to be misled by the spurious mark.

Original inventorship or proprietorship of the article and the relative value or quality of the rival products are not in question when action is brought for infringing a distinguishing trade-mark. If the mark has become associated with the goods of one trader, its wrongful appropriation by another will be enjoined.

No name, merely as such, can confer any exclusive trade-right. It is only when it becomes identified with some particular kind of goods, or is employed as a legal mark in connection with the party's place of business, that its use will be protected.

A trader is without special privilege even to his own name as against a rival of the same name, unless the latter deceptively simulates his labels or marks.

Exact similitude to the trade-mark is not essential to its infringement. If it is such as would be likely to mislead in the ordinary course of purchasing the goods, equity will interfere to prevent the deception.

Though he is not the manufacturer, and yet uses the name of the latter as part of his mark, the trader will be protected in the mark he employs, if it is a lawful one.

Future wrongful use of a trade-mark may be restrained, although there may be no award of an account for past profits, because of the delay in bringing suit.

Where the infringement is cl[illegible] proof of fraudulent intent is not essential to establish liability.

Infringement of a specific mark is unnecessary to an injunction. If the court is satisfied that there was an attempt to palm off the goods as those of the complainant—which was persisted in after protest—it is sufficient.

Although the objection of long delay or laches was not directly set

up in defeat of the action for an account, the Court, in consideration of the particular nature of the allegations and the proceedings, admitted it for consideration.

The decree below being affirmed as to injunction and reversed as to an account, the costs in the Supreme Court were taxed against the appellee.

[*S. S. Boyd*, for appellant; *W. L. Gray* and *G. Denison*, for appellee.]

Mr. Justice CLIFFORD delivered the opinion of the Court:

Protection for lawful trade-marks may be obtained by individuals, firms, or corporations entitled to the same, if they comply with the requirements prescribed by the act of Congress, and the provision is, that a trade-mark, duly registered as required, shall remain in force thirty years from the date of such registration, subject to an exception not necessary to be noticed. (16 Stat. at Large, 210; Rev. Stats., secs. 4,937, 4,941.)

Exclusive ownership of a certain medicinal manufacture known as "Dr. C. McLane's Liver Pills," and of the trade-mark used in advertising and vending the same, is claimed by the complainant, and the record shows that he, on the 1st day of June, 1872, filed in the ciruit court a bill of complaint against the respondent, charging that the respondent had unlawfully infringed the said trade-mark, and he prayed for a decree that the respondent shall render an account of the gains and profits made by the infringement, and for an injunction.

Service was made, and the respondent appeared and filed an answer. Proofs were taken, and the parties having been heard, the court entered a decretal order in favor of the complainant, and sent the cause to a master to compute the amount of the gains and profits. Due report was made by the master, to which the respondent excepted, and the court overruled the exception, confirmed the report of the master, and entered a final decree for the complainant in the sum of seven thousand three hundred and ninety-nine dollars and thirty-five cents.

All matters in that court having been finally determined, the respondent appealed to this court and assigns errors as follows:

1. That the court erred in finding that the labels L and K, or either of them, infringed Exhibit F, as set forth in the decretal order.
2. That the court erred in finding that the complainant was entitled to any damages, and in ordering the assessment thereof and in allowing him costs.
3. That the court erred in ordering an account of the sales of Exhibits L and K prior to the 16th of October, 1871, the date of the first use of Exhibit H by the complainant.
4. That the court erred in overruling the respondent's exception to the master's report.

Medicines of the kind described were first prepared and sold by the physician whose name the pills bear, by putting the same in wooden boxes labeled with the name of the inventor. For ten years or more he used the pills in his practice; but the evidence shows that on the 19th of June, 1844, he sold the right to use the same to Jonathan Kidd, who, for a year or more, prepared and sold the pills under that agreement, when he formed a partnership with John Fleming, under the style of Jonathan Fleming & Co., which firm continued to prepare and sell the pills until March 29, 1853, when the senior partner died.

They (the firm) dealt largely in the business, and as early as 1847, in order to designate the medicine as an article of their own manufacture, and to prevent imposition and fraud, they commenced putting the pills in wooden boxes of uniform size, shape, and appearance, each box containing twenty-two pills, with the name of the original inventor stamped in red wax upon the cover of each box, around which they placed the red label or wrapper described in the bill of complaint. Beyond doubt that label, with its devices, and the red seal on the box, constituted the trade-mark by which the firm made known to their customers and the public the genuine pills which they prepared and sold, the firm being at the time the owners of the original recipe, and having the exclusive right to make and vend the pills.

Within a month subsequent to the death of the senior partner of the firm his executors sold and conveyed all the interest of the decedent in the business to the surviving partner and the complainant, whereby they, under the firm-name of Fleming Brothers, acquired not only the title to the recipe and the right to make and vend the pills, but also the right to use the labels and trade-marks used by the former owners. Possessed of the whole interest, they (the firm, Fleming Brothers) prosecuted the business, with some changes in the individual partners, until July 1, 1865, when the present complainant sold out his whole interest to his brother, John Fleming, who, as sole proprietor of what the firm owned, continued the business until the 2d of November, 1870, when he died, leaving a last will and testament.

When that firm acquired the entire interest they immediately enlarged the business, and in the year 1855 they adopted the dark label, (Exhibit F,) which is fully and minutely described in the bill of complaint, and the complainant avers that it has since been used in the business, with no other substantial alterations than what are shown in Exhibit H, mentioned in the decretal order.

Both parties agree that the complainant, by the will of his deceased brother, acquired all the rights which the deceased had in the business, and the record shows that he has, since the probate of the will on the 9th of November, 1870, been preparing and vending said pills, and using the labels and trade-marks to designate their genuineness, and to commend their value and utility.

Evidence was introduced by the respondent, whose name is James H. McLean, that he commenced in 1849, in St. Louis, to manufacture his own medicines; that in 1851 he began to manufacture and sell liver-pills under the name of "Dr. McLean's Universal Pills," using first a type-printed label in red letters, which was changed in 1852 to a lithographed red label, called in the decretal order "Exhibit L," which was used down to 1866, except that about 1863 he added to his name the initials J. H., so that the label read "Dr. J. H. McLean's Universal Pills;" that in 1866 he changed his label to the one referred to in the decretal order as "Exhibit K," which he continued to use until May 21, 1872, when he adopted a new label, the use of which does not infringe the trade-mark of the complainant.

Governed by these facts as stated, the Court will examine the first error assigned, which is, that the court erred in finding that the labels L and K infringed complainant's Exhibit H, as set forth in the decretal order. By the order the respondent, James H. McLean, his agents, employés, and servants, are perpetually enjoined and restrained from using, or causing to be used, the words "Dr. J. H. McLean's Universal Pills," or "Vegetable Liver-Pills," or the words "Dr. McLean's Universal Pills," upon any label or wrapper for boxes or other packages of pills resembling or in imitation of the labels, wrappers, or trade-mark of the complainant, described in his bill of complaint as "Exhibit H," whether in style of engraving, printing, or lettering, and from vending or exposing for sale, or causing to be vended or exposed for sale, any article of pills having upon the boxes or other packages thereof any such labels or wrappers so made in imitation of, or resemblance to, the said labels or wrappers of the complainant.

Equity gives relief in such a case upon the ground that one man is not allowed to offer his goods for sale representing them to be the manufacture of another trader in the same commodity. Suppose the latter has obtained celebrity in his manufacture, he is entitled to all the advantages of that celebrity, whether resulting from the greater demand for his goods or from the higher price the public are willing to give for the article rather than for the goods of the other manufacturer, whose reputation is not so high as a manufacturer. Where, therefore, a party has been in the habit of stamping his goods with a particular mark or brand, so that the purchasers of his goods, having that mark or brand, know them to be of his manufacture, no other manufacturer has a right to adopt the same stamp, because by doing so he would be substantially representing the goods to be the manufacture of the person who first adopted the stamp, and so would or might be depriving him of the profit he might make by the sale of the goods which the purchaser intended to buy. (*Seixo* vs. *Provezende*, Law Rep., 1 Chan., 195.)

What degree of resemblance is necessary to constitute an infringement is incapable of exact definition as applicable to all cases. All that courts of justice can do in that regard is to say that no trader can adopt a trade-mark so resembling that of another trader as that ordinary purchasers buying with ordinary caution are likely to be misled.

Unreasonable delay in bringing a suit is always a serious objection to relief in equity; but cases arise in litigations of the kind before the Court where the complainant may be entitled to an injunction to restrain the future use of a trade-mark, even when it becomes the duty of the court to deny the prayer of the bill of complaint for an account of past gains and profits. (*Harrison* vs. *Taylor*, 11 Jurist, N. S., 408.)

In such cases the question is, not whether the complainant was the original inventor or proprietor of the article made by him and on which he puts his trade-mark, nor whether the article made and sold under his trade-mark by the respondent is equal to his own in value or quality, but the Court proceeds on the ground that the complainant has a valuable interest in the good-will of his trade or business, and having adopted a particular label, sign, or trade-mark indicating to his customers that the article bearing it is made or sold by him or by his authority, or that he carries on business at a particular place, he is entitled to protection against one who attempts to deprive him of his trade or customers by using such labels, signs, or trade-mark without his knowledge or consent. (*Coats* vs. *Holbrook*, 2 Sand. Ch. R., 625; *Partridge* vs. *Menck*, 2 Barb. Ch. R., 103.)

Everywhere courts of justice proceed upon the ground that a party has a valuable interest in the good-will of his trade, and in the labels or trade-mark which he adopts to enlarge and perpetuate it. Hence it is held that he, as proprietor, is entitled to protection as against one who attempts to deprive him of the benefits resulting from the same by using his labels and trade-mark without his consent and authority. Decided cases to that effect are quite numerous, and it is doubtless correct to say that a person may have a right in his own name as a trade-mark as against a trader or dealer of a different name; but the better opinion is, that such a party is not, in general, entitled to the exclusive use of a name, merely as such, without more. (*Millington* vs. *Fox*, 3 Myl. & Cr., 338; *Dent* vs. *Turpin*, 2 Johns. & Hem., 139; *Menceley* vs. *Menceley*, 62 N. Y., 433.)

Instead of that he cannot have such a right even in his own name as against another person of the same name, unless such other person uses a form of stamp or label so like that used by the complaining party as to represent that the goods of the former are of the latter's manufacture. Nor will any other name, merely as such, confer any such exclusive right, unless the name is printed in some particular manner, in a label of some peculiar characteristics, so that it becomes, to some extent, identified with a particular kind of goods, or when the name is used by the party in connection with his place of business, in such a manner that it assumes the character of a trade-mark within the legal meaning of that term, and as such entitles the party to the protection of a court of equity to prevent others from infringing the proprietor's exclusive right. (*Gilman* vs. *Hunnewell*, 122 Mass., 148; *Calladay* vs. *Baird*, 4 Phil., 141; *Sykes* vs. *Sykes*, 3 B. & C., 543; *Croft* vs. *Day*, 7 Beavan, 89; *Burgess* vs. *Burgess*, 3 De G., M. & S., 903; *Holloway* vs. *Holloway*, 13 Beavan, 213; *Rogers* vs. *Taintor*, 97 Mass., 296.)

Much must depend in every case upon the appearance and special characteristics of the entire device; but it is safe to declare as a general rule that exact similitude is not required to constitute an infringement or to entitle the complaining party to protection. If the form, marks, contents, words, or the special arrangement of the same, or the general appearance of the alleged infringer's device, are such as would be likely to mislead one in the ordinary course of purchasing the goods, and induce him to suppose that he was purchasing the genuine article, then the similitude is such as entitles the injured party to equitable protection, if he takes seasonable measures to assert his rights and to prevent their continued invasion. (*James* vs. *James*, Law Rep., 13 Eq., 425; *Singleton* vs. *Bolton*, 3 Doug., 293; *Morrison* vs. *Salmon*, 2 Man. and Gran. R., 392; *Boardman* vs. *Meriden Co.*, 35 Conn., 413.)

Such a proprietor, if he owns or controls the goods which he exposes to sale, is entitled to the exclusive use of any trade-mark adopted and applied by him to the goods to distinguish them as being of a particular manufacture and quality, even though he is not the manufacturer, and the name of the real manufacturer is used as part of the device, (*Walton* vs. *Crowley*, 3 Blatch., 440; *Emerson* vs. *Badger*, 101 Mass., 86.)

Equity courts will not, in general, refuse an injunction on account of delay in seeking relief, where the proof of infringement is clear, even though the delay may be such as to preclude the party from any right to

an account for past profits. (*Rodgers* vs. *Rodgers*, 31 Law Times, 285; *Blackwell* vs. *Crabb*, 45 L. Jour., Pt. I, 505.)

Positive proof of fraudulent intent is not required where the proof of infringement is clear, as the liability of the infringer arises from the fact that he is enabled, through the unwarranted use of the trade-mark, to sell a simulated article as and for the one which was genuine. (*Wotherspoon* vs. *Currie*, Law Reps., 5 App. Cases, 512.)

Nor is it necessary, in order to give a right to an injunction, that a specific trade-mark should be infringed; but it is sufficient that the court is satisfied that there was an intent on the part of the respondent to palm off his goods as the goods of the complainant, and that he persists in so doing after being requested to desist. (*Woollam* vs. *Ratcliff*, 1 Hem. and Miller, 201.)

Apply these rules to the case, and it is clear that the charge of infringement is satisfactorily proved in this case.

Words or devices, or even a name in certain cases, may be adopted as trade-marks, which are not the original invention of the party who appropriates the same to that use, and courts of equity will protect the proprietor against any fraudulent use or imitation of the device by other dealers or manufacturers. Property in the use of a trade-mark, however, bears very little analogy to that which exists in copyrights or in patents for new inventions or discoveries, as they are not required to be new, and may not involve the least invention or skill in their discovery or application. Phrases, or even words, in common use may be adopted for the purpose if at the time of their adoption they were not employed by another to designate the same or similar articles of production or sale. Stamps or trade-marks of the kind are employed to point out the origin, ownership, or place of manufacture or sale of the article to which it is affixed, or to give notice to the public who is the producer or where it may be purchased. (*Canal Co.* vs. *Clark*, 13 Wall., 322.)

Subject to the qualification before explained, a trade-mark may consist of a name, symbol, figure, letter, form, or device, if adopted and used by a manufacturer or merchant in order to designate the goods he manufactures or sells, to distinguish the same from those manufactured or sold by another, to the end that the goods may be known in the market as his, and to enable him to secure such profits as result from his reputation for skill, industry, and fidelity. (Upton on Trade-marks, 9; *Taylor* vs. *Carpenter*, 2 Sand. Ch., 673; Coddington's Dig., 9.)

Complainant's pills have been in the market as a vendible article for more than forty years, and, during that whole period, have been sold under trade-marks of the forms heretofore sufficiently described, and they are still sold under the trade-mark mentioned in the decretal order.

Difficulty frequently arises in determining the question of infringement; but it is clear that exact similarity is not required, as that requirement would always enable the wrong-doer to evade responsibility for his wrongful acts. Colorable imitation which requires careful inspection to distinguish the spurious trade-mark from the genuine is sufficient to maintain the issue; but a court of equity will not interfere when ordinary attention by the purchaser of the article would enable him at once to discriminate the one from the other. Where the similarity is sufficient to convey a false impression to the public mind, and is of a character to mislead and deceive the ordinary purchaser in the exercise of ordinary care and caution in such matters, it is sufficient to give the injured party a right to redress, if he has been guilty of no laches. (*Manufacturing Company* vs. *Spear*, 2 Sand. S. C., 599; Coddington Dig., 109; *McAndrew* vs. *Bassett*, 4 De G., Jones & Smith, 380.)

Argument to show that the name of the pills, as given in the trade-mark of the respondent, was of a character to mislead and deceive is scarcely necessary, as they are *idem sonans* in the usual pronunciation; nor can it be doubted that the form of the box containing the pills and the general appearance of the wrapper which surrounded it were calculated to have the same effect. Mention may also be made of the fact that the color of the label and the wax impression on the top of the box are well suited to divert the attention of the unsuspecting buyer from any critical examination of the prepared article.

Chancery protects trade-marks upon the ground that a party shall not be permitted to sell his own goods as the goods of another, and therefore he will not be allowed to use the names, marks, letters, or other *indicia* of another, by which he may pass off his own goods to purchasers as the manufacture of another. (*Croft* vs. *Day*, 7 Beavan, 89; *Perry* vs. *Truefitt*, 6 Id., 73; *Newman* vs. *Alford*, 51 N. Y., 192.)

Witnesses in great numbers were called by the complainant, who testified that the Exhibits L and K of the respondent were calculated to deceive purchasers, and the reasons given by them in support of the conclusion are both persuasive and convincing. Differences between those exhibits and Exhibits F and H of the complainant undoubtedly exist, and still it is manifest that the general appearance of the package in the respects mentioned, and others which might be suggested, is well calculated to mislead and deceive the unwary and all others who purchase the article without opening the box and examining the label. (*Cantrell* vs. *Davis*, 58 N. Y., 233.)

Two trade-marks are substantially the same in legal contemplation if the resemblance is such as to deceive an ordinary purchaser giving such attention to the same as such a purchaser usually gives, and to cause him to purchase the one supposing it to be the other. (*Gorham Company* vs. *White*, 14 Wall., 528.)

Suffice it to say, without entering further into details, the Court is of the opinion that the first assignment of error must be overruled, and that the injunction was properly granted to prevent infringement subsequent to the filing of the bill of complaint.

Suppose that is so; still the respondent contends that the court erred, as alleged in the second assignment of errors, and that the complainant is not entitled to an account, nor to a decree for gains, profits, or damages. Support to that proposition is attempted to be drawn from the long delay of the complainant, and those under whom he claims, to take any legal steps to protect their alleged rights. Opposed to that, it is insisted by the complainant that no such defense is open to the respondent, as it was not set up in the answer. Nothing of the kind is directly set up in the answer; but the respondent denies all intent to injure or defraud the complainant, and avers that he has been engaged during the last twenty years in perfecting his pills, and that he had no idea that his trade-marks infringed the trade-marks of the complainant.

Proofs were taken upon both sides upon the subject, and the respondent in his petition for rehearing, filed in the court below, expressly alleges that the immediate predecessor of the complainant was perfectly familiar with the pills manufactured by the respondent, and well knew that the respondent used the labels in question; that the agent of the complainant, May 20, 1872, called on the respondent and remonstrated with him for using the label Exhibit K, and that he, on the following day, adopted a different label, as therein fully explained.

Examined in the light of these suggestions, the Court is of the opinion that the question presented in the second assignment of errors is open for re-examination. (*Sullivan* vs. *Railroad*, 4 Otto, 811.)

Repetition of the facts is unnecessary, as it sufficiently appears that the respondent has been engaged in preparing and selling his pills for more than forty years; that during that period, or more than half of it, he has been using labels and trade-marks corresponding more or less to those used by the predecessors of the complainant, some of whom, during all or most of that time, knew what the labels and trade-marks were which were used by the respondent, the evidence to that effect being full and decisive.

Negotiations took place at one time between the respondent and one of the predecessors of the complainant for an interchange of commodities, with a view that both commodities might be sold at each of their respective places of business.

Evidence of a decisive character is exhibited in the record to show that the complainant or his predecessor knew throughout what description of labels and trade-marks the respondent was using, and it does not appear that any objection was ever made except as heretofore stated and explained. Once the respondent was requested to insert the initials of his Christian name before his surname in the label, and it appears that he immediately complied with the request.

Cases frequently arise where a court of equity will refuse the prayer of the complainant for an account of gains and profits on the ground of delay in asserting his rights, even when the facts proved render it proper to grant an injunction to prevent future infringement. (*Harrison* vs. *Taylor*, 11 Jurist, N. S., 408; Cox on Trade-marks, 541.)

Relief of the kind is constantly refused, even where the right of the party to an injunction is acknowledged because of an infringement, as in case of acquiescence or want of fraudulent intent. (*Moet* vs. *Couston*, 33 Beavan, 580; *Edelsten* vs. *Edelsten*, 1 De G., Jones & Smith, 185; *Millington* vs. *Fox*, 3 Myl. & Cr., 352; *Myeth* vs. *Stone*, 3 Story, 284; *Beard* vs. *Turner*, 13 Law Times, N. S., 747; *Estcourt* vs. *Estcourt*, Law Rep., 10 Chan., 276; Coddington Dig., 162; High. on Injunction, 405.)

Acquiescence of long standing is proved in this case, and inexcusable laches in seeking redress, which show beyond all doubt that the complainant was not entitled to an account nor to a decree for gains or profits; but infringement having been proven, showing that the injunction was properly ordered, he is entitled to the costs in the circuit court; but the decree for an account and for the supposed gains and profits being erroneous, the respondent, as appellant, is entitled to costs in this Court. (Browne on Trade-marks, sec. 497.)

Decree as to the injunction and costs in the circuit court is affirmed; but it is reversed as to the decree for an account and as to the allowance for gains and profits, with costs in this Court for the appellant; and the cause is remanded with direction to enter a decree in conformity with the opinion of this Court.

Narrative of the Polaris Expedition.

Authority having been given the Public Printer to print another edition of the above work, subscriptions will now be received by Mr. A. F. Childs, Chief Clerk, until August 1, 1878, at the following rates: If delivered at the Government Printing Office, $1.60. If sent by mail, $1.75.

TRADE-MARKS.

[Each certificate bearing date May 21, 1878.]

6,091.—MUSTARD, SPICES, AND ROASTED COFFEE.—*William J. Fell*, Faulkland, Del. Application filed May 6, 1878.

"The picture of a winged lion in a circle or disk of solid color, and the words 'FRANKLIN MILLS.'"

6,092.—MUSTARD, SPICES, AND ROASTED COFFEE.—*William J. Fell*, Faulkland, Del. Application filed May 6, 1878.

"A shield with red border and yellow or gilt center, and red arm above it upon a silvered disk or circle, and the autograph 'C. J. FELL & BROTHER.'"

6,093.—CHEMICAL PREPARATIONS FOR WASHING, CLEANSING, SOAP-MAKING, &c.—*New York Chemical Works*, New York, N. Y. Application filed May 7, 1878.

"The arbitrarily-selected word-symbol 'KALYX.'"

6,094.—GUNPOWDER FOR SPORTING PURPOSES.—*Miami Powder Company*, Xenia, Ohio. Application filed April 29, 1878.

"The letters and word-symbol 'SOUTHERN SPORTING.'"

6,095.—HAMS.—*Troth Brothers*, Philadelphia, Pa. Application filed March 13, 1878.

"The arbitrary designation 'TROTHS.'"

6,096.—CIGARS.—*Charles Claudius*, Canandaigua, N. Y. Application filed May 10, 1878.

"The word-symbol 'BERNARD BRAND.'"

6,097.—MEDICINAL PREPARATION.—*Caswell, Hazard & Co.*, New York, N. Y., and Newport, R. I. Application filed April 15, 1878.

"The word-symbol 'PEPTONIZED.'"

6,098.—MEDICINAL PREPARATIONS.—*Henry Helkelt & Petferren*, New York, N. Y. Application filed May 16, 1878.

"The figure of a man in clerical costume, with a medal, bearing a cross on his breast, and the words 'THE FATHER MATHEW REMEDY.'"

6,099.—CIGARS.—*John D. Loomis*, Suffield, Conn. Application filed May 10, 1878.

"The words 'PANTHER BRAND,' used in connection with the picture of a panther, with forest surroundings, as shown."

6,100.—CIGARS.—*John D. Loomis*, Suffield, Conn. Application filed May 10, 1878.

"The words 'DAVY CROCKETT BRAND,' used in connection with the portrait of a man represented as dressed in trapper's costume, as shown."

6,101.—CIGARS.—*John D. Loomis*, Suffield, Conn. Application filed May 10, 1878.

"The words 'BLACKFOOT BRAND,' used in connection with the picture of a Blackfoot Indian on horseback, as shown."

6,102.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *McCoy & Co.*, New York, N. Y. Application filed May 11, 1878.

"The words 'TALLY HO.'"

6,103.—MEDICINAL PREPARATION.—*Relief Manufacturing Company*, New York, N. Y. Application filed April 23, 1878.

"The word-symbol 'RELIEF.'"

6,104.—LUBRICATING OIL OR COMPOUND.—*George Binns, Jr.*, Brooklyn, N. Y. Application filed May 13, 1878.

"The word-symbol 'WOOLINE.'"

6,105.—NEEDLES.—*John Thornton & Co.*, New York, N. Y., and Philadelphia, Pa. Application filed May 6, 1878.

"The name 'THORP'S,' with the picture of the head and neck of the conventional figure known as a 'unicorn.'"

6,106.—MEDICINAL PREPARATIONS.—*William H. Whitney*, New York, N. Y. Application filed April 18, 1878.

"The word-symbol 'WINDSOR PHARMACY.'"

6,107.—A MEDICINAL PREPARATION.—*Chas. R. Burrage*, San Francisco, Cal. Application filed April 10, 1878.

"The word 'CALIFORNIA' and the representation of the root, as shown."

6,108.—ROASTED AND GROUND COFFEE, SPICES, AND MUSTARD.—*Burns & Byram*, Philadelphia, Pa. Application filed May 1, 1878.

"The word-symbol 'JAVA MILLS.'"

6,109.—PLUG CHEWING-TOBACCO.—*P. McNamara & Co.*, Covington, Ky. Application filed March 1, 1878.

"The series of diamond or lozenge shaped figures, and the intervening spaces formed upon the surface of the plug of tobacco by stamping, and in the center of the intervening spaces the circular piece of card-board containing the words 'P. MCNAMARA & CO.,' arranged around the edge or border."

6,110.—DRUGS AND CHEMICALS.—*William S. Powell*, Baltimore, Md. Application filed May 7, 1878.

"The arbitrarily-selected letter 'P.'"

6,111.—EDGE-TOOLS.—*The Collins Company*, Collinsville, Conn. Application filed February 20, 1878.

"The representation of a bird in flight."

6,112.—EDGE-TOOLS.—*The Collins Company*, Collinsville, Conn. Application filed April 15, 1878.

"The word 'COLLINS.'"

6,113.—MEDICINAL TONIC.—*Richard Van Buskirk*, Peekskill, N. Y. Application filed March 23, 1878.

"The word-symbol 'TEETOTAL.'"

6,114.—MEDICINAL PREPARATION.—*Atkins, Hertel & Co.*, Baltimore, Md. Application filed May 1, 1878.

"The words 'DE WITT'S ECLECTIC.'"

6,115.—MEDICINAL PREPARATION.—*Thomas S. Bradfield*, La Grange, Ga. Application filed April 29, 1878.

"The fanciful title 'THE SUFFERER'S BALM' and the fac-simile of my signature."

6,116.—CLOCKS.—*Henry J. Davies*, Brooklyn, N. Y. Application filed May 14, 1878.

"The word-symbol 'BIRD'S EYE.'"

6,117.—BURNISHING-INK.—*J. Henry Dwyer*, Lynn, Mass. Application filed March 19, 1878.

"The word-symbol 'SUN.'"

6,118.—BURNISHING-INK.—*J. Henry Dwyer*, Lynn, Mass. Application filed March 19, 1878.

"A circular panel containing the representation of a town and surrounded by rays, thus constituting the symbol of a sun."

6,119.—CHEWING AND SMOKING TOBACCO.—*Frishmuth Brother & Co.*, Philadelphia, Pa. Application filed May 6, 1878.

"A triangular-shaped figure with an enlargement at each corner."

6,120.—SARSAPARILLA EXTRACTS.—*Robertson F. George*, Galveston, Tex. Application filed May 3, 1878.

"The arbitrarily-selected words 'FRENCH BORDER.'"

6,121.—NURSING-BOTTLES.—*Hagerty Brothers & Co.*, New York, N. Y. Application filed March 25, 1878.

"The word-symbol 'PEERLESS.'"

6,122.—WATCHES.—*Lake Shore Watch Company*, Fredonia, N. Y. Application filed May 4, 1878.

"The words 'LAKE SHORE.'"

6,123.—PLUG CHEWING-TOBACCO.—*Wilson & McCallay*, Middletown, Ohio. Application filed April 5, 1878.

"A symbolic figure representing a plug of tobacco having one or more of its edges formed with regular undulations, as shown."

6,124.—WHISKY.—*Charles F. O'Donnell*, New York, N. Y. Application filed April 23, 1878.

"A seal and a ribbon, the latter being secured by the seal, as shown."

6,125.—REMEDIES FOR COUGHS, COLDS, &c.—*Alice C. Simpson*, Danville, Cal. Application filed April 30, 1877.

"The word-symbol 'AUSTRALIAN.'"

6,126.—CIGARS.—*William Simpson*, Springfield, Mass. Application filed May 6, 1878.

"The words 'RED JACKET.'"

6,127.—DRY-GOODS.—*The Eddystone Manufacturing Company*, (limited,) Chester and Philadelphia, Pa. Application filed May 2, 1878.

"The designation 'EDDYSTONE.'"

6,128.—LEATHER.—*Richard Woolley & Sons*, Cincinnati, Ohio. Application filed May 2, 1878.

"The word-symbol 'BUCKEYE.'"

6,129.—PREPARATION FOR COLORING BUTTER.—*Wells, Richardson & Co.*, Burlington, Vt. Application filed May 1, 1878.

"Cut of a farm scene, representing a dairy-maid and a cow."

6,130.—FLOUR.—*George Bliss Woodman*, Philadelphia, Pa. Application filed May 13, 1878.

"A red seal, or the symbol of a red seal, either stamped, printed, or affixed, together with the words 'RED SEAL.'"

DESIGNS.

[Each design bearing date May 21, 1878.]

10,684.—PARLOR-STOVES.—*Frank S. Bissell*, Pittsburg, Pa. Application filed April 29, 1878. Term of patent 7 years.

10,685.—FONT OF PRINTING-TYPES.—*James M. Conner*, Greenville, N. J. Application filed April 25, 1878. Term of patent 7 years.

10,686.—EXTENSION LAMP-FIXTURE.—*Frederick R. Seidensticker*, West Meriden, Conn., assignor to *Bradley & Hubbard Manufacturing Company*, same place. Application filed April 3, 1878. Term of patent 7 years.

10,687.—STOVES.—*William A. Spicer*, Providence, R. I., assignor to *Spicers & Peckham*, same place. Application filed January 8, 1877. Term of patent 7 years.

10,688.—GLASSWARE.—*Matthew Smith*, Pittsburg, Pa. Application filed May 11, 1878. Term of patent 3½ years.

10,689.—CLOCK-CASE.—*Henry J. Davies*, Brooklyn, N. Y. Application filed May 13, 1878. Term of patent 7 years.

10,690.—BUCKLES.—*Earl A. Smith*, Waterbury, Conn., assignor to *Waterbury Buckle Company*, same place. Application filed April 30, 1878. Term of patent 7 years.

10,691.—SPOON-HANDLES.—*Herman Vasseur*, Wallingford, Conn., assignor to *Simpson, Hall, Miller & Co.*, same place. Application filed May 13, 1878. Term of patent 7 years.

LABELS.

[Each certificate bearing date May 21, 1878.]

1,545.—Title: "CATAREDA CIGARETTES."—*Rush B. Heintzelman*, New York, N. Y. Application filed January 28, 1878.

1,546.—Title: "HOOD'S FRENCH COLOGNE."—*M. O. Hood & Co.*, Boston, Mass. Application filed May 13, 1878.

1,547.—Title: "HETHERINGTON'S TROPIC-FRUIT LAXATIVE."—*John E. Hetherington*, Cincinnati, Ohio. Application filed May 15, 1878.

1,548.—Title: "DR. MACALISTER'S COUGH MIXTURE."—*John P. Lee*, Chicago, Ill. Application filed April 8, 1878.

1,549.—Title: "COOK'S ROOT AND HERB ALTERATIVE."—*Robert T. Stone* and *John Friend*, Petersburg, Va. Application filed May 15, 1878.

1,550.—Title: "MANUFACTURED FROM EXTRA CAST-STEEL."—*The Collins Company*, Collinsville, Conn. Application filed February 20, 1878.

DISCLAIMER.

4,865, (Reissue.)—*David Stuart*, Philadelphia, Pa.; patented October 3, 1872, No. 199,666; disclaimer filed May 27, 1878.

Disclaims that part of the claim in said specification which is in the following words, to wit:

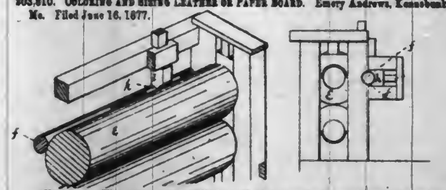
"1. A preserving or other kettle, at or near the upper edge of which a projection, *b*, is arranged, as and for the purpose set forth.

"2. A preserving or other kettle provided with a ball, which, after being raised to an upright position, is retained, substantially in the manner and for the purpose described."

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

MAY 21, 1878.

203,810. COLORING AND SIZING LEATHER OR PAPER BOARD. Emery Andrews, Kennebunk, Me. Filed June 16, 1877.

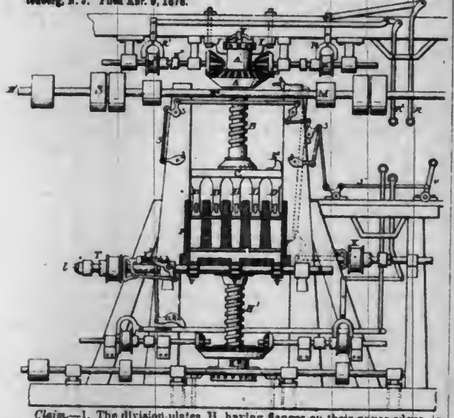


Claim.—1. The process of utilizing all the chemicals employed in coloring and sizing pulp, facilitating the felting, improving the strength, and regulating the quality of the same, which consists in coloring, sizing, or otherwise chemically treating or stuffing leather or paper board after the sheet has been formed and before it has been removed from the winding or press rolls, as herein described.

2. In combination with the winding-roll *r*, the supplemental roll *f*, for the purpose herein described.

3. The combination of the winding-roll *e*, the supplemental roll *f*, and the stops or gates *l*, as herein described.

203,811. MACHINES FOR MAKING PAVING AND BUILDING TILES. Adrian H. Austin, Guttenberg, N. J. Filed Apr. 9, 1878.



Claim.—1. The division plates H, having flanges on their upper edges, in combination with the spring catches for elevating them, substantially as shown.

2. The perforated plates a^2, for placing upon the top of the cement while it is being compressed, substantially as described.

3. The combination of the plates a^2 and the division plates H, substantially as set forth.

4. The combination of the carriage R, having racks provided with teeth that are arranged in divisions, whereby the pinions V will be thrown out of gear just as another set of molds are moved into position under the plungers, substantially as specified.

5. The plate C, provided with cam *b'*, in combination with the cam a^4 and the connecting devices, whereby the clutch X is thrown into gear, substantially as shown.

6. The combination of the screw B, plate C, catches *c*, and ends A, substantially as described.

7. The combination of the plate C, catches *c*, cams M', and projections D', substantially as set forth.

8. The combination of the screw B, plate C, plungers D, and plates a^2 with the screw H' and bottom F, substantially as specified.

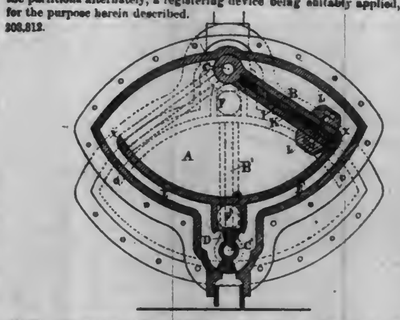
9. The combination of the cam *a*, lever A, clutch T, spring, and connecting-rods with screw H' and bottom F, substantially as shown.

10. The combination of the cams 3, connecting-rods and levers 5, and lever 4 with the ends F', substantially as described.

203,812. OSCILLATING WATER-METERS. Alvah C. Austin, Oakland, Cal., assignor to A. Chabot, same place. Filed Nov. 14, 1877.

Claim.—The combination of the two vibrating partitions B B', operating within the chambers A A', each partition by its vibration giving motion to the valve controlling the vibration of the adjoining partition by admitting the water to and discharging it from their respective chambers on either side of the partitions alternately, a registering device being suitably applied, as and for the purpose herein described.

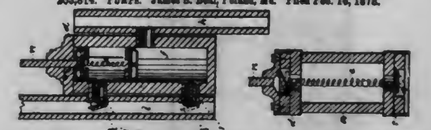
203,813. ATTACHMENTS TO RUBBER OVERSHOES. Jas. W. Baker, Decatur, Ill. Filed Apr. 25, 1878.



Claim.—1. In combination with the counter of an overshoe, the metallic loop B, formed of sheet metal, adapted to receive and hold an ankle-retaining strap, substantially as set forth.

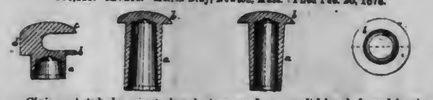
2. In combination with the counter of a shoe and a metallic tongue, C, riveted to said counter, the metallic loop B, hinged to said tongue, substantially as and for the purpose described.

203,814. PUMPS. James S. Beal, Poland, Me. Filed Feb. 16, 1878.



Claim.—The combination of the feed-pipe A, barrel *f*, pipe *l*, arranged as described, with the horizontal openings *i j*, having valves, with springs *k l*, and piston *e*, having the upper and lower valves and spring *e*, and proper feed-apertures into said barrel *f*, as herein set forth.

203,815. RIVETS. Mellen Bray, Newton, Mass. Filed Feb. 20, 1878.



Claim.—A tubular rivet closed at one end by a solid head, *b*, and having the walls of its tubular shank of varying thickness, gradually increasing from its point or cutting end to the under side of said head, and the chamber within said shank having a diameter at its outer end not less than that of its inner end, with or without the secondary head *c* and neck *d*, substantially as and for the purposes described.

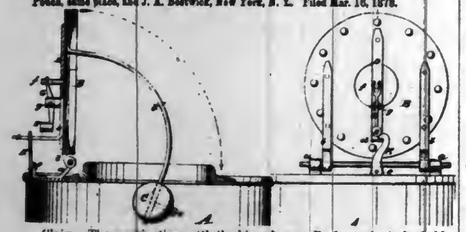
203,816. MAN-HOLE COVERS FOR PETROLEUM-TANKS. Wm. H. Brock, Brooklyn, assignor to A. J. Pouch, same place, and J. A. Bostwick, New York, N. Y. Filed Apr. 23, 1878.

Brief.—Expandent vapor generated within the tank from inflammable liquids is permitted to escape by throwing open the covers, which are at once automatically closed to prevent the admission of air.



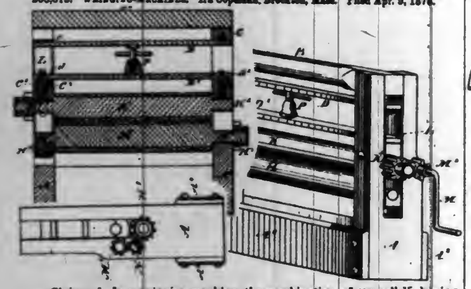
Claim.—The combination, with double-hinged covers B and C of a tank, A, of the central pivotal rod D, with the supports E, of the packing H, with its fasteners I, of the tight joint K, and of the stiffening-bars J, substantially as herein set forth, and for the purposes as above described.

203,817. MAN-HOLE COVERS FOR OIL-TANKS. Wm. H. Brock, Brooklyn, assignor to A. J. Pouch, same place, and J. A. Bostwick, New York, N. Y. Filed Mar. 16, 1878.



Claim.—The combination, with the hinged cover B of a tank, A, for holding petroleum or other hydrocarbon liquids, of the curved rod *b* and weight C, with the set-screw *c* of the cross-bar D, and hinged catch and cam E, substantially as herein set forth, and for the purposes as above described.

203,818. WRINGING-MACHINES. Ira Copeland, Brooklyn, Mass. Filed Apr. 9, 1878.

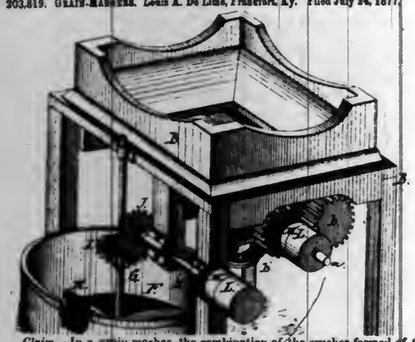


Claim.—1. In a wringing machine, the combination of the roll K, having one of its ends in a fixed bearing and the other in a yielding bearing, with the roll H, having one of its ends in a fixed bearing and the other in a yielding bearing, the yielding bearings of the said rolls being at alternate ends, all substantially as described, and for the purpose set forth.

2. The combination of the rolls H and K, having alternate free bearings, with the compound spring D D', loop L, and movable housings E and E', all operating together substantially as described, and for the purpose set forth.

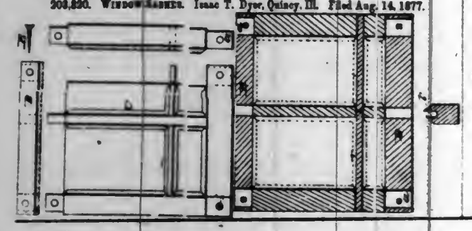
3. The combination of the rolls H K, having alternate free bearings, with the system of gears K², M', M², N, and H², and crank-shaft M, all operating together substantially as described, and for the purpose set forth.

203,819. GRAIN-MASHERS. Louis A. De Lima, Frankfort, Ky. Filed July 24, 1877.



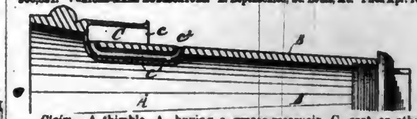
Claim.—In a grain-masher, the combination of the crusher formed of the fluted rollers A A, the one having a fixed and the other a movable axis, conducting-chute E, and rotary mixing-rake H, the several parts being arranged and combined to operate, in connection with suitable gearing, substantially as and for the purpose specified.

203,820. WINDOW-SASHES. Isaac T. Dyer, Quincy, Ill. Filed Aug. 14, 1877.



Claim.—A sash made with grooves to receive the glass, whose stiles and rails are connected by slot-and-tenon engagement, and secured together by the described fastening devices, the several parts of the sash being formed with the projecting bevel on the inner side of the sash, substantially as described.

203,821. VEHICLE-AXLE LUBRICATORS. L. Espenschied, St. Louis, Mo. Filed Apr. 10, 1878.



Claim.—A thimble, A, having a grease-reservoir, C, cast or otherwise formed in the same, with supply-opening *c* and communicating-spout *c'*, as herein shown and described, in combination with the wheel-hub forming a compressed-air grease-reservoir, whereby, through the action of the compressed air, the grease is forced out automatically, as and for the purpose set forth.

203,822. PIPE-WRENCHES. Daniel Fisher, Oil City, Pa. Filed Apr. 6, 1878.

Brief.—Wrenches adjusted to different-sized pipe by changing the reducer.

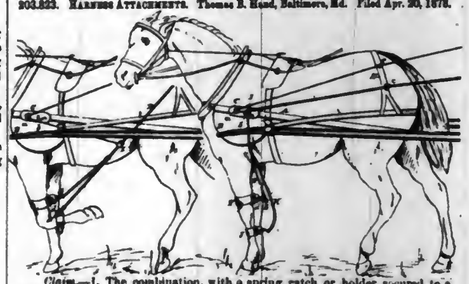


Claim.—1. The pipe-wrench constructed with rigid jaws B C and a reversible bit, D, bearing against a shoulder, H, and secured by a bolt, E, all substantially as described.

2. The combination of a wrench-stock, A B C, the removable bit D, the bolt F, for securing the bit to the jaw, and the liner G, as described.

3. The combination of the stock A B C, bolt E, bit D, and reducer I, as and for the purpose described.

203,823. HARNESS ATTACHMENTS. Thomas B. Hand, Baltimore, Md. Filed Apr. 20, 1878.



Claim.—1. The combination, with a spring catch or holder secured to a harness-tug, of a safety-strap attached to a leg-strap, and a cord or strap extending through a ring located in close proximity to said spring catch or holder, and fastened to a check-button on the safety-strap, substantially as set forth.

2. The combination, with a safety-strap and spring catch or holder, of a guard or shield attached to the harness tug, substantially as set forth.

3. The combination, with the safety strap or rein, of a leg-strap consisting of a strap having a ring or loop secured to one end, through which is passed the free end of said safety-strap, substantially as set forth.

4. The combination, with the metallic plate provided with a ring and spring catch or holder, of the safety-strap and locking-cord, and of two leg-straps adapted to be secured above and below the knee of the horse, substantially as set forth.

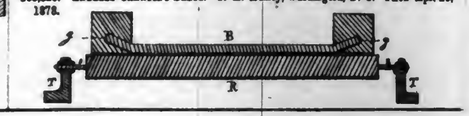
203,824. BARRELS. Ladley L. Hanson, Palmyra, N. Y. Filed Dec. 26, 1877.

Brief.—After the hoops are on the barrel they are struck in several places, driving them into the staves, preventing their removal.



Claim.—The barrel made substantially as described, with the staves nailed to the heads, in combination with the loose head C and stave B.

203,825. ENDLESS CARRYING-BELTS. T. M. Healey, Washington, D. C. Filed Apr. 20, 1878.



Claim.—1. The endless belt B, having grooved edge ledges L L, together forming an endless ledged belt, constructed to operate as and for the purposes described.

2. The carrying-rollers R, having adjustable collars C, in combination with the endless belt B, as and for the purposes described.

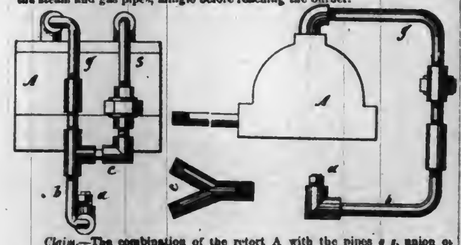
3. The angular and revolving edge-carrying rollers r r and revolving rollers R, in combination with the endless belt B, as and for the purposes described.

4. The endless belt *b*, angular rollers r, and carrying-rollers R, in combination with the endless belt B, as and for the purposes set forth.

5. As a new article of manufacture, the grooved rubber ledge L.

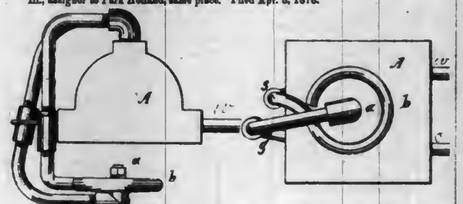
203,826. HYDROCARBON-VAPOR GENERATOR AND BURNER. Charles Holland, Chicago, Ill., assignor to Park Holland, same place. Filed Apr. 3, 1878.

Brief.—Water and oil flow into the separate compartments of the retort, (having a partition between them,) where they are retorted, and, passing into the steam and gas pipes, mingle before reaching the burner.



Claim.—The combination of the retort A with the pipes *g s*, union or coupling *c*, pipe *b*, and burner *a*, substantially as described.

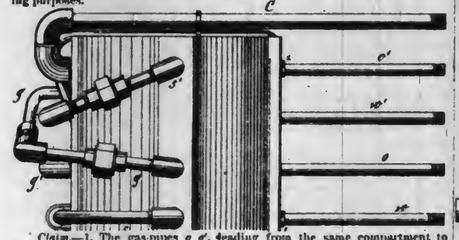
203,827. HYDROCARBON-VAPOR GENERATOR AND BURNER. Charles Holland, Chicago, Ill., assignor to Park Holland, same place. Filed Apr. 3, 1878.



Claim.—The steam-exit circle *b*, located above the burner-pipe, having about one-half the diameter of the bottom of the retort and outwardly-inclined perforations *c*, in combination with the burner *a*, retort A, and pipes *g w*, substantially as and for the purpose set forth.

203,828. HYDROCARBON GENERATOR AND BURNER AND GAS-GENERATOR. Charles Holland, Chicago, Ill., assignor to Park Holland, same place. Filed Apr. 3, 1878.

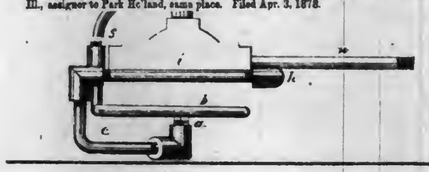
Brief.—Gas is generated from oil, and is burned together with steam generated in a separate chamber of the retort. Steam generated in a third chamber of the retort passes into a fourth chamber, where it meets gas generated from oil, and assists in carrying it forward out of the retort for illuminating purposes.



Claim.—1. The gas-pipes *g g'*, leading from the same compartment to opposite sides of the burner *a*, and in combination therewith, substantially as specified.

2. In combination with the retort-chambers for producing heating gas and their supply-pipes *o w*, the chambers for producing illuminating gas and their supply-pipes *o' w'*, the steam-pipe *s'*, and the gas-eduction pipe C, substantially as and for the purpose set forth.

203,829. HYDROCARBON-VAPOR GENERATOR AND BURNER. Charles Holland, Chicago, Ill., assignor to Park Holland, same place. Filed Apr. 3, 1878.



Claim.—The combination of the oil-gas pipe *g f h i*, extending around the retort A, and burner *a*, with the steam-pipes *s b*, constructed and combined substantially as specified.

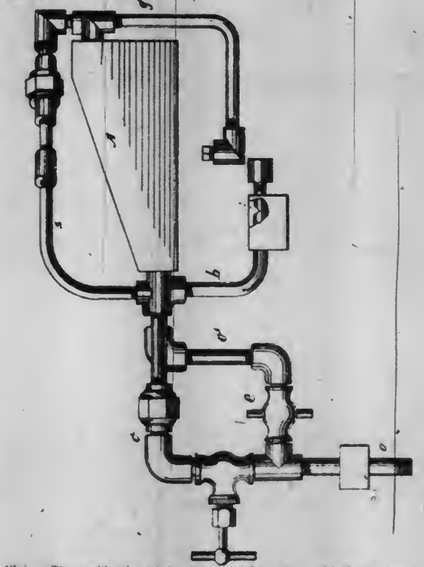
203,830. HYDROCARBON-VAPOR GENERATOR AND BURNER AND GAS-GENERATOR. Charles Holland, Chicago, Ill., assignor to Park Holland, same place. Filed Apr. 3, 1878.



Claim.—The retort A, having the enlarged body flaring outward and upward to a border of less diameter, substantially as shown, for the purpose described.

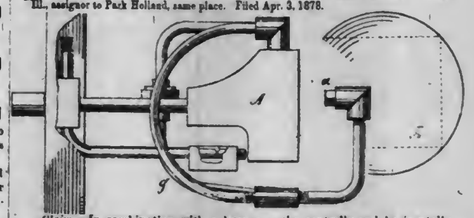
203,831. HYDROCARBON-VAPOR GENERATOR AND BURNER. Charles Holland, Chicago, Ill., assignor to Park Holland, same place. Filed Apr. 3, 1878.

Brief.—Water and oil enter the separate compartments of the retort. Steam from the water-compartment enters the oil-pipe, and passes with the oil to the oil-compartment, where both are combined and still further heated, and then pass to the burner below.



Claim.—The combination of the retort A and pipes *s s* with the pipes *o g* and burner *a*, substantially as specified.

203,832. HYDROCARBON GENERATOR, BURNER, AND LIGHTER. Charles Holland, Chicago, Ill., assignor to Park Holland, same place. Filed Apr. 3, 1878.



Claim.—In combination with a burner, *a*, the centrally and horizontally set retort A, having a vertical circular and concave face, by which combination the heat of the flame is concentrated, and the flame is also retained in compact form, thus increasing the light, substantially as described.

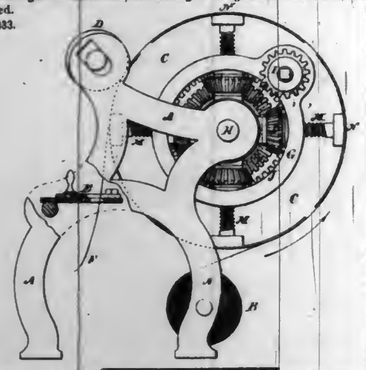
203,833. EXPANDING DRUMS FOR PAPER-CUTTING MACHINES. William E. Hudson, North Manchester, assignor to Cheney Brothers, Hartford, Conn. Filed May 1, 1878.

Brief.—Sheets varying in length may be cut from the web or roll of material by expanding or contracting the drum, as desired.

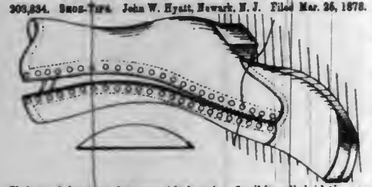
Claim.—1. The combination, in a paper-cutting machine, of an adjustable drum, having an expanding cylindrical surface, with the cutting mechanism, the drum having a definite angular rotation at each movement of the cutter, substantially as herein described.

2. The drum C, having the expanding mechanism J K L M, constructed and arranged as described, for moving the segments N out or in, as may be desired.

203,833.



203,834. SHOE-TIPS. John W. Hyatt, Newark, N. J. Filed Mar. 26, 1878.



Claim.—A boot or shoe provided with a flexible celluloid tip cemented to the upper and sole, all substantially as shown and described.

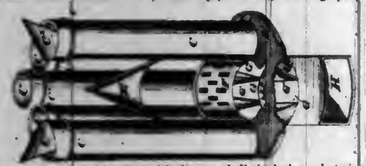
203,835. ELECTRO-GALVANIC BELTS. H. B. Jacobson, New York, N. Y. Filed Oct. 17, 1877.



Claim.—In an electro-galvanic belt, a link composed of a copper plate, B, and zinc plate A', the zinc plate A' being perforated with holes *b*, the two plates being of equal size and united, as described, and having between them a piece of cotton or other woven cloth, substantially as described, and for the purposes set forth.

203,836. HEATING-FURNACES. David L. Jaques, Cleveland, Ohio. Filed Oct. 3, 1877.

Brief.—A system of hot-air flues is inclosed within a casing formed of two cylinders, one within the other, having a space between them. The hot-air flues are removable, and upon the top of each flue is a deflector for throwing the heat in the direction of any desired pipe leading to living-apartments.



Claim.—1. The combination, with the two shells inclosing a hot-air space, of the system of heating-flues adapted to be readily disconnected therefrom, and whose base-plate seats upon the flange formed on the interior lower body of said inner shell, substantially as described.

2. The combination, with the heating-flues, of the adjustable deflectors for directing the heat of two or more of said flues toward a single exit flue, substantially as described.

3. The combination, with the hot-air flues and the adjustable deflectors, of the cap-piece provided with openings for the exit flues, substantially as described.

4. The combination of the shell A' and the extensions G', for the purpose of clearing the ashes collecting about the bottom portion of the flues C, substantially as described.

5. The combination, with the heating-flues and adjustable deflectors, of the cap-piece provided with openings for the smoke and heat exit flues, said cap-piece being formed with the removable lid, substantially as described.

6. The combination, with the system of heating-flues C and the perforated fire-wall F, of the extensions t t', formed upon the side of fire-pot G, the whole being adapted, as described, to permit heat to escape under and pass up on the outside of the said perforated fire-wall, substantially as described.

203,837. TRADING-PITS. Reuben S. Jennings, Chicago, Ill. Filed Dec. 10, 1877.

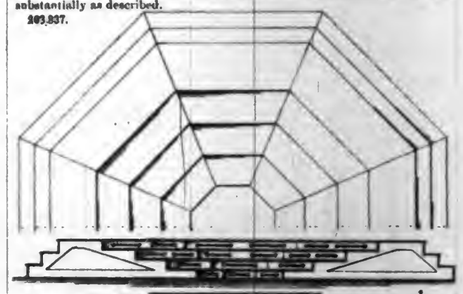
Brief.—Forms a trading-pit of a series of platforms arranged around and rising from a center space, with a broad platform forming the upper step, and a series of steps descending on the outside from said platform. It may be placed below the floor, with the top step on a level with it, and is made in removable sections. The sections are perforated in the risers for heating from below.

Claim.—1. A series of platforms or steps arranged continuously around and rising from a center space, with a broad platform forming the upper step, and a series of steps around and on the outside of said broad platform, substantially as shown and described.

2. A series of platforms forming a pit, and designed to be placed on or sunk under a floor in sections, so as to be easily removed, substantially as described.

3. A trading-pit formed in removable sections, heated and ventilated by hot or cold air admitted through the risers of the steps from the closed space or air-chamber under said steps, said air-chamber being supplied by pipes, substantially as described.

203,837.



203,838. ORNAMENTING GLASS WITH GOLD, SILVER, OR OTHER METALS. John Jeehum and Richard Herrmann, Brooklyn, N. Y. Filed Jan. 7, 1878.

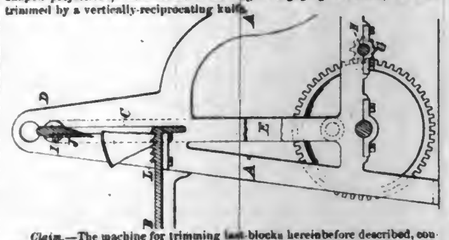
Claim.—The application of starched or prepared paper in the process of forming letters, words, figures, and designs upon glass, when used in combination with burnished gold, silver, or metal upon the back of the glass, substantially as and for the purposes specified.

203,839. LUBRICANTS. Clark Johnston, Rochester, N. Y. Filed Jan. 16, 1878.

Claim.—The improved lubricant consisting of the combination, with powdered graphite, of a buoyant compound consisting of petroleum, crude paraffine-wax extracted from crude petroleum, Japan wax, myrtle-wax, gambia-wax, and a suitable alkali.

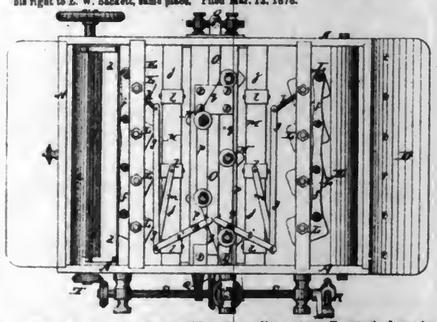
203,840. MACHINES FOR TRIMMING LAST-BLOCKS. J. C. Kingston, Buffalo, N. Y. Filed Apr. 20, 1878.

Brief.—The last-block is placed on a bed provided with a series of V-shaped projections, which assist in holding and gaging the block, which is trimmed by a vertically-reciprocating knife.



Claim.—The machine for trimming last-blocks hereinbefore described, consisting, essentially, of the standards A, table B, cutter-bar D, and cutter J, said table B being provided with the V-shaped projections L, serving as a means for gaging the blocks to be trimmed, and at the same time to retain them in position, substantially as and for the object specified.

203,841. BRONZING-MACHINES. John O. Kuttemann, New York, N. Y., assignor of one-half his right to E. W. Sackett, same place. Filed Mar. 12, 1878.



Claim.—1. In a bronzing-machine, the endless apron E, attached to the endless belt H, which enters the grooves of the rollers F G, substantially as and for the purpose specified.

2. The combination of the oscillating rubbers L with the reciprocating rubbers M and feed-apron E, in a bronzing-machine, substantially as and for the purpose specified.

3. The combination of the oscillating rubbers L with the rotary rubbers N and feed-apron E, in a bronzing-machine, substantially as and for the purpose specified.

4. The combination of the reciprocating rubbers M and rotary rubbers N and feed-apron E, in a bronzing-machine, substantially as and for the purpose specified.

5. The combination of the reciprocating rubbers M, rotary rubbers N, and oscillating rubbers L, with the feed-apron E, in a bronzing-machine, substantially as and for the purpose specified.

6. The combination of the spring *t* with the stem *s* and rubber L of a bronzing-machine, substantially as and for the purpose specified.

7. The combination of the reciprocating rod O with the levers *i i*, rods *m m* and *g g*, and with the reciprocating rubbers M M and oscillating rubbers L L, substantially as and for the purpose specified.

8. The combination of the roller *b*, which carries rubber rings at certain distances apart, with the feed-apron E, for use in a bronzing-machine, substantially as specified.

203,842. METHODS OF BENDING PLUMBERS' TRAPS. Edwin A. Leland, New York, assignor, by mesne assignment, to Thos. C. Miles, New York, N. Y. Filed Nov. 1, 1877.

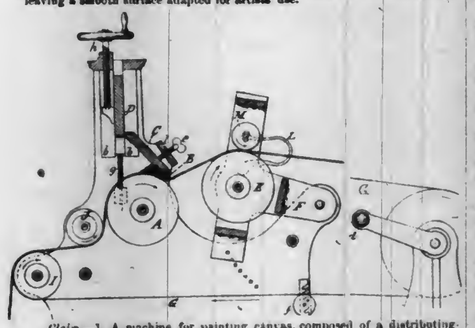


Claim.—1. The herein-described improvement in the method of making plumbers' traps and bent pipes—namely, first filling the pipe with a fluid under pressure sufficient to counteract the tendency of the walls of the pipe to bend inward, and then bringing the pipe to the requisite curved or trap-like shape by bending, substantially as herein set forth.

2. In the above-named method, heating the fluid used under pressure in the pipe, in order to increase the flexibility of the pipe, and consequent ease and facility of bending to shape, substantially as herein set forth.

203,843. MACHINES FOR PAINTING CANVAS. William Levis, New York, N. Y. Filed Jan. 26, 1878.

Brief.—By means of an endless band the canvas is drawn under a knife, by which the paint is evenly distributed and the pores of the canvas filled, leaving a smooth surface adapted for artists' use.



Claim.—1. A machine for painting canvas, composed of a distributing-knife, B, in combination with an endless band or carrier and a series of supporting-rollers, the said band being adapted to support the canvas to be painted and to draw it under the knife, whereby paint is applied to the canvas, substantially as described.

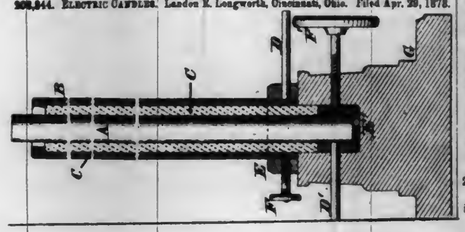
2. In a machine for painting canvas, the combination of a paint-applying knife, B, a traveling band, G, supported under the said knife, and by which the fabric to be painted is drawn under the knife, together with a vertically-adjustable roller, E, over which the fabric passes after leaving the knife, substantially as and for the purpose herein set forth.

3. The mode herein described of texturing the surface of painters' canvas—viz., by passing the freshly-painted surface under a smooth roller free to roll thereon, substantially as herein set forth.

4. The combination of the paint-applying knife B, fixed roller A, adjustable roller E, winding-drum H, and endless band G, as shown and described.

5. The combination of the knife B, supporting-roller A, adjustable roller E, winding-drum H, endless band G, and roller I, substantially as shown and described.

203,844. ELECTRIC CANDLES. Landon R. Longworth, Cincinnati, Ohio. Filed Apr. 29, 1878.



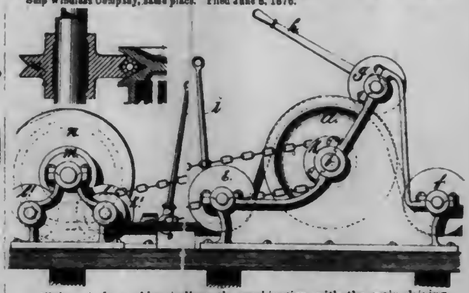
Claim.—1. The within-described concentric electric candle, made with an outer carbon in the form of a hollow cylinder, an inner cylindrical carbon, the two carbons being separated by an insulating substance in the form of a hollow cylinder.

2. The combination, in an electric candle, of the inner carbon A, the outer carbon B, and the insulating substance C, when made substantially in the form herein shown and described.

3. In an electric candle, the negative carbon A, surrounded by the positive carbon B, or vice versa, the two carbons being separated by the insulating substance.

4. The combination, in an electric candle, of base G, outer socket and carbon E B, inner socket and carbon E' A, and insulator C, substantially as and for the purposes hereinbefore set forth.

203,845. WIRE-CABLE WINDLASSES. Jos. P. Manton, Providence, R. I., assignor to American Ship Windlass Company, same place. Filed June 8, 1876.



Claim.—1. In a ship-windlass, the combination, with the main driving-shaft *b*, of the locking-disk *c* and main pulley *a*, provided with a V-shaped groove adapted to hold a wire cable, and controlled by a friction-brake, substantially as and for the purpose set forth.

2. The combination, with the main pulley *a*, provided with the V-shaped groove arranged to be loose on the driving-shaft, and to be locked to or unlocked from the same by suitable locking-gear, of the guide-pulleys *e* and *f*, arranged substantially as and for the purpose described.

3. The combination, with a cable-windlass, of the eccentric contact-pulley *g*, arranged to press the cable into the V-shaped groove, substantially as and for the purpose specified.

4. The combination of the main pulley *a*, loose on its shaft, and arranged to be connected with or disconnected from the same by a suitable locking device, and controlled by a friction-brake, of the guide-pulleys *e* and *f* and the eccentric contact-pulley *g*, the whole operating as a ship-windlass for hauling in and paying out wire cable, substantially as described.

5. The combination, with the wire-cable windlass, consisting of the main pulley *a* and the guide-pulleys *e* and *f*, substantially as described, of the drum *n*, and means, substantially as described, by which rotative motion is imparted to the drum for the purpose of winding the cable as the same is hauled in by the windlass, as and for the purpose set forth.

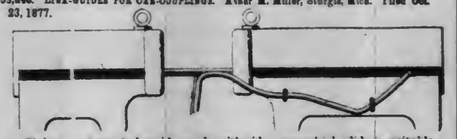
6. The combination, with the V-shaped wheel or pulley *m*, of the wheels or pulleys *l* and *l'*, provided with V-shaped grooves, and arranged to support and impart motion to the drum *n*, substantially as and for the purpose described.

7. The combination of the chain-pulleys *k k'*, the chain, and the winding-drum *n*, whereby the drum is rotated coincidently with the windlass *a*, and thereby winds upon itself the cable as it is delivered from the windlass, substantially as and for the purpose described.

8. The combination, with the drum *n*, of the friction-gears *l*, *m*, and *l'*, and the brake *o*, for controlling the rotation of the drum, substantially as and for the purpose set forth.

9. In a wire-cable windlass, the combination of the following elements: a main pulley or wild-cat, provided with a V-shaped groove to hold the cable, guide-pulleys to guide the cable around the greater portion of the main pulley, and a winding apparatus for winding the cable, substantially as and for the purpose specified.

203,846. LINK-GUIDES FOR CAR-COUPLINGS. Asher M. Miller, Sturgis, Mich. Filed Oct. 23, 1877.



Claim.—1. A car link guide made with side arms which slide in suitable guideways, said arms being formed curved or bent, as described, whereby the link-guide may automatically operate in coupling cars, substantially as and for the purposes described.

2. In a car-link guide, the combination, with the guides, of the sliding arms, formed with their free extremities flaring outward, as described, whereby the said link-guide is prevented from displacement by reason of the movement of the car, substantially as set forth.

3. The combination, with the side arms, of the link-guiding plate, formed with its lower longitudinal body projecting forward and braced by the cross-rod which connects the arms, said guiding-plates having a horizontally arched body and a serrated upper edge, substantially as and for the purpose described.

203,847. MILK-STRAINERS. Hiram Mare, Chicago, Ill. Filed Mar. 7, 1878.

Claim.—1. The pyramidal strainer B, provided with a screw-thread around its base, in combination with the milk-receiver A and its extension A', the

latter having a corresponding screw thread for the reception of the strainer B, substantially as and for the purpose set forth.

2. The telescopic rest F, in combination with the extension A' of the milk-receiver, as and for the purpose set forth.



203,847. SALVES. Jacob G. Muller, Buffalo, N. Y. Filed Mar. 19, 1878.

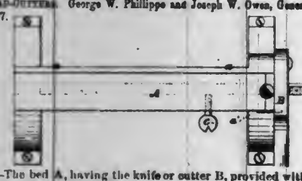
Claim.—The compound for salve consisting of gum arabic dissolved in brandy, whisky, or other spirits, with beef or mutton tallow and olive-oil added, all in about the proportions herein described, and for the purpose set forth.

203,849. TREATING ORES OF ZINC. E. A. Parnell, Swansea, Wales. Filed Mar. 4, 1878. Patented in England, Feb. 28, 1877.

Brief.—Roasts at a moderate heat, to convert zinc sulphide into sulphate and oxide. Treats the roasted ore with dilute sulphuric acid to dissolve out the zinc as sulphate. Concentrates this sulphate and decomposes it, mixed with raw blende, into sulphurous acid and oxide of zinc, which latter is subsequently reduced, as usual.

Claim.—The herein-before-described method of disengaging sulphurous acid and manufacturing zinc, which consists in mixing finely-divided sulphide of zinc or raw blende with previously-obtained concentrated sulphate of zinc, decomposing the sulphate of zinc by calcination until the sulphurous acid ceases to be disengaged, and then treating the calcined product to manufacture metallic zinc, substantially as specified.

203,850. LEAD-CUTTER. George W. Phillippe and Joseph W. Owen, Geneseo, Ill. Filed Nov. 9, 1877.



Claim.—The bed A, having the knife or cutter B, provided with the recess or slot *d*, in combination with the sliding bar or gage C, having the projection or rest *c'*, substantially as and for the purpose set forth.

203,851. MOCCASINS. Jesse G. Pitts, Newark, N. Y. Filed Mar. 1, 1878.

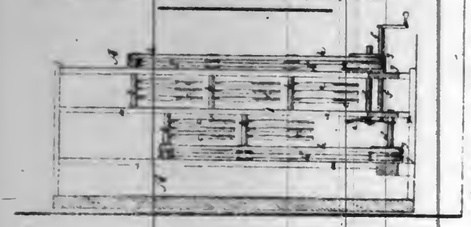


Claim.—A moccasin formed of a single piece of leather of the form shown, said piece having the apertures D and E, which are adapted to be stitched, as described, and thus form the moccasin to fit the hollow of the foot, substantially as described.

203,852. VESSELS FOR SETTING MILK. Jay W. Powers, Portage, Wis., assignor of two-thirds his right to E. S. Purdy and A. H. Armor, same place. Filed Mar. 12, 1878.



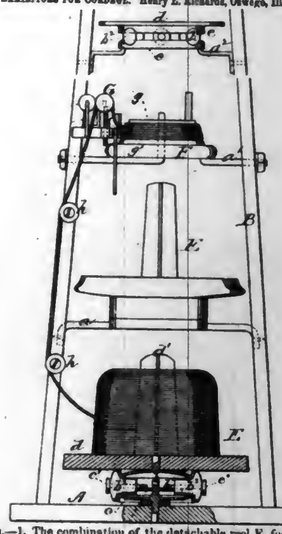
Claim.—The combination, with a vessel for setting milk, of a piston fitting air-tight in said vessel and having an aperture through it covered by a valve opening outward, substantially as and for the purpose specified.



203,853. CARPET-CLEANING MACHINES. John Rae, New York, N. Y., assignor to Thomas M. Stewart, same place. Filed Apr. 16, 1878.

Claim.—The combination, in a carpet-cleaning machine, of the frame A, with the shafts *b*, carrying beaters *c*, and with the oscillating cams *g g'* and straps *h* and *h'*, all constructed and arranged so that oscillating motion is imparted to the beaters with varying velocity, substantially as and for the purpose herein specified.

203,854. EXHIBITORS FOR CORDAGE. Henry E. Richards, Oswego, Ill. Filed Aug. 4, 1877.

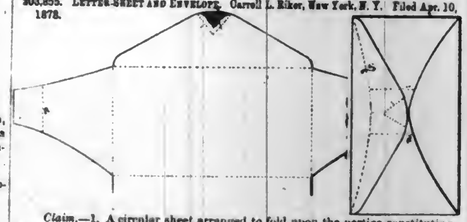


Claim.—1. The combination of the detachable reel E, for storing cordage, belting, and the like, having a track-plate on its under side, with a supporting-carriage and a center plate affording trackways for said carriage, substantially as specified.

2. The combination, with the storing-reels E and a coiling-drum, F, of a shaft, G, having worm *j*, the face pinion *j'*, the spindle *e*, having a collar, and hand *k*, and a rope, or its equivalent, passing from a storing-reel over said shaft G to the coiling drum, all operating substantially as specified.

3. In combination with the coiling reel F and the measuring device, the stationary knife blade *a* and swinging knife-blade *a'*, substantially as and for the purpose specified.

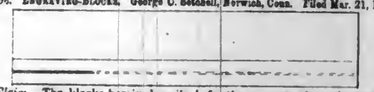
203,855. LETTER-SHEET AND ENVELOPE. Carroll L. Riker, New York, N. Y. Filed Apr. 10, 1878.



Claim.—1. A circular sheet arranged to fold upon the portion constituting the envelope, the latter being provided with side flaps, which meet when closed, and an end flap adapted to be gummed to the side flaps, as set forth.

2. A circular sheet arranged to fold upon the portion constituting the envelope, the latter being provided with side flaps perforated near their ends, and an end flap adapted to be gummed thereto, thereby admitting of the withdrawal of the sheet without breaking the seal, substantially as described.

203,856. ENGRAVING-BLOCKS. George C. Setchell, Norwich, Conn. Filed Mar. 21, 1877.



Claim.—The blocks herein described, for the purpose of wood-engraving, for letter-press printing, when these blocks are made by gluing a box-wood face upon the end grain of cheap wood backing, so that the direction of the grain of the wood shall be the same through both the face and the backing, substantially as and for the purposes herein set forth.

203,857. MACHINES FOR MAKING NETTING. Wilbur J. Squire, East Haddam, Conn. Filed Jan. 14, 1878.

Brief.—The method of forming the knot consists in passing the thread around the hook and pin in an S form, turning over the loop, passing the shuttle through the loop, crossing over the top thread, passing the shuttle down again through the loop, and then releasing and drawing up the knot. The entire machine is organized and adapted to produce netting possessing the peculiar formation of knots described.

Claim.—1. The combination of the cams V' in the wheels J and K, the connecting-rods U' and W', and the rocking lever W with the shuttle-bars U V, to give them the proper motion, as herein set forth.

2. The combination of the double cams V' I', the switches G' H', the shuttle-bar V, the lever I, and the carriage H, for giving said carriage and the shuttle-bars their proper relative motions, substantially as herein described.

3. The cam Q', with its switch J', in combination with suitable connecting-levers and a rocking rack, Q, for communicating the rotary motion herein described to the hooks P, whereby they are alternately reversed at successive revolutions of the wheel J, substantially as set forth.

4. The combination of the cam M' and its switches K' K' with the thread-carrier H and suitable mechanism, whereby said thread-carrier receives motion in a reverse or opposite direction in alternate successive revolutions of the wheel K, substantially as herein described.

5. The combination of the cams O and O' and the lever N' with the frame N, for giving the vertical motion to said frame at the time of forming and releasing the knot, substantially as herein described.

6. The combination of the cams I I', the striding lever R', and the pins R with suitable connecting mechanism, to throw said pins up and down to form and release the knot, substantially as herein described.

7. The combination of the cam A', the bars B' C', and the rocking lever D' and the dogs X' and Y', substantially as herein described.

8. The combination of the small levers X and their springs Z, the dog X', the locking-plate U'', and the shuttle-bar U with mechanism for operating them, substantially as and for the purpose herein described.

9. The folding rack E', in combination with the shuttles D, for guiding said shuttles as they pass through the knot, substantially as herein described.

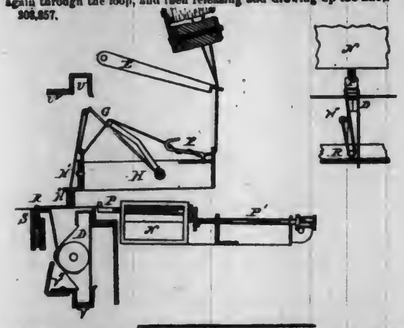
10. The frame E, in combination with the sliding carriage B, for regulating the feed of the thread, substantially as herein described.

11. The combination of mechanism for raising, lowering, and rotating the hooks P in the manner described, mechanism for raising and lowering the pins R, as described, and mechanism for passing the shuttles D up and down through each knot with thread-carriers which describe an S, either direct or reverse, around the hooks and pins, substantially as shown and set forth.

12. The combination, in a net-making machine, with the thread-carrier and rotating hooks, of mechanism by which the said thread-carrier is caused to describe similar reversed motions around the hook and pin, and mechanism by which the said hooks are caused to rotate in reversed directions in forming successive alternate knots to the right and left, substantially as herein described.

13. The herein-described method of forming the knot—that is, by forming an S around the hook and pin, turning over the loop, passing the shuttle up through the loop, crossing over the top thread, passing the shuttle down again through the loop, and then releasing and drawing up the knot.

203,857.

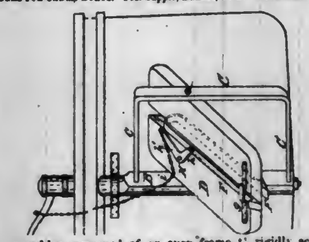


203,858. DENTAL TOOLS. Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place. Filed Mar. 6, 1878.



Claim.—The improved tool constructed, substantially as hereinbefore described, with a driving end, a cross-groove between the round portion and driving end of the shank, and a transverse groove at right angles to the cross groove.

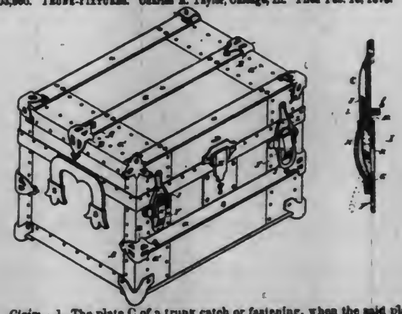
203,859. RUDDERS FOR CANAL-BOATS. Jos. Sappie, Buffalo, N. Y. Filed Mar. 6, 1878.



Claim.—1. A rudder composed of an open frame, C, rigidly secured to the rudder-post, and a feathering-board, D, pivoted within the frame C, and provided with a locking device, so that the feathering-board can be rigidly secured to the frame or permitted to swing on its pivots, substantially as and for the purpose set forth.

2. The combination, with the rudder-post B and open frame C, secured thereto, of the pivoted board D, gravity locking-bolt F F, and releasing mechanism H *i*, substantially as and for the purpose set forth.

203,860. TRUNK-FIXTURE. Charles A. Taylor, Chicago, Ill. Filed Feb. 16, 1878.



Claim.—1. The plate C of a trunk catch or fastening, when the said plate has cast thereon one or more pins or posts, *b*, projecting horizontally from the rear face of the said plate, substantially as and for the purposes set forth.

2. A trunk catch or fastening consisting of the combination of the plate C, having thereon the lug or shoulder L, the plate G, and the snap-loop J, substantially as and for the purposes specified.

3. A trunk catch or fastening consisting of the combination of the plate C, having thereon the lug or shoulder L and the post or pin *b*, the plate G, box or recess H, spring I, and loop J, having the cam K on its cross-bar, all substantially as and for the purposes specified.

203,861. CIGARETTES FOR MEDICAL PURPOSES. D. Wark, Rochester, N. Y. Filed Oct. 15, 1877.

Brief.—Steeps Manila paper in nitrate of potash, twenty-two ounces to the gallon. It is then dried, and a mixture of juniper-tar, one part, Carolina tar, one part, add oil of turpentine is applied to saturate it. The paper is again dried and formed into cigarettes of a cylindrical tapering form.



Claim.—1. The herein-described tubular tapering cigarette for medical purposes, formed of paper prepared substantially in the manner set forth.

2. Paper prepared for medical uses by treatment with nitrate of potash and vegetable tar, substantially as set forth.

203,862. PARING-KNIVES. John E. Wilhelm, Denver, Colo. Filed Oct. 27, 1877.

Brief.—A paring-knife is provided with spring-clasps having perforated flanges to carry and give adjustment to the bent-wire guard. The extreme point of the knife is beveled or rounded on one side, and there is formed a little below it a stop for the point-clasp, while the heel-clasp is held in place by means of a shoulder, and serves, also, to protect the thumb against the sharp edge of the knife-blade.

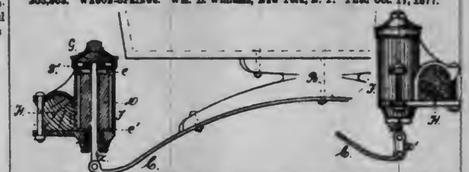


Claim.—1. The stop *m*, in combination with the beveled or rounded point of the knife-blade, and with the point-clasp, substantially as shown and described.

2. The spring-clasps *g*, adapted to pass over the blade, and having perforated flanges to secure the wire guard in place, substantially as specified.

3. The combination of the spring-clasps *g*, the wire guard *w*, and the knife-blade, substantially as described and shown, and for the purpose set forth.

203,863. WAGON-SPRINGS. Wm. L. Williams, New York, N. Y. Filed Oct. 17, 1877.



Claim.—1. The combination of the vertically-acting wagon-spring, as described, the outer case F of which is composed of two parts, as explained, each part having solid with it an arm or projection, as shown, and which arms or projections conjointly clamp firmly over the longitudinal side bars H, and of the steel cross spring or bar C, all substantially as and for the purpose hereinbefore set forth.

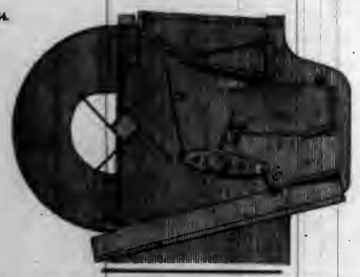
2. The combination, with the case F, the inclosed spring D, and the rod Z, of the buffer G, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the case F, the inclosed spring D, and the rod Z, of the disk *g'*, substantially as and for the purpose hereinbefore set forth.

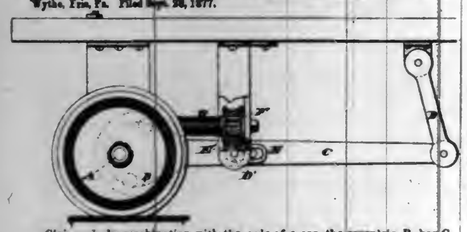
203,864. GRAIN-SEPARATORS. Clark Wood, Cochranton, Pa. Filed Jan. 17, 1878.

Claim.—In connection with the movable hopper and riddle-shoes, the shaft A, the casting B, with the hook C and rod E, and upright arm D, substantially as described.

203,864.



203,865. MECHANISM FOR IMPARTING MOTION TO SPEED-RECORDERS. William W. Wythe, Erie, Pa. Filed Sept. 26, 1877.



Claim.—1. In combination with the axle of a car, the eccentric B, bar C, swinging support D, and spud or projection D', or its equivalent, substantially as and for the purpose described.

2. In combination with the bar C and spud or projection D', or its equivalent, the screw-shaft E', worm-gear F, and flexible shafting G, substantially as and for the purposes described.

3. The combination of eccentric B, bar C, swinging support D, spud D', or its equivalent, and slotted crank E, substantially as and for the purposes described.

4. The combination, with the car-axle, of eccentric B, bar C, swinging support D, spud D', or its equivalent, screw-shaft E', worm-gear F, and flexible shaft G, whereby motion may be transmitted to a suitable recording-barrel of a speed recorder, substantially as described.

203,866. COMBINED PAPER-WEIGHT AND COPY-HOLDER. David [illegible], Zanesville, Ohio. Filed Oct. 19, 1877.



Claim.—The combination, with bar A, having shaft springs D, and rolls C C' journaled in brackets E, of the bar E, secured to arms F of brackets, and recessed correspondingly to rolls C C', as and for the purpose specified.

203,867. APPARATUS FOR BUNDLING CIGARS. William A. Abbott, Westfield, Mass. Filed Jan. 10, 1878.

Brief.—A flaring tube receives the package, while several plungers press it through, where finally the metal band slides off from the tube onto the package as the latter leaves the tube.



Claim.—1. The tube A, having a flare at one end, in combination with a follower, B, equal in length to said flare, as and for the purpose described.

2. The combination, with tube A, having flare at one end, of the collared follower C, equal in length to the flare and about one-half the length of the tube, to force the bundle of previously-compressed cigars about half-way through the machine.

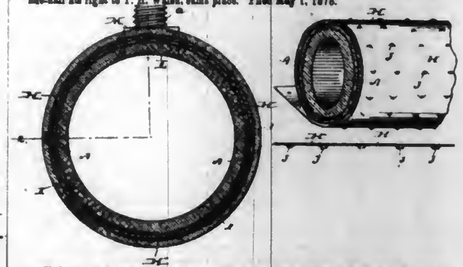
3. The combination, with the tube A, having the shoulder a', of the collared follower D, that passes nearly through the tube to enable the band E to be applied, as specified.

206,868. CANS OR VESSELS FOR LIQUIDS. John P. Adams, Cambridge, Mass. Filed Mar. 1, 1878.



Claim.—The folding sluice section or table D, provided with perforated false bottom, consisting of detachable and removable sections *a*, said sluice-section resting upon the bails C, and connected at one end to an abutment, G, by a detachable spring, I, and at the other end to the upright arm of a right-angle lever, K, by staple F, whereby the sluice section or table may be readily removed or detached from its connections, folded, and transported, substantially as and for the purpose set forth.

203,869. CEMENT AND ASPHALTUM PIPES. Michael Allen, New York, N. Y., assignor of one-half his right to T. E. Welsh, same place. Filed May 1, 1878.

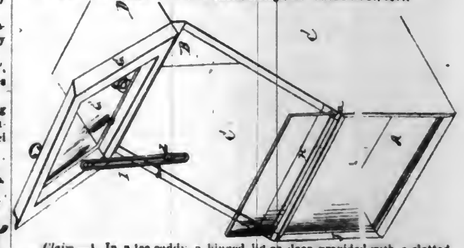


Claim.—1. In cement or other pipe, embedded coils of sheet metal wound around a cylinder and then upon itself, having intervening layers of cement or asphaltum, as set forth.

2. A pipe having an inner cylinder, A, between which and an outer cylinder, I, are arranged coils of sheet metal, H, provided with burrs J, a layer of asphaltum or cement being interposed between each two coils of metal, as set forth.

3. A section of pipe formed of cement or asphaltum, and provided with embedded coils of sheet metal, as set forth, having one end provided with a ring, B, formed with a recess, C, and flange D, and the other end provided with a ring, E, formed with a flange, G, and tongue F, as shown and described.

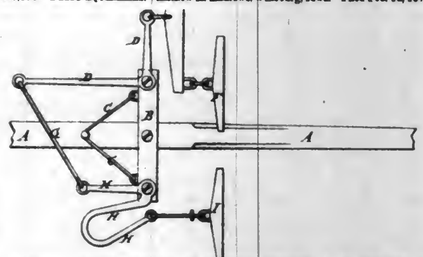
203,870. TEA-CADDY. John A. Anderson, Chicago, Ill. Filed Nov. 10, 1877.



Claim.—1. In a tea-caddy, a hinged lid or door provided with a slotted arm passing over a pin, or its equivalent, on the inside of the caddy, and so arranged as to hold such lid at any angle by friction only, substantially as herein set forth.

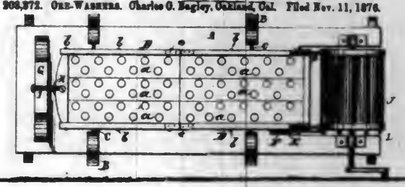
2. As an article of manufacture, a tea-caddy composed of the wooden box A B C D, hinged glass door G G', with slotted arm I and pin *d*, cross-bar H, frame J, and loose glass front L, all constructed substantially as and for the purposes herein set forth.

203,871. DRAFT-EQUALIZERS. Mathew A. Andrews, Willsberg, Iowa. Filed Feb. 16, 1878.



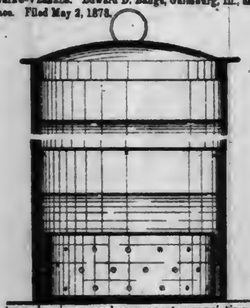
Claim.—The combination of the stationary cross-bar B, the stay-rods or braces C, the right-angled lever D, the connecting-rod G, and the bent lever H, having its outer arm curved into U form, with each other and with the draw-bar A, substantially as herein shown and described.

203,872. ORE-WASHERS. Charles O. Bagley, Oakland, Col. Filed Nov. 11, 1876.



Claim.—The folding sluice section or table D, provided with perforated false bottom, consisting of detachable and removable sections *a*, said sluice-section resting upon the bails C, and connected at one end to an abutment, G, by a detachable spring, I, and at the other end to the upright arm of a right-angle lever, K, by staple F, whereby the sluice section or table may be readily removed or detached from its connections, folded, and transported, substantially as and for the purpose set forth.

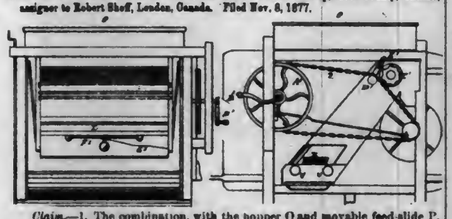
203,873. CONDENSING-VESSELS. Edward D. Bangs, Galesburg, Ill., assignor to Amelia P. Bangs, same place. Filed May 2, 1878.



Claim.—1. A condensing vessel or apparatus consisting of a lower vessel, and of an upper vessel having bottom extension with air-vent holes, the extension telescoping into the bottom vessel, substantially as and for the purpose set forth.

2. A condensing vessel or apparatus consisting of a lower vessel and interior perforated supporter, and of an upper vessel with bottom extension and air-vent holes, telescoping into the lower vessel, substantially as specified.

203,874. GRAIN-SEPARATORS. Thomas Barnes, Harwich Township, Kent County, Ontario, assignor to Robert Sheff, London, Canada. Filed Nov. 8, 1877.

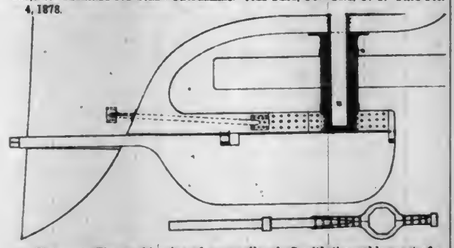


Claim.—1. The combination, with the hopper O and movable feed-slide P, of the stationary inclined elastic scraper *a*, located between the rear portion of said hopper and said feed-slide, substantially as and for the purpose specified.

2. In a fanning mill, the combination, with the shaking or vibrating and conveying mechanisms, of the driving mechanism, consisting of the chain Z, toothed wheel C', pulley and slide D' E', and wheel and crank A B', substantially as herein shown and described.

3. The combination, with the shaker and screen L, of the double-knobbed pendulum striker or knocker F' and the spring-supporting wire G, engaging by frictional contact with said striker or knocker, substantially as and for the purpose herein shown and described.

203,875. BEARINGS FOR SCREW-PROPELLERS. John Baird, New York, N. Y. Filed Feb. 4, 1878.



Claim.—1. The combination of a propeller-shaft with the rudder-post of a vessel, the two being connected substantially in the manner described, so that the shaft prevents the bending of the rudder-post, in the manner specified.

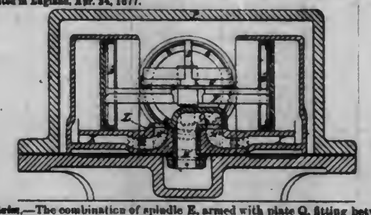
2. In combination with a propeller-shaft, a sleeve secured thereon, and a rudder-post, a brass in the rudder-post, the three being so made and combined, substantially as specified, that the shaft prevents the bending of the post, as set forth.

3. A ring, in combination with the shaft and the rudder-post, as applied, substantially as described, between the propeller and the front part of the rudder-post, that said ring shall operate to prevent currents of water flowing between the rubbing-surfaces inclosed in the rudder-post.

4. In combination with the rudder-post, the metallic closing-piece which shuts up the after end of the brass in the rudder-post, said piece being made and operating substantially as described.

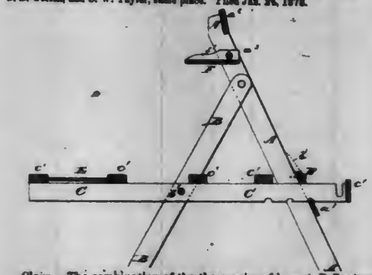
5. The ring applied between the propeller and the stern-post, in combination with the hub of the propeller and a boss upon the stern-post, substantially in the manner and for the purpose set forth.

203,876. PISTON WATER-METERS. James Barnes, Acocrington, England. Filed May 9, 1877. Patented in England, Apr. 24, 1877.



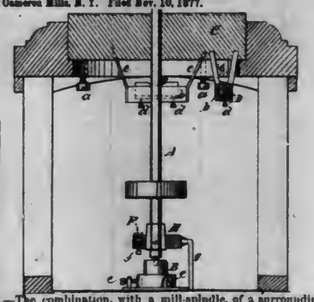
Claim.—The combination of spindle E, armed with plate Q, fitting between rods F and G, for the purpose of keeping the rod E upright.

203,877. WASH-BENCHES. Chas. Barlow, Cookshire, Quebec, Canada, assignor to himself, T. B. Terrill, and C. W. Taylor, same place. Filed Jan. 24, 1878.



Claim.—The combination of the three pairs of bars A B C, pivoted to each other, and provided with the cross-bars and rods a^1 a^2 b^1 c^1, and the latch D and catch-block d^1, substantially as herein shown and described

203,878. DEVICES FOR LEVELING AND TRAMMING MILLSTONES WHILE AT WORK. Jas. T. Beckwith, Cameron Mills, N. Y. Filed Nov. 10, 1877.



Claim.—The combination, with a mill-spindle, of a surrounding plate, B, containing two spirit-levels, F, and an adjustable step, B, as and for the purpose specified.

203,879. DRYING-MACHINES. George H. Bliss, Boston, Mass. Filed Apr. 4, 1878.



Claim.—1. An endless carrying-chain or chains consisting of alternate supporting-links C and connecting-links *c*, with suitable driving mechanism, in combination with a series of hurdles pivoted on said supporting-links and provided with suitable stops, substantially as set forth.

2. An endless drive-chain composed of a series of links, each supporting link having two or more hurdles hinged thereon, and provided with suitable stops to hold the parts in position, substantially as set forth.

3. The combination of the driving and carrying mechanism and the hinged hurdles with a guard to regulate the movement of the hurdles, substantially as set forth.

203,880. BALING-PRESSES. Jos. R. Blossom, Brooklyn, N. Y. Filed Apr. 17, 1876.

Brief.—The bands are placed on the top of the flat-faced ribs of the platen, which ribs are so constructed as to project beyond the plane or level of the rest of the platen under pressure, and to force the bands into the bale. The guards to hold the bands in place on the ribs sink below the level of the ribs, when pressure against the bale renders them no longer serviceable as guards.

Claim.—1. The process herein described in pressing and baling, consisting in applying the bands upon the faces of ribs which are more prominent when under pressure than any other part of the platen, thereby forcing the ribs and bands into the bale, and securing the ends of the bands while the bale is under compression, as set forth.

2. A platen provided with a series of curved parallel ribs, constructed and adapted to receive the bands on their faces, and to force the same into the bale on lines coinciding substantially with the outline the bale assumes on expanding, substantially as set forth.

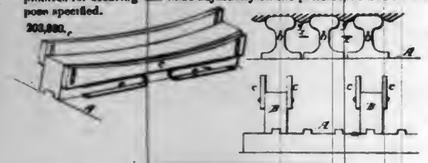
3. The spring-supported guards *e*, arranged to sink below the faces of the band supporting bars on application of pressure to the bale, as set forth.

4. The platen consisting of a series of plane-faced parallel bars, B, thicker at the outer ends than at the center, and arranged upon a flat platen-plate, substantially as set forth.

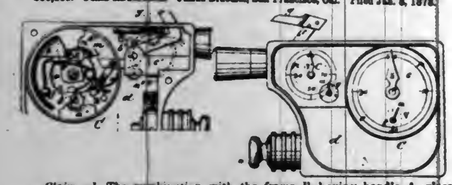
5. The bars B, made each in two sections, for varying the length, as set forth.

6. The combination, with the platen-plate A, of movable bars B and appliances for securing the same adjustably on the plate A, as and for the purpose specified.

203,880.



203,881. FARE-REGISTERS. Julius Steenel, San Francisco, Cal. Filed Jan. 8, 1878.

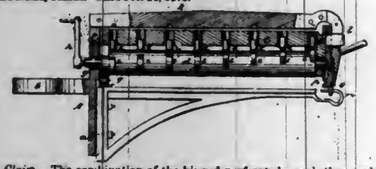


Claim.—1. The combination, with the frame B, having handle A, glass panels, partition C, and compartments *d d'*, of the clipping, striking, and registering devices, substantially as shown and described.

2. The combination of lever *f*, having thumb-piece *g* and pivoted hook-pawl *h*, the striking device *s j*, and the spring lever *k*, as and for the purpose set forth.

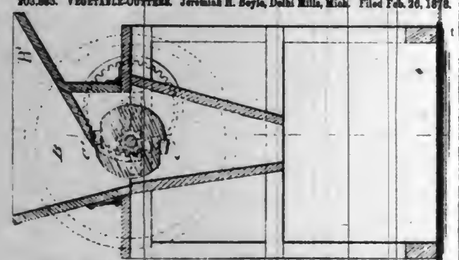
3. The combination, in a fare-register, of the lever *k*, carrying the dog *m* and hammer *j*, the bell *s*, and the lever *f*, having a shear-cutting edge, substantially as herein shown and described.

203,882. MACHINE FOR INSERTING RIVETS. Thos. Beardman, Charlottetown, Prince Edward Island, Canada. Filed Feb. 21, 1878.



Claim.—The combination of the hinged perforated arm *k*, the crank-roll *d*, having spirally-arranged cams *i* and followers *e*, the arm *c*, the apertured movable gage-disk *o*, having groove *p*, and the hasp *l*, as and for the purpose specified.

203,883. VEGETABLE-CUTTERS. Jeremiah H. Boyle, Delhi Mills, Mich. Filed Feb. 26, 1878.



Claim.—The combination, with hopper B, of a cylinder, C, having knives C', guided by rectangularly bent and slotted end pieces in grooves at the end of the cylinder, as and for the purpose specified.

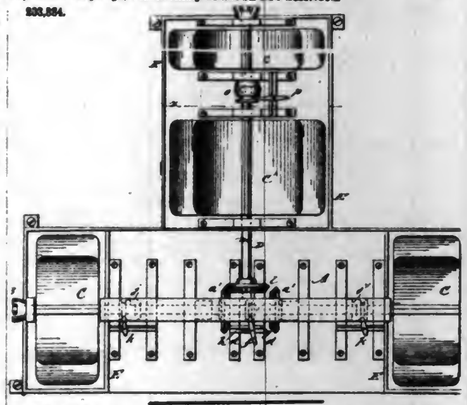
203,884. WIND-ENGINES. La Fayette Brayman, Gilbert Station, Ill. Filed Mar. 26, 1878.

Brief.—Two series of wind wheels placed on horizontal shafts are arranged at right angles to each other, and geared together, so that either or both series may be employed. Arranged at right angles to utilize the force of the wind blowing from any direction. The shaft of each wheel can be disconnected from, or connected to, the shaft of the next wheel by means of suitable clutch-couplings.

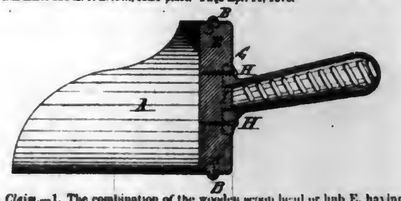
Claim.—1. Two series of stationary wind-wheels, having their axes arranged at right angles to each other, and having their shafts connected by miter-gearing, substantially as herein shown and described.

2. Two or more wind wheels, C, mounted on a sectional shaft connected by clutch-couplings, substantially as shown and described.

203,884.



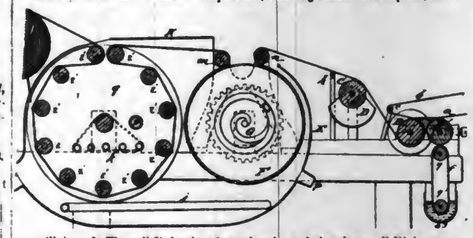
203,885. SCOOPS. Alphonzo Button, East Saginaw, Mich., assignor of two-thirds his right to Josiah Ames and M. J. Liddell, same place. Filed Apr. 11, 1878.



Claim.—1. The combination of the wooden scoop head or hub E, having a bead, B', circular mortise or channel G, and center standard I, with the metallic cap A, having a groove, B, corresponding with and formed to receive the bead B' in the attachment of the cup A to the head E.

2. An adjustable skeleton metallic handle, F, provided with a circular disk or shoulder at its base, having a hole in the center, and secured to a wooden head of scoops or other articles by means of screws H H, substantially as and for the purposes set forth.

203,886. MACHINES FOR PASTING TOGETHER AND DRYING ROLLS OR CONTINUOUS SHEETS OF PAPER AND OTHER FABRICS. Joseph Culler, Cambridge, Mass. Filed Apr. 13, 1878.



Claim.—1. The roll B, having flanged ends, and the plane roll B', in combination, for containing paste and combining two or more fabrics, substantially as shown and described.

2. The combination of the endless apron *f* with the roll B', substantially as and for the purpose herein shown and described.

3. The combination, in a pasting-machine, with the pasting and sizing rolls, of means, substantially as described, that simultaneously steam-dry the stock on both sides.

4. The wire-gauze cylinder F, the steam-coil G, the casing E, and steam-coil *j*, in combination, for applying heat to the inside and outside of the strip simultaneously, substantially as shown and described.

5. The combination of the rollers *i*, inside coil I, outside coil *j*, and the casing E, substantially as shown and described.

203,887. ELEVATOR-BOOTS. Henry W. Caldwell and William Watson, St. Louis, Mo. Filed Apr. 29, 1878.

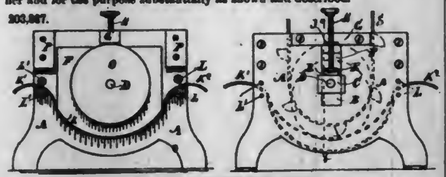
Claim.—1. An adjustable elevator-boot provided with an adjustable bottom, whereby the bottom of the boot follows up and down with the pulley, and remains at all times at the same distance from the bottom of said pulley, in the manner and for the purpose substantially as shown and described.

2. In an elevator-boot, the combination of the adjustable boot, consisting of the sides F F, the fixed bottom K, with flexible projecting ends K' K', the pulleys L L L' L', and the tightening-screws R R, whereby said adjustable

boot can be adjusted up and down, and the flexible ends K' K' of the bottom shall make extension sides to said boot, in the manner and for the purpose substantially as shown and described.

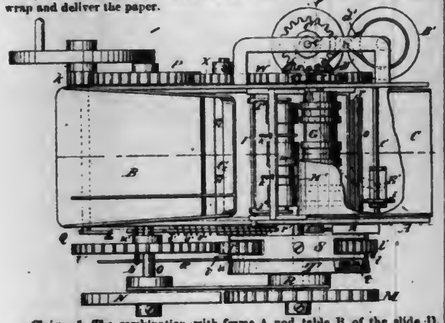
3. In an elevator-boot, the adjustable boot consisting of the sides F F, the curved bottom K, with sides K', adapted to move up and down against flexible cushions *n n* of the frame A, combined with the pulley O, in the manner and for the purpose substantially as shown and described.

203,887.



203,888. NEWSPAPER WRAPPING AND PASTING MACHINES. Pleasant A. Chalfant, Independence, Cal. Filed Sept. 29, 1877.

Brief.—A newspaper is fed from table B down the chute G, where it is supported by forks H, when a slide, D, folds it in the center, and forces its folded edge through the spring holding-plates E F. A wrapper is fed down the chute H' from table C, and rests on rod *a'*, which is removed by suitable mechanism at the proper time to bring wrapper and newspaper together over a transverse oval rod, *p'*, when they are grasped between the plate *o* and finger *r*, which is then revolved between plates L and I, and passed beneath and around the paste-trough J, and delivered from such plate and finger by the follower F' into the delivery-rolls A' B'. During the delivery of one wrapped paper another is being wrapped by a duplicate wrapping mechanism. The fingers *k'* are automatically projected into chute H', to prevent the feeding of a wrapper out of time. The wrapping mechanisms are supported in a head, S, which, by means of geared segments U N R, is caused to intermittingly revolve, thus bringing each wrapping mechanism successively into position to wrap and deliver the paper.



Claim.—1. The combination, with frame A and table B, of the slide D, the pivoted plate E, serrated and pressed by spring *c*, the subjacent curved plate F, pivoted and thrown upward by a spring, *d*, the chute G, forks H, slotted curved spring-plate I, springs *g*, and elastic strips *h*, as and for the purpose described.

2. The chute H', having a portion, *i*, movable, pivoted at *j'*, and provided at its upper edge with fingers *k'*, extending through holes in the outer side of chute, as and for the purpose set forth.

3. The curved plate L, attached to cross-bar *i*, and extending beneath the paste-trough to the opposite side, where it is bent inward to permit the turning of paper, as described.

4. The head *n*, having shaft *l*, pinion *l'*, and cross-head *m*, the head S, and disk T, having the annular slot *t*, in combination, substantially as shown and described.

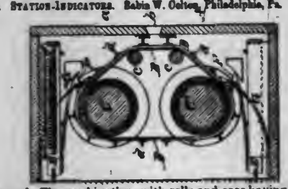
5. The combination of the head *n*, folding-plate *o*, lever *p*, finger *r*, cam *s*, and the spring *q*, substantially as shown and described.

6. The combination of the chute H', roller G', movable plate *i'*, arms P, roller *m'*, and rods *n'*, substantially as shown and described.

7. The folding-plate *o* and finger *r*, the bar *p'*, and plates E F, in combination, substantially as shown and described.

8. The arms J' K' and lever L', in combination with the sliding table D, having the finger *b*, for imparting a reciprocating motion to the said table, substantially as shown and described.

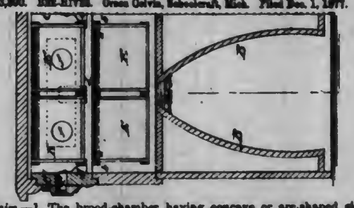
203,889. STATION-INDICATORS. Sabin W. Colton, Philadelphia, Pa. Filed Oct. 6, 1877.



Claim.—1. The combination, with rolls and case having aperture *b*, of the printed strip B, held at the edges by the belts D D', that run continuously over all the rolls, as shown and described, so that the distance of rotation with each pull of the handle will be equal.

2. The springs G, in combination with the rolls C C', substantially as and for the purpose herein specified.

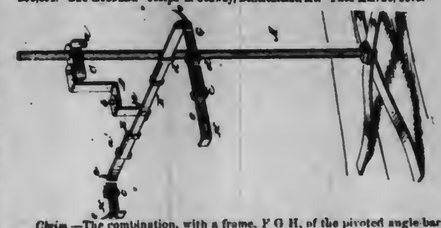
203,890. RIM-RIVETS. Orson Colvin, Schoolcraft, Mich. Filed Dec. 1, 1877.



Claim.—1. The brood-chamber having concave or arc-shaped sides, as shown and described, for the purpose specified.

2. The comb-guides or peak-blocks of the brood-chamber, having convex sides, as shown and described.

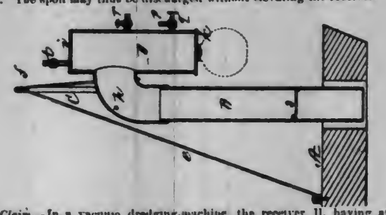
203,891. BAG-HOLDERS. Joseph L. Conway, Bellefontaine, Mo. Filed Mar. 26, 1878.



Claim.—The combination, with a frame, F G H, of the pivoted angle-bars D E, slide C, and standard A, the latter pivoted in the base B, as and for the purpose specified.

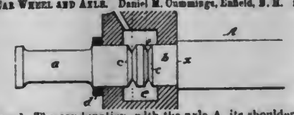
203,892. VACUUM-DREDGERS. Augustine Crosby, Boston, Mo. Filed Nov. 27, 1877.

Brief.—The delivery chamber has an offset connection with the main receiver, an open bottom, and a gate whereby the latter may be closed air-tight. The spoil may thus be discharged without elevating the receiver.



Claim.—In a vacuum dredging-machine, the receiver H, having at its upper end a vacuum-chamber, D, located out of line with the main portion of the receiver, and provided with a direct outlet at its bottom for the discharge of the mud, &c., in combination with a movable cover or gate, *k*, constructed to close the open bottom of the vacuum chamber with an air-tight joint while the mud is being raised, substantially in the manner and for the purpose described.

203,893. CAR WHEEL AND AXLE. Daniel M. Cummings, Enfield, N. H. Filed May 2, 1878.

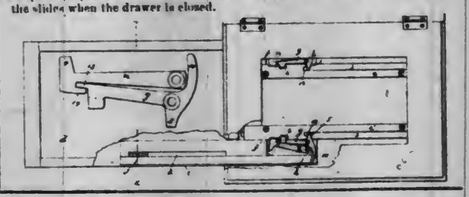


Claim.—1. The combination, with the axle A, its shoulder *x*, and grooved bearing *b*, of the wheel having a chambered hub and a body, *d*, of Babbitt metal or its equivalent, filling the chamber and grooves of the axle, substantially as set forth.

2. The wheel provided with one or more chambers, divided by lips *i*, with intermediate soft-metal filling adapted to grooves in the axle, substantially as and for the purpose specified.

203,894. DRAWER-SUPPORTS. Jos. W. Dana, Boston, Mass. Filed Apr. 29, 1878.

Brief.—The sides of the drawer project below its bottom, and rest in grooves in the outer top edge of the sliding supports. The supports move within guides attached to the rails separating the drawers, and are provided with hooked locking levers, that stop and hold the slides in a fixed position when the drawer is opened, a pin on the bottom of the drawer tripping said levers, and releasing the slides when the drawer is closed.



Claim.—1. The slides and locking levers connected therewith, in combination with the guides adapted to be engaged by the levers to lock the slides in their outward positions.

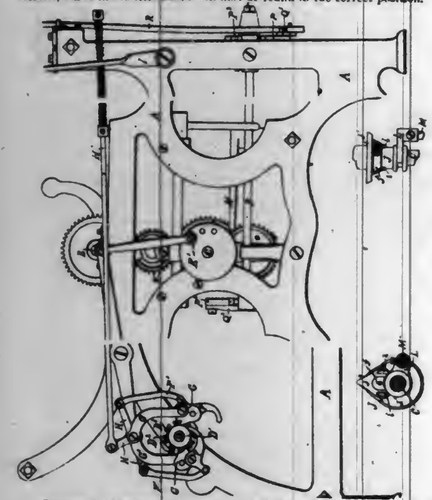
2. The drawer notched at its under side, and the slides and guides, combined with locking and drawer engaging levers, adapted to be engaged with and from both the guides and the drawer, to operate substantially as described.

3. The combination, with the drawer, provided with side pieces extended below the bottom of the drawer to enter grooves in the slides, of slides guided by independent guides below the bottom of the drawer, the drawer in its outward and inward movements being supported above the slides, substantially as described.

4. The hooked locking lever *g*, provided with the projection 5 and heel 10, combined with and adapted to move with it the drawer engaging lever *n*, substantially as and for the purpose described.

203,895. LOOMS. Heinz D. Davis, North Andover, Mass., assignor to George L. Davis, John A. Wiley, Joseph M. Stone, George G. Davis, Joseph H. Stone, and James H. Davis, same place. Filed May 15, 1876.

Brief.—The cam-shaft revolves with same velocity as the lay-shaft, and each picking-cam has but one picking-point. The cam is made in two parts—one fixed to the shaft, and the other part, carrying the picking-point, embraces the shaft and slides axially upon it, between lateral guides in the fixed part. The pattern mechanism may be reversed or stopped. For finding the true pick the picking-cams are thrown out of operative position and the driving mechanism of the pattern is reversed by a hand-lever. The loom is then put in operation, the other parts moving in the usual way until the proper shed is formed, when the shuttle-boxes will also be found in the correct position.

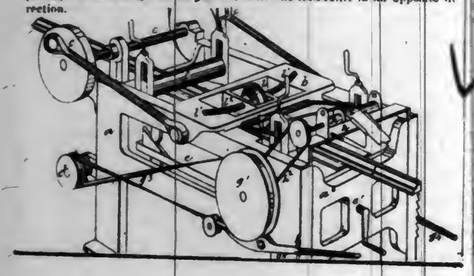


Claim.—1. The combination, with each of the movable picking-cams, of a shipper and mechanism, substantially as specified, for operating the shipper, whereby either of said cams may be operated independently of the other cam, substantially as described.

2. The combination, with the sliding cams, rocking shafts, and devices for rocking the same, of mechanism, such as described, for connecting the cams and rocking shafts, whereby the two cams may be thrown out of action simultaneously in opposite directions, substantially as described.

203,896. MACHINES FOR VENEERING MOLDINGS. J. A. Dayton, Brooklyn, N. Y. Filed Oct. 3, 1877.

Brief.—The strip of molding is veneered by means of a vertically-adjustable bed, upon which it is supported; a gluing-hopper having a hollow bottom for passing a heated agent through it to keep the glue hot; a guide through which the veneer passes, and a roller for coating the under side with glue, in connection with vertical guide-rolls, horizontal guide-rolls, a heated roller in a reciprocating frame, and a swinging former for forcing the veneer into all parts of the molding. To obviate passing the whole length of the strip through the machine more than once, a slack belt is placed on the other end of the feed-roller shaft, and a tightening-pulley pivoted below the belt-pulley, the belt being so arranged as to turn the feed-roller in an opposite direction.



Claim.—1. In a machine for veneering and polishing moldings, the combination of the straight and cross belts g^6 g^7 and their tightening-levers with the feed-rollers *f* and *f'*, adjustable bed *d*, and reciprocating frame *b*, constructed and operating substantially as hereinbefore set forth.

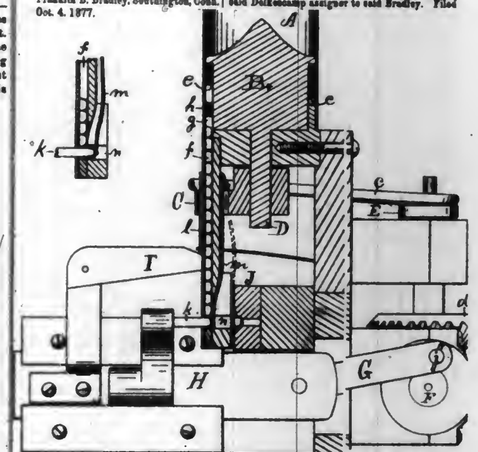
2. In combination, the gluing apparatus *h* *h'*, former *k'*, and pressure-roller *l*, substantially as and for the purposes hereinbefore set forth.

3. The adjustable bed *d* and feeding-rollers *f*' *f'*, in combination with the gluing apparatus, former *k'*, and pressure-roller *l*, substantially as hereinbefore set forth.

4. The gluing apparatus *h* *h'* and pressure-roller *l*, in combination with the feeding-rollers *f*' *f'*, the upper feeding-roller being so constructed as to operate also to form the veneer on the molding, substantially as hereinbefore set forth.

5. In a machine for veneering moldings, the combination of the gluing apparatus *h* *h'*, the feeding and forming rollers *f*' *f'*, the vertical side pressure-rollers *o* and *o'*, and the heated pressure-roller *l*, substantially as and for the purposes hereinbefore set forth.

203,897. MACHINES FOR ARRANGING AND FEEDING BLANKS. Adolph Dalkeramp and Franklin B. Bradley, Southington, Conn.; said Dalkeramp assignor to said Bradley. Filed Oct. 4, 1877.



Claim.—1. In a machine for feeding blanks, the flange *c*, mounted on the upper end of the cylinder B, and provided with peripheral openings *b*, in combination with the sides of the receptacle A, surrounding said flange, and forming one side of the openings for the passage of the blanks, substantially as described, and for the purposes set forth.

2. The combination of the receptacle A, rotary cylinder B, and spiral incline *a*, substantially as described, and for the purpose specified.

3. The combination of receptacle A, cylinder B, incline *a*, and conductor *f*, substantially as described, and for the purpose specified.

4. The combination of conductor *f*, incline *a*, stop *g*, and waste-chute *h*, substantially as described, and for the purpose specified.

5. The combination of the following elements, viz: first, a stationary receptacle; second, an incline placed within the receptacle in such relative position as to incline downward when the receptacle is in a vertical position; third, an internal rotating cylinder; and, fourth, mechanism for imparting motion to the said cylinder relatively to the receptacle, substantially as described, and for the purpose specified.

6. The combination of the conductor *f*, having opening *n*, the spring *m*, reciprocating punch *k*, and mechanism for raising the spring out of the path of the punch, substantially as described, and for the purpose specified.

7. In combination with the conductor *f*, the punch *k*, of triangular form in cross-section, and a corresponding-shaped opening in the front of the conductor, substantially as described, and for the purpose specified.

8. The receptacle A, having a chamber at both its ends, in combination with the arranging mechanism and cut-off, forming a transverse division through the receptacle between said chambers, the lower chamber being located below the plane occupied by the arranging mechanism, substantially as described, and for the purpose specified.

9. In a machine for feeding cup-shaped blanks, the conductor *f*, having a transverse delivery-opening, in combination with the spring *m*, or equivalent mechanism, for closing said opening and preventing the bottom blank from rolling out while it is being seated preparatory to being delivered through said opening, substantially as described, and for the purpose specified.

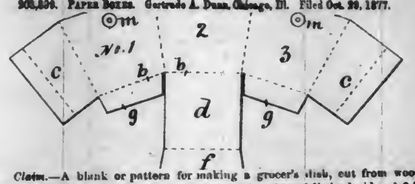
203,898. TREE-PROTECTORS. Thomas Dodd, Cameron, Mo. Filed Apr. 16, 1878.



Claim.—1. The herein-described imperforate flexible and elastic envelope for trees, the same being adapted to automatically conform to the shape and size of the body of the tree by reason of its own elasticity, and being saturated or coated with pitch or the like material, as herein before shown and described.

2. In combination with an imperforate flexible and elastic envelope, adapted to fit closely to the body of a tree, and to automatically conform to the size and shape thereof, an upper band of cloth saturated with pitch or the like material, the whole being confined at top and bottom in the manner explained, and adapted to prevent encroachment of insects, &c., as and for the purposes set forth.

203,899. PAPER BOXES. Gertrude A. Dunn, Chicago, Ill. Filed Oct. 20, 1877.



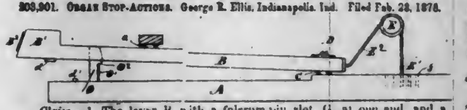
Claim.—A blank or pattern for making a grocer's slab, cut from wood veneering or other suitable sheet material, having three full-sized sides, 1 2 3, flaps *c c* to form a fourth side, and a vertical lap-joint, lappets *g g*, to connect the sides 1 and 3 with the corresponding sides of the full-sized bottom *d*, having the tappet *f* to overlap the bottom edges of the overlapping flaps *c c*, substantially as shown and described.

203,900. DRIVE-WELL-POINT FILTERS. Martin J. Eich, Plymouth, Ind. Filed Mar. 18, 1878.



Claim.—The plates C, bent longitudinally into triangular form, placed side by side, and having their edges notched and soldered to the perforated tube A, in combination with the said perforated tube A and with the point B, substantially as herein shown and described.

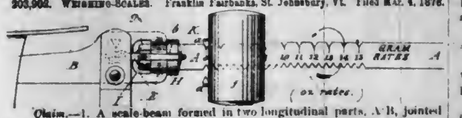
203,901. ORGAN STOP-ACTIONS. George B. Ellis, Indianapolis, Ind. Filed Feb. 28, 1878.



Claim.—1. The lever B, with a fulcrum-pin slot, G, at one end, and a slot, G', near the other end, in combination with the stationary stud or hook O and spring E, in the manner and for the purpose substantially as shown and described.

2. In an organ stop-action, the lever B, with an adjustment slot, G, operating on a fulcrum-pin, thereby allowing an end motion to the lever, and permitting the lever to be moved forward when depressed, and retained in position by a stationary stop or hook standard, O, and released by an end pressure on the lever, in the manner and for the purpose substantially as shown and described.

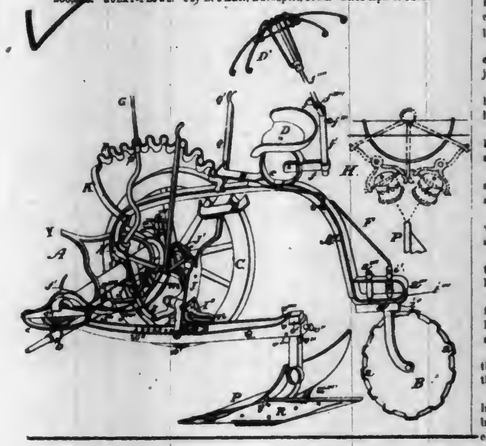
203,902. WEIGHING-SCALES. Franklin Fairbanks, St. Johnsbury, Vt. Filed Mar. 4, 1878.



Claim.—1. A scale-beam formed in two longitudinal parts, A B, jointed together between their extremities, the zero end of the graduated part A being socketed in the end of the fulcrumed part B, and rotatable thereon, to bring either of its sides into view, substantially as and for the purpose herein set forth.

2. In combination with a rotatable differently graduated scale-beam, a sliding weight, *f*, rotatable with the beam, provided with double index-points *a a*, corresponding to each graduated side of the beam, and adapted to engage with either graduated side by the act of turning the required graduated side into view, substantially as herein shown and described.

203,903. SULKY-PLOWS. Jay B. Fisher, Davenport, Iowa. Filed Apr. 6, 1878.



Claim.—1. A sulky-frame consisting of the axle A', arc-shaped reach A'', wheels C C, spindles *b b'*, and caster guide-wheel B, constructed substantially as and for the purpose specified.

2. A caster guide-wheel, B, having projections *a* and knife-cutting edges between them, substantially as and for the purpose specified.

3. The caster guide-wheel B, having projections *a*, and cutting-edges between them, and having the upright standards *f'''* fastened to the rear end of the lengthwise plate *f''''*, having wings *a'* and slot *i''* between the said standards *f'''*, and having the vertical journal-shaft *a'''*, on which the caster guide-wheel B operates, secured to the front end of said plate *f''''*, in order to form a long bearing-crank shoulder, *a'''*, and strong lockage at the rear end, formed and operating substantially as and for the purpose specified.

4. The caster guide-wheel B, having projections *a*, and cutting-edges between them, and having the upright standards *f'''* fastened to the rear end of the lengthwise plate *f''''*, having wings *a'* and slot *i''* between the said standards, and having the vertical journal-shaft *a'''*, on which the caster guide-wheel turns, secured to the front end of said plate *f''''*, in combination with the bearing-box *a'''* and lock-pin *f*, pivoted to the lever F_3, all operating together for the purpose of cutting a straight furrow across the field, substantially as shown, for the purpose specified.

5. The combination of an arc-shaped reach, A'', with the seat D, convolute-spring support *c*, foot-rests, clasp-band *c'*, bolted so as to be adjusted back and forth, and arm-bearing band *f*, bolted to the seat-spring *c*, to hold and adjust the top D', substantially as and for the purpose specified.

6. The combination of the arm-bearing band *f* with the seat D, elbow-sleeve *f'*, jointed stem *f''''*, adjustable rod-band *g''''*, adjustable arm-rods *g*, plate *g'*, plate *h*, and collar-block *h'''*, substantially as and for the purpose specified.

7. The combination of the top D', consisting of the elbow-sleeve *f'*, jointed stem *f''''*, adjustable rod-band *f''''*, plate *g'*, plate *h*, rim-rods *h'*, circular rod *h''*, and collar-blocks *h'''*, all constructed substantially as and for the purpose specified.

8. Lever O', having an elbow-support bearing, *u''''*, provided with hinged arms *n'''*, which have the other end pivoted to the sleeve of cup *u'*, to allow the friction-spring O to rise and lower with the plow, and plate *n''''*, hinged to the lever O', for its fulcrum adjustment, substantially as and for the purpose specified.

9. The coil-spring O, having cup-caps *u u'*, sleeve-bearing *u''*, and bent or double rod *n''''*, substantially as and for the purpose specified.

10. The combination of the friction coil-spring O, having cup-caps *u u'*, sleeve-bearing *u''*, and bent or double rod *n''''*, with the post Q', lever O', rod O'', and rack O''', substantially as and for the purpose specified.

11. The combination of rod O'' with the axle-lever O', having plate *n''''* and journal-shaft *a''''*, substantially as and for the purpose specified.

12. The combination of the furrow-guide support N, having its lower end divided, as shown, and upper end perforated, with the bar N' and plow P, to operate substantially as described, for the purpose set forth.

13. In a sulky-plow, the combination of an adjustable bar N', with the axle, furrow-guide support N, and journal-shaft *a''''*, substantially as and for the purpose specified.

14. The lever G, with its respective elbow *j*, bolted to the bar *j''*, which is hinged with it to the axle or frame of the sulky, and bearing bifurcated end *j'*, substantially as and for the purpose specified.

15. The arms *k*, having a bearing-collar, *k'*, and collar-bow *m*, constructed substantially as and for the purpose specified.

16. The combination of the yoke I, having journal ends and journal-pin *i*, with the arms I', knee-plate I'', and arms *i*, substantially as and for the purpose specified.

17. The combination of the arms *k*, having the collar-bow *m*, with the elbow-lever J', to lock the central lateral movement of the plow-beam, semi-circular bar *j''*, and rod *j''''*, substantially as and for the purpose specified.

18. The perforated tubular cog-bearing brace *w*, provided with a bearing-rim, *w'*, and connecting-pin *w''*, constructed substantially as and for the purpose specified.

19. The combination of the perforated tubular cog-bearing brace *w*, provided with a bearing-rim, *w'*, and connecting-pin *w''*, with the double beam Q, one bar having cog-pins, arms I', and knee-plate I'', having the knee-pans *z*, to operate substantially as and for the purpose specified.

20. In a sulky-plow, the combination of the operating device H, consisting of the arms *k*, yoke I, arms I', knee-plate I'', and levers J J', with the double beam Q, having the cog-brace *w*, and lever G, having bifurcated end *j'*, the elbow *j*, bolted to the bar *j''*, having bar *j''''*, and axle or frame of the sulky-plow, substantially as and for the purpose specified.

21. The lever G, having the elbow *j*, bolted to the bar *j'*, having hinged ends *j''* and bifurcated end *j'*, in combination with the frame A or axle and journal-bearing collar-neck *k'*, substantially as and for the purpose specified.

22. The combination of the hinged lever J, having elbow-arms *e* and handles *o'*, with the knee-plate I'', elbow-lever J', and seat D, to regulate the lateral movement of the plow, substantially as and for the purpose specified.

23. In combination, the elbow-lever J' with the spring collar-bow *s* and knee-plate I'', for the purpose of locking the lateral movement of the plow, substantially as and for the purpose specified.

24. The lever-rack K, having the spring collar-bows *p*, made more than semicircular in form, in order to clasp and hold the levers, substantially as shown, for the purpose set forth.

25. The combination of the lever-rack K, having the spring collar-bows *p*, with the arc-shaped reach and lever G, substantially as and for the purpose specified.

26. In combination, the sleeve-rubber *p'* with the rack K and lever G, for the purpose of securing a safe and firm vibrating hold of the lever in the collar-bows, with easy adjustment, substantially as and for the purpose specified.

27. In combination, the lap-spring sleeve *t'* with the lever M and rack K, for the purpose of securing an up-and-down movement of lever M in the collar-bows *p*, when raising and lowering the plow, and lateral movement, substantially as and for the purpose specified.

28. In combination, the hinged lever M, made adjustable up and down by the lap-spring sleeve *t'*, to correspond with the vertical motion of the plow by the lever G, operating substantially as and for the purpose specified.

29. In combination, the furrow-cutter L, consisting of the disk-blade mold-boards *s'*, divided, as shown, with cutting-edges the whole length of each blade, and dishing from the center of the mold-boards to the end of blades, circular blade-scrapers *o*, as shown, having two blades on each sleeve, secured

to the axle between the said mold-boards, to remove obstruction from between the divisions of the blades, and frame r, having axle r' and arms r'', with the plow-beam Q, mold-board T, and share S, for the purpose of dividing the furrow-slice as it passes over the said mold-board and share, substantially as and for the purpose specified.

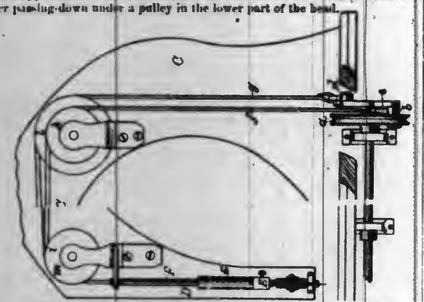
30. The land-side reversible plate R, made wedge-shaped from the ends to the center, to be used end for end and upside down, having a rib-shoe, x', constructed substantially as and for the purpose specified,

31. The combination of the reversible land-side plate R, made wedge-shaped from the ends to the center, and having a rib-shoe, x'', with the post Q, made substantially as and for the purpose specified.

32. In a plow, the combination of an adjustable double beam, Q, post Q', land-side reversible plate R, mold-boards T, and reversible share S, substantially as and for the purpose specified.

203,904. SEWING-MACHINES. Joseph L. Follett, New York, N. Y. Filed Feb. 16, 1878.

Brief.—The driving-shaft or pulley is provided with a double crank, to the extremities of which two bands or cords are attached. These cords pass up over two independent pulleys in the rear end of the goose-neck, thence over two like pulleys in the top of the head of the machine, one being attached to the upper end of the needle-bar, and the other to the lower end of the same, after passing down under a pulley in the lower part of the head.

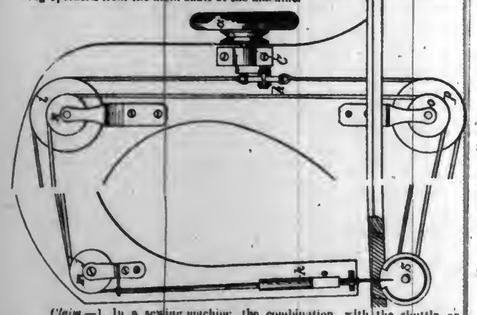


Claim.—1. In a sewing-machine, the combination, with the needle-bar or holder, of cording, banding, or its equivalent, connected with and receiving a positive back-and-forth movement from some moving part of the machine on the one hand, and on the other hand connected with, and imparting a positive reciprocatory movement to, the needle-bar or holder, as set forth.

2. The combination, substantially as herein set forth, of the lower rotary shaft, the double crank or its equivalent connected therewith, the reciprocatory needle-holder or bar, and cording or banding or its equivalent, extending from the crank to the needle-holder or bar, over or around guide-pulleys, and operated by the crank, to impart a positive movement of reciprocation to the needle-holder.

203,905. SEWING-MACHINES. Joseph L. Follett, New York, N. Y. Filed Mar. 2, 1878.

Brief.—The shuttle or hook, or both shuttle or hook and needle-bar, are given a positive motion, in the proper manner, by means of cording or banding operated from the main shaft of the machine.



Claim.—1. In a sewing machine, the combination, with the shuttle or equivalent device which co-operates with the needle to form the stitch, of cording, banding, or its equivalent, connected with, and receiving a positive back-and-forth movement from, a rotary double crank or eccentric on the one hand, and on the other hand connected with, and imparting a positive back-and-forth movement to, said shuttle or its equivalent, as set forth.

2. In a sewing-machine, the combination, substantially as set forth, of a needle-bar or holder and the shuttle or its equivalent, with cording, banding, or its equivalent, connected with, and receiving positive reciprocatory movement from, some moving part of the machine, and imparting said movement to both needle-bar or holder and shuttle, or the equivalent thereof, as described.

3. The combination, substantially as described, of the needle-bar or holder, the hook or its equivalent, the intermediate crank-shaft, and the cording or banding connecting the said crank-shaft and hook and needle-bar or holder, the combination being and acting as set forth.

203,906. BOILER-COVERING COMPOUNDS. Gilbert C. Fowler, San Francisco, Cal. Filed Oct. 9, 1877.

Claim.—A boiler-covering consisting of the fiber or pulp of the cactus family of plants, combined with suitable non-conducting ingredients, substantially as described.

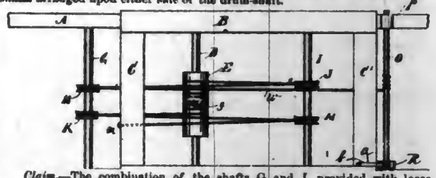
203,907. BOX-FASTENERS. Otto Geier, St. Albans, W. Va. Filed Apr. 11, 1878.



Claim.—The combination of the lid or cover C, provided with the cleats or braces D D', and lugs a, with the lock E, socket b, and guard c, constructed and arranged as described.

203,908. SAW-MILL CARRIAGES. Henry Groves, Indianapolis, Ind. Filed Mar. 13, 1878.

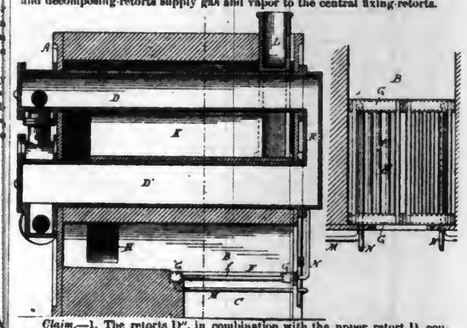
Brief.—The log-carriage is operated by means of a cord or chain, one end of which is attached to the carriage, the other being secured to a shaft provided with a ratchet and pawl, the chain passing over a drum mounted upon a shaft having its bearings in the main frame, and over loose sheaves upon shafts arranged upon either side of the drum-shaft.



Claim.—The combination of the shafts G and I, provided with loose sheaves H K J M, the drum E, the rope w, the movable carriage B C, and the shaft O, provided with the ratchet R and the pawl n, all arranged and combined to operate in the manner set forth and described.

203,909. GAS APPARATUS. John Hanlon, New York, N. Y. Filed Mar. 8, 1878.

Brief.—Steam is generated in the hollow tubular grate-bars of the furnace, and is superheated in tubular passages in the retort-oven, after which it is conducted, in contact with a stream of oil, into the decomposing-retort. The gas and vapors here produced are conducted through two connected hot retorts, where a fixed illuminating-gas is produced. Two side steam superheaters and decomposing-retorts supply gas and vapor to the central fixing-retorts.

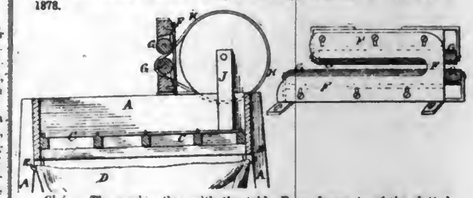


Claim.—1. The retorts D'', in combination with the upper retort D, connected by the pipes Q, and with the lower retort D', connected by the outside pipe R, all constructed and relatively arranged substantially as and for the purpose set forth.

2. The retorts D'', D', and D, and pipes Q and R, constructed and arranged as described, in combination with the steam superheaters E E and the pipes O and P, substantially as and for the purpose set forth.

3. The horizontal center flue K, between the upper and lower retorts D D', communicating by suitable openings with the hot-air chamber J, in combination with the horizontal side flues I, connecting with the rear of the fire-box by the passages H, constructed as described.

203,910. HOP-PICKING MACHINES. Henry H. Hatheway, Clockville, N. Y. Filed Feb. 27, 1878.



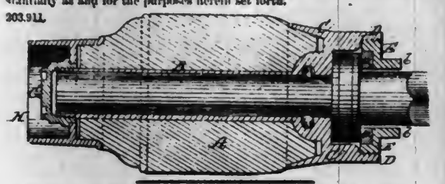
Claim.—The combination, with the table B on frame A, of the slotted plate F, the rollers G, beveled at their ends, and the lower of which protrudes beyond the other, to serve as a guide, and suitable mechanism for rotating said rollers, substantially as and for the purpose described.

203,911. HUB-ATTACHING DEVICES. J. C. Foudry, Boston, Mass. Filed Oct. 11, 1877.

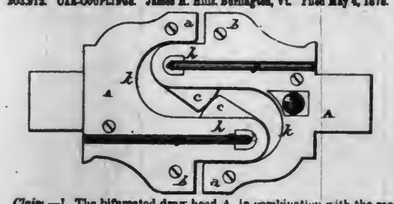
Claim.—As an improvement upon Letters Patent No. 178,772, the combination of the axle-box B, formed with the cap C, having a projecting annular flange, D, with interior screw-threads, and the hollow screw plug or nut E,

recessed on its inner side to receive the annular packing a, and provided with exterior screw-threads and a projecting polygonal-shaped flange, b, all substantially as and for the purposes herein set forth.

203,911.



203,912. CAR-COUPLINGS. James H. Hills, Burlington, Vt. Filed May 4, 1878.

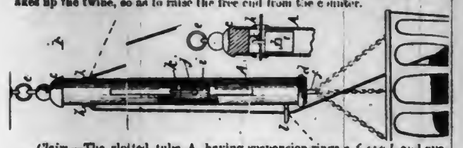


Claim.—1. The bifurcated draw-head A, in combination with the recessed and spring-acted dog c, substantially as shown.

2. The bifurcated draw-head A and spring c, in combination with dog c, having shoulder a and recess m, substantially as described.

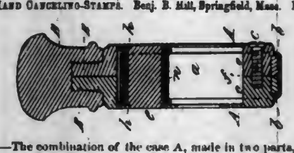
203,913. TWINE-HOLDERS. Jonathan Hill, New York, N. Y. Filed Apr. 27, 1878.

Brief.—By drawing upon the twine the weight is raised to the upper end of the suspending-tube before the twine comes from the ball, and when the package is tied and the twine broken the dropping of the weight in the tube takes up the twine, so as to raise the free end from the counter.



Claim.—The slotted tube A, having suspension-rings a f, eye l, and eyelets h, and the weight i, having the pin j and eye k, in combination, substantially as herein shown and described.

203,914. HAND CANCELING-STAMPS. Benj. B. Hill, Springfield, Mass. Filed May 1, 1878.



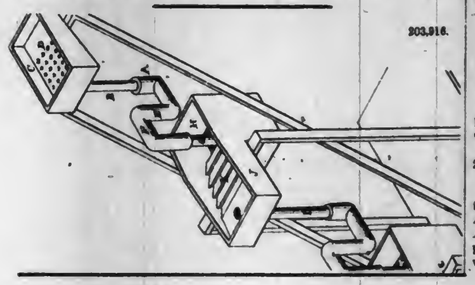
Claim.—The combination of the case A, made in two parts, and provided with the head a and slots g, the handle or knob D, the ink-roll e, covered with absorbing material and arranged to revolve in bearings in the case A, the disc b, and the inking-ribbon c, all substantially as and for the purpose herein described.

203,915. HAND-STAMPS. Benj. B. Hill, Springfield, Mass. Filed Nov. 20, 1877.



Claim.—The combination of a series of drums, D, each provided with a disk or flange, B, the single shaft c, upon which said drums are arranged to rotate, and a series of printing-bands passing around and moved by said drums, whereby any desired band in the series may be moved by turning the corresponding flange or disk and its drum, substantially as described.

203,916.



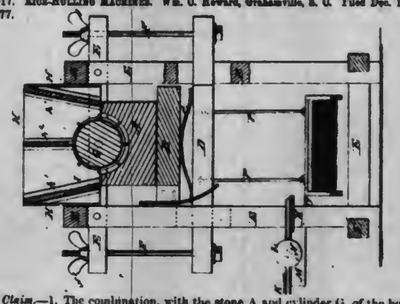
203,916. AMALGAMATORS. John H. Hobart and C. W. Sward, Oakland, Cal. Filed Apr. 4, 1878.

Claim.—1. The hopper C, having screen D and feed-pipe B, arranged above and in combination with a mercury-chamber, A, pipes E F G, and chamber with a screen, I, whereby gravity forces the sand through the mercury into chamber H, as set forth.

2. The pipes B E and chambers A and H, in combination with the pipe G, serrated at the bottom, as shown, and provided with the distributing flange or plate l', substantially as shown, and for the purpose herein described.

3. The chambers A and H and the pipes B, E, and G, in combination with the riffles or plates K, substantially as herein described.

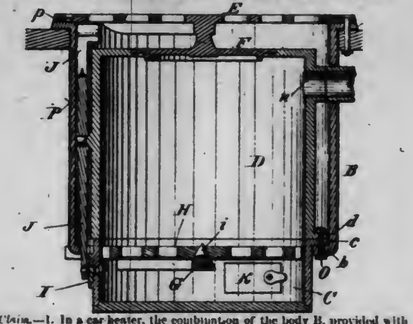
203,917. RICE-HULLING MACHINES. Wm. C. Howard, Orahamville, S. C. Filed Dec. 16, 1877.



Claim.—1. The combination, with the stone A and cylinder G, of the hopper H, resting on the stone, and having one of the slides h' provided with wire-gauze I, as and for the purpose set forth.

2. The hopper H, provided with the end slides h', the central slide h', and the wire-gauze I, in combination with the cylinder G and the concaved stone A, substantially as herein shown and described.

203,918. CAR-HEATERS. Walker M. Jackson, Providence, R. I. Filed Mar. 18, 1878.



Claim.—1. In a car-heater, the combination of the body B, provided with the flanges a b, ash-pit C, provided with ears e, and the fire-pot D, provided with ears d, arranged and united as shown.

2. In a car-heater, the combination of the ash-pit C, fire-pot D, and the external flanged cast-metal body B, provided with a non-conducting jacket or cover, P, as shown.

3. The combination of the fire-pot and its cover F and the external body B, provided with a cover, E, connected to the cover F, and arranged to lock within the top of the body, as shown, whereby both covers are locked in place and the locking devices removed from the action of the fire.

4. In a car-heater, the damper-operating lever J, slipped loosely upon its pivot, and held in place by means of the outside body, as described and shown.

5. In combination with a damper, I, the lever J, mounted on the pivot upon the fire-pot, and secured in place by means of the body B, as shown.

6. In combination with the ash-pit C, the bottom plate M, connected therewith by the eye j and the hook K.

203,919. METAL LOOPS FOR HARNESS. D. A. Johnson, Boston, Mass., assignor of one-half his right to E. S. Merrill, same place. Filed Apr. 1, 1878.



Claim.—As an improved article of manufacture, the metal harness-loop provided with internal transverse grooves b on all sides, and having flaring or slightly-flanged edges f, as set forth.

203,920. LATHES FOR TURNING MASTS AND SPARS. Henry Kean, East Boston, Mass. Filed Jan. 24, 1878.

Brief.—A straight spar is clamped between the revolving chuck and stationary spindle, and turned by the traveling tool, as usual in turning cylinders. A bent spar is placed in the lathe, and both spindles held from revolution. A traveling hollow mandrel, arranged to follow the curve of the spar, then passes along the timber and trues it. An overhead rest supports the stick when necessary.

Claim.—1. The hollow mandrel G, provided at one end with face-plate g^1, carrying tool-holding sockets d^1, and having both a horizontal and a longitudinal adjustment, in combination with the spindles *b* and *m* of the head and tail stocks of a mast and spar turning lathe, substantially as specified.

2. The combination, in a mast-turning lathe, of the carriage C, the tool-holder *i*, and the movable hollow mandrel G, substantially as herein shown and described.

3. The combination, with the shaft a^1, of the movable boxes a^1 and a spring for drawing the shaft against the pressure of the driving-belt, substantially as herein shown and described.

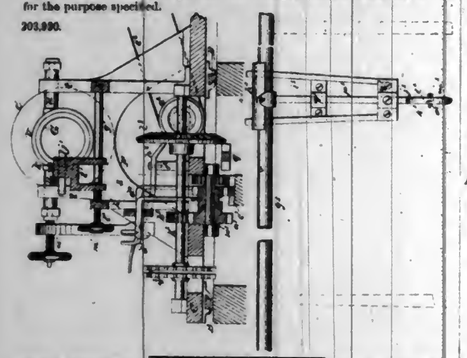
4. The combination, with the movable carriage C and the driving mechanism of the hollow mandrel G, of the chain r^2, tightener r^3, and chain-wheel r^4, substantially as herein shown and described.

5. The combination of the rack c^2, pinions c^3 c^4, shifting-bars d^2 d^3, spur-wheels a^2 a^3, and drawing-pinion b^2, substantially as and for the purpose herein shown and described.

6. The hollow mandrel G, journals *v*, trunnions *u*, bars *w* w^1, standards *t*, adjusting-screw s^1, and standard b^1, all combined and arranged as and for the purpose specified.

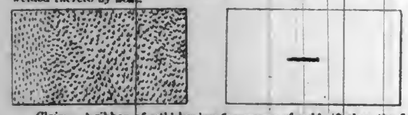
7. An overhanging steady-rest for a mast and spar turning lathe, consisting, essentially, of the ring k^1, made in two parts and pinned together, bar p^1, set-screw r^1, and frame k^2 i^2, in combination with the ways j^2 j^3, which are supported above the carriage-ways and arranged parallel therewith, as and for the purpose specified.

203,920.



203,921. DENTAL-GOLD FILLINGS. Edward G. Kearing and Loose Kearing, Spring Valley, N. Y. Filed Dec. 19, 1877.

Brief.—Cup-shaped pieces of foil are sifted upon a ribbon of gold and welded thereto by heat.



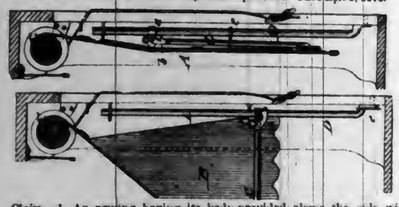
Claim.—A ribbon of gold having fine pieces of gold sifted on the flat surface and welded fast by heat, as and for the purpose specified.

203,922. BUNG-STAVE LOCKS. Josiah Kirby, Cincinnati, Ohio. Filed Apr. 26, 1878.



Claim.—The combination, with a turn bung and retaining-follower, of a bung-orifice formed in the stave, with an annular seat for the bung, and projections to enable the follower to keep the bung against the seat.

203,923. AWNINGS. Jos. Koenig, Indianapolis, Ind. Filed Apr. 3, 1878.

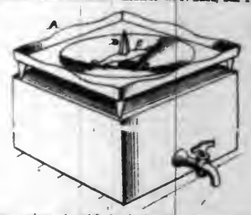


Claim.—1. An awning having its body provided above the side wings with a cross-wire that runs through the middle of awning, to prevent the wings from drawing the main body together, and enable the awning to be rolled up straight.

2. The combination of an awning having stretching side rods hinged to sliding end sleeves with vertical guide-rods of the window casing, and with retaining locking-hooks entering bottom recesses of the sleeves, substantially as set forth.

3. The combination of an awning having top extension, with stiffening cross-rod, folding side wings, and side rods hinged to sliding sleeves of the guide-rods, with the guide-rods and a winding top roller for winding up or lowering awning entirely, substantially as and for the purpose set forth.

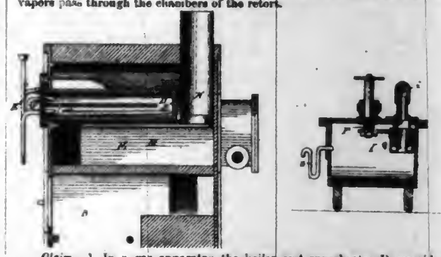
203,924. SELF-TAPPING GAS-FUNNELS. Arnaldo W. P. Ladd, San Francisco, Cal. Filed Apr. 1, 1878.



Claim.—The receiver A, with its inclined or funnel-shaped bottom, and discharge-nozzle B, in combination with the cutter or piercing device D, forming an automatic tapping and discharging apparatus, substantially as herein described.

203,925. GAS APPARATUS. John Hanlon, New York, N. Y. Filed Mar. 6, 1878.

Brief.—Superheated steam and oil are together decomposed and converted into a fixed gas, which is washed to purify it. The superheated steam enters the chambered decomposing-retort through a small chamber having elongated spiral ribs, located just below the induction-passage for the oil, so that the steam, in a whirling spiral motion, catches the incoming oil and vapor, and intimately mixes therewith, to form a fixed illuminating-gas as the compound vapors pass through the chambers of the retort.



Claim.—1. In a gas apparatus, the boiler and superheater D, provided with an upper and lower longitudinal chamber, communicating at their rear, in combination with a series of boiler tubes, E, and water-supply pipes F, substantially as and for the purpose set forth.

2. The boiler and superheater D, constructed as described, in combination with the retorts E, provided with the longitudinal chambers *a b c*, with chamber H and pipes G and F, substantially as set forth.

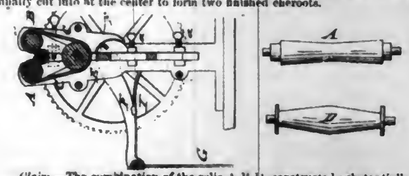
3. The retort E, provided with the chamber *f*, having elongated spiral ribs, in combination with the boiler and superheater D and connecting-pipe F, substantially as and for the purposes set forth.

4. The retort E, provided with the discharge-pipe *i*, in combination with the washer I and supporting-frame *i'*, provided with the friction-rollers *m*, substantially as and for the purpose set forth.

5. The adjustable dip-cup, in combination with the operating worm-screw P, and the washer I and its supporting-frame, mounted on friction-rollers *m*, substantially as and for the purpose set forth.

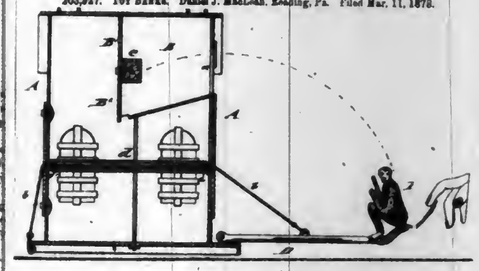
203,926. CHEROOT-MACHINES. Alex. Marengo and Joseph Marengo, Montreal, Quebec, Canada, assignors to themselves and R. Marengo, same place. Filed Nov. 1, 1877.

Brief.—The lower and upper rolls are made with their surfaces at such an angle as will produce a cheroot in the bight of the apron, which cheroot is finally cut into at the center to form two finished cheroots.



Claim.—The combination of the rolls A B D, constructed substantially as described, with a suitably-shaped belt, as and for the purpose specified.

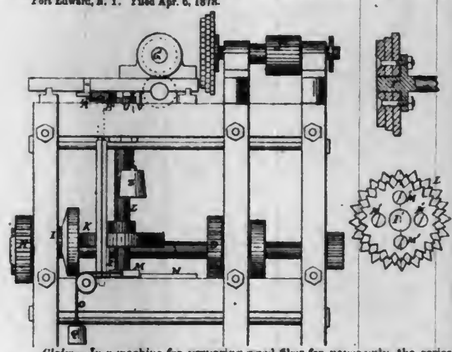
203,927. TOY BANKS. Daniel J. MacLean, Reading, Pa. Filed Mar. 11, 1878.



Claim.—1. A toy bank having an opening at its upper part, a connecting-chute, and a lateral partition with central cushion, in combination with a swinging arm, carrying a coin-holding figure, and with an actuating mechanism to draw the figure into the bank, substantially as specified.

2. The toy bank having an entrance-chamber, with chute and cushioning device at the upper part, an interior guide-tube, a swinging arm, carrying a coin-holding figure, and an actuating spring, cord, or wire, passing through guide-tube to the opposite side of toy bank, substantially as and for the purpose described.

203,928. MACHINES FOR PREPARING WOOD FIBER FOR PAPER-PULP. Jas. C. McIntyre, Fort Edward, N. Y. Filed Apr. 6, 1878.



Claim.—In a machine for preparing wood fiber for paper-pulp, the series of saws arranged in the form of a cone, the largest saw cutting next the log, and the series of cuts forming ring-steps, as shown and described, whereby each saw cuts fibers of a length equal to its own thickness, and the fibers are all supported at one end by the solid timber of the log, and whereby the teeth are prevented from tearing off slivers as they leave the log.

203,929. BRIDLES AND HALTERS. John McKibben, Lima, Ohio. Filed Dec. 20, 1877.

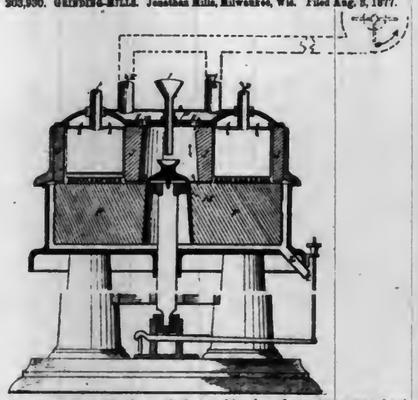


Claim.—1. The hereinbefore-described buckle B, consisting of the center plate J, loops K, and pins L, for fastening straps in bridles and halters, substantially as described.

2. The combination of the hereinbefore-described buckles B, for fastening straps of bridles and halters, with the check-rein attachment H, provided with a loop, M, substantially as shown and described.

3. The combination, in a bridle, of the straps A C E F, substantially as described, with the buckles B, check-rein attachment H, buckles I P Q, and bit-ring D, all constructed and arranged in the manner shown and described.

203,930. GRINDING-MILLS. Jonathan Mills, Milwaukee, Wis. Filed Aug. 8, 1877.



Claim.—1. In a grinding-mill, the combination of an upper stone, having vertical openings at a point or points between the eye and the periphery, and a fan arranged to produce an upward current of air through said openings, substantially as and for the purpose described.

2. The combination, in a grinding-mill, of a lower stone, an upper stone having vertical openings through its grinding face, a fan arranged to produce an upward current of air through said openings, and brushes arranged to act upon the face of the lower stone to assist in the release and discharge of the flour and pulverulent impurities.

3. A grinding-mill having its upper stone provided with long narrow openings extending through its lower face and intersecting the lands or grooves therein, in combination with a fan arranged to produce an upward current of air through the openings.

4. A millstone provided on its grinding-face with vertical openings, having separate passages therein for the descent and ascent of air, in combination with an exhaust-fan communicating with the outlet-passages.

5. In a grinding-mill, the combination of an upper stone provided with vertical openings at points outside of the eye, a fan arranged to produce a draft of air upward through the openings and downward through the eye, and means, substantially such as shown, for regulating the admission of air at the eye.

6. The air-box A, provided with inlet-passage D, outlet-passage at the bottom, and brush C, substantially as and for the purposes set forth.

7. In combination with the millstone having the openings made therein, as described, the hood provided with air-inlets D, extending down within the openings in the stone, and the air-outlets, communicating with the space above the stone and with an exhaust-fan, substantially as shown and described.

8. The air-inlets K K, in combination with inlet-tubes D D, outlet-tubes E E, and an exhaust-fan communicating with E E, substantially as and for the purposes set forth.

9. A grinding-mill having air admitted at the eye or center of the upper stone, and exhausted through the same at a point or points between the eye and the periphery, substantially as shown, whereby the first flour and pulverulent impurities are removed before reaching the periphery of the stone.

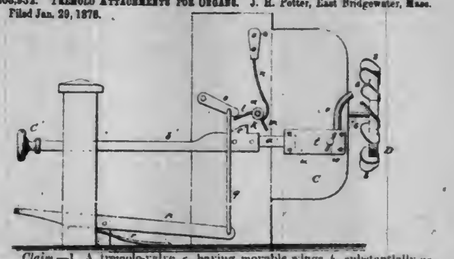
10. The air-brushes C C, in combination with hood P and radial openings B B B B, and exhaust-tubes E E, substantially as shown and described.

203,931. CONNECTING-TIPS FOR ELECTRICAL CONDUCTORS. Jos. A. Nickerson, Boston, Mass. Filed Apr. 30, 1878.



Claim.—The herein-described connecting-tip for telephones or electrical apparatus or instruments, consisting of the split sleeve *b b' b''*, having screw-threaded shank *c*, serrated head *d*, and wire or projection *e*, in combination with the annular tapering sleeve *f g*, as and for the purpose set forth.

203,932. TREMOLO ATTACHMENTS FOR ORGANS. J. H. Potter, East Bridgewater, Mass. Filed Jan. 29, 1878.



Claim.—1. A tremolo-valve, *c*, having movable wings *b*, substantially as and for the purpose specified.

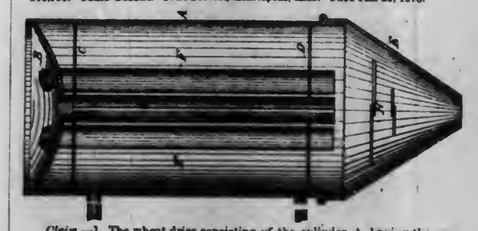
2. An organ provided with rotary valves having wings that impart an undulating or tremolo effect to the tone, as described.

3. The combination of the diagonal valve B in the wind-trunk and the pedal, for the purpose of regulating the tremolo effect, as set forth.

4. The stop-bar *b'*, having the shoulder *c'*, in combination with the arm *m* on the valve-rod *a*, combined with the valve B, substantially as shown and described.

5. The combination of the spring-acted pedal *p*, rod *q*, and lever *o* with the valve-lever *l*, substantially as and for the purpose specified.

203,933. GRAIN-DRIERS. Peter Provost, Minneapolis, Minn. Filed Jan. 29, 1878.



Claim.—1. The wheat-drier consisting of the cylinder A, having the concave head B and plane heads C D, and provided with the tubes F and funnel E, substantially as herein shown and described.

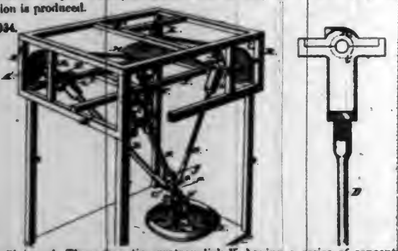
2. In a grain-drier, the combination of the bar *b* with the tubes F, substantially as herein shown and described.

203,934. STONE-POLISHING MACHINES. Peter Pitkin and John B. Dougherty, Rochester, N. Y. Filed Mar. 7, 1878.

Brief.—A depending shaft connected to the polishing-disk and to a vertical driving-shaft by universal joints is longitudinally adjustable by a telescopic

feathered joint. While the polishing-disk is axially rotated it is also gyrated by two crank-shafts mounted at right angles to each other. The wrist-pins of these shafts are adjustable in the cranks and connected to the gyrating rods by ball-and-socket joints. The reciprocating motion given by one crank is counteracted by the other, so that a resultant elliptical or circular gyrating motion is produced.

203,934.



Claim.—1. The automatic gyratory disk K, having a series of concentric detachable and vertically-adjustable rings G, and provided with radial slots *t*, and connected by a universal joint, N, to a gyrating spindle, P, essentially as and for the purposes described.

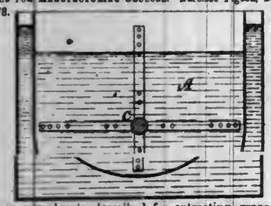
2. The slotted collar C, secured between the rings *g* at the lower end of the gyrating spindle P, having the connecting-rods D affixed thereto by screw-bolts, substantially as and for the purposes described.

3. The combination of the horizontal counter-shafts A A', slotted crank-shafts *k k'*, connecting-rods D D', and universal joint N, by which the polishing-disk is regulated to gyrate in any direction over a plane surface, substantially as described.

4. The counter-shafts A A', crank-shafts *k k'*, and rods D, connecting said shafts, by wrist-pins *a* and collar C, to the spindle P, by which the extent of the reciprocal movements of the gyrating disk in any direction is regulated, as and for the purposes described.

5. The combination of the horizontal counter-shafts A A' and vertical counter-shaft X, crank-shafts *k k'*, connecting-rods D D', slotted collar C, universal joint N, and gyratory disk K, by which the polishing-disk is adjusted to any irregular reciprocal movement for traversing in any direction over a plane surface, as and for the purposes described.

203,935. PROCESSES FOR MANUFACTURING GLUCOSE. Barnaise Pigeon, Brooklyn, N. Y. Filed Mar. 1, 1878.

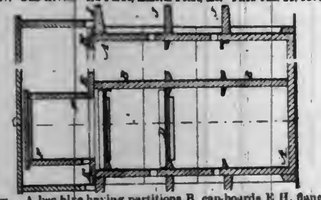


Claim.—The process herein described for extracting grape-sugar from maize or Indian corn, consisting in the following steps, to wit: slowly heating the corn-mash to 135° Fahrenheit, or thereabout; second, adding a per cent. of malt in the first stage of the process before the temperature of the mash has reached 125° Fahrenheit; third, adding another per cent. of malt in the second or last stage of the process—that is to say, after the mash has cooled to 155° Fahrenheit, or thereabout; fourth, filtering the mash and concentrating the product by evaporation, as set forth.

203,936. MANUFACTURE OF RED COLORS FROM COPPERAS. Wetherill Peterson, Philadelphia, Pa. Filed Apr. 16, 1878.

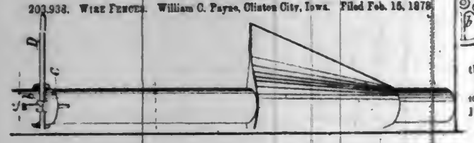
Claim.—In making Venetian red, Indian red, and the other colors obtainable from oxide of iron, the process which consists in mixing sulphate of iron with hydrate of lime and calcining the mixture, substantially as set forth.

203,937. BEE-HIVES. Ira Parks, Mineral Point, Mo. Filed Jan. 21, 1878.



Claim.—A bee-hive having partitions B, cap-boards E H, flanges I, cleats J, and holes just above the cleats leading into the several compartments, as shown and described.

203,938. WIRE FENCES. William C. Payne, Clinton City, Iowa. Filed Feb. 15, 1878.



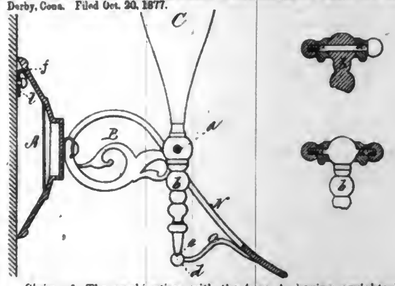
Claim.—The combination, with the hooked or slotted projections A A at the rear of the cart with a shaft, E, on the sweeper-frame.

2. The combination of the shaft E of the sweeper-frame and its crank-pin *e'* with the crank-pin *e* of the cart's driving-wheel, and with the slotted rod F and fulcrum *x*.

3. The combination of the slotted rod F, the removable fulcrum-pin *x*, and

Claim.—The band C, in two parts, constructed to be interlocked around a fence-post, and provided with a wire-holder, *b*, adapted to hold the wire either loosely or firmly by the adjustment of the key which holds the band in place on the post, substantially as and for the purposes described.

203,939. FLOWER-VASES. Frederick Ratcliff, Morden, assignor to Derby Silver Company, Derby, Conn. Filed Oct. 20, 1877.

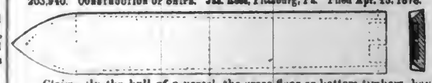


Claim.—1. The combination, with the base A, having uprights B and slotted hook *f*, and the spring-catches *j* and *c d* at right angles to each other, of the vibrating vase C, having extension *b*, substantially as specified.

2. The uprights B, having lateral prolongation N, with the spring-catch *c d*, and the base A, having the spring-catch *j* and slotted hook *f*, in combination with the vase C, journaled in said uprights, and having the extension *b*, substantially as specified.

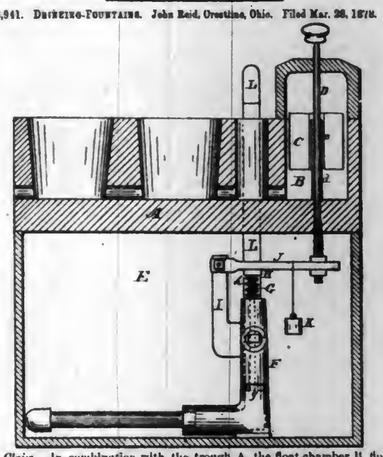
3. The flower-vase C, journaled in suitable uprights, and adapted to be locked in two positions at right angles to each other, substantially as set forth.

203,940. CONSTRUCTION OF SHIPS. Jas. Rose, Pittsburg, Pa. Filed Apr. 13, 1878.



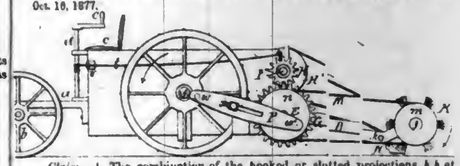
Claim.—In the hull of a vessel, the cross floor or bottom timbers, having a gradual contraction from the harpoon to the stern, without a contraction of the beam or deck-timbers, substantially as described.

203,941. DRINKING-FOUNTAINS. John Reid, Crestline, Ohio. Filed Mar. 26, 1878.



Claim.—In combination with the trough A, the float-chamber B, float C, with its rod D, the lever J, barrel F, arm I, valve-rod G and valve *g*, spring K, weight K, and discharge-pipe L, all constructed and arranged to operate substantially as and for the purpose specified.

203,942. STREET-SWEEPING MACHINES. Herbert W. Richardson, Philadelphia, Pa. Filed Oct. 16, 1877.



Claim.—1. The combination of the hooked or slotted projections A A at the rear of the cart with a shaft, E, on the sweeper-frame.

2. The combination of the shaft E of the sweeper-frame and its crank-pin *e'* with the crank-pin *e* of the cart's driving-wheel, and with the slotted rod F and fulcrum *x*.

3. The combination of the slotted rod F, the removable fulcrum-pin *x*, and

the plain crank-pins on the driving-wheel and shaft E, all as set forth.

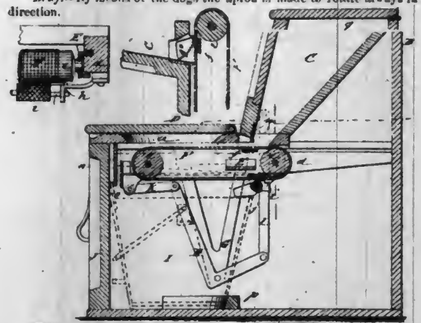
4. The within-described sweeper-frame, consisting of two bars combined with and carrying the shaft E, belt-shafts F and *k*, and brush K, all as described.

5. The combination of the endless apron, the brush K, and fingers N, hung loosely to the frame, all substantially as specified.

6. The combination of the projecting arms D' of the sweeper-frame with the windlass *d* on the cart and the two ropes or chains *t t*.

203,943. EARTH-CLOSETS. Richard W. Riddle, Minneapolis, Minn. Filed Apr. 16, 1878.

Brief.—By means of the dogs the apron is made to rotate always in one direction.

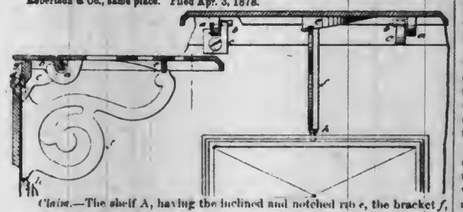


Claim.—1. The endless apron F, supported by the movable frame E, and connected by means of rods and levers with the seat-cover D, substantially as shown and described.

2. The combination of the dogs or cams *g i* with the apron F, substantially as herein shown and described.

3. The combination, in an earth-closet, of the hopper C, reciprocating frame E, carrying the endless apron F, the dogs *g i*, cover D, and means for connecting the same with the reciprocating frame E, substantially as herein shown and described.

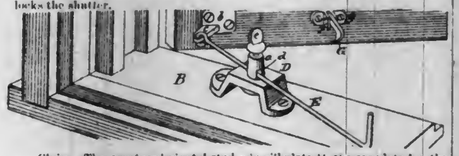
203,944. STOVE-SHELVES. George W. Robertson, Peekskill, N. Y., assignor to Southard, Robertson & Co., same place. Filed Apr. 3, 1878.



Claim.—The shelf A, having the inclined and notched rib *e*, the bracket *f*, having pivots *g h*, in combination with a stove-end having apertures adapted to the pivots of the bracket, and having ears *e* for supporting the shelf-pivots, substantially as herein shown and described.

203,945. SHUTTER-BOWER AND FASTENER. Thomas B. Rogers, Jr., Brooklyn, assignor to himself and Peter Cooper, New York, N. Y. Filed Mar. 19, 1878.

Brief.—A rod connected with the shutter near the lower hinge passes through a pivotal stud set in a plate on the window-sill. The shutter may be retained in any position by means of a thumb-screw in the stud. A hook attached to the lower rail engages with the rod when in a closed position, and locks the shutter.



Claim.—The apertured pivotal stud *a* in sill-plate D, the ear-plate *b c*, the catch G, and the rod E, combined as and for the purpose specified.

203,946. METAL-SCREW MACHINES. Charles D. Rogers, Providence, R. I., assignor to the American Screw Company, same place. Filed Jan. 26, 1878.

Claim.—1. The combination, with a pair of revolving griping-jaw spindles, capable of intermittent rotation on an axis common to both, substantially as described, of threading-dies, and a milling-tool, which, in operating upon a blank, positively secures its axial adjustment in the jaw of one of the spindles, substantially as described, whereby, when the spindles change position, the blank is presented to the threading-dies truly coincident with the axis of the spindle and the center of the die, as set forth.

2. The combination, with revolving griping-jaw spindles in an intermittingly revolving yoke-frame, and the threading-dies, of the counter-shaft, two cam-sleeves thereon, driven by it intermittingly, a clutch for each sleeve, and mechanism by which the clutches are connected with and controlled by the threading-dies, substantially as described, whereby the cam-sleeves alternate in their movements, and in regular order cause the jaw of one spindle to open and close, the threading-dies to close and advance, open and retreat, and the spindles to change with reference to the threading-dies, as set forth.

3. A pair of jaw-spindles mounted rotatively at one end in a circular head-plate, which revolves in an annular bearing, and is connected to a yoke and axis, which supports the rear ends of the spindles, substantially as described, the same constituting an improvement in a yoke-frame, whereby the spindles are placed closely side by side, and a smooth and easy change of position effected, as set forth.

4. A pair of continuously-revolving jaw-spindles mounted in a yoke-frame which intermittingly revolves, in combination with an intermediate sleeve on the axis of the frame, which is geared to both spindles and continuously driven, substantially as described.

5. The combination, with the spindle containing the jaws, thrusting-levers, and sliding sleeve, of cam-levers which bear upon the rear ends of the thrusting-levers with yielding pressure, substantially as described, whereby the jaws may be closed upon and made to hold the heads of blanks of various sizes, without liability of injury to the jaw-operating mechanism, as set forth.

6. The combination, with the jaws, thrusting-levers, sliding sleeve, and yielding cam-levers, of springs for the cam-levers, which are adjustable to varied pressure, substantially as described.

7. The combination, with the jaws, thrusting-levers, sliding sleeve, and yielding cam-levers, of a parting-block, which secures the proper relation of the thrusting-levers to each other and to the jaws, substantially as described.

8. A four-sided sectional threading-die, inwardly beveled at each edge, centrally drilled, and provided with threaded recesses, substantially as described, and for the purposes specified.

9. The combination, with threading-dies mounted on jaws attached to a tail-rod of a die-holder, inclosing the die-jaws, and provided with wedge-blocks for closing the dies, of adjustable wedge-blocks for causing the dies to approach more or less closely to each other without affecting the relations of the tail-rod and holder and the time of opening or closing the dies, substantially as described.

10. The combination, with threading-dies mounted on jaws sliding within a die-holder and connected with a tail-rod, of a cam attached to the holder, a gear and cam on the tail-rod, and a vibrating lever provided with a segmental toothed plate, substantially as described, whereby the holder is advanced independently of the tail-rod and the dies closed, as set forth.

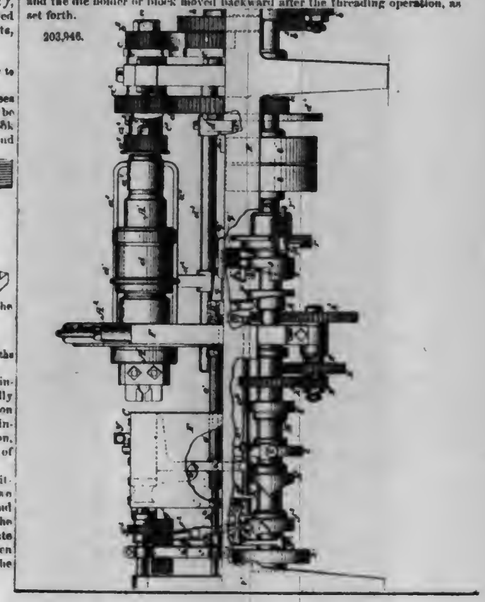
11. The combination, with the die-holder, the dies, the tail-rod, its cam and geared lever, of the cam on sleeve E', the sliding bar with spring-finger, and lever connecting with the tail-rod, substantially as described, whereby the dies, after being closed, are advanced with yielding pressure, as set forth.

12. The combination, with the threading-dies, the main shaft, the counter-shaft, the two cam-sleeves, and their clutches, of the cam *s*, loosely mounted on the main shaft, the clutch-lever s^1, the clutch *r*, keyed to the main shaft, the bell-crank lever *q*, and the sliding rod o^2, controlled by the threading-dies, substantially as described, whereby the dies, at the terminal forward movement, rotatively connect one of the sleeves to the counter-shaft, which sleeve, in turn, causes the spindles to change position and the jaws of one spindle to open and close, disconnect said sleeve from the counter-shaft, and connect said shaft with the second sleeve, substantially as set forth.

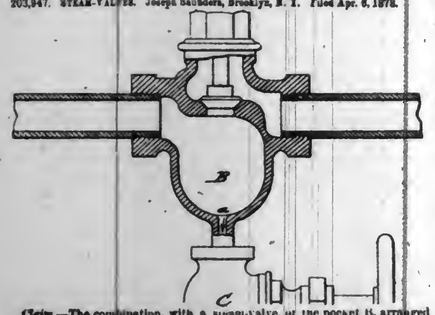
13. The combination, with the counter-shaft and the two cam-sleeves, of the clutch which connects sleeve E^2 with the shaft, a spring shipper-bar which engages with the clutch, and is moved longitudinally by a cam on said sleeve for opening the clutch, a spring lever or catch which holds the shipper when thus moved, and a catch-controlling device on sleeve E^2, for permitting the shipper to again close its clutch, and thereby connect sleeve E^2 with the counter-shaft, substantially as described.

14. The combination, with the threading-dies, of the clutch *r* on the main shaft, controlled by the forward terminal movement of the dies, the cam *p* on main shaft, driven by the clutch, and the sliding rod *o'*, which engages with the die-holder, substantially as described, whereby the dies are opened and the die-holder or block moved backward after the threading operation, as set forth.

203,946.

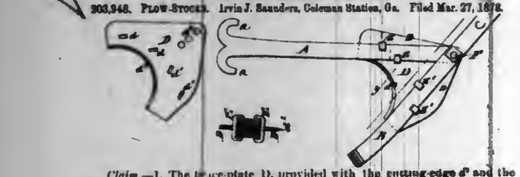


203,947. STEAM-VALVES. Joseph Saunders, Brooklyn, N. Y. Filed Apr. 6, 1878.



Claim.—The combination, with a steam-valve, of the pocket B, arranged under the valve-seat, and provided with a cock, C, below the aperture *a*, said cock being kept slightly open, as and for the purpose specified.

203,948. PLOW-STOCKS. Irvin J. Saunders, Coleman Station, Ga. Filed Mar. 27, 1878.

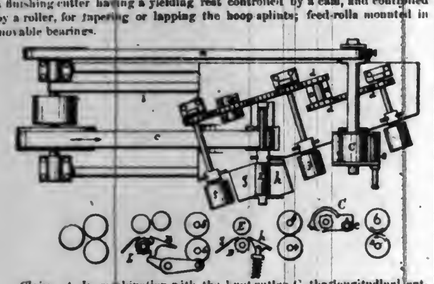


Claim.—1. The brace-plate D, provided with the cutting-edge d^5 and the three sets of holes d' d'' d''', arranged to adapt it for adjustably securing together the beam A and standard B of a plow-stock, substantially as set forth.

2. The handles and standard B C, made in one piece, having the openings c' c'', in combination with the brace plate D, having holes d^3 d^4, the split beam A, and the clamps E E', as shown and described.

203,949. HOOP-MACHINES. George B. Selden, Rochester, N. Y. Filed Apr. 19, 1878.

Brief.—Half-round hoop-splints are shaved, dressed, and the projections of knots removed therefrom by means of a knot-cutter attached to a yielding shaft; a longitudinal boring head placed obliquely to the line of feed, and over which the splint is fed; a fixed after rest and a yielding forward rest arranged concentrically to the boring-head; a yielding pressure-roller above said head; a finishing-cutter having a yielding rest controlled by a cam, and controlled by a roller, for tapering or lapping the hoop-splints; feed-rolls mounted in movable bearings.



Claim.—1. In combination with the knot-cutter C, the longitudinal cutter-head D, placed obliquely to the line of feed, and the rests *g* and *h* and pressure-roller E, substantially as set forth.

2. The combination, in a hoop-dressing machine, of a knot-cutter, C, boring-head D, and finishing-cutter I, provided with a yielding rest, n, arranged to protect thin splints, substantially as described.

3. In combination with the cutter-head I, the movable rest n, controlled by the cam *r*, operated by the feed-rollers 5 and 6, substantially as and for the purposes described.

4. The pointing-knife *z*, controlled by the roller *v*, operating substantially as and for the purposes set forth.

203,950. METALLIC HORSE-COLLARS. Jesse C. Smith, Centerville, Iowa. Filed Nov. 26, 1877.

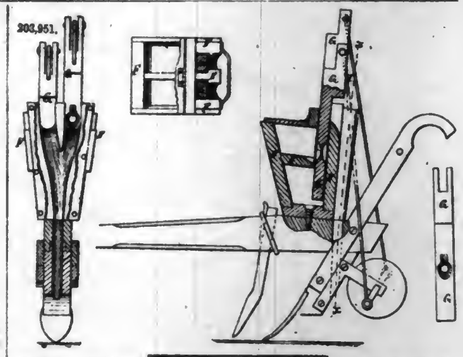


Claim.—A horse-collar, A, made of sheet-zinc, pressed into shape and strengthened by malleable-iron stays B, so formed as to also serve as a seat for the hames C, substantially as herein shown and described.

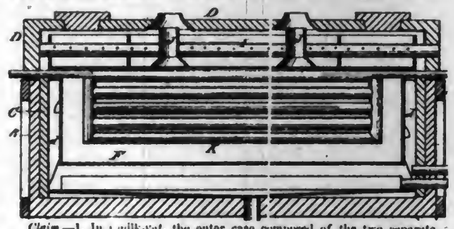
203,951. SEED-PLANTERS. Wm. C. Smith, Jacksonville, Tenn. Filed Feb. 28, 1878.

Claim.—The combination, in a seeder, with the hopper F, of the slide G, having opposite countersunk holes on both sides, arranged as and for the purpose specified.

203,951.



203,952. CHEESE-VATS. Edgar B. Smith, Albany, and George L. Freeman and David H. Burrell, Little Falls, assignors to Whitman & Burrell, Little Falls, N. Y. Filed Feb. 9, 1878.



Claim.—1. In a milk-vat, the outer case composed of the two separate non-conducting layers B and C, constructed and arranged as shown and described, in combination with the cleats *d*, for the purpose of securing an air-space and non-conducting envelope to the milk-receptacle F, substantially as set forth.

2. In a milk-vat, the outer casing constructed of wood, as shown and described, and provided with the metallic bottom C', in combination with the tank E, having inlet and outlet pipes and internal divisions for causing a circulation of the inclosed fluid, all constructed and arranged as and for the purpose specified.

3. In a milk-vat, the combination of the double outer casing, the tank E, the milk-receptacle, and the devices, constructed and arranged as shown and described, for causing a circulation of heating or cooling fluids between them, as hereinbefore described.

4. In a milk-vat, in combination with the milk-receptacle, the freely-swinging pipe coil K, so constructed and arranged as to be used for heating or cooling the milk, substantially as and for the purpose specified.

5. In a milk-vat, the ice-pan constructed substantially as shown and described, and provided with ice-chambers H and perforated tube I, for the purpose specified.

6. The ice-pan provided with the perforated tube I and ventilating-pipes J, in combination with the cover D, as and for the purpose set forth.

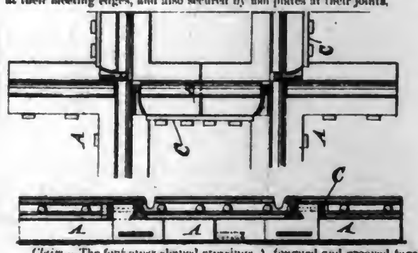
7. In a milk-vat, the cover D, constructed as shown and described, and openings *i*, in combination with the outer casing and interposed packing-strips, as and for the purpose set forth.

8. The combination, in a milk-vat, of an air-tight cover, refrigerating ice-pans, a swinging pipe-coil, and milk-receptacle, these devices being arranged for alternately heating or cooling the contents of the milk-receptacle, substantially as specified.

9. The process hereinbefore described of treating milk, by placing it in the vat as drawn, heating it to a temperature of 140° by steam or currents of hot air, then cooling it quickly by the refrigerating means shown and described, and covering the vat with an air-tight non-conducting cover until the cream has separated from the milk, all substantially as and for the purpose specified.

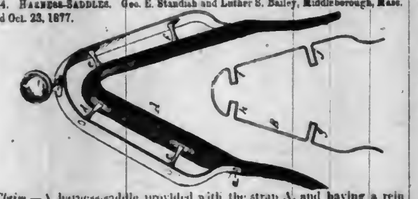
203,953. RAILROAD-CROSSINGS. James H. Sparkes, Clinton, Ill., assignor to himself, James Delapd, and Chas. D. Hyndman, same place. Filed Jan. 12, 1878.

Brief.—The four cross-formed sections are tongued and grooved together at their meeting edges, and also secured by fish-plates at their joints.



Claim.—The four cross-shaped crossings A, tongued and grooved together at the ends, in combination with the fish-plates C, to form a solid joint, as shown and described.

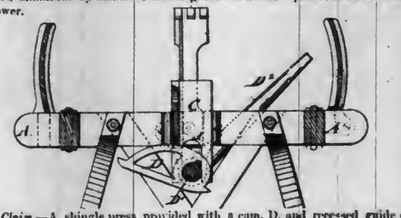
203,954. HARNESS-SADDLES. Geo. E. Standish and Luther S. Bailey, Middleborough, Mass. Filed Oct. 23, 1877.



Claim.—A harness-saddle provided with the strap A, and having a rein guide or support consisting of the body and standards *c d e f*, constructed and arranged substantially as and for the purpose set forth.

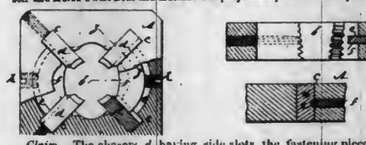
203,955. SHINGLE-PRESSES. Rudolph A. Stahn, South Stillwater, Minn. Filed Jan. 18, 1878.

Brief.—The shingles are arranged upon cross-pieces placed upon the follower, and are pressed between the follower and the projecting seats of recessed standards by means of a cam guided in a recess provided for it in the follower.



Claim.—A shingle-press provided with a cam, D, and recessed guide *d*, arranged as and for the purpose specified.

203,956. SCREW-CUTTING DIES. George R. Stetson, New Bedford, Mass., assignor to himself and Morse Twist Drill and Machine Company, same place. Filed Apr. 26, 1878.

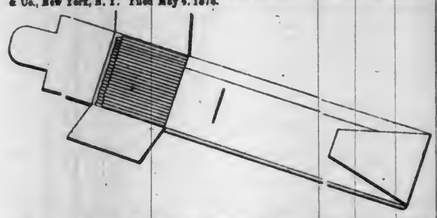


Claim.—The chasers *d*, having side slots, the fastening-pieces *f*, and the slotted block or body A, having the adjusting and binding screws *h*, in combination, substantially as shown and described.

203,957. MELTING AND TREATING IRON AND STEEL RAILS AND SCRAP. George W. Swett, Troy, N. Y. Filed May 20, 1877.

Claim.—The process herein described for melting Bessemer metal or wrought-iron, which consists in adding the same to a bath of molten iron kept at a high temperature in the converter by means of the air-blast, then injecting pulverent carbonaceous matter or hydrocarbon gases into the mass by means of the blast, whereby sufficient carbon is supplied thereto to recarbonize the entire mass, then redecarbonizing the same by passing into it the air-blast alone, and finally adding spiegeleisen or franklinite, substantially as described.

203,958. NEEDLE-WRAPPERS. Benjamin M. Thomas, Brooklyn, assignor to Neuss, Hesslein & Co., New York, N. Y. Filed May 4, 1878.



Claim.—A wrapper for sewing and knitting needles, made of a re-enforced blank, with a bottom flap, lower transversely slitted side flaps, upper folding side flaps, and a closing top flap and tongue, substantially as and for the purpose set forth.

203,959.

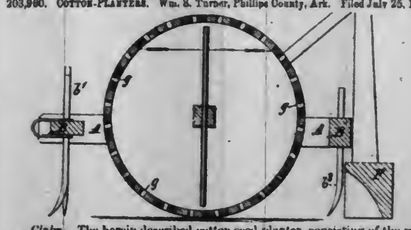


203,959. CORN-HUSKING GLOVES. Cyrus M. Townsend, Standing Rock, Dak. Filed Apr. 18, 1878.

Claim.—1. A working-glove, A, provided on the wearing-surfaces with a protective coating of rubber and sand, substantially as and for the purpose set forth.

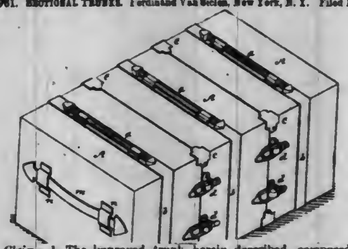
2. A glove-protector consisting of a suitable fabric, B, coated with rubber and sand, substantially as and for the purpose set forth.

203,960. COTTON-PLANTERS. Wm. S. Turner, Phillips County, Ark. Filed July 25, 1878.



Claim.—The herein-described cotton-seed planter, consisting of the rolling hopper, provided with perforations *g*, in combination with the front drill-tooth b^1, the pulverizing-teeth *b b*, the rear teeth b^2 b^2, coverer F, and supporting-frame, substantially as set forth.

203,961. SECTIONAL TRUNKS. Ferdinand Van Sicklen, New York, N. Y. Filed Feb. 20, 1878.

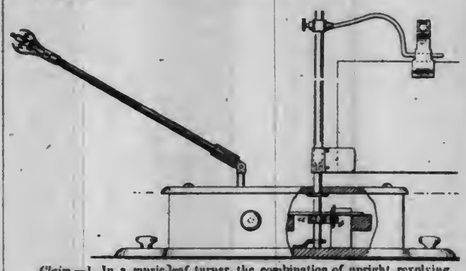


Claim.—1. The improved trunk herein described, composed of two or more separate and distinct sections, connected by means of spring-catches *d*, or other similar devices, each of said sections forming a complete valise, which may be readily detached from the others, as and for the purposes set forth.

2. In combination with two or more valises, A, the spring-catches *d* and angle-pieces or clips *e e*, all arranged substantially as described, for the purpose set forth.

3. As an improved article of manufacture, a sectional trunk made from what is known as "vulcanized fiber," and composed of two or more sections, A, connected together by spring-catches *d*, or similar means, each of the said sections being detachable, and forming a separate and complete valise, which can be used separately, all as hereinbefore described, and for the purposes set forth.

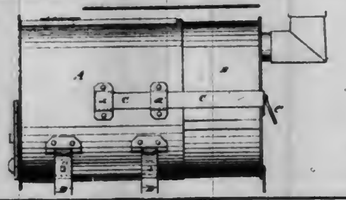
203,962. LEAF-TURNERS. John J. Vincent and Geo. B. McMillan, Fox Sippi, Wis. Filed Apr. 20, 1878.



Claim.—1. In a music-leaf turner, the combination of upright revolving arms, having upper and lower spring-clamps, with pinions and sliding racks, operated by stops of the racks, substantially as described.

2. The combination of the jointed upright arms, having adjustable spring-clamps, with the sliding locking-sleeves of the lower clamps, for admitting the raising or folding of the arms, substantially as specified.

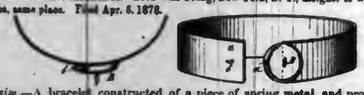
203,963.



203,963. CAMP-STOVES. Louis P. Vollbrecht, Macon, Tex. Filed Sept. 10, 1877.

Claim.—The combination of the main body of the stove with one or more telescoping and guided sections, to extend the stove for use or reduce the same in size for transportation, substantially as and for the purpose described.

203,964. BRACELET-FASTENINGS. Leon Van Praag, New York, N. Y., assignor to Wood & Hughes, same place. Filed Apr. 5, 1878.



Claim.—A bracelet constructed of a piece of spring metal, and provided on one end with a concave apertured plate, B, soldered on the outside of said end, and projecting half way over the same, and on the other end provided with a hook, *b*, arranged as shown and described.

203,966. MEDICAL COMPOUNDS. Charles C. Wainwright, Bishop Creek, Cal. Filed Mar. 6, 1878.

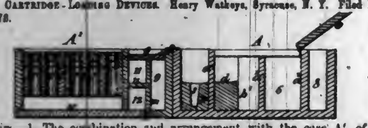
Claim.—The compound herein described, consisting of wild-sage brush as a base, pulverized mandrake-root, pulverized golden-seal root, fluid extract of nux vomica, alcohol, and water, substantially as and in the proportions above set forth.

203,966. FAN-BLOWERS. Robert Waskey, Blue Ridge, Va. Filed Feb. 16, 1878.



Claim.—The combination, with fans E E', of the casing A, divided into two compartments, *b c*, by a median partition, *d*, said compartments being subdivided by partitions *e e'*, smaller in diameter than the interior of casing, as and for the purpose specified.

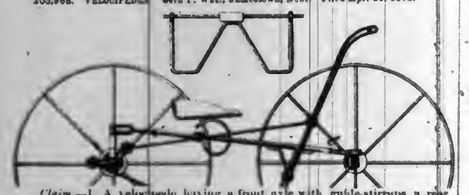
203,967. CARTRIDGE-LOADING DEVICES. Henry Watkeys, Syracuse, N. Y. Filed Mar. 29, 1878.



Claim.—1. The combination and arrangement, with the case A', of the loading-block *f*, supported adjustably in its position above the bottom of the case, for the purpose of accommodating shells or cartridges of various lengths, substantially as described.

2. The loading-block *f*, when constructed of two horizontal sections, substantially as described, for the purpose set forth.

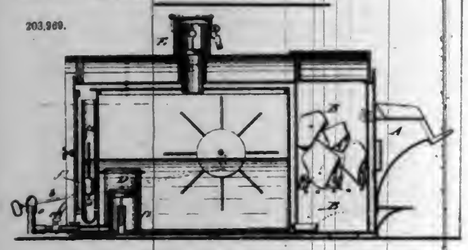
203,968. VELOCIPEDS. Sern P. Watt, Jamestown, Nebr. Filed Apr. 11, 1878.



Claim.—1. A velocipede having a front axle with guide-stirrups, a rear crank-axle, a connecting seat frame, and a reciprocating hand lever and crank-rods, connecting with double crank of hind axle, substantially as shown and described.

2. The combination of the axle-connecting seat frame, resting on the front axle and on a recessed supporting frame of the hind axle, with a hand lever intermixed thereto, connecting crank-rods and double crank of the hind axle, substantially as specified.

203,969.

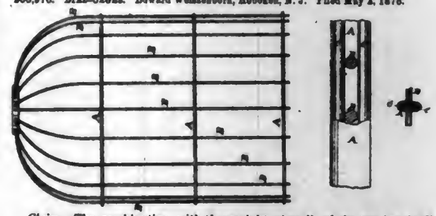


203,969. MEASURING ATTACHMENTS FOR REFRIGERATING MILK-WAGONS. Patrick T. Weir, New York, N. Y. Filed Jan. 25, 1878.

Claim.—1. The combination, with the casing E on top of wagon, and connected by an opening with the milk-tank, of the measure E', offset at the middle to rest on shoulder of casing, and divided by a valve into an upper measure and a lower discharge-spout, as shown and described.

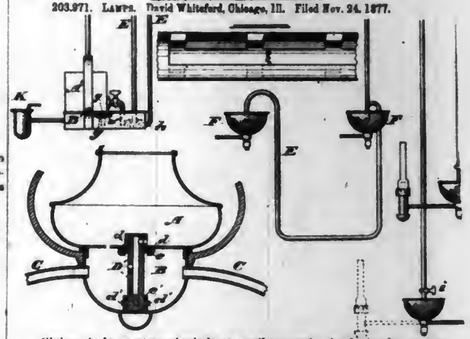
2. The bottom measure D, having a top valve with subjacent stem, guided in a central socket, and a discharge-spout with gage and stop-cock on the outside, as shown and described.

203,970. BIRD-CAGES. Edward Weissenborn, Hoboken, N. J. Filed May 2, 1878.



Claim.—The combination, with the upright wires B, of the two longitudinal wires C C and the strip A, of sheet metal, bent into U form, and having its edges bent inward to overlap each other upon the adjacent wire C, clamping the three wires B C C firmly in place, substantially as herein shown and described.

203,971. LAMPS. David Whiteford, Chicago, Ill. Filed Nov. 24, 1877.



Claim.—1. In an atmospheric lamp or oil-reservoir, the device for preventing the flow of oil from the fountain to the intermediate chamber or cup during the process of filling, and also for holding the said fountain and cup together when communication has been established between them, consisting of a connecting valve operated by a key, handle, or any equivalent means, and detachable from both the fountain and cup, but not from both simultaneously and detachable from the cup, moreover, only when, by the turning of the said key or other agent, the valve has been shut and the flow stopped, and from the fountain only after it has been lifted away from the cup, substantially as specified.

2. The combination consisting of the valve D, provided with the lugs *d d* and *d' d'*, slotted and flanged collars *e* and *e'*, and handle *a*, constructed and arranged to operate substantially as described, for the purpose set forth.

3. The oil-distributing device consisting of the combination of the following elements, viz: the upper chamber A', lower chamber B', the said two chambers communicating in the manner described, and siphon-tubes E, leading from the said lower chamber B' to cups F, substantially as set forth and shown.

4. In combination with the upper chamber A' and lower chamber B', communicating in the manner described, the siphon-tubes E, provided, when conveying oil to cups F at a lower level than the chamber B', each with a float-valve, G, adapted automatically to prevent the rising of the oil above a given height within such cups F, substantially as described.

5. The combination of an upper chamber, A', and lower chamber B', communicating as described, and siphon-tubes E, leading from said lower chamber to cups F, and provided at their extremities with traps *h*, substantially as described, for the purpose set forth.

6. An atmospheric bracket-lamp, in which the intermediate chamber or cup turns on a hinge or pivot, whereby the burner may be swung from side to side, as set forth.

7. The bracket device consisting of the cup F, having the partly-hollow stem *j*, the latter pivoted to the fixed arm H, in combination with the tube *l*, whereby the burner may be turned or moved from side to side, substantially as described.

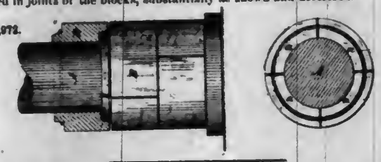
8. The device consisting of the sleeve J, provided on its inner surface with the lugs *a a*, in combination with the shaft I, having the longitudinal grooves *n* and branch recesses *n*, constructed and arranged to operate substantially as described, by means of which the reservoir is raised and lowered and the height of the oil within the cups F regulated, as set forth.

203,972. FIRE-PROOF COLUMNS. Peter B. Wight, Chicago, Ill., assignor of one-half his right to H. B. Morrell, Morristown, N. J., and Thomas Ferguson, Detroit, Mich. Filed Feb. 26, 1878.

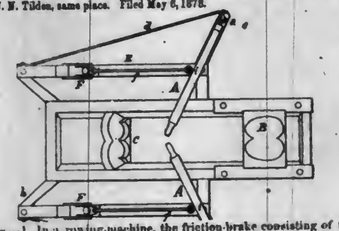
Brief.—An iron column is rendered fire-proof by a casing of terra-cotta or fire-brick laid in courses, rabbeted at their upper, outer, and lower inner edges, and secured together by wire thongs or bands set into and concealed and protected by the overlapping brick.

Claim.—In combination with the iron column and the incombustible and non-conducting rabbeted blocks, the wire bands or hoops, covered and protected in joints of the blocks, substantially as shown and described.

203,972.



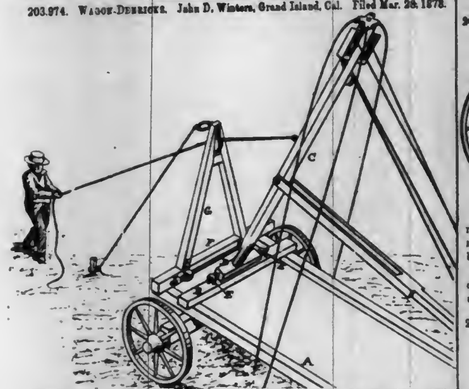
203,973. EXERCISING-MACHINES. Wm. H. Willcox, Poughkill, N. Y., assignor to J. E. Willcox and J. H. Tilden, same place. Filed May 6, 1878.



Claim.—1. In a rowing-machine, the friction-brake consisting of the stirrup F, blocks *c c'*, cam G, and regulating-screw *h*, substantially as shown and described.

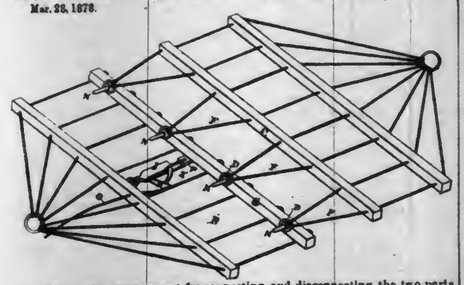
2. In a rowing-machine, the combination of the oars A A, connecting-rods *f f*, brakes F F, and friction-bars E E, all operating together substantially as shown and described.

203,974. WAGON-DERRICKS. John D. Winters, Grand Island, Cal. Filed Mar. 28, 1878.



Claim.—The wagon A, having the derrick C, mounted upon a journaled beam, B, near one end; and having the jack-frame G mounted near it, substantially as and for the purpose described.

203,975. NETTINGS FOR UNLOADING WAGONS. John D. Winters, Grand Island, Cal. Filed Mar. 28, 1878.



Claim.—An arrangement for connecting and disconnecting the two parts of a netting for unloading wagons, consisting of the extensions, cords, or ropes F, with their rings D, attached to the rail C of one part of the netting, and the pins N, arm P, link or chain 2', and the detaching device J, attached to the other parts, arranged and operated substantially as above described.

203,976. COMPENSATION-BALANCES. Charles V. Woerd, Waltham, Mass. Filed Apr. 16, 1878.

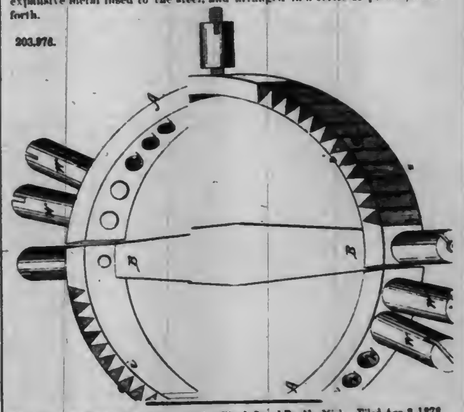
Claim.—1. A compensation-balance, in the segments of which a highly-expansive metal is combined with steel for the regulation of the compensation, according to the methods herein stated, and in the form and manner shown and described.

2. In a compensation-balance, the bimetallic portions or laminæ *a i*, arranged in the form of intermeshing teeth at or near the inner ends of the segments A, substantially as and for the purpose specified.

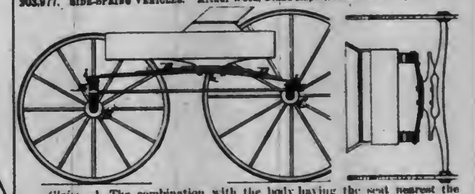
3. In a compensation-balance, the segments A, composed of a single metal, excepting at their inner ends, where they are provided with the more highly expansible portions *a*, arranged as shown and described.

4. A compensation-balance having steel segments A, which are serrated at their inner ends, and provided between the serrations with a more highly expansive metal fused to the steel, and arranged in a series of prisms, as set forth.

203,976.



203,977. SIDE-SPRING VEHICLES. Arthur Wood, Grand Rapids, Mich. Filed Apr. 9, 1878.



Claim.—1. The combination, with the body having the seat nearest the rear end, of a spring, with leaves arranged to impart greater stiffness at the rear, and united at a point between the center and the rear axle and directly below the seat, as set forth.

2. The within-described connection between the springs at right angles, consisting in the bent end of one spring clasping the other between its turned-up end *c* and a stop, *d*, as set forth.

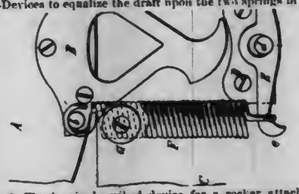
203,978. TOBACCO-GRINDERS. Jordan Woods, Glasgow, Mo., assignor to Benj. F. Johnson, same place. Filed Sept. 10, 1877.



Claim.—The cap A, having formed on it a nail or cutter, D, and the split ring B, having ears *a*, and connected with the cap A by the joint C, substantially as shown and described.

203,979. ROCKING-CHAIR ATTACHMENTS. Joseph Zangerle, Chicago, Ill. Filed Apr. 16, 1878.

Brief.—Devices to equalize the draft upon the two springs in rocking.



Claim.—1. The herein-described device for a rocker attachment of two springs, F, the draft to which being equalized by a yoke, E, substantially in the manner set forth.

2. The rocker A, having studs *b b*, the base C, having stud *d*, and yoke E, in combination with the springs F, all constructed and arranged to operate substantially as shown and specified.

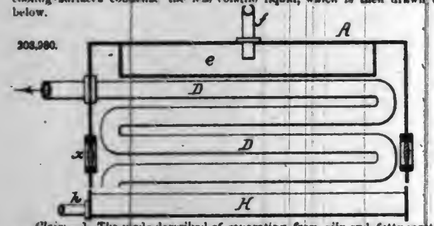
3. The attachment for a rocking-chair, consisting of the rocker A, having pendent plate B, with studs *b* and springs F, the base C, having plate D, with stud *d*, the yoke E, and the rubber stops G, all constructed and arranged substantially as described and shown.

203,980. EXTRACTING HYDROCARBONS FROM FATTY MATTERS. Wm. Adamson, Philadelphia, Pa. Filed Mar. 28, 1878.

Brief.—When oil-bearing materials are treated with hydrocarbons or vola-

tile solvents to remove the oil, some of the solvent remains behind in the residual mass of oil. From this it is freed by passing the oil in fine streams over a warm coil, so that the more volatile liquid is evaporated, while in same vessel cooling-surfaces condense the less volatile liquid, which is then drawn off below.

203,960.

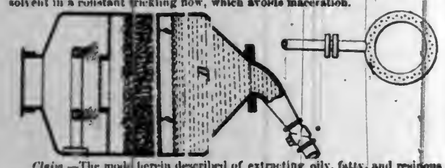


Claim.—1. The mode described of separating from oily and fatty matter the hydrocarbons used in extracting the same—that is to say, causing the matter to trickle in thin films over heated tubular surfaces, and thereby evaporating the hydrocarbons contained in the matter, condensing the vapors by cooling-surfaces, and effecting the desired separation, all in the same vessel, substantially as set forth.

2. The combination, in a vessel, A, of a distributing-trough, *e*, with which the inlet-pipe *f* communicates, a system of steam-heated pipes, D, the trough H, and its outlet *h*, the cooling-pipes G G' or other cooling-surfaces, and the outlet-pipe *i*, all substantially as specified.

203,961. PROCESSES FOR EXTRACTING OILS BY FILTRATION AND TRICKLING. William Adamson and Charles T. A. Simonin, Philadelphia, Pa., assignors to said Adamson. Filed Mar. 23, 1878.

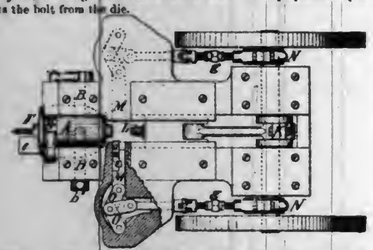
Brief.—In the method of separating oils from fatty materials by filtration and trickling, it is here deemed desirable not to soak or flood materials by the hydrocarbon which is used to exhaust the material of its oil, but to supply the solvent in a constant trickling flow, which avoids maceration.



Claim.—The mode herein described of extracting oily, fatty, and resinous matter from vegetable and animal substances—that is to say, by causing liquid hydrocarbon to trickle through a mass of such substances in a closed vessel, and preventing it from being subjected to steeping or flooding, as specified.

203,962. BOLT-HEADING MACHINES. Charles B. Allen, Philadelphia, Pa. Filed Sept. 21, 1877.

Brief.—The vertically-swinging die-holder is held firmly in a horizontal position while the head is being formed by a pawl, which engages with the teeth of a wheel on one of its trunnions, and is swung to a vertical position by a hand-lever on its other trunnion after the head-forming operation is completed. The tube carrying the die is revolved by a hand-wheel, for the purpose of bringing all sides of the bolt-head in contact with the hammers. The side hammers are made in two sections, (one screwing into the other,) and can be adjusted to forge the desired size of head. A trip operated by a treadle ejects the bolt from the die.



Claim.—1. The combination of the eccentrics N and the toggles O, plates M, and dies *a*, arranged horizontally, with the die-holder A hung to the frame of the machine, so as to be capable of being turned from a horizontal to a vertical position, as set forth.

2. The combination of the tilting die-holder A and its central tube C with the ratchet D and its hand-wheel, carried by and moving with the said holder A, as specified.

203,963. BARBER AND DENTAL CHAIRS. George W. Archer, Rochester, N. Y. Filed Feb. 22, 1877.

Brief.—The frame forming the legs is in two parts screwed or bolted together, each part forming a front and a rear leg, and supported between the parts near their top in a frame forming the footstool and body-support, the two frames being connected by mechanism for adjusting the inclination of the chair-body.

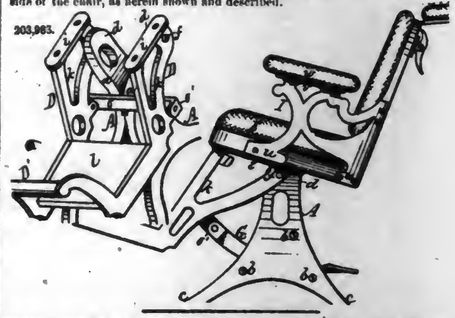
Claim.—1. In a barber or dental chair, the supporting base or standard, made in two parts, A A, fitting together at the center and united by screws, the lower extremities branching outward to form the legs *c c*, and the upper ends expanding laterally, and provided with solid pivots *f f*, to form the bearings *d d* for the chair-body, as shown and described, and for the purpose specified.

2. In a barber or dental chair, the frame D, with footstool D', formed in one piece, provided with sockets in its upper ends, in combination with the standard A A, formed in two pieces, and provided with corresponding pivots *f f*, the whole arranged as herein described, so that the upper ends of the divided standard may be inserted between the right arms *k k* of the frame, and the pivots be inserted in the sockets, as and for the purpose specified.

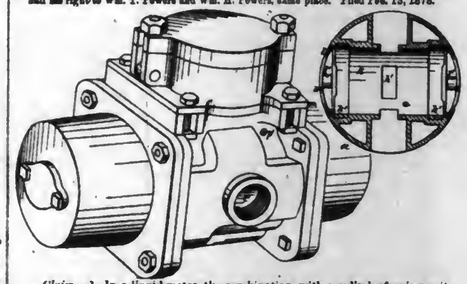
3. In a barber or dental chair, the combination, with the slotted base A, of the notched and hooked segment G, the spring *r*, and the pivoted lever or cam H, as shown and described, and for the purpose specified.

4. In a barber or dental chair, the side frame I, constructed with the lugs *u u*, the flange *e*, and the right-angled flange *x*, whereby the same is adapted to secure the seat, the back, and the arm of the chair together, and to form the side of the chair, as herein shown and described.

203,963.



203,964. PISTON WATER-METERS. Horace L. Arnold, Grand Rapids, Mich., assignor of one-half his right to Wm. T. Powers and Wm. H. Powers, same place. Filed Feb. 13, 1878.



Claim.—1. In a liquid-meter, the combination, with a cylinder having suitable induction and eduction ports and passages, of a reciprocating piston containing interior water-passages, and a sliding valve which occupies a chamber within and is carried by the piston, and which controls the interior passages of the piston, and is actuated in all its movements by the pressure of liquid on its heads, substantially as described.

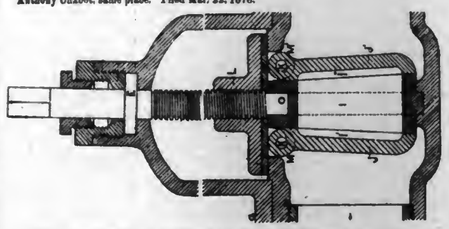
2. In a liquid-meter, the combination, with a cylinder having suitable induction and eduction ports and passages, of a reciprocating piston provided with interior passages, and a valve which occupies a transverse chamber within the piston is carried by it for controlling its interior passages, is moved by the pressure of liquid on its heads, and is limited to a longitudinal movement within its chamber, substantially as described.

3. A piston-meter cylinder composed of a cast-metal shell having an annular web at each end, and longitudinal webs or portions connecting said annular webs, in combination with an interior lining provided with ports, substantially as described.

4. The combination, with a meter-piston, of a sliding valve occupying a transverse chamber in the piston, and heads at each end of the chamber, which are provided with ports of a lesser area than the area of the valve-heads, substantially as and for the purposes specified.

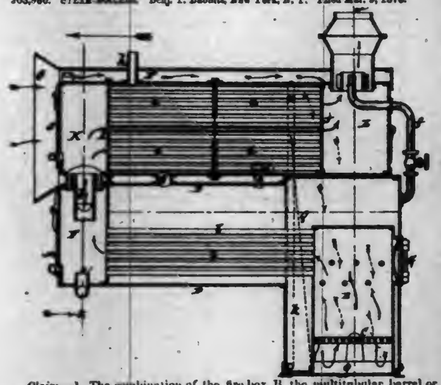
5. The combination, with the piston, of the segmental geared lever, the rack-bar, escapement-wheel, and its shaft, substantially as described.

203,965. WATER-GATES OR STOP-VALVES. Alvah C. Austin, Oakland, Cal., assignor to Anthony Chabot, same place. Filed Mar. 22, 1878.



Claim.—The valves J J', hinged to and depending from the valve and screw-nut L, in combination with their respective seats and the valve-casing, arranged and operated as and for the purpose herein described.

203,966. STEAM-BOILERS. Benj. T. Babbitt, New York, N. Y. Filed Mar. 9, 1878.

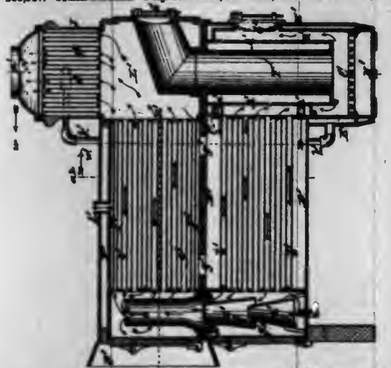


Claim.—1. The combination of the fire-box B, the multitubular barrel or body D, the smoke-boxes F K, the multitubular steam-superheater I, the multitubular feed-water heater J, and the smoke-box L, all arranged essentially as shown and described.

2. The multitubular steam superheater I and feed-water heater J, having corresponding tubes, and arranged with the tubes of the one in line with the tubes of the other to facilitate the operation of cleaning them, substantially as specified.

3. The combination, with the multitubular superheater I, the feed-water heater J, both arranged above the body of the boiler, and the fire-box B of the latter, of an air-heating jacket, having an inlet-opening for the admission of fresh air at the end of the boiler farthest removed from the fire, also constructed to surround both the said superheater and said feed-water heater, likewise provided with one or more extensions down the fire-box end of the boiler, and terminating in an outlet or outlets within the fire-box below the grate, essentially as and for the purpose herein set forth.

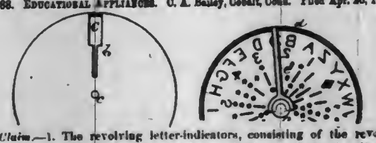
203,967. STEAM-BOILERS. Benj. T. Babbitt, New York, N. Y. Filed Mar. 9, 1878.



Claim.—1. The combination, with the fire-box B' and horizontal, or approximately horizontal, multitubular barrel or body D', of a horizontal, or approximately horizontal, multitubular steam-superheater I', arranged over the body D', and in connection with the water-space of the latter, and an upright multitubular feed-water heater, J', arranged between the steam-superheater and the chimney, and forming an uptake for products of combustion after they have been in circulation in opposite directions through the barrel D' and superheater I', substantially as specified.

2. The combination of the fire-box B', the multitubular barrel or body D', the smoke-boxes F' K', the multitubular steam-superheater I', in communication with the water-space of the barrel, the smoke-box L', and the multitubular feed-water heater J', mounted on the latter, essentially as described.

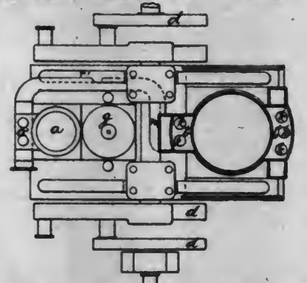
203,968. EDUCATIONAL APPLIANCES. C. A. Bailey, Cobalt, Conn. Filed Apr. 20, 1878.



Claim.—1. The revolving letter-indicators, consisting of the revolving letter-disk A, its radially-slotted guard-plate B, the rim-flange *d*, indicator *c*, handle *a*, and pivot, substantially as specified.

2. A revolving letter-indicator, having in front a radially-slotted guard-plate, in rear an indicator radially arranged opposite the right slot of the guard-plate, and between the two the revolving letter-disk, having its letters or figures similarly arranged in front and rear, substantially as specified.

203,969. STEAM-ENGINES. John Baird, New York, N. Y. Filed Aug. 6, 1877.

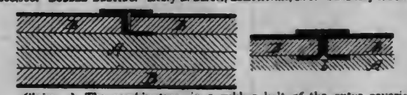


Claim.—1. The combination, hereinbefore described, of two cylinders, a beam with a fixed bearing for its center-pin, a crank-shaft, and connecting-rod, when these parts are arranged substantially as described—that is to say, with the axis of the shaft substantially under the beam center-pin and between lines passing through the center lines of the two cylinders, as hereinbefore set forth.

2. In combination with a single valve-chest, a set of balanced or double-beat puppet-valves, all performing the same duty, located in that chest, substantially in the manner and for the purpose specified.

3. In combination with the brasses of a pillow-block, keys applied between the brasses, constructed and capable of operating as specified, the combination being substantially as described.

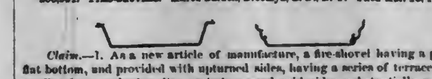
203,990. RUBBER BELTING. Henry B. Barber, Lambertville, N. J. Filed May 6, 1878.



Claim.—1. The combination, in a rubber belt, of the outer covering B with a strip, *b*, of rubber interposed between the edges of said covering, and underlapping or overlapping one or both of said edges, all substantially as set forth.

2. The strip *b*, interposed between the opposite edges of the covering B of a rubber belt, and overlapping or underlapping one or both of the said edges, in combination with the strip *x*.

203,991. FIRE-SHOVELS. Alfred Bardell, Brooklyn, E. D., N. Y. Filed Apr. 10, 1878.



Claim.—1. As a new article of manufacture, a fire-shovel having a plain flat bottom, and provided with upturned sides, having a series of terraces extending in an unbroken line entirely around said sides, substantially as and for the purposes set forth.

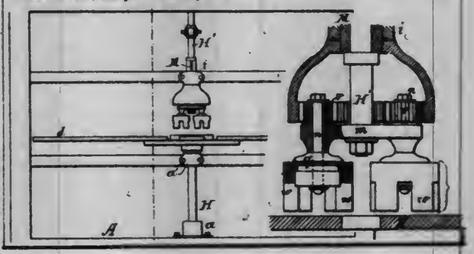
2. In combination with the terraces extending in an unbroken line entirely around the sides of the shovel, the upwardly-turned edge extending into the handle, substantially as and for the purposes specified.

203,992. STENCIL-PLATES. Alonzo C. Barnes, Jr., Philadelphia, Pa., assignor of one-half his right to Alonzo C. Barnes, same place. Filed Feb. 7, 1878.



Claim.—A series of stencil-plates for producing letters or figures, each plate having a single letter or figure forming part of the said plate, and bounded laterally by openings (one on each side) arranged in respect to the figure or letter as described, so that the color imparted to a surface through the openings of one plate in producing one letter or figure will serve as a guide for adjusting the same or another plate for the production of the same or another letter or figure at a proper distance from the first, all as set forth.

203,993. SAW-GRINDING MACHINES. Samuel Bovan, Philadelphia, Pa., assignor to Henry Disston & Sons, same place. Filed Apr. 22, 1878.

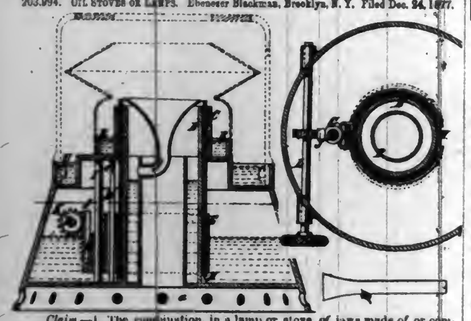


Claim.—1. The combination of a shaft, H, carrying a face-plate for supporting or holding a circular saw, with a shaft, H', arranged in line, or nearly so, with the shaft H, and carrying lap-wheels or grinding-disks, and with mechanism whereby the said lap-wheels are caused to revolve in a circle as well as on their own axes, all as set forth.

2. The combination of the shaft H, the sleeve M, through which the shaft passes, and which is arranged to slide on, but not turn with, the said shaft, the wheel *s*, secured to the sleeve, and the lap-wheels or grinding-disks carried by the shaft and geared to the wheel, all substantially as set forth.

3. The within-described face-plate, having a slightly-elevated central portion, *e*, as and for the purpose set forth.

203,994. OIL STOVES OR LAMPS. Ebenezer Blackman, Brooklyn, N. Y. Filed Dec. 24, 1877.



Claim.—1. The combination, in a lamp or stove, of jaws made of or comprising elastic material, a stock-piece supporting said jaws, a rack mounted on such stock-piece, and a pinion engaging with said rack, and carried by a shaft extending outside the lamp or stove, where it may be conveniently operated, substantially as and for the purpose specified.

2. The combination, with wick adjusting mechanism comprising jaws capable of being spread apart to disengage them from a wick, of a spreader, by which said jaws are automatically spread apart upon being raised to the proper position therefor, substantially as specified.

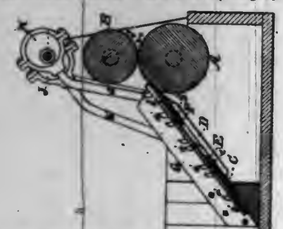
3. The combination, with spring jaws adapted to embrace and engage with a wick, or be spread apart and disengaged therefrom, and means for elevating said jaws, of a rod provided in a suitable portion with diverging inclines, substantially as and for the purpose specified.

4. The combination, with an annular wick-tube in a stove or lamp, of a water-tank arranged on the inner side of the same, and a funnel for introducing water thereto, substantially as and for the purpose specified.

5. The combination, with an annular wick-tube in a stove or lamp, and a water-tank arranged upon the inner side thereof, of an inverted conoidal deflector, communicating with said water-tank and serving as a funnel for filling the same, substantially as specified.

6. The combination, in a stove or lamp, of an annular wick-tube, water-tanks arranged, respectively, inside and outside thereof, and deflectors extending over said water-tanks, substantially as and for the purpose specified.

203,995. WOOL-WASHING MACHINES. William H. Bradley, Allegheny, Pa. Filed Apr. 11, 1878.



Claim.—In combination with the squeezing-rolls of a wool-scouring machine, the mechanism for feeding the same, provided by the plate C, set at an incline, and bearing the series of sliding bars *e* and *f'*, having an alternate forward and backward movement from the eccentrics J and K, and armed with the teeth *a' a' a' a'*, the said bars *e* and *f'* being secured to their respective connecting-bars E and F, whereby the wool is evenly advanced and fed to the rolls A B.

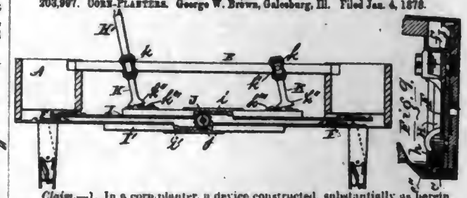
203,996. SEAL-LOCKS. Edward J. Brooks, New York, N. Y. Filed Apr. 8, 1878.



Claim.—1. A seal-lock having a sliding bolt with a seal-chamber in its outer face, and an opening at one end to admit a frangible seal to said chamber, in combination with a fixed stud, against which said open end of the bolt abuts, to fasten a hasp thereon and to retain said seal, and an automatic detent for holding said bolt in locking position, said detent being located behind said seal when said bolt is locked, so as to be inaccessible until said seal is broken.

2. A seal-lock composed of a sliding bolt having a seal-chamber in its outer face, and an opening at one end to admit seals to said chamber, a housing having guide-flanges to embrace the edges of said bolt, and a stud against which the open end of said bolt abuts, and an automatic detent attached to said housing, to prevent the retraction of said bolt until the seal is broken, in combination with a hasp engaging with said stud beneath said open end of the bolt.

203,997. CORN-PLANTERS. George W. Brown, Galesburg, Ill. Filed Jan. 4, 1878.



Claim.—1. In a corn-planter, a device constructed, substantially as herein described, of two bars or parts, arranged to operate simultaneously in opposite directions, in combination with and for the purpose of actuating the seed-cup wheels, in the manner substantially as and for the purpose specified.

2. The bars I I' and pinion J, in combination with seed-cup wheels F, substantially as described, and for the purpose specified.

3. The bars I I', having pawls L L', respectively, in combination with seed-cup wheel F, having series of teeth *g g'*, upon which the pawls act, substantially as described, and for the purpose specified.

4. The combination, with a seed-cup wheel, F, of two actuating-bars, each having a pawl adapted to impart movement to the seed-cup wheel alternately, substantially as described, and for the purpose specified.

5. The detents M M', in combination with the bars I I' and spring-pawls L L', substantially as described, and for the purpose specified.

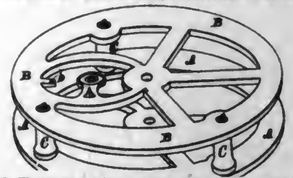
6. A seed-cup wheel having series of teeth *g* and *g'* in different planes, in combination with bars I I', having pawl L in same plane as teeth *g*, and a similar pawl, L, in same plane as teeth *g'*, substantially as and for the purpose specified.

7. In combination with the seed-wheels F and bars I I', geared or connected so that longitudinal movement of one bar will move the other in an opposite direction, a lever, K, by which they may be operated, substantially as described, and for the purpose specified.

8. In a corn-planting machine, the combination of the levers K, pivoted to the bar E, having handles K' and segment-gears on their lower ends, with bar I, having rack-bars to gear with said segment gears, and a rack-bar, *i*, to gear with pinion J, so that the levers K will prevent the rack-bar I from springing upward and out of gear with the pinion J, substantially as and for the purpose set forth.

9. The seed-box constructed with an enlargement, *a''*, at one side and bottom, said enlarged portion being projected over the seed-wheel, substantially as described, and for the purpose specified.

203,998. WATCH-PLATES. D. Asro A. Buck, Worcester, Mass. Filed Jan. 4, 1878.



Claim.—1. The upper and lower plates, each cut from one piece of metal and having the bearings for the staff of the balance-wheel so connected with other portions of said plate as to enable them to be bent toward or from the escape-wheel, and thereby change the depth of engagement of said balance-wheel with said escape-wheel, substantially as and for the purpose specified.

2. As a means for limiting end motion of the arbor, a cap, D, placed within a recess at the outer end of each pivot-opening in the plates A and B, and secured in position by swaging or burnishing the contiguous metal of its said plate over the edge of said cap, substantially as and for the purpose set forth.

3. As a means for uniting the plates A and B, the pillars C, each permanently secured at one end within said plate A, and having its opposite reduced or shouldered end *c*, which projects through said plate B, and is provided with an axial opening, enlarged laterally by the use of a tapering-tool, so as to form a frictional spring-bearing within said plate B, substantially as and for the purpose specified.

203,999. WATCH-ESCAPEMENTS. D. Asro A. Buck, Worcester, Mass. Filed Jan. 4, 1878.



Claim.—1. The staff of a balance-wheel, having formed within its shoulder a notch for engagement with the impulse-tooth of an escape-wheel, and within its periphery a notch for the passage of the locking-tooth of the same, substantially as and for the purpose shown.

2. An escape-wheel having radial peripheral teeth of different lengths, formed of the same plate, and having one or both sets of such teeth bent laterally at any desired angle to the face of said wheel, substantially as and for the purpose set forth.

204,000. WATCHES. D. Asro A. Buck, Worcester, assignor to himself and Edwd. A. Locke, Boston, Mass. Filed Nov. 28, 1877.

Claim.—1. The spring-wheel O, cut from sheet metal, and provided near its periphery with radial openings *a'*, which are parallel with the axis of said wheel and receive the teeth of a spur-gear wheel, substantially as and for the purpose shown.

2. The spring-wheel O, having at the inner edge of its rim a number of lugs, *a''*, which are attached to and form part of said rim, and are bent downward at a right angle to the plane of said wheel, substantially as and for the purpose set forth.

3. The cap U, arranged to fit within the rabbet *p'* of the case-center P, and to embrace the spring-wheel O and spring Z, substantially as and for the purpose shown and described.

4. In combination with the spring-wheel O, the pawl A', provided at one end with a point which engages with said wheel, and at its opposite end with a spring, and pivoted upon the stem W between the winding-wheel V and the case-center P, substantially as and for the purpose specified.

5. As a means for releasing the pawl A' from engagement with the spring-wheel O, the lug *a'*, formed upon the upper side of said pawl, in rear of its pivotal bearing, and projecting upward through the dial N, substantially as and for the purpose shown.

6. Stop mechanism for limiting the coiling of the mainspring when such mechanism is actuated by said spring, substantially as and for the purpose set forth.

7. In a watch-movement having its train arranged to rotate upon or around a center, a pivotal arbor for the upper end of the same, which forms a pivotal support for the minute-hand, and is connected to or with the upper plate of the frame of said train by means of a friction-bearing, substantially as and for the purpose set forth.

8. As a means for imparting motion to the hour-hand S, the toothed wheel Q, secured to or upon the dial N, the toothed wheel R, having a less number of teeth than said wheel Q, and provided with the arbor *r*, which passes through said wheel Q and receives and supports said hand, and the pinion *f*, forming part of the train of the watch, and arranged to mesh with and rotate around said wheels, substantially as and for the purpose shown and described.

9. As a means for producing a friction-bearing of the hour-hand S upon its supporting arbor *r*, a concave steel washer, *r'*, interposed between the hub of said hand and the upper riveted end of said arbor, substantially as and for the purpose shown.

10. An open watch-dial formed by removing the material around the figures, substantially as and for the purpose set forth.

11. A watch in which the dial is secured within the case by placing said dial within a rabbet that is formed within the inner upper edge of the center-piece, and burnishing the contiguous metal inward and downward over the edge of said dial, substantially as and for the purpose shown and described.

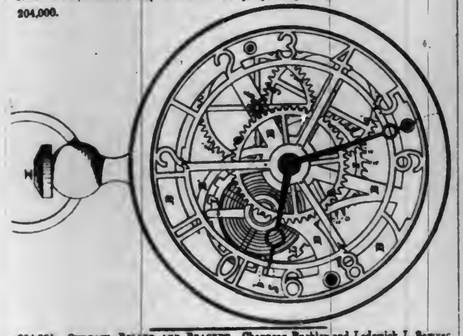
12. As a means for connecting the center-wheel Q to or with the dial N, the washer *q*, placed between said parts, and provided with a hollow hub, *q'*, which projects through said parts, and is riveted or headed down upon each, substantially as and for the purpose specified.

13. As a means for containing and securing in position the toothed ring B', spring-wheel O, and cap U, the rabbet *p'*, formed within the inner lower corner of the center-piece P, substantially as set forth.

14. A watch in which the center-piece of the case operates to support the parts of the movement, to connect the same together, and to confine them in place, substantially as and for the purpose shown and described.

15. As a means for supporting the pivotal arbor D and E of the movement, the dial N, permanently secured within one side of the case-center P, and the spring-wheel O, confined in position within the opposite side of the latter, and each provided with a central opening for the reception of one of said arbors, substantially as and for the purpose specified.

204,000.



204,001. CURTAIN-ROLLER AND BRACKET. Chauncey Buckley and Ledowick L. Sawyer, Meriden, Conn. Filed Dec. 11, 1877.

Brief.—Prevents the spring from unwinding when the roller is removed from the bracket by means of a cam loose on the spindle, which is secured eccentrically to a bearing-head loose in the interior of the roller. A modification shows the spindle concentric to the bearing-head and the cam eccentric to the spindle. Also makes a roller-tip with gudgeon and main portion in one piece of wood, and covered by a metallic cap, whose extended edge overlaps the roller when the tip is secured thereto.



Claim.—1. The combination of the tubular roll, the spindle and spring thereon, with a cam loose on the said spindle to engage with the inner surface of the roll, and a bearing-head fixed upon the inner end of the spindle and loose within the cavity of the roll, substantially as described.

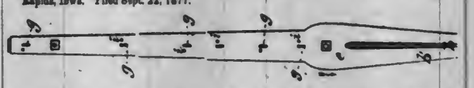
2. A tip for curtain-rolls consisting of the wood block and gudgeon, combined with a metallic cap extended over the block to cover the joint, substantially as described.

204,002. TABLE-CUTLERY. Edwin Cady Wall, Meriden, Conn., assignor to Meriden Cutlery Company, same place. Filed May 1, 1878.



Claim.—In table-cutlery, the combination of a blade with twisted tang, but without bolster, a handle having a cavity to receive said tang and leave space around it, lateral recesses in said cavity, and a metal bolster cast upon said blade, and extending into the cavity around said twisted tang and said lateral recesses, all as described.

204,003. FENCE-POSTS. William E. Canedy, Rochester, Minn., and Edwin E. Leach, Cedar Rapids, Iowa. Filed Sept. 22, 1877.



Claim.—The combination, with a fence-post, of the hooks *g* for holding the fence-wires, and the projecting spurs *i*, secured at one side of said hooks on a line below the upper end of the same, whereby the wires are confined, substantially as specified.

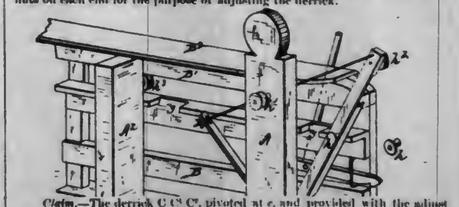
204,004. CHECKING APPARATUS. John Casey, Jersey City, N. J. Filed Mar. 9, 1878.



Claim.—The method, substantially as hereinbefore set forth, of exposing each check to view in a quiescent condition between the point of deposition and the till, by continually holding an inclined series in visible suspension between these points, said series being automatically moved to discharge successively into the till from the lower end as other checks are being deposited at the upper end.

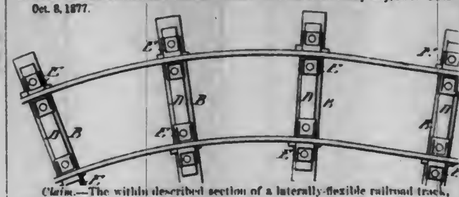
204,005. GATES. Austin B. Clayton, Dover, Mo. Filed Apr. 8, 1878.

Brief.—The derrick consists of three pieces of timber framed together. Rods pass through the upper and lower ends. The rods are provided with nuts on each end for the purpose of adjusting the derrick.



Claim.—The derrick C C' C', pivoted at *c*, and provided with the adjusting-rods *b b'*, and nuts *d*, in combination with the gate B B', posts A A' A', wheels B' B' B', and the wheel A, taking into a groove, *i*, on the derrick, all substantially as herein set forth.

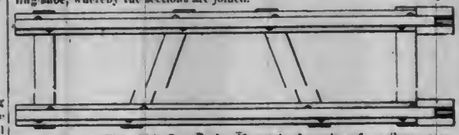
204,006. PORTABLE RAILROAD-TRACKS. Nathan W. Goodlet, Jr., Jersey City, N. J. Filed Oct. 6, 1877.



Claim.—The within-described section of a laterally-flexible railroad track, consisting of rails A A', without lower flanges, tie-bars D, chairs E, and devices whereby the chairs may be secured to or released from the rails, all being combined substantially as set forth.

204,007. PORTABLE RAILWAYS. Nathan W. Goodlet, Jr., Jersey City, N. J. Filed Jan. 7, 1878.

Brief.—Portable railway-sections consisting of rails connected by transverse and diagonal bars or ties, each rail having secured to one end a coupling-shoe, whereby the sections are joined.

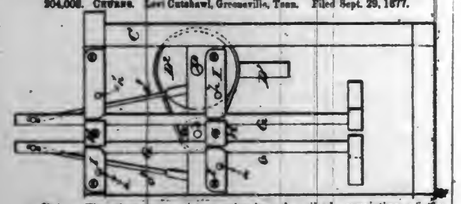


Claim.—1. The within-described self-contained section of a railway, consisting of the combination of two rails and transverse and diagonal ties, all of wrought-iron, and permanently secured together, as set forth.

2. A portable railroad-track consisting of a series of sections, each com-

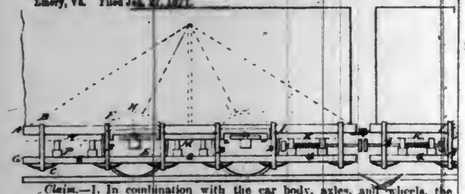
posed of two rails, permanently connected together by transverse and diagonal cross ties, in combination with shoes B, permanently secured to the rails of one section and adapted to the rails of the adjoining section, for the maintenance of the rails of the several sections in line with each other, all as set forth.

204,008. CHURNS. Levi Cutshaw, Greeneville, Tenn. Filed Sept. 29, 1877.



Claim.—The churn operating mechanism described, consisting of the belted pulleys D² *a*, the double crank *b' b'*, the pitmen *d d*, with sleeves *c c*, all constructed and adapted to be connected and serve to operate the dash-rods G G in fixed groove in frame C, substantially as set forth.

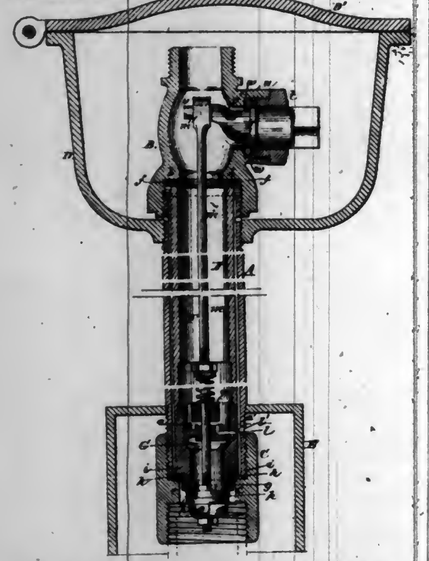
204,009. RAILWAY-CARS. Robert L. Dabney, Hampden Sidney, and Charles W. Dabney, Jr., Emory, Va. Filed Jan. 27, 1877.



Claim.—1. In combination with the car body, axles, and wheels, the exterior longitudinal joists or beams A A, the parallel lower beams G G, and the connecting-stirrups B B, for supporting the floor-joists, as shown and described, for the purpose specified.

2. The combination of the grooved plates F, having flanges *a*, and the connecting-bars V, the grooved plates E, balls H, and the car body and truck, all as shown and described.

204,010. VALVES FOR HYDRANTS, STREET-WASHERS, &c. Patrick H. Donahoe, Middletown, Conn. Filed Mar. 26, 1878.

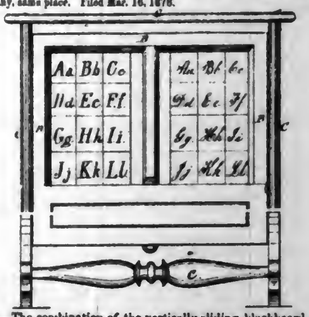


Claim.—1. The combination, with the barrel A, having its upper end screw-threaded, of a casing, D, having a screw-threaded aperture in its bottom, and the top section B engaging with the upper end of said barrel, substantially as and for the purpose set forth.

2. The combination, with the inner barrel F, having its lower portion shouldered, as described, of the outer barrel A and thimble C, having annular shoulder *c*, substantially as described.

3. The combination, with the inner barrel F, of the section G, cast in one piece, suitably connected to said barrel, and having the seats for the valves O and *q* formed therein, the valve-rod *m*, valve O, and spring-valve *q*, substantially as set forth.

204,011. BLACKBOARDS. Henry W. Eastman, Baltimore, Md., assignor to himself and Wm. J. O. Dulany, same place. Filed Mar. 16, 1878.



Claim.—The combination of the vertically-sliding blackboard, pivoted at top and bottom of same, to adapt it to be reversed, as described, the tablet-holder, the connecting-cords, and the holding-frame C, substantially as shown and described, whereby the blackboard is held fixed on its pivots when the counterbalancing tablet-holder is lowered, as set forth.

204,012. COB-ELEVATORS FOR CORN-SHELLERS. H. H. Eby, Mendota, Ill. Filed Dec. 1, 1877.



Claim.—1. The combination, with an elevating-spout adapted to swing from its lower end, of the horizontal wheel *d'*, having cog-gears on its upper and lower peripheries, and an intermediate sheave to receive a cord or belt, substantially as and for the purpose set forth.

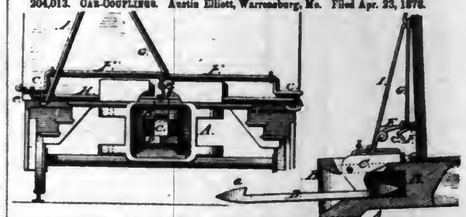
2. In an elevating-spout adapted to swing from its lower end, the case B', for inclosing the gearing, cast in one piece, and provided with an open top, by which the gearing can be dropped into or raised from the case without removing bolts or other fastenings, substantially as described.

3. In an elevating-spout adapted to turn from its lower end, the forked standard e, supporting the lower end of the spout, and carrying the horizontal gearing, in combination with the short standard *g* in the covering-case in which the said standard *e* is stepped, substantially as described.

4. The standard e, constructed with the shield *e'*, and having arms *e''*, substantially as described.

5. The combination, with the spout A, of the revolving block C, shaft or windlass *i*, journaled thereon, rope *k*, and pin *l'*, constructed and arranged substantially as described and shown.

204,013. CAR-COUPLINGS. Austin Elliott, Warrensburg, Mo. Filed Apr. 23, 1878.

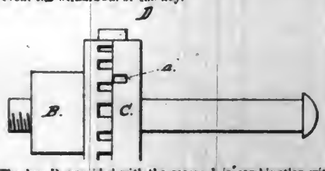


Claim.—1. In a car-coupling, the bumper A', provided with the pivoted dog C, having staple *b*, in combination with the arm E, bars F F', having cranks *c* and bar G, provided with rod I, attached to horizontal bar H', the several parts being adapted for operation, in connection with each other, substantially as and for the purpose specified.

2. The pivoted dog C, provided with staple B, in combination with arm E, attached to bar F, said bar having a crank, *c*, to lift said dog, and rod H, provided with arm *e*, by which said dog is held up out of the way when it is not desirable to couple.

204,014. NUT-LOCKS. Ralph Ely, Davisburg, Mich. Filed Mar. 25, 1878.

Brief.—A key provided with a recess in one of its sides is inserted between the washer and the nut in their corresponding grooves, when the nut is turned slightly back, so that one of its projections can fit into the recess in the key, and thus prevent the withdrawal of the key.



Claim.—The key D, provided with the recess *d*, in combination with nut B, having on its inner face a series of radial projections, *b*, and washer C, as and for the purposes set forth.

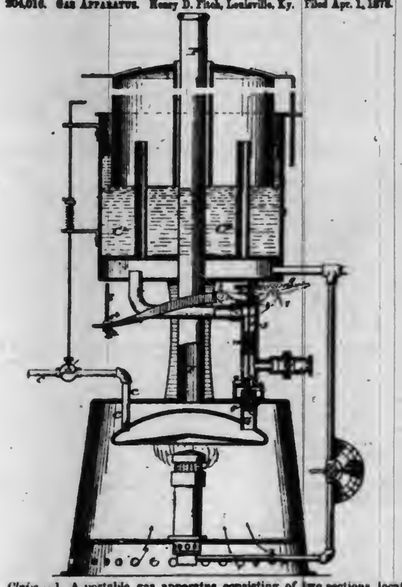
204,015. STEAM-PUMPS FOR OIL-WELLS. Hiram W. Fenner, Philadelphia, Pa. Filed Oct. 10, 1877.



Claim.—1. In a steam-pump, the combination, with the steam-cylinder and its piston, of the valve-chamber and ports, the annular-ported main valve, and the supplementary valve and ports, the whole constructed to operate to exhaust the steam directly into the bore of the well, substantially as set forth.

2. The combination of the steam-cylinder and its piston, the hollow piston-rod and pump, and the oil-reservoir provided with a discharge-pipe, the whole constructed and arranged to operate substantially as set forth.

204,016. GAS APPARATUS. Henry D. Fitch, Louisville, Ky. Filed Apr. 1, 1878.



Claim.—1. A portable gas apparatus consisting of two sections, located one above the other, with an intervening space between them, and united together in one continuous structure, the lower section constituting a heating-chamber inclosing a vaporizing-retort, and the upper section constituting a gas-holder, the connecting vapor-conveying pipe and the valve mechanism being arranged in the intervening space between the two sections, substantially as described.

2. In a gas apparatus, the combination of a retort for the vaporization of hydrocarbon liquid, a burner underneath the retort, a gas-holder located above, and an exit-flue for the products of combustion opening over the retort and passing through the gas-holder, for the purpose of imparting warmth to the latter to prevent condensation of the gas, substantially as described.

3. In a gas apparatus, the combination of a retort for the vaporization of hydrocarbon liquid, a combustion-chamber inclosing said retort, a burner within the combustion-chamber and underneath the retort, a gas-holder, and an exit-flue for the products of combustion leading from said combustion-chamber and passing through said gas-holder, for the purpose of imparting warmth to the latter to prevent condensation of the gas, substantially as described.

4. In a hydrocarbon-gas apparatus, a retort consisting of two parts, of cast iron, united together, as shown, and provided in its interior with a series of perforated cast-iron plates, substantially as described.

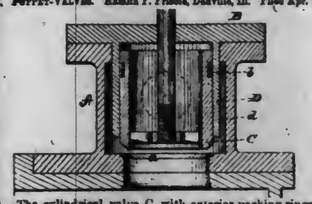
5. In a gas apparatus, the combination, with the oil-supply pipe, of a valve, a rod connecting said valve with the gas-holder, a spring for holding said valve open, and an arm projecting from the gas-holder, the said parts being arranged as described, whereby said valve is not affected by the usual rising and falling of the gas-holder, but is closed automatically by the continued or abnormal descent of the gas-holder in case the burner accidentally becomes extinguished and the vaporization ceases, substantially as described.

204,017. CARTRIDGE-PACKAGES. Joseph W. Frazier, New York, N. Y. Filed Mar. 21, 1878.



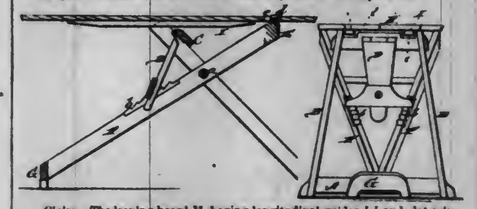
Claim.—The box A, in combination with the strip E, folded back and forth upon itself, and forming in the opposite blights of its folds two parallel rows of cells, adapted to hold two parallel rows of cartridges, substantially as shown and described.

204,018. PUTTY-VALVES. Hamlin F. Frisbie, Danville, Ill. Filed Apr. 15, 1878.



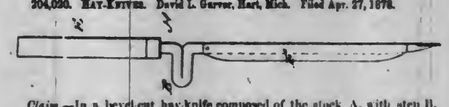
Claim.—The cylindrical valve C, with exterior packing-rings *b b*, and fitting within a cylinder, D, formed on the valve-chest cover B, in combination with the chest A, seat *c*, and chamber *d*, substantially as and for the purposes herein set forth.

204,019. IRONING-TABLES. Alvin T. Gale, Piqua, Ohio. Filed Apr. 6, 1878.



Claim.—The ironing-board H, having longitudinal guides I I and slot *e*, in combination with the frames A B C and E F G, hook *d*, and the notches *i i* in the cross-bar C, substantially as and for the purposes set forth.

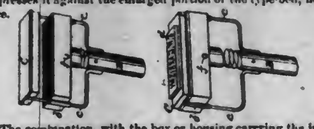
204,020. HAY-KNIVES. David L. Garver, Hart, Mich. Filed Apr. 27, 1878.



Claim.—In a bevel-cut hay-knife composed of the stock A, with step B, knife C, and handle E, the flange F, attached to the vertical bar, for the purposes set forth.

204,021. RUBBER POCKET-STAMPS. S. W. Garrison, Memphis, Tenn. Filed Mar. 30, 1878.

Brief.—The side rods are pivoted to the type-bed at its opposite ends, nearer to the bottom than the type side, so that the latter is heavier. When the type side is in contact with the inking-pad in the case, and it is desired to use the stamps, the case is drawn back to free the type-bed, and then held in such a position as to cause said type-bed to reverse its position with reference to the case, thus bringing its type side outward. The case is then released, and the spring presses it against the enlarged portion of the type-bed, holding it firmly in place.

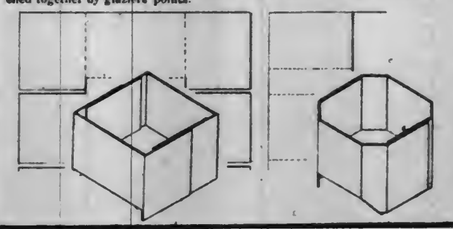


Claim.—1. The combination, with the box or housing carrying the inking-pad, of the type-bed C, having its type side reduced in size to adapt it to enter the housing, and its back being of larger size to adapt it to rest on the lower edge of the housing when the stamp is required for use, the spring, stem B, and rods *c c*, as shown and described.

2. The sleeve or tube B, adapted for attachment to a pencil or other handle, the arms *c c*, attached thereto, the housing having sleeves *b b*, and sliding on said arms to and from the type-bed, and the spring interposed between the housing and tube, all combined as shown and described, for the purpose specified.

204,022. FRUIT-BOXES. Andrew P. Gibson, Chicago, Ill., assignor to Francis T. Wheeler and Lucius G. Fisher, Jr., same place. Filed Apr. 2, 1878.

Brief.—The supporting-flanges of the box are arranged so as to be always in the same vertical plane with the mouth of the basket. Boxes may be fastened together by glaziers' points.



Claim.—1. A fruit-box having a supporting-rim, or its described equivalent, which projects below the bottom, and a bottom and sides in a single sheet, and made chiefly or wholly therefrom, substantially as set forth.

2. A fruit-box blank creased and scored substantially as indicated, with reference to giving, when bent in the lines of the creasing, a bottom, the sides, and a supporting-rim, either broken or continuous, substantially as set forth.

3. The octagonal shaped box, hereinbefore indicated as No. 2, made with supporting rim, bottom, and sides from a single sheet, substantially as described.

204,023. FRUIT-BASKETS. Andrew P. Gibson, Chicago, Ill., assignor of six-eighths his right to L. O. Faber, Jr., and Francis T. Wheeler, same place. Filed Apr. 24, 1878.



Claim.—1. A basket-body made of a single sheet of paper, wood, or other like substance by slitting and bending in the parts *a*, which form the bottom, with or without disks, and bending outwardly and securing the slitted part *b*, which forms the mouth, substantially as described.

2. A basket-blank slitted on one edge and notched or serrated on the other, substantially as and for the purposes set forth.

204,024. SPEAKING-TELEPHONES. Webster Gillett, Ypsilanti, Mich., assignor of one-half his right to O. M. Gillett, Cleveland, Ohio. Filed Mar. 22, 1878.



Claim.—1. In telephones, an improvement consisting of a vibrator composed of a series of wires or springs, a magnetic cylinder having a wire helix thereon, and a core or magnet with a wire coil arranged within said cylinder, substantially as and for the purpose set forth.

2. In a telephone, the vibrator O, or a series of wires or springs set transversely and opposite the opening of the mouth-piece, substantially as specified.

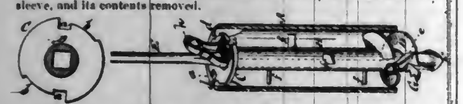
3. In telephones, an improvement consisting of the central core or magnet H, with a spool and helix thereon, surrounded by the cylinder E and its wire coil, in combination with the bar F, vibrator D, case A, and cover B, constructed and arranged substantially as described, and for the purpose specified.

4. In telephones, an improvement consisting of the cylinder and its coil surrounding the central magnet, its spool and helix connected with the bar F at one end, and having a wire vibrator at the other, and secured in a suitable case with an opening in direct relation with said vibrator, substantially as and for the purpose set forth.

5. In telephones, the combination of the vibrator D, the cylinder E, with a helix thereon, the central magnet H, spool I, and coil J, with the wires of said vibrator arranged transversely to the end of said cylinder and magnet, arranged in a suitable frame or case, substantially as described, and for the purpose set forth.

204,025. WELL-AUGERS. James T. Glass, Austin, Tex. Filed Mar. 2, 1878.

Brief.—An earth-auger consisting of a central shaft having a twisted bit and a radial saw-edged knife, a central sleeve fitting over the shaft, sliding thereon and turning with it, an elevating-worm and retaining-valve, radial blades on the sleeve, and an inclosing cylinder connected with the central sleeve by a disk secured to the upper end of the sleeve, and having slots and recesses in its edges, by which it can be engaged with notched ribs on the interior of the cylinder similar to a bayonet-joint. The radial blades assist in elevating the earth in the cylinder as it passes above the worm, and when the cylinder is filled it is drawn up on the shaft and disconnected from the central sleeve, and its contents removed.



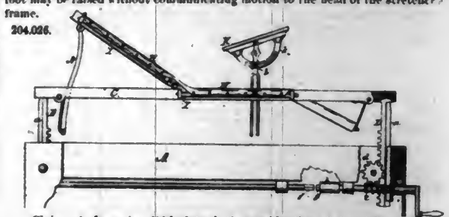
Claim.—1. In a well-auger, the combination, with the cylinder A, of the interior central shaft E, having attached thereto the sleeve B, worm D, and cutters *f*, with the valve *e* upon the lower end of said sleeve and a fastening-device at the top thereof, forming a union between the cylinder and shaft, as described.

2. The combination of the cylinder A, sleeve B, worm D, with valve *e*, cutters or wings *f f*, disk C, with slots *a a* and cut-out portions *b*, and the notched ribs *d d*, secured to the inside of the cylinder, substantially as and for the purposes set forth.

204,026. INVALID-BEDSTEADS. James Goodwin, Montreal, Quebec, Canada. Filed July 24, 1877.

Brief.—The stretcher-frame is raised and lowered by rack-bars engaging with four pinions at the corners of the bed. These pinions receive motion from two shafts, one at the foot and the other at the head of the bed. These shafts are revolved simultaneously by means of a connecting-shaft extending from end to end of the bed, said shaft being formed in two sections, united by a movable sleeve which slips over its squared ends, by which device the foot may be raised without communicating motion to the head of the stretcher-frame.

204,026.



Claim.—1. In an invalid-bedstead, the combination of the sliding sleeve, the two-part connecting rod or shaft, the worm-gears, pinions, cross-shafts, and adjusting-posts of the stretcher-frame, as shown and described, for the purpose of enabling the latter to be adjusted at one end or simultaneously at both ends, as specified.

2. In an invalid-bedstead, the angular castings provided with a vertical groove, in combination with the frame A and the posts D, having a vertical rib, as shown and described.

3. In an invalid-bedstead, the detachable stretcher-frame, provided with cavities or sockets on the under side, in combination with the posts, the heads of the latter entering said cavities or sockets, as shown and described, for the purpose specified.

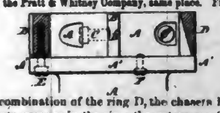
204,027. SPEAKING-TELEPHONES. Elisha Gray, Chicago, Ill. Filed Jan. 25, 1878.



Claim.—1. A yoke-shaped yielding support adapted to fit under the chin, and having a telephone mounted upon each branch thereof, whereby the instrument may be grasped by one hand, while a telephone is applied to each ear of the person receiving the message, and leaving the other hand free to hold a transmitting-instrument.

2. The combination, substantially as hereinbefore set forth, of a bifurcated support, a supporting-bracket on each arm of the support, and a telephone pivoted to rock upon said brackets, to facilitate their adjustment to the ears of the person receiving the message.

204,028. SCREW-CUTTING DIES. J. J. Grant, Nelson Sawyer, and F. M. Gardner, Hartford, Conn., assignors to the Pratt & Whitney Company, same place. Filed Apr. 13, 1878.



Claim.—The combination of the ring D, the chasers B, with their inclined rear ends fitting into grooves in the ring, the set-screws C, and the adjusting-screws E and F, with the body A, substantially as herein described.

204,029. SPEAKING-TELEPHONES. Elisha Gray, Chicago, Ill. Filed Mar. 21, 1878.



Claim.—1. A bipolar telephone constructed, substantially as hereinbefore set forth, with two diaphragms approximating each other at one edge, arranged at an acute angle, and having a common mouth-piece, whereby the lips may be brought close to each diaphragm to increase the electro-motive force.

2. The combination, substantially as hereinbefore set forth, of two telephones mounted upon a common support at an acute angle to each other, with an interposed bifurcated mouth-piece secured to said support.

3. The combination, substantially as hereinbefore set forth, of a permanent magnet, two diaphragms mounted thereon at an acute angle to each other, and approximating at one edge, with an interposed bifurcated mouth-piece, each branch of which comes opposite the center of its respective diaphragm.

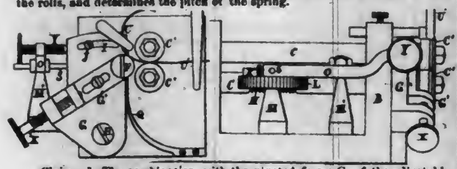
4. The combination, substantially as hereinbefore set forth, of the permanent magnet, a screwed soft-iron core passing therethrough, and the check-nut on the core, whereby the core may be adjusted relatively to the diaphragm.

5. The combination, substantially as hereinbefore set forth, of two telephones with a looped handle, upon which they are mounted, and a common mouth-piece.

6. The combination, substantially as hereinbefore set forth, of a permanent horseshoe magnet, constituting a looped handle, with a telephone mounted on each pole thereof, and an interposed mouth-piece.

204,030. WIRE-COILING MACHINES. Chas. E. Green, Newark, N. J. Filed Apr. 17, 1878.

Brief.—The wire passes from a reel through a slotted guide to the feed-rollers, and thence to the coiling-roll, which slides to and fro, by means of a set-screw, in a frame pivoted so as to swing to and fro by means of a connected lever. An adjustable slotted guide receives the coil as it passes from the rolls, and determines the pitch of the spring.

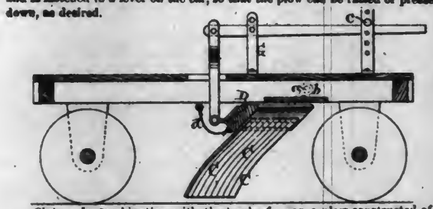


Claim.—1. The combination, with the pivoted frame G, of the adjustable slide G', carrying the gage-roll F, as set forth.

2. The combination of the shafts C C, carrying the rolls O' O', the adjustable worm-wheel L, gearing with a worm on one of the shafts, cam K, lever O, and pivoted frame G, carrying the roll F, all as set forth.

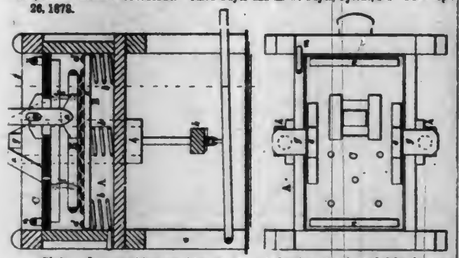
204,031. TRACE-CLEANERS. Wm. T. Grantler, Tivoli, N. Y. Filed Mar. 13, 1878.

Brief.—A solid beam or head is hinged to the lower side of the car-bed obliquely to the draft-line. A row of curved metallic spring-blades are fastened to the head. A rod fastened to the back side of the head passes upward, and is fastened to a lever on the car, so that the plow can be raised or pressed down, as desired.



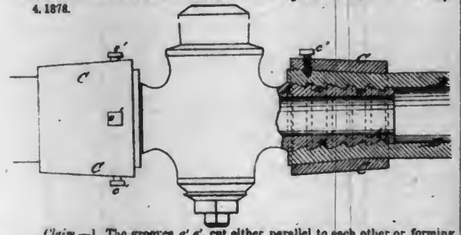
Claim.—In combination with the truck of a car, a plow constructed of a series of curved metallic springs or elastic blades, C, rigidly secured to a head, D, hinged to the truck obliquely to the draft-line, and mechanism for raising and lowering said plow upon its hinges, substantially as and for the purposes specified.

204,032. WASHING-MACHINES. Caleb Geyer and A. W. Geyer, Tyrone, Pa. Filed Apr. 26, 1878.



Claim.—In a washing-machine, the box A, having the slatted false bottom B, supported yieldingly therein by means of spiral springs, combined with the reciprocating slatted washer E, suspended by the links *l* from the vertically-moving perforated board C, substantially as herein specified.

204,033. WATER-PIPE JOINTS. Frederick P. Hallberg, Green Point, N. Y. Filed Apr. 4, 1878.

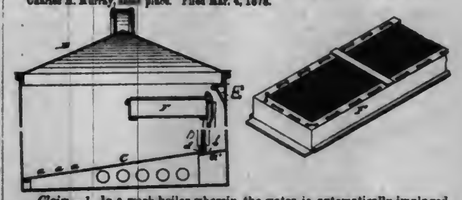


Claim.—1. The grooves *a' a'*, cut either parallel to each other or forming a screw, and at a distance of not less than one-sixteenth inch apart from each other, having one of their sides vertical against the face of the shank, in combination with the conical collar C, provided with teeth c^1, for the purpose described and set forth.

2. The conical collar C, provided with the teeth c^2 c^2, for the purpose described and set forth.

3. The combination of the grooved shank of an ordinary water-cock with the collar C, provided with teeth c^2 c^2, for the purpose specified.

204,034. WASH-BOILERS. Joseph J. Hall, Chicago, Ill., assignor of one-half his right to Charles H. Murray, same place. Filed Mar. 4, 1878.

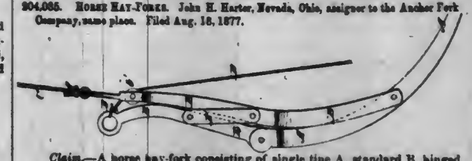


Claim.—1. In a wash-boiler wherein the water is automatically impinged upon the clothes, a filter arranged below the place from which the water is so discharged upon the clothes, for the purposes set forth.

2. The combination, in a wash-boiler, of the removable elevated and perforated bottom C, the removable false back D, and the filter F, all arranged substantially as shown and described, with relation to each other and the walls of the boiler, for the purposes set forth.

3. The combination, in a wash-boiler, of the false bottom C, false back D, removable filter F, and deflector E, all constructed and arranged substantially as and for the purposes specified.

204,035. HORSE HAY-FORKS. John H. Harter, Nevada, Ohio, assignor to the Anchor Fork Company, same place. Filed Aug. 16, 1877.



Claim.—A horse hay-fork consisting of single tine A, standard B, hinged near the middle of the tine, trip-bar E, and link-bars F F, said parts being connected and constructed as shown and described.

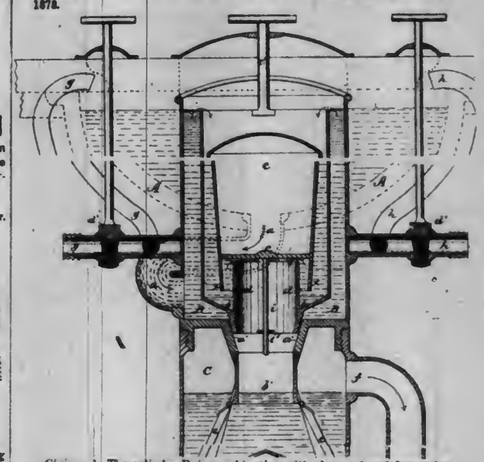
204,036. BOLTS AND NUTS. Hayward A. Harvey, Orange, N. J. Filed Nov. 21, 1877.

Brief.—Decided to be an improvement on his patent of November 27, 1877, No. 197,466, and consists in making the bolt of steel and the nut of iron, or vice versa, so as to throw the loss occasioned by the upsetting of the threads upon one or the other at pleasure.



Claim.—As a new article of manufacture, a steel screw-bolt and an iron nut provided with ratchet or undercut screw-threads, substantially as and for the purpose set forth.

204,037. WASTE-TRAPS. David Healy, Los Angeles, Cal., assignor of one-half his right to Benjamin F. Coulter, Chas. T. Harper, and Robert S. Moore, same place. Filed Apr. 10, 1878.



Claim.—1. The cylinder B, in combination with plunger *b* and float-valves *c c*, constructed substantially as shown and described.

2. The combination of a basin or other water-receptacle with cylinder B, plunger *b*, and float-valve *c c*, for the purpose set forth.

3. The combination of cylinder B, having seat *c'*, plunger *b*, with tapering base, funnel *b'*, provided with gravitating-valves *c c*, and trap or chamber C, substantially as and for the purpose set forth.

4. The detachable plunger *b*, constructed with tapering base, tube *d d*, cross-bar *i'*, and float-valve *c c*, substantially as set forth.

204,038. UNDER-DRAINS. Wm. B. Heaning, Waterloo, Ind. Filed Nov. 27, 1877.

Brief.—A square upright tube or box serves as a sediment-receptacle and turn-chamber for under-drains. Near the top are large holes for the ends of tile drains, and smaller ones for surface-drainage. A grating near the bottom prevents muskrats, &c., from getting up into the box. The top has a hinged lid, so that the box may be examined and cleaned.



Claim.—1. The box A, having perforations B in its sides, near the top, for connection with tile drains, and adapted to serve as a sediment-chamber or branch or turn chamber, as specified.

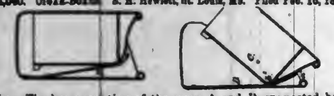
2. The box A, having perforations B in its sides, near the top, for connection with tile drains, and provided with grate C, lid E, and inlets D for air or surface-water, according as the device may be placed, as and for the purposes specified.

204,039. WASHING-MACHINE. William L. Hess and Lester W. Bowton, Belle Plaine, Iowa. Filed Apr. 1, 1878.



Claim.—In a washing-machine, the wheel or cylinder B, provided with a series of buckets, *b b*, having deflectors *b' b'* attached to said buckets about equidistant from their edges, and extending forward and lapping the preceding buckets, forming passages *b''*, and internal flanges or lips *c*, substantially as shown and described.

204,040. CIGAR-BOXES. S. H. Hewlett, St. Louis, Mo. Filed Feb. 16, 1878.



Claim.—The box consisting of the cases A and B, connected by pivot C, and containing the closing spring D, substantially as set forth.

204,041. PEN-HOLDER. Joseph Hoffman, New York, N. Y., assignor to Joseph Rockendorfer, same place. Filed May. 14, 1878.



Claim.—1. A pen-holder formed of a single piece of sheet metal, coiled into a scroll or volute, with the inner fold or nib-piece slit transversely, so as to allow the upper part of said fold or nib-piece to yield to the insertion of the pen independently of the lower part, as set forth.

2. A pen-holder formed of a single piece of sheet metal, coiled into a scroll or volute, having one of its folds at the handle end provided with an extension, which is bent and lapped upon the other fold or folds, as set forth.

3. A pen-holder formed of a single piece of sheet metal, coiled into a scroll or volute, having the inner fold prolonged at the handle end beyond the outer fold, and swaged or outwardly bent upon the outer fold in bead form, as set forth.

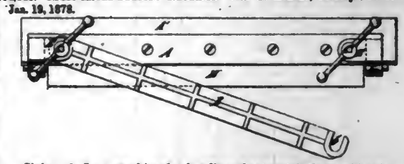
4. A pen-holder made from a blank of sheet metal, formed with a slit and a projecting lip or flange at the handle end, as shown in Fig. 1, and as herein described.

204,042. DEVICES FOR MARKING PLUG-TOBACCO. Harry C. Holbrook, Louisville, Ky. Filed Mar. 27, 1878.



Claim.—A plate for marking plug-tobacco, provided with a series of raised panels of any shape and a series of alternating depressions, the raised panels being provided with sunken letters, marks, or symbols, whereby the tobacco plug is formed with a series of depressions, within which are raised letters, marks, or symbols, as set forth.

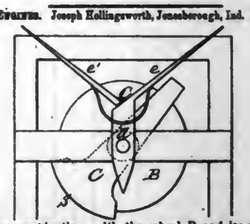
204,043. SHEET-METAL-BENDING MACHINES. Wm. T. Holland, Brooklyn, N. Y. Filed Jan. 19, 1878.



Claim.—1. In a machine for bending sheet metal, the combination, with the bed-plate, of a former, whereon the metal is beat, pivoted at one end, so that it may be swung radially outward, substantially as and for the purpose set forth.

2. The combination of the bed-plate A, former B, the screws C C', and presser H, strengthened by sector-shaped ribs *i*, substantially as and for the purposes set forth.

204,044. WIND-ENGINES. Joseph Hollingsworth, Jonesborough, Ind. Filed Mar. 23, 1878.



Claim.—The combination, with the wheel B and its rotating shield S, of the vane C', having arm *d*, forming a stop for the vibrating hinged wing *c'*, the fixed wing *c*, and spring *e*, secured to the said wings, substantially as specified.

204,045. HINGES. James A. Hoxse, Bridgeport, Conn. Filed Mar. 15, 1878.

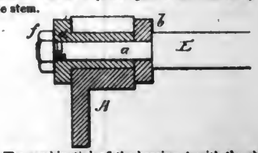


Claim.—1. A hinge having a forked strap of corresponding width from its base to its outer end, and a one-part strap of a width at its base corresponding to that of the forked strap, and with an arm the counterpart of the space between the forks of the forked strap.

2. The hinge consisting of the forked strap having heel projections, and the single-arm strap with heel projections interlocking with those of the forked strap, and united with them by a pin, substantially as set forth.

204,046. BEARINGS FOR RUB-ROLL SHAFTS. Daniel Hyde, Philadelphia, Pa., assignor to William Tetlow, James Lindsay, Daniel Hyde, and Wm. G. Lindsay, same place. Filed Mar. 4, 1878.

Brief.—The shaft is reduced at the end so as to form a stem, which is threaded at its outer end. On this stem is first placed a washer, and then a sleeve having a flange at its outer end. The sleeve encompasses the stem of the shaft, and is confined in place against the washer by means of a nut on the end of the stem.



Claim.—The combination of the bearing A with the shaft E, its threaded stem *a*, collar or washer *b*, flanged sleeve *d*, and nut *f*, as specified.

204,047. BROOCH-PINS. Joel Jenkins, Brooklyn, N. Y. Filed Jan. 30, 1878.



Claim.—1. As a new article of manufacture, bearing B for brooch-pins, with the tabular portion *b* and the flat portion *c* thereof integral and in continuous stripe, and the head *d* of the pin formed solid in continuous stripe, with its several parts integral, and with holes *b* and *c* drilled therein, the bearings and pin beads being complete when cut into sections without the use of solder, substantially as described.

2. The tongue of a brooch-pin bearing flat on two sides and serrated on its edges, substantially as and for the purpose set forth.

204,048. DIES FOR CUTTING SCREW-THREADS. M. C. Johnson, Hartford, Conn. Filed Feb. 9, 1878.

Brief.—The diameter of the thread cut is adjusted by set-screws passing through the collet and resting upon a shoulder of the body, and the socket in which the collet is adjusted thereto by means of set-screws passing through the outer collar.

Claim.—1. The combination of the collet L and its contained cutters K with the body A and its vertical slides G, connected in the manner described, so as to permit of the removal and substitution of different collets and cutters, as herein set forth.

2. The screws O, in combination with the collet L, the body A, the slides G, and the inclined backed cutters K, as a mechanism for adjusting the radial position of the cutters, substantially in the manner herein described.

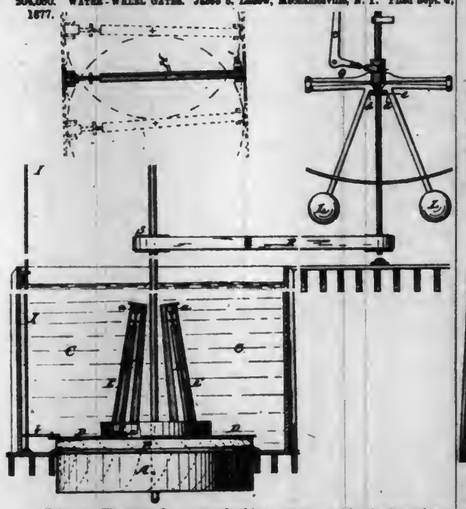
3. The combination of the clamping-screw E with the collar D and the body A, for tightening the socket of the collet L, substantially as herein described.

204,049. CHURN-MOTORS. George W. Jones, Farmington, Ky. Filed Feb. 26, 1878.



Claim.—The combination, in a churning apparatus, of the differential double wheel and pulley E F, the belt G, the crank I, and lever I, each provided with the series of holes *d*, the pitman H attached thereto, and the dasher-rod K, all constructed and arranged as shown and described, whereby the described adjustment of parts may be made according to the quantity of cream to be churned.

204,050. WATER-WHEEL GATES. Jacob S. Ladow, Mechanicsville, N. Y. Filed Sept. 4, 1877.



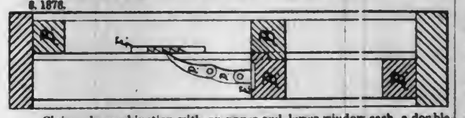
Claim.—1. The gate of a water-wheel hung to move with a horizontal motion, as described, in combination with an actuating-governor, as set forth.

2. The gate of a water-wheel suspended upon standards having segmental ends bearing against plane surfaces, substantially as and for the purpose described.

3. The gate of a water-wheel suspended by means of stanchions E, standards H, having segmental ends, and sockets *a* and *a'*, substantially as described.

4. The water-wheel gate suspended on standards, as described, and connected to a governor by means of the rock-shaft I, having arms *b b'*, link K, and toggle-lever *c*, substantially as described.

204,051. FASTENERS FOR MEETING-RAILS OF SASHES. Jacob M. Keech, Philadelphia, assignor of one-half his right to John H. Harner, Leverington, Philadelphia, Pa. Filed Apr. 8, 1878.



Claim.—In combination with an upper and lower window-sash, a double-jointed brace, D, as shown and described, and for the purpose specified.

204,052. MOTORS FOR STREET-CARS. Jos. F. Kelley, Washington, D. C. Filed Apr. 13, 1878.

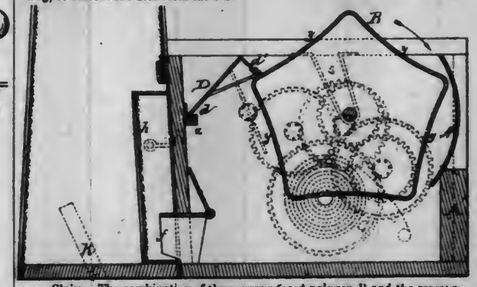
Claim.—1. In an engine for railway-cars, the combination, with the traction-wheels C D thereof, of a horizontal revolving weighted wheel, E, supported upon the tops of the traction-wheels and driving them, as set forth.

2. In an engine for railway-cars, the combination of a horizontal revolving weighted wheel, E, of the traction-wheels D D, one upon the other, and the single traction-wheel C, upon which the weight is supported for transmitting speed, as described.

3. The combination, with a horizontal revolving weighted wheel E and the traction-wheels C D D, upon the tops of which it is supported for operation, as described, of the face gear-wheel I, the shifting-pinions J and P, and their connections with the crank-shaft, for the purpose specified.

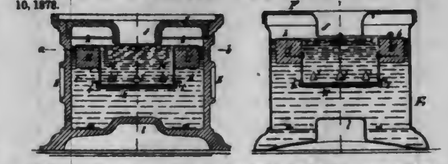
204,053. FLY-TRAPS. D. S. Kidder, Turner's Falls, Mass. Filed Sept. 15, 1877.

Brief.—The polygon, journaled in the case, receives its motion by means of clock-work. The flies received by the polygon are conveyed to an inner chamber, and removed from the polygon by means of a scraper. The front of the case is formed of wire-netting, so that the light to the flies may decrease gradually. To the rear of the case is attached an auxiliary cage, made of netting, to receive the flies from the case.



Claim.—The combination of the concave-faced polygon B and the removable scraper D, bent at its longitudinal edges, as described, and having its lower edge *d* resting loosely in a grooved ledge or bracket, *s*, on the inner wall of the chamber *a*, substantially as and for the purpose specified.

204,054. INKSTANDS. Friedrich Klingspor, Jr., Siegen, Westphalia, Germany. Filed Apr. 10, 1878.



Claim.—1. In combination with an inkstand, the floating chamber H, provided with a cork ring, G, or its equivalent, the openings *i*, and the india-rubber or other suitable covering *k* in its bottom, arranged and combined in the manner and for the purpose substantially as set forth.

2. The chamber H, made in two parts, and attached to the cork ring G, in the manner and for the purpose substantially as described.

204,055. LOCKS. John Klissing, Pittsburg, Pa. Filed Apr. 17, 1878.

Claim.—1. The combination of the bolt B, having the notches *b b'*, and the swinging pawl D, pivoted in the case, and adapted to lock the bolt either within or out of the lock-case, substantially as and for the purposes set forth.

2. The pawl D, pivoted in the lock-case, and provided with the arms *d d'* and key-hole *h*, substantially as and for the purposes set forth.

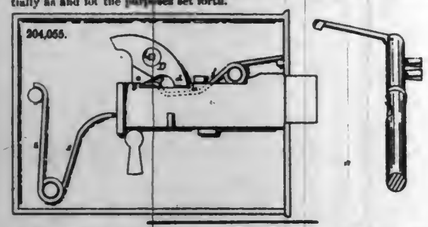
3. The combination of the bolt B, having the notches *b b'*, the spring *f*, and the pawl provided with the arms *d d'*, and having the key-hole *h* formed

therein, substantially as and for the purposes set forth.

4. The bolt-key herein described, provided with a pawl-key at the end thereof, each key being adapted to operate a separate and distinct lock, substantially as and for the purposes set forth.

5. The combination of the bolt-locking key hereinbefore described with the pawl-key *i*, pivoted thereto, and adapted to fold into the bolt-key, substantially as and for the purposes set forth.

204,055.



204,056. PLANING-MACHINE. John B. D. Leavitt, Lebanon, N. H. Filed Mar. 1, 1878.

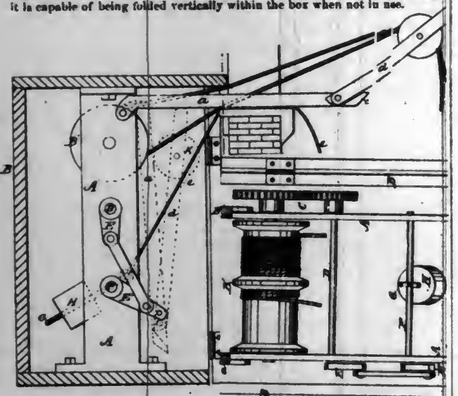
Brief.—The pressure-roll is caused to bear upon the work by means of an elliptic metal spring placed between projections upon a side piece of the machine, adjustable bearings for the roll, and rods interposed between the bearings and ends of the spring, but independent of the same.



Claim.—In a planing-machine, a pressure-roll having its bearings in adjustable boxes, in combination with an elliptic or flat metal spring, and vertical rods interposed between the boxes and ends of the spring, and independent of the same, substantially as and for the purpose set forth.

204,057. FIRE-ESCAPES. John M. Lonsale, Paincourtville, La. Filed Apr. 17, 1878.

Brief.—The descent is regulated by means of a pendulum, consisting of a vibrating weight having an adjustable radius. The ropes are reversibly wound upon drums in a box or inclosure, and pass over pulleys at outer end of a folding frame, which is pivoted at its inner end to a frame within the box, so that it is capable of being folded vertically within the box when not in use.



Claim.—1. In combination with the drum or pulley and its attached ropes, the gearing C, crank-shafts D and F, having cranks E E', connected by a link which permits rotary reciprocating movement of shaft F without allowing complete rotation, and the radius-bar G, having a weight attached, all as shown and described.

2. The radius-bar G, screw-threaded, as shown, the adjustable weight, and rock-shaft F, in combination with the rotary shaft D and drum B, having ropes attached, as and for the purpose specified.

3. In combination with a box or wash-stand, B, having an open front, and the drum and ropes of the fire-escape apparatus proper, the frame consisting of the jointed bars *a* and *d*, hinged to the frame A within the box, in the manner described, whereby said frame is adapted to be extended or folded into vertical position within the box, as specified.

204,058. DEVICES FOR FOLDING COTTON BATTING OR WADDING. Willard Lewis, Walpole, Mass. Filed Jan. 30, 1878.

Brief.—The sheet of wadding or batting is folded in passing over the plate by the combined action of the guide and horn, the two edges of the material coming into line and forming the fold. The guide is adjustable on the main plate, so that sheets of varying width may be folded.

Claim.—1. A device for folding cotton batting or wadding, consisting of a plate, A, conical or curved guide B, and a plate or guide, C, substantially as set forth.

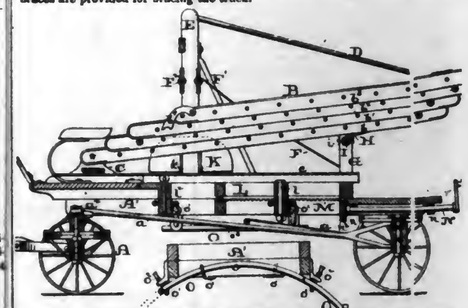
2. The combination, with the plate A and guide B, of the adjustable guide or plate C, as and for the purpose specified.

204,058.



234,059. FIRE-ESCAPE LADDERS. John J. Lucas, Belleville, Ill. Filed Mar. 14, 1878.

Brief.—An extensible ladder, the foot of lower section of which is provided with a slide or shoe, which travels upon ways upon a turn-table, and also upon the top of truck. The ladder is elevated by ropes attached to the slide or shoe, which then pass back over pulleys at rear of turn-table platform, and thence up and forward to a windlass upon the frame on the turn-table, to the upper ends of which frame are pivoted brace-rods, the outer ends of which are pivoted to the upper ends of the lower ladder-section. Curved sliding braces are provided for bracing the truck.



Claim.—1. The combination of the turn-table L, ways *c c*, ladder B, slide C, standards E E, and braces D D, substantially as described.

2. The combination of the ladder B, slide C, ways *c c*, braces D D, and standards E E, substantially as described.

3. The combination of the ladder B, slide C, ways *c c*, braces D D, standards E E, cords F F, pulleys *f f*, standards G G, and shaft F', substantially as described.

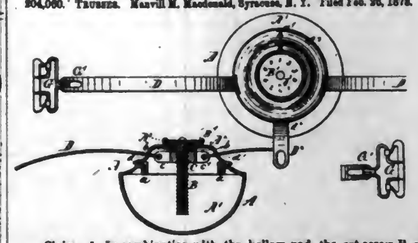
4. The turn-table L, having the ways *c c*, in combination with the ladder B, substantially as described.

5. The combination of the turn-table L, the ways *c c*, the ladder B, slide C, standards E E, and braces D D, substantially as described.

6. The combination of the bed A^1, ladder B, ways *c c*, slide C, turn-table L, standards E E G G, cords F F, shaft F', braces D D, cords H H, shaft I, and pulleys *f* h h^1 h^2, substantially as described.

7. In combination with the wagon A, the braces C C, having the arms *o o* and bars o^3 o^3, and arranged to move in the guides o^2 o^2, and be fastened by the screws o^3 o^3, substantially as described.

204,060. TRUSSES. Manvill M. Macdonald, Syracuse, N. Y. Filed Feb. 26, 1878.



Claim.—1. In combination with the hollow pad, the set-screw B, nut C, and arms D D^1, situated upon opposite sides of the screw and actuated by the nut, substantially as set forth.

2. The combination, with the pad and the thigh-strap, of the set-screw B, nut C, and arm D^1, for regulating the pressure of the thigh-strap, substantially as set forth.

3. The combination of the screw B and nut C with the arms D D^1, mounted loosely in the sides of the pad, to form a flexible attachment, substantially as set forth.

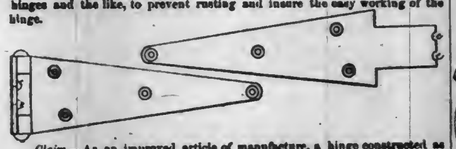
4. In combination with the screw B and nut C, the horizontal arms D D^1 and the vertical arm D^2, adapted to regulate simultaneously the pressures upon the pad of the body-strap and the thigh-strap, substantially as set forth.

5. In a truss, a pad provided with an index upon its outer face, rotating with the screw, for indicating the pressure exerted by the pad, substantially as set forth.

6. A truss-pad consisting of a semi-spherical shell and a cap-plate, these parts being united by means of screw-threads, substantially as set forth.

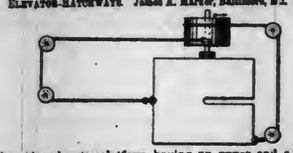
204,061. HINGE. Woodbury S. Mains, Portland, Me. Filed Oct. 16, 1877.

Brief.—One leaf or section of a pair of strap-hinges is provided with notches in its joint end, in such manner that when the joint portion is bent around there is formed in it, at or near its junction with the opposite leaf, one or more oil-holes for lubricating purposes, specially adapted for trap-door hinges and the like, to prevent rusting and insure the easy working of the hinge.



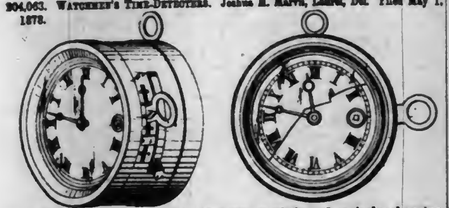
Claim.—As an improved article of manufacture, a hinge constructed as described, having one or more oiling holes or notches, *c*, arranged in one of its joint-tubes *b*, so as to lead out of the angular space formed between such joint-tube and the flat portion of the leaf thereof, substantially as and for the purpose set forth.

204,062. ELEVATOR-HATCHWAYS. James A. Marker, Baltimore, Md. Filed Feb. 1, 1878.



Claim.—An elevator-platform having an upper and a lower rack fitted thereto, a winding-drum on a shaft, carrying a pinion adapted to engage with said racks, a sliding hatch-cover, and cords running over sheaves, connecting the said drum and cover, combined substantially as specified, whereby the hatch-cover is slid from and over the hatchway by the movement of the elevator-platform, for the purposes described.

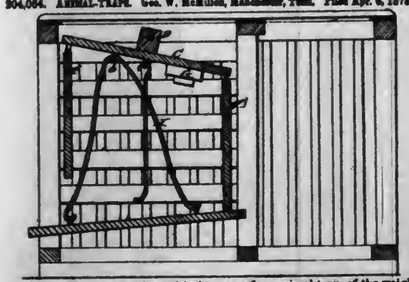
204,063. WATCHMEN'S TIME-DETECTERS. Joshua H. Marvil, Laurel, Del. Filed May 1, 1878.



Claim.—1. A watchman's time-detecter consisting of an inclosed casing containing a clock or time movement, the latter having a lever attached to its winding-stem, which projects through a slot of such length in the side of the casing that the lever will be engaged by the upper edge of the slot, so as to stop the clock-work at stated and limited intervals, thus necessitating rewinding by the watchman from time to time, substantially as and for the purpose specified.

2. In combination with the casing and the operating-lever, the adjustable gage and hinged strip for securing said gage in place, substantially as and for the purpose specified.

204,064. ANIMAL-TRAPS. Geo. W. McMillen, Manchester, Tenn. Filed Apr. 6, 1878.

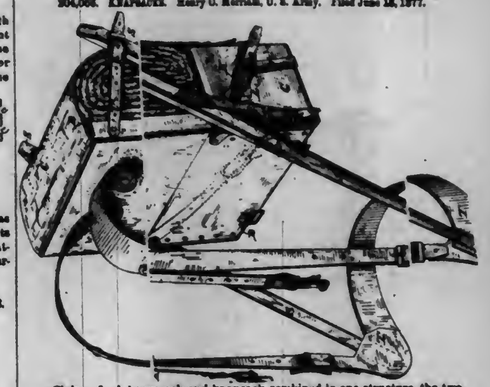


Claim.—The combination, with the cage of an animal-trap, of the weighted tilting top board C, forming the roof, with inner and outer doors *F F'*, the stirrups I I, and platform H, operated in the manner as described.

204,065. PROCESSES OF PREPARING DOUGH. Max Mahlhold, Delaware, Ohio. Filed Dec. 31, 1877.

Claim.—The herein-described process of preparing dough for the manufacture of bread, consisting in, first, preparing a hop-liquor by boiling down a suitable quantity of hops with water, and adding barley-malt and wheat-flour in about the proportions specified; second, preparing a dough from wheaten flour and water in the usual manner; third, mixing with the dough so prepared suitable quantities of lard, salt, tartaric acid, and baking-soda; and, lastly, adding a suitable quantity of the hop-liquor, the preparation of which forms the first step in my process, substantially as described, and for the purpose set forth.

204,066. KNAPSACKS. Henry G. Morrison, U. S. Army. Filed June 18, 1877.



Claim.—1. A haversack and knapsack combined in one structure, the two being formed in the same frame and inseparably connected, substantially as described.

2. A metallic-framed knapsack, the frame of which is extended to form the frame of a haversack, substantially as described.

3. The sheet-metal frame of the knapsack and haversack, constructed with end recesses for the reception of combined ration-cases and cooking utensils, substantially as described.

4. The end provision-cases G G', in combination with the recesses in the metal frame and the intermediate ration-pocket H, arranged within the frame of the haversack, substantially as described, for the purpose specified.

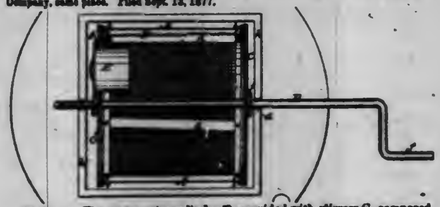
5. The combination of the buckle and straps J K L with the pocket H, cases G G', and frame of the knapsack, substantially as described, for the purpose specified.

6. The side braces S, combined with the knapsack by means of the straps and buckles U V and the sockets in the hip-strap T, substantially as described.

7. The side braces S, combined with the knapsack and haversack by means of the adjustable straps U V, substantially as described.

8. The side braces adapted to be united to form a shelter-tent pole by means of the beveled ends and the leather loops, substantially as described.

204,067. COFFEE-ROASTERS. Jonathan Miller, Trenton, N. J., assignor to Pressure Extract Company, same place. Filed Sept. 13, 1877.



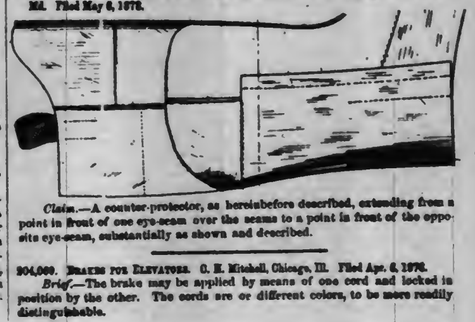
Claim.—1. The woven-wire cylinder B, provided with stirrers G, composed of angular strips of sheet metal having their ends extended beneath and secured by a marginal rim, substantially as described.

2. The cylinder-heads C C', cast with concentric grooves *b c*, and combined with the sheet-metal cylinder A, the woven-wire cylinder B, and the central shaft, and adapted to be clamped together, substantially as described.

3. The cylinder-head C, cast with a channeled boss, *f*, and combined with the central shaft having pin *d*, the intermediate shell, the opposite cylinder-head, and a clamping-nut arranged upon said central shaft, substantially as and for the purpose described.

4. The cylinder C', cast with an eccentric opening having flanged edges *g*, in combination with the cap E, substantially as shown and described.

204,068. MANUFACTURE OF BOOTS. William B. Miller and Miller B. Creighton, Baltimore, Md. Filed May 6, 1878.



Claim.—A counter-protector, as hereinbefore described, extending from a point in front of one eye-seam over the seams to a point in front of the opposite eye-seam, substantially as shown and described.

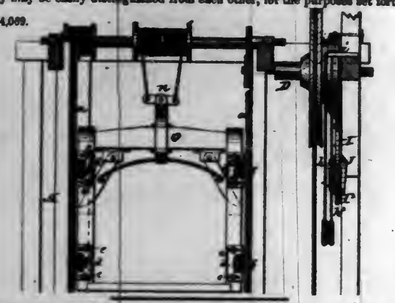
204,069. BRAKES FOR ELEVATORS. C. H. Mitchell, Chicago, Ill. Filed Apr. 6, 1878.

Brief.—The brake may be applied by means of one cord and locked in position by the other. The cords are of different colors, to be more readily distinguishable.

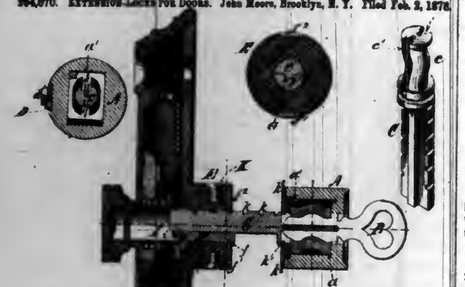
Claim.—1. In an elevator, the combination, with the pulley G and brake band H, of the brake-lever I, provided with the prong I', and the lock-lever J, constructed and operating substantially as and for the purposes set forth.

2. In combination with an elevator-car, a brake and locking device, the cords or lines *h* and *h'*, said cords or lines being of different colors, whereby they may be easily distinguished from each other, for the purposes set forth.

204,069.



204,070. EXTENSION-LOCKS FOR DOORS. John Moore, Brooklyn, N. Y. Filed Feb. 2, 1878.



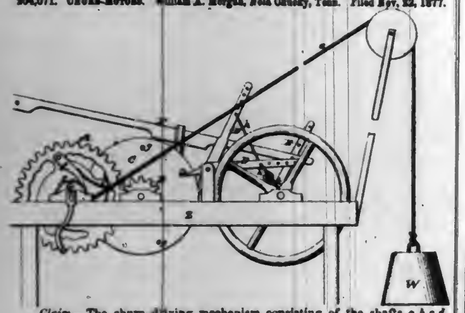
Claim.—1. The tumblers *a*, provided with the inwardly-projecting tongues a^2, in combination with a rectangular chamber and a crooked rotating stem provided with the longitudinal slots *c'*, substantially as and for the purpose set forth.

2. A cylinder provided with a rectangular chamber for containing a series of sliding tumblers and for receiving the crooked upper portion of the rotating stem, in combination with the slotted steadying-plate D and the box E, substantially as described.

3. The sliding stem C, in combination with the box E and the semi-cylindrical piece F, provided with a projecting collar or crank for operating the cam-shaft I and supporting the semi-cylindrical portion of the stem C in the bearing *c*, substantially as described.

4. The stem C, provided with the recesses *k* in its periphery, in combination with the stop-plates f' and f^2, substantially as described.

204,071. CHURN-MOTORS. William A. Morgan, Polo Church, Tenn. Filed Nov. 22, 1877.



Claim.—The churn-driving mechanism consisting of the shafts *a b c d*, gearing A B, drum G, pawl *f*, ratchet *r*, verge-wheel C, stroke-levers D D, crank-shaft *d*, weight W, and rope *e*, substantially as specified.

204,072. WHIP-SOCKETS AND REIN-HOLDERS. Henry W. Neal, Wellsville, Pa. Filed Mar. 27, 1878.

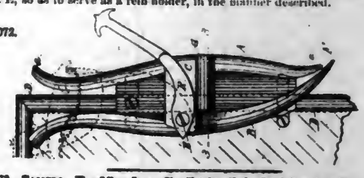
Claim.—1. The whip-socket herein described, consisting of a stationary concave jaw, A, constructed with a front leg, C, and a flat back, A', by which it is attached to the dash or other part of the carriage, and a movable concave jaw, B, connected to the first by a pivot, E, passing through the leg C and jaw B and into the back A', substantially as specified.

2. The stationary jaw A, constructed with a flat back, A', connecting leg C, and barrel G, as and for the purposes specified.

3. The combination, with the jaws A B, pivoted together, of the locking-screw H, fitted in a threaded socket in the jaw A, and bearing against the jaw B below the pivot, as described.

4. The combination of the whip-socket A B and the arm R, turning on the pivot E, so as to serve as a rein-holder, in the manner described.

204,072.



204,073. TASSELS. Wm. Other, Jersey City Heights, N. J. Filed Dec. 7, 1877.

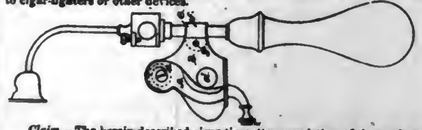
Brief.—The tube is of metal, and is inserted through the mold-covering without forming the usual openings therein. In order to confine said tube in position, the lower end is split, and the split portion spread beneath the head.



Claim.—A tassel composed of a series of molds, pendent cords, a cord-supporting head, and a metal tube, said tube having its end split and bent outward to form a head, and inserted through central openings in said molds and tassel-head, as and for the purpose set forth.

204,074. CIGAR-TIP CUTTERS. George Ohmer, Dayton, Ohio. Filed May 6, 1878.

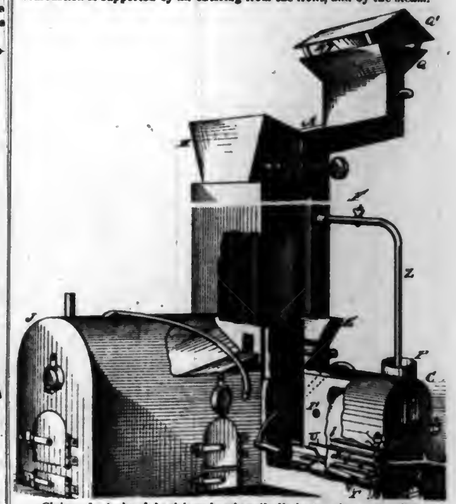
Brief.—The cutter has attached to it a clamp, whereby it can be attached to cigar-lighters or other devices.



Claim.—The herein-described cigar-tip cutter, consisting of the perforated plate B, with its integral guide-slot H and its clamping-arm *s*, the spring cutting-blade A, pivoted to the plate and held against it by the guide-slot, and the adjustable clamp F, the whole constructed and adapted to be attached to a cigar-lighter or other standard, substantially as shown.

204,075. FURNACES FOR DESULPHURISING ORE. C. Olsted, Boulder, Colo., assignor to Olsted Furnace Company. Filed Aug. 4, 1877.

Brief.—The ore is dried on the drying-floor, passes to the hopper, where it is stirred, and then falls through ore-flues to the desulphurizing-chamber. These flues are heated by the hot gases from the heating-furnace flues inclosing them, and the drying-floor is also heated by the same gases passing beneath it. Fumes from the roasting-chamber impinge against the condensing-deflector above, and are there collected. The roasting-chamber is heated externally by the heating-furnaces, which also superheat steam to inject through its side walls, and internally by the combustion of lignite from the hopper, which combustion is supported by air entering from the front, and by the steam.



Claim.—1. A desulphurizing-chamber, C, distinct and separate from the furnace, and having no flue-connection therewith, in combination with heated ore-passages B, arranged between the flues G, and having no connection therewith, whereby the ore is dried and heated before its entrance to the desulphurizing-chamber, substantially as described.

2. Furnace J, with a boiler, and an auxiliary furnace, K, with a superheater, in combination with pipe V, with its branch pipes *d*, and the desulphurizing-chamber C, by means of which superheated steam is injected into the latter.

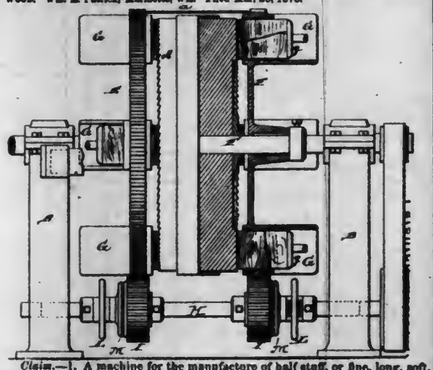
3. The combination, substantially as hereinbefore described, of the chamber C, air-chambers I I, lying on each side of said chamber and communicating therewith by means of the air-holes I', and air-regulating dampers *f*, for the purposes set forth.

4. The inclined drying-floor A, leading into the hopper H, in combination with the main flue L under said floor, and flues G G N' F, whereby the ore is dried before feeding the same to the ore-chamber, substantially as described.

204,076. COMPOSITIONS FOR TEMPERING, LUBRICATING, &c. James Park, Troy, N. Y., assignor of one-half his right to Ralph R. Osgood, same place. Filed Mar. 2, 1878.

Claim.—The herein-described compound for metal-workers' use, for lubrication, and for tempering of metals, the same consisting of water, sal-soda, and quicklime, united in about the proportions—that is, to one gallon of water eight ounces of the soda and one ounce of the lime—and in a manner substantially as set forth.

204,077. ROTARY GRINDING-MACHINES FOR THE MANUFACTURE OF PAPER-PULP FROM WOOD. Wm. R. Patrick, Marinette, Wis. Filed Mar. 23, 1878.



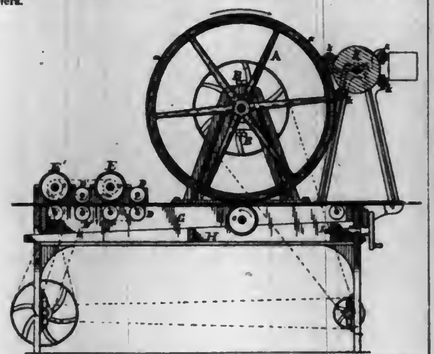
Claim.—1. A machine for the manufacture of half stuff, or fine, long, soft, and strong fibrous material, from wood, consisting of a frame, B, scraping-cylinder A, disks E, with chambers G, pinions I, friction-plates M, and hand-wheels L, for the purpose set forth.

2. The combination, with the rotary cylinder A, provided with scraping-surfaces C, and mounted upon a frame, B, of two revolving disks, E, containing pockets or chambers G, substantially as described.

3. The combination of two geared disks, having chambers for receiving the wood, and revolving upon a shaft, F, in connection with rotary cylinder A, each provided with a gear-pinion revolving upon a shaft acted upon by friction-plates M at discretion, substantially as set forth.

204,078. GRAINING-MACHINES. George Palstring Cincinnati, Ohio. Filed Apr. 20, 1878.

Brief.—The apparatus consists of a cylinder having on its face a metallic plate engraved or electrotyped in imitation of the grain of wood; a device for inking the raised portions of said plate; a roller for supporting the soft wood in its passage under the graining-cylinder, and a set of feed, polishing, and filling rollers. A board or strip of soft wood being passed under the graining-cylinder is impressed with the desired figure, and the impressions are filled, and the wood polished by subsequent passage through the feed and filling rollers.

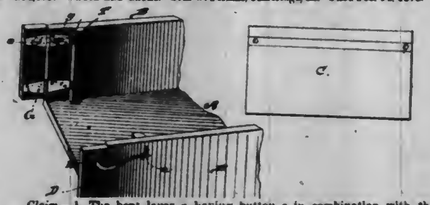


Claim.—1. In a graining-machine, the drum A, having on its peripheral face an electrotyped or engraved plate, *a*, the exact counterpart of the grain of some particular kind of wood, the rollers K *k* near the upper part of said drum, for supplying the composition to the plate, and the idler C beneath the drum, for supporting the wood to be grained, substantially as set forth.

2. The series of bed-rollers F F, feed and polishing and filling rollers D D, D' D', and E E', the latter rotating in the contrary direction to the former, and being composed of a cylinder, *e*, surrounded with canvas, leather, or other similar material, as and for the purpose set forth.

3. In combination with the drum A and engraved plate *a*, the feed-rollers D D and D' D', polishing and filling rollers E E', and bed-rollers F F', as and for the purpose specified.

204,079. WAGON END-GATES. Seth W. Perkins, Cambridge, Ill. Filed Feb. 14, 1878.

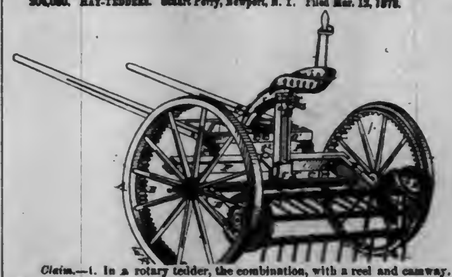


Claim.—1. The bent lever *a*, having button *c*, in combination with the hinge G, having opening *g*, substantially as specified.

2. The lever *a*, having button *c* and screw-thread, as described, in combination with a gate, D, having plate *k* and opening *g*, substantially as set forth.

3. The gate D, provided with lever D and hinge G, and recess *i*, in combination with an end-board, C, cleats T, and staple *b*, substantially as described.

204,080. HAY-TEDDERS. Stuart Perry, Newport, N. Y. Filed Mar. 12, 1878.



Claim.—1. In a rotary tedder, the combination, with a reel and cam-way, of equivalent mechanism for rocking the fork-shafts of the reel, of a cross-bar connecting the forward ends of the side pieces of the tedder and a through main axle, which is rigidly secured to said side pieces by means of collars surrounding the ends of the axle, whereby the frame is braced and strengthened by a single cross-bar and the main axle of the machine, substantially as set forth.

2. The draft-frame of a hay-tedder constructed with a central longitudinal frame for the attachment of a seat-spring, and with inclined or diagonal side pieces for the attachment of thills to the outer surfaces thereof, substantially as set forth.

3. The combination, with the standard and the hand-lever extending laterally outward therefrom, of the driver's seat, located immediately over said standard and horizontal portion of the hand-lever, substantially as set forth.

4. The combination, with the standard and segmental rack-bar, located beneath the driver's seat, of the hand-lever and locking-bar, extending laterally from beneath the driver's seat, and projecting above the same within easy reach of the driver, substantially as set forth.

5. The draft-frame of a rotary tedder provided with a central frame-piece constructed with a central perforated web for the attachment of a pole, and with end plates for bracing and securing the front and rear cross-bars of the draft-frame, substantially as set forth.

6. In a rotary hay-tedder, the combination, with the main axle and the forward cross-bar of the tilting frame, of a yoke for supporting the standard, the ends of said yoke being removably secured to the axle and cross-piece, substantially as set forth.

7. The combination, with the standard and notched sector-bar, of a spring-pressed link and a locking-slide, having lugs formed on its opposite side, which serve as guides for retaining the link in place, substantially as set forth.

8. The combination, with two upright bars forming the standard of a hay-tedder, of a yoke secured to the axle and front cross-piece of a tilting frame, said yoke constructed with rectangular side recesses for receiving the lower ends of the parts of the standards, substantially as set forth.

9. The draft-frame of a rotary tedder, constructed with diagonal outer sides, in combination with thills which are secured to said diagonal sides, substantially as set forth.

10. The draft-frame of a rotary tedder adapted to both thills and pole, said frame constructed with diagonal sides for the attachment of the thills, substantially as set forth.

204,081. SHIRTS. Pulaski B. Pickens, New York, N. Y. Filed Apr. 25, 1878.

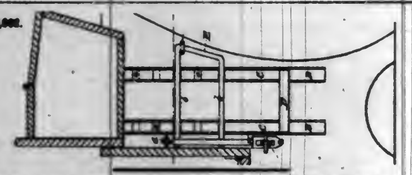


Claim.—The combination, with a shirt neck-band which is provided with two buttons or like fastening devices, respectively situated at equal distances from its center, of a collar the band of which is of equal length to its flap, and which is provided with suitable devices to engage with the fastening devices of the shirt-band, substantially as shown and described, and for the purpose specified.

204,082. SCHOOL-DESKS. John P. Pies, Spades, Ind. Filed Oct. 2, 1877.

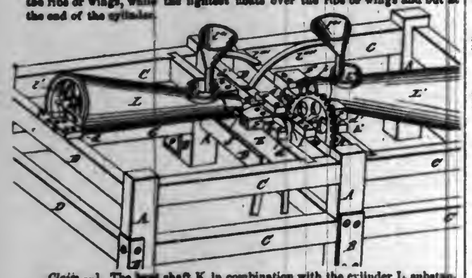
Claim.—The combination of the guides B, slides C, yoke E, and bar H, all constructed and arranged substantially as set forth.

204,082.



204,082. ORE-SEPARATOR. Paschal Plant, Washington, D. C. Filed Jan. 8, 1878.

Brief.—The rotation of the cylinder causes the separation of the heaviest from the lightest substances. The heaviest is retained within the cylinder by the ribs or wings, while the lightest floats over the ribs or wings and out at the end of the cylinder.



Claim.—1. The bent shaft K, in combination with the cylinder L, substantially as shown and described, and whereby a conical motion is imparted to the cylinder, for the purpose set forth.

2. The bent shaft K, with the cylinder loosely attached thereto, in combination with the guides F and pins *f*, substantially as described.

3. The bent shaft K, with the cylinders L loosely attached, in combination with the guides F, guide-pins *f*, and gear-wheel H and pinion I, as described, and for the purpose set forth.

204,084. HALTERS. Thomas Fuller and George W. Warren, Wellsville, N. Y. Filed Feb. 15, 1878.



Claim.—As an improvement in halters, the combination of the nose-strap A, having the cheek-pieces B' B' and sliding loop-ring *g* E, headstall B, and split detachable hitching-strap D, having snap-hooks *f f'*, for uniting it to the rings *b b* of the cheek-pieces B' B', substantially as and for the purposes herein shown and specified.

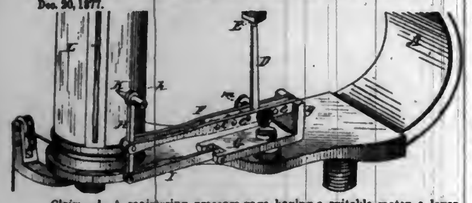
204,085. RESERVOIR BOLSTER-BEARINGS FOR SPINDLES OF SPINNING MACHINERY. Francis J. Rabbeth, Pawtucket, R. I. Filed Nov. 17, 1875.

Brief.—The bolster-bearing is grooved spirally in a direction opposite to the rotation of the spindle, so that the surplus oil carried upward from the reservoir by the spindle is carried downward and back.



Claim.—The combination, with a live spindle and an oil-reservoir which contains the step and the bolster-bearing for the spindle, of a bolster-bearing which is scored or grooved spirally for forcing downward the excess of oil carried upward by the spindle when in motion, substantially as described.

204,086. PRESSURE-INDICATORS FOR STEAM-ENGINES. John Rae, New York, N. Y. Filed Dec. 20, 1877.



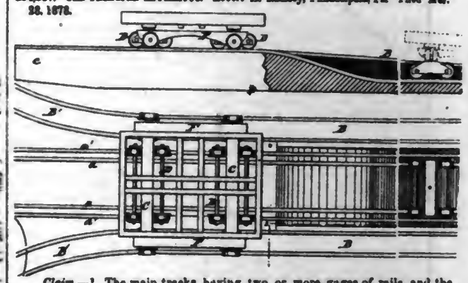
Claim.—1. A registering pressure-gage having a suitable motor, a lever adjustably connected therewith and connected with the pencil-carrying arm, in combination with a moving tablet, sheet, or drum, substantially as described.

2. The combination of the pencil-moving lever F, adjustably-pivoted rod D, and spring A, substantially as described.

3. The combination of the spring A, adjustably-pivoted rod D, lever F, centrally-pivoted pencil-arm H, and link I, substantially as described.

4. The combination, with the hollow spring A, the pencil-lever F, and the adjustable connecting-rod D, of the ball-and-socket joint E, for the purpose stated.

204,087. CAR-TRANSFER APPARATUS. Robert H. Ramsey, Philadelphia, Pa. Filed Mar. 28, 1878.



Claim.—1. The main tracks having two or more gages of rails, and the side tracks arranged in a different plane, and both graded with an incline, as described, and combined with the independent side tracks, to permit the shifting of the trucks to be effected by gravity, as set forth.

2. The inclined graded side rails, combined with the inclined main track, as described, and having a steeper grade at the point where the newly-adjusted trucks receive the burden of the car, substantially as and for the purpose described.

3. The combination, with the main track having two or more gages of rails, of the side tracks, curved outwardly at B', and graded at this point in the same plane with the main track, and extending closer in to the main track at the point where it is graded in a different plane, substantially as described.

204,088. SUSPENSORY-BANDAGES. S. E. G. Rawson, Saratoga Springs, N. Y. Filed Dec. 10, 1877.



Claim.—1. In a suspensory-bandage, the combination of the back or under straps C C, adjustably connected to the sack-supporting strap at a point above the hips of the wearer, substantially as herein set forth.

2. The combination, with the bag A, of the strap B, extending a suitable distance each side of the same, the under straps C C, and the shoulder-strap D, forming a junction with the sack-supporting strap at a point above the hips of the wearer, substantially as and for the purposes herein set forth.

204,089. CARRIAGE-WRENCHES. George W. Remington, Exeter, assignor of one-half his right to George H. Remington, Providence, R. I. Filed Mar. 30, 1878.



Claim.—An improved wrench consisting of a stationary jaw, A, having a rib-piece, D, in combination with a sliding jaw, B, having a concave or grooved seat fitted to the rib D, and an adjusting device, C E, all arranged, relatively to each other, substantially as set forth.

204,090. HAY-RAKES. Artemas Rigby, Upper Stillwater, Me. Filed Apr. 22, 1878.



Claim.—1. The combination, with the lever L on the forward end of the tongue H and arm N on the staple bar, of the connecting-rod M, whereby the rake may be dumped by the person dragging it.

2. The combination, with the rake A C D and tongue H, of the lever L, handle I, rod or brace *k*, rod M, and arm N, substantially as and for the purposes herein set forth.

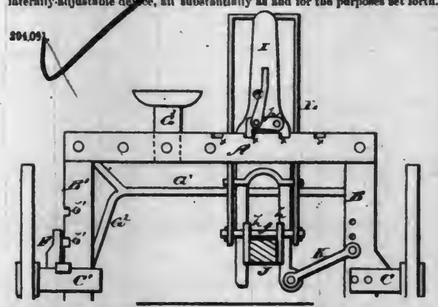
204,091. SULKY-PLOWS. Wallace G. Rogers, Papillion, Nebr. Filed Mar. 16, 1878.

Claim.—1. In a plow-sulky, the frame consisting of the bars A A, vertical bars B B', spindles, and wheels, in combination with tongue E and braces G G' G', substantially as and for the purposes set forth.

2. The combination of the bars A A, forked plate or bar I, with roller *i*, plow-beam J, and the dog *p*, taking into notches on one of the bars A, substantially as and for the purposes set forth.

3. The combination, with the forked plate I and plow-beam J, of the plates *h h*, rod *f*, pivoted stirrup *f'*, the quadrant M, formed with the catch *m*, and a laterally-adjustable device, all substantially as and for the purposes set forth.

204,092.



204,092. TRACK-CLEARERS. George Royal, Truckee, Cal. Filed Apr. 6, 1878.

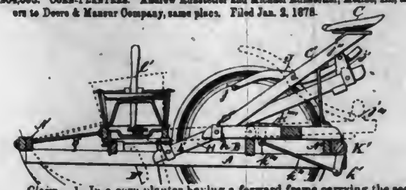
Brief.—The wheel-flange space in frogs, switches, crossings, and at guard-rails is cleared by "cutters" working in pivoted slides connected by a cross-bar, to the center of which is secured a lever, which is fulcrumed upon an axle on the locomotive or truck, the forward end of said lever being movably secured to a loop at the center of truck or frame.



Claim.—1. The combination of the cutters *i*, connected together by a pivoted cross-bar *j*, with the rigid rod *l*, which has its front end fastened to the middle of the truck-frame, its center being pivoted to the axle and its rear end fastened to the cross-bar, substantially as shown.

2. The combination of the hangers *g*, sleeves *h*, connected together across the track by a pivoted cross-bar, *j*, cutters *i*, and rod *l*, the sleeves being pivoted at their upper ends to the hangers *g*, so that the cutters *i* are allowed a lateral motion, substantially as shown.

204,093. CORN-PLANTERS. Andrew Rensteiler and Michael Rensteiler, Moline, Ill., assignors to Deere & Manser Company, same place. Filed Jan. 2, 1878.



Claim.—1. In a corn-planter having a forward frame carrying the seeding devices and a rear frame supported on wheels, the forward frame journaled to the rear frame, so as to permit of either frame oscillating in a vertical plane transversely with the machine, substantially as and for the purpose specified.

2. The lever J, pivoted to the seat-standard O', and arranged to operate with the lever H, having plates *f'* and pulley or roller *f''*, which permits the lever J to slide beneath it, and with the lug or catch *f'''*, against which the end of the lever J rests, substantially as and for the purpose specified.

3. The lever H, having plates *h'*, with ledges *h''* on their upper inner faces, combined with the plate I, having studs *i*, for raising and lowering the forward frame of a corn-planter and permitting easy separation of the parts, substantially as and for the purpose specified.

4. The opening *r*, having walls *r'*, slotted for the lugs on the plates S, and combined to operate with the plates S, spring T, and valves *m*, substantially as described, and for the purpose specified.

204,094. METHODS OF UTILIZING HOT AIR. Silas C. Salisbury, New York, N. Y. Filed Apr. 26, 1878.

Brief.—If the pressure is too great when the heated air is turned off from several of the working-points, it is relieved by the automatic valve.

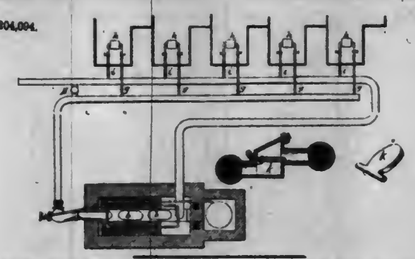
Claim.—1. The process, substantially as herein described, for using a blast of hot air at high temperature, as set forth, substantially in a closed circuit, as set forth, whereby said hot air is conducted to the point of work and returned to the heater in a constantly-recurring succession, as and to the effect set forth.

2. A blowing apparatus, a blast-heater, separate flux and reflux pipes or ducts, combined with a system of connecting-pipes, substantially as shown in Fig. 2, whereby the hot blast is conveyed to the flux-pipe and transmitted therefrom to the reflux-pipe, for the purpose of distributing said hot blast to a large number of intermediate points.

3. A blowing apparatus, a blast-heater, separate flux and reflux pipes, connected by lateral pipes *i* and *g* with interposed apparatus *h*, for utilizing the heat.

4. A blowing apparatus, a blast-heater, separate flux and reflux pipes, connected by lateral pipes *i* and *g*, and interposed apparatus *h*, combined with an equalizing-valve, H, substantially as set forth.

204,094.

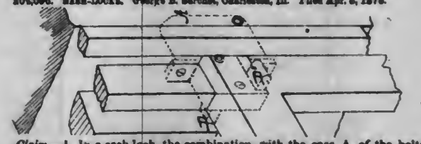


204,095. SHIRT OR SLEEVE-STUDS. Narcisse Salmon and Albert Delaviere, Paris, France. Filed Oct. 3, 1877.



Claim.—A shirt or sleeve stud or button comprising the combination of a shank for insertion in a button-hole, a cross-bar and spring connected rigidly by a spindle, and deflecting inclines mounted upon the said shank, whereby the cross-bar is precluded from moving without deflecting the spring, and is held against the shank, substantially as and for the purpose set forth.

204,096. SASH-LOCKS. George B. Sarchet, Charleston, Ill. Filed Apr. 9, 1878.

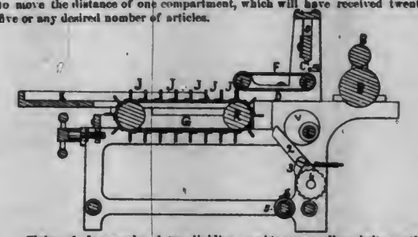


Claim.—1. In a sash-lock, the combination, with the case A, of the bolts C C', having recesses *a a'*, and provided with the stops D D', extending in opposite directions through slots in the case, the springs *d d'*, and the double reverse-action tumbler D^2, having slotted hub *b*, substantially as and for the purposes herein set forth.

2. The hooks or lugs *i i*, formed at the ends of the double-action tumbler D^2, in combination with the bolts C C', for the purposes herein set forth.

204,097. MACHINES FOR COUNTING LABELS, &c. C. E. Sawyer, Boston, Mass. Filed Dec. 1, 1875.

Brief.—A carrier having compartments is intermittingly operated by a pawl and ratchet, which is actuated by a secondary pawl and ratchet attached to a cam. One revolution of the secondary ratchet and cam, involving twenty-five or any desired number (according to the number of teeth in said secondary ratchet) of movements of the pawl of the secondary ratchet, causes the carrier to move the distance of one compartment, which will have received twenty-five or any desired number of articles.



Claim.—1. In a card- and tag dividing machine, an endless belt, or other equivalent means therefor, having a series of compartments, in combination with shears or cutters and feed-rolls, substantially in the manner described, as and for the purposes set forth.

2. In the above-described automatic card and tag dividing machine, an endless belt, or other equivalent means therefor, having a series of compartments or spaces, actuated by a pawl and ratchet, or equivalent devices, in combination with a cam, lever, pawl, and ratchet, which impart an intermittent motion to the same, as and for the purposes set forth.

3. The above-described automatic card or tag counting machine, consisting essentially of feed-rolls, shears, and dividing apparatus, in combination with a pawl and ratchet, cam and lever, whereby an intermittent motion is imparted to the dividing apparatus, each space of which receives the same number of cards or tags as they are cut from the material, substantially in the manner described, as and for the purposes set forth.

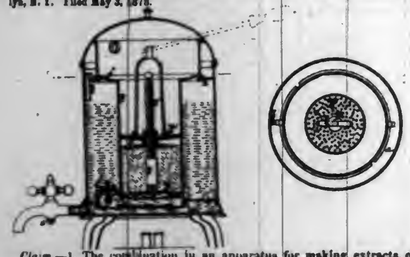
4. In combination with feed-rolls B and cutters or shears C, the conveyer F and dividing mechanism G, substantially in the manner described, as and for the purposes set forth.

5. In combination with feed-rolls B and shears C, the endless dividing-belt G, compartments J, and table K, constructed and arranged to operate substantially in the manner described, as and for the purposes set forth.

204,098. FINISHING THE SURFACES OF PAPER OR CLOTH. Charles E. Sawyer, Boston, Mass., assignor of one-half his right to E. L. Perkins, same place. Filed Feb. 16, 1876.

Claim.—The method of finishing card-board, playing-cards, or other articles requiring a smooth white repellent surface, consisting in coating the article with melted paraffine, then treating the same with pulverized talc, substantially in the manner described, as and for the purposes set forth.

204,099. APPARATUS FOR MAKING EXTRACTS OF COFFEE, &c. Balthasar Schmitz, Brooklyn, N. Y. Filed May 3, 1878.

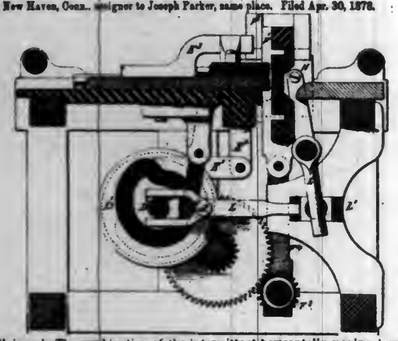


Claim.—1. The combination, in an apparatus for making extracts, of a reservoir, a cylinder situated within the reservoir, a weighted valve by which the cylinder communicates with the reservoir, and a piston-rod carrying two foraminous heads, which are fitted in the cylinder, all adapted to operate substantially as described.

2. The combination, in an apparatus for making extracts, of a reservoir, a detachable cylinder situated within the reservoir, a weighted valve which is secured to the cylinder, and by which the cylinder communicates with the reservoir, a locking device for holding the cylinder in position, and a piston-rod carrying two foraminous heads, which are fitted in the cylinder, all adapted to operate substantially as described.

3. The combination, in an apparatus for making extracts, of a reservoir, a cylinder situated within the reservoir, a weighted valve by which the cylinder communicates with the reservoir, and a piston-rod carrying two foraminous heads, which are fitted in the cylinder, and one of which is adjustable lengthwise of the rod, all adapted to operate substantially as described.

204,100. MACHINES FOR FINISHING PAPER FELT AND OTHER FABRICS. Worthington Scranton, New Haven, Conn., assignor to Joseph Parker, same place. Filed Apr. 30, 1878.



Claim.—1. The combination of the intermittent horizontally-moving jaws E D, combined with the reciprocating jaws F G, the said two pairs of jaws working together to bring the paper between the said two pairs of jaws, and operating upon it in that condition, substantially as described.

2. The combination of the intermittent horizontally-moving jaws E D, combined with the reciprocating jaws F G, the said two pairs of jaws working together to bring the paper between the said two pairs of jaws, and operating upon it in that condition, and an intermittent feed to take up the paper as fast as operated upon, substantially as described.

204,101. CLOTHES-POUNDER. George M. Smith, Delphi, Ind. Filed Mar. 2, 1878.

Brief.—Improvement on the patent granted June 24, 1873, to L. S. Enos, and numbered 140,261.



Claim.—The clothes-pounder herein described, consisting of the cone A and socket B, the inverted cone C, extending from the center of the cone A to the bottom of the socket B and rigidly connected with both, and the rim D, secured at its upper edge to the outer cone A, and having its lower edge connected by braces to the base of said cone, thereby forming an air-chamber, *b*, all constructed and combined as and for the purposes specified.

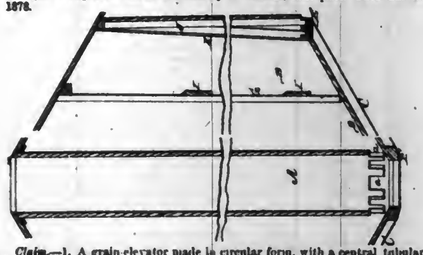
204,102. ANIMAL-TRAP. Sylvester Buell, Watertown, N. Y. Filed Mar. 20, 1878.



Claim.—1. The combination, with the case or box A, of one or more end doors, C, hinged at the bottom and arranged to fold outwardly, and the falling doors D D, hinged at right angles to the end doors and arranged to fold inwardly to a central line and connected with the end doors for reverse movement, substantially as described.

2. The combination, with the pit B and removable cage K, having door L, of the removable box A, having doors C and D connected by shafts, rock-arms, and rods, substantially as described.

204,103. GRAIN-ELEVATORS. Orlando D. Spalding, Mitchell, Iowa, assignor of two-thirds his right to Origen S. Williams and Timothy F. Williams, same place. Filed Mar. 30, 1878.



Claim.—1. A grain-elevator made in circular form, with a central tubular shaft and a series of bins arranged around the same, and all running to the center, as herein set forth.

2. In a circular grain-elevator, the combination of the central tubular shaft A, inclined sills C C, floor D, outside slotted hoop E, inside sill F, and wall-studdings J, substantially as set forth.

3. In a circular grain-elevator, the combination of the central tubular shaft A, wall-studdings J, floor D, studding G, partitions H, and braces I, all constructed substantially as and for the purposes set forth.

204,104. BED-BOTTOMS. Menzo Stansel, Yorkville, Ill. Filed Apr. 13, 1878.



Claim.—The combination of the bottom *a*, braces *b*, head *c*, rods *d*, ratchets *g*, and guides *i*, substantially as shown.

204,105. BOTTLE-STOPPERS. David E. Stevens, Newark, Ohio. Filed Mar. 20, 1878.



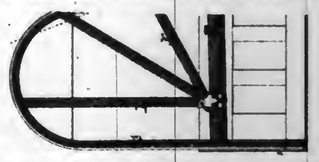
Claim.—1. The combination, with a bail, of the wire clamp, formed with the two neck-embracing portions, which embrace substantially the entire neck of a bottle below its shoulder, and the upright extensions, which provide bearing for the journal ends of said bail, substantially as set forth.

2. The combination, with the bail, of the lever, whose long arm is bent with a slight curve extending continuously outward from its engagement with said bail down to its extreme lower portion, which latter bears against the bottle-head when the stopper is sealed, and provides means for readily raising the same, the two short arms of said lever being bent inwardly and engaged with slots made in opposite sides of the cap-piece formed on the stopper, substantially as set forth.

3. In a bottle-stopper, the combination, with cam-lever C, provided with the two short arms *c'*, of the stopper D, made with the cap-piece *d*, which latter has slots formed in opposite sides thereof, with which the inwardly-bent extremities of said arms respectively engage, substantially as set forth.

4. In a bottle-stopper, the combination, with bail B, of the lever C, engaged therewith by the two loop formations *c*, one at either opposite end portion of its horizontal body, said lever being formed with arm *c'*, curved as described, and with the two arms *c'*, which latter have inwardly-bent extremities engaging with cap-piece *d* of stopper D, substantially as set forth.

204,106. GRAND PIANO-FORTES. Christn. F. T. Steinway, New York, N. Y. Filed Mar. 20, 1878.



Claim.—1. The combination, in the treble part of a grand-piano case, of an inside and outside rim bent in two different forms, the inside rim serving as a brace to prevent that section of the case from being forced out of position by the strain of the strings, both rims being connected by a strengthening-piece, *a*, substantially as and for the purpose shown and described.

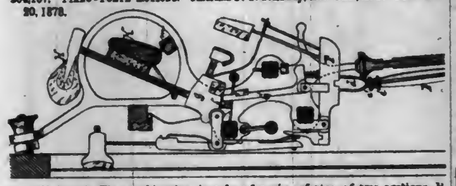
2. The combination, with the case A, of a metallic shoe, G, which is secured to the cross-block F, and the inclined face of which serves to support the front ends of the braces P Q N, substantially as and for the purpose set forth.

3. The combination, with the shoe which supports the front ends of the braces P Q N, of a brace placed between the shoe and the iron frame or the wrest-plank, substantially as shown and described.

4. The combination, with the case A, of a key-board-supporting frame, H, provided with a rim projecting beyond the sides of the case A, and forming an architrave, substantially as and for the purpose set forth.

5. The combination, with the case A, and with the frame which supports the key-board and rests upon the front leg, forming a console for the case of a grand piano, of a support for the rear leg let into the wooden braces P Q, and leaving an open space for the escape of the sound, substantially as shown.

204,107. PIANO-FORTE ACTIONS. Christian F. T. Steinway, New York, N. Y. Filed Mar. 20, 1878.



Claim.—1. The combination, in a key for piano-fortes, of two sections, B and C, the inner section being placed on the top of the outer section, substantially as and for the purpose herein shown and described.

2. A pilot, D, for a piano-forte action provided with a square or polygon to facilitate the operation of securing and adjusting the pilot in the key, substantially as set forth.

3. A pilot, D, for a piano-forte action cast with a body cross-shaped in its section, and with a square or polygon either above or below, substantially as and for the purpose shown and described.

4. The combination, with a regulating-pad provided with a soft cushion on one side and an adjusting-screw on the other, of the soft-pedal rail or tabe or its support, for the purpose of regulating the position of the soft pedal toward the hammers, substantially as shown and described.

204,108. PIANO-FORTES. Christian F. T. Steinway, New York, N. Y. Filed Mar. 1, 1878.

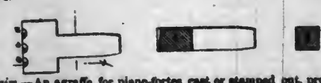


Claim.—1. The combination, with the wrest-plank of a piano-forte and with its iron frame, of a metallic bridge-plate, which covers the wrest-plank, and is provided with lugs adapted to abut against the braces of the metal frame, substantially as and for the purpose set forth.

2. The combination, with the metal plate D, of the projections *f f*, adapted to engage with corresponding cavities in the capodastro-bar G, substantially as and for the purpose described.

3. The combination, with the metallic bridge-plate D, wrest-plank A, and capodastro-bar G, of holes *e* in the wrest-plank, which are enlarged toward their upper ends, and which receive the screws *c d*, substantially as and for the purpose set forth.

204,109. PIANO-FORTE AGRAFFES. Christian F. T. Steinway, New York, N. Y. Filed Mar. 1, 1878.



Claim.—An agraffe for piano-fortes cast or stamped out, provided with a flat notched head, and with a square stem slightly tapering at its point, substantially as shown and described.

204,110. SOUNDING-BOARDS FOR PIANO-FORTES. Christian F. T. Steinway, New York, N. Y. Filed Mar. 20, 1878.

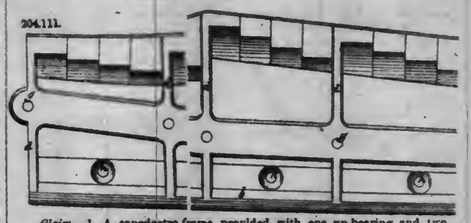


Claim.—1. The combination, with a piano-forte sounding-board, of a sustaining-bar (one or more) arranged crosswise with relation to the ribs, and connected to the sounding-board, either above or below, at a distance from the bridge equal or nearly equal to the distance of the bridge from the opposite edge of the sounding-board, and forming a limit to the vibrations of said board, substantially as described.

2. The combination, with the sounding-board, of two coincident sustaining-bars, which are arranged crosswise to the ribs, and are fastened to said board, one above and the other below, at a distance from the bridge equal or nearly equal to the distance of the bridge from the opposite edge of the sounding-board, the upper bar being metallic, and supported by cushions of wood or other suitable material, substantially as and for the purpose set forth.

204,111. CAPODASTRO-FRAMES FOR PIANO-FORTES. Christian F. T. Steinway, New York, N. Y. Filed Mar. 1, 1878.

204,111.

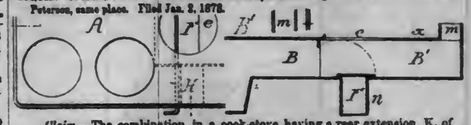


Claim.—1. A capodastro-frame provided with one up-bearing and two down-bearing strips, which are connected by cross-ribs, all cast in one piece, the distances between the up and down bearings provided by said bearing-strips being aliquot parts of the effective length or main scale of the corresponding strings, thus forming a triplex scale, substantially as set forth.

2. The combination, with a capodastro-frame composed of an up-bearing and of one or more down-bearing strips and cross-ribs, of screw-holes in the up-bearing strip, and in a flange connected to one of the down-bearing strips, said screw-holes being so distributed that each screw has to support the strain of the strings of two notes, substantially as described.

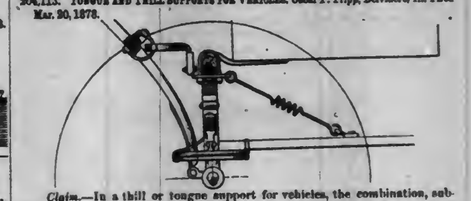
3. The combination, with a capodastro-frame and with the wrest-plank to which the same is to be secured, of screw-holes which are enlarged toward their outer ends, substantially as and for the purpose set forth.

204,112. COOKING-STOVES. David Stuart, Philadelphia, Pa., assignor to himself and Richard Peterson, same place. Filed Jan. 2, 1878.



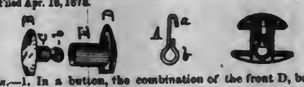
Claim.—The combination, in a cook-stove having a rear extension, K, of the top flue B of the stove, the flue B' of the extension K, the latter flue forming a continuation of the former with the vertical rear flue F, terminating abruptly at the two flues B B', and the boiler-hole *s*, situated directly above the said flue F, all as set forth.

204,113. TONGUE AND THILL SUPPORTS FOR VEHICLES. Oscar P. Tripp, Belvidere, Ill. Filed Mar. 20, 1878.



Claim.—In a thill or tongue support for vehicles, the combination, substantially as specified, of the holding-prongs, having an angularly-projecting slotted plate to provide for vertical adjustment, the bracket, and the connecting-bolts.

204,114. BUTTONS. Daniel B. Waite, Providence, R. I., assignor to Waite, Smith & Co., same place. Filed Apr. 18, 1878.

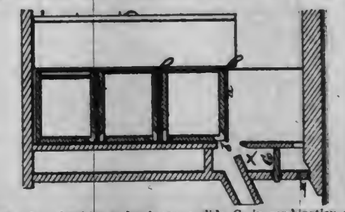


Claim.—1. In a button, the combination of the front D, back B, tubular and shouldered posts C E, and spring A, having the hook *a* and loop *b*, substantially as and for the purpose specified.

2. In a button, the spring A, having at one end the hook *a*, adapted to catch within the tubular and shouldered post C, and at the opposite end a loop or ring, *b*, by means of which loop it is secured to the tubular post E, substantially as and for the purpose specified.

204,115. BEE-HIVES. George S. Walton, Alleyton, Tex. Filed Dec. 20, 1877.

Brief.—The slide can be withdrawn when the hive is to be cleaned of débris.



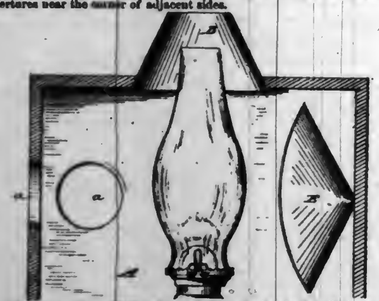
Claim.—In a bee-hive or bee-house, a slide, G, in combination with the débris-chamber *x*, for the purposes explained.

204,116. SOAPS. Alonzo H. West, Hamilton, N. Y. Filed Mar. 23, 1878.

Claim.—The improved soap herein described, formed by the combination of lime, sal-soda, water, tallow, borax, marble-dust, glycerine, lard, ammonia, and gum-arabic, substantially in the manner and proportions herein specified.

204,117. EGG-TESTERS. C. L. Westerman, Bloomington, Ill. Filed Apr. 18, 1878.

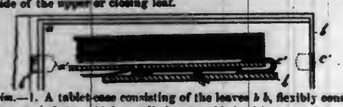
Brief.—The box may be square, triangular, or oval in form, and has two apertures near the corner of adjacent sides.



Claim.—As a new article of manufacture, the herein-described egg-testing case A, having a lamp-flue, B, and egg-openings *a a* through adjacent sides of the case, and near one corner thereof, whereby the operator is enabled to test eggs in each hand at the same time, as specified.

204,118. COVERS FOR RULED TABLETS. Henry Willson, Chicago, Ill. Filed Mar. 14, 1878.

Brief.—One end of the back of an ordinary writing-tablet is inserted and held beneath the fixed clasps C C, while the other is held in like manner by the longitudinally adjustable clasps C' C'. Detachable blotters are attached to the under side of the upper or closing leaf.

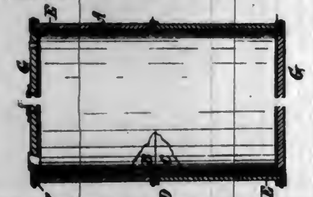


Claim.—1. A tablet-case consisting of the leaves *b b*, flexibly connected to each other, one of the said leaves being provided with one or more blotting-sheets, and the other with clasps for clasping the edges of a tablet of writing-sheets, substantially as and for the purposes specified.

2. The tablet-case provided with the fixed clasps C C and the movable clasps C' C', constructed and arranged to clasp the upper face of the base-piece *a'*, substantially as and for the purposes specified.

204,119. JACKET-CANS. F. Cortes Wilson, Chicago, Ill. Filed Feb. 14, 1878.

Brief.—The strips of metal soldered to sides or ends of can. May apply jacket to a pitch-top can.



Claim.—1. A shipping-can provided with a casing or jacket composed of sections fastened to the can independently of each other, substantially as described.

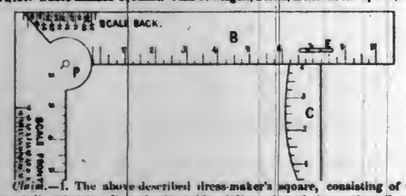
2. The can A, in combination with a sectional jacket inclosing the body of the can, the independent sections of which are secured, respectively, to opposite ends of the can, and a band covering the joint between the sections, substantially as described.

3. The can A, in combination with the independent jacket-sections and fastening-strips E at each end of the can, substantially as described.

4. The can A, in combination with the jacket-sections secured thereto independently of each other, and the heads G, substantially as described.

5. The independent jacket-sections B C, in combination with the fastening-strips E, attached to the can at opposite ends thereof, and the heads G, substantially as described.

204,120. DRESS-MAKERS' SQUARES. Julia F. Wingate, Boston, Mass. Filed Sept. 29, 1877.



Claim.—1. The above-described dress-maker's square, consisting of the arms A B, rule-joint P, and adjustable sliding pivoted finger-piece C, constructed substantially as and for the purposes set forth.

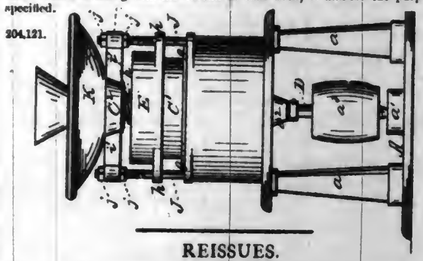
2. The combination of the adjustable sliding pivoted finger-piece C with the arms A B of a dress-maker's square, substantially as and for the purposes set forth.

204,121. GRINDING-MILLS. Abraham H. Wolf, Allentown, Pa. Filed Apr. 27, 1878.

Claim.—1. The combination, with the running stone C, its casing E, having vertical screw-threaded rods J, the bed stone C', and its hoop-casing E, having offsets *h* engaging said rods, and provided with the tubular threaded neck *h'*, of the spider C', engaging the said rods, the adjusting-nuts *j j* above and below said spider upon said rods, and the hand-wheel K, having inside-threaded hub *i*, engaging the neck of the casing, and journaled in and supported by said spider, substantially as specified.

2. The combination, with the running stone having raised cone *f*, and a bed-stone having a recess, *f'*, and a casing, E, provided with a tubular female screw-threaded neck, *h'*, of the hopper F, having a tubular stem, *p*, having a screw-thread meshing with the thread of said neck, as and for the purpose specified.

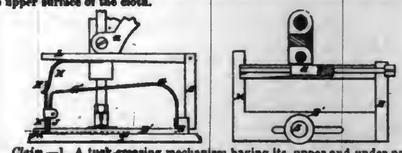
204,121.



REISSUES.

8,236. TUCK-CREASING ATTACHMENTS FOR SEWING-MACHINES. Isaac W. Bertram, Brooklyn, N. Y., assignor, by mesne assignments, of Israel M. Rose. Patent No. 40,084, dated Sept. 22, 1863; Reissue No. 3,218, dated Dec. 1, 1868. Filed Apr. 1, 1878.

Brief.—The upper and under members of the creasing devices are rigidly secured to a common base-plate, which is adapted to be secured to the cloth-plate of a sewing-machine, the upper member of said creasing devices consisting of jaws arranged to be operated from the needle-bar to pinch a crease in the upper surface of the cloth.



Claim.—1. A tuck-creasing mechanism having its upper and under parts connected together as a unit, in combination with a sewing-machine, whereby the said mechanism may be adjusted with relation to the needle while at rest for different widths of tucks, substantially as described.

2. A tuck creasing or pinching mechanism, consisting of jaws or of opposing surfaces arranged on an adjustable base-plate, which carries a piece of metal at M for raising the cloth, in combination with a sewing machine, substantially as described, whereby the said jaws or surfaces are opened and closed at regular intervals by the needle-arm, and made to impinge on the cloth raised by the said piece of metal at M, and to seize the cloth thus raised and gather it up preparatory to pinching it on itself between the jaws or pinching-surfaces as they are brought together by the further descent of the needle-arm, substantially as specified.

3. In a tuck-creasing attachment, the combination, with a sewing-machine, of an adjustable base-plate formed with extensions at each end, to which are connected upper and under parts of a tuck-creasing mechanism, leaving the space between the extensions and around the presser-foot open, substantially as specified, whereby the creasing devices may be located in the plane of motion of the needle-arm, and adjusted to the needle together for different widths of tucks, while the cloth will pass freely to the needle and creasing devices by the action of the feed in parallel lines, either straight or curved, substantially as specified.

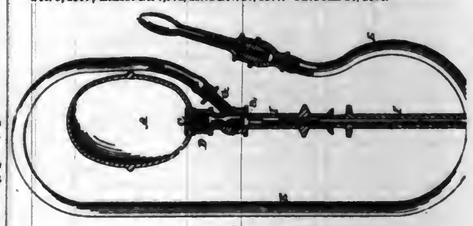
8,237. COMPOSITIONS FOR MAKING HYDRAULIC CEMENT. Cleaveland P. Dauderdale, Kingston, N. Y. Patent No. 196,748, dated Oct. 2, 1877. Filed May 3, 1878.

Claim.—1. In a composition for making hydraulic cement, the combination of a refractory clay rich in alumina and a fusible clay rich in silicic acid with lime or its carbonate, for the purpose herein set forth.

2. A composition for making hydraulic cement, consisting of the artificial admixture of a mari (calcareous clay) with a silicate of alumina, and a mari rich in silica with one rich in alumina, with lime or the carbonate thereof, for the purposes as herein set forth.

3. A composition for making hydraulic cement, consisting of the artificial admixture of infusorial silica and a silicate of alumina with lime or the carbonate thereof, for the purpose as herein set forth and described.

8,238. FLEXIBLE STRIPPER. Morris Matteos, New York, N. Y. Patent No. 61,750, dated Feb. 5, 1867; Reissue No. 7,971, dated Nov. 27, 1877. Filed Jan. 30, 1878.

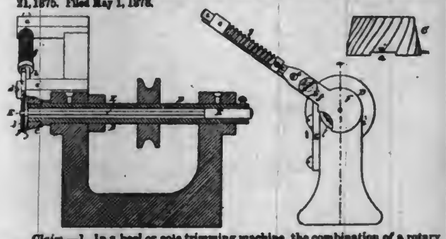


Claim.—1. In an elastic-bulb syringe, an inlet-tube made in sections for convenience of packing, and made entirely of hard material, so as to form a support for the hand, substantially as described.

2. In an elastic-bulb syringe, the combination of the bulb A, section D, readily detachable therefrom, rigid inlet-tube I, pipe G, and flexible tube E, the inlet-tube being made in sections for convenience of packing, and divisible at another point than at the valve, substantially as shown.

3. The combination of the bulb A, a rigid inlet-tube, which forms a rest or support for the hand while using the syringe, and which is connected to the bulb by a screw or equivalent coupling, and a flexible outlet-tube, E, substantially as set forth.

8,239. HEEL AND SOLE TRIMMING MACHINES. Jas. H. Bussell, Boston, Mass., assignor, by mesne assignments, to the Bussell Edge Trimmer Company. Patent No. 167,874, dated Sept. 21, 1875. Filed May 1, 1878.



Claim.—1. In a heel or sole trimming machine, the combination of a rotary edge-trimming cutter and a rand-knife, arranged to rotate in unison therewith around an independent axis, the position of which relative to the axis of the edge-trimming cutter may be varied by the pressure of the boot or shoe, according as the width of the projecting portion of the heel or sole is greater or less, substantially as described.

2. The combination of the hollow or sleeve shaft B, an edge-trimming cutter, the spindle E, and rand-knife *b*, to operate substantially as and for the purpose specified.

3. The cutter provided with the recess or groove *a*, in combination with the rand-knife *b*, adapted to rotate about a movable or variable axis, as and for the purposes described.

4. In a heel or sole trimming machine, the combination of a rotary edge-trimming cutter, a rand-knife adapted to rotate about a movable axis, and a yielding rand guide or shield inclosing the rand-knife and forming a bearing for its spindle, substantially as described, for the purposes specified.

5. In an organized trimming-machine, the following instrumentalities, viz: a guide to enter between the sole and upper, a revolving rand-knife located at the rear side of the guide, and an edge-trimming cutter, provided at its end with a notch or recess to receive the rand knife, whereby a portion of the cutting-edge of the edge-cutter may be extended beyond the cutting-edges of the rand-knife, substantially as described.

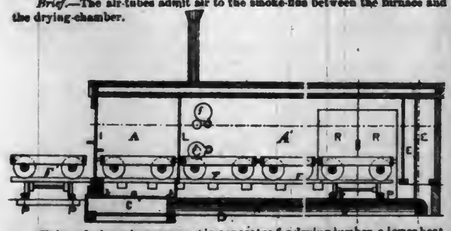
6. In a trimming-machine, an edge-trimming cutter provided at one end with a recess, and a rand-knife located in said recess, whereby some of the cutting-edges of the edge-cutter are, in the rotation of the cutter, made to cut across the cutter edge of the sole, and the cutting-edges of the rand-knife are placed to operate upon and remove one corner of the sole previously trimmed by the edge-trimming cutter, substantially as described.

7. The combination, with an edge-trimming cutter having cutting-edges terminating at different distances with relation to its front end or face, or of different lengths in the line of the axis of rotation of the cutter, of a rand-knife placed opposite the ends of the shorter cutting-edges, or those not extended to the face of the cutter, a portion of the cutting-edge of the rand-knife being thereby located back of the forward ends of the longer cutting-edges of the edge-cutter, to operate substantially as described.

8. The edge-trimming cutter notched at *a*, and the rand-knife located in such notch, combined with a guide to enter between the sole and upper, the guide being provided with an open space to permit the discharge of chips removed from the sole by the rand-knife, substantially as described.

8,240. APPARATUS FOR DRYING LUMBER. Richd. P. Johnson, Wabash, assignor, by mesne assignments, to Eli J. Sumner, Mooresville, Ind. Patent No. 66,594, dated July 9, 1867. Filed Mar. 14, 1878.

Brief.—The air-tubes admit air to the smoke-flue between the furnace and the drying-chamber.

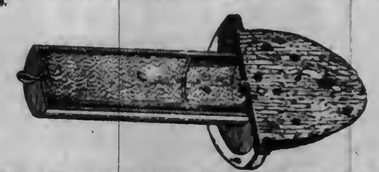


Claim.—1. As an improvement in apparatus for drying lumber, a lower heating-chamber, D, and an upper drying-chamber, A', the two chambers having a communicating hot-air draft at or near the rear of the apparatus, the drying-chamber having a door at the front end thereof for admitting car-loads of lumber, and the heating-chamber having a cold-air draft at the front of the apparatus, and a door at or near the rear of the apparatus for the exit of the car-loads of lumber when dried, and with escape-flues at or near the front end of the drying-chamber, whereby the moving current of air is hottest at the rear of the apparatus, and passes from thence to the escape-flues, and the lumber on the cars in its greenest state comes into the drying-chamber where the heat is least and passes backward, and is gradually dried by being moved against the current of hot air to the point where the latter is hottest.

2. The combination and arrangement of the furnace C, flue D, and perforated plates E, by which the products of combustion are discharged into the chamber A' among the lumber, being driven through such chamber and discharged through the chimneys M, as herein described, for the purpose specified.

3. The tubes N, arranged in relation with the flue D, whereby the draft through the chamber A' is regulated, as herein set forth, for the purpose specified.

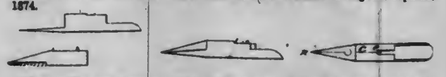
8,241. RESERVOIR SLATE-CLEANERS. Abraham W. Overbaugh, New York, N. Y., assignor to George B. Wight, same place. Patent No. 60,045, dated Nov. 27, 1866. Filed Apr. 9, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, of a reservoir having stiff walls, constituting a handle by which the device is used, a removable cap fitting the open end or mouth of the reservoir, having an opening or perforation therein for the passage of the liquid, and a sponge secured to and projecting from the cap or cover, closing the opening therein, which sponge is in direct communication or contact with the liquid in the reservoir when the device is being used, whereby a free flow of the liquid to the applying-sponge is obtained, greater or less amount of liquid may be applied by pressure on the sponge, and the reservoir readily refilled when emptied.

2. The combination, substantially as hereinbefore set forth, of the perforated cap, the sponge, and the clamping-ring uniting them.

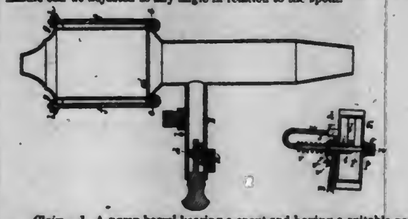
8,242. WRITING-PENS. Leopold Boral Bertram, New Wandsworth, England. Patent No. 194,319, dated Nov. 14, 1876. Filed Mar. 23, 1878. Patented in England, Sept. 18, 1874.



Claim.—The combination, with a writing-pen, of a solid writing composition for supplying the nib of the pen with ink, substantially in the manner shown and described.

8,243. PUMPS. Thomas Dowling, Gloucester, Mass., assignor to himself and Israel C. Mayo, same place. Patent No. 160,544, dated May 5, 1874. Filed Dec. 19, 1877.

Brief.—As the air-chamber revolves, and the handle is fastened to it, the handle can be adjusted to any angle in relation to the spout.



Claim.—1. A pump-barrel bearing a spout and having a suitable packing-ring at its upper end, in combination with an air-chamber resting by its lower edge on said packing, adjustable thereon by rotation, and bearing the pump-handle, said parts being united by vertical clamping-bolts for securing a tight joint, substantially as set forth.

2. A pump-barrel and a spout therefor, having two discharge-orifices, as described, and a valve-seat between said orifices, in combination with a valve adapted by compression to direct the flow of water to either orifice, substantially as set forth.

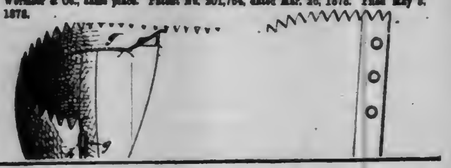
3. A pump-barrel bearing a spout and provided with an outwardly-projecting flange, in combination with an adjustable rotary air-chamber of greater internal diameter than the barrel, so as to permit free play and convenient connection of the piston-rod and lever-arm within the air-chamber, substantially as set forth.

4. The pump-handle E, composed of the tubular body *t*, having a suitable fulcrum, and two arms, *t m*, the latter being formed with an offset to bring its lower part in line with the arm *t*, substantially as set forth.

5. The combination, with a pump-handle, of the spindle F, having screw *n* and nut *o*, and also formed with the leg *u*, for insertion in either of the sockets *v w*, substantially as set forth.

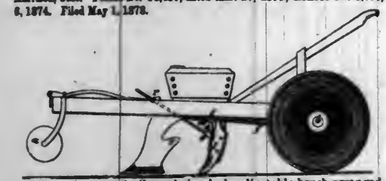
6. The combination of the spring *v'* with a pump-handle and its supporting-spindle F, formed with the leg *u*, adapted to engage with the studs *v w*, substantially as set forth.

8,244. MANUFACTURE OF CORSETS. August Feltheimer, New York, N. Y., assignor to S. Wormser & Co., same place. Patent No. 201,764, dated Mar. 26, 1878. Filed May 8, 1878.



Claim.—The improvement in the manufacture of corsets, consisting in constructing a corset with its bosom stiffened and kept in shape by turning in a portion of the spare material within the selvage of the woven web to form a hem or pocket, *p*, and inserting a stiffening-piece into the hem or pocket so formed, substantially as herein-described.

8,245. CORN-PLANTERS. Daniel Lane and Daniel F. Lane, Centre Hall, Pa., assignors, by mesne assignments, to Hoosier Drill Company, Milton, Ind., and J. & J. A. Campbell, Harrison, Ohio. Patent No. 52,460, dated Mar. 27, 1866; Reissue No. 6,078, dated Oct. 8, 1874. Filed May 1, 1878.

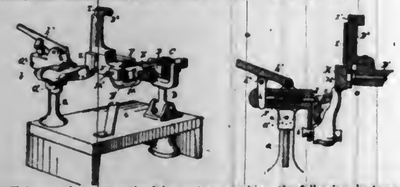


Claim.—1. A vertically and circularly adjustable brush arranged in a cove in front of the seed-delivery opening, as and for the purpose specified.

2. The bail I, provided with the attaching and adjusting flange *t* and angle-adjusting rod *u* for mounting the drill-tooth upon, substantially as and for the purpose herein specified.

3. The double share and full double mold-board furrow-clearing plow W, in combination with the drill-tooth I, substantially as and for the purpose herein set forth.

8,246. MACHINES FOR BURNISHING THE EDGES OF BOOTS AND SHOES. Charles J. Addy, Boston, Mass. Patent No. 196,383, dated Oct. 23, 1877. Filed Jan. 5, 1878.



Claim.—1. In an organized burnishing-machine, the following instrumentalities, viz: a reciprocating burnishing-tool, a shaft rotated in but one direction to operate said tool, a universally-jointed tool-carrying frame, a handle thereon to hold and move it, and a horizontally-movable frame, and a shaft rotated in but one direction, and supported in bearings in said frame, said latter frame and shaft being adapted to be reciprocated together in the direction of the length of the shoe, and at the same time move with it the tool-carrying frame, and rotating the shaft of said frame continuously in but one direction to reciprocate the burnishing-tool, substantially as described.

2. A universally-jointed tool-carrying frame, provided with a handle to hold and direct it, combined with a shaft rotated in but one direction, a crank-pin thereon, and a link moved by such crank-pin to reciprocate the burnishing-iron.

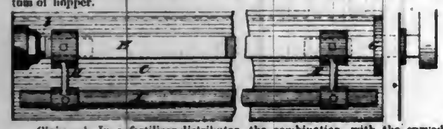
3. The combination of the iron K, movable frame B, the part D', the handle D², and the vibrating link I, all operating together, substantially as described, and for the purpose set forth.

4. The combination of vibrating iron K and the frame D' with the weighted lever N N', connected with the frame, and arranged, as described, to prevent treadmotion, substantially as described.

5. In the holding-jack, the combination of the support Q and the bar or rod *d* with the wedge *k* and lever l^2, all operating substantially as described, and for the purpose set forth.

8,247. FERTILIZER-SOWERS. Charles F. Johnson, Jr., Owego, N. Y. Patent No. 194,870, dated Sept. 8, 1874. Filed May 15, 1878.

Brief.—Inclined sharp metallic wiper vibrates over outlets in curved bottom of hopper.



Claim.—1. In a fertilizer-distributer, the combination, with the curved metallic bottom of the hopper, of a vibrating wiper extending lengthwise of the hopper, so as to pass at each vibration under the bottom of the whole, or nearly the whole, of the fertilizing material, substantially as described.

2. The combination, with a fertilizer-hopper having a curved bottom, of a continuous vibrating wiper extending lengthwise of said hopper, and provided with the sharp cutting or scraping edge, substantially as and for the purpose set forth.

3. In a fertilizer-distributer, the rock-shaft E, in combination with the iron arms H and the thin metal wiper attached to said arms, substantially as described.

4. In a fertilizer-distributer, the combination, with a curved and perforated metallic hopper-bottom, of a vibrating wiper having its lower face set inclined to said bottom, substantially as and for the purpose set forth.

8,248. SPEAKING-TELEPHONES. James J. McTighe, Alpsville, Pa. Patent No. 198,406, dated Dec. 18, 1877. Filed Jan. 21, 1878.

Claim.—1. The combination, in an electrical circuit, of two or more telephonic or speaking-telegraph instruments, consisting each of a permanent or electro-inducing magnet and an electrical coil or helix in its natural condition, and in inductive proximity thereto, one of said poles constituting the metallic diaphragm of the instrument, substantially as described.

2. A permanent or electro magnet having its pole or poles reduced to a diaphragm form, substantially as described.

3. As an article of manufacture, a compound or composite magnet, consisting of a metallic diaphragm and a permanent or electro magnet, arranged substantially as described, so that the diaphragm is a continuation of the pole of the magnet itself, substantially as described.

4. The combination of an electrical coil or helix with a permanent or electro magnet, having one or both poles, or their continuation, of diaphragm form, said electrical coil or helix and pole or poles being adjustable with relation to each other, substantially as described.

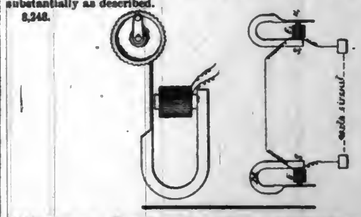
5. A permanent or electro magnet having its pole or poles, or continuation thereof, of diaphragm form, in combination with an electrical coil or helix, substantially as described.

6. In an electric telephone, the combination of a tubular magnet with a metallic diaphragm, substantially as set forth.

7. In an electric telephone, the combination of a tubular magnet, a metallic diaphragm, and an electro-magnet or helix, substantially as described.

8. In an electric telephone, a tubular magnet for use as a speaking or hearing tube, for the purpose of conveying sounds to or from the diaphragm, substantially as described.

8,249.



8,249. CANISTERS. Edwin Norton, Chicago, Ill. Patent No. 195,301, dated Sept. 18, 1877. Filed May 14, 1878.



Claim.—1. A can or caddy provided with one or more openings, in combination with one or more movable plates having a series of labels or names, which may be brought into view, substantially as and for the purpose specified.

2. A can or caddy provided with one or more labels inclosed in casings on the inside of the can, and provided with an inside fastening device, to prevent tampering with the labels, substantially as set forth.

3. A can or caddy having two openings, in combination with two revolving labels inclosed within the case, and a fastening device, whereby spices of different kinds, and also different qualities, may be labeled, substantially as and for the purpose set forth.

8,250. LAMPS. Bennett B. Schneider, New York, N. Y. Patent No. 102,163, dated Apr. 19, 1870; Reissue No. 6,355, dated Mar. 30, 1875. Filed Apr. 27, 1878.



Claim.—1. In a lamp, a removable fount and an outer case inclosing the fount, in combination with a device for securing the fount and outer case together, for the purpose set forth.

2. The combination of a removable fount and outer case inclosing the fount with a locking device and valve in bottom of fount, whereby the fount and outer case are locked together and the valve opened by a movement of the fount, for the purpose set forth.

3. The combination, with the bottom plate of the reservoir B, having an aperture therein for the admission and escape of oil, of a valve having a corresponding aperture, and attached to the bottom of the reservoir to be capable of turning thereon, substantially as herein described.

4. The combination of the reservoir B, a turning valve attached to its bottom, an arm, *c*, provided on such valve, and a receiver, A, having a groove or passage in its inner side receiving said arm, substantially as and for the purpose herein described.

5. The combination, with the reservoir B, valve *b* or *c*, furnished with an arm, *c*, of a receiver, A, provided in its inner side with a passage, terminating in a transverse extension, substantially as herein set forth, whereby the reservoir may be secured in the said receiver against removal by simply lifting it out.

6. The plate or sheet of metal which unites the deflector I to the tube H, constructed with a series of apertures in close contiguity with the tube H, substantially as set forth.

7. The combination of the tube H and strips of metal *f f*, substantially as set forth.

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THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE

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DECISION OF THE SECRETARY OF THE INTERIOR.

The original jurisdiction of the Examiner of Interferences to hear and determine contested cases involving trade-mark registration is conferred in accordance with the law.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., May 28, 1878.

SIR: I have received and considered the application of John H. McElwee, for a review of your decision of the 17th instant, in the matter of the interference of *McElwee* vs. *Blackwell*, claimants for the registration of a certain trade-mark.

From your letter of the 21st instant I am informed that—

The above-named parties are rival claimants to a certain trade-mark to be applied to manufactured tobacco; that the said party, Blackwell, received a certificate of registration from the Office for the mark in dispute in 1870, and his opponent, McElwee, made application to be protected in the use of the same mark in August of last year, 1877. Thereupon, in accordance with the course of procedure prescribed in such class of cases, an interference was declared for the purpose of determining the question of rightful ownership between the parties. The interference having progressed through the usual preliminary stages, and evidence having been taken in behalf of both parties pertaining to the subject in controversy, the Examiner of Interferences fixed a date for hearing arguments of opposing counsel bearing upon matters of law and fact involved. At the time of said hearing counsel for McElwee demurred to the jurisdiction of the Examiner of Interferences, urging that there was no authority in law for said Examiner to adjudge priority between parties contesting title to the same trade-mark.

This objection was overruled by the Examiner of Interferences, and on appeal you affirmed his decision

The only question presented for my consideration is the one which you have passed upon and determined—viz: whether, under the law and the rules of practice of your Office, made in pursuance thereof, the Examiner of Interferences is authorized to adjudicate and determine the rights of parties to a particular trade-mark. Upon this question counsel for McElwee claim that, inasmuch as the law provides an examiner to be in charge of trade-marks, the jurisdiction to try and determine the rights of parties to a particular trade-mark is vested in that officer alone, and that his decision must be final in the case unless overruled by the Commissioner of Patents. This position, I think, is untenable. It is true, the law does provide for an examiner in charge of trade-marks, but it nowhere provides that he shall have exclusive jurisdiction and control of all questions which may arise pertaining thereto.

Section 483 of the Revised Statutes provides that—

The Commissioner of Patents, subject to the approval of the Secretary of the Interior, may from time to time establish regulations, not inconsistent with law, for the conduct of proceedings in the Patent Office.

In pursuance of this provision rules and regulations have been adopted by your Office, with the approval of the Secretary of the Interior, wherein it is provided that all questions in relation to the priority of claims for trade-marks shall be referred to the Examiner of Interferences, and by him determined. This is now the settled practice of your Office.

The receipt of an application for a trade-mark, its consideration, allowance or rejection, and registration, if allowed, are all proceedings in the Patent Office, and it is clearly competent for the Commissioner of Patents and Secretary of the Interior to make such rules and regulations in relation to the granting of certificates therefor and registration thereof as in their judgment shall seem proper.

The rules and regulations of your Office now in force providing for the certification and registration of trade marks are not inconsistent with law. I am, therefore, of the opinion that the Examiner of Interferences, under the law and the rules of practice of your Office adopted in pursuance thereof, has the right to determine questions of priority between contesting claimants for a particular trade-mark, and that your decision

in affirmation of his ruling to that effect should be sustained.

Mr. McElwee's application for the reversal of your decision is, therefore, denied; and the papers transmitted with your letter of the 21st instant are herewith returned.

Very respectfully,

(Signed) C. SCHURZ,
Secretary.

To the Commissioner of Patents.

COMMISSIONER'S DECISIONS.

GEORGE L. ANDERS.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of George L. Anders for letters patent for* "IMPROVEMENT IN PRINTING-TELEGRAPHS, *filed January* 23, 1877.—*Decided April* 22, 1878.]

There is no invention in substituting a polarized for a neutral electro-magnet in a type-printing telegraph, wherein a rotating escapement, governed by the vibrating armature of the magnet, controls the movement of both the type-wheel and the printing mechanism.

The neutral magnet being old in the particular relation, and the characteristics of both kinds of magnets, and of the currents to operate them, fully known, the substitution is without merit.

Especially is this true since the polarized magnet has been employed in relations strictly analogous to the present.

SPEAR, *Commissioner:*

So much of applicant's invention as is involved in the present appeal may be stated, in a general way, to consist of a type-printing telegraph, in which the rotating type-wheel and the printing-pad are operated mechanically by a suitable gear-wheel train, the step-by-step movement of the type-wheel being regulated by an escapement-wheel fixed on the same shaft with it, and which engages with the vibrating arm of a polarized armature in such manner that each alternation of the armature, consequent upon a change in the polarity of the line-current, permits the type-wheel escapement to revolve the distance of one of its projecting teeth, and thus in turn brings each letter or figure of the type-wheel in position for printing. The relation and construction of the various parts are such that, so long as currents of reverse polarity are sent in rapid succession along the line, and the vibrating armature is thus free to release the type-wheel escapement step by step, the presser-pad will not operate; but if the current is once broken, which happens when the transmitter at the forwarding-station has reached the next letter it is desired to send, (and which is accomplished in a manner which need not be detailed,) with the cessation of the current the movement of the vibrating armature and of the type-wheel escapement is necessarily arrested; and in the interval between the breaking of the circuit and its renewal for transmitting the next succeeding letter the presser-pad mechanism is released, and the pad is forced with a quick stroke up against the paper strip, which is thus imprinted with the contiguous character presented by the type-wheel.

It will be seen that the efficient operation of the machine, both with respect to the rotation of the type-wheel and the percussive striking of the printing-pad, is primarily dependent upon the vibration of the polarized armature acting as it does to release the escapement step by step, and thus to permit the revolution of the gear-wheel train. The alternating positive and negative currents for effecting the movement of the armature are derived from a magneto-electric generator situated at the sending-station.

The patentable novelty of the following claims is insisted upon by the applicant, to wit:

1. The combination with a magneto-generator of one or more magnets operated thereby, and each rotating a type-wheel step by step, and one or more press mechanisms operated mechanically and effecting the impression when the step-by-step movement of the type-wheel is suspended, substantially as and for the purpose set forth.

2. The combination of the step-by-step type-wheel movement, the polarized magnet operating the same, the press and mechanism operating mechanically, and with the magnet controlling the press to effect an impression when the step-by-step movement of the type-wheel is suspended, substantially as and for the purpose set forth.

Something might be said in criticism of the claims, as for example, the applicant states in substance that each of the magnets rotates a type-wheel step by step, conveying the impression that the magnet is the primary and efficient source of the rotation of the wheel; whereas, as has been indicated, the wheel is actually rotated mechanically in like manner with the press mechanism, (*i. e.*, by a gear-wheel train,) and the magnet and its polarized armature have no other office than to control or regulate the step-by-step escapement.

I have no difficulty whatever in understanding precisely what the applicant designs to cover, however, and am therefore less disposed to dwell with any greater stress or for any longer time upon these mere formal defects.

The principal reference cited in anticipation of the claims is Patent No. 94,178, granted to John Blackie, August 31, 1869. In that patent I find a type-wheel rotated mechanically by a suitable gear-wheel train, its step-by-step movement being regulated by an escapement-wheel fixed on the same shaft with it, and which engages with the vibrating arm of a neutral electro-magnet armature. During the rapid step-by-step rotation of the type-wheel, incident upon the correspondingly rapid making and breaking of the current at the transmitting-station, the printing-pad and the gear-wheel mechanism to operate it are without movement; but just so soon as a prolonged interval occurs between currents, which will be the case when the transmitter has reached the letter it is designed to send, and the corresponding letter on the type-wheel at the receiving-station is in position for printing, the presser-pad train will be released, and the pad itself will rise with a sudden blow to force the paper strip against the type.

Here, then, is the substantial equivalent of every element to be found in the applicant's combination operated in substantially the same manner to produce the same effect; unless, indeed, I can agree with him, that the substitution of a polarized magnet and its vibrating armature for the neutral electro-magnet and the vibrating armature of the patent in controlling the step-by-step rotation of the escapement-wheel is attended with the exercise of invention.

Polarized electro-magnets have long been known and used in electro-telegraphy, not only for recording the signals of the more usual sounding and needle instruments, but likewise in connection with what is known as the dial-telegraph, which latter quite closely resembles in general principle the printing-telegraph, so far as the progressive step-by-step advancement of the recording device is regulated by the vibratory movement of the armature of the polarized magnet located at the receiving-station and forming part of the receiving instrument. The alternating positive and negative currents essential to the operation of such a magnet have been obtained with equal success from the galvanic battery by the use of a pole-changing key, and likewise from a magneto-electric generator, which avoids, as is well understood, all the disadvantages attendant upon chemical action as the source of the electric impulses.

So long ago as 1858, Wheatstone perfected a dial-telegraph, since gone into extensive use, wherein the reverse polarity-currents, derived from a magneto-generator, were employed to effect the vibration of the armature of the polarized magnet at the receiving-station, and thus to effect the step-by-step advancement of the recording device.

In the year 1875 the present applicant was allowed a patent, wherein magneto-electric currents were used to alternate the movement of a polarized-magnet armature situated at the receiving-station, and which differed from the Wheatstone invention in making the vibrating armature control the step-by-step rotation of a type-wheel instead of the step-by-step rotation of the pointer belonging to the dial-telegraph.

Much has been said by applicant as to the advantages which result from the use of magneto instead of galvanic currents in effecting the movement of the polarized armature connected with the electro-printing telegraph. If such advantages exist, and I am not disposed to dispute them, they have been amply set forth and secured by the patent already referred to, and granted to applicant in 1875. Having once been protected in the exercise of these advantages, it is a strange view of patent law which will permit the applicant to go back over a long field of electro-type-printing telegraphy, and which will allow him a patent for the simple substitution of a polarized magnet, operated by magneto currents, for the same magnet when operated by galvanic currents, or for the neutral electro-magnet and vibrating armature, when all perform precisely the same function, and serve to control the step-by-step movement of the escapement rotating with the type-wheel.

From the review of the art that has been given, it is quite clear that the characteristics of the two classes of magnets, and the two classes of currents which may be made to operate them, and the step-by-step principle in printing telegraphy, as controlled by the vibration of the pivoted armature of either of such classes of magnets, have been long well understood. Under the circumstances, what patentable merit exists in substituting for the neutral electro-magnet and its vibrating armature of the Blackie patent the vibrating armature of a polarized electro-magnet, where both, by their vibration, serve to control the rotation of the escapement-wheel, and, per consequence, of the type-wheel rigidly fixed to the same axis, I fail to discover. That there is anything more than this simple substitution, that any new principle has been developed or applied in a manner not well understood and practiced prior to the present application, I am clear is not justified by the state of the art as exhibited.

The claims which are presented must therefore be rejected, and the action of the Board of Examiners-in-Chief, in this regard, is affirmed.

DECISIONS OF THE COURTS.

U. S. Circuit Court—District of New Jersey.

DAVID W. ODIORNE *vs.* JOHN G. DENNEY.

[*In Equity.—Before* NIXON, *D. J.*]

An anvil-post heated upon its surface to prevent the cracking of the glazed umbrella-case reversely drawn therefrom, right side out, after attaching the end metal ring, is infringed, although the construction of the post and its manner of heating are different in the infringing device from those of the patentee.

That the improved structure is of increased efficiency renders it none the less liable, if it is an equivalent of the patented device in so far as it involves the same principle or mode of operation.

No proper notice having been given, a patent referred to in argument, in defeat of the patent upon which suit was brought, was disregarded.

Evidence of fraudulent designs on the part of the defendants will incline a court to a liberal construction of the patent infringed.

[*B. F. Lee* and *F. C. Bowman* for complainant; *Amos G. Hull* and *R. J. Gwillem* for defendant.]

NIXON, *J:*

The bill is filed in this case for an injunction, profits, and damages against the defendant, for infringing certain Letters Patent No. 149,480, and dated April 7, 1874, for an "improvement in machines for fixing metallic rings to umbrella-cases," originally granted to John C. Hurcombe, and by him assigned to the complainant.

The answer of the defendant denies the infringement, and justifies under Letters Patent No. 182,913, dated October 3, 1876, and issued to one Robert J. Gemmill, for "improvement in apparatus for attaching rings to umbrella-cases." It contains some general allegations, in paragraph 111, that Hurcombe was not the original and first inventor of any material or substantial part of the thing patented and described in the bill of complaint, and that the same has been in public use or on sale in this country for more than two years before his application for a patent. But as no notice was given to the complainant of any special matters to be proved in support of such general allegations, I shall pass at once to the only issue raised in the pleadings.

The complainant's patent is for a machine to be employed in the manufacture of umbrella-cases. It embraces mechanism not new in itself, but never before combined in the same manner, or applied to the specific object for which it was designed.

Umbrella-cases were usually made of enameled cloth, and, before the invention described in the patent of the complainant, much difficulty and loss were experienced in their manufacture. The two longitudinal side edges were sewed together inside out. A grooved metallic ring was inserted in the smaller end of the case, and a string was tied around the cloth, pressing it into the groove, so as to attach the end of the case to the ring. It was then necessary to turn the case, and this was accomplished by pressing it over an umbrella, or over a stick of the general shape of an umbrella, and stripping it down from the top or larger end. Sometimes the turning was effected by using a pair of sticks—the case being peeled off one stick onto the other, after the ring had been attached in the mode above described. These processes, however, were slow and comparatively costly—there being a great loss of material from the breaking and cracking of the enamel on the cloth, which could only be avoided by the application of heat to the case when turned.

In this state of the art, Hurcombe invented and patented the machine now owned by the complainant.

He had two objects in view: (1) To fasten the ring to the umbrella-case more expeditiously and securely than by the old method of tying; (2) to warm the post on which the case was placed inside out, in order to attach the ring, so that the case could be stripped off and turned without delay, and without loss by the cracking and chipping of the enameled cloth.

In the specifications of his patent he describes his invention as follows:

My invention consists, broadly, of a machine for clasping metallic ring-binders to the ends of umbrella-cases, and to the ends of the gores of umbrella-covers, so as to confine the fabric between the edges of the metal binder; such machine consisting of an anvil carrying a spring or yielding poppet-holder for the metal binder, and mounted upon a hollow heating-post, so as to retain and present the binder to the action of a clasping-hammer, the heating-post serving to heat and hold the article while being united with the binder, and the spring poppet-holder performing the function of securing the clasped binder upon the anvil, to hold it in position to allow the umbrella-case to be turned right side out in effecting its removal in a heated condition from the post while, such machine combines in its construction a tubular standard connecting with the holding-post and a suitable heater, through which the anvil-post and the standard heated water is made to circulate. The object of such heating apparatus, in connection with the case-holder, is to allow the case to be withdrawn from the anvil-post without danger of cracking, defacing, or tearing the glazed case, as would result from its removal in a cold condition.

After describing the drawings which accompany the specifications, he then makes eight claims, with none of which we have anything to do in the present case except the fifth, which, complainant alleges, the defendant's machine infringes.

The claim is—

In a machine for clasping the metal binders to umbrella covers and cases, a hollow heated post or holder, E, for the umbrella-case, for the purpose stated.

The purpose is clearly stated in the specifications, and to these we are entitled to look for the construction of the claim. Thus interpreting it, I am inclined to hold, in accordance with the views of the counsel for the complainant, that the essence of the invention is the use of an iron anvil-post heated at its surface, which comes in contact with the glazed surface of the cloth, thereby softening it at the moment the ring is being clasped to the cloth at the top of the anvil-post, so that it can at once be stripped from the post, and turned right side out as soon as the ring has been compressed and secured by the hammer.

The sole question presented by the pleadings and evidence is: Does the defendant's machine infringe the complainant's?

His patent was taken out to accomplish the same results that were attempted in the Hurcombe invention. He calls it "an improvement in apparatus for attaching rings to umbrella-cases." He states that—

The object of his invention is to provide a simple and efficient machine for expeditiously attaching grooved metallic binding-rings to the ends of umbrella-cases and the gores of umbrella-covers, and to allow of the umbrella-case, clamped at its ends by the binding-ring, being turned right side out and removed from its holding-post without tearing or cracking the material of which said case is composed.

He substitutes for the hollow, fixed, internally-heated iron post of the complainant's patent a solid removable and externally-heated iron post, over which the umbrella-case, having been drawn inside out, is drawn or passed. The metallic ring, which is to be affixed to the smaller end of the umbrella-case, is fitted over the end of the anvil-post, and then, instead of bringing down the hammer upon the post, he raises up the post by means of a treadle until it strikes an immovable case having a hollow, into which the top of the post enters, whereby the clasping of the ring to the umbrella-case is effected.

In the two machines, there are a number of variations in the details of mechanical construction. But it seems to me that Gemmell has seized the principle of the complainant's patent and its mode of operation, and has studiously sought, by varying the instrumentalities, to avoid the charge of infringement.

The language of the late Justice McLean, in *Pitt vs. Edmonds*, 2 Fish., 57, is pertinent here:

A patent, in calling for a specific mode, embraces in law all mechanical equivalents or modes which operate on the same principle; consequently all modes, however changed in form, but which act substantially on the same principle and effect the same end, are within the patent. If this were not so, a patent right would be of no value, as it might be avoided by any one who possessed ordinary mechanical skill.

The defendant's machine is more simple, cheaper, and possibly better. But its chief efficiency arises from the use of equivalents to the complainant's patent, and the law does not allow even so meritorious a class of men as inventors to appropriate the property of other people to their own use without making satisfactory compensation, or, at least, acknowledging their obligations.

The defendant has exhibited in his case a patent granted to one Shadrick H. Pierce in 1868, and his counsel on the argument laid much stress upon its specifications, claiming that they anticipated all the most valuable parts of the Hurcombe patent. But I have given no attention to it in considering this case, for the reason that the defendant is not allowed to surprise the patentee by evidence of a prior invention of which he has given no notice. (See *O'Reilly vs. Morse*, 15 How., 110.)

I have been inclined to give a benign construction to the complainant's patent, not only because the court should not hasten to deprive patentees of the advantages of a real and meritorious invention on account of the awkward and clumsy manner in which their claims are stated, but also because the evidence strongly suggests, if it does not lead to the conviction, that the defense is a combination on the part of the defendant and his son-in-law, Gemmill, and the inventor, Hurcombe, to deprive the complainant, who has bought and paid liberally for the Hurcombe patent, from enjoying the fruits of his purchase.

Let a decree be entered for an injunction and an account.

U. S. Circuit Court—Southern District of New York.

LORIN INGERSOLL *vs.* WILLIAM MUSGROVE AND EDGAR F. MUSGROVE. LORIN INGERSOLL *vs.* DARIUS BENHAM *et al.*

The amount of profits and damages arising under infringement being questions of fact to be satisfactorily proven, and the master having based his report upon evidence merely in the nature of estimate, opinion, and conjecture, the exceptions thereto were sustained and nominal damages alone awarded.

Costs allowed the plaintiff, except as to the reference of the cases to the master and all the subsequent proceedings, with decree for the party in whose favor the difference in amount of opposing costs should exist.

[*Frederic H. Betts*, for the plaintiff; *Benjamin F. Lee, W. H. L. Lee*, and *John H. Miller*, for the defendants.]

BLATCHFORD, *J.*:

The master reports that the defendants realized as profits from the sale of infringing cuspadores at least $300 in the first case on 1003, and at least $275 in the second case on 2225; but that he is unable, from the proofs, to report what amount of such profits to them is attributable to the distinctive patented feature of said cuspadores, "the business of the defendants being different from the complainant's in relation to these goods." The plaintiff does not except to this part of the report.

The plaintiff sold during the same time 90,554 of the patented cuspadores for a sum less by $10,325.84 than the sum for which they would have sold at rates which ruled prior to the commencement of the infringements. The master reports that such reduction in price was to a great extent occasioned by such infringements by the defendants and other parties; that the infringements by the defendants occasioned a loss to the plaintiff by the compulsory reduction of his prices of thirty per cent. of the $10,325.84, being $3,097.76; that such loss was occasioned by reason of the fact that the infringing articles contained the patented features of the plaintiff's patented cuspadores; and that one-half of such thirty per cent of loss was occasioned by each set of defendants. The master attributes seventy per cent. of the reduction of prices to causes other than the infringements by the defendants. He therefore reports against each set of defendant's damages for the above cause, amounting to $1,548.88.

He also reports that if the defendants in the first case had not sold the 1003 infringing cuspadores the plaintiff would have sold 1003 more of the patented cuspadores than he did sell, and would have made a profit on each of 79 cents, or, in all, $792.37; and that eighty-five per cent of this, or $673.56, is the amount of such profit to be assigned to the distinctive patented feature of the cuspadores. He therefore reports that amount, $673.56, as additional damages against defendants in the first suit. The aggregate damages against them he reports at $2,118.94. The figures add up $2,222.44.

He also reports that it is not made to appear that if the defendants in the second case had not sold the 2225 infringing cuspadores the plaintiff would have sold an equal number of the patented cuspadores to the persons who purchased from said defendants. He therefore reports against said defendants damages to the amount of $1,545.48, which should be $1,548.88.

I think it was a correct conclusion that the zinc cuspadores, with the bottom loaded with iron filings, was an infringement of the patent. It was composed of three metallic parts, formed and combined substantially as set forth in the Heath patent, with the excess of weight in the base. Although the self-righting feature is found in the Topham patent, that patent does no show the combination covered by the Heath patent.

The question whether the prices which the plaintiff received for his cuspadores were less than those which he would have received but for the infringements by the defendants is a question of fact. Such also is the question as to the amount of the reduction, and as to how much of it was occasioned by the acts of the defendants; and as to how much of it was attributable to the fact that the infringing articles contained the patented feature of the plaintiff's patented cuspadores. Such also is the question as to whether, if the infringing cuspadores had not been sold, the plaintiff would have sold any greater number of the patented cuspadores than he did sell, and what profit he would have made on them, and what part of such profit is to be assigned to the defendant's patented feature of the cuspadores.

It is for the plaintiff to establish by satisfactory evidence not only that a reduction of his prices was caused by the infringements, but how much such reduction was; and how much of it was occasioned by the acts of the defendants; and how much was due to the fact that the infringing articles contained the patented feature of the plaintiff's patented cuspadores.

I am not satisfied with the conclusions of the master on this subject. The evidence on which those conclusions were reached was in the shape of estimate, and conjecture, and opinion, and afforded no proper basis for a report of actual damages by a forced reduction of prices. The allotment of thirty per cent. of such reduction to the infringements by the defendants, and to the fact that the infringing articles contained the patented features of the plaintiff's patented cuspadores, and of seventy per cent. of such reduction to other causes, is founded only on the conjectures, estimates, and assertions of witnesses, and not on any sound and safe bases of calculation. Moreover, it does not appear that the master at all considered the question as to the weight to be given to the fact that the sales of the plaintiff were unquestionably increased in number by the reduction of prices by him, resulting in profit on the added sales, and counterbalancing to some extent, at least, diminution of profit on the rest of the sales.

So, also, it is for the plaintiff to establish, by satisfactory evidence, that he would have sold more of the patented cuspadores than he did sell if the infringing cuspadores had not been sold; and what profit he would have made on them; and what part of such profit is to be assigned to the distinctive patented feature or the cuspadores. I see no proper foundation in the evidence for the conclusion that, if the defendant in the first case had not sold the 1003 infringing cuspadores, the plaintiff would have sold 1003 more of the patented cuspadores than he did sell. The conclusion has no other basis than conjecture and speculation.

Only nominal damages should have been reported in each case. The plaintiff is entitled to recover costs other than the costs of the references before the master, and of the reports and exceptions, and of the hearing thereon; and the defendants are entitled to recover the costs of the references before the master, and of the reports and exceptions and of the hearings thereon. The one set of costs in each case must be deducted from the other, and a decree be rendered for the difference for the party in whose favor it shall exist.

Circuit Court of the United States—District of Rhode Island.

THE AMERICAN COTTON TIE COMPANY *vs.* SIMON W. SIMONS, *et al.*

[*June Term*, 1878.]

A buckle or bale-tie sold for ordinary commercial use passes beyond the monopoly of the patent, and cannot be followed or controlled in its subsequent disposition.

Though the words "Licensed to use once only" were stamped upon the buckles, and words of like import were contained in the bill-heads and invoices, the nature of the article and of its use are such that there is an implied parting with the unrestricted title at the time of sale which is inconsistent with any such reservation or limitation.

SHEPLEY, *J.*:

The complainants are engaged in the manufacture and sale of a patented buckle for use in connection with an iron strap for a tie or fastening to cotton-bales. There can be no reasonable doubt that cotton-ties sold by defendants are covered by the patents under which complainants claim. Nor does the evidence in this case leave any reasonable doubt that the buckles sold by the defendants are the identical buckles made and sold by the complainants under their patent. The complainants contend that they sold the buckles under a restriction which limited them to one use, and did not convey an unrestricted title, and that the buckles never passed out of the monopoly of the patent. The facts are that the complainants sold the patented buckles with the words printed on them "Licensed to use once only," and that up to the season of 1876 on the bill-heads and invoices of all their agents were the words—

The cotton-ties sold by this invoice are licensed to be used only as baling-ties, and are sold and purchased subject to this restriction.

During the season of 1876 the following clause was printed on their bills:

The buckles accompanying these bands are the property of the American Cotton Tie Company, limited, and are licensed to be used for one season only, the company reserving the right after such use to recover possession of them wherever found.

The company clearly had the right, in selling a patented article, to put a restriction on its use or sale, and to convey only a restricted title, or to license only a restricted use, and the purchaser under such a restricted title could not convey a greater or better title than he had himself. The law upon this subject was fully stated in *Hawley* vs. *Mitchell*, (1 Holmes, 42,) and affirmed in the Supreme Court of the United States, (16 Wall., 544.) But when the proprietors of a patented article sell it for the purpose of allowing it to be used in ordinary pursuits of life, and to pass into the market of the country as an ordinary article of commerce, and subject to the unrestricted purchase and sale, he waives his right to affix conditions or restrictions to its use or sale, and consents that, after one sale and the payment of one royalty, it shall pass out of the limits of the monopoly. If a manufacturer of patented pins, or nails, or wood-screws, or any similar article, were to affix to his invoice of sale a condition limiting them to one use, and sell them in quantities to retail dealers to be sold again, he must know and intend that they are to pass into the commerce of the country and be sold over and over again, and sold only to persons who would not buy anything less than an unrestricted title. Shall the purchaser of a packing-box be treated as an infringer and as pirating an invention because he uses again and for another purpose the screws or nails which held the box together, and which he purchased when he purchased the box and its contents? May he not reasonably presume with regard to articles of this description, that pins, and nails, and screws do not go into the market with an incumbrance upon their title or a restriction on their use, and that he is not bound to trace the title to see if it be unrestricted, for the reason that he may well suppose no one would expect to affix a restriction on the use of such articles which would be operative, or if he could do so would ever find purchasers of them? The buckles sold by the complainants belong to this class of articles. They are sold for the purpose of being used to confine a bale of cotton, as a nail or screw confines a packing-box. It appears in evidence that when a bale of cotton is sold it is without tare, and consequently the buckle and the strap it confines are sold and resold with the bale of cotton to which they are attached. If the cotton takes fire or is otherwise damaged, and requires to be rebaled, must the owner put the same buckle back on the same bale or be liable to the penalties of an infringer?

When the cotton bales are opened for use at the factories, the manufacturer who has purchased the ties and buckles with the cotton, having no further use for them, sells them to the junk-dealer. From the junk-dealer the defendants purchase them and repair them and sell them again. The vendor of the patented buckle sells them to be applied to the bales of cotton with the full knowledge that they will be sold and resold as often as the cotton is sold. They impliedly consent to these unrestricted sales. They cannot under such circumstances be fairly considered as retaining the title to the buckles in themselves, or as parting only with such a restricted title as would require each vendor of the cotton to sell it accompanied with a restriction on the title and use of the buckles. The very purpose of the original sale, with the knowledge of the subsequent use and sales necessarily incident, imply a parting with the unrestricted title, and a passing out of the limits of the monopoly of the thing sold, as much as it would if the vendor sold patented thread, nails, or screws, to be used in fastening packing-cases to be sold with the goods packed.

The facts in this case show that the owners of the patented buckle intended and contemplated that the purchasers should sell (*buy?*) an unrestricted title inconsistent with any reservation of title or use in the original vendors. Such a sale does not fall within the principle as stated in *Hawley* vs. *Mitchell*, but clearly falls within the language and principle of the decisions in *Goodyear* vs. *Beverly Rubber Company*, (1 Cliff., 336,) and *Washing Machine Company* vs. *Earle*, (3 Wall., p. 320.) The case is very different from that of the sale of a machine easily identified and to which a restriction may easily be attached, or where a license to use only may be sold unaccompanied with any title or accompanied with a restricted title. But when pins, nails, screws, or buckles are sold, if some of them are sold with a restricted and some with an unrestricted title, there are no means of identification which enable the purchaser, after they have passed into the market and common use, to distinguish the articles licensed or restricted in their use from those absolutely sold. In the case of articles of that description the patentee may fairly be presumed to have received his royalty when he parted with the possession of the articles and allowed them to go into common and general use. The public should not be vexed with litigation about reserved rights or conditions affixed to the title of such articles, or put upon the investigation of incumbrances or restrictions on the title of nails, screws, buckles, or pins, before they can be safely used by a person who has bought them of parties who obtained them of the patentee with the right to sell them in the open market. It is more for the interest of inventors that they should obtain their royalty on such articles when they first put them upon the market than to make the monopoly odious by the attempt to fix restrictions on the subsequent use.

Bill dismissed, with costs.

U. S. Circuit Court.—District of Minnesota.

[*December* 1, 1877.]

WM. D. ANDREWS, GEO. H. ANDREWS, AND NELSON W. GREEN *vs.* GEO. B. WRIGHT.

Reissue Letters Patent No. 4,372 granted to Nelson W. Green, May 9, 1872, for "the process of constructing wells by driving or forcing an instrument into the ground until it is projected into the water without removing the earth upward as it is in boring," conform to the original patent, and are valid.

The invention disclosed is novel, has not been dedicated or abandoned to the public, and the patent therefor covers a true process and not a result.

[*George Gifford, John Y. Page, Lamprey & Jones*, for complainants; *Davis, O'Brien & Wilson*, for defendant.]

[*Opinion June* 20, 1878.]

NELSON, *J.*:

This suit is brought to recover damages for an infringement of a patent Reissue No. 4,372, and for an injunction. The defenses are:

1. Reissue obtained by fraud, and not for same invention as the original.
2. Want of novelty, prior discovery and use.
3. Alleged invention for a result or effect, and not patentable.
4. Dedication to the public and abandonment.

The original patent is No. 73,425, and while the charge of fraud in procuring the reissue is not pressed, it is urged that the two instruments are for different inventions.

To impeach a reissue which is *prima facie* evidence that it is for the same invention, it must appear in the absence of fraud that the invention described therein is repugnant to the original. (*Middletown Tool Company* vs. *Judd*, 3 Fisher, 142.)

The two patents, on examination, show that they were both granted for "a process of constructing wells," and the claim and specifications describe the process, which consists in driving a tube tightly into the earth until it reaches a water-bearing stratum without removing the earth upward, and attaching to this well-pit a pump, air-tight, the tube being perforated at the lower extremity and for a short distance upward to admit the water more freely to the inside. The reissue is not different from the original, and the claim does not include anything more than the patentee was entitled to.

Want of novelty.—To sustain this defense testimony of prior discovery and use is introduced, but a close examination and analysis of this evidence does not satisfy my mind of the existence of the drive-wells before Green put into practical operation his invention. There is no clear and certain testimony that any one had previously conceived the idea of such a process and adapted it to practical use; it is too shadowy and doubtful. (Curtis on Patents, Ed. 1849, Secs. 40–48.)

There is no description of Green's process in any of the publications cited, and the claim is not strenuously pressed. It is evident the results noted therein are obtained by boring or excavating, and not by Green's process, and it is also clear that this process was not used in constructing the salt-wells at Syracuse, New York.

Alleged invention not patentable.—The utility of the invention can not be seriously denied. Its practical use throughout this and foreign countries attests this fact. It is a simple and cheap method of obtaining a supply of water, unknown until Green's discovery, and the patent issued is for a process and not a result. Although making a hole in the ground by driving a rod may be a part of the operation Green performs in obtaining a supply of water, his patent describes something more. Before his process, this pit or hole could only be utilized as a well when by natural forces water flowed into the bottom, and a water-bearing stratum must necessarily be reached where these natural forces will cause a flow of water in such quantity that the pit becomes a reservoir or produces a stream through the tube as an artesian well.

Green, by driving a tube, open at the lower end as described, into the earth to a water-bearing stratum, with the earth packed tight about it until the water is reached, and attaching to it a pump, air-tight, constructs a well from which a supply of water is obtained when the pump is worked, and does not rely upon the ordinary operation of natural forces upon the water lying in the earth.

The evidence shows that not only an abundant supply of water is thus obtained, but it is inexhaustible.

In *Kneas* vs. *Schuylkill Bank*, (4 Wash., p. 9,) the patent improvement secured and described in the specifications was for copper-plate or copper-plate and type printing on bank-notes, for the purpose of producing a particular effect, viz: security against counterfeits; and it was urged that printing with types and copper-plate is not new, but had been long in common use before the invention described, and therefore the patent is for an effect. The court said: "This is a mistake; * * * the patent is not for the effect, but for the kind of printing by which the effect is produced." And the patent was sustained as a process, although the art of printing with copper-plates and letter-press was old. So here, a hole or well-pit is made, but the invention is for a combination of that operation with others described as necessary to construct a drive-well—a process. Green dispenses with digging and boring, and produces a new combination of operation.

Dedication to the public and abandonment.—The facts were reviewed by Judge Benedict in *Andrews* vs. *Carman*, (13 Blatchford, 208,) and I concur in his conclusion, that they do not amount to a dedication or sustain the defense of abandonment.

Decree for complainant is ordered, and a reference to master to ascertain damages.

Circuit Judge Dillon concurs.

ERRATUM.

In the OFFICIAL GAZETTE of May 14, 1878, page 872, the labels are represented as bearing the numbers 1,431 to 1,444, inclusive. This is a clerical error; the labels of May 14, 1878, bore the numbers 1,531 to 1,544, inclusive.

TRADE-MARKS.

[Each certificate bearing date May 28, 1878.]

6,131.—WEIGHING-SCALES.—*E. and T. Fairbanks & Co.*, St. Johnsbury, Vt. Application filed April 2, 1878.

"The name 'FAIRBANKS.'"

6,132.—CIGARS.—*Fozen, Newman & Co.*, Detroit, Mich. Application filed May 16, 1878.

"The letters and words 'R. E. LEE' and the word-symbol 'WARRIOR.'"

6,133.—CHEESE.—*George S. Hart*, New York, N. Y. Application filed May 18, 1878.

"The word-symbol or fanciful name 'UNADELLA.'"

6,134.—PREPARED SKINS FOR RACKING BEER.—*Carl Maegerlein & Son*, Chicago, Ill. Application filed May 16, 1878.

"A design representing the end of a large beer-barrel, from about the middle of which of which projects the head of a Texas steer, and from which beer is drawn into a smaller barrel, placed upon a frame below it through a racking-faucet, having attached one of our prepared skins, through which it communicates with the bung of the smaller barrel. To the right of the large barrel, and behind the small barrel, stands a brewer in working dress, resting his right hand upon the faucet-handle."

6,135.—CIGARETTES.—*Seidenberg & Co.*, Key West, Fla., and New York, N. Y. Application filed May 18, 1878.
"The words 'ROSA ESPAÑOLA.'"

6,136.—BAKING-POWDER.—*Carter Brothers & Co.*, Pittsburg, Pa. Application filed September 27, 1877.
"The word-symbol 'VIENNA' and the figure of a crown."

6,137.—SALERATUS, BICARBONATE OF SODA, SUPERCARBONATE OF SODA, AND SAL-SODA.—*H. A. De Land & Co.*, Fairport, N. Y. Application filed May 20, 1878.
"The representation of a lion shown in the act of rolling a keg."

6,138.—OVERALLS, JUMPERS, AND GARMENTS OF OUTSIDE WEAR.—*Berthold Greenebaum*, San Francisco, Cal. Application filed May 16, 1878.
"The word-symbol 'CALIFORNIA.'"

6,139.—LADIES' CORSETS.—*Catharine A. Griswold*, New York, N. Y. Application filed May 20, 1878.
"The word 'CLIMAX.'"

6,140.—PERFORATED PLASTERS FOR MEDICINAL PURPOSES.—*Holman Liver Pad Company*, New York, N. Y. Application filed May 15, 1878.
"The fancifully-selected word-symbol 'ABSORPTINE.'"

6,141.—COTTON FABRICS.—*Hamilton Manufacturing Company*, Lowell, Mass. Application filed May 20, 1878.
"A coat of arms or heraldic shield, surmounted by a coronet or crest, arranged as shown."

6,142.—CIGARS.—*Joseph Hirsch*, New York, N. Y. Application filed May 20, 1878.
"The word-symbol 'AFECCION.'"

6,143.—SMOKING AND CHEWING TOBACCO.—*Marburg Brothers*, Baltimore, Md. Application filed May 20, 1878.
"The word-symbol 'PUCK' and the pictorial representation of a boy-sprite intended to represent Puck, with hat and pipe, substantially as described and shown."

6,144.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Straiton & Storm*, New York, N. Y. Application filed May 16, 1878.
"The word-symbol 'PRIMROSE.'"

6,145.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Edward A. Smith*, Brooklyn, N. Y. Application filed May 16, 1878.
"The word-symbol 'AVALANCHE.'"

6,146.—SNUFF.—*B. Frank Weyman*, Pittsburg, Pa. Application filed May 20, 1878.
"The arbitrary word-symbol 'COPENHAGEN.'"

6,147.—LEMONADE COMPOUND.—*Abrams & Carroll*, San Francisco, Cal. Application filed April 22, 1878.
"The word-symbol 'ROYAL.'"

6,148.—PLUG-TOBACCO.—*B. Frank Weyman*, Pittsburg, Pa. Application filed May 8, 1878.
"The title or designation 'WEYMAN & BRO.'"

6,149.—PILE-OINTMENT.—*George W. Frazier*, Cleveland, Ohio. Application filed April 6, 1878.
"The name 'DR. WILLIAMS,' and the fac-simile signature of 'GEO. W. FRAZIER,' used in connection with the words 'INDIAN OINTMENT.'"

6,150.—CIGARS.—*Oliver & Robinson*, Richmond, Va. Application filed May 15, 1878.
"The word-symbol 'ROSALIND.'"

6,151.—LIQUID PAINTS.—*George W. Pitkin & Co.*, Chicago, Ill. Application filed January 15, 1878.
"A draped sash supporting a circular medallion, as illustrated, adapted to receive any distinguishing device that may be preferred."

6,152.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO, AND SNUFF.—*C. Swartz & Co.*, South Norwalk, Conn. Application filed May 13, 1878.
"The designation 'WELL.'"

6,153.—SNUFF.—*B. Frank Weyman*, Pittsburg, Pa. Application filed May 8, 1878.
"The title or designation 'WEYMAN & BRO.'"

6,154.—CIGARS.—*B. Frank Weyman*, Pittsburg, Pa. Application filed May 8, 1878.
"The tile or designation 'WEYMAN & BRO.'"

6,155.—KNITTED OR WOVEN UNDERSHIRTS AND UNDER-DRAWERS.—*Dunham Hosiery Company*, Naugatuck, Conn. Application filed January 10, 1878.
"The representation of a crescent, upon the body of which are shown one or more stars."

6,156.—CIGARS.—*J. & A. Frey*, New York, N. Y. Application filed May 11, 1878.
"The word-symbol 'DIPLOMAT.'"

6,157.—DRY-GOODS.—*The Eddystone Manufacturing Company*, (limited,) Chester and Philadelphia, Pa. Application filed May 18, 1878.
"A lady in a walking-costume."

6,158.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Isaac Underndorfer*, New York, N. Y. Application filed May 22, 1878.
"The dissimilar figures of Barbarism and Civilization, as shown, and the word-symbol 'MANHATTAN.'"

6,159.—COPYING-PAPER AND COPYING-BOOKS.—*William Mann*, Haddonfield, N. J. Application filed May 22, 1878.
"The fanciful words 'AMERICAN RAILROAD.'"

6,160.—SOAP.—*Ecker & Co.*, Philadelphia, Pa. Application filed May 6, 1878.
"The words 'OUR FORE-FATHERS.'"

6,161.—CIGARS.—*Joseph Martinez*, Mobile, Ala. Application filed May 22, 1878.
"The arbitrary characters 'T, D. S.'"

6,162.—COTTON GOODS.—*Nashua Manufacturing Company*, Nashua, N. H. Application filed May 15, 1878.
"The representation of two birds of the crane species, the one in the act of walking and the other flying, as shown."

6,163.—ILLUMINATING-OILS.—*Wadsworth, Martinez & Longman*, Brooklyn and New York, N. Y. Application filed March 21, 1878.
"The fanciful words 'LUZ DIAMANTE,' accompanied by our said firm-name.

LABELS.

[Each certificate bearing date May 28, 1878.]

1,551.—Title: "COLE'S BUSINESS RECORD."—*Lewis Cole*, Aurora, Ill. Application filed May 16, 1878.

1,552.—Title: "THESE SEGARS ARE MADE BY CUBANS AT KEY WEST, FLORIDA," &c.—*Walter A. Ezekiel*, Cincinnati, Ohio. Application filed May 18, 1878.

1,553.—Title: "ANGELICA BITTERS OR POOR MAN'S TONIC."—*George H. Fickardt*, Circleville, Ohio. Application filed May 13, 1878.

1,554.—Title: "FARRINGTON'S CELEBRATED GLUE."—*Joseph T. Farrington*, New York, N. Y. Application filed April 27, 1878.

1,555.—Title: "BRITTON'S AGUE PILLS."—*F. M. Gooding*, Millington, Md. Application filed May 8, 1878.

1,556.—Title: "MRS. JONES' BURN OINTMENT."—*Anna W. Jones*, Boston, Mass. Application filed May 3, 1878.

1,557.—Title: "LA EMINENGIA."—*William Wicks & Co.*, New York, N. Y. Application filed May 17, 1878.

1,558.—Title: "THE GREAT AMERICAN CURE AND PREVENTIVE FOR HOG CHOLERA."—*Beers & Co.*, Columbus, Ohio. Application filed May 10, 1878.

1,559.—Title: "BEAUTÉ DU TEINT, LEVY'S FRENCH CREAM."—*Ben. Levy & Co.*, Boston, Mass. Application filed May 8, 1878.

1,560.—Title: "CURTIS."—*John A. Lowell & Co.*, Boston, Mass. Application filed March 2, 1878.

1,561.—Title: "C. F. FISH FANCY FLOUR."—*Fish, Storer & Davis* Shelby, Ohio. Application filed May 7, 1878.

1,562.—Title: "WALLINGFORD'S GARGET CURE."—*W. W. Whipple & Co.*, Portland, Me. Application filed May 21, 1878.

DESIGNS.

[Each design bearing date May 28, 1878.]

10,692 to 10,702, inclusive.—FANCY CASSIMERE.—*Frederick S. Bosworth*, Providence, R. I., assignor to *The Weybosset Mills*, same place. Applications filed April 20 and May 13, 1878. Term of patents 7 years.

10,703.—HANDKERCHIEF.—*John Grimshaw*, Paterson, N. J. Application filed May 10, 1878. Term of patent 3½ years.

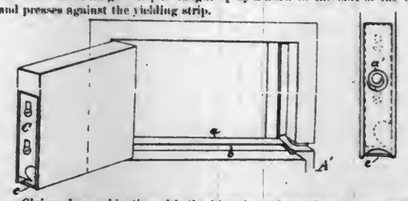
10,704.—BUCKLE.—*Frederick Crane*, Bloomfield, N. J. Application filed April 1, 1878. Term of patent 7 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

MAY 28, 1878.

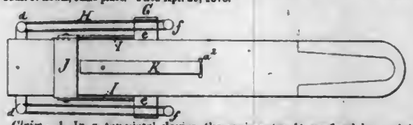
204,122. WEATHER-STRIPS. Dinsmore Austin, Murray, Iowa, assignor of one-half his right to Ezra T. Dafer and Jedediah Knotts, same place. Filed Feb. 5, 1878.

Brief.—An elastic strip is attached by one edge to a groove in the bottom of the door. A hinged strip is caught up by a hook in the side of the door, and presses against the yielding strip.



Claim.—In combination with the hinged weather-strip A, adjusted to be raised into the groove in the lower edge of the door, the elastic strip c, having one edge fastened in the groove and the other edge free, forming a freely-yielding bearing-surface for the hinged strip, substantially as and for the purposes described.

204,123. TOY PISTOLS. Adam F. Able, New Orleans La., assignor of one-half his right to Chas. J. Lewis, same place. Filed Apr. 30, 1878.

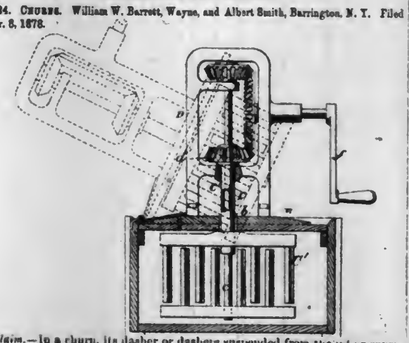


Claim.—1. In a toy-pistol device, the springs top E, confined by a rigid external mechanical pressure device, such as described, so as to retain the marble until the pistol is discharged, substantially as set forth.

2. The pins D and F, having flaring heads *d* and *f*, in combination with the slide E, having lateral guides G, and the elastic bands H, whereby the elastic bands H are prevented from slipping off and from being displaced by recoil, substantially as and for the purpose set forth.

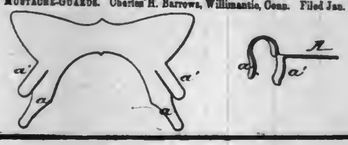
3. The combination of the slide E, connections I, ring J, and spring K, whereby the marble or other missile, L, is prevented from changing its proper position previous to its discharge, and allowed a free exit when the pistol is discharged, substantially as set forth.

204,124. CHURNS. William W. Barrett, Wayne, and Albert Smith, Barrington, N. Y. Filed Mar. 8, 1878.



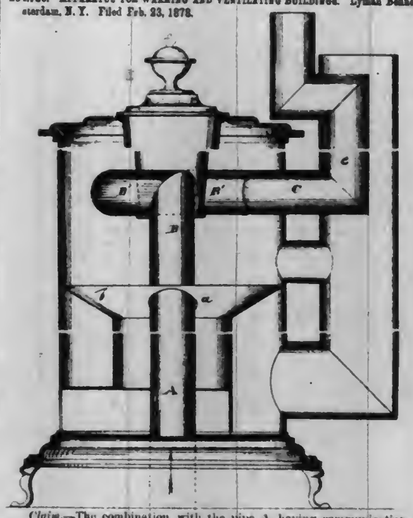
Claim.—In a churn, its dasher or dashers suspended from the lid or cover B, hinged to the receptacle inclosing said dasher or dashers, substantially as shown and described, by which the dasher or dashers may be lifted out of the receptacle with the opening of the lid or cover, and be supported in an elevated position when thus removed, substantially as and for the purpose set forth.

204,126. MUSTACHE-GUARDS. Charles H. Barrows, Willimantic, Conn. Filed Jan. 8, 1877.



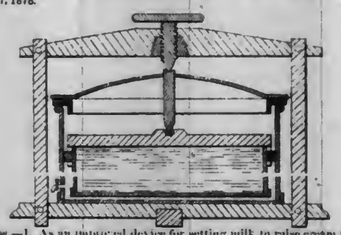
Claim.—A mustache guard or protector composed of a plate, A, stamped with fingers *a* and *a'*, the former bent and curved, as shown, to extend up and over the rim or edge of a drinking vessel or cup, and the latter bent down, as shown, both sets of fingers being adapted at their lower ends to press against the inner and outer sides of the vessel, respectively, substantially as and for the purpose set forth.

204,126. APPARATUS FOR WARMING AND VENTILATING BUILDINGS. Lyman Benoit, Amsterdam, N. Y. Filed Feb. 23, 1878.



Claim.—The combination, with the pipe A, having communication with the air outside of the building, the same being located between the fire-pot and stove-wall in a magazine-stove, and passing through the opening *a* in the flaring ring *b* of the fire-pot, of the vertical pipe section B, located contiguous to the stove-wall, the horizontally-curved portion B', partially embracing the magazine, and the exit-pipe C, which latter passes upward through the smoke-flue and connects with the respective rooms to be heated, the said several parts made and connecting together, all substantially as and for the purpose described.

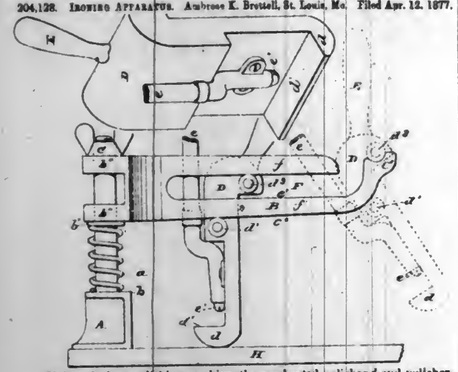
204,127. APPARATUS FOR RAISING CREAM. James W. Brady, Catonsville, Md. Filed Apr. 17, 1878.



Claim.—1. As an improved device for setting milk to raise cream thereon, jointly, an air-tight inclosing cylinder or case, having a stop-cock near the bottom, and a packed piston-rod passing through its cover at top, and a milk-containing cylinder or vessel, properly packed, and operated within said inclosing-cylinder after the manner of a packed closely-fitting piston, by force communicated to it through the medium of the piston-rod, substantially as set forth.

2. In a device for raising cream on milk, the combination of an air-tight inclosing vessel or cylinder and an inner milk containing vessel or cylinder, closely fitted and packed, so as to make an air-tight joint with the inner surface of the inclosing-cylinder, and mechanism to impart to said cylinder, either or both, sliding movement of the one within or upon the other, after the manner of the tubes of a telescope, with a view to condense or expel the atmosphere from, or to create a partial vacuum within, said cylinder, substantially as described.

204,128. IRONING APPARATUS. Ambrose K. Bretsell, St. Louis, Mo. Filed Apr. 12, 1877.



Claim.—1. In a polishing-machine, the gas-heated polisher *d* and polisher-head D, combined with swinging frame B by friction-rollers *d*' *d*', and with the standard A, spring *a*, and set-screw c by the double joint *b*', as shown.

2. The polishing-head D, having the recessed body to receive the gas-jet *e*', and provided with the polisher *d*, having an upper flat surface, *d*', directly beneath the jet *e*', as and for the purpose set forth.

3. The swinging frame B, having the slot F, and the two parallel arms *f*' *f*', the lower arm terminating in the upwardly-curved bracket C', having a semi-circular notch to receive and support the polisher D, as set forth.

204,129. MOLDING DOVETAILS IN METAL CASTINGS. Forman Burdick and James Easterly, Albany, N. Y. Filed Mar. 29, 1878.

Brief.—The sand-mold having been formed in the usual way, the cope is lifted vertically from the pattern without destroying the cope portion of the mold. The sand-base below the outermost points of the mold between the side pieces sustains the inclined sides of mold above them while cope is lifted.



Claim.—1. The combination of the main piece A, provided with the sunken portion D, having inclined sides, with side pieces B B, having inclined sides.

2. The combination, with a pattern for molding dovetails, of the side pieces B B, having a connection with the main portion A of the pattern at their outside lower edges, to adapt said side pieces being turned upward, substantially in the manner specified, for the purpose set forth.

3. The combination, with the main portion A of a pattern for molding dovetails, of side pieces B B, having their inclined faces *a a* adapted to be turned to a vertical position, and the recess D, made below the plane of the lower margin edges of inclined faces *a a*, in the manner specified, for the purpose set forth.

4. The combination, with the main portion A of a pattern for molding dovetails, and side pieces B B, adapted to be turned up from said main portion from their rear or outside lower edges *c c*, of the guard-blocks C C, in the manner and for the purpose set forth.

204,130. COMPOSITIONS TO BE USED AS MORDANTS AND DYE-STUFFS. Saml. Osbot, Jr., Boston, Mass., assignor to Charles W. Slade, same place. Filed Jan. 14, 1878.

Brief.—The object is to employ this composition as a fixing agent for aniline colors, or to produce slate or drab colors with iron salts for use on cotton or mixed fabrics.

Claim.—A mordant consisting of gallic acid, sodic or potassic hyposulphite, hydrosodic or hydropotassic sulphate, and nut galls, the same being finely ground and thoroughly mixed together, substantially as set forth.

204,131. ORGAN-CASES. Lyman C. Carpenter, Syracuse, N. Y. Filed Feb. 9, 1878.

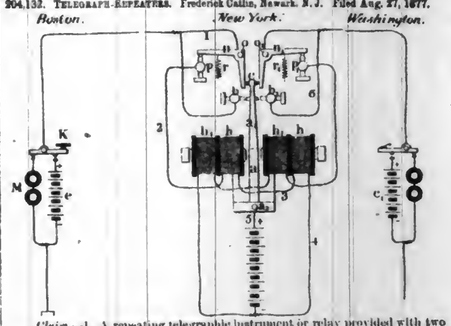
Brief.—A sheet music holder and segmental cover are combined with the upper portion of the organ-case.



Claim.—1. The combination, with an organ, of the book and music case, having the pockets B C and the rolling cover D, all constructed and arranged substantially as and for the purposes described.

2. The spring K, in combination with the shoulder I on the rolling cover D, substantially as and for the purposes specified.

204,132. TELEGRAPH-REPEATERS. Frederick Catlin, Newark, N. J. Filed Aug. 27, 1877.

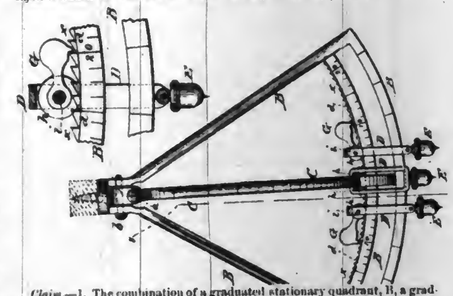


Claim.—1. A repeating telegraphic instrument or relay provided with two independent sets of helices, so arranged as to have equal and opposite effects upon its armature, in combination with two independent line-wires, substantially as specified.

2. An armature so arranged with reference to an electro magnet or magnets provided with opposing helices as to be movable in either of two directions from a central position, according to the preponderance of magnetic effect in one or the other of the said opposing helices, and a main battery, having one of its poles connected with said armature and the other with the earth, in combination with two contact-levers and two fixed stops, one of each being permanently connected to each of two independent lines or circuits, substantially as specified.

3. The armature a and arm *a*', in combination with the contact-lever a and stop *b*, connected to one line-wire, L, and the contact-lever *a*' and stop *b*, connected to another line-wire, L, substantially as specified.

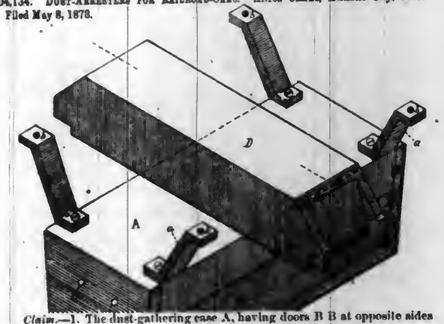
204,133. ROLL AND PITCH INDICATORS FOR VESSELS. Ralph Chandler, Boston, Mass., assignor to himself and Walton Brothers, New York city. Filed May 13, 1878.



Claim.—1. The combination of a graduated stationary quadrant, B, a graduated quadrant, C, united thereto by a universal joint, and stirrups D, placed loosely upon the arcs of the quadrants, for the purposes herein set forth.

2. The stirrup H, provided with hinged weight E, pin *i*, rollers *h h*, and hook G, in combination with the arc of a quadrant having teeth *x* and ways *d*, substantially as and for the purposes herein set forth.

204,134. DUST-ARRESTERS FOR RAILROAD-CARS. Alfred Clarke, Atlantic City, N. J. Filed May 8, 1878.



Claim.—1. The dust-gathering case A, having doors B B at opposite sides opening inwardly alternately, according to the movements of the train, one door being closed while the other is open, and having one or more holes in its top for the escape of dust into a suitable discharging-receptacle, the case being adapted to be connected with the bottom of a car-body, substantially as and for the purpose set forth.

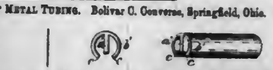
2. The trunk D, having doors E, adapted to open outward, one being opened while the other is closed, in combination with the case A, having doors B B to open inward, there being one or more holes or openings in the bottom of the trunks communicating with like openings in the top of the case A, substantially in the manner and for the purpose set forth.

204,135. SEWER-TRAP VALVES. Peter J. Convery, Brooklyn, N. Y. Filed Apr. 13, 1878.



Claim.—A valve for sewer-traps, consisting of the threaded spindle C, the coiled spring E, the regulating-nut *c*, in combination with the air-tight ground seat D, inclosed in the sectional cylinder A, supplied with vent-holes *a*', substantially as described, for the purpose intended.

204,136. MANUFACTURE OF METAL TUBING. Bolivar C. Converse, Springfield, Ohio. Filed Aug. 13, 1877.



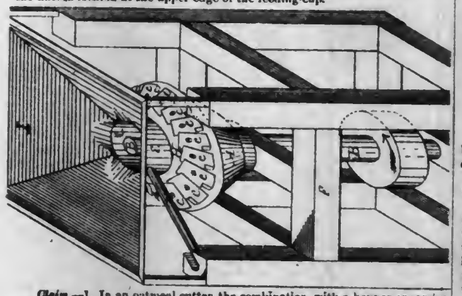
Claim.—1. The within-described mode of making a tube, having a central internal rib, the same consisting in forming a skelp of a T-shaped cross-section, and then passing the same through a tapering die having a core, *a*, with a central slot, *i*, as set forth.

2. The within-described die, consisting of the block A, having an opening tapering uniformly from one face to the other of the block, and a short cylindrical slotted core, *a*, supported by a web having parallel edges, and extending centrally from the contracted end of the opening, all as set forth.

3. As a new article of manufacture, a tube the edges of which are separated, and from which extends centrally toward the slot between said edges a rib, as set forth.

204,137. OATMEAL-MACHINES. George H. Cormack, Rockford, Ill., assignor to A. M. Johnston & Co., same place. Filed Apr. 8, 1878.

Brief.—Grains fed from hopper into the saucer-shaped revolving cup provided with radial grooves, up which the grains pass by centrifugal force to the knives located at the upper edge of the feeding-cup.



Claim.—1. In an oatmeal-cutter, the combination, with a hopper or carrier adapted to be rotated in a horizontal plane, the inner surface of said hopper being provided with radial grooves which lead to the outer edge thereof, of suitable cutters located in close proximity to the edge of said carrier or hopper, substantially as set forth.

2. In an oatmeal-cutter, the combination, with a hopper or carrier adapted to be rotated in a horizontal plane, the inner surface of the hopper being provided with radial grooves which extend to the outer edge thereof, of a series of inclined cutters located and adjustably secured in close proximity to the outer edge of said grooved carrier or hopper, substantially as set forth.

204,138. WRITING-TABLETS. Wm. O. Davis, Bloomington, Ill. Filed Jan. 22, 1878.



Claim.—1. A memorandum or blank tablet consisting of a smooth wooden strip, C, and sheets of paper, B, having the edges of one end of the sheets secured to said wooden strip by some adhesive substance, substantially as herein shown and described.

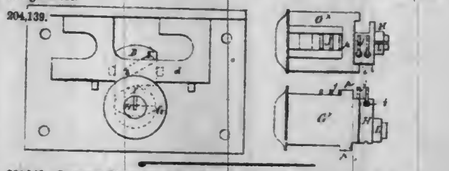
2. The herein-described memorandum or blank tablet, consisting of the smooth wooden strip C, paper sheets B, and a cover, said sheets and cover secured to said wooden strip by some adhesive substance, substantially as specified.

204,139. LOCKS. Chas. C. Dickerman, Boston, Mass. Filed Sept. 30, 1875.

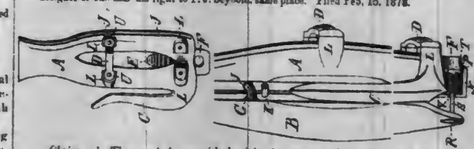
Brief.—The rotation of a boss placed eccentrically upon the end of a rotating cylinder effects the movement of a bolt. The escutcheon has longitudinal slots for receiving the ends of sliding tumblers, and a transverse bar crosses each slot. The bolt-propeller slot is centrally located, so that the escutcheon may be used either side up.

Claim.—1. The combination, with the rotative plug or tumbler holder H, of the escutcheon G', having longitudinal slots for receiving the ends of the sliding tumblers *j*, and a transverse bar, *p*, crossing each slot, and located within the periphery of the escutcheon, substantially as and for the purpose specified.

2. The escutcheon G', having its bolt-propeller slot centrally located, substantially as described, whereby the escutcheon may be placed either side up, and yet be properly located with reference to the bolt-propeller and its actuating device.



204,140. COMBINED WHIP-SOCKET AND REIN-HOLDER. Burton J. Downing, St. Louis, Mo., assignor of one-half his right to F. J. Seybold, same place. Filed Feb. 15, 1878.



Claim.—1. The part A, provided with the upturned continuation E, and orifices J, in combination with the part B, provided with the projections G, substantially as described.

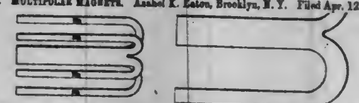
2. The combination of the parts A and B, the former provided with the projecting arm C, which, with the latter, forms a clamp for holding the reins, substantially as described.

3. The combination of the parts A and B and catch S O, substantially as described.

4. In combination with parts A and B, the catch S O and spring N, substantially as described.

5. The spring N, in combination with the parts A and B and catch S O, constructed with heads P R and the shoulder W, substantially as described.

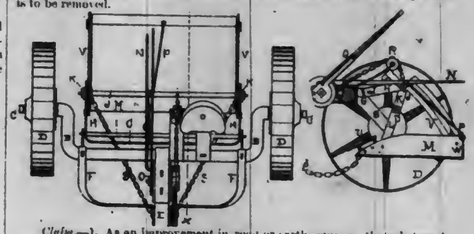
204,141. MULTIPOLAR MAGNETS. Asahel K. Eaton, Brooklyn, N. Y. Filed Apr. 12, 1878.



Claim.—A multipolar magnet having one pole of a given polarity balanced by two, three, or more poles of the opposite character, distributed symmetrically with reference to the main pole and to one another.

204,142. EARTH-SCRAPERS. James H. Edmondson, Valparaiso, Ind. Filed Dec. 6, 1877.

Brief.—This is an improvement on Patent No. 196,143, dated October 6, 1877, to the same patentee, and it consists in making the axle with arms extending downward and to the rear to receive the wheels, and also in pivoting the tilting frame, from which the scraper is suspended, to the rear ends of the braces connecting the axle and the tongue, which arrangement brings the point of support or suspension for the scraper in, or nearly on, a line with the wheel-spindles of the axle, thereby balancing the weight on the axle, and avoiding any tendency to tilt up the front end of the tongue. Curved slotted bars, connecting the rear corners of the scrapers with the supporting rod or pivots, sustain the corners and prevent dipping when sloppy or watery earth is to be removed.



Claim.—1. As an improvement in road or earth scrapers, the axle-tree A, provided with the backward and downward projecting arms B, in combination with the tilting frame G H H, lever N, connecting-rod P, and scraper M, as set forth and described.

2. The tilting frame G H H, in combination with the direct-attaching braces F F, rod P, and scraper M, as shown and described.

3. Slotted and curved supports V V, combined with the tilting frame and scraper M, as specified, and for the purpose set forth.

204,143. WELL-DRILLING APPARATUS. J. E. Elliott and Gilbert B. Elliott, Moncton, New Brunswick, Canada. Filed Apr. 1, 1878.

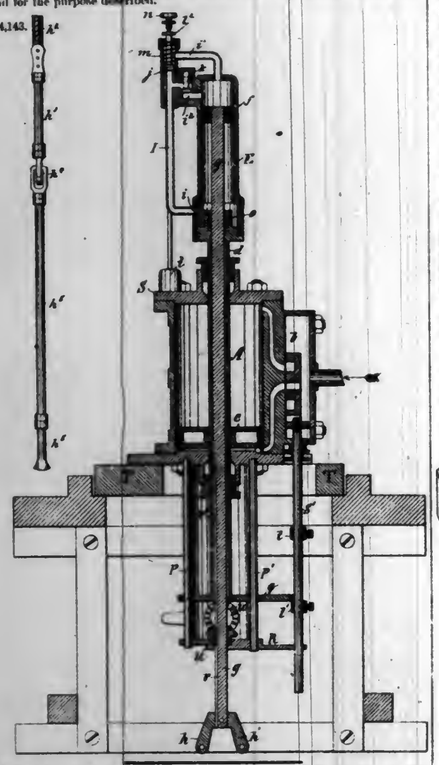
Claim.—1. The combination, with the vertical steam-cylinder A, provided with the hollow piston-rod *d*, of the automatic feed-cylinder E, with its piston *f* and piston-rod *g*, working in the said rod *d*, whereby drilling tools attached to said rod *g* may be suspended upon a column of water in said cylinder E in the operation of drilling, as and for the purpose described.

2. The automatic feed-cylinder E, provided with the pipes or passages i^1 i^2, communicating with the pipe I, and the valves *j* and *k*, controlling the passages i^1 and i^2, all constructed and combined to operate as and for the purpose described.

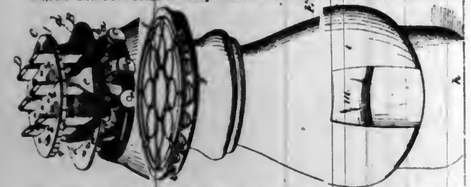
3. The combination of the vertical steam-cylinder A and piston c, provided with a hollow piston-rod, *d*, with the lifting and automatic feed-cylinder E and piston *f*, provided with its rod *g*, working in rod *d*, together with pipe I, passages i^1 i^2, valves *j* and *k*, weights *l P*, (one or both,) spring *m*, and feed regulating screw *n*, all constructed to operate as and for the purpose described.

4. The combination of the cylinders A and E, pistons c and *f*, rods *d* and *g*, clamps A k^1, gears *n* and *n'*, the said gear *n* having a pin or feather working in groove e in rod *g*, and the crank H, all constructed and arranged to operate as and for the purpose described.

204,143.

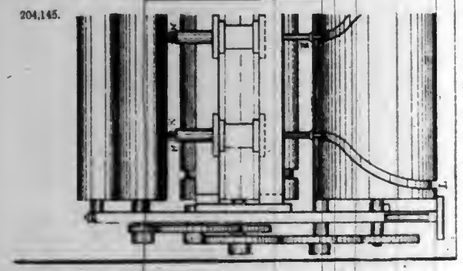


204,144. LAMPS FOR COOKING. Henry S. Fifield, New Hampton, N. H. Filed May 18, 1877.



Claim.—In lamps for cooking, the lamp A, provided with the plates B and C, and the attachment E, having a base, *k*, adapted to rest upon the plate B and be held in position by the plate C, and having an enlarged body, *i*, and a top, *j*, adapted for a grating, the several parts constructed and arranged substantially as described and shown.

204,145.



204,145. RUBBER-CUTTING MACHINES. Chas. Ford, Jarvis M. Slade, and Franklin Bayles, New York, N. Y. Filed Feb. 28, 1878.

Brief.—Sheets of rubber are cut into longitudinal strips, each strip comprising a series of blanks, which are afterward separated by cutting them transversely of the strip.

Claim.—1. The combination, substantially as hereinbefore set forth, of the cutter-roll, one or more carriages and spindles provided with cutters or knives, and one or more revolving cams, shaped and connected substantially as described, to move the spindles and the cutters or knives along the surface of the cutter-roll parallel with its axis, all arranged to operate in the manner and for the purposes set forth.

2. The combination, substantially as hereinbefore set forth, of the cutter-roll, one or more carriages and spindles provided with revolving cutters or knives, and two revolving cams for each carriage and spindle, one cam presenting the cutters at the proper angle to the rubber-sheet, and one for giving the cutter a motion along the surface of the cutter-roll parallel with its axis, all constructed and arranged to operate in the manner and for the purposes set forth.

3. The combination, substantially as hereinbefore set forth, of the cutter-roll and one or more carriages and spindles provided with revolving cutters, arranged to move parallel to the axis of the cutter-roll, substantially in the manner and for the purposes set forth.

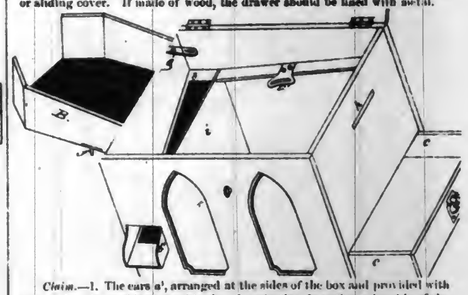
204,146. MARBLEIZING PAPER AND OTHER FABRICS. Georg Grossheim, Elberfeld, assignor to A. Siebert, Hummerbach, Prussia, Germany. Filed Apr. 8, 1878.



Claim.—The process of reproducing the natural veins of marble on paper or other fabric by sinking the natural veins of a block or slab of marble below the polished surface thereof, and then printing from the surface thus produced, or from a metallic reproduction thereof, substantially as specified.

204,147. SCREENS. Geo. F. Halley, Princeton, N. J. Filed Apr. 1, 1878.

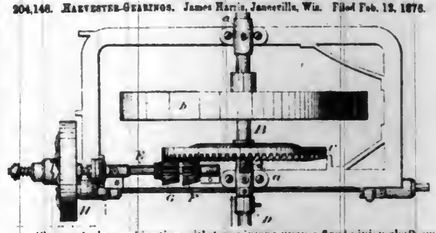
Brief.—Interchangeable screens are provided for each box. In place of the hinged cover, a sliding cover may be substituted, or a hopper with hinged or sliding cover. If made of wood, the drawer should be lined with metal.



Claim.—1. The ears *a'*, arranged at the sides of the box and provided with curved slots, in combination with pins *f*, projecting from the under side of the screen B, as and for the purposes stated.

2. A screen for screening coal-ashes or other substances, provided with a handle, *g*, and pins or studs *f* on its under side, and having a wire bottom and an opening at one end to permit the escape of the coal therefrom, as shown.

204,148. HARVESTER-GEARINGS. James Harris, Janesville, Wis. Filed Feb. 12, 1878.



Claim.—1. In combination with two pinions upon a fixed pinion shaft, one of which is movable relatively to the other, substantially as described, a gear-wheel capable of movement relatively to the fixed pinion shaft, substantially as described, having two series of teeth, one of which projects beyond the other, the construction being such that when the parts are in gear for either speed a single series of teeth and a single pinion only are in frictional contact, substantially as set forth.

2. The combination of the following elements: a movable frame having a pinion shaft fixed thereon, substantially as described, a gear-wheel mounted on the main axle or drive-wheel, having two series of teeth, substantially as described, a pinion-shaft fixed upon the frame-shaft, adapted to engage with one of the series of teeth, and a pinion movable upon the frame-shaft, adapted to engage with the other series, the construction being such that either pinion may be caused to engage with the proper series of teeth without the frictional movement of the other, substantially as described.

3. The combination of the shaft B, having the limiting collar D, the sliding frame A, and the fastening iron *d*, as described.

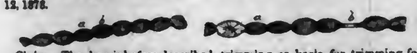
4. The combination of the grooved shaft E and the loosely attached gear-wheel H, having clutch-teeth on its outer side, with the sliding clutch J and the push-rod K, adapted to slide in the groove to actuate the clutch, as described.

5. The combination of the sliding clutch-spring *j* and the push-rod K, having the revolving collar *k* attached thereto, with the non-revolving collar L and independent lever M, as described.

6. The combination of the journal-box, lever M pivoted thereto, and non-revolving collar L, having arms *l l* bearing against the journal-box, as described.

7. The combination of two pinions with the main gear-wheel, capable of movement at right angles to the face of the pinions, for engagement with or disengagement from one of the same, the other pinion being capable of movement in a plane parallel to the face of the wheel for engagement or disengagement, substantially as set forth.

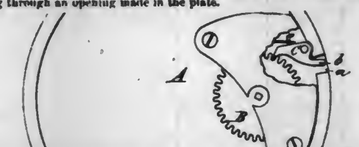
204,149. WIRE TRIMMING FOR JEWELRY. Louis Hookmaker, Wrentham, Mass., assignor of two-thirds his right to William H. Wade and Edward P. Davis, same place. Filed Mar. 12, 1878.



Claim.—The hereinbefore-described trimming or basis for trimming for jewelry, consisting of a wire provided with a continuous series of flattened surfaces, *a b*, at right or other angles to each other, substantially as described and shown, and for the purpose set forth.

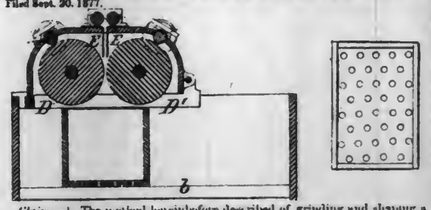
204,150. WINDING-CLICKS FOR WATCHES. Charles T. Higginbotham, Springfield, Mass., assignor to the Hampden Watch Company, same place. Filed Apr. 10, 1878.

Brief.—The invention consists in providing a means of letting down the mainspring of watches by means of click provided with a projection protruding through an opening made in the plate.



Claim.—The combination of the click C, provided with the tail or projection *b*, the plate A, having the slot or recess *a* therein, the ratchet-wheel B, and the click-spring *c*, substantially as and for the purpose herein set forth.

204,151. APPARATUS FOR GRINDING AND SHAPING SLATE. John W. Hyatt, Newark, N. J. Filed Sept. 20, 1877.



Claim.—1. The method hereinbefore described of grinding and shaping a slab of slate into pencil-blanks by passing the slab between grooved grinding and shaping rolls, which act simultaneously on opposite sides of the slab to cut the slab into blanks while passing between a single set of rolls.

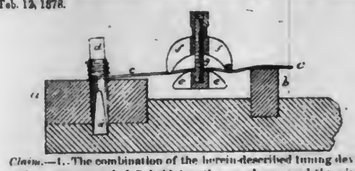
2. The combination, in a slate-grinding machine, of the trough and the receiving-box with the grinding and shaping or grinding rolls, substantially as and for the purposes set forth.

3. The combination, with the trough and the grinding and shaping or grinding rolls, of a hood, substantially as and for the purpose set forth.

4. The combination of the feed-rolls, the guide-plates, and the grinding and shaping or the grinding rolls, substantially as and for the purposes set forth.

5. The combination, with the grinding rolls, of truing rolls or points, substantially as and for the purpose set forth.

204,152. TUNING ATTACHMENTS FOR PIANO-FORTES. H. F. Jacobs, Weston, Mass. Filed Feb. 12, 1878.



Claim.—1. The combination of the herein-described tuning device, consisting of the parts *c c'* and *f f'*, held together as shown, and the pin *d*, said pin being immovably fixed in the pin-block, so as to be incapable of being turned, all substantially as and for the purpose above set forth.

2. The combination of the part *c*, provided with the crease *c'*, and the part *f*, provided with the notches *f'*, said parts being held together by means of a screw and head or nut, substantially as and for the purpose set forth.

204,153. LAWN-MOWERS. Frank G. Johnson, New York, N. Y. Filed Aug. 8, 1877.

Claim.—1. The curved plates F, constituting the carriers of all the working parts, as the axles of the cutters G, bearing-wheels E, pressure-knife L, and the adjusting-screws *i* and *j*, substantially as described.

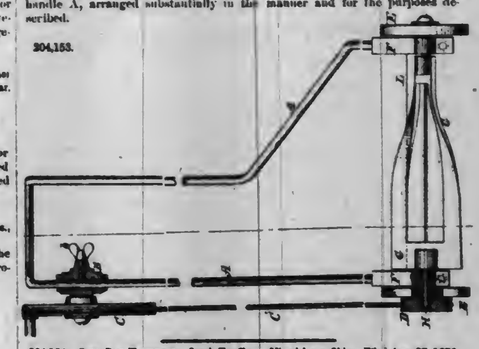
2. The operating-wheel C and the adjustable sliding sleeve H, arranged in the manner and for the purpose set forth.

3. The revolving cutters G and carrying-shaft, with its long and short bearings, as combined with the bearing-plate F, supporting-wheels E, and driving-wheel D, substantially as described.

4. The combination, with the cutters of a lawn-mower, of an independent adjustable hand-wheel, an endless band or chain, and a pulley secured to the cutter-shaft, substantially as described.

5. The combination of the revolving cutters G, stationary pressure-knife L, curved plates F, carrying-wheels E, drive-wheel C, and the guiding-frame handle A, arranged substantially in the manner and for the purposes described.

204,153.

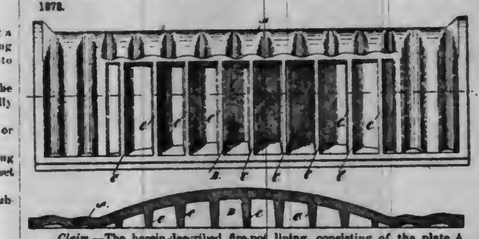


204,154. SIDE-BAR VEHICLES. Jacob Kauffman, Miamisburg, Ohio. Filed Apr. 27, 1878.



Claim.—The herein-described running-gear for vehicles, composed of the axle A, bobster B, and side bars D, made of a single piece and bent as shown, the fifth-wheel E, the semi-elliptical springs F, upon which are secured the bed bars G, provided with rubber springs *j*, bearing upon the metal springs F, and the rear shackles *f*, provided with rubber springs *h*, the whole constructed and combined as and for the purpose specified.

204,155. FIRE-POT LININGS FOR COOK-STOVES. R. J. King, Dayton, Ohio. Filed May 6, 1878.



Claim.—The herein-described fire-pot lining, consisting of the plate A, with a central concavity, B, facing the pot, in which are located the vertical ribs C, with their front edges flush with the front edges of the plate, substantially as set forth.

204,156. WASH-BOARDS. Florian Kuemy, Peoria, D. Filed Mar. 6, 1878.



Claim.—1. In a wash-board having a scrubbing-surface composed of a brush or brushes, the combination, with the upper ends of brushes D, of the pendent end piece E, hung on end pivots *b* and button *d*, said brushes also in combination with end piece *e*, provided with shoulders *f*, all arranged as described.

2. In a wash-board having a brush-surface, the combination, with said brush-surface, of the fixed end piece *e*, the flat back board B B', and hanging end piece E, having button *d*, and boards A A, arranged as described.

3. In a brush-surfaced wash-board, the swinging end piece E, having a shoulder and recess on the upper part of the edge next to the confined brushes D, in combination with button *d*, board B', and sides A A, as described.

4. The arrangement of the brushes D D D, back B, end piece *e* E, shoulder or recess *f*, button *d*, pivots *b*, sides A A, and boards B C, as described.

204,157. SEWING-MACHINE TABLES. Tolbert Lanston, Washington, D. C. Filed Jan. 17, 1878.

Claim.—1. A chair having an arm or support adapted to receive and sus-

tain the base-plate of a sewing-machine, and having suitable attachments or bearings beneath to support the driving mechanism of the same, substantially as specified.

2. A chair having one of its arms constructed to support the base-plate of a sewing-machine, the latter being adjustable horizontally upon said arm toward and from the operator sitting in said chair, substantially as specified.

3. The combination, with a chair, a sewing-machine supported thereby, and adjustable to or from a sitter, and a balance-wheel, of a gravitating automatically adjustable driving-pulley and its endless belt, substantially as specified.

4. The combination of a chair and a sewing-machine adjustable to or from its back, and provided with a driven pulley, of the gravitating driving-wheel, and an endless belt suspending it from the driven pulley, substantially as specified.

5. In a chair having an arm support for a sewing-machine, a guard-screen between the arm and chair-seat, to protect the apparel of the sitter from wear by the endless belt at the side of the chair, substantially as specified.

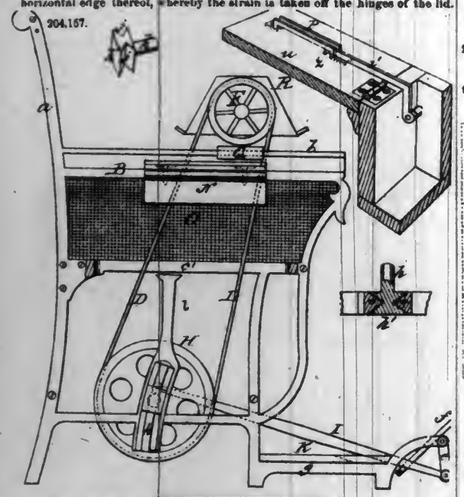
6. The combination, with a chair having arm B, with T-flange b, of the sewing-machine support, having the T-guide G, adapted to receive said flanges, and a set-screw, s, substantially as specified.

7. The combination of a chair having a driving-pulley and treadle-shaft journaled thereon, a pitman connecting said pulley and shaft, a sewing-machine supported by said chair, a driven pulley on said machine, and an endless belt passing around said pulleys, substantially as specified.

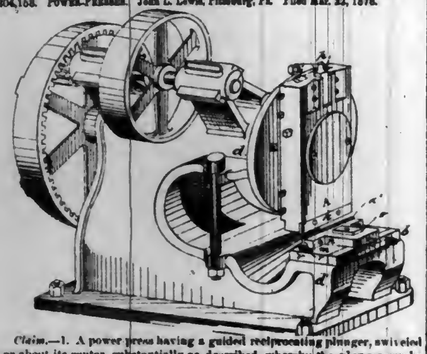
8. The combination of a chair having the curved slot *k*, the spindle A, moving in said slot, and the driving-wheel H, with the driven pulley F of a sewing-machine and the suspending-belt D, substantially as specified.

9. The sewing-machine work-box, having a hinged lid, u, with slotted transverse guides P, in combination with the angular arms *s'*, having cross-heads *z* engaging said guides, and pivoted to the end of the box, substantially as specified, and one portion of said arm bearing; when the lid is open, against the inner surface of the back of the box, and with the other resting upon the horizontal edge thereof, whereby the strain is taken off the hinges of the lid.

204,157.



204,158. POWER-PRESSES. John L. Lewis, Pittsburg, Pa. Filed Mar. 22, 1878.



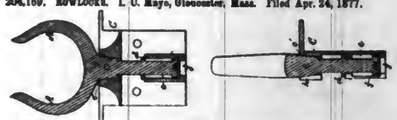
Claim.—1. A power press having a guided reciprocating plunger, swiveled at or about its center, substantially as described, whereby the plunger can be reversed or swung to any position without interference with its reciprocation.

2. The combination of a reciprocating plunger, swiveled at or about its center, with a face plate or carrier provided with guides upon its face for the movement of the plunger, and capable of revolution or partial revolution, substantially as described, and for the purpose of changing the position of the plunger and of accurately guiding the same.

3. The combination of a guided and swiveled plunger, A, with and operated by the eccentric S of the drive-shaft F, and a revolvable carrier, E, through which the said drive-shaft F passes to the plunger, said carrier rotating on the circular head *d'*, substantially as described, whereby the reciprocation of the plunger is effected while in any position it is capable of taking.

4. In a power-press having a reversible reciprocating plunger, provided with knife and punch, respectively, at its opposite ends, as shown, the combination, specifically, with the plunger and its tools, of a reversible lower tool, consisting of base-plate *m n*, having die-cavity *o* and shear-blade *k'*, arranged as described, and adjustably bolted to the bed *d'*.

204,159. ROWLOCKS. L. C. Mayo, Gloucester, Mass. Filed Apr. 24, 1877.



Claim.—1. The bracket C, provided with a journal-bearing, *c'*, and with an elongated ball or head socket, *c*, open in front, substantially as shown and described.

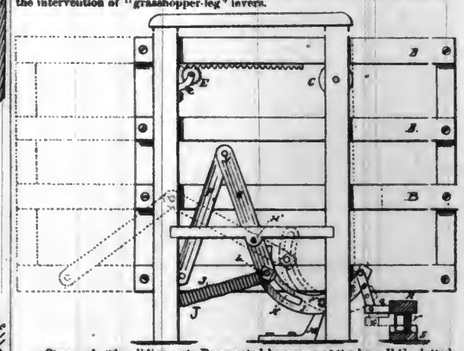
2. The bracket C, provided with the journal-bearing *c'* and the elongated ball or head socket *c*, open in front, as set forth, in combination with the rowlock A, provided with the ball or head, the shank, and the journal, all substantially as represented.

3. The rowlock having its shank provided with the journal, the ball or head, and the annular shoulder, in combination with the bracket provided with the journal-bearing and the elongated head-socket, open in front, and arranged with a clear or open space between them, (the said bearing and socket,) all being essentially as set forth.

4. The rowlock provided with the conical journal, in combination with the bracket provided with the conical bearing for such journal, and having such bearing open in front, as represented.

204,160. RAILWAY-GATES. Jos. M. McCaffrey, Sherman, Tex., and Jas. Larkin, Milwaukee, Wis. Filed Jan. 2, 1877.

Brief.—A treadle is acted upon by the wheel, and actuates the gate by the intervention of "grasshopper-leg" levers.



Claim.—1. The sliding gate B, operated by means of the bars F G, slotted arc-shaped lever I, spring J, and treadle R, substantially as and for the purpose specified.

2. In combination with the treadle-bar R, the step-bar S, springs V, staples T, and links U, substantially as and for the purpose specified.

3. The combination of gate B, bars F G, spring J, and slotted lever I with a treadle and connecting devices, substantially as set forth.

204,161. CORN-SHELLERS. John W. Miller, Pittsburg, Pa., assignor of one-half his right to James M. Miller, same place. Filed Mar. 16, 1878.

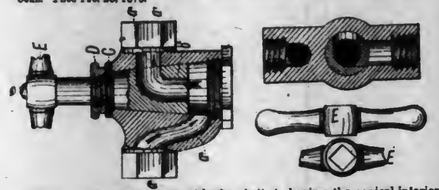


Claim.—1. In a machine for shelling corn, the combination of the herein-described two shelling-drums, each composed of a series of sections formed with teeth arranged at an inclination to the axes of the sections and the drum, and so that the teeth of the said sections resemble the sections of independent screw-threads upon the same cylindrical body, as herein shown and set forth, and for the purposes specified.

2. In a corn-sheller, the herein-described shelling-drums, composed each of a series of sections formed with teeth arranged at an inclination to the axes of the sections, each section being formed with several projections upon one side of its hub and corresponding recesses upon the other side thereof, whereby the sections are coupled together and the teeth arranged in a spiral line around the drums, as shown and described, and for the purposes specified.

3. In combination with the two shelling-drums, composed of series of sections, with teeth arranged at an inclination to the axes of the sections, and also in spiral lines around the drums, substantially as described, the spring-plate *g*, having upon its face a series of projecting ribs, *h*, arranged at acute angles to the base of the plate, substantially as shown and specified, and for the purposes set forth.

204,162. STOP-COCKS. Geo. H. Munger, New Haven, assignor to himself, Elias P. Merriman, and Edwin M. Munger, same place, and George Munger and George B. Munger, Madison, Conn. Filed Feb. 28, 1878.



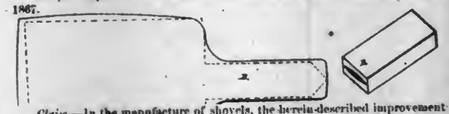
Claim.—1. In combination with the shell A, having the conical interior chamber inclining inward as it extends upward, the conical plug B, the parts being arranged to admit the water below for the purpose of keeping the plug to its seat.

2. In combination with the conical chamber, the conical plug extending through the top of the chamber, and the cap *a'*, closing the lower opening, the construction being such that the cap may be removed without disturbing any other part, as described.

3. The cock described, having the shell A, with chamber *a'* and passages *a' a''*, the plug B, with passage *b'*, the cap *a'*, washer *t'*, and collar D, as described.

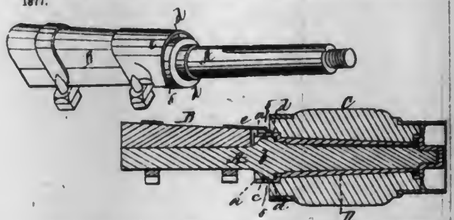
204,163. MANUFACTURE OF SHOVELS. H. M. Myers, Beaver Falls, Pa. Filed Feb. 2, 1878.

Brief.—Improvement upon Letters Patent No. 61,756, dated February 5, 1867.



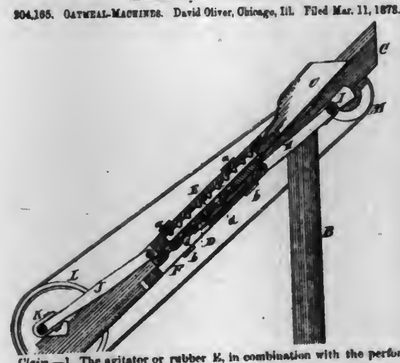
Claim.—In the manufacture of shovels, the herein-described improvement in the mode of forming the straps B, the same consisting in forming a rectangular blank with a recess in one end, as specified, and then drawing out the blank to form the straps by plating or hammering with the edges remaining united, and finally finishing and trimming, substantially as and for the purposes set forth.

204,164. HAND-GUARDS FOR CARRIAGE-AXLES. M. C. May, Boston, Mass. Filed Jan. 2, 1877.



Claim.—The combination of the axle A, having wide collar *b*, and turned-down portion *c*, forming shoulders 3 *d*, axle-box D, and extension *a*, formed in one piece, clip B, having the outer extended flaring end *e* projecting over extension end of axle-box, and the hub C, the several parts constructed and relatively arranged with each other substantially in the manner herein shown and described, and for the purpose specified.

204,165. OATMEAL-MACHINES. David Oliver, Chicago, Ill. Filed Mar. 11, 1878.



Claim.—1. The agitator or rubber E, in combination with the perforated plate D, substantially as specified.

2. The combination of the fixed plate D with the agitator E, frame F, and knives G, all constructed and operating substantially as specified.

3. The hopper O, with space between the agitator and perforated plate, in combination with frame F and knives G, constructed and arranged substantially as and for the purpose set forth.

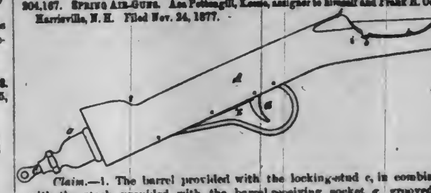
204,166. SUSPENDER-ENDS. Edward Painter, Easthampton, Mass. Filed May 1, 1878.



Claim.—1. As a new article of manufacture, a seamless suspender-end woven in a single piece, with a tubular central portion and flat ends, substantially as described.

2. As a new article of manufacture, a seamless suspender-end woven in one piece, with a tubular central portion having an internal core and with flat ends, substantially as described.

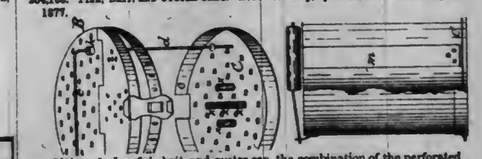
204,167. SPRING AIR-GUNS. Asa Pettengill, Keene, assignor to himself and Frank H. Colony, Harrisville, N. H. Filed Nov. 24, 1877.



Claim.—1. The barrel provided with the locking-stud *c*, in combination with the stock provided with the barrel-receiving socket *g*, grooved and notched, as set forth.

2. The barrel provided with the stud *c*, in combination with the stock A, provided with the socket *g*, having the groove *k* and notch *i*, as set forth, and with the perforated abutment *f*, and the air-chamber and its plug-piston, operative spring or springs, catch-lever, and its spring and trigger, all being arranged and applied substantially in manner and to operate as set forth.

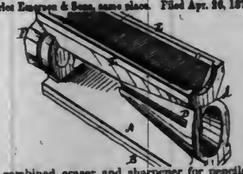
204,168. FISH, BAIT, AND OYSTER CANS. Robert J. Roney, Syracuse, N. Y. Filed July 10, 1877.



Claim.—1. In a fish, bait, and oyster can, the combination of the perforated false bottom C, provided with the flanges *c* and lifting-bail *e*, having wires *d d* attached thereto, with the perforated cover B, having guides *h*, substantially as set forth.

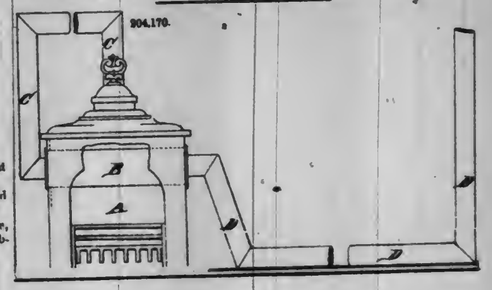
2. The above-described fish, bait, and oyster can, consisting of the perforated false bottom C, having tubes X, bail *e*, wires *d d*, and the sectional hinged cover B, having guides *h*, in combination with the can A, having tubes *m*, substantially as and for the purpose set forth.

204,169. COMBINED PENCIL-SHARPENER AND ERASER. Wm. Sellers, Haverhill, Mass., assignor to Charles Emerson & Sons, same place. Filed Apr. 26, 1878.



Claim.—A combined eraser and sharpener for pencils, composed of the base-piece A, provided with the erasive material B, the conical sharpener D, the serrated grooved piece E, and the eraser F, substantially as set forth.

204,170.

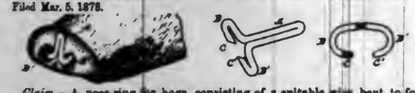


204,170. DRAFT-PIPES FOR HEATERS. Merrill A. Shepard, Lebanon, Ill. Filed Nov. 16, 1877.

Claim.—1. The fire-receptacle A, draft-pipe B, smoke and heating pipes C C, and exit-pipe D, all combined substantially as shown and described.

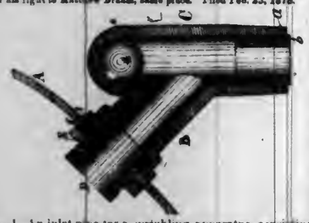
2. The pipe B, attached, as described, in the most suitable place in a stove or heater, so that the air within it may be superheated, thereby accelerating the draft through the pipes C C, with which it is connected, substantially as and for the purposes described and set forth.

204,171. RINGS FOR PREVENTING HOGS FROM ROOTING. John M. Smeeton, Union, Ky. Filed Mar. 5, 1878.



Claim.—A nose-ring for hogs, consisting of a suitable wire, bent to form two parallel portions, A, having loops B B' at right angles to portions A, and terminating in inwardly-bent points C C', adapted to fit each other when applied to the nose of the animal, substantially as shown and described.

204,172. INLET-PIPES FOR STREET-SPRINKLERS. G. H. Stutman, Cincinnati, Ohio, assignor of one-half his right to Matthew Braun, same place. Filed Feb. 23, 1878.



Claim.—1. An inlet-pipe for a sprinkling apparatus, consisting of stem B and vertical mouth *a*, and a valve located at or near the orifice of said mouth, for the purposes specified.

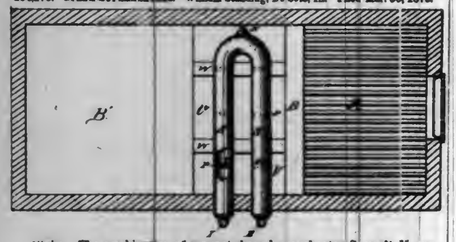
2. The inlet-pipe for a sprinkling apparatus, consisting of stem B, vertical portion C, provided with recess *c*, ball valve *d*, and valve-seat *b*, substantially as and for the purposes specified.

3. In combination with stem B, provided with mouth-piece *a*, the tube D, substantially as and for the purposes specified.

4. In combination with stem B, provided with mouth-piece *a*, the tube D and lock-nut E, substantially as and for the purposes specified.

5. In combination, the vertical portion C, ball-valve *d*, valve-seat stem B, tube D, and lock-nut E, substantially as and for the purposes specified.

204,173. STEAM-SUPERHEATERS. William Standing, De Soto, Ill. Filed Mar. 30, 1878.



Claim.—The combination of magnet-shaped superheater S, vault V, supports W W, bridge B, and steam-pipe connections I E, constructed and arranged, in connection with a steam-boiler and furnace, substantially as described and shown, and for the purposes set forth.

204,174. RAILWAY COUPON-TICKETS. Chas. J. Stromberg, Chicago, Ill. Filed Mar. 16, 1878.



Claim.—A coupon railroad ticket in which the agent's stub and each succeeding coupon indicate the place of departure and destination and road or roads over which the passenger will travel, and each part having a list of the coupon-stations of the terminal road and a final stub for the conductor of the last road, also indicating place of departure and destination, whereby but one set or form of tickets is required for each road, and whereby each road and the agent retain a complete history of the ticket, substantially as herein set forth.

204,175. BREATHING-CLOCKS. Henry Thompson, Providence, R. I. Filed Mar. 16, 1878.

Claim.—1. The snail-wheel E, with its steps *b'* and pins *b*, rotated by mechanism connected with the arbor of the minute-hand, in combination with the racks G H, gathering-pallet *q*, retainer I, a mechanism for striking the hours and parts thereof, and a mechanism operated by a cord, 15, or its equivalent, for raising the retainer and setting in motion the striking-train, substantially as and for the purpose set forth.

2. The cam-wheel *b* on the arbor of the minute-hand, in combination with the weighted lever D, with its pawl *c*, the ratchet-wheel *f*, and the snail-wheel E, operating substantially in the manner and for the purpose described.

3. The pins *b*, in combination with and projecting from the snail-wheel E, provided with graduated steps *b'*, substantially as and for the purpose set forth.

4. The arm L, pivoted to the lever K, and operated by the cord 15, in combination with a mechanism for liberating the striking-train, and the arm *p* on the shaft of the fly *c'*, operating substantially in the manner and for the purpose set forth.

5. The spring-guide M, in combination with the pivoted arm L and cord 15, substantially as and for the purpose described.

6. The rack G, with its arm 21, operated by the gathering-pallet *q*, in combination with the movable bell R, with its notch 24, and the hammer Q and its operative mechanism, substantially as and for the purpose set forth.

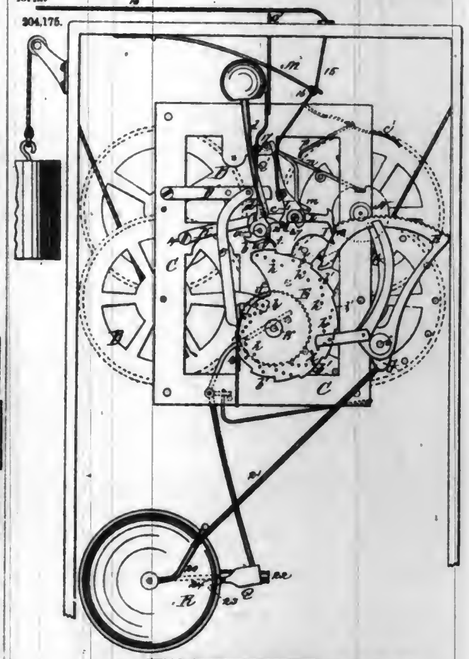
7. The notched bell R, made movable around its center, in combination with a mechanism for returning it to its original position after being turned by the arm 21 of the rack G, substantially as described.

8. The sleeve *s*, with its pin *t*, arranged to rotate and slide upon the arbor *a* of the minute-hand, in combination with the shipper-lever Q', cam *b*, and its pin *u*, the arm L, with its pin 25, and a mechanism for liberating the racks G H and setting in motion the striking-train, substantially as set forth.

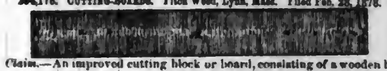
9. The lip 27, projecting from the arm L, in combination with the pin 25 and the pin *t* on the sleeve *s*, operating substantially in the manner and for the purpose described.

10. The rack H, with its wedge-shaped projection *l*, in combination with the snail-wheel E, with its pins, the ratchet-wheel *f*, and spring-pawl 13, constructed and operating substantially in the manner and for the purpose set forth.

204,175.

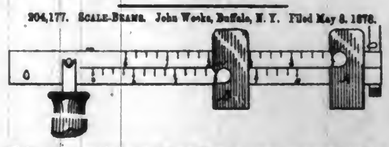


204,176. CUTTING-BOARDS. Titch Wood, Lynn, Mass. Filed Feb. 28, 1878.



Claim.—An improved cutting block or board, consisting of a wooden block or board having its surface saturated with an oleaginous and resinous or gummy solution, substantially as and for the purpose set forth.

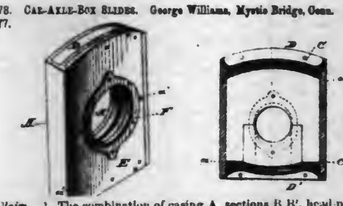
204,177. SCALE-BEAMS. John Weeks, Buffalo, N. Y. Filed May 8, 1878.



Claim.—1. A single beam for platform or other graduated beam-scales, having thereon different lines of figures, forming a progressive series from one line to the other, so as to operate as one continuous line or scale, substantially as specified.

2. In a weighing-scale, two or more sliding poises moving on a single beam, each poise with an index pointing to a separate line of figures on the single beam, substantially as hereinbefore specified.

204,178. CAR-AXLE-BOX SLIDES. George Williams, Mystic Bridge, Conn. Filed May 4, 1877.



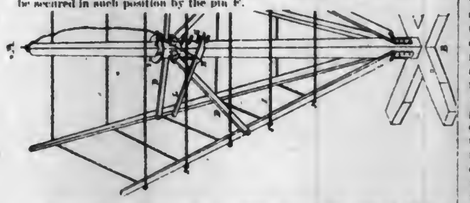
Claim.—1. The combination of casing A, sections B B', head-pieces D D', and springs C C', the said casing and head-pieces inclosing and protecting the other parts named, substantially as set forth.

2. Casing A, having rims or ribs *a' a'*, in combination with a soft shield, E, and an annular guard, F, arranged substantially as set forth.

3. As an article of manufacture, a slide for car-axle boxes, consisting of rectangular casing A, shield E, annular guard F, head-pieces D D', springs C C', and asbestus sections B B', all constructed and arranged substantially as set forth.

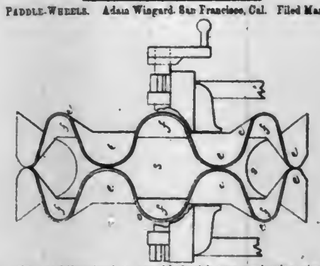
204,179. CLOTHES-DRIERS. Wm. F. Wilson, Columbia, Pa. Filed Mar. 11, 1878.

Brief.—The arms are forced apart and the cord tightened by pressing the sliding sleeve, and the braces hinged thereto and to the arms, downward by means of clevis, levers, and the fulcrum-pins on the post, when the sleeve may be secured in such position by the pin F.



Claim.—In combination with the sliding sleeve E, the bridle or clevis H, the perforated post A, the pin F, the fulcrum-pins G, and the lever L, the whole arranged and operated as and for the purpose specified.

204,180. PADDLE-WHEELS. Adam Wingard, San Francisco, Cal. Filed Mar. 26, 1878.



Claim.—The paddle-wheel A, provided with two projecting rims or blades, *c c*, one of which is secured to the periphery of the wheel on each side, the projecting portion of each blade being alternately bent in opposite directions, so as to form alternate arches or bridges *e*, and flaring or mouthed-shaped cavities or buckets *f*, substantially as and for the purpose above described.

204,181. APPARATUS AND PROCESSES FOR MANUFACTURING ILLUMINATING-GAS. Henry W. Adams, Philadelphia, Pa. Filed May 7, 1878.

Claim.—1. In a bench of gas-retorts, A, the retorts B C and D E, connected together in reciprocating pairs by the cross-pipes F and G, placed on their front ends, which project outside of the furnace, and which pipes are provided with valves Z and D', steam-connections L M N O, and nozzles H I and J K, and pipes T' U' V' W', for feeding oil, naphtha, or similar fluid matter into them, the said retorts having their stand-pipes placed on their rear ends, substantially in the manner and for the purposes shown and described.

2. The nozzles H I and J K, in combination with the pipes F and G and the retorts B C and D E, substantially in the manner and for the purposes indicated and described.

3. The reciprocating retorts, in combination with connecting-pipes having steam-nozzles at each end and opening toward each other, for injecting steam alternately and in opposite directions, as vehicles to carry the products of a freshly-charged retort into a reciprocating one, the charge of which is red hot and partially or wholly distilled, substantially as described.

4. The steam-pipes L M, in combination with the superheaters P and Q, and with the nozzles H I in the pipe F, and the branch steam-pipes N O, in combination with the nozzles J K in the pipe G, all provided with valves V W X Y, substantially in the manner and for the purposes described.

5. The oil-reservoir H', provided with the pipe I for filling it, the float J for indicating the quantity of oil in it, the safety-pipe K', and the attached feed-pipes L' M' N' O' and valves P' Q' R' S', constructed substantially in the manner and for the purposes indicated.

6. The stand-pipes O^{v} C^{v} C^{v} O^{v}, in combination with and placed at the rear end of the retorts B C D E, and inclosed by the back wall of the furnace, which protects them from the direct action of the fire, and prevents the more intense heat of the furnace from filling them up with solid carbon, as set forth.

7. The dip-pipes K^{v} L^{v} M^{v} N^{v}, having a circle of holes, I^{v} I^{v} I^{v} I^{v}, about one inch above their lower and open ends, in combination with the sealing buckets K''' L''' M''' N''', which, when resting on the bottom of the hydraulic main U^{v}, will project at their upper edges up to about the level of the series of holes in the dip-pipes, and which are provided with attached rods O^{v} O^{v} O^{v} O^{v} and levers P^{v} Q^{v} R^{v} S^{v} and fulcrums T^{v} T^{v} T^{v} T^{v}, to raise and lower them at pleasure, and to reverse the gas from one reciprocating retort to the other, all constructed substantially in the manner and for the purposes set forth.

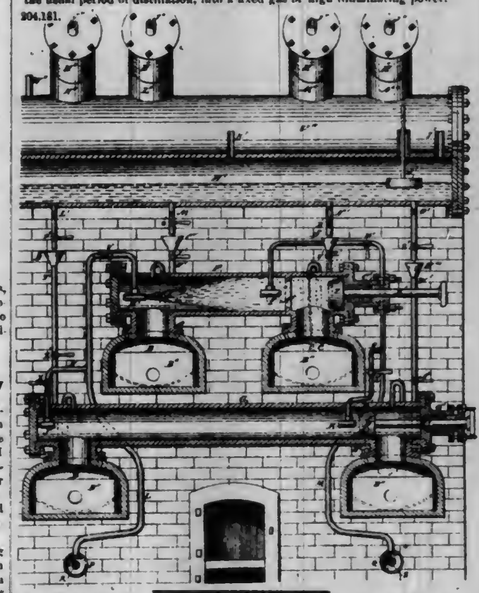
8. The hydraulic main U^{v} and dip-pipes K^{v} L^{v} M^{v} N^{v}, in combination with a sealing fluid, such as soft soap, an emulsion, or mucilage, or liquid gelatine, which, by virtue of its plastic and adhesive nature, has the characteristics of gas-tar in cleansing fresh-made gas, substantially as and for the purpose described.

9. The tubular retorts D^{v}, provided with external teeth or spiral cutting-edges G^{v}, and attached rods E^{v}, having lugs on them, F^{v}, to hold them up in the tops of the stand-pipes, when not in use, by resting on the tops of their flanges, through which they are passed by means of oblong holes, in combination with the stand-pipes C^{v}, substantially in the manner and for the purpose set forth.

10. The combination of the steam-pipes J^{v} with the saddle-pipes H^{v}, for the purpose of injecting them into jets of steam to clean them, substantially as shown and described.

11. The process of manufacturing illuminating gas, which consists in passing the tarry and aqueous vapors and gases distilled from a fresh charge of coal, wood, peat, turf, or other similar materials undergoing destructive distillation in one retort, in connection with oil, petroleum, naphtha, or any suitable oleaginous matter, together with steam, (preferably superheated,) as an injecting, carrying, and gas-yielding agent, into a reciprocating retort charged with red-hot coke or partially-distilled coal, wood, peat, turf, or other suitable substance, to be decomposed conjunctively in the same into fixed gas, and continuing this operation until the said fresh charge is partially distilled, and then shutting off the oil and steam feed, and drawing the spent charge from this retort and charging it with a fresh charge of coal, wood, peat, turf, or other similar material, and reversing the course of the gas and turning it from the retort last charged with its tarry and aqueous vapors and gases, in conjunction with a stream of oil, petroleum, naphtha, or any other oleaginous matter, together with steam, as an injecting, carrying, and gas-yielding agent, into the other reciprocating retort, whose charge is now red hot and partially distilled, to be decomposed together in the same into fixed gas, and continuing this operation until the last fresh charge is partially distilled, and then shutting off the oil and steam feed, and drawing and charging this last retort again, and reversing the gas, as before, and turning its tarry and aqueous vapors and gases, with the oil and steam feed, into the other retort, and so continuing this alternating process, thus generating, mixing, and combining the gaseous elements of coal, petroleum, and water in the same retort in a nascent state, and during the usual period of distillation, into a fixed gas of high illuminating power.

204,181.



204,182. BRICK-KILNS. Edwin F. Andrews, St. Louis, Mo., assignor of one-third his right to Thaddeus S. Smith, same place. Filed Mar. 28, 1873.

Claim.—1. The combination, with a closed top kiln, of a suction-fan or similar mechanical device having connection with the interior of the kiln at different heights, substantially as and for the purpose set forth.

2. The combination, in a covered kiln, of main flue Q with one or more adjustable dampers, *s*, to regulate the draft through the kiln.

3. In combination with a covered kiln, a series of small flues extending from the heads to a large central discharging-flue, Q, provided with a series of dampers, *s s*, substantially as set forth.

4. The large central discharging-flue Q, series of small longitudinal flues O, giving the central discharging-flue connection with every course of bricks at the top of kiln, in combination with a cover composed of flatting P, as and for the purpose set forth.

5. The furnaces A, placed outside the kiln, in combination with the arches H in line with the furnaces, and an unobstructive central cross-arch, J, extending from side to side of the kiln, substantially as set forth.

6. The combination, in a closed kiln, of arches H and J, extending, respectively, from side to side and end to end of the kiln, and suction pipe or pipes and suction fan L, or other equivalent device, for the purpose set forth.

7. The combination, in a kiln with sealed top, of the furnaces A, arches H and J, and the main flue Q at top, provided with a series of dampers, *s*, for the purpose set forth.

8. The combination, in a sealed-top kiln, of the outside furnace A at base of kiln, and transverse discharging flue or flues, covered by a series of dampers, for the purpose of localizing caloric currents, as described.

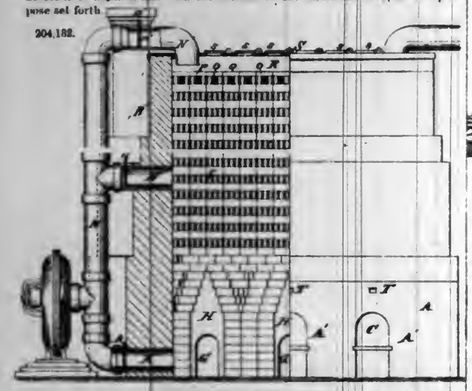
9. The combination of outside furnace A', small series of flues O, and main flue Q, with series of dampers *s s*, substantially as and for the purpose set forth.

10. In a covered kiln, with a series of small flues, O, main flue Q, adjustable dampers *s s*, and fan or other suction device to draw off the water-smoke before the draft is established by the action of the fire in the furnace or furnaces.

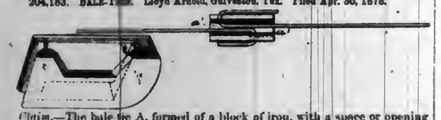
11. The combination, with the suction device, vertical pipe, series of draw-pipes, and dampers, of the flues extending to the interior of the kiln at two or more points, for the purpose set forth.

12. The combination, with a burning or burned kiln and an unburned kiln, of a flue or flues connecting the kilns at their upper part, and a suction device in communication with the interior of the unburned kiln, for the purpose set forth.

204,182.

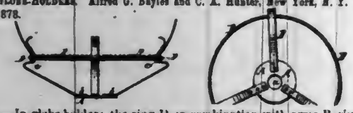


204,183. BALE-TIES. Lloyd Arnold, Galveston, Tex. Filed Apr. 30, 1878.



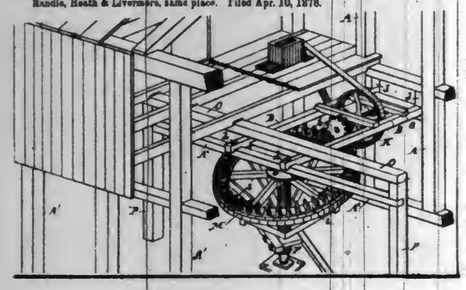
Claim.—The bale-tie A, formed of a block of iron, with a space or opening longitudinally through its breadth from one end nearly to the other, and having the alternate edges of the two plates thus formed notched, the notch of the lower plate being square and of a width equal to or a little greater than the bale-band, and the notch of the upper plate being narrower at its bottom than the bale-band, and with its sides inclined and beveled to an edge, to adapt it to receive and hold the bale-band, substantially as herein shown and described.

204,184. GLOBE-HOLDERS. Alfred G. Bayles and C. A. Hunter, New York, N. Y. Filed Apr. 8, 1878.



Claim.—In globe-holders, the ring D, in combination with arms B, riveted to disk A, substantially as described, and for the purpose set forth.

204,185. HORSE-POWERS. T. O. Bettis and James W. Heath, Memphis, Tenn., assignors to Randle, Heath & Livermore, same place. Filed Apr. 10, 1878.

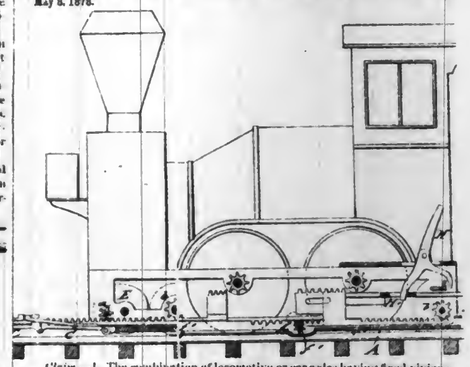


Claim.—1. The combination of the vertical master-shaft F and the independent frame H H, substantially as and for the purpose set forth.

2. The box D, cap C, and beams B, combined substantially as set forth.

3. The combination of a vertical-shaft horse-power, F M, an independent frame, B B, for supporting the upper journal of said horse power, and building frames A A', to which the horse-power frame or beams B are secured at one end, leaving them independent of said building-frame at the other end.

204,186. SAFETY-BRAKES FOR RAILWAY-TRAINS. Louis Blanck, New York, N. Y. Filed May 8, 1878.



Claim.—1. The combination of locomotive or car axles having fixed pinions, and of a series of toothed and successively actuated slide-sections arranged below the car-frame, with a set of eccentric-wheels that cause the locomotive or car, and with a set of intermediate eccentric-wheels that impart then a backward motion to the same, substantially as and for the purpose set forth.

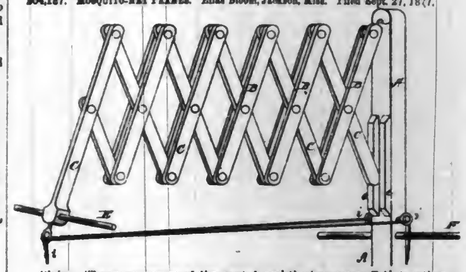
2. The combination of a safety-brake, consisting of toothed and successively actuated slide-sections that are arranged one within the other, and of eccentric raising and backing wheels operated thereby, with a sliding and spring-acted front buffer-head, and with suitable actuating-lever mechanism at the rear part, so as to throw the safety-brake into action from the front or rear, substantially as shown and described.

3. The combination of the intermediate toothed slide section, which is guided along the brake-pieces of the buffer head, and of the innermost toothed slide-section, with lever mechanism at the rear of the locomotive, and with fixed pinions of the axles of the car-wheels and eccentric-wheels, so as to operate the brake mechanism independently of the buffer-head and outer slide-section, substantially as described.

4. The combination of the outer toothed slide-sections, having spring-acted buffer-head, with the intermediate toothed section, and with hinged and folding brace-pieces and lifting-levers, so that the slide-sections are successively thrown into action to engage the pinions of the axles of the car-wheels and of the eccentric wheels, substantially as specified.

5. The combination of the intermittingly-toothed intermediate slide-section, having guided front portions, inwardly-projecting front shoulders, and bottom teeth, and of the innermost intermittingly-toothed slide-section having front shoulders, with pinions on the axles of the car-wheels and of the eccentric wheels, to cause, by the backward motion of the slide-sections, the successive raising, backing, and lowering of the locomotive or car, substantially as set forth.

204,187. MOSQUITO-NET FRAMES. Elias Bloom, Jackson, Miss. Filed Sept. 27, 1877.



Claim.—The arrangement of the post A and the lazy-tongs B C, together with the rods E and F and the cords *i i*, whereby the mosquito-bar may be hung and operated below its fastenings, as and for the purpose set forth.

204,188. GAS-METERS. Alex. C. Blount, Pascagoula, Miss. Filed Mar. 13, 1878.

Claim.—1. In a gas-meter, the combination of the valve-chamber B, having ports *d d' d²* and valve N, the chambers B' B² B³ B⁴, having pipes C' C², the operating-hood F, the lever G, arm I, and rod K, and the tappet-arms *a a'*, whereby the circulation of the gas through the measuring mechanism is effected, substantially as set forth.

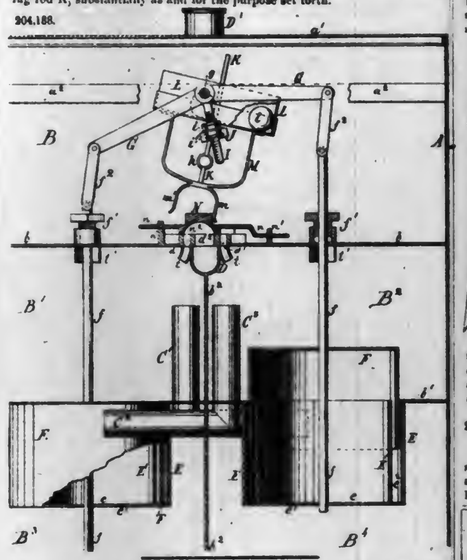
2. The combination of the oscillating box L, provided with two chambers, in each of which a ball is placed, the rod K, tappets *a*, rock-shaft G, arm I, and forked plate J, substantially as described.

3. The combination of the perforated vessels E, rigid movable hoods F, gas-chambers for supplying the gas alternately to the inner and outer surfaces of the tops of the respective hoods, so that one hood shall ascend while the other descends, a slide-valve, N, and appropriate mechanism for imparting

sudden action to the valve, substantially as described.

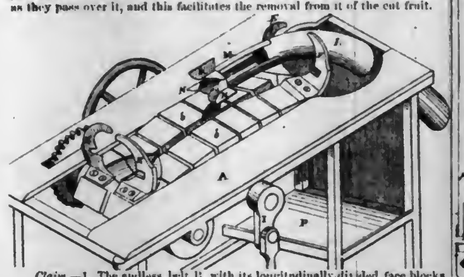
4. The combination of the rock-shaft *g*, arm I, forked plate J, and oscillating rod K, substantially as and for the purpose set forth.

204,188.



204,189. MACHINES FOR PITTING AND CUTTING FRUIT. Charles P. Bowen, Silver City, Idaho. Filed Feb. 16, 1878.

Brief.—A belt-pulley, large at the middle and tapered toward the ends, placed just beyond the cutters, separates and inclines the blocks of each pair as they pass over it, and this facilitates the removal from it of the cut fruit.



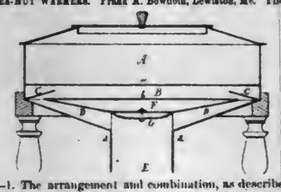
Claim.—1. The endless belt B, with its longitudinally divided face-blocks *b*, and having the carriers E, as shown, in combination with the elastically-mounted three-bladed knives N, to pit and divide the fruit, and the core-carrier L, substantially as herein described.

2. The carrying-belt B, with its rigid longitudinally-divided face-blocks *b*, in combination with the conical pulley D, whereby the blocks are caused to open, substantially as herein described.

3. The belt B, with its longitudinally-divided face-blocks, having the two-part carriers E mounted upon the opposite sides thereof, said carriers being slotted, so as to pass the knives, substantially as herein described.

4. The knives N, having the curved blades for separating the pit from the fruit, in combination with the radial blades for subdividing the fruit, and the spring-arms M, substantially as and for the purpose herein described.

204,190. TEA-NUT WARMERS. Frank A. Bowdoin, Lewiston, Me. Filed May 13, 1878.

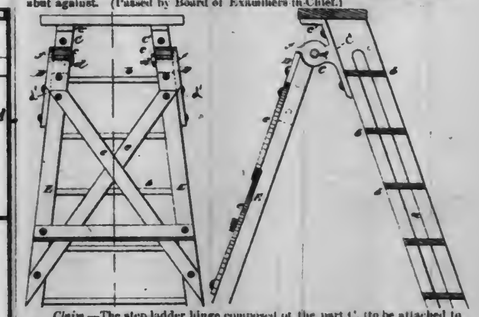


Claim.—1. The arrangement and combination, as described, of the lamp-closet E, and the flaring pipes D D with the receptacle A and its heating-chamber, whereby there is formed between such heating-chamber and the lamp-closet and the conduits D D an open air-space, F, as and for the purpose specified.

2. The arrangement and combination of the receptacle A, heating-chamber B, two deflectors, C' C', flaring pipes D D, and lamp-closet E, all being essentially as shown and described.

204,191. STEP-LADDERS. John J. Brady, Long Island City, N. Y. Filed Dec. 27, 1877.

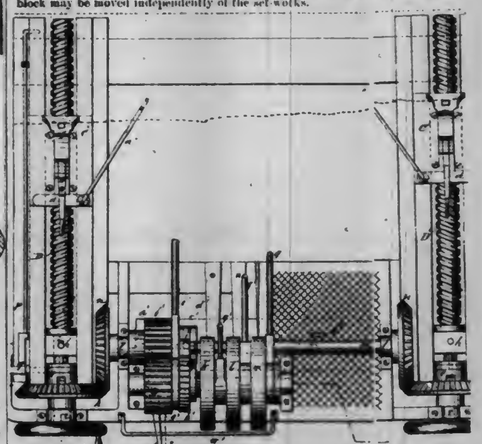
Brief.—Improvement on patent of McCandless, No. 132,912, dated October 15, 1872. The part of the hinge applied to the leg embraces an adjoining side and edge of same, and has a notch at its lower rear edge for the cross-brace to abut against. (Passed by Board of Examiners-in-Chief.)



Claim.—The step-ladder hinge composed of the part C, (to be attached to the stile,) and having the flange *c'*, for sustaining the top step, and the hinge-ear *c*, with stop *f*, and the part D, (to be attached to the legs,) having the stud *d* and angle-piece, provided with the notch *d'*, for holding the head of the brace *e*, all as shown and described.

204,192. SAW-MILL HEAD-BLOCKS. James Brett and Bethune Perry, Albion, Cal. Filed Mar. 6, 1878.

Brief.—The set-wheels are provided with notches for receiving a detent, and with ratchet-wheels and levers for disengaging the detent and moving the set-wheels. By means of peculiarly arranged gearing the screw of the head-block may be moved independently of the set-works.

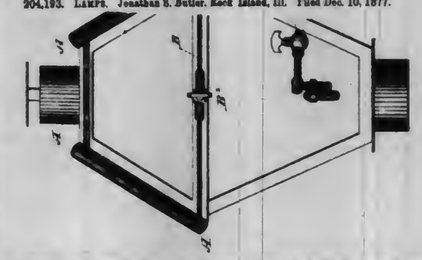


Claim.—1. The combination, with the wheel *k*, having pins, and the clutches *o*, of the ratchet *h'* and pawl-lever *i'*, as and for the purpose specified.

2. The combination of the clutch *o*, clutch-rod *p*, and wheel *k*, having lug-pins, as herein shown and described.

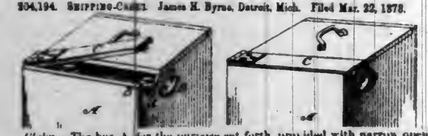
3. One or more graduated disks, *k'*, *l'*, or *m'*, the actuating-levers *q'*, and detent *s'*, in combination with the screws D D', substantially as herein shown and described.

204,193. LAMPS. Jonathan S. Butler, Rock Island, Ill. Filed Dec. 10, 1877.



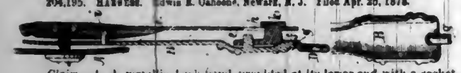
Claim.—In a street-lamp, the reservoirs A, attached to the upper inclined bars of the lantern-frame, and connected at their lower ends by the tubes B, having stop-cocks B', in combination with the supply-tube and burner, as herein set forth.

204,194. SHIPPING-CASES. James H. Byrne, Detroit, Mich. Filed Mar. 22, 1878.



Claim.—The box A, for the purpose set forth, provided with narrow opening *b*, extending across the top of the same, and opening *d* in its side, in combination with the hinged covering-piece C and the plate-latch D, pivoted to the side of the box, and adapted to lock the covering-piece over the opening *b*, and to close the opening *d* when in that position, constructed and arranged substantially as described and shown.

204,195. HARness. Edwin E. Osborne, Newark, N. J. Filed Apr. 25, 1878.



Claim.—1. A metallic back-band provided at its lower end with a socket and a projecting stud, *r*, combined with a separate loop-plate, D, adapted to rest in said socket and lock over said stud, the whole being secured in the manner described.

2. A metallic back-band having a socket, with stud *r* and finger *g*, and a detachable loop-plate, D, adapted to engage with said pin and finger, and provided with the headed stud *k*, combined with the under plate E, having a slot, *h*, to receive said stud, whereby the metallic back-band and loop-plate are secured together and the back-band strap supported without reference to the flap leather.

3. A metallic back-band or back-band loop-plate, constructed with a transverse bar or bridge, *s*, and transverse serrations, combined with a separate plate or end, adapted to slip under said loop and be forced to engage with said serrations by the forcible depression of said bridge, as set forth, whereby the length of said back-band or plate may be adjusted as to length.

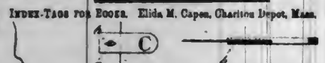
4. A metallic back-band or metallic back-band loop-plate constructed with a transverse bridge, *s*, having on its under side a rib and transverse serrations, as described, combined with the separate plate or end, adapted to slip under said loop, and provided with transverse serrations and a transverse rib, *p*, whereby the two parts may be immovably locked together by the forcible depression of said loop, as set forth.

5. A metallic back-band or back-band loop-plate, D, constructed with transverse serrations, bridge *s*, and side ears *q*, combined with a separate plate or end adapted to slip under said bridge and be secured at two points by the depression of said bridge and ears, as set forth.

6. An under plate and stiffener, all cast in one piece, and provided with the button-hole slot *h* at its lower end, adapted to receive and combined with the headed stud *k*, as set forth.

7. An under plate and stiffener, all in one piece, provided with a button-hole slot, *h*, at its lower end, adapted to receive and combined with the headed stud *k*, and a stud or pin, *e*, at its upper end to engage with a corresponding hole in the back-band, as set forth.

204,196. INDEX-TAGS FOR BOOKS. Elida M. Capen, Charlton Depot, Mass. Filed June 18, 1877.



Claim.—As a new and improved article of manufacture, the metal tag for the leaves of books, formed with serrated jaws *b b* and a prong or rivet, *c*, substantially as specified.

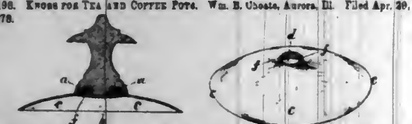
204,197. HEDGE FENCES. Ira O. Childs, Shreve, Ohio. Filed Apr. 13, 1878.

Brief.—The twigs are planted zigzag in two rows, one bent down near the ground into horizontal positions, and planted or intertwined with each other.



Claim.—A hedge fence in which the plants A are planted zigzag, or in two rows alternating with each other, are bent down near the ground into horizontal positions, and are planted or intertwined with each other, substantially as herein shown and described.

204,198. KNOBS FOR TEA AND COFFEE POTS. Wm. B. Chosta, Aurora, Ill. Filed Apr. 20, 1878.



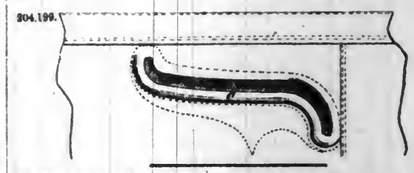
Claim.—1. The knob or handle for metal covers of tea-pots, coffee-pots, and similar articles made with an annular groove, *e*, in its lower end or face, and surrounding the central short pin *b*, for the purpose set forth.

2. The improved joint or seam connecting the knob to its cover, the same consisting of the burr *d*, projecting upward from the cover, and the annular cavity or groove *a* in the knob, these parts being united together by solder, in the manner shown and described.

3. The improved cover described, composed of the knob with the annular groove, the cover *c*, with its upturned burr *f* projecting into such groove, and the solder uniting their parts together.

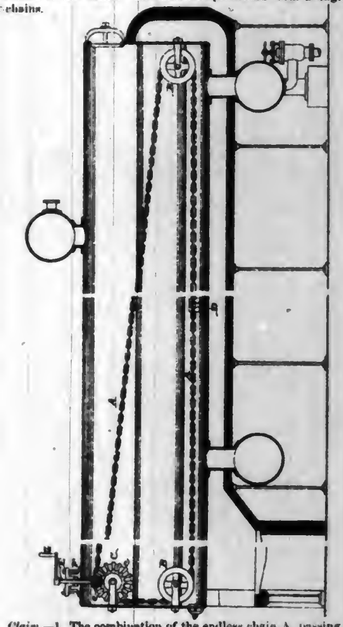
204,199. POCKETS FOR GARMENTS. Yung Chow, San Francisco, Cal. Filed Apr. 10, 1878.

Claim.—The improvement in the method of re-enforcing the mouths or openings of pockets for garments, consisting in partly or wholly surrounding such openings with a strip or welt of strengthening material, D, inclosed in a tube formed by the stitching C, and applied substantially as shown and described.



204,200. OPERATING BOILER-BROOMS. Andrew C. Cook, St. Louis, Mo. Filed Feb. 16, 1878.

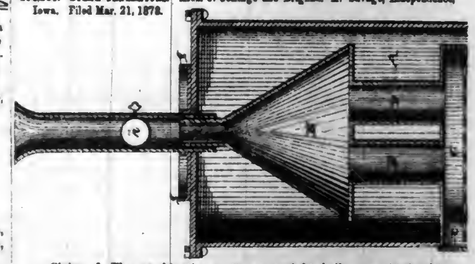
Brief.—By means of gear a brush attached to a chain is made to sweep the bottom of the boiler. The brush is prevented from swinging round by stay-chains.



Claim.—1. The combination of the endless chain A, passing over grooved pulleys B B and toothed wheel C, attached to the boiler-heads, and chain attachments *d d* with the broom D, arranged to be adapted to boilers having two or more flues, substantially as set forth and described.

2. The combination of the endless chain A with broom D, guide-pulleys B C, bevel-wheel *e e*, and crank-shaft E, constructed and operating substantially as and for the purpose set forth.

204,201. STEAM-GENERATORS. Alex. J. Collings and Brigham M. Savage, Independence, Iowa. Filed Mar. 21, 1878.



Claim.—1. The combination, with an upright boiler, provided with a removable head having a smoke-chimney secured thereto, of the horizontal fire-box, conical drum, and intermediate vertical flues, said drum provided with a smoke-flue, which detachably connects with said chimney, substantially as set forth.

2. The combination, with the fire-box, conical drum, and intermediate vertical flues, all the same being adapted to be surrounded by water within the boiler, of the smoke-chimney, which passes through the removable head of the boiler, and is connected with the smoke-exit of said conical drum, substantially as set forth.

3. In a steam-generator, the combination, with an upright boiler, of a removable top provided with an annular water-vessel having inner and outer raised flanges, said inner flanges serving to secure the chimney in place, substantially as set forth.

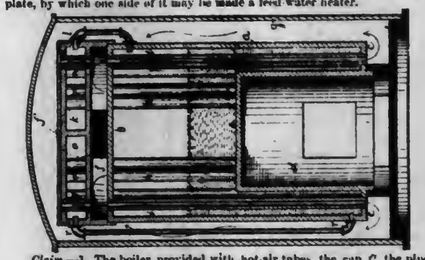
204,202. PROCESS OF PREPARING IRON FOR CASE OR SURFACE HARDENING. Samuel A. Conrad, Terre Haute, Ind. Filed Aug. 10, 1877.

Brief.—Repeats operation, if desired. After forging, article may be coated, finished, and reheated for hardening, or, without finishing, may be hardened immediately after forging. One side only of article may be hardened.

Claim.—The continuous process herein described for preparing iron for case or surface hardening—namely, heating the iron substantially to the heat specified, coating it with a mixture of borax and iron chips, reheating to fuse the coating, and finally mechanically compressing it, substantially as and for the purposes herein set forth.

204,203. STEAM-GENERATORS. Michael Cullen, Hartford, Conn., assignor of one-half his right to Matthew Hogan, same place. Filed Mar. 20, 1878.

Brief.—The tubes in the superheater register with the tubes in the boiler, whereby both can be cleaned. The superheater is provided with a division-plate, by which one side of it may be made a feed-water heater.



Claim.—1. The boiler provided with hot-air tubes, the cap *f'*, the pipes *l m*, and the superheater *k*, provided with tubes *n*, all combined and arranged substantially as described, and for the purposes set forth.

2. The boiler provided with hot-air tubes, the cap *f'*, the pipes *l m*, the superheater *k*, provided with tubes *n*, the pipes *p r*, and the feed-water heater *o*, provided with the tubes *o'*, all combined as described.

204,204. HEAD-PROTECTORS FOR THE USE OF FIREMEN, SHIPWRECKED PERSONS, &c. Francis P. Cunnerford, Wilmington, Del. Filed Feb. 18, 1878.

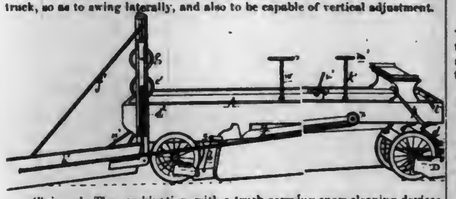


Claim.—1. A head-protector or helmet having a ventilator at the top part, and eyeglasses and a mouth-piece, with suitable closing device, substantially as and for the purpose described.

2. A head-protector made so as to fit tightly to the neck and loosely to the head, and being arranged with a ventilating device at the upper part that is made of inner and outer walls, perforated, respectively, at the upper and lower parts to admit the air, but prevent the entrance of water, substantially as and for the purpose set forth.

204,205. TRACK-CLEARERS. Augustus Day, Detroit, Mich. Filed Feb. 8, 1878.

Brief.—A track-clearer for street-railways, in which each wheel has a scraper or plow in front of it, all of which are simultaneously raised or lowered, and a rear supplementary scraper pivoted at its inner end to one side of the truck, so as to swing laterally, and also to be capable of vertical adjustment.



Claim.—1. The combination, with a truck carrying snow-cleaning devices, of the track-scrapers D, one in front of each of the four wheels to the truck, the rock-shafts *d*, *d'*, and *k*, provided with double cranks, the connecting chains or rods, and the single lever, whereby all the scrapers can be raised simultaneously by operating a single lever, substantially as described and shown.

2. The combination, with a truck or carriage carrying devices for cleaning the snow from the track, of the supplementary plow or scraper E, pivoted at its inner end to the carriage, so as to be vertically and laterally adjustable, and extending outwardly from one side of the said carriage, substantially as and for the purpose set forth.

3. The combination, with the platform A, mounted upon wheels, of the plow or scraper E, pivoted at its inner end to the said platform by means of the rod *a'* and sleeved arm *b*, and the ropes or chains *d''*, *f'*, and *a'*, substantially as described and shown.

204,206. APPARATUS FOR REFINING SULPHUR. H. H. Eames, San Francisco, Cal. Filed Dec. 5, 1877.

Brief.—Improvement in apparatus for fusing and refining sulphur by superheated steam.

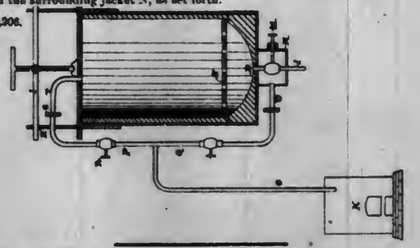
Claim.—1. The reducing-tank A, provided with a wooden lining and wooden bottom, substantially as shown, and for the purpose herein described.

2. The reducing-tank A, having the funnel-shaped wooden bottom, with its exterior flat rim to receive and support the wooden lining, substantially as shown and herein described.

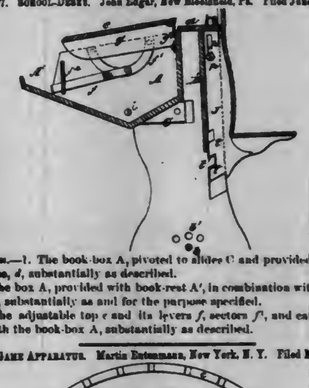
3. The funnel-shaped wooden bottom, having its flange or rim fitted to receive the wooden lining and to support the strainer E and filtering material, substantially as herein described.

4. The reducing-tank A, mounted on trunnions B B and sustained by standards C C, provided near its bottom with sieve E, and connected by pipes T P Q U with superheater K, in combination with discharge-pipe L, provided with the surrounding jacket N, as set forth.

204,206.



204,207. SCHOOL-DESKS. John Edgar, New Brownfield, Pa. Filed June 11, 1877.

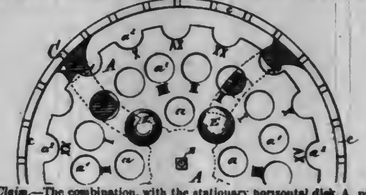


Claim.—1. The book-box A, pivoted to slides C and provided with a latching device, *d*, substantially as described.

2. The box A, provided with book-rest A', in combination with the adjustable top *a*, substantially as and for the purpose specified.

3. The adjustable top *c* and its levers *f*, sectors *f'*, and catches *f''*, combined with the book-box A, substantially as described.

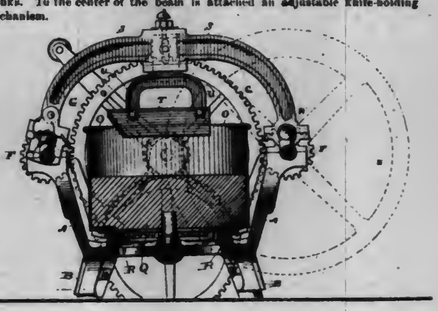
204,208. GAME APPARATUS. Martin Entenmann, New York, N. Y. Filed Mar. 30, 1878.



Claim.—The combination, with the stationary horizontal disk A, provided with a series of numbered perforations *a a' a''*, of the concentric subjacent rotating wheel C, provided with the vertical rim *c*, and having projections D, arranged to dislodge, by rotation, one or more balls, E, resting in the holes of the disk A, substantially as shown and described.

204,209. MEAT-CHOPPERS. Edwd. W. Fawcett, Salem, Ohio, assignor to Silver & Deming Manufacturing Company, same place. Filed Apr. 20, 1878.

Brief.—The semicircular-shaped beam is arranged across the hopper, and secured to the crank-shafts by a rigid joint on one end and a flexible joint on the other, to compensate for any difference that may exist in the length of the cranks. To the center of the beam is attached an adjustable knife-holding mechanism.

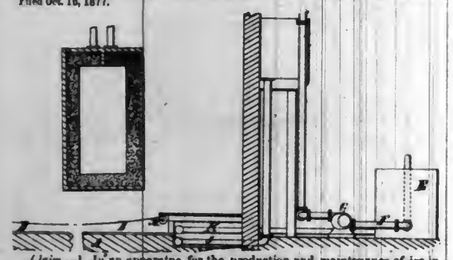


Claim.—1. The beam S, in combination with the crank-shafts D D, said parts being constructed and operating substantially as shown and described, and for the purpose set forth.

2. The master cog-wheel G, in combination with the pinions F F, crank-shafts D D, and beam S, said parts being constructed and operating substantially as shown and described, and for the purpose specified.

3. The flexible joint X and rigid joint W, in combination with the beam S, substantially as shown and described, and for the purpose specified.

204,210. APPARATUS FOR FORMING SHEETS OF ICE. John Gamgee, Chelsea, Great Britain. Filed Oct. 16, 1877.



Claim.—1. In an apparatus for the production and maintenance of ice in skating-rinks, the elevated reservoir I, which supplies the refrigerating-pipes B on the floor of the rink, in combination with the refrigerator E, which receives and cools the refrigerating medium from the pipes B, and with the pump G, for supplying the reservoir from the refrigerator, substantially as herein-before described and set forth.

2. A flexible sheet or cover to be extended a short distance above the ice in skating-rinks as a non-conductor when the ice is not in use.

204,211. DRYING-KILNS. Ernest T. Gounert, New York, N. Y. Filed Mar. 27, 1878.



Claim.—1. The combination of the furnace C, the heating-plates D, and the air-heating pipe H with the kiln A and the grate B, substantially as herein shown and described.

2. The combination of the angular plates J with the furnace C, the heating-plates D, the air-heating pipe H, the kiln A, and the grate B, substantially as herein shown and described.

204,212. CAR-COUPLINGS. Charles Gifford, Gardiner, Me. Filed Mar. 18, 1878.

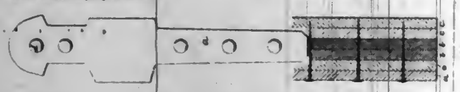


Claim.—1. The coupling-link provided with the projection, in combination with the draw-head provided with the guiding-groove to receive said projection, substantially as and for the purpose described.

2. The draw-head and coupling-link, combined with the holding-plate *f*, projected through the link to hold it down in the recess *b*, and to steady the link in its vertical position, substantially as and for the purpose described.

204,213. LOOM-PICKERS. Charles T. Ortley, Boston, Mass. Filed Oct. 26, 1877.

Brief.—The picker is composed of tough fibrous layers of leather cut from the flesh side of the hide—the grain face of the leather, which is hard and more brittle, and which has heretofore composed the chief part of leather pickers, not being employed at all.



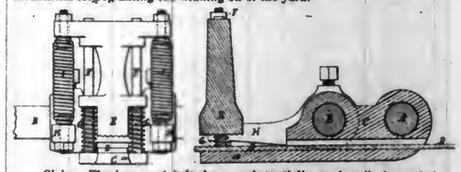
Claim.—1. As an improved article of manufacture, a loom-picker composed at its face of tough fibrous layers of leather cut from the flesh side of a hide, substantially as described.

2. A loom-picker composed of face layers *a*, of leather cut from the flesh side of a hide, and of a tip-checking layer, *b*, of a more dense and hard material, substantially as described.

3. In a loom-picker, face layers *a*, of leather cut from the flesh side of a hide, tip-checking layer *b*, of a more dense and hard material, and cushioning layers *c*, all substantially as described.

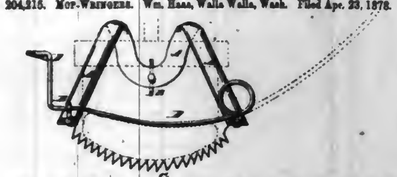
204,214. WINDING-ON MECHANISMS FOR SPINNING-MULES. Geo. Gurney, Taunton, Mass. Filed Mar. 14, 1878.

Brief.—When the yarn presses down on the back faller at the "starting in" of the carriage the clamp will be forced into contact with the endless belt by means of the intermediate mechanism, thereby bringing into action the mechanism for regulating the winding on of the yarn.



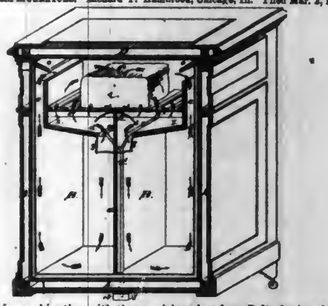
Claim.—The improved belt-clamp, substantially as described, consisting of the arms C H H and the jaw E, arranged and combined with each other and with the two male-shafts A B, and provided with the joining and elevating springs I I G G, essentially as set forth.

204,215. MOP-WRINGERS. Wm. Haas, Walla Walla, Wash. Filed Apr. 23, 1878.



Claim.—The combination of the bent bar A, the set-screw B, the spiral spring C, the spring-lever D, and its catch-hook E with each other, substantially as herein shown and described.

204,216. REFRIGERATORS. Richard T. Hambrook, Chicago, Ill. Filed Mar. 2, 1878.



Claim.—In combination with the provision-chambers B B, the ice-chamber C, having rack *c'* and double-inclined bottom pieces *x* and *y*, provided with a central opening guarded by the deflector-plate K, and provided, also, with the side passage *e* from the provision-chamber, and the trough *z* and pipe *z'*, all substantially as described and shown, for the purpose set forth.

204,217. FRUIT-PITTING MACHINES. Augustus T. Hatch, Cordelia, Cal. Filed Apr. 1, 1878.

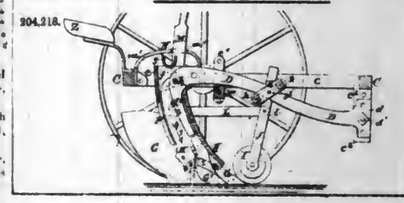
Brief.—The machine is pressed into the upper end of the fruit. The knife blades pass around the pit, cutting the fruit into pieces. The spring causes the blade to hug the pit in passing.



Claim.—1. A device consisting of the knives having a straight and curved portion, B C, said knives being hinged together at F, and having a closing-spring, the whole operating substantially as and for the purpose herein described.

2. The knives B C, hinged to approach and recede from each other, and provided with the extension guide-lips *d d*, substantially as and for the purpose herein described.

204,218.



204,218. CORN-PLANTER AND PLOW. Daniel Hays, Martinsville, Mo. Filed Feb. 11, 1878.

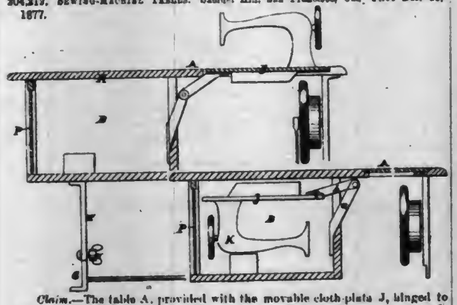
Brief.—The plow-beam and colter-standard are connected by a rod, so that they are adjusted simultaneously. The rear part of the plow-standard, together with a fixed plate, forms the passage for the seed.

Claim.—1. The combination, with the hollow movable standard H, of the fixed plate F, that forms a stop for the standard, and with it a seed-conveyer, as set forth.

2. The plow-beam D, provided with the downward-projecting arm *d'* and guide-plate F, in combination with the U-shaped plow-standard H, hinged at A to the plow-beam D, substantially as specified.

3. The combination of the arm J and plow-standard H, both hinged or pivoted to the plow-beam D, and the lever M, with the connecting-rod L and the notched stop-bar N on the frame C, substantially as and for the purpose set forth.

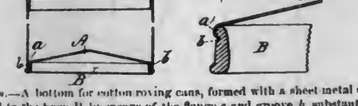
204,219. SEWING-MACHINE TABLES. Samuel Hill, San Francisco, Cal. Filed Dec. 19, 1877.



Claim.—The table A, provided with the movable cloth-plate J, hinged to the cabinet B by the links *a b*, and provided with a hinged cover, *n*, and the end slide F, whereby the machine-head is folded down end for end into the cabinet, as set forth.

204,220. COTTON-ROVING CANS. James Hill, Providence, R. I. Filed Apr. 19, 1878.

Brief.—The end of the sheet-iron cylinder is dipped in an acid-bath, and then into melted solder. The iron hoop is also tinned. After the insertion of the hoop in the cylinder, both together are dipped in molten solder to form a union.



Claim.—A bottom for cotton-roving cans, formed with a sheet-metal disk, A, locked to the hoop B by means of the flange *a* and groove *b*, substantially as described.

204,221. WIND-ENGINES. Harvey N. Hill, Pontiac, Mich. Filed Mar. 7, 1878.



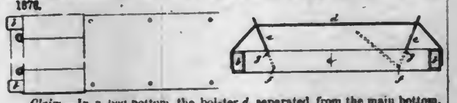
Claim.—1. In a windmill, and in combination therewith, the wheel A, cut from sheet metal, provided with openings *a b*, the cut metal being turned to the rear to disclose the openings, and to form the wind-sails *f* in series, substantially as shown.

2. In a windmill, and in combination with a wheel constructed substantially as shown, the wind-guides *g*, substantially as and for the purposes set forth.

3. In a windmill, the combination, with the horizontal main shaft B, having grooved crank-wheel F and bevel-wheel *o*, of the vertical governor-shaft *n*, placed at right angles to the main shaft, and provided with bevel-wheel *n*, the lever *k*, pivoted to the frame and sliding on the governor-shaft, and the rope or chain *h*, secured at one end to the frame and at the other end to the said lever, and wound intermediately around the grooved crank-wheel, constructed and arranged substantially as described and shown.

4. In a windmill, and in combination therewith and with a pivoted tail-vane, constructed substantially as described, a detaining-latch operated by the motion of a ball-governor, substantially as and for the purposes specified.

204,222. BED-BOTTOMS. Tyler Howe and Otis Howe, Cambridge, Mass. Filed Feb. 25, 1878.

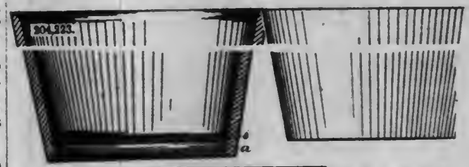


Claim.—In a bed-bottom, the bolster *d*, separated from the main bottom, in combination with the movable rests *e*, pivoted at *f*, and stops *g*, the whole adapted to be folded within the bed-bottom and extended for use at will, substantially as described.

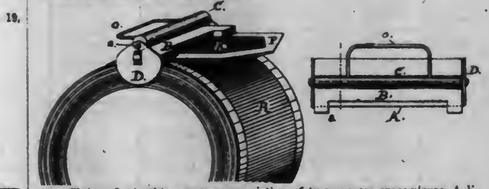
204,223. PAPER-PULP PAILS. Eber Hubbard, Medina, N. Y. Filed Mar. 23, 1878.

Claim.—A pulp pail formed with a croze, *b*, and a circumferential shoulder, *a*, immediately below and projecting inwardly beyond the same, substantially as shown and described.

204,223.



204,224. CLASPS FOR SECURING RIBBONS OR ROLLS. Henry G. Hubert and Charles G. Hubert, New York, N. Y. Filed Dec. 17, 1877.



Claim.—1. A ribbon-fastener consisting of two or more cross-pieces, A B, guiding ends D, and eccentric-roller C, with or without the handle O, all constructed substantially as specified.

2. In a device for keeping ribbons tightly coiled, the holding cross-pieces, made adjustable by means of guiding end pieces, and a cam or eccentric, all substantially as set forth.

204,225. NUT-CRACKERS. Frank A. Humphrey, Worcester, Mass. Filed Apr. 8, 1878.



Claim.—The nut-cracker device made in the form of a squirrel sitting upon his haunches, and arranged for crushing a nut placed beneath the snout or chin by upward movement of the fore paws, resultant from downward pressure or action of the tail, substantially as herein set forth.

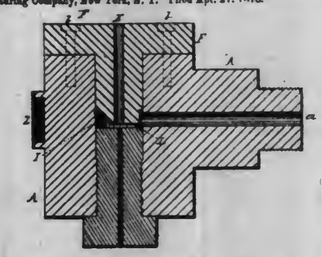
204,226. SEAL-LOCKS. Frederick W. Master, Moncton, New Brunswick, Canada. Filed Apr. 19, 1878.



Claim.—1. A seal-lock consisting of a casing with interior recessed middle portion and top and bottom end slots, and of one or more interior band-springs, and of a connecting tin seal or strap passed through the slots, substantially as shown and described.

2. In a seal-lock, a lock or casing having a solid main piece, with centrally-recessed and wedge-shaped portion and slots near the ends and one or more retaining pin or pins at the center, in combination with one or more interior curved band-springs, retained on the pins and extending over the bottom slots, and with a tin seal passed through the slots and retained by the biting action of the band-springs, substantially as specified.

204,227. APPARATUS FOR COVERING CORDS AND FORMING TUBES OF CELLULOID AND OTHER PLASTIC MATERIALS. John W. Hyatt, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed Apr. 27, 1878.



Claim.—1. A machine for coating surfaces with plastic composition, in which the outlet occupies a position to reach which the flow of material is equalized by proportionate friction with the space over which it passes, substantially as specified.

2. The outlet E, located eccentrically to the upper surface of the head H, substantially as set forth.

3. The head H, beveled substantially as specified.

4. The plug B, adjustable with relation to the head H, substantially as expressed.

5. The combination of the head H and a suitable adjustable surface, arranged with relation to increasing or reducing the friction of the material passing over the upper surface of the head H, substantially as set forth.

6. The plug F, provided with the outlet E and head H, in combination with the plug B, provided with the inlet D, substantially as set forth.

7. A machine for coating a surface with plastic composition, in which the flow of material to the core or surface to be coated is equalized by the proportionate surface over which it passes in reaching the core, substantially as set forth.

8. A machine for coating a continuous core with plastic composition, in which the core is sustained at all points by the evenly-distributed flow of the material to it, which flow also causes its progress through the chamber containing the coating composition, substantially as set forth.

9. The process of forming tubes of plastic composition, which consists in feeding the composition in equal quantities to all sides of a core, which core is withdrawn from the composition, leaving the tubular coating, substantially as set forth.

204,226. PRODUCING TUBES AND HOLLOW ARTICLES FROM CELLULOID AND OTHER PLASTIC MATERIALS. John W. Hyatt, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed Mar. 25, 1878.



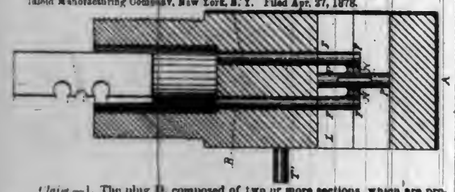
Claim.—1. The process of covering cores of such nature as are not capable of sustaining the pressure of dies with a plastic composition, which consists in forcing a tubular structure from a stuffing-machine or other suitable device over such a core, substantially as specified.

2. A structure or piece of plastic composition, wholly or partially tubular, shrunk upon a core, substantially of the order specified, for the purpose set forth.

3. The process of forming hollow frames, which consists in shrinking a piece of plastic composition upon a suitable core and removing sections of the composition and core, substantially as specified.

4. The process of producing tubular structures above described, which consists in causing the material to pass over a core, which core is withdrawn before the material is fully hardened, substantially as set forth.

204,229. APPARATUS FOR COATING BARS OR SPRINGS WITH CELLULOID OR OTHER PLASTIC COMPOSITION. John W. Hyatt and Charles Burroughs, Newark, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. Filed Apr. 27, 1878.



Claim.—1. The plug D, composed of two or more sections, which are provided with coincident sectional cavities, which, when united, form a space to receive the coating composition, substantially as specified.

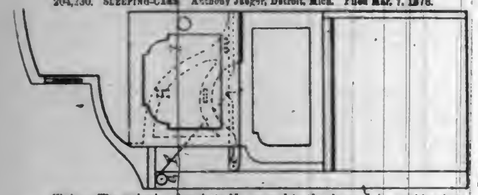
2. The plug D, in combination with the nozzle A, substantially as set forth.

3. The nozzle A, provided with an inlet having a curved mouth, substantially as specified.

4. The nozzle A, having an outlet with a curved mouth, substantially as specified.

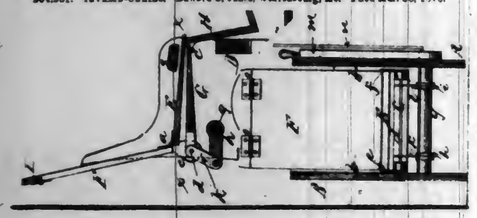
5. Two or more sections which, when united, form a cavity having the gates N and pockets E, substantially as set forth.

204,230. SLEEPING-CARS. Anthony Jaeger, Detroit, Mich. Filed Mar. 7, 1878.



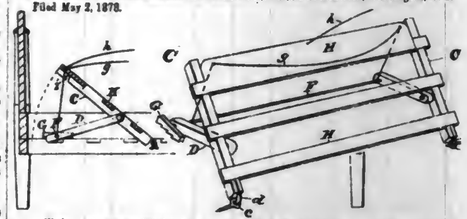
Claim.—The swinging brackets H, secured to the doors I, in combination with the folding upper berth of a sleeping car, constructed and arranged to operate substantially as set forth.

204,231. INVALID-CHAIRS. Edward C. Jones, Warrensburg, Mo. Filed Mar. 28, 1878.



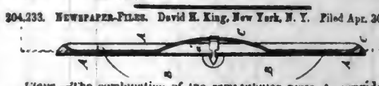
Claim.—An invalid's chair consisting of the adjustable back-rest F, foot-rest H, board G, with side pieces c and f, seat E, axle g, with arms b and b', lever m, with catch n, the connecting-rods k and l, the sides A and B, with rod c, and slops q q, all arranged and combined in the manner shown and described.

204,232. INVALID ATTACHMENTS FOR BEDSTEADS. Tunis T. Kendrick, Washington, D. C. Filed May 2, 1878.



Claim.—A removable back-rest attachment for bed-bottoms, composed of a frame-work having the side rails C, provided with hooks d and screws e, and connected by slats H, provided with the pivoted arms D, carrying the rod F, having the ratchet-shoes G and the cord g, constructed and operating substantially as and for the purposes set forth.

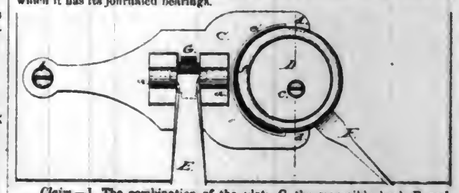
204,233. NEWSPAPER-FILES. David H. King, New York, N. Y. Filed Apr. 20, 1878.



Claim.—The combination of the semi-tubular plate A, provided with a handle, B, and a cross-slit, a', in its center, the wire spring C, and the steel needle D provided with an arrow-head, substantially as herein shown and described.

204,234. VEHICLE-SEAT LOCKS. David Kirk, Orleans, N. Y., assignor to himself and Irving D. King, same place. Filed May 15, 1878.

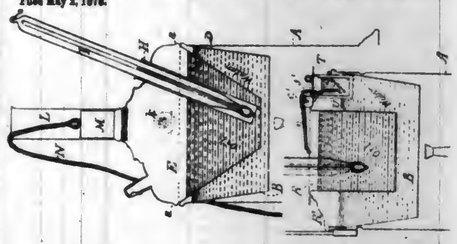
Brief.—The clamping-hook is capable of being reversed in the plate on which it has its journaled bearings.



Claim.—1. The combination of the plate C, the reversible hook E, and the eccentric D, substantially as described.

2. The plate C, pivoted at b, and provided with crescent-formed ends d, in combination with hook E and rabbeted eccentric D, substantially as described.

204,235. DEVICES FOR TESTING ILLUMINATING FLUIDS. Stephen S. Mann, Baltimore, Md. Filed May 2, 1878.



Claim.—1. The oil-receiver E, provided with the thermometer-tube H and projectile-tube L, and a valve arranged to be closed by pressure from within, substantially as set forth.

2. In an oil-testing apparatus, the combination, with the oil-receiver E, provided with the tube L and a valve to be closed by pressure from within, of a projectile, N, made of any suitable material admitting of slight compression, as and for the purpose specified.

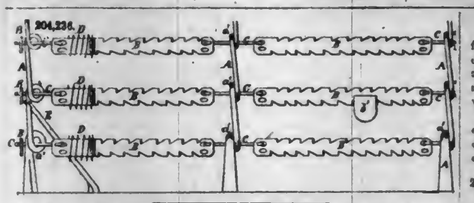
3. The combination, in an oil-testing apparatus, of case A, having the water-receptacle B, below which is placed a lamp, oil-receiver E, having a tube, L, and a valve to be closed by pressure from within, and a projectile to fit the tube, all substantially as specified.

4. In an oil-testing apparatus, the stationary alcohol-receptacle T, to which is attached the horizontal shaft c, turning in suitable bearings, and having a spiral spring, d, wound around and secured thereto, and the tapering sack-tube e, secured to the shaft, substantially as shown and described.

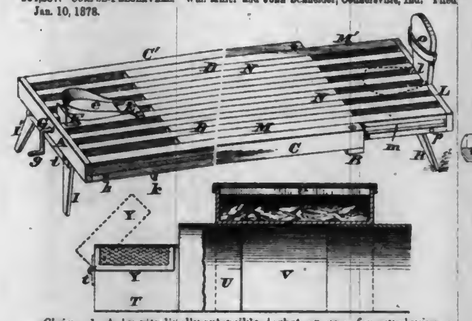
204,236. IRON FENCES. Freeman R. Martin, Brooklyn, Wis. Filed Feb. 1, 1878.

Claim.—1. The combination of the spiral springs with the two-part rails R, the hooks C, and the posts having eyes, as shown and described, for the purpose specified.

2. The combination of pendent wings b' with the rails R, attached to posts by means which permit them to turn, as specified.

204,236. 

204,237. CORPSE-PRESERVERS. Wm. Miller and John Schneider, Connersville, Ind. Filed Jan. 10, 1878.



Claim.—1. A longitudinally-extensible jacket or case for enveloping a corpse, said jacket being composed of the open-bottom sheet-metal sections T, U, V, W, and X, which sections are about semi-tubular in transverse section, and are capable of telescoping one within another, as herein described, and for the purpose set forth.

2. In combination with a longitudinally-extensible cooling-board, the within-described open-bottomed sheet-metal jacket or case, whose several sections are capable of being telescoped one within another, so as to adjust said jacket to the length of the cooling-board, as herein described and set forth.

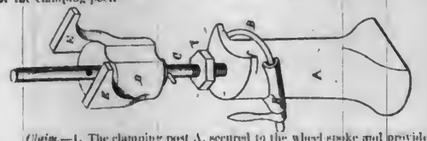
3. A longitudinally-extensible cooling board, consisting of the two slotted frames A B C c C' c', K L M m M' m', pivoted legs H A I I', I' p R R', and retaining devices b Q Q', substantially as herein described and set forth.

4. In combination with a cooling-board, the yielding bearing E, head-rest e, wedge-nut F, and screw G, said screw being provided with a handle, g, external to the frame of said cooling-board, in order that the rest e may be adjusted vertically without removing the enveloping case or jacket, as herein described and set forth.

5. The lid Y, hinged to the head-section of a corpse-preserver at t, and provided with a wire-gauze covering, y, substantially as herein described.

204,238. TIRE-SETTERS. John A. Miles, Rio Vista, Cal. Filed Apr. 1, 1878.

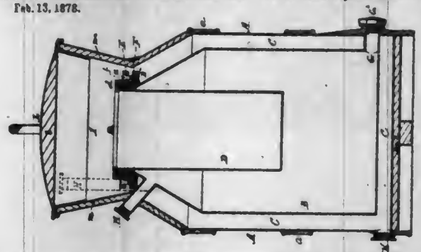
Brief.—The wheel is firmly clamped by means of a post having upon its outer surface an inclined and interiorly-threaded socket, in which works the threaded shank of a hook-bolt, the outer end of which passes over the spoke, and a vertically-adjustable spindle having a fixed operating enlargement, and near its upper part a vertically-adjustable head provided with lugs for holding the felly, the threaded end of the spindle working in a nut in the interior of the clamping post.



Claim.—1. The clamping post A, secured to the wheel spoke and provided with an interior stationary nut, in combination with the head D, having the lugs E, and the rotating screw-spindle C, with its fixed operating enlargement F, the head being adjustable upon the spindle by a pin and washer, substantially as herein described.

2. The clamping-hook B, having its stem passing through the socket or guide at an incline, B', so that the clamp will be drawn tighter by the strain brought upon it, substantially as herein described.

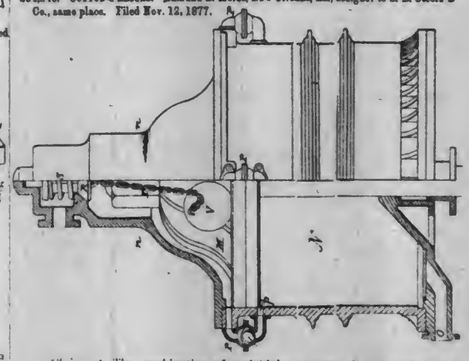
204,239. REFRIGERATING TRANSPORTATION-CANS. Wm. A. Moore, Boylston, Mass. Filed Feb. 13, 1878.



Claim.—1. The transportation-can constructed, substantially as hereinbefore described, with the exterior shell or casing A, having cover L, the receiver B, arranged within said casing, with the surrounding area or chamber C and neck-space I, and the removable ice-receptacle D, open at the top and arranged within the receiver-mouth, where it is supported and retained by a water-tight lock or screw-thread joint, as and for the purposes set forth.

2. The combination, in a transportation-can for milk or other substances, of a milk-receiver, B, ice-receptacle D, ice-supply chamber I, and waste-water chamber C, inclosed complete within an external can, A, having cover L and capped orifice K, for the purposes set forth.

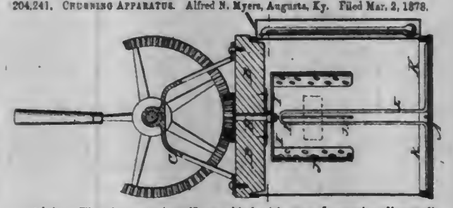
204,240. COTTON-PRESSES. Edmund L. Morse, New Orleans, La., assignor to S. B. Steere & Co., same place. Filed Nov. 12, 1877.



Claim.—1. The combination of cycloidal cog-sectors E and inclined cog-racks K, substantially as and for the purpose set forth.

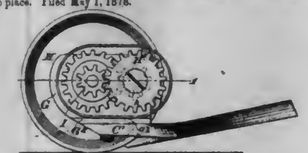
2. The combination of cylinder N, piston M, and valve R with closing spring S and suspended weight V, substantially as set forth.

204,241. CHURNING APPARATUS. Alfred N. Myers, Augusta, Ky. Filed Mar. 2, 1878.



Claim.—The churn-strainer K, provided with wires l_2 passing diagonally across it, and forming a U-shaped vertical loop, as and for the purpose specified.

204,242. LAWN-MOWERS. Alvah P. Osborne, Tremansburg, N. Y., assignor to Orman Osborne, same place. Filed May 1, 1878.

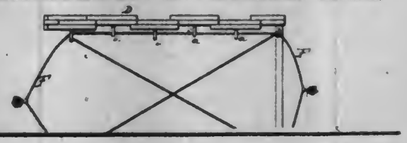


Claim.—1. The lawn-mower skeleton main frame, constructed with diverging branches, terminating in forked ends, the inner forks of which support a fixed cutter between the driving wheels, and in the plane of their axis of revolution, while the outer forks sustain the gearing outside of the driving-wheels, and are provided with bearings for said wheels, substantially as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the main frame having forked ends, the long-hubbed driving wheels rotating in the forks of the frame, the combined journal-boxes and supplementary or gearing frames mounted upon the outer forks of the frame, the rotating cutter, the shaft of which projects at its ends through and turns loosely in the driving-wheel hubs, and the gearing connecting the wheel-hubs and cutter shaft outside of the driving-wheels.

3. The combination of the main frame, the long-hubbed driving-wheels, the shaft of the rotating cutter, gearing connecting the wheel-hubs and said shaft, and the supplementary or gearing frame between the wheels and gearing, substantially as and for the purpose set forth.

204,243. MOSQUITO-BAR FRAMES. Jeremiah F. O'Sullivan and Elias Bloom, Jackson, Miss. (Elias Bloom for himself and as administrator of J. F. O'Sullivan, deceased.) Filed Jan. 16, 1878.



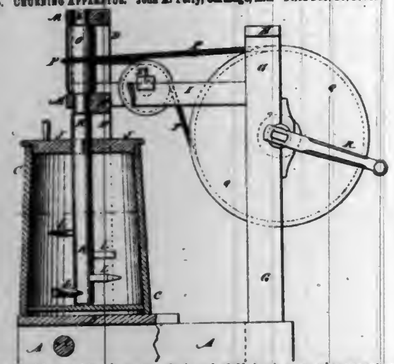
Claim.—The combination of the attachment B, the lazy-tongs D, having eyes *a a*, and the cord F, arranged as described, with a mosquito-net, whereby the same can be operated from either the head or foot of the bed, as set forth.

204,244. PROCESSES FOR RECOVERING WASTE SULPHURIC ACID. André Pleissat, Clermont-Ferrand, France, assignor to himself and William H. Nichols, Brooklyn, N. Y. Filed Mar. 7, 1878.

Brief.—The dark acid, after being separated from the tar by dilution, and concentrated, in the usual manner, to 60° or 61° Baumé, is run through a suitable still, in which the carbon is destroyed and the acid distilled. The resulting white acid is then again concentrated in the usual manner.

Claim.—The method herein specified of recovering sulphuric acid from the refuse in the treatment of coal-oil, consisting in washing the acid from the tar, evaporating the proper portion of the water, and then vaporizing the acid acid by a continuous operation in a platinum or other suitable pan, condensing and producing the white sulphuric acid, and then concentrating the same, substantially as set forth.

204,245. CHURNING APPARATUS. John A. Perry, Carthage, Ala. Filed Feb. 20, 1878.



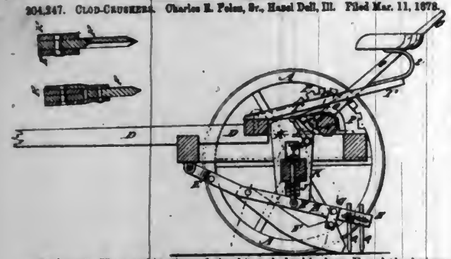
Claim.—The combination of the dasher-shaft K, having an enlargement or drum, O, upon its upper part, the lock-bars M N, the band P, and the wheel Q and crank R, with each other, and with the frame-work A B C D E F G H I, substantially as herein shown and described.

204,246. FENCE-POSTS. Henry A. Pierce, Moline, Ill. Filed Nov. 3, 1877.



Claim.—The combination, with the post A, having a disk, B, provided with a centering-point, *x*, and the downturned pointed lips *a*, of the broad steadying-plate C, arranged above the said disk, substantially as specified.

204,247. CLOD-CRUSHER. Charles H. Polm, Sr., Hazel Dell, Ill. Filed Mar. 11, 1878.



Claim.—1. The combination of the hinged double bars E and the knives F with the frame C, the axles B, and the wheels A, substantially as herein shown and described.

2. The combination of the hinged double bars E, the knives F, and the harrow-teeth Q with the frame C, the axles B, and the wheels A, substantially as herein shown and described.

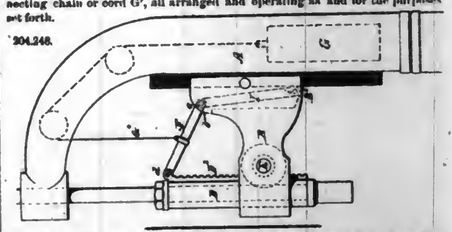
204,248. METAL-DRILLING MACHINES. David W. Pond, Worcester, Mass. Filed May 10, 1878.

Brief.—Improvement on machine described in Letters Patent No. 150,890, May 12, 1874. The force of the counter-balance acts centrally on the mechanism. The strain at the forward end of the lever, to which the weighted cord is attached, is brought into direct line from the forward joint of said lever to the feed-pinion, (causing no twisting action on the feed-quill,) while the link to which the rear end of said lever is connected, being centrally attached to the lower rear part of the drill-head, causes the strain of the counter-weight to act in opposition to the leverage of the head, overcoming the tendency of said head to bind or cramp on its guides.

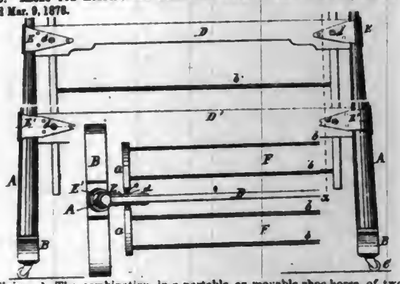
Claim.—1. The combination, with the drilling-spindle and sliding head in an upright drilling-machine, of a counterbalance-weight mechanism, substantially such as described, arranged centrally in rear of the drill-spindle, and connected by pivot or hinge attachment directly to the upper end of the feed-rack or quill, and linked to the lower rear part of the head-block, for the purposes set forth.

2. In combination, substantially as herein shown and described, the feed-quill and rack D D′, provided with ears *d*, the sliding head H, the lever F, having its front end pivoted between the ears *d*, and its rear end connected by link I to the central lower part or heel B′ of the head-block, the weight G, and connecting chain or cord G′, all arranged and operating as and for the purposes set forth.

204,248.



204,249. RACKS FOR HOLDING AND EXHIBITING SHOES. Johnson Priest, Lynn, Mass. Filed Mar. 9, 1878.



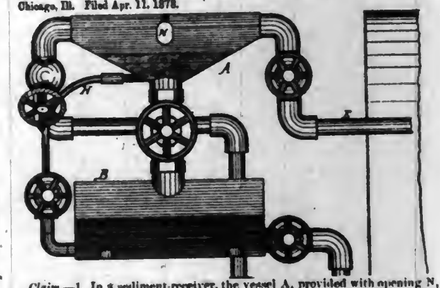
Claim.—1. The combination, in a portable or movable shoe-horse, of two tapering uprights, each provided with one flat side, and set in horizontally-extending sills or feet, and one or more horizontal bars, provided at each end with a socket or eye adapted to receive and embrace one of said uprights, said eye or socket being shaped to fit and bear against the flat side of said uprights to prevent them from turning therein, substantially as and for the purposes described.

2. The combination, in a portable shoe-horse or other goods-exhibiting stand, of two tapering uprights, A A, each provided with one flat side, one or more horizontal bars, D D′, each having its ends shaped to fit and bear against said flat side of the uprights, and provided at each end with a metal strap, E or E′, firmly bolted or otherwise secured thereto, and forming a socket to receive and embrace one of said uprights, and the horizontally-projecting sills or feet F B, to support the rack or frame in an upright position, substantially as described.

3. In combination with a portable goods-exhibiting horse or stand composed of two uprights set in horizontally-projecting sills or feet, and one or more horizontal bars connecting said uprights, one or more separate racks or frames, F, each composed of two end pieces, *a a*, and two or more pairs of bars or rods, *b b*, and provided with two or more hooks, *c c*, adapted to engage with and support said frame F upon said central goods-exhibiting horse or stand, substantially as and for the purposes described.

4. The combination of a shoe-horse or other goods-exhibiting stand composed of two uprights set in suitable bases or feet and connected by one or more horizontal bars or rods, provided with two or more eyes or sockets, *d d*, and one or more separate racks or stands, F, each provided with two or more hooks, *c c*, firmly secured thereto, and adapted to engage with the eyes *d d*, substantially as and for the purposes described.

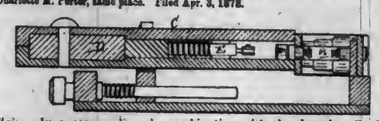
204,250. APPARATUS FOR REMOVING SEDIMENT FROM STEAM-BOILERS. Thomas C. Purves, Chicago, Ill. Filed Apr. 11, 1878.



Claim.—1. In a sediment-receiver, the vessel A, provided with opening N, vessel B, and pipe H, connecting said vessels at their bottoms, constructed and arranged to collect and blow off the mud, substantially as described and shown.

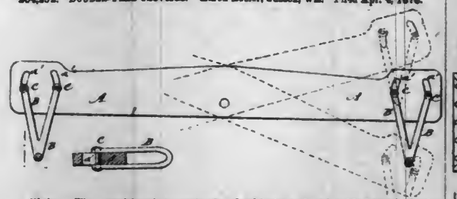
2. The pipe B, made at its small end to join the exit-pipe E, and enlarged at its bulb end to hold sufficient water to balance it, and with large skimming-holes in its top part, whereby sediment passes into the pipe in part, by its own gravity, as specified.

204,251. CAR-COUPLINGS. Charles A. Roberts, Detroit, Mich., assignor of one-half his right to Charlotte M. Porter, same place. Filed Apr. 3, 1878.



Claim.—In a car-coupling, in combination with the draw-bar C of the hook-block D, pivoted in a horizontal position in such draw-bar, and provided with the socket *f*, beveled on one side, and the spring-latch E, having projecting toe *g*, so that the withdrawal of the spring-latch from the socket will turn the pivoted block, substantially as described and shown.

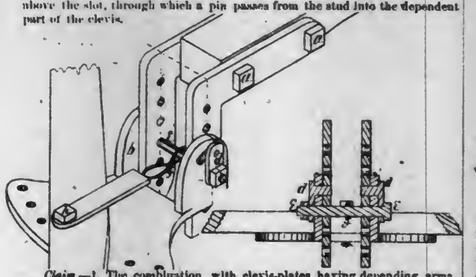
204,252. DOUBLE-TREE CLEVISES. Aaron Rosier, Sussex, Wis. Filed Apr. 4, 1878.



Claim.—The combination, with the double-tree A, of a U-shaped clevis, B, having V shaped arms automatically adjustable in arc-slots *a a′* of the double-tree, as shown and described, for the purpose specified.

204,253. PLOW-CLEVISES. Ebenezer A. Sanders, Rockford, Ill. Filed Oct. 22, 1877.

Brief.—The straps that are secured to the beam depend, and are furnished with a single set of holes each. The horizontal plate upon which the double-tree rests is also provided with a horizontal row of holes, the opposite end being furnished with ears, having in each one hole for the clevis-pin, and a curved slot above and concentric. A stud embraces the clevis-pin, and extends above the slot, through which a pin passes from the stud into the dependent part of the clevis.

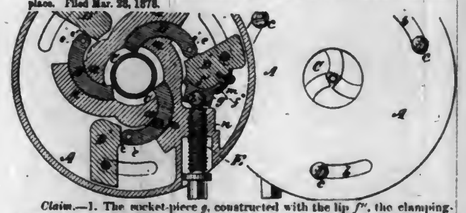


Claim.—1. The combination, with clevis-plates having depending arms, each of which is provided with a single series of holes, of a horizontal clevis, constructed with upturned ears fitting the clevis-plates, said ears provided with holes for the clevis-pin, and a curved slot located above said holes, for connecting the clevis-ears to the plates by studs or a pin extending through the holes in the clevis-plates, substantially as described.

2. The combination, with the clevis-plates having a single series of holes and the horizontal clevis, provided with upturned slotted ears, of the plates *d*, having inwardly-projecting studs formed thereon, substantially as described.

3. The combination, with the clevis-plates and the horizontal clevis, provided with upturned slotted ears, of the hammer-strap attached to the clevis-pin and evener, said evener adapted to be laterally adjusted with relation to the horizontal clevis, substantially as described.

204,254. CHUCKS. Andrew Saunders, Yonkers, N. Y., assignor to D. Saunders' Sons, same place. Filed Mar. 28, 1878.



Claim.—1. The socket-piece *g*, constructed with the lip *f″*, the clamping-plate *m* on one of the shoulders D′, and the ball-and-socket joint *s* of the screw E, in combination with the griping-jaws D, shell A, and cap-plate B, substantially as and for the purpose set forth.

2. The arc-shaped slots *b* in the shell A, in combination with the screws *c*, the shoulders D′ on the cap-plate B, and the arc-shaped griping-jaws D in the guides *a* of the shell A, substantially as and for the purpose herein set forth.

204,255. KITCHEN-SINKS. Michael W. Scannell, Williamsport, Pa. Filed Apr. 23, 1878.

Claim.—1. The combination, with a sink having a bottom trap with interior dip-pipe, of an interior detachable strainer, a plug, and an overflow-pipe, to use sink as a basin, substantially as set forth.

2. The combination, with a sink having a bottom trap with interior dip-pipe, of an interior detachable strainer, a plug, and an overflow-pipe, to use sink as a basin, substantially as set forth.

204,255.



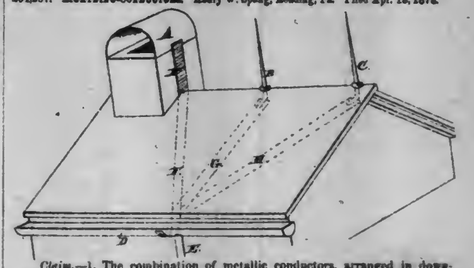
204,256. ENVELOPES. John Schade and Byron H. Lockwood, Stamford, Conn., assignors to themselves and George H. Sherman, same place. Filed Mar. 16, 1878.



Claim.—1. A perforated envelope provided with a stamp and address tag, the envelope and tag being composed of a single piece of perforated and folded material lined with a transparent substance, substantially as described.

2. An envelope composed of a body with a number of coincident perforations through it, lined with an imperforate transparent substance, substantially as described.

204,257. LIGHTNING-CONDUCTORS. Henry W. Spang, Reading, Pa. Filed Apr. 18, 1878.

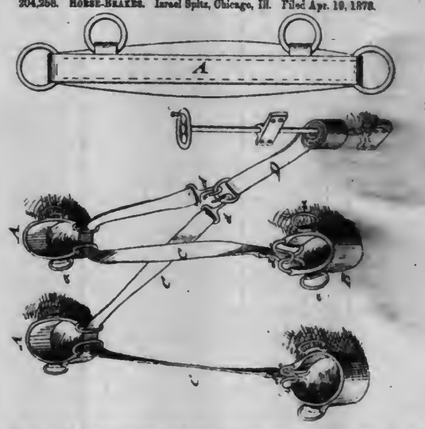


Claim.—1. The combination of metallic conductors, arranged in downward and direct lines beneath the wooden sheathing or rafters or slate covering of the roof of a building, or of a steeple or other elevated projection, as described, with the air-terminal or elevated metallic conductors thereon, and the rain-pipes or vertical conductors leading from the eaves of the roof to the earth, as and for the purposes set forth.

2. The combination of sheet-metal bands or conductors F G H, arranged as described, with chimney-cap A, rods B C, gutter or trough D, and rain-pipe E, as set forth.

3. The combination of air-terminal rod B with rafter or cross-piece L and bar N, as set forth.

204,258. HORSE-BRAKES. Israel Spitz, Chicago, Ill. Filed Apr. 10, 1878.



Claim.—The combination, with the leg-encircling straps or loops A and B, having side suspension-rings and end rings, of connecting brake-straps, that are, respectively, attached and passed through the rings of the loops, and with a winding-up strap and mechanism of the vehicle or saddle, substantially as and for the purpose specified.

204,259. BARRELS FOR SHIPPING BOTTLED LIQUORS. Samuel Strauss, Charleston, W. Va. Filed May 9, 1878.

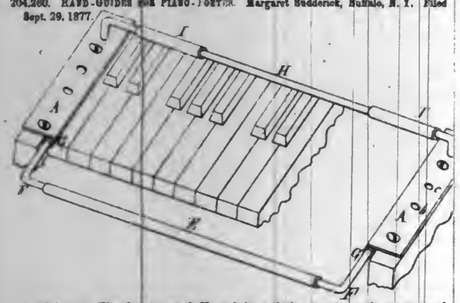
Brief.—No one not having the key can have access to the barrel. A seal may be placed over the locking device.



Claim.—1. A barrel or package for shipping bottled liquors, having a solid central partition, two or more perforated guide-partitions at each side of the central partition, and detachable heads with locking devices, substantially as and for the purpose set forth.

2. The combination, with a barrel having a socket-hole at one side and a locking bolt at the opposite side, of a detachable head, having socket-pin at one side, and a socket-hole for the locking-bolt at the opposite side, substantially as described.

204,260. HAND-GUIDES FOR PIANO-FORTES. Margaret Sudderick, Buffalo, N. Y. Filed Sept. 29, 1877.



Claim.—1. The finger-guard H and its tubular extensors I, constructed and arranged substantially as shown and described.

2. The wrist-check E, in combination with its extensors F F, constructed and arranged substantially as shown and described.

3. The right and left plates A A, in combination with the check E F and finger-guard H I, substantially as hereinbefore specified.

204,261. LANTERNS. Oscar J. Swedberg, Chicago, Ill., assignor to Joseph S. Dennis and Henry N. Wheeler, same place. Filed Apr. 5, 1878.



Claim.—1. The lantern the casings of the side lights whereof are open for the insertion of the glass at the edge, abutting against and protected by the door, substantially as specified.

2. The lantern the casings of the side lights whereof are open for the insertion of the glass at the edge, abutting and protected by the door, and the door the casing whereof is open at one edge for the insertion of the glass, and a lip, I, attached to the housing, whereby the closing of the door closes all the joints, substantially as specified.

204,262. HAT AND CAP SWEATS. J. Rufus Terry, Jr., New York, N. Y. Filed May 16, 1878.

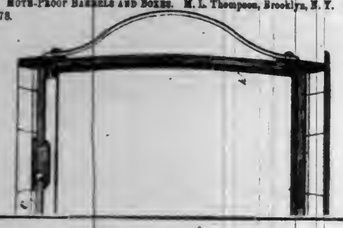


Claim.—1. The process of treating leather or counter board with oils, substantially as described.

2. As a new article of manufacture, the improved leather-like substance produced by treating leather or counter board with oils, substantially as described.

3. As a new article of manufacture, hat or cap sweat-bands made from leather or counter board, treated substantially in the manner described.

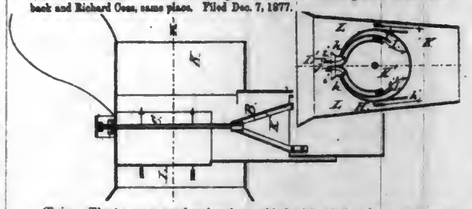
204,263. MOTH-PROOF BARRELS AND BOXES. M. L. Thompson, Brooklyn, N. Y. Filed Apr. 29, 1878.



Claim.—1. The moth-proof lining for boxes or barrels, composed of a layer of bituminous material upon the wood, a lining of tarred paper, and an interior layer of paper, substantially as set forth.

2. A box or barrel with removable head or cover, and a lining of bituminous material, covered by a layer of paper or similar material, as set forth.

204,264. VENTILATORS. Salathiel S. Thompson, Sacramento, Cal., assignor to Robert Hornback and Richard Coss, same place. Filed Dec. 7, 1877.



Claim.—The turning head or hood provided with wind-passages L L' and smoke-passages K K', substantially as set forth.

204,265. SPECTACLE-FRAMES. Jacob F. Traub, Detroit, Mich. Filed Apr. 13, 1878.



Claim.—1. In spectacles, the temple-pieces B of drawn round wire, provided with a suitable thread, in combination with an internally-threaded thimble, D, and eyebolt c d, substantially as and for the purposes set forth.

2. In spectacles, and in combination with the recessed ears a a', the eyebolt c d, rotating within the chamber formed between said ears, the cap C, and thimble D, substantially as and for the purposes described.

3. In spectacles, and in combination with the temple pieces B, formed of round-drawn wire, the ball E, substantially as and for the purposes specified.

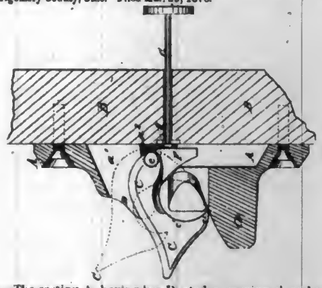
4. The improved spectacles herein described, consisting of the bows provided with the recessed ears a a', the eyebolt c d, thimble D, round drawn-wire temple-pieces B, and cap C, constructed and combined to operate substantially as and for the purposes described.

204,266. EYEGLASSES. Jacob F. Traub, Detroit, Mich. Filed Apr. 3, 1878.



Claim.—In spectacles or eyeglasses, the combination, with the recessed studs d, attached to the frames A A', of the slotted plates c, secured in the recesses in said studs by screws, and the spring h, passing through the slots in the plates c, and fastened at its ends in the said recesses, constructed and arranged substantially as described and shown.

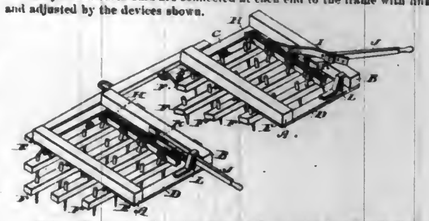
204,267. GATE-LATCHES. Hiram Unger, Germantown, assignor to himself and Jacob S. Antrim, Montgomery County, Ohio. Filed Mar. 29, 1878.



Claim.—The casting A, having ing D, stud a, opening a^1, and recesses a^1, in combination with the catch C, having pivots c and arm F, the latter operated by a slide, G, as and for the purpose specified.

204,268. HARROWS. Henry F. Wasmund, Tecumseh, Nebr. Filed Nov. 12, 1877.

Brief.—The tooth-bars are connected at each end to the frame with links, and adjusted by the devices shown.



Claim.—The combination of the frame A B and tooth-bars F with the lever J, adjustable arm I, bars H, arms G, and links F', all constructed and arranged substantially in the manner shown and described.

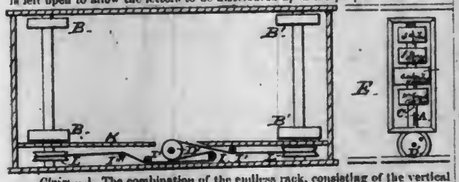
204,269. CHECK-REIN GUIDES. Augustus L. Whitney, Waltham, assignor to himself and Thomas H. Hussey, Lowell, Mass. Filed Sept. 1, 1877.



Claim.—As a new article of manufacture, an overhead check-rein guide composed of a metallic base-plate having attached guides, the plate extending across the head, substantially as and for the purpose described.

204,270. POST-OFFICE APPARATUS. Geo. W. Wiles, Vincennes, Iowa, assignor to himself and J. M. Wyllis, same place. Filed Mar. 15, 1878.

Brief.—Letters are placed, according to the initial letter of the surname, upon the bars of the endless rack, mounted upon rolls, and in the rear of an inspection-window. The rack can be operated by persons calling for letters by turning the crank. The rear side of the frame in which the rack is mounted is left open to allow the letters to be distributed upon the proper bars.



Claim.—1. The combination of the endless rack, consisting of the vertical bars arranged in alphabetical order, and each provided with one or more letter-clips, the rolls B B', track K, and mechanism, substantially as described, for driving or operating the apparatus.

2. The case E, provided with an opening in its back and an inspection-window in its front, in combination with rolls B B', bearing endless rack, track K, and the cord and pulleys, the latter constituting the driving operating mechanism, as and for the purpose set forth.

204,271. RAILROAD-CAR-VENTILATOR VALVES. E. H. Winchell, Chicago, Ill. Filed Nov. 17, 1877.



Claim.—1. An interior valve for car-ventilators, projecting in the form of a triangle into the car, and provided with vertical adjustable slats at the diagonal sides, substantially as specified.

2. The interior valve for car-ventilators, having double oblique sides, vertical adjustable slats, and a central partition dividing it into two chambers, substantially as specified.

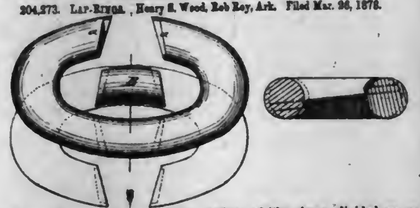
3. The combination, with an exterior ventilator, of the interior valve, having double oblique sides, vertical slats, and a central partition, substantially as specified.

204,272. METHODS OF LABELING BOTTLES. Edward L. Witte, White Mills, Pa. Filed Feb. 18, 1878.



Claim.—A method of labeling glass bottles that consists in first burning the colors into the label and then melting the label into the bottle, as shown and described.

204,273. LAP-RINGS. Henry S. Wood, Rob Roy, Ark. Filed Mar. 26, 1878.



Claim.—A lap-ring made of two sections of like shape, divided on an inclined diagonal line, and having openings at one side, and solid guide portion at the opposite side, the ends of the sections and the solid portions being recessed and converging, substantially as and for the purpose set forth.

204,274. WATCH-WINDING DEVICES. Benj. Wormelle, Brighton, Mass. Filed Mar. 9, 1878.



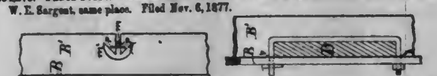
Claim.—1. In a detachable watch-winding device, the pipe a, constructed with the flange b, the top of which forms the part disk or base, in combination with the hinged flange c, which completes the full base or disk of the winder, substantially as and for the purpose set forth.

2. The combination, with the pipe a and the disk or base formed of the flanges b and c, of the thumb-piece f, as and for the purpose specified.

3. Attaching the flange c and thumb-piece to the pipe a by means of the joint-spring wire g, fitted in the peculiarly-shaped bore in the pipe, substantially as and for the purpose described.

4. The slit h at the inner end of the thumb-piece f e, as and for the purpose set forth.

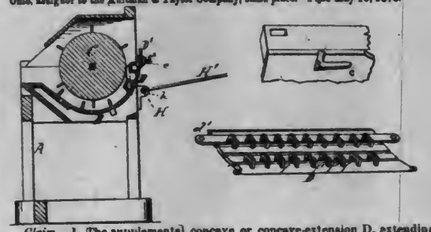
204,275. FENCE-POSTS. Oscar Allen, Marshalltown, Iowa, assignor of one-half his right to W. E. Sargent, same place. Filed Nov. 6, 1877.



Claim.—1. An improved metallic fence-post having the flange B', provided with the slots m m^1 m^2, formed as shown, and for the purpose set forth.

2. An improved metallic fence-post having the flange B', provided with the slots m m^1 m^2, formed as shown, and staples t, as and for the purpose set forth.

204,276. CLOVER-HULLING ATTACHMENTS FOR THRASHERS. Joseph Allman, Mansfield, Ohio, assignor to the Aultman & Taylor Company, same place. Filed May 15, 1878.



Claim.—1. The supplemental concave or concave-extension D, extending the entire length of the cylinder, and leaving an open discharge over its upper edge above the axial plane of the cylinder, substantially as and for the purpose set forth.

2. The removable concave-extension D, made adjustable to and from the cylinder, substantially as described.

3. The combination, with the thrasher-concave or concave-extension, of the adjustable tail-piece D', substantially as and for the purpose described.

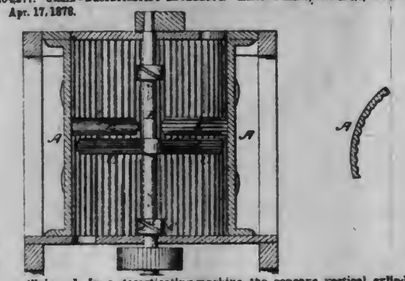
4. The combination, with the thrasher-concave, of the removable and adjustable supplemental concave or concave-extension, provided with the adjustable tail-piece, substantially as and for the purpose described.

5. The grate or fingers H', applied at the rear end of the concave, and made adjustable independently of said concave, substantially as described.

6. The supplemental concave provided with teeth made in staple form, substantially as described.

7. The supplemental concave provided with the transverse grooves on its inner face, giving it a corrugated or fluted surface, as described.

204,277. GRAIN-DECORTICATING APPARATUS. Adelbert Ames, Northfield, Minn. Filed Apr. 17, 1878.



Claim.—1. In a decorticating-machine, the concave vertical cylinder A, provided with the inwardly-projecting spikes or plates E, having their under surfaces inclined and roughened, substantially as and for the purpose set forth.

2. The vertical shaft B, provided with inclined arms or scourers C C, corrugated on their upper sides, in combination with the concave vertical cylinder, provided with the spikes or plates E, having their under sides inclined and corrugated or roughened, substantially as described.

3. A decorticating-machine consisting, essentially, of a hollow vertical cylinder provided with internally-projecting spikes, in combination with a central vertical revolving shaft provided with radial arms, having their upper faces inclined and corrugated or roughened, substantially as described.

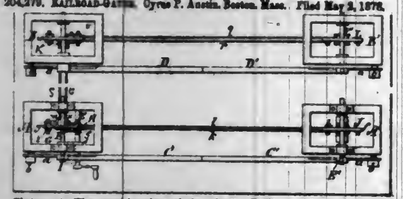
204,278. GAS-BURNERS. Walter Anderson, Brooklyn, N. Y. Filed May 14, 1878.

Brief.—The quantity of gas admitted through the burner is regulated by turning the cap F, to cover or uncover the perforations.



Claim.—In a gas-burner, the combination of the check or regulator-cap, having the slot and inner projection, a burner-base having the series of holes and peripheral groove, and the burner-tip, substantially as described.

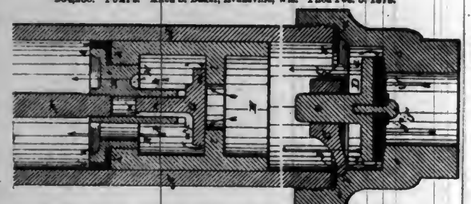
204,279. RAILROAD-GATES. Cyrus F. Austin, Boston, Mass. Filed May 3, 1878.



Claim.—1. The combination of the shafts B E', gate-bars C C', and rack G and head J, the rack and head being connected by the tension-rods *i j* and cords or chains *k l*, as explained, and the whole being substantially as and for the purposes stated.

2. In general combination, the gate-bars C C' D D', shafts E E' F F', sectoral rack G, and heads J K L, the rack G and head J being connected by the cords *k l*, as stated, and the heads K and L by the cords *q r*, while the rack G and head K are connected by the cords *s t*, the whole being substantially as and for the purposes stated.

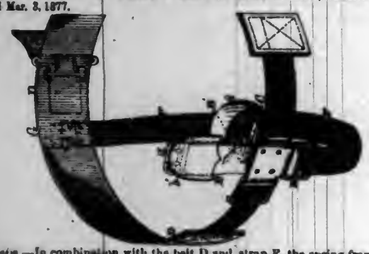
204,280. PUMPS. Alva S. Baker, Evansville, Wis. Filed Feb. 8, 1878.



Claim.—1. The combination, with the brass yoke E', screwed into the top of the plunger F, and having the central hollow hub *k*, of the plunger-valve G, having its stem *n* projecting into such hollow hub, the said valve working between the lower end of the hub and the valve-seat *l*, directly below in the plunger, constructed and arranged substantially as described and shown.

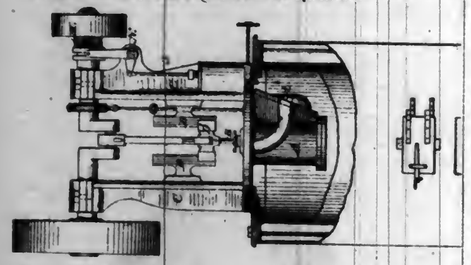
2. The combination, with the hub *k* of the brass yoke E', of the plunger-valve G, having stem *n*, provided with grooves *n' n'*, constructed and arranged substantially as described and shown.

204,281. HERNIAL TRUSSES. Dunstan E. Banks and Thomas M. Merck, Gainesville, Ga. Filed Mar. 3, 1877.



Claim.—In combination with the belt D and strap F, the spring-frame B, *b*, *b'*, and *b''*, provided with the pad A and buckles C, E, and H, and arranged with its longest axis in a line having a right angle to said belt, substantially as and for the purpose specified.

204,282. STEAM-ENGINE CYLINDERS. Geo. E. Banner, Newark, N. J., assignor of one-half his right to Anna Gray Fales, Hartford, Conn. Filed Apr. 30, 1878.



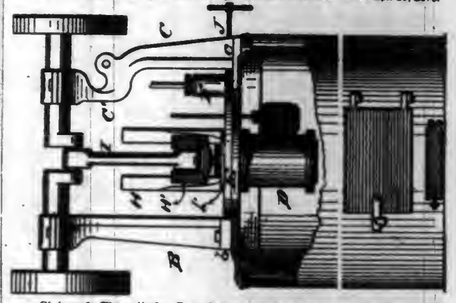
Claim.—1. In combination with a ball-governor casing and governor valve, a cylinder suspending flange containing the steam passages from the boiler to the cylinder, said parts being constructed and arranged substantially as shown and described.

2. In a steam-engine, a cylinder-supporting flange containing the steam-passages from the boiler to the cylinder, said flange being cast in one piece with the cylinder, standards, and guides.

3. In combination with a steam-engine cylinder and slide-valve, a steam-chest having its face inclined longitudinally from top to bottom, the inclination being sufficient to allow the valve-seat to be cleaned and smoothed without a dipping or digging motion.

4. In a steam-engine, a steam-chest having its lower end rounded on the inside, substantially as and for the purpose set forth.

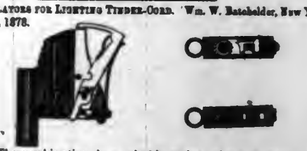
204,283. STEAM-ENGINE STANDARDS AND CYLINDERS. George E. Banner, Newark, N. J., assignor of one-half his right to Anna Gray Fales, Hartford, Conn. Filed Apr. 30, 1878.



Claim.—1. The cylinder D and governor valve-box, cast in one piece, in combination with the straight standard B and the curved standard C, independently attached to the boiler, and arranged so that the said cylinder and valve-box can be withdrawn from said boiler without moving said standards or the shaft carried thereby, substantially as set forth.

2. The combination of cylinder D, having depression D', with bifurcated guide H, having offset A, substantially as set forth.

204,284. SCINTILLATORS FOR LIGHTING TINDER-CORD. Wm. W. Batchelder, New York, N. Y. Filed May 1, 1878.



Claim.—1. The combination, in a suitable casing, of two or more separate substances or compounds which will not explode when separate, but will burn violently or explode when mixed or brought in contact with each other and rubbed or otherwise mechanically acted upon, and a scraper connected to a reciprocating pawl, adapted to operate the mechanism for ejecting the substances, and accomplishing such mixing or uniting and ignition of said substances or compounds, said casing having a tube in which is arranged a slow-match, which is ignited by the flash or flame of the ignited substances, in order to keep up the combustion as long as desired.

2. The combination, in an igniter for smokers' uses and other purposes, of a casing provided with two parallel chambers for holding the igniting material, and an intermediate screw and traversing nut for projecting said substances, with the scraper for firing the projecting substances and a pawl and ratchet-wheel for actuating the screw, the whole arranged as and for the purposes set forth.

3. The combination, with the scraper and the projection thereon, of a double cam pivoted to the casing or shell and adapted to trip the scraper, substantially as specified.

204,285. SCINTILLATORS FOR LIGHTING GAS. Wm. W. Batchelder, New York, N. Y. Filed May 1, 1878.

Claim.—1. The combination, in a suitable casing, of two or more separate substances or compounds which will not explode when separate, but will burn violently or explode when mixed or brought in contact with each other and rubbed or otherwise mechanically acted upon, and a suitable device for accomplishing such mixing or ignition of said substances or compounds, said casing being attached to a suitable handle, provided with a lever pivoted at its bend and connected to a thumb-lever below, and the mechanism for operating the devices by which the mixing and ignition of them are effected, substantially as set forth.

2. In combination with the mechanism in the casing of the apparatus, the lever pivoted at the bend of the tube connected with the mechanism of the casing, the shaft being provided with a projection adapted to engage one of the ratchets of the nut, and with the thumb-lever below, for transmitting motion around the bend of the apparatus, substantially as specified.

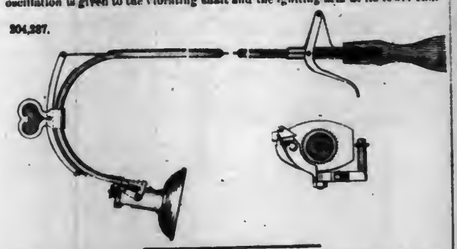
3. In combination with said parallel chambers in the casing secured to a suitable handle for the reception of the explosive substances, the longitudinal chamber, running parallel therewith and adjacent thereto, and provided with a traversing-nut carrying followers extending into the said parallel chambers, the screw-shaft by which the nut is traversed, the ratchet-wheel on top of said screw-shaft, the arm and pawl on the upper end of the oscillating lever, and the bent lever and pawl on the side of the casing, whereby the substances may be ejected, substantially as specified.

4. In combination with said parallel chambers, a casing attached to a suitable arm, the followers and nut, and the screw, the ratchet-wheel attached to the upper end of the screw, and the vibrating arm on the oscillating shaft and its pawl, and the bent lever and pawl on the side of the casing, whereby the shaft and screw are operated in conjunction with each other, as specified.

5. In combination with the vibrating arm on the oscillating shaft, the bent lever on the side of the casing and its pawl, whereby the said arm is tripped to oscillate the shaft and its igniting-arm, substantially as specified.

6. In combination with the oscillating shaft and its actuating mechanism, the spiral spring connected to a ratcheted nut set loosely on said shaft and the casing, whereby the tension of the spring may be regulated, and the reverse oscillation is given to the vibrating shaft and the igniting-arm at its lower end.

204,287.



204,286. SCINTILLATING ATTACHMENTS FOR GAS-BURNERS. Wm. W. Batchelder, New York, N. Y. Filed May 1, 1878.



Claim.—1. The combination, in a suitable casing, of two or more separate substances or compounds which will not explode when separate, but will burn violently or explode when mixed or brought in contact with each other and rubbed or otherwise mechanically acted upon, and a suitable device for accomplishing such mixing or ignition of said compounds, with a gas-burner provided with a pawl and double cams adapted to automatically operate the arm on the lower end of the oscillating shaft, whereby, when the substances are ignited, the flash or flame will ignite the gas, substantially as set forth.

2. In combination with the arm on the lower end of the oscillating shaft, the cam or cams on the gas-cock, whereby the igniter will be automatically operated to ignite the gas when the cock is rotated to turn on the gas, substantially as specified.

3. The combination, with the curved arm on the lower part of the oscillating shaft, its pawl, and the ratchet-wheel, of an extension on said arm, whereby the advancing and firing mechanism may be operated independently of the gas-cock, substantially as set forth.

4. In combination with the oscillating shaft and the spring, the ratcheted nut loosely fitted thereon, and secured to the spring, and the correspondingly-ratcheted nut rigidly secured to said shaft, whereby provision is made for tightening the spring, substantially as specified.

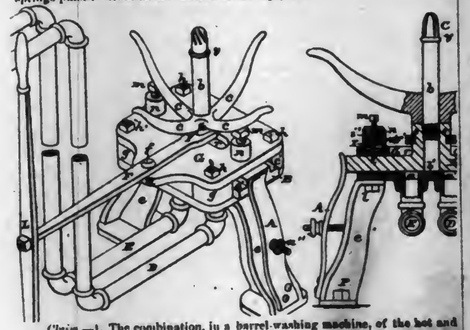
204,287. WATCH-REGULATORS. Geo. Bichsel, Sedalia, Mo. Filed Apr. 16, 1878.



Claim.—In a watch-regulator, the combination, with the regulating screw or shaft *d* and the yoke D, carrying the pointer or arm C, of the projection *a*, pivoted plate or lever *b*, and stud *c'*, all arranged to operate as and for the purpose set forth.

204,288. BARREL-WASHERS. Hermann Binder, St. Louis, Mo. Filed Apr. 23, 1878.

Brief.—The butt and nozzle pipe are mounted on a sliding plate, and by means of a lever are shifted to engage alternately with hot and cold water pipes located under the frame. The sliding plate operates as a valve to the water pipes, and closes them automatically by means of the adjustable springs at the side of the frame, the plate being held down on the water-pipes by springs placed within hollow bosses on the top plate.

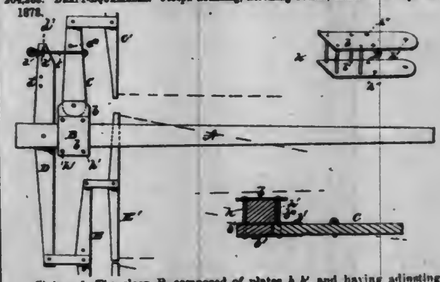


Claim.—1. The combination, in a barrel-washing machine, of the hot and cold water pipes E D, having delivery-openings *a a'* arranged beneath the plate B, the movable nozzle-pipe *b*, mounted on said sliding plate B, and having its lower end *b'* adapted to engage alternately with either one of said pipes E D, and the lever F, all as set forth.

2. In a barrel-washer, the combination, with sliding plate B, carrying the nozzle *b*, adapted to engage alternately with the hot or cold water pipes E D, of adjusting-springs A A and the set-screws *a''* *a''*, as set forth.

3. In a barrel-washer, the combination, with sliding plate B, pipe *b*, having plain vertical or spiral slits, hot and cold water pipes E D, springs A A, and lever F, of the pressure-springs I I, set in hollow bosses *n n*, and the plunger-screws *m m*, *nn* and for the purposes set forth.

204,289. DRAFT-EQUALIZERS. Joseph Brunning, Blooming Prairie, Minn. Filed Apr. 27, 1878.



Claim.—1. The clasp B, composed of plates *b b'*, and having adjusting-holes A and bolts *b'*, and constructed and adapted to operate substantially as described.

2. The clasp B, constructed as described, and combined with tongue A and lever C, substantially as and for the purposes set forth.

3. The combination of lever C, clasp B, and tongue A with lever D, link *c*, and staple *d*, substantially as and for the purposes set forth.

4. In a draft-equalizer, the combination of lever D, having double-trees E, with single-trees E E', with tongue A, clasp B, and lever C, substantially as and for the purposes set forth.

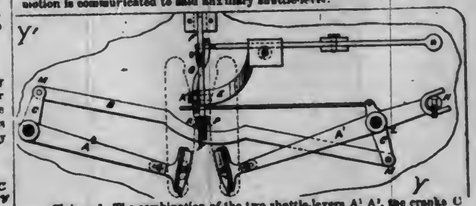
204,290. CLEW-LINE LEADERS. Sidney B. Brooks, East Marion, N. Y. Filed Feb. 7, 1878.



Claim.—As an article of manufacture, the herein-described clew-line leader, consisting of the body A, centrally perforated to inclose the clew-line, with an anti-friction roll upon the bearing side, and with a recess at the opposite end to form a seat upon the edge of the sail, and with a perforation at each side, substantially as and for the purpose set forth.

204,291. SHUTTLE-DRIVING MECHANISMS FOR SEWING-MACHINES. Ernst Brossmann and Martin Rosenberger, New York, N. Y., and Moritz Rosenstock, Hoboken, N. J. Filed Feb. 19, 1877.

Brief.—The ordinary vibrating shuttle-lever, operated by an upright vibrating lever, is attached, by means of an arm projecting at right angles from it at its pivot and a pitman or connecting-rod, to a similar angular arm on an auxiliary shuttle-lever pivoted to an extension of the table, by which connection its motion is communicated to said auxiliary shuttle-lever.



Claim.—1. The combination of the two shuttle-levers A^1 A^2, the cranks C C, and the pitman B, connecting the said levers, and causing them to impart simultaneous movement to the shuttles in circular arcs, as explained.

2. The combination of the extended table or platform Y Y', two levers A^1 A^2, crank-arms C C, and connecting-rod B, as and for the purposes set forth.

3. The projecting bracket E and a suitable feed mechanism mounted therein, in combination with the table Y Y', levers A^1 A^2, crank-arms C C, and connecting-rods B, as and for the purposes set forth.

204,292. WATER-WHEELS. Wilson S. Clay, Valparaiso, Nebr. Filed May 20, 1878.

Claim.—1. The combination of the sprocket-wheel C, made adjustable on the frame A by means substantially as described, with the endless chain of buckets and the upright water-tube, substantially as described, for the purpose specified.

2. The endless chain of buckets, composed of a series of links provided with buckets N and steps *p*, substantially as described.

3. The combination of the projecting plates *s* and bolts *t* with the bucket-links, for the purpose of preserving the slope of the pendent chain-loop, so that it shall conform to the curvature of the upright tube, substantially as described, for the purpose specified.

4. The sprocket-wheel constructed, as described, with the cross-bars *h*, to receive the action of the steps *p* in the chain of buckets, substantially as described.

5. The cross-bars *h* of the sprocket-wheel, adapted, by means as described,

for radial adjustment in the arms of the wheel to adjust the spaces between the stops *p* of the chain of buckets, substantially as described.

6. The radial arms of the sprocket-wheel, adapted for adjustment by means substantially as described, for the purpose specified.

7. The combination of the abutment A' with the end of the race B and the upright water-tube, substantially as described, for the purpose specified.

8. The endless chain for the purposes herein described, consisting of buckets connected by links which have limited movement upon their pivots by means substantially as described.

9. The vertical water tube, curved at its lower end and formed with an enlarged upper end, substantially as described, for the purpose specified.

10. The water-tube D, consisting of the front and rear plates *a' a'* and side plates *b' b'*, having flanges *d' d'*, in combination with the ribs *f'*, cross-bars *h'*, and nuts *e'*, substantially as and for the purposes herein set forth.

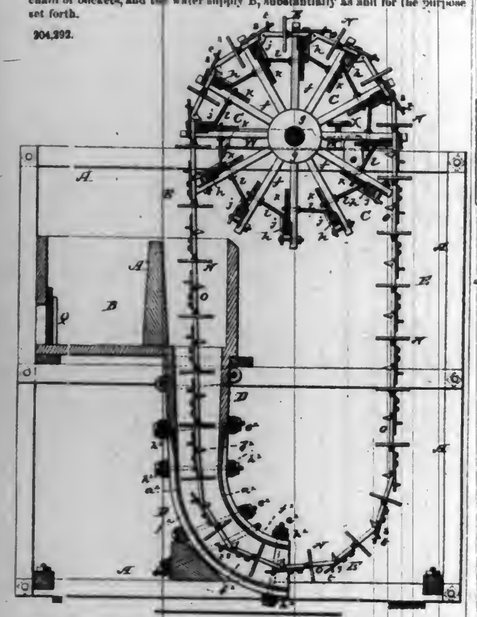
11. The bucket consisting of the flat metal plates N N, provided with the cross-bars *m' m'*, and fastened together and to the link O by bolts *n' i'*, substantially as and for the purposes herein set forth.

12. In combination with the links O and the stops *p* thereon, the cross-bars A on the sprocket-wheel, the plates *r'*, with arms *r r*, and the angular plate *p'*, with flange *s'*, substantially as and for the purposes herein set forth.

13. A water-wheel consisting of an endless chain of buckets, passing over an elevated guide-wheel and down through an upright tube or trunk, curved at its lower end to guide the chain, without a secondary or lower guide-wheel, substantially as described.

14. The combination of an endless chain of buckets, E, the sprocket-wheel C, the curved upright water-tube D, forming the lower guide for the chain of buckets, and the water supply B, substantially as and for the purpose set forth.

204,292.



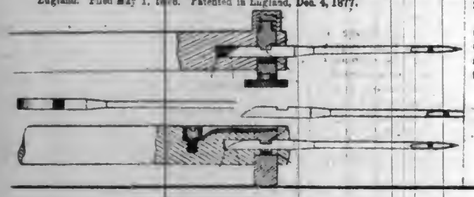
204,293. LUMBER-RULES. Admiram J. Colburn, Greenville, Mich. Filed Mar. 25, 1878.



Claim.—1. The dials B B', having elliptic or spiral springs connected therewith; as shown in Figs. 3 and 5.

2. In a lumber rule and gage, the tube *m*, having internal screw-thread *s*, in combination with the screw-threaded rod W, rubber ring *f*, rubber block *g*, and pencil L, all arranged and operating substantially as herein described, for the purpose set forth.

204,294. NEEDLE-BARS FOR SEWING-MACHINES. William Cook and Samuel Hill, Redditch, England. Filed May 1, 1878. Patented in England, Dec. 4, 1877.



Claim.—The combination, with the bevel or cone headed needle, grooved transversely, as shown and described, of the needle-bar, provided with spring, sliding bolt, and knob or stud, to be operated for the release of the needle from without said needle-bar, substantially as shown and set forth.

204,295. LADDERS. Frederick A. Copeland, La Crosse, Wis. Filed May 4, 1878.

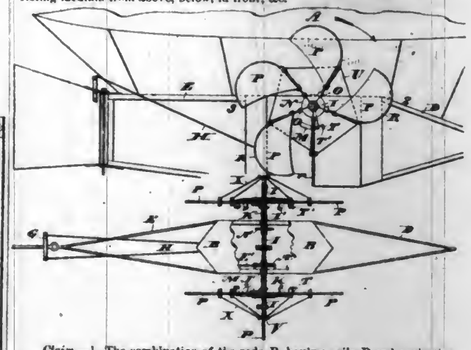
Brief.—Secures tubular rounds, having internal right and left hand screw-threads at their ends, to eyebolts, through which the side ropes pass, and clamps the latter by means of grooved sockets, against which the ends of the rungs impinge.



Claim.—As the improvement herein described, the tubular round B, having an internal screw-thread at each end, the socket C, having a groove, *b*, in one side and a circular recess in the other, and the bolts, having eyes to receive the ropes A, and their threaded shanks entering the rounds, all combined as shown and described.

204,296. AERIAL PADDLE-WHEELS. R. W. Cowan and Charles Page, Montreal, Quebec, Canada. Filed Apr. 22, 1878.

Brief.—The paddles are so arranged that at least one on each side of the aerial car or submarine boat shall be at right angles. The arm which projects from the bearing-sleeve, to hold firmly the paddles at right angles to the car during a portion of their revolution, may be adjusted to different radial positions, in order that the paddles shall present their flat surfaces to the resisting medium from above, below, in front, &c.



Claim.—1. The combination of the rods R, having sails P and projection T, with the bar M, substantially as and for the purposes set forth.

2. The combination of the flanges N, having brackets O, rods R, projection T, and bar M, substantially as and for the purposes set forth.

3. The combination of the shaft I, having flanges N and brackets O, secured thereon, with rods R, paddles P, and bar M, substantially as and for the purposes set forth.

4. The combination of the shaft I, sleeve K, and arm and bar L M, substantially as and for the purposes set forth.

5. The combination of the shaft I, sleeve K, and arm and bar L M, gear-wheel A', pinion D', and screw E', substantially as and for the purposes set forth.

6. The combination of the paddles P, constructed as described, with the bar M, capable of being placed in various positions, as described, whereby the effects of said paddles are changed without changing the direction of revolution of the shaft I, substantially as described.

204,297. COATING LEAD ARTICLES WITH TIN. John J. Crooke, Southfield, and Lewis Crooke, New York, N. Y. Filed Mar. 9, 1878.

Brief.—Deposition of tin from its solution upon leaden articles without the aid of the battery.

Claim.—The improvement in the art of coating lead articles with tin, consisting of the treatment of the said articles with the solution of a salt of tin and free nitric acid or its substitute, substantially as before set forth, whereby the precipitation of salts of lead is prevented during the plating operation.

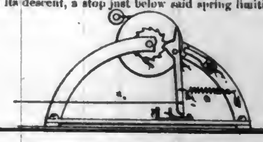
204,298. TIN-PLATED SHOT. Lewis Crooke, New York, N. Y. Filed Mar. 9, 1878.

Claim.—1. Burnished tin-plated projectiles having a body of lead coated with burnished metallic tin, substantially as before set forth, the same being a new article of manufacture.

2. The improvement in the art of manufacturing projectiles, consisting, substantially as before set forth, of the treatment of projectiles with a solution of tin, and with agitation, whereby said projectiles are not only tin plated, but have bright metallic surfaces imparted to them.

204,299. FIRE-ESCAPES. Ira D. Cross, San Francisco, Cal. Filed Mar. 2, 1878.

Brief.—The ladder and sling are released and allowed to unwind by tilting the spring-pawl which engages the ratchet upon the drum-shaft by pulling upon a rope, the outer end of the pawl-lever forcing back and passing under a spring-stop in its descent, a stop just below said spring limiting the descent of the lever.



Claim.—The combination, with the ladder and its drums, of the ratchet-wheel *f*, pawl *h*, with handle *h'*, springs *e m*, and stop *n*, substantially as and for the purposes herein set forth.

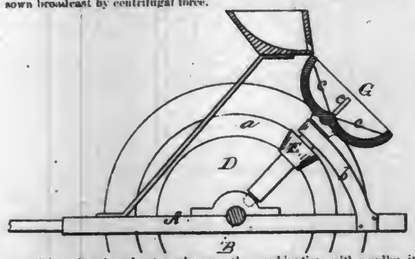
204,300. SPHERICAL TARGETS. Samuel A. Darrach, Newark, N. J. Filed May 14, 1878.



Claim.—The combination, in a target-ball, of an interior shell or body of sheet metal or other tough and rigid material, and a covering-layer of plaster-paris or other fragile material, substantially as and for the purpose shown and described.

204,301. SEED-DISTRIBUTERS. John W. Dooley, Middletown, Conn. Filed Mar. 16, 1878.

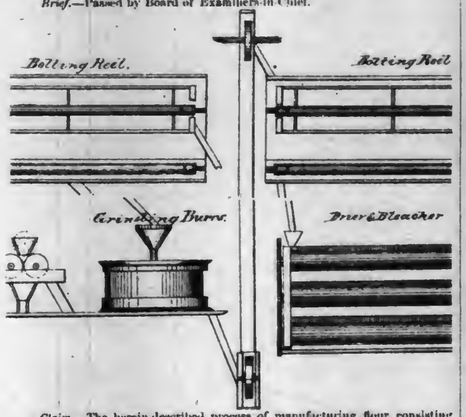
Brief.—A rotating radially-ribbed bowl secured upon a rearwardly-inclined shaft, which receives motion from a beveled master-wheel attached to axle of the carriage. The seed, upon falling into the bowl, which rotates rapidly, is sown broadcast by centrifugal force.



Claim.—In a broadcast seed sower, the combination, with a sulky, its rotating axle B, and a beveled master wheel, D, secured thereto, of the inclined shaft F, having beveled wheel E and rotating bowl G, with radial ribs *c*, substantially as specified.

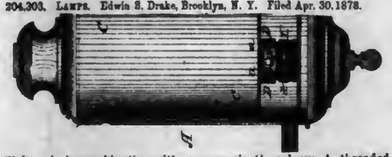
204,302. PROCESSES OF MANUFACTURING FLOUR. R. L. Downton, Milwaukee, Wis. Filed Aug. 22, 1878.

Brief.—Passed by Board of Examiners-in-Chief.



Claim.—The herein-described process of manufacturing flour, consisting of an intermediate separation of the material termed "dustings" from the middlings previous to the purification of said middlings, and then subjecting said dustings to the action of rolls or burrs for regrinding and rewhitening the same, and subsequently reboltting said material on finer cloths, substantially as specified.

204,303. LAMPS. Edwin S. Drake, Brooklyn, N. Y. Filed Apr. 30, 1878.



Claim.—1. In combination with a reservoir, C, and cup A, threaded collars or projections on their adjacent ends to engage with each other for locking the reservoir to the cup, as set forth.

2. In combination with a reservoir, C, and cup A, a threaded valve and corresponding seat, whereby, by the turning of the reservoir, the valve will be opened and closed, as herein set forth.

3. In combination with a reservoir, C, and cup A, a screw-valve connected to the bottom of the reservoir and a screw-collar on the bottom of the cup, whereby the reservoir is locked and the valve operated by the turning of the reservoir, as herein set forth.

204,304. LAMPS. Edwin S. Drake, Brooklyn, N. Y. Filed Apr. 30, 1878.



Claim.—1. The outer shell A and reservoir D, provided with downwardly-projecting collar E, in combination with the valve F and rod I, substantially as and for the purpose set forth.

2. A rod passing through the inside of the reservoir, in combination with a locking device, whereby the reservoir may be locked and unlocked without moving the reservoir, as herein set forth.

3. The combination of a rod passing through the inside of the reservoir, a valve at or near the bottom of the reservoir, and a locking device, whereby the valve is opened and the reservoir locked at one operation without moving the reservoir, as set forth.

204,305. LAMPS. Edwin S. Drake, Brooklyn, N. Y. Filed Apr. 30, 1878.

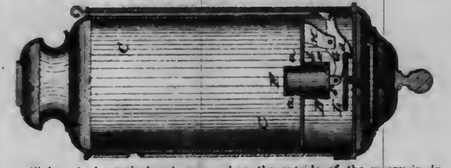


Claim.—1. The shell A and cylinder G, in combination with the reservoir C and a valve, F, at or near the bottom, whereby the valve may be opened and closed by turning the cylinder G without moving the reservoir or shell A, substantially as and for the purpose set forth.

2. The shell A and cylinder G, in combination with the reservoir C and a locking device, whereby the reservoir may be locked and unlocked by turning the cylinder G, and without moving the reservoir or shell A, substantially as and for the purpose set forth.

3. The shell A and cylinder G, in combination with the reservoir C and a locking device and valve, whereby the valve may be opened and closed, the reservoir locked and unlocked by turning the cylinder G, and without moving the reservoir or shell A, substantially as and for the purpose set forth.

204,306. LAMPS. Edwin S. Drake, Brooklyn, N. Y. Filed Apr. 30, 1878.



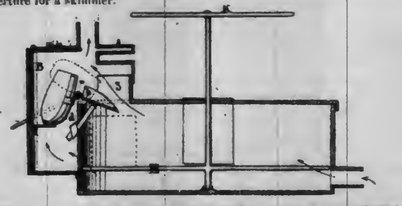
Claim.—1. A vertical rod arranged on the outside of the reservoir, in combination with a valve at or near the bottom of the reservoir, whereby the valve may be opened and closed without moving the reservoir or case, as herein set forth.

2. A vertical rod arranged on the outside of the reservoir, in combination with a locking device, whereby the reservoir may be locked and unlocked without moving the reservoir or case, as herein set forth.

3. The combination of a vertical rod arranged on the outside of the reservoir, a valve at or near the bottom of the reservoir, and a locking device, whereby, at one operation, the valve may be opened and reservoir locked, or the valve closed and reservoir unlocked, without moving the reservoir or case, as herein set forth.

204,307. CASTING APPARATUS. James Duff, Peoria, Ill. Filed Nov. 3, 1877.

Brief.—Introduces filled ladle, closes case, passes current of one or more of certain specified gases through the case to expel the air, and pours the metal while enveloped in such a gaseous atmosphere. Case has mica windows and an aperture for a skimmer.



Claim.—1. In a casting apparatus constructed to exclude the air and admit gas or vapor within the same, a closed case or receptacle having therein a crucible or vessel arranged to pour the molten metal into the mold or molds, substantially as and for the purpose set forth.

2. In a casting apparatus constructed to exclude the air, a closed case provided with a revolving table to receive the molds, and an inlet and outlet passage to admit gas or vapor therein before or during the operation of pouring or casting the molten metal into the molds, substantially as and for the purpose set forth.

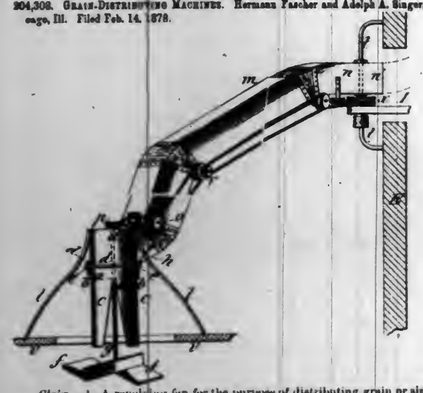
3. The closed case having therein a tilting crucible-holder and a connecting-spout, by which the molten metal is poured or cast into the molds, substantially as set forth.

4. The closed case provided with a door to admit the crucible or pouring-vessel, and with a rest for the holder, in combination with the tilting crucible-holder, substantially as and for the purpose set forth.

5. The closed case provided with a door to admit the molds, in combination with the revolving table, substantially as and for the purpose set forth.

6. The closed case with gas-inlet F and door *f*, constructed with an offset or pouring well, B, provided with gas-outlet D, doors *b x*, and windows *z*, in combination with the tilting crucible-holder *d*, conducting-spout *b*, and revolving table H, containing the molds, substantially as and for the purpose set forth.

204,308. GRAIN-DISTRIBUTING MACHINES. Hermann Pascher and Adolph A. Singer, Chicago, Ill. Filed Feb. 14, 1878.



Claim.—1. A revolving fan for the purpose of distributing grain or similar substance within any vessel, ship, car, or other means of transportation to a practically even and level surface throughout the whole space allotted for that purpose.

2. A pliable jointed grain-spout consisting of three or more joints, *k m n*, all arranged and constructed to operate substantially as and for the purpose above set forth.

3. The combination, in a grain-distributer, of drum *a a a*, movable jacket *b b b*, spout *c c*, shaft *g g*, fan *f f*, pulley *p*, and legs *l l*, all arranged and constructed to operate substantially as above set forth.

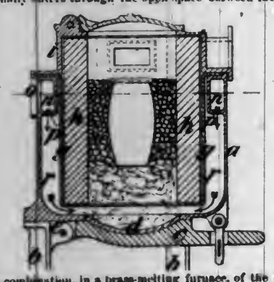
4. The connection of a grain-distributer with a pliable jointed spout, along which the power is transmitted from joint to joint, the whole constructed to operate substantially as above set forth.

5. The connection of a grain-spout with axle or shaft *t t*, all constructed to operate substantially as and for the purpose above set forth.

6. The connection of a grain-spout and pulleys *o r s*, all constructed to operate substantially as and for the purpose above set forth.

204,309. BRASS-MELTING FURNACES. John Fletcher, Ashton-under-Lyne, Great Britain. Filed Mar. 21, 1878. Patented in England, Feb. 2, 1877.

Brief.—The blast enters the annular blast-box at the top of the furnace, from which it is distributed to the annular space surrounding the inner casing, within which it finally enters through the open space between the casing and locked bottom.



Claim.—The combination, in a brass-melting furnace, of the outer casing *a* and closed bottom *b* with the inner lining *g h*, forming, with the outer casing, an annular air-chamber, *r*, and leaving a free space entirely around that portion of the fuel between the lower end of said lining and the bottom of the furnace, all substantially as set forth.

204,310. WASHING-MACHINE. Rimba S. M. Ford, Christiansburg, Ky. Filed Apr. 16, 1878.

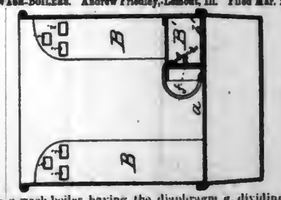


Claim.—1. The combination of the box having the stationary frame D, holding a reciprocating rubber, E, with the detachable frame F H, holding the reciprocating rubber G, and the lock-frame I, substantially as described, for the purpose herein set forth.

2. In a washing-machine, the combination, with the tub or receptacle A, having the oblique or diagonal grooves *j j*, the lower extremities of which terminate in recesses *k k*, which extend to one side of said grooves, as shown, of the lock-frame I, whose arms are confined in said recesses, staples or keepers *i i*, fastened to the frame H, and frame F, provided with spring-surrounded uprights *g g*, moving vertically in perforations in the frame H, substantially as and for the purpose specified.

3. The improved washing-machine herein described, consisting, essentially, of the box or tub A, having grooves and recesses *k*, stationary frame D, having rubbing-board E, detachable frame F H, having rubbing-board G, lock-frame I, pitmen K L, double-crank shaft C, shaft B, having crank *a*, and gear-wheels *b b'*, all combined, arranged, and operating substantially as described, for the purpose herein set forth.

204,311. WASH-BOILERS. Andrew Friedley, Lemont, Ill. Filed Mar. 2, 1878.



Claim.—In a wash-boiler having the diaphragm *a*, dividing it into two compartments, the close valve-box B', sliding by its flanges in ways upon said diaphragm, and having the inwardly-swinging valve *d* at its inward end, said box and valve being entirely above the diaphragm and detachable therefrom, as specified.

204,312. WIRE FENCES. Wm. H. H. Frye, Marshalltown, Iowa. Filed May 4, 1878.

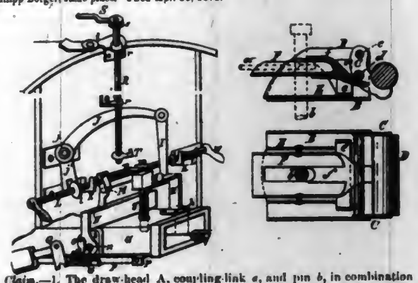


Claim.—1. A wire fence composed of two or more cables, A, placed vertically the one above the other, each composed of two parallel wires, *a a'*, formed at regular intervals, as described, by barbs B, and combined with palings C, substantially as and for the purposes set forth.

2. The fence-cable A, composed of horizontally parallel and untwisted wires *a a'*, and combined with barbs B, substantially as described.

3. The double lock-bar B, composed of wire *b*, twice twisted round each of the horizontally-parallel cable-wires *a a'*, and intertwined between them, and having points *b' b*, substantially as and for the purposes set forth.

204,313. CAR-COUPLINGS. Louis Gasser, Chicago, Ill., assignor of one-half his right to Philipp Borger, same place. Filed Apr. 30, 1878.



Claim.—1. The draw-head A, coupling-link *e*, and pin *b*, in combination with the link-holding device, consisting of frame B, arms C, with rod *d* and weight D, the plate E, and piece F, all constructed, arranged, and operating substantially in the manner set forth.

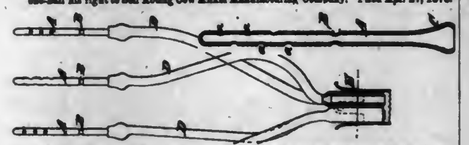
2. The draw-head G, having pin *g* attached to guiding-piece H, in combination with the car-body having bar I, arm J *j'*, and tumbler-rod L, arranged with collar *l*, nose projections *m*, weighted lever M, and handles *n*, and stop *e*, all of which to be constructed and to operate substantially in the manner set forth.

3. In a car-coupling, the combination, with the tumbler-rod L for locking the coupling-pin in an elevated position, the bar P, having toe *q*, and the arm N, having latch O, all of which to be constructed, arranged, and operating substantially as shown and described.

4. In a car-coupling, the combination, with the tumbler-rod L, the arm N, having latch O, the bar P, having toe *q*, and the weighted lever Q, all substantially as and for the purpose set forth.

5. The draw-head G, having pin *g* attached to the guiding-piece H, the bar I, arm J *j'*, the tumbler-rod L, having collar *l*, nose projection *m*, and weighted lever M, and stop *e*, in combination with the rod R, pivoted in brackets *r*, and having handle S, grooved collar *s*, crank T, and latch *t*, all constructed, arranged, and operating substantially in the manner shown and described.

204,314. APPARATUS FOR MILKING COWS. William F. George, New York, N. Y., assignor of one-half his right to Self Acting Cow Milker Manufacturing Company. Filed Apr. 27, 1878.



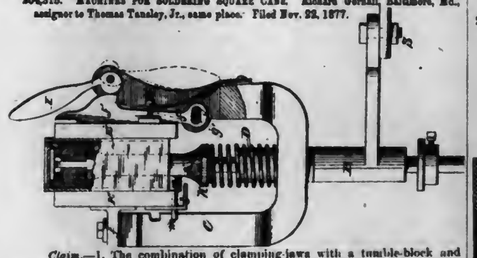
Claim.—1. In a milking apparatus, one or more teat-tubes, each having a groove, depression, or neck, B, substantially as and for the purpose specified.

2. In a milking apparatus, a teat-tube or tubes having the interiorly-flaring end or ends C, for increasing the flow of the milk without unduly stretching the teat or teats, substantially as and for the purpose specified.

3. A teat-tube having both a neck, B, and an interiorly-flaring end, substantially as and for the purposes described.

4. The combination, with an embracing band or nozzle, E, for holding together the lower ends of the flexible tube D, of a flexible supporter, G, for sustaining the weight of the said tubes and nozzle and their contained milk, substantially as and for the purpose set forth.

204,315. MACHINES FOR SOLDERING SQUARE CANS. Richard Gersall, Baltimore, Md., assignor to Thomas Tansley, Jr., same place. Filed Nov. 22, 1877.



Claim.—1. The combination of clamping-jaws with a tumble-block and standard, for the purpose of holding square sheet-metal cans while the bottoms and tops are being soldered in place, substantially as described.

2. A spring-standard carrying a tumble-block, in combination with the clamping-jaws, substantially as described, for the purpose specified.

3. The uprights or supports of the clamping-jaws, in combination with the standard carrying the tumble-block, substantially as described.

4. The combination of the guide *m* with one of the uprights of the clamping-jaws and the standard of the tumble-block, to steady the latter within the can, substantially as described.

5. The stops *l l*, secured to and projecting laterally under one of the clamping-jaws, and acting independently of the tumble-block standard, to support a can, substantially as described.

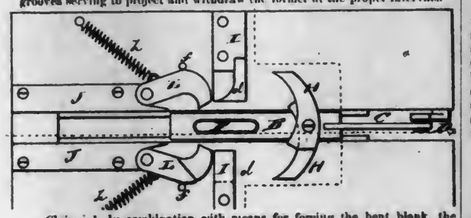
6. The clamping-jaw E', pivoted to its standard by means of the cam-block *f'* entering a slot of the upright, and the slotted extension *g* of said block, mounted upon the bolt *g'*, substantially as described.

7. The combination of the cam-lever I, cam-block *f'*, the slotted upright, and the pivoted clamping-jaw E', substantially as described, for the purpose specified.

8. The collar K and jointed arm S, combined with the tumble-block standard, substantially as described.

204,316. MACHINES FOR BENDING LINKS. Horace E. Grant, Pittsburg, Pa. Filed Apr. 20, 1878.

Brief.—Grooves in the stationary guides close the laps of the blank. The former has a sliding movement in the reciprocating head, and is provided with a pin, which rides in cam grooves on the under side of the machine, these grooves serving to project and withdraw the former at the proper intervals.



Claim.—1. In combination with means for forcing the bent blank, the guides J J, having grooves *c* and *c'* in their inner edges, constructed as and for the purposes herein set forth.

2. The combination of the reciprocating carriage B, with former F and cam-surfaces H H, the rests I I, grooved guides J J, and pivoted benders L L, with springs *b b*, all constructed and operating substantially as and for the purposes herein set forth.

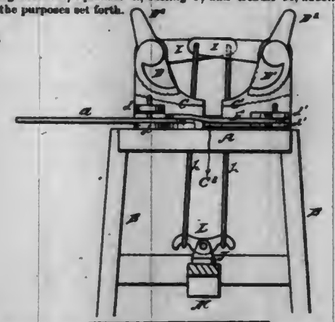
204,317. TIRE-UPSETTERS. Morris W. Griffiths, Middle Granville, N. Y. Filed May 6, 1878.

Brief.—The feature of novelty consists in connecting the clamping-jaw, through a train of mechanism, to an equalizing-bar, by means of which said jaws are made to clamp a tire of unequal thickness with equal force.

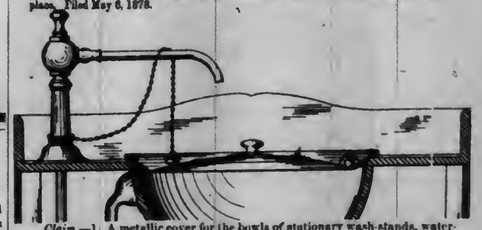
Claim.—1. The eccentrics D D', shafts *a a'*, arms I I, connecting-rods *h h*, equalizer L, casting J, and treadle M, substantially as and for the purposes set forth.

2. In combination with the eccentrics D D', shafts *a a'*, and arms I I, the connecting-rods *h h*, equalizer L, casting J, and treadle M, substantially as and for the purposes set forth.

204,317.



204,318. SEALING-COVERS FOR BOWLS OF WASH-STANDS, WATER-CLOSETS, &c. Florian Grosjean, New York, N. Y., assignor to Lalance & Grosjean Manufacturing Company, same place. Filed May 6, 1878.



Claim.—1. A metallic cover for the bowls of stationary wash-stands, water-closets, sinks, and similar articles, coated upon its entire surface with a vitreous enamel, and provided on its under side with an attached flexible sealing-gasket, substantially as described.

2. As a new article of manufacture and trade, a sealing-cover for the bowls of stationary wash-stands, water-closets, sinks, &c., consisting of a convex plate, rimmed and having an under sealing-gasket and a drip-escape protected by an automatic closing valve.

204,319. HANDLES FOR SHEET-METAL VESSELS. Florian Grosjean, New York, N. Y., assignor to Lalance & Grosjean Manufacturing Company, same place. Filed Mar. 16, 1878.



Claim.—The combination, with a metal vessel or utensil having an outwardly-projecting lip, provided with a longitudinal rib which extends partly across the wall of said vessel, of a handle consisting of two concavo-convex sheet-metal shells, the longitudinal margins of one of which are bent over and closely upon the corresponding margins of the other, the outer end of the handle thus formed being closed, and the two parts there riveted together, and the other and wider end embracing and riveted to the lip of the vessel or utensil, which lip lies between the two shells, resting against the upper one, and assisting in bracing the junction of the handle and body against strain when said vessel or utensil is in use, substantially as set forth.

204,320. BURIAL-CASKETS. William Hamilton, Allegheny, Pa. Filed Apr. 22, 1878.



Claim.—1. The combination, with the casket-body, of either a lid or cover provided with longitudinal sliding connections for substantially the whole length thereof, substantially as and for the purpose specified.

2. The combination, with the casket, of either a lid or cover, the parts being tongued and grooved, and provided with stops, so that the cover or lid will be limited in its movement on the casket, substantially as specified.

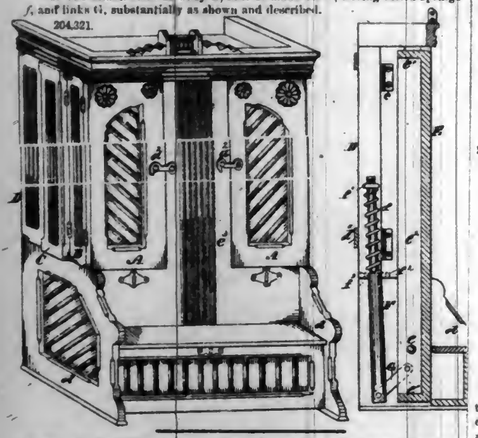
204,321. WARDROBE-BEDSTEADS. James C. Hand and Frederick Gachier, Philadelphia, Pa., assignors to Hadas P. Blackman and Charles S. Greene, same place. Filed Oct. 6, 1877.

Brief.—The folding sections form the head and posts of the bedstead when lowered for use, the hollow posts serving to cover the springs which assist in elevating the bed.

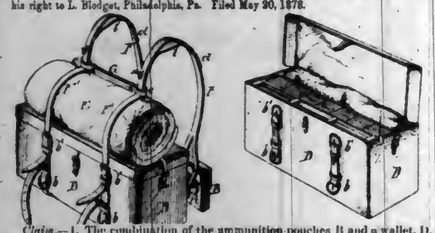
Claim.—1. In a wardrobe bedstead, the hinged folding sections A B C, secured to the uprights D, substantially as and for the purpose described.

2. The combination of body E, rods or mandrels F, having coiled springs *f*, and links G, substantially as shown and described.

204,321.



204,322. MILITARY ACCOUTERMENTS. Charles Harkins, Atlanta, Ga., assignor of one-third his right to L. Blodget, Philadelphia, Pa. Filed May 20, 1878.



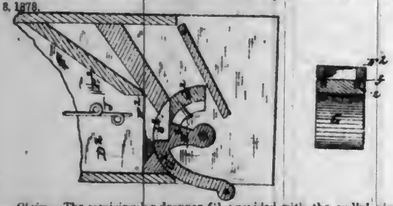
Claim.—1. The combination of the ammunition pouches B and a wallet, D, with a belt, A, and straps F F', arranged substantially as described, whereby the pouches B and wallet D are supported upon the loins of the wearer, and the arms left free, as set forth.

2. The combination of the straps F F' with the wallet D and its buckles *b b'*.

3. The combination of the wallet D, straps F F', and strap G, as set forth.

4. The combination of the straps F with the straps F', provided with hooks *x*, for the reception of the ends of the said straps F when the latter are not attached to the wallet, as set forth.

204,323. SEED AND FERTILIZER DISTRIBUTERS. W. Harper, Falk's Run, Va. Filed Apr. 8, 1878.



Claim.—The semicircular dropper G², provided with the radial pivoting-arm H², grooves *e e*, pocket *b*², and slide *d*², in combination with the chamber D², bottom F², and ribs *f f*, all substantially as and for the purposes herein set forth.

204,324. TRACE AND HAME-TUG COUPLINGS. Greenville Haslewood, Jr., and James Keagin, Mossfield, Iowa. Filed Jan. 5, 1878.



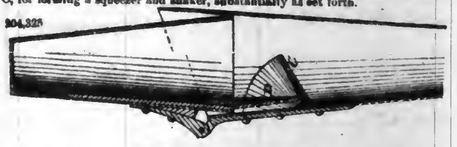
Claim.—In a hame-tug and trace coupling, the metal strap-form base *a a*, having eyelets formed integral therewith, said eyelets consisting of projections *b*, elongated cavities *c*, and openings or slots *d*, leading to the cavities *c*, substantially as shown and described, for the purposes specified.

204,325. LEMON-SQUEEZER AND SHAKER COMBINED. Horace L. Hosier, West Jefferson, Ohio. Filed May 15, 1878.

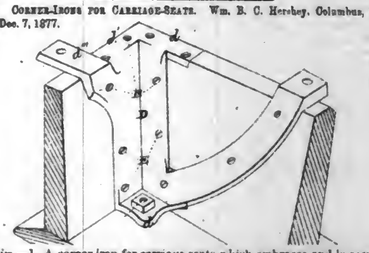
Claim.—1. The combination of two metallic cups, hinged together, and so formed that the mouth of one fits within that of the other, for forming a shaker, as herein set forth.

2. The combination of two hinged metallic cups, as described, one having a lemon-cup, C, and the other a plate, the end of which projects into the cup C, for forming a squeezer and shaker, substantially as set forth.

204,326.



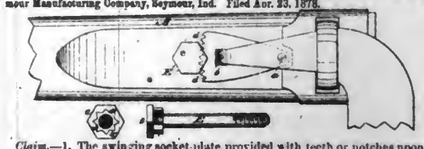
204,326. CORNER-IRONS FOR CARRIAGE-SEATS. Wm. B. C. Hershey, Columbus, Ohio. Filed Dec. 7, 1877.



Claim.—1. A corner-iron for carriage-seats which embraces and is secured to the upper face of the seat-bottom and the upper edge and inner face each of the end and back pieces at the point where said parts meet, substantially as and for the purpose specified.

2. A corner-iron for carriage-seats which is arranged to embrace the upper face of the bottom and the inner faces and upper edges of the end and back, and is provided with shifting-rail connections that are attached to and form part of said corner-iron, substantially as and for the purpose shown.

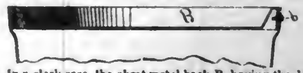
204,327. SCYTHE-SNATH FASTENINGS. Manlius Hewitt, St. Louis, Mo., assignor to Seymour Manufacturing Company, Seymour, Ind. Filed Aug. 23, 1878.



Claim.—1. The swinging socket-plate provided with teeth or notches upon the edge of its swinging end, combined with a bolt having projections adapted to engage with said teeth or notches, substantially as described.

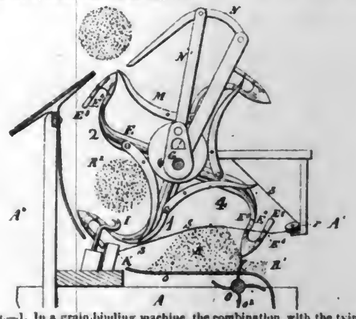
2. The swinging socket-plate having teeth *d* upon the edge of its swinging end, combined with a transverse bolt having an overlapping head, *c*, and teeth *d'*, adapted to engage with the teeth of the swinging plate and hold the same in position, substantially as described.

204,328. CLOCK-CASES. George Hills and Dwight B. Hills, Plainville, Conn. Filed Mar. 27, 1878.



Claim.—In a clock-case, the sheet-metal back B, having the double rim *c*, with annular recess inside said rim, the rim forming the edge of the back, substantially as described, and for the purpose specified.

204,329. GRAIN-BINDERS. George H. Howe, Akron, Ohio, assignor of one-half his right to William M. Howe, Austin, Minn. Filed Aug. 7, 1877.



Claim.—1. In a grain-binding machine, the combination, with the tying or tucking mechanism and the clamp and other devices for holding the band taut, of the head E² on the arm E, having slot E⁴ and shoulders E⁵ E⁶, for the purposes specified.

2. The combination, with the arms E, of the fingers or lifting-arms M and arms N, supported and operated substantially as and for the purpose set forth.

3. The combination, with the tucker I, sleeve i², pin or stud i³, bracket i⁴, and pinion i⁵, of the shaft H², pinion i, and bracket *j*², substantially as shown and described.

4. In a grain-binder, the combination, with the arms E and axis D' and the tucker-revolving shafts H' H², of the crank-arm D, pitman *c'*, crank-wheel C, rack H, and pinion H', arranged and operating substantially as set forth.

5. The combination, with a series of arms, E, supported on a hub, E', having lateral extensions *e*, the ends or faces of which are provided with clutches *g*, and revolving on the shaft D', of the clutches G' on the faces of the heads of the crank-arms G, and shaft D', having a partial, direct, and reverse revolving movement, substantially as set forth.

6. The combination, with the arms E, curved at or near their outer ends, as described, of the lifting-arms M, pivoted to the inner ends of the arms E, and actuated by eccentrics F, arranged as and for the purpose set forth.

7. The combination, with the tucker-shaft H', provided with the pinion H', crank-wheel C, pitman *c'*, and crank D, of the rack H and rocking bearing H², substantially as and for the purpose set forth.

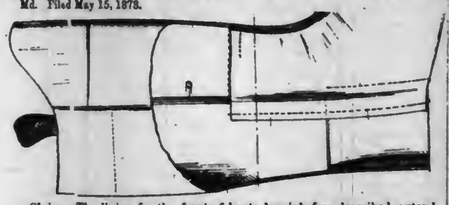
8. The curved tucker I, supported on an oscillating shaft, H², as described, and adapted to be revolved in a slot E', in and over the top of the head E² on the arm E, for the purpose set forth.

9. The combination, with the bracket *f*, constructed with a lip or flange, *f'*, and cam-sleeve *l*, supported on the axle H², as described, of the knife *j*, pod *f'*, and arm *k*, having the jaw K, substantially as set forth.

10. The combination, with the arms E, supported on a hub, E', provided with clutches *g*, and arms N, pivoted to the standards *f'*, of the actuating-bars N', crank-arms G, provided with clutches G', shaft D', crank D, and pitman C, substantially as and for the purpose set forth.

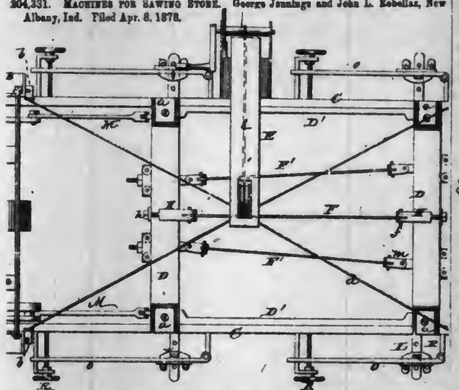
11. The combination, with the slotted platform *o* and the tying and discharging mechanism, of the series of arms E, formed with elbows, as described, and having their ends pointed, and constructed with slots E⁴ and shoulders E⁵ E⁶, and arranged on their central hub E' relatively to each other, substantially as set forth, and for the purposes specified.

204,330. MANUFACTURE OF BOOTS AND SHOES. John J. Hurst and Wm. R. Miller, Baltimore, Md. Filed May 15, 1878.



Claim.—The lining for the front of boots hereinbefore described, extending back of the seams D D, and attached to the back or counter of the boot or shoe by a separate seam, all substantially as shown and described.

204,331. MACHINES FOR SAWING STONE. George Jennings and John L. Rebellas, New Albany, Ind. Filed Apr. 8, 1878.

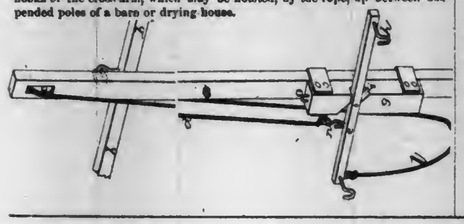


Claim.—1. The head-block I, with rollers *i i*, and adjustable bar J, with the saw F', secured thereto, as herein set forth.

2. The combination of the head-block I with perforated arm I', slide L, slotted and hinged guide O, and adjusting-screw R, for the purposes herein set forth.

204,332. TOBACCO-HOISTING DEVICES. Cyrus F. Johnson, Canton, Ky. Filed Apr. 30, 1878.

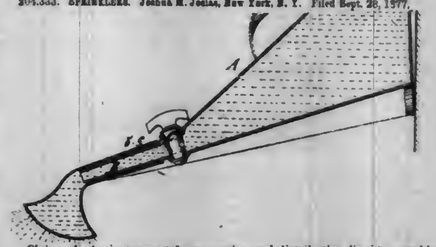
Brief.—The sticks on which the tobacco is hung are placed to rest in the hooks of the cross-arm, which may be hoisted, by the rope, up between suspended poles of a barn or drying-house.



Claim.—1. The runner *g*, having the diagonal groove *i* in its side, in combination with the cross-bar *c*, pivoted therein so as to have a limited end play, substantially as shown.

2. The combination of the bar *c*, runner *g*, having the diagonal groove *i*, upright *a*, and cross-bar *b*, one end of the rope *d* being fastened to the bar *c* at one side of its center, and the other end of the rope fastened to the outer end of the bar, substantially as described.

204,333. SPRINKLERS. Joshua M. Jocias, New York, N. Y. Filed Sept. 26, 1877.



Claim.—1. An instrument for conveying and distributing liquids, capable of being carried in the hand, having a horizontally-extending and longitudinally-tapering body closed at the larger end, substantially as specified.

2. The combination, with an instrument for conveying and distributing liquids, capable of being carried about in the hand, having a longitudinally-tapering and horizontally-extending body closed at the larger end, of a cock or faucet controlling the escape of liquid at the smaller end, substantially as specified.

3. An instrument for conveying and distributing liquid, having a longitudinally-tapering body closed at the larger end, and provided with a suspending-handle on its tapering side, so that when suspended by such handle it will assume an approximately horizontal position, substantially as specified.

4. The combination, with an instrument for conveying and distributing liquids, capable of being carried about in the hand, having a longitudinally-tapering and horizontally-extending body closed at the larger end, of legs affixed rigidly thereto, and adapted to support said instrument in its proper horizontal position, substantially as specified.

5. The combination, with an instrument for distributing liquids, having a longitudinally-tapering body, of a back closing the larger end, and provided with a suspensory device, so that said instrument may be hung against a wall in an approximately horizontal position, substantially as specified.

6. The combination of the instrument A, its cock C, nozzle B, and cylindrical sprinkler S, substantially as and for the purpose specified.

204,334. REVOLVING FIRE-ARMS. Benj. F. Joslyn, Worcester, assignor to Daniel B. Wesson, Springfield, Mass. Filed Feb. 23, 1878.

Brief.—A sliding extracting-bolt working in a socket attached to the frame at the side of the cylinder is operated by cams at the front end of the cylinder to draw the bolt forward, to allow a lip or projection at its rear end to engage with the flanges of the cartridges successively as the cylinder rotated. When released from the cams the bolt is thrown back by the force of a spring within the socket, and the shells are thrown out of the cylinder.



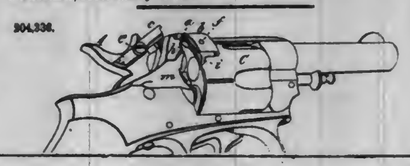
Claim.—In a revolving fire-arm, the combination, with the extractor-rod *e*, operating in a guide-socket and provided with a pin or projection, *a*, of the cams *c* on the cylinder, and a spring, *g*, as a means of automatically extracting the shells from the chambers by the rotation of the cylinder, substantially as described.

204,335. REVOLVING FIRE-ARMS. Benj. F. Joslyn, Worcester, assignor to Daniel B. Wesson, Springfield, Mass. Filed Apr. 4, 1878.



Claim.—In a revolving fire-arm, the barrel A, having the recoil-plate I made thereon, combined with the lock-frame B, whereby, when the barrel is tilted, the recoil-plate moves with the barrel away from its position in front of the hammer, substantially as described.

204,336.



204,326. EXTRACTORS FOR REVOLVING FIRE-ARMS. Benjamin F. Joslyn, Worcester, assignor to Daniel B. Wesson, Springfield, Mass. Filed Feb. 23, 1878.

Brief.—A pivoted piece on the hammer is arranged to strike a lever at the rear of the cylinder to eject the shell of the preceding cartridge on the fall of the hammer. When so desired the pivoted piece on the hammer may be turned out of engagement with said lever.

Claim.—The combination, in a revolving fire-arm, of the cylinder C, the ejector *k*, pivoted above and provided with the wedge-shaped projection *i*, the hammer A, and the piece pivoted thereto, substantially as set forth.

204,327. EXTRACTORS FOR REVOLVING FIRE-ARMS. Benjamin F. Joslyn, Worcester, assignor to Daniel B. Wesson, Springfield, Mass. Filed Feb. 23, 1878.



Claim.—The combination, in a revolving fire-arm, of the revolving chambered cylinder C with the bar E, provided with the stem *i*, screw F, and cam *c*, and the spring *e* and socket D, all substantially as herein described.

204,338. SAD-IRON STANDS. Kittie E. Kesler, Apulia, N. Y. Filed Mar. 23, 1878.

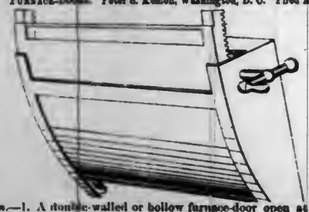


Claim.—1. In a combined sad-iron cleaner and stand, the skeleton-frame A, having the elevations B and supports C, with the projections F, in combination with the platform G, arranged to slide into the frame upon the projections F, as specified.

2. A combined sad-iron cleaner and stand, consisting, essentially, of the skeleton-frame A, having the elevations B and supports C, the ridged pad K, cloth pad L, and the platform G, arranged to slide into the frame upon the projections F, said platform being arranged to retain the pads K and L when not in use, in the manner as and for the purpose specified.

3. A scouring-pad for sad-irons, having the base K and the inner sides of the projections *k* covered with wire-cloth, whereby the base and the edges of a sad-iron can be scoured by passing the said iron over the base between the elevations *k*, as and for the object specified.

204,339. FURNACE-DOORS. Peter S. Keenon, Washington, D. C. Filed Apr. 4, 1878.

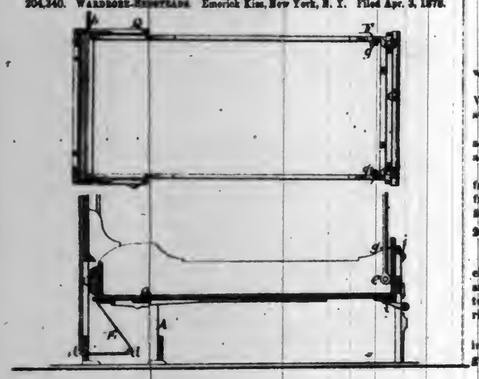


Claim.—1. A double-walled or hollow furnace-door open at top and bottom, arranged to slide upward and downward, and in relation to the sill of the door-frame, in the manner described, whereby it is adapted to be adjusted so as to pass over the door-sill and project into the furnace-chamber, as specified.

2. A double-walled or hollow furnace-door open at top and bottom, and arranged to slide upward and downward, and having its inner plate extended downward below the outer plate, for the purpose of deflecting the air-current, in the manner specified.

3. A double or hollow-walled sliding furnace-door open at the bottom and on its front side near the top, in combination with the stationary bridge-plate and lateral guides, substantially as described, whereby the admission of air through the door downward into the front of the fire-box is controlled by adjustment of the door with relation to the bridge-plate, as specified.

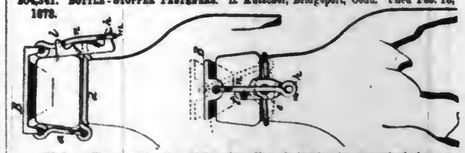
204,340. WARDROBE-BEDSTEADS. Emerich Kiss, New York, N. Y. Filed Apr. 3, 1878.



Claim.—1. The combination, with a wardrobe frame and a bed-frame hinged therein, of a yoke-shaped frame, which is pivoted to the upper part of the wardrobe-frame and adapted for adjustment to a horizontal position to support the top part of a canopy or curtain, cords or chains which are attached to said yoke-shaped frame at one end, and attached to the hinged bed-frame at the other end, and suitable pulleys for guiding the cords or chains to automatically raise the yoke-shaped frame, the whole being adapted to operate substantially as described.

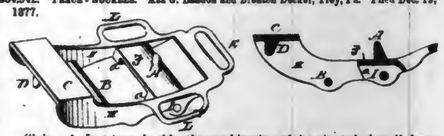
2. The combination, with a wardrobe-frame and a bed-frame hinged therein, of a yoke-shaped frame which is pivoted to the bed-frame at or near the foot end of the latter, and adapted for adjustment to a vertical position to support the side or end part of a canopy or curtain, and the hooks *g j*, for holding the said yoke-shaped frame and the legs in vertical position, substantially as described.

204,341. BOTTLE-STOPPER FASTENERS. L. Kutscher, Bridgeport, Conn. Filed Feb. 18, 1878.



Claim.—The combination of the plate B and elastic plug attached thereto, the said plate hinged to the neck of the bottle, with the cam *f*, pivoted to the neck of the bottle to swing in a vertical plane parallel with the hinge of the plate B, and constructed with a projection, *h*, at one end and projection *l* at the other, and the bar *n*, attached to the said plate, and provided with a loop, *m*, to engage the projection *h* on the said cam, substantially as described.

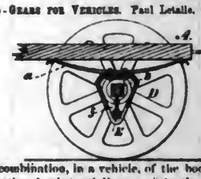
204,342. TRACE-BUCKLES. Asa G. Landon and Brenton Decker, Troy, Pa. Filed Dec. 19, 1877.



Claim.—1. In a trace-buckle, the combination of the pivoted plate F, having tongue A and ears *a a*, with side lugs *b b* and the side bars H, having recesses *x*, substantially as and for the purposes herein set forth.

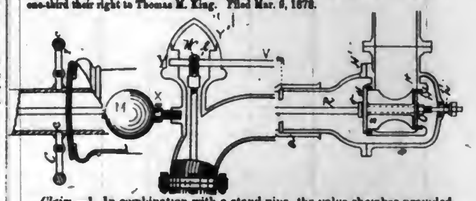
2. The combination of the frame H, loops E I, cross-plate C, with tongue D, and the pivoted plate F, with tongue A and ears *a a*, having stops *b b*, substantially as and for the purposes herein set forth.

204,343. RUNNING-GEARS FOR VEHICLES. Paul Letalle, Paris, France. Filed Mar. 6, 1878.



Claim.—The combination, in a vehicle, of the body A, yokes D, axles B, and flexible connection *f*, substantially as and for the purpose set forth.

204,344. STAND-PIPES. Edward Lewis and Wm. A. Maloney, Oil City, Pa., assignors of one-third their right to Thomas M. King. Filed Mar. 6, 1878.



Claim.—1. In combination with a stand-pipe, the valve-chamber provided with the double-seated valve, substantially as and for the purpose specified.

2. The combination, with the valve H and its stem, of the eccentric-band W, eccentric K, and rod V, mounted on the jib, the whole constructed substantially as and for the purpose specified.

3. The combination, in a stand-pipe, of the valve-stem, the eccentric-band adjustably connected to the valve-stem, and the cam or eccentric, substantially as and for the purpose specified.

4. In a stand-pipe, the combination of the main valve and the adjustable frost or waste valve, provided with the sleeve *h'*, connected to and operated from the main valve or its stem, substantially as and for the purpose specified.

204,345. WIND-ENGINES. Jacob Longyear and Dan'l. W. Clark, Grass Lake, assignors of one-third their right to Miles M. Seymour, Leslie, Mich. Filed Apr. 27, 1878.

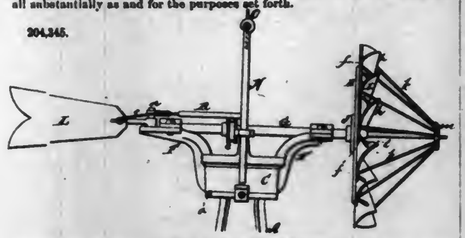
Brief.—The tower-beams are fastened to the inside of a ring, which is beveled at the top and grooved at bottom, and which supports the turn-table. A small ring is fastened to the inside of the downwardly-projecting sides of the turn-table, and is beveled at top to fit the groove in the bottom of the tower-ring.

Claim.—1. In a windmill, the combination of the stationary ring B, having V-edge *b*, and the ring C, having overhanging flange D, with corresponding groove *d*, as and for the purposes set forth.

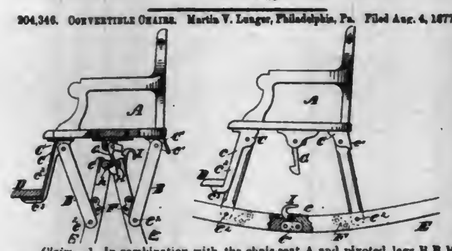
2. The interior ring K and set-screws *s*, in combination with the turn-table C D and ring K, for the purposes set forth.

3. The combination of the main horizontal vane L, pivoted on the stud *n*, the upright shaft N, with regulating-vane O and elbow E, and the cords *s t*, all substantially as and for the purposes set forth.

204,345.



204,346. CONVERTIBLE CHAIRS. Martin V. Lenger, Philadelphia, Pa. Filed Aug. 4, 1877.



Claim.—1. In combination with the chair-seat A and pivoted legs B B B B, the brackets C C', forming a connection between said parts and limiting the outward movement of the legs, as set forth.

2. The brackets C C', constructed substantially as described, to form a pivotal connection for the legs B and a rest for the foot-board D.

3. In combination with swinging legs B B, the bisected rockers E E, hinged thereto, and adapted to fold and form legs, substantially as shown and described.

4. In combination with the bisected rockers E E, spring-catches I I, connecting their inner ends, for holding the sections E' E' distended or in line, substantially as shown and described.

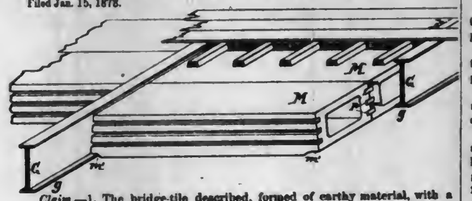
5. In combination with the chair-seat A and folding rocker-sections E' E', spring-catches G G, substantially as shown.

6. In combination with legs B B, folding sections E' E', provided with lugs F, for the purpose set forth.

7. The combination of chair-seat A, pivoted legs B B, bisected rockers E E, and spring-catch G, constructed and operating substantially as shown and described.

8. The combination of chair-seat A, pivoted legs B B, bisected rockers E E, and spring-catch I, constructed and operating substantially as shown and described.

204,347. BRIDGE-TILES FOR FIRE-PROOF BUILDINGS. Michael F. Lyons, New York, N. Y. Filed Jan. 15, 1878.



Claim.—1. The bridge-tile described, formed of earthy material, with a hollow interior, and having ridges *m* on the sides and rabbets *m'* on the bottom, adapted to serve as herein specified.

2. A series of tiles, M *m m'*, united by mortar *p*, in combination with iron beams G *g* and finishing H, as herein specified.

204,348. COMPOSITIONS FOR ARTIFICIAL MARBLE. John F. Martin, Chicago, Ill., assignor to William B. Price, Baltimore, Md. Filed Mar. 12, 1878.

Claim.—Gilders' whiting, calcimine, glue and sugar-of-lead water, combined with any mineral colors, as herein before specified, and for the purposes set forth.

204,349. STOVES FOR BURNING CRUDE HYDROCARBON AND OTHER OILS. Pearl Martin, Medford, assignor of one-fourth his right to Selwyn E. Bowman, Somerville, Mass. Filed Feb. 23, 1878.



Claim.—1. In a hydrocarbon-stove, the inclined casing D, open at its top and bottom, in combination with the fire-pot B, around and above the top of which it extends, and so constructed as to form a space, *f*, for the upward passage of currents of air between them, substantially as and for the purpose set forth.

2. The inclined plate or deflector *g*, in combination with and arranged along the front edge of the fire-pot B, for directing the air which enters the aperture in the front of the stove-casing over the deflector down toward the center of the fire-pot, substantially as described.

3. A series of open perforated tubes, *i*, in combination with and applied to the side or sides of the fire-pot B, substantially as and for the purpose set forth.

4. The casing A, with its longitudinal aperture, *k*, covered with wire-gauze, and located in close proximity to the upper edge of the front of the fire-pot, in combination with the oil-reservoir C, and communicating with the chamber *m* thereover, substantially as and for the purpose set forth.

5. The casing A, with its longitudinal aperture *k*, covered with wire-gauze near the upper edge of the front of the fire-pot, and the oil-reservoir C, in combination with chamber *m* and vertical perforated plate *e*, all constructed, arranged, and operated as and for the purpose set forth.

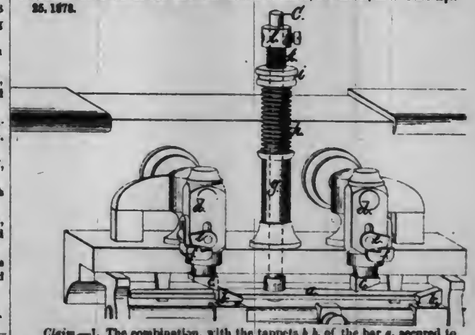
204,350. BOTTLE-STOPPERS. Henry Martin, New York, N. Y. Filed May 14, 1878.



Claim.—1. In a bottle-stopper, the combination, with a supporting-cap which is provided with an inlet-hole and adapted to be fastened to a bottle, of an india-rubber valve-ring, which is fitted in said cap, constructed with two inwardly-projecting flanges and with a flap on the upper flange, the other flange being fitted on the mouth of the bottle to which the whole is applied, substantially as hereinbefore set forth.

2. The combination, in a bottle-stopper, of an india-rubber valve-ring having two inwardly-projecting flanges and a flap on the upper flange with the supporting-cap A, which is adapted to receive said valve-ring, and constructed with an inwardly-projecting flange on its lower edge to hold the ring in position, substantially as hereinbefore described.

204,351. VALVE-GEARS FOR ENGINES. Lowell C. Mason, Providence, R. I. Filed Apr. 25, 1878.



Claim.—1. The combination, with the tappets *b b*, of the bar *a*, secured to the governor-rod, and arranged to lift the tappets, substantially as and for the purpose set forth.

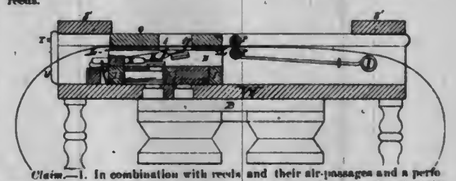
2. The combination, with the latches *c c*, of the adjustable toe-piece *f* and the latch *e*, arranged to sustain the latches, substantially as and for the purpose set forth.

3. The combination, with the governor-rod C, of the coiled spring *h*, thumb-nut *i*, screw *k*, and clamp *l*, arranged to regulate the resistance against a governor, substantially as described.

4. The combination, with the governor-rod C, provided with the bar *a*, arranged to raise the tappets *b*, and the spring *h* and thumb-nut *i*, of the hinged latches *c c*, the latch *e*, and toe-piece *f*, the whole arranged to detach the valve-gear and stop the engine by the action of the spring *h*, substantially as and for the purpose set forth.

204,352. MECHANICAL MUSICAL INSTRUMENTS. M. J. Matthews, Boston, Mass. Filed Dec. 11, 1877.

Brief.—The springs of the valves tend to hold the latter away from their seats. Projections arranged on the valves are adapted to take or spring into the holes of the perforated sheet to produce the music, the sheet where imperforate holding the valves to their seats and preventing the speech of the reeds.



Claim.—1. In combination with reeds and their air-passages and a perforated sheet of paper, a series of valves constructed and arranged to be held to their seat or bed by the combined action of the said perforated sheet and pneumatic pressure, substantially as described and shown.

2. In combination with reeds and their air-passages, together with a series of valves, H H, constructed substantially as described, a continuous roll of perforated paper, all as and for the purpose set forth.

3. The combination and arrangement of the friction-rollers P P and three-armed lever E with the adjustable toggles *e* and feeders C C, when constructed and arranged substantially as described.

4. The combination of the friction-rollers P P and perforated paper R with the valves H H, substantially as set forth.

5. In combination with an endless sheet of perforated paper and the valves H H, the removable guide-rails S, substantially as and for the purpose specified.

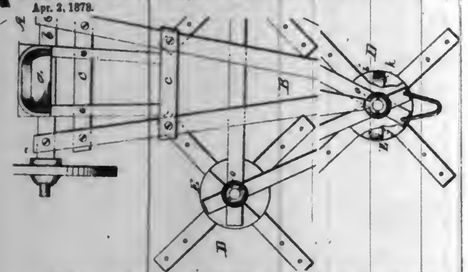
6. In a mechanical musical wind-instrument having reeds and an endless band or sheet of paper, suitably perforated to produce a tune, in connection with valves, the reeds arranged in alternate positions in two rows, substantially as specified.

204,353. STEAM BAKER AND COOKER. Joseph A. McClure, Moline, Ill. Filed May 1, 1878.



Claim.—The combination of the vessel I, made of perforated sheet metal, the bottom being curved upward, with central opening, the vessel D, with central tube F, and tubes A, with the vessel E, having short tube G, substantially as and for the purpose set forth.

204,354. ROTARY HARROWS. Eugene McNiel and Elias H. McNiel, Groton, N. Y. Filed Apr. 2, 1878.

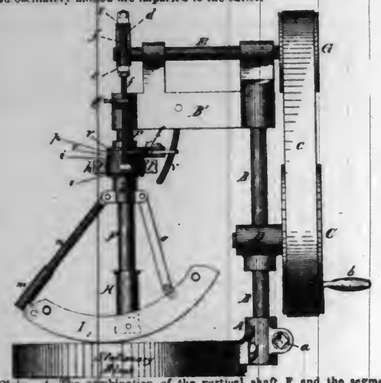


Claim.—1. The spiky A and tongue B, in combination with the frame C, carrying horizontally rotating drags D, said drags being connected to the frame by bed-piece *g*, sectional head E, and pivotal bolt *n*, substantially as and for the purpose set forth.

2. The drag D, having bed-piece *f*, with abonider *g*, in combination with head E, formed in sections *i j*, and pivotal bolt *n*, substantially as and for the purpose specified.

204,355. MACHINES FOR CHOPPING MEAT. Jacob Mosil and Alois Kwocalla, Pittsburg, Pa. Filed Sept. 27, 1877.

Brief.—The cutter is connected to a sliding sleeve on the upright shaft by a hinge-link at one end, and by a rod and tube working telescopically at the other. The sleeve is reciprocated, through the medium of a stirrup, by an eccentric on a cross-shaft, and is oscillated through contact of a projecting portion of it with a curved bar depending from the frame. Thus a rocking motion and an oscillatory motion are imparted to the cutter.



Claim.—1. The combination of the vertical shaft F and the segmental curved knife or knives I, connected thereto, with mechanism, substantially as described, for automatically imparting a rocking and horizontal rotary motion to said knives, substantially as set forth.

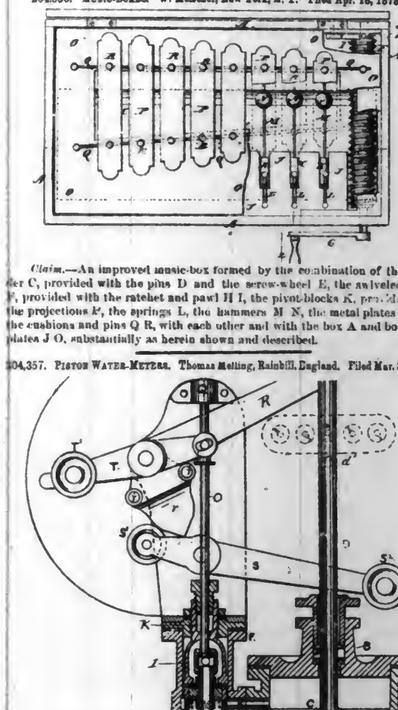
2. The combination of pivoted knives I, having alternating motion, with a sleeve, H, and guide-rod F, substantially as described, whereby the knives are self adjusting.

3. The combination, specifically, of the knives I, sleeve H, rod F, sleeve *k*, slide *w*, rod *n*, and pitman *o*, substantially as described.

4. The combination of sleeve *k*, plate *r*, ratchet *p*, pawl *t*, and curved arm *s*, substantially as specified.

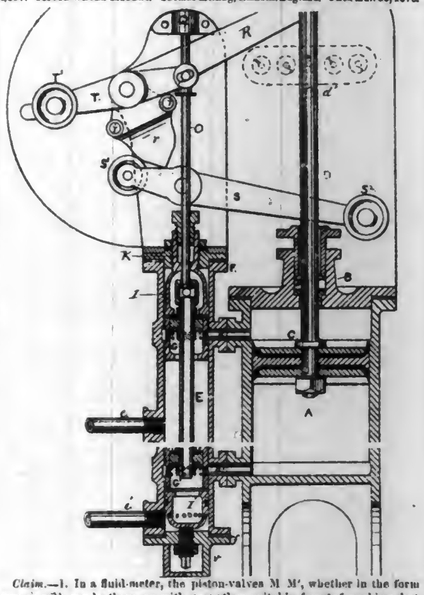
5. The combination of shaft E, cam *d*, frame *e e f f*, guides *g*, and collar *h*, with sliding sleeve *k*, substantially as described.

204,356. MUSIC-BOXES. W. Meissner, New York, N. Y. Filed Apr. 16, 1878.



Claim.—An improved music-box formed by the combination of the cylinder C, provided with the pins D and the screw-wheel E, the swiveled screw F, provided with the ratchet and pawl H I, the pivot-blocks K, provided with the projections *k'*, the springs L, the hammers M N, the metal plates P, and the cushions and pins Q R, with each other and with the box A and boards or plates J O, substantially as herein shown and described.

204,357. PISTON WATER-METERS. Thomas Melling, Rainhill, England. Filed Mar. 30, 1878.



Claim.—1. In a fluid-meter, the piston-valves M M', whether in the form shown or with cup-leathers, or with any other suitable form of packing, but made to fit closely the cylinders or valve-chambers G G', in which they work, and to cover at the same time both the ports that lead from the measuring-chamber, so that one cannot be opened until the other be closed, thus preventing slip.

2. The combination, in fluid-meter valves, of piston-valve M M' with the movable bush I I' and fixed bush G G', so that the piston-valve M M' shall not merely act as a valve on the periphery by covering the ports G or G', but also on its upper and lower side by bearing alternately against the flanges of I or I', or of G or G'.

3. The combination of the weighted lever T, the lever R, having the heart-plate arm *r* and the projecting studs *r' r''*, with the slot *d d'* on the main piston-rod, or their mechanical equivalents, for the purposes described.

4. The combination of the lever S, having the weight S' and the roller S', with the bell-crank lever R *r*, actuated by the piston-rod D, or their mechanical equivalents, substantially as described.

204,358. PLOWS. Thomas M. Moore, Tyler, assignor to himself and Richard Blair, Smith County, Tex. Filed Apr. 1, 1878.

Claim.—1. The standard B', provided with slots *f f*, in combination with the land-side F and its fastening-bolts, substantially as and for the purpose specified.

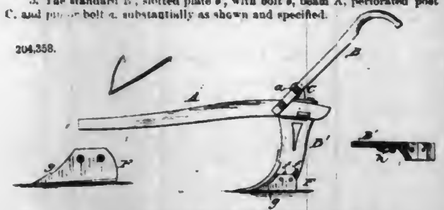
2. The vertically-adjustable land-side F, provided upon its front edge with an elongated recess or slot, *g*, in combination with the standard B' and its sweep or blade E, substantially as and for the purpose described.

3. The standard B', provided with recessed and slotted flange *e* and recess or slot *e*, wing D, and sweep or blade E, substantially as shown, and for the purpose described.

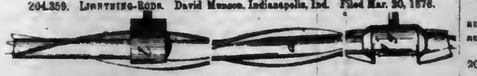
4. The standard B', provided with the slots *f e* and recessed or slotted flange *e*, in combination with the land-side F, sweep E, and plow D D', substantially as and for the purpose set forth.

5. The standard B', slotted plate *b'*, with bolt *b*, beam A, perforated post C, and pin or bolt *a*, substantially as shown and specified.

204,358.



204,359. LIGHTNING-RODS. David Munson, Indianapolis, Ind. Filed Mar. 30, 1878.



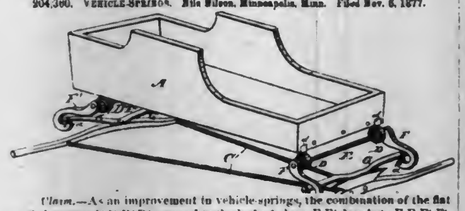
Claim.—1. A tubular lightning-rod having a galvanized-iron core of angular cross-section, forming interior edges and intervening spaces, and inserted into the tube in sections to form non-oxidizing surfaces with continuous edges and ventilating-spaces, for the purpose specified.

2. The combination, with a spirally-flanged electrical conductor, of coupling-sleeves having grooves to receive said flanges and shoulders to form locks or holds, between or over which cross-cut portions of the telescoping open flanges are bent down upon said sleeves, substantially as herein specified.

3. The supplemental grooved sleeves adapted to be adjusted over the spiral flanges of the tubular rod, in combination with the screw-joint for securing the same, substantially as described, whereby to re-enforce the conductor with a multiplicity of adjustable points.

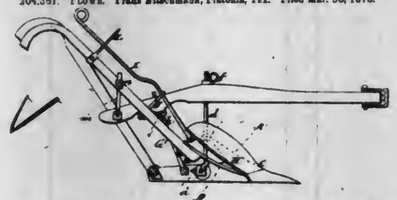
4. The combination, with a copper tubular rod having external spiral flanges, of a galvanized iron core forming interior concentrating edges for the electric current, as specified.

204,360. VEHICLE-SPRINGS. Nils Wilson, Minneapolis, Minn. Filed Nov. 6, 1877.



Claim.—As an improvement in vehicle-springs, the combination of the flat coiled springs D D D' D', secured to the body A, bars E E', brackets F F F' F', and springs G G', all constructed and combined to operate substantially as and for the purpose herein shown and specified.

204,361. PLOWS. Franz Hitschmann, Flatonia, Tex. Filed Mar. 30, 1878.

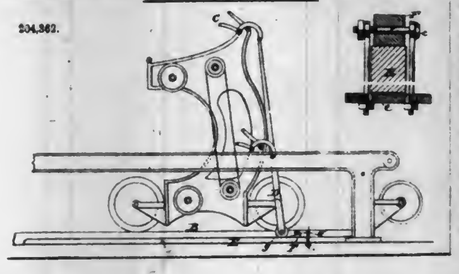


Claim.—1. In combination with a plow and plow-beam, the rods *d* and *h*, connected directly to the land-side of the plow, and passed upward through the beam, and provided, respectively, with the thumb-nut *k* and nut *i* above and below the beam, as and for the purposes herein set forth.

2. The combination, with the share C and perforated bar D, of the mold-board H, provided with the lips *p* and pin *s*, and a lever or handle for adjusting the mold-board, substantially as herein set forth.

3. The combination of the movable mold-board H, lever L, perforated rest J, and ratchet-bar L, substantially as and for the purposes herein set forth.

204,362.



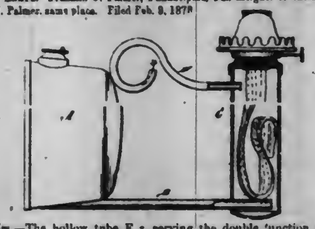
204,363. RAILWAY-RAIL JOINTS. Orester Pagan, Philadelphia, Pa. Filed Nov. 15, 1877.



Claim.—1. The wedge-shaped or tapering bars or plates C D, combined with a screw or bolt, E, for causing one of them to slide longitudinally on the other, substantially as described and shown.

2. The combination of the plates B C D, screw or bolt E, with nuts *e e'*, and double-headed gibs F F, the several parts being constructed and forming an improved fastening for railway rails, substantially as shown and described.

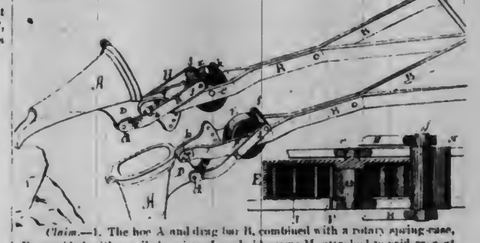
204,364. LAMPS. Franklin O. Palmer, Philadelphia, Pa., assignor of one-half his right to Jason J. Palmer, same place. Filed Feb. 9, 1878.



Claim.—The hollow tube F *z*, serving the double function of conveying generated gas from the base of the burner to the wick-tube C to the outside atmosphere, and also as an ornamental brace between the said tube and the body of the reservoir A, constructed, arranged, and combined to operate, in relation to said reservoir, wick-tube, and feed-tube B, as herein specified, for the purpose set forth.

204,365. SPRING-HOES FOR GRAIN-DRILLS. Charles E. Patrie, Springfield, Ohio. Filed Mar. 18, 1878.

Brief.—Rotating barrel or case contains a coiled spring, and is axially mounted upon the drag-bar. The periphery of the case is connected to the hoe by side arms, so that when the point of the hoe encounters an obstacle the tension of the spring may be temporarily overcome and the barrel partially rotated.



Claim.—1. The hoe A and drag-bar B, combined with a rotary spring-case, E, provided with a coiled spring, J, and side arms H, attached to said case at one side of the drag-bar, and to the lug D at the other side of the drag-bar, substantially as and for the purpose set forth.

2. The spring-case E, substantially as described, provided with the stop-shoulders *g*, and side-arm pivot-studs *f*, combined with the drag-bar B and side arms H, as set forth.

3. The spring-case E, provided with the inner rib or abutment *m* and the clamp-screw *k*, as a means of adjusting the tension of and securely holding the spring J, as set forth.

4. The rotary spring-case or lever E, mounted upon the drag-bar, and provided with a stop to limit its movement in a forward direction, combined with the side arms pivoted to the periphery of said case, and a stop upon the hoe, to which the rear ends of said side arms are attached, whereby the movement in a backward direction is limited, for the purpose set forth.

5. A drag-bar, B, substantially as set forth, attached at its front end to the frame of the machine, and at its rear end, by the pin *b*, to the lug D of the hoe A, and a cylindrical case or lever, E, pivoted to said drag-bar, combined with side arms H, pivoted to said case or lever at one side of said drag-bar, and to the lug D at the other side thereof, and suitable stops, whereby the movements of said side arms are limited between the axes of said case E and pin *b*.

6. The rotary spring-case E, combined with the loose roller or fulcrum R upon the axis of said case, and the spring J, the inner end whereof is independently attached to the frame upon which said case is pivoted.

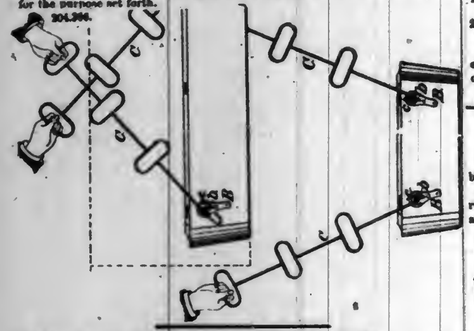
7. The drag-bar B and the side arms H, provided with a rotating spring-lever, E, and rollers *g*, combined with the hoe A and lug D, provided with an orifice or slot, *r*, through which the pivot-pin or clamping-bolt passes, and may be adjusted vertically or laterally, as set forth.

204,366. BURIAL APPARATUS. Jerome Patterson and Horton Wheeler, Sharon, Pa. Filed Apr. 24, 1878.

Claim.—1. The rods C, constructed as described, with hooks *c* and handles D, substantially as and for the purpose specified.

2. The combination of the rods C, constructed with hook ends and handles, as described, with the rings or staples *b*, the latter being attached to a burial-casket, the whole arranged for operation in the manner substantially as and for the purpose set forth.

204,366.



204,367. LAP-LINER. Algie Perry, Covington, Tenn. Filed Apr. 17, 1878.

Brief.—The arms of the two parts are made of variable lengths, and are pivoted together at a point opposite to where they are to be opened for the insertion of a ring or link.



Claim.—A link, A, composed of two parts, B B', pivoted together at the side opposite to the openings in the links, the leg *b*' of the part B being longer than the leg *b*' of the part B', and the leg *b*' of the part B' being longer than the leg *b*' of the part B, substantially as shown and described.

204,368. RUBBER BELTING. Clement T. Fotchell, Brooklyn, N. Y. Filed Jan. 26, 1878.



Claim.—In a belt, the combination of rubber, or rubber and rubber fabric, with one or more longitudinal strengthening bands or strips, serrated or corrugated on opposite edges or sides, and embedded in the rubber of the belt, whereby longitudinal displacement of the rubber from the strips is prevented, substantially as specified.

204,369. SAWS. Robert E. Finkenstar, Anderson, Ind. Filed Jan. 26, 1878.

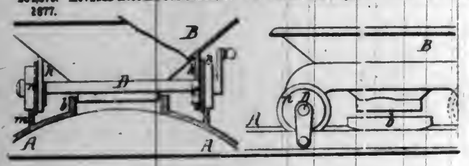
Brief.—The saw is provided with three cutting-teeth having a concave on their cutting sides, so as to draw the point toward its proper set, and forming cutting-edges on each side of the concavity. The diamond-pointed tapering cutting-teeth are arranged between clearing-teeth wider at the top than at the base, and having two cutters each. The chip-chambers between all the teeth are of equal depth.



Claim.—1. A saw provided with three diamond-pointed tapering cutting-teeth, B B' B', between two clearing-teeth, C C', each diamond-pointed tooth having a concave, E, on the cutting side, in the manner substantially as and for the purpose shown.

2. A saw-tooth, B, having a concave, E, on the cutting side, so as to draw the point t1 toward its proper set, and to form the curved cutting-edges *e e*, in the manner and for the purpose substantially as shown and described.

204,370. MOVABLE HOPPERS FOR TABLES, &c. F. C. Prindle, Philadelphia, Pa. Filed Oct. 24, 1877.

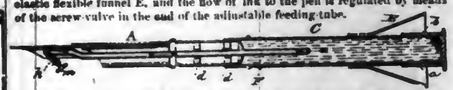


Claim.—A tank, A, having two or more openings situated at a distance from each other, in combination with a hopper, B, having wheels adapted to rails on or near the said tank, all substantially as set forth.

2. The combination of a tank or other receptacle, A, having rails *m m*, with a hopper, B, and devices whereby the latter may be raised or lowered, all substantially as set forth.

204,371. FOUNTAIN-PENS. Thomas H. Quinn and James E. Quinn, Racine, Wis. Filed Apr. 8, 1878.

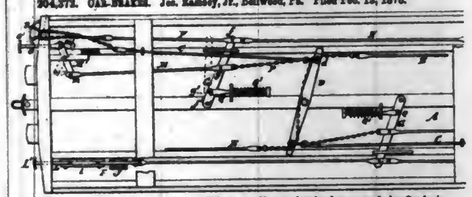
Brief.—The reservoir is filled through the opening *a* by the assistance of the elastic flexible funnel E, and the flow of ink to the pen is regulated by means of the screw-valve in the end of the adjustable feeding-tube.



Claim.—1. The flexible funnel E, attached to the outside of the fountain C below the vent *a*, for the purposes set forth.

2. The combination, with the hollow holder provided with one or more rubber gaskets, of the adjustable feeding-tube F, having tubular projection A and screw *m* therein, all substantially as set forth.

204,372. CAR-BRAKES. Jos. Ramsey, Jr., Bellwood, Pa. Filed Feb. 12, 1878.



Claim.—1. The combination, with an ordinary brake-lever and draft chain or rod for operating a railway-car brake, of a special brake-operating mechanism, substantially as described, and a hand-wheel connected with both brake-operating mechanisms, whereby either may be operated by the hand-wheel at pleasure.

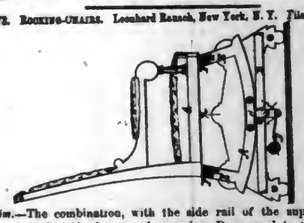
2. On a car of a railroad train, the yielding and brake-applying buffer O, in combination with the abutting buffer L', whereby the yielding buffer O' of the following car is operated while the train is in motion, substantially as set forth.

3. The combination of the buffer O', levers M' G, rods H M, tension-spring Q', and slide-bar I, constructed and operating as set forth.

4. The reciprocating bar I, having recess *i*, and the lever K, having finger *k* and connections *l*, whereby the buffer L' is moved out and rigidly held in position, substantially as set forth.

5. The stand J, having lug *j*', whereby the sliding bar I is supported and the swing of the lever K is limited, substantially as set forth.

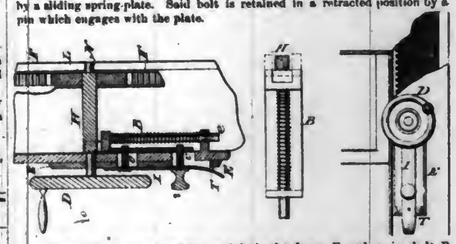
204,373. ROCKING-CHAIRS. Leonhard Rausch, New York, N. Y. Filed Dec. 18, 1877.



Claim.—The combination, with the side rail of the supporting-frame, having a central guide-slot, *c*, and a spring, D, secured to the supporting-frame at one end, of the jointed arm C, attached to the rocker and projecting downward through the guide-slot in the side rail, the lower jointed portion of said arm being attached to the free end of the spring D, substantially as and for the purpose described.

204,374. SASH BALANCE AND LOCK. John B. Rayner and Eugene G. Burr, Springfield, Mass. Filed Jan. 24, 1878.

Brief.—The sash is raised or lowered by means of rack and pinion. The shaft is square, and may be locked in any position by a spring-bolt operated by a sliding spring-plate. Said bolt is retained in a retracted position by a pin which engages with the plate.

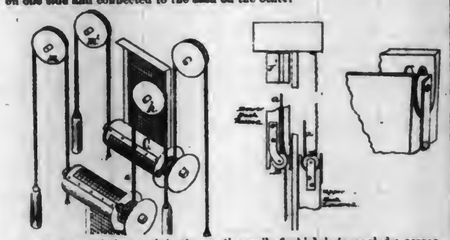


Claim.—1. In a sash balance and lock, the frame F and spring-bolt B, having thumb-piece *t*, in combination with pinion L, shaft H, and rack F, arranged and operating substantially as shown.

2. The spring I, in combination with bolt B and frame E, having pin T, as and for the purpose set forth.

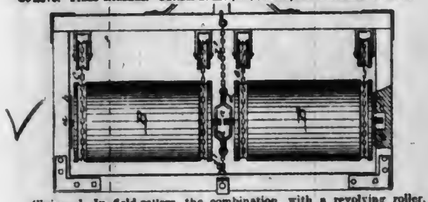
204,375. WINDOW-SCREENS. George L. Reynolds, Oakland Township, Alameda County, Cal. Filed Aug. 29, 1877.

Brief.—Screens secured at one end to the window-frame wind upon rollers journaled in grooved meeting sash-rails. The sashes are balanced and the rollers operated by balance cord and weight, winding upon the roller-pulley on one side and connected to the sash on the other.



Claim.—A window-sash in the meeting-rail of which is journaled a screen-roller, and having one balance-cord secured upon the pulley of said roller and the other balance-cord attached direct to the sash, substantially as and for the purpose specified.

204,376. FIELD-ROLLERS. Thomas B. Rice, Jr., Modoc, Ill. Filed Mar. 16, 1878.



Claim.—1. In field-rollers, the combination, with a revolving roller, of endless chains or belts turning in grooves of the roller, and passing over front pulleys of the supporting-frame, substantially as and for the purpose described.

2. The combination of independent flexible roller-sections with endless chains or belts and pulleys of the supporting-frame, and with slotted side bearings and central chain-supported bracket-links, substantially as described.

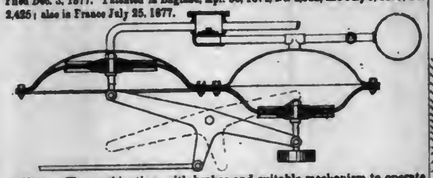
204,377. TABLES. Sumner Robbins, West Medway, Mass. Filed Mar. 26, 1878.



Claim.—1. A knock-down table consisting of the combination of a single leaf or piece, with mortised cleats B on its under side, cross-legs C C, provided with projections *b b*, having dovetail or equivalent locking-recesses, and the longitudinal bar D, having its ends shaped to fit such locking-recesses, as and for the purpose set forth.

2. The combination of the bar D, with its brace E, the table-top A, with its recessed cleats B B *c*, and the cross-legs C C, with their recessed projections *b b*, substantially as and for the purpose described.

204,378. BRAKES FOR RAILWAY-CARRIAGES. Richard D. Sanders, Birmingham, England. Filed Dec. 3, 1877. Patented in England, Apr. 30, 1874, No. 1,522, and July 6, 1876, No. 2,425; also in France July 25, 1877.



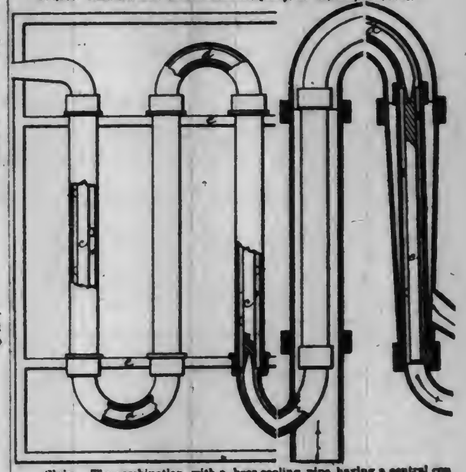
Claim.—The combination, with brakes and suitable mechanism to operate or press the same against the wheels of railway-carriages, of two power-drums of different diameters, constructed and arranged, in relation to said brakes and intermediate mechanism, for operation in the manner herein shown and described.

204,379. CLOTHES-POUNDERS. Otto Schindler Gallatin, Tenn. Filed May 7, 1878.



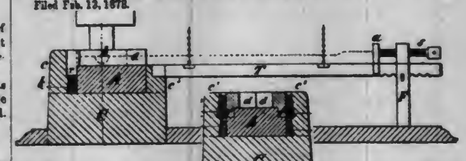
Claim.—The hollow head or pounder provided with the internal elastic perforated diaphragm.

204,380. BEER-COOLERS. H. Frank Schmidt, Quincy, Ill. Filed Apr. 26, 1878.



Claim.—The combination, with a beer-cooling pipe having a central continuous wooden core extending through it, and forming a narrow annular passage next the pipe-wall, of a jacket surrounding said pipe, and having an induct and educt for the water, substantially as specified.

204,381. MACHINES FOR MAKING BRIDGE-EYES. A. Schaddelbrochner, Pittsburg, Pa. Filed Feb. 13, 1878.

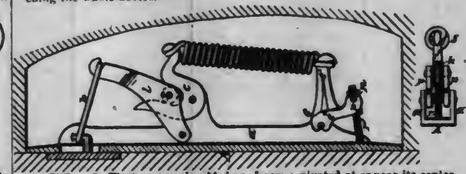


Claim.—1. The combination of the anvil-block C, having the wings *c c' c'*, as described, the anvil A, the half-dies *d d*, with ribs *r r'*, overhanging the anvil, and the keys, substantially as described and set forth.

2. The table T, provided with the movable foot F and the screw *s* and guide *a*, in combination with the anvil-block C, as described, and for the purpose set forth.

204,382. DOOR-SPRINGS. Obadiah Sealy, Syracuse, N. Y. Filed Apr. 24, 1877.

Brief.—As an improvement on that class of door-springs which are recessed in the hinge-edge of the door, and joined by link-connection, through the face-plate, to a hook on the door-jamb, there is provided a two-armed or V-shaped cam, pivoted near its center to the hanger, and connected at the end of one arm with a strong spiral spring, while the other arm or cam proper bears against a friction-roller pivoted in a slot of the main lever, which main lever has a link-connection at its upper end to the door-jamb, and is pivoted at its lower extremity in such relative position to the V-shaped cam as to receive the greatest force when the door is closed. There is also a novel combination of an elbow-lever, swiveled nut, and set-screw, to regulate the tension of the spring, the construction reducing friction of the integral parts, and improving and strengthening the whole device.



Claim.—1. The two-armed or V-shaped cam *c*, pivoted at or near its center to the hanger A, and having one arm connected with the spring and the other arm or cam proper engaging the coupling-lever *l*, constructed substantially as described and shown, for the purpose set forth.

2. The combination and arrangement of the two-armed or V-shaped cam *c*, pivoted at or near its center to the hanger A, and having one arm connected with the spring, and the lever *l*, having pivoted to its body the friction-roller *r*, and pivoted at its lower extremity to the hanger A in such relative position as to bring the said friction-roller, when the spring is at rest, to its nearest position to the fulcrum of the cam, constructed and arranged substantially in the manner and for the purpose specified.

3. The knee or elbow lever *e*, pivoted at the junction of its two limbs *e' e''* to the hanger A, connected at the end of limb *e'* with the end of spring *s*, and by limb *e''* with a set-screw, *r'*, as and for the purpose set forth and described.

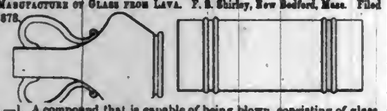
4. The knee *e*, having the limb *e''*, provided with prongs *p p*, and the nut *n*, having trunnions on its sides, and supported thereby in the said prongs, constructed substantially in the manner and for the purpose specified and shown.

204,383. COUPLING AIR AND STEAM BRAKE PIPES ON CARS. Frederick A. Sheeley, Prairie City Ill. Filed Apr. 8, 1878.



Claim.—In combination with the two main pipes A A of adjacent cars, the pipes F F, provided with enlarged ends, and the pipes B B, similarly constructed, the pipe C, and the bell-mouthed pipe D, all constructed and used substantially as set forth.

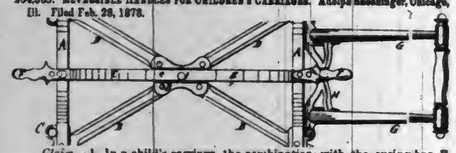
204,384. MANUFACTURE OF GLASS FROM LAVA. F. S. Shirley, New Bedford, Mass. Filed Apr. 6, 1878.



Claim.—1. A compound that is capable of being blown, consisting of glass and lava, substantially as described.

2. As a new article of manufacture, an article of glassware made of lava and glass, substantially as specified.

204,385. REVERSIBLE HANDLES FOR CHILDREN'S CARRIAGES. Adolph Shoninger, Chicago, Ill. Filed Feb. 28, 1878.

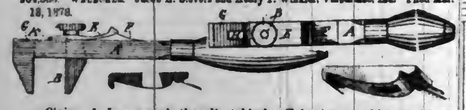


Claim.—1. In a child's carriage, the combination, with the spring-bar E, secured at its center to the reach, and forming notched ends, of the handles G, having a yoke to engage with such notched ends, adapted to be locked to either axle without changing the position of the spring-bar, substantially as described and shown.

2. In combination with the spring-bar E, secured at its center to the reach, the notched haft F at each end of said bar, substantially as and for the purposes set forth.

3. The handles G, attached to yoke H, having hooks h, in combination with the loops C, attached to the hind and fore axles, and with spring-bar E, having notched end hafts F, and being secured upon the reaches, all arranged on a child's carriage, substantially in the manner and for the purpose described and shown.

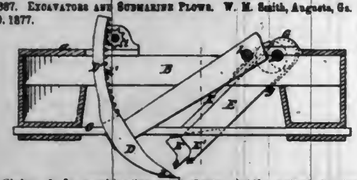
204,386. WRENCHES. Jacob H. Sievers and Henry T. Winkler, Valparaiso, Ind. Filed Mar. 18, 1878.



Claim.—1. In a wrench, the adjustable dog E, having a rocking motion on the shank of such wrench, and provided with a wedge-shaped opening to receive the end of the movable jaw B, and having at one end the tooth K, and at the other the spring F, substantially as and for the purposes set forth.

2. In a wrench, the combination of the shank A, having slot H and notches G, the stationary jaw J, movable jaw B, and the dog E, having tooth K and spring F, all constructed, arranged, and operated substantially as described and shown.

204,387. EXCAVATORS AND SUBMARINE PLOWS. W. M. Smith, Augusta, Ga. Filed Nov. 19, 1877.

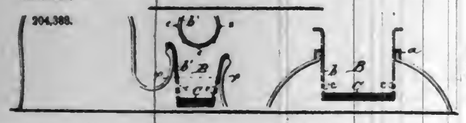


Claim.—1. In combination with floats rigidly united by longitudinal beams and bolts, one or more submarine plows or excavators, pivoted at their forward end to said beams, and two or more push-bars, connected to eccentrics operated by steam-engines or other power, substantially as and for the purpose described.

2. In combination with a floating excavator, constructed substantially as described, the submarine plows pivoted to the forward end or float, and connected to the rear end by means of a rack extension and pinion controlled by ratchet-wheel and pawl mounted upon the deck of said float to raise and lower the plows or hold them down, substantially as described.

3. In combination with floats, push-bars, and plows, as described, the two courses of longitudinal beams B and C, substantially as and for the purpose described.

204,388.

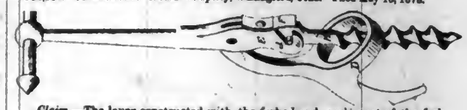


204,389. IRONSTAND. Walter F. Speller, New York, N. Y. Filed July 10, 1877.

Claim.—1. The combination, with an ink stand, bottle, or well, of a coil of soft rubber, arranged therein to form a pen-protector by providing a soft and pliable surface for the pen to strike against, substantially as described, for the purpose set forth.

2. The combination, with an inkstand having screw-threaded cap or rim a, of a screw-threaded tube, b, having perforations c, and a bottom formed of a coil of soft rubber, substantially as described, for the purpose set forth.

204,389. CORKSCREWS. Alfred W. Sperry, Wallingford, Conn. Filed May 13, 1878.



Claim.—The lever constructed with the forked end, each part of the fork in hook shape, combined with a screw, the head of which is constructed with trunnions to rest in said hooks, and means, substantially as described, on the lever for closing the mouth of the hooks, and with a yoke hinged to the lever, substantially as described.

204,390. CORN-PLANTERS. Henry Steckler, Jr., New Iberia, La., assignor to himself and Richd. Protcher, same place. Filed Apr. 2, 1878.

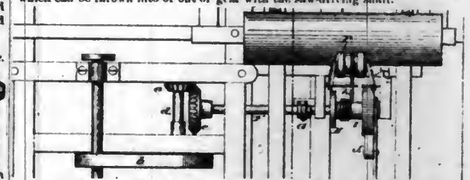


Claim.—1. The box A, having the recesses b, in combination with the dropping wheel D, being made convex on both sides, substantially as and for the purpose set forth.

2. The dropping-wheel D, made convex on both sides, and cast with two concentric circles of cogs, d, and seed-openings a in its under side, in combination with the frame B and box A, having interior recesses b, substantially as and for the purposes herein set forth.

204,391. LOG-TURNERS. Caleb Strobel and Fredrick Strobel, Waldo, Ohio. Filed May 8, 1878.

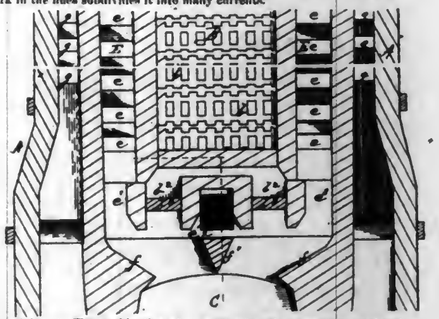
Brief.—The log is turned by means of a rope or chain carrying a hook at its free end, passing over a pulley mounted in a vertically-swinging frame, and wound upon a windlass mounted upon a longitudinally adjustable shaft, which can be thrown into or out of gear with the saw-driving shaft.



Claim.—The windlass H, with rope A on the shaft F, the ratchet wheel I and pawl J, and elevated pulley P, mounted in the vertically-swinging frame P', in combination with the saw-mandrel and a mechanism connecting said mandrel with the shaft F, substantially as and for the purposes herein set forth.

204,392. METALLURGIC FURNACES. Henry Swindell, Allegheny, Pa. Filed Mar. 7, 1878.

Brief.—Gas from the producer enters the hearth directly, and, by the deflecting ledges, is thoroughly commingled with the heated air entering from the side and central flues. Air enters underneath the hearth, and passes into the front end of the side flues placed between the producer and the flues for the products of combustion, whereby it is highly heated, and the checker-work in the flues subdivides it into many currents.

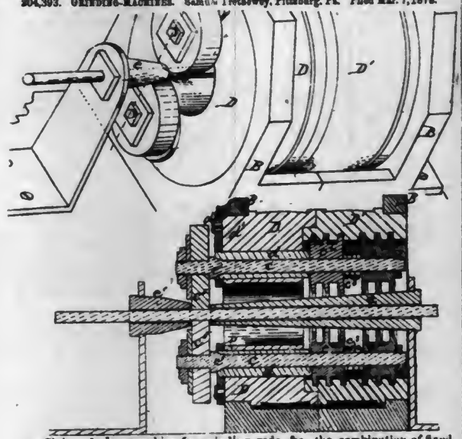


Claim.—1. The combination of a working-hearth or combustion-chamber, C, a producer, B, air heating or regenerating chambers E E, provided with checker-work, said air flues inclosing the producer and inclosed by the escape-flues D for waste products, and tortuous air-channels arranged beneath the working-hearth and communicating with the regenerator, the whole constructed and arranged substantially as and for the purpose specified.

2. The combination of a producer, regenerators or air-heating chambers inclosing the same, a combustion-chamber or working-hearth, and a series of breasts or deflectors, *f f'*, arranged between the producer and hearth, and with relation to the flues *e'*, *e''*, *e*, and *b'*, as shown, whereby they are adapted to break up and intermingle the air and gas, substantially as and for the purpose specified.

3. The combination, with a furnace or producer, of the hinged and slotted or box hopper I, provided with a follower or plunger, *i*, substantially as and for the purpose specified.

204,393. GRINDING-MACHINES. Samuel Trethewey, Pittsburg, Pa. Filed Mar. 7, 1878.



Claim.—1. In a machine for grinding rods, &c., the combination of fixed housings B B, rotary housings D D' journaled therein, one or more grinding-wheels mounted on shafts adjustably journaled in the rotary housings, and an axially-arranged fixed guide or guides, substantially as specified.

2. The combination of the fixed housings, the two rotary housings journaled on each other, and adapted to be driven in reverse directions, the internal driving-gear, and a grinding wheel or wheels adjustably journaled in the rotary housing, substantially as specified.

3. In a machine of the class specified, the combination of the internally-grooved rotary housing with the bevel friction-gear and the spring for preserving the contact of the gear and housing, to permit the adjustment of the rolls or grinding-wheels, substantially as specified.

4. In a grinding-machine having fixed and rotary housings, the axially-arranged fixed guide *e e'*, projecting through the rotary housings and arranged as described with relation to the grinding-wheels, substantially as and for the purpose specified.

204,394. SAW-MILL CARRIAGES. Mahlon Taplin, Montpelier, Vt. Filed Mar. 2, 1878.

Brief.—The momentum of a saw-mill carriage is absorbed by springs so arranged as to always act efficiently, no matter at what point the carriage is reversed, and without requiring any attention or adjustment.

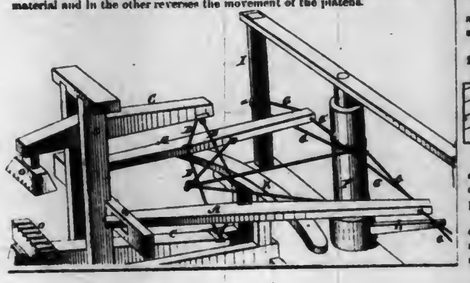


Claim.—1. The combination, with a saw-mill carriage, of a bar attached thereto and a mechanism, substantially as described, whereby an endwise motion is allowed to said bar, to which bar or stick the propelling power is attached or connected by rack and pinion or equivalent devices, substantially as set forth.

2. The combination of one or more springs or elastic substance with a feed-rack and the carriage of a saw-mill, arranged in such a manner that the same will be brought into action and overcome the momentum of the carriage as often as the motion of the feed and gig works is reversed, substantially as and for the purposes set forth.

204,395. COTTON-PRESSES. Wiley H. Tate and John E. Curtis, Jacksonville, Ark. Filed Apr. 24, 1878.

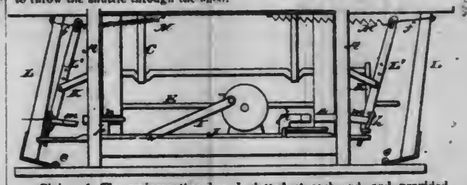
Brief.—An ordinary baling-chamber admitting the platens to operate from each end is used. Turning the horse-power shaft in one direction presses the material and in the other reverses the movement of the platens.



Claim.—In combination with the horizontally-acting levers A A, the follower-levers C C, and connecting toggle mechanism D, the vertical windlass F and ropes G G', and the pulleys *a*, located at points beyond the limits of movement of said levers A A', all as shown and described, whereby the followers are caused to approach or recede from each other, according as the windlass is turned in one direction or the other.

204,396. LOOM PICKING MECHANISMS. Enoch P. Terrell and Lucius A. Williams, West Liberty, Ohio; said Terrell assignor to said Williams. Filed Feb. 16, 1878.

Brief.—The sliding bar is slotted at each end to receive the arms pivoted to the inner picker-staff, and receives backward and forward motion from a crank. As one end of the bar moves inward it draws the lower end of the inner staff on that side with it until the catch on the staff engages with that on the lay-sword. In the returning movement of the bar, the knocker carried by it disengages the catches, and the spring throws the upper end of the staff inward, and the outer staff, being connected with the inner one, is thus caused to throw the shuttle through the shed.

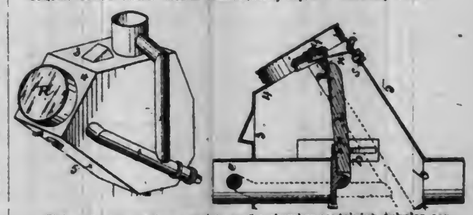


Claim.—1. The reciprocating bar J, slotted at each end, and provided with knockers *p*, operated by mechanism, as herein described, in combination with the alternating staffs L' L, having spring-latches *m* near their lower ends, for the purpose set forth.

2. A loom picking mechanism consisting of a slotted bar, J, with knockers *p p*, pivoted arms A *h*, and inner pivoted staffs L' L, provided with spring-latches *m m* and spiral springs M M, and forming a connection with the picker-staffs L L by means of straps *f f*, adapted for use substantially as described.

3. The combination of the pivoted staff L', having its lower end bent forward and slotted, the pivoted arm A, and the slotted end of the sliding bar J, for the purposes specified.

204,397. SEWER-TRAPS. John M. Thatcher, Jersey City, N. J. Filed May 1, 1878.



Claim.—1. A sewer-trap consisting of a chamber containing tubular connections with the soil-pipe, in the same vertical axis therewith, and a valve operated by independent mechanism to lock and release the same, substantially as and for the purposes set forth.

2. In a sewer-trap of the character herein described, the valve-operating mechanism consisting of a weighted lever carrying a valve on the opposite end and normally keeping said valve in its seat, a locking mechanism, substantially as described, holding the valve closed against any superincumbent weight upon the valve, and a means to release the locking mechanism operated by a given column of liquid, as and for the purposes set forth.

3. The combination, with the chamber of a sewer-trap, constructed and arranged for operation as herein set forth, of an elastic diaphragm or bulb, or the mechanical equivalent of the same, to maintain equilibrium of atmospheric pressure within said chamber, substantially as herein shown and set forth.

4. The combination and arrangement of tubes to convey liquid from the upper tube or soil-pipe to the elastic diaphragm operating the lever-locking mechanism, as set forth.

204,398. COMPOUNDS FOR CURRYING LEATHER. E. S. Thayer, Salem, Mass. Filed Nov. 30, 1877.

Brief.—The "degras" used is described as "the product proceeding from the treatment of the waters coming from wool-factories by some chemical process, the same containing the suint extracted from the wool, and the greasy and oily matters from the scraps and oils used in those factories." Takes two hundred pounds degras, and adds to it one hundred pounds paraffine-wax.

Claim.—The compound hereinbefore described, consisting of paraffine-wax and what is known commercially in the United States as "degras," mixed in suitable proportions and adapted to be used for treating leather, as specified.

204,399. ADJUSTABLE AXLE-NUTS. Orrin B. Thompson, Jersey, Ohio. Filed Jan. 29, 1878.



Claim.—1. The combination, with the threaded spindle, of one or more sleeves or collars independently adjustable thereon, and adapted to lengthen or shorten the bearing-surface of the spindle, substantially as and for the purpose specified.

2. The combination, with the threaded spindle, of one or more independently adjustable sleeves or collars arranged and adapted to form an adjustable shoulder or collar for a bearing for either the box or nut, substantially as specified.

204,400. ESCAPEMENTS. William A. Wales, Newton, Mass., assignor to Wm. B. Fowle, same place. Filed Apr. 15, 1878.



Claim.—In a mechanism for denoting divisions of a second of time, a vibrating escapement, I, having each of its pallets *b b'* constructed with positive stops *c c'* and impulse-faces 1 2, in combination with an escape-wheel, A, provided with one or more pairs of pins or crown-teeth, substantially as and for the purpose set forth.

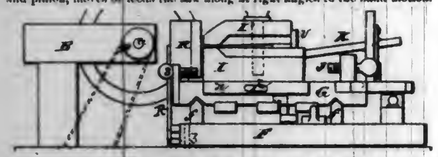
204,401. BED-BOTTOMS. George S. Walker, Erie, Pa. Filed Dec. 31, 1877.



Claim.—The combination, within a spring bed-bottom, of the slats C, separating-pieces F, cords K, eye-blocks J, rods B and I, and springs G, said parts being arranged and operating together as and for the purposes mentioned.

204,402. SAW-SHARPENERS. William Medd Watson, Tonica, Ill. Filed Feb. 23, 1878.

Brief.—Three platforms are mounted on a bench or table. The lowest is pivoted to swing horizontally about the grinding-wheel as a center. The other two slide at right angles to each other. The top platform, with the saw clamped in its front, is slid by hand to and from the grinding-wheel. When it is moved from the wheel an oblique arm strikes a vertical pivoted lever carrying a pawl which operates a pinion-ratchet, which, in turn, by means of rack and pinion, moves or feeds the saw along at right angles to the hand motion.



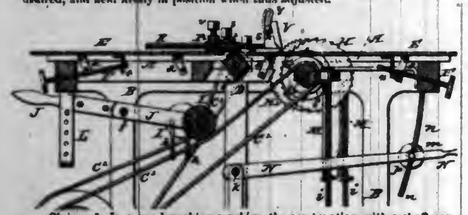
Claim.—1. The combination, with the platform, carriage, and rack and pinion, as described, the saw-clamp and handle to operate the feed, substantially in the manner as set forth.

2. The combination of the platform, carriage, saw-clamp, rack and pinion, (the said rack being removable,) and the levers K and H, substantially as set forth.

3. In a handsaw sharpener having an emery-wheel, the pivoted platform P, having attached thereto a spring-guide, R, moving therewith, in combination with a saw-clamp, for the purpose set forth.

204,403. MACHINES FOR PLANING AND SAWING WOOD. Wm. H. Webb, Cincinnati, Ohio. Filed Mar. 29, 1878.

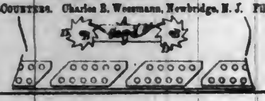
Brief.—The saw is attached to an arbor mounted on a sliding frame vertically adjustable upon guide-rods by a pointed lever carrying near its outer end a perforated stud and set-screw, to secure the lever at any desired point upon a curved rod projecting from the under side of the upper part of the main frame. The table is provided with a longitudinal slot, in which is placed a stationary rod carrying a gage that can be adjusted in any direction and in any manner desired, and held firmly in position when thus adjusted.



Claim.—1. In a wood-working machine, the combination, with a shaft carrying a saw or other tool, of the vertically-sliding frame M, guide-rods *i i*, pivoted lever N, with perforated stud *m*, curved rod *n*, and set-screw *p*, all substantially as and for the purposes herein set forth.

2. In a wood-working machine, the combination, with the slotted table A, of the rod *r*, slide O, plate P, with tube P', rod R, frame S, rod *x*, gage V, with slotted ears *y y*, and the set-screws *z*, *c*, and *w*, substantially as and for the purposes herein set forth.

204,404. GAME-COUNTERS. Charles B. Wessmann, Newbridge, N. J. Filed Nov. 14, 1877.



Claim.—A game-register composed of the base-plate A, two registering-disks, C C, a common index, E, two ratchet-wheels, D D, mounted, respectively, on the axis of said disks, and of a spring, F, which is held in position by pins *g*, projecting from the base-plate, and engages with each of said ratchet-wheels, the whole being adapted to operate substantially as described.

204,405. TOY PISTOLS. Henry J. P. Whipple, West Meriden, Conn. Filed May 13, 1878.



Claim.—The combination, in a toy pistol, of the plate F, arranged to rotate in a horizontal plane, the disk *f*, in connection with said plate F, so as to rotate with it, and adjustable for the introduction of the disk of pellets between the two, a hammer constructed and arranged so as, by its cocking movement, to rotate the plate and disk, and in its discharge impart its force upon the pellets between said disks, and substantially as described.

204,406. STOVE-DAMPERS. Thomas White, Quincy, Ill., assignor of one-half his right to Danl. E. Parris, Troy, N. Y. Filed Mar. 16, 1878.



Claim.—1. The combination, with a stove door and damper, of a connecting-link composed of two parts longitudinally adjustable upon and with respect to each other, so that said link may be lengthened or shortened within the stove, substantially as and for the purpose set forth.

2. The combination of the rod B, adjustable washer or plate *f*, and the serrated slotted bar B', having the lateral slotted arm *d*, said parts being held together by a suitable nut, substantially as described, and for the purpose set forth.

204,407. SELF-ADJUSTING BRIDGES. Benedetto Williams, Chicago, Ill. Filed Apr. 17, 1878.

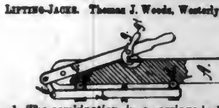
Brief.—A landing-bridge hinged by one end to an abutment, a float supporting inclined ways, and a flexible attachment of the outer end of the bridge to the craft or object to be boarded. The inclined ways, together with similar ways on the abutment, are so pitched that the bridge, having rollers riding upon the inclined ways upon the float, by its weight and load, causes the float by its rear end to ride against the inclined ways on the abutment. As the tide rises or falls, a rearward or forward movement of the float takes place. The inclines on the float are so adjusted in reference to those on the abutment that throughout the vertical movements aforesaid the bridge shall have constant bearing on the inclines and maintain a rectilinear figure.

Claim.—1. The system of inclined planes or tracks marked *a a'*, *b b'*, *c c'*, *d d'*, and *e e'*, in combination with the substructure marked D, the float marked E, and the inclined guides marked *f f'*, each successive inclined plane or track having an angle differing in inclination from the one preceding it, the angle being determined substantially as described, the substructure D being self-adjusting and compelled by the buoyancy of the water and the tension on the apron B to follow the guides *f f'* in shifting from one position to another.

2. The combination of the inclined planes marked *a a'*, *b b'*, *c c'*, *d d'*, and *e e'*, having a regulated vertical and horizontal movement, with the approach or apron marked B, the fixed abutment, dock, or pier marked A, and the floating dock, platform, or bridge marked C, in such manner as to support the apron at any number of points, and to maintain the same in a continuous line or plane at any stage of the water, thus rendering the floating dock or bridge C, which is variable in height, accessible, when in any position, from the fixed structure A.

3. The combination of the whole, to wit—the abutment or dock marked A, the apron marked B, the floating dock or bridge marked C, the substructure marked D, the floats marked E, the inclined planes or supports marked *a a'*, *b b'*, *c c'*, *d d'*, and *e e'*, and the inclined guides marked *f f'*, together with rollers or riders, as described, to be used as a permanent bridge, dock, or approach to a dock or ferry, or any similar marine structure, substantially as set forth.

204,408. LIFTING-JACKS. Thomas J. Woods, Westerly, R. I. Filed Apr. 22, 1878.



Claim.—1. The combination, in a carriage-jack, with the bar *b*, of the adjustable slotted bracket *c* and the friction-rollers *d d*, substantially as and for the purpose set forth.

2. The combination, with the standard A, of the hinged lever *e*, the latch *g*, provided with the thumb-piece *g'*, the bar *b*, connected with the lever by a link, and the adjustable bracket *c*, slotted and held on the bar, substantially as and for the purpose set forth.

204,409.

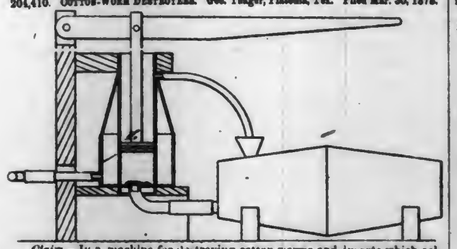


204,409. BALE-TIES. Jacob Wyckoff and Joel Y. Bloomingdale, New Salem, N. Y. Filed Apr. 30, 1878.

Claim.—1. A bale-tie constructed with a riveted eye, E, and free end C, in combination with loop L, as herein shown.

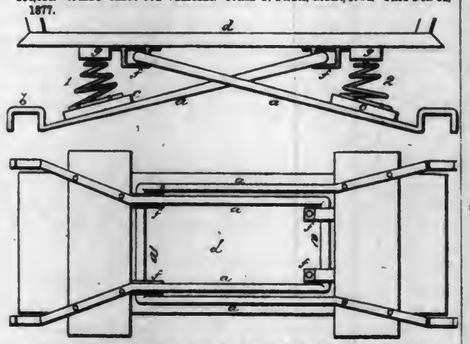
2. In a bale-tie, the riveted eye E and guard *g*, combined with loop L, as herein specified.

204,410. COTTON-WORM DESTROYERS. Geo. Yeager, Platosia, Tex. Filed Mar. 30, 1878.



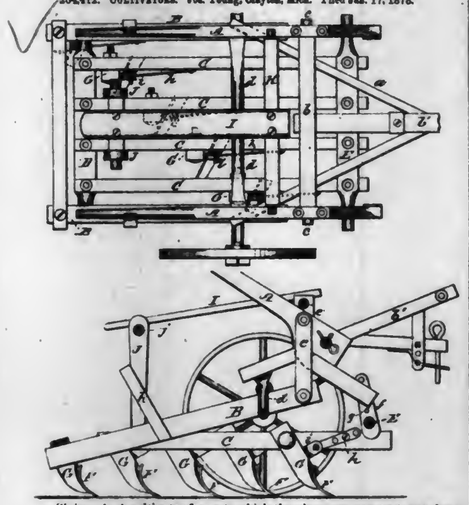
Claim.—In a machine for destroying cotton-worms and insects which collect on plants, the combination of a force-pump, a vessel containing poisoned water, and a waste-pipe forming a connection between said pump and vessel, for the purposes explained.

204,411. SPRING-SEATS FOR VEHICLES. Josiah T. Yerkes, Stuart, Iowa. Filed Dec. 31, 1877.



Claim.—The combination, with the seat *d*, of the double rectangular cross-braces *a a*, each formed in a single piece, and connected to slide-loops *f f* under the seat ends by the transverse portion *a'*, connecting the two arms or prongs of said brace, said arms supporting the bases of the seat-springs, substantially as specified.

204,412. CULTIVATORS. Jos. Young, Clayton, Mich. Filed Jan. 17, 1878.

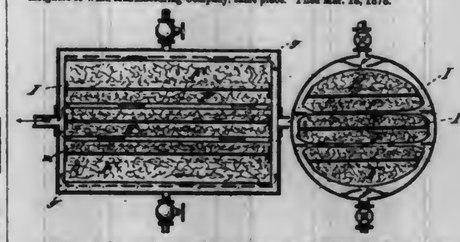


Claim.—1. A cultivator-frame to which the plows are attached, said frame being pivoted at its rear end to side beams, or to a frame pivoted or hinged to the axle, and at its front end to pivoted levers, whereby the frame may have an oblique forward falling motion and a correspondingly oblique backward rising motion, substantially as and for the purpose set forth.

2. The combination, with the cultivator-frame C and side beams B, constructed to operate as specified, of the seat or seat-board, connected to said frame and beams by pivoted standards J and straps *e'*, substantially as and for the purpose set forth.

3. The frame consisting of the parallel bars C, connected at its rear end to the pivoted cross-piece D and at its front end to cross-piece E, the latter having its bearings in pendent straps *f*, in combination with the levers A, straps *e*, and beams B, substantially as and for the purpose described.

204,413. GAS AND AIR CARBURETERS. C. C. Dusenbery and W. H. Winn, New York, N. Y., assignors to Winn Manufacturing Company, same place. Filed Mar. 18, 1878.



Claim.—1. In a carbureter, three or more sets of double shallow pans for holding a capillary absorbent, said pans extending the entire length of the carbureting-cylinder, and having spaces between them for the passage of the gas or air to be carbureted, substantially as herein set forth, for the purpose specified.

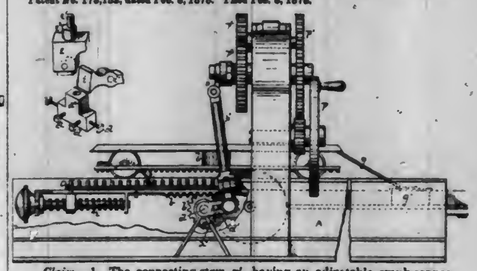
2. The combination of the wire-gauze screens with the double pans F within the carbureting-cylinder, substantially as and for the purpose set forth.

3. The deflecting-plates *f*, in combination with the pans I within the carbureting-cylinder, substantially as and for the purpose herein set forth.

4. The partitions *g*, perforated or slotted longitudinally, extending nearly or quite the length of the carbureting-cylinder, and arranged at the upper and lower parts of the latter, substantially as and for the purpose herein set forth.

REISSUES.

8,251. MACHINES FOR PUNCHING AND BEVELING METAL. James Morgan, Pittsburg, Pa. Patent No. 173,132, dated Feb. 8, 1876. Filed Feb. 6, 1878.



Claim.—1. The connecting-stem *g'*, having an adjustable crank-connection at each end, in combination with a rack and pinion, an extensible or adjustable rack, a feed-carriage, and pivoted table, substantially as set forth.

2. An extensible rack, *a*, in combination with a rack and pinion arranged to operate with alternate forward and reverse motions, substantially as set forth.

3. The combination of a punch, die, and beveling-shear, whereby the plate is prepared for calking at the same time that it is punched, substantially as set forth.

4. In a machine having an unobstructed line of feed for the progressive shearing of the edge of a sheet or plate, the combination of the fixed die *d* and a beveling shear, *i*, the latter having a rigid connection to a fixed center of motion above the level of the die, and being operative from such fixed center of motion across the edge of such die, substantially as set forth.

5. In combination with an adjustable die, d^3, a punch, c^3, connected with its die-head by an eccentric stem, substantially as set forth.

6. The combination of eccentric gear-wheels l° l^{12}, slotted cranks *g* d^3, and stem *g'*, arranged substantially as set forth.

8,252. VELOCIPEDES. Harvey A. Reynolds, New York, N. Y., assignor to Henry M. Richardson and George McKee. Patent No. 46,705, dated Mar. 7, 1865. Filed Apr. 15, 1878.

Claim.—1. In a velocipede, a forward-driven axle provided with reversed or oppositely-projecting cranks, combined with a seat for the rider, whereby the oppositely-projecting cranks may be acted upon by the feet of the rider to rotate the axle and propel the velocipede, substantially as described.

2. A rigid seat adapted to connect the front and rear axles, and remain in a fixed position as to its elevation above the axle during the movement of the velocipede, combined with a forward-driven axle, provided with reversed cranks and stirrups, to be operated directly by the feet of the rider.

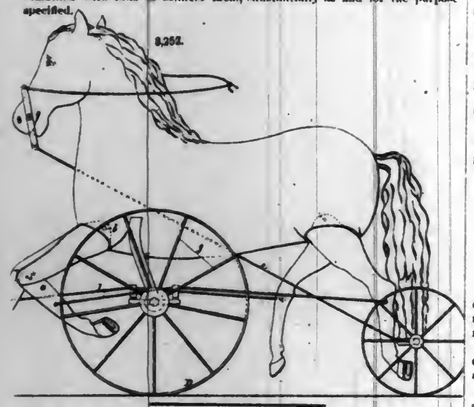
3. A rigid seat adapted to connect the front and rear axles, and remain in a fixed position as to its elevation above the axle during the movement of the velocipede, combined with a forward-driven axle, provided with reversed cranks and stirrups, to be operated directly by the feet of the rider, and with mechanism to move one axle out of parallelism with the other, to direct the course of the velocipede.

4. A velocipede trotting or pacing horse mounted upon axles provided with wheels, and having the axle of the forward or driving wheels provided

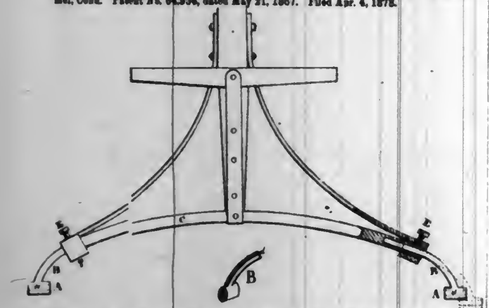
with reversed cranks, substantially as explained.

5. The jointed legs and the stirrups K on the axle of the driving-wheels, combined with rods to connect them, substantially as and for the purpose specified.

8,252.



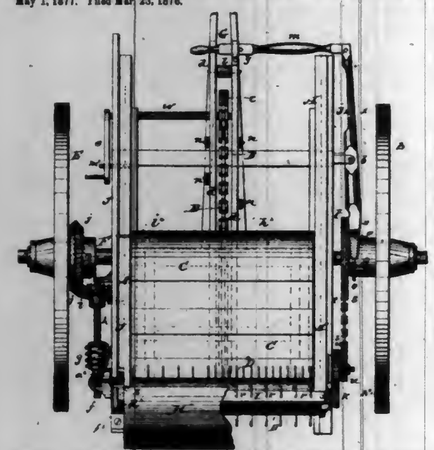
8,253. CARRIAGE-POLES. Aaron B. Bartram, Redding, assignor to James Ives, Mount Carmel, Conn. Patent No. 64,936, dated May 21, 1867. Filed Apr. 4, 1873.



Claim.—1. The coupling A and the shank B, in combination with the cross-bar C, substantially as set forth.

2. The shank B of the coupling A and the set-screw E, or other device for confining the coupling in any particular location, in combination with the cross-bar C, substantially as and for the purposes described.

8,254. MANURE-SPREADERS. Jos. S. Kemp, Magog, Canada. Patent No. 190,220, dated May 1, 1877. Filed Mar. 23, 1876.



Claim.—1. In a fertilizer distributer, the toothed drum or beater D, having a portion of its teeth made knife-edged, substantially as and for the purpose set forth.

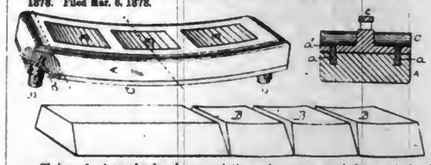
2. The yielding toothed drum D, in combination with the spring *f*, coupling *g'*, and spring Z, substantially as and for the purpose set forth.

3. The combination of the driving-wheel, provided with bevel-gear *j* on the shaft *h*, with the bevel-gear *i* and worm *g*, the feeding-wheel *f*, endless chain B, and bottom C, substantially as and for the purpose set forth.

4. The spring-lever J, connected to the gearing operating the slotted belt or bottom B C, in combination with the spring Z, coupling *g'*, drum D, pivoted bearing *d'*, and spring *f'*, substantially as and for the purpose set forth.

5. In a fertilizer-distributer, the body A and floor C, in combination with the bevel-wheel *j*, gear *i*, inclined shaft *h*, worm-gear *g*, feed-wheel F, and the polygonal pulley *a*, constructed and arranged substantially as and for the purpose set forth.

8,255. BRAKE-SHOES. Wm. McConway, Pittsburg, Pa. Patent No. 199,161, dated Jan. 15, 1878. Filed Mar. 6, 1878.

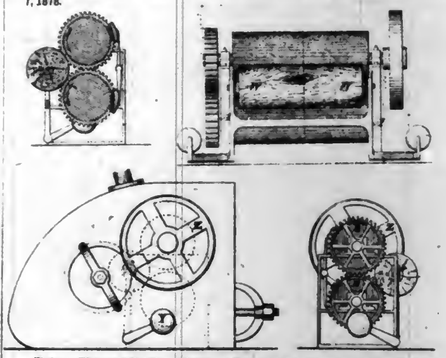


Claim.—1. A car-brake shoe consisting of a cast-metal frame, A, having one or more recesses extending through the same from back to face, in combination with insertible blocks B, adapted to the form of such recesses, and a removable back, C, substantially as described.

2. A rubber for car-brake shoes consisting of a cast-metal frame, A, in combination with one or more detached blocks, B, insertible from the rear, substantially as and for the purpose described.

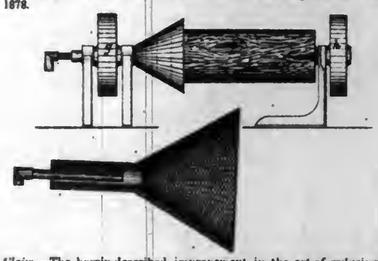
3. In a car-brake shoe, a back piece, C, adapted to be interposed between and to connect the rubber or sole to the holder or clog, and having a front face or seat conformed nearly or exactly to the curvature of the wheel, in combination with a rubber or sole removably attached thereto, substantially as and for the purposes set forth.

8,256. MANUFACTURE OF PAPER-PULP FROM WOOD. Harrison B. Meech, Chatham Village, N. Y., assignor to Benj. F. Brown. Patent No. 106,710, dated Aug. 23, 1870. Filed May 7, 1878.



Claim.—The combination of two rollers (each having a grinding-surface) mounted in a frame in such relation to each other as is described, and capable of operating to reduce wood to pulp, substantially as herein described.

8,257. MANUFACTURE OF PAPER-PULP FROM WOOD. Harrison B. Meech, Chatham Village, N. Y., assignor to Benj. F. Brown. Patent No. 106,710, dated Aug. 23, 1870. Filed May 7, 1878.

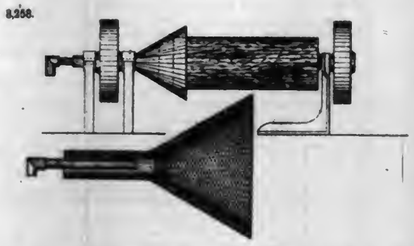


Claim.—The herein-described improvement in the art of reducing wood to pulp, which consists in subjecting the wood, substantially in the manner herein described, to the action of steam while the wood is being ground.

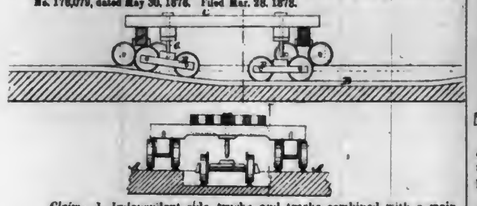
8,258. MANUFACTURE OF PAPER-PULP FROM WOOD. Harrison B. Meech, Chatham Village, N. Y., assignor to Benj. F. Brown. Patent No. 106,710, dated Aug. 23, 1870. Filed May 7, 1878.

Claim.—The herein-described improvement in the art of reducing wood to pulp, which consists in grinding the wood by a grinding-surface when the fibers thereof are presented to such surface in such manner as to have one of their ends protected by other fibers, and also in such manner that the asperities of the surface act upon the fibers in lines crosswise of their length, substantially as specified.

8,259.



8,256. CAR-TRUCK-SHIFTING APPARATUS. Robert H. Ramsey, Philadelphia, Pa. Patent No. 178,079, dated May 30, 1876. Filed Mar. 28, 1878.



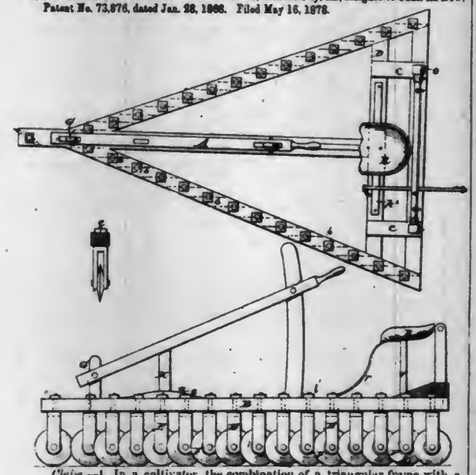
Claim.—1. Independent side trucks and tracks combined with a main track having two or more gages of track arranged upon a different grade from the side tracks, and having an incline at each end of the graded portion, for the purpose of shifting the trucks of a car, substantially as described.

2. Independent side trucks and tracks combined with a main track having two or more gages of track upon a different grade from the side tracks, with an incline at each end of the grade, and with removable cross-beams adapted to extend transversely from side track to side track and support the car-body, substantially as and for the purpose described.

3. Independent side trucks adapted to sustain the weight of a car-body, substantially as described, and combined with an intermediate main track and independent side tracks graded at each end with an incline from a plane in which the tracks are all upon a level to point where the side tracks and main track are upon different levels, substantially as and for the purpose described.

4. The combination, with a car, of a beam placed under each end thereof, and supported by independent side trucks that roll on tracks outside of and on a higher plane than the main track, substantially as and for the purpose described.

8,260. HARROW-CULTIVATORS. Elisha Crane, Elkhart City, Ill., assignor to Chas. La Dow. Patent No. 73,876, dated Jan. 28, 1868. Filed May 16, 1878.



Claim.—1. In a cultivator, the combination of a triangular frame with a leading cutting-disk at its apex and a series of following disks on each side thereof.

2. In a cultivator, the combination, with a frame, of opposing gangs of revolving disks, overlapping each other.

3. In a cultivator, the combination, with a frame, of gangs of revolving disks, said gangs being set at opposite angles to each other, and confined by said frame to the same horizontal plane.

4. In a cultivator, the combination of a frame and driver's seat with gangs of revolving disks, each gang being arranged at an opposite angle to the other on said frame, and the driver's weight enforcing a uniform cutting action on the disks of said gangs.

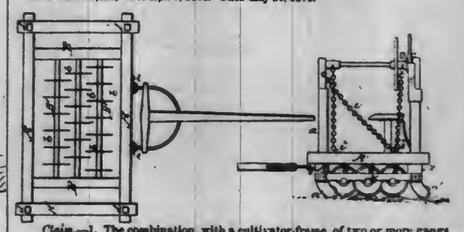
5. In a cultivator, the combination of a frame with gangs of vertically-rotating disks, each wheel having its cutting-edge adjustable relatively to the line of draft.

6. In combination with a cultivator-frame, two gangs of disks attached thereto, said gangs extending rearwardly and outwardly from the line of draft.

7. In combination with a cultivator-frame, a revolving cutting-disk having its axle supported at two points, its support being provided with a clamping device for holding said axle in the desired position relatively to the line of draft.

8. In a cultivator, the combination of two disk-gang bars, a central draft-bar, and a transverse brace-bar with a seat for the driver supported from three points by connections attached to the frame.

8,261. HARROW-CULTIVATORS. Elisha Crane, Elkhart City, Ill., assignor to Chas. La Dow. Patent No. 76,404, dated Apr. 7, 1868. Filed May 16, 1878.



Claim.—1. The combination, with a cultivator-frame, of two or more gangs of revolving disks, mounted on through-axles, said axles being supported relatively to the frame at more than one point, and said gangs being arranged to prevent longitudinal rocking of said frame.

2. The combination, in a cultivator, of disk-gangs, driver's seat, and frame with a pole pivoted to said frame, which pivotal connection allows the said pole to be raised or lowered without affecting the position of the driver's seat.

3. In a cultivator, the combination of disk-gangs with a truck-frame and main frame, said main frame being arranged to brace said truck-frame against transverse strain.

4. In a cultivator, the combination, with a truck-frame, of disk-gangs and axles passing through said gangs, each axle being secured to the truck-frame and said truck-frame attached to the main frame at more than one point.

5. In a cultivator, the combination, with a frame, of disk-gangs mounted on through axles, and each axle arranged transversely to the line of draft and at different distances longitudinally from the front of the machine.

6. In a cultivator, the combination of a frame and disks arranged in gangs on through-axles, so that a disk of one gang will overlap a disk of another.

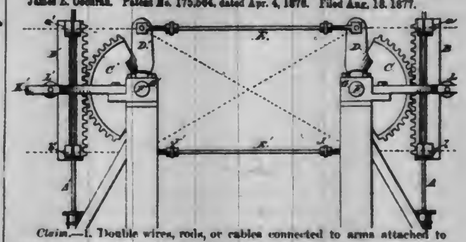
7. In a cultivator, the combination of two or more gangs of revolving cutting-disks, each gang turning with its axle and each axle journaled at two points to a truck-frame, said truck-frame being connected to said main frame at more than one point.

8. In a cultivator, the combination of a frame with revolving cutting-disks arranged in gangs on through-axles, each axle being attached to said frame by bearings which confine the gangs to a uniform horizontal plane.

9. In a cultivator, the combination of a main frame and truck-frame with gangs of revolving disks mounted on through-axles, the axle of each gang being secured to the truck-frame at two points, and the truck-frame being attached at two or more points to the main frame, whereby the said gangs are braced against vertical and transverse strain.

10. In a cultivator, the combination of an axle having a square or equivalent shape in cross-section with a series of cutting-disks correspondingly perforated, so as to turn therewith.

8,262. MACHINERY FOR OPERATING PUMPS. Robert W. Pinn and Annie Hull, Pagnados, Pa., administrators of John W. Hull, deceased; said Hull assignor of one-half interest to James E. Cochran. Patent No. 175,564, dated Apr. 4, 1876. Filed Aug. 18, 1877.



Claim.—1. Double wires, rods, or cables connected to arms attached to segment-gears meshing with racks having an alternate reciprocating motion, for the purpose of operating two or more pumps by one motive power.

2. In an arrangement for operating several pumps from one motive power by means of segment-gears acting upon reciprocating racks attached to pump-rods, an adjustable clamp upon the piston-rod, substantially as shown and described.

3. A rack and pinion attached to a piston, connected by cords with another rack and pinion attached to another piston, by which the motion of the first piston is communicated to the other piston, substantially as shown and described, and for the purpose set forth.

4. The combination of the polished rods A and A', racks B and B', pinions C and C', clamps *a b* and *a' b'*, and cords or cables E and E', substantially as shown, and for the purpose specified.

8,263. SHOE-TIPS. Hugh White, Chicago, Ill., assignor, by mesne assignments, of two-thirds interest to C. H. Fargo & Co. Patent No. 169,991, dated Feb. 16, 1875. Filed Feb. 1, 1876.

Brief.—The tip is formed from a prolongation of the sole, which is turned up over the toe portion of the upper, and quilted to the upper by stitches.

Claim.—1. The leather blank having tip, forming prolongations *a* and wings *b* in one piece therewith, substantially as and for the purpose specified.

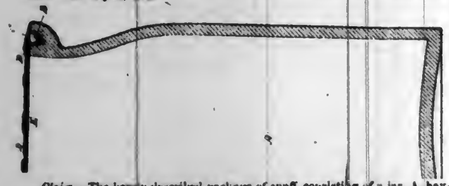
2. A sole-leather tip or toe-protector, substantially as described, having its thickest portion at the toe, and made thin at its edges to adapt it to be stitched to the upper, as shown and set forth.

3. A boot or shoe provided with a sole-leather tip or toe-protector, substantially as described, having its thickest portion at the toe and made thin at the edge, and adapted to be stitched at its margin to the upper-leather.

8,203.



8,204. SNUFF-PACKAGES. B. F. Weyman, Pittsburg, Pa. Patent No. 199,128, dated Jan. 8, 1878. Filed May 20, 1878.



Claim.—The herein-described package of snuff, consisting of a jar, A, having a groove, H, in its top, and a tin cup-shaped cover, C, in combination with the outer tin foil covering D, inclosing the flaring neck of the jar and covering inner cover C', and with the inner packing K, substantially as specified.

8,205. ROTARY CUTTERS. Charles H. Meller and M. L. Orum, Philadelphia, Pa. Patent No. 140,936, dated July 15, 1873. Filed Dec. 3, 1877.

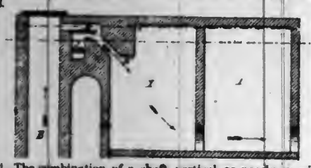
Brief.—The cutter is provided with side-cutting arms, extending outward from its stock or spindle, with a clear open space between them, and a central socket, which is adapted to receive either an end cutting bit or a guide-pin, one or the other of which is secured in said socket, according as the cutter is to be used for surface or edge work.



Claim.—1. A rotary cutter having side-cutting arms extended outward from the end of its spindle, with an intermediate clear, open space, and a central socket in the spindle suited to receive either an end-cutting bit or a guide-pin, so that the cutter may be operated either on surface or edge work, substantially as set forth.

2. The combination, in a rotary cutter, of a stock or spindle, side-cutting arms extended outward from the end thereof, with an open space between said arms beyond the end of the spindle, and an end-cutting bit or a guide-pin secured in a central socket in the end of the spindle, those members being combined for joint operation on surface-work, substantially as set forth.

8,206. ORE-ROASTING FURNACES. Chas. Stetefeldt, San Francisco, Cal., assignor, by mesne assignments, to Stetefeldt Furnace Company. Patent No. 72,931, dated Dec. 31, 1867; Reissue No. 3,807, dated Jan. 25, 1870; Reissue No. 6,165, dated Apr. 9, 1876. Filed May 23, 1878.



Claim.—1. The combination of a shaft, vertical, or nearly so, with a fire-place at or near the bottom, a flue leading from the upper part of the shaft, and an auxiliary fire-place for heating said flue.

2. An auxiliary fire-place connected with a flue or chamber, through which the dust passes, escaping from a roasting-furnace, for the purpose of roasting and chloridizing said dust.

3. A supplemental or auxiliary fire-place, J, combined with a furnace, B, fire-place C, dust flue D and H', and dust-chambers I I, said auxiliary fire-place being arranged to roast and chloridize the fine ore which is carried out of the furnace B after it has left the main furnace-chamber.

8,207. FIRE-ALARM SIGNAL-BOXES. Robert H. Tooker, Chicago, Ill. Patent No. 164,606, dated June 15, 1875. Filed Apr. 20, 1878.

Claim.—1. The combination, with a fire-alarm signal-box, of an alarm-bell or its equivalent, located at the box and sounded by mechanism which is set in motion by the operation of the device which allows the box to be opened, substantially as specified.

2. The combination, with the bell or gong, of the handle, the hammer I, and the intervening mechanism by which the motion of the handle is imparted to said hammer, substantially as specified.

3. The combination, with a fire-alarm box, of the handle, the shaft S, the arm U', and the curved catch *w*, substantially as specified.

4. The combination, with a fire-alarm box, of the arm U, the drum D, both being carried by the same shaft, the chain O, spiral spring P, (which is held at its under end,) catch *w*, upright spring P', provided with the shoulder *b*, and the lug *g*, substantially as specified, whereby the door is automatically latched.

5. The combination, with a fire-alarm signal-box, of the gong K, screw *f*, sleeve *j*, and aperture *n'*, substantially as specified.

6. The combination, with a fire-alarm signal-box, of a local alarm which is sounded by mechanism receiving motion from a spring wound up by the revolution of the handle in opening the door, substantially as set forth.

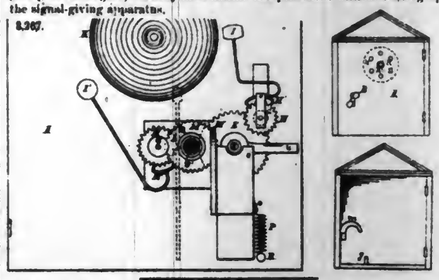
7. The combination, with a fire-alarm signal-box, of a local alarm which is sounded by mechanism receiving motion from a spring wound up by the revolution of the handle in opening the door, and released as soon as that revolution is completed, substantially as set forth.

8. The combination, with a fire-alarm signal-box, of a local alarm which is sounded by the opening of the door, substantially as specified.

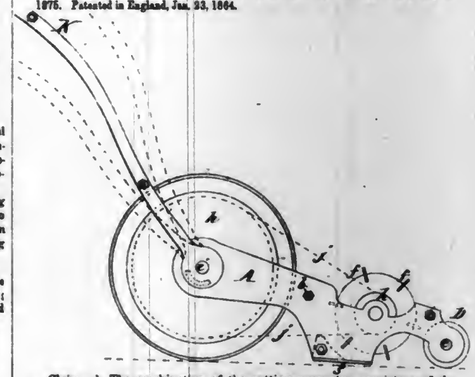
9. In combination with the local-alarm mechanism, a spring which is wound up by the handle operated by the person giving the fire-signal, and which expends its power in continuing the alarm after the handle has completed its movement.

10. The combination, with a fire-alarm signal-box, the signal-giving mechanism whereof is accessible to the public without keys, of a local alarm so attached thereto or connected therewith as to be necessarily sounded in giving the fire-signal, whereby false alarms are prevented without locking up the signal-giving apparatus.

8,267.



8,208. LAWN-MOWERS. John Shaw, Brooklyn, N. Y., assignor to the Hills Archimedian Lawn Mower Company, Hartford, Conn. Patent No. 83,101, dated Oct. 13, 1868. Filed May 26, 1875. Patented in England, Jan. 23, 1864.



Claim.—1. The combination of the cutting apparatus, consisting of the revolving helical cutters and the fixed cutting-blade, with a swinging or vibrating frame, substantially as described, whereby the cutting apparatus can adapt itself to follow the undulations of the ground, irrespective of the operator.

2. The combination, with the swinging or vibrating cutter-frame, having a cutting apparatus consisting of revolving helical cutters and a fixed cutting-blade, of the handles K and clamping devices, whereby the entire frame of the machine may be made rigid at will, substantially as described.

3. In combination with a swinging or vibrating frame having a cutting apparatus consisting of revolving helical cutters and a fixed cutting-blade, the handles K, hinged or journaled to the swinging frame A of the machine, so as to swing up and down, substantially as described.

4. In combination with a swinging or vibrating frame, A, having a cutting apparatus, consisting of revolving helical cutters and a fixed cutting-blade, the handles K, hinged or journaled to the swinging frame A, and adapted to be swung to the front or rear, substantially as described.

5. In combination with the swinging or vibrating frame A, having a cutting apparatus consisting of revolving helical cutters and a fixed cutting-blade, the hinged or pivoted handles K, and devices for adjusting and holding them in fixed position relatively to the frame A of the machine, substantially as described.

6. In combination with the frame A and handle K, with segmented slot in its shank, the thumb-nut *l*, for clamping the two in fixed position, substantially as described.

7. The combination, with the swinging or vibrating cutter-frame having a cutting apparatus consisting of revolving helical cutters and a fixed cutting-blade, of the independent front rolling supports in advance of the fixed blade of the cutting apparatus.

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DECISIONS OF THE COURTS.

U. S. Circuit Court—District of New Jersey.

THE KEROSENE LAMP HEATER COMPANY *vs.* AARON P. LITTELL.

[*In Equity.—Argued March* 28, 1877, *before* MCKENNAN, *Circuit Judge, and* NIXON, *District Judge.—Decision filed June* 28, 1878.]

The drawings being identical with those of the original patent, it is no violation of the reissue privilege to include in the new specification and claims what was fairly indicated by the drawings to be within the invention.

Thus, features of construction shown in combination and in a manner that would enable a skilled mechanic to practice the invention, although neither described nor claimed originally, may be set forth and protected upon reissue.

The doctrine in *Herring et al.* vs. *Nelson et al.* (12 OFFICIAL GAZETTE) approved. Separate claim may be laid in the reissue to sub-combinations of elements united originally in one general combination claim.

Reissue Letters Patent No. 7,069, granted the Kerosene Lamp Heater Company, assignee, April 18, 1876, for lamp-chimney, are valid, and are infringed by Letters Patent No. 156,149, granted October 20, 1874, to John A. Frey, for a coal-oil stove.

A claim cannot be sustained which, though in terms for a combination, seeks in fact to protect the convenient relative arrangement of an old device, having no coactive function with the other elements specified.

A. Pollok and *B. F. Lee*, for complainant; *W. W. Niles*, for defendant.]

NIXON, *District Judge:*

The bill of complaint in this case is for the infringement of certain reissued Letters Patent No. 7,069, granted to the complainant corporation on the 18th of April, 1876, praying for an injunction and an account. The original Patent No. 35,598 was issued to Warren L. Fish, June 17, 1862.

The defense is substantially embraced in three propositions:

1. That the reissue is void, not being for the same invention as the original patent.
2. That it has been anticipated by prior inventions.
3. That the defendant's stove is not an infringement.

(1) Is the reissue for the same or a different invention?

This question is answered by a comparison of the reissue with the original patent. It is the presumption of law that they are the same, and this presumption is only overthrown by finding elements or combinations in the one which do not substantially exist in the other.

The subject-matter of the patent is an apparatus for heating, in which the flame of the lamp is used as the heating agent. In the original the patentee calls his invention "a new and improved attachment to lamp-chimneys." He says that—

> It consists in the arrangement of a receiver in combination with the chimney of a kerosene or other flame, in such a manner that water or other liquid poured into such receiver can be heated by the action of the flame in any easy and convenient manner; and of a window in the lower part of the metal chimney, in such a manner that the flame can be observed from the outside, and that sufficient light is allowed to pass out into the room to render the device available for a nurse-lamp.

He claims as new—

1. A lamp-chimney provided with a receiver, substantially as and for the purpose shown and described.
2. The arrangement of the window in the bulb of the chimney, as and for the purpose set forth.

Two intermediate reissues were obtained, one dated December 23, 1862, and No. 1,368, and the other dated January 5, 1864, No. 1,596, which I will not stop to consider, as the comparison is to be made with the third reissue, dated April 18, 1876, and numbered 7,069.

In this reissue the claims are multiplied into four. The specification states that—

> The invention has for its object the utilization of the heat of the illuminating-flame of kerosene-oil lamps, and consists, first, in the combination, substantially as therein shown and described, of a kerosene-oil lamp, deflector or cone, and a metallic heating chamber or shell, adapted to support the vessel to be heated; second, in a kerosene-oil lamp heater, in which the deflector or cone of the lamp is arranged in the bottom of the metallic heating chamber or shell that is adapted to support the vessel to be heated; third, in the combination of a kerosene-oil lamp, a deflector or cone, and a metallic heating-chamber, under the arrangement substantially as shown and described, so that the air for the sustenance of the flame in the heater shall be admitted through the bottom of the heater, and the products of combustion shall pass off through a contracted opening in the top of the heater; fourth, in the combination of a kerosene-oil lamp, a metallic shell adapted to support a vessel to be heated, and a window made of transparent material in the walls of the shell, substantially as therein set forth.

The action of the Commissioner of Patents in granting the reissue under section 4916 of the Revised Statutes has conclusively settled the question that the original patent was inoperative or invalid by reason of a defective or insufficient specification, or by reason of the patentee claiming, as his own invention, more than he had a right to claim as new, and that the error arose by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention. (*Seymour* vs. *Osborne*, 11 Wall., 516.)

The reissue, nevertheless, must be for the same invention. It may change the phraseology, correct the specification, and, under some circumstances, increase the number of claims of the original patent, but no new matter may be added to the schedule or specifications, nor any new claim made, unless the same were substantially embraced, indicated, or suggested in the original description, claims, drawing, or model.

In the case before the court the drawings are identical in the original and in the reissue, and if it shall appear on examination that nothing has been embraced in the reissue beyond what is fairly indicated in the drawings, it must be held, as a matter of legal construction, that the inventions claimed in the two patents are the same.

In the description of the original patent the patentee clearly indicates a combination. The elements of the combination are (1) a receiver to hold the water to be heated; (2) a metallic lamp-chimney, of a peculiar construction, consisting of two parts—to wit: of a bulb and tube, fitting together and yet capable of separation, the tube being soldered to the receiver and removable with it from the bulb; (3) the flame of a kerosene or other lamp placed under the chimney in such a manner that the action of the flame will impart heat to the water. In addition to the foregoing—not in combination with it—is a window in the bulb of the chimney, so arranged that the flame is visible from the outside, and at the same time the window admits the light from the flame into the room.

In the reissue the invention is described as a combination, and is made the subject of four clauses of claims.

To this the counsel of the defendants objects, (1) because, as he alleges, the mechanism of the complainant's patent shows a mere aggregation of parts and not an original and useful invention; and (2) because the patentee has introduced new matters into the claims, as, for instance, the slotted deflector and cone, and changed the scope of the original patent by limiting the heating-flame to a kerosene-lamp.

(1) It is true that a patent for a combination cannot be maintained where nothing is done except to bring well-known devices into juxtaposition, each working its own effect, and the aggregate producing no new and useful result. (*Hailes* vs. *Van Wormer*, 20 Wall., 353.) Such a use of old elements involves no invention. But the complainant claims that the patentee has accomplished more than this; that a new and practical result has been attained by the coaction of the elementary parts of the combination, which was not reached by their separate action before the combination was made; and, in my judgment, the evidence sustains the claim.

(2) The second objection involves the consideration of the province of a reissue. It must be for the same invention; but, subject to this limitation, such changes may be introduced in the description, specifications, or claims, as may be deemed necessary to give validity to the invention and protect it against infringement. Whatever is fairly indicated, either in the schedules, drawing, or model of the original may be comprehended in the specifications and claims of a reissue without subjecting the patentee to the imputation of claiming more than he is entitled to. (*Jordon* vs. *Dobson*, 4 Fisher, 232; *Parham* vs. *The Buttonhole Company*, ibid, 468; *Aultman* vs. *Holley*, 11 Blatch., c. 317; *Herring* vs. *Nelson*, 12 OFFICIAL GAZETTE, 753.)

The identity of the invention set forth in the original patent and the reissue is a matter of legal construction, and is determined by a comparison of the two patents. (*Seymour* vs. *Osborne*, 11 Wall., 516; *Stevens* vs. *Pritchard*, 10 OFFICIAL GAZETTE, 505.)

Instituting this comparison in the present case, I find in the reissue some elements or constituents which did not appear in the specification or claims of the original patent; but I find nothing that was not substantially indicated by the original drawing. The same drawing was used in the reissue that had been filed with the papers on which the first patent was granted.

The testimony for the defense seemed to be based upon the idea that the test of identity was what the inventor intended to do rather than what he did.

But the question is not, What did the patentee intend, but What did he in fact invent? And sometimes the drawing which he filed more clearly discloses the invention than the specifications and claims, which are apt to partake more or less of the infirmity of human language.

Mr. Dodge, the expert of the defendant, acknowledges that the drawings in the original and in the reissue are identical, and says that a device or apparatus constructed by following the drawing in the two cases, would be identically the same.

Unless, therefore, something can be found in the claims of the reissue which discloses another and different invention, the reissue will be valid notwithstanding the changes, verbal or otherwise, that have been introduced into the specifications and claims to make them correspond with, and conform to, the real invention.

These claims are as follows:

1. The combination, substantially as herein shown and described, of a kerosene-oil lamp, a deflector or cone, and a metallic heating chamber or shell, adapted to support a vessel to be heated.
2. A kerosene-oil-lamp heater, in which the deflector or cone of the lamp is arranged in the bottom of a metallic heating chamber or shell that is adapted to support the vessel to be heated.
3. The combination of a kerosene-oil lamp, a deflector or cone, and a metallic heating-chamber, under the arrangement, substantially as herein shown and described, so that the air for the sustenance of the flame in the heater shall be admitted through the bottom of the heater, and the products of combustion shall pass off through a contracted opening in the top of the heater.
4. The combination of a kerosene-oil lamp, a metallic shell adapted to support a vessel to be heated, and a window made of transparent material in the walls of the shell, substantially as herein set forth.

These claims speak of a combination, the elements of which are a kerosene-oil lamp, a deflector or cone, and a metallic heating chamber or shell, arranged in reference to each other in the manner described in the specifications, and shown in the drawings. The elements are all found in the original drawing, which is expressly made a part of the specifications of the patent. (See p. 9, fol. 33.) A "kerosene lamp" is not mentioned by name, nor is a "slotted deflector or cone;" but the

flame of a kerosene or other lamp "passing through a slotted deflector or cone" is so clearly exhibited that a mechanic of ordinary skill, having the drawing, would make no mistake and have no difficulty in constructing the device or apparatus, more fully set forth in the specifications of the reissue.

I first had the impression that the reissue in this case came within the principle of the reissue in *Gill* vs. *Wells*, (22 Wall., 1,) which the Supreme Court declared invalid because one of the elements of the original combination was dropped in the reissue, and a full description of several other devices in lieu thereof (*inserted?*) without any allegation that they were equivalents of the one stricken out. Such a change was held to be the introduction of new matter, constituting a different invention, because it did not appear that the new devices were known at the date of the original invention as proper substitutes for the ingredient left out.

But it will be observed that the court did not say in that case, nor in view of their subsequent decision in the Corn-Planter patent, (23 Wall., 181,) do I think it ought to be said, that when the patent is originally taken out for a single combination, a reissue may not be had in which separate claims may not be made for subcombinations of a part of the elements joined in one in the original invention. This subject has been so ably discussed by the late Judge Johnson, of the second circuit, in the case of *Herring et al.* vs. *Nelson et al.*, (12 OFFICIAL GAZETTE, 753,) that it is only necessary to refer to his opinion, as containing not only a satisfactory exposition of the law of reissue in the case of patent for a combination, but also the grounds why the reissue in the case before the court should be deemed valid.

The remaining questions discussed at the hearing were, whether the invention was new, and whether the defendant's stove was an infringement.

It would serve no good purpose to take up *seriatim* the large number of exhibits introduced by the defendant to prove that the complainant's patent has been anticipated by other inventions. They are useful as illustrating the state of the art at the date of the Fish invention. Patents for nurse-lamps, portable furnaces, lamp-stoves, gas-stoves, chafing-dishes, vapor-stoves, and various other articles of household economy are brought forward, in nearly all of which something is doubtless found that bears a resemblance to some of the elements of the complainant's combination. They prove that the flame of a lamp has long been used for heating and cooking purposes; that lamp heaters and stoves are not new; and that the vessel to be heated is generally supported upon a cylinder or shell, below which is placed the lamp, whether of oil, alcohol, or kerosene that supplies the heat; but I nowhere find, except in the patent of the complainant, in combination (*a*) a kerosene-oil lamp, deflector or cone; (*b*) a metallic heating-chamber, adapted to support a vessel; (c) the arrangement whereby the air enters the heating-chamber only through the deflector: and (*d*) a contracted opening above the heating-chamber for the escape of the products of combustion.

Is the same combination found in the apparatus or mechanism manufactured or sold by the defendant?

He has exhibited the Letters Patent No. 156,149, dated October 20, 1874, under which he justifies, and the complainants have produced a stove called the "Summer Queen," which the defendant has sold. An examination of these quite clearly show a kerosene-lamp in combination with a metallic heating chamber or shell to support the vessel to be heated, with a deflector or cone in its bottom; and the bottom closed, except the slat in the cone through which alone the air enters the chamber; and a contracted opening above the heated chamber to produce a draft.

It is hardly necessary to add that such a combination influences the first, second, and third claims of the complainants' reissue.

I have spent no time on the fourth claim, because, in view of the state of the art at the time of the original patent there would seem to be no invention in placing a window in the walls of the metallic chamber, whether it was designed to give light in the room or for the inspection of the flame. The device is old, and it is the merest aggregation to link it with other elements in order to make it the subject of a separate claim.

Let a decree be entered against the defendant for infringing the first, second, and third claims of the complainants' patent, and for an injunction, and an account for profits and damages since the date of the last reissue.

U. S. Circuit Court—Northern District of New York.

CHARLES SCHUESSLER *vs.* CHARLES H. DAVIS.

[In Equity.]

The original patent being unnecessarily restricted, it was the object and the proper office of the reissue to correct this omission, so as to protect the patentee to the full extent of the invention.

It is the peculiarities of the case itself, and not of the method of fastening it to the strap, which is the valuable feature of the improvement—Reissue No. 7,129.

[*A. V. Briesen*, for complainant; *J. C. Hunt*, for defendant.]

[This suit was brought for infringement of reissued patent No. 7,129, originally granted to R. Meyer, for "improved buckle-fastenings," January 19, 1867, and assigned to complainant. The defendant claims to manufacture under patent originally granted him September 21, 1869, and reissued March 7, 1876, No. 6,974.]

OPINION.—*Filed May* 11, 1878.

WALLACE, *J.*:

The description, as well as the drawings and model accompanying the original patent, clearly point out the invention claimed in the reissue. The improvement consists in a compact device embodying a loop, bottom plate, and buckle to be attached to a strap by rivets or an equivalent fastening. In my view, the valuable feature of the improvement does not consist in the method by which the case is fastened to the strap, but in the case itself, as forming a loop and buckle combined, and its adaptability to being fastened by various methods to the strap. In the original patent the claim did not cover the combination of the buckle with the case, or, speaking more accurately, with the bottom plate of the shell of the case, but was limited to a combination of the pins or rivets with the case. It was the object and the proper office of the reissue to correct this omission so as to protect the patentee to the full extent of his invention.

It is urged that there is want of novelty in the arrangement by which the buckle is fastened upon the bottom plate of the shell. The evidence in support of

this theory is unsatisfactory, and cannot prevail against the testimony of dealers introduced by the complainant and against the presumption afforded by the complainant's patent.

I am not satisfied that the means described in complainant's patent for fastening the shell to the strap are an essential feature of his device, although evidently regarded as such by the patentee. If they are, there is reason to believe that the defendant has so far improved upon this feature in his device as to have made a patentable improvement instead of employing an equivalent.

In either case the complainant must rely upon the second claim for the purposes of this action.

As defendant has appropriated the combination covered by that claim, there will be a decree declaring that claim infringed, and for an injunction and accounting accordingly, with costs.

TRADE-MARKS.

[Each certificate bearing date June 4, 1878.]

6,164.—SILK RIBBONS.—*C. A. Auffm'ordt & Co.*, New York, N. Y. Application filed May 17, 1878.
"The figures of three kings."

6,165.—BOOTS AND SHOES MADE WHOLLY OR IN PART OF INDIA-RUBBER.—*Goodyear's Metallic Rubber Shoe Company*, Naugatuck, Conn. Application filed May 14, 1878.
"The fanciful word 'WALES.'"

6,166.—MEDICAL COMPOUND.—*Dr. Charles Rowell*, San Francisco, Cal. Application filed March 30, 1878.
"The words 'DR. ROWELL'S FIRE OF LIFE' and the autograph signature 'DR. CHAS. ROWELL.'"

6,167.—CATHARTIC PILLS.—*Dr. H. D. Whitbeck & Co.*, Auburn, N. Y. Application filed May 13, 1878.
"The letters 'H. D. W.,' arranged in the form of a monogram."

6,168.—STENCH-TRAPS.—*Ludwig Brandeis*, Brooklyn, N. Y. Application filed May 24, 1878.
"The word-symbol 'PARAGON.'"

6,169.—SHAKER FLANNELS.—*Damon & Almy*, Westvale, Mass. Application filed May 23, 1878.
"The full figure of a Shakeress."

6,170.—CHEESE.—*George S. Hart*, New York, N. Y. Application filed May 24, 1878.
"The words 'YOUNG AMERICA.'"

6,171.—MATERIAL USED AS PAINT ON THE BOTTOM OF VESSELS.—*Nathan Seeley*, New York, N. Y. Application filed May 21, 1878.
"The word-symbol 'VERDI-MARINE.'"

6,172.—HARNESS-BLACKING.—*Isaac Coriell*, Baltimore, Md. Application filed May 15, 1878.
"The representation of a strap the ends of which are buckled together, and the strap forming a circle, and the representation of a star."

6,173.—SMOKING AND CHEWING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*G. W. Geil & Ax*, Baltimore, Md. Application filed May 21, 1878.
"The word-symbol 'AURAPHONE.'"

6,174.—BEVERAGES FROM LIME-FRUIT.—*Hamilton H. Howard*, Rochester, N. Y. Application filed May 10, 1878.
"The coats of arms upon the shield, with the crest and the word 'MONTSERRAT.'"

6,175.—DYE-STUFFS.—*Hamilton H. Howard*, Rochester, N. Y. Application filed May 10, 1878.
"The vignette as described and the word 'PEOPLE'S.'"

6,176.—STEEL PENS.—*Joseph Gillott & Sons*, Birmingham, England, and New York, N. Y. Application filed May 23, 1878.
"The number '1.'"

6,177.—STEEL PENS.—*Joseph Gillott & Sons*, Birmingham, England, and New York, N. Y. Application filed May 23, 1878.
"The number '294.'"

6,178.—STEEL PENS.—*Joseph Gillott & Sons*, Birmingham, England, and New York, N. Y. Application filed May 23, 1878.
"The number '390.'"

6,179.—STEEL PENS.—*Joseph Gillott & Sons*, Birmingham, England, and New York, N. Y. Application filed May 23, 1878.
"The number '659.'"

6,180.—STEEL PENS.—*Joseph Gillott & Sons*, Birmingham, England, and New York, N. Y. Application filed May 23, 1878.
"The number '393.'"

6,181.—STEEL PENS.—*Joseph Gillott & Sons*, Birmingham, England, and New York, N. Y. Application filed May 23, 1878.
"The number '808.'"

6,182.—LUBRICATING-GREASE.—*John H. MacDonald*, Stapleton, N. Y. Application filed April 27, 1878.
"The words 'THE HALDANE' and the symbol phenix figure."

6,183.—REFINED PETROLEUM.—*Henry W. Peabody & Co.*, Boston, Mass. Application filed May 13, 1878.
"The word-symbol 'AURORA.'"

6,184.—SMOKING-TOBACCO.—*Roulhac & Co.*, Durham, N. C. Application filed May 18, 1878.
"The word-symbol 'THE PRINCE OF DURHAM.'"

6,185.—LEAF-TOBACCO.—*Seidenberg & Co.*, Key West, Fla., and New York, N. Y. Application filed May 27, 1878.
"The arbitrary letters and character 'S. & Co.'"

6,186.—CIGARS AND CIGARETTES.—*Seidenberg & Co.*, Key West, Fla., and New York, N. Y. Application filed May 18, 1878.
"The arbitrary letters and character 'S. & Co.'"

DESIGNS.

[Each design bearing date June 4, 1878.]

10,705.—PIANO-STOOL LEGS.—*George W. Archer*, Rochester, N. Y. Application filed May 11, 1878. Term of patent 7 years.

10,706.—PRESSED-GLASS TABLE-SET.—*Andrew H. Baggs*, Bridgeport, Ohio. Application filed May 24, 1878. Term of patent 3½ years.

10,707.—WOODEN CIGAR-LIGHTER.—*Nathaniel Fuller* and *Joseph A. Brown*, Boston, Mass. Application filed March 21, 1878. Term of patent 7 years.

10,708.—CARPET.—*Edmund Pyne*, New York, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed April 24, 1878. Term of patent 3½ years.

10,709.—BOTTLES.—*Léon Geistodt*, Paris, France. Application filed April 26, 1878. Term of patent 3½ years.

10,710.—CARPET.—*John H. Bromley*, Philadelphia, Pa., assignor to *John Bromley & Sons*, of same place. Application filed April 29, 1878. Term of patent 3½ years.

10,711.—BADGE.—*Edward Williams*, New York, N. Y. Application filed May 22, 1878. Term of patent 3½ years.

10,712.—FONT OF PRINTING-TYPES.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed May 27, 1878. Term of patent 14 years.

10,713.—CARPETS.—*Cornelius Uster*, Amsterdam, N. Y., assignor to *Stephen Sandford*, same place. Application filed May 10, 1878. Term of patent 3½ years.

LABEL.

[Certificate bearing date June 4, 1878.]

1,563.—Title: "SYRUP GLYCEROLE OF FERROUS CHLORIDE."—*Geo. I. McKelway*, Philadelphia, Pa. Application filed May 27, 1878.

Narrative of the Polaris Expedition.

Authority having been given the Public Printer to print another edition of the above work, subscriptions will now be received by Mr. A. F. Childs, Chief Clerk, until August 1, 1878, at the following rates: If delivered at the Government Printing Office, $1.60. If sent by mail, $1.75.

BOUND VOLUMES FOR 1877.—The bound volumes of THE OFFICIAL GAZETTE for 1877 are now ready for distribution, and can be procured, in full law binding, for $8, and in half-calf for $7. The Annual Index for 1877 will not be ready for distribution, either to subscribers or purchasers of the bound volumes, before the 1st of May, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

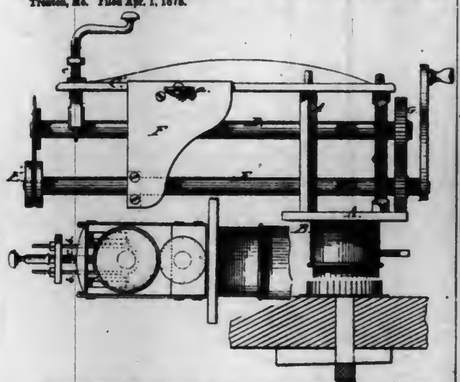
JUNE 4, 1878.

204,414. WOOD PAVEMENTS. Hugo Akerlaim, Chicago, Ill., assignor of one-half his right to Michael B. Bailey, same place. Filed July 14, 1877.



Claim.—The blocks A, treated with copperas and salt, as described, laid on a firm foundation, and embedded in a cement or mortar, substantially as specified.

204,415. MACHINES FOR CUTTING SHEET METAL. Howard B. Asher and Milton C. Asher, Trenton, Mo. Filed Apr. 1, 1878.



Claim.—In combination with the cutting device, the gage F, sliding on ways formed on the upper member of the frame of the machine, and supporting, in suitable journal bearings, the shaft E, as and for the purpose set forth.

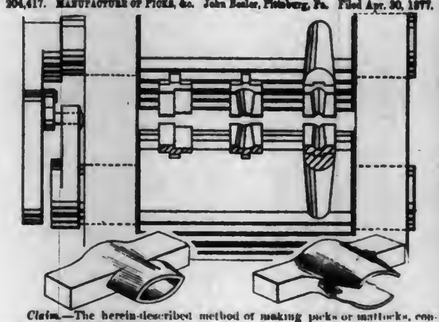
204,416. BIT-STOCKS. Quimby S. Backus, Holyoke, Mass. Filed Nov. 21, 1877.



Claim.—1. In a bit-brace or tool-holder, the spring tool-holding jaws having the two conical projections, one of which is provided with a screw-thread, for the purpose of producing an equal compression of the jaws throughout their length, as set forth.

2. In a bit-brace or tool-holder, the spring tool-holding jaws, which are semi-conical in form for a part or the whole of their length, and are provided with an exterior screw-thread, in combination with the internally screw-threaded sleeve, substantially as described.

204,417. MANUFACTURE OF PICKS, &c. John Bealer, Pittsburg, Pa. Filed Apr. 20, 1877.



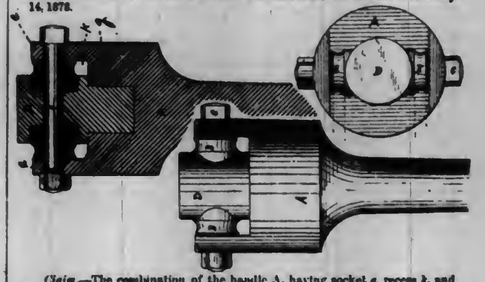
Claim.—The herein-described method of making picks or mattocks, consisting in first drawing out the metal from a rectangular blank over a mandrel to form the sides of the eye, then welding these sides together in another pair of dies, and finally drawing out the arms of the blank, all substantially as set forth.

204,418. CHURNS. George A. Blanchard, Concord, N. H. Filed Oct. 16, 1877.



Claim.—As a new article of manufacture, a rotating churn-dasher provided with pivoted floats, and with blades having convexed outer faces and inner faces, shaped substantially as shown and described, whereby the cream is permitted to pass freely over the blades without clogging, so as to make butter of uniform color and quality, all substantially as described.

204,419. RIVETING-MACHINES FOR TUBING. Wm. E. Brooks, Trenton, N. J. Filed May 14, 1878.



Claim.—The combination of the handle A, having socket *g*, recess *k*, and bearings *e*, with the recessed center pin D, rollers B B', and shaft C, as and for the purpose set forth.

204,420. STIRRUPS. Melancthon T. Berto, Portsmouth, Ohio. Filed Feb. 11, 1878.



Claim.—1. The sheaths A A, connected by the bar B, having the groove *b*, as described and set forth.

2. The stirrup D, sheaths A A, having holes *a a*, bar B, having groove *b*, and pin *c*, arranged and combined as described and set forth.

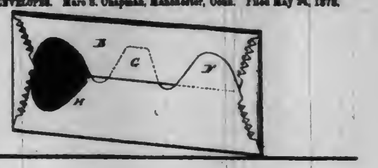
204,421. HAND-STAMPS. Edward D. Chamberlain, Westfield, N. J. Filed May 10, 1878.



Claim.—1. The stamp-case A, provided with projecting griping blades or spurs *a a'* for holding the pencil, substantially as set forth.

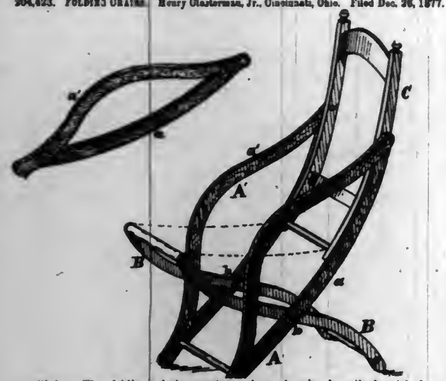
2. The casing A, provided with an inking-pad, P, in its upper inside surface, and end slots *c c*, in combination with the rotating die E and spring C, constructed as described, whereby the die is normally held away from contact with the inking-pad, substantially as and for the purpose set forth.

204,422. ENVELOPES. Mary S. Chapman, Manchester, Conn. Filed May 24, 1878.



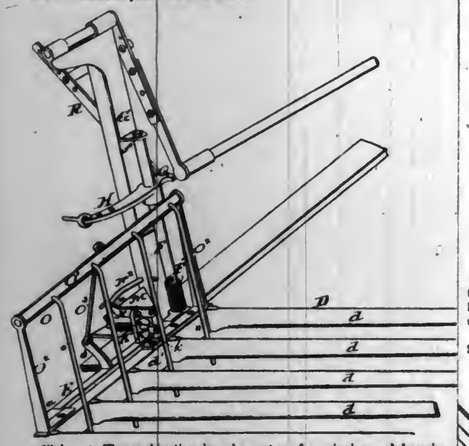
Claim.—An envelope having its upper and lower flaps provided with serrated or perforated ends, the former being coated with adhesive material on its inner side and externally at its outer corners, and the latter provided with auxiliary flaps gummed on their inner sides, the whole constructed and adapted to be closed in the manner and for the purpose specified.

204,423. FOLDING CHAIR. Henry Clasterman, Jr., Cincinnati, Ohio. Filed Dec. 26, 1877.



Claim.—The folding chair constructed, as herein described, with bow-shaped members A A', each consisting of a back-support, *a*, and an arm, *a'*, permanently connected together in one plane by flush joints at their ends, the rear legs B B, pivoted to the back-supports *a a* and braced laterally by the arms *a' a'*, the back C, applied between the members A A' and extending down to the level of the seat, and the front and rear seat bars, the former applied between the upper ends of the legs B B, and the latter extending through the lower extremities of the back C and through the back-supports *a a*, all substantially as specified.

204,424. HARVESTERS. Robert Cesarros, Belleville, Ill., assignor of one-half his right to D. W. Pratt, same place. Filed Feb. 9, 1878.



Claim.—1. The combination, in a harvester, of a swinging and dropping platform, D, a rake or sweep, O, and mechanism for causing said rake to operate upon the grain immediately after the platform has been tilted, substantially as and for the purpose set forth.

2. The combination of the cradle D and starter O, having the rock-shaft O' and the downwardly-projecting fingers *o o o*, substantially as described.

3. The combination of the cradle D, arm E, post F, arm K, post *k*, bearing L, and spring K', substantially as described.

4. The combination of the cradle D, arms E and K, posts F and *k*, bearing L, spring K', and stop M, substantially as described.

5. The combination of the cradle D, hinges *e e*, arms E and K, bearing L, post *k*, and spring K', substantially as described.

6. The combination of the cradle D, post *k*, latch N, catch N', arm K, stop M, and arm E, substantially as described.

7. The combination of the cradle D, arm E, projection *e'*, shaft O', bearings O' O', and rod O', substantially as described.

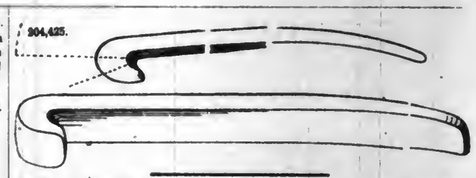
8. The combination of the cam Q, lever R, dividing-rod P, lock S, post G, and stud *s'*, substantially as described.

9. The combination of the lock S, lever R, rod R', dividing-rod P, post G, and stud *s'*, substantially as described.

204,425. METALLIC TENT-PINS. Aaron S. Daggett, U. S. Army. Filed Feb. 18, 1878.

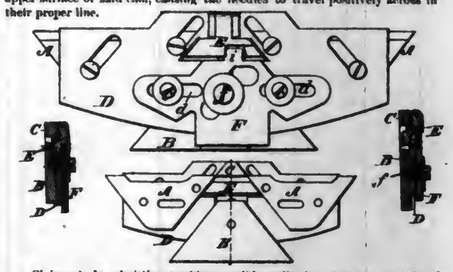
Claim.—The metallic tent-pin provided with a hook-shaped head and gradually-tapering shank curved in the lower portion, all substantially as and for the purpose described.

204,425.



204,426. KNITTING-MACHINE CAMS. Frodk. Dessler, Brooklyn, N. Y., assignor to Lamb Knitting Machine Manufacturing Company, Chicopee, Mass. Filed Mar. 11, 1878.

Brief.—To prevent the needles being thrown too high when the cam is depressed, a guide or stop is automatically brought into position over the upper surface of said cam, causing the needles to travel positively across in their proper line.



Claim.—1. In a knitting-machine, a solid needle-elevating cam capable of a vertical adjustment, and arranged, substantially as described, so that the needles always pass over its top, in combination with an adjustable stop or guide, to limit the ascent of the needles and compel them to follow across the top of the cam when it is in its depressed position, substantially as described and shown.

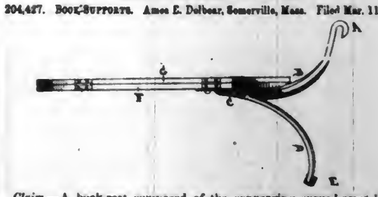
2. In combination with a needle-elevating cam capable of vertical adjustment, a stop or guide to limit the ascent of the needles connected with the cam, substantially as described, so that as the latter is depressed the stop is automatically brought into position above it.

3. The combination of the cams A B, stop C, and adjustable stop E.

4. In combination with the adjustable cam B, the guide or stop E, adjustable forward and backward through the frame D.

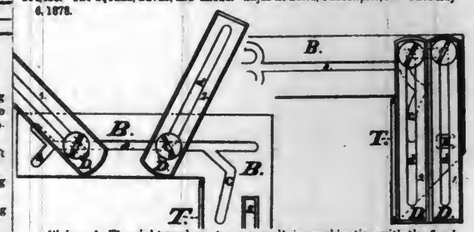
5. In combination with the cam B and guide or stop E, the plate F, arranged to adjust both the cam and the guide.

204,427. BOOK-SUPPORTS. Amos E. Delbear, Somerville, Mass. Filed Mar. 11, 1878.



Claim.—A book-rest composed of the converging curved arms B D, the former having hook A, and the latter the bar E, and the longitudinally-divided hinged sections G F, the latter secured to the bracket C, as herein described, and for the purpose specified.

204,428. TRY-SQUARE, BEVEL, AND MITER. Elijah H. Eaton, Philadelphia, Pa. Filed May 6, 1878.



Claim.—1. The right-angle or try square B, in combination with the fixed rib or shoulder T, when the same is formed from a single piece of sheet-steel by folding and lapping, as shown and described.

2. The slotted right-angle or try square B, having a shoulder, T, in combination with the adjustable slotted stocks D D, as shown and described, and for the purpose specified.

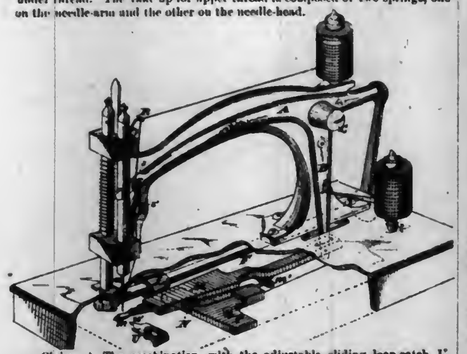
3. In a right-angle square, a central slot, *a*, in combination with two diverging slots, *b b*, at one end and two slots, *c c*, at the opposite end, and slotted stocks D D, as shown and described, and for the purpose specified.

4. The spring *s*, in combination with a movable slotted stock, D, as shown and described, and for the purpose specified.

5. A metallic stock constructed with projecting flanges, forming recesses for the head and nut of the adjusting-screws, in combination with a slot, *c*, for the blade B, and a slot, *d*, for the thumb-screw, as shown and described, and for the purpose specified.

204,429. SEWING-MACHINES. Frederick D. Elderfield, St. Louis, Mo. Filed Oct. 23, 1877.

Brief.—The needle-arm is pivoted at the rear of the machine, and has a part which descends through the bed-plate and reciprocates the under-needle bar, which is given a lateral motion by a tapering eccentric-cam on main rotating shaft. When a single thread is used, a loop-catch on the under side of the cloth-plate is moved forward to enter, during a part of its movement, a groove in the under needle to take the loop of thread therefrom. A pin in a stationary plate and a projection from under-needle bar form a take-up for under thread. The take-up for upper thread is composed of two springs, one on the needle-arm and the other on the needle-head.



Claim.—1. The combination, with the adjustable sliding loop-catch U, formed with the sharp point *u'*, of the under needle *u*, having the longitudinal groove *v* formed on its upper side body and made with open ends, substantially as set forth.

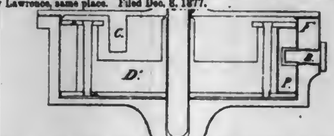
2. The combination, with spring-clamp S, formed longitudinally on lever A, of the curved upright spring-pressure piece *s'*, the latter being adapted to bear against the clamp, and thus bind the thread intermittently during both the upward and downward strokes of said needle-bar lever, substantially as set forth.

3. The spring-clamp S, formed in same piece with the longitudinal side body of the lever of the upper needle-bar, and provided with the upper right-angular projection *s*, in combination with the upright spring-pressure piece *s'*, the latter adapted to bear against said clamp and cause it to bind the thread intermittently during both the upward and downward movement of the needle, substantially as set forth.

4. The combination, with spring-clamp S, formed in single piece longitudinally on the side body of lever A, of, the spring-pressure piece *s'*, the latter curved in its vertical body, as shown, and adapted to bear intermittently against the same side of said clamp during both the upward and downward strokes of said lever, substantially as set forth.

5. The combination, with shaft F, provided with the tapering eccentric-cam L, of the under needle-bar M, together with mechanism for actuating the same, the longitudinal spring N, and the plate P, said plate and under-needle bar being formed, respectively, with the post *p* and hook *m'*, which are adapted to engage the thread of the under needle, substantially as set forth.

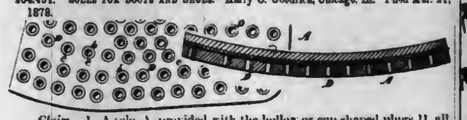
204,430. ROTARY ENGINES. Bernard Frese, Chicago, Ill., assignor of one-half his right to Henry Lawrence, same place. Filed Dec. 6, 1877.



Claim.—1. In a rotary engine, an abutment arranged between the disks of a rotating piston, and adapted to have lateral motion, as and for the purpose described.

2. The combination of a laterally-movable abutment, P, a rotating piston, D' D D, valves V, hinged to outer disks D D, a cam, C, and casing F *f*.

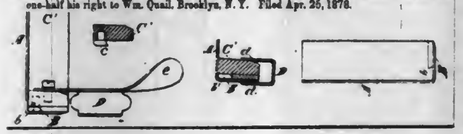
204,431. SOLES FOR BOOTS AND SHOES. Harry C. Goodrich, Chicago, Ill. Filed Mar. 21, 1878.



Claim.—1. A sole, A, provided with the hollow or cup-shaped plugs B, all constructed substantially as and for the purpose set forth.

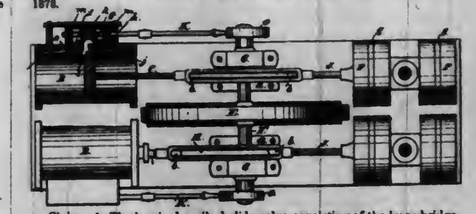
2. As an improved manufacture, a flexible leather and metal boot and shoe sole, having hollow plugs B distributed throughout the body, substantially as specified.

204,432. PRINTERS' COMPOSING-STICKS. Oliver F. Grover, Middletown, Conn., assignor of one-half his right to Wm. Quail, Brooklyn, N. Y. Filed Apr. 25, 1878.



Claim.—In a printer's composing-stick, the combination of the following elements: a shell, A, provided with a back, B, and end piece C, the back B provided with a longitudinal groove, *b*, to receive a stud, *c*, upon the forward end of the knee C', and a clamp, D, swiveled to the back of the knee C', and provided with a lip, *d*, and finger-rest *e*, constructed and operating substantially as and for the purposes set forth.

204,433. STEAM PUMPING-ENGINES. William O. Heister, Springfield, Ohio. Filed Apr. 27, 1878.

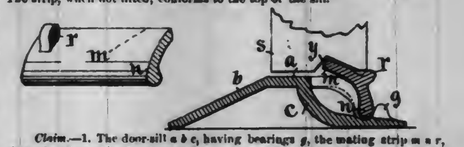


Claim.—1. The herein-described slide-valve, consisting of the loose bridge *k* and adjustable slides *m*, in combination with the induction and eduction ports, whereby the steam can be cut off automatically at any desired part of the stroke, and whereby the expansive force of the steam may be retained until the completion of the stroke, substantially as specified.

2. The herein-described pumping-cylinder, consisting of the central cylinder M, recessed heads P, valve-disks S, with their seats of valves *t t'*, the upper seated on the inner and the lower on the outer faces of the disks S, recesses R, and chambers N N', the whole constructed and arranged in the manner and for the purpose specified.

204,434. DOOR-SILL AND WEATHER-STRIP. Eli Handley, Perry, and Thomas G. Orwig, Des Moines, Iowa. Filed July 23, 1877.

Brief.—A metallic sill-piece has bearings, upon which rests a bowed metallic hinged strip. The latter has a projection, which catches against the edge of the door, and lifts the strip into a recess in the lower edge of the door. The strip, when not lifted, conforms to the top of the sill.



Claim.—1. The door-sill *a b c*, having bearings *g*, the mating strip *m n r*, formed and combined substantially as shown and described, to operate in the manner and for the purposes specified.

2. As an improved article of manufacture, a combined door-sill and weather-strip, composed of the parts *a b c g* and *m n r*, substantially as and for the purposes set forth.

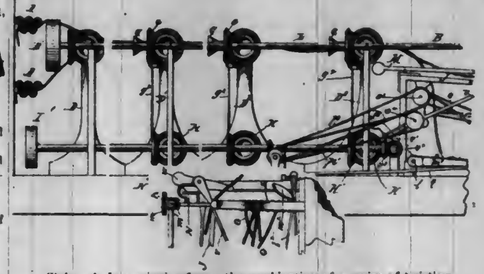
204,435. VEHICLE-AXLES. George W. Henderson, Unity, Wis. Filed Apr. 17, 1878.



Claim.—The combination, with the axle A, of the axle-arms or skeins A' A', having the bolster-supports *a a* formed thereon, said supports being flared circumferentially and toward the axle A, and fastened in position with the axle-arms upon the axle and to the bolster by the clips *c*, and plates and nuts *c'*, said plates extending through grooves *b b* in the lower side of the axle-arms, substantially as shown and described, for the purpose specified.

204,436. SPINNING-FRAMES. Wm. D. Isett, Spruce Creek, Pa. Filed July 21, 1877.

Brief.—The sets of drawing-rolls are arranged at increasing distances apart as they recede from the rub-rolls for the purpose of imparting an increase of twist. There is also improved mechanism for raising and lowering the spindle-rail, improved belt-shipping medium for the spindle-driving drums, and tension-controlling apparatus for properly laying the yarn upon the spindles.



Claim.—1. In a spinning-frame, the combination of a series of twisting-belts with two or more pairs or sets of rollers, E E, arranged each successive pair or set a greater distance from the other as they recede from the sub-rolls A A, substantially as and for the purpose set forth.

2. The spindle-rail *i* and feathered spindles K K, having whirls *h n*, in combination with the belts *o n*, drum *o'*, pulley *o''*, belt *p*, and drums *q q*, sub-

stantially as and for the purpose set forth.

3. The spindle-rail *i* and feathered spindles K K, having whirls *n n*, in combination with the belts *o o*, drums o^1 o^2, pulleys o^3 o^4, belts *p* p^1, drums *q* q^1, and shipper *t*, substantially as and for the purpose set forth.

4. In combination with the spindle-rail *i*, the axis or shaft *l*, having arms l^1 l^2 and bar l^3, and upright worm or screw L, gearing with the driving-shaft, substantially as and for the purpose set forth.

5. The spindle-rail *i* and spindles K K, having whirls *n n*, belts *o o*, drums o^1 o^2, pulleys o^3 o^4, belts *p* p^1, shaft *l*, having arms l^1 l^2 and bar l^3, and upright worm or screw L, in combination, substantially as and for the purpose set forth.

6. The feathered and shouldered spindle K, having a whirl, *n*, in combination with frame J, provided with the rail *i* and bars k k^1 k^2, shaft *l*, having arms l^1 l^2, pitman l^3, and screw or worm L, substantially as and for the purpose set forth.

7. The combination, with the faller N and slotted pitman *o*, of the gear-wheel o^2, the axis of which is provided with a crank or its equivalent, having an arm or projection entering the slot of said pitman, substantially as and for the purpose described.

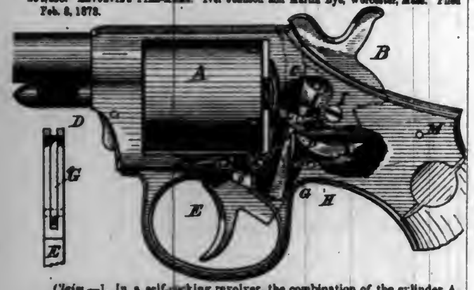
8. In combination with the faller N and slotted pitman *o*, the slotted crank o^2, having an arm, o^4, adjustably connected to said crank by a headed and nutted bolt, o^5, and provided with a projection entering the slot of said pitman, substantially as set forth.

204,437. PROCESSES OF MANUFACTURING WATER-GAS. Erasm J. Jermanowski, New York, N. Y. Filed Mar. 30, 1878.

Claim.—1. In the manufacture of water-gas, the method of preventing explosion in the generator with elimination of the remaining injurious products of combustion, which consists in alternately admitting steam and air to the generator, charged as described, and freely passing off the products of combustion arising from the admission of the air till the pressure within the generator is reduced to atmospheric pressure, and also freely passing off the gas arising from the admission of the steam till the pressure within the generator is reduced to the pressure of the atmosphere, substantially as described.

2. In the manufacture of water-gas, the method of preventing explosion in the generator with elimination of the remaining injurious products of combustion, which consists in alternately admitting steam and air to the generator, charged as described, and allowing the purge-valve to remain open until the pressure within the generator is reduced to that of the atmosphere, when steam is admitted, driving out before it the products of combustion of the air through the purge-valve, which is left open until nothing but water-gas exists in the generator, when it is closed, and subsequently opened before the second admission of air.

204,438. REVOLVING FIRE-ARMS. Ivor Johnson and Martin Bye, Worcester, Mass. Filed Feb. 8, 1878.



Claim.—1. In a self-cocking revolver, the combination of the cylinder A, the stop-lever F, the lever G, the tumbler B, having a half-cock notch, *b*, and the tilting catch lever H, substantially as set forth.

2. The combination of the cylinder A, lever F, and lever G, pivoted on the trigger E, and operated by hammer B, substantially as and for the purposes described.

3. In a self-cocking revolver, the combination of a self-firing mechanism, consisting of the trigger-lever D, acting on the stirrup C, pivoted to the hammer B, and an equal-motioned full-cocking mechanism, consisting of the tilting lever H, holding by the full cock notch *d*, and released by the rear of the trigger E, so that the hammer will be released at or about the same point, whether cocked by hand or automatically by a pull on the trigger, as set forth.

4. In a revolver, the combination of the cam-lever G, operated by the hammer B, and a cylinder stop mechanism, substantially as and for the purposes set forth.

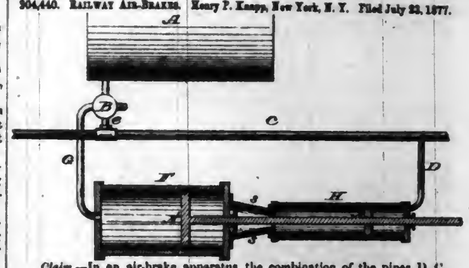
204,439. CHISELS. Wm. King, London, England, assignor to Henry Hall, same place. Filed Apr. 3, 1878.

Brief.—The tool is provided with a center cutter, which is removable for cutting a single tenon, and firmly secured in position between the side cutters when a double tenon is to be cut.



Claim.—The combination, in tools for cutting tenons, of three cutters adjustable to the size and nature of the work, and shaped, all substantially as described, and for the purposes set forth.

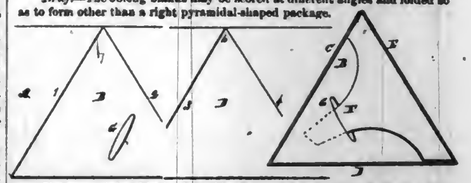
204,440. RAILWAY AIR-BRAKES. Henry P. Knapp, New York, N. Y. Filed July 23, 1877.



Claim.—In an air-brake apparatus, the combination of the pipes D, C, and G with the cylinders F H and reservoir A, arranged and operating as and for the purpose described.

204,441. PACKAGES FOR FRUIT, &c. E. L. Marshall, Cleveland, Ohio. Filed Apr. 8, 1878.

Brief.—The oblong blanks may be scored at different angles and folded so as to form other than a right pyramidal-shaped package.



Claim.—1. A box-blank of an oblong piece of material, with a tag at one end, and a slit or loop to receive the tag, and being cut or scored in lines which are at oblique angles with the parallel sides thereof and with each other, forming a zigzag line lengthwise of the blank, for the purpose set forth.

2. A box formed of a single piece of material, and having triangular sides A B C, triangular bottom D, triangular section E, overlapped on side A, tag F, attached to section E, and slot G in section B, substantially as and for the purpose set forth.

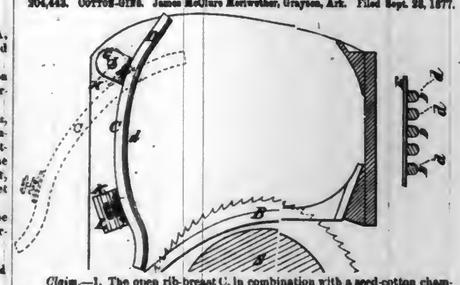
204,442. COTTON AND HAY PRESSES. Samuel T. McCanless, Cartersville, Ga. Filed May 15, 1878.



Claim.—1. The roller with the slit and reversible bar, as hereinbefore set forth.

2. The combination of the roller, bar, and eccentric flange-plates, substantially as and for the purpose hereinbefore set forth.

204,443. COTTON-GINS. James McClure Meriwether, Grayson, Ark. Filed Sept. 28, 1877.

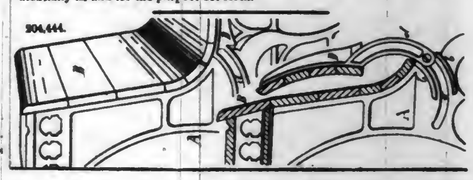


Claim.—1. The open rib-breast C, in combination with a seed-cotton chamber, substantially as and for the purpose set forth.

2. An open breast, C *c*, constructed with ribs D, having convex rear portions *d*, as and for the purpose set forth.

3. The open rib-breast C, forming the front of the seed-cotton chamber A, said chamber having a grated bottom, B, for the saws to work through, substantially as and for the purpose set forth.

204,444.



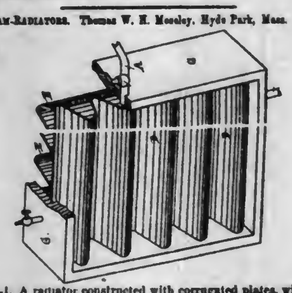
204,444. SCHOOL-DESKS. Henry Mare, Milwaukee, Wis. Filed Apr. 11, 1876.

Brief.—Improvement on patent to Thomas Gregg, No. 119,515, dated October 3, 1871.

Claim.—1. The standard A, having arc-shaped slot *a* and flanges *b*, in combination with the seat-bracket D, having bifurcated arc-shaped extension-arm *d*, and roller E, all of which constructed, arranged, and operating substantially in the manner set forth.

2. The standard A, having arc-shaped slot *a* and flanges *b*, in combination with the seat-bracket D, having arc-shaped extension-arm *d*, rubber-lined roller E, and rubber cushion *e*, all constructed and arranged to operate substantially as herein described and shown.

204,445. STEAM-RADIATORS. Thomas W. H. Moseley, Hyde Park, Mass. Filed May 10, 1878.



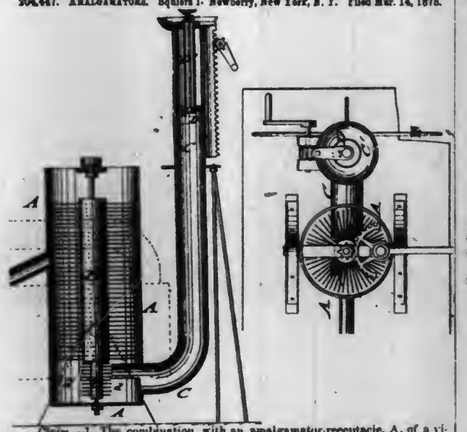
Claim.—1. A radiator constructed with corrugated plates, with the corrugations intersecting or crossing each other, as described, and an inclosing rim.

2. A radiator constructed, as herein described, with crossed corrugated plates D E, inclosed within a rim, G, cast on their edges.

204,446. WALL-PAPER. James S. Munroe, Lexington, assignor to Charles Fairchild, Boston, Mass. Filed June 19, 1877.

Claim.—The improved wall-paper described, consisting of mixed cotton and woolen rags dyed before pulping, and possessing the following distinctive characteristics, viz: first, increased thickness, to add to its strength, and permit its application to walls by abutting instead of overlapping its edges; second, ingrain instead of surface color, whereby it may be washed without marring or destroying its color; third, water-repellency, so as to prevent the passage of moisture through the wall; and, fourth, toughness, so as to yield and not break with cracking of the wall, substantially as specified.

204,447. AMALGAMATORS. Squiers I. Newberry, New York, N. Y. Filed Mar. 14, 1878.



Claim.—1. The combination, with an amalgamator-receptacle, A, of a vibratory agitator, B, having short arms *d* below the long ones, and a feed-tube, C, extending into the receptacle to the edge of said short arms, as and for the purpose described.

2. The combination, with receptacle A, agitator B, having short arms *d* below the long ones, and feed-tube C, extending into said receptacle to said short arms, of the close-fitting plunger D, having spring-valve, as and for the purpose set forth.

3. The combination, with receptacle A, agitator B, having short arms below the long ones, and a feed-tube, C, extending to said short arms, of the pinion on the upper end of agitator-shaft, and an arc-rack attached to an operating-arm, as and for the purpose specified.

204,448. HYDROCARBON-GAS LAMPS. William R. Park, Philadelphia, Pa. Filed Jan. 31, 1878.

Claim.—1. The reservoir A, having a central well-opening, A′, said opening extending from top to bottom of the reservoir, and forming a through passage for air admitted below said bottom, and a passage way, *c*, for the exit of the gas, leading from the upper part of said reservoir to a mixing-chamber or pipe located in said central opening, substantially as shown and described.

2. The combination of reservoir A with the concentric cylinders B C, having the space or passage *c* and inlet and outlets *a′* and *b*, respectively, substantially as shown and described.

3. The combination of reservoir A, hollow bridge F, combining-nut G, and mixing-chamber D, substantially as shown and described.

4. In combination with a reservoir, A, having central passage A′, extending all the way through said reservoir from top to bottom, the mixing-chamber or gas-pipe D, having gas-jet orifices d^2, for the purpose of playing upon the cylinder B, substantially as shown and set forth.

5. In combination with the reservoir A, having central passage A′ and mixing-chamber or gas-pipe D located therein, and formed with jet-openings d^2, the threaded adjustable disk H, substantially as shown and described.

204,449.



204,449. STEAM-GAGE SIPHONS. John A. Prindle, Cleveland, Ohio, assignor of one-half his right to Jas. B. Warwick, same place. Filed Apr. 15, 1878.



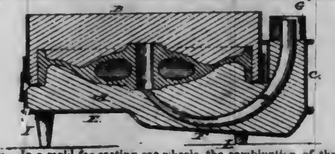
Claim.—1. A steam-gage siphon, consisting in the combination, with a condensing-chamber and steam induction-pipe terminating near its top, of a casing made independent of said pipe, and forming a passage-way from the same to the bottom of the chamber, substantially as set forth.

2. In a steam-gage siphon, the combination, with a condensing-chamber and upright steam-induction pipe terminating near its top, of a thimble or casing made independent of and fitting about said induction-pipe, the same forming an annular passage connecting the top of the induction-pipe with the bottom of the condensing-chamber, substantially as set forth.

3. In a steam-gage siphon, the combination, with a condensing-chamber, having a steam-induction pipe formed in same piece therewith, and terminating near its top, of a casing which wholly or partially surrounds the side of said pipe, and connects its open top with the bottom of the chamber, substantially as set forth.

4. In a steam-gage siphon, the combination, with a condensing-chamber, having an upright steam-induction pipe made in same piece therewith, and terminating near its top, of a thimble made independent both of said chamber and pipe, and fitting over the latter, substantially as set forth.

204,450. CASTING CAR-WHEELS. John Quinn, Omaha, Nebr. Filed May 8, 1878.



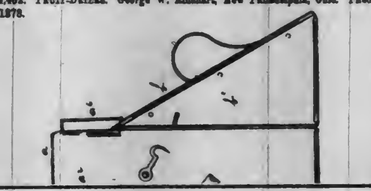
Claim.—In a mold for casting car-wheels, the combination of the part A, with attachment C, bottom plate E, with recess F, sprues D D, terminating at the bottom in the center of the mold, and the pouring-basin G, all constructed and arranged substantially as and for the purposes herein set forth.

204,451. CORN-HUSKING IMPLEMENTS. Edward F. Rate, Cedar Bluff, Iowa. Filed Feb. 16 1877.



Claim.—The within-described husking implement, consisting of the husking-pin A, adapted to be worn upon the outer fingers of the hand, and provided with the finger *b*, bent at an angle inward and extending beyond the index-finger, in combination with the cot or shield C, substantially as set forth.

204,452. FRUIT-DRIERS. George W. Rinehart, New Philadelphia, Ohio. Filed Apr. 24. 1878.



Claim.—The combination, with the casing *a*, having heat-apertures *a'*, of the extensible side or heat-concentrator *b*, having wings *b' b'* and apron *a'*, substantially as and for the purposes set forth.

204,453. HEARTHS FOR COOKING-STOVES. Carl Roehl, Peoria, Ill., assignor of three-fourths his right to R. A. Culter, David G. Proctor, and Adalbert E. Bronson, same place. Filed Apr. 16, 1878.

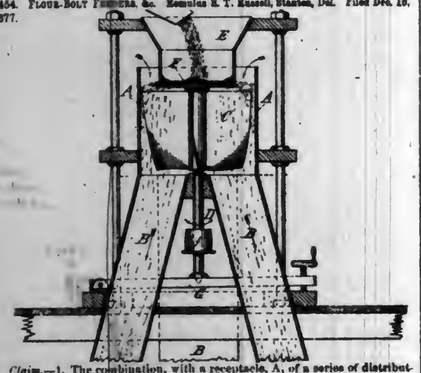


Claim.—1. In combination with the hearth A, having opening *a*, with flanges *b* and projections *c*, the hearth-plate D, having flange *d* and cavities *c'*, substantially as and for the purpose set forth.

2. The hearth-plate D, having rectangular stud F, with bead *f*, in combination with the hearth, having round and slotted hole G *g*, substantially as and for the purpose specified.

3. The hearth A, having opening *a*, with flanges *b* and projections *c*, and the round and slotted hole G *g*, in combination with the hearth-plate D, having flange *d*, cavities *c'*, and square or rectangular stud F, with head *f*, all constructed, arranged, and operating substantially in the manner set forth.

204,454. FLOUR-BOLT FRAMES, &c. Romulus S. T. Russell, Stanton, Del. Filed Dec. 18, 1877.



Claim.—1. The combination, with a receptacle, A, of a series of distributing-chutes, B B, having their sides so formed as to admit of their being arranged in a circle at the bottom of the chamber, so as to radiate therefrom and to meet on a sharp edge at their junction therewith, substantially in the manner described and set forth.

2. The combination of the receptacle A and distributing-chutes B B with a positively-driven draft-fan, C, revolving independently within the receptacle A and over the mouths of the chutes B B, substantially as described.

3. The combination of a fixed receptacle, A, and chutes B B with a rotary disk, F, arranged and operating substantially as described.

4. The combination of a receptacle, A, chutes B B, draft-fan C, and rotary disk D, operating in the manner and for the purpose specified.

5. The combination of the receptacle A, distributing-chutes B B, draft-fan C, shaft D, disk F, and hopper E, the whole arranged and operating in the manner set forth and described.

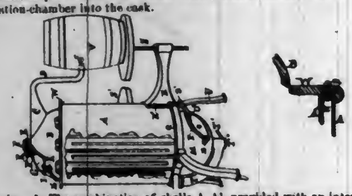
204,455. BOILER-COVERINGS. James B. Sanner and F. D. Sanner, Baltimore, Md. Filed Nov. 1, 1877.



Claim.—As a new article of manufacture, a heat-retaining brick provided with means for attachment to other similar bricks, whereby a united series of said bricks forms a self-sustaining covering for boilers, pipes, &c., substantially as specified.

204,456. MACHINES FOR PITCHING CASKS. Leonhard Schreiber, Cincinnati, Ohio. Filed Dec. 17, 1877.

Brief.—The furnace is made practically air-tight, and is adapted to allow an air-blast to pass between its outer shells, thence through the grate and combustion-chamber into the cask.



Claim.—1. The combination of shells A A', provided with an intervening air-space, inlet-tube L, exit-tube T, ash-pan M, a furnace, and tube D, arranged substantially as and for the purposes specified.

2. In combination with the cylindrical shell A, the band Q, provided at its exterior with dovetail grooves adapted to receive the upper extremities of the legs or feet U, for the purposes specified.

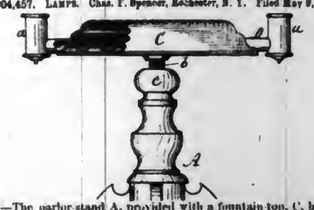
3. In combination with a close furnace and a blast apparatus, the ash-pan M and latch D D', substantially as and for the purposes specified.

4. The peculiar devices, consisting of flange W, with flange X, recess Y, and flange Z, for combining the shells A A' and the top B, substantially as specified.

5. In combination with the band Q, properly supported by legs or equivalent devices, the shell A and the inner shell A', provided with flange A^2, substantially as and for the purposes specified.

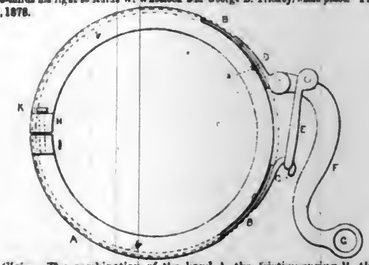
6. In combination with a blast apparatus and a close furnace, provided with top B E E, the door G, provided with knuckles F', having projections F, substantially as and for the purposes specified.

204,457. LAMPS. Chas. F. Spencer, Rochester, N. Y. Filed May 9, 1878.



Claim.—The parlor-stand A, provided with a fountain-top, C, having one or more pipes, D D, leading therefrom, with fixtures *a a* for the attachment of lamps, as herein shown and described.

204,458. DEVICES FOR HITCHING HORSES. Dexter Starkey, Lawrence, Mass., assignor of two-thirds his right to Rufus W. Wheelock and George B. Tricky, same place. Filed Jan. 19, 1878.



Claim.—The combination of the band A, the friction-spring H, the hook C, the hinge-joint D, the link E, the cam-lever F, the eye G, the clamp H and J, the bolt and screw K, the latch *a*, and ratchets *b*, in a manner substantially as described.

204,459. CORSETS. John C. Tallman, New York, N. Y., assignor to Lucien C. Warner, same place. Filed Oct. 10, 1877.



Claim.—1. The within-described compound fabric for corsets, &c., consisting of sheets or sections of fabric, each having the warp or weft only of stiff material, and arranged with the stiff fibers of one section at an angle to those of the other section, as set forth.

2. A corset formed in whole or in part of the within-described compound fabric, consisting of layers each with a warp or weft only of stiff material, arranged so that the stiff fibers of one layer are at an angle to those of the other layer, as set forth.

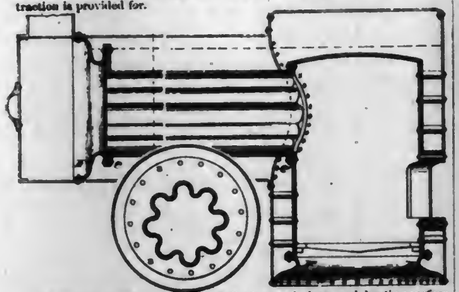
204,460. BOSOM-PADS. John C. Tallman, New York, N. Y., assignor to Lucien C. Warner, same place. Filed Oct. 10, 1877.



Claim.—As a new article of manufacture, a bosom-pad consisting of semi-globular pads B B, connected together and composed of two or more thick masses of open-woven material, having their respective warps and their respective wefts arranged to cross one another, and having the warps formed of a fiber which differs in flexibility and elasticity from the fiber of which the wefts are composed, substantially as specified.

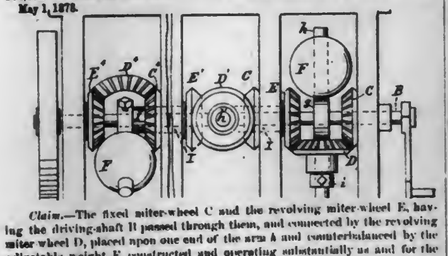
204,461. COMBINED CAST AND WROUGHT IRON BOILERS. Fuller Trump, Springfield, Ohio, assignor to J. W. Bookwalter, same place. Filed Nov. 26, 1877.

Brief.—A corrugated steel ring forms a flexible joint in the connection of a cast-iron body and a wrought-iron shell, by which the expansion and contraction is provided for.



Claim.—In a boiler having a shell of wrought-iron and heating-surface interior of cast-iron, a connecting-ring of malleable cast-iron or cast-steel, the flexibility of which absorbs the strain occasioned by taking up the slack of the shell in riveting, so as to relieve the cast-iron interior from such strain, and which also provides for differences of expansion between the wrought-iron shell and the cast-iron interior, substantially as specified.

204,462. MECHANICAL MOVEMENTS. A. W. Utterback, Rappahannock County, Va. Filed May 1, 1878.



Claim.—The fixed miter-wheel C and the revolving miter-wheel E, having the driving-shaft H passed through them, and connected by the revolving miter-wheel D, placed upon one end of the arm h and counterbalanced by the adjustable weight F, constructed and operating substantially as and for the purpose set forth.

204,463. SCREW-CAPS FOR BOTTLES, JARS, &c. A. Voegs, Brooklyn, N. Y. Filed May 4, 1878.

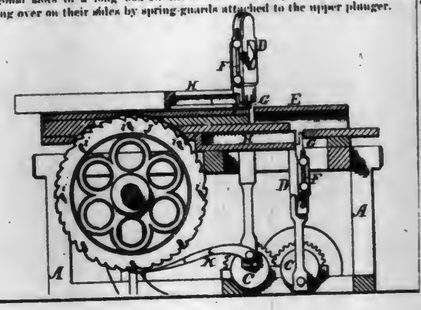


Claim.—1. The screw-cap A, with the inner surface of its upper portion convex or concavo-convex, in combination with the neck-band B, substantially as described.

2. The screw-cap A, with the inner surface of its upper portion convex or concavo-convex, in combination with the neck-band B and wire *a*, substantially as described.

204,464. MACHINES FOR MAKING FIRE-KINDLERS. John P. Wagner, Cleveland, Ohio. Filed Nov. 19, 1877.

Brief.—Common laths are cut the proper length by a saw provided with two small saws for notching the edges for fire-kindler blanks. The central strips or blanks are then forced into the notches in the other strips by means of upper and lower vertically and angularly reciprocating plungers. In putting the strips together, the strips, as fast as secured, are fed into transverse troughs in close proximity to the table, one of said troughs being made with a half-twist, for turning the strips half over to bring the notched edges uppermost before they arrive at the lower plunger, while being conveyed through diagonal slots in a long box on the table. The strips are prevented from falling over on their sides by spring-guards attached to the upper plunger.



Claim.—1. The plungers D D, arranged to operate reciprocally, in combination with the slotted box E, substantially as and for the purpose set forth.

2. The plungers D D, arranged to operate reciprocally, in combination with the slotted box E and the troughs H H I I, as and for the purpose specified.

3. The plungers D D, arranged to operate reciprocally, in combination with the slotted box E and the toothed wheel J, substantially as and for the purpose set forth.

4. In a machine for making fire-kindlers, the combination of the toothed wheel J, provided with pins *i i*, and the dog K, with the slotted box E, whereby an intermittent movement is given to the central pieces comprising the kindler, resulting in attaching the several pieces together at intervals, as shown, and for the purpose set forth.

5. The elastic cords and hooks M M N N, in combination with the troughs H H and I I, substantially as and for the purpose set forth.

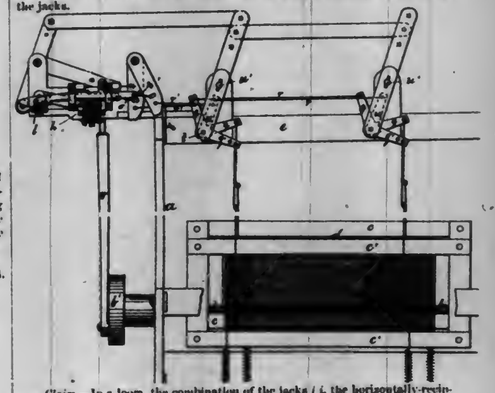
204,465. NEEDLE-WRAPPERS. Willis G. Waite, Burlington, Vt. Filed Nov. 28, 1877.



Claim.—The needle-wrapper A, having the projections *e* and *f*, through which the needle is stuck, so formed that the pointed extremity of the needle is protected between the divisions *y* and *z*, when the lower end of the division *z* is connected to the division *y* at the crease *a b*.

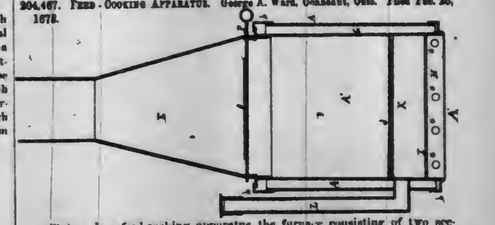
204,466. SHEDDING MECHANISMS FOR FANCY-LOOMS. Samuel Walker, Boston, Mass., assignor of one-half his right to George F. Hall, same place. Filed Feb. 8, 1878.

Brief.—The harness is moved from its middle to its lowest position by means of the reciprocating bell-crank levers, independently of the jacks, and is raised and lowered between the middle and the highest positions by means of the jacks.



Claim.—In a loom, the combination of the jacks *i i*, the horizontally-reciprocating bell-crank levers *q q'*, oscillating frames *u u*, and harness-frames *c c'* and their connecting-links, as set forth, by which the harnesses are lowered and raised by the jacks between the upper and middle planes of the warp-shed, and raised and lowered between the middle and lowest planes of the warp-shed, by the reciprocation of the bell-crank-levers *q q'* on their axes, independent of the jacks *i i*, substantially as set forth.

204,467. FEED-COOKING APPARATUS. George A. Ward, Canaseat, Ohio. Filed Feb. 26, 1878.



Claim.—In a feed-cooking apparatus, the furnace consisting of two sections, D E, provided with a grate and damper within said sections, and having a recess, H, below, and a shell, A, arranged in relation to section D as described, to form an annular water-circulating space, G, in combination with the draft-pipe I, and outlet-pipe, substantially as and for the purpose set forth.

204,468. SASH-PULLEYS. Benj. D. Washburn, Boston, Mass. Filed Oct. 1, 1877.

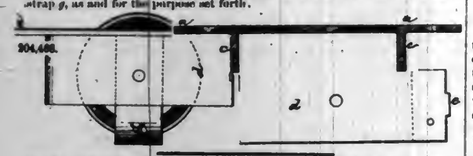
Brief.—A portion of the face-plate at each end of the slot is bent inwardly, forming right angular lugs or bearings, and the casing is formed of two pieces of wrought metal, struck out in dies, and secured to each other and to the lugs of the face-plate. There is also a separate strip of wrought metal, bent into loop shape, which serves as a band to control the cord and stiffen the sides of the pulley-case, giving better bearings for a shouldered axle, which holds the whole together.

Claim.—1. The stripe c c, cut and turned down from the face-plate to form a means of connection with the case *d*, substantially as and for the purpose set forth.

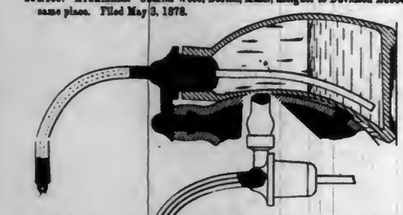
2. In a window-sash pulley, the combination, with the face-plate *a*, of the two wrought-metal pieces *d d*, secured to each other and to said face-plate, substantially in the manner shown and described.

3. The combination, with the pulley *p* and casing *d*, of the supporting-strap *g*, as and for the purpose set forth.

204,469.

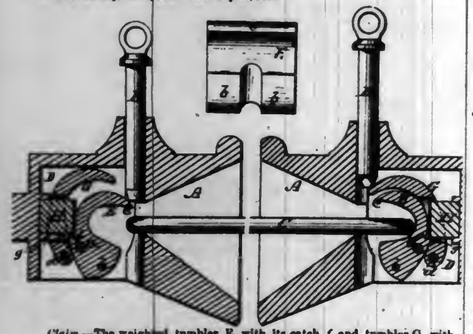


204,469. ATOMIZERS. Charles Wood, Boston, Mass., assignor to Davidson Rubber Company, same place. Filed May 3, 1878.



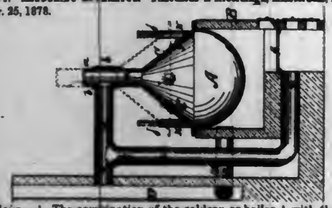
Claim.—In an atomizer, a blast pipe or tube combined with two or more liquid-discharges projecting beyond the end of the air-discharge or blast pipe, substantially as and for the purpose described.

204,470. CAR-COUPLINGS. Charles H. Wood, Seattle, Wash., assignor of one-half his right to W. H. Shrady, same place. Filed July 21, 1877.



Claim.—The weighted tumbler E, with its catch *f*, and tumbler G, with its catch *g*, arranged and operating substantially as described, in combination with the draw-head A, coupling-pin B, and coupling-link C, substantially as and for the purpose herein specified.

204,471. RENDERING APPARATUS. Timotheus I. Alberdingk, Amsterdam, Holland. Filed Apr. 25, 1878.



Claim.—1. The combination of the caldron or boiler A with the perforated cover C, placed directly over said boiler, and with the pipes *a d e*, leading from said cover into the furnace B, the pipe *d* leading also into the chimney D, substantially as herein shown and described.

2. The combination of the movable cover C with the boiler A, and with the guide-posts *j j*, on which said cover is placed, which cover is made so as to be wholly removable from said boiler in case of explosion, substantially as specified.

3. The combination of the movable cover and its projecting pipe *a*, which is closed at its upper end, with the guide-tube *b* on the smoke-pipe *d*, and with the boiler A, substantially as and for the purpose herein shown and described.

4. The method herein described of destroying combustible vapors or gases of evaporation by leading them, together with fresh air from the boiler, which is open for the admission of air, and within which the vapors are created, into the fire-box of a furnace, said fire-box being meanwhile deprived of all air-supply except that which it obtains by the pipe that supplies it with the vapors or gases, substantially as specified.

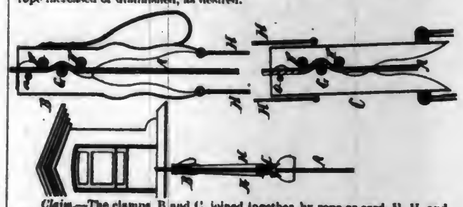
204,472. BOTTLE-STOPPERS. Albert Albertson, Jersey City, N. J. Filed May 30, 1878.



Claim.—As an improvement in the bottle-stopper described and shown in the Letters Patent issued to me August 29, 1876, No. 181,615, the herein-described combination of the conical or tapering flanged cap B, the hollow flanged stopper A, having the chamber *a* extending upward within and substantially concentric with the cap B, and the swinging link or loop C, the whole constructed and arranged substantially as and for the purpose herein set forth.

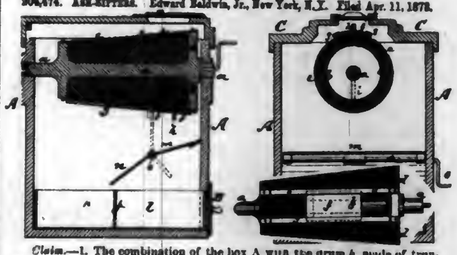
204,473. FIRE-ESCAPES. James Ames, Beaumont, Ontario, Canada. Filed Jan. 16, 1878.

Brief.—An upper and lower clamp consisting each of flanged sections pivoted together at upper ends, one section of each carrying two rollers, and the other one—the lower clamp having a supporting-stirrup to support a person, and the upper a handle, whereby it is controlled, and the friction upon the rope increased or diminished, as desired.



Claim.—The clamps B and C, joined together by rope or cord H H, and formed each in two flanged halves, pivoted together at the top, and provided with three friction-rollers, placed as shown, in combination with the rope A, substantially as and for the purpose set forth.

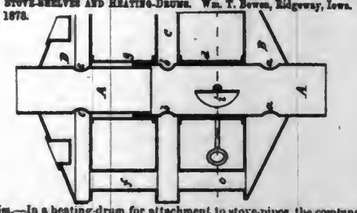
204,474. ASH-SIFTERS. Edward Baldwin, Jr., New York, N.Y. Filed Apr. 11, 1878.



Claim.—1. The combination of the box A with the drum *b*, made of truncated conical form, and provided with the sliding cover *f*, having pin *h*, substantially as specified.

2. The combination of the box A with the drum *b*, having the sliding cover *f* and pin *h*, and with the compartments *k* and *l* and hinged cover *m*, all being so arranged that by swinging the cover *m* upward the slide *f* may be opened, substantially as specified.

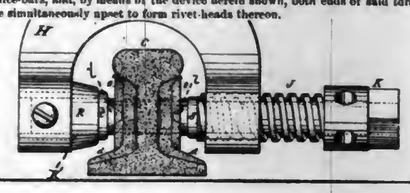
204,475. STOVE-SHELVES AND HEATING-DRUMS. Wm. T. Bowen, Ridgeway, Iowa. Filed Apr. 3, 1878.



Claim.—In a heating-drum for attachment to stove-pipes, the combination, with inverted hollow cones B D and the central dampered main pipe A, having holes *a b*, of the flat drum C, connected with cones by pipes *e f*, and supported by thimble *d*, as shown and described.

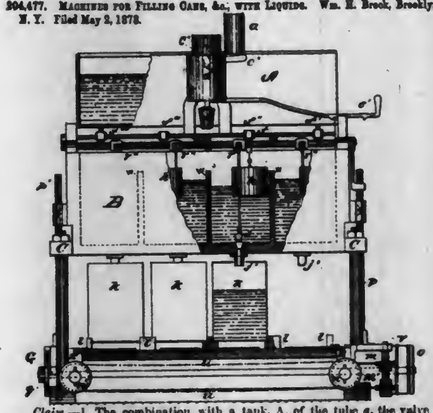
204,476. RIVETING DEVICES. Edward Bourne, Pittsburg, Pa. Filed Feb. 16, 1878.

Brief.—A section of tubing is put in a hole made through the rails and splice-bars, and, by means of the device herein shown, both ends of said tube are simultaneously upset to form rivet-heads thereon.



Claim.—As a mechanism for enlarging the ends of tubular rivets upon fish-bars, the U-shaped bar H, in combination with the conical-shaped mandrel *l*, with collar S, and secured in place by a connecting-rod within the hollow screw J, and also the mandrel *l'*, of conical form, the collar *t*, and suitable rod or shank thereof, secured in the hollow collar R, substantially as shown and described.

204,477. MACHINES FOR FILLING CANS, &c., WITH LIQUIDS. Wm. H. Brock, Brooklyn, N. Y. Filed May 2, 1878.



Claim.—1. The combination, with a tank, A, of the tube *a*, the valve *b*, the lever *c*, with its graduated scale and weight *d*, and of the rest *c'*, with the catch *c''*, for automatically weighing a body of liquid, substantially as and for the purposes herein set forth.

2. The combination, with a tank, B, divided into equal compartments by its partitions *w*, of the displacement-weights *h*, the supporting-frame *f*, the adjusting-screws *g* and *i*, the lifting-frame *e*, with its levers *r'* and *r''*, the substructure C, the beveled spools *j'*, the driving-pulley and shaft O, the cams *q q'* and followers *y y'*, the rods *p p'*, with the connecting-levers *p''* and *p'''*, for dividing a given weight of liquid automatically into the desired number of equal parts, substantially as and for the purposes as herein set forth.

3. The combination, with the carriage-frame D of the carriage-bed E, of the cans or other receiving-vessels *k*, of the levers *s* and *s'*, and driving-power O, by means of the lever-arms and lug, all constructed and arranged substantially as specified.

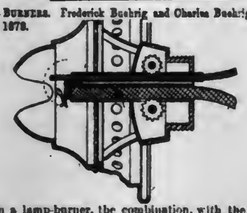
4. The combination, with the elevator-frame G, of the supports *l*, the guides *l'*, the cans or their equivalent *k*, the substructure C, the lifting-rods *p p'*, the cams *q q'* and followers *y y'*, and the driving-power O, substantially as herein shown and described.

5. The combination, with the carrier *u*, of the drums *n n'* and axles, the carriage-bed E, the cans *k*, or their equivalent, the belt *v*, the idlers *m m'* and their pivotal shaft, and driving-pulley O, substantially as and for the purposes herein set forth.

6. The combination, with the driving-power O, of the carriage-frame D, its bed E, the levers *s* and *s'*, with the propelling-arms and lug, the cans *k*, or other equivalent receiving-vessels, the carrier *u*, with its drums *n n'* and axles, the idlers *m m'*, and belt *v*, for placing the vessels to be filled and removing them after filling, substantially as herein shown and described.

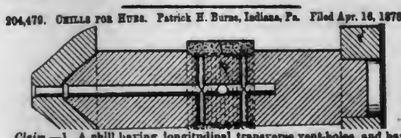
7. The combination, with a liquid-filling machine made as here shown and described, of the receiving-vessels *k*, driving-power O, tank A, with its tube *a*, valve *b*, lever *c*, weight *d*, rest *c'*, and catch *c''*, for the automatic weighing, division, and distribution of the liquid, substantially as and for the purpose herein set forth.

204,478. LAMP-BURNERS. Frederick Boehrig and Charles Boehrig, Fort Madison, Iowa. Filed Mar. 30, 1878.



Claim.—In a lamp-burner, the combination, with the main wick-tube, of a smaller auxiliary wick-tube and of a hinged extinguishing-cap, placed intermediately between the wick-tubes at the upper end of the same, substantially as specified.

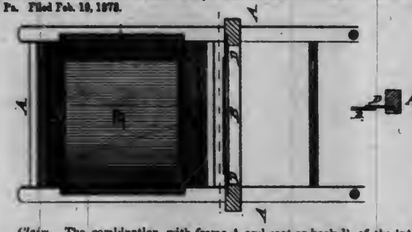
204,479. CHILLS FOR HUBS. Patrick H. Burns, Indiana, Pa. Filed Apr. 16, 1878.



Claim.—1. A chill having longitudinal transverse vent-holes, and having its middle portion reduced in diameter to receive an annular core, substantially as herein shown and described.

2. A chill for hubs whose middle portion B is circumferentially grooved to receive the core C, as and for the purpose specified.

204,480. CHAIR SEATS AND BACKS. Henry S. Case, Millerstown, (Barnhart's Mills P. O.) Pa. Filed Feb. 19, 1878.



Claim.—The combination, with frame A and seat or back B, of the intervening continuous elastic strip D, as and for the purpose specified.

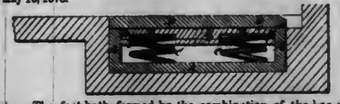
204,481. WIND-ENGINES. John W. Cleland, Nevada, Mo. Filed Mar. 12, 1878.



Claim.—1. In a windmill, the deflectors D, hinged to standards C, and connected near the outer edges by rods *b*, jointed at *c*, as and for the purpose described.

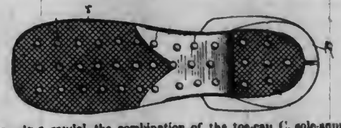
2. In a windmill, the curved vanes K, pivoted near their outer edges between disks I J, and connected by rods *b'*, to operate as and for the purpose set forth.

204,482. FOOT-BATHS FOR HORSES. Silas S. Crocker and Albert Wilcox, Clarence, Iowa. Filed May 10, 1878.



Claim.—The foot-bath formed by the combination of the box or tank A the perforated movable top B, the supporting-springs C, and the hinged top D with each other, substantially as herein shown and described.

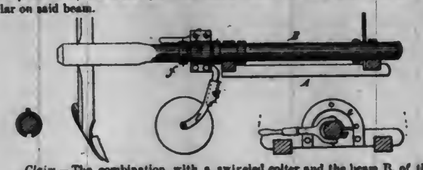
204,483. SANDALS. John G. Cunningham, Kentland, Ind. Filed May 4, 1878.



Claim.—In a sandal, the combination of the toe-cap C, sole-support D, heel B, provided with a securing-strap, E, and a perforated sole or bottom, A, all constructed and arranged substantially as shown and described.

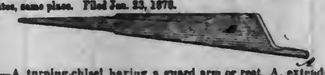
204,484. PLOW-COLTERS. Charles Daniel, Virginia, Mo. Filed Feb. 26, 1878.

Brief.—Colter journaled in swiveled support attached to revolving sleeve on plow-beam, said sleeve provided with latch adapted to engage notched collar on said beam.



Claim.—The combination, with a swiveled colter and the beam B, of the collar *f*, notched at opposite points, and the sleeve *h*, having pivoted latch *i*, as and for the purpose specified.

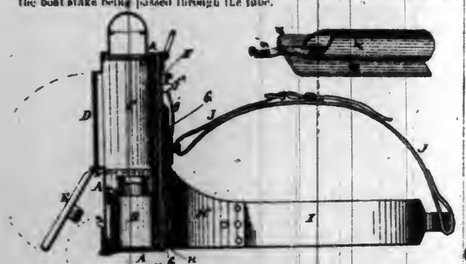
204,485. TURNING-CHISELS. Homer O. Emery, Union, Oreg., assignor of one-half his right to R. S. Oates, same place. Filed Jan. 23, 1878.



Claim.—A turning-chisel having a guard arm or rest, A, extending from the front point thereof, as and for the purpose set forth.

204,486. SPORTSMEN'S LANTERN. Albert Ferguson, Brooklyn, E. D., N. Y. Filed May 13, 1878.

Brief.—The bond H and straps are to fit around the bat. When used in a boat the tube K is substituted for the bond H, and the lantern supported by the boat stake being passed through the tube.



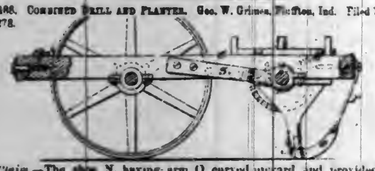
Claim.—The combination of the plate E, provided with the groove-flanges *f* and the catch *f'*, and the sliding plate G, provided with the latch *g'*, the curved plate H, and the straps I I J, with each other, and with the case A of a lantern, substantially as herein shown and described.

204,487. CHIN-ADJUSTER. Robert S. Ganong and Wm. H. Langdon, Seneca Falls, N. Y. Filed Mar. 1, 1878.



Claim.—In a chin adjuster, the combination of the ratchet-bar C, provided with a disk, E, and the slotted tube B, provided with a disk, E', and a spring-pawl, A, working in the slot of said tube, substantially as described, and for the purpose specified.

204,488. COMBINED DRILL AND PLANTER. Geo. W. Grimes, Fiatton, Ind. Filed Mar. 28, 1878.



Claim.—The shoe N, having arm O, curved upward and provided with hook-slot to receive rod P, as shown and described.

204,489. SPINNING-RING. Dan'l J. Harley, Oil City, Pa. Filed Apr. 11, 1877.

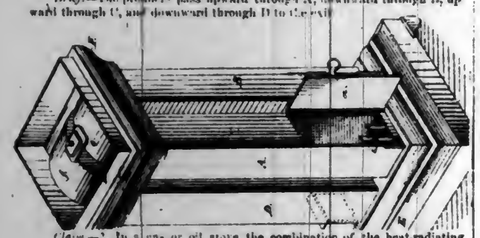
Brief.—The raceway is detachable, and is held in place on the main ring by a dovetailed elliptical groove, which fits over a correspondingly shaped shoulder on the upper edge of the main ring.



Claim.—In a spinning ring, the combination of the solid main ring A, formed with a projecting dovetail, *b*, and a detachable flat raceway provided with the elliptical dovetailed groove *c*, as shown and described.

204,490. GAS OR OIL STOVE. Edwin A. Jackson, New York, N. Y. Filed May 4, 1878.

Brief.—The products pass upward through A, downward through B, upward through C, and downward through D to the exit.



Claim.—1. In a gas or oil stove, the combination of the heat-radiating columns B, C, D, and A, the latter being provided with a door, *a*, the elbows *b*, *c*, and *f*, base-piece E, and lamp or burners *i*, substantially as and for the purposes specified.

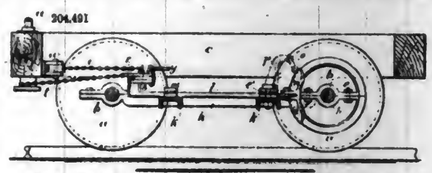
2. The combination of the heat-generating columns A, B, C, and D, connecting-elbows *b*, *c*, and *f*, base-piece E, cap F, lamp or burners *i*, the said column A being provided with a door, *a*, substantially as and for the purposes set forth.

204,491. CAR-BRAKE. Job Johnson, Brooklyn, N. Y. Filed Apr. 8, 1878.

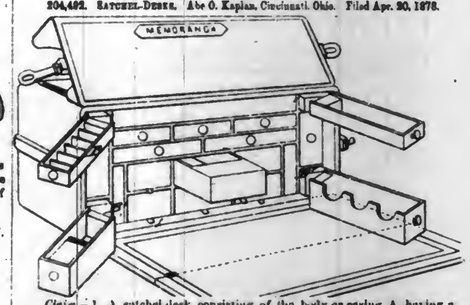
Claim.—1. The combination, with the brake-wheels, of the shoes *a*, the levers *l l'*, for holding and operating such brake-shoes, the toggle-bars *s*, and the frame *h h*, supported upon the axles *b*, substantially as set forth.

2. The levers *l l'*, arranged in duplicate pairs, and provided with the brake-shoes and toggle-bars *s*, in combination with the chains *t v*, pulleys *u*, and connecting-rods *y*, substantially as set forth.

204,491



204,492. SATCHEL-DESK. Abe O. Kaplan, Cincinnati, Ohio. Filed Apr. 20, 1878.

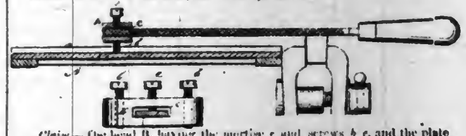


Claim.—1. A satchel-desk consisting of the body or casing A, having a series of compartments or divisions forming an open front, the folding desk or table D, hinged to the bottom of said open front, and the closing and locking lid E, hinged to the top thereof, substantially as and for the purpose set forth.

2. In a satchel-desk, the combination, with the subdivided body or casing, of sliding blocks with hinged and outwardly swinging corner drawers, substantially as described.

3. The combination, in a satchel-desk, of the subdivided body or casing, having a hinged and folding desk portion, with a hinged and closing lid, having an exterior handle and slide and end locking devices, substantially as specified.

204,493. APPLIANCES FOR FLAT FILING. Ephraim M. Kimball, Toledo, Ohio, assignor to himself and Dyas F. Foster, same place. Filed Apr. 15, 1878.



Claim.—The bead B, having the mortise *c* and screws *b c*, and the plate A, in combination, substantially as and for the purpose specified.

204,494. THILL-COUPLING. John J. D. Kingsbury, East Bloomfield, N. Y. Filed Nov. 19, 1877.



Claim.—The thill coupling having slots in both the jaws, the slot in one jaw being in a different position from that in the other, in combination with the shaft iron and the pin having a key or feather at one side, substantially as set forth, whereby the pin can be inserted when the shafts are either elevated or depressed, as set forth.

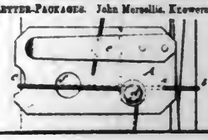
204,495. BRAID-HOLDER. John C. Lyon, New York, N. Y., assignor of one-half his right to D. S. Brown, same place. Filed Mar. 28, 1878.

Brief.—The wire clip or clasp is bent into coils on each side of the braid-roll, and its free ends are secured to an axle which is independent of the spool on which the braid is wound.



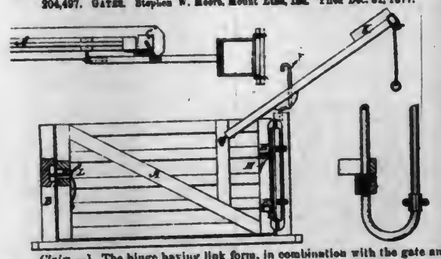
Claim.—In combination with the spool A, the wire-spring holder D, when formed into two circles, to serve as guards on each side of the tape B, and having the ends *d d'* fastened to a separate axle, C, substantially as and for the purpose set forth.

204,496. TIES FOR LETTER-PACKAGES. John Marcellis, Knowersville, N. Y. Filed Apr. 17, 1878.



Claim.—As a new article of manufacture, the tie for letter-packages herein described, consisting of the plate A, having the opening *a*, notch *c*, button *d*, and spring-clasp *e*, all constructed and arranged as herein described, to operate, in connection with a tying-string, in the manner set forth.

204,497. GATE. Stephen W. Moore, Mount Etna, Ind. Filed Dec. 31, 1877.



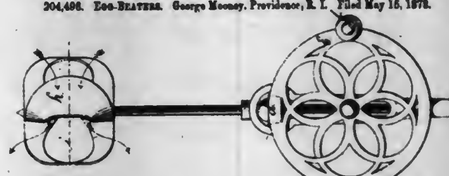
Claim.—1. The hinge having link form, in combination with the gate and post, as shown and described.

2. The combination of the locking-cam, the link-hinge, and the adjustable gate, as shown and described.

3. The combination of the bent pivot-rod *f* and the lever, gate, and gate-post, as shown and described.

4. The link-hinge formed in two like parts, hinged together at top and bottom, as shown and described.

204,498. EGG-BEATERS. George Mooney, Providence, R. I. Filed May 15, 1878.

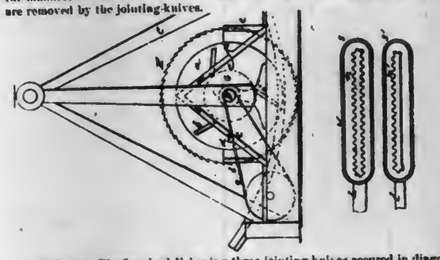


Claim.—1. A mixer-head consisting of two or more cup-shaped wings, *h*, provided with the aperture *i*, and means for rotating the same, substantially as and for the purpose described.

2. The combination, with the revolving shaft *c*, of curved wings *h*, secured to the shaft and provided with openings *i*, arranged and operating substantially as and for the purpose set forth.

204,499. MACHINES FOR HAWING AND JOINTING SHINGLES. Joseph A. Mumford, Avondale, Nova Scotia, Canada. Filed Apr. 15, 1878.

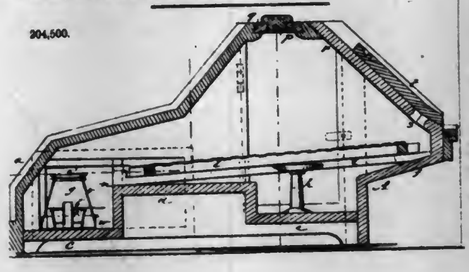
Brief.—The shingles, after being sawed from the bolt, are placed upon two inclined supports arranged over the journal-boxes of the saw-arbor, and near the fly-wheel, and their butts held against ribs upon the supports while being jointed by suitable knives secured in diagonal slots in the fly-wheel, which is mounted upon the inner end of the saw-arbor. Upon each side of the mandrel are boards or other covering for confining the shavings as they are removed by the jointing-knives.



Claim.—1. The fly-wheel E, having three jointing-knives secured in diagonal slots thereof, in combination with the two inclined shingle-supports *c*, having ribs *d*, as shown and described.

2. The mandrel having fly-wheel with knives and boards *e*, arranged substantially as and for the purpose specified.

204,500.



204,500. VAPOR-BATH. Carrie A. Moore, Salt Lake City, Utah. Filed Apr. 23, 1878.

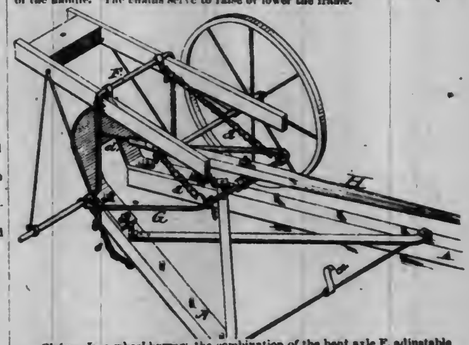
Claim.—1. A vapor-bath provided with top and end apertures for receiving the neck, and having a pillow-support, *u*, substantially as herein shown and described.

2. The cot *l*, having the transverse and longitudinal strips of webbing, in combination with the box A, having cleats *i*, as herein shown and described.

3. A vapor-bath box, A, having an apertured top, with removable portion *q*, and having the removable inclined end piece *r* and neck-aperture *s*, substantially as shown and described.

204,501. HARROWS. Eli Murray, Rushville, Ind. Filed July 17, 1877.

Brief.—The harrow-frame plays loosely back and forth in the forward end of the handle. The chains serve to raise or lower the frame.



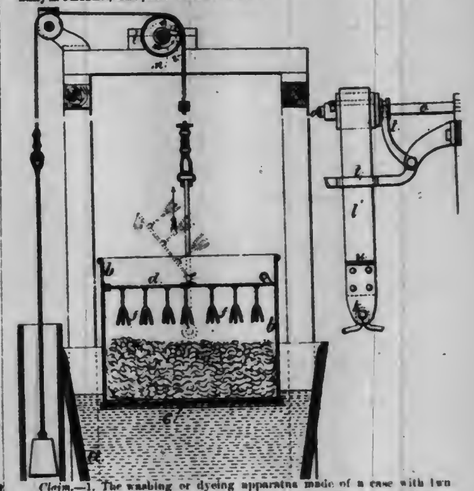
Claim.—In a wheel-barrow, the combination of the bent axle F, adjustable swinging frame G, and swiveled guide and elevating-lever H, all arranged and operating substantially as and for the purpose herein specified.

204,502. GALVANIC RING, BRACELET, OR NECKLACE. E. A. Ossolin, Paris, France, and Abraham Meyer, Syracuse, N. Y. Filed Aug. 24, 1877.



Claim.—An electric ring, bracelet, or necklace consisting of a metallic body, constituting the outer face; and bands or threads of another metal inserted in the body, and with the latter forming an inner face of alternate zones of electro-positive and electro-negative metal, as set forth.

204,503. WOOL-WASHING MACHINE. Stephen R. Parkhurst, Mont Clair, N. J., assignor to Emily R. Parkhurst, same place. Filed Oct. 1, 1877.

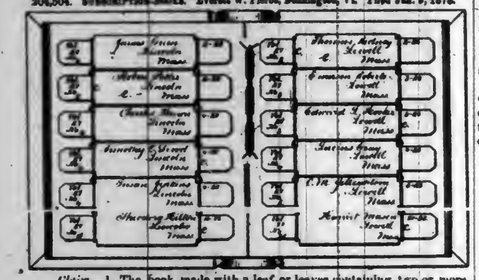


Claim.—1. The washing or dyeing apparatus made of a case with two diaphragms of netting or open-work, between which the fiber to be washed or dyed is placed, in combination with mechanism for reciprocating such apparatus in water, substantially as set forth.

2. The case *b*, diaphragms *c* and *d* of open-work, in combination with the fingers *f*, substantially as and for the purposes set forth.

3. The combination, with the washing or dyeing apparatus, consisting of a case with open-work diaphragms, of the lifting-pulley *m*, revolving shaft *o*, and coupling and uncoupling mechanism, substantially as set forth.

204,504. SUBSCRIPTION-BOOKS. Everett W. Pierce, Bennington, Vt. Filed Jan. 9, 1878.



Claim.—1. The book made with a leaf or leaves containing two or more lines of cords, threads, or wires passing through the leaf, and forming loops on both sides thereof for receiving the movable name and address slips, substantially as set forth.

2. A removable subscription-slip having the described tongues and shoulders, combined with a holder provided with loops, into which such slip is placed, substantially as specified.

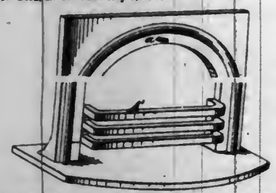
204,505. DESK SLATE-HOLDERS. Moses M. Rice and Jesse Lapp, Slatington, Pa. Filed Mar. 11, 1878.



Claim.—1. The desk-top having a hinged and recessed portion, *b*, and the adjustable slate *c*, in combination, substantially as shown and described.

2. The frame *d*, adapted to hold the pivoted slate *c*, in combination with the hinged portion *b* of the desk-top A, substantially as shown and described.

204,506. FIRE-PLACE BLOWERS. Stephen P. Baggies, Boston, Mass., assignor to Elizabeth Thompson, New York, N. Y. Filed May 3, 1878.



Claim.—1. In combination with a blower for open-fire stoves or fire-places, the handle and means for suspending said blower, located at the uppermost portion, substantially as and for the purpose described.

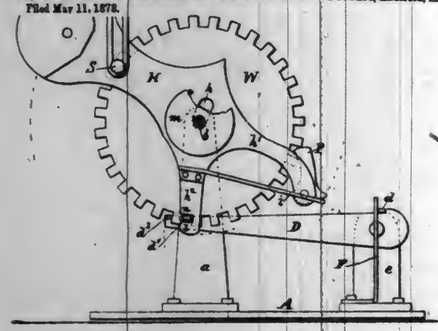
2. A blower perforated centrally in its uppermost portion to receive a pin or hook, by which it is suspended, in combination with a non-conducting handle perforated and located in coincidence with the perforation of the blower, to receive and cover said pin or hook, substantially as described.

204,507. HARNESS-SADDLE TREES. Wm. M. Byerson, Newton, N. J. Filed May 15, 1878.



Claim.—The harness-saddle tree formed by the combination of the arched bar A and the two plates B, provided with the holes b^1, the lugs b^2 and b^3 upon their forward edges to receive the check-reins and the collar-braces, the lugs b^4 upon their rear edges to receive the divided back-strap, and the screw-holes b^5 b^5 in their upper parts, substantially as herein shown and described.

204,508. ACTUATING MECHANISMS FOR CALENDAR-CLOCKS. Wm. S. Shirk, Anderson, Ind. Filed May 11, 1878.

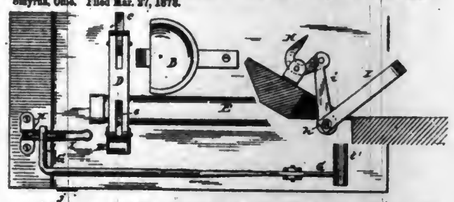


Claim.—1. The detent D, constructed as described, with the lugs d d^2 d^3, and provided with a spring, F, in combination with the wheel W, substantially as and for the purposes shown and set forth.

2. The combination, with the detent D and its lug d^3, of the branch h^3 of the short arm of the lever H, provided with the fork or notch l u, substantially as and for the purposes shown and described.

3. The lever H, provided with the slot *h*, and having its short arm forked or divided into two branches, h^1 h^2, one branch carrying a pawl, l^2, and the other branch being provided with a fork or notch, *l* u, in combination with the time-movement of a calendar-clock, a detent, and a toothed wheel on a hand-carrying shaft or arbor, substantially as and for the purpose herein described.

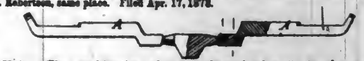
204,509. HARVESTER SAFETY ATTACHMENTS. Albert J. Spaulding and John R. Hibbs, Smyrna, Ohio. Filed Mar. 27, 1878.



Claim.—1. In a safety attachment for harvesters, the combination, with the clutch-operating mechanism and the foot-lever G, of the holding device, consisting of the hook-shaped lever H, spring *h*, and foot-lever or stirrup I, substantially as and for the purpose set forth.

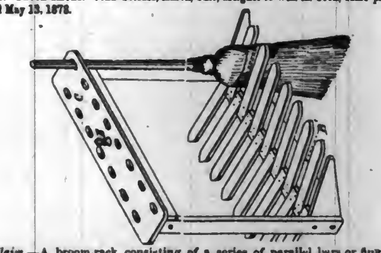
2. The combination of the clutch, its operating-lever *e*, connection or bar D, rock-shaft E *o* *e'*, spring F, lever G *g*, hook-shaped lever H, the spring *h*, foot-lever or stirrup I, and hook *f*, substantially as and for the purpose set forth.

204,510. GATES FOR PATTERNS. Wm. Taylor, Peekskill, N. Y., assignor to himself and Geo. W. Robertson, same place. Filed Apr. 17, 1878.



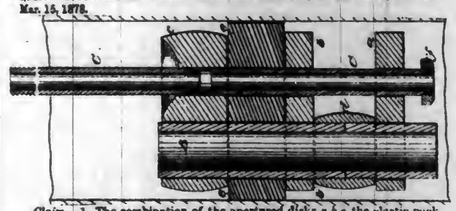
Claim.—The combination of a gate formed of easily-fused metal, interlocked with a pattern having countersunk holes or dovetail slots, or both, substantially as herein shown and described.

204,511. BROOM-RACKS. John Terrass, Akron, Ohio, assignor to Wm. H. Cook, same place. Filed May 13, 1878.



Claim.—A broom-rack consisting of a series of parallel bars or fingers, between which the brooms are placed at or near the stitched line, with a series of holes above to support the handles, substantially as shown.

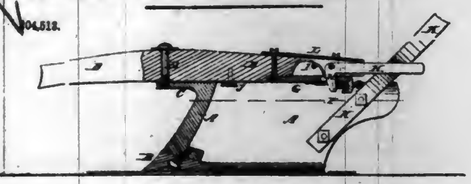
204,512. VACUUM-PACKERS FOR OIL-WELLS. Jas. C. Thomson, Barnhart's Mills, Pa. Filed Mar. 15, 1878.



Claim.—1. The combination of the apertured disks *a b c*, the elastic packing-disk *c*, and the vacuum-tube C, substantially as herein shown and described.

2. The combination, with tubes B C, of the disk *a*, placed above collar *f* and below the coupling *d*, as and for the purpose set forth.

204,513.

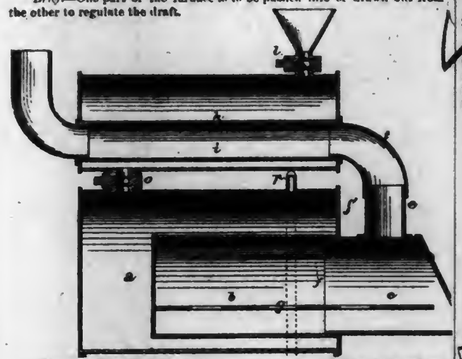


204,513. PLOWS. Mason R. Underhill, Derry, N. H. Filed Mar. 30, 1878.

Claim.—The combination of the recessed beam D, hooked plate G, lever H, spring I, transverse notched cross-bar F, and front bar J with the double mold-board A, point B, pivoting-arm C, and bolt E, all constructed and relatively arranged as herein set forth, for the purpose specified.

204,514. FEED-STEAMERS. George W. Van Buren, Jr., Mendon, Mich., assignor of one-half his right to George W. Kinkle, same place. Filed Mar. 28, 1878.

Brief.—One part of the furnace is to be pushed into or drawn out from the other to regulate the draft.

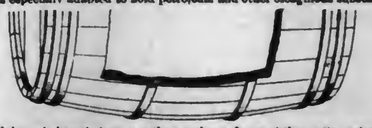


Claim.—1. The adjustable extension *c*, with horizontal plate *f*, in combination with the fire-box *b*, the plate *f* forming a flue, *f'*, in the top part of the fire-box, substantially as and for the purposes herein set forth.

2. The combination, with the boiler *a*, fire-box *b*, and reservoir *h*, with flue *i*, of the adjustable extension *c*, with plate *f*, exit *e*, and the adjustable elbow *i*, substantially as and for the purposes herein set forth.

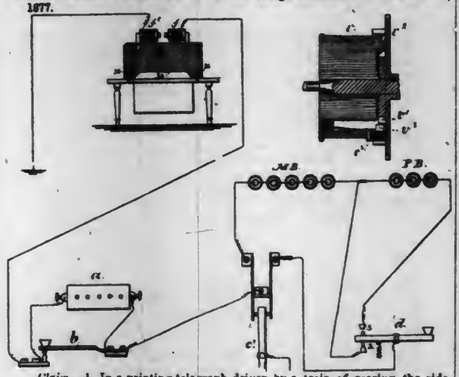
204,515. BARREL-LINING COMPOSITIONS. Andrew Van Bibber, Cincinnati, Ohio. Filed Apr. 30, 1877.

Brief.—Lines the barrel, cask, or box with a glue compound consisting of glue, four ounces; glycerine, two ounces; molasses, two ounces. A barrel so lined is especially adapted to hold petroleum and other oleaginous substances.



Claim.—A barrel, box, or other package for naphthas, oils, paints, or other oleaginous substances, provided with a lining of the herein-described glue, glycerine, and molasses compound, substantially as and for the purpose specified.

204,516. PRINTING-TELEGRAPHS. H. Van Hoevenbergh, Elizabeth, N. J. Filed Dec. 24, 1877.



Claim.—1. In a printing-telegraph driven by a train of gearing, the side plates or frames made in two parts, the upper part being removable, and carrying the magnets, type-wheel, and printing mechanism, substantially as and for the purposes set forth.

2. In a printing-telegraph instrument, the combination, with the two trains of gearing, the type-wheel, and impression and paper-feeding devices, of one actuating cord and weight, acting upon the respective barrels of the trains, and a spring-dog and ratchet to determine the amount of cord wound upon each barrel, substantially as set forth.

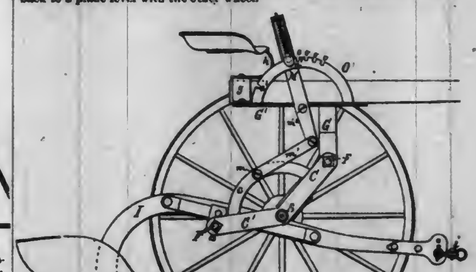
3. In combination with the type-wheel, escapement-wheel and pallets, the stop 6, that arrests the hinged pallet 5, and the electro-magnet *f'*, and armature, the parts being arranged substantially as specified, to liberate the escapement from the pallets by an increase of power in the electro-magnet *f'*, substantially as set forth.

4. In combination with the printing-telegraph instrument in which the printing is effected by an increase of electric energy, a rheostat or resistance in the line, a key and shunt to short-circuit the said resistance, and a unison mechanism in the printing-instrument operated by a further increase of electric energy, substantially as set forth.

5. In a printing-telegraph instrument, the combination, with the electro-magnets and lateral armature, of a lever, *g*, latch *p*, and toes 15 16, to actuate the printing-pad, substantially as set forth.

204,517. SULKY-PLOWS. Edward Ward and George G. Avery, Louisville, Ky., assignors to A. F. Avery & Sons, same place. Filed Apr. 29, 1878.

Brief.—A double-crank plow-frame extending front and rear of the wheels. The rear end supports the plow, and the front carries the tongue and seat frame. When the plow is to be raised the weight of the seat-frame and driver balances and assists to raise the plow, and the land-wheel automatically slides back to a place level with the other wheel.



Claim.—1. The double-crank-axle frame, consisting of the arms C C' and E E', which form angles at or about the center of the wheels of the plow, the front and rear connecting-bars F and F', and the short axles B and B', one of which is adjustable, said frame being adapted for having the plow proper hung upon its rear bar and the tongue-support to rest and rock upon its front bar, substantially as and for the purpose described.

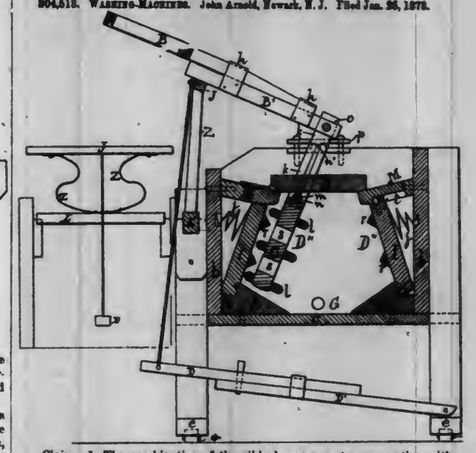
2. The adjustable axle-arm B', having the clasping or slotted slide attached to it, and connected to the divergent perforated arm E' of the double-crank-axle frame, as shown, so that when the plow proper is raised and the arm is nearly horizontal the slide with axle and wheel are capable of moving backward until the axle B' coincides with the axle B, substantially as and for the purpose described.

3. The rocking double-crank-axle frame having a brace or support, *c*, attached to it, in combination with the link m^1, lever M, rocking frame G G', and driver's seat, whereby facilities for raising the plow are afforded, and the weight of the driver, when on the seat, assists to lift the plow, substantially as described.

4. The combination of the short axles, one of which is adjustable, as described, double-crank-axle frame having arms which form angles at or about the center of the supporting-wheels, and the rocking support or seat-frame G G', substantially as and for the purposes described.

5. The combination of the tubular brackets J J, attached to the beam of the plow and to the rear bar of the double-crank-axle frame, the tubular stop J' on said bar and between the tubes of the brackets, the set-screw *f*, and the braces K, substantially as and for the purposes described.

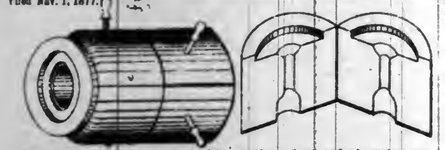
204,518. WARMING-MACHINES. John Arnold, Newark, N. J. Filed Jan. 26, 1878.



Claim.—1. The combination of the ribbed spring-rockers, vibrating with their lower ends in recesses *i* at the upper ends of the blocks *d*, having inclined faces, and the ribbed and perforated presser C, swinging between the two rockers and over the inclined faces, as and for the purpose set forth.

2. The presser C, vibrating between spring-rockers I, and provided with a lateral handle, B, in combination with the extensible treadle D and intermediate spring Z, beam L, cross-bar, bearings, and cord, as set forth.

204,519. LIFTS FOR GLASS-MOLDS. Joseph Anderson and August Spetzer, Pittsburg, Pa. Filed Nov. 1, 1877.



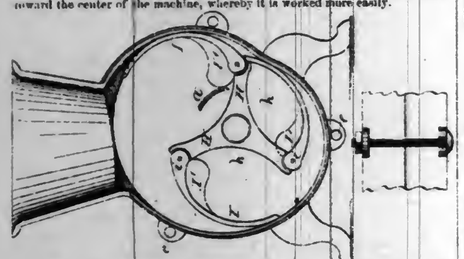
Claim.—The supports *f*, formed with central openings, and adapted to sustain the glass-mold, substantially as shown, said supports being mounted upon a common bed-plate by means of suitable standards, in combination with the lifts *k k*, arranged upon a cross-bar, *l*, and passing upward through the bed-plate and openings in the supports, all adapted to operate substantially as herein shown and described.

204,520. TROCHES. C. Fritz Aschs, Hamburg, Germany. Filed Dec. 20, 1877.

Claim.—A lozenge composed of cubebs, anise, fenchel, pimpinella, ipecac, sugar, and the necessary gums to form the lozenge, in about the proportions and for the purposes hereinbefore set forth and described.

204,521. SAUSAGE-STUFFERS. Hiram J. Bechtel, McDonaldsville, Ohio. Filed Aug. 4, 1877.

Brief.—The scrapers, being pivoted to the rotary wheel, follow the contour of the internal surface of the case, and, when loaded, compress the meat toward the center of the machine, whereby it is worked more easily.

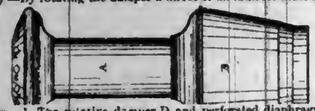


Claim.—1. In combination with the outer casing, the scrapers I, mounted as described, and the stationary projection *a*, for opening said scrapers, substantially as set forth.

2. In combination with the arms H H, the hinged scrapers I I, arranged as described, to form open spaces *h h* between the arms and the said scrapers, substantially as set forth.

204,522. LOCOMOTIVE SMOKE-STACKS. William F. Beecher, Cleveland, Ohio, assignor of two-thirds his right to Phillip Alleman and Augustus C. Gatchell, same place. Filed Nov. 3, 1877.

Brief.—By rotating the damper n direct or an indirect draft is produced.



Claim.—1. The rotative damper D and perforated diaphragm C, in combination with the discharge-pipe H, annular chamber J, and wall A', substantially as and for the purpose set forth.

2. In smoke-stacks, the combination of the discharge-pipe H, annular chamber J, diaphragm and damper C D, and sections A B of the annular wall F, having a thunel-shaped base, *b*, substantially as and for the purpose described.

204,523. STAYS AND CLASPS FOR NARROW FABRICS. Wm. E. Parrows, Hartford, Conn., assignor to H. N. Daggett, Attleborough, Mass. Filed Apr. 1, 1878.



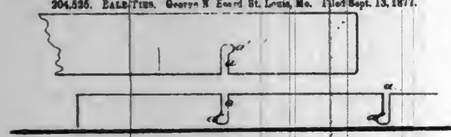
Claim.—The strip or stay A, having grooves or channels along its edges, in combination with the slide or clasp C, the whole adapted as a holder for braid and other narrow fabrics, substantially as set forth.

204,524. MACHINES FOR OILING SLIDES AND GUIDES. Asa N. Bates, Dallas County, Tex. Filed Sept. 11, 1877.



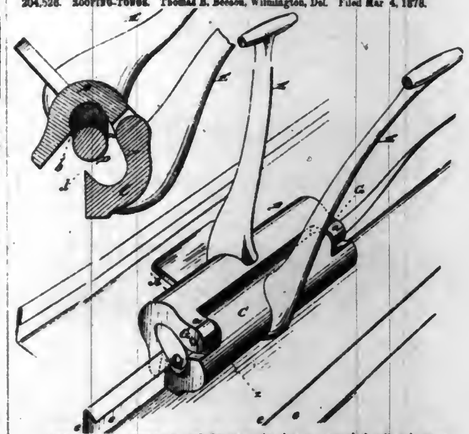
Claim.—The mode of oiling guides and slides by means of an oil-reservoir containing a centrally or similarly pivoted spring-lever, operated automatically by contact with the moving part, substantially as described.

204,525. BALE-TIES. George N. Beard St. Louis, Mo. Filed Sept. 13, 1877.



Claim.—The hoop provided with transverse slot or slots *a* at the edges, said slots having the rounded hook-shaped and round-seat notches *a'* at their inner ends, and at right angles to the slots, substantially as set forth.

204,526. ROOFING-TOOLS. Thomas B. Beeson, Wilmington, Del. Filed Mar 4, 1878.

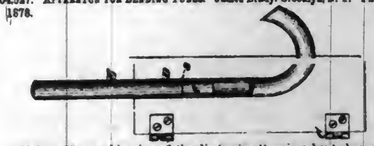


Claim.—1. The upper jaw of the tongs having a journaled roller, in combination with the lower jaw having a V-shaped lip and a concave, substantially as shown and for the purpose set forth.

2. The combination of the upper jaw having the roller D arranged in advance of the bite of the upper jaw, so as to roll the metal down over the lower jaw in such a manner that the two pieces of sheet metal will be hooked and fastened together, substantially as described.

3. A pair of roofing-tongs, consisting of the jaw B, with roller D and handle E, and the jaw C, with lip *d* and handle E, hinged together, substantially as set forth.

204,527. APPARATUS FOR BENDING TUBES. James Brady, Brooklyn, N. Y. Filed Mar. 26, 1878.



Claim.—The combination of the die having therein a bent channel, D, the cross-section of which is of uniform size and shape throughout its extent, and a pusher, E, having the shoulder *e* formed thereon, and the part *e* fitted to enter the end of the tube to be bent and secure the square abutment of the said shoulder against the end of the said tube, substantially as and for the purpose specified.

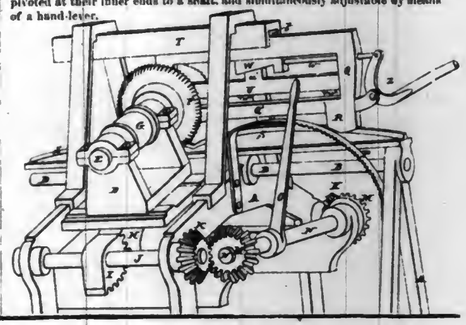
204,528. WATER-PROOF BLACKING. Chas. H. Broad, Rochester, assignor to Chas. T. Alverson, Pittsford, N. Y. Filed Aug. 15, 1877.

Brief.—The composition consists of gum-arabic, castor or neat's foot oil, shellac, ammonia, lamp-black, and solutions of india-rubber and resin, together with an aqueous solution of borax.

Claim.—A water-proof polish-blacking for leather, composed of gum-arabic, castor or neat's-foot oil, shellac, ammonia, lamp-black, and solutions of india-rubber and resin, together with an aqueous solution of borax, compounded substantially in the proportions set forth.

204,529. STAVE-JOINTING MACHINES. Wm. Brown, St. Louis, Mo. Filed Mar. 27, 1878.

Brief.—The staves are placed on a carriage between two curved clamps, one of which is movable in vertical slots, and is pressed down by a wedge actuated by hand-lever. The carriage slides on curved ways, and presents the stave to the action of two inclined circular saws mounted on head-stocks, pivoted at their inner ends to a shaft, and simultaneously adjustable by means of a hand-lever.



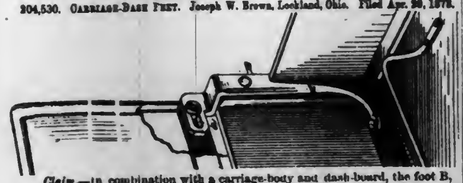
Claim.—1. The carriage Q, working on curved guide S at bottom and in channel-bar T at top, and provided with clamping device to hold the stave, for the purpose set forth.

2. The combination, in the carriage Q, of the clamping bar or jaw U, operated by wedge W and lever Z, substantially as and for the purpose set forth.

3. The combination, in the carriage Q, of the movable clamping bar U, concavely curved on its lower side, its ends working in vertical slots *q*, and supported by springs *s*, fixed clamping bar Q', curved at its upper side, and the wedge W, for exerting downward pressure on the bar U, substantially as set forth.

4. The combination of head-stocks D, pivoted at their inner ends to bar B, and capable of simultaneous adjustment on the shaft as an axis by mechanism consisting of the cog-racks H, shafts J and N, bevel cog-wheels K and M, and lever O, as set forth.

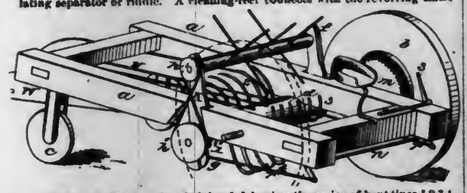
204,530. CARRIAGE-DASH PIECE. Joseph W. Brown, Lockland, Ohio. Filed Apr. 20, 1878.



Claim.—In combination with a carriage-body and dash-board, the foot B, the upper end of which is bent inward and upward, and slotted, as described, and its lower portion provided with the extension E, having bolt-hole *f*, substantially as shown and specified.

204,531. POTATO-HARVESTERS. David F. Brown, Newton, Iowa, assignor of one-half his right to Richd. Lamb, same place. Filed Aug. 10, 1877.

Brief.—The potatoes are lifted by the bent tines and thrown upon an oscillating separator or riddle. A cleaning-reel connects with the revolving tines.



Claim.—1. The rotating fork-head *d*, having the series of bent tines 1 2 3 4, the oscillating frame *f* and the reel *j*, the pulleys *h* and *h''*, and the belt *k*, arranged and combined to operate substantially as and for the purposes shown and described.

2. The carriage *a b c*, having the driving-wheel *m*, the suspended oscillating frame *f*, carrying the fork *d*, reel *j*, and pinion *g*, and the operating mechanism *u r s*, arranged and combined substantially as and for the purposes shown and described.

3. A potato-harvester composed of the carriage *a b c*, the adjustable suspended frame *f*, carrying the fork *d*, reel *j*, and pinion *g*, the driving-wheel *m*, the operating mechanism *u r s*, and the vibrating separator *w g*, substantially as shown and described.

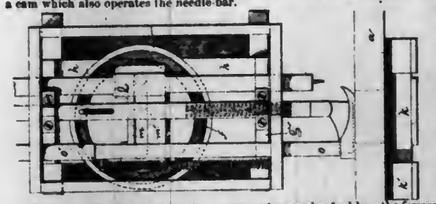
204,532. MANUFACTURE OF HYDRAULIC CEMENT. Walter J. Bullington, Hudson, assignor to H. Joseph Bullington, Kingston, N. Y. Filed Apr. 27, 1878.

Claim.—1. A cement made of fossiliferous stone and blue clay, substantially in the manner herein set forth.

2. The method of making cement from fossiliferous stone and blue clay, consisting essentially in reducing the stone and clay separately to an impalpable powder, then mixing the same and adding water, molding the mass, then drying the same, and finally burning it sufficiently to produce semi-vitrification, substantially as herein set forth.

204,533. FEED MECHANISMS FOR SEWING-MACHINES. Albert Burgess, Cambridge, Mass. Filed Sept. 17, 1877.

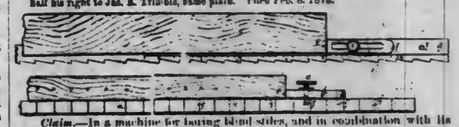
Brief.—The upper and under feed are operated simultaneously by a shaft extending to the rear of and thence under the machine. Said upper feed is secured in a carriage reciprocated by said shaft, from which carriage it obtains its horizontal movement, the vertical motion of the same being obtained from a cam which also operates the needle-bar.



Claim.—1. The combination of an upper and an under feed-bar, the former being caused to reciprocate within a horizontal movable carriage, which is connected with the latter by means of a pivoted bar attached to the rear of said carriage, and extending to the rear, and then beneath the bed-plate of the machine, and an operating-cam, substantially as and for the purposes set forth.

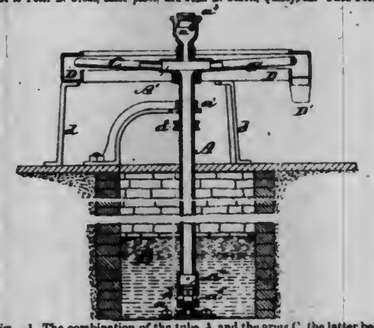
2. The combination of the vertically and horizontally reciprocating feed-bar, the presser-bar, carriage *h*, pivoted connecting-bar *i*, and the operating-cams, the several parts being arranged substantially as shown and described.

204,534. MACHINES FOR BORING BLIND-STILES. E. Cather, Baltimore, Md., assignor of one-half his right to Jas. R. Trimble, same place. Filed Feb. 8, 1878.



Claim.—In a machine for boring blind-stiles, and in combination with its ratchet-bar having a zero point or center mark, *x*, for the stile, an adjustable stop, adapted to secure the stile at any desired point upon the ratchet-bar, substantially as described.

204,535. CENTRIFUGAL PUMPS. Charles Chadwick, Hannibal, Mo., assignor of two-thirds his right to Peter B. Groat, same place, and John B. Schott, Quincy, Ill. Filed Feb. 5, 1878.



Claim.—1. The combination of the tube A and the arms C, the latter being contracted at their outer ends, as and for the purpose described.

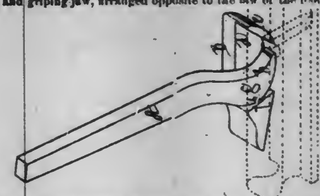
2. The combination of the tube A, having the aperture *a''* at its upper end, the removable cap *a'*, the foot-valve *a''*, and the arms C, substantially as described.

3. The tube A, enlarged at A', in combination with the arms C, substantially as described.

4. The combination of the tube A, having the apertures *a''* and *a''*, the foot-valve *a''*, cap *a'*, chamber A', arms C, and chamber D, substantially as described.

204,536. NAIL-EXTRACTORS. John C. Chapman, Boston, Mass. Filed Dec. 4, 1877.

Brief.—Spikes, bolts, and nails can be drawn straight by means of a recessed foot-piece having a curved bottom, and provided at one end with an inclined side, and at its opposite end with a jaw, and a lever pivoted near its lower end to the foot-piece within its recess, and provided with a curved portion and griping-jaw, arranged opposite to the jaw of the foot-piece.



Claim.—The recessed or slotted foot-piece B, with its inclined side 7 and jaw *c*, in combination with the bar or lever A, pivoted near its lower end to the foot-piece within its recess or slot, and provided with a curved portion, 6, and griping-jaw *b*, arranged opposite to the jaw *c*, and acting in connection therewith, the several parts constructed and relatively arranged to operate substantially in the manner and for the purpose set forth.

204,537. CLASPS. Arthur Christey, Buffalo, N. Y. Filed Feb. b, 1878.

Brief.—Improvement on Patent No. 198,929, dated January 8, 1878.



Claim.—1. The clasp constructed of a single piece of metal, with the back A of a single or double thickness, and the tip *a* or lips *a a'* of a double thickness, substantially as and for the purpose specified.

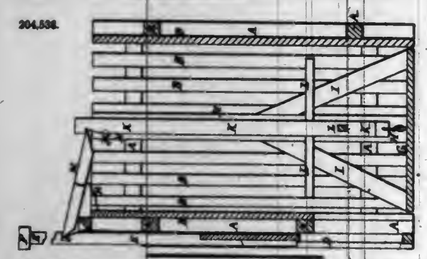
2. The back A, constructed double, but open at the edge, and the clasp-lips *a a'*, also double and forming rounded smooth edges, all constructed out of a single sheet of metal, substantially as and for the purpose specified.

204,538. FISH-TRAPS. Wm. J. Clark and Thos. W. Roberts, Coffeeville, Miss. Filed Mar. 1, 1878.

Brief.—The fish, after entering the trap, strike against the cross-bars, thereby turning the bar, which disengages the trigger, causing the door to fall. The fish are removed by raising the platform.

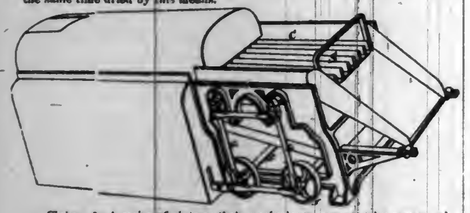
Claim.—The slat-frame trap A B, having a slide-door provided with notched and weighted bar E, connected by trigger M with a bait-bar, K, swiveled to the movable bottom, as and for the purpose described.

204,538.



204,539. FINE-CUT-TOBACCO MACHINES. George B. F. Cooper, New Albany, Ind., assignor of six-sixths his right to R. Lee Masden, H. W. Queen, and Joseph Pottas, Louisville, Ky. Filed Apr. 13, 1878.

Brief.—Shorts or refuse tobacco are separated from long-cut fibers, and at the same time dried by this means.



Claim.—1. A series of slats or their equivalents, operated by means substantially as herein described, for dressing fine-cut tobacco by tossing, as set forth.

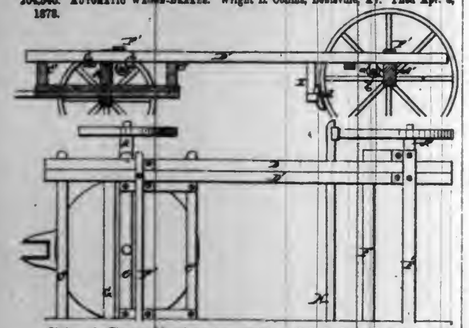
2. A drying-chamber provided with a series of slats or their equivalents, operated by eccentrics or otherwise, for tossing the tobacco and drying it at the same time, as herein set forth.

3. The combination of a drying-chamber and a cooling-space, each being provided with a series of slats or their equivalents, operating substantially as described.

4. A vibrating sheets-box and screen arranged below the devices for tossing the tobacco, as and for the purposes set forth.

5. A tossing gathering-apron arranged at the mouth of a fine-cut-tobacco machine, and operated by means substantially as described, and for the purposes set forth.

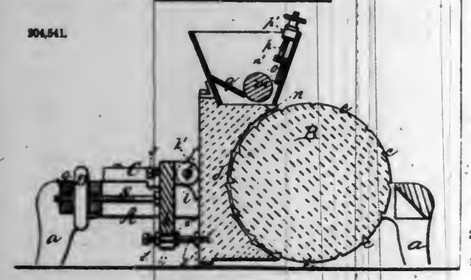
204,540. AUTOMATIC WAGON-BRAKES. Wright L. Collins, Louisville, Ky. Filed Apr. 8, 1878.



Claim.—1. The combination of parallel bars D D D' D', and cross-bars C' C' and F, with brake-bar H, having arms I I, with brake-shoes d d attached, all arranged substantially as and for purposes set forth.

2. The side bars D D and cross-bars C' C' and F, in combination with side bars D' D', having inclines i i, all as and for the purposes set forth.

204,541.

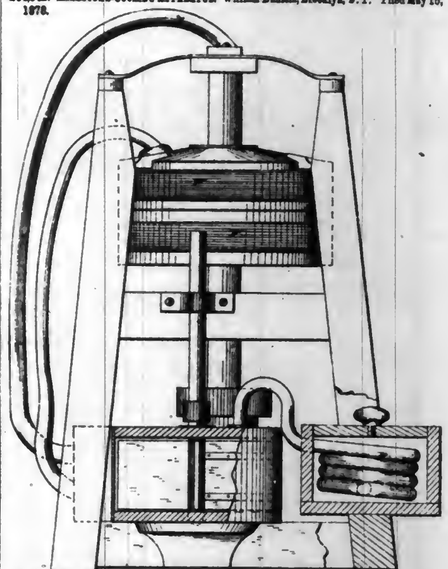


204,541. GRINDING-MILLS. Wm. N. Cosgrove, Faribault, Minn., assignor of one-half his right to Henry W. Bingham and Isaac M. Fuller, same place. Filed Apr. 27, 1878.

Claim.—1. In a grinding-mill, the combination, with the stone B, the cross-head C upon its frame, the concave J, centrally pivoted to said cross-head, and the lighter-screw S, of the subsidiary adjusting-screws s at each side of the center of the concave, and working through the cross-head against the same, and the lower subsidiary screw s', working through a slot in the said head, and bearing against the concave and the adjusting-nuts i^1 i^2, substantially as specified.

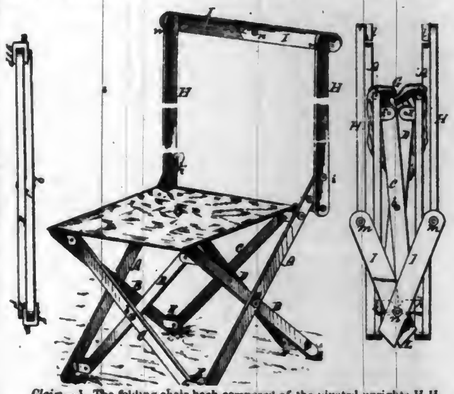
2. In a grinding-mill, the combination, with a stone, B, cross-head C, concave J, centrally hinged thereto, and the lighter-screw S, of the subsidiary adjusting-screws s at each side of the center of the slide, and the adjusting-screw s' below the center thereof, substantially as specified.

204,542. MILLSTONE-COOLING APPARATUS. William Daniels, Brooklyn, N.Y. Filed May 15, 1878.



Claim.— The combination of grinding-stones provided with interior air-chambers, a fan or bellows, a refrigerator with coiled pipe cooled with ice or other material, and pipes or hose connecting the coiled pipe with the fan and the fan with the air-chambers, for the purposes herein set forth.

204,543. FOLDING CHAIRS. Albert T. L. Davis, Lake Village, N. H. Filed Aug. 2, 1877.



Claim.—1. The folding-chair back composed of the pivoted uprights H H and divided and pivoted back slat I, substantially as and for the purpose herein specified.

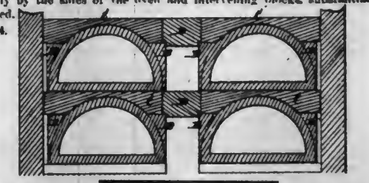
2. In a folding chair, the combination of two pairs of pivoted side cross-bars, A B, two pairs of pivoted transverse cross bars, C D, connected by long and short swivel-bearings E E in exact line, as described, pivoted back uprights H H, and the divided toggle-jointed back slat I, substantially as and for the purpose herein specified.

204,544. GAS-RETORTS. Darius Davison, New York, N. Y. Filed Oct. 12, 1877.

Brief.—An improvement on Letters Patent No. 148,187, granted March 3, 1874.

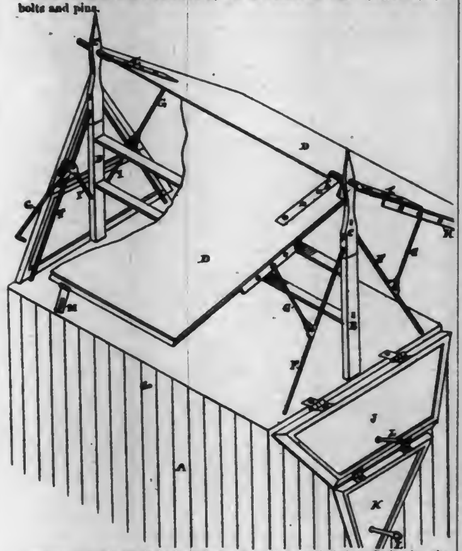
Claim.—The combination of the exterior projections B B on the sides of the retort, stopping short of the top of the retort, and the arched saddle-tiles C, straddling the retort and resting upon said side projections, and supported laterally by the sides of the oven and intervening blocks, substantially as specified.

204,544.



204,545. HOUSES. Joseph Decombe, San Francisco, Cal. Filed Apr. 10, 1878.

Brief.—The sides of a roof are hinged to uprights, and are adjustably held open by means of hooked braces, which engage adjustably with perforated plates on the roof-sides, and are hinged to braces supporting the uprights. The gable-ends are formed in two hinged sections, which hang down at the ends of the house when unfastened, and are fastened to the uprights by eye-bolts and pins.



Claim.—1. The main body or house A, with its end timbers B, having the iron extension-pieces C and bearings for hinging the roof-sides, in combination with the braces F, to secure the extension-pieces and support the end timbers, substantially as herein described.

2. The roof-sides D, hinged at E, as shown, and provided with the plates H, in combination with the hinged brace-rods G, engaging adjustably with said plates H and the braces F and I, substantially as shown and described.

3. The gable composed of the two parts J and K, hinged to each other and to the main portion A, as shown, and provided with the locking-pins L, to be secured to the upright posts, substantially as herein described.

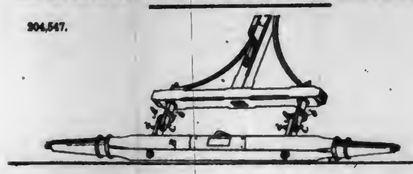
204,546. CARPETS. John C. Duckworth, New York, N. Y., assignor to E. S. Higgins & Co., same place. Filed Feb. 15, 1878.

Brief.—The tufts or piles are supported laterally and held down by the binding-chain engaging with the wefts passing through said tufts and around the wefts on the back of the stuffing-chain.



Claim.—In a carpet, the combination, with the tufts b and stuffing-chain a, of the binding-chain d, wefts or fillings c^1 c^2, and the surface binding-chain e, arranged as shown, whereby the tufts are firmly supported laterally and held down by the binding-chain engaging with the wefts passing through said tufts and around the wefts on the back of the stuffing-chain, as set forth.

204,547.



204,547. TRILL-COUPLINGS. Joseph Dufour, Racine, Wis. Filed Mar. 15, 1878.

Claim.—The combination, substantially as described, of the irons A, having the hook-shaped lateral arms b and perforations c, and the thill or pole irons C, having plates d, for the purpose specified.

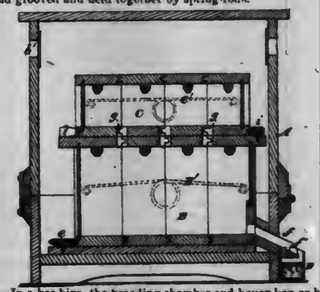
204,548. BRACELETS. Wallace Durand, Newark, N. J., assignor to Durand & Co., same place. Filed Mar. 20, 1878.



Claim.—A bracelet consisting of an endless coil made of a single piece of metal folded into tube form, the edges being brought together, but not united, substantially as and for the purpose specified.

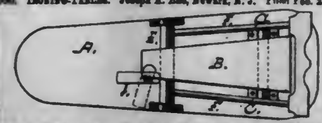
204,549. BEE-HIVES. James W. Elder, Hardinsburg, Ky. Filed Apr. 24, 1878.

Brief.—The casing of the brooding-chamber and honey box or boxes are tongued and grooved and held together by spring-rods.



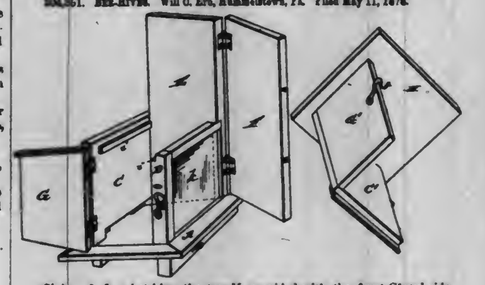
Claim.—In a bee-hive, the brooding-chamber and honey box or boxes, constructed of tongued-and-grooved sections, united together by spring or coiled rods B' C', substantially as and for the purpose set forth.

204,550. IRONING-TABLES. Joseph A. Eno, Newark, N. J. Filed Feb. 23, 1878.



Claim.—The ironing-table A, having the clamping-plate B, with its spring D, with an end of the plate extending back to about the center of the table, and having in combination therewith the perpendicular support F, which, by the brace-rods N, is jointed to the table, and this said support having the cam-shaped bar E to operate the plate B and stops I, substantially as specified.

204,551. BEE-HIVES. Will C. Erb, Hummelstown, Pa. Filed May 11, 1878.

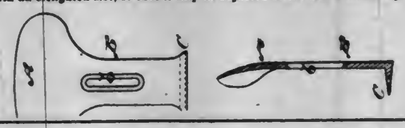


Claim.—1. In a bee-hive, the top H, provided with the front C' and side G', permanently attached thereto and connected by hooks to the body of the hive, so as to be removable therefrom, substantially as shown.

2. The within-described bee-hive, consisting of the inclined bottom A, with stationary front C, side E, and back frame D, the doors G F, and top H, with the front C' and side G' permanently attached thereto, all constructed substantially as and for the purposes set forth.

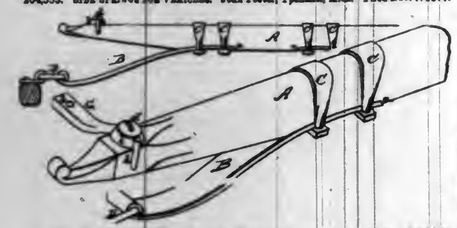
204,552. HEEL-SUPPORTS. Guyon T. Fisher, Fowlerville, Mich. Filed Apr. 27, 1878.

Brief.—The improvement consists in providing the metal stiffening-piece with an elongated slot, so that it may be adjusted as the heel wears away.



Claim.—As an improved article of manufacture, the heel-stiffener herein described, consisting of the plate A, shank B, having elongated slot *b*, and the perforated inclined bottom flange C, as shown and described.

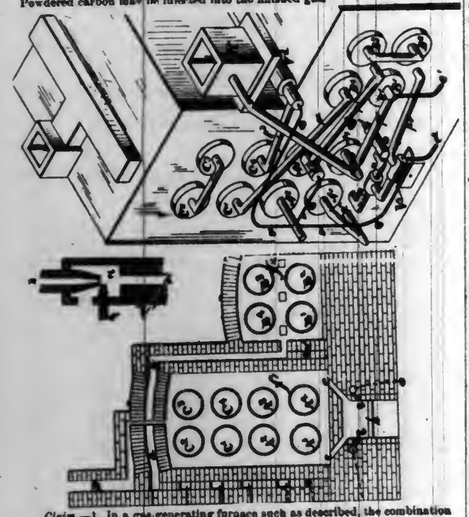
204,553. SIDE SPRINGS FOR VEHICLES. John Foster, Ypsilanti, Mich. Filed Nov. 7, 1877.



Claim.—The combination of the elongated side bar A, having shoulders or offsets *a a*, formed on its under side at equal distances from the center, the short springs B B, butting against the shoulders *a*, and secured to the side bar by clips C, and the links D, forming the connection between the outer ends of the springs and the hind axle and front head-block, and the irons G, secured to the ends of the elongated side bars A, all constructed substantially as and for the purposes herein set forth.

204,554. PROCESSES AND APPARATUS FOR MANUFACTURING ILLUMINATING-GAS. Chas. Gearing, Pittsburg, Pa., assignor of one-half his right to Samuel Harper, same place. Filed May 3, 1878.

Brief.—Air is heated in passages of the walls of the main chamber of the furnace and passed into the smaller chamber for heating the oil-retorts. Part of the hot air is drawn from the smaller chamber to support combustion in the fire-box of the main chamber, and part of it may be mixed with the water-gas made in retorts A^3 A^3, &c. Steam-jet exhausters are used for conducting gas from one retort to another. Steam is decomposed in one set of retorts, mixed with oil-vapors in another set containing siliceous bowlders, and this mixture is converted into a fixed gas in a third set of retorts containing siliceous bowlders. Powdered carbon may be injected into the finished gas:



Claim.—1. In a gas-generating furnace such as described, the combination of the main combustion-chamber f^1, having air-passages *a*, auxiliary chamber f^2, and series of retorts A B C, constructed and arranged for operation substantially as and for the purpose specified.

2. In a gas-generating furnace such as described, the combination of a combustion-chamber, f^1, having air-passages *a* in its walls, fire-place *b*, having side flues *a* and branches *g*, and channels or flues *c*, arranged for operation substantially as set forth.

3. The process for the manufacture of gas, consisting, first, in superheating and decomposing steam; then passing it, together with petroleum, through retorts containing siliceous bowlders at a high temperature; and, lastly, in passing these gaseous products through other retorts containing siliceous bowlders at a high temperature, to thoroughly combine the gaseous elements into a fixed gas for illuminating purposes, substantially as described.

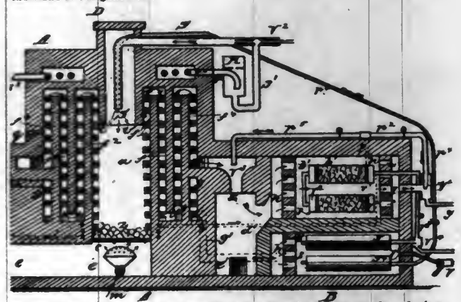
4. In a gas-generating furnace such as described, the steam superheating and decomposing retorts A, filled with siliceous bowlders, with iron fragments interspersed, substantially as described, and for the purpose specified.

5. In combination with a main chamber, having air-passages *a* in its walls, and auxiliary chamber f^2, containing retorts, of a gas-generating furnace such as described, the return air-flue p^1, substantially as and for the purpose specified.

6. In combination with a gas-generating furnace having a main combustion-chamber, f^1, and an auxiliary chamber, f^2, heated by a current of air at high temperature, a return-flue, p^1, and exhauster V^1, arranged and operating substantially as and for the purpose described.

204,556. PROCESSES AND APPARATUS FOR MANUFACTURING HEATING AND ILLUMINATING GAS. Chas. Gearing, Pittsburg, Pa., assignor of one-half his right to Samuel Harper, same place. Filed May 15, 1878.

Brief.—Steam is superheated and air is heated in passages in the furnace-walls. Steam is decomposed and mixed with oil-vapors, and this mixture, together with powdered carbon, is injected by a steam-jet into the top of the main generator, where combustion takes place. The products heat the steam-decomposing retorts. The oil-retorts are heated by hot air from passages in the walls of the generator.



Claim.—1. The process of manufacturing illuminating-gas and producing the heat necessary to its manufacture in one and the same operation—namely, by projecting into the combustion-chamber of a gas-generating furnace, and passing over a series of heated surfaces adjacent thereto, a blast composed of superheated steam, pulverized carbon, and hydrocarbon gas, previously evolved from the combination of superheated or decomposed steam and petroleum, substantially as and for the purpose set forth.

2. In a gas-generating apparatus, the combination of main generator A, containing a combustion-chamber, *a*, and concentric passages f^1 f^2, &c., blast-pipe S, auxiliary chamber b^1, with bench of steam-decomposing retorts *r*, and exhausting device V^1, with their connecting pipes and passages, substantially as and for the purpose set forth.

3. In combination with the generator A, having combustion-chamber *a* and concentric passages f^1 f^2, &c., blast-pipe S, retorts *r*, and exhaust device V^1, the air-heating passage *g*, auxiliary chamber b^2, with its bench of retorts *s*, and exhausting device V^2, substantially as and for the purposes described.

4. In combination, in a gas-generating furnace, the blast-pipe S, injector V^3, and carbureting device R, substantially as and for the purpose described.

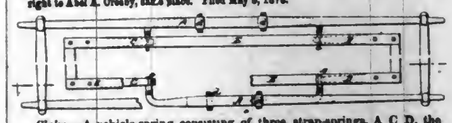
5. In a gas-generating furnace such as described, the blast-pipe S and counter-blast pipe *m*, having a rose-nozzle, in combination, arranged and operating substantially as described.

6. The main furnace A, having combustion-chamber *a*, concentric passages f^1 f^2, &c., cover D, grate *c*, ash-pit *d*, passage *x*, ash-pit *d'*, in combination with auxiliary chamber b^2, and retorts *r*, substantially as described and shown.

7. In combination with the main furnace A, having combustion-chamber *a* and passages f^1 f^2, &c., cover, ash-pit, auxiliary chamber b^1, and retort *r*, the air-heating passage *g*, passage *g'*, auxiliary chamber b^2, and retorts *s*, substantially as described and shown.

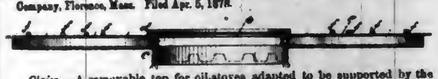
8. In combination with grate *c* of the combustion-chamber *a* of a gas-generating furnace, the layer of bowlders *r*, substantially as and for the purpose described.

204,558. VEHICLE-SPRINGS. Sebastian Gilsinger, Rondout, N. Y., assignor of one-half his right to Abel A. Crosby, same place. Filed May 6, 1878.



Claim.—A vehicle-spring consisting of three strap-springs, A C D, the spring A being secured to the side bars of the vehicle and having its ends bent substantially at right angles, to which bent ends, and by hinge-joints, are secured the ends of the springs C and D, which last-mentioned springs are also fastened to the sills of the body of the vehicle, substantially as and for the purpose described.

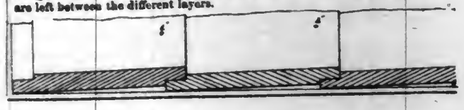
204,557. OIL-STOVES. Dexter W. Goodell, Northampton, assignor to the Florence Machine Company, Florence, Mass. Filed Apr. 5, 1878.



Claim.—A removable top for oil-stoves adapted to be supported by the drum of a stove, constructed with a central pot-hole, *b*, and depending flange *c*, and with two chambers or hollow extensions, A' A', the upper walls of said chambered extensions being perforated and provided with studs *f*, substantially as herein shown and described.

204,559. SHINGLES. Henry S. Gerdner, Rosedale, N. C. Filed Apr. 26, 1877.

Brief.—A shingle is constructed with rabbeted edges, the part cut away being less than half the thickness of the shingle, so that ventilating-spaces are left between the different layers.



Claim.—The lap-shingle herein described, having wedge-shaped rabbets upon its side edges, said rabbets for two-thirds, or thereabout, the length of the shingle being less than half the thickness of the shingle, and the parts fitting thereto having more than one-half said thickness, whereby a ventilating-space is produced, as described.

204,560. SPEAKING-TELEPHONES. Elisha Gray, Chicago, Ill. Filed May 13, 1878.



Claim.—1. A secondary diaphragm and its magnet mounted on one pole of a permanent magnet, and operated by a primary diaphragm mounted on the other pole, substantially as set forth.

2. The combination, substantially as hereinbefore set forth, of a permanent horseshoe-magnet, an electro-magnet mounted on each pole thereof, a diaphragm for each magnet, and a mouth-piece for one diaphragm, so as to operate one diaphragm directly from or by the other.

3. The combination, substantially as hereinbefore set forth, of a permanent horseshoe-magnet, an electro-magnet mounted on each pole thereof, a tubular core for each magnet, and an interposed tubular connecting-piece, constituting, with the core and diaphragms, a closed chamber, through which one diaphragm operates upon the other.

4. In combination, two permanent magnets, a primary diaphragm and electro-magnet mounted on one pole of each permanent magnet, and a secondary diaphragm and magnet on the other pole of said magnet, and an interposed bifurcated mouth-piece actuating the primary diaphragm of each set.

204,560. SPEAKING-TELEPHONES. Elisha Gray, Chicago, Ill. Filed May 17, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, in a speaking telephone, of a primary magnet, a supplementary magnet mounted thereon, and intermediate connections which isolate them both magnetically and electrically, so that the supplementary magnet is charged by induction only, and not by contact.

2. The combination, substantially as hereinbefore set forth, in a speaking-telephone, of an electro-magnet, a diaphragm, and an isolated supplementary magnet interposed between the primary magnet and the diaphragm.

3. The combination, substantially as hereinbefore set forth, of a handle with a magnet mounted thereon, a plate united to the handle and encircling the magnet without contact therewith, and a diaphragm mounted upon the encircling plate, whereby the two poles of the magnet are brought near together.

4. The combination, substantially as hereinbefore set forth, of the handle, the magnet mounted thereon, the encircling plate carrying the diaphragm, and the adjusting-screw interposed between the handle and plate to adjust the diaphragm relatively to the magnet.

5. The combination, substantially as hereinbefore set forth, of the plate, the box or casing mounted thereon, the ring supporting the diaphragm, and the screws connecting the ring and supporting-plate.

6. The combination, substantially as hereinbefore set forth, in a speaking-telephone, of a diaphragm with a soft-iron ring upon which it rests, whereby a greater inductive capacity is given to the diaphragm by increasing the mass of metal without encumbering its motions with additional weight.

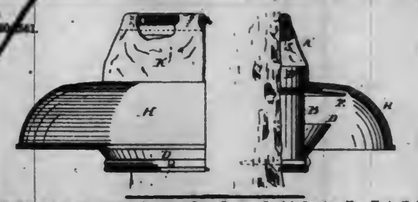
7. The speaking-telephone hereinbefore described, consisting of the combination of a handle, a primary and a supplementary magnet mounted thereon, a diaphragm mounted independently of the magnets on a supporting-plate, and an adjusting-screw for regulating the relation of the diaphragm to the magnet.

8. In a speaking-telephone, the arrangement on circuit, substantially as hereinbefore set forth, consisting of the combination of a local battery at each end, charging a magnet, supplementary magnets isolated magnetically and electrically from the primary magnets so as to act by induction only, an earth-connection with each supplementary magnet, and a line-wire connecting the supplementary magnets, whereby the line remains quiescent until thrown into action by the vibrations of the inductor.

204,561. TREE-PROTECTORS. Jett Grant and Albert G. Cook, Boston, Mass. Filed Mar. 20, 1878.

Claim.—In a tree-protector, the combination of the cylinder B B', oil-trough D, and water-shed E with the shield H and bag K, all constructed as described, and for the purpose set forth.

204,562.



204,562. FEED AND WATER CUPS FOR BIRD-CAGES. Gottlob Genther, New York, N. Y. Filed May 22, 1878.

Brief.—The cup may be retained in position by any suitable means, in place of the wire latch.



Claim.—A fountain-cup for a bird-cage, the body of said cup being closed at the top, and provided with a flat inclined bottom, and with a discharge-opening, *a*, near its bottom, leading to a spout which is provided with an extension, *b*, running up to the top of the cup, or nearly so, and adapted to fit between the filling-wires of the cage, substantially as and for the purpose shown and described.

204,563. VEHICLE-TIRE TIGHTENERS. Geo. A. Hall, Waterford, Me. Filed Apr. 27, 1878.



Claim.—In a tire-tightener, the tenon-sleeve *b*, externally threaded from end to end and flush with the spoke at the shoulder of the tenon, upon which it is driven and rigidly secured, the felly-socket *a*, perforated for the passage of the tenon and having the side flanges *a'* to prevent turning, and the tightening-nut *c*, working on the screw-sleeve against the base of the felly-socket, all constructed and arranged as herein shown and described.

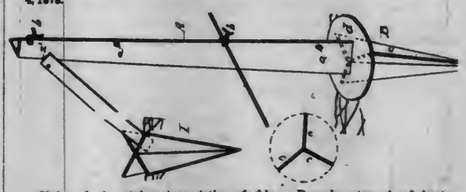
204,564. DREDGE-BOTTLES. John W. Haines, Cambridge, Mass. Filed May 6, 1878.

Brief.—The glass dredging-bottle is blown in a mold of such a shape and construction that the interior of the bottle is furnished with projections, for the purpose of breaking up such lumps by the shaking of the bottle.



Claim.—A glass bottle for table or caster use, for holding salt or other substance, provided with stems or arms *b b*, projecting inwardly from the sides or bottom, or both, said stems or arms being integral with the body of the bottle, substantially as shown, and for the purpose of preventing or destroying lumps therein, as a new article of manufacture.

204,565. FENCE-POSTS. James M. Hartley and Jos. F. Dickens, Waverly, Iowa. Filed Mar. 4, 1878.



Claim.—1. A metal post consisting of a base, B, and a stem, A, of sheet metal, bent, perforated at *a a'*, and tied by wires *b*, to prevent the separation of the edges and secure the wires *x*, substantially as set forth.

2. The combination of the post, stem, or shaft A, base B, of cast metal, having a tapering stem, *c*, and flat disk *d*, as and for the purpose set forth.

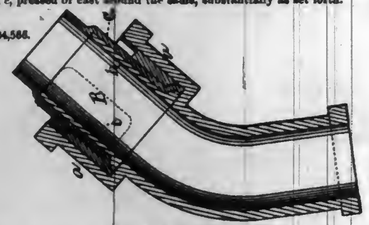
3. The stake I, of cast metal, X-shaped in cross-section, and having tapering wings at an angle to each other, as described.

204,566. PIPE-COUPLING NIPPLES. C. M. Handover, Brooklyn, N. Y. Filed May 18, 1878.

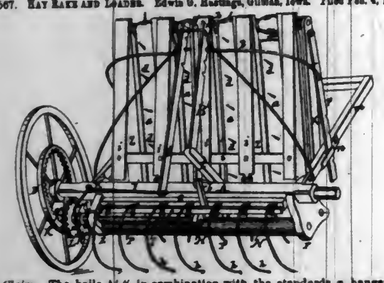
Claim.—1. The coupling-nipple for iron, copper, lead, and other metallic pipes, consisting of an iron tube having a leaden coating pressed or cast thereon, and protected from the melted lead used in calking by a guard-plate, substantially as specified.

2. The nipple B, consisting of a metal tube, *b*, and a leaden exterior coating, *c*, pressed or cast around the same, substantially as set forth.

204,566.

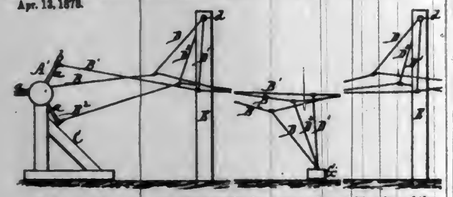


204,567. HAY RAKE AND LOADER. Edwin G. Hastings, Gilman, Iowa. Filed Feb. 4, 1878.



Claim.—The bails A' *t'*, in combination with the standards *p*, hangers *n*, and frame *m*, substantially as set forth.

204,568. APPARATUS FOR TRANSFERRING POWER. J. W. Hawley, Warsaw, N. Y. Filed Apr. 13, 1878.



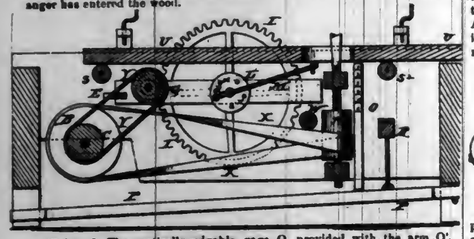
Claim.—1. In an apparatus for transferring power, the combination of the cranks A A' and the connecting-wires B B' B', having suitable tension devices connected with the said wires, the whole arranged as described, so that power imparted to one crank will be transmitted through said wires to the other crank, as and for the purpose specified.

2. The combination, with the cranks A A' at the ends of the line, and with the wires B B' B', connecting said cranks, of the tension wires or rods D D' D', arranged to take up the slack and to support the main wires, as herein described.

3. In combination with the main wires B B' B', connecting the cranks A A', the tension wires or rods D D' D', arranged in sets alternately above and below the main wires, whereby one set opposes the other in straining the main wires, as herein shown and described.

204,569. MORTISING-MACHINE. David E. Henderson, Lostown, W. Va. Filed Dec. 5, 1877.

Brief.—The work to be operated upon is placed upon a slotted table arranged to reciprocate upon rollers mounted on the main frame, while the mortise is formed by a vertically-moving auger fed to its work by a lever, upon which its lower end rests, and suitable operating mechanism. A gage having its upper end graduated and moving vertically in suitable guides is placed upon the same lever as the auger-shank, so that it can be moved at the same time with the auger, to enable the operator at all times to see the distance the auger has entered the wood.

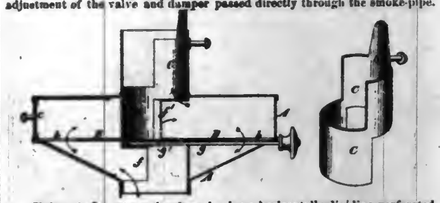


Claim.—1. The vertically-movable gage O, provided with the arm O', which rests upon the lever P, in combination with the auger-shaft N', also resting on said lever, and the operating-lever R, connected to the lever P, substantially in the manner and for the purposes herein set forth.

2. The combination, with the main shaft D, pulleys B C, and belts X Y, of the auger-shaft N', shaft F, with pulleys G G', gears H I, shaft K, disk L, with adjustable crank-pin *d*, pitman M, and slotted table U, resting on the rollers S, all constructed and arranged to operate substantially as and for the purposes herein set forth.

204,570. STOVE-PIPE SHELVES. Wm. L. Hess, Belle Plaine, Iowa. Filed Dec. 14, 1877.

Brief.—Products may be caused to circulate through the drum, or by adjustment of the valve and damper passed directly through the smoke-pipe.

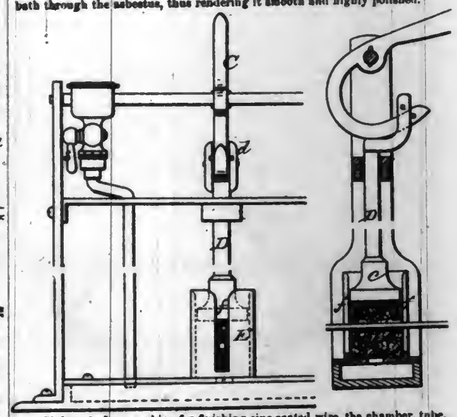


Claim.—1. In a stove-pipe drum having a horizontally-dividing perforated partition and a valve or damper, the tubular valve C, having the upper and lower openings *f f'*, substantially as and for the purpose set forth.

2. The combination of the drum A, perforated partition B, dividing the said drum horizontally, damper *g g'*, and tubular valve C *f f'*, substantially as and for the purpose set forth.

204,571. APPARATUS FOR FINISHING ZINC-COATED WIRE. Edwin H. Hill, Worcester, Mass. Filed May 18, 1878.

Brief.—Asbestus placed in holder; wire placed in slots; then more asbestus placed on wire; the whole compressed by plunger. Oil is drawn from bath below holder by capillary attraction. Wire is drawn from zinc-bath through the asbestus, thus rendering it smooth and highly polished.



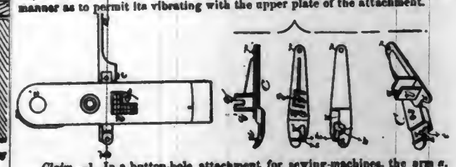
Claim.—1. In a machine for finishing zinc coated wire, the chamber, tube, or cup E, having slots *f*, and designed to contain asbestus or other non-inflammable material, properly compacted, substantially as specified.

2. The combination, with the tube, chamber, or cup E, slotted to receive the wire and designed to contain asbestos, of a plunger fitting in said tube, chamber, or cup, and a mechanism for actuating the same, substantially as specified.

3. The combination, with a chamber, cup, or tube, a plunger, and its actuating mechanism, of a chamber designed to hold oil, and communicating with the asbestus-receptacle, and an elevated oil-vessel feeding said chamber, substantially as specified.

204,572. BUTTON-HOLE ATTACHMENTS FOR SEWING-MACHINES. George F. Hildenbrand and Peter J. Eches, New York, N. Y. Filed Mar. 7, 1878.

Brief.—The shuttle-carrier operates an arm, which serves, by means of a slide which engages the top plate of the attachment at each alternate stitch, to vibrate the top plate and presser-foot, so that one stitch is taken through the cloth and the next through the button-hole, binding the edge of the same. A presser-foot of peculiar form is used, being composed of two plates, one rigidly attached to the presser-foot bar, and the other pivoted thereto in such manner as to permit its vibrating with the upper plate of the attachment.



Claim.—1. In a button-hole attachment for sewing-machines, the arm *a*, provided with the catch *a'* and projection *a''*, and bent end *a'''*, adapted to be operated by the shuttle-carrier of a sewing-machine, substantially as shown and specified, and for the purposes set forth.

2. The slide *b*, provided with the dog *d* and spring *d'*, in combination with the pivoted arm *a* and star and ratchet wheel *e e'*, substantially as described and shown, and for the purposes indicated.

3. The ratchet and star-wheel *e e'*, with its pawl and spring *h h'*, in combination with the slide provided with the lug *g* and the dog *f* of the shifting top plate A, substantially as shown and specified.

4. The button-hole feeder provided with the axle *m*, the lugs *r r'*, and slot *o*, in combination with the top plate A, having the open socket *m'* and pin *o'*, and the bottom plate B, having the opening *l'*, substantially as specified and shown, and for the purposes set forth.

5. The top plate A, provided with the shouldered dog *f* and spring *f'*, in combination with the pivoted arm *a*, the slide *b*, provided with the lug *g* and shoulder *b'*, and the star and ratchet wheel *e e'*, for the purpose of giving the side motion to the top plate, substantially as described.

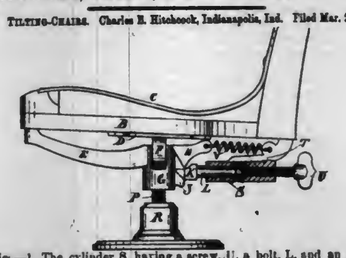
6. The shifting top plate A, provided with the curved tongue *k* and screw-pivot *i*, in combination with the bottom plate B, having a curved groove, *k'*, substantially as shown and specified.

7. The combination of the top plate A, provided with the half-tubular lug *p*, with the lower plate C of the presser-foot, provided with the slot *t*, needle-hole *n'*, and stop-pin *s*, substantially as described and shown.

8. The presser-foot composed of the two plates C and D, pivoted together at *r*, as described, the upper plate D being provided with a socket, *q*, and projection *s*, and the lower having the needle-hole *n'*, and slot *t*, substantially as shown and specified.

9. A pivoted shifting presser-foot provided with the eye *n*, a needle-hole countersunk at the mouth *n'*, and rabbeted on the bottom *x*, for the purpose of securing equal pressure on all parts of the cloth, and facilitating the turning of the button-hole, substantially as shown and described.

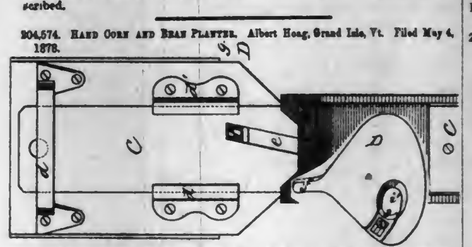
204,573. TILTING-CHAIRS. Charles B. Hitchcock, Indianapolis, Ind. Filed Mar. 2, 1878.



Claim.—1. The cylinder S, having a screw, U, a bolt, L, and an arm, T, in combination with the spring V and bracket H, in the manner and for the purpose substantially as shown and described.

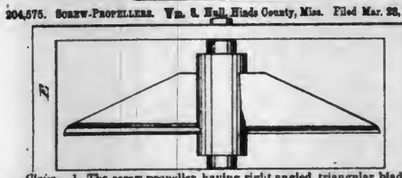
2. In combination, the bracket H, the spring V, the arm T, the cylinder S, the screw U, the bolt L, and the recessed lug J, all constructed and arranged to operate in the manner and for the purpose substantially as shown and described.

204,574. HAND CORN AND BEAN PLANTER. Albert Hoag, Grand Isle, Vt. Filed May 4, 1878.



Claim.—The combination, with the seed-chamber D', provided with the dished bottom plate *g*, having a seed-cup, *i'*, therein, of the valve-supporting plate *g'*, arranged below the said plate *g*, the oscillating valve D, fitting snugly between said plates, and having a stem, *f*, and the plunger C, having the oblique slot *e*, substantially as specified.

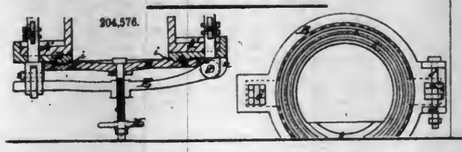
204,575. SCREW-PROPELLERS. Wm. S. Hall, Hinds County, Miss. Filed Mar. 28, 1878.



Claim.—1. The screw-propeller having right-angled triangular blades arranged spirally, as described, and having plain main surfaces, with the leading-edges of the blades bent to a finer pitch, substantially as and for the purpose described.

2. The propeller-shaft having a boss, E, in combination with the right-angled triangular blades arranged spirally, as described, and connected directly to said boss, as and for the purpose described.

204,576.

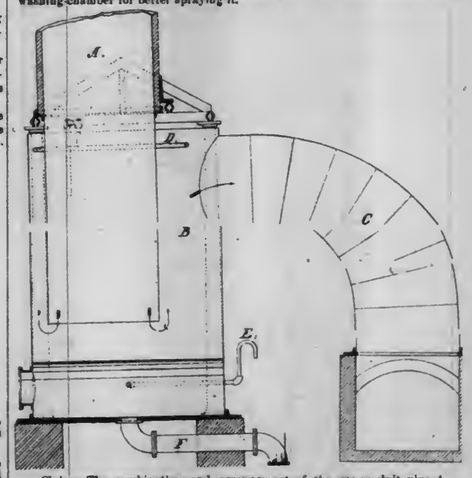


204,576. LIDS FOR GAS-RETORTS. Nicolata Jamin, New York, N. Y. Filed Aug. 24, 1877.

Claim.—The combination of a circular face-plate, B, upon the mouth of a retort, having concentric ribs or projections *e e*, with a circular lid, D, having concentric recesses *d d* to fit the said ribs or projections, and mounted upon a central bolt, J, by which it is borne on the cutter-bar E, and on which it has a free turning movement, substantially as and for the purpose herein specified.

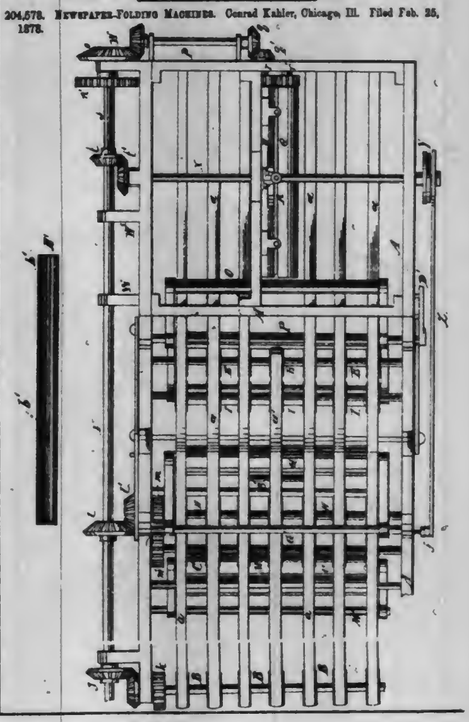
204,577. APPARATUS FOR WASHING GASES. Daniel H. Jones, Johnstown, Pa., assignor of one-half his right to Cambria Iron Company. Filed Oct. 8, 1877.

Brief.—Gases from blast and other furnaces are first passed over the surface of water, and then up through a shower or spray of water from a perforated spray-pipe, from which the water is jetted upward against the top of the washing-chamber for better spraying it.



Claim.—The combination and arrangement of the gas-conduit pipe A, washing-tub B, and gas-discharge pipe C with spray-pipes D and waste-pipes E and F, substantially as and for the purpose hereinbefore set forth.

204,578. NEWSPAPER-FOLDING MACHINES. Conrad Kahler, Chicago, Ill. Filed Feb. 25, 1878.



Claim.—1. In a printing-press delivery and folding apparatus, the combination of the tapes *a c*, leading directly from the cutting-cylinders, with the interposed tapes *b*, folding-blade, and rollers Q, whereby the sheets are carried, overlaid, and extended over said folding-rollers before leaving the leading tapes, substantially as specified.

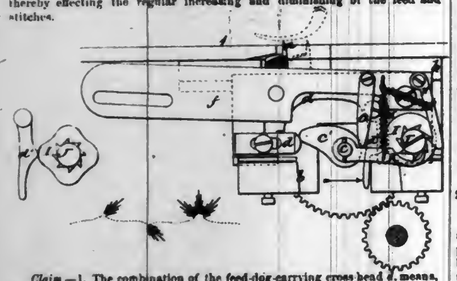
2. The combination of the tapes *a c*, the pulleys C, and tightening-roller *m*, arranged to operate as a sheet-breaker, with a switch and intermediate tapes *b*, substantially as specified.

3. The combination of the tapes *a c* and intermediate tapes *b* with the paste-pot B′, arranged for continuous operation, and operating on the center of the sheets or half-sheets that pass in a direct line, substantially as specified.

4. The combination of the support S, having slot *w* and roller *u*, the cam U, with groove *v*, shaft X, and the socket T, for giving the blades a vertical movement, substantially as and for the purpose set forth.

204,579. FEED-OPERATING MECHANISMS FOR SEWING-MACHINES. Thomas K. Keith, Haverhill, Mass., assignor to Moses How, same place. Filed Feb. 23, 1878.

Brief.—The secondary feed-dog is carried by a cross-head that is reciprocated by a cam acting against bearings, one of which is in form of a lever, and is pivoted at one end. This lever-bearing is made to vibrate by means of an eccentric or cam attached to the cross-head, and operated by a pawl pivoted to the shaft of the cam giving the reciprocating motion to the cross-head, thereby effecting the regular increasing and diminishing of the feed and stitches.



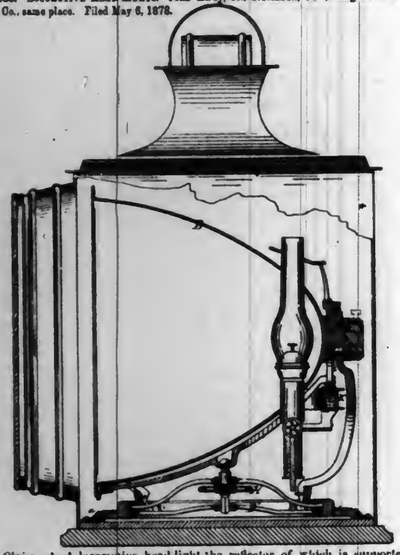
Claim.—1. The combination of the feed-dog-carrying cross-head *d*, means, substantially as described, for reciprocating the same, and means, substantially as described, whereby the reciprocating movements of the cross-head and feed-dog are automatically varied in length, as set forth.

2. The feed-dog-carrying cross-head *d*, provided with the fixed bearing d^2 and pivoted or swinging bearing d^3, combined with the cam *c′*, for reciprocating the cross-head, the cam I, forming a backing for the bearing d^3, and the ratchet J and pawl K, arranged to rotate the cam I when the cross-head is reciprocated, as set forth.

3. The combination of the cam I and ratchet J with the cross-head *d*, having bearings d^2 d^3, arranged to be reciprocated by the cam *c′* and the pawl K, pivoted to the non-reciprocating shaft *c*, as set forth.

4. The combination of the lever *f* and arm O with the pawl K, substantially as and for the purpose specified.

204,580. LOCOMOTIVE HEAD-LIGHTS. John Kirby, Jr., Cincinnati, Ohio, assignor to Post & Co., same place. Filed May 6, 1878.



Claim.—1. A locomotive head-light the reflector of which is supported upon a circular track or way, substantially as and for the purposes specified.

2. In a locomotive head-light, the combination, substantially as specified, of the reflector, the standards or legs thereof, and a circular track or way, forming the support and guide for said legs.

3. In a locomotive head-light, the combination, substantially as specified, of a turning reflector and a screw or equivalent means for forcing the reflector hard down upon its fixed support on assuming the position in which it faces front.

4. In a locomotive head-light, the combination, substantially as specified, of a turning reflector, the circular track for supporting it, the traveling screw loosely connected with the reflector, and the nut connected to turn with the reflector to traverse and move the said screw.

5. In a locomotive head-light, the combination, substantially as specified, of a turning reflector, the circular track for supporting it, the traveling screw loosely connected with the reflector, the nut on said screw, and a pawl for connecting the nut with the reflector.

6. The sliding base of the reflector, composed of a metallic frame provided with a circular track, substantially as and for the purposes specified.

7. In a locomotive head-light, the combination, substantially as specified, of the turning reflector, the circular track, the stop or stops thereon, and the latch for locking the reflector.

8. The oil-reservoir detachably secured to a reflector for ready removal and replacement, substantially as and for the purposes specified.

9. The oil-reservoir fitted around the reflector, with its ends bolted to forked brackets thereof, and its curved rear part bolted to a suspension-plate, substantially as and for the purpose specified.

10. A locomotive head-light the reflector of which is adjustably secured to its support at the rear end, substantially as specified, so that its pitch can be regulated by moving its rear end up or down.

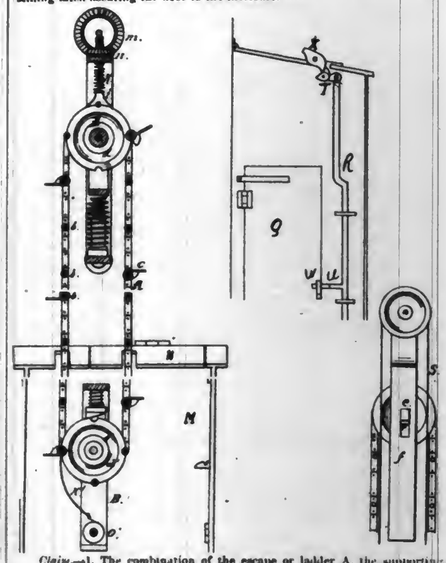
11. In a locomotive head-light, the combination, substantially as specified, of the reflector mounted on a circular track, the rigidly-secured front standards or legs thereof, the rear standards or legs, to which the reflector is adjustably secured, and the set-screws for adjusting said rear legs to the track.

12. In a locomotive head-light having a turning reflector, the window in the door or side of the case, arranged with reference to a hand-hole therein, substantially as and for the purpose specified.

13. In a locomotive head-light, the combination, substantially as specified, of the oil-reservoir, the covered glass tube dipping into and projecting above the same, and the float in said tube.

204,581. FIRE-ESCAPES. Thomas H. Knight, Orville H. Curtis, and George C. Gibbs, Milwaukee, Wis.; said Knight assignor to said Curtis. Filed Feb. 2, 1878.

Brief.—A fire-escape consisting of an endless ladder passing over upper and lower drums, the journals of which have bearings in sliding boxes supported on springs. The movement of the ladder is controlled by friction-brakes bearing on pulleys on the drums, and under the control of a person on the ladder or on the ground. The lower end of the ladder is protected from interference or improper use by a locked inclosure, the top of which is provided with a falling door, through openings in which the ladder passes, the door being supported in its closed position by a weighted or eccentric shaft, connected by a bell-crank arm and rod with a sliding latch to secure an ordinary door to the inclosure. A person stepping on the ladder causes it to descend, and the side pieces of the ladder, striking a catch sustaining the eccentric-shaft, releases the same, thereby permitting the trap-door to fall, and at the same time, by means of the bell-crank arm and sliding rod, releasing the sliding latch securing the door to the inclosure.

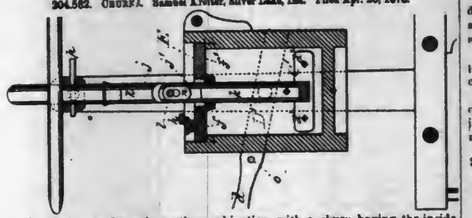


Claim.—1. The combination of the escape or ladder A, the supporting pulley E, sliding vertically in a frame, as shown, strap-brakes *i i*, springs K K, and screw-bolts *l l*, provided with nuts *n n*, substantially as and for the purposes set forth.

2. The combination of the shaft O, catch X, bell-crank T, connecting-rod R, provided with catch-piece U, and door Q, provided with catch W, all constructed and operating substantially as hereinbefore set forth.

3. The shaft O, provided with the pinions *o m*, pulley P, and band S, in combination with beveled pinions *n a*, bolts *l l*, springs K K, brakes *i i*, and pulleys *h h*, substantially as and for the purposes set forth.

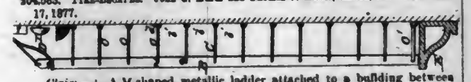
204,582. CHURN. Samuel Kreiter, Silver Lake, Ind. Filed Apr. 20, 1878.



Claim.—1. In a churn, the combination, with a churn having the inside ledge *i* and the projecting spurs *g*, of the lid E, composed of the sections *f f′*, having contiguous beveled edges and the buttons, substantially as specified.

2. The combination, with the coupled dash-rod sections *k k′* and their hinge-pin *l*, having a head, *l′*, and an annular end groove, *m*, of the locking plate *n*, having the key-hole slot *i i′*, substantially as specified.

204,583. FIRE-ESCAPES. John G. Kurtz and Thomas J. Kister, Milton, Pa. Filed Nov. 17, 1877.



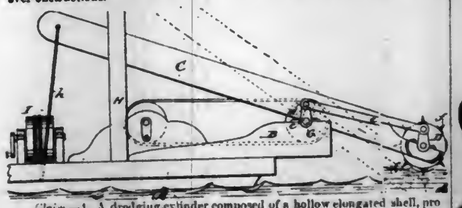
Claim.—1. A V-shaped metallic ladder attached to a building between the windows and forming a double ladder, said ladder consisting of the pivoted rungs C C′, perforated bar B, and staples *d*, or their equivalents, all constructed substantially as and for the purposes set forth.

2. The combination of a metallic ladder attached to a building, and capable of being folded flat against and opened from the same, with an automatic alarm operated by the opening of the ladder, as set forth.

3. The combination of the perforated center bar B, with pin *a* at the top, the rungs C C′, bent rod D, staples *d*, and an alarm, all constructed substantially as and for the purposes herein set forth.

204,584. DREDGING-MACHINES. Thomas L. Lee, Paducah, Ky. Filed Feb. 20, 1878.

Brief.—A dredging-machine in which the cutting-cylinder is located at the lower end of a lever-frame centrally fulcrumed in suitable bearings on the boat, and the driving-shaft, from which motion is communicated to the cylinder, is arranged concentrically with the bearings of the lever-frame. The cylinder is provided with cutting-blades of an inverted-V shape, having flanges at their base, through which pass screw-bolts to secure them to the cylinder. The pivoting of the frame near its center renders it yielding to recede from or ride over obstructions.



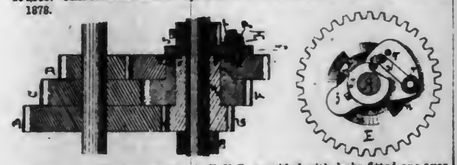
Claim.—1. A dredging cylinder composed of a hollow elongated shell, provided with longitudinal beating blades or knives, flanged at their base and secured to the periphery of the cylinder by screw-bolts, as described.

2. The combination, with the lever-frame, fulcrumed at or near the middle and carrying a revolving cutting-cylinder at its outer end, of the drive-shaft arranged concentrically with the pivots of the lever-frame, as and for the purpose described.

3. The combination, with the lever-frame pivoted near its center, and a drive-shaft arranged concentrically with said pivots, of a tubular bearing arranged to sustain the weight of the frame, and an independent concentric bearing arranged to support the drive-shaft, substantially as described.

4. The combination of the cylinder D, centrally-fulcrumed lever-frame C, drive-shaft G, pitman *e*, cranks *d′ d″*, or their equivalents, guide-posts H, drum I, and cable *h*, substantially as and for the purpose described.

204,585. CHANGE-SPEED GEARS. Sylvanus D. Locke, Hoosick Falls, N. Y. Filed Apr. 17, 1878.



Claim.—1. The several wheels E F G, provided with hubs fitted one over the other, as set forth, so that the ends of said hubs may all terminate on the same plane, combined with a clutch mechanism common to all of said wheels, whereby either one may be locked to its shaft, as set forth.

2. The flange or clutch-plate *j*, rigidly secured to the shaft, and extended laterally to cover the clutch faces of the several wheels, as set forth, provided with holes *q* opposite the several clutch-faces, combined with a clutch pin, *p*, actuated by a spring to keep it in place.

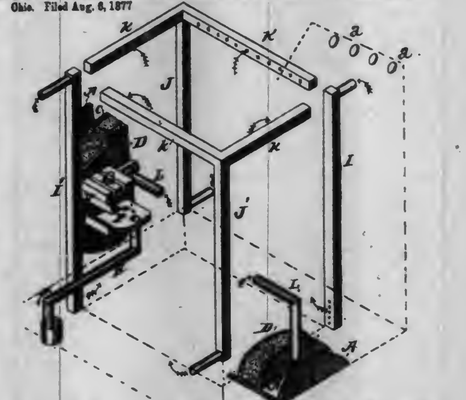
3. The clutch-plate or flange *j*, as set forth, provided with the holes *q*, combined with the pin *p*, mounted in the end of an arm, H, which is provided at its pivot end with a spring, *r*, as set forth.

4. A series of wheels, E F G, having concentric hubs, substantially as described, combined with a sliding sleeve-bearing, *i*, upon which said wheels are mounted, so that the whole series may move laterally along the shaft, as set forth.

5. A series of wheels, more or less of which are gear-wheels, part fast and part loose, the loose wheels capable of being locked to the fast wheels, so as to change the speed combination at will, as and for the purpose set forth.

6. A system of change-gears, substantially as shown, combined with a clutch mechanism external to the shaft, whereby either of said wheels may be individually and separately locked to its shaft to change the speed transmitted.

204,586. REFRIGERATOR-BUILDINGS. Jacob Lorenz and Frederick W. Bender, Hamilton, Ohio. Filed Aug. 6, 1877.

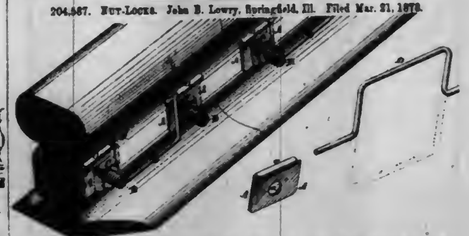


Claim.—1. The combination of ingress and egress tubes I I′ and J J′ with air-space A′, to cause the circulation of air, substantially as described.

2. The elbow-tubes L below the ice-floor, in combination with the tubes J I′ J J′ and air-space A′, in the manner and for the purpose specified.

3. The combination, in an ice and preserving house, of the ingress and egress openings I I′ and *a a*, near the roof of the building, with the air-tubes K J J′, substantially as and for the purpose specified.

204,587. NUT-LOCKS. John B. Lowry, Springfield, Ill. Filed Mar. 21, 1878.



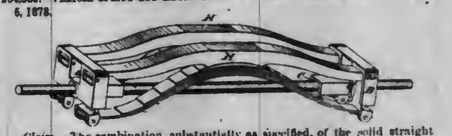
Claim.—As a means for locking the nuts U in place upon the bolts B, the washers A, provided with the openings *a′* and sleeves *a*, and the crank-rod D, journaled within said sleeves, and capable of being turned downward between said nuts, substantially as specified.

204,588. BALE-TIES. William Loyd, Allegheny, Pa. Filed May 14, 1878.



Claim.—The combination, with the tie band having the lapping ends and the slit-loops *b* in said ends engaging with each other in the manner described, of the transverse hook C, pivoted to the overlap between the slit-loops, to engage the same and be secured in this engagement by their extension under strain, substantially as specified.

204,589. VEHICLE SPRING AND AXLE. Samuel W. Ludlow, Cincinnati, Ohio. Filed Apr. 6, 1878.

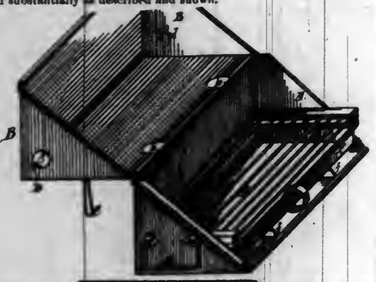


Claim.—The combination, substantially as specified, of the solid straight axle, the duplex guide boxes, rigidly secured to the axle near the respective journals thereof, the pair of springs, the links suspended in the guide-boxes to connect the ends of the springs thereto, and the guide-bars H.

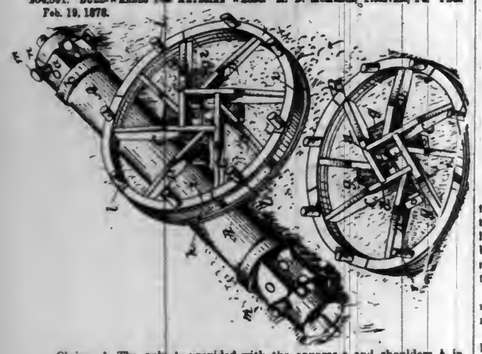
204,590. MEAT-ROASTERS. Charles Mackh, Elgin, Ill., assignee of one-half his right to O. P. Chisholm, same place. Filed Mar. 23, 1878.

Claim.—The roasting-vessel described, consisting of the triangular prismatic body A, provided with handles *a*, and carrying the removable grate E and gravy-pan F, and the cover B, shaped like the body and hinged thereto, and having the folding leg C and the venting-disks D, constructed and arranged substantially as described and shown.

204,590.



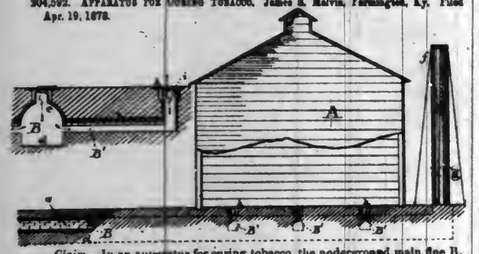
204,591. BULL-WHEELS FOR ARTESIAN WELLS. M. B. McManus, Titusville, Pa. Filed Feb. 19, 1878.



Claim.—1. The axle A, provided with the squares *a* and shoulders *b*, in combination with a suitable wheel and the bolts *m* and washers *n*, substantially as set forth.

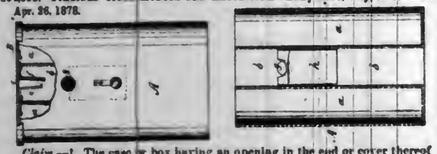
2. In a bull wheel, the spokes C and grooved spokes D, in combination with the bolts *f* and washers *g*, substantially as shown and described.

204,592. APPARATUS FOR CURING TOBACCO. James S. Malvin, Farmington, Ky. Filed Apr. 19, 1878.



Claim.—In an apparatus for curing tobacco, the nodergroand main flue B, formed by the trench or ditch *d*, arched by brick, so that the crown *e* will not be above the surface, leading from the furnace and passing through the drying-room, and extending to the outer side of the farthest wall, and terminating in a smoke-stack or chimney having the damper *g*, with the intersecting hot-air flues B', the terminus of each being provided with the damper *i*, as shown and described, and covered on a level with the surface by the grating *h*, as set forth.

204,593. COMBINED CIGAR-LIGHTER AND MATCH-SAFE. Henry Monk, Troy, N. Y. Filed Apr. 26, 1878.



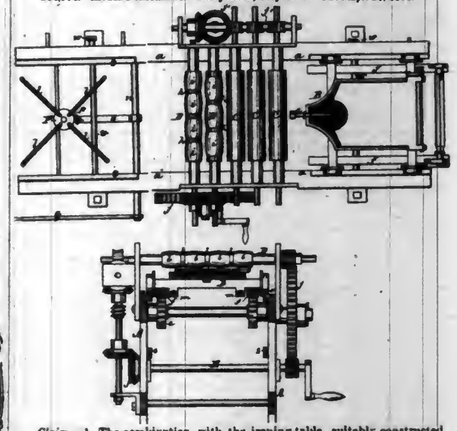
Claim.—1. The case or box having an opening in the end or cover thereof for insertion of a match, a friction match lighter attached to the inner side of the cover, a combined combustion-chamber and air-passage, and a lateral opening for allowing access to the flame of the match, in the manner shown and described, for the purpose specified.

2. The pocket device for holding matches and lighting cigars, consisting of a case having side pockets *a*, for containing matches, the central air-passage and combustion-chamber, the friction device *c*, the perforated cover, and an aperture in the side of the case, as shown and described.

3. The slide *h*, having its upper end beveled to an edge to adapt it for use in cutting off the tips of cigars, in combination with the case A, having the aperture *g*, as shown and described.

4. In combination with the cover B, having an opening, *c*, therein, friction-plate *e*, and the guide *f*, as shown and described, for the purpose specified.

204,594. IRONING-MACHINES. Henry Monk, Troy, N. Y. Filed Apr. 26, 1878.



Claim.—1. The combination, with the ironing-table, suitably constructed to permit a shirt to be drawn over it, of the bosom-board, made adjustable toward and from the fixed head of said ironing-table, and its upper surface lying in a plane above the head, as shown and described, whereby said bosom-board may be adjusted to bring its upper end into coincidence with the correspondingly-shaped end of different-sized shirt-fronts, leaving the neck-bands thereof free or unsupported, as specified.

2. The combination, substantially as described, of the parallel polishing-rolls, having their respective reduced and enlarged portions or sections arranged in the alternation specified, for the purpose set forth.

3. The combination, with the driving-shaft E and polishing-rolls D, of the large spur-gear *j* and the pinions meshing with it, the bevel-gearing *j'*, the worm-shaft *j''*, and the ironing-rolls C, having worm-pinions, all constructed and arranged as shown and described.

4. The combination, with an ironing-table and ways *a*, substantially as described, of a vertically-adjustable device adapted to support said table, raise it the distance required to free the ways, and capable of rotation for turning the table end for end, for the purpose of facilitating the removal and attachment of shirts, as specified.

5. The combination, substantially as described, with the table-lifter shaft and its grooved bearing, of a feather fixed or attached on the upper portion of the shaft, for the purpose of preventing rotation of the lifter while being adjusted vertically, and then supporting it while being rotated, as specified.

6. The combination of the rock-shaft, arm, link, lifter, and guides or bearings for the lifter, as shown and described, for the purpose specified.

7. In combination with the ways *a* and ironing-rolls, a supplementary track arranged below said ways, substantially as described, for use in transferring the ironing-table from one end of the machine to the other.

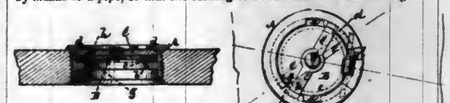
8. In combination with the horizontal ways and ironing-rolls of an ironing-machine, a supplementary table-transfer track arranged below the rolls, and having tilting end rails or sections to allow the table to descend from and ascend to the said ways, substantially as shown and described.

9. The combination of the fixed rails or track-sections *a*, the rails *b*, the ways *a*, and means for holding said rails in horizontal position and suddenly allowing them to tilt, substantially as and for the purpose specified.

10. The combination, with the tilting rails, substantially as described, of vibrating arms, rock-shaft, and lever attached thereto, for the purpose of supporting the rails in horizontal position and allowing them to tilt at the required moment, as specified.

204,595. BUNGS. Hermann Müller, Hoboken, N. J., assignor to Solomon L. Cohen, New York, N. Y. Filed May 14, 1878.

Brief.—The bar may have a vent-hole in it, so as to vent when the two holes register, and the vent-hole in the bar may communicate with the faucet by means of a pipe, so that the turning of the faucet will vent the keg.



Claim.—1. The combination, with the bung-socket having a seat, *b*, for the bung and locking flange-sections *d d'*, of a valve or bung constructed to open and close through or between said sections, and provided with a vent-hole, *g*, and a locking-bar pivoted to the bung for operation in relation with the locking-sections of the bung-socket and the vent through the bung, substantially as specified.

2. The pivoted bung-locking bar C, provided in its face with a cavity containing a packing, *h*, in combination with the valve or bung B, having a vent, *g*, and the bung socket A, substantially as shown and described.

204,596. FILE-HOLDERS. Wm. T. Nicholson, Providence, R. I., assignor to the Nicholson File Company, same place. Filed Apr. 8, 1878.

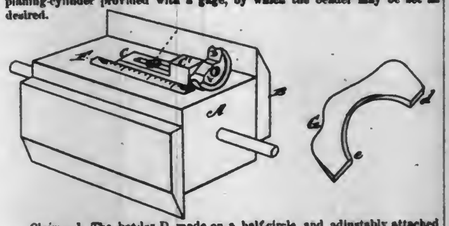


Claim.—1. In a file-holder, the combination, with a pair of expanding jaws, of a handle provided with a threaded spindle, which occupies a tapped hole in one of the jaws and abuts at its end against the inner face of the other jaw, substantially as described.

2. The combination, with a file-handle, of a screw-clamp which has two pivoted jaws of unequal length, and is attached to one end of the handle, substantially as described, whereby, when applied to a file, the handle will be inclined to the cutting-face thereof, as set forth.

204,597. BEADING ATTACHMENTS TO CUTTER-HEADS. John J. Nolan, East Saginaw, Mich. Filed Mar. 9, 1878.

Brief.—A beading-cutter made in a half-circle is adjustably attached to a planing-cylinder provided with a gage, by which the beader may be set as desired.

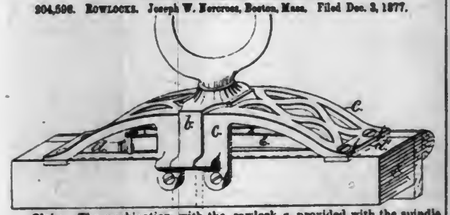


Claim.—1. The beader D, made on a half-circle, and adjustably attached to a stock fastened to a planer-cylinder, whereby the beader-knife may be turned out of the way when not desired for use, as herein set forth.

2. The combination, with a planer-cylinder, of the slotted adjustable plate C, with head C', and the adjustable beader D, made on a half-circle, substantially as and for the purposes herein set forth.

3. The gage F, secured to a planer-cylinder, A, in combination with the adjustable beader-stock and beader, for the purposes herein set forth.

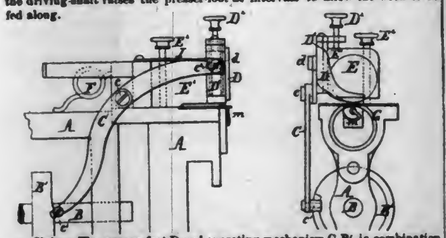
204,598. ROWLOCKS. Joseph W. Norcross, Boston, Mass. Filed Dec. 3, 1877.



Claim.—The combination, with the rowlock *a*, provided with the spindle *a'* and the hinged bolster *b*, of the guard *c*, arranged so as to receive and retain the hinged bolster *b* in position, and secure the whole to the gunwale, substantially as and for the purpose described.

204,599. STRAW-BRAID-SEWING MACHINES. Frank D. Palmer, New York, N. Y. Filed Aug. 16, 1877.

Brief.—For insuring that the thread shall always lie at a certain distance below the upper surface of the work, the presser-foot is attached to a slide carried by the head of the machine and pressed downward by a spring, so that all the portions of the braid shall be compressed to an equal thickness, the downward movement being regulated by a set-screw. A lever actuated by a cam on the driving-shaft raises the presser-foot at intervals to allow the work to be fed along.



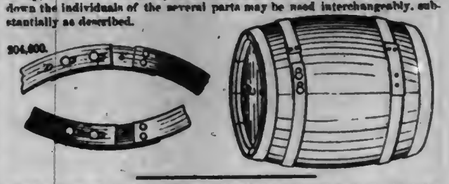
Claim.—The presser-foot D and operating mechanism C B', in combination with the separate head-block E', having separate pressing mechanism E, and with a gage-screw, D', adapted to not only gage the level to which the work may be compressed, but also to permit the presser-foot to rise when the head-block is raised, as and for the purposes herein specified.

204,600. KNOCK-DOWN BARRELS. Lew Passoo, Dubuque, Iowa, assignor to Monroe M. Cody, same place. Filed July 31, 1877.

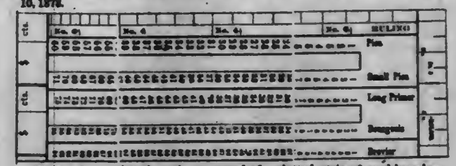
Claim.—1. The method of constructing knock-down bulge barrels for facilitating their transportation when knocked down, and their restoration to form when set up for reuse, which consists in making the staves for each size of barrel of the same dimensions, curvatures, crozing, and bevels, the heads also of the same size and construction, and the hoops of metal, and adapted to be locked at their ends and driven onto the set-up barrel, substantially as set forth.

2. A knock-down bulge barrel composed of the following parts, to wit: staves of uniform size, bevel, curvature, and crozing, heads alike in size and construction, and locking detachable metallic hoops, whereby the barrel, when set up, will be held in form by the tension alone of the hoops, and when knocked down the individuals of the several parts may be used interchangeably, substantially as described.

204,600.



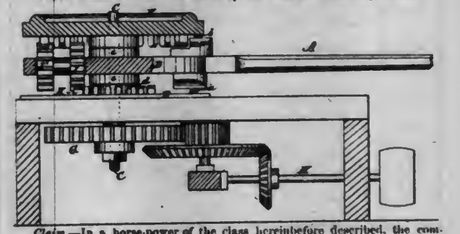
204,601. PRINTERS' MEASURING-SCALES. Wm. G. Parris, New York, N. Y. Filed May 10, 1878.



Claim.—1. A printer's scale composed of a slotted strip of card-board or other suitable material, bearing on its edges and on the edges of its slots graduated scales *a b d e f g h i j*, adapted for measuring type or matter, substantially as hereinbefore set forth.

2. A printer's scale composed of a slotted strip of card-board or other suitable material, bearing on its edges and on the edges of its slots graduated scales *a b d e f g h i j*, adapted for measuring type or matter, and a ruling-scale, *k*, substantially as and for the purpose described.

204,602. HORSE-POWERS. Wm. H. Phelps, Greenville, Ga. Filed May 18, 1878.



Claim.—In a horse-power of the class hereinbefore described, the combination of the crown-wheel E and spur-gear G, fixed on the axis C, the lever A and plate B, connected as described, and the latter revolving loose on said axis, the pinions I I', arranged on the side of the axis opposite the lever, and the fixed row of teeth K, all as shown and described, for the purpose specified.

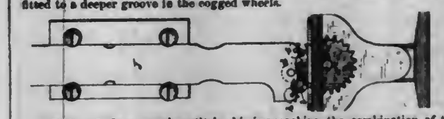
204,603. MAILING-PACKAGES. William B. Pittman, Vicksburg, Miss. Filed Apr. 23, 1878.



Claim.—An envelope having a flap-stiffener secured to one side of its open end, and extending the full width of the envelope, and arranged to fold over with the edges of the envelope into the same plane with the body portion, and be secured by a transverse band or cord, substantially as described.

204,604. RUNNING-STITCH SEWING-MACHINES. J. Heberling, Iowa City, Iowa. Filed May 9, 1878.

Brief.—A corder is employed between two needles, the said corder being fitted to a deeper groove in the cogged wheels.



Claim.—1. In a running-stitch shirring-machine, the combination of the table C, having opening, as described, the stud *a*, removable wheel F, and latch G, substantially as and for the purposes herein set forth.

2. In a running-stitch shirring-machine having a series of intermeshing cogged wheels or pinions, the combination of a bodkin or corder of the form shown and a needle on each side thereof, as described, said bodkin or corder and needles being arranged in grooves of different depths in the pinions, as set forth.

3. The combination of the head D, having screw-heads or their equivalents *y*, the bar J, carrying the pinions or wheels *d a*, and formed with the cutouts *x*, and the set-screw K, substantially as and for the purposes herein set forth.

204,605. MOP-HEADS. Jas. Porter, Greenfield, Mass. Filed Apr. 12, 1878.

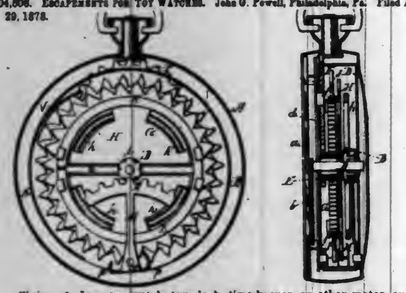


Claim.—1. In a mop-head, the corrugated V-shaped bar C, the plate *d* of which is provided with springs *e e* at either end, to bear against teeth in the frame A, as and for the purpose set forth.

2. In a mop-head, the V-shaped bars C B, with projecting flanges or lips *a b* on each, to hold the mop when they are moved toward each other.

3. A mop-head composed of the lower corrugated bar, with projecting lips *b*, and the upper movable bar, with projecting lips *a*, and a notched bottom, held in position by springs *e*, secured to it, and holding onto the ratcheted frame A of the mop-head.

204,606. ESCAPEMENTS FOR TOY WATCHES. John G. Powell, Philadelphia, Pa. Filed Apr. 29, 1878.

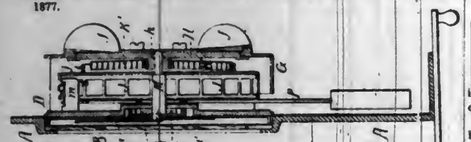


Claim.—1. In a toy watch, toy clock, time keeper, or other motor, an escapement-motion consisting of two pallet-wheels, one of less diameter than the other, and a pallet-lever, one pallet of which is acted on by the teeth of one wheel and the other by the teeth of the other wheel, all substantially as set forth, for the purpose specified.

2. The combination of the duplex pallet-wheel and the pallet-lever with the inner case B of the toy watch, toy clock, or other motor, and the pivot-pins *x x* for the said lever, the said pins projecting inward from opposite sides of the case, all substantially as set forth.

3. The within-described duplex pallet-wheel, consisting of the wheel H, with its bent lips *f*, and the toothed ring I, the two being secured together, all substantially as described.

204,607. TOY WATCHES AND CLOCKS. John G. Powell, Philadelphia, Pa. Filed Oct. 26, 1877.



Claim.—1. In a toy clock, toy watch, or time-keeper, the combination of the following elements, namely: first, a spindle carrying the large pointer; second, a wheel carrying the small pointer, and having internal teeth; third, a pinion geared to the wheel; and, fourth, an eccentric for controlling the relative movements of the wheel and pinion, all substantially as set forth.

2. The combination of the frame A of a clock or watch, the plate or disk D, and glass B with the wheel N, pinion K, and two pointers interposed between the said disk D and the glass, as set forth.

3. The combination of the spindle M, the recessed disk D, the pinion K, secured in the said recess, and the wheel N, hung to an eccentric on the spindle, all substantially as set forth.

4. The combination of the pallet-wheel J and its perforated flange with a pendulum hung to the disk or plate D, between the latter and the pallet-wheel, as set forth.

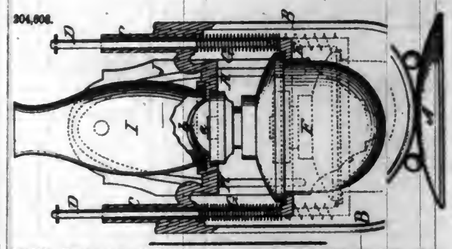
5. The combination of the disk H, the elastic cross-bar I, and the ratchet at the back of the case.

204,608. LAMPS. Frederick Ratcliff, West Meriden, Conn. Filed Feb. 9, 1878.

Brief.—The lamp-bowl is held up in place under the chimney and cone by the springs on the bars D.

Claim.—The combination, with the U-shaped support B and the globe-ring H, having the sleeves C attached to said support, of the lamp-ring E, having the slide-rods D, the upper ends of which work in the sleeves C, and the lower ends of which are surrounded by the exposed extension-springs, as specified.

204,608.



204,609. RECEPTACLES FOR LIQUORS, ACIDS, AND OILS. John F. Reinhard, New York, N. Y. Filed May 9, 1878.

Brief.—The trunnion-plates of the black glass vessel are interwoven with the wicker-work vertically, or the plates may be applied horizontally and placed around the vertical strands, the horizontal strands being omitted for a space of the width of the trunnion-plates. The wicker-work is rattan, other wood, wire, or hemp, and may be covered with papier-maché. The bottle-casing may be of metal, and lined with felt or paper.

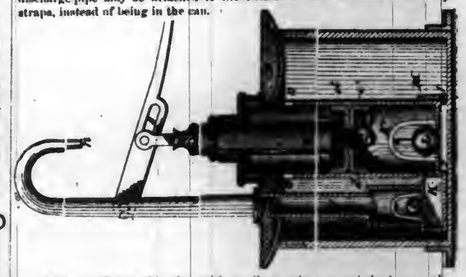


Claim.—1. The removable plates C', each having a trunnion, C, attached to it near its middle, in combination with the wicker-work B, to which the plates are attached, and the body A, as herein specified.

2. In combination with a trunnioned demijohn, A B C, the compound packing-case D E' E², the parts E' E² being adapted to serve the double functions of coverings for the packing-case when packed, and of supports for the packing-case and for other vessels when unpacked, all substantially as herein specified.

204,610. APPARATUS FOR STORING AND DISCHARGING OIL. Stephen H. Rhoades, Pittston, Pa. Filed May 3, 1878.

Brief.—A slip-cap may be used in place of the screw-threaded cap; also, the discharge-pipe may be rigidly attached to the cover, and a brace attached to its upper end and to the can, to strengthen the pipe while pumping. The discharge-pipe may be attached to the outside of the can, and secured by straps, instead of being in the can.



Claim.—1. The combination, with an oil-can, of pump and discharge cylinders attached to the removable cover of the can, said cylinders provided with check-valves, substantially as set forth.

2. The combination, with an oil-can or other vessel, of a removable cover, having pump and discharge cylinders attached thereto, and a discharge-pipe leading from said discharge-cylinder and extending above the cover of the can, substantially as set forth.

3. The combination, with an oil-can or other vessel, of a cover having pump and discharge cylinders attached thereto, of a discharge-pipe extending above the cover, and a pump-lever fulcrumed on said discharge-pipe, substantially as set forth.

4. The combination, with an oil-can or other vessel, of a removable cover provided with a drip-opening, and having pump and discharge cylinders secured thereto, and a discharge-pipe extending above the can, the downwardly-turned end of said discharge-pipe being located vertically above said drip-opening in the cover, substantially as set forth.

5. The combination, with an oil-can or other vessel, of pump and discharge cylinders attached to the removable cover of the can, and a flange secured to the bottom of the can to retain said cylinders in position, substantially as set forth.

6. The combination, with an oil-can or other vessel, of a removable cover, having pump and discharge cylinders attached thereto, and a perforated flange attached to the bottom of the can, substantially as set forth.

7. An oil-can or other vessel provided with angle-pieces secured diametrically opposite each other to the lower edge of the can, in combination with a closed loop and a catch-piece adapted to be secured to a shelf or other support for the can, substantially as set forth.

8. The combination, with an oil-can or other vessel the cover of which has pump and discharge cylinders attached thereto, of a discharge-pipe extending above the cover, a piston-rod provided with a bifurcated end, a slotted pump-lever, and two or more studs attached to the discharge pipe, substantially as set forth

204,611. SHIPPING-PACKAGES. Marcus C. Richards, Oswego, Ill., assignor of two-thirds his right to H. W. Farley and D. M. Knight, same place. Filed Jan. 25, 1878.

Brief.—A knock-down package with metal body and wooden heads, with combined strengthening and securing strips.



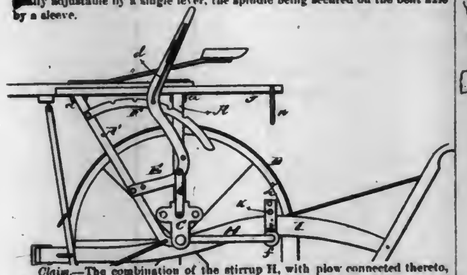
Claim.—1. A shipping-package composed of a sheet-metal hoop or barrel, A, having its ends temporarily secured, and removable wooden heads C, fitted to the ends of the barrel, and temporarily secured thereto by means of stripe E and staples F, substantially as described.

2. In a shipping-package, the sheet-metal hoop or barrel A, formed by securing the ends of the metal strip together by a temporary and removable fastening, in combination with wooden heads C, fitted to the open ends of the barrel, secured thereto by temporary fastenings, and removable therefrom at pleasure, substantially as and for the purpose set forth.

3. In a shipping-package, the sheet-metal hoop or barrel A, the ends whereof are detachably secured together by means of a metallic strip, B, laced through slots *a a* near the ends of said hoop, in combination with wooden heads C, fitted to the open ends, and secured therein by temporary fastenings, one of said heads being in two pieces, hinged together, so that the contents may be inspected without removal of the whole cover.

204,612. WHEEL-PLOWS. Nelson Rowen and Garret Amis, Oswego, Kans. Filed Mar. 30, 1878.

Brief.—The bail supporting the plow-beam and the wheel-spindle are vertically adjustable by a single lever, the spindle being secured on the bent axle by a sleeve.



Claim.—The combination of the stirrup H, with plow connected thereto, the rod or link *m*, lever E, rod or link *b*, slide C, and wheel D, all constructed and arranged to operate substantially as and for the purposes set forth.

204,613. HARVESTERS. John S. Royce, Cuylerville, N. Y. Filed Mar. 20, 1878.

Claim.—1. The combination, substantially as hereinbefore set forth, of the wide tongue-extension, the sleeve-bearing secured thereto, the driving and supporting wheel, its projecting hub mounted in said bearing, and the stud-axle.

2. The combination, substantially as hereinbefore set forth, of the loose driving-wheel, the projecting tubular hub, the flanged sleeve-bearing, the tongue-extension, to which said bearing is bolted, the stud-axle, and the disk or flange upon its inner end, against which said bearing and hub abut.

3. The combination of the single driving or supporting wheel, the tongue or draft frame inside thereof, and the fender encircling the gearing and its supporting-frame, and hinged at each end to the tongue, substantially as and for the purpose set forth.

4. The combination, substantially as hereinbefore set forth, of the single driving-wheel, the tongue-extension, the rear cross-piece secured upon the tongue and connected with the platform at its inner end, the seat, and the seat-supporting standard mounted upon and rocking on the outer end of said cross-bar outside the driving-wheel.

5. The combination, substantially as hereinbefore set forth, of the tongue, the driving-wheel supported thereby, the front and rear cross-bars secured to the tongue, the platform supported at the inner ends of said cross-bars, and the driver's seat supported upon the outer ends of said cross-bars outside the driving-wheel.

6. The combination of the tongue, the rear cross-bar, the front cross-bar, the driver's seat, supporting plate-spring connected at one end to said front cross-bar, and the standard and spring connecting said supporting-spring with the rear cross-bar, substantially as hereinbefore set forth.

7. The combination, substantially as hereinbefore set forth, in a harvester having no main frame proper, of a main driving and supporting wheel, a tongue extending back of said wheel, a rear rigid cross-bar secured to the tongue at its heel, and the platform connected by a hinge to said cross-bar and capable of rocking thereon transversely thereto.

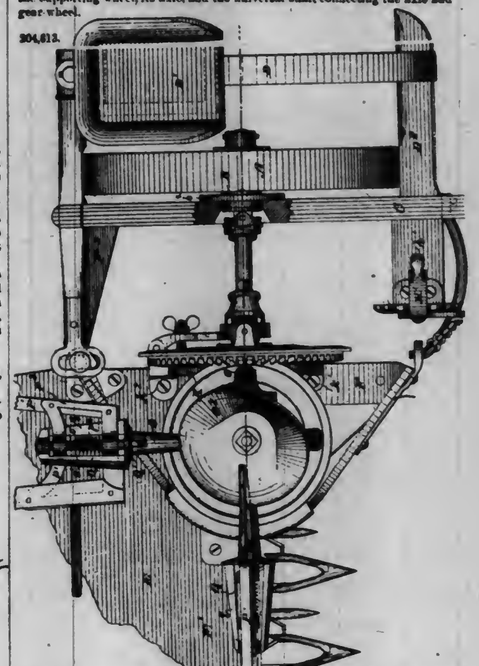
8. The combination, substantially as hereinbefore set forth, of the supporting-wheel, the tongue, cross-bars rigidly secured thereto in front and rear of the supporting-wheel, the cutting apparatus, the platform hinged to said rear cross-bar, the coupling-arm hinged to the shoe, and the lever for rocking the guards mounted upon the front cross-bar.

9. The combination, substantially as hereinbefore set forth, of the supporting-wheel, the tongue, the rear cross-bar rigidly secured upon the top of the tongue at its heel, the brace-bar rigidly secured to the under side of the heel of the tongue, and the platform and fender jointed to said cross-bar and brace, and rocking thereon parallel with the tongue.

10. The combination, substantially as hereinbefore set forth, of the platform, the fender, the vertical bracket at its rear end, the bracket-bearings, the coupling-pin, the rear cross-bar slotted at its end, the perforated brace-bar, and the tongue.

11. The combination, substantially as hereinbefore set forth, in a harvester having no main frame proper, of a hinged platform, cutting apparatus, a main gear-wheel, its supporting frame or bracket mounted on the platform or finger-beam and shoe, and having a boss upon which said gear-wheel is mounted, the supporting-wheel, its axle, and the universal shaft connecting the axle and gear-wheel.

204,613.



12. The combination, substantially as hereinbefore set forth, of the single driving or supporting wheel, the universal shaft, the main gear-wheel, its supporting-frame over the heel of the floating finger-beam, the vertical crank-shaft, and the pinion on its lower end meshing with the teeth of said main gear.

13. The combination of the gearing-supporting frame over the heel of the finger-beam, the main gear-wheel driven by its universal-shaft connection with the supporting-wheel axle, the boss on the gear-supporting frame about which said gear-wheel revolves, the vertical crank-shaft turning at its upper end in a collar supported in said boss, the crank-wheel and pinion at the lower end of the crank-shaft, and the pitman for driving the cutters, substantially as hereinbefore set forth.

14. The combination, substantially as hereinbefore set forth, of the frame supporting the gearing over the heel of the finger-beam, the main gear-wheel revolving about a boss on said frame, the upright crank-shaft, the collar in which said shaft is supported at its upper end, the collar-shaft mounted in and projecting through said boss, and the disk or washer on said shaft to keep the main gear-wheel in place.

15. The combination, substantially as hereinbefore set forth, of the main gear-wheel having an inner and an outer circle of teeth thereon, the crank-shaft directly driven by the outer set of teeth, and the crown-wheel for driving the rakes by the inner set of teeth.

16. The combination of the rocking platform, the shoe, the gearing-supporting frame secured at its base upon the platform and shoe, the fender, the plate or top support of the gearing-frame secured thereto, the rake-driving crown-wheel mounted on said plate, and the doubly-toothed main gear directly driving both the rake and cutters, substantially as hereinbefore set forth.

17. The combination of the main gear-wheel, its peripheral flange, the crank-shaft pinion, its flange, crank-wheel, and the adjustable roller, whereby the two gears are kept securely interlocked.

18. The combination of the gearing-supporting frame, the crank-shaft, the crank-wheel and pinion provided with a collar, the gearing-supporting frame or bracket, the rollers carried thereby, the adjustable roller, and the main gear-wheel between said roller and the crank-shaft, these members being constructed and operating substantially as hereinbefore set forth, whereby the crank-shaft is sustained and wabbling of the main-gear prevented.

19. The skeleton gear-supporting frame or bracket constructed with the posts flanged at their lower ends, the brace connecting the posts and carrying rollers, and the swinging arm carrying the adjustable roller, in combination with the gearing, substantially as and for the purpose set forth.

20. The combination, substantially as hereinbefore set forth, of a yoke on the rake-arm, and a rake-head bracket sliding and turning between the yoke-arms, whereby the rake-head may be oscillated in the yoke by first moving the bracket endwise.

21. The combination, substantially as hereinbefore set forth, of the short rake-arm, its yoke, the rake-head, its bracket movable endwise along and oscillating in the yoke, the rake-arm extension upon which said bracket is mounted, and the spring acting upon the bracket with a tendency to prevent endwise movement thereof.

22. The combination, substantially as hereinbefore set forth, of the short rake-arm, the oscillating rake-head, the bracket at the inner end of the rake-head turning and sliding upon an extension or rod of the rake-arm, the rake-arm yoke in which the bracket is secured, a locking-arm on the yoke-base, an engaging shoulder on the bracket-base, and a spring acting upon the bracket-base with a tendency to keep the bracket and yoke locked together to prevent oscillation of the rake-head.

23. The combination, substantially as hereinbefore set forth, of the series of continuously revolving, rising, and falling short rake-arms, the oscillating rake-heads, yokes on the rake-arms, brackets secured to the rake-heads turning in said yokes and interlocking therewith, springs acting upon the brackets with a tendency to keep them locked with the rake-arm yokes, the curved-spring rake-guides traversed by the rake-head brackets, and the tripping-arm to oscillate the rake-heads.

24. The combination, substantially as hereinbefore set forth, of the yoke on the rake-arm, the bracket turning and moving endwise therein, the oscillating rake-head, the curved-spring rake-guide supported at one end on the fender and provided with a shoulder or abrupt incline, and the vertically-operating tripping-arm acting upon the rake-head bracket to unlock it from the rake-arm and cause the rake-head to be quickly oscillated by the contact of its bracket with said shoulder.

25. The combination, substantially as hereinbefore set forth, of the fender, the vertically-reciprocating tripper-arm outside thereof, the spring inside the fender and acting on the tripper with a tendency to keep it elevated, the bell-crank lever, and its cord or wire.

26. The rake-head bracket constructed with cross-arms perforated at their middles to turn upon the rake-arm rod *e*, the lug g^2 to abut against the yoke-arm, and the offset or shoulder g^1 to engage with the locking-arm on the yoke, substantially as set forth.

27. The rake-head bracket provided with the edge rib g^3, as and for the purpose specified.

28. The combination of the rake-arm, the yoke having the arm g^4 and perforated outer end, and the removable rake-arm rod *e*, substantially as and for the purposes set forth.

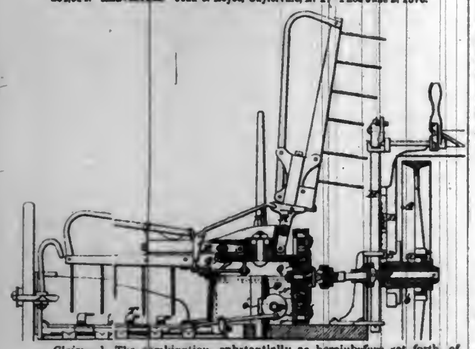
29. The combination, substantially as hereinbefore set forth, of the large forked guard-fingers, the small guard-fingers arranged between them, and the cutter-bar provided with teeth arranged at intervals with spaces between them, and each playing through one of the small guard-fingers and in one of the forks of each of the large fingers adjacent thereto, whereby the tooth cuts at three points at each reciprocation, as specified.

30. The series of large and small guard-fingers, constructed as hereinbefore set forth, cast in sections, each forming one small guard, and the adjacent parts of the large guards at each side thereof with a single shank.

31. The series of large and small guards connected together by means of the mortise-and-tenon connections between the large guards only, as set forth.

32. The combination, substantially as set forth, of the main gear-wheel, the crank-shaft pinion, and the crown-wheel carrying the rakes, whereby both rake and cutter are driven directly from the interposed main gear.

204,614. HARVESTERS. John S. Royce, Oaylerville, N. Y. Filed June 2, 1876.



Claim.—1. The combination, substantially as hereinbefore set forth, of the sleeve on the main frame, the tubular axle of the driving-wheel turning in said sleeve, the driving-shaft passing through the tubular axle, the ratchet-connection between the driving-wheel and driving-shaft, the thumbling-shaft, and the gear-wheel mounted upon the finger-beam and driving both the rake and cutters.

2. The combination of the finger-beam, the frame mounted thereon, the gear-wheel carrying both an internal gear spur-wheel and a bevel-gear, the crank-wheel driving the cutters, and the crown-wheel upon which the reel and rake arms are mounted, these members being constructed and operating substantially as hereinbefore set forth, whereby the crank-wheel and the reel and rake arms are driven from the same gear-wheel and all are mounted on the finger-beam.

3. A series of short spring teeth or bars, T, constructed as described, independently and rigidly secured by their respective front ends directly to the platform or finger-beam just back of the cutters, and curved horizontally to conform to the path of a combined reel and rake, whereby the rake-teeth are enabled to strike deeply into the cut grain before sweeping it over the platform, from which it discharges it.

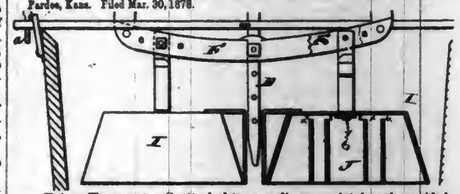
4. The combination, substantially as hereinbefore set forth, of a series of rising and falling combined reel and rake arms rotating on an axis substantially vertical, a platform over which the rake sweeps the cut grain to discharge it at one side of the machine, and a series of short spring teeth or bars independently and rigidly secured at their respective front ends to the finger-beam or platform just back of the cutters, and curved horizontally to conform to the path of the rake, whereby the rake-teeth are enabled properly to enter the fallen grain preparatory to sweeping it upon, over, and from the platform.

204,615. MONEY-BAG FASTENERS. Wm. H. Sanford, Detroit, Mich., assignor of one-half his right to John E. Griffiths, same place. Filed Apr. 8, 1878.



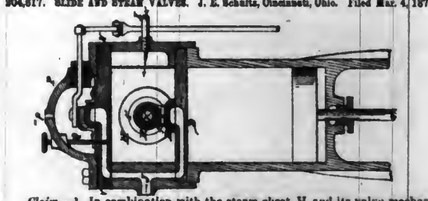
Claim.—A bag for holding money and valuables, constructed with the flap D, and having the plate E attached thereto, provided with perforated posts, which pass through the sides of the bag and the flap, and are adapted to receive the hollow metallic tube A, through which may be passed the string or wire B, the ends of which are to be fastened to the flap D by a seal, the whole constructed and operating substantially as and for the purpose stated.

204,616. WASHING-MACHINES. Benj. F. Sanders, Robert G. Dildine, and Benj. F. Mead, Pardee, Kans. Filed Mar. 30, 1878.



Claim.—The cross-bar C, attached to an ordinary wash-tub and provided with a perforated swiveled pin, D, in combination with the lever G F, having inverted cup-washers I I, which are laterally adjustable, substantially as shown, and for the purpose set forth.

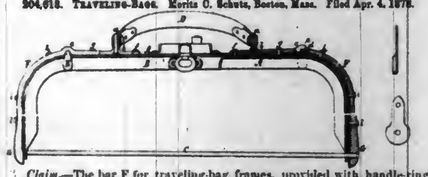
204,617. SLIDE AND STEAM VALVES. J. B. Schultz, Cincinnati, Ohio. Filed Mar. 4, 1878.



Claim.—1. In combination with the steam-chest H and its valve mechanism, and the chamber P, which contains the positive-moving valve O, the aperture *g*, with its needle-pointed adjusting-screw Q, substantially as and for the purpose specified.

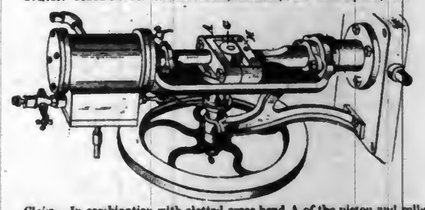
2. In a steam-pump, the combination, substantially as specified, of the hollow double-headed piston-valve, moved only by steam, the stationary rod K_2 provided with a centrally-disposed fixed collar or piston, L, and light cushioning-springs M, the tension of which is never so great as to overcome the weight and friction of the piston-valve.

204,618. TRAVELING-BAGS. Moritz C. Schutz, Boston, Mass. Filed Apr. 4, 1878.



Claim.—The bar F for traveling-bag frames, provided with handle-ring, clasp-notches or bearings, slot *d* for receiving the stop-stud of the clasp, and provided at its lower end with a cap or shoe to receive the pivot-rod, constructed of one and the same piece of metal, and adapted to be applied in the manner and for the purpose set forth.

204,619. STEAM-PUMPS. Michael Schultz, Cincinnati, Ohio. Filed Apr. 26, 1878.



Claim.—In combination with slotted cross-head A of the piston and roller G upon the crank-pin, the flanges B, arranged substantially in the manner and for the purpose specified.

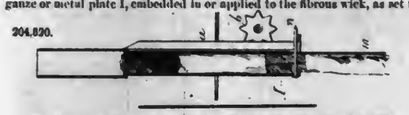
204,620. LAMP-BURNERS. Henry C. Scott, Chicago, Ill. Filed Mar. 26, 1878.

Claim.—1. The combination, in a burner, of the wick-tube F and the shield *s* with the movable tube G and its leg *s*, all substantially as set forth.

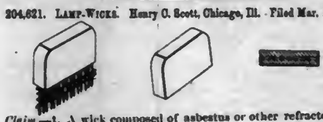
2. The combination of the wick-tube of a lamp and its stationary mineral and fibrous wicks with transverse pins *n n*, as specified.

3. The combination of the wick-tube and retaining-pins *n* with the wire-gauze or metal plate I, embedded in or applied to the fibrous wick, as set forth.

204,620.



204,621. LAMP-WICKS. Henry C. Scott, Chicago, Ill. Filed Mar. 26, 1878.

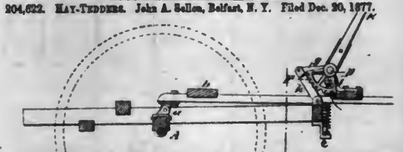


Claim.—1. A wick composed of asbestus or other refractory mineral, and iron filings or other particles of metal, as set forth.

2. The combination of a mineral wick with wire-gauze or its equivalent embedded in the mineral, as specified.

3. The combination of the mineral wick with wire-gauze or its equivalent embedded in the mineral, and projecting from the lower edge of the said wick, as specified.

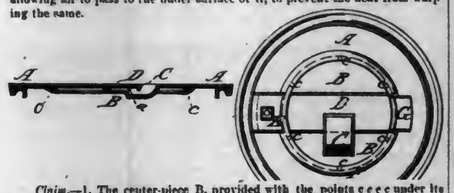
204,622. HAY-TEDDERS. John A. Sellen, Belfast, N. Y. Filed Dec. 20, 1877.



Claim.—The combination, in a hay-tedder, of the rock-shaft D with lever E, arms *g*, connecting-rods *h*, and the rubber buffers *k*, attached to the cross-bar *c*, substantially as and for the purpose set forth.

204,623. STOVE-COVERS. Abner J. Sennett, Louisville, Ky., assignor to Bridgeford & Co. Filed Apr. 26, 1876.

Brief.—The points lift the center-plate from its seat in the outer one, thus allowing air to pass to the under surface of it, to prevent the heat from warping the same.



Claim.—1. The center-piece B, provided with the points *e e e* under its outer edge, and the main body A, provided with an annular ledge for the center-piece to rest upon, substantially as and for the purpose described.

2. The cross-bar D, having one end embedded in the upper surface of said fastened to the plate A, and the other end, G, inserted under the top surface of the same, but left free to expand endwise, adapted to lock the center-piece B in position, substantially as described.

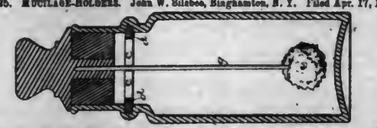
3. The combination of the depression C in the center-piece B and the cross-bar D, adapted to form a suitable recess for a lifter for handling the stove-cover, substantially as shown and described.

204,624. LOCK-FAUCETS. Marion F. Seward, Bandera, Tex., assignor of one-third his right to Leonard H. Cherry, same place. Filed Nov. 27, 1877.



Claim.—In a faucet, the combination, with the plug having recesses in its sides, of the spring-impelled pivoted arms, constructed to engage said recesses at their free ends, and adapted to be operated by a key to force the free ends of the arms from the recesses in the plug, all substantially as and for the object set forth.

204,625. MUCILAGE-HOLDERS. John W. Silsbee, Binghamton, N. Y. Filed Apr. 17, 1878.



Claim.—In combination with a bottle having a groove in its neck, a single sheet of rubber or other elastic material, *e*, having a slit or slits across its center, down through which slit or slits the swab is passed, substantially as shown.

204,626. TRIMMINGS. Gustave Simon, New York, N. Y. Filed May 10, 1878.

Claim.—1. The process of treating woven trimmings to produce a trimming having scalloped edges, serpentine parallel warp-threads, and rectilinear parallel weft-threads, and which consists in passing straight-edged woven trimming between rollers provided with a reciprocating gage, arranged to cause said trimming to travel lengthwise in an undulating line, substantially as set forth.

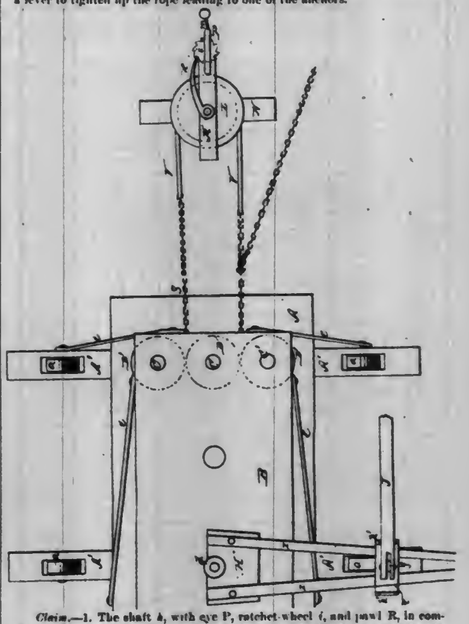
2. As a new article of manufacture, a woven trimming having scalloped edges, its longitudinal warp-threads being arranged in serpentine form and parallel to each other, while its transverse weft-threads are rectilinear and parallel, as set forth.

204,626.



204,627. STUMP-EXTRACTORS. Jos. D. Smith, Rockford, Ill. Filed Apr. 30, 1878.

Brief.—After the apparatus is anchored the ratchet-wheel is operated by a lever to tighten up the rope leading to one of the anchors.



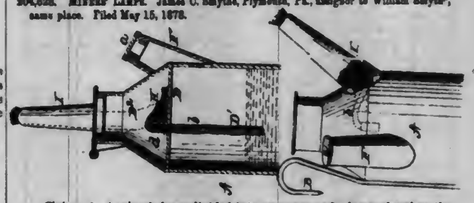
Claim.—1. The shaft *h*, with eye P, ratchet-wheel *i*, and pawl R, in combination with the pulley L, pulley-block M, and bar N, for the purposes herein set forth.

2. The combination of the pulley-frame M, pulley L, windlass *h* P, pawl and ratchet *i* R, cable *m*, and chain S with cord or cable V, for the purposes herein set forth.

3. The plate or casting K, with side flanges *k k* and end crotches k^1 k^1, in combination with the sweep I I, bar J, and swiveled rod *f*, substantially as and for the purposes herein set forth.

4. In combination with the platform A and cap B, the shouldered sleeves C, pulleys D, and bolts or screws C', substantially as and for the purposes herein set forth.

204,628. MINERS' LAMPS. James C. Smythe, Plymouth, Pa., assignor to William Smythe, same place. Filed May 15, 1878.



Claim.—1. A miner's lamp divided into an upper and a lower chamber, the latter forming the oil-reservoir, and provided with a small wick to convey the oil to the upper chamber, and to a large wick passing from said upper chamber through the neck or tube of the lamp, substantially as set forth.

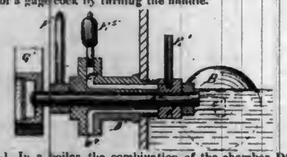
2. The combination of a lamp, A, interior division D, forming two chambers, D^1 D^2, inlet F, small wick-tube *b*, and neck or tube I, all substantially as and for the purposes herein set forth.

204,629. MEDICAL COMPOUNDS. Abraham A. Solomons, Savannah, Ga. Filed Feb. 26, 1878.

Claim.—A composition of matter consisting of the oil of the berries of the saw palmetto, extracted by pressure, and sugar of milk, in about the proportions of one of the oil and seven of the sugar, substantially as set forth.

204,630. INDICATORS AND GAGE-COCKS. William Starkey and Oliver P. Jackson, Pittsburg, Pa., assignors of one-fourth their right to Joseph Starkey, same place. Filed May 8, 1878.

Brief.—The apparatus indicates high and low water in the boiler by dial-plate, alarms by whistles when the water is at a dangerous point, and answers the purpose of a gage-cock by turning the handle.

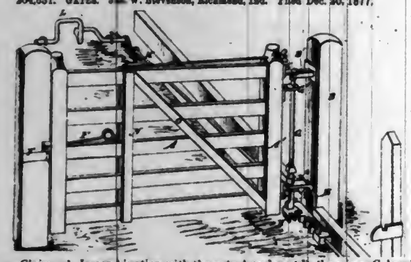


Claim.—1. In a boiler, the combination of the chamber D', pipe E', and diverging ports B² and E² in valve A', and passage E', whistle E³, lever C', and float B', giving an oscillating movement to the valve A', substantially as set forth.

2. In a boiler, the combination of the chamber D' and valve A', slotted ports H' and H², which are alternately connected with the passage H³ by moving the lever F², answering for the purpose set forth.

3. The combination of the chamber D', valve A', lever C', float B', lever F', and dial G', all arranged together substantially as described.

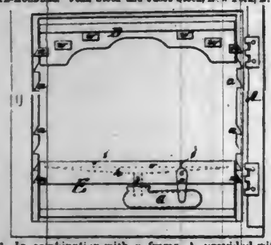
204,631. GATES. Jas. W. Stevenson, Richmond, Ind. Filed Dec. 20, 1877.



Claim.—1. In combination with the gate A and post B, the wings C, bracket B', forming a bearing for the pintle of the upper hinge, and the bracket B², forming a bearing at both ends for the eccentric-shaft E, and wing or bracket D, which embraces the shaft and throws the gate out of the perpendicular by the rotation of the shaft, substantially as set forth.

2. In combination with the gate and brackets and shaft E, the torsion-spring G, pinion H, and rack I, for actuating the gate, by the action of the passing vehicle, substantially as set forth.

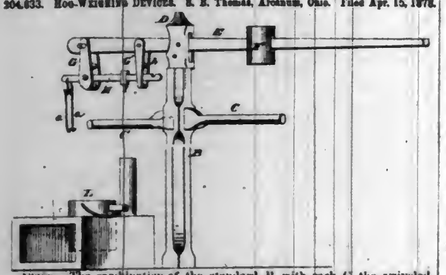
204,632. PLATE-HOLDER. John Stock and Jacob Stock, New York, N. Y. Filed Mar. 19, 1878.



Claim.—1. In combination with a frame, A, provided with recesses *n* at the inner sides, the top piece B, with projections *w w* and ings *a a*, fitting into the recesses *n*, arranged to operate substantially in the manner and for the purpose substantially as set forth.

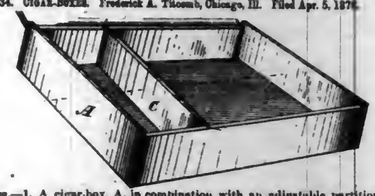
2. In combination with the lower piece E, provided with a ledge, *r*, having projections *s* and the channel or gutter *k*, the receptacle G, in the manner and for the purpose substantially as described.

204,633. HOG-WEIGHING DEVICES. S. B. Thomas, Aronum, Ohio. Filed Apr. 15, 1878.



Claim.—The combination of the standard B, with rack C, the swiveled head-block D, lever F, with poise F', hangers G G', and scale-beam H, with poise I, substantially as and for the purposes herein set forth.

204,634. CIGAR-BOXES. Frederick A. Titcomb, Chicago, Ill. Filed Apr. 5, 1878.

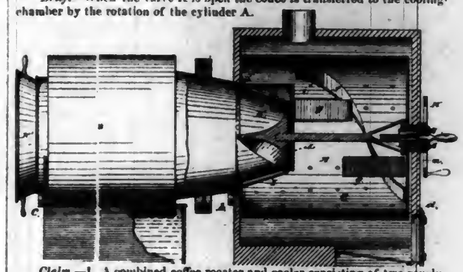


Claim.—1. A cigar-box, A, in combination with an adjustable partition, C, provided with devices which engage with the bottom and upper edges of the sides of the box, whereby the partition may be secured in any position to which it may be adjusted, substantially as described.

2. The cigar-box A, in combination with the adjustable partition C and the pointed fastening-strips D, all arranged and operating substantially as described.

204,635. COFFEE-ROASTERS. Joseph B. Underwood, Fayetteville, N. C., assignor to Annie V. Jessup. Filed Apr. 23, 1878.

Brief.—When the valve K is open the coffee is transferred to the cooling-chamber by the rotation of the cylinder A.



Claim.—1. A combined coffee roaster and cooler consisting of two revolving cylinders or receptacles having intercommunication, controlled by valves, and provided with spiral conveyers for stirring and transferring the coffee, substantially as described.

2. In a coffee-roaster, a cylinder having a head in the shape of a frustum of a cone, with outlet-openings upon the side thereof, combined with a correspondingly-shaped valve arranged to move axially, as described.

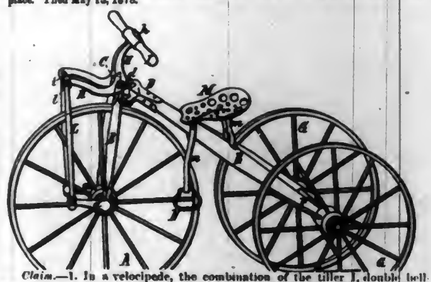
3. The combination, in a coffee-roaster, with the cylinder having spiral conveyers and curved pieces *i*, of the valve K and attached blades L, substantially as and for the purpose described.

4. The combination, with the cylinder A, of the valve K and wheel H, arranged at the front end of the cylinder, and connected axially with said valve, substantially as and for the purpose described.

5. The cylinders A and B, combined with each other and connected by a conical pipe having its largest end next to the cooling-cylinder, as shown and described.

6. The combination, with the cylinders and their connecting conical pipe, of a band-flange, O, located upon said pipe, to afford means for rotation, as shown and described.

204,636. VELOCIPEDES. Otto Unsicker, Chicago, Ill., assignor to Adolph Sheuringer, same place. Filed May 13, 1878.



Claim.—1. In a velocipede, the combination of the tiller I, double bell-crank H, yoke C, pitman L, standards B, and cranks *a*, substantially as and for the purpose set forth.

2. In a tricycle velocipede, arranged to be propelled by a tiller, I, the lady's-saddle-shaped seat M, having supporting-frame *m* secured upon the reach-rods E, in combination with the stirrup N and strap *n*, the same to be constructed and arranged as and for the purpose described and shown.

3. In combination with a velocipede consisting of driving-wheel A, having cranks *a*, the standards B, yoke C, hook-plates D, reach-rods E, axle F, and hind wheels G, the bell crank H, having tiller I, the pitmen L, the lady's saddle-shaped seat M, and stirrup N, all constructed, arranged, and operating substantially as and in the manner set forth.

204,637. THERMOMETER ATTACHMENTS FOR SAD-IRONS. John Van Gunster, Ilion, N. Y., assignor of one-half his right to Charles W. Horton, same place. Filed May 11, 1878.

Claim.—1. A sad-iron provided with a thermometer inclosed within the iron, and operating on an index to show the degree of heat, as herein set forth.

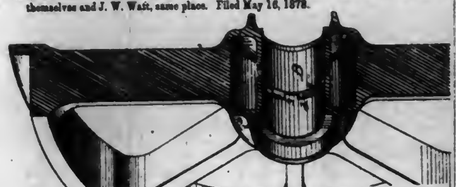
2. The combination, with a sad-iron, of an expansible bar, an intermediate lever, and an index-hand, substantially as and for the purposes herein set forth.

3. The combination, with the iron A, of the bar B, lever D, index-hand F, index G, and the covering-plate I, with handle H, all constructed substantially as and for the purposes herein set forth.

204,637.



204,638. CAR-WHEELS. James H. Watt and Stewart Watt, Barnesville, Ohio, assignors to themselves and J. W. Watt, same place. Filed May 16, 1878.



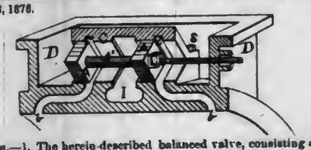
Claim.—A continuous slot around the central inner portion of the hub, provided with alternate projections, substantially as and for the purposes set forth.

204,639. LIGHTING APPARATUS. Charles S. Wells, New Haven, Conn. Filed May 16, 1878.



Claim.—The pipe C, arranged on the outside of a car and provided with the side pipe D, reflectors *a* and *c*, and light *d*, in combination with the reflector *c*, arranged within the car and in line with the side pipe D, as shown and set forth.

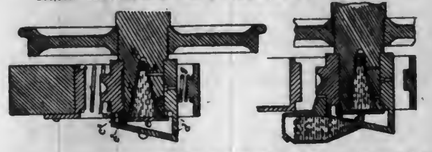
204,640. BALANCED VALVES FOR STEAM-ENGINES. James C. Wells, Warren, Pa. Filed Aug. 23, 1876.



Claim.—1. The herein-described balanced valve, consisting of the blocks A A, united by the shank A', in combination with the valve-seat provided with the ports *b c b c*, the cap C being formed of a piece separate and apart from the steam-chest D, substantially as set forth.

2. In combination with the upper and lower parts of the valve-seat, the dowel-pins P and the yielding packing, all constructed and arranged substantially as set forth.

204,641. CAR-AXLE BOXES. John E. Wheeler, Lynn, Mass. Filed Mar. 4, 1878.



Claim.—1. The combination, in an axle, of a chamber, *a*, in its end, not extended beyond the inner edge of the axle-bearing, a removable vessel for holding a lubricant adapted to entirely fill said chamber, and provided with an outlet or duct, *b'*, opening directly into the duct *b* in the axle, substantially as and for the purpose described.

2. In combination with an axle having an interior lubricating-chamber, a yielding box arranged to be constantly held against the under portion of said axle to prevent the waste of the lubricant, substantially as described.

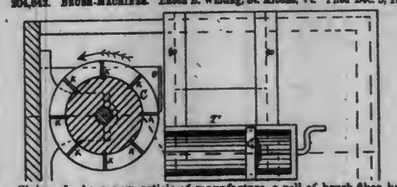
3. The combination of an axle having an interior lubricating-chamber opening upon the bearing with the box *d* and the yielding box *d'*, each provided with means for removing dirt from the journal, for the purposes set forth.

4. In combination with an axle having an interior lubricating-chamber arranged within the end of said axle, but not extended beyond the outer bearing, a reservoir arranged upon a line with or above the journal opening into said lubricating-chamber, and the boxes *d d'*, substantially as and for the purpose described.

5. In combination with a chamber formed in the end of an axle, not extended beyond the inner edge of the bearing, and provided with ducts opening upon the bearing, a removable vessel, completely filling said chamber, for holding the lubricant, with suitable guides for directing its insertion into said chamber, and a flange for bolting it to the flange or collar upon the axle, substantially as described.

6. In combination with a distributing-chamber in the end of an axle provided with ducts opening upon the bearing, the car-axle box described, consisting of the portion *d d'*, adapted to prevent the waste of the lubricant and to cleanse or remove the dirt, &c., from the journal, substantially as and for the purposes set forth.

204,642. BRUSH-MACHINES. Enoch B. Whiting, St. Albans, Vt. Filed Dec. 5, 1877.

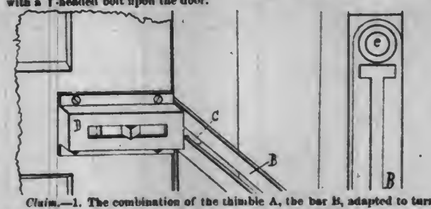


Claim.—1. As a new article of manufacture, a roll of brush fiber having a paper wrapper, as described.

2. The rotary cutter-head C, having knives *k*, in combination with the cutter O, arranged as shown, and the trough T, having a movable gage, G, and sliding on ways *w*, substantially as shown and described.

204,643. DOOR-CHECKS. Charles S. Whipple, New London, Conn., assignor to Goddard Manufacturing Company. Filed Apr. 24, 1878.

Brief.—A slotted bar swinging upon a hollow thimble in the jamb engages with a T-headed bolt upon the door.



Claim.—1. The combination of the thimble A, the bar B, adapted to turn thereon, and the T-headed bolt C, substantially as described.

2. In a door-check composed of the bolt C and bar B, turning upon the thimble A, inclined lugs *c c*, as a part of such thimble, substantially as and for the purpose specified.

204,644. METALLIC SHANK-STIFFENERS FOR BOOTS AND SHOES. Joseph G. Whittier, Anion, Ind. Filed Apr. 30, 1878.



Claim.—The shank-stiffening plate C, formed with the point *a*, and constructed in the manner described, to be applied to run-over boots and shoes for twisting the shank, as herein set forth.

204,645. MOTOR-CABLES FOR DENTAL ENGINES. B. M. Wilkerson, Baltimore, Md. Filed May 24, 1878.



Claim.—1. A flexible motor-cable for dental engines, terminating in a section more flexible than the rest, and adapted to be attached to the spindle of the hand-piece, substantially as described.

2. A flexible sheath for the motor-cable of a dental engine, terminating in a section more flexible than the rest, and adapted to be attached to the hand-piece, substantially as described.

3. A motor-cable for dental engines inclosed throughout its length in a non-rotating sheath which is longitudinally adjustable for a portion of its length, and thereby adapted to take up the motion caused by flexure, as set forth.

4. A motor-cable for dental engines inclosed in a sheath provided with a telescopic joint, as set forth.

5. In combination with the motor-cable of a dental engine, a rigid rod inclosed in a telescopic sheath, substantially as described.

204,646. HAT-BRIMS. Edwin Woolley, Newark, N. J., assignor to Sealey & Selley, New York, N. Y. Filed May 3, 1878.

Claim.—1. The hat-brim B, having the supplemental elastic edge A, of rubber or gutta-percha, substantially as and for the purpose specified.

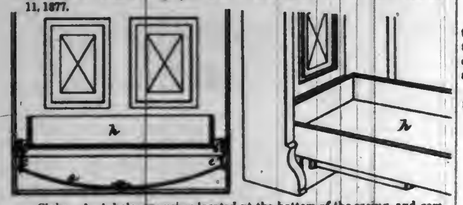
2. The hat-brim B, having the edge A, of elastic rubber, held in position by the binding C, substantially as set forth.

204,647. METHODS OF CURING FISH. Lyman Woodruff, Ellensburg, Oreg. Filed Feb. 16, 1878.

Claim.—The process above described for treating and curing the fish, consisting in cleaning the fish and immersing it in lime-water, then washing and wiping dry, then rubbing the flesh side successively with black pepper, pulverized saltpeter, and fine salt, in the proportions set forth, until each in turn disappears or is absorbed, then sprinkling with brown sugar and folding the sides together, allowing the fish to lie in this condition for about twelve hours, when the back is wiped dry and coated with linseed-oil, substantially as described.

REISSUES.

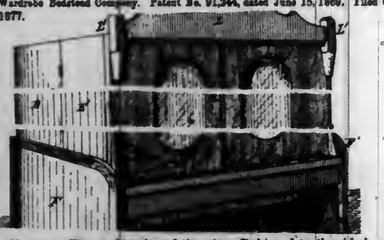
8,269. WARDROBE-BEDSTEADS. Sebora C. Maine, Boston, Mass., assignor to the New England Wardrobe Bedstead Company. Patent No. 63,066, dated Mar. 19, 1867. Filed Oct. 11, 1877.



Claim.—1. A balance-spring located at the bottom of the casing, and combined with the movable bed-frame by means of flexible cords or chains wound upon a shaft which moves with said bed-frame, substantially as shown and described.

2. The combination of spring *a*, secured to the casing, cords or chains *c*, shaft *b*, and movable bed-frame A, the several parts being arranged substantially as shown and described.

8,270. CABINET-BEDSTEADS. Sebora C. Maine, Boston, Mass., assignor to the New England Wardrobe Bedstead Company. Patent No. 91,344, dated June 15, 1869. Filed Oct. 11, 1877.



Claim.—1. The combination of the wings D, hinged to the side boards of the movable bed, and arms F of the base, with suitable means for automatically closing the wings as the bed is raised, substantially as described.

2. The combination of an inclosed coiled spring, S, strap or cord *m*, and shaft or roller G with the movable bed-frame and stationary base-frame, substantially as described.

3. In a cabinet-bedstead, the combination, with the movable bed-frame, of permanent counter-balance adjustable in stress to compensate for variations in weight of bed-clothing, substantially as described.

4. The combination of the spring S, attached to the base-frame, and shaft or roller G upon the movable bed-frame with the adjustable intermediate connection *m*, substantially as described.

5. The combination of the automatically-operating shelf *a* and door *b* with the bed-frame, substantially as described.

6. The combination, with the movable frame of a cabinet-bedstead, of a relatively-moving pediment automatically raised into position as the frame is made to assume the perpendicular, substantially as described.

7. The combination, with the movable bed-frame of a cabinet-bedstead, of a folding pediment and legs attached to said pediment, which are automatically brought into position to form either the foot-board or the pediment of the case as the frame is lowered or raised.

8. The combination, with the folding pediment and legs of a cabinet-bedstead, of suitable mechanism for automatically determining their movement as the bed-frame is lowered, substantially as described.

9. The combination, with pediment L, of cord *e*, bed-frame A, and base-frame F, substantially as described.

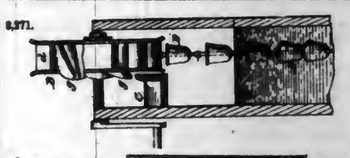
10. In a cabinet-bedstead, a folding frame hinged at the extreme end of the longitudinal bars of the movable bed-frame, and adapted to assume a position at right angles thereto when it is down to form a support and exterior foot-piece, and parallel therewith when it is up, projecting above and concealing the hinges, and forming an ornamental top piece or pediment to the case, substantially as described.

11. The cabinet-bedstead herein described, consisting, essentially, of base-frame F, movable bed-frame A, with counterbalancing device, and the automatically-folding pediment and legs, substantially as described.

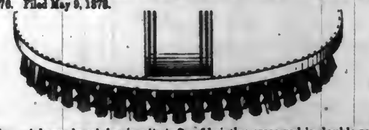
8,271. WIREDRAWS WATER-ELEVATORS. Russell T. Stokes, Garnett, Kans. Patent No. 197,396, dated Nov. 20, 1877. Filed Mar. 29, 1878.

Claim.—In combination with the lifting-buckets D, the center-discharge wheel B, constructed with inclined partitions *d* and laterally-discharging chutes or spouts *g*, arranged over a trough, C, substantially in the manner described.

8,271.

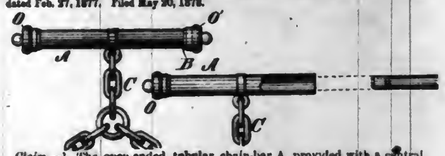


8,272. HORSE-BRUSHES. Hermann Giesecke, St. Louis, Mo. Patent No. 176,800, dated Mar. 14, 1876. Filed May 9, 1878.



Claim.—A horse-brush having its tufts of bristles arranged in double rows, those of the row on the right being directed obliquely to the left, and those of the row on the left being directed obliquely to the right, so that the tufts of one row shall stand, as it were, wholly crossing those of the other row, substantially as described and shown.

8,273. WATCH-CHAIN BARS. William S. Hicks, New York, N. Y. Patent No. 187,851, dated Feb. 27, 1877. Filed May 20, 1878.

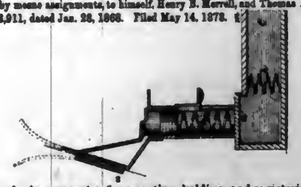


Claim.—1. The open-ended tubular chain-bar A, provided with a central ring, *c*, in combination with the detachable case B, constructed and arranged to operate substantially as described.

2. The tubular chain-bar A, provided at one end with an ornamental head, O, in combination with the detachable case B, provided with a corresponding head, O', arranged to fit together, substantially as described, so that when united the whole shall have the appearance of a single solid bar, as set forth.

3. In combination with the tubular chain-bar A, the detachable holder or case B, the said parts being constructed and adapted for use substantially as and for the purpose set forth.

8,274. APPARATUS FOR HOLDING AND DELIVERING COINS. John W. Meaker, Chicago, Ill., assignor, by mesne assignments, to himself, Henry B. Merrell, and Thomas Ferguson. Patent No. 73,911, dated Jan. 28, 1868. Filed May 14, 1878.



Claim.—1. An apparatus for assorting, holding, and registering coins, consisting of a series of tubes of varying diameter to suit different-sized coins, and provided with indexes to show the number contained in each, and of an inclined plane or way arranged along the upper rear sides of said tubes, with openings opposite the upper ends of the same corresponding in size with the coin and the tubes, said openings being arranged with the smallest at the upper end of the incline and increasing in size toward the lower end, with partitions or guides to direct the coins to their respective tubes or receptacles, substantially as shown and described.

2. A coin-assorter consisting of an inclined plane or way for the coin to pass down, with openings corresponding in size with the various-sized coins, said openings being arranged with the smallest at the upper end of the inclined way, and increasing in size, in regular order, toward the lower end, with partitions or guides to direct the various coins to their respective receptacles, substantially as described.

3. The yielding bed *m*, pivoted at one end, in combination with the stationary support *a*, arranged as and for the purpose set forth.

8,275. APPARATUS FOR HOLDING AND DELIVERING COIN. John W. Meaker, Chicago, Ill., assignor, by mesne assignments, to himself, Henry B. Merrell, and Thomas Ferguson. Patent No. 73,911, dated Jan. 28, 1868. Filed May 14, 1878.



Claim.—1. A series of semicircular troughs of varying diameters for holding different-sized coin, and provided along their sides with indexes graduated to correspond with the varying thickness of the coin, to indicate or register the amount in each trough, as shown and described.

2. In combination with the semicircular inclined trough for holding and registering coin, as described, the gate I, plate *k*, and spring *s*, constructed and arranged as shown, for the purpose set forth.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE

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LETTERS FROM THE SECRETARY OF THE INTERIOR.

By order of the Hon. Secretary of the Interior the following letters are published in the GAZETTE:

DEPARTMENT OF THE INTERIOR,
SECRETARY'S OFFICE,
Washington, D. C., May 24, 1878.

WM. H. APPLETON, Esq.,
Principal Examiner U. S. Patent Office.

SIR: On the 11th ultimo the Commissioner of Patents transmitted to this Department the complaint of Joseph A. Miller, Esq., attorney for Seth W. Baker, who obtained Letters Patent No. 200,965, for an "Improvement in Tubular Woven Fabrics," the brief of which appeared in the OFFICIAL GAZETTE of March 5, 1878, on page 437. Said brief was in the following words:

Brief.—Improvement on Letters Patent No. 57,659. The alleged invention consists simply in weaving the fabrics shown in such patent in tubular form. Allowed by Board of Examiners-in-Chief.

The use of the words "alleged" and "simply" in said brief was the reason for making the complaint above-mentioned.

On the receipt of the papers transmitted, including your answer to said complaint, a Board of Inquiry was convened to investigate the charges made and to report to me their conclusions thereon. An additional answer to said charges was presented by you to said Board, in which you state, among other things:

While aiming to do exact justice to the applicant in truthfully stating in a concise way the nature of his alleged invention, I did not take pains to conceal therein my dissatisfaction at the action of the Board.

You have thus admitted the charge made, and the motives which actuated you in the preparation of the brief concerning which the complaint was made.

The Board of Inquiry, after a full consideration of all the facts, and your answers in justification of your course, found—

First. That you were guilty of the charge made; and

Second. That your conduct in the matter was highly censurable.

In these conclusions I fully concur. The application for a patent in this case had been passed upon by you and rejected; from your decision an appeal was taken by the applicant to the Board of Examiners-in-Chief, and by that tribunal the application for patent was allowed. The case was then remanded to you for such further action in the premises as is made necessary by the rules of practice of the Patent Office in preparing patents for issue. In the discharge of this duty you had no right to reflect in any manner upon the action of your superior officers, neither can such a reflection be permitted. A like offense again occurring will subject the officer thus offending to a prompt and summary dismissal.

An applicant for a patent, if his claim is allowed, is entitled to have proper publication made thereof in the OFFICIAL GAZETTE without any discredit being thrown thereon, directly or indirectly.

I consider it my duty to hereby pronounce upon your action in this case the censure of this Department.

Very respectfully,
C. SCHURZ,
Secretary.

DEPARTMENT OF THE INTERIOR,
SECRETARY'S OFFICE,
Washington, D. C., May 24, 1878.

F. S. WILLIAMS, Esq.,
First Assistant Examiner, U. S. Patent Office.

SIR: On the 11th ultimo the Commissioner of Patents transmitted to this Department the complaint of A. H. Saunders, Esq., assignee of reissued Patent No. 8,117, for "an Improvement in Machines for Dressing and Sizing Yarn," in which he alleges that he has suffered material damage and injury in the publication of the

brief prepared by you, which appeared in the OFFICIAL GAZETTE of March 12, 1878. Your answer to said complaint was also transmitted.

The brief referred to is in the words and figures following, viz:—

Brief: Avoids the use of tubs, buckets, pails, &c., for conveying the liquid, by the employment of a pump and pipe in the ordinary manner. The alleged improvement consists in pumping size instead of other liquids. For this purpose the mechanism shown and described in Patent No. 10,677, granted March 21, 1854, is adopted with slight changes in form. The liquid, however, to be used in that machine was stated to be dye. In the present case the liquid is size. Passed by the board.

On the receipt of said papers a Board of Inquiry was appointed to investigate the matters charged, and report to me their findings thereon. I have received the report of said Board, together with the additional answer to said charges filed by you therewith. In the opinion of said Board, in which I fully concur, the language used in said brief was not only improper, unjust, and not warranted, but clearly evidenced a disregard of your duty to your superior officers. It appears from the papers before me that the application for patent in the case in question had been passed upon by you and rejected; that thereafter an appeal was taken to the Board of Examiners-in-Chief, by whom it was allowed. The case was then remanded to you for such further action in the premises and the preparation of such additional papers as are made necessary by the rules of the Patent Office, in order to pass the same to issue. In the preparation of such papers, your opinion, whatever it might have been as to the real merits of the case, and especially if it was adverse, should not have been expressed in the brief. An applicant for patent, if his claim is allowed, is entitled to have proper publication made thereof in the OFFICIAL GAZETTE without any discredit being thrown thereon, directly or indirectly.

If my attention should be again called to a similar offense on your part, I shall consider it my duty to peremptorily and summarily dismiss you from the service. I deem it my duty at this time to pronounce upon your action in this case the censure of this Department.

Very respectfully,

C. SCHURZ,
Secretary.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Eastern District of New York.

[*October* 19, 1877.]

ELI W. BLAKE *vs.* THE GREENWOOD CEMETERY.

Preliminary injunction to restrain the use of a stone-crusher already adjudged to infringe, but which the defendants assert became licensed under the judgment, denied, the crusher being employed in breaking stone for the repair of roads and paths in a cemetery. The particular use cannot fairly be said to be for the profit of any one, but is for the convenience of the public; and since it appears that the plaintiff derives profit not from using the machines but by royalty dependent upon their size, which royalty the defendants tender, to abide the event of the suit, there is no irreparable injury to justify the injunction.

[*H. T. Blake*, for complainant; *B. E. Valentine*, for defendant.]

BENEDICT, *J.*:

This action is brought against the Greenwood Cemetery to obtain an injunction and damages for the use by the defendants of a certain stone-breaking machine.

The case is now before the court upon the plaintiff's motion for a preliminary injunction to restrain the defendants from using the machine during the pendency of the action.

The facts are not in dispute.

It is not denied that the machine in use by the defendants is an infringement upon the plaintiff's patent as set out in his bill, and the validity of the patent is not disputed.

As to these questions, there could be no dispute, for not only this patent but this identical machine has formed the subject of a former action in this court brought by this plaintiff against the maker of this and three similar machines, in which action the validity of the plaintiff's patent was declared and the machine in question decided to be an infringement.

That decision, having been since affirmed by the Supreme Court of the United States upon appeal, furnishes the law of this case in respect to the question of infringement. But in that action, brought as it was against the maker of the machine, to receive damages for its construction with others, and in which the damages were fixed in pursuance of a stipulation between the parties in respect thereto, inasmuch as the evidence offered to prove the damages failed to show any amount of damages sustained by reason of the construction of the machines complained of, the recovery was limited to $1 as nominal damages.

In this action that former action, together with the payment of the $1 there awarded, is set up by way of defense; and it is contended that the defendants, by reason of the said recovery, are entitled to use the machine in question as a licensed machine without further payment to the patentee.

Pending the determination of the question thus raised, which the defendants are entitled to have determined upon the hearing and not upon this motion, there is a difficulty in granting an injunction arising out of the nature of the use to which the machine in question is devoted.

The machine complained of is a powerful and expensive ore-crusher used solely for the purpose of breaking the stone needed to keep in repair the roads of that cemetery called Greenwood, where are the graves of nearly two hundred thousand dead—the dead of every State in the Union and of almost every nation on the earth.

Some nineteen miles of roads border the burial-lots of this great city of the dead. These roads are constantly traveled by the living upon the saddest of all their errands.

There is no part of the cemetery which may not be at any moment required to be used for the purposes of interment, and the necessity is absolute that its ways and paths be unimpeded and in good repair.

The duty of maintaining these roads belongs to the defendants, but it is in no proper sense a private obligation.

The machine in question cannot fairly be said to be employed for the profit of any one, but for the convenience of the public to the end that the people without annoyance or obstruction may bury their dead.

Such a use, it is plain, should not be interfered with by the court unless such intervention by the court is an absolute right of the plaintiff. In this stage of the case the plaintiff can have no such absolute right. His papers show that he does not derive profit for his patent by using his machines, but that he charges a fixed royalty or license fee according to the size of the machine.

The amount of this royalty upon the machine in question the defendants now offer to pay into court to abide the decision of the question raised by their answer; and such a payment of his royalty will fully protect the rights of the plaintiff, and the offer to make the payment renders it impossible for the plaintiff successfully to contend that a temporary injunction is necessary to prevent irreparable injury to him.

The motion must therefore be denied, provided the defendants pay into the registry of this court, to abide the event of this action, the amount of the plaintiff's royalty upon the machine in question.

Narrative of the Polaris Expedition.

Authority having been given the Public Printer to print another edition of the above work, subscriptions will now be received by Mr. A. F. Childs, Chief Clerk, until August 1, 1878, at the following rates: If delivered at the Government Printing Office, $1.60. If sent by mail, $1.75.

EXTRA COPIES OF THE GAZETTE.—The letter-press of THE GAZETTE has been prepared with a view of meeting the demand for extra copies of that particular portion which relates to Office practice, decisions of the courts, &c.

Extra copies of the letter-press can be had separately from the illustrated portion, and the weekly index of patents and patentees can be had in any number at 5 cents per copy. Where extra copies of either the letter-press or weekly index are desired orders must be sent to the Office as early as the Saturday preceding the issue of the following Tuesday.

PRICE OF THE GAZETTE.—The price of THE OFFICIAL GAZETTE is still fixed at $6 per annum, and there is no reduction from that price except where five subscriptions are included in one order, when the subscription is $5; and subscribers can be added to this club, by the party or parties forming it, any time during the year, at the reduced price.

The Annual Index will not be furnished to subscribers hereafter without extra charge; but immediately after the expiration of each volume a Half-yearly Index will be given without charge, and should additional copies of the Half-yearly Index be desired, they will be furnished upon the payment of fifty cents for each additional copy required.

THE DECISIONS FOR 1877.—The decisions of the United States courts in patent cases and of the Commissioner of Patents have been printed and conveniently arranged in one volume, with suitable indexes, thus making a valuable work for those who care to keep pace with the operations in patent practice. They are now ready for delivery, bound in full law binding, at $2 per volume, or in half-calf binding for $1.50, and in paper for $1.

TO SUBSCRIBERS.—Great care will hereafter be taken in mailing THE OFFICIAL GAZETTE to subscribers, and in case of its non-receipt the fault will not be in the Patent Office. When each issue shall have been mailed, the Office will assume that it has done its duty by the subscribers, and will not send extra numbers except upon receipt of 10 cents for each copy ordered.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

TRADE-MARKS.

[Each certificate bearing date June 11, 1878.]

6,187.—CIGARS.—*Ed. Aschermann & Co.*, Milwaukee, Wis. Application filed May 29, 1878.
"The word 'CHUMS.'"

6,188.—SODA AND CREAM OF TARTAR.—*Charles E. Burrage*, San Francisco, Cal. Application filed March 29, 1878.
"The letter 'B,' inclosed in the border."

6,189.—CIGARS.—*Jerome Baxter*, Memphis, Tenn. Application filed May 25, 1878.
"The word 'CAVOUR.'"

6,190.—BEEF-OIL.—*Hugo Berthold*, Stapleton, N. Y. Application filed May 29, 1878.
"The words 'HARRISON, NEW YORK,' and the Maltese cross bearing the letters 'C. E. M.'"

6,191.—FLAVORING-EXTRACTS.—*John W. Colton*, Westfield, Mass. Application filed May 15, 1878.
"A green label with a fac-simile of my signature, 'J. W. Colton,' on the same."

6,192.—WRITING-INK.—*Carter, Dinsmore & Co.*, Boston, Mass. Application filed May 23, 1878.
"The outline of a shield within or surrounded by a circle."

6,193.—MUCILAGE.—*Carter, Dinsmore & Co.*, Boston, Mass. Application filed May 23, 1878.
"The words 'THE GREAT STICKIST.'"

6,194.—MUCILAGE.—*Carter, Dinsmore & Co.*, Boston, Mass. Application filed May 23, 1878.
"The representation shown substantially in the fac-simile. A box, presumably containing mucilage of our manufacture, lies upon the floor, with a bottle of our mucilage tipped over upon the top. A man who has been unconsciously sitting in the spilled mucilage upon the box, upon attempting to rise, finds that his clothing adheres so firmly to the box, on account of the excellent quality of the mucilage in which he has been sitting, that his attempts to get away from the box, even when supplemented by the strenuous efforts of a negro to pull him up by the arms, bracing himself against the box, are ineffectual. An astonished and admiring boy witnesses the scene."

6,195.—COAL-OIL.—*M. Ehrman & Co.*, San Francisco, Cal., and New York, N. Y. Application filed May 28, 1878.
"The word-symbol 'EVENING-LIGHT.'"

6,196.—MEDICINAL PREPARATIONS.—*John M. Falk*, New York, N. Y. Application filed March 1, 1878.
"The words 'RED CHEEKS' and the said figure of the head of a female."

6,197.—THREAD.—*Hadley Company*, Boston, Mass. Application filed May 18, 1878.
"The symbolic words 'PERSIAN' and 'SWISS.'"

6,198.—PAPER-CUTTING MACHINES.—*Rufus L. Howard*, Buffalo, N. Y. Application filed May 29, 1878.
"The word 'GEM.'"

6,199.—MINERAL WATERS.—*John A. Lomax*, Chicago, Ill. Application filed February 9, 1878.
"The arbitrarily-selected letters 'J. A. L.'"

6,200.—SOAP.—*Charles McKeone, Son & Co.*, Philadelphia, Pa. Application filed May 24, 1878.
"The word-symbol 'TELEPHONE.'"

6,201.—MEDICINAL PREPARATION.—*William T. Russell*, La Fayette, Ga. Application filed March 14, 1878.
"The words 'THE BIG MEDICINE MAN OF THE CHEROKEES' and the figure of the Indian, arranged as shown."

6,202.—SPOOL-COTTON.—*Thomas Russell*, New York, N. Y. Application filed May 27, 1878.

"The fanciful word-symbol 'MILE END.'"

6,203.—FOOD FOR INFANTS AND INVALIDS.—*L. C. Sharpless*, Philadelphia, Pa. Application filed May 28, 1878.

"The device or picture of a bowl with a spoon in it, and the word-symbol 'KINDERGARTEN.'"

6,204.—SHIRTS.—*Wheeler & Alling*, Newark, N. J. Application filed May 20, 1878.

"The word-symbol 'PEERLESS.'"

6,205.—PHARMACEUTICAL PREPARATIONS.—*Henry A. Cassebeer, Jr.*, New York, N. Y. Application filed June 1, 1878.

"The fac-simile of my signature."

6,206.—SMOKING-TOBACCO.—*Brodie L. Duke*, Durham, N. C. Application filed November 10, 1877.

"The words 'THE ONLY GENUINE DUKE OF DURHAM' and the device described of a man in military garb, wearing a ducal coronet with a plume, and having in his right hand a sword and in his left a pipe."

6,207.—SOAP.—*Jones Earenson & Sons*, Philadelphia, Pa. Application filed April 19, 1878.

"A soap pan, a pair of skids, and a barrel of red oil."

6,208.—BRAID.—*S. B. & M. Fleisher*, Philadelphia, Pa. Application filed May 29, 1878.

"The word-symbol 'STAR' and the device of a star."

6,209.—LINIMENTS.—*Richard Matchett*, Allegheny, Pa. Application filed March 19, 1878.

"The fanciful words 'FOUR-FOLD' and the design or symbol of a bee-hive."

6,210.—VETERINARY MEDICINES.—*Edward S. Smith*, New York, N. Y. Application filed May 28, 1878.

"The heads of the horse, bullock, sheep, and dog, the sheaves of grain, and the word and letters 'U. S. of A.,' and, between the words 'Trade' and 'Mark,' the figure of a hog, under which are the word and figures 'Established 1876,' arranged as shown."

6,211.—STOVE-POLISH.—*Shadrach T. Smith*, Kasson, Minn., assignor to *Samuel H. Moore* and *Edward Y. Moore*, Chicago, Ill. Application filed May 29, 1878.

"The word-symbol 'MIRROR.'"

6,212.—WASH-BOARDS.—*Union Manufacturing Company*, Toledo, Ohio. Application filed May 23, 1878.

"The representation of the globe, as above described, and the word 'GLOBE.'"

6,213.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Batchelor & Brothers*, Philadelphia, Pa. Application filed May 24, 1878.

"The words 'BUM BLE BEE' and the pictorial representation of a bee."

6,214.—MEDICINAL COMPOUND.—*Cram & Melcher*, Chicago, Ill. Application filed March 28, 1877.

"The words 'FLUID LIGHTNING.'"

6,215.—GLOVES.—*Fish, Clark & Flagg*, New York, N. Y. Application filed May 29, 1878.

"The symbol of a 'coach-and-four,' executed in silhouette, substantially as described."

6,216.—GLOVES.—*Fish, Clark & Flagg*, New York, N. Y. Application filed May 29, 1878.

"The symbol of a dog-cart drawn by two horses tandem, executed in silhouette, substantially as described."

6,217.—CHEWING-TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*Marburg Brothers*, Baltimore, Md. Application filed May 21, 1878.

"The printed copy of the seal of North Carolina, and the words 'SEAL OF NORTH CAROLINA' in connection therewith."

6,218.—AXLE-GREASE.—*Udell, Schmieding & Co.*, St. Louis, Mo. Application filed June 3, 1878.

"The word-symbol 'ALLIGATOR.'"

6,219.—CHEWING-TOBACCO.—*S. W. Venable & Co.*, Petersburg, Va. Application filed May 15, 1878.

"The words 'RED TAG.'"

6,220.—COFFEE AND SPICES.—*Weikel & Smith Spice Company*, Philadelphia, Pa. Application filed March 20, 1878.

"The word-symbol 'ANCHOR BRAND' and the figure of an anchor in connection therewith."

6,221.—CIGARS.—*William Hunt*, Maysville, Ky. Application filed May 16, 1878.

"The representation of two fanciful female heads, arranged in a circular border, one at each side of a circular mirror, of about the same diameter therewith, so that if any person looks into the mirror a third head appears, and illustrates thereby the legend of 'Three Beauties,' as shown."

6,222.—NEEDLES.—*National Needle Company*, Springfield, Mass. Application filed May 23, 1878.

"The arbitrarily-selected word-symbol 'STANDARD.'"

6,223.—ANTI-FRICTION METALS.—*Theodore Thurber*, Auburn, N. Y. Application filed May 3, 1878.

"Border-lines, longitudinally extended, crossed at the left in the form of the letter X, the outer ends of these cross-lines being connected by a vertical line, said longitudinal lines being extended at the right and the extensions connected by a vertical line, forming a rectangular inclosed space for the insertion of a number, together with the words 'Thurber's Excelsior' within the border-lines, substantially as shown."

6,224.—FLANNELS, SHEETINGS, SHIRTINGS, DENIMS, &c.—*Elisha H. Allen, Jr.*, New York, N. Y. Application filed May 11, 1878.

"An ornamental frame-work, printed in gold, red, and black, and inclosing the words 'WILLOW BROOK MILLS.'"

6,225.—GUNPOWDER.—*American Powder Company*, Boston, Mass. Application filed January 30, 1878.

"The words 'DEAD SHOT.'"

LABELS.

[Each certificate bearing date June 11, 1878.]

1,564.—Title: "CASSEBEER'S AMMONIA LOZENGES."—*Henry A. Cassebeer, Jr.*, New York, N. Y. Application filed May 10, 1878.

1,565.—Title: "HEGEMAN & CO.'S CELEBRATED PASTILE OR WITCH HAZEL LOZENGES."—*Hegeman & Co.*, New York, N. Y. Application filed May 20, 1878.

1,566.—Title: "HESSELROTH'S UNIVERSAL HEALING PLASTER."—*Lawrence Hesselroth*, Chicago, Ill. Application filed June 3, 1878.

1,567.—Title: "FRENCH, RICHARDS & CO. STRICTLY PURE LEAD, &c."—*French, Richards & Co.*, Philadelphia, Pa. Application filed May 21, 1878.

1,568.—Title: "FRENCH'S SELECTED CALCINED PLASTER."—*French, Richards & Co.*, Philadelphia, Pa. Application filed May 31, 1878.

1,569.—Title: "HOP TONIC."—*Charles R. Stuart*, Cleveland, Ohio. Application filed June 3, 1878.

1,570.—Title: "THE GOODYEAR UNION SYRINGE, No. 3, &c."—*Goodyear Rubber Company*, New York, N. Y. Application filed June 4, 1878.

1,571.—Title: "EARLY ROSE."—*Heppenheimer & Maurer*, New York, N. Y. Application filed June 5, 1878.

1,572.—Title: "SURE POP."—*Heppenheimer & Maurer*, New York, N. Y. Application filed June 5, 1878.

1,573.—Title: "ELGIN BLACK INK."—*The Elgin Ink Company*, Elgin, Ill. Application filed May 6, 1878.

DESIGNS.

[Each design bearing date June 11, 1878.]

10,714.—CARPETS.—*Robert Allan*, Yonkers, N. Y., assignor to *Alexander Smith & Sons Carpet Company*, same place. Application filed May 25, 1878. Term of patent 3½ years.

10,715.—HINGES.—*Nelson H. Camp*, West Meriden, assignor to *The Charles Parker Company*, Meriden, Conn. Application filed May 13, 1878. Term of patent 14 years.

10,716.—PERFUMERY-BOTTLES.—*Martin C. Hood*, Boston, Mass. Application filed May 13, 1878. Term of patent 7 years.

10,717.—FURNITURE-DRAWERS.—*Edwin Hart*, Cleveland, Ohio. Application filed May 24, 1878. Term of patent 14 years.

10,718.—WALL-POCKETS.—*Lewis A. Leeser*, Baltimore, Md. Application filed May 24, 1878. Term of patent 3½ years.

10,719.—GROUP OF STATUARY.—*John Rogers*, New Canaan, Conn. Application filed May 10, 1878. Term of patent 14 years.

10,720.—FRINGE.—*Edmund Greasly*, Philadelphia, Pa. Application filed June 3, 1878. Term of patent 3½ years.

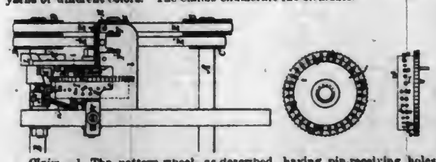
10,721 to 10,724, inclusive.—OIL-CLOTHS.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed June 3, 1878. Term of patents 3½ years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

JUNE 11, 1878.

204,642. HARROWING MECHANISMS FOR KNITTING-MACHINES. Walter Aitken, Franklin, N. H. Filed Mar. 25, 1878.

Brief.—The mechanism automatically determines the times or periods of "narrowing," and may be used for stopping the machine for the application of yarns of different colors. The claims enumerate the elements.

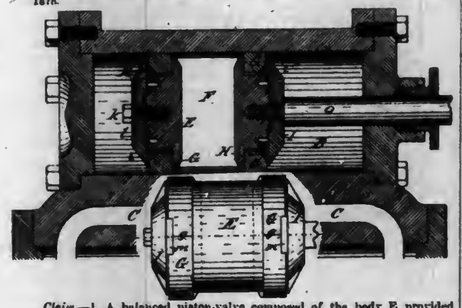


Claim.—1. The pattern-wheel, as described, having pin-receiving holes, and provided with mechanism for revolving it and for moving it laterally, as specified, in combination with the two shafts A B, their pulleys C C' D D' and belts E E', and the tighteners F F' and latch H, all being arranged and applied substantially and to operate as set forth.

2. The pattern wheel, as described, having pin-receiving holes, and provided with mechanism for revolving it and moving it laterally as specified, in combination with the lever N', having the tooth s and the retractive spring s', and with the two shafts A B, their pulleys C C' D D' and belts E E', and their tighteners F F' and latch H, all being arranged and applied substantially and to operate as set forth.

3. The combination of the pattern-wheel, perforated as described, and provided with mechanism for revolving it and moving it laterally, as specified, with the abutment N, and with the two shafts A B, their pulleys C C' D D' and belts E E', and the tighteners F F' and latch H, all being essentially as specified.

204,649. PISTON-VALVES FOR ENGINES. Robert W. Aitken, Buffalo, N. Y. Filed 29, Apr. 1878.

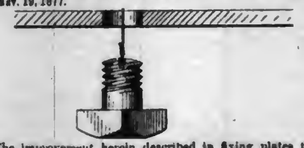


Claim.—1. A balanced piston-valve composed of the body E, provided with exhaust-cavity F, split main packing-rings G G provided with beveled seats on their outer side, beveled split packing-rings H, and covers or followers I, arranged and operating as shown and described.

2. In a piston-valve, the combination, with the body E, of the recessed packing-rings G, provided with beveled seats, beveled split packing-rings H, packing-blocks m, and covers or followers I, substantially as and for the purpose set forth.

3. In a piston-valve, the combination, with the body E, of the packing-rings G, provided with beveled seats, beveled packing-rings H, and covers I, beveled opposite the steam-ports, and prevented from turning on the body of the valve, substantially as and for purpose set forth.

204,650. METHODS OF INSERTING BOLTS IN BOILER-PLATES. Newby S. Barrit, Saugerties, N. Y. Filed Nov. 19, 1877.



Claim.—The improvement herein described in fixing plates to boilers, which consists in providing the bolt with a cross-groove in its end, bridged over, as described, fastening a hook or wire thereto, passing said hook or wire through some opening in the boiler, and through the bolt-hole and the nut, and holding the bolt in position while the nut is screwed thereon, as and for the purpose set forth.

204,651. BRICK-KILNS. Edward W. Bingham, Philadelphia, Pa. Filed May 13, 1878.



Claim.—1. In a kiln for burning brick, the combination of a furnace-chamber having its end nearest the kiln rounded with several curved or bent flues each leading into a particular kiln-arch, substantially as shown and described.

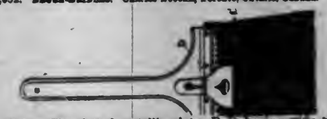
2. In a kiln, the combination of the furnace B with its diverging flues b and the bent or curved kiln-wall eyes a, leading into a particular kiln-arch, substantially as shown and described.

3. In a kiln, the combination of a furnace built adjacent to the outside of a kiln-wall, and having the spreading flues b through its rear wall, with a kiln-wall having the bent or curved kiln-wall eyes a, each furnace-flue and its corresponding kiln-eye leading into a separate kiln-arch, substantially as shown and described.

4. In a brick-kiln, the combination, with a furnace-chamber separated from the kiln-wall by a rear wall, K, and having the flues b, of the bent kiln-wall eyes a, whereby said furnace may be made to burn several kiln-arches, substantially as shown and described.

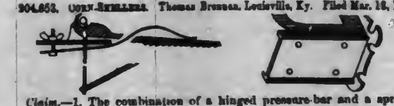
5. The combination of a furnace built adjacent to the outside of a kiln-wall, and having the end of its chamber nearest the kiln-wall rounded, with two or more curved or bent flues connecting said furnace-chamber with two or more separate kiln-arches, substantially as specified.

204,652. BRIDLE-BRIDLES. Charles Roesch, Toronto, Ontario, Canada. Filed Feb. 9, 1878.



Claim.—The slotted metallic plates D D, having wide bases, which are beaded, as shown, combined with the wire band C, fitted to the beads, as described.

204,653. CORN-SHELLERS. Thomas Brennan, Louisville, Ky. Filed Mar. 16, 1878.

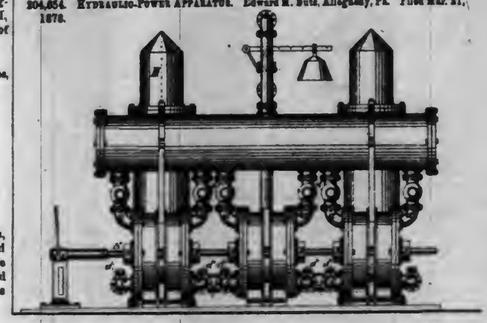


Claim.—1. The combination of a hinged pressure-bar and a spring, the latter extending through and bearing upon the former, substantially as shown and described.

2. The combination of a hopper, a pressure-bar forming one side thereof, and provided with stops and a spring, substantially as and for the purpose described.

3. The combination of the flanged hopper provided with a fulcrum-pin, the perforated pressure-bar formed with a hook at its upper end, and the detachable spring extending through its perforation, substantially as and for the purpose described.

204,654. HYDRAULIC-POWER APPARATUS. Edward M. Butz, Allegheny, Pa. Filed Mar. 21, 1878.



Claim.—1. In a hydraulic-power apparatus, the combination of two or more pumping-cylinders, a corresponding number of pistons, one for each cylinder, arranged on a single stem, and at each end of each cylinder valved inflow and outflow pipes leading from a common supply and to a common receptacle or discharge, substantially as set forth.

2. In a hydraulic-power apparatus, the combination of two or more pumping-cylinders with their pistons arranged upon a common stem, a common inflow pipe leading to both ends of each cylinder, a common outflow-pipe leading from both ends of each cylinder, and a pipe-connection between the inflow and outflow pipes, which is opened and closed by an automatically-operating valve, substantially as and for the purpose described.

3. The combination of a hydraulic-power apparatus having two or more pumping-cylinders, a corresponding number of pistons, one to each cylinder, arranged on a common stem, and a hydraulic jack, with suitable connections between the piston-stem and the ram-head of the jack, substantially as described, whereby a series of short strokes in the operating-lever of the jack may be made to give a single and common stroke of greater range to the pistons.

4. The combination of a hydraulic-power apparatus having two or more pumping-cylinders with their pistons arranged upon a common stem, a common supply leading to both ends of each cylinder, a common discharge leading from both ends of each cylinder, an automatic valve-connection between the discharge and supply pipes, and one or more accumulating or expanding cylinders opening to the common discharge, substantially as described.

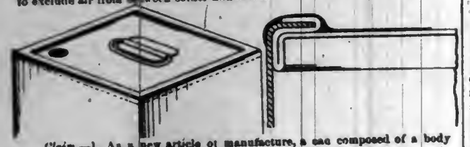
204,655. HORSE-STALL CUSHIONS. Joseph H. Clark, Dearing, Me. Filed May 9, 1878.



Claim.—The combination of the rim *f*, the cover *a*, and the water-tight receptacle *d*, substantially as and for the purpose herein specified.

204,656. MANUFACTURE OF SHEET-METAL CANS. Edward T. Covell, New Bedford, Mass. Filed May 17, 1878.

Brief.—Makes can-body of tin and ends of uncoated metal. Solders by dipping in path. Outside of ends are covered with solder in dipping. Puts can slantingly in bath, and gradually straightens to vertical position, in order to exclude air from between solder and metal.



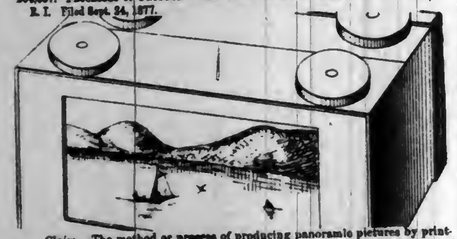
Claim.—1. As a new article of manufacture, a can composed of a body made of a sheet or sheets of iron tinned on both sides, and of two heads made of sheets of iron tinned on one side only.

2. As a new article of manufacture, a can composed of a body made of a sheet or sheets of iron tinned on both sides, and of two heads made of sheets of iron connected or united with the body by a seam or joint, as described, and subsequently tinned or coated with metal, so as to both coat the head and seal the joint or seam, substantially as herein set forth.

3. The method of constructing cans and closing the seams thereof by forming the can of a tinned sheet-iron body and untinned or ungalvanized sheet-iron heads, the two being united by compressed seams, as described, and by tinning or coating with metal or soldering alloy both the heads and the seams uniting the heads with the body.

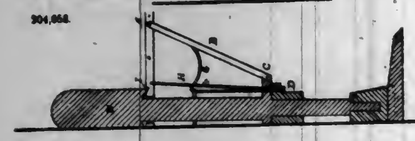
4. A tin can composed of a body and two heads, the former consisting of sheet-iron tinned before, and the latter of sheet-iron tinned after, they are put together, substantially as described.

204,657. PROCESSES OF PRODUCING PANORAMIC PICTURES. Herman Decker, Providence, R. I. Filed Sept. 24, 1877.



Claim.—The method or process of producing panoramic pictures by printing the representation of a coast like across the middle part of a sheet of blue paper, so that the lower part of said sheet shall represent the water or foreground and the upper part of said sheet the sky or background of the picture, substantially as set forth.

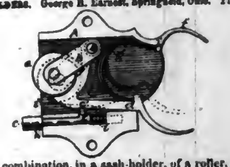
204,658.



204,658. CLOTHES-DRIERS. Peter Dunbar, Cincinnati, Ohio, assignor of one-half his right to Wm. Constable, same place. Filed Aug. 20, 1877.

Claim.—The combination of projection I, circular projection C, sliding band D, arms A, brace B, and cords H and G, operating substantially as described, and for the purpose herein set forth.

204,659. SASH-HOLDERS. George H. Earnest, Springfield, Ohio. Filed Apr. 4, 1878.

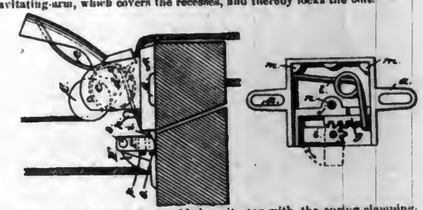


Claim.—1. The combination, in a sash-holder, of a roller, *a*, pivoted in the free end of a suspended link, *b*, operated by a curved-faced dog or brake, *d*, pivoted within said link to the same post, *e*, held by a pressure-spring, *g*, and having its lower edge provided with a recess, *c'*, and shoulder *i'*, for catching the stud *c'* of a locking-bolt, *c*, and retracting the same by a continuous movement of said dog after releasing its pressure upon the roller, as described.

2. In a sash-holder, a friction-brake or dog, *d*, pivoted to the same post, *e*, with the link *b*, having a roller, *a*, or its equivalent, operated by said brake or dog, in combination with a pressure-spring, *g*, as and for the purpose herein before set forth.

204,660. BASH-BALANCES. Elliot Eberly, Dayton, Ohio. Filed Jan. 3, 1878.

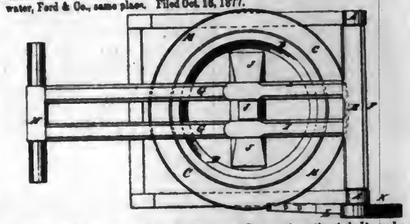
Brief.—The swinging spring-bolt is provided at its inner end with cogs arranged in an arc of a circle, and is actuated by a rack provided with an operating button. The bolt swings into a recessed piece provided with a gravitating-arm, which covers the recesses, and thereby locks the bolt.



Claim.—1. The casing A, provided on its top with the spring clamping-dog B and pulley C, and having contained within it the rack *g* and bolt *f*, meshing together and controlled by the coiled spring *l*, the parts constructed and arranged in the manner and for the purpose specified.

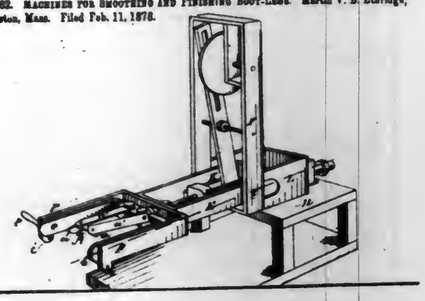
2. In combination with a horizontally-swinging bolt, the horizontally-recessed piece F, provided with a gravitating-arm, covering the openings in the recesses, whereby the bolt, after entering either recess, is held from withdrawal, substantially as set forth.

204,661. WASHING-MACHINES. William M. Fitzwater, Greenville, Tenn., assignor to Fitzwater, Ford & Co., same place. Filed Oct. 16, 1877.



Claim.—The combination, with the ring C, carrying the tub D, and provided with the ratchet-teeth M, of the pivoted frame I E F, levers G H, arm K, pawl L, and the pounder J, always striking in its descent across the center of the bottom of the tub, whereby the more soiled part of the clothes, placed in the middle part of the tub, will be cleansed as quickly as the other parts, as herein specified.

204,662. MACHINES FOR SMOOTHING AND FINISHING BOOT-LEGS. Martin V. B. Ethridge, Boston, Mass. Filed Feb. 11, 1878.

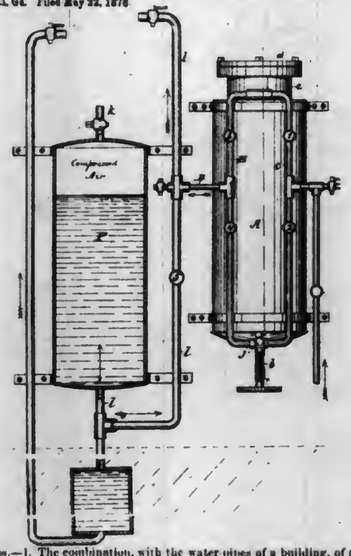


Claim.—1. In a boot-leg smoothing and finishing machine, a reciprocating yielding smoothing and finishing device, consisting of two or more blocks, *a*, arranged upon yielding arms *a'*, to correspond in curvature with the surface of the boot-tree, provided with the adjustments described, having suitable handles *p*, for guiding said device, and actuated by mechanism entirely back of the same, in connection with a boot-tree or other support adapted to rotate at right angles to the line of movement of said smoothing and finishing device, substantially as and for the purpose set forth.

2. The combination of a swiveling cross-bar, C, provided with the arms *c*, with the swiveling frame F, provided with a handle, *p*, and the stops *c'*, substantially as described, and for the purpose set forth.

3. The combination of the eccentric G or other driving mechanism, slotted lever I, and connecting-rod K, or its equivalent, reciprocating shaft D, and the smoothing and finishing device described, substantially as set forth.

204,663. COMBINED FILTERING, COOLING, AND WATER-FORCING APPARATUS. Jas. Gainey, Augusta, Ga. Filed May 22, 1878.



Claim.—1. The combination, with the water-pipes of a building, of a filter and an air-cushion reservoir, the said filter being arranged to receive its water from the main supply and to discharge its pure water into the air-cushion reservoir, and the said air-cushion reservoir being interposed between the filter and the distributing-pipes of the house, substantially as described, and for the purpose set forth.

2. The air-cushion reservoir combined with the filter and connected with the pure-water discharge of the same by a single pipe, which forms both an inlet and discharge pipe for the said reservoir, substantially as described.

3. The combination, with a filter and air-cushion reservoir, of a cooling-tank buried in the earth and connected with the said reservoir, substantially as described.

4. The filter-cylinder having a neck, *c*, forming a reduced chamber, and a removable head, *d*, in combination with the perforated head *e f*, the felt disks *g i*, and the ring *h*, substantially as and for the purpose described.

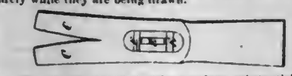
204,664. HORSE-COLLARS. Wm. H. Gotzendaner and J. P. Marquardt, Jr., Dayton, Ohio. Filed Oct. 29, 1877.



Claim.—The collar D, cut through diagonally at its lower end, in combination with the metal hames, one of which is provided with a vertical pin, *d*, and the other with a socket-piece, *f*, adapted to slip over the pin, and held from displacement by the spring-latch *g*, the whole adapted to be opened or closed by vertical pressure, substantially as and for the purpose specified.

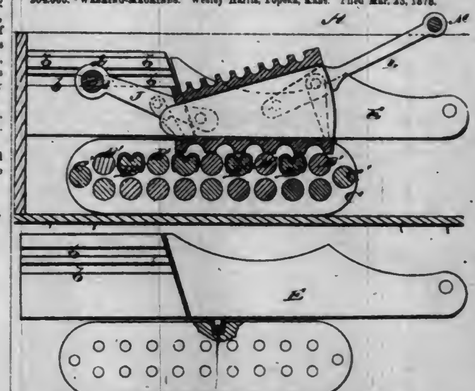
204,665. HAMMERS. H. Hammond, Hartford, Conn., assignor to Horace Cornwall, same place. Filed Mar. 7, 1878.

Brief.—The holding-edges of the claw are provided with serrations for taking hold of nails the heads of which have been broken off, and holding them securely while they are being drawn.



Claim.—The claw C, provided with serrations, substantially as and for the purpose herein described.

204,666. WASHING-MACHINES. Wesley Harris, Topeka, Kans. Filed Mar. 23, 1878.



Claim.—1. The combination of the double reversible wash-board, as described, the box A, and the pivoted bars E E, provided with pins *a*, fitting in holes in the frame of the wash-board, as set forth.

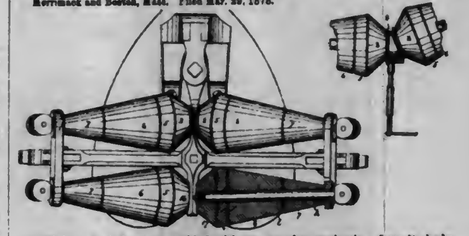
2. The combination of the double reversible rubber, as described, the pivoted arms L L, with pivoted buttons N N and handle M, and the pivoted arms J J, with pivoted buttons K K and roller I, all substantially as and for the purposes set forth.

204,667. PAPER CHAIR SEATS AND BACKS. Hahum Harwood, Leominster, Mass., assignor to J. A. and H. Harwood, same place. Filed Mar. 14, 1878.

Claim.—1. My improved method, substantially as described, of preparing pasteboard or leather board, such consisting in coloring it by a bath, and subsequently running it between rollers to even the color and express the surplus liquid, and afterward dipping it in a bath of gelatine and pebbling or embossing it, and treating it with shellac or varnish, all being substantially as described.

2. As a new or improved manufacture, pasteboard or leather-board evenly colored, coated with gelatine, pebbled or embossed, and shellaced or varnished, all being substantially as set forth.

204,668. MECHANISMS FOR FORMING BATS FOR BOOTS, SHOES, HATS, &c. Alfred A. Hawley, Merrimack, and Robert B. Hawley, Amesbury, assignors to Merino Shoe Company, Merrimack and Boston, Mass. Filed Mar. 29, 1878.



Claim.—1. A former provided with an annulus projecting from its body in such direction, substantially as described, that a line extended from the highest part of the annulus to the body of the former, where the annulus meets the body of the former, will form an obtuse angle with the body of the former, substantially as set forth.

2. A former provided with an enlarged central annulus, substantially as described, and with ends of larger diameter than the body of the former near the intersection of the annulus and body, substantially as set forth.

3. The combination, with a former, of sectional rollers to support and rotate it, substantially as described.

4. The combination, with the former provided with the enlarged annulus, of supporting-rollers, certain portions of which bear the annulus and are driven positively to rotate the former, while other portions are loose thereon, substantially as described.

5. As an article of manufacture, a wool bat provided with a base projecting therefrom at its large end, substantially as described.

6. The herein-described method of manufacturing blanks for hollow felted articles, such as boots, shoes, and hats, consisting in first forming a wool bat with a radial base projecting therefrom, and then hardening, fulling, and shrinking such bat, substantially as described.

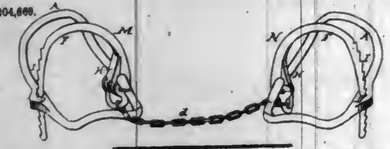
204,669. PRISONERS' SHACKLES. George S. Hickox, Marshalltown, Iowa. Filed Mar. 15, 1878.

Claim.—1. A shackle for securing both arms of a prisoner in a folded position, which consists of an elliptical bail and a centrally-hinged hasp for each arm, the bails being connected by a chain, and the hasp provided with a rack, which is engaged by a spring-pawl in said bail, substantially as specified.

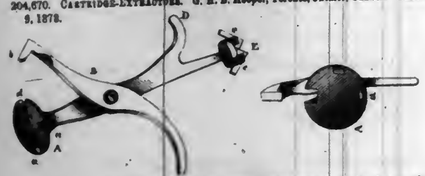
2. A shackle consisting of the parts M N, adapted to secure the arms in a folded position, in combination with the chain *d* and a suitable fastening device for adjusting the length of same, substantially as specified.

3. A shackle consisting of the elliptical bail A, having a hinged hasp, F, provided with a suitable rack, substantially as expressed.

204,669.



204,670. CARTRIDGE-EXTRACTORS. G. H. B. Hooper, Toronto, Ontario, Canada. Filed Feb. 9, 1878.

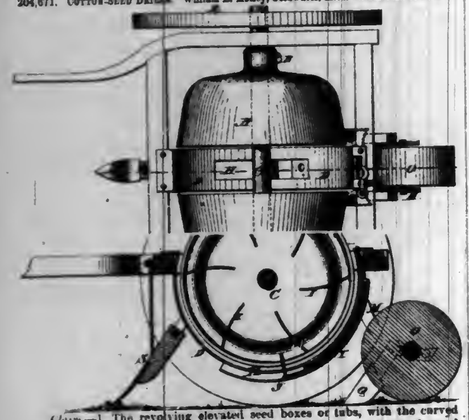


Claim.—1. A cartridge-shell extractor with a head, A, having a slot, *d*, and one or more stationary claws, in combination with an adjustable claw, *b*, substantially as shown and described.

2. A cartridge-shell extractor having a curved handle, D, attached to the shank C, in combination with the curved end of the pivoted lever B, affording the operator a firm gripe upon the extractor, for the purpose specified.

3. The head E, screwed or otherwise suitably attached to the shank C, and provided with one or more dogs, *e*, pivoted so that they will fold back as the head E is forced into the shell, and open out when pressed in the opposite direction, as and for the purpose specified.

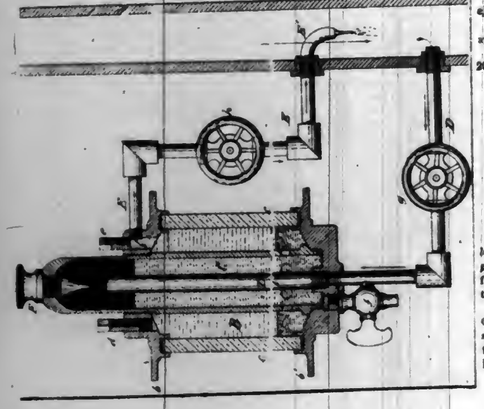
204,671. COTTON-SEED DRILLS. William E. Kelley, Coldwater, Mich. Filed Jan. 5, 1878.



Claim.—1. The revolving elevated seed boxes or tubs, with the curved elevators I I I on the inside, arranged on the shaft C so as to throw the seed to the center, as herein described.

2. In combination, the revolving seed boxes or tubs, with the curved elevators inside, the receiver D, with aperture H, and stop I, with tongue J, the opener or marker S, and the coverers and rollers, all arranged to operate as described, for the purpose herein set forth.

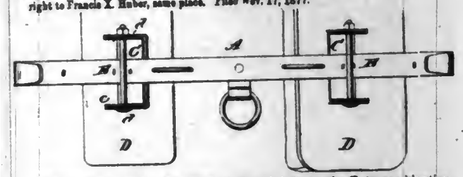
204,672. LUBRICATORS. John L. Knight, New York, N. Y. Filed Apr. 2, 1878.



Claim.—In an oil-cup, the internal condensing and water chamber C C', arranged to rise through the oil-vessel, with its condensing end C' extended out of and above the oil-vessel, in combination with the outer oil-vessel B, oil-feed pipe E, and steam-vent pipe D, arranged and operating substantially as herein shown and described.

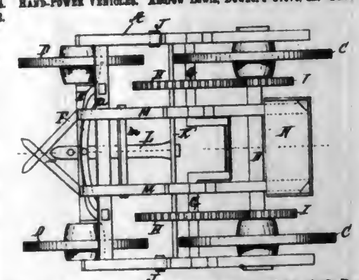
2. An oil-cup formed of a central cylinder, C C', having its sides threaded at the top and bottom, in combination with an outer cylinder, B *b b'*, having its heads *b b'* screwed onto the same, substantially as herein shown and described.

204,673. HARNESS-SADDLES. Friedrich Koch, New York, N. Y., assignor of one-half his right to Francis X. Huber, same place. Filed Nov. 17, 1877.



Claim.—In a saddle, the plates C D and bolt or pin E, in combination with the curved frame and pads or blocks, substantially as described.

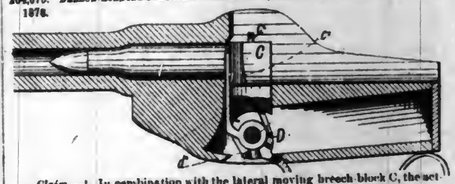
204,674. HAND-POWER VEHICLES. Andrew Lewis, Downer's Grove, Ill. Filed Mar. 16, 1878.



Claim.—1. The combination, with the frame A, of the shaft B, driving-wheels C C, crank-shaft G, gear-wheels H H, pinions I I, and movable seat N, all arranged, with relation to each other, substantially as and for the purpose specified.

2. The combination, with the frame A, axle E, and wheels D D, of the U-shaped brace F, pendants J J, tie-braces K K, cross-bar K', and reach L, substantially as and for the purpose specified.

204,675. BREECH-LOADING FIRE-ARMS. James McAlpine, New Haven, Conn. Filed Jan. 3, 1878.



Claim.—1. In combination with the lateral moving breech-block C, the actuating cam D *d'*, made in one piece, having the lever *d'*, as described, the construction being such that by the movement of the lever the cam-block is actuated to give the breech-block reciprocating movement in either direction, as may be desired, substantially as described.

2. In combination with the breech-block, the actuating cam-block and the ejector, substantially as described.

3. In combination with the cam-block having the recesses, the locking-spring, as described.

204,676. MACHINES FOR CRUSHING AND GRINDING ORES, &c. Thomas McGlew, San Francisco, Cal. Filed Feb. 18, 1878.



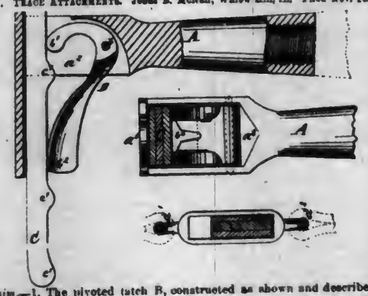
Claim.—1. The crushing and grinding rollers C C' and their sliding shafts *b c*, one of which is connected with the power, in combination with the bevel gears E E' and cams D D' on the shafts, and the arms F F', secured to the frame, and having rollers engaging with the grooves in said cams, substantially as described and shown.

2. In a crushing and grinding machine, the combination of the rollers C C', and mechanism for giving them rotary and reciprocating motions, with the sliding frame B, carrying one of the rollers and its shaft, and moved toward the center of the machine by a weight, so that the rollers will separate to allow large pieces to pass between them, substantially as described and shown.

3. The combination, with the crushing and grinding rollers C C', having

rotary and reciprocating motions, of the sliding frame B, carrying one of the rollers, the arms I K, rock-shaft J, and weight L, all constructed and arranged substantially as described and shown.

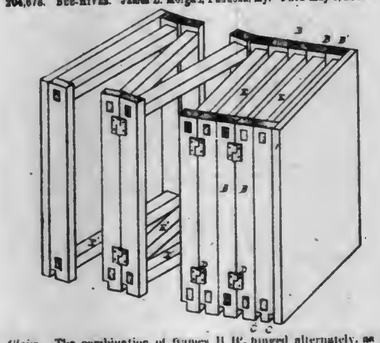
204,677. TRACE ATTACHMENTS. Jones B. McNair, Willow Hill, Ill. Filed Nov. 14, 1877.



Claim.—1. The pivoted catch B, constructed as shown and described, in combination with the slotted and flanged end piece A of a single-tree, for securing the tug C to the latter, substantially as specified.

2. The tug C, having projections or raised parts *c'*, in combination with the slotted end piece A of the whiffletree and the cam lever B, as and for the purpose set forth.

204,678. BEE-HIVES. James E. Morgan, Paducah, Ky. Filed May 6, 1878.



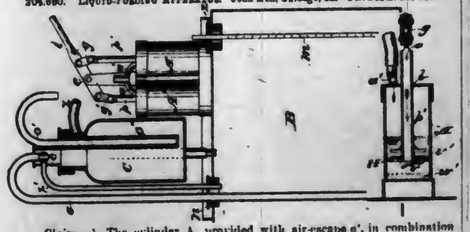
Claim.—The combination of frames B B', hinged alternately, as shown, having gains C and cross-pieces E E', substantially as herein described and set forth.

204,679. AUTOMATIC CAR-BRAKES. George A. Neal, Smithfield, Ky. Filed Apr. 22, 1878.



Claim.—In a car-brake, an adjustable rod, A, provided with spring C and movable thimbles D F, in combination with horizontal lever J, pivoted substantially as shown, vertical lever K, rigidly attached to brake-piece I, and operating as described, and for the purpose set forth.

204,680. LIQUID-FORCING APPARATUS. John Neil, Chicago, Ill. Filed Mar. 12, 1878.



Claim.—1. The cylinder A, provided with air-escape *a'*, in combination with the submerged piston H within the cylinder A, as described, and for the purpose set forth.

2. The hollow piston-rod *p'*, provided with air-valve *c*, or their mechanical equivalents, in combination with the cylinder A, directly fixed to tank B, liquid flow-pipe *o*, and liquid cut-off *e*, substantially as described, and for the purposes set forth.

3. The hollow piston-rod *p'*, provided with valve *c*, or their described mechanical equivalents, in combination with the submerged piston H and air-escape *a'*, substantially as described, and for the purpose set forth.

4. The cylinder A, directly fixed to tank B, flow-pipe *o*, provided with screw J and liquid cut-off *e*, substantially as described, and for the purpose set forth.

5. The combination of the tank B, adjustable pipe *x*, cylinder A, pipes *x'''* and *x''''*, and plug P, substantially as described, and for the purpose set forth.

6. The combination of the measuring-jar C, air-valve *f*, and flow-pipe *o'*, substantially as described, and for the purpose set forth.

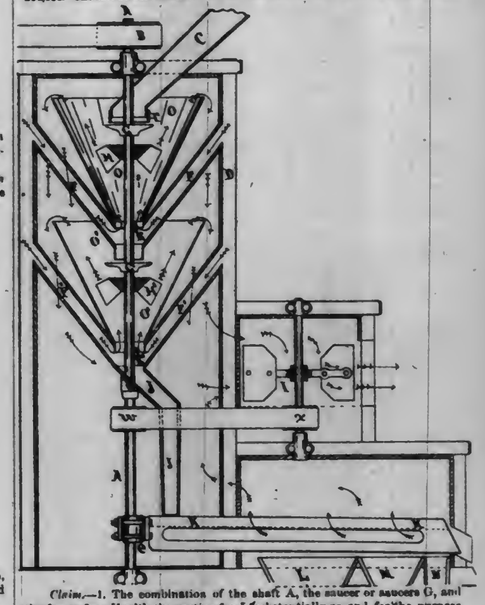
7. The combination of tank B, flow-pipe *o*, and graduated measuring-jar C, substantially as described, and for the purpose set forth.

8. The combination of tank B, air-pipe *x'*, jar C, air cut-off *e*, and pipe *o'*, substantially as described, and for the purpose set forth.

9. The combination of screw Z, measuring-rod *m*, and tank B, substantially as and for the purpose set forth.

10. The combination of jar C and the elongating flow-pipe, consisting of the two pipes *o'* and *o''*, as described, and for the purpose set forth.

204,681. MIDDLINGS-SEPARATORS. Thomas Newell, Sacramento, Cal. Filed Apr. 9, 1878.



Claim.—1. The combination of the shaft A, the saucer or saucers G, and the fan or fans H with the suction fan I, substantially as and for the purpose hereinbefore set forth.

2. The combination of the saucer or saucers G and fan or fans H with the funnel or funnels O, substantially as above set forth.

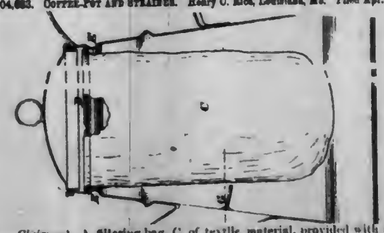
3. The combination of the saucer O, fan H, and funnel O with the suction-fan I and sieve K, substantially as above set forth.

204,682. WHIFFLETREE-HOOKS. Millard M. Olin, Anton Zwiebel, and W. A. Bennett, Burlington, Wis. Filed Apr. 25, 1878.



Claim.—The combination of the screw or rod *c*, having the enlarged and recessed head *c*, spring *d*, and catch *e*, with the trace or cheek ring *b*, the catch *e* being made to sink downward as the ring is passed over it, and then snap outward again, substantially as shown.

204,683. COFFEE-POT AND STRAINER. Henry C. Rice, Louisiana, Mo. Filed Apr. 30, 1878.

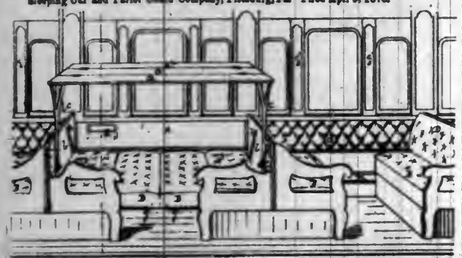


Claim.—1. A filtering-bag, C, of textile material, provided with an open elastic hoop or ring, D, arranged in its mouth, and adapted to expand outwardly against the wall of the containing-vessel, substantially as set forth.

2. The combination of a pot provided with an internal ledge, bead, or other projection with a bag of some textile material and an open outwardly-expanding ring or hoop arranged around the mouth of the bag, adapted to be compressed so that it may easily pass into the mouth of the vessel, substantially as and for the purposes set forth.

3. The combination of a pot provided with the bead E, the bag C, ring D, and the guard-wire G, substantially as and for the purposes set forth.

204,684. SLEEPING-CARS. Edward Robinson, Wilmington, Del., assignor to the Woodruff Sleeping Car and Parlor Coach Company, Pittsburg, Pa. Filed Apr. 5, 1878.



Claim.—1. In combination with a lower berth platform or frame composed of seats and backs, a three-fold upper berth platform or frame and a recess beneath the car-windows adapted to its reception, substantially as set forth.

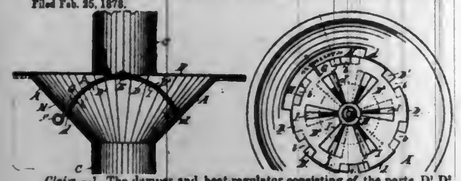
2. The pocket *d* in the bottom of recess A, substantially as set forth.

3. The bars *g*, sliding longitudinally out and in on fixed guides or ways in the seat-frames, so as to bridge over the space between facing seats, in combination with the seats B and side rails, substantially as set forth.

4. The inclined cleats *s* and hinged extensions *s'*, attached to a seat-back, in combination with supporting side rails or ledges, substantially as described.

5. The cleats *c c' c²*, in combination with seat and foot-board, arranged substantially as described.

204,685. HEATER REGULATOR AND DAMPER COMBINED. Peter Schaefer, St. Peter, Minn. Filed Feb. 25, 1878.

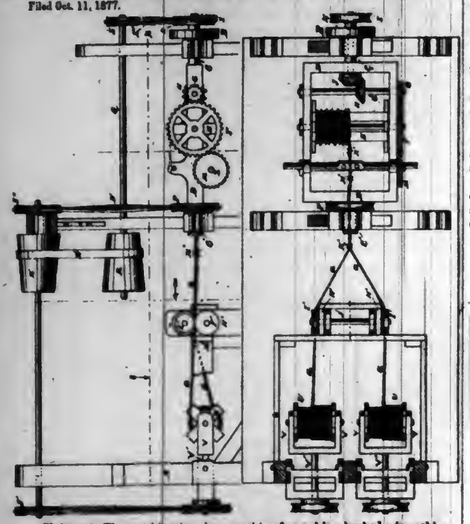


Claim.—1. The damper and heat-regulator consisting of the parts D^1 D^2, provided with vents or openings I I i i, proportioned and arranged substantially as shown, whereby I am enabled to close all the openings, or open them all, or open either set partially or wholly and independently, as set forth.

2. The combination, with the handle F and projection H, of the vents *i i*, operating, in connection with the vents I I, by means of said handle, substantially as and for the purposes shown and described.

3. The drum A, in combination with the handle F, projection H, and damper D, the part D^1 being rigidly secured to the drum, and the part D^2 operating, in connection with the part D^1, by means of the handle, as described.

204,686. MACHINES FOR MAKING WIRE CABLES. H. B. Scott and H. S. Smith, Joliet, Ill. Filed Oct. 11, 1877.



Claim.—1. The combination, in a machine for making barbed wire cables, of the rotary frame or flier D, the reel E, mounted in bearings in the sides of the said frame, the hollow shaft C, rigidly connected to one end of the said frame and provided with a driving-wheel, the shaft I, arranged within the shaft C, and carrying the wheels J and K, and the gearing carried by the said frame and connecting the wheel J to the reel E, whereby the said reel is rotated on its transverse axis, and also on its longitudinal axis, substantially as and for the purposes specified.

2. In a machine for making barbed wire cables, the combination of the flanged tension-rollers F and I' and the shelf J', suspended on the axle of the rollers I' I', substantially as and for the purposes specified.

3. The combination of the conical pulleys with the shafts V' V' and I and frame D, for the purpose specified.

204,687. SAFETY-VALVE FOR FERMENTED-LIQUOR CASKS. Henry Shlaudeman, Decatur, Ill. Filed June 23, 1877.

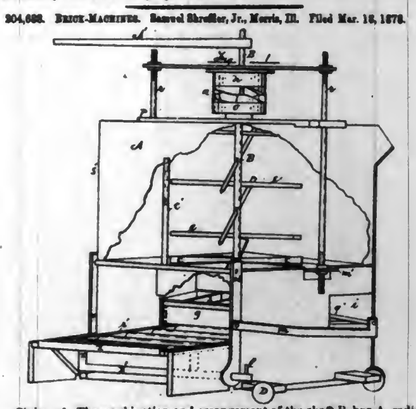
Brief.—Uses one of a series of valves numbered according to their different weights, and thus sets the vent to discharge at a predetermined pressure.



Claim.—1. A safety-valve for casks of fermenting liquor, having a predetermined and fixed capacity for retaining and allowing gases to escape formed of a weighted valve having a projecting stem, and provided with an elastic packing placed in a recess in its lower end, resting on the upper extremity of a perforated conical valve-seat, substantially as shown and described.

2. The combination of the case A and valve C, having a projecting stem, D, and inclosing a soft-rubber packing, *c*, with a perforated conical valve-seat, substantially as and for the purpose set forth.

204,688. BRICK-MACHINES. Samuel Shreffler, Jr., Morris, Ill. Filed Mar. 18, 1878.

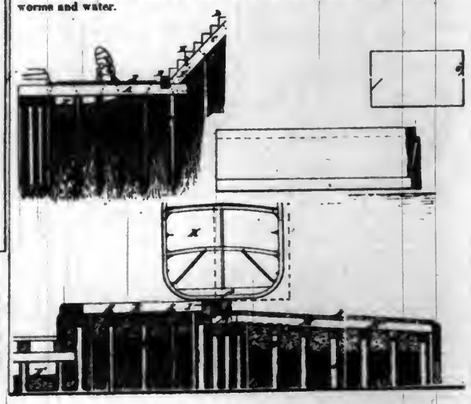


Claim.—1. The combination and arrangement of the shaft B, box A, radial arms *e* and *e*, grate 2, rods *r*, beams *m'* and *s*, and wheels *n* and *o*, all constructed and arranged, as set forth, to elevate and lower the grate 2, in the manner and for the purpose set forth.

2. The rim *s'* on the upper outer edge of the wheel *o*, arranged, as set forth, to prevent the lubricating-oil from falling off the inclined offsets.

204,689. DRY-DOCKS. James E. Simpson, Brooklyn, N. Y. Filed Apr. 5, 1878.

Brief.—The dock is constructed entirely of timber. The piles in the bottom of the dock are capped by floor-beams running at right angles to the length of the dock. Near each end of the floor-beams a gain is cut for the reception of a longitudinal timber, which serves as a support for the lower end of the oblique side timbers of the dock. These side timbers are capped on and bolted to the heads of piles. They support the altars or steps. These altars are cut from rectangular sticks of timber by a line drawn from two or three inches above one corner to the same distance below the corner diagonally opposite. The keel of the floating gate seats laterally inward against a single sill, which is provided with a facing or packing of elastic material. The table end and abutments are coated with an impervious composition to keep out worms and water.



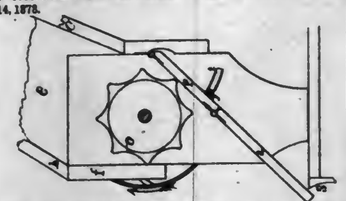
Claim.—1. The timber D, running longitudinally at the foot of the braces C and gained into the cross or floor timbers A A, substantially as described.

2. The altars or steps E E, of the form substantially as shown and arranged, the back of one to lap upon the seat above and secured to the braces C C, as and for the purpose described.

3. A single sill or inner seating, I, provided with a facing or packing of elastic material, in combination with a floating gate, K, operating substantially as and for the purpose described.

4. The table end and the abutments of a dry-dock coated with a composition, N, impervious to worms and water, substantially as described.

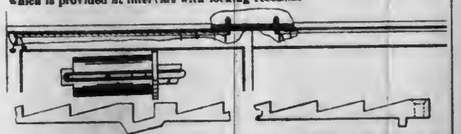
204,690. COTTON-GIN AND LINTER FEEDERS. Ferdinand Streuby, New Orleans, La. Filed Jan. 14, 1878.



Claim.—The combination of the hopper *b b* C *c*, the feeding-cylinder O, and the hinged adjustable feed-board F, with apron *a* hinged thereto, substantially as herein set forth.

204,691. SASH HOLDER AND LOCK. Edmund Tobin, Jr., Oconto, Wis. Filed Apr. 26, 1878.

Brief.—A spring-bolt is inclosed in a case fastened in the side of the frame, and is operated by means of a key which engages with an arm attached to the inner end of the bolt. Said arm is bent at right angles, and projects from the stop in front of the sash. The bolt engages with a rack in the sash, which is provided at intervals with locking-recesses.



Claim.—In a sash holder and lock, a bevel-nosed spring-bolt inclosed in a circular case, and provided with an arm adapted to engage with a key for the purpose of unlocking the bolt, in combination with a rack having teeth arranged to hold the sash in any position and to lock the same at short intervals, substantially as described.

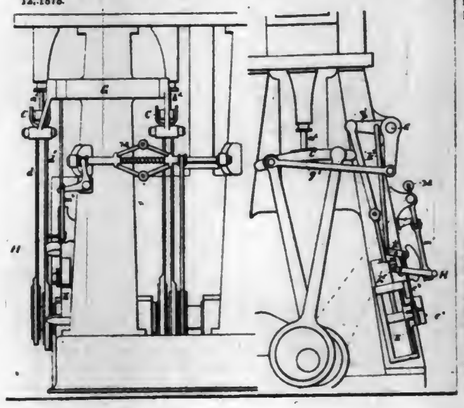
204,692. ROPE-HOLDING DEVICES. Robert B. White, Chetopah, Kans. Filed Feb. 16, 1878.



Claim.—1. The supports B B', in combination with a series of fixed and swinging supports and spindles for holding reels, substantially as described.

2. The swinging supports or brackets D D, in combination with supporting-upright B', reel E, and spindle *d*, as and for the purpose set forth.

204,693. GOVERNOR-CONTROLLING MECHANISM. J. S. Wilson, Philadelphia, Pa., assignor to the William Cramp & Sons' Ship and Engine Building Company, same place. Filed Apr. 12, 1878.

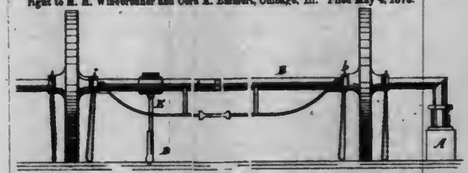


Claim.—The combination of a governor operating the starting-handle H of the auxiliary steam-cylinder, E, the compensating-levers and links K K', the reversing-shaft G, and the link C, all connected and operating to control the valve, substantially as herein described.

204,694. HOG-CHOLERA COMPOUND. Thomas McK. Wilcox, Moberly, Mo. Filed Nov. 20, 1877.

Claim.—The hog-cholera compound of black antimony, copperas, flowers of sulphur, saltpeter, charcoal, wheat flour, common salt, and wood-ashes, prepared and used substantially as described.

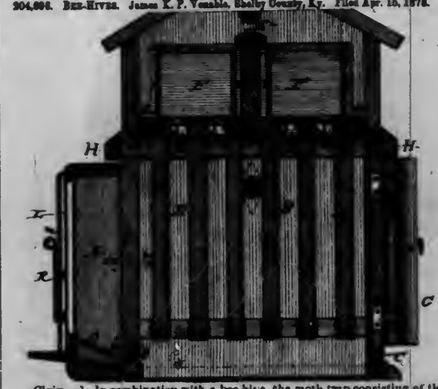
204,695. IRRIGATING DEVICES. John A. Winebrenner, Jefferson, assignor of two-thirds his right to M. H. Winebrenner and Cora A. Emmert, Chicago, Ill. Filed May 4, 1878.



Claim.—1. A pipe, B, provided with suitable perforations or sprinkling devices, and mounted on one or more wheels or other suitable support, and adapted to be connected with and rotate about a plug, A, substantially as and for the purposes set forth.

2. In combination with a perforated pipe, B, adapted to be connected with and rotate about a plug, A, a suitable number of cultivating shovels or teeth, D, substantially as and for the purposes specified.

204,696. BEE-HIVES. James K. P. Venable, Shelby County, Ky. Filed Apr. 15, 1878.

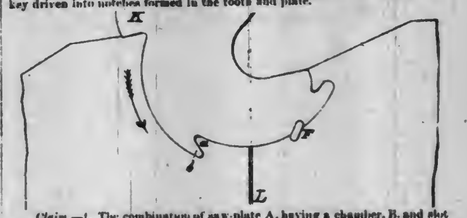


Claim.—1. In combination with a bee-hive, the moth-trap consisting of the frame I, with wire-cloth I, conductor O, with opening *i*, the rods *m*, and sliding gate E, all substantially as and for the purposes herein set forth.

2. The frame I, with wire-cloth I, and conductor O, with openings *i*, in combination with body C, having opening *b* and bottom A, substantially as and for the purpose set forth.

204,697. SAW-TEETH. Cairn Adams, Rensselaerville, Pa. Filed May 10, 1878.

Brief.—The saw-plate has a slot formed in the rim, and extending into a chamber for the reception of the tooth, for stiffening the plate and obviating excessive hammering in its manufacture, and for keeping the rim from becoming untrue when heated. The tooth has a heel overlapping the edge of the saw-plate, forming a strong bearing for the tooth, and acting as a lever to contract the rim of the tooth. The tooth is secured by a V-shaped edge in the plate, fitting in a corresponding groove in the tooth, and is locked in position by a key driven into notches formed in the tooth and plate.



Claim.—1. The combination of saw-plate A, having a chamber, B, and slot I, extending inwardly therefrom, with a tooth having a projection adapted to engage with said saw-plate and clamp the same on said tooth when in operation, substantially as set forth.

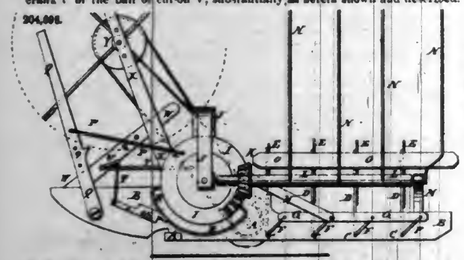
2. A circular saw-plate having the chamber B and the slot I, as described, in combination with a tooth having the heel K, said tooth being held within the chamber by the V-shaped edge *d* in said chamber and corresponding groove in the tooth, and locked in position by the wedge F, substantially as and for the purpose stated.

204,698. HARVESTER-DROPPERS. Wm. H. Adams, Penn Line, Pa. Filed Dec. 7, 1877.

Claim.—The combination of the cam K, the lever S, and the connecting-rod

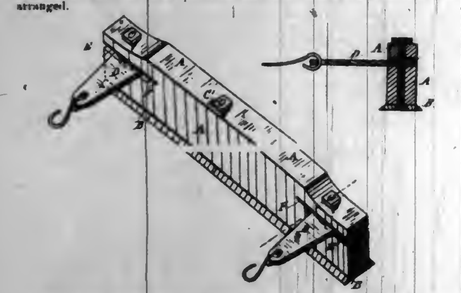
T with the wheel I, that operates the plates E and fingers N, and with the crank U of the bail or cut-off V, substantially as herein shown and described.

204,698.



204,699. ROAD-GRADERS. Martin Amnel, Belleville, Ill. Filed May 10, 1878.

Brief.—The scraper is constructed with a stock or bar of wood and a flat metal side secured to the stock by bolts. Recesses or slits are made in the ends of the stock, in which reversible draw-bars turning on pivot-bolts are arranged.



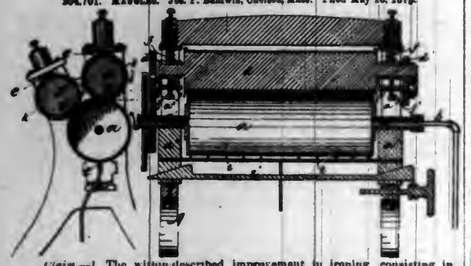
Claim.—The improved road grader constructed with stock A, shoe B, and reversible draw-bars D D, substantially as herein shown and specified.

204,700. AXLE-TREE WASHERS. George Aspinwall and Fayette C. Clark, Hartford, Conn. Filed Sept. 27, 1877.



Claim.—As a new article of manufacture, an axle-tree washer made of leather and saturated with bayberry tallow.

204,701. MANGLES. Jos. F. Baldwin, Chelsea, Mass. Filed May 16, 1878.



Claim.—1. The within-described improvement in ironing, consisting in subjecting the articles to the action of a heated cylinder and elastic-faced rolls, which bear upon the cylinder on parallel lines *y y*, and retain the articles as they pass between said lines in contact with the intermediate heated ironing-face, substantially as set forth.

2. The combination of the heated cylinder *c* and elastic-faced rolls *d d''*, having parallel points of contact with the cylinder, and operating to stretch the goods over the ironing surface between said points *a*, as set forth.

3. The combination of the heated cylinder *c*, having adjustable bearings, and the elastic-faced rolls *d d''*, turning in yielding bearings adjustable radially, substantially as specified.

4. In a mangle, the combination of the roll *a*, having a rigid surface, the roll or rolls *d*, having compressible coverings *k*, and the springs *f*, for pressing the roll or rolls *d* toward the roll *a*, with the adjustable stops *f'*, for rigidly supporting the roll or rolls *d* against the pressure of the springs *f* without interfering with the yielding of the latter, thereby enabling the rolls *d* to be adjusted so that the yielding pressure on thin fabrics will be produced by the compression of the coverings *k*, the springs *f* permitting the passage of thicker articles under an increased pressure, as set forth.

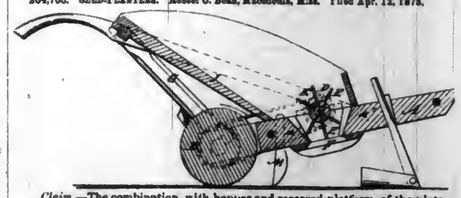
5. In a mangle, the combination, with the steam-heated roll *a*, of a series of external gas-burners, as specified.

204,702. WATERPROOFING COMPOSITIONS. Wm. W. Baxter, Herman, Ill. Filed May 13, 1878.

Brief.—The compound consists of sulphur, one pound; graphite, one pound; litharge, one half pound; charcoal, one pound; copperas, one-half pound; rosin, one-half pound; white lead, two pounds; linseed-oil, five gallons; oil of creosote, one-fourth pound. Mixes the whole to a syrupy consistency, subjects to heat, raises to boiling-point, and then immerses the wood, &c., for about one hour.

Claim.—A compound for preserving and waterproofing wood and cloth, consisting of sulphur, graphite, litharge, charcoal, copperas, rosin, white lead, linseed-oil, and oil of creosote, substantially in or about the proportions set forth.

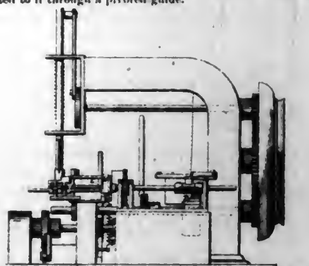
204,703. SEED-PLANTERS. Russel O. Bean, Macedonia, Miss. Filed Apr. 12, 1878.



Claim.—The combination, with hopper and recessed platform, of the plates F, concaved on the sides and provided with downwardly projecting flanges, as and for the purpose specified.

204,704. PLAITING-MACHINES. Wm. Soukup, New Haven, Conn. Filed Oct. 8, 1877.

Brief.—The forked plaiter, through a system of gearing, is caused to make a complete revolution, thereby folding the cloth between its forks, said cloth being presented to it through a pivoted guide.



Claim.—1. In combination with a forked plaiter mounted in suitable bearings, mechanism, substantially as described, for imparting to the said plaiter a rotary reciprocating motion, essentially as set forth.

2. In combination with forked plaiter and mechanism for imparting to the same a rotary reciprocating motion, mechanism, substantially as described, for reciprocating the said plaiter in the direction of its length, as set forth.

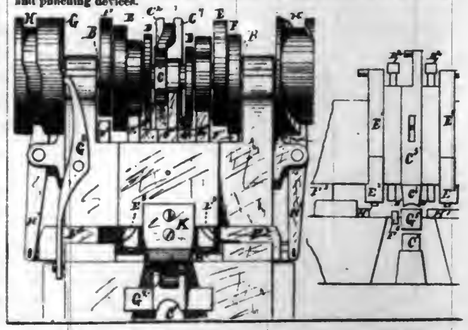
3. The combination of the rotary reciprocating plaiter and the compound feed, constructed to operate together substantially as and for the purposes herein described.

4. The combination of the rotary reciprocating plaiter, the compound feed, and the presser-foot, constructed to operate together substantially as and for the purposes herein described.

5. The combination of the rotary reciprocating plaiter, the compound feed, and the feed-guide, all constructed and operating together substantially as and for the purpose described.

204,705. NUT-MACHINES. John B. Blakeslee, Cleveland, Ohio. Filed Apr. 3, 1878.

Brief.—A finger-piece on a reciprocating bar, in conjunction with the reciprocating finger-slides, carries the blanks to the punching and flattening devices, and, after these operations are completed, under the pins by which they are discharged from the machine. There are two sets of punching, flattening, and discharging devices, one being located on each side of the vertically-reciprocating cutter, and the parts of the machine are so arranged that while one blank is being punched and flattened, another blank is being severed from the bar, crowned and hammered on its ends, and, while the first blank is being carried under the discharging-pin, the second is being carried to its flattening and punching devices.



Claim.—1. The combination, with the crowner, central finger, and lateral fingers, said fingers respectively having movement as described, of the punching, flattening, and discharging devices, substantially as set forth.

2. The combination, with the cutters, central finger, and lateral fingers, said fingers respectively having movement as described, of the crowner, the punching, the flattening, and the discharging devices, substantially as set forth.

3. The combination, with the cutters, feed-clutch, crowner, central finger, and lateral fingers, said fingers having movements as described, of the punching, the flattening, and the discharging devices, substantially as set forth.

4. The combination, with the cutters, feed-clutch, crowner, hammer, central finger, and lateral fingers, said fingers having movements as described, of the punching, the flattening, and the discharging devices, substantially as set forth.

5. The combination, with the central finger F^2, of the lateral fingers H^1, the latter adapted to have alternate reciprocation to and from said central finger, substantially as set forth.

6. The combination, with the lateral reciprocating fingers H^1, adapted to have an adjustable tension or elasticity imparted thereto, of the finger F^2, formed on the finger-bar F^2, substantially as set forth.

7. The combination, with the upper stationary cutter, lower vertically-reciprocating cutter, and central finger F^2, which latter is adapted to have lateral reciprocation relative to the machine, of the lateral fingers H^1, which are respectively adapted to have reciprocation relative to said central finger and on opposite sides of the same, substantially as set forth.

8. The combination, with the cutters, central finger F^2, and lateral fingers H^1, of the hammer G^2, substantially as set forth.

9. The combination, with central finger F^2 and lateral fingers H^1, the same being adapted to have lateral movements relative to the machine, of the crowner C^2, substantially as set forth.

10. The combination, with the cutters C^1 and K, central finger F^2, and lateral fingers H^1, of the crowner C^2 and hammer G^2, substantially as set forth.

11. The combination, with the central finger F^2 and lateral fingers H^1, the same having movements as described, of the punchers E^1, substantially as set forth.

12. The combination, with central finger F^2 and lateral fingers H^1, the same having movements as described, of piercers or punchers E^1 and flatteners F^2, substantially as set forth.

13. The combination, with central finger F^2 and lateral fingers H^1, the same having movements as described, of the discharging-pins D^1, the latter being adapted to have vertical reciprocation alternately, respectively on opposite sides of said central finger, substantially as set forth.

14. The combination, with central finger F^2 and lateral fingers H^1, the same having movements as described, of punchers E^1, flatteners F^2, and discharging-pins D^1, substantially as set forth.

15. The combination, with the cutters C^1 K, fingers F^2 H^1, and hammer G^2, of crowner C^2, punchers E^1, flatteners E^2, and discharging-pins D^1, substantially as set forth.

16. The combination, with central finger F^2 and lateral fingers H^1, the same having movements as described, of the cutter C^1, which vertically reciprocates within a recess formed in the frame of the machine, as shown, and having an open space upon both sides thereof, through which latter the nuts are alternately discharged, substantially as set forth.

204,706. SLEEVE-BUTTONS. Wm. Bourke, New York, N. Y. Filed Jan. 29, 1878.

Brief.—The base-plate is slotted on one side from center to circumference, and on the other side a short distance from the circumference only, so that it may be dropped down in line with the shank.



Claim.—1. In a sleeve-button, the combination, with plate A, of shank B, having cross-pin *c*, which is retained in a base, C, both plates of which are slotted in a radial direction, as explained, said shank being adapted to be moved in said slotted base from center to circumference, substantially as shown and described.

2. The herein-described base for buttons, the same being composed of two plates, one of which is slotted from its circumference to its center, for the purpose of confining the end of the button-shank, and the other cut away, so as to permit the base to be moved along and dropped in line with the shank, substantially as and for the purposes set forth.

204,707. VEHICLE-SPRINGS. Jonas Bowman, Somerset, Ohio, assignor to himself and Isaac Mechling, same place. Filed Apr. 13, 1878.



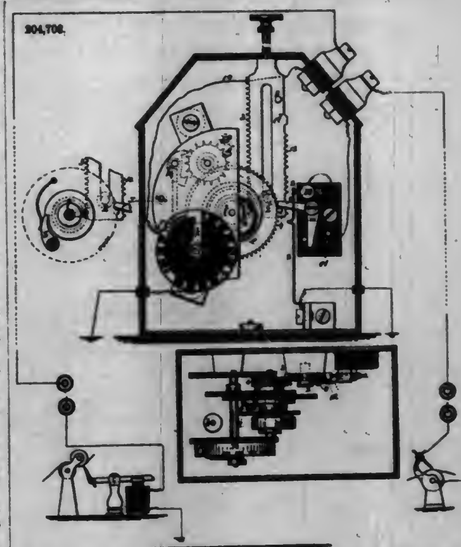
Claim.—1. The plates B C, arranged on body-sill A, equidistant from its ends, and having downwardly-projecting lugs *b c*, for attaching the side springs directly to the body, as shown and described.

2. The combination, with plates B C, having lugs *b c*, of the lapping springs D E, each hinged at one end between said lugs, and provided near their middles with eyebolts F G, as and for the purpose specified.

204,708. FIRE AND DISTRICT ALARM TELEGRAPH BOXES. James J. Bradley, Newark, N. J. Filed Apr. 8, 1878.

Claim.—In an alarm or signal instrument having two independent electric circuit-connections, the combination of a push-button, a rack, a train of wheels to regulate the speed, a spring that is wound by the track, a circuit-breaking ring, and an arm revolved by the gearing, and a circuit-breaker upon the rack-bar acting in the second circuit, and a switch moved by such rack-bar, substantially as set forth.

204,708.



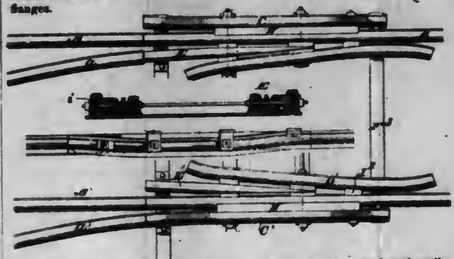
204,709. METHODS OF MAKING GAS-BURNERS. Geo. Bray, Leeds, England. Filed May 24, 1878.



Claim.—The method herein specified of manufacturing mineral gas-burners, consisting in molding the same of clay, partially burning, then slotting and finishing the shape of the burner, and then completing the burning operation to harden the material, substantially as set forth.

204,710. RAILWAY-SWITCHES. Jas. Briody, Detroit, Mich., assignor of one-fourth his right to Bernard Briody, same place. Filed Dec. 31, 1877.

Brief.—Outside of the main switch-rails, and rigidly secured thereto by means of splice or filling blocks, are elevated safety-rails, upon which the treads of the wheels on one side of the cars bear when the switch has been left in line with the main track and a train comes out of the siding, the wheels on opposite side riding upon a point-rail, and their flanges being acted upon by an inclined guard-rail, whereby the trucks are drawn over and upon the main switch-rails without necessitating the traveling of the wheels upon their flanges.



Claim.—1. The combination, in a railway-switch, of the switch main rails and the outside safety-rails, having inclined ends and raised middle portions, and occupying at all times fixed positions relatively to each other and to said main rails, substantially as and for the purpose set forth.

2. The combination, in a railway-switch, substantially as hereinbefore set forth, of the elevated safety-rails for supporting the wheels upon their treads, the main rails, the upper surfaces of which are located below the level of the corresponding surfaces of the safety-rails, the guard-rails, and the points.

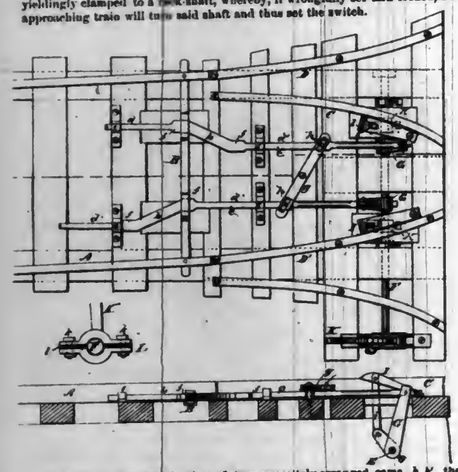
3. The combination of the switch main rails, the inside guard-rails, the points intermediate the switch main-rails and guard-rails, the outside elevated safety-rails to support the wheels on their treads, and at all times occupying fixed positions relatively to each other and to the switch main rails, the rails of the main track, and the rails of the branch or siding track, all substantially as hereinbefore set forth.

4. The combination of the switch main rails, the elevated safety-rails, the elevated guard-rails, the points, and the sectional tie-rod and brace-bar, these members being constructed and operating substantially as hereinbefore set forth.

5. The combination, substantially as hereinbefore set forth, of the switch main rails, the elevated outside safety rails, the inside guard-rails, the points E E', the combined points and safety-rails L L', and the points M M', whereby the switch is doubled and adapted to accommodate three tracks.

204,711. RAILWAY-SWITCHES. Erskine H. Tronson, Ottawa, Ontario, Canada. Filed Dec. 24, 1877.

Brief.—Two oppositely-arranged cam-levers are reciprocated through slots in the cross-bar of the switch-rails by means of wheel-actuated treadles and a lever centrally pivoted between the cam-levers, whereby when one cam is moved forward the other is moved backward. A hand operating-lever is yieldingly clamped to a rock-shaft, whereby, if wrongfully set and locked, an approaching train will turn said shaft and thus set the switch.

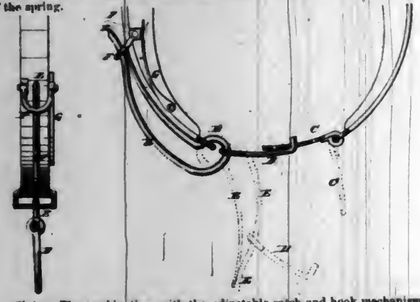


Claim.—1. The combination of two oppositely-arranged cams, *b b'*, the lever *g*, levers G H, and treadles I I', for operating the movable switch-rails, as herein specified.

2. The lever K, having friction-clamp L, in combination with the shaft F of the switch-operating mechanism, substantially as shown and described.

204,712. HAME-FASTENINGS. Madison Calhoun, Ocala, assignor to himself and Samuel Edge, Fort Union, N. Mex. Filed Jan. 19, 1878.

Brief.—The improvement consists in a cam-loop which locks the swinging lever, said loop having a cam-shaped end, which is adapted to bear on the end of the spring.



Claim.—The combination, with the adjustable catch and hook mechanism C D, of the lever E, constructed as described, the pivoted cam-loop F, and the spring *i*, all arranged on the hames, as shown and described.

204,713. TOWEL-RACKS. William H. Castle, Geneva, Ohio. Filed Apr. 25, 1878.



Claim.—1. A series of swinging wire arms C c^1 c^2, folding upon each other, as shown, and moving horizontally on the same pintle or pivot, substantially as and for the purpose set forth.

2. The bracket A *d*, pintle B, and a series of swinging wire arms, C c^1 c^2, substantially as shown and described.

204,714. DRAWERS. Harris Cohn, Delhi, N. Y. Filed Apr. 12, 1878.

Claim.—1. A pair of drawers having each of its legs provided at the lower end with vertically-adjustable buttons, or their described equivalents, on the two sides, substantially as and for the purpose described.

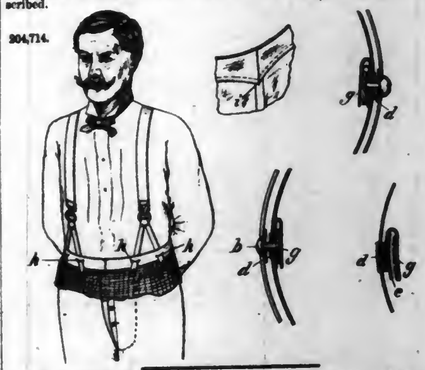
2. The drawers having the series of eyelet-holes in the lower ends of the legs, and the inside strips *g* applied to cover the holes.

3. The drawers having the waistband provided with openings *h*, of a crescent shape, as and for the purposes described.

4. In combination with the drawers, the re-enforcing strips *d c*, applied over the seams on the inside and outside of the fabric and stitched in place, in the manner described and shown.

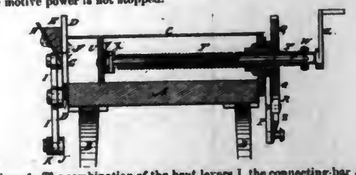
5. The drawers having the gore in the top of the outside hip-seams, and the waistband, with the points *i* secured within the gore, as shown and described.

204,714.



204,715. TOBACCO-CUTTING MACHINES. James W. Crossley, Augustus A. Hagan, and George Jamgot, New York, N. Y., assignors to said Crossley. Filed Mar. 23, 1878.

Brief.—The tobacco is fed automatically to the cutter, and automatically stopped, when the follower reaches the cutter, by a clutch that connects the feed-screw with the follower, and a stop on the rod that carries the clutch, so that the motive power is not stopped.



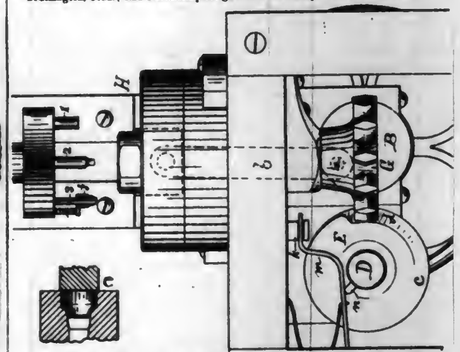
Claim.—1. The combination of the bent levers I, the connecting-bar J, and the two bolts and washers F G with the knife-bar E, the stationary plate D, provided with the two curved slots *d'*, and the crank or crank-wheel L, substantially as herein shown and described.

2. In a tobacco-cutting machine, the combination of the levers I I and connecting-bars J K, the knife-bar E, having its front side inclined, and the knife H, secured to said bar, with the beveled side of its edge inward, in contact with the front plate or head of the machine, as shown and described.

3. In a tobacco-cutting machine, the combination of the revolving nut, the follower, the feed-screw swiveled thereto, and a clutch or key for temporarily locking them together, and a connecting-rod or equivalent device, connected at its forward end to said clutch or key, and having at its rear end a stop, W, in virtue of which the forward movement of the connecting-rod and clutch or key is arrested when the stop W comes in contact with the nut, or with some other object that is stationary.

4. The combination of the rod V, provided with the collar W upon its outer end, and a cross-head, X, upon its inner end, with the feed-screw T, the driving-nut Q, and the slotted or notched collar Y of the follower U, substantially as herein shown and described.

204,716. MACHINES FOR MAKING EYELETS. Adolph Deltrocamp and Franklin B. Bradley, Southington, Conn. ; said Deltrocamp assignor to said Bradley. Filed Oct. 4, 1877.



Claim.—1. In a machine for making eyelets, the punch 2 and intermittingly-moving series of dies in which the eyelet-blanks are swaged, in combination with bottom-removing punch 3, having spring-follower *f*, shaped to fit the interior of the blank as swaged by dies and punch 2, whereby the bottoms of

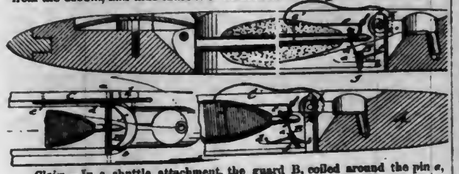
the eyelets are removed without removing them from the die in which they are swaged, substantially as described, and for the purpose set forth.

2. That improvement in the art of making eyelets from previously-prepared cup-shaped blanks which consists, first, of partially swaging said blank and leaving a portion unswaged, producing thereby the form shown in Fig. 4 ; second, striking the result of the first operation by another punch to force it farther into the same die and complete its form ; and, third, striking the result of the second operation by means of another punch, which removes its solid end, all of said punches operating upon the blank while in the same die and without removing it therefrom, substantially as described, and for the purpose specified.

3. In combination with the intermittingly-revolving die-table H and its bed I, a die and punch for removing the end of an eyelet-blank, the knock-out *i*, and its table end *h*, firmly supported at a distance from the end of the blank less than the diameter of the piece to be removed, and with a space between said table end and the end of the blank, substantially as described, and for the purpose specified.

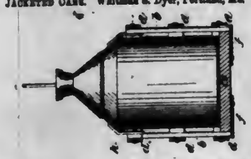
204,717. LOCK-SHUTTLE ATTACHMENTS. William A. Doherty, Fall River, Mass., assignee of one-third his right to Michael Higgins, same place. Filed Feb. 19, 1878.

Brief.—In case of a false shed, the side spring comes in contact with the warps, and releases the bow-shaped guard from the catch, and permits it to be thrown over the spindle-point, so as to prevent the filling from being drawn from the bobbin, and thus cause it to be broken.



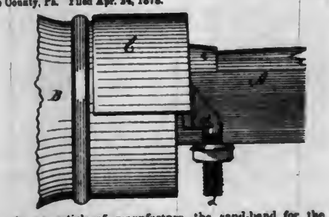
Claim.—In a shuttle attachment, the guard B, coiled around the pin *e*, twisted at one end into a toe-piece, *b*, and having arm *d*, bow *f*, and finger-rest *g*, in combination with a projecting side spring, C, having hook *c*, guided along staple *c'*, and swinging on a pivot and tension-screw, as shown and described.

204,718. JACKETED CARS. Whitman S. Dyer, Portland, Me. Filed Feb. 16, 1878.



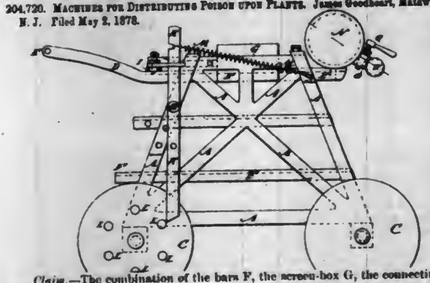
Claim.—The combination of the crate, consisting of uprights *b*, bands *d*, bottom *a*, and straps *f*, severally secured to the bottom and between the uprights and the lower band, and the inside metal pieces *h*, with the can resting on the bottom *a*, and soldered to pieces *h*, all as and for the purposes set forth.

204,719. SAND-BANDS FOR VEHICLE-HUBS. David Fogleback, Summit Township, (Erie, P. O.,) Erie County, Pa. Filed Apr. 24, 1878.



Claim.—As an article of manufacture, the sand-band for the hubs of vehicles herein shown, consisting of an overhanging flange, C, a web, C', and attaching-lugs *d d*, formed of one piece of metal, substantially as set forth.

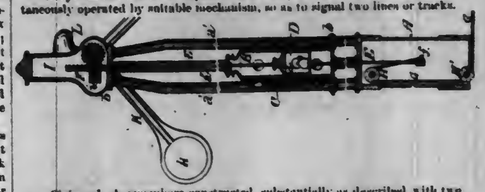
204,720. MACHINES FOR DISTRIBUTING POISON UPON PLANTS. James Goodheart, Matawan N. J. Filed May 2, 1878.



Claim.—The combination of the barn F, the screen-box G, the connecting-rod H, the two pivoted levers I K, the pins L, and the spring M with the frame-work A B and the wheels C, substantially as herein shown and described.

204,721. SIGNALING APPARATUS. William Gravit, Elkhart, Ind. Filed Apr. 1, 1878.

Brief.—A two-armed semaphore and a lamp within a lens-case are simultaneously operated by suitable mechanism, so as to signal two lines or tracks.



Claim.—1. A semaphore constructed, substantially as described, with two arms, K K, pivoted to a common shaft, J, and arranged to operate so as to simultaneously signal two lines or tracks, substantially as set forth.

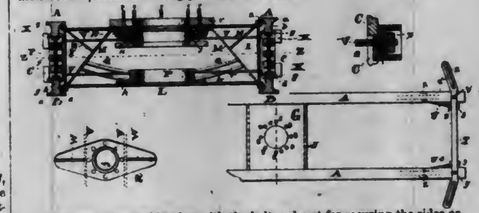
2. The combination of the semaphore K, having the weighted cord L, with the movable lantern or lamp chamber D and lens-casing B, the semaphore and lamp-chamber being connected by suitable mechanism, so as to operate by gravity, in the manner and for the purpose set forth.

3. The combination of the semaphore K, pinion and rack-bar F, rod E, lamp-chamber D, rope or chain G, and lens-case B, substantially as and for the purpose specified.

4. The cap-piece I, tube *a'*, case B, and hollow pedestal A, constructed substantially as and for the purpose specified.

204,722. TURN-TABLES. Clemens A. Greenleaf, Indianapolis, Ind. Filed Mar. 22, 1878.

Brief.—The central box or frame-work is secured to the truss-beams by bolts, the ends of which receive countersunk washers, which are doubled into the braces, ordinary nuts being screwed home into the countersinks. Said bolts are prevented from springing inward by the vertical bolts which secure the pivot bearing, and from springing outward by the ribs upon the under side of the steadying-plate which surrounds the friction pivot-box. The central box or frame-work is strengthened by a system of diagonal braces and curved I-beams, the ends of which abut against one set of the diagonal braces. A distancing cross-bar carrying supporting-rollers is secured to the truss-beams by bolts, one end of which passes through the web of the beams and the other through the cross-bar, both ends being provided with nuts.



Claim.—1. In combination with the bolt and nut for securing the sides or trusses to the mechanism supporting the turn-table upon the central pivot, the washers fitted to recesses in the said trusses, and countersunk to receive said securing-nuts, substantially as and for the purposes specified.

2. In combination with suitable side trusses provided with appropriate cross-bars, the box G, composed of the external plates, in combination with plate M and braces N Q, substantially as and for the purposes specified.

3. The bolt U and nuts 2 3 3, combined with a beam, and the cross-bar T, substantially as and for the purposes set forth.

4. The combination of the bolts V, bolts *t*, and rib W, whereby the deflection of the bolts is prevented, substantially as and for the purposes specified.

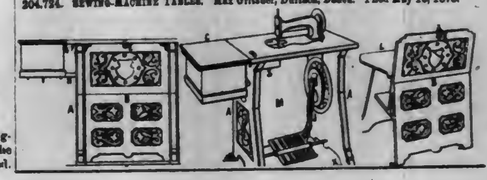
204,723. POCKETS FOR GARMENTS. Berthold Greensbaum, San Francisco, Cal. Filed May 16, 1878.



Claim.—1. The bands C and D, stitched along the lower and upper edges of the pocket-opening, as shown, and strengthening these edges, respectively, said bands crossing the corners of the pocket-opening one above the other, so as to form a double re-enforce and stay, substantially as herein described.

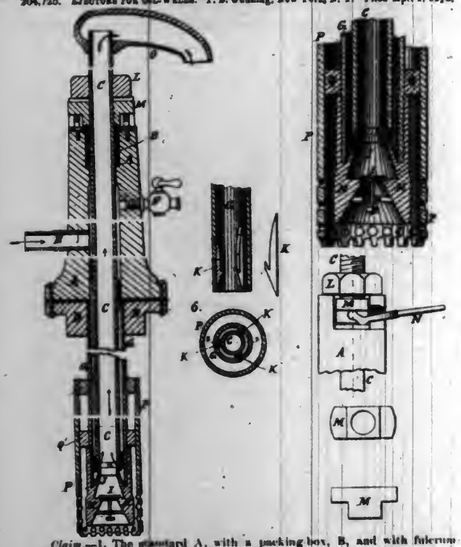
2. The bands C and D, stitched continuously along the lower and upper edges of the pocket-opening, and crossing the corners of said opening and each other, as shown, in combination with the lines of stitching crossing each other diagonally at the said corners, substantially as herein described.

204,724. SEWING-MACHINE TABLES. Max Grissner, Durlach, Baden. Filed May 13, 1878.



Claim.—The combination of a sewing-machine table and its side standards or supports with a movable chair constructed, substantially as shown and described, so that the latter may constitute, with the table, its side supports, and lock, a perfect and ornamental case, inclosing the driving mechanism, and capable of being locked up, substantially as shown and set forth.

204,725. EJECTORS FOR OIL-WELLS. T. B. Canning, New York, N. Y. Filed Apr. 1, 1878.

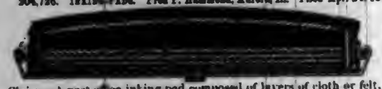


Claim.—1. The standard A, with a packing-box, B, and with fulcrum-sockets for the lever N, which standard A also affords support at its uppermost end to the collar L, and has an opening, E, through which air is forced into the annular space, and a vent-cock, F, opening from it.

2. The combination, with pipe C, of the outer pipe G, which extends down the well, having at its lower end a valve, I, and just above this a nozzle, J, and having guides K, also a protecting-pipe, P, with holes, all substantially as shown.

3. The inner pipe C, with the lifting and supporting collars M L, and arranged with the lever N and a spout, O, substantially as described, and for the purposes set forth.

204,726. INKING-PADS. Fred P. Hammond, Aurora, Ill. Filed Apr. 24, 1878.



Claim.—A post-office inking-pad composed of layers of cloth or felt, printing-roller composition, oiled silk, and buck or chamois skin, arranged, with relation to each other, substantially as herein described.

204,727. BIT-STOCKS. Robert C. Hart, Unionville, assignor of one-half his right to P. & F. Corbin, New Britain, Conn. Filed Oct. 26, 1877.



Claim.—1. In a bit-holder, the jaws B B, having the flat faced shoulders c near their upper ends, and the downward and inward inclined surface d below said shoulders, said jaws adapted for use in connection with a hollow and slotted socket, and a screw-thimble having a flat right-angular seat for forcing the jaws endwise down into the socket, substantially as described, and for the purpose specified.

2. In a bit-holder, the screw-thimble or nut having the flat right-angular seat surrounding all sides of the opening at the inside of its upper end, in combination with jaws adapted to be acted upon by said flat seat to force them endwise, substantially as described, and for the purpose specified.

3. In a bit-holder, the cylindrical stationary pin a, secured in the foot of the socket and in axial line therewith, in combination with the sliding block which carries the jaws, substantially as described, and for the purpose specified.

204,728. DOUBLE-ACTING FLUID-MOTORS. David G. Haskins, Cambridge, Mass. Filed Nov. 23, 1877.

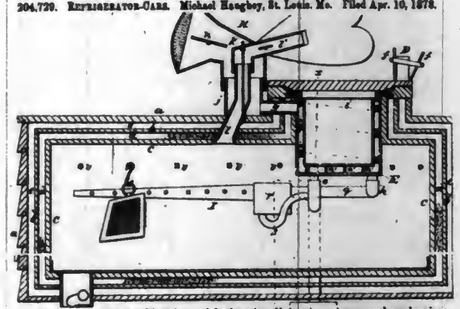


Claim.—1. A fluid-motor consisting of a series of swinging plates or blades connected with a shaft and operating in such a manner that as the fluid acts upon either side or face of the said swinging plates their rotation with the shaft will always be in one and the same direction, substantially as set forth.

2. The combination, with the hinged or swinging plates, of means for limiting the degree of inclination of the said plates, as and for the purpose set forth.

3. The combination of the hinged or swinging plates *d d*, the shaft *a*, and the rim or wheel *h*, substantially as and for the purpose specified.

204,729. REFRIGERATOR-CARS. Michael Haughey, St. Louis, Mo. Filed Apr. 10, 1878.

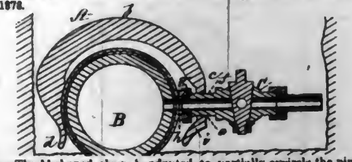


Claim.—1. The combination, with chamber E, having pipe *g*, and car having pipe *j*, of the valved cowl and pipe H *l*, supported on the pivot *k*, said cowl having a wire-gauze at one end and a vane at the other, as and for the purpose set forth.

2. The combination, with car and ice-box, of the drip-pipe *e*, pipe *q*, box *r*, siphon *s*, and perforated pipe I, as and for the purpose specified.

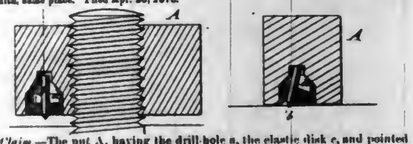
3. The ventilator D, having the connected hinged doors *f*, in combination with the refrigerator-car A, having the air-space *c*, substantially as shown and described.

204,730. DEVICES FOR TAPPING WATER-PIPES. W. W. Harlow, Malden, Mass. Filed May 10, 1878.



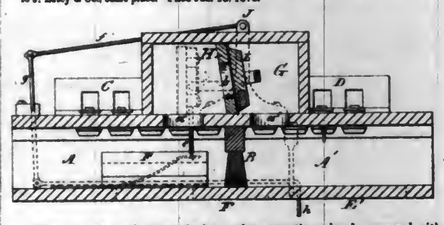
Claim.—The U-shaped clasp A, adapted to partially encircle the pipe B, in combination with a straight joint-cock, C, provided at its inner end with a swiveling packing, *b*, which is brought up against the outside of the pipe by screwing in the cock C, substantially as and for the purpose set forth.

204,731. NUT-LOCKS. Alva T. Hill, Detroit, Mich., assignor to himself and Edward J. Smith, same place. Filed Apr. 23, 1878.



Claim.—The nut A, having the drill-hole *a*, the elastic disk *c*, and pointed pin *b*, in combination, substantially as herein shown and described.

204,732. VALVE-TREMOLOS FOR ORGANS. James H. Holden, Brattleborough, Vt., assignor to J. Estey & Co., same place. Filed Jan. 18, 1878.



Claim.—1. In a valve-tremolo for reed-organs, the valve I, arranged with the plane of its seat vertical, or nearly so, hinged so as to close by its own weight, and free to be vibrated by a passing current, substantially as set forth.

2. In a tremolo for reed-organs, the combination of the chamber G, having two apertures, *a a'*, beneath it, opening into the wind-chest, the perforated partition H between the apertures *a a'*, and set at an angle with the cover of the chest, and the valve I, hinged so as to cover the aperture in the partition, substantially as and for the purposes specified.

3. The combination, with the valve I, arranged as shown, of the valve F, tracker-pin *e*, lever J, and rods *f g h*, whereby the valve F may be closed with the knee and the valve I be caused to vibrate, substantially as and for the purposes set forth.

204,733. CORN-CRIB DOORS. Alfred C. Holmes, Delavan, Ill. Filed Apr. 26, 1878.

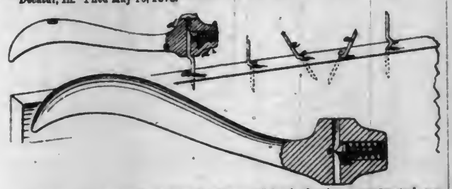


Claim.—1. A corn-crib door provided with independently-removable slats, substantially as specified and shown.

2. In combination with a door provided with independently-removable slats, the platform E, constructed and arranged substantially as and for the purposes set forth.

3. A corn-crib door provided with independently-removable slats and tight outside doors D and E, as specified and shown.

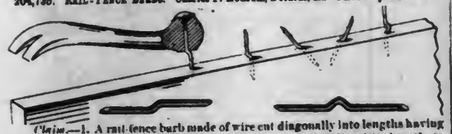
204,734. DEVICES FOR HOLDING AND DRIVING BARBS INTO FENCES. Charles P. Housum, Decatur, Ill. Filed May 16, 1878.



Claim.—1. A metallic holder for fence-rail barbs having a perforated projection or head at one end through which to receive barbs made of wire pointed or beveled at each end and bent in the middle, where a rest or shoulder is thus formed, upon which the holder bears while driving barbs into rails, substantially in the manner shown and described.

2. In combination with a barb-holder perforated for the reception of barbs, a spring-clamp having a pointed or beveled end to bear against the side of a barb and retain it in the perforated holder before it is driven in position, substantially as described.

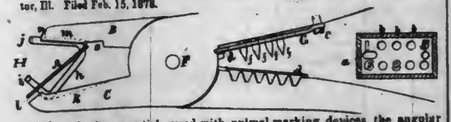
204,735. RAIL-FENCE BARBS. Charles P. Housum, Decatur, Ill. Filed May 16, 1878.



Claim.—1. A rail-fence barb made of wire cut diagonally into lengths having a beveled or chisel edge at each end, and bent in the middle of its length, to form a rest or shoulder for a driving or holding tool to bear upon while the barb is to be driven into a fence-rail, substantially as and for the purpose described.

2. In combination with a wooden fence-rail, a barb made of wire having a beveled edge at each end, and bent in the middle to form a shoulder, substantially as and for the purpose set forth.

204,736. DEVICES FOR MARKING ANIMALS. Charles P. Housum and Hugh W. Hill, Decatur, Ill. Filed Feb. 15, 1878.



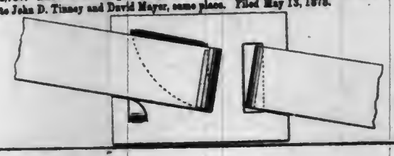
Claim.—1. As an article used with animal-marking devices, the angular link H, having unequal angles, and divided at one of its angles, so as to form a wedge-point upon one end and a grooved recess upon the other, substantially as shown and described.

2. In a stock-marking device to be attached to animals, the combination of the angular link H, having flat sides and unequal angles, and divided at one of its angles, with a sheet-metal tag, perforated at opposite ends, as at *a a*, and having many characters or symbols, one or more of which can be erased to form various combinations, substantially as specified.

3. An implement for marking stock, consisting of grooved jaws B C, having beveled portions *e f*, adapted to receive stock-marking devices, and handles having an adjustable tag-erasing device, consisting of a plate, G, with removable punches and grooves to receive them, substantially as and for the purpose set forth.

4. The combination of the jaw B, having grooves *m n*, and a bevel, *o*, with the jaw C, having a groove, *k*, and a bevel, *l*, said grooves and bevels being formed so as to bend an angular link, H, having unequal angles, and adapted to hold upon said link at the same time a sheet-metal tag, substantially as described.

204,737. BALE-TIES. August Jingels, Vicksburg, Miss., assignor of two-thirds his right to John D. Tinsley and David Mayer, same place. Filed May 13, 1878.

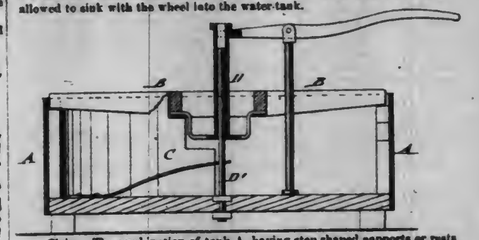


Claim.—1. A bale-tie in which the looped ends of the hoop are held, respectively, in a slot cut out of the body of the rectangular tie-plate and over a blade cut out of the same tie-plate by incision, but raised above said plate, so that the end engaging said blade shall be entirely above, while the other end shall be partly above and partly below, the plate, as shown and set forth.

2. The hook-blade formed by the incision of the plate along two lines forming an angle, the terminal points of the lines of incision being in such relation as to admit of the loop end being inclined with respect to the line of tension, substantially as shown and set forth.

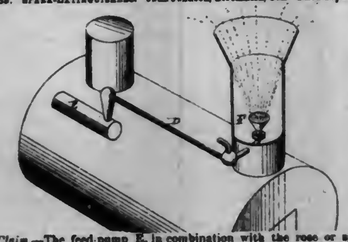
204,738. TIRE SETTING AND COOLING APPARATUS. Wm. John, Rigdon, Ind. Filed Jan. 3, 1878.

Brief.—The wheel is placed on the frame until the tire is in place, when the frame is turned round to carry the arms off their end supports, and then allowed to sink with the wheel into the water-tank.



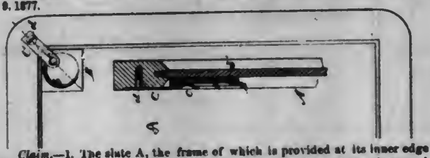
Claim.—The combination of tank A, having step-shaped supports or rests C at the circumference, and a center guide-post, D', with a wheel-supporting trestle-frame, B, having center guide-sleeve D, and with a detachable lever and post for raising and lowering frame, substantially as and for the purpose specified.

204,739. SPARK-EXTINGUISHERS. John Johnson, Broomfield, Col. Filed Sept. 16, 1876.



Claim.—The feed-pump E, in combination with the rose or sprinkler F and its supply-pipe and regulator D, for the purpose of extinguishing sparks in the stack and to relieve the pump of air, substantially as herein described.

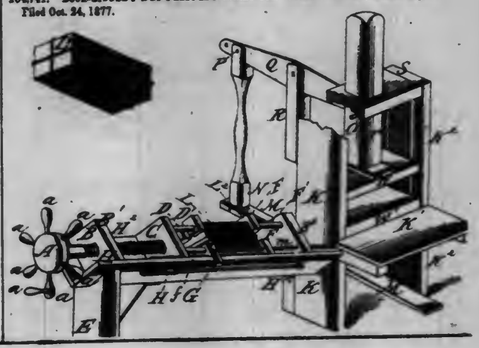
204,740. SLATE-FRAME ATTACHMENTS. Frank G. Johnson, New York, N. Y. Filed Nov. 9, 1877.



Claim.—1. The slate A, the frame of which is provided at its inner edge with a spring-strip, C, arranged to project over the face of the slate, and adapted to hold the eraser B, substantially as described.

2. The slate A, the frame of which has secured at its inner edge a spring-strip, C, having the rounded depression *c*, in combination with the eraser B, provided with the circular depression *b*, all constructed and arranged to operate as set forth.

204,741. BOOK-BINDER'S DRY-PRESS AND SHEET-TIE. Joshua W. Jones, Harrisburg, Pa. Filed Oct. 24, 1877.



Claim.—1. In a printer's and book binder's dry-press and sheet-tie, the compressing-heads C D D' and B² F' F, constructed with crossways L² L², centrally arranged through them, substantially as and for the purposes herein set forth.

2. The inclined press-bed H H', provided with longitudinal slots H² H² in its sides, in combination with the press-heads B² F' F and C D D', having through them the crossways L² L², correspondingly arranged with said slots, substantially as and for the purpose set forth.

3. The press-head C D D', connected by swivel with screw B A *a a'*, and made to travel as a plunger in the nut or block B', in combination with bed H H² and clips G G, substantially as and for the purpose set forth.

4. In combination with the dry-press bed H H², the device of a set of removable ledges, *f*, or a set of adjustable guide-rods, *u*, arranged as and for the purpose set forth.

5. The process herein described for treating folded printed sheets of paper in dry-pressing, the same consisting of subjecting a collection of such sheets to pressure without the use of fuller-boards, and while under such pressure tying them into compact bundles with end boards, then removing them immediately from the press, and allowing them to remain tied sufficiently long to fix and complete dry-pressing.

204,742. MATS FOR OIL-PRESSES. Andrew C. Lawston and Alfred B. Lawther, Chicago, Ill. Filed May 10, 1878.



Claim.—1. An improved press-mat constructed of paper, paper-pulp, cloth, or other material, compacted together substantially as described.

2. In an improved press-mat constructed of paper, paper-pulp, cloth, or other material, compacted together, the metal rods C, substantially as and for the purpose specified.

204,743. FASTENING DEVICES FOR TRAVELING-BAGS. John W. Lieb, East Newark, N. J. Filed Mar. 22, 1878.



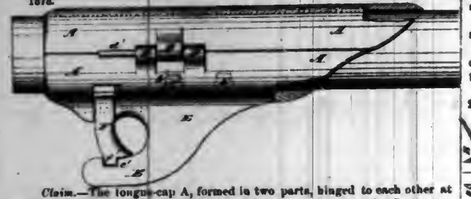
Claim.—1. In combination with a bag-frame, a transverse cranked shaft or arm, C, having a limited end motion and a spring, D, arranged to act thereon, substantially as shown and described.

2. In combination with a bag-frame, a plate, B, rotary button C, and spiral spring D, substantially as shown and described.

3. In combination with the bag-frame and the spiral spring, the button or crank-shaft, provided with the collar *d* and shoulder.

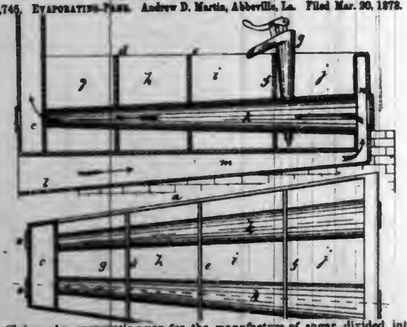
4. In combination with a bag-frame and a cranked arm or shaft, C, thereon, a dog or tumbler, F, mounted in an inclosing-case, and adapted to be actuated by a key, for the purpose of locking the shaft, as shown.

204,744. VEHICLE-POLE TIPS. Saml. Mason, Craigvale, Ontario, Canada. Filed May 17, 1878.



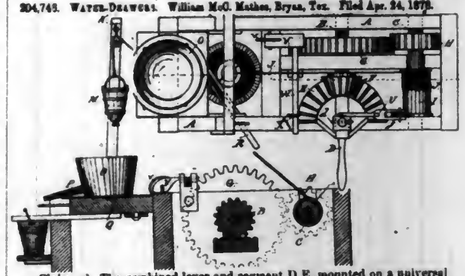
Claim.—The tongue-cap A, formed in two parts, hinged to each other at their side edges, and provided with an inwardly-projecting pin, C, an outwardly-projecting brace or hook, E, and a swinging latch, F, substantially as herein shown and described.

204,745. EVAPORATING-PAN. Andrew D. Martin, Abbeville, La. Filed Mar. 20, 1878.



Claim.—An evaporating-pan for the manufacture of sugar, divided into separate compartments *g h i j*, gradually increasing in size from the smoke-pipe *c* to the smoke-box *n*, said pipe being connected with the box by tapering flues *k*, passing through the compartments, and the box with the furnace by a flue, *m*, under the compartments, as shown and described.

204,746. WATER-DRAWER. William McG. Mathes, Bryan, Tex. Filed Apr. 24, 1878.



Claim.—1. The combined lever and segment D E, mounted on a universal joint, *d*, and operating substantially as and for the purposes set forth.

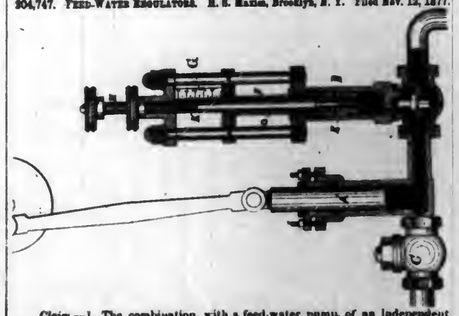
2. The combination of the lever D, segment E, gearing F G H, drum I, cord J, and well-bucket M, as described.

3. The combination of the segment-lever D E, gearing F G H, and pawl V, as described, for the purposes set forth.

4. The combination of the segment D E, gearing F G H, drum I, bucket-cord J, and brake U, as and for the purposes set forth.

5. The combination of the reciprocating lever D, mounted on a universal joint, *d*, and carrying a beveled segment-gear, E, with the beveled pinion F, substantially as and for the purposes set forth.

204,747. FEED-WATER REGULATOR. H. S. Marin, Brooklyn, N. Y. Filed Nov. 12, 1877.



Claim.—1. The combination, with a feed-water pump, of an independent yielding plunger, E, in the water-space between the two valves of the pump, and a stop, H, to regulate the amount of end motion allowed to such plunger, substantially as and for the purposes set forth.

2. The combination, with the feed-pump and yielding plunger E, of the scale G and adjusting-stop H, substantially as and for the purposes set forth.

3. The barrel D, plunger E, spring F, adjusting-stop H, and device for connecting the barrel to the water-space of a feed-pump between the valves thereof, substantially as and for the purposes set forth.

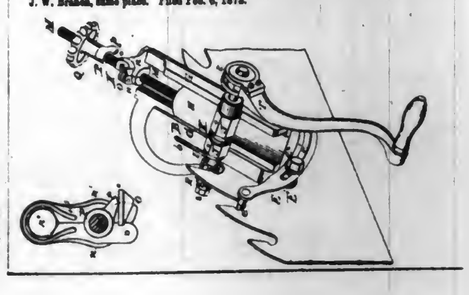
204,748. FRUIT-PICKERS. Wm. V. McConnell and Charles M. Dickerson, Crockett, Tex. Filed Apr. 11, 1878.



Claim.—1. A fruit-picker having cup-shaped self-opening spring-jaws B C attached to its handle A, and operated by a cord, G, to close upon and clamp the fruit, substantially as specified.

2. The combination, in a fruit-picker, of the hollow extensible adjustable handle A and the pair of cup-shaped self-opening spring-jaws B C, operated to close by the central cord G, with each other and with the fruit-receiver E, suspended by horizontal pivots *f*, in the axial plane of the handle A and jaw B, substantially as and for the purpose set forth.

204,749. SAW-GUMMERS. George Mercer, St. Louis, Mo., assignor of one-half his right to J. W. Branch, same place. Filed Feb. 6, 1878.

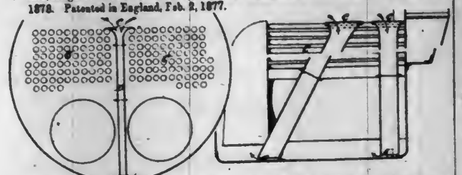


Claim.—1. The combination of cutter R, whose inner end is countersunk at *e*, and its conical shoulder *s'* of spindle-shaft I, worm-gear K, surrounding the shaft and engaging with the screw-gear wheel L on the feed-screw M, spring-jaws *a a' a²*, forming split nut N, in which the screw turns to give motion to the carriage cam P *p*, and catch O, substantially as set forth.

2. The combination, with the feed-screw M, of the adjustable cam P *p*, spring-jaws *a a' a²*, forming split nut N, and catch O, substantially as set forth.

3. The combination, with the feed-screw M and split feed-nut N, provided with catch O, of the cam-nut P and hand-nut Q, substantially as and for the purpose set forth.

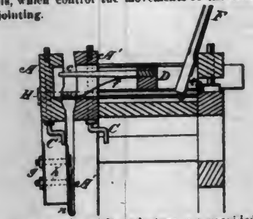
204,750. STEAM-BOILERS. Wm. Menzies and Charles Blagburn, Newcastle-upon-Tyne, England, assignors of one-half their right to John Storer, Marlborough, N. Y. Filed Apr. 25, 1878. Patented in England, Feb. 2, 1877.



Claim.—The combination, in a multitubular boiler, of one or more flues containing the fire grate or grates, and water-circulating passages or tubes extending from above the fire-tubes, but below the level of the water in the boiler, to just above the bottom of the boiler, but below the level of the fire-grate, substantially as shown and set forth.

204,751. STAVE-JOINTERS. James O. Moore, Henderson, Ky. Filed Mar. 12, 1878.

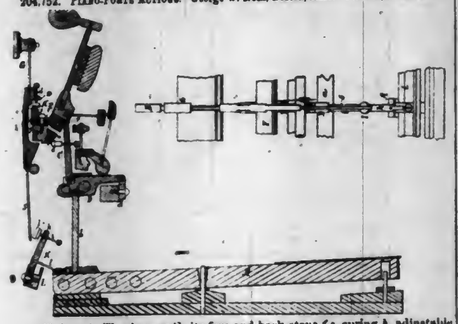
Brief.—The staves are placed between clamping-jaws provided with adjustable guide-rails, which control the movements of the cutting-tool during the operation of jointing.



Claim.—1. The cross-beam D and stops *e e*, provided with the metallic springs *f f*, in combination with the jaws A A', as and for the purpose set forth.

2. The stave-clamp herein described, composed of the jaws A A', and provided with the adjustable slotted hinge *x*, in combination with the rod H, lever G, and adjusting-handle F, with its holding-ratchet *d*, as and for the purpose specified.

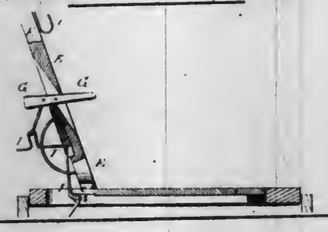
204,752. PIANO-FORTE ACTIONS. George W. Neill, Boston, Mass. Filed Apr. 22, 1878.



Claim.—1. The damper G, its fore and back stops *f s*, spring *h*, adjustable button H, and fulcrum *e*, combined and arranged substantially as set forth.

2. The damper G, its fore and back stops *f s*, spring *h*, fulcrum *e*, adjustable button H, and rod S, arranged as described, in combination with the angular lever K, provided with the adjustable button I, and arranged with and to be operated by the key A, as specified.

204,753.



204,753. ANIMAL-TRAPS. David R. Nichols, Alexandria Bay, N. Y. Filed Jan. 17, 1878.

Claim.—The combination, with the catch-lever that has the friction-roller *i* on a bend thereof, and holds the tilting platform of an animal-trap, of the lever G, passing through and balanced on a vertical bait-board, E, beneath the bait-hook, as and for the purpose specified.

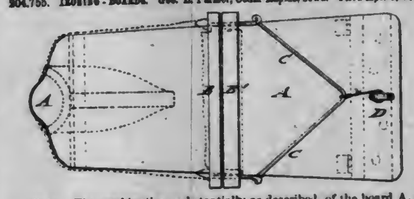
204,754. PICTURE-ROD MOLDINGS. Hiram F. Hyt, West Dennis, Mass. Filed May 10, 1878.

Brief.—A picture-rod molding is constructed with two hook-supporting beads, an intervening fillet, and two nail-grooves.



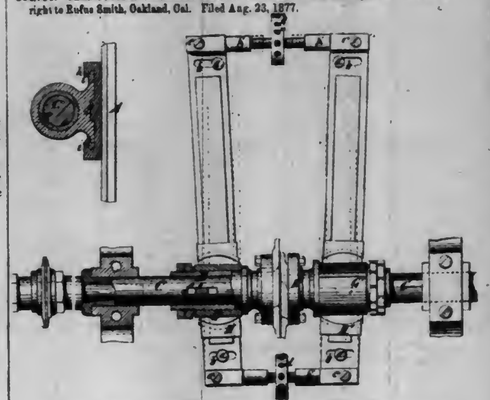
Claim.—As a new manufacture, a picture-rod molding provided with two beads, *a b*, an intervening fillet, *c*, and grooves *d e*, arranged as set forth.

204,755. IRONING-BOARDS. Geo. E. Palmer, Cedar Rapids, Iowa. Filed Apr. 6, 1878.



Claim.—The combination, substantially as described, of the board A, having neck-shaped end, the pin D, the cord, the bridle C, and the clamping-bars B B', as and for the purpose specified.

204,756. GEAR-CUTTING MACHINES. John A. Poor, San Francisco, assignor of one-half his right to Rufus Smith, Oakland, Cal. Filed Aug. 23, 1877.



Claim.—1. The combination, in a gear-cutting machine, with a rotary shaft, of two rotary sleeves capable of longitudinal movement on said shaft, carrying separate and independent series of cutters, connected to boxes pivoted to slide-pieces traveling along guides connected by right and left hand screw-threads, substantially as and for the purposes set forth.

2. The combination, in a gear-cutting machine, with guides causing the two separate series of cutters to approach one another for the purpose of tapering a bevel-gear-wheel tooth, of right and left hand screw threads for adjusting the said guides relatively to each other, substantially as and for the purpose set forth.

3. The combination, in a gear-cutting machine, with a rotary shaft and two separate and independent cutter-carrying sleeves mounted thereon, so as to be susceptible of longitudinal movement, of boxes surrounding said sleeves, and pivoted to slide-pieces traveling on adjustable inclined guides, substantially as and for the purpose set forth.

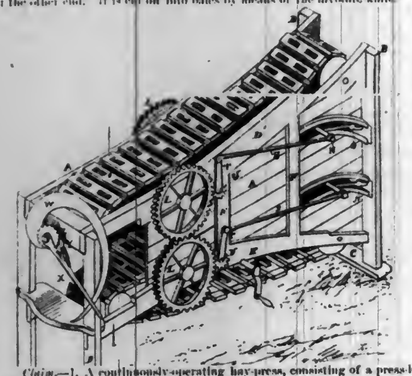
4. A gear-cutting instrument composed of a series of detachable cutters, severally having a cutting-face on one side only, and arranged so that the cutting-faces of alternate cutters are on one side of the instrument, and the cutting-faces of intervening cutters are on the other side, substantially as specified, whereby the opposite or reverse cutters may be detached and dressed together, so as to be perfectly uniform.

5. A gear-cutting instrument composed of a series of cutters severally having a cutting-face on one side only, arranged one with its cutting-face on one side and the next with its cutting-face on the other side of the said instrument, and severally having the reverse side or back inward of the plane of the cutting-face of the next cutter, substantially as specified, whereby each cutter affords clearance to the chips produced by the preceding cutter.

6. A gear-cutting instrument composed of a series of cutters severally having a cutting-face on one side only, the reverse side or back inward of the plane of the cutting-face of the preceding cutter, and having a laterally oblique cutting-edge or end, substantially as and for the purpose specified.

204,757. HAY-PRESSES. Jacob Price, San Leandro, Cal. Filed Dec. 29, 1877.

Brief.—The hay is fed in between the endless belts by reciprocating blocks, and, when pressed, is tied through the open spaces in the sides of the press at the other end. It is cut off into bales by means of the involute knife.



Claim.—1. A continuously-operating hay-press, consisting of a press-box, two convergent endless slat-belts, I I', and the knife W, combined and arranged to operate substantially as above described.

2. A hay-press consisting of two endless belts, I I', mounted in a suitable box so that the two belts approach each other at one end, in combination with one or more feeding or crowding blocks, M, for pressing the straw forward between the wide ends of the belts, and a knife, W, for cutting off the bales, combined and arranged substantially as specified.

3. A press-box provided with endless belts I I', and having sides A A shorter than the endless belts at the narrow end, so as to provide a space, i, between the ends of the sides and the end frame D, for tying the bale, in combination with the end frame D and knife W, substantially as and for the purpose specified.

4. The sides A A of a continuous hay-press provided with the slots B B, curved as described, in combination with the feeder-blocks M M, the upper faces of which are beveled, ridged, and provided with pins Q, said blocks being operated by a crank and pitman, substantially as described.

5. The involute knife W, operated by the lever X, pawl Y, and ratchet Z, substantially as and for the purpose described.

204,758. SPOOL-HOLDERS. Edward Rice, Providence, R. I. Filed May 3, 1878.



Claim.—As an improved article of manufacture, the herein-described spool-protector, consisting of the cylinder A, having inwardly-projecting flanges a extending around its upper and lower edges, and provided with the slit b and aperture c, substantially as and for the purpose specified.

204,759. SAD-IRON POLISHERS. Emilie G. Rowe, New York, N. Y. Filed Sept. 29, 1877.



Claim.—1. The improvement in that class of sad-iron polishers having a polishing-surface of gritty material, which consists in coating said gritty material with an emolliating substance, and covering the same with a porous fabric, substantially as and for the purpose hereinbefore set forth.

2. As a new article of manufacture, a sad or flat iron polisher consisting of a base, A, gritty material *a*, emolliating substance *b*, and a porous covering, *d*, arranged substantially as described, and for the purposes set forth.

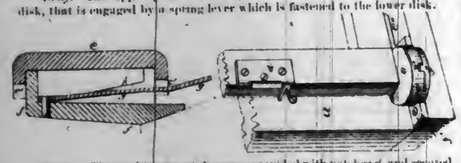
204,760. PROCESSES OF DEVELOPING PHOTOGRAPHIC PICTURES. Henry Randle, Edwardsville, Ill., assignor of one-half his right to George L. Williams, same place. Filed Sept. 24, 1877.

Claim.—1. The herein-described method of intensifying or redeveloping photographic pictures by treating them with a solution composed of sulphate of iron, alum, acetic acid, and corrosive sublimate, substantially in the proportions named.

2. As a new manufacture, the herein described albertype-picture upon a ferro-plate.

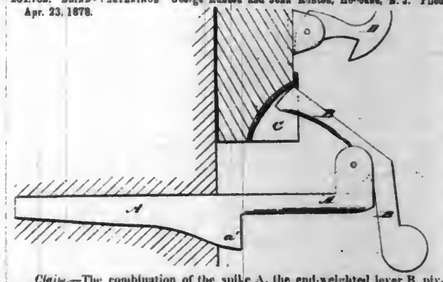
204,761. LOCK-HINGES. Daniel T. Randlet, Boston, Mass. Filed May 20, 1878.

Brief.—The upper part of the hinge has a series of slots in its flanged disk, that is engaged by a spring-lever which is fastened to the lower disk.



Claim.—The combination of the cups, provided with notches *e'*, and secured to the blind by means of the plate *e''*, and the lower cup *f*, provided with the spring *g*, and secured to the sill or building by means of the plate *f'*, all substantially as and for the purpose herein set forth.

204,762. BLIND-FASTENINGS. George Ruston and John Ruston, Hoboken, N. J. Filed Apr. 23, 1878.



Claim.—The combination of the spike A, the end-weighted lever B, pivoted to the outer end thereof, and the socket C, having a curved face, arranged as and for the purpose specified.

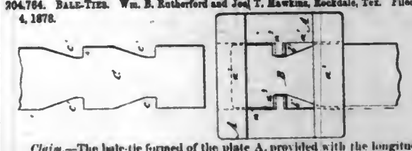
204,763. COMPOSITION PAVEMENTS. John C. Russell, Kensington, England. Filed May 2, 1878. Patented in England, Jan. 15, 1878.

Claim.—1. The process of producing a material for use in paving or construction of road-beds, &c., whose most important steps consist in drying bruised or finely-ground peat or spent tan, heating the same in excess to degrees of 150° Fahrenheit, and adding sulphur and gas-tar, gas-pitch, and stearine-pitch in the proportions specified, then kneading the mixture while heated and adding carbonate of lime and furnace-slag, substantially as described.

2. In molding the material hereinbefore described, the process of applying pieces of felt in the bottom and sides of the mold, as set forth.

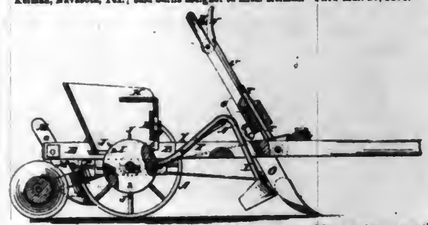
3. As an article of manufacture, the paving material formed of peat or spent tan, gas-tar, gas-pitch, stearine-pitch, sulphur, carbonate of lime, and furnace-slag, as specified.

204,764. BALE-TIES. Wm. B. Rutherford and Joel T. Hawkins, Rockdale, Tex. Filed Apr. 4, 1878.



Claim.—The bale-tie formed of the plate A, provided with the longitudinal groove a^1, the cross ribs or loops a^2, and the projections or keys a^3, to adapt it to receive and hold the notched ends B C of the bale-band, substantially as herein shown and described.

204,765. COMBINED PLANTER, CULTIVATOR, AND COTTON-DROPPER. Reuss Sarlls and Alex. Kolman, Navasota, Tex.; said Sarlls assignor to Alex. Kolman. Filed Mar. 27, 1878.



Claim.—The dropping-wheel I, provided with cavities to drop smooth seeds, with pins J to drop cotton-seeds, and with pins Z to operate the chopper *x y*, substantially as herein shown and described.

204,766. PISTON-PACKING. Martin Schaible, Dayton, Ohio, assignor to Edwin P. Monroe, Newark, N. J. Filed May 23, 1877.



Claim.—1. The packing cup provided with segmental packing-rings, and having a central rod-opening, expanding in wedge form toward the steam side, substantially as and for the purpose specified.

2. The combination of a packing cup provided with segmental packing rings, and having a central rod opening, with a socket-ring having plane-concave or plano-convex surfaces, substantially as specified.

3. The packing cup provided with a concave or convex surface at one end, and a central rod-opening, expanding toward the steam side, in combination with a socket-ring having plano-concave or plano-convex surfaces, substantially as specified.

4. The combination, with a segmental packing ring or rings, of a packing bearing at one end and an elastic and yielding bearing at the other end of the box or case in which the packing-rings are arranged to work, substantially as specified.

204,767. BEE-FEEDERS. John M. Shuck, Des Moines, Iowa. Filed Mar. 20, 1878.



Claim.—The series of troughs or vessels *d*, separated by the partitions A, the casings B and C, the screen or guard G, the opening D, and the lid or cover F, in combination with each other, substantially as described, and for the purposes shown and specified.

204,768. BREECH-LOADING FIRE-ARMS. J. D. Slote, Bernardston, Mass. Filed Oct. 6, 1877.



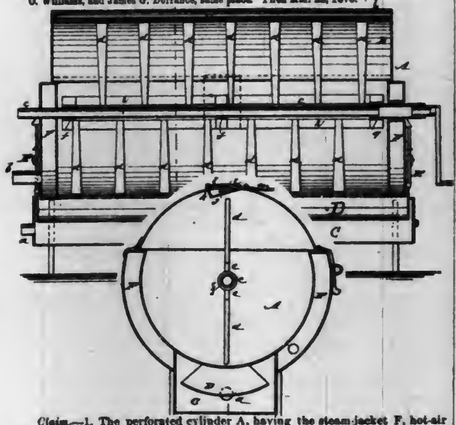
Claim.—1. The combination, in a fire-arm, of a barrel, lever I, arm *f*, and lug *d*, having an inclined edge adapted to an inclined shoulder of the lever, substantially as specified.

2. The combination of the sliding barrel and the slides C, constructed and arranged to be carried with the barrel during a part of its movement, and to force back the hammer when moved to the rear, as set forth.

3. The combination of the hammer, the slide C, and the trigger J, carrying the block *m*, as set forth.

4. The catch N, in combination with the slide C, moving with the barrel, and provided with an inclined shoulder, as set forth.

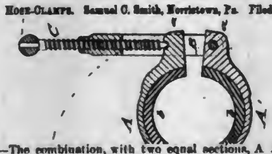
204,769. FEATHER-RENOVATORS. Benjamin Slater, Ation, N. Y., assignor to himself, Isaac O. Williams, and James O. Derrance, same place. Filed Mar. 22, 1878.



Claim.—1. The perforated cylinder A, having the steam-jacket F, hot-air box C, and cover D, substantially as shown and described.

2. The cylinder having the oblong aperture *i*, the inclined plate *j*, and a perforated cover, *l*, and entire cover *m*, in combination, substantially as specified.

204,770. HOOF-CLAMPS. Samuel C. Smith, Norristown, Pa. Filed Apr. 13, 1878.



Claim.—The combination, with two equal sections, A A', hinged at one side, and having lugs *a a*, of the hinged bifurcated bail B and screw C, passing longitudinally through said bail, as shown and described.

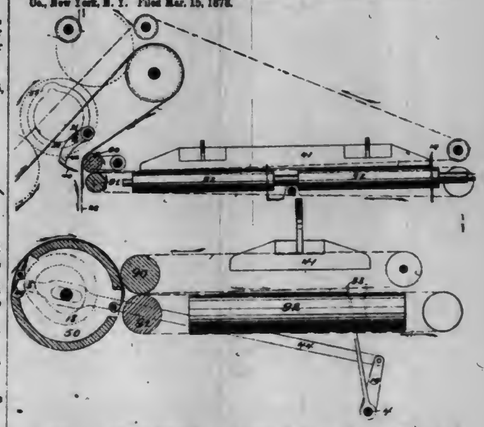
204,771. FENCE-POSTS. Alfred B. Smith, Byron, Ill. Filed Sept. 22, 1878.



Claim.—1. The isosceles-triangular-shaped metal fence-post, made from a single rod, the top ends crossed, forming a recess for holding the upper longitudinal wire, the bottom secured in the earth, as described, in combination with the longitudinal wires of the fence, substantially as shown and set forth.

2. In combination with the isosceles-triangular-shaped post, crossed at the top, as shown, the longitudinal wires D' and metallic central rod D, for securing purposes, substantially as shown and described.

204,772. PAPER-FOLDING MACHINES. Wm. Spiethover, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Mar. 15, 1878.



Claim.—1. The combination, with folding-rollers over which sheets to be folded are conducted, of a sheet-controlling device provided with mechanism whereby it is automatically moved across the plane in which a sheet travels, to intercept and govern the movement of the same with respect to said rollers, all substantially as described.

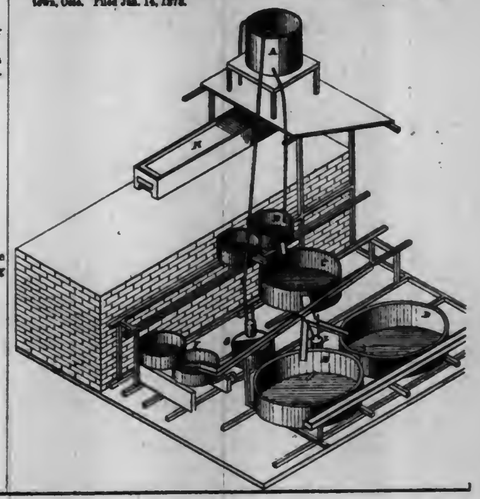
2. The combination, with folding-rollers, as 92 93, of a length suited to the manipulation of two sheets, and a folding mechanism coacting therewith, of a sheet-controlling device automatically moved across the plane in which the sheets travel, and operating so that the passage of one sheet is unobstructed while the succeeding sheet is intercepted, substantially as described.

3. The combination of the folding-rollers, as 92 93, folding-blade 41, stop 14, and a device automatically moved across the plane in which a sheet travels to intercept and control the same, all substantially as described.

4. The combination, with folding-rollers, as 90 91, and a co-operating folding-blade, of folding-rollers, as 92 93, placed at right angles thereto, and a folding-blade co-operating therewith, and a sheet-controlling device provided with mechanism whereby it is automatically operated to intercept alternate sheets, all substantially as described.

5. The combination, with folding-rollers adapted to fold both large and small sheets, of a sheet-controlling device provided with mechanism for automatically moving it across and out of the plane in which the sheets travel, to intercept alternate sheets, which mechanism is constructed so as to be thrown out of operation to render said controlling device inactive, all substantially as described.

204,773. PROCESSES FOR AMALGAMATING CHLORIDIZED ORES. James O. Stewart, Georgetown, Colo. Filed Jan. 14, 1878.



Claim.—1. The process herein described of treating chloridized ores with mercury, for the purpose of amalgamating the precious metals contained therein, constating in mixing the charge of ore with mercury out of contact with iron, and then subjecting the mass to the action of a strong brine which has been used on a previous charge of ore, whereby the chlorides and other reagents contained in the lixivium of one charge of ore are utilized upon the subsequent charges, substantially as set forth.

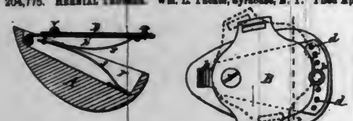
2. In combination with the wooden amalgamating-pan B, settler C, filter-tub D, and supplemental settling-tubs E F, the pump G, reservoir A, and evaporator H, all combined and arranged to operate substantially as and for the purpose described.

204,774. TOBACCO-PIPES. Saml. M. Thurston, Bloomfield, N. J., assignor to Charles T. Pierson, Bamapo, N. Y. Filed Mar. 23, 1878.



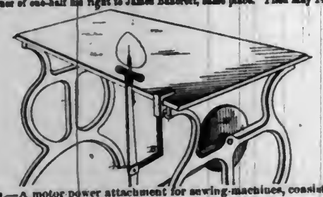
Claim.—An implement for holding tobacco in smoking, having a body or interior of pumice-stone, and a covering of some material applied to the pumice-stone in a plastic condition and afterward hardened, substantially as described.

204,775. HERNIAL TRUSSES. Wm. L. Tucker, Syracuse, N. Y. Filed Apr. 22, 1878.



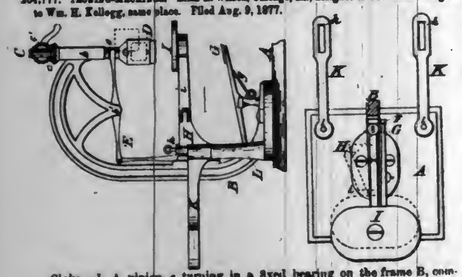
Claim.—The back plate b, widened at the base, and provided thereat with a series of holes, d, and the main plate B, pivoted near its top edge to the upper end of the back plate by means of set-screw c, and provided at its bottom edge, and directly underneath the perineal-strap attachment, with spur e, adapted to engage the holes d aforesaid, all constructed and combined substantially as described and shown, for the purpose set forth.

204,776. TREADLE ATTACHMENTS FOR SEWING-MACHINES. Cornelius B. Vernon, Athens, Ga., assignor of one-half his right to James Bancroft, same place. Filed May 14, 1878.



Claim.—A motor-power attachment for sewing-machines, consisting in the combination, with the upright hand-lever pivoted to the elbow-arm, which latter is adapted to be detachably secured to a machine, of the horizontal pitman which connects with the driving-wheel, substantially as set forth.

204,777. IRONING-MACHINES. Elias L. Wilson, Chicago, Ill., assignor of one-third his right to Wm. H. Kellogg, same place. Filed Aug. 9, 1877.



Claim.—1. A pinion, e, turning in a fixed bearing on the frame B, combined with the shaft C, which slides in its bearing and through said pinion, and a polishing-iron, D, attached to the lower end of said shaft, all substantially as and for the purpose set forth.

2. The rigid curved supporting-frame B, provided with a bearing for the pinion e and the sliding shaft C, which slides through said pinion and carries a polishing-iron, D, upon its lower end, in combination with a foot-lever, G, forcing-spring g, and a device for connecting the foot-lever with the sliding shaft and a movable ironing-table, substantially as and for the purpose set forth.

3. The ironing-board I, attached to the standard B by a double-hinged support, in combination with the vertically-adjustable polishing-iron D, substantially as and for the purpose set forth.

4. The standard H, in combination with the arm H, hinged thereto, and the ironing-table I, mounted upon an arm hinged to the piece H, substantially as and for the purpose set forth.

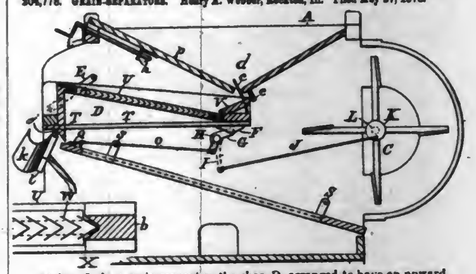
5. An ironing-board, I, in combination with a swinging support, upon which it is mounted, and which is constructed to permit the table to be swung back to the rear of the machine to give place for the attachment of a skirt-board, substantially as and for the purpose set forth.

6. The frame and operative mechanism of an ironing-machine and the skirt-board J, in combination with swinging supports K, to which it is detachably connected, substantially as and for the purpose set forth.

7. The swinging arms K, provided with slots k at their outer ends, in combination with the skirt-board J, having pins j projecting from its under side, substantially as and for the purpose set forth.

8. The frame and operative mechanism of an ironing-machine, provided with two arms, K, supported on the posts, one on either side of the machine L, by pivots, which permit the arms to be removed, in combination with the detachable skirt-board J, whereby the board may be readily adjusted when in use or entirely removed, and the arms swung back out of the way of the ironing-board or entirely removed from the supporting-posts, substantially as and for the purpose set forth.

204,778. GRAIN-SEPARATORS. Henry A. Webber, Rockton, Ill. Filed May 27, 1878.



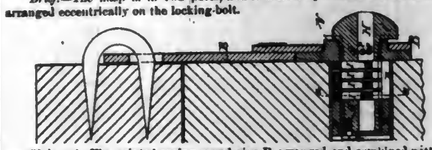
Claim.—1. In a grain-separator, the shoe D, arranged to have an upward and forward movement at the feed end, and having the agitator e projecting upwardly and forwardly through the opening in the hopper from the inclined strip, substantially as and for the purpose set forth.

2. In a grain-separator, the cut-off c, secured to the under side of the hopper immediately in the rear of the shoe D, having a vertical movement at its feed end, substantially as and for the purpose set forth.

3. The angle-sleve W, having V-shaped transverse ribs X and flat longitudinal ribs Y, the corners a a of which are bent to the right and left, as shown, having its rear end inserted into the V-shaped groove in the removable end piece b of the sieve-frame U, substantially as and for the purposes set forth.

204,779. HASP-LOCKS. Thomas V. Allis, New York, N. Y. Filed Apr. 30, 1878.

Brief.—The hasp is in two parts, and is locked by a round button-head arranged eccentrically on the locking-bolt.



Claim.—1. The pointed spring guard-pins P, arranged and combined with the keyway H, substantially as described.

2. The combination, with the revolving tumbler and key-bolt A, of the round head C, arranged eccentrically to the axis of the bolt, substantially as described.

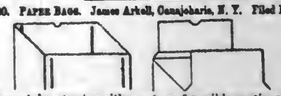
3. The combination of the revolving key-hole and tumbler-bolt A, having a round and eccentrically-arranged head, C, with a hasp, B, substantially as described.

4. The combination of the neck or collar V with bolt A and its head C, substantially as described.

5. The compound or two-part hasp with rivet-fastenings, substantially as described.

6. The figured rivets, in combination with a compound or two-part hasp, substantially as described.

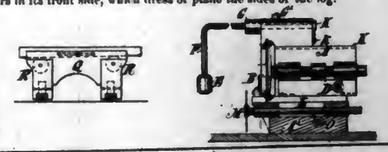
204,780. PAPER BAGS. James Artell, Canajoharie, N. Y. Filed May 31, 1878.



Claim.—A bag having either cuts or frangible portions at the mouth end, substantially as and for the purpose described.

204,781. MACHINES FOR PLANING TIMBER. Henry Atkinson, Etchemin, Quebec, Canada. Filed July 7, 1877.

Brief.—The logs or timber, after being "butted," are placed upon a carriage provided with laterally-shiftable blocks mounted upon rollers, for supporting the log, and fed between a vertical stationary roller and a vertically-arranged self-adjusting roller to an overhung cutter-head provided with cutters in its front side, which dress or plane the sides of the log.



Claim.—1. In a machine for dressing timber, the combination, substantially as specified, of an overhung cutter-head provided with cutters in its front or face side, the vertically-arranged stationary rollers, and the vertically-arranged self-adjusting rollers.

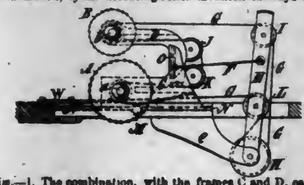
2. In an apparatus for dressing timber, the combination, with the frame A, of the guides or slides H H, (carrying either rigidly or adjustably the sockets G G,) drawn back by weights, &c., and capable of forward motion, all substantially as and for the purposes herein set forth.

3. The combination, with the sockets G, provided with stops *h*, of arms F, carrying rollers E and provided with levers K, all as and for the purposes described.

4. In a machine for dressing timber, the combination, substantially as specified, of the cutter-head, the rollers B and E for guiding the log, and the carriage for moving the log, said carriage being provided with laterally-shiftable blocks S, mounted on rollers or wheels for the support of the log, so that the latter will readily move laterally under the action of the said guide-rollers.

204,782. CIRCULAR-SAW MILLS. Henry Atkinson, Etchemin, Quebec, Canada. Filed Mar. 22, 1878.

Brief.—Logs are butted by means of two saws mounted in a reciprocating frame, for bringing them in contact with the log to be butted, the distance of the saw-arbors being adjustable for different-sized logs. The saws are enabled to cut completely through the log, by means of a section of the track upon which it is moved, by an actuating-roller mounted in ways secured to the floor.

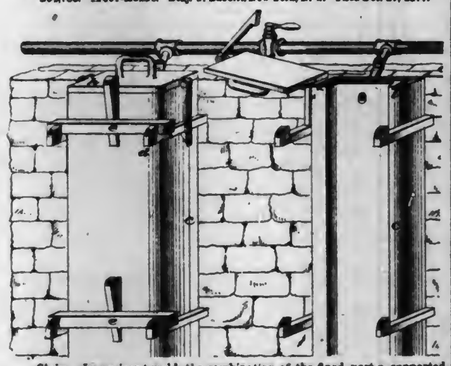


Claim.—1. The combination, with the frames C and D, carrying the saw-arbors, of swing E, pivoted to brackets, operating to move the saw-frames back and forth on suitable ways, substantially as and for the purposes specified.

2. In combination with the frames C and D, carrying the butting-saws, a section, W', of the track, moving back and forth transversely by means of roller M, or its equivalent, as and for the purposes set forth.

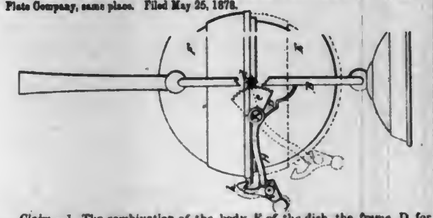
3. The combination, with the driving-belt G, of driving-pulley H, pulleys I, J, K, and L, arranged as described, and operating to convey motion to the saw-arbors, all as herein set forth.

204,783. INGOT-MOLDS. Benj. T. Babbitt, New York, N. Y. Filed Dec. 27, 1877.



Claim.—In an ingot-mold, the combination of the fixed part *c*, supported vertically at its back, and having a branch air-exhaust pipe attached thereto, with the movable part *c'*, and with the brackets, cross-bars, and wedges, substantially as and for the purpose set forth.

204,784 COVERED DISHES. S. Wm. Babbitt, West Meriden, Conn., assignor to Wilcox Silver Plate Company, same place. Filed May 25, 1878.

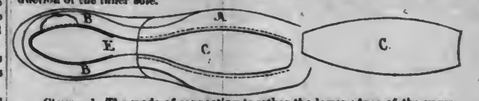


Claim.—1. The combination of the body E of the dish, the frame D for supporting the body, and to which it is attached, the revolving cover F, with trunnions connecting it with the body, and so that securing the body to the frame secures the cover in place, substantially as described.

2. The combination of the body E, revolving cover F, a pinion on the axis of the said cover, a segment working in said pinion, with handle and latch for operating and securing said segment, substantially as described.

204,785. MANUFACTURE OF BOOTS AND SHOES. C. C. Ballou, Albany, N. Y. Filed Mar. 26, 1878.

Brief.—The lower edges of the vamp are united to an intermediate gusset, so that the upper can be drawn over the last, and thus positioned for the introduction of the inner sole.



Claim.—1. The mode of connecting together the lower edges of the vamp or upper of a boot or shoe by means of a gusset, C, made in one or more pieces, and attached to the vamp or upper before the operation of lasting, as and for the purpose herein specified.

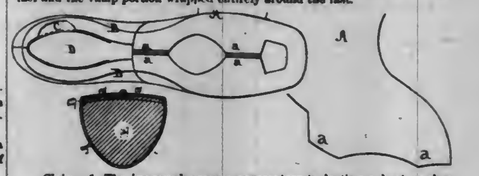
2. The quarters B of a boot or shoe, having a quickened curve formed therein at the lower part of the back seam, as and for the purpose herein specified.

3. In an unlasted boot or shoe, the vamp or upper A, having its lower edges connected together by means of the gusset C, in combination with the quarters B, substantially as and for the purpose herein specified.

4. The mode of lasting boots and shoes herein set forth—that is to say, by drawing upon a last in the manner described, the upper parts seamed together, and having the lower edges of the vamp or upper completely or partially connected together preparatory to the operation of lasting, as herein specified.

204,786. MANUFACTURE OF BOOTS AND SHOES. C. C. Ballou, Albany, N. Y. Filed Mar. 26, 1878.

Brief.—The vamp is cut with extensions or flaps at the lower edge, which are united by stitches, so that the complete upper may be drawn on over the last and the vamp portion wrapped entirely around the last.

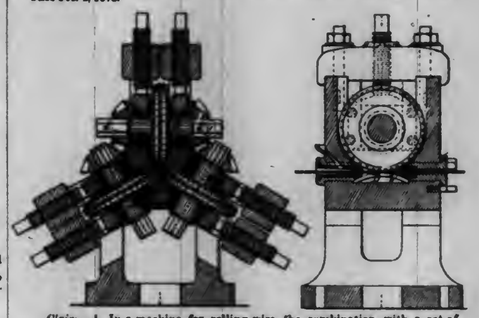


Claim.—1. The improved process preparatory to lasting a boot or shoe, consisting of uniting the edges of the vamp or upper so as to form a continuous wrapper around the fore part of the last, all substantially as set forth.

2. The vamp A or upper for a boot or shoe, provided with one or more flaps, *a*, for connecting together the lower edges thereof, in the manner and for the purpose herein specified.

3. The vamp A or upper for a boot or shoe, provided with one or more flaps, *a*, as described, in combination with the quarters B, having a quickened curve formed thereon at the lower part of the back seam, as and for the purpose herein specified.

204,787. MANUFACTURE OF WIRE. Wilhelm Benzon, Bodenbach-on-the-Elbe, Austria. Filed Feb. 1, 1878.



Claim.—1. In a machine for rolling wire, the combination, with a set of three or more grooved rollers having their axes at an angle to each other, as shown and described, to form an annular rolling-surface, of a finisher-plate through which the wire passes after leaving the rollers, and is finished at one and the same operation, substantially as described.

2. A machine for rolling wire, consisting of the following elements: three or more grooved rollers or wheels having their axes at an angle to each other, their respective grooves coinciding at one point to form the groove in which the wire is rolled, a feeding device to feed and guide the wire properly between the rollers, a finisher-plate to remove all inequalities in the wire after leaving the rollers, an inclosing frame within which the above-described mechanism is mounted, and suitable driving mechanism, all combined and operating as set forth, for the purpose specified.

204,788. PROCESSES FOR TEMPERING STEEL. Geo. Banister, Columbus, Ohio. Filed Feb. 15, 1878.

Claim.—The process of hardening and tempering steel at one operation, which consists in heating it to the degree required for hardening by ordinary methods, and immersing it while so heated in a molten metal bath, and retaining it therein, substantially as set forth.

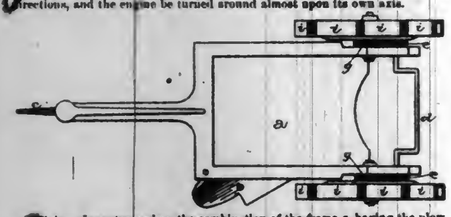
204,789. CLAMPS FOR SEWING-MACHINE NEEDLES. Henry Barclay, Elizabeth, N. J. Filed Mar. 20, 1878.

Claim.—The combination of the slotted or perforated needle-bar, the

grooved clamping-pin, and the spring H, attached to the needle-bar and engaging the said clamping-pin, substantially as described, whereby the said clamping-pin is forced endwise for clamping the needle in the slot or perforation of the needle-bar and the groove of the clamping-pin, substantially as and for the purpose specified.

204,789. STEAM-PLOWS. James Beard, Kent, Iowa. Filed Apr. 15, 1878.

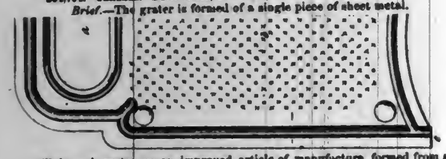
Brief.—The pinions on the crank-axle may be adjusted to mesh with the cog-wheels on the inner ends of the hubs, or with the internal gear on the inside of the wheel. By this means the wheels may be moved in opposite directions, and the engine be turned around almost upon its own axis.



Claim.—In a steam-plow, the combination of the frame c, having the plow c secured to its under side, with the driving-wheels b, having the movable shoes i around its periphery, and the internal gears h, secured to their inner sides, crank-shaft d, movable pinions e, and spur-wheels g, substantially as shown and described.

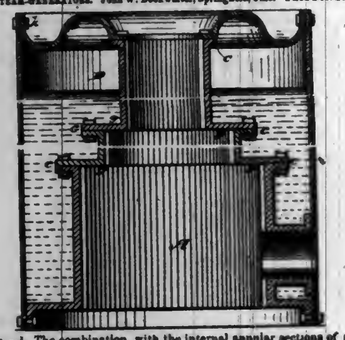
204,791. GRATERS. David Block, New York, N. Y. Filed Apr. 25, 1878.

Brief.—The grater is formed of a single piece of sheet metal.



Claim.—A grater, as an improved article of manufacture, formed from a single piece of tin or other suitable sheet metal, and provided with a rough-ened or abrasive surface, b, an opening, c, to form a handle, and feet f f, the surrounding edges of the metal forming the frame of the grater, and the whole being constructed and arranged substantially as described.

204,792. STEAM-GENERATORS. John W. Bookwalter, Springfield, Ohio. Filed Feb. 16, 1878.



Claim.—1. The combination, with the internal annular sections of successively-decreasing size from below upwardly, and the corrugated steam-cap, of the exterior wrought-iron wall, forming a connection between the cast-iron sections and the wrought-iron casing of a steam-boiler, substantially as specified.

2. The combination, with the boiler-sections of gradually-decreasing size from below upward, joined horizontally together to form the wall of the fire-chamber, and having ribs or projections to increase its heating-surface, of the exterior wrought-iron case and the steam top or cap-plate, substantially as specified.

204,793. WHEEL-HARROWS. Frank Brauer, Little Falls, N. Y. Filed May 28, 1878.

Claim.—1. A wheel-harrow cultivator consisting of the combination of a pole or tongue, a high main frame, wheel-gangs supporting the high frame through the medium of rigid fixed standards interposed between the gang-bars and main frame, and rods for bracing the wheel-gangs against independent movements and injurious strains.

2. The combination, substantially as hereinbefore set forth, of the main frame, the gang-bar, the interposed supporting-standard, the brace-rods, the slotted plate secured to the brace-rods, and the adjusting-screw or set-bolt on the gang-bar.

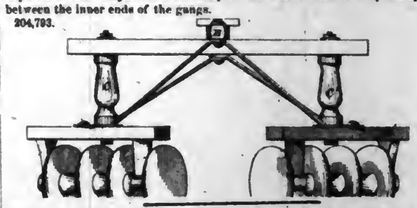
3. The combination, substantially as hereinbefore set forth, of the slotted main frame or beam, the pivoted gang-bars, and the doubly-slotted plates, said plates being connected to brace-rods by set-bolts working in one set of slots, and to the gang-bars by set-bolts working in the other or curved slots, whereby the working angle of the disks relatively to the line of draft may be varied and the disks adjusted laterally relatively to said line of draft.

4. The combination, substantially as hereinbefore set forth, of a main frame, reversible wheel or disk gangs, and mechanism for locking the gangs, whereby each gang may be turned end for end on its pivot and securely locked.

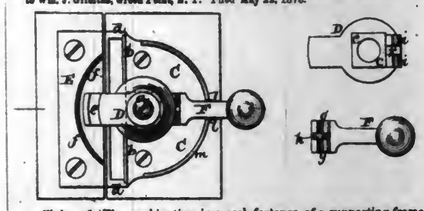
5. A wheel-harrow provided with reversible disk-gangs, the disks or wheels having concavo-convex sides or faces, whereby either the concave or convex faces of the wheels may be brought opposite each other, as set forth.

6. A wheel-harrow provided with reversible disk-gangs, one on each side of an intermediate tongue or draft frame, the gangs being also capable of independent lateral adjustment relatively to the line of draft to vary the space between the inner ends of the gangs.

204,793.



204,794. FASTENERS FOR MEETING-RAILS OF SASHES. John Broughton, Brooklyn, assignor to Wm. J. Griffiths, Green Point, N. Y. Filed May 22, 1878.



Claim.—1. The combination, in a sash-fastener, of a supporting-frame provided with a recess, l, in its rim, a handle, F, adapted to engage with said recess l, and provided with a depression or depressions, g, and a revolving latch provided with a lip or lips, i, adapted to engage with the depressions of the handle and to form a hinge-joint without a pintle, substantially as and for the purpose set forth.

2. The combination, with the handle F, constructed substantially as described, of the oscillating latch D, having the cam-shaped hub e and depression e, straight flat spring b, all upon the top of the lower sash-frame, and the concave covered flange f, provided with a downward-projecting lip for engaging in the depression of the latch, whereby said latch is held securely in its locking position, and the two sash-frames are prevented from being separated in any direction, as set forth.

204,796. COMPOSITIONS FOR SUPPORTING METALLIC PLATES FOR THE FORMATION OF PRINTING-SURFACES. Jos. Brown, London, England. Filed July 13, 1876.

Claim.—The composition of matter for forming the inelastic yielding backing, consisting of plaster-of-paris, chromate of potassa, and common salt, with sufficient water to bring the mass to the required consistence, substantially as herein set forth.

204,796. PRODUCTION OF DYE-STUFFS FROM METHYL-ANILINE. Heinrich Caro, Mannheim, Grand Duchy of Baden, Germany. Filed Mar. 28, 1878.

Brief.—Production of a blue color or dye-stuff from tertiary monamines, and especially from dimethyl-aniline, and called "methylene-blue."

Claim.—As a new manufacture, a dye-stuff or coloring matter having the characteristics above described, and produced by means substantially such as herein set forth, or by any other means which will produce a like result.

204,797. METHYL-ANILINE VIOLET COLORS. Heinrich Caro, Mannheim, Grand Duchy of Baden, Germany. Filed Mar. 26, 1878.

Brief.—In order to render methyl-aniline violet colors more soluble, and thereby better adapted for dyeing purposes, it is first converted into a sulpho-acid compound, which is subsequently converted into an acid sodium salt of methyl-aniline, which is the purple dye-stuff claimed.

Claim.—As a new manufacture, a dye-stuff or coloring matter having the characteristics above described, and produced from methyl-violet by means substantially such as herein set forth, or by any other means which will produce a like result.

204,798. ETHYL-ROSANILINE DYE-STUFFS. Heinrich Caro, Mannheim, Grand Duchy of Baden, Germany. Filed Mar. 26, 1878.

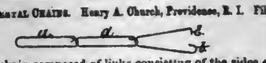
Brief.—The color is produced by converting rosaniline or fuchsine into a sulpho-acid compound, which is then heated with ethyl-iodide neutralized, and subsequently evaporated to dryness, when it has a purple color, and is not dichroic.

Claim.—As a new manufacture, a dye-stuff or coloring-matter having the characteristics above described, and produced from the reactions of iodide of ethylon, the sulpho-acid of rosaniline, or by any other means which will produce a like result.

204,799. DYE-STUFFS PRODUCED FROM NAPHTHYLAMINE. Heinrich Caro, Mannheim, Grand Duchy of Baden, Germany. Filed May 10, 1878.

Claim.—As a new manufacture, the coloring-matter or dye-stuff obtained from the reactions of nitro-naphthylamine and beta-naphthol, substantially in the manner set forth, or by any other method which will produce a like result.

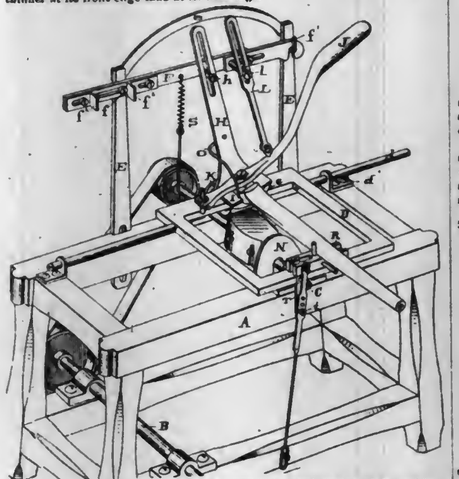
204,800. ORNAMENTAL CHAINS. Henry A. Church, Providence, R. I. Filed Dec. 3, 1877.



Claim.—A chain composed of links consisting of the sides a a, having two slits, c c, formed in one end of the link, while the opposite ends are provided with the loop b, and the tongue E, provided with slit d, the said links, when connected together, having their ends turned beneath and concealed by the sides of the link, substantially as set forth.

204,801. SPOKE-TENONING MACHINES. George B. Cramer, Cincinnati, Ohio. Filed May 7, 1878.

Brief.—The spoke is held by a hand-lever to a rocking bed, which is pivoted to a sliding frame, the lever itself being swiveled to a curved arm attached to the rocking bed. Hand-lever and rocking bed are connected by slotted arms and guide-pins to an extensible bar, by which the relation of the rocking bed to the revolving cutter is so changed as to make the throat of the spoke thinner at its front edge than at its rear edge.



Claim.—1. In a spoke-tenoning machine, the combination of the rocking bed G, arm H, and sliding bar F, the parts being arranged for the purpose of changing the swing of the bed with relation to the cutter, so as to produce reverse bevels upon opposite sides of the spoke, substantially as described.

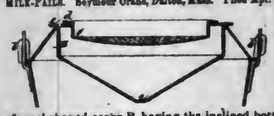
2. The slotted link I, having its lower end jointed to lever J and its upper slotted end adapted to engage a stud-pin, i, which projects from the sliding bar F, for the purpose of disengaging the notch in said bar from its pin or guide f', substantially as specified.

3. The combination, substantially as described, of bed G, lever-arm J, and fulcrum-arm K, said arm K being rigidly secured to bed G, and lever-arm J being jointed to arm K, so as to control the movements of the bed by the handle of lever J, for the purpose specified.

4. In combination with a tenoning-machine, the extensible bar F, fitted with adjustable stops f' at one end and a notch at the opposite end, said bar being fitted to slide on stud-pins or guides secured in standards E E, the purpose of said adjustable stops and extensible bar being to guide and limit the longitudinal play of said bar, so as to adapt the machine to cut different bevels, substantially as specified.

5. In combination, the bed G, bed-plate I, and its adjusting-screw i, for the purpose of setting the plate I nearer to or farther from the revolving cutter to leave a shoulder of any desired length upon the spoke.

204,802. MILK-PAILS. Seymour Crane, Dalton, Mass. Filed Apr. 23, 1878.



Claim.—The funnel-shaped cover B, having the inclined bottom, terminating at the center in a small orifice, c, and constructed with lateral flanges at its upper edge, one for supporting the cover in a pail, in combination with the independent and removable strainer having the lateral flange d, resting on one of the flanges of the funnel-shaped cover, for supporting the strainer within the upper portion of said cover, substantially as and for the purpose described.

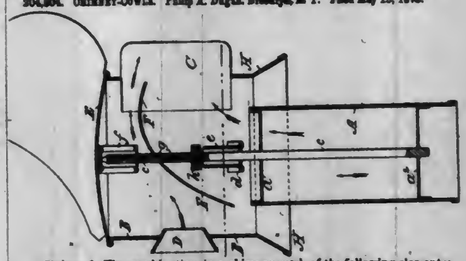
204,803. STENCILS. Charles H. Dana, Lebanon, N. H., assignor to himself and D. U. Marston, same place. Filed Apr. 30, 1878.

Brief.—Independent letters formed of paper or other suitable material, each letter having a guiding-line, and being coated at one edge with gum or other suitable adhesive material.



Claim.—A stencil-plate letter formed of a strip of paper or similar material, the same being provided with the described guiding-line and coating of adhesive substance, whereby it is adapted to be readily and accurately connected with other independent letter-strips similarly made, substantially as set forth.

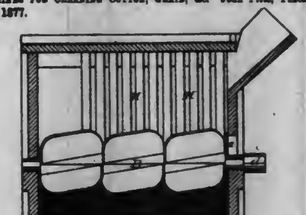
204,804. CHIMNEY-COWLS. Philip A. Dugas, Brooklyn, N. Y. Filed May 15, 1878.



Claim.—1. The combination, in a chimney-cowl, of the following elements: a square base, A, and a revolving cowl, B, composed of a section of a cylinder, and provided with a deflecting-plate or shield, F, and supported by a spindle, c, constructed and operating substantially as and for the purposes specified.

2. The combination, in a chimney-cowl, of the following elements: a square base, A, revolving cowl B, supported by a spindle, c, and provided with wings C, deflecting-plate or shield F, mouth-piece D, circular collar H, and vane G, constructed and operating substantially as and for the purposes set forth.

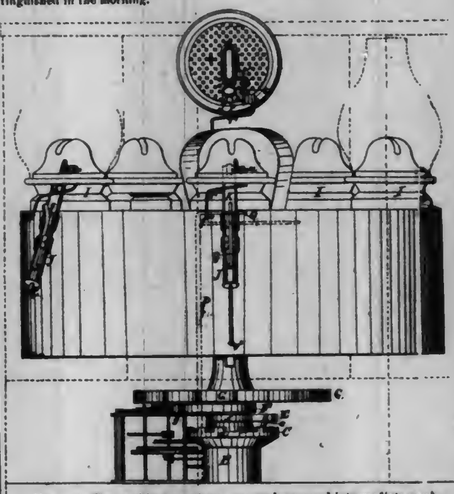
204,805. MACHINES FOR CLEANING COTTON, GRAIN, &c. John Fitts, Tuscaloosa, Ala. Filed Sept. 1, 1877.



Claim.—In combination with the beating-shaft of a cotton-cleaner, having spirally-set wings, the head or end casing formed with an aperture at the end of said shaft for the ingress of air, substantially as specified.

204,806. SELF-LIGHTING LAMPS FOR LIGHT-HOUSES. Joseph Fosgut, Oakville, Md. Filed May 14, 1878.

Brief.—A series of lamps having lighting and extinguishing devices attached are so operated by clock-work that each lamp, as it is brought into connection with a lever operated by the clock-work, is lighted at night and extinguished in the morning.

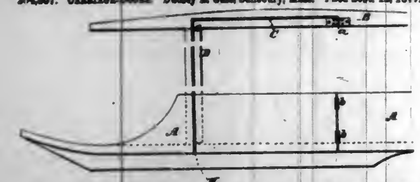


Claim.—1. The combination of one or more lamps and intermediate mechanism, substantially as described, with a time-movement, whereby an intermittent revolving motion at regulated intervals apart is imparted to the lamp, for the purposes set forth.

2. The combination, with each of a series of lamps having an intermittent revolving motion, of an extinguishing device, substantially as set forth.

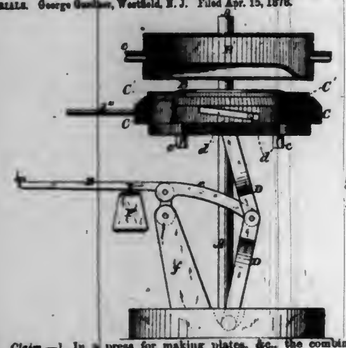
3. The combination, with each of a series of lamps having an intermittent revolving motion, of a self-lighting device, substantially as described.

204,807. CARRIAGE-TOPS. Dudley S. Gale, Salisbury, Mass. Filed Sept. 13, 1877.



Claim.—In a carriage-top, the rail B, provided with recess C, and the panel A, having step-flange H, in combination with the door D, hinged at a and *b b*, substantially as specified.

204,808. HOT-PRESSES FOR MOLDING PLATES, &c., FROM VENEERS AND OTHER MATERIALS. George Gardner, Westfield, N. J. Filed Apr. 15, 1878.



Claim.—1. In a press for making plates, &c., the combination of two chambered or hollow dies, by which the same may be heated with steam or hot air, and arranged for joint operation, substantially as and for the purpose set forth.

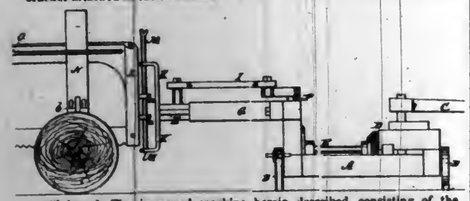
2. In combination with the die B, the annular knife C', arranged to operate substantially as specified.

3. The combination, with the die B, of the annulus C, having the knife C', inclined slots or grooves *d*, which receive projections *d'*, secured to said die, and handle *d''*, substantially as and for the purpose set forth.

4. The combination of the dies B B', uprights A, toggle-levers D D, tongue *e*, support *f*, notched lever or bar E, and weight F, with or without the knife C', substantially as and for the purpose set forth.

204,809. DRAG-SAWING MACHINES. David Gates, Benwood, W. Va. Filed May 18, 1878.

Brief.—A truck or wheeled frame having a rotary horse-power gearing attached is provided with a horizontal extension, which serves as a guide for the reciprocating cross-head, to which the saw is detachably connected by a bolt and clevis, on which bolt the saw-frame slides downward as the saw-cut deepens. A saw-guide is attached to the log, and passes through a loop or bracket attached to the saw-frame.



Claim.—1. The improved machine herein described, consisting of the truck A B, having the horizontal extension or grooved ways G G, the attached gearing, the cross-head H, clevis K, bolt M, and saw-frame L, all combined as shown and described, to operate as specified.

2. The combination of the reciprocating cross-head H, the long vertical clevis K attached thereto, the detachable bolt M, and the saw-frame provided with perforated arms *b*, all as shown and described, for the purpose specified.

3. The combination of the vertical guide-bar having a horizontal foot, by which it is secured to a log, and the saw-frame having the bracket attached thereto, as shown and described.

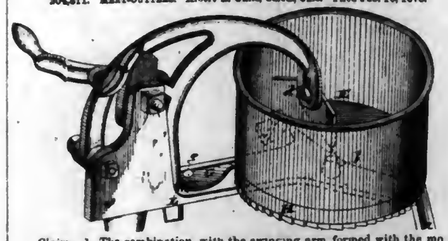
4. The combination of the vertical guide-bar N, adapted for attachment to a log, the frame having a bracket, O, attached thereto, the long bolt M, clevis K, and reciprocating cross-head, all as shown and described, for the purpose specified.

204,810. POT-LIDS. Wm. Geary, Fort Wayne, Ind. Filed Apr. 22, 1878.



Claim.—The within-described lid, formed with the concave top surface, and having perforations therein and also in the rim, and provided with hinged cover B and the depressed handle *c*, all constructed and arranged as herein shown, and for the purpose set forth.

204,811. MEAT-CUTTERS. Albert E. Gillis, Salem, Ohio. Filed Feb. 16, 1878.



Claim.—1. The combination, with the swinging arm formed with the motion-cam on either side thereof, of the actuating-shaft provided with the two double cams or wipers, adapted to engage respectively with said motion-cams, substantially as set forth.

2. In a meat and vegetable cutter, the combination, with the actuating-shaft formed with the two double cams or wipers, all cast in the same piece with the crank-handle, of the swinging arm which works in a vertical plane between the said double cams, substantially as set forth.

3. The combination, with the lower lever formed on the swinging arm, of the spring-pawl which operates the meat-block, said pawl being provided with the stud or pin which works in the slot of the bed-plate, substantially as set forth.

4. In a meat and vegetable cutter, the swinging arm formed with the curved lever, adapted to secure the knife in vertical adjustment, and the downwardly projecting lever, adapted to steady the knife-lever by working in a slot made in the bed-plate, substantially as set forth.

5. The combination, with the meat-block, secured by loose pivotal connection to the bed-plate and provided with the circular rack, of the pawl, which latter is provided with the guide-pin working in the slot of the bed-plate, and also with the recoil-spring which returns the said pawl for re-engagement with the rack, substantially as set forth.

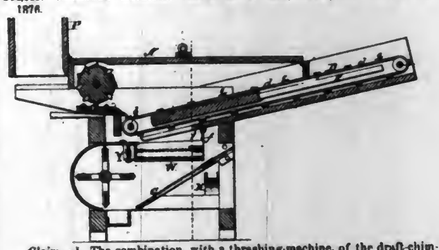
6. The combination, with the pawl adapted to rotate the meat-block, of the spiral or equivalent spring connected therewith, and adapted to maintain the two in engagement, substantially as set forth.

204,812. SCREW-DRIVERS. Richard S. Gladding, Bristol, R. I. Filed Nov. 7, 1877.



Claim.—The combination, with the shank or blade *a*, of the hollow handle *b*, arranged to contain the points *g g* of the stock *a*, provided with the coarse spring *f*, and the points *g*, provided with the concave recess *f'*, arranged substantially as and for the purpose set forth.

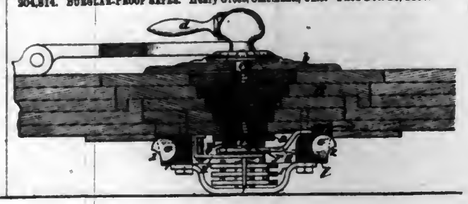
204,813. THRASHING-MACHINES. John E. Glover, Lonoke County, Ark. Filed Feb. 19, 1878.



Claim.—1. The combination, with a thrashing-machine, of the draft-chimney P, arranged to cover the feed-board, and hinged to the cap N in front of the cylinder to fold down over the cap N, substantially as specified.

2. The combination of the sieve-box W, the hinge Y, supporting one corner of the feed end thereof, links *f*, bracket T, pitman V, and face-plate M, all constructed and arranged substantially as set forth.

204,814. BURGLAR-PROOF SAFES. Henry Gross, Cincinnati, Ohio. Filed Dec. 20, 1877.



Claim.—1. The rotating disk for manipulating the lock and bolt-work of the safe, composed of a series of stepped welded steel and iron plates, the average diameter of the disk being at least equal to its thickness, substantially as specified.

2. The combination, substantially as specified, of the door, the door-jamb, and the rotating bolt, cut away on one side.

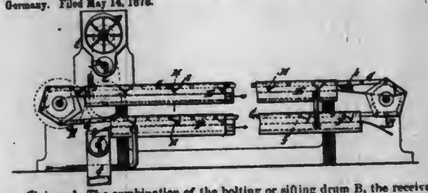
3. In a burglar-proof safe, the combination of rotating bolts G G' 1 2 and connecting-link *i*, arranged as shown, whereby the bolts may be caused to revolve simultaneously in opposite directions, substantially as and for the purpose specified.

204,815. CIGAR-TUCK PROTECTORS. Gustav E. Gumpert, Philadelphia, Pa. Filed Apr. 8, 1878.



Claim.—The combination, with a cigar, of a protector for the tuck thereof, the same consisting of an edge overhanging disk, A, and an attaching-pin, B, combined and operating substantially as and for the purpose set forth.

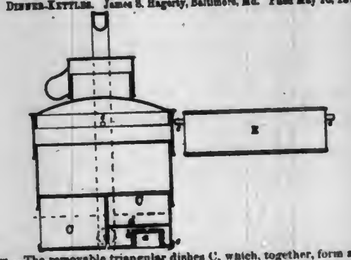
204,816. APPARATUS FOR THE MANUFACTURE OF PEAT BRICKS. Friedrich Hack, Hamburg, Germany. Filed May 14, 1878.



Claim.—1. The combination of the bolting or sifting drum B, the receiver C below said drum, the right and left hand threaded screw distributer D within said receiver, one or more drying-tables, E F, the endless traveling chain or chains G, the rakes or scrapers H, carried by said chain or chains, the receiver or hopper I, and the screw-conveyer J, for conducting the dried peat to the pressing devices, substantially as specified.

2. The combination, with the duct or passage *f*, of the reciprocating plunger E', the mold C', the pivoted jaw piece D', forming the movable portion of said mold, and the weighted lever H', essentially as and for the purposes described.

204,817. DEEPER-KETTLES. James S. Hagerty, Baltimore, Md. Filed May 10, 1878.



Claim.—The removable triangular dishes C, which, together, form a cylindrical section of the kettle, combined with a bottom receptacle for liquids, and a series of cylindrical food-sections, the whole being fitted and held together by means of a ball and locking devices, substantially as specified.

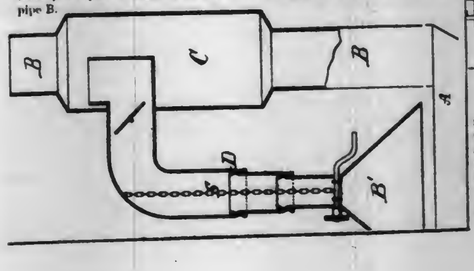
204,818. FENCE-WIRE FASTENERS. Richard W. Hargrave, Marshalltown, Iowa. Filed Mar. 20, 1878.



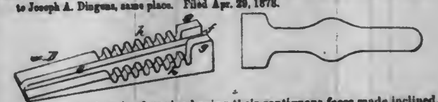
Claim.—The perforated loop and slotted plate A, jointly with the key E, as and for the purpose specified.

204,819. VENTILATOR ATTACHMENTS FOR COOK-STOVES. Justus Harding, Goshen, Ind. Filed May 18, 1878.

Brief.—The diameter of drum C equals the sum of the diameters of pipes B and D, so that the space in the drum adjacent to pipe D and unoccupied thereby is equal in capacity for carrying off products of combustion to the pipe B.



204,820. PRINTERS' QUOINS. Henry A. Hempel, Buffalo, N. Y., assignor of one-half his right to Joseph A. Dingens, same place. Filed Apr. 29, 1878.

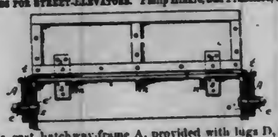


Claim.—1. A pair of quoins having their contiguous faces made inclined, and provided with two parallel rack-bars, located below the plane of the contiguous faces, and adapted to be moved in opposite directions by a pinion inserted between the rack-bars, substantially as shown and set forth.

2. A pair of quoins, D D, having their contiguous faces each provided with an inclined central rib or feather, *e*, and a corresponding groove, *f*, arranged at the head of each quoin, substantially as and for the purpose set forth.

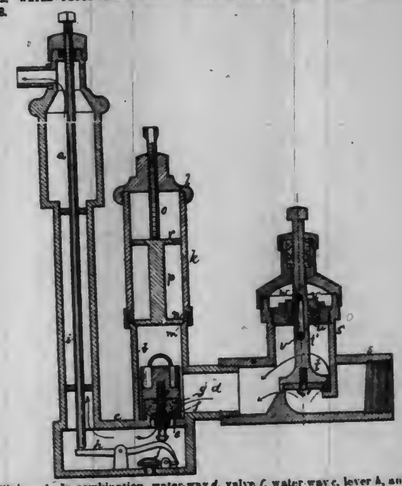
3. A pair of quoins, D D, having their contiguous faces each provided with an inclined central rib or feather, *e*, a corresponding groove, *f*, arranged at the head of each quoin, and rack-bars *h h*, arranged on both sides of the inclined feather, substantially as and for the purpose hereinbefore set forth.

204,821. HATCHES FOR STREET-ELEVATORS. Philip Hinkle, San Francisco, Cal. Filed Apr. 27, 1878.



Claim.—The cast hatchway-frame A, provided with lugs D, braces *a*, rib *i*, brackets *a a*, lugs *c c'*, and gutter *t*, with its spout *t'*, the whole cast integral, as set forth.

204,822. WATER-PLUGS OR HYDRANTS. Matthew Hogan, Hartford, Conn. Filed Mar. 7, 1878.

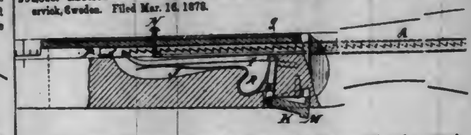


Claim.—1. In combination, water-way *d*, valve *f*, water-way *c*, lever *h*, and rod *i*, all substantially as described.

2. In combination, stand-pipe *b*, removable cap-pipe *k*, removable cap *l*, disk *n*, and screw *o*.

3. In combination, casing *c'*, valve *t* upon stem *t'*, provided with conduit *v*, the disk *u*, chamber *w*, and escape-orifice *y*.

204,823. REGISTERING ATTACHMENTS FOR MEASURING-RULES. Wilhelm Helmström, Westervik, Sweden. Filed Mar. 16, 1878.



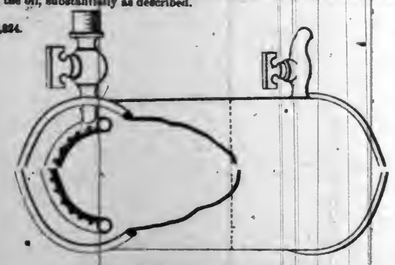
Claim.—The combination, with the longitudinally grooved and recessed rule or yard-stick A and ratch-bar *g*, carrying the index P, which projects through the yard-stick, of the thumb-piece M, bell-crank K, pawl I, and spring J, for moving the ratch-bar, and the spring-pawl *l*, having a thumb-piece, N, projecting through the stick for holding the ratch-bar until moved, all substantially as and for the purpose described.

204,824. BATHS FOR TEMPERING STEEL. John Humphreys, New Haven, Conn. Filed May 13, 1878.

Brief.—The flow of water through the bath is regulated according to the size of the article to be tempered—that is, to the temperature of the bath. The larger the article to be tempered the quicker the bath is heated.

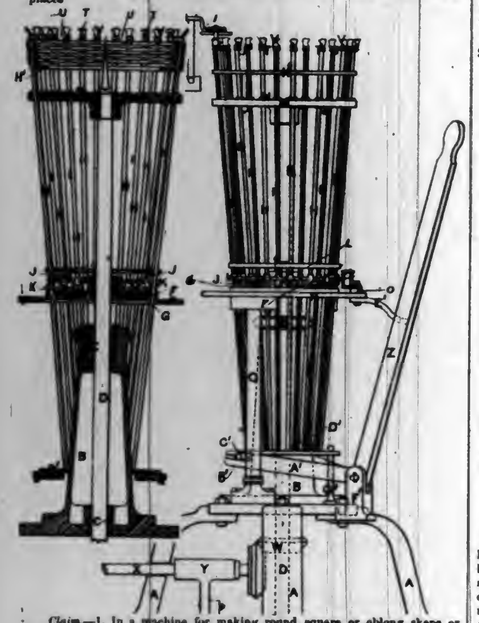
Claim.—The herein-described bath for hardening or tempering steel, consisting of a body of oil with a body of water below it, and a flow of water into the oil and out of the body of water below the point where the water separates from the oil, substantially as described.

204,824.



204,825. MACHINES FOR MAKING SKEPS OR OTHER BASKETS. Wm. Illingworth and Carl Zeidler, Bradford, England. Filed Dec. 20, 1877. Patented in England, Apr. 13, 1877.

Brief.—The wickers to form the sides of the baskets are woven in and out around vertical rods that are arranged in the form that it is desired to make the basket. The rods carry at their tops fingers formed with coarse-pitched screw-threads, which take the willows from the guide and force them down the rods. As the frame is rotated an intermittent motion, giving a semi-revolution to the fingers, is caused by pinions carried on the rods that come in contact with fixed racks on the frame. The rods rise as the work progresses, and when the desired height is finished are withdrawn and stakes driven in their places



Claim.—1. In a machine for making round, square, or oblong skeps or other baskets, the series of rods H, severally surmounted by a finger, T, having a coarse-pitched screw, U, and top guide V, combined with mechanism, substantially as described, for imparting to the rods and their fingers a turning motion, as and for the purpose set forth.

2. In combination with the rods H and their fingers T, constructed and operating as set forth, the devices, substantially as described, for giving a rotary motion to the whole system of rods.

3. In combination with the rotary system of rods, adapted to be raised and lowered, as described, and provided with the fingers T, the pinions J on the rods, and through which the rods are free to rise and fall, as set forth.

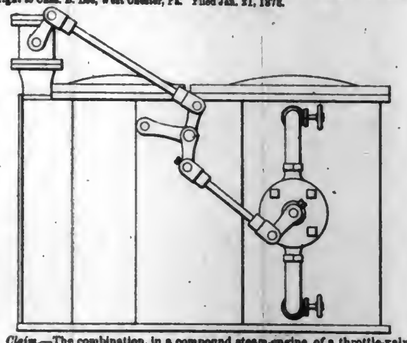
204,826.



204,826. ELECTRO-MAGNETIC GAS-BURNERS. W. W. Jacques, Newburyport, Mass. Filed May 3, 1878.

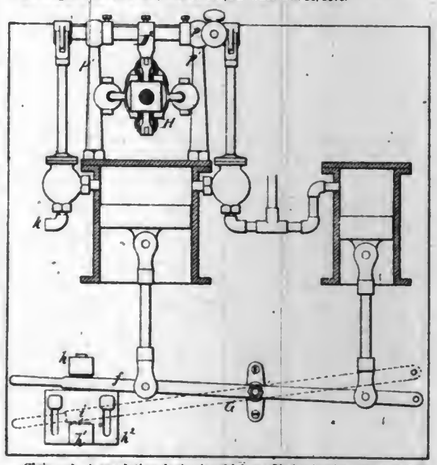
Claim.—In an electro-magnetic gas-lighting apparatus, the soft-iron portion of the body of the burner interposed between the valve and burner-tip, provided with a helix through which a closed circuit is maintained to close the flow of gas to the main burner by means of an armature-valve, which valve is allowed to fall, thereby allowing the flow of gas by breaking the previously-closed circuit.

204,827. ENGINE-GOVERNORS. Caldwell C. Jenkins, Philadelphia, assignor of one-half his right to Chas. B. Lee, West Chester, Pa. Filed Jan. 21, 1878.



Claim.—The combination, in a compound steam-engine, of a throttle-valve for regulating the admission of steam to the steam-chest of the small cylinder, a valve and pipes or passages for opening and cutting off communication between the upper and lower portions of the large cylinder, and a governor for operating both valves, all substantially as set forth.

204,828. STEAM-ENGINE REGULATORS. Caldwell C. Jenkins, Philadelphia, assignor of one-half his right to Charles B. Lee, West Chester, Pa. Filed Mar. 16, 1878.



Claim.—1. A regulating device in which a cylinder having steam and exhaust valves under the control of a governor, for admitting steam to and exhausting it from the cylinder on one side of its piston, is combined with a smaller cylinder having a provision for maintaining a constant supply of steam on one side of its piston, and with devices by which the simultaneous movement of the two pistons is communicated to the main throttle-valve of an engine, all substantially as set forth.

2. The combination of the cylinders, pistons, and lever G with the stops A A'.

204,829. LEATHER-WATERPROOFING COMPOUNDS. W. P. Jessey, Brooklyn, N. Y. Filed Jan. 9, 1878.

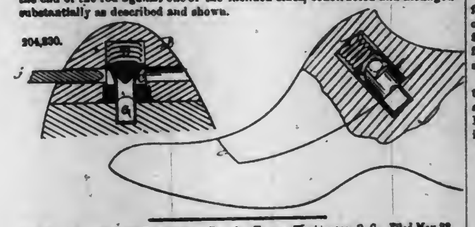
Claim.—1. The new manufacture or leather-dressing herein described, possessing substantially the qualities or properties herein described, composed of oxidized sludge-oil, or equivalent resinous base, dissolved in non-drying or slowly-drying oils, and thinned by naphtha or other volatile solvent, substantially as herein described and set forth.

2. The new manufacture or leather-dressing herein described, and possessing substantially the properties or qualities herein described, composed of oxidized sludge-oil, dissolved in suitable non-drying oils, substantially as herein described and set forth.

204,830. LAST-BLOCK FASTENERS. Chas. C. Johnson, Springfield, Vt., assignor to John M. Pitton, same place. Filed May 6, 1878.

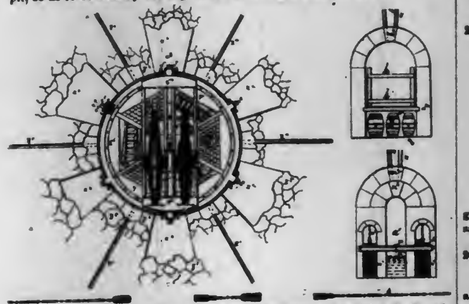
Claim.—The device for locking a last-block, consisting of the bolt E, having head with inclined or beveled sides, the bifurcated stud F, and the opening I in the block, to receive the rod J for unlocking such bolt E by forcing the end of the rod against one of the inclined sides, constructed and arranged substantially as described and shown.

204,830.



204,831. COUNTERPOISE-BATTERIES. Beverley Kennon, Washington, D. C. Filed May 28, 1878.

Brief.—The guns are placed on a platform which is suspended in a pit below the surface of the ground and counterbalanced by weights. The magazines, store-rooms, and quarters for the gunners are arranged around the gun-pit, so as to be entirely under ground and concealed from the enemy.



Claim.—1. The combination of the platform having uprights A E and B F, &c., with the weights *w* and pulleys *w'*, as set forth.

2. The combination of the platform having uprights A E and B F, &c., with grooves or ways S and stops S', substantially as set forth.

3. The combination of the elevating-platform (carrying the gun) with the rammer-pipes R', substantially as shown.

4. The combination of the platform having uprights A E and B F, &c., with the weights, pulleys, and windlass, as set forth or shown.

5. The combination of the platform A B with the skeleton-platform C D, as set forth.

6. The combination of the platform A B with the platform C D, the braces M and N, and the center-post K, as set forth.

7. The combination of the uprights A E and B F, &c., with the skeleton-platform C D and braces O and H, substantially as shown.

8. The combination of the elevating-platform, upper rim s^{x} s^{4}, and the shield S^{iv}, as set forth.

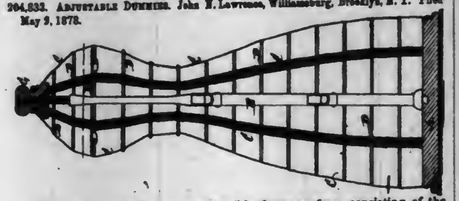
204,832. SPINNING RING AND TRAVELER. Edwin T. Lanphear, Pawtucket, R. I. Filed Feb. 8, 1878.

Brief.—The strain on the yarn is diminished and friction reduced by the peculiar construction of the ring and traveler.



Claim.—The spinning-ring having the interior race-groove *d* and outward beveled face *a*, arranged in relation to each other as described, in combination with the traveler *a b c*, constructed as and for the purpose described.

204,833. ADJUSTABLE DUMMIES. John M. Lawrence, Williamsburg, Brooklyn, N. Y. Filed May 9, 1878.



Claim.—An extensible and collapsible frame or form, consisting of the base A, the center-post B, constructed of a series of movable sections, the series of vertical tapes C, carrying the series of hoops D, and attached at their lower ends to the base, and the adjustable screw knob or nut G on the center-post, to which the upper ends of the tapes C are attached, the whole constructed and combined substantially as described, whereby the entire form may be detached and packed for transportation, or set up for use, as set forth.

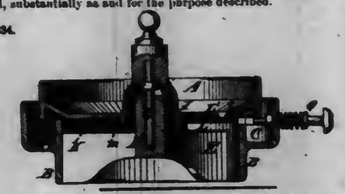
204,834. CENTRIFUGAL MACHINES. Peter B. Lawson, Cold Spring, N. Y. Filed Feb. 20, 1878.

Brief.—The bottom valve of the basket of the centrifugal machine is placed upon the outside, and provided with a spring-stop extending through the outer shell of the tub, for convenience in emptying the basket of sugar.

Claim.—1. In a centrifugal machine for purging and drying sugar, and for analogous uses, the combination, with the basket and the stationary part of the machine, of a valve placed on the outside of the bottom of the basket, fitted to and turning about a bearing on the outside of the said bottom, and a fastening device, substantially as described, for securing the said valve to the stationary part of the machine, substantially as and for the purpose specified.

2. The combination of the basket A, outside bottom valve K, fitted to and turning on the bottom of said basket, and provided with one or more notches, *a*, in its perimeter, and a spring-stop, Q, working in bearings in or on the tub B, and adapted to engage the said notches when the said stop is pressed inward, substantially as and for the purpose described.

204,834.



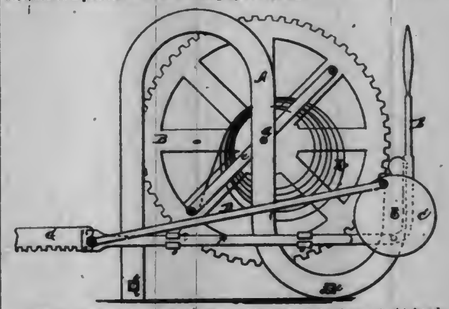
204,835. GAS-BURNERS. John Matthewman, New Haven, Conn. Filed Feb. 16, 1878.



Claim.—The combination of a suitable guide or guides with the plug of a gas-cock and its handle, with a cord from each side the handle through the said guide or guides, substantially as and for the purpose described.

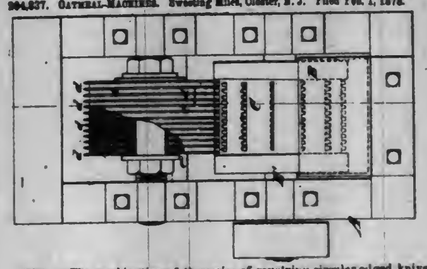
204,836. DRAG-SAWING MACHINES. David Miller and Wm. H. Johnson, Harrisburg, Ind. Filed May 3, 1878.

Brief.—The saw is operated by means of a coiled spring, which is hung on a loose shaft carrying at its outer end a ratchet, which engages with two pawls attached to a pointed lever for winding up the spring.



Claim.—In a sawing-machine, the combination of the frame A A', hand-lever J, pawls a a', loose shaft *d*, coil-spring h, spur-wheel B, pinion *n*, shaft *n*, driving-wheel C, pitman D, slide E, and adjusting hand-lever F, all constructed and arranged to operate in the manner and for the purposes herein set forth.

204,837. OATMEAL-MACHINES. Swissing Miles, Chester, N. J. Filed Feb. 1, 1878.



Claim.—The combination of the series of revolving circular-edged knives *d d*, the toothed carrying, feeding, and holding cylinder C, the teeth of which work between the edges of the said knives to present the grain to be cut to the said knives, as herein described, and the trough or box B, arranged below the said cylinder and receiving the lower part thereof, for presenting the grain to be cut to the said cylinder, substantially as and for the purpose specified.

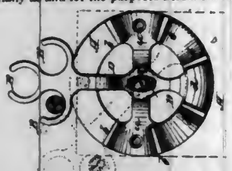
204,838. ROPE-HOLDERS. John Misner, Grand Rapids, Mich. Filed Dec. 1, 1877.

Claim.—1. The disk A, formed with radial ribs *b*, forming a series of

tapering notches or recesses, in combination with a lever pivoted in the center of the disk, and formed at one end with a tapering or wedge piece, *d*, for the purposes herein set forth.

2. The lever D, provided at one end with prongs E, and at the other end with the wedge *d*, in combination with the disk A, provided with radial ribs *b*, all substantially as and for the purposes herein set forth.

204,838.



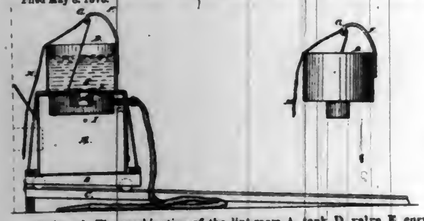
204,839. STOVE-LEGS. Isaac T. Montross, Peekskill, N. Y. Filed May 28, 1878.



Claim.—1. The combination, with the stove-base having a downward-projecting lug, circular in cross-section, and provided with an elongated cross-head, of the stove-leg having its shank provided with a longitudinal opening corresponding in form with said cross-head, substantially as described, and for the purpose set forth.

2. The combination, with the stove-base having a downward-projecting conical lug, provided with a laterally-projecting cross-head, the base of which at its junction with the lug is similar thereto in shape and size, of the stove-leg having its shank provided with a longitudinal aperture similar in form to said cross-head, and its upper edges beveled to fit the said conical lug when the cross-head is inserted through said aperture, substantially as and for the purpose set forth.

204,840. FIRE-EXTINGUISHERS FOR LIFT-ROOMS. Zachariah H. Morrell, Luling, Tex. Filed May 6, 1878.

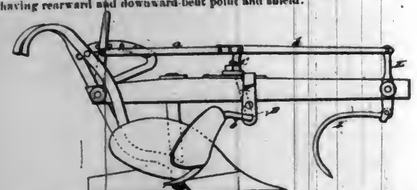


Claim.—1. The combination of the lint-room A, tank D, valve E, curved bar F, pulley G, and rope H, substantially as described.

2. The combination of the lint-room A, tank D, sprinkler I, pipe *c*, and hose J, substantially as described.

204,841. PLOW ATTACHMENTS. John D. Munson, Beloit, Wis. Filed Mar. 30, 1878.

Brief.—Regulator-hook adapted to catch stalks and other obstructions, and place them in position to be folded under bottom of furrow by crank-shaft having rearward and downward-bent point and shield.



Claim.—The combination, with an ordinary plow, the crank-shaft D, and operating devices, constructed substantially as described, of the pivoted regulator-hook I, pivoted lever L, and connecting-rod *h*, for the purposes described.

204,842. TOILET-SOAPS. Julius L. Pollock, Hoboken, N. J., assignor to B. T. Babbitt, New York, N. Y. Filed Dec. 27, 1877.

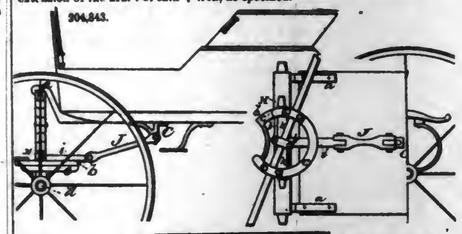
Brief.—Adds to soaps or other detergent compounds mustard, or its extracts or essences, while the soap is either in fluid, powdered, or in a pasty condition from admixture with glycerine.

Claim.—The combination of mustard and its extracts with glycerine and detergent compounds, substantially as set forth.

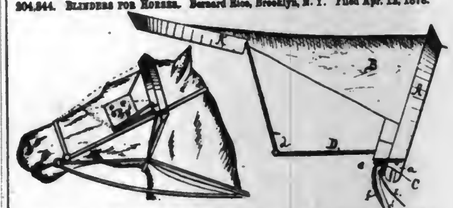
204,843. JOINTED BRACES FOR VEHICLE-SPRINGS. William J. Rawlings, Ottawa, Ohio, assignor to himself, Frank Brinkman, and Andw. Brinkman, same place. Filed Apr. 6, 1878.

Claim.—In a spring-vehicle, the combination, with the fifth-wheel section *c'* and the T-iron *b*, bolted thereto and supporting the head-block H, of the bracket C and the coupling-brace J, jointed to said bracket and to the rear extension of the arm *i* of said T-iron, as specified.

204,843.



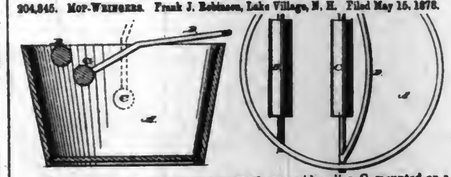
204,844. BLINDERS FOR HORSES. Bernard Rice, Brooklyn, N. Y. Filed Apr. 12, 1878.



Claim.—1. A horse-blinder consisting of a pair of plates adapted to be secured over the forehead of the animal, the lower plate being hinged to the upper one, the said plates having between them a curtain or screen adapted to be lowered in front of the eyes of the horse, substantially as described.

2. In combination with the plates A A', hinged together and having spring *d*, the screen B, cords *e f*, and spring-catch C, substantially as described.

204,845. MOP-WRINGERS. Frank J. Robinson, Lake Village, N. H. Filed May 15, 1878.



Claim.—1. A mop-wringer composed of a movable roller, C, mounted on a swinging bail or lever, D, and arranged to swing automatically down into a central position in the pail or tub while inactive, in combination with a stationary roller, B, at one side of the pail or tub, substantially as and for the purpose herein specified.

2. A mop-wringer having a bail, D, upon which the movable roller C is mounted, the said bail also serving as a bail to carry the pail or tub by, substantially as and for the purpose herein specified.

204,846. CASE-HARDENING IRON. Gracie S. Roberts, Brooklyn, N. Y. Filed Mar. 6, 1876.

Brief.—Glues the ferro-cyanide of potash to the parts to be case-hardened, packs in charcoal, and heats. To intensify the degree of case-hardening at a given point, either repeats the coating there or uses the most powerful case-hardening material there and other less active materials at other portions.

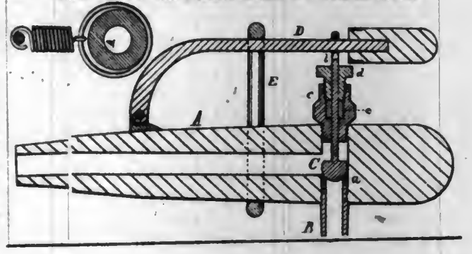
Claim.—1. The process of producing case-hardened articles which consists in coating the whole or any desired portion with an adhesive material, next applying the case-hardening material as an exterior coating, and afterward subjecting the thus-prepared iron to heat in a packing of charcoal or analogous neutral or nearly neutral material, as herein specified.

2. In case-hardening iron articles, the process of applying the case-hardening material which consists in attaching it to any desired portion of the article by means of glue, substantially as described.

3. In the production of case-hardened articles, the within-described method of case-hardening certain portions at will to different depths by variably coating the different parts, as herein specified.

4. Iron articles having different portions case-hardened to different degrees, as herein specified.

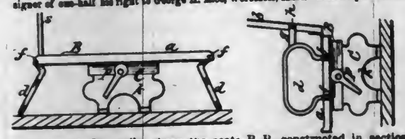
204,847. FAUCETS. John G. Schmidt, Rochester, N. Y. Filed Mar. 12, 1878.



Claim.—1. The combination of the body A, pipe B, valve C, valve-stem *b*, provided with stuffing-box *c*, lever D, and the spring E, arranged to be adjusted longitudinally upon the body A, substantially as set forth.

2. The combination of the body A, valve C, closed by a spring, pipe B, and valve-seat *a* within the body A, and resting upon the pipe B, substantially as set forth.

204,848. CAR SEATS AND COUCHES. Norman B. Sherwood, Saratoga Springs, N. Y., assignor of one-half his right to George H. Rice, Worcester, Mass. Filed Sept. 20, 1877.



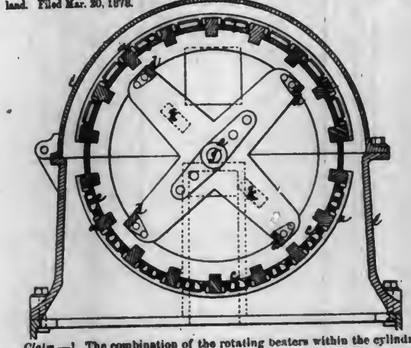
Claim.—1. In a railroad-car, the seats B B, constructed in sections *a b*, forming the bottom and back, hinged together, as described, in combination with the platforms or supports C C, provided with the slots *m m*, through which pass the pivots *n n*, connecting the seats with the platforms, said slots having offsets *m' m'* at their outer ends, the whole arranged as described, so that the seats can be drawn out bodily on the supports, swung around at right angles and longitudinally with the car, and the hinged sections of the seat be laid flatwise to form a couch, as herein shown and described.

2. In a railroad-car, the combination of the seat B and its platform or support C, provided with the groove *m* in the platform, and having the offset or branching slots *m' m'* at its outer end, whereby, when the seat is fully drawn out, its pivot *n* may fall back into one of said offsets, enabling the seat to be turned without striking the next seat, also enabling the ends of two adjoining seats to be abutted together when extended, as herein shown and described.

3. The combination, with the seat proper, *a*, and back *b*, hinged together so as to be laid flatwise, of the seat-arms *d d*, hinged to the ends of the seat and capable of a turning action, provided with the extension *g*, which, when the back is turned up, engages with said back and locks it in place, as herein shown and described.

4. The combination, with the adjustable seat B and its support C, of the cam or eccentric *p*, pivoted to the end of the support and resting under the seat, and serving to tighten or secure the seat to the support at any adjustment, as herein shown and described.

204,849. CRUSHING AND PULVERIZING MACHINES. George E. Sherwin, Hackney, England. Filed Mar. 20, 1878.

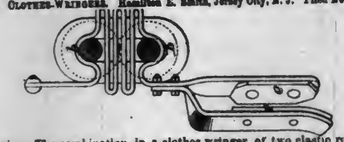


Claim.—1. The combination of the rotating beaters within the cylindrical shell, provided with alternate serrations and levers, and the exterior casing inclosing the whole, substantially as specified.

2. The cylindrical shell, provided with serrations and having the movable blanks *b* and sieve-sections *c*, substantially as and for the purposes specified.

3. In an ore-crushing machine, the combination, with the rotating arms and the cylindrical shell in which they revolve and the sieves thereof, of an outer casing provided with a return-flue leading to the center of the cylindrical shell, whereby the blast of air created by the beaters is returned to the center of the shell, substantially as and for the purposes set forth.

204,850. CLOTHES-WRINGERS. Hamilton E. Smith, Jersey City, N. J. Filed Nov. 6, 1877.



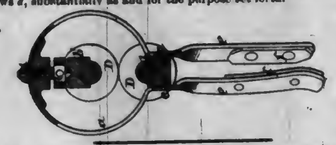
Claim.—The combination, in a clothes-wringer, of two elastic rollers and two standards connected by a traverse, each of said standards made of spring-steel, and each having two jaws for connection with a tub or other vessel, one jaw of each of the said standards being extended and bent to form seats for the journals of the upper and lower wringer-rollers, and a series of serpentine curves that will be between said upper and lower journal-seats, substantially as herein shown and described.

204,851. CLOTHES-WRINGERS. Hamilton E. Smith, Jersey City, N. J. Filed Nov. 6, 1877.

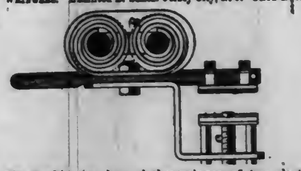
Claim.—1. The combination, in a clothes-wringer, of two elastic rollers with two standards connected together by a traverse, each of said standards consisting of a ring, within which is arranged the set of boxes for the journals of the two rollers, the metal forming each ring being continued or extended downward, as shown, to form two elastic jaws for embracing the side of a tub, substantially as described.

2. The combination, with the rings *a*, elastic rollers D, and boxes *b b'*, of set-screws *d*, substantially as and for the purpose set forth.

204,851.

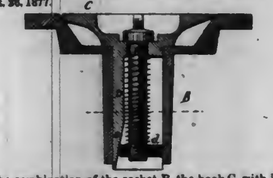


204,852. WRINGERS. Hamilton E. Smith, Jersey City, N. J. Filed Nov. 6, 1877.



Claim.—The combination, in a clothes-wringer, of two elastic rollers, a frame provided with clamps for securing the wringer to a wash-tub, and two coiled springs secured to each side of the frame, the inner rings of said coiled springs forming bearings for the journals of both the elastic rollers, substantially as and for the purpose described.

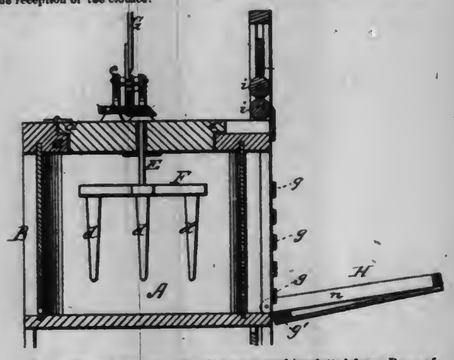
204,853. BENCH-HOOKS. Seymour Smith, Watertown, Conn., assignor to Smith & Son, same place. Filed Oct. 26, 1877.



Claim.—The combination of the socket B, the hook C, with its open shank D, incline *a* on the inner surface of said shank, vertical screw-spindle E, and nut *d*, working between the said incline and opposite surface of the socket, substantially as and for the purpose described.

204,854. WASHING-MACHINES. Cyrus P. Smith, Brunswick, Me. Filed Feb. 16, 1876.

Brief.—The swinging frame is designed to receive the clothes after being wrung out, the slats on the frame serving to prevent them from coming in contact with the sides of the tank. It may also be used to support a basket for the reception of the clothes.



Claim.—The combination, with the tank A and its slatted frame F *g g*, of the swinging frame H, its side bars hinged to the sides of the tank-frame, and its brace *g'* serving as a stop, substantially as specified.

204,855. SLEEPING-CARS. Andrew M. Smith, Philadelphia, Pa. Filed May 15, 1878.

Claim.—1. The arms *b*, secured to the arm-rests, in combination with the sliding sleeves F, and the arms *a*, secured to the seat-back and pivoted to the said arms *b*, substantially as herein shown and described, and for the purpose set forth.

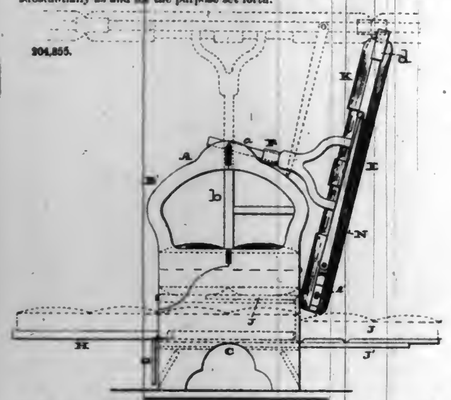
2. In combination with the box C, the bar and brace G H, hinged thereto, substantially as shown, and adapted to be swung round and lowered, for the purpose of supporting the extended seat, or swung upward and back again, with the brace H returned within the box, and the bar G closing up the opening along the side of the same, substantially as specified.

3. In combination with the body of the seat, a jointed board, J, hinged thereto, and provided with a suitable brace, J', for the support of the same when in an unfolded and horizontal position, said hinged and jointed board being also adapted to be folded over the body and partly under the cushion D, or unfolded in a vertical position for the purposes of a partition, substantially as shown and described.

4. In combination with the backs E, arranged to be brought into a horizontal position, the guard L, adapted to connect together and strengthen two adjacent backs in above said position, and also to extend above the same, whereby a side board or guard is formed, as and for the purpose specified.

5. The backs E, provided with pockets K, substantially as and for the purpose set forth.

6. The arm-rest formed of an opening part, B', having a vertical joint, substantially as and for the purpose set forth.



204,856. ALLOYS FOR THE MANUFACTURE OF SHOT. Thomas W. Sparks, Philadelphia, Pa. Filed Jan. 31, 1878.

Claim.—The within-described alloy for the manufacture of shot, said alloy consisting of lead, antimony, and arsenic, combined in proportions substantially as herein set forth.

204,857. FOUNTAIN-PENS. John W. Stanton, Philadelphia, Pa. Filed May 13, 1878.

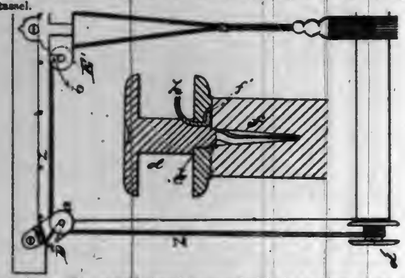


Claim.—1. In a fountain-pen holder, the combination of the pen-sheath A, rubber reservoir C, and hollow handle F with thumb-slot e and the sliding sleeve I, all constructed substantially as and for the purposes herein set forth.

2. As a new article of manufacture, a fountain-pen holder consisting of the pen-sheath A, rubber reservoir C, with outlet-tube D, the hollow handle F, having slot e and exterior roughened surface b, the sliding sleeve I, and cap G, all constructed and combined substantially as and for the purposes herein set forth.

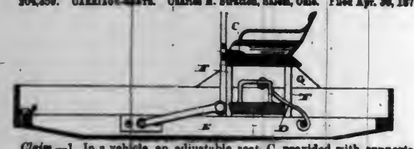
204,858. CURTAIN-FIXTURES. Charles W. Stowe, Flint, Mich., assignor of one-half his right to Royal C. Ripley, same place. Filed Mar. 23, 1878.

Brief.—The curtain is tacked to a lath at the top, and to a roller at the bottom. The cords pass from spools at the ends of the roller up over pulleys working in pivoted hangers at the upper corners, thence to the center at the top over similar pulleys, and thence down, where they are united to a weighted tassel.



Claim.—The pivoted slotted hangers D d E', in combination with a curtain-roller, cord h, and weighted tassel G, as and for the purposes specified.

204,859. CARRIAGE-SEATS. Charles M. Stratton, Salem, Ohio. Filed Apr. 30, 1878.



Claim.—1. In a vehicle, an adjustable seat, C, provided with supports F and arms D, one end of said arms being pivoted to the seat, and the other end pivoted to the sill E, as set forth.

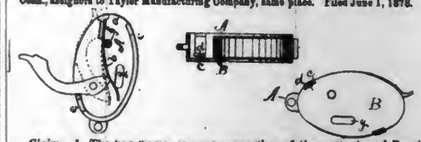
2. The combination of an adjustable seat, C, constructed with panels G, supports F, and arms D, with the standards B, having projections J, substantially as described.

204,860. STEAM AND HYDRAULIC PACKING. Charles S. C. Symonds, Philadelphia, Pa. Filed Apr. 8, 1878.



Claim.—An elliptical packing constructed of endless layers of fabric, a rubber core of rectangular form, with unequal sides, and lubricant, substantially as and for the purpose set forth.

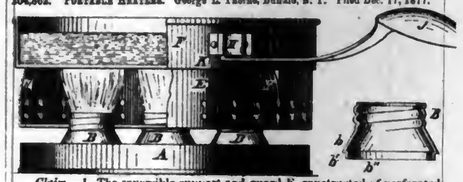
204,861. BURGLAR-ALARMS. Augustus E. Taylor and Jewett R. Johnson, New Britain, Conn., assignors to Taylor Manufacturing Company, same place. Filed June 1, 1878.



Claim.—1. The box frame or case consisting of the parts A and B, with hooks or lugs on one part taking under bridges in the other part, in combination with the hammer and spring, whereby said parts are held together, substantially as described, and for the purpose specified.

2. In a burglar-alarm, the case carrying the spring and hammer, and having an elongated slot, g, through the same, extending from side to side in a direction parallel to the axis of the hammer, substantially as described, and for the purpose specified.

204,862. PORTABLE HEATERS. George L. Thorne, Buffalo, N. Y. Filed Dec. 17, 1877.

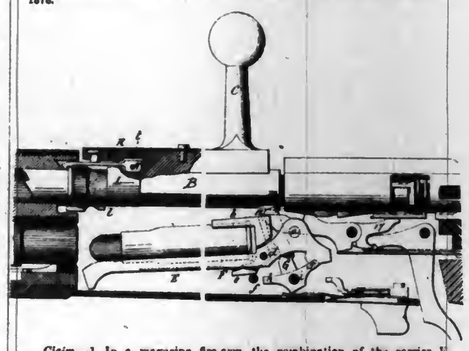


Claim.—1. The reversible support and guard E, constructed of perforated sheet metal, having the burner-apertures in its bottom and the notched parts N in its rim, as and for the use and purpose specified.

2. The burners B, having the square shoulder b' and straight tubular part b'', in combination with the vessel A, having apertures for said straight tubular part, as and for the purpose specified.

3. The portable heater hereinbefore described, consisting, essentially, of the reservoir A, having the wick-tubes B, the perforated support and guard E, the vessels F and G, with the loops H, and the spoon J, with the bend K, the parts being arranged for operation and transportation, substantially as set forth and stated.

204,863. MAGAZINE FIRE-ARMS. Frank W. Tiesing, New Haven, Conn. Filed May 13, 1878.



Claim.—1. In a magazine fire-arm, the combination of the carrier H, hinged at the rear, and so as to be turned up and down for the transfer of the cartridge, the fingers b, hinged in said carrier, a spring, F, on said carrier to close the fingers on the cartridge, and a stationary bearing, f, on the frame to open the fingers as the carrier descends, substantially as described.

2. In a magazine fire-arm, the combination of the carrier E, hinged at the rear, the rocking levers G, hung beneath said carrier, arms h and g on said lever, and the breech piece or bolt provided with a shoulder near the forward and rear ends to act upon said lever, and, through said arms h and g, respectively, to raise and lower the carrier and lock it in either its raised or lower position, substantially as described.

3. In a magazine fire-arm, the combination of the carrier E, hinged at the rear, the rocking levers G, h, and g, hung beneath said carrier, and the breech piece or bolt, provided with a shoulder near the forward and rear ends to act upon said levers, respectively, to raise and lower the carrier, and a slide, H, operating upon said lever to turn it out of line of the rear shoulder on the breech-piece, and lock it with the carrier in the raised position, substantially as described.

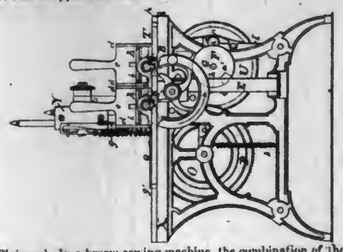
4. In a fire-arm, the combination of a barrel open at the breech, a breech piece or bolt moving longitudinally in line with the barrel to open and close the breech, and which is partially rotated to lock or unlock the breech, the head or forward portion of the breech-piece connected to the said bolt, so as to move longitudinally with it, but disconnected from its rotary movement, and an extracting-hook on said head, an arm extending from the rotating part forward over the non-rotating part, and carrying a spring, which is moved onto or away from the extractor by the rotation of the bolt, substantially as described.

5. The combination, in a breech-loading fire-arm, of the bolt B, the hammer T surrounding it, a sleeve, S, in the rear end of the hammer, arranged for both longitudinal and rotary movement independent of said hammer, the said sleeve having a finger, S, on its forward end, and the bolt B, with notches 9 and 10 in its rear end, into either of which the said finger S may be turned, one to lock, the other to unlock, the breech, substantially as described.

6. The combination, in a breech-loading fire-arm, of the bolt B, the hammer T surrounding it, the firing-pin W within it, a pin, 12, connecting said firing-pin with the hammer, and a notch, 14, in the rear end of the bolt, into which the said pin 12 must pass before the firing-pin can strike the cartridge, substantially as described.

204,864. BROOM-SEWING MACHINES. Lionel Varieas, San Francisco, Cal. Filed Feb. 23, 1876.

Brief.—The machine is composed of a sewing-machine combined with a broom-clamp carriage and driving mechanism, in such a way that the broom will be first wrapped and then stitched.



Claim.—1. In a broom-sewing machine, the combination of the rack-table Q, fitted with carriages R R R and geared to the spur-gear P, with attached ratchets O O', the pawls *a t a' t'*, with springs for engaging these ratchets, the fixed shanks *a' a'*, the movable clamps A, provided with curved serrated faces *x x*, covers *b*, and tightening levers *c d*, sleeves *a a*, provided with pins *d' c'*, fitted to the ribs of the rocking bar *T f' f'*, the levers N S, keys *a o p*, sleeve with lug and pin L *r m*, and sliding bar *s*, cam-grooved drum *f*, fitted to the key-shaft, cam-grooved drum K, with ratchet-wheel J, attached to the shaft *k*, the scalloped key H *b' c z*, provided with sheave *i*, springs, and toothed bar *j* I, the disk F, provided with projections *h a'*, and the yoke E, provided with projections *c* and springs, and the clutch D, for operating the loose gear C, fitted to the sewing-mechanism gear *e f*, all arranged as herein set forth.

2. In a broom-sewing machine, the combination of the rocking bar *T f' f'*, fitted by sleeves *a d' c'* to the movable broom-clamps A A and to the traveling rack Q, provided with fixed sleeve casings or carriages R R, substantially as and for the purposes herein set forth and specified.

3. In combination with the sewing-mechanism gear C *e f*, the rocking bar *T f' f'*, fitted with holding-clamps A *a* A *a*, described, and to the cam-grooved drum *f*, attached to the driving-shaft M, substantially as and for the purposes herein set forth and specified.

4. The broom-clamp A, provided with cover *b*, curved serrated faces *x*, levers *c d*, and broom-handle sleeve *a*, all constructed and arranged as shown, substantially as and for the purposes herein set forth and specified.

5. The keyed movable sleeve *a a p* described, fitted to the feathered shaft M *g* and to the outer sleeve L, provided with pin *m* and log *r*, with sliding bar *s*, all arranged as shown, in combination with the direct-acting cam-grooved drum K, and the mechanism, or its equivalent, for operating the traveling rack Q, with broom-carriages R R R, consisting of the levers S N, pawls *a t a' t'*, springs *k' l' k' l'*, with ratchet-wheels and spur gear O O' P, respectively, substantially as and for the purposes herein set forth and specified.

6. The rocking bar T *f'*, provided with curved ribs or cams *f' f' f'*, fitted to the movable clamps A *a* A *a*, said clamps being provided with toothed or serrated faces *x x*, curved in an opposite direction to that of these ribs *f' f' f'*, all combined as shown and described, substantially as and for the purposes herein set forth and specified.

7. The scalloped key H *b' c z* described, fitted with bar I, provided with sheave *i*, springs *m' y*, and toothed rack *j*, in combination with the shaft *k*, provided with ratchet-wheel J, and grooved cam-drum K *l*, that actuates the keyed sleeves L *a a p*, all arranged as herein set forth, whereby, by these keys *a a p* being timed by this scalloped key in their action on the levers operating the rack mechanism, said keys may be made to regulate long and short forward and backward movements of the broom carriages and clamps, as required.

8. The disk F, provided with projections *h a'*, in combination with the yoke E, fitted with springs *w*, and provided with the projection *r*, and the clutch D, for impingements on the loose gear C, all arranged as shown, substantially as and for the purposes herein set forth and specified.

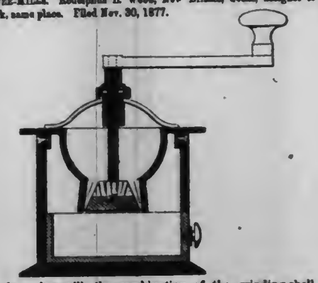
9. The shanks *a' a'*, attached to the broom-sewing-machine frame X X, in combination with the pawls *a t a' t'* and ratchet-wheels O O', with spur-gear P, geared to the rack-table Q, provided with broom-carriages R R, substantially as and for the purposes herein set forth and specified.

10. The pawls *a t a' t'*, fitted with springs *k' l' k' l'*, in the manner described, in combination with the ratchet and spur wheel gear O O' P, respectively, geared to the rack-table Q, fitted with broom-carriages R R, substantially as and for the purposes herein set forth and specified.

11. The traveling rack-table Q, provided with fixed carriages R R and movable broom-clamps A *a*, in combination with the needle and shuttle mechanism fitted to the stationary sewing-machine head Y, substantially as and for the purposes herein set forth and specified.

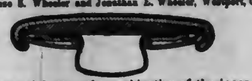
12. In a machine for sewing brooms, the combination, substantially as specified, of the following elements, viz: first, a sewing-machine operating intermittingly; second, a broom-clamp mounted to laterally reciprocate on a traversing feed-carriage; third, mechanism for traversing the feed-carriage and laterally reciprocating the broom-clamp at proper times and in unison with the movements of the needle to first wrap and then stitch the broom.

204,865. COFFEE-MILLS. Rodolphus L. Webb, New Britain, Conn., assignor to Landers, Frary & Clark, same place. Filed Nov. 30, 1877.



Claim.—In a box-mill, the combination of the grinding-shell, hopper, runner, runner-spindle, and stationary bearing above the hopper, with the adjustable sleeve and adjusting-collar above the said bearing, substantially as described.

204,866. BUTTONS. Eleone S. Wheeler and Jonathan E. Wheeler, Westport, Conn. Filed Mar. 20, 1878.

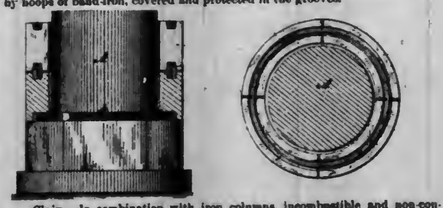


Claim.—1. In a covered button, the combination of the inner and outer disks, with a flange around the central aperture of the inner turned outward through the aperture of the outer to form the back of the button, the said inner disk also constructed with points or spurs extending through or into the fabric which forms the fastening, substantially as described.

2. The combination of an inner and outer disk to form the back of the button, the inner disk constructed with points or spurs extending through or into the fabric which forms the fastening, substantially as described.

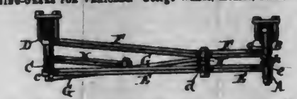
204,867. FIRE-PROOF COLUMNS. Peter R. Wight, Chicago, Ill., assignor of one-half his right to Harvey B. Merrill and Thos. Ferguson, Detroit, Mich. Filed May 9, 1878.

Brief.—Upright iron columns are surrounded and protected by incombustible and non-conducting blocks of brick, terra-cotta, or similar substance. The blocks are grooved on their top and bottom edges, and secured in place by hoops of band-iron, covered and protected in the grooves.



Claim.—In combination with iron columns, incombustible and non-conducting blocks, grooved on their top and bottom edges, and secured in place by hoops of band-iron, covered and protected in the grooves or joints of the same, substantially as shown and described.

204,868. RUNNING-GEARS FOR VEHICLES. George Wilkes, Monroe, Iowa. Filed Oct. 27, 1877.



Claim.—1. A reach for a vehicle, composed of two parts, E and F, one placed above the other, in which the forward end of the upper part F is connected with the king-bolt by means of a slot.

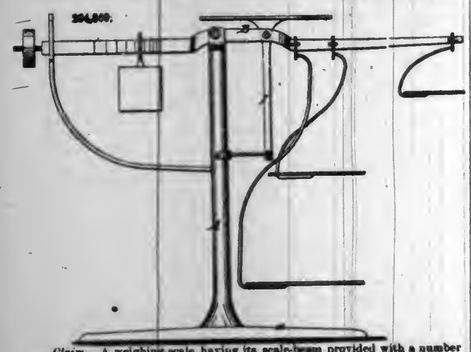
2. A reach for a vehicle, composed of two parts, E and F, one placed above the other, in which the forward end of the upper part F is enlarged and made convex on its upper side, so as to permit the forward axle to rock from side to side without twisting the reach.

3. The struts or braces G, H, J, and K, in combination with a double reach and rear axle of a vehicle, in which the rear ends of G and H are fastened below the axles and the rear extremities of J and K are fastened above the same, or vice versa, substantially as shown and described.

4. A spring, h, in combination with the forward extremities of a double reach of a vehicle, which said forward ends are kept apart by, and any tendency to cause them to approach one another is resisted by, said spring in addition to the natural rigidity of the material of which said reach is composed.

204,869. WEIGHING-SCALES. Hosea Willard, Vergennes, Vt., assignor to himself and P. W. Coe, same place. Filed May 20, 1878.

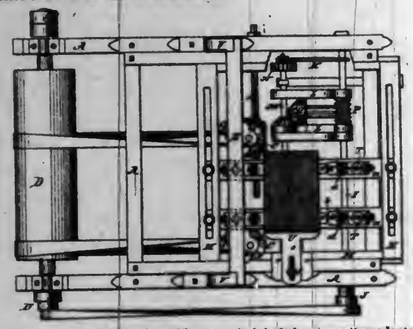
204,869.



Claim.—A weighing scale having its scale-beam provided with a number of dishes suspended from different points thereon to represent or correspond with different weights, and requiring different weights to depress the different dishes, substantially as and for the purpose herein described.

204,870. MACHINES FOR MAKING WOODEN BOXES. Billy M. Williamson, Chicago, Ill., assignor of one-half his right to Henry Stevens, same place. Filed Apr. 1, 1878.

Brief.—The boards for the sides and ends of wooden boxes are held in an expansible clamp having doubly-adjustable clamping-brackets, and mounted upon a horizontally-sliding and expansible feed-table, while being passed between two series of cutters mounted on vertically-adjustable shafts, one of which is laterably adjustable, by means of which the tongues and grooves are formed in the ends of the boards. The teeth of the cutters are dressed, without being removed from their shafts, by means of a piece of emery secured in a vertically-adjustable clamp mounted in a frame which is detachably connected to one of the bars of the feed-table.



Claim.—1. The combination, with two vertical shafts bearing cutters adapted to be set at varying distance apart, of an expansible feed-table arranged to pass between the cutters, and adjustable to give support to the box-stuff in proximity to the cutters, substantially as described.

2. The combination, with two vertical cutter-shafts adapted to be set at varying distance apart, of an expansible clamp arranged, in connection with an expansible feed-table, to pass between the cutters, to confine the box-stuff near its ends while being cut, substantially as specified.

3. In combination with the cutters and the feed-table of a box-machine, the brackets S', provided with the face-blocks c, rods b, springs d, and cam-lever T, substantially as and for the purposes specified.

4. The combination, in a feed mechanism of a box-machine, of a horizontally sliding table provided with a rack, and a pinion-shaft, M, swung from a driving-shaft, I, by arms K, severally arranged and together operating substantially as described.

5. The combination shown, Fig. 4, of the tooth-dresser L', provided with vertically-sliding emery-clamp, with the horizontally-sliding feed-table, substantially as and for the purposes set forth.

204,871. LUMP-TOBACCO MACHINES. Jos. F. Wooldridge, Johan F. Bystrom, and Lyman D. Howard, Richmond, Va. Filed Apr. 2, 1878.

Brief.—The lumps are discharged, after being pressed, laterally from the head, the hard-pressed passing through a receiver and undergoing several pressures, while those that are lightly pressed are discharged below the receiver.

Claim.—1. The combination, with a movable platen and a head to form an abutment, of the removable frame V, having the within-described or equivalent lifting devices to adjust it against the head, and a plunger arranged to operate at right angles to the line of pressure, as set forth.

2. The combination of the hollow head A, the platen D, and the removable frame V, the distance between the bottom of the hollow head and the top of the table B being greater than the thickness of the removable frame V, whereby the plug may be discharged between the removable frame and hollow head, substantially as described.

3. The combination, with the table having head A above and head A' below the same, connected together substantially as described, of the platen D, toggle-arms E E, secondary toggles G G, treadle G', connecting-rod g, and a lifting-spring for the treadle, substantially as described.

4. The combination, with the removable frames V, of the lifting device for the same, consisting of the rods S, rock-shaft O, cam Q, and pawl-arm R, located upon the toggle-joint, substantially as described.

5. The combination of the head A, the removable frame V, and the plunger U, constructed and arranged as described.

6. The combination, with the plunger U, of the links t, arms T, rock-shaft N, arm N², and cam M, located on shaft J, substantially as and for the purpose described.

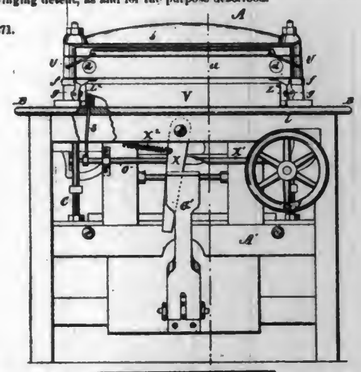
7. The combination, with the frames V, having legs or projections upon the ends thereof, of the vertically-moving frame L, having horizontal tappets L², adapted to engage with the legs on the frames, the lever L', and cam K, located on shaft, substantially as described.

8. The sliding catches f, mounted on levers g', pivoted to the upper head, combined with the vertically-moving tappets L², and adapted to sustain the plugs in the hollow head, substantially as described.

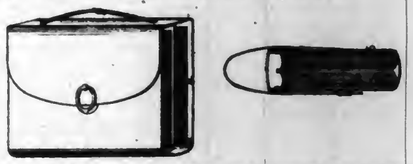
9. The swinging detent X, combined with the curved bar X', cam W, and treadle G', as described.

10. The adjustable block Y, having steps, combined with the treadle and the swinging detent, as and for the purpose described.

204,871.



204,872. BOOK-HOLDERS. Edwin Young, Edward B. Young, and Frederick E. Hafely, New York, N. Y., assignors to Fett, Young & Co., same place. Filed May 10, 1878.



Claim.—The combination, in a book-holder, of two cheeks united by a flexible back, two pockets, one on the inside of each cheek, and adapted to receive one side of the cover of a book, a flap or strap, and a clasp for closing the holder, and a handle for carrying the same, all constructed and adapted to operate substantially as shown and described.

204,873. BUTTON-HOLE SEWING-MACHINES. Bugene Moran, San Francisco, Cal., assignor to Moran Machine Manufacturing Company, same place. Filed July 23, 1877. Patented in England, Nov. 6, 1878.

Claim.—1. The combination, with the stitch-forming mechanism of a sewing-machine, of a take-up lever and a cam, V, adapted to hold the needle-thread at periods of varying lengths at regular intervals, substantially as described.

2. In a button-hole sewing-machine, the combination of clamp B, carriage C, the series of sliding standards, and the series of cams operating upon said standards through intermediate devices, substantially as and for the purpose set forth.

3. The combination, with a holder or clamp, B, of an oscillating frame, W, having sliding rods W² W³, levers D² F², connecting mechanism, substantially as described, and devices by means of which oscillatory motion is communicated to said frame, substantially as and for the purpose set forth.

4. The combination, with the clamp-carriage C, of mechanism for producing a lateral reciprocation of said clamp-carriage, the same consisting of the slide c C', flanged bar C², wedge E, lever D², oscillating frame W, sliding standard F, and mechanism, substantially as specified, for reciprocating said standard, substantially as described.

5. The combination, with the clamp-carriage C, bell-crank lever F', oscillating frame W, flanged plate c², slide E², connected with said bell-crank lever, sliding standard F', cam D', and mechanism, substantially as described, for imparting motion to said cam and oscillating said frame W, substantially as and for the purpose set forth.

6. The combination, with the clamp or holder B, of a flanged bar, C², slide C', carriage C, cam D', sliding standard F', and the sliding wedge E', for imparting to the clamp a side movement, substantially as shown.

7. The combination, with the cam-shaft E and eccentric G, of the forked connecting-rod G', provided with the projecting pin g, the loose collar H, the toe h, feed-dogs H' H', cam D', having the rim h', and a suitable device for producing the backward motion of the said loose collar H, substantially as described.

8. The combination, with the cam-shaft E and eccentric G, of the rod G', having a strap surrounding said eccentric, and provided with a pin, g, loose collar H, provided with toe h, feed-dogs H' H', pin h', slotted plate g', lever Y, and a suitable device for producing the backward movement of the loose collar H, substantially as described.

9. The combination, with cam-shaft E and eccentric G, of the forked connecting-rod G', suitably connected with said eccentric at one end, and provided with the toe g at its forked end, of the feeding devices operated by said rod, the arm Z, extending outward through case A, attached to a rock-shaft Z', from which projects an arm, z, having a wrist-pin projecting into the fork of said connecting-rod, the catch-arm z², projecting at right angles from the arm Z, and the notched disk d², as set forth.

10. The combination, with the clamp or holder B, of the gage I, having a series of tongues adapted to different lengths of button-holes, and a device for raising and lowering said gage, as desired, substantially as described.

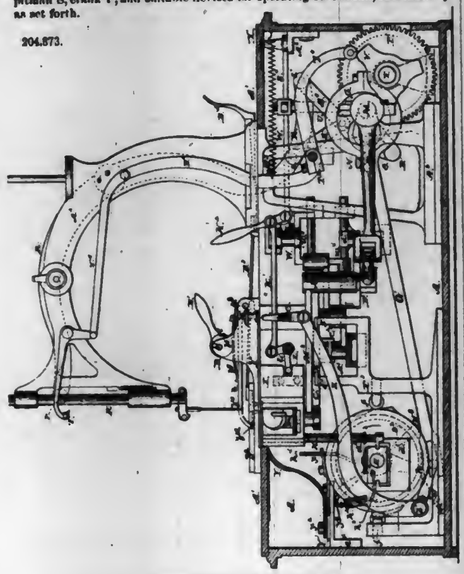
11. The combination, with the stitch-forming devices of a button-hole sewing-machine, of a reciprocating fabric-clamp, a longitudinally-adjustable shaft, having mounted thereon a series of cams and intermediate devices, through which motion is communicated therefrom to said clamp, whereby the machine can be adapted to stitch button-holes of different lengths, substantially as set forth.

12. The combination, with a clamp or holder, B, and with a sliding shaft, E, carrying a series of graduated cams, of a series of gages, I, mounted on a slide, and a lever, K, which connects with the cam-shaft and with the gage-slide, substantially as and for the purpose described.

13. The combination, with the cloth-clamp B, carriage C, and the series of graduated cams D², of the sliding standard F² and connecting devices, substantially as described, whereby the proper progressive reciprocating motion is imparted to said clamp, essentially as set forth.

14. The combination, with the needle-bar R', of the arm R, links S' S², pitman S, crank P, and suitable devices for operating said crank, substantially as set forth.

204,873.



REISSUES.

8,276. RIVET-SETTING MACHINES. Melien Bray, Newton, Mass., assignor to the Tubular Rivet Company, of Connecticut. Patent No. 161,659, dated Apr. 6, 1875. Filed May 27, 1878.

Claim.—1. In combination with setting-tools and an inclined chute for conveying the rivets thereto, a hopper provided with a slot in its bottom, of suitable width to receive the body of the rivet, and an opening through one end for the passage of the head of the rivet, with the hopper pivoted at one end to the upper end of the chute, and adapted to be vibrated around the pivots, substantially as described, for the purposes specified.

2. A hopper for receiving, separating, and arranging rivets, pivoted and slotted, as described, having that portion of its bottom farthest from its pivoted end and beyond the end of the slot made at an angle to the other portion, substantially as and for the purpose set forth.

3. The hopper G G', made in two parts, hinged together, and adapted for adjustment at different angles relative to each other, substantially as described.

4. In combination with a hopper, and inclined chute leading therefrom, and a plunger for moving the lower rivet in the chute to the setting-tools, the pivoted wedge-cam L, operating-bar D, and spring m, all arranged and adapted to operate substantially as described.

5. The combination of the chute F, guide-channel k, provided with the spring l, the plunger J, and receiver N, adapted to operate substantially as described, whether said receiver is mounted upon the setting-plunger or the anvil.

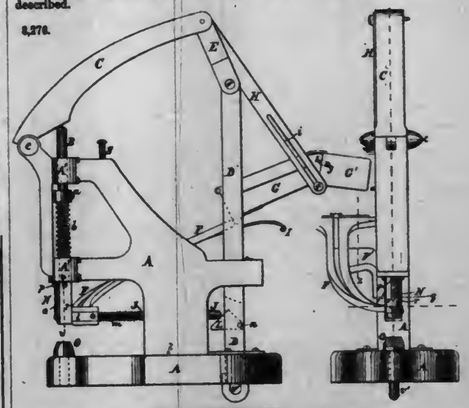
6. The receiver N, adapted to hold the rivet in position to be acted upon by the setting-tools and to move vertically or in line with the movement of the setting-plunger, for the purpose of guiding the rivet to the work, substantially as described.

7. In combination with a reciprocating plunger and a clinching-anvil, a receiver provided with spring or yielding sides, and adapted to receive the rivet and hold it in a perpendicular position between the plunger and anvil, and to be moved vertically or in line with the movement of the plunger during the first part of the downward movement of said plunger and guide the rivet to the work, and then remain in a state of rest till the plunger has completed its downward motion and forced the rivet from the receiver into the material, substantially as described.

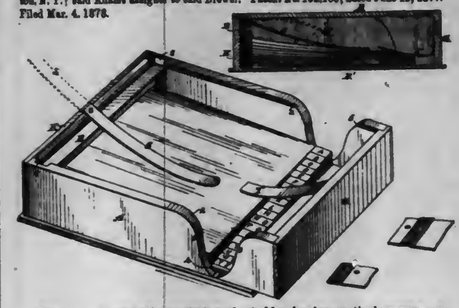
8. The receiver N, provided with the springs r and r', mounted upon the setting-plunger B, and adapted to operate substantially as described.

9. The combination of the receiver N, setting-plunger B, and special anvil O u, provided with the slit w, all arranged to operate as and for the purposes described.

8,276.



8,277. TEMPORARY BINDERS. Bloomfield Brower, New York, and John F. Adams, Irvington, N. Y.; said Adams assignor to said Brower. Patent No. 192,109, dated June 19, 1877. Filed Mar. 4, 1878.



Claim.—1. A letter-file consisting of a holder having vertical recesses, as 6, and a series of leaves held in a binding-back which is capable of introduction and removal vertically from said holder, substantially as described.

2. The detachable binding-back consisting of a narrow rectangular box with an open front, the parts composing which are permanently secured together for holding the index-leaves and providing for their vertical adjustment.

3. The combination, with a pack of sheets or index-leaves, held at one end in a holder or file, of a holder or file having sides which prevent them from being displaced, and a swinging spring, S, attached to said holder or file, so as to bear upon the free ends of said sheets to hold them, or swing away to release them, substantially as described.

4. The combination of the swinging spring S with the holder, provided with vertical recesses, as 6, and the removable binding-back D, substantially as described.

5. The combination of the swinging spring T with the cover B, the holder A, and the index-leaves, substantially as described.

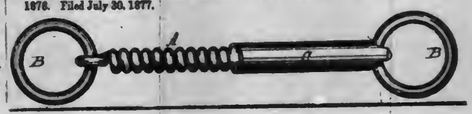
6. The binding-back D, consisting of plates m n u, permanently connected together, and rods t, secured thereto, substantially as described.

7. An associated pack of index-leaves having its outside leaf provided with the binding cord or band c, the free ends of which are temporarily attached thereto, and adapted for operation substantially as described.

8. The combination of cover B, having a spring, R, attached thereto, with index-leaves and holder A, substantially as described.

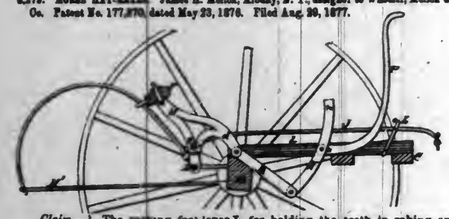
9. The combination of cover B, having a spring, R, attached thereto, with index-leaves, supporting-rods t, and holder A, substantially as described.

8,278. BRIDLE-BITS. John A. Fairbanks, Boston, Mass. Patent No. 172,502, dated Jan. 25, 1876. Filed July 30, 1877.



Claim.—In a driving or check bit, the combination of the elastic helix A, having loops at its ends, formed as shown, and the protecting covering C, with the rein-rings B B, substantially as described, and for the purpose set forth.

8,379. MOWER HAY-RAKER. James H. Molick, Albany, N. Y., assignor to Wheeler, Molick & Co. Patent No. 177,870, dated May 23, 1876. Filed Aug. 30, 1877.

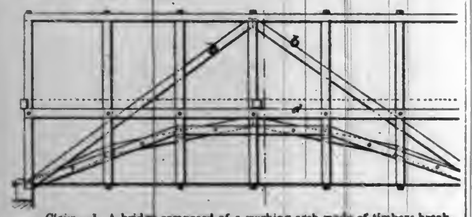


Claim.—1. The rocking foot-lever L, for holding the teeth in raking or elevated position, in combination with the draft-bar J, operating with the adjuncts employed to raise the fingers, substantially as set forth.

2. The rocking foot-lever L, in combination with draft-bar J, for holding the teeth in raking or elevated position, substantially as described.

8,380. TRUSS-BRIDGES. Joseph M. McDonald, Tomlinson, Ark. Patent No. 173,863, dated Feb. 22, 1876. Filed Mar. 1, 1878.

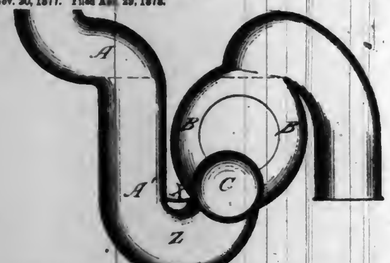
Brief.—Combination of arch and truss systems, such that each acts independently of the other, and may be used separately therefrom. The arch is composed of double longitudinal series of timbers, the meeting ends in one series being arranged alongside and a little above the middle points of the timbers of the other series. Transverse timbers are interlocked at those points, forming a firm arch.



Claim.—1. A bridge composed of a working arch made of timbers breaking joint and ranging in intersecting lines, and interlocking transverse timbers and a system of trusses, said arch and system of trusses being connected and adapted to operate separately from each other, substantially as shown and described.

2. The combination, with a compound arch, constructed substantially as specified, of the supporting shoes of the piers or abutments, as set forth.

8,381. WASTE-PIPE TRAPS. James L. Turner, New York, N. Y. Patent No. 197,801, dated Nov. 20, 1877. Filed Apr. 29, 1878.



Claim.—The combination, in waste-pipe traps, substantially as described, of bend in chamber A, the furrowed curve Z, the elongated, enlarged, and ovoid or bulbous shaped chamber B, and the sinking ball C, as herein applied, for the purposes specified.

8,382. STAMP-CANCELERS. Graham B. Dennis, Dayton, Ohio, assignee of Maria A. Eaton, administratrix of Daniel E. Eaton, deceased. Patent No. 121,705, dated Dec. 12, 1871. Filed May 27, 1878.

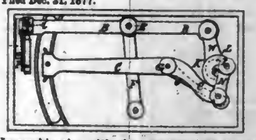


Claim.—1. In a canceling-stamp, the combination, with a canceling-die, of electric conductors for heating the die, substantially as set forth.

2. In a stamp-canceler, the combination of a body or handle, electric conductors, and a non-conducting carrier to which is attached a platinum or other die, as set forth.

3. In a stamp-canceler, the combination of a body or handle, A, electric conductors *x*, and a non-conducting spring-carrier, B, provided with a platinum or other die, whereby, upon striking the die upon a stamp, an electric current is generated which brands or burns the stamp, as set forth.

8,383. SEWING-MACHINES. Charles F. Harlow, Boston, assignor, by mesne assignments, to W. L. Grout, East Stoughton, Mass. Patent No. 107,041, dated Sept. 6, 1870; antedated Aug. 27, 1870. Filed Dec. 21, 1877.

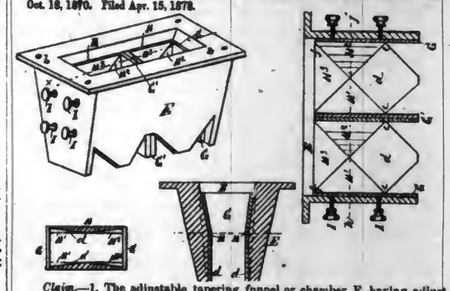


Claim.—1. In combination with the roughened feed-surface of a sewing-machine and a retracting-spring, the wedge-ended lever B, having a movable fulcrum, and actuated by means of an eccentric mounted upon the driving-shaft, as described, so as to rotate within the cylindrical perforation of a connecting-bar jointed to the feed-lever and bed, substantially as set forth.

2. The combination and arrangement of the vertical driving-shaft D, crank-pin I, link H, and pivoted carrier C, adapted to drive the shuttle in a curved raceway, substantially as set forth.

3. The driving-shaft D, carrying the eccentric L and crank-pin I, in combination with the feed mechanism and the link and shuttle-carrier, respectively, actuated thereby, substantially as set forth.

8,384. BRICK-MACHINES. Zelora Phillips, Little Rock, Ark. Patent No. 106,511, dated Oct. 18, 1870. Filed Apr. 15, 1878.



Claim.—1. The adjustable tapering funnel or chamber E, having adjustable straight sides H H, secured at any required taper by means of the set-screws I I, by means of which the size of the mouth-funnel is regulated, in the manner described.

2. An adjustable contracted funnel, E, with straight tapering sides, in combination with any suitable power mechanism operated in a grinder or press-box, by which material from behind the contracted funnel is forced into it and the adjustable exit, and so resists the egress of the material that the material between the exit and said power is compressed, in the manner and for the purpose described.

3. A contracted funnel, E, with two adjustable sides, H H, in the manner and for the purpose substantially as shown and described.

4. The adjustable sides H H of a contracted funnel, with tapering sides H' H' and tapering end H' and flat part *d*, in combination with the binding-plates C G', screws I I, and funnel E, in the manner and for the purpose substantially as shown and described.

5. In combination with the adjustable straight tapering sides H H of a compress-chamber or funnel, E, the central partition G' and end clamp-plates G G, and binding-screws I I, in the manner and for the purpose substantially as shown and described.

8,385. SHUTTLES FOR SEWING-MACHINES. George W. Hunter, Washington, D. C., assignor, by mesne assignments, of part interest to Henry M. Baker, Wm. F. Stone, and James E. Vermilya, same place. Patent No. 145,948, dated Dec. 9, 1873. Filed May 28, 1878.



Claim.—1. A cylindrically-bored shuttle provided with an open-ended slot for the passage of the bobbin-thread, substantially as set forth.

2. A cylindrically-bored shuttle provided with a tension and an open-ended slot for the passage of the bobbin-thread to the tension, substantially as set forth.

3. A cylindrically-bored shuttle recessed on its face and provided with a spring, which is located therein, and acts in conjunction with the surface of said recession to form a tension for the bobbin-thread, substantially as set forth.

4. A cylindrically-bored shuttle provided with an open-ended slot formed with a curved edge to facilitate the passage or delivery of the bobbin-thread, substantially as set forth.

5. A cylindrically-bored shuttle having its face provided with a curved or straight slot for the passage of the thread, and with a tension-spring in a depression in such face, as and for the purpose described.

6. The cylindrically-bored shuttle provided in its face with an open-ended slot for the passage of the thread, as shown and described.

7. The shuttle having its face slotted, as described, when combined with a bobbin without journals or journal-receiving depressions, and with its heads resting against the shell of the shuttle.

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DECISIONS OF THE COURTS.

U. S. Circuit Court—District of New Jersey.

WM. B. GOULD AND CLARENCE P. GOULD *vs.* GEORGE M. BALLARD AND GEORGE MINCHIN.

[In Equity.]

Minor features of invention relinquished upon reissue—because: 1, unimportant and valueless, and, 2, lacking in patentable novelty—will not invalidate the reissue grant.

Under the circumstances the reissue contains nothing more than the original patent, but less. It is restricted to what the patentee regards as actually his invention, and for which protection is desired.

It being old to make the sides, ends, top, and bottom, as well as corners, of a trunk of corrugated-metal plates, no invention is necessary to apply such corrugated metal to the corners alone of a wooden trunk.

The corner metal guard of the original patent was provided with a strengthening-wire. This wire being omitted upon reissue, the guard showed no improvement over the existing state of the art, and the patent accordingly declared void.

NIXON, *District Judge:*

This suit is brought against the defendants for infringing reissued Letters Patent No. 7,149, dated May 30, 1876, for "Improvement in Corner Clamps or Protectors for Trunks." The original patent was granted November 6, 1866, to one Edward A. G. Roulstone, the assignor of the complainants, for "Improvement in Trunk Molding."

The defenses set up in the answer are:

1. That the reissued letters patent are void, because they include more than was specified in the original, and are inventions and things substantially different.

2. That the invention claimed in the reissue was described in several letters patent anterior to complainants' patent, and was known and in public use by certain persons therein specified, and hence is void for want of novelty.

3. That they have not infringed, but are making and selling the corner-clamps for trunks, which the complainants allege are an infringement, under and according to letters patent granted to Edward A. G. Roulstone, October 30, 1866, and reissued May 23, 1876, and assigned to the defendants March 23, 1876.

1. Is the reissue void for including matter not disclosed in the original patent?

To determine this question it will be necessary to compare the original with the reissue. *Prima facie*, the latter is for the same invention and the burden of showing the contrary falls upon the defendants.

The only claim in the original reads as follows:

> I claim as a new article of manufacture, the corner molding or guard, *a*, for trunks, made of corrugated metal, formed into shape for application, and strengthened by a wire, *b*, substantially as described.

The defendants insist that, in view of the state of the art when the patent was issued, such a claim is susceptible of only one construction, to wit, a corner molding or guard strengthened by a wire, and that there is nothing else therein which was not fully disclosed and patented by the same inventor, Roulstone, in Letters Patent No. 27,476, and granted to him as early as March 13, 1860.

But it is not always safe or proper in construing a patent to confine attention to the claims. These are sometimes too narrow to embrace the whole invention disclosed in the description and specifications.

In the present case the complainants say that the original patent has two features: one relating to the manner of protecting trunk-corners, and the other to the construction of a trunk-molding, and that this view is fully sustained by the specifications.

Turning to the specifications, we find it declared that—

> The invention relates to the manner of protecting or re-enforcing the corners of leather and wooden traveling trunks by metal caps or moldings, or the construction of such moldings as articles of manufacture, and consists in a metal molding made into form to cover or project over the three surfaces, meeting at each corner or angle of the trunk, when this molding, so struck up or formed into shape, is made of corrugated metal re-enforced in the horizontal angle by a metal wire.

Having thus stated of what his invention consisted,

he proceeds to state the good results which would follow its introduction:

Such moldings or corner-pieces applied to the four upper corners of a trunk enable the corners to stand, without damage, the very rough usage to which they are subjected by express and baggage men. Any blow received upon the molding is imparted not directly to the trunk, but to the projecting corrugation or corrugations of the metal upon which the blow may happen to fall, thereby preserving the body of the trunk from injury. * * *

The article thus made into shape, ready for application to trunk-corners without any subsequent shaping or bending, and so as to protect the three surfaces meeting at either angle of the trunk, and presenting, by means of a corrugated surface, obstacles at all points to the direct impact of any body against the surface of the trunk, is of great utility, presenting to manufacturers of traveling trunks a cheap and reliable means of improving and strengthening their productions.

The reissue is dated May 30, 1876; whether it is for the same invention depends upon the solution of the question whether leaving out certain features described in the original has so changed its character as to render the reissue substantially different.

The claims of the latter are:

1. The corner-clamp A, made with the outwardly-projecting bead *d* at the corner, said bead being convex at the outer and concave at the inner side, substantially as herein shown and described.
2. The corner-clamp corrugated substantially as herein described, as a new article of manufacture.

There is nothing more here than the original contained, but less. In the reissue the inventor has made no mention of the strengthening-wire nor of the three-winged clamp, which were so fully described in the original. They were omitted by design. The three-winged clamp, because it was found to be anticipated by the patent to H. T. Lee, No. 42,670, and granted May 10, 1864; and the wire, because it was ascertained to be of no value in protecting the trunk. Not much was left except the guard or clamp, made hollow around the trunk-corners for the purpose of protection, so that, in the words of the original patent—

any blow received upon the molding would be imparted not directly to the trunk but to the corrugation or corrugations of the metal upon which the blow might happen to fall, thereby preserv- the body of the trunk from injury.

Are the strengthening-wire and the three-cornered clamp such important particulars of the original patent that their omission so changes the scope of the invention as to render the reissue void?

In the recent case of *Russell* vs. *Dodge*, (11 OFFICIAL GAZETTE, 151,) the Supreme Court exhibited a disposition to criticise the facility with which reissues were obtained at the Patent Office, and held that, where the original patent was for a process of treating bark-tanned lamb or sheep skin by means of a compound in which heated fat liquor was an essential ingredient, and in a reissue a change was made in the original specification by eliminating the necessity of using the fat liquor in a heated condition, and making in the new specification its use in that condition a mere matter of convenience, and by inserting an independent claim for the use of fat liquor in the treatment of leather generally, the character and scope of the invention as originally claimed were so enlarged as to constitute a different invention.

I was inclined to the opinion at the first blush that the case under consideration came within the principle of *Russell* vs. *Dodge*, but after a more careful examination I have come to a different conclusion. The difficulty there was that the changes introduced into the reissue extended and enlarged the operation of the original patent, "bringing under it," as was stated in the opinion of the court, "manufacturers not originally contemplated by the patentee."

But here the omission tends to restrict rather than to enlarge; and while enlargement by the use of new instrumentalities is forbidden, restriction by the disuse of some of the old is allowable.

This question was early before the late Mr. Justice Story, (*Carver* vs. *The Braintree Manufacturing Company*, 2 Story, 432,) who held that an inventor was always at liberty in a reissue to omit a part of his original invention, if he deemed it expedient, and to retain that part only which he deemed it fit to retain. To the same effect was the opinion of the late Judge Woodruff of the Second Circuit in the case of *Gallahue* vs. *Butterfield*, (6 Fish, 214.) The patentee in his original patent had a weight co-operating with a spring to give greater efficiency to the spring, and in the reissue he claimed the action of the spring alone. In commenting on this change, the learned judge said:

Nor do I perceive any sound objection to allowing the inventor in his reissue to claim the action of the spring alone. It is shown in the record of his patent, and surely a patentee whose devices are new is at liberty to claim each by way of reissue, although he may have represented and claimed them originally as acting conjointly.

In determining the case of *The Dorsey Harvester Rake Company* vs. *Marsh*, (6 Fish., 396,) Judge McKennan of this Circuit held that any feature of the invention, which was actually a part of it, that was only suggested or indicated in the specifications or drawings, might be distinctly described in an amended specification and protected by a reissued patent, and, hence, that the claims of a patent might be restricted or enlarged to cover the real invention.

Nor is it any objection to a renewed patent [he adds] that a part of the original invention is omitted. This an inventor may do, because the public may use it, and there is nothing in the policy or terms of the patent act which forbids it.

2. Holding the reissue to be good, notwithstanding these omissions, the inquiry recurs, What is the invention described and sought to be covered by it, and is the same void for want of novelty?

It is a corner-clamp, made with an outwardly-projecting bead at the corner, the bead being convex at the onter and concave at the inner side. The inventor called it a corner molding or guard in his original description. In the Lee patent it is denominated a metal corner and cap or protecting-cap, but is solid, and not hollow. In the patent issued to Roulstone, March 13, 1860, and numbered 27,476, the whole trunk, embracing sides, ends, top, and bottom, as well as corners, is made of corrugated-metal plates or outwardly-projecting beads with an exterior convexity and an interior concavity.

The object of the invention is the protection of the corners of a trunk, and it is done by the use of corrugated metal. When it is once demonstrated that the entire trunk may be improved and strengthened by covering it with corrugations, is there anything patentable or novel, or does it require invention, to apply to the covers of a wooden trunk substantially the same protection?

The complainant's reissued patent does this and nothing more. The invention lost its distinguishing feature by the omission of the strengthening-wire. Every valuable thing left in it is so plainly suggested by the previous patent to Roulstone for trunks wholly covered with corrugated metallic plates that a mechanic would naturally make the application of such corrugated metal to the corners of wooden trunks without the exercise of more than ordinary skill. This view of the case renders it unnecessary to inquire whether the manufactures of the defendants are an infringement of the patent of the complainants.

The bill must be dismissed with costs.

Narrative of the Polaris Expedition.

Authority having been given the Public Printer to print another edition of the above work, subscriptions will now be received by Mr. A. F. Childs, Chief Clerk, until August 1, 1878, at the following rates: If delivered at the Government Printing Office, $1.60. If sent by mail, $1.75.

CAVEATS.—Inventors filing caveats in the Office should be careful to describe their invention or improvement with accuracy, and illustrate such inventions as are capable of illustration with care and thoroughness.

Caveats are placed in the hands of the Examiners, who should not be expected to understand what the inventor means unless the latter has sufficiently matured his invention to clearly describe and illustrate it.

Caveats are sometimes filed in the Patent Office stating that the caveator is engaged in a series of experiments intended to accomplish certain results, and giving nothing more than a vague hint of the means by which the result is to be attained. As the courts have frequently decided that results are not patentable, the practice of the Patent Office is to the effect that a caveat cannot cover more ground than a patent. So, where a caveat describes more than one invention, the Examiner frequently overlooks a portion of the caveat, knowing that under the rules caveators are confined to a single invention.

Complaints are often made that caveats have been overlooked, and patents issued to subsequent applicants, when the fault lies in the hasty preparation of the caveat papers. The rules are explicit, that the caveat must describe the invention as fully as the inventor is able to do; that the drawings shall be of the same size as the drawings to accompany an application for a patent, (8 by 13 inches, on a sheet 10 by 15 inches, with an inch margin all round,) and on tracing-muslin, or light bristol-board or drawing-paper, which can be folded without breaking. A careful compliance with the rules will greatly facilitate the work of the Office, and will go a long way toward insuring the accuracy which is so necessary in securing their just rights to inventors.

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TRADE-MARKS.

[Each certificate bearing date June 18, 1878.]

6,226.—SOAP.—*Benjamin T. Babbitt*, New York, N. Y. Application filed June 8, 1878.
"The arbitrarily-selected number '88.'"

6,227.—BAKING-POWDER.—*Bennett & Sloan*, New Haven, Conn. Application filed June 3, 1878.
"The word-symbol 'QUEEN.'"

6,228.—GIN.—*Henry Bohlen & Co.*, Philadelphia, Pa. Application filed June 6, 1878.
"The monogram 'B B I' and the anchor."

6,229.—CARBONATE OF SODA.—*Charles R. Burrage*, San Francisco, Cal. Application filed June 3, 1878.
"The word-symbol 'SODINE.'"

6,230.—CREAM OF TARTAR.—*Charles R. Burrage*, San Francisco, Cal. Application filed June 3, 1878.
"The word-symbol 'TARTINE.'"

6,231.—MUSTARD.—*John H. Brand & Co.*, Louisville, Ky. Application filed March 23, 1878.
"The arbitrary word 'BURROWES'"

6,232.—STOVES AND RANGES.—*W. C. Davis & Co.*, Cincinnati, Ohio. Application filed February 9, 1878.
"The word-symbol 'FAVORITE.'"

6,233.—ROOFING-SLATE.—*Hugh G. Hughes*, Poultney, Vt. Application filed June 6, 1878.
"The word-symbol 'EUREKA.'"

6,234.—AXES.—*Kloman, Park & Co.*, Pittsburg, Pa. Application filed April 27, 1878.
"The arbitrarily-selected title or word-symbol 'IRON CITY,' used in connection with the words 'JOHN & CO.'"

6,235.—COTTON PIECE GOODS.—*Langdon Manufacturing Company*, Manchester, N. H. Application filed June 3, 1878.
"The pictorial representation or symbol of a turtle."

6,236.—BOOTS AND SHOES.—*Charles W. Mundell*, Brooklyn, N. Y. Application filed May 25, 1878.
"The design of a blue flag, as shown."

6,237.—BOOTS AND SHOES.—*William F. Mayo*, Chelsea, Mass. Application filed June 8, 1878.
"The words 'HARD PAN.'"

6,238.—BISCUITS, CRACKERS, CAKES, AND SNAPS.—*R. Ovens & Son*, Buffalo, N. Y. Application filed May 23, 1878.
"The pictorial representation of the head of an American bison or buffalo.

6,239.—PAPER-CUTTING MACHINES.—*George H. Sanborn*, Brooklyn, N. Y. Application filed June 5, 1878.
"The word 'GEM.'"

6,240.—SMOKING-TOBACCO.—*Allen & Dunning*, Paterson, N. J. Application filed April 25, 1878.
"The words 'THE CAPTAIN,' and the cut or likeness of Mr. Stephen Allen."

6,241.—UMBRELLAS AND PARASOLS.—*Amasa Lyon*, New York, N. Y. Application filed June 3, 1878.
"The word 'COACHING.'"

6,242.—COTTON GOODS.—*F. Sweetser & Son*, New York, N. Y. Application filed June 1, 1878.
"The fancy border, as shown in the fac-simile, when used in connection with the words 'HILLSDALE M'F'G COMPANY,' printed within it."

6,243.—PILE-OINTMENT.—*Upton & Co.*, Salem, Mass. Application filed June 10, 1878.
"The word 'INDIAN.'"

6,244.—BITTERS.—*Charles A. Aschermann*, Davenport, Iowa. Application filed May 8, 1878.
"The arbitrarily-selected word 'EUROPEAN.'"

6,245.—FLAVORING-EXTRACTS.—*John W. Colton*, Westfield, Mass. Application filed May 15, 1878.
"The arbitrary designation 'COLTON.'"

6,246.—MEDICINAL PREPARATION FOR THE CURE OF HEADACHE.—*Charles De Cordova*, Now York, N. Y. Application filed May 22, 1878.

"The word-symbol 'SEEDESEA.'"

6,247.—LAGER-BEER.—*Feigenspan & Co.*, Newark, N. J. Application filed May 2, 1878.

"The representation of a goblet filled with foaming beer and held at the stem by a hand."

6,248.—SMOKING AND CHEWING TOBACCO AND SNUFF.—*James M. Gardiner*, New York, N. Y. Application filed May 6, 1878.

"The word 'IMPERIAL' and a shield with letter 'G' in the center, such shield surmounted by a crown."

6,249.—COTTON GOODS.—*Lockwood Company*, Waterville, Me., and Providence, R. I. Application filed May 23, 1878.

"The representation of two gladiators, with swords and shields, at combat."

6,250.—WINE.—*P. S. Lucis & Co.*, St. Louis, Mo. Application filed June 5, 1878.

"A shield surmounted by a crown, and is divided into five parts by lines drawn obliquely from right to left. In the top or first space a crescent and a five-pointed star are delineated; in the second space is the word 'Bonne;' in the third space three fleur-de-lis are represented; in the fourth space is the word 'Bouche;' and in the fifth and last space is a comet, all as shown."

6,251.—HAY-RAKES.—*A. W. Miner & Co.*, Belmont, N. Y. Application filed May 13, 1878.

"The arbitrarily-selected word-symbol 'LION.'"

6,252.—CHEWING-TOBACCO.—*R. A. Patterson & Co.*, Richmond, Va. Application filed May 13, 1878.

"The shield held above clouds in the beak of an eagle, as shown."

6,253.—SNUFF.—*Catherine De Rojer*, Rochester, N. Y. Application filed April 26, 1878.

"The words 'DE ROJER'S' and the monogram 'C. DE R.,' with the crown upon the top or over the monogram."

6,254.—HAMMOCKS.—*Thomas Tresilian*, Gloucester, Mass. Application filed May 10, 1878.

"The fanciful title 'UNION.'"

6,255.—PLUG-TOBACCO.—*Merchants' Tobacco Company*, Boston, Mass. Application filed May 31, 1878.

"Man or knight in armor, on horseback, and carying a flag, castle in the background, with the title or word-symbol 'TEMPLAR.'"

6,256.—CIGARS AND CIGARETTES.—*Louis Ash & Brother*, New York, N. Y. Application filed June 7, 1878.

"The arbitrarily-selected words 'FIVE TWENTIES.'"

6,257.—MEDICINAL COMPOUND.—*Charles R. Burrage*, San Francisco, Cal. Application filed June 3, 1878.

"The word-symbol 'FERRI VITRATA.'"

6,258.—COOKING-STOVES.—*Sherman S. Jewett & Co.*, Buffalo, N. Y. Application filed May 25, 1878.

"The arbitrarily-selected words 'GLAD TIDINGS.'"

6,259.—COOKING-STOVES.—*Sherman S. Jewett & Co.*, Buffalo, N. Y. Application filed May 27, 1878.

"The arbitrarily-selected word 'SERENO.'"

6,260.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*McCoy & Co.*, New York, N. Y. Application filed June 7, 1878.

"The arbitrarily-selected words 'WESTERN QUEEN.'"

6,261.—METALLIC CANS.—*George H. Perkins*, Philadelphia, Pa. Application filed June 7, 1878.

"The arbitrarily-selected word 'KNOCKDOWN.'"

6,262.—HOGS' LARD.—*William H. Popham*, New York, N. Y. (Re-registration.) Application filed August 31, 1872.

"The figure of a pig or hog."

6,263.—CLARET WINES.—*J. B. Clerc*, Bordeaux, France. Application filed June 4, 1878.

"The words 'CHATEAU PAPE-CLÉMENT,' which are arbitrary words."

6,264.—HORSE-COLLARS.—*Dayton Leather and Collar Company*, Dayton, Ohio. Application filed May 20, 1878.

"A monogram formed from the large capital letters 'D' and 'M' and two small capital 'c's,' and one small capital 'o.'"

6,265.—COMBS.—*Howard, Sanger & Co.*, New York, N. Y. Application filed June 3, 1878.

"The arbitrary word-symbol 'KEARSARGE.'"

6,266.—LOCKS AND BUILDERS' HARDWARE.—*Mallory, Wheeler & Co.*, New Haven, Conn. Application filed May 25, 1878.

"The representation of an eagle carrying one or more locks, substantially as shown."

6,267.—COAL-OIL.—*John E. Miles*, San Francisco, Cal. Application filed June 7, 1878.

"The word-symbol 'ALCYONE.'"

6,268.—CONFECTIONERY.—*A. Slauson & Co.*, New York, N. Y. Application filed May 25, 1878.

"A central stripe or band with two segmental elliptical bands arranged upon opposite sides thereof, as shown."

6,269.—CONFECTIONERY.—*A. Slauson & Co.*, New York, N. Y. Application filed May 31, 1878.

"The word-symbol 'ROYAL.'"

6,270.—CONFECTIONERY.—*A. Slauson & Co.*, New York, N. Y. Application filed May 31, 1878.

"The word-symbol 'PEARL.'"

6,271.—CONDITION-POWDERS.—*Matthew S. Teller*, Sandy Hill, N. Y. Application filed May 25, 1878.

"The figure of the horse, as hereinbefore described, with the name or word 'TELLER'S' printed over and accompanying the same."

LABELS.

[Each certificate bearing date June 18, 1878.]

1,574.—Title: "¼ REAM ARTIST'S MUSIC PAPER, No. —."—*Bouvan & Pease*, New York, N. Y. Application filed May 25, 1878.

1,575.—Title: "CAMELLIA LOTION FOR BEAUTIFYING AND HEALING THE SKIN."—*Margaret De Voy*, New York, N. Y. Application filed June 1, 1878.

1,576.—Title: "HETHERINGTON'S TROPIC FRUIT LAXATIVE."—*John E. Hetherington*, Cincinnati, Ohio. Application filed June 7, 1878.

1,577.—Title: "TROPIC-FRUIT LAXATIVE."—*John E. Hetherington*, Cincinnati, Ohio. Application filed June 7, 1878.

1,578.—Title: "THE ERADICATOR."—*James McCalvey*, Frankford, Philadelphia, Pa. Application filed June 7, 1878.

1,579.—Title: "SMITH'S AGRICULTURAL LINIMENT."—*Thomas B. Smith*, Covington, Ky. Application filed June 10, 1878.

1,580.—Title: "THE FASHIONABLE INK, PERFUMED."—*Homer Worden*, New York, N. Y. Application filed May 20, 1878.

1,581.—Title: "WILLIAMS' VEGETABLE PAIN EXTERMINATOR."—*M. F. Williams & Co.*, Gettysburg, Pa. Application filed June 8, 1878.

DESIGNS.

[Each design bearing date June 18, 1878.]

10,725 and 10,726.—TOBACCO-BAGS.—*William J. Cussen*, Richmond, Va. Applications filed March 19, and February 11, 1878. Term of patents 14 years.

10,727.—GLASSWARE.—*John E. Miller*, Pittsburg, Pa. Application filed June 8, 1878. Term of patent 7 years.

10,728.—STOVES.—*Albert J. Redway*, Avondale, Ohio. Application filed March 26, 1878. Term of patent 3½ years.

10,729.—GLASS AND LAVA WARE.—*Frederick S. Shirley*, New Bedford, Mass. Application filed June 10, 1878. Term of patent 7 years.

10,730.—CIGAR-BOX.—*Mathew Stockhausen* and *Walter Becklind*, New York, N. Y. Application filed May 20, 1878. Term of patent 7 years.

DISCLAIMER.

4,588, (Reissue.)—*Priscilla Webster Page*, Washington, D. C., administratrix of the estate of *Charles Grafton Page*, deceased, assignor of one-half her right to *The Western Union Telegraph Company*, New York; patented April 14, 1868, No. 76,654; reissued October 10, 1871; disclaimer filed June 18, 1878.

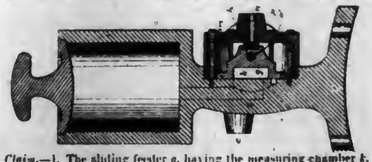
Disclaims that part of the claim in said specification which is in the following words, to wit:

"2. I claim the combination of an automatic circuit-breaker with either a primary coil alone or a primary and secondary coil combined, substantially as set forth."

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

JUNE 18, 1878.

204,874 LUBRICATORS. Hiram Allen, Columbus, Ohio Filed May. 14, 1877.



Claim.—1. The sliding feeder *g*, having the measuring chamber *h*, in combination with the plate *a*, provided with the ports *b* and *c* and channel *f*, substantially as described, and for the purpose set forth.

2. The combination of the steam-chest *m*, having steam pipe *n*, plate *a*, with ports *b* and *c*, and channel *f*, oil-reservoir *d*, and sliding feeder *g*, substantially as described, and for the purpose set forth.

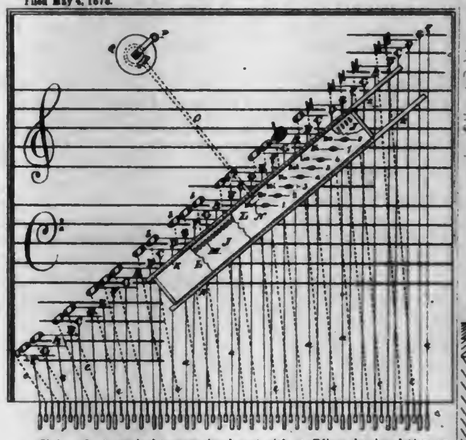
3. The combination of the sliding feeder *g*, steam-chest *m*, spring *k*, and operating-screw *l* with the plate *a*, having the ports *b* and *c*, and channel *f*, substantially as described, and for the purpose set forth.

204,875. SUSPENDERS-HOOKS. Frank Anderson, Peekskill, N. Y. Filed Dec. 6, 1877.



Claim.—A device for suspending tags, cards, &c., made of a continuous piece of wire, having the clamp A formed by a coil of two turns of the same diameter, as shown, with the penetrating-spur C formed on one end thereof, and the loop, hook, or point B at the other end, the intermediate portion forming the shank, substantially in the manner and for the purpose specified.

204,876. MUSICAL TRANSPOSING-BOARDS. Lang Anderson, Corneley, Ontario, Canada. Filed May 4, 1878.



Claim.—1. A musical transposing-board with staff-lines having letters or characters of notation attached to the end of wires adapted to be operated by a key-board, as and for the purpose set forth.

2. In combination with a musical transposing-board having characters of notation operated by wires, a plate, J, and scale L, arranged to slide on said plate, as set forth, for transposing the musical composition.

3. The combination, with a musical transposing-board having characters of notation operated by wires, of a slide, J, for holding the transposing-scale L, and a bell or gong, Q, timed to operate as and for the purpose set forth.

204,877. WIRE-BARBING MACHINES. Frank Billings, Cleveland, Ohio. Filed Apr. 12, 1878.

Brief.—The barb-wires are fed from opposite directions, one above and the other below the main wire. Their ends enter recesses in the reciprocating holding-block on horizontally-opposite sides of the main wire, and into corresponding recesses in the twisting and cutting head. The rotation of the twisting-head simultaneously severs both barbs, and then coils them about the main wire.

Claim.—1. In a machine for making barb-fence wire, the rotating cutting and twisting head, for cutting off and twisting the barbs onto the main wire at one and the same operation, substantially as and for the purpose specified.

2. The hollow shaft B, having the head H and pinion B", the segment gear C, and the pitman D, operated by the cam D', by means of which the said shaft is given a reciprocatory rotary movement, substantially in the manner and for the purpose stated.

3. The head H, having conical slotted face, and provided with the adjustable cutters *h h*, as and for the purpose set forth.

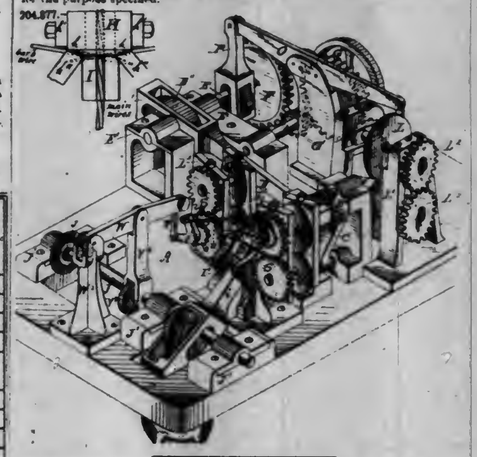
4. In combination with the head H, provided with the cutters *h h*, the cutters *h*" *h*", for cutting off the barbs, as and for the purpose specified.

5. The block I, pivoted in the posts I' I', and having the reciprocatory movements imparted to it by means of the pitman J and the cam J', as described.

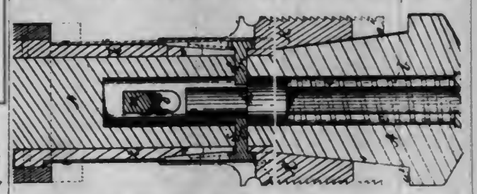
6. The feed mechanism for passing the main wires through the hollow shaft B, consisting of the grooved wheels L L, gears L', set in the posts J' J', loose ratchet and pinion *m*, rack and slides *n n'*, operated by the pitman *o*, rocking lever O, pitman P, and cam P', substantially as and for the purpose specified.

7. The feed mechanism for feeding the barb-wires, consisting of the feed-wheels Q Q, gears S S, set in the frames R R, the ratchets and dogs *s s*, horse-cranks *t t*, and connecting rod *u*, operated by the pitman V, rocking lever W, pivoted in the post W', and the pitman V' and cam V', substantially as and for the purpose specified.

204,877.



204,878. CASING-SPEARS FOR OIL-WELLS. John Bole, Knox P. O., Pa. Filed Apr. 29, 1878.



Claim.—1. The combination, with the stem and wickers of a casing-spear, of a spring or springs connected therewith and adapted to act constantly on the wickers, substantially as and for the purpose specified.

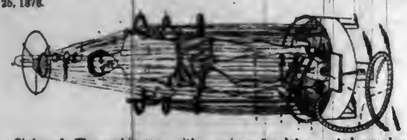
2. The combination, with the stem and wickers of a casing-spear, of a spring or springs adapted to act constantly on the wickers, and devices, substantially as described, for varying the power of the spring, substantially as and for the purpose specified.

3. The combination of the hollow stem with the spring rod, the wickers, and the wicker-pins, operated by inclines on the wickers, substantially as and for the purpose specified.

4. The combination of the hollow stem, the spring-rod, and the wickers, part of said wickers connected by a cross-pin and part provided with retractable pins or catches, substantially as and for the purpose specified.

5. The combination, with the stem of a casing-spear, of the loose wicker-collar C and the series of detachable wickers, connected to the collar C by screws, the whole constructed substantially as and for the purpose specified.

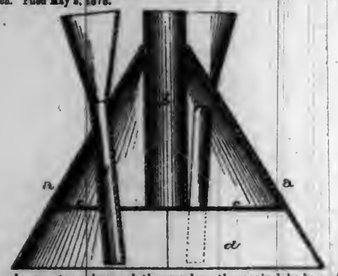
204,879. HYDROTHERAPIC APPARATUS. Eugene E. G. Boserian, Paris, France. Filed Apr. 26, 1878.



Claim.—1. The combination, with a system of pedals mounted upon levers oscillating upon their centers, as described, of pumps corresponding to said pedals, and air-reservoir, together with tubes provided with roses, perforations, or nozzles, as and for the purposes set forth.

2. In a hydrotherapic or shower-bath apparatus, in combination with two cylinders containing alternating tubular pistons, provided with valves opening upon the ascent of said pistons, an air-reservoir connected with the said cylinders by means of branch pipes, provided with valves opening upon the descent of the corresponding pistons, as shown and set forth.

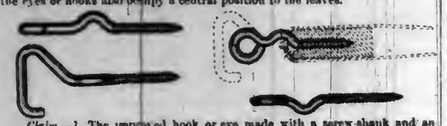
204,880. ATMOSPHERIC CLOTHES-WASHER. Albert A. Brooks and Herman D. Crooker, Battle Creek, Mich. Filed May 2, 1878.



Claim.—In an atmospheric clothes-washer, the conical body *a*, divided horizontally by the partition *c*, and the space below the partition divided into separate chambers *e* by the vertical partitions *d*, in combination with the tubes *g*, the lower ends of which reach nearly to the lower edge of the body *a*, substantially as shown and described.

204,881. SCREW HEDDLE EYES OR HOOKS FOR HEDDLE-FRAMES. Darius C. Brown, Lowell, Mass. Filed Mar. 30, 1877.

Brief.—To avoid displacing the rig-bands the screw eye or hook for attaching the supporting bands or hooks is formed with a recess or offset which will permit the rig-band to occupy a central position on the shaft, while the eyes or hooks also occupy a central position to the leaves.



Claim.—1. The improved hook or eye made with a screw-shank and an offset or recess in the shank to receive the rig-band, and adapted to operate substantially as described.

2. The improved hook or eye made with a screw-shank, and with an offset or recess in the shank to receive the rig-band, as described, in combination with the shaft of a leaf of heddles, substantially as described.

204,882. CATCH-BASIN COVERS. George G. Campbell, Milwaukee, Wis. Filed Sept. 28, 1877.

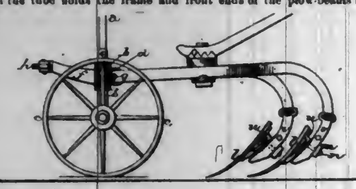


Claim.—1. A catch-basin cover constructed with slanting front, with strips D, base B, and raised partition E, substantially as specified.

2. A catch-basin cover, with body A, flanges C C, and flange F, substantially as specified.

204,883. CULTIVATORS. Charles D. Carter, Allegan, assignor of one-half his right to J. T. Carter, Spring Arbor, Mich. Filed May 2, 1878.

Brief.—The draft-bar has a tube inserted between the arms of the arch, through all which the vertical portion of the wheel-spindle passes. A set-screw in the tube holds the frame and front ends of the plow-beams at any height.



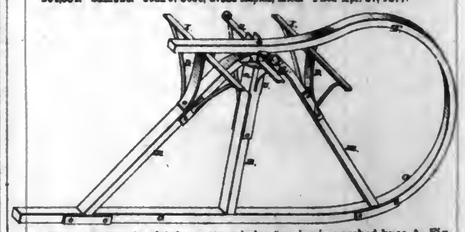
Claim.—1. The endless sectional pitted screen, the knocker H, arranged to act upon the backs of the sections as they pass thereunder.

7. In combination with the reciprocating screen L, the wiper S, mounted upon and sustained wholly by the right-and-left screw.

8. In combination with the inclined longitudinally-reciprocating screen L, the longitudinal transversely-reciprocating wiper S, sustained by and pivoted upon the operating-screw, as shown and described.

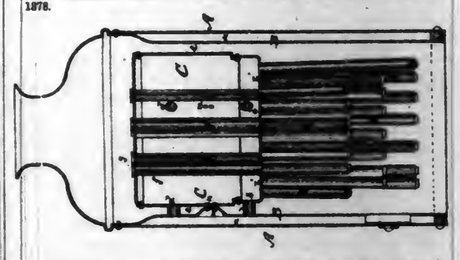
9. In a cockle-separating machine, the combination and arrangement for joint operation of the following members: the perforated screen L and endless pitted screen F, both arranged to reciprocate endwise, hopper K, conveyer-boards M O, and spouts P R.

204,884. SLEIGHS. John J. Cobb, Grand Rapids, Mich. Filed Apr. 27, 1877.



Claim.—A gear for sleighs, cutters, bobs, &c., having arched knee A, Fig. 1, supported by center knee B, held to position by metallic piece C, having mortise *a*, T-top *b*, supporting reversed T-top *d* for beam-rest, also having front and back metallic pieces D, for the support of front and back beams, as and for the purpose set forth.

204,885. BOILERS FOR STEAM FIRE-ENGINES. M. R. Clapp, Hudson, N. Y. Filed May 11, 1878.

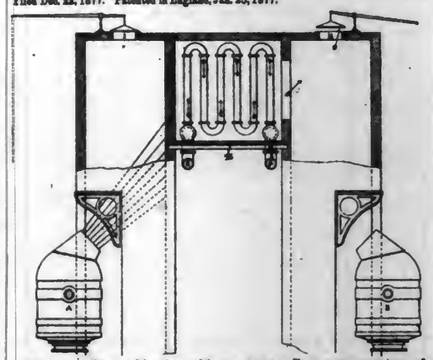


Claim.—1. In a steam fire-engine boiler, the combination of the drum C, carrying the water-tubes *b*, with the connecting-pipes *b* and *d*, and water and steam reservoir *a*, all arranged so that a smoke-space, *e*, is left between the drum and the wall B of the space *a*, substantially as herein shown and described.

2. In a steam-boiler for fire-engines, the water and steam drum C, combined by the pipe or pipes *b* with the water-chamber *a*, said parts being so arranged that a thin sheet of water may be on the bottom of the drum, while at the same time the water is at less height in the chamber *e*, substantially as specified.

3. The combination, in a boiler, of the outer shell A, the inner wall B, with the drum C, the inner wall bulging at *m m* to extend across the smoke-passage *e*, substantially as shown and described.

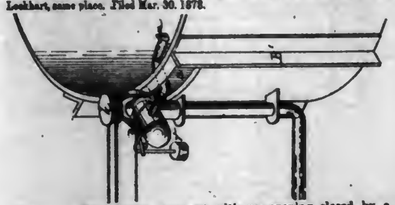
204,886. UTILIZING HEAT FROM BESSEMER CONVERTERS. Arthur Cooper, Darnall, England. Filed Dec. 22, 1877. Patented in England, Jan. 25, 1877.



Claim.—1. The combination, with one or more Bessemer converters, of a pair of stacks and a heater between them, the said stacks being provided with dampers, the whole operating substantially as described, whereby the hot gases from the converters are made to pass to the heater or to the atmosphere at will, substantially as set forth.

2. The combination of a pair of converters, A B, a pair of stacks, C C', and a stove or heater, D E F, common to both, substantially as and for the purpose set forth.

204,887. DEVICES FOR EXTINGUISHING FIRE IN OIL TANKS AND SIMILAR PLACES. Joseph H. Connolly and Thos. E. Connolly, Pittsburg, Pa., assignors to themselves and Charles Lockhart, same place. Filed Mar. 30, 1878.



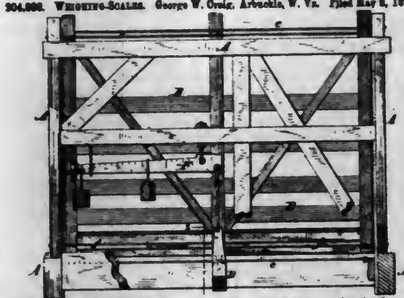
Claim.—1. The oil-tank provided with an opening closed by a door adapted to automatically unclose said opening to admit the swinging nozzle substantially in the manner and for the purpose specified.

2. In combination with the oil-tank, a series of angle-irons or brackets arranged thereon at or near the nozzle-openings of the tank, substantially as and for the purpose specified.

3. The combination, with an oil-tank or similar receptacle, of one or more tubes or pipes provided with universally jointed nozzles, arranged on the exterior of the tank, and adapted to deliver a stream or streams of water, gas, &c., to the interior of the tank, substantially as specified.

4. The combination, with the universally-jointed delivery-nozzle, of a series of pulleys, wires, chains, &c., the whole arranged and adapted to operate the devices from a point off the tank, substantially as specified.

204,888. WEIGHING-SCALES. George W. Craig, Arbuckle, W. Va. Filed May 6, 1878.

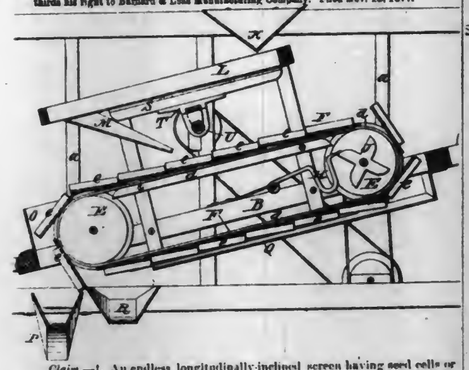


Claim.—1. In combination with an ordinary weighing-scale, the frame A, stock-pen B, and horizontal check-fastenings *c*, constructed and arranged substantially as described.

2. The horizontal fastenings *c*, in combination with the stock-pen B, pivoted upon the lever-beam D, as described, and for the purpose explained.

3. In combination with the lever-beam D, having the stock-pen B pivoted thereon, the check-rod C, as and for the purpose set forth.

204,889. GRAIN-SEPARATORS. William H. Escelstyn, Fort Atkinson, Wis., assignor of two-thirds his right to Barnard & Leas Manufacturing Company. Filed Nov. 13, 1877.



Claim.—1. An endless longitudinally-inclined screen having seed cells or pockets in its surface, arranged to reciprocate longitudinally, substantially as shown and described.

2. The longitudinally-reciprocating frame, having the endless longitudinally-inclined revolving screen provided with the cells or pockets, and the inclined screen L, both mounted therein.

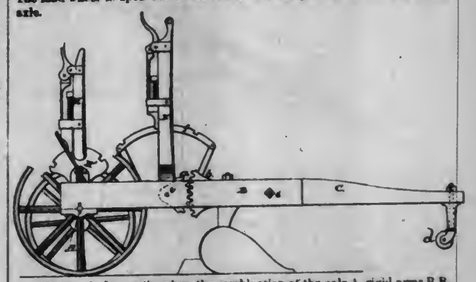
3. In a cockle-separator, the inclined endless pocketed screen P, inclined perforated screen L, both arranged to reciprocate longitudinally, and intermediate returning-board M, combined and arranged for joint operation in the manner shown.

4. The endless screen having its sections composed each of two plates, one perforated and the other imperforate, said plates being connected in such manner that they may separate and vibrate independently to a limited extent.

5. The endless screen composed of a series of sections, each section composed of a perforate and an imperforate plate, united by folding the edge of one over and upon that of the other.

204,890. SULKY-PLOWS. Francis M. Foster, Montgomery County, assignor of one-half his right to W. A. Fuller, Coffeyville, Kans. Filed Apr. 25, 1877.

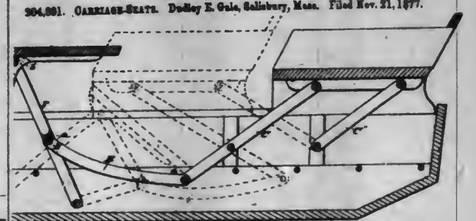
Brief.—Two rigid arms project forward from the axle, having the plow-beam pivoted between them. A lever is provided with a notched segment-arm, which gears into a similar segment upon the rear end of the plow-beam, by which device the plow is raised, a caster-wheel supporting the front end. The hand-wheel is upon the lower end of a lever pivoted to the end of the axle.



Claim.—1. In a sulky-plow, the combination of the axle A, rigid arms B B, plow-beam C, pivoted between said arms and provided with segment-gear *b*, and elbow-lever K, having geared segment *a*, substantially as shown and described.

2. The axle A, arms B B, lever K, provided with segment-gear *a* and rack *f*, in combination with pivoted plow-beam C, having segment-gear *b* and caster-wheel *d*, substantially as shown and described.

204,891. CARRIAGE-SEATS. Dudley E. Gale, Salisbury, Mass. Filed Nov. 21, 1877.



Claim.—The front seat constructed with the jointed back leg F, in combination with the back seat provided with the pivoted legs C and C', the legs C extended below the pivotal point, and connected to said leg F of the front seat by the curved rod E, all being combined to operate substantially as described.

204,892. RIDING-SADDLES. Josiah B. Gathright, Louisville, Ky. Filed Apr. 17, 1878.



Claim.—1. As a brace and supplement to the wooden front of a saddle-tree, the metallic casting herein shown and described, combining head-rim H, neck portion R, and branches P P', as constructed and combined with parts I, L, substantially as and for the purpose herein shown and described.

2. A front (or fork) for muley saddle-trees, constructed mainly of wood, supplemented and completed by a cast-metal rear and top portion, substantially as herein described.

3. In a tree for riding-saddles, the cast-metal cantle B, perforated through out the seat portion for ventilation and stitching purposes, as herein shown and described.

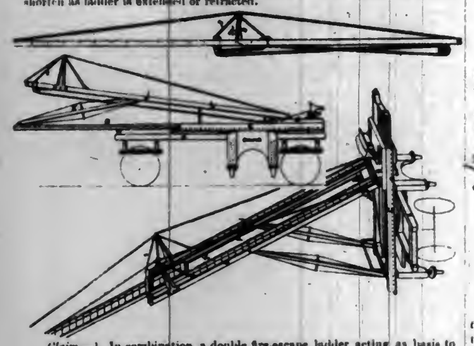
4. In a tree for riding-saddles, the cast-metal cantle B, having the seat-portion perforated for ventilation and stitching purposes, as described, in combination with the bars K and K', constructed substantially as herein shown and described.

5. In a tree for riding-saddles, the cast-metal cantle B, combining concave seat, rounded points, and concave-convex roll, substantially as herein shown and described.

6. In a tree for riding-saddles, the metallic cantle B, provided with slot *g*, substantially as and for purpose herein shown and described.

204,893. FIRE-ESCAPE LADDER. Dennis E. Gibbons, Chicago, Ill. Filed Apr. 13, 1878.

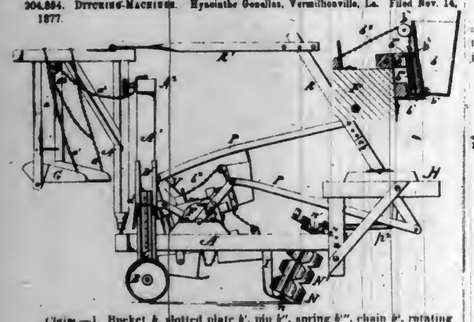
Brief.—A double base-ladder with an open center, in which slides an extension-section, said base-ladder being pivoted at its lower end to the frame of the truck, within which is a sliding frame, to the outer end of which is pivoted the supporting-beams, whose upper ends are pivoted to the double ladder, the same being raised by drawing the sliding frame inward, and lowered by sliding it outward. The frame carrying the ladders is mounted upon a turn-table. The extension-section is braced, when extended, by ropes, which lengthen or shorten as ladder is extended or retracted.



Claim.—1. In combination, a double fire-escape ladder acting as basis to an extension-ladder, the latter being braced by ropes or cables, which lengthen or shorten simultaneously, and in proportion with the sliding up or down of the extension-ladder, the main or double ladder being supported by two beams and a sliding frame, which frame, together with the beams aforesaid, raises the double ladder, the whole being connected with and resting on a turn-table, all substantially as described.

2. The combination of the before-mentioned ladder and appurtenances with adjustable extension-supporters, substantially as described.

204,894. DITCHING-MACHINE. Hyacinthe Gosselin, Vermilionville, La. Filed Nov. 14, 1877.



Claim.—1. Bucket *b*, slotted plate *b'*, pin *b''*, spring *b'''*, chain *b⁴*, rotating bucket-wheel F, and discharging-pan G, in combination with cutters N, said cutters being arranged in advance of the bucket-wheel, as described, substantially in the manner as and for the purpose set forth.

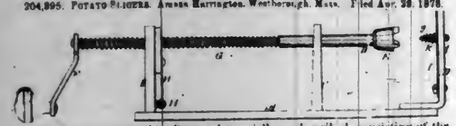
2. Cutters N, constructed as shown, standards I, supporting cross-bar *n*, with the cutters arranged to cut below and in front of said cross-bars, as described, ratchet-wheels n^1, and their connecting frames, in combination with frame A and ditch-wheel B, substantially as and for the purpose herein shown and set forth.

3. Frame A, with one end supported by and mounted on wheel B, and the other end pinned to guides A^5 in frame H, as herein described, in combination with ditching-wheel F, discharging-pan G, scrapers N, ratchet-wheels n^1 and their connecting frames, cranks P, and the lever R, that operates the machine simultaneously, substantially as herein shown and described.

4. The combination of cutters N, having the ratchet-wheels n^1 n^1, levers *n*, bell-crank levers *n'*, pawls n^2 n^2, rods p p^1, and arms p^2 p^2, connected by suitable levers, with the operating machinery of the machine, substantially as set forth.

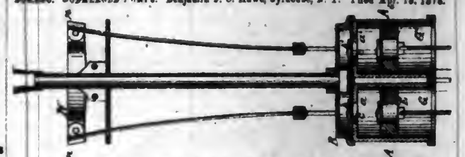
5. The rocking bucket *b*, provided with the supports or arms b^5, bearings b^6, and friction-pulley b^7, in combination with the wheel F, having chain b^4, catch b^5, spring b''', and pin b'', arranged to operate substantially as set forth.

204,895. POTATO SLICER. Amasa Harrington, Westborough, Mass. Filed Apr. 30, 1878.



Claim.—The vegetable-slicer, substantially as described, consisting of the case A and its posts B C, the spindle D, provided with the screw-thread and toothed head E, the locking-lever H, the standard D, the knife I and thread or threads *e*, and the gimlet-screw center K, all arranged and applied essentially as and to operate as set forth.

204,896. SUBMERGED PUMPS. Benjamin J. O. Rowe, Syracuse, N. Y. Filed Apr. 16, 1878.



Claim.—1. The yoke having at its upper end the socket to which the plunger-rod is attached, and at its lower end the plunger carrying standard, all made in one piece, substantially as set forth.

2. The non-corrodible cylinder A, having the interior flange *a*, forming the valve-seat, in combination with the cap B and the valve *b*, clamped between the two, as shown and described.

204,897. SHOVELS. John Johnson, Memphis, Tenn. (Filed Dec. 15, 1877.

Brief.—The handle-grasp can be removed, and the upper end of the handle then be used as a tamping-bar.



Claim.—1. The dovetailed ferrule C^4, attached to the lower end of handle C^1, in combination with shield B, with dovetailed seat *b* and blade A, substantially as and for the purpose set forth.

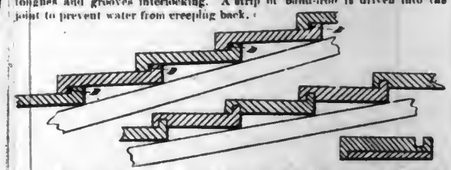
2. The dovetailed ferrule C^4 and the dovetailed hand-piece D, in combination with the handle C^1 and blade A, substantially as and for the purpose set forth.

204,898. HOG-CHOLERA COMPOUND. John M. Keltner, Salisbury, Ill. Filed Mar. 25, 1878.

Claim.—The hog-cholera mixture described, consisting of sal soda, Epsom salts, chlorate of potash, borax, and water, in about the proportions set forth.

204,899. ROOF-COVERING AND SHEATHING. Wm. H. Kershaw, Widnes, England. Filed Apr. 23, 1878.

Brief.—A groove is made in one side (near the edge) of a roof-board and a tongue on the other. The boards are laid on parallel to the ridge, the tongues and grooves interlocking. A strip of band-iron is driven into the joint to prevent water from creeping back.

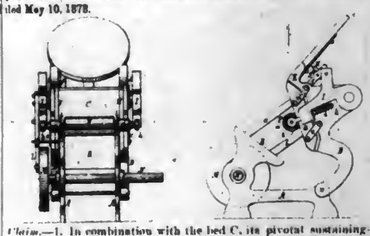


Claim.—1. A wooden roof consisting of a series of transverse boards, having overlapping interlocking edges, substantially as described, and shown in Figs. 2, 3, and 5, whereby moisture is prevented from lodging in the joints.

2. The overlapping and interlocking boards of a tapering form in cross section, as represented in Fig. 3, adapted to present a continuous smooth under surface or ceiling when laid transversely on the roof, as shown.

3. In a wooden roof, the combination of boards having overlapping interlocking edges with metal strips D, inserted between and concealed by said edges, substantially as shown.

204,900. INKING APPARATUS FOR PRINTING-PRESSES. W. P. Kidder, Jamaica Plain, Mass. Filed May 10, 1878.



Claim.—1. In combination with the bed C, its pivotal sustaining-arms D, and the inking-roller rails E thereof, auxiliary rails or bearers G, applied thereto, and mechanism, substantially as described, for supporting such bearers and effecting and limiting their movements, as explained, it consisting of the links *c*, arms *d*, shaft *e*, arm *f*, latch H, and screw *g*, arranged and applied as presented.

2. The inking-roller wheels provided with the flanges, in combination with the inking-disk or table, arranged so that the peripheries of such flanges during a traverse of the inking-roller across it may run in contact with the face of such disk or table.

204,901. TESTING-MACHINES. Francis S. Kinney, New York, N. Y. Filed Dec. 13, 1877.

Claim.—1. A testing machine in which the column of liquid under continuous pressure is relieved against another column of liquid under elastic pressure, substantially as specified.

2. A machine for testing boilers and analogous structures in which a column of liquid under invariable continuous pressure, substantially as specified.

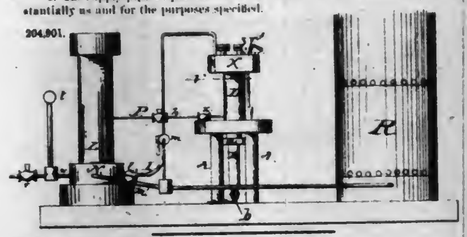
3. A device for testing wherein an undue pressure is prevented by a check-valve that lifts when the undue pressure is reached, and thus opens communication with a body of liquid under elastic pressure, substantially as specified.

4. A pump connected with a boiler or analogous structure, or a ram, in combination with a pipe having a check-valve that opens toward a magazine of liquid under elastic pressure, substantially as set forth.

5. The pump-cylinder D, provided with the plunger E and check-valve *r*, controlling the air and liquid supply, in combination with the check-valve *i*, controlling the exhaust-pipe, substantially as set forth.

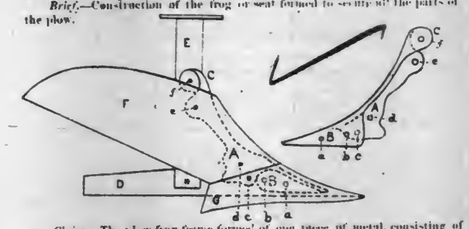
6. The supply-pipe P, provided with the valve *s* and check-valve *p*, substantially as and for the purposes specified.

204,901.



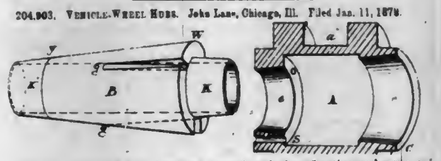
204,902. PLOWS. John Lane, Chicago, Ill. Filed Dec. 17, 1877.

Brief.—Construction of the frog or seat formed to secure all the parts of the plow.



Claim.—The plow-frog frame formed of one piece of metal, consisting of the support B, having the flange A springing therefrom behind the perforation *a*, leaving the support B extending forward alone to support the point, and with the cast and the perforations *a b c d e f*, as shown, by which the land-side bar D, standard E, mold-board F, share G, and share turn-down H are attached, and whereby the perforation *a* may be high up near the share, all constructed substantially as shown, and for the purpose set forth.

204,903. VEHICLE-WHEEL HUBS. John Lane, Chicago, Ill. Filed Jan. 11, 1878.

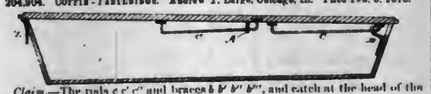


Claim.—1. The hub A, having a central conical perforation and seats, *c c'*, and having combined therewith an axle-box, B, having grooves *g g* and shoulder W between the extensions K K', and united to the hub with bolts *h h*, as shown and described.

2. The hub A, having a central conical perforation and seats, *c c'*, as shown, and having the recess *s* formed between the seats *c c'*, and having the holes *a a'* in the rim of the hub, as shown, all arranged as and for the purpose set forth.

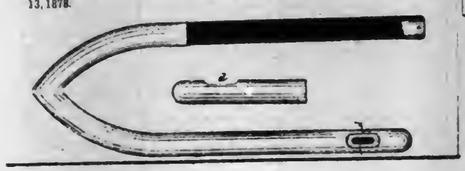
3. The axle-box B, with extensions K K', open grooves *g g* on the outside, and shoulder W, the extension K projecting outward beyond the shoulder W, as shown, all arranged as and for the purpose set forth.

204,904. COFFIN-FASTENINGS. Andrew T. Large, Chicago, Ill. Filed Feb. 8, 1878.



Claim.—The rods *c c' c''* and braces *b b' b''*, and catch at the head of the top, all made fast, as described, upon the under side of a coffin-top, in combination with the slotted piece B and the bridge A, slotted at S S, and the hook L, all as and for the purpose set forth.

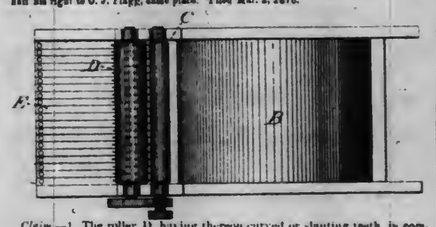
204,905. INDIA-RUBBER SURGICAL TUBES. Rhodes Lockwood, Boston, Mass. Filed May 13, 1878.



Claim.—1. An India-rubber surgical tube provided with a flattened portion, *d*, at or near its end, and with an eye cut through such portion from the exterior to the interior of the tube, substantially as described.

2. An India-rubber surgical tube composed of hard and soft rubber, substantially as described.

204,906. FIBER-CLEANING MACHINES. George D. Luce, New Orleans, La., assignor of one-half his right to O. J. Flagg, same place. Filed Mar. 2, 1878.

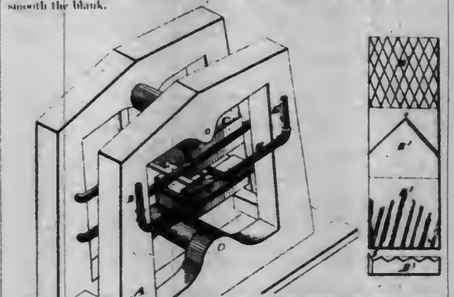


Claim.—1. The roller D, having thereon curved or slanting teeth, in combination with independent springs E and rollers C^1 C^2, substantially as shown and described.

2. The series of independent springs E, in combination with toothed roller D, substantially as shown and described.

204,907. SCREW-SWAGING MACHINES. Michel D. Leehrs, Cleveland, Ohio. Filed Feb. 8, 1878.

Brief.—Improvements on Patent No. 194,875, dated September 4, 1877. The ridges upon the screw-forming plate are inclined to the longitudinal axis of the plate, and are made gradually shorter on both sides of the longest or central. Two preparatory plates are provided, one to reduce and the other to smooth the blank.



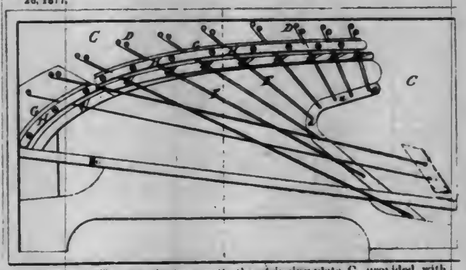
Claim.—1. In a screw-swaging machine, a thread-forming plate or die whose grooves or ridges are inclined to the longitudinal axis of the plate, and are made gradually shorter from the central portion of said grooves outward on both sides thereof, substantially as set forth.

2. The combination, with the thread-forming plate or die, of the preparatory dies B^1 and B^2, said die B^1 provided with one or more raised angular formations, *e*, pointing in the direction of the approaching blank, substantially as set forth.

3. The combination, with the thread-forming plate, of the die B^1 immediately adjoining it, said die made with the raised formations *e*, having centrally pointed bodies in the direction of the approaching blank, and diagonal rearwardly inclined sides, substantially as set forth.

4. The plates B, made laterally movable in their attachments.

204,908. STRINGING DEVICES FOR PIANOS. Seehald Mennig, Brooklyn, N. Y. Filed Oct. 26, 1877.



Claim.—1. The combination, with the stringing-plate C, provided with bridge or support F, forming the terminal bearing of the vibrating portion of the string, the bead-rest G, and the tuning-pins D, of the pressure-bar H, situated between the bridge F and bead-rest G, constructed and arranged to operate substantially in the manner described and specified.

2. The bridge F, provided with the projections *b*, forming the terminal bearing of the vibrating portion of the string, and the bridge-pins *c*, situated immediately behind said rests or projections, for the purpose of retaining the strings in position laterally, constructed and operating substantially in the manner described and specified.

204,909. FENCE-POSTS. Wm. McMillan, West Liberty, Iowa. Filed Apr. 3, 1878.



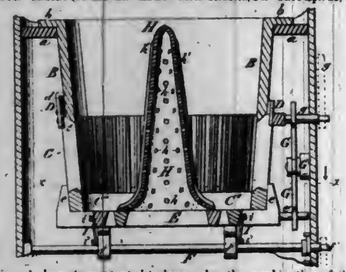
Claim.—An improved fence-post having its lower or ground end formed into the twisted flattened loop B, substantially as set forth.

204,910. BACK-BAND HOOKS. Henry W. Minnemeyer, Pittsburg, Pa. Filed May 6, 1878.



Claim.—The back-band hook formed in a single piece, with center beveled bar, a series of points projecting from the rear face of the upper bar, and the trace-hook, the whole substantially as and for the purpose specified.

204,911. GRATES FOR STOVES. Andrew Neal Scranton, Pa. Filed Apr. 25, 1878.



Claim.—1. In a stove adapted to burn culm, the combination of the fixed and imperforate part B and the vertically and closely grated and partially-rotating part C, the bars of which are separated from each other to admit air to the burning mass within, the two parts forming the fire-pot of the stove, as described.

2. The combination of the partially-rotating and grated section C of the fire-pot with the partially-rotating grate E, adapted to be simultaneously moved in opposite directions by the means substantially as described, and for the purpose set forth.

3. In combination with the partially-rotating section C of the fire-pot of a stove, the upwardly-projecting centering-lugs *e* on grate E, as and for the purposes described.

4. The combination of the partially-rotating grate E with the hollow perforated central cone H, having the ribs *h'*, substantially as and for the purposes described.

5. The combination of the inwardly-projecting ribs *c''* on bars *c* of a partially-rotating grated section, C, of the fire-pot with the partially-rotating hollow perforated and ribbed cone H, as and for the purposes described.

6. The combination of the partially-rotating grate E, having the perforated and ribbed cone H thereon, with the eccentrics *f f* on rock-shaft F, substantially as and for the purposes described.

7. The combination of the partially-rotating grate E, having the perforated and ribbed cone H thereon, eccentrics *f f*, rock-shaft F, and links I, as and for the purposes described.

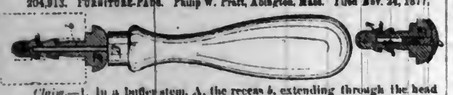
204,912. STRINGER. Samuel Peters, Cohoes, N. Y. Filed Mar. 25, 1878.

Brief.—An extension or prolongation of the rubber stopper to valve-chamber serves as a valve. By rotating the stopper the valve is removed from its seat and allows the fluid to pass.



Claim.—A soft-rubber syringe-bulb provided at either end—that is, at inlet and outlet—with the valve-chamber A and the valve-cork B, with its valve-extensions *g* at right angles to the long axis of the valve-box, all as and for the purpose described.

204,913. FURNITURE-PADS. Philip W. Pratt, Abington, Mass. Filed Nov. 24, 1877.

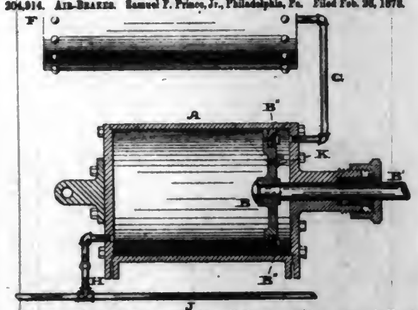


Claim.—1. In a buffer-stem, A, the recess *b*, extending through the head B, and longitudinally into the body of the stem, together with the solid extremity or point *b'*, as described, and for the purposes specified.

2. A furniture-buffer provided with the stem A, head B, solid point *b'*, and longitudinal recess *b*, in combination with the cap C and its rigid stem *c*, arranged to operate as and for the purpose specified.

3. In combination, as a furniture-buffer, the elastic head B and its elastic stem A, fabricated in one piece, together with the metal cap C, arranged to operate as and for the purpose described.

204,914. AIR-BRAKES. Samuel F. Prince, Jr., Philadelphia, Pa. Filed Feb. 26, 1878.



Claim.—1. In combination with the cylinder A, auxiliary reservoir F, and piston B, the pipes G H and check-valve K of the piston, all arranged to establish communication between pipe H and reservoir F, as herein shown, the said reservoir being supplied with compressed air from cylinder A, substantially as set forth.

2. In an air-brake, the piston B, provided with an equilibrium-valve, in combination with pipes J and G, arranged substantially as and for the purpose set forth.

204,915. VEHICLE-SPRINGS. Samuel M. Richardson, Boston, Mass. Filed May 3, 1878.

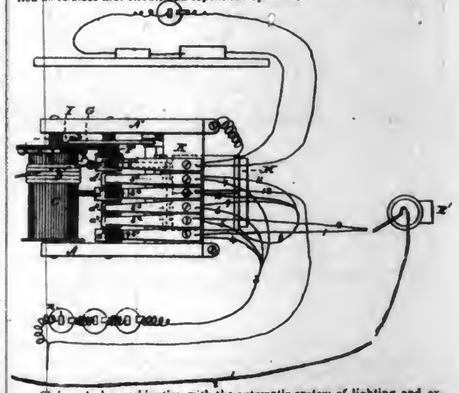


Claim.—1. The springs *f*, attached at one end to the box, and having their other ends projecting inwardly beyond the point of attachment to the axle or cross-bar, in combination with springs A, extending inwardly, and attached to cross-springs *k*, and projecting outwardly, so as to overlap and stiffen the springs *f*, substantially as described.

2. The combination of springs *f f'* and A *k*' *k*² with the cross-springs *k* and the box, axle, and cross-bar of a wagon, when constructed and arranged substantially as and for the purpose described.

204,916. CIRCUIT-CHANGERS IN ELECTRIC GAS-LIGHTING APPARATUS. Frank V. Sandford, Chelsea, Mass., assignor of one-half his right to Jos. W. Bartlett, New York, N. Y. Filed Mar. 27, 1878.

Brief.—The lamps are lighted one by one by a current passing over one conductor. By a movement of the circuit-changer the main line is broken at the central station. If an earth-connection at any part of the line be now made, the circuit-changer again moves. A current is now thrown onto another conductor, which turns out the lights one by one at the several lamps, when the circuit-changer will break the second circuit, leaving the changer in such position as to close first circuit and repeat the operation.



Claim.—1. In combination with the automatic system of lighting and extinguishing street gas-lamps by electricity, apparatus operating on the completion of the lighting or extinguishing of all the lamps in the circuit to reverse the connection of the battery with the line, to break the connection of the line with the earth, and to leave the connections, as described, so that if the lamps are lighted they will be automatically extinguished by making a ground-connection at any desired point in the circuit, and if extinguished they will be automatically lighted by also making a ground-connection at any desired point in the circuit, substantially as and for the purpose set forth.

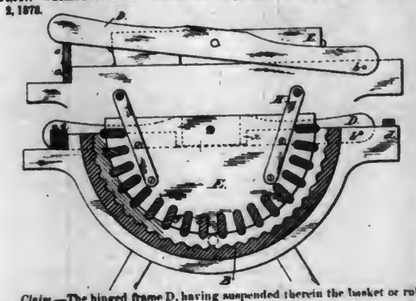
2. In combination with the automatic system of lighting and extinguishing street gas-lamps by electricity and the electric connections, as described, apparatus composed of the following elements in combination, namely: a shaft having a tendency to rotate imparted to it by any suitable power, and provided with a series of cams, or their equivalents, arranged as described; a series of circuit breaking and closing devices, each operated by one of the series of cams; a wheel, or its equivalent, rotating with the shaft, and provided with a series of pins, or their equivalents, placed at any desired distance from each other, as described; an escapement which, in its normal position, prevents the wheel and shaft from rotating, but which, when moved, allows one pin, or its equivalent, to escape and the shaft to make a partial rotation; an electro-magnet included in the circuit from the lamps, and when energized moving the escapement; and a device automatically breaking the circuit through the electro-magnet when the armature of said electro-magnet is attracted, substantially as and for the purpose set forth.

3. In combination with the automatic system of lighting and extinguishing street gas-lamps by electricity, and the current-shifting apparatus and its connections, as described, one or more keys for establishing a ground-connection with the line, situated at any desired point or points on the line, substantially as and for the purpose set forth.

4. In combination with the rotating shaft of the current-shifting apparatus, as described, a suitable circuit breaking and closing device operated thereby, and one or more electro-magnetic apparatus included in said circuit, said circuit breaking and closing device acting to close the local circuit while the series of lamps are being lighted or continue lighted, substantially as and for the purpose set forth.

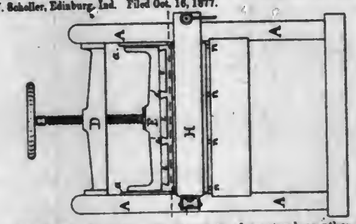
5. In combination with the automatic system of lighting and extinguishing street gas-lamps by electricity and the electric connections, as described, the following elements in combination, namely: the shaft H, mechanism imparting a tendency to rotate to said shaft, a series of cams, a', a^2, a^3, a^4, a^5, and a^6, on said shaft, a series of circuit breaking and closing devices, as described, each operated by one of said cams, or its equivalent, the wheel G, or its equivalent, provided with a series of pins, or their equivalents, as described, the lever O, carrying the pins *c d*, as described, the rock-shaft J, armature A, spring K, or its equivalent, post R, or its equivalent, spring S, Fig. 2, or its equivalent, and the electro-magnet M, substantially as and for the purpose set forth.

204,917. WASHING-MACHINES. Hermann Schmelzfoening, Campbellsburg, Ky. Filed May 2, 1878.



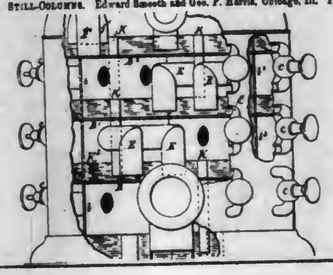
Claim.—The hinged frame D, having suspended therein the basket or rubber E, in combination with the ends-box B and lever *c c*, substantially as and for the purpose set forth.

204,918. PRESSES FOR EXTRACTING WATER FROM STARCH AND OTHER SUBSTANCES. Henry W. Scheller, Edinburg, Ind. Filed Oct. 16, 1877.



Claim.—In a press for extracting water from starch or other granulated wet substance, the combination, with the cross-head F, having a series of followers, *e*, with the spaces *e'* between them, of the perforated and partitioned box A, resting on the cleats *n*, and the hinged clamping-doors H, having cleats *n'*, whereby the water exuding from the wet substance pressed readily escapes, as herein specified.

204,919. STILL-COLUMNS. Edward Smooth and Geo. P. Harris, Chicago, Ill. Filed Mar. 9, 1878.

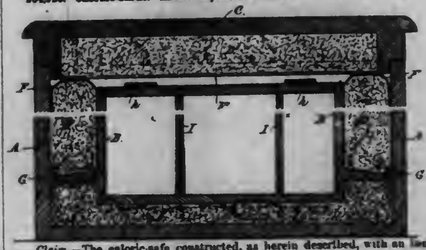


Claim.—1. In a distilling apparatus or column, two or more chambers formed in the same section of the column, on the same horizontal plane, and connected together by elbow-pipes, or other similar device, substantially as and for the purpose described.

2. The combination of a series of many-chambered horizontal sections of a still-column, elbow-pipes E, angular pipes F *f f*, each pipe F having a bell or hood, *f'*, between its vertical portions *f f*, whereby the circulation of the vapors of the still is through a number of horizontal chambers on the same plane in one section, then through vertical passages, and then again through a number of horizontal chambers on the same plane in another section, and such circulation being in a spiral or zigzag course, substantially as and for the purpose set forth.

3. The still-column provided with the angular pipes F *f f f'*, substantially in the manner and for the purpose set forth.

204,920. CALORIC-SAFES. Anna T. Snyder, Connersville, Ind. Filed Mar. 27, 1878.



Claim.—The caloric-safe constructed, as herein described, with an inner box, B, and outer casing A, the one supported within the other by stays G and shields J, whereby the contact of solid material between them is avoided, and with an interposed body, D, of fibrous material, extending above the inner box B, thus permitting the cover C to close tightly upon it, and forming an air space above the inner box.

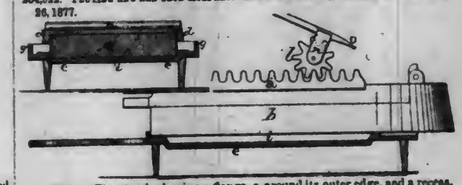
204,921. KNOB ATTACHMENTS. Even St. John, Leland, Ill. Filed May 2, 1878.



Claim.—1. In combination, a knob having on the end of its shank a flange or shoulder, *d*, and the plate B, adapted to be secured to the door, and provided with a tapering hole, *i*, which is largest on its inner side, and the two-part clamp *f i*, exteriorly enlarging from the outer to the inner end, and interiorly forming a box in which turns the shank of the knob, as shown and described.

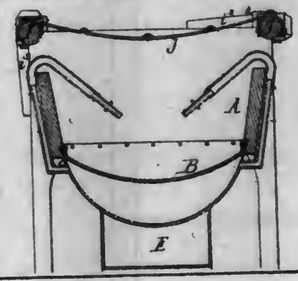
2. The improvement in securing door-knobs to locks, consisting of knob A, having on its shank shoulder *d*, plate B, provided with tapering hole *i*, and the two part clamp *f i*, provided with lugs *r*, and forming a box for the shank, in combination with the free or self-adjusting spindle *e*, as and for the purpose described.

204,922. FLUTING AND RAD IRON HOLDERS. Nelson B. Brewster, Groton, N. Y. Filed July 26, 1877.



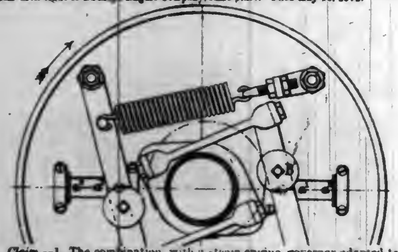
Claim.—The stand *e*, having a flange, *g*, around its outer edge, and a recess, *i*, in its center, to form a hot-air chamber for the iron or a recess for the core, substantially as set forth.

204,923. HOG-SCALDER AND FEED-STEAMER. Henry Strycker, Goshen, Ind. Filed May 16, 1878.



Claim.—The frame A, with metal bottom B, surmounted with windlasses and chains, with slats connecting them, in combination with a furnace and flue, D E, which have a steam-chamber formed above them below the bottom B, which steam-chamber is provided, as described, with steam-pipes for conveying steam or heated vapors into the trough, whereby an apparatus adapted for conveniently handling and scalding hogs and for steaming food for animals is produced, substantially as described.

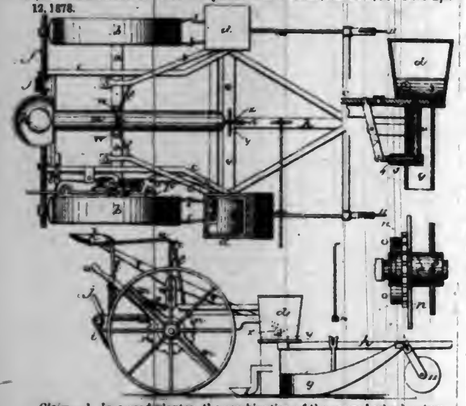
204,924. GOVERNORS. Jos. W. Thompson and Nathan Hunt, Salem, Ohio, assignors of one-half their right to Buckeye Engine Company, same place. Filed May 10, 1878.



Claim.—1. The combination, with a steam-engine governor adapted to be mounted upon the driving shaft, of a loose eccentric fitting upon the shaft and connected to the weight-arms of the governor by links, united with said arms by ball-and-socket joints, substantially as set forth.

2. The combination, in a steam-engine governor adapted to be mounted upon the driving shaft, of a supporting-case, weight-arms pivoted to said case, and stop-pins secured to the weight-arms and projecting into radial slots in the case, which are provided with spring-cushions at their ends to act as abutments for the stop-pins, substantially as set forth, the construction being such that the slots and spring-cushions are in proper position for both directions of rotation.

204,925. CORN-PLANTERS. Thos. W. Tyler and Wm. O. Barkis, Hammond, Ill. Filed Apr. 12, 1878.



Claim.—1. In a seed-planter, the combination of the cogged wheel *n*, having the cams *o*, operating-lever *q*, provided with the dog *r*, rod or lever *p*, and seed-slide *e*, and the operating spring, the lever being connected to the slide and the slide being moved directly by the cams, as shown and described.

2. The combination of the movable part of the clutch, the wheel *n*, operating-lever *q*, dog *r*, marker *m*, and an operating lever for throwing the clutch in and out of gear with the driving wheel *b*, substantially as shown.

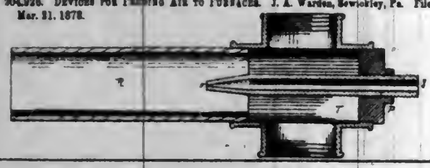
3. The combination of the foot-levers *s*, secured to the seed-boxes *d*, and having their rear ends connected together by means of the bent rod *t*, with the extension *u* in front of the seat and notches *z* for the rod to catch in, substantially as described.

4. The combination of the pivoted lever *v*, having a hook or catch upon its front end for raising up the rear ends of the furrow-openers, with the levers *s*, rod *t*, and notches *z*, substantially as specified.

5. In a seed-planter, the combination of a seed-box, *d*, a tube, 4, depending therefrom and located in the furrow-opener *g*, and a piston or its equivalent for shooting the seeds against the inside of the opener *g*, so as to scatter them on the ground, substantially as shown.

6. The combination of the box *d*, furrow-opener *g*, tubes 4 5, piston 6, rod 7, seed-slide *e*, and operating spring, substantially as described.

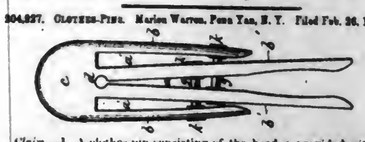
204,926. DEVICES FOR FEEDING AIR TO FURNACES. J. A. Warden, Sewickley, Pa. Filed Mar. 21, 1878.



Claim.—1. The herein-described injector, constructed with its outlet air-opening of a diameter about fifty times that of the steam-jet opening, and having the latter adjusted inside the air-conduit pipe, and at a point about two hundred times its diameter in rear of the outlet air-opening, substantially as and for the purposes set forth.

2. A series of steam-ejectors, J, and air-pipes E, proportioned and adjusted as described, in combination with a fire box or chamber, substantially as set forth.

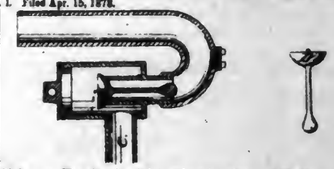
204,927. CLOTHES-PINS. Marion Warren, Penn Yan, N. Y. Filed Feb. 26, 1878.



Claim.—1. A clothes-pin consisting of the head *c*, provided with the exterior short arms *b b* and interior long arms *b' b'*, each exterior arm being connected with the farther interior arm by a rivet or other connection, arranged so that pressure upon the two outside arms inward will produce expansion of the center arms outward, as shown and described, and for the purpose specified.

2. The combination, with the arms *b b'*, of the rivet *g*, provided with the shoulders *h h*, and the washers *k k*, fitting on said shoulders on the opposite sides of the arms, as shown and described, and for the purpose specified.

204,928. TRAPS FOR DRAIN, WASTE, AND SEWER PIPES. George E. Waring, Jr., Newport, R. I. Filed Apr. 15, 1878.



Claim.—1. The chamber inlet and outlet pipe as combined, a passage connected with the outlet-pipe is formed between the inlet-pipe and the wall of the chamber, as specified and set forth.

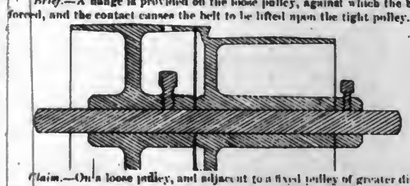
2. The chamber, in combination with the inlet pipe, provided with a valve-seat and valve raised above the bottom of the chamber, as specified and set forth.

3. The chamber, in combination with the inlet pipe, provided with a valve seat and valve raised above the outlet pipe, as specified and set forth.

4. The chamber, in combination with the inlet-pipe, provided with a valve seat and valve raised above the bottom of the chamber and above the outlet-pipe, as specified and set forth.

204,929. BELT-SHIFTING PULLEYS. Joseph J. White, Smithville, N. J., assignor to H. B. Smith Machine Company, same place. Filed Apr. 6, 1878.

Brief.—A flange is provided on the loose pulley, against which the belt is forced, and the contact causes the belt to be lifted upon the tight pulley.



Claim.—On a loose pulley, and adjacent to a fixed pulley of greater diameter, a flange whose side is shaped to engage the belt, and by the friction produced lift the belt upon the tight pulley, substantially as and for the purpose described.

204,930. MUSTARD POTS AND SPOONS. H. J. White, Boston, Mass. Filed Dec. 1, 1875.



Claim.—1. The above-described mustard-spoon, as made of sheet metal, consisting of the bowl A and hollow handle B, having the supports *c c*, indentation *e*, and screw shank E, in combination with the cap D and screw-knob F, all being constructed substantially in the manner described, as and for the purposes set forth.

2. The above-described mustard-pot G, as made of sheet metal, and having the annular space H formed in the bottom surrounding the pot G, as a new article of manufacture, as and for the purposes set forth.

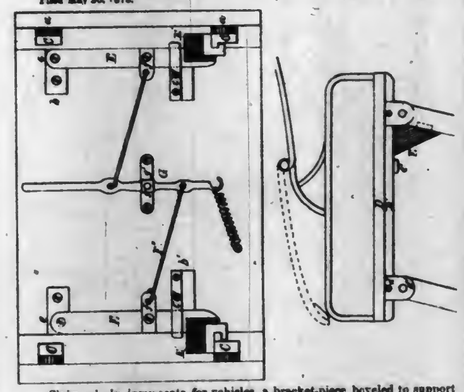
204,931. HAT-POUNCING MACHINES. Edwin B. Whiting and Frodt. E. Dunn, Orange, N. J. Filed June 3, 1878.

Brief.—The slide moving up and down rotates the shaft right and left, thus giving a reciprocating motion to the hat-block.



Claim.—The screw-shaft A, having the slide D fitted thereto, in combination with the hat-block B and cross-head F, substantially as and for the purpose specified.

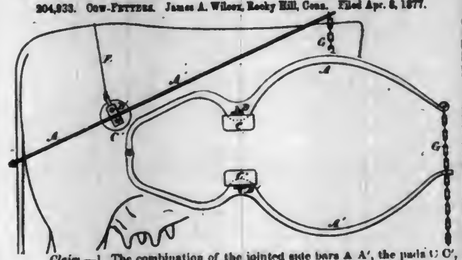
204,932. JUMP-SEATS FOR VEHICLES. H. C. Wingler and Will W. Stough, Shippensburg, Pa. Filed May 20, 1878.



Claim.—1. In jump-seats for vehicles, a bracket-piece beveled to support the seat-standard in one direction, and having on one edge a recess, in combination with the seat-standard provided with a projecting lug, substantially as described.

2. The lever E, pivoted at one end, and having at the other end a supporting-bracket provided with a locking recess, in combination with the seat standard provided with a projecting lug, substantially as described.

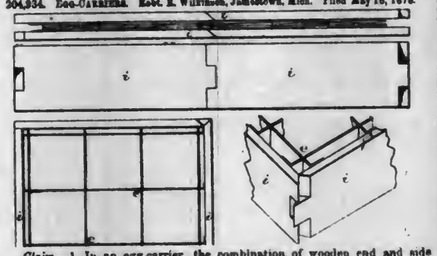
204,933. COW-FETTERS. James A. Wilcox, Rocky Hill, Conn. Filed Apr. 6, 1877.



Claim.—1. The combination of the jointed side bars A A', the pads C C', the support E, and a chain or fastening, G, substantially as and for the purpose herein described.

2. The pads C C', in combination with bars A A', adapted to pass around the rear of the cow and to be secured over the back, for holding the tail and preventing kicking, substantially as herein described.

204,934. EGG-CARRIERS. Robt. R. Wilkinson, Jamestown, Mich. Filed May 16, 1878.



Claim.—1. In an egg-carrier, the combination, of wooden end and side pieces and strips of fibrous material, the wooden pieces having their ends made to interlock, and being secured together by the fibrous strips at the corners, substantially as shown.

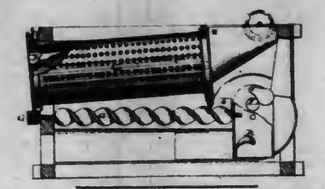
2. In an egg-carrier, the combination of the side and end pieces *i* and the strips of fibrous material *e*, the pieces *i* being held together by means of the pieces *e*, so that the section can be folded together into a very small space, substantially as specified.

204,935. CORN AND GRAIN CLEANERS. Stanley E. Worrell, Hannibal, Mo. Filed Mar. 14, 1878.

Claim.—1. The combination, with the open rotating cylinder C, of the buckets H, secured in an oblique position upon its interior surface at the discharge end, substantially as described.

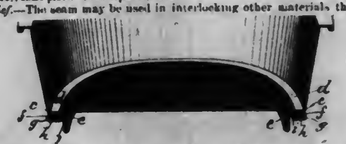
2. The combination of the conveyer G, the suction-spout, and the spreader K, secured in the suction-spout below the delivery end of the conveyer, and formed with convex upper face, substantially as described.

204,936.



204,936. LOCKING-SEAMS FOR METAL WARE. Geo. Wright, Chicago, Ill., assignor to Helen M. Marey, same place. Filed Apr. 19, 1878.

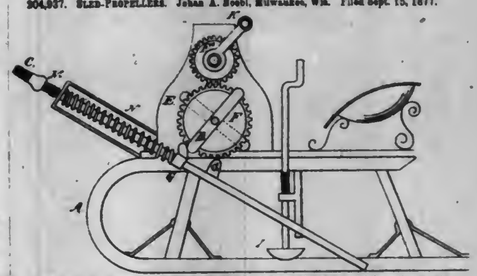
Brief.—The seam may be used in interlocking other materials than wire.



Claim.—1. The shoulder *h*, projecting upward above and in conjunction with the horizontal parts *f h* of the same piece of metal, as and for the purpose described.

2. The metallic locked seam described, formed of the inwardly-bent part *d*, the outwardly-bent part *f*, and the inwardly, upward, and downward bent part *h j f*, and the wire-cloth or other material interlocked therewith, substantially as shown and described.

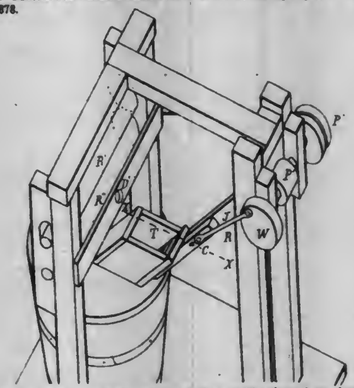
204,937. SLED-PROPELLERS. Johan A. Roehl, Milwaukee, Wis. Filed Sept. 15, 1877.



Claim.—1. In a device for propelling sleds and other vehicles, the combination of the gear-wheels F and F', provided with handles K and levers D and E, with the propelling-rods C C and sled A, substantially as specified.

2. The rods C C, provided with spiral springs H and adjusting-screws M, substantially as and for the purpose specified.

204,938. DEVICES FOR WASHING PIECE GOODS. S. Arnold, Lansingburg, N. Y. Filed Feb. 27, 1878.



Claim.—1. In a washing apparatus, the combination of an elevating or delivery trough, a supply-aperture formed in the latter, and a reciprocating piston-foot working in the trough opposite the aperture to rub the material being washed, also to squeeze the same by an alternating intermittent pressure, and so as to force the material into and through the trough, as shown and described.

2. In combination and arranged within a washing tub or vessel, a vertical receiving-hopper opening into an elevating or discharging trough, having beveled cross-recesses or ratchet-formed steps arranged upon its walls, with a reciprocating plunger-foot that rubs the material to be washed and squeezes the same by an alternating intermittent pressure, and forces the material into and through the trough, as herein described and shown.

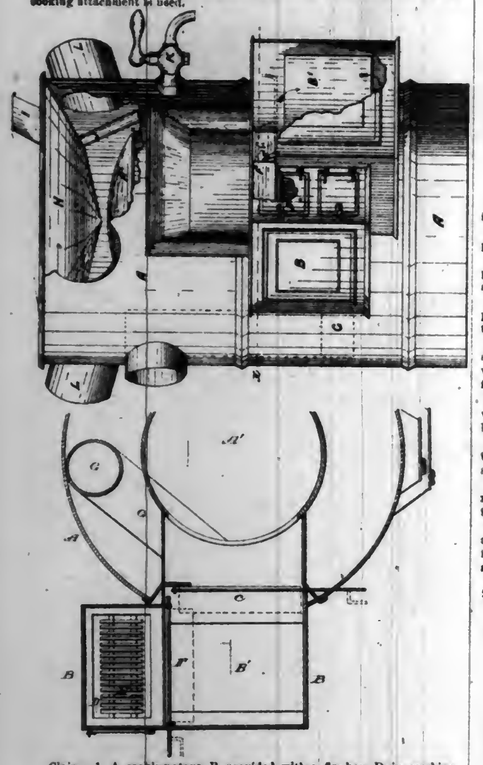
3. In combination with a washing tub or vessel, the vertical hopper H,

plunger-space D″, elevating-trough T, with its cross-recesses or beveled steps *m m m m*, the upturned plunger-foot P, actuating plunger-rod C, crank-shaft J, crank-pin E, wheel W, engaging-rollers E′ and E″, and stripping-bar S′, arranged to operate as and for the purposes described and set forth.

4. In combination with a washing tub or vessel, a vertical receiving-hopper opening into an elevating or discharging trough, arranged with beveled cross recesses or steps on its bottom or top, or both, with a reciprocating piston-foot that moves in the trough and rubs the material being washed, and squeezes the same with an alternating and intermittent pressure, and forces the same into the trough, with the latter curved upward and forward, and so as to discharge the material into the hopper to repeat the washing, as herein shown and described.

204,939. FURNACES. Henry W. Austin and William B. Hosford, Chicago, Ill. Filed July 19, 1877.

Brief.—When it is desired to heat the cooking attachment by the products of combustion from the hot-air furnace, the damper F is closed and C opened. The position of the dampers is reversed when the fire-box of the cooking attachment is used.



Claim.—1. A cooking-stove, B, provided with a fire-box, D, in combination with a furnace, A, to which it is attached, and with which it is directly connected, and adapted to be heated from either the furnace or its own fire box, substantially as and for the purpose set forth.

2. The furnace A, in combination with the cooking attachment B, provided with a fire-box, D, and dampers C and F, substantially as and for the purpose set forth.

3. The casing of the furnace A, in combination with a water-reservoir, H, arranged directly over the hot-air chamber, and fitted permanently to the top of the casing, to form the cover thereto, substantially as and for the purpose set forth.

4. The furnace A, in combination with the hot-water reservoir H, fitted to the top of the casing, and the outlet-pipe J, arranged within the hot-air chamber, and provided with a stop-cock, K, on the outside of the casing, substantially as and for the purpose set forth.

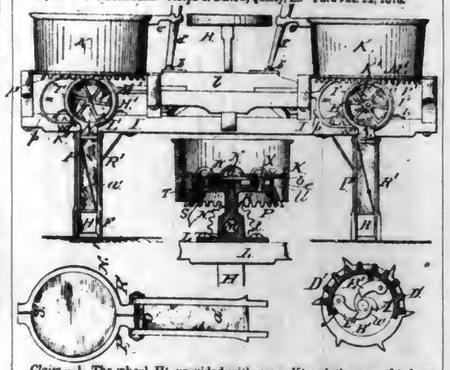
5. The casing of the furnace A, in combination with the water-reservoir H and hot-air pipes L, entering the casing to communicate with the hot-air chamber at the sides of the furnace, just below the reservoir, substantially as described.

204,940. TRACE AND PAD BUCKLES. Geo. E. Bales, Seattle, Wash. Filed Apr. 24, 1878.



Claim.—An improved buckle formed by the combination with each other of the frame A, having an inwardly-projecting slotted flange, B, and a rigid tongue, E, formed upon its forward bar, a loop, H, formed upon its rear bar, and a rigid tongue, I, upon its center bar, and the wedge-block D, grooved longitudinally to receive the tongue E, and having a loop, F, formed upon its forward end, substantially as herein shown and described.

204,941. SEED-PLANTERS. Joseph C. Barlow, Quincy, Ill. Filed Jan. 22, 1878.



Claim.—1. The wheel H′, provided with arms K′ and the arms L′, forming buckets M′, substantially as specified.

2. A seed-wheel the arms of which radiate from a common center, and are provided with an extension to retain the grain, substantially as set forth.

3. The segments D′, loosely mounted on the shaft *w*, and provided with pawls for engaging in reverse directions the triple rack A′, secured on the shaft *w*, substantially as specified.

4. In a seed-planter, a segmental cog loosely mounted upon a shaft, and provided with a pawl engaging a rack secured on the same shaft, in combination with a seed-wheel, substantially as specified.

5. The connecting-bar *l*, provided upon each end with a casing, *n*, constructed in one piece, and having the upper and lower racks *u*, in combination with the segmental cogs D′, pawls E′, and ratchet A′, substantially as set forth.

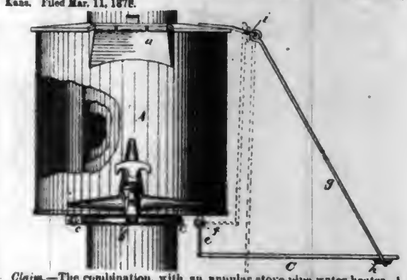
6. The casing N′, composed of the sections P′ R′, the upper portion of which is circular, and provided with a transparent face and seed-inlet, in combination with the seed-wheel H′, substantially as shown and described.

7. The casing N′, composed of the sections R′ P′, and provided with apertures S′, as shown, in combination with the seed-wheel H′, substantially as specified.

8. The toothed casings *n*, segmental cogs D′, provided with pawls and a rack, in combination with the seed-wheel H′, carrying buckets M′, and with the casing N′, substantially as specified.

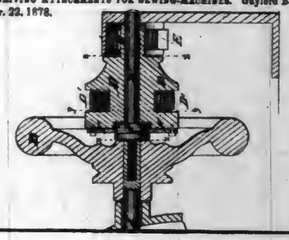
9. The casing N′, composed of the sections P′ R′, constructed substantially as shown, so that its upper part closely encompasses the seed-wheel H′, while its lower portion has parallel sides and forms a seed-tube, substantially as shown and specified.

204,942. COMBINED WATER-RESERVOIR AND STOVE-PIPE SHELF. J. W. Barton, Emporia, Kans. Filed Mar. 11, 1878.



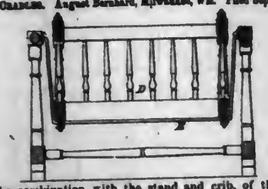
Claim.—The combination, with an annular stove-pipe water-heater, A, of a shelf, C, suspended by rods *e g* and eyes *f h i*, arranged as and for the purpose specified.

204,943. DRIVING ATTACHMENTS FOR SEWING-MACHINES. Gaylord Ball, Cheyenne, Wyo. Filed Mar. 22, 1878.



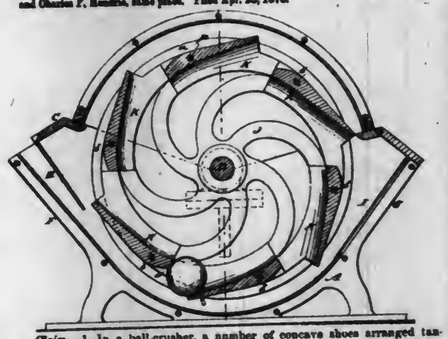
Claim.—The combination, with the shaft A A′, having collar F′, of the loose pulley D, provided with pivoted spring-cams F, a treadle-strap, D′, and a coiled spring, E, said strap and spring winding in opposite directions, as and for the purpose specified.

204,944. CRADLES. August Bernhard, Milwaukee, Wis. Filed Sept. 11, 1877.



Claim.—The combination, with the stand and crib, of the longitudinal bent rods E, passing beneath the bottom of the crib and extending from head to foot, whereby the crib is suspended and a support is afforded for the slatted or other bottom, substantially as specified.

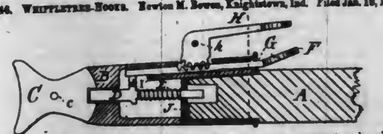
204,945. PULVERIZING APPARATUS. Henry Bolshoff, Central City, Colo., assignor to himself and Charles F. Hendrie, same place. Filed Apr. 23, 1878.



Claim.—1. In a ball-crusher, a number of concave shoes arranged tangential to a circle, and containing a ball which rolls upon the inner face of the shoes, and drops from one shoe to another as the series of shoes is rotated, substantially as herein shown and described.

2. The combination, with rotary crusher, of the case having straight inclined sides F G, chute H, and sieve I, arranged as shown and described, for the purpose specified.

204,946. WHIFFLETREE-HOOKS. Bevier M. Brown, Knightstown, Ind. Filed Jan. 10, 1878.



Claim.—1. In a whiffletree-hook in which are two separate chambers divided by the removable plate I, the combination, with the movable tip C, of the centrally-locking bolt D, said bolt being provided with a projection, *d*, by which it is connected with a rod or strap in the separate chamber G, substantially as shown and specified.

2. In a whiffletree-hook in which are two separate chambers divided by the removable plate I, the combination of the movable tip C, locking bolt D, having projection *d*, spring E, ratchet-bar F, and cogged lever H, substantially as herein shown and described, and for the purpose specified.

3. A whiffletree-hook provided with a removable plate, I, forming the division between the chamber in the ferrule, into which the end of the whiffletree enters, and the separate chamber G, in which the operating-rod is situated, substantially as herein shown and described.

204,947. BOOK-HOLDERS. James B. Brown, Suisun City, Cal. Filed Mar. 19, 1878.



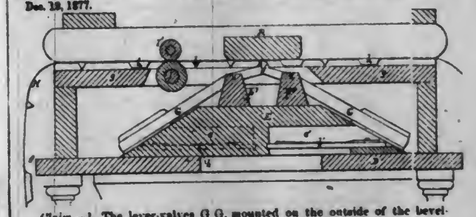
Claim.—In a book-support, the spring-clasp A B C C′, having side arms and strip D, the latter attached by screws to a piano or organ, as shown and described.

204,948. FENCE-POSTS. Belus Calkins, Varysburg, N. Y. Filed Apr. 5, 1878.



Claim.—The foot-piece having the box or socket *b*, and provided with the brace *a* and blades *c*, the parts being cast or rigidly connected together, as and for the purpose set forth.

204,949. MECHANICAL MUSICAL INSTRUMENTS. J. H. Chase, Cambridgeport, Mass. Filed Dec. 19, 1877.

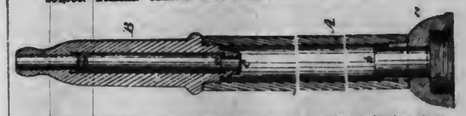


Claim.—1. The lever-valves G G, mounted on the outside of the bevel-faced tube-board E, arranged relatively to the wind-reservoir chest B, so as to be adapted to be held to their seat or bed by their own weight and by pneumatic pressure, in combination with a music-sheet provided with projections or studs on its surface, as described.

2. In a mechanical musical instrument, the combination of the music-sheet H, the grooved platform *g*, the grooved roller I and friction-roller I′, and lever-valves G G, when said parts are constructed and arranged to operate substantially as described and shown.

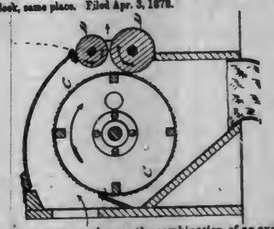
3. In a mechanical musical instrument in which is employed an endless band or detached sheet of paper or other flexible material having projections from its surface for the purpose of operating valves, the reeds *k k′*, arranged alternately in two rows, substantially as and for the purpose set forth.

204,950. NOZZLES. Charles E. Clark, Rochester, N. H. Filed Dec. 7, 1877.



Claim.—A hose pipe and nozzle consisting of the pipe A, having at one end a socket, *a*, provided with an inwardly-projecting annular edge, *b*, and at the other a nozzle, B, made in two diameters and having the inwardly-projecting annular edges *c d* and the outwardly-projecting edge *e*, as specified.

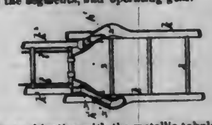
204,951. COTTON-CONDENSERS. Emanuel Cook, Oglethorpe, Ga., assignor to himself and Jacob R. Cook, same place. Filed Apr. 3, 1878.



Claim.—In a cotton-condenser, the combination of an overshot condensing-screen, C, and the two rolls D D, the upper one of the latter being made smaller than the lower one, as and for the purpose specified.

204,952. FIRE-ESCAPE LADDERS. Solomon Davis, New York, N. Y. Filed Sept. 7, 1877.

Brief.—Tubular ladder-sections are coupled by inclined sockets having tapering openings on upper end of one section of ladder, and laterally-adjustable tubular sections at lower ends of next section, whereby, when last-named section is raised above the upper end of its supporting-section and allowed to settle down, the adjustable sections enter the other, and water-connection is established. The tubular ladder is provided with toothed segments, braces from the tubes to the segments, and operating-gear.



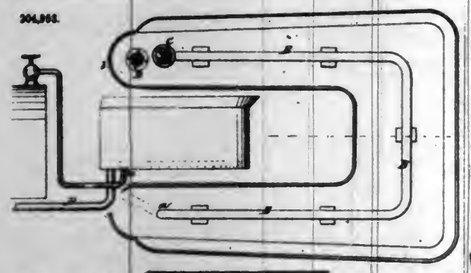
Claim.—1. In combination with the metallic tubular ladder *k* and tube *s*, the segments k^1, connected directly to such tubes *k*, the braces *l*, extending from the ladder-tubes *k* to the segments k^1, the cross-shaft *i*, sustaining-frames *h*, pinion 3, and crank *m*, substantially as set forth.

2. The tubular ladder provided with inlet-pipe *s* and socket *s′*, in combination with the extension-ladder k^2 and tubular sections *s′*, substantially as and for the purposes set forth.

204,953. FEED-WATER HEATERS. Walter Dawson, Scranton, Pa. Filed Mar. 20, 1878.

Claim.—As the improvement hereinbefore described, the combination, with the locomotive-boiler and the tender, having feed-pipe D attached, as specified, of the surplus-steam pipe connected with the steam-space of the boiler and extending through the water-space of the tender, and terminating in the end of the right side or leg *b* thereof, contiguous to the exit-orifice of feed-pipe D, as shown and described, for the purpose specified.

204,953.

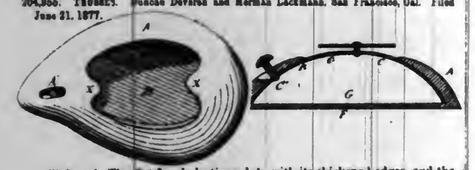


204,954. FLY-WHEEL FOR SEWING-MACHINES. A. Decker, Kankakee, Ill. Filed May 10, 1878.



Claim.—The combination, with the main shaft of a sewing-machine, having a fixed collar and square end, of a fly-wheel placed loosely thereon, and clamped by a loose outer collar and adjustable clamp-screw, substantially as shown and described.

204,955. TROUSERS. Duncan Devaras and Herman Lockmann, San Francisco, Cal. Filed June 21, 1877.



Claim.—1. The flat faced elastic pad A, with its thickened edges, and the sides extending up so as to form a socket for the reception of the concavo-convex back B, substantially as shown, and for the purpose herein described.

2. The elastic pad A, constructed as shown, in combination with the concavo-convex back B, fitted as shown, and having the minute perforations C C for the ingress and egress of air, substantially as herein described.

3. The elastic pad A, fitted to the perforated concavo-convex back B, in combination with the plate E, adjustably mounted upon the back plate B, as shown, and provided with the series of perforations F, whereby a universal adjustment of the pad may be had, substantially as herein described.

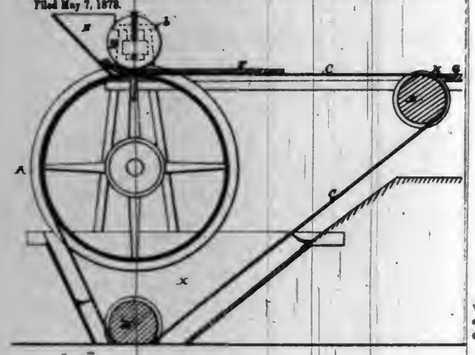
4. The hollow elastic pad A, fitted to the rigid concavo-convex back plate B, and having the thickened edges and point, said point being perforated by the elongated hole A', to receive and adjust itself to the stud C' and allow the pad to fit itself to the rupture, substantially as shown and herein described.

204,956. WARDROBE. Michael Doyle, San Francisco, Cal. Filed Dec. 5, 1877.



Claim.—A portable clothes-guard or wardrobe composed of the parts C E and the door F, as shown, and provided with the adjustable flap H I, to close upon and fit different base boards, substantially as herein described.

204,957. BRICK AND TILE MACHINES. Emile Durand, La Bastide Rousieux, France. Filed May 7, 1878.



Claim.—1. In a machine for making bricks, tiles, &c., the combination of the mould-box A, the pivoted arm B, the pressing-roller C, and the adjustable stop D, substantially as and for the purpose set forth.

2. In a machine for making bricks, tiles, &c., the combination of the mould-box A, the pivoted arm B, the pressing-roller C, the adjustable stop D, and the ejecting-bar E, substantially as and for the purpose set forth.

3. In a machine for making bricks, tiles, &c., the combination of the mould-box A, the pivoted arm B, the pressing-roller C, the adjustable stop D, the ejecting-bar E, and the pivoted bar F, substantially as and for the purpose set forth.

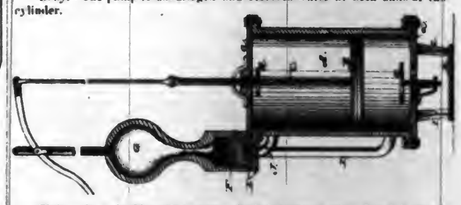
4. In a machine for making bricks, tiles, &c., the combination of the mould-box A, the pivoted arm B, the pressing-roller C, the adjustable stop D, the ejecting-bar E, the pivoted bar F, and the pivoted bar G, substantially as and for the purpose set forth.

Claim.—1. The grooved forming-pulley A, having the movable flange or flanges to vary the size and shape of the formed belt, in combination with a pressing-roller, B, substantially as shown, and for the purpose herein described.

2. The grooved forming-pulley A, pressing-roller B, and belt C, in combination with the washing and cleansing tank X, scrapers or brushes Y, and guide-pulleys D and D', substantially as shown, and for the purpose herein described.

204,958. PUMPS. Charles H. Dawelins and Henry Oitvel, Richmond, Ind. Filed Oct. 1, 1877.

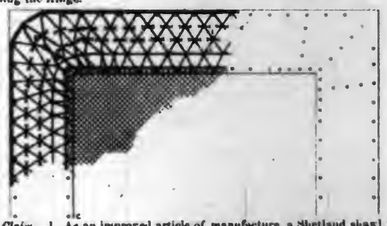
Brief.—The pump is submerged and receives water at both ends of the cylinder.



Claim.—In a double-acting pump, the independent tubes J and I, above and below the piston B, in combination with cylinder A and water-chamber F on the extension E, as and for the purpose set forth.

204,959. SHETLAND SHAWLS. Fredrick Farrand, Boston, Mass. Filed May 13, 1878.

Brief.—The body or center portion of the shawl is knitted as usual, and the fringe is attached by knot-threads, which pass about a heading course and the selvage of the fabric. Puckering or drawing or straining of the shawl at its square corners is thus avoided. There is also peculiarity in the method of forming the fringe.

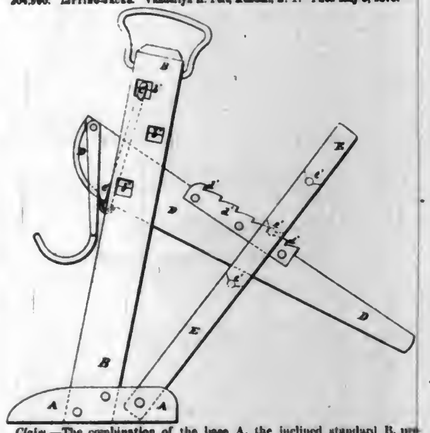


Claim.—1. As an improved article of manufacture, a Shetland shawl provided with a continuous uniform fringe, the heading of which is tied by knot-threads to the selvage of the body or center part of the shawl, all as and for the purpose described.

2. In the manufacture of shawls, the herein described process of forming the fringe and uniting it to the body part, consisting in placing the selvages or outer edges of the body-piece over selvage-pins, stretching about such selvage-edges, and parallel therewith, heading and ball-forming courses of yarn, crossing such yarns with spanning-threads, tying by knot-threads the crossings of the spanning-threads with the heading and ball-forming courses of yarns, and tying the heading-yarns with the selvage, substantially as described.

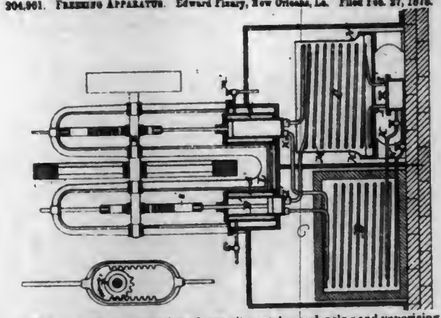
3. A shawl combined with a fringe having a heading, the outer edge of which, or that next the selvage of the shawl, is made shorter than the inner edges, substantially as described.

204,960. LIFTING-JACKS. Vanderlyn H. Felt, Kendall, N. Y. Filed May 9, 1878.



Claim.—The combination of the base A, the inclined standard B, provided with holes b', the hook-link C, the lever D, provided with the rack-teeth d', and the pivoted bar E, provided with the pins or catches e', with each other, substantially as herein shown and described.

204,961. FREEZING APPARATUS. Edward Finny, New Orleans, La. Filed Feb. 27, 1878.



Claim.—1. The combination of two alternately condensing and vaporizing cylinders with two sets of coils, arranged respectively in a refrigerating-tank and a condensing-chamber, both sets of coils being connected with a receiver, as herein described.

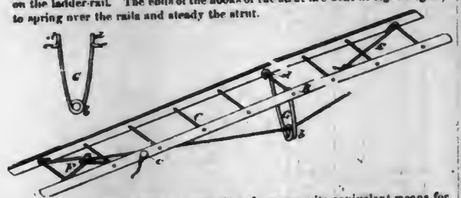
2. The combination, with two cylinders, alternately and simultaneously condensing and vaporizing volatile substances, as herein described, said cylinders being connected with the receiver through the medium of two sets of coils in the refrigerating-tank and condensing-chamber respectively, of a double rack and sectional pinion, arranged in relation to the driving shaft as described, or of the mechanical equivalent of the same, whereby the pistons work alternately in their respective cylinders, and are moved in said cylinders in opposite directions simultaneously and at an equable speed and with uniform power, substantially as herein described.

3. The combination, with alternate condensing and vaporizing cylinders, intercommunicating water-jackets and suitable water supply and discharge, arranged as described, whereby a flow of water is maintained around the two cylinders, for the purposes and in the manner herein described.

4. The combination, with the condensing pipes or coils, of a frame for supporting around said pipes a material absorbent of water, and whether the same is used with or without an air-agitating mechanism, as herein described.

204,962. ADJUSTABLE LADDER-TRUSSES. George H. Fox, Boston, Mass. Filed Mar. 30, 1878.

Brief.—A detachable ladder truss consists of a rope hooked to a round at one end of the ladder, a V-shaped rod or strut hooked to the middle round, (and through the eye of which the rope passes,) and a V-shaped rod hooked to a round at the other end, the rope passing through it and belayed about a pin on the ladder-rail. The ends of the hooks of the strut are bent at right angles, to spring over the rails and steady the strut.



Claim.—1. A ladder truss consisting of a rope, or its equivalent means for attaching the end of the same to the ladder, and an intermediate strut, the whole adapted for ready application to and removal from any ordinary ladder, and adjustable to varying lengths of ladders, substantially as set forth.

2. The hooks E and F and brace G, as adapted to fold down upon the body of the ladder, substantially as and for purposes stated.

3. The hooks E and F and brace G, as adapted to fold down upon the body of the ladder, and readily removable from the ladder, substantially as and for purposes stated.

4. The brace G, as formed with the hooks d d and ears e e, substantially as and for purposes stated.

204,963. BOOT AND SHOE LASTING APPARATUS. H. Gerrol, Chester, Ill. Filed Apr. 11, 1878.



Claim.—1. In a lasting device, the combination of the slotted rod B with the screw-rod A, substantially as and for the purpose set forth.

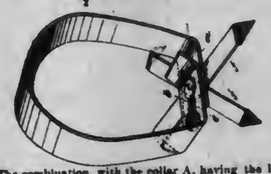
2. In a lasting device, the combination of the adjusting-nuts F with the right-and left-hand screw-rod C, by which the arms D are operated, substantially as and for the purpose set forth.

3. In a lasting device, the combination of the adjusting-nuts F on the right-and left-hand screw-rod C and thumb-nuts G with the arms D, provided with the projections I, by means of which the jaws H are operated, all substantially as and for the purpose set forth.

4. In a lasting device, the combination of the adjusting-nuts F, the right and left hand screw-rod C, and guides E with the slotted rod H and screw-rod A, substantially as and for the purpose stated.

204,964. SHEEP-PROTECTORS. Cephas Gilbert, Rockville, assignor to himself and Thomas W. Beaty, Conwayborough, S. C. Filed May 7, 1878.

Brief.—The collar is provided with cross-pieces having pointed ends, to protect the sheep against the ravages of dogs, &c.



Claim.—The combination, with the collar A, having the lapped and slotted ends a b, of the rivet c and the jointed bars f, substantially as shown and described.

204,965. BALE-TIES. Saml. H. Gilman, New Orleans, La. Filed May 23, 1878.



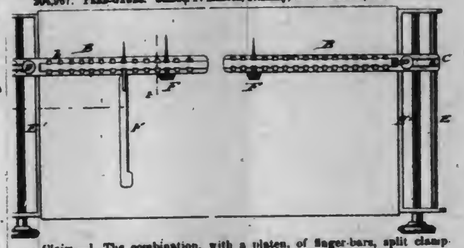
Claim.—1. A bale-tie provided with two or more sets of corrugations, e and e', in combination with globes f and bale-band L, whereby a band as broad, or nearly so, as the channels formed by the corrugations may be passed through the body of the tie, and several independent globes employed to bear on said band without liability of moving laterally out of one channel into another, substantially as described.

2. The body A of a bale-tie, constructed substantially as described, in combination with globes f and a bale-band, L, for the purposes set forth.

204,966. PROCESSES FOR CURING FISH. Gardner W. Griffin, Chelsea, Mass. Filed May 17, 1878.

Claim.—The improved process of curing fish, such consisting in salting them, removing the bones and skin from the flesh, and subsequently, without granulating it and soaking it in brine, subjecting the said flesh to compression in a press, so as to expel the water or surplus brine from and reduce the mass to a cake or cakes, as set forth.

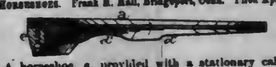
204,967. FEED-GAGES. Samuel P. Hallock, Oriskany, N. Y. Filed Apr. 6, 1878.



Claim.—1. The combination, with a platen, of finger-bars, split clamp-nuts, and plain and threaded guide-rods at the sides of the platen, substantially as and for the purpose specified.

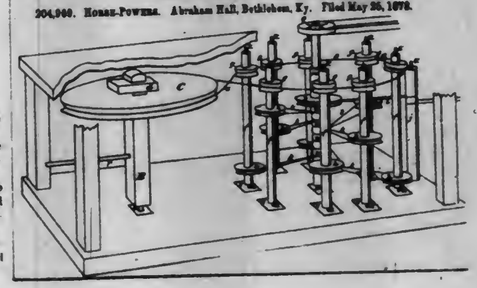
2. The clamp-disk and screw-socket D, rod E, and screw E', combined with the finger-bar B and split nut C, as and for the purpose specified.

204,968. HORSESHOES. Frank H. Hall, Bridgeport, Conn. Filed Apr. 13, 1878.



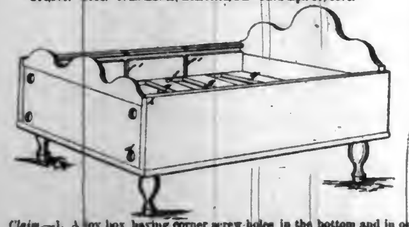
Claim.—A horseshoe, a, provided with a stationary calk, d, extending around the inner edge of the toe, around the quarters, and leaving at the outer edge a space for the attachment of a removable toe-calk, c, said stationary calk d being tapering on both sides toward the heel, and leaving the heel of the shoe flat and thin, all substantially as and for the purposes herein set forth.

204,969. HORSE-POWERS. Abraham Hall, Bethlehem, Ky. Filed May 25, 1878.



Claim.—The drum C, its shaft B, and the enlarged band *e*, constructed and arranged substantially as described, in combination with shafts *f*, their pulleys *h* and *g*, counter-shaft *m*, and its series of pulleys *n* and bands *k*, substantially as shown and set forth.

204,970. TOYS. J. H. Hawes, Moorestown, Pa. Filed Apr. 16, 1878.



Claim.—1. A toy box having corner screw-holes in the bottom and in one of the end walls, for screwing in supporting-legs, and side walls with interior longitudinal and transverse grooves, substantially as shown and described.

2. A toy box having a bottom and end wall with corner screw-holes, detachable screw-legs, and side walls with interior grooves, in combination with cross-slats and with detachable head-boards secured into end recesses of the side walls, substantially as and for the purpose set forth.

3. The combination, in a toy box, of the body of the box, having end recesses on the side walls, with detachable head-boards, to be secured in line with the end walls or at right angles thereto, according as the box is to be used as a bedstead or cupboard, substantially as specified.

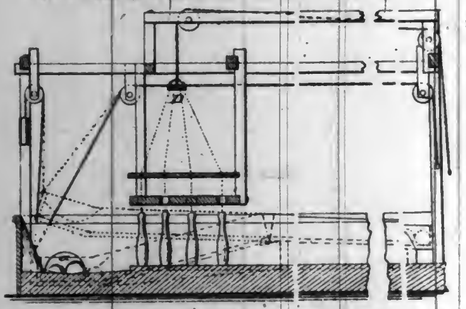
204,971. BOTTOMS FOR COTTON-CANS. James Hill, Providence, R. I. Filed May 17, 1878.



Claim.—1. A bottom for cans stamped with a deep central indentation, *a*, combined with the star-like radiations *b*, substantially as described.

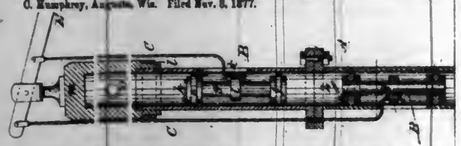
2. A concave or conically-formed disk of sheet metal, provided with gradually-diminishing radial indentations, combined with oppositely-increasing ones, whereby the edge of the disk may be held back while the center is being drawn up, substantially as described.

204,972. BOWLING-ALLEYS. Henry J. Hellert, Franck M. Möller, and Charles A. Meyer, Vincennes, Ind. Filed Apr. 26, 1878.



Claim.—In a bowling-alley, the combination of a hinged angular and balanced gutter-section at the rear of the gutter, with an operating-rope attached to the gutter-section, and with an inclined and channeled rear part of the alley, and with a connecting-opening in the partition between alley and gutter, substantially as set forth.

204,973. DOUBLE-ACTING PUMPS. Henry J. Humphrey, Grundy Center, Iowa, and Luther C. Humphrey, Augusta, Wis. Filed Nov. 6, 1877.



Claim.—The combination of the double pistons B, the barrel A, slotted on opposite sides, the piston-rods t', and the lever E, substantially as herein shown and described.

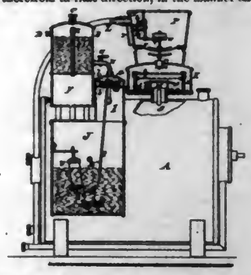
204,974. APPARATUS FOR CARBURETING AIR. Ryan J. Ryans, Pittsburg, Pa. Filed Apr. 19, 1877.

Brief.—The flow of oil to the recarbureting-chamber, and thence to the primary carbureting-cylinder, is automatically regulated by a float and slide valve. A back-pressure of carbureted air automatically closes the opening for such supply, and at the same time shuts off the supply of air to the air forcing and carbureting cylinder. The mingled air and vapors, after leaving the main carbureting-cylinder, pass through a recarbureting-chamber, and thence to a storing and condensing chamber.

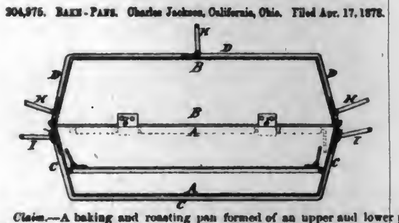
Claim.—1. The perforated circular frame L, covered with cotton cloth or other porous material, arranged inside of the recarbureting-chamber K, in combination with the hood-covered carbureted-air pipe M and curved inlet or gasoline-feed pipe *g*, substantially as shown and set forth.

2. The movable diaphragm T, provided with a vertical rod, V, to the upper end of which is attached a lever, W, connecting it with a valve, Y, in combination with the air-supplying pipe r, for automatically regulating the supply of atmosphere to the main cylinder A, and preventing the escape of carbureted air therefrom in that direction, in the manner shown and set forth.

204,974.

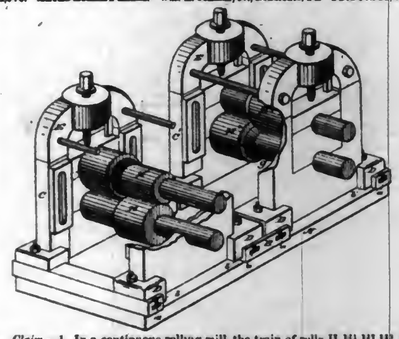


204,975. BAKE-PANS. Charles Jackson, California, Ohio. Filed Apr. 17, 1878.



Claim.—A baking and roasting pan formed of an upper and lower pan, A B, strengthened, respectively, by bars C D, and having locking-wires E F and handles H I, the lower pan A being bent on the edges and having an outward offset, while the upper pan B is wired on the edges and provided with sockets, as and for the purpose specified.

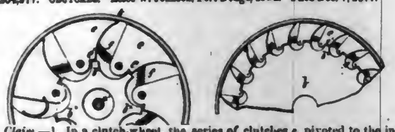
204,976. METAL-ROLLING MILLS. Wm. R. Jenkins, Jr., Bellefonte, Pa. Filed Oct. 13, 1877.



Claim.—1. In a continuous rolling-mill, the train of rolls H H¹ H² H³, constructed as described, provided with grooves or passes I, each with a longer and a shorter axis, arranged alternately, substantially as described.

2. In a continuous rolling-mill, the arrangement of the pairs of rolls in a train of rolls placed horizontally, so that the same shall present to the iron passing between them the shorter axes of the grooves or passes alternately at right angles, substantially as described.

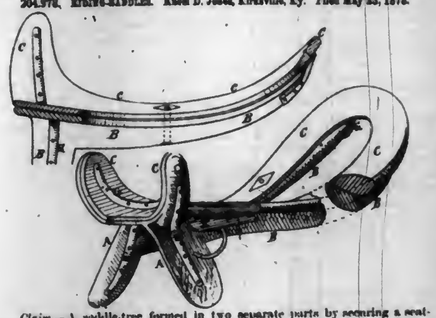
204,977. CLUTCHES. Reice W. Johnson, Fort Dodge, Iowa. Filed Dec. 7, 1877.



Claim.—1. In a clutch-wheel, the series of clutches *c*, pivoted to the inner side of and arranged around the plate *b*, as shown, and braced one against another by the series of intermediate springs *f*, substantially as set forth.

2. The combination, with the plate *b*, constructed with the stop or projection b^2 and barrel a^1 on wheel *a*, of the pivoted clutch *c*, having the shoulder *c'* and spring *f*, substantially as set forth.

204,978. RIDING-SADDLES. Awed D. Jones, Kirksville, Ky. Filed May 23, 1878.



Claim.—A saddle-tree formed in two separate parts by securing a seat-piece, C, detachably to the bow A and bars B by bolts, substantially as herein shown and described.

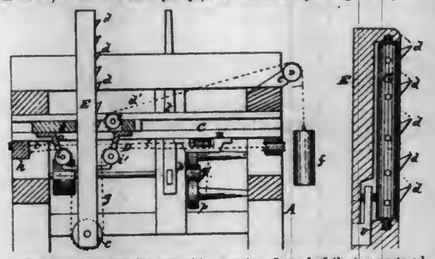
204,979. MANUFACTURE OF BOOTS AND SHOES. Geo. H. Jones, Rochester, N. Y. Filed Aug. 27, 1877.



Claim.—The process herein described of manufacturing boots and shoes, which consists in laying a flat piece of leather over the bottom of the lasted boot or shoe, sewing the same to the upper and the inner sole by a seam passing to the inside, then cutting around the toe and sides inside the seam as far back as the heel, leaving thereby a welt at the edges and a filling-piece in the center, and finally sewing the outer sole to the welt by a seam passing through both of said parts outside of the upper, as and for the purpose specified.

204,980. LOG-TURNERS. Geo. J. Keats, Emporium, Pa. Filed Apr. 22, 1878.

Brief.—The logs are turned by means of a vertically-sliding bar carrying a vertically-pivoted roller in a longitudinal recess, and provided with pivoted teeth, and arranged to turn in the direction in which the log moves on the saw-mill carriage, and it is returned to its working position by a spring in the lower part of the bar, which engages with a pin projecting from the roller, and a slotted and laterally-moving carriage formed in two parts, through which the bar works, and which carries pulleys, over which the operating-chain passes.

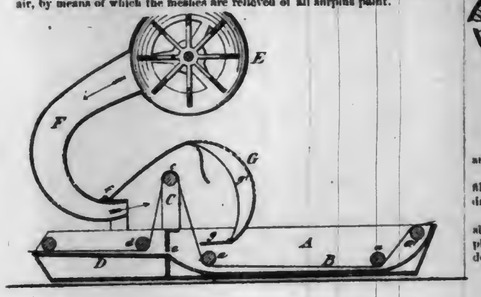


Claim.—1. The combination, with a carriage formed of the two parts *a b*, operating as described, of the bar E, provided with pivoted teeth *d*, as and for the purpose specified.

2. The spring-actuated roller G, carrying the pivoted teeth *d*, in combination with the bar E, as herein shown and described.

204,981. APPARATUS FOR PAINTING WIRE-CLOTH. Michael Kennedy, Chicago, Ill., assignor, by mesne assignment, to Horace H. Waters, same place. Filed July 11, 1877.

Brief.—Submits the wire-cloth, after it leaves the paint-vat, to a blast of air, by means of which the meshes are relieved of all surplus paint.



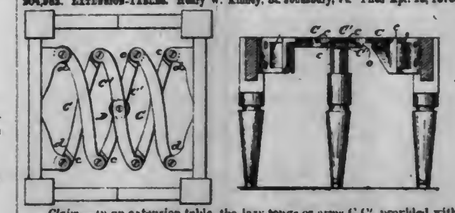
Claim.—1. The paint-vat A, in combination with an air-blast mechanism, E F, and mechanism whereby the web of wire-cloth is conducted, after it leaves the paint-bath, directly in front of the mouth of the blast-conductor, substantially as and for the purpose set forth.

2. The air-blast mechanism E F, in combination with the paint-receptacle A and guide-rollers, suitably arranged to direct the strip of wire-cloth through the bath of paint, and thence in front of the mouth of the blast-conductor, substantially as described.

3. The paint-vat A, provided with one or more guide-rollers, *s*, at its bottom, in combination with the elevated roller *e*, guide-roller *d*, and blast-conductor F, substantially as described.

4. The cover G, in combination with the vat A, raised roller *e*, and blast-conductor F, substantially as and for the purpose set forth.

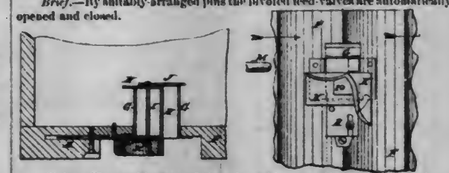
204,982. EXTENSION-TABLES. Henry W. Kinney, St. Johnsbury, Vt. Filed Apr. 18, 1878.



Claim.—In an extension-table, the lazy-tongs or arms C C', provided with the lugs or projections *c c*, to brace the jointed ends of said arms or tongs to prevent the sagging of the table, substantially as shown and described.

204,983. SEED-PLANTERS. Joseph Lando, Monticello, Ark. Filed Jan. 9, 1878.

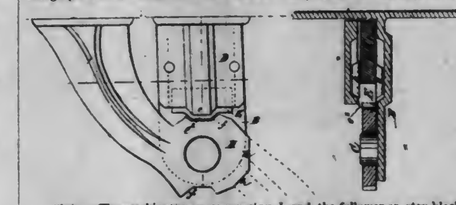
Brief.—Its suitably-arranged pins the pivoted feed-valves are automatically opened and closed.



Claim.—The combination of the adjustable gages H, the bolt I, the inner plate J, the outer flanged plate K, and the rods L M with the box G, inserted in the angles of the drum F, and with the frame A a^1 a^1, substantially as herein shown and described.

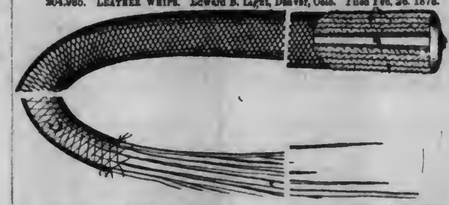
204,984. LOCK-HINGES. Benson Lent, Peekskill, N. Y. Filed May 24, 1878.

Brief.—A case in the stationary bracket incloses a spring, which acts to press a stop against the angular circumference of the pivoted head of the swinging bracket. The stop is adapted to enter a corresponding notch in the swinging bracket, to lock the blind in either a fully opened or closed position.



Claim.—The combination of the spring I and the follower or stop-block E, arranged upon the plate B of the stationary bracket, with the swinging bracket provided with notches *f* in the circumference of the head H, substantially as and for the purpose set forth.

204,985. LEATHER WHIPS. Edward B. Light, Denver, Colo. Filed Feb. 26, 1878.



Claim.—1. A leather whip covered with a plaiting of thread, as shown and described.

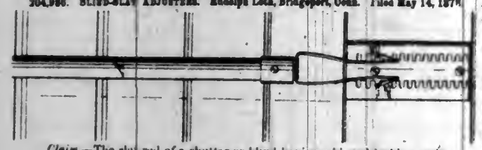
2. In making whips, the method of cutting the leather in a wet state, filling the pattern therewith, then plaiting on the thread-cover, and finally drying the whip, as described.

3. The method of making the filling of leather whips, consisting, first, in shaping the tapering leather strips of different length or size in a mold, and plaiting them first in wet state, and finally in dry state, substantially as described.

4. The method of making fillings of leather whips, consisting, first, in

molding the tapering leather strips into tapering shape; secondly, splicing and tying them at the butt-end, then plaiting them in wet state and rolling them into proper shape; and, finally, plaiting them in dry state, substantially as specified.

204,986. BLIND-SLAT ADJUSTERS. Rudolph Loth, Bridgeport, Conn. Filed May 14, 1878.



Claim.—The slat-rod of a shutter or blind having a hinged locking-spring, with projecting handles or finger-rests and sidewise-extending guide-ends, in combination with a notched and flanged guide-plate of the shutter-frame, substantially as and for the purpose set forth.

204,987. BOTTLE-STOPPERS. Thos. Massey and Wm. H. Rawe, Pawtucket, R. I. Filed May 15, 1878.



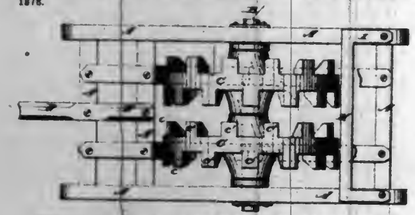
Claim.—1. A bottle-nozzle having parallel sides, and having formed in opposite sides thereof slots or grooves with a straight upper portion and a curved lower portion, as herein shown and described.

2. The wire yoke C, having its ends bent outward and returned upon themselves to form pivots *b*, in combination with the nozzle B, having slots *a* for holding the yoke, as herein shown and described.

3. The stopper-casting D, having the slotted transverse sleeve *c* and the slotted rubber cylinder *d*, in combination with the yoke C, substantially as herein shown and described.

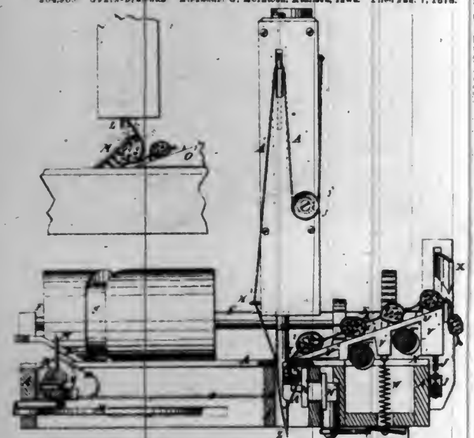
4. The stopper-casting D, having the cavity *e*, in combination with the elastic stopper E, having the button *f*, substantially as shown and described.

204,988. SOIL-PULVERIZERS. Stephen McColm, Waggoner's Ripple, Ohio. Filed May 20, 1878.



Claim.—An improved pulverizer formed by the combination of a series of wheels, C, having projections or blocks *c* formed upon or attached to the opposite sides of their rims, in such positions as to alternate with each other, with an axle or axles, B, and a frame work, A, substantially as herein shown and described.

204,989. GRAIN-BINDERS. Alexander G. Mefatosh, Atalissa, Iowa. Filed Jan. 7, 1878.



Claim.—1. The combination, in a harvester, of the knife N and the elevator I O, as and for the purpose specified.

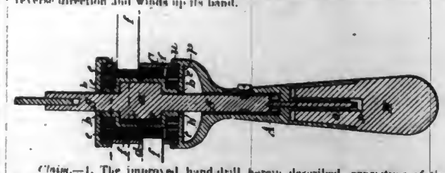
2. The combination, with the fixed tooth-bars O O', of the median movable bar I N', operated by the cams T T and spring W', as specified.

3. The combination of the two straps O, wound in opposite directions, with the hinged bar of the rake I M, for raising and lowering the rake-teeth, and for pressing down the gavel while being bound, substantially as herein shown and described.

4. The combination, in a harvester, with the elevator and knife, of a knotting or binding mechanism that ties two knots between each sheaf, as and for the purpose specified.

204,990. HAND-DRILLS. Stephen Morey, Syracuse, N. Y. Filed Nov. 20, 1877.

Brief.—The enlarged portion of the drill-spindle is provided with cam-grooves, in which friction-rollers are placed. Two drums, separated from each other by a diaphragm and arranged in reverse positions, are each provided upon the portion which surrounds the enlargement of the spindle with a wound band or cord, whose end passes out through an aperture in the case, and with a coiled spring. These bands, being pulled, cause the drums to rotate, force the rollers into the shallow portions of the cam-grooves, and revolve the spindle, winding up the springs, the reaction of which causes the drums to slip loosely around the spindle and wind up the bands. The mechanism is so arranged that while one drum engages and rotates the spindle the other revolves in a reverse direction and winds up its band.



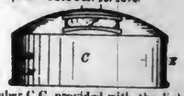
Claim.—1. The improved hand-drill herein described, consisting of the drill-stock provided with the case C, the drill-spindle S, passing through the case C, and having inside thereof the enlargement s, with cam-grooves e, the rollers r, drums b, bands f, and springs a, all constructed and arranged within the case C, substantially in the manner specified and shown.

2. The within-described mechanism for rotating the drill-spindle, in combination with a drill-stock composed of the shank A, case C, and handle H, substantially as shown and described.

3. In combination with the drill-spindle S, having a shoulder near its forward end, a drill-stock provided in the socket of the shank A, with stud *o*, having male and female threads, the set-screw *v*, passing through said stud and fitted into a countersunk in the end of the spindle, and the handle H, screwed onto stud *o*, all constructed and arranged substantially as and for the purpose set forth.

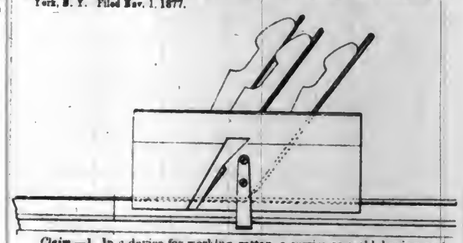
4. The combination of the shank A, provided with plate *p* and screw-threaded flange *w*, cylinder C, and removable cap *c*, with the described mechanism, and spindle S, substantially as and for the purpose set forth.

204,991. BROILING-CHAMBERS. Edwin Norton, Boston, Mass., assignor of one-half his right to Wm. P. Baldwin, same place. Filed Feb. 13, 1878.



Claim.—The chamber C C, provided with the lights F F, the opening E, and brackets H H, all operating together substantially as described, and for the purpose set forth.

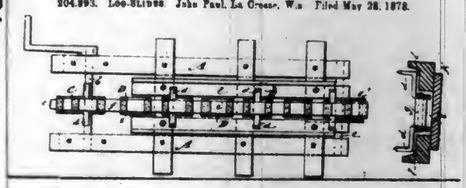
204,992. APPARATUS FOR WORKING RATTAN. Geo. P. Orerin and John H. Coldwell, New York, N. Y. Filed Nov. 1, 1877.



Claim.—1. In a device for working rattan, a carrier or mold having rectangularly-beveled top and a grooved or planed-off apex, with fixed projecting spurs, to attach the rattan section thereto for the action of the plane, substantially as and for the purpose described.

3. The combination of a carrier or mold having beveled top and tapering, grooved, or flat apex with a plane having a bottom recess corresponding to bevel of carrier, and two side cutters and a center grooving cutter, substantially as and for the purpose specified.

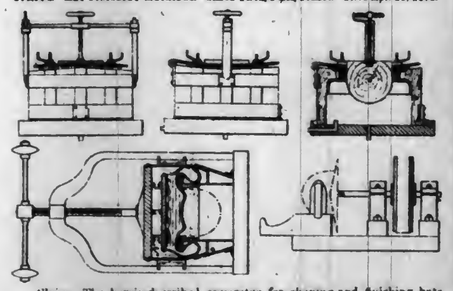
204,993. LOG-SLIDES. John Paul, La Crosse, Wis. Filed May 28, 1878.



Claim.—1. A link composed of strips or bars D, provided with dogs *d*, formed thereon as described, said bars being connected by bolts *f* to form the link, substantially as and for the purpose set forth.

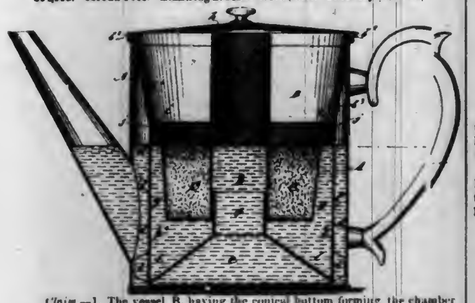
2. The slide K, having the trough or channel *i*, and rails or ways *l*, in combination with the endless chain or carrier and the spur-wheel and pulley, as shown and described, for the purpose specified.

204,994. HAT-FINISHING MACHINES. Simon Firm, Paris, France. Filed Apr. 25, 1878.



Claim.—The herein-described apparatus for shaping and finishing hats, the same consisting substantially, first, of mechanism for shaping by two distinct but simultaneously-produced pressures upon the brim and crown of the hat while both are subjected to the action of steam; second, of mechanism for ironing the crown, consisting of a revolving hat-carrying form and an adjustable and iron support operated by hand, substantially as herein shown and set forth; third, of mechanism for shaping and pressing the brim, consisting of blocks made of a composition of plaster, one stationary and the other movable, as herein set forth; and, fourth, of mechanism for turning the rim, consisting of a matrix supporting the brim of a platen, carrying an India-rubber pouch filled with water, and a cylindro-conical case in two parts, operating as herein shown and set forth.

204,995. COFFEE-POTS. Armstrong B. Place, Denver, Colo. Filed May 23, 1878.



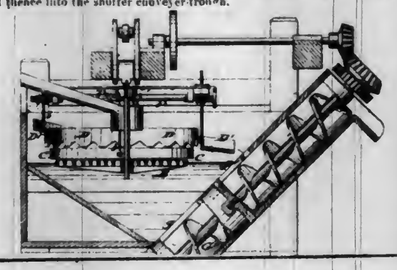
Claim.—1. The vessel B, having the conical bottom forming the chamber *e*, the central tube *f*, the solid sheet-metal upper and lower portions b^1 b^1, and perforated intermediate portion or belt b^2, in combination with a strainer or coffee-holder and a pot, kettle, or boiler, substantially as and for the purpose herein described.

2. The perforated vessel, cup, or coffee-holder C, having the perforated tube A and flange *i*, in combination with the vessel B and its tube *f* and flange *j*, substantially as and for the purpose shown and described.

3. The combination of the perforated cup or vessel C, the vessel B, having the trough *l*, formed by the conical bottom and the portion b^1 of the sides, and the coffee pot or boiler A, substantially as and for the purposes herein described.

204,996. ORE-JIGGERS. William H. Plumb, Marsh Chunk, Pa., assignor to Jos. A. Sterling, New York city. Filed Aug. 16, 1877.

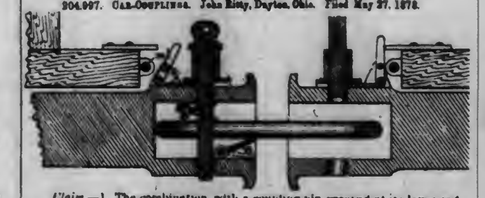
Brief.—Ore, &c., is fed through the central hopper to the vibrating grate. The heavy particles pass through the grate, between it and the adjustable ring *c*, and also over the top of the latter, between it and the serrated curb, passing finally into the longer of the two conveyer-troughs. The light particles pass over the top of the curb into the inclined chute surrounding its upper part, and thence into the shorter conveyer-trough.



Claim.—1. The combination, with the vibrating grate and circumjacent vertically-adjustable curbing, of the vertically-adjustable ring, made with a beveled top edge and outer inclined chute, so and for the purpose described.

2. The combination of the grate B, curbing C, and ring D, having chute D', of the two unequal spiral conveyers, working side by side in double case, and having inlets *g g'* at different levels, as and for the purpose specified.

204,997. CAR-COUPLINGS. John Risty, Dayton, Ohio. Filed May 27, 1878.

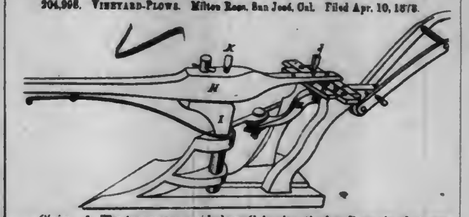


Claim.—1. The combination, with a coupling-pin grooved at its lower end, of a latch and lever pivoted upon the draw-head, whereby, when the opposite draw-heads come in contact, the lever is moved by the platform or projecting plate, and causes the disengagement of the latch and pin, substantially as and for the purpose specified.

2. The combination, with a recessed draw-head and coupling-link, of two pivoted wings, *e*, or their equivalents, connected by links or gearing, so as to move simultaneously, whereby the links may be raised or lowered, or held at any desired inclination, as set forth.

3. The combination of the wings or their equivalents, *e*, by means of suitable connecting mechanism, with the roller-shaft *m*, provided with cranks *n* at the sides of the car, whereby the adjustment of the links can be effected without going between the cars, as set forth.

204,998. VINEYARD-PLOWS. Milton Rees, San José, Cal. Filed Apr. 10, 1878.



Claim.—1. The transverse guide-bars C, having the bar D moving between them, in combination with the curved beam E, pivoted at its front end, and having the handles F secured to its rear end, substantially as shown, and for the purpose herein described.

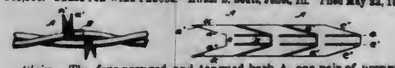
2. The beam E, pivoted at its front end, united to the laterally-sliding bar D, as shown, and having the handles F attached to its rear end, in combination with the plow-beams H and crank I and locking-pins J and K, or equivalent device, substantially as shown, and for the purpose herein described.

204,999. SCARF-FASTENINGS. Henry Sandner, Hoboken, N. J. Filed May 16, 1878.



Claim.—A scarf-fastener or clamp consisting of a main or front plate, and of a pivoted and spring-acted rear plate having a button at the upper end, adapted to project at the back of the scarf, substantially as and for the purpose set forth.

205,000. HARPS FOR WIRE FENCES. Hiram B. Scott, Joliet, Ill. Filed May 22, 1878.



Claim.—The four-pronged and tongued barb A, one pair of prongs being formed on the same end by means of the parallel edges *a a* and the diverging cuts *a'' a''*, and the other pair by means of cuts *a' a'*, parallel to the cuts *a'' a''*, and by means of the cuts *a' a''*, the latter also forming the tongue B, substantially as and for the purposes specified.

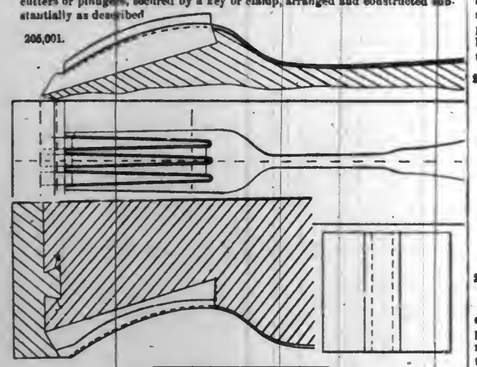
205,001. MANUFACTURE OF FORKS. Thomas Shaw, Orange, N. J. Filed Jan. 26, 1878.

Brief.—Cuts blank and stamp to form in first operation. By means of set of removable dies cuts out tines, and ornaments at the second operation.

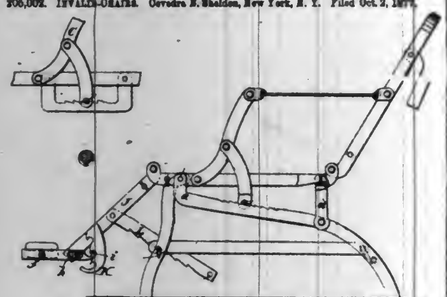
Claim.—1. A die for cutting forks, with one or more removable cutters or plungers, with separators, having their rear ends so formed as to rest in the body of the die, and the forward ends held firmly in position by means of a key or clamp, all constructed, arranged, and operated substantially as and in the manner and for the objects set forth.

2. The combination, with an embossing or ornamenting die, of removable cutters or plungers, secured by a key or clamp, arranged and constructed substantially as described

205,001.



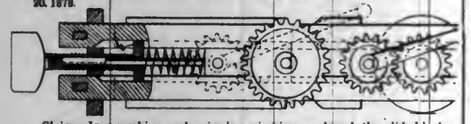
205,002. INVALID-CHAIRS. Cornelius B. Sheldon, New York, N. Y. Filed Oct. 2, 1877.



Claim.—1. The combination, with a seat having front legs, of legs F, pivoted in front of seat, having offset *a*, and connected with seat at the rear by arms *d*, as shown and described.

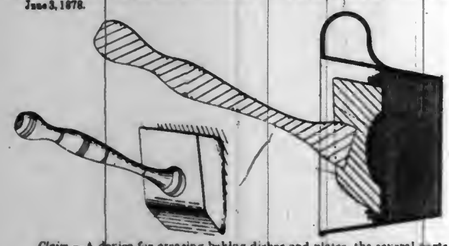
2. The frame *f*, having end pieces provided with slots *g* and rounded hooks *i*, in combination with the frame J, having the pins A and curved notched arms K, substantially as herein shown and described.

205,003. COMBINED WASHER AND WRINGER. James W. Sheets, Woodstock, Va. Filed Feb. 20, 1878.



Claim.—In a washing and wringing machine combined, the slide-blocks of the washing and wringing rolls, of which the upper independent blocks have central guide-pins, in combination with pressure-springs, top blocks, and hollow set-screws, so as to adjust jointly the pressure of both washing and wringing rolls, substantially as specified.

205,004. DEVICE FOR GREASING BAKING-DISHES. Jane B. Smith, Worcester, Mass. Filed June 3, 1878.



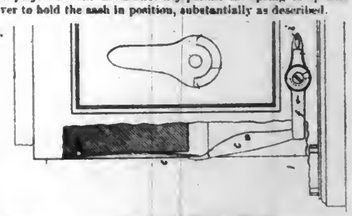
Claim.—A device for greasing baking dishes and plates, the several parts of which are constructed and arranged substantially as shown and described.

205,005. SASH-HOLDERS. Samuel S. Spear, South Weymouth, Mass. Filed Dec. 12, 1877.

Brief.—A shouldered hand lever having a projecting knob is adopted by horizontal movement to operate a suitable connecting device, and thus release a friction-lever, which is pressed outward by a spring, the smooth surface of the friction lever bearing against the window-frame; the construction being such that the movement of the sash up or down releases the friction-lever, while the release of the knob permits the spring to operate the friction-lever for holding the sash in desired position.

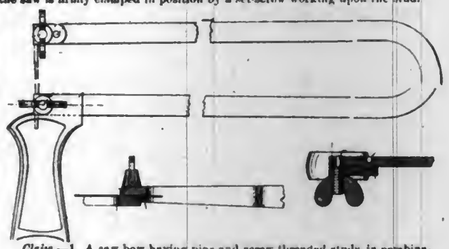
Claim.—The shouldered hand-lever, friction-lever *c*, and spring *e*, in combination with a connecting device, *f*, whereby, by the movement of the sash up or down, (a knob or projection, *i*, on the hand-lever being seized for that purpose,) will simultaneously release the friction-lever, and the release of the knob or projection will simultaneously permit the spring to operate the friction-lever to hold the sash in position, substantially as described.

205,006.



205,006. BRACKET-SAW FRAMES. Charles Spring and John T. Robinson, Hyde Park, Mass. Filed May 17, 1878.

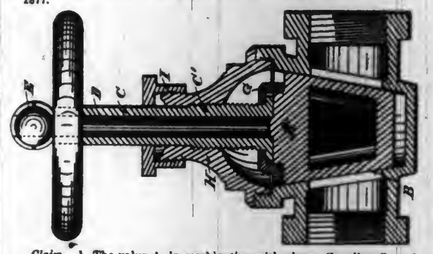
Brief.—The saw is attached to the bow by means of pins and threaded studs formed upon the lower ends of the bow. In connection with clamping pieces or ears, (one of which is formed on the handle,) having recesses for the reception of the pins, and threaded openings, through which the studs pass, the saw is firmly clamped in position by a set-screw working upon the stud.



Claim.—1. A saw-bow having pins and screw-threaded studs, in combination with clamps having recesses for the reception of the pins, and openings through which the studs pass, and with clamping-nuts, substantially as described.

2. A saw-handle, a clamp formed therewith, and the saw-bow, in combination with a screw extending through said bow and clamp, and a clamping-nut, substantially as described.

205,007. STEAM-VALVES. George Stringer and Thos. Francis, Ithaca, N. Y. Filed Oct. 31, 1877.



Claim.—1. The valve A, in combination with sleeve C, collar G, and cap H, constructed as described, and for the purpose set forth.

2. The combination of the conical valve A, the chamber B, having the upper section or cap H, the sleeve C, collar G, stem D, and valve-handle E, all constructed and combined as and for the purpose specified.

205,008. REIN-HOLDING ATTACHMENTS FOR HARNESSES. John M. Taylor and John Mackay, Fredericton, New Brunswick, Canada. Filed May 16, 1878.



Claim.—The device C, made with two recesses, c^1 c^2, adapted to be attached to the hip straps of a harness for holding the reins, substantially as herein shown and described.

205,009. HAT-POUNCING MACHINES. Edmund B. Taylor, Portland, Me., assignor of three-fourths his right to Robinson Williams and John W. Deering, same place. Filed Mar. 4, 1878.

Claim.—1. The combination of the friction-wheel with the shaft, boxes, and lever for operating it, substantially as described.

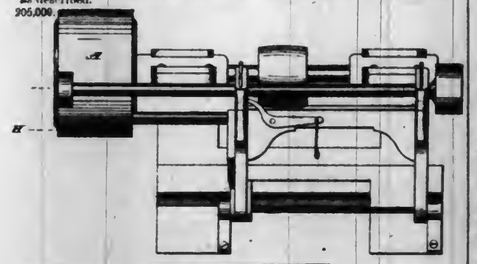
2. The combination of the friction-wheel, friction-wheel shaft, boxes, and lever with the hat-block, sleeve, and friction-belt, and the frame for supporting and tipping it, substantially as described.

3. The combination of the hat-block H with the friction-belt, for regulating its motion.

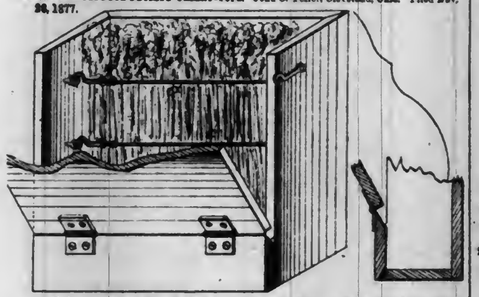
4. The combination of sleeve, friction-strap, hat-block, and pouncing-cylinder, substantially as described.

5. The combination of the rapidly-rotating pouncing-cylinder A with the hat-block H and frame for supporting and tipping it, the friction-belt, and the friction-wheel and machinery for driving and disconnecting it, substantially as described.

205,009.



205,010. MEANS FOR PACKING CELERY-TOPS. John C. Telfer, Cleveland, Ohio. Filed Nov. 26, 1877.

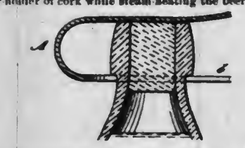


Claim.—1. A packing device for celery or other vegetables, consisting of the box formed with an open or ventilated top, a hinged side, and the inert bevel, extending longitudinally along the connecting fixed portion of the box with said hinged side, substantially as set forth.

2. In a packing device for celery or other vegetables, the combination, with the box made with an open or ventilated top and a removable side, of the described strips or stranda C, adapted to divide off and secure the celery in separate portions, and yet not form close walled compartments for the same, substantially as set forth.

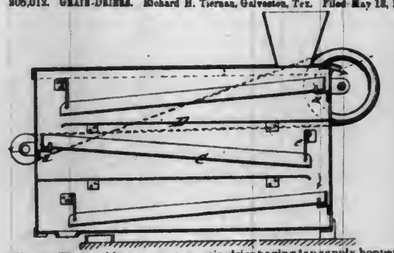
205,011. CLAMPS FOR SECURING CORKS IN BOTTLES. A. Templeton, Louisville, Ky. Filed May 3, 1878.

Brief.—The clamp, of hoop-iron, brass, or heavy wire, is struck out of a sheet, so that the tongue of one leaves a notch in the next. Clamp is a temporary stopper-holder of cork while steam-heating the beer.



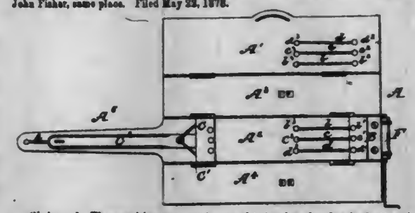
Claim.—A cork-fastening clamp consisting of a metallic plate, strip, or bar, A, bent to form a horseshoe or U shape in its longitudinal section, and provided with a notch, *b*, and tongue *c*, substantially as and for the purpose herein described.

205,012. GRAIN-DRIERS. Richard H. Tiernan, Galveston, Tex. Filed May 18, 1878.



Claim.—The combination, with a grain-drier having top supply-hopper and bottom discharge-opening, interior oscillating and inclined sieves, and fixed shelves below the sieves, of a bottom entrance and top discharge-opening, for admitting the passage of a blast of hot air in opposite direction to the direction of motion of the grain, substantially as and for the purpose set forth.

205,013. WOOL-PRESSES. Wm. Tipton, Harrisonville, Ohio, assignor of one-half his right to John Fisher, same place. Filed May 23, 1878.



Claim.—1. The combination, with a wool tying box having its bottom board formed with an extension, A^3, provided with a guide-slot, *a*, of a fixed head-block, B, sliding compressor C, having the arm C^1 and vertical arm C^2 extending downward through the slot *a*, cord D, and windlass F, substantially as and for the purpose set forth.

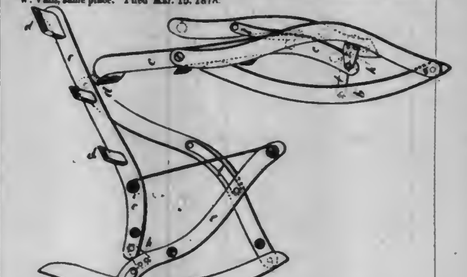
2. The combination of the boards A^1 A^2 A^3 A^4, hinged so that they may be folded together and form a rectangular box, the opposite sides A^1 A^2 being provided with corresponding slots *b c d*, and the bottom A^3 having the extension A^3, with slot *a*, the fixed head-block B, the sliding compressor C, having the extended arm C^1 and the vertical arm C^2, and cord and windlass for operating the compressor, arranged to operate substantially as and for the purposes set forth.

205,014. HAT-FASTENERS. Freeman L. Tripp, Eau Claire, Wis. Filed Mar. 25, 1878.



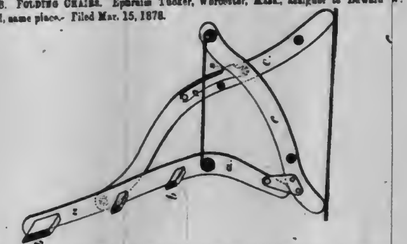
Claim.—As an improvement in hat or bonnet holders, the wire body B, having prongs *b b* and braces or stiffeners *c c*, substantially as and for the purpose herein set forth.

205,015. FOLDING ROCKING-CHAIRS. Ephraim Tucker, Worcester, Mass., assignor to Edward W. Vaill, same place. Filed Mar. 15, 1878.



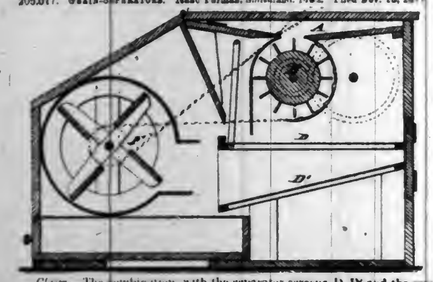
Claim.—The combination, in a folding rocking-chair, of rockers *a* and front legs *a* pivoted together, a back-frame, *c d*, pivoted to the upper ends of the front legs, a seat-frame, *e*, intervening between the rocker and the lower ends of the back-frame, and forming the back legs, hinge-plates *h*, connecting the back legs and lower ends of the back-frame, links *l*, connecting the back-frame and rockers, and links *t*, pivoted at their upper ends to the front legs, and at their lower ends to the seat-frame, so as to support the same, substantially as set forth.

205,016. FOLDING CHAIRS. Ephraim Tucker, Worcester, Mass., assignor to Edward W. Vaill, same place. Filed Mar. 15, 1878.



Claim.—The combination, with the back frame *a b*, front legs *c*, pivoted at *d* to the back-frame, and the back legs *e*, pivoted to the lower ends of the back-frame *a*, the links *o*, pivoted at their lower ends to the forward portions of the back legs, and extending upwardly and pivoted to the inner faces of the front legs, and provided with stops *s*, to arrest the movement of the front legs, substantially as set forth.

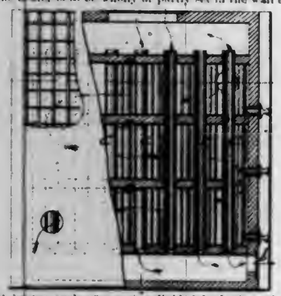
205,017. GRAIN-SEPARATORS. Isaac Turman, Smithland, Iowa. Filed Nov. 13, 1877.



Claim.—The combination, with the separator-screens D D' and the separating-cylinder B, of the hopper A, having the swinging side and partition, substantially as shown and described, for the purpose specified.

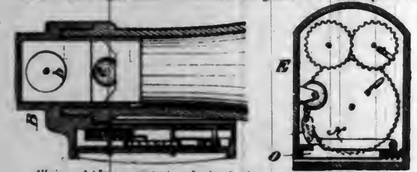
205,018. HEATERS. Christoph Weske, St. Charles, Mo. Filed Apr. 5, 1878.

Brief.—The heater is to be wholly or partly set in the wall of the room.



Claim.—A heater made of a casing divided by horizontal partitions into compartments, of which the upper and lower compartments are provided with air registers and connected through the partitions by air-conducting pipes, while the middle compartments communicate with each other by openings at alternate ends, and have also openings connecting with stove-pipe and chimney, and a vertical corrugated plate extending from the lower partition to the uppermost partition, substantially as specified.

205,019. BOTTLE-REGISTERS. Jas. H. Welch, Georgetown, D. C. Filed Apr. 27, 1878.



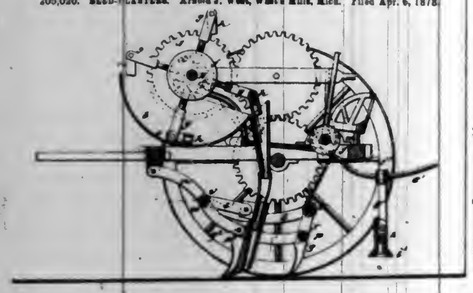
Claim.—1. In a registering device for bottles, &c., a filling-valve arranged to open inward for the purpose of permitting the bottle to be filled without operating the discharge valve or registering mechanism.

2. In a registering valve for bottles, the combination of the passages *a c*, filling-valve *c*, and discharge-valve *b*, the latter connected with a registering mechanism.

3. The combination of the neck B, adapted to fit the mouth of a bottle, and provided with the discharge-valve *b*, the tight case E, containing the registering mechanism, with an actuating-slide, O, and the lever C, connected with the slide and the valve, as shown.

4. The combination of the valve-operating lever C, the slide O, connected thereto and provided with the inclined shoulder, and the register-operating lever N, as described and shown.

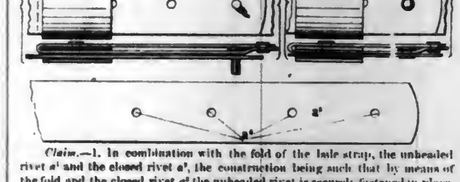
205,020. SEED-PLANTERS. Arnold J. West, West's Mills, Mich. Filed Apr. 6, 1878.



Claim.—1. The alternating short and long bars *a a'*, provided with teeth *p*, in combination with rods *q' t* and braces *s s'*, as and for the purpose set forth.

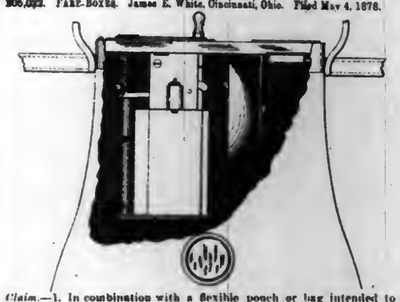
2. The two shafts *a'* H, the former having arms *b' c'*, and the latter a cam, *d'*, in combination with the cross-bar *f'*, arms *g'*, and tampers *h' i'*, as and for the purpose specified.

205,021. NIPPING AND CLINCHING TOOLS. Philip Whightell, Pickerington, Ohio, assignor to himself and Edwd. Harris, same place. Filed Apr. 27, 1878.



Claim.—A compound clinching and nipping tool having a common handle, D E, for the diagonal jaws B G, and the independent handles C F on opposite sides thereof, as shown and described.

205,022. FARE-BOXES. James E. White, Cincinnati, Ohio. Filed May 4, 1878.

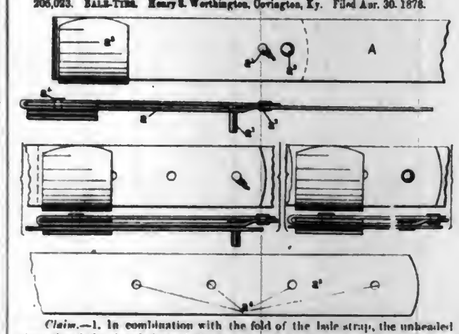


Claim.—1. In combination with a flexible pouch or bag intended to be worn upon the person of the conductor, a hinged lid closing the mouth of said bag, and carrying a register and alarm mechanism, and appliances, substantially as specified, for indicating any attempt to open the bag, for the purposes set forth.

2. In combination with a registering and alarm mechanism, attached to and movable with the lid which closes the mouth of a conductor's pouch, the cylindrical pin detecter, adapted to be displaced from its seat or pocket when ever the lid is opened, as and for the purposes explained.

3. In combination with the perforated and hinged lid of a conductor's pouch, a shaft carrying the upper and lower cutters, and lugs for operating the alarm and the registering mechanism, the arrangement being substantially such as described, so that no ticket can be inserted until the preceding one has been deposited, the alarm sounded, and the registering mechanism advanced one unit, for the purposes explained.

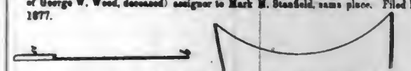
205,023. BALE-TIES. Henry S. Worthington, Covington, Ky. Filed Aug. 30, 1878.



Claim.—1. In combination with the fold of the hale strap, the unheaded rivet a^1 and the closed rivet a^2, the construction being such that by means of the fold and the closed rivet a^2 the unheaded rivet is securely fastened in place.

2. The tie described, consisting of the strap A, having the folded end, with loose rivet a^1, closed rivet a^2, clasp a^3, and end a^4, having holes a^5, as described.

206,024. DRESS-SHIELDS. George W. Wood, New York, N. Y.; Hetty Wood (administratrix of George W. Wood, deceased) assignor to Mark M. Stanfield, same place. Filed Nov. 19, 1877.

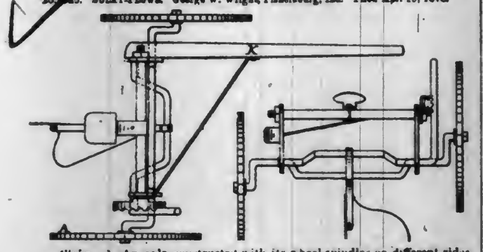


Claim.—1. A shield for garments made of one piece of stockinet coated with rubber, of a crescent form, and without a seam, as a new article of manufacture.

2. The method herein specified of manufacturing shields for garments, consisting in stretching a single flat piece of india-rubber-coated stockinet over a form to the shape of the finished article, securing the edges of such material, and then vulcanizing the india-rubber, substantially as set forth.

3. The form for garment-shields, made of sheet metal, with a concave edge, *x*, and points *y y* to retain the stockinet material while being vulcanized or cured, substantially as set forth.

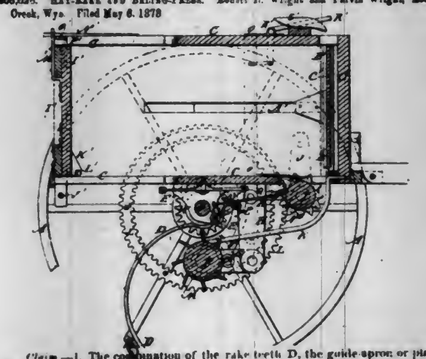
205,025. SULKY-PLOWS. George W. Wright, Fishersburg, Ind. Filed Apr. 15, 1878.



Claim.—1. An axle constructed with its wheel-spindles on different sides of and parallel with itself, in combination with a frame-work loosely mounted thereon, so that said frame-work may always retain its level independently of the position of the wheels, substantially as herein shown and specified.

2. In combination with an axle, substantially as described, and a frame-work loosely mounted thereon, a laterally-adjustable driver's seat, by which an accurate balance is maintained, substantially as herein shown and specified.

205,026. HAY-RAKE AND BALING-PRESS. Robert F. Wright and Parvin Wright, Rock Creek, Wyo. Filed May 6, 1878.



Claim.—1. The combination of the rake-teeth D, the guide-apron or platform K, the two toothed cylinders F I, and the baling-box C with each other and the wheels and axle A B, substantially as herein shown and described.

2. The combination of the internally and externally toothed gear-wheel L and the gear-wheels M N with the drive-wheel A and the two toothed cylinders F I, substantially as herein shown and described.

3. The combination of the lever O and the pivoted bars P Q with the two toothed cylinders F I, for throwing the gear-wheels M N into and out of gear with the gear-wheel L, substantially as herein shown and described.

4. The combination of the short arm or lever S and the connecting-rod R with the bar E, that supports the rake-teeth D, and the lever O, for raising the said rake-teeth when the gear-wheels M N are thrown out of gear, substantially as herein shown and described.

5. The combination of the follow-block C', the holders B', the toothed racks A', and the gear-wheels W X Y Z with the baling-box C and the axle B of the drive-wheels A, for compressing the bale, substantially as herein shown and described.

6. The combination of the three connecting-bars D' D' F' and the two levers E' G' with the sliding gear-wheels W and axle B and the baling-box C, substantially as herein shown and described.

7. The combination of the bars or arms K', the pins L', the rod J', the spring-fasteners M' N', the cams or arms O', and the rod P' with the hinged end-board I', the hinged part of the baling-box bottom, and the baling-box C, substantially as herein shown and described.

205,027. WIRE-CUTTING MACHINES. John Adt, New Haven, Conn. Filed Apr. 30, 1878.

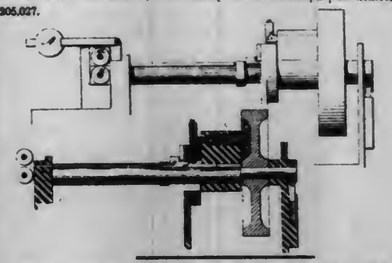
Brief.—Continuously-revolving feed-rolls are mounted at right angles with and at one end of an intermittingly-revolving cutting and measuring mandrel. A continuously-revolving pulley is mounted at the other end of the mandrel, and is automatically clutched therewith during each alternate revolution. The mandrel receives the wire in a longitudinal groove, at the inner end of which the wire strikes and moves forward a cam-slide, which cam moves a spring-slide placed at right angles with mandrel. The spring-slide moves upward a downwardly spring-pressed catch. When the catch is disengaged a spring slide in which it slides moves forward horizontally and clutches the pulley with the mandrel, which makes one revolution, thereby cutting off and delivering one length of wire. At the end of the revolution the downwardly pressed catch, by means of a cam on the mandrel-bearing, retracts the clutch slide, and the mandrel stops to receive another length of wire.

Claim.—1. The combination of the longitudinally-grooved arbor, having an intermittent rotary movement, a stationary cutting-die, through which the wire passes to the said groove, a feed to introduce the wire to the said groove, and a mechanism, substantially such as described, to connect and disconnect the power from the arbor to produce the said intermittent movement of the arbor, the said arbor in such movement acting in connection with said stationary die to cut off the wire, and then to deliver the cut piece from the machine, substantially as described.

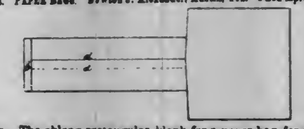
2. The combination of the longitudinally-grooved arbor, having an intermittent rotary movement, a stationary cutting-die, through which the wire passes to the said groove, a feed to introduce the wire to the said groove, and a mechanism, substantially such as described, to connect and disconnect the power from the arbor, to produce the said intermittent movement of the arbor, with a stationary cover over the groove in the said arbor during the feed, and from which the arbor will pass in its rotation, substantially as described.

3. The combination of the longitudinally-grooved arbor, having an intermittent rotary movement, a stationary cutting-die, through which the wire passes to the said groove, a feed to introduce the wire to the said groove, and a mechanism, substantially such as described, to connect and disconnect the power from the arbor, to produce the said intermittent movement of the arbor, with the cam L and slide I', substantially as and for the purpose described.

205,027.

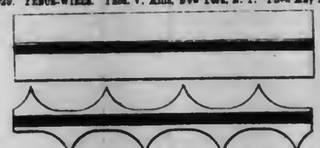


206,028. PAPER BAGS. Newton J. Alexander, Austin, Tex. Filed Apr. 17, 1878.



Claim.—The oblong rectangular blank for a paper bag for druggists' use, the same having slits *a a* at opposite points in its parallel sides, and the end projection *b*, as shown and described.

206,029. FENCE-WIRES. Thos. V. Allis, New York, N. Y. Filed May 13, 1878.



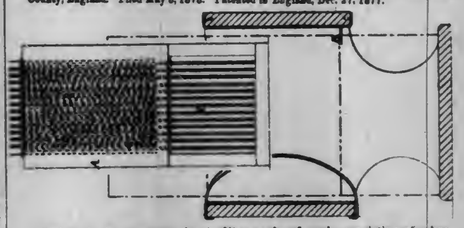
Claim.—1. A wire for barb-wire fences, consisting of a main wire provided with thin fins located on opposite sides of the wire, said fins being of sufficient width to form barbs of the desired length without bending the barbs, substantially as set forth.

2. A barb fence-wire consisting of a main wire provided with fins on opposite sides thereof, said fins being scalloped or cut, and the wire twisted to form triangular-shaped barbs, spirally arranged on the wire, substantially as set forth.

3. A barb fence-wire consisting of a main wire provided with triangular-shaped barbs, which are formed as an integral part of the wire, the barbs on opposite sides of the wire being arranged to intersect each other, substantially as set forth.

4. A barb fence-wire consisting of a main wire having barbs formed on opposite sides thereof, the base portions of the barbs on one side of the wire being of sufficient length to overlap the base portions of the barbs on the opposite side of the wire, substantially as set forth.

206,030. APPARATUS FOR SHUFFLING CARDS. Henry C. Ash, 316 Oxford Street, Middlesex County, England. Filed May 8, 1878. Patented in England, Dec. 27, 1877.



Claim.—1. An apparatus for shuffling packs of cards, consisting of a box or case to receive the cards, provided with an internal grating or gratings, by means of which one-half of the cards, or thereabout, can be separated from among the others, substantially as hereinbefore set forth.

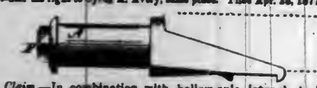
2. A card-shuffling box or case open at top, provided with a grating to separate the cards, and made open at its lower part, substantially as and for the purpose hereinbefore set forth.

3. The hereinbefore-described card-shuffling apparatus, consisting of a

box or case having an open top hollowed or cut away at its sides at top, having openings at its lower part, and provided with a card-separating comb or grating.

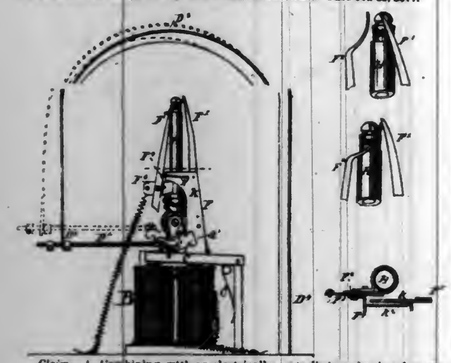
4. The combination, with the card-shuffling case, of an adjusting-slide to vary the width of the card-space, substantially as hereinbefore set forth.

205,031. AXLE-ARMS FOR VEHICLE-WHEELS. Robt. H. Avery, Galesburg, Ill., assignor of one-half his right to Byron M. Avery, same place. Filed Apr. 26, 1877.



Claim.—In combination with hollow-axle journal A, having inwardly-extending flange a', removable nut F and bolt D, the head of said bolt being adapted to engage with said flange, substantially as set forth.

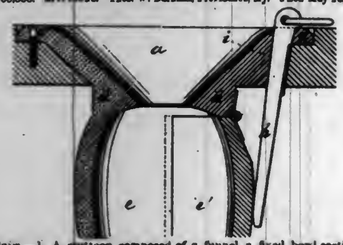
205,032. THERMO AND ELECTRIC GAS CONTROLLING AND LIGHTING APPARATUS. George D. Bancroft, Lynn, assignor to Geo. F. Williams, Dedham, Mass. Filed Oct. 15, 1877.



Claim.—1. Combining, with an electrically-controlled mechanism for opening and closing gas stop-cocks, a thermo-arch, D^1 D^2 D^3, operating substantially as described, and for the purpose set forth.

2. The combination of the armature C and the moving circuit-breaker F^1 with the moving circuit-breaker F^2 and the gas-burner H, operating together substantially as described, and for the purpose set forth.

205,033. SPITTOONS. Thos. W. Barnhill, Providence, Ky. Filed May 16, 1878.



Claim.—1. A spittoon composed of a funnel, a fixed bowl-section, and a swinging bowl-section hinged to the funnel, and having its center of gravity inside of the hinge, whereby the said hinged section swings away from the fixed section automatically, as set forth.

2. The combination, in a spittoon, of the funnel a, having slot i, the fixed bowl-section e, the swinging bowl-section e', having its center of gravity inside of its hinge, and a key extending through said slot, bearing against the section e', and holding it closed in upon the section e, substantially as specified.

206,034. COMBINED RIPPING AND CUTTING DEVICES. Charles Bean, Pawtucket, assignor of one-half his right to Daniel W. Hayden, Providence, R. I. Filed May 15, 1878.



Claim.—1. The combination, with the hinged bars a, of the curved cutting-edges c, blunted at the ends d, each provided with a thick edge at e, and the ends bent so as to overlap each other at the cutting-edges, all substantially as and for the purpose set forth.

2. The combination, with the hinged bars a, provided at their forward end with cutting-edges and blunted ends, of the rear end provided with the eye f, arranged to operate substantially as and for the purpose set forth.

205,035. PREPARING PALMETTO FIBER AND PINE LEAVES FOR MATTRESS-FILLINGS, &c. Washington C. Beasley, Orange Park, Fla. Filed May 23, 1878.

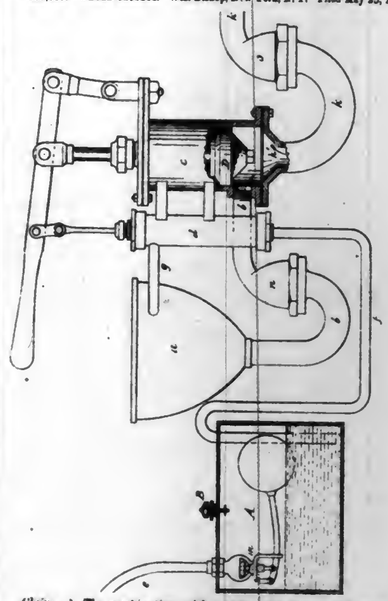
Claim.—1. A material for filling beds, mattresses, &c., consisting of shredded palmetto leaves and pine-straws, combined in about the proportions specified.

2. A material for filling beds, upholstering, &c., consisting of curled and twisted palmetto fiber and pine-leaves, combined in about the proportions specified.

3. The method herein described of preparing an aromatic upholstering material, which consists in trimming and drying the leaves or straws of pine trees, &c., and mixing these leaves or straws with shredded palmetto-leaves, either with or without the kink and curl, substantially as described.

4. The method herein described of preparing an aromatic upholstering material, which consists in trimming and drying the leaves or straws of pine trees, mixing these leaves with palmetto fiber, twisting both together into a rope, and picking apart to give a curled aromatic fiber, as described.

205,036. WATER-CLOSETS. Wm. Bishop, New York, N. Y. Filed May 25, 1878.

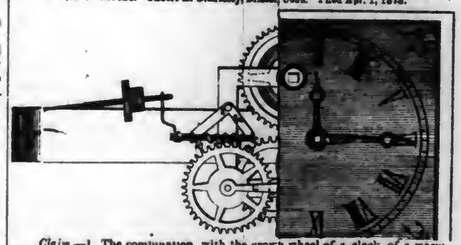


Claim.—1. The combination, with a pump water-closet, of a water-supply tank, A, disposed between the water-supply and the water-pump, and provided with an automatically-acting supply-valve, by means of which a constant water-supply is afforded the pump, while the pressure is removed from the pump and danger of overflow or leakage through the same prevented, substantially as herein set forth.

2. The combination, with a pump water-closet, of a water-supply tank, A, inclosed on all sides, and provided with an externally-closing air-vent valve, B, and also an internal automatically-acting supply-valve, *a*, substantially as and for the purpose set forth.

3. In a pump water-closet, a soil-pump, *c*, having the soil-inlet *b* arranged on the side of the pump-cylinder, in the path of the piston, and the soil-discharge *k* arranged through the bottom of the cylinder, under the piston, with the piston D, constructed to act as a valve, which, in its descent, closes the orifice of both the soil-inlet and soil-discharge, substantially as herein shown and described.

206,037. CLOCKS. Gilbert H. Blakesley, Bristol, Conn. Filed Apr. 1, 1878.



Claim.—1. The combination, with the crown-wheel of a clock, of a worm-shaft arranged parallel with the frame or plate of the clock-movement, said worm-shaft provided with an arm for imparting a rotary movement to the pendulum, substantially as set forth

2. The combination, with the crown-wheel of a clock, of a worm adapted to be laterally adjusted relative to said crown-wheel, substantially as set forth.

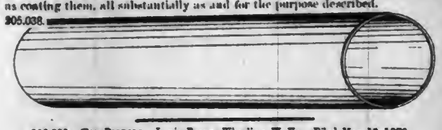
3. The combination, with the crown-wheel of a clock, of a worm-shaft supported in a bridge adjustably secured to the clock-frame, substantially as set forth.

4. The combination, with the crown-wheel of a clock-movement, of a worm pivoted within the arms of a triangular bridge, substantially as set forth.

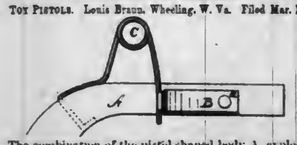
205,038. PROCESSES FOR COATING BOILER-TUBES. Robert Brayton, David Jane, and Orntas S. French, Fremont, Ohio. Filed Nov. 21, 1877.

Claim.—The within described process for coating boiler-tubes of iron or steel, consisting in first heating them to a red heat, then covering them with pulverized borax, again heating them to a yellow heat, and finally subjecting them to a bath of non-corroding metal, for the purpose of saturating as well as coating them, all substantially as and for the purpose described.

205,038.



205,039. TOY PISTOLS. Louis Braun, Wheeling, W. Va. Filed Mar. 19, 1878.



Claim.—The combination of the pistol-shaped body A, explosive-holder B, and coil-spring C, substantially as herein shown, and for the purpose set forth.

205,040. TORPEDOES FOR OIL-WELLS. John Briscoe, Petrolia, Pa. Filed Apr. 20, 1878.



Claim.—1. The combination of the annular shell A, having its inner chamber formed with a shoulder, I, the firing-head B, having longitudinal play above said shoulder, the anchor-stem playing in the lower portion of the said inner chamber, and a suitable stop for preventing the escape of the firing-head, substantially as described.

2. In a torpedo for oil-wells, the combination, with the removable firing-head, of a removable cap above and a reciprocating anchor-stem below, whereby the firing-head is forced against said firing-cap and the charge exploded, substantially as specified.

205,041. LATCHES. Fredrick W. Brocksieper, New Haven, Conn., assignor to Sargent & Co., same place. Filed Apr. 30, 1878.

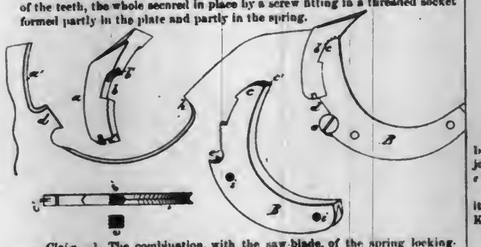
Brief.—The cam on the latch-case operates the cam on the latch when the latter is operated by the lever.



Claim.—In a latch, the lever pivoted to the edge of the latch-bolt, one arm of which extends outward and forward of the bevel of the latch-bolt, a second arm inward, and so as to take a bearing or fulcrum on the inner surface of the face-plate or within the case, and combined with the incline E within the case, substantially as and for the purpose described

205,042. SAW-TEETH. Wm. E. Brooks, Trenton, N. J. Filed May 23, 1878.

Brief.—The detachable tooth is locked in position in the saw-plate, so that it can be readily removed and replaced in such a manner as to prevent all injurious strain upon the plate by means of a retaining-spring provided with a hook upon its outer end, having a tongue which fits in a groove in the front of the teeth, the whole secured in place by a screw fitting in a threaded socket formed partly in the plate and partly in the spring.



Claim.—1. The combination, with the saw-blade, of the spring locking-plate B and its retaining-screw *c*, inserted partly in the saw-blade and partly in the spring locking-plate, substantially as and for the purpose specified.

2. The saw-tooth provided with the recess *b* and groove *b'*, in combination with the spring locking-plate B, having hook *c* and tongue *c'*, fitted into groove *b'*, as and for the purpose set forth.

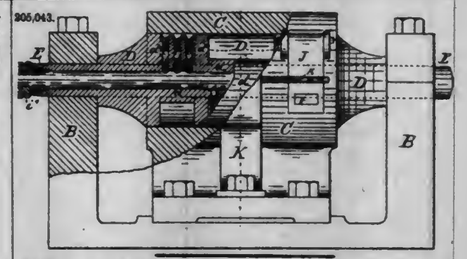
3. A saw-plate provided in its tooth-holding recess with the projection *d*, in combination with the spring locking-plate, retaining-screw, and tooth, all arranged and operating for joint support, substantially as shown and described.

205,043. ROTARY STEAM-ENGINES. John F. Brown, Indianapolis, Ind. Filed Apr. 30, 1878.

Claim.—1. The shaft E, concentrically-set flanges d^3 and d^4, and eccentrically-set pistons *d d d*, together forming the device D, in combination with the cylinder C, substantially as shown and specified.

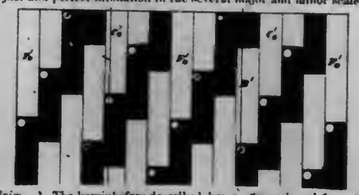
2. The combination of the hollow shaft E, having steam-ports *e e*, the flanges d^3 d^3 and d^4 d^4 inclosing and dividing the pressure chambers, the pistons *d d d* and the cylinder C, having suitable exhaust-ports, forming a rotary steam-engine, substantially as shown and specified.

205,043.



205,044. KEY-BOARDS FOR MUSICAL INSTRUMENTS. Colin Brown, Glasgow, North Britain. Filed Aug. 21, 1876.

Brief.—The key or finger board is made enharmonic in arrangement to furnish just and perfect intonation in the several major and minor scales.

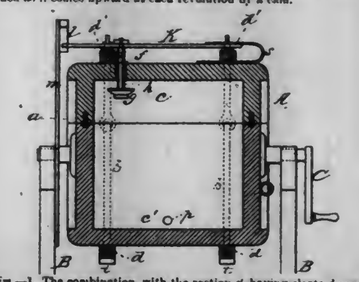


Claim.—1. The hereinbefore-described key or finger board for musical instruments, composed of digitals adapted for the production of the tones or sounds of the musical scale in perfect intonation, relatively arranged as shown and set forth, whereby any one of said digitals falls in one line running lengthwise of the finger-board with all the other digitals, which, (in any key in which the sound produced by this one digital forms one note,) together with this one digital, forms a musical scale, as specified.

2. The key or finger board for musical instruments, composed of digitals adapted for the production of the tones or sounds of the musical scale, in perfect intonation, arranged in a series of rows transversely of the finger-board, any one digital in one row differing from the next digital in the same row toward the front of the finger-board by a comma, and from the next digital toward the rear by a chroma, or the reverse, and each of the digitals composing the key or finger board falling in one line running lengthwise of the finger-board with all the other digitals, which, (in any key in which the sound produced by this one digital forms one note,) together with this one digital, forms a musical scale, as shown and set forth.

205,045. CHURNS. Nathaniel B. Brown, Antwerp, N. Y. Filed May 14, 1878.

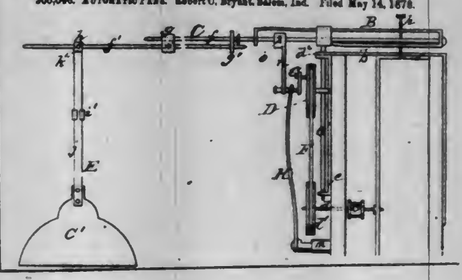
Brief.—A valve is located in the top of the box, which valve is automatically opened as it comes upward at each revolution by a cam.



Claim.—1. The combination, with the section *c'*, having cleats *d* across its bottom, and the section *c*, having similar cleats *d'*, with end notches *e*, of the jointed rods *b*, secured to cleats *d*, and adapted to be received in the notches *e* of cleats *d'*, and the clamp-nuts J, substantially as specified.

2. The combination, in a rotary churn, with the box A, having vent *f* in its top, of a valve, *g*, closing said vent, a valve-stem, *h*, a spring-actuated lever, K, and a cam-strip, *l*, above the box, substantially as set forth.

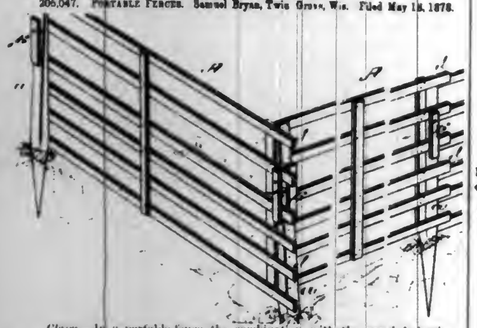
206,046. AUTOMATIC FANS. Robert C. Bryant, Salem, Ind. Filed May 14, 1878.



Claim.—1. In a fly fan, the combination, with the rock shaft C, having arm a and hanger E, carrying a fan, C', of the vibrating forked rod H, rigid pitman G, jointed pitman H', and the crank wheel D, operated by a suitable mechanism, substantially as specified.

2. In a fly fan, the rock shaft C, formed of the sections *f f'*, the former having the slide *g* and the adjustable screw-clamp *g*, and the latter extending through said clamp and secured to the slide, constructed and arranged to operate substantially as shown and described.

205,047. PORTABLE FENCES. Samuel Bryan, Twin Grove, Wis. Filed May 18, 1878.



Claim.—In a portable fence, the combination, with the panel A, having the rails extended beyond its end tie-bar to form laps *d*, of the panel A', having posts *a*, and a turn button, B, adapted to be swung across the laps of panel A, as set forth.

205,048. FRUIT-HULLERS. Augustus S. Bunker, Lawrence, Mass. Filed Apr. 12, 1877.

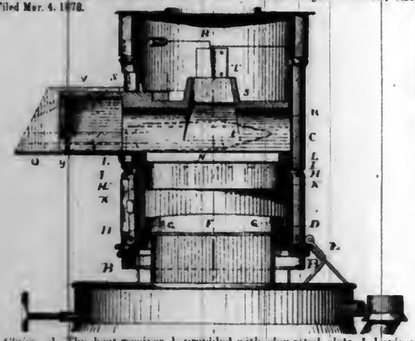


Claim.—1. A device for hulling berries, consisting of the handles A, terminating at their free ends in bowls B, or plates having their inner faces concave, substantially as and for the purpose set forth.

2. A device for hulling berries, consisting of the handles A, terminating at their free ends in bowls B, formed with cutting-edges C, substantially as and for the purpose specified.

3. A device for hulling berries, consisting of the handles A and cups B concave upon their inner faces and convex upon their outer faces, and formed with cutting-edges C, substantially as and for the purpose described.

205,049. FURNACES FOR HEATING SOLDERING-IRONS. Josiah Burgess, Zanesville, Ohio. Filed Mar. 4, 1878.



Claim.—1. The heat-receiver I, provided with elongated slots J, having downwardly projecting sides K, in combination with the grate L, substantially as described.

2. A grate, L, provided with guides O P, whereby the hoods are prevented from being displaced laterally when lifted by the insertion of the soldering-irons, substantially as shown and described.

3. A grate, L, constructed with two bars, N, on each side of the center guide P, substantially as described.

4. The hoods S, constructed with fines T and lugs W, as shown and described.

5. The hoods S, provided with self-adjusting door X, having opening Y, substantially as shown, constructed and operating to close around the handle of a soldering-iron, as set forth.

6. The hoods S, in combination with the cylinder C and grate R, substantially as shown and described.

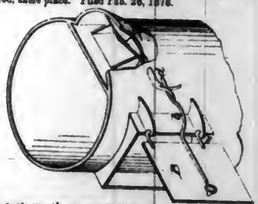
7. In a furnace for heating soldering-irons, the combination of the cylinder C, constructed with a side extension, Q, with the hoods S, provided with self-adjusting door X, substantially as described.

8. In a furnace for heating soldering-irons, the combination of the oil-reservoir or lamp A, cylinder C, casting D, constructed with elongated burners G, heating-casting I, grate L, hoods S, cylinder side extension Q, and top Z, constructed to be extended, substantially as described.

9. The hoods S, constructed with fines T, and made larger at *t*, in order to allow larger soldering-irons to be heated without obstructing the draft, substantially as described.

10. In combination with the heating-chamber of a soldering-iron heater, the hoods S, having rectangular extensions V, which are provided with swing ing doors X, substantially as shown and described.

205,050. DAMPERS FOR STOVES. Eock Bussey, Troy, N. Y., assignor of one-half his right to Chas. A. McLeod, same place. Filed Feb. 26, 1878.



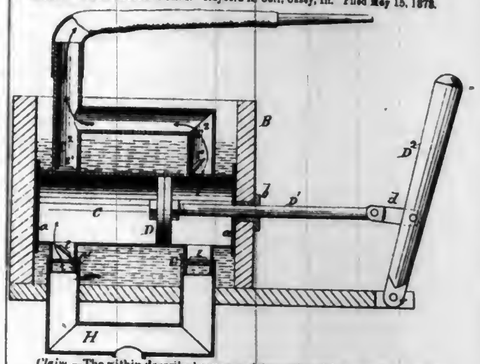
Claim.—In a stove, the hinged damper D, having arm *d*, by which it may be independently operated, adapted to and combined with door B, having an outside arm, *b*, substantially as and for the purposes set forth.

205,051. LOCK-HINGES. Nelson H. Camp, West Meriden, assignor to the Charles Parker Company, Meriden, Conn. Filed May 13, 1878.



Claim.—The combination of the two parts A B, constructed one with the pintle and the other with the eye, an incline, *a*, on the flange of the pintle, a corresponding incline, *b*, on the eye, and a pintle of elliptical shape in transverse section, the longest diameter in substantially the radial line of the incline, all substantially as described.

205,052. DOUBLE-ACTION PUMPS. Claybern A. Carr, Casey, Ill. Filed May 15, 1878.



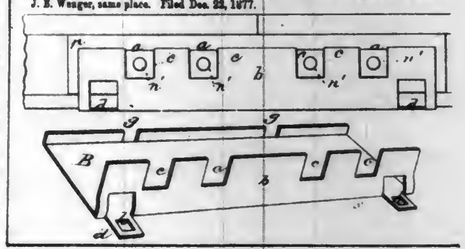
Claim.—The within-described pump and fire extinguisher, consisting of the box B, cylinder C, with packing *a* at its ends, the piston D, with its rod and operating-lever, diverging supply pipe, with strainer and valves, and converging suction-pipes, with valves, hose, and nozzle, all constructed and arranged substantially as and for the purposes herein set forth.

205,053. SCREW-PROPELLERS. Milton Chase, Haverhill, Mass. Filed Mar. 5, 1878.



Claim.—In a propeller-wheel, the combination, with the shaft having a slot or series of slots, *a'*, of the blades with shanks which pass through said slot, overlapping each other, and secured together by the clamping-pieces *c*, as described and set forth.

205,054. NUT-LOCKS. George H. Coffee, Gainesville, Mo., assignor of one-half his right to J. B. Wenger, same place. Filed Dec. 22, 1877.



Claim.—The wrought-metal railroad-shoe having upturned vertical flanges *b* C, the former having spaced slots *c*, for the reception of the nuts *a*, and horizontal eyes *d d*, struck out of the body of the flange, for the reception of the spikes, and the latter vertical notches *g*, for the passage of the heads of the spikes, upon its side, substantially as specified.

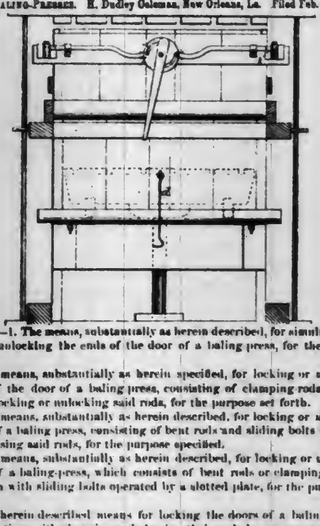
205,055. DEVICES FOR CONVERTING MOTION. Chas. Cole, Ottawa, Ontario, Canada. Filed June 3, 1878.



Claim.—1. The combination of the yoke C, friction-wheel B on shaft A, and toggle-bar F with the piston-rod E, as set forth, and operating as described.

2. The yoke C, counterbalanced by weight D, and the toggle-bar F, counterbalanced by weight D', in combination with the friction-wheel B, as set forth.

205,056. BALING-PRESSES. H. Dudley Coleman, New Orleans, La. Filed Feb. 27, 1878.



Claim.—1. The means, substantially as herein described, for simultaneously locking or unlocking the ends of the door of a baling press, for the purpose set forth.

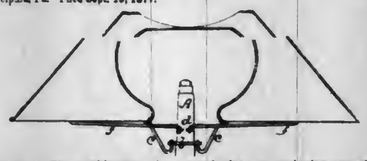
2. The means, substantially as herein specified, for locking or unlocking the ends of the door of a baling press, consisting of clamping-rods and the means for locking or unlocking said rods, for the purpose set forth.

3. The means, substantially as herein described, for locking or unlocking the doors of a baling press, consisting of bent rods and sliding bolts for securing or releasing said rods, for the purpose specified.

4. The means, substantially as herein described, for locking or unlocking the doors of a baling-press, which consists of bent rods or clamping-bars, in combination with sliding bolts operated by a slotted plate, for the purpose set forth.

5. The herein-described means for locking the doors of a baling-press—the combination, with clamping-rods having their ends bent in opposite directions and at right angles, of sliding bolts having pins or projections upon their inner ends fitting within inclined slots in a disk or plate, by which said bolts are operated, substantially as and for the purpose specified.

205,057. COMBINED GLOBE AND REFLECTOR FOR ILLUMINATING-BURNERS. Louis Corte, Philadelphia, Pa. Filed Sept. 19, 1877.

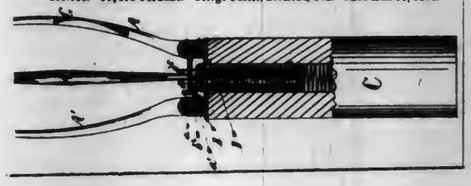


Claim.—1. The combination of a ground glass or equivalent translucent globe and a shade-reflector surrounding the globe in horizontal directions, substantially from top to bottom, and having its interior reflecting-surface flared outward and downward, substantially as and for the purpose herein specified.

2. The combination of a globe, as herein described, and a reflector surrounding the globe on all sides from top to bottom, there being a free air-space between the globe and reflector for producing an upward current of air between them, substantially as and for the purpose herein specified.

3. The combination of the spring clasping-arms *c c c*, socket *d*, rods *f f f f*, and outside sockets *g g g g*, for securing the combined globe and reflector to the lamp or burner, substantially as and for the purpose herein specified.

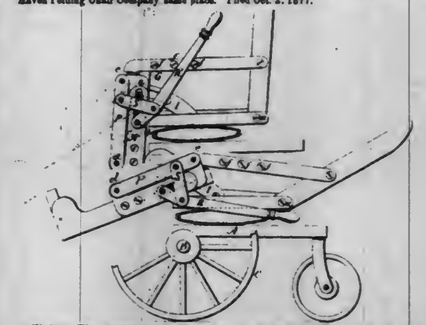
205,058. COTTON-PICKERS. George Custer, Bremond, Tex. Filed Mar. 15, 1878.



Claim.—1. The spring pusher D, in combination with the lugs a^1, a^2, a^3, and a^4, arms A, A^1, A^2, A^3, and A^4, plate B, and handle C, substantially as and for the purpose set forth.

2. The arm A^4, with lug a^4 and thumb-piece G, in combination with the lugs a^1 a^2 a^3 a^4, pusher D, and arms A A^1 A^2 A^3, substantially as and for the purpose set forth.

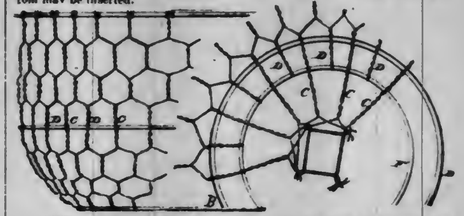
205,059. CHAIRS. Isaac N. Dean and Edwin Kelsey, New Haven, Conn., assignors to the New Haven Folding Chair Company same place. Filed Oct. 2, 1877.



Claim.—The combination, in a chair, of a foot-rest hinged to the frame near the seat by a slotted connection, and by a lever, P, hinged to the frame at a point above the seat and to the foot-rest below the said slotted connection, with a hand-lever, the fulcrum of which is the point of said slotted connection, and a hinged connection from said hand-lever R, at a point above its fulcrum, to the said hinged lever P, at a point below its connection with the chair, substantially as and for the purpose described.

206,060. WIRE BASKETS. Nelson Davis, Ida, Mich. Filed Mar. 27, 1878.

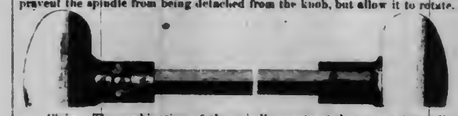
Brief.—More than one ring may be used in the bottom, if desired, and each ring will have its own set of wires starting from it. A sheet-metal bottom may be inserted.



Claim.—In a wire basket, the combination of the wires C, connected together in the center, as shown, the bottom hoop B, and the wires D, with an inside strengthening-ring, F, formed of the wires themselves or added thereto, substantially as herein set forth.

206,061. KNOB ATTACHMENTS. Amos Dickerman, New Haven, Conn., assignor to Mallory, Wheeler & Co., same place. Filed May 25, 1878.

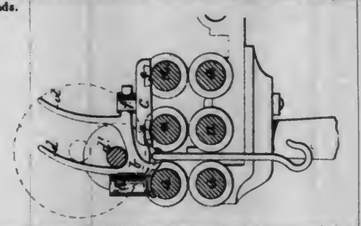
Brief.—The groove in the spindle and the groove or holes in knob shank prevent the spindle from being detached from the knob, but allow it to rotate.



Claim.—The combination of the spindle constructed at one end of cylindrical form, and with an annular groove or grooves in said cylindrical portion, with a knob having a cavity in its neck to receive the said cylindrical portion, and a filling in said cavity to engage with both the neck of the knob and the groove in the spindle, substantially as described.

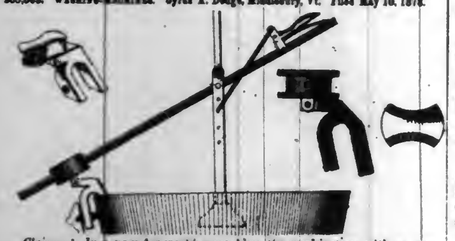
206,062. DRAWING-ROLL SADDLES. Ezra Dixon, Bristol, R. I. Filed Feb. 18, 1878.

Brief.—The front saddle is provided with two curved horns, which support the clearer-roll, so that as the latter increases in size by the accumulation of waste, it is drawn backward, thus obviating interference with the piecing of the threads.



Claim.—The top-roll saddle *b*, having curved guides *d d*, arranged to guide the clearer roll, substantially as and for the purpose described.

205,063. WASHING-MACHINES. Cyrus A. Dodge, Middlebury, Vt. Filed May 10, 1878.



Claim.—1. In a pounder washing-machine, the combination, with an actuating-lever having a pounder-shaft attached thereto, of a rod attached at one end to the pounder-shaft, and at the other to a hand-lever pivoted to the handle end of the actuating-lever, substantially as set forth.

2. In a pounder washing-machine, the combination, with an actuating-lever having a pounder-shaft pivoted thereto in a vertically-adjustable manner, of a rod attached at one end to the pounder-shaft, and at the other to a hand-lever pivoted to the handle end of the actuating lever, substantially as set forth.

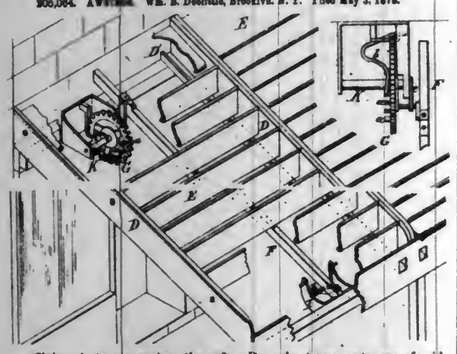
3. In a pounder washing machine, the combination, with an actuating-lever having a pounder-shaft pivoted thereto, of a bell-crank hand-lever connected with the pounder-shaft by a rod, and a spring interposed between the hand lever and the handle portion of the actuating-lever, substantially as set forth.

4. In a pounder washing-machine, the combination, with an actuating-lever having a pounder-shaft pivoted thereto, of a bell-crank hand-lever constructed with lugs adapted to overlap the sides of the actuating-lever, and attached thereto by a pin or pivot, and a rod, one end of which is attached to the upright arm of the bell-crank lever and the other end to the pounder-shaft, substantially as set forth.

5. In a pounder washing-machine, the combination, with an actuating-lever, of a rocking fulcrum having laterally and outwardly flaring openings leading from the center of the fulcrum, substantially as set forth.

6. In a pounder washing-machine, the combination, with an actuating-lever, of a rocking fulcrum pivoted to a portion of the clamp, said fulcrum constructed with a central opening of practically the size of the actuating lever in cross-section, while the opposite portions of said fulcrum are outwardly flaring to allow the lever to be moved laterally to carry the pounder to any part of the tub, substantially as set forth.

205,064. AWNINGS. Wm. B. Doolittle, Brooklyn, N. Y. Filed May 3, 1878.



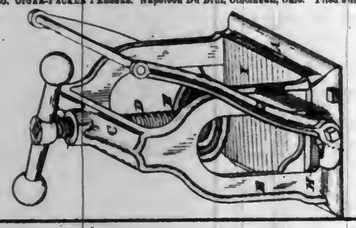
Claim.—1. In an awning, the rafter D, made of two parts, one of said parts formed with a bead and rabbet to hold the rolling slats in place, so that by removing the beader-stop any one or more of the rolling shades may be removed and replaced by another, substantially as set forth.

2. In an awning, the slats E, provided with ledges *i*, metal stops K, and pivots *m*, in combination with the operating bar F and cranks *c* and *h*, as and for the purpose set forth.

3. In an awning, the toothed wheel G, provided with stops *a*, in combination with the spring-catch *a'* and spring lever *b*, substantially as and for the purpose set forth.

4. The brackets I and crank *h* at the front of an awning, in combination with the operating bar and a series of pivoted slats, E, and suitable operating mechanism, as and for the purpose specified.

205,065. CIGAR-PACKER PRESSES. Napoleon Du Brul, Cincinnati, Ohio. Filed June 6, 1878.



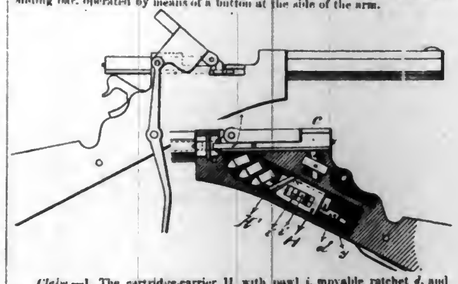
Claim.—1. The combination of cam-lever G G' and vertically-working platen I with screw D, substantially as and for the purpose set forth.

2. In a cigar-packer, the combination, with the frame A B C and screw-adjusted head E, of platen I, operated by cam-lever G G', substantially as set forth.

3. In a cigar-packer, the combination, with a head, E, capable of vertical adjustment by means of screw D, situated above it, and of a guiding and supporting frame, A B C, of the platen I, having the indented ings or projections H, to coact with the cam-levers G, in the manner designated.

205,066. MAGAZINE FIRE-ARMS. Edward F. Edgecomb, Mechanics Falls, Me., assignor of one-half his right to Wm. Watters, same place. Filed Apr. 27, 1878.

Brief.—A carriage or follower, by which the cartridges are presented to the barrel, is moved forward one step at each operation of opening and closing the breech, and is held in such advanced position by a pawl engaging in ratchet-notches at the side of the magazine-chamber. The pawls are disengaged by a sliding bar, operated by means of a button at the side of the arm.

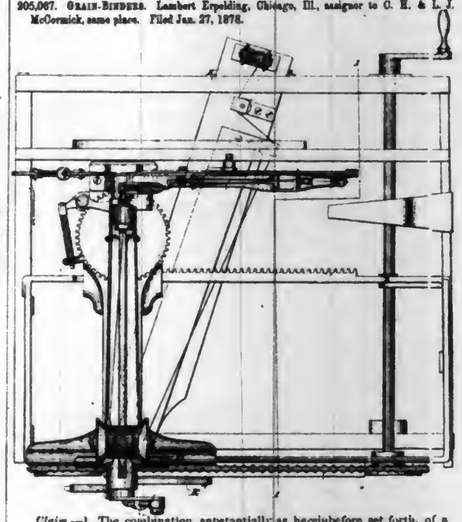


Claim.—1. The cartridge-carrier H, with pawl *i*, movable ratchet *d*, and lever *f*, all combined as described, and operated by the breech mechanism, substantially as set forth.

2. The slide *l*, with button *a*, in combination with the inclines *x x* and pawls *i l* in the cartridge-carrier, for the purposes herein set forth.

3. The combination of the ratchet *d*, having projection *y*, and the slide *l*, with projection *z*, for the purposes set forth.

205,067. GRAIN-BINDERS. Lambert Erpelding, Chicago, Ill., assignor to C. H. & L. J. McCormick, same place. Filed Jan. 27, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, of a traversing binding carriage, an intermittently-rotating crank, E, mounted thereon, a driving-chain actuating the carriage through the medium of the said crank, locking-latches F F', a lug or spline, *e'*, on the collar of the crank, (temporarily to hold the carriage at the end of each stroke,) and releasing lugs *f'* on the crank itself.

2. The combination, substantially as hereinbefore set forth, of an oscillating wire-carrying arm and a slotted spring-compressor actuated directly from said arm.

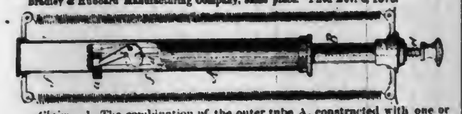
3. The combination, substantially as hereinbefore set forth, of an oscillating wire-carrying arm, a slotted compressor-arm or lever, and a supplementary spring-compressor pivoted upon and actuated by the slotted arm.

4. A reciprocating rotating twister-pinion, in combination with a locking latch acting on the twister-actuating gear, and a fixed stop, against which the latch abuts to release the twister and give it a half-revolution at the end of its forward movement, substantially as hereinbefore set forth.

5. The combination, substantially as hereinbefore set forth, of a rack, a reciprocating binding-carriage, a twister-pinion, and its actuating-gear mounted thereon, a locking-latch acting on a stud of the gear, and a fixed stop, by which the latch is automatically released and the gear revolved as the carriage reaches the end of its forward stroke to give a half-turn to the twister-pinion to carry the wire around said twister.

6. The combination, substantially as hereinbefore set forth, of a sectional twister and cutter (composed of independently-rotating concentric pinions) and an actuating-gear provided with two series of teeth differentially or irregularly arranged upon a portion of its periphery, to cause one cutter-pinion to gain upon the other to sever the wire, and then to resume its normal position again to receive the wire.

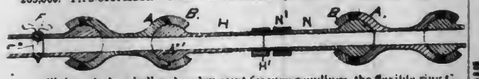
205,068. EXTENSION-CHANDELIERS. John A. Evarts, West Meriden, Conn., assignor to the Bradley & Hubbard Manufacturing Company, same place. Filed Nov. 6, 1876.



Claim.—1. The combination of the outer tube A, constructed with one or more notches or perforations, *f*, the inner tube B, with the bolt or pawl *a* arranged therein, the lever *b*, and the central rod *d*, all substantially as set forth.

2. In an extension-chandelier, a vertical rod movable within the central shaft, and in connection with the device which engages or disengages the adjustable part, to allow the adjustment of the elevation of the chandelier, substantially as described.

205,069. PIPE-COUPLINGS. Talcott T. Farnsworth, Manassas, Va. Filed May 4, 1878.



Claim.—1. In a ball and socket joint for pipe couplings, the flexible ring C, arranged to be compressed against shoulder *b*, in combination with ball E' and pipes H and N, as and for the purpose set forth.

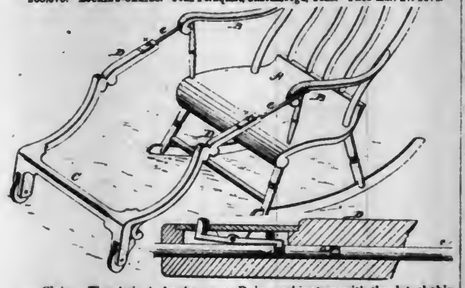
2. In a ball and socket joint for pipe couplings, the hemisphere B, with its shoulder *b*, in combination with hemisphere A, substantially as described, and for the purpose set forth.

3. In a pipe-coupling, the ball-and-socket joint composed of ball E' and hemispheres A and B, said hemisphere B having shoulder *b*, in combination with pipes H and N, having screw-nuts H' N', respectively, substantially as and for the purpose set forth.

4. In a ball-and-socket joint for pipe-coupling, the pipes H N, with their screw-nuts H' N' and bands H' N', and connecting-pieces H' N', all substantially as and for the purpose set forth.

5. In a ball-and-socket joint for pipe-couplings, the screw-nuts H' N', for connecting pipes H and N, in combination with bands H' N', connecting pieces H' N', and small projections N', all substantially as described, and for the purpose set forth.

205,070. ROCKING-CHAIRS. John Fernquist, Chattanooga, Tenn. Filed Mar. 27, 1878.



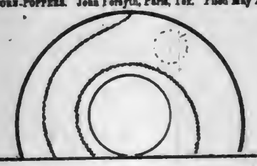
Claim.—The chair A, having arms B, in combination with the detachable frame C, supported at its forward end upon wheels or rollers, and having adjustable arms D D, connected to the chair by rods or bars *c c*, substantially as described.

205,071. BUTTON-FASTENINGS. Geo. B. Fiske, Attleborough, Mass. Filed May 10, 1878.



Claim.—A fastening for buttons or studs, consisting of the lower plate A, formed with sleeve B, having annular recess *a*, in combination with the plate C, tubular shank D, and catch *e*, formed with shoulder *d* and spring arm *c*, said catch being operated by the presser-bar *g*, having stop *h*, and working within a groove, *f*, formed with shoulders *l*, substantially as and for the purpose set forth.

205,072. CORN-POPPERS. John Forsyth, Paris, Tex. Filed May 25, 1878.



Claim.—A corn-popper consisting of an exterior cylinder and an interior perforated convolute, both being connected to the same heads, and having suitable doors, as and for the purposes set forth.

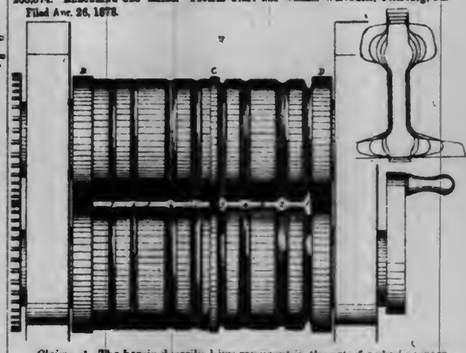
205,073. CURTAIN-FIXTURES. James Gillmore, Detroit, Mich., assignor to Leander S. Butterfield, same place. Filed Mar. 23, 1878.

Brief.—Improvement on patent of A. H. Knapp and H. W. Bailey, No. 102,409, dated April 26, 1870. The boss for holding the spring-brake is cast with the bracket. The brake is applied in a grooved pulley adjacent to the cord spool.



Claim.—The combination, substantially as hereinbefore described, of an ordinary curtain-roller, B, having at one end an extension of the shaft *b*, with the grooved pulley D and operating-cord attached thereto, the ordinary bracket F, with inwardly-projecting arm *f*, and the brake-spring H, attached to arm *f* by coiling, substantially as described, and for the purposes explained.

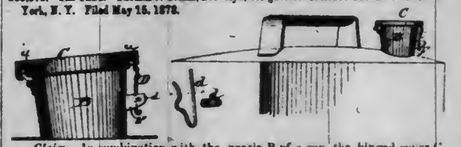
205,074. REROLLING OLD RAILS. Thomas Glass and William Westwater, Pittsburg, Pa. Filed Aug. 26, 1878.



Claim.—1. The herein-described improvement in the art of reducing worn rails to flat or bar iron, which consists in gradually reducing, in rolls, the metal forming the head and flange of the rail without confining the web, and forcing a portion of the metal into the web and to either side of the rail, forming a bar thicker than the web and wider than the rail, substantially as set forth.

2. A pair of rolls having collars or bearings B C D and grooves *e f*, constructed substantially as herein described, and for the purpose set forth.

205,075. OIL-CANS. Thomas J. Griffin, Brooklyn, assignor to Clarence Brooks & Co., New York, N. Y. Filed May 15, 1878.



Claim.—In combination with the nozzle B of a can, the hinged cover C, having groove *a* in its under side, the rubber packing *b*, hasp D, perforated tongue F, and key *d*, substantially as and for the purposes herein set forth.

205,076. BASE-LOCKS. Wm. M. Griscom, Reading, Pa. Filed May 20, 1878.



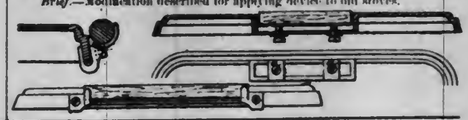
Claim.—1. The combination of the base-plate D and its spring *d* with the lever E and its locking-lever F, as set forth.

2. The combination of the lever E and its recesses *e* with the lever F and its lugs *f*, as specified.

3. The combination of the base D and its inclined rib *m*, the lever E, having an opening, *n*, and the spring lever F, carried by the lever E, and having an inclined rib, *s*, and projecting lug *j*, as described.

205,077. KNIFE-SHARPENERS. Daniel Gundelfinger, Jr., and Andrew Gundelfinger, Jefferson City, Mo. Filed Apr. 27, 1878.

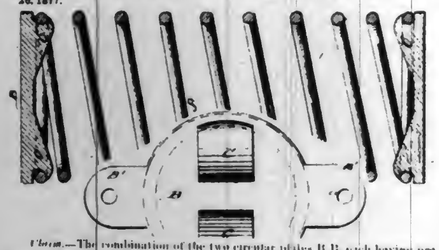
Brief.—Modification described for applying device to old stoves.



Claim.—1. The combination, substantially as hereinbefore described, of a top plate of a stove with holder for supporting a knife-sharpener and mechanical means for securing the same.

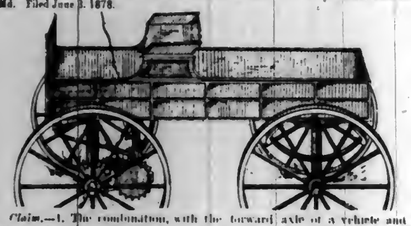
2. A top plate of a stove provided with a cavity or holder for supporting a knife-sharpener, and an adjusting device, substantially as described, and for the purpose set forth.

206,078. VEHICLE SEAT-SPRING FASTENINGS. R. H. Guyer, La Fayette, Ind. Filed Nov. 26, 1877.



Claim.—The combination of the two circular plates B B, each having projecting therefrom the perforated ears B' B', and having each on its inner face the hooked lips C C, with the coil spring A, the upper and lower coils of which respectively bear directly on the body of the plates B B, substantially as and for the purposes herein set forth.

206,079. MECHANISM FOR STOPPING RUNAWAY HORSES. Thomas B. Hand, Baltimore, Md. Filed June 3, 1878.



Claim.—1. The combination, with the forward axle of a vehicle and a roller attached to a shaft the ends of which are supported in bearings laterally adjustable on guide bars or rods rigidly secured to the axle, of a bell crank lever pivoted to a swinging plate located on the floor of the vehicle, the depending arm of said lever being attached to rods secured to said adjustable bearings, and cog or friction wheels attached to the roller shaft and forward wheels of the vehicle, substantially as set forth.

2. The combination, with the forward axle of a vehicle having rearwardly-projecting guide bars rigidly secured thereto, of a roller mounted on a shaft, the ends of which are journaled in bearings supported on said guide-bars, and springs interposed between the axle and bearings, substantially as set forth.

3. The combination, with the laterally adjustable roller-shaft and the cog or friction gearing, substantially as hereinbefore described, of a bell-crank lever pivoted to a swinging plate and attached to rods connecting with said laterally adjustable roller-shaft, substantially as set forth.

4. The combination, with the axle of a vehicle having horizontal guide-bars rigidly secured thereto, of a drum-shaft supported in bearing blocks laterally adjustable on said guide bars, springs interposed between the axle and bearing blocks, cog or friction gearing attached to the drum-shaft and vehicle wheels, and a suitable lever for throwing the parts in or out of gearing, substantially as set forth.

206,080. MACHINES FOR MAKING BUTTON-HOLE LININGS. David Harris, Brooklyn, N. Y., assignor of one-half his right to John O. Cosins, same place. Filed Sept. 17, 1877.

Claim.—1. In a machine for making button hole linings, the combination, with the dies N and rod O, of the vibrating crimpers D D, substantially as set forth.

2. The vibrating crimpers, in combination with the segmental carrier d^5 d^5, substantially as set forth.

3. The combination, with the carrier C and crimpers D D, of the treadle E, arm M, sliding bar *w*, and connecting link, substantially as set forth.

4. The combination, with the crimpers and dies, of the needles *f f*, substantially as set forth.

5. The combination, with the needles, of the guide L, substantially as set forth.

6. In a machine for making button-hole linings, the combination, with the series of dies N, of the guide L, provided with elastic fingers *l l* and the stops *l' l'*, substantially as set forth.

7. The combination, in a machine for making button-hole linings, with the needles *f f*, of the lever G, link G', the bell-crank lever H, and the locking-lever I, substantially as set forth.

8. The combination, in a machine for making button-hole linings, with the locking lever and the bell-crank lever, of the tripping-lever I', link I^4, and the treadle E, substantially as set forth.

9. The combination, with the needles, of the spring *g*, adapted to thrust them into the lining, substantially as set forth.

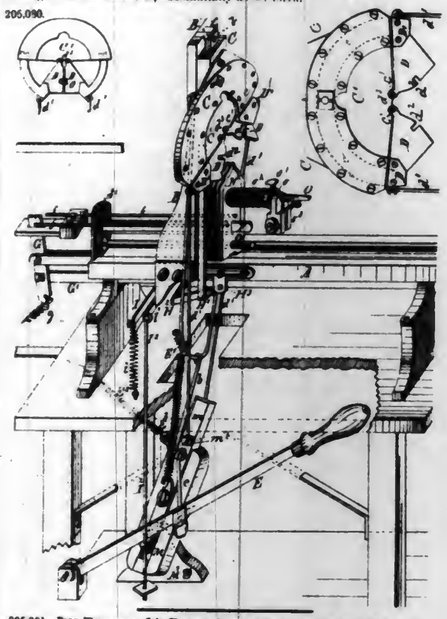
10. The dies N, provided at their lower ends with recesses, and arranged in a series, substantially as shown, whereby the recesses form continuous grooves adapted to fit upon the ways A, as set forth.

11. In a machine for making button-hole linings, the combination, with the dies N, provided with the embossing-recesses n^1, of crimpers which force the blank between the dies, and a spring which presses the dies toward each other after the lining has been crimped, and thereby raise the bead, substantially as set forth.

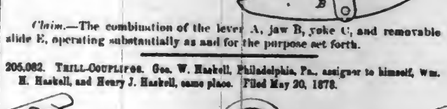
12. The dies N, in combination with rod O and a tension device, to maintain pressure upon the dies, substantially as set forth.

13. The combination, with the ways A A and dies N, of an automatic feeding device for said dies, substantially as set forth.

205,090.

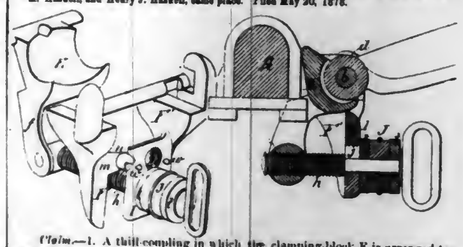


205,081. PIPE-WRENCHES. John Hartman, Jr., Philadelphia, Pa. Filed Nov. 22, 1877.



Claim.—The combination of the lever A, jaw B, yoke C, and removable slide E, operating substantially as and for the purpose set forth.

205,082. THILL-COUPLINGS. Geo. W. Haskell, Philadelphia, Pa., assignor to himself, Wm. H. Haskell, and Henry J. Haskell, same place. Filed May 20, 1878.



Claim.—1. A thill-coupling in which the clamping-block E is arranged to laterally confine the eye *d* on the thill-iron, all substantially as set forth.

2. The combination of the eye d_4, the clamping-block E, having arm *f* and block *g*, and the screw-stem *h*, as specified.

3. The combination of the plate F' and its plate I, having an opening, *s*, with the plate F, its arm *m*, and lug *n*, as specified.

4. The combination of the plate I, having *n* slot, *j*, and lugs *w*, with the screw-stem *h* and washer *i*, as specified.

206,083. HINGES FOR AWNING-BLINDS. Cyrus L. Hasbrouck, Syracuse, N. Y. Filed May 21, 1878.

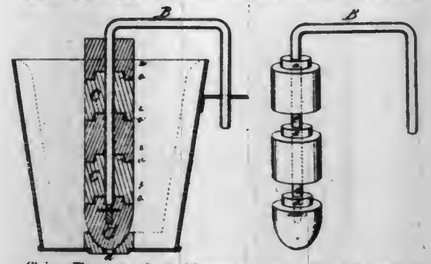
Brief.—The device is used as an ordinary lock-hinge, and when the blinds are used for an awning they are fastened and lifted together until the cup of the lower hinge clears the round of the pintle, when the blinds are pushed out at any angle desired.



Claim.—1. An upper hinge for window blinds or shutters, consisting of the plates A B, arms *a b*, pin or cone b^2, notched incline *c*, and the peculiar construction of the axle a^2, constructed substantially as described.

2. A bottom hinge for window blinds or shutters, consisting of the plates C D, arms c^2 d^2, pins c^3, full round at the base and of flat sides near the top, slotted cap d^3, notched incline d^4, and stop *m*, constructed substantially as described.

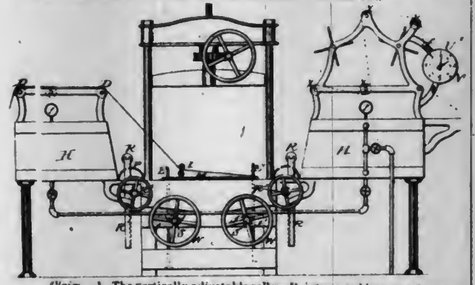
206,084. STOPPER-SLEEVES. Andrew J. Hawe, Johnstown, Pa. Filed May 9, 1878.



Claim.—The stopper for steel ladles, consisting of the rod B and the short perforated baked-clay sections C C C', secured on said rod, and engaging with each other by the end projections *u* and end recesses *v*, substantially as specified.

205,085. CLOTH-PRESSING MACHINES. Wm. Hebden, Boston, Mass. Filed Apr. 12, 1878.

Brief.—Rollers, vertically adjustable, are placed on either side of the press, between it and the heating-chambers, to facilitate the passage of the plates to and fro. Similar adjustable guide-pins govern the building of the pile. To the measuring-roll a back-stop and registering dial are attached.

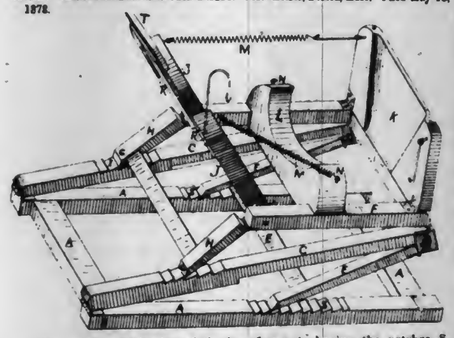


Claim.—1. The vertically-adjustable rollers R, interposed between the press A and the heating-chambers H H^1, substantially as described, for the purpose specified.

2. The vertical guide pins E E', adapted to be adjusted vertically in the bed of the press, in combination with the friction pulleys *f f'* and shafts S S, whereby said pins are adjusted simultaneously in pairs, substantially as described.

3. In combination, the measuring roll U', working in a bearing provided with the inclosed recess R^3 and the friction-roller R^4, whereby the backward rotation of the roll is prevented, and the pointer *w*, gearing Z Z, pointer *x*, and dial V, whereby the forward rotations of the roll are indicated, substantially as described.

206,086. HEAD-ELEVATOR AND CHIN-RAISER. John Hoists, Boston, Mass. Filed May 13, 1878.

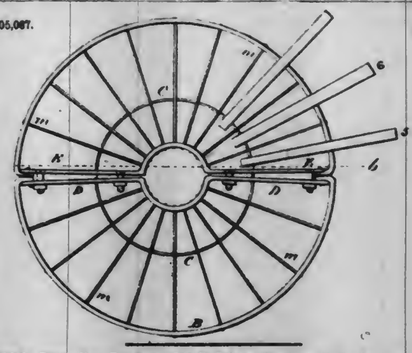


Claim.—The combination of the base-frame A, having the notches S, with the adjustable frame C, having the supports E, the adjustable frame F, having the supports H, yoke L, head-board K, chin-supports J R T, and springs M, all being constructed and arranged to operate substantially in the manner described, as and for the purposes set forth.

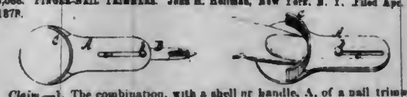
205,087. STOVE-PIPE SHELVES. Timothy Hill, Fairfield Township, Crawford County, Pa. Filed Feb. 23, 1878.

Claim.—A shelf constructed with a wrought-iron hoop, A B, the spokes *a a a a*, the wire C C, and the clamps D D E E, in combination with the wooden arms 5 6 7, constructed as described, for the purposes set forth.

205,087.



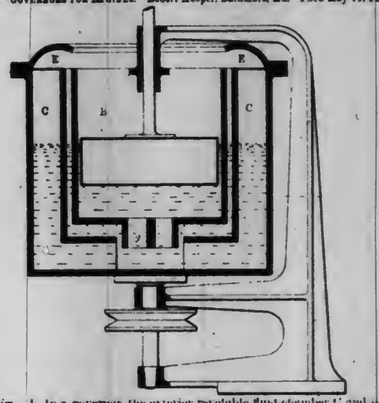
205,088. FINGER-NAIL TRIMMERS. John H. Hollman, New York, N. Y. Filed Apr. 17, 1878.



Claim.—1. The combination, with a shell or handle, A, of a nail trimmer and cleaner, B, provided with a slot, the end walls of which are beveled and sharpened to form cutting edges, and so arranged and constructed that the trimmer can be slid into the shell when not in use, substantially in the manner and for the purpose set forth.

2. The combination, with the shell or handle A, of the segmental concaved file C attached thereto, substantially as described, and for the purpose set forth.

206,089. GOVERNORS FOR ENGINES. Robert Hooper, Baltimore, Md. Filed May 11, 1878.



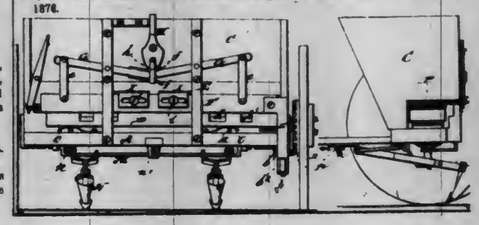
Claim.—1. In a governor, the exterior revoluble fluid-chamber C and interior stationary fluid-chamber B, combined substantially as shown, and having suitable passages or ducts, whereby the interiors of the said chambers are in communication, substantially as specified, and for the purposes set forth.

2. In a governor, the revoluble chamber C, divided into sections, and having practically an open top, adapted in its revolution to conduct fluid from the center of the inner stationary chamber B, containing a float connected, directly or indirectly, with the governing-valve, substantially as herein set forth.

3. In a governor, the combination, with the revoluble chamber C, of the stationary fluid-chamber B, having the sectional nozzle *g*, adapted to pass below and through the inner casing of the said revoluble chamber, substantially as herein shown and described.

4. In a governor, the combination, with the stationary fluid-chamber B, of the revoluble fluid-chamber C, having the cap or annular flange E, adapted to deflect fluid ejected from the said revoluble chamber to the stationary one, substantially as herein specified.

205,090. SEED-SOWERS. Wm. A. Horrell and Joseph J. Varckler, Chico, Cal. Filed Apr. 6, 1878.



Claim.—1. The combination of the seed-box C, vibrating bar D, and vertically-operating cut-off bar F, with gages I I, as and for the purposes set forth.

2. The combination of the cut-off bar F, guides E, links *e*, levers G G, with overlapping plates *f*, and the cam-lever H, with stirrup A, all substantially as and for the purposes set forth.

3. The combination of the cut-off bar F, arm L, gear-wheel b^1, shaft b^2, with crank b^3 and pitman b^4, vibrating bar D, and the gear-wheel *b*, all operating in the manner described, and for the purposes set forth.

4. The springs O and regulating screws K, in combination with the vibrating bar D, for the purposes set forth.

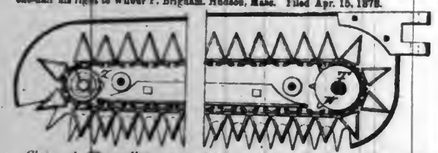
5. The combination, with the seed-sower, of the hinged bail M, cultivators N, clip *m*, bolts *a a'*, and nut *p*, substantially as and for the purposes set forth.

205,091. LAP-LINKS. Matthew Howard, Paris, Ky. Filed May 15, 1878.



Claim.—The open link A, having its end beveled at *x*, in combination with a spring, *s*, one end of which is riveted in a recess in the inner side of the ring, and both ends of which are flush with the inner surface of the link, as and for the purpose set forth.

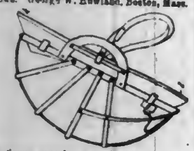
205,092. HARVESTER CUTTING APPARATUS. Carson F. Howes, Marlborough, assignor of one-half his right to Wilbur F. Brigham, Hudson, Mass. Filed Apr. 15, 1878.



Claim.—1. The endless cutter-chain consisting of the triangular cutters having formed at their heels the reversely-set hooks, outwardly beyond which project the corners of said heels, and the separate loop-links by which the cutters are connected; substantially as described.

2. The combination, with the endless cutter-chain formed of the separate cutters, provided at their heels with reversely-set hooks connected by loop-links, of the sprocketed or toothed pulley W, mounted on shaft T, the adjustable round pulley Z, the finger-bar, the pulley S, mounted also on the shaft T, and a suitable device for driving said pulley, substantially as described.

205,093. MASKS. George W. Rowland, Boston, Mass. Filed May 16, 1878.



Claim.—1. In a face-guard or mask, the combination, with the face-surrounding rim, of an independent or separable arched-pad, *k*, adapted to bear upon the head of the wearer, as and for the purpose described.

2. In a face-guard or mask, arched pads *k l*, connected with, but forming no integral part of, the face-surrounding rim, and adapted to bear upon the head and front of the face, as and for the purpose described.

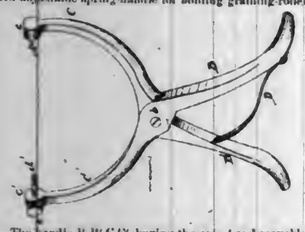
3. The combination, with the mask and arched pads, of the temple-shields, substantially as described.

4. The combination, with the mask, of a spring-supported chin-plate, substantially as described.

5. The arched pads, combined with the face-surrounding rim by means of loops, substantially as described.

205,094. GRAINING-TOOLS. E. H. Huffman, Oskaloosa, Iowa. Filed Apr. 4, 1878.

Brief.—An adjustable spring-handle for holding graining-rollers.



Claim.—The handle B B' C C', having the axis *d* and movable axis *d'*, held in a circular or tubular portion, *c'*, of the said handle, provided with a set or holding screw, *e*, substantially as shown and described, and for the purpose set forth.

205,095. BOOK-BINDINGS. George E. Huntington, Thereof, N. Y., assignor of one-half his right to C. H. Houghton, Matachen, N. J. Filed Apr. 20, 1878.

Claim.—The combination, with the leaves A, of the back-plate B, having its longitudinal edges *a* doubled under, pressed on the edges of the leaves, and secured firmly thereto by the indented points *b*, made in rear of the folded-under edges, substantially as specified.



205,096. AUGER-HANDLES. William A. Ives, New Haven, Conn. Filed Apr. 30, 1878.

Brief.—The auger is securely held in the handle without turning backward by means of a metal socket, a seat of wood or similar material other than metal, and a longitudinal clamp extending through the handle, which forces the tang against the auger.



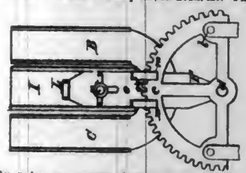
Claim.—The socket A, provided with a seat, D, of wood or similar material other than metal, combined with the longitudinal clamp E, substantially as specified.

205,097. FEED-BAGS. Demetrius Jannopoulo, St. Louis, Mo. Filed Mar. 29, 1878.



Claim.—In a feed-bag attachment, the compound loop A', the two loops of which are joined at right angles to each other, the upper loop serving as an attachment for the head-gear A *a*, and the lower loop adapted for the reception of the cord *c*, by which the feed-bag is raised or lowered, substantially in the manner described, and for the purpose stated.

205,098. VEHICLE-TOPS. Demetrius Jannopoulo, St. Louis, Mo. Filed Mar. 29, 1878.

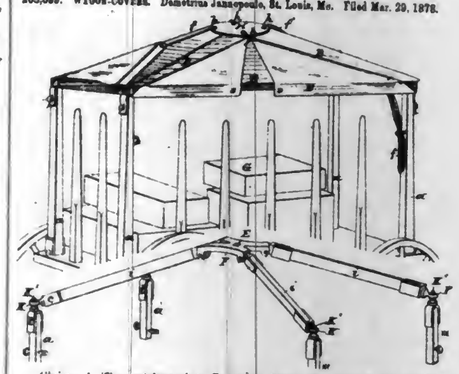


Claim.—1. In a top or awning frame holding device, the central bow-socket F, provided with the way, the toothed dog *e*, provided with a clamp, and the semicircular rack *c*, substantially as set forth.

2. The bow-sockets F, H, and C, pivoted as shown, the toothed sliding dog *e*, provided with the fingers *m*, in combination with the fixed rack *c*, as herein set forth.

3. In combination, the way I O on socket F, the sliding dog *e*, having the finger-piece L and fingers *m*, and the rack *c*, as and for the purposes described.

205,099. WAGON-COVERS. Demetrius Jannopoulo, St. Louis, Mo. Filed Mar. 29, 1878.

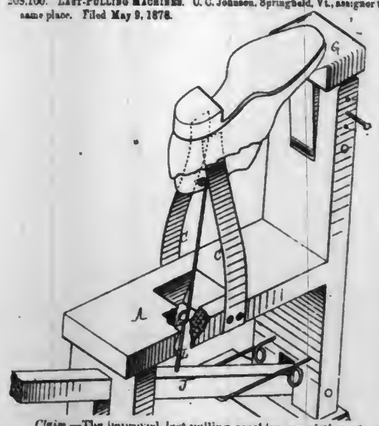


Claim.—1. The coupling-plate F, having hinge-connections with the arms *i*, the latter being provided with fixed eyes at their outer extremities, substantially as set forth.

2. The coupling-plate F, connecting, as shown, with arms *i*, the latter having fixed eyes K, and the posts *a*, provided with thimbles having pins K', as and for the purposes described.

3. The cover B, provided with perforated cap-plate H, having shank A' and cords *f*, in combination with the plate F of the frame, having aperture E, substantially as set forth.

205,100. LAST-PULLING MACHINES. C. C. Johnson, Springfield, Vt., assignor to J. N. Patton, same place. Filed May 9, 1878.



Claim.—The improved last pulling machine, consisting of a table, A, the arms C C, attached to such table, the pivoted foot-lever J, hook L, and adjustable toe-piece G, all constructed and arranged substantially as described and shown.

205,101. WINDOW-SASHES. Joseph L. Joyce, New Haven, Conn. Filed Apr. 19, 1878.

Brief.—The sash is rabbeted for the glass, and has a groove contiguous to the glass, in which is inserted the flange of a metallic bead. A rubber packing in the hollow of the bead presses against the glass. The bead, in sections, respectively, to the sides of the sash, has mitered joints at the corners, and on one side is divided, one of the parts being secured by a pin passing into the sash and through the flange. The several parts of the bead are inserted in place, and the part secured by the pin last retains the others.



Claim.—1. The grooved metallic bead *b*, constructed with a flange, *a*, the sash rabbeted to receive the glass, a groove in the said rabbet parallel with the surface of the glass to receive the said flange and support the bead, and the elastic packing *d* within the said bead, and between it and the glass, substantially as described.

2. In a sash inclosing glass, the flanged beads on the several sides, each part, save the last, cut as described, to secure the others, and the last secured directly to the sash, as a means for locking the whole, substantially as described.

205,102. CORPSE-COOLERS. Alex. Kinnaird, Baltimore, Md. Filed Feb. 5, 1878.

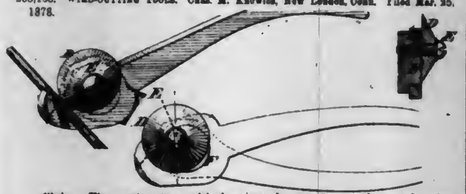


Claim.—1. In an ice-casket, and in combination with a coffin, a series of sectional ice-chambers having wedges for separating them from the coffin, whereby the entrance of moisture into the latter is prevented, as described.

2. An ice-casket having its walls and coffin provided with ledges for conducting condensed moisture to the drip end of the device, substantially as described.

3. In combination with an ice-casket, one or more swiveling holders, *f*, adapted to receive the carrying-bars, substantially as described.

205,103. WIRE-CUTTING TOOLS. Chas. M. Knowles, New London, Conn. Filed Mar. 20, 1878.



Claim.—The combination, with the pivoted parts, jaws, or levers of a wire-cutting implement, of the rotary cutter D, its pivot E, and the eccentric F, or circular projection eccentric to the pivot E, formed on or attached to one of said pivoted parts, jaws, or levers, and forming a pivot for the other, substantially as and for the purpose specified.

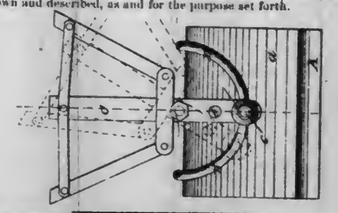
205,104. VEHICLE-TOP ADJUSTERS. Jerome Lamson and James Brotherton, Waverly, Iowa. Filed May 8, 1878.

Brief.—The adjusting device is located outside and below the top of the seat, to prevent the occupants of the vehicle coming in contact therewith.

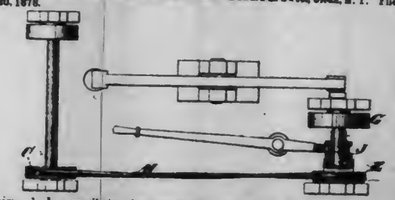
Claim.—1. The pivoted ironed bow C, having an adjusting nut and screw, in combination with a segmental bar, H, extending below the top of the exterior side of the end rails of a wagon-seat, substantially as and for the purpose set forth.

2. A wagon-seat provided with a segmental bar, D, the ends of which are secured to the inner side of the seat *a* A, and extend downwardly from the top of the end rails and exteriorly thereto, in combination with the central bow C, pivoted to the bar B, and provided with an adjusting nut and screw, substantially as shown and described, as and for the purpose set forth.

205,104.



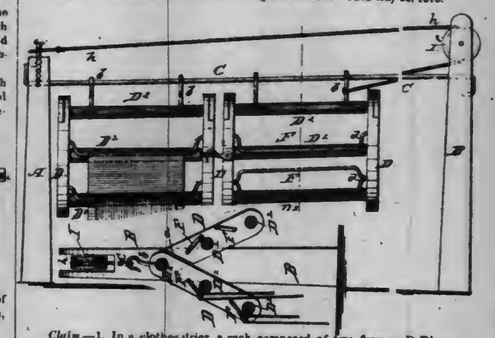
205,106. RIGS FOR DRILLING OIL AND OTHER WELLS. Edward B. Scott, Olean, N. Y. Filed Feb. 20, 1878.



Claim.—1. In an oil-rig, the combination of the shaft having the band wheel G rigidly attached thereto and the loose tug pulley provided with lugs, the toothed clutch J, sliding longitudinally on the said shaft, and the clutch lever for operating the said clutch to engage or disengage the said tug pulley, all constructed and operating substantially as and for the purpose specified.

2. The combination, with the tug-pulley E and bull-wheel C, of the tug rope or chain M, having an extra turn around each of said wheels to prevent slipping, substantially as and for the purpose described.

205,106. CLOTHES-DRIERS. James J. Largent, Peoria, Ill. Filed May 28, 1878.



Claim.—1. In a clothes-drier, a rack composed of two frames, D D', connected together by a round, D², and provided with crank-wires F F, substantially as and for the purposes herein set forth.

2. The combination of the posts A B, inclined cable C', and a series of racks, D D' D², suspended from the cable by hooks *b*, and coupled together, substantially as and for the purposes herein set forth.

3. The cord A and pulley I, in combination with the posts, inclined cable, and racks, substantially as and for the purposes herein set forth.

205,107. GATES. Albro Lee, Massillon, Ohio. Filed Mar. 12, 1878.

Brief.—A casing incloses the latch-bar, and retains it in its proper position on the gate as it is being operated to disengage the latch from the front gate-post.

Claim.—1. The combination, with the levers, whose upper extremities are pivoted to opposite sides of the swinging gate, and which depend therefrom in diagonal vertical inclination, of the cross-bar connecting their lower extremities, and the spring-pressed latch-bar, which latter is adapted to have longitudinal movement in a horizontal line, substantially as set forth.

2. The combination, with the levers, whose upper extremities are pivoted to the gate, and the connecting cross-bar, of the latch-bar, which is adapted to be operated horizontally in line with itself, substantially as set forth.

3. The combination, with the gate-pivoted levers formed with slotted lower extremities, of the cross-bar which connects the two, and is seated in a recess of the latch-bar, said cross-bar made with headed extremities, which engage with said slotted extremities of the pivoted levers, substantially as set forth.

4. The combination, with the levers, pivoted in diagonal vertical inclination to the gate, and the cross-bar which connects their lower extremities, of the spring-pressed latch-bar, which has movement in a horizontal line, and is adapted to be longitudinally operated by said levers and cross-bar, substantially as set forth.

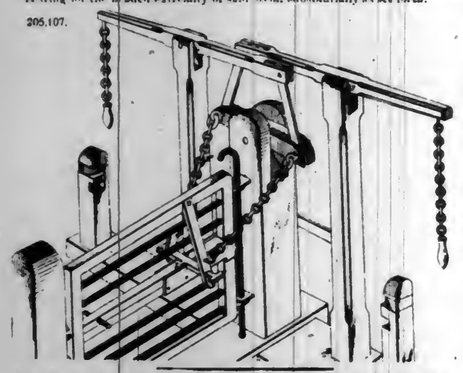
5. In mechanism for operating a swinging gate, the combination, with the actuating levers and connecting links, of the cross-head, which is pivoted within a recess formed in the top of the gate-supporting post, and is adapted to have tilting movement in a vertical plane, substantially as set forth.

6. The combination, with the actuating levers, connecting links, and pivoted cross-head, which has vertical movement in a recess formed in the gate-supporting post, of the levers which are pivoted to the gate, and the chains or other flexible connections which engage them to said pivotal cross-head, substantially as set forth.

7. The combination, with the actuating levers, connecting links, and cross-head, pivoted to the gate-supporting post, so as to have tilting movement in a vertical plane, of the chains or other connections engaging with the levers which are pivoted to the gate, together with said lever, the cross-bar connecting their lower extremities, and the spring-pressed latch-bar adapted to have a longitudinal movement, substantially as set forth.

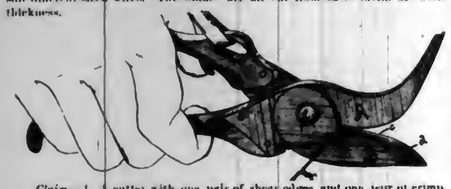
8. The combination, with the gate-latch, of the catch made in two independent parts, each of said parts being provided with a rear horizontal stem, and a spiral spring placed about the latter, said spring having respective end bearing against the catch and the vertical plate, which latter provides free bearing for the headed extremity of said stem, substantially as set forth.

205,107.



205,108. WIRE-CUTTERS. Sylvanus D. Locke, Hoosick Falls, N. Y. Filed Apr. 8, 1878.

Brief.—The crimper plate is made adjustable by reason of its elasticity to suit different-sized wires. The blades are all cut from sheet metal of same thickness.



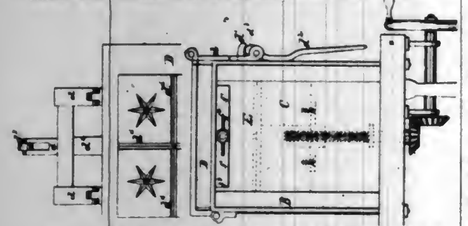
Claim.—1. A cutter with one pair of shear edges and one pair of crimping edges, adapted for use in severing the wire bands around grain-sheaves, constructed with a male blade, A, and female blade B, constructed with the plates *b c*, unconnected except at the outer end, so as to permit free downward discharge of obstructing matter, as set forth.

2. A cutter adapted for use in severing the bands of grain-sheaves, constructed with the blades A and *c*, united to handles of different material, as set forth, and the plate *b*, secured at the point to plate *c*, with an interposed plate, *d*, and extending back sufficiently far only to receive the head of the pivot-bolt *e*, as set forth.

3. A cutter adapted for use in severing the bands of grain-sheaves, constructed with the blade A and the plates *b c*, the upper edge of said plate *b* being slightly higher than the upper edge of *c*, and the proximate edges of A and *b* rounded or beveled, as described, so as to sever and gripe the wire *w* with one of the severed ends hooked under the edge of blade A, as described.

4. A cutter adapted for use in severing the bands of grain-sheaves, constructed with the blade A, and the cutting-blade *c* and crimping-blade *b*, the proximate edge of A and *b* being rounded or beveled, as described, combined with the shoulders *b' b'*, arranged to stop the closing motion of said blades and secure uniformity of gripe upon the wire, as set forth and described.

206,109. BUTTER-PRESSES. Nathan S. Long, Marysville, Ohio. Filed Mar. 5, 1878.



Claim.—1. In a butter-press having mold-box B, in which works the presser-block C, the combination, with the lid D, of the hinged hasp *d*, in which is pivoted the lever *d²*, carrying the cam *d³*, together with the downwardly-curved stud or pin *d'*, fixed on the exterior of the said mold-box, all constructed and arranged to operate as and for the purpose described.

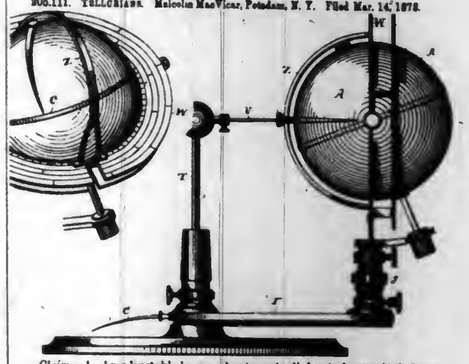
2. In a butter-press having the mold-box B, with its presser-block C, and lid D, with its grooves *d⁵*, the plate E, with its corresponding grooves *e*, and the frame F, with its cutter-wires *f* arranged to correspond to said grooves, together with the spring-bolts *f'* in slots *f²*, and carried by plates *f³*, having thumb-screws *f⁴*, all constructed and arranged to operate as and for the purpose specified.

206,110. CLIPS FOR HOOK-YOKES. Wm. W. Langor, Anamosa, assignor of one-half his right to Jay Hoscock, Jones County, Iowa. Filed May 25, 1878.



Claim.—The clip B, cast in one piece with the loop A, open longitudinally directly opposite the loop, and provided with the rib *b* and lugs *c*, all substantially as herein set forth.

206,111. TELLURIANS. Malcolm MacVicar, Potsdam, N. Y. Filed Mar. 14, 1878.



Claim.—1. An adjustable horizon having a twilight-circle attached thereto, pivoted to the equator and extending around the globe, substantially as shown and described.

2. The combination of a horizon adjustably pivoted to the equator, with a meridian, substantially as shown and described.

3. A globe revolving freely around its axis, and provided with a stationary equator, in combination with a stationary axis, having a pointer attached to its upper extremity and extending to the equator, substantially as shown and described.

4. A pointer attached to the upper end of the axis of the globe, and extending to a point adjacent to the equator, substantially as shown and described, all arranged and operating so as to point to a calendar upon the equator and remain stationary when the globe is revolved upon its axis.

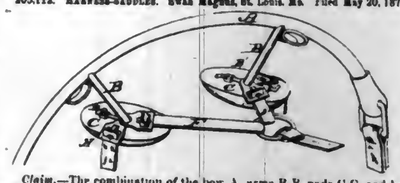
5. The combination of the globe A, horizon W, and meridian Z with the standard T and rod V, the latter being adjusted to hold the horizon in a vertical position during the passage of the globe around the sun, as set forth.

6. Adjustable guides *g g*, substantially as shown and described, all arranged and operating to prevent the lateral movement of the horizon, while permitting its longitudinal movement, substantially as shown and described.

7. The collar F and guides *g g*, in connection with the horizon, whereby the latter is held at all times facing the ball representing the sun, substantially as shown and described.

8. The combination of the arm I, index *c*, and calendar *d*, substantially as shown and described.

206,112. HARNESS-SADDLES. Swan Magnus, St. Louis, Mo. Filed May 20, 1878.



Claim.—The combination of the bow A, arms B B, pads C C, and buckles F F, arranged substantially as described.

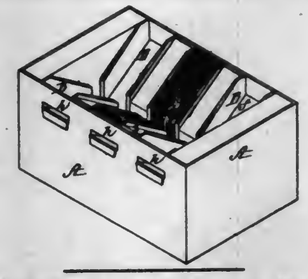
206,113. OIL-STOVES. Pearl Martin, Medford, assignor of one-fourth his right to Selwyn Bowman, Somerville, Mass. Filed May 27, 1878.

Brief.—Air is admitted at *b* and discharged at *b*.

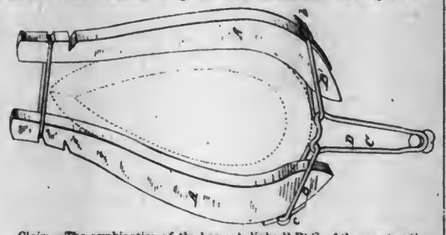
Claim.—1. In an oil-stove, a wick-holder, B, applied to the inside of the fire-pot, and provided with one or more air-passages having inlet and outlet apertures, the latter located at or near the upper edges of the holder, so that the air, after being heated, will impinge upon the flame, substantially in the manner and for the purpose described.

2. The combination of the wick-holders B with the fire-pot A, having air-apertures *b* in its sides, communicating with the air-passages of the wick-holders, substantially as and for the purpose set forth.

206,113.

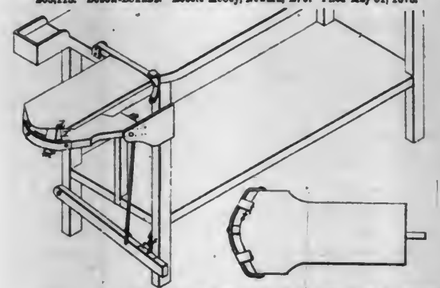


206,114. HAME-FASTENERS. George M. Marks, Fort Matilda, Pa. Filed May 7, 1878.



Claim.—The combination of the hame A, links B B' C, of the construction herein described, plate or cap *c*, forming a bearing for the link B, and the hooked plate *b*, all arranged and operating substantially as herein set forth, for the purposes shown and specified.

206,115. BOSOM-BOARDS. Robert McCoy, Newark, N. J. Filed May 31, 1878.

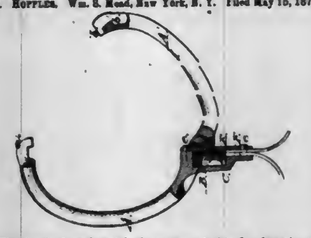


Claim.—1. In combination with a bosom-board, a tilting clamp arranged underneath the board, and operated by a foot-lever for clamping the yokes of the shirt to the edge of the board, as herein set forth.

2. In combination with a bosom-board, a tilting board or platform arranged under the bosom-board, operated by a foot-lever, and provided at its outer end with upwardly-projecting fingers, substantially as and for the purposes herein set forth.

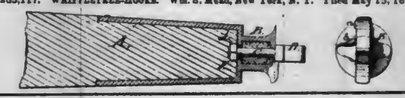
3. Laterally-adjustable fingers arranged in the outer end of a tilting platform, operated by a foot-lever, in combination with a bosom-board, substantially as and for the purposes herein set forth.

206,116. HOPPLES. Wm. S. Mead, New York, N. Y. Filed May 15, 1878.



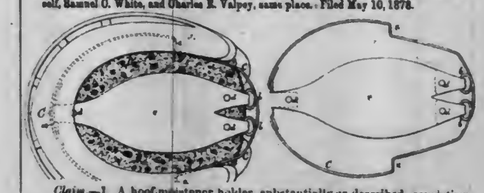
Claim.—The hooked and notched sections A A' of a hopple, the former provided with an extended box, C, having a cavity, D, to receive a spring, E, and studs *c c*, in combination with plate F and rivet B, arranged as described, for the purpose set forth.

206,117. WHIFFLETREE-HOOKS. Wm. S. Mead, New York, N. Y. Filed May 15, 1878.



Claim.—The socket A, having an extended stem, B, which is made hollow to inclose an elastic packing, in combination with the shank C of button D, as and for the purpose set forth.

206,118. HOOF-MOISTENER HOLDERS. George P. Merriam, Lynn, Mass., assignor to himself, Samuel C. White, and Charles R. Valpey, same place. Filed May 10, 1878.



Claim.—1. A hoof-moistener holder, substantially as described, consisting of the flexible sheet *c* and the elastic frame C, arranged and applied essentially as specified.

2. The elastic frame C, as provided with the shoulders arranged on its flanks, substantially as and for the purpose set forth.

3. The elastic frame C, bent up at its heel, and provided with the shoulders, all being substantially as set forth.

206,119. SEAMS OR JOINTS FOR CANS. Henry C. Milligan, Elizabeth, N. J. Filed May 16, 1878.

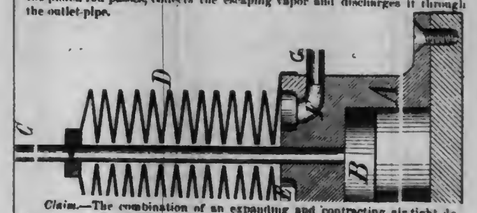


Claim.—1. The method of forming side seams or joints in sheet-metal cans or cylinders, by first lapping the edges and then bending them into the position shown at Fig. 1, and subsequently flattening down the same into the position shown at Fig. 2.

3. A sheet-metal cylinder, can, or vessel the wall of which is made of one or more sheets, joined at the edges to form a smooth exterior by folds of the sheet (or sheets) upon itself near to the edges, the edges being confined within folds, substantially as shown and described.

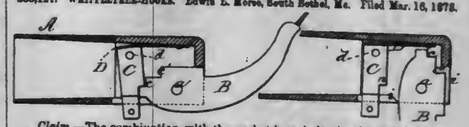
206,120. AMMONIA OR ETHER MACHINES. Eugene Morena and James W. Haggerty, San Francisco, Cal. Filed Nov. 6, 1877.

Brief.—The expanding and contracting air-tight device, through which the piston-rod passes, collects the escaping vapor and discharges it through the outlet-pipe.



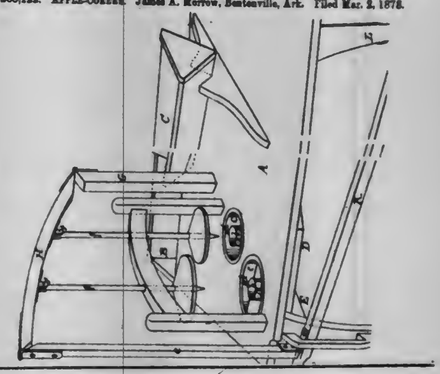
Claim.—The combination of an expanding and contracting air-tight device, D, with the rod C, the cylinder A, or other device, through which the said rod may pass, and the outlet F G, as and for the purposes described.

206,121. WHIFFLETREE-HOOKS. Edwin E. Morse, South Bethel, Me. Filed Mar. 16, 1878.



Claim.—The combination, with the socket-iron A, having longitudinal slot *i*, of the curved trace-hook B, having shoulders *e e'* vibrating in said slot, the rabbeted latch C, and spring D, secured to the socket-iron and bearing against the heel of the latch, substantially as specified.

206,122. APPLE-CORERS. James A. Morrow, Bentonville, Ark. Filed Mar. 2, 1878.



Claim.—The coring and quartering table A, consisting of a receptacle, B, inclined feeding-trough C, the inclined chute D, supported by a brace, E, adapted to receive the coring-cylinders *b*, the main standard G, passing through the table and secured to the chute, the transverse bar H, having the vertically-jointed plunger-rods R, passing through a guide, M, on suitable uprights, said bar H hinged to the standard G, and having the hinged depending arm *e*, connecting a suitable hinged lever, K, hinged to the rear leg L, and engaging a slot in the front leg of the table, all constructed and arranged to operate as described.

206,123. FAUCET ATTACHMENTS TO CASKS AND BARRELS. Hermann Müller, Hoboken, N. J., assignor to Solomon L. Cohen, New York, N. Y. Filed May 14, 1878.



Claim.—1. The faucet holding or locking strips *c c*, attached to the cask on opposite sides of its tap-hole, in combination with the sliding plate C, fitting said strips, the screw-box D, attached to said plate, and the tubular screw-shank *g* of the faucet, substantially as specified.

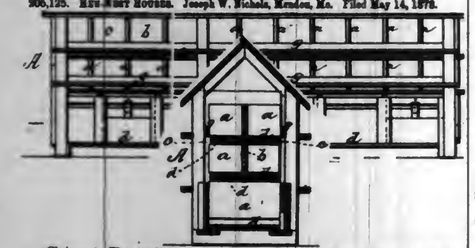
2. The block or plate B, constructed with a tapping-plug socket, *d*, and provided with faucet holding and locking strips *c c* on its face, essentially as and for the purpose specified.

3. The combination of the packing-collar and stop A with the tubular screw-shank of the faucet, and with the screw-box C and means for connecting said screw-box with the cask or barrel, substantially as specified.

206,124. LUBRICATING COMPOUNDS. G. G. Munger, Rochester, N. Y. Filed Nov. 7, 1877.

Claim.—The compound consisting of petroleum-oil, plumbago, palm-oil, and soda, as herein described, and for the purpose specified.

206,125. HEN-NEST HOUSES. Joseph W. Bichels, Meadow, Mo. Filed May 14, 1878.

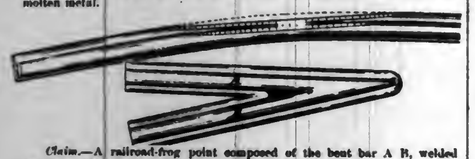


Claim.—1. The poultry-coop A, having the vertical transverse and longitudinal partitions *a b*, the former having spaced slots *c*, and the floors *d*, sliding endwise through said slots and removable from the coop, combined, arranged, and operating substantially as specified.

2. The hen-coop having an upper series of tiers of open laying-nest boxes, perches arranged in front thereof, and guards confining the nesting to the nests, and a lower closed tier of hatching-nests, each having an entrance closed by a sliding door, substantially as specified.

206,126. RAILROAD-FROGS. Leonard H. North, Chicago, Ill. Filed Mar. 4, 1878.

Brief.—A rail is pared and then doubled back upon itself and welded together, and the space just back of the point between the webs is filled with molten metal.



Claim.—A railroad-frog point composed of the bent bar A B, welded together and having a solid backing or filling, substantially as shown and described, and for the purpose set forth.

206,127. METHODS OF STAMPING CIGARS WITH REVENUE-STAMPS. Wm. D. O'Connor, Washington, D. C. Filed May 8, 1878.



Claim.—The method herein described of applying revenue-stamps, of the form and construction described, to cigars, by affixing a separate and distinct stamp to the end of each individual cigar, as set forth.

206,128. FIRE-PROOFS FOR CASES. Wm. H. Ortlip, Norristown, Pa. Filed June 5, 1878.



Claim.—1. The fish or provision drain consisting of the combination of a rod or bar, A, and a chute, C, provided with a pin or hook on its front and a supporting-leg at its rear, substantially as shown and described.

2. The chute C, as made with side walls or guards *f*, the pin or hook *d*, and a spring-clasp, all substantially as and for the purposes described.

3. In combination with the chute, a pivoted or swinging leg at its rear, having its lower end sharp-pointed or wedge-shaped, and provided with a screw or nail hole, substantially as and for the purposes described.

4. The bar or rod A, as made of a length less than the diameter of the cask to which it is to be applied, and with the two bent and sharpened or wedge-shaped ends, adapted to be forced between the staves and hoop of a cask.

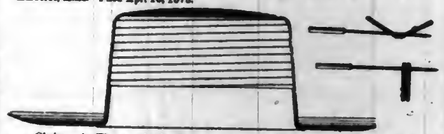
206,129. SHOES OR GAITERS. Fred Packard, Brockton, Mass. Filed May 16, 1878.



Claim.—1. A tongue or instep-piece for a shoe or gaiter, provided with the side wings or flaps B and slots or openings C intermediate of said flaps and the body of the tongue, substantially as specified.

2. A shoe or gaiter having a tongue or instep-piece, provided with the side wings or flaps B and slots or openings C intermediate of said flaps and the body of the tongue, substantially as set forth.

206,130. MANUFACTURE OF HATS AND CAPS FROM STRAW BRAID. Chas. O. Parmenter, Amherst, Mass. Filed Apr. 10, 1878.

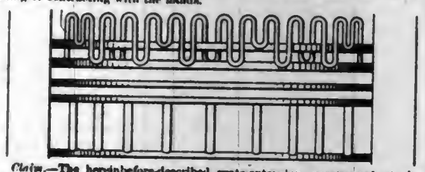


Claim.—1. The method of sewing straw hat braid by guiding the rows of braid longitudinally at an obtuse angle to each other while being sewed, substantially as and for the purpose set forth.

2. A hat or cap having its brim and crown made up from a continuous strip of straw or other braid, said continuous strip being stitched together edge to edge, substantially as described, and for the purpose set forth.

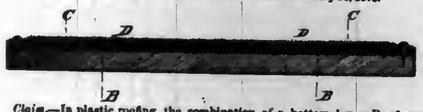
206,131. GRATE-EXTENSIONS. Oliver G. Parr, Newark, Ohio. Filed Feb. 4, 1878.

Brief.—Made of wire, so as to be easily applied to any sized grate by extending or contracting with the hands.



Claim.—The hereinbefore-described grate-extension, constructed of wire and formed into a series of convolutions, two or more of which are bent back and down, as shown and described, for the purpose set forth.

206,132. ROOFINGS. Lewis Peirce, Salem, Mass. Filed May 16, 1878.



Claim.—In plastic roofing, the combination of a bottom layer, B, of tar-paper and prepared cloth, a thick intermediate bituminous cement layer, C, and a top layer, D, of prepared cloth, whereby the cement becomes inclosed air-tight and the roofing retains its plastic nature, substantially as herein set forth.

206,133. PAPER-BAG MACHINES. Frederick E. Porter, Baltimore, Md., assignor of one-half his right to Rodney B. Smith, same place. Filed Apr. 16, 1878.

Brief.—Makes a lined or duplex paper bag by passing two webs over a double former, (after pasting the edge of each web,) and then cutting into bag-lengths, and forming bottom by folding over onto the body projecting lips of each inner and outer independent tube.

Claim.—1. As an improvement in the art of manufacturing tubes for paper bags, &c., by machinery, the hereinbefore-described method of simultaneously and continuously forming two flattened tubes with parallel pasted seams, the one within the other, from two separate sheets or webs of paper, preparatory to severing into short lengths or duplex blanks.

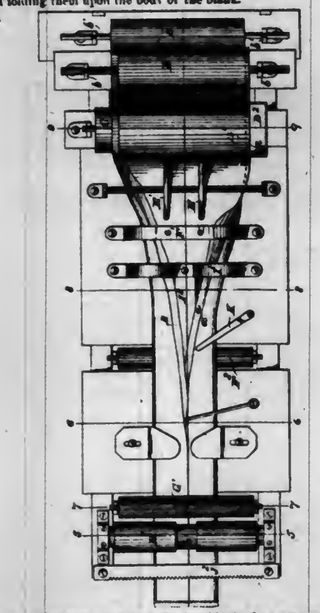
2. As an improvement in the art of manufacturing paper bags by machinery which simultaneously forms two unconnected tubes, the one within the other, from two sheets or webs of paper, the hereinbefore-described method of simultaneously drawing the two papers along, applying paste to one edge of each sheet, forming the tubes, and pressing down the pasted seams preparatory to severing blanks from the duplex tube connected with the sheets or webs from which it is continuously formed.

3. As an improvement in the art of manufacturing paper tubes for bags, &c., the hereinbefore described method of simultaneously and continuously forming two flattened parallel seamed tubes, the one within the other, and subsequently severing the tubes at intervals to form blanks.

4. As an improvement in the art of manufacturing paper bags by machinery, the hereinbefore-described method of simultaneously forming two tubes, the one within the other, and, after so forming them, severing the tubes at intervals to form duplex bag-blanks having exposed end projections or lips on the outer tubes, or on both the outer and inner tubes, to receive the paste for securing the bottoms.

5. As an improvement in the art of manufacturing paper bags, the hereinbefore described method of uniting two tubular blanks, the one within the other, which consists in cutting the ends of the tubes (previously formed from long webs or uncut sheets) on parallel lines, to form exposed projecting lips on the inner and outer tubes, or on the outer tubes alone, applying paste to said lips, and folding them upon the body of the blank.

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6. The hereinbefore-described duplex bag-blank, the same consisting of an inner and an outer tube made up of a uniform number of thicknesses of paper throughout, except at the longitudinal laps or seams, and having no transverse laps or seams, and terminating at the end in exposed parallel projections or lips on the inner and outer tubes, the cuts producing such lips extending the width of the tubes only.

7. The peculiar lined or duplex bag hereinbefore described, the same consisting of independent inner and outer tubes united together at the bottom by pasting and folding and unconnected elsewhere, the said bag being made up from a blank of a uniform number of thicknesses of paper throughout, except at the longitudinal laps or seams, and having no other laps or seams whatever, except those produced by the pasting down of the lips formed by cuts extending the width of the tubular blank only.

8. The combination, substantially as hereinbefore set forth, of mechanism for supplying two sheets of paper and applying paste to the edges thereof, said mechanism being and operating substantially as described, and two formers to which the sheets of paper pass, along which they are drawn, and upon which they are simultaneously formed into an inner and an outer tube.

9. The combination of a former, F, having a neck, *f*, the supporting arch or bridge, the annularly-grooved pressing-roller, and the annularly-grooved drawing-roller, substantially as set forth.

10. The combination, substantially as hereinbefore set forth, of the top former and the bottom former, projecting beyond the top former and having a serrated end.

11. The combination of a bottom former, the supporting arch or bridge, its suspending centrally-open bracket, a top former, and its supporting-bracket, these members being constructed and operating substantially as hereinbefore set forth.

12. The combination, substantially as hereinbefore set forth, of the paper-supplying rollers, the paste-wheels, the paste-reservoir, the depressing-wheels, the formers, and their supports, whereby the edges of the paper are pasted on the way to the formers and the two sheets properly presented to the formers to be formed into a double tube as drawn along them from the supplying-rollers.

13. The combination, substantially as hereinbefore set forth, of a roller, G, having an annular groove, the bottom former having a neck adapted to enter said groove, and the top former supported on said roller and held above the bottom former.

14. The combination of the two formers having necks *f i*, the annularly-grooved roller G, the groove of which receives the neck *f* of the bottom former, and upon which roller the shoulder of the top former is supported, substantially as hereinbefore set forth.

15. The combination, substantially as hereinbefore set forth, of two formers having necks *f i* of different widths, and the drawing-rollers having annular grooves of different widths to receive the necks of the formers, whereby the clamping of the paper between the formers, or between them and the rollers, is avoided, and the bite of the rollers upon the paper at the sides of the former-necks is insured.

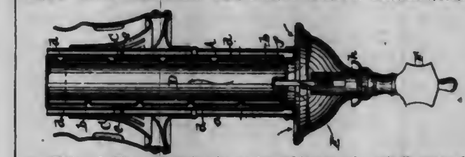
16. The combination, substantially as hereinbefore set forth, of two formers, arranged one above the other and terminating in serrated ends, with the end of the bottom former projecting slightly beyond that of the top former, and the stationary cutter above and at a slight distance back from the end of the top former, whereby the blanks may be severed on three lines.

17. The combination, substantially as hereinbefore set forth, of two formers having serrated ends, the one projecting beyond the other, mechanism, essentially such as described, for supplying two sheets of paper to the formers, drawing them along the formers, and simultaneously forming them into two tubes, one within the other, the cutter above the former, beyond which cutter the serrated ends of the formers project, and a striker to deflect the paper upward and sever the duplex blanks on different lines, whereby lips for pasting are formed upon both the inner and outer tubes of the blank, as set forth.

18. The combination, substantially as hereinbefore set forth, of two formers upon which two tubes are simultaneously formed, one within the other, and the pressing-finger K, acting upon the paper near its pasted edge, for the purpose specified.

19. The combination, substantially as hereinbefore set forth, of the two formers and the curved hook-ended pressing-finger crossing the pasted edge of the outer tube, and acting upon the inner tube, for the purpose specified.

206,134. ARGAND LAMP-BURNERS. Henry Prelos, New York, N. Y. Filed June 1, 1878.



Claim.—1. The combination, in an Argand-burner, of a spirally-grooved wick-carrier, a spirally-grooved draft-tube, on which the wick-carrier is fitted and rotates, and an inner rotating tube, having one or more downwardly-projecting arms at its upper end, which extend over the upper edge of the draft-tube, are of equal length thereto, or nearly so, and engage with the wick-carrier, substantially in the manner and for the purpose set forth.

2. The combination, with the drip-cup E and key F, projecting from the bottom of said cup, of a supplemental drip-cup situated on the exterior and lower part of the main cup, substantially as and for the purpose set forth.

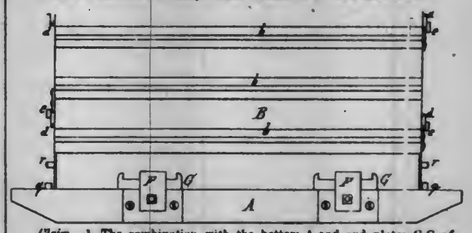
206,135. SATURATED SHEATHINGS FOR ROOFING. W. H. Rankin, Elizabeth, N. J. Filed May 16, 1878.

Brief.—Roofing paper or felt is saturated with a compound of one hundred pounds rosin, eighteen gallons dead oil, three pounds sugar of lead, two ounces (liquid) sulphuric acid, and one hundred and fifty pounds mineral substances, as Lehigh metallic or Prince's metallic paint.

Claim.—1. As a new article of manufacture, roofing paper or felt saturated with a composition consisting of dead-oil, rosin, an acid, a drier, and mineral substance, combined in substantially the proportions above set forth.

2. The above-described composition of matter, consisting of rosin, dead-oil, sugar of lead, sulphuric acid, and mineral substance, united in substantially the proportions above stated.

206,136. SOAP-FRAMES. Henry Rathmann, Buffalo, N. Y. Filed Mar. 13, 1878.



Claim.—1. The combination, with the bottom A and end plates C C, of the side plates B B, having overlapping end portions *b'*, hooks or catches *c* secured thereto, and one or more locking levers or clamps, substantially as and for the purpose set forth.

2. The combination, with the bottom A and side plates B B, of the end plates C C, provided with locking devices, said plates being adapted to slide laterally on the bottom in applying and removing them, in order to facilitate the separation of the end plates from the block of soap, substantially as set forth.

3. The combination, with the bottom A and side plates B, of the fixed guide F, sliding wedge G, and clamp *k*, substantially as and for the purpose hereinbefore set forth.

4. The combination, with the bottom A and side plates B, of the fixed guide F, provided with feather *g*, sliding wedge G, provided with straight groove *h* and inclined groove *i*, and clamp *k*, provided with inclined feather *k'*, substantially as and for the purpose set forth.

5. The combination, with the bottom A and side plates B, of the fixed guide F, sliding wedge G, provided on its under side with inclined groove *l*, and sliding bar *m*, provided with inclined feather *m'* and shoulder *n*, substantially as and for the purpose set forth.

6. The combination, with the bottom A and side plates B, of the fixed guide F, sliding wedge G, clamp *k*, and sliding bar *m*, provided with shoulder *n*, substantially as and for the purpose set forth.

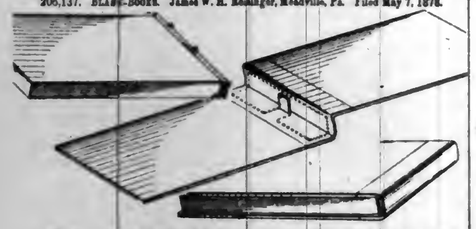
7. The combination, with the bottom A, provided with one or more hooks,

e, of the end plate C, provided with cavity *p*, composed of a large part, *p'*, and a narrow inclined part, *p''*, arranged and adapted to operate as and for the purpose hereinbefore set forth.

8. In a soap frame, the locking lever *d*, provided with adjustable claw *d'*, substantially as and for the purpose set forth.

9. The combination, with the metallic side plates B, of the end plates C, composed of a wooden body and a metallic facing, substantially as and for the purpose set forth.

205,137. BLANK-BOOKS. James W. H. Beisinger, Meadville, Pa. Filed May 7, 1878.



Claim.—1. A pair of detachable book-covers, one of which is flexibly jointed to the back, and the other rigidly connected therewith and provided with one or more studs, which project at right angles from the inner side of said cover near the back, substantially as described.

2. A stack or series of leaves or sheets of paper constituting the body of a blank-book, adhesively secured together at one end or side and provided with a rigid backing, and an opening between the backing and the paper, substantially as described.

3. The combination of a stack or series of sheets of paper, united at one end or side and oppositely recessed, with a blotter provided with an elastic band or cord, which occupies the recesses in the stack of paper, substantially as described.

4. A pair of detachable united covers, one of which is provided near the back thereof with one or more studs projecting at right angles from its inner side, in combination with a stack or series of leaves or sheets of paper united at the ends and provided with a rigid backing, and with one or more openings between the backing and paper to receive the studs, substantially as described.

206,138. EMBROIDERY-PATTERNS. Adolph B. Rice, Brooklyn, N. Y. Filed Mar. 8, 1878.

Brief.—A thin sheet of wood veneer is perforated to form an ornamental design adapted to be worked in the manner of embroidery.



Claim.—As a new article of manufacture, an embroidery-pattern consisting of a sheet of wood veneering perforated for ornamentation, the said perforations being arranged and adapted for filling in with needle-work, substantially as described and shown.

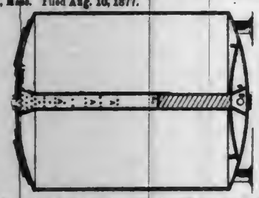
206,139. SEPARATING ANIMAL FROM VEGETABLE FIBERS. George M. Rice, 2d, and Alfred L. Rice, Worcester, Mass. Filed Apr. 10, 1878.

Brief.—In separating woolen fiber from its admixture with cotton in rags or waste textile products, for the recovery and further utilization of the wool, the products are submitted to the action of chlorine gas, pure or diluted with air, under the conditions specified.

Claims.—1. The improvement in the art of separating animal fibers from vegetable fibers, consisting essentially in subjecting the mixed fibrous material within a closed vessel or receiver, and in dry condition, to the direct action of chemically free chlorine, (Cl_2) either in its pure gaseous form or diluted with air, for which it has no chemical affinity, as set forth.

2. The improvement in the art of separating animal fibers from vegetable fibers, consisting in the process of exposing mixed fibrous material within a closed vessel or receiver, and in dry condition, in direct contact with chemically free chlorine, (Cl_2) and subjecting the same to an elevated temperature, substantially as and for the purposes hereinbefore set forth.

206,140. APPARATUS FOR CLEANSING AND BLEACHING TEXTILE FABRICS. Henry S. Robinson, Boston, Mass. Filed Aug. 16, 1877.



Claim.—In a tier for bleaching, the distributer, as herein described, consisting of a tube perforated with numerous holes, increasing in number or area from below upward, so that the liquid will be principally spread upon the top of the goods to be bleached, as and for the purposes set forth.

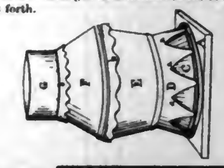
206,141. VENTILATORS AND CHIMNEY-TOPS. Wm. F. Rossman, Hudson, N. Y., assignor of one-half his right to Leonard J. Rossman, same place. Filed Mar. 19, 1878.

Brief.—The concave disk B prevents downward drafts of air in the chimney.

Claim.—1. The combination, with the external truncated cone F, of the concavo-convex bowl H, having its concave side upward, substantially as described, and for the purpose specified.

2. The combination of the concavo-convex bowl B, internal truncated cone C, perforated casing D, flaring casing E, and external truncated cone F, the whole constructed and arranged substantially in the manner described, and for the purpose set forth.

206,141.



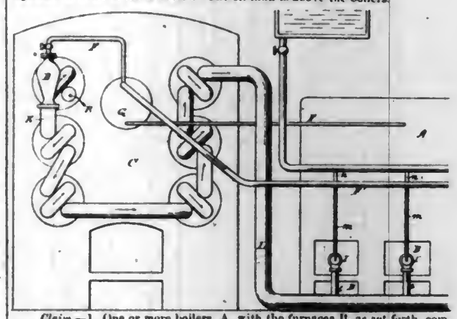
206,142. TIME-INDICATORS FOR LETTER-BOXES. J. H. Rouse, Somerville, assignor of one-half his right to Austin J. Coolidge, Watertown, Mass. Filed Apr. 15, 1878.



Claim.—In combination with the plate A B, having the slots C, the adjustable letters, figures, or characters, the flexible packing H, and back plate L, all being held in position by confining-screws, as and for the purposes set forth.

206,143. APPARATUS FOR BURNING HYDROCARBONS. Silas C. Salisbury, New York, N. Y. Filed Mar. 8, 1878.

Brief.—Steam from the boilers passes to the superheater G, and, on leaving the superheater, part enters the injector leading to the air-pipe to be further heated, mingled with the air, and part enters the pipe which runs along the front of the boilers, from which branch pipes carry it to the hydrocarbon injectors in front of the furnaces. The oil-tank is above the boilers.



Claim.—1. One or more boilers, A, with the furnaces B, as set forth, combined with the bench C of retorts for heating the blast and superheating the steam, the blast-injector D, and the blast-pipe E I, extending from said retort in front of the furnace B, to furnish hot-blast for the injection and combustion of hydrocarbon, substantially in the manner as set forth.

2. The bench of retorts C, wherein the blast is heated and the steam is superheated, and the bank of steam-generators A, combined with hot-blast pipe I_1, steam-pipes F and F', and injectors D and I_1, with the required connecting-pipes for hot air, steam, and hydrocarbon, whereby hydrocarbon is discharged in the fire-chamber B, as set forth

206,144. ELECTRIC LAMPS. Wm. E. Sawyer, New York, and Albon Man, Brooklyn, N. Y. Filed May 16, 1878.

Claim.—1. An electric lamp in which the globe and stopper, both of glass or other vitreous substance, are ground together and held together by a clamping device.

2. In an electric lamp, the combination, with suitable conductors of electricity, of an inclosing-globe provided with a rim or flange, A', forming an integral part of such globe, as and for the purpose specified.

3. The combination of the vitreous globe A of an electric lamp and the cushion P_1 placed, as shown and described, above the vitreous flange thereof, for the purpose of supporting a clamping device.

4. The combination of the vitreous globe A of an electric lamp and the cushion N, placed, as shown and described, under the stopper thereof, for the purpose of supporting a clamping device.

5. The combination of the globe of an electric lamp and the two cushions N and P, placed as shown and described, for the purpose of supporting a clamping device.

6. In an electric lamp, a tube-bolt, Q, and binding-post *n*, in combination with a packing, *l*, under said binding-post.

7. In an electric lamp, a tube-bolt, Q, nut *m*, binding-post *n*, and packings *l l l*.

8. The combination of the clamp G and the cross-piece *g*, as and for the purpose specified.

9. In an electric lamp, a tube leading from an external connection to or

near to the top of the globe, and having an opening thereat, in combination with an opening at or near to the base of the globe, for the purpose of facilitating the filling of the globe with a carbon-preservative atmosphere, substantially as shown and described.

10. In an electric lamp, two unobstructed tubes leading from external connections into the globe thereof, and so arranged as to facilitate the charging of the globe with a carbon-preservative atmosphere.

11. In an electric lamp, a diaphragm obstructive of radiant heat interposed between the luminous part or parts of such lamp and the air-tight joint or joints thereof, as and for the purpose specified.

12. An electric lamp within which the conductors leading from the air-tight joint or joints thereof to the luminous part or parts thereof, are so formed, lengthened, or broadened as to have great radiating-surface, so that conduction of heat from such part or parts to such joint or joints is in great measure, if not wholly, prevented.

13. In an electric lamp, the long coiled conductor J, opening at its upper end, and connecting with one electrode of such lamp.

14. In an electric lamp, the long coiled conductor K, opening at the base of such lamp, and connecting with one electrode thereof.

15. In an electric lamp, an absorbent of carbonic-acid gas.

16. In the sealed globe of an electric lamp containing an azotic or other carbon-preservative atmosphere, an absorbent of carbonic-acid gas.

17. In an electric lamp, an agent having a great affinity for oxygen, whose oxidization produces a solid unalterable by the natural heat in the lamp, such as sodium or potassium.

18. The combination, in an electric lamp, of an absorbent of carbonic acid gas and an agent having a great affinity for oxygen, whose oxidization produces a solid unalterable by the natural heat in the lamp, such as sodium or potassium.

19. A carbon rod, piece, or pencil heated to incandescence in an atmosphere deprived of oxygen, in which atmosphere is permanently an oxidizing agent whose oxidization produces a solid, which agent may be sodium or potassium, or other readily-oxidizable metal.

20. A carbon rod, piece, or pencil heated to incandescence in an atmosphere deprived of oxygen, in which atmosphere is permanently an absorbent of carbonic-acid gas.

21. A carbon rod, piece, or pencil heated to incandescence in an atmosphere deprived of oxygen, in which atmosphere is permanently an oxidizing agent, such as sodium, potassium, or other readily-oxidizable metal, in combination with an absorbent of carbonic-acid gas.

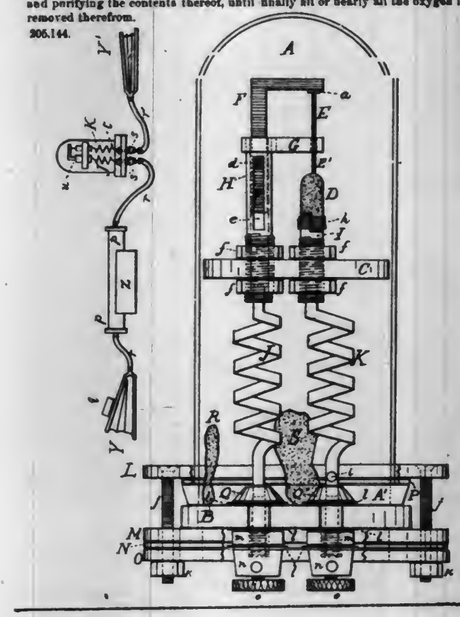
22. A sealed electric lamp inclosing an agent or agents for purifying the atmosphere contained therein from oxygen or oxygenic gases.

23. The herein-described method of charging an electric lamp with a carbon-preservative atmosphere, consisting in placing the lamp in the circuit of a purifying agent or agents and two gas receivers, one of which is primarily preferably filled with the carbon-preservative gas and the other empty, and forcing the gas back and forth from one receiver to the other, each time through the lamp and the purifying agent or agents, until the atmosphere becomes pure, or nearly so.

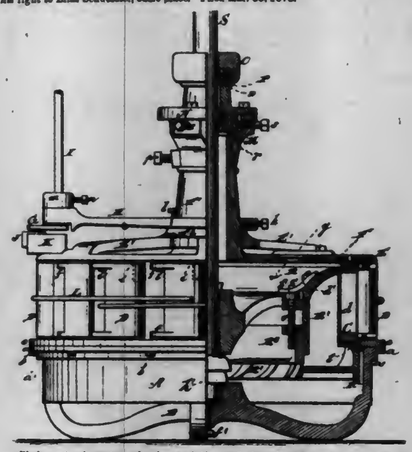
24. The herein-described method of charging an electric lamp with a carbon-preservative atmosphere, consisting in placing the lamp in a circuit of a purifying agent or agents and two receivers, one of which is primarily preferably filled with a gaseous medium and the other empty, and forcing the gaseous medium back and forth from one receiver to the other, each time through the lamp and the purifying agent or agents, until the atmosphere in the lamp becomes pure, or nearly so.

25. The method of charging an electric lamp with a carbon preservative gas by intermittently passing a purified atmosphere, or an atmosphere undergoing purification, into the globe thereof, and thereby successively diluting and purifying the contents thereof, until finally all or nearly all the oxygen is removed therefrom.

206,144.



206,145. TURBINE WATER-WHEELS. John Schuessler, Attica, Ind., assignor of one-fourth his right to Elias Schuessler, same place. Filed Mar. 30, 1878.



Claim.—1. A water-wheel consisting of the rim R, series of buckets R^1, and exterior bottom band R^2, the buckets being straight from the rim to the top of the band, and then inclined, as described, and the band provided at the top with the interior flange *t*, all substantially as and for the purposes herein set forth.

2. A water-wheel provided with an interior adjustable band to make a variable discharge, as herein set forth.

3. In combination with a water-wheel, the interior adjustable band R^2, adjusting-screws *e*, and the casing F, with band-holes *e* and covering plates *y*, all substantially as and for the purposes herein set forth.

4. The sliding slotted plates *b'*, with fastening-screws *d'*, in combination with the adjusting-screws *a*, having square ends *c'*, for the purposes herein set forth.

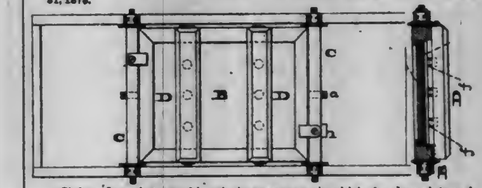
5. In combination with the follower-box M and wheel-shaft S, the cover or head N, with projecting hub, and the gravitating metal collar O, with interior wooden collar P, for the purposes herein set forth.

6. The reversible valves or gates D, formed with concavities *h* on their inner sides, and a perforated ear, *e*, at each end, in combination with the ring E, having projecting pins *i* and *i'* for each valve, substantially as and for the purpose set forth.

7. The combination of gate, operating-ring E, with radial arms E^1, central hub E^2, and grooved jaw K, the arm H, crank G, and box J, all substantially as and for the purposes set forth.

8. The spring-ring L, in combination with the valves or gates D, for the purposes set forth.

206,146. PHOTOGRAPHIC-PRINTING FRAMES. Earl M. Seitz, Philadelphia, Pa. Filed Jan. 31, 1878.



Claim.—In a photographic-printing apparatus in which the glass plate and pad are secured within a reversible frame, the combination and arrangement of the hinged cleats D, with springs *f*, adapted to bear against the pad, and the frame B, pivoted to the bars C, which are provided with wheels and adapted to travel upon the trestle-work A, substantially as shown and described.

206,147. HOG-CHOLERA COMPOUNDS. John Sens, Evansville, Ill. Filed May 13, 1878.

Claim.—The medical compound for cure of hog-cholera consisting of the following ingredients, in the proportions named, to wit: water, one and a half gallon; white-oak bark, one pound; wild-cherry-tree bark, one pound; poke-root, one-half pound; glue, two ounces; chalk, one ounce; copperas, twenty grains; sugar of lead, six grains; and opium, two grains, as described.

206,148. WASH-BOARDS. Mark A. Smith, Evansville, Ind., assignor to Frederick W. Brinkmyer and John E. Harper, same place. Filed Apr. 6, 1878.



Claim.—The metallic wash board rubbing-plate having parallel transverse series of scalloped ridges *c*, formed by alternate short and long inclines, the short being uppermost and meeting in points *d*, which are flattened on top at *i*, between the scallops, said flattened points *i* extending back to the long or downward inclines of the scallops, and the valleys being deeper at the centers of the scallops than at their meeting-points, as specified.

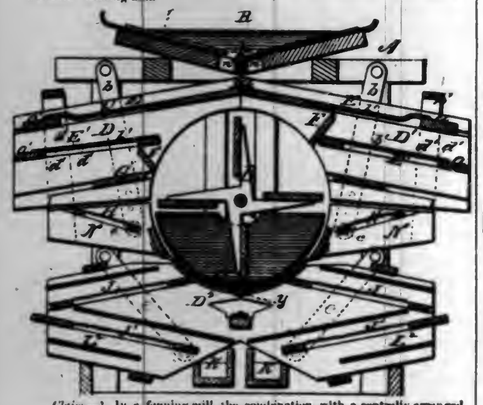
206,149. SAMPLE-REELS. Alva L. Snyder, Bryan, Ohio. Filed May 1, 1878.



Claim.—The combination and arrangement, in a suitable supporting-frame, of the revolving reels or centrally-hung frames D D, connected together by a web or strip of textile material, upon which may be arranged or disposed samples of goods, figures, &c., substantially as and for the purpose set forth.

206,150. GRAIN-SEPARATORS. Sargeant Stone, Faribault, Minn., assignor of one-half his right to Orin H. Amy and Charles W. Andrews, same place. Filed Feb. 23, 1878.

Brief.—Improvement in the construction and arrangement of two parts of a double "fanning mill."



Claim.—1. In a fanning mill, the combination, with a centrally-arranged internal fan wheel blowing in opposite directions, of the independently-adjustable vibrating screen-shoes, hinged together over the fan and arranged on opposite sides of the same, to receive the double blast, substantially as specified.

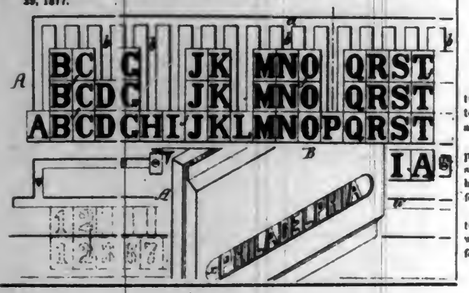
2. The combination, with a centrally-arranged fan, of two vibrating shoes, hinged together and provided with independently arranged and adjusted deflectors and screens, substantially as specified.

3. The combination, with the rigidly-coupled shoes N, suspended from the fan frame, and the flexibly-coupled shoes D D', supported thereby, of the bridges S, rigidly secured to the shoes N and straddling the shoes D D', and the adjusting pins *x*, and the perforations in the said shoes D D', substantially as specified.

4. The double fanning mill consisting of the central fan B and concave C, the independently-adjustable screen-shoes D D', bridging the fan and receiving blasts therefrom in opposite directions, the screen-shoes N, supporting the sections D D', suspended from the fan-frame and connected by a coupling, *y*, under the concave, and the lower double shoe D', extending under the fan, as set forth.

5. The combination, with the hinged independently-adjusted shoes D D', the suspended shoe-sections N below and supporting the same, the lower double shoe D', an intermediate fan and case, and the rigid coupling *y*, extending under the fan and connecting the sections N of the forked vertically-vibrating lever M, connected at its lower end to shoe D and at its upper end to the coupling *y*, substantially as specified.

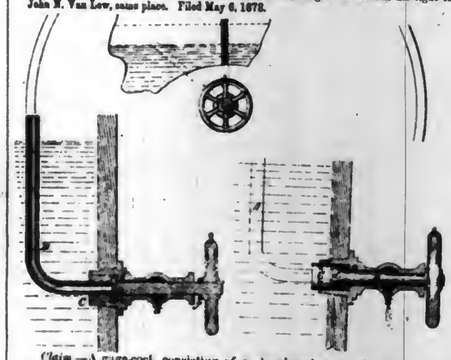
206,151. INDICATORS FOR PRINTERS' CASES. James Tatham, Philadelphia, Pa. Filed Dec. 29, 1877.



Claim.—1. The combination and arrangement, with the sliding bar A, having the projecting pins *a*, of the frame B, having the slots *b* and *c*, and the pivoted arm C, having the slot *d*, substantially as and for the purpose set forth.

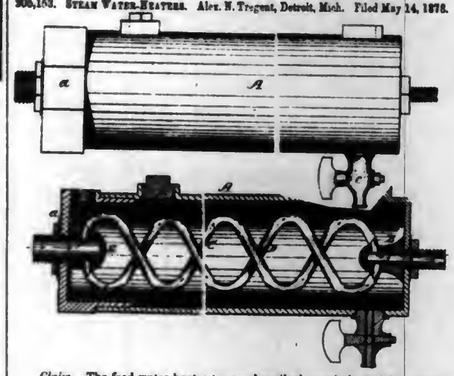
2. The combination of the bar A, having the pins *a*, the frame B, having the slots *b* and *c*, the pivoted arm C, having the slot *d*, and the spring E, substantially as and for the purpose set forth.

206,152. GAGE-COCKS. John J. Tonkin, Richmond, Va., assignor of one-half his right to John N. Van Lew, same place. Filed May 6, 1878.



Claim.—A gage-cock consisting of a chambered screw-plug and a stem carrying a valve arranged to be opened by longitudinal movement, together with a bent tube rigidly attached to and arranged to be deflected by the axial movement of the stem, all combined as shown and described.

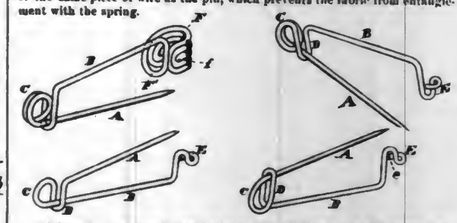
206,153. STEAM WATER-HEATERS. Alex. H. Tregent, Detroit, Mich. Filed May 14, 1878.



Claim.—The feed-water heater herein described, consisting of the cylinder A, inclosing the coils C D, diverging in opposite directions, and connected at one end to a single inlet pipe and joined at the opposite end to a single outlet-pipe, when constructed and arranged substantially as and for the purpose set forth.

206,154. SAFETY-PINS. John Q. A. Trusso, Washington, D. C. Filed June 8, 1878.

Brief.—The pin is provided with a shield adjacent to the spring-coil, and of the same piece of wire as the pin, which prevents the fabric from entanglement with the spring.



Claim.—1. A safety-pin provided with a shield adjacent to the spring portion, said shield formed of the wire constituting the safety-pin, and adapted to prevent the goods from becoming entangled at that point, substantially as and for the purposes described.

2. As a new article of manufacture, a safety-pin consisting of a wire pointed at one end and bent into the form of or provided with a hook and shield at the other end, said wire being bent upon itself in such manner as to have a shank portion, B, a point portion, A, and shield D, substantially as and for the purposes described.

3. In a safety-pin, a shield, D, formed by bending the pin portion A across the intervening space, around the shank B, and back again at such a point as will leave a portion, C, projecting beyond the said shield, substantially as and for the purposes described.

4. In a safety-pin, a shield, D, formed by bending a portion of the shank B across the intervening space, around the pin portion A, and back again at such point as will leave a portion, C, extending beyond the said shield, substantially as and for the purposes described.

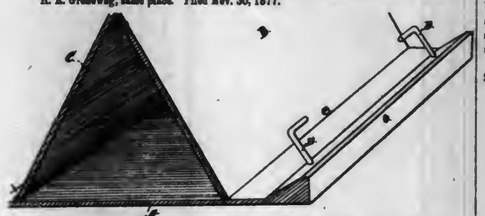
5. The combination, with the shank B, of the hook F', formed of a single strand of wire, and shield F, formed by coiling the end beyond the hook into a close convex surface, with the extremity *f* within the coil and flush with the surface, the convexity projecting forward of the point of the pin.

206,155. MILK-COOLERS. Lewis W. Truesdell, Owego, N. Y., assignor to D. F. Steele and A. D. Heegland, same place. Filed Mar. 12, 1878.



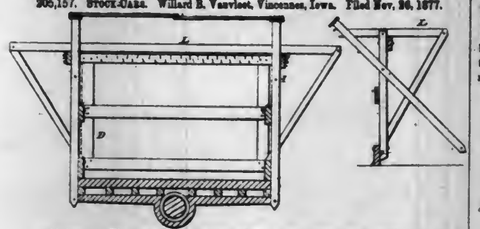
Claim.—The cover C, constructed as described, and provided with the automatically-acting valve D at its top, closing against an annular upwardly-projecting flange, *b*, in combination with the milk-can B and water-pan A, substantially as and for the purposes set forth.

206,156. BOOK-SUPPORTS. Josiah S. Turner, Dayton, Ohio, assignor of one-half his right to H. B. Grunewag, same place. Filed Nov. 30, 1877.



Claim.—The herein-described portable and folding book-rest, consisting of the horizontal base A, having ledges *b c* and retaining-wires D, and the hinged and adjustable pieces B C, the several parts constructed and relatively arranged as specified.

205,157. STOCK-CARS. Willard B. Vanvleet, Vincennes, Iowa. Filed Nov. 26, 1877.



Claim.—1. The stock-car having frame separable into self-supporting panels, substantially as set forth.

2. The stock-car having the inclosing open-bottom frame D, movable for loading and unloading, substantially as set forth.

3. The inclosing open-bottom frame D, with base-boards forming runners, and having beam L, with projecting ends, and braces from them to the lower part of the sides, substantially as set forth.

206,158. BOTTLE-REGISTERS. Jas. H. Welch, Georgetown, D. C. Filed Apr. 13, 1878.



Claim.—The combination of the tubular neck B, valve *b*, lever *c*, spring *c'*, registering mechanism *c*, and inclosing-case C, said parts being united and arranged to form a device adapted for application to bottles in general.

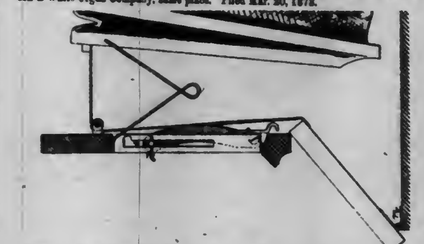
205,159. HORSE-BOOTS. George W. Wemple, West Union, Iowa. Filed Dec. 29, 1877.



Claim.—1. In a horse-boot, the iron sole A, formed to fit the shoe, and provided with the projecting heel-piece B and raised side and toe bearings *a a a*, for the purposes explained.

2. The combination of the sole A, heel-piece B, sponge C, bearings *a*, and straps D E, substantially as and for the purposes herein set forth.

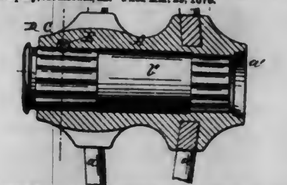
206,160. BLOW-PEDALS FOR ORGANS. Jas. H. White, West Meriden, Conn., assignor to Wilcox & White Organ Company, same place. Filed Mar. 20, 1878.



Claim.—1. The combination, with the bellows of an organ, of principal and auxiliary blow-pedals, the one set arranged above the other independently of each other, and so that either acts directly upon the bellows, substantially as described.

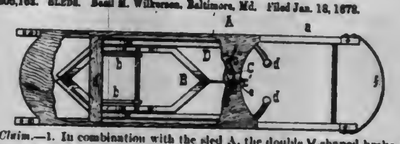
2. The combination of the principal and auxiliary blow-pedals with the bellows of an organ, the auxiliary pedals arranged above the principal pedals, and so that either acts directly upon the bellows, the said auxiliary pedals arranged to be closed into the front of the case above the principal pedals, all substantially as described.

206,161. VEHICLE-WHEELS. Charles C. Wilder, Racine, Wis., assignor of one-half his right to Weir Plow Company, Monmouth, Ill. Filed Mar. 29, 1878.



Claim.—A metallic wheel-hub, constructed as described, with a pipe-box tapering in form and having fluted ends *b* and central depressed portion *b'*, keyway C D, and key-bolt E, the diameter of the fluted portion of the hub-box being greater than the inner periphery of the hub, so that the driving of the box into the hub crushes the thin edges or splines of the fluted portions, and thereby forms a tight metallic joint, substantially as and for the purpose specified.

206,162. SLEDS. Basil M. Wilkerson, Baltimore, Md. Filed Jan. 16, 1878.



Claim.—1. In combination with the sled A, the double V-shaped brake B, substantially as described.

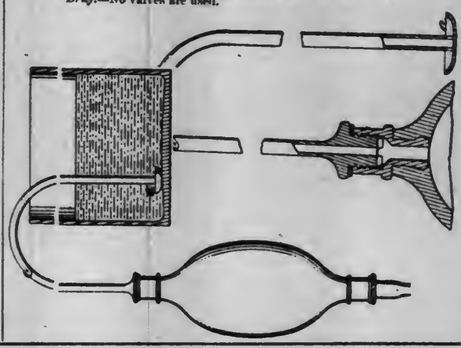
2. In combination with the sled-body having slot *c'*, the brake B and rope C, provided with stops *c c''*, substantially as described.

3. In combination with a sled, a curved resilient bumper, substantially as described.

4. In combination with the sled A, the curved spring-bar *f*, substantially as described.

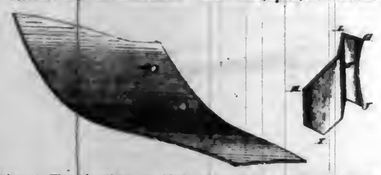
206,163. SIPHONS. George H. Winkler, Augusta, Ga. Filed Feb. 18, 1878.

Brief.—No valves are used.



Claim.—In a siphon, an elastic bulb without valves, in combination with the arms, for the purpose of exhausting the air and establishing the flow of the liquid, substantially as described and shown.

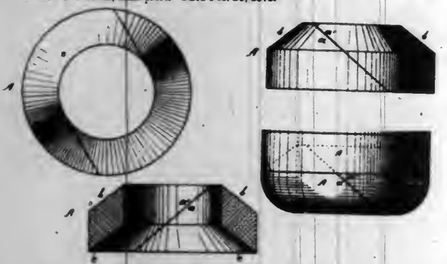
206,164. TURNING-PLOWS AND ATTACHMENTS. Robt. Wimes, Sparta, Ga. Filed Jan. 20, 1877.



Claim.—1. The plowshare or blade formed as shown, and having its front cutting-edge curved transversely, substantially as specified.

2. The share or blade, in combination with attachment-plate J G H I, all constructed and arranged to operate as described.

206,165. PISTON-PACKING. Wm. P. Woodruff, Chicago, Ill., assignor of one-half his right to John A. Baldwin, same place. Filed Feb. 23, 1878.

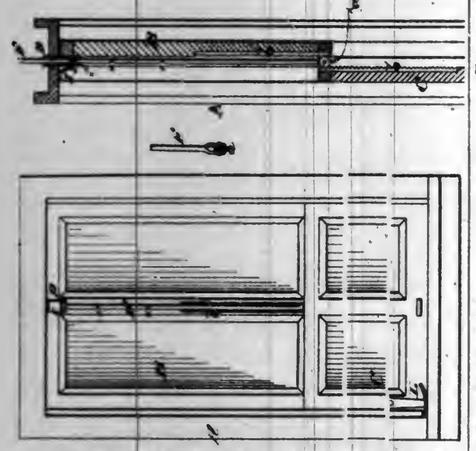


Claim.—1. A composition for metallic steam-packing, the said composition consisting of four parts lead, six parts tin, two parts antimony, and one part copper, all melted together and made into a solid mass, substantially as and for the purposes specified.

2. A packing consisting of two or more metal rings, each ring made in sections, and each section A A having oppositely-inclined or beveled ends *a* and *a'*, and parallelly-inclined or sloping upper and lower faces *b* and *c*, one face of each ring being thus made dish-shaped, and the opposite face formed and arranged to extend into the dish-shaped face of its fellow, substantially as and for the purposes specified.

206,166. SASH-FASTENERS. John F. Zimmermann, New Castle, Me. Filed Apr. 27, 1878.

Brief.—The sashes are balanced on the pinion that is supported by the rod, which is adjustable.



Claim.—1. In combination with the two sashes of a window, a vertical adjustable shaft carrying a pinion, and rack-bars attached to the sashes and meshing with said pinion, substantially as and for the purposes set forth.

2. The combination, with the frame A and sashes B C, of the tube D, with spring-catch I, the shaft F, having notches *x x* and carrying the pinion *a*, and the rack-bars *b b*, substantially as and for the purposes set forth.

REISSUES.

8,286. STEAM-TRAPS. James H. Blessing, Albany, N. Y., assignor, by mesne assignments, to the Albany Steam Trap Company. Patent No. 142,323, dated Sept. 2, 1873. Filed May 10, 1878.

Claim.—1. A steam-trap provided with a rising and falling bucket contained within a shell, into which the return-water is delivered, and from which it is discharged by a siphon-pipe which passes nearly to the bottom of said bucket, substantially as described.

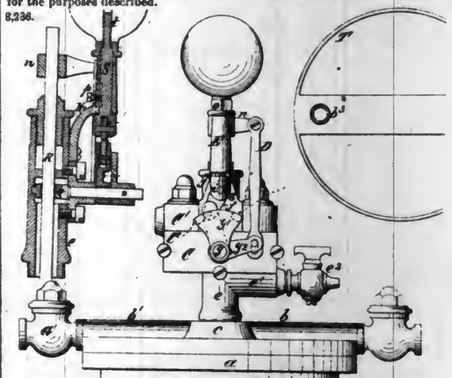
2. A steam-trap provided with a rising and falling bucket contained within a shell, into which the water is delivered, and from which it is discharged by a siphon-pipe passing nearly to the bottom of the apparatus, the said bucket being attached to apparatus operating the steam-valve, which apparatus does not open or close the steam-valve at the commencement of the fall or rise of the bucket, but allows an interval of time to elapse between the movement of the bucket and its action on the steam-valve, whereby the bucket is entirely filled and discharged, substantially as described.

3. An improved steam-trap provided with a rising and falling bucket, through the top of which the water is delivered and discharged by means of a delivery and discharge pipe, each provided with a check-valve, substantially as described.

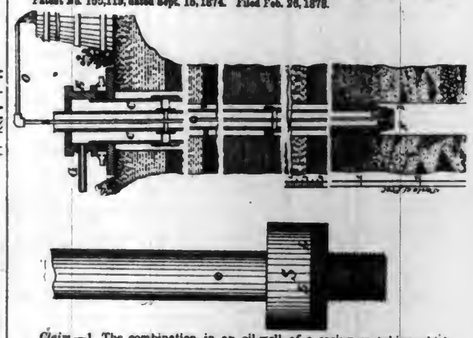
4. An improved steam-trap provided with a rising and falling floating bucket, into which the water is delivered, and through which it is discharged by means of a siphon-pipe reaching nearly to its bottom, and provided with an air-cock, by means of which the accumulated air may be discharged from the apparatus, substantially as described.

5. The inlet and outlet passages *b b'*, provided with check-valves, and combined with a water-receiver containing a vertically-movable bucket, T, into which the water enters and from which it is discharged, substantially as and for the purposes described.

8,236.



8,287. PETROLEUM-WELLS. Elisha McC. Stevenson, Pulaski, Pa., assignor to John Irwin. Patent No. 155,119, dated Sept. 15, 1874. Filed Feb. 26, 1878.



Claim.—1. The combination, in an oil-well, of a casing or tubing which excludes water from the lower part of the well, a tube through which oil is discharged from the well, and packing which prevents oil and gas from passing upward outside of the discharge-tube, substantially as set forth.

2. The combination of the flowing-tube O with the plate S, the seat N, and the tube T, or equivalents, substantially as set forth.

8,288. MAGAZINE-GUNS. Andrew Burgess, Owego, N. Y. Patent No. 128,306, dated June 25, 1872. Filed June 6, 1878.

Claim.—1. The spring-bar N, in combination with the lever *r*, when the latter is pivoted to the bed-piece, and provided with an arm, *s*, engaging with a notch, *p*, in a prolongation of the bar N, in the manner and for the purpose set forth.

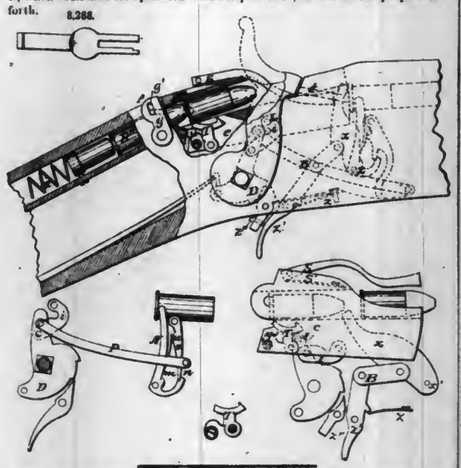
2. In a magazine fire-arm, a feed-regulator or detent arranged to engage the flanges of the cartridges and hold them until released by the operation of the arm, in combination with the movable parts of the breech mechanism, the whole so arranged that the detent is operated to release the cartridges, one at a time, in the act of opening and closing the breech, all substantially as described.

3. In a magazine fire-arm, the combination of the following elements, viz: a magazine located in the rear stock or butt, a spring in said magazine to feed the cartridges forward, and a stop or detent operated automatically by the movable parts of the breech mechanism, to engage the flanges and to regulate the feeding of the cartridges.

4. In combination with a magazine adapted to be charged from its delivery orifice, a pivoted stop or detent to engage in front of the flanges of the cartridges and hold them as they are fed in, as described.

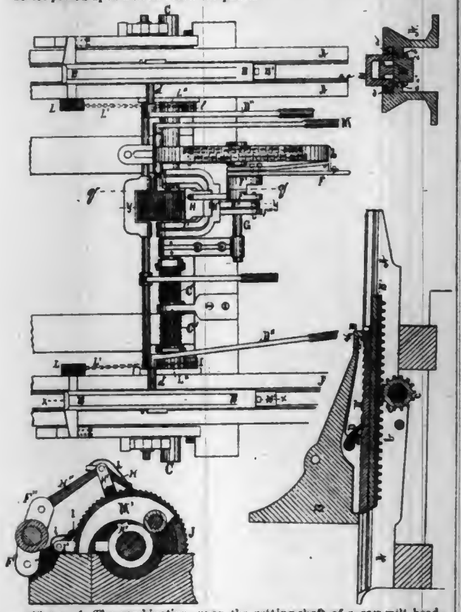
5. The pushing or loading device, consisting of the trigger Z' and toggle B, when combined for operation with the pusher X, as and for the purpose set forth.

8,289.



8,289. HEAD-BLOCKS FOR SAW-MILLS. Edward H. Stearns, Erie, Pa., assignor to the Stearns Manufacturing Company, same place. Patent No. 199,667, dated Jan. 29, 1878. Filed May 18, 1878.

Brief.—Independent pawls act on the ratchet-wheel alternately to constantly advance the knees when the lever is vibrated. The knees are receded by means of coiled springs upon the actuating-shaft, which reverses the action of said shaft after the pawls have been released from the ratchet by a tripping device placed upon a shaft below the pawls.



Claim.—1. The combination, upon the setting-shaft of a saw-mill head-block, of a ratchet wheel, J, a reacting spring, C', and a pinion, *c*, said pinion being so placed as to operate upon the rack *b*, by which the knee B is operated, all substantially as and for the purposes mentioned.

2. The combination, within a saw-mill head-block, of the alternate acting pawls H and I, with their accompanying carriers, the ratchet-wheel J, shaft C, reacting spring C', pinion *c*, and rack *b*, all arranged to operate substantially as and for the purposes set forth.

3. In combination with the knees B, shaft C, ratchet J, and pawls H and I, or either of them, a tripping device so applied as to release said pawls from said ratchet, and allow the said springs to reverse the action of said shaft and recede the knees, substantially as herein set forth.

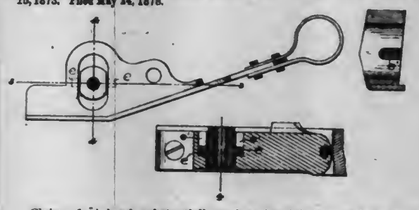
4. The combination of the trip M', pawls H and I, and springs *h* and *i*, substantially as and for the purposes mentioned.

5. In combination with the pawls H and I and connecting-rods H'' and I'', the crank F, with pivot-pins placed as described, for the purposes mentioned.

6. The combination of the shaft C, pinion *c*, rack *b*, and slide B' with the knee B, said knee being moved only when in communication with said slide by a proper attaching and detaching device, substantially as and for the purposes mentioned.

7. In combination with the chains L', the knee B and shaft C, said chains being attached at one end to said knee and at the other end to said shaft C, for the purposes mentioned.

8,290. HARVESTERS. Charles Colshan, Cleveland, Ohio. Patent No. 140,890, dated July 15, 1873. Filed May 24, 1878.



Claim.—1. A head, substantially such as hereinbefore set forth, having a vertical oblong or oval slot therein for the reception of a connecting bolt or pin uniting the head with the shoe and finger-beam, whereby the shoe, finger-beam, and guards may rock or roll without rocking or rolling the head.

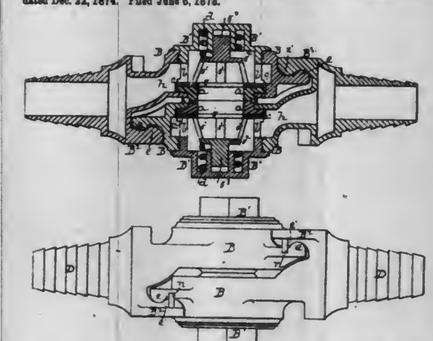
2. A coupling-frame, substantially such as hereinbefore set forth, having at one end a device for connecting it to the frame of the machine, and at the other a head having a vertical oblong or oval slot for the reception of a connecting bolt or pin uniting the head with the finger-beam and shoe, the pin being adapted to play freely in the slot in the head, to allow the shoe and finger-beam to rock or roll without rocking or rolling the head or coupling-frame.

3. A connecting bolt or pin rocking and turning in a head provided with a vertical oblong or oval slot, and constituting a double-hinged connection between the head and shoe, whereby the latter rocks or rolls with the pin in or upon the head, substantially as hereinbefore set forth.

4. The combination, substantially as hereinbefore set forth, of a head having a vertical oblong or oval slot therein, a finger-beam, a shoe on the inner or heel end thereof, and a coupling bolt or pin connecting the finger-beam and shoe, and turning and rocking or rolling in the slot, to allow the finger-beam to rock or roll in the line of its length, and also to rise and fall at its divider end without correspondingly affecting the head.

5. The combination, substantially as hereinbefore set forth, of a pivoted coupling-frame, its vertically-slotted head, a rocking bearing therein, a finger-beam, a shoe, and a connecting bolt or pin rocking and turning in the slot, to allow the finger-beam and shoe to rock or roll (without correspondingly affecting the head) to raise or lower the points of the guards.

8,291. PIPE-COUPLINGS. George Westinghouse, Jr., Pittsburg, Pa. Patent No. 157,951, dated Dec. 22, 1874. Filed June 6, 1878.



Claim.—1. A two-part pipe-coupling the parts of which are automatically detachable under unusual strain, and having lateral port-openings, by which through communication is effected when the two halves which constitute the coupling are duplicates of each other, substantially as set forth.

2. In a two-part splice-joint pipe-coupling wherein the two halves are of like construction, the ported end parts lapping onto and supporting each other transversely, in combination with a double fastening capable of being automatically detached under unusual strain, each such fastening securing the toe of one lapping part to the heel of the other, substantially as set forth.

3. In a half coupling, a port-opening adapted to give a circuitous through passage-way, in combination with the one part or half of a fastening forward of the port, (in the direction of the length of the coupling,) and also in combination with the counterpart or other half of a like fastening arranged back of the same port, such fastening devices, one or both, having the feature of automatic detachability under unusual strain, substantially as set forth.

4. In a two-part pipe-coupling the two halves of which are of like construction, the combination of ported ends to provide a circuitous passage-way for the air, heel and toe fastenings to hold the half-couplings together against ordinary longitudinal strain, and stop-posts *s*, to keep the fastenings from slipping laterally out of engagement, substantially as set forth.

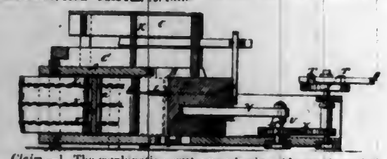
5. In the half coupling described, the combination of a lateral port opening, a packing ring arranged therein, and a skeleton pressure frame and spring back of the packing ring, substantially as set forth.

6. In a pair of couplings the ends of which lap onto each other, and thereby bring their lateral port openings into line with each other, the compressible packing-rings *n*, in combination with hooks and catches *c c'*, whereby the couplings are rendered automatically detachable under unusual strain, substantially as set forth.

7. As a device for connecting together the two halves of a splice-joint coupling, the hook or hooks *c c'*, curved in the direction of the line of engagement, with the radial line of curvature running in the general direction of the line of strain, substantially as set forth.

8. The hook or hooks *c c'*, curved in the direction of their line of engagement, in combination with a stop or stops, constructed substantially in the manner and for the purposes set forth.

8,292. HAY AND COTTON PRESSES. Peter K. Dederick, Albany, N. Y. Patent No. 151,477, dated June 2, 1874. Filed Jan. 19, 1878.



Claim.—1. The combination, with press having side openings G G', of the rolls F F, substantially as and for the purpose described.

2. In that class of horizontal presses in which the hay is fed and pressed in sections by a reciprocating traverser and crank or toggle power, as set forth, the loose or adjustable sweep or horse-lever, for the purpose set forth.

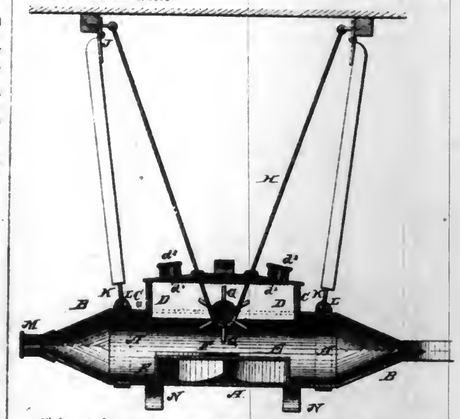
3. The combination, with follower D and press case, of the levers L, as and for the purpose specified.

4. In that class of baling presses in which the hay is fed or pressed in sections by a reciprocating traverser, as shown, the feed-hopper C, extending beyond the feed orifice B, and provided with a compacting follower, K, for the purpose described.

5. In that class of baling presses in which the hay is fed and pressed in sections, a press-case provided with a screen-bottom under the reciprocating traverser D, and in combination with the same, for the purpose set forth.

6. In a baling-press in which the material is compressed in sections by a reciprocating traverser, the pressing devices, so arranged and operated that the reaction or elasticity of the pressed material shall reverse the traverser without turning the horse-lever or sweep.

8,293. CHURNS. John Campbell, Alsonte, Ontario, Canada. Patent No. 181,311, dated Aug. 22, 1876. Filed June 6, 1878.



Claim.—1. In a swinging churn, a chamber, A, having ends contracted to, or nearly to, a point, substantially as described.

2. In a swinging churn, a chamber, A, having ends contracted to, or nearly to, a point, in combination with the breaker E.

3. The chamber A, having conical ends B, cream-breaker E, and knife F, constructed and arranged to operate as and for the purpose herein specified.

4. The combination, with the cylindrical chamber A, cream-breaker E, and knife F, of the agitating-wheel G, as and for the purpose herein specified.

5. In a pendulously-operating churn, the combination, with the chamber A, cream-breaker E, and knife F, of the cover D, provided with the air-openings d^1 and agitating-wheel G, when constructed and arranged to operate as and for the purposes herein specified.

6. A churn having its ends contracted to, or nearly to, a point, and having an opening for filling and discharging the churn, and provided with an adjustable cover, for the purposes set forth.

PHOTO-LITH BY THE GRAPHIC CO. NEW YORK

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COMMISSIONER'S DECISIONS.

SMITH *vs.* WINCHELL AND PATRIC.—*Motion.*

[*In the matter of the interference between the application for letters patent of Joshua M. Smith, filed June 30, 1877, and reissued Letters Patent No. 7,875, granted Charles E. Patric, September 4, 1877, and No. 7,926, granted James F. Winchell, October 23, 1877, for* "IMPROVEMENT IN SEEDING-MACHINES."—*Decided May 24, 1878.*]

Where the interference had been properly restricted to a special class of machines and the applicant party showed and described a device not within the class, the interference was dissolved and the applicant required to expunge the objectionable matter as for a distinct invention.

REHEARING OF INTERLOCUTORY APPEAL.

SPEAR, *Commissioner:*

The Commissioner, under date of May 1, 1878, upon appeal from the Primary Examiner, granted a motion made in behalf of the patentee, Winchell, to dissolve the interference as declared between the parties, and ruled that the device shown in the model and in Figures 1 and 2 of the drawing and described in the specification of the applicant, Smith, was not a force-feed drill, as understood in the art, and could not be included in a case or involved in an interference which

the regulated and orderly supply of seed to the drills is absolutely dependent upon the rotation of the feed-wheels inclosed within the magazines or cases. If revolution ceases, just so certainly will the flow of grain to the drills cease. It is possible, I imagine, for certain of the force-feed constructions that I have examined to be converted into gravity feeds by passing to an extreme in the adjustment of their parts, but this is not a legitimate or ordinary use, and, what is of more importance by way of distinction, a true gravity feed can never become a force-feed under the most extreme circumstances. After a careful reading of the Smith specification, taken in connection with Figures 1 and 2 of his drawing, I am satisfied that it is his purpose to make a seed-wheel case in which the inclined-plane bottom, movably mounted in suitable grooves cut in the side walls of the case, shall serve by its adjustment to and from the revolving wheel, situated at the lower front end of the case, to determine the size of the outlet opening and consequently to regulate the supply of seed to the drills.

The construction shown and described by him cannot be a force-feed drill, unless the sliding bottom in its downward adjustment approaches so near to the wheel periphery that it will act in conjunction with the contiguous cells formed by the projecting edges of the wheel face and secure a certain regulated flow of seed to the drills. Now to do this, it seems to me, that the slide will have to be practically tangent to the periphery of the wheel; for if it were not so, and a slight space or passage were permitted between the wheel face and the nearest surface of the inclined slide the pitch of the slide is such that even were the wheel at rest there is nothing to prevent the escape of the seed in an irregular manner, dependent, of course, upon the variation in elevation and jolting which the machine experiences as it passes across the field.

I am well aware that the applicant guards against

5. In the half-coupling described, the combination of a lateral port-opening, a packing-ring arranged therein, and a skeleton pressure-frame and spring back of the packing-ring, substantially as set forth.

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5,292. HAY AND COTTON PRESSES. Peter K. Dederick, Albany, N.Y. Patent No. 161,477, dated June 2, 1874. Filed Jan. 19, 1878.



Claim.—1. The combination, with press having side openings G G, of the rolls F F, substantially as and for the purpose described.

2. In that class of horizontal presses in which the hay is fed and pressed in sections by a reciprocating traverser and crank or toggle power, as set forth, the loose or adjustable sweep or horse-lever, for the purpose set forth.

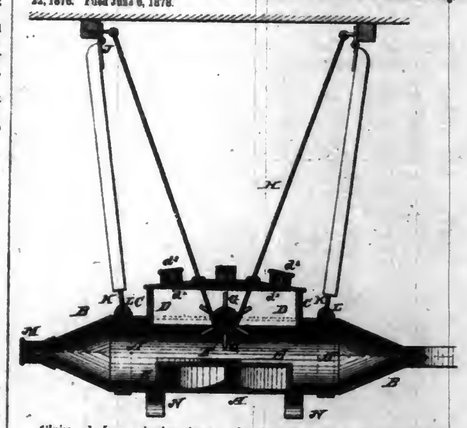
3. The combination, with follower D and press-case, of the levers L, as and for the purpose specified.

4. In that class of baling-presses in which the hay is fed or pressed in sections by a reciprocating traverser, as shown, the feed-hopper C, extending beyond the feed-orifice E, and provided with a compacting-follower, K, for the purpose described.

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4. The combination, with the cylindrical chamber A, cream-breaker E, and knife F, of the agitating-wheel G, as and for the purpose herein specified.

5. In a pendulously-operating churn, the combination, with the chamber A, cream-breaker E, and knife F, of the cover D, provided with the air-openings d^3 and agitating-wheel G, when constructed and arranged to operate as and for the purposes herein specified.

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Where the interference had been properly restricted to a special class of machines and the applicant party showed and described a device not within the class, the interference was dissolved and the applicant required to expunge the objectionable matter as for a distinct invention.

REHEARING OF INTERLOCUTORY APPEAL.

SPEAR, *Commissioner:*

The Commissioner, under date of May 1, 1878, upon appeal from the Primary Examiner, granted a motion made in behalf of the patentee, Winchell, to dissolve the interference as declared between the parties, and ruled that the device shown in the model and in Figures 1 and 2 of the drawing and described in the specification of the applicant, Smith, was not a force-feed drill, as understood in the art, and could not be included in a case or involved in an interference which was exclusively drawn to cover that style of drill, and no other.

At the instance of attorney for the applicant, Smith, a rehearing of the motion has been granted, and further opportunity given him to establish the force-feed characteristics of the device in question.

A force-feed drill, as I understand it, is one in which the regulated and orderly supply of seed to the drills is absolutely dependent upon the rotation of the feed-wheels inclosed within the magazines or cases. If revolution ceases, just so certainly will the flow of grain to the drills cease. It is possible, I imagine, for certain of the force-feed constructions that I have examined to be converted into gravity feeds by passing to an extreme in the adjustment of their parts, but this is not a legitimate or ordinary use, and, what is of more importance by way of distinction, a true gravity feed can never become a force-feed under the most extreme circumstances. After a careful reading of the Smith specification, taken in connection with Figures 1 and 2 of his drawing, I am satisfied that it is his purpose to make a seed-wheel case in which the inclined-plane bottom, movably mounted in suitable grooves cut in the side walls of the case, shall serve by its adjustment to and from the revolving wheel, situated at the lower front end of the case, to determine the size of the outlet opening and consequently to regulate the supply of seed to the drills.

The construction shown and described by him cannot be a force-feed drill, unless the sliding bottom in its downward adjustment approaches so near to the wheel periphery that it will act in conjunction with the contiguous cells formed by the projecting edges of the wheel face and secure a certain regulated flow of seed to the drills. Now to do this, it seems to me, that the slide will have to be practically tangent to the periphery of the wheel; for if it were not so, and a slight space or passage were permitted between the wheel face and the nearest surface of the inclined slide the pitch of the slide is such that even were the wheel at rest there is nothing to prevent the escape of the seed in an irregular manner, dependent, of course, upon the variation in elevation and jolting which the machine experiences as it passes across the field.

I am well aware that the applicant guards against this by causing his slide to close against the lower face of the case, but I am reading the invention as shown in Figures 1 and 2 and as described. I say there is no provision of this kind mentioned, and the model, which shows it is confessedly not a legitimate force-feed for the reason above indicated, that the slide does not approach with sufficient nearness to the rotating wheel

to choke the outlet-orifice and insure the regulated feed of the grain independently of the adjustment of the slide to the lower face of the case.

In the light of the specification and drawings alone, I find no hint as to the necessity of this approximate tangency of the slide and wheel, in order to constitute a force feed. It is idle to say that such construction is an unessential, for with the inclination of the slide from the upper part of the case downward toward the wheel, situated at the bottom, the natural tendency of the contained grain to escape at the outlet, although much dependent on the degree of inclination and the size of the orifice, is none the less a positive one, and to be certainly guarded against must require the sealing of the orifice by the substantial tangency of the slide and the wheel. As there is no provision of this kind indicated or even hinted at, I am very certain that specification, drawings, and model, altogether, do not impart such full and certain information as will enable those skilled to build a force-feed drill and no other.

The exhibits which are filed by the applicant, presumably built after the instructions of his specification, are not so, in point of fact. In the brass exhibit the curved upturned lip, at the extreme bottom end of the inclined slide, has substantially the same function as the curved bottom shown by him in Figure 3. It is in certain positions undoubtedly a force feed; but as there is no suggestion of a curved lip to be made upon the sliding bottom in the Smith specification, nor any such shown in drawings and model, it is without the invention as disclosed. So, too, the wooden exhibit shows a *fixed* bottom, approaching near enough to the wheel periphery to make the device a force feed; but with a bottom of this kind the feed is necessarily invariable, for a constant rate of rotation and the overlying slide which applicant proposes, as the equivalent of the complete sliding bottom shown in his application, has no other function than the regulating-slide of an ordinary gravity-drill. It may diminish or, indeed, prevent the flow of seed altogether, but it does this in precisely the same sense that the gauge shown in Letters Patent No. 184,268, granted Smith and Thomas, does.

The sketch marked Exhibit C, and presented by attorney in argument, is unquestionably as much of a force feed as the other two I have just discussed, but like both of them it is not constructed according to the terms of the Smith application. The slide approaches the wheel from below and not from above, nor does it constitute that portion of the seed-wheel case which is the bottom proper for the contained grain. That part which in strictness corresponds exactly with the incline gage or slide of the application is made in piece with the rest of the shell, and is consequently *immovable*. It is clear, therefore, that while the exhibits afford excellent illustrations of different styles of force-feed drill they are not such constructions as necessarily flow from any reading of the Smith application. They are not, therefore, in point and do not relieve the case from the criticism already made against it. Since the device shown by the model and by Figures 1 and 2 of the Smith application is not a force-feed drill, the application must be divided and restricted to such as are. In event the applicant elects to confine himself to the construction shown in Figure 3 his application must be suitably amended and a model filed which shall be in substantial correspondence.

The interference as declared is dissolved, and the Smith application remanded to the Examiner for action in the premises.

DECISIONS OF THE COURTS.

Circuit Court of the United States—Northern District of Illinois.

MATTHEW GOTTFRIED *et al. vs.* BARTHOLOMAE & ROESING. MATTHEW GOTTFRIED *et al. vs.* FORTUNE BROS. MATTHEW GOTTFRIED *et al. vs.* PETER SCHOENHOFEN.

[*In Equity.—Decided June* 24, 1878.]

A stationary apparatus for surface-coating the interior of beer-barrels, (Letters Patent No. 42,580,) in which an air-blast is forced up through a grate-fire, and the escaping gases and products discharged into the barrel to heat its surface, is not anticipated by a device wherein the air-blast circulates through heated pipes and passes thence into the barrel. They are different modes of accomplishing the same effect.

The complainants' apparatus is infringed, although those of the defendants are portable and otherwise differ in minor details. All obtain a like result by substantially the same means.

[*Messrs. Banning & Banning*, solicitors for the complainants; *Messrs. Jussen & Anderson*, solicitors for the defendants.]

BLODGETT, *J.:*

These are suits brought by the complainants as the owners of a patent issued by the United States to J. F. T. Holbeck and M. Gottfried, dated May 3, 1864, for an improved mode of pitching the inside of barrels. The complainants' invention consists of a device by which air is driven through fire by a fan or blower, where it becomes heated to a high temperature, whence it is forced by the blast into the barrels so as to heat the inside of the barrels sufficiently to melt the pitch or resin which is used for the purpose of pitching the insides, so that it will readily flow into the cracks or pores of the wood. The cask is then closed and rolled until the melted resin has covered the entire inner surface. The complainants' device is a furnace, with grate-bars in the bottom, upon which the fire is built with anthracite coal, or any other combustible; underneath the grate-bars comes a pipe, to which is attached a fan or blower by which the blast of air is driven into and up through the ignited combustible, coal or wood as the case may be. The cask or barrel to be pitched is attached by the nozzles being inserted in the bung-hole, so that the air, which becomes heated by being forced through the fire, is expelled through the pipe into the cask, thereby heating the inside of the cask to such an extent as to melt the pitch or resin.

The defendants' two devices embody applications of the same principle. One is a portable device in which the fan or blower is attached by a pipe at the bottom; the air is driven through the fire, there being a grate-bar in the bottom, and the cask is attached upon the pipe. This is called the Vogt machine. The other, also portable, involves the same principle, but is so adjusted as to receive a large number of casks, the casks being suspended upon hooks so that the air-nozzles fit into the bung-holes, and the air is driven into them. This is known as the Shlaudeman machine. The object

of all these devices is simply to coat the inner surface of the cask with pitch or resin, so as to make it more capable of holding liquids, especially ales and beers.

It must be admitted, I think, that the two devices—that of the complainants and those used by the defendants—are alike in their mode of operation and effect. There is no substantial difference in the principle upon which they operate; they both accomplish the same end by substantially the same means—that is, a blast of air driven through the fire and escaping into the cask.

The defendants contest the novelty of the complainants' device, and in support of their position rely upon a patent granted in England to Robert Davison and William Symington, in November, 1843, and upon the various devices for producing a hot-air blast in furnaces, such as the Neilson blast and the various other hot-air blasts in smelting-furnaces, where heated air is driven into the furnace for the purpose of securing a higher degree of heat and of increasing the melting-power of the furnace.

The Davison and Symington device was specifically arranged for the purpose of cleansing barrels; we have no model of that, but we have the specifications and drawings in connection with it. They show an arrangement for cleansing the inside of casks and barrels, and the inventors specially say that it is adapted to the cleansing of beer and ale casks particularly, so as to renovate them and make them available for further uses. That device combined several applications; one was the use of hot air, which was driven into the cask by a blast, in the same manner as in this case, except that the air was heated by being driven through heated tubes—that is, a nest or group of iron pipes was arranged in a furnace, and the pipes becoming hot the air was driven through them into the cask, whereby the inner side of the cask became heated. By that it was claimed the must and various impurities were expelled. The same device, also, combined a mechanism for introducing a rough chain into the inner side of the barrel, and shaking or rolling the barrel with the chain inside, whereby the barrel was cleansed of impurities which stuck to the inside. Sometimes instead of using the chain, they used gravel or any other substance by which attrition upon the inside of the cask could be obtained. A further device was connected with the same mechanism for driving steam at a high temperature into the cask for the purpose of still further cleansing.

All these devices were intended really to cleanse the inside of the barrel, and not to pitch it; but it is obvious that heating the inside of the barrels, so as to melt the pitch, could have been accomplished by the Davison and Symington process—that is, when you once conceived the idea of the necessity of pitching or coating the inside of the barrel with any substance susceptible of being melted, it could be heated by the Davison and Symington process as readily as by the complainants' process. But the mechanism, it is noticeable, by which the heating was obtained is widely different.

The complainants' process is perhaps the simplest process by which air can be heated and then driven into casks, and so simple that one can hardly deny that they should have a patent upon it if they were the first to invent it. All you have to do is to apply a simple fan or blower and drive the air through the fire. What the fire does not consume will, of course, escape into the cask in a heated condition, heated to the extent of the intensity of the fire. And one of the merits, so to speak, of the device is that by the very process of blowing or driving the air through the fire you increase the intensity of the fire, and therefore the intensity of the heat of the air which escapes into the cask. It is true that with the heated air will go some smoke and the products of combustion, such as the carbonic-acid gas, &c., but for the purpose for which the complainants apply their device, that is not objectionable—the only object being to get the inner surface of the cask heated sufficiently to melt the resin or other substance with which it is desired to coat it. That is accomplished by this process readily. And while, as I have already said, the Davison and Symington process may produce the same results, yet they produce them by a different mechanism, and a mechanism much more costly; it costs much more to make a machine, and fully as much, if not more, to operate it; you would have to produce heat enough in your furnace around your pipes to make the air sufficiently hot, and then keep up that heat by an additional blast of air into your furnace in addition to the blast which drives the air into your cask. So that the two mechanisms, while they produce the same result and reach the same end, do it by two different processes. Therefore I do not think the Davison and Symington device anticipates the complainants'.

As I have already stated, the defendants' devices are but other forms of the complainants' device. The complainants drive their air by a fan or blower through the fire upon the grate-bars, into the cask to be heated; the defendants do the same and by substantially the same mechanism. The method of attaching the pipe at the bottom, or anywhere below the grate-bars, is the same, and undoubtedly an infringement of the complainants' patent.

It is urged that the Shlaudeman device is different, because there is a device by which the air can be driven directly from the fan or blower into the cask. That would simply drive cold air in, or at most the air would only become heated to the extent of whatever heat there was in the chamber over the fire, as the air would not pass through the grate-bars. But in so far as this machine provides for driving the air through the fire by turning a cock and closing the direct entrance into the chamber above the fire, the moment the upper aperture is closed, it becomes the complainants' machine to all intents and purposes.

I therefore hold that the infringement is clearly made out, and that the complainants are entitled to the relief claimed. Injunctions will accordingly be granted, and references ordered to the master to take proof and report the damages the complainants have sustained by the defendants' infringement.

Narrative of the Polaris Expedition.

Authority having been given the Public Printer to print another edition of the above work, subscriptions will now be received by Mr. A. F. Childs, Chief Clerk, until August 10, 1878, at the following rates: If delivered at the Government Printing Office, $1.60. If sent by mail, $1.75.

TRADE-MARKS.

[Each certificate bearing date June 25, 1878.]

6,272.—CIGARS.—*Fay & Co.*, Boston, Mass. Application filed June 8, 1878.
"The word 'ALBANI.'"

6,273.—BEES-WAX.—*Wakeman & Fierz*, New York, N. Y. Application filed June 12, 1878.
"The representation of a star and the word-symbol 'STAR.'"

6,274.—MEDICINAL PREPARATION.—*Jennie Heywood*, New York, N. Y. Application filed June 11, 1878.
"The word-symbol 'HEYWOODIAN.'"

6,275.—CIGARS AND CIGARETTES AND SMOKING AND CHEWING TOBACCO.—*David Hirsch & Co.*, New York, N. Y. Application filed June 13, 1878.
"The word-symbol 'BRAKERS.'"

6,276.—PARLOR-STOVES.—*Sherman S. Jewett & Co.*, Buffalo, N. Y. Application filed June 14, 1878.
"The word-symbol 'AVALON.'"

6,277.—LYE AND POTASH.—*Emanuel Lauferty*, New York, N. Y. Application filed June 14, 1878.
"The fancifully-selected word 'ROYAL.'"

6,278.—COTTON JEANS, DRILLS, SHEETINGS, AND SHIRTINGS.—*A. A. Low & Brothers*, New York, N. Y. Application filed May 10, 1878.
"A buffalo charging."

6,279.—CIGARS.—*William Simpson*, Springfield, Mass. Application filed June 6, 1878.
"The word 'CREEDMOOR.'"

6,280.—YEAST-POWDERS.—*The Taylor Manufacturing Company*, St. Louis, Mo. Application filed May 27, 1878.
"The representation of three silver dime-pieces within the oval-shaped symbol, and the word 'GRANT'S.'"

6,281.—ILLUMINATING AND LUBRICATING OILS.—*Standard Oil Company*, Pittsburg, Pa. Application filed November 3, 1877.
"The word-symbol 'STANDARD.'"

6,282.—STARCH.—*The Buffalo Grape Sugar Company*, Buffalo, N. Y. Application filed December 21, 1877.
"The word-symbol 'LUSTRE.'"

6,283.—BEAVER CLOTHS.—*Bacon, Baldwin & Co.*, New York, N. Y. Application filed June 12, 1878.
"The word-symbol 'WASHOR.'"

6,284.—BEAVER CLOTHS.—*Bacon, Baldwin & Co.*, New York, N. Y. Application filed June 12, 1878.
"The word-symbol 'CHAMPION.'"

6,285.—SMOKING-TOBACCO.—*Beck & Feldkamp*, Chicago, Ill. Application filed May 20, 1878.
"The letters 'B. & F.' in a monogram, as shown."

6,286.—CIGARS.—*Gutmann & Rice*, New York, N. Y. Application filed June 17, 1878.
"The words 'ENTRE NOUS.'"

6,287.—BOOTS AND SHOES.—*Hurst, Miller & Co.*, Baltimore, Md. Application filed June 18, 1878.
"A white boot on a black ground, as shown."

6,288.—BLANKETS.—*Levi Strauss & Co.*, San Francisco, Cal., and New York, N. Y. Application filed June 17, 1878.
"The word-symbol 'HERCULES' and the letters 'L. S. & Co.'"

6,289.—BLANKETS.—*Levi Strauss & Co.*, San Francisco, Cal., and New York, N. Y. Application filed June 17, 1878.
"The arbitrarily-selected words 'THE GRIZZLY' and the figure of a bear."

6,290.—OINTMENT.—*Soler & Guardias*, New York, N. Y. Application filed June 17, 1878.
"The portrait and signature of Salvador Guardias."

6,291.—SOAP AND CANDLES.—*Proctor & Gamble*, Cincinnati, Ohio. Application filed June 17, 1878.
"The device of the hand holding the parallelogram."

6,292.—SALERATUS, SODA, BORAX, AND CONCENTRATED LYE.—*Weikel & Smith Spice Company*, Philadelphia, Pa. Application filed June 18, 1878.
"The word-symbol 'TRADERS.'"

6,293.—COMPOUND PASTE OR MUCILAGE.—*Benjamin F. Callender*, Detroit, Mich. Application filed March 26, 1878.
"The arbitrarily-selected words 'NEW ERA.'"

6,294.—WHISKY.—*Crane, Hastings & Co.*, San Francisco, Cal. Application filed April 22, 1878.
"The word 'CABINET,' in connection with the picture of a crown."

6,295.—PERFUMES FOR THE BREATH.—*Walter M. Fleming*, New York, N. Y. Application filed June 7, 1878.
"The word 'SMAX.'"

6,296.—SODA-WATERS, SELTZER-WATERS, AND GINGER-POP.—*Hayes Brothers*, Chicago, Ill. Application filed April 22, 1878.
"The monogram 'H. B.'"

6,297.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Kerbs & Speise*, New York, N. Y. Application filed June 19, 1878.
"The words 'CRACK NEW YORKER.'"

6,298.—SILK HANDKERCHIEFS, SCARFS, BOOK-MARKS, BADGES, AND DRESS-GOODS OTHER THAN DRESS-TRIMMINGS.—*B. B. Tilt & Son*, Paterson, N. J. Application filed June 8, 1878.
"Representation of the Statue of Liberty which is intended to be erected in the harbor of New York."

6,299.—HEALING-BALSAM.—*Dr. H. D. Whitbeck & Co.*, Auburn, N. Y. Application filed May 31, 1878.
"The figures of a fir-tree and a person gathering the sap therefrom, the whole surrounded by two concentric circles."

LABELS.

[Each certificate bearing date June 25, 1878.]

1,581.—Title: "WILLIAMS' VEGETABLE PAIN EXTERMINATOR.—*M. F. Williams & Co.*, Gettysburg, Pa.

1,582.—Title: "KOKOLEON. AN EXQUISITE EMOLLIENT."—*Emerson O. Angell*, New York, N. Y.

1,583.—Title: "ROMALEON. AN EXQUISITE EMOLLIENT," &c.—*Emerson O. Angell*, New York, N. Y.

1,584.—Title: "DEUSNER'S MERCHANDISE TICKET."—*P. Deusner, Jr.*, Kokomo, Ind.

1,585.—Title: "FEARLESS."—*Neuman A. Dinglinger*, New York, N. Y.

1,586.—Title: "GRAND HAVANA-FILLER HAND-MADE."—*George Gaab*, Cincinnati, Ohio.

1,587.—Title: "LIEBIG COCA-BEEF TONIC, (PEPTONIZED.)"—*Madeline Hofman*, New York, N. Y.

1,588.—Title: "EVER FAITHFUL."—*Heppenheimer & Maurer*, New York, N. Y.

1,589.—Title: "UNION COLOR COMPANY. BURNT SIENNA."—*Thomas Ramsey*, Cleveland, Ohio.

1,590.—Title: "PROF. DYKES' BEARD ELIXIR."—*L. A. L. Smith & Co.*, Palatine, Ill.

1,591.—Title: "MAY QUEEN."—*William Wicks & Co.*, New York, N. Y.

1,592.—Title: "WILLIAMS & MOORE'S MEXICAN INSECT-POWDER."—*Williams & Moore*, Stockton, Cal.

1,593.—Title: "FLORIDA ORANGE MARMALADE."—*Loudwick Warrock*, Jacksonville, Fla.

DESIGNS.

[Each design bearing date June 25, 1878.]

10,731.—GLASSWARE.—*Henry Franz*, Pittsburg, Pa., assignor to *Campbell, Jones & Co.*, same place. Application filed June 17, 1878. Term of patent 3½ years.

10,732.—GEM-SETTING.—*Charles A. Faas*, Wrentham, Mass. Application filed June 14, 1878. Term of patent 3½ years.

10,733.—FONT OF PRINTING-TYPES.—*William W. Jackson*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed June 4, 1878. Term of patent 14 years.

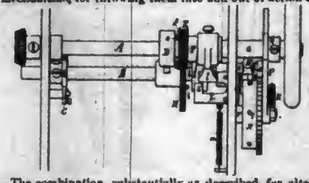
10,734.—HOBBY-HORSES.—*Otto Unricher*, Chicago, Ill., assignor to *Adolph Shoeninger*, same place. Application filed May 31, 1878. Term of patent 3½ years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

JUNE 25, 1878.

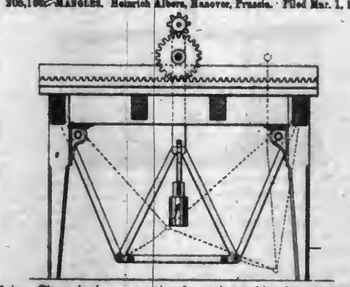
206,167. NARROWING MECHANISMS FOR KNITTING-MACHINES. Walter Aiken, Franklin, N. H. Filed May 27, 1878.

Brief.—The invention is applied to the driving shafts of the knitting and narrowing mechanisms, for throwing them into and out of action at the proper times.



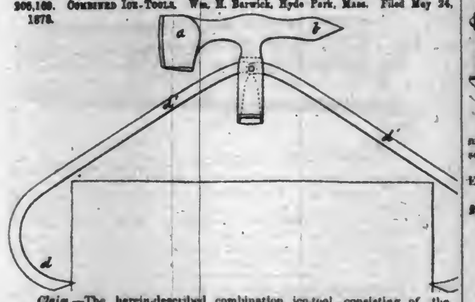
Claim.—The combination, substantially as described, for alternately putting the two shafts A B in revolution, each consisting of the shaft G, sleeve F, cam Q, lever P, spring R, pawl s, ratchet-wheel O, toothed wheel N, toothed lever M, notched abutment L, spring w, cam I, duplex-flanged gear E, plain gear H, studs *e f i k*, and circular heads D *l*, all being arranged and applied essentially in manner as shown, and to operate as specified.

206,168. MANGLES. Heinrich Albers, Hanover, Prussia. Filed Mar. 1, 1878.



Claim.—The swinging supporting-frame, in combination with the weighted levers, the supporting-arms, the revolving and reciprocating mangling-roller, and the table, as and for the purpose specified.

206,169. CORRUGATED ICE-TOOLS. Wm. H. Barwick, Hyde Park, Mass. Filed May 24, 1878.



Claim.—The herein-described combination ice-tool, consisting of the hatchet a, pick *b*, and jointed tongs *d d'* *d''*, as and for the purpose set forth.

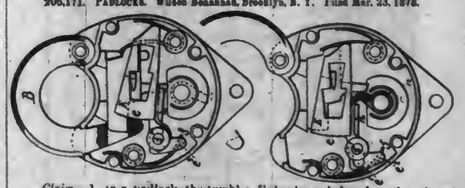
206,170.



206,170. MILK AND PROVISION RACKS. Richard A. Bassett, Rockford, Ill., assignor to himself and R. J. Randolph, same place. Filed Apr. 6, 1878.

Claim.—The combination, substantially as herein described, of the vertical post, the crane-like arms pivoted thereto and capable of a horizontal oscillation, and the vermin-protector to protect the contents on the rack, these parts constructed, arranged, and operating substantially as and for the purpose hereinbefore set forth.

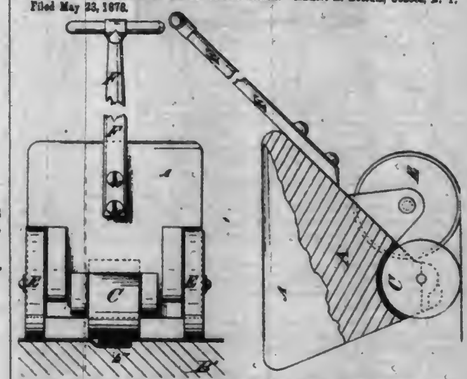
206,171. PADLOCKS. Wilson Bohannan, Brooklyn, N. Y. Filed Mar. 23, 1878.



Claim.—1. In a padlock, the tumbler E, having a ledge, *b*, a slot, *c'*, and a hook, *c''*, and the spring *f*, whereby the key of the lock is prevented from turning back after it has opened the lock, substantially as set forth.

2. The combination of the tumbler E, having a slot, *c'*, hook *c''*, and curved back *e*, and the spring *f*, whereby the unlocked shackle B is thrown out of the lock, substantially as set forth.

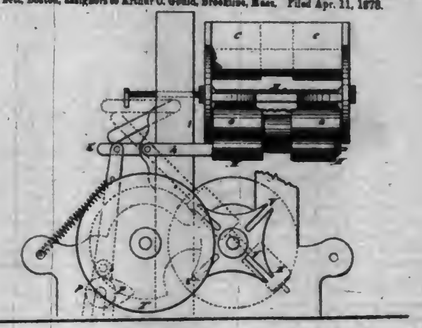
206,172. CLOSING SEAMS OF SHEET-METAL ROOFS. Hamlet E. Bottum, Cohoes, N. Y. Filed May 23, 1878.



Claim.—1. A heavy or weighted cylindrical roller, in combination with means for propelling and controlling it, substantially as and for the purpose set forth.

2. The combination of the cylindrical weighted roller C, guiding-rollers E E, scrap F, and body A, substantially as and for the purpose set forth.

206,173. BOOK-PRINTING MACHINES. M. Wagner Brush, Cambridge, and James J. Hartnett, Boston, assignors to Arthur C. Gould, Brookline, Mass. Filed Apr. 11, 1878.

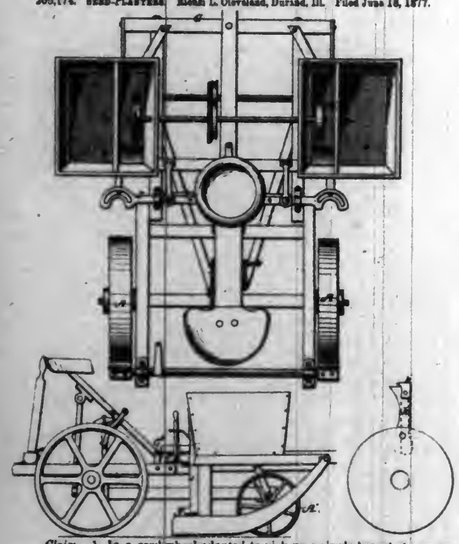


Claim.—1. In a machine for printing the heads of spools, the combination, with the intermittently-rotating die-carriers, of the reservoirs C C, the movable roller E, the supply-rollers G G, the distributing-rollers H H, hinged substantially as shown, and mechanism, substantially as described, whereby the distributing-rollers are caused to vibrate in vertical planes and receive and distribute the ink, in the manner and for the purposes set forth.

2. In a machine for printing spools, the combination, with the intermittently-rotating die-carriers, of the rolls H H, actuated by the cam P on shaft *p* through the medium of pivoted arms *b b* and forked arm O, the movements of the parts being timed, substantially as described, so that each roll H will always ink the same set of dies, for the purposes set forth.

3. In a machine for printing spools, the combination, with the die-carriers, of the disk U, having concave edges and intermediate slots V, the grooved wheel T, provided with pin *t*, and the vibrating arm *b*, carrying the inking-rollers, the several parts operating substantially as shown, and their respective movements being timed, as explained, so that the ink may be applied to the dies at the intervals and in the manner specified.

205,174. SEED-PLANTER. Elenzi L. Cleveland, Durand, Ill. Filed June 18, 1877.



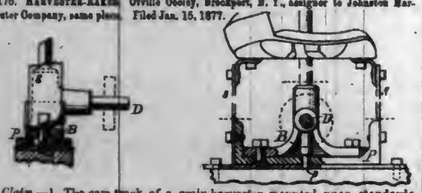
Claim.—1. In a seed-wheel adapted to pick up a single kernel at a grasp, the combination of the hollow wheel, the vibrating jaw, pivoted to the same at a point near the periphery of the wheel, and the pivotal jaw, having the weighted inwardly-extending end, arranged and operating substantially as described and set forth.

2. In a seed-planter adapted to plant the seed in hills, the combination of the rearwardly-swinging seed-tubes, through which the seed passes, the stationary plates *p'*, and the actuating-lever I, arranged and operating substantially as described.

3. In a seed-planter adapted to plant the seed in hills, the combination, with the die-carriers, of the disk U, having concave edges and intermediate slots V, the grooved wheel T, provided with pin *t*, and the vibrating arm *b*, carrying the inking-rollers, the several parts operating substantially as shown, and their respective movements being timed, as explained, so that the ink may be applied to the dies at the intervals and in the manner specified.

4. The combination of the hollow rearwardly-swinging seed-tube, pivoted to the seed-spout, whereby the seed can, by the swinging movement, be carried back and off its resting-place upon the stationary bottom, the actuating slide or lever having the curved slotted ends, within which the stud rising from the seed-tube enters, and the stationary plate or tube bottom *p'*, all these parts arranged and operating substantially as described.

205,175. HARVESTER-RAKE. Orville Cooley, Brockport, N. Y., assignor to Johnston Harvester Company, same place. Filed Jan. 15, 1877.

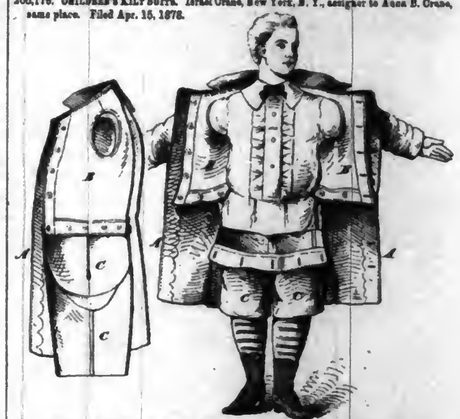


Claim.—1. The cam-track of a grain-harvester mounted upon standards *s s*, which are made laterally adjustable upon the machine by means of the bearing-block B and slotted angular base-plate P, pivoted on the central stud *p* of such block, or their described equivalents, as and for the purpose specified.

2. The block B, constructed with a vertical bearing for the rake-shaft, a lateral bearing for the driving-shaft D, and a central stud, *p*, stepped into the base-plate P, in combination with the cam-track and its supports, substantially as described, for the purpose specified.

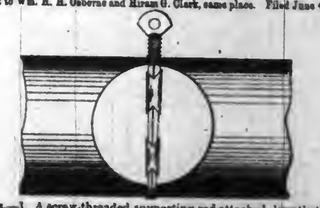
3. The slotted base-plate P, constructed with upturned ends, to which the side standards *s s* of the cam-track are secured, and mounted upon the base-support, so as to be laterally adjustable thereon, under the bearings of the rake-shaft, substantially as described, for the purpose specified.

205,176. CHILDREN'S KILT SUITS. Israel Crane, New York, N. Y., assignor to Anna B. Crane, same place. Filed Apr. 15, 1878.



Claim.—As a new article of manufacture, a child's kilt suit, consisting of the coat A, waist B, and skirt or pants C, the shoulders of the waist being attached to the shoulders of the coat directly, as shown and described.

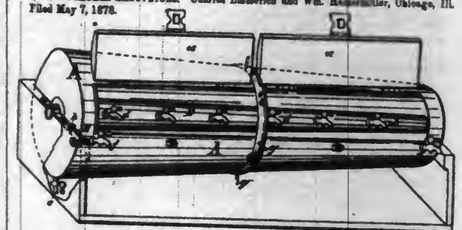
205,177. STOVE-PIPE DAMPERS. Solomon Crowell, Palmyra, N. Y., assignor of two-thirds his right to Wm. H. H. Osborne and Hiram G. Clark, same place. Filed June 4, 1878.



Claim.—1. A screw-threaded supporting-rod attached directly to a damper-plate, and adapted, as described, to hold the damper in any desired position by frictional contact of the threads with a hole or holes in the stove-pipe.

2. The combination, substantially as described, of a stove-pipe having opposite openings, a damper-plate with a rectangular passage, and a tapering screw-threaded rod.

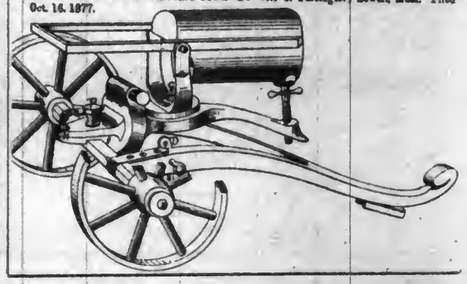
205,178. FEATHER-RENOVATORS. Charles Emmerich and Wm. Hasenmiller, Chicago, Ill. Filed May 7, 1878.



Claim.—1. The conical jacketed drum A, supported by hollow journals *b* and *b'*, and having lids *a* and faucets *e* and *f*, substantially as and for the purpose set forth.

2. The conical jacketed drum A, supported by hollow journals *b* and *b'*, one for the admittance of steam and the other one to be closed by a wooden stopper, and having lids *a*, pipe D, with faucets *d*, and ring G, having handles *g*, all constructed and arranged to operate substantially as set forth.

205,179. CARRIAGES FOR MACHINE-GUNS. De Witt C. Farrington, Lowell, Mass. Filed Oct. 16, 1877.

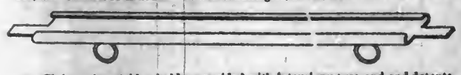


Claim.—1. The combination, in a machine-gun, of an elevating-screw, a sword-plate, D, or equivalent device, and an intermediate frame, supporting the gun proper and the screw, substantially as and for the purpose described.

2. The combination, in a machine-gun, of a traverse-pivot, G, and an axis of motion at right angles thereto, for regulating the plane of the traverse, substantially as described.

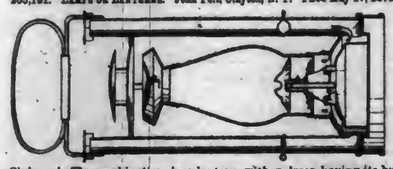
3. A trail-plate or anchor constructed with converging flanges, substantially as and for the purpose described.

205,180. CARTRIDGE-HOLDERS. De Witt C. Farrington, Lowell, Mass. Filed Mar. 9, 1877.



Claim.—A cartridge-holder provided with lateral grooves and end detents, the parts being constructed and arranged to hold a series of cartridges and to permit them to be moved longitudinally, substantially as and for the purpose set forth.

205,181. LAMPS OR LANTERNS. John Felt, Clayton, N. Y. Filed May 17, 1878.



Claim.—1. The combination, in a lantern, with a lamp having its burner, oil-vessel, and chimney, of an air-chamber surrounding said oil-vessel, and communicating with tubular columns which extend above the chimney, or any top or air-deflecting appurtenances of said chimney, without communicating therewith, as described.

2. The combination, in a lantern in which the oil-vessel is surrounded by an air-chamber communicating with columns admitting air from above the chimney, as shown and described, of an auxiliary air-chamber surrounding the burner underneath the combustion-chamber of the lamp, with the means herein shown and described of admitting, at pleasure, air within said chamber independently of that conveyed by the columns, all substantially as herein set forth.

3. In combination with the wick-tube and foraminous air-distributer of a kerosene-oil burner of otherwise ordinary or suitable construction, the tubular sleeve surrounding said wick-tube and resting upon said air-distributer; but such sleeve is claimed only when provided with a bottom flange snugly fitting the wick-tube, as herein shown and set forth.

4. The combination, in a lantern, of a lamp and its appurtenances, an air-chamber surrounding it, columnar air-tubes communicating with the air-chamber and valves in said air-tubes, all substantially as shown and set forth.

5. In combination with columns conducting air to the lamp from without, as described, the caps composed of annular disks overhanging and connected with cruciform air-deflecting blades, substantially as shown and set forth.

6. The combination, with the lamp, the air-chamber, and columnar air-ducts, of a hood encircling the lower part of the said air-ducts and air-chamber, as and for the purposes set forth.

7. In a lantern having a lamp and air-supply contrivances, as herein shown and set forth, the chimney and removable chimney-top, constructed and arranged for operation substantially as herein shown and set forth.

8. The chimney-top composed of the following elements in combination, viz: first, a double cone provided at its lower end with a ferrule or sleeve fitting the top of the chimney, and at its upper end with a spheroidal cap, leaving an annular opening between it and the cone, as described; second, a concavo-convex annular disk overhanging the annular opening in the cone, as described; and, third, a spherical cap overhanging the opening in the concavo-convex disk, as shown and set forth.

9. The combination, with the tubular columns, the wire brace, and handle, of the hook, arranged as shown and described, and for the purposes set forth.

205,182. HORSE-DETACHING DEVICES. Robert Fox, Deerfield, Iowa. Filed Dec. 11, 1877.



Claim.—1. The fulcrum-post E, lever F, and rods *f'* and *f''*, in combination with the single tree A, with ferrule D, lugs *d*, levers *d'*, spring *d²*, pulls *d³*, and pin *d'*, substantially as and for the purpose set forth.

2. The stand-block G, with pulleys *g*, *g'*, and *g²*, and cable H and H', in combination with the levers F, bar *c*, single tree A, and pole C, substantially as and for the purpose set forth.

205,183. PADLOCKS. John W. Gable, Tower City, Pa., assignor of one-half his right to E. F. Philips, same place. Filed May 21, 1878.



Claim.—The combination in the padlock herein described, consisting of a shackle having bosses, through which a hollow securing-pin is run, and which is fastened by spring-catches in one of the bosses, substantially as set forth.

205,184. EAVE-TROUGH FRAMES. Oliver S. Garrison, Buffalo, N. Y. Filed Mar. 26, 1877.

Brief.—The shell or case is cast in a single piece, with interior re-enforces and projecting lugs, and there are curved recesses and rear recesses and screw-holes, all molded and cast at the one operation, thus diminishing the weight of metal, and simplifying and cheapening the construction.



Claim.—1. In a frame-pulley, the case or shell A, when cast in a single piece, with interior re-enforces B B', substantially as described and shown.

2. The curved recesses *c c'*, holes D D', wings *d d'*, and rear recesses *e e*, as shown and described, and for the purpose specified.

205,185. EAR-PIERCERS. Adolphus Gipperich, Richmond, Va., assignor to Mulford & Bonnet, New York city. Filed Apr. 3, 1878.



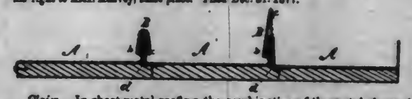
Claim.—1. As a means of piercing ears, a needle having a detachable point, in combination with a receiving-cushion and a clamping device, having coincident apertures, between which the ear-lap is held, substantially as specified.

2. The plate D, provided with the aperture *b*, with or without the tube *d*, in combination with the griper H and cork-holder I, substantially as set forth.

3. The combination of the spring F, attached to the plate D, griper H, cork-holder I, and lever E, substantially as set forth.

4. The combination of the plate D, having the aperture *b* and tube *d*, griper H, spring F, and lever E, substantially as specified.

205,186. SHEET-METAL ROOFING. Wm. S. Grafton, Steubenville, Ohio, assignor of one-half his right to Alex. Harvey, same place. Filed Dec. 31, 1877.



Claim.—In sheet-metal roofing, the combination of the metal sheets A with the cap B, having its edges *b b* turned in, and the anchor *d*, all arranged in the manner and for the purpose substantially as described.

205,187. PROCESSES OF REFINING RETORTED AMALGAM. Frederick Gutskow, San Francisco, Cal. Filed May 16, 1878.

Claim.—The herein-described process of refining retorted amalgam, consisting in dissolving a portion of said amalgam in sulphuric acid, subsequently adding another portion of amalgam to the solution, whereby the silver is precipitated and the copper dissolved, substantially as above specified.

205,188. SHEET-METAL ROOFING. Malcolm Harris, Morris, Ill., assignor of one-half his right to Frank B. Handwork, same place. Filed Sept. 27, 1877.

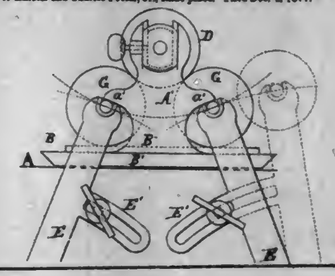


Claim.—1. The sheets B, having the double bend *a b* at their edges, in combination with the fastening plate or strip C, slitted at its upper end, with divisions bent in opposite directions around the bent edges of the sheets B, and both turned down together, substantially as and for the purpose set forth.

2. The metal sheets B, bent, as described, at the edges, in combination with the cap or cover E, the latter bent down upon the sides of the rib, with the flanges *b*, substantially as and for the purpose set forth.

3. The metal sheets B, bent at their edges, as described, in combination with the packing-strip D and the cap E, the edges of the strips and cap being bent and folded down together on each side of the packing, substantially as and for the purpose set forth.

205,189. INKING APPARATUS FOR PRINTING-MACHINES. Jas. F. Hubbard, Plainfield, N. J., assignor to himself and Charles Potter, Jr., same place. Filed Dec. 4, 1877.

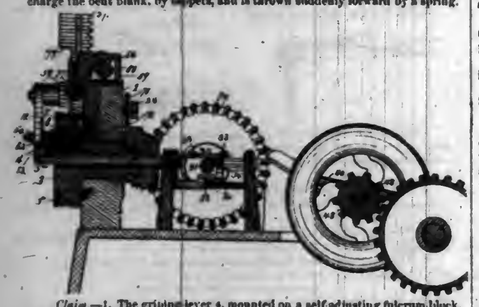


Claim.—1. In a printing press, the levers E E, eccentrically pivoted at their lower ends, recessed at their upper ends, and provided with the slotted arms E' E', in combination with the inking-rollers G, distributing-roller D, and bed B', as herein specified.

2. In a printing-press, the shoulder *a'* on the standards A', in combination with the rollers G, and with the levers E, having forks or open-topped recesses, as and for the purposes herein specified.

205,190. LINK-BENDING MACHINES. William Jones, Pittsburg, Pa. Filed Mar. 27, 1878.

Brief.—The heated rod is fed over the flat face of the intermittingly-revolving mandrel until its scarf end enters a gage adapted to receive it, carried by the first bending-lever, and a blank is then severed from the rod by a descending shear. A griping-lever carried by a self-adjusting fulcrum-block holds the blank on the mandrel while it is being bent, as the mandrel revolves, by the rollers of the bending-levers. The nose of said lever is depressed, to gripe the blank, by a lug on a slide, which elevates its tail end, and is kept in its depressed position until the bending operation is completed by a circular camway in the frame, the said camway being so formed for a portion of its circumference as to release the said lever. The mandrel is retracted, to discharge the bent blank, by tappets, and is thrown suddenly forward by a spring.



Claim.—1. The griping-lever 4, mounted on a self-adjusting fulcrum-block, 6, supported by a spring, 7, and operating in combination with the revolving mandrel 5*, as described.

2. The combination, with the griping-lever 4, former 3, and camway 2, of the slide 8, operating to elevate the tail of the lever, as described.

3. The combination of the intermittingly-revolving mandrel 5, the bending-lever 12, and the gage 61, carried by said bending-lever, as described.

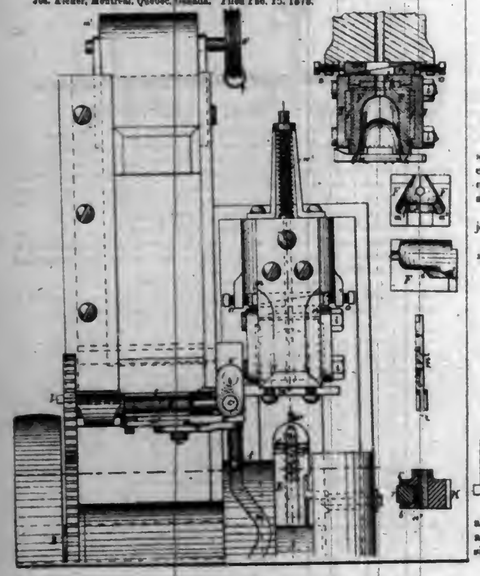
4. The weighted lever 26, mounted on a self-adjusting fulcrum, 27 28, to graduate the pressure of the bending-lever 18 on the blank, as required.

5. The combination, with the mandrel 5, of the bending-lever 18 and sleeve 18*, mounted on a rock-shaft, 21, and carrying bending-rollers 19 and 20, said sleeve receiving an endwise motion at the proper period to impart a spiral bend to one-half of the blank.

6. In combination with the bending mechanism, the inclined ways 43, slide 42, pitmen 40 41, and cranks 44 37, combined and arranged as described, causing the said pitmen to be brought approximately to a straight line while operating the bending mechanism.

7. The combination of the oblique shears 66 67, guide-roller 20, forming mandrel 5, bending-roller 12, and oblique-faced gage 63, all substantially as and for the purpose set forth.

205,191. MACHINERY FOR MOLDING COUNTERS OR STIFFENERS FOR BOOTS AND SHOES. Jos. Keefer, Montreal, Quebec, Canada. Filed Feb. 15, 1878.



Claim.—1. The combination of the feed and corrugating rollers K K with the male and female dies E F F, all being constructed and provided with mechanism for operating them, substantially as set forth.

2. The combination of the delivering-slide I with its supporting-abutment *s*, the feed-rollers K K, and the male and female dies E F F, constructed and provided with mechanism for operating them, as set forth.

3. The combination of the stud *k'* with the delivery-slide I, the feed-rollers K K, and the male and female dies E F F, arranged and provided with mechanism for operating them, substantially as explained.

4. The combination of the feeding-apron G and the delivery-slide I, provided with mechanism for operating them, as described, with the feed and corrugating rollers K K and the male and female dies E F F, applied and to operate essentially as set forth.

5. The combination of the two expellers a^3 a' and their operative springs a^4 a^4 with the male and female dies E F F, arranged and to operate as set forth.

6. The guide-plates m^3 a^2, provided with the notches a^2 p' q' t' l', arranged in them, substantially as and for the purposes described.

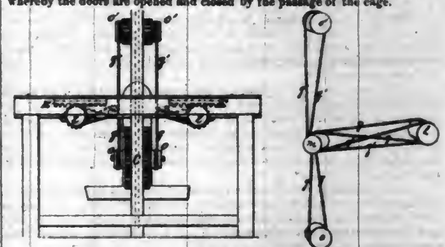
7. The male die grooved on its flanks, essentially as and for the purpose set forth.

8. The corrugating feed-rollers K K, provided with the movable feeding-segments *s s*, arranged and combined with such rollers, substantially as explained.

9. The female dies provided with the tapering recess a^3, arranged in or at its mouth, substantially as and for the purpose specified.

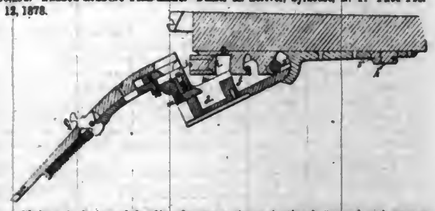
205,192. DEVICES FOR OPENING AND CLOSING HATCHWAY-DOORS. John J. Lacey, San Francisco, Cal. Filed Mar. 28, 1878.

Brief.—Sliding doors are operated by pulleys above and below the door, connected by cords and intermediate pulleys. The pulleys have pinion-wheels on their axes, those above and below engaging with racks on the cage, and those on the intermediate pulleys engaging with racks on the doors, whereby the doors are opened and closed by the passage of the cage.



Claim.—The sliding hatchway-doors E E, supported in the grooves *g g*, and provided with one or more racks, *h*, the shaft I, with its pinions *k k* and pulley *l*, the intermediate pulley *n*, and the combined pulleys and pinions *o o'*, connected by belts *q q*, in combination with the racks *r* on the carriage or platform, the whole combined and arranged to operate substantially as and for the purpose described.

206,193. BREECH-LOADING FIRE-ARMS. Daniel M. Lefever, Syracuse, N. Y. Filed Feb. 12, 1878.

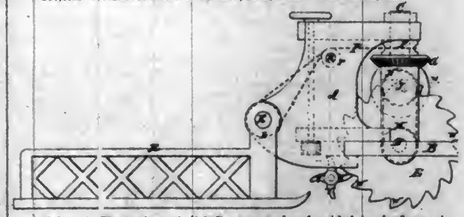


Claim.—1. In breech-loading fire-arms, the projection *k*, formed with square shoulders on its sides, in combination with the recoil-plate, provided with a corresponding recess, the shoulders on said projection and on the recess being curved in the arc of a circle struck from the pivot on which the barrels turn, substantially as and for the purposes described.

2. The compensating-plate *i* and adjusting-screw *j*, attached to the projections *k* upon the barrel, as and for the purposes specified.

3. The screw *n'*, for compensating the wear of the lower catch bolt *n*, as above specified.

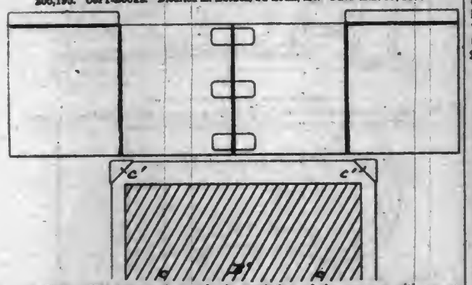
206,194. ICE-LOCOMOTIVES. Henri Leinè, Paris, France. Filed June 5, 1878.



Claim.—1. The horizontal disk B, supported and guided in the frame A and turning on its vertical axis C, in combination with the horizontal shaft D and driving-wheel E, provided with teeth W, and with the driving-gear, consisting of the pulleys M and N, gear-wheels H and G, and pulleys F and L, arranged to operate substantially in the manner and for the purpose described.

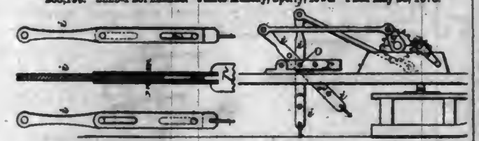
2. In combination with a driving-wheel, E, provided with teeth W, the wheel provided with arms or teeth V, arranged to operate in the manner and for the purpose substantially as set forth and specified.

205,195. COPY-BOOKS. Diedrich H. Lockau, St. Louis, Mo. Filed Mar. 20, 1878.



Claim.—The improved copy-book consisting of the wrapper with one or more pockets, as shown and described, having the slant lines *c*, the tips *c'*, and the book of pages B, all arranged in the manner and for the purposes set forth.

205,196. SLED-PROPELLERS. James Mahedy, Sperry, Iowa. Filed May 23, 1878.



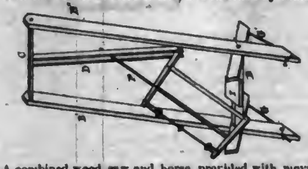
Claim.—1. The sleeves *m*, having a limited movement, in combination with the propelling-levers *i*, substantially as shown.

2. The combination of the levers *i*, rod *o*, and levers *r*, substantially as described, whereby the motion of the vehicle is reversed.

3. The combination of an operating mechanism, connecting-rods, levers *i*, sleeves *m*, rod *o*, and levers *r*, substantially as set forth.

205,197. DRAG-SAWS. Frank Mayrhofer, Delphos, Ohio, assignor to H. P. Eyssenbach. Filed Oct. 13, 1877.

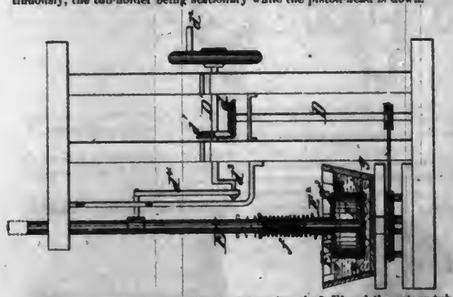
Brief.—The buck-saw has its teeth reversed from their usual cutting position. The buck can be closed more or less, and fastened by chains.



Claim.—A combined wood saw and horse, provided with movable standards B' B'', beam C, parallel frames D, protection-cap I, chains G G', and guard F, substantially as shown, and for the purpose herein described and set forth.

205,198. WASHING-MACHINES. Robert E. McCauley, Apollo, Pa., assignor of one-half his right to David D. Lloyd, same place. Filed July 17, 1877.

Brief.—The tub-holder is rotated intermittingly by means of a segmental gear-wheel and connecting mechanism, while the piston is reciprocated continuously, the tub-holder being stationary while the piston-head is down.



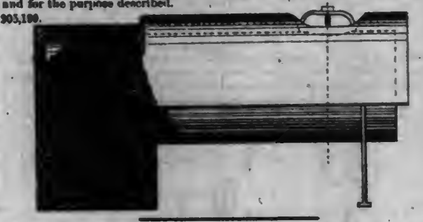
Claim.—The combination of the reciprocating shaft E' and the rotary tub-holder with the shafts D' D, pitman d^3, crank d^2, and beveled and mutilated gearing and connecting mechanism, substantially as described, whereby the tub-holder is intermittingly rotated between the strokes of the piston, as and for the purpose described.

205,199. BOILER-COVERINGS. Isaac L. Merrell, San Francisco, Cal. Filed Oct. 22, 1877.

Claim.—1. A covering for boilers, steam-pipes, or other steam and heat conductors, consisting of a matting or layer of dry fibrous or pulverised asbestus, secured in place around the same by a wire-netting or skeleton frame, said frame being covered by an external shell of plastic material, substantially as and for the purpose specified.

2. A covering for steam-boilers, consisting of a matting of dry fibrous or pulverised asbestus, a wire-netting or skeleton-frame, and external shell of plastic material, and a metal guard-strip around the man-hole, connecting the wire of the netting or frame with the edge of the opening, substantially as and for the purpose described.

205,199.



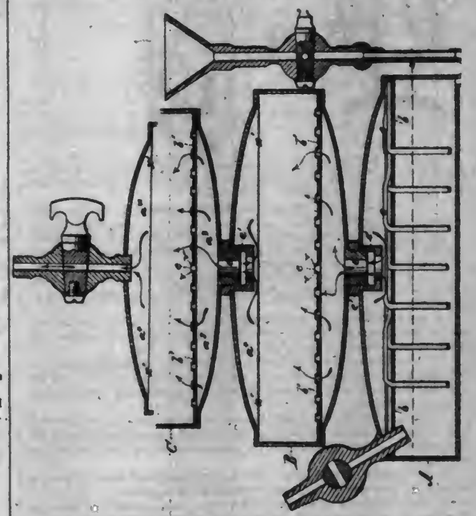
205,200. MANUFACTURE OF BOOTS. Wm. R. Miller, Baltimore, Md. Filed June 3, 1878.



Claim.—The seam of a boot protected by a stay-strip, one side of which is secured in the seam which unites the parts of the upper together, the other side being folded over the seam and stitched to one of said parts, substantially as shown and described.

205,201. CARBURETERS. Wm. Mershouse, Buffalo, N. Y. Filed Mar. 1, 1878.

Brief.—Gas is carbureted and passed up through layers of granulated charcoal, powdered charcoal, and air-slaked lime. A small quantity of sulphuric acid and lime is mixed with the carbureting-liquid.



Claim.—1. A carbureting-chamber provided with a single and central supporting-screw socket, *c'*, and a tubular screw, *c*, as a means whereby one chamber of a carbureter can be united to another, the gas conducted from one chamber to another, and an abutment provided between united chambers, substantially as described.

2. The combination of a perforated disk, *b'*, with a carbureting-chamber made with a convex top, or both a convex top and bottom, which permit a diffusion or spreading of the gas, and provided with a central screw tube and socket, by which the chambers of a carbureter may, by turning them around horizontally, be readily united or separated, the central tube and socket serving as the channel by which the chamber is filled or cleaned out, and through which the gas flows from one chamber into another of a carbureter, substantially as described.

3. A column of carbureting-chambers, which have, respectively, an arched bracing top and intermediate tubular abutments, which serve as central connections and channels for the flow of gas from one chamber into another, substantially as described.

4. In a carbureting apparatus, a series of chambers, B C D, having convex tops and bottoms, in combination with a chamber, A, having a convex top, which chambers B C D A, from the bottom vessel upward, throughout the series, have their horizontal diameters diminished consecutively, substantially as and for the purpose described.

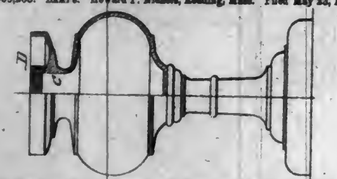
206,202. MATCH-BOXES. William A. Morse, Philadelphia, Pa. Filed May 25, 1878.

Brief.—After the metal is dipped into the enamel or glazing-liquid, and before the same is dried, a thin sprinkling of fine quartz is applied, and when the whole is thoroughly dried it is put into an enameler's oven and brought to a heat sufficient to vitrify the enamel, the quartz remaining solid and presenting a rough surface.



Claim.—A metallic enameled match mat or box with a rough or frictional surface, consisting of ground quartz held in position by the enamel, substantially as specified, and for the purpose set forth.

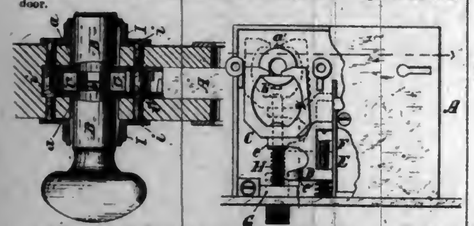
206,203. LAMPS. Howard P. Nichols, Reading, Mass. Filed May 23, 1878.



Claim.—The saucer or cup D, raised above the oil-reservoir and situated immediately below or about the neck C, and cast or formed integral with the said reservoir, substantially as and for purposes stated.

206,204. REVERSIBLE LATCHES. Milton C. Niles and Sidney S. Niles, Oak Park, Ill. Filed Apr. 3, 1878.

Brief.—By a screw in the face-plate the talons are thrown back to disengage them from the knob-shank. They are then drawn forward until the latch-bolt projects enough to be turned, so as to adapt it for a right or left hand door.



Claim.—1. The bolt-talons, in combination with a device arranged to be operated through the face-plate of the lock for adjusting the talons back and forth within the case, substantially as described.

2. The slide E, in combination with the adjusting-screw F and bolt-talons t, substantially as described.

3. The knob-shank B, in combination with the lock-case A, to the plates of which it is attached, and the bolt-talons C, adjusted in position by the movable slide D, substantially as described.

4. The lock-case A, provided with apertures *a*, having notches *a'*, in combination with the knob-shanks B, provided with the lugs *b'*, substantially as described.

5. The knob-shanks B, provided with lugs *b'*, in combination with the lock-case A, having apertures *a*, notched as described, and the adjustable bolt-talons C, substantially as described.

6. The casing G around the bolt-head on the inside of the face-plate, and provided with a notch, *g*, in its lower side, in combination with the slide D, provided with the projection *e* and the bolt H, arranged and operating substantially as described.

7. The knob-shank B, having a bearing in the lock-case A, and provided with a cam, *b*, in combination with the talons C and a movable slide within the case, whereby the talons are adjusted in relation to the cam *b*, substantially as described.

8. The roses I, in combination with the lock-case A and screws *i*, passing through the door into the lock-case, substantially as described.

9. The knob-shank B, provided with a lug, *b'*, and a shoulder adjacent, as described, in combination with the lock-case A, substantially as and for the purpose set forth.

10. The face-plate, in combination with the slide D, the screw F, and the spring *f*, arranged around the screw between the slide and face-plate, whereby the screw is prevented from turning in the face-plate by accident, substantially as described.

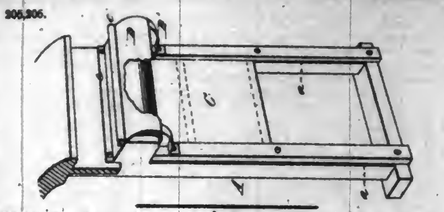
11. The lock-case A, in combination with the knob-shank, B, provided with a lug, *b'*, for attaching to the case, and the roses I, whereby the parts are held from displacement, substantially as described.

206,205. STREET-CARS. William H. Paige, Springfield, Mass. Filed Apr. 4, 1878.

Claim.—1. The curtain C, arranged to be moved up and down freely, and provided on each vertical edge with a flexible rib, *c*, in combination with the grooves *a*, made wider in the main part than at the side entrance, so that the rib will be permitted to move up and down freely in said groove, and yet will be prevented from being pulled out of said groove in a horizontal direction, substantially as described.

2. The combination of the gutter *e* with the piece *a'*, made thereon, and the part D, the whole attached to the car above the openings, and serving as a water-conduit and a housing or covering for the protection of the curtains and rollers, all substantially as described.

206,206.



206,206. OPEN RAILWAY-CARS. William H. Paige, Springfield, Mass. Filed Apr. 4, 1878.



Claim.—The combination, in an open railway-car, of the metal frame B, the panel A, and the post D, all constructed, arranged, and secured substantially as herein described.

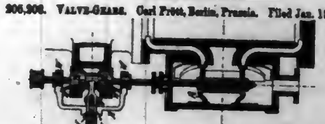
206,207. COMBINED BUTTONER AND BUTTON-FASTENER. Lewis H. Parker, Littleton, N. H., assignor of one-half his right to Ira Parker, same place, and George M. Glazier and Charles T. Lincoln, Boston, Mass. Filed Feb. 25, 1878.

Brief.—An elastic loop is attached to the shank of the button, which is used as a buttoner, and, after the operation of buttoning, as a fastener or lock for the button.



Claim.—As an improved article of manufacture, a combined buttoner and fastener, constructed as described, and consisting of a suitable button and the diverging elastic loop C, substantially as specified.

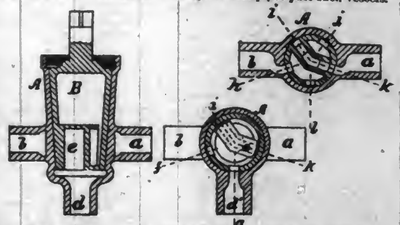
206,208. VALVE-GEARS. Carl Pfost, Berlin, Prussia. Filed Jan. 18, 1878.



Claim.—The combination of the stirrup H, having inclined surfaces *f* and screw-shaped surfaces or cams W, the boxes B, having similar screw-shaped surfaces, the latch K, the lever H', and the vertically-movable wedge K', with the governor mechanism, the reciprocating valve, having an axial or rotary movement and valve-rod, the piston-cylinder, and the steam-chest, all constructed and arranged as and for the purpose set forth.

206,209. REVERSE-WAY COCKS. Elias B. Quick, Brooklyn, N. Y. Filed Mar. 27, 1878.

Brief.—The device governs and reverses the flow of liquids through filters, &c., or it may direct the flow through service-pipes past such vessels.



Claim.—1. The extra diametrical arrangement of the ports of *a* and *b*, in combination with the series of ports *h i j k l* and channel *e*, substantially in the manner and for the purposes described.

2. The combination of the shell A, having the four branches *a*, *b*, *d*, and *d'*, with the plug B, having the channel *e* and ports *f*, *g*, *h*, *i*, *j*, *k*, and *l*, arranged substantially in the manner and for the purposes described.

206,210.

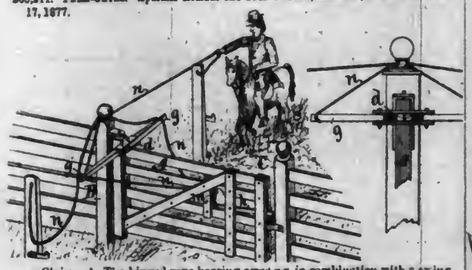


206,210. SIEVES. Merrick A. Richardson and Gordon M. Richardson, Chicago, Ill. Filed May 20, 1878.

Brief.—Wire bound in lower edge of hoop or some device forming ledge extending entirely around lower edge of hoop. Screen stretched taut by forcing strip between upper wire and lower wire or ledge.

Claim.—In combination with a sieve-hoop, A, having a ledge, D, around its lower edge, a wire, C, attached to the screen-bottom, and a narrow outer band, E, having an inward indentation, all applied substantially as and for the purpose specified.

206,211. FARM-GATES. Ephraim Romans and F. H. Romans, Indianola, Iowa. Filed Dec. 17, 1877.

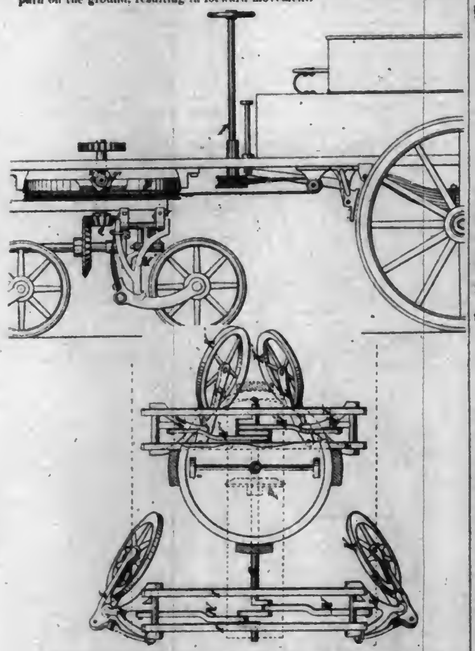


Claim.—1. The hinged rope-bearing arms *g g*, in combination with a swinging gate, A, substantially as and for the purposes shown and described.

2. The combination of the socket *d*, the hinged rope-bearing arms *g*, the gravitating-latch *h*, and the operating-ropes *n* with a swinging gate, A, substantially as and for the purposes shown and described.

206,212. ROAD-LOCOMOTIVES. John B. Root, New York, N. Y. Filed Oct. 27, 1877.

Brief.—In operation the arms move back and forth across the machine, and the wheels, which are attached thereto by a swivel-joint, describe a zigzag path on the ground, resulting in forward movement.



Claim.—1. In combination with a vehicle or traction-engine, a propelling-wheel or other device mounted upon a vibrating arm, so as to run upon the ground in directions diagonal to the general path of the machine, and changing alternately to the right and left, substantially as described.

2. In combination with a vehicle or traction-engine, a pair of propelling-wheels or other devices mounted upon vibrating arms, so as to run on the ground in directions diagonal to the general path of the machine, and to act against each other to steady the machine, substantially as described.

3. In combination with the propelling-wheels or other devices of the traction-engine or vehicle, the swivel-joint and spring by which they are attached to the vibrating arms, substantially as and for the purpose described.

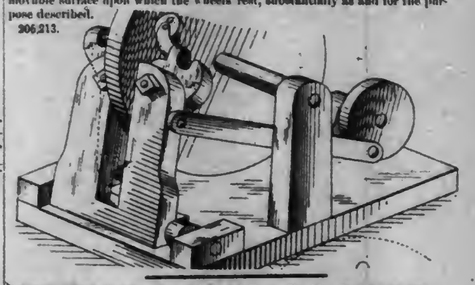
206,213. MECHANICAL MOVEMENTS. John B. Root, New York, N. Y. Filed Jan. 17, 1878.

Claim.—1. The combination of one or more vibrating arms or frames and a corresponding number of caster-wheels, or equivalent devices, mounted in such arms by means of spindles or axes inclined to the surface on which the wheels are designed to act, substantially as described.

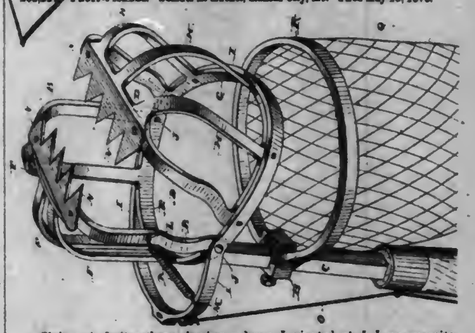
2. In combination with one or more vibrating arms and caster-wheels, or equivalent devices, mounted thereon, as set forth, springs or weights arranged to hold the casters in contact with the surface on which they are designed to act.

3. In combination with a movable surface and one or more vibrating arms attached to a stationary frame, a caster wheel or wheels, or equivalent devices, mounted in such vibrating arms by means of axes or spindles inclined to the movable surface upon which the wheels rest, substantially as and for the purpose described.

206,213.



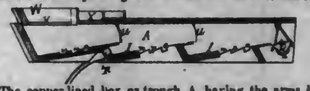
206,214. FRUIT-PICKERS. Samuel R. Ruckel, Kansas City, Mo. Filed May 15, 1878.



Claim.—A fruit-gatherer having a lever, I, pivoted at J J, on opposite sides of the stationary hand B, and provided with an operating-hand, D, as shown, the hands being provided with cutting-knives N N and semicircular bottom pieces E G, to allow the fruit to drop into the bag Q when clipped, the hands being held open by a spring, K, extending from a point, M, on the lever to a point, L, on the hand B, and operated by a cord, O, substantially as described.

206,215. AMALGAMATORS. Eli F. Russell, San Francisco, Cal. Filed May 3, 1878.

Brief.—When used as a dry amalgamator a blast of air is forced through the opening R.



Claim.—1. The copper-lined box or trough A, having the arms *b c*, supported on rollers *d d*, and having the grate V, hopper W, and chute X at its upper end, in combination with the crank-shaft J, pitman L, toothed wheel M, pinion N, and crank P, substantially as and for the purpose above described.

2. The copper-lined box A, mounted upon rollers *d d*, and having its bottom formed into inclined steps or shelves I I, the lower end of each shelf overhanging the upper end of the shelf below, each shelf being provided with the transverse depressions *n o*, in combination with the crank-shaft J, pitman L, toothed wheel M, pinion N, and crank P, substantially as and for the purpose above described.

3. The suspended quicksilver-troughs Q, having the central depressions *r* and side shelves or ledges *s*, and covered by the screen *t*, substantially as and for the purpose described.

4. The inclined copper-lined laterally-shaking box A, provided with the steps or shelves I I, and having the opening R in the upper riser, in combination with the amalgamated plates U, which are suspended across the box at the lower end of each shelf, substantially as and for the purpose specified.

5. The inclined copper-lined laterally-shaking box A, provided with the steps or shelves I I, and having the opening R in the upper riser, in combination with the blower and elastic or flexible tube, substantially as and for the purpose specified.

205,216. APPARATUS FOR RAISING WATER. P. J. Seybold, St. Louis, Mo. Filed Feb. 6, 1878.

Claim.—1. In an apparatus for raising water, the piston-head O, constructed with the sand-chamber on its upper side and the orifice P, in combination with the heavy-ended pivoted valve S R, for the purpose set forth.

2. In an apparatus for raising water, the piston-head O, constructed with the sand-chamber and the orifice P, in combination with the valve S R and the shaft D.

3. In an apparatus for raising water, the piston-head O, constructed with the sand-chamber and the orifice P, in combination with the valve S R and the hollow cylinder N, for the purpose set forth.

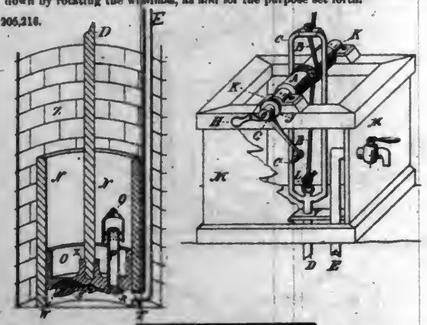
4. In an apparatus for raising water, the piston-head O, constructed with the sand-chamber, and the orifice P, in combination with the valve S R, the

hollow cylinder N, and the pipe E, for the purpose set forth.

5. In an apparatus for raising water, the combination of the piston-rod D, having the guiding-yoke at the top, with the windlass A inside the yoke, and having the locking device H J, rope B, coiled around the windlass and fastened to the piston-rod above and below the windlass, whereby the piston-rod can be forced up or down by rotating the windlass, substantially as described.

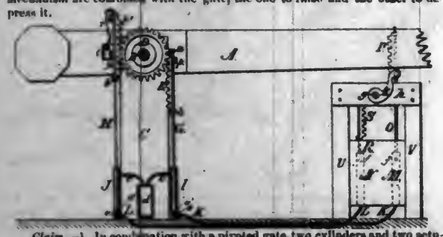
6. In an apparatus for raising water, the combination of the piston-rod D, the windlass A, and the rope B, coiled around it and fastened to the piston-rod above and below the windlass, whereby the piston-rod can be forced up or down by rotating the windlass, as and for the purpose set forth.

205,216.



205,217. GATE-OPERATING MECHANISMS. Albert M. Sherman, Natick, assignor to Stephen A. Jenks, Lincoln, R. I. Filed Feb. 18, 1873.

Brief.—Two actuating-pistons and cylinders and suitable intermediate mechanism are combined with the gate, the one to raise and the other to depress it.



Claim.—1. In combination with a pivoted gate, two cylinders and two actuating-pistons, connected by intermediate mechanism, substantially as described, whereby as the one is moved in one the other is thereby moved in the opposite direction, for the purpose set forth.

2. The combination of two cylinders, I and J, two pistons and rods, G and H, two rack-bars, E and F, and gear D, with a pivoted gate, substantially as described.

3. In combination with a pivoted gate, two pipes, K and L, two cylinders, I and J, and two pistons, connected together by intermediate mechanism, substantially as described, whereby they are simultaneously moved in opposite directions, for the purpose set forth.

4. The combination of the piston-rod H, rack-bar F, and pivoted check-hook *c* with the pinion D, substantially as and for the purpose set forth.

5. The combination of a stop with a piston-rod carrying a rack-bar, and the latter provided at its upper and lower ends with a lug, for the purposes set forth.

6. The combination of two force-pumps, M and N, two pipes, K and L, two cylinders, I and J, and their respective pistons, with a pivoted gate and intermediate mechanism, substantially as described, for operating the same.

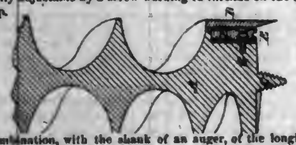
7. The combination of two force-pumps, M and N, two pipes, K and L, two cylinders, I and J, and their respective pistons and piston-rods G and H, two rack-bars, E and F, and gear D, with a pivoted gate, in the manner substantially as and for the purpose set forth.

8. The combination of the crank *k*, rock-shaft *g*, gear Q, rack-bars P and S, and piston-rods O and R, and their respective pistons or equivalent devices, pump-cylinders M and N, and pipes K and L, with cylinders I and J, and their pistons and piston-rods G and H, and the gate A, and intermediate mechanism, substantially as described.

9. The combination, with a tank, W, of two or more sets of force-pumps provided with mechanism, substantially as described, for operating the same simultaneously.

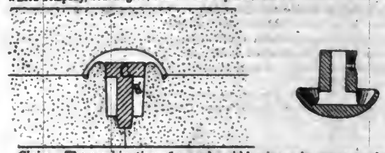
205,218. AUGERS. George F. Stearns, Forestville, assignor to himself and Richard J. Allyn, Hartford, Conn. Filed May 22, 1873.

Brief.—A cutting-lip inserted in a slot at the circumference of the twisted shank is longitudinally adjustable by a screw working in threads on the inner side of the sliding lip.



Claim.—The combination, with the shank of an auger, of the longitudinally-moving lip-slide D, having a thread upon its inner side, and the adjusting-screw E, engaging in said thread and turning in a socket in the shank, substantially as herein described.

205,219. CASTING DOOR-KNOBS. Enos E. Stow, Plantsville, assignor to Peck, Stow & Wilcox Company, Southington, Conn. Filed Apr. 25, 1873.



Claim.—The combination of a sand mold having only one core-print, which is arranged in the hub end thereof, with a core resting at one end in said print, and having at the other end a cross-arm, whose ends rest against the sides of the hub portion of the mold and inside of the knob portion, substantially as described, and for the purpose specified.

205,220. BALL-TARGETS. Nathan F. Turner, Brooklyn, assignor of one-half his right to Geo. H. Nellis, New York, N. Y. Filed May 20, 1873.



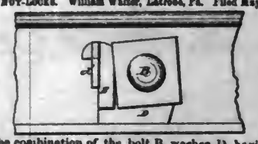
Claim.—An elastic target-ball made of rubber or other suitable elastic material, inflated or expanded and weighted, as set forth, and for the purpose specified.

205,221. HORSESHOES. Otto Von Ruville, Bruchsal, Baden. Filed Feb. 21, 1873.



Claim.—A horseshoe consisting of a plate of pliable metal, having tongues or lugs formed on its side edges, and an india-rubber or elastic tread-surface detachably retained between said lugs or tongues, as and for the purpose set forth.

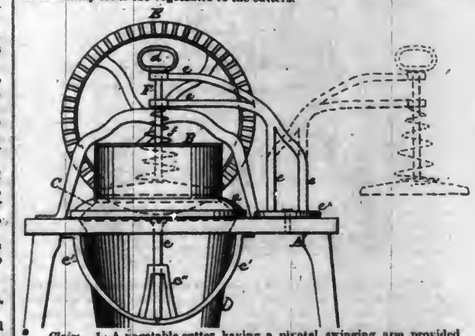
205,222. NUT-LOCKS. William Walter, Latrobe, Pa. Filed May 28, 1873.



Claim.—The combination of the bolt B, washer D, having the lip *d'*, nut C, and key E, having an inclined edge, substantially as shown.

205,223. VEGETABLE-CUTTERS. James Weatherbee and Isaac Mowder, Port Washington, Ohio. Filed Mar. 30, 1873.

Brief.—A pivoted swinging arm is provided with a sliding standard, which automatically feeds the vegetables to the cutters.



Claim.—1. A vegetable-cutter having a pivotal swinging arm provided with a sliding standard, having a follower arranged to automatically feed the vegetables to the cutters, substantially as and for the purpose set forth.

2. The double swinging brace-arms *c c*, constructed and attached to a plate pivoted to the table, and having the sliding standard F, provided with the handle *d*, follower *d'*, and spiral spring *f*, in combination with the revolving cutters *b b* and receiving-hopper B, substantially as described.

3. The combination of the pivotal swinging arms *c c*, sliding standard F, automatic follower *d'*, spring *f*, beveled gear-wheel C, revolving cutters *b b*, shaft *e*, cross-bar *c'*, brace *c''*, hopper B, covering *a*, beveled gear-wheel E, and hopper D, substantially as and for the purpose set forth.

205,224. BAKER AND ROASTER. Silas W. White, Pensacola, Fla. Filed May 22, 1873.

Claim.—1. In a baker and roaster, the pan A, having pivotally secured at

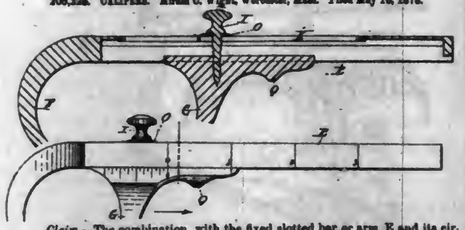
suitable points upon its upper surface the buttons *a*, in combination with the broiler B, consisting of the two bars C, having side flanges *d*, in which are cut the slots *b*, all arranged substantially as and for the purpose set forth.

2. As an improved baker and roaster, the cover *f*, provided with the double edge *h*, horizontal flange *i*, and convex plate *l*, in combination with the pan A, supplied with the pivotally-secured buttons *a*, and with the broiler B, having the side flanges *d* and slots *b*, substantially as set forth.

205,224.



205,226. CALIPERS. Hiram C. Wight, Worcester, Mass. Filed May 16, 1873.



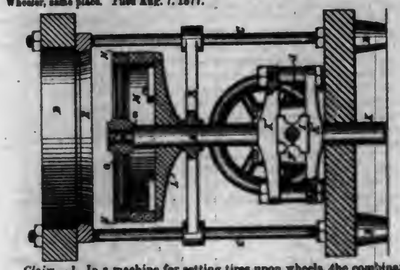
Claim.—The combination, with the fixed slotted bar or arm E and its circular jaw F, of the sliding part, upon which circular jaw G and hub or projection Q are formed, adjusting thumb-screw I, and adjustable spring-plate O, substantially as and for the purposes set forth.

205,226. DEVICES FOR FASTENING BARREL HEADS AND COVERS. Wm. I. Winne, Albany, N. Y. Filed Nov. 9, 1877.



Claim.—As a new article of manufacture, a device for securing the heads and hoops of barrels, consisting of a metallic bar, bent, as shown in the drawing, at 1, 2, and 3, to form the divisions *a*, *b*, *c*, and *d*, as and for the purpose herein specified.

205,227. TIRE-SETTING MACHINES. Benj. F. Young, Boston, Mass., assignor to Young & Wheeler, same place. Filed Aug. 7, 1877.



Claim.—1. In a machine for setting tires upon wheels, the combination of a bell-mouthed or tapering female die and a reciprocating follower, adapted to bear around the portion of its upper surface upon the rim of the wheel and the edge of the tire, and to pass freely through and substantially fill the smallest part of said die, substantially as described.

2. In a machine for setting tires, the combination of a tapering, open-mouthed, or ring die and a reciprocating follower, adapted to pass freely through and at the same time substantially fill the smallest parts of said die, and to bear around its outer edge upon the tire and the rim of the wheel, and provided with a support for the end of the wheel-hub, adapted to prevent a downward motion of said hub, substantially as and for the purposes described.

3. The combination of a tapering ring-die, a follower adapted to pass freely through and at the same time fill the smallest parts of said die, and to bear around its outer edge upon the edge of the tire, and to be reciprocated to force the tire through said die, and a central pin adapted to enter the hole in the hub to centralize the wheel, and provided with a shoulder, *a*, to support the hub while the tire is being set, and to prevent a downward motion of said hub, substantially as described.

4. The combination, in a machine for setting tires, of the tapering ring-die E, removably attached to the die-support D, the reciprocating piston L, ring-follower M, removably attached to said piston, and the centralizing-pin P and shoulder or hub support *a*, all arranged and adapted to operate substantially as and for the purposes described.

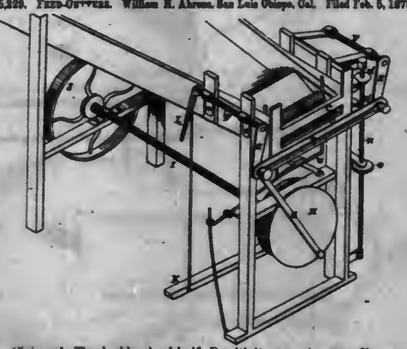
5. In a machine for setting tires on wheels, the combination of the tapering ring-die E, the ring-follower M, piston L, piston-rod K, provided with the yoke K', sliding box I, and shaft G, provided with the crank H, all arranged and adapted to operate substantially as and for the purposes described.

205,228. BOTTLE-STOPPERS. Alexandre E. N. Aguet, Paris, France, assignor to C. W. May, Firmbaber & Co., same place. Filed Mar. 28, 1873.



Claim.—The improved stopper formed of the screw-tapped cap or cover *f*, having holes *b* and the inwardly-turned lip *i* on its inner end, the tube *d*, having the screw-threaded head *c*, forming a circular rib or shoulder, with which the said lip engages when the cap is screwed out to open the discharge-orifice, as shown and described.

205,229. FEED-DUVICES. William H. Abrens, San Luis Obispo, Cal. Filed Feb. 5, 1873.



Claim.—1. The double-edged knife D, with its operating-arms E, mounted upon the shafts F, in combination with the arm L and treadle, substantially as and for the purpose herein described.

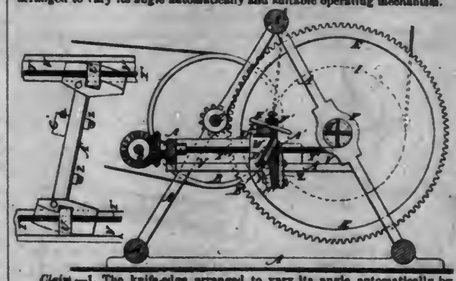
2. The knife D, with its operating-arms and treadle, in combination with the crank H, shaft I, and balance-wheel J to retain the momentum, substantially as herein described.

3. The feed-rollers B B', with their bevel-gears M M', and vertical shaft N, provided with the ratchet O and pawl P, in combination with the levers Q and operating-pins upon the wheel S, substantially as and for the purpose herein described.

4. In combination with the adjustable feed-roller B, with its standards and spring, the pinion M', with its sleeve slotted to receive the end of the roller-shaft and sliding upon the vertical shaft N, so as to be adjusted to the motion of the feed-roller, substantially as herein described.

205,230. MACHINES FOR CUTTING VENEERS. Leonard Anderson, Painesville, Ohio, assignor to himself and Charles A. Avery, same place. Filed Jan. 7, 1873.

Brief.—Either straight or tapering veneers for pails, buckets, &c., can be cut from logs of any size, without breaking or checking, by means of a knife arranged to vary its angle automatically and suitable operating mechanism.



Claim.—1. The knife-edge arranged to vary its angle automatically by means of the unequally-pitched screws T, sliding shoes W, and bar X, as shown and described, for the purpose specified.

2. The combination of the nuts V, the shoes W, the pressure-bar X, the knife-plate Y, and the knife A' with the bars V and the swiveled feed-screws T, whether the threads of the said screws have the same or a different pitch, substantially as herein shown and described.

205,231. DEVICES FOR UNLOADING HEADER-WAGONS. Nelson Archibald, Hanford, Cal. Filed May 16, 1873.

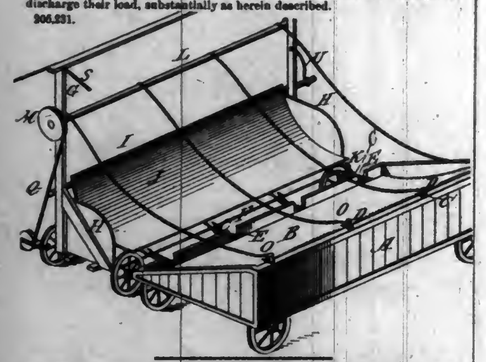
Claim.—1. The wagon A, with its netting B, in combination with the unloader F, with its netting J, fitted to be hooked to the netting B, said netting

being operated by cords from the transverse roller L of the unloader, substantially as shown, and for the purpose herein described.

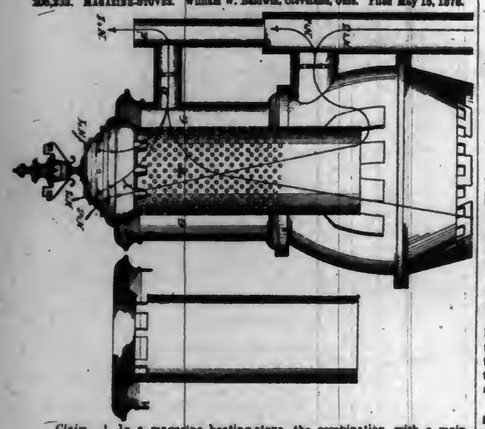
2. The unloader F, having the sides H and the adjustable back I, supporting the netting and capable of being raised or lowered to suit the height of the stack, substantially as herein described.

3. The unloader F, with its netting J, capable of being joined to the netting B, said unloader being provided with the elevated transverse roller L, with its pulley M and operating-rope Q, by which to raise the nettings and discharge their load, substantially as herein described.

206,231.



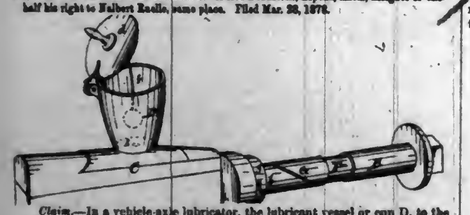
206,232. MAGAZINE-STOVES. William W. Baldwin, Cleveland, Ohio. Filed May 15, 1878.



Claim.—1. In a magazine heating-stove, the combination, with a main smoke-flue provided with the described upper and lower cross-flues, of a perforated fuel-reservoir having a lid or top provided with air-openings, and a perforated stove-crown, substantially as set forth.

2. In a magazine heating-stove, the combination, with the main smoke-flue provided with upper and lower cross-flues connecting therewith, as described, of a perforated fuel-reservoir, having a lid or top which is provided with the inverted conical tubes depending through openings therein, and the perforated stove-crown, substantially as set forth.

206,233. VEHICLE-AXLE LUBRICATORS. Alfred Bennedell, Alpena, Mich., assignor of one-half his right to Halbert Radle, same place. Filed Mar. 26, 1878.



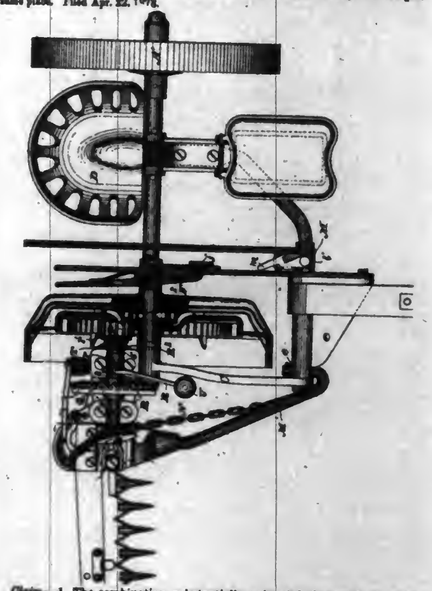
Claim.—In a vehicle-axle lubricator, the lubricant vessel or cup D, to the lid of which is hung a ball-valve, *a*, covering the passage *c*, leading from the bottom of said cup, and having a transversely-arranged branch passage, *b*, with which communicates or connects a spiral groove or passage, G, terminating in an annular depression or groove, F, all arranged in connection with an axle, substantially as shown and described, for the purpose set forth.

206,234. BARBED FENCE-WIRES. Frank Billings, Cleveland, Ohio. Filed May 27, 1878.



Claim.—The combination of the main strands or wires A A' with the barbs B B', the short barb-wire B being bent and wound around and embracing one of the main strands A and the central part of the barb B', while the other or longer barb-wire, B', is bent and wound around and embraces both the main wires A A' and the other barb-wire, as shown and described.

206,235. HARVESTERS. Joseph Bordwell, Brockport, N. Y., assignor to Dayton S. Morgan, same place. Filed Apr. 22, 1878.



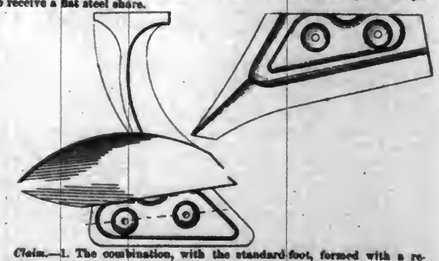
Claim.—1. The combination, substantially as hereinbefore set forth, of the main frame, the cranked rock-shaft mounted in bearings at the front of the main frame, and crossing it transversely to and beneath the tongue in advance of the driving-wheel, the lifting-lever secured to one end of the rock-shaft, the chain secured to the crank at the outer end of the rock-shaft outside the main frame, the pulley on the gearing portion of the main frame, outside the driving-wheel and above the shoe, over which pulley the chain passes, and the hinged cutting apparatus.

2. The combination of the frame-bar C, the bent frame-rod C', the down-hanger *e*, the bracket M, the cranked rock-shaft mounted in bearings beneath the heel of the tongue in said down-hanger and bracket, the lifting-lever at the inner side of the tongue, and a flexible connection between the crank of the rock-shaft and the cutting apparatus, these members being constructed and operating substantially as hereinbefore set forth.

3. The combination of the driving-wheel, the main internally-toothed gear, the gearing-supporting portion of the main frame outside the driving-wheel, the counter-shaft, the shifting pinion movable endwise thereon, and at all times meshing with the main gear, the stop on the counter-shaft and interlocking with the pinion, the endwise-moving clutch-rod engaging the pinion, the weighted shifting-lever, its slotted collar turning above the clutch-rod between its supporting-brackets, the pin on this clutch-rod engaging the slot in the lever-collar, the bevel-pinion on the counter-shaft, the upright crank-shaft, and its pinion, these members being constructed and operating substantially as hereinbefore set forth.

206,236. PLOWS. Nelson F. Bowsher, South Bend, Ind. Filed Nov. 16, 1877.

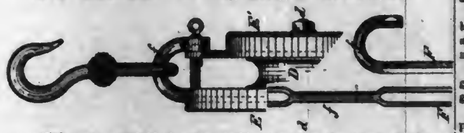
Brief.—The standard formed with depressed and elevated parts to fit corresponding shapes in the cast-iron share, and with a lever-bearing at its edges to receive a flat steel share.



Claim.—1. The combination, with the standard-foot, formed with a recessed bearing-face, having raised projections about its bolt-holes within said recessed face, of the plow-point whose inner surface is made with a projection the counterpart of the recessed face of the standard-foot, and which is also formed with recesses about its bolt-holes corresponding to the raised projections on the standard-foot, the whole being adapted to interlock and bring the standard-foot and plow-point into contact with each other at all points, substantially as set forth.

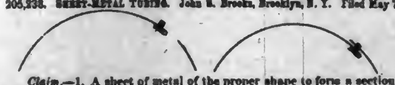
2. The combination, with the standard-foot A', made with the recess E, extending over its entire bearing-surface except at the edges thereof, and having the annular projections *b* formed about the bolt-holes thereon, of the plow-point C, whose inner surface is made with the projection F, having the annular recesses *e* formed about its bolt-holes, said projection F and recesses *e* being adapted to interlock with the counterpart recess E and projections *b*, formed on the standard-foot, substantially as set forth.

206,237. SNATCH-BLOCKS. Thos. J. Bray, Pittsburg, Pa. Filed Dec. 13, 1877.



Claim.—In snatch-blocks, the combination, with the blocks E E' and sheave D, of the strap F, formed of channel-iron, swaged into round section at *f*, and bent into a semicircle, substantially as described.

206,238. SHEET-METAL TUBING. John S. Brooks, Brooklyn, N. Y. Filed May 7, 1878.



Claim.—1. A sheet of metal of the proper shape to form a section of tube, provided with a row of rivets permanently secured in one edge, their shanks or bodies passing through but one thickness of metal, and a row of corresponding or coincident perforations in the opposite edge, substantially as set forth.

2. A partly-made tube consisting of a sheet of metal cut to the proper shape, having a row of rivets passing through perforations in one edge, and permanently held in place, and a coincident row of rivet-holes in the opposite edge, so that the tube may be completed by lapping the opposite edge over the rivets, passing the rivets through the holes, and heading them down, substantially as set forth.

3. In a sheet-metal tube, the method of holding the rivets in place before riveting the two edges together, the same consisting in embracing or clasping the rivet-head between two folds of the sheet, while the shank of the rivet projects through one of the folds, substantially as set forth.

206,239. CARPENTERS' VISES. Emmett H. Brower, Carson City, Mich. Filed Nov. 27, 1877.

Brief.—When the stops are turned down so that the short levers lie on the jaw, the movable jaw will oscillate horizontally, so as to hold tapering objects. When the short levers are turned outward from the jaw, and their stops are against the projections on the washer, the movable jaw is held parallel with the rigid jaw.



Claim.—1. In a carpenter's vise, one or both jaws provided with an adjustable face-plate composed of the bed-pieces S, side plate P, top plate R, and rods *s* and *t*, substantially as described.

2. In a carpenter's vise, the loose jaw A, provided with the plate H, having central slot N, shoulder *o*, and movable stops *i* and *j*, in combination with the projections on the washer J of the screw F, substantially as and for the purpose specified.

206,240. TOY PISTOLS. Julius Brauer, Morrisania, N. Y. Filed May 24, 1878.

Brief.—The caps are placed in grooves or recesses formed in the faces of the arms of the wheel. The wheel is rotated by pulling the arm projecting through the bottom of the frame, and when the hammer slips past the arm by which it has been raised it falls upon the cap carried by the next arm and explodes it.



Claim.—1. In a toy revolver, the star-wheel C, having the undercut paper-retaining lips *b*, substantially as herein shown and described.

2. The combination, in a toy revolver, of the star-wheel C and the spring-hammer B, substantially as shown and described.

206,241. MACHINES FOR FLANGING BOILER-HEADS. Loudon Campbell and James F. Richards, Pittsburg, Pa. Filed Apr. 27, 1878.

Brief.—The heated plate is secured in a revolving clamp, and its edge is bent upward against a revolving resisting-roller by a vertically-moving revolving former. The former and resisting-roller are peculiarly constructed, and each may be adjusted either vertically or horizontally, as required. The mechanism for vertically feeding the former is an improvement on that described in Letters Patent No. 201,525, issued to patentees March 19, 1878; and the improvement consists in notching the loose cam-collar, and in pivoting to one side of the arch-piece a catch-bar, which normally gravitates toward said collar and enters its notch, holding the collar stationary, and permitting the pawl on the fixed collar of the feed-screw to engage, at certain intervals, with the notched head of said screw. The upward movement of the former is continued until the catch-bar is withdrawn from the notch in the loose collar by a pawl operated by a stud on the fixed collar of the former-shaft.

Claim.—1. In a flanging-machine, the combination, with revolving table P and a rest, *c*, for the plate, of the vertical pressure-roller *c'*, having positive independent motion, and a revolving former, *c*, having positive independent motion and capable of vertical feed, substantially as described.

2. In a flanging-machine, the combination, with revolving table P and a rest, *c*, for the plate, of the vertical pressure-roller *c'*, having positive independent motion and capable of lateral adjustment, and a revolving former, *c*, having positive independent motion and capable of both vertical and lateral adjustment, substantially as described.

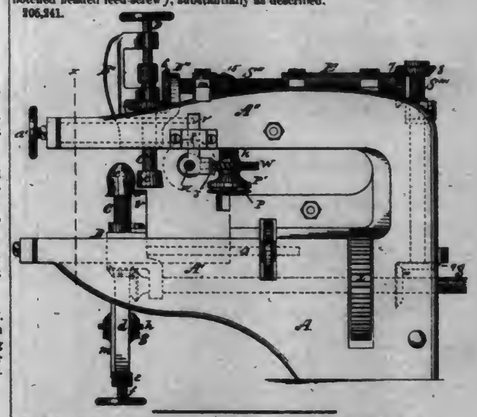
3. In combination, a revolving former, *c*, and a vertical pressure-roller, *c'*, having its periphery axially inclined, the pressure-roller *c'* being so inclined, substantially as described, as to bear upon a plate only on that side of its axis next to the former *c*, as and for the purpose shown.

4. The combination of presser-foot P' with its shaft S', collared and grooved, as shown, threaded sleeve *k*, shears A'', splined gear 11, pinion 12, gear 14, spur 15, and shaft S'', as described.

5. The combination of sleeve *k*, shears A'', worm-wheel W, worm-shaft *w*, plate *s*, sliding bearings *r*, and brackets *t*, substantially as specified.

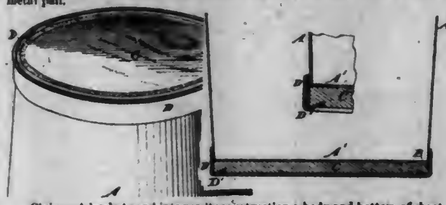
6. The combination of notched loose collar *h*, fixed collar *g*, with the described stud on its upper surface, pivoted pawl *n*, having detent *o*, pivoted catch-bar *m*, having notch for the detent, with the shaft C, former *c*, and notched headed feed-screw *f*, substantially as described.

206,241.



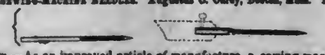
206,242. METAL BUCKETS. Marvin Campbell, South Bend, Ind. Filed May 6, 1878.

Brief.—An extra metal-bound wooden bottom is attached to an ordinary metal pail.



Claim.—A bucket combining in its construction a body and bottom of sheet metal, below which a flange, B, extends, which is an extension of the body, a wooden bottom, C, having an annular rabbet cut in its lower face around the rim, and a ring, D, which is soldered at the top to the body A, and its lower edge being at the top and turned down over the edge of the wooden bottom into the annular rabbet, substantially as set forth.

206,243. SEWING-MACHINE NEEDLES. Augustus G. Carey, Boston, Mass. Filed Feb. 12, 1878.



Claim.—As an improved article of manufacture, a sewing-machine needle provided at or near its shank with a thread-cutting edge, to operate substantially as and for the purpose described.

206,244. PILE-DRIVERS. George H. Cavanagh, Boston, Mass. Filed May 23, 1878.

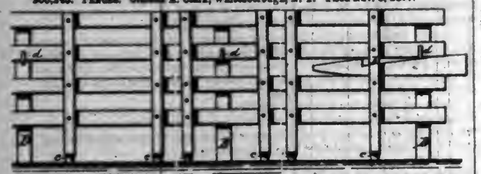
Brief.—The fixed guideways have grooved or dovetailed into their inner faces adjustable guideways, which can be slid downward after the pile has been driven below the end of the fixed guideways, so as to continue the driving.



Claim.—1. In a pile-driver, an extensible guideway adapted to be projected or extended below the platform or frame, substantially as and for the purpose described.

2. The uprights *b b*, combined with a vertically-adjustable guideway, adapted to be lowered below the base of the driver, to permit the hammer to follow and operate upon the head of the pile to drive it below the level of the base, as may be desired.

206,245. FENCES. Orsemus A. Clark, Whitesborough, N. Y. Filed Nov. 8, 1877.



Claim.—1. As an improvement in the cross-pieces or panel-supports *b*, the pointed metal plate *c*, attached to the lower end thereof, substantially as and for the purpose set forth.

2. The combination, with the fence-panels, constructed substantially as described, and the posts D, having hooks *d*, of the wedges G, substantially as and for the purpose herein set forth.

206,246. BOBBINS. John H. Crowley, Manchester, England. Filed Mar. 28, 1878.

Brief.—A metallic ferrule having lugs or notches for engaging with bobbin-wheel is fitted to base of the bobbin by means of the serrations on its upper edge being bent into the V-shaped recess at lower end of said bobbin.



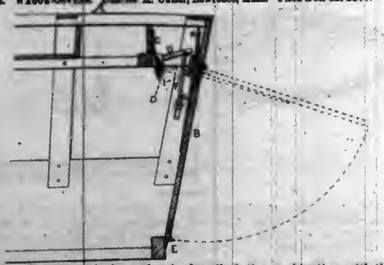
Claim.—The combination, with the bobbin having collar *b* and notch *c*, of the ferrule B, having serrated edge *d* and shoulder *e*, as shown and described.

206,247. MUCILAGE-BOTTLE STOPPERS. Henry T. Cushman, North Bennington, assignor to Henry C. Babcock and Nathan O. Wilcox, Bennington, Vt. Filed Mar. 11, 1878.



Claim.—A bottle-stopper constructed of appropriate material, as described, tipped with an elastic, porous, or spongy material capable of being saturated with the contents of the bottle, having one or more ducts for the free access of the contents to the tip, and the upper portion thereof projecting above the top of the mouth of the bottle, for the purposes described, in combination with a close cap adapted to fit said projecting portion, all substantially as described and set forth.

206,248. WAGON-COVERS. Charles H. Cutler, Lawrence, Mass. Filed Dec. 12, 1877.



Claim.—In a wagon-body, as herein described, the combination, with the body A and door or cover B, of the spring C, the rod D, the rods or wires E F, the knobs G G, the lever H, and fulcrum *i*, in a manner and for the purpose substantially as described.

206,249. NECK-YOKE ADJUSTERS. John Dalton, Benches, Wis. Filed Mar. 26, 1878.



Claim.—The herein-described neck-yoke adjuster, composed of the hoop or clevis B, having roller D, pivoted in the projecting ears C C, made in one piece with and projecting from the sleeve-shaped breast-strap support A A, in combination with the neck-yoke hook, consisting of the tubular part or sleeve E and semicircular upwardly-curved hooked arm F, partly encircling sleeve E, and having bulging part or shoulder *f*, substantially as and for the purpose herein set forth.

206,250. PICTURE-FRAMES. Alex. S. Davis, Jersey City, N. J., assignor of one-half his right to George M. Law, New York, N. Y. Filed Apr. 23, 1878.

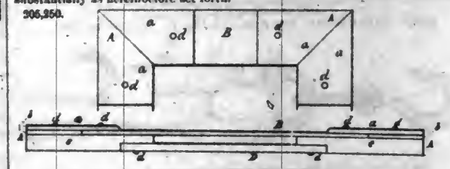
Brief.—The corner and side pieces are separate, and may be arranged to fit different sizes of pictures.

Claim.—1. As a new article of manufacture, the corner-piece A, composed of the parts *a a b c*, constructed and adapted to receive the stripe B B, substantially as hereinbefore set forth.

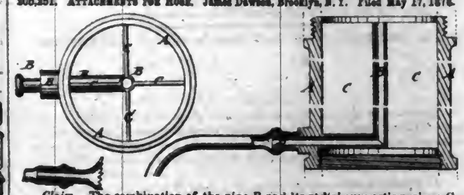
2. The picture-frame hereinbefore described, consisting in its construction the corner-pieces A A, composed of the parts *a a b c* and the stripe B B, as and for the purpose set forth.

3. The combination of the corner-pieces A A, stripe B B, and the piece D, substantially as hereinbefore set forth.

206,250.

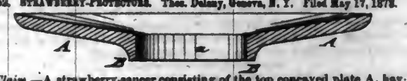


206,251. ATTACHMENTS FOR HOSE. James Downes, Brooklyn, N. Y. Filed May 17, 1878.



Claim.—The combination of the pipe B and its radial supporting-wings C with the tube A of the hose coupling or nozzle, for introducing liquid chemicals into the stream of water passing through the said hose or nozzle, substantially as herein shown and described.

206,252. STRAWBERRY-PROTECTORS. Thos. Delmy, Geneva, N. Y. Filed May 17, 1878.



Claim.—A strawberry-saucer consisting of the top concaved plate A, having downward flange B and central aperture *a*, as shown and described.

206,253. MANUFACTURE OF HYDRAULIC CEMENT. John Dimslow, Austin, Tex., assignor to Thorsen Martin, same place. Filed June 3, 1878.

Claim.—1. The mode of preparing hydraulic cement from rotten, decomposed, or refuse limestone or marble and the deposit of rivers, by burning the refuse limestone or marble, mixing it with the deposit of rivers, soaking the mixture in water, grinding it, sifting it, evaporating the water, cutting or molding it into blocks, drying them, burning them in a furnace, and grinding them to powder, substantially as herein set forth and described.

2. A hydraulic cement formed of rotten, decomposed, or refuse limestone or marble and the deposit of rivers, in about equal proportions, substantially as herein set forth.

206,254. SEWING-MACHINE SHUTTLES. William T. Elliott, Orange, Mass. Filed Nov. 3, 1877.

Brief.—The forward end of the bobbin-spindle or the bobbin-disk is formed with a groove, in which engages the arm of a small spring-lever mounted in the forward end of the shuttle, and retains the bobbin in place.

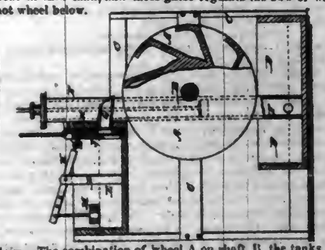


Claim.—1. The combination, in a sewing-machine shuttle, with the body and spring-lever, of the spindle provided with disks, to constitute a bobbin, also with an annular groove, and with a point, *c*, that works in a hole at the forward end of said body, as shown and described, for the purpose specified.

2. The combination, with the spindle and its disks and the spring-holder therefor, of the body of the shuttle, having the parallel longitudinal slots, and a flattened portion, forming one side of an angular projection or rib having slits a^2 a^3 a^4, to receive the thread, and the flat pivoted spring B, all as shown and described.

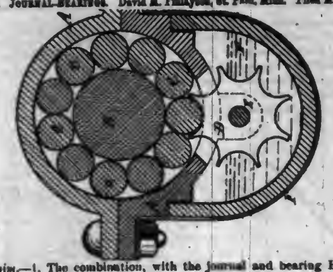
206,255. MACHINES FOR STORING THE POWER OF WIND-ENGINES. Martin Everhart, Fort Worth, Tex. Filed Apr. 1, 1878.

Brief.—Water is pumped by a wind-engine from a lower into an upper tank. In the upper tank are two gates, one of them operated automatically by a float in said tank, and these gates regulate the flow of water upon the overshot wheel below.



Claim.—The combination of wheel A on shaft B, the tanks D E, and the wind-pumps F, the tank E being provided with gates H J, operating as and for the purpose specified.

206,256. JOURNAL-BEARINGS. David M. Finlayson, St. Paul, Minn. Filed May 14, 1878.

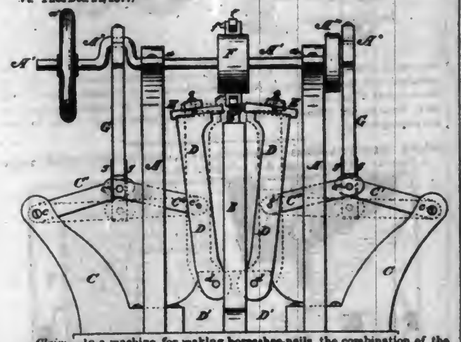


Claim.—1. The combination, with the journal and bearing B A, of the series of rollers C, surrounding the journal, and interposed between its surface and that of the inside of the bearing, said roller being kept in axial line with the journal by the lubricating-pinion D, mounted in bearings E in the oil-box F, substantially as and for the purpose set forth.

2. The pinion D, in combination with the rollers C, the journal B, and the bearing A, to keep the rollers parallel with the axis of the journal, substantially as specified.

3. The pinion D, in combination with the oil-box and the rollers C, for the purpose of lubrication, substantially as specified.

206,257. HORSESHOE-NAIL MACHINES. John P. Flanders and Nelson W. Goodrich, Vergennes, Vt. Filed Dec. 24, 1877.



Claim.—In a machine for making horseshoe-nails, the combination of the revolving shaft A', having cranks or eccentrics A'' A'', revolving stock F, and drawing-rollers *f f*, pitmen G G, needle-pins X X, provided with projecting pins *c''* *c''* and *x x*, bifurcated and pivoted arms C' C' and C'' C'', with the pivoted and vibrating hammer or edger stocks D D, having the edger-hammers E E, constructed, arranged, and operating substantially as described.

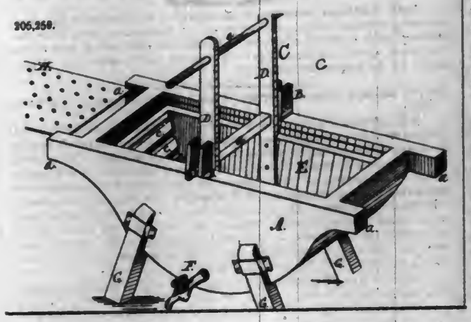
206,258. DEVICES FOR HOLDING COILS OF BRAID AND SIMILAR ARTICLES. Simon B. Fletcher, Philadelphia, Pa. Filed May 31, 1878.



Claim.—1. The frame for packing up braid coils, having sides C C, which pass across the diameter of the coil, and being connected together at the periphery, with end pieces C' C', with or without slots *d d*, in combination with the bobbin or pin, all adapted to hold the braid in place, substantially as described.

2. A device for putting up flat coils of braid, consisting of supporting ribs strips F, with or without diverging radial arms, having notches *f*, in combination with an exterior surrounding band and central bobbin or pin, all adapted to hold the braid in place, substantially as described.

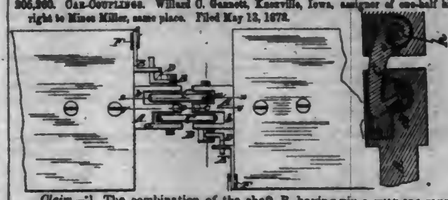
206,259.



206,260. CONVERTIBLE CLOTHES-BOILER AND WASHING-MACHINE. Joel B. Franklin, White Pine, Tenn. Filed Apr. 23, 1877.

Claim.—The convertible boiler and washing-machine consisting of the metallic vessel A, having a corrugated bottom, detachable legs G, perforated sliding plate H, rocker C, and slotted standards B, said vessel A, with its perforated plate, when the rocker and legs are detached from it, having the requirements of an independent boiler, as and for the purpose set forth.

206,260. CAR-COUPLINGS. Willard C. Garnett, Knoxville, Iowa, assignor of one-half his right to Minor Miller, same place. Filed May 13, 1878.



Claim.—1. The combination of the shaft B, having pin *e*, with the coupling-hook C, having perforation *b* and recess or slot *i*, of greater width than the pin *e*, substantially as and for the purpose set forth.

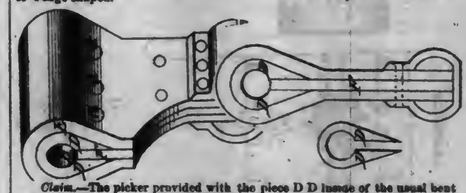
2. In a car-coupling, the combination of the partially-rotating shaft B, having notch *d*, with the coupling-hook C, when arranged and operating substantially as herein described, for the purpose set forth.

3. The partially-rotating shaft B, having notch *d*, coupling-hook C, and crank D, in combination with the slotted lever E, having arm F, substantially as herein described, for the purpose set forth.

4. As an improvement in car-couplings, the draw-head A, having recesses *a b*, in combination with the shaft B, having notch *d*, coupling-hook C, and crank D, and the lever E, having arm F, all arranged and operating substantially as herein set forth, for the purposes shown and specified.

206,261. LOOM-PICKERS. James G. Garland, Biddeford, Me., assignor to the Loom Picker Company, same place. Filed July 27, 1877.

Brief.—The rod-head is strengthened by the insertion of a piece of rawhide or other suitable material, the edges of which may or may not be chamfered or wedge-shaped.



Claim.—The picker provided with the piece D D inside of the usual bent or doubled-over hide, forming the rod-head, and extending into the web, substantially as shown and described.

206,262. FEED-COOKERS. Chas. Gorton, Salem, Ohio. Filed Apr. 17, 1878.



Claim.—1. In a feed-cooker or steam-generator, the combination, with an upright fire-box, of a cylinder adapted for burning wood, and an innermost magazine adapted, in the manner described, for burning coal, said magazine being disconnectedly supported within the wood-burning cylinder, substantially as set forth.

2. In a feed-cooker or steam-generator, the combination, with an upright fire-box, of a cylinder adapted for burning wood, and an innermost magazine adapted, as described, for burning coal, said magazine being disconnectedly supported upon a ring-piece which is secured to the lower extremity of the wood-burning cylinder, substantially as set forth.

3. In a feed-cooker or steam-generator, the combination, with an upright fire-box, of a cylinder adapted for burning wood, and an innermost magazine adapted, as described, for burning coal, said magazine being disconnectedly seated in an annular shoulder formed on a ring-piece, which latter is secured to the lower extremity of the wood-burning cylinder, substantially as set forth.

4. In a feed-cooker or steam-generator, the combination, with an upright fire-box, of a cylinder adapted for burning wood, and an innermost magazine adapted, as set forth, for burning coal, said magazine being disconnectedly seated in an annular shoulder formed on a cast-iron ring, which latter is secured to the lower inner side of the wood-burning cylinder, substantially as set forth.

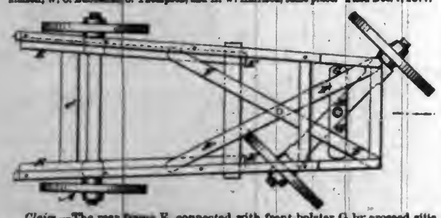
5. In a feed-cooker or steam-generator, the combination, with an upright fire-box, of a wood-burning cylinder and a coal-burning magazine, the latter made with a flaring or conoidal base and suitable draft-openings, and being

disconnectedly supported within the wood-burning cylinder, substantially as set forth.

6. In a feed-cooker or steam-generator, the combination, with a suitable boiler or vessel, of a removable upright fire-box adapted to permit the boiler-water to pass beneath its bottom, said fire-box being also provided with a cylinder adapted for burning wood, and a magazine adapted for burning coal, said magazine formed with a flaring or conoidal base having draft-openings, and disconnectedly supported upon a shouldered ring, which latter is secured to the interior of the lower extremity of the first and outer cylinder, substantially as set forth.

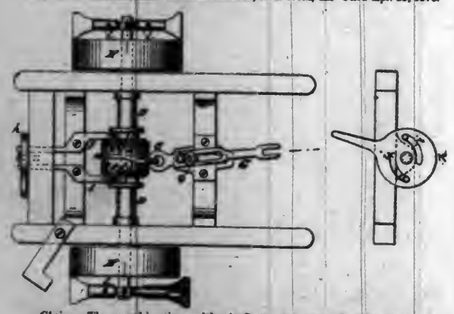
7. In a feed-cooker or steam-generator, the combination, with an upright fire-box, of a wood-burning cylinder having parallel straight sides, and a coal-burning magazine, the latter made with a flaring or conoidal base, having draft-openings, and being supported disconnectedly within the wood-burning cylinder, substantially as set forth.

205,263. TENSHING-MACHINE FRAMES. Theophilus Harrison, Belleville, Ill., assignor to himself, W. C. Buchanan, C. Thompson, and H. W. Harrison, same place. Filed Dec. 7, 1877.



Claim.—The rear frame E, connected with front bolster G by crossed stile F F, as and for the purpose specified.

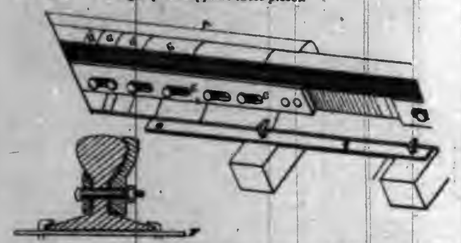
205,264. CORN-DROPPERS. Hiram H. Hartsock, Clear Creek, Ill. Filed Apr. 15, 1878.



Claim.—The combination, with shaft having cam C connected with a vibrating lever, G, of the side clutches D D, levers *f f*, and lever A, having curved slots *i*, as and for the purpose specified.

205,265. RAIL-JOINTS. William A. Hawthorn, Carson City, Nev., assignor of one-half his right to H. Hunter, same place. Filed Mar. 28, 1878.

Brief.—The outer fish-plate is thicker than usual, and rests on the flange, and is carried up to the top of the rail, forming a support for the tread of the wheel at joints. Both plates are slotted to allow of contraction and expansion in rails. A number of short pieces of rail are inserted, to be taken out as the rails creep. A wrought plate supports these pieces.



Claim.—1. The peculiarly-shaped bar or plate A, fitting the shape of the rail, in combination with the fish-plate and sections G, perforated to receive the bolts and be locked at one end, substantially as shown, and for the purpose herein described.

2. The bar, or plate A, in combination with the sections G and the supporting-plate F, substantially as shown, and for the purpose herein described.

205,266. ANCHORS FOR CHECK-ROW CORDS. L. L. Haworth, Decatur, Ill. Filed Apr. 13, 1877.

Brief.—As the machine approaches the end of the field the check-row cord can be thrown over from one row to another by means of a pivoted bar anchored to the ground, and carrying the cord on its upper end.

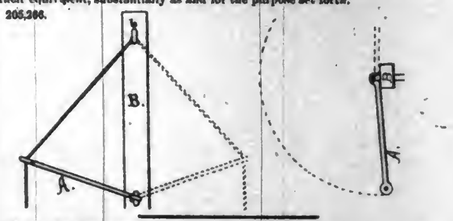
Claim.—1. A pivoted bar or arm anchored to the ground, and adapted to carry the check-row cord or wire over laterally as the planter approaches the end of the field or row to be planted, substantially as and for the purpose described.

2. The combination of the pivoted arm or bar A with a stake, D, adapted to be driven into the ground for anchoring said arm, substantially as described.

3. The combination of the pivoted arm A and stakes D D, or their equivalent, for anchoring the check-row cord to the ground, and permitting its lateral vibration, substantially as and for the purpose described.

4. The combination of the pivoted arm A, beam B, and stakes D D, or their equivalent, substantially as and for the purpose set forth.

205,266.

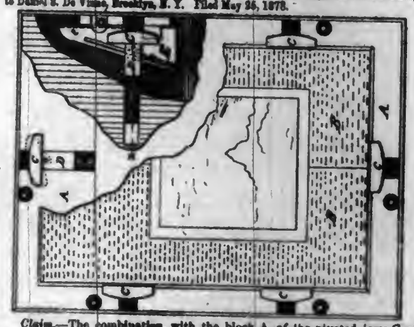


205,267. HOSE-PIPE NOZZLES. James T. Hayden, Cambridge, assignor to Caleb C. Walworth, Boston, Mass. Filed May 16, 1877.



Claim.—The herein-described hose-pipe nozzle A, having the cock B near the end of delivery, and having the single open passage beyond said cock so enlarged that the stream may pass without coming in contact with it, when desired, but which may be deflected against its side by slightly turning the cock, breaking the stream into spray, all arranged substantially as and for the purpose specified.

205,268. STEREOTYPE-BLOCKS. Amandus Henning, New York, assignor of one-half his right to Daniel S. De Vinne, Brooklyn, N. Y. Filed May 24, 1878.



Claim.—The combination, with the block A, of the pivoted jaws C, sliding followers D, and sliding wedges E, operated by rack and pinion, as and for the purpose specified.

205,269. CAR-SPRINGS. Charles M. Higginson, Chicago, Ill. Filed June 28, 1877.



Claim.—The improved method of manufacturing nest-springs, as described, consisting of taking rods of equal length and of diameters proportional to the proposed outer diameters of the several coils, and then coiling them on the same pitch, whereby all the springs of the nest are made substantially of equal height, for the purpose set forth.

205,270. RAILROAD DITCHING-MACHINES. David Harris, Keokuk, Iowa. Filed Feb. 2, 1878.

Brief.—Forward part of the car has side arms, sleeved and vertically adjustable on posts on the platform. Suspended from these arms are the cutting devices in sliding frames, adjustable laterally by rope or pulley. The cutting devices consist of a beam or frame having shares, a scraper having a V-shaped cutter, and cutting-rollers. On the rear of the platform are hinged side frames supporting traveling belt-frames, which adjustably gear with pinions connected with the driving-wheels. The hinged frames are folded up to the car by cords, pulleys, and weights in hollow tubes on the platform. Belt-frames on the sides parallel to the car are laterally adjustable on rods by sleeve-connections, cords, and pulleys. A dumping-car behind has an inclined conveyer-belt connecting adjustably with those on the main car.

Claim.—1. The combination, with the car-truck and elevating mechanism, of the beam a^1, connected by a web, b^1, and provided with shares c^1, a V-shaped scraper, d^1, and rolling cutters f^1 f^2, the web b^1 being jointed to a frame, g^1 g^2, as shown and described.

2. In a ditcher, the combination, with the driving-wheels and pinions *j*, of the frame K and sliding frame O, the former having notched end piece *q*, as and for the purpose set forth.

3. The combination of bars a^1, sleeves a^1, arms o^{11}, and brace p^1, to support the sleeve q^1, as specified.

4. The ditching device jointed to a sleeve adjustable on an arm, o^{11}, as and for the purpose described.

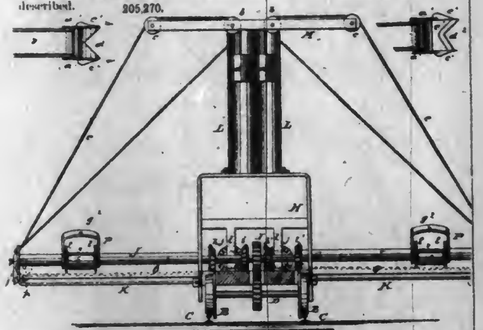
5. The combination, in a ditcher, of a platform, A, frames P K, and ropes q^1 k^2, as and for the purpose specified.

6. The hinged frame K, in combination with the frame H, for supporting the swinging frames O P, and the shaft-extension J, substantially as specified.

7. The hollow columns L and the counterbalance-weights *d*, in combination with the hinged frame K, substantially as herein shown and described.

8. The combination of the dumping-car S, carrying an inclined conveyer-apron, with the aprons *o* of the ditching machine, substantially as shown and described.

205,270.



205,271. MANUFACTURE OF SHEETS OF CELLULOID AND OTHER ANALOGOUS PLASTIC COMPOSITIONS. John W. Hyatt, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed May 15, 1878.



Claim.—1. As a means of forming a homogeneous roll of plastic composition, the combination of a hollow core end plates, and segmental curved plates, all or any of which are provided with means of receiving and discharging or of receiving or discharging a heating or cooling agent, substantially as set forth.

2. A homogeneous roll of plastic composition immovably affixed upon a core by means of heat and pressure and subsequent shrinkage, substantially as specified.

3. A hollow cylinder or core provided with means of receiving a heating or cooling agent, substantially as and for the purpose specified.

4. A hollow plate provided with means of receiving a heating or cooling agent, as a means of securing a mass of plastic composition upon a core, substantially as set forth.

5. The cylinder or core A, substantially as and for the purpose specified.

6. The segmental plate D, with or without the spring D', and cavity E, substantially as set forth.

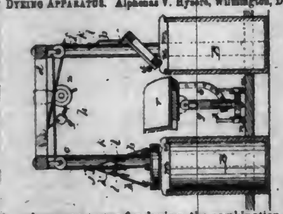
7. The heads or end plates B, substantially as shown and described.

8. The combination of the core or cylinder A, heads or end plates B, and segmental plates D, substantially as specified.

9. The within-described process for producing a sheet or strip of plastic composition, which consists in fixing a mass of the composition upon a core, and subjecting this mass to the action of a cutting-edge that reduces it to the dimensions desired, substantially as expressed.

10. Two or more hollow plates which, when united, form a cavity about a central core, substantially as specified, said plates and core or plates or core being adapted to receive a heating or a cooling agent, or both thereof, as specified.

205,272. DYEING APPARATUS. Alphonso V. Hyers, Wilmington, Del. Filed May 20, 1878.



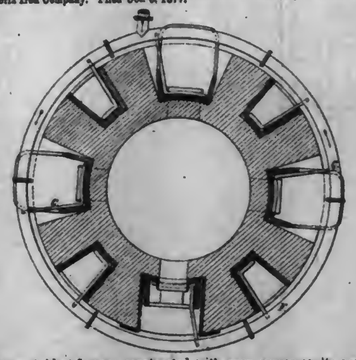
Claim.—In an apparatus for dyeing, the combination, with hoisting mechanism, of vat or vats B, provided with notched bars *m*, and grated bottom C, having eyebolts *a*, substantially as shown and described.

205,273. CIGAR-PACKAGES. Moritz Jonas, New York, N. Y. Filed June 18, 1877.



Claim.—A package of cigars, composed of a series of bundles prismatic in cross-section, and placed together so as to dovetail into each other, substantially as described.

205,274. BLAST-FURNACES. Daniel M. Jones, Johnstown, Pa., assignor of one-half his right to Cambria Iron Company. Filed Oct. 6, 1877.



Claim.—A blast-furnace constructed with open spaces on its periphery, at the lower part thereof, and extending inward toward the lining of the same, said spaces being fitted with iron linings or boxes and provided with spray-pipes for cooling the furnace, as described.

205,275. TIME-LOCKS. Theo. F. Keating, New York, N. Y. Filed May 3, 1878.

Brief.—A disk similar to the combination-lock disk is rotated by the time mechanism. The fence-bar of the permutation-lock projects over the time-disk, so that the lock cannot be operated until the notch in the time-disk allows the fence-bar to drop into the disks.

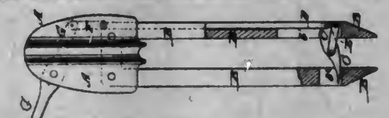


Claim.—1. In combination with the tumblers of a complete tumbler-lock, to be set for locking or unlocking, at will, from without, in the usual manner, a single independent time-tumbler having no connection with the ordinary lock-tumblers, and to be set up by time mechanism from within, substantially as and for the purpose specified.

2. The combination of a lock containing an elongated fence and an extra time-tumbler, substantially as described.

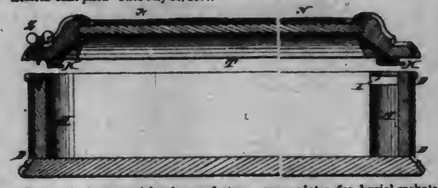
3. In combination with the fence of a tumbler-block, the spring-plunger provided with an incline, *x'*, and the extra tumbler having the incline *x*, substantially as described.

205,276. HORSE HAY-FORKS. Richard H. B. Kirkham, Kansas, Ill. Filed Apr. 30, 1878.



Claim.—The combination of the slotted head A, the two straight parallel tines B, the barb C, the pivoted bar E, the sliding rod D, the pivoted bars F, and the trip-lever G with each other, substantially as herein shown and described.

205,277. BURIAL-CASKETS. Gustave A. Kirchner, Philadelphia, Pa., assignor to Julia A. Hancock same place. Filed July 23, 1877.



Claim.—1. As an article of manufacture, corner-plates for burial-caskets and for the lids thereof, having flanges or hooks formed thereon adapted to engage in each other and form a fastening for the lid upon the casket, substantially as and for the purpose set forth.

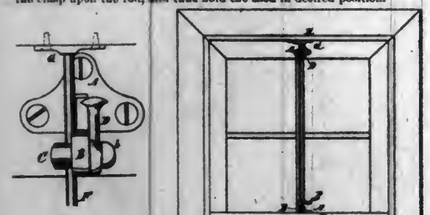
2. A casket-lid formed of a central panel, T, grooved into moldings N and S, and retained therein by metallic corner-pieces uniting the moldings

with each other and the panel, substantially in the manner set forth and shown.

3. A burial-casket provided with flanges or hooks I and K, forming a part of the metallic corners of the lid and box, arranged to engage and disengage with each other by a horizontal motion of the lid, and combined with the screw Z, substantially as and for the purpose set forth.

206,278. SASH-FASTENER. L. W. Knight, Elgin, Ill. Filed Dec. 24, 1877.

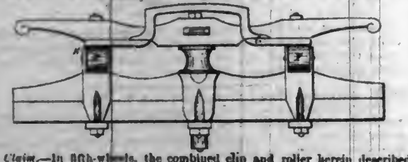
Brief.—A lever having two inclines arranged opposite to each other, which inclines act upon a headed and movable stud supported on a bracket or plate, is combined with a vertical rod running the whole length of the sash (a hole in the stud permitting the passage of the rod,) the action of the lever cams or inclines upon the movable stud serving either to tighten or release the clasp upon the rod, and thus hold the sash in desired position.



Claim.—1. The lever D, provided with the cams or inclines *c*, in combination with the stud C, provided with the head *a*, substantially as and for the purposes specified.

2. The lever D, provided with the cams or inclines *c*, and stud C, provided with head *a* and base E, in combination with the support A B and rod F, substantially as and for the purposes specified.

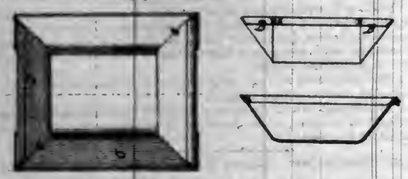
206,279. FIFTH-WHEELS. Jacob Kritch, Cleveland, Ohio. Filed June 1, 1878.



Claim.—In fifth-wheels, the combined clip and roller herein described, arranged in relation to, and in combination with, the circle-section G, substantially as set forth, and for the purpose specified.

206,280. WOODEN BOXES. George A. Mannie, Brooklyn, N. Y., assignor of one-half his right to Wm. H. Bogart, same place. Filed Dec. 9, 1875.

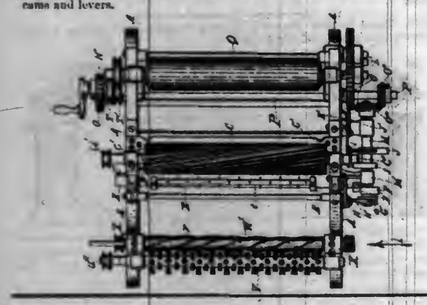
Brief.—The sheet-metal clamps may cover both the sides and ends. The box may be lined with paper or muslin.



Claim.—The combination, with a veneer box having its sides prolonged to form flaps lapping over upon its end, of a bent metal strip, covering substantially the entire upper edge of the end, and securing the end to the flaps, substantially as and for the purposes set forth.

206,281. CLOTH-PILE-RING MACHINES. Edwin T. Marble, Worcester, Mass. Filed Jan. 17, 1878.

Brief.—The ledger-blade and shearing-cylinder are mounted in a swinging frame, so that they may be raised from the cloth when desired. Different designs may be produced, either by giving the cloth an intermittent forward motion or by reciprocating the cloth-rest or the shearing-cylinder by means of cams and levers.

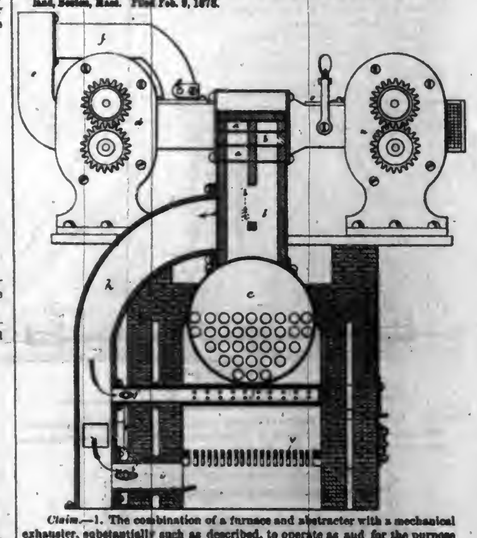


Claim.—1. The combination and arrangement of cam F and lever F' with sliding rest E, substantially as and for the purpose described.

2. The combination and arrangement of cam J, jointed lever K K', and draft-pawl J, with draft-roll Q and shearing mechanism, substantially as and for the purpose described.

3. The combination and arrangement of cam-shaft M, cams F, G, I, and J, and levers F', H H', P, and K K', with rest E, frame B, revolving blade C, roll Q, and figuring-rolls W W', substantially as and for the purpose specified.

206,282. APPARATUS FOR CONSUMPTION OF FUEL FOR GENERATION OF STEAM. Obadiah Marland, Boston, Mass. Filed Feb. 9, 1878.



Claim.—1. The combination of a furnace and abstracter with a mechanical exhauster, substantially such as described, to operate as and for the purpose set forth.

2. The combination of an air-forcing device, furnace, abstracter, and a mechanical exhauster, substantially such as described, for the purpose specified.

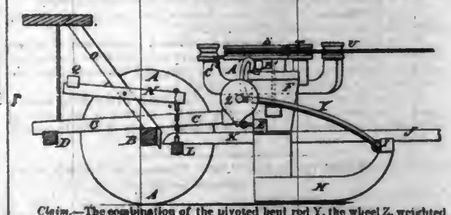
3. The abstracter composed of plates or sheets of conducting material, formed, as described, into chambers *a b*, alternately arranged for passage of air and volatile products of combustion, and of removable filling-pieces, the abstracter being combined with the discharging end of a furnace, and with the furnace-space over the grate-bars.

4. An exhauster and an abstracter, with passages *a b*, formed and arranged as described, in combination with the discharging end of a furnace, and by means of a suitable passage with the space under the grate-bars, for the purpose described.

5. An exhauster and an abstracter, with passages *a b*, formed and arranged as described, in combination with the discharging end of a furnace, and by means of a suitable passage with the combustion-chamber at or beyond the first bridge-wall, for the purpose described.

6. The abstracter composed of metallic plates or sheets placed with relation each to the other, as shown, to form chambers *a b*, and of the removable filling-pieces, to permit the abstracter to be cleaned, substantially as described.

206,283. CHECK-ROW CORN-PLANTER. Hubert H. McConaughey, Grant, Iowa, assignor to James M. Hart, Austin H. Smith, and Sidney J. Botts, same place. Filed Mar. 5, 1878.



Claim.—The combination of the pivoted bent rod Y, the wheel Z, weighted upon one side, and provided with a wedge-shaped projection upon the said weighted side, the hook A', the lever B', and the stop C', with the dropping-wheel S and the forward frame of a seed-planter, substantially as herein shown and described.

206,284. WATER-CLOSETS. Michael J. McEvoy, New York, N. Y. Filed Dec. 17, 1877.

Claim.—1. The packing-ring *f*, placed into a recess in the under side of the plate *e* of the box C, and combined with the annular plate *h* and flange *g* so that it projects below said flange *g* and plate *h* and around the discharge end of the bowl A, substantially as herein shown and described.

2. The combination of the bowl A with the box C and downwardly-projecting packing-ring *f*, and with the sliding valve D, substantially as herein shown and described.

3. The combination of the sliding valve D with the inclined raising-rib *q* and upper packing-ring *f*, substantially as and for the purposes specified.

4. The combination of the inclined raising-rib *q* in the box C with the rib or ribs *r* on the valve D, substantially as and for the purposes herein shown and described.

5. The combination of the sliding valve D with the crank *j*, rock-shaft E, crank *l*, and weighted rod F, substantially as herein shown and described.

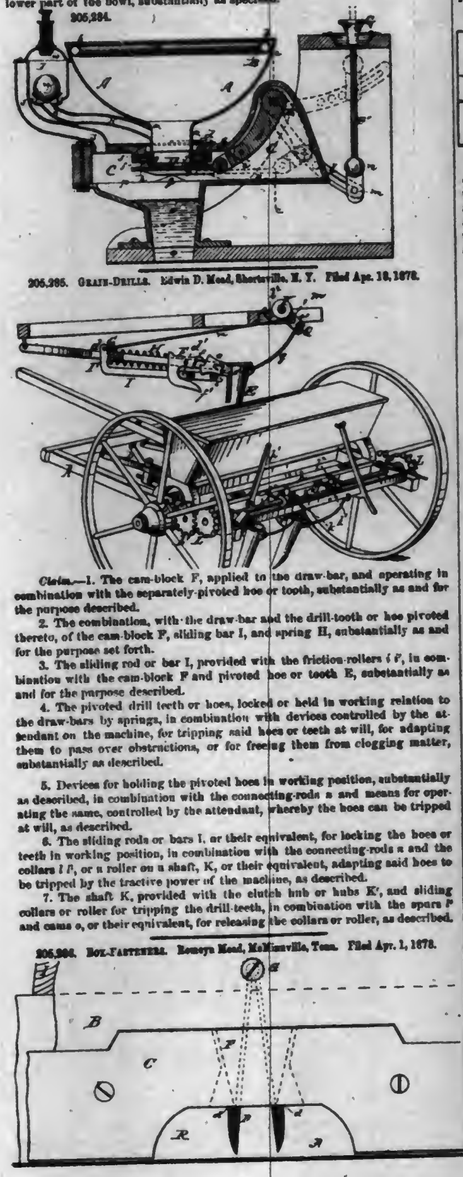
6. The combination of the box C, containing the sliding valve D and crank *j*, with the rock-shaft E and stuffing-box *s*, substantially as and for the purposes specified.

7. The combination of the water-closet basin A with the overflow-pipe H, chamber I, discharge-pipe J, and floating valve *u*, substantially as herein shown and described.

8. The combination of the pipes H J and chamber I with the downwardly-opening valve *w*, placed into the chamber I, substantially as and for the purpose specified.

9. The combination of the water-closet bowl A and box C with the sliding valve D and projecting packing *f*, and with the discharge-pipes H J, chamber I, and spherical valve *u*, all arranged to constitute a double inclosure to the lower part of the bowl, substantially as specified.

206,285. GRAIN-DRILLS. Edwin D. Mead, Shortsville, N. Y. Filed Apr. 10, 1878.



Claim.—1. The cam-block F, applied to the draw-bar, and operating in combination with the separately-pivoted hoe or tooth, substantially as and for the purpose described.

2. The combination, with the draw-bar and the drill-tooth or hoe pivoted thereto, of the cam-block F, sliding bar I, and spring H, substantially as and for the purpose set forth.

3. The sliding rod or bar I, provided with the friction-rollers *i i'*, in combination with the cam-block F and pivoted hoe or tooth E, substantially as and for the purpose described.

4. The pivoted drill teeth or hoes, locked or held in working relation to the draw-bars by springs, in combination with devices controlled by the attendant on the machine, for tripping said hoes or teeth at will, for adapting them to pass over obstructions, or for freeing them from clogging matter, substantially as described.

5. Devices for holding the pivoted hoes in working position, substantially as described, in combination with the connecting-rods *n* and means for operating the same, controlled by the attendant, whereby the hoes can be tripped at will, as described.

6. The sliding rods or bars I, or their equivalent, for locking the hoes or teeth in working position, in combination with the connecting-rods *n* and the collars *l l'*, or a roller on a shaft, K, or their equivalent, adapting said hoes to be tripped by the tractive power of the machine, as described.

7. The shaft K, provided with the clutch hub or hubs K', and sliding collars or roller for tripping the drill-teeth, in combination with the spurs P and cams *o*, or their equivalent, for releasing the collars or roller, as described.

206,286. BOX-FASTENERS. Romeyn Mead, McConnellsville, Tenn. Filed Apr. 1, 1878.

Claim.—1. In combination with a box-lid and lid-latch, the cleats B and C, mutually formed on their meeting faces to engage one another when in contact, to prevent lateral movement of the lid, substantially as described and shown.

2. In a box-cover fastening, the combination, with a vertical latch, of the meeting cleats B and C, recessed as described and shown—that is, the former on its inner face, to permanently hold the spring-latch, and the latter on its inner and bottom faces, to temporarily receive it and to guard its lower projecting portion, substantially as and for the purposes specified.

3. The combination of the metallic mortise-shell E, having external double tapering sides or shoulders, and the correspondingly-formed mortise in the back of the box-cleat, substantially as described, so that when the cleat is fastened to the box the shell is held in place without other fastening.

4. In combination with a lid-latch engaging on the under face of the box-cleat, the downward projection of the cleat on both sides of the latch to guard its protruding portion, substantially as described.

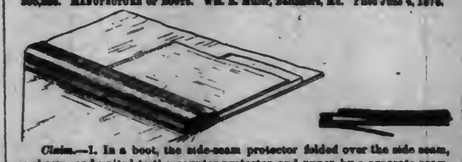
5. A box provided with the lid-cleat B and box-cleat C, mutually formed on their meeting faces as shown, and with the double spring-latch D, secured to the lid and engaging the box-cleat C, substantially as described, and for the purposes set forth.

206,287. RAIL-JOINTS. Alex. Moberly, La Fayette, Ind. Filed Aug. 11, 1877.



Claim.—The combination, with ordinary T-shaped rails, having the tread entire, and provided with rectangular slots at their ends through the web portion, of the fish-plates arranged on opposite sides of the rails, over the joint, and provided with rectangular lugs, which meet and fit into the slots of the adjacent ends of the two rails, the said fish-plates and rails being fastened together by means of suitable bolts on each side of the rail-joint, substantially as shown and described.

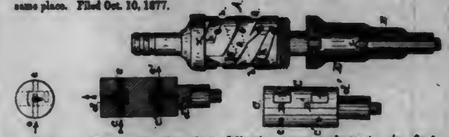
206,288. MANUFACTURE OF BOOTS. Wm. R. Miller, Baltimore, Md. Filed June 4, 1878.



Claim.—1. In a boot, the side-seam protector folded over the side seam, as shown, and united to the counter-protector and upper by a separate seam, substantially as and for the purpose set forth.

2. In a boot, the combination of the counter-stiffening protector with a side-seam-protecting strip, covering the side seam, all arranged substantially as set forth.

206,289. MOTORS FOR DENTAL PLUGGERS. Eugene Meyen and Samuel W. Dennis, San Francisco, Cal., assignors, by mesne assignments, to said Dennis and John B. Reynolds, same place. Filed Oct. 10, 1877.



Claim.—1. The combination of the following parts or elements, viz: first, a cylinder or chamber having induction and eduction passages or channels *a* and *b* between its outer and inner shell, and ports or openings *g g h h i i'* in these passages, communicating with the interior of the cylinder; second, a piston within the cylinder, provided with ports *d d'* and passages *e e' e e'*; third, the valves D D', located within and carried by the piston, traveling at a right angle to or across the line of movement thereof, and controlling the admission and exit of the air in and from the cylinder.

2. The combination of the piston C, provided with ports *d d'*, each of which acts alternately as induction and eduction ports, and the passages *e e'*, with the two valves D D', having passages, and reciprocating within said piston at right angles to the travel or momentum thereof, and acting to disconnect and connect in a regular manner the passages *e e* from and with the ports *d d'*, substantially as and for the purposes set forth.

3. In motors for operating dentists' instruments, the combination, with the chamber A, of the piston C, valves carried by such piston, and moving at right angles to the reciprocation of the same, and ports operating in connection with the valves to admit and exhaust compressed air into and from the cylinder at both ends of the piston, substantially as described.

4. In dentists' drills or pluggers, the chamber A, piston C, valves carried by the piston, and moving at right angles to the reciprocation of the same, and ports operating in connection with the valves to move the piston in both directions by compressed air, in combination with the rod or spindle E, forced forward by the piston and retracted by a spring, substantially as described.

206,290. ROAD-SCRAPERS. Silas G. L. Morrow, New Bloomfield, Mo. Filed Apr. 10, 1878.

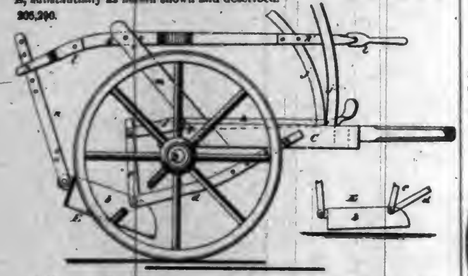
Brief.—The front of the scraper is suspended from the frame by adjustable draw-bars, and by links connecting with arms secured to a rock-shaft, which latter is operated by a foot-lever under the control of the driver, and the rear of the scraper is suspended by a bar or link adjustably attached to a lever, which is also adjustably pivoted in standards on the frame, and extends forward under the control of the driver. By means of the levers and the connecting-arms and links the scraper can be adjusted to the several positions—load, unload, or transport the earth.

Claim.—1. The combination of the draw-bars *d*, operating-levers *l h*, connecting-bars *n e*, and arms *f* with the scraper E and the supporting-truck, as and for the purpose set forth.

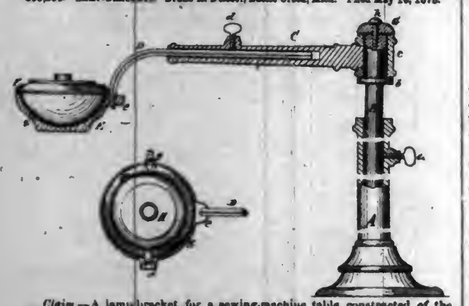
2. The combination of the lever A, rock-shaft *g*, having arms *f*, and the suspending links *n* with the wheel-supported scraper E, substantially as herein shown and described.

3. The combination of the adjustable lever *l* and bar *n* with the scraper E, substantially as herein shown and described.

206,290.

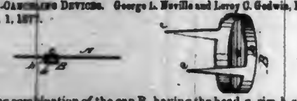


206,291. LAMP-BRACKETS. Bruno A. Heiser, Battle Creek, Mich. Filed May 16, 1878.



Claim.—A lamp-bracket for a sewing-machine table, constructed of the combination of the hollow standard A, having set-screw *a*, the vertical sliding rod B, having collar *b*, washer G, and screw A, the horizontal swinging arm C, having set-screw *d*, the horizontal sliding rod D, and the lamp receiver E, provided with the hinged and clasped fastening-ring F, substantially as shown and described.

206,292. STAMP-CANCELING DEVICES. George L. Neville and Leroy C. Godwin, Portsmouth, Va. Filed Nov. 1, 1877.



Claim.—The combination of the cap B, having the head *a*, rim *b*, and points *c*, with the stamp A, substantially as herein shown and described.

206,293. OATMEAL-MACHINES. David Oliver, Chicago, Ill. Filed May 15, 1878.

Brief.—Hopper-bottom composed of longitudinal bars for guiding the grain between the laterally-set cutting-bars or knives, thus presenting the same vertically to the action of the stationary knives.



Claim.—1. The reciprocating frame B, carrying the hopper D, having its bottom provided with the longitudinal bars E and cross knives or bars F, for guiding and directing the grain to the cutting-blades, substantially as specified.

2. The reciprocating frame B, hopper D, longitudinal bars E, and cross knives or bars F, in combination with the stationary cutting knives or blades G and a supporting-frame, A, substantially as and for the purposes specified.

206,294. HORSE-COLLARS. Samuel M. Palmer, Glens Falls, N. Y. Filed Dec. 22, 1877.



Claim.—1. A horse-collar having a perforated metallic face and a device for forcing air through the said perforated face, substantially as herein shown and described.

2. The combination, in a horse-collar, of the perforated metallic face C, the elastic apertured back D, stayed by the bar *e*, the spring *b*, and valves *c*, substantially as herein shown and described.

206,295. MILK-COOLERS. Charles Funk, Chicago, Ill., and Robert R. Ball, West Meriden, Conn. Filed Mar. 22, 1878.



Claim.—In a milk-cooler, the pan B, having a central chamber extending from the top and nearly to the bottom, thereby forming a passage, *c*, and the shallow pan *f*, substantially as and for the purposes herein set forth.

206,296. CUTTING INSTRUMENTS OR TOOLS. John A. Fow, San Francisco, assignor of one-half his right to Rufus Leach, Oakland, Cal. Filed Nov. 22, 1877.



Claim.—1. The combination, in a cutting instrument or tool, with a supporting spindle or arbor, of two separate and independent series of cutters capable of adjustment laterally on said spindle or arbor by means forming part of the cutting instrument or tool, substantially as and for the purpose specified.

2. The combination, in a cutting instrument or tool, with a spindle or arbor, of two series of separate and independent cutters laterally adjustable by means of devices forming part of the cutting instrument or tool, the cutters of one series intervening between those of the other series, substantially as and for the purposes specified.

3. The combination, in a cutting instrument or tool, with a spindle or arbor, of two series of separate and independent cutters mounted on sleeves capable of adjustment toward and from each other by means of devices forming part of the cutting instrument or tool, substantially as and for the purpose specified.

4. The combination, in a cutting instrument or tool, with a spindle or arbor, of two separate and independent series of cutters mounted on two separate and independent sleeves provided internally with right and left female screw-threads, engaging with right and left male screw-threads on the spindle or arbor, substantially as and for the purpose specified.

5. The combination, in a cutting instrument or tool, with the spindle or arbor, of two series of separate and independent cutters mounted on sleeves provided internally with right and left female screw-threads, engaging with right and left male screw-threads on the spindle or arbor, and nuts applied to the said spindle or arbor outside said sleeves, and engaging with screw-threads inclined reversely to the screw-threads with which said sleeves engage, substantially as and for the purpose specified.

6. The combination, in a cutting instrument or tool, with two series of separate and independent cutters mounted on laterally-adjustable sleeves, of bolts securing said series of cutters to the sleeves, whereon they are mounted, and having heads fitting in bearings in the opposite sleeves, substantially as and for the purpose specified.

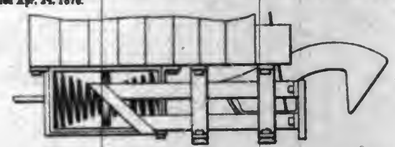
205,297. FIRE-PROOF SHUTTERS. Simon L. Pollock, St. Paul, Minn. Filed May 3, 1878.

Brief.—A sheet-iron shutter is formed with a central and two outer walls, interposed supporting-stripe, and overlapping flanges on its sides bolted together. Dead-air spaces between the walls are formed by closing top and bottom.



Claim.—A fire-proof shutter consisting of the walls A B C, bolted together, the cross-stripe F G, and the flanges *a b b' c c'*, as shown and described.

206,298. CAR-COUPLINGS. Joshua L. Pope, Brooklyn, and Wm. S. Sampson, New York, N. Y. Filed Apr. 24, 1878.



Claim.—In hook car-couplings, a lifter or palm having its fulcrum or axle above the face of said lifter, so as to form a close joint with the inner face of the draw-head when the upper and front edge of the lifter is on a line with the top of the draw-head.

206,299. CLEANING AND SCOURING DEVICES. C. Rasts, San Francisco, Cal. Filed Apr. 22, 1878.

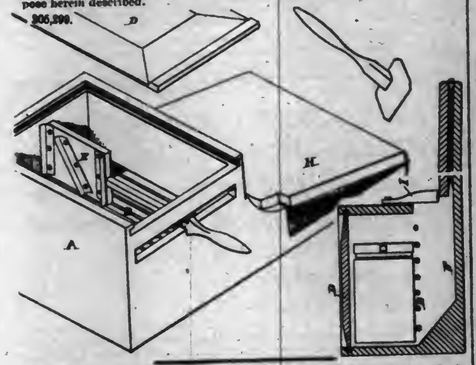
Claim.—1. The containing-box A, with its perforated bottom B, for supporting a brick, and the slotted side, in combination with the scraper E, substantially as shown, and for the purpose herein described.

2. The scraper E, having the vertical and angular scraping-plates, and moving horizontally in the box A, for the purpose of cutting away the side or end of a contained brick, substantially as herein described.

3. The box A, with its perforated brick-supporting frame or plate B and solid floor F, in combination with the folding extension-pad H, substantially as herein described.

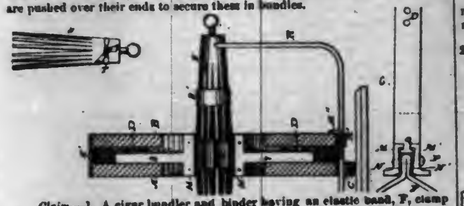
4. The brick-containing box A, with its perforated supporting-plate B, solid floor F, and scraper E, in combination with the extension folding pad H, and the compression button or cam I, substantially as shown, and for the purpose herein described.

206,299.



206,300. CIGAR BUNDLER AND BINDER. George W. Klynestreer, Cincinnati, Ohio. Filed Sept. 4, 1877.

Brief.—The radially-moving clamps carry at their inner ends a rubber band, in which the cigars are clamped, while the tapes, by a sliding thimble, are pushed over their ends to secure them in bundles.

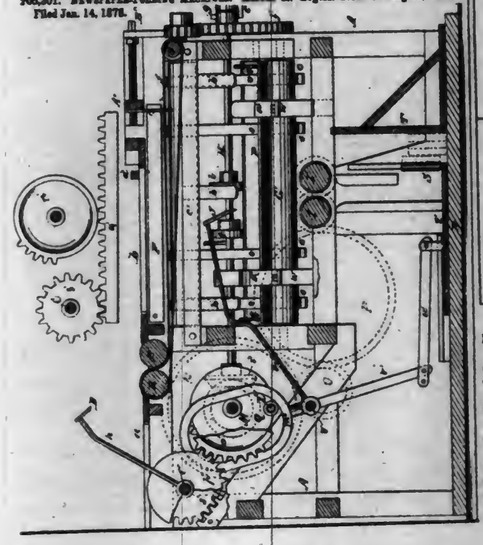


Claim.—1. A cigar bundler and binder having an elastic band, F, clamp M M' N N', legs 1, 2, 3, 4, 5, 6, 7, and 8, and studs D, substantially as described, and for the purpose specified.

2. A cigar bundler and binder provided with wire support R, thimble S, and band S', substantially as described, and for the purpose herein described.

3. The combination of disks A and B with radiating grooves and stems, elastic band F, clamps M M' N N', eccentric curves or grooves specified, wire support R, thimble S, and band S', when used in a cigar bundler and binder, substantially as described and herein set forth.

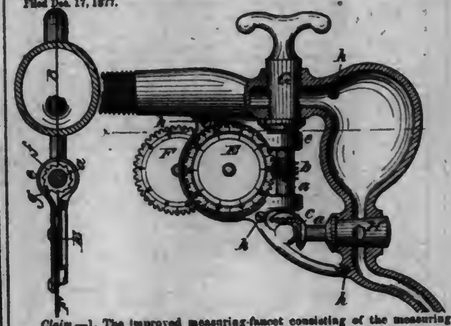
206,301. NEWSPAPER-FOLDING MACHINES. Warren H. Bogue, Great Barrington, Mass. Filed Jan. 14, 1878.



Claim.—1. The mutilated wheels *n' o*, carried by shaft M, the mutilated wheel *p'*, spur-wheel *o'*, and rack *q'*, in combination with the folding-blade, for imparting to the folding-knife D an intermitting oscillatory motion, substantially as herein shown and described.

2. The roller *l'*, carried by the shaft M, and the apertured arm *m'* and rock-shaft V, in combination with the folding-knife J and packer S, substantially as herein shown and described.

206,302. MEASURING-FAUCETS. Francis X. Rousseau, Arthabaskaville, Quebec, Canada. Filed Dec. 17, 1877.

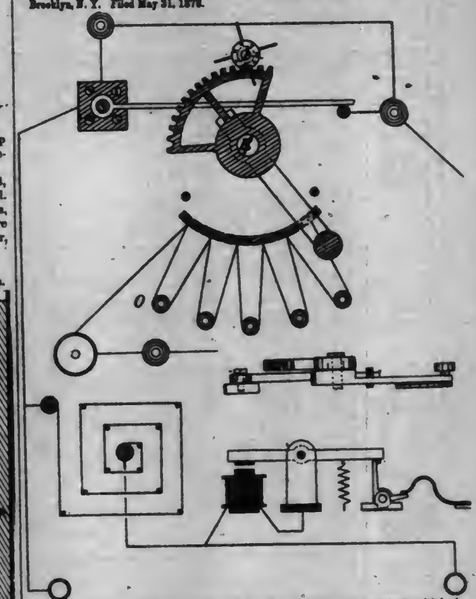


Claim.—1. The improved measuring-faucet consisting of the measuring chamber or body and the two valve-plugs G H, arranged at right angles to each other and provided with the pinions *e*, gearing directly into each other, as shown.

2. As an improvement in measuring-faucets, the plugs G H and the registering devices E F *f g*, in combination with the body, consisting of the two equal parts, constructed and arranged to embrace and hold the moving parts between their faces, as shown and described.

3. The valve-plug G, having its stem provided with the thread *h*, and ratchet-wheel *f*, in combination with the register-wheel and the divided frame, arranged to embrace and hold the other parts, as shown.

206,303. ELECTRIC LIGHTING SYSTEMS. William E. Sawyer, New York, and Albon Man, Brooklyn, N. Y. Filed May 31, 1878.



Claim.—1. The combination, with an electric lamp, of a switch which, in lighting the lamp, gradually removes a resistance from the circuit thereof.

2. The combination, with an electric lamp, of a switch which, while preserving the continuity of the circuit, gradually removes a resistance from the circuit of the lamp.

3. The combination, with an electric lamp, of a resistance in the circuit thereof, which is lessened as the resistance of the lamp is increased.

4. The herein-described method of lighting an electric lamp, consisting in causing the flow of current in such lamp to increase in strength slowly.

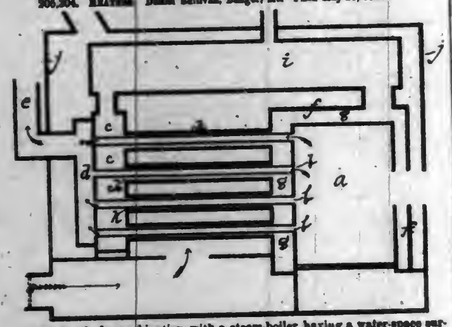
5. In an electric lighting system, two or more conductors supplied with electricity by the generator of electricity, which is the common source of supply for such system, and in each of these conductors, or in circuits derived therefrom, two or more electric lamps, the same being so arranged for the purpose of insuring the necessary distribution and subdivision of the current with-

out artificial lengthening of the circuits by the introduction of resistances which would only waste the current, as set forth.

6. In an electric lighting system, rheostats, resistances, &c., having great radiating-surfaces, the same being preferably constructed of a thin flat conducting medium, to which the air is given free access, so that the heat generated by the current is rapidly radiated or conducted off.

7. In an electric lighting system, an electrical apparatus energized by the current flowing in such system, which, when there is an abnormal flow of current in a part or parts of such system, automatically operates to disrupt, disconnect, or change the circuit of such part or parts.

206,304. HEATER. Daniel Sullivan, Bangor, Me. Filed May 13, 1878.

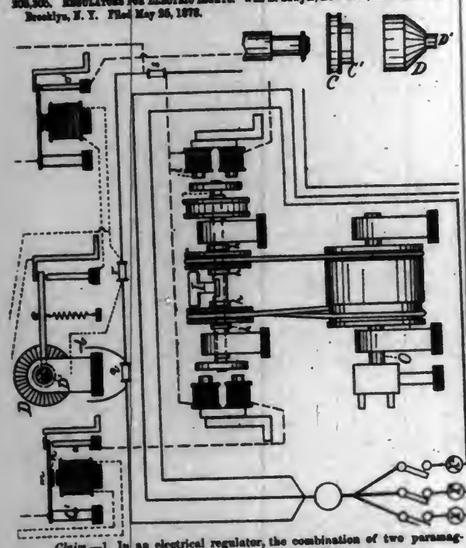


Claim.—1. In combination with a steam-boiler having a water-space surrounding all its fire-surfaces, a body consisting of encased tubes *b h*, connecting its end sections and the ordinary fittings of a steam-boiler, the casing *j*, inclosing the whole, having a cold-air-feed pipe and the ordinary fittings of a hot-air furnace, both the steam-pipes and the cold-air feeder being provided with cut-offs, whereby either steam or hot air may be used for heating singly, or both combined, substantially as set forth, for the purposes specified.

2. In a heater having a casing, *j*, provided with an air-feed pipe, the double tubes *b h*, exposed within the casing to the incoming air, substantially as described, for the purposes specified.

3. A heater constructed substantially as herein described—to wit, having two end sections and connecting-tubes and a fire-chamber, *a*, fire-tubes *b*, and fire-back *d*, surrounded by the casing *f* and water-tubes *h*, uniting said casing with the water-back *c*, substantially as set forth.

206,305. REGULATOR FOR ELECTRIC LIGHTS. Wm. E. Sawyer, New York, and Albon Man, Brooklyn, N. Y. Filed May 25, 1878.



Claim.—1. In an electrical regulator, the combination of two paramagnetic parts, C' and D, operating substantially as set forth.

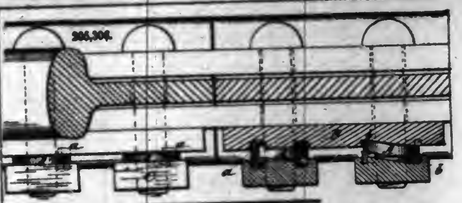
2. In an electric-lighting system, a generator of electricity, two or more electric lamps supplied thereby, and an independent electro-magnetic switch or regulator, energized by the current from the generator, and acting automatically upon the occurrence of any change of electrical condition in the circuit or circuits supplied, to allow of a corresponding change in the quantity or intensity of the current generated.

206,306. NUT-LOCKS. William E. Schall, Latrobe, Pa., assignor of one-half his right to Louis Weber and Joseph Smith, same place. Filed May 24, 1878.

Claim.—The helical spring-washer formed with bulbs or convex end projections *s*, in combination with concave depressions *d d'*, or their equivalent, on the nut and on the lock-bar, and the bolt, substantially as described.

206,307. WARPING-MACHINE. Lorenzo L. Shaw, Yarmouth, Me. Filed Feb. 18, 1878.

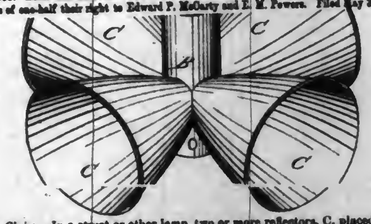
Brief.—By means of a traversing bar provided with a series of reducing-guides the strands are laid in helices upon the beam, with the coils of each helix close together.



Claim.—1. In combination with the reed C, the yarn-beam D, and its supporting and operative roller or cylinder E, the traversing bar F, its series of reducing-guides *c*, and the mechanism applied to the said bar and to the shaft of the yarn-beam, and consisting of the grooved wheels *k m q*, endless bands *l p*, arm *n*, spring *r h*, shafts *o u*, worm *s*, worm-gear *t*, heart-cam *v*, and lever *w*, arranged and applied as set forth, it being for moving the traversing bars with a variable reciprocating motion, in accordance with the variable rotary motion of the beam as the load of the latter may increase in diameter.

2. The combination, substantially as described, applied to the traversing bar and to the yarn-beam, for moving the former by the latter, as specified, it consisting of the grooved wheels *k m q*, endless bands *l p*, arm *n*, spring *r h*, shafts *o u*, worm *s*, worm-gear *t*, heart-cam *v*, and lever *w*, arranged and applied as represented.

206,308. LAMP-REFLECTORS. Albert C. Sheldon and Edwin B. Pope, St. Louis, Mo., assignors of one-half their right to Edward P. McCarty and E. M. Powers. Filed May 31, 1878.



Claim.—In a street or other lamp, two or more reflectors, C, placed before and around the flame or light, as described, in combination with an opaque collar or chimney, E, substantially as and for the purpose set forth.

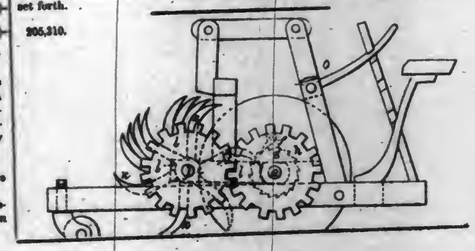
206,309. BUTTER-CANS. G. W. Simpson, Somerville, Mass. Filed June 7, 1878.

Brief.—Cover is depressed, except at its rim, to keep butter away from the joint, where heat is used in soldering. May place wire solder in groove and then melt it, or apply molten solder by pouring, or by iron.



Claim.—The herein-described butter-can *a a'*, with its outer flaring band *b b'* secured at the top, and sink-cover *c*, with its annular projecting lip *c'*, resting in the annular groove *d*, and united by the solder *f*, as and for the purpose set forth.

206,310.

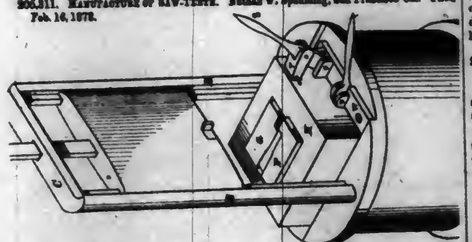


206,310. POTATO-DIGGERS. Amos N. Smiley, Bangor, Me. Filed Feb. 22, 1878.

Brief.—The fingers are arranged on the cylinder in groups, the outer fingers being longest, and the others gradually shorter to the center, thus forming a V-shaped scoop of each group. The digger is vertically adjusted by mechanism on top of the frame.

Claim.—The arrangement of the fingers or diggers *k* upon the shaft *j*, each finger, from the ends toward the center of said shaft, being set back of the next outer finger, so as to form together a V-shaped scoop, as and for the purposes set forth.

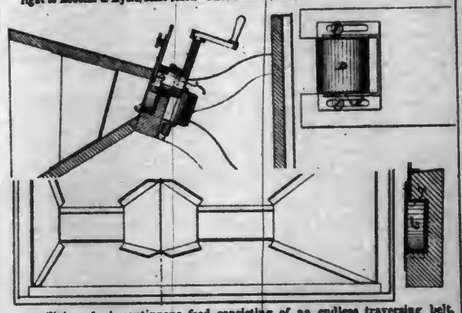
206,311. MANUFACTURE OF SAW-TEETH. Nathan W. Spaulding, San Francisco Cal. Filed Feb. 16, 1878.



Claim.—1. The metal block or frame H, with its central opening, in which a fixed jaw or die, F, and a movable jaw or die, G, are arranged, said fixed jaw or die having a recess or excavation, *f*, in its outer face, while the movable jaw has a corresponding projection, *k*, on its opposing face, said projection serving as a follower to admit of the adjustment of the die-faces to blanks of different thicknesses, substantially as and for the purpose herein set forth.

2. The fixed jaw or die F, provided with a recess or excavation, *f*, in its outer face, in combination with the movable jaw or die G, with its projection *k*, and set screw or screws *o*, the two jaws being secured in a block or frame, H, and operated by a wedge, r, or equivalent device, substantially as and for the purpose described.

206,312. SEEDING-MACHINES. A. P. Steele, Springfield, Ohio, assignor of one-half his right to Robbins & Myers, same place. Filed Mar. 23, 1878.



Claim.—1. A continuous feed consisting of an endless traversing belt, adapted to deliver the grain laterally over its edge, substantially as hereinbefore set forth.

2. An endless feeding-belt or grain-carrier, working longitudinally at the bottom of a seed-hopper, and transversely inclined, substantially as hereinbefore set forth.

3. The combination, substantially as hereinbefore set forth, of a seed box or hopper, an endless feeding-belt or carrier traversing the hopper-bottom longitudinally, and inclined driving and driven pulleys, around which the belt passes, outside of the hopper.

4. The combination, substantially as hereinbefore set forth, of a seed box or hopper, a transversely-inclined feeding-belt or grain-carrier working therein beneath the grain, and the hopper-bottom having a discharge-opening therein beneath the discharge edge of the belt.

5. The combination, substantially as hereinbefore set forth, of a seed box or hopper, an endless feeding-belt or grain-carrier working therethrough, and a deflector, to which the grain is fed, and by which it is directed to the edge of the belt.

6. The combination, substantially as hereinbefore set forth, of a seed box or hopper, an endless transversely-inclined feeding-belt or grain-carrier working therethrough, and a deflector, to which the grain is fed and by which it is directed to the edge of the belt.

7. The combination, substantially as hereinbefore set forth, of a seed box or hopper, an endless transversely-inclined feeding-belt or grain-carrier working therethrough, a deflector crossing said belt, and a side-discharge tube or opening, to which the grain is directed, and through which it passes from the lower edge of the belt.

8. The combination, substantially as hereinbefore set forth, of a seed box or hopper, an endless feeding-belt or grain-carrier working beneath the grain and between the opposite sides or walls of the hopper, a deflector which directs the grain crosswise of the belt, and a regulator for controlling the discharge of the grain.

9. The combination, substantially as hereinbefore set forth, of a seed box or hopper, a transversely-inclined endless feeding-belt or grain-carrier working endwise of the hopper, the hopper-bottom having grain-discharge openings at the lower edge of the belt or carrier, a deflector crossing said belt diagonally, and a seed-discharge regulator and cut-off.

10. The combination, substantially as hereinbefore set forth, of a seed box or hopper, a laterally-discharging endless feeding-belt or grain-carrier working at the bottom thereof, a deflector for directing the grain crosswise of the belt, and a covering-plate to separate the deflector from the mass of grain in the hopper.

11. The combination, substantially as hereinbefore set forth, of a seed box or hopper, a transversely-inclined laterally-discharging endless feeding-belt or grain-carrier working longitudinally and at the bottom of the hopper, the hopper-bottom having a discharge-opening at the lower edge of the belt, and a protecting-plate spanning the hopper above the deflector and discharge-opening.

12. The combination, substantially as hereinbefore set forth, of a seed box or hopper having front and rear sides terminating at their lower edges in different horizontal planes, an inclined detachable hopper-bottom, and an endless feeding-belt carried thereby.

206,313. PROCESSES OF TREATING PRESERVED EGGS. Cæsar A. Stumpf, Chemnitz, Ma. Filed Oct. 24, 1877.

Brief.—Eggs which have been preserved by closing the pores of the shell are apt, when boiled, to burst, and the contents are thus wasted. By piercing the shell before boiling this liability is overcome.

Claim.—The process of treating eggs that have been preserved in a solution, consisting of piercing a small hole in the egg-shell over the air-blister, whereby the liability of such eggs to burst their shells in boiling is obviated.

206,314. DOLLS. Mary M. Stember, Philadelphia, Pa. Filed Mar. 5, 1878.

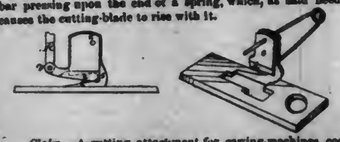


Claim.—1. The combination, with the upper part of the leg of a doll, of the lower part of the leg A, stocking B, and boot C, when formed, put together, and constructed substantially as described, and for the purpose set forth.

2. In the manufacture of legs for dolls, the process herein described, which consists in sewing the stocking B to the leg A and the shoe C to the stocking B previous to sewing or uniting the back seams, then uniting and filling, substantially as described.

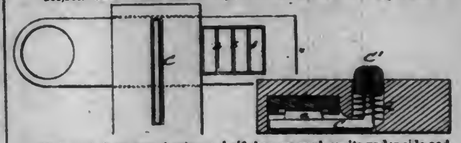
206,315. CUTTING ATTACHMENTS FOR SEWING-MACHINES. Daniel J. Tapley, New York, N. Y. Filed May 26, 1877.

Brief.—A stationary blade is secured to the bed-plate, which, in turn, is adjusted upon the cloth-plate of the machine. Upon said stationary blade is secured a cutting-blade by means of a pin working through a vertical slot cut in the above-named stationary blade, thereby allowing a vertical reciprocating movement to be given to the cutting-blade through the medium of the needle-bar pressing upon the end of a spring, which, as said needle-bar rises, also causes the cutting-blade to rise with it.



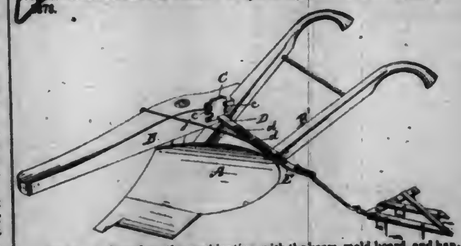
Claim.—A cutting attachment for sewing-machines, consisting of a bed-plate to be secured to the cloth plate of the machine, and upon which a stationary cutting-blade is made, having a projection raised above it, as at *c'*, and the operating-blade pivoted to or supported upon said projection above the stationary blade, instead of at its end, leaving the heel of the lower blade unobstructed by the joint that unites the two blades.

206,316. DRAW-GAGES. John H. Tays, New Braunfels, Tex. Filed Apr. 9, 1878.



Claim.—A draw-gage having a knife-bar grooved on its under side and smooth on its other sides, in combination with the angular spring-catch C, as and for the purpose specified.

206,317. COMBINED PLOW AND HARROW. Joseph G. Teague, Wabash, Ind. Filed Apr. 26, 1878.



Claim.—1. In a plow, the combination, with the beam, mold-board, and handles, of the vertically-adjustable attachment, consisting of the horizontal bar

D and vertical plate C, having the lateral extensions *c c*, and secured rigidly to the side of the beam B, and extended across the plow and over, with its outer end resting on, the top of the mold-board and against the handle B', and adapted substantially as and for the purpose set forth.

2. The combination of the slotted bar D, constructed with the vertical plate C, having the lateral extensions *c c* and secured to the side of the beam B, and extended across the plow and resting on the top of the mold-board A, and against the front edge of the handle B', and the laterally-extendible arm E, having on its outer end a pivoted and vertically-swinging arm, *e*, arranged and adapted substantially as and for the purposes set forth.

306,318. VEHICLE-WHEELS. Wm. Thuson, Cherokee, Cal. Filed May 6, 1878.

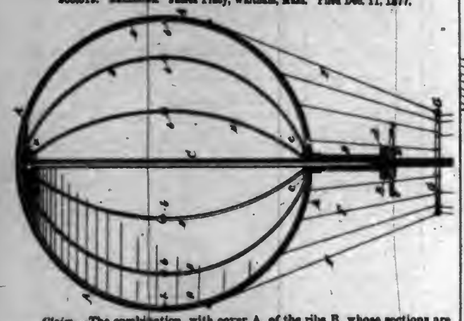


Claim.—1. The metal hub A and the entire metal felly F, with its countersunk holes to receive the ends of the spokes, in combination with the two-part forked spokes E, having the single stem to enter the hub, substantially as herein described.

2. The cast-metal hub A, having the removable interior box B, and the keys C, in combination with the projecting wrought bands D, shrunk upon the ends of the box, substantially as herein described.

3. The wheel consisting of the hub A, with its removable box B, keys C, and exterior box-bands D, in combination with the forked spokes E, riveted into the felly F, and the exterior protecting-tire G, substantially as herein described.

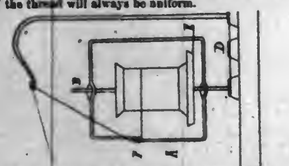
306,319. BALLOONS. James Tracy, Waltham, Mass. Filed Dec. 11, 1877.



Claim.—The combination, with cover A, of the ribs B, whose sections are hinged together at *b*, hinged at *a* to a disk on a central shaft, C, and at *c* to the sleeve D, the latter being provided with a flange, *d*, swiveled to a nut, E, working on thread of said shaft, and operated by a hand-wheel, *e*, as shown and described.

306,320. DEVICE FOR WINDING THREAD FROM SPOOLS OR BOBBINS. Wendell E. Turner, New York, N. Y. Filed Dec. 10, 1877.

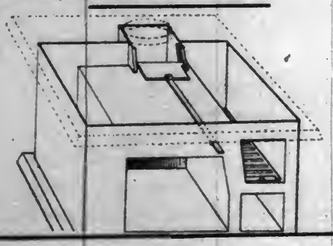
Brief.—A flexible metallic flier works loosely on a spindle in such manner that as it rotates around the spool or bobbin an eye in the flier will be adjusted in line with the separate coils of thread as they are being unwound, so that the tension of the thread will always be uniform.



Claim.—1. The follower A, constructed as described, with a guide-eye, F, formed therein, as shown and set forth.

2. The combination, with the spindle B and disk E, of the follower A, having the guide-eye F, as and for the purpose set forth.

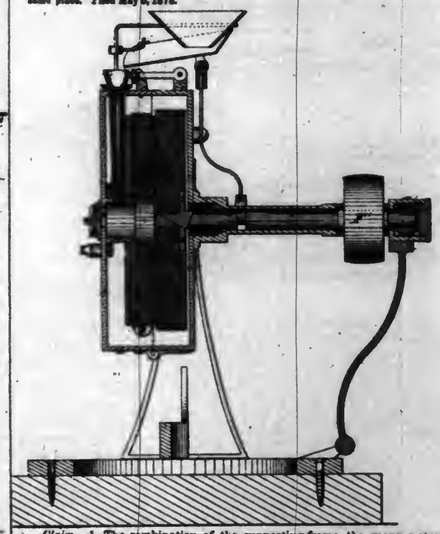
306,321.



306,321. STOVE-DAMPER. Jabez S. Van Buren, West Troy, N. Y. Filed Apr. 19, 1878.

Claim.—A damper adapted, substantially in the manner described, to close or open the flue of a cooking-stove by sliding in parallel ways inclined to the path of the damper-rod.

306,322. GRINDING-MILLS. Aubert H. Wagner, Chicago, Ill., assignor to Anna G. Wagner, same place. Filed May 8, 1878.



Claim.—1. The combination of the supporting-frame, the running stone, the casing, the driving-shaft, the loosely-enveloping sleeve on the shaft, having enlarged recessed ends or boxes, and the self-adjusting removable bushings, in which the driving-shaft is fitted, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the self-adjusting plate or turning-cam, yieldingly held in position, of the stationary or bed stone, its casing, and devices which support the stone upon said cam, substantially as described, whereby the stone is normally sustained in proper position relatively to the runner, while left free to yield automatically by the turning of the cam to allow clogging matter injurious to the stones to escape, in the manner set forth.

3. The combination, substantially as hereinbefore set forth, of the stationary or bed stone, its pivots, the casing, the guideways or sockets on the inside of the casing-wall or periphery, and the adjustable bolts, having heads movable in the guideways and provided with bearings for the pivots of the stone.

4. The combination, substantially as hereinbefore set forth, of the casing, the adjusting-bolts, having shoulders or collars, the adjustable screw-attached heads of the bolts, the stone pivoted in said heads, bearing-blocks on the bolts, and the adjusting-plate or turning-cam upon which the shoulders of said bearing-blocks are supported.

5. The combination, substantially as hereinbefore set forth, of the casing, the stationary or bed stone, its adjustable clamping-band, provided with pivots, the yieldingly-secured adjusting-bolts, their adjustable heads supporting the stone on the pivots, shoulders or collars on the bolts, the adjustable bearing-blocks acted upon by said collars as the bolts are adjusted, and the adjusting-plate or turning-cam, upon which the blocks bear, and by which the stone is moved toward or away from the casing-back.

6. The combination, substantially as hereinbefore set forth, of the stationary or bed stone, its casing provided with guideways upon the inner wall or periphery, the adjusting-plate or turning-cam, the endwise-moving rod for controlling said plate, the hand wheel or nut thereon, the spring or yielding cushion between said wheel and the casing, the adjusting-bolts, having heads movable in the casing-guideways and supporting the stone on its pivots, and the adjustable shouldered blocks on said bolts bearing upon the cams of the adjusting-plate, whereby the stone may be adjusted as desired, and firmly held in its position under ordinary circumstances, and yet be capable of yielding under unusual strain by the compression of the cushion on its controlling-rod, to allow the escape of clogging matter and prevent injury to the stones, as set forth.

7. The combination, substantially as hereinbefore set forth, of the casing, its sockets, the hopper-frame or bracket, formed of a bent rod fitting in said sockets, the shaking-lever, the shoe, the ferrule fitting upon the end of the shaking-lever, and the rod adjustably secured upon one of the ends or posts of the hopper-frame and supporting the outer end of the shoe.

306,323. HARVESTERS. Charles Whitney, St. Louis, Mo., assignee to O. W. Marsh and W. W. Marsh, Sycamore, Ill. Filed Nov. 8, 1877.

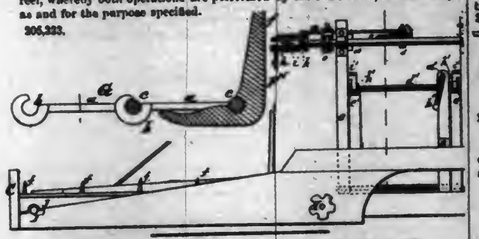
Claim.—1. A chain-link consisting of side bars *a*, projecting end bar *c*, and slotted hook *b*, all constructed and arranged substantially as and for the purpose specified.

2. The chain G, constructed of the bars *a c*, with openings *c*, in combination with the teeth F, having the projecting part *f* and bearings for the bar *c*, substantially as and for the purpose set forth.

3. In combination with a link having a slotted hook and operating therein, the tooth F, capable of being attached to or detached from the chain, and provided with a broad base or heel, operating against the link to act as a stop to prevent the tooth from tipping forward or back, substantially as specified.

4. The lever *p*, supported on the rock-shaft S, in combination with suitable devices to change the angle of the reel-slats and to raise and lower the reel, whereby both operations are performed by the same lever, substantially as and for the purpose specified.

306,323.



306,324. CAR-AXLES. John W. Whittle, Syracuse, N. Y. Filed Feb. 12, 1878.

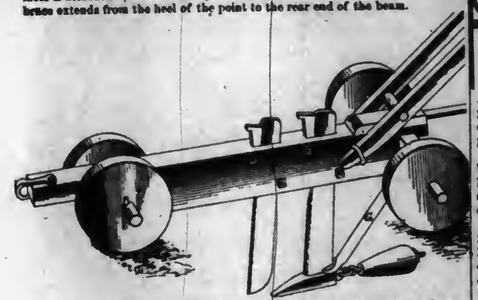


Claim.—1. In a divided car-axle, the combination of the independently-moving coupling D E E with the shouldered journal-bearings B H and the divided axle A, substantially as herein set forth.

2. In a divided car-axle, the long coupling D E E, splicing the divided axle ends, the part D having recesses at each end to receive the shouldered journal-bearings B H, and adapted to turn with or independently of said bearings and the divided axle, as herein set forth.

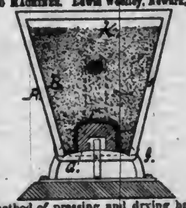
306,325. DITCHING-PLOWS. Alexander Wiley, Hart Point, Ind. Filed Nov. 20, 1877.

Brief.—A heavy wooden beam is supported upon two pairs of wheels. Between the forward and hind wheels the colter and standard are inserted. The foot or point is secured to the lower end of the standard, and to this the mole is attached by a bolt that passes through it and secured by a nut. A brace extends from the heel of the point to the rear end of the beam.



Claim.—In combination with the colter, share, and mole, the brace G, attached by a bolt, which also serves to secure the hind axle to the beam, substantially as set forth.

306,326. HAT-FINISHING MACHINES. Edwin Woolley, Newark, N. J. Filed May 21, 1878.



Claim.—1. The method of pressing and drying hats, the same consisting of seaming the hat-block and hat to be operated upon in the open apex of a double-walled cone-shaped case, mounted on hollow trunnions, and filled with sand, whereby, when the case is inverted in its bearings, the weight of the sand will be evenly distributed on the hat, and press and dry the same, substantially as described and set forth.

2. The cone-shaped case A, having the lining B, forming the steam-chamber *f*, in combination with the steam-pipes C and D and the frame I, substantially as and for the purpose specified.

3. In combination with the conical heated case A, to contain loose heated sand K, the cover F, having connected therewith the hat-block G and hat L, substantially as and for the purpose set forth.

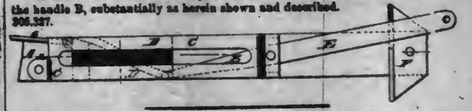
306,327. DRAFT-ADJUSTERS FOR PLOWS. Wm. A. Woodward, North Tunbridge, Vt. Filed Feb. 28, 1878.

Claim.—1. The combination of the slotted keeper C, the diagonally-grooved sliding block D, the pivoted draft-lever E, the plate-keeper F, the rod G, and the hand-lever H with the beam and handle, as shown and described.

2. The combination of the adjustable catch-plate I with the lever H, the handle B, and the mechanism G D E, as and for the purpose specified.

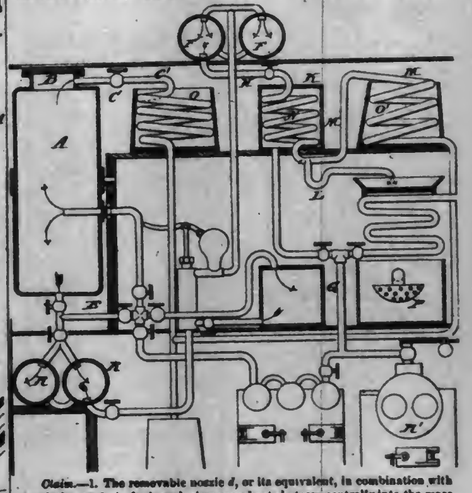
3. The combination of the adjustable catch-plate I with the lever H and the handle B, substantially as herein shown and described.

306,327.



306,328. APPARATUS FOR REFINING FAT-OILS. H. T. Yaryan, Richmond, Ind. Filed Feb. 26, 1878.

Brief.—Apparatus suitable to extract the last traces of hydrocarbon solvent used in percolators for removing or extracting fatty oils from cotton-seed and other oil-bearing seeds, in which superheated steam is the removing agent.

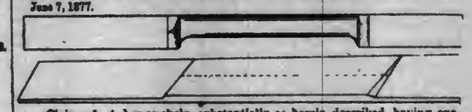


Claim.—1. The removable nozzle *d*, or its equivalent, in combination with percolating-tank A, for introducing superheated steam centrally into the mass of vegetable or other matter within the tank, substantially as and for the purpose described.

2. In an apparatus for the extraction of oils from oil-bearing substances by chemical solution and separating and recovering the solvent therefrom by heat, the combination of a coil, N, inclosing steam-drum K, outlet-pipe H', and separating-branches L M, for vaporizing and separating the solvent from the oil, substantially as specified.

3. The construction and arrangement of the apparatus, consisting of the following elements in combination, namely: steam-generator B', steam-superheater S, reversible percolator A, draining tank or tanks R, separator K, with coil N and outlet-branches L M, condenser O, and receiving-tank P, with their connecting-pipes, substantially as and for the purpose specified.

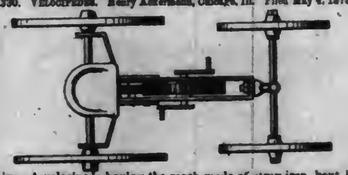
306,329. BLANKS FOR OUTLERY. George Abel and John Pedder, Beaver Falls, Pa. Filed June 7, 1877.



Claim.—1. A bar or skelp, substantially as herein described, having one or both faces made up of a series of longitudinal inclines or tapers, alternating with a series of portions of even gage longitudinally, the latter of sufficient length to form one or more solid handles, and serving to connect the longitudinal inclines or blade portions of the bar, the whole joined end to end, substantially as and for the purpose specified.

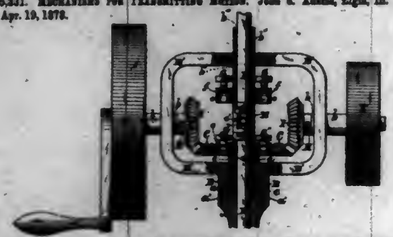
2. A bar or skelp having one or both faces made up of longitudinal inclines or tapers, alternating with portions of the bar of even gage longitudinally, the longitudinal inclines being also beveled transversely, and the even-gage portions which connect the inclines being of sufficient length to form one or more solid handles, substantially as and for the purpose specified.

306,330. VELOCIPEDES. Henry Ackermann, Chicago, Ill. Filed May 4, 1878.



Claim.—A velocipede having the reach made of strap iron, bent in front, and forming bearings at the rear for the rear axle, and a sleeve at the front end, forming a bearing for the guiding-shaft, and having a rear extension connecting it to the reach, in the manner described.

206,331. MECHANISM FOR TRANSMITTING MOTION. John S. Adams, Elgin, Ill. Filed Apr. 19, 1878.



Claim.—1. As a means for transmitting the power of a vertical driving-shaft to a pump, the pump-shaft D, provided with the cross-bar *d*, the sleeve E, having the slotted yoke *e*, the coupling-pins G′, engaging with said yoke and cross-bar, and the shaft F, connected with the upper end of said shaft, said parts being combined to operate in the manner and for the purpose substantially as specified.

2. As a means for transmitting the power of a vertical driving-shaft to mechanism which is operated by belts or other like means, the gear-wheel C, journaled within or upon a suitable support, the sleeve E, provided at its lower end with the cross-bar *e*, the coupling-pins G″, passing through said cross-bars into said gear-wheel, the horizontally-journaled shafts H, the pinions I, and the pulleys K, said parts being combined with each other and with the shaft F, in the manner and for the purpose substantially as shown.

3. As a means for connecting the shaft F to or with the operating-sleeve E, the cross-bar *f*, attached to said shaft, the cross-bar *e*, provided upon the upper end of said sleeve, and the coupling-pins G, passing through and connecting said parts, the same being combined to operate in the manner substantially as set forth.

4. As a means for rendering the operative mechanism radially adjustable with relation to the shaft, the frame B B′, swiveled upon the upper end of the hollow standard A, and locked in place by means of the set-screw L, said parts being constructed and combined in the manner and for the purpose substantially as shown and described.

5. The hereinbefore-described mechanism, in which the standard A, provided with the neck *a*, the frame B B′, having the bosses *b* and *b′*, the gear-wheel C, provided with the hub *c*, the pump-shaft D, having at its upper end the cross-bar *d*, the sleeve E, provided with the cross-bars *e* and slotted yoke *e′*, the shaft F, having the cross-bar *f*, the coupling-pins G, G′, and G″, the horizontal shafts H, the pinions I, the pulleys K, and the set-screw L, are constructed as shown and combined with each other, a windmill or other motor shaft, and a pump-shaft, substantially as and for the purpose specified.

206,332. BED-BOTTOMS. Benjamin F. Allen, Boston, Mass. Filed Oct. 22, 1877.

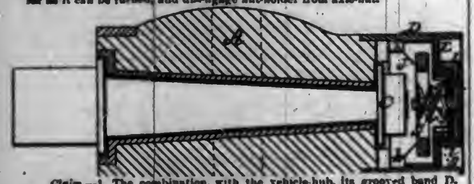


Claim.—1. In a spring-bed, a spring-supporting frame, B, constructed as herein shown and described, in combination with the bottom C, for giving additional powers of resistance to the frame B, and provided with slots *d*, for the purpose of ventilating the bed, as specified.

2. The improved bed-bottom herein described, consisting of the frame composed of the part B and bottom board C, slotted as described, and the springs and rings *b c*, said springs and rings forming the entire surface upon which the bedding is placed, as specified.

206,333. VEHICLE-HUBS. Alfred W. Anthoine, Minot, Me. Filed May 18, 1878.

Brief.—Turn the polygonal band-head as far to the right as possible to engage the nut-holder with the axle-nut; then turn the wheel to the right to unscrew the axle-nut. To secure the wheel upon the spindle, turn the wheel to the left till nut is fully screwed on; then turn the band-head to the left as far as it can be turned, and disengage nut-holder from axle-nut.



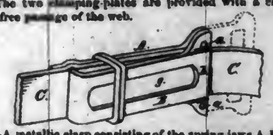
Claim.—1. The combination, with the vehicle-hub, its grooved band D, the axle-spindle, and its nut C, of the flanged nut-holder J, having the offsets *g*, the cap-plate L, the turning head *l*, its shank or post *j*, and the double branched helical spring S, substantially as specified.

2. In a hub, the projecting band D, forming a chamber beyond end of hub, the cap-plate L, and the turning head *l*, having a shank extending through said cap-plate and supporting a nut-holder, J, through the medium of a spring or yielding connection attached to said shank, substantially as specified.

3. The cap-plate L, having the central turning shank *j*, provided on the outside of said plate with a turning head, *l*, and on the inside of the same with a spiral yielding guide, and a reciprocating nut-holder engaging therewith, substantially as specified.

206,334. CLASPS. Frank Armstrong, Bridgeport, Conn. Filed Apr. 10, 1878.

Brief.—The two clamping-plates are provided with a channel between them for the free passage of the web.



Claim.—A metallic clasp consisting of the spring-jaws A B, joined at their upper ends, provided with a channel, *c*, between them, and adapted to be closed by means of a sliding ring, substantially as and for the purpose set forth.

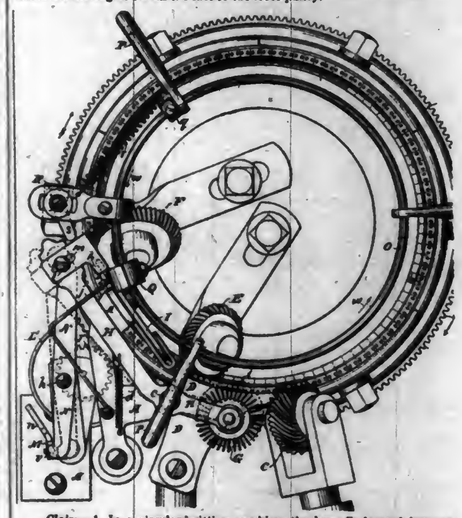
206,335. TRUNK-CATCHES. John Arnold, Newark, N. J. Filed May 13, 1878.



Claim.—The plate A, its central tongue *c*, recesses *x*, and spring *b*, in combination with the loop D, extending round and below the tongue *a* through the recesses *x*, and provided with the lip *a*, bearing against the spring, as set forth.

206,336. STOPPING MECHANISMS FOR KNITTING-MACHINES. Sotterios Arnold, Lansingburg, N. Y. Filed Aug. 17, 1877.

Brief.—When the yarn breaks or fails, the burr, which is located between the sinker and landing burrs, moves into deeper engagement with the needles, and in so doing will liberate the web-depressor, which is connected therewith. The web-depressor, in its movement to force the old loops below the barbs of the needles, strikes against the pendent arm of the support or frame which overhangs the needle-cylinder, and brings into operation the mechanism which shifts the driving-belt from the fast to the loose pulley.



Claim.—1. In a circular-knitting machine, the burr G, located between the sinker-burr C and landing-burr E, in combination with the movable support H and a spring, *d*, whereby the said burr G is caused to operate upon the new loops between the needles, or move into deeper engagement therewith when the new loops fail, substantially as and for the purposes herein set forth.

2. In a circular-knitting machine, the combination of the web-depressor I, movable support H, and burr G, said burr engaging with the needles and mounted on the movable support, which is connected with the web-depressor, substantially as and for the purposes herein set forth.

3. In a circular-knitting machine, the burr G, located between the sinker-burr C and landing-burr E, in combination with the web-depressor I and movable support H, substantially as and for the purposes herein set forth.

4. In a circular-knitting machine, the combination of the stopping mechanism, the web-depressor I, the stop-operating mechanism Q O R, the burr G, engaged with the needles, and a movable support, H, connected with the web-depressor, whereby, when the new loops fail, the burr will move inward, and thereby release the web-depressor, so as to cause the latter to actuate the stopping mechanism, as set forth.

206,337. FURNACE-DOORS. John Ashcroft, Brooklyn, N. Y., assignor to Sarah Jane Ashcroft, same place. Filed Mar. 12, 1878.

Claim.—1. A swinging door hung centrally and horizontally, and balanced without counterpoise-weights, and adapted to open inwardly and outwardly, substantially as set forth and described.

2. A hollow door horizontally hung at or near its center, balanced to remain at any fixed position for the introduction of air to the furnace, in the manner set forth and described.

3. A furnace-door whose axis of motion is at or near its center on a horizontal line, the inner and outer walls or plates of which are made of different

curvatures, for the purpose set forth and described.

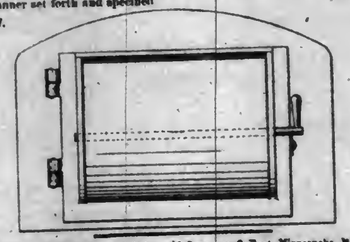
4. A swinging door horizontally hung at or near its center, in combination with a door-frame hinged and swinging, as and for the purpose set forth and described.

5. A swinging door horizontally hung, the inner wall of which is constructed of different curves, so that when the door is opened outwardly the air is deflected from the crown-sheet of the boiler, for the purpose set forth and described.

6. A furnace-door horizontally hung at or near its center, adapted to supply air to the furnace through it when closed, and through it and under it when open, or partially so, substantially as set forth and described.

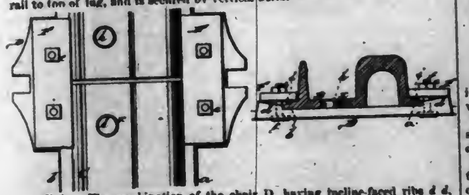
7. The combination, in a furnace-door, of the centrally-swinging portion, the frame swinging portion, and the projecting flanges, arranged to operate in the manner set forth and specified

206,337.



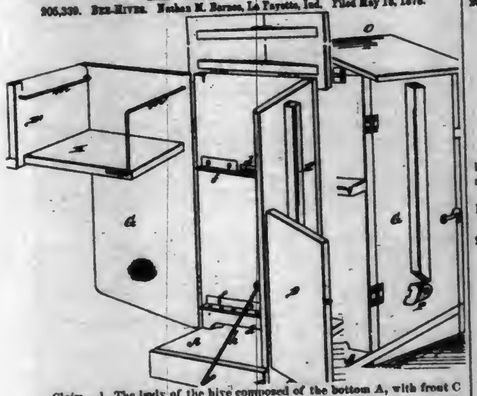
206,338. RAIL-JOINTS. Lewis I. Baker and Lawrence O. Rust, Minneapolis, Minn. Filed Apr. 27, 1878.

Brief.—The rails are secured between lugs upon the chairs, the upper surfaces of which lugs incline downward toward the rail, which also has inclined base flanges sloping toward the lugs. A flat plate bridges across from web of rail to top of lug, and is secured by vertical bolts.



Claim.—The combination of the chair D, having incline-faced ribs *d d*, the rail having inclined bottom flanges *a b*, the covering-plates F F, forming cavities *i i* underneath, and the fastening bolts and nuts, substantially as and for the purposes set forth.

206,339. BEE-HIVES. Nathan M. Barnes, La Fayette, Ind. Filed May 16, 1878.



Claim.—1. The body of the hive composed of the bottom A, with front C and side E secured thereto, the side G, hinged to the front and provided with the back section D′ and honey-board H, and the back door D, hinged to the side E, all substantially as and for the purposes set forth.

2. The honey-board H, secured to the hinged side G and back section D′, and forming, when the hive is closed, bee spaces *b* along the opposite two edges, as herein set forth.

3. In a bee-hive, the rounded edges *a* at the joints where the hinged parts are closed, for the purposes set forth.

4. In a bee-hive, one or more entable ventilating-shafts communicating near the bottom with the interior of the hive, and provided at the lower end with a slide or valve, substantially as and for the purposes set forth.

206,340. OZONE-GENERATORS. George F. H. Bartlett, Buffalo, N. Y. Filed May 1, 1877.

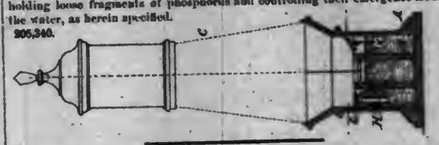
Brief.—The phosphorus is molded upon wires or strips of fusible metal, which are prolonged and provided with hooks for suspending the phosphorus from suitable supports, and which strips of metal are readily fused upon the commencement of ignition of the phosphorus, thus allowing the latter to drop into the water and preventing inflammation. A wire-gauze basket is provided for holding bits of phosphorus, and thus utilizing them for making ozone.

Claim.—1. In combination with a water-containing vessel and provisions for slow admission of air and for the discharge of ozone, the yielding supports G, adapted each to immerse its quantity of phosphorus on the generation of any considerable heat, as herein specified.

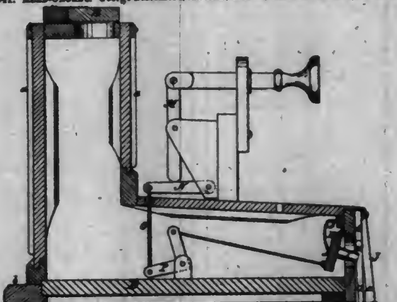
2. The phosphorus sticks H, molded upon the yielding supports G, as and for the purposes herein specified.

3. In combination with the water-vessel A and ozone distributing surface C, the open-work cradle K and suitable supporting means, as a means for holding loose fragments of phosphorus and controlling their emergence from the water, as herein specified.

206,340.



206,341. REED-ORGANS. George Blatchford, Mitchell, Ontario, Canada. Filed Apr. 26, 1878.



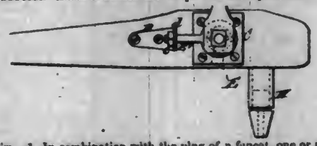
Claim.—1. A resonant air-chamber for organs, having the reed-board inserted into grooves inside of the chamber, so as to obtain a more perfect vibration of the chamber, substantially as and for the purpose set forth.

2. A resonant air-chamber for organs, made of a horizontal and a vertical section, having solidifying or qualifying bars to obtain a more distinct voicing of the instrument, substantially as specified.

3. The combination, with a resonant chamber for an organ, of an auxiliary front swell, in connection with or independently of the grand swell at the top of the chamber, substantially as described.

4. The combination of the knee-stop H, lever G, pivot I, and levers J, K, L, M, and N, rod O, lever P, and leather-strap attachment, substantially as and for the purposes set forth.

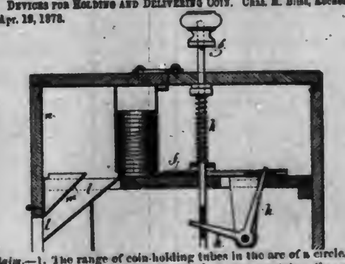
206,342. FAUCETS. Alfred Bessaulell and Joseph Morreau, Alpena, Mich. Filed Jan. 16, 1878.



Claim.—1. In combination with the plug of a faucet, one or more adjustable braces for compensating for the wear of the plug and keeping the faucet air-tight, as set forth.

2. The combination of the plates D, with ears or flanges *d*, plug B, rings E, with arms E′, and nuts *e*, substantially as and for the purposes set forth.

206,343. DEVICES FOR HOLDING AND DELIVERING COIN. Chas. E. Bliss, Rochester, Minn. Filed Apr. 19, 1878.



Claim.—1. The range of coin-holding tubes in the arc of a circle, or nearly so, in combination with a funnel-shaped mouth for receiving the coins from any of the holding-tubes and discharging the same at one place, substantially as set forth.

2. The combination, with the coin-holding tubes, of the horizontal slides *f*, acting to push the coin out from the pile, the push buttons *g* and their vertical rods, and the bent levers *h* and springs *i*, arranged and operating substantially as set forth.

206,344. BROOMS. John W. Booth, Wayne, assignor to George C. Wetherbee, Detroit, Mich. Filed Apr. 13, 1878.

Claim.—The broom described, consisting of the handle A, head-block B,

flexible metallic band C, secured to such head-block, and bent inwardly at its bottom to inclose the brown straws more securely within it, and an outer layer of brown straws, F, all constructed and arranged substantially as and for the purposes set forth.

205,344.



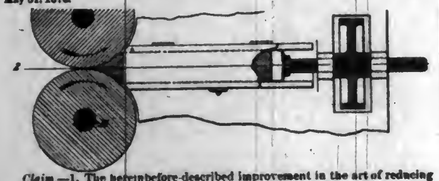
205,345. CIGARETTES. George E. Bovee, Convent, La. Filed June 23, 1877.

Claim.—As a new article of manufacture, a cigarette provided with a mouth-piece which is constructed from corn-husk or other like substance that has a roughened or irregular surface, loosely rolled into the form of a cylinder and secured to or upon one end of said cigarette, substantially as and for the purpose specified.

205,346. ARTIFICIAL MARBLE. Agapit Brault, Montreal, Quebec, assignor to Gideon Bourdeau, Lapraire Canada. Filed Mar. 2, 1878.

Claim.—A composition for artificial stone, consisting of sulphur, marble-dust, ivory-black, and powdered vermilion, as set forth.

205,347. REDUCING WOOD TO PULP FOR PAPER, &c. Benj. P. Brown, Tilton, N. H. Filed May 31, 1878.



Claim.—1. The hereinbefore-described improvement in the art of reducing wood to pulp, which consists in presenting a block or billet, with the grain running parallel to its length and in the direction of the feed, to and between two stones or grinding surfaces revolving in opposite directions, or away from each other and against the feed, and acting on the block on both sides of its center, at its end, against the exposed ends of the fibers and diagonally to them.

2. The combination, substantially as hereinbefore set forth, of two rolls or grinding-surfaces revolving parallel to each other, and in opposite directions or away from each other, and against the wood to be acted on, and block or billet feeding and guiding devices, whereby the wood is presented to the rolls and the ends of the fibers pressed against their adjacent peripheries in a direction opposite to that in which they both revolve, for the purpose described.

205,348. FIREMEN'S BELT-HOOKS. Herman Buchholz, Springfield, Mass. Filed Nov. 26, 1877.



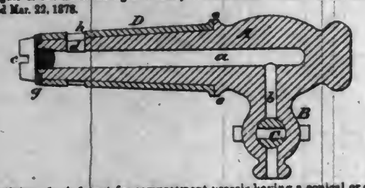
Claim.—A fireman's belt-hook composed of the parts a, d, and A, and having a shank slotted for the passage of the belt, substantially as and for the purpose set forth.

205,349. COMBS. Manuel Betron, Havana, Cuba. Filed June 6, 1878.



Claim.—The combination, with a comb, of tufts of bristles or like material interposed between the teeth of the comb, substantially in the manner and for the purpose shown and described.

205,350. FAUCETS FOR COMPARTMENT-VESSELS. Joseph Butcher, New York, N. Y., assignor of two-thirds his right to Henry C. Dobson and William Kissner, same place. Filed Mar. 22, 1878.

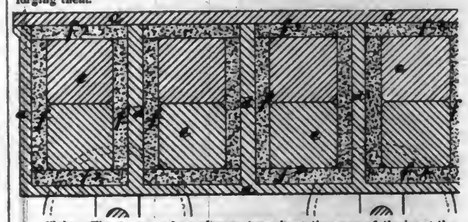


Claim.—1. A faucet for compartment-vessels having a conical or cylindrical spindle provided with a hole in the side, and a close-fitting tubular sleeve with two or more ports arranged to coincide successively, when the spindle is turned within the sleeve, with the hole in the spindle, and a suitable cut-off or stop operating independently of the sleeve to regulate the escape of fluids from the faucet, substantially as set forth.

2. The combination of the body or spindle A of a faucet, provided with a bore, *a*, side opening *d*, and shoulder *c*, with the close-fitting sleeve D, provided with two or more ports, *b b*, arranged to coincide successively with the opening *d* when the sleeve is turned on the spindle, substantially as and for the purposes set forth.

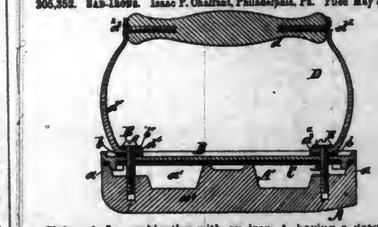
205,351. TREATING CAST-STEEL INGOTS. Bernard E. Cammell, Sheffield, and James Dufield, Dronfield, England. Filed Jan. 22, 1878.

Brief.—Immediately after metal has set in molds, places ingots in a box or a pit lined with fire-clay, and therein surrounds them with a pulverized non-conductor of heat, to equalize temperature of ingots preparatory to rolling or forging them.



Claim.—The process of equalizing throughout the mass of the ingot the heat which it contains when discharged from the mold, and thus rendering the ingot fit, without further heating, to undergo the operations of rolling, hammering, or forging into shape, such process consisting in burying the heated ingot for a limited time in pulverized charcoal or other bad conductor of heat reduced to a granular or pulverized state, and thereby protecting the ingot from the action of the air.

205,352. SAD-IRONS. Isaac P. Chalfant, Philadelphia, Pa. Filed May 8, 1878.



Claim.—1. In combination with an iron, A, having a dead-air space or chamber, *a'*, and a detachable metallic cap, B, a lining of asbestus, C, forming a ceiling to said air-chamber, and a non-conducting joint between the body and cap, substantially as shown and described.

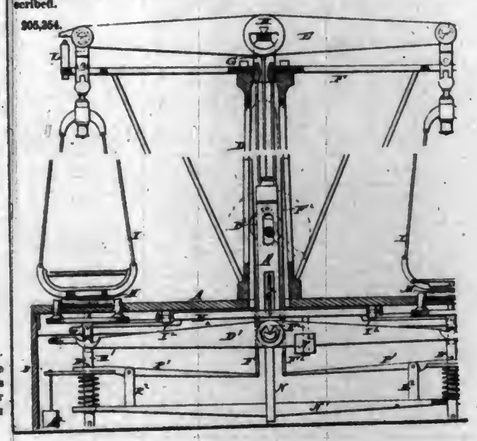
2. The combination of iron A, having air-chamber *a'* and central post A', detachable cap B, asbestus lining C, handle D, screws E E, and washers, substantially as shown and described.

205,353. VAGINAL SYRINGES. Harrison T. Chamberlin, Brockport, N. Y. Filed Oct. 17, 1876.



Claim.—The instrument consisting of the tubular body A, having closed sides, provided with the longitudinal grooves or channels *c c* and the connecting orifices *b b* at the top, the whole arranged so that the injecting liquid is forced down in currents outside the instrument, as herein shown and described.

205,354.



205,304. WEIGHING-SCALES. Henry S. Goshorn, Philadelphia, Pa. Filed June 13, 1878.

Claim.—1. In combination with the platform-scale, an auxiliary or spring scale, whereby the weight of the material may be approximately determined previously to subjecting it to the weighing operation on said scale, substantially as specified.

2. In combination with the standard N, provided with a central slot, M, and side slots A^1 A^1, the slotted portion of the standard E, adapted to reciprocate in said central slot, the shaft O, and the eccentric B^1 and B^1, whereby the two standards are simultaneously shifted and thrown into and out of operative position, substantially as specified.

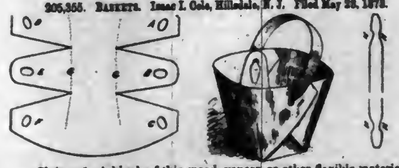
3. In combination with the beam-scale and platform-scale, and the mechanism for throwing the same into and out of operation, the weighted rock-shaft and vertically-sliding standards, whereby the scale-pans may be supported independently of the scale-supports, substantially as specified.

4. In combination with the auxiliary spring-scale on the platform-scale, the index F^2 and gage G^2 on the standard D^1, as and for the purpose set forth.

5. In combination with the beam-scale and platform-scale, and the mechanism for throwing the same into and out of operative position, the rock-shaft and the sliding standards operated thereby for supporting the scale-pans, substantially as and for the purpose specified.

6. In combination with the sliding standard for supporting the beam-scale and the sliding standard for supporting the platform-scale, the transverse shaft passing through the upright column D, and the cams mounted thereon for operating the respective sliding standards, the whole arranged to operate substantially as described.

205,355. BASKETS. Isaac I. Cole, Hillsdale, N. J. Filed May 28, 1878.



Claim.—1. A blank of thin wood, veneer, or other flexible material, cut or stamped with two V-shaped notches on each side thereof, and provided with holes A B C D E F, substantially as and for the purposes set forth.

2. A basket-handle blank with spatulated ends, substantially as described, and shown in Fig. 2.

3. The combination of the basket blank and handle, constructed and united substantially as herein set forth.

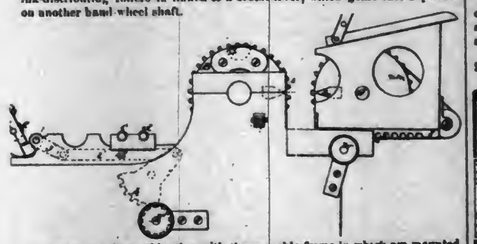
205,356. COMPOUNDS FOR COATING ROASTED COFFEE. John T. Cocks, Brooklyn, N. Y. Filed Apr. 25, 1878.

Brief.—To a quarter of a pound of glucose adds two gallons of water and three-quarters of a pound of gum-tragacanth, stirring until a solution is formed. This is applied to the roasted coffee before cooling.

Claim.—A compound of glucose and gum-tragacanth, when mixed together about in the proportions herein specified, for the purposes set forth.

205,357. PRINTING-PRESSES. Calvert B. Cottrell, Westerly, R. I. Filed May 27, 1876.

Brief.—The feed-board and delivery apparatus are mounted in an auxiliary frame adapted to slide upon the main frame. It carries a rack gearing with a pinion on a shaft bearing a hand-wheel. An arm on the hinged frame of the ink-distributing rollers is linked to a sector-lever, which gears into a pinion on another hand-wheel shaft.

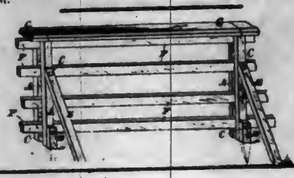


Claim.—1. In combination with the movable frame in which are mounted the rolls that work over the ink-rolls, a mechanism, substantially as described, for moving said frame, the combination being and operating substantially as specified.

2. In combination with the main frame and impression-cylinder of the press, the auxiliary movable frame carrying the feed-board, delivery mechanism, and other appurtenances, the combination being and operating as specified, for the purpose set forth.

3. In combination with the main frame carrying the impression-cylinder and other usual parts, and the auxiliary movable frame carrying the feed-board, delivery mechanism, and other necessary appurtenances, the mechanism, substantially as described, for moving the auxiliary frame from and toward the impression-cylinder on the main frame, all substantially as shown and described.

205,358.



205,208. FENCES. Samuel Craig, North Benton, Ohio. Filed Nov. 10, 1877.

Claim.—1. The hereinbefore-described post, consisting of the bars A and A, blocks B and B, supporting-stake D, brace E, and bolts C and C, all constructed substantially as and for the purpose specified.

2. The hereinbefore-described fence, consisting essentially in the bars A, stakes D, braces E, rails F, top board G, and binding-bolts C, constructed substantially as shown.

205,359. TRACE-FASTENINGS. Lucius P. Crandall, Eau Claire, Wis., assignor to Clark Robinson and Joseph P. Ellis. Filed Sept. 14, 1877.



Claim.—As a means for attaching a trace to or upon a whiffletree, the bar A, provided with the vertically-elongated head *a*, and the block C, pivoted eccentrically upon said bar, between said head and the end of the whiffletree, and having within its rear side a semicircular groove, *c*, for the reception of the slotted end of the trace, said parts being constructed and combined to operate as specified.

205,360. STEAM-ENGINES. John B. Crowley, Brooklyn, N. Y. Filed Mar. 16, 1878.



Claim.—1. A steam-engine having a hollow piston-rod, in combination with a driving-shaft extending through said piston-rod and the steam-cylinder, the piston-rod being provided with a swiveled block adapted to travel longitudinally on said driving-shaft and journal, said block being provided with lugs or projections adapted to travel in reversely-set spiral ways, whereby a rotary motion is imparted to the driving-shaft, substantially as set forth.

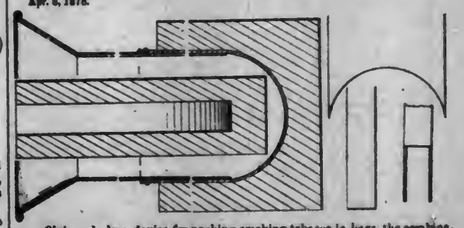
2. In combination with the steam-cylinder, its hollow piston-rod, and driving-shaft extending through the same, the swiveled block adapted to travel longitudinally on said shaft, and provided with lugs or friction-rollers, and the supplementary cylinder provided with reversely-set spiral grooves, in which said lugs or projections travel, substantially as set forth.

3. In combination with the rotating block, the cam mounted on a pin on the front face of the same, and the tappet connected with a lever under control of the driver, arranged to operate said cam on the rotating block, for the purpose of throwing the projections or rollers into either grooves at will, for the purpose of reversing the engine, substantially as set forth.

4. In combination with the rear head of the steam-cylinder, the cap secured to the same, whereby the access of dust to the packing is prevented and a bearing to support the engine is formed, substantially as set forth.

5. In combination with the piston-rod of the engine, the valve-chest, and oscillating valve, the poppet-valves, operated by the piston to admit steam alternately to each side of the valve, for the purpose of shifting the same, substantially as set forth.

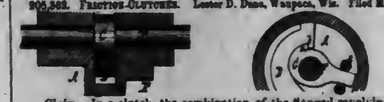
205,361. DEVICES FOR PACKING SMOKING-TOBACCO. Wm. J. Cussen, Richmond, Va. Filed Apr. 6, 1878.



Claim.—1. In a device for packing smoking-tobacco in bags, the combination of a mold with concaved bottom, and a plunger having concaved end, and an open-bottomed tin, to which the bag is connected, all substantially as and for the purposes herein set forth.

2. The combination, in a device for packing smoking-tobacco, of an open-bottomed tin with concave end, a mold with concaved bottom, and a plunger with concaved end, all substantially as and for the purposes herein set forth.

205,362. FRICTION-CLUTCHES. Lester D. Dana, Waupaca, Wis. Filed May 14, 1878.



Claim.—In a clutch, the combination of the flanged revolving disk A, secured on the shaft F, a dog or cam, C, provided with a toe, *c*, and mounted loosely upon said shaft within the flanged disk, a segment, D, provided with toe *b*, and arranged also within said flanged disk, so as to engage with the said dog or cam, and an oscillating disk, E, mounted loosely upon the shaft and engaging with said dog, all adapted to operate substantially as described.

205,363. PRESSERS. James W. Dawson, Chicago, Ill. Filed Feb. 23, 1878.

Brief.—The stem is made telescopic and the parts prevented from rotating upon each other by being made angular. An enlarged base covers the hinge between the spring and stem, and prevents injuring the flesh.



Claim.—1. The extension-stem composed of the part B, having the partially-threaded recess, the sleeve B', entering the recess, and the screw B², held within the sleeve and engaging the threaded portion of the recess in the part B, substantially as specified.

2. The enlarged base of the stem, in combination with the hinge-joint between the spring and stem placed under the base, substantially as set forth.

3. The uterine supporter wherein the cervix-cup is adjustable upon a stem, upon which it is prevented from turning by giving the telescoping parts the angular or equivalent form, substantially as set forth.

205,364. HOG-CHOLERA COMPOUND. Andrew R. Derrickson, Bedford, Iowa. Filed Sept. 4, 1877.

Claim.—The herein-described medical compound, consisting of flaxseed-oil, tar, asafœtida, tobacco, origanum, aqua ammonia, aconite, opii, olive-oil, chloroform, oil of sassafras, and oil of cloves, mixed in the proportions substantially as specified.

205,365. SOAP-HOLDERS. Wm. H. Devoss, Philadelphia, Pa. Filed Nov. 26, 1877.



Claim.—The soap-case consisting of the case A, open at both ends, the reticulate bottom B, and the cover C, fitting both ends of the case, so as to alternately serve as top inclosure and bottom receptacle for the water and drip, substantially as and for the purpose set forth.

205,366. POUNDER WASHING-MACHINES. Cyrus A. Dodge, Middlebury, Vt. Filed June 15, 1878.



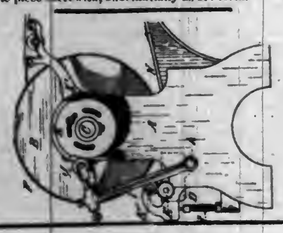
Claim.—1. In a pounder washing-machine, the combination, with a stationary guide-bar equal in length to the desired longitudinal movement to be imparted to the actuating-lever, said guide-bar adapted to be removably secured to the tub and extend outwardly therefrom, of an actuating-lever provided with a pounder-shaft, one end of said lever being connected with said guide-bar, and adapted to be moved vertically, laterally, and longitudinally, the extreme end of the lever being at all times supported by the guide-bar, substantially as set forth.

2. In a pounder washing-machine, the combination, with a stationary guide-bar equal in length to the desired longitudinal movement to be imparted to the actuating-lever, said guide-bar adapted to be removably secured to the tub and extend outwardly therefrom, of a slide provided with a swiveled bearing, said slide adapted to be freely moved to and fro upon said stationary guide-bar, and an actuating-lever provided with a pounder-shaft and pounder, said lever pivoted at one end to said swiveled bearing on the slide, substantially as set forth.

3. In a pounder washing-machine, the combination, with a stationary guide-bar equal in length to the desired longitudinal movement to be imparted to the actuating-lever, said guide-bar adapted to be removably secured to the tub and extend outwardly therefrom, of a slide provided with a swiveled bearing, said slide adapted to be moved to and fro upon said stationary guide-bar, and an actuating-lever and equalizing-bar, the outer ends of which are pivoted to the swiveled bearing on the slide, substantially as set forth.

4. A stationary guide bar or rod equal in length to the desired longitudinal movement to be imparted to the actuating-lever, and adapted to support one end of the actuating-lever throughout its movement toward and from the center of the tub, said guide bar or rod having an inverted U-shaped clamp cast in a single piece therewith, substantially as set forth.

205,367.



205,367. VARNISHING-MACHINES. Thomas B. Dooley, Boston, Mass., assignor to himself, Daniel Gunn, and George E. Bliss, same place. Filed Apr. 4, 1876.

Brief.—Improvement on Patent No. 199,635, dated January 29, 1878. Sheets of paper are carried around a drum and receive a coating of varnish from a suitable elastic roller, the varnish being supplied from a trough by a feed-roller. By suitable mechanism the varnish-roller is kept from contact with any part of the drum except that covered by the sheet of paper.

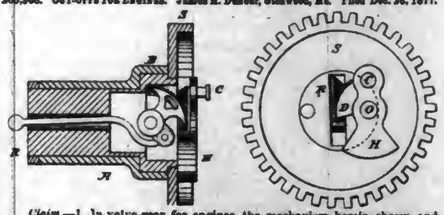
Claim.—1. The standards, the rotating drum, the tank, and the feed-roller, in combination with the elastic varnishing-roller, adapted to apply the varnish directly to the paper sheet, and provided with hinged bearings, whereby it may be thrown out of contact with the feed-roller, substantially as set forth.

2. The combination of the rotating drum and its supporting-standards with the varnish-tank and rollers and the adjustable pins, substantially as and for the purpose set forth.

3. The combination of the supporting-standards A, the rotating drum B, and the adjustable cams K K' on the axis of the drum, with the rollers E E', fountain D, and arm I, projecting from the shaft A, substantially as set forth.

4. In a varnishing-machine, the combination of the drum, the fountain, and the varnishing-rollers with the hinged extension N of the feed-table, and the rock-shaft arms and cam for operating the same, substantially as set forth.

205,368. CUT-OFFS FOR ENGINES. Justus H. Dunbar, Glenwood, Ma. Filed Dec. 28, 1877.

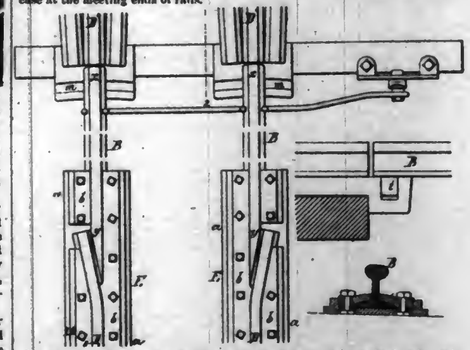


Claim.—1. In valve-gear for engines, the mechanism herein shown and described, consisting of a crank set off from the center of a shaft upon a fixed center revolving with said shaft, and adjustable by a governing mechanism, as and for the purpose described.

2. In valve-gear for engines, the hollow shaft R, disk S, and weighted crank H, set off from the axis of shaft R upon a fixed pin, O, and attached to the segmental gear D, in combination with the segmental gear B, which is controlled by a governing mechanism, as and for the purpose specified.

205,369. RAIL-JOINTS. Owen Eckert and John W. Lovan, White Haven, Pa. Filed Mar. 25, 1878.

Brief.—The fixed ends of the switch-rails, together with the adjacent ends of the track-rails, are correspondingly beveled, and inserted in guiding-shoes, whereby free expansion and contraction longitudinally is secured, and in case of contraction there is not that wide right-angled gap which ordinarily is the case at the meeting ends of rails.



Claim.—1. The combination of the rails B B, having inclined ends, and the rails D D, having ends bent to a corresponding inclination, with guiding-slides E E, to which the said rails are adapted, so as to move in parallel lines, all substantially as set forth.

2. The combination of the switch-rails B B, confined longitudinally at their outer ends *x x*, and having their inner ends *y y* beveled, with the fixed rails D D inclined at their ends, to correspond with the beveled ends of the said switch-rails, substantially as set forth.

3. The combination of the rails B B, having beveled ends, and the rails D D, having inclined ends and recessed flanges, with the shoes F F, having pins *z*, adapted to the recesses in the flanges, as and for the purpose set forth.

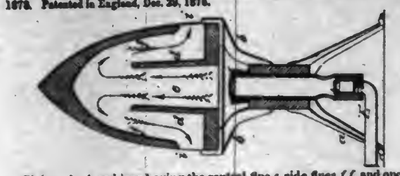
205,370. PNEUMATIC STENCIL-PENS. Thomas A. Edison, Menlo Park, N. J. Filed Mar. 26, 1877.



Claim.—1. In an instrument for puncturing paper for autographic printing, a needle-pointed rod reciprocated by a device constructed substantially as described, and operated by the action of air or other fluid, as set forth.

2. In combination with the holder *a* and needle-rod *e*, the fan-wheel *l*, case *k*, shaft *l*, cam *m*, and flexible tube *t*, substantially as and for the purposes specified.

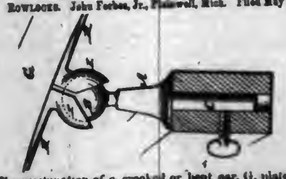
205,371. SAD-IRONS AND HEATERS. Charles Read, Bradford, England. Filed Mar. 4, 1878. Patented in England, Dec. 29, 1876.



Claim.—1. A sad-iron having the central flue *e*, side flues *f f*, and openings *i i*, as described.

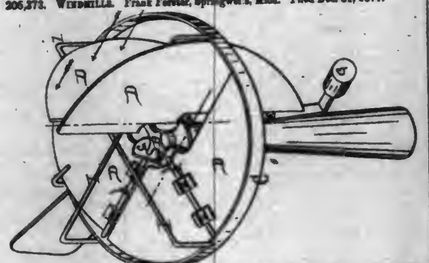
2. The combination of a sad-iron having flues, as described, with a stand, A, having a central burner, and brackets *b*, for supporting the iron, all substantially as set forth.

205,372. ROWLOCKS. John Forbes, Jr., Flatwell, Mich. Filed May 25, 1878.



Claim.—The combination of a crooked or bent oar, G, plates H H, with cups I I, and the post A, with ball B, all substantially as and for the purposes set forth.

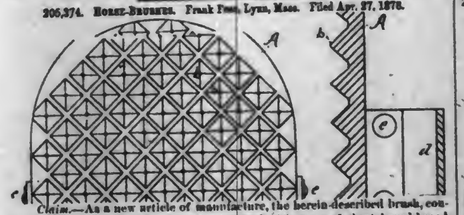
205,373. WINDMILLS. Frank Forster, Springwell's, Mich. Filed Dec. 31, 1877.



Claim.—1. In a wind or water wheel, the hub B, provided with radial arms *b* and sails D, in combination with the band C, stay-rods I, and shaft A, substantially as set forth.

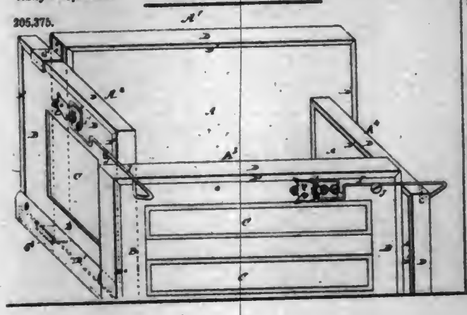
2. In combination with a wheel constructed substantially as hereinbefore described, the cams e and the spring cam plate H, arranged to operate as and for the purposes set forth.

205,374. HORSE-BRUSHES. Frank Ford, Lynn, Mass. Filed Apr. 27, 1878.



Claim.—As a new article of manufacture, the herein-described brush, consisting of a molded elastic back, A, integral with rows of short broad-based pyramidal projections *b b* upon its face, and upon its back, as a constituent part thereof, two lugs or ears, *c c*, to which is attached a hand-loop, substantially as specified.

205,375.



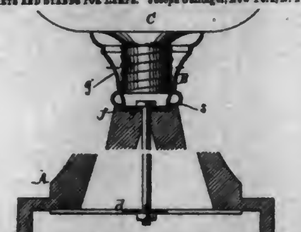
205,376. MULTIPLYING-MIRRORS FOR EXHIBITING SAMPLES. Lewis G. Francis, New York, N. Y. Filed May 20, 1878.

Claim.—1. The series of mirrors A^1 A^2 A^3 A^4, having backs C, composed of cross-glued layers of wood, as herein specified.

2. The rectangular frame A^1 A^2 A^3 A^4, composed of mirrors backed with cross-glued wood C, loosely inclosed in frames B, and adapted to serve as herein specified.

3. The mirror-frame A^3, provided with the stop J and spring-clip I, having a hooked beveled end, in combination with the mirror-frame A^2, having a spring-clip and stop at one end, and the mirror-frame A^4, whereby the mirror-frames A^3 A^4 can readily be engaged with the spring-clips or removed therefrom by a facewise movement of said frames, as herein specified.

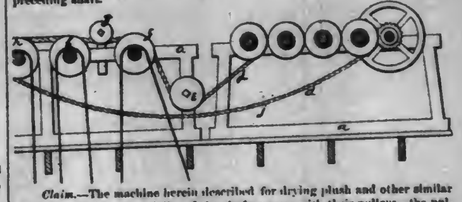
205,378. SOCKETS AND STANDS FOR LAMPS. Joseph Gallinger, New York, N. Y. Filed June 5, 1878.



Claim.—The combination, with the stand A, having the depression *f*, and with the fount C, of the shell *g'*, having a projection, *g*, adapted to the depression, the internal fastening-thimble h, for receiving and holding the shank of the fount, and the screw-bolt *c*, passing through the lower end *s* of the shell, the fastening-thimble for confining the said shell, and fastening device in the depression *f'* of the shell, all substantially as and for the purpose described.

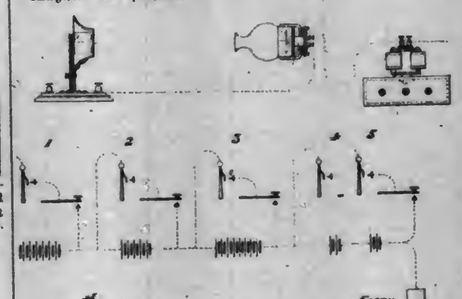
205,377. MACHINES FOR DRYING CLOTH. Thomas Goodall, Sanford, Me. Filed Mar. 11, 1878.

Brief.—The fabric is suspended between a series of shafts, to which actuating-pulleys are attached. When a loop of cloth of the desired length has been made the rotation of the shaft over which the web of fabric is running is checked by means of a friction-pulley, thus forming a new loop behind the preceding shaft.



Claim.—The machine herein described for drying plush and other similar goods, consisting, essentially, of the shafts *c c c c*, with their pulleys—the pulley *e*, pulley *f*, friction-pulleys *g*, and pulleys *h*—attached to feeding-shafts *i*, as herein set forth, and operating in the manner specified, with the band *d*.

205,378. TRANSMITTING RHYTHMICAL VIBRATIONS IN AN ELECTRIC CIRCUIT. Elisha Gray, Chicago, Ill. Filed Apr. 9, 1878.



Claim.—The combination, substantially as hereinbefore set forth, in an apparatus for generating and transmitting vibrations, impulses, or waves representing composite tones, of a closed circuit, a series of transmitters vibrating at such relative speeds as to produce the fundamental and harmonics of the tone to be transmitted, a main battery so arranged as to give each transmitter the desired relative amplitude of vibration, and a common receiver, or one capable of reproducing tones of every variety and quality.

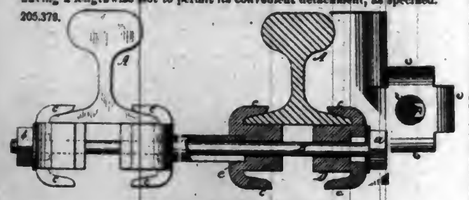
205,379. RAILWAY-SWITCH BARS. Royal Gurley, Meadville, Pa. Filed May 21, 1878.

Brief.—Two clamping-heads, having each four claws, hold the rail, each head engaging the rail by one of its claws. A transverse tie-bolt passes through the center of the heads, and draws the outer heads to either rail. The inner heads are pressed against the rails by a pipe surrounding the tie-rod, which regulates the gage, and is received in recesses in the heads. The pipe has a slot of the width of the diameter of the rod to facilitate its detachment.

Claim.—1. The combination, with switch-rails A A, of the gage-tube, the clamps having claws *c*, and provided with recesses *e* to receive the ends of the tube, and the tie-rod having head *a* and screw-nut *b*, all as shown and described.

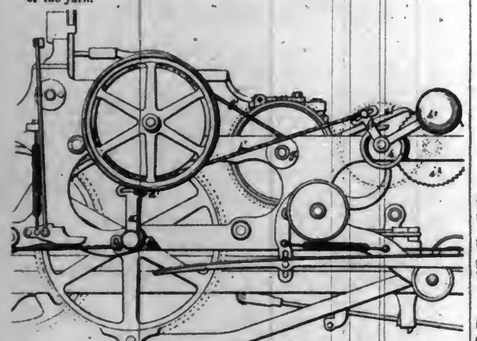
2. The combination, with the tie-rod and adjustable clamps, of the tube, having a lengthwise slot to permit its convenient detachment, as specified.

205,379.



205,380. SPINNING-MULES. John Hackaley, Fall River, Mass., assignor of one-half his right to James P. Hilton, same place. Filed Feb. 2, 1878.

Brief.—When the carriage has completed its inward run the spindles are continued in their rotation during the changing of the driving-belt from the drawing-in to the driving-out pulley, so as to prevent "slack" or the kinking of the yarn.



Claim.—1. In a spinning-mule, the combination, with the main driving-shaft, band-wheel or drum, and spindles of the roller-clutch arm and mechanism, substantially as described, whereby said band-wheel or drum is rotated and the spindles turned by the action of the roller-clutch arm, to take up the slack of the yarn by the spindles as the carriage approaches the roller-beam, as set forth.

2. The combination of the main driving-shaft, band-wheel or drum, roller-clutch arm *x*, and band *b* with the cam A, chain A', sector *i*, and the intermediate mechanism, substantially as described, whereby the spindles are varied in their revolutions according to the amount of slack to be taken up, as set forth.

205,381. FENCES. John Hallner, Ithaca, Nebr. Filed May 7, 1878.

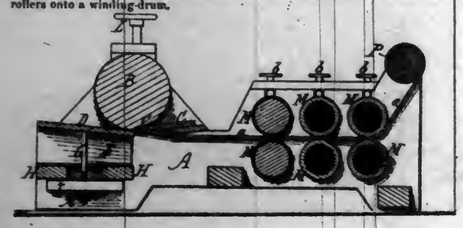


Claim.—1. The combination of the posts B B', wires *b b*, braces C C, and block D, the latter being fastened permanently to one and adjustably to the other of the braces C, substantially as described, for the purpose herein shown and specified.

2. The section or panel of fence consisting of the posts B B', provided each with a series of elongated slots, *a a*, wires *b*, having eyes *c c*, through which are passed headed or hooked rods *d*, and braces C C, connected together by the block D and adjusting-bolts *d'*, substantially as and for the purpose specified.

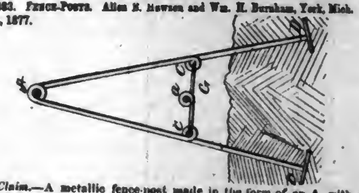
206,382. VENEER-CUTTING MACHINES. Thomas Harvey, Rochester, N. Y. Filed Apr. 24, 1878.

Brief.—The log rests in a trough formed by the inclined knife and bed, while the veneer is shaved off and passed between pressing and calendering rollers onto a winding-drum.



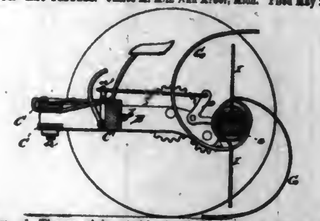
Claim.—In a machine for cutting, seasoning, and winding wood, consisting of the knife C, rollers M M, and mandrel P, the combination, with the inclined bed D, of the wedge-shaped adjusting-blocks E E, the screw-shaft G, with tightening-nut K, and the fulcrum-block I, as shown and described, and for the purpose specified.

205,383. FENCE-POSTS. Allen S. Mowsen and Wm. H. Burnham, York, Mich. Filed Dec. 14, 1877.



Claim.—A metallic fence-post made in the form of an A, with an eye or hole, A, at its upper end, feet D D at the ends, and eyes or holes C C near the bottom, and a brace, G, fastened in the eyes C, all substantially as and for the purposes herein set forth.

205,384. HAY-TEDDERS. James M. Hill, Ann Arbor, Mich. Filed May 25, 1878.

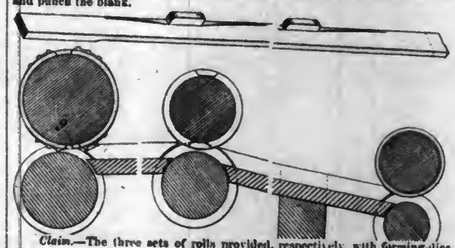


Claim.—1. The revolving tedder-head F, provided with curved spring-teeth G and straight teeth I, said teeth G adapted to throw the hay back by force of the spring after the teeth leave the ground, as herein specified.

2. The combination of the head F, teeth G I, staple *f*, rod or bar *e*, and bands *d d*, substantially as and for the purposes set forth.

205,385. MACHINES FOR MANUFACTURING HORSESHOE-BLANKS. Frank Holah, Chicago, Ill., assignor of two-thirds his right to Nathan E. Platt and Edwin Thorn, same place. Filed June 15, 1878.

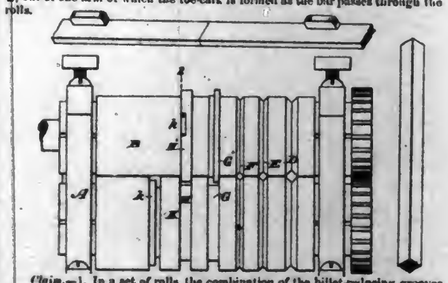
Brief.—The die and groove of the first set convert the rectangular bar into an L-shaped bar. Those of the second form thereon the projection to constitute the toe-calk, and those of the third finish the toe-calk, and crease and punch the blank.



Claim.—The three sets of rolls provided, respectively, with forming-dies and grooves, as described, in combination with the guideways between them and with one another, for forming a series of blanks from a heated bar at a single operation, substantially as described.

205,386. MACHINES FOR ROLLING HORSESHOE-BLANKS. Frank Holah, Chicago, Ill., assignor of two-thirds his right to Nathan E. Platt and Edwin Thorn, same place. Filed June 13, 1878.

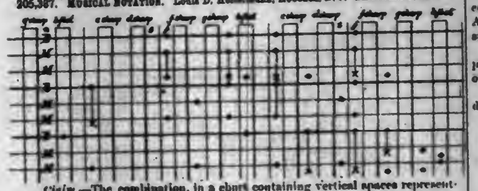
Brief.—The rectangular bar, reduced to the proper size, is made into an L, out of one arm of which the toe-calk is formed as the bar passes through the rolls.



Claim.—1. In a set of rolls, the combination of the billet-reducing grooves or dies D E F with the horseshoe-blank-forming dies G H K, of the conformation shown, substantially as described.

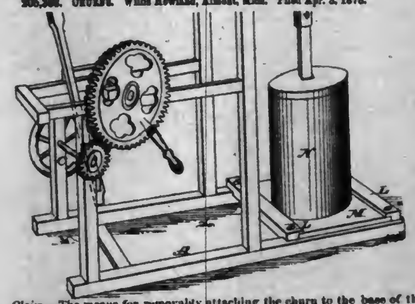
2. In a set of rolls, the combination of the horseshoe-blank-forming grooves and dies G H K, of the conformation shown, substantially as described.

205,387. MUSICAL NOTATION. Louis D. Hohermann, Hoboken, N. J. Filed June 5, 1878.



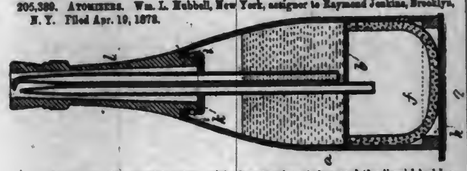
Claim.—The combination, in a chart containing vertical spaces representing the successive keys of a piano-forte, of a series of horizontal lines representing the bars of the piece of music to be performed, a series of intermediate horizontal lines representing the measure, dots marked on the spaces representing the keys, and on or between the bar lines to indicate the keys to be struck, and vertical lines extending through one or more of the horizontal lines, and indicating the value of notes larger than the unit of the measure, substantially as and for the purpose herein set forth.

205,388. CHURNS. Willis Howland, Almont, Mich. Filed Apr. 3, 1878.



Claim.—The means for removably attaching the churn to the base of the frame carrying the operating mechanism and rigidly holding it when mounted thereon, consisting in the guides L, secured transversely across the extended portion of the base-frame A, and the base-board M, adapted to slide under said guides, and having the churn rigidly attached thereto, substantially as described and shown.

205,389. ATOMIZERS. Wm. L. Hubbell, New York, assignor to Raymond Jenkins, Brooklyn, N. Y. Filed Apr. 19, 1878.

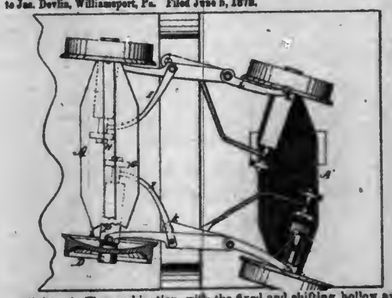


Claim.—1. The combination, with the atomizer-tubes and the liquid-holder, of a flexible force-cup, *f*, that is open at one end and provided with parallel, or nearly parallel, sides, and a case, *a*, within which such force-cup is received and supported, substantially as set forth.

2. The removable screw-neck *i*, in combination with the screw-socket E, having openings *i* through the screw thereof, and the atomizer-tubes, substantially as set forth.

3. An atomizer made in the form of a bottle, with an inwardly-projecting rim at *h* and diaphragm *b*, in combination with the air-forcing device that is entirely within the lower part of the bottle-shaped case, and the air and liquid tubes that pass up through the neck *i*, substantially as set forth.

205,390. CAR-TRUCKS. Lorenzo D. Hurd, Wellsville, N. Y., assignor of one-sixth his right to Jas. Devlin, Williamsport, Pa. Filed June 5, 1878.



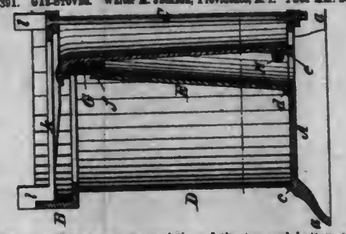
Claim.—1. The combination, with the fixed and shifting hollow axles and the rotating axles pivoted thereto, of the jointed and braced connecting-bars, one part of which is extended beyond the joint and pivoted to the bed of the car, all arranged substantially as shown and described, for the purpose specified.

2. The combination of the sleeves, having rollers applied to their inner ends, the rotating axles, on which the wheels are fixed, and the hollow axles A A', to which said sleeves are pivoted, and bars for connecting the axles, substantially as shown and described.

3. The combination of the sleeves, friction-rollers, and dished wheels, the pivots of the former being located, as specified, with reference to the tread of the wheels and the rotating axles, all as shown and described.

4. The combination, with the pivoted sleeves and hollow axles, of the detachable bottom bar, as shown and described.

205,391. GAS-STOVES. Walter M. Jackson, Providence, R. I. Filed Mar. 30, 1878.

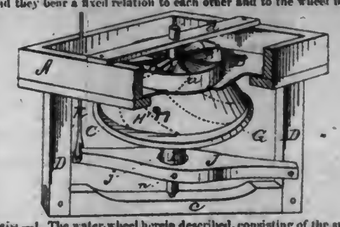


Claim.—1. The gas-stove consisting of the top and bottom plates A B, tubes D E F, and gauze G, all united by means of a single bolt, C, substantially as shown.

2. The open central air-tube F, cast in one piece with the flaring upper end, in combination with the short tube E and the wire-gauze held directly between the two, in the manner shown.

205,392. TURBINE WATER-WHEELS. Louis J. Johnson, Elk Falls, Kans., assignor of one-half his right to Joseph Root, same place. Filed Dec. 15, 1877.

Brief.—An ordinary rectangular flume having raised sides and a circular opening in its bottom, that is covered by a metallic plate which has an orifice concentric to that of the flume-bottom, and bordered by an annular vertical flange, to the inner wall of which the guides for the descending head of water are rigidly secured to a conical metallic ring, the smaller end of which is uppermost, and they bear a fixed relation to each other and to the wheel below.



Claim.—1. The water-wheel herein described, consisting of the spaced conical rings H H' and the buckets connecting the rings to the same, substantially as specified.

2. The main shaft E, provided with recessed hub F, in combination with the water-wheel C, having a spurred central conical aperture adapted to receive said hub, substantially as specified.

3. The main shaft E and its conical hub F, in combination with a water-wheel having a central conical aperture and the conical ring *b* of the guides, adapted to receive said hub, substantially as specified.

4. The combination, with the dished conical wheel C, of the under gate G, having a rounded or beveled edge, adapted to conform to the dish of said wheel, vertically adjustable to or from the said wheel, substantially as specified.

5. The gate G, having tubular collar I, the vibrating lever J, having oblong slot *j*, and the operating-rod K, in combination with the main shaft E and wheel C, substantially as specified.

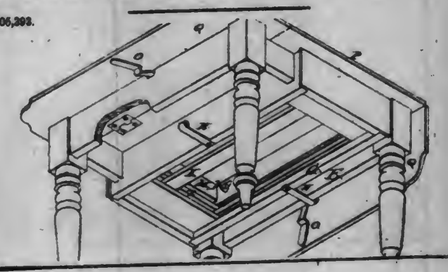
6. The main shaft E, having a conical hub, F, adapted to enter a conical aperture in the water-wheel, substantially as specified.

7. The vertically-adjustable water-wheel, in combination with a flume, its metallic bottom plate, and the fixed guides B', erected on said plate, substantially as specified.

8. The flume-bottom plate B, having vertical flange *a* and fixed inclined guides B', in combination with a water-wheel rotating below said plate, substantially as specified.

9. The fixed inclined guides B', in combination with a water-wheel having conical concentric inner and outer annular walls and radial curved buckets between said walls, substantially as specified.

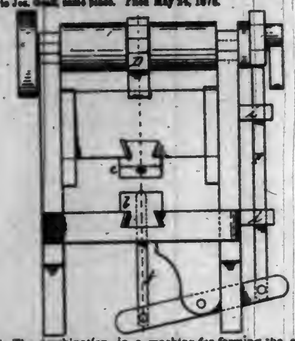
205,393.



206,393. TABLES. Chas. Kale, St. Louis, Mo. Filed Feb. 1, 1878.

Claim.—The table consisting of the top P, falling leaf Q, provided with the catch O, to hold the leaf-supporting leg-frames in position when extended, and the table-frame provided with the catch N, to hold said leaf-supporting leg-frames against the table-frame when the leaves are folded, substantially as set forth.

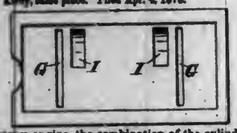
206,394. MACHINES FOR FORMING THE EYES OF HOES. Edward L. Keeler, Beaver Falls, Pa., assignor to Jos. Graff, same place. Filed May 24, 1878.



Claim.—1. The combination, in a machine for forming the eyes of hoes and like articles, of two perforated dies and a punch operated through the dies, together with power mechanism, substantially as described, for reciprocating the punch and one of the dies, substantially as and for the purpose specified.

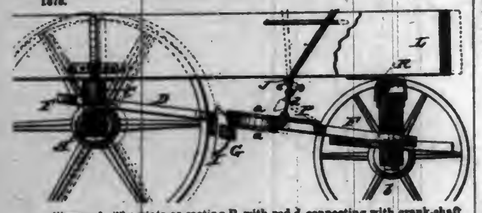
2. The combination, in a machine for forming the eyes of hoes, &c., of two sloping-faced perforated dies and a punch operating through the dies, together with mechanism, substantially as described, for reciprocating the punch and one of the dies, substantially as and for the purpose specified.

206,395. RECIPROCATING ENGINES. Dan. W. Kellogg, Auburn, N. Y., assignor of one-half his right to Wm. A. Kirby, same place. Filed Apr. 4, 1878.



Claim.—In a steam-engine, the combination of the cylinder, provided with the short straight ports G, and the thin top wall with the wide and shallow ports I, and the flat valve H, as shown and described.

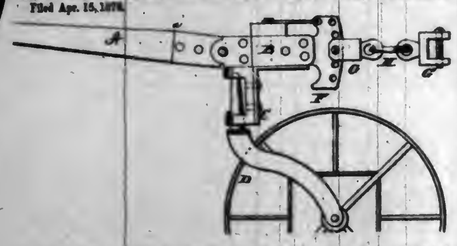
206,396. AUTOMATIC WAGON-BRAKES. Gottlieb Kummel, Summit, Mich. Filed May 28, 1878.



Claim.—1. The plate or casting P, with rod *d*, connecting with crank-shaft J, in combination with the reach F and bounds D D, substantially as and for the purposes herein set forth.

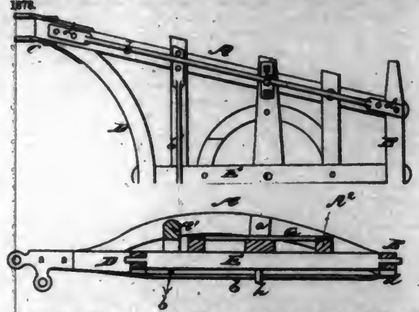
2. In a wagon, the brake-lever G, permanently attached to the sliding reach, in combination with the plate or casting P, rod *d*, crank-shaft J, and bounds D D, constructed and arranged substantially as and for the purpose set forth.

206,397. POLES FOR AGRICULTURAL IMPLEMENTS. Lester B. Kenney, Charlotte, Mich. Filed Apr. 15, 1878.



Claim.—The combination of the pole A B, made in two parts, jointed together at *a*, the frame C, caster-wheel D, clevis F, clips G G', and link H, all constructed substantially as and for the purposes herein set forth.

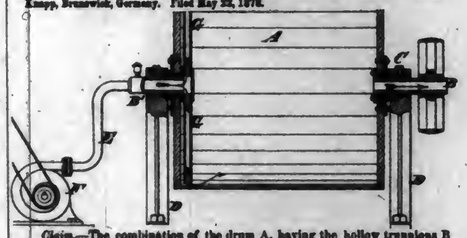
206,398. PLATFORM-GEARS FOR WAGONS. Hewet L. Kingsley, Racine, Wis. Filed Apr. 27, 1878.



Claim.—1. The combination of the arched side beams A A and the arched cross-bars A^1 A^2, having their ends below the side beams, as herein set forth.

2. The within-described platform-wagon gear, consisting of the arched side beams A A, with arched cross-bars A^1 A^2, and truss-rods *b b'*, head-block B, curved bar D, connecting-bars E F, and circle G, all constructed substantially as and for the purposes herein set forth.

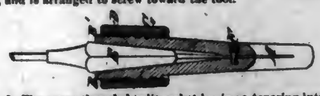
206,399. TRAMPING-DRUMS FOR USE IN THE MANUFACTURE OF LEATHER. Friedrich Knapp, Brunswick, Germany. Filed May 22, 1878.



Claim.—The combination of the drum A, having the hollow trunnions B B', upon which the said drum turns, the hollow arms or air-conductors C, attached to one of the said trunnions B', extending radially outward and opening at or near the inner surface of the said drum, the pipe or conductor E, connected with the hollow trunnion B', and a blower or pump connected with said pipe or conductor, substantially as and for the purpose set forth.

206,400. BIT-STOCKS. Charles M. Knowles, New London, Conn. Filed Apr. 23, 1878.

Brief.—The bit is held in a screw-threaded split socket having a tapering exterior and interior, and its larger end extending toward the tool when inserted therein by means of a tapering internally-threaded sleeve. The socket is provided with a guide or steadying pin passing through one part of the socket, and extending into a recess in the other. The thread upon the socket is formed with one side nearly at right angles with the axis of the lever, and the other side at an acute angle thereto, and the sleeve has a corresponding thread in it, and is arranged to screw toward the tool.

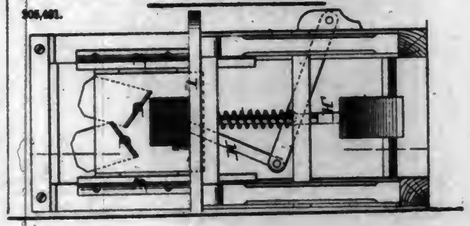


Claim.—1. The screw-threaded split socket having a tapering interior and exterior, and constructed with its large end extending toward the tool when inserted therein, in combination with the tapered screw-ferrule, constructed and arranged with its larger end extending toward the working end of the tool when inserted, substantially as shown and described.

2. The combination, with the parts B B' of a tapered split tool-socket of a bit-brace or tool-holder, of a male screw-thread formed thereon, with one side of the thread nearly at right angles with the axis of the screw, and the other side of the thread formed at an acute angle with the said axis, a ferrule, G, having a female screw-thread corresponding with the male thread on the socket, and applied to the said socket to screw toward the point of the tool, for clamping the latter in the said socket, substantially as and for the purpose specified.

3. The combination, with the split socket B B' and the ferrule G, of the guide or steadying pin F, inserted in one part of the split socket, or an extension of the same, and having its inner end extended into the recess D in the opposite part, substantially as and for the purpose set forth.

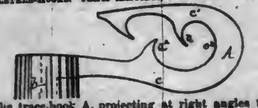
206,401.



206,401. BOX-PLANING MACHINES. Julius Mannebach, New York, assignor of one-half his right to H. C. Stone, Brooklyn, N. Y. Filed Apr. 17, 1878.

Claim.—The combination, in a box-planer, of a plane carrying two oblique knives, the cutting-edges of which extend upward and inward, each extending inwardly beyond the line at which the other terminates, vertical ways for guiding such plane, mechanism for imparting thereto a reciprocating motion, and a platform for supporting the box to be planed, all constructed to operate substantially as described.

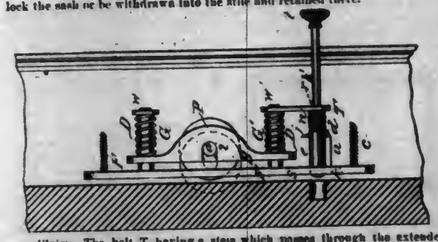
206,402. WHIFFLETREE-HOOKS. James Marcellus, Sault de St. Marie, Mich. Filed Mar. 22, 1878.



Claim.—The trace-hook A, projecting at right angles to the whiffletree when attached to the same, and having inwardly-projecting points *a* a^1, curved toward the bow c^2 of the hook, constructed and arranged substantially as described and shown.

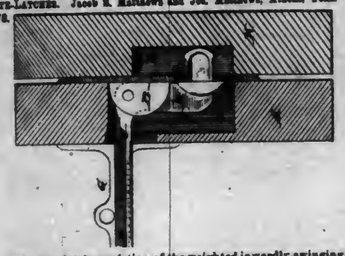
206,403. SASH-FASTENERS. Fredk. Marten, Boston, N. Y. Filed Apr. 4, 1878.

Brief.—A spring-pressed friction-roller holds the sash in any desired position. A spring-bolt is used in connection with the roller, and is adapted to lock the sash or be withdrawn into the stile and retained there.



Claim.—The bolt T, having a stem which passes through the extended washer s', and provided with the thumb-nut *t*, shoulder *d*, and through-pin *f*, the curved lug *s*, provided with the offset *h* and notch *h'*, and spring *n*, in combination with the plates F and B, studs D, springs G, washers s s', roller R, and ears P, as and for the purposes described.

206,404. GATE-LATCHES. Jacob S. Matthews and Jos. Matthews, Athens, Tenn. Filed June 5, 1878.



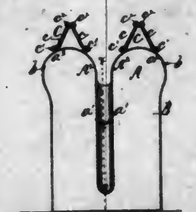
Claim.—The gate-latch consisting of the weighted inwardly-swinging lever-arm *b*, bent with a right-angular tooth, and provided with a guard-arm, G, and handle D, substantially as and for the purpose specified.

206,405. INSECTICIDE COMPOUNDS. Daniel Maurer, Philadelphia, Pa. Filed Apr. 20, 1878.

Brief.—Boils a quantity of sirup of the best quality at 100° Reaumur, and adds a quantity of the best flour until the mass assumes the consistency of a salve; then reheats the mixture at 80° Reaumur, and adds to each gallon of sirup contained in the compound eight inches of ordinary phosphorus stick.

Claim.—As an improvement in the manufacture of phosphorus-paste, first boiling sirup, to this adding flour, then reheating the same, and afterward combining phosphorus therewith, all substantially in the proportions and manner herein specified.

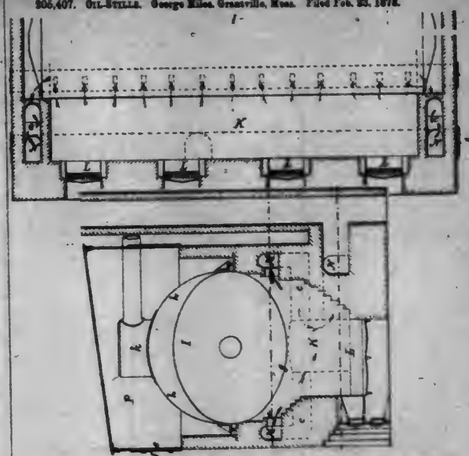
206,406. CROWN-SHEETS FOR LOCOMOTIVE-BOILERS. John Meredith, Aurora, Ill. Filed Apr. 17, 1878.



Claim.—1. The central inclined channel A^1, when formed by the crown-sheet A, with convex swell A^3 and elliptical curves a^2 and the side pieces a^1, substantially as and for the purpose set forth.

2. The bracing-plates C, consisting of the longitudinal plates *c* and flanges c^1 and c^2, in combination with the convex part A^3 of the crown-sheet A, substantially as and for the purpose set forth.

206,407. OIL-STILLS. George Miles, Greenville, Mass. Filed Feb. 23, 1878.

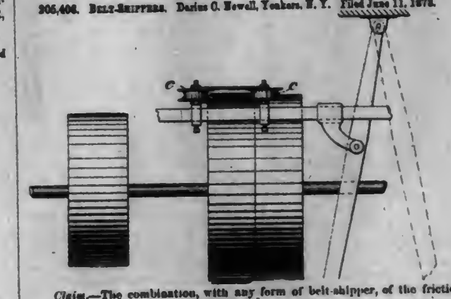


Claim.—1. The flues M and N, the series of inducts *a*, and educts *e*, arranged and combined, as set forth, with the still I and the smoke-chamber K, having a series of fire-places, L, as represented.

2. In combination with the still I, the chamber P, provided with one or more openings, and shutters or valves, *f*, thereto, and arranged to extend over the entire still and furnace, as shown and described.

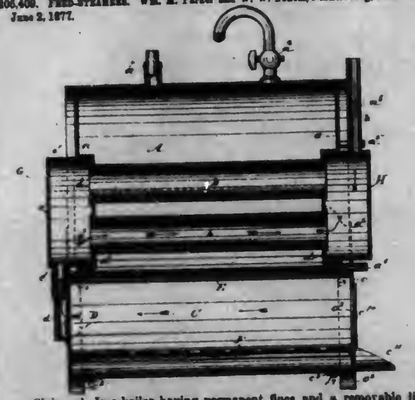
3. The horizontal still, combined with fire-places and flues, as described, and having its bottom semi-elliptical in transverse section, its ends concave-convex, and its crown curved transversely and sloped from its ends upward to its middle, all substantially as set forth.

206,408. BELT-SHIPPERS. Darius C. Howell, Yonkers, N. Y. Filed June 11, 1878.



Claim.—The combination, with any form of belt-shipper, of the friction-wheels *c*, inclosing the belt, substantially as described.

206,409. FEED-STEAMERS. Wm. M. Parker and W. W. Yokum, Parkersburg, Iowa. Filed June 2, 1877.



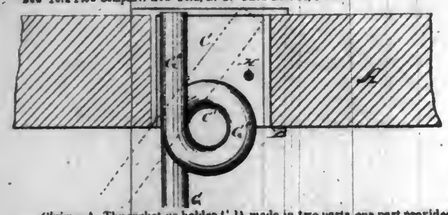
Claim.—1. In a boiler having permanent flues and a removable lining-pipe, a removable cap, substantially as described, adapted to permit access to the flues.

2. In combination with a boiler having permanent flues and removable lining-pipes, the caps G H, adapted to permit access at each end, as described, for the purpose set forth.

3. In combination with the fire-box D, having the flue-box *d*, the removable cap G, having the flue *e*, as described.

4. In combination with the semi-cylindrical body C and the interposed plate E, the independent ends *c d*, as described.

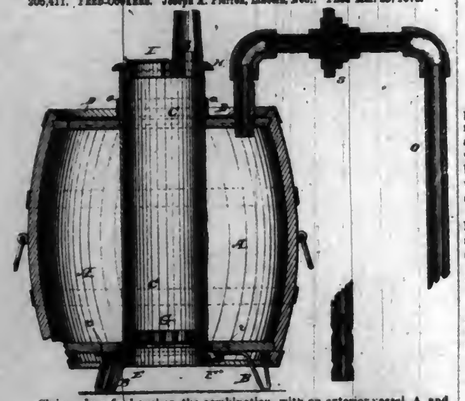
206,410. HARROWS. John Pentreath and John Q. Crosby, Newark, N. J., assignors to the New York Plow Company, New York, N. Y. Filed Nov. 26, 1877.



Claim.—1. The socket or holder C D, made in two parts, one part provided with an axial stud, C', extending from one part of the holder into a hole in the other part to pass through an eye formed on a harrow-tooth, substantially as and for the purposes herein set forth.

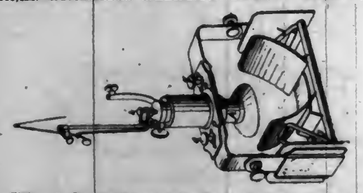
2. In a harrow, the combination of the slotted or mortised frame A, the bisected tooth-holder C D, provided with the axial stud C', and the harrow-tooth G, formed with the coil G¹ and extension G², all constructed substantially as and for the purposes herein set forth.

206,411. FEED-COOKERS. Joseph A. Pierce, Lincoln, Nebr. Filed Mar. 25, 1878.



Claim.—In a feed-cooker, the combination, with an exterior vessel, A, and a central vertical and cylindrical fire-box, C, entirely open at its lower end and provided with the grate G, of the bottom collar E, constructed as described, to form a water-chamber, *t*, encircling the lower end of the fire-box below the grate, the metal top plate D, with flange *s*, and the cover H, with lid I and smoke-exit *b*, all constructed substantially as and for the purposes herein set forth.

206,412. SPHYGMOGRAPHS. Erasmus A. Pond, Rutland, Vt. Filed May 17, 1878.



Claim.—1. In a sphygmograph, the combination, with a suitable upright tubular holder or frame, of a wire or rod arranged, substantially as shown and described, to cause in contact with the vibratory or pulsating body, directly or through the medium of an elastic membrane, spring, or other body, substantially as shown and set forth.

2. In a sphygmograph, the combination, with a magnetized steel arm of the pendulous needle, of a soft-iron-wire-tipped float, substantially as and for the purposes set forth.

3. The apparatus for transmitting the vibrations of vibratory or pulsating bodies to a pendulous lever and its jointed marking-needle by means of a system of levers, substantially as shown and described—that is to say, by the combination, with the weighted arm of the pendulous lever, of an angle-lever oscillating upon a point stationary relatively to the holder of the instrument, the short arm of which lever rests upon the terminal rod, while its longer arm engages the short arm of the pendulous lever, and has movable connection therewith, all substantially as shown and set forth.

4. As a means of adjustment of the lever-connection with the terminal rod, the interposition between the short arm of the angle-lever and terminal rod, and, whether applied to the one or to the other, of a screw pad or disk, operating substantially as shown and set forth.

5. In a sphygmograph, to be used in connection with or without an elastic diaphragm or spring, but as an attachment to the bell-mouthed or otherwise suitably-shaped base of the instrument, the double disk, united by a shank loosely held in a frame or clasp, substantially as shown and described.

6. In apparatus for determining or recording the movement of pulsating or vibratory bodies, and in combination with a system of levers for the transmission of the movement of a rod or float actuated by such pulsation or vibrations, a mirror on the end of the pendulous lever, for use in connection with suitable screen or photographic means, substantially as shown and set forth.

7. In combination with a sphygmograph, the wrist-support, adapted to adjust itself to the wrist resting thereon, substantially as shown and set forth.

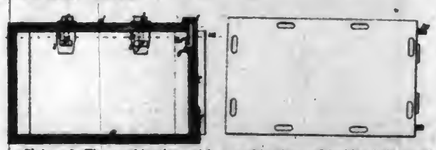
8. In combination with the self-adjusting wrist-support, the frame for holding the sphygmograph in position over the wrist, substantially as shown and set forth.

9. The combination of a sphygmograph wrist-support and frame, and means for adjusting the position of said sphygmograph laterally as well as in relation to height and angle, or either of them, substantially as shown and set forth.

10. The combination, with a sphygmograph, of a spring or weighted lever and scale, to regulate and determine its pressure upon the body whose pulsations or vibrations are to be measured or graphically represented.

206,413. PACKING-BOXES. Isidor Popper, New York, N. Y. Filed June 1, 1878.

Brief.—The fastening-hooks are insertible in and detachable from both head and cover. One of the ends is hinged. The sides at that end are held together by a rod hooked at both ends, hooked ends projecting in holes in cleats on sides of box.



Claim.—1. The combination, with a packing-box, of locking-bolts, each provided with a hook at one end, and adapted to be turned by hand or by means of a suitable tool, recesses formed in the inner surfaces of the sides and ends of the box, and metal plates fastened over said recesses and provided with slots to engage with the hooks of the locking-bolts, said locking-bolts being made to pass through elongated holes in the cover, and through washers placed over said elongated holes, all constructed and adapted to operate substantially as and for the purpose shown and described.

2. As a new article of manufacture, a packing-box constructed with hinged or removable sides or ends and with a brace-rod, having hooked ends attached to and connecting the sides of the box, as and for the purpose described.

206,414. CURTAIN-CORD TIGHTENERS. Frederick E. Porter, Baltimore, Md., and David A. Beatson, New York, N. Y. Filed May 31, 1878.

Brief.—The bracket is struck up in one piece. It retains a screw in sockets at top and bottom. At the lower end of screw is a thumb-wheel, by turning which the cord-retaining block is actuated up and down in the slot in the bracket.



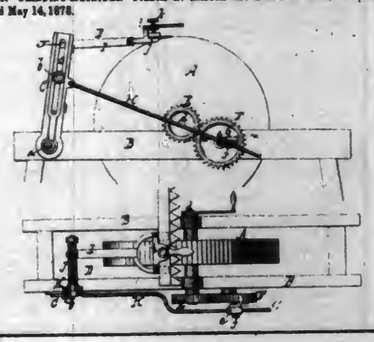
Claim.—1. The device herein described, consisting of the slotted sheet-metal plate A, struck up as shown, and having perforated end pieces *a a*, screw B, block C, and roller D, substantially as described.

2. In combination with the sheet-metal strip A, having slot *a'*, and struck up to form end lugs *a*, perforated as shown, the milled-head screw B, block C, roller D, and disk *c'*, substantially as shown and described.

206,415. PROCESSES FOR MAKING OIL-CLOTH. Thos. Potter, Philadelphia, Pa. Filed Dec. 6, 1877.

Claim.—The method herein described of making floor oil-cloth, which consists in sizing, filling, rubbing, and drying the foundation-web of jute, in the usual manner, coating the web so prepared with an impervious varnish, printing the pattern direct upon said varnish when dry, and after the drying of the pattern superficially varnishing the whole, substantially as and for the reasons specified.

206,416. GRINDING-MACHINES. Francis D. Randall and Lester D. Dana, Waupaca, Wis. Filed May 14, 1878.

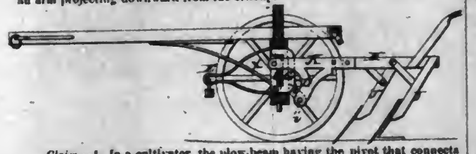


Claim.—1. The combination, with the pivoted standard C, adapted to have an oscillating motion imparted to it from suitable driving mechanism, of the tool-rest D, constructed of the bar J, journaled in the bracket K, and the bar I, arranged at right angles to the bar J, and having its end inserted in a cylindrical opening in said bar, and adapted to be rotated therein for presenting the tool in a more or less oblique position to the grinding-stone, substantially as and for the purpose described.

2. The combination, with the eccentric G, adjustably attached to the wheel F, and with the pitman H, attached at one end to the pivoted standard C, of the pivoted button *e*, attached to the eccentric, and through which button the pitman passes, and the set-screw *f*, passing transversely through the said button, and adapted to bind on the pitman, substantially as and for the purpose described.

206,417. WHEEL-CULTIVATORS. George W. Ray, Watson, Mo. Filed Nov. 17, 1877.

Brief.—The axle-tree is arched and swiveled to two independent frames, bearing the axles for the wheels. There are two shafts, that are bolted, one to each of the frames, at their rear ends, and separated at their forward ends by a pivoted rod. A vertical bolt upon each frame, made laterally adjustable, holds a pivoted stirrup, to which the cultivator-beams are attached through an arm projecting downward from the stirrup.

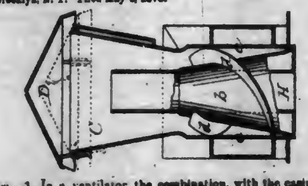


Claim.—1. In a cultivator, the plow-beam having the pivot that connects it to the frame dropped down below the beam, substantially for the purposes herein set forth.

2. The combination, with a cultivator-beam, of a clevis, or its equivalent, having hangers attached to or projecting from it, for dropping down the pivot below the beam, as herein set forth.

3. The combination of the swiveled bar G, with arm *h*, the beam H, with clevis K, hangers L, and pivot *i*, all as and for the purposes herein set forth.

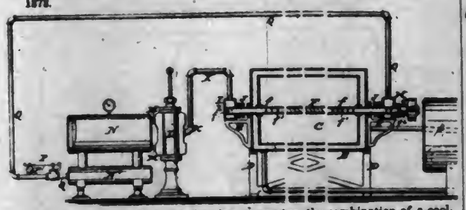
206,418. VENTILATORS. Jean E. Bichard, New York, assignor of one-half his right to J. E. Hulin, Brooklyn, N. Y. Filed May 4, 1878.



Claim.—1. In a ventilator, the combination, with the casing *a*, funnel C, cap D, and trumpets B B, having opposite inducts *c c*, opening into casing *a*, of the interior conical pipe *b*, open at both ends, and provided with the spiral flanges *d*, each commencing at one of the inducts, and running in the same direction around the said pipe *b*, substantially as specified.

2. The combination, with the casing *a*, having opposite trumpets opening into said casing, and the conical tube *b*, having the spiral flanges *d* running around said tube in the same direction, of the funnel C, having a cap, D, and angular opening *f*, provided with guards *g*, substantially as specified.

206,419. COOLING AND FREEZING APPARATUS. John Ring, St. Louis, Mo. Filed Apr. 22, 1878.



Claim.—1. In cooling and freezing apparatus, the combination of a cooling-vessel, A, the trough B, connected therewith, to contain a non-freezing liquid, which circulates between the said cooling-vessel and trough, the cylinder C, rotated within the trough B by means of shaft F, hollow and perforated near the ends, an air-pump, L, exhausting vapor from the cylinder C through a pipe, K, condenser N, and pipe Q, guarded by valve P, through which vapor is returned to the cylinder, substantially as herein described.

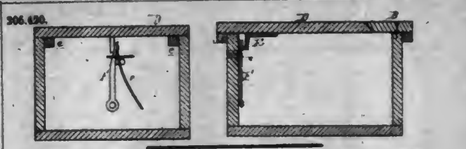
2. The combination of the trough B, the cylinder C, constructed with lifting-buckets R and charged with loose material S, the pump L, the condenser N, and the connecting-pipes K Q, substantially as and for the purpose set forth.

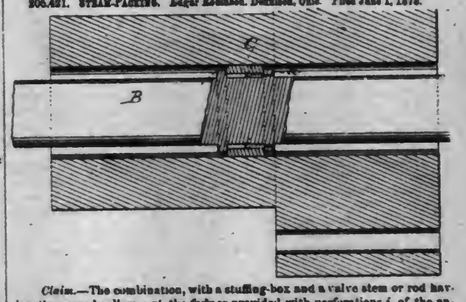
3. The cylinder C, provided with lifting-buckets R and open-work partitions T, in combination with the trough B, pump L, condenser N, and connecting-pipes K Q, substantially as and for the purpose set forth.

206,420. FASTENINGS FOR PACKING-BOXES. Maxim J. Rivard, Detroit, Mich., assignor of one-half his right to F. L. Dohmstreich, same place. Filed Mar. 22, 1878.

Claim.—In a shipping-case, the cover D, having cleats to prevent it from being moved laterally when placed upon the case, and provided with a beveled edge, interlocking with the oppositely-beveled edge of the fixed part B of the cover, in combination with a spring-lock placed within the case, substantially as described and shown.

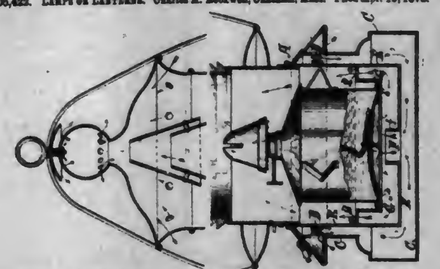
206,421. STEAM-PACKING. Edgar Robinson, Dennison, Ohio. Filed June 1, 1878.





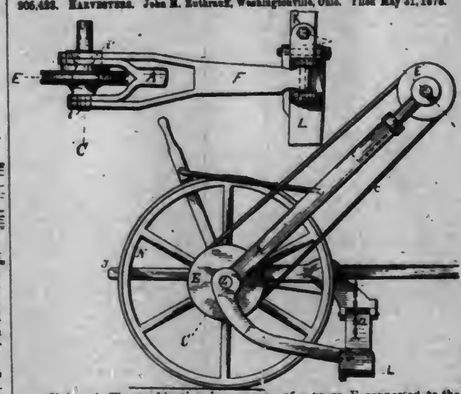
Claim.—The combination, with a stuffing-box and a valve stem or rod having the spaced collars a a', the former provided with perforations *i*, of the annulus C, fitting snugly between the said collars, having zigzag cleft *b*, and the edges of said cleft halved into each other, substantially as specified.

206,422. LAMPS OR LANTERNS. Charles H. Rockwell, Chatham, Mass. Filed Apr. 19, 1878.



Claim.—In combination with the outer shell or base C of a lantern, provided with the air-inlets D, the interior annular diaphragm or lining E, provided with an orifice, F, and the lamp-shelf G, constructed as described, and provided with holes *g*, the whole arranged to form a circuitous air-passage, substantially as and for the purposes set forth.

206,423. HARVESTERS. John M. Rothrauff, Washingtonville, Ohio. Filed May 31, 1878.



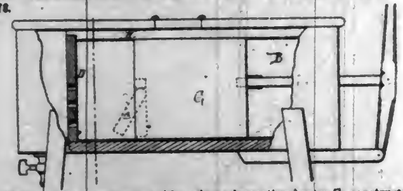
Claim.—1. The combination, in a reaper, of a brace, F, connected to the cutter-bar and supported at the other end by the axle, and the reel-post A, arranged outside the wheel, and supported at one side of the wheel by the brace, substantially as set forth.

2. The brace F, connected to the cutter-bar, and pivoted opposite the end of and supported by the axle, in combination with the reel-post vibrating with the brace, as set forth.

3. The combination, with the reel-post and axle C, of the brace F, connected by a universal joint to the axle, and carrying the driving-pulley E, operated from the axle, as set forth.

4. The combination of the reel-post, the driving-pulley, and swinging bevel F, all having a common axis upon a hub, D, attached to the driving-shaft by a universal joint, substantially as set forth.

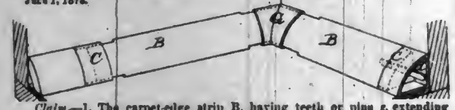
205,424. WASHING-MACHINES. Marvin M. Sanders, New Baltimore, Mich. Filed Mar. 7, 1878.



Claim.—1. In a washing-machine, the reciprocating beater G, constructed of vertical wooden plates *a*, extending nearly the entire height of the box, and provided with valves *b*, one between each pair of plates, pivoted so as to close the lower half of the spaces between such plates, constructed and arranged substantially as described and shown.

2. In a washing-machine, the wall D, dividing the box into two parts, and perforated only in its lower half, in combination with the reciprocating beater G, constructed to form a number of vertical spaces, *b*, and provided with valves *b*, closing the lower half of these spaces, constructed and arranged substantially as described and shown.

205,425. CARPET STRETCHER AND FASTENER. Wm. H. Salladé, Monroe, Iowa. Filed June 1, 1878.

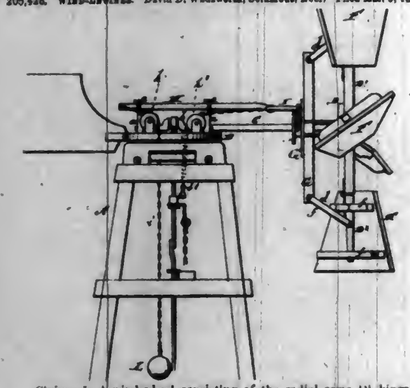


Claim.—1. The carpet-edge strip B, having teeth or pins *e*, extending downward and in rear of the same, substantially as specified.

2. The combination of the edge-fastenings strips B with the clasps C G and cleats *d*, substantially as specified.

3. In a carpet stretching and fastening device, the edge-strips B, having the teeth or pins *e* to hold the carpet, and fastened to the wall or wash-board by the clasps C G and cleats *d*, substantially as shown and described.

205,426. WIND-ENGINES. David D. Wadsworth, Columbus, Nebr. Filed Mar. 9, 1878.

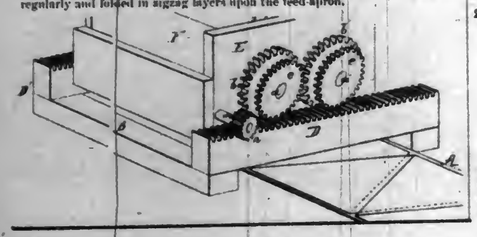


Claim.—1. A wind-wheel consisting of the radial arms D', hinged at or near the center, and provided with vanes or sails F, parallel pivoted brace-rods *d d*, and arms G G, substantially as described, and for the purpose set forth.

2. The hinged radial arms D', provided with vanes or sails F, parallel brace-rods *d d*, and arms G G, in combination with the turn-table B, sliding governor-arm H, chain I, pulley *b*, and weight L, substantially as described, and for the purpose set forth.

205,427. FEEDING DEVICES FOR CARDING-MACHINES. Chas. Schofield and Robert Wilde, Philadelphia, Pa. Filed Mar. 18, 1878.

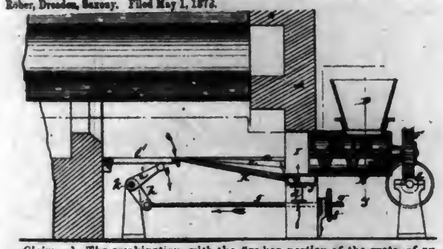
Brief.—The roll of lap is placed upon two supporting-rolls, and the whole moved across the longitudinally-moving feed-apron by means of the reciprocating carriage. The supporting-rolls are caused to revolve in the same direction, by means of their gearing and pawls and ratchet-wheels, as the carriage moves backward and forward, thus causing the lap to be drawn off regularly and folded in zigzag layers upon the feed-apron.



Claim.—1. The combination of the longitudinally-moving feed-apron A with the transversely-reciprocating carriage E, having two rolls, F F, which support the lap-roll, and are combined with mechanism, substantially as described, whereby they are both rotated in the same direction as the carriage reciprocates.

2. The combination of the feed-apron A and reciprocating carriage E with the guide D and its rack, the loose pinions *e e'* and their pawls, the loose cog-wheel *b* and fast cog-wheel *b'* and their ratchets, the rolls F F, and the cog-wheels *h*, *h'*, and *f*, all substantially as specified.

205,428. FEEDING FUEL TO FURNACES. August L. Schultz, Meissen, assignor to Bernhard Reber, Dresden, Saxony. Filed May 1, 1878.



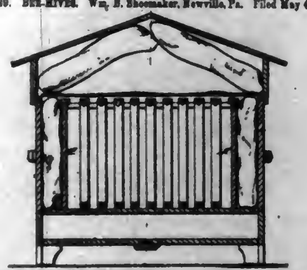
Claim.—1. The combination, with the fire-bar portion of the grate, of an upwardly-inclining feeding-trough, arranged to project within said portion of the grate and below the level of its fire-bars, substantially as and for the purposes specified.

2. The upwardly-inclining feeding-trough, constructed with a series of steps on either side of it, in combination with the fire-bars of the grate, arranged to meet on their upper surfaces the outer edges of the trough, essentially as described.

3. The combination, with the fire-bar portion C' of the grate, and upwardly-inclining feeding-trough K, arranged to project within said portion of the grate, of the hopper D, the screw-conveyer E, the feed tube or duct H, constructed to closely ing said conveyer on its one side, *b*, and of a tangential construction on its opposite side, *c*, and the passage I, substantially as specified.

4. The perforated air-blast distributer J, in combination with the passage I, the upwardly-inclined feeding-trough K, and the fire-bar portion of the grate, with which said trough communicates, essentially as described.

205,429. BEE-HIVES. Wm. B. Shoemaker, Newville, Pa. Filed May 4, 1878.



Claim.—In a bee-hive, the combination of the hollow bottom, hollow front, hollow rear, and hollow cover, all filled with chaff cushions, as herein set forth.

205,430. WATERING-TROUGHS. Orson J. Smith, Farmer City, Ill. Filed May 17, 1878.



Claim.—The improved watering-trough for live stock, consisting of the base portion A, having sides provided with gains *a* and the rabbeted ends *b b*, and the detachable cover B, having rabbeted triangular ends *c*, also provided with openings *h* in the inclined sides, the hinged lids *i*, and the hooks and staples for connecting the base and cover, all combined as shown and described.

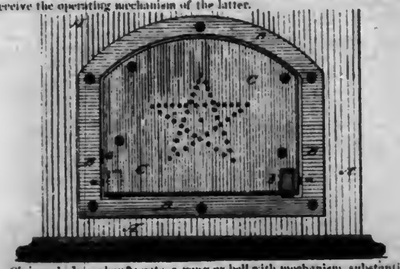
205,431. AIR-DISTRIBUTING PIPES FOR FURNACES. Morris M. Seider, Ames, Iowa. Filed Nov. 15, 1877.



Claim.—The distributing-cylinder A, having a series of nozzles, 1 2 3, a series of clampers, *d f g*, a crank-lever, *h m*, and a pivot or gudgeon, *e*, on its closed end, and the conveying-tube B, when arranged and combined in a furnace, substantially as shown and described, to distribute air, vapor, or gas, to promote the combustion of carbonaceous fuel.

205,432. CHANGE-GATES. Henry P. Speckmann, Louisville, assignor of one-half his right to T. J. Maury, Jefferson County, Ky. Filed Dec. 19, 1877.

Brief.—All the operating parts are arranged within and move with the hollow gate, thus avoiding the necessity of mortising the door below the gate, to receive the operating mechanism of the latter.



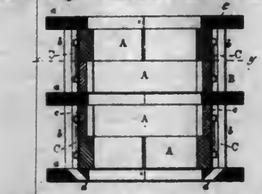
Claim.—1. In a change-gate, a gong or bell with mechanism, substantially as described, for sounding the same, inclosed within and moving with said gate, as herein set forth.

2. In a change-gate, a mechanism, substantially as described, for holding the gate in and returning it to an erect position, such mechanism being inclosed within and moving with the gate, substantially as herein set forth.

3. The combination, with the pivoted gate C, of the rod *a*, stops *b b*, and spring *d*, said rod, stops, and spring located within and moving with the gate, substantially as and for the purposes herein set forth.

4. The combination, with the pivoted gate C, of the gong or bell D, spring-hammer E, and bolt G, with spring *i* and spring-latch *h*, said parts located within and moving with said pivoted gate C, substantially as and for the purposes herein set forth.

205,433. PACKING DEVICES FOR PACKING-BOXES, &c. Allen D. Spencer, Baltimore, Md., assignor of one-half his right to William Stewart, same place. Filed May 3, 1878.



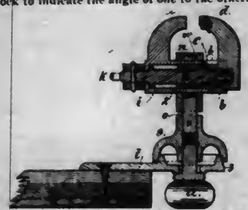
Claim.—1. The cage B, formed in two parts, as shown, and consisting of the annular partitions *a* and the connecting-bars *b*, substantially as herein set forth.

2. The cage B, formed in two parts, as shown, and consisting of the annular partitions *a* and connecting-bars *b*, combined with the packing-rings A, and springs C and *c*, substantially as specified.

3. The cage B, having the steam-apertures *d*, combined with the packing-rings A and springs C and *c*, substantially as described.

205,434. HAND-VISES. Benj. F. Stephens, Brooklyn, N. Y. Filed May 24, 1878.

Brief.—The vise-stock slides endwise, and turns freely within the clamping-eye, and the vise may be set at any angle by means of the clamping-screw. The jaws may be protected by sheet-metal or wooden faces. The stand can also be revolved on the bed-plate. There may be marks upon clamping-eye and tubular stock to indicate the angle of one to the other.



Claim.—1. The tubular stock *b* upon the jaw *a* and the bar *c* upon the jaw *d*, sliding within the stock *b* and guided by the feather, in combination with the clamping-screw *b*, passing into a nut formed in the rod *c*, substantially as set forth.

2. The combination, with the vise-jaws *a d* and stock *b*, of the eye *n* surrounding the stock *b*, and the clamping-screw for securing the eye *n* in position upon the stock *b*, substantially as set forth.

3. The combination, with the vise and its cylindrical stock *b*, of the eye *n*, screw *o*, clamping-stand *s*, base *t*, and screw *u*, substantially as set forth.

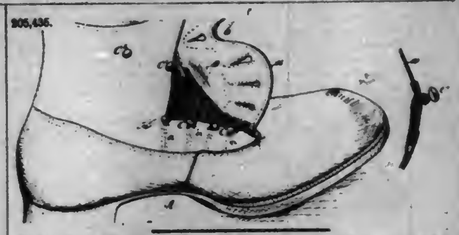
4. The clamping-stand *s*, provided with a base, *t*, and clamping-nut *u*, in combination with the eye *n*, screw *o*, and vise, substantially as set forth.

205,435. SHOES. Jerome B. Stevens, Detroit, Mich. Filed Feb. 9, 1878.

Claim.—1. In a button-shoe, the combination of an elastic goring, D, under the button-flap, and elastic cords or tapes *a*, arranged between the upper and lining, for connecting the buttons C to the shoe, as and for the purposes herein set forth.

2. In a button-shoe having an elastic goring, D, under the button-flap, and the buttons C, connected by elastic cords or tapes *a* to the shoe, the button-flap B, formed with a scallop, *b*, just above the instep, substantially as and for the purposes set forth.

205,436.



205,436. BUTTER-TUBS. Ransom Stitt, Canaseria, assignor of one-half his right to William L. Stevens, Lock Berlin, N. Y. Filed May 4, 1878.

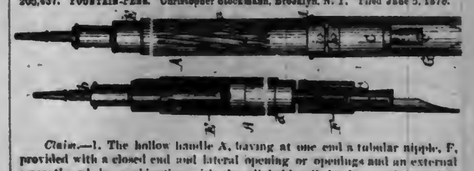
Brief.—A glass cover may be embedded in the plaster-of-paris disk on the lid.



Claim.—1. The lid D, provided with the annular rim *d*, having its inner edge beveled, and with the plaster-of-paris disk F, substantially as herein set forth.

2. The combination of the tub A, glass jar B, filling C, lid D, with rim *d* and disk F, the packing *e*, and fastening devices, all substantially as and for the purposes herein set forth.

205,437. FOUNTAIN-PENS. Christopher Stockmann, Brooklyn, N. Y. Filed June 5, 1878.

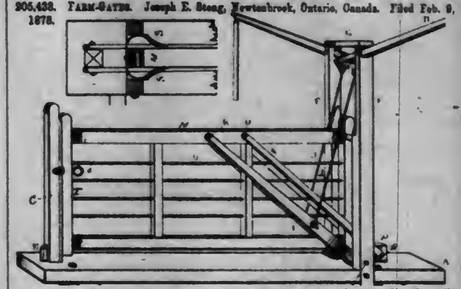


Claim.—1. The hollow handle A, having at one end a tubular nipple, F, provided with a closed end and lateral opening or openings and an external screw-thread, in combination with the nib-holder C, having an ink-conduit and an internal screw-thread adapted to the nipple, said nib-holder having a seat at the end of the ink-conduit, upon which the closed end of the nipple is adapted to bear to close the lateral openings in the latter, substantially as and for the purpose described.

2. The hollow handle A, having the screw-threaded cap E, provided with a perforated lower end for filling the ink-reservoir, in combination with a removable pencil-holder, D, having an external screw-thread, and adapted to set and screw within the cap and serve as a stopper, substantially as and for the purpose described.

3. The combination, with a hollow handle, A, having a screw-nipple at its lower end and having a radial spur on its lower part, of a cup-shaped nib-holder, which is provided with an internal screw-thread to fit said nipple, provided with an ink-conduit and with a spur on its upper part, and a nib-protecting cap which is fitted on the lower part of the hollow handle, and provided with a T-shaped internal groove or slot to engage with said spurs, substantially as and for the purpose described.

205,438. FARM-GATES. Joseph E. Stong, Newtonbrook, Ontario, Canada. Filed Feb. 9, 1878.



Claim.—The gate D, base A, and latch-post C, recessed to receive the stile T of the gate, combined with the lever-posts F, spring-guards S S, lifting-bars I, braces N, and levers H, with their connections, substantially as specified.

205,439. DITCHERS. Charles B. Stough, Monticello, assignor of one-half his right to Henry L. Timmons, Piatt County, Ill. Filed May 13, 1878.

Brief.—A forked beam, pivoted to rear of main frame, is secured at its forward end to a vertical rack-bar, supported therewith by braces. The beam is raised and lowered by a pinion on the main frame, engaging the rack-bar and operated by suitable devices. The plows and carrier-belt frame are connected to a beam, itself connected to the vertical rack-bar by a stirrup, said beam being raised and lowered by a screw-rod and winch in the forked beam. The stirrup inclosing the rack-bar. A guide-wheel is secured to a vertical bar connected with the rack-bar, said vertical bar sliding through a clevis. Provides a supporting board belt within the carrier-belt.

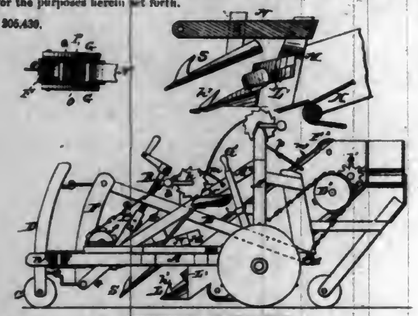
Claim.—1. The combination, with the main frame A, of the beam E, rack-bar F, and braces G, with the devices for adjusting and holding the same upon the forward part of the frame, for the purposes herein set forth.

2. The combination of the beam N, stirrup O, adjustable rack-bar F, bar P, and screw R, substantially as and for the purposes herein set forth.

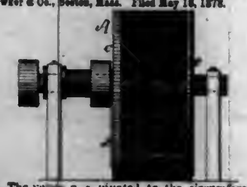
3. The wheel C and bar D, connected to the adjustable bar F, said bar D sliding through the hinged clevis s, substantially as and for the purposes herein set forth.

4. The board belt B', arranged within the carrier K, substantially as and for the purposes herein set forth.

205,439.



205,440. DISINTEGRATING-MILLS. Thomas L. Sturtevant, South Framingham, assignor to William E. Bowker & Co., Boston, Mass. Filed May 16, 1878.



Claim.—1. The valves a e, pivoted to the circumference of the outer or larger cage A, and operating in manner as explained, to prevent accumulations upon the inner circumference of the case or hood which surrounds the said cage, substantially as and for purposes stated.

2. The swinging bar or plate d, applied to the exterior of the cage A, and operating to scrape the end walls of the case, substantially as and for purposes stated.

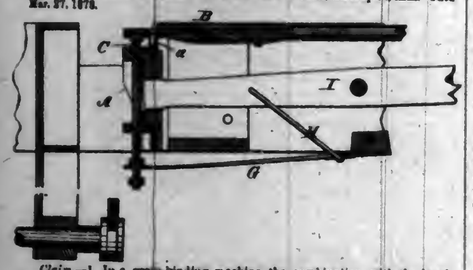
3. In combination with the outer and inner edges, the bars a e, fixed to and revolving with the outer cage, and operating to scrape not only the adjacent wall of the case, but also the end of the inner cage.

206,441. HARVESTER-PLATFORMS. George Sweet, Danville, N. Y. Filed Dec. 24, 1877.



Claim.—In combination with the rear tie of a harvester-platform, the brackets or abutments b b' near the corners of the outer end, the rod D, having screw-threaded ends f, extending through the bracket or abutment b, and provided on the inner side of said bracket or abutment with one or more nuts, d, and the staples s, secured at intervals to the rear tie, through which the rod D freely passes, substantially as and for the purpose specified.

206,442. GRAIN-BINDERS. Chas. L. Travis and Chas. B. Chute, Minneapolis, Minn. Filed Mar. 27, 1878.



Claim.—1. In a grain-binding machine, the combination, with the band-carrying mechanism, of two dies movable in relation to each other, and a guide attached to one of said dies and arranged to set upon the other, for the purpose of bringing them exactly in line with each other.

2. In combination with the dies A B, the dog or clamp C, operated by positive-acting mechanism, and arranged to rise in advance of the die A, substantially as shown.

3. The combination of the die A, dog C, lever I, arm G, and link H.

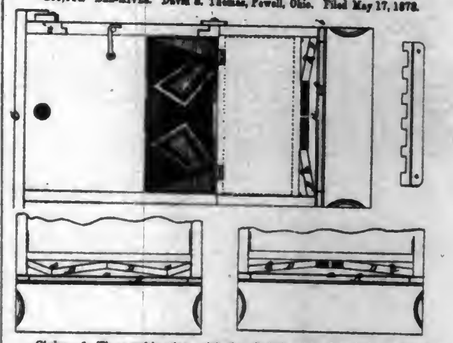
4. In a grain-binding machine, the combination of the dies A B and the carrier-arm D, curved upward and around the outside of the band-fastening mechanism, substantially as shown.

206,443. PROCESSES FOR FLAVORING LIQUORS. J. H. Thomas, Louisville, Ky. Filed Jan. 29, 1878.



Claim.—The herein-described process of flavoring and rectifying alcoholic liquors, consisting, first, in introducing the liquor into contact with charcoal impregnated with the essential or flavoring oil or extract; and, secondly, in precipitating it through filtering medium below, whence it is drawn off, thus flavoring and rectifying the liquor at a single continuous operation, substantially as specified.

206,444. BEE-HIVES. David S. Thomas, Powell, Ohio. Filed May 17, 1878.



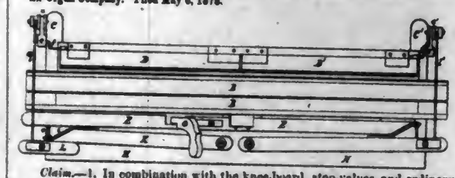
Claim.—1. The combination, with the alighting-board and the body of the hive, having a bee-entrance located as usual, the blocks D D, having the form of a right-angled triangle and perforated at one corner, and the headed pins, which enter holes in the alighting-board, all as shown and described.

2. The moth miller trap consisting of a hinged board having grooves in its under side, as specified.

3. The door I, the hinge, and the cam-button or fastening, in combination with the body of the hive, having a bee-entrance, as specified.

4. The detachable section I, cut away or notched at its lower edge, and the detachable strip for closing the bee-entrance beneath the section, as shown and described.

206,445. REED-ORGANS. Wm. O. Trowbridge, Newton, Mass., assignor to the Mason & Hamlin Organ Company. Filed May 6, 1878.



Claim.—1. In combination with the knee-board, stop-valves, and ordinary stop mechanism of a reed-organ, the operating tracker-rod E, the lever K, knee-lever M, and rods l P, all constructed and arranged substantially as and for the purpose specified.

2. The knee-board O, sub-lever P, or its equivalent, and metal holder T, in combination with the operating tracker-rod E, the lever K, knee-lever M, and self-adjusting strip S, all constructed and arranged substantially as and for the purpose set forth.

206,446. STOPPING OF GLASS. John Unwin, Sheffield, Great Britain. Filed May 6, 1878.

Claim.—The process of producing etched designs on the surface of glass by printing them directly from flexible molds in ordinary ink, and applying powdered resin to the printed parts, and producing the etched and all deadened effects at one operation by the agency of fluoric acid and soda-ash, substantially as hereinbefore described, the same being cheaper and more quickly effected than by the process of transferring prints from steel, copper, metal, or stone plates, as in previous methods used for the purpose of etching on glass.

206,447. BREECH-LOADING FIRE-ARMS. Horace Updegraff, Smithfield, Ohio. Filed Mar. 19, 1878.

Brief.—When the breech is opened a cam-shoulder gradually forces the extractor back to start the cartridge or shell. When near its limit of movement a projection on the block strikes a shoulder on the rear side of the extractor, and gives it a sudden jerk to throw the shell out. A locking lever or arm pivoted to the side of the frame is operated by a groove in the side of the hammer, to lock the breech-block in case of premature explosion.

Claim.—1. The breech-block F, having the recess C, cam-shoulder c, and stop c', in combination with the extractor G, pivoted to the frame A, and having the shoulder e' and shoulder d, substantially as and for the purposes set forth.

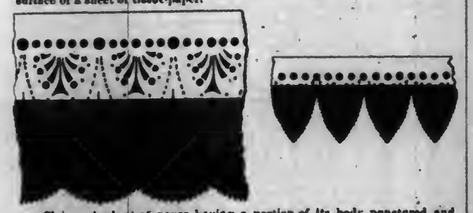
2. The combination, with the safety-arm H, pivoted to the frame A, and provided with a pin h, of the hammer D, having the groove D^2 and cams D^4 D^5, substantially as and for the purposes set forth.

205,447.



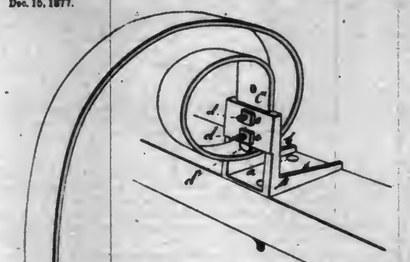
206,448. WRAPPERS FOR BONBONS. Isabella J. Van Skelline, Brooklyn, E. D., N. Y. Filed Sept. 1, 1877.

Brief.—Perforates and tints a portion, and then coats with wax the entire surface of a sheet of tissue-paper.



Claim.—A sheet of paper having a portion of its body punctured and tinted, and the whole covered with a film of wax, as a new article of manufacture.

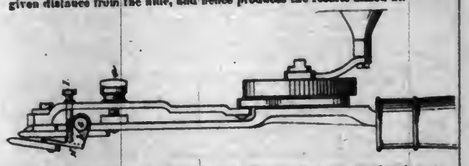
206,449. HARROW-TEETH. Daniel Waterbury and Frank Miller, Kalamazoo, Mich. Filed Dec. 15, 1877.



Claim.—The combination, with the standard B, constructed as described, of a spring-tooth, made of flat spring-steel, the inner end of which is perforated, and fits between the ribs b b on the vertical part of the standard, and secured thereto by bolts d d, having nuts c on their ends, substantially as described.

206,450. ANIMAL-SHEARING MACHINES. Edward J. Watson, Greenbush, N. Y., and Frank Armstrong, Bridgeport, Conn. Filed Apr. 10, 1878.

Brief.—A secondary comb is combined with the shearing-blades, which, while it does not cover the hair of the animal, holds the cutting-blades at any given distance from the hide, and hence produces the results aimed at.



Claim.—1. In combination with the cutting mechanism of a shearing-machine, a hinged comb adapted to be adjusted at different distances from the cutting mechanism, substantially as and for the purpose set forth.

2. In combination with a shearing device and a secondary adjustable comb or its equivalent, and frame H b, the set-screw l, for holding and adjusting the comb, substantially as hereinbefore set forth.

206,451. STOPPING MECHANISMS FOR LOOMS. Jos. Watters, Fall River, Mass. Filed Mar. 22, 1877.

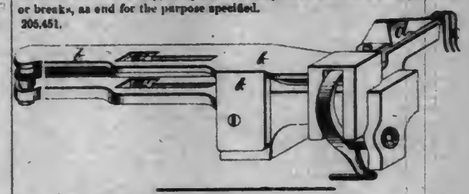
Brief.—The weft-fork and the lever operated thereby are protected by covers, to prevent the operative from improperly meddling with them, so that the loom shall be automatically stopped by the said fork only when the weft is absent.

Claim.—1. The combination, in a loom, with the detaching-lever a, of the guard b, arranged substantially as and for the purpose described.

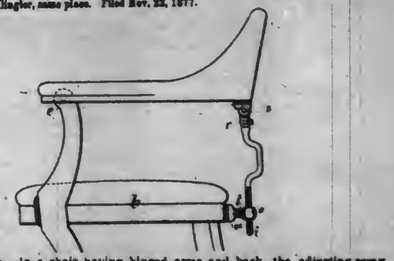
2. In combination with the weft-fork c, the cap d, arranged substantially as and for the purpose set forth.

3. The guard b and cap d, in combination with the automatic stop mechanism of a loom, substantially as described, by which the parts are protected, and the loom can be stopped by the same only when the weft-thread gives out or breaks, as and for the purpose specified.

206,451.

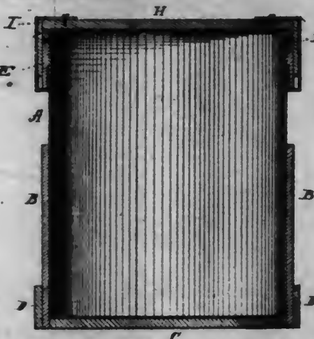


206,452. BARBERS' CHAIRS. August Wolcke, New York, N. Y., assignor to himself and Simon Klingler, same place. Filed Nov. 22, 1877.



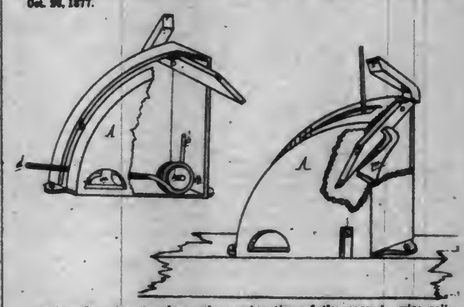
Claim.—In a chair having hinged arms and back, the adjusting-screw formed of a rod that is bent as a bow or brace-handle between the screw portion and the straight end, that enters the socket r, in combination with the nut o and pivoted connections s t, substantially as set forth.

206,453. BUTTER-TUBS. Isaac Westcott and John Westcott, Antwerp, N. Y., assignors to Melvin M. Westcott. Filed May 16, 1878.



Claim.—The combination, in a butter-tub, of the metallic tub A, provided with the wide wooden hoop B, extending from the bottom nearly to the top, the wooden bottom C, strengthening-band D, wooden band E at the top, and the cover H I, all constructed substantially as and for the purposes herein set forth.

206,454. BURGLAR-ALARMS. James W. Wharf and Wm. W. Wharf, Detroit, Mich. Filed Oct. 26, 1877.



Claim.—In a burglar-alarm, the combination of the case A, wire coil spring a, with two free ends, b d, pin h, and hammer m, all constructed and arranged to operate substantially as and for the purposes set forth.

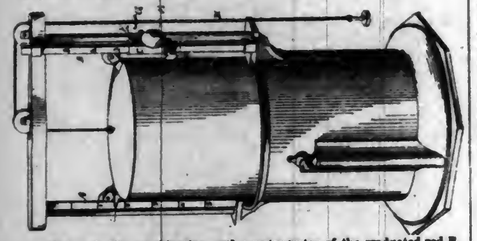
205,455. GAGE-HOLDER. James W. Wharf and Wm. W. Wharf, Detroit, Mich. Filed May 9, 1878.



Claim.—The gage-holder described, wherein are combined the case A having its inner face A' inclined inwardly in a downward direction, the loose roller B, contained by the case, and the lever b, pivoted in the case with its inner end below the roller and not connected thereto, substantially as described and shown.

205,456. GAS-METER PROVER. John T. Wheeler, Detroit, Mich. Filed Apr. 13, 1878.

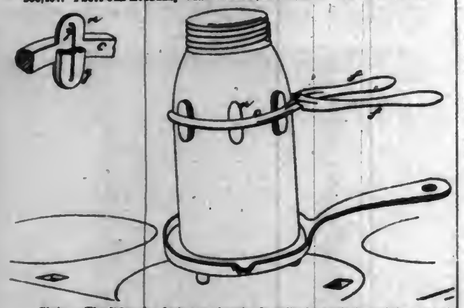
Brief.—An alarm attached to a gas-meter prover can be adjusted on a graduated rod, and is automatically sounded when the desired amount of gas has passed into the gas-meter.



Claim.—1. The combination, with a meter-tester, of the graduated rod B, having the adjustable sleeve C, provided with an alarm, substantially as described and shown.

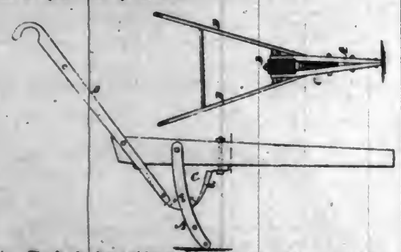
2. In a meter-prover, the combination, with the rod B, of the sleeve C, adjustably secured to such rod by screw D, and having the bell E and bell-crank F, and the trip-stop G, all constructed, arranged, and operated substantially as described and shown.

205,457. FRUIT-JAR HOLDERS. Julia Woodruff, Detroit, Mich. Filed June 8, 1878.



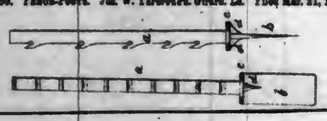
Claim.—The lifter for fruit-cans herein described, consisting of the curved jaws *c c*, handles *f f*, flanges *u*, fastening-wires *y*, and pads *p*, constructed and arranged substantially as and for the purpose specified.

205,458. PLOWS. Reuse W. Workman, Rock Hill, S. C., assignee of one-half his right to John R. Loudon, same place. Filed Apr. 23, 1878.



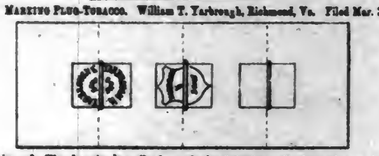
Claim.—The fixed colter and brace-plate C, having a convex or semicircular cutting-edge, *d*, in combination with the bifurcated standard A, adjustable upon the colter-plate, and the handles D, extended downward and bolted to said plate, all as shown and described, and for the purposes specified.

205,459. FENCE-POSTS. Jas. W. Yarbrough, Girard, La. Filed Mar. 21, 1878.



Claim.—The post *a*, flange *c* at the foot and extended out equally in all directions from the center of said post, wedge-shaped blade *b*, and wedge-shaped braces *d*, the said blade and braces being formed at right angles to each other and centrally under the flange and post, all formed or cast together in one piece, substantially as set forth.

205,460. MARKING PLUG-TOBACCO. William T. Yarbrough, Richmond, Va. Filed Mar. 30, 1878.



Claim.—1. The herein-described method of laying off plug-tobacco into sections and labeling each section of said plug, which consists in first applying to the lump of tobacco a series of flexible labels and a series of wire staples arranged to straddle each or every alternate label, which latter are provided with duplicate marks and a space between such marks for the reception of the wire, and then securing them permanently in position by the pressure employed to compress said lump into a plug of tobacco, substantially as described, for the purpose specified.

2. As a new article of manufacture, a plug of tobacco provided with a series of section-indicating wires and a series of flexible labels arranged under and held by said wires, as described, each label being provided with duplicate marks, whereby each section will be properly labeled, the wires forming the gage by which said sections are severed from the plug, substantially as specified.

206,461. TOYS. George Sockenwerdt, New York, N. Y. Filed May 14, 1878.



Claim.—1. The combination, in a toy, of the compound sheet-metal strip A, embodying the sides and the top and bottom of the article, the sheet-metal end pieces B B, loosely attached to the edges of the compound strip, and a catch for connecting together the ends of the compound strip, substantially as described.

2. The combination of the end pieces B B and the compound sheet-metal strip A, having the grooves *b* to receive the edges of the end pieces, substantially as described.

3. The combination of the end pieces B B and the compound sheet-metal strip A, having the grooves *b* and the indentations *c*, substantially as and for the purpose described.

REISSUES.

8,294. PIANO-STOOLS. James Bramble, Manayunk, Pa., and Hugh M. Dehl, Fort Wayne, Ind., assignors to John P. Parvi, Washington, D. C.; said Parvi assignor to Samuel S. White, Philadelphia, Pa. Patent No. 70,044, dated Nov. 21, 1868. Filed May 24, 1878.

Claim.—1. The combination, substantially as hereinbefore set forth, of the base or stand, the vertically-movable plunger or spindle mounted therein, the seat mounted on the plunger, and the fluid-column to hold said seat at any point to which it may be raised, and to permit it, when desired, to pass gradually and without shock from that elevated point to a lower one.

2. The combination, substantially as hereinbefore set forth, of the base or stand, the vertically-movable plunger or spindle, the seat mounted on the plunger or spindle, mechanism for raising the seat, and the fluid-column to hold said seat at any point to which it may be raised by the lifting mechanism, and to permit it, when desired, to pass gradually and without shock from that elevated point to a lower one.

3. The combination, substantially as hereinbefore set forth, of the base or stand, the fluid-reservoir and cylinder mounted therein, the plunger or spindle, movable vertically endwise in the cylinder, the seat mounted on the plunger, the pipe or channel connecting the cylinder and reservoir, and the inlet-valve in the channel, for the purposes specified.

4. The combination, substantially as hereinbefore set forth, of the base or stand, the fluid-reservoir mounted thereon and enveloped thereby, the cylinder carried by the base, and the plunger carrying a seat and working within the cylinder.

5. The combination, substantially as hereinbefore set forth, of the seat mounted on the plunger, the cylinder in which the plunger moves endwise, the fluid-reservoir mounted in the base or stand, the inlet-valve, which permits the fluid to follow the ascent of the supporting-plunger, and another or outlet valve, which permits the fluid slowly to be displaced by the descending plunger, to insure the gradual and easy descent of the seat.

6. The combination, substantially as hereinbefore set forth, of the base, the cylinder mounted thereon, the plunger carrying a seat and movable endwise in the cylinder, the fluid-reservoir, also mounted on the base, and valves connecting the reservoir with the cylinder, whereby, as the chair is raised or lowered, the fluid is transferred from the reservoir to the cylinder, and vice versa.

7. The combination, substantially as hereinbefore set forth, of the base or stand, the fluid-cylinder mounted thereon, the plunger, movable endwise in the cylinder, and the seat carried by said plunger and capable of a horizontal turning movement relatively to the base.

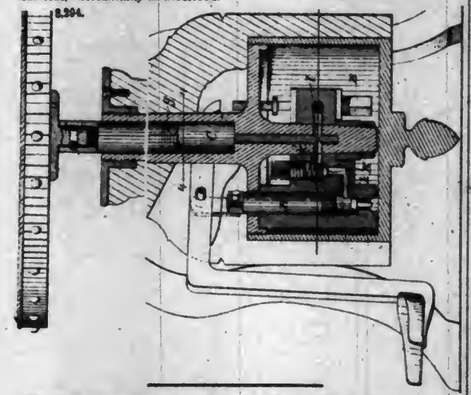
8. The combination, substantially as hereinbefore set forth, of the vertically-movable plunger, the seat, the lifting mechanism, and the elevating foot-lever, whereby the seat and occupant may be raised to any desired height by the foot of the operator.

9. The combination, substantially as hereinbefore set forth, of the vertically-movable plunger carrying the seat, the lifting mechanism, and the foot-lever acting with a step-by-step movement to raise the seat.

10. The combination, substantially as hereinbefore set forth, of the vertically-movable plunger, the seat mounted thereon, the lifting mechanism, retaining mechanism to hold said seat at any height desired, and the foot-lever.

11. The combination of the vertically-movable seat-supporting plunger, the foot-lever acting with a step-by-step movement, and the spring acting upon the lever to return it to its normal or raised position after each depression, in readiness for the next movement which is to add to the elevation of the seat, substantially as described.

8,294.



8,295. ILLUMINATING VAULT-COVERS. Wm. Dale, New York, N. Y., assignor, by mesne assignments, to the Dale Tile Manufacturing Company, (limited,) same place. Patent No. 112,428, dated Mar. 7, 1871; Reissue No. 5,084, dated Dec. 16, 1873. Filed May 22, 1878.



Claim.—1. A vault-cover consisting of a metallic disk, A, having holes in the bottom plate A^1, bull's-eye B, placed in said holes, and a non-slippery filling material, described, which forms substantially the upper surface of the cover within the rim A^1, and in which the bull's-eyes are set and held, the said material forming a water-tight joint with the bull's-eyes, all as specified.

2. The illuminated vault-cover described, provided with openings A^2, for ventilation, through the rim A^1 of the cover A, as specified.

8,296. BALING-PRESSES. Peter K. Dederick, Albany, N. Y. Patent No. 177,216, dated May 9, 1876. Filed June 13, 1878.



Claim.—1. The press-case provided with one or more apertures, O, for the purpose set forth.

2. The sliding frame fitted to receive the followers and guide them into the box, as set forth.

3. The follower M, provided with grooved projections, for the purpose set forth.

4. The traverser provided with yielding substance between the leaves, for the purpose specified.

5. The hinged leaf R, in combination with the aperture O', for the purpose set forth.

8,297. WOOD-PLANING MACHINES. J. A. Fay & Co., Cincinnati, Ohio, assignees of John Richards. Patent No. 103,080, dated May 17, 1870. Filed June 7, 1878.

Brief.—The feeding mechanism is started, driven, and stopped by a friction device connected with the gearing of the feed-rolls and the driving-shaft. The top or yielding feed-roll is supported and adjusted so that it can adjust itself to the inequalities of the lumber as it passes between the rolls. Weighted levers are connected with the yielding feed-rolls, and the adjusting-screws of said rolls, by links pivoted to the levers and swiveled to the adjusting-screws.

Claim.—1. The combination, substantially as specified, of a friction-driver and the torsional shifter-shaft n.

2. The combination, substantially as specified, of a driving-shaft, a pulley to receive motion therefrom, a friction-driver for transmitting motion from the shaft to the pulley, and a shiftable shaft-supporting bearing.

3. The combination, substantially as specified, of a driving-shaft, a pulley to receive motion therefrom, a friction-driver for transmitting motion from the shaft to the pulley, a shiftable shaft-supporting bearing, and the torsional shifter-shaft.

4. In a machine for planing wood, the combination substantially as specified, of the driving-shaft, a pulley loosely mounted on said shaft, a friction-clutch for transmitting motion from the shaft to the pulley, and a movable bearing of the shaft adapted to force the shiftable part of the clutch up into frictional contact with the fixed part thereof.

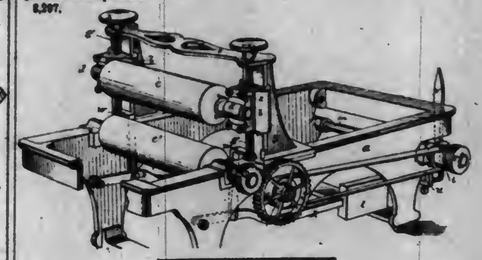
5. In a machine for planing wood, the combination, substantially as specified, of the driving-shaft, a pulley loosely mounted on said shaft, a friction-clutch for transmitting motion from the shaft to the pulley, a movable bearing of the shaft, and the torsional shifter-shaft.

6. The radial friction-plates *r t*, with the friction-washer *o*, constructed as described, in combination with the movable bearing *n'*.

7. The sliding carriers *b b'*, when provided with the adjustable bearings *d d*, constructed as shown, for the purposes specified.

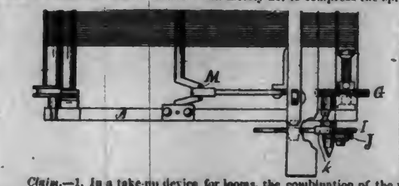
8. The levers *k k*, connected directly to the adjusting-screws *g g* by means of links *s s*, with a swivel-joint, substantially in the manner and for the purposes herein specified.

8,297.



8,298. TAKE-UPS FOR LOOMS. George H. Holmes, New Britain, Conn. Patent No. 63,441, dated Aug. 10, 1866. Filed Nov. 6, 1877.

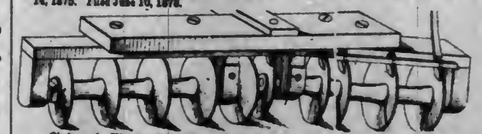
Brief.—The pawl-lever is connected to a rod passing loosely through a collar on the sword of the lay and surrounded by a spiral spring, one end of which bears against the collar and the other against a nut on the rod. A pin on the rear end of the rod prevents it from being drawn forward entirely out of the collar. The lay in its backward movement sets the pawl, and any slackness in the cloth will be taken up by the beam, as the lay in its forward movement slides the collar on the rod and compresses the spring, and the strength of the spring will turn the beam and take up any slack; but when there is sufficient tension the collar will merely act to compress the spring.



Claim.—1. In a take-up device for looms, the combination of the ratchet-wheel I, through which motion is imparted to the beam which takes up the fabric, the oscillating pawl-carrier J, provided with the pawl *k*, the rod L, spring O, stop-nut *p*, and reciprocating sliding collar *m* and operating mechanism, whereby the positive reciprocating motion imparted to the sliding collar is made to turn the ratchet-wheel a greater or less distance, according to the tension of the fabric, substantially as described.

2. In a take-up device for looms, the combination of the stop-nut *p*, the rod L, spring O, sliding collar *m*, the crank M, and suitable intermediate mechanism, substantially as described, whereby the rotary motion of the crank is transformed into the compensatory reciprocating motion of the rod L, for the purpose set forth.

8,299. WHEEL-HARROWS. Frank Bruner, Little Falls, N. Y. Patent No. 171,092, dated Dec. 14, 1875. Filed June 10, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, of a series or gang of harrow-disks having concave faces or sides with a series of scrapers or clearers adapted to be vibrated or moved close to or in contact with said concave sides and removed therefrom while the machine is in motion.

2. The combination, substantially as hereinbefore set forth, of a series of rotating concave-convex harrow-disks, a series of pivoted, rocking, or adjustable clearers or scrapers, connected together, and a lever pivoted on the gang-frame, whereby the scrapers may be caused simultaneously to approach or recede from the concave faces of the disks.

3. In combination with a gang or series of rotating harrow-disks, the clearers or scrapers united to a reciprocating bar, adapting them to be operated simultaneously by means of a lever, substantially as and for the purposes set forth.

4. The combination, substantially as hereinbefore set forth, of a draft-frame, a gang or series of rotating harrow-disks connected therewith, a series of scrapers united to a bar mounted upon the gang-bar or disk-frame and adapted to vibrate in contact with or close to the sides of the disks, and a lever pivoted upon said gang-bar, extending to within reach of the driver while in his seat on the machine, whereby the scrapers may simultaneously be caused to clear the sides of the disks, and then removed therefrom when the disks are free and clear, to prevent clogging by accumulation upon the scrapers.

8,300. ORNAMENTAL SCROLL-WORK FOR JEWELRY. Louis Heckmann, Fishville, Mass., assignor of part interest to William H. Wade and Edward F. Davis. Design No. 10,220, dated Oct. 30, 1877. Filed June 13, 1878.

Claim.—The design for ornamental scroll-work for articles of jewelry, composed essentially of the fluted band *b*, provided with caps in the positions shown, said band being coiled in the shape of a scroll, substantially as described, and illustrated in the accompanying drawings.

8,301. DEVICES FOR FINISHING THREAD. Tobias Kohn, Hartford, Conn. Patent No. 46,958, dated July 25, 1865. Filed Dec. 6, 1877.

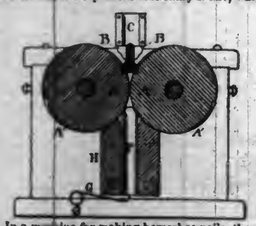


Claim.—1. In a thread cleaning machine, the concave-faced rollers C, for the purpose of cleaning and finishing silk and other thread, substantially in the manner herein set forth.

2. A series of rollers placed on axes at right angles to each other, in combination with suitable mechanism for holding them in this position, or nearly so, substantially as and for the purpose herein set forth.

8,302. MACHINES FOR MAKING HORSESHOE-NAILS. David R. Loring, Boston, Mass., assignor, by mesne assignments, to John P. Wheeler, John P. Russell, and Chas. W. Russell, trustees. Patent No. 194,710, dated Nov. 28, 1876. Filed Nov. 30, 1877.

Brief.—Guides in the stationary chute open to permit a blank to descend, and then close upon its shank, and hold it in such a position that the head shall accurately enter the recess formed to receive it in the rolls. A delivering-tunnel is constantly held up against the rolls by a spring, and the frame within which it operates is extended to contact with the periphery of the rolls. A blank wedged in the dies will impinge against and depress the delivering-tunnel, and will contact with the top of the stationary frame, which strips it from the dies.



Claim.—1. In a machine for making horseshoe-nails, the combination of a feed-tunnel, C, automatic guides B, arranged to operate between said tunnel and the rolls, and the revolving dies A', all arranged substantially as and for the purpose described.

2. The combination of the guides B, levers E E', spring *e*, and pin *d* with the pins *f*, substantially as shown and described.

3. The combination of the tunnel F, spring G, and frame H with the revolving dies A', substantially as set forth.

4. The combination of an automatic centering device, the revolving dies, and an automatic delivering apparatus, substantially as and for the purpose set forth.

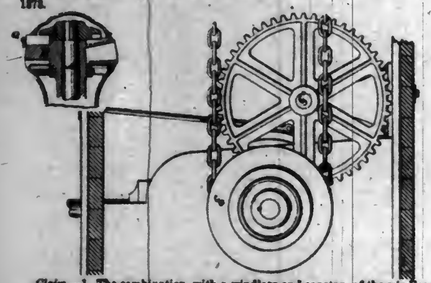
5. The combination of a feed-tunnel, a combined detent and centering device, and revolving dies, as set forth.

6. The combination of a feed-tunnel, a divided detent, and revolving dies, substantially as described.

7. In a machine for the manufacture of horseshoe nails having a stationary feed-tunnel and revolving dies, an automatically-acting device in the lower part of said tunnel for vertically supporting a blank while it is being drawn in to the dies, as described.

8. In a machine for manufacturing horseshoe-nails, a device for centering the blank in revolving dies arranged immediately above the converging point of said dies, in combination with an independent tunnel for conveying blanks to said centering device, for the purpose set forth.

8,303. WINDLASSES. Joseph P. Manton, Providence, R. I., assignor to the American Ship Windlass Company, same place. Patent No. 176,331, dated Apr. 18, 1876. Filed May 4, 1878.



Claim.—1. The combination, with a windlass and capstan, of the windlass-head *b*, secured to the shaft A and arranged to be locked to the capstan-head, and the messenger-wheel E and intermediate gears, by which both the windlass and capstans may be driven by the capstan-bars or steam-power, substantially as described.

2. The combination, with the shaft A, connected with the windlass by gears, substantially as described, of the windlass-head *b*, the capstan-head B, provided with a sleeve surrounding the shaft and connecting the compound driving-pinion with the capstan-head, so that the capstan can be connected with the windlass and operated either as a simple or power capstan.

3. The combination, with a messenger-wheel and gears arranged to drive the horizontal shaft of a windlass, of the vertical shaft A, provided with a locking device, by which it is connected with the capstan, and gears connecting the horizontal with the vertical shaft, the whole arranged to drive the capstan through the windlass by steam-power.

4. The combination of the upright shaft and the windlass, the two directly geared together, and with the windlass-head keyed to said shaft, the power-capstan and a capstan-head revolving around said shaft and arranged to interchangeably drive the capstan or the windlass, substantially as described.

8,304. COUPLINGS FOR LIGHTNING-RODS. William S. Rayburn and Edmund A. W. Hunter, Philadelphia, Pa.; said Hunter assignor of one-half his right to Byron P. Moulton. Patent No. 90,576, dated May 25, 1869. Filed Apr. 3, 1878.





Claim.—1. A metallic coupling for lightning-rods, consisting of two parts, provided with a male and female screw, by means of which they are connected together, and each having a recess or socket in one end adapted to receive and hold the end of the rod, substantially as described.

2. The metallic coupling-pieces B C, provided with a recess or socket at one end adapted to receive the end of the rod, in combination with the rod-sections A and the fastening-pins D, substantially as described.

3. The angular or flanged rod-sections A, in combination with the coupling-pieces B C, having slits or recesses *c* and *d* in their ends, corresponding to the flanges of the rod-sections, which they are adapted to receive, substantially as described.

8,305. PROCESSES OF MAKING COMPOSITION ARTICLES FROM BLOOD. William H. Dibble, Elizabeth, assignor to the Dibble Manufacturing Company, Trenton, N. J. Patent No. 192,063, dated July 10, 1877. Filed June 12, 1878.

Claim.—The process of making compressed articles from the blood of animals herein described, consisting of first converting the blood into a dry mass or mixture by the treatment described, and then subjecting the mass so formed to great pressure in heated molds or dies of any desired configuration, substantially in manner and proportion as set forth.

8,306. WIRE-BARBING TOOLS. Jas. R. Hill and W. H. Jayne, Keosauqua, Iowa, assignors, by mesne assignments, to said Jayne, Thomas B. Moore, Jeremiah E. Black, and John E. Ingersoll. Patent No. 172,437, dated Jan. 18, 1876. Filed June 11, 1878.



Claim.—1. The combination, in a barb-forming tool, of the two blocks A C, one of said blocks pivoted to revolve, and each provided with the tapering grooves E E, as and for the purpose specified.

2. The combination, in a barb-forming tool, of the two blocks A C, one of said blocks pivoted to revolve, and each provided with the tapering grooves E E and slot D, to receive the fence-wire, as and for the purpose specified.

3. The combination of the hinged blocks A B and the pivoted block C, provided with the handles *a' a'*, the slots D, and the tapering grooves E E, with each other, substantially as herein shown and described.

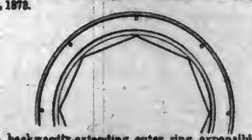
8,307. ILLUMINATING-DOORS FOR INCLOSING VAULTS, AREAS, CELLAR-WAYS, &c. Theodore Hyatt, New York, N. Y., assignor to Elizabeth A. L. Hyatt. Patent No. 145,183, dated Dec. 2, 1873. Filed June 10, 1878.



Claim.—As a new article of manufacture, an illuminating-door composed of wrought-iron with glazed light-openings, substantially as and for the purpose specified.

8,308. PROJECTILES FOR ORDNANCE. Hugh Reilly, Brooklyn, N. Y. Patent No. 165,255, dated July 6, 1875. Filed Jan. 26, 1878.





Claim.—1. A sabot with a backwardly-extending outer ring, expansible radially, in combination with the angular projection of the shot and the attaching-plate, substantially as and for the purposes specified.

2. A sabot provided with perforations to allow the escape of the gases of combustion, substantially as specified.

3. The body of a shot or shell having on its rear end a slanting shoulder, in combination with a ring-sabot having its front face slanting to correspond with the slant of the shoulder on the shot, so as to prevent expansion in that part of the sabot, and an attaching-plate, substantially as and for the purposes set forth.

4. As a new article of manufacture, a ring-sabot with its front face made on a slant inwardly and forwardly from the periphery of the sabot.

5. The packing-ring *f*, in combination with the body of a sabot and a clamp-plate.

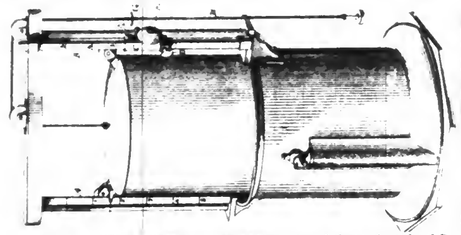
THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.



Claim.—The sash holder described, wherein are combined the case A having its inner face A' inclined inwardly in a downward direction, the inclined slot B cut in said face and the case, and the bent *b* pivoted in the case with its upper end to bear the roller and not connected thereto, substantially as described and shown.

205,456. GAS-METER PROVERS. John T. Wheeler, Detroit, Mich. Filed Apr 13, 1878.

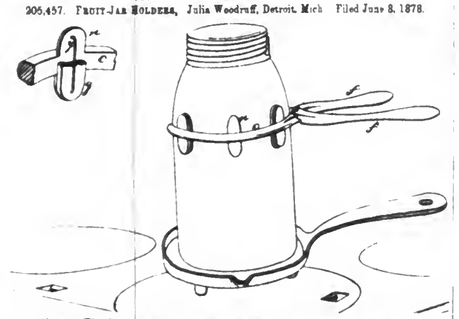
Brief.—An alarm attached to a gas meter prover can be adjusted on a graduated rod, and is automatically sounded when the desired amount of gas has passed into the gas meter.



Claim.—1. The combination, with a meter tester, of the graduated rod B, having the adjustable sleeve C, provided with an alarm, substantially as described and shown.

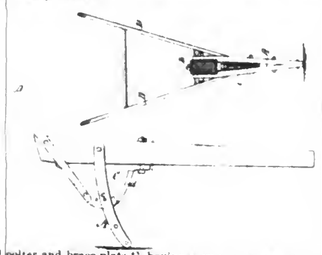
2. In a meter prover, the combination, with the rod B, of the sleeve C, adjustably secured to such rod by screw D, and having the bell E and bell-crank F, and the trip stop G, all constructed, arranged, and operated substantially as described and shown.

205,457. FRUIT-JAR HOLDERS. Julia Woodruff, Detroit, Mich. Filed June 8, 1878.



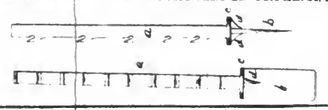
Claim.—The lifter for fruit cans herein described, consisting of the curved jaws *c c*, handles *f f*, flanges *a*, fastening wires *y*, and pads *g*, constructed and arranged substantially as and for the purpose specified.

205,458. PLOWS. Reese W. Workman, Rock Hill, S. C., assignor of one-half his right to John R. Loudon, same place. Filed Apr. 23, 1878.



Claim.—The fixed colter and brace plate C, having a convex or semicircular cutting edge, *d*, in combination with the bifurcated standard A, adjustable upon the colter plate, and the handles D, extended downward and bolted to said plate, all as shown and described, and for the purposes specified.

205,459. FENCE-POSTS. Jas. W. Yarbrough, Girard, La. Filed Mar. 21, 1878.



each other and centrally under the flange and post, all formed or cast together as and for the purpose specified.

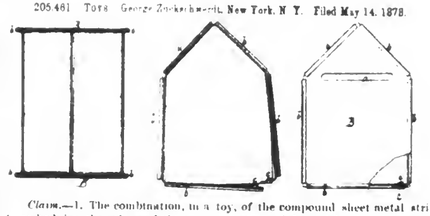
205,460. MODE OF PUTTING TOBACCO. William T. Yarbrough, Richmond, Va. Filed Mar 30.



Claim.—1. The herein described method of laying off plug tobacco into sections, and labeling each section of said plug, which consists in first applying to the lump of tobacco a series of flexible labels and a series of wire staples arranged to straddle each or every alternate label, which latter are provided with duplicate marks and a space between such marks for the reception of the wire, and then securing them permanently in position by the pressure employed to compress and lump into a plug of tobacco, substantially as described, for the purpose specified.

2. As a new article of manufacture, a plug of tobacco provided with a series of section indicating wires and a series of flexible labels arranged under and held by said wires, as described, each label being provided with duplicate marks, whereby each section will be properly labeled, the wires forming the gage by which said sections are severed from the plug, substantially as specified.

205,461. TOYS. George Zockenhoefft, New York, N. Y. Filed May 14, 1878.



Claim.—1. The combination, in a toy, of the compound sheet metal strip A, embodying the sides and the top and bottom of the article, the sheet metal end pieces B B, loosely attached to the edges of the compound strip, and a catch for connecting together the ends of the compound strip, substantially as described.

2. The combination of the end pieces B B and the compound sheet-metal strip A, having the grooves *b* to receive the edges of the end pieces, substantially as described.

3. The combination of the end pieces B B and the compound sheet-metal strip A, having the grooves *b* and the indentations *c*, substantially as and for the purpose described.

REISSUES.

8,294. PIANO-STOOLS. James Bramble, Manayunk, Pa., and Hugh M. Dethl, Fort Wayne, Ind., assignors to John F. Paret, Washington, D. C.; said Paret assignor to Samuel S. White, Philadelphia, Pa. Patent No. 76,044, dated Mar. 31, 1868. Filed May 24, 1878.

Claim.—1. The combination, substantially as hereinbefore set forth, of the base or stand, the vertically movable plunger or spindle mounted therein, the seat mounted on the plunger, and the fluid column to hold said seat at any point to which it may be raised, and to permit it, when desired, to pass gradually and without shock from that elevated point to a lower one.

2. The combination, substantially as hereinbefore set forth, of the base or stand, the vertically movable plunger or spindle, the seat mounted on the plunger or spindle, mechanism for raising the seat, and the fluid-column to hold said seat at any point to which it may be raised by the lifting mechanism, and to permit it, when desired, to pass gradually and without shock from that elevated point to a lower one.

3. The combination, substantially as hereinbefore set forth, of the base or stand, the fluid reservoir and cylinder mounted therein, the plunger or spindle, movable vertically endwise in the cylinder, the seat mounted on the plunger, the pipe or channel connecting the cylinder and reservoir, and the inlet-valve to the channel, for the purposes specified.

4. The combination, substantially as hereinbefore set forth, of the base or stand, the fluid reservoir mounted thereon and enveloped thereby, the cylinder carried by the base, and the plunger carrying a seat and working within the cylinder.

5. The combination, substantially as hereinbefore set forth, of the seat mounted on the plunger, the cylinder in which the plunger moves endwise, the fluid reservoir mounted in the base or stand, the inlet-valve, which permits the fluid to follow the ascent of the supporting plunger, and another or outlet valve, which permits the fluid slowly to be displaced by the descending plunger, to insure the gradual and easy descent of the seat.

6. The combination, substantially as hereinbefore set forth, of the base, the cylinder mounted thereon, the plunger carrying a seat and movable endwise in the cylinder, the fluid reservoir, also mounted on the base, and valves connecting the reservoir with the cylinder, whereby, as the chair is raised or lowered, the fluid is transferred from the reservoir to the cylinder, and vice versa.

7. The combination, substantially as hereinbefore set forth, of the base or stand, the fluid-cylinder mounted thereon, the plunger, movable endwise in the cylinder, and the seat carried by said plunger and capable of a horizontal turning movement relatively to the base.

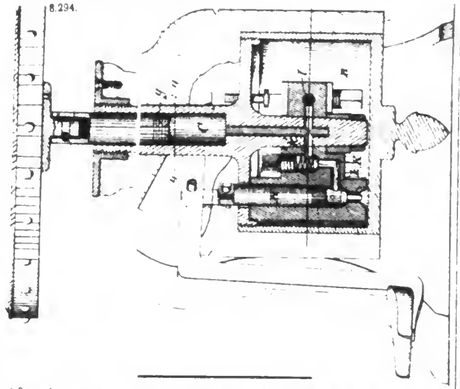
8. The combination, substantially as hereinbefore set forth, of the vertically-movable plunger, the seat, the lifting mechanism, and the elevating foot-lever, whereby the seat and occupant may be raised to any desired height by the foot of the operator

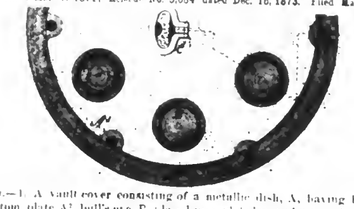
9. The combination, substantially as hereinbefore set forth, of the vertically movable plunger carrying the seat, the lifting mechanism, and the foot-lever acting with a step-by-step movement to raise the seat.

10. The combination, substantially as hereinbefore set forth, of the vertically movable plunger, the seat mounted thereon, the lifting mechanism, retaining mechanism to hold said seat at any height desired, and the foot-lever.

11. The combination of the vertically movable seat-supporting plunger, the foot-lever acting with a step-by-step movement, and the spring acting upon the lever to return it to its normal or raised position after each depression, in readiness for the next movement which is to add to the elevation of the seat, substantially as described

8,295. ILLUMINATING VAULT-COVERS. Wm. Dale, New York, N. Y., assignor, by mesne assignments, to the Dale Tile Manufacturing Company, limited, same place. Patent No. 112,428, dated Mar. 7, 1871; Reissue No. 5,684 dated Dec. 16, 1873. Filed May 22, 1878.

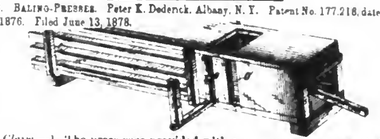




Claim.—1. A vault cover consisting of a metallic dish, A, having holes in the bottom plate A', bull's-eye B, placed in said holes, and a non-slippery filling material, described, which forms substantially the upper surface of the cover within the rim A', and in which the bull's-eyes are set and held, the said material forming a water tight joint with the bull's-eyes, all as specified.

2. The illuminated vault cover, described, provided with openings A', for ventilation, through the rim A' of the cover A, as specified.

8,296. BALING-PRESSES. Peter K. Dederick, Albany, N. Y. Patent No. 177,216, dated May 9, 1876. Filed June 13, 1878.



Claim.—1. The press case provided with one or more apertures, O, for the purpose set forth.

2. The sliding frame fitted to receive the followers and guide them into the box, as set forth.

3. The follower 5f, provided with grooved projections, for the purpose set forth.

4. The traverser provided with yielding substance between the leaves, for the purpose specified.

5. The hinged leaf R, in combination with the aperture O', for the purpose set forth.

8,297. WOOD-PLANING MACHINES. J. A. Fay & Co., Cincinnati, Ohio, assignees of John Richards. Patent No. 103,080, dated May 17, 1870. Filed June 7, 1878.

Brief.—The feeding mechanism is started, driven, and stopped by a friction device connected with the gearing of the feed rolls and the driving shaft. The top or yielding feed roll is supported and adjusted so that it can adjust itself to the inequalities of the lumber as it passes between the rolls. Weighted levers are connected with the yielding feed rolls, and the adjusting screws of said rolls, by links pivoted to the levers and swiveled to the adjusting screws.

Claim.—1. The combination, substantially as specified, of a friction driver and the torsional shifter shaft *u*.

2. The combination, substantially as specified, of a driving shaft, a pulley to receive motion therefrom, a friction driver for transmitting motion from the shaft to the pulley, and a shiftable shaft supporting bearing.

3. The combination, substantially as specified, of a driving shaft, a pulley to receive motion therefrom, a friction driver for transmitting motion from the shaft to the pulley, a shiftable shaft supporting bearing, and the torsional shifter shaft.

4. In a machine for planing wood, the combination substantially as specified, of the driving shaft, a pulley loosely mounted on said shaft, a friction-clutch for transmitting motion from the shaft to the pulley, and a movable bearing of the shaft adapted to lower the shiftable part of the clutch up into frictional contact with the fixed part thereof

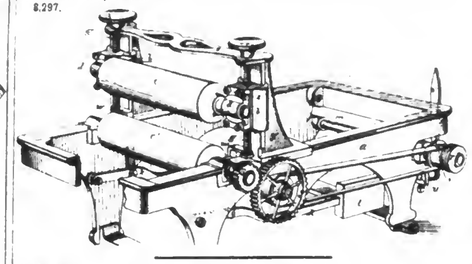
5. In a machine for planing wood, the combination, substantially as specified, of the driving shaft *t*, pulley *t'*, bevels mounted on said shaft, a friction-clutch for transmitting motion from the shaft to the pulley, a movable bearing of the shaft, and the torsional shifter shaft

6. The radial friction plates *r r*, with the friction washer *s*, constructed as described, in combination with the movable bearing *u*.

7. The sliding carriers *b b'*, when provided with the adjustable bearings *d d*, constructed as shown, for the purposes specified.

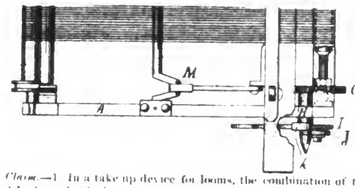
8. The levers *k k*, connected directly to the adjusting screws *g g* by means of links *e e*, with a swivel joint, substantially in the manner and for the purposes herein specified.

8,297.



8,298. TAKE-UPS FOR LOOMS. George H. Holmes, New Britain, Conn. Patent No. 93,441, dated Aug. 10, 1869. Filed Nov. 6, 1877.

Brief.—The pawl lever is connected to a rod passing loosely through a collar on the sword of the lay and surrounded by a spiral spring, one end of which bears against the collar and the other against a nut on the rod. A pin on the rear end of the rod prevents it from being drawn forward entirely out of the collar. The lay in its backward movement sets the pawl, and any slackness in the cloth will be taken up by the beam, as the lay in its forward movement slides the collar on the rod and compresses the spring, and the strength of the spring will turn the beam and take up any slack; but when there is sufficient tension the collar will merely act to compress the spring



Claim.—1. In a take-up device for looms, the combination of the ratchet wheel I, through which motion is imparted to the beam which takes up the fabric, the oscillating pawl-carrier J, provided with the pawl *k*, the rod L, spring O, stop-nut *p*, and reciprocating sliding collar *m* and operating mechanism, whereby the positive reciprocating motion imparted to the sliding collar is made to turn the ratchet wheel a greater or less distance, according to the tension of the fabric, substantially as described.

2. In a take-up device for looms, the combination of the stop-nut *p*, the rod L, spring O, sliding collar *m*, the crank M, and suitable intermediate mechanism, substantially as described, whereby the rotary motion of the crank is transformed into the compensatory reciprocating motion of the rod L, for the purpose set forth.

8,298. WHEEL-HARROWS. Frank Bramer, Little Falls, N. Y. Patent No. 171,092, dated Dec. 14, 1875. Filed June 10, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, of a series or gang of harrow-disks having concave faces or sides with a series of scrapers or clearers adapted to be vibrated or moved close to or in contact with said concave sides and removed therefrom while the machine is in motion.

2. The combination, substantially as hereinbefore set forth, of a series of rotating concavo-convex harrow-disks, a series of pivoted, rocking, or adjustable clearers or scrapers, connected together, and a lever pivoted on the gang frame, whereby the scrapers may be caused simultaneously to approach or recede from the concave faces of the disks.

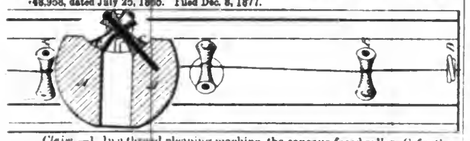
3. In combination with a gang or series of rotating harrow-disks, the clearers or scrapers united to a reciprocating bar, adapting them to be operated simultaneously by means of a lever, substantially as and for the purposes set forth.

4. The combination, substantially as hereinbefore set forth, of a draft-frame, a gang or series of rotating harrow-disks connected therewith, a series of scrapers united to a bar mounted upon the gang-bar or disk-frame and adapted to vibrate in contact with or close to the sides of the disks, and a lever pivoted upon said gang-bar, extending to within reach of the driver while in his seat on the machine, whereby the scrapers may simultaneously be caused to clear the sides of the disks, and then removed therefrom when the disks are free and clear, to prevent clogging by accumulation upon the scrapers.

8,300. ORNAMENTAL SCROLL-WORK FOR JEWELRY. Louis Heckmann, Plainville, Mass., assignor of part interest to William H. Wade and Edward P. Davis. Design No. 10,288, dated Oct. 30, 1877. Filed June 13, 1878.

Claim.—The design for ornamental scroll-work for articles of jewelry, composed essentially of the fluted band *b*, provided with caps in the positions shown, said band being coiled in the shape of a scroll, substantially as described, and illustrated in the accompanying drawings.

8,301. DEVICES FOR FINISHING THREAD. Tobias Kohn, Hartford, Conn. Patent No. 203,958, dated July 25, 1865. Filed Dec. 8, 1877.

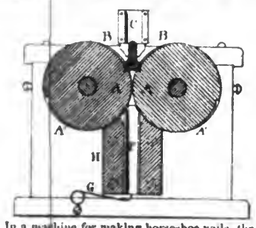


Claim.—1. In a thread cleaning machine, the concave faced rollers C, for the purpose of cleaning and finishing silk and other thread, substantially in the manner herein set forth.

2. A series of rollers placed on axes at right angles to each other, in combination with suitable mechanism for holding them in this position, or nearly so, substantially as and for the purpose herein set forth.

8,302. MACHINES FOR MAKING HORSESHOE-NAILS. David B. Loring, Boston, Mass., assignor, by mesne assignments, to John E. Wheeler, John E. Russell, and Chas. W. Russell, trustees. Patent No. 184,718, dated Nov. 28, 1876. Filed Nov. 20, 1877.

Brief.—Guides in the stationary chute open to permit a blank to descend, and then close upon its shank, and hold it in such a position that the head shall accurately enter the recess formed to receive it in the rolls. A delivering tunnel is constantly held up against the rolls by a spring, and the frame within which it operates is extended to contact with the periphery of the rolls. A blank wedged in the dies will impinge against and depress the delivering tunnel, and will contact with the top of the stationary frame, which strips it from the dies.



Claim.—1. In a machine for making horseshoe-nails, the combination of a feed-tunnel, C, automatic guides B, arranged to operate between said tunnel and the rolls, and the revolving dies A', all arranged substantially as and for the purpose described.

2. The combination of the guides B, levers E E', spring *e*, and pin *d* with the pins *f*, substantially as shown and described.

3. The combination of the tunnel F, spring G, and frame H with the revolving dies A', substantially as set forth.

4. The combination of an automatic centering device, the revolving dies, and an automatic delivering apparatus, substantially as and for the purpose set forth.

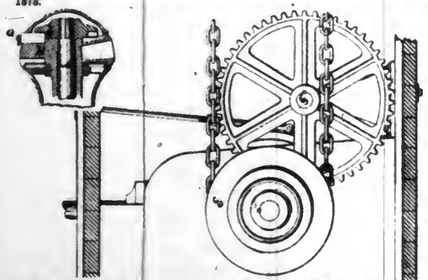
5. The combination of a feed-tunnel, a combined detent and centering device, and revolving dies, as set forth.

6. The combination of a feed-tunnel, a divided detent, and revolving dies, substantially as described.

7. In a machine for the manufacture of horseshoe-nails having a stationary feed-tunnel and revolving dies, an automatically-acting device in the lower part of said tunnel for vertically supporting a blank while it is being drawn in to the dies, as described.

8. In a machine for manufacturing horseshoe-nails, a device for centering the blank in revolving dies arranged immediately above the converging point of said dies, in combination with an independent tunnel for conveying blanks to said centering device, for the purpose set forth.

8,303. WINDLASSES. Joseph P. Manton, Providence, R. I., assignor to the American Ship Windlass Company, same place. Patent No. 176,331, dated Apr. 18, 1876. Filed May 4, 1876.



Claim.—1. The combination, with a windlass and capstan, of the windlass-head *b*, secured to the shaft A and arranged to be locked to the capstan-head, and the messenger-wheel E and intermediate gears, by which both the windlass and capstans may be driven by the capstan-bars or steam-power, substantially as described.

2. The combination, with the shaft A, connected with the windlass by gears, substantially as described, of the windlass-head *b*, the capstan-head B, provided with a sleeve surrounding the shaft and connecting the compound driving pinion with the capstan-head, so that the capstan can be connected with the windlass and operated either as a simple or power capstan.

3. The combination, with a messenger-wheel and gears arranged to drive the horizontal shaft of a windlass, of the vertical shaft A, provided with a locking device, by which it is connected with the capstan, and gears connecting the horizontal with the vertical shaft, the whole arranged to drive the capstan through the windlass by steam-power.

4. The combination of the upright shaft and the windlass, the two directly geared together, and with the windlass-head keyed to said shaft, the power-capstan and a capstan-head revolving around said shaft and arranged to interchangeably drive the capstan or the windlass, substantially as described.

8,304. COUPLINGS FOR LIGHTNING-RODS. William S. Roybarn and Edmond A. W. Hunter, Philadelphia, Pa.; said Hunter assignor of one-half his right to Byron P. Moulton. Patent No. 90,578, dated May 25, 1869. Filed Apr. 3, 1878.



Claim.—1. A metallic coupling for lightning rods, consisting of two parts, provided with a male and female screw, by means of which they are connected together, and each having a recess or socket in one end adapted to receive and hold the end of the rod, substantially as described.

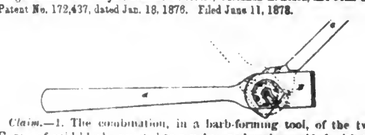
2. The metallic coupling-pieces B C, provided with a recess or socket at one end adapted to receive the end of the rod, in combination with the rod-sections A and the fastening pins D, substantially as described.

3. The angular or flanged rod sections A, in combination with the coupling-pieces B C, having slits or recesses *e* and *d* in their ends, corresponding to the flanges of the rod sections, which they are adapted to receive, substantially as described.

8,305. PROCESSES OF MAKING COMPOSITION ARTICLES FROM BLOOD. William H. Dibble, Elizabeth, assignor to the Dibble Manufacturing Company, Trenton, N. J. Patent No. 192,883, dated July 10, 1877. Filed June 12, 1878.

Claim.—The process of making compressed articles from the blood of animals herein described, consisting of first converting the blood into a dry mass or mixture by the treatment described, and then subjecting the mass so formed to great pressure in heated molds or dies of any desired configuration, substantially in manner and proportion as set forth.

8,306. WIRE-BARBING TOOLS. Jas. H. Hill and W. H. Jayne, Boone, Iowa, assignors, by mesne assignments, to said Jayne, Thomas B. Moore, Jeremiah E. Black, and John E. Ingersoll. Patent No. 172,437, dated Jan. 18, 1876. Filed June 11, 1878.



Claim.—1. The combination, in a barb-forming tool, of the two blocks A C, one of said blocks pivoted to revolve, and each provided with the taper ing grooves E E, as and for the purpose specified.

2. The combination, in a barb forming tool, of the two blocks A C, one of said blocks pivoted to revolve, and each provided with the tapering grooves E E and slot D, to receive the fence-wire, as and for the purpose specified.

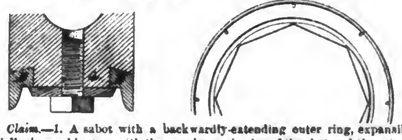
3. The combination of the hinged blocks A B and the pivoted block C, provided with the handles *a' c'*, the slots D, and the tapering grooves E E, with each other, substantially as herein shown and described.

8,307. ILLUMINATING-DOORS FOR INCLOSING VAULTS, AREAS, CELLAR-WAYS, &c. Thaddeus Hyatt, New York, N. Y., assignor to Elizabeth A. L. Hyatt. Patent No. 145,183, dated Dec. 2, 1873. Filed June 10, 1878.



Claim.—As a new article of manufacture, an illuminating-door composed of wrought-iron with glazed light-openings, substantially as and for the purpose specified.

8,308. PROJECTILES FOR ORDNANCE. Hugh Reilly, Brooklyn, N. Y. Patent No. 165,255, dated July 6, 1875. Filed Jan. 28, 1878.



Claim.—1. A sabot with a backwardly-extending outer ring, expansible radially, in combination with the angular projection of the shot and the attaching-plate, substantially as and for the purposes specified.

2. A sabot provided with perforations to allow the escape of the gases of combustion, substantially as specified.

3. The body of a shot or shell having on its rear end a slanting shoulder, in combination with a ring-sabot having its front face slanting to correspond with the slant of the shoulder on the shot, so as to prevent expansion in that part of the sabot, and an attaching-plate, substantially as and for the purposes set forth.

4. As a new article of manufacture, a ring-sabot with its front face made on a slant inwardly and forwardly from the periphery of the sabot.

5. The packing-ring *f*, in combination with the body of a sabot and a clamp-plate.

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, &c.

OFFICIAL GAZETTE—January—June, 1878.

DIGEST OF DECISIONS.

[The names of court cases are designated by an asterisk, (*.)]

ABANDONED APPLICATIONS.

1. A rejected application for letters patent is no bar to a patent, there being no evidence to show that the alleged prior invention which it discloses was ever perfected or brought to practical use, or that it was not abandoned and never revived by the original inventor.

[*Rubber Step Manufacturing Company *vs.* Metropolitan Railroad Company *et al.*, 549.

2. An application abandoned because of failure to prosecute within two years next after the last Office action will not be revived if the neglect or default of the party himself has caused the loss in status.

[Thomas Mayor, 912.

ABANDONED EXPERIMENTS.

1. A machine temporarily disused under circumstances connected with the demand and supply of its product, and independent of the efficiency of the mechanism, is not an abandoned experiment.

[*Snow *vs.* Tapley, 542.

2. Abandonment of the use of a machine is no evidence that it was a mere abandoned experiment.

[*Pickering *et al. vs.* McCullough *et al.*, 818.

(See Interferences, 8.)

ABANDONED INVENTION.

Abandonment of the use of a mechanical structure which has been brought to such a degree of maturity, and whose operative merit has been demonstrated by trial, will inure to the benefit of the public, and not to that of even an original but subsequent inventor.

[*Pickering *et al. vs.* McCullough *et al.*, 818.

(See Abandoned Applications, 1; Prior Knowledge and Use, 1.)

AGGREGATION.

1. To taper a lathe-chuck and to make it with a screw-thread on its face are both well-known constructions in the art of spinning metal. It is without patentable merit to unite both these features in the same chuck, when no joint modified effect is obtained, but a simple aggregation of their individual functions.

[J. L. Mason, 324.

2. A claim cannot be sustained which, though in terms for a combination, seeks in fact to protect the convenient relative arrangement of an old device, having no coactive function with the other elements specified.

[*The Kerosene Lamp Heater Company *vs.* Littell, 1009.

(See Patentability, 1.)

APPEALS.

It is incumbent upon an appellant to show clearly the error in the decisions of the lower tribunals.

[Towers *vs.* Pease, 176.

APPLICATIONS FOR PATENT.

1. There must be substantial correspondence between the description, drawing, and model respecting all the essentials of an invention which it is sought to patent.

[James W. Schoonmaker, 595.

2. So, too, the specification and drawing must fully and clearly reveal some practical means of carrying the invention into effect.

[Ibid., 595.

3. Though an applicant may suggest or illustrate modifications of an invention, yet he is required to disclose in entirety some one means of practising it.

[Ibid., 595.

(See Joint Invention, 1, 2.)

ARTICLES OF MANUFACTURE.

1. When a thing is produced new, in and of itself, it is patentable as a new manufacture.

[*Badische Anilin and Soda Fabrik *vs.* Hamilton Manufacturing Company, 273.

2. The main and principal features of the art of preserving fruits, vegetables, and meats in hermetically-sealed cans or packages being old, whether a patent for each particular article of canned goods "as a new article of commerce" can be sustained as a new invention, *Quære.*

[*Wilson Packing Company *et al. vs.* Clapp, 368.

3. A passenger-ticket consisting, in addition to the usual matter, of a personal description of the purchaser and an executed contract, is simply a contract, or method of doing business, and is not patentable.

[A. E. Sheldon, 817.

(See Infringement, 9.)

ASSIGNMENTS.

1. There being conflicting claimants to ownership in an invention for which letters patent were to issue, he was excluded from the grant whose assignment deed did not certainly identify the invention in controversy with the one which the deed conveyed.

[Edwin L. Paine, 407.

2. It is a mere license, and not such an assignment as will include a party in the grant of letters patent, which reserves to the assignor certain uses of the invention the patent is intended to secure.

[Ibid., 407.

3. Where an application is withheld from issue for the sole purpose of ascertaining who is a legal assignee to be included in the grant, an assignment deed will be considered, even though filed of record subsequently to the payment of the final fee.

[Ibid., 407.

CASES CONSIDERED.

The case of Murray and Writerich (C. D. 1873, p. 96) considered.

[P. A. Dailey, 228.

(See Reissues, 8.)

CLAIMS.

1. In stating claims no set expression or formula need be followed, but they must come within the subject-matter disclosed by the specification, and must, moreover, be clear, distinctive, well defined, and accurate, and not for mere abstractions, generalizations, functions, or results.

[P. G. L. G. Designolle, 227.

2. Certain claims wanting in these requisites criticised and rejected.

[Ibid., 227.

(See Aggregation, 2; Reissues, 8.)

COMBINATIONS.

(See Aggregation, 2; Reissues, 8.)

CONSTRUCTION OF PATENTS.

Evidence of fraudulent designs on the part of the defendants will incline a court to a liberal construction of the patent infringed.
[*Odiorne *vs.* Denney, 965.

(See Disclaimers, 3; Particular Patents.)

CONSTRUCTION OF STATUTES.

The rights and remedies conferred by the copyright law are applicable to the amendatory act of June 18, 1874.
[*Marsh *et al. vs.* Warren and Fairweather, 7.

(See Expiration of Patents, 1; Prints and Labels, 1.)

COSTS.

1. The right to tax the docket fee, where the case is one of a number embraced by stipulation in a single hearing, the decree in one to stand for the decree in all, is undoubted.
[*The Goodyear Dental Vulcanite Company *vs.* Osgood *et al.*, 325.

2. So, too, after issue and interlocutory decree deciding the merits, if the case is finally dismissed by the court on final decree, and upon motion of the complainants, the docket fee is to be taxed.
[*Ibid., 325.

3. Costs were disallowed, except so far as they had accrued since curing the defect of non-joinder by the appearance of the omitted partner.
[*Frese & Co. *vs.* Bachof, 635.

4. The decree below being affirmed as to injunction and reversed as to an account, the costs in the Supreme Court were taxed against the appellee.
[*McLean *vs.* Fleming, 913.

5. Costs allowed the plaintiff, except as to the reference of the cases to the master and all the subsequent proceedings, with decree for the party in whose favor the difference in amount of opposing costs should exist.
[*Ingersoll *vs.* Musgrove *et al.*, 966.

(See Practice in Courts, 5, 6, 7.)

DAMAGES.

1. Damages recovered for such infringement will be proportioned to the respective interests of the parties.
[*Herring *vs.* Gas Consumers' Association, 637.

2. Damages of a compensatory character may be allowed to a complainant in an equity suit where it appears that the business of the infringer was so improvidently conducted that it did not yield any substantial profits.
[*Marsh *et al. vs.* Seymour and Morgan, 723.

3. The amount of profits and damages arising under infringement being questions of fact to be satisfactorily proven, and the master having based his report upon evidence merely in the nature of estimate, opinion, and conjecture, the exceptions thereto were sustained and nominal damages alone awarded.
[*Ingersoll *vs.* Musgrove *et al.*, 966.

DEFENSES.

1. The objection that the patent was for a simple substitution of one material for another, involving no invention, not having been set up regularly in the answer, was overruled.
[*Comstock *et al. vs.* Sandusky Seat Company *et al.*

2. An objection to the validity of a patent because of an insufficient specification, raised in argument, but not set up as a defense in the answer, cannot be considered. (*Rubber Co.* vs. *Goodyear*, 2 Fisher, 509; 9 Wall., 793.)
[* Wouson *vs.* Peterson *et al.*, 548.

3. Since a patent may be invalid for several reasons under the law, an assignment of error which gave no more explicit cause than "that the patent is invalid" was overruled.
[*Marsh *et al. vs.* Seymour and Morgan, 723.

(See Practice in Courts, 8, 10, 11.)

DESIGNS.

1. Hence, the figure of a boy, together with certain words, printed in minute squares upon a sampler-card, is the subject of a design-patent. It is not to be attached as a distinguishing label or symbol to certain merchandise, but is the article itself.
[T. E. Parker. 323.

2. Doubted whether a frusto-pyramidal shaped packing-can with rounded corners for containing preserved meat, and which facilitates its removal in solid mass, is a patentable device, because lacking in novelty.
[*Wilson Packing Company *et al. vs.* Clapp, 368.

3. Nor is there objection to making claim to each subordinate feature, provided it is of a distinct and separable part of the whole design.
[Rogers and Huggins, 596.

(See Division of Applications, 4.)

DISCLAIMER.

1. A disclaimer contained in an original patent may be omitted upon reissue, notwithstanding it was entered to avoid a threatened interference, it being clearly established that the admission which it makes is an inadvertence.
[Daniels *vs.* Chestermann, 4.

2. To omit a disclaimer on reissue which is entirely consistent with the limited invention disclosed by the original patent, and obviously not entered through inadvertence, accident, or mistake, will not permit the insertion of a claim broader in scope than the invention for which the original patent was issued.
[Funck *vs.* Doty, 322.

3. In the English patent corresponding to the domestic one upon which suit was brought, a disclaimer to certain general features of invention was entered, presumably in view of the fact that such features had already been disclosed by an antecedent patentee: *Held*, that the American patent, to be valid, must be likewise limited to the particular means set forth, even though it did not contain the restricting disclaimer.
[*Ashcroft *vs.* The Boston and Lowell Railroad Company, 865.

(See Interferences, 1, 2; Particular Patents, 30.)

DISUSE.

(See Abandoned Experiments, 1, 2.)

DIVISION OF APPLICATIONS.

1. Division of an application required where distinct inventions pertaining to steam-condensing apparatus, to air-pumps, and valve-rods, were embraced in it.
[R. W. Hamilton, 122.

2. In one sense the inventions relate to steam-engines, but in an advanced state of the art specific improvements of an original machine may arise which will be equally applicable to every species of the machine. It is absolutely necessary to keep such matters within well-defined limits of classification.
[Ibid., 122.

3. A mode of manufacturing ornamented felt fabrics, the machinery employed, and the article produced declared to be properly joined in a single application.
[P. A. Dailey, 228.

4. An application for a design patent in analogy to an application for a mechanical patent need not be divided if the separate subordinate designs to which claim is made form, when united, one principal and complete design.
[Rogers and Huggins, 596.

5. In a sewing-machine, if the combination of the trimmer and the mechanism for moving the cloth laterally is an invention, then the other subordinate constructions and combinations—improvements upon the two elements of this combination—may be considered as parts of the same invention, and be included in the same application.
[John Bigelow, 913.

(See Designs, 3.)

DRAWINGS.

1. Illustrated drawings of conceived ideas do not constitute an invention, and unless they are followed up by a seasonable observance of the requirements of the patent laws they can have no effect upon a subsequently-granted patent to another.
[*Draper *vs.* The Potomska Mills Corporation, 276.

2. Where a patent is assailed for lack of novelty, sketches and drawings may be resorted to to fix the date of inceptive invention, and if there has been no unreasonable delay subsequently in adapting the invention and applying for patent the protection of the patent will be carried back to the date thus established.
[*Ibid., 276.

3. Corroborated testimony respecting certain unpreserved drawings illustrative of the invention not wholly disregarded where the patentee's efforts prior to their date of making, and his subsequent achievements, brought them clearly within the line of invention pursued.
[Wyman *vs.* Knowles, 320.

(See Applications for Patent, 1, 2; Priority of Invention, 1; Reissues, 6, 7.)

EMPLOYER AND EMPLOYÉ.

1. An employer is entitled to use the suggestion or invention of an employé which is an improvement ancillary to a preconceived plan of reorganizing an old machine.
[Yost and Warner *vs.* Powell, 122.

2. The mere fact of employment gives to the employer no title in letters patent for inventions made by the workman while in his service.
[*Whiting *vs.* Graves *et al.*, 455.

3. A workman engaged to make improvements in the special machinery of a fancy dry-goods manufactory, of which his employer is to have the fullest benefit, forfeits no part of his title to letters patent for inventions which are of general applicability and not confined to the specialities of construction in the factory machinery.
[*Ibid., 455.

4. The terms of the particular contract may operate as a license to the employer to use machinery invented by the workman and put in use during his employment, but it would not of itself confer any legal title to the invention or to letters patent protecting it.
[*Ibid., 455.

5. An exclusive license for the use of certain patented machinery, invented and constructed during the term of service, results to an employer where the workman agreed to give the employer the exclusive benefit of his inventive faculties and of such inventions as he should make in a particular class of machinery during the period of employment.
[*Wilkens *vs.* Spafford, 675.

6. So, too, an agreement that the employer was to have the exclusive benefit of the workman's services in making machinery and improvements in the employer's premises operates to license the use of machinery perfected and constructed, or in course of construction, during the term of service, although it had actually been invented and patented by the workman prior to such service.
[*Ibid., 675.

(See Infringement, 15.)

EQUITY.

1. In a court of equity a party holding an equitable title cannot be ousted of his equitable rights by the holder of the legal title who in such case stands as trustee for the party beneficially interested.
[*Whiting *vs.* Graves *et al.*, 455.

2. An equity court will not entertain jurisdiction of a matter which the person has had opportunity to litigate in another court, and which has there been decided against him, unless it appears that circumstances beyond his control prevented his making the defense or trying the question.
[*Brooks *vs.* Moorhouse, 499.

(See Infringement, 10, 15, 27.)

EQUIVALENTS.

1. The explosive compound consisting of a combination of nitro-glycerine with infusorial earth (Reissue Letters Patent No. 5,799) is infringed by one in which the nitro-glycerine is mixed with a mealed powder composed of nitrate of soda, charcoal, and sulphur, it appearing that the powder, as an ingredient, is substantially the same as the infusorial earth in function and effect, although possessed of additional advantageous qualities as well.
[*The Atlantic Giant Powder Company *vs.* Goodyear. Same *vs.* Townsend, 45.

2. When a substitute is used for one ingredient in a patented combination which has every property, and performs every function of the original in the combination, it does not cease to be an equivalent because, in addition, it does something more and better.
[*Ibid., 45.

3. Similarities or differences are not to be judged by names. One device is substantially the same as another if it performs substantially the same functions in substantially the same way to obtain the same result, and this though they differ in name, form, or shape.
[*The Union Paper Bag Machine Company and Cupples *vs.* Murphy, 366.

(See Infringement, 1, 8, 12, 20, 23, 30; Interferences, 7; Particular Patents, 44.)

ESTOPPEL.

1. The defendant in a suit at law for infringement agreed with the plaintiff, for a valuable consideration, to discontinue the manufacture of the infringing article, and subsequently suffered interlocutory judgment to be entered against himself by default. Afterward he continued to make and sell an article differing but slightly from the former, and a clear infringement of the one patented. A bill in equity having been brought to restrain the unlicensed manufacture, and it appearing that the defenses set up in the answer were within the defendant's knowledge at the time of the action at law: *Held*, his agreement cannot be repudiated. It was made for a valuable consideration, with a full knowledge of the facts, and there is nothing to show that it was either unconscientious or unreasonable.
[*Brooks *vs.* Moorhouse, 499.

2. The defendant, both by the proceedings in the action at law and the agreement signed by him, is concluded from contesting the validity of the patent.
[*Ibid., 499.

(See Interferences, 1.)

EXPIRATION OF PATENTS.

1. The provision of the patent act of 1870, that in the case of a prior foreign patent, the United States patent "shall expire at the same time with the foreign patent, or, if there be more than one, at the same time with the one having the shortest term," is not retroactive. It did not take away any portion of the term of an existing patent, nor any right to an extension [*a reissue?*] which was in force when such patent was granted.
[*Badische Anilin and Soda Fabrik *vs.* Hamilton Manufacturing Company, 273.

2. Hence, a patent granted originally in 1869, and reissued after the passage of the act of 1870, is not abridged in term by the expiration of a prior foreign patent for the same invention occurring subsequent to the reissue.
[*Ibid., 273.

FORMAL DIFFERENCES.

(See Equivalents, 3; Infringement, 1, 13, 24, 27, 31.)

INFRINGEMENT.

1. Although defendant's dies were in four parts, and complainant's in but two, infringement was established from the fact that the "side dies," so called, when connected with the principal dies, were identical in operation and effect with the side walls of complainant's top and bottom dies.
[*Klein *vs.* Kloman Park & Co., 5.

2. The gripers which operate, in conjunction with the sheath and knife, to seize and conduct forward the severed end of the paper web, form no part of the patented combination. That they are referred to in describing one of the purposes of the invention does not include them in it; hence, where other means in lieu of the gripers were employed to advance the web, infringement of the combination existed none the less.
[*Bullock Printing Press Company, 124.

3. A device for puffing fluted fabric, consisting of a double-plated segment of a hollow cylinder, with its arch upward, between the guide-plates of which the material passes to the ordinary grooved fluting-rolls beyond, (Reissue Letters Patent No. 3,000, G. E. King, June 23, 1868,) is not infringed by a spring-pressed detent or finger operating above and in conjunction with a smooth flat plate, over which the material is fed to the rolls. (Letters Patent No. 134,621, R. Werner, January 7, 1873.)
[*Werner *vs.* King, 176.

4. It appears that in the first device, (the complainant's,) the cross-section curve of the arched guide-plates being greater in length than the rolls, a redundant width of material is constantly fed to the latter, which excess causes the material to rise in irregular puffs between the fluting-lines; in the second, the spring-finger momentarily detains the central portions of the fabric intermediate to the fluting-lines, and thereby produces the crinkles.
[*Ibid., 176.

5. The difference is more than one of form. With complainant the puffing is due entirely to the curved guide, and unless a guide in some manner gives an arch or curve to the material on passing into the rolls, it is not within the scope of his patent. The result produced must not only be the same, but it must be done in substantially the same way.
[*Ibid., 176.

6. The devices operate on different principles. The arched guide invariably feeds the same amount of redundant material, irrespective of the elasticity or rigidity of the fabric, while the detention of the finger, and consequently the puffing, will vary with the resisting strength of the fabric and the power of the presser-spring.
[*Ibid., 176.

7. With the arched guide the puffing results from a pressure which is uniform over the entire surface of the fabric; with the detent or finger the pressure varies.

[*Ibid., 176.

8. The two devices are in no sense mechanical equivalents, unless complainant claims every method by which a redundancy of material is presented to the rolls for puffing. This he does not do, and, if he did, the claim would be fatal.

[*Ibid., 176.

9. If it be capable of being produced by various different processes, yet when the product is new, independent of the process, the patent is infringed by the unlicensed manufacture of the new product by any mode of manufacture, the process of manufacture being wholly unimportant.

[*Badische Anilin and Soda Fabrik *vs.* Hamilton Manufacturing Company, 273.

10. Proceedings in equity for infringement of patents are not strictly proceedings for torts. Aside from the restraint by perpetual injunction, an infringer must account as trustee for profits realized, and is liable for the damage of infringement; hence, where a decree had settled the question of infringement, and the case had been referred to a master to ascertain the amount for which final decree should be entered, pending which the respondent died, the action was held to survive notwithstanding.

[*Atterbury *vs.* Gill, 276.

11. A weighted knife with five planes or faces, which descends by gravity upon a flat continuous paper web and severs a peculiar outline blank that folds into a bag without further cutting, (Claim 1, Letters Patent No. 24,734, William Goodale,) is infringed by a stationary serrated-edge knife of substantially the same form fixed to the machine-bed, and which cuts the same shaped blank from the web passing above by conjoint action with a quick-descending striker that gives the paper a vertical blow, directly in advance of the edge of the knife.

[*The Union Paper Bag Machine Company and Cupples *vs.* Murphy, 366.

12. The two devices—viz., the knife and the striker—operating together perform the exact same function as that performed in the complainants' machine by the ascent and descent of the cutter. It makes no difference that the latter severs the blank by its own gravity, while in the former the descending striker falls upon the paper at the proper moment to cause the stationary knife to cut for the same purpose. They are alike in function.

[*Ibid., 366.

13. Except where form is of the essence of an invention it has but little weight in determining the question of infringement. It is necessary to look at the mode of operation and at the result, as well as at the means by which the result is attained.

[*Ibid., 366.

14. In the patented device the elastic resilient ridges, over which the foot may easily slide, serve as "scrapers to clean the feet," and the cells or inclosed spaces hold the dirt thus removed. In the other device the projecting hemispheres or pyramids present a frictional bearing to prevent sliding, and make the foot rest firmly, while the depressions corresponding to the patentees' dirt-cells are not to retain the dirt, but by the construction of the parts, and the elasticity of the material, facilitate the removal of mud, water, and ice. The two contrivances do not perform the same function by the same means, and each is unfit for the use and purpose for which the other is intended.

[*Brown *et al. vs.* Rubber Step Manufacturing Company *et al.*, 369.

15. Hence, where the employer rested his suit for infringement on a legal title obtained under such circumstances, the court ruled that the equitable title of the workman under which the defendants justified was superior, and that there was no infringement.

[*Whiting *vs.* Graves *et al.*, 455.

16. The means employed by the defendant being different in the essential elements of organization from that of the patentee, no infringement occurs, although the several devices are alike in accomplishing a common result.

[*Merriam and Chamberlain *vs.* Van Nest *et al.*, 597.

17. Long-continued use of a particular form of package and of particular colors for its wrappers, papers of directions, and labels having served to distinguish the complainants' article in the trade, the appropriation of such peculiarities in form and color by another dealer for packages of the same article will be restrained.

[*Frese & Co. *vs.* Bachof, 635.

18. Action for infringement may be maintained against a joint owner of a patent for the unauthorized use of a device which infringes it.

[*Herring *vs.* Gas Consumers' Association, 637.

19. The case distinguished from that in which the joint owner uses the device secured by the common patent.

[*Ibid., 637.

20. It is an infringement where the sweep-rake operates in combination with the quadrant platform to remove the cut grain in substantially the same way and for the same purpose as in the complainants' patent, even though the mode of attaching the rake-arm to the machine and the means employed for retaining it in position for another sweep are different.

[*Marsh *et al. vs.* Seymour and Morgan, 723.

21. Since, under such restriction, the means employed by the respondent to accomplish the common object differ both in construction and mode of operation from those of the patentee, no infringement occurs.

[*Asheroft *vs.* The Boston and Lowell Railroad Company, 865.

22. An invention which consists in surface-coating the interior of a blower-case—*i. e.*, its end pieces or head-plates and the concaves—with plaster-of-paris or equivalent, so that the revolving pistons will work true and air-tight, is clearly infringed by the substitution of a composition of litharge and glycerine for the plaster.

[*Hyndman *vs.* Roots and Roots, 868.

23. For the purposes of the invention, the composition is the substantial equivalent of the plaster, and its use a palpable evasion of the patent.

[*Ibid., 868.

24. Where the concave arcs of the blower were made of a certain size, and located in certain relation to the axes of the revolving piston-sweeps, so that the entire casing might be cast in one piece, and yet permit the ready removal of the abutments and pistons: *Held*, that to copy the proportions and relative position of the arcs was none the less an infringement, even though the respondent did not make his casing in one piece.

[*Ibid., 868.

25. A trade-mark is infringed if ordinary purchasers buying with ordinary caution are likely to be misled by the spurious mark.

[*McLean *vs.* Fleming, 913.

26. Original inventorship or proprietorship of the article and the relative value or quality of the rival products are not in question when action is brought for infringing a distinguishing trade-mark. If the mark has become associated with the goods of one trader, its wrongful appropriation by another will be enjoined.

[*Ibid., 913.

27. Exact similitude to the trade-mark is not essential to its infringement. If it is such as would be likely to mislead in the ordinary course of purchasing the goods, equity will interfere to prevent the deception.

[*Ibid., 913.

28. Where the infringement is clear, proof of fraudulent intent is not essential to establish liability.

[*Ibid., 913.

29. An anvil-post heated upon its surface to prevent the cracking of the glazed umbrella-case reversely drawn therefrom, right side out, after attaching the end metal ring, is infringed, although the construction of the post and its manner of heating are different in the infringing device from those of the patentee.

[*Odiorne *vs.* Denney, 965.

30. That the improved structure is of increased efficiency renders it none the less liable, if it is an equivalent of the patented device in so far as it involves the same principle or mode of operation.

[*Ibid., 965.

31. The complainants' apparatus is infringed, although those of the defendants are portable and otherwise differ in minor details. All obtain a like result by substantially the same means.

[*Gottfried *et al. vs.* Bartholomae *et al.*, 1128.

(See Construction of Patents, 1; Damages, 1; Equivalents; Mechanical Skill, 1; Particular Patents, 2, 6, 8, 9, 44.)

INJUNCTION.

1. Preliminary injunction was accordingly denied, it appearing that the label had been published by being affixed and sold with the merchandise for which it was designed prior to its registration.

[*Marsh *et al. vs.* Warren and Fairweather, 7.

2. The patent having been adjudged valid by the court in a former trial, a preliminary injunction decreed, even though an independent suit based upon the patent was in progress in another court of equal jurisdiction.

[*The Atlantic Giant Powder Company *vs.* Goodyear and Townsend, 45.

3. Notwithstanding the use of the infringed combination was stopped upon suit brought, an injunction and account were decreed. The defendants have made no disclaimer of the right to use, nor does it appear that the previous use, though disadvantageous to themselves, was without damage to complainants. Moreover, there may be other evidence as to profits on an accounting.

[*Bullock Printing Press Company, 124.

4. Courts should not be hasty or inconsiderate in granting injunctions at the instance of the holders of such patents against other manufacturers of similar goods. Preliminary injunction accordingly dissolved, leave to make motion to such effect based on suitable affidavits being granted at the time of the injunction.

[*Wilson Packing Company *et al. vs.* Clapp, 368.

5. The defendant having neither made nor sold goods in the similitude of complainants' goods within the district where suit was brought, the preliminary injunction was dissolved; ordinarily such process cannot run beyond the district from whence it issues.

[*Ibid., 368.

6. Future wrongful use of a trade-mark may be restrained, although there may be no award of an account for past profits, because of the delay in bringing suit.

[*McLean *vs.* Fleming, 913.

7. Infringement of a specific mark is unnecessary to an injunction. If the court is satisfied that there was an attempt to palm off the goods as those of the complainant—which was persisted in after protest—it is sufficient.

[*Ibid., 913.

8. Preliminary injunction to restrain the use of a stone-crusher already adjudged to infringe, but which the defendants assert became licensed under the judgment, denied, the crusher being employed in breaking stone for the repair of roads and paths in a cemetery.

[*Blake *vs.* The Greenwood Cemetery, 1046.

9. The particular use cannot fairly be said to be for the profit of any one, but is for the convenience of the public; and since it appears that the plaintiff derives profit not from using the machines but by royalty dependent upon their size, which royalty the defendants tender, to abide the event of the suit, there is no irreparable injury to justify the injunction.

[*Ibid., 1046.

(See Infringement, 17.)

INTERFERENCES.

1. If the interfering patentee believed the reissue applicant estopped from withdrawing the disclaimer, he should have objected at the outset of the controversy, and moved to dissolve the interference.

[Daniels *vs.* Chestermann, 4.

2. His failure to do so presumptively admits the applicant's right to omit the disclaimer.

[Ibid., 4.

3. In declaring an interference under Rule 53, Office Practice, the issue stated should contain a brief summary of the contested subject-matter, and should specify the conflicting claims. The omission of either is equally an error.

[Stephens *vs.* Bailey, 45.

4. In a second interference controversy over the same subject-matter, a motion made at final hearing of the question of priority to admit certain new claims and remand the case to the Primary Examiner to determine their patentability was refused for want of sufficient reason.

[Yost and Warner *vs.* Powell, 122.

5. Favorable action respecting the claims would reopen the cause for additional testimony. Since the emphatically novel element in the new claims is already embodied in those stated in the issue, a neglect to take satisfactory evidence relating thereto, which has not been the case, would be inexcusable.

[Ibid., 122.

6. An interference controversy involving such subject-matter was accordingly dissolved and the application rejected.

[Blackman *vs.* Morray, 175.

7. The interference declaration sustained, the device being one for correcting faults in fancy-loom weaving, which permitted the shedding mechanism and pattern-cylinder to be operated independently of the lay in finding a lost pick. That the device is attached to an open-shed loom in one case and to a close-shed in the other makes no essential difference, the independent and unison operation which it secures being common to both looms.

[Wyman *vs.* Knowles, 320.

8. The interference decided in favor of the patentee, his adversary having failed to antedate the inceptive invention as fixed by the unpreserved drawings, or, disregarding these, to show that the alleged prior embodiment by him was other than a neglected and unappreciated experiment.

[Ibid., 320.

9. A motion made after final interference hearing, but before decision announced, to remand the cause to the Primary Examiner to reject old and admit new claims, to redeclare the interference and permit the taking of additional testimony, denied.

[Kirchner *vs.* Blair, 364.

10. The existing claims are patentable, and state the invention as satisfactorily as the proposed substitutes. There has been no mistaking the issue, and no material error in the taking of testimony.

[Ibid., 364.

11. It is safer to depend upon the full history of what an exhibit machine has done, as developed by the testimony, than to trust to expert evidence (new) as to what it is capable of doing.

[Ibid., 364.

12. A contestant establishes nothing by an exhibit machine, which, though producing the same result, does it in a manner and by means different from what are within the invention as stated in the issue.

[Ibid., 364.

13. Where the interference had been properly restricted to a special class of machines and the applicant party showed and described a device not within the class, the interference was dissolved and the applicant required to expunge the objectionable matter as for a distinct invention.

[Smith *vs.* Winchell and Patric, 1129.

(See Drawings, 3; Priority of Invention, 3; Public Use, 1; Reduction to Practice, 2.)

INVENTION.

1. Coffins having top and bottom sections, with tongue-and-groove interlock joints, the sections being made wholly of cement, terra-cotta, or glass, are old in the art. To make a coffin in like manner, with top section of glass and bottom of cement, is without invention.

[Blackman *vs.* Morray, 175.

2. A rack-and-pinion device, for adjusting a central button-rod at various heights, and thus regulating the lamp-flame, being old, no invention was necessary to apply the same contrivance in adjusting the height of a vertical deflector or jacket surrounding the lamp-flame and concentric therewith.

[Funck *vs.* Doty, 322.

3. A lathe chuck or former having a screw-thread on its face, being old for spinning up screw-caps from ductile metal, no invention is necessary to round the edge of the thread so as to prevent the cutting of the metal cap along the line of the spiral.

[J. L. Mason, 324.

4. There is no invention in substituting a polarized for a neutral electro-magnet in a type-printing telegraph, wherein a rotating escapement, governed by the vibrating armature of the magnet, controls the movement of both the type-wheel and the printing mechanism.

[George L. Anders, 964.

5. The neutral magnet being old in the particular relation, and the characteristics of both kinds of magnets, and of the currents to operate them, fully known, the substitution is without merit.

[Ibid., 964.

6. Especially is this true since the polarized magnet has been employed in relations strictly analogous to the present.

[Ibid., 964.

7. It being old to make the sides, ends, top, and bottom, as well as corners, of a trunk of corrugated-metal plates, no invention is necessary to apply such corrugated metal to the corners alone of a wooden trunk.

[*Gould *vs.* Ballard and Minchin, 1081.

(See Article of Manufacture, 2; Drawings, 1; Novelty, 1, 2.)

ISSUING PATENTS.

1. In determining to whom a patent shall issue it is neither the duty nor within the power of the Office to reform or cancel assignments, or make decrees on the equitable rights of parties, based upon extraneous or *ex parte* proof.

[Edwin L. Paine, 407.

2. A suit in equity to fix title of contesting claimants to an invention will not justify the detention of an application for patent therefor, which has been passed to issue.

[Ibid., 407.

JOINDER OF INVENTIONS.

(See Division of Applications.)

JOINT INVENTION.

1. Doubted whether parties who have made oath of joint inventorship can be deemed to be improperly joined merely upon inference deduced from the use of the singular pronoun by one of them in testifying as to the history of the invention.

[Perkins *vs.* Compton *vs.* Chinnock *vs.* Leland, 43.

2. In the absence of direct and positive testimony on the point, and there being corroborating evidence of the assistance of the other joint applicant in perfecting the invention, the Commissioner refused to disturb the joint oath.

[Ibid., 43.

JOINT PATENTS.

(See Infringement, 18, 19; Jurisdiction, 1.)

JUDGMENTS.

To surrender the original and obtain reissue letters patent does not impair the judgment of lack of novelty, it appearing that the inventions set forth are the same as those contained in the original patents.

[*Jones *vs.* McMurry, 6.

(See Res Adjudicata, 2.)

JURISDICTION.

The original jurisdiction of the Examiner of Interferences to hear and determine contested cases involving trade-mark registration is conferred in accordance with the law.

[McElwee *vs.* Blackwell, 963.

LABELS.

(See Prints and Labels.)

LICENSES.

(See Assignments, 2; Employer and Employé, 4, 5, 6; Injunction, 8.)

LIMIT OF PATENT PROTECTION.

1. A buckle or bale-tie sold for ordinary commercial use passes beyond the monopoly of the patent, and cannot be followed or controlled in its subsequent disposition.

[*The American Cotton Tie Company *vs.* Simons *et al.*, 967.

2. Though the words "Licensed to use once only" were stamped upon the buckles, and words of like import were contained in the bill-heads and invoices, the nature of the article and of its use are such that there is an implied parting with the unrestricted title at the time of sale which is inconsistent with any such reservation or limitation.

[*Ibid., 967.

MANUFACTURE AND USE.

The mere making of the invented article more than two years before applying for letters patent is quite immaterial, and where there is a doubt upon the evidence as to public use or sale of the article under like circumstances, the doubt should be resolved against the respondents, upon whom rests the burden of proof. (*Coffin* vs. *Ogden*, 18 Wall., 120.)

[*Comstock *et al. vs.* Sandusky Seat Company *et al.*, 230.

MECHANICAL SKILL.

To improve the efficient operation of the mechanism described in the patent (Reissue No. 1,982, May 31, 1864,) by the simple exercise of mechanical skill does not constitute invention. The patent is for a practical and useful invention, although the particular improvement is not suggested, and is infringed, notwithstanding the described mechanism is used only in connection with such improvement.

[*Marsh *et al.* vs. Seymour and Morgan, 723.

(See Invention, 3; Reissues, 7.)

MODELS AND MACHINES.

Features contained in the Patent Office model may be incorporated into the drawings and specifications of the letters patent upon reissue without prejudice. They do not constitute new matter in the sense of the law.

[*Reissner *et al. vs.* Anness and Blauvelt, 870.

(See Applications for Patent, 1; Interferences, 11, 12.)

NEW MATTER.

It is no enlargement of the invention to draw the reissue claim so as to cover various kinds of bell, the original being laid simply to a gong-shaped bell. The drawings and specification clearly show that the form of bell is not an essential characteristic of the invention, and it is manifest that the original claim must have been unnecessarily limited.

[*Gong Bell Manufacturing Company *vs.* Clark and Hilliard, 274.

(See Disclaimer, 2; Models and Machines, 1; Reissues, 1, 2, 4, 5.)

NEW TRIAL.

A mistake in fact which could have been avoided with reasonable care is no ground for a new trial, particularly where the fact is itself immaterial.

[Kirchner *vs.* Blair, 364.

(See Interferences, 4, 5, 9, 10.)

NEW USE.

(See Invention, 2.)

NOVELTY.

1. The method of forming the eyes of picks, as set forth and claimed in Reissue Letters Patent No. 6,951, is new and patentable. To draw down the eyes on a mandrel between rolling-dies, after the bar has been punched and the metal set down at either end around the eyes, so that the walls of the eyes are elongated as desired, and preserved of uniform thickness, is a new step in the art, and impresses the whole method with the character of novelty.

[*Klein *vs.* Kloman Park & Co., 5.

2. A possible difference between a patented device and another known to the trade long before the date of the patent, indicated only by a statement of result in the specification, will not suffice to establish a difference in invention.

[*Burrall *et al. vs.* Rumsey *et al.*, 123.

3. To establish this diversity it will not do to rely on describing the result attained; the description must show how it can be attained.

[*Ibid., 123.

(See Particular Patents, 46.)

PARTICULAR PATENTS.

BARTON—*Gong-Bell.*

1. Reissue Letters Patent No. 6,644, granted E. C. Barton, September 14, 1875, for a toy, construed to be for "the combination of two connected wheels with a bell or bells arranged between and upon the axle of the wheels, which bells are connected with the wheels so as to revolve therewith, and to ring when revolving."

[*Gong Bell Manufacturing Company *vs.* Clark and Hilliard, 274.

2. The invention is patentable, and is infringed by a toy consisting of a pair of wheels connected by a hollow drum or axle in which are attached bells that revolve simultaneously with the wheels, and ring while revolving; likewise, it is infringed by a toy in which one of a pair of wheels connected by bent metallic rims or axles has an attached sleigh-bell, which is encircled by the rims, and which revolves with the wheels and rings as it does so.

[*Ibid., 274.

BULLOCK, ADAMS, AND SELDEN—*Printing-Press.*

3. Claim 9 of Letters Patent No. 38,200, granted to Bullock, Adams, and Selden, April 14, 1863, for "improvement in printing-machines," construed to be for a combination of the sheath with the fixed knife in the same cylinder. It is new and patentable.

[*Bullock Printing Press Company *vs.* Jones *et al.*, 124.

BURRALL—*Corn-Sheller.*

4. Letters Patent No. 38,002, granted March 24, 1863, for "improvement in corn-shellers," do not exhibit any meritorious invention over devices in previous public use.

[Burrall *et al. vs.* Rumsey *et al.*, 123.

CHAFFEE—*Door-Mat.*

5. Letters Patent No. 19,347, granted E. W. Chaffee, February 16, 1858, construed to be for a flexible-gum mat, having flexible-gum ridges to serve as scrapers, and cells or inclosed spaces to contain the dirt.

[*Brown *et al. vs.* Rubber Step Manufacturing Company *et al.*, 369.

6. The patent is not infringed by a device for carriage and car steps, in which a series of small rubber hemispheres or pyramids are arranged upon a vulcanized-rubber base-piece, so that they shall project a slight distance above its surface.

[*Ibid., 369.

COLLENDER—*Billiard-Cushion.*

7. The claim in Reissue Letters Patent No. 2,511, granted to H. W. Collender, March 19, 1867, for "cushions for billiard-tables," construed to be for the art or process of making the cushion, and not for the cushion itself, as completed.

[*Collender *vs.* Bailey, 277.

DE PUY—*Printer's Galley.*

8. A printer's galley in which the metal facing-strips are secured to the wooden rails without perforations or roughness in the smooth metal surface (Reissue Letters Patent No. 6,326) is infringed, although the patentee shows and describes the metal face-strips, with top and bottom flanges, having projecting ledges which engage with corresponding grooves in the wooden rails, while the defendant uses an L-shaped metal face, to which the wooden back or rail is secured by screws passing through the foot of the L.

[*Hoe & Co. *vs.* Cole & Co., 500.

DRAPER—*Bobbin and Spindle.*

9. The combined spindle and bobbin (Reissue Letters Patent No. 6,016, granted August 18, 1874) is novel, useful, and patentable, and is infringed by combining a spindle and bobbin so that the spindle, bolster, and sleeve will permit a quill-bobbin of ordinary size to come down and so encompass the same as to take one bearing upon the sleeve below the top of the bolster, and another upon the spindle above the sleeve or bolster, the sleeve carrying the whirl between the bolster and the step.

[*Draper *vs.* The Potomska Mills Corporation, 276.

ELWELL—*Knob-Latch.*

10. Reissue Letters Patent No. 3,909, granted April 5, 1870, to the Norwalk Lock Company, (assignees,) for "improvement in reversible knob-latches," declared valid.

[*Norwalk Lock Company *vs.* Berger, Mathes, *et al.*, 47.

TEEL—*Gates.*

11. Suit was brought in all four cases for infringement of Letters Patent (reissue) No. 2,667, granted to A. C. Teel, July 2, 1867, for "improvement in farm-gates." In delivering an oral opinion, the judge stated that it did not appear from the evidence that Teel was the first and original inventor of the improvement described and claimed. It was specially ordered that the decree should go no farther than dismissing the bill with costs.

[*Wright *vs.* McMillan, Hickey, Smithpeter, and Glick, 47.

FISH—*Kerosene-Lamp Heater.*

12. Reissue Letters Patent No. 7,069, granted the Kerosene Lamp Heater Company, assignee, April 18, 1876, for lamp-chimney, are valid, and are infringed by Letters Patent No. 156,149, granted October 20, 1874, to John A. Frey, for a coal-oil stove.

[*The Kerosene Lamp Heater Company *vs.* Littell, 1009.

FREY—*Coal-Oil Stove.*

13. Reissue Letters Patent No. 7,751, granted June 19, 1877, are valid, and for the same invention as the original.

[*Reissner *et al. vs.* Anness and Blauvelt, 870.

GOODALE—*Paper-Bag Machine.*

14. The characteristic features of invention protected by Letters Patent No. 24,734, granted July 12, 1859, stated, and infringement found.

[*Union Paper Bag Company and Cupples *vs.* Murphy, 366.

GRAEBE AND LIEBERMANN—*Alizarine.*

15. Artificial alizarine (Reissue Letters Patent No. 4,321, granted April 4, 1871) is a composition of matter differing essentially from the dye-stuffs obtained from the madder-plant and from the chemically-pure alizarine of the laboratory. It is new and useful, and the patent therefor is not invalid simply because the inaccurate term "alizarine" makes it apparently cover pre-existing products of the same name.

[*Badische Anilin and Soda Fabrik *vs.* Hamilton Manufacturing Company, 273.

GRAHAM—*Carriage Body and Seat.*

16. Reissue Letters Patent No. 4,780, granted March 5, 1872, to Comstock, Booth, and Booth, assignees, for carriage bodies and seats, examined and sustained.

[*Comstock *et al. vs.* Sandusky Seat Company *et al.*, 230.

GREEN—*Driven Wells.*

17. Reissue Letters Patent No. 4,372, granted to Nelson W. Green, May 9, 1872, for "the process of constructing wells by driving or forcing an instrument into the ground until it is projected into the water without removing the earth upward as it is in boring," conform to the original patent, and are valid.

[*Andrews *et al. vs.* Wright, 969.

18. The invention disclosed is novel, has not been dedicated or abandoned to the public, and the patent therefor covers a true process and not a result.

[*Ibid., 969. *Searls and Van Nest *et al.*, 772.

GUIDET—*Pavement.*

19. Letters patent invalid by reason of prior public use.

[Guidet *vs.* The City of Brooklyn, 773.

HOLBECK AND GOTTFRIED—*Lining Barrels.*

20. A stationary apparatus for surface-coating the interior of beer-barrels, (Letters Patent No. 42,580,) in which an air-blast is forced up through a grate-fire, and the escaping gases and products discharged into the barrel to heat its surface, is not anticipated by a device wherein the air-blast circulates through heated pipes and passes thence into the barrel. They are different modes of accomplishing the same effect.

[*Gottfried *et al. vs.* Bartholomae *et al.*, 1128.

HURCOMBE—*Fitting Metal Rings to Umbrella-Cases.*

21. Letters Patent No. 149,480, granted April 7, 1874, defined and declared to be infringed by Letters Patent No. 182,913, granted October 3, 1866.

[*Odiorne *vs.* Denney, 965.

(See Designs, 2; Equivalents, 1; Infringement, 2, 3, 4, 5, 6, 7, 8, 11, 29; Invention, 7; Reissues, 1.)

JONES—*Green Corn.*

22. The U. S. Supreme Court, in *Jones* vs. *Sewall*, (1 Otto, 171,) declared Letters Patent No. 34,928 and No. 35,724 (canning green corn) to be void for want of novelty in the subject-matter, and not because of defective or insufficient specifications.

[*Jones *vs.* McMurry, 6.

23. Letters Patent No. 51,379 and No. 54,170, for a curved knife for cutting corn from the cob, are wanting in patentable novelty.

[*Ibid., 6.

KEENE—*Rubber Carriage-Tread.*

24. A vulcanized-rubber undulating surface covering, with projections of rubber, for the tread of carriage-steps, does not infringe the Chaffee door-mat, (13 OFFICIAL GAZETTE, 369,) and is not anticipated by it, or by the use of rubber as a soling for stirrups and shoes, or by the iron treads used for door, stair, and carriage steps.

[*Rubber Step Manufacturing Company *vs.* Metropolitan Railroad Company *et al.*, 549.

25. In the metal treads the projections become slippery, instead of adhesive, to the foot by wear, and there is no resiliency under pressure to effect the removal of ice and snow. These qualities distinguish them from the rubber treads of the complainants.

[*Ibid., 549.

KETCHUM—*Mowing-Machine.*

26. Reissue Letters Patent No. 4,884, granted W. T. Ketchum, July 25, 1871, for "improvement in single-wheel grain and grass cutting machines," and Reissue Letters Patent Nos. 4,672 and 4,673, (Divisions A and B,) granted W. F. Ketchum, December 12, 1871, for "improvements in attachments for harvesters," are valid, in view of the state of the art, and are for the same inventions as the original patents.

[*The Ketchum Harvesting Machine Company *vs.* The Johnston Harvester Company, 178.

KING—*Fluting-Machine.*

27. Scope of Reissue Letters Patent No. 3,000, granted June 23, 1868, for "improvement in fluting-machines," defined.

[*Werner *vs.* King, 176.

KLEIN—*Picks.*

28. The method of forming the eyes of picks as set forth and claimed in Reissue Letters Patent No. 6,951 is new and patentable.

[*Klein *vs.* Kloman Park & Co., 5.

MERRIAM AND CHAMBERLAIN—*Whip-Sockets.*

29. Reissue Letters Patent No. 5,713, granted Merriam and Chamberlain, December 30, 1873, construed to be for the combination, with whip-sockets, of the particular means described for attaching them to carriages.

[*Merriam and Chamberlain *vs.* Van Nest *et al.*, 597.

MEYER—*Buckle-Fastening.*

30. It is the peculiarities of the case itself, and not of the method of fastening it to the strap, which is the valuable feature of the improvement—Reissue No. 7,129.

[*Schnessler *vs.* Davis, 1011.

NAYLOR—*Safety-Valves.*

31. Letters Patent No. 58,962, granted William Naylor, October 16, 1866, for "improvement in safety-valves" (subsequently reissued) restricted in scope in view of disclaimer entered in the corresponding English patent.

[*Ashcroft *vs.* The Boston and Lowell Railroad Company, 865.

NIMMO—*Plumbago-Crucible Machine.*

32. The patent of Nimmo for machine for making plumbago crucibles is invalid by reason of prior knowledge and public use.
[Pickering *et al. vs.* McCullough *et al.*, 818.

NOBEL—*Explosive Compound.*

33. Reissue Letters Patent No. 5,799, for "improvement in explosive compounds," (dynamite,) are good and valid in law.
[*Atlantic Giant Powder Company *vs.* Goodyear and Townsend, 45.

PENNOCK—*Puddling-Furnaces.*

34. Letters Patent No. 153,110, granted to Joseph L. Pennock, July 14, 1874, for "improvement in puddling-furnaces," declared valid.
[*Pennock *vs.* Beale, 125.

ROOTS—*Rotary Blower.*

35. The validity of Reissue Letters Patent No. 3,570, granted P. H. and F. M. Roots, July 27, 1869, for a rotary blower, sustained.
[*Hyndman *vs.* Roots and Roots, 868.

ROULSTONE—*Corner-Guards for Trunks.*

36. The corner metal guard of the original patent was provided with a strengthening-wire. This wire being omitted upon reissue, the guard showed no improvement over the existing state of the art, and the patent accordingly declared void.
[*Gould *vs.* Ballard and Minchin, 1081.

SEARLS AND SCOTT—*Whip-Socket.*

37. Reissue Letters Patent No. 5,400, granted to Anson Searls and Erastus W. Scott, May 6, 1873, for "improvements in whip-sockets for carriages," are valid, and are for the same inventions as the original patent, No. 70,627.
[Searls and Scott *vs.* Van Nest *et al.*, 772.

SEYMOUR—*Reaping-Machine.*

38. The construction given reissued Letters Patent No. 1,177, granted W. H. Seymour, May 7, 1861, (No. 72,) in *Seymour vs. Osborne*, 11 Wallace, viz: A quadrant or sector shaped platform for a reaping-machine, placed just behind the cutting apparatus, and in such relation to the main frame that the cut grain is swept around on the arc of a circle and dropped heads foremost on the ground at such distances from the standing grain as to avoid taking up the gavels between swaths, approved, and its validity sustained.
[*Marsh *et al. vs.* Seymour and Morgan, 723.

39. Reissue Letters Patent No. 1,682 and No. 1,683, granted May 31, 1864, for "improvement in harvesting-machines," examined and sustained.
[*Ibid., 723.

SNOW—*Uniting Paper and Cloth.*

40. Applying paste or other adhesive material to the cloth alone, by passing the cloth through or past the paste in the manner and by the instrumentalities described, is a material and essential step of the process disclosed in Letters Patent No. 134,103, granted December 17, 1872, to G. K. Snow, for continuously uniting paper and cloth.
[*Snow *vs.* Tapley, 548.

41. This step being regarded as an essential the process as a whole is novel in the art.
[*Ibid., 548.

42. The invention disclosed by the letters patent is not anticipated by the English patent to Eugene Carless.
[*Ibid., 548.

TARR AND WONSON—*Marine Paint.*

43. Letters Patent No. 4,509, (reissue division B,) granted Tarr and Wonson, October 17, 1871, are valid, and are for substantially the same invention as the original patent, viz: A marine paint composed of oxide of copper, an earthy or mineral basis, and a vehicle or medium.
[*Wonson *vs.* Peterson *et al.*, 548.

44. The earthy or mineral base serves to retard the dissolution of the oxide of copper. It is not anticipated in function by the pulverized antimony with which the oxide is mixed in the Wetterstedt patent, (No. 8,275, granted August 5, 1851.)
[*Ibid., 548.

45. Sulphuret of antimony comes within the description of the retarding earthy or mineral basis with which the copper oxide is mixed according to the terms of the patent, and its use is an infringement, notwithstanding small quantities of the arsenite and the arsenate are added to the oxide of copper by defendants.
[*Ibid., 548.

WELLING—*Martingale-Ring.*

46. Letters Patent No. 37,941, granted William M. Welling, March 17, 1863, construed to be for a product, viz: A martingale-ring, consisting of a metal ring enveloped in a composition ring of artificial ivory or similar material.
[*The Rubber Coated Harness Trimming Company *et al. vs.* Welling, 727.

47. The dies employed to complete the solidification and ornamentation of the ring form no essential of the patented invention, and since metal rings enveloped in plastic compositions and the particular composition used by the patentee (artificial ivory) are both old in the art, the patent is void for lack of novelty and of invention.
[*Ibid., 727.

WILSON—*Canned Meats.*

48. The patentability of the subject-matter contained in Reissue Letters Patent No. 6,451 and 6,452, granted W. C. Marshall, May 25, 1875; No. 6,370, granted W. J. Wilson, April 6, 1875; and No. 7,923, granted J. A. Wilson, October 23, 1877, doubted.
[*Wilson Packing Company *vs.* Clapp, 368.

PARTIES.

1. A meritorious cause of action properly brought in the firm-name for violation of firm-rights being established, leave was given to move within a time limited before final decree to join a member of the firm who had been omitted as a party to the suit.
[*Frese & Co. *vs.* Bachof, 635.

2. Upon leave given before entry of final decree, motion was made and granted to join as party to the cause a firm-member who had been previously omitted in an action brought and maintained in the firm-name.
[*Ibid., 635.

(See Costs, 3; Infringement, 10, 18; Practice in Courts, 3, 4.)

PATENTABILITY.

1. Both materials are old for the purpose they serve in the particular combination, and since there is no new resultant function or effect developed, but a simple summation of the separate results of the contributing elements, the coffin as thus constructed is without patentable merit.
[Blackman *vs.* Morray, 175.

2. An imperfect and incomplete invention resting in mere theory, or in intellectual notion, or in uncertain experiments, and not actually reduced to practice, and embodied in some distinct machinery, apparatus, manufacture, or composition of matter, is not patentable.
[*Draper *vs.* The Potomska Mills Corporation, 276.

(See Aggregation, 1, 2; Articles of Manufacture, 1, 2, 3; Designs, 2.)

PATENTS.

1. The patent is *prima facie* valid. It is a muniment of title. He who would overcome it must do so by a clear preponderance of evidence.
[*Comstock *et al. vs.* Sandusky Seat Company *et al.*, 230.

2. Until a patent is both signed and sealed, it may, in the exercise of official discretion, be withheld.
[Franklin B. Hunt, 771.

(See Abandoned Applications, 1; Assignments, 1; Construction of Patents, 1; Designs; Disclaimer, 3; Drawings, 1, 2; Employer and Employé, 2, 3; Equity, 1; Expiration of Patents; Limit of Patent Protection; Particular Patents.)

POWER OF ATTORNEY.

A power of attorney to prosecute an application for letters patent is irrevocable if it forms part of a contract entered into for a valuable consideration, which creates a beneficial interest in the patent in favor of the party appointed by the power.
[W. H. Harrison, 547.

PRACTICE IN COURTS.

1. Where a replication is put in to a plea, the parties proceed to the examination of witnesses in the same way as in case of a replication to an answer.
[*Reissner *et al. vs.* Anness *et al.*, 7.

2. This course having been prescribed by order of the court, a motion to revoke was denied.
[*Ibid., 7.

3. A bill of revivor brought under Rule 56 of court, the respondent having died while the case was before a commissioner to assess amount of award, and after interlocutory decree establishing the validity and infringement of complainant's patent, will not revive the case under the rule unless an order is made to that effect.
[*Atterbury *vs.* Gill, 276.

4. No order reviving the case having been made, a demurrer to the bill of revivor was allowed to stand, although entered without leave.
[*Ibid., 276.

5. Wherever a final decree is entered by the court in an equity cause, after replication filed, for the purpose of taxation of the docket fee, this is to be considered as the "final hearing" referred to in Section 824 Revised Statutes.
[*The Goodyear Dental Vulcanite Company *vs.* Osgood *et al.*, 325.

6. In the taxation of costs, "final hearing" is to be considered as the submission of a case in equity for the determination of the court after the case is at issue.
[*Ibid., 325.

7. The docket fee is not to be taxed for an attorney unless his name has been entered on the docket before the filing of the general replication, and unless he has been admitted to the bar of some circuit court or of the Supreme Court of the United States.
[*Ibid., 325.

8. On motion made before final argument, leave was given to amend the answer so as to set up the new defense of public use and sale.
[*Snow *vs.* Tapley, 548.

9. Interlocutory decree entered in accordance with the findings of the court, with leave to take testimony relating strictly to the new defense in event the amended answer was filed within a time limited.
[*Ibid., 548.

10. Although the objection of long delay or laches was not directly set up in defeat of the action for an account, the court, in consideration of the particular nature of the allegations and the proceedings, admitted it for consideration.
[*McLean *vs.* Fleming, 913.

11. No proper notice having been given, a patent referred to in argument, in defeat of the patent upon which suit was brought, was disregarded.
[*Odiorne *vs.* Denney, 965.

(See Costs; Damages, 3; Defenses; Equity, 2; Estoppel; Infringement, 10, 15; Injunction, 2, 3; Parties, 1, 2.)

PRACTICE IN THE PATENT OFFICE.

1. Ordinarily the examination of an application should be had before division is required.
[R. D. Sanders, 818.

2. The most pertinent references should be cited at the outset.
[Ibid., 818.

(See Abandoned Applications, 2; Appeals, 1; Applications for Patent, 1, 2, 3; Assignments, 3; Claims, 1; Designs, 3; Division of Applications; Interferences, 1, 3; Issuing Patents; Patents, 2; Power of Attorney, 1; Public Use, 1; Res Adjudicata, 1.)

PRESUMPTIONS.

The presumption of law is always in favor of the validity of a reissue patent.
[*Reissner *et al. vs.* Anness and Blauvelt, 870.

PRINTS AND LABELS.

1. To effect the valid registry of a print or label under the amendatory act in question, a printed copy of the title of the article to be thus protected must be deposited at the Patent Office before its publication.
[*Marsh *et al. vs.* Warren and Fairweather, 7.

2. Registrable prints or labels and trade-marks are recognized by the terms of the law, and the decisions of the courts, as applicable only to some kind of merchandise.
[T. E. Parker, 321.

3. Labels give the names of manufacturers, place of manufacture, nature or quality of goods, directions for use, &c. Trade-marks are arbitrary symbols, which serve to distinguish the manufactured goods from those of a similar character made by other persons. Both are affixed in some manner to the goods they designate, and are not an essential constituent of the merchandise itself.
[Ibid., 323.

(See Construction of Statutes, 1; Injunction, 1.)

PRIORITY OF INVENTION.

1. A figure in a sheet of drawings which, if precisely followed, might possibly produce the invention in contest, will not suffice to establish priority where the foreign patent to which it belongs describes an essentially different invention.
[Perkins *vs.* Compton *vs.* Chinnock *vs.* Leland, 43.

2. An applicant, to establish priority as against a patentee, must show that he was first to make the invention, and that he had reduced it to practice before the grant of the patent, or was following it up with reasonable diligence.
[Towers *vs.* Pease, 176.

3. Priority awarded an applicant who was first to conceive and first to reduce the inventions stated to actual and successful practice.
[Kirchner *vs.* Blair, 364.

(See Drawings, 1, 2.)

PRIOR KNOWLEDGE AND USE.

Adverse knowledge and use of the device claimed, prior to the patentees' invention thereof, on a machine which was never completed, the device itself not being patented or otherwise given or made accessible to the public until long after the issue of complainant's patent, will not invalidate the exclusive right of the patentees.
[*Bullock Printing Press Company *vs.* Jones *et al.*, 124.

PROCESS AND PRODUCT.

The right to reissue a patent in two divisions, one for a new product and the other for a new process of making it, even though the original patent related to the process alone, is fully sustained. (*Goodyear* vs. *Providence Rubber Co.*, 2 Fisher.)
[*Badische Anilin and Soda Fabrik *vs.* Hamilton Manufacturing Company, 273.

(See Articles of Manufacture, 1, 2; Infringement, 9.)

PROFITS.

(See Injunction, 6, 9.)

PUBLIC USE.

1. Public use and sale of the invention under circumstances fatal to the grant of a patent having been disclosed in the testimony of an interference contestant, he was not permitted to explain away its force by additional *ex-parte* evidence.
[Stearns *vs.* Prescott, 121.

2. Such testimony may have entered materially into the determination of the question of priority. To present it for one purpose, and, after favorable award, to allow it to be assailed for another, might result in the reversal of the former award, and would be a bad precedent as well.
[Ibid., 121.

3. After expiration of limit of appeal, and in event none is noted by the adverse (the defeated) party, the application remanded to the Primary Examiner to ascertain whether the statutory bar of public use or sale is established by the testimony.
[Ibid., 121.

(See Manufacture and Use; Novelty, 2; Particular Patents, 18.)

REDUCTION TO PRACTICE.

1. The date of invention of the device covered by the patent on which infringement suit was brought fixed at the time when the inventor perfected the invention, made models of the device, and entered into a contract for its manufacture.
[*Comstock *et al. vs.* Sandusky Seat Company *et al.*, 230.

2. Although the subordinate device containing the invention performs its functions well, yet if the machine in which it is embodied proves a failure this experimental test will not prevail against an adversary who has perfected and successfully operated the entire machinery containing it.
[Wyman *vs.* Knowles, 320.

(See Patentability, 2; Priority of Invention, 3.)

REISSUES.

1. If the reissue (No. 7,061) does contain something new and patentable, then the grant is none the less invalid because it is not for the same invention as the original. The meritorious matter should be embodied in a separate patent, and not ingrafted on one which has been adjudged to be wholly void.
[*Jones *vs.* McMurry, 6.

2. The original patent having called the absorbent material "inexplosive" with which the nitro-glycerine was mixed: *Held*, that to omit the term upon reissue was no enlargement of the invention. The word is ambiguous, since it is clear from the original description that the patentee did contemplate the use of materials which, though explosive, were not so in comparison and under like conditions with nitro-glycerine.

[*The Atlantic Giant Powder Company *vs.* Goodyear. Same *vs.* Townsend, 45.

3. To introduce new words or phrases which are more aptly descriptive does not invalidate a reissue, the invention set forth being the same as in the original patent.

[*Draper *vs.* The Potomska Mills Corporation, 276.

4. An invention accurately defined and limited in the original patent cannot be expanded on reissue to include antecedent improvements not within the scope of the patent as originally granted.

[Funck *vs.* Doty, 322.

5. Reissues must be for the same inventions as the originals upon which they are based. A device as patented cannot be disorganized and reissue taken for special constituent parts separated entirely from the remainder of the machine when there is nothing to indicate that such separation was originally contemplated. It is a different invention.

[James Powell, 911.

6. The drawings being identical with those of the original patent, it is no violation of the reissue privilege to include in the new specification and claims what was fairly indicated by the drawings to be within the invention.

[*The Kerosene Lamp Heater Company *vs.* Littell, 1009.

7. Thus, features of construction shown in combination and in a manner that would enable a skilled mechanic to practice the invention, although neither described nor claimed originally, may be set forth and protected upon reissue.

[*Ibid., 1009.

8. The doctrine in *Herring et al.* vs. *Nelson et al.* (12 OFFICIAL GAZETTE) approved. Separate claim may be laid in the reissue to subcombinations of elements united originally in one general combination claim.

[*Ibid., 1009.

9. The original patent being unnecessarily restricted, it was the object and the proper office of the reissue to correct this omission, so as to protect the patentee to the full extent of the invention.

[*Schuessler *vs.* Davis, 1011.

10. Minor features of invention relinquished upon reissue—because: 1, unimportant and valueless, and, 2, lacking in patentable novelty—will not invalidate the reissue grant.

[*Gould *vs.* Ballard and Minchin, 1081.

11. Under the circumstances the reissue contains nothing more than the original patent, but less. It is restricted to what the patentee regards as actually his invention, and for which protection is desired.

[*Ibid., 1081.

(See Disclaimer, 1, 2; Expiration of Patents; Interferences, 1; Judgments, 1; Models and Machines, 1; New Matter, 1; Particular Patents; Presumptions, 1; Process and Product, 1; Res Adjudicata, 1.)

RES ADJUDICATA.

1. The party against whom final interference judgment was rendered, and who accepted a limited patent, cannot set up claim, on reissue, to subject-matter awarded his adversary under the judgment.

[John Burge, 498.

2. An Office judgment unexcepted to is conclusively binding upon the principals touching every matter which it decided. Particularly is this true where the parties by their subsequent acts acquiesce in its findings.

[Ibid., 498.

SUBSTITUTION.

(See Equivalents, 2; Invention, 5.)

TRADE-MARKS.

1. The words "Cachemire Milano" denied registration as a trade-mark for silk.

[Warburg & Co., 44.

2. They may be properly descriptive of quality or origin, or are deceptive, and in either event are not registerable.

[Ibid., 44.

3. Such words distinguished from those which have a coined or fanciful signification that renders them unobjectionable as trade-marks.

[Ibid., 44.

4. Where a trade-mark has lost its office of pointing out distinctively the origin or ownership of the article to which it is affixed, and has become a generic term in common use as such, it cannot be readopted by the original owners thereof, or monopolized by any one firm or person.

[Hall & Co. *vs.* J. L. Atkinson, 229.

5. No more than one class of merchandise can be entered in a single registration of a trade-mark.

[George Lisner, 455.

6. "Fancy goods" does not definitely ascertain any one class of merchandise: Hence, registration of a mark refused until the particular class was more clearly specified.

[Ibid., 455.

7. A proposed trade-mark in which words descriptive of quality, characteristics, &c., are inclosed in a simple outline border is not sufficiently distinctive from the descriptive words used alone to entitle the mark to registration.

[G. W. Rader & Co., 596.

8. No name, merely as such, can confer any exclusive trade-right. It is only when it becomes identified with some particular kind of goods, or is employed as a legal mark in connection with the party's place of business, that its use will be protected.

[*McLean *vs.* Fleming, 913.

9. A trader is without special privilege even to his own name as against a rival of the same name, unless the latter deceptively simulates his labels or marks.

[*Ibid., 913.

10. Though he is not the manufacturer, and yet uses the name of the latter as part of his mark, the trader will be protected in the mark he employs, if it is a lawful one.

[*Ibid., 913.

(See Infringement, 17, 25, 26, 27; Injunction, 6; Jurisdiction, 1; Prints and Labels, 2, 3.)

UNITY OF INVENTION.

(See Division of Applications; Interferences, 13.)

ALPHABETICAL LIST OF PATENTEES

FOR

THE HALF YEAR, JANUARY TO JUNE, 1878, INCLUSIVE.

[Claims and drawings of Designs, Extensions, and Disclaimers are not carried into the Monthly Volumes or the Gazette. Trade-Marks are in a separate index.]

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
Adams, C. L. (See Fingar, J. W., assignor.)						
Adams, L. J., East Templeton, Mass. Cradle	198,784	Jan. 1	68	17	13	18
Allertson, A., Jersey City, N. J., assignor to S. B. Hunt, New York, N. Y. Air-cooling apparatus	198,830	Jan. 1	108	31	13	25
Allertson, A., Jersey City, N. J., assignor to S. B. Hunt, New York, N. Y. Ice-machine	198,831	Jan. 1	109	31	13	25
Allen, D. K., *et al.* (See Phelps, I. M., assignor.)						
Andrews, A. L., Providence, R. I. Hitching-bar	198,832	Jan. 1	110	31	13	26
Arno, O. H., Somerville, Mass. Mechanical musical instrument	198,866	Jan. 1	145	42	13	31
Austin, M. J., Bonham, Texas. Ditching-machine	198,785	Jan. 1	68	18	13	18
Automatic Boiler and Engine Company. (See Mather, T. W., assignor.)						
Automatic Boiler and Engine Company. (See Trowbridge, W. P., assignor.)						
Adams, J. S., Elgin, Ill. Mechanism for transmitting power of windmills	199,008	Jan. 8	299	88	13	62
Adams, O., San Francisco, Cal. Valve for steam-engines. (Reissue)	8,036	Jan. 8	441	130	13	84
Alger, D., Providence, assignor of one-half interest to J. O. Tillinghast, Natick, R. I. Horse-shoe	198,923	Jan. 8	215	61	13	49
Allen S. A., New York, N. Y. Roller-skate	199,009	Jan. 8	300	88	13	62
Anthony, R. C. (See Klee, J., assignor.) (Reissue.)						
Abbott, E. L., and J. C. Birdsell, South Bend, Ind. Fire-extinguisher	199,171	Jan. 15	475	140	13	90
Abbott, W. W., assignor, by mesne assignments, to E. P. Knipe, Philadelphia, Pa. Machine for cutting wooden heels	199,247	Jan. 15	545	161	13	101
Allen, R. N., Hudson, N. Y. Exhaust-nozzle of locomotives	199,137	Jan. 15	443	131	13	85
Allenwood, J. M., Timbuctoo, Cal., assignor, by mesne assignments, to J. Craig. Ore-washing apparatus for hydraulic mining. (Reissue)	8,037	Jan. 15	651	191	13	117
Ames, D. T., *et al.* (See Day, J. D., assignor.)						
Ames, T. G., Denton, Texas. Apparatus for preserving meat, &c	199,248	Jan. 15	546	161	13	101
Andrews, H. K., Decatur, Texas. Band-cutting feeder for thrashing-machines	199,172	Jan. 15	477	141	13	90
Anthony, J. J., Sharon Springs, N. Y. Car-coupling	199,173	Jan. 15	478	141	13	90
Armstrong, F. (See Vinton and Fitzpatrick, assignors.)						
Asbury, W. S., Olney, assignor of one-half interest to H. J. Strawn, Albion, Ill. Lamp-extinguisher	199,249	Jan. 15	547	161	13	101
Atkin, R., Iowa City, Iowa. Neck-yoke and combined draft-tongue and equalizer	199,174	Jan. 15	479	141	13	91
Atwood, B. S., South Abington, Mass. Box-fastener	199,138	Jan. 15	444	131	13	85
Avery, C. M. (See Avery, R. H., assignor.)						
Avery, R. H., assignor of one-half interest to C. M. Avery, Galesburg, Ill. Corn-planter	199,344	Jan. 15	647	189 190	13	117
Acheson, W., assignor to himself, T. Rees, and J. Boyd, Pittsburg, Pa. Roll for making axle-blanks	199,393	Jan. 22	708	209	13	134
Adriance, W., Poughkeepsie, N. Y. Horse hay-rake	199,486	Jan. 22	794	233	13	148
Aldrich, N., Alden, Iowa. Fuel-press	199,394	Jan. 22	709	209	13	134
Aldrich, W., assignor of one-half interest to Dayton Machine Company, Dayton, Ohio. Horse hay-rake	199,487	Jan. 22	795	233	13	148
Alexander, A., assignor of one-half interest to S. M. Boyd, Pittsburg, and C. R. Moore, St. Petersburg, Pa. Ram for opening crevices in oil-wells	199,488	Jan. 22	795	234	13	148
Allen, C. A., *et al.* (See Raymond, W. F., assignor.)						
Amberg, W. A., Chicago, Ill. Letter-file	199,395	Jan. 22	710	209	13	134
American Shearer Manufacturing Company. (See Smith, R. T., assignor.) (Reissue.)						
American Watch Company. (See Wood, C. Y., assignor.)						
Andrew, W. E., New York, N. Y. Artificial butter. (Reissue)	8,048	Jan. 22	937		13	170
Andrews, J. B., Jersey City, N. J. Draft apparatus for stoves, &c	199,396	Jan. 22	711	209	13	134
Anthony, E., assignor of one-half interest to H. Q. Hawley, Albany, N. Y. Rotary fluid meter and motor	199,397	Jan. 22	712	210	13	135
Ashbaugh, D. B., *et al.* (See Gillen, W. S., assignor.)						
Ashley, J. M., *et al.* (See Pope, F. L., assignor.) (Reissue.)						
Albers, H., Hannover, Prussia. Clothes-mangle	199,677	Jan. 29	1022	298	13	191
Aldrich, E. C. (See Wellington, D., assignor.)						
Allen, W. J., assignor of one-half interest to H. Thompson, Jersey City, N. J. Furnace-grate	199,609	Jan. 29	951	277	13	161
American Propeller Company. (See Mallory, W. H., assignor.)						
Anderson, J. W., Greene, Pa. Clip-iron for carriages	199,679	Jan. 29	1023	298	13	191
Andrews, T. A., and A. G. Edwards, Gainesville, Texas. Bale-tie	199,678	Jan. 29	1023	298	13	191
Anthoine, L., Epworth, Iowa. Cultivator	199,680	Jan. 29	1025	299	13	191
Austin, C. B. (See Austin, M. S. and C. B.)						
Austin, M. S. and C. B., Cuba, Ohio. Gate	199,681	Jan. 29	1026	299	13	191
Aeklom, G. E., Cheltenham, England. Refrigerator	199,891	Feb. 5	1	1	13	233

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Aikins, W. T., Toronto, Canada. Grease-arrester for sinks	200,012	Feb. 5	117	38	13	252
Alexander, C. L., B. L. Osborn, and J. G. Anthony, Washington, D. C. Thill-coupling	199,951	Feb. 5	62	20	13	242
Alker, J. H., assignor to Jones and Laughlins, Pittsburg, Pa. Forging-mandrel	199,892	Feb. 5	2	1	13	233
Allen, J. B., Lincsville, Pa. Railway-rail joint	200,013	Feb. 5	118	39	13	252
Allison, W. O. (See Waring, J. B., assignor.)						
Amber, W. A. (See Thompson, E. H., assignor.) (Reissue.)						
American Button Hole, Overseaming, and Sewing Machine Company. (See Rehfuss, G., assignor.)						
Andrews, A. M. (See Curtis and Andrews.)						
Anthony, J. G. (See Alexander, Osborn, and Anthony.)						
Anthony, J. S. (See Pope and Anthony.)						
Arundell, R. L., assignor of one-half interest to J. McPherson, Rochester, Ky. Stone-cutting tool	200,014	Feb. 5	119	39	13	252
Arntzen, B., *et al.* (See Vermland, C., assignor.)						
Atwood, L. J., assignor to Plume and Atwood Manufacturing Company, Waterbury, Conn. Lamp-burner	200,015	Feb. 5	120	39	13	252
Adams, A. (See Phillips, T., assignor.)						
Adamson, A., Washington, D. C. Truss	200,160	Feb. 12	279	83	13	284
Aitcheson, P., and R. P., Alexandria, Va. Bottle-packing case	200,161	Feb. 12	280	84	13	284
Aitcheson, R. P. (See Aitcheson, P. and R. P.)						
Alker, J. H., assignor to Jones and Laughlins, Pittsburg, Pa. Blacksmiths' tongs	200,238	Feb. 12	357	105	13	296
Allen, D. K., *et al.* (See Phelps, I. M., assignor.)						
Allen, H. N., assignor of one-half interest to W. H. Kimball, Norwood, Mass. Nail for boots and shoes	200,240	Feb. 12	353	105	13	296
Allen, T. E., New York, N. Y. Tobacco-package	200,239	Feb. 12	352	105	13	296
Ashton, H. G., Somerville, Mass., assignor to Ashton Valve Company, Hartford, Conn. Safety-valve	200,119	Feb. 12	239	73	13	279
Ashton Valve Company. (See Ashton, H. G., assignor.)						
Atkinson, F. M., Falkland, N. C. Vehicle-hub	200,241	Feb. 12	354	105	13	296
Atterbury, T. B., Pittsburg, Pa. Metal-lipped glass vessel	200,120	Feb. 12	240	73	13	279
Austin, A. C., assignor to A. Chabot, Oakland, Cal. Hydrant	200,121	Feb. 12	241	73	13	279
Averill Paint Company. (See Stevens, G. I., assignor.)						
Avery, D. J., *et al.* (See Kirby, J. A., assignor.)						
Adams, P., Jr. (See Shepard and Adams.)						
Aldrich, W., Lowell, Mass. Carpet-fastener	200,421	Feb. 19	552	163	13	334
Amberg, W. A. (See Hoffman, A. D., assignor.)						
Armstrong, E., assignor to himself and J. R. Hutchinson, Allegheny, Pa. Device for indicating and automatically regulating the temperature of apartments	200,497	Feb. 19	624	184	13	345
Accelerating Fire Arms Company. (See Lyman, A. S., assignor.)						
Agren, C. A., New York, N. Y. Transposing key-board	200,640	Feb. 26	786	231	13	378
Alberger, J. L., Buffalo, N. Y. Refrigerating apparatus. (Reissue)	8,109	Feb. 26	979	288	13	406
Alker, J. H., assignor to Jones and Laughlins, Pittsburg, Pa. Machine for bending tubular sockets	200,595	Feb. 26	741	217	13	371
Allan, G., and J. W. Brown, London, England. Telegraph-relay	200,680	Feb. 26	832	245	13	384
Allen, N., assignor of one-half interest to E. H. Lane, Forestville, and E. C. Hamlin, Plainville, Conn. Manufacture of clock-cases	200,596	Feb. 26	742	217	13	371
Allen, S. L., Philadelphia, Pa. Cultivator	200,681	Feb. 26	833	245	13	384
Amazeen, C., Boston, Mass. Leather-skiving machine	200,682	Feb. 26	834	245	13	384
Amish, W. C., Lumberton, N. J. Hydrant sewer-trap	200,597	Feb. 26	743	217	13	371
Anderson, L. (See Nix, Stone, and Anderson.)						
Austin, S. J., Litchfield, Ill. Platform-scales	200,683	Feb. 26	835	245	13	384
Abell, B. M., and F. Brecht, New York, N. Y. Toy money-box	200,885	Mar. 5	69	24	13	426
Ableiter, A., Boscobel, Wis. Hame-strap loop	200,886	Mar. 5	70	24	13	426
Adams, R. D., Fulton, N. Y. Wagon-brake	200,887	Mar. 5	71	25	13	426
Albro, C. E., Cortland, N. Y. Hoisting apparatus	200,961	Mar. 5	136	44	13	436
Alden, E., *et al.* (See Prusha, W. F., assignor.)						
Allbright, A. (See Paine, E. L., assignor.)						
Allen, N. I., assignor to Dutcher Temple Company, Hopedale, Mass. Temple for looms	200,814	Mar. 5	1	1	13	415
Amesbury, G. W., Chicago, Ill. Specie pocket-book	200,962	Mar. 5	137	45	13	437
Anders, G. L., Boston, assignor to E. B. Welch, Cambridge, Mass. Magneto-signal apparatus	200,963	Mar. 5	138	45	13	437
Anderson, L., Chicago, Ill. Toy musical-instrument	200,964	Mar. 5	139	45	13	437
Ayres, W., St. Peter's, Pa. Boiler-furnace	200,815	Mar. 5	2	1	13	415
Acheson, N. B., Youngstown, Ohio. Nut-lock	201,144	Mar. 12	331	101	13	471
Adair, G. (See Dyer and Adair.)						
Adler, M., assignor to Mayer, Strouse & Co., New Haven, Conn. Corset	201,145	Mar. 12	331	101	13	472
Adler, M., New York, N. Y. Safe-bolt work	201,146	Mar. 12	332	102	13	472
Ahrend, H., assignor to Romer & Co., Newark, N. J. Seal-lock	201,147	Mar. 12	333	102	13	472
Alexander, J. L., Edenburg, Pa. Joint for oil-well tools	201,082	Mar. 12	265	83	13	463
Allen, S. M., Duxbury, Mass. Manufacture of paper-pulp from wood	201,083	Mar. 12	266	83	13	463
Ames, O. (See Cale, J. W., assignor.)						
Amwake, W. F. H., assignor of one-half interest to W. B. Wiley, Lancaster, Pa. Padlock	201,084	Mar. 12	268	83	13	463
Arzheimer, J., *et al.* (See Roberts, E. J., assignor.)						
Ashton, J., Hythe, England. Breech-loading fire-arm	201,216	Mar. 12	397	122	13	482
Askew, J. A. J., Colerain, N. C. Flat-iron heater	201,215	Mar. 12	396	122	13	482
Avery, W. H., Cherokee, Ala. Key-hole guard	201,065	Mar. 12	269	83	13	463
Abrams, W. H., Eugene City, Oreg. Saw-mill head-block	201,376	Mar. 19	588	180	13	515
Achauer, H. F. (See Youmans, G. W., assignor.)						
Adams, P., Jr., assignor to C. G. and W. J. Shepard, Buffalo, N. Y. Lock-hinge	201,476	Mar. 19	685	210	13	529
Aiken, W., and W. W. Drummond, Louisville, Ky. Machine for molding in sand	201,377	Mar. 19	589	181	13	515
Alberger, M. H., assignor of one-half interest to S. W. Pettit, Philadelphia, Pa. Insulated telegraph-wire	201,477	Mar. 19	686	210	13	529
Albree, R. C. (See Lauderbach, C. J., assignor.)						
Allen, B. F., Boston, Mass. Dowel-pin	201,378	Mar. 19	589	181	13	515
Altenburg, A., and W. C. Hill, Buffalo, N. Y. Window-screen	201,478	Mar. 19	687	210	13	529
Amidon, C. H., assignor of one-half interest to E. R. Saxton, Buffalo, N. Y. Bit-brace	201,379	Mar. 19	590	181	13	515
Armsworth, W., and J. H. Brown, Monticello, Ill. Check-row-planter attachment	201,479	Mar. 19	688	210	13	529
Arnold, J., Newark, N. J. Trunk-lock	201,480	Mar. 19	689	211	13	529
Artand, T., Jackson, Miss. Valve-action for brass musical instruments	201,380	Mar. 19	591	181	13	515
Atkins, A. R., *et al.* (See Spear, T., assignor.)						
Atkins, G. W., Milton, Del. Saw-set	201,481	Mar. 19	689	211	13	529
Aikin, W., *et al.* (See Smith, G. E., assignor.)						
Alexander, G. W., Washington, D. C. Door-securer	201,586	Mar. 26	817	249	13	551
Alexander, H. C., New York, N. Y. Lamp-burner	201,730	Mar. 26	956	293	13	572

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
American Dairy and Commercial Company. (See Freeman, H. O., assignor.)						
Androvatt, J. W., Prince's Bay, N. Y. Chimney-cowl	201,641	Mar. 26	874	266	13	559
Anthoine, J. W., Miller's Falls, Mass. Friction-clutch for lathes, &c	201,587	Mar. 26	818	249	13	551
Anthony & Co., E. and H. T. (See Lewis, W. H., assignor.)						
Armstrong, F. (See Coester and Moore, assignors.) (Reissue.)						
Armstrong, W. E., and D. Giesman, Ludington, Mich. Clothes-pounder	201,642	Mar. 26	874	266	13	559
Arnold, D. G. (See Stark, G. W., assignor.)						
Abbott, E. S. (See Addy, C. J., assignor.)						
Adams, S. E., Plain View, assignor to C. Allison, Faribault, Minn. Grain-separator	201,975	Apr. 2	112	33	13	615
Addy, C. J., assignor of one-half interest to E. S. Abbott, Boston, Mass. Machine for trimming the edge of boot and shoe soles	201,977	Apr. 2	114	33	13	615
Adgate, J. J., assignor to C. E. Parent, New York, N. Y. Furniture-caster	201,976	Apr. 2	113	33	13	615
Adler, M., assignor to Mayer, Strouse & Co., New Haven, Conn. Corset	201,978	Apr. 2	115	34	13	616
Alberger, M. H., Philadelphia, Pa. Eye-bar for bridges, &c	201,860	Apr. 2	1	1	13	599
Albright, A. (See Muchmore, D. B., assignor.)						
Alker, J. H., assignor to Jones & Laughlins, Pittsburg, Pa. Machine for rolling sucker-rod blanks	201,861	Apr. 2	2	1	13	599
Allison, C. (See Adams, S. E., assignor.)						
Anderson, S. G., Cincinnati, Ohio. Automatic cut-off valve for water-tanks, &c	201,979	Apr. 2	115	34	13	616
Arnold, S., Silver Springs, Tenn. Clothes-wringer	201,902	Apr. 2	44	12	13	605
Ashton, H. G., Somerville, Mass., assignor to Ashton Valve Company, Hartford, Conn. Exhaust mechanism for locomotives and other steam-engines	201,862	Apr. 2	5	1	13	599
Ashton Valve Company. (See Ashton, H. G., assignor.)						
Adams, B. F., Burton, Tex. Corn and cotton-seed planter	202,133	Apr. 9	294	87	13	645
Adams, F. W. (See Rathbun and Adams.)						
Adams and Shaler. (See Delisser, G. P., assignor.)						
Adams, T. F., assignor to Peerless Brick Company, Philadelphia, Pa. Brick-kiln roof	202,212	Apr. 9	376	110	13	656
Alford and Sorley. (See Tucker, A. W., assignor.)						
Alvord, H. B., Vineland, N. J. Weather-strip	202,088	Apr. 9	247	73	13	639
Amsden, N. C., Dubuque, Iowa. Fastening for egg-carriers	202,213	Apr. 9	377	111	13	656
Adgate, J. J., assignor of one-half interest to C. E. Parent, New York, N. Y. Fire-escape	202,504	Apr. 16	662	200	13	704
Aikin, W., and W. W. Drummond, Louisville, Ky. Apparatus for mounting and transporting ladles for molten metal	202,321	Apr. 16	509	149	13	679
Aikin, W., and W. W. Drummond, Louisville, Ky. Sand-molding machine	202,322	Apr. 16	510	149	13	679
Allen, S. W., and I. Cook, Tonica, Ill. Boot-upper	202,393	Apr. 16	579	170	13	689
Antisdale, J. O. (See Brunson, S., assignor.)						
Armstrong, F., Bridgeport, Conn. Stocking-supporter	202,394	Apr. 16	579	170	13	689
Ashcroft, J., assignor to S. J. Ashcroft, Brooklyn, N. Y. Furnace-grate	202,323	Apr. 16	511	149	13	679
Ashcroft, S. J. (See Ashcroft, J., assignor.)						
Ask, J., Salem, Ohio. Chair	202,505	Apr. 16	663	201	13	704
Atkinson, W. H., New York, N. Y., assignor to S. S. White, Philadelphia, Pa. Shaft-journal and box therefor	202,395	Apr. 16	580	170	13	689
Azbill, W. K., Columbia, Ky. Sash-balance	202,324	Apr. 16	512	150	13	679
Absterdam, J., New York, N. Y., assignor, by mesne assignments, to M. R. Alberger. Condenser for steam-engines. (Reissue)	8,193	Apr. 23	1158	333	13	769
Adams, B. D. (See Everett, G. W., assignor.)						
Alberger, M. R. (See Absterdam, J., assignor.) (Reissue.)						
Algeo, A., New York, N. Y. Hat-pressing machine	202,623	Apr. 23	845	243	13	731
Allen, R. N., Hudson, N. Y., assignor of one-half interest to J. C. Beach, Bloomfield, N. J. Brake-shoe for railway-cars	202,772	Apr. 23	999	287	13	750
Allen, W. J., Buffalo, N. Y. Condenser for engines. (Reissue)	8,188	Apr. 23	1153	331	13	768
Almy, J. F., Salem, Mass. Rack for curtain rollers and fixtures	202,773	Apr. 23	1000	288	13	750
Alton, R. C., assignor to F. O. Horstmann, S. Clarkson, W. P. Ellison, and W. Horstmann, trustees, Philadelphia, Pa. Machine for covering stands for making bullion	202,774	Apr. 23	1001	288	13	750
Arnold, J., Philadelphia, Pa. Ready-cut blank for election-stickers	202,775	Apr. 23	1002	288	13	750
Angepurger, J., Trenton, Ohio. Colter for plows	202,624	Apr. 23	846	243	13	731
Aultman & Co., C. (See Miller, C. M., and E. E., assignors.)						
Avery, C. M. (See Avery, R. H., assignor.)						
Avery, J. P., assignor of one-half interest to A. Clark, Norwich, Conn. Heating apparatus	202,776	Apr. 23	1003	288	13	750
Avery, R. H., assignor of one-half interest to C. M. Avery, Galesburg, Ill. Corn-planter	202,625	Apr. 23	847	243	13	731
Azbill, W. K., Columbia, Ky. Motor	202,626	Apr. 23	848	244	13	731
Ames, D. J., and E. J. Austin, Minn. Grinding-mill	203,100	Apr. 30	1340	390	13	797
Ames, E. J. (See Ames, D. J. and E. J.)						
Andres, S. R., Philadelphia, Pa. Articles of food from beans	202,975	Apr. 30	1225		13	782
Arkell, J., B. and A. Smith, Canajoharie, N. Y. Paper bag. (Reissue)	8,202	Apr. 30	1485	435	13	815
Armstrong, R., Portland, New Brunswick, Canada. Sled	202,976	Apr. 30	1226	354	13	782
Ashton, W., Hinckley, Ill. End-gate for grain-wagons	203,101	Apr. 30	1341	390	13	798
Atkinson, J., assignor of one-half interest to P. A. V. Le Lubez, London, England. Apparatus for heating water and other fluids	202,917	Apr. 30	1169	337	13	775
Atlantic Refining Company, *et al.* (See Perkins, G. H., assignor.)						
Atwood, J. E., Stonington, Conn. Machine for straightening shafting	202,978	Apr. 30	1227	355	13	782
Austin, W. B., New York, N. Y. Ventilator for chimneys	202,977	Apr. 30	1226	354	13	782
Adams, H. J. (See Adams, S. B. and H. J.)						
Adams, S. B. and H. J., Dunreith, Ind. Stalk-cutter	203,311	May 7	82	24	13	831
Amberg, W. A., Chicago, Ill. Temporary binder. (Reissue)	8,209	May 7	301	86	13	862
Anderson, O. (See Rude, P. H., assignor.)						
Anthony & Co., E. and H. T. (See Wheeler and Bazin, assignors.) (Reissue.)						
Applebaugh, W. K. (See Van Hoevenbergh and Applebaugh.)						
Ashton, H. G., Boston, Mass., assignor, by mesne assignments, to Ashton Valve Company, Hartford, Conn. Safety-valve attachment to utilize escape-steam. (Reissue)	8,211	May 7	302	87	13	862
Ashton Valve Company. (See Ashton, H. G., assignor.) (Reissue.)						
Ashton Valve Company. (See Wortman, P. A., assignor.) (Reissue.)						
Avers, H. M., Chicago, Ill. Combined cake-cutter and nutmeg-grater	203,312	May 7	84	24	13	831
Abbott, H., Newark, N. J. Stem-winding watch	203,524	May 14	319	91	13	873
Abbott, J. (See Gidlow and Abbott.)						
Adt, J., New Haven, Conn. Wire-cutting machine	203,691	May 14	490	138	13	894
Alexander, J., Cherry Fork, Ohio. Drag-sawing machine	203,692	May 14	491	139	13	894
Allen, A. N., Pittsfield, Mass. Automatic gas-lighting	203,693	May 14	491	139	13	894
Allen, N. I., Milford, assignor to G. Draper & Sons, Hopedale, Mass. Ring for spinning-machines	203,573	May 14	375	106	13	880
Alrich, W. J., Elkton, Md. Milk-can	203,694	May 14	495	140	13	894
Andrews, A. M. (See Curtis and Andrews.)						
Appenzeller, J. C., Cincinnati, Ohio. Apparatus for making vinegar	203,574	May 14	375	106	13	880
Armstrong, J. C., *et al.* (See Wheeler, M., assignor.)						
Arnn, J., Sullivan township, Sharp county, Ark. Gate	203,575	May 14	376	106	13	880

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Austin, T., Virginia city, Nev. Washing-machine	203,695	May 14	496	140	13	895
Axa, L., Winona, Minn. Shoe-lace fastening	203,696	May 14	497	141	13	895
Abbots, W. A., Westfield, Mass. Apparatus for bundling cigars	203,867	May 21	684	195	13	926
Adams, J. P., Cambridge, Mass. Can or vessel for liquids	203,868	May 21	685	195	13	926
Adamson, W., Philadelphia, Pa. Extracting hydrocarbons from fatty matters	203,980	May 21	804	231	13	941
Adamson, W., and C. F. A. Simonin, Philadelphia, Pa., assignor to said Adamson. Extracting oils by filtration and trickling	203,981	May 21	805	231	13	942
Addy, C. J., Boston, Mass. Machine for burnishing the edges of boots and shoes. (Reissue)	8,246	May 21	968	277	13	962
Allen, C. B., Philadelphia, Pa. Bolt-heading machine	203,982	May 21	806	231	13	942
Allen, M., assignor of one-half interest to T. H. Walsh, New York, N. Y. Cement and asphaltum pipe	203,869	May 21	686	195	13	926
American Screw Company. (See Rogers, C. D., assignor.)						
American Ship Windlass Company. (See Manton, J. P., assignor.)						
Ames, J., *et al.* (See Button, A., assignor.)						
Anchor Fork Company. (See Harter, J. H., assignor.)						
Anderson, J. A., Chicago, Ill. Tea-case	203,870	May 21	687	195	13	926
Andrews, E., Kennebunk, Me. Coloring and sizing leather or paper board	203,810	May 21	629	177	13	919
Andrews, M. A., Willsburg, Iowa. Draft-equalizer	203,871	May 21	687	196	13	926
Archer, G. W., Rochester, N. Y. Barber and dental chair	203,963	May 21	807	232	13	942
Armor, A. H., *et al.* (See Powers, J. W., assignor.)						
Arnold, H. L., assignor of one-half interest to W. T. and W. H. Powers, Grand Rapids, Mich. Piston water-meter	203,984	May 21	808	232	13	942
Austin, A. C., assignor to A. Chabot, Oakland, Cal. Oscillating water-meter	203,812	May 21	632	178	13	919
Austin, A. C., assignor to A. Chabot, Oakland, Cal. Water-gate or stop-valve	203,965	May 21	811	233	13	942
Austin, A. H., Guttenberg, N. J. Machine for making paving and building tiles	203,811	May 21	630	177	13	919
Able, A. F., assignor of one-half interest to C. J. Lewis, New Orleans, La. Toy pistol	204,123	May 28	960	279	13	967
Adams, H. W., Philadelphia, Pa. Apparatus and process for manufacturing illuminating-gas	204,181	May 28	1041	296, 297	13	975
Allen, O., assignor of one-half interest to W. E. Sargent, Marshalltown, Iowa. Fence-post	204,275	May 28	1136	325	13	987
Allonas, J., assignor to Aultmann & Taylor Company, Mansfield, Ohio. Clover-hulling attachment for thrashers	204,276	May 28	1138	326	13	987
Ames, A., Northfield, Minn. Grain-decorticating apparatus	204,277	May 28	1139	326	13	987
Anderson, W., Brooklyn, N. Y. Gas-burner	204,278	May 28	1140	326	13	987
Andrews, E. F., assignor of one-third interest to T. S. Smith, St. Louis, Mo. Brick-kiln	204,182	May 28	1049	297, 298	13	975
Antrim, J. S. (See Unger, H., assignor.)						
Arnold, L., Galveston, Tex. Bale-tie	204,183	May 28	1051	298	13	976
Aultman & Taylor Company. (See Allonas, J., assignor.)						
Austin, C. P., Boston, Mass. Railway-gate	204,279	May 28	1141	326, 327	13	988
Austin, D., assignor of one-half interest to E. T. Dufer and J. Knotts, Murray, Iowa. Weather-strip	204,122	May 28	979	279	13	967
Akerhielm, H., assignor of one-half interest to M. B. Bailey, Chicago, Ill. Wood pavement	204,414	June 4	1	1	13	1013
Alberdingk, T. I., Amsterdam, Holland. Rendering apparatus	204,471	June 4	53	17	13	1020
Albertson, A., Jersey City, N. J. Bottle-stopper	204,472	June 4	55	17	13	1020
Alleman, P., *et al.* (See Beecher, W. F., assignor.)						
Alverson, C. T. (See Broad, C. H., assignor.)						
Amess, J., Rosemount, Ontario, Canada. Fire-escape	204,473	June 4	55	18	13	1020
Amis, G. (See Rowen and Amis.)						
Anderson, J., and A. Sperber, Pittsburg, Pa. Lift for glass-molds	204,519	June 4	93	31	13	1026
Arnold, J., Newark, N. J. Washing-machine	204,518	June 4	92	31	13	1025
Asche, C. F., Hamburg, Germany. Troche	204,520	June 4	94	.....	13	1026
Asher, H. B. and M. C. Trenton, Mo. Machine for cutting sheet metal	204,415	June 4	2	1	13	1013
Asher, M. C. (See Asher, H. B. and M. C.)						
Avery, G. C. (See Wiard and Avery.)						
Avery & Sons, B. F. (See Wiard and Avery, assignors.)						
Adams, C., Russelsburg, Pa. Saw-tooth	204,697	June 11	281	87	13	1055
Adams, J. F. (See Brower and Adams.) (Reissue.)						
Aiken, W., Franklin, N. H. Narrowing mechanism for knitting-machines	204,648	June 11	231	73	13	1049
Aitken, R. W., Buffalo, N. Y. Piston-valve for engines	204,649	June 11	232	73	13	1049
Akens, W. H., Penn Line, Pa. Harvester-dropper	204,698	June 11	282	88	13	1055
Allis, T. V., New York, N. Y. Hasp-lock	204,779	June 11	373	111, 112	13	1066
Ammel, M., Belleville, Ill. Road-grader	204,699	June 11	283	88	13	1056
Arkell, J., Canajoharie, N. Y. Paper bag	204,780	June 11	375	112	13	1066
Aspinwall, G., and F. C. Clark, Hartford, Conn. Axle-tree washer	204,700	June 11	284	88	13	1056
Atkinson, H., Etchemin, Quebec, Canada. Machine for planing timber	204,781	June 11	377	112	13	1066
Atkinson, H., Etchemin, Quebec, Canada. Circular-saw mill	204,782	June 11	378	113	13	1067
Adt, J., New Haven, Conn. Wire-cutting machine	205,027	June 18	649	191	13	1105
Albany Steam Trap Company. (See Blessing, J. H., assignor.) (Reissue.)						
Alexander, N. J., Austin, Tex. Paper-bag	205,028	June 18	650	192	13	1105
Allis, T. V., New York, N. Y. Fence-wire	205,029	June 18	651	192	13	1105
Allton, H., Columbus, Ohio. Lubricator	204,874	June 18	497	145	13	1085
Amy, O. H., *et al.* (See Stone, S., assignor.)						
Anderson, F., Peekskill, N. Y. Suspension-hook	204,875	June 18	498	145	13	1085
Anderson, L., Corseley, Ontario, Canada. Musical transposing-board	204,876	June 18	499	145	13	1085
Andrews, C. W., *et al.* (See Stone, S., assignor.)						
Arnold, S., Lansingburg, N. Y. Device for washing piece goods	204,938	June 18	563	164, 165	13	1093
Ash, H. C., 315 Oxford street, Middlesex county, England. Apparatus for shuffling cards	205,030	June 18	652	192	13	1105
Austin, H. W., and W. B. Hoaford, Chicago, Ill. Furnace	204,939	June 18	565	165	13	1094
Avery, C. M. (See Avery, R. H., assignor.)						
Avery, R. H., assignor of one-half interest to C. M. Avery, Galesburg, Ill. Axle-arm for vehicle-wheels	205,031	June 18	653	192	13	1106
Abel, G., and J. Pedder, Beaver Falls, Pa. Blank for cutlery	205,329	June 25	979	290	13	1153
Ackermann, H., Chicago, Ill. Velocipede	205,330	June 25	980	290	13	1153
Adams, J. S., Elgin, Ill. Mechanism for transmitting motion	205,331	June 25	980	290	13	1154
Agnel, A. E. N., assignor to C. W. May, Firnhaber & Co., Paris, France. Bottle-stopper	205,238	June 25	869	257	13	1139
Ahrens, W. H., San Luis Obispo, Cal. Feed-cutter	205,229	June 25	870	257	13	1139
Aiken, W., Franklin, N. H. Narrowing mechanism for knitting-machines	205,167	June 25	805	239	13	1131
Albers, H., Hanover, Prussia. Mangle	205,168	June 25	806	239	13	1131
Allen, B. F., Boston, Mass. Bed-bottom	205,332	June 25	983	291	13	1154
Allyn, R. J. (See Stearns, G. F., assignor.)						
American Ship Windlass Company. (See Manton, J. P., assignor.) (Reissue.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Anderson, L., assignor to himself and C. A. Avery, Painesville, Ohio. Machine for cutting veneers	205,230	June 25	871	258	13	1139
Anthoine, A. W., Minot, Me. Vehicle-hub	205,333	June 25	984	291	13	1154
Archibald, N., Hanford, Cal. Device for unloading header-wagons	205,231	June 25	872	258	13	1139
Armstrong, F. (See Watson and Armstrong.)						
Armstrong, F., Bridgeport, Conn. Clasp	205,334	June 25	985	291	13	1154
Arnold, J., Newark, N. J. Trunk-catch	205,335	June 25	985	291	13	1154
Arnold, S., Lansingburg, N. Y. Stopping mechanism for knitting-machines	205,336	June 25	986	292	13	1154
Ashcroft, J., assignor to S. J. Ashcroft, Brooklyn, N. Y. Furnace-door	205,337	June 25	988	292, 293	13	1154
Ashcroft, S. J. (See Ashcroft, J., assignor.)						
Avery, C. A. (See Anderson, L., assignor.)						
Barmore, E. C., New Buffalo, Mich. Bed-spring	198,833	Jan. 1	110	32	13	26
Bartlett, S. R., Detroit, Mich. Press	198,834	Jan. 1	111	32	13	26
Bausch, J. J., *et al.* (See Gundlach, E., assignor.)						
Beaudry, Z., Worcester, Mass. Burnisher-head for boot and shoe machines	198,835	Jan. 1	112	32	13	26
Bedworth, T. (See Ward and Bedworth.)						
Beeson, W., Battle Mountain, Nev. Car-step register	198,786	Jan. 1	70	18	13	18
Bell, I. L., Rounton Grange, England. Manufacture of iron and steel	198,733	Jan. 1	1	.....	13	9
Bigelow, J., Philadelphia, Pa. Sweat-leather for hats	198,867	Jan. 1	146	42	13	31
Bigelow, J., Philadelphia, Pa. Attaching sweat-leathers to hat-bodies	198,868	Jan. 1	148	42, 43	13	32
Birch, W., Salford, England. Machine for opening, smoothing, spreading, and guiding fabrics	198,787	Jan. 1	71	18	13	18
Blackman, A. B. (See Blackman and Grifling.)						
Blackman, F. M. and A. B., and D. T. Grifling, De Kalb, Ill. Water-carrying truck	198,734	Jan. 1	3	1	13	9
Blake Crusher Company. (See Marsden, S. L., assignor.)						
Bond, J. L. (See Stevens and Bond.)						
Bradford, S. H., New York, N. Y. Combined kindling-wood receptacle and burning-fluid can	198,788	Jan. 1	72	19	13	18
Bradley, R. A., Ottawa, Ontario, Canada. Camp-bedstead	198,869	Jan. 1	150	43	13	32
Brainerd, G. S., St. Albans, Vt. Variable exhaust for locomotives	198,789	Jan. 1	73	19	13	19
Brebner, A. (See Heyl and Brebner.) (Reissue.)						
Briggs, T., Lynn, Mass. Trimming mechanism for sewing-machines	198,790	Jan. 1	74	19	13	19
Brooks, W. F., New York, N. Y. Car-axle	198,870	Jan. 1	150	43	13	32
Brown, G. W., Galesburg, Ill. Corn-planter	198,760	Jan. 1	36	9	13	13
Butler, S. D., New Buffalo, Mich. Bedstead-fastening	198,836	Jan. 1	113	32	13	26
Butler, T. L. (See Butler, W. A., assignor.)						
Butler, W. A., assignor to T. L. Butler, New York, N. Y. Safety-pin	198,912	Jan. 1	197	56	13	39
Butts, A. C., Newark, N. J. Glove	198,921	Jan. 1	205	58	13	40
Butts, W., Petaluma, Cal. Fruit and hop drier	198,791	Jan. 1	75	19, 20	13	19
Babbitt, S. W., assignor to Wilcox Silver Plate Company, West Meriden, Conn. Covered butter-dish	199,010	Jan. 8	301	88	13	62
Babcock, J. (See Black and Babcock.)						
Bailey, G. C., Pittsburg, Pa. Stop-cock. (Reissue)	8,024	Jan. 8	427	125	13	82
Baines, J. A., New York, N. Y. Rowlock	199,011	Jan. 8	302	89	13	63
Balbach, E., Jr., Newark, N. J. Retort for separating zinc from gold and silver alloys. (Reissue)	8,029	Jan. 8	433	127	13	83
Ballagh, A. H., Macon City, Mo. Harrow	199,012	Jan. 8	303	89	13	63
Barbour, T., *et al.* (See Wallace, J., assignor.)						
Barrows, E., Brooklyn, N. Y. Platform-door for stove-ovens	199,013	Jan. 8	304	89	13	63
Barnes, L. P., and J. H. Faupel, St. Louis, Mo. Car-roof	199,014	Jan. 8	304	89	13	63
Bausch, J. J., assignor to Bausch and Lomb Optical Company, Rochester, and Orange Judd Company, New York, N. Y. Microscope	199,015	Jan. 8	306	90	13	63
Bausch and Lomb Optical Company, *et al.* (See Bausch, J. J., assigner.)						
Bazzoni, L. J., Newburg, N. Y. Vehicle-spring	199,016	Jan. 8	306	90	13	63
Benedict, I. A., West Springfield, Pa. Cultivator	199,017	Jan. 8	307	90	13	64
Bennett, G. P., Corning, Iowa. Vehicle-hub	198,924	Jan. 8	216	61	13	49
Benwell, H. R., Newark, N. J. Chill-mold for casting metal	198,925	Jan. 8	216	61	13	49
Bergstrom, C. (See Golucke, E., assignor.)						
Betts, L. F., assignor of one-half interest to J. S. Dennis and H. N. Wheeler, Chicago, Ill. Barbed-fence material	199,015	Jan. 8	308	90	13	64
Birdsall, R. M., Clinton, Wis. Refrigerator-car	199,019	Jan. 8	308	91	13	64
Black, A. M., and J. Babcock, Decatur, Ill. Combined check-rower and dropper mechanism	199,020	Jan. 8	309	91	13	64
Boult, F. B., Bainbridge, N. Y. Hay-press	199,021	Jan. 8	310	91	13	64
Boggs, G. C., *et al.* (See Hixson, E., assignor.)						
Bonney, O., Jr., San Francisco, Cal. Gage for sawing-machines	198,963	Jan. 8	253	72	13	55
Boon, W. M., Perry, Ga. Fertilizer-distributer	199,022	Jan. 8	311	92	13	64
Border, D., assignor of one-half interest to L. Walter, Bedford, Pa. Lock and key	199,023	Jan. 8	312	92	13	64
Bourne, H. H., Clond county, Kansas. Portable lime-kiln	198,964	Jan. 8	254	73	13	55
Bowie, E. R., assignor to E. T. Covell, New Bedford, Mass. Can-seaming machine	198,965	Jan. 8	255	73	13	55
Boyd, J., Galveston, Texas. Portable house	198,926	Jan. 8	217	61	13	49
Brewster, W. A., Woodbury, N. J. Folding bracket-chair	199,024	Jan. 8	313	92	13	64
Brooks, M. D., Boston, Mass. Portable hammock attachment for car-seats	198,927	Jan. 8	219	62	13	49
Brown, W. P., Zanesville, Ohio. Cultivator-tongue	199,025	Jan. 8	313	92	13	64
Bruner, J. A., and A. Rich, Stockton, Cal. Combined elevator, track, and self-discharging bucket	198,966	Jan. 8	257	73	13	55
Brunner, C. and J. G., Newton, Iowa. Fire-escape	199,026	Jan. 8	315	93	13	65
Brunner, J. G. (See Brunner, C. and J. G.)						
Bullock, E. K., assignor of two-thirds interest to W. J. Miller and J. M. Curtiss, Detroit, Mich. Corset	199,027	Jan. 8	316	93	13	65
Burritt, H. H., and G. A. Ohl, Newark, N. J. Furnace-grate	198,967	Jan. 8	258	73	13	55
Burrows, H., Georgetown, assignor of one-half interest to W. H. Godey, Washington, D. C. Fire-escape	198,928	Jan. 8	220	62	13	49
Bussey, W. C., assignor of one-half interest to A. Camous, San Francisco, Cal. Bill-file	198,968	Jan. 8	259	74	13	56
Baird, J., New York, N. Y. Steam-boiler	199,139	Jan. 15	445	131	13	85
Baker, G. W., St. Louis, Mo. Fruit-gatherer	199,250	Jan. 15	548	161	13	101
Ballinger, C., White Mills, Pa. Machine for cutting down from feathers	199,175	Jan. 15	479	142	13	91
Barber, O. P., Saginaw, Mich., assignor of two-thirds interest to C. H. Patterson, Chicago, Ill., and J. Tuthill, Saginaw, Mich. Inhaler	199,140	Jan. 15	446	132	13	85
Barlow, F. A., Ladora, Iowa. Wagon-brake	199,176	Jan. 15	481	142	13	91
Baron, C. S. S., and C. H. Tallman, Bellaire, Ohio. Oil can	199,251	Jan. 15	549	162	13	102
Baron, C. S. S., and C. H. Tallman, Bellaire, Ohio. Oil-can	199,252	Jan. 15	550	162	13	102
Barrow, D. (See Barrow, S., D., J., and L. S.)						
Barrow, L. S. (See Barrow, S., D., J., and L. S.)						

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Barrow, S. (See Barrow, S., D., J., and L. S.)						
Barrow, S., D., J., and L. S., Windfall, Ind. Lifting-jack	199,177	Jan. 15	482	142	13	91
Barrows, H. M., New York, N. Y., and W. Kennish, New Brunswick, N. J., assignors to said Barrows. Ruler	199,253	Jan. 15	551	162	13	102
Beal, R., Orfordville, N. H. Lathe for turning round or polygonal bodies	199,178	Jan. 15	483	142, 143	13	91
Beatty, W. (See Hodgdon, I. H., assignor.)						
Berliner, E., Washington, D. C. Telephone	199,141	Jan. 15	447	132	13	85
Birdsell, J. C. (See Abbott and Birdsell.)						
Bisset, G., Jr., assignor to himself and W. H. Knight, Quebec, Canada. Collapsible core for casting	199,179	Jan. 15	485	143	13	92
Blackham, E. J., assignor to Wilmot Manufacturing Company, Bridgeport, Conn. Lamp	199,254	Jan. 15	552	162	13	102
Blake Manufacturing Company, G. F. (See Hall, A. F., assignor.)						
Bliss, J. (See Winn and Bliss.)						
Boeklen, R., Brooklyn, assignor to C. A. Waterbury, New York, N. Y. Telltale-clock	199,181	Jan. 15	487	143	13	92
Bowe, P., Jersey City, N. J. Electric lock	199,255	Jan. 15	553	163	13	102
Brace, W. H., assignor of one-half interest to J. B. Countryman, Nunda, N. Y. Torsion-spring for vehicles	199,256	Jan. 15	555	163	13	102
Bradley, B. C., Chicago, Ill. Draft-equalizer	199,142	Jan. 15	449	132	13	85
Brewster, F. A., Brunswick, Ga., assignor to himself and J. W. Labaree. Hoop-skirt. (Reissue)	8,040	Jan. 15	654	191	13	118
Bricknell, A. L., London, England, assignor to G. W. Gillett, New York, N. Y. Joining the ends of lead pipes	199,180	Jan. 15	485	143	13	92
Brown, I. S. (See Brown, W. H., assignor.)						
Brown, W. H., assignor to I. S. Brown, Indianapolis, Ind. Steam-radiator	199,257	Jan. 15	556	163	13	103
Budd, J. C., Brooklyn, N. Y. Sweat-leather for hats	199,258	Jan 15	557	164	13	103
Bugg, P. H., *et al.* (See Catlin, S. C., assignor.)						
Burgess, B., Baltimore, Md. Machine for making molds for car-wheels	199,259	Jan. 15	558	164	13	103
Burnham, L., Woburn, and D. G. Chase, Somerville, Mass. Hair-curling device	199,260	Jan. 15	561	164	13	103
Burr, M. C., Minneapolis, Minn. Horse hay-rake	199,143	Jan. 15	449	132, 133	13	86
Butman, T. R., Milan, Ohio. Furnace-door	199,182	Jan. 15	489	144	13	92
Babcock, E. H., J. C. Whiting, and O. H. Chamberlain, Canandaigua, N. Y. Plow	199,398	Jan. 22	713	210	13	135
Backer, J., Rose Hill, Texas. Combined wrench and saw-set	199,489	Jan. 22	796	234	13	148
Bailey & Brothers, D. M. (See Boals, J. A., assignor.)						
Bain, W. P. C., Edinburg, North Britain. Fence-wire retainer	199,490	Jan. 22	797	234	13	148
Baker, L. P. (See Cliff, J. W., assignor.)						
Baker, W. H., Syracuse, N. Y. Breech-loading fire-arm. (Reissue)	8,053	Jan. 22	944	274	13	171
Balmore, J., Harlem, N. Y. Combined gas scrubber and washer	199,492	Jan. 22	799	235	13	149
Baltzly, B. F., Montreal, Canada. Photographic-plate holder	199,491	Jan. 22	798	234	13	149
Barnum, A., Green Island, assignor of one-half interest to G. Geer, Jr., Troy, N. Y. Ventilating-cap for chimneys, &c	199,399	Jan. 22	713	210	13	135
Barron, W. J., New York, N. Y., assignor to Type Writer Company. Type-writing machine	199,494	Jan. 22	802	235	13	149
Barrows, F. A., Castleton, Vt. Plow	199,493	Jan. 22	801	235	13	149
Beach, E. B., West Meriden, Conn. Pulley-block	199,400	Jan. 22	714	210	13	135
Beck, J. P., St. Louis, Mo. Combined heating furnace and range	199,347	Jan. 22	659	193	13	127
Benton, S., Baltimore, Md. End for burial cases	199,495	Jan. 22	803	235	13	149
Bergstresser, E. L., Hubbersburg, Pa. Corn-planter	199,401	Jan. 22	715	211	13	135
Bijur, A., New York, N. Y. Shutter	199,402	Jan. 22	716	211	13	135
Blair, W. M., Williamsport, Md. Corn-shelling machine	199,496	Jan. 22	803	236	13	150
Blauvelt, G. F., New York, N. Y. Boot-cleaner	199,497	Jan. 22	804	236	13	150
Bledsoe, B. C. (See Moss, J. H., assignor.)						
Blinco, J. D., Lewisport, Ky., assignor of two-thirds interest to H. G. Smith and G. D. Howe. Harness tug and attachment	199,498	Jan. 22	806	236	13	150
Bliss, O. S., Georgia, Vt. Steam culinary vessel	199,403	Jan. 22	716	211	13	135
Bliss, O. S., Georgia, Vt. Milk-cooler	199,404	Jan. 22	717	211	13	136
Blye, A. W., Syracuse, N. Y. Wood-incased barrel	199,405	Jan. 22	718	212	13	136
Boals, J. A., Dinsmore, assignor to D. M. Bailey & Brothers, Cardville, Pa. Mail-bag catcher	199,499	Jan. 22	806	236, 237	13	150
Bosworth, C. F., Milford, Conn. Machine for sewing straw braid	199,500	Jan. 22	808	237	13	150
Bowman, J. C., Pickens, Miss. Transplanting-tool	199,501	Jan. 22	810	237	13	151
Bown, T., South Charleston, Ohio. Can waxing and soldering apparatus	199,406	Jan. 22	720	212	13	136
Boyd, J., *et al.* (See Acheson, W., assignor.)						
Boyd, S. M., *et al.* (See Alexander, A., assignor.)						
Boynton, C. W. (See Luckhurst, W., assignor.)						
Brabrook, E. H. (See Dill, J., assignor.)						
Bradley, S., Mauch Chunk, Pa. Ore-jigger	199,502	Jan. 22	811	238	13	151
Bray, M., Newton, Mass. Rivet-setting machine	199,503	Jan. 22	812	238	13	151
Bray, M., Newton, Mass. Japanning	199,504	Jan. 22	814	238	13	151
Briggs, G. G., Chicago, Ill. Stove-polish liquid	199,407	Jan. 22	720	.....	13	136
Bright, W. L., G. Ingham, and J. Fielding, Rochdale, England. Winding and reeling cotton, silk, worsted, &c	199,348	Jan. 22	660	193	13	127
Brinckmann, J. F., Cincinnati, Ohio. Screw-cutting-die holder	199,408	Jan. 22	721	212	13	136
Brinsmade, D. S. (See Stever, J., assignor.)						
Britton, R. G., Springfield, Vt. Child's carriage	199,505	Jan. 22	817	239	13	152
Brooks, D., assignor to Brooks Underground Telegraph Construction Company, (limited,) Philadelphia, Pa. Insulating underground telegraph-wire	199,506	Jan. 22	818	239	13	152
Brooks Underground Telegraph Construction Company, (limited.) (See Brooks, D., assignor.)						
Brubaker, A., assignor of one-half interest to L. J. Sprengle, Ashland, Ohio. Bag-holder	199,507	Jan. 22	819	239	13	152
Bryant, W. C., executor. (See Tifft and Love.) (Reissue.)						
Buchanan, A. M., Moberly, Mo. Velocipedo	199,409	Jan. 22	722	212	13	136
Bunting, R. W., Madison, Mich. Land-roller	199,508	Jan. 22	819	239	13	152
Burgess, W. H., Jackson P. O., N. C. Baling-press	199,509	Jan. 22	820	240	13	152
Buser, W. E., Chillicothe, Ohio. Wash-stand	199,510	Jan. 22	822	240	13	152
Butler, T. L. (See Butler, W. A., assignor.)						
Butler, W. A., assignor to T. L. Butler, New York, N. Y. Safety-pin	199,511	Jan. 22	823	240	13	153
Buzzell, G. H., assignor to himself and F. E. Stevens, Boston, Mass. Device for absorbing the noise of escaping steam	199,512	Jan. 22	824	241	13	153
Babbitt, S. W., assignor to Wilcox Silver Plate Company, West Meriden, Conn. Covered dish	199,772	Jan. 29	1108	325	13	205
Baker, W. H., Syracuse, N. Y. Lock for fire-arms	199,773	Jan. 29	1109	325	13	205
Ball, H., Nashua, N. H. Weaving-needle	199,774	Jan. 29	1110	326	13	205
Balus, H., *et al.* (See Pate, T. H., assignor.)						
Barber, A. H., Red Oak, Iowa. Animal-trap	199,775	Jan. 29	1111	326	13	205

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Bartlett, D. L., *et al.* (See McAvoy, H. L., assignor.)						
Bates, W. S., Cincinnati, Ohio. Speed-indicator	199,682	Jan. 29	1027	299	13	192
Beach, A. J., Linden, Mich. Running-gear for wagons	199,610	Jan. 29	952	277	13	181
Beard, J., Franklin, Ind. Fire-kindler	199,683	Jan. 29	1028	299	13	192
Beattie, C. J., Pueblo, Colo. Ointment	199,684	Jan. 29	1028	.....	13	192
Beck, A., New York, N. Y., assignor to L. and J. Dryfoos. Sewing-machine. (Reissue)	8,063	Jan. 29	1225	360	13	222
Becker, C., New York, N. Y. Weighing-scales	199,776	Jan. 29	1111	326	13	205
Benezet & Co. (See Evans and Sparks, assignors.)						
Bergman, H., Stockholm, Sweden. Door and window fastening	199,685	Jan. 29	1029	300	13	192
Berry, F. S., Mercer, Me. Stove-leg	199,777	Jan. 29	1112	326	13	205
Bingham, T. F., Abronia, Mich. Device for destroying insects by fumigation	199,611	Jan. 29	952	277	13	181
Bissell, M. R., Grand Rapids, Mich. Carpet-sweeper	199,612	Jan. 29	953	277	13	181
Blakeley, J., Toronto, Canada. Car-axle box	199,613	Jan. 29	954	278	13	181
Blust, C., assignor to Schimper Brothers, New York, N. Y. Pocket-book frame	199,778	Jan. 29	1113	327	13	205
Bogart, A. L. (See Wright, A. W., assignor.)						
Bolton, G. J. (See Brumbaugh, S. A., assignor.)						
Bonney, J. J., Fulton, N. Y. Feather-renovator	199,614	Jan. 29	955	278	13	181
Bonwill, W. G. A., Philadelphia, Pa. Dental engine	199,779	Jan. 29	1114	327	13	206
Boxley, G., assignor of one-half interest to I. V. Ford, Troy, N. Y. Machine for folding blanks for collars and cuffs	199,615	Jan. 29	956	278, 279	13	181
Bradley, C. L., San Francisco, Cal. Underwear	199,780	Jan. 29	1115	327, 328	13	206
Bradley, J., Philadelphia, Pa. Carbureter	199,781	Jan. 29	1116	328	13	206
Bradley, Voorhees & Day Manufacturing Company, (limited.) (See Netzner, L., assignor.)						
Branch, J. W. (See Milligan, J. F., assignor.)						
Briggs, O. P., assignor to H. F. Oliver, Chicago, Ill. Bolt-threading machine	199,686	Jan. 29	1030	300	13	192
Brinsmead, J., assignor to J. Brinsmead & Sons, London, Great Britain. Piano-forte action	199,687	Jan. 29	1033	300, 301	13	193
Brinsmead, J., & Sons. (See Brinsmead, J., assignor.)						
Brock, A. D., Grantville, Mass. Water-tube steam-generator	199,782	Jan. 29	1118	328, 329	13	206
Brown, R., and W. Honston, Dayton, Ohio. Corn-planter	199,783	Jan. 29	1121	329	13	207
Browne, G., assignor of one-half interest to T. T. Turnbull, Montreal, Canada. Metal can	199,616	Jan. 29	962	279	13	182
Brubaker, D., Mansfield, Ohio. Millstone-exhaust	199,688	Jan. 29	1034	302	13	193
Brumbaugh, S. A., assignor to himself and G. J. Bolton, Harrisburg, Pa. Coupling for soft-metal pipes and hose	199,784	Jan. 29	1123	329	13	207
Budd, E. C., Prairie Green, Ill. Sulky-plow	199,689	Jan. 29	1035	302	13	193
Bull, G., and L. Koch, New Orleans, La. Bale-band tightener	199,617	Jan. 29	962	279	13	182
Bürgin, E., New York, N. Y. Apparatus for desecrating water	199,785	Jan. 29	1123	330	13	207
Bürgin, E., Basel, Switzerland. Steam-condensing and gas and air compressing apparatus	199,786	Jan. 29	1124	330	13	207
Burkholder, J., Centreburg, Ohio. Wheat-steaming apparatus	199,690	Jan. 29	1036	302	13	193
Buskett, J. L., St. Louis, Mo. Intrenching-tool	199,787	Jan. 29	1126	331	13	208
Butler, E. K. (See Dooley, T. B., assignor.)						
Baker, E., Salem, Mass. Device for propelling wagons	200,016	Feb. 5	120	39	13	252
Baldwin, S. D., Chicago, Ill. Coal-oil stove	199,952	Feb. 5	63	20	13	242
Barber, F. J. (See Smith, W. D., assignor.)						
Bardell, A. (See Edgar and Bardell.)						
Baron, J., Dayton, O. Straw-cutter	199,893	Feb. 5	3	1	13	233
Bartel, R. F., New York, N. Y. Thermostat for electric fire-alarms	200,017	Feb. 5	121	40	13	252
Bates, C. E., West Cheshire, Conn. Button-fastening	200,018	Feb. 5	122	40	13	252
Bayley, O. W., Dayton, Ohio. Steam-pressure gage	199,953	Feb. 5	64	21	13	243
Beavers, R. R., Humboldt, Ill. Whiffletree	199,894	Feb. 5	4	2	13	233
Bennett, C., Clifton, Arizona Ter. Blast and reverberatory furnace	200,019	Feb. 5	123	40, 41	13	252
Bennett, E. S., Brooklyn, N. Y., assignor, by mesne assignments, to G. Frost and G. H. Phelps, Boston, Mass. Combined shirt and drawers. (Reissue)	8,068	Feb. 5	230	70	13	268
Bennett, L., *et al.* (See Bennett, W. A., assignor.)						
Bennett, W. A., assignor to himself, L. Bennett, and L. A. Brace, Augusta, Wis. Shingle-packing machine	199,895	Feb. 5	4	2	13	233
Bettis, J. R., assignor to C. Schraubstadter and J. A. St. John, St. Louis, Mo. Type	200,020	Feb. 5	124	41	13	252
Bigelow, A. J., Roosie, N. Y. Harvester-cutter	200,021	Feb. 5	125	41	13	253
Bilhimer, C. F., *et al.* (See Lauffer, S. D., assignor.)						
Blackburn, F., and V. Moeslein, assignors of three-fifths interest to H. Friedberger and H. L. Strouse, Philadelphia, Pa. Straw-braid sewing-machine	200,022	Feb. 5	126	42	13	253
Boman, C. W. (See Hoffman and Boman.)						
Bonchet, P., New York, N. Y. Reversible plow	199,954	Feb. 5	65	21	13	243
Bonsaard, R., assignor to himself, A. and J. Schwarz, New York, N. Y. Button or stud fastening	200,023	Feb. 5	127	42	13	253
Box, A., Philadelphia, Pa. Screw-hoisting pulley apparatus	199,955	Feb. 5	66	21	13	243
Boyce, J. B., Lockport, N. Y. Bench-plane	199,956	Feb. 5	67	21	13	243
Boyd, J. (See Land, W. H., assignor.)						
Boyer, J. L., Cincinnati, Ohio. Applying nail-heads on metal roofing	199,957	Feb. 5	68	22	13	243
Brace, L. A., *et al.* (See Bennett, W. A., assignor.)						
Bradley, C. L., San Francisco, Cal. Combination undersuit. (Reissue)	8,069	Feb. 5	231	71	13	269
Brandt, A., Ebensee, Austria. Rock-boring machine, (hydraulic)	200,024	Feb. 5	128	42	13	253
Brown, S. (See Goldsmith, Cruickshank, and Brown.)						
Brown, W. M. (See Titus, G. M., assignor.)						
Bryson, C. M., Cleveland, Ohio. Bed-clothes clamp	200,025	Feb. 5	130	42	13	254
Burger, T. W., Plainfield, N. J. Spice-box	199,896	Feb. 5	6	2	13	233
Burgess, W. S., assignor to J. H. Dager and G. W. Grady, Norristown, Pa. Air-pump	200,026	Feb. 5	131	43	13	254
Badger, O. W. (See Bramer and Badger.) (Reissue.)						
Bailey, M. B., assignor of one-half interest to F. Bauer, Chicago, Ill. Composition roof	200,122	Feb. 12	242	73	13	279
Bains, J., assignor of one-half interest to J. L. Cochran, Cincinnati, Ohio. Hydrant-valve	200,162	Feb. 12	292	84	13	284
Ball, F. H., Foxburg, Pa. Valve-gear. (Reissue)	8,077	Feb. 12	496	.....	13	317
Ball, F. H., Foxburg, Pa. Balanced slide-valve	200,242	Feb. 12	355	106	13	296
Barber, D. D., *et al.* (See Buie, D. M., assignor.)						
Barsalou, H., St. Anne, Ill. Seeding-machine	200,163	Feb. 12	283	84	13	285
Bauer, F. (See Bailey, M. B., assignor.)						
Beard, E. J., *et al.* (See King, P. F., assignor.)						
Beard, G. N., *et al.* (See King, P. F., assignor.)						
Blair, A. F. (See White, J. A., assignor.)						
Blattner, C., *et al.* (See Shallenberger, G., assignor.)						
Boardman, T., Gray, N. Y. Harness	200,243	Feb. 12	356	106	13	296
Bobbitt, F., Varna, Ill. Hat-holder	200,244	Feb. 12	357	106	13	296
Bois, J. M., Salamanca, N. Y. Hydraulic motor	200,245	Feb. 12	357	106	13	296

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Bond, G. W. (See Coffin, J. N., assignor.)						
Borgfeldt, N. H., New York, N. Y. Tobacco-stem flattener	200,246	Feb. 12	360	107	13	297
Bosse, H. C. (See Durand, L., assignor.)						
Boyer, J. J., Lamartine, Pa. Torpedo for oil-wells	200,164	Feb. 12	284	84	13	285
Boynton, E. M., New York, N. Y. Saw-handle	200,165	Feb. 12	285	85	13	285
Boynton, N. A., New York, N. Y. Cooking-range	200,247	Feb. 12	361	107 / 108	13	297
Brace, J., Covington, Ky. Preserving meats	200,248	Feb. 12	363	.....	13	297
Bradford, E. S., Springfield, Ill. Composition for pavements	200,123	Feb. 12	242	.....	13	279
Bradley, B. C., and C. A. Hague, Chicago, Ill. Sulky-plow	200,249	Feb. 12	364	108	13	297
Bramer, F., Little Falls, and O. W. Badger, Whitney's Point, N. Y.; said Badger assignor to said Bramer. Wheel-harrow. (Reissue)	8,080	Feb. 12	498	146	13	317
Brankman, A. (See Brightman, L., assignor.)						
Brightman, L., Cleveland, Ohio, assignor of one-half interest to A. Brankman. Machine for drawing and straightening metal bars	200,251	Feb. 12	366	108	13	297
Bristol, C. B., assignor to W. and E. T. Fitch, New Haven, Conn. Harness-terret	200,166	Feb. 12	286	85	13	285
Britt, B. (See Britt, S., assignor.)						
Britt, S., assignor to B. Britt, Brooklyn, N. Y. Platen for oil-presses	200,250	Feb. 12	365	108	13	297
Brooks, D., Jr., Philadelphia, Pa. Telegraph-insulator	200,124	Feb. 12	243	74	13	279
Brown, J. E., Lansingburg, N. Y. Car brake and starter	200,167	Feb. 12	286	85	13	285
Brunner, C., Peru, and H. Reynolds, La Salle, Ill. Barb for fence-wires	200,125	Feb. 12	244	74	13	279
Buchhorn, F., Chicago, Ill. Parlor-fountain	200,126	Feb. 12	245	74	13	280
Buie, D. M., assignor to himself, J. F. Post, Wilmington, N. C., and D. D. Barber, Maysville, S. C. Manufacturing oils from organic substances	200,168	Feb. 12	287	85	13	285
Bullymore, R., Buffalo, N. Y. Apparatus for refining lard	200,252	Feb. 12	367	109	13	298
Burris, M. E., New York, N. Y., assignor to W. Burris, Washington, D. C. Vehicle-spring	200,169	Feb. 12	288	86	13	286
Burris, W. (See Burris, M. E., assignor.)						
Burroughs, J., assignor of one-half interest to D. Donson, Dayton, Ohio. Feed-wheel for grain-drills	200,253	Feb. 12	369	109	13	298
Busack, C., Lansing, Ill. Revolving harrow	200,127	Feb. 12	246	74	13	280
Bush, H. F., and M. L., Douglassville, Pa. Machine for sharpening mower and reaper knives	200,170	Feb. 12	290	86	13	286
Bush, M. L. (See Bush, H. F. and M. L.)						
Barker, A., Peekskill, N. Y. Hinge for molders' flasks	200,422	Feb. 19	553	163	13	334
Barker, S., Hartford, Conn. Nutmeg-grater	200,423	Feb. 19	554	163	13	334
Barney, E. H., Springfield, Mass. Skate	200,424	Feb. 19	555	164	13	334
Bartlett, F. W., and C. Ward, Buffalo, N. Y. Wash for covering brick surfaces	200,498	Feb. 19	625	.....	13	345
Batchelder, H. J., Fitchburg, assignor to H. K. Flagler and T. I. Very, Boston, Mass. Manufacture of horseshoes	200,425	Feb. 19	556	164	13	334
Beer, E. B., Sussex, New Brunswick, Canada. Target	200,426	Feb. 19	557	164	13	335
Bell, J. S., *et al.* (See Caum, E. L., assignor. (Reissue.)						
Bennett, J. O. A., Morrison, Ill. Barrel-truck. (Reissue)	8,092	Feb. 19	734	215	13	362
Bergstrom, L. G. (See Thompson and Bergstrom.)						
Bickford, R. H., *et al.* (See Curtis, W. H., assignor.)						
Billings, H. F., *et al.* (See Stevens, J. L., and G. W., assignors.) (Reissue.)						
Birch, W., Salford, Great Britain. Squeezing-machine for bleachers and dyers	200,427	Feb. 19	558	164	13	335
Bishop, J., assignor of one-half interest to J. Forney, Philadelphia, Pa. Driving-gear for street-cars	200,499	Feb. 19	625	184	13	345
Blohm, C. A., assignor to P. H. McGraw, McGrawville, N. Y. Corset	200,500	Feb. 19	626	184	13	345
Blossom, J. R., Brooklyn, N. Y. Bale-tie	200,428	Feb. 19	559	165	13	335
Bonnet, J., New York, N. Y. Adjustable foot-rest for hot-air registers	200,429	Feb. 19	560	165	13	335
Borgia, F. J., Wilson, assignor of one-fourth interest to F. J. McLean, Menomonee, Wis. Gate	200,430	Feb. 19	560	165	13	335
Borst, W. E., Cobleskill, N. Y., assignor, by mesne assignments, to Washburn & Moen Manufacturing Co., Worcester, Mass. Wire bale-tie	200,371	Feb. 19	505	149	13	327
Branford Lock Works. (See Coleman, C. C., assignor.)						
Bray, W., Jr., assignor of one-half interest to P. S. Hadger, Auburn, N. Y. Buckle	200,501	Feb. 19	627	184	13	346
Brimmer, H. J. (See Salisbury, W. S., assignor.)						
Brinkerhoff, J. (See Judson, L. P., assignor.) (Reissue.)						
Brown, C. W. (See Dodge and Brown.)						
Brown, L. J. See Terry, S. C., assignor.)						
Buckley, J. W., *et al.* (See Pine, J. W., assignor.)						
Buckley, R. C., Peoria, Ill. Sulky-plow	200,502	Feb. 19	628	185	13	346
Buckton, W., Philadelphia, Pa. Machine for polishing and finishing cord	200,503	Feb. 19	629	185	13	346
Buell, H. J., New York, N. Y. Pillow	200,504	Feb. 19	630	185	13	346
Burgess, G. W., Skowhegan, Me. Ruffler for sewing machines	200,431	Feb. 19	562	165	13	335
Burrell, D. H. (See McEachren, J. D., assignor.)						
Busby, G. F., Lynn, Mass. Burglar-alarm	200,372	Feb. 19	505	149	13	327
Buxton, L. W., Nashua, N. H. Heel-plate for boots and shoes	200,505	Feb. 19	631	186	13	346
Buzzell, C. N., assignor to himself and E. H. Nealley, Monroe, Me. Shelf for stove-ovens	200,432	Feb. 19	563	166	13	335
Baker, W. R. (See McCormick and Baker.)						
Ball, A., Worcester, Mass. Magazine fire-arm. (Reissue)	8,110	Feb. 26	981	289	13	406
Barber, D. D., *et al.* (See Wells, I., assignor.)						
Barbour, G. H. (See Dwyer and Barbour.) (Reissue.)						
Barbour, M., Hamilton, Ohio. Sweeper for seeding-machines	200,684	Feb. 26	836	246	13	385
Bardwell, H. G. (See Densmore, E., assignor.)						
Barnes, H. S., and J. I. Miller, West Point, Wis. Spoke-tenoning and felly-boring machine	200,598	Feb. 26	744	218	13	377
Barnum, I. W. (See Fuller, H. W., assignor.) (Reissue.)						
Barron, J. H. (See Jordan and Barron.)						
Bates, S., Providence, R. I. Paper collar	200,685	Feb. 26	837	246	13	385
Baumgaertner, C., Rock Island, Ill. Wagon gearing and tongue support	200,641	Feb. 26	788	231	13	378
Beachman, R., Lyons, N. Y. Attachment to combination-locks	200,599	Feb. 26	744	218	13	371
Beecher, L. W., Westville, Conn. Fruit-basket	200,786	Feb. 26	933	275	13	399
Bennor, J., and P. Pond, Philadelphia, Pa.; said Bennor assignor to said Pond. Register	200,642	Feb. 26	788	232	13	378
Berry, H., assignor of one-half interest to F. Ratcliff, West Meriden, Conn. Cup and other vessels	200,686	Feb. 26	837	246	13	385
Bissell, T. M. (See Knoblock and Bissell.)						
Bowman, H. J., assignor of one-half interest to M. Laner, Cleveland, Ohio. Fire-escape	200,600	Feb. 26	745	218	13	371
Brainard, E. D. (See Hinckel, F., assignor.) (Reissue.)						
Brannan, P., Freeport, Ill. Corn-plow	200,787	Feb. 26	934	275	13	400
Brawley, D. C., and W. H. H. Morris, Franklin, Pa. Sand-pump reel for deep wells	200,687	Feb. 26	838	246 / 247	13	385
Bright, C. M., Waupaca, Wis. Label-holder	200,688	Feb. 26	839	247	13	385
Brombacher, C., Tarrytown, N. Y. Sheet-metal-bending machine	200,689	Feb. 26	840	247	13	385
Brown, A. (See Speers, N. W., assignor.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brown, I. S. (See Brown, W. H., assignor.)						
Brown, J. W. (See Allan and Brown.)						
Brown, W. H., assignor to I. S. Brown, Indianapolis, Ind. Steam-radiator	200,601	Feb. 26	746	219	13	371
Buck, C. H., Jr. (See Clement, B. F., assignor.)						
Burleigh, C., Fitchburg, Mass. Rock-drill	200,690	Feb. 26	841	247	13	385
Burtey, H., Paris, France. Button-fastener	200,691	Feb. 26	842	248	13	385
Butterfield, J., Woodlawn, Mo. Self-dropper for planters	200,692	Feb. 26	843	248	13	386
Baker Manufacturing Company, S. W. (See Baker, S. W., assignor.)						
Baker, S. W., assignor to S. W. Baker Manufacturing Company, Providence, R. I. Tubular-woven fabric	200,965	Mar. 5	140	46	13	437
Baldwin, C. H., Tiffin, Ohio. Wash-board	200,852	Mar. 5	39	14	13	421
Bassett, D. M. (See Iles, H. J., assignor.)						
Bee, A., Lancaster, assignor to O. W. Turner, Harvard, Mass. Turbine water-wheel	200,966	Mar. 5	142	46, 47	13	437
Benham, W. L., assignor of one-half interest to C. H. Norris, Detroit, Mich. Envelope	200,853	Mar. 5	40	14	13	421
Berdan, A., and A. E. Warren, Tecumseh, Mich. Wrench	200,971	Mar. 5	149	48	13	438
Bergin, J. (See Hitchcock, M. L., assignor.)						
Bernard, G. S., *et al.* (See Goodwyn, G. W., assignor.)						
Bevin Brothers' Manufacturing Company. (See Nichols, W. H., assignor.)						
Betts, L. F., assignor of one-half interest to J. S. Dennis and H. N. Wheeler, Chicago, Ill. Combined ventilating nozzle and spout	200,816	Mar. 5	2	1	13	415
Birch, T. H., Cincinnati, Ohio. Charging-scoop for gas-retorts	200,888	Mar. 5	72	23	13	426
Bishop, O. A., assignor of one-half interest to W. E. Geer, Chicago, Ill. Device for forming cigar-wrappers	200,889	Mar. 5	73	25	13	426
Blake, G. F., Boston, Mass. Steam pumping-engine	200,890	Mar. 5	73	25, 26	13	426
Bliss, J., Primghar, Iowa. Kitchen-table	200,891	Mar. 5	74	26	13	426
Bloom, H. O., assignor of one-half interest to J. B. Raymond, Chicago, Ill. Coffee-polishing machine	200,817	Mar. 5	4	1	13	415
Bond, H., Haverhill, Mass. Shoe	200,818	Mar. 5	5	2	13	415
Boote, J. J. K., and G. L. Hechler, Cleveland, Ohio, assignors of one-half interest to D. F. Sherbondy and V. Lillie, New York, N. Y. Fire-kindler	200,972	Mar. 5	149	49	13	438
Bortree, L. S., Toledo, Ohio. Corset	200,967	Mar. 5	145	47	13	438
Bowman, W. H., assignor of one-half interest to J. C. Hays, South Solon, Ohio. Cotton-planter	200,968	Mar. 5	145	47	13	438
Boyle, T. W., Augusta, Ga. Shovel-plow	200,819	Mar. 5	5	2	13	415
Boynton, D. P. (See Thompson, A. P., assignor.)						
Brady, J., Brooklyn, N. Y. Gas-engine	200,970	Mar. 5	140	48	13	438
Brady, P. B. (See Robert, T., assignor.)						
Brandon, A., New York, N. Y. Elevated railway	200,969	Mar. 5	146	47, 48	13	438
Brecht, F. (See Abell and Brecht.)						
Brigham, W. B., *et al.* (See Prusha, W. F., assignor.)						
Brimmer, H. J. (See Salisbury, W. S., assignor.)						
Brookfield, J. M., Brooklyn, N. Y. Glass-furnace	200,973	Mar. 5	150	49	13	439
Brooks, W., Middlefield, assignor to J. W. Lamb, Otsego, N. Y. Hop-picking box	200,892	Mar. 5	75	26	13	427
Buckeye Iron and Brass Works. (See Krutzsch, W., assignor.)						
Burden, F. C. (See Burden, W. H. and F. C.)						
Burden, W. H. and F. C., Cleveland, Ohio. Car-axle box	200,893	Mar. 5	76	26, 27	13	427
Burns, G., assignor to Rand, McNally & Co., Chicago, Ill. Varnishing-machine	200,894	Mar. 5	76	27	13	427
Burns, J., London, Ontario, Canada. Gas-retort	200,820	Mar. 5	6	2	13	416
Burrell, Ives & Co. (See Fairchild, C. T., assignor.)						
Bussey, E., assignor of one-half interest to C. A. McLeod, Troy, N. Y. Stove-shelf	200,974	Mar. 5	151	49	13	439
Bussey, E., assignor of one-half interest to C. A. McLeod, Troy, N. Y. Stove-oven	200,975	Mar. 5	152	49	13	439
Bailey, S. R., Boston, Mass. Sleigh-standard	201,148	Mar. 12	334	102	13	472
Baker, W. R., Chicago, Ill., and C. B. Withington, Janesville, Wis., assignors to C. H. and L. J. McCormick, Chicago, Ill. Grain-binder	201,149	Mar. 12	335	102 / 103	13	472
Banger, G. S., Williamsport, Pa., and L. D. Hurd, Wellsville, N. Y., assignors to themselves and J. Devlin, Williamsport, Pa. Car-truck	201,217	Mar. 12	399	122 / 123	13	482
Barnes, W. H., Chicago, Ill. Cooking-range	201,086	Mar. 12	269	84	13	463
Barnhart, A. E., *et al.* (See Fuchs, H., assignor.)						
Barnhart, A. M., *et al.* (See Fuchs, H., assignor.)						
Barnhart, G. W., *et al.* (See Fuchs, H., assignor.)						
Bartell, C. F., *et al.* (See Roberts, E. J., assignor.)						
Bartholomew, G. W. (See Bartholomew, H. S., assignor.) (Reissue.)						
Bartholomew, H. S., Bristol, Conn., assignor to himself and G. W. Bartholomew. Bit-stock. (Reissue)	8,115	Mar. 12	517	158	13	497
Bassett, W. L., *et al.* (See Bergstrom, A., assignor.) (Reissue.)						
Beebe, C. T., assignor to Withington and Cooley Manufacturing Company, Jackson, Mich. Craw-socket for scythe-fastenings	201,218	Mar. 12	401	123	13	482
Beierdorf, J., Chicago, Ill. Rocking-chair	201,087	Mar. 12	270	84	13	463
Benedict, W. G. (See Miller and Benedict.)						
Bergstrom, A., Minneapolis, Minn., assignor of part interest to W. J. Fender, W. L. Bassett, and S. B. Chase. Piston water-meter. (Reissue)	8,120	Mar. 12	522	160	13	498
Bevins, S. H., New York, N. Y., J. Weis, Jersey City, N. J., and W. H. Phillips, New York, N. Y. Brake mechanism for hoisting apparatus	201,150	Mar. 12	336	103	13	472
Bild, G. G., New York, N. Y. Press for making cigars	201,088	Mar. 12	271	84	13	463
Bishop, R. G., Chetopah, Kan. Balanced slide-valve	201,151	Mar. 12	337	104	13	472
Bishop, T. T., Atlanta, Ga. Hinge	201,219	Mar. 12	401	123	13	482
Black, V., Cincinnati, Ohio, assignor to J. A. Crawford, Covington, Ky. Device for handling hogsheads of tobacco	201,220	Mar. 12	402	123	13	482
Blake, H. E., Flushing, N. Y. Telegraph-key	201,089	Mar. 12	272	84	13	464
Bly, N., Crown Point, N. Y. Machine for reducing wood to paper-pulp	201,152	Mar. 12	338	104	13	473
Bogenrief, S. H., and W. Pattison, St. Cloud, Minn. Plow	201,153	Mar. 12	339	104	13	473
Bourn, B. A., *et al.* (See Theobald, G., assignor.)						
Brahn, J., Jersey City, N. J. Frog	201,154	Mar. 12	339	104	13	473
Brandeis, L., Brooklyn, N. Y. Water-trap	201,090	Mar. 12	273	85	13	464
Brandis, F. E., Brooklyn, assignor to Brandis and Teckritz, New York, N. Y. Spindle attachment for surveying-instruments	201,155	Mar. 12	340	105	13	473
Brandis and Teckritz. (See Brandis, F. E., assignor.)						
Brintnall, T. M., Medina, Ohio. Lamp-burner	201,221	Mar. 12	402	124	13	482
Brown, I. S. (See Brown, W. H., assignor.)						
Brown, W. H., assignor to I. S. Brown, Indianapolis, Ind. Steam-radiator	201,091	Mar. 12	274	85	13	464
Browne, W. T., *et al.* (See Vincent, G., assignor.)						
Buhler, M. (See Dean, G. B., assignor.)						
Burgraff, G., *et al.* (See Roberts E. J., assignor.)						
Burns, P. H., and W. G. McElhany, Indiana, Pa., assignors to said Burns. Plow	201,222	Mar. 12	403	124	13	482

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Ballard, H. W. (See Ballard, M. L., assignor.)						
Ballard, M. L., assignor to H. W. Ballard, Canton, Ohio. Carriage-spring coupling	201,381	Mar. 19	592	182	13	516
Barker, A., Bloomfield, Iowa. Weight-motor	201,482	Mar. 19	690	211	13	530
Barkham, E. (See Scharnweber and Barkham.)						
Barry, D. (See Baxendale and Barry.)						
Bash, H. R., assignor of two-thirds interest to M. T. Lowry and H. V. P. Draper, Hannibal, Mo. Flue	201,484	Mar. 19	691	212	13	530
Bassett, H. W., Wallingford, Conn. Device for receiving and arranging blanks	201,483	Mar. 19	691	211	13	530
Batchelder, W. W., New York, N. Y. Lighting device	201,485	Mar. 19	692	212	13	530
Baxendale, W. J., and D. Barry, Rochester, N. Y. Machine for reducing wood to pulp for paper	201,486	Mar. 19	695	212	13	530
Beach, W. G., New Haven, Conn. Loose-pulley lubricator	201,487	Mar. 19	696	212	13	530
Beard & Brother. (See King, P. F., assignor.)						
Beck, A., New York, N. Y. Burglar-alarm	201,382	Mar. 19	592	182	13	516
Beckett, J. R., Cushing, Me., assignor, by mesne assignments, to himself, C. B. and D. N. Payson, and S. S. Rowe. Street-railway. (Reissue)	8,125	Mar. 19	804	245	13	544
Beckwith, J. L., *et al.* (See Spear, T., assignor.)						
Bedell, H. O., *et al.* (See Stockham, J. B., assignor.)						
Beecher, J. G., Grand Rapids, assignor of one-half interest to C. C. Bowling, Marshall, Mich. Sash-fastener	201,383	Mar. 19	593	182	13	516
Behle, C. E. (See Schulze, P., assignor.)						
Bell, A. G., Boston, Mass. Speaking-telephone	201,488	Mar. 19	697	213	13	531
Benedict, J., Plainwell, Mich. Hand-rake	201,330	Mar. 19	531	163	13	507
Berryman, C., Monroe, Wis. Corn-planter	201,489	Mar. 19	697	213	13	531
Birdseye, I. W., Birmingham, Conn. Corset	201,490	Mar. 19	700	213	13	531
Blair, J., Boston, Mass. Bung and bush	201,491	Mar. 19	700	214	13	531
Boardman, L. M., St. Peter, Minn. Amalgamator for stamp-mills	201,321	Mar. 19	531	163	13	507
Boone, I., Troy, Ohio. Cotton-harvester	201,384	Mar. 19	594	182 183	13	516
Boone, I., Troy, Ohio. Hog-dressing machine	201,385	Mar. 19	596	183	13	516
Bopp, C., Jersey City, N. J., assignor to himself and H. C. Stone, Brooklyn, N. Y. Track-clearer	201,492	Mar. 19	701	214	13	531
Bowling, C. C. (See Beecher, J. G., assignor.)						
Brandon, C. T., Toronto, Canada. Painting-machine	201,322	Mar. 19	532	163	13	507
Brickey, J. Y., Lexington, Ky. Mold for running plaster cornices	201,493	Mar. 19	702	214	13	531
Briggs, J., Montreal, Canada. Cooking and heating range	201,494	Mar. 19	703	214	13	531
Briney, R., Kittanning, Pa. Sucker-rod socket or drill-grab	201,386	Mar. 19	597	183	13	516
Brown, J. H. (See Armsworth and Brown.)						
Brown, L. D., Montmorency, assignor of one-half interest to W. S. Haggard, Lafayette, Ind. Wagon-tongue support	201,323	Mar. 19	533	164	13	507
Bryant, V. A. (See Seamans, Bryant, and Devling.)						
Buckingham, C. P., Chicago, Ill. Manufacture of cultivator-sleeves	201,324	Mar. 19	534	164	13	507
Bugbee, G. W. (See Doane and Bugbee.)						
Busa, E., Magdeburg, Prussia. Tachometer or speed-indicator	201,495	Mar. 19	704	215	13	532
Butler, C. H., New York, N. Y. Broom-brace	201,496	Mar. 19	705	215	13	532
Baker, J. J., *et al.* (See Hoffman, A. D., assignor.)						
Barry, J., assignor to himself and J. Barry, Auburn, N. Y. Lubricator	201,731	Mar. 26	957	293	13	572
Bartle, W. S., Newark, N. Y. Feed-cutter	201,732	Mar. 26	958	293	13	572
Bayliss, H., Providence, R. I. Implement for capping and uncapping cartridges	201,733	Mar. 26	960	293	13	572
Bean, R., Hudson, Mich. Pump	201,734	Mar. 26	961	294	13	572
Bennett, E. (See Bucklin, J. M., assignor.)						
Best, J. F., Galva, Ill. Harness-pad machine	201,735	Mar. 26	962	294	13	572
Bingham, T., and T. J. McTighe, Pittsburg, Pa. Low-water signal for steam-boilers	201,588	Mar. 26	818	249	13	551
Blair, B. X., Huntingdon, Pa. Bag-fastening apparatus	201,737	Mar. 26	963	294 295	13	573
Blair, G. W., Pittsburg, Pa. Flaring and crimping glassware	201,589	Mar. 26	819	249	13	551
Blakesley, A. M., Rock Island, Ill. Domestic oven	201,736	Mar. 26	963	294	13	573
Boger, I., and W. H. King, assignors of one-third interest to L. Kosiol, Louisville, Ky. Machine for grinding, smoothing, and polishing glass	201,738	Mar. 26	964	295	13	573
Bogert, J. B., *et al.* (See Wygant, J. H., assignor.)						
Bogle, J. S., Springfield, Ohio. Grain-drill	201,643	Mar. 26	875	266 267	13	559
Boynton, E. S., New York, N. Y. Book-sewing	201,590	Mar. 26	820	250	13	551
Brady, J., Detroit, Mich. Car-coupling	201,644	Mar. 26	877	267	13	559
Breckenridge, O., Westfield, Mass. Pipe and rod vise	201,591	Mar. 26	821	250	13	551
Briant, C. C., Versailles, Ind. Churn	201,739	Mar. 26	966	295	13	573
Briggs, R. F. (See Brown, J. L., assignor.)						
Brock, M. (See Copeland, Woodward, and Brock.) (Reissue.)						
Brown, C. M., Chicago, Ill. Ore crusher and grinder	201,646	Mar. 26	879	267	13	560
Brown, G., Washington, Pa. Adjustable float for paddle-wheels	201,740	Mar. 26	966	295	13	573
Brown, J. L., assignor to R. F. Briggs, Amesbury, Mass. Spoke-dressing machine	201,592	Mar. 26	822	250 251	13	552
Brown, T. J., Fairfield, Texas. Horse-hoe and cultivator	201,645	Mar. 26	878	267	13	559
Bryan, J., Canton, Ill. Strup-gage	201,593	Mar. 26	824	251	12	552
Buck, M. M., St. Louis, Mo. Railway-lantern	201,741	Mar. 26	967	296	13	573
Bucklin, J. M., Knightsville, assignor of one-half interest to E. Bennett, Michigan City, Ind. Fastening for railway-rail joints	201,647	Mar. 26	880	268	13	560
Bulkeley, W., Ballston Spa, N. Y. Barrel-hoisting clamp	201,648	Mar. 26	881	268	13	560
Bullock Printing Press Company. (See Bullock, W.) (Reissue.)						
Bullock, W., deceased, R. Vose, administrator and assignor to Bullock Printing Press Company, Philadelphia, Pa. Machine for dumping paper. (Reissue)	8,145	Mar. 26	1112	336	13	593
Burnshow, J. H., Baltimore, Md. Machine for making wood rosettes	201,742	Mar. 26	967	296	13	574
Burroughs, C. C., Decatur, Ill. Corn-sheller	201,743	Mar. 26	968	296	13	574
Butler, O. E., Lamoille, Iowa. Fence-post	201,744	Mar. 26	969	296	13	574
Bailey, G. L., Portland, Me. Implement for capping and uncapping cartridges	201,903	Apr. 2	45	12	13	605
Baldwin, C. W., Brooklyn, N. Y. Hydraulic elevator	201,980	Apr. 2	116	34	13	616
Bartholomae, G., Chicago, Ill. Fermenting beer	201,982	Apr. 2	119	35	13	616
Barton, J. K., Worcester, Mass. Toy wheeled vehicle	201,981	Apr. 2	118	34	13	616
Bayliss, E., Massillon, Ohio. Wheel-barrow. (Reissue)	8,147	Apr. 2	228	67	13	632
Becker, R., Austin, Tex. Ironing-table	201,904	Apr. 2	46	12	13	605
Beebe, C. T., assignor to Withington & Cooley Manufacturing Company, Jackson, Mich. Scythe-fastening	201,905	Apr. 2	47	12	13	605
Behn, H., Sr., New York, N. Y. Time-indicating night-lamp	201,864	Apr. 2	6	2	13	599
Belue, J. F., assignor of one-half interest to J. A. Wiley, Iuka, Miss. Water-bed fence	201,983	Apr. 2	121	35	13	616

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Benton, T. P., Prairie du Sac, assignor of two-thirds interest to J. K. Mansfield, Eau Claire, and D. Mansfield, Baraboo, Wis. Millstone-dresser	201,865	Apr. 2	7	2	13	600
Berst, C., Warsaw, Ind. Weighing-scales	201,984	Apr. 2	122	35	13	617
Bickers, G. R., Farmville, Va. Pen-holder	201,985	Apr. 2	122	36	13	617
Bigelow, H. B., *et al.* (See Johnson, A. W., assignor.)						
Bishop, A. W., Berea, Ohio. Boiler-cleaner	201,986	Apr. 2	123	36	13	617
Blake, L. R., Boston, Mass. Boot and shoe sewing machine	201,987	Apr. 2	124	36, 37	13	617
Boehmler, T., and H. E. Olbrich, Cedar Falls, Iowa. Fire-tube boiler	201,982	Apr. 2	126	37	13	617
Bonnaffon, G. H., *et al.* (See Leclere, F., assignor.)						
Bradt, H., and N. Van Slyck, Schenectady, N. Y. Machine for painting broom-handles	201,866	Apr. 2	8	2, 3	13	600
Brady, P., Cambridgeport, Mass. Door-knob and shank attachment	201,906	Apr. 2	48	13	13	605
Breitschwerth, C., Syracuse, and J. B. Hughes, Auburn, N. Y. Machine for forming pottery-ware	201,907	Apr. 2	48	13	13	606
Bristol, C. B., assignor to W. and E. T. Fitch, New Haven, Conn. Harness-loop	201,989	Apr. 2	127	37	13	617
Brockett, A. E., Branford, assignor to H. L. Harrison, Guilford, Conn. Combined auger and reamer	201,908	Apr. 2	50	13	13	606
Brooks, S. N., administrator. (See Yale, L., Jr.) (Reissue.)						
Broussard, C. E., *et al.* (See Howard, W. H., assignor.)						
Buckley, G. E., *et al.* (See Leclere, F., assignor.)						
Burlingham, W., Baltimore, Md. Pump	201,909	Apr. 2	51	14	13	606
Burnett, M., Hyde Park, Mass. Napkin-supporter	201,863	Apr. 2	6	2	13	599
Byrne, R., Brooklyn, assignor of one-half interest to J. J. Marrin, New York, N. Y. Grinding-stone for paint-mills	201,990	Apr. 2	127	37	13	617
Babbitt, B. T., New York, N. Y. Rotary engine	202,134	Apr. 9	295	87	13	645
Babbitt, B. T., New York, N. Y. Centrifugal machine	202,135	Apr. 9	295	87	13	645
Badcock, H., St. Petersburg, Pa. Pipe-tongs	202,089	Apr. 9	248	73	13	639
Baker, B. C., Columbus, Ohio. Advertising-medium	202,214	Apr. 9	377	111	13	656
Baldwin, C. W., Brooklyn, N. Y. Valve-gear for hydraulic elevators	202,215	Apr. 9	378	111	13	656
Baldwin, E. (See Bate, W. A., assignor.)						
Ballard, G. M., *et al.* (See Schwerin, M., assignor.) (Reissue.)	202,090	Apr. 9	248	73	13	639
Barber, E., Jonesborough, Ga. Plow	202,216	Apr. 9	380	111	13	657
Barker, B. F., Curtisville, Mass. Machine for making paper-pulp from wood	202,136	Apr. 9	297	87	13	645
Barthel, A. E., Detroit, Mich. Combined gun-tool and whistle	202,137	Apr. 9	297	88	13	645
Barthel, A. E., Detroit, Mich. Bottle-stopper fastener	202,138	Apr. 9	298	88	13	645
Barthel, A. E., Detroit, Mich. Bottle-stopper	202,217	Apr. 9	383	112	13	657
Bate, W. A., assignor to E. Baldwin, Yonkers, N. Y. Hat	202,218	Apr. 9	383	112	13	657
Batty, J. W., assignor of two-thirds interest to G. H. Davison, Baltimore, Md. Lubricating bearing for millstones	202,139	Apr. 9	298	88	13	646
Bell, A. J., Kokomo, Ind. Lavatory	202,219	Apr. 9	385	112	13	657
Belt, W. L., assignor of one-half interest to D. Smith, Washington, D. C. Gas and water valve for sewerage connections	202,091	Apr. 9	249	73	13	639
Bennett, N. M. (See Witsil, G. L., assignor.)						
Bernard, F. H. (See James, J. P. R., assignor.)						
Bink, A., San Francisco, Cal. Folding carriage-door	202,220	Apr. 9	386	113	13	658
Birdsall, T. H. (See Dunn and Birdsall.)						
Bitters, J. (See Powe, M., assignor.)						
Blankenship, R. E., *et al.* (See Tucker, S. J., assignor.)						
Bodge, J. W., Canisteo, N. Y. Tire-upsetter	202,140	Apr. 9	300	88	13	646
Bowers, J. H., Cowan, Tenn. Umbrella-holder	202,141	Apr. 9	300	.....	13	646
Bowie, H., Houma, La. Medical compound	202,221	Apr. 9	387	113	13	658
Bowles, D., Miser's Station, Tenn. Flood-gate	202,142	Apr. 9	300	89	13	646
Bowman, J., Somerset, Ohio. Running-gear for vehicles	202,143	Apr. 9	301	89, 90	13	646
Brady, G. A., and F. F. Warner, Chicago, Ill. Type-writing machine	202,144	Apr. 9	303	90	13	646
Brainerd, G. S., St. Albans, Vt. Variable exhaust for locomotives	202,145	Apr. 9	304	90	13	646
Brainerd, G. S., St. Albans, Vt. Variable exhaust for locomotives	202,092	Apr. 9	250	.....	13	639
Breed, D. C., Buffalo, N. Y. Compound to increase the combustion of fuel	202,222	Apr. 9	388	113	13	658
Brigham, W. F., *et al.* (See Trowbridge, W. F., assignor.)						
Brigham, W. F., *et al.* (See Watkins, H. J., assignor.)						
Brown, C., Winterthur, Switzerland. Valve-gear for engines	202,146	Apr. 9	305	90, 91	13	646
Brown, J. S., Fisherville, N. H., and L. Kimball, Jr., East Richford, Vt. Wooden-tray machine	202,223	Apr. 9	389	113	13	658
Bryant, W. A., Notasulga, Ala. Apparatus for detaching horses from vehicles	202,224	Apr. 9	389	114	13	658
Burke, P. C., Philadelphia, Pa. Packing box and case for fruits	202,225	Apr. 9	390	114	13	658
Burnett, T., Springfield, Ohio. Vehicle-wheel	202,147	Apr. 9	306	91	13	647
Butler, G. L., Merrittsville, S. C. Seed-planter	202,226	Apr. 9	391	114	13	658
Buzzell, J. G., Lynn, Mass. Machine for shaving and whitening leather	202,227	Apr. 9	392	115	13	658
Byrne, C., Conneaut, Ohio. Locomotive head-light						
Babbitt, B. T. (See Cullen, T., assignor.)						
Babington, T. (See Rose, A. P., assignor.)						
Bailey, C. M., Baltimore, Md. Reversing propeller-blades	202,396	Apr. 16	581	171	13	689
Baker, W. H., Syracuse, N. Y. Breech-loading fire-arm	202,397	Apr. 16	582	171	13	689
Ball, G. S., assignor of one-half interest to E. J. Zahm, Lancaster, Pa. Device for holding coin and making change	202,507	Apr. 16	685	201	13	704
Ballard, G. M., *et al.* (See Jenkinson, G. B., assignor.) (Reissue.)						
Bancroft, J. W., and T. Walker, Philadelphia, Pa., assignors of part interest to S. H. Safford. Amalgamator. (Reissue)	8,175	Apr. 16	930	240	13	720
Banfield, J. D., Boston, Mass. Bosom-form	202,398	Apr. 16	582	171	13	689
Banks, G. L. (See Banks, W. C. and G. L.)						
Banks, W. C. and G. L., Comer's Mills, Col. Calf-weaner	202,399	Apr. 16	583	171	13	689
Barnes, H., Orange, Mass. Friction-clutch	202,400	Apr. 16	584	172	13	689
Barnhart, L., *et al.* (See Forlow, J., assignor.)						
Bartholomae, G., Chicago, Ill. Wet-grain elevator	202,401	Apr. 16	587	172	13	690
Bates, W. A., Boston, Mass. Setting for gems	202,402	Apr. 16	588	173	13	690
Batt, J., Wilkesbarre, Pa. Vehicle-spring	202,506	Apr. 16	684	201	13	704
Beam, A. (See Thornton and Beam.)						
Beebe, E. W., Evansville, Wis. Gate	202,508	Apr. 16	686	201 202	13	704
Bell, H. and J., and J. J. Coleman, Glasgow, Scotland. Refrigerating apparatus	202,509	Apr. 16	687	202	13	705
Bell, J. (See Bell and Coleman.)						
Bell, M. G., Glen Gardner, N. J. Harvester cutter-bar	202,510	Apr. 16	689	202	13	705
Bendix, G. E., Brooklyn, assignor to S. P. Stoddard and W. Lipe, New York, N. Y. Lock	202,511	Apr. 16	689	202	13	705
Berg, H., Meinhardt, near Hard-on-the-Selg, Germany. Pump	202,512	Apr. 16	691	203	13	705
Berlin, G. W. (See Palmer, J. W., assignor.)						
Berry, N. H., *et al.* (See McKee, J., assignor.)						

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Best, F. W. E., *et al.* (See Thomas, D., assignor.)						
Bickford, H. M., *et al.* (See McKee, J., assignor.)						
Bidwell, F. A., Norwich, Conn. Bolt for patching boilers	202,403	Apr. 16	589	173	13	690
Black, S., Union Grove, Iowa. Door-latch	202,404	Apr. 16	589	173	13	690
Boettcher, J. G. L., Brooklyn, N. Y. Fish-guard for water-pipes	202,513	Apr. 16	692	203	13	705
Bostock, E., New York, and L. T. Simon, Williamsburg, Brooklyn, N. Y. Advertising apparatus	202,325	Apr. 16	513	150	13	679
Boyle, J. E., Brooklyn, assignor, by mesne assignments, to H. W. Collender, New York, N. Y. Billiard-table cushion. (Reissue)	8,172	Apr. 16	825	239	13	719
Brackett, J. B., and L. M. Merrill, Boston, Mass. Cotton-gin	202,326	Apr. 16	514	151	13	680
Brenner, M., Baltimore, Md. Sheet-metal can	202,514	Apr. 16	693	203	13	705
Brines, W. H., assignor of two-thirds interest to Brown and Owen, Philadelphia, Pa. Metallic railing	202,405	Apr. 16	590	173	13	690
Brooks, E. J. (See Brooks, F. W., assignor.)						
Brooks, F. W., assignor to E. J. Brooks, New York, N. Y. Blank for bank-checks	202,515	Apr. 16	694	203 / 204	13	705
Brown and Owen. (See Brines, W. H., assignor.)						
Brownell, G. L., East Haddam, Conn. Machine for making cordage	202,406	Apr. 16	591	174	13	690
Brunson, S., Benton Harbor, assignor of one-half interest to J. O. Antisdale, Muskegon county, Mich. Nut-lock	202,407	Apr. 16	592	174	13	690
Burnitz, C., Chicago, Ill. Convertible chair	202,327	Apr. 16	515	151	13	680
Buscher, J. H., Ottawa, Ohio. Farm-gate and hanger	202,328	Apr. 16	516	151	13	680
Butler, F. G., Bellows Falls, Vt. Butter-worker	202,516	Apr. 16	696	204	13	705
Bywaters, J. K., *et al.* (See Morris, J. P., assignor.)						
Babbitt, B. T., New York, N. Y. Steam-boiler	202,689	Apr. 23	916	262	12	738
Bailey, G. O., J. A. Emmert, and A. L. Capps, Minier, Ill. Nut-lock	202,690	Apr. 23	917	262	13	739
Baker, A. J., Edinburg, and J. W. Simonton, Taylorsville, Ind. Device for detecting counterfeit coin	202,691	Apr. 23	918	262	13	739
Balcom, L. (See Driscoll and Balcom.)						
Barkalow, W. C., New London, Ind. Portable stove-back	202,777	Apr. 23	1004	289	13	750
Baron, A. L., E. F. Cash, and D. Rankin, Bellaire, Ohio. Lantern	202,779	Apr. 23	1005	289	13	750
Baron, G. A., Gouverneur, N. Y. Cream-pump	202,778	Apr. 23	1004	289	13	750
Barr, J. H., Redmon, Ill. Harrow	202,780	Apr. 23	1008	289	13	751
Batchelder, A. G., assignor, by mesne assignments, to J. H. Haworth and W. S. Watson, Lowell, Mass. Machine and process for making paper-tubes. (Reissue)	8,196	Apr. 23	1162	334	13	769
Beach, J. C. (See Allen, R. N., assignor.)						
Beardsley, J. G., Waupun, Wis. Washing-machine	202,781	Apr. 23	1009	290	13	751
Bell, G. C., Brooklyn, assignor to W. Van Tine, New York, N. Y. Educational and advertising card	202,692	Apr. 23	919	263	13	739
Bement & Sons, R. (See Jarvis, S. E., assignor.)						
Blancke, J. (See Stenberg, O., assignor.)						
Bliss, W. H., Norwich, Conn. Fire-arm	202,627	Apr. 23	848	244	13	731
Boekel, W., Philadelphia, Pa. Lamp	202,693	Apr. 23	920	263	13	739
Bogart, A. L., assignor to A. L. Bogart, Jamaica, N. Y. Electric gas-lighting burner	202,694	Apr. 23	921	263	13	749
Boland, C. M., New York, N. Y. Glove-sewing machine	202,695	Apr. 23	922	263 / 264	13	739
Bordewich, L., Chicago, Ill. Stilts	202,782	Apr. 23	1011	290	13	751
Borgfeldt, N. H., New York, N. Y. Tobacco-stem crusher	202,696	Apr. 23	924	264	13	739
Boughton, C. F. (See Collins and Boughton.)						
Boyle, C. C. (See Smith and Boyle.)						
Brackett, G. A. (See Olmsted, Travis, and Chute, assignors.)						
Brackett, G. A., Minneapolis, Minn. Grain-band	202,697	Apr. 23	925	264	13	739
Bright, R. A., Jr., Providence, R. I. Cigar-machine	202,698	Apr. 23	849	244	13	732
Brightman, J. W., Cleveland, Ohio. Pulp-grinding machine	202,698	Apr. 23	926	264 / 265	13	740
Brown, F., Haverhill, Mass. Valve	202,785	Apr. 23	1013	291	13	751
Brown, H., Decatur, Mich. Fruit-drier	202,699	Apr. 23	927	265	13	740
Brown, N. H., Detroit, Mich. Roof-battening	202,784	Apr. 23	1012	290	13	751
Brown, R. A., Burke Centre, N. Y. Tread-mill	202,783	Apr. 23	1011	290	13	751
Buckingham, E. L. (See Dillon, J. W., assignor.)						
Buell, J. S. (See Phelps, C. H., assignor.)						
Bullock, T. H., Cleveland, Ohio. Bellows' nozzle	202,700	Apr. 23	928	265	13	740
Burnham, N., Amboy, Ill. Staple-hook	202,786	Apr. 23	1014	291	13	751
Butcher, H. C. (See Van Haagen, A., assignor.)						
Butcher, J., assignor of two-thirds interest to W. Klauser and H. C. Dobson, New York, N. Y. Compartment-vessel	202,701	Apr. 23	929	265	13	740
Byrne, J., assigner to himself, S. M. Waldron, and J. McGrath, Boston, Mass. Valve for barrels, kegs, &c.	202,629	Apr. 23	849	245	13	732
Bailey, L., Hartford, Conn. Carpenter's plane	202,918	Apr. 30	1171	337	13	775
Baker, L. J., Boston, Mass., assignor to J. O. Wetherbee. Picture-rod molding. (Reissue)	8,208	Apr. 30	1492	437	13	816
Barcellos, D., Williamsburg, Brooklyn, N. Y. Thread-controller for sewing-machines	203,102	Apr. 30	1343	390 / 391	13	798
Bates, E. P., assignor to E. W. Parmelee, Syracuse, N. Y. Apparatus for preserving food	202,979	Apr. 30	1229	355	13	783
Baughn, R. F., and W. M. Harrison, Lexington, Miss. Lint-room	203,103	Apr. 30	1344	391	13	798
Beach, H. B., West Meriden, Conn. Ice-pitcher	202,980	Apr. 30	1230	355	13	783
Beasley, M. E., Philadelphia, Pa. Foot-warmer	202,919	Apr. 30	1172	337	13	775
Beggs, E. (See Pennington and Beggs.)						
Benedict, W. G. (See Miller and Benedict.)						
Bennett, E. S., Denver, Colo. Apparatus for separating sand from water	203,104	Apr. 30	1345	391	13	798
Bernstein, A., Friedenau, Prussia. Liquid-measure	203,105	Apr. 30	1346	391	13	798
Berry, H., West Meriden, Conn. Jewel-casket	203,106	Apr. 30	1347	392	13	798
Bevins, S. H., New York, N. Y. Boiler-furnace	202,981	Apr. 30	1231	355	13	783
Bigelow Carpet Company. (See Buzzell, J. P., assignor.)						
Blackstone, B., Warren, Ill. Horse-tail tie	203,107	Apr. 30	1348	392	13	799
Bliss, C. C., Norwich, Conn. Stop-cock or valve	202,982	Apr. 30	1232	356	13	783
Bowen, O. (See Howe, M. A., assignor.)						
Bowman, R. A. (See Clark and Bowman.)						
Bowman, S. (See Clark and Bowman.)						
Boyers, J. P., Finney's Grove, Mo. Animal-trap	203,109	Apr. 30	1350	393	13	799
Boyle, J. E., assignor to H. W. Collender, New York, N. Y. Billiard-table	203,108	Apr. 30	1349	392	13	799
Brach, I., Philadelphia, Pa. Water-purifier	203,110	Apr. 30	1351	393	13	799
Brady, J. (See Martin, W. J., assignor.)						
Bresnan, P., Astoria, assignor to R. F. Cole & Co., New York, N. Y. Galley	202,983	Apr. 30	1232	356	13	783

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Briggs, R. H., and J. H. Dougherty, Whistler, Ala. Machine for making freight-car-truck sides	202,984	Apr. 30	1233	356	13	783
Brill, G. M. (See Brill, J. G., and G. M.)						
Brill, G. M., Philadelphia, Pa. Car-truck	202,922	Apr. 30	1174	338	13	775
Brill, J. G. and G. M., Philadelphia, Pa. Car-shutter	202,920	Apr. 30	1172	338	13	775
Brill, J. G. and G. M., Philadelphia, Pa. Car-door	202,921	Apr. 30	1173	338	13	775
Broadbooks, P., Batavia, N. Y. Mechanical movement	203,111	Apr. 30	1352	393	13	799
Broadbooks, P., Batavia, N. Y. Mechanical movement	203,112	Apr. 30	1353	394	13	799
Brooks, B. A., New York, N. Y. Type-writing machine	202,923	Apr. 30	1175	338 / 339	13	775
Brown, F. B., Boston, Mass. Clasp	202,924	Apr. 30	1177	339	13	776
Brown, F. B., Boston, Mass. Corset-fastening	203,113	Apr. 30	1354	394	13	799
Brown, T. H., Chicago, Ill. Cushion for sulkies	202,925	Apr. 30	1177	339	13	776
Brueck, G. (See Brueck, O., assignor.) (Reissue.)						
Brueck, O., Union Hill, N. J., assignor to G. Brueck, New York, N. Y. Fan. (Reissue)	8,207	Apr. 30	1491	436	13	816
Bullock, J., Cohoes, N. Y., assignor, by mesne assignments, to J. Bullock, trustee. Machine for winding bobbins	203,114	Apr. 30	1354	394	13	799
Burckard, A., Crisfield, Md., assignor of one-half interest to I. H. Coulborne. Barrel for packing fruit	203,115	Apr. 30	1356	395	13	800
Burke, M. T., Portsmouth, Ohio. Saddle-stirrup	202,926	Apr. 30	1178	339	13	776
Burns, C. M., Hamler, Ohio. Corn plow and marker	202,985	Apr. 30	1234	356	13	783
Burns, W. B., Syracuse, N. Y. Trace-carrier	202,986	Apr. 30	1235	357	13	784
Burt, J. W., Jr., Garner's Station, Miss. Cotton-gin	202,927	Apr. 30	1178	340	13	776
Butterworth, E. B., Ottawa, Ontario, Canada. Heating apparatus	202,928	Apr. 30	1179	340	13	776
Buzzell, J. P., assignor to Bigelow Carpet Company, Clinton, Mass. Bobbin for loom-shuttles	202,929	Apr. 30	1180	340	13	776
Baker, J. F., *et al.* (See Kenworthy and McGregor, assignors.)						
Banfield, J. D., Boston, Mass. Corset-busk	203,400	May 7	171	49	13	844
Barker, V., Bridgeton, Me. Machine for filling cans	203,313	May 7	84	25	13	831
Barrett, R. (See Codd, H., assignor.)						
Bate, J. J., Brooklyn, assignor to Bate Refrigerating Company, New York, N. Y. Refrigerator-car	203,236	May 7	1	1	13	821
Bate Refrigerating Company. (See Bate, J. J., assignor.)						
Battle, C., Warrenton, Ga. Bale-tie	203,401	May 7	172	50	13	844
Bazin, J. A. (See Wheeler and Bazin.) (Reissue.)						
Beasley, W. F. (See Lalor, T., assignor.) (Reissue.)						
Belden, H. S., Canton, Ohio. Street-lamp	203,237	May 7	2	1	13	821
Bellamy, C. L., Arlington, N. J. Hand-drill	203,402	May 7	173	50	13	844
Benedict & Burnham Manufacturing Company. (See Locke, E. A., assignor.)						
Bentley, W. and R., Newark, N. J. Champagne-tap	203,314	May 7	86	25	13	831
Bentley, R. (See Bentley, W. and R.)						
Biekel, L., Akron, Ohio. Corn-cutting implement	203,315	May 7	87	25	13	832
Bishop, J. H. (See Pitts, W. C., assignor.)						
Bishop, J. S., Fillmore, N. Y. Oil-well-drilling apparatus	203,403	May 7	173	50	13	844
Bissmann, C., New York, N. Y. Spring shade-roller	203,404	May 7	174	50	13	844
Boekel, W., Philadelphia, Pa. Cap for battery-cells	203,405	May 7	175	51	13	844
Bogart, A. L., New York, N. Y. Electric gas-lighting burner	203,406	May 7	176	51	13	845
Bonfoey, C. P., assignor to E. G. Bonfoey, Middletown, Conn. Snap-hook	203,238	May 7	3	1	13	821
Bonfoey, E. G. (See Bonfoey, C. P., assignor.)						
Borst, G., Rochester, N. Y. Bung	203,316	May 7	87	25	13	832
Bothner, G., New York, N. Y. Piano-forte action	203,407	May 7	177	51	13	845
Bovey, G. C., Columbus, Ohio, assignor to A. Woodward, Shelburne Falls, Mass. Wall-protector	203,241	May 7	5	2	13	821
Bowman, E., *et al.* (See Maranville, G., assignor.)						
Braslin, J., Fair Haven, Conn. Machine for making flower-pots	203,408	May 7	178	51	13	845
Breed, C., Farwell, Mich. Sand-band for vehicle-wheels	203,239	May 7	3	1	13	821
Brooks, F. W., New York, N. Y. Postal card	203,409	May 7	179	52	13	845
Broughton, J., Hope Valley, R. I. Fire-escape	203,240	May 7	4	2	13	821
Browell, J., San Francisco, Cal. Heating and ventilating chimney	203,317	May 7	88	26	13	832
Brown, J., assignor to D. Stewart, Elgin county, Canada. Thrashing-machine	203,318	May 7	90	26	13	832
Brunor, J. J., Washington, D. C. Book	203,410	May 7	181	52	13	845
Brush, C. F., Cleveland, Ohio. Electric lamp	203,411	May 7	181	52, 53	13	845
Brush, C. F., Cleveland, Ohio. Magneto-electric machine	203,412	May 7	184	53	13	845
Brush, C. F., Cleveland, Ohio. Armature for dynamo-electric machines	203,413	May 7	185	54	13	846
Buck, C. H., Jr. (See Clement, B. F., assignor.)						
Buckley, C., and L. L. Sawyer, Meriden, Conn. Curtain-roller and bracket	203,414	May 7	186	54	13	846
Budd, H. R. and W. N., Bunker Hill, Ill. Hog-cholera compound	203,319	May 7	91	.....	13	832
Budd, W. N. (See Budd, H. R. and W. N.)						
Burbank, A. N. (See Fisher, A. H., assignor.)						
Burrell, D. H., *et al.* (See Dougherty, J. B., assignor.)						
Burrell, Ives & Co., *et al.* (See Dougherty, J. B., assignor.)						
Burt, G. E., and E. A. Hildreth, Harvard, Mass. Horse-power	203,320	May 7	91	26	13	832
Buzzard, B., and A. P. Snyder, assignors to themselves and S. Leaman, Ashland, Ohio. Bee-hive	203,321	May 7	93	26	13	832
Babcock, N. (See Cottrell, C. B., assignor.)						
Bacon, S. T., Boston, Mass. Ballot-box	203,525	May 14	320	91	13	873
Bailey, H. C., Boston, Mass. Book-clamp	203,576	May 14	376	107	13	880
Baker, L. J., Boston, Mass. Picture-rod molding	203,526	May 14	323	91	13	873
Baker, W. S. G., Baltimore, Md. Car-axle and loose wheel	203,577	May 14	377	107	13	880
Baldwin, J. W., Fitchburg, Mass. Ash-sifter	203,697	May 14	497	141	13	895
Banner, G. E., Newark, N. J., assignor of one-half interest to A. G. Fales, Hartford, Conn. Steam-engine boiler	203,698	May 14	498	141	13	895
Banner, G. E., Newark, N. J., assignor of one-half interest to A. G. Fales, Hartford, Conn. Governor	203,699	May 14	499	141	13	895
Barber, D. D., *et al.* (See Wells, I., assignor.)						
Barker, A. (See Hyde and Barker.)						
Barnes, W. F., and J. Rockford, Ill. Rotary cutter	203,578	May 14	378	107	13	880
Barnes, J. (See Barnes, W. F. and J.)						
Barr, S. (See Heaton, L. E., assignor.)						
Battey, D. C., Marion Centre, Kan. Carburetor	203,579	May 14	380	107	13	880
Beach, G. H. (See Colborne, L. H., assignor.)						
Bennett, T. L., East Templeton, Mass. Fire-escape	203,527	May 14	324	91	13	873
Bersch, J., Baden, Austria, assignor of one-half interest to H. Gath, New York, N. Y. Ventilating-bung	203,580	May 14	381	108	13	880

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Betts, S. N., Hillsdale, assignor of one-half interest to W. S. Schermerhorn, Reading, Mich. Stove	203,528	May 14	325	92	13	873
Bingham, E. W. (See Surls, G. C., assignor.) (Reissue.)						
Birch, J. S., Orange, N. J. Wrench	203,581	May 14	381	108	13	881
Birge, J. B., D. J. Woodard, and G. D. Rowell, Appleton, Wis. Seeding-machine	203,529	May 14	326	92	13	873
Boda, W. J., Columbus, Ohio. Frame for supporting wire mattresses	203,700	May 14	500	142	13	895
Borchardt, H., Philadelphia, Pa. Child's carriage	203,582	May 14	382	108	13	881
Bourke, W. (See Wellington and Bourke.)						
Boynton, E. S., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Book-sewing machine	203,530	May 14	327	92–4	13	874
Bradt, H., assignor of one-half interest to N. Van Slyck, Schenectady, N. Y. Machine for varnishing broom-handles	203,583	May 14	383	108	13	881
Briggs, C. A., Quaker Street, N. Y. Carpet tacker and stretcher	203,531	May 14	331	94	13	874
Bristol, L. J., New Haven, Conn. Snap-hook	203,584	May 14	384	109	13	881
Brown, D. F., Sr., assignor of one-half interest to P. Engle, Newton, Iowa. Combined vise, wrench, and pinchers	203,701	May 14	501	142	13	895
Brown, H. M. (See McGill, W. C., assignor.)						
Brown, J. S., West Jefferson, Ohio. Clothes-pounder	203,532	May 14	332	94	13	874
Brown, L., Angola, N. Y. Harrow	203,585	May 14	385	109	13	881
Brown, R. C., Portland, Oreg. Construction of hulls of steam-vessels	203,586	May 14	386	109	13	881
Bryant, F. G., Seattle, Wash. Ter. Fire-escape	203,587	May 14	387	109	13	881
Budge, M., Middlebury, Conn. Dumping-wagon	203,588	May 14	387	110	13	881
Buell, M., Buffalo, assignor of one-half interest to W. B. Moore, New York, N. Y. Apparatus for carbureting air and gas	203,702	May 14	501	142	13	896
Buickens, F. (See Grinnell and Buickens.)						
Burke, W., Syracuse, N. Y. Adjustable draft-bar for sleighs	203,703	May 14	502	142	13	896
Burkhardt, G., Homer, Ill. Washing-machine	203,704	May 14	503	143	13	896
Buswell, C., Etna, Me. Harrow	203,705	May 14	504	143	13	896
Byrne, R. H., and E. D. Knight, Camden, N. J. Tap for barrels	203,706	May 14	505	143	13	896
Babbitt, B. T., New York, N. Y. Steam-boiler	203,986	May 21	812	233	13	943
Babbitt, B. T., New York, N. Y. Steam-boiler	203,987	May 21	814	233	13	943
Bagley, C. O., Oakland, Cal. One-washer	203,872	May 21	688	196	13	926
Bailey, C. A., Cobalt, Conn. Educational appliance	203,988	May 21	815	233	13	943
Bailey, L. S. (See Standish and Bailey.)						
Baird, J., New York, N. Y. Bearing for screw-propellers	203,875	May 21	691	197, 198	13	927
Baird, J., New York, N. Y. Steam-engine	203 989	May 21	816	234	3	943
Baker, J. W., Decatur, Ill. Attachment to rubber overshoes	203,813	May 21	633	178	13	919
Bangs, A. F. (See Bangs, E. D., assignor.)						
Bangs, E. D., assignor to A. F. Bangs, Galesburg, Ill. Condensing-vessel	203,873	May 21	689	196	13	927
Barber, H. R., Lambertville, N. J. Rubber belting	203,990	May 21	818	235	13	943
Bardell, A., Brooklyn, N. Y. Fire-shovel	203,991	May 21	819	235	13	943
Barlow, C., assignor to himself, T. B. Terrill, and C. W. Taylor, Cookshire, Quebec, Canada. Wash-bench	203,877	May 21	694	198	13	927
Barnes, A. C., Jr., assignor of one-half interest to A. C. Barnes, Philadelphia, Pa. Stencil-plate	203,992	May 21	820	235	13	943
Barnes, J., Accrington, England. Piston water-meter	203,876	May 21	693	198	13	927
Barnes, T., Harwich township, Kent county, Ontario, assignor to R. Shoff, London, Canada. Grain-separator	203,874	May 21	690	196	13	927
Barnum, I. W. (See Rose, I. M., assignor.) (Reissue.)						
Beal, J. S., Poland, Me. Pump	203,814	May 21	633	178	13	919
Beckwith, J. T., Cameron Mills, N. Y. Device for leveling and tramming millstones while at work	203,878	May 21	694	199	13	927
Bertram, L. B., New Wandsworth, England. Writing-pen. (Reissue)	8,242	May 21	964	275	13	961
Bevan, S., assignor to H. Disston & Sons, Philadelphia, Pa. Saw-grinding machine	203,993	May 21	820	235	13	943
Blackman, E., Brooklyn, N. Y. Oil stove or lamp	203,994	May 21	822	236	13	944
Bliss, G. N., Boston, Mass. Drying-machine	203,879	May 21	695	199	13	927
Bloesom, J. R., Brooklyn, N. Y. Baling-press	203,880	May 21	696	199	13	927
Blumel, J., San Francisco, Cal. Fare-register	203,881	May 21	697	199	13	928
Boardman, T., Charlottetown, Prince Edward Island, Canada. Machine for inserting rivets	203,882	May 21	698	200	13	928
Bostwick, J. A., *et al.* (See Brock, W. H., assignor.)						
Boyle, J. H., Delhi Mills, Mich. Vegetable-cutter	203,883	May 21	699	200	13	928
Bradley, F. B. (See Delkeescamp and Bradley.)						
Bradley, W. H., Allegheny, Pa. Wool-washing machine	203,995	May 21	823	236	13	944
Bray, M., Newton, Mass. Rivet	203,815	May 21	634	178	13	919
Brayman, L., Gilbert Station, Ill. Wind-engine	203,884	May 21	700	200	13	928
Brock, W. H., assignor to A. J. Pouch, Brooklyn, and J. A. Bostwick, New York, N. Y. Man-hole cover for petroleum-tanks	203,816	May 21	635	179	13	919
Brock, W. H., assignor to A. J. Pouch, Brooklyn, and J. A. Bostwick, New York, N. Y. Man-hole cover for oil-tanks	203,817	May 21	636	179	13	920
Brooks, E. J., New York, N. Y. Seal-lock	203,996	May 21	824	236	13	944
Brown, J. W., Galesburg, Ill. Corn-planter	203,997	May 21	826	236, 237	13	944
Buck, D. A. A., Worcester, Mass. Watch-plate	203,998	May 21	827	237	13	944
Buck, D. A. A., Worcester, Mass. Watch-escapement	203,999	May 21	828	237	13	944
Buck, D. A. A., Worcester, assignor to himself and E. A. Locke, Boston, Mass. Watch	204,000	May 21	830	237, 238	13	944
Buckley, C., and L. L. Sawyer, Meriden, Conn. Curtain-roller and bracket	204,001	May 21	834	238	13	945
Burrell, D. H. (See Smith, Freeman, and Burrell.)						
Busell Edge Trimmer Company. (See Busell, J. H., assignor.) (Reissue.)						
Busell, J. H., Boston, Mass., assignor, by mesne assignments, to Busell Edge Trimmer Company. Heel and sole trimming machine. (Reissue)	8,239	May 21	960	274	13	961
Button, A., assignor of two-thirds interest to J. Ames and M. J. Liddell, East Saginaw, Mich. Scoop	203,885	May 21	701	200	13	928
Baker, A. S., Evansville, Wis. Pump	204,280	May 28	1142	327	13	988
Banks, D. E., and T. M. Merck, Gainsville, Ga. Hernial truss	204,281	May 28	1144	327	13	988
Banner, G. E., Newark, N. J., assignor of one-half interest to A. G. Fales, Hartford, Conn. Steam-engine cylinder	204,282	May 28	1145	327	13	988
Banner, G. E., Newark, N. J., assignor of one-half interest to A. G. Fales, Hartford, Conn. Steam-engine standard and cylinder	204,283	May 28	1146	328	13	988
Barrett, W. W., Wayne, and A. Smith, Barrington, N. Y. Churn	204,124	May 28	981	279	13	967
Barrows, C. H., Willimantic, Conn. Mustache-guard	204,125	May 28	982	279	13	967
Bartram, A. R., Redding, assignor to J. Ives, Mount Carmel, Conn. Carriage-pole. (Reissue)	8,253	May 28	1295	366	13	1006
Batchelder, W. W., New York, N. Y. Scintillators for lighting tinder-cord	204,284	May 28	1147	328	13	988

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Batchelder, W. W., New York, N. Y. Scintillators for lighting gas	204,285	May 28	1148	328	13	988
Batchelder, W. W., New York, N. Y. Scintillating attachment for gas-burners	204,286	May 28	1150	329	13	989
Bayles, A. G., and C. A. Hunter, New York, N. Y. Globe-holder	204,184	May 28	1052	298	13	976
Baylies, F. (See Ford, Slade, and Baylies.)						
Bennet, L., Amsterdam, N. Y. Apparatus for warming and ventilating buildings	204,126	May 28	982	280	13	967
Bettis, T. C., and J. W. Heath, assignors to Randle, Heath & Livermore, Memphis, Tenn. Horse-power	204,185	May 28	1052	298, 299	13	976
Bichsel, G., Sedalia, Mo. Watch-regulator	204,287	May 28	1151	329	13	989
Binder, H., St. Louis, Mo. Barrel-washer	204,288	May 28	1152	329	13	989
Blackman, H. P., *et al.* (See Hand and Caulier, assignors.)						
Blair, R. (See Moore, T. M., assignor.)						
Blanck, L., New York, N. Y. Safety-brake for railway-trains	204,186	May 28	1053	299	13	976
Blodget, L. (See Harkins, C., assignor.)						
Bloom, E. (See O Sullivan and Bloom.)						
Bloom, E., Jackson, Miss. Mosquito-net frame	204,187	May 28	1056	300	13	976
Bloomingdale, J. Y. (See Wynkoop and Bloomingdale.)						
Blount, A. C., Pascagoula, Miss. Gas-meter	204,188	May 28	1056	300	13	976
Borger, P. (See Gasser, L., assignor.)						
Bowdoin, F. A., Lewiston, Me. Pea-nut warmer	204,190	May 28	1059	301	13	977
Bowen, C. P., Silver City, Idaho Ter. Machine for pitting and cutting fruit	204,189	May 28	1058	300, 301	13	977
Bowman, S. Z. (See Martin, P., assignor.)						
Braam, M. (See Stallman, G. H., assignor.)						
Brady, J. J., Long Island City, N. Y. Step-ladder	204,191	May 28	1060	301	13	977
Brady, J. W., Catonsville, Md. Apparatus for raising cream	204,127	May 28	983	280	13	967
Branning, J., Blooming Prairie, Minn. Draft-equalizer	204,289	May 28	1153	329	13	989
Brett, J., and B. Perry, Albion, Cal. Saw-mill head-block	204,192	May 28	1060	301, 302	13	977
Brettell, A. K., St. Louis, Mo. Ironing apparatus	204,128	May 28	984	280	13	968
Brooks, S. R., East Marion, N. Y. Clew-line leader	204,290	May 28	1154	330	13	989
Broscmann, E., and M. Rosenberger, New York, N. Y., and M. Rosenstock, Hoboken, N. J. Shuttle-driving mechanism for sewing-machines	204,291	May 28	1155	330	13	989
Brown, B. F. (See Meech, H. B., assignor.) (Reissue.)						
Burdick, N., and J. Easterly, Albany, N. Y. Molding dovetails in metal castings	204,129	May 28	985	280	13	968
Burr, E. G. (See Rayner and Burr.)						
Burroughs, C. (See Hyatt and Burroughs.)						
Butler, J. S., Rock Island, Ill. Lamp	204,193	May 28	1062	302	13	977
Byrne, J. H., Detroit, Mich. Shipping-case	204,194	May 28	1063	302	13	978
Bachtel, H. J., McDonaldsville, Ohio. Sausage-stuffer	204,521	June 4	94	32	13	1026
Backus, Q. S., Holyoke, Mass. Bit-stock	204,416	June 4	3	1	13	1013
Bailey, M. B. (See Alkerhicim, H., assignor.)						
Baldwin, E., Jr., New York, N. Y. Ash-sifter	204,474	June 4	56	18	13	1020
Barrows, W. E., Hartford, Conn., assignor to H. N. Daggett, Attleborough, Mass. Stay and clasp for narrow fabrics	204,523	June 4	96	32	13	1026
Bates, A. N., Dallas county, Tex. Machine for oiling slides and guides	204,524	June 4	97	32	13	1026
Beard, G. N., St. Louis, Mo. Bale-tie	204,525	June 4	97	33	13	1026
Beecher, W. F., assignor of two-thirds interest to P. Alleman and A. C. Gatchell, Cleveland, Ohio. Locomotive smoke-stack	204,522	June 4	95	32	13	1026
Beeson, T. R., Wilmington, Del. Roofing-tongs	204,526	June 4	97	33	13	1026
Bender, F. W. (See Lorenze and Bender.)						
Besler, J., Pittsburg, Pa. Manufacture of picks, &c	204,417	June 4	4	1, 2	13	1013
Bingham, H. W., *et al.* (See Cosgrove, W. N., assignor.)						
Blanchard, G. A., Concord, N. H. Churn	204,418	June 4	5	2	13	1013
Bookwalter, J. W. (See Trump, F. assignor.)						
Bonrne, E., Pittsburg, Pa. Riveting device	204,476	June 4	57	18, 19	13	1020
Bowen, W. T., Ridgeway, Iowa. Stove-shelf and heating-drum	204,475	June 4	57	18	13	1020
Brady, J., Brooklyn, N. Y. Apparatus for bending tubes	204,527	June 4	98	33	13	1026
Bridgeford & Co. (See Sennett, A. J., assignor.)						
Broad, C. H., Rochester, assignor to C. T. Alverson, Pittsford, N. Y. Water-proof blacking	204,528	June 4	99	.....	13	1026
Brock, W. H., Brooklyn, N. Y. Machine for filling cans, &c., with liquids	204,477	June 4	58	19, 20	13	1021
Bronson, A. E., *et al.* (See Rochl, C., assignor.)						
Brooke, W. E., Trenton, N. J. Riveting-machine for tubing	204,419	June 4	6	2	13	1013
Brown, D. F., assignor of one-half interest to R. Lamb, Newton, Iowa. Potato-harvester	204,531	June 4	102	34, 35	13	1027
Brown, D. S. (See Lyon, J. C., assignor.)						
Brown, J. W., Lockland, Ohio. Carriage-dash feet	204,530	June 4	101	34	13	1027
Brown, W., St. Louis, Mo. Stave-jointing machine	204,529	June 4	100	34	13	1026
Budington, H. J. (See Budington, W. J., assignor.)						
Budington, W. J., Hudson, assignor to H. J. Budington, Kingston, N. Y. Manufacture of hydraulic cement	204,532	June 4	102	.....	13	1027
Buehrig, C. (See Buehrig, F. and C.)						
Buehrig, F. and C., Fort Madison, Iowa. Lamp-burner	204,478	June 4	60	20	13	1021
Burgess, A., Cambridge, Mass. Feed mechanism for sewing-machines	204,533	June 4	103	35	13	1027
Burke, M. T., Portsmouth, Ohio. Stirrup	204,420	June 4	6	3	13	1013
Burns, P. H., Indiana, Pa. Chill for hubs	204,479	June 4	61	20	13	1021
Bye, M. (See Johnson and Bye.)						
Babbitt, B. T. (See Pollock, J. L., assignor.)						
Babbitt, B. T., New York, N. Y. Ingot-mold	204,783	June 11	379	113	13	1067
Babbitt, S. W., assignor to Wilcox Silver Plate Company, West Meriden, Conn. Covered dish	204,784	June 11	380	113	13	1067
Baker, H. M., *et al.* (See Hunter, G. W., assignor.) (Reissue.)						
Baldwin, J. F., Chelsea, Mass. Mangle	204,701	June 11	284	88, 89	13	1056
Ballou, C. C., Albany, N. Y. Manufacture of boots and shoes	204,785	June 11	381	113	13	1067
Ballou, C. C., Albany, N. Y. Manufacture of boots and shoes	204,786	June 11	383	114	13	1067
Bancroft, J. (See Vernee, C. B., assignor.)						
Banister, G., Columbus, Ohio. Tempering steel	204,788	June 11	385	.....	13	1067
Bansen, W., Bodenbach-on-the-Elbe, Austria. Manufacture of wire	204,787	June 11	383	114	13	1067
Barclay, H., Elizabeth, N. J. Clamp for sewing-machine needles	204,789	June 11	385	114	13	1067
Barritt, N. S., Sangertics, N. Y. Inserting bolts in boiler-plates	204,650	June 11	234	73	13	1049
Baxter, W. W., Hersman, Ill. Waterproofing composition	204,702	June 11	287	.....	13	1056
Bean, R. O., Macedonia, Miss. Seed-planter	204,703	June 11	287	89	13	1056
Beard, J., Kent, Iowa. Steam-plow	204,790	June 11	386	114	13	1068
Bennett, W. A. (See Olin, Zwiebel, and Bennett.)						
Beukler, W., New Haven, Conn. Plaiting-machine	204,704	June 11	288	89, 90	13	1056
Bingham, E. W., Philadelphia, Pa. Brick-kiln	204,651	June 11	234	74	13	1049

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Blagburn, C. (See Menzies and Blagburn.)						
Blakeslee, J. R., Cleveland, Ohio. Nut-machine	204,705	June 11	289	90	13	1036
Block, D., New York N. Y. Grater	204,791	June 11	387	115	13	1068
Boeckh, C., Toronto, Canada. Brush-bridle	204,652	June 11	236	74	13	1049
Bookwalter, J. W., Springfield, Ohio. Steam-generator	204,792	June 11	387	115	13	1068
Bourke, W., New York, N. Y. Sleeve-button	204,706	June 11	292	91	13	1057
Bowman, J., assignor to himself and I. Mechling, Somerset, Ohio. Vehicle-spring	204,707	June 11	293	91	13	1057
Bradley, F. B. (See Delkescamp and Bradley.)						
Bradley, J. J., Newark, N. J. Fire and district alarm telegraph box	204,708	June 11	293	91	13	1057
Bramer, F., Little Falls, N. Y. Wheel-barrow	204,793	June 11	388	115	13	1068
Branch, J. W. (See Mercer, G., assignor.)						
Bray, G., Leeds, England. Making gas-burners	204,709	June 11	294	91	13	1057
Bray, M., Middlesex, Mass., assignor to Tubular Rivet Company, Connecticut. Rivet-setting machine. (Reissue)	8,276	June 11	484	140	13	1079
Brennan, T., Louisville, Ky. Corn-sheller	204,653	June 11	236	74	13	1049
Brinkman, A., *et al.* (See Rawlings, W. J., assignor.)						
Brinkman, F., *et al.* (See Rawlings, W. J., assignor.)						
Briody, B. (See Briody, J., assignor.)						
Briody, J., assignor of one-fourth interest to B. Briody, Detroit, Mich. Railway-switch	204,710	June 11	295	92	13	1057
Bronsen, E. H., Ottawa, Canada. Railway-switch	204,711	June 11	298	92	13	1058
Broughton, J., Brooklyn, assignor to W. J. Griffiths, Green Point, N. Y. Sash-fastener	204,794	June 11	390	116	13	1068
Brower, B., New York, and J. F. Adams, Irvington, N. Y.; said Adams assignor to said Brower. Temporary binder. (Reissue)	8,277	June 11	486	140 / 141	13	1079
Brown, J., London, England. Composition for supporting metallic plates for the formation of printing-surfaces	204,795	June 11	391	.....	13	1068
Butz, E. M., Allegheny, Pa. Hydraulic-power apparatus	204,654	June 11	237	74, 75	13	1049
Baldwin, J. A. (See Woodruff, W. P., assignor.)						
Baldwin, W. F. (See Norton, E., assignor.)						
Bales, G. E., Seattle, Wash. Ter. Trace and pad buckle	204,940	June 18	566	165	13	1094
Bancroft, G. D., Lynn, assignor to G. F. Williams, Dedham, Mass. Thermo and electric gas controlling and lighting apparatus	205,632	June 18	653	193	13	1106
Barlow, J. C., Quincy, Ill. Seed-planter	204,941	June 18	567	166	13	1094
Barnard and Leas Manufacturing Company. (See Esselstyn, W. N., assignor.)						
Barnhill, T. W., Providence, Ky. Spittoon	205,633	June 18	654	193	13	1106
Bartlett, J. W. (See Sanford, E. V., assignor.)						
Barton, J. W., Emporia, Kan. Combined water-reservoir and stove-pipe shelf	204,942	June 18	569	166	13	1094
Baskin, W. C. (See Tyler and Baskin.)						
Bean, C., Pawtucket, assignor of one-half interest to D. W. Hayden, Providence, R. I. Combined cutting and ripping device	205,634	June 18	655	193	13	1106
Beaty, T. W. (See Gilbert, C., assignor.)						
Bell, ——, Cheyenne, Wyo. Ter. Driving attachment for sewing-machines	204,943	June 18	570	166	13	1094
Benedict, W. G., Orange Park, Fla. Preparing palmetto fiber and pine leaves for mattress-filling, &c.	205,635	June 18	656	.....	13	1106
Bernard, A., Milwaukee, Wis. Cradle	204,944	June 18	571	167	13	1095
Billings, F., Cleveland, Ohio. Wire-barbing machine	204,877	June 18	499	145 / 146	13	1085
Bishop, W., New York, N. Y. Water-closet	205,636	June 18	657	193	13	1106
Blakesley, G. H., Bristol, Conn. Clock	205,637	June 18	658	194	13	1106
Blessing, J. H., Albany, N. Y., assignor by mesne assignments to Albany Steam Trap Company. Steam-trap. (Reissue)	8,286	June 18	789	234	13	1124
Bole, J., Knox P. O., Pa. Casing-spear for oil-wells	204,878	June 18	502	147	13	1085
Bolthoff, H., assignor to himself and C. F. Hendrie, Central City, Colo. Pulverizing apparatus	204,945	June 18	571	167	13	1095
Bowen, N. M., Knightstown, Ind. Whiffletree-hook	204,946	June 18	572	167	13	1095
Bowman, S. Z. (See Martin, P., assignor.)						
Bozerian, E. E. G., Paris, France. Hydrotherapic apparatus	204,879	June 18	503	147	13	1086
Bradley and Hubbard Manufacturing Company. (See Evarts, J. E., assignor.)						
Braun, L., Wheeling, W. Va. Toy pistol	205,639	June 18	661	194	13	1107
Brayton, R., D. June, and O. S. French, Fremont, Ohio. Coating boiler-tubes	205,638	June 18	660	194	13	1106
Brigham, W. F. (See Howes, C. F., assignor.)						
Brinkmyer, F. W., *et al.* (See Smith, M. A., assignor.)						
Briscoe, J., Petrolia, Pa. Torpedo for oil-wells	205,640	June 18	661	194	13	1107
Brocksieper, F. W., assignor to Sargent & Co., New Haven, Conn. Latch	205,641	June 18	662	195	13	1107
Brooke, W. E., Trenton, N. J. Saw-tooth	205,642	June 18	663	195	13	1107
Brooks, A. A., and H. D. Crooker, Battle Creek, Mich. Atmospheric clothes-washer	204,880	June 18	504	147	13	1086
Brooks & Co., C. (See Griffin, T. J., assignor.)						
Brotherton, J. (See Lamson and Brotherton.)						
Brown, C., Glasgow, North Britain. Key-board for musical instruments	205,644	June 18	665	195	13	1107
Brown, D. C., Lowell, Mass. Screw heddle eye or hook for heddle-frames	204,881	June 18	505	147	13	1086
Brown, J. B., Suisun City, Cal. Book-holder	204,947	June 18	573	167	13	1095
Brown, J. F., Indianapolis, Ind. Rotary steam-engine	205,643	June 18	664	195	13	1107
Brown, N. B., Antwerp, N. Y. Churn	205,645	June 18	668	196	13	1107
Bryan, S., Twin Grove, Wis. Portable fence	205,647	June 18	670	196	13	1108
Bryant, R. C., Salem, Ind. Automatic fan	205,646	June 18	669	196	13	1107
Buckeye Engine Company. (See Thompson and Hunt, assignors.)						
Bunker, A. S., Lawrence, Mass. Fruit-huller	205,648	June 18	671	196	13	1108
Burgess, A., Owego, N. Y. Magazine-gun. (Reissue)	8,288	June 18	793	235	13	1124
Burgess, J., Zanesville, Ohio. Furnace for heating soldering-irons	205,649	June 18	672	197	13	1108
Bussey, E., assignor of one-half interest to C. A. McLeod, Troy, N. Y. Damper for stoves	205,650	June 18	673	197	13	1108
Butterfield, L. S. (See Gillmore, J., assignor.)						
Babcock, H. C., *et al.* (See Cushman, H. T., assignor.)						
Baker, L. I., and L. O. Root, Minneapolis, Minn. Rail-joint	205,338	June 25	990	293	13	1155
Baldwin, W. W., Cleveland, Ohio. Magazine-stove	205,232	June 25	874	258 / 259	13	1140
Ball, R. R. (See Peck and Ball.)						
Barnes, N. M., La Fayette, Ind. Bee-hive	205,339	June 25	990	293 / 294	13	1155
Bartlett, G. F. H., Buffalo, N. Y. Ozone-generator	205,340	June 25	992	294	13	1155
Barwick, W. H., Hyde Park, Mass. Combined ice-tool	205,169	June 25	807	240	13	1131
Bassett, R. A., assignor to himself and R. J. Randolph, Rockford, Ill. Milk and provision rack	205,170	June 25	807	240	13	1131
Beatson, D. A. (See Porter and Beatson.)						
Beausoleil, A., assignor of one-half interest to N. Ruelle, Alpena, Mich. Vehicle-axle lubricator	205,233	June 25	876	259	13	1140

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Beausoleil, A., and J. Morreau, Alpena, Mich. Faucet	205,342	June 25	995	294	13	1155
Billings, F., Cleveland, Ohio. Barbed fence-wire	205,234	June 25	877	259	13	1140
Black, J. E., *et al.* (See Hill and Jayne, assignors.) (Reissue.)						
Blatchford, G., Mitchell, Ontario, Canada. Reed-organ	205,341	June 25	993	294	13	1155
Bliss, C. H., Rochester, Minn. Device for holding and delivering coin	205,343	June 25	995	295	13	1155
Bliss, G. N., *et al.* (See Dooley, T. B., assignor.)						
Bogart, W. H. (See Mannie, G. A., assignor.)						
Bohannan, W., Brooklyn, N. Y. Padlock	205,171	June 25	808	240	13	1131
Booth, J. W., Wayne, assignor to G. C. Wetherbee, Detroit, Mich. Broom	205,344	June 25	996	295	13	1155
Bordeau, G. (See Brault, A., assignor.)						
Bordwell, J., assignor to D. S. Morgan, Brockport, N. Y. Harvester	205,235	June 25	877	259 / 260	13	1140
Botts, S. J., *et al.* (See McConoughey, H. N., assignor.)						
Bottum, H. E., Cohoes, N. Y. Closing seams of sheet-metal roofs	205,172	June 25	809	240	13	1131
Bovee, G. E., Convent, La. Cigarette	205,345	June 25	997	295	13	1156
Bowker & Co., W. H. (See Sturtevant, T. L., assignor.)						
Bowsher, N. P., South Bend, Ind. Plow	205,236	June 25	879	260	13	1140
Bramble, J., Manayunk, Pa., and H. M. Deihl, Fort Wayne, Ind., assignors, by mesne assignments, to S. S. White, Philadelphia, Pa. Piano-stool. (Reissue)	8,294	June 25	1107	328	13	1170
Bramer, F., Little Falls, N. Y. Wheel-harrow. (Reissue)	8,299	June 25	1114	330	13	1171
Brault, A., Montreal, assignor to G. Bordeau, Lapraine, Canada. Artificial marble	205,346	June 25	997	.....	13	1156
Bray, T. J., Pittsburg, Pa. Snatch-block	205,237	June 25	880	260	13	1141
Brooks, J. S., Brooklyn, N. Y. Sheet-metal tubing	205,238	June 25	882	261	13	1141
Brower, E. H., Carson City, Mich. Carpenter's vise	205,239	June 25	882	261	13	1141
Brown, B. F., Tilton, N. H. Reducing wood to pulp for paper, &c	205,347	June 25	998	295	13	1156
Brunner, J., Morrisania, N. Y. Toy pistol	205,240	June 25	883	261	13	1141
Brush, M. W., Cambridge, and J. J. Hartnett, Boston, assignors to A. C. Gould, Brookline, Mass. Spool-printing machine	205,173	June 25	810	241	13	1131
Buchanan, W. C., *et al.* (See Harrison, T., assignor.)						
Buchholz, H., Springfield, Mass. Firemen's belt-hook	205,348	June 25	1000	296	13	1156
Burnham, W. H. (See Hawson and Burnham.)						
Butcher, J., assignor of two-thirds interest to H. C. Dobson and W. Klauser, New York, N. Y. Faucet for compartment-vessels	205,350	June 25	1001	296	13	1156
Button, M., Havana, Cuba. Comb	205,349	June 25	1000	296	13	1156
Cain, J., Pittsburg, Pa. Window-awning	198,792	Jan. 1	76	20	13	19
Card, B. F., Brooklyn, N. Y. Turnstile-register	198,761	Jan. 1	38	9, 10	13	14
Case, M., Oneonta, N. Y. Machine for treating spine diseases	198,871	Jan. 1	151	43	13	32
Caton, E. B., assignor of one-half interest to R. Coltman, Washington, D. C., and J. T. Clements, St. Joseph, Mo. Combined indicator and seal-lock	198,837	Jan. 1	114	33	13	26
Champlin, W. H. (See Fenton, H. C., assignor.)						
Chapman, S., Clockville, N. Y. Horse hay-fork	198,762	Jan. 1	40	10	13	14
Chase, T. L., *et al.* (See Phelps, I. M., assignor.)						
Chittock, J., St. Joseph, Mo. Portable burial-vault	198,872	Jan. 1	152	44	13	32
Clawson, C. C., Raleigh, N. C. Tobacco measuring and packing machine	198,793	Jan. 1	77	20	13	19
Clements, J. T., *et al.* (See Caton, E. B., assignor.)						
Clinton Wire Cloth Company. (See Waters, C. H., assignor.) (Reissue.)						
Cloke, W. H., Rahway, N. J. Fastening bottoms in boilers	198,794	Jan. 1	78	20	13	19
Cohen, J., *et al.* (See Dette, H. J. L., assignor.)						
Cohen, J. (See Thompson, G. W., assignor.)						
Colahan, C., Cleveland, Ohio. Grain-binder	198,735	Jan. 1	3	1	13	9
Cole, S., Stoneham, Mass. Sash-fastener	198,795	Jan. 1	78	21	13	19
Coltman, R., *et al.* (See Caton, E. B., assignor.)						
Cook, Z., Ingersoll, Mich. Bench-dog	198,763	Jan. 1	41	10	13	14
Cooksey, N. B., Clay City, Ill. Gate	198,838	Jan. 1	116	33	13	27
Cooper, C. (See Tiffany, E., assignor.)						
Cornell, G. W., Clarence Centre, assignor of one-half interest to M. D. Cornell, Cowlesville, N. Y. Curtain-fixture	198,839	Jan. 1	117	33	13	27
Cornell, M. D. (See Cornell, G. W., assignor.)						
Crandal, G. L., Binghamton, N. Y. Carriage-knob	198,840	Jan. 1	118	34	13	27
Cross, J. R. (See Swartz and Cross.)						
Crumrine, B. V., Yuba City, Cal. Spark-extinguisher	198,796	Jan. 1	79	21	13	20
Caldwell, J. K., Philadelphia, Pa. Brick-carrying car. (Reissue)	8,027	Jan. 8	431	126	13	82
Camons, A. (See Bussey, W. C., assignor.)						
Cawker, S. M., Denver, Col. Combined pump and measuring faucet	198,969	Jan. 8	260	74	13	56
Challinor, D., Pittsburg, Pa. Manufacture of glassware	199,030	Jan. 8	319	94	13	65
Chandler, J. M., Fredonia, N. Y. Fire-escape	199,028	Jan. 8	317	93	13	65
Christey, A., Buffalo, N. Y. Clasp	198,929	Jan. 8	221	62	13	49
Clark, L. P., Baltimore, Md. Water-closet	199,029	Jan. 8	318	93	13	65
Class, W. F., assignor to Worswick Manufacturing Company, Cleveland, Ohio. Apparatus for pumping fluids from casks, &c. (Reissue)	8,025	Jan. 8	429	126	13	82
Class, W. F., assignor to Worswick Manufacturing Company, Cleveland, Ohio. Apparatus for pumping fluids from casks, &c. (Reissue)	8,026	Jan. 8	430	126	13	82
Clay, D. A. (See Holcomb and Clay.)						
Clines, T. P., Louisville, Ky. Bridle attachment	199,031	Jan. 8	320	94	13	65
Clinton, J. A. (See Hotchkiss and Clinton.)						
Clowes, J., Bedford, Pa. Envelope	199,032	Jan. 8	321	94	13	65
Cobb, Z., Chicago, Ill. Fastening for seat-springs	198,930	Jan. 8	221	62	13	50
Corey, J. W., Salt Lake City, Utah Ter. Revolving hook sewing-machine	198,970	Jan. 8	261	74, 75	13	56
Correll, R. H. (See Craig, J. W., assignor.)						
Cosgrave, H. E., Cambridge, Ohio. Hame	199,033	Jan. 8	321	94	13	66
Covell, E. T. (See Bowie, E. R., assignor.)						
Cowing, G., Seneca Falls, N. Y., assignor to E. H. Cowles and H. D. Cowing. Grinding-machine. (Reissue)	8,030	Jan. 8	434	127	13	83
Cowing, H. D., *et al.* (See Cowing, G., assignor.) (Reissue.)						
Cowles, E. H., *et al.* (See Cowing, G., assignor.) (Reissue.)						
Craig, J. W., assignor of one-third interest to R. H. Correll, Kirkwood, Ill. Door-check	198,931	Jan. 8	222	63	13	50
Crawford, H. F., Brockton, Mass. Burglar-alarm	199,034	Jan. 8	322	95	13	66
Crocker, J. B., Alton, Ill. Apparatus for drying or cooking fruit, &c	198,971	Jan. 8	262	75	13	56
Cross, D. L., Austin, Texas. Water-wheel	199,035	Jan. 8	323	95	13	66
Curtiss, J. M., *et al.* (See Bullock, E. K., assignor.)						
Caden, F. R., and T. H. McCray, Evansville, Ind. Holder for a mower-knife-sharpening tool	199,261	Jan. 15	502	165	13	103
Cambria Iron Company. (See Davis, F. B., assignor.)						
Carter, J. W., assignor to J. W. Carter, Jr., Brooklyn, N. Y. Extension-chandelier	199,183	Jan. 15	491	144	13	92

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Case, H. H., Cleveland, Ohio. Fire-kindler	199,184	Jan. 15	492	144	13	93
Catlin, E. F., *et al.* (See Catlin, S. C., assignor.)						
Catlin, S. C., assignor to P. H. Bngg and E. F. Catlin, Brooklyn, N. Y. Lamp-burner	199,144	Jan. 15	451	133	13	86
Chase, D. G. (See Burnham and Chase.)						
Clapp, H. W., Concord, N. H. Sink-trap	199,145	Jan. 15	451	133	13	86
Clark, J. H., Deering, Me. Shutter-fastening	199,262	Jan. 15	562	165	13	104
Clarke, G. R., Brooklyn, N. Y. Machine for cutting paper	199,146	Jan. 15	452	133	13	86
Clough, J. M., and W. K. Jenne, Ilion, assignor to Type Writer Company, New York, N. Y. Type-writing machine	199,263	Jan. 15	563	165, 166	13	104
Coats, H. A., Wellsville, N. Y. Canceling-stamp	199,185	Jan. 15	493	145	13	93
Cody, J. T., Cincinnati, Ohio. Metallic neck for glass vessels	199,264	Jan. 15	569	166	13	104
Cogswell, I., Chicago, Ill. Sash-fastener	199,265	Jan. 15	570	166	13	104
Conkling, J. P., Saratoga Springs, assignor to New York Ore Separating Company, New York, N. Y. Apparatus for collecting dust from ore-separators	199,267	Jan. 15	571	167	13	104
Conway, F., Buffalo, N. Y. Attaching device for harness-straps	199,266	Jan. 15	570	166	13	104
Cooper, N. B., Dunreith, Ind. Hay-rack	199,186	Jan. 15	493	145	13	93
Cordesman, Egan & Co. (See Cordesman, H. J., Jr., assignor.)						
Cordesman, H. J., Jr., assignor to Cordesman, Egan & Co., Cincinnati, Ohio. Paneling-machine	199,268	Jan. 15	572	167	13	105
Countryman, J. B. (See Brace, W. H., assignor.)						
Craig, J. (See Allenwood, J. M., assignor.) (Reissue.)						
Crowell, S., assignor to F. J. Garvin, Palmyra, N. Y. Ale-pitcher	199,188	Jan. 15	495	145	13	93
Crump, T. J., assignor of one-half interest to D. T. Pounds, Buena Vista, Texas. Motor for operating churns	199,187	Jan. 15	494	145	13	93
Cummings, G. W., Jr., Big Rapids, Mich. Oscillating chair	199,189	Jan. 15	496	146	13	93
Cushman, J. and J. B., Thomson, Ill. Windmill	199,190	Jan. 15	496	146	13	94
Cushman, J. B. (See Cushman, J. and J. B.)						
Cutter, F. L., Brooklyn, N. Y. Cover for lamp-shades	199,269	Jan. 15	573	167	13	105
Campbell, A. S. (See Price and Campbell.)						
Campbell, H. C., *et al.* (See Gillen, W. S., assignor.)						
Carlton, G., St. Johns, Mich. Extension-ladder	199,514	Jan. 22	826	251	13	153
Carr, E. R., Avon, Ill. Check-rower attachment for corn-planters	199,410	Jan. 22	723	213	13	137
Carriker, M. A. and N. J., Litchfield, Ill. Bee-hive	199,513	Jan. 22	825	241	13	153
Carriker, N. J. (See Carriker, M. A. and N. J.)						
Casey, M., New Britain, Conn. Window-frame	199,515	Jan. 22	826	241	13	153
Caswell, W. A., assignor of one-half interest to E. B. Preston, Chicago, Ill. Hose-coupling	199,349	Jan. 22	661	194	13	127
Caswell, W. A., assignor of one-half interest to E. B. Preston, Chicago, Ill. Apparatus for attaching hose to couplings	199,350	Jan. 22	662	194	13	127
Chamberlain, O. H. (See Babcock, Whiting, and Chamberlain.)						
Chandler, H., assignor to G. C. Stearns, Buffalo, N. Y. Piston water-meter	199,351	Jan. 22	663	194	13	127
Chandler, H., assignor to G. C. Stearns, Buffalo, N. Y. Piston water-meter	199,352	Jan. 22	665	195	13	128
Chandler, J. (See Kirkham, Hulett, and Chandler.)						
Chandler, S., Jr. (See Kirkham, Hulett, and Chandler.)						
Clark, I., Tippecanoe City, Ohio. Arbor for gardens	199,353	Jan. 22	666	195	13	128
Clark, J. H., Deering, Me. Horse-stall	199,411	Jan. 22	724	213	13	137
Clement, N. S., Northampton, assignor of one-half interest to Rice, Barton & Fales Machine and Iron Company, Worcester, Mass. Machine for folding and counting paper	199,354	Jan. 22	667	195, 196	13	128
Cliff, J. W., assignor of one-half interest to L. P. Baker, Buffalo, N. Y. Broom-binder	199,412	Jan. 22	725	213	13	137
Codding, J. H., Taunton, Mass. Sink-trap	199,413	Jan. 22	726	213	13	137
Conley, F. C., Ralston, Pa. Car-stove	199,414	Jan. 22	726	213	13	137
Conn, C. G., and E. Dupont, Elkhart, Ind. Cornet	199,516	Jan. 22	827	242	13	153
Cook, E. P., and J. F. Hall, Havana, N. Y. Vise	199,517	Jan. 22	829	242	13	153
Cook, L. D. (See Knowlton, H., assignor.)						
Coupe, W., South Attleborough, Mass. Machine for boarding or breaking raw hides	199,415	Jan. 22	727	214	13	137
Cox, T. B., Bloxwich, Great Britain. Machine for making lasting-tacks	199,416	Jan. 22	728	214	13	137
Crandall, J. A., Brooklyn, N. Y. Velocipede	199,518	Jan. 22	830	243	13	154
Crawford, J., assignor to J. Stephens, and E. P. Gleason, New York, N. Y. Water-filter	199,519	Jan. 22	830	243	13	154
Cushman, D., Hartford, Conn. Water-wheel. (Reissue)	8,049	Jan. 22	938	273	13	170
Cachot, M. A. (See Le Clerc, J. B., assignor.)						
Chapman, S. J., assignor to himself and D. S. Wilcox, Charleston, S. C. Bale-tie	199,788	Jan. 29	1127	331	13	208
Chard, R. J., Brooklyn, N. Y. Lubricating compound	199,789	Jan. 29	1128	.....	13	208
Cheney, H. O., assignor to L. K. Hutchinson, Hopkinton, Mass. Machinery for cutting pegs from boots and shoes	199,790	Jan. 29	1128	331	13	208
Chewning, J. W., Jr., Shadwell Depot, Va., assignor of one-half interest to J. and N. Rowland, Philadelphia, Pa. Cut-nail machine	199,791	Jan. 29	1129	331	13	208
Clark, G., Buffalo, N. Y. Grain-drier	199,793	Jan. 29	1131	332	13	208
Clark, M., and C. A. Heckel, Decatur, Ill. Cornstalk-cutter	199,691	Jan. 29	1036	302	13	193
Clark, P. A., Anaheim, Cal. Oscillating pump	199,792	Jan. 29	1130	332	13	208
Clark, P. B., Minneapolis, Minn. Fastening heads in metal cylinders	199,794	Jan. 29	1133	332	13	208
Clarke, W. H., Indianapolis, Ind. Organ-stop action	199,795	Jan. 29	1134	333	13	209
Cole, W. R., Detroit, Mich. Damper-regulator for steam-boiler furnaces	199,692	Jan. 29	1037	302, 303	13	194
Collier, O., assignor to C. J. Lane, Sacramento City, Cal. Check-valve for bib-cocks and faucets	199,694	Jan. 29	1039	303	13	194
Collins, J. W., Baltimore, Md. Combined calendar and clamp	199,796	Jan. 29	1135	333	13	209
Colvin, M. P. Battle Creek, Mich. Clothes-pounder	199,693	Jan. 29	1038	303	13	194
Cook, E. C., *et al.* (See Smith, W., assignor.)						
Cook, W. P., New Garden, Ind. Stove-pipe adjuster	199,618	Jan. 29	963	280	13	182
Coonley, J. C., and T. T. Graham, Chicago, Ill., said Graham assignor to said Coonley. Tumbling-barrel	199,797	Jan. 29	1136	333	13	210
Corby, E. P., St. Louis, Mo. Automatic stove-pipe ventilator	199,619	Jan. 29	964	280	13	182
Corby, E. P., St. Louis, Mo. Stove-pipe ventilator	199,620	Jan. 29	965	280	13	183
Cowing, A. A., Watkins, N. Y. Portable mosquito-bar	199,695	Jan. 29	1040	303	13	194
Crandal, G. L., Binghamton, N. Y. Carriage-curtain loop	199,798	Jan. 29	1137	334	13	209
Cross, A. T., Providence, R. I. Fountain-pen	199,621	Jan. 29	966	280	13	183
Crowell, W. (See Hall and Crowell.)						
Cunningham, W. F., Brooklyn, N. Y. Radiator	199,799	Jan. 29	1137	334	13	209
Cunningham, W. F., Brooklyn, N. Y. Drinking-fountain	199,800	Jan. 29	1138	334	13	209
Cady, M. M. (See Hregaard, C. A., assignor.)						
Carriker, W. M., Irving, Ill. Corn-planter	200,027	Feb. 5	132	43	13	254
Cattell, L. C., Cleveland, Ohio. Clothes-drier	199,958	Feb. 5	68	22	13	244
Cavalier, P., Yankton, Dakota Ter. Lamp-reflector	200,028	Feb. 5	133	44	13	254
Celluloid Manufacturing Company. (See Hyatt, J. W., assignor.)						
Chapman, J. C., Boston, Mass. Hatchet	199,959	Feb. 5	69	22	13	244

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Chapman, J. Y., Buffalo, N. Y., assignor of one-half interest to J. W. Holmes. Boy's sled	199,897	Feb. 5	7	2	13	233
Clay, J. A. (See Field, G. B., assignor.)						
Clark, F. B. (See Guild and Clark.)						
Cloyd, J. V., Whitley Court House, Kentucky. Corn-planter	200,029	Feb. 5	133	44	13	254
Coleman, H. D., New Orleans, La. Millstone-pick	199,960	Feb. 5	70	22	13	244
Cooper, J. G., Brooklyn, N. Y. Steam-engine	199,961	Feb. 5	71	23	13	244
Coutie, J. (See Coutie, W. and J.)						
Coutie, W. and J., Troy, N. Y. Ironing-machine	199,898	Feb. 5	7	3	13	234
Covell, E. T. (See Maxfield, C. P., assignor.)						
Cruickshank, G. M. (See Goldsmith, Cruickshank, and Brown.)						
Curtis, T. Y., and A. M. Andrews, Le Mars, Iowa. Meal heater and steamer	199,962	Feb. 5	73	24	13	244
Cain, A. C. W., Pittsburg, Pa. Boot and shoe exhibitor	200,128	Feb. 12	246	75	13	280
Candee, C. E., St. Louis, Mo. Car-wheel	200,254	Feb. 12	370	109	13	298
Canfield, I. W., Jr., and C. H. Demarest, Nyack, N. Y. Ventilator	200,255	Feb. 12	371	109	13	298
Carey, J. J., La Salle, Ill. Corn-planter attachment	200,171	Feb. 19	291	86	13	286
Case, L. W. (See Merrill, E. H., assignor.)						
Catner, J. M., Cleveland, Ohio. Hitching apparatus	200,256	Feb. 12	371	110	13	298
Caverly, P. H., Brooklyn, N. Y. Bottle-stopper fastener	200,257	Feb. 12	372	110	13	298
Caverly, S. L., Brooklyn, N. Y. Wash-board	200,258	Feb. 12	373	110	13	299
Cawood, J., New York, N. Y. Refrigerator for cooling beer-kegs and bottles	200,129	Feb. 12	247	75	13	280
Chabot, A. A. (See Austin, A. C., assignor.)						
Chase, T. L., *et al.* (See Phelps, I. M., assignor.)						
Clark, F. O., Des Moines, Iowa. Carpet-fastener	200,172	Feb. 12	292	87	13	286
Clarke, H., Baltimore, Md. Register	200,259	Feb. 12	374	110, 111	13	299
Closterman, H., Cincinnati, Ohio. Library-tablo	200,173	Feb. 12	293	87	13	286
Cochran, J. L. (See Bains, J., assignor.)						
Coffin, J. N., assignor to himself and G. W. Bond, Biddeford, Me. Bearer for harness collars and breeching	200,174	Feb. 12	293	87	13	286
Coleman, C. C., Honolulu, Hawaiian Islands. Pipe-wrench	200,175	Feb. 12	294	87	13	287
Colony, C. W., Sandy Creek, N. Y. Lantern	200,176	Feb. 12	294	88	13	287
Comstock, A. W., Mount Pleasant, Iowa. Weather-strip	200,177	Feb. 12	295	88	13	287
Connelly, M. (See Spellman, W., assignor.)						
Cook, S. M., Boston, Mass. Joining sheet metal to wire-cloth for the construction of fly-traps, &c	200,130	Feb. 12	248	75	13	280
Cottner, J., New York, N. Y. Trunk	200,178	Feb. 12	296	88	13	287
Cousland, W. L., Philadelphia, Pa. Copying-press	200,131	Feb. 12	248	75	13	280
Cowan, E. P., Germantown, Pa. Combined shawl-strap and head-rest	200,179	Feb. 12	296	88	13	287
Cremins, W. H. (See Morris, J. G., assignor.)						
Cross, L. D., Reno, Nev. Fire-escape	200,260	Feb. 12	377	111	13	299
Cushman, A. F., Hartford, Conn. Lathe-chuck	200,261	Feb. 12	378	111	13	299
Caldwell, H. P. (See Wickham, H., Jr., assignor.)						
Carrier, F., New York, N. Y. Lamp	200,373	Feb. 19	506	149	13	337
Carter, E., Folsom City, Cal. Bee-feeding device	200,506	Feb. 19	632	186	13	346
Cann, E. L., assignor of seven-eighths interest to C. J. Dougherty, Harrisburg, W. D. Moore, Wilkesbarre, H. Levis, F. J. Kimball, and J. S. Bell, Philadelphia, Pa. Draft and buffing apparatus for railway-cars. (Reissue)	8,095	Feb. 19	736	216	13	362
Cavanagh, J. H., San Francisco, Cal. Screen	200,433	Feb. 19	563	166	13	336
Chapman, T. M., Oldtown, Me. Stave-jointer	200,507	Feb. 19	632	186	13	346
Chichester, F., Poughkeepsie, N. Y. Sewing-machine chair	200,508	Feb. 19	633	186	13	346
Clegg, J., Providence, R. I. Machine for washing wool	200,509	Feb. 19	635	187	13	347
Coburn, C. E., *et al.* (See Stevens, J. L., and G. W., assignors.) (Reissue.)						
Cole, H. H., Philadelphia, Pa. Twin-hook	200,510	Feb. 19	636	187	13	347
Coleman, C. C., Branford, Conn., assignor to T. Kennedy, New York, N. Y. Cylinder-lock	200,511	Feb. 19	637	187	13	347
Coleman, C. C., assignor to Branford Lock Works, Branford, Conn. Extension-key	200,512	Feb. 19	637	187	13	347
Collman, J., Jr. (See Collman, J. and J., Jr.)						
Collman, J. and J., Jr., Cedar Rapids, Iowa. Nut-lock	200,513	Feb. 19	638	188	13	347
Connell, T. J., Merrimac, Mass. Brush	200,434	Feb. 19	564	166	13	336
Cooper, D. F., New York, N. Y. Vehicle-spring	200,435	Feb. 19	565	166	13	336
Copleston, E., Boston, Mass. Hat	200,374	Feb. 19	507	149	13	337
Corbin, L. J., Winnebago, Ill. Seed-planter. (Reissue)	8,089	Feb. 19	730	214	13	361
Corey, W. (See Leighton, G. A., assignor.)						
Craig, J. E. (See Frost, F. C., assignor.)						
Cristy, S., and D. Jay, Floris, Iowa. Gate	200,514	Feb. 19	639	188	13	347
Crompton, G., Worcester, Mass. Clutch mechanism	200,375	Feb. 19	507	150	13	337
Cummings, J. K., Ladonia, Texas. Motor	200,516	Feb. 19	640	188	13	348
Cunningham, A. G., J. Winhofer, and R. M. Rice, Keota, Iowa. Feed-cooker	200,515	Feb. 19	639	188	13	347
Curtiss, F. B., *et al.* (See Curtiss, W. H., assignor.)						
Curtiss, W. H., assignor of two-thirds interest to R. H. Bickford and F. B. Curtiss, Buffalo, N. Y. Belting	200,517	Feb. 19	641	189	13	348
Cushing, E. G., assignor of one-half interest to H. H. Kendrick, Oswego, N. Y. Mill spindle, bush, and tram	200,436	Feb. 19	565	167	13	336
Campbell, E. R., *et al.* (See Ross, W. B. and J. S., assignors.)						
Candlish, T. C., St. Joseph, Mo. Corset-clasp	200,693	Feb. 26	844	248	13	386
Card, W. L., Moberly, Mo. Automatic car-brake	200,602	Feb. 26	748	219	13	372
Carpenter, T. F., New York, N. Y. Fire-escape	200,694	Feb. 26	844	248, 249	13	386
Castillo, J. M., New York, N. Y. Hat-holder	200,695	Feb. 26	846	249	13	386
Clapp, E. D., and F. Van Patten, Auburn, N. Y. Machine for rolling blanks for carriage-axle clips	200,603	Feb. 26	749	219, 220	13	372
Clark, E. J., *et al.* (See Condon, W. F., assignor.)						
Clark, F. B. (See Guild and Clark.)						
Clement, B. F., assignor to C. H. Buck, Jr., St. Louis, Mo. Door for cooking-stoves	200,604	Feb. 26	751	220	13	372
Close, W. R., Bangor, Me. Mold for freezing water	200,605	Feb. 26	751	220	13	372
Cole, H. J., London, England. Apparatus for cleaning hulls of vessels	200,696	Feb. 26	847	249	13	386
Comstock, A. W., Mount Pleasant, Iowa. Neck-yoke fastener	200,643	Feb. 26	791	232	13	378
Condon, W. F., assignor of one-half interest to E. Wetzel, W. E. Gardner, D. Creaser, and E. J. Clark, Zilwaukie, Mich. Self-extinguishing stove	200,697	Feb. 26	848	249, 250	13	386
Conkling, C. G., Hopewell, Pa. Wagon-box fastening	200,698	Feb. 26	849	250	13	387
Connelly, T. E., New Brighton, Pa. Fire-extinguisher	200,699	Feb. 26	850	250	13	387
Cook, F. (See Shaw and Cook.)						
Cook, F., New Orleans, La. Bale-tie	200,644	Feb. 26	791	233	13	378
Cook, F., New Orleans, La., and H. Shaw, Waveland, Miss. Bale-tie	200,700	Feb. 26	851	251	13	387
Corman, C. A., Cochituate, Mass. Peg-cutter	200,788	Feb. 26	935	275	13	400

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Creaser, D., *et al.* (See Condon, W. F., assignor.)						
Crossley, F. W., *et al.* (See Otto and Crossley.) (Reissue.)						
Crossley, W. J., *et al.* (See Otto and Crossley.) (Reissue.)						
Campbell, M., South Bend, Ind. Adjustable strainer for milk-pails	200,976	Mar. 5	152	50	13	439
Carpenter, F. W., Harrison, N. Y. Axle-lubricator	200,985	Mar. 5	160	52	13	440
Carter, J. J., Sacramento, Cal. Steam-engine for sawing-machines	200,895	Mar. 5	78	27	13	427
Cartwright, R., Rochester, N. Y. Hopper for pneumatic dredging-scows	200,821	Mar. 5	7	2	13	416
Carty, M., Newark, N. J. Die for molding plastic substances	200,986	Mar. 5	161	52	13	440
Christmann, J., Washington, D. C. Policeman's club	200,987	Mar. 5	162	53	13	440
Clemmons, A. J., and H. M. Hills, Burdett, Mo. Neck-yoke attachment for wagon-tongues	200,977	Mar. 5	153	50	13	439
Coe, E. D. (See Yonge, R. G., assignor.)						
Comstock, B. F., Lincoln, Ill. Washing-machines	200,896	Mar. 5	79	28	13	427
Conner, J., Philadelphia, Pa. Car-axle-box lid	200,854	Mar. 5	40	15	13	421
Conover, G., New Haven, Conn., assignor of one-half interest to M. Feth, New York, N. Y. Fastening-plate for shoe-buttons	200,978	Mar. 5	154	50	13	439
Conser, E. P., Monticello, Iowa. Revolving box-churn and device for operating the same	200,897	Mar. 5	80	28	13	427
Cope, E., Hamilton, and J. R. Maxwell, Cincinnati, Ohio. Valve for steam-engines	200,855	Mar. 5	41	15	13	421
Corney, W. Westborough, Mass. Machine for tracing boots and shoes	200,979	Mar. 5	154	50, 51	13	439
Coulter, C. M., assignor of one-half interest to E. A. Leonard, Danville, Ill. Cutter-head	200,980	Mar. 5	155	51	13	439
Cox, C., Washington Heights, assignor of one-half interest to C. H. Goodrich, Chicago, Ill. Combined hydrometer cup and thief	200,981	Mar. 5	156	51	13	439
Cummings, C., Woburn, Mass. Carpet-cleaner	200,822	Mar. 5	7	3	13	416
Cunliffe, G. D., Brooklyn, N. Y. Refrigerator-box	200,982	Mar. 5	157	51	13	440
Cunningham, J. H., Chelsea, Mass. Steam-radiator	200,983	Mar. 5	158	52	13	440
Curren, J., Providence, R. I. Safety-stop for children's carriages	200,856	Mar. 5	42	15	13	421
Curtis, J. W., New York, N. Y. Bottle-stopper	200,984	Mar. 5	159	52	13	440
Caddick, S., Pembroke, Me. Burning fuel in metal-working furnaces	201,223	Mar. 12	404	124	13	483
Calef, J. W., North Easton, Mass., assignor to O. Ames. Washing-machine	201,224	Mar. 12	406	125	13	483
Call, A., assignor of one-half interest to D. J. Miller, Santa Fé, New Mexico. Mail-bag	201,156	Mar. 12	341	105	13	473
Camp, E. J., Alpharetta, Ga. Plow	201,225	Mar. 12	407	125	13	483
Campbell, A., Brooklyn, N. Y. Printing-press	201,226	Mar. 12	408	125 / 126	13	483
Candee, W. A., Bristol, Conn. Galvanic electrode for curative purposes	201,157	Mar. 12	342	105	13	473
Capron, F. E. assignor to himself, H. A. and H. S. Capron, Providence, R. I. Bracelet-joint	201,092	Mar. 12	276	85	13	464
Capron, H. A., *et al.* (See Capron, F. E., assignor.)						
Capron, H. S., *et al.* (See Capron, F. E., assignor.)						
Carey, J. R. (See Watkins and Carey.)						
Carnes, W. J., Jr., Gonzales, Texas. Buckle	201,093	Mar. 12	277	86	13	464
Carter, A., New York, N. Y. Spring for mattresses	201,158	Mar. 12	343	105	13	473
Caton, H. V., Patricksburg, Ind. Running-gear for vehicles	201,159	Mar. 12	344	106	13	473
Cauhapé, P., New York, N. Y. Cigar-package	201,160	Mar. 12	344	106	13	474
Chamberlin, T. B., Clarinda, Iowa. Sulky-plow	201,227	Mar. 12	410	126	13	483
Chapman, T. C. (See Way, W. J., assignor.)						
Chase, S. B., *et al.* (See Bergstrom, A., assignor.) (Reissue.)						
Chipman, G. W., Boston, Mass. Stair-carpet pad. (Reissue)	8,116	Mar. 12	518	158	13	497
Clapp, G. P., assignor of two-thirds interest to J. A. Pillow and R. Hersey, Montreal, Canada. Machine for reducing the shanks of horseshoe-nail blanks	201,094	Mar. 12	277	86	13	464
Clark, A., *et al.* (See Vincent, G., assignor.)						
Clark, W. H., Chicago, Ill. Hydraulic engine	201,095	Mar. 12	279	86	13	464
Cowles, W., assignor to himself and S. A. Seager, Syracuse, N. Y. Apparatus for placing elastic tubing upon spindles	201,096	Mar. 12	280	87	13	465
Crawford, J. A. (See Black, V., assignor.)						
Crawford, J. W. (See Vandorston, A. W., assignor.)						
Cndell, F. E., Cleveland, Ohio. Sewer-gas trap	201,161	Mar. 12	345	106	13	474
Cndell, F. E., Cleveland, Ohio. Stove-evaporator	201,162	Mar. 12	345	106	13	474
Currie, J., London, Ontario, Canada. Gang-plow frame	201,097	Mar. 12	282	87	13	465
Campbell, L., and J. F. Richards, assignors of one-third interest to W. M. Rees, Pittsburg, Pa. Flanging-machine	201,325	Mar. 19	535	164	13	507
Campbell, R. H., assignor of one-half interest to N. P. Chipman, Red Bluff, Cal. Flume	201,326	Mar. 19	537	165	13	508
Carney, T., St. Louis, Mo. Silvering glass mirrors	201,497	Mar. 19	705	.....	13	532
Carpenter, J. C., Council Grove, Kan. Plow	291,387	Mar. 19	598	183	13	516
Carrington, S. R., *et al.* (See Lees, T., assignor.)						
Carrington, W. E., *et al.* (See Lees, T., assignor.)						
Carrington, W. T., *et al.* (See Lees, T., assignor.)						
Carroll, T. J., Bridgeport, Conn. Garment-supporter	201,327	Mar. 19	538	165	13	508
Carter, G. P. (See Woods, G., assignor.) (Reissue.)						
Case, Whiting & Co. (See Weed, C. A., assignor.)						
Cass, A. A., *et al.* (See Stockbridge, L. R., assignor.) (Reissue.)						
Castle, C., Cleveland, Ohio. Hand hose-carriage	201,328	Mar. 19	539	184	13	516
Chamberlin, E. L., Monroe, Ohio. Shaft-supporter for vehicles	201,329	Mar. 19	539	166	13	508
Chamberlin, J. S., Burlington, Vt. Gymnastic apparatus	201,328	Mar. 19	538	165	13	508
Chipman, N. P. (See Campbell, R. H., assignor.)						
Chipman, N. P., Red Bluff, Cal. Bunching lumber for running through V-shaped flumes	201,330	Mar. 19	540	166	13	508
Churchman, E. S., Plain City, Ohio. Dust-conveyer for thrashing-machines	201,331	Mar. 19	540	166	13	508
Clark, F., Springfield, Mo., assignor to J. A. Fay & Co., Cincinnati, Ohio. Saw-guide	201,498	Mar. 19	706	215	13	532
Clark, W. A., Westville, Conn. Lubricator	201,332	Mar. 19	541	167	13	508
Clephane, L., *et al.* (See Moore, C. T., assignor.)						
Coast, J., Hammonton, N. J. Digging-machine	201,499	Mar. 19	707	215 / 216	13	532
Cobb, Z., Chicago, Ill. Door-spring	201,500	Mar. 19	708	216	13	532
Colby, W. H. and W. H., Merrimacport, Mass. Side-bar wagon	201,389	Mar. 19	599	184	13	517
Collender, H. W., New York, N. Y. Billiard-table cushion. (Reissue)	8,132	Mar. 19	813	248	13	546
Collender, H. W., New York, N. Y. Billiard-cushion. (Reissue)	8,133	Mar. 19	814	248	13	546
Comstock, A. W., Mount Pleasant, assignor of one-half interest to J. M. C. Swimford, Henry county, Iowa. Lifting-jack and tire-tightener	201,502	Mar. 19	711	216	13	533
Coyne, J., Pittsburg, Pa. Apparatus for separating breeze from ashes	201,390	Mar. 19	600	184	13	517
Crocker, S. S., and A. Wilcox, Clarence, Iowa. Wagon bolster-plate	201,333	Mar. 19	543	167	13	509
Crofoot, A. B., *et al.* (See Stockbridge, L. R., assignor.) (Reissue.)						
Croft, H., Sr., and H., Jr., Springfield, Ohio. Wind-engine	201,334	Mar. 19	544	167	13	509
Crossman, J. H., *et al.* (See Moore, C. T., assignor.)						
Cndell, F. E., Cleveland, Ohio. Sewer-gas trap	201,391	Mar. 19	602	184	13	517
Cushman, F. A., Lebanon, N. H. Wood-pulping machine	201,501	Mar. 19	710	216	13	533
Cady, H. G., Bellville, Ark. Feed-water heater	201,649	Mar. 26	882	268	13	560
Caldwell, L., Burgettstown, Pa., assignor to C. A. Dodge. Washing-machine. (Reissue)	8,134	Mar. 26	1089	331	13	590

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Calvert, C. I., Philadelphia, Pa. Harness	201,745	Mar. 26	971	297	13	574
Campbell & Clute. (See Paul, A., assignor.)						
Capern, J. C., New York, N. Y. Screw-propeller	201,650	Mar. 26	882	268	13	560
Card, W. L., Moberly, Mo. Automatic railway-brake	201,594	Mar. 26	825	251	13	552
Cardarelli, E., Washington, D. C. Siphon	201,746	Mar. 26	971	297	13	574
Carlisle, W. S., Watertown, N. Y. Latch for sliding doors	201,747	Mar. 26	972	297	13	574
Carter, S. C., Liberty, Ind. Dental plate	201,748	Mar. 26	973	297	13	574
Chandler, C. H., assignor to himself and W. W. Clark, Foxcroft, Me. Rock-drill	201,651	Mar. 26	883	269	13	560
Chicago Stamping Company. (See Flint, W. W., assignor.)						
Chow, Y., San Francisco, Cal. Pocket	201,595	Mar. 26	827	252	13	552
Clark, G. C., Freehold, N. Y. Horse potato-fork	201,652	Mar. 26	883	269	13	560
Clark, W. W. (See Chandler, C. H., assignor.)						
Clarkson, E. H. N., and W. H. H. Kesler, Baltimore, Md. Sash-pulley	201,749	Mar. 26	974	298	13	574
Clements, G. S., and J. C. Decker, assignors of one-fourth interest to T. J. Smith, New Lexington, Ohio. Bed-bottom	201,750	Mar. 26	974	298	13	575
Coester, C., Jr., and J. L. Moore, assignors, by mesne assignments, to F. Armstrong, Bridgeport, Conn. Garter. (Reissue)	8,146	Mar. 26	1113	336	13	594
Coggeshall, O. P. (See Eddy and Coggeshall.)						
Conover, G. H., *et al.* (See Waite, W. T., assignor.)						
Conover, J. F., *et al.* (See Waite, W. T., assignor.)						
Cook, F., New Orleans, La. Bale-tie	201,751	Mar. 26	975	298	13	575
Copeland, G. W., Malden, E. Woodward, and M. Brock, Boston, Mass., assignors, by mesne assignments, to Copeland Lasting Machine Company. Lasting-machine for boots and shoes. (Reissue)	8,138	Mar. 26	1099	333	13	592
Copeland Lasting Machine Company. (See Copeland, Woodward, and Brock, assignors.) (Reissue.)						
Covert, J. S., M. D. Garner, and L. B. Walthall, Modesto, Cal. Bag-holder	201,653	Mar. 26	884	269	13	560
Cram, E. B., *et al.* (See Fox, A. C., assignor.)						
Cram, R. J., Detroit, Mich. Shaking grate-bar for steam-boilers	201,752	Mar. 26	976	298	13	575
Cranston, G. W., San Francisco, Cal. Sand or earth elevator	201,753	Mar. 26	977	299	13	575
Croft, D. L., Springfield, Ohio. Belt-tightener	201,596	Mar. 26	828	252	13	552
Cushman, C. H., Erie, Pa. Combined shoulder-brace and suspenders	201,597	Mar. 26	829	252	13	552
Caesar, A., New York, N. Y. Flux composition for emery tools	201,910	Apr. 2	53	.....	13	606
Callaway, J. F., Louisville, Ky. Circuit-closer for alarms	201,991	Apr. 2	128	38	13	617
Cardozo, L. J. (See Cardozo, T. W., assignor.)						
Cardozo, T. W., assignor to L. J. Cardozo, Brooklyn, N. Y. Spring-pillow	201,911	Apr. 2	54	14	13	606
Case, C. M., South Evanston, Ill. Lamp	201,867	Apr. 2	10	3	13	600
Chamberlain, O. W. (See Downing and Chamberlain.)						
Chase, W. D. (See Meinikheim and Chase.) (Reissue.)						
Cheate, W. S. (See Rice, C. R., assignor.)						
Clark, H. A., Boston, Mass. Treating linseed-oil	201,992	Apr. 2	129	.....	13	618
Clond, B. F., Philadelphia, Pa. Device for transmitting and arresting motion	201,868	Apr. 2	11	3	13	600
Cogswell, I., Jr., Englewood, Ill., assignor, by mesne assignments, to O. B. North & Co., New Haven, Conn. Carriage-top. (Reissue)	8,151	Apr. 2	233	68	13	632
Colahan, C., Cleveland, Ohio. Grain-binder	201,993	Apr. 2	130	38	13	618
Coleman, A. B., Lyndonville, N. Y. Double harness	201,869	Apr. 2	12	3	13	600
Collignon, A., Westwood, N. J. Reclining-chair	201,912	Apr. 2	54	14	13	606
Collyer, C. W., assignor of two-thirds interest to L. A. May and A. E. Withey, Lynn, Mass. Seam-pressing mechanism	201,994	Apr. 2	131	38	13	618
Colwell, R., *et al.* (See Shoots, J. D., assignor.) (Reissue.)						
Conkling, S. D., *et al.* (See Shoots, J. D., assignor.) (Reissue.)						
Connolly, P., Brooklyn, N. Y. Stop-cock and box for water-pipes	201,996	Apr. 2	134	39	13	618
Conrad, J., Burlington, Iowa. Heater for sad-irons	201,995	Apr. 2	132	38	13	618
Conradt, L., Utica, N. Y. Safety-tap for casks	201,870	Apr. 2	13	4	13	600
Cooke, W., Paterson, N. J. Portable derrick	201,997	Apr. 2	134	39	13	618
Cooke, W., Paterson, N. J. Portable derrick	201,998	Apr. 2	136	39	13	618
Cooper, J. W., Salem, Ind. Alcohol-lamp	201,913	Apr. 2	55	14	13	606
Copeland, G. W., Malden, Mass., assignor to Copeland Lasting Machine Company, Hartford, Conn. Boot and shoe lasting machine	201,914	Apr. 2	56	15	13	607
Copeland Lasting Machine Company. (See Copeland, G. W., assignor.)						
Corbin, F., *et al.* (See Penfield, C. W., assignor.)						
Corbin, F., *et al.* (See Sparks, W. E., assignor.)						
Corbin, P., *et al.* (See Penfield, C. W., assignor.)						
Corbin, P., *et al.* (See Sparks, W. E., assignor.)						
Cowles, E. H., New Castle, Pa. Feather-renovator	201,871	Apr. 2	13	4	13	600
Craig, G. W., assignor to himself, C. A. Wheeler, and H. M. Staylor, Baltimore, Md. Toy trundle	201,999	Apr. 2	137	39	13	619
Curtice, J. M., Mount Sterling, Ky. Water-filter	202,000	Apr. 2	137	40	13	619
Cain, J., Sandy Lake, assignor, by mesne assignments, to Stearns Manufacturing Company, Erie, Pa. Head-block for saw-mills. (Reissue)	8,162	Apr. 9	497	145	13	673
Carr, T. B., Wilmington, N. C. Dredger	202,228	Apr. 9	304	115	13	639
Carroll, J. (See Whiting, J. M., assignor.)						
Carvalho, S. N., assignor to himself and J. M. Pattee, New York, N. Y. Heating attachment to boiler and other furnaces	202,148	Apr. 9	307	91	13	647
Cate, H. S., Millerstown, Barnhart's Mills P. O., Pa. Bed-bottom	202,149	Apr. 9	309	92	13	647
Chapman, J., Wenona, Mich. Car-coupling	202,229	Apr. 9	304	115	13	650
Chapman, S. L., assignor of one-half to R. A. Perry, Chicago, Ill. Paper-bag holder	202,230	Apr. 9	305	116	13	650
Childs, T. P., Troy, N. Y. Medical compound	202,231	Apr. 9	306	.....	13	650
Chinnock, G. H., Brooklyn, N. Y. Lamp-shade	202,232	Apr. 9	307	116	13	650
Chinnock, G. H., assignor to L. Richardson, Brooklyn, N. Y. Combined lamp shade and base	202,233	Apr. 9	308	116	13	650
Chinnock, G. H., assignor to L. Richardson, Brooklyn, N. Y. Lamp	202,234	Apr. 9	309	116	13	650
Clabaugh, L., Warrior's Mark, Pa. Fruit-jar	202,093	Apr. 9	250	74	13	639
Clark, W. A., Westville, Conn. Lubricator	202,235	Apr. 9	309	117	13	650
Clarke, G. P., New York, N. Y. Cane	202,094	Apr. 9	251	74	13	639
Clawson, I. N., Philadelphia, Pa. Cigar-lighter	202,150	Apr. 9	309	92	13	647
Click, D. (See Hunt, J. C., assignor.)						
Close, P. C., Augusta, Ga. Shutter-worker	202,151	Apr. 9	311	92	13	647
Collier, F. M., assignor of one-half interest to O. L., T. H., and S. H. Roberts, Boston, Mass. Wire-rope harness-trace	202,153	Apr. 9	313	93	13	648
Converse, E. K., *et al.* (See Mudge, C., assignor.)						
Cooke, O. R., Chicago, Ill. Sash-fastener	202,152	Apr. 9	311	93	13	648
Cooke, O. R., Chicago, Ill. Sash-fastener	202,154	Apr. 9	314	93	13	648
Cooney, P. H., Erie, Pa. Combined wash-bench and wringer	202,155	Apr. 9	316	93	13	648

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Craighead, H., Mamaroneck, N. Y. Lamp	202,236	Apr. 9	401	117	13	660
Crawley, E., Newport, Ky., assignor to J. R. Davey, Cincinnati, Ohio. Machine for preparing fly-leaves for books	202,156	Apr. 9	317	94, 95	13	648
Crose, W. C., Boston, Mass. Sewing-machine needle	202,237	Apr. 9	402	117	13	660
Crowson, W. L., Memphis, Tenn. Combined feeder and cleaner for cotton-gins	202,238	Apr. 9	403	{117 118}	13	660
Culver, T., New York, N. Y. Putting up boneless hams	202,239	Apr. 9	405	118	13	660
Cunnings, J. E., Utica, N. Y. Ash-sifter	202,157	Apr. 9	326	95	13	649
Caddick, G., Allegheny, Pa. Plane	202,408	Apr. 16	503	174	13	691
Campbell, R. W., Cincinnati, Ohio. Counter-support for boots and shoes	202,409	Apr. 16	504	175	13	691
Carnegie, T. M., Pittsburg, Pa. Utilizing scrap-steel	202,517	Apr. 16	697	.....	13	705
Casey, J., Jersey City, N. J. Smoke and cinder conveyer for railroad-trains	202,518	Apr. 16	698	204	13	705
Celluloid Manufacturing Company. (See Hyatt, J. W., assignor.)						
Chapin, E. M., Washington, D. C. Sewer-cleaning device	202,519	Apr. 16	699	204	13	706
Chapman, J. L., assignor to J. Watson, Philadelphia, Pa. Steam-trap	202,520	Apr. 16	701	205	13	706
Chase, S. T., Brooklyn, N. Y. Desiccating cocoa-nut	202,521	Apr. 16	702	.....	13	706
Clark, R. (See Ingalls and Clark.)						
Clark, T. E., Boston, Mass. Safety attachment for bridles	202,522	Apr. 16	703	205	13	706
Clarke, A., Sheboygan, assignor of one-half interest to C. A. Spencer, Sheboygan Falls, Wis. Canopy-adjuster for children's carriages	202,329	Apr. 16	517	151	13	680
Cole, M., Lowell, Mass. Curry-comb	202,410	Apr. 16	505	175	13	691
Coleman, J. J. (See Bell and Coleman.)						
Collender, H. W. (See Boyle, J. E., assignor.) (Reissue.)						
Collins, E. H., Denver, Colo. Canvas-stretcher	202,330	Apr. 16	518	152	13	680
Conrath, J., Salamanca, N. Y. Curtain-stretcher	202,411	Apr. 16	505	175	13	691
Conway, J. A., Toledo, Ohio. Artificial irrigation	202,331	Apr. 16	518	152	13	680
Cook, I. (See Allen and Cook.)						
Corrigan, T., Brooklyn, N. Y. Shutter-worker	202,413	Apr. 16	506	176	13	691
Cottle, S., New York, N. Y. Button	202,412	Apr. 16	506	175	13	691
Coupe, W., South Attleborough, Mass. Machine for boarding and breaking raw hides	202,414	Apr. 16	507	176	13	691
Cox, A. (See Russel, S., assignor.)						
Craig, W. H., San Francisco, Cal. Governor for steam-engines	202,332	Apr. 16	519	152	13	680
Crocker Manufacturing Company. (See Syms, W. E., assignor.)						
Cropley, A. B., *et al.* (See Duvall, W. T., assignor.)						
Cropley, R. L., *et al.* (See Duvall, W. T., assignor.)						
Cullen, T., San Francisco, Cal., assignor of one-half interest to B. T. Babbitt, New York, N. Y. Feathering paddle-wheel	202,523	Apr. 16	705	205	13	706
Cumming, T., Hackensack, N. J. Platform for submarine rock-drilling	202,415	Apr. 16	598	176	13	681
Call, A. C., Algona, Iowa. Forming ice in separated layers	202,787	Apr. 23	1015	291	13	751
Cambria Iron Company. (See Jones, D. N., assignor.)						
Capps, A. L. (See Bailey, Emmert, and Capps.)						
Carroll, J. (See Shamberger and Carroll.)						
Carter, C. H., Brooklyn, N. Y. Electro-magnetic burglar-alarm	202,630	Apr. 23	851	245	13	732
Cash, E. F. (See Baron, Cash, and Rankin.)						
Caulier, F., Philadelphia, Pa. Nursery-chair	202,788	Apr. 23	1015	291	13	752
Chaffee, C. B., Toledo, Ohio. Button	202,789	Apr. 23	1016	292	13	752
Chalfant, B., Williamsport, Pa. Die for cutting wooden pins	202,702	Apr. 23	930	266	13	740
Challiner, D., assignor to himself, J. Lowery, and D. F. Evans, Pittsburg, Pa. Machine for finishing open-ended glassware	202,631	Apr. 23	853	245	13	732
Chamberlain, E. D., Westfield, N. J. Hand-stamp. (Reissue)	8,201	Apr. 23	1168	335	13	770
Charles, S. F., Cumming, Ga. Amalgamator	202,703	Apr. 23	931	266	13	740
Childs, G. K. (See Rice and Childs.)						
Churchill, J. A. (See Turley, M., assignor.)						
Chute, C. R. (See Olmsted, Travis, and Chute.)						
Clark, A. (See Avery, J. P., assignor.)						
Clark, H. L., and A. B. Smith, Chester, N. Y. Clothes-pin	202,704	Apr. 23	932	266	13	740
Clark, J. M., assignor of one-half interest to W. L. May, Dayton, Ohio. Book-rack	202,790	Apr. 23	1017	292	13	752
Clarkson, S., *et al.*, trustees. (See Alton, R. C., assignor.)						
Close, J. W., Buffalo, N. Y. Railway-switch	202,632	Apr. 23	854	{245 246}	13	732
Clute, N., Schenectady, N. Y. Double-acting suction and force pump	202,633	Apr. 23	856	246	13	732
Collins, M. W., and C. F. Boughton, Brooklyn, N. Y. Implement for holding and operating oil-cans	202,791	Apr. 23	1017	292	13	752
Colvin, M. P., Battle Creek, Mich. Clothes-pounder	202,792	Apr. 23	1018	292	13	752
Conrad, C., Genoa, Mich. Compound rail	202,635	Apr. 23	858	247	13	732
Conner, S., assignor of one-half interest to J. G. Stewart, Washington, Iowa. Clothes-line tightener	202,634	Apr. 23	857	246	13	732
Connolly, P., Brooklyn, N. Y. Hydrant	202,793	Apr. 23	1019	293	13	752
Cress, H. D., assignor to himself and S. C. Makemson, Cromwell, Ind. Draft-equalizer	202,705	Apr. 23	933	266	13	740
Crockett, J. (See Hillen and Crockett.)						
Cushman, F. A., Lebanon, N. H., assignor to W. A. Russell. Stock-grinder for paper-pulp. (Reissue)	8,197	Apr. 23	1163	334	13	770
Cushman, F. A., Lebanon, N. H., assignor to W. A. Russell. Wood-grinder for paper-pulp. (Reissue)	8,198	Apr. 23	1164	334	13	770
Catlisch, C. A. (See Gröbli, Catlisch, and Wehrli.)						
Caldwell, J. (See Christman and Caldwell.)						
Camp, C. B., and N. Gardner, White Pigeon, Mich. Clothes-wringer	203,116	Apr. 30	1357	325	13	800
Campbell, M., South Bend, Ind. Heating-stove	203,117	Apr. 30	1358	325	13	800
Carnes, S., Jonesborough, Ga. Plow-stock	202,987	Apr. 30	1235	357	13	784
Carter, T. H. (See Thomas and Carter.)						
Cate, H. S., Millerstown, (Barnhart's Mills P. O.,) Pa. Packing for oil-wells	202,988	Apr. 30	1236	357	13	784
Chase, A. F. (See Newhall and Chase.)						
Chase, C. H., New Orleans, La. Bale-tie	202,989	Apr. 30	1236	357	13	784
Childs, O. A., Cleveland, Ohio. Ice-creeper	202,930	Apr. 30	1161	341	13	776
Chinnock, C. E., Brooklyn, assignor to Ives, Blakeslee & Co., New York, N. Y. Jumping toy	202,990	Apr. 30	1237	358	13	784
Christman, E., and J. Caldwell, assignors to themselves and J. Taylor, Louisville, Ky. Baby's safety-chair	202,991	Apr. 30	1238	358	13	784
Clark, A. H., Fond du Lac, Wis. Car-coupling	203,118	Apr. 30	1359	396	13	800
Clark, G. P., Windsor Locks, Conn. Roll for wringing-machines	202,992	Apr. 30	1239	358	13	784
Clark, W. W., and B. A. and S. Bowman, Kirksville, Mo. Fire-escape ladder	203,119	Apr. 30	1360	396	13	800
Clarke, J. W., Newnan, Ga. Seed-cotton cleaner	202,931	Apr. 30	1182	341	13	776
Cleveland, O., Jersey City, N. J. Erasive-tablet holder	203,120	Apr. 30	1360	396	13	800
Clifford, P., Cambridgeport, Mass. Rivet	202,994	Apr. 30	1240	359	13	784

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Closser, S. M., assignor of one-half interest to J. A. Cutler, La Porte, Ind. Shoe box and drawer	202,993	Apr. 30	1240	358	13	784
Cole & Co., R. F. (See Brennan, P., assignor.)						
Cole, E., Brooklyn, N. Y. Bung-fastener	202,996	Apr. 30	1243	359	13	785
Collier, H. C., Clarksville, Ark. Hog-cholera compound	202,932	Apr. 30	1183	.....	13	777
Collender, H. W. (See Boyle, J. E., assignor.)						
Collet, J. W., Upper Alton, Ill. Step-box for shafts or spindles	202,997	Apr. 30	1244	360	13	785
Collom, J., Golden, Colo. Ore-separator	202,995	Apr. 30	1241	359	13	784
Connelly, J. T., and H. C. Huston, Connellsville, Pa. Spark-arrester	203,121	Apr. 30	1361	396	13	800
Conner, M. J. (See Graham, R. J. S., assignor.)						
Cooley, R. R., and A. W. A. Winsor, Willimantic, Conn.; said Winsor assignor to said Cooley. Scaffold-bracket fastening	202,998	Apr. 30	1244	360	13	785
Cope, E., Hamilton, and J. R. Maxwell, Cincinnati, Ohio. Valve for steam-engines	202,933	Apr. 30	1183	341	13	777
Coulborne, I. H. (See Burckard, A., assignor.)						
Coutts, G. H. (See Holmes, J., assignor.)						
Crane, E. N., Newark, N. J. Bridle-bit	203,001	Apr. 30	1247	361	13	785
Crane, F., Bloomfield, N. J. Manufacture of bridle-bits	203,002	Apr. 30	1248	361	13	785
Crane, R. B., Westfield, Mass. Paper basket	202,999	Apr. 30	1245	360	13	785
Crane, R. B., Westfield, Mass. Making seamless paper baskets	203,000	Apr. 30	1246	360	13	785
Crocker, R. C. (See Foster, H. E., assignor.)						
Crompton, G. (See Gordon, A. A., assignor.)						
Cross, R. A., Boston, Mass. Apparatus for washing and condensing coal-gas	203,003	Apr. 30	1249	361	13	785
Croyle, S. H. (See Patterson, L., assignor.)						
Currier, G. H. (See Weed, J. W., assignor.)						
Curtis, R. K., assignor to Wabash School Furniture Company, Wabash, Ind. School-desk	202,934	Apr. 30	1184	342	13	777
Cutler, C. F., *et al.* (See Cutler, H., assignor.)						
Cutler, G. E., *et al.* (See Cutler, H., assignor.)						
Cutler, H., Wilbraham, assignor to himself, C. F. and G. E. Cutler, and B. T. Thompson, Framingham, Mass. Grain-drier	203,004	Apr. 30	1251	362	13	785
Cutler, J. A. (See Closser, S. M., assignor.)						
Cady, E., assignor to Meriden Cutlery Company, West Meriden, Conn. Carving-fork	203,415	May 7	188	54	13	846
Card, M. E., Cazenovia, N. Y. Ball-target thrower	203,416	May 7	188	54	13	846
Carey, H. C., *et al.* (See Morrison, G. W., assignor.)						
Carson, H., assignor to A. Speer & Sons, Pittsburg, Pa. Cultivator-tooth	203,322	May 7	94	27	13	832
Chenette, J. E., Hillsborough, Oreg. Last						
Church, G. E. (See Corning, C., assignor.)						
Clark, B., Walpole, Mass. Churn	203,419	May 7	191	55	13	846
Clark, C. B., Buffalo, N. Y. Curtain-roller and bracket	203,418	May 7	190	55	13	846
Clark, G. W., *et al.* (See Kenworthy and McGregor, assignors.)						
Clayton, J., Brainerd P. O., Minn. Wheel attachment for plows	203,420	May 7	192	55	13	847
Clement, B. F., assignor to C. H. Buck, Jr., St. Louis, Mo. Stove-oven shelf	203,242	May 7	5	2	13	821
Closson, W. B., Boston, Mass. Finger-ring	203,323	May 7	95	27	13	832
Codd, H., Camberwell, assignor of one-half interest to R. Barrett, London, England. Apparatus for filling bottles	203,243	May 7	7	3	13	822
Colbrook, C. H., assignor of part interest to W. Whitworth and M. W. Wheeler, Millbury, and J. Luther, Worcester, Mass. Winding-on regulator for spinning mules and jacks	203,244	May 7	8	3, 4	13	822
Cole, S. M., Anamosa, Iowa. Pump	203,421	May 7	193	56	13	847
Collender, H. W., New York, N. Y. Game-counter for billiard-tables	203,422	May 7	194	56	13	847
Corning, C., Lawrence, assignor of one-half interest to G. E. Church, Williamsburg, Kans. Steam-cooker	203,245	May 7	9	4	13	822
Cowper, E. A., Westminster, England. Flier-bearing for spinning-machines	203,424	May 7	199	57	13	847
Cox, E., Plainfield, Ind. Combined bridle and halter	203,324	May 7	95	27	13	832
Cox, S. L., Jr., *et al.* (See Newell and Croft, assignors.)						
Cox, S. P., Brooklyn, assignor to Cox and Sedgwick, New York, N. Y. Locket	203,425	May 7	199	57	13	847
Cox, S. P., Brooklyn, assignor to Cox and Sedgwick, New York, N. Y. Bracelet	203,426	May 7	200	57	13	847
Cox and Sedgwick. (See Cox, S. P., assignor.)						
Crandal, H. S., Binghamton, N. Y. Carriage-top prop	203,246	May 7	10	4	13	822
Croft, J. (See Newell and Croft.)						
Culter, R. A., *et al.* (See Kinsey, S. A., assignor.)						
Cushman, A. R., Memphis, Mo. Wagon-brake	203,247	May 7	11	4	13	822
Carson, J. (See Jenkins, D., assignor.)						
Carver, H. I., Ludlow, Mass. Butter-worker	203,533	May 14	333	95	13	874
Castle, O. H. (See Polk and Castle.)						
Chatillon, J. P., assignor to J. Chatillon & Sons, New York, N. Y. Platform-scales	203,389	May 14	389	110	13	881
Chatillon & Sons, J. (See Chatillon, J. P., assignor.)						
Chittenden, T. C., *et al.* (See Wheeler, M., assignor.)						
Clager, C. (See Mills and Clager.)						
Clarke, H., Baltimore, Md. Register	203,707	May 14	505	{143 144}	13	896
Cochrane Brothers. (See Cochrane, J., assignor.)						
Cochrane, J., New York, N. Y., assignor to Cochrane Brothers, Farmingdale, N. J. Stay-bolt trimmer	203,708	May 14	508	145	13	896
Cofran, G. W., *et al.* (See Trezise, T., assignor.)						
Colborne, L. H., assignor of one-half interest to G. H. Beach, New York, N. Y. Sewer-pipe stench-trap	203,390	May 14	389	110	13	882
Collins, H. W. (See Fenn, E. J., assignor.)						
Collmann, A., Vienna, Austria. Valve-gear for engines	203,534	May 14	334	95	13	875
Congdon, I. H., Omaha, Neb. Locomotive smoke-stacks	203,592	May 14	392	111	13	882
Converse, B. C., Springfield, Ohio. Tool for trimming and finishing the edges of dash-boards	203,391	May 14	390	110	13	883
Cooper, J. G. (See Hardie, James, and Cooper.)						
Corbin, F., *et al.* (See Smith, C. H., assignor.)						
Corbin, J., Danbury, Conn., assignor to himself and A. J. Cowl, Brooklyn, N. Y. Pipe-tongs	203,593	May 14	393	111	13	882
Corbin, P., *et al.* (See Smith, C. H., assignor.)						
Cornell, L. T., Chicago, Ill. Implement for capping, uncapping, and crimping cartridge-shells	203,594	May 14	393	111	13	882
Cottrell, C. B., Westerly, R. I. Sheet-delivery apparatus for printing-machines	203,509	May 14	510	145	13	896
Cottrell, C. B., assignor of one-half interest to N. Babcock, Westerly, R. I. Sheet-delivering apparatus for printing-machines	203,510	May 14	511	145	13	897
Cowl, A. J. (See Corbin, J., assignor.)						
Cram, W., Raleigh, N. C. Packing for piston and other rods	203,596	May 14	396	112	13	882
Cramer, E. D., Hackettstown, N. J. Spring-bottom for vehicles	203,597	May 14	396	112	13	882
Crawford, W. M., Shiloh, Ohio. Lifting-jack	203,511	May 14	513	145	13	897

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Crooke, L., New York, N. Y. Tumbling-barrel	203,595	May 14	395	111	13	882
Curtis, T. V., and A. M. Andrews, Lemars, Iowa, assignor to said Curtis. Hoe and cultivator	203,598	May 14	397	112	13	883
Cutliff, J. M., Albany, Ga. Bale-tie	203,599	May 14	397	112	13	883
Cady, E., assignor to Meriden Cutlery Company, West Meriden, Conn. Table-cutlery	204,002	May 21	836	239	13	945
Caldwell, H. W., and W. Watson, St. Louis, Mo. Elevator-boot	203,887	May 21	703	201	13	928
Caller, J., Cambridge, Mass. Machine for pasting together and drying rolls or continuous sheets of paper and other fabrics	203,886	May 21	702	201	13	928
Campbell, J., *et al.* (See Luce, D., and D. F., assignors.) (Reissue.)						
Campbell, J. A., *et al.* (See Luce, D., and D. F., assignors.) (Reissue.)						
Canedy, W. E., Rochester, Minn., and E. E. Leach, Cedar Rapids, Iowa. Fence-post	204,003	May 21	836	239	13	945
Casey, J., Jersey City, N. J. Checking apparatus	204,004	May 21	837	239	13	945
Chabot, A. (See Austin, A. C., assignor.)						
Chalfant, P. A., Independence, Cal. Newspaper wrapping and pasting machine	203,888	May 21	704	{201 202}	13	929
Cheney Brothers. (See Hudson, W. E., assignor.)						
Clayton, A. B., Dover, Mo. Gate	204,005	May 21	838	239	13	945
Colton, S. W., Philadelphia, Pa. Station-indicator	203,889	May 21	706	202	13	929
Colvin, O., Schoolcraft, Mich. Bee-hive	203,890	May 21	707	202	13	929
Condict, N. W., Jr., Jersey City, N. J. Portable-railway track	204,006	May 21	839	240	13	945
Condict, N. W., Jr., Jersey City, N. J. Portable railway	204,007	May 21	840	240	13	945
Conway, J. L., Bellefontaine, Mo. Bag-holder	203,891	May 21	708	202	13	929
Cooper, P. (See Rogers, T. B., Jr., assignor.)						
Copeland, I., Brockton, Mass. Wringing-machine	203,818	May 21	637	179	13	920
Coulter, B. F., *et al.* (See Healy, D., assignor.)						
Creighton, M. R. (See Miller and Creighton.)						
Crosby, A., Benton, Me. Vacuum-dredge	203,892	May 21	708	203	13	929
Cummings, D. M., Enfield, N. H. Car-wheel and axle	203,893	May 21	710	203	13	929
Cutshawl, L., Greenville, Tenn. Churn	204,008	May 21	840	240	13	946
Cabot, S., Jr., assignor to C. W. Slade, Boston, Mass. Composition to be used as mordants and dye-stuffs	204,130	May 28	986	.....	13	968
Cahoone, E. R., Newark, N. J. Harness	204,195	May 28	1063	303	13	978
Capen, E. M., Charlton Depot, Mass. Index-tag for books	204,196	May 28	1065	303	13	978
Carpenter, L. C., Syracuse, N. Y. Organ-case	204,131	May 28	987	281	13	968
Catlin, F., Newark, N. J. Telegraph-repeater	204,132	May 28	988	281	13	968
Caulier, F. (See Hanel and Caulier.)						
Celluloid Manufacturing Company. (See Hyatt and Burroughs, assignors.)						
Celluloid Manufacturing Company. (See Hyatt, J. W., assignor.)						
Chandler, R., Boston, Mass., assignor to himself and Walton Brothers, New York, N. Y. Roll and pitch indicator for vessels	204,133	May 28	989	281	13	968
Childs, I. O., Shreve, Ohio. Hedge-fence	204,197	May 28	1065	303	13	978
Choate, W. B., Aurora, Ill. Knob for tea and coffee pots	204,198	May 28	1066	303	13	978
Chow, Y., San Francisco, Cal. Pocket for garments	204,199	May 28	1067	304	13	978
Clark, D. W. (See Longyear and Clark.)						
Clarke, A., Atlantic City, N. J. Dust-arrester for railway-cars	204,134	May 28	990	281	13	968
Clay, W. S., Valparaiso, Nebr. Water-wheel	204,292	May 28	1156	330	13	989
Cochran, J. E. (See Hull, J. W., assignor.) (Reissue.)						
Cook, A. C., St. Louis, Mo. Operating boiler-brooms	204,200	May 28	1067	304	13	978
Colburn, A. J., Greenville, Mich. Lumber-rule	204,293	May 28	1158	331	13	990
Collinge, A. J., and B. M. Savage, Independence, Iowa. Steam-generator	204,201	May 28	1068	304	13	978
Colony, F. H. (See Pettengill, A., assignor.)						
Conrad, S. A., Terre Haute, Ind. Process of preparing iron for case or surface hardening	204,202	May 28	1069	.....	13	979
Convery, P. J., Brooklyn, N. Y. Sewer-trap valve	204,135	May 28	991	282	13	969
Converse, B. C., Springfield, Ohio. Manufacture of metal tubing	204,136	May 28	992	282	13	969
Cook, W., and S. Hill, Redditch, England. Needle-bar for sewing-machines	204,294	May 28	1159	331	13	990
Copeland, F. A., La Crosse, Wis. Ladder	204,295	May 28	1160	331	13	990
Cormack, G. H., assignor to A. M. Johnston & Co., Rockford, Ill. Oatmeal-machine	204,137	May 28	993	282	13	969
Coss, R., *et al.* (See Thompson, S. S., assignor.)						
Cowan, R. W., and C. Page, Montreal, Canada. Aerial paddle-wheel	204,296	May 28	1161	332	13	990
Crooke, J. J., Southfield, and L. Crooke, New York, N. Y. Coating lead articles with tin	204,297	May 28	1162	.....	13	990
Crooke, L. (See Crooke, J. J. and L.)						
Crooke, L., New York, N. Y. Tin-plated shot	204,298	May 28	1163	.....	13	990
Crane, E., Elkhart City, Ill., assignor to C. La Dow. Harrow-cultivator. (Reissue)	8,260	May 28	1293	368	13	1007
Crane, E., Elkhart City, Ill., assignor to C. La Dow. Harrow-cultivator. (Reissue)	8,261	May 28	1295	368	13	1007
Cross, I. D., San Francisco, Cal. Fire-escape	204,299	May 28	1165	332	13	990
Cullen, M., assignor of one-half interest to M. Hogan, Hartford, Conn. Steam-generator	204,203	May 28	1070	305	13	979
Cummerford, F. P., Wilmington, Del. Head-protector for the use of firemen, shipwrecked persons, &c.	204,204	May 28	1071	305	13	979
Curtis, J. E. (See Tate and Curtis.)						
Cady, M. M. (See Passoo, L., assignor.)						
Cambria Iron Company. (See Jones, D. N., assignor.)						
Cate, H. S., Millerstown, Barnhart's Mills P. O., Pa. Chair seat and back	204,480	June 4	61	20	13	1021
Cates, R. S. (See Emery, H. C., assignor.)						
Cather, E., assignor of one-half interest to J. R. Trimble, Baltimore, Md. Machine for boring blind-stiles	204,534	June 4	104	35	13	1027
Chadwick, C., assignor of two-thirds interest to P. B. Groat, Hannibal, Mo., and J. B. Schott, Quincy, Ill. Centrifugal pump	204,535	June 4	105	35	13	1027
Chamberlain, E. D., Westfield, N. J. Hand-stamp	204,421	June 4	7	3	13	1013
Chapman, J. C., Boston, Mass. Nail-extractor	204,536	June 4	106	36	13	1027
Chapman, M. S., Manchester, Conn. Envelope	204,422	June 4	8	3	13	1013
Cherry, L. H. (See Seward, M. F., assignor.)						
Chisholm, O. P. (See Mackh, C., assignor.)						
Christey, A., Buffalo, N. Y. Clasp	204,537	June 4	107	36	13	1027
Clark, W. J., and T. W. Roberts, Coffeeville, Miss. Fish-trap	204,538	June 4	107	36	13	1027
Cleland, J. W., Nevada, Mo. Wind-engine	204,481	June 4	62	21	13	1021
Closterman, H., Jr., Cincinnati, Ohio. Folding chair	204,423	June 4	8	3	13	1014
Cohen, S. L. (See Müller, H., assignor.)						
Collins, W. L., Louisville, Ky. Automatic wagon-brake	204,540	June 4	109	37	13	1028
Conarroe, R., assignor of one-half interest to D. W. Pratt, Belleville, Ill. Harvester	204,424	June 4	9	4	13	1014
Cook, A. G. (See Grant and Cook.)						
Cook, W. H. (See Terrass, J., assignor.)						
Cooper, G. B. F., New Albany, Ind., assignor of six-ninths interest to R. L. Mannen, N. W. Queen, and J. Pettus, Louisville, Ky. Fine-cut-tobacco machine	204,539	June 4	108	36, 37	13	1028
Cosgrove, W. N., assignor of one-half interest to H. W. Bingham and I. M. Fuller, Faribault, Minn. Grinding-mill	204,541	June 4	110	37	13	1028

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Crocker, S. S., and A. Wilcox, Clarence, Iowa. Foot-bath for horses	204,482	June 4	62	21	13	1021
Crosby, A. A. (See Gilzinger, S., assignor.)						
Culler, R. A., *et al.* (See Roehl, C., assignor.)						
Cunningham, J. G., Kentland, Ind. Sandal	204,483	June 4	63	21	13	1021
Curtis, O. H. (See Knight, Curtis, and Gibbs.)						
Calhoun, M., Ocate, assignor to himself and S. Edge, Fort Union, N. Mex. Ter. Hame-fastening	204,712	June 11	299	92	13	1058
Caro, H., Mannheim, Germany. Production of dye-stuffs from methyl-aniline	204,796	June 11	391	.....	13	1068
Caro, H., Mannheim, Germany. Methyl-aniline violet color	204,797	June 11	393	.....	13	1068
Caro, H., Mannheim, Germany. Ethyl-rosaniline dye-stuffs	204,798	June 11	394	.....	13	1068
Caro, H., Mannheim, Germany. Dye-stuffs produced from naphthylamine	204,799	June 11	395	.....	13	1068
Castle, W. H., Geneva, Ohio. Towel-rack	204,713	June 11	300	93	13	1058
Church, H. A., Providence, R. I. Ornamental chain	204,800	June 11	395	116	13	1069
Clark, F. C. (See Aspinwall and Clark.)						
Clark, J. H., Deering, Me. Horse-stall cushion	204,655	June 11	239	75	13	1050
Coe, F. W. (See Willard, H., assignor.)						
Cohn, H., Delhi, N. Y. Drawers	204,714	June 11	300	93	13	1058
Constable, W. (See Dunbar, P., assignor.)						
Corbin, F., *et al.* (See Hart, H. C., assignor.)						
Corbin, P., *et al.* (See Hart, H. C., assignor.)						
Cornwall, H. (See Hammond, H., assignor.)						
Covell, E. T., New Bedford, Mass. Manufacture of sheet-metal cans	204,656	June 11	240	75	13	1050
Cramer, G. R., Cincinnati, Ohio. Spoke-throating machine	204,801	June 11	396	116	13	1069
Cramp & Sons' Ship and Engine Building Company, W. (See Wilson, J. S., assignor.)						
Crane, S., Dalton, Mass. Milk-pail	204,802	June 11	398	116	13	1069
Crossley, J. W., A. A. Hagen, and G. Juengst, New York, N. Y., assignors to said Crossley. Tobacco-cutting machine	204,715	June 11	302	93	13	1058
Calkins, B., Varysburg, N. Y. Fence-post	204,948	June 18	574	168	13	1095
Camp, N. H., West Meriden, assignor to C. Parker Company, Meriden, Conn. Lock-hinge	205,051	June 18	674	197	13	1108
Campbell, G. G., Milwaukee, Wis. Catch-basin cover	204,822	June 18	506	148	13	1086
Campbell, J., Almonte, Ontario, Canada. Churn. (Reissue)	8,293	June 18	801	237	13	1135
Carr, C. A., Casey, Ill. Double-action pump	205,052	June 18	675	198	13	1108
Carter, C. D., Allegan, assignor of one-half interest to J. T. Carter, Spring Arbor, Mich. Cultivator	204,823	June 18	506	148	13	1086
Carter, J. T. (See Carter, C. D., assignor.)						
Chase, J. H., Cambridgeport, Mass. Mechanical musical instrument	204,949	June 18	575	168	13	1095
Chase, M., Haverhill, Mass. Screw-propeller	205,053	June 18	675	198	13	1108
Clapp, M. R., Hudson, N. Y. Boiler for steam fire-engines	204,885	June 18	508	148	13	1086
Clark, C. E., Rochester, N. H. Nozzle	204,950	June 18	575	168	13	1095
Cobb, J. J., Grand Rapids, Mich. Sleigh	204,884	June 18	507	148	13	1086
Coffee, G. H., assignor of one-half interest to J. B. Wenger, Gainesville, Mo. Nut-lock	205,054	June 18	676	198	13	1108
Cohen, S. L. (See Müller, H., assignor.)						
Colahan, C., Cleveland, Ohio. Harvester. (Reissue)	8,290	June 18	797	236	13	1125
Coldwell, J. H. (See Overin and Coldwell.)						
Cole, C., Ottawa, Ontario, Canada. Device for converting motion	205,055	June 18	677	198	13	1109
Coleman, H. D., New Orleans, La. Baling-press	205,056	June 18	677	199	13	1109
Connelly, J. H. and T. E., assignors to themselves and C. Lockhart, Pittsburg, Pa. Device for extinguishing fire in oil-tanks and similar places	204,887	June 18	511	149	13	1087
Connelly, T. E. (See Connelly, J. H. and T. E.)						
Cook, E., assignor to himself and J. R. Cook, Oglethorpe, Ga. Cotton-condenser	204,951	June 18	576	168	13	1095
Cook, J. R. (See Cook, E., assignor.)						
Coolidge, A. J. (See Rouse, J. H., assignor.)						
Cooper, A., Darnall, England. Utilizing heat from Bessemer converters	204,886	June 18	509	149	13	1086
Costa, L., Philadelphia, Pa. Combined globe and reflector for illuminating-burners	205,057	June 18	679	199	13	1109
Cozine, J. G. (See Harris, D., assignor.)						
Craig, G. W., Arbuckle, W. Va. Weighing-scales	204,888	June 18	512	149	13	1087
Crivel, H. (See Duwelius and Crivel.)						
Crooker, H. D. (See Brooks and Crooker.)						
Custer, G., Bremond, Tex. Cotton-picker	205,058	June 18	680	199	13	1109
Cambria Iron Company. (See Jones, D. N., assignor.)						
Cammell, B. E., Sheffield, and J. Duffield, Dronfield, England. Treating cast-steel ingots	205,351	June 25	1001	296	13	1156
Campbell, L., and J. F. Richards, Pittsburg, Pa. Machine for flanging boiler-heads	205,241	June 25	884	{261 262}	13	1141
Campbell, M., South Bend, Ind. Metal bucket	205,242	June 25	885	262	13	1141
Carey, A. C., Boston, Mass. Sewing-machine needle	205,243	June 25	886	262	13	1141
Cavanagh, G. H., Boston, Mass. Pile-driver	205,244	June 25	887	262	13	1141
Celluloid Manufacturing Company. (See Hyatt, J. W., assignor.)						
Chalfant, I. P., Philadelphia, Pa. Sad-iron	205,352	June 25	1003	297	13	1156
Chamberlin, H. T., Brockport, N. Y. Vaginal syringe	205,353	June 25	1004	297	13	1156
Chute, C. R. (See Travis and Chute.)						
Clark, H. G., *et al.* (See Crowell, S., assignor.)						
Clark, O. A., Whitesborough, N. Y. Fence	205,245	June 25	888	263	13	1142
Cleveland, R. L., Durand, Ill. Seed-planter	205,174	June 25	811	241	13	1132
Cochran, H. S., Philadelphia, Pa. Weighing-scales	205,354	June 25	1005	{297 298}	13	1157
Cole, I. I., Hillsdale, N. J. Basket	205,355	June 25	1007	298	13	1157
Cooke, J. T., Brooklyn, N. Y. Compound for coating roasted coffee	205,356	June 25	1007	.....	13	1157
Cooley, O., assignor to Johnston Harvester Company, Brockport, N. Y. Harvester-rake	205,175	June 25	813	241	13	1132
Cottrell, C. B., Westerly, R. I. Printing-press	205,357	June 25	1008	298	13	1157
Craig, S., North Benton, Ohio. Fence	205,358	June 25	1010	299	13	1157
Crandall, L. P., Eau Claire, Wis., assignor to C. Robinson and J. F. Ellis. Trace-fastening	205,359	June 25	1011	299	13	1157
Crane, A. B. (See Crane, I., assignor.)						
Crane, I., assignor to A. B. Crane, New York, N. Y. Child's kilt suit	205,176	June 25	814	242	13	1132
Crawley, J. B., Brooklyn, N. Y. Steam-engine	205,360	June 25	1012	299	13	1157
Crosby, J. Q. (See Pentreath and Crosby.)						
Crowell, S., assignor of two-thirds interest to W. H. H. Osborne and H. G. Clark, Palmyra, N. Y. Stove-pipe damper	205,177	June 25	814	242	13	1132
Crowley, J. S., Manchester, England. Bobbin	205,246	June 25	888	263	13	1142
Cushman, H. T., North Bennington, assignor to H. C. Babcock and N. O. Wilcox, Bennington, Vt. Mucilage-bottle stopper	205,247	June 25	889	263	13	1142
Cussen, W. J., Richmond, Va. Device for packing smoking-tobacco	205,361	June 25	1014	{299 300}	13	1157
Cutler, C. H., Lawrence, Mass. Wagon-cover	205,248	June 25	890	263	13	1142

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Davis, H. T., Sherman, Texas. Churn	198,797	Jan. 1	80	21	13	20
Denton, S. S., *et al.* (See Wallace, E. L., assignor.)						
Desha, R., Meridian, and W. A. Manahan, Booneville, Miss. Cotton-cleaner	198,873	Jan. 1	153	44	13	32
Dette, H. J. L., assignor of two-thirds interest to J. Cohen and H. Milling, Buffalo, N. Y. Car-coupling	198,736	Jan. 1	4	1	13	3
Dodge, J. R., Jr., and W. G. Mast, Normal, Ill. Corn-planter	198,874	Jan. 1	154	44	13	92
Doty, N. (See Rockwell and Doty.)						
Dangler, H. J. (See Dangler, W. S., assignor.)						
Dangler, W. S., assignor of one-half interest to H. J. Dangler, Ottawa, Ohio. Gate-hanger	199,037	Jan. 8	324	95	13	66
Daniel, C., Virginia, Mo. Reversible plow	199,036	Jan. 8	324	95	13	66
De Beaumont, A., Philadelphia, Pa. Feed-water heater and condenser	199,038	Jan. 8	325	96	13	66
Dennis, J. S., *et al.* (See Betts, L. F., assignor.)						
Dennis, J. S. (See Syverson, A., assignor.) (Reissue.)						
Dietrich, F., Murten, Switzerland. Manufacture of tartaric acid	199,039	Jan. 8	326	.....	13	66
Doak, H., Lowell, Mass. Bobbin-holder for spooling-machines	199,040	Jan. 8	327	96	13	66
Dobson, J. L. (See Powers, S. H., assignor.)						
Dolbear, A. E., Somerville, Mass., assignor to Gold and Stock Telegraph Company, New York, N. Y. Telephone	199,041	Jan. 8	328	96	13	67
Domestic Refrigerator and Pipe Covering Company. (See Levis, G. H., assignor.)						
Dunn, C. W., Sr., Quincy, Ill. Bellows	199,042	Jan. 8	329	96	13	67
Dunn, W., St. Mary's, assignor to I. B. McQuesten, Hamilton, Canada. Car-coupling	198,972	Jan. 8	264	76	13	56
Durham, C. W., Chicago, Ill. Hot-air furnace	199,043	Jan. 8	330	97	13	67
Dailey, P. A., New York, N. Y. Manufacture of ornamental felt fabrics	199,270	Jan. 15	574	167	13	105
Damon, G. W., Brooks, Me. Lap-seat for wagons	199,271	Jan. 15	575	168	13	105
Darozir, L., Natick, Mass. Last	199,272	Jan. 15	575	168	13	105
Davis, F. B., assignor to Cambria Iron Company, Johnstown, Pa. Nut-lock	199,191	Jan. 15	497	146	13	94
Davis, J. W., San Francisco, Cal. Pantaloons	199,273	Jan. 15	576	168	13	105
Day, J. D., assignor to himself, and D. T. Ames, New York, N. Y., and C. C. Tainter, Elizabeth, N. J. Spacing T-squares	199,192	Jan. 15	498	146	13	94
De Conroy, E., San Francisco, Cal. Awning	199,193	Jan. 15	498	147	13	94
Dorenus, W. T., New York, N. Y. Sash-fastener	199,194	Jan. 15	499	147	13	94
Dougherty, E. D., Philadelphia, Pa. Holder for neck-wear	199,195	Jan. 15	500	147	13	94
Drouillard, J. P., assignor of one-half interest to A. Gleason, Greenville, Mich. Flume for water-wheels	199,274	Jan. 15	577	168	13	105
Dutot, J., and W. H. Thrift, Newton, Iowa. Reversible center-piece for stoves and ranges	199,275	Jan. 15	578	169	13	106
Dutton, N., Janesville, Wis. Covering for spring bed-bottoms	199,147	Jan. 15	455	134	13	86
Daggett, H. R., Paxton, Ill. Tree-protector	199,355	Jan. 22	670	196	13	128
Dalton, M. A., Cincinnati, Ohio. Time-lock	199,520	Jan. 22	832	243	13	152
Daniels, W. B., Harlan, Ind. Platform-scales	199,356	Jan. 22	671	197	13	128
Davidson Brothers. (See Heeley, J. L., assignor.)						
Davis, P. F., *et al.* (See Long, N. H., assignor.)						
Day, J., Brooklyn, N. Y. Corset-spring	199,417	Jan. 22	730	215	13	138
Dayton Machine Company. (See Aldrich, W., assignor.)						
De Macedo, J. A., Leeds, England. Time-signal	199,419	Jan. 22	732	215	13	138
Demarest, J., New York, N. Y. Water-closet valve	199,418	Jan. 22	731	215	13	138
Denio, A. O., assignor of one-half interest to Lobdell Car Wheel Company, Wilmington, Del. Spark-arrester	199,521	Jan. 22	836	244	13	154
Detroit Safe Company. (See Paige, D. O., assignor.)						
Dickerson, E. N., New York, N. Y. Air-filter for houses	199,357	Jan. 22	672	197	13	128
Didden, C. A., Washington, D. C. Composition for black mortar	199,420	Jan. 22	733	.....	13	138
Dill, J., Boston, assignor to E. H. Brabrook, Cambridge, Mass. Marquetry	199,522	Jan. 22	836	244	13	155
Dixon, H., and F. W. Unverferth, Dayton, Ohio. Stove-pipe thimble	199,423	Jan. 22	734	216	13	138
Dobbin, M. M., Sugar Grove, Ill. Harrow	199,421	Jan. 22	733	215	13	138
Dodge, C. A., Chicago, Ill. Clamp for washing-machines	199,358	Jan. 22	673	197	13	129
Dodge, J. L., Greene, R. I. Horseshoe	199,422	Jan. 22	734	216	13	138
Dodge, J. W., Malden, Mass. Heel-burnishing machine	199,523	Jan. 22	837	244	13	155
Doolittle, T. B., Bridgeport, Conn., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Wire-barbing machine	199,524	Jan. 22	838	245	13	155
Drennen, C. M. (See Walker, J., assignor.)						
Dunbar, H. P., and T. C. Lothrop, Boston, Mass. Rubber article. (Reissue)	8,043	Jan. 22	927	271	13	169
Dunbar, J., assignor to W. D. Stevens, Springfield, Mass. Making seams in woven-wire work for paper-machines	199,359	Jan. 22	674	197	13	129
Dupont, E. (See Conu and Dupont.)						
Dye, A. M., Elkhart City, Ill. Truss and supporter	199,424	Jan. 22	735	216	13	139
Dalton, J., assignor of one-half interest to G. Simon, New York, N. Y. Boot and shoe heel	199,801	Jan. 29	1139	334	13	209
Damon, G. L. (See Gear, G. F., assignor.)						
Dancel, C., assignor to C. Goodyear, Jr., New York, N. Y. Sewing-machine for boots and shoes	199,802	Jan. 29	1140	335	13	210
Daniels, H. L., Redwood Falls, Minn. Gang and sulky plow	199,622	Jan. 29	966	281	13	183
Dauth, J. P., assignor of one-half interest to F. J. Obert, Reading, Pa. Heater	199,803	Jan. 29	1142	335	13	210
Davies, H. J. and W. D., Brooklyn, N. Y. Pendulum-clock	199,804	Jan. 29	1143	335	13	210
Davies, W. D. (See Davies, H. J. and W. D.)						
Davis, T. B. (See McCheaney, R., assignor.)						
Dean, W. W., Macon, Ill. Hay raker and loader	199,805	Jan. 29	1144	336	13	210
Deering, M. L., assignor of one-half interest to J. T. Edson, Cleveland, Ohio. Machine for painting barrels	199,623	Jan. 29	967	281	13	183
De Forest, D. W., Brooklyn, N. Y. Marking-frame for plug-tobacco	199,624	Jan. 29	969	282	13	183
Demarest, J., assignor to J. L. Mott Iron Works, New York, N. Y. Slop-safe for water-closets	199,806	Jan. 29	1145	336	13	210
Denamore, D. L., Stanton, Mich. Board rule and gage	199,807	Jan. 29	1145	336	13	210
Devault, D. J. (See Devault, W. V. and D. J.)						
Devault, W. V. and D. J., Johnson City, Tenn. Straw-cutter	199,808	Jan. 29	1145	336	13	210
Dikeman, J., Brooklyn, N. Y. Sewer-valve	199,696	Jan. 29	1041	304	13	194
Dooley, T. B., assignor, by mesne assignments, to E. K. Butler, Boston, Mass. Machine for varnishing	199,625	Jan. 29	970	282	13	183
Drake, S. P., assignor of one-half interest to G. H. Platt, Canton, Ill. Sulky-plow	199,626	Jan. 29	972	283	13	183
Dryfoos, J., *et al.* (See Beck, A., assignor.) (Reissue.)						
Dryfoos, L., *et al.* (See Beck, A., assignor.) (Reissue.)						
Dulaney, T. (See Dulaney, W. H. and T.)						
Dulaney, W. H. and T., Peterstown, W. Va. Butter-shaper	199,697	Jan. 29	1042	304	13	194
Dager, J. H., *et al.* (See Burgess, W. S., assignor.)						
Dann, T., Montreal, Canada. Last	199,963	Feb. 5	74	24	13	244
Davenport, M., London, Great Britain. Gate-latch	199,964	Feb. 5	75	24	13	245
Davidson Rubber Company. (See Weed, C., assignor.)						

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Davis, H. T. (See Wood, G. W., assignor.)						
Demuth, W., New York, N. Y. Tobacco-pipe	200,030	Feb. 5	134	44	13	234
Dodsworth, S. (See Shoemaker and Dodsworth.)						
Dunham, T. and W. M., Cleveland, Ohio. Tub-ear	199,899	Feb. 5	9	3	13	234
Dunham, W. M. (See Dunham, T. and W. M.)						
Darling, D. S., Brooklyn, N. Y. Horseshoe	200,180	Feb. 12	297	89	13	287
D'Auria, L., Baltimore, Md. Adjustable music-holder	200,262	Feb. 12	380	112	13	300
Daverio, G., Oberstrass, near Zurich, Switzerland. Crushing-roll	200,263	Feb. 12	380	112, 113	13	300
Davis, W. E., Port Huron, Mich. Railway-ticket	200,264	Feb. 12	382	113	13	300
Dawson, J., Williamsburg, N. Y. Commode-chair	200,181	Feb. 12	299	89	13	287
Dela Peyrouse, L. A. L. E. P., London, England. Manufacturing gas	200,182	Feb. 12	299	89, 90	13	288
Delori, F. J. J., Suaeskerke, Belgium. Apparatus for measuring, controlling, and registering liquids	200,184	Feb. 12	303	90	13	288
Demarest, C. H. (See Canfield and Demarest.)						
Devenny, L. (See Griffith and Patterson, assignors.) (Reissue.)	200,265	Feb. 12	383	113	13	300
Dinkle, C. F., and C. R. Woodward, Carlisle, Pa. Dumping-wagon						
Doherty, J. H., *et al.* (See Schallenberger, G., assignor.)						
Donson, D. (See Burroughs, J., assignor.)						
Doyle, J., Hoboken, N. J. Motor for propelling vehicles or mechanical horses	200,266	Feb. 12	384	114	13	300
Drake, J. C., assignor of one-half interest to C. O. Kimball, Little Rock, Ark. Fence	200,132	Feb. 12	240	76	13	280
Drummond, J. T., Alton, Ill. Marking plug-tobacco	200,133	Feb. 12	251	76	13	280
Durand, L., assignor to himself and H. C. Bosse, Quebec, Canada. Dough-kneading machine	200,183	Feb. 12	302	90	13	288
Durant, W. N., Milwaukee, Wis. Tallying-machine	200,267	Feb. 12	386	114	13	301
Dushane, J. A. (See Jones, G. F., assignor.)						
Daughtrey, W. T., assignor of one-half interest to W. W. McCollum, Selma, Ala. Insect-exterminator	200,376	Feb. 19	508	150	13	327
Davies, H. J. (See Davies and Lambert, assignors.)						
Davies, W. D., Brooklyn, and F. A. Lambert, New York, assignors to said Davies and H. J. Davies, Brooklyn, N. Y. Striking-movement for clocks	200,518	Feb. 19	641	189	13	348
Davis, C. S., assignor to Washburn & Moen Manufacturing Co., Worcester, Mass. Fence-wire stretcher	200,377	Feb. 19	510	150	13	327
Davis, F. B., Chicago, Ill. Soldering device	200,437	Feb. 19	567	167	13	336
Dehouck, H. (See Hutchinson and Dehouck.)						
Delay, M. R., Helena, Montana Ter. Car-coupling	200,438	Feb. 19	568	167	13	336
Dempsy, J. R., Logan county, Ky. Riding-saddle	200,378	Feb. 19	511	151	13	328
Dickens, J., Kingston, N. J. Wagon-axle sleeve	200,519	Feb. 19	643	190	13	348
Dingee, W. W., assignor to Sawyer Manufacturing Company, Oshkosh, Wis. Horse-power	200,439	Feb. 19	569	168	13	336
Dodge, C. P., and C. W. Brown, Salem, assignor, by mesne assignments, to C. W. Brown, Trustee, Brookline, Mass. Carriage-boot	200,440	Feb. 19	569	168	13	336
Dognin & Co., C. (See Haas, S., assignor.)						
Domon, O., Bienne, Switzerland. Watch-case	200,379	Feb. 19	511	151	13	328
Domon, O., Bienne, Switzerland. Stem winding and setting device for watches	200,380	Feb. 19	512	151	13	328
Dornitzer, A., New York, N. Y. Window-cleaning chair	200,441	Feb. 19	570	168	13	337
Dougherty, C. J., *et al.* (See Camm, E. L., assignor.) (Reissue.)						
Downie, G. H., Winona, Minn. Coffee-roaster	200,520	Feb. 19	644	190	13	348
Duffee, M. J., assignor to himself and J. W. Miller, Mobile, Ala. Envelope	200,442	Feb. 19	571	169	13	337
Dunne, L., and E. T. C. Richmond, Morgantown, West Va. Rain-gage	200,443	Feb. 19	572	169	13	337
Davis, D. V., Mocksville, N. C. Apparatus for curing tobacco	200,789	Feb. 26	936	276	13	400
De Célis, J. M., New York, N. Y. Fireman's hat	200,701	Feb. 26	854	251	13	387
Densmore, E., Blooming Valley, Pa., assignor of one-half interest to H. G. Bardwell. Fence	200,645	Feb. 26	792	233	13	378
Dewe, J., Ottawa, Canada. Postage-stamp	200,702	Feb. 26	854	251	13	387
Diehl, P., Elizabeth, N. J., assignor to Singer Manufacturing Company, New York, N. Y. Sewing-machine shuttle	200,606	Feb. 26	753	221	13	372
Diepenbrock, A. (See McCarthy, J., assignor.)						
Divoll, J. G., San Francisco, Cal. Car-truck	200,640	Feb. 26	793	233	13	379
Divers, J. K., *et al.* (See Hill, N., assignor.)						
Dixon, S., London, England. Bustle and pannier	200,647	Feb. 26	795	234	13	379
Dodge, L., Evanston, Ill., assignor to S. A. Lewis, Waterford, N. Y. Draft-equalizer for horse-powers	200,607	Feb. 26	754	221	13	373
Dorand, J. H. (See Ivens and Dorand.)						
Drane, E. M. (See Patteson, W. N., assignor.)						
Dunbar, G. S., Pittsfield, Mass. Gas-lighter and automatic extinguisher	200,703	Feb. 26	855	252	13	387
Dunbar, P., Cincinnati, Ohio. Ironing-table	200,648	Feb. 26	796	234	13	379
Durrell, G. A., *et al.* (See Maddocks, N. P., assignor.)						
Dutrow, D. E., Washington, D. C. Egg-carrier	200,704	Feb. 26	857	252	13	388
Dwyer, J., and G. H. Barbour, assignors to Michigan Stove Company, Detroit, Mich. Culinary attachment to base-burning heating-stoves. (Reissue)	8,101	Feb. 26	965	284	13	404
Damon, G. L., Boston, Mass. Burglar-proof safe	200,823	Mar. 5	8	3	13	416
Dauntless Manufacturing Company. (See Perkins, N. S. C., assignor.)						
De Célis, J. M., New York, N. Y. Crane	200,898	Mar. 5	80	28	13	427
De Cell, G., and A. W. Jenninga, Troy, N. Y. Grate	200,969	Mar. 5	163	53	13	440
Decker, A. W., Niven, Pa. Churn-power	200,988	Mar. 5	163	53	13	440
Dennis, J. S., *et al.* (See Betts, L. F., assignor.)						
Denton, H. R. J. (See Riches, C., assignor.)						
Deraismes, H. A., Elizabeth, N. J. Padlock	200,990	Mar. 5	164	53	13	440
Dietz, A. F., Guilderland Centre, N. Y. Bottle-stopper	200,991	Mar. 5	166	54	13	441
Dixson, W., and B. W. Records, Walton, Ky. Sawing-machine	200,899	Mar. 5	81	28	13	428
Dobson, C. L. (See Dobson, H. C., assignor.)						
Dobson, H. C., assignor to C. L. Dobson, New York, N. Y. Banjo	200,900	Mar. 5	82	29	13	428
Dreyfus, L., New York, N. Y. Machine for compressing and purifying air	200,901	Mar. 5	84	29	13	428
Du Bois, J., Williamsport, Pa. Machine for ripping, surfacing, and matching lumber	200,992	Mar. 5	167	54, 55	13	441
Dungan, W. H., Johnson county, Ind. Bag-holder	200,857	Mar. 5	43	15	13	421
Dutcher Temple Company. (See Allen, N. L., assignor.)						
Darby, W., assignor of one-half interest to F. B. Moffitt, Chillicothe, Ill. Ridge-saddle for roofs	201,098	Mar. 12	282	87	13	465
Davis, A. B., Ithaca, N. Y. Fastener for coffins, &c	201,163	Mar. 12	346	107	13	474
Davis, S. E. (See Van Brunt and Davis.)						
Davis, W. S., assignor of one-half interest to W. L. Parks, Pittsfield, Me. Pump	201,164	Mar. 12	347	107	13	474
Dean, G. B., assignor to himself and M. Buhler, Lamoille, Ill. Windmill	201,166	Mar. 12	349	107	13	474
Deane, R. E., New York, N. Y. Culinary boiler	201,165	Mar. 12	348	107	13	474
De Célis, J. M., New York, N. Y. Automatic fire-alarm	201,167	Mar. 12	350	108	13	475
Dederick, E., Milwaukee, Wis. Grain-binder	201,228	Mar. 12	411	126	13	493

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De La Montagnie, A., New York, N. Y. Machine for pressing sugar	201,229	Mar. 12	412	126, 127	13	483
Delong, E., Stone Church, Pa. Steam and fume box	201,168	Mar. 12	350	108	13	475
De Long, G. A., Weedsport, N. Y. Hilling-plow	201,099	Mar. 12	282	87, 88	13	465
Devlin, J. (See Banger and Hurd, assignors.)						
De Yongh, J., New York, N. Y. Implement for holding hot corn	201,230	Mar. 12	414	127	13	484
Dodge, C. A., Middlebury, Vt. Washing-machine	201,169	Mar. 12	351	108	13	475
Dufilho, L. (See Wermand and Dufilho.)						
Dyer, F., and G. Adair, Rock Falls, Ill. Fence-post	201,170	Mar. 12	352	108	13	475
Dyer, H. B., Toronto, Canada. Joint for sidewalks	201,171	Mar. 12	353	109	13	475
Dahler, A., and F. W. Hoffmann, assignors to A. Weidmann, New York, N. Y. Toy revolver	201,392	Mar. 19	603	185	13	517
Davenport, J. W., Cumberland City, assignor of one-half interest to J. H. Sullivan, Shiloh, Tenn. Shingle-shaving machine	201,503	Mar. 19	712	217	13	533
Davis, G., Silver Run, assignor to S. G. Jenkins, Talladega county, Ala. Fish and animal trap	201,504	Mar. 19	712	217	13	533
Dederick, P. K., Albany, N. Y. Hay and cotton press. (Reissue)	8,130	Mar. 19	811	247	13	546
Dennert, J. C., Altona, Germany. Piston water meter and motor	201,505	Mar. 19	713	217	13	533
Dennison, J. A. (See Graham and Dennison.)						
Devin, M. (See Foster, A. F., assignor.)						
Devling, H. (See Seamans, Bryant, and Devling.)						
Dexter, H. L. (See Tichenor and Dexter.)						
Dickinson, W., Rockford, Ill. Attaching calks to horseshoes	201,335	Mar. 19	545	167	13	509
Doane, W. H., and G. W. Bughee, assignors to J. A. Fay & Co., Cincinnati, Ohio. Machine for boring and mortising blind-stiles	201,506	Mar. 19	714	217	13	534
Dodge, T. H., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Barbed fence-wire	201,507	Mar. 19	718	218	13	534
Doty, P. B., Conneaut, Ohio. Seed-planter	201,508	Mar. 19	718	218, 219	13	534
Drake, E. S., Brooklyn, N. Y. Lamp-chimney	201,509	Mar. 19	719	219	13	534
Draper, H. V. P., *et al.* (See Bash, H. R., assignor.)						
Drummond, W. W. (See Aiken and Drummond.)						
Darling, S., Providence, R. I. Railway-car window	201,598	Mar. 26	832	252	13	553
Davidson, O. E., Clarksville, Tenn. Paper-bag machine	201,754	Mar. 26	978	299	13	575
Davidson, O. E., Clarksville, Tenn. Paper bag	201,755	Mar. 26	979	299	13	575
Davies, E., Brooklyn, N. Y. Device for sizing rings	201,654	Mar. 26	885	269	13	561
Davis, J. M. (See Smith and Davis.)						
Dawes, F. S., Hudson, Mass. Counter-stiffener for boots and shoes	201,796	Mar. 26	1023	312	13	581
Day, W. S. (See Edgar and Day.)						
Dealy, W. H., assignor to W. H. Grove, Philadelphia, Pa. Show-case	201,756	Mar. 26	980	300	13	575
Decker, J. C. (See Clements and Decker.)						
De Wolf, W. H., *et al.* (See Wygant, J. H., assignor.)						
Dixon, J. W., West Manayunk, Pa. Paper-making machine	201,757	Mar. 26	981	300	13	576
Dodge, C. A. (See Caldwell, L., assignor.) (Reissue.)						
Doolittle, H. H. (See Potter, H. H., assignor.)						
Doremus, W. T., New York, N. Y. Sash-fastener	201,655	Mar. 26	885	270	13	561
Dorris, O. E. (See Swan, T. B., assignor.)						
Downey, W. F., Washington, D. C. Sewer and other traps	201,758	Mar. 26	984	301	13	576
Dunn, J., Portland, Conn. Thread-holder	201,656	Mar. 26	886	270	13	561
Dusch, J., and H. Lewis, Bay City, Ill. Harvester	201,759	Mar. 26	985	301	13	576
Drew, G. R., Millburn, N. J. Combined rule, square, and comb	201,599	Mar. 26	832	253	13	553
Drummond, W. W., *et al.* (See Smith, G. E., assignor.)						
Dake, H. M., Nunda, N. Y. Portable fence. (Reissue)	8,152	Apr. 2	234	68	13	632
Daniels, T. E., and A. Reed, Chicago, Ill. Collin	201,872	Apr. 2	15	4	13	600
Dansreau, H. (See Townsend, E. E., assignor.)						
Danzig, A. A., New York, N. Y. Under-garment	202,001	Apr. 2	138	40	13	619
Darling, E. O., Rockton, Ill. Clothes-drier	202,002	Apr. 2	139	40	13	619
Darling, I., Norwalk, Ohio. Wash-board	202,003	Apr. 2	140	40, 41	13	619
Davies, T., Jr. (See Tyler, J. B., assignor.)						
Davis, M., and S. Simonson, New York, N. Y. Hat and cap	202,005	Apr. 2	142	41	13	619
Deaderick, C., Knoxville, Tenn. Vehicle-wheel	201,873	Apr. 2	16	4	13	601
Depp, H. E., Sedalia, Mo. Air and steam engines	201,874	Apr. 2	16	5	13	601
Dick, S. P., and D. B. Musselman, Louisville, Ky. Plug-tobacco cutter	201,915	Apr. 2	57	15	13	607
Donaldson, R. B., Washington, D. C. Manufacture of dentists' tools for cleaning nerve cavities	202,006	Apr. 2	142	41	13	619
Doubler, J. W. H., Rockford, Ill. Weather-strip	202,007	Apr. 2	143	42	13	620
Downing, W. H., and O. W. Chamberlain, Fairview township, Pa. Device for cleaning rope for paper-making	202,008	Apr. 2	144	42	13	620
Drayer, W. E. (See Shellenback, P., assignor.)						
Dubroy, A. (See Ewerett and Dubroy.)						
Dudley, C., assignor to O. B. North & Co., New Haven, Conn. Adjustable carriage-top	202,004	Apr. 2	141	41	13	619
Duflot, C. P. (See Viol and Duflot.)						
Dunn, J., *et al.* (See Gray, R., assignor.)						
Du Paget, A. L. (See Grivel, E., assignor.)						
Dadisman, M. V., Luray, Va. Combined grain-drill and fertilizer	202,240	Apr. 9	406	118	13	660
Daniels, C. A., Waterville, N. Y. Car-ventilator	202,241	Apr. 9	409	119	13	660
Davey, J. R. (See Crawley, E., assignor.)						
Davies, D. J. H., Ogdensburg, N. Y. Steam washing-machine	202,243	Apr. 9	410	119	13	660
Davies, H. J., Brooklyn, N. Y. Clock-case	202,095	Apr. 9	252	74	13	631
Davis, F., North Adams, Mass. Door-bolt	202,158	Apr. 9	327	96	13	649
Davis, W. S., Galveston, Tex. Bale-tie	202,242	Apr. 9	409	119	13	661
Davison, G. H. (See Batty, J. W., assignor.)						
Dean, J., Derby, England. Lady's boot	202,244	Apr. 9	411	119	13	661
DeForest, D. W., Brooklyn, N. Y. Manufacture of plug-tobacco	202,245	Apr. 9	412	120	13	661
Delaney, M., New York, N. Y. Electro-magnetic piano-action	202,096	Apr. 9	253	74	13	639
Delisser, G. P., Brooklyn, assignor of two-thirds interest to Adams and Shaler, New York, N. Y. Medical compound	202,246	Apr. 9	414	.....	13	661
Dickinson, G. W., Charlestown, Ill. Window-sash	202,247	Apr. 9	415	120	13	661
Dienelt, H., *et al.* (See Eisenhardt, G. F., assignor.)						
Doane, W. A., Rochester, N. Y. Machine for making paper-pulp from wood	202,097	Apr. 9	255	75	13	640
Doty, W. B., Chillicothe, Ohio. Steam water-elevator	202,248	Apr. 9	415	121	13	661
Dowling, P. (See Merrill and Dowling.)						
Dowling, T. K., Okolona, Miss. Ax	202,159	Apr. 9	328	96	13	649
Dunn, J., and T. H. Birdsall, New York, N. Y. Sewer-trap	202,250	Apr. 9	417	121	13	661
Dunn, R., Wylam, England. Nut-lock	202,249	Apr. 9	416	121	13	661

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Durkin, M. T., New York, N. Y. Sky-light	202,160	Apr. 9	329	96	13	649
Davies, O. T., Brighton, Cal. Ditcher and cultivator combined	202,416	Apr. 16	599	176	13	692
Davis, J. A., Watertown, N. Y. Ruffling attachment for sewing-machines. (Reissue)	8,176	Apr. 16	831	240	13	720
Davis, J. R., Bloomfield, Iowa. Well boring and drilling apparatus	202,417	Apr. 16	600	177	13	692
De Forest, T. B., Birmingham, Conn. Shovel	202,524	Apr. 16	705	205	13	706
De Mouncie, A. T., assignor of one-fourth interest to M. Kaufmann, London, England. Lock for fire-arms	202,418	Apr. 16	603	177	13	692
De Waru, L. E., Philadelphia, Pa. Manufacture of boots and shoes. (Reissue)	8,182	Apr. 16	838	242	13	721
Dice, L. M., Chambersburg, Pa. Car-coupling	202,333	Apr. 16	521	152	13	680
Dickey, G. (See McKitrick, A. H., assignor.)						
Dimmick, W. H. (See Vandenburg, L. W., assignor.)						
Dixon, S. W., Findlay, Ohio. Fire-place	202,419	Apr. 16	605	177	13	692
Domestic Sewing Machine Company. (See Wild, F. W., assignor.)						
Doremus, W. D., Washington, D. C., assignor of three-fourths interest to J. W. Mancourt, Brooklyn, N. Y. Bottle-stopper	202,525	Apr. 16	707	206	13	706
Doughty, W. S., Cape Elizabeth, Me. Sprinkler	202,334	Apr. 16	521	153	13	681
Douglas, B., *et al.* (See Douglas, J. W., assignor.) (Reissue.)						
Douglas, J. W., Middletown, Conn., assignor to W. and B. Douglas. Knapsack fire-engine. (Reissue)	8,177	Apr. 16	834	240	13	720
Douglas, W., *et al.* (See Douglas, J. W., assignor.) (Reissue.)						
Douglas, W. O., Binghamton, N. Y. Truss-bridge	202,526	Apr. 16	707	206	13	706
Doyle, J., Lowell, Mass. Thread-guard support for ring-spinning frames	202,420	Apr. 16	607	178	13	692
Drummond, W. W. (See Aiken and Drummond.)						
Du Brul & Co., N. (See Du Brul, N., assignor.)						
Du Brul, N., assignor to N. Du Brul & Co., Cincinnati, Ohio. Transportation oil-can	202,335	Apr. 16	521	153	13	681
Dudley, C., assignor to O. B. North & Co., New Haven, Conn. Carriage-top adjuster	202,527	Apr. 16	708	207	13	707
Dunn, J., Oskaloosa, Iowa. Washing-machine	202,421	Apr. 16	607	178	13	693
Duvall, A., *et al.* (See Duvall, W. T., assignor.)						
Duvall, W. T., assignor of two-thirds interest to R. L. and A. B. Cropley, Georgetown, D. C. Brick-machine	202,336	Apr. 16	522	153, 154	13	681
Duvall, W. T., assignor of three-fourths interest to R. L. and A. B. Cropley, and A. Duvall, Georgetown, D. C. Clay sawing and pulverizing machine	202,337	Apr. 16	525	154	13	681
Darling, D. D., L. L. Parshall, and F. H. Wendell, Cold Water, Mich. Feed steamer	202,706	Apr. 23	933	267	13	741
Darrach, S. A., Newark, N. J. Whip-rack	202,794	Apr. 23	1021	293	13	752
Davies, H. J., and W. D., Brooklyn, N. Y. Clock	202,795	Apr. 23	1022	293	13	753
Davies, W. D. (See Davies, H. J., and W. D.)						
Davis, E. P. (See Muldoon and Davis.)						
Davis, G. W., *et al.* (See Palmer, C., assignor.)						
Davis, J. C., Oskaloosa, Iowa. Mechanical movement	202,707	Apr. 23	934	267	13	741
Davis, T. K., *et al.* (See Palmer, C., assignor.)						
Dettmer, F., Madison, Ind. Fire-escape	202,708	Apr. 23	935	267	13	741
Dibble, W. H., Elizabeth, N. J. Composition for manufacturing molded articles	202,636	Apr. 23	859	.....	13	733
Dillon, J. W., assignor of one-third interest to E. L. Buckingham, Virginia City, Nev. Machine for drying slimes	202,709	Apr. 23	936	267	13	741
Dittrich, A., St. Lukes, England. Umbrella-tip cup	202,710	Apr. 23	936	268	13	741
Divers, J. K., *et al.* (See Hill, N., assignor.)						
Dobson, H. C., *et al.* (See Butcher, J., assignor.)						
Dodds, J. (See Ritty, S., assignor.)						
Dodge, M. J. (See Parsons, H. F., assignor.)						
Dollard, J., Babylon, N. Y. Lining bored wells	202,796	Apr. 23	1024	293	13	753
Dressell, A., and E. H. and J. G. Voth, Cleveland, Ohio, assignors to D. Dressell. Head-light for locomotives	202,711	Apr. 23	937	268	13	741
Dressell, D. (See Dressell and Voth, assignors.)						
Drew, C. H. (See Washburn, M. P., assignor.)						
Driscoll, J. H., and L. Balcom, Oconto, Wis. Log-turner	202,712	Apr. 23	938	268	13	741
Dutton, L. K., Oskaloosa, Iowa. Burial-case	202,797	Apr. 23	1024	294	13	753
Davis, M. (See Dominy, E., assignor.)						
Davis, S. B., Hamburg, Iowa. Seed-planter	203,122	Apr. 30	1362	397	13	801
Dearborn, C. P., Boston, Mass. Blind-awning	202,935	Apr. 30	1186	342	13	777
Deblois, C. T., Boston, Mass. Car-window	203,123	Apr. 30	1363	397	13	801
Dehnel, L. O. (See Helmlich and Dehnel.)						
Delano, B. F., Boston, Mass. Ventilating ships	203,005	Apr. 30	1251	362	13	786
Demo, A., Camden, N. J. Marine engine	203,006	Apr. 30	1252	362, 363	13	786
Dickey, W. D., assignor to himself and Handren and Ripley, New York, N. Y. Pressure-regulator	203,124	Apr. 30	1365	398	13	801
Diehlmann, J. G. (See Doll, Rieder, and Diehlmann.)						
Dietz, A. E., Brooklyn, N. Y. Latch	203,007	Apr. 30	1254	363	13	786
Dillon, G. M., Chateaugay Lake, assignor to G. Pope, Glens Falls, N. Y. Hammer for charcoal blooms, cast billets, &c.	203,008	Apr. 30	1255	363	13	786
Dingley, E. R., New York, N. Y. Automatic cut-off for plane-valve engines	203,009	Apr. 30	1256	364	13	786
Doll, F., M. Rieder, and J. G. Diehlmann, Connersville, Ind. Invalid-bedstead	202,936	Apr. 30	1186	342	13	777
Dominy, E., assignor to himself and M. Davis, Freedom, Ill. Stalk-cutter	203,010	Apr. 30	1257	364	13	786
Donnelly, C. J., assignor to P. B. and A. B. Sprenkle, York, Pa. Match-machine	203,125	Apr. 30	1366	398	13	801
Dorr, W., Gardiner, Me. Car-coupling	203,011	Apr. 30	1258	365	13	786
Dougherty, J. H. (See Briggs and Dougherty.)						
Dunn, W., assignor to J. Harvey, Hamilton, Ontario, Canada. Seal-lock	203,012	Apr. 30	1259	365	13	786
Paul, A., Newark, N. J., assignor of one-half interest to R. Van Baar. Envelope	203,427	May 7	201	58	13	848
Davies, J., Muskegon, Mich. Grain-separator	203,325	May 7	96	27	13	833
Davis, J. A., W. D. Guseman, and H. D. McGeorge, Morgantown, W. Va. Harrow	203,248	May 7	11	5	13	822
Day, T. H., San Francisco, Cal. Rope tramway and apparatus	203,249	May 7	12	5	13	822
De Forest, T. B., Birmingham, Conn. Machine for tipping corset-springs	203,428	May 7	201	58	13	848
Dodge, C. A., Middlebury, Vt. Washing-machine	203,250	May 7	14	6	13	823
Dollason, A., and C. L. Leonard, Factoryville, N. Y. Front gear for carriages	203,326	May 7	97	28	13	833
Dorman, J. F. W., Baltimore, Md. Hand-stamp. (Reissue)	8,223	May 7	316	90	13	864
Dougherty, J. B., Rochester, assignor to Burrell, Ives & Co., and D. H. Burrell, Little Falls, N. Y. Machine for cutting hoops from the log	203,429	May 7	203	58, 59	13	848
Dungan, W. P., Jr., Watauga, Tenn. Clothes-pounder	203,430	May 7	206	59	13	848
Dutrow, D. E., Washington, D. C. Tray for egg-cases	203,431	May 7	207	59	13	848
Dyer, F., Rock Falls, Ill. Step-ladder	203,327	May 7	97	28	13	833
Darrow, J. F. (See Waring, Darrow, and Winters.)						
Davies, W., Henderson, Ky. Tobacco stripping and drying machine	203,600	May 14	398	113	13	833
Day, E. S. (See Schramling and Day.)						
Day, J. C. (See Schramling and Day, assignors.)						

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Daymon, J., Eddystone, Pa. Detergent composition	203,712	May 14	513	.....	13	897
Deuel, J., Millbrook, assignor to W. H. Field, Port Chester, N. Y. Horse hay-rake	203,601	May 14	399	113	13	883
Devore, W., California, and S. L. Yourtee, Cincinnati, Ohio; said Devore assignor to said Yourtee. Long center for stoves	203,713	May 14	514	146	13	897
D'Henreuse, J., Schmetzdorf, near Bernau, Prussia. Mashing grain. (Reissue)	8,224	May 14	616	172	13	909
Dietsch, A., Chicago, Ill. Rocking-chair	203,602	May 14	400	113	13	883
Dimond, G. H., Bridgeport, Conn. Manufacture of hats	203,603	May 14	400	113	13	897
Dobson, C. E., assignor of one-half interest to H. C. Dobson, New York, N. Y. Banjo	203,604	May 14	401	114	13	883
Dobson, H. C. (See Dobson, C. E., assignor.)						
Donner, O. W., Brooklyn, N. Y. Apparatus for washing filter-bags	203,714	May 14	514	146	13	897
Draper & Sons, G. (See Allen, N. L., assignor.)						
Du Brul, N. (See Duburn, A. M., assignor.)						
Du Brul, N., Cincinnati, Ohio. Cigar-mold	203,715	May 14	516	146	13	897
Duburn, A. M., assignor to N. Du Brul, Cincinnati, Ohio. Lantern	203,716	May 14	517	146	13	897
Dabney, C. W., Jr. (See Dabney, R. L., and C. W., Jr.)						
Dabney, R. L., Hampden Sidney, and C. W. Dabney, Jr., Emory, Va. Railway-car	204,009	May 21	841	240	13	946
Dane, J. W., Boston, Mass. Drawer-support	203,894	May 21	711	203	13	929
Davis, G. G., *et al.* (See Davis, H. D., assignor.)						
Davis, G. L., *et al.* (See Davis, H. D., assignor.)						
Davis, H. D., assignor to G. L. Davis, J. A. Wiley, J. M. Stone, G. G. Davis, J. H. Stone, and J. H. Davis, North Andover, Mass. Loom	203,895	May 21	712	204	13	930
Davis, J. H., *et al.* (See Davis, H. D., assignor.)						
Dayton, J. A., Brooklyn, N. Y. Machine for veneering moldings	203,896	May 21	714	205	13	930
Deere & Mansur Co. (See Runstetler, A. and M., assignors.)						
Deland, J., *et al.* (See Sparkes, J. H., assignors.)						
Delaviere, A. (See Salmon and Delaviere.)						
De Lime, L. A., Frankfort, Ky. Grain-masher	203,819	May 21	638	179	13	920
Delkescamp, A., and F. B. Bradley, Southington, Conn; said Delkescamp assignor to said Bradley. Machine for arranging and feeding blanks	203,897	May 21	715	205	13	930
Derby Silver Company. (See Ratcliff, F., assignor.)						
Disston & Sons, H. (See Bevan, S., assignor.)						
Doak, T., Cameron, Mo. Tree-protector	203,898	May 21	718	206	13	930
Donahoe, P. H., Middletown, Conn. Valve for hydrants, street-washers, &c	204,010	May 21	842	241	13	946
Dougherty, J. B. (See Pitkin and Dougherty.)						
Dowling, T., assignor to himself and I. C. Mayo, Gloucester, Mass. Pump. (Reissue)	8,243	May 21	965	276	13	961
Dulany, W. J. C. (See Eastman, H. W., assignor.)						
Dunderdale, C. F., Kingston, N. Y. Composition for making hydraulic cement. (Reissue)	8,237	May 21	958	.....	13	960
Dunn, G. A., Chicago, Ill. Paper box	203,899	May 21	719	206	13	931
Dyer, I. T., Quincy, Ill. Window-sash	203,820	May 21	639	180	13	920
Darrach, S. A., Newark, N. J. Spherical target	204,300	May 28	1166	332	13	991
Davis, E. P., *et al.* (See Heckmann, L., assignor.)						
Davis, W. O., Bloomington, Iowa. Writing-tablet	204,138	May 28	994	283	13	969
Day, A., Detroit, Mich. Track-clearer	204,205	May 28	1071	305	13	979
Decker, B. (See Landon and Decker.)						
Dennis, J. S., *et al.* (See Swedberg, C. J., assignor.)						
Dickermann, C. C., Boston, Mass. Lock	204,139	May 28	995	283	13	969
Dooley, J. W., Middletown, Conn. Seed-distributer	204,301	May 28	1166	332	13	991
Downing, B. J., assignor of one-half interest to F. J. Seybold, St. Louis, Mo. Combined whip-socket and rein-holder	204,140	May 28	997	283	13	969
Downton, R. L., Milwaukee, Wis. Manufacturing flour	204,302	May 28	1167	333	13	991
Drake, E. S., Brooklyn, N. Y. Lamp	204,303	May 28	1168	333	13	991
Drake, E. S., Brooklyn, N. Y. Lamp	204,304	May 28	1169	333	13	991
Drake, E. S., Brooklyn, N. Y. Lamp	204,305	May 28	1169	333	13	991
Drake, E. S., Brooklyn, N. Y. Lamp	204,306	May 28	1170	334	13	991
Dufer, E. T., *et al.* (See Austin, D., assignor.)						
Duff, J., Peoria, Ill. Casting apparatus	204,307	May 28	1171	334	13	991
Dusenbury, C. C., and W. H. Winn, assignors to Winn Manufacturing Company, New York, N. Y. Gas and air carbureter	203,413	May 28	1281	365	13	1005
Daggett, A. S., United States Army. Metallic tent-pin	204,425	June 4	11	4	13	1014
Daggett, H. N. (See Barrows, W. E., assignor.)						
Daniel, C., Virginia, Mo. Plow-colter	204,434	June 4	63	21	13	1021
Daniels, W., Brooklyn, N. Y. Millstone-cooling apparatus	204,542	June 4	111	37, 38	13	1028
Davidson Rubber Company. (See Weed, C., assignor.)						
Davis, A. T. L., Lake Village, N. H. Folding chair	204,543	June 4	111	38	13	1028
Davison, D., New York, N. Y. Gas-retort	204,544	June 4	112	38	13	1028
Decombe, J., San Francisco, Cal. House	204,545	June 4	113	39	13	1029
Deuzler, F., Brooklyn, N. Y., assignor to Lamb Knitting Machine Manufacturing Company, Chicopee, Mass. Knitting-machine cam	204,426	June 4	11	5	13	1014
Dickens, J. F. (See Hartley and Dickens.)						
Dildine, R. G. (See Sanders, Dildine, and Head.)						
Dollbear, A. E., Somerville, Mass. Book-support	204,427	June 4	13	5	13	1014
Duckworth, J. C., assignor to E. S. Higgins & Co., New York, N. Y. Carpet	204,546	June 4	114	39	13	1029
Dufour, J., Racine, Wis. Thill-coupling	204,547	June 4	115	39	13	1029
Durand & Co. (See Durand, W., assignor.)						
Durand, W., assignor to Durand & Co., Newark, N. J. Bracelet	204,548	June 4	116	39	13	1029
Dana, C. H., assignor to himself and D. U. Marston, Lebanon, N. H. Stencil	204,803	June 11	399	117	13	1069
Decker, H., Providence, R. I. Producing panoramic pictures	204,657	June 11	241	75	13	1050
Delkescamp, A., and F. B. Bradley, Southington, Conn.; said Delkescamp assignor to said Bradley. Machine for making eyelets	204,716	June 11	303	93, 94	13	1058
Dennis, G. B. (See Eaton, D. E., assignor.) (Reissue.)						
Dickerson, C. M. (See McConnell and Dickerson.)						
Dingens, J. A. (See Hemple, H. A., assignor.)						
Doherty, W. A., assignor of one-third interest to M. Higgins, Fall River, Mass. Loom-shuttle attachment	204,717	June 11	305	94	13	1059
Dorrance, J. G., *et al.* (See Slater, B., assignor.)						
Dugan, P. A., Brooklyn, N. Y. Chimney-cowl	204,804	June 11	400	117	13	1069
Dunbar, P., assignor of one-half interest to W. Constable, Cincinnati, Ohio. Clothes-drier	204,638	June 11	242	76	13	1050
Dyer, W. S., Portland, Me. Jacketed can	204,718	June 11	306	94	13	1059
Dann, L. N., and E. Kelsey, assignor to New Haven Folding Chair Company, New Haven, Conn. Chair	205,059	June 18	680	199, 200	13	1109
Daum, F. E. (See Whiting and Daum.)						
Davis, N., Ida, Mich. Wire-basket	205,060	June 18	682	200	13	1109
Davis, S., New York, N. Y. Fire-escape ladder	204,952	June 18	577	169	13	1095
Dawson, W., Scranton, Pa. Feed-water heater	204,953	June 18	578	169	13	1095

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Decker, A., Kankakee, Ill. Fly-wheel for sewing-machines	204,954	June 18	579	169	13	1096
Dederick, P. K., Albany, N. Y. Hay and cotton press. (Reissue)	8,292	June 18	800	237	13	1126
Deering, J. W., *et al.* (See Taylor, E. B., assignor.)						
Deveron, D., and H. Lackmann, San Francisco, Cal. Truss	204,955	June 18	579	169	13	1096
Dickerman, A., assignor to Mallory, Wheeler & Co., New Haven, Conn. Knob attachment	205,061	June 18	683	200	13	1109
Dixon, E., Bristol, R. I. Drawing-roll saddle	205,062	June 18	683	201	13	1109
Dodge, C. A., Middlebury, Vt. Washing-machine	205,063	June 18	684	201	13	1110
Doolittle, W. B., Brooklyn, N. Y. Awning	205,064	June 18	685	201	13	1110
Doyle, M., San Francisco, Cal. Wardrobe	204,956	June 18	581	170	13	1096
Du Brul, N., Cincinnati, Ohio. Cigar-packer press	205,065	June 18	687	201	13	1110
Durrand, E., La Bastide, Rousiroux, France. Brick and tile machine	204,957	June 18	581	170	13	1096
Duwelius, C. H., and H. Crivel, Richmond, Ind. Pump	204,958	June 18	583	171	13	1096
Dale Tile Manufacturing Company, (limited.) (See Dale, W., assignor.) (Reissue.)						
Dale, W., New York, assignor, by mesne assignments, to Dale Tile Manufacturing Company, (limited,) New York, N. Y. Illuminating vault-cover. (Reissue)	8,295	June 25	1110	329	13	1171
Dalton, J. Bouchea, Wis. Neck-yoke adjuster	205,249	June 25	890	264	13	1142
Dana, L. D. (See Randall and Dana.)						
Dana, L. D., Waupaca, Wis. Friction-clutch	205,362	June 25	1014	300	13	1157
Davis, A. S., Jersey City, N. J., assignor of one-half interest to G. M. Law, New York, N. Y. Picture-frame	205,250	June 25	891	264	13	1142
Davis, E. P., *et al.* (See Heckmann, L., assignor.) (Reissue.)						
Dawson, J., Brooklyn, N. Y. Attachment for hose	205,251	June 25	892	264	13	1142
Dawson, J. W., Chicago, Ill. Pessary	205,363	June 25	1015	300	13	1158
Dederick, P. K., Albany, N. Y. Baling-press. (Reissue)	8,296	June 25	1110	329	13	1171
Deihl, H. M. (See Bramble and Deihl.) (Reissue.)						
Delany, T., Geneva, N. Y. Strawberry-protector	205,252	June 25	893	264	13	1142
Dennis, S. W. (See Moreau and Dennis.)						
Derrickson, A. B., Bedford, Iowa. Hog-cholera compound	205,364	June 25	1016	.....	13	1158
De Vinne, D. S. (See Henning, A., assignor.)						
Devlin, J. (See Hurd, L. D., assignor.)						
Dewees, W. H., Philadelphia, Pa. Soap-holder	205,365	June 25	1016	300	13	1158
Dibble Manufacturing Company. (See Dibble, W. H., assignor.) (Reissue.)						
Dibble, W. H., Elizabeth, assignor to Dibble Manufacturing Company, Trenton, N. J. Making composition articles from blood. (Reissue)	8,305	June 25	1121	.....	13	1172
Dimelow, J., assignor to T. Martin, Austin, Tex. Manufacture of hydraulic cement	205,253	June 25	894	.....	13	1142
Dobson, H. C., *et al.* (See Butcher, J., assignor.)						
Dodge, C. A., Middlebury, Vt. Pounder washing-machine	205,366	June 25	1017	301	13	1158
Dohmstreich, F. L. (See Rivard, M. J., assignor.)						
Dooley, T. B., assignor to himself, D. Gunn, and G. N. Bliss, Boston, Mass. Varnishing-machine	205,367	June 25	1019	302	13	1158
Duffield, J. (See Cammell and Duffield.)						
Dunbar, J. H., Glenwood, Mo. Cut-off for engines	205,368	June 25	1020	302	13	1158
Ebaugh, D. C., Charleston, S. C. Disintegrating or mixing machine	198,764	Jan. 1	41	11	13	14
Edgarton, W. W., Bouckville, N. Y. Curing hops and furnace used therefor	198,875	Jan. 1	155	44	13	33
Eickemeyer, R., Yonkers, N. Y. Process and machine for stretching hats	198,876	Jan. 1	156	45	13	33
Elkins, F. and L., Brooklyn, N. Y. Automatic fan	198,798	Jan. 1	81	21, 22	13	20
Elkins, I. (See Elkins, F. and I.)						
Evans, E., Philadelphia, Pa. Umbrella	198,841	Jan. 1	118	34	13	27
Early, J. (See Young, W. E., assignor.)						
Eckardt, J. C., Stuttgart, Würtemberg, Germany. Show-stand for Christmas-trees, &c	199,044	Jan. 8	331	97	13	67
Edwards, W. E., Oakland, and F. J. Gracier, San Francisco, Cal. Bellows-nozzle	198,932	Jan. 8	323	63	13	50
Ehrich, A. J. F., Kellogg, Minn. Draft-equalizer	199,045	Jan. 8	332	98	13	68
Eisenbraun, A. (See Lange and Eisenbraun.)						
Elek, S. G., Buda-Pest, Austro-Hungary. Machine for testing the quality of rolling stock, &c	199,046	Jan. 8	333	98	13	68
Emery, G. D. (See McCollum and Seely, assignors.)						
Emerson, R., *et al.* (See Smith, J. D., assignor.)						
Eastman, G. C., Lewiston, Me. Shaft-supporter for carriage-harness	199,148	Jan. 15	455	134	13	86
Emerson, J. H., St. Joseph, Mo. Horse-collar fastening	199,276	Jan. 15	579	169	13	106
Edwards, H. H., and J. R., Baltimore, Md. Temporary binder for letters, &c	199,525	Jan. 22	841	245	13	155
Edwards, J. R. (See Edwards, H. H., and J. R.)						
Ellenberger, G., Darmstadt, Germany. Process and apparatus for mashing. (Reissue)	8,050	Jan. 22	939	273	13	170
Ericson, E., Joliet, Ill. Centering-square and protractor	199,425	Jan. 22	736	216	13	139
Ertel, G., Quincy, Ill. Cotton and hay press	199,360	Jan. 22	675	198	13	129
Erwin, J. B., Milwaukee, Wis. Sled-propeller	199,361	Jan. 22	676	198	13	129
Estey & Co., J. (See Fuller, L. K., assignor.)						
Eckert, W., Jersey City, N. J. Wheelbarrow	199,698	Jan. 29	1040	304	13	194
Eddy, G. W., Waterford, N. Y. Car-wheel	199,627	Jan. 29	973	283	13	184
Edson, J. T. (See Deering, M. L., assignor.)						
Edwards, A. G. (See Andrews and Edwards.)						
Edwards, A. N., *et al.* (See Randall, J. C., assignor.)						
Edwards, Y. M., *et al.* (See Randall, J. C., assignor.)						
Emerick, J. T., Chicago, Ill. Tobacco-pail	199,628	Jan. 29	974	283	13	184
Ereckson, L. C., New Cambria, Ill. Grain-toller	199,629	Jan. 29	975	283	13	184
Evans, W., Philadelphia, Pa., and W. H. Sparks, Camden, N. J., assignors to Benezet & Co., Philadelphia, Pa. Torsion-spring for vehicles	199,810	Jan. 29	1147	337	13	211
Everstine, D. M., Cumberland, Md. Car-window deflector	199,630	Jan. 29	976	284	13	184
Excelsior Grain Binder Company, (limited.) (See Garrard, J., assignor.)						
Eames, F. W., Watertown, N. Y. Car-brake coupling	200,031	Feb. 5	135	44	13	254
Edgar, J., New York, and A. Bardell, Brooklyn, N. Y. Frying-pan	200,033	Feb. 5	137	45	13	255
Edison, T. A., Menlo Park, N. J. Synchronous movement for electric telegraphs	200,032	Feb. 5	136	45	13	254
Edwards, J. W., Oswego, Ill. Pinchers for applying fence-barbs	199,965	Feb. 5	75	25	13	245
Eickemeyer, R., Yonkers, N. Y. Hat blocking and banding machine	200,034	Feb. 5	138	45, 46	13	255
Eisenberg, G. (See Freshman, A. P., assignor.)						
Eisenhart, W. H., *et al.* (See Yinger, F. S., assignor.)						
Elmer, A. E., Shelburne Falls, Mass. Pocket-knife	199,966	Feb. 5	76	25	13	245
Elton, A., New York, N. Y. Wire-rope ladder	199,967	Feb. 5	77	25	13	245
Eppelsheimer, W., San Francisco, Cal. Tube for wire-rope railways	199,900	Feb. 5	10	3	13	234
Eppelsheimer, W., San Francisco, Cal. Wire-rope railway-tube	199,901	Feb. 5	11	4	13	234
Evans, J., Wolverhampton, Great Britain. Steam-pump	200,035	Feb. 5	141	46	13	255
Evens, G., Cleburne, Texas. Rotary engine	200,036	Feb. 5	142	46	13	256
Eggers, S. (See Pierce and Eggers.)						
Elliott, S. A., Oxford, N. C. Reel	200,268	Feb. 12	387	114	13	301
Elzey, S. B., Hope, Ark. Pump	200,185	Feb. 12	304	91	13	288

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Emmitt, J. V., Sterling, Ill. Carriage-top	200,269	Feb. 12	388	115	13	301
Eureka Blast Company. (See Jones, E. J., assignor.)						
Echols, J., West Point, Miss. Indexing books	200,381	Feb. 19	513	151	13	328
Edison, T. A., Menlo Park, N. J. Phonograph or speaking machine	200,521	Feb. 19	646	191	13	348
Elliott, P. H., Greenville, Texas. Plow and seeder	200,444	Feb. 19	574	169	13	325
Eaton and Ayer. (See Mills, G. C., assignor.)						
Eaton, R. W., Watsonville, Cal. Spoke-tenoning machine	200,649	Feb. 26	796	234	13	379
Elmer, N., Freeport, Ill. Sulky-plow	200,650	Feb. 26	797	{234 235}	13	379
Emerson, R., assignor of one-half interest to H. H. Mason, Sycamore, Ill. Harvester	200,705	Feb. 26	857	252	13	388
Easterling, C., Marion County, Ind. Shifting carriage-top	200,858	Mar. 5	43	16	13	422
Ebbitt, W. (See Smith, W. H., assignor.)						
Eddy, R. A., East Saginaw, Mich. Clothes-pounder	200,902	Mar. 5	85	29	13	428
Edison, T. A., Menlo Park, N. J., assignor to Western Union Telegraph Company. Acoustic telegraph	200,993	Mar. 5	171	55	13	441
Edison, T. A., Menlo Park, N. J. Automatic telegraph perforator and transmitter	200,994	Mar. 5	173	55	13	441
Edson, J., Boston, Mass. Vehicle-axle box	200,903	Mar. 5	86	29, 30	13	428
Emery, C. G., Brooklyn, N. Y. Cigarette	200,859	Mar. 5	44	.....	13	422
Evans, G. W., Baltimore, Md. Cartridge	200,995	Mar. 5	175	56	13	442
Ellis, J. W. (See Nickerson, A. C., assignor.)						
Ellms, F. M., and J. Mills, Stoughton, Mass. Last-block fastener	201,100	Mar. 12	283	88	13	465
Excelsior Drive Screw and Bolt Company. (See Fetter, D. F., assignor.) (Reissue.)						
Eason, R. B., New York, N. Y. Car-axle box	201,393	Mar. 19	603	185	13	517
Eastman, G., Newton, Mass. Mirror and other frames	201,394	Mar. 19	604	185	13	517
Eberle, E. (See Eberle, L., Sr., E., and L., Jr.)						
Eberle, L., Jr. (See Eberle, L., Sr., E., and L. Jr.)						
Eberle, L., Sr., E., and L., Jr., Mabelvale, Ark. Plow	201,510	Mar. 19	720	219	13	534
Edson, J., Boston, Mass. Ships' pump	201,336	Mar. 19	546	168	13	500
Eggleston, W. H., Sugar Land, Texas. Hoe	201,395	Mar. 19	605	185	13	517
Eickemeyer, R., Yonkers, N. Y. Mower	201,396	Mar. 19	605	186	13	517
Elliott, S. (See Laffin and Elliott.)						
Emery, C. E., Brooklyn, N. Y. Steam engine for cotton-presses	201,397	Mar. 19	611	187	13	518
Ensten, C., Syracuse, N. Y. Game apparatus	201,398	Mar. 19	613	187	13	518
Everhart, M., Victoria, Texas. Device for driving light machinery from an irregular power	201,399	Mar. 19	613	187	13	518
Everhart, M., Victoria, Texas. Wind-wheel	201,400	Mar. 19	615	187	13	518
Everts, C. O. (See Johnson and Everts.)						
Ewing, C., Washington, D. C. Numbering-machine	201,401	Mar. 19	616	188	13	519
Eyster, W. F., Chambersburg, Pa. Water-motor	201,511	Mar. 19	721	219	13	534
Eastman, S. N. (See Eastman, W. E., assignor.)						
Eastman, W. E., assignor to S. N. Eastman, Worcester, Mass. Mitering-machine	201,657	Mar. 26	887	270	13	561
Eddy, P. S., and O. P. Coggeshall, Providence, R. I. Collar and sleeve button and stud	201,600	Mar. 26	833	253	13	553
Edgar, W. D., and W. S. Day, assignors of one-third interest to S. H. Merrill, Ottawa, Kans. } Motor	201,761	Mar. 26	967	{301 302}	13	576
Edison, T. A., Menlo Park, N. J. Speaking-machine	201,760	Mar. 26	986	301	13	576
Edwards, R. L., Brooklyn, and J. Lee, New York, N. Y., assignors to A. H. Lucas and L. F. Prince, St. Louis, Mo. Egg-box	201,601	Mar. 26	833	253	13	553
Eigelberner, T. F., *et al.* (See Fox, A. C., assignor.)						
Elmer, W. W., Bay City, Mich. Apparatus for the manufacture of salt	201,762	Mar. 26	989	302	13	576
Empire Lubricating Company. (See Johnson, J., assignor.) (Reissue.)						
Everts, C., St. Louis, Mo. Cop-tube	201,763	Mar. 26	990	302	13	576
Everts, C., St. Louis, Mo. Wash-board	201,658	Mar. 26	888	270	13	561
Eisenman, L. (See Grube, J., assignor.)						
Ellithorpe, A. C., and C. Haas, Chicago, Ill. Fire-extinguisher and escape-tower	202,009	Apr. 2	145	42	13	620
Embrey, S. D. (See Wheatley, J. W., assignor.)						
Ensign, W. D., Mechanicsville, N. Y. Potato-bug catcher	201,916	Apr. 2	58	15	13	607
Ericson, J. V., Escanawba, Mich. Car-brake	201,917	Apr. 2	59	16	13	607
Estey, J. C., San Francisco, Cal. Utilizing power of water in pipes	201,875	Apr. 2	18	5	13	601
Everett, F. D., and A. Dubroy, Cleveland, Ohio. Spring-motor	202,010	Apr. 2	147	43	13	620
Ewart, W. D., assignor to A. B. Thomas and B. Sewell, Chicago, Ill. Dental bracket	201,876	Apr. 2	19	5	13	601
Eisenhardt, G. F., assignor to himself, H. Dienelt, and G. F. Gelbach, Philadelphia, Pa. Centrifugal machine	202,251	Apr. 9	417	122	13	662
Edgar, D., Adrian, Mich. Gate	202,422	Apr. 16	608	178	13	694
Edmondson, N. D., Crown Point, Ind. Sulky road-scraper	202,423	Apr. 16	609	178	13	693
Egge, F., assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Manufacture of sheet-metal chains	202,528	Apr. 16	709	{207 208 209}	13	707
Eickemeyer, R., Yonkers, N. Y. Hat pouncing-machine	202,529	Apr. 16	721	210	13	707
Elliot, W. H., New York, N. Y. Rock-drill	202,338	Apr. 16	526	154	13	681
Elliott, A., Warrensburg, Mo Spark-arrester	202,424	Apr. 16	610	179	13	693
Ellis, C., Boston, Mass., assignor to Globe Nail Company. Nail-plate-feeding mechanism	202,425	Apr. 16	611	179	13	693
Emmons, T. A., Lawrence, Mass. Loom-harness	202,339	Apr. 16	529	154	13	682
Enders, J., Louisville, Ky. Carriage-spring	202,340	Apr. 16	529	155	13	682
Enders, J., Louisville, Ky. Vehicle-spring	202,341	Apr. 16	530	155	13	682
Evans, C. A., Revere, Mass. Artificial sheep-skin	202,427	Apr. 16	614	.....	13	694
Evans, G. M., Pittsburg, Pa. Extension-ladder	202,426	Apr. 16	612	179	13	694
Ewing, D. R., *et al.* (See Weymouth, J. W., assignor.)						
Earnshaw, O., assignor of one-half interest to E. Johnson, Jr., Chicago, Ill. Fire-lining and back for furnaces, &c	202,637	Apr. 23	860	.....	13	733
Eddy, G. W., New Britain, Conn. Burglar-alarm	202,798	Apr. 23	1025	294	13	753
Elliot, W. H., New York, N. Y. Rock-drilling engine	202,638	Apr. 23	861	247	13	733
Elliott, C. J., Pottsville, Pa. Gage-cock	202,639	Apr. 23	864	247	13	733
Ellison, W. P., *et al.*, trustee. (See Alton, R. C., assignor.)						
Elmer, A. E., Shelburne Falls, Mass. Grinding-machine	202,640	Apr. 23	865	248	13	733
Emmert, J. A. (See Bailey, Emmert, and Capps.)						
Enright, J., Cleveland, Ohio. Ammoniacal-gas pump	202,641	Apr. 23	866	248	13	733
Evans, D. F., *et al.* (See Challinor, D., assignor.)						
Everett, G. W., assignor to himself and B. D. Adams, New York, N. Y. Skirt-exhibitor	202,713	Apr. 23	940	269	13	741
Ewing, J. A., assignor of one-half interest to L. V. Sherwood, Berlin Cross Roads, Ohio. Fire front	202,799	Apr. 23	1026	294	13	753
Edison, T. A., Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Speaking-telegraph	203,013	Apr. 30	1260	365	13	787
Edison, T. A., Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Speaking-telegraph	203,014	Apr. 30	1262	{365 366}	13	787

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Edison, T. A., Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Speaking-telegraph	203,015	Apr. 30	1263	366	13	787
Edison, T. A., Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Speaking-telephone	203,016	Apr. 30	1265	366	13	787
Edison, T. A., Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Telephone call-signal	203,017	Apr. 30	1266	366	13	787
Edison, T. A., Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Telephone or speaking-telegraph	203,018	Apr. 30	1267	367	13	787
Edison, T. A., Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Circuit for acoustic or telephonic telegraphs	203,019	Apr. 30	1268	367	13	788
Edwards, W. P. (See Irwin, T. H., assignor.)						
Elliott, W. R. E., *et al.* (See Mackey, J., assignor.)						
Elting, P. T., Boston, Mass. Grinding-mill	203,126	Apr. 30	1368	398	13	801
Elting, P. T., Boston, Mass. Grinding-mill	203,127	Apr. 30	1369	399	13	801
Emery, A. H., New York, N. Y. Breech-loading cannon	203,020	Apr. 30	1270	367	13	788
Everett, L., Lockport, N. Y. Vehicle-top adjuster	202,937	Apr. 30	1188	342	13	777
Everding, J. (See Hunter and Everding.)						
Everding, J., assignor of one-half interest to A. S. Jenks, Philadelphia, Pa. Valve-gearing for steam-engines	203,128	Apr. 30	1370	399	13	802
Eastman, G., Newton, Mass. Composition frame for hand mirrors, brushes, &c	203,251	May 7	15	6	13	823
Eberhart, J. W., Mishawaka, Ind. Sulky-plow	203,432	May 7	208	60	13	848
Eckel, G., Richmond, Ind. Eave-trough former	203,433	May 7	209	60	13	849
Edgar, J., New York, N. Y. Sheet-metal pan	203,328	May 7	98	28	13	833
Edison, T. A., Menlo Park, N. J. Perforating-pen	203,329	May 7	99	28	13	833
Elliott, A., Warrensburg, Mo. Vehicle-spring brace	203,330	May 7	99	29	13	833
Elsey, G., assignor of one-half interest to E. Risley, Springfield, Mass. School-desk	203,252	May 7	16	6	13	823
Elstner, D. S., Canton, Ohio. Device for supplying steam and air blasts to furnaces	203,434	May 7	209	60	13	849
Enright, J., San José, and J. L. Heald, Vallejo, Cal. Steam-boiler furnace	203,253	May 7	17	7	13	823
Ericsson, J., New York, N. Y. Submarine torpedo and means for propelling the same	203,435	May 7	211	61	13	849
Evans, H. E., Flint, Mich. Hay-loader	203,254	May 7	18	7	13	823
Evans, J., Cleveland, Ohio. Lathe stone-chuck	203,436	May 7	213	61	13	849
Everson, C. R., assignor of one-half interest to J. Woolsey, Macedon, N. Y. Wash-boiler bottom	203,331	May 7	100	29	13	833
Ewing, C., Washington, D. C. Bale-tie	203,255	May 7	19	7	13	823
Eastman, A. M., Somerville, Mass. Camp bed and chair	203,605	May 14	401	114	13	883
Eckles, G., Dover Centre, Minn. Grain-separator	203,717	May 14	517	147	13	897
Edmands, G. D., Milford, Mass. Spinning-ring holder, &c	203,606	May 14	402	114	13	883
Engle, P. (See Brown, D. F., Sr., assignor.)						
Everest, H. B., and C. E. Ross, executrix of A. P. Ross, deceased, assignors to Vacuum Oil Company, Rochester, N. Y. Box and can for oils and paints. (Reissue)	8,225	May 14	617	172	13	909
Eastman, H. W., assignor to himself and W. J. C. Dulany, Baltimore, Md. Blackboard	204,011	May 21	843	241	13	946
Eby, H. H., Mendota, Ill. Cob-elevator for corn-shellers	204,012	May 21	844	241	13	946
Eich, M. J., Plymouth, Ind. Drive-well-point filter	203,900	May 21	720	206	13	931
Elliott, A., Warrensburg, Mo. Car-coupling	204,013	May 21	846	242	13	946
Ellis, G. R., Indianapolis, Ind. Organ stop-action	203,901	May 21	720	206	13	931
Ely, R., Davisburg, Mich. Nut-lock	204,014	May 21	846	242	13	946
Espenschied, L., St. Louis, Mo. Vehicle-axle lubricator	203,821	May 21	640	180	13	920
Eames, H. H., San Francisco, Cal. Apparatus for refining sulphur	204,206	May 28	1073	306	13	979
Easterly, J. (See Burdick and Easterly.)						
Eaton, A. K., Brooklyn, N. Y. Multipolar magnet	204,141	May 28	999	284	13	969
Edgar, J., New Bloomfield, Pa. School-desk	204,207	May 28	1075	306	13	979
Edmondson, J. H., Valparaiso, Ind. Earth-scraper	204,142	May 28	999	284	13	969
Elliote, G. R. (See Elliote, J. B., and G. R.)						
Elliote, J. B., and G. R., Moncton, New Brunswick, Canada. Well-drilling apparatus	204,143	May 28	1001	284	13	969
Emerson & Sons, C. (See Sellers, W., assignor.)						
Entenmann, M., New York, N. Y. Game apparatus	204,208	May 28	1075	306	13	979
Eaton, E. H., Philadelphia, Pa. Try-square, bevel, and miter	204,428	June 4	13	5	13	1014
Eckes, P. J. (See Hildenbrand and Eckes.)						
Elder, J. W., Hardinsburg, Ky. Bee-hive	204,540	June 4	116	40	13	1029
Elderfield, F. D., St. Louis, Mo. Sewing-machine	204,429	June 4	14	5, 6	13	1015
Emery, H. C., assignor of one-half interest to R. S. Cates, Union, Oreg. Turning-chisel	204,485	June 4	64	22	13	1021
Eno, J. A., Newark, N. J. Ironing-table	204,550	June 4	117	40	13	1029
Erb, W. C., Hummelstown, Pa. Bee-hive	204,551	June 4	118	40	13	1029
Earnest, G. H., Springfield, Ohio. Sash-holder	204,659	June 11	242	76	13	1050
Eaton, D. E., deceased, M. A. Eaton, administratrix and assignor to G. B. Dennis, Dayton, Ohio. Stamp-canceler. (Reissue)	8,282	June 11	491	142	13	1080
Eaton, M. A., administratrix. (See Eaton, D. E.) (Reissue.)						
Eberly, E., Dayton, Ohio. Sash-balance	204,660	June 11	243	76	13	1050
Edge, S. (See Calhoun, M., assignor.)						
Emmert, C. A., *et al.* (See Winebrenner, J. A., assignor.)						
Estey & Co., J. (See Holden, J. H., assignor.)						
Ethridge, M. V. B., Boston, Mass. Machine for smoothing and finishing boot-legs	204,662	June 11	245	77	13	1050
Edgecomb, E. F., assignor of one-half interest to W. Watters, Mechanics Falls, Me. Magazine fire-arm	205,066	June 18	688	202	13	1110
Erpelding, L., assignor to C. H. and L. J. McCormick, Chicago, Ill. Grain-binder	205,067	June 18	688	{202 203 204}	13	1110
Esselatyn, W. N., Fort Atkinson, Wis., assignor of two-thirds interest to Barnard & Leas Manufacturing Company. Grain-separator	204,889	June 18	513	150	13	1067
Evarts, J. A., assignor to Bradley & Hubbard Manufacturing Company, West Meriden, Conn. Extension-chandelier	205,068	June 18	691	204	13	1111
Eckert, O., and J. W. Levan, White Haven, Pa. Rail-joint	205,360	June 25	1021	302	13	1158
Edison, T. A., Menlo Park, N. J. Pneumatic stencil-pen	205,370	June 25	1022	302	13	1158
Elliott, W. T., Orange, Mass. Sewing-machine shuttle	205,254	June 25	894	265	13	1142
Ellis, J. F., *et al.* (See Crandall, L. P., assignor.)						
Emmerich, C., and W. Hamermiller, Chicago, Ill. Feather-renovator	205,178	June 25	813	242	13	1132
Everhart, M., Fort Worth, Tex. Machine for storing the power of wind-engines	205,255	June 25	895	265	13	1142
Eysenbach, H. P. (See Mayrhofer, F., assignor.)						
Ezard, C., Bradford, England. Sad-iron and heater	205,371	June 25	1023	303	13	1159
Fairbanks & Co., E. and T. (See Fairbanks and Spooner, assignors.)						
Fairbanks, F., and T. Spooner, assignors to E. and T. Fairbanks & Co., St. Johnsbury, Vt. Scales for weighing pasteboard	198,877	Jan. 1	161	45	13	33
Farley, J., Marquette, Mich. Lubricator	198,842	Jan. 1	119	34	13	27

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Fenton, H. C., Wethersfield, assignor of one-half interest to W. H. Champlin, Stafford Springs, Conn. Printer's composing-stick	198,913	Jan. 1	197	56	13	39
Fillman, H. J., *et al.* (See Phelps, L. M., assignor.)						
Fingar, J. W., assignor of one-half interest to C. L. Adams, Auburn, N. Y. Corn-sheller	198,878	Jan. 1	162	46	13	34
Fisher, C. R., Chelsea, Mass. Tip for fishing-rods	198,879	Jan. 1	163	46	13	34
Flagg, J. M., Providence, R. I. Vertical loom	198,765	Jan. 1	43	11, 12	13	14
Fleming, J., Monroeville, Ind. Road-scraper	198,880	Jan. 1	163	46	13	34
Foster, C. W., New Haven, Conn. Corset	198,881	Jan. 1	164	46	13	34
Frécot, A. A., Paris, France. Safety-brake for machinery	198,799	Jan. 1	81	22	13	20
Fulton, S. M., Pittsburg, Pa. Heating and feeding water for steam-boilers	198,737	Jan. 1	6	1	13	9
Fabre, A., New York, N. Y. Machine for cutting corks	199,047	Jan. 8	334	98	13	68
Faupel, J. H. (See Barnes and Faupel.)						
Felt, G. H., *et al.* (See Smith, S. H., assignor.)						
Felter, J. B., Cazenovia, N. Y. Door-lock	199,048	Jan. 8	336	98, 99	13	68
Fetherston, T., Orange, N. J. Propelling boats	198,933	Jan. 8	224	63	13	50
Fields, C. C., Abingdon, assignor of one-half interest to H. A. and M. G. Mann, Washington county, Va. Adding-register for pencils	198,934	Jan. 8	225	63	13	50
Fifield, J. W., North Brookfield, Mass. Peg-float	199,049	Jan. 8	337	99	13	68
Fowler, S. W., assignor to F. H. Lovell & Co., New York, N. Y. Combined shade and chimney for lamps	199,050	Jan. 8	338	99	13	68
Fox, G. H., Boston, Mass. Breech-loading fire-arm	198,973	Jan. 8	265	76	13	57
Frisbie, E. G., and C. H. Johnson, Monroe, Mich. Combined bag-holder and truck	199,051	Jan. 8	338	99	13	68
Fuller, H. R., Princeton, Mo. Beef-steak tenderer	198,974	Jan. 8	266	76	13	58
Fanning, D. H., Worcester, Mass. Corset-clasp	199,277	Jan. 15	580	169	13	106
Farnsworth, H. T., Bellefonte, Pa. Governor	199,140	Jan. 15	456	134	13	87
Fellows, H., Bloomington, Ind. Blind-stop	199,278	Jan. 15	581	169	13	106
Ferguson, S. T., Minneapolis, Minn. Colter. (Reissue)	8,038	Jan. 15	652	191	13	117
Ferris, F. (See West, M. C., assignor.)						
Ferris, W. M., Jr., St. Louis, Mo. Butter-tray	199,279	Jan. 15	581	170	13	106
Field, G. F. (See Gue and Field.)						
Fitzpatrick, M. E. (See Vinton and Fitzpatrick.)						
Flather, E., and W. Houghtaling, Bridgeport, Conn. Table-leaf support	199,150	Jan. 15	457	134	13	87
Frey, J. A., New York, N. Y. Coal-oil stove	199,280	Jan. 15	582	170	13	107
Frost, H. S., Watertown, Conn. Umbrella tip-cup	199,196	Jan. 15	501	147	13	94
Farnam, H. M., St. Albans, Vt. Ventilator	199,426	Jan. 22	736	217	13	139
Farrell, W. E., Philadelphia, Pa. Manufacture of paper-pulp from salt-water fibrous plants	199,427	Jan. 22	737	.....	13	139
Fawkes, J. W., Marca, Ill. Corn-planter. (Reissue)	8,054	Jan. 22	945	274	13	171
Felthousen, E. G., Buffalo, N. Y. Lubricating-pump	199,428	Jan. 22	738	217	13	139
Felthousen, J. H., Baltimore, Md. Apparatus for forming molds for gear-wheels	199,526	Jan. 22	842	246	13	155
Ferguson, T. B., Baltimore, Md. Fish-hatching apparatus	199,527	Jan. 22	843	246	13	155
Field, J. F., Philadelphia, Pa. Glove-fastener	199,528	Jan. 22	845	247	13	156
Fielding, J. (See Bright, Ingham, and Fielding.)						
Flagg, W. F., Bloomington, Ill. Furnace	199,529	Jan. 22	845	247	13	156
Flagler, H. K. (See Winchester, E. S., assignor.)						
Foster, A. G., *et al.* (See Raymond, W. F., assignor.)						
Fowden, S., Philadelphia, Pa. Injector	199,530	Jan. 22	847	247	13	156
Frasier, W. H. (See Range, H. N., assignor.)						
Freeman, A., Boston, Mass. Attachment to kerosene-stoves	199,531	Jan. 22	848	248	13	156
Fuller, L. K., assignor to J. Estey & Co., Brattleborough, Vt. Reed-organ action	199,429	Jan. 22	739	217	13	139
Fuller, W. (See Shepard, T. N., assignor.)						
Fairbanks, F., St. Johnsbury, Vt. Scale-platform	199,811	Jan. 29	1148	337	13	211
Fairbanks, H. (See Robinson, I. J., assignor.) (Reissue.)						
Felix, B. F., and W. Scharnweber, Chicago, Ill. Rope spool-rack	199,631	Jan. 29	977	284	13	184
Ferguson, D. P., Jonesborough, Ga. Plow	199,812	Jan. 29	1149	337	13	211
Ferguson, T., *et al.* (See Wight, P. B., assignor.)						
Fichter, C., assignor of one-half interest to J. Lighton, Syracuse, N. Y. Plaiting-machine	199,813	Jan. 29	1149	338	13	211
Fifield, H. S., New Hampton, N. H. Lamp-chimney	199,815	Jan. 29	1152	338	13	211
Fifield, J. F., Brooklyn, N. Y. Stop-valve	199,814	Jan. 29	1150	338	13	211
Figer, B., San Francisco, Cal. Carpet-sweeper	199,632	Jan. 29	978	284	13	184
Finser & Brothers, J. (See Miller and Worley, assignors.) (Reissue.)						
Fisher, G. W. (See Medart, P., assignor.)						
Fiske, H. G., Springfield, Mass. Revolving fountain	199,633	Jan. 29	979	284, 285	13	185
Fiske, H. G., Springfield, Mass. Lawn-sprinkler	199,816	Jan. 29	1152	338	13	212
Fiske, H. G., Springfield, Mass. Hose-reel	199,817	Jan. 29	1153	339	13	212
Flagg, E. H., New York, N. Y. Pad for external application of medicinal agents	199,818	Jan. 29	1155	339	13	212
Floyd, H. (See Zuern, D., assignor.)						
Follett, R. J. (See Gay and Follett.)						
Ford, I. V. (See Boxley, G., assignor.)						
Ford, S. H., Beaver Dam, Wis. Cultivator	199,634	Jan. 29	980	285	13	185
Frisell, J. P., Boston, Mass. Compressing air	199,819	Jan. 29	1155	339	13	212
Fulgham, J. P., assignor to Hoosier Drill Company, Milton, Ind. Corn-drill	199,820	Jan. 29	1157	340	13	212
Farmer, S. E., assignor to himself and A. A. Simonds, Dayton, Ohio. Apparatus for hardening and tempering saws	199,968	Feb. 5	78	25	13	245
Faxon, J. W., Quincy, Mass. Steam apparatus for buildings	200,037	Feb. 5	143	47	13	256
Ferguson, S. T., Minneapolis, Minn. Sulky-plow	200,038	Feb. 5	144	47	13	256
Ferguson, T., *et al.* (See Meaker, J. W., assignor.)						
Field, G. B., New York, assignor of one-half interest to J. A. Clay, Auburn, N. Y. Facing for buildings	200,039	Feb. 5	146	47, 48	13	256
Field, W., Birmingham, England. Breech-loading fire-arm	200,041	Feb. 5	149	48, 49	13	256
Fields, J. F., Greenville, Tenn. Saw-set	200,040	Feb. 5	148	48	13	256
Finch, W. R., Eureka, Cal. Breech-loading fire-arm	200,042	Feb. 5	152	49, 50	13	257
Finley, G., Pittsburg, Pa. Key for locks	199,969	Feb. 5	79	26	13	245
Fish, J. B., Providence, Pa. Hydrant and street-washer	200,043	Feb. 5	154	50	13	257
Flanders, M. C., Kendall, N. Y. Wagon-jack	200,044	Feb. 5	155	50	13	257
Fleisch, J. H., New York, N. Y. Neck-tie	200,045	Feb. 5	156	50	13	257
Follett, J. L., New York, N. Y. Universal joint for connecting rotary shafts	200,046	Feb. 5	157	51	13	258
Forbes, A. A., Valleyfield, Quebec, Canada. Cloth-shearing machine	199,970	Feb. 5	79	26	13	245
Fosburgh, C. E., Louisville, Ky. Canopy-top for carriages. (Reissue)	8,074	Feb. 5	236	72	13	269
Foster, M. W. (See Ryder, B. F., assignor.)						
Fowler, W. R., Baltimore, Md. Attachment for plows	200,047	Feb. 5	158	51	13	258
Freshman, A. P., assignor of one-half interest to G. Eisenberg, Bellville, Ill. Compass	200,048	Feb. 5	159	51	13	258
Friedberger, H., *et al.* (See Blackburn and Moeslein, assignors.)						
Frost, G., *et al.* (See Bennett, E. S., assignor. (Reissue.)						

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Fahlberg, C., Baltimore, Md. Utilizing zinc sulphate	200,134	Feb. 12	252	.....	13	281
Fillman, H. J., *et al.* (See Phelps, L. M., assignor.)						
Fiske, B. A., Naperville, Ill. Boat attaching and detaching apparatus	200,270	Feb. 12	389	115	13	301
Fitch, E. T., *et al.* (See Bristol, C. B., assignor.)						
Fitch, W., *et al.* (See Bristol, C. B., assignor.)						
Forsyth, J., assignor to himself and J. P. Houghton, New York, N. Y. Roller-skate	200,186	Feb. 12	305	91	13	288
Forsyth, J., assignor to himself and J. P. Houghton, New York, N. Y. Roller-skate	200,271	Feb. 12	390	115	13	301
Forsyth, J., Paris, Texas. Device for use in reciprocating churns	200,272	Feb. 12	390	.....	13	301
Fowler, S. J., Westfield, Mass. Explosive compound	200,187	Feb. 12	306	91	13	288
Fox, J., New York, N. Y. Postage-stamp	200,273	Feb. 12	391	115	13	301
Franklin, W. H., Philadelphia, Pa. Horse-boot	200,274	Feb. 12	392	116	13	301
Frey, J. A., New York, N. Y. Oil-can	200,445	Feb. 19	575	170	13	337
Fahnestock, J. D., and L. A. Powell; said Powell assignor to O. Willson, Aurora, Ill. Dental plate	200,522	Feb. 19	648	191	13	349
Fairbairn, C., and H. Simon, Manchester, England. Machine for impressing screw-threads on bolts, &c.	200,382	Feb. 19	514	152	13	328
Falcon, M. (See Isenminger, D. H., assignor.)						
Farrar, W. B., assignor to Western Electric Manufacturing Company, Chicago, Ill. Mercurial thermostat	200,383	Feb. 19	515	152	13	328
Fischer, C. G., Schloss Holte, near Bielefeld, Westphalia, Germany. Tap with turnable outlets	200,523	Feb. 19	650	191	13	340
Fisher, J. W., Groton, N. Y. Fire-pot or portable furnace	200,524	Feb. 19	651	192	13	349
Flagler, H. K., *et al.* (See Batchelder, H. J., assignor.)						
Flinn, J., Philadelphia, Pa. Wire ladder	200,446	Feb. 19	576	170	13	337
Flower, G. H., Chicago, Ill. Lubricator	200,525	Feb. 19	652	192	13	349
Flynn, J. T., Colchester, Conn. Boot-tree	200,526	Feb. 19	653	192	13	349
Forney, J. (See Bishop, J., assignor.)						
Foster, G. W., Green Point, N. Y. Fire-escape	200,384	Feb. 19	515	152	13	328
Foy, L. H., New Haven, Conn. Corset	200,386	Feb. 19	518	153	13	329
Fredericks, C. A., Brooklyn, N. Y. Weighing-scales	200,385	Feb. 19	517	153	13	328
Freeman, A. A., assignor of one-half interest to J. H. Scott, Jr., Philadelphia, Pa. Car-axle box	200,447	Feb. 19	577	170	13	338
Fritschy, C., Delaware, Ohio. Shifting-rail for carriage-seats	200,448	Feb. 19	578	170	13	338
Frost, F. C., assignor to himself and J. E. Craig, Anoka, Minn. Circular-saw mill	200,706	Feb. 26	860	253	13	388
Fay, R. C., Pawtucket, R. I. Bobbin and spool	200,608	Feb. 26	755	221	13	373
Fern, H. (See Glenn and Fern.)						
Foley, J., Montreal, Canada. Water-filter	200,790	Feb. 26	937	276	13	400
Forsyth, J. G., *et al.* (See Tripp, A. F., assignor.)						
Foulke, J. W., Brooklyn, N. Y. Ore-mill	200,707	Feb. 26	861	253	13	388
French, C. M., Pittsburg, Pa. Manufacture of combined plowshare and point	200,609	Feb. 26	756	221	13	373
Frost, H. S., assignor to A. N. Woolson, Watertown, Conn. Umbrella-runner	200,651	Feb. 26	800	235	13	379
Fuller, A. P., Rutland, Vt. Combined shoulder-brace and suspenders	8,103	Feb. 26	969	285	13	405
Fuller, H. W., Brooklyn, N. Y., assignor, by mesne assignments, to I. W. Barnum. Mechanism for marking cloth in sewing-machines. (Reissue)	200,996	Mar. 5	175	56	13	442
Fairchild, C. T., Salisbury, assignor to Burrell, Ives & Co., Little Falls, N. Y. Machine for cutting veneers	200,997	Mar. 5	177	56	13	442
Farmer, C., Rockford, Ill. Churn	200,824	Mar. 5	10	3	13	416
Farr, H. G. (See La Fonte, J. G., assignor.)						
Farre, W. T., Providence, R. I. Button	200,825	Mar. 5	10	4	13	416
Feth, M. (See Conover, G., assignor.)						
Flinner, J., Millersburg, Ohio. Gate	200,904	Mar. 5	87	30	13	428
Flocke, R., Newark, N. J., assignor to R. Newman & Co., New York, N. Y. Bag-lock	8,112	Mar. 5	261	82	13	454
Frazier, J. W., New York, N. Y. Cartridge-box. (Reissue)	200,998	Mar. 5	178	56	13	442
Freer, R., Cassopolis, Mich. Water-heating apparatus	200,860	Mar. 5	45	16	13	422
French, C., Seymour, Conn. Car-spring	200,999	Mar. 5	178	57	13	442
Fretz, N., Centre Point, Ind. Nipple-guard for fire-arms	201,000	Mar. 5	179	57	13	442
Frost, R., Chester, England. Apparatus for reducing semolino, middlings, or sharps to flour	200,905	Mar. 5	87	30	13	428
Fuller, A. C., Middletown, N. Y. Hat-pressing machine	200,906	Mar. 5	89	30	13	429
Fuller, A. C., assignor to himself and G. B. Fuller, Middletown, N. Y. Hat-folding device						
Fuller, G. B. (See Fuller, A. C., assignor.)						
Fahrney, C. E., Timberville, Va. Harvester-reel	201,231	Mar. 12	415	128	13	484
Fanning, J. T., Manchester, N. H. Steam-boiler	201,232	Mar. 12	416	128	13	484
Farrell, M. A., Boston, Mass. Combined tap and faucet	201,172	Mar. 12	354	109	13	475
Fayette, J. B., Oswego, N. Y. Lifting-jack	201,173	Mar. 12	355	109	13	475
Fender, W. J., *et al.* (See Bergstrom, A., assignor.) (Reissue.)						
Ferguson, T., *et al.* (See Meaker, J. W., assignor.)						
Fetter, D. F., assignor, by mesne assignments, to Excelsior Drive Screw and Bolt Company, New York, N. Y. Drive-screw. (Reissue)	8,121	Mar. 12	523	160	13	498
Fisher, D. A., *et al.* (See Roberts, E. J., assignor.)						
Fletcher, D. R. (See Morel and Fletcher.)						
Fogarty, T. B., Jersey City, N. J. Vapor-jet gas-machine	201,101	Mar. 12	284	88	13	465
Foley, J., Montreal, Canada. Water-filter	201,102	Mar. 12	285	88	13	465
Foley, J., Montreal, Canada. Water-filter	201,103	Mar. 12	286	89	13	466
Folk, E. M., Brooklyn, N. Y. Exercising device	201,174	Mar. 12	355	109	13	476
Foster, J. B., Delaware, Ohio. Wind-engine	201,233	Mar. 12	417	129	13	484
Fox, C. J. (See Lester and Fox.)						
Fox, S. G. L., London, England. Electric gas-lighting device	201,175	Mar. 12	356	110	13	476
Fray, H. H., and L. Hellman, Chicago, Ill. Machine for cutting labels	201,104	Mar. 12	287	89	13	466
Fuchs, H., assignor to A. M., G. W., and A. E. Barnhart, and C. E. Spindler, Chicago, Ill. Clutching device	201,105	Mar. 12	288	89	13	466
Farnham, G. W., Lowell, Mass. Steam-engine lubricator	201,402	Mar. 19	619	132	13	519
Farrar, J., assignor of one-half interest to J. C. Nichol, Montreal, Canada. Tobacco-cutter	201,338	Mar. 19	549	130, 131	13	509
Fay & Co., J. A. (See Clark, F., assignor.)						
Fay & Co., J. A. (See Doane and Bugbee, assignors.)						
Fay, W., St. Louis, Mo. Wardrobe-bedstead	201,337	Mar. 19	548	130	13	509
Fay, W. L. (See Moore, M. M., assignor.)						
Ferguson, T. J., Pikeville, Md. Machine for coating paper with tobacco-pulp	201,340	Mar. 19	551	169	13	510
Ferrier, C., Minneapolis, Minn. Toe-weight for horses	201,339	Mar. 19	550	169	13	510
Finch, J. R., Dayton, Ohio. Grain-drill	201,341	Mar. 19	552	169	13	510
Finders, P., Newark, N. J. Window-screen	201,512	Mar. 19	722	220	13	535
Fisher, A. L., Orange, N. J. Spout for oil-cans	201,513	Mar. 19	723	220	13	535
Ford, G. W., Elba, N. Y. Machine for expanding and contracting metal	201,403	Mar. 19	620	189	13	519
Foster, A. F., Alton Junction, Ill., assignor of one-third interest to M. Devin, St. Louis, Mo. Device for finishing the sockets of sewer-pipes	201,342	Mar. 19	553	170	13	510

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fraser, D. (See Henry and Fraser.)						
Fuller, W. K., Modena, Ill. Stump-extractor	201,514	Mar. 19	724	220	13	535
Fassett, A. K., *et al.* (See Fassett, N. B., assignor.) (Reissue.)						
Fassett, C. F., *et al.* (See Fassett, N. B., assignor.) (Reissue.)						
Fassett, N. B., St. Louis, Mo., assignor, by mesne assignments, to himself, A. K. and C. F. Fassett, and G. F. Filley. (Reissue)	8,136	Mar. 26	1002	332	13	591
Feithemer, A., assignor to S. Wormser & Co., New York, N. Y. Manufacture of corsets	201,764	Mar. 26	991	302	13	577
Felton, L. E., Potsdam, N. Y. Inhaler	201,650	Mar. 26	888	271	13	561
Filley, G. F., *et al.* (See Fassett, N. B., assignor.) (Reissue.)						
Fisher, J. B., Davenport, Iowa. Sulky-plow	201,765	Mar. 26	991	303	13	577
Fisher, J. C., Lawrence, Mass. Filter	201,602	Mar. 26	834	253	13	553
Fitzhugh, H. M., Bay City, Mich. Barrel	201,603	Mar. 26	836	254	13	553
Flint, W. W., assignor to Chicago Stamping Company, Chicago, Ill. Hinge for sheet-metal ware, boxes, &c	201,666	Mar. 26	889	271	13	561
Flynn, J. T., Naugatuck, Conn. Rubber boot	201,766	Mar. 26	995	304	13	577
Follett, J. L., New York, N. Y. Weighing-scales	201,604	Mar. 26	837	254	13	553
Forman, M., Memphis, Mo. Grain scouring and cleaning machine	201,767	Mar. 26	995	304	13	577
Foskett, W. M., Le Mars, Iowa. Combined ironing-board and cutting-table	201,605	Mar. 26	838	254	13	554
Foster, W. A., Chester, Ct. Carriage-jack	201,768	Mar. 26	997	305	13	578
Foust, N., Edenburg, Pa. Piston for steam-engines	201,661	Mar. 26	890	271	13	561
Fox, A. C., assignor of one-half interest to T. F. Eigelberner, Baltimore, Md.; said Fox and Eigelberner assignors of one-third interest to E. B. Cram, Portland, Me. Postage and revenue stamps	201,769	Mar. 26	997	305	13	578
Frazee, G. T., assignor of one-half interest to H. F. Miller, West Mitchell, Iowa. Printing-press	201,770	Mar. 26	998	305	13	578
Freeman, H. O., Sherburne, assignor to American Dairy and Commercial Company, New York, N. Y. Milk-stirrer	201,771	Mar. 26	1001	306	13	578
Frost, F. N., assignor of one-half interest to G. Swain, New Britain, Conn. Bottle-stopper fastener	201,662	Mar. 26	891	271	13	562
Fuller, C. A., *et al.* (See Morse, C. H., assignor.)						
Falcon, M., and D. H. Iseminger, Bloomington, Ill. Gas-lighter	201,918	Apr. 2	60	16	13	607
Feickert, C., New York, N. Y. Cord	202,011	Apr. 2	148	43	13	620
Fichter, C., assignor of one-half interest to J. Lighton, Syracuse, N. Y. Hasp-lock	201,877	Apr. 2	20	5	13	601
Fitch, E. T., *et al.* (See Bristol, C. B., assignor.)						
Fitch, W., *et al.* (See Bristol, C. B., assignor.)						
Fitt, F., Ottawa, Ontario, Canada. Watch going-barrel	202,012	Apr. 2	149	43	13	621
Foster, J. T., Arlington, N. J. Temporary binder	202,013	Apr. 2	150	44	13	621
Fuld, S., New York, N. Y. Combined candle-holder, match-safe, and nail-file	201,919	Apr. 2	61	16	13	607
Fulmer, T. J., and F. Wiegman, De Graff, Ohio. Shock-binder	202,014	Apr. 2	151	44	13	621
Furey, C. R., Logansport, Ind. Portable shower-bath	202,015	Apr. 2	152	44	13	621
Fees, J. W., assignor of one-half interest to G. A. Morse, Corning, Iowa. Harrow and weed-cutter	202,098	Apr. 9	257	75	13	640
Ferchlandt, C., New York, N. Y. Door-spring	202,099	Apr. 9	258	75	13	640
Field, G. B., St. Louis, Mo., assignor to Woolen Fabric Company, (limited,) New York, N. Y. Felting-machine for making felted and napped fabrics	202,252	Apr. 9	418	122	13	662
Finley, J. E., Memphis, Tenn. Curry-comb	202,161	Apr. 9	329	96	13	649
Fogg, J. T., assignor of one-half interest to L. Oak & Co., Garland, Me. Egg-carrier	202,253	Apr. 9	420	122	13	662
Fowler, T., Seymour, Conn. Hinge	202,162	Apr. 9	330	97	13	650
Freese, W. L., Mohawk Village, Ohio. Grading-machine	202,163	Apr. 9	331	97	13	650
Fritzner, N., Berlin, Prussia, Germany. Bottle-stopper	202,100	Apr. 9	259	75	13	640
Fairbanks, J. W. (See Thurston, H. W., assignor.)						
Faust, G. L., *et al.* (See Laird, W. A., assignor.)						
Feike, F., Middletown, Mo. Water-bed fence	202,428	Apr. 16	615	180	13	694
Ferguson, T., *et al.* (See Wight, P. B., assignor.)						
Ford, S. A., Allegheny, Pa. Converting non-chilling iron into chilling-iron	202,530	Apr. 16	728	.....	13	708
Forlow, J., assignor of two-thirds interest to L. Barnhart, Eaton, and W. Lantis, Winchester, Ohio. Machine for cutting up corn-stalks	202,531	Apr. 16	729	211	13	708
Fortin, M., Stillwater, Minn. Traction-engine	202,429	Apr. 16	615	180	13	694
Foutz, H. W., Bellefonte, Pa. Governor	202,430	Apr. 16	616	180	13	694
Fowler, J. F., Alliance, Ohio. Dash-rail	202,532	Apr. 16	730	211	13	708
Fowler, M., Northford, Conn. Making sheet-metal spoons	202,431	Apr. 16	617	181	13	694
Fox, W., Wheeling, W. Va. Glory-hole or reheating-furnace for glassware	202,533	Apr. 16	731	211	13	708
Frederick, L. W., Mooresville, Ind. Draft-equalizer	202,432	Apr. 16	618	181	13	694
French, C. (See Whiting, W. S., assignor.)						
French, C., Seymour, Conn. Manufacture of horseshoe-nails	202,534	Apr. 16	732	211	13	708
Fulton, S. M., Pittsburg, Pa. Device for supplying feed-water to boilers	202,535	Apr. 16	732	212	13	708
Fairbanks, T., St. Johnsbury, Vt. Weighing-scales	202,800	Apr. 23	1026	295	13	753
Faik, H., Nashville, Tenn. Medical compound	202,801	Apr. 23	1027	.....	13	753
Fassett, N. B., St. Louis, Mo. Harvester	202,802	Apr. 23	1028	{295 {296	13	753
Fassett, N. B., assignor of one-half interest to G. F. Filley, St. Louis, Mo. Grain-binder	202,803	Apr. 23	1030	{296 {297 {298	13	754
Feigenspan, C. (See Thomson and Naylor, assignors.)						
Fields, E. G. (See Taylor, B. H., assignor.)						
Filley, G. F. (See Fassett, N. B., assignor.)						
Firmin, G. J., and T. A. D. Forster, Norristown, Pa. Amalgamator	202,804	Apr. 23	1037	{298 {299	13	755
Fisher, R. A. (See Marsters and Fisher.)						
Flagg, H. W., and G. Jackson, Yonkers, N. Y. Felting process	202,805	Apr. 23	1038	299	13	755
Forney, J., Canfield, Ohio. Trace-coupling	202,806	Apr. 23	1039	299	13	755
Forschner, C., New York, N. Y. Spring-balance	202,807	Apr. 23	1040	299	13	735
Forster, T. A. D. (See Firmin and Forster.)						
Fox, N., assignor to himself and J. Ray, Savannah, Ga. Bottle-stopper	202,714	Apr. 23	940	269	13	741
Frazier, J. W., New York, N. Y. Cartridge-box	202,642	Apr. 23	868	249	13	733
Freeman, J., Chicago, Ill. Indicator	202,643	Apr. 23	869	249	13	734
Felix, B. F., Chicago, Ill. Ear for well-buckets	202,938	Apr. 30	1188	343	13	777
Fenstermacher, W., Shippensburg, Pa. Side-bar wagon	203,021	Apr. 30	1271	367	13	788
Fernald, A. S., Portland, Me. Button	203,022	Apr. 30	1271	368	13	788
Finley, J. R., assignor of one-half interest to W. F. Lytle, Delphi, Ind. Wash-board	203,129	Apr. 30	1373	400	13	802
Fischer, C. H., New York, N. Y. Laundry bluing-package	203,130	Apr. 30	1374	400	13	802
Fitch, H. D., Louisville, Ky. Bed-bottom	203,023	Apr. 30	1272	368	13	788
Flaherty, J., Memphis, Tenn. Corpse-cooler	203,024	Apr. 30	1274	368	13	788

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Foster, C., deceased, assignor, by mesne assignments, to L. H. Rogers, New York, N. Y. Letter-sheet envelope. (Reissue)	8,206	Apr. 30	1491	436	13	816
Foster, H. E., assignor of one-half interest to R. C. Crocker, Decatur, Ill. Corn-planter	203,025	Apr. 30	1274	368	13	788
Frankenstein, M., Chicago, Ill. Slate	203,026	Apr. 30	1275	369	13	788
Freeman, H. M., Lathrop, Mo. Riding attachment to plows	203,027	Apr. 30	1276	369	13	789
Freese, L. (See Johnson, W. D., assignor.)						
Frost, S. J., and H. T. Smith, Brooklyn, N. Y. Patty-pan	202,039	Apr. 30	1189	343	13	777
Field, I. A. (See Gielstrup and Field.)						
Fisher, A. H., Bellows Falls, Vt., assignor to A. N. Burbank, Lawrence, Mass. Reducing wood to pulp for paper	203,437	May 7	214	.....	13	849
Fleming, P. F., E. Wayland, and S. B. Gilliland, Salisbury; said Fleming assignor to A. W. Terrill, Mexico, Mo. Hay loader and stacker	203,332	May 7	101	29	13	833
Fredrickson, O., New York, N. Y. Portable hand-windlass	203,333	May 7	101	29	13	834
Frobisher, B. C., Brockton, assignor to B. C. Morse, Boston, Mass. Brush	203,256	May 7	20	7	13	823
Fuller, W. W. (See Rogers and Fuller.)						
Fairbanks & Co., E. and T. (See Spencer, L. G., assignor.)						
Fales, A. G. (See Banner, G. E., assignor.)						
Faulhaber, A., Heidelberg, Germany. Beer-cooling apparatus	203,718	May 14	518	147	13	897
Fellner, S., Streator, Ill. Skirt	203,607	May 14	403	114	13	883
Fenn, E. J., assignor of one-half interest to H. W. Collins, Medina, Ohio. Fire-kindler	203,535	May 14	335	95	13	875
Ferguson, C. W. (See Pierson and Ferguson.)						
Field, S. A., Philadelphia, Pa. Counterfeit-coin detecter and coin-receiver	203,719	May 14	519	147	13	898
Field, W. H. (See Denel, J., assignor.)						
Fisher, J. B., Davenport, Iowa. Fence	203,536	May 14	336	96	13	875
Fitch, L. M., assignor to J. S. Haselton, Rome, N. Y. Platform-wagon trestle	203,720	May 14	520	147	13	898
Frank, H., Cincinnati, Ohio. Catch-basin. (Reissue)	8,226	May 14	618	172	13	909
Franke, T. P., assignor of one-half interest to F. Noe, Buffalo, N. Y. Steam-generator	203,721	May 14	520	148	13	898
Franklin, M. C. (See Lane and Franklin.)						
Frey, J., New York, N. Y. Cigar	203,537	May 14	337	96	13	875
Furbush, M. A., Philadelphia, Pa., and C. H. Knowlton, Camden, N. J., assignors to M. A. Furbush & Son, Philadelphia, Pa. Loom	203,722	May 14	522	148	13	898
Furbush & Son, M. A. (See Furbush and Knowlton, assignors.)						
Fairbanks, F., St. Johnsbury, Vt. Weighing-scales	203,902	May 21	721	207	13	931
Fawcett, H. W., Philadelphia, Pa. Steam-pump for oil-wells	203,015	May 21	847	242	13	947
Feithemer, A., assignor to S. Wormser & Co., New York, N. Y. Manufacture of corsets. (Reissue)	8,244	May 21	966	276	13	961
Ferguson, T., *et al.* (See Wight, P. B., assignor.)						
Fisher, D., Oil City, Pa. Pipe-wrench	203,222	May 21	640	180	13	930
Fisher, J. B., Davenport, Iowa. Sulky-plow	203,903	May 21	722	207	13	931
Fisher, L. G., Jr., *et al.* (See Gibson, A. P., assignor.)						
Fitch, H. D., Louisville, Ky. Gas apparatus	204,016	May 21	848	{242 {243	13	947
Follett, J. L., New York, N. Y. Sewing-machine	203,904	May 21	727	208	13	932
Follett, J. L., New York, N. Y. Sewing-machine	204,905	May 21	728	208	13	932
Fowler, G. C., San Francisco, Cal. Boiler-covering compound	203,906	May 21	729	.....	13	932
Frazier, J. W., New York, N. Y. Cartridge-package	204,017	May 21	851	243	13	947
Freeman, G. L. (See Smith, Freeman, and Burrell.)						
Frisbie, H. F., Danville, Ill. Puppet-valve	204,018	May 21	851	243	13	947
Fales, A. G. (See Banner, G. E., assignor.)						
Fargo & Co., C. H. (See White, H., assignor.) (Reissue.)						
Fascher, H., and A. A. Singer, Chicago, Ill. Grain-distributing machine	204,308	May 28	1172	334	13	992
Fawcett, E. W., assignor to Silver and Deming Manufacturing Company, Salem, Ohio. Meat-chopper	204,209	May 28	1076	{306 {307	13	979
Fifield, H. S., New Hampton, N. H. Lamp for cooking	204,144	May 28	1002	285	13	970
Fletcher, J., Ashton-under-Lyne, Great Britain. Brass-melting furnace	204,309	May 28	1173	334	13	992
Ford, C. J. M. Slade, and F. Bayliss, New York, N. Y. Rubber-cutting machine	204,145	May 28	1003	285	13	970
Ford, E. S. M., Christiansburg, Ky. Washing-machine	204,310	May 28	1175	335	13	992
Fowle, W. B. (See Wales, W. A., assignor.)						
Friedley, A., Lemont, Ill. Wash-boiler	204,311	May 28	1175	335	13	992
Frotscher, R. (See Steckler, H., Jr., assignor.)						
Frye, W. H. H., Marshalltown, Iowa. Wire fence	204,312	May 28	1176	335	13	992
Fairchild, C. (See Munroe, J. S., assignor.)						
Farley, H. W., *et al.* (See Richards, M. C., assignor.)						
Ferguson, A., Brooklyn, N. Y. Sportsman's lantern	204,486	June 4	64	22	13	1022
Ferguson, T., *et al.* (See Meaker, J. W., assignor.) (Reissue.)						
Fisher, G. T., Fowlerville, Mich. Heel-support	204,532	June 4	119	41	13	1029
Florence Machine Company. (See Goodell, D. W., assignor.)						
Foster, J., Ypsilanti, Mich. Side spring for vehicles	204,533	June 4	119	41	13	1030
Foster, O. F. (See Kimball, E. M., assignor.)						
Frese, E., assignor of one-half interest to H. Lawrence, Chicago, Ill. Rotary engine	204,437	June 4	16	6	13	1015
Fuller, I. M., *et al.* (See Cosgrove, W. N., assignor.)						
Fairbanks, J. A., Boston, Mass. Bridle-bit. (Reissue)	8,278	June 11	488	141	13	1079
Ferguson, T., *et al.* (See Wight, P. B., assignor.)						
Fitts, J., Tuscaloosa, Ala. Machine for cleaning cotton, grain, &c	204,805	June 11	401	117	13	1069
Fitzwater, Ford & Co. (See Fitzwater, W. M., assignor.)						
Fitzwater, W. M., assignor to Fitzwater, Ford & Co., Greenville, Tenn. Washing-machine	204,661	June 11	244	76	13	1050
Fogelbach, D., Summit township, Erie P. O., Erie county, Pa. Sand-band for vehicle-hubs	204,719	June 11	307	94	13	1059
Forrest, J., Oakville, Md. Self-lighting lamp for light-houses	204,806	June 11	401	{117 {118	13	1069
Farnsworth, T. T., Manassas, Va. Pipe-coupling	205,069	June 18	662	204	13	1111
Farrand, F., Boston, Mass. Shetland shawl	204,959	June 18	584	171	13	1096
Felt, V. H., Kendall, N. Y. Lifting-jack	204,960	June 18	585	171	13	1096
Fernquist, J., Chattanooga, Tenn. Rocking-chair	205,070	June 18	664	204	13	1111
Fisher, J. (See Tipton, W., assignor.)						
Fittz, G. B., Attleborough, Mass. Button-fastening	205,071	June 18	664	205	13	1111
Fixary, E., New Orleans, La. Freezing apparatus	204,961	June 18	586	171	13	1097
Flagg, O. J. (See Luce, G. D., assignor.)						
Forsyth, J., Paris, Tex. Corn-popper	205,072	June 18	665	205	13	1111
Foster, F. M., Montgomery county, assignor of one-half interest to W. A. Peffer, Coffeyville, Kans. Sulky-plow	204,890	June 18	515	150	13	1067
Fox, G. H., Boston, Mass. Adjustable ladder-truss	204,962	June 18	588	172	13	1097
Francis, T. (See Stringer and Francis.)						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
French, O. S. (See Brayton, June, and French.)						
Farrington, D. C., Lowell, Mass. Carriage for machine-guns	205,179	June 25	816	242	13	1132
Farrington, D. C., Lowell, Mass. Cartridge-holder	205,180	June 25	817	243	13	1133
Fay & Co., J. A. (See Richards, J., assignor.) (Reissue.)						
Felt, J., Clayton, N. Y. Lamp or lantern	205,181	June 25	818	243	13	1133
Finlayson, D. M., St. Paul, Minn. Journal-bearing	205,256	June 25	896	265	13	1143
Flanders, J. P., and N. W. Goodrich, Vergennes, Vt. Horseshoe-nail machine	205,257	June 25	897	265	13	1143
Fleisher, S. B., Philadelphia, Pa. Device for holding coils of braid and similar articles	205,258	June 25	898	266	13	1143
Forbes, J., Jr., Plainwell, Mich. Rowlock	205,372	June 25	1023	303	13	1159
Forster, F., Springwells, Mich. Windmill	205,373	June 25	1024	303	13	1159
Foss, F., Lynn, Mass. Horse-brush	205,374	June 25	1025	303	13	1159
Fox, R., Deerfield, Iowa. Horse-detaching device	205,182	June 25	890	243	13	1133
Francis, L. G., New York, N. Y. Multiplying-mirror for exhibiting samples	205,375	June 25	1025	304	13	1159
Franklin, J. B., White Pine, Tenn. Convertible clothes-boiler and washing-machine	205,259	June 25	899	266	13	1143
Garlington, T. C., La Fayette, Ala. Manure-grinder	198,882	Jan. 1	165	47	13	34
Gathright, J. T., Louisville, Ky. Trace-carrier and back-band buckle	198,800	Jan. 1	82	22	13	20
Godley, G. F., Philadelphia, Pa. Car-spring	198,843	Jan. 1	120	34	13	27
Gold, E. E., Brooklyn, N. Y. Tubular heater	198,766	Jan. 1	45	12	13	15
Grant, R. C., Middleport, Ohio. Rotary cut-nail machine	198,844	Jan. 1	121	35	13	27
Gray, E., Chicago, Ill. Morse telephonic telegraphy	198,738	Jan. 1	7	2	13	10
Griffing, D. T. (See Blackman and Griffing.)						
Guild, W. H., Brooklyn, N. Y. Injection-condenser	198,883	Jan. 1	166	47	13	34
Gundlach, E., assignor of one-half interest to J. J. Bausch, Rochester, and H. Lomb, Brooklyn, N. Y. Object-glass for microscopes	198,914	Jan. 1	198	56	13	39
Gale, C. C. (See Young and Gale.)						
Gehrt, A. A., Quincy, Ill. Portable hay and cotton press	199,052	Jan. 8	339	100	13	69
Geiss, H. E., Florence, Ill. Grain-separator	198,975	Jan. 8	266	76	13	57
Gilchrist, W. L., Franklin, N. H. Screw-driver	198,935	Jan. 8	226	64	13	50
Gilman, S. H., New Orleans, La. Bale-tie	198,976	Jan. 8	267	77	13	57
Gimson, E., Stalybridge, England. Ore-crusher	198,936	Jan. 8	227	64	13	50
Gipson, J. C. (See Griswold and Gipson.)						
Godey, W. H. (See Burrows, H., assignor.)						
Gold and Stock Telegraph Company. (See Dolbear, A. E., assignor.)						
Golucke, E., assignor of one-half interest to C. Bergstrom, Crawfordville, Ga. Horse-power	199,053	Jan. 8	341	100	13	69
Goodwin, G., Cookshire, Quebec, Canada. Tanning leather	199,054	Jan. 8	342	.....	13	69
Gordon, J., assignor to Redlich and Schnitzler, New York, N. Y. Cigarette	198,977	Jan. 8	267	77	13	57
Gott, L. J., La Grange, Ohio. Car-coupling pin	198,937	Jan. 8	228	64	13	51
Gracler, F. J. (See Edwards and Gracler.)						
Gray, G. L., Philadelphia, Pa. Feed-regulator for carbureters	199,055	Jan. 8	343	100	13	69
Green, G. W., *et al.* (See Smith, S. H., assignor.)						
Green, W. H. (See Morgan, T., assignor.)						
Greenwood, J., Rochester, N. Y. Machine for making hoops	199,056	Jan. 8	344	100	13	69
Greenwood, J., Rochester, N. Y. Machine for making staves	199,057	Jan. 8	345	101	13	70
Greenwood, J., Rochester, N. Y. Barrel-hoop machine	199,058	Jan. 8	346	101	13	70
Grimm, P., Glen Cove, N. Y. Governor for steam-engines	198,978	Jan. 8	268	77	13	57
Griswold, G. B., and J. C. Gipson, Felt's Mills, N. Y. Feather-renovator	199,059	Jan. 8	347	101	13	70
Gutmann, M. L., Rochester, N. Y. Portable hand-punch	199,060	Jan. 8	348	101	13	70
Gallagher, A. E. (See Gallagher, A. J. and A. B.)						
Gallagher, A. J. and A. B., Philadelphia, Pa. Rectifying apparatus	199,281	Jan. 15	583	170	13	107
Gallagher, A. J. and A. B., Philadelphia, Pa. Rectifying apparatus	199,282	Jan. 15	584	171	13	107
Garison, L., Philadelphia, Pa. Brake for operating ships' windlasses	199,283	Jan. 15	585	171	13	107
Garretson, D. G., Chicago, Ill. Stencil-plate	199,197	Jan. 15	502	148	13	95
Garvin, F. J. (See Crowell, S., assignor.)						
Gerould, H., Cleveland, Ohio. Shield for commode-covers	199,284	Jan. 15	586	171	13	107
Gillett, G. W. (See Bricknell, A. L., assignor.)						
Gleason, A. (See Drouillard, J. P., assignor.)						
Goodrich, A. I., assignor to Waterbury Clock Company, Waterbury, Conn. Clock	199,198	Jan. 15	503	148	13	95
Grant, B. A., Joliet, Ill. Grain-separator	199,151	Jan. 15	458	135	13	87
Greene, W. A., Lincoln, R. I. Fire-escape	199,199	Jan. 15	504	148	13	95
Greenlee, R. L. and R. S., Chicago, Ill. Mortising and boring machine	199,285	Jan. 15	586	171 172	13	107
Greenlee, R. S. (See Greenlee, R. L. and R. S.)						
Grimes, G. W., Blufton, Ind. Combined drill and planter	199,200	Jan. 15	505	148	13	95
Grossman, M. J. (See Krapp, J., assignor.)						
Grummon, R. S., Newark, N. J. Pole-crab for vehicles	199,152	Jan. 15	458	135	13	87
Gue, A. F., and G. F. Field, Boston, Mass. Car-brake	199,286	Jan. 15	587	172	13	107
Garlick, W. H., Ellicottsville, Ohio. Oil-lamp	199,532	Jan. 22	849	248	13	156
Garver, D. L., Hart, Mich. Harrow-tooth	199,430	Jan. 22	847	217	13	140
Geer, G., Jr. (See Barnum, A., assignor.)						
Gerlach, A. P. (See Woodbridge and Gerlach.)						
Gilbert, J. W., assignor to S. S. White, Philadelphia, Pa. Hand-piece for dental engines	199,431	Jan. 22	848	218	13	140
Gillen, W. S., assignor of part interest to J. S. Negley, Jr., and H. C. Campbell, Pittsburg, and D. B. Ashbaugh, Leechburg, Pa. Metallurgic gas-furnace	199,362	Jan. 22	677	198	13	129
Gillen, W. S., Pittsburg, assignor to D. B. Ashbaugh, Leechburg, and H. C. Campbell, Pittsburg, Pa. Process and apparatus for preparing hydrocarbon gas from gas-wells	199,363	Jan. 22	678	199	13	130
Gillespie, H. M., Pickwick, Pa. Device for raising and lowering tubes in oil-wells	199,533	Jan. 22	850	248	13	157
Gleason, E. P., *et al.* (See Crawford, J., assignor.)						
Goldie, G., Princeton, N. J. Rowing-machine	199,432	Jan. 22	742	218	13	140
Gorsline, J. T., Parma, N. Y. Apparatus for handling hides	199,534	Jan. 22	850	248 249	13	157
Gough, S. C., *et al.* (See Holton, J. C., assignor.)						
Gough, W. C., *et al.* (See Holton, J. C., assignor.)						
Granger, S. D., Ann Arbor, Mich. Sewing-machine chair	199,535	Jan. 22	852	249	13	157
Gray, B. A. (See Rose, J. F., assignor.)						
Grover, H. M., Vinton, Iowa. Car-coupling	199,433	Jan. 22	744	218	13	140
Gutenberger, W., Sacramento, Cal. Land-roller and clod-crusher	199,536	Jan. 22	853	249	13	157
Gabler, E., New York, N. Y. Piano-forte	199,635	Jan. 29	981	285	13	185
Gaertner, A. (See Pettberg and Gaertner.)						
Gale, H., Albion, Mich. Plow-wheel attachment	199,636	Jan. 29	982	285	13	185
Garrard, J., Cincinnati, Ohio, assignor to Excelsior Grain Binder Company, (limited,) New York, N. Y. Grain-binder	199,637	Jan. 29	982	286	13	185
Gay, F. H., and R. J. Follett, Corry, Pa. Fountain	199,821	Jan. 29	1159	340	13	212
Geer, G. F., Concord, assignor of one-half interest to G. L. Damon, Boston, Mass. Lamp	199,699	Jan. 29	1043	304	13	194
Geyser, J. B., Allegheny, Pa. Broiler	199,822	Jan. 29	1159	340	13	213

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Gibbs, E. S., Lyons, Iowa. Tire-tightener	199,700	Jan. 29	1044	305	13	195
Gilbert, J. H. (See Johnson, J., assignor.)						
Glorieux, W. L., Newark, N. J. Metallurgic crucible	199,823	Jan. 29	1160	341	13	213
Good, A., San Francisco, Cal. Umbrella-runner	199,638	Jan. 29	983	286	13	185
Goodyear, C., Jr. (See Dancel, C., assignor.)						
Graham, M. G., Monmouth, Ill. Cultivator	199,701	Jan. 29	1045	305	13	195
Graham, T. T. (See Coonley and Graham.)						
Green, S., Aurora, N. Y. Chair-bottom	199,824	Jan. 29	1160	341	13	213
Greenhalgh, J. B., Uxbridge, Mass. Stop-motion for warping-machines	199,702	Jan. 29	1047	305	13	195
Greenwood, T. J., Warren, Ill. Low shoe	199,639	Jan. 29	984	286	13	185
Gregory, C. W. (See Morris and Gregory.) (Reissue.)						
Gaines, J. C. (See Rogers, E., assignor.)						
Gissinger, S., assignor to E. W. Swentzel, Pittsburg, Pa. Level	199,902	Feb. 5	12	4	13	234
Glaze, T. (See Starkey, W., assignor.)						
Gleason, L., *et al.* (See Johnson, A. S., assignor.)						
Guade, R. G. (See Lozier, A. W., assignor.)						
Gockley, H. L., Joliet, Ill. Metal fence-post	199,971	Feb. 5	80	26	13	245
Golder, M. D., Lewiston, Me. Wagon-hub	200,049	Feb. 5	159	51	13	258
Goldsmith, M. M., New York, N. Y., G. M. Cruickshank, Providence, and S. Brown, Green, P. I., assignors to Goldsmith and Wheatley Manufacturing Company, New York, N. Y. Machine for cutting horn into sheets	200,050	Feb. 5	160	52	13	258
Goldsmith and Wheatley Manufacturing Company. (See Goldsmith, Cruickshank, and Brown, assignors.)						
Goodchild, W. H., New York, N. Y., and S. F. Hay, Metuchen, N. J.; said Hay assignor to said Goodchild. Apple-paring machine	199,903	Feb. 5	13	4	13	235
Gorr, S., Allentown, Pa. Wagon-brake	200,051	Feb. 5	161	52	13	258
Grady, G. W., *et al.* (See Burgess, W. S., assignor.)						
Grant, J. J., *et al.* (See Johnson, A. S., assignor.)						
Graves, J. M., Blossom Prairie, Texas. Cultivator	199,972	Feb. 5	81	26	13	245
Green, A., Aurora, Iowa. Tool for stretching fence-wires	199,904	Feb. 5	14	4	13	235
Greenwood, J. T., Jr., assignor of one-half interest to J. R. Nye, Beloit, Wis. Washing-machine	200,052	Feb. 5	162	52	13	258
Guild, A., and F. B. Clark, Middletown, Conn. Steam-engine lubricator	200,053	Feb. 5	163	53	13	259
Galbraith, T., Londonderry, Ireland. Hot-bath apparatus	200,275	Feb. 12	393	116	13	302
Gale, H., assignor, by mesne assignments, to Gale Manufacturing Company, Albion, Mich. Plow. (Reissue)	8,082	Feb. 12	500	147	13	318
Gale Manufacturing Company. (See Gale, H., assignor.) (Reissue.)						
Garver, A. A., Albion, Iowa. Fence-post	200,276	Feb. 12	394	116	13	302
Gerlach, J. C. (See Griffin, J. B., assignor.)						
Gisel, J., Buffalo, N. Y. Street receiver and stench-trap	200,277	Feb. 12	395	117	13	302
Glidden, C. (See Sholes and Glidden.)						
Godfrey, J. S., Leslie, Mich. Tube-cleaner	200,278	Feb. 12	395	117	13	302
Goepel, A. F. H., Newark, N. J. Frame for satchels	200,135	Feb. 12	253	76	13	281
Goldman, I. S., assignor of one-half interest to J. K. Wyscawer, Edinberg, Ill. Pushing-bar for railway-cars	200,136	Feb. 12	254	76	13	281
Goldthwait, C., South Weymouth, Mass. Slate-frame attachment	200,137	Feb. 12	255	77	13	281
Gomber, G. W., Sybertsville, Pa. Fruit-jar	200,188	Feb. 12	307	91	13	288
Goodell, D. H., Antrim, and W. Robb, Nelson, N. H. Apple-parer	200,279	Feb. 12	396	117	13	302
Gordon, J. (See Walton, G., assignor.)						
Gordon, J. H., assignor of one-half interest to N. I. Peters, Keota, Iowa. Harness-saddle tree	200,280	Feb. 12	397	118	13	302
Grable, E. L., Manor Station, Pa. Spring-pillow	200,281	Feb. 12	398	118	13	302
Grange, F. C., Baltimore, Md. Fertilizer	200,189	Feb. 12	307	.....	13	289
Graves, E. K., Waltham, Mass. Fire-escape	200,190	Feb. 12	308	92	13	289
Greenwood, T. J., Warren, Ill. Balmoral shoe	200,282	Feb. 12	398	118	13	302
Griffin, J. B., assignor to himself and J. C. Gerlach, Boston, Mass. Bottle-stopper fastening	200,191	Feb. 12	308	92	13	289
Griffith, S., and J. S. Patterson, Cincinnati, Ohio, assignors of one-third interest to L. Deveny. Draft apparatus for railway-cars. (Reissue)	8,081	Feb. 12	499	147	13	318
Grossman, M. J. (See Krapp, J., assignor.)						
Garoutte, W. B., Greene county, Mo. Fire-escape	200,387	Feb. 19	519	153	13	329
Geminder, A., Columbus, Ohio. Organ-pipe	200,449	Feb. 19	579	172	13	338
Glenn, J. S., Chicago, Ill. Balanced rotary valve	200,388	Feb. 19	520	153	13	329
Gorenflo, E., Jersey City Heights, N. J. Paging-machine	200,527	Feb. 19	654	192 193	13	349
Graetzel, H. F., Gardenville, Md. Reed-organ	200,528	Feb. 19	656	193	13	350
Green, M. (See Hanson, F., assignor.)						
Greene, C. S. (See Naulty, J. F., assignor.)						
Grinnan, R. L., Lancaster, Ky. Post-marking and stamp-canceling machine	200,389	Feb. 19	521	154	13	329
Guild, C. (See Townsend, L., assignor.) (Reissue.)						
Gall, J. (See Lowne, R. M., assignor.)	200,610	Feb. 26	756	222	13	373
Gardiner, H., New York, N. Y. Car-spring						
Gardner, W. E., *et al.* (See Condon, W. F., assignor.)						
Garvey, T. J. (See Schoonmaker, J. W., assignor.)						
George, J. A., and J. S., Bridgeport, Conn. Spring-scales for weighing	200,708	Feb. 26	802	233	13	388
George, J. S. (See George, J. A., and J. S.)						
Gillen, M. P., Foreston, assignor of one-half interest to W. J. Gillen, Galesburg, Ill. Combined baby jumper and carriage	200,652	Feb. 26	801	236	13	380
Gillen, W. J. (See Gillen, M. P., assignor.)						
Glenn, G. K., and H. Fern, Woodland, Cal. Cornice mold and mitering device	200,653	Feb. 26	802	236	13	380
Glover, A. B., Birmingham, assignor of one-half interest to D. W. Plumb, Huntington, Conn. Paper-bag machine	200,654	Feb. 26	803	237 253 254	13	380
Goodchild, W. H., New York, N. Y. Meat and vegetable cutter	200,709	Feb. 26	862	254 276 277	13	388
Goodrich, G. D., Boston, Mass. Machine for enlarging the ends of clay tubular bodies and forming collars thereon	200,791	Feb. 26	938	276 277	13	400
Gorby, J. R., Hiramsburg, Ohio. Combined collar and hame	200,710	Feb. 26	865	254	13	389
Gray, K., Chicago, Ill. Traveling printing apparatus	200,711	Feb. 26	865	254	13	389
Gray, R., Bloomington, Ill., assignor to T. J. Gray, Goodland, Ind. Gate	200,655	Feb. 26	807	237	13	380
Gray, T. J. (See Gray, R., assignor.)						
Grier, W. W., Hulton, Pa. Fifth-wheel for carriages	200,712	Feb. 26	867	254	13	389
Griffin, A., assignor of one-half interest to E. Merritt, Meshoppen, Pa. Frame for photographs	200,713	Feb. 26	868	255	13	389
Groth, H., assignor to himself and P. Klee, New York, N. Y. Toy carriage	200,714	Feb. 26	869	255	13	389
Guild, A., and F. B. Clark, Middletown, Conn. Counter-shaft with reverse motion	200,715	Feb. 26	869	255	13	389
Gale, H., assignor to Gale Manufacturing Company, Albion, Mich. Plow	200,861	Mar. 5	46	16	13	422

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gale Manufacturing Company. (See Gale, H., assignor.)						
Gary, M. E. (See Roberts and Gary.)						
Geer, W. E. (See Bishop, O. A., assignor.)						
Gerken, G. H., New York, N. Y. Window	200,907	Mar. 5	89	31	13	429
Gesley, S., Beloit, Wis. Sulky-cultivator	201,001	Mar. 5	180	57	13	443
Gilbert, G., assignor to W. and H. Rowland, Philadelphia, Pa. Machine for finishing nail-rods	201,002	Mar. 5	181	58	13	443
Gilliland, T. F., assignor of one-half interest to W. Gutenkunst, Milwaukee, Wis. Fire-extinguisher	200,826	Mar. 5	11	321	13	417
Golding, W. H., Chelsea, Mass. Printing-press	200,827	Mar. 5	12	321	13	417
Goldsmith, R. H., Charleston, S. C. Bale-tie	201,003	Mar. 5	182	58	13	443
Goode, W. H. C. (See Slusser, B., assignor.)						
Goodrich, C. H. (See Cox, C., assignor.)						
Goodwyn, G. W., assignor of two-thirds interest to J. C. Griffin and G. S. Bernard, Petersburg, Va. Nut-lock	200,862	Mar. 5	47	16	13	422
Gordon, F., Chicago, Ill. Running-gear for wagons	200,863	Mar. 5	48	17	13	422
Gorman, J. E., Washington, D. C. Bill-file	201,004	Mar. 5	183	58	13	443
Gratiot, E. H., Platteville, Wis. Drier for grain and middlings	200,908	Mar. 5	90	31	13	429
Graves, J., New York, N. Y. Can for transporting liquids. (Reissue)	8,113	Mar. 5	262	82	13	454
Gray, J. (See Hailes and Gray.)						
Gray, J. D. (See Thomas D. H., assignor.)						
Griffin, J. C., *et al.* (See Goodwyn, G. W., assignor.)						
Gross, J. (See Mueller and Gross.)						
Grosscup, F. P., *et al.* (See Moltrip, J., assignor.)						
Grube, L., Liberty Mills, Ind. Clamp for attaching mop heads and wringers to pails	201,005	Mar. 5	183	59	13	443
Gutenkunst, W. (See Gilliland, T. F., assignor.)						
Ganster, G. P., Reading, Pa. Automatic device for raising and lowering illuminating-flames	201,237	Mar. 12	423	130	13	485
Gathmann, L., Chicago, Ill. Middlings-separator	201,234	Mar. 12	419	129	13	485
Gathmann, L., Chicago, Ill. Middlings-separator	201,235	Mar. 12	420	129	13	485
Gathmann, L., Chicago, Ill. Apparatus for preserving beer	201,236	Mar. 12	422	130	13	485
Geise, H., Philadelphia, Pa. Barber's chair	201,176	Mar. 12	357	110	13	476
Gemmell, T., Baltimore, Md. Heating-stove	201,238	Mar. 12	426	130 131	13	485
Gere, T. D. (See Putnam, A., assignor.) (Reissue.)						
Gernert, C., assignor to E. Oakford, Philadelphia, Pa. Musical top	201,106	Mar. 12	289	89	13	466
Gillig, O., Brooklyn, N. Y. Trap for water-pipes	201,239	Mar. 12	427	131	13	485
Glover, F. E., Reynolds, Ga. Cotton-chopper	201,240	Mar. 12	428	131	13	485
Godfrey, R. S., Camden, N. J. Ventilator or smoke-cowl	201,241	Mar. 12	428	131	13	486
Goldsmith, R. A., Washingtonville, N. Y. Thill-coupling	201,107	Mar. 12	290	90	13	466
Greenough, J. J., Syracuse, N. Y. Hinge for awning-blinds	201,108	Mar. 12	291	90	13	466
Griffith, L. B. and N. B., Philadelphia, Pa. Curtain-tassel	201,109	Mar. 12	292	90	13	466
Griffith, N. B. (See Griffith, L. B. and N. B.)						
Grinnell, F., Providence, R. I. Sprinkling-pipe	201,242	Mar. 12	429	132	13	486
Griswold, C. A., New York, N. Y. Garment-supporter	201,177	Mar. 12	358	111	13	476
Griswold, J., Fandon, Ill. Evaporating-pan	201,110	Mar. 12	293	90	13	466
Gamewell, J. A., assignor of one-half interest to M. Ittner, St. Louis, Mo. Brick-machine	201,515	Mar. 19	725	221	13	535
George, C. F., assignor of one-half interest to A. A. Judson, Fairfield, Iowa. Soldering-tweezers for jewelers	201,404	Mar. 19	620	189	13	519
Gerson, C., Hamburg, Germany. Filtration	201,516	Mar. 19	727	222	13	535
Gilbaugh, J. (See McGraw and Gilbaugh.)						
Gilbert, J. S., New York, N. Y. Valve for wash-basins	201,405	Mar. 19	621	189	13	519
Godley, G. F., Philadelphia, Pa. Draw-bar for railway-cars	201,517	Mar. 19	728	222	13	535
Goebel, C. H., Philadelphia, Pa. Bedstead-fastening	201,343	Mar. 19	554	170	13	510
Golden, W. F., Morris, Ind. Gate-latch	201,406	Mar. 19	622	189	13	519
Goodrich, H. D., Fitchburg, Mass. Oiling wheel-axles	201,518	Mar. 19	729	222	13	535
Gordon, E. F., assignor to J. A. White, Concord, N. H. Clamp	201,407	Mar. 19	622	190	13	519
Gorges, E., Paris, France. Powder for curing meat	201,344	Mar. 19	555	.....	13	510
Graether, T., Rochester, N. Y. Sled	201,519	Mar. 19	730	223	13	535
Grafflin, G. W., Jr., Baltimore, Md. Sash-holder	201,408	Mar. 19	623	190	13	520
Graham, W., Utah county, and E. Ward, Salt Lake county, Utah Territory. Blasting-powder	201,520	Mar. 19	730	.....	13	536
Graham, W. and J. A. Dennison, Anniaquam, Mass. Lowises	201,409	Mar. 19	623	190	13	520
Graham, W. H. (See Hutchinson and Graham.)						
Green, C., and W. Wilson, Jr., Wilmington, Del. Metallic can. (Reissue)	8,126	Mar. 19	806	245	13	545
Green, H., assignor to himself and S. H. James, Chilton, Wis. Mud-pipe cleaner	201,410	Mar. 19	624	190	13	520
Green, O. C., Dublin, assignor to Hoosier Drill Company, Milton, Ind. Corn-planter	201,521	Mar. 19	731	223	13	536
Gardner, J. W., Shelburne Falls, Mass. Carving-fork	201,663	Mar. 26	892	272	13	562
Gardner, J. W., Shelburne Falls, Mass. Carving-fork	201,664	Mar. 26	892	272	13	562
Garner, M. D. (See Covert, Garner, and Walthall.)						
Garver, D. L., Hart, Mich. Harrow. (Reissue)	8,142	Mar. 26	1106	334	13	592
Glesman, D. (See Armstrong and Glesman.)						
Gilfillan, F. C., St. Petersburg, Pa. Low-water indicator and alarm	201,772	Mar. 26	1002	306	13	578
Glah, C. C., Salem, Kans. Motor	201,665	Mar. 26	893	272	13	562
Godding, R., *et al.* (See Murdock, E. R., assignor.)						
Grant, J. A. (See McClelland and Grant.)						
Grantham, J. (See Sample, Grantham, Ward, and Waddle.)						
Gravatt, T. E., Port Royal, Va. Barber's comb	201,773	Mar. 26	1003	306	13	578
Green, C., and W. Wilson, Jr., Wilmington, Del. Metallic can	201,666	Mar. 26	894	272	13	562
Grove, W. H. (See Dealy, W. H., assignor.)						
Gaff, J. W., Cincinnati, Ohio. Reducing vegetable substances to prepare the same for saccharification	202,016	Apr. 2	152	44	13	621
Gardner, W., New York, N. Y. Canister	202,017	Apr. 2	153	45	13	621
Gibson, C. D. P., New York, N. Y. Gas-lighting	202,018	Apr. 2	154	45	13	621
Gilliland, W. T., Monmouth, Ill. Coffee-roaster	201,920	Apr. 2	62	16	13	607
Gould, W. B. (See Rivers, T. L., assignor.) (Reissue.)						
Gray, G. E., San Francisco, Cal. Spiral spring	202,019	Apr. 2	156	45	13	621
Gray, H. W., Philadelphia, Pa. Piano-string	202,020	Apr. 2	157	46	13	622
Gray, R., assignor to himself, J. Dunn, and J. B. Sargent, Bloomington, Ill. Railway-switch	202,021	Apr. 2	157	46	13	622
Grivel, E., Paris, France, assignor to A. L. Du Paget, Hoboken, N. J. Compressed food	201,578	Apr. 2	21	.....	13	601
Grove, G. W., Lionville, Ohio. Permutation-padlock	202,022	Apr. 2	159	46	13	622
Gruhs, J., assignor of one-fourth interest to L. Eisenman, Washington township, Pa. Oil-drill bit	202,023	Apr. 2	160	46	13	622
Gallagher, J. J., Davisville, Cal. Vehicle-gear	202,164	Apr. 9	332	97	13	650
Gayton, W. C., Chicago, Ill. Window-cleaner	202,101	Apr. 9	259	76	13	640
Geddes, W. B., Rochester, N. Y. Stove and furnace grate	202,102	Apr. 9	260	76	13	640

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gelbach, G. F., *et al.* (See Eisenhardt, G. F., assignor.)						
Gibson, L. S., Jamestown, N. Y. Sash-fastener	202,254	Apr. 9	420	122	13	662
Gile, A. K., Alfred, Me. Cranberry-gatherer	202,103	Apr. 9	262	76, 77	13	641
Gillespie, R. S. (See Worthen and Gillespie.)						
Gladwell, J. W., and J. R. White, Keys, N. C. Washing-machine	202,104	Apr. 9	263	77	13	641
Gladwin, P. A., Boston, Mass. Tool-handle	202,105	Apr. 9	264	78	13	641
Göbbels, J., St. Johns, Ky. Target	202,255	Apr. 9	421	123	13	662
Goddard, A. M. (See Goddard, G. B., assignor.)						
Goddard, G. B., assignor to A. M. Goddard, Brockton, Mass. Mallet-handle	202,165	Apr. 9	332	97	13	650
Goff, F., Chicago, Ill. Boot and shoe	202,256	Apr. 9	422	123	13	662
Goodwin, A. J., Brookline, Mass. Invalid-bedstead	202,106	Apr. 9	264	78	13	641
Gallup, G., Cleveland, Ohio. Wash-board	202,536	Apr. 16	734	212	13	702
Galster, F., Belew's Creek, Mo. Candle-holder	202,342	Apr. 16	531	155	13	688
Gard, E. R. and W. E., Croton Landing, N. Y. Brick-machine	202,537	Apr. 16	735	212 213	13	703
Gard, W. E. (See Gard, E. R. and W. E.)						
Giles, C. (See McCarthy and Giles.)						
Gillespie, M., assignor of one-half interest to A. J. McDonald, East Liverpool, Ohio. Invalid-bedstead	202,343	Apr. 16	531	155	13	682
Gleason, E. P. (See Osgood, E., assignor.) (Reissue.)						
Glidden, J. F., and P. W. Vaughan, De Kalb, Ill. Sulky-plow	202,538	Apr. 16	738	213	13	709
Globe Nail Company. (See Ellis, C., assignor.)						
Gmehlin, P. (See Hastings, A. H., assignor. (Reissue.)						
Göbel, G., Darmstadt, Germany. Distance and velocity recorder	202,433	Apr. 16	619	181 182	13	694
Gomber, G. W., Hazleton, Pa. Bottle-stopper	202,434	Apr. 16	621	182	13	695
Goodrich, B. F. (See Work, A., assignor.)						
Gower, F. A., Providence, R. I., and M. J. Matthews, Boston, Mass. Electro-harmonic telegraph	202,539	Apr. 16	739	214	13	709
Grimshaw, W. D., New York, N. Y. Hydraulic power-accumulator	202,435	Apr. 16	622	182	13	695
Griswold, L. A., Marshfield, Ohio. Curry-comb	202,436	Apr. 16	623	182	13	695
Grosjean, F., assignor to Lalance & Grosjean Manufacturing Company, New York, N. Y. Handle for sheet-metal vessels or utensils	202,540	Apr. 16	742	214	13	709
Grosjean, F., assignor to Lalance & Grosjean Manufacturing Company, New York, N. Y. Handle for sheet-metal vessels or utensils	202,541	Apr. 16	743	214	13	709
Gates, S. T., assignor to E. P. Knipe, Philadelphia, Pa. Manufacture of heels for boots and shoes	202,808	Apr. 23	1040	300	13	755
Gathright, J. B., Louisville, Ky. Buckle	202,644	Apr. 23	870	249	13	734
Gaughen, J. M., Philadelphia, Pa. Horse-car bell	202,645	Apr. 23	871	249	13	734
Gerike, H., Berlin, Prussia. Annealing glass and glassware	202,809	Apr. 23	1042	.....	13	755
Gillis, C., Brooklyn, N. Y. Child's carriage	202,715	Apr. 23	941	269	13	742
Glazier, G. W., Salem, assignor to T. E. Smith and B. Scribner, Jr., Lynn, Mass. Manufacture of logotypes	202,716	Apr. 23	942	269	13	742
Goddard, N., Framingham, Mass. Clay-sifter	202,717	Apr. 23	943	270	13	742
Gould, F. J., Sidney, Ohio. Heating-stove	202,718	Apr. 23	943	270	13	742
Gray, L. W. P., and T. S. Johnson, New Orleans, La. Bale-tie	202,719	Apr. 23	945	270	13	742
Grinnell, V. B., Waverly, Iowa. Wagon-top	202,810	Apr. 23	1044	300	13	755
Gross, A., New York, N. Y. Smoke-consuming furnace	202,646	Apr. 23	871	250	13	734
Grotevent, F. J., Reading, Pa. Mailing-package	202,720	Apr. 23	945	270	13	742
Guinn, A. J., Jackson, Tenn. Hog-cholera compound	202,811	Apr. 23	1044	.....	13	755
Gallahue, A. C., Morrisania, N. Y. Machine for making shoe-peg blanks	203,134	Apr. 30	1374	400	13	802
Gallaspie, J., Russiaville, Ind. Trace-holder	203,028	Apr. 30	1277	369	13	789
Gandy, O. S., Newport, N. J. Cultivator	203,132	Apr. 30	1377	400	13	802
Gardner, N. (See Camp and Gardner.)						
Gates, A. E., *et al.* (See Gates, P. W., assignor.)						
Gates, P. W., assignor to himself, A. E., R. D., and P. W. Gates, Jr., Chicago, Ill. Ore-crusher	202,940	Apr. 30	1189	343	13	778
Gates, P. W., assignor to himself, A. E., R. D., and P. W. Gates, Jr., Chicago, Ill. Ore-crusher	202,941	Apr. 30	1190	344	13	778
Gates, R. D., *et al.* (See Gates, P. W., assignor.)						
Gessert, C. F., assignor of one-half interest to M. W. Oliver, Cincinnati, Ohio. Railway-switch	203,133	Apr. 30	1378	401	13	802
Gilberds, J., and C. S. Jackson, Jamestown, N. Y.; said Jackson assignor to said Gilberds. Fastening for butter-tubs	203,135	Apr. 30	1380	401	13	803
Gilbert, G. W., Kendallville, Ind. Churn-dasher	203,134	Apr. 30	1379	401	13	803
Goodwin, G. E., Portland, assignor of one-half interest to J. Pierce, Orange township, Ionia county, Mich. Gate-hinge	203,136	Apr. 30	1381	401	13	803
Goodwyn, G. W., assignor of one-fourth interest to H. A. Taylor, Petersburg, Va. Coffee-pot	203,137	Apr. 30	1381	402	13	803
Gordon, A. A., assignor to G. Crompton, Worcester, Mass. Loom-picker	203,139	Apr. 30	1383	402	13	803
Gordon, J. H., Brooks, Me. Shoe-blacking	203,138	Apr. 30	1383	.....	13	803
Graf, L., Newark, N. J. Dye-stuff or coloring-matter	203,140	Apr. 30	1384	.....	13	803
Graham, R. J. S., Brooklyn, assignor to himself and M. J. Conner, New York, N. Y. Buckle	203,029	Apr. 30	1277	369	13	789
Greene, C. S. (See Naulty, J. F., assignor.)						
Greenwood, T. J., Warren, Ill. Shoe	203,030	Apr. 30	1278	370	13	789
Griggs, G. H., Hartford, Conn. Pipe-coupling	202,942	Apr. 30	1192	344	13	778
Grimme, H. J., Cincinnati, Ohio. Sofa-bedstead	203,141	Apr. 30	1384	402	13	803
Gröbli, I. (See Rieter, Wehrli, and Gröbli.)						
Gröbli, I., Wülflingen, C. A. Caflisch, Foss, and J. Wehrli, Wülflingen, Switzerland, assignors to F. A. and A. E. Kursheedt, New York, N. Y. Embroidering-machine	203,142	Apr. 30	1385	402 403 404	13	803
Gröbli, I, Wülflingen, H. Rieter, Jr., Winterthur, and J. Wehrli, Wülflingen, Switzerland, assignors to F. A. and A. E. Kursheedt, New York, N. Y. Embroidering-machine	203,143	Apr. 30	1386	404 405 406	13	804
Gurler, H. B., De Kalb, Ill. Garbage-truck	203,144	Apr. 30	1390	406	13	804
Galligan, T. (See Sayers and Galligan.)						
Gally, M., New York, N. Y. Mechanical musical instrument	203,257	May 7	21	8	13	823
Gavioli, A. A. M., Paris, France. Organ-pipe	203,438	May 7	215	61	13	849
Gibson, B. M., Monmouth, Ill. Shoe	203,439	May 7	216	61	13	850
Gielstrup, N. C., Bath, and I. A. Field, Phipsburg, Me. Vessel-loading apparatus	203,334	May 7	102	30	13	834
Gilliam, A., Pittsburg, Pa. Saddle-loop	203,258	May 7	22	8	13	824
Gilligan, J. S., Cincinnati, Ohio. Paint-brush	203,259	May 7	24	8	13	824
Gilliland, S. B. (See Fleming, Wayland, and Gilliland.)						
Gilman, E. L., Somerville, Mass. Printing-press	203,335	May 7	103	30	13	834
Gilmore, V. C., Petrolia, Pa. Pump-rod attachment for deep wells	203,260	May 7	25	8	13	824

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Glidden, C. W., Lynn, Mass. Heeling-machine for boots and shoes	203,440	May 7	217	62	13	850
Glynn, L., Cambridgeport, Mass. Pipe-wrench	203,261	May 7	26	9	13	824
Goodspeed, G. S., Providence, R. I. Wrench	203,262	May 7	26	9	13	824
Crawe, H. C., St. Louis, Mo. Pendulum adjustment for clocks	203,263	May 7	27	9	13	824
Gray, E., Chicago, Ill. Circuit for speaking-telephones	203,264	May 7	28	9	13	824
Green, C. C., Worcester, Mass. Buffing-wheel for finishing boots and shoes	203,265	May 7	30	10	13	824
Greenman, A., Lockport, N. Y. Device for trapping the apple-worm	203,336	May 7	104	30	13	834
Greenman, T. S., Mystic Bridge, Conn. Paper-cutting machine	203,441	May 7	220	62	13	850
Griffin, R. S., Worcester, Mass. Bench-plane	203,442	May 7	222	63	13	850
Guseman, W. D. (See Davis, Guseman, and McGeorge.)						
Gampert, W., Keokuk, Iowa. Wood-sole shoe	203,608	May 14	404	115	13	884
Gangwer, W., Mulberry, Ind. Harvester	203,609	May 14	405	115	13	884
Gath, H. (See Bersch, J., assignor.)						
Gathright, J. B., Louisville, Ky. Back-bend hook. (Reissue)	8,227	May 14	619	173	13	909
Geer, W. E., Chicago, Ill. Manufacture of oakum	203,723	May 14	523	.....	13	898
Gidlow, T., Hollywood, and J. Abbott, Ince, England. Puddling and balling furnace	203,724	May 14	524	148	13	898
Gifford, E. T., and S. W. Pyle, Iowa Falls, Iowa. Steam boiler and heater	203,725	May 14	525	149	13	898
Gile, A. K., Alfred, Me. Cranberry-rake	203,538	May 14	338	96	13	875
Gillmore, J., *et al.* (See Trezise, T., assignor.)						
Goldsworthy, J. E. (See Jewett, J. S., assignor.) (Reissue.)						
Gordon, S. J., assignor of one-half interest to T. Seymour, Winterset, Iowa. Laundry apparatus	203,610	May 14	406	115 116	13	884
Gray, J. W., Hartford, Conn. Hose-nozzle	203,539	May 14	338	96	13	875
Graydon, J. W., Washington, D. C. Car-heating apparatus	203,611	May 14	407	116	13	884
Greene, W. H. S., and A. Sturdevant, Summit Station, N. Y. Chair	203,612	May 14	407	116	13	884
Grinnell, C. W., and F. Bnickens, Waverly, Iowa. Vehicle-top adjuster	203,726	May 14	526	149	13	898
Grubb, W. H., Hannibal, Mo. Barrel-top show-case	203,613	May 14	408	116	13	884
Gunkel, E., Chicago, Ill. Prepared meat	203,614	May 14	408	.....	13	884
Gale, A. T., Piqua, Ohio. Ironing-table	204,019	May 21	852	243	13	947
Garrison, S. W., Memphis, Tenn. Rubber pocket-stamp	204,021	May 21	853	244	13	947
Garver, D. L., Hart, Mich. Hay-knife	204,020	May 21	852	244	13	947
Geier, O., St. Albans, West Va. Box-fastener	203,907	May 21	730	208	13	932
Gibson, A. P., assignor to F. T. Wheeler and L. G. Fisher, Jr., Chicago, Ill. Fruit-box	204,022	May 21	854	244	13	947
Gibson, A. P., assignor of six-eighths interest to L. G. Fisher, Jr., and F. T. Wheeler, Chicago, Ill. Fruit-basket	204,023	May 21	856	245	13	948
Gillett, C. M. (See Gillett, W., assignor.)						
Gillett, W., Ypsilanti, Mich., assignor of one-half interest to C. M. Gillett, Cleveland, Ohio. Speaking-telephone	204,024	May 21	857	245	13	948
Glass, J. T., Austin, Tex. Well-auger	204,025	May 21	858	245	13	948
Goodwin, J., Montreal, Canada. Invalid-bedstead	204,026	May 21	859	246	13	948
Grant, J. J., N. Sawyer, and F. N. Gardner, assignors to Pratt & Whitney Company, Hartford, Conn. Screw-cutting die	204,028	May 21	862	246	13	948
Gardner, F. N. (See Grant, Sawyer, and Gardner.)						
Gray, E., Chicago, Ill. Speaking-telephone	204,027	May 21	860	246	13	948
Gray, E., Chicago, Ill. Speaking-telephone	204,029	May 21	863	246	13	948
Green, C. E., Newark, N. J. Wire-coiling machine	204,030	May 21	864	247	13	949
Groves, H., Indianapolis, Ind. Saw-mill carriage	203,908	May 21	730	209	13	932
Gruntler, W. T., Tivoli, N. Y. Track-clearer	204,031	May 21	865	247	13	949
Guyer, A. W. (See Guyer, C. and A. W.)						
Guyer, C. and A. W., Tyrone, Pa. Washing-machine	204,032	May 21	866	247	13	949
Gamgee, J., Chelsea, Great Britain. Apparatus for forming sheets of ice	204,210	May 28	1077	307	13	960
Garrett, J. (See Ogden and Garrett.)						
Gasser, L., assignor of one-half interest to P. Borger, Chicago, Ill. Car-coupling	204,313	May 28	1177	335	13	992
Genuert, E. T., New York, N. Y. Drying-kiln	204,211	May 28	1079	307	13	960
George W. F., assignor of one-half interest to Self Acting Cow Milker Manufacturing Company. Apparatus for milking cows	204,314	May 28	1179	336	13	993
Gifford, C., Gardiner, Me. Car-coupling	204,212	May 28	1080	307	13	960
Gornall, R., assignor to T. Tausley, Jr., Baltimore, Md. Machine for soldering square cans	204,315	May 28	1180	336	13	993
Grant, H. E., Pittsburg, Pa. Machine for bending links	204,316	May 28	1182	336	13	993
Greene, C. S., *et al.* (See Hand and Caulier, assignors.)						
Griffiths, M. W., Middle Granville, N. Y. Tire-upsetter	204,317	May 28	1183	336 337	13	993
Grilley, C. T., Boston, Mass. Loom-picker	204,213	May 28	1080	308	13	960
Grosjean, F., assignor to Lalance and Grosjean Manufacturing Company, New York, N. Y. Sealing-cover for bowls of wash-stands, water-closets, &c.	204,318	May 28	1184	337	13	993
Grosjean, F., assignor to Lalance and Grosjean Manufacturing Company, New York, N. Y. Handle for sheet-metal vessels	204,319	May 28	1185	337	13	993
Grossheim, G., Elberfeld, assignor to A. Siebert, Hummersbach, Prussia, Germany. Marbleizing paper and other fabrics	204,146	May 28	1005	286	13	970
Gurney, G., Taunton Mass. Winding-on mechanism for spinning-mules	204,214	May 28	1081	308	13	960
Ganoung, R. S., and W. H. Langdon, Seneca Falls, N. Y. Chin-adjuster	204,487	June 4	65	22	13	1022
Gatchell, A. C., *et al.* (See Beecher, W. F., assignor.)						
Gearing, C., assignor of one-half interest to S. Harper, Pittsburg, Pa. Process and apparatus for manufacturing illuminating-gas	204,554	June 4	120	41	13	1030
Gearing, C., assignor of one-half interest to S. Harper, Pittsburg, Pa. Process and apparatus for manufacturing heating and illuminating gas	204,555	June 4	122	42	13	1030
Giesecke, H., St. Louis, Mo. Horse-brush. (Reissue)	8,272	June 4	225	72	13	1044
Gibbs, G. C. (See Knight, Curtis, and Gibbs.)						
Gilginger, S., assignor of one-half interest to A. A. Crosby, Rondout, N. Y. Vehicle-spring	204,556	June 4	125	42	13	1030
Goddard Manufacturing Company. (See Whipple, C. S., assignor.)						
Goodell, D. W., Northampton, assignor to Florence Machine Company, Florence, Mass. Oil-stove	204,557	June 4	123	42	13	1030
Goodrich, H. C., Chicago, Ill. Sole for boots and shoes	204,431	June 4	17	6	13	1015
Gordner, H. S., Rose Dale, N. C. Shingle	204,558	June 4	126	43	13	1030
Grant, J., and A. G. Cook, Boston, Mass. Tree-protector	204,561	June 4	130	44	13	1031
Gray, E., Chicago, Ill. Speaking-telephone	204,559	June 4	127	43	13	1031
Gray, E., Chicago, Ill. Speaking-telephone	204,560	June 4	128	43	13	1031
Griffiths, J. E. (See Sanford, W. H., assignor.)						
Grimes, G. W., Bluffton, Ind. Combined drill and planter	204,488	June 4	65	22, 23	13	1022
Groat, P. B., *et al.* (See Chadwick, C., assignor.)						
Grover, O. F. Middletown, Conn., assignor of one-half interest to W. Quail, Brooklyn, N. Y. Printers' composing-stick	204,432	June 4	17	6	13	1015
Gunther, G., New York, N. Y. Feed and water cup for bird-cages	204,562	June 4	131	44	13	1031
Gainey, J., Augusta, Ga. Combined filtering, cooling, and water-forcing apparatus	204,663	June 11	247	77	13	1051

Alphabetical list of patentees, January to June, inclusive—Continued.

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Gale, D. E., Salisbury, Mass. Carriage-door	204,807	June 11	404	118	13	1070
Gardner, G., Westfield, N. J. Hot-press for molding plates, &c., from veneers and other materials	204,808	June 11	404	118	13	1070
Gates, D., Benwood, W. Va. Drag-sawing machine	204,809	June 11	405	119	13	1070
Geary, W., Fort Wayne, Ind. Pot-lid	204,810	June 11	406	119	13	1070
Getzendanner, W. H., and J. P. Marquardt, Jr., Dayton, Ohio. Horse-collar	204,664	June 11	249	77	13	1051
Gillis, A. R., Salem, Ohio. Meat-cutter	204,811	June 11	407	119	13	1070
Gladding, R. S., Bristol, R. I. Screw-driver	204,812	June 11	408	119	13	1070
Glover, J. E., Lonoke county, Ark. Thrashing-machine	204,813	June 11	409	120	13	1070
Goodheart, J., Matawan, N. J. Machine for distributing poison upon plants	204,720	June 11	307	95	13	1059
Gravit, W., Elkhart, Ind. Signaling apparatus	204,721	June 11	308	95	13	1059
Greenebaum, B., San Francisco, Cal. Pocket for garments	204,723	June 11	312	95	13	1059
Greenleaf, C. A., Indianapolis, Ind. Turn-table	204,722	June 11	310	95	13	1059
Griffiths, W. J. (See Broughton, J., assignor.)						
Gritzner, M., Durlach, Baden. Sewing-machine table	204,724	June 11	313	96	13	1059
Gross, H., Cincinnati, Ohio. Burglar-proof safe	204,814	June 11	409	120	13	1070
Grout, W. L. (See Harlow, C. F., assignor. (Reissue.)						
Gumpert, G. E., Philadelphia, Pa. Cigar-tuck protector	204,815	June 11	411	120	13	1071
Gunning, T. B., New York, N. Y. Ejector for oil-wells	204,725	June 11	314	96	13	1060
Gale, D. E., Salisbury, Mass. Carriage-seat	204,891	June 18	516	151	13	1067
Gathright, J. B., Louisville, Ky. Riding-saddle	204,892	June 18	516	151	13	1067
Gerred, H., Chester, Ill. Boot and shoe lasting apparatus	204,963	June 18	589	173	13	1097
Gibbons, D. E., Chicago, Ill. Fire-escape ladder	204,893	June 18	518	151	13	1068
Gilbert, C., Buckville, assignor to himself and T. W. Beaty, Conwayborough, S. C. Sheep-protector	204,964	June 18	590	172	13	1097
Gillmore, J., assignor to L. S. Butterfield, Detroit, Mich. Curtain-fixture	205,073	June 18	695	205	13	1111
Gilman, S. H., New Orleans, La. Bale-tie	204,965	June 18	590	172	13	1097
Glaze, T., and W. Westwater, Pittsburg, Pa. Rerolling old rails	205,074	June 18	696	205 206	13	1111
Gonellaz, H., Vermillionville, La. Ditching-machine	204,894	June 18	519	152	13	1068
Griffin, S. W., Chelsea, Mass. Curing fish	204,966	June 18	592	.....	13	1097
Griffin, T. J., Brooklyn, N. Y., assignor to C. Brooks & Co., New York, N. Y. Oil-can	205,075	June 18	697	206	13	1111
Griscom, W. M., Reading, Pa. Sash-lock	205,076	June 18	698	207	13	1111
Groneweg, H. R. (See Turner, J. S., assignor.)						
Gundelfinger, A. (See Gundelfinger, D., Jr., and A.)						
Gundelfinger, D., Jr., and A., Jefferson City, Mo. Knife-sharpener	205,077	June 18	699	207	13	1111
Guyer, R. H., La Fayette, Ind. Vehicle-seat-spring fastening	205,078	June 18	699	207	13	1112
Gable, J. W., assignor of one-half interest to E. F. Phillips, Tower City, Pa. Padlock	205,183	June 25	821	243	13	1133
Gallinger, J., New York, N. Y. Socket and stand for lamps	205,376	June 25	1027	304	13	1159
Gannett, W. C., assignor of one-half interest to M. Miller, Knoxville, Iowa. Car-coupling	205,260	June 25	900	266	13	1143
Garland, J. G., assignor to Loom Picker Company, Biddeford, Me. Loom-picker	205,261	June 25	901	267	13	1143
Garretson, O. S., Buffalo, N. Y. Sash-pulley frame	205,184	June 25	822	244	13	1133
Gipperich, A., assignor to Mulford and Bonnet, Richmond, Va. Ear-piercer	205,185	June 25	823	244	13	1133
Glazier, G. M., *et al.* (See Parker, L. H., assignor.)						
Godwin, L. C. (See Neville and Godwin.)						
Goodall, T., Sanford, Me. Machine for drying cloth	205,377	June 25	1028	304	13	1159
Goodrich, N. W. (See Flanders and Goodrich.)						
Gorton, C., Salem, Ohio. Feed-cooker	205,262	June 25	901	267	13	1143
Gould, A. C. (See Brush and Hartnett, assignors.)						
Graff, J. (See Keeler, E. L., assignor.)						
Grafton, W. S., assignor of one-half interest to A. Hanvey, Steubenville, Ohio. Sheet-metal roofing	205,186	June 25	824	244	13	1133
Gray, E., Chicago, Ill. Transmitting rhythmical vibrations in an electric circuit	205,378	June 25	1028	304	13	1159
Gunn, D., *et al.* (See Dooley, T. B., assignor.)						
Gurley, R., Meadville, Pa. Railway-switch bar	205,379	June 25	1030	305	13	1159
Gutzkow, F., San Francisco, Cal. Refining retorted amalgam	205,187	June 25	824	.....	13	1133
Hagan, D. A., Hoosick Falls, N. Y. Whiffletree-hook	198,739	Jan. 1	9	2	13	10
Hartmann, C., Hanover, Germany. Buffer for horseshoes	198,885	Jan. 1	167	47	13	34
Haskins, W. A., administrator. (See Haskins, W. H., deceased.)						
Haskins, W. H., deceased, (by Haskins, W. A., administrator,) Littletown, N. H. Machine for reducing wood to pulp for paper	198,845	Jan. 1	123	35	13	28
Hay, J., Ellis, Cal. Harvester and thrasher	198,801	Jan. 1	83	22, 23	13	21
Hayden, J. B., Hempstead, N. Y. Composition for molded articles	198,884	Jan. 1	167	.....	13	34
Heinle, A. G. and R., Pittsburg, Pa. Nut-lock	198,740	Jan. 1	10	2	13	10
Heinle, R. (See Heinle, A. G. and R.)						
Hendryx, A. B., assignor to A. B. Hendryx & Co., Ansonia, Conn. Bird-cage feed-cup holder	198,846	Jan. 1	124	36	13	28
Hendryx & Co., A. B. (See Hendryx, A. B., assignor.)						
Heyl, H. R., and A. Brehmer, Philadelphia, Pa., assignors to Novelty Paper Box Company. Paper-box machine. (Reissue)	8,020	Jan. 1	206	58, 59	13	40
Hobbs, J. H., Wheeling, W. Va. Manufacture of glassware	198,741	Jan. 1	11	2	13	10
How, M. (See Keith, T. K., assignor.)						
Howell, H. F., Sarnia, Ontario, Canada. Apparatus for roasting ores	198,767	Jan. 1	46	12	13	15
Howland, A., and H. Lawton, Westerly, R. I. Shipping mechanism for spinning-mules	198,742	Jan. 1	12	3	13	10
Hudson, W. S., Paterson, N. J. Crown-sheet for steam-boilers	198,743	Jan. 1	13	3	13	10
Hunt, S. B. (See Albertson, A., assignor.)						
Hale, G. C., assignor to himself and F. C. White, Kansas City, Mo. Rotary engine	199,061	Jan. 8	348	102	13	70
Hancock, G., Providence, R. I. Sewing-machine. (Reissue)	8,028	Jan. 8	432	.....	13	83
Harrison, E., New Haven, Conn. Grinding-mill	199,062	Jan. 8	350	103	13	71
Hartshorne, S., Bordentown, N. J. Potato-digger	199,063	Jan. 8	350	103	13	71
Hay, J., Junction City, Kansas. Automatic fan	198,938	Jan. 8	228	64, 65	13	51
Hayes, G., New York, N. Y. Window-shutter	198,979	Jan. 8	269	77	13	57
Hayt, D. A., Ovid, Mich. Fence-post socket	199,064	Jan. 8	351	103	13	71
Herron, H. C., Cleveland, Ohio. Water-dam	198,939	Jan. 8	229	65	13	51
Hine, A. P., Wolcottville, Conn. Machine for drying and scouring sheet metal	198,980	Jan. 8	270	78	13	57
Hinrichs, C. F. A., and C. Reistle, Brooklyn, N. Y., assignor to said Hinrichs. Lamp-burner	198,981	Jan. 8	271	78	13	58
Hixson, E., assignor of one-half interest to G. C. Boggs and G. W. Plotts, Russell, Iowa. Pruning-knife	199,065	Jan. 8	352	104	13	71
Hobbs, J. H., Wheeling, W. Va. Glass-chandelier trimming	199,066	Jan. 8	353	104	13	71
Hodges, A. S., Hyde Park, assignor of one-half interest to E. B. Wilds, Ipswich, Mass. Stove and furnace lining	198,940	Jan. 8	230	65	13	51
Hoff, A., Brooklyn, N. Y. Saddle-bag	199,067	Jan. 8	353	104	13	71
Holcomb, E. B., and D. A. Clay, Port Leyden, N. Y. Hide-fleshing machine	198,941	Jan. 8	231	66	13	51
Holmes, A. B., Ipswich, Mass. Swinging frame for supporting hammocks	198,942	Jan. 8	233	66	13	51
Holmes, H. C. (See Williams, G., assignor.)						

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Hopper, I. A., *et al.* (See Wallace, J., assignor.)						
Hotchkiss, G. M., New Haven, and J. A. Clinton, West Haven, Conn.; said Clinton assignor to said Hotchkiss. Buckle	199,068	Jan. 8	354	104	13	71
Howard, W. (See Osborne, D. D., assignor.)						
Howell, F. A., Jersey City, N. J., assignor to W. F. Reed, Brooklyn, N. Y. Show-case	198,982	Jan. 8	272	78	13	58
Hughes, J., Stapleton, N. Y. Furnace for burning pyrites	199,069	Jan. 8	355	105	13	72
Humphreys, J. W., La Fayette, Ind. Ditching-machine	198,983	Jan. 8	272	78	13	58
Haas, L. F., Fond du Lac, Wis. Harrow	199,287	Jan. 15	569	172	13	107
Hague, C. A., Chicago, Ill. Sulky-plow	199,153	Jan. 15	459	{135 / 136}	13	87
Hale, H. S., Philadelphia, Pa. Chair-bottom. (Reissue)	8,041	Jan. 15	655	192	13	118
Hall, A. F., assignor to G. F. Blake Manufacturing Company, Boston, Mass. Double-acting steam-pump	199,288	Jan. 15	580	172	13	108
Hanks, H. T., New York, N. Y. Oil-chamber for lamps	199,201	Jan. 15	506	149	13	95
Hart, W., Kirksville, Mo. Calculator	199,289	Jan. 15	591	173	13	108
Harwell, W. E., Starrsville, Ga. Band-cutting feeder for thrashing-machines	199,202	Jan. 15	507	149	13	95
Hastings, A. H., New York, N. Y. Upright-piano action	199,154	Jan. 15	460	136	13	87
Hatch, A. T. (See Hatch, H. and A. T.)						
Hatch, H. and A. T., assignors of one-fourth interest to G. B. Hubbard, South Elgin, Ill. Lamp-filler	199,290	Jan. 15	582	173	13	108
Hatch, P. (See Libby and Hatch.)						
Havens, S. H., Hartford, Conn. Chair for switch-rails	199,155	Jan. 15	461	136	13	88
Hawkins, J. T., Salisbury, Vt. Gearing for transmission of power	199,203	Jan. 15	508	149	13	95
Hazen, R. S., Sr., Calmus, Iowa. Calf-muzzle	199,156	Jan. 15	462	136	13	88
Helwig, J., Frankfort-on-the-Main, Germany. Pressure-gage for steam-boilers	199,157	Jan. 15	463	137	13	88
Hipkins, W., assignor of one-fourth interest to H. D. Meek, Bellaire, Ohio. Paper shutter for windows	199,291	Jan. 15	593	173	13	108
Histed, T. C., Salina, Kans. Grain-separator	199,204	Jan. 15	509	{149 / 150}	13	95
Hodel, A., Jefferson, and F. A. Stauber, Chicago, Ill. Garden-sprinkler	199,293	Jan. 15	595	174	13	108
Hodgdon, I. H., assignor to himself and W. Beatty, Gray, Maine. Horse-blanket	199,292	Jan. 15	595	174	13	108
Hodges, G., assignor to E. B. and T. S. Winship, Racine, Wis. Windmill	199,345	Jan. 15	649	190	13	117
Horstmann, R. (See Seymer, C., assignor.)						
Houghtaling, W. (See Flather and Houghtaling.)						
Howard, J. W., Newark, N. J. Painter's brush	199,205	Jan. 15	510	150	13	96
Howard, T. S. L., Somerville, assignor to G. W. Simmons, Boston, Mass. Button-hole sewing-machine	199,206	Jan. 15	511	150	13	96
Hubbard, G. B. (See Hatch, H. and A. T., assignors.)						
Hunt, T. H. (See Walker and Hunt.)						
Hadley, A. K., assignor to himself and W. F. C. McCarty, New York, N. Y. Car-brake	199,434	Jan. 22	744	218	13	140
Hale & Kilburn Manufacturing Company. (See Kilburn, C., assignor.)						
Hall, A., Jr., St. Johnsville, N. Y. Machine for planing octagonal blanks for clothes-pins	199,364	Jan. 22	680	199	13	130
Hall, A. O., assignor to himself and G. C. Smith, Cincinnati, Ohio. Piano-hammer	199,537	Jan. 22	853	249	13	157
Hall, J. F. (See Cook and Hall.)						
Haliner, J., Ithaca, Neb. Barbed fence	199,538	Jan. 22	854	250	13	157
Halsey, J. S., Lebanon, Ohio. Carbonic-acid-generating attachment to fire-engine hose	199,436	Jan. 22	746	219	13	140
Hammersmith, H. W., South Bend, Ohio. Rail-joint	199,437	Jan. 22	747	219	13	140
Hansen, C., assignor to himself, S. Oerting, Ebeltoft, Denmark, N. H. Holmes, Montgomery, Ala., and P. J. M. Oerting, Warrington, Fla. Paper panel to imitate wood	199,435	Jan. 22	745	.....	13	140
Harbaugh, G. A., Bellefonte, Pa. Pipe-tongs	199,539	Jan. 22	855	250	13	157
Hardy, J., and J. G., Vienna, Austria. Vacuum-brake for railway-cars	199,540	Jan. 22	855	250	13	157
Hardy, J. G. (See Hardy, J., and J. G.)						
Harvey, L. D., Sheboygan, Wis. Ventilator for windows	199,438	Jan. 22	748	219	13	140
Havell, G., assignor to F. Stevens, J. Roberts, and G. Havell, Newark, N. J. Satchel and traveling bag handle. (Reissue)	8,051	Jan. 22	940	274	13	170
Hawley, H. Q. (See Anthony, E., assignor.)						
Hayward, C. E., Attleborough, Mass. Watch-guard tip	199,365	Jan. 22	681	200	13	130
Heath, E. A., New York, N. Y. Cuspadore	199,541	Jan. 22	857	250	13	158
Heeley, J. L., Attleborough Falls, Mass., assignor to Davidson Brothers, New York, N. Y. Ornamental chain	199,542	Jan. 22	858	251	13	158
Heimerl, J., Marysville, Cal. Neck-yoke	199,543	Jan. 22	859	251	13	158
Hendrickson, S. C., *et al.* (See Pope, F. L., assignor.) (Reissue.)						
Herreshoff, N. G., Providence, R. I. Regulator for steam-engines	199,544	Jan. 22	859	251	13	158
Hickey, T. J., Philadelphia, Pa. Vehicle-seat	199,545	Jan. 22	861	251	13	158
Hill, G. B., assignor to Michigan Bolt and Nut Works, Detroit, Mich. Machine for cutting and punching nut-blanks	199,546	Jan. 22	861	252	13	158
Hill, J. M., Cisne, Ill. Churn	199,547	Jan. 22	862	252	13	159
Hobbs, J., Nineveh, N. Y. Wagon-standard	199,439	Jan. 22	748	219	13	141
Holmes, N. H., *et al.* (See Hansen, C., assignor.)						
Holton, J. C., assignor to himself, W. C., and S. C. Gough, Owensborough, Ky. Horse hay-rake	199,440	Jan. 22	749	220	13	141
Hooker, W. C., Abingdon, Ill. Gate	199,441	Jan. 22	749	220	13	141
Howe, G. D., *et al.* (See Blinco, J. D., assignor.)						
Hubmann, G., assignor to F. Marx, New York, N. Y. Ornamenting marble and similar surfaces	199,366	Jan. 22	681	.....	13	130
Huddleston, J. S. F., Boston, Mass. Thermometer	199,442	Jan. 22	750	220	13	141
Hughson, K. A., Cortland Village, N. Y. Vehicle-body	199,548	Jan. 22	863	252	13	159
Hulbert, E. J., Middletown, Conn. Screw-propeller	199,549	Jan. 22	864	253	13	159
Hulbert, E. J., Middletown, Conn. Screw-propeller	199,550	Jan. 22	865	253	13	159
Hulett, D. (See Kirkham, Hulett, and Chandler.)						
Haas, J., and J. Manning, Stockton, Cal. Well-boring machine	199,640	Jan. 29	985	{286 / 287}	13	185
Hagerty, T., Brooklyn, N. Y. Ribbon-block	199,641	Jan. 29	987	287	13	186
Hall, L. and Z., and W. Crowell, Dennis, Mass. Cranberry-picker	199,703	Jan. 29	1047	306	13	195
Hall, Z. (See Hall and Crowell.)						
Hallett, E., Hillsdale, Mich. Fence	199,642	Jan. 29	987	287	13	186
Halloway, E., Belvidere, Ill. Egg-tester	199,643	Jan. 29	988	287	13	186
Hamilton, R. W. (See Primm, W. W., assignor.)						
Hampton, E. S., Detroit, Mich. Dish-washer	199,704	Jan. 29	1048	306	13	195
Harrington, G., Springfield, Mass. Spool-box	199,644	Jan. 29	989	288	13	186
Harris, C., Brooklyn, N. Y. Drawer for bureaus	199,825	Jan. 29	1162	341	13	213
Hatfield, A. L., Constantine, Mich. Bag-holder	199,705	Jan. 29	1049	306	13	195
Hayden, N., Essex, Conn. Lifting-handle	199,826	Jan. 29	1162	341	13	213
Hazeltine, D. W., Conneaut, Ohio. Carriage-top	199,706	Jan. 29	1049	307	13	195

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Heaton, L. E., assignor to E. F. Phillips, Providence, R. I. Tip for flexible electric conducting-cords	199,827	Jan. 29	1163	342	13	213
Heckel, C. A. (See Clark and Heckel.)						
Heeren, W. E., Pittsburg, Pa. Machine for putting up medical powders	199,645	Jan. 29	989	288	13	186
Henzel, N., Prag, and P. W. Liebich, Teplitz, Austria. Grate-bar for furnaces	199,707	Jan. 29	1050	307	13	196
Herold, H., *et al.* (See Hubel, H., assignor.)						
Herold, J., *et al.* (See Hubel, H., assignor.)						
Hersman, G. (See Hersman, M. M. and G.)						
Hersman, M. M. and G., Hersman, Ill. Metallic burial-case	199,708	Jan. 29	1051	307	13	196
Hewitt, J. S., Wheatland, Mo. Rotary steam-engine	199,709	Jan. 29	1052	307	13	196
Hewitt, J. W. and W. J., Jackson, Mich. Carriage-spring	199,646	Jan. 29	993	289	13	187
Hewitt, W. J. (See Hewitt, J. W. and W. J.)						
Hitter, J. A., Jr., St. Martinsville, La. Punch for cutting letters	199,710	Jan. 29	1053	308	13	196
Hobbs, T. J., and L. Hunting, Baldwinsville, Mass. Hobby-horse	199,711	Jan. 29	1053	308	13	196
Holtzer, C. W., Brookline, Mass. Centrifugal bell-alarm	199,828	Jan. 29	1164	342	13	213
Hoosier Drill Company. (See Fulgham, J. P., assignor.)						
Hopkins, W. H., and M. L. Stebbins, Waverly, Iowa. Buggy-top	199,829	Jan. 29	1165	342	13	214
Horrocks, A., and E. D. Stevens, Bardolph, Ill. Roller for drain-tile machines	199,712	Jan. 29	1054	308	13	196
Houston, W. (See Brown and Houston.)						
Hoyt, F. J., New York, N. Y. Lock for freight-cars	199,713	Jan. 29	1054	308	13	196
Hubel, H., assignor to H. and J. Herold and J. Zwicker, New York, N. Y. Machine for crimping seamless foxings for boots and shoes	199,714	Jan. 29	1056	309	13	196
Huguin, E. B., New York, N. Y. Horseshoe	199,830	Jan. 29	1166	342	13	214
Hunting, L. (See Hobbs and Hunting.)						
Hutchinson, J. L., Baltimore, Md. Water-closet bowl	199,831	Jan. 29	1168	343	13	214
Hutchinson, L. K. (See Cheney, H. O., assignor.)						
Hyatt, W. F., Brooklyn, N. Y. Bolt for fastening doors, &c	199,832	Jan. 29	1168	343	13	214
Hadfield, R., Sheffield, England. Projectile for heavy guns	199,973	Feb. 5	82	27	13	246
Haehnel, F., assignor to Mayer Brothers and Haehnel, New Orleans, La. Cigar-machine	200,054	Feb. 5	164	53	13	259
Haehnel, F., assignor to Mayer Brothers and Haehnel, New Orleans, La. Cigar-wrapper cutter	200,055	Feb. 5	166	53	13	259
Haggard, E. C. (See Haggard, J. W., assignor.)						
Haggard, J. W., assignor of one-half interest to E. C. Haggard, Bloomington, Ill. Combined harrow and clod-crusher	199,905	Feb. 5	14	5	13	235
Hake, A., *et al.* (See Yinger, F. S., assignor.)						
Hall, T., Brooklyn, N. Y., and T. J. Whitney, Philadelphia, Pa. Oil-stove	200,056	Feb. 5	166	54	13	259
Hamilton, J. M. (See Shea and Hamilton.)						
Hammondsett Sole Leather Company. (See Tinnerholm, C. J., assignor.)						
Harding, J. W., and I. Towell, Columbus, Texas. Safety-guard for cars	199,974	Feb. 5	83	27	13	246
Hart, W. W., assignor to F. H. Seymour, Detroit, Mich. Folding table	200,057	Feb. 5	167	54	13	259
Havell, G., assignor to Roberts and Havell, Newark, N. J. Glove-fastening	200,058	Feb. 5	168	54	13	259
Hay, S. F. (See Goodchild and Hay.)						
Hayes, D., New Orleans, La. Stowing cotton	199,975	Feb. 5	83	27	13	246
Heasley, A. H., *et al.* (See Lauffer, S. D., assignor.)						
Heath, F. S., Corry, Pa. Bale-tying machine	200,059	Feb. 5	168	55	13	259
Hedley, E. E., *et al.* (See Johnson, A. S., assignor.)						
Heegaard, C. A., assignor of one-half interest to M. M. Cady, Dubuque, Iowa. Knife cleaner and sharpener	199,976	Feb. 5	84	28	13	246
Hendrickson, S. C., Brooklyn, N. Y. Electric signaling apparatus for railway-switches	199,977	Feb. 5	85	28	13	246
Hitt, D. F., Ottawa, Ill. Surveyor's plotting instrument	200,060	Feb. 5	170	55	13	259
Hoffman, J., and C. W. Boman, assignors to J. Reckendorfer, New York, N. Y. Pen-holder	200,061	Feb. 5	171	55	13	260
Holmes, J. W. (See Chapman, J. Y., assignor.)						
Holub, J., New York, N. Y. Steam-engine	199,978	Feb. 5	86	28	13	246
Horsford, S., Halifax, Nova Scotia, Canada. Skate	199,906	Feb. 5	15	5	13	235
Houghton, C. (See Palmer and Houghton.) (Reissue.)						
Hunt, H. W., Brooklyn, N. Y. Labeling plugs of tobacco	200,062	Feb. 5	172	55	13	260
Hyatt, J. W., Newark, N. J. Slate-frame	199,907	Feb. 5	16	5	13	235
Hyatt, J. W., assignor to Celluloid Manufacturing Company, Newark, N. J. Manufacture of sheets of celluloid and other plastic compositions	199,908	Feb. 5	17	5, 6	13	235
Hyatt, J. W., assignor to Celluloid Manufacturing Company, Newark, N. J. Manufacture of combs from celluloid, &c	199,909	Feb. 5	22	7	13	236
Hyder, J., Fork Mountain, N. C. Drying fruit	199,910	Feb. 5	25	.....	13	236
Haaaz, D. F., Philadelphia, Pa. Chair-bottom	200,283	Feb. 12	399	118	13	302
Hague, C. A. (See Bradley and Hague.)						
Hall, J., 90 Chancery Lane, London, England. Boring and drilling apparatus	200,285	Feb. 12	400	119	13	303
Hall, W. P., Piqua, Ohio. Artificial teeth	200,284	Feb. 12	400	119	13	303
Halpine, P. C., assignor of one-half interest to W. Roberts, Waltham, Mass. Asbestus sheathing-paper	200,192	Feb. 12	310	92	13	289
Harbin, G. W. (See Harbin, J. W., assignor.)						
Harbin, J. W., Evansville, Ind., assignor of one-half interest to G. W. Harbin, Waterloo, Iowa. Corn-planter	200,286	Feb. 12	401	119	13	303
Harper, J., assignor of one-half interest to R. J. Richardson, Pittsburg, Pa. Machine for forming cultivator-points	200,287	Feb. 12	402	{119 / 120}	13	303
Harris, J., Janesville, Wis. Harvester	200,288	Feb. 12	403	120	13	303
Harris, J., Janesville, Wis. Mower	200,289	Feb. 12	404	{120 / 121}	13	303
Harrison, R. N., Faribault, Minn. Egg-beater	200,290	Feb. 12	407	121	13	304
Hart, W. W., assignor to F. H. Seymour, Detroit, Mich. Folding table	200,291	Feb. 12	408	123	13	304
Harway, W. H., *et al.* (See Scripture, E. S., assignor.)						
Hayden, H. A., New York, N. Y. Belt for suspending garments	200,293	Feb. 12	410	122	13	304
Hayden, W. B., Columbus, Ohio. Trace-carrier	200,292	Feb. 12	409	122	13	304
Hayes, G., Girardville, Pa. Miner's squib	200,193	Feb. 12	310	92	13	289
Heard, L. A., Cleveland, Ohio. Gage for indicating the amount of water in oil-cars	200,138	Feb. 12	255	77	13	281
Heine, H., Berlin, Prussia. Sectional steam-generator	200,294	Feb. 12	411	123	13	304
Helfiker, M. R., Wauseon, Ohio. Reciprocating churn-dasher	200,194	Feb. 12	311	93	13	289
Helm, J. H., Allegheny, Pa. Furnace for link-welding	200,195	Feb. 12	311	93	13	289
Helm, J. H., Allegheny, Pa. Machine for forming chain-links	200,196	Feb. 12	313	93	13	289
Hendrickson, M. W., *et al.* (See Scripture, E. J., assignor.)						
Herbert, C. T. (See Herbert, W. and C. T.)						
Herbert, W. and C. T., Irving Park, Ill. Corn and potato coverer	200,295	Feb. 12	413	123	13	304
Hesse, E. A. C., assignor to himself and J. H. C. Lange, Brooklyn, N. Y. Rocking chair	200,296	Feb. 12	414	123	13	305
Hicks, A., assignor to himself, M. S. Seymour, and G. W. Quackenbosa, Flushing, N. Y. Preparing feathers for bedding	200,197	Feb. 12	314	94	13	290
Hicks, J. M., Summit, N. J. Burner for fuel	200,139	Feb. 12	257	77	13	281

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Hodges, A. J. (See Mohler, C. F. and J. B., assignors.)						
Hoen, A., Baltimore, Md. Street-lamp	200,297	Feb. 12	415	123	13	305
Hoffman, J. H., New York, N. Y., and C. Spofford, Boston, Mass., assignors to said Hoffman. Paper collar	200,298	Feb. 12	416	124	13	305
Hopkins and Dickinson Manufacturing Company. (See Wadsworth, H., assignor.)						
Hotchkiss, S. L., Tioga, Pa. Clothes-pin	200,299	Feb. 12	416	124	13	305
Houghton, J. P. (See Forsyth, J., assignor.)						
House, C. D., New York, N. Y. Instrument for smoothing and leveling the teeth of horses	200,300	Feb. 12	417	124	13	305
Howard, J. K., assignor to M. L. Wright, St. Louis, Mo. Horseshoe	200,301	Feb. 12	418	124	13	305
Hull, L., Charlestown, Mass. Metallic bedstead-fastening	200,198	Feb. 12	315	94	13	290
Huppelsberg, F. W., assignor to Steinborn and Huppelsberg, Brooklyn, N. Y. Machine for covering cord	200,302	Feb. 12	418	125	13	306
Huppelsberg, F. W., assignor to Steinborn and Huppelsberg, Brooklyn, N. Y. Double-winged plaited cord	200,303	Feb. 12	419	125	13	306
Hurrell, W. F., Jr., Cincinnati, Ohio. Curtain roller and bracket	200,304	Feb. 12	420	125	13	306
Hutton, J. F., Berry Station, Ky. Shuttle for sewing-machines	200,305	Feb. 12	421	125	13	306
Hyde, J. P. (See McDermott and Hyde.)						
Hass, S., assignor to C. Dognin & Co., Lyons, France. Machine-treadle	200,390	Feb. 19	522	154	13	329
Hadger, P. S. (See Bray, W., Jr., assignor.)						
Hagins, J. J., Rock Hill, S. C. Bale-tie. (Reissue)	8,094	Feb. 19	735	.....	13	302
Haines, J. W., Cambridge, Mass. Attaching shanks to door-knobs	200,450	Feb. 19	579	171	13	338
Halter, D. R., Leo's Cross Roads, Pa. Car-coupling	200,451	Feb. 19	580	171	13	338
Hanson, F., assignor of one-half interest to M. Green, Nevada City, Cal. Insect and vermin fumigator	200,529	Feb. 19	657	193	13	350
Harban, J., Lexington, Ind. Apparatus for pressing butter	200,392	Feb. 19	524	154	13	329
Hardwick, J. W., Weymouth, Mass. Hot-water heater for buildings	200,391	Feb. 19	523	154	13	329
Harris, J., Allegheny, Pa. Steam-heater for oil-wells	200,393	Feb. 19	525	155	13	330
Hart, G. E., Newark, N. J., assignor to A. Mason, New York, N. Y. Embroidering attachment for sewing-machines	200,452	Feb. 19	581	171	13	338
Havell, G., Newark, N. J. Satchel-handle	200,530	Feb. 19	657	194	13	350
Heald, J. L., Vallejo, Cal. Stop-cock for steam-boilers	200,453	Feb. 19	582	172	13	338
Helm, J. H., Allegheny, assignor to H. Morton, Pittsburg, Pa. Furnace for heating links	200,394	Feb. 19	526	155	13	330
Hess, B. B., Burlington, Iowa. Revolving churn	200,531	Feb. 19	658	194	13	350
Hevener, S., Blairstown, Iowa. Harvester	200,532	Feb. 19	659	194	13	350
Higgins, E. O., Fairhaven, Mass. Machine for punching sheet-metal tubing	200,454	Feb. 19	583	172	13	338
Hitchkock, J. M., Michigan City, Ind. Escapement for watches and clocks	200,533	Feb. 19	660	194	13	350
Hoffman, A. D., assignor of one-half interest to W. A. Amberg. Lubricator for shafting	200,395	Feb. 19	527	155	13	330
Holly, J. H. (See Knapp, J. G. and J. W., assignors.)						
Horne, C. H., Berwick, Me. Washing-machine	200,453	Feb. 19	583	172	13	339
Hotchkiss, A. E., Cheshire, Conn. Clock-movement	200,534	Feb. 19	661	195	13	350
House, W. M., New York, N. Y. Collar	200,535	Feb. 19	662	195	13	351
Howard, E., Providence, R. I. Loom	200,536	Feb. 19	662	195	13	351
Humphry, A. W., Hiramsburg, Ohio. Feed-steamer	200,537	Feb. 19	663	195	13	351
Huntley, H. H., Quincy, Ill. Stove-leg	200,538	Feb. 19	664	196	13	351
Hutchinson, J. L., and H. Dehouck, Elgin, Ill. Watch-plate	200,539	Feb. 19	665	196	13	351
Hutchinson, J. R. (See Armstrong, E., assignor.)						
Hyde, C. D., Pitcher, N. Y. Folding chair	200,456	Feb. 19	584	172	13	339
Hagaman, J. D., Weston, Mich. Gate	200,716	Feb. 26	870	255	13	389
Hall, E. P., Chicago, Ill. Window-cleaning device	200,611	Feb. 26	757	222	13	373
Hamlin, E. C., *et al.* (See Allen, N., assignor.)						
Harrison, H., *et al.* (See Ross, W. B. and J. S., assignors.)						
Hartman, H., Camp Halleck, Nev. Apparatus for administering medicine to horses	200,717	Feb. 26	871	256	13	389
Hartman, S., Pittsburg, Pa. Rotary harrow	200,656	Feb. 26	808	238	13	381
Haworth, G. A., Liverpool, England. Balanced valve for steam-engines	200,718	Feb. 26	872	256	13	390
Hayes, W. H., Salisbury, Mo. Stock-car	200,719	Feb. 26	872	256	13	390
Hendrikson, H. O. (See Wing, L. T. L., assignor.)						
Henkell, A., Yonkers, N. Y. Safety-halter	200,720	Feb. 26	874	257	13	390
Herrmann, W., Cotton Plant, Mo. Cotton-cleaner	200,721	Feb. 26	874	257	13	390
Hess, D., Evansville, Ind. Grinding-mill	200,722	Feb. 26	875	257	13	390
Hickley, A. S., London, England. Magneto-electric fire-alarm and signaling apparatus	200,723	Feb. 26	876	257	13	390
Hill, J., *et al.* (See Hill, N., assignor.)						
Hill, N., assignor to J. K. Divors, Clyde township, Allegan county, J. Hill, Grand Rapids, and W. B. Tripp, Bangor, Mich. Lifting-jack	200,792	Feb. 26	939	277	13	401
Hinckel, F., assignor to E. D. Brainard, Albany, N. Y. Washing shavings in breweries. (Reissue)	8,099	Feb. 26	963	284	13	404
Holbrook, A., Lockport, N. Y. Buck-saw frame	200,612	Feb. 26	758	222	13	373
Howell, H., Salem, Ohio. Thill-coupling	200,793	Feb. 26	940	277	13	401
Hull, W., Fort Wayne, Ind. Spring-hinge for gates, &c	200,657	Feb. 26	809	238	13	381
Hunt, R. W., and A. Wendel, Troy, N. Y. Recarburizer for use in the pneumatic process	200,724	Feb. 26	877	.....	13	390
Hunter, C., assignor to himself and J. F. Hunter, Stonewall, Va. Steam-engine	200,725	Feb. 26	879	258	13	390
Hunter, J. F. (See Hunter, C., assignor.)						
Hyde, T. W., Bath, Maine. Pin-rail for vessels	200,613	Feb. 26	759	222	13	373
Hyndman, W. G., Cincinnati, Ohio. Securing metal plates to structures. (Reissue)	8,100	Feb. 26	964	284	13	404
Hagerty, E., New York, N. Y. Cap for glass syringes	200,909	Mar. 5	91	31	13	429
Hailes, W., and J. Gray, Albany, N. Y. Coal-oil stove	200,864	Mar. 5	49	17, 18	13	422
Hale, R., Minneapolis, Minn. Wire-band cutter	201,006	Mar. 5	184	59	13	443
Hamilton, C. L., Roxborough, Pa. Cooling beating-engines for paper-pulp	200,828	Mar. 5	14	5	13	417
Hanks, E. F., Jersey City, N. J. Slab and bottle-holder for dentists	200,829	Mar. 5	15	5	13	417
Hansen, L. (See Nordblom and Hansen.)						
Harbaugh, G. A., Bellefonte, Pa. Turbine water-wheel	201,007	Mar. 5	185	59	13	444
Harrison, J. B., Cincinnati, Ohio. Ash-pan for locomotives	200,910	Mar. 5	91	31	13	429
Hart, H., Little Valley, N. Y. Burglar-alarm	201,008	Mar. 5	186	59	13	444
Hastings, S., Pleasant Valley, N. Y. Platform passenger-register	201,009	Mar. 5	186	60	13	444
Hawes, A. E., *et al.* (See Wallace, F. G., assignor.)						
Hawkins, H. and M., Sedalia, Mo. Medical compound	201,010	Mar. 5	188	.....	13	444
Hawkins, M. (See Hawkins H. and M.)						
Hays, J. C. (See Bowman, W. H., assignor.)						
Hechler, G. L. (See Boote and Hechler.)						
Hemingray, W. (See Rigney and Hemingray.)						
Hénard, C., and E. Lanier, Paris, France. Cosmographic clock	200,830	Mar. 5	16	6, 7	13	417
Hewitt, J. (See Smith and Hewitt.)						
Hicks, W. H., Brooklyn, N. Y. Bottle-stopper	201,011	Mar. 5	189	60	13	444
Hildreth, R. A., Harvard, Mass. Lawn-mower	201,012	Mar. 5	189	60, 61	13	444
Hills, H. M. (See Clemmons and Hills.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hinkle, M. W., Memphis, Tenn. Adding-machine	200,911	Mar. 5	92	32	13	429
Hinson, J. A., Oskaloosa, Iowa. Vehicle running-gear	201,013	Mar. 5	192	61	13	445
Hitchcock, M. L., assignor of one-half interest to J. Bergin, Cornwall, Ontario, Canada. Slashers	201,014	Mar. 5	193	61	13	445
Hogan, A. L., Mason, Ill. Machine for cutting shingles	200,912	Mar. 5	93	32	13	429
Hollingsworth, J. F. (See Myrick, L. E., assignor.)						
Hoover, W. U., Bowling Green, Ky. Combined bed-bottom and fire-escape	201,015	Mar. 5	194	62	13	445
Howse, H. L., Sacramento, Cal. Oil cook-stove lamp	200,913	Mar. 5	93	32	13	429
Hoyt, F. J., New York, N. Y. Hat-mirror	201,016	Mar. 5	194	62	13	445
Huntoon, W. P., Stewart, Iowa. Reversible pinion for watches	200,831	Mar. 5	16	7	13	417
Hyatt, J. W., Newark, N. J. Pneumatic, hydraulic, or steam pressure apparatus	200,914	Mar. 5	95	32	13	430
Hand, S. A., Philadelphia, Pa. Differential-pressure regulator	201,243	Mar. 12	430	139	13	486
Hartford, D. F., assignor of one-half interest to T. T. Hartford, Boston, Mass. Apparatus for grading patterns	201,111	Mar. 12	294	91	13	467
Hartford, T. T. (See Hartford, D. F., assignor.)						
Haskins, J. F., assignor to Stow Flexible Shaft Company, (limited,) Philadelphia, Pa. Device for transmitting power	201,178	Mar. 12	359	111	13	476
Hathaway, W. H., Pawtucket, R. I. Manufacturing pin-tongues for jewelry	201,244	Mar. 12	431	139	13	486
Haumann, A. G., Chicago, Ill. Shutter. (Reissue)	8,118	Mar. 12	500	159	13	497
Hearn, E. R., Jersey City, N. J. Package for plug-tobacco	201,245	Mar. 12	431	139	13	486
Hebdon, H., assignor to L. Hebdon, Boston, Mass. Process and apparatus for finishing cloth	201,112	Mar. 12	297	91	13	467
Hebdon, L. (See Hebdon, H., assignor.)						
Hellman, L. (See Frary and Hellman.)						
Hentshel, A., Cincinnati, Ohio. Sofa-bedstead	201,246	Mar. 12	432	133	13	486
Hersey, R., *et al.* (See Clapp, G. P., assignor.)						
Hess, G. H. (See Ritchol, C. F., assignor.)						
Higley, E. N., Somersworth, N. H. Velocipede	201,179	Mar. 12	360	111	13	476
Hill, W., Newark, N. J. Boot and shoe heel	201,247	Mar. 12	433	133	13	486
Hillard, P. H., Middle Haddam, Conn. Bell-toy	201,180	Mar. 12	361	111	13	476
Hinckle, J. A. (See Shirley, J. R., assignor.)						
Howe, J. A. (See Nourse and Howe.)						
Hudson, A. L., Hingham, Mass. Photographic camera	201,248	Mar. 12	434	133	13	486
Hughes, S., Charleston, S. C. Feed-water heater and purifier	201,181	Mar. 12	362	112	13	477
Hull, C. W., *et al.* (See Scarritt, J., Jr., assignor.)						
Hull, H. C., *et al.* (See Scarritt, J., Jr., assignor.)						
Hull, W. A., Meriden, Conn. Inkstand	201,249	Mar. 12	435	134	13	486
Hurd, S. D. (See Banger and Hurd.)						
Haggard, W. S. (See Brown, L. D., assignor.)						
Haines, P. P., assignor to Wilson Packing Company, Chicago, Ill. Soldering-tool	201,522	Mar. 19	732	223	13	536
Hall, A., Cypress Hill, N. Y. Lamp-extinguisher	201,411	Mar. 19	625	191	13	520
Halsey, E. L. (See Scanlan, C. A., assignor.)						
Halteman, J. L. (See Westcott and Halteman.)						
Hansell, W. P., Pittsburg, Pa. Car-spring	201,523	Mar. 19	733	223	13	536
Hard, J. W., Decorah, Iowa. Sectional steam-boiler	201,412	Mar. 19	625	191	13	520
Harkness, E., Vincennes, Ind. Vault	201,413	Mar. 19	626	191	13	520
Harrison, H. (See Vanclain, J. A. P., assignor.)						
Harrison, T. W., Boston, assignor to himself and H. R. Perkins, Newburyport, Mass. Musical top	201,345	Mar. 19	555	170	13	510
Hastings, M. (See Tregoning and Hastings.)						
Hastings, W. F., Bridgeport, Conn. Bobbin-socket for spindles	201,414	Mar. 19	627	191	13	520
Henry, A., and D. Fraser, Edinburgh, North Britain; said Fraser assignor to said Henry. Fire-arm	201,524	Mar. 19	734	224	13	536
Hester, J., Knoxville, Ill. Outside window-blind	201,415	Mar. 19	627	192	13	520
Hildreth, J. W., Boston, Mass. Leather-stuffing machine	201,526	Mar. 19	736	224, 225	13	536
Hill, G. C., assignor of one-half interest to C. W. Stites, Salisbury, Md. Corpse-cooler	201,525	Mar. 19	735	224	13	536
Hill, W. C. (See Altenburg and Hill.)						
Hodgson, T., Amherst, Nova Scotia, Canada. Saw-sharpening machine	201,416	Mar. 19	628	192	13	520
Hoffmann, F. W. (See Dahler and Hoffmann.)						
Holland, C., Chicago, Ill. Hydrocarbon-gas apparatus	201,527	Mar. 19	738	225	13	536
Hoosier Drill Company. (See Green, O. C., assignor.)						
Hoosier Drill Company. (See Westcott and Halteman, assignors.)						
Horsley, P. N., Jersey City, N. J. Shutter-fastening	201,417	Mar. 19	629	192	13	521
Hotchkiss, W. T., *et al.* (See Wolbrecht, J. M., assignor.)						
Hoyt, A. S., Winona, Minn. Grain-binder	201,346	Mar. 19	556	170, 171	13	510
Huebethal, J., Salineville, Ohio. Churn	201,528	Mar. 19	739	225, 226	13	536
Hull, E. H., Warren, Ohio. Calender for watches	201,418	Mar. 19	630	192	13	521
Hurd, M. J., Rochester, Minn. Wagon-jack	201,529	Mar. 19	741	226	13	537
Hurd, O. P., Binghamton, N. Y. Neck-tie retainer	201,419	Mar. 19	631	193	13	521
Hutchinson, F., and W. H. Graham, Pittsburg, Pa. Utilizing worn-out springs	201,420	Mar. 19	631	193	13	521
Hyatt, C. M. (See Hyatt, J. W. and C. M.)						
Hyatt, J. W., Nowark, N. J. Mill for pulverizing	201,347	Mar. 19	558	171, 172	13	511
Hyatt, J. W., Newark, N. J., and C. M. Hyatt, Albany, N. Y. Silicious material to imitate ivory and similar substances	201,348	Mar. 19	560	.....	13	511
Haarmann, H. A., Osnabruck, Prussia. Railway-track	201,667	Mar. 26	895	273	13	562
Hadley, G. W., assignor to Massachusetts Arms Company, Chicopee, Mass. Cap-extractor	201,774	Mar. 26	1004	306	13	579
Haines, J. W., Cambridgeport, Mass. Silvered-glass door-knob. (Reissue)	8,139	Mar. 26	1103	334	13	592
Hamilton G. W., Fredericksburg, Va. Cigar-mold	201,775	Mar. 26	1004	307	13	579
Hammond, A. S., and D. W., Independence, Iowa. Window-blind closer	201,776	Mar. 26	1005	307	13	579
Hammond, D. W. (See Hammond, A. S. and D. W.)						
Hardy, C. R., Lexington, Ind. Stock-feed boiler	201,668	Mar. 26	896	273	13	562
Harmon, O. S., Brooklyn, N. Y. Exercising-machine	201,606	Mar. 26	839	254	13	554
Harris, M., Jamestown, N. Y. Draft attachment for plows	201,777	Mar. 26	1006	307	13	579
Hart, G., Detroit, Mich. Emery-wheel	201,778	Mar. 26	1007	307	13	579
Hart, R. E., Odell, Ill. Trace-carrier	201,779	Mar. 26	1007	308	13	579
Hartnett, R. W., Philadelphia, Pa. Milling-machine for dressing printers' chases	201,780	Mar. 26	1008	308	13	579
Harty, W., Jersey City, N. J. Machine for bending elliptic springs	201,607	Mar. 26	840	255	13	554
Harvey, G. W. (See Seal, W. D., assignor.)						
Heckendorn, H. C., Reading, Pa. Oval-turning lathe	201,781	Mar. 26	1009	308	13	579
Heising, W., *et al.* (See Stewart, E., assignor.)						
Helck, J. M., Callicoon, N. Y. Pruning-knife	201,782	Mar. 26	1011	309	13	580

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hendricks, A. C., Duffield's, West Va. Vehicle-wheel	201,783	Mar. 26	1011	309	13	580
Herriff, J. H., City Bluff, Mo. Car-coupling	201,669	Mar. 26	896	273	13	563
Hess, D., Evansville, Ind. Grinding-mill	201,784	Mar. 26	1012	309	13	580
Hewitt, H. L., Alton, Ill., assignor of one-half interest to L. M. and M. Rumsey, St. Louis, Mo. Sulky-plow	201,670	Mar. 26	897	273, 274	13	563
Heywood, W. F., Woonsocket, R. I. Distance-register for vehicles	201,608	Mar. 26	841	255	13	554
Hibbert, T., Cochran, Ind. Car-axle-box lid	201,671	Mar. 26	892	274	13	563
Highland Foundry Company. (See Simpson, R., assignor.) (Reissue.)						
Hill, S., San Francisco, Cal. Pencil-holder	201,672	Mar. 26	899	274	13	563
Hill, T. M., Dayton, Ohio. Combined sieve and strainer	201,609	Mar. 26	842	255	13	554
Hinaman, L. H., Long Eddy, N. Y. Vehicle-axle lubricator	201,673	Mar. 26	899	275	13	563
Hodges, L. L., Boston, Mass. Organ-stop draw-knob	201,674	Mar. 26	900	275	13	563
Hoffman, A. D., Chicago, Ill., assignor to J. J. Baker and J. I. Wallace. Sickle-grinder	201,610	Mar. 26	842	255	13	554
Holden, O., St. Louis, Mo. Grain-drier	201,785	Mar. 26	1013	309	13	580
Hollingsworth, B., Sigourney, Iowa. Fastening for latches	201,675	Mar. 26	901	275	13	563
Hoover, Z. L., Moline, Ill. Post-hole spade	201,787	Mar. 26	1015	310	13	580
Hovey, W. H., Springfield, Mass. Gas-light extinguisher	201,611	Mar. 26	843	256	13	554
Hunt, A. T., Arkadelphia, Ark. Cotton cleaner and condenser	201,676	Mar. 26	902	275	13	563
Hurrell, W. F., Jr., Cincinnati, Ohio. Self-binding pulley-block	201,612	Mar. 26	844	256	13	554
Hurst, A., and F. W. Smith, Louisville, Ky. Box-fastener for egg-cases, &c.	201,788	Mar. 26	1015	310	13	580
Hussey, D., Lowell, Mass. Speed-indicator	201,677	Mar. 26	902	276	13	564
Hutton, J., St. Louis, Mo. Utilizing waste-heat of furnaces	201,613	Mar. 26	845	256, 257	13	554
Haas, C. (See Ellithorpe and Haas.)						
Halstead, B., Cincinnati, Ohio. Type-writing machine	202,024	Apr. 2	160	47	13	622
Hamelback, D., *et al.* (See Hamelback, J., assignor.)						
Hamelback, J., assignor to himself, W., and D. Hamelback, Hopewell, Ohio. Combined cultivator and corn-planter	202,026	Apr. 2	165	48	13	623
Hamelback, W., *et al.* (See Hamelback, J., assignor.)						
Hamlin, H. M., Greenville, Pa. Balanced slide-valve	202,025	Apr. 2	164	47, 48	13	622
Hargitt, J. (See Schroder, J. L., assignor.)						
Harrison, H. L. (See Brockett, A. E., assignor.)						
Harvey, E. A., Wilmington, Del. Machine for straightening sheet metal	202,027	Apr. 2	166	48	13	623
Henry, J. S., North Belle Vernon, Pa. Curtain roller and bracket	202,028	Apr. 2	167	48	13	623
Hess, G. H., Winchester, Va. Rein-holder	202,029	Apr. 2	168	49	13	623
Hill, W. K., Brush Creek, Iowa. Feed-steamer	201,921	Apr. 2	63	17	13	608
Hodges, O. F. (See Root, D. N., assignor.)						
Hogan, J., Fort Worth, Tex. Car-coupling	201,922	Apr. 2	64	17	13	608
Holt, W. (See Matthews and Holt.)						
Hooker, G. W. (See Scharf, S. R., assignor.)						
Hoover, R., Boonsborough, Iowa. Feather-renovator	202,030	Apr. 2	169	49	13	623
Howard, W. H., San Antonio, assignor of one-fourth interest to C. E. Broussard, Galveston, and R. M. Hutchins, Houston, Tex. Bale-tie	202,031	Apr. 2	170	49	13	623
Hübner, C., Newark, N. J. Motor	201,923	Apr. 2	64	17	13	608
Hughes, J. B. (See Breitschwerth and Hughes.)						
Hull, L., Charlestown, Mass. Bed-bottom	202,032	Apr. 2	170	49	13	623
Hussey, C. A., New York, N. Y. Galvanic battery	201,924	Apr. 2	65	17	13	608
Hutchins, R. M., *et al.* (See Howard, W. H., assignor.)						
Haines, C., Manchester, Me. Stump-extractor	202,107	Apr. 9	266	78	13	641
Hale, H. S., Philadelphia, Pa. Wash-stand	202,257	Apr. 9	422	123	13	663
Haley, J., New Brighton, Pa. Machine for welding chain-links	202,258	Apr. 9	423	123, 124	13	663
Hamblin, S., Greenville, Pa. Link for valve-motions	202,166	Apr. 9	333	98	13	650
Hammer, G. F., Cincinnati, Ohio. Cylinder-cock	202,167	Apr. 9	334	98	13	650
Hansen, A., San Francisco, Cal. Sofa-bed	202,108	Apr. 9	266	78, 79	13	641
Harnah, W., New York, N. Y. Machine for eyeleting umbrella-cases	202,168	Apr. 9	336	98	13	650
Hayes, D. D., San Francisco, Cal. Extension-ladder	202,169	Apr. 9	337	98	13	650
Hayman, H. C., Van Buren, Ark. Convertible chair	202,170	Apr. 9	338	99	13	651
Henderson, T. A., Natchez, Miss. Reciprocating steam-engine	202,171	Apr. 9	339	99	13	651
Hill, A. C., *et al.* (See Proctor, D. R., assignor.)						
Hilton, C. W., Bacon Hill, assignor of one-half interest to J. H. Thompson, Northumberland, N. Y. Wrench	202,259	Apr. 9	425	124	13	663
Hoard, J. W., Providence, R. I. Toy money-box. (Reissue)	8,170	Apr. 9	505	147	13	674
Hobbs, T. J. (See Tenney and Hobbs.) (Reissue.)						
Holcomb, I. M., *et al.* (See Macey, C. R., assignor.)						
Holmes, M. C., Woonsocket, R. I. Chuck	202,260	Apr. 9	426	124	13	663
Howland, E. A., Worcester, Mass. Car-coupling	202,261	Apr. 9	426	125	13	663
Hunt, J. C., assignor of one-half interest to D. Click, Sheridan, Cal. Grain-meter	202,172	Apr. 9	340	99	13	651
Hurlbut, W. (See Moore, S. M., assignor.)						
Hyslop, J., Jr., Abington, assignor, by mesne assignments, to H. H. and G. O. Jenkins, South Abington, Mass. Machine for making metallic shoe-shanks. (Reissue)	8,163	Apr. 9	498	145	13	673
Haas, J., Delaware, Ohio. Brick-kiln	202,542	Apr. 16	744	215	13	709
Habernicht, A., New York, N. Y. Apparatus for dispensing effervescent liquids	202,543	Apr. 16	745	215	13	710
Haines, W., Philadelphia, Pa. Adjustable watch-key	202,344	Apr. 16	533	156	13	682
Hancock, G., Passaic, N. J. Sewing-machine. (Reissue)	8,178	Apr. 16	835	241	13	721
Hastings, A. H., New York, N. Y., assignor to P. Gmehlin. Upright piano-forte action. (Reissue)	8,185	Apr. 16	841	242	13	722
Hatch, G. E., assignor to Meriden Flint Glass Company, West Meriden, Conn. Tempering glass	202,544	Apr. 16	745	.....	13	710
Hernstein, A. L., New York, N. Y. Saddle-bags	202,345	Apr. 16	533	156	13	682
Heston, W., Akron, Ohio. Whiffletree-hook	202,437	Apr. 16	624	183	13	695
Hill, E. A., Princeton, Ind. Ironing-table	202,438	Apr. 16	624	183	13	695
Hochheimer, J., Baltimore, Md. Plaiting-machine	202,346	Apr. 16	534	156	13	682
Hoffman, J. B., Waterloo, Iowa. Hay-rack	202,347	Apr. 16	535	156, 157	13	683
Holcomb, H., Painesville, Ohio. Heating-furnace	202,439	Apr. 16	625	183	13	695
Holmes, F. H., Detroit, Mich. Device for holding and counting coin	202,545	Apr. 16	746	215	13	710
Homrighous, J., Royalton, Ohio. Burial-casket	202,440	Apr. 16	626	183	13	695
Hooton, M. M., Brookside, assignor of one-half interest to M. M. Pomeroy, Chicago, Ill. Band-cutting feeder for thrashers	202,546	Apr. 16	747	216	13	710
Hough, E. C. (See Murphy, L., assignor.)						
Hubbard, M. E., Medina, N. Y. Machine for making pails from paper-pulp	202,547	Apr. 16	749	216	13	710
Hubbell, W. F. (See Williams and Hubbell.)						

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Hyatt, J. W., Newark, N. J., assignor to Celluloid Manufacturing Company, N. Y. Coating articles with celluloid, &c.	202,441	Apr. 16	627	184	13	696
Hyde, A. (See Hyde, J. B., assignor.)						
Hyde, J. B., assignor to A. Hyde, New York, N. Y. Underground-telegraph	202,442	Apr. 16	629	184	13	696
Hager, T., Mayence, Germany. Wire rope and cable	202,812	Apr. 23	1045	300	13	755
Hall, J. C., Monroe, Wis. Speculum	202,813	Apr. 23	1046	300	13	755
Hallett, H. H., Rockland, Mass. Work-trimmer for sewing-machines	202,721	Apr. 23	946	271	13	742
Hanks, E. F., Jersey City, N. J. Hammock	202,814	Apr. 23	1047	301	13	756
Hape, W. (See Harcum, A., assignor.)						
Harcum, A., assignor to himself and W. Hape, Scott township, Pa. Ornamenting glass-ware	202,647	Apr. 23	872	250	13	734
Harrington, H. and J., Woodstock, Ontario, Canada. Portable fence	202,722	Apr. 23	947	271	13	742
Harrington, J. (See Harrington, H. and J.)						
Harris, A. J. and F. E., Boston, Mass. Apparatus for indicating the direction of the wind	202,815	Apr. 23	1049	301	13	756
Harris, F. E. (See Harris, A. J. and F. E.)						
Harrison, C., New York, N. Y. Drip-tray for water-closet bowls. (Reissue)	8,189	Apr. 23	1154	332	13	768
Hatfield, O. P., New York, N. Y. Envelope	202,816	Apr. 23	1051	302	13	756
Haven, G. S., Racine, Wis. Plow	202,817	Apr. 23	1052	302	13	756
Haworth, J. H., *et al.* (See Batchelder, A. G., assignor.) (Reissue.)						
Haywood, J. L., South Framingham, Mass. Nut-lock	202,723	Apr. 23	948	271	13	742
Headley, J. H., Brooklyn, N. Y. Baby-walker	202,724	Apr. 23	948	271	13	743
Heaton, W., Lee township, Iowa. Shelter for animals	202,648	Apr. 23	873	250	13	734
Helster, C., Hanover, Prussia. Double-acting pump	202,725	Apr. 23	949	272	13	743
Hendry, J. C., Boston, Mass. Hub-attaching device	202,726	Apr. 23	949	272	13	743
Herman, C. V. (See Herman, J. M., F. W., and C. V.)						
Herman, F. W. (See Hermann, J. M., F. W., and C. V.)						
Herman, J. M., F. W., and C. V., Lincoln Centre, Kans. Grain-separator	202,727	Apr. 23	950	272	13	743
Hesse, O., West Hoboken, N. J. Fishing apparatus	202,818	Apr. 23	1053	302	13	756
Hicks, E. A., *et al.* (See Palmer, C., assignor.)						
Hill, I., *et al.* (See Mann, W., assignor.)						
Hill, N., Bravo, assignor of three-fourths interest to J. K. Divers, Clyde, and W. B. Tripp, Bangor, Mich. Whiffletree-hook	202,649	Apr. 23	875	251	13	734
Hillen, G., and J. Crockett, New York, N. Y. Electro-magnetic printing apparatus	202,650	Apr. 23	876	251	13	734
Himmer, V., New York, N. Y. Pendulum-clock. (Reissue)	8,194	Apr. 23	1160	333	13	769
Hoagland, G. H., Port Jervis, N. Y. Fire-box for steam-boilers	202,819	Apr. 23	1054	302, 303	13	756
Hoagland, G. H., Port Jervis, N. Y. Lubricator	202,820	Apr. 23	1055	303	13	757
Hoard, F. R., Providence, R. I. Toy vehicle	202,651	Apr. 23	877	251	13	734
Hoffman, A. A., New York, N. Y. Table-bedstead	202,823	Apr. 23	1059	303	13	757
Hoffman, R., Marienberg, Germany. Manufacture of ultramarine colors	202,822	Apr. 23	1057	.....	13	757
Hoffman, W. H., Passaic, N. J. Compound engine	202,821	Apr. 23	1056	303	13	757
Hogan, M., Hartford, Conn. Water-closet	202,652	Apr. 23	878	251, 252	13	734
Hogan, M., Hartford, Conn. Water-cock	202,653	Apr. 23	879	252	13	734
Holland, J., Cincinnati, Ohio. Pencil	202,654	Apr. 23	880	252	13	734
Holland, J., Cincinnati, Ohio. Fountain-pen point	202,655	Apr. 23	881	252	13	735
Holmes, C. E. L. (See Lawrence and Holmes.)						
Hooker, G. W. (See Shane and Hooker.)						
Hooper, N. B. (See Keenan, W., assignor.)						
Horstmann, F. O., *et al.*, trustee. (See Alton, R. C., assignor.)						
Horstmann, W., *et al.*, trustee. (See Alton, R. C., assignor.)						
Hough, J. T., Pittsburg, Pa. Horseshoe-nail machine	202,824	Apr. 23	1060	304	13	757
Hulen, J. S. (See Richard, J. E., assignor.)						
Hunkeler, J., St. Louis, Mo. Grinding-machine	202,656	Apr. 23	882	253	13	735
Huntington, B. B., New Richmond, Wis. Gate	202,728	Apr. 23	951	273	13	743
Hutchinson, S., Jr., Salem, Mass. Machine-oiler	202,729	Apr. 23	952	273	13	743
Haas, W., Walla Walla, Washington Territory. Washing-machine	203,031	Apr. 30	1279	370	13	789
Hall, W. H., Tiffin, Ohio. Corn-sheller	203,032	Apr. 30	1280	370	13	789
Haller, E. G., Philadelphia, Pa. Self-lighting lamp	203,145	Apr. 30	1391	406, 407	13	804
Hance, A., New York, N. Y. Whiffletree	203,146	Apr. 30	1392	407	13	805
Handren and Ripley. (See Dickey, W. D., assignor.)						
Harrison, W. M. (See Baughn and Harrison.)						
Harvey, J. (See Dunn, W., assignor.)						
Hatch, A. H., New York, N. Y. Apparatus for embalming	203,033	Apr. 30	1280	370	13	789
Haus, W., Church P. O., Pa. Torpedo for oil-wells	203,034	Apr. 30	1281	371	13	790
Hawley, A. A., Merrimack, and R. B. Hawley, Amesbury, Mass., assignors to Merino Shoe Company, Merrimack and Boston, Mass. Mechanism for hardening or felting hollow articles of wool	203,147	Apr. 30	1393	407	13	805
Hawley, A. A., Merrimack, and R. B. Hawley, Amesbury, Mass., assignors to Merino Shoe Company, Merrimack and Boston, Mass. Manufacture of felt foot-coverings, &c.	203,148	Apr. 30	1394	407	13	805
Hawley, R. B. (See Hawley, A. A. and R. B.)						
Haworth, J., Philadelphia, Pa. Motor for sewing-machines	203,035	Apr. 30	1282	371	13	790
Hay, G. (See Van Buskirk and Hay.)						
Hazen, R. W., Fremont, Nebr. Corn-crib ventilator	203,036	Apr. 30	1283	371	13	790
Hebard, A. K., assignor to Stedman and Morse, Cambridge, Mass. Device for holding coils of wire	203,037	Apr. 30	1284	372	13	790
Hebdon, W., Boston, and T. F. Mathews, Malden, Mass. Compound for dressing textile fabrics	203,038	Apr. 30	1285	.....	13	790
Heckman, A., Sterling, Ill. Corn-planter	203,149	Apr. 30	1395	408	13	805
Heimlich, J., and L. O. Dehnel, Sandusky, Ohio. Oscillating water-meter	203,039	Apr. 30	1285	372	13	790
Henrich, H., assignor to R. Henrich, New York, N. Y. Die for forming settings for lockets	203,040	Apr. 30	1287	372	13	790
Henrich, R. (See Henrich, H., assignor.)						
Herr, A. K., Lampeter, Pa. Tuyere	203,041	Apr. 30	1288	373	13	790
Hill, H. W., Decatur, Ill. Machine for opening ditches	203,042	Apr. 30	1289	373	13	790
Hill, J., Williamsport, Pa. Buttoner	202,943	Apr. 30	1194	345	13	778
Hillegass, G., Philadelphia, Pa. Lamp-burner	203,043	Apr. 30	1289	373	13	790
Hoadley, I. N. (See Hoadley, L. W., assignor.)						
Hoadley, L. W., assignor of two-thirds interest to I. N. Hoadley, Peachville, Pa. Oil-well packing	203,044	Apr. 30	1290	373	13	791
Hoeffer, A. (See Seneff and Hoeffer.)						
Hogan, M., Hartford, Conn. Water-closet	203,045	Apr. 30	1291	374	13	791
Holbrook, C. L. (See Johnson, S. W., assignor.)						
Holcomb, J. R., *et al.* (See Spalding, D. M., assignor.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Holmes, J., Jersey City, N. J., assignor of one-half interest to G. H. Coutts, New York, N. Y. Sugar-coated biscuit	202,944	Apr. 30	1195	.....	13	778
Hopkins, D. A., Park Ridge, N. J. Car-axle box	203,150	Apr. 30	1396	406	13	805
Hopkins, T. A., Providence, R. I. Center-rim for watch-cases	203,046	Apr. 30	1292	374	13	791
Hopkins, W. W., Thorntown, Ind. Calculating-machine	203,151	Apr. 30	1398	408	13	805
Houghton, C., Boston, Mass., assignor to Merino Shoe Company. Overshoe or gaiter	203,152	Apr. 30	1400	409	13	805
Howe, M. A., assignor of one-half interest to O. Bowen, Elyria, Ohio. Churn	203,047	Apr. 30	1293	375	13	791
Hubbard, D. B., Williamsport, Pa. Swing	203,049	Apr. 30	1295	375	13	791
Hughes, J. R., Saugus, Mass. Egg-beater	203,153	Apr. 30	1400	409	13	805
Humphrey, W. W., Boston, Mass. Curved street-rail	202,945	Apr. 30	1195	345	13	778
Hunter, H. C., and J. Everding; said Hunter assignor to A. S. Jenks, Philadelphia, Pa. Running-gear for street-cars	203,154	Apr. 30	1402	409	13	806
Hunter, H. C., and J. Everding; said Hunter assignor to A. S. Jenks, Philadelphia, Pa. Device for transmitting motion	203,155	Apr. 30	1404	410	13	806
Hunter, H. C., and J. Everding; said Hunter assignor to A. S. Jenks, Philadelphia, Pa. Shaft-coupling	203,156	Apr. 30	1405	410	13	806
Hurd, N. (See Kidder, G. R., assignor.)						
Huston, H. C. (See Connelly and Huston.)						
Hyde, S. T., Boston, Mass. Steam-generator	203,157	Apr. 30	1406	401	13	806
Haedicke, P., Berlin, Prussia. Lamp	203,443	May 7	222	63	13	850
Hale, R., Ledyard, N. Y. Manufacture of manganese alloys	203,206	May 7	30	.....	13	825
Hall, C. I., Vallejo, Cal. Straw-burning furnace	203,267	May 7	33	10	13	825
Hall, D., Covington, Ky. Bale-tie	203,444	May 7	223	63	13	851
Hallam, R. W., assignor to Meriden Cutlery Company, West Meriden, Conn. Carving-fork	203,445	May 7	224	63	13	851
Halstead, C., New York, N. Y. Coffee-pot	203,268	May 7	34	10	13	825
Hamilton, M. J., White Marsh, Pa. Metallurgic gas-generator	203,446	May 7	225	64	13	851
Hamilton, R. W., Hartford, Conn. Condenser	203,337	May 7	105	30, 31	13	834
Handover, C. M., Brooklyn, N. Y. Ventilator	203,447	May 7	226	64	13	851
Harris, B. C. W., and F. M. Williams, Mount Gilead, Ohio. Weather-strip	203,448	May 7	227	64	13	851
Harris, E. L., Red Banks, Miss. Gin-saw filer	203,338	May 7	106	31	13	834
Hart, A., *et al.* (See Morrison, G. W., assignor.)						
Hart, D. B., and W. P. Webster, West Mentor, Ohio. Wagon-tongue support	203,339	May 7	107	31	13	834
Hartford, D. F., assignor to himself and T. T. Hartford, Boston, Mass. Shears for cutting sheet material	203,449	May 7	228	65	13	851
Hartford, T. T. (See Hartford, D. F., assignor.)						
Hathaway, J. C., *et al.* (See Moffett, H. M., assignor.)						
Hawley, M. C., assignor of one-eighth interest to J. G. Ross, St. Louis, Mo. Heating-stove	203,269	May 7	34	10, 11	13	851
Hayes, J. H. (See Hayes, T. E. and J. H.)						
Hayes, T. E., and J. H., Spring Green, Wis. Vehicle-top	203,450	May 7	228	65	13	825
Heald, J. L. (See Enright and Heald.)						
Heavener, F., Laramie City, Wyo. Car-coupling	203,451	May 7	229	65	13	851
Herlt, H., New York, N. Y. Curtain-fixture	203,270	May 7	36	11	13	825
Herr, A. K., Lampeter, Pa. Fan-blower machine	203,340	May 7	108	32	13	835
Herrmann, A. T., and W. Sexton, San José, Cal. Construction of wooden sewers	203,341	May 7	109	32	13	835
Hesse, L. J., St. Petersburg, Russia. Agricultural building	203,452	May 7	230	65	13	852
Hewitt, H. E., Georgetown, Ill. Vegetable-cutter	203,453	May 7	231	66	13	852
Hickey, J., Sheboygan, Wis. Steam-brake for locomotives	203,454	May 7	232	66	13	852
Higgins, H. M. (See McConoughey, H. N., assignor.)						
Higgins, M. P., Worcester, Mass. Hydraulic elevator	203,271	May 7	37	11	13	825
Hildreth, E. A. (See Burt and Hildreth.)						
Hill, H. W., Decatur, Ill. Hog-ringing implement	203,272	May 7	38	12	13	825
Hinrichs, C. F. A., and C. Reistle, Brooklyn, N. Y., assignors to said Hinrichs. Lamp-burner	203,342	May 7	110	32	13	835
Hoehn, C. W., Carlinville, Ill. Winding attachment for watches	203,455	May 7	233	66	13	852
Hoff, C., Cincinnati, Ohio. Carbureting attachment for gas-burners	203,456	May 7	234	67	13	852
Hollenbeck, J. P. (See Morris and Hollenbeck.)						
Holman, J., Rochester, Ky. Fruit-picker	203,457	May 7	235	67	13	852
Honse, E. O. (See Morris and Hollenbeck, assignors.)						
Huffman, J. S. (See Wilber, A., assignor.)						
Hughes, S. E., Philadelphia, Pa. Carbureter	203,458	May 7	235	67	13	852
Hull, W. G., Sing Sing, N. Y. Box-loop for harness	203,273	May 7	38	12	13	825
Hunt, A. M. (See Hunt, E. S., assignor.)						
Hunt, E. S., assignor, by mesne assignments, to A. M. Hunt, Weymouth, Mass. Line-throwing apparatus	203,274	May 7	39	12	13	825
Hunt, F. H., Minneapolis, Minn. Coffee-pot	203,275	May 7	40	12	13	826
Hackelberg, A., New York, N. Y. Packing case or box for bottles	203,727	May 14	526	149	13	898
Hale & Kilburn Manufacturing Company. (See Kilburn, C., assignor.)						
Hale & Mulford. (See Hein, C., assignor.)						
Hall, J. C., Cincinnati, Ohio. Wardrobe-bedstead	203,728	May 14	527	149	13	899
Hamilton, F. P. (See Millard, O., assignor.)						
Hammer, C. O., assignor of one-half interest to W. Sunderman, Pittsburg, Pa. Bottle-stopper fastener	203,615	May 14	409	117	13	884
Hardie, R., Govan, J. James, Edinburgh, North Britain, and J. G. Cooper, Brooklyn, assignors, by mesne assignments, to Pneumatic Tramway Engine Company, New York, N. Y. Valve for compressed-air engines	203,729	May 14	528	150	13	899
Hartman, A., Murfreesborough, Tenn., assignor, by mesne assignments, to S. S. White, Philadelphia, Pa. Dental drill. (Reissue)	8,231	May 14	623	174	13	910
Haselton, J. S. (See Fitch, L. M., assignor.)						
Hatfield, V. (See Henkel, G. H., assignor.)						
Haya, L. A., Greenville, N. H. Saw-filing machine	203,616	May 14	410	117	13	884
Heaton, H. L., West Jefferson, Ohio. Churn-dasher	203,730	May 14	529	150	13	899
Heaton, L. E., assignor to himself and S. Barr, Providence, R. I. Ticket-case	203,617	May 14	411	117	13	884
Hebert, H. B., Brooklyn, N. Y. Grain drying, scouring, and cleaning apparatus	203,340	May 14	339	97	13	875
Hein, C., Corona, assignor to Hale & Mulford, New York, N. Y. Sleeve-button link	203,618	May 14	412	117	13	884
Henderson, E., New York, N. Y. Mold-holder for gold-leaf cutters	203,620	May 14	414	118	13	885
Henkel, G. H., assignor of one-half interest to V. Hatfield, Middletown, Ohio. Cooking utensil	203,341	May 14	340	97	13	875
Henley, W. T., Plaistow, England. Submarine-telegraph cable	203,619	May 14	413	118	13	885
Hill, M. V. B., assignor to Winchester Repeating Arms Company, New Haven, Conn. Cartridge-loading machine	203,731	May 14	529	150, 151	13	899
Hill, W., Sennett, N. Y. Clothes-wringer	203,621	May 14	414	118	13	885
Hinks, J., Birmingham, England. Lamp-wick raiser	203,342	May 14	341	97, 98	13	876
Holcomb, N. B., Geneva, Ohio. Machine for constructing hand-rakes	203,732	May 14	533	151	13	899
Hooker, D. P. (See Timby, B. J., assignor.)						
How, W. S., Cincinnati, Ohio, assignor to S. S. White, Philadelphia, Pa. Dental-tool holder	203,733	May 14	534	151	13	899

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Howe, E. A., Elyria, Ohio. Mechanical movement	203,734	May 14	535	152	13	900
Huff, O., Lyman, Mo. Clothes-drier	203,543	May 14	342	98	13	876
Hughes, R. F., *et al.* (See Lanstrom, R., assignor.)						
Hunter, A., Rochester, N. Y. Treatment of flour	203,544	May 14	343	98	13	876
Hunter, W. R., assignor to himself and M. Van Meredith, East Saginaw, Mich. Safety attachment for hand-satchels	203,735	May 14	536	152	13	900
Hutchinson, J. (See Stanton and Hutchinson.)						
Hutter, K. (See Luthy, A., assignor.)						
Hyde, J., and A. Barker, Baltimore, Md. Brick-cleaning machine	203,622	May 14	415	118	13	885
Hall, J. J., assignor of one-half interest to C. H. Murray, Chicago, Ill. Wash-boiler	204,034	May 21	867	248	13	949
Hallberg, F. P., Green Point, N. Y. Water-pipe joint	204,033	May 21	866	248	13	949
Hand, T. B., Baltimore, Md. Harness attachment	203,823	May 21	641	180, 181	13	920
Hanlon, J., New York, N. Y. Gas apparatus	203,909	May 21	731	209, 210	13	932
Hanlon, J., New York, N. Y. Gas apparatus	203,925	May 21	745	215	13	934
Hansen, L. L., Palmyra, N. Y. Barrel	203,824	May 21	643	181	13	920
Harner, J. H. (See Keech, J. M., assignor.)						
Harper, C. F., *et al.* (See Healy, D., assignor.)						
Harter, J. H., assignor to Anchor Fork Company, Nevada, Ohio. Horse hay-fork	204,035	May 21	868	248	13	949
Harvey, H. A., Orange, N. J. Bolt and nut	204,036	May 21	869	248	13	949
Hatheway, H. H., Clockville, N. Y. Hop-picking machine	203,910	May 21	732	210	13	932
Healey, T. M., Washington, D. C. Endless carrying-belt	203,825	May 21	643	181	13	920
Healy, D., assignor of one-half interest to B. F. Coulter, C. F. Harper, and R. S. Moore, Los Angeles, Cal. Waste-trap	204,037	May 21	869	249	13	949
Hendry, J. C., Boston, Mass. Hub-attaching device	203,911	May 21	733	210	13	932
Henning, W. B., Waterloo, Ind. Underdrain	204,038	May 21	870	249	13	950
Herrmann, R. (See Jochum and Herrmann.)						
Hess, W. L., and L. W. Newton, Belle Plaine, Iowa. Washing-machine	204,039	May 21	871	249	13	950
Hewlett, S. H., St. Louis, Mo. Cigar-box	204,040	May 21	871	249	13	950
Hill, B. B., Springfield, Mass. Hand canceling-stamp	203,914	May 21	735	211	13	933
Hill, B. B., Springfield, Mass. Hand-stamp	203,915	May 21	736	211	13	933
Hill, J., New York, N. Y. Twine-holder	203,913	May 21	734	211	13	933
Hills, J. H., Burlington, Vt. Car-coupling	203,912	May 21	733	210	13	933
Hobart, J. H., and C. W. Steward, Oakland, Cal. Amalgamator	203,916	May 21	736	211	13	933
Hoffman, J., assignor to J. Reckendorfer, New York, N. Y. Pen-holder	203,041	May 21	872	250	13	950
Holbrook, H. C., Louisville, Ky. Device for marking plug-tobacco	204,042	May 21	873	250	13	950
Holland, C., assignor to P. Holland, Chicago, Ill. Hydrocarbon-vapor generator and burner	203,826	May 21	644	181, 182	13	921
Holland, C., assignor to P. Holland, Chicago, Ill. Hydrocarbon-vapor generator and burner	203,827	May 21	645	182	13	921
Holland, C., assignor to P. Holland, Chicago, Ill. Hydrocarbon generator and burner and gas-generator	203,828	May 21	646	182, 183	13	921
Holland, C., assignor to P. Holland, Chicago, Ill. Hydrocarbon-vapor generator and burner	203,829	May 21	647	183	13	921
Holland, C., assignor to P. Holland, Chicago, Ill. Hydrocarbon-vapor generator and burner	203,831	May 21	648	184	13	921
Holland, C., assignor to P. Holland, Chicago, Ill. Hydrocarbon-vapor generator and burner and gas-generator	203,830	May 21	647	183	13	921
Holland, C., assignor to P. Holland, Chicago, Ill. Hydrocarbon generator, burner, and lighter	203,832	May 21	649	184, 185	13	921
Holland, P. (See Holland, C., assignor.)						
Holland, W. T., Brooklyn, N. Y. Sheet-metal-bending machine	204,043	May 21	874	250	13	950
Hollingsworth, J., Jonesborough, Ind. Wind-engine	204,044	May 21	874	250	13	950
Hoosier Drill Company, *et al.* (See Luse, D. and D. F., assignors.) (Reissue.)						
House, J. A., Bridgeport, Conn. Hinge	204,045	May 21	875	251	13	950
Howard, W. C., Grahamville, S. C. Rice-hulling machine	203,917	May 21	737	212	13	933
Hudson, W. E., North Manchester, assignor to Cheney Brothers, Hartford, Conn. Expanding-drum for paper-cutting machines	203,833	May 21	650	185	13	921
Hyatt, J. W., Newark, N. J. Shoe-tip	203,834	May 21	651	185	13	922
Hyde, D., assignor to W. Tetlow, J. Lindsay, D. Hyde, and W. G. Lindsay, Philadelphia, Pa. Bearing for rub-roll shafts	204,046	May 21	876	251	13	950
Hyndman, C. D., *et al.* (See Sparkes, J. H., assignor.)						
Haas, W., Walla Walla, Wash. Ter. Mop-wringer	204,215	May 28	1082	308	13	980
Hailey, G. F., Princeton, N. J. Screen	204,147	May 28	1005	286	13	790
Hambrook, R. T., Chicago, Ill. Refrigerator	204,216	May 28	1083	309	13	980
Hamilton, W., Allegheny, Pa. Burial-casket	204,320	May 28	1186	337	13	993
Hampden Watch Company. (See Higginbotham, C. T., assignor.)						
Hand, J. C., and F. Caulier, assignors to H. P. Blackman and C. S. Greene, Philadelphia, Pa. Wardrobe-bedstead	204,321	May 28	1187	338	13	993
Harkins, C., Atlanta, Ga., assignor of one-third interest to L. Blodget, Philadelphia, Pa. Military accouterments	204,322	May 28	1188	338	13	994
Harper, W., Fulk's Run, Va. Seed and fertilizer distributer	204,323	May 28	1189	339	13	994
Harris, J., Janesville, Wis. Harvester-gearing	204,148	May 28	1006	286	13	970
Hatch, A. T., Cordelia, Cal. Fruit-pitting machine	204,217	May 28	1084	309	13	980
Haya, D., Martinsville, Mo. Corn-planter and plow	204,218	May 28	1085	309	13	981
Hazlewood, G., Jr., and J. Reagin, Bloomfield, Iowa. Trace and hame-tug coupling	204,324	May 28	1190	339	13	994
Heaton, H. L., West Jefferson, Ohio. Lemon squeezer and shaker combined	204,325	May 28	1191	339	13	994
Heath, J. W. (See Bettis and Heath.)						
Heckmann, L., assignor of two-thirds interest to W. H. Wade and E. P. Davis, Wrentham, Mass. Wire-trimming for jewelry	204,149	May 28	1009	287	13	971
Hershey, W. B. C., Columbus, Ohio. Corner-iron for carriage-seats	204,326	May 28	1192	339	13	994
Hewitt, M., St. Louis, Mo., assignor to Seymour Manufacturing Company, Seymour, Ind. Scythe-snath fastening	204,327	May 28	1193	340	13	994
Higginbotham, C. T., assignor to Hampden Watch Company, Springfield, Mass. Winding-click for watches	204,150	May 28	1009	287	13	971
Hill, H. N., Pontiac, Mich. Wind-engine	204,221	May 28	1088	310	13	981
Hill, J., Providence, R. I. Cotton-roving can	204,220	May 28	1087	310	13	981
Hill, S. (See Cook and Hill.)						
Hill, S., San Francisco, Cal. Sewing-machine table	204,219	May 28	1086	309	13	981
Hills' Archimedean Lawn Mower Company. (See Shaw, J., assignor.) (Reissue.)						
Hills, D. B. (See Hills, G. and D. B.)						
Hills, G. and D. B., Plainville, Conn. Clock-case	204,328	May 28	1193	340	13	994
Hogan, M. (See Cullen, M., assignor.)						
Hornback, R., *et al.* (See Thompson, S. S., assignor.)						
Howe, G. H., Akron, Ohio, assignor of one-half interest to W. M. Howe, Austin, Minn. Grain-binder	204,329	May 28	1194	340	13	994

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Howe, O. (See Howe, T. and O.)						
Howe, T. and O., Cambridge, Mass. Bed-bottom	204,222	May 28	1069	310	13	981
Howe, W. M. (See Howe, G. H., assignor.)						
Hubbard, E., Medina, N. Y. Paper-pulp pail	204,223	May 28	1069	311	13	981
Hubert, C. G. (See Hubert, H. G. and C. G.)						
Hubert, H. G., and C. G., New York, N. Y. Clasp for securing ribbons on rolls	204,224	May 28	1069	311	13	981
Hull, A., administratrix. (See Hull, J. W.) (Reissue.)						
Hull, J. W., deceased, by R. W. Pimm and A. Hull, administrators, Fagundus, Pa.; said Hull assignor of one-half interest to J. E. Cochran. Machinery for operating pumps. (Reissue)	8,262	May 28	1297	369	13	1007
Humphrey, F. A., Worcester, Mass. Nut-cracker	204,225	May 28	1091	311	13	981
Hunter, C. A. (See Bayles and Hunter.)						
Hunter, F. G., Moncton, New Brunswick, Canada. Seal-lock	204,226	May 28	1092	311	13	981
Hurst, J. J., and W. R. Miller, Baltimore, Md. Manufacture of boots and shoes	204,330	May 28	1197	341	13	995
Hussey, T. H. (See Whitney, A. L., assignor.)						
Hyatt, J. W., Newark, N. J. Apparatus for grinding and shaping slate	204,151	May 28	1010	287	13	971
Hyatt, J. W., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N. Y. Apparatus for covering cores and forming tubes of celluloid and other plastic materials	204,227	May 28	1093	312	13	981
Hyatt, J. W., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N. Y. Producing tubes and hollow articles from celluloid and other plastic materials	204,228	May 28	1094	312	13	982
Hyatt, J. W., and C. Burroughs, Newark, N. J., assignors to Celluloid Manufactnring Company, New York, N. Y. Apparatus for coating bars or springs with celluloid or other plastic compositions	204,229	May 28	1095	312	13	982
Haight, D. M., *et al.* (See Richards, M. C., assignor.)						
Haines, J. W., Cambridge, Mass. Dredge-bottle	204,564	June 4	132	44	13	1031
Hall, G. A., Waterford, Me. Vehicle-tie tightener	204,563	June 4	131	44	13	1031
Hall, G. F. (See Walker, S., assignor.)						
Hall, H. (See King, W., assignor.)						
Handley, E., Perry, and T. G. Orwig, Des Moines, Iowa. Door-sill and weather-strip	204,434	June 4	19	7	13	1015
Handover, C. M., Brooklyn, N. Y. Pipe-coupling nipple	204,566	June 4	134	45	13	1031
Harper, S. (See Gearing, C., assignor.)						
Hartley, J. M., and J. F. Dickens, Waverly, Iowa. Fence-post	204,565	June 4	133	45	13	1031
Hastings, E. G., Gilman, Iowa. Hay rake and loader	204,567	June 4	134	45	13	1032
Hawley, J. W., Warsaw, N. Y. Apparatus for transferring power	204,568	June 4	135	45, 46	13	1032
Head, B. F. (See Sanders, Dildine, and Head.)						
Heberling, J., Iowa City, Iowa. Running-stitch sewing-machine	204,604	June 4	177	57	13	1037
Heister, W. C., Springfield, Ohio. Steam pumping-engine	204,433	June 4	18	7	13	1015
Henderson, D. E., Leetown, W. Va. Mortising-machine	204,569	June 4	137	46	13	1032
Henderson, G. W., Unity, Wis. Vehicle-axle	204,435	June 4	20	7	13	1015
Hess, W. L., Belle Plaine, Iowa. Stove-pipe shelf	204,570	June 4	138	46	13	1032
Hibbs, J. R. (See Spaulding and Hibbs.)						
Hicks, W. S., New York, N. Y. Watch-chain bar. (Reissue)	8,273	June 4	226	72	13	1044
Higgins & Co., E. S. (See Duckworth, J. C., assignor.)						
Hildenbrand, G. F., and P. J. Eckes, New York, N. Y. Button-hole attachment for sewing-machines	204,572	June 4	139	47	13	1032
Hill, E. H., Worcester, Mass. Apparatus for finishing zinc-coated wire	204,571	June 4	138	46	13	1032
Hinkle, G. W. (See Van Buren, G. W., Jr., assignor.)						
Hitchcock, C. B., Indianapolis, Ind. Tilting-chair	204,573	June 4	141	47	13	1033
Hoag, A., Grand Isle, Vt. Hand corn and bean planter	204,574	June 4	142	47	13	1033
How, M. (See Keith, T. K., assignor.)						
Hull, W. S., Hinds county, Miss. Screw-propeller	204,575	June 4	142	47	13	1033
Hurley, D. J., Oil City, Pa. Spinning-ring	204,489	June 4	67	23	13	1022
Hack, F., Hamburg, Germany. Apparatus for the manufacture of peat bricks	204,816	June 11	412	121	13	1071
Hafely, F. E. (See Yonng and Hafely.)						
Hagen, A. A. (See Crossley, Hagen, and Juengst.)						
Hagerty, J. S., Baltimore, Md. Dinner-kettle	204,817	June 11	413	121	13	1071
Hammond, F. P., Aurora, Ill. Inking-pad	204,726	June 11	316	96	13	1060
Hammond, H., assignor to H. Cornwall, Hartford, Conn. Hammer	204,665	June 11	249	78	13	1051
Harding, J., Goshen, Ind. Ventilator attachment for cook-stoves	204,819	June 11	414	122	13	1071
Hargrave, R. W., Marshalltown, Iowa. Fence-wire fastener	204,818	June 11	414	121	13	1071
Harlow, C. F., Boston, assignor, by mesne assignments, to W. L. Grout, East Stoughton, Mass. Sewing-machine. (Reissue)	8,283	June 11	492	142	13	1080
Harris, W., Topeka, Kan. Washing-machine	204,666	June 11	250	78	13	1051
Hart, H. C., Unionville, assignor of one-half interest to P. and F. Corbin, New Britain, Conn. Bit-stock	204,727	June 11	317	96	13	1060
Harwood, J. A., *et al.* (See Harwood, N., assignor.)						
Harwood, N., assignor to J. A. and N. Harwood, Leominster, Mass. Paper chair seat and back	204,667	June 11	251	78	13	1051
Haskins, D. G., Cambridge, Mass. Double-acting fluid-motor	204,728	June 11	318	97	13	1060
Haughey, M., St. Louis, Mo. Refrigerator-car	204,729	June 11	319	97	13	1060
Hawkes, W. W., Malden, Mass. Device for tapping water-pipes	204,730	June 11	320	97	13	1060
Hawkins, J. T. (See Rutherford and Hawkins.)						
Hawley, A. A., Merrimack, and R. B. Hawley, Amesbury, assignor to Merino Shoe Company, Merrimack and Boston, Mass. Mechanism for forming bats for boots, shoes, hats, &c.	204,668	June 11	252	79	13	1051
Hawley, R. B. (See Hawley, A. A. and R. B.)						
Hemple, H. A., assignor of one-half interest to J. A. Diugens, Buffalo, N. Y. Printer's quoin	204,820	June 11	415	122	13	1071
Hickox, G. S., Marshalltown, Iowa. Prisoners' shackles	204,669	June 11	253	79	13	1051
Higgins, M. (See Doherty, W. A., assignor.)						
Hill, A. T., assigner to himself and E. J. Smith, Detroit, Mich. Nut-lock	204,731	June 11	321	97	13	1060
Hill, H. W. (See Housum and Hill.)						
Hinkle, P., San Francisco, Cal. Hatch for street-elevators	204,821	June 11	416	122, 123	13	1071
Hoe & Co., R. (See Spalckhaver, W., assignor.)						
Hogan, M., Hartford, Conn. Water plug or hydrant	204,822	June 11	417	123	13	1071
Holden, J. H., assignor to J. Estey and Co., Brattleborough, Vt. Valve-tremolo for organs	204,732	June 11	322	98	13	1060
Holmes, A. C., Delavan, Ill. Corn-crib door	204,733	June 11	322	98	13	1061
Holmström, W., Westervick, Sweden. Registering attachment for measuring-rules	204,823	June 11	417	123	13	1071
Hooper, G. H. B., Toronto, Canada. Cartridge-extractor	204,670	June 11	254	79	13	1052
Housum, C. P., Decatur, Ill. Device for holding and driving barbs into fences	204,734	June 11	323	98	13	1061
Housum, C. P., Decatur, Ill. Rail-fence barb	204,735	June 11	324	98	13	1061
Housum, C. P., and H. W. Hill, Decatur, Ill. Device for marking animals	204,736	June 11	325	99	13	1061
Howard, L. D. (See Woolridge, Nystrom, and Howard.)						
Huber, F. X. (See Koch, F., assignor.)						
Humphreys, J., New Haven, Conn. Bath for tempering steel	204,824	June 11	418	123	13	1071

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Hunter, G. W., assignor, by mesne assignments, of part interest to H. M. Baker, W. F. Stone, and J. H. Vermilya, Washington, D. C. Sewing-machine shuttle. (Reissue)	8,285	June 11	495	143	13	1080
Haggerty, J. W. (See Moreau and Haggerty.)						
Hall, A., Bethlehem, Ky. Horse-power	204,969	June 18	594	173	13	1097
Hall, F. H., Bridgeport, Conn. Horseshoe	204,968	June 18	593	173	13	1097
Halleck, S. P., Oriskany, N. Y. Feed-gage	204,967	June 18	592	173	13	1097
Hand, T. B., Baltimore, Md. Mechanism for stopping runaway horses	205,079	June 18	700	207, 208	13	1112
Harper, J. E., *et al.* (See Smith, M. A., assignor.)						
Harrington, A., Westborough, Mass. Potato-slicer	204,895	June 18	590	152	13	1088
Harris, D., assignor of one-half interest to J. G. Cozine, Brooklyn, N. Y. Machine for making button-hole linings	205,080	June 18	702	208, 209	13	1112
Harris, E. (See Whightail, P., assignor.)						
Harris, G. P. (See Smeeth and Harris.)						
Hartman, J., Jr., Philadelphia, Pa. Pipe-wrench	205,081	June 18	704	209	13	1112
Haabrouck, C. L., Syracuse, N. Y. Hinge for awning-blinds	205,083	June 18	706	209	13	1112
Haskell, G. W., assignor to himself, W. H. and H. J. Haskell, Philadelphia, Pa. Thill-coupling	205,082	June 18	705	209	13	1112
Haskell, H. J., *et al.* (See Haskell, G. W., assignor.)						
Haskell, W. H., *et al.* (See Haskell, G. W., assignor.)						
Hawes, J. H., Monroeton, Pa. Toy	204,970	June 18	594	173	13	1098
Haws, A. J., Johnstown, Pa. Stopper-sleeve	205,084	June 18	707	210	13	1113
Hayden, D. W. (See Bean, C., assignor.)						
Heacock, J. (See Lunger, W. W., assignor.)						
Hebdon, W., Boston, Mass. Cloth-pressing machine	205,085	June 18	708	210	13	1113
Heintz, J., Boston, Mass. Head-elevator and chin-raiser	205,086	June 18	709	210	13	1113
Hellert, H. J., F. M. Müller, and C. A. Meyer, Vincennes, Ind. Bowling-alley	204,972	June 18	596	174	13	1098
Hendrie, C. F. (See Bolthoff, H., assignor.)						
Hill, J., Providence, R. I. Bottom for cotton-cans	204,971	June 18	595	174	13	1098
Hill, T., Fairfield township, Crawford county, Pa. Stove-pipe shelf	205,087	June 18	710	210	13	1113
Hollman, J. H., New York, N. Y. Finger-nail trimmer	205,088	June 18	711	211	13	1113
Hoogland, A. D., *et al.* (See Truesdell, L. W., assignor.)						
Hooper, R., Baltimore, Md. Governor for engines	205,089	June 18	711	211	13	1113
Horrall, W. A., and J. J. Verckler, Chico, Cal. Seed-sower	205,090	June 18	713	211	13	1113
Hosford, W. E. (See Austin and Hosford.)						
Houghton, C. H. (See Huntington, G. B., assignor.)						
Howard, M., Paris, Ky. Lap-link	205,091	June 18	714	212	13	1114
Howe, B. J. C., Syracuse, N. Y. Submerged pump	204,896	June 18	521	152	13	1088
Howes, C. F., Marlborough, assignor of one-half interest to W. F. Brigham, Hudson, Mass. Harvester cutting apparatus	205,092	June 18	714	212	13	1114
Howland, G. W., Boston, Mass. Mask	205,093	June 18	716	212	13	1114
Huffman, E. H., Oskaloosa, Iowa. Graining-tool	205,094	June 18	716	213	13	1114
Humphrey, H. J., Grundy Centre, Iowa, and L. C. Humphrey, Augusta, Wis. Double-acting pump	204,973	June 18	597	174	13	1098
Humphrey, L. C. (See Humphrey, H. J. and L. C.)						
Hunt, N. (See Thompson and Hunt.)						
Huntington, G. B., Theresa, N. Y., assignor of one-half interest to C. H. Houghton, Metuchen, N. J. Book-binding	205,095	June 18	717	213	13	1114
Hyams, H. J., Pittsburg, Pa. Apparatus for carbureting air	204,974	June 18	598	174, 175	13	1098
Hackaley, J., assignor of one-half interest to J. P. Hillard, Fall River, Mass. Spinning-mule	205,380	June 25	1031	305, 306	13	1160
Hallner, J., Ithaca, Nebr. Fence	205,381	June 25	1032	306	13	1161
Hamermiller, W. (See Emmerich and Hamermiller.)						
Handwerk, F. B. (See Horrie, M., assignor.)						
Hanvey, A. (See Grafton, W. S., assignor.)						
Hanvey, T., Rochester, N. Y. Veneer-cutting machine	205,382	June 25	1034	306	13	1160
Harrison, H. W., *et al.* (See Harrison, T., assignor.)						
Harrison, T., assignor to himself, W. C. Buchanan, C. Thompson, and H. W. Harrison, Belleville, Ill. Thrashing-machine frame	205,263	June 25	903	267	13	1144
Hart, J. M., *et al.* (See McConoughey, H. N., assignor.)						
Hartnett, J. J. (See Brush and Hartnett.)						
Hartsock, H. H., Clear Creek, Ill. Corn-dropper	205,264	June 25	903	267	13	1144
Haworth, L. L., Decatur, Ill. Anchor for check-row cords	205,266	June 25	905	268	13	1144
Hawson, A. B., and W. H. Burnham, York, Mich. Fence-post	205,383	June 25	1035	307	13	1160
Hawthorn, W. A., assignor of one-half interest to H. Hunter, Carson city, Nev. Rail-joint	205,265	June 25	904	268	13	1144
Hayden, J. T., Cambridge, assignor to C. C. Walworth, Boston, Mass. Hose-pipe nozzle	205,267	June 25	906	268	13	1144
Heacock, J. A. (See Kirchner, G. A., assignor.)						
Heckmann, L., Plainville, Mass., assignor of part interest to W. H. Wade and E. P. Davis. Design for ornamental scroll-work for jewelry. (Reissue)	8,300	June 25	1116	.....	13	1172
Henning, A., New York, assignor of one-half interest to D. S. De Vinne, Brooklyn, N. Y. Stereotype-block	205,268	June 25	907	268	13	1144
Higginson, C. M., Chicago, Ill. Car-spring	205,269	June 25	907	269	13	1144
Hill, J. H., and W. H. Jayne, Boone, Iowa, assignors, by mesne assignments, to said Jayne, T. B. Moore, J. E. Black, and J. E. Ingersoll. Wire-barbing tool. (Reissue)	8,306	June 25	1122	331	13	1172
Hill, J. M., Ann Arbor, Mich. Hay-tedder	205,384	June 25	1035	307	13	1160
Hillard, J. P. (See Hackaley, J., assignor.)						
Holmes, G. H., New Britain, Conn. Take-up for looms. (Reissue)	8,298	June 25	1113	329	13	1171
Holtermann, L. D., Hoboken, N. J. Musical notation	205,387	June 25	1038	308	13	1161
Holub, F., assignor of two-thirds interest to N. E. Platt and E. Thorn, Chicago, Ill. Machine for manufacturing horseshoe-blanks	205,385	June 25	1036	307, 308	13	1160
Holub, F., assignor of two-thirds interest to N. E. Platt and E. Thorn, Chicago, Ill. Machine for rolling horseshoe-blanks	205,386	June 25	1037	308	13	1160
Horrie, D., Keokuk, Iowa. Railway ditching-machine	205,270	June 25	908	269	13	1144
Horrie, M., assignor of one-half interest to F. B. Handwerk, Morris, Ill. Sheet-metal roofing	205,188	June 25	825	244	13	1133
Howland, W., Allmont, Mich. Churn	205,388	June 25	1039	308	13	1161
Hubbard, J. F., assignor to himself and C. Potter, Jr., Plainfield, N. J. Inking apparatus for printing-machines	205,189	June 25	826	245	13	1133
Hubbell, W. L., New York, assignor to R. Jenkins, Brooklyn, N. Y. Atomizer	205,389	June 25	1039	309	13	1161
Hulin, J. S. (See Richard, J. E., assignor.)						
Hunter, E. A. W. (See Reybnrn and Hunter.) (Reissue.)						
Hunter, H. (See Hawthorn, W. A., assignor.)						
Hurd, L. D., Wellsville, N. Y., assignor of one-sixth interest to J. Devlin, Williamsport, Pa. Car-truck	205,390	June 25	1040	309	13	1161

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Hyatt, E. A. L. (See Hyatt, T., assignor.) (Reissue.)						
Hyatt, J. W., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N. Y. Manufacture of sheets of celluloid and other analogous plastic compositions	205,271	June 25	911	270	13	1145
Hyatt, T., New York, N. Y., assignor to E. A. L. Hyatt. Illuminating-door for inclosing vaults, areas, cellar-ways, &c. (Reissue)	8,307	June 25	1123	332	13	1172
Hysore, A. V., Wilmington, Del. Dyeing apparatus	205,272	June 25	912	270	13	1145
Imhof, H., Lockport, N. Y. Stove-pipe expander and contractor	198,886	Jan. 1	168	47	13	34
Isbell, C., and E. C. Taylor, Little York, N. Y. Rotary box churn	198,802	Jan. 1	85	23	13	21
Iliff, R. W., Glen Gardner, N. J. Harvester cutter-bar	199,551	Jan. 22	866	253	13	150
Ingham, G. (See Bright, Ingham, and Fielding.)						
Isaacs, W. B., San Francisco, Cal. Tobacco-drying machine	199,367	Jan. 22	682	200	13	130
Ives, J., Mount Carmel, Conn. Pole-sweep for vehicles	199,911	Feb. 26	255	803	13	236
Inman, E. (See Lewthwaite, G. W., assignor.)						
Irick, J. T., Humansville, Mo. Reciprocating churn	200,306	Feb. 12	422	126	13	306
Iseminger, D. H., assignor of one-half interest to M. Falcon, Bloomington, Ill. Pneumatic signaling apparatus	200,457	Feb. 19	585	173	13	339
Ingham, E. A. (See Ingham, J. Q., assignor.)						
Ingham, J. Q., Elmira, N. Y., assignor to E. A. Ingham, Clinton, Iowa. Window hanging and fastening	200,614	Feb. 26	759	223	13	373
Irwin, G. L., Allegheny, Pa. Apparatus for the manufacture of white lead	200,726	Feb. 26	880	258	13	391
Ivens, E. M., and J. H. Dorand, New Orleans, La. Cotton-press	200,615	Feb. 26	760	223	13	374
Iles, H. J., assignor to himself and D. M. Bassett, Birmingham, Conn. Thill-coupling	200,832	Mar. 5	19	7	13	417
Iske, A., Lancaster, Pa. Invalid-bedstead	200,865	Mar. 5	51	18	13	422
Irons, F. M., Greenville, Mich. Machine for seaming, grooving, and beading metal pipes	201,182	Mar. 12	364	113	13	477
Ittner, M. (See Gamewell, J. A., assignor.)						
Ives, E. R., assignor to Ives, Blakeslee & Co., Bridgeport, Conn. Toy	201,678	Mar. 26	903	276	13	564
Ives, Blakeslee & Co. (See Ives, E. R., assignor.)						
Ireland, G. H., Springfield, assignor to H. Partridge, Somerville, Mass. Toy ark	201,879	Apr. 2	22	6	13	601
Iseminger, D. H. (See Falcon and Iseminger.)						
Ives, F., *et al.* (See Johnson, A. W., assignor.)						
Iannarone, F. P., Washington, D. C. Car-coupling	202,109	Apr. 9	267	79	13	641
Isidor, M., New York, N. Y. Cap and collar combined	202,262	Apr. 9	427	125	13	663
Ivens, E. L. (See Ivens, E. M., assignor.)						
Ivens, E. M., assignor to E. L. Ivens, New Orleans, La. Baling-press follower	202,110	Apr. 9	269	79	13	642
Ingalls, J. B., and R. Clark, Trempealeau, Wis. Horse-collar	202,348	Apr. 16	536	157	13	683
Ives, W. A., New Haven, Conn. Bit-stock	202,548	Apr. 16	750	217	13	710
Irwin, T. H., assignor of one-half interest to W. P. Edwards, Dennison, Ohio. Feed-water heater for locomotives	203,158	Apr. 30	1407	410 / 411	13	806
Ives, Blakeslee & Co. (See Chinnock, C. E., assignor.)						
Ireland, G. H., Springfield, Mass. Toy steam-fire-engine apparatus	203,459	May 7	237	67, 68	13	853
Isbell, C. W., New York, N. Y. Gas-meter	203,276	May 7	41	13	13	826
Ives & Co., W. A. (See Spofford, N., assignor.) (Reissue.)						
Isham, J. G., *et al.* (See Lanstrom, R., assignor.)						
Ives, J. (See Bartram, A. R., assignor.) (Reissue.)						
Isett, W. D., Spruce Creek, Pa. Spinning-frame	204,436	June 4	21	7, 8	13	1015
Illingworth, W., and C. Zeidler, Bradford, England. Machine for making skeps or other baskets	204,825	June 11	419	124 / 125	13	1072
Irwin, J. (See Stevenson, E. M., assignor.) (Reissue.)						
Ives, W. A., New Haven, Conn. Auger-handle	205,096	June 18	718	213	13	1114
Ingersoll, J. E., *et al.* (See Hill and Jayne, assignors.) (Reissue.)						
Jackson, S. M., *et al.* (See King, J. G., assignor.)						
Jamison, J. P., Cambridge, Mass. Producing printing-surfaces	198,847	Jan. 1	125	36	13	28
Jennings, L., Fairfield, Conn. Paper-pulp distributer for coating articles	198,887	Jan. 1	169	48	13	32
Jewett, E. B., Buffalo, N. Y. Refrigerator	198,768	Jan. 1	48	12, 13	13	15
Johnson, D. A., Boston, Mass. Thill-coupling	198,803	Jan. 1	86	21	13	21
Johnson, S., Philadelphia, Pa. Fountain watering-trough for cattle	198,744	Jan. 1	15	4	13	11
Jones, O., and F. W. Marston, Philadelphia, Pa. Extractor for revolving fire-arms	198,745	Jan. 1	15	4	13	11
June, F. T., Chicago, Ill. School-desk	198,922	Jan. 1	206	58	13	40
Jaquett, C. A. W., Brooklyn, N. Y. Mill for reducing grain	199,070	Jan. 8	356	105	13	72
Jasper, G. A., Boston, Mass. Refining raw sugar	198,943	Jan. 8	234	66	13	51
Jasper, G. A., Boston, Mass. Apparatus for refining raw sugar	198,944	Jan. 8	235	67	13	51
Johnson, C. H. (See Frisbie and Johnson.)						
Johnson, J. M., assignor of one-half interest to A. Parker, Cleveland, Ohio. Collapsible screw-tap	198,945	Jan. 8	236	67	13	52
Johnson, P. C., Black Hawk, Col. Hoisting-machine	199,071	Jan. 8	357	105	13	72
Jordon, C., Wakefield, Mass. Corset-steel	198,984	Jan. 8	274	79	13	58
Joslyn, M. H., Rochester, N. Y. Band-cutting feeder for thrashing-machines	198,985	Jan. 8	274	79	13	58
Jasper, W., assignor of two-thirds interest to H. and S. M. Moschowitz, New York, N. Y. Car-starter	199,158	Jan. 15	464	137	13	88
Jenne, W. K. (See Clough and Jenne.)						
Jennes, O., Boston, Mass. Hat-holder	199,294	Jan. 15	596	174	13	109
Johnson, H. C., *et al.* (See Peiffer and Richards, assignors.) (Reissue.)						
Jones, N., Syracuse, N. Y. Car-axle	199,207	Jan. 15	513	151	13	96
Jones, N., Syracuse, N. Y. Car-axle	199,208	Jan. 15	514	151	13	96
Jourdes, F., Paris, France. Antiseptic composition	199,209	Jan. 15	514	.....	13	96
Jackson, C. L., Millersburg, Ill. Wheel-plow	199,443	Jan. 22	751	220	13	141
Jackson, O. P., Pittsburg, Pa. Shaking-grate	199,532	Jan. 22	806	233	13	160
Jacobi, C., Ransom, Ill. Match-safe and lamp combined	199,444	Jan. 22	753	221	13	141
James, T., Braddocks, Pa. Ingot-mold stripper	199,533	Jan. 22	807	254	13	160
Jensen, J. C., Chicago, Ill. Coffee-percolator	199,445	Jan. 22	753	221	13	141
Jewett and Root. (See Jewett, S. S., assignor.)						
Jewett, S. S., assignor to Jewett and Root, Buffalo, N. Y. Wood heating-stove	199,446	Jan. 22	754	221	13	142
Johnson, J. W., Cincinnati, Ohio. Key-retainer	199,447	Jan. 22	754	221 / 222	13	142
Jones, D., Youngstown, Ohio. Roll for rolling metals	199,368	Jan. 22	683	200	13	130
Jones, J. E., assignor of one-half interest to W. A. Peall, Philadelphia, Pa. Ship's water-closet	199,369	Jan. 22	683	200	13	130
Judy, A. M. (See Le Mar, O. W., assignor.)						
Jelinek, A., Chicago, Ill. Tailor's grinding-machine	199,647	Jan. 29	994	289	13	187
Jenkins, J., Evanston, Wyoming Ter. Locomotive-spring. (Reissue)	8,057	Jan. 29	1220	358	13	221
Jenkins, S. H., Nashville, Tenn. Punch for metal	199,715	Jan. 29	1057	309	13	197
Johnson, J., assignor of one-half interest to J. H. Gilbert, Brooklyn, N. Y. Compound for steam-packing	199,833	Jan. 29	1169	.....	13	214
Johnston, L. F., Pocahontas, Ark. Stirrup-suspender for riding-saddles	199,716	Jan. 29	1057	309	13	197
Jones, O., and F. W. Marston, Philadelphia, Pa. Cartridge	199,717	Jan. 29	1058	309	13	197

Alphabetical list of patentees, January to June, inclusive—Continued.

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Jones, T. L., Natchez, Miss. Steam-generator	199,648	Jan. 29	995	289 / 290	13	187
Jordan, W., Waterville, Me. Packing-case	199,718	Jan. 29	1058	310	13	197
Jourdain, A. (See Milné and Jourdain.)						
Jackson, G. F., assignor to himself and C. B. Simpson, Minneapolis, Minn. Chest-protecting vest	200,063	Feb. 5	173	56	13	200
Jerzmanowski, E. J., New York, N. Y. Apparatus for the manufacture of gas	199,912	Feb. 5	26	8, 9	13	237
Jewett, E. M. (See Sangster, A. W., assignor.)						
Johnson, A. S., assignor to himself, E. E. Hedley, T. F. Taylor, Philadelphia, L. Gleason, Honesdale, Pa., and J. J. Grant, New York, N. Y. Treating artificial stone	200,064	Feb. 5	173	56	13	200
Johnston, C., Rochester, N. Y. Lubricating compound	199,913	Feb. 5	28	.....	13	237
Jones and Laughlins. (See Alker, J. H., assignor.)						
Jaeger, G. L., New York, N. Y. Machine for feeding, pasting, and cutting paper and other fabrics	200,307	Feb. 12	423	126	13	306
Johannesen, L., Blair, Wis. Automatic wagon-brake	200,308	Feb. 12	426	126 / 127	13	306
Johnson, C. D., and L. F. Johnston, Marshalltown, Iowa. Wire fence. (Reissue)	8,078	Feb. 12	497	146	13	317
Johnston, L. F. (See Johnson and Johnston.) (Reissue.)						
Jones, E. J., Indianapolis, Ind., assignor, by mesne assignments, to Eureka Blast Company. Device for supplying steam and air blast to furnaces	200,310	Feb. 12	427	127 / 128	13	307
Jones, G. F., Morgan, assignor of one-half interest to J. A. Dushane, Baltimore, Md. Doctor for paper-machines	200,309	Feb. 12	426	127	13	307
Jones and Laughlins. (See Alker, J. H., assignor.)						
Jordan, A. C., Pittsburg, Pa. Machine for forming chains and like articles	200,199	Feb. 12	316	94, 95	13	290
Jarecki, A. H., Erie, Pa. Gage-cock	200,396	Feb. 19	528	156	13	330
Jay, D. (See Cristy and Jay.)						
Jeffers, W. W. D., Glens Falls, N. Y. Machine for preparing wood for making paper-pulp	200,540	Feb. 19	665	196	13	351
Jeffery, E. A., Jersey City, N. J. Bed-bottom	200,397	Feb. 19	528	156	13	330
Jerome, C. C., Chicago, Ill. Stuffing-box for steam-engines	200,458	Feb. 19	586	173	13	339
Jerome, C. C., Chicago, Ill. Stuffing-box for steam-engines	200,459	Feb. 19	587	173	13	339
Johnston, J. E., Clark's Hill, Ind. Gate	200,398	Feb. 19	529	156	13	330
Johnston, N., Mayfield, N. Y. Horse-detacher	200,541	Feb. 19	667	196	13	351
Jones, B., Rock Mart, Ga. Harness	200,399	Feb. 19	530	156	13	330
Jones, C. H., Watertown, Wis., assignor of one-half interest to J. Jones, Chicago, Ill. Circular sawing machine	200,542	Feb. 19	668	197	13	351
Jones, G. M., *et al.* (See Smalstig, W. C., assignor.)						
Jones, H. M., *et al.* (See Mentzer, W. G., assignor.)						
Jones, J. (See Jones, C. H., assignor.)						
Judson, L. P., Rose, N. Y., assignor to J. Brinkerhoff. Fence. (Reissue)	8,096	Feb. 19	737	216	13	362
James, T. and T. L., Seymour, Conn. Making copper bottoms for domestic boilers, &c.	200,727	Feb. 26	881	259	13	391
James, T. L. (See James T. and T. L.)						
Jeffords, C. L., Jamestown, N. Y. Machine for making axes	200,616	Feb. 26	761	223 / 224	13	374
Jones, D. W., Pocahontas, Ark. Rotary valve	200,728	Feb. 26	882	259	13	391
Jones and Laughlins. (See Alker, J. H., assignor.)						
Jones, O., Philadelphia, Pa. Revolving fire-arm	200,794	Feb. 26	941	277 / 278	13	401
Jordan, R. J., and J. H. Barron, Bowenville, Ga. Manure and guano distributer	200,729	Feb. 26	882	259	13	391
Judd, J. R., New York, N. Y. Combined clasp and buckle	200,658	Feb. 26	810	238	13	381
Jackson, W., Millerstown, Barnhart's Mills, P. O., Pa. Links and cross-head	200,915	Mar. 5	96	33	13	430
Jansen, C., New York, N. Y. Vapor-bath	200,916	Mar. 5	97	33	13	430
Jennings, A. (See Jennings, B. S. and A.)						
Jennings, A. W. (See De Coll and Jennings.)						
Jennings, B. S. and A., Sullivan, Ill. Device for twisting yarn into hanks	200,917	Mar. 5	98	33	13	430
Jennings, M. E. (See Loree, J., assignor.)						
Johnson, D. A., Boston, Mass. Holder for leather straps	200,918	Mar. 5	98	33	13	430
Johnson, D. M., Emerson, Iowa. Plow-regulator	200,919	Mar. 5	99	34	13	430
Johnson, N., Jasper, N. Y. Securing insertible saw-teeth	200,833	Mar. 5	20	7, 8	13	418
Jordan, T. B., London, England. Machine for drilling or boring rock	201,017	Mar. 5	125	62, 63	13	445
Jarecki, Hayes & Co. (See McNamara, W., assignor.)						
Johnson, S., Philadelphia, Pa. Tank for stock-cars	201,250	Mar. 12	436	134	13	486
Jacobson, C. F., assignor to himself and J. C. Jones, New York, N. Y., and G. E. Maltby, Norfolk, Va. Machine for making twist-drills	201,530	Mar. 19	742	226	13	537
James, S. H. (See Green, H., assignor.)						
Jasper, W., Morrisania, assignor of one-half interest to J. C. Kelley, Brooklyn, N. Y. Car-starter	201,421	Mar. 19	633	193	13	521
Jenkins, J., Brooklyn, N. Y. Skirt-supporter	201,531	Mar. 19	744	226	13	537
Jenkins, J., Brooklyn, N. Y. Stocking-supporter	201,532	Mar. 19	744	227	13	537
Jenkins, S. G. (See Davis, G., assignor.)						
Johnson, A. J., and C. O. Everts, Cleveland, Ohio. Measuring and indicating faucet	201,533	Mar. 19	745	227	13	537
Johnson, D. C., New Providence, N. J. Fence-post	201,422	Mar. 19	634	193	13	521
Jones, J. C., *et al.* (See Jacobson, C. F., assignor.)						
Jones, W. (See Leavitt and Jones.)						
Jones, W. E., Brooklyn, N. Y. Spring-head for picture-nails	201,534	Mar. 19	746	227	13	537
Judson, A. A. (See George, C. F., assignor.)						
Jackman, G. W., Bath, N. H. Whiffletree-hook	201,789	Mar. 26	1016	310	13	580
Jay, P. E., Bethlehem, Pa. Aging liquors	201,679	Mar. 26	904	276	13	564
Jeffries, M., Collins, Ind. Gate	201,614	Mar. 26	847	257	13	555
Johnson, J., Brooklyn, N. Y., assignor to Empire Lubricating Company, New York, N. Y. Lubricating composition for journal-bearings. (Reissue)	8,140	Mar. 26	1103	.....	13	592
Johnson, J. F., Boston, Mass. Carriage-axle box	201,791	Mar. 26	1013	311	13	581
Johnson, M. C., Hartford, Conn. Screw-cutting die	201,790	Mar. 26	1017	311	13	581
Johnson, W. C., and S. E. Phillips, Charlton, England. Insulator for telegraph-wires	201,615	Mar. 26	848	257	13	555
Johnson, W. M. (See Showalter, L., assignor.)						
Jones, H. L., Buffalo, N. Y. Iron fence	201,616	Mar. 26	848	257	13	555
Jones, T. W., Jr., London, England. Neck-tie fastener	201,792	Mar. 26	1019	311	13	581
Judd, H. L., Brooklyn, N. Y. Picture-hook	201,680	Mar. 26	905	276	13	564
Judd, H. L., Brooklyn, N. Y. Picture-nail	201,681	Mar. 26	905	277	13	564
Judd, H. L., Brooklyn, N. Y. Curtain-bracket	201,682	Mar. 26	906	277	13	564
Janney Car Coupling Company. (See Janney, E. H., assignor.) (Reissue.)						
Janney, E. H., assignor, by mesne assignments, to Janney Car Coupling Company, Alexandria, Va. Car-coupling. (Reissue)	8,153	Apr. 2	235	68, 69	13	633
Johnson, A. W., assignor to E. F. Mersick, H. B. Bigelow, and F. Ives, New Haven, Conn. Compressible pump and check-valve	201,880	Apr. 2	23	6	13	602

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Jones, H. C., Winona, Minn. Door-spring	202,033	Apr. 2	171	50	13	624
Jones and Laughlins. (See Alker, J. H., assignor.)						
Jones, N., Syracuse, N. Y. Car-axle	201,881	Apr. 2	24	6	13	602
Jordan, R. K., Oakland, Cal. Marsh-shoe	201,882	Apr. 2	24	6		602
Jackson, W. B., Minneapolis, Minn. Horse hay-rake	202,173	Apr. 9	341	99	13	651
James, J. P. R., Pepin, Minn., assignor to F. H. Bernard, Chippewa Falls, Wis. Fire-escape	202,263	Apr. 9	428	125	13	663
Jenkins, G. O., *et al.* See Hyslop, J., Jr., assignor.) (Reissue.)						
Jenkins, H. H., *et al.* (See Hyslop, J., Jr., assignor.) (Reissue.)						
Johnson, D. D., United States Army. Loading attachment for ordnance	202,174	Apr. 9	341	100	13	651
Johnson, T. S., *et al.* (See Mudge, C., assignor.)						
Johnston, J. M., and R. Marshall, Pittsburg, Pa. Elevator	202,264	Apr. 9	429	125	13	664
Jones, J. P., Gold Hill, Nev. Congealing-plate for ice-machines	202,265	Apr. 9	430	126	13	664
Jones, L., Wheeling, W. Va. Pile for rerolling old rails	202,266	Apr. 9	432	126	13	664
Joy, J. P. (See Macarille, G., assignor.)						
Jenkinson, G. B., Newark, N. J., assignor to G. M. Ballard and G. Minchin. Trunk-caster frame. (Reissue)	8,180	Apr. 16	837	241	13	721
Jennings, R. S., assignor, by mesne assignments, to New York Filter Company, New York, N. Y. Filter. (Reissue)	8,183	Apr. 16	839	242	13	721
Jerauld, H. F., and J. W. Stolle, Vandalia, Ill. Sulky-plow	202,349	Apr. 16	537	157	13	683
Jones, W. T. (See Pooler and Jones.)						
Joslyn, B. F., Worcester, assignor to D. B. Wesson, Springfield, Mass. Revolving fire-arm	202,350	Apr. 16	538	158	13	683
Joslyn, B. F., Worcester, assignor to D. B. Wesson, Springfield, Mass. Revolving fire-arm	202,351	Apr. 16	539	158	13	683
Jackson, G. (See Flagg and Jackson.)						
Jarvis, S. E., assignor of one-half interest to E. Bement & Sons, Lansing, Mich. Windmill	202,825	Apr. 23	1061	304	13	757
Jehnke, A. (See Swanke and Jehnke.)						
Jenks, G. A. (See Jenks, J., assignor.)						
Jenks, J., assignor of one-half interest to G. A. Jenks, Detroit, Mich. Boiler-furnace	202,657	Apr. 23	882	253	13	735
Jennings, A. and I., Fairfield, Conn. Paper pail. (Reissue)	8,190	Apr. 23	1155	332	13	769
Jennings, I. (See Jennings, A. and I.) (Reissue.)						
Jewett & Co., S. S. (See Stannard, G. S., assignor.)						
Jillson, C. D., and H. Smith, Providence, R. I. Lapping for printing-machines	202,826	Apr. 23	1062	.....	13	757
Johnson, E., Jr. (See Earnshaw, O., assignor.)						
Johnson, J., Lowell, Mass. Rotary water-meter	202,827	Apr. 23	1063	304	13	757
Johnson, T. S. (See Gray and Johnson.)						
Johnston, E. H., assignor to Wharton Rail Road Switch Company, Philadelphia, Pa. Locking device for railway turn-tables, &c	202,828	Apr. 23	1065	305	13	758
Jones, D. N., Johnstown, Pa., assignor of one-half interest to Cambria Iron Company. Gas-check for blast-furnaces	202,730	Apr. 23	952	273 274	13	743
Jackson, C. S. (See Gilberds and Jackson.)						
Jelliff, E. (See Kile, J. C., assignor.)						
Jenks, A. S. (See Everding, J., assignor.)						
Jenks, A. S. (See Hunter and Everding, assignors.)						
Jenks, G. A. (See Jenks, J., assignor.) (Reissue.)						
Jenks, J., Detroit, Mich., assignor of one-half interest to G. A. Jenks. Feeding air to furnaces. (Reissue)	8,203	Apr. 30	1487	435	13	816
Jerauld, H. A., Watseka, Ill. Gas-burner	203,159	Apr. 30	1409	411	13	806
Johnson, A., Springfield, Mass. Spindle-fastener for locks and latches	203,160	Apr. 30	1410	411	13	806
Johnson, J. W., Cincinnati, Ohio. Key-fastener	203,161	Apr. 30	1411	411	13	807
Johnson, M., Lockport, N. Y. Cultivator	203,048	Apr. 30	1293	375	13	791
Johnson, S. W., West Medford, assignor to himself and C. L. Holbrook, Boston, Mass. Extension-stock for pistols, &c	202,946	Apr. 30	1196	345	13	778
Johnson, W. D., assignor of one-half interest to L. Freese, Elmore, Ohio. Barrel-hoop-cutting machine	203,162	Apr. 30	1412	412	13	807
Jackson, P. H., San Francisco, Cal. Sidewalk hatchway and door	203,343	May 7	111	32	13	835
Johnson, A., Kewanee, Ill. Camera-shutter	203,344	May 7	112	33	13	835
Johnson, J. F., Yocum Station, Va. Pen-holder	203,400	May 7	238	68	13	853
Johnson, J. P. (See Martin, J., assignor.)						
Johnson, M., Lockport, N. Y., assignor, by mesne assignments, to C. La Dow. Rotary cultivator. (Reissue)	8,222	May 7	314	90	13	861
Johntry, J. A., assignor to E. W. Owen, Brooklyn, N. Y. Dust-shovel	203,277	May 7	42	13	13	826
Jones, R. W., Syracuse, N. Y. Snap-hook	203,461	May 7	238	68	13	853
James, J. (See Hardie, James, and Cooper.)						
Jay, P. E., Bethlehem, Pa. Fly-wheel for engines	203,623	May 14	416	119	13	885
Jenkins, D., assignor of one-half interest to J. Carson, Pittsburg, Pa. Gage-cock for steam-boilers	203,736	May 14	537	152	13	900
Jenkins, P. S., New Liberty, Ky. Hedge-fence	203,545	May 14	344	98	13	876
Jeter, H. M., Opelika, Ala. Process and compound for preserving food	203,737	May 14	538	.....	13	900
Jewett, J., assignor to S. S. Jewett & Co., Brooklyn, N. Y. Elevated-oven cooking-stove	203,546	May 14	346	99	13	876
Jewett, J. S., Sedgwick, Kans., assignor to J. E. Goldsworthy, Central Falls, R. I. Gate. (Reissue)	8,232	May 14	625	174	13	910
Jewett & Co., S. S. (See Jewett, J., assignor.)						
Jones, C. W., Vincennes, Ind. Indicator for telephone alarm-bells	203,738	May 14	538	152	13	900
Jackson, W. M., Providence, R. I. Car-heater	203,918	May 21	738	212	13	933
Jacobsen, H. E., New York, N. Y. Electro-galvanic belt	203,835	May 21	651	186	13	922
Jaques, D. L., Cleveland, Ohio. Heating-furnace	203,836	May 21	652	186	13	922
Jenkins, J., Brooklyn, N. Y. Brooch-pin	204,047	May 21	876	251	13	950
Jennings, R. S., Chicago, Ill. Trading-pit	203,837	May 21	654	186	13	922
Jochum, J., and R. Herrmann, Brooklyn, N. Y. Ornamenting glass with gold, silver, or other metals	203,838	May 21	655	.....	13	922
Johnson, H. F. (See Woods, J., assignor.)						
Johnson, C. F., Jr., Owego, N. Y. Fertilizer-sower. (Reissue)	8,247	May 21	969	277	13	962
Johnson, D. A., assignor of one-half interest to R. S. Merrill, Boston, Mass. Metal loop for harness	203,919	May 21	740	212	13	933
Johnson, M. C., Hartford, Conn. Die for cutting screw-threads	204,048	May 21	878	251	13	950
Johnson, R. P., Wabash, assignor, by mesne assignments, to E. J. Sumner, Mooresville, Ind. Apparatus for drying lumber. (Reissue)	8,240	May 21	962	275	13	961
Johnston, C., Rochester, N. Y. Lubricant	203,839	May 21	655	.....	13	922
Jones, G. W., Farmington, Ky. Churn-motor	204,049	May 21	879	252	13	951
Jacobs, H. F., Weston, Mass. Tuning attachment for piano-fortes	204,152	May 28	1012	287	13	971
Jaeger, A., Detroit, Mich. Sleeping-car	204,230	May 28	1097	313	13	982
Jennings, G., and J. L. Robellaz, New Albany, Ind. Machine for sawing stone	204,331	May 28	1198	341 342	13	995
Johnson, C. F., Canton, Ky. Tobacco-hoisting device	204,332	May 28	1199	342	13	995
Johnson, F. G., New York, N. Y. Lawn-mower	204,153	May 28	1013	288	13	971

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Johnston & Co., A. M. (See Cormack, G. H., assignor.)						
Jones, R. C., Warrensburg, Mo. Invalid-chair	204,231	May 28	1097	313	13	982
Josias, J. M., New York, N. Y. Sprinkler	204,333	May 28	1200	342	.....	995
Joslyn, B. F., Worcester, assignor to D. B. Wesson, Springfield, Mass. Revolving fire-arm	204,334	May 28	1201	342	13	995
Joslyn, B. F., Worcester, assignor to D. B. Wesson, Springfield, Mass. Revolving fire-arm	204,335	May 28	1202	343	13	995
Joslyn, B. F., Worcester, assignor to D. B. Wesson, Springfield, Mass. Extractor for revolving fire-arms	204,336	May 28	1203	343	13	996
Joslyn, B. F., Worcester, assignor to D. B. Wesson, Springfield, Mass. Extractor for revolving fire-arms	204,337	May 28	1203	343	13	996
Jackson, E. A., New York, N. Y. Gas or oil stove	204,490	June 4	68	23	13	1022
Jackson, O. P. (See Starkey and Jackson.)						
Jamin, N., New York, N. Y. Lead for gas-retorts	204,576	June 4	143	48	13	1033
Jerzmanowski, E. J., New York, N. Y. Manufacturing water-gas	204,437	June 4	23	.....	13	1016
Jessup, A. V. (See Underwood, J. B., assignor.)						
Johnson, I., and M. Bye, Worcester, Mass. Revolving fire-arm	204,438	June 4	25	8	13	1016
Johnson, J., Brooklyn, N. Y. Car-brake	204,491	June 4	68	24	13	1022
Jones, D. N., Johnstown, Pa., assignor of one-half interest to Cambria Iron Company. Apparatus for washing gases	204,577	June 4	144	48	13	1033
Jacques, W. W., Newburyport, Mass. Electro-magnetic gas-burner	204,826	June 11	422	125	13	1072
Jenkins, C. C., Philadelphia, assignor of one-half interest to C. B. Lee, West Chester, Pa. Engine-governor	204,827	June 11	422	125	13	1072
Jenkins, C. C., Philadelphia, assignor of one-half interest to C. B. Lee, West Chester, Pa. Steam-engine regulator	204,828	June 11	423	126	13	1072
Jenney, W. P., Brooklyn, N. Y. Leather-waterproofing compound	204,829	June 11	425	.....	13	1072
Jingels, A., assignor of two-thirds interest to J. D. Tinney and D. Mayer, Vicksburg, Miss. Bale-tie	204,737	June 11	326	99	13	1061
John, W., Rigdon, Ind. Tire setting and cooling apparatus	204,738	June 11	327	99	13	1061
Johnson, C. C., assignor to J. N. Patton, Springfield, Vt. Last-block fastener	204,830	June 11	427	126	13	1072
Johnson, F. G., New York, N. Y. Slate-frame attachment	204,740	June 11	329	100	13	1061
Johnson, J., Bloomfield, Cal. Spark-extinguisher	204,739	June 11	328	99	13	1061
Johnson, J. R. (See Taylor and Johnson.)						
Johnson, W. H. (See Miller and Johnson.)						
Jones, J. W., Harrisburg, Pa. Book-binder's dry-press and sheet-tie	204,741	June 11	329	100	13	1061
Juengst, G. (See Crossley, Hagen, and Juengst.)						
Jackson, C., California, Ohio. Bake-pan	204,975	June 18	599	175	13	1098
Jannopoulo, D., St. Louis, Mo. Feed-bag	205,097	June 18	718	213	13	1114
Jannopoulo, D., St. Louis, Mo. Vehicle-top	205,098	June 18	719	214	13	1114
Jannopoulo, D., St. Louis, Mo. Wagon-cover	205,099	June 18	720	214	13	1114
Jenkins, W. K., Jr., Bellefonte, Pa. Metal-rolling mill	204,976	June 18	600	175 176	13	1098
Johnson, C. C., assignor to J. N. Patton, Springfield, Vt. Last-pulling machine	205,100	June 18	721	214	13	1115
Johnson, J., Memphis, Tenn. Shovel	204,897	June 18	522	153	13	1088
Johnson, R. W., Fort Dodge, Iowa. Clutch	204,977	June 18	602	176	13	1098
Jones, A. D., Kirksville, Ky. Riding-saddle	204,978	June 18	602	176	13	1099
Jones, G. H., Rochester, N. Y. Manufacture of boots and shoes	204,979	June 18	603	176	13	1099
Joyce, J. L., New Haven, Conn. Window-sash	205,101	June 18	721	215	13	1115
June, D. (See Brayton, June, and French.)						
Jackson, W. M., Providence, R. I. Gas-stove	205,391	June 25	1042	309	13	1161
Jayne, W. H. (See Hill and Jayne.) (Reissue.)						
Jenkins, R. (See Hubbell, W. L., assignor.)						
Jenks, S. A. (See Sherman, A. R., assignor.)						
Johnson, L. J., assignor of one-half interest to J. Root, Elk Falls, Kans. Turbine water-wheel	205,392	June 25	1043	309	13	1161
Johnston Harvester Company. (See Cooley, O., assignor.)						
Jonas, M., New York, N. Y. Cigar-package	205,273	June 25	913	270	13	1145
Jones, D. N., Johnstown, Pa., assignor of one-half interest to Cambria Iron Company. Blast-furnace	205,274	June 25	914	271	13	1145
Jones, W., Pittsburg, Pa. Link-bending machine	205,190	June 25	827	245 246	13	1134
Keith, S. N., Providence, R. I. Car-coupling	198,746	Jan. 1	17	4	13	11
Keith, T. K., assignor to M. How, Haverhill, Mass. Feeding mechanism for sewing-machines	198,915	Jan. 1	199	56	13	39
Kimball, C. M., Bradford, Mass. Car-axle coupling	198,747	Jan. 1	18	4	13	11
King, H. T., Rochester, N. Y. Culinary steamer	198,769	Jan. 1	49	13	13	15
King, J. G., assignor of one-half interest to S. M. Jackson and A. O. Stiveson, Apollo, Pa. Combined fire-escape and spring bed-bottom	198,848	Jan. 1	126	36	13	28
Kirch, J. B. (See Morrison, R. H. D., assignor.)						
Knudsen, R., Brooklyn, N. Y. Inclined-plane railway	198,888	Jan. 1	170	48	13	35
Kruse, F., Coatsburg, Ill. Flour-bolt	198,889	Jan. 1	171	48, 49	13	35
Kuempel, F., Buffalo, N. Y. Sled-runner attachment for vehicles	198,748	Jan. 1	19	5	13	11
Kain, W. H., assignor of one-half interest to J. Q. A. Ziegler, Philadelphia, Pa. Brick-machine	199,072	Jan. 8	358	106	13	72
Kemp, T. P., Lawrence, Mass. Guard for harness-buckles	198,946	Jan. 8	237	67	13	52
Kendrick, A. W. and C. T., Brooklyn, N. Y. Grain-separator	198,986	Jan. 8	275	79, 80	13	58
Kendrick, C. T. (See Kendrick, A. W. and C. T.)						
Kinney, W., Bellevue, Ohio. Clevis	199,073	Jan. 8	359	106	13	72
Klee, J., Dayton, Ohio, assignor to R. C. Anthony, New York, N. Y. Bottle-stopper. (Reissue)	8,034	Jan. 8	438	128	13	84
Knouse, J., Harrisburg, Pa. Pump-plunger	199,074	Jan. 8	360	106	13	73
Kyle, W., Cleveland, Ohio. Ladder-scaffold	198,947	Jan. 8	237	68	13	52
Kane, F. L., Brooklyn, assignor to Warren Chemical and Manufacturing Company, New York, N. Y. Fire-proof roof and floor	199,210	Jan. 15	515	151	13	96
Keeler, W. H., Buffalo, N. Y. Hand-stamp	199,295	Jan. 15	597	174	13	109
Kennish, W. (See Barrows and Kennish.)						
Kirk, A. G., New Brighton, Pa. Portable fence	199,211	Jan. 15	516	151	13	96
Kline, M. (See Purdy, C. G., assignor.)						
Knight, J. D., West Concord, N. H. Grain-measure	199,159	Jan. 15	465	137	13	88
Knight, W. H. (See Bisset, G., Jr., assignor.)						
Knipe, E. P. (See Abbott, W. W., assignor.)						
Krapp, J., Brooklyn, assignor to M. J. Grossman, New York, N. Y. Rocking-chair	199,212	Jan. 15	516	152	13	96
Kearns, I. F., Chicago, Ill. Tinware	199,370	Jan. 22	684	201	13	130
Keating, J. M., Memphis, Tenn. Ventilating railway-cars and ships	199,554	Jan. 22	868	254	13	160
Keats, J. (See Silver, E., assignor.)						
Kemmerer, C. P., Drums, Pa. Feed-regulator for millstones	199,371	Jan. 22	685	201	13	130

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kent, R., Brooklyn, N. Y. Warehouse-truck	199,372	Jan. 22	685	201	13	130
Keys, W. H., East Princeton, Mass. Pencil-sharpener	199,448	Jan. 22	756	222	13	142
Kilburn, C., assignor to Halo and Kilburn Manufacturing Company, Philadelphia, Pa. Furniture structure	199,373	Jan. 22	686	201	13	131
King, G. E., assignor to F. H. Kurshedt, New York, N. Y. Fluting-machine. (Reissue)	8,055	Jan. 22	946	275	13	172
King, J. (See Wallace and King.)						
King, W. A., Dayton, Ohio. Shelf for cooking-stoves	199,555	Jan. 22	869	254	13	160
Kingsbury, A. B., Utica, assignor of two-thirds interest to W. and H. H. Ranney, Mohawk, N. Y. Ash-sifter	199,449	Jan. 22	757	222	13	142
Kirkham, T. N., Westminster, D. Hulett, High Holborn, S. Chandler, Jr., and J. Chandler, 104 Newington Causeway, England. Gas-purifying apparatus	199,450	Jan. 22	757	222	13	142
Knight, A. H. W., Somerton P. O., Philadelphia, Pa. Ladder	199,556	Jan. 22	870	254	13	160
Knowlton, H., assignor to himself and L. D. Cook, Flint, Mich. Door stop and holder	199,451	Jan. 22	758	223	13	142
Kurshedt, F. H. (See King, G. E., assignor.) (Reissue.)						
Kaufmann, L., New York, N. Y. Cigar-box	199,719	Jan. 29	1059	310	13	197
Kelly, J., San Francisco, Cal. Device for operating windows and transoms	199,649	Jan. 29	996	290	13	187
Kendall, O. B., Buffalo, N. Y. Boiler-flue cleaner	199,650	Jan. 29	997	290	13	187
Kimball, S. (See Simpson and Kimball.)						
Kinney, J., London, England. Iron fence	199,651	Jan. 29	998	290	13	187
Kleckner, A. M., Kendall Creek, Pa. Polish-rod adjuster for oil-wells	199,809	Jan. 29	1146	337	13	211
Klotz, G., Böhmisch-Kamnitz, Austria. Skate	199,720	Jan. 29	1060	310	13	197
Knickerbocker, Z. S., *et al.* (See Pate, T. H., assignor.)						
Knight, J. L., Topeka, Kans. Device for calculating percentage	199,721	Jan. 29	1061	310	13	197
Koch, L. (See Bull and Koch.)						
Kann, I., New York, N. Y. Hair-crimper	199,979	Feb. 5	88	29	13	247
Kelley, W. H., Cleveland, Ohio. Bottle-stopper	199,980	Feb. 5	88	29	13	247
Kepner, S., Pottstown, Pa. Hub-attaching device	199,914	Feb. 5	29	9	13	237
Kibbe, A. F., Brooklyn, N. Y. Oil-stove	199,981	Feb. 5	89	29, 30	13	247
Kiddoo, J. B., *et al.* (See Leland, E. A., assignor.)						
Klobussa, V. (See Kloczewski and Klobussa.)						
Kloczewski, A. M., and V. Klobussa, Washington, D. C. Flask for cooling liquids	200,065	Feb. 5	174	56	13	260
Klotz, A., Vallejo, Cal. Windmill-wheel	200,066	Feb. 5	175	56	13	260
Koch, J. C., Jr., Berlin, Prussia. Album	199,982	Feb. 5	92	30	13	247
Keating, T. F. (See Towne and Keating.)						
Keim, S. J., assignor of one-half interest to W. Younger, Catasauqua, Pa. Car-coupling	200,311	Feb. 12	429	128	13	307
Kenyon, G., Springfield, Ill. Fire-escape	200,200	Feb. 12	318	95	13	290
Kesselring, J., Blissfield, Mich. Gate	200,201	Feb. 12	318	95	13	290
Kimball, C. O. (See Drake, J. C., assignor.)						
Kimball, W. H. (See Allen, H. N., assignor.)						
King, P. F., assignor to G. N. and E. J. Board, St. Louis, Mo. Time-lock for safes	200,312	Feb. 12	429	{ 128 129 } 13	13	307
Kinney, F. S., New York, N. Y. Plug-tobacco	200,202	Feb. 12	319	95	13	291
Kirby, G. W., *et al.* (See Wroth, L., assignor.)						
Kirby, J. A., assignor of two-thirds interest to D. J. Avery, and J. W. Taft, Chicago, Ill. Car-brake	200,313	Feb. 12	433	129	13	308
Kirkland, M. P. (See Shutt, M., assignor.)						
Knox, R. G., Sidney, Ohio. Handle-extension attachment for brooms, &c.	200,203	Feb. 12	320	96	13	291
Krapp, J., Brooklyn, assignor to M. J. Grossman, New York, N. Y. Rocking-chair	200,204	Feb. 12	320	96	13	291
Kribs, C. C., Trempealeau, Wis. Coffee-pot	200,205	Feb. 12	321	96	13	291
Kaselowsky, E., Berlin, Prussia. Car-wheel	200,400	Feb. 19	531	157	13	331
Kaylor, J., Pittsburg, Pa. Invalid-bedstead	200,543	Feb. 19	668	197	13	352
Keller, M. A., Littlestown, Pa. Grain-binder	200,544	Feb. 19	669	{ 197 198 } 13	13	352
Kendrick, H. H. (See Cushing, E. G., assignor.)						
Kennedy, T. (See Coleman, C. C., assignor.)						
Kimball, F. J., *et al.* (See Caum, E. L., assignor.) (Reissue.)						
King, J., assignor of one-half interest to Wallace & Sons, Ansonia, Conn. Electric lighting apparatus	200,545	Feb. 19	672	198	13	352
Knapp, J. G., and J. W., assignors of one-third interest to J. H. Holly, Warwick, N. Y. Cabinet-bedstead	200,401	Feb. 19	532	157	13	331
Knapp, J. W. (See Knapp, J. G. and J. W.)						
Koch, J. C., New York, N. Y. Picture-exhibitor	200,460	Feb. 19	589	{ 173 174 } 13	13	339
Kruse, F. (See Weber and Kruse.)						
Kennedy, D. A., Eau Claire, Wis. Plow-clevis	200,730	Feb. 26	883	259	13	391
Kimball, C. M., Bradford, Mass. Apparatus for the manufacture of manure from night-soil	200,731	Feb. 26	884	260	13	391
Kimberly, A. E., West Liberty P. O., Iowa. Bale-tie	200,659	Feb. 26	810	238	13	381
Kinehan, J., Springfield, Ill. Gage for adjusting the hair-springs of watch-balances	200,732	Feb. 26	885	260	13	392
King, H. M., and S. D. Pierce, Chicago, Ill. Combination-padlock	200,617	Feb. 26	763	224	13	347
King, H. W., Alden, N. Y. Machine for trussing barrels	200,733	Feb. 26	887	{ 260 261 } 13	13	392
Kirk, D., assignor to W. A. Lamb, Orleans, N. Y. Clip for vehicles	200,795	Feb. 26	943	278	13	401
Klee, P. (See Groth, H., assignor.)						
Knoblock, J. C., and T. M. Bissell, assignors to St. Joseph Reaper and Machine Company, South Bend, Ind. Plow	200,734	Feb. 26	889	261	13	392
Kahlke, H. W. (See Tower and Kahlke.)						
Kanouse, C. O. (See Sanborn, Kanouse, and Sanborn.)						
Keely, O. B., *et al.* (See Quigg, L., assignor.)						
Kelter, M., and P. Lelekem, McHenry, Ill. Gate	201,018	Mar. 5	197	63	13	445
Ketcham, J. L., Milwaukee, Wis. Reversible dumping-boat	200,920	Mar. 5	100	34	13	430
Kilmer, A. (See Kilmer, I. A., assignor.)						
Kilmer, I. A., assignor of one-half interest to A. Kilmer, Howe's Cave, N. Y. Bale-tie	201,019	Mar. 5	198	63	13	445
Knight, J. L., New York, N. Y. Sewer-trap	201,020	Mar. 5	198	63	13	445
Knoeppel, J. C., New York, N. Y. Shutter-fastening	200,921	Mar. 5	101	34	13	430
Koch, J. C., Jr., Berlin, Prussia. Easel-album	200,922	Mar. 5	102	34	13	431
Korsmoyer, F. A. (See Mueller and Gross, assignors.)						
Koskul, F., Philadelphia, Pa. Manufacturing artificial stone	200,834	Mar. 5	21	.....	13	418
Koskul, F., Philadelphia, Pa. Manufacturing artificial stone	200,835	Mar. 5	22	.....	13	418
Kratzsch, W., assignor to Buckeye Iron and Brass Works, Dayton, Ohio. Lathe-head	201,021	Mar. 5	199	64	13	446
Karns, D. H., Williamsport, Md., and J. Ream, Bedington, West Va. Grain cleaner and scourer	201,251	Mar. 12	437	{ 134 135 } 13	13	487
Kidder, R. B., Columbus, Wis. Rotary engine	201,113	Mar. 12	300	91	13	467
King, W., Philadelphia, Pa. Ornamenting wood	201,252	Mar. 12	438	135	13	487
Kirkham, H. P., New York, N. Y. Horse-stall for vessels	201,253	Mar. 12	439	135	13	487

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kretsinger, W. H., Fort Madison, Iowa. Rake	201,254	Mar. 12	440	136	13	487
Keene, F. A., and C. Van Order, Marengo, Iowa. Wagon-brake	201,423	Mar. 19	635	194	13	521
Kelley, J. C. (See Jasper, W., assignor.)						
Kella, P. H., Adrian, Mich. Brick-machine. (Reissue)	8,127	Mar. 19	807	246	13	545
Kelly, J. R. F. (See Striedinger, Kelly, and Korrow.)						
Kennedy, T. (See Van Benthuysen, I. E., assignor.)						
Kerr, T., Milwaukee, Wis. Manhole and cover	201,349	Mar. 19	561	172	13	511
King, P. F., assignor to Beard and Brother, St. Louis, Mo. Time-lock	201,535	Mar. 19	747	228	13	537
Kirk, E. C., Philadelphia, Pa. Bronze alloy	201,536	Mar. 19	749	.....	13	537
Kitson, R., Lowell, Mass. Cotton opener and cleaner	201,424	Mar. 19	635	194	13	521
Knowlton, W. A. (See Spaulding, G. H., assignor.)						
Korrow, K. (See Striedinger, Kelly, and Korrow.)						
Kritch, J., Cleveland, Ohio. Hub-boring machine	201,350	Mar. 19	562	{ 172 173 } 13	13	511
Kachelman, J., Jr., Evansville, Ind. Perpetual time and interest calendar	201,617	Mar. 26	849	258	13	555
Kearney, W. F., Michigan City, Ind. Packing for stuffing boxes, &c.	201,683	Mar. 26	906	277	13	564
Kelleher, D., New Bedford, Mass. Bomb-lance	201,793	Mar. 26	1020	{ 311 312 } 13	13	581
Kelleher, D., New Bedford, Mass. Bomb-lance	201,794	Mar. 26	1021	312	13	581
Kern, E., *et al.* (See Sherck, I., assignor.)						
Kern, I., *et al.* (See Sherck, I., assignor.)						
Kern, W. H., *et al.* (See Sherck, I., assignor.)						
Kesler, W. H. H. (See Clarkson and Kesler.)						
Kilburn, I. C., *et al.* (See Taylor, L. P., assignor.)						
Kimball, A., New York, N. Y. Machine for making wired tickets	201,684	Mar. 26	907	{ 277 278 } 13	13	564
King, C. A., Meriden, Conn. Attaching fore-ends of gun-stocks	201,618	Mar. 26	851	258	13	555
King, W. H. (See Boger and King.)						
Kirkland, J., Menomonee, Wis. Spark-arrester	201,685	Mar. 26	911	278	13	565
Kiss, E., New York, N. Y. Table-bedstead	201,795	Mar. 26	1022	312	13	581
Klock, A. K., Freeport, Ill. Feather-renovator	201,686	Mar. 26	911	278	13	565
Koppenheffer, C., Halifax, Pa. Plow	201,780	Mar. 26	1014	310	13	580
Kosiol, L. (See Boger and King, assignors.)						
Künstler, J., assignor to W. W. Vasse, Thomas Hill, Mo. Hoof-parer	201,687	Mar. 26	912	278	13	565
King, J. F., Edwardsville, Kan. Spring-seat for wagons	201,925	Apr. 2	66	18	13	608
King, T. H., San Francisco, Cal. Anti-friction bearing for journals and axles	202,034	Apr. 2	172	50	13	624
Kinsey, G. (See Schweitzer and Kinsey.)						
Kirk, J. (See Swindells, J., assignor.)						
Klein, P. L., Werden on the Ruhr, Prussia, Germany. Wool-carding machine. (Reissue)	8,156	Apr. 2	239	70	13	633
Knight, J. L., New York, N. Y. Rudder	201,927	Apr. 2	67	18	13	608
Knight, S., assignor to H. K. White, St. Louis, Mo. Clothes-pounder	201,926	Apr. 2	66	18	13	608
Kohnle, J., Dayton, Ohio. Baker's oven	201,883	Apr. 2	25	7	13	602
Keeler, S., East Saginaw, Mich., assignor of one-half interest to W. J. Watson, Chicago, Ill. Seal-fastening	202,207	Apr. 9	433	126	13	664
Keller, W. L., Baltimore, Md. Measuring-stopper for bottles	202,268	Apr. 9	433	126	13	664
Kelly, H., Osage, Iowa. Harvester	202,269	Apr. 9	434	127	13	664
Ketzscher, J., Little Rock, Ark. Bath	202,270	Apr. 9	436	127	13	664
Kimball, L., Jr. (See Brown and Kimball.)						
King, T. H., San Francisco, Cal. Vehicle-wheel	202,271	Apr. 9	437	127	13	664
Kingseed, C., Sidney, Ohio. Awning-frame	202,272	Apr. 9	439	128	13	665
Kingsley, M. L., Kendall Creek, Pa. Sash-fastener	202,273	Apr. 9	440	128	13	665
Kirtland, C. A., New York, N. Y. Plate-glass face-protector	202,175	Apr. 9	343	100	13	651
Knight, T. G., Brooklyn, N. Y. Stench-trap	202,176	Apr. 9	343	100	13	652
Knox, R. F., San Francisco, Cal. Quicksilver-furnace	202,274	Apr. 9	441	128	13	665
Koehler, C. A. and J. A., East Saginaw, Mich. Skid	202,177	Apr. 9	344	101	13	652
Koehler, J. A. (See Koehler, C. A. and J. A.)						
Kupferle, J. C. (See White and Kupferle.)						
Kaufmann, M. (See De Mouncie, A. T., assignor.)						
Keefe, W. J., Boston, Mass. Machine for the manufacture of paper boxes from pulp	202,352	Apr. 16	540	158	13	683
Keefe, W. J., Boston, Mass. Mechanism for pressing and finishing hollow articles of paper-pulp	202,353	Apr. 16	542	158	13	683
Keller, I. B. (See Sprecher and Keller.)						
Kershaw, T., Philadelphia, Pa. Spooling-machine	202,549	Apr. 16	751	217	13	711
Kershaw, T., Philadelphia, Pa. Stop-motion for doubling and twisting machines	202,550	Apr. 16	753	217	13	711
Kiggens, J. T. (See Rand, C. N., assignor.)						
Kinter, W. H., and B. F. Williams, Cookport, Pa. Carriage wheel and axle	202,551	Apr. 16	754	218	13	711
Kitchen & Co., G. H. (See Scattergood, J. R., assignor.) (Reissue.)						
Knipscheer, J., Weimar, Tex. Bale-tie	202,552	Apr. 16	755	218	13	711
Knoth, G., Brealau, N. Y. Fodder-cutter	202,553	Apr. 16	756	218	13	711
Kohl, C. R., *et al.* (See Upton, W., assignor.)						
Kohl, J. W., *et al.* (See Upton, W., assignor.)						
Kohl, W. S., *et al.* (See Upton, W., assignor.)						
Kreiter, S., Silver Lake, Ind. Churn with swinging body and reciprocating dasher	202,554	Apr. 16	756	218	13	711
Keenan, W., assignor to himself and N. B. Hooper, Brooklyn, N. Y. Hat-pouncing machine	202,839	Apr. 23	1066	305	13	758
Kendrick, H. H., Oswego, assignor to Munson Bros., Utica, N. Y. Balancing millstones	202,731	Apr. 23	954	274	13	743
Kennish, W., Philadelphia, Pa. Insect-powder gun	202,830	Apr. 23	1067	305	13	758
Kingsford, T., Oswego, N. Y. Process and apparatus for drying starch	202,832	Apr. 23	1068	306	13	758
Kingsland, H. A., Newark, N. J. Implement for capping and uncapping cartridges	202,831	Apr. 23	1067	305	13	758
Kinney, H. B., Columbus, Ohio. Machine for making pitchforks	202,658	Apr. 23	883	253	13	735
Klauser, W., *et al.* (See Butcher, J., assignor.)						
Knapp, E., Stanfordville, N. Y. Horse hay-rake	202,833	Apr. 23	1069	306	13	758
Knipe, E. P. (See Gates, S. T., assignor.)						
Kastner, G. A., Plagwitz, Leipzig, Germany. Pad for horses' feet	202,947	Apr. 30	1197	345	13	778
Kean, F. H., Cincinnati, Ohio. Shoe-brush	203,050	Apr. 30	1295	376	13	791
Kella, P. H., Adrian, Mich. Brick and tile machine	202,948	Apr. 30	1198	346	13	778
Kerr, J. N., West Greenwood, Pa. Fence	202,949	Apr. 30	1199	346	13	778
Kidder, G. R., assignor to himself and N. Hurd, Armada, Mich. Sliding door	203,051	Apr. 30	1295	376	13	791
Kile, J. C., Woodbourne, assignor of one-half interest to L. Jelliff, Liberty, N. Y. Apparatus for raising water	202,950	Apr. 30	1200	347	13	779
Kimball, C. M., Bradford, Mass. Railway-car truck	203,163	Apr. 30	1413	412	13	807
Kingsland, G., Kingsland, N. J. Strawberry-vine cutter	202,951	Apr. 30	1201	347	13	779
Kinney, F. S., New York, N. Y. Cigarette-package	203,164	Apr. 30	1414	412	13	807
Kirkpatrick, E. C., Camden, N. J. Trundle-toy	203,165	Apr. 30	1415	412	13	807
Knapp, H. F., New York, N. Y. Removing bars of rivers. (Reissue)	8,204	Apr. 30	1488	435	13	816
Knoch, C. F. (See Salomon, Knoch, and Semel.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kretsinger, W. H., Fort Madison, Iowa. Scythe-fastener	203,166	Apr. 30	1416	413	13	807
Kürsheedt, A. E., *et al.* (See Gröbli, Catlisch, and Wehrli, assignors.)						
Kürsheedt, A. E., *et al.* (See Gröbli, Rieter, and Wehrli, assignors.)						
Kürsheedt, A. E., *et al.* (See Rieter, Wehrli, and Gröbli, assignors.)						
Kürsheedt, F. A., *et al.* (See Gröbli, Catlisch, and Wehrli, assignors.)						
Kürsheedt, F. A., *et al.* (See Gröbli, Rieter, and Wehrli, assignors.)						
Kürsheedt, F. A., *et al.* (See Rieter, Wehrli, and Gröbli, assignors.)						
Keep, W. B. (See Kirby, J. A., assignor.)						
Kelm, S. J., assignor of one-half interest to W. Younger, Catasauqua, Pa. Lard and fruit press and sausage-stuffer	203,345	May 7	113	33	13	835
Kelly, R. A., Manchester, Iowa. Nut-lock	203,464	May 7	241	69	13	853
Kelso, J. P., Morgantown, Ind. Automatic fly-brush	203,462	May 7	230	68	13	853
Kenerson, V. D. P., and C. H. Morgan, Worcester, Mass. Wire-drawing	203,346	May 7	114	.....	13	835
Kenworthy, T. C., and A. McGregor, assignors of part interest to J. F. Baker and G. W. Clark, New York, N. Y. Plate-printing machine	203,465	May 7	241	69, 70	13	853
Kernochan, F. E., Pittsfield, Mass. Valve attachment for the pipes of wash-basins	203,347	May 7	115	33	13	836
Kimball, V. P., Watertown, N. Y. Grain-cutting machine	203,348	May 7	115	33, 34	13	836
Kinsey, S. A., assignor to D. C. Proctor and R. A. Culter, Peoria, Ill. Stove-hearth	203,278	May 7	42	13	13	826
Kirby, J. A., assignor of two-thirds interest to W. B. Keep, Chicago, Ill. Street-railway track	203,463	May 7	240	69	13	853
Kittleson, O. O., Milan, Ill. Barbed fence-wire	203,349	May 7	117	34	13	836
Knickmann, H., East New York, N. Y. Tool for removing pintles from hinge-joints	203,466	May 7	245	70	13	854
Kummerer, M. C., and C. W. Widney, Polo, Ill.; said Widney assignor to said Kummerer. Motive power	203,350	May 7	117	34	13	836
Kunkely, M. R., New York, N. Y. Tent, awning, &c	203,279	May 7	43	13	13	826
Kampf, G. (See Ortmann and Kampf.)						
Kent, A. A., Denver, Colo. Ore-washer	203,547	May 14	346	99	13	876
Keyt, A. T., Cincinnati, Ohio. Sphygmometer	203,548	May 14	347	99, 100	13	876
Kilburn, C., assignor to Hale & Kilburn Manufacturing Company, Philadelphia, Pa. Spring for seats	203,739	May 14	539	153	13	900
King, J. R., St. Paul, Minn. Trundling toy	203,624	May 14	417	119	13	885
Kiune, R. O., El Dorado, Ill. Grain-binder	203,625	May 14	417	119	13	885
Kirby, J., Cincinnati, Ohio. Bung	203,740	May 14	540	153	13	900
Knerr, L., Jr. (See Whealen and Knerr.)						
Knight, E. D. (See Byrne and Knight.)						
Knowlton, C. H. (See Furbush and Knowlton.)						
Kreter & Anger. (See Kreter, R., assignor.)						
Kreter, R., assignor to Kreter & Anger, New York, N. Y. Child's folding carriage	203,742	May 14	543	154	13	901
Kreutzberger, F. G., Paris, France. Grinding-machine	203,741	May 14	541	153, 154	13	901
Kuntz, J., and S. F. Schroeder, Dubuque, Iowa. Vehicle-top	203,743	May 14	544	154	13	901
Kean, H., East Boston, Mass. Lathe for turning masts and spars	203,920	May 21	740	213	13	933
Kearsing, E. G. and L., Spring Valley, N. Y. Dental-gold filling	203,921	May 21	742	214	13	934
Kearsing, L. (See Kearsing, E. G. and L.)						
Keech, J. M., assignor of one-half interest to J. H. Harner, Philadelphia, Pa. Sash-fastener	204,051	May 21	881	252	13	951
Kelley, J. F., Washington, D. C. Motor for street-cars	204,052	May 21	881	252, 253	13	951
Kidder, D. S., Turner's Falls, Mass. Fly-trap	204,053	May 21	883	253	13	951
Kingston, J. C., Buffalo, N. Y. Machine for trimming last-blocks	203,840	May 21	656	187	13	922
Kirby, J., Cincinnati, Ohio. Bung-stave lock	203,922	May 21	743	214	13	934
Klingspor, F., Jr., Siegen, Westphalia, Germany. Inkstand	204,054	May 21	884	254	13	951
Klinzing, J., Pittsburg, Pa. Lock	204,055	May 21	885	254	13	951
Koenig, J., Indianapolis, Ind. Awning	203,923	May 21	744	214	13	934
Kurtzmann, J. O., assignor of one-half interest to E. W. Sackett, New York, N. Y. Bronzing-machine	203,841	May 21	658	187	13	922
Kauffman, J., Miamisburg, Ohio. Side-bar vehicle	204,154	May 28	1014	288	13	971
Keeler, K. E., Apulia, N. Y. Sad-iron stand	204,338	May 28	1204	343	13	996
Kemon, P. S., Washington, D. C. Furnace-door	204,339	May 28	1205	344	13	996
Kemp, J. S., Magog, Canada. Manure-spreader. (Reissue)	8,254	May 28	1226	366	13	1006
Kendrick, T. T., Washington, D. C. Invalid attachment for bedsteads	204,232	May 28	1098	313	13	982
King, D. H., New York, N. Y. Newspaper-file	204,233	May 28	1099	314	13	982
King, I. D. (See Kirk, D., assignor.)						
King, R. J., Dayton, Ohio. Fire-pot lining for cook-stoves	204,155	May 28	1015	288	13	971
King, T. M. (See Lewis and Maloney, assignors.)						
Kirk, D., assignor to himself and I. D. King, Orleans, N. Y. Vehicle-seat lock	204,234	May 28	1099	314	13	982
Kiss, E., New York, N. Y. Wardrobe-bedstead	204,340	May 28	1207	344	13	996
Knotts, J., *et al.* (See Austin, D., assignor.)						
Kueny, F., Peoria, Ill. Wash-board	204,156	May 28	1015	288	13	971
Kutscher, L., Bridgeport, Conn. Bottle-stopper fastener	204,341	May 28	1208	344	13	996
Kwoczalla, A. (See Meahl and Kwoczalla.)						
Kahler, C., Chicago, Ill. Newspaper-folding machine	204,578	June 4	145	48, 49	13	1033
Kaplan, A. O., Cincinnati, Ohio. Satchel-desk	204,492	June 4	69	24	13	1022
Keith, T. K., assignor to M. How, Haverhill, Mass. Feed-operating mechanism for sewing-machines	204,579	June 4	148	49	13	1034
Kimball, E. M., assignor to himself and O. F. Foster, Toledo, Ohio. Appliance for flat filing	204,493	June 4	70	24	13	1022
King, W., assignor to H. Hall, London, England. Chisel	204,439	June 4	26	9	13	1016
Kingsbury, J. J. D., Bloomfield, N. Y. Thill-coupling	204,494	June 4	71	24	13	1022
Kirby, J., Jr., assignor to Post & Co., Cincinnati, Ohio. Locomotive head-light	204,580	June 4	149	49, 50	13	1034
Kister, T. J. (See Kurtz and Kister.)						
Knapp, H. F., New York, N. Y. Railway air-brake	204,440	June 4	26	9	13	1016
Knight, T. H., O. H. Curtis, and G. C. Gibbs, Milwaukee, Wis.; said Knight assignor to said Curtis. Fire-escape	204,581	June 4	152	50	13	1034
Kreiter, S., Silver Lake, Ind. Churn	204,582	June 4	153	50	13	1035
Kurtz, J. G., and T. J. Kister, Milton, Pa. Fire-escape	204,583	June 4	154	51	13	1035
Kelley, W. E., Coldwater, Mich. Cotton-seed drill	204,671	June 11	255	79	13	1052
Kellogg, W. H. (See Wilson, E. L., assignor.)						
Kelman, A. (See Sarlls and Kelman.)						
Kennon, B., Washington, D. C. Counterpoise-battery	204,631	June 11	427	126, 127	13	1073
Knight, J. L., New York, N. Y. Lubricator	204,672	June 11	255	80	13	1052
Koch, F., assignor of one-half interest to F. X. Huber, New York, N. Y. Harness-saddle	204,673	June 11	257	80	13	1052
Kautz, G. J., Emporium, Pa. Log-turner	204,980	June 18	604	177	13	1099
Kelsey, E. (See Dann and Kelsey.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Keltner, J. M., Salisbury, Ill. Hog-cholera compound	204,898	June 18	523	.....	13	1088
Kennedy, M., assignor, by mesne assignments, to H. H. Waters, Chicago, Ill. Apparatus for painting wire-cloth	204,981	June 18	605	177	13	1099
Kershaw, W. H., Widnes, England. Roof covering and sheathing	204,899	June 18	523	153	13	1088
Kidder, W. P., Jamaica Plain, Mass. Inking apparatus for printing-presses	204,900	June 18	524	153	13	1088
Kinnaird, A., Baltimore, Md. Corpse-cooler	205,102	June 18	722	215	13	1115
Kinney, F. S., New York, N. Y. Testing-machine	204,901	June 18	525	153	13	1088
Kinney, H. W., St. Johnsbury, Vt. Extension-table	204,982	June 18	606	178	13	1099
Knowles, C. M., New London, Conn. Wire-cutting tool	205,103	June 18	723	215	13	1115
Kade, C., St. Louis, Mo. Table	205,393	June 25	1045	310	13	1162
Keating, T. F., New York, N. Y. Time-lock	205,275	June 25	914	271	13	1145
Keeler, E. L., assignor to J. Graff, Beaver Falls, Pa. Machine for forming the eyes of hooks	205,394	June 25	1046	310	13	1162
Kellogg, D. W., assignor of one-half interest to W. A. Kirby, Auburn, N. Y. Reciprocating engine	205,395	June 25	1047	310	13	1162
Kemmel, G., Summit, Mich. Automatic wagon-brake	205,396	June 25	1048	310	13	1162
Kenney, L. B., Charlotte, Mich. Pole for agricultural implements	205,397	June 25	1049	311	13	1162
Kieffer, J., Montreal, Canada. Machinery for molding counters or stiffeners for boots and shoes	205,191	June 25	830	246, 247	13	1134
Kingsley, H. L., Racine, Wis. Platform-gear for wagons	205,398	June 25	1049	311	13	1162
Kirby, W. A. (See Kellogg, D. W., assignor.)						
Kirchner, G. A., assignor to J. A. Heacock, Philadelphia, Pa. Burial-casket	205,277	June 25	916	272	13	1145
Kirkham, R. N. B., Kansas, Ill. Horse hay-fork	205,276	June 25	916	271	13	1145
Klauser, W., *et al.* (See Butcher, J., assignor.)						
Klingler, S. (See Wekerle, A., assignor.)						
Knapp, F., Brunswick, Germany. Tramping-drum for use in the manufacture of leather	205,399	June 25	1050	311	13	1162
Knight, L. W., Elgin, Ill. Sash-fastener	205,278	June 25	917	272	13	1146
Knowles, C. M., New London, Conn. Bit-stock	205,400	June 25	1051	311	13	1162
Kohn, T., Hartford, Conn. Device for finishing thread. (Reissue)	8,231	June 25	1116	330	13	1172
Kriteh, J., Cleveland, Ohio. Fifth-wheel	205,279	June 25	918	272	13	1146
Lawton, H. (See Howland and Lawton.)						
Lennon, J., San Francisco, Cal. Harrow	198,920	Jan. 1	204	58	13	40
Lindsay, J. P., Boston, Mass. Safety-pin	198,890	Jan. 1	171	49	13	35
Lomb, H., *et al.* (See Gundlach, E., assignor.)						
Loverin, N., Montreal, Canada. Apparatus for teaching history, &c	198,749	Jan. 1	20	5	13	11
Ludlum, D. S., New Hampton, N. Y., and L. W. Ludlum, Orange, N. J. Poke	198,805	Jan. 1	87	24	13	21
Ludlum, L. W. (See Ludlum, D. S. and L. W.)						
Lufkin, A. D., Cleveland, Ohio. Reservoir and wash-stand combined	198,770	Jan. 1	50	13	13	15
Luttgens, H. A., Paterson, N. J. Whiffletree plate and clevis	198,771	Jan. 1	51	13	13	15
Lüttges, A., Solingen, Prussia. Apparatus for hardening and tempering sheet-steel	198,804	Jan. 1	87	24	13	21
Lynde, J. D., Philadelphia, Pa. Injector	198,891	Jan. 1	172	49	13	35
Lalance and Groejean Manufacturing Company. (See Musgrove, J., assignor.)						
Lange, J., and A. Eisenbraun, Lodz, Poland, Russia. Anti-friction bearing for rotary shafts and axles	198,987	Jan. 8	279	80	13	59
Lash, N., Ellsworth, Ill. Signal-lantern	198,988	Jan. 8	280	81	13	59
Leslie, E. N., Skaneateles, N. Y. Covering the sides and roofs of buildings with slate	199,075	Jan. 8	361	107	13	73
Levis, G. H., assignor to Domestic Refrigerator and Pipe Covering Company, Philadelphia, Pa. Insole for boots and shoes	198,989	Jan. 8	281	81	13	59
Liddell, W., Sandy Hill, N. Y. Music-leaf turner	198,990	Jan. 8	281	81	13	59
Lindsay, C. G. (See Lindsay, R. G. and C. G.)						
Lindsay, R. G. and C. G., Hollidaysburg, Pa. Construction of houses	199,076	Jan. 8	362	107	13	74
Little, S. A., Shelburne, Mass., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Time-lock. (Reissue)	8,035	Jan. 8	439	129	13	84
Lord, T. C., assignor of one-half interest to F. E. Marsh, Joliet, Ill. Horse hay-rake	199,077	Jan. 8	362	107	13	73
Lovell & Co., F. H. (See Fowler, S. W., assignor.)						
Lumpert, E., New York, N. Y. Fire-escape	199,078	Jan. 8	364	108	13	74
Larabee, J. W. (See Brewster, F. A., assignor.) (Reissue.)						
Langstaff, J., Cleveland, Ohio. Stone-sawing machinery	199,160	Jan. 15	466	137	13	88
Lawson, J. A., Troy, N. Y. Stove-grate	199,296	Jan. 15	599	175	13	109
Lawther, A. B., Chicago, Ill. Hydraulic press	199,297	Jan. 15	600	175	13	109
Leach, C. J., Hartford township, Van Buren county, Mich. Saw-mill dog	199,213	Jan. 15	517	152	13	96
Leavitt, W. A. (See Perry, F. W., assignor.)						
Leudorf, F. J., Chicago, Ohio. Horse-detacher	199,298	Jan. 15	601	175	13	109
Libby, N. F., and P. Hatch, Cholmsford, Mass. Pile-driver	199,299	Jan. 15	602	176	13	109
Lippitt, A. C., New London, Conn. Butter-dish	199,214	Jan. 15	517	152	13	97
Lowe, J. L., Upper Alton, Ill. Grain-separator	199,300	Jan. 15	603	176	13	110
Labelle, C. H., Keesville, N. Y. Reversible latch	199,452	Jan. 22	759	223	13	142
Lau, A. H., San Francisco, Cal. Whip-socket	199,374	Jan. 22	687	202	13	131
Lauffer, J. B., Harrison City, Pa. Boot-jack	199,537	Jan. 22	870	255	13	161
Le Mar, O. W., assignor of one-half interest to A. M. Judy, New Burlington, Ohio. Saw-filing machine	199,453	Jan. 22	759	223, 224	13	143
Lillie, L. C., Elizabeth, N. J., and S. M. Lillie, Philadelphia, Pa. Time-lock	199,454	Jan. 22	764	224	13	143
Lillie, S. M. (See Lillie, L. C. and S. M.)						
Lincoln, J. D., *et al.* (See Pope, F. L., assignor.) (Reissue.)						
Lobdell Car Wheel Company. (See Denio, A. O., assignor.)						
Long, N. H., assignor to himself, J. Marks, and P. F. Davis, Muncie, Ind. Clothes-washer	199,455	Jan. 22	766	224	13	143
Loring, D. B. (See Wheeler and Loring.)						
Lothrop, T. C. (See Dunbar and Lothrop.) (Reissue.)						
Love, W. (See Tifft and Love.) (Reissue.)						
Lowe, L. J., Ashland City, Tenn. Plow	199,538	Jan. 22	871	255	13	161
Luckhurst, W., assignor of one-half interest to C. W. Boynton, Woodbridge township, Middlesex county, N. J. Weeding-hoe	199,375	Jan. 22	688	202	13	131
La Grange, J. P., Ashtabula, Ohio. Boiler washing-machine	199,732	Jan. 29	1064	311	13	198
Laidley, T. T. S., U. S. Army. Powder for cannons	199,723	Jan. 29	1064	311	13	198
Laird, H. S. (See Landeker and Laird.)						
Landeker, L., and H. S. Laird, San Luis Obispo, Cal. Nut-lock	199,834	Jan. 29	1170	343	13	214
Lane, C. J. (See Collier, O., assignor.)						
Laurent, J., New York, N. Y. Watch-case spring	199,835	Jan. 29	1171	343	13	214
Lawrence, J. H., Schenectady, N. Y. Device for operating reciprocating churn-dashers	199,836	Jan. 29	1172	344	13	214
Leavitt, W. A. (See Perry, F. W., assignor.) (Reissue.)						
Le Clerc, J. B., and M. A. Cachot, San Francisco, Cal. Ore-amalgamator	199,724	Jan. 29	1065	311	13	198
Lenard, W. R., assignor to himself and J. S. Rodecker, Waco, Texas. Bale-tie	199,725	Jan. 29	1066	312	13	198
Lepley, J., Lewisburg, Pa. Farm-gate	199,652	Jan. 29	998	291	13	188
Lester, G. H., Brooklyn, N. Y. Milk jar and can	199,837	Jan. 29	1172	344	13	214
Leützinger, J., Hillsborough, Mo. Brake-block holder	199,726	Jan. 29	1067	312	13	198

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Liebich, P. W. (See Henzel and Liebich.)						
Lighton, J. (See Fichter, C., assignor.)						
Littlefield, J. E., East Thorndike, Me. Cattle-tie	199,653	Jan. 29	999	291	13	188
Long, A. L., and E. C., Big Rock, Ill. Harvester cut-off	199,727	Jan. 29	1067	312	13	198
Long, E. C. (See Long, A. L. and E. C.)						
Longsworth, M. V., and E. M. Tannehill, Delphos, Ohio. Combined hammer, meat-pounder, and hasher	199,838	Jan. 29	1173	344	13	215
Lumbert, D., Marston's Mills, Mass. Cranberry-picker	199,728	Jan. 29	1068	312	13	198
Lyon, N. (See Scopes, E., assignor.)						
Lytle, R., Pine Flats, Pa. Millstone-dressing machine	199,839	Jan. 29	1174	344 and 345	13	215
Lytle, R., Pine Flats, Pa. Device for dressing millstones	199,840	Jan. 29	1175	345	13	215
Land, W. H., Des Moines, Iowa, assignor of one-half interest to J. Boyd, Marlborough, Mass. Shoe	199,983	Feb. 5	92	30	13	247
Lauffer, S. D., assignor of three-fourths interest to A. H. Heasley, C. F. Billhimer and W. Williams, Irwin Station, Pa. Burglar-alarm	199,984	Feb. 5	93	30	13	247
Lee, M., Highlandville, Mass. Postal card	200,067	Feb. 5	176	57	13	260
Leland, E. A., assignor, by mesne assignments, to T. C. Miles and J. B. Kiddoo, New York, N. Y. Machine-gun	199,915	Feb. 5	30	9	13	237
Levens, T. F., Cascades, Washington Ter. Steering-propeller	199,925	Feb. 5	94	31	13	247
Lever, J. S., Philadelphia, Pa. Book-binding	200,068	Feb. 5	177	57	13	261
Livermore, C. E., San Francisco, Cal. Mercury-condenser	200,069	Feb. 5	178	57	13	261
Loch, J., New York, N. Y. Tumbler for permutation-locks	200,070	Feb. 5	179	57	13	261
Lockwood, J. K., Alpena, Mich. Circular saw. (Reissue)	8,076	Feb. 5	237	72	13	270
Lombard, N. C., Cambridgeport, assignor to A. A. Sawyer, Boston, Mass. Aerial observatory	199,986	Feb. 5	94	31	13	248
Love, J. J., New York, N. Y. Apparatus for boring or broaching	200,071	Feb. 5	180	58	13	261
Lozier, A. W., New York, N. Y., assignor to R. G. Gnade, Rutherford Park, N. J. Sash-fastener	199,916	Feb. 5	31	10	13	237
Lake, J. C., Camden, N. J. Curtain-fixture	200,314	Feb. 12	434	129	13	308
Lamp..ere, C. W. (See Williams, E., assignor.)						
Landis, A. J., Columbia City, Ind. Lifting-jack	200,140	Feb. 12	259	77	13	281
Lange, J. H. C. (See Hesse, E. A. C., assignor.)						
Langham, W., Cedar Rapids, Iowa. Metallic fence-post	200,206	Feb. 12	322	96	13	291
Lautenschlager, J., Sr. (See Lautenschlager, J., assignor.)						
Lautenschlager, J., Ashland, Ky., assignor to J. Lautenschlager, Sr., Dayton, Ohio. Piano tuning-pin	200,207	Feb. 12	323	97	13	291
Lewis, J. A., New Haven, Conn. Carriage-spring	200,208	Feb. 12	323	97	13	291
Lewis, N. C., Brookline, Mass. Making horseshoe-nails	200,315	Feb. 12	435	129	13	308
Lewthwaite, G. W., Fort Miller, assignor to E. Inman, South Argyle, N. Y. Felt washer for paper-making machines	200,209	Feb. 12	324	97	13	291
Liudblad, O., Jamestown, N. Y. Cutter-head	200,316	Feb. 12	435	130	13	308
Lindemann, W. (See Meth and Lindemann.)						
Luce, G. (See Luce, S. K., assignor.)						
Luce, S. K., assignor to G. Luce, Attleborough, Mass. Safe-guard for chairs	200,317	Feb. 12	436	130	13	308
Ludlow, W. L., Rochester, N. Y. Knob latch and lock	200,318	Feb. 12	437	130	13	308
Ludlow, W. L., Rochester, N. Y. Lock for drawers	200,319	Feb. 12	439	131	13	308
Lyford, C. W., Brooklyn, N. Y. Scarf	200,210	Feb. 12	325	97	13	292
Lyons, M. F., New York, N. Y. Fire-proof material for walls, ceilings, flues, &c.	200,320	Feb. 12	441	131	13	309
Lytch, J., Laurinburg, N. C. Cotton-seed planter	200,141	Feb. 12	259	78	13	281
Lambert, F. A. (See Davies and Lambert.)						
Lamson, R. M., Veray, Iowa. Pitman-connection	200,461	Feb. 19	590	174	13	340
Lane, D., assignor to Lane Manufacturing Company, Moutpeller, Vt. Machine for sawing shingles	200,546	Feb. 19	674	198	13	352
Lane Manufacturing Company. (See Lane, D., assignor.)						
Lapham, E. V., Morrison, Ill. Manufacture of cheese	200,547	Feb. 19	676	199	13	353
Larkin, S., Bridgeport, Conn. Seal-press	200,548	Feb. 19	676	199	13	353
Lasator, J. M., assignor to R. L. Lasater, Manchester, Tenn. Hame	200,462	Feb. 19	590	174	13	340
Lasater, R. L. (See Lasator, J. M., assignor.)						
Lawther, A. B., Chicago, Ill. Artificial honey-comb	200,549	Feb. 19	677	199	13	353
Leighton, G. A., assignor of one-half interest to W. Corey, Manchester, N. H. Circular-knitting machine	200,463	Feb. 19	591	174 and 175	13	340
Levis, H., *et al.* (See Conn, E. L., assignor.) (Reissue.)						
Link, D. C., New York, N. Y. Preserving meats. (Reissue)	8,090	Feb. 19	732	214	13	361
Lotz, W. H., Chicago, Ill. Toy money-box	200,402	Feb. 19	532	157	13	331
Luce, S. K., Attleborough, Mass. Knife-scourer	200,550	Feb. 19	678	199	13	353
Luetters, C., Solingen, Germany. Pocket-knife	200,551	Feb. 19	679	200	13	653
Lyman, F. A., assignor of one-half interest to S. H. Schmuck, Cleveland, Ohio. Gasoline-burner	200,464	Feb. 19	593	175	13	340
Lynn, W. S., Philadelphia, Pa. Bottle-register	200,552	Feb. 19	680	200	13	353
Lamb, W. A. (See Kirk, D., assignor.)						
Lane, E. H., *et al.* (See Allen, N., assignor.)						
Lauer, M. (See Bowman, H. J., assignor.)						
Lawton, C. A., De Pere, Wis. Lime-bin	200,618	Feb. 26	764	221	13	374
Le Caud, F. J. V. (See Stietenroth, A. L., assignor.)						
Lee, F. C., Ridgefield, Conn. Hub-attaching device	200,735	Feb. 26	889	261	13	392
Lee, G. W., Ridgewood, N. Y. Wooden brush for scrubbing	200,736	Feb. 26	890	261	13	392
Lehlbach, G., Newark, N. J. Railway-track	200,737	Feb. 26	891	262	13	393
Lewis, S. A. (See Dodge, L., assignor.)						
Lewis, T. E., Vicksburg, Miss. Shoe-exhibitor	200,738	Feb. 26	891	262	13	393
Liddle, R. Z. (See Shields and Liddle.)						
Little, G. H., Peabody, Mass. Injector. (Reissue)	8,104	Feb. 26	970	285	13	405
Little, G. H., Peabody, Mass. Injector. (Reissue)	8,105	Feb. 26	973	285	13	405
Lowne, R. M., East End, Finchley, England, assignor to J. Gall, New York, N. Y. Barometer	200,739	Feb. 26	892	262	13	393
Lyman, A. S., assignor, to Accelerating Fire Arms Company, New York, N. Y. Accelerating-gun	200,740	Feb. 26	893	262	13	393
Lyon, G. W., Chicago, Ill. Piano-forte sound-board	200,741	Feb. 26	894	263	13	393
Lyon, N., Albany, N. Y. Boot and shoe holder	200,619	Feb. 26	765	225	13	374
La Fonte, J. G., assignor to H. G. Farr, Indianapolis, Ind. Treatment of wood for corset-stays, &c.	201,022	Mar. 5	200	.....	13	446
Lake, J. C., Camden, N. J. Curtain roller and bracket	201,023	Mar. 5	201	64	13	446
Lamb, J. W. (See Brooks, W., assignor.)						
Langham, T., Elwood, N. J. Knitting-machine	201,024	Mar. 5	203	64	13	446
Lasnier, E. (See Hénard and Lasnier.)						
Leach, S. (See St. Clair, H. L., assignor.)						

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Leickem, P. (See Keller and Leickem.)						
Leidy, J. C., Galesburg, Ill. Sulky-plow	201,025	Mar. 5	204	64, 65	13	446
Leonard, E. A. (See Coulter, C. M., assignor.)						
Lillie, V., *et al.* (See Boote and Hechler, assignors.)	200,866	Mar. 5	52	18	13	423
Lillis, F. C., and L. A. Rebasz, Lockport, N. Y. Vent-faucet	201,026	Mar. 5	206	65	13	446
Locke, H. G., Waterville, N. Y. Hop-picking machine						
Loewig, F., *et al.* (See Löwig, C., assignor.)						
Loewig, G., *et al.* (See Löwig, C., assignor.)						
Lores, J., assignor of one-half interest to M. E. Jennings, Lincoln, Neb. Obstetrical support	201,027	Mar. 5	206	65	13	447
Löwig, C., Breslau, Silesia, assignor to G. Loewig, Dresden, and F. Loewig, Goldschmieden, Germany. Manufacture of caustic alkalies and preparations of alumina	201,028	Mar. 5	207	.....	13	447
Loyd, J. (See Malmquist, N., assignor.)						
Lyon, N. (See Webster, C. M., assignor.)						
Lane and Bodley Company. (See Randolph, S. P., assignor.)						
Lauterbach, J., *et al.* (See Roberts, E. J., assignor.)						
Lawson, J. A., Troy, N. Y. Fire-box for stoves	201,255	Mar. 12	441	136	13	487
Lawson, J. A., Troy, N. Y. Cooking-stove	201,256	Mar. 12	442	136 and 137	13	488
Le Comte, J. (See Perkins, G. H. and J. H., assignors.)						
Le Comte and Perkins Manufacturing Company. (See Perkins, G. H. and J. H., assignors.)						
Lester, J. C., and C. J. Fox, Chicago, Ill. Fire-extinguisher	201,183	Mar. 12	365	113	13	477
Lewis, F. S., Brooklyn, N. Y. Fire-kindler	201,184	Mar. 12	365	113	13	477
Lewis, G. T. (See Lewis, R. H. and G. T.)						
Lewis, R. H. and G. T., Pittsburg, Pa. Hydraulic jack	201,114	Mar. 12	300	92	13	467
Lombard, C. E., Cambridge, Mass. Needle-sharpener	201,115	Mar. 12	302	92	13	467
Long, G. F., *et al.* (See Roberts, E. J., assignor.)						
Lovett, A. S., Erie, Pa. Advertising apparatus	201,257	Mar. 12	444	137	13	488
Lowell, J. W., Salt Lake City, Utah Ter. Tie-rod for vehicle-axle skeins	201,258	Mar. 12	445	137	13	488
Lund, J. A., London, England. Electro-magnetic apparatus for synchronizing clocks	201,185	Mar. 12	366	114	13	477
Lackey, G. O., Akron, Ohio. Bag-machine	201,425	Mar. 19	636	194	13	522
Laflin, M., and S. Elliott, Chicago, Ill. Egg-carrier	201,426	Mar. 19	639	195	13	522
Lambert, J. H., Philadelphia, Pa. Haversack	201,537	Mar. 19	750	228	13	538
Larrabee, S. W., Salem, Mass. Cake holder and cooler	201,538	Mar. 19	751	229	13	538
Larwill, A. L., Port Royal, assignor to himself and G. W. Roberts, Beaufort, S. C. Grapple	201,427	Mar. 19	640	195	13	522
Lathrop, G. H., *et al.* (See Stockham, J. B., assignor.)						
Lauderbach, C. J., Allegheny, Pa., assignor to himself and R. C. Albree. Suspender-socket	201,428	Mar. 19	641	195	13	522
Leavitt, E. D., Jr., Cambridge, Mass., and W. Jones, Philadelphia, Pa. Steam-cylinder with steam-jacket	201,429	Mar. 19	642	196	13	522
Lees, T., assignor to S. R., W. E., and W. T. Carrington, Stockport, England. Machine for curling hat-brims	201,351	Mar. 19	564	173	13	511
Lillis, F. C., Lockport, N. Y. Lock-faucet	201,430	Mar. 19	643	196	13	522
Little, G. H., Peabody, and J. S. Smart, Salem, Mass. Valve	201,352	Mar. 19	565	173	13	511
Logue, F. M., Vicksburg, Miss. Bale-tie	201,431	Mar. 19	643	196	13	523
Lord, S., St. Louis, Mo. Truck for street-cars	201,539	Mar. 19	752	229	13	538
Lord, S., St. Louis, Mo. Car-truck	201,540	Mar. 19	753	229	13	538
Lowe, W., Bridgeport, Conn. Self-adjusting cut-off for engines	201,353	Mar. 19	566	174	13	512
Lowry, M. T., *et al.* (See Bash, H. R., assignor.)						
Lytle, A. J., Hillsborough, Ohio. Button-hole cutter	201,432	Mar. 19	644	196	13	523
Langlois, P., Port Henry, N. Y. Sewing-machine	201,797	Mar. 26	1024	313	13	582
Larsen, N. C., Elgin, Ill. Measuring-gage	201,798	Mar. 26	1025	313	13	582
Lash, J. F., Toronto, Canada. Curtain-fixture	201,799	Mar. 26	1026	313	13	582
Laskey, S., Chicago, Ill. Overalls	201,800	Mar. 26	1026	313	13	582
Lauster, D., Buffalo, N. Y. Safety-bridle	201,801	Mar. 26	1027	314	13	582
Ledyard, J. W., Detroit, Mich. Spark arrester and extinguisher	201,803	Mar. 26	1029	314	13	582
Lee, J. (See Edwards and Lee.)						
Lee, M., Highlandville, Mass. Dynamometer for testing the strength of yarn	201,802	Mar. 26	1028	314	13	582
Leerme, E. O., Gold Hill, Nevada. Pump suction-pipe	201,689	Mar. 26	913	279	13	565
Leiner, M., New York, N. Y. Brush	201,688	Mar. 26	913	279	13	565
Lewis, H. (See Dusch and Lewis.)						
Lewis, W. H., Brooklyn, assignor to E. and H. T. Anthony & Co., New York, N. Y. Stereoscope	201,804	Mar. 26	1030	314	13	583
Lorenz, J. C., St. Petersburg, Pa. Oil-well sprinkler	201,619	Mar. 26	851	259	13	555
Loring, D. B. (See Wheeler and Loring.)						
Lucas, A. H., *et al.* (See Edwards and Lee, assignors.)						
Lungren, C. M., Baltimore, Md. Argand-lamp burner	201,805	Mar. 26	1031	315	13	583
Lynch, W., Detroit, Mich. Splint-cutting machine	201,806	Mar. 26	1032	315	13	583
La Dow, C., Albany, N. Y. Horse hay-rake. (Reissue)	8,157	Apr. 2	240	70	13	633
Lamb, W., Green Bay, Wis. Log-carriage for saw-mills. (Reissue)	8,150	Apr. 2	232	67	13	632
Leclere, F., assignor to himself, G. H. Bonnaffon, and G. E. Buckley, Philadelphia, Pa. Automatic fire-extinguisher	202,035	Apr. 2	174	51	13	624
Lovalley, C. W., St. Paul, Minn. Harvester	202,036	Apr. 2	175	51	13	624
Lewis, S. L., Fort Wayne, Ind. Label-holder	201,928	Apr. 2	68	18	13	608
Lighton, J. (See Fichter, C., assignor.)						
Lockwood, R., Boston, Mass. Pessary	202,037	Apr. 2	179	52	13	624
Loring, H., Boston, Mass. Extracting oil from fish	201,884	Apr. 2	26	7	13	602
La Dow, C., Albany, N. Y. Harrow-cultivator. (Reissue)	8,159	Apr. 9	491	144	13	673
Laney, W. S., Lithopolis, Ohio. Pump	202,178	Apr. 9	345	101	13	652
Le Blond, N., Farmington, Minn. Rosette for bridles	202,111	Apr. 9	269	79	13	642
Leffler, F. C., Ainsworth, Iowa. Cultivator	202,112	Apr. 9	270	80	13	642
Lehmann, H., Cleveland, Ohio. Barrel-pitching machine. (Reissue)	8,168	Apr. 9	504	147	13	674
Lennon, S. N., Chicago, Ill. Fence-post	202,179	Apr. 9	346	101	13	652
Ley, H. W., London, England. Clock	202,275	Apr. 9	443	129	13	665
Little, H. B., Hartford, Conn. Adjustable centering-square	202,180	Apr. 9	346	101	13	652
Lomax, J. A., *et al.* (See Whitman, W. G., assignor.)						
Lord, C. W., Newton, Mass. Mechanism for utilizing wave-power	202,113	Apr. 9	271	80	13	642
Lowe, N. M., Boston, Mass. Psychrometer	202,276	Apr. 9	444	129	13	665
Laird, W. A., assignor of one-half interest to G. L. Faust and W. L. Warren, Ossian, Iowa. Three-horse draft-equalizer	202,555	Apr. 16	757	219	13	711
Lalance & Grosjean Manufacturing Company. (See Grosjean, F., assignor.)						
Lamont, A., *et al.* (See Lamont, J., assignor.) (Reissue.)						
Lamont, J., deceased, assignor to J. and A. Lamont, Chester, N. Y. Razor-strop. (Reissue)	8,181	Apr. 16	837	241	13	721
Lane, A. R., New York, N. Y. Coupling for telegraph-wires	202,556	Apr. 16	758	219	13	711
Lantis, W., *et al.* (See Forlow, J., assignor.)						

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Lawrence, T. C., Lodago, assignor of one-half interest to J. T. Mack, Crawfordsville, Ind. Wagon-brake lever	202,557	Apr. 16	759	219	13	712
Lawton, W. D., San Francisco, Cal. Manufacture of shirts	202,558	Apr. 16	760	219	13	712
Leckie, R. G., Acton Vale, Quebec, Canada. Separating sulphur from its ores	202,443	Apr. 16	620	184	13	696
Legouge, L. F. A., St. Georges la Tretoire, France. Scraping-tool	202,444	Apr. 16	621	184	13	696
Lehmann, F. A. (See Rhind, F., assignor.)						
Lennartson, G., Erie, Pa. Miter-machine	202,445	Apr. 16	632	185	13	696
Lesher, S., assignor of one-half interest to J. M. Willson, Sharon, Pa. Lifting-jack	202,354	Apr. 16	543	159	13	684
Lewis, G. T., Philadelphia, Pa., and W. J. Menzies, St. Helens, England; said Menzies assignor to said Lewis. Manufacture of bicarbonate of soda	202,356	Apr. 16	545	159	13	684
Leypoldt, F. C., Philadelphia, Pa. Button-hole cutter	202,446	Apr. 16	633	185	13	696
Lindsey, P. H., Lockport, N. Y. Carriage-top adjuster	202,355	Apr. 16	544	159	13	684
Linn, A. L., Cleveland, Ohio. Burglar-alarm	202,447	Apr. 16	634	185	13	696
Lipe, W., *et al.* (See Bendix, G. E., assignor.)						
Lipman, L. H., Philadelphia, Pa. Pocket cigar-cutter	202,559	Apr. 16	761	220	13	712
Longking, T. and T. P., Brooklyn, N. Y. Combined carriage and chair	202,560	Apr. 16	761	220	13	712
Longking, T. P. (See Longking, T. and T. P.)						
Lattin, M., Chicago, Ill. Compound for lining barrels, &c	202,834	Apr. 23	1070	.....	13	758
Lahaussois, M., Paris, France. Hay and cotton press	202,835	Apr. 23	1071	306	13	758
Landreth, W. M., Johnson City, Tenn. Fence	202,836	Apr. 23	1072	306	13	758
Lavey, J. E., Huntington county, Ind. Watchmaker's lathe-chuck	202,838	Apr. 23	1074	307	13	759
Lawrence, W. E., and C. E. L. Holmes, New York, N. Y. Curry-comb	202,837	Apr. 23	1073	307	13	759
Lawther, A. B., Chicago, Ill. Machine for treating oleaginous seeds for the extraction of oil	202,839	Apr. 23	1074	307	13	759
Lees, T., Chester, Pa. Bill-file	202,752	Apr. 23	955	274	13	744
Lemon, W. T., Detroit, Mich. Knitting-machine	202,840	Apr. 23	1076	{307 / 308}	13	759
Le Page, W. N., Boston, Mass. Pistol-holster	202,733	Apr. 23	956	275	13	744
Lester, D. B., Savannah, Ga. Funnel	202,734	Apr. 23	956	275	13	744
Lever, J. S., Philadelphia, Pa. Book-binding. (Reissue)	8,195	Apr. 23	1161	332	13	769
Lindsay, J. P., Boston, Mass. Sleeve-supporter	202,735	Apr. 23	957	275	13	744
Loom Picker Company. (See Parker, J. M., assignor.)						
Low, A. H., Bullion, Pa. Machine for pumping	202,841	Apr. 23	1078	308	13	759
Lowery, J., *et al.* (See Challinor, D., assignor.)						
Lubin, L. T. J., Boston, Mass. Truss	202,842	Apr. 23	1078	308	13	759
Lubin, L. T. J., Boston, Mass. Truss	202,843	Apr. 23	1080	308	13	759
Lucasse, A., and J. A. Newell, Kalamazoo, Mich. Pump	202,659	Apr. 23	884	254	13	735
Lufkin, R. H., Chelsea, Mass. Leather-folding machine	202,844	Apr. 23	1081	309	13	760
Lynch, C. D., Detroit, Mich. Lubricator	202,736	Apr. 23	958	{275 / 276}	13	744
Lamb, W. M., Stanardsville, Va. Tool	203,052	Apr. 30	1296	376	13	792
Lawrence, E., Hyde Park, England. Spike	202,952	Apr. 30	1202	347	13	779
Leach, E. E., Cedar Rapids, Iowa. Combined anvil and vise	203,167	Apr. 30	1416	413	13	807
Le Conte, J., *et al.* (See Perkins, G. H., assignor.)						
Lee, A., Charleston, Ill. Harrow and cultivator combined	203,053	Apr. 30	1297	376	13	792
De Lubez, P. A. V. (See Atkinson, J., assignor.)						
Lipsey, A. B., West Hoboken, N. J. Ore-crusher	203,054	Apr. 30	1298	377	13	793
Locke, S. D., Hoosick Falls, N. Y. Grain-binder	203,168	Apr. 30	1417	{413 / 414}	13	807
Lucas, J. H., Hornellsville, N. Y. Carpet-stretcher	203,055	Apr. 30	1298	377	13	792
Lu Gar, J. B. (See Murphy, P. L., assignor.)						
Langer, W. W., Ananosa, Iowa. Nut-lock	203,169	Apr. 30	1420	414	13	807
Lysaght, J. (See Nightengale, W. O., assignor.)						
Lytle, W. F. (See Finley, J. R., assignor.)						
La Cour, P., Copenhagen, Denmark. Isochronous and synchronous movement for telegraphic and other lines	203,423	May 7	195	56, 57	13	847
La Dow, C. (See Johnson, M., assignor.) (Reissue.)						
Lalor, T., assignor, by mesne assignments, to W. F. Beasley, Baltimore, Md. Indicator-lock. (Reissue)	8,212	May 7	303	87	13	862
Lalor, T., assignor, by mesne assignments, to W. F. Beasley, Baltimore, Md. Register for indicator-locks. (Reissue)	8,213	May 7	305	87	13	862
Lamb, W., Green Bay, Wis. Log-carriage gear for saw-mills	203,467	May 7	245	71	13	854
Lane, A. W., Philadelphia, Pa. Window-shade	203,468	May 7	246	71	13	854
Lane, D., Montpelier, Vt. Saw-mill dog	203,469	May 7	247	71	13	854
Larson, F., and F. D. Livermore, Rochester, Minn. Sleigh-knee	203,470	May 7	248	71	13	854
Law, J. W., Bloomington, Ill. Motor for operating pumps	203,280	May 7	45	14	13	836
Law, J. W., Bloomington, Ill. Draw-bar for street-cars	203,281	May 7	45	14	13	836
Leach, C. B., *et al.* (See Maranville, G., assignor.)						
Leaman, S. (See Buzzard and Snyder, assignors.)						
Leonard, C. L. (See Dollason and Leonard.)						
Lindemann, O., Edgewater, N. Y. Fountain-cup for animal-cages. (Reissue)	8,219	May 7	310	89	13	863
Linley, E. H. (See Milligan, J. F., assignor.)						
Livermore, F. D. (See Larson and Livermore.)						
Livingston & Co., W. (See Schupp, M., assignor.)						
Locke, E. A., assignor to Benedict & Burnham Manufacturing Company, Waterbury, Conn. Globe-holder for gas-burners, &c	203,471	May 7	248	72	13	854
Locke, S. D., Hoosick Falls, N. Y. Hop-picking machine	203,351	May 7	118	35	13	836
Longnecker, A. P. (See McCarren, J. H., assignor.)						
Loring, D. B., Boston, Mass. Machine for making horseshoe-nails	201,282	May 7	46	14	13	836
Loughran, T., New York, N. Y. Crockery pitcher	203,472	May 7	249	72	13	855
Lovejoy, D. B., Reading, Mass. Hair-brush	203,281	May 7	49	15	13	837
Luther, J., *et al.* (See Colbrook, C. H., assignor.)						
Lyon, N. (See Robinson, A. S., assignor.)						
Landers, Frary & Clark. (See Mosman and Webb, assignors.)						
Lane, C. M., and M. C. Franklin, Lockhart, Tex. Saddle-tree fork	203,636	May 14	420	120	13	885
Lane, J. S., Akron, Ohio. Combined clutch and brake of hoisting-drums for elevators, &c	203,744	May 14	546	154	13	901
Lane, W. J., Millbrook, N. Y. Measuring-faucet	203,627	May 14	421	120	13	886
Langford, C. F., Brooklyn, N. Y. Seam of boots and shoes. (Reissue)	8,228	May 14	620	173	13	909
Laustrom, E., assignor to J. G. Isham and R. F. Hughes, Cincinnati, O. Artificial slate-pencil	201,549	May 14	353	.....	13	877
Leach, D. R., Pike, N. Y. Portable fence	203,628	May 14	422	121	13	886
Leger, E., Chicago, Ill. Show-stand	203,629	May 14	423	121	13	886
Leverty, A., Bridgeport, Conn. Stench-valve for wash-basins	203,745	May 14	547	155	13	901
Lewis, J. H., Detroit, Mich. Harvester-rake	203,630	May 14	423	{121 / 122}	13	886

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Lewis, W. O., Brooklyn, N. Y. Telegraph-pole	203,746	May 14	548	155	13	901
Lewis, W. O., Brooklyn, N. Y. Electro-magnetic watchman's time-check	203,747	May 14	549	155	13	902
Livingston, F., Newark, N. J. Machine for sharpening pencils	203,550	May 14	353	100	13	877
Lockwood, D. C., assignor to Rubber and Celluloid Harness Trimming Company, Newark, N. J. Martingale-ring	203,631	May 14	425	122	13	886
Luthy, A., New York, N. Y., assignor, by mesne assignments, to K. Hutter. Bottle-stopper fastener. (Reissue)	8,234	May 14	627	174	13	910
Ladd, A. W. P., San Francisco, Cal. Self-tapping can-funnel	204,924	May 21	745	214	13	934
Ladow, J. S., Mechanicsville, N. Y. Water-wheel gate	204,050	May 21	860	232	13	951
Leach, E. E. (See Canedy and Leach.)						
Leavitt, J. B. D., Lebanon, N. H. Planing-machine	204,056	May 21	886	254	13	952
Leland, E. A., assignor, by mesne assignments, to T. C. Miles, New York, N. Y. Bending plumbers' traps	203,842	May 21	660	187	13	923
Lescale, J. M., Paincourtville, La. Fire-escape	204,057	May 21	887	254	13	952
Levin, W., New York, N. Y. Machine for painting canvas	203,843	May 21	661	188	13	923
Lewis, W., Walpole, Mass. Device for folding cotton batting or wadding	204,058	May 21	888	255	13	952
Liddell, M. J., *et al.* (See Button, A., assignor.)						
Lindsay, J., *et al.* (See Hyde, D., assignor.)						
Lindsay, W. G., *et al.* (See Hyde, D., assignor.)						
Locke, E. A. (See Buck, D. A. A., assignor.)						
Longworth, L. R., Cincinnati, Ohio. Electric candle	203,844	May 21	662	188	13	923
Lucas, J. J., Bellville, Ill. Fire-escape ladder	204,059	May 21	889	255	13	952
Luse, D. and D. F., Centre Hall, Pa., assignors, by mesne assignments, to Hoosier Drill Company, Milton, Ind., and J. and J. A. Campbell, Harrison, Ohio. Corn-planter. (Reissue)	8,245	May 21	967	276	13	962
Luse, D. F. (See Luse, D. and D. F.) (Reissue.)						
La Dow, C. (See Crane, E., assignor. (Reissue.)						
Lalance and Grosjean Manufacturing Company. (See Grosjean, F., assignor.)						
Landon, A. G., and B. Decker, Troy, Pa. Trace-buckle	204,342	May 28	1209	344	13	996
Lanston, T., Washington, D. C. Sewing-machine table	204,157	May 28	1016	289	13	971
Larkin, J. (See McCaffrey and Larkin.)						
Letalle, P., Paris, France. Running-gear for vehicles	204,343	May 28	1209	345	13	996
Lewis, C. J. (See Able, A. F., assignor.)						
Lewis, E., and W. A. Maloney, Oil City, Pa., assignors of one-third interest to T. M. King. Stand-pipe	204,344	May 28	1210	345	13	996
Lewis, J. L., Pittsburg, Pa. Power-press	204,158	May 28	1018	289	13	972
Lockwood, B. H. (See Schade and Lockwood.)						
Longyear, J., and D. W. Clark, Grass Lake, assignor of one-third interest to M. M. Seymour, Leslie, Mich. Wind-engine	204,345	May 28	1212	346	13	996
Lunger, M. V., Philadelphia, Pa. Convertible chair	204,346	May 28	1212	346	13	997
Lyons, M. F., New York, N.Y. Bridge-tile for fire-proof buildings	204,347	May 28	1213	346	13	997
Labar, J. (See Rice and Labar.)						
Lamb Knitting Machine Manufacturing Company. (See Denzler F., assignor.)						
Lamb, R. (See Brown, D. F., assignor.)						
Langdon, W. H. (See Ganoung and Langdon.)						
Lawrence, H. (See Frese, B., assignor.)						
Lee, T. L., Paducah, Ky. Dredging-machine	204,584	June 4	155	51	13	1035
Locke, S. D., Hoosick Falls, N. Y. Change-speed gear	204,585	June 4	157	51	13	1035
Lorenze J., and F. W. Bender, Hamilton, Ohio. Refrigerator-building	204,586	June 4	158	51, 52	13	1035
Lowry, J. B., Springfield, Ill. Nut-lock	204,587	June 4	159	52	13	1035
Loyd, W., Allegheny, Pa. Bale-tie	204,588	June 4	160	52	13	1035
Ludlow, S. W., Cincinnati, Ohio. Vehicle spring and axle	204,589	June 4	161	52	13	1035
Lyon, J. C., assignor of one-half interest to D. S. Brown, New York, N. Y. Braid-holder	204,495	June 4	71	25	13	1022
Landers, Frary & Clark. (See Webb, R. L., assignor.)						
Lanphear, E. T., Phenix, R. I. Spinning-ring and traveler	204,832	June 11	434	127	13	1073
Lausten, A. C., and A. B. Lawther, Chicago, Ill. Mat for oil-presses	204,742	June 11	331	100	13	1062
Lawrence, J. N., Williamsburg, N. Y. Adjustable dummy	204,833	June 11	435	127	13	1073
Lawson, P. B., Cold Spring, N. Y. Centrifugal machine	204,834	June 11	436	128	13	1073
Lawther, A. B. (See Lausten and Lawther.)						
Lee, C. B. (See Jenkins, C. C., assignor.)						
Lewis, A., Downer's Grove, Ill. Hand-power	204,674	June 11	257	80	13	1052
Lieb, J. W., East Newark, N. J. Fastening device for traveling-bags	204,743	June 11	332	100	13	1062
Lackmann, H. (See Deveron and Lackmann.)						
Lamson, J., and J. Brotherton, Waverly, Iowa. Vehicle-top adjuster	205,104	June 18	724	215	13	1115
Lane, J., Chicago, Ill. Plow	204,902	June 18	527	154	13	1089
Lane, J., Chicago, Ill. Vehicle-wheel hub	204,903	June 18	527	154	13	1089
Large, A. T., Chicago, Ill. Coffin-fastening	204,904	June 18	528	154	13	1089
Largent, J. J., Peoria, Ill. Clothes-drier	205,106	June 18	725	216	13	1115
Laude, J., Monticello, Ark. Seed-planter	204,983	June 18	607	178	13	1099
Lee, A., Massillon, Ohio. Gate	205,107	June 18	726	216	13	1115
Lent, B., Peekskill, N. Y. Lock-hinge	204,984	June 18	608	178	13	1099
Light, E. B., Denver, Col. Leather whip	204,985	June 18	609	178	13	1099
Locke, S. D., Hoosick Falls, N. Y. Wire-cutter	205,108	June 18	728	217	13	1116
Lockhart, C. (See Connelly, J. H., and T. E., assignors.)						
Lockwood, R., Boston, Mass. India-rubber surgical tube	204,905	June 18	529	154	13	1089
Long, N. S., Marysville, Ohio. Butter-press	205,109	June 18	730	217	13	1116
Loth, R., Bridgeport, Conn. Blind-slat adjuster	204,986	June 18	610	179	13	1100
Luce, G. D., assignor of one-half interest to O. J. Flagg, New Orleans, La. Fiber-cleaning machine	204,906	June 18	530	155	13	1089
Luehrs, M. D., Cleveland, Ohio. Screw-swaging machine	204,907	June 18	530	155	13	1089
Lunger, W. W., Ananosa, assignor of one-half interest to J. Heacock, Jones county, Iowa. Slip for neck-yokes	205,110	June 18	731	217	13	1116
Lacey, J. J., San Francisco, Cal. Device for opening and closing hatchway-doors	205,192	June 25	832	247	13	1134
Laine, H., Paris, France. Ice-locomotive	205,194	June 25	834	247	13	1134
Law, G. M. (See Davis, A. S., assignor.)						
Lefever, D. M., Syracuse, N. Y. Breech-loading fire-arm	205,193	June 25	833	247	13	1134
Levan, J. W. (See Eckert and Levan.)						
Lincoln, C. T., *et al.* (See Parker, L. H., assignor.)						
Lloyd, D. D. (See McCauley, R. E., assignor.)						
Loom Picker Company. (See Garland, J. G., assignor.)						
Loring, D. B., Boston, Mass., assignor, by mesne assignments, to J. E. Wheeler, and J. E. and C. W. Russell, trustees. Machine for making horseshoe-nails. (Reissue)	8,302	June 25	1117	330	13	1172
Loudon, J. R. (See Workman, R. W., assignor.)						
Lueken, D. H., St. Louis, Mo. Copy-book	205,195	June 25	835	248	13	1135
Magers, J., Gervais, Oreg. Bed-bottom	198,892	Jan. 1	173	49	13	36

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Manahan, W. A. (See Desha and Manahan.)						
Marsden, S. L., assignor to Blake Crusher Company, New Haven, Conn. Stone-breaker	198,849	Jan. 1	127	36	13	28
Marsh, W. Z., Brooks, Iowa. Weather-board gage	198,772	Jan. 1	52	14	13	16
Marston, F. W. (See Jones and Marston.)						
Mast, W. G. (See Dodge and Mast.)						
Mather, T. W., assignor, by mesne assignments, to Automatic Boiler and Engine Company, New Haven, Conn. Steam-boiler feeder	198,850	Jan. 1	128	37	13	28
Mathews, W. L., Imlay City, Mich. Plow	198,773	Jan. 1	53	14	13	16
Mathias, L., Toledo, Ohio. Pedal attachment for pianos	198,893	Jan. 1	174	50	13	36
McIlryde, D. S., Good Hope, Miss. Fish-trap	198,894	Jan. 1	174	50	13	36
McConnell, J. A. and W. V., Crocket, Texas. Churn	198,806	Jan. 1	88	24	13	22
McConnell, W. V. (See McConnell, J. A. and W. V.)						
McManus, M. B., Titusville, Pa. Sand-pump reel	198,774	Jan. 1	53	14	13	16
Meharry, A., La Fayette, Ind. Portable derrick	198,895	Jan. 1	175	50	13	36
Messenger, C., Cleveland, Ohio. Sash-balance	198,896	Jan. 1	176	50	13	36
Meyer, C. (See Olmstead, J. A., assignor.)						
Middleton, A. H., Philadelphia, Pa. Ladder	198,897	Jan. 1	177	51	13	36
Milbank, G., Chillicothe, Mo. Middlings purifying and separating machine	198,775	Jan. 1	54	14, 15	13	16
Milco, G. N., Stockton, Cal. Insect-powder injector	198,807	Jan. 1	89	24	13	22
Miller, J., Petersburg, and W. B. Miller, Altoona, Pa. Shaft-tug	198,851	Jan. 1	130	37	13	29
Miller, L., Akron, Ohio. Grain-binder	198,898	Jan. 1	179	51	13	36
Miller, L., Akron, Ohio. Grain-binder	198,899	Jan. 1	182	51, 52	13	37
Miller, W. B. (See Miller, J. and W. B.)						
Milling, H., *et al.* (See Dette, H. J. L., assignor.)						
Molloy, B. C., London, and J. D. Warren, South Kensington, England. Recovery of waste nitrous gases	198,776	Jan. 1	58	.....	13	16
Monroe, H. H., Thomaston, Me. Broadcast-seeder	198,750	Jan. 1	21	5	13	12
Morrison, R. H. D., assignor of one-half interest to J. B. Kirch, Winona, Minn. Oscillating valve for steam-engines	198,916	Jan. 1	201	57	13	39
Morrison, W. A., Fridigsburg, assignor to E. E. Spencer, parish of St. Armand, Canada. Evaporating-pan	198,900	Jan. 1	185	52	13	37
Magnus, P., New York, N. Y. Service-valve	199,079	Jan. 8	365	108	13	73
Mann, H. A., *et al.* (See Fields, C. C., assignor.)						
Mann, M. G., *et al.* (See Fields, C. C., assignor.)						
Mann, W. D., Mobile, Ala. Sleeping-car	198,991	Jan. 8	283	82, 83	13	59
Markham, D. C., Collinsville, N. Y. Vehicle-spring equalizer	198,948	Jan. 8	238	68	13	52
Marsh, F. E. (See Lord, T. C., assignor.)						
Marsh, G. (See Marsh, L. and G.)						
Marsh, L., Milton, and G. Marsh, Lewisburg, Pa. Pottery-kiln	199,080	Jan. 8	366	108	13	74
Matthews, E. G., Oakham, Mass. Combined cultivator and seed-drill	199,081	Jan. 8	366	{108 {109	13	74
McBride, J., Des Moines, Iowa. Plow attachment	199,082	Jan. 8	369	109	13	74
McCormick, J. R., Georgetown, Texas. Gang and sulky plow	199,083	Jan. 8	369	{109 {110	13	74
McCollum, A. J., and T. Seely, assignors to themselves and G. D. Emery, Indianapolis, Ind. Saw-mill-carriage attachment	199,084	Jan. 8	371	110	13	74
McCurdy, J. B., Joplin, Mo. Furnace for smelting lead	198,949	Jan. 8	238	68	13	52
McGill, G. W., New York, N. Y. Metallic fastener	199,085	Jan. 8	372	110	13	75
McQuesten, L. B. (See Dunn, W., assignor.)						
Merriman, J. E., West Meriden, Conn. Drawer-pull	199,086	Jan. 8	372	110	13	75
Metcalfe, S., Poquonock, Conn. Wool-combing machine	198,950	Jan. 8	240	68, 69	13	52
Metzger, J., Indianapolis, Ind. Bottle-stopper holder	198,992	Jan. 8	285	83	13	60
Miller, W. J., *et al.* (See Bullock, E. K., assignor.)						
Moffatt, W., assignor of one-half interest to B. W. Short, Hornellsville, N. Y. Hame-fastener	198,951	Jan. 8	241	69	13	53
Moodie, E. L., New York, N. Y., assignor of one-half interest to M. A. Parker, Jersey City, N. J. Medicated soap	199,087	Jan. 8	373	.....	13	75
Moore, H. B., Brooklyn, N. Y. Pulverizing-machine	198,993	Jan. 8	286	83	13	60
Moore, H. B., Brooklyn, N. Y. Pulverizing-machine	198,994	Jan. 8	287	84	13	60
Moore, H. R., Norwalk, Ohio. Organ-stop action	199,090	Jan. 8	376	{111 {112	13	75
Moore, J. A., Indianapolis, Ind. Cabinet-desk	199,089	Jan. 8	375	111	13	75
Moore, J. P., De Moesville, Ky. Millstone-balancing device	199,088	Jan. 8	374	111	13	75
Moore, R. R., Modesto, Cal. Feeder for thrashing-machines	198,995	Jan. 8	288	84	13	60
Morgan, J. C., Philadelphia, Pa. Ventilator for mines, cellars, and buildings	199,091	Jan. 8	378	112	13	75
Morgan, T., assignor of one-third interest to W. H. Green, Marquette, Mich. Wagon-tongue support	199,092	Jan. 8	379	112	13	75
Morris, B. F., Saltillo, assignor of one-half interest to T. F. Swift, Scott's Hill, and W. H. Strickland, Decatur county, Tenn. Reversible plow	199,093	Jan. 8	379	113	13	76
Morris, W. B., Collinsville, Cal. Mill-pick	198,996	Jan. 8	288	84	13	60
Moses, W., Buffalo, N. Y. Lubricator	198,952	Jan. 8	242	69	13	53
Musgrove, J., Wood Haven, assignor to Lalance & Grosjean Manufacturing Company, New York, N. Y. Candlestick	199,094	Jan. 8	380	113	13	76
Mahoney, J. W., Bishop Creek, Cal. Plow	199,215	Jan. 15	519	152	13	97
Makiolczyk, A., New York, N. Y. Buckle for shoes, gloves, &c	199,216	Jan. 15	519	153	13	97
Manning, W. N., Rockport, Mass. Pivot-turning attachment	199,217	Jan. 15	520	153	13	97
Marks, A. J., Beaver, Pa. Derrick for hay-stackers	199,301	Jan. 15	604	176	13	110
Mather, J. H., Chicago, Ill. Eyeglass for watch-makers	199,218	Jan. 15	521	153	13	97
McCeney, H. C., Washington, D. C. Horseshoe	199,302	Jan. 15	604	177	13	110
McConnell, E., assignor of one-half interest to J. M. Patterson, Lexington, Va. Nut-lock	199,303	Jan. 15	606	177	13	110
McConway, W., Pittsburg, Pa. Car-brake shoe	199,161	Jan. 15	467	138	13	89
McCray, T. H. (See Caden and McCray.)						
McKay, G., Cambridge, Mass. Jack for boots and shoes	199,304	Jan. 15	607	177	13	110
McNall, F. E., West Henrietta, N. Y. Grain-binder	199,219	Jan. 15	521	{153 {154	13	97
McNeill, J., Chicago, Ill. Metal barb for fences	199,162	Jan. 15	468	138	13	89
Mead, W. S., New York, N. Y. Elastic tug-holder	199,163	Jan. 15	469	138	13	89
Meek, H. D. (See Hipkins, W., assignor.)						
Menge, J., Point Michel, La. Dredging-machine	199,305	Jan. 15	607	177	13	110
Miles, C. W., *et al.* (See Zimmerman, A. W., assignor.)						
Millings, R. C., Charleston, S. C. Revolving advertising-case	199,306	Jan. 15	609	178	13	111
Morgan, C. H., Worcester, Mass. Furnace for heating iron and steel bars	199,164	Jan. 15	469	138	13	89
Moschowitz, H., *et al.* (See Jasper, W., assignor.)						
Moschowitz, S. M., *et al.* (See Jasper, W., assignor.)						
Munyon, S. (See Wolle and Munyon.)						

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Mackintosh, E. D., Brooklyn, N. Y. Top-spinning device	199,559	Jan. 22	872	255	13	161
Marks, J., *et al.* (See Long, N. H., assignor.)						
Martin, P., Medford, Mass. Oil-stove	199,456	Jan. 22	767	{224 {225	13	144
Marx, F. (See Hubmann, G., assignor.)						
Matheny, C., Wintersville, Ind. Window-screen	199,560	Jan. 22	873	255	13	151
McCarty, W. F. C. (See Hadley, A. K., assignor.)						
McCollum, J. C., Los Angeles, Cal. Adjustable stiff crupper for harness	199,561	Jan. 22	874	256	13	161
McDonald, A. E., assignor of one-half interest to J. R. Sloane, Hartford, Conn. Knife scourer and polisher	199,457	Jan. 22	768	225	13	144
McLinden, J. D., New York, N. Y. Ventilating-flue cap	199,458	Jan. 22	769	225	13	144
McMurtrie, D., Mocsic, Pa. Coal and rock drilling machine	199,377	Jan. 22	689	202	13	131
Meader, G., Prairie Center, Ill. Field corn-husker	199,376	Jan. 22	688	202	13	131
Merchant, I., Bloomington, Ill. Street-pavement	199,562	Jan. 22	874	256	13	161
Michigan Bolt and Nut Works. (See Hill, G. B., assignor.)						
Moore, C. R., *et al.* (See Alexander, A., assignor.)						
Morgan, C. H., Worcester, Mass. Rolling-mill	199,459	Jan. 22	769	225	13	144
Morgans, W. T., Liberty, N. Y. Hand-stamp	199,460	Jan. 22	770	226	13	144
Moss, J. H., assignor of one-half interest to B. C. Bledsoe, Collierseville, Tenn. Vehicle-wheel	199,563	Jan. 22	875	256	13	161
Mallory, W. H., assignor to American Propeller Company, Bridgeport, Conn. Spar-torpedo boat	199,841	Jan. 29	1176	345	13	215
Manning, J. (See Haas and Manning.)						
Marks, L., San Francisco, Cal. Compound for producing illuminating-gas	199,654	Jan. 29	1000	.....	13	188
Marston, F. W. (See Jones and Marston.)						
Mattocks, T. S., and J. Wise, Logan, Ohio. Insole for boots and shoes	199,842	Jan. 29	1177	345	13	215
Mattson, M., New York, N. Y. Enema-syringe	199,843	Jan. 29	1177	346	13	215
Maull, J. P., assignor of one-half interest to L. C. Maull, St. Louis, Mo. Hand-binding harvester	199,655	Jan. 29	1000	291	13	188
Maull, L. C. (See Maull, J. P., assignor.)						
Mayo, O., Evanston, Ill. Treating paper to render it incombustible	199,656	Jan. 29	1002	.....	13	188
McAncepey, J., Philadelphia, Pa. Securing rotary dashers in churns	199,657	Jan. 29	1002	292	13	188
McAvoy, H. L., assignor to D. L. Bartlett and H. W. Robbins, Baltimore, Md. Fire-plate for stoves	199,844	Jan. 29	1179	346	13	215
McChesney, R., Ilion, assignor of one-third interest to T. B. Davis, New York, N. Y. Scroll-sawing machine	199,845	Jan. 29	1180	346	13	215
McCrory, F. M., Goshen, Ind. Bellows	199,846	Jan. 29	1181	346	13	216
McCurdy, D., Ottawa, Ohio. Gate	199,729	Jan. 29	1069	313	13	198
McKay, F. C. D., Paterson, N. J. Curtain-fixture	8,064	Jan. 29	1227	360	13	223
McLaren, J., Albany, N. Y. Wrench. (Reissue)	199,846	Jan. 29	1183	347	13	216
Medart, P., assignor of one-third interest to G. W. Fisher, St. Louis, Mo. Belt-pulley	199,849	Jan. 29	1184	347	13	216
Merrell, H. B., *et al.* (See Wight, P. B., assignor.)						
Middleditch, J., West Chester, N. Y. Instrument for administering balls to horses	199,847	Jan. 29	1182	347	13	216
Miller, A., and C. Worley, St. Louis, Mo., assignors of one-half interest to J. Finzer & Brothers, Louisville, Ky. Finishing tobacco-plugs. (Reissue)	8,060	Jan. 29	1222	359	13	222
Miller, A. L., New York, N. Y. Car-coupling	199,658	Jan. 29	1003	292	13	188
Miller, H. H., Lyndonville, Vt. Machine for dressing staves	199,730	Jan. 29	1069	313	13	199
Miller, J. K., Pleasant Hill, Mo. Clothes-drier	199,731	Jan. 29	1071	313	13	199
Miller, W. A. L., San Francisco, Cal. Buttons, &c	199,850	Jan. 29	1185	347	13	216
Milligan, J. F., assignor to J. W. Branch, St. Louis, Mo. Circular saw	199,851	Jan. 29	1185	348	13	216
Milligan, J. F., assignor to J. W. Branch, St. Louis, Mo. Circular saw	199,852	Jan. 29	1165	348	13	216
Mills, J. J. (See Stimson, A. A., assignor.)						
Milné, A., and A. Jourdain, Newark, N. J. Watch-crown	199,732	Jan. 29	1072	314	13	199
Moesta, J. L., Pittsburg, Pa. Reversible knob-latch	199,853	Jan. 29	1186	348	13	217
Mongovan, A. J. (See Sterzing, E., assignor.)						
Moore, J. C., Philadelphia, Pa. Odorless garbage-receiver	199,734	Jan. 29	1073	314	13	199
Moore, M., Whippany, N. J. Powder-duster for destroying insects	199,733	Jan. 29	1072	314	13	199
Morris, G. E., and C. W. Gregory, Danville, Ill. Rail-joint. (Reissue)	8,059	Jan. 29	1221	359	13	222
Mott Iron Works, J. L. (See Demarest, J., assignor.)						
Machotte, E. V., Jr. (See Pearson, R. P., assignor.)						
Marshall, W. V., Janesville, Wis. Rule for making straight and circular lines	199,917	Feb. 5	32	10	13	237
Maxfield, C. P., Fairhaven, assignor to E. T. Covell, New Bedford, Mass. Metallic can	199,918	Feb. 5	33	10	13	237
Mayer Brothers and Haehnel. (See Haehnel, F., assignor.)						
McAdams, G., Winchester, Ind. Stove-pipe shelf and utensil stand	199,919	Feb. 5	34	10	13	238
McComb, M., Pittsburg, Pa. Sash-fastener	199,920	Feb. 5	182	58	13	261
McCord, W., Sing Sing, N. Y. Vehicle-spring	200,072	Feb. 5	183	58, 59	13	261
McCully, R., Philadelphia, Pa. Car registering apparatus	200,073	Feb. 5	185	59	13	262
McCully, R., Philadelphia, Pa. Car registering apparatus	200,074	Feb. 5	186	59	13	262
McCully, R., Philadelphia, Pa. Car registering apparatus	200,075	Feb. 5	187	60	13	262
McCully, R., Philadelphia, Pa. Car registering apparatus	200,076	Feb. 5	190	60	13	262
McCully, R., Philadelphia, Pa. Railway-conductor's alarm and fare-registering punch	200,077	Feb. 5	191	60	13	262
McDonald, J. W., Woburn, Mass. Machine for unhairing and scouring hides and skins	200,078	Feb. 5	232	71	13	269
McGarry, T. J., Cleveland, Ohio. Vessel for storing and transporting oils. (Reissue)	8,071	Feb. 5	95	31	13	248
McGuire, D., New Garden, Mo. Animal-trap	199,987	Feb. 5	193	.....	13	263
McManus, R., Ansonia, Conn. Tinning and finishing sheet copper	200,079	Feb. 5	35	11	13	238
McNett, L. F., New York, N. Y. Corset-clasp	199,921	Feb. 5	35	11	13	238
McPherson, J. (See Arendell, R. L., assignor.)						
Meaker, J. W., Chicago, Ill., assignor of two-thirds interest to H. B. Merrell, Morristown, N. J., and T. Ferguson, Detroit, Mich. Device for receiving and delivering coin and detecting counterfeit coin	200,080	Feb. 5	193	61	13	263
Medart, M., Belleville, Ill. Step-ladder	199,922	Feb. 5	36	11	13	238
Mellor, H. M., Nottingham, England. Loop-wheel for knitting-machines	199,923	Feb. 5	36	12	13	238
Menz, G. W. (See Shaw and Menz.)						
Merino Shoe Company. (See Palmer and Houghton, assignors.) (Reissue.)						
Merrell, H. B., *et al.* (See Meaker, J. W., assignor.)						
Merryman, A. C. (See Patrick, W. R., assignor.)						
Michell, M. P., Delta, Iowa. Barbed fence-wire	199,924	Feb. 5	37	12	13	238
Miles, T. C., *et al.* (See Leland, E. A., assignor.)						
Miller, L., *et al.* (See Verniaud, C., assignor.)						
Millington, I. B., Columbia, Pa. Hydraulic ram	200,081	Feb. 5	194	61	13	263
Milsted, W. M., New York, N. Y. Meter-governor	199,925	Feb. 5	38	12	13	238
Mitchell, J. A., Maysville, Ky. Device for catching fish	199,926	Feb. 5	39	13	13	238
Mocsiein, V. (See Blackburn and Mocsiein.)						
Morrison, H. A. (See Valentine and Morrison.) (Reissue.)						

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Murraine, E., Rochelle, Ill. Horseshoe	199,927	Feb. 5	40	13	13	229
Mackall, R. W., Washington, D. C. Perforating-machine	200,142	Feb. 12	261	78	13	292
Macomber, W. C., Baltic, Conn. Flier for speeders and fly-frames	200,321	Feb. 12	442	131	13	309
Mahony, E. H., Boston, Mass. Folding chair	200,211	Feb. 12	325	98	13	292
Marshall, E. L., Cleveland, Ohio. Thill-coupling	200,143	Feb. 12	262	78	13	282
Mauser, P., Oberndorf, Würtemberg. Breech-loading fire-arm	200,322	Feb. 12	443	131	13	309
McCormick, M. T., Petrolia, Pa. Drop-weight for oil-wells	200,144	Feb. 12	262	75	13	282
McDermott, P., and J. P. Hyde, Tremont, N. Y. Preventing the siphoning of traps of water-closets	200,323	Feb. 12	446	132	13	309
McDonald, J. S., Chicago, Ill. Book of carbon-paper	200,145	Feb. 12	263	79	13	282
McGloghlon, W. D., London, Ontario, Canada. Calendar-dial for clocks and watches	200,212	Feb. 12	326	98	13	292
Meissner, J., Buffalo, N. Y. Reed-organ	200,146	Feb. 12	265	79	13	282
Mekenney, A., Middleborough, Mass. Fertilizer-distributer	200,324	Feb. 12	447	132	13	309
Merrill, E. H., assignor of one-half interest to L. W. Case, Winsted, Conn. Wagon-seat spring	200,147	Feb. 12	265	79	13	282
Merrill, R. S., Boston, Mass. Picture-hook	200 213	Feb. 12	326	98	13	292
Meth, J. E., and W. Lindemann, Grand Island, Neb. Car-axle-box lid	200,325	Feb. 12	448	132	13	309
Miller, W. E., New Haven, Conn. Carriage-axle	200,214	Feb. 12	327	98	13	292
Mohler, C. F., and J. B., Pekin, assignors of one-half interest to A. J. Hodges, Peoria, Ill. Casting wheels	200,326	Feb. 12	449	132	13	310
Mohler, J. B. (See Mohler, C. F., and J. B.)						
Moore, D. S., Chicago, Ill. Unloading rails and ties from cars	200,148	Feb. 12	266	79	13	282
Moore, J., Salisbury, Mo. Sod-cutter and cotton-chopper	200,327	Feb. 12	449	133	13	310
Morris, J. G., assignor of one-half interest to W. H. Cremins, Chicago, Ill. Corn shelling and grinding machine	200,215	Feb. 12	328	99	13	292
Morton, A. (See Wood and Morton.)						
Moss, J. C., New York, N. Y. Parallel ruler	200,216	Feb. 12	329	99	13	292
Moss, J. C., assignor to Photo Engraving Company, New York, N. Y. Ruling-pen	200,328	Feb. 12	450	133	13	310
Mudgett, J. H., Camanche, Iowa. Fence-post	200,217	Feb. 12	331	99	13	292
Mallory, C. M., assignor to M. Orendorf, Wauseon, Ohio. Hay-elevator	200,465	Feb. 19	594	175	13	341
Mason, A. (See Hart, G. E., assignor.)						
McAdams, J., Brooklyn, N. Y. Paper-ruling machine	200,553	Feb. 19	681	200	13	353
McAdams, W., *et al.* (See Smallzig, W. C., assignor.)						
McAnespey, J., Philadelphia, Pa. Folding stand for rotary churns	200,403	Feb. 19	534	158	13	331
McCollum, W. W. (See Daughtrey, W. T., assignor.)						
McConnell, A. E., New Orleans, La. Buckle	200,466	Feb. 19	595	175	13	341
McCully, R., Philadelphia, Pa. Key-fastener	200,404	Feb. 19	534	158	13	331
McEachren, J. D., Galt, Ontario, Canada. Machine for cutting veneers	200,467	Feb. 19	596	176	13	341
McEachren, J. D., Galt, Ontario, Canada, assignor of one-half interest to D. H. Burrell, Little Falls, N. Y. Barrel	200,468	Feb. 19	597	176	13	341
McGlaulin, E. W., Providence, R. I. Button	200,554	Feb. 19	682	200	13	354
McGraw, P. H. (See Blohm, C. A., assignor.)						
McLean, F. J. (See Borgia, F. J., assignor.)						
Mendenhall, C., Cincinnati, Ohio. Feed-water regulator	200,405	Feb. 19	535	158	13	331
Mentzer, W. G., Garrett, Ind., assignor of two-thirds interest to J. S. Smith and H. M. Jones. Gate	200,555	Feb. 19	683	201	13	354
Meredith, E., Batavia, Ill. Converting reciprocating into rotary motion	200,556	Feb. 19	684	201	13	354
Merritt, C. D., *et al.* (See Pine, J. W., assignor.)						
Metais, J., Chippewa Falls, Wis. Washing-machine	200,469	Feb. 19	598	176	13	341
Mettler, J. I., and W. J., Mendota, Ill. Tile-laying machine	200,557	Feb. 19	684	201	13	354
Mettler, W. J. (See Mettler, J. I. and W. J.)						
Mildren, E. J. (See Morrison, Mildren, and Moore.)						
Miller, J. W. (See Duffee, M. J., assignor.)						
Mills, J. Y., *et al.* (See Quincy, E. W., assignor.)						
Mills, W. H., *et al.* (See Quincy, E. W., assignor.)						
Minshull, J. E., Middletown, N. Y. Tube expander and trimmer	200,558	Feb. 19	685	201, 202	13	354
Moon, W. S., Pleasant Grove, Ga. Plow	200,559	Feb. 19	687	202	13	354
Moore, J. D., Cambridge, Iowa. Copy-holder	200,560	Feb. 19	687	202	13	354
Moore, J. L., Bridgeport, Conn. Elastic garter	200,561	Feb. 19	688	202	13	355
Moore, M. (See Morrison, Mildren, and Moore.)						
Moore, W. D., *et al.* (See Caum, E. L., assignor.) (Reissue.)						
Morrison, T. C., Brady's Bend, E. J. Mildren, and M. Moore, Black Lick, Pa. Forge	200,562	Feb. 19	689	203	13	355
Morton, H. (See Heim, J. H., assignor.)						
Mundell & Co., J. (See Partridge, E. F., assignor.)						
Muntzenberger, A., and H. M. Underwood, Kenosha, Wis.; said Underwood assignor to said Muntzenberger. Machine for washing casks	200,470	Feb. 19	599	176	13	341
Maddocks, N. P., Lawrence, assignor to G. B. Reed, and, by mesne assignments, to G. A. Durrell, Cambridge, Mass. Pie-turner	200,742	Feb. 26	894	263	13	393
Magruder, T. P. W., Rushville, Ill. Gate-latch	200,660	Feb. 26	811	239	13	381
Maitland, T. (See Riley, W. P., assignor.)						
Marple, C. S., Chicago, Ill. Manufacture of flour	200,621	Feb. 26	766	225	13	375
Mason, H. H. (See Emerson, R., assignor.)						
Massey, J. (See Woelfel and Massey.)						
Mathews, W. B., Delta, Ala. Tether	200,620	Feb. 26	765	225	13	374
McCarthy, J., Springfield, Mass., assignor to A. Diepenbrock, New York, N. Y. Candle-stick	200,661	Feb. 26	812	239	13	381
McConnell, J., Cleveland, Ohio. Meat-broiler	200,622	Feb. 26	767	226	13	375
McCormick, C. H., *et al.* (See McCormick and Baker, assignors.)						
McCormick, L. J., and W. R. Baker, assignors to C. H. and L. J. McCormick, Chicago, Ill. Harvester-reel	200,796	Feb. 26	944	278	13	401
McCullough, R. G., Somerville, Ill. Tile or brick kiln	200,743	Feb. 26	895	263	13	393
Merriam, I. Z., Dubuque, Iowa. Adjustable buggy-top	200,797	Feb. 26	945	278, 279	13	401
Merritt, E. (See Griffin, A., assignor.)						
Messer, L., assignor to Zinn and Messer, New York, N. Y. Clasp for pocket-books. (Reissue)	8,106	Feb. 26	973	286	13	406
Meyer, J. T., Rochester, N. Y. Lubricator	200,623	Feb. 26	768	226	13	375
Michigan Stove Company. (See Dwyer and Barbour, assignors.) (Reissue.)						
Miles, W. A., Copake Iron Works, New York, N. Y. Operating charcoal-kilns	200,662	Feb. 26	812	239	13	381
Miller, J. I. (See Barnes and Miller.)						
Miller, S. P., Springfield, Ohio. Refrigerator for cooling articles under ground	200,624	Feb. 26	768	226	13	375
Miller, T., Jersey City, N. J. Ale or beer measure	200,744	Feb. 26	896	263	13	393
Millington, G. W., Wilmington, Del. Car-axle	200,798	Feb. 26	946	279	13	402
Mills, G. C., assignor to Eaton and Ayer, Nashua, N. H. Loom-shuttle	200,745	Feb. 26	897	264	13	393
Miltimore, G. W., New York, N. Y. Car-axle	200,746	Feb. 26	898	264	13	394
Morey, P. F., Oakland, Cal. Purifying coal	200,663	Feb. 26	813	.....	13	382

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Morris, H. (See Morris, H. G., assignor.)						
Morris, H. G., assignor to H. Morris, Philadelphia, Pa. By-pass for gas-works	200,799	Feb. 26	947	279	13	402
Morris, W. H. H. (See Brawley and Morris.)						
Munroe, R., Fitchburg, Mass. Screw-driver	200,747	Feb. 26	900	264	13	394
Murphy, B., Allegheny, Pa. Power mechanism for hammers	200,748	Feb. 26	900	265	13	394
Malmquist, N., assignor to himself and J. Loyd, New York, N. Y. Lift and force pump	200,923	Mar. 5	103	35	13	431
Manwaring, W. G. (See Samuelson and Manwaring.)						
Mark, M., New York, N. Y. Insect-powder blower	200,924	Mar. 5	104	35	13	431
Martens, W. L. F., College Point, N. Y. Centering device for surveyors' transits	200,836	Mar. 5	23	8	13	418
Martin, A. J., assignor to P. P. Mast & Co., Springfield, Ohio. Force-feed for grain-drills	201,029	Mar. 5	209	66	13	447
Mason, F. E., Cambridge, assignor to F. W. McCleave, Somerville, Mass. Chart for key-board musical instruments	201,030	Mar. 5	211	66	13	447
Mast & Co., P. P. (See Martin, A. J., assignor.)						
Maus, C. A., Nashville, Tenn. Liquid-cooler	200,925	Mar. 5	104	35	13	431
Maxwell, J. R. (See Cope and Maxwell.)						
McCarter, J. G., Milford, Mass. Cigar-pipe	201,031	Mar. 5	212	66	13	447
McCleave, F. W. (See Mason, F. E., assignor.)						
McCool, W. A., *et al.* (See Moltrip, J., assignor.)						
McGill, G. W., New York, N. Y. Buckle	200,867	Mar. 5	53	19	13	423
McLean, A., assignor of two-thirds interest to I. W. G. Whitney and B. Morton, Toronto, Canada. Stone preservative and renovating compound	201,032	Mar. 5	213	.....	13	447
McLeod, C. A. (See Busscy, E., assignor.)						
McNelle, A., Pentonville, England. Lumber-drier	201,033	Mar. 5	214	67	13	447
McPherson, D., Caledonia, N. Y. Grain-binder	200,868	Mar. 5	53	19	13	423
Menaar, L. A. (See Menaar and Sangster, assignors.)						
Menaar, N. A., and H. Sangster, Buffalo, N. Y., assignors to L. A. Menaar. Tea-kettle	201,034	Mar. 5	215	67	13	448
Mitchell, W. B., New York, N. Y. Transom-lifter	200,869	Mar. 5	55	19	13	423
Moltrip, J. C., assignor of two-thirds interest to W. A. McCool and F. P. Grosscup, Perrysville, Ohio. Fertilizer-dropper	200,837	Mar. 5	24	8	13	418
Moore, F. H., Boston, Mass. Picture-frame	201,035	Mar. 5	216	68	13	448
Moore, J. C., Lowell, Mich. Fire-escape	200,870	Mar. 5	57	20	13	423
Moore, J. M., Ovilla, Texas. Cotton-hoe	200,926	Mar. 5	105	35	13	431
Moore, W. N., deceased, W. A. Strong, Jr., administrator and assignor to Solar Stove Works, Joliet, Ill. Cooking-stove. (Reissue)	8,111	Mar. 5	260	82	13	454
Morey, R. E., San Francisco, Cal. Handle for fruit-boxes, &c	201,036	Mar. 5	217	68	13	448
Morgan, C. H., Worcester, Mass. Hydraulic elevator	201,037	Mar. 5	217	68, 69	13	448
Morton, B., *et al.* (See McLean, A., assignor.)						
Mosher, D. J., Norwich, N. Y. Apparatus for developing the chest	201,038	Mar. 5	219	69	13	448
Mulford, I. H., East Orange, N. J. Vehicle running-gear	200,872	Mar. 5	60	21	13	424
Mueller, H., and J. Gross, assignors of one-third interest to F. A. Korsmeyer, Decatur, Ill. Water-regulator	200,871	Mar. 5	59	20	13	424
Mullins, J. W., London, Ky. Mechanical movement	201,039	Mar. 5	220	69	13	449
Myrick, I. E., assignor of one-half interest to J. F. Hollingsworth, Cleveland, Ohio. Motor for sewing-machines	201,040	Mar. 5	220	69, 70	13	449
Manler, B. F., Green Island, N. Y. Sleeping-car	201,186	Mar. 12	367	114	13	477
Mann, D., *et al.* (See Mann, J., assignor.)						
Mann, J., assignor of one-half interest to W. A. and D. Mann, Buffalo, N. Y. Manufacturing coupling-links	201,261	Mar. 12	449	138	13	488
Mann, W. A., *et al.* (See Mann, J., assignor.)						
Manring, E., *et al.* (See Roberts, E. J., assignor.)						
Marble, W. A., New York, N. Y., assignor to Worcester Corset Company. Combined box and vase	201,116	Mar. 12	303	93	13	467
Markle, G. B., Jeddo, Pa. Coal-breaker	201,187	Mar. 12	368	115	13	478
Maus, C., Danville, Pa. Device for oiling wagon-wheels	201,259	Mar. 12	446	138	13	488
Mayer, Strouse & Co. (See Adler, M., assignor.)						
McCarthy, J., Syracuse, N. Y. Coffin-fastener	201,188	Mar. 12	369	115	13	478
McCloskey, J., New York, N. Y. Take-up for sewing-machines	201,260	Mar. 12	447	138	13	488
McConnell, J., Cleveland, Ohio. Toy pistol	201,189	Mar. 12	370	115	13	478
McCormick, C. H., *et al.* (See Baker and Withington, assignors.)						
McCormick, L. J., *et al.* (See Baker and Withington, assignors.)						
McDowell, A. S., assignor of one-half interest to A. Nittinger, Jr., Philadelphia, Pa. Tool for cutting rivets	201,262	Mar. 12	450	139	13	488
McElhany, W. G. (See Burns and McElhany.)						
McGovern, G. W., Richmond, Va. Door-knob alarm	201,117	Mar. 12	304	93	13	468
McNamara, W., assignor to Jarecki, Hayes & Co., Erie, Pa. Hydrant	201,263	Mar. 12	451	139	13	489
Meaker, J. W., Chicago, Ill., assignor of two-thirds interest to H. B. Merrell, Morristown, N. J., and T. Ferguson, Detroit, Mich. Apparatus for holding and counting coin	201,264	Mar. 12	452	139	13	489
Mennez, V. A., Michigan City, Ind. Ice-velocipede	201,265	Mar. 12	453	140	13	489
Merrell, H. B., *et al.* (See Meaker, J. W., assignor.)						
Merrell, H. B. (See Wight, P. B., assignor.)						
Merrill, R. S., Boston, Mass. Lamp-stand	201,266	Mar. 12	454	140	13	489
Merrin, W. L., Fredericktown, Ohio, assignor of one-half interest to W. Sturgeon. Organ-reed	201,267	Mar. 12	455	140	13	489
Messer, L., assignor to Zinn and Messer, New York, N. Y. Fastening for pocket-books. (Reissue)	8,123	Mar. 12	525	161	13	498
Messler, A., Providence, R. I. Button	201,268	Mar. 12	456	140	13	489
Millard, G., *et al.* (See Roberts, E. J., assignor.)						
Miller, A., *et al.* (See Roberts, E. J., assignor.)						
Miller, D. J. (See Call, A., assignor.)						
Miller, G. F., Jacksonville, and W. G. Benedict, Orange Park, Fla.; said Miller assignor to said Benedict. Machine for treating palmetto-leaves, &c	201,269	Mar. 12	457	141	13	490
Miller, J., Canton, Ohio. Harvester-rake. (Reissue)	8,119	Mar. 12	520	159	13	498
Miller, J., Himrods, N. Y., assignor to Pressure Extract Company, Trenton, N. J. Apparatus for making tea, coffee, &c	201,272	Mar. 12	459	141	13	490
Miller, J. A., Oshkosh, Wis. Saw-sharpening machine	201,271	Mar. 12	458	141	13	490
Miller, J., Jr., Philadelphia, Pa. Gas-regulator	201,270	Mar. 12	457	141	13	490
Miller, W. A., Rigdon, Ind. Wash-boiler	201,190	Mar. 12	371	115	13	478
Mills, J. (See Ellms and Mills.)						
Miner, J. G., St. Louis, Mo. Sectional boiler	201,273	Mar. 12	460	142	13	490
Moffit, F. B. (See Darby, W., assignor.)						
Mole, J. G., Batavia, Ill. Ball-target thrower	201,118	Mar. 12	305	93	13	468
Moore, L. T., *et al.* (See Roberts, E. J., assignor.)						
Moore, W. B., *et al.* (See Roberts, E. J., assignor.)						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Morel, J. S., Savannah, Ga., and D. R. Fletcher, Chambersburg, Ohio, assignors of one-third interest to J. A. Watterson, Mercer's Bottom, West Va. Plastic compound for paving, &c.	201,274	Mar. 12	461	.....	13	491
Moriarty, P., Jr., *et al.* (See Roberts, E. J., assignor.)						
Morrell, B. D., Sharpsburg, Pa. Shock-binder	201,275	Mar. 12	462	142	13	491
Morrison, J. A., Karns City, Pa. Combined elevator and clamp for sucker-rods of oil-wells	201,191	Mar. 12	371	116	13	478
Morse, E., Boston, Mass. Machinery for applying rivets or clasps	201,192	Mar. 12	373	116	13	478
Morss, J., Philadelphia, Pa. Spirit-level and plumb	201,276	Mar. 12	463	142	13	491
Moyer, E. W., Bernville, Pa. Axle-lubricator	201,193	Mar. 12	374	116	13	478
Moynihan, J., *et al.* (See Roberts, E. J., assignor.)						
Murphy, M. (See Murphy, R. W. and M.)						
Murphy, M. F. (See Murphy, R. W. and M., assignors.)						
Murphy, R. W. and M., said R. W. Murphy assignor to M. F. Murphy, St. Louis, Mo. Paper-bag machine	201,277	Mar. 12	463	143	13	491
Murphy, R. W. and M., said R. W. Murphy assignor to M. F. Murphy, St. Louis, Mo. Paper-bag machine	201,278	Mar. 12	465	143	13	491
Mabie, D. K., Marshalltown, Iowa. Fence-post	201,541	Mar. 19	753	229	13	538
Maltby, G. E., *et al.* (See Jacobson, C. F., assignor.)						
Manz, P. C. (See Savey and Manz.)						
Marchant, R. M., London, England. Pump and condenser for motive-power engines, &c.	201,542	Mar. 19	754	230	13	538
Marquis, R., Kokomo, Ind. Ear-corn-elevator feeder	201,543	Mar. 19	757	230	13	538
Marr, A. D., Boston, Mass. Shirt	201,433	Mar. 19	645	197	13	523
Matthewman, E., administratrix. (See Matthewman, J., deceased.)						
Matthewman, J., deceased, Brooklyn, N. Y., E. Matthewman, administratrix. Insulator for telegraph-wires	201,544	Mar. 19	758	230	13	538
Maugham, G. R., Philadelphia, Pa. Carriage-wheel guard	201,545	Mar. 19	758	231	13	539
McCormick, T. A. (See Wade, T. I., assignor.)						
McCulley, A. B. (See Smith and McCulley.)						
McGraw, A., and J. Gilbaugh, Anita, Iowa. Washing-machine	201,434	Mar. 19	645	197	13	523
McMahel, J., Cincinnati, Ohio. Animal-trap	201,546	Mar. 19	759	231	13	539
McVitty, E. C., Kenton, Ohio. Metallic fence-post	201,547	Mar. 19	760	231	13	539
Merrill, R. S. (See White, J. T., assignor.)						
Mettler, J. I. and W. J., Mendota, Ill. Tile-laying machine	201,548	Mar. 19	761	231 232	13	539
Mettler, W. J. (See Mettler, J. I. and W. J.)						
Miller, J. K., Pleasant Hill, Mo. Harrow	201,435	Mar. 19	646	197	13	523
Moore, C. T., White Sulphur Springs, West Va., assignor of one-half interest to L. Clephane and J. H. Crossman, Washington, D. C. Preparing transfer sheets or matrices for printing	201,436	Mar. 19	647	197	13	523
Moore, G. H., Norwich, Conn. Filter	201,354	Mar. 19	567	.....	13	512
Moore, J., Jr., Brooklyn, N. Y. Grate for fire-places, &c.	201,549	Mar. 19	762	232	13	539
Moore, J., Jr., Brooklyn, assignor to J. L. Mott Iron Works, New York, N. Y. Register-box for heaters	201,551	Mar. 19	764	233	13	539
Moore, J. G., Lisbon, N. H. Machine for reducing wood to pulp for paper	201,550	Mar. 19	762	232	13	539
Moore, M. M., Cleveland, assignor of one-half interest to W. L. Fay, Elyria, Ohio. Fare-box	201,437	Mar. 19	649	198	13	523
Moore, O. O., Medina, N. Y. Churn	201,438	Mar. 19	649	198	13	523
Morean, E., San Francisco, Cal. Apparatus for the production of hot air	201,439	Mar. 19	650	198	13	524
Mott Iron Works, J. L. (See Moore, J., Jr., assignor.)						
Macarthy, C. E., Forsyth, Ga. Horse-power	201,807	Mar. 26	1033	315	13	583
Mackenzie, P. W., Rauveltville, N. Y. Furnace for producing gases for heating and other purposes	201,808	Mar. 26	1034	316	13	583
Mackey, S. P., Brownsburg, Va. Water-wheel	201,690	Mar. 26	914	279	13	565
MacLennan, R. D., assignor of one-half interest to A. S. McDonald, Los Angeles, Cal. Sash-holder	201,620	Mar. 26	853	259	13	556
Mahan, F. M. (See Owen and Mahan.)						
Massachusetts Arms Company. (See Hadley, G. W., assignor.)						
Matthiessen, F. O., Irvington, N. Y. Manufacturing coffee-sugar	201,809	Mar. 26	1035	.....	13	583
McAllister, A. H., Cotton Plant, Miss. Machine-gun	201,810	Mar. 26	1035	316	13	583
McClelland, T. M., and J. A. Grant, Mount Pleasant, Iowa. Shingling-bracket	201,691	Mar. 26	915	279	13	565
McCormick, H. L. (See Smith, A. J., assignor.) (Reissue.)						
McCulley, F., McKinney, Tex. Solution for preserving meats	201,811	Mar. 26	1037	.....	13	584
McDonald, A. S. (See MacLennan, R. D., assignor.)						
McFarland, J. M., Virginia City, Nev. Stamp-mill	201,692	Mar. 26	915	280	13	566
McGeehon, J., Fort Wayne, Ind. Car-coupling	201,812	Mar. 26	1037	317	13	584
McKnight, J. R., Chicago, Ill. Index	201,693	Mar. 26	916	280	13	566
McPike, J. M., St. Helena, Cal. Harrow attachment for plows	201,694	Mar. 26	917	280	13	566
McTighe, T. J. (See Bingham and McTighe.)						
Merrill, R. S., Boston, Mass. Picture-hook	201,695	Mar. 26	917	280	13	566
Merrill, S. H. (See Edgar and Day, assignors.)						
Mery, M. L., Chico, Cal. Feeder for thrashing-machines	201,696	Mar. 26	918	281	13	566
Meta, E., Rochester, N. Y. Flower-stand	201,813	Mar. 26	1038	317	13	584
Meyer & Co., H. C. (See Meyer, H. C., assignor.)						
Meyer, E. W., New York, N. Y. Service-box	201,814	Mar. 26	1039	317	13	584
Meyer, H. C., assignor to H. C. Meyer & Co., New York, N. Y. Water-closet-supply apparatus	201,815	Mar. 26	1040	318	13	584
Miller, E. G., H. C., and E. O., North Lewisburg, Ohio. Clothes-drier	201,816	Mar. 26	1042	318	13	584
Miller, E. O. (See Miller, E. G., H. C., and E. O.)						
Miller, H. C. (See Miller, E. G., H. C., and E. O.)						
Miller, H. F. (See Frasee, G. T., assignor.)						
Miller, J. B., Wilkesbarre, Pa. Coal-breaker	201,817	Mar. 26	1043	318	13	584
Milligan, H. O., Elizabeth, assignor to Newark Stamping Company, Newark, N. J. Plumber's tack	201,697	Mar. 26	919	281	13	566
Moore, J. L. (See Chester and Moore.) (Reissue.)						
Moore, W. H. (See Smith, T. S., assignor.)						
Morris, J. P., Paris, Texas. Curtain roller and bracket	201,631	Mar. 26	854	259	13	556
Morse, C. H., assignor of one-half interest to C. A. Fuller and G. H. Simpson, Minneapolis, Minn. Reversible cuff	201,818	Mar. 26	1044	319	13	584
Munday, J. W., Chicago, Ill. Printer's galley	201,819	Mar. 26	1044	319	13	584
Murdock, E. E., York, Neb., assignor of two-thirds interest to G. W. Williams, Sr., Eau Claire, Wis., and H. Godding, Beaver Crossing, Neb. Machine for pressing straw, corn-stalks, &c., for fuel	201,820	Mar. 26	1045	319	13	585
Murphin, J., assignor of one-half interest to A. B. Richman, Malaga, N. J. Wash-board	201,821	Mar. 26	1046	319	13	585
Myers, F., New York, N. Y. Machine for trimming wooden boxes	201,822	Mar. 26	1047	320	13	585
Macdonald, R. J., New York, N. Y. Carpet-lining	201,929	Apr. 2	69	19	13	608
Mansfield, D., *et al.* (See Benton, T. P., assignor.)						

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Mansfield, J. K., *et al.* (See Benton, T. P., assignor.)						
Marrin, J. J. (See Byrne, R., assignor.)						
Marsh, E. (See Marsh, H. T., assignor.)						
Marsh, H. T., assignor, by mesne assignments, to E. Marsh, Hartford, Conn. Corset	202,038	Apr. 2	180	52	13	624
Marsh, H. T.	201,931	Apr. 2	70	19	13	609
Martin, D., Hotchkissville, Conn. Pocket-knife for opening cans	201,930	Apr. 2	69	19	13	609
Martin, J. H., Hartford, Conn. Convertible chair	201,885	Apr. 2	26	7	13	602
Matthews, C., and W. Holt, Chicago, Ill. Water-heater	201,932	Apr. 2	71	19, 20	13	609
May, J., Cambridge, Mass. Gage-lathe						
May, L. A., *et al.* (See Collyer, C. W., assignor.)						
Mayer, Strouse & Co. (See Adler, M., assignor.)						
McGill, G. W., New York, N. Y. Suspender-buckle	202,039	Apr. 2	180	52	13	624
McIlroy, T., Jersey City, N. J. Surgical operating-table	201,933	Apr. 2	73	20	13	609
McPherrin, R. W., Hector, Kans. Fence-post	202,040	Apr. 2	181	53	13	624
Meburin, O. C. (See Meburin, O. F. and O. C.)						
Meburin, O. F. and O. C., Newark, Ohio. Fire-place	201,886	Apr. 2	27	7	13	602
Meinikheim, B. G., Newtown, and W. D. Chase, New York, N. Y.; said Chase assignor to Meinikheim. Basket. (Reissue)	8,148	Apr. 2	231	.....	13	632
Melton, B. F., Gainesville, Tex. Saddle-tree	201,934	Apr. 2	74	21	13	609
Mersick, E. F., *et al.* (See Johnson, A. W., assignor.)						
Meyers, F. J. (See Stockwell and Minninghoff, assignors.)						
Meylan, C. H., New York, N. Y. Chronograph-watch	202,041	Apr. 2	183	53	13	624
Miller, J. C., Bridgewater, Va. Fruit-picker	202,042	Apr. 2	183	53	13	625
Minninghoff, J. (See Stockwell and Minninghoff.)						
Mocers, A. H., North Ridgeville, Ohio. Coffin-shield	201,936	Apr. 2	75	21	13	610
Moran, T. W., Louisville, Ky. Barrel-filling device	201,887	Apr. 2	28	8	13	603
Morse, G. A., South Egremont, Mass. Die for making axle-boxes	201,935	Apr. 2	75	21	13	610
Muchmore, D. B., Madison, assignor of one-half interest to A. Albright, Newark, N. J. Potato-digger	201,888	Apr. 2	29	8	13	603
Musselman, D. R. (See Dick and Musselman.)						
Myers, J., St. Louis, Mo. Weight for horseshoes	201,937	Apr. 2	76	21	13	610
Macardle, G., Pittsfield, Ill., assignor of one-half interest to J. P. Joy, St. Louis, Mo. Dust-pan	202,277	Apr. 9	444	130	13	665
Macey, C. R., Lamington, assignor to himself, I. M. Holcomb, Plainfield, and J. A. Thickstun, North Plainfield, N. J. Bee-hive	202,114	Apr. 9	273	81	13	642
Macmurdo, J. R., *et al.* (See Tucker, S. J., assignor.)						
Macomb, J., Chicago, Ill. Ice-elevator	202,181	Apr. 9	347	102	13	632
Macy, T. G., and E. F. Reed, Boston, Mass. Manufacturing illuminating-gas	202,279	Apr. 9	446	130	13	666
Maguire, J. F., New York, N. Y. Tuyere	202,280	Apr. 9	447	131	13	666
Marshall, R. (See Johnston and Marshall.)						
Mason, O. C. (See Quimby, E. R., assignor.)						
McMackin, P., Lonsdale, R. I. Dry-closet	202,278	Apr. 9	445	130	13	665
Merrill, G. P., and P. Dowling, Toledo, Ohio. Unloading cars	202,182	Apr. 9	348	102	13	632
Mettam, C., New York, N. Y. Flying toy	202,281	Apr. 9	448	131	13	666
Miller, C. C., assignor of one-half interest to J. E. Owens, Hamilton, Ohio. Shoal-indicator for ships	202,184	Apr. 9	351	103	13	632
Miller, E. D., Bloomington, Ill. Pencil-sharpener	202,183	Apr. 9	350	103	13	632
Minchin, G., *et al.* (See Schwerin, M., assignor.) (Reissue.)						
Montgomery, W. S., Marshalltown, Iowa. Combined lock, bolt, and handle	202,186	Apr. 9	354	103	13	633
Moore, S. M., assignor to W. Hurlbut, Canastota, N. Y. Manufacture of knife-blades	202,282	Apr. 9	448	131	13	666
Morrell, Z. N., Luling, Tex. Fire-proof cotton-lint room	202,283	Apr. 9	449	132	13	666
Morse, G. A. (See Fees, J. W., assignor.)						
Moesman, R. D., Bristol, N. H. Machine for making wood-pulp for paper	202,185	Apr. 9	353	103	13	633
Mott, C. R., New York, N. Y. Fire-escape	202,115	Apr. 9	274	81	13	642
Mott Iron Works, J. L. (See Reid, J., assignor.)						
Mudge, C., Bay St. Louis, Miss., assignor of two-thirds interest to E. K. Converse and T. S. Johnson, New Orleans, La. Mode of laying flooring	202,187	Apr. 9	355	104	13	633
Mack, J. T. (See Lawrence, T. C., assignor.)						
Mancourt, J. W. (See Doremus, W. D., assignor.)						
Mann, E. E., Lawrence, Mass. Dust-pan	202,357	Apr. 16	546	159	13	684
Marshall, J., Pittsburg, Pa. Safety-check for elevators	202,561	Apr. 16	762	220	13	712
Martin, E. J., Rockville, Conn. Spindle for cleaning and smoothing silk and other threads	202,448	Apr. 16	635	185	13	697
Martin, G., Milwaukee, Wis. Fire-escape	202,562	Apr. 16	763	220	13	712
Masterson, C. A., Decatur, Ill. Hoe and brier-hook	202,563	Apr. 16	764	221	13	712
Matthews, M. J. (See Gower and Matthews.)						
Maynz, E., Boston, Mass. Lacing-hook	202,564	Apr. 16	764	221	13	712
Mayo, O., Evanston, Ill. Lamp-wick	202,358	Apr. 16	546	160	13	684
McCarthy, C., Petrolia, and C. Giles, Summit City, Pa. Oil-pump	202,565	Apr. 16	765	221	13	712
McCaslin, J. W., Vinton, Iowa. Apparatus for lowering coffins into graves	202,359	Apr. 16	547	160	13	684
McClave, W., Pittston, and J. A. Price, Scranton, Pa. Stove-grate	202,449	Apr. 16	636	186	13	697
McCrea, J., Wilmington, Del. Metal-heating furnace	202,566	Apr. 16	768	221	13	712
McCrossin, P. (See Tygh, J. F., assignor.)						
McDevitt, W. J., Philadelphia, Pa. Cam for knitting-machines	202,567	Apr. 16	768	222	13	712
McDonald, A. J. (See Gillespie, M., assignor.)						
McKee, J., assignor to himself, H. M. Bickford, and N. H. Berry, Lawrence, Mass. Apparatus for preparing food for animals	202,360	Apr. 16	548	160	13	684
McKitrick, A. H., Tiffin, Ohio, assignor of one-half interest to G. Dickey. Hay elevator and unloader	202,450	Apr. 16	637	186	13	697
Menzies, W. J. (See Lewis and Menzies.)						
Meriden Britannia Company. (See Savage G. E., assignor.) (Reissue.)						
Meriden Flint Glass Company. (See Hatch, G. E., assignor.)						
Merrell, H. B., *et al.* (See Wight, P. B., assignor.)	202,451	Apr. 16	638	186	13	697
Merrens, H. J., Cleveland, Ohio. Machinery for manufacturing hose						
Merrill, L. M. (See Brackett and Merrill.)						
Messmer, H., Magdeburg, Prussia. Tobacco-washer	202,568	Apr. 16	769	222	13	712
Meyer, F. M., Shannandale, Mo. Machine for setting tobacco-plants	202,452	Apr. 16	639	186	13	697
Miller & Co., E. (See Perkins, R. B., assignor.)						
Miller, C. C., Hamilton, Ohio. Brush for cleaning boiler-flues	202,361	Apr. 16	548	160	13	684
Miller, D. P., Lodi, N. Y. Bee-hive	202,569	Apr. 16	770	222	13	713
Minahan, M., Portland, Oreg. Device for cutting screw-threads	202,362	Apr. 16	549	161	13	684
Minchin, G., *et al.* (See Jenkinson, G. B., assignor.) (Reissue.)						
Minnese, N. S., and D. A. Wray, Bradford, Pa. Method and apparatus for obtaining oil from oil-wells	202,570	Apr. 16	771	222	13	713
Moody, G. D., *et al.* (See Thomas, D., assignor.)						
Moore, M., Liber, Ind. Tile-machine	202,454	Apr. 16	641	187	13	697

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Moore, T. B., assignor of one-half interest to C. L. Swope, Frankford, Pa. Manufacture of cartridge-shells	202,363	Apr. 16	550	161	13	684
Morgan, W., Jersey City, N. J. Machine for making retorts, crucibles, &c	202,366	Apr. 16	533	162	13	685
Morris, J. P., assignor of two-thirds interest to G. G. Wright and J. K. Bywaters, Paris, Tex. Fire-escape ladder	202,364	Apr. 16	531	161	13	685
Morris, R., Kansas City, Mo. Cartridge	202,365	Apr. 16	532	162	13	685
Mortensen, H., Alma, Colo. Torpedo-boat	202,453	Apr. 16	640	187	13	697
Mowers, P. A., Shippensburg, Pa. Coffin-handle	202,367	Apr. 16	544	162	13	685
Mundel, J. C., Arrowsmith, Ill. Seeding-machine	202,571	Apr. 16	772	223	13	713
Murphy, L., assignor to himself and E. C. Hough, Greensburg, Pa. Railway-frog	202,455	Apr. 16	642	187	13	698
Mynatt, J. B., Easta Boga, Ala. Water-bed fence	202,572	Apr. 16	773	223	13	713
Maguire, T. M., Corona, N. Y. Hydraulic power-accumulator	202,660	Apr. 23	885	254	13	735
Makemson, S. C. (See Cress, H. D., assignor.)						
Mann, W., Newcastle, Pa., assignor of one-half interest to W. Plant, I. Hill, and J. Matthews. Reverberating furnace	202,845	Apr. 23	1082	309	13	760
Marsters, E. J., Stockton, and R. A. Fisher, Sacramento, Cal.; said Fisher assignor to said Marsters. Car-truck	202,737	Apr. 23	961	276	13	744
Mason, E. R., Des Moines, Iowa. Thill-coupling	202,846	Apr. 23	1083	309	13	760
Matthews, J., *et al.* (See Mann, W., assignor.)						
May, W. L. (See Clark, J. M., assignor.)						
McCallip, W. W., Columbus, Ohio. Guide for wire-rolling machines	202,848	Apr. 23	1084	310	13	760
McCarroll, W., assignor of one-half interest to A. Young, Chicago, Ill. Fuel-box	202,847	Apr. 23	1084	309	13	760
McClintock, J. M., Devall's Bluff, Ark. Lifting-jack	202,849	Apr. 23	1085	310	13	760
McCloskey, J., New York, N. Y. Sewing-machine	202,738	Apr. 23	962	276, 277	13	744
McGough, T. F., Eau Claire, Wis. Ditching-machine	202,661	Apr. 23	886	254, 255	13	735
McGrath, J., *et al.* (See Byrne, J., assignor.)						
McIntyre, N., Princeton, Wis. Lifting-jack	202,739	Apr. 23	966	277	13	745
McKinnon, A., Chicago, Ill. Folding satchel	202,850	Apr. 23	1086	310	13	760
Michael, W., Harrison City, Pa. Vehicle-spring	202,851	Apr. 23	1087	310, 311	13	760
Michel, C., La Crosse, Wis. Bottle-washing machine	202,740	Apr. 23	966	277, 278	13	745
Miechardt, J. F., Brooklyn, N. Y. Curtain-cord tightener	202,852	Apr. 23	1087	311	13	760
Miller, C. M. and E. E.; said C. M. Miller assignor to C. Aultman & Co., Canton, Ohio. Portable engine	202,853	Apr. 23	1088	311	13	761
Miller, E. E. (See Miller, C. M. and E. E.)						
Miller, J., Washington, Pa. Stock-car	202,854	Apr. 23	1089	311	13	761
Milligan, P. F., and J. F. Wood, Washington, D. C. Side-spring vehicle	202,741	Apr. 23	967	278	13	745
Minshall, C. B. (See Roseman, E. D., assignor.)						
Mohr, C., Worcester, Mass. Top-spinning toy pistol	202,742	Apr. 23	968	278	13	745
Moore, S. T., Baltimore, Md. Bung-faucet	202,855	Apr. 23	1090	312	13	761
Morgan, T. D., Pittsburg, Pa. Metallurgic furnace	202,743	Apr. 23	969	278	13	745
Morrell, R. W., and T. and J. Parkinson, Bradford, England. Sewing-machine	202,857	Apr. 23	1092	312, 313	13	761
Morris, W. G. (See Smith, J. T., assignor.)						
Morse, F. F. (See Morse, H. T., L. B., and F. F.)						
Morse, H. T., L. B., and F. F., Athol, Mass. Folding settee	202,856	Apr. 23	1090	312	13	761
Morse, L. B. (See Morse, H. T., L. B., and F. F.)						
Muldoon, G. P., and E. P. Davis, Omaha, Neb.; said Davis assignor to said Muldoon. Vehicle-spring	202,858	Apr. 23	1094	313	13	761
Munger, R. S., Mexia, Tex. Cotton-gin-saw cleaner	202,744	Apr. 23	970	279	13	745
Munson Brothers. (See Hendrick, H. H., assignor.)						
Mackey, J., assignor to himself, J. Mackey, W. R. E. Elliott, and H. Opperman, Steubenville, Ohio. Tuyere	203,056	Apr. 30	1299	377	13	792
Magee, W., Fowler's, West Va., assignor of one-half interest to D. C. Pogue, Patterson's Mills, Pa. Churn	203,170	Apr. 30	1421	414	13	808
Manley, H. A., Boston, Mass. Printing-press	203,171	Apr. 30	1421	415	13	808
Maranville, H., assignor to himself and S. D. Stewart, Akron, Ohio. Postal scale and counterfeit-coin detector	203,057	Apr. 30	1300	377	13	792
Martin, L., Lyons, N. Y. Machine for exterminating noxious grasses	203,172	Apr. 30	1422	415	13	808
Martin, W. J., assignor to J. Brady, Philadelphia, Pa. Feeding mechanism for button-hole sewing-machines	203,173	Apr. 30	1424	416	13	808
Mason, A. (See Pearson, F. W., assignor.)						
Mathews, T. F. (See Hebdon and Mathews.)						
Maxwell, J. R. (See Cope and Maxwell.)						
May, E. S., Campbelltown, N. Y. Pocket-case for pipe and tobacco	203,058	Apr. 30	1301	378	13	792
McCormick, J., Princeton, Ind. Harvester cutter-bar	203,175	Apr. 30	1426	416	13	809
McCue, J. M., Mount Solon, Va. Artificial ford or dam	203,174	Apr. 30	1425	416	13	808
McDougall, A., Chicago, Ill., assignor to D. G. Ross, Toronto, Canada. Barrel-cover	203,059	Apr. 30	1301	378	13	792
McGarrett, J. W., Jr., Nashua, N. H. Copy-holder	203,060	Apr. 30	1302	378	13	792
McKinney, W. S., Hamilton, assignor to United States Iron Company, Youngstown, Ohio. Bale-tie	203,061	Apr. 30	1303	378	13	793
McKnight, W., Brooklyn, assignor to himself, Woodbury Brothers, and J. H. Woodward, New York, N. Y. Breastpin	203,176	Apr. 30	1427	416	13	809
McMaster, H. H., Jamestown, Pa. Washing-machine	203,062	Apr. 30	1303	379	13	793
Merino Shoe Company. (See Hawley, A. A. and R. B., assignors.)						
Merino Shoe Company. (See Houghton, C., assignor.)						
Merrill, H. E., Akron, Ohio. Roofing-tile	202,953	Apr. 30	1203	347	13	779
Miller, G. F., Jacksonville, and W. G. Benedict, Orange Park, Fla.; said Miller assignor to said Benedict. Treating palmetto fiber for use in the arts	203,177	Apr. 30	1427	.....	13	809
Miller, J., assignor to Pressure Extract Company, Trenton, N. J. Apparatus for making coffee, tea, and other extracts	203,178	Apr. 30	1428	417	13	809
Miller, J., Himrod's, N. Y., assignor to Pressure Extract Company, Trenton, N. J. Device for making tea, coffee, and other extracts	203,179	Apr. 30	1428	417	13	809
Miller, J., Himrod's, N. Y., assignor to Pressure Extract Company, Trenton, N. J. Floating cover for extract-receivers	203,180	Apr. 30	1429	417	13	809
Moench, G., Rushville, Ill. Millstone-ventilator	203,181	Apr. 30	1430	417	13	809
Moffett, S. T., Lisbon, N. H. Machine for spirally sawing logs	203,182	Apr. 30	1430	418	13	809
Morris, H., assignor of one-half interest to T. L. Reed, Providence, R. I. Circular loom	203,183	Apr. 30	1431	418	13	809
Morrow, R. G. (See Wilson and Morrow.)						
Morse, E. F., Plantsville, assignor of one-half interest to J. B. Savage, Southington, Conn. Auxiliary wick raiser	203,063	Apr. 30	1304	379	13	793

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Mudge, C. F., and G. Whittaker, Brooklyn, N. Y., assignors to J. Tirrell, Boston, Mass. Rasp-machine	203,064	Apr. 30	1305	379, 380	13	793
Mudge, C. F., and G. Whittaker, Brooklyn, N. Y., assignors to J. Tirrell, Boston, Mass. File-cutting machine	203,065	Apr. 30	1307	380	13	793
Müller, K., Philadelphia, Pa. Gun-rest	203,184	Apr. 30	1433	419	13	810
Murphy, P. L., assignor of one-half interest to J. B. La Gar, New York, N. Y. Dumping-scow	203,185	Apr. 30	1435	419	13	810
Maddin, S. D., Indianapolis, Ind. Harvester	203,352	May 7	120	35	13	836
Maine, S. C., assignor to R. H. Spaulding, Boston, Mass. Fog-signal	203,473	May 7	250	72	13	855
Maranville, G., assignor to E. Bowman and C. B. Leach, Rutland, Vt. Fastening roofing-slates	203,353	May 7	121	35	13	836
Marsh, J. F., assignor to Springfield Glazed Paper Company, Springfield, Mass. Manufacture of ornamental paper	203,474	May 7	251	72	13	855
Martin, J., assignor of one-half interest to J. P. Johnson, Peoria, Ill. Fastening for horse-collars	203,354	May 7	122	36	13	837
Mase, W. H., and S. Terwilliger, Matteawan, N. Y. Fulling-mill	203,355	May 7	123	36	13	837
McCarren, J. H., assignor to himself and A. P. Longnecker, Cincinnati, Ohio. Egg-carrier	203,356	May 7	124	36	13	837
McConoughey, H. N., assignor of one-half interest to H. M. Higgins, Douglas township, Montgomery county, Iowa. Check-rower for corn-planters	203,357	May 7	125	37	13	837
McCullough, J. J., Wilmington, Del. Preparing and coating metals. (Reissue)	8,220	May 7	311	89	13	863
McFadyen, J. (See Walker, A. R., assignor.)						
McGeorge, H. D. (See Davis, Guseman, and McGeorge.)						
McGowan, T., *et al.* (See Winters, J. R., assignor.)						
McGregor, A. (See Kenworthy and McGregor.)						
McKenzie, J. C., Adrian, Mich. Brick and tile machine	203,284	May 7	50	15, 16	13	827
Meredith, E. J., Philadelphia, Pa. Gas-regulator	203,285	May 7	52	16	13	827
Meriden Cutlery Company. (See Cady, E., assignor.)						
Meriden Cutlery Company. (See Hallam, R. W., assignor.)						
Mey, F. H. C., Buffalo, N. Y. Metallic belting for elevators, &c	203,475	May 7	252	73	13	855
Mey, F. H. C., Buffalo, N. Y. Metallic belting	203,476	May 7	253	73	13	855
Meyer, G. A. C., Hannibal, Mo. Automatic fan	203,358	May 7	126	37	13	837
Mihan, P., Cambridgeport, Mass. Chimney cap or ventilator	203,477	May 7	255	74	13	855
Mihan, P., Cambridgeport, Mass. Stove-pipe thimble	203,478	May 7	256	74	13	855
Miller, T. J., Scotland county, Mo. Gate	203,479	May 7	256	74	13	855
Milligan, J. F., assignor of one-half interest to E. H. Linley, St. Louis, Mo. Shovel-handle	203,359	May 7	127	37	13	837
Miner, H. C., Stafford, N. Y. Wind-engine	203,480	May 7	257	74	13	856
Miner, H. C., Stafford, N. Y. Potato-digger	203,481	May 7	258	75	13	856
Moffett, H. M., assignor to himself, J. C. Hathaway, and J. A. Moffett, Cleveland, Ohio. Door-bolt	203,360	May 7	128	37	13	838
Moffett, J. A., *et al.* (See Moffett, H. M., assignor.)						
Monakay, E., assignor of one-half interest to W. H. Tefft, Mineville, N. Y. Explosive compound	203,482	May 7	260	.....	13	856
Moore, J., San Francisco, Cal., assignor of one-half interest to F. Smith. Joint for sheet-metal pipes. (Reissue)	8,214	May 7	306	87	13	862
Moore, J. A., Indianapolis, Ind. Hinge for cabinet-desks, &c	203,286	May 7	53	16	13	828
Moore, J. E., Byron, N. Y. Honey-box	203,483	May 7	260	75	13	856
Moore, T. J. (See Warren, E. A., assignor.) (Reissue.)						
Morgan, C. H. (See Kenerson and Morgan.)						
Morgan, W. K., Alexandria, Ohio. Clothes-drier	203,484	May 7	261	75	13	856
Morris, G. M., Cohoes, and J. P. Hollenbeck, assignors to E. O. House, Troy, N. Y. Button-hole attachment for sewing-machines	203,287	May 7	54	16, 17	13	828
Morris, J. H. and W., Seward, Nebr. Animal-trap	203,361	May 7	129	38	13	838
Morris, W. (See Morris, J. H. and W.)						
Morrison, G. W., assignor to himself, H. C. Carey, A. Hart, and E. Rich, administratrix, Philadelphia, Pa. Combustion of fuel in steam-boiler furnaces	203,485	May 7	262	75	13	856
Morse, B. C. (See Frobisher, B. C., assignor.)						
Mottinger, N. W., Massillon, Ohio. Curry-comb	203,288	May 7	58	17, 18	13	828
Münzer, W., New York, N. Y. Machine for pressing and molding substances into blocks	203,362	May 7	130	38	13	838
Muth, A. E., Cincinnati, Ohio. Molding bread	203,363	May 7	134	39	13	838
Myers, F., New York, N. Y. Manufacture of packing-boxes	203,486	May 7	262	76	13	856
Myers, W. J., Hartford, Conn. Sofa-bedstead	203,289	May 7	59	18	13	828
Mackie, J. B., New York, N. Y. Spinning-machine	203,632	May 14	425	122	13	886
Martin, H., New York, N. Y. Attachment to bottling-machines	203,748	May 14	551	156	13	902
Maupin, L. D., assignor of one-half interest to J. R. Miles, Renick, Mo. Nut-lock	203,633	May 14	426	122	13	886
McDonald, H., Allegheny, Pa. Reheating-furnace	203,634	May 14	427	123	13	886
McDowell, T. S., Davenport, Iowa. Paper-carrier for telegraph stock-reporters	203,635	May 14	429	123	13	886
McGill, W. C., Washington, assignor of one-half interest to H. M. Brown, Georgetown, D. C. Register	203,749	May 14	552	156	13	902
Mefford, D. M., Toledo, Ohio. Preserving fruit. (Reissue)	8,229	May 14	621	173	13	909
Merserean, W. T., Orange, N. J. Stud for frames and fender-bars	203,551	May 14	355	100	13	877
Miles, J. R. (See Maupin, L. D., assignor.)						
Millard, O., assignor of one-half interest to F. P. Hamilton, Flint, Mich. Air-forcing apparatus	203,752	May 14	555	157	13	902
Miller, C. M., Canton, Ohio. Portable steam-boiler	203,750	May 14	553	156	13	902
Miller, H. J., Oil City, Pa. Temper-screw for oil-wells	203,751	May 14	554	156	13	902
Miller, S., Clinton, Iowa. Metallic fence-post	203,753	May 14	555	157	13	902
Mills, F. E., and C. Clager, Ann Arbor, Mich. Steamer or boiler for feed	203,636	May 14	429	123	13	887
Mitchell, T., Bradford, Great Britain. Bobbin used in spinning mohair, &c	203,754	May 14	556	157	13	902
Moore, A. A., Sherman, Tex. Brick-press	203,755	May 14	556	157	13	902
Moore, W. B. (See Buell, M., assignor.)						
Morley, I., Pittsburg, Pa. Brick-machine	203,756	May 14	557	158	13	903
Morrison, W. H. (See Siprell, D. W., assignor.)						
Mosman, D., and R. L. Webb, assignors to Landers, Frary & Clark, New Britain, Conn. Inkstand	203,757	May 14	559	158	13	903
Mull, B. F., Merced, Cal. Earth-anger	203,637	May 14	430	123	13	887
Mullins, J. W., London, Ky. Mechanical movement	203,758	May 14	560	158	13	903
Murphy, E. T., Cambridgeport, Mass. Faucet-hole attachment to barrels	203,638	May 14	430	124	13	887
Macdonald, M. M., Syracuse, N. Y. Truss	204,060	May 21	891	255	13	952
MacLean, D. J., Reading, Pa. Toy bank	203,927	May 21	747	216	13	934
Mains, W. S., Portland, Me. Hinge	204,061	May 21	893	256	13	953
Manton, J. P., assignor to American Ship Windlass Company, Providence, R. I. Wire-cable windlass	203,845	May 21	664	188	13	923
Marengo, A. and J., assignors to themselves and R. Marengo, Montreal, Canada. Cheroot-machine	203,926	May 21	747	215	13	934
Marengo, J. (See Marengo, A. and J.)						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Marengo, R. (See Marengo, A. and J., assignors.)						
Marker, J. A., Baltimore, Md. Elevator-hatchway	204,062	May 21	894	256	13	953
Marvil, J. H., Laurel, Del. Watchman's time-detecter	204,063	May 21	895	256	13	953
Mattson, M., New York, N. Y. Flexible syringe. (Reissue)	8,238	May 21	959	274	13	960
Mayo, I. C. (See Dowling, T., assignor.)						
McIntyre, J. C., Fort Edward, N. Y. Machine for preparing wood fiber for paper-pulp	203,928	May 21	748	216	13	935
McKibben, J., Lima, Ohio. Bridle and halter	203,929	May 21	749	216	13	935
McMillan, G. B. (See Vincent and McMillan.)						
McMillon, G. W., Manchester, Tenn. Animal-trap	204,064	May 21	896	256	13	953
McTighe, J. J., Alpsville, Pa. Speaking-telephone. (Reissue)	8,248	May 21	971	277	13	962
Meinhold, M., Delaware, Ohio. Preparing dough	204,065	May 21	896	.....	13	953
Meriden Cutlery Company. (See Cady, E., assignor.)						
Merrell, H. B., *et al.* (See Wright, P. B., assignor.)						
Merriam, H. C., United States Army. Knapsack	204,066	May 21	897	257	13	953
Merrill, R. S. (See Johnson, D. A., assignor.)						
Miles, T. C. (See Leland, E. A., assignor.)						
Miller, A. M., Sturgis, Mich. Link-guide for car-couplings	203,846	May 21	666	189	13	923
Miller, J., assignor to Pressure Extract Company, Trenton, N. J. Coffee-roaster	204,067	May 21	898	257	13	953
Miller, W. R., and M. R. Creighton, Baltimore, Md. Manufacture of boots	204,068	May 21	900	258	13	953
Mills, J., Milwaukee, Wis. Grinding-mill	203,930	May 21	750	{216 {217	13	935
Mitchell, C. H., Chicago, Ill. Brake for elevators	204,069	May 21	900	258	13	953
Moore, J., Brooklyn, N. Y. Extension-lock for doors	204,070	May 21	901	258	13	954
Moore, R. S., *et al.* (See Healy, D., assignor.)						
More, H., Chicago, Ill. Milk-strainer	203,847	May 21	666	189	13	923
Morgan, W. A., Nola Chucky, Tenn. Churn-motor	204,071	May 21	903	258	13	954
Morse Twist Drill and Machine Company. (See Stetson, G. R., assignor.)						
Müller, J. G., Buffalo, N. Y. Salve	203,848	May 21	667	.....	13	924
Murray, C. H. (See Hall, J. J., assignor.)						
Maloney, W. A. (See Lewis and Maloney.)						
Mann, S. S., Baltimore, Md. Device for testing illuminating fluids	204,235	May 28	1100	314	13	962
Martin, F. R., Brooklyn, Wis. Iron fence	204,236	May 28	1102	315	13	962
Martin, H., New York, N. Y. Bottle-stopper	204,350	May 28	1217	347	13	997
Martin, J. F., Chicago, Ill., assignor to W. B. Price, Baltimore, Md. Composition for artificial marble	204,348	May 28	1215	.....	13	997
Martin, P., Medford, assignor of one-fourth interest to S. Z. Bowman, Somerville, Mass. Stove for burning crude hydrocarbon and other oils	204,349	May 28	1215	347	13	997
Mason, L. C., Providence, R. I. Valve-gear for engines	204,351	May 28	1218	347	13	997
Matthews, M. J., Boston, Mass. Mechanical musical instrument	204,352	May 28	1219	347	13	997
Mayo, I. C., Gloucester, Mass. Rowlock	204,159	May 28	1019	290	13	972
McCaffrey, J. M., Sherman, Tex., and J. Larkin, Milwaukee, Wis. Railway-gate	204,160	May 28	1020	290	13	972
McClure, J. A., Moline, Ill. Steam baker and cooker	204,353	May 28	1220	348	13	998
McConway, W., Pittsburg, Pa. Brake-shoe. (Reissue)	8,255	May 28	1287	367	13	1006
McKee, G., *et al.* (See Reynolds, H. A., assignor.) (Reissue.)						
McNiel, E. and E. H., Groton, N. Y. Rotary harrow	204,354	May 28	1221	348	13	998
McNiel, E. H. (See McNiel, E. and E. H.)						
Meahl, J., and A. Kwoczalla, Pittsburg, Pa. Machine for chopping meat	204,355	May 28	1222	348	13	998
Meech, H. B., Chatham Village, N. Y., assignor to B. F. Brown. Manufacture of paper-pulp from wood. Reissue)	8,256	May 28	1289	367	13	1006
Meech, H. B., Chatham Village, N. Y., assignor to B. F. Brown. Manufacture of paper-pulp from wood. (Reissue)	8,257	May 28	1290	367	13	1006
Meech, H. B., Chatham Village, N. Y., assignor to B. F. Brown. Manufacture of paper-pulp from wood. (Reissue)	8,258	May 28	1290	368	13	1006
Meissner, W., New York, N. Y. Music-box	204,356	May 28	1223	348	13	998
Melling, T., Rainhill, England. Piston water-meter	204,357	May 28	1224	349	13	998
Mellor, C. H., and M. L. Orum, Philadelphia, Pa. Rotary cutter. (Reissue)	8,265	May 28	1299	370	13	1008
Merck, T. M., (See Banks and Merck.)						
Merriman, E. P., *et al.* (See Munger, G. N., assignor.)						
Miles, J. A., Rio Vista, Cal. Tire-setter	204,238	May 28	1105	315	13	983
Miller, J. M. (See Miller, J. W., assignor.)						
Miller, J. W., assignor of one-half interest to J. M. Miller, Pittsburg, Pa. Corn-sheller	204,161	May 28	1021	{290 {291	13	972
Miller, W., and J. Schneider, Connersville, Ind. Corpse-preserver	204,237	May 28	1103	315	13	983
Miller, W. R. (See Hurst and Miller.)						
Moore, T. M., Tyler, assignor to himself and R. Blair, Smith county, Tex. Plow	204,358	May 28	1226	349	13	998
Moore, W. A., Boylston, Mass. Refrigerating transportation-can	204,239	May 28	1105	315	13	983
Morgan, J., Pittsburg, Pa. Machine for punching and beveling metal. (Reissue)	8,251	May 28	1283	365	13	1005
Morse, E. L., assignor to S. B. Steers & Co., New Orleans, La. Cotton-press	204,240	May 28	1107	316	13	983
Munger, E. M., *et al.* (See Munger, G. N., assignor.)						
Munger, G., *et al.* (See Munger, G. N., assignor.)						
Munger, G. B., *et al.* (See Munger, G. N., assignor.)						
Munger, G. N., assignor to himself, E. P. Merriman and E. M. Munger, New Haven, and G. and G. B. Munger, Madison, Conn. Stop-cock	204,162	May 28	1023	291	13	973
Munson, D., Indianapolis, Ind. Lightning-rod	204,359	May 28	1227	350	13	999
Myers, A. N., Augusta, Ky. Churning apparatus	204,241	May 28	1108	316	13	983
Myers, H. M., Beaver Falls, Pa. Manufacture of shovels	204,163	May 28	1024	291	13	973
Mackh, C., assignor of one-half interest to O. P. Chisholm, Elgin, Ill. Meat-roaster	204,590	June 4	162	53	13	1035
Maine, S. C., Boston, Mass., assignor to New England Wardrobe Bedstead Company. Wardrobe-bedstead. (Reissue)	8,269	June 4	222	71	13	1044
Maine, S. C., Boston, Mass., assignor to New England Wardrobe Bedstead Company. Cabinet-bedstead. (Reissue)	8,270	June 4	223	71	13	1044
Manuen, R. L., *et al.* (See Cooper, G. B. F., assignor.)						
Marshall, E. L., Cleveland, Ohio. Package for fruit, &c	204,441	June 4	27	9	13	1016
McCanless, S. T., Cartersville, Ga. Cotton and hay press	204,442	June 4	28	9	13	1016
McManus, M. B., Titusville, Pa. Bail-wheel for Artesian wells	204,591	June 4	162	53	13	1036
Meaker, J. W., Chicago, Ill., assignor, by mesne assignments, to himself, H. B. Merrell, and T. Ferguson. Apparatus for holding and delivering coin. (Reissue)	8,274	June 4	227	72	13	1044
Meaker, J. W., Chicago, Ill., assignor, by mesne assignments, to himself, H. B. Merrell, and T. Ferguson. Apparatus for holding and delivering coin. (Reissue)	8,275	June 4	229	72	13	1044
Melvin, J. S., Farmington, Ky. Apparatus for curing tobacco	204,592	June 4	163	53	13	1036
Meriwether, J. M., Grayson, Ark. Cotton-gin	204,443	June 4	28	10	13	1016
Merrell, H. B., *et al.* (See Meaker, J. W., assignor.) (Reissue.)						
Mersellis, J., Knowersville, N. Y. Tie for letter-packages	204,496	June 4	72	25	13	1022
Merz, H., Milwaukee, Wis. School-desk	204,444	June 4	29	10	13	1017

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Meyer, A. (See Osselin and Meyer.)						
Monk, H., Troy, N. Y. Combined cigar-lighter and match-safe	204,593	June 4	164	53	13	1036
Monk, H., Troy, N. Y. Ironing-machine	204,594	June 4	165	54	13	1036
Mooney, G., Providence, R. I. Egg-beater	204,496	June 4	73	25	13	1023
Moore, S. W., Mount Etna, Ind. Gate	204,497	June 4	73	25	13	1023
Mosely, T. W. H., Hyde Park, Mass. Steam-radiator	204,445	June 4	30	10	13	1017
Müller, H., Hoboken, N. J., assignor to S. L. Cohen, New York, N. Y. Bung	204,595	June 4	168	54	13	1036
Mumford, J. A., Avondale, Nova Scotia, Canada. Machine for sawing and jointing shingles	204,499	June 4	74	26	13	1023
Munro, C. A., Salt Lake City, Utah Ter. Vapor-bath	204,500	June 4	75	26	13	1024
Munroe, J. S., Lexington, assignor to C. Fairchild, Boston, Mass. Wall-paper	204,446	June 4	31	.....	13	1017
Murray, E., Rushville, Ind. Harrow	204,501	June 4	76	26	13	1023
Maneer, S., Craigvale, Ontario, Canada. Vehicle-pole tip	204,744	June 11	333	101	13	1062
Marquardt, J. P., Jr. (See Getzendanner and Marquardt.)						
Marston, D. U. (See Dana, C. H., assignor.)						
Martin, A. D., Abbeville, La. Evaporating-pan	204,745	June 11	334	101	13	1062
Mathes, W. M., Bryan, Tex. Water-drawer	204,746	June 11	335	101	13	1062
Matthewman, J., New Haven, Conn. Gas-burner	204,835	June 11	437	128	13	1073
Maxim, H. S., Brooklyn, N. Y. Feed-water regulator	204,747	June 11	336	101	13	1062
Mayer, D., *et al.* (See Jingels, A., assignor.)						
McAlpine, J., New Haven, Conn. Breech-loading fire-arm	204,675	June 11	258	80, 81	13	1058
McConnell, W. V., and C. M. Dickerson, Crockett, Tex. Fruit-picker	204,748	June 11	337	102	13	1062
McDonald, J. M., Tomlinson, Ark. Truss-bridge. (Reissue)	8,260	June 11	490	142	13	1080
McGlew, T., San Francisco, Cal. Machine for crushing and grinding ores	204,676	June 11	260	81	13	1058
McNair, J. B., Willow Hill, Ill. Trace attachment	204,677	June 11	261	81	13	1058
Mechling, I. (See Bowman, J., assignor.)						
Melick, J. H., Albany, N. Y., assignor to Wheeler, Melick & Co. Horse hay-rake. (Reissue)	8,279	June 11	489	141	13	1080
Menzies, W., and C. Blagburn, Newcastle-upon-Tyne, England, assignors of one-half interest to J. Storer, Marlborough, N. Y. Steam-boiler	204,750	June 11	339	{102 {103	13	1063
Mercer, G., assignor of one-half interest to J. W. Branch, St. Louis, Mo. Saw-gummer	204,749	June 11	338	102	13	1062
Merino Shoe Company. (See Hawley, A. A. and R. B., assignors.)						
Merrill, H. B., *et al.* (See Wight, P. B., assignor.)						
Miles, S., Closter, N. J. Oatmeal-machine	204,837	June 11	439	128	13	1073
Miller, D., and W. H. Johnson, Harrodsburg, Ind. Drag-sawing machine	204,836	June 11	438	128	13	1073
Mizner, J., Grand Rapids, Mich. Rope-holder	204,838	June 11	440	129	13	1073
Monroe, E. P. (See Schnoble, M., assignor.)						
Montrose, I. T., Peekskill, N. Y. Stove-leg	204,839	June 11	440	129	13	1074
Moore, J. C., Henderson, Ky. Stave-jointer	204,751	June 11	340	103	13	1063
Morean, E., assignor to Morean Machine Manufacturing Company, San Francisco, Cal. Button-hole sewing-machine	204,873	June 11	477	{138 {139 {140	13	1078
Morean Machine Manufacturing Company. (See Morean, E., assignor.)						
Morgan, J. E., Paducah, Ky. Bee-hive	204,840	June 11	441	129	13	1074
Morrell, Z. N., Luling, Tex. Fire-extinguisher for lint-rooms	204,841	June 11	442	129	13	1074
Munson, J. D., Beloit, Wis. Plow attachment						
Mackay, J. (See Taylor and Mackay.)						
MacVicar, M., Potsdam, N. Y. Tellurian	205,111	June 18	731	{217 {218	13	1116
Magnus, S., St. Louis, Mo. Harness-saddle	205,112	June 18	733	218	13	1116
Mallery, Wheeler & Co. (See Dickerman, A., assignor.)						
Man, A. (See Sawyer and Man.)						
Marcy, H. M. (See Wright, G., assignor.)						
Marks, G. M., Port Matilda, Pa. Hame-fastener	205,114	June 18	735	218	13	1117
Martin, P., Medford, assignor of one-half interest to S. Z. Bowman, Somerville, Mass. Oil-stove	205,113	June 18	734	218	13	1116
Massey, T., and W. H. Rawe, Pawtucket, R. I. Bottle-stopper	204,987	June 18	611	179	13	1100
McColm, S., Waggoner's Ripple, Ohio. Soil-pulverizer	204,988	June 18	611	179	13	1100
McCormick, C. H., *et al.* (See Erpelding, L., assignor.)						
McCormick, L. J., *et al.* (See Erpelding, L., assignor.)						
McCoy, R., Newark, N. J. Bosom-board	205,115	June 18	735	219	13	1117
McIntosh, A. G., Atalissa, Iowa. Grain-binder	204,989	June 18	612	{179 {180	13	1100
McLeod, C. A. (See Bussey, E., assignor.)						
McMillan, W., West Liberty, Iowa. Fence-post	204,909	June 18	533	155	13	1090
Mead, W. S., New York, N. Y. Hopple	205,116	June 18	736	219	13	1117
Mead, W. S., New York, N. Y. Whiffletree-hook	205,117	June 18	737	219	13	1117
Mennig, S., Brooklyn, N. Y. Stringing device for pianos	204,908	June 18	532	155	13	1089
Morriam, G. P., assignor to himself, S. C. White, and C. R. Valpey, Lynn, Mass. Hoof-moistener holder	205,118	June 18	738	219	13	1117
Meyer, C. A. (See Hellert, Müller, and Meyer.)						
Milligan, H. C., Elizabeth, N. J. Seam or joint for cans	205,119	June 18	738	220	13	1117
Minnemeyer, H. W., Pittsburg, Pa. Back-band hook	204,910	June 18	533	156	13	1090
Morean, E., and J. W. Haggerty, San Francisco, Cal. Ammonia or ether machine	205,120	June 18	739	220	13	1117
Morey, S., Syracuse, N. Y. Hand-drill	204,990	June 18	614	180	13	1100
Morrow, J. A., Bentonville, Ark. Apple-corer	205,122	June 18	741	220	13	1117
Morse, E. E., South Bethel, Me. Whiffletree-hook	205,121	June 18	740	220	13	1117
Müller, F. M. (See Hellert, Müller, and Meyer.)						
Müller, H., Hoboken, N. J., assignor to S. L. Cohen, New York, N. Y. Faucet attachment to casks and barrels	205,123	June 18	742	221	13	1118
Munger, G. G., Rochester, N. Y. Lubricating compound	205,124	June 18	743	.....	13	1118
Mahedy, J., Sperry, Iowa. Sled-propeller	205,196	June 25	836	248	13	1135
Man, A. (See Sawyer and Man.)						
Mannobach, J., New York, assignor of one-half interest to H. C. Stone, Brooklyn, N. Y. Box-planing machine	205,401	June 25	1052	312	13	1163
Mannle, G. A., assignor of one-half interest to W. H. Bogart, Brooklyn, N. Y. Wooden box	205,280	June 25	919	272	13	1146
Manton, J. P., assignor to American Ship Windlass Company, Providence, R. I. Windlass. (Reissue)	8,303	June 25	1118	{330 {331	13	1172
Marble, E. T., Worcester, Mass. Cloth-finishing machine	205,281	June 25	920	273	13	1146
Marcellus, J., Sault de St. Marie, Mich. Whiffletree-hook	205,402	June 25	1053	312	13	1163
Marland, O., Boston, Mass. Apparatus for combustion of fuel for generation of steam	205,282	June 25	921	{273 {274 {275	13	1146
Marsh, C. W., *et al.* (See Whitney, C., assignor.)						
Marsh, W. W., *et al.* (See Whitney, C., assignor.)						
Marten, F., Sodus, N. Y. Sash-fastener	205,403	June 25	1053	312	13	1163

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Martin, T. (See Dimelow, J., assignor.)						
Mason & Hamlin Organ Company. (See Trowbridge, W. O., assignor.)						
Matthews, J. (See Matthews, J. S. and J.)						
Matthews, J. S. and J., Athens, Tenn. Gate-latch	205,404	June 25	1054	312	13	1163
Maurer, D., Philadelphia, Pa. Insecticide compound	205,405	June 25	1055	.....	13	1163
May, Firnhaber & Co., C. W. (See Agnel, A. E. N., assignor.)						
Mayrhofer, F., Delphos, Ohio, assignor to H. P. Eysenbach. Drag-saw	205,197	June 25	837	248	13	1135
McCarty, E. P., *et al.* (See Sheldon and Pope, assignors.)						
McCauley, R. E., assignor of one-half interest to D. D. Lloyd, Apollo, Pa. Washing-machine	205,198	June 25	837	248	13	1135
McConoughey, H. N., assignor to J. M. Hart, A. H. Smith, and S. J. Botts, Grant, Iowa. Check-row corn-planter	205,283	June 25	924	275	13	1146
McEwan, M. J., New York, N. Y. Water-closet	205,284	June 25	925	275	13	1146
Mead, E. D., Shortsville, N. Y. Grain-drill	205,285	June 25	927	275	13	1147
Mead, R., McMinnville, Tenn. Box-fastener	205,286	June 25	929	276	13	1147
Meharry, A., La Fayette, Ind. Rail-joint	205,287	June 25	930	276	13	1147
Mellen, G. H. (See Turner, N. F., assignor.)						
Meredith, J., Aurora, Ill. Crown-sheet for locomotive-boilers	205,406	June 25	1055	313	13	1163
Merrell, I. L., San Francisco, Cal. Boiler-covering	205,199	June 25	838	249	13	1135
Miles, G., Grantville, Mass. Oil-still	205,407	June 25	1056	313	13	1163
Miller, F. (See Waterbury and Miller.)						
Miller, M. (See Gannett, W. C., assignor.)						
Miller, W. R., Baltimore, Md. Manufacture of boots	205,200	June 25	839	249	13	1135
Miller, W. R., Baltimore, Md. Manufacture of boots	205,288	June 25	931	276	13	1147
Minary, T. J. (See Speckmann, H. P., assignor.)						
Moore, T. B., *et al.* (See Hill and Jayne, assignors.) (Reissue.)						
Moreau, E., and S. W. Dennis, assignors, by mesne assignments, to said Dennis and J. B. Reynolds, San Francisco, Cal. Motor for dental pluggers	205,289	June 25	932	277	13	1147
Morehouse, W., Buffalo, N. Y. Carbureter	205,201	June 25	840	249	13	1135
Morgan, D. S. (See Bordwell, J., assignor.)						
Morreau, J. (See Beausoleil and Morreau.)						
Morrow, S. G. L., New Bloomfield, Mo. Road-scraper	205,290	June 25	934	277	13	1147
Morse, W. A., Philadelphia, Pa. Match-box	205,202	June 25	842	250	13	1136
Moulton, B. F. (See Reyburn and Hunter, assignors.) (Reissue.)						
Mowder, I. (See Weatherbee and Mowder.)						
Mulford and Bonnet. (See Gipperich, A., assignor.)						
Nellis, A. J., Pittsburg, Pa. Mold for casting metals	198,852	Jan. 1	130	.....	13	29
Newbaker, J. J., Pottsville, Pa. Oiler	198,808	Jan. 1	90	25	13	22
Nicholson File Company. (See Nicholson, W. T., assignor.)						
Nicholson, W. T., assignor to Nicholson File Company, Providence, R. I. File-handle	198,777	Jan. 1	60	15	13	16
Novelty Paper Box Company. (See Heyl and Brebmer, assignors.) (Reissue.)						
Naeher, C., Brooklyn, N. Y. Check-valve for sewers	199,307	Jan. 15	609	178	13	111
New York Ore Separating Company. (See Conkling, J. P., assignor.)						
Nickerson, W. E., Somerville, Mass. Machine for manufacturing circular saws	199,308	Jan. 15	610	178	13	111
Norris, F., and C. E. Sweet, Wappinger's Falls, N. Y. Bolt-holder and clamping-tool	199,220	Jan. 15	623	154	13	97
North, J., Keokuk, Iowa. Preventing incrustation in steam-boilers	199,309	Jan. 15	611	.....	13	111
Nunn, W. J., Boston, Mass. Fire-escape	199,461	Jan. 22	770	226	13	144
Needham, B. F. and L. W., New Castle, Ind. Wheel-cultivator	199,565	Jan. 22	877	257	13	161
Needham, D., Oskaloosa, Iowa. Steam-heating apparatus	199,564	Jan. 22	876	256	13	161
Needham, L. W. (See Needham, B. F. and L. W.)						
Negley, J. S., Jr., *et al.* (See Gillen, W. S., assignor.)						
Noyes, L. W., Batavia, Ill. Horse hay-fork	199,378	Jan. 22	690	203	13	131
Nyvall, H., Chattanooga, Tenn. Mosquito-net frame	199,566	Jan. 22	877	257	13	161
Netscher, J. B., Mansfield, Ohio. Vinegar-generator	199,854	Jan. 29	1186	348	13	217
Netzner, L., assignor of one-half interest to Bradley, Voorhees & Day Manufacturing Company, (limited,) New York, N. Y. Suspender-strap	199,659	Jan. 29	1004	292	13	189
Newsom, A., Valdosta, Ga. Plow	199,736	Jan. 29	1075	314	13	199
Nicolassen, A., assignor to M. E. Nicolassen, Baltimore, Md. Stock-car	199,855	Jan. 29	1187	349	13	217
Nicolassen, M. E. (See Nicolassen, A., assignor.)						
Niedringhaus, F. G. and W. F., St. Louis, Mo. Enameling sheet-iron ware	199,735	Jan. 29	1074	.....	13	199
Niedringhaus, W. F. (See Niedringhaus, F. G. and W. F.)						
Noteman, A., Toledo, Ohio. Rotary pump	199,737	Jan. 29	1075	315	13	199
Nolon, M. D., New Richmond, Ohio, assignor of one-half interest to S. L. Yourtee. Carbureting apparatus	199,928	Feb. 5	40	13	13	239
Nichols, M., assignor of one-half interest to L. L. Sloat, Newburg, N. Y. Griddle greaser and holder	199,929	Feb. 5	42	13	13	239
Nolan, J. J., East Saginaw, Mich. Lamp-bracket	200,082	Feb. 5	195	61	13	263
Norton, L., Hartford, N. Y. Harrow	199,988	Feb. 5	96	32	13	248
Nye, J. R. (See Greenwood, J. T., Jr., assignor.)						
Newman, J., Amenia, N. Y. Implement for filling cartridge-shells	200,149	Feb. 12	267	80	13	283
Nicholson File Company. (See Nicholson, W. T., assignor.)						
Nicholson, W. T., assignor to Nicholson File Company, Providence, R. I. File-cleaner	200,218	Feb. 12	331	100	13	293
Naulty, J. F., assignor of one-half interest to C. S. Greene, Philadelphia, Pa. Disinfecting attachment to water-closets	200,563	Feb. 19	690	203	13	355
Nealley, E. H. (See Buzzell, C. N., assignor.)						
Northrop, H. D., assignor to Waterbury Clock Company, Waterbury, Conn. Clock striking-movement	200,564	Feb. 19	691	203	13	355
Northrup, E. J., Warren, Pa. Oil-saver and casing-head	200,471	Feb. 19	601	177	13	341
Nichols, A. T., Williamsport, Pa. Spring draft-tug	200,749	Feb. 26	902	265	13	394
Nichols, M., Newburg, N. Y. Baking-oven	200,625	Feb. 26	770	226	13	375
Nicholson, W. H., Cincinnati, Ohio, assignor to himself and J. M. Stephens. Washing-machine	200,800	Feb. 26	948	279	13	402
Niedringhaus, F. G. and W. F., St. Louis, Mo. Enameling sheet-iron ware	200,626	Feb. 26	770	.....	13	375
Niedringhaus, W. F. (See Niedringhaus, F. G. and W. F.)						
Nix, M. L., J. M. Stone, and L. Anderson, Paris, Texas. Cotton-seed planter	200,750	Feb. 26	902	265	13	395
Noel, A. T., Brooklyn, N. Y. Lamp-burner	200,627	Feb. 26	771	227	13	375
Newman & Co., R. (See Flocke, R., assignor.)						
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Nittinger, A., Jr. (See McDowell, A. S., assignor.)						
Noble, H. T., Dixon, Ill. Plow-clevis	201,120	Mar. 12	307	94	13	468
Normand, J. H., and L. Dufilho, Natchitoches, La. Medicated oil	201,194	Mar. 12	375	.....	13	479
Nourse, J., Boston, and J. A. Howe, Ayer, Mass. Plow	201,281	Mar. 12	468	144	13	492
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Norris, W. R., Fort Ann, N. Y. Planing-machine	201,624	Mar. 26	856	260 261	13	556
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Nadelhoffer, J. W., De Kalb, Ill. Barb for fence-wires	201,889	Apr. 2	31	9	13	603
Nickerson, W. E., Somerville, Mass. Cutter for reducing bark	201,938	Apr. 2	77	22	13	610
Nolty, A. J., Chattanooga, Tenn. Sealed can	201,939	Apr. 2	77	22	13	610
North & Co., O. B. (See Cogswell, I., Jr., assignor.) (Reissue.)						
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North, O. B., assignor to O. B. North & Co., New Haven, Conn. Adjustable carriage-top	202,043	Apr. 2	184	53	13	625
Norton, J. L., Memphis, Tenn. Machine for making cotton-batting	201,940	Apr. 2	78	22	13	610
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New, J. E., Binghamton, N. Y. Sprinkler	203,487	May 7	264	76	13	857
Newell, D. C., Yonkers, N. Y. Crushing and grinding roll	203 364	May 7	135	39	13	838
Newell, G. F., Sr., and J. Croft; said Croft assignor to S. L. Cox, Jr., and G. F. Newell, Jr., Osseo, Wis. Cockle-separator	203,488	May 7	265	76	13	857
Norrington, H. H., West Bay City, Mich. Bank-check book	203,365	May 7	136	39	13	838
Noyes, H. F., Boston, Mass. Carpet-sweeper	203,489	May 7	266	76	13	857
Nantz, R., Berlin, Prussia, Germany. Cutter-head for frizzing-machines	203,552	May 14	356	100	13	877
Nebinger, G. R., Philadelphia, Pa. Piston-packing	203,639	May 14	431	124	13	887
Noe, F. (See Franke, F. P., assignor.)						
Northey, T., Hamilton, Ontario, Canada. Double stuffing-box for steam-pumps	203,553	May 14	356	101	13	877
Neal, H. W., Wellsville, Pa. Whip-socket and rein-holder	204,072	May 21	903	250	13	954
Neuss, Hesslein & Co. (See Thomas, B. M., assignor.)						
Newton, L. W. (See Hess and Newton.)						
Nickerson, J. A., Boston, Mass. Connecting-tip for electrical conductors	203,931	May 21	752	217	13	935
Norton, E., Chicago, Ill. Canister. (Reissue)	8,249	May 21	973	277	13	962
Nay, M. C., Boston, Mass. Sand-guard for carriage-axles	204,164	May 28	1025	291	13	973
Nichols, W. H. (See Pénissat, A., assignor.)						
Nilson, N., Minneapolis, Minn. Vehicle-spring	204,360	May 28	1229	350	13	999
Nitschmann, F., Flatonia, Tex. Plow	204,361	May 28	1230	350	13	999
New England Wardrobe Bedstead Company. (See Maine, S. C., assignor. (Reissue.)						
Newberry, S. L., New York, N. Y. Amalgamator	204,447	June 4	32	10	13	1017
Nicholson File Company. (See Nicholson, W. T., assignor.)						
Nicholson, W. T., assignor to Nicholson File Company, Providence, R. I. File-holder	204,596	June 4	169	54	13	1037
Nolan, J. J., East Saginaw, Mich. Beading attachment to cutter-heads	204,597	June 4	170	55	13	1037
Norcross, J. W., Boston, Mass. Rowlock	204,598	June 4	170	55	13	1037
Norton, C. W. (See Van Gumster, J., assignor.)						
Neal, G. A., Smithfield, Ky. Automatic car-brake	204,679	June 11	262	82	13	1053
Nell, J., Chicago, Ill. Liquid-forcing apparatus	204,680	June 11	264	82	13	1053
Nelli, G. W., Boston, Mass. Piano-forte action	204,752	June 11	341	103	13	1063
Newell, T., Sacramento, Cal. Middlings-separator	204,681	June 11	265	82	13	1053
Nichols, D. R., Alexandria Bay, N. Y. Animal-trap	204,753	June 11	342	104	13	1063
Nye, H. F., West Dennis, Mass. Picture-rod molding	204,754	June 11	343	104	13	1063
Nystrom, J. F. (See Woolridge, Nystrom, and Howard.)						
New Haven Folding Chair Company. (See Dann and Kelsey, assignors.)						
Nichols, J. W., Mendon, Mo. Hen's-nest house	205,125	June 18	743	221	13	1118
Nicol, A., Scranton, Pa. Grate for stoves	204,911	June 18	534	156	13	1090
North, L. H., Chicago, Ill. Railway-frog	205,126	June 18	744	221	13	1118
Norton, E., assignor of one-half interest to W. F. Baldwin, Boston, Mass. Broiling-chamber	204,991	June 18	616	180	13	1100
Nelsser, B. A., Battle Creek, Mich. Lamp-bracket	205,291	June 25	935	277	13	1148
Neville, G. L., and L. C. Godwin, Portsmouth, Va. Stamp-canceling device	205,292	June 25	935	277	13	1148
New York Plow Company. (See Pentreath and Crosby, assignors.)						
Newell, D. C., Yonkers, N. Y. Belt-shipper	205,408	June 25	1057	313	13	1163
Nichols, H. P., Reading, Mass. Lamp	205,203	June 25	842	250	13	1136
Niles, M. C. and S. S., Oak Park, Ill. Reversible latch	205,204	June 25	843	250	13	1136
Niles, S. S. (See Niles, M. C. and S. S.)						
O'Brien, D., Brooklyn, N. Y. Dumping-car. (Reissue)	8,021	Jan. 1	211	59	13	40
Ochleeker, H. C. F., Hamburg, Germany. Dental articulator	198,853	Jan. 1	131	37	13	29

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Martin, T. (See Dimelow, J., assignor.)						
Mason & Hamlin Organ Company. (See Trowbridge, W. O., assignor.)						
Matthews, J. (See Matthews, J. S. and J.)						
Matthews, J. S. and J., Athens, Tenn. Gate-latch	205,404	June 25	1054	312	13	1163
Maurer, D., Philadelphia, Pa. Insecticide compound	205,405	June 25	1055	.....	13	1163
May, Firnhaber & Co., C. W. (See Agnel, A. E. N., assignor.)						
Mayrhofer, F., Delphos, Ohio, assignor to H. P. Eysenbach. Drag-saw	205,197	June 25	837	248	13	1135
McCarty, E. P., *et al.* (See Sheldon and Pope, assignors.)						
McCauley, R. E., assignor of one-half interest to D. D. Lloyd, Apollo, Pa. Washing-machine	205,198	June 25	837	248	13	1135
McConoughey, H. N., assignor to J. M. Hart, A. H. Smith, and S. J. Botts, Grant, Iowa. Check-row corn-planter	205,283	June 25	924	275	13	1146
McEwan, M. J., New York, N. Y. Water-closet	205,284	June 25	925	275	13	1146
Mead, E. D., Shortsville, N. Y. Grain-drill	205,285	June 25	927	275	13	1147
Mead, R., McMinnville, Tenn. Box-fastener	205,286	June 25	929	276	13	1147
Meharry, A., La Fayette, Ind. Rail-joint	205,287	June 25	930	276	13	1147
Mellen, G. H. (See Turner, N. F., assignor.)						
Meredith, J., Aurora, Ill. Crown-sheet for locomotive-boilers	205,406	June 25	1055	313	13	1163
Merrell, I. L., San Francisco, Cal. Boiler-covering	205,199	June 25	838	249	13	1135
Miles, G., Grantville, Mass. Oil-still	205,407	June 25	1056	313	13	1163
Miller, F. (See Waterbury and Miller.)						
Miller, M. (See Gannett, W. C., assignor.)						
Miller, W. R., Baltimore, Md. Manufacture of boots	205,200	June 25	839	249	13	1135
Miller, W. R., Baltimore, Md. Manufacture of boots	205,288	June 25	931	276	13	1147
Minary, T. J. (See Speckmann, H. P., assignor.)						
Moore, T. B., *et al.* (See Hill and Jayne, assignors.) (Reissue.)						
Morean, E., and S. W. Dennis, assignors, by mesne assignments, to said Dennis and J. B. Reynolds, San Francisco, Cal. Motor for dental pluggers	205,289	June 25	932	277	13	1147
Morehouse, W., Buffalo, N. Y. Carbureter	205,201	June 25	840	249	13	1135
Morgan, D. S. (See Bordwell, J., assignor.)						
Morreau, J. (See Beausoleil and Morreau.)						
Morrow, S. G. L., New Bloomfield, Mo. Road-scraper	205,290	June 25	934	277	13	1147
Morse, W. A., Philadelphia, Pa. Match-box	205,202	June 25	842	250	13	1136
Moulton, B. P. (See Reyburn and Hunter, assignors.) (Reissue.)						
Mowder, I. (See Weatherbee and Mowder.)						
Mulford and Bonnet. (See Gipperich, A., assignor.)						
Nellis, A. J., Pittsburg, Pa. Mold for casting metals	198,852	Jan. 1	130	.....	13	29
Newbaker, J. J., Pottsville, Pa. Oiler	198,808	Jan. 1	90	25	13	22
Nicholson File Company. (See Nicholson, W. T., assignor.)						
Nicholson, W. T., assignor to Nicholson File Company, Providence, R. I. File-handle	198,777	Jan. 1	60	15	13	16
Novelty Paper Box Company. (See Heyl and Brehmer, assignors.) (Reissue.)						
Naeher, C., Brooklyn, N. Y. Check-valve for sewers	199,307	Jan. 15	609	178	13	111
New York Ore Separating Company. (See Conkling, J. P., assignor.)						
Nickerson, W. E., Somerville, Mass. Machine for manufacturing circular saws	199,308	Jan. 15	610	178	13	111
Norris, F., and C. E. Sweet, Wappinger's Falls, N. Y. Belt-holder and clamping-tool	199,220	Jan. 15	623	154	13	97
North, J., Keokuk, Iowa. Preventing incrustation in steam-boilers	199,309	Jan. 15	611	.....	13	111
Nunn, W. J., Boston, Mass. Fire-escape	199,461	Jan. 22	770	226	13	144
Needham, B. F. and L. W., New Castle, Ind. Wheel-cultivator	199,565	Jan. 22	877	257	13	161
Needham, D., Oskaloosa, Iowa. Steam-heating apparatus	199,564	Jan. 22	876	256	13	161
Needham, L. W. (See Needham, B. F. and L. W.)						
Negley, J. S., Jr., *et al.* (See Gillen, W. S., assignor.)						
Noyes, L. W., Batavia, Ill. Horse hay-fork	199,378	Jan. 22	690	203	13	131
Nyvall, H., Chattanooga, Tenn. Mosquito-net frame	199,566	Jan. 22	877	257	13	161
Netscher, J. B., Mansfield, Ohio. Vinegar-generator	199,854	Jan. 29	1186	348	13	217
Netzner, L., assignor of one-half interest to Bradley, Voorhees & Day Manufacturing Company, (limited,) New York, N. Y. Suspender-strap	199,659	Jan. 29	1004	292	13	189
Newsom, A., Valdosta, Ga. Plow	199,736	Jan. 29	1075	314	13	199
Nicolassen, A., assignor to M. E. Nicolassen, Baltimore, Md. Stock-car	199,855	Jan. 29	1187	349	13	217
Nicolassen, M. E. (See Nicolassen, A., assignor.)						
Niedringhaus, F. G. and W. F., St. Louis, Mo. Enameling sheet-iron ware	199,735	Jan. 29	1074	.....	13	199
Niedringhaus, W. F. (See Niedringhaus, F. G. and W. F.)						
Noteman, A., Toledo, Ohio. Rotary pump	199,737	Jan. 29	1075	315	13	199
Nelon, M. D., New Richmond, Ohio, assignor of one-half interest to S. L. Yourtee. Carbureting apparatus	199,928	Feb. 5	40	13	13	239
Nichols, M., assignor of one-half interest to I. L. Sloat, Newburg, N. Y. Griddle greaser and holder	199,929	Feb. 5	42	13	13	239
Nolan, J. J., East Saginaw, Mich. Lamp-bracket	200,082	Feb. 5	195	61	13	263
Norton, L., Hartford, N. Y. Harrow	199,988	Feb. 5	96	32	13	248
Nye, J. R. (See Greenwood, J. T., Jr., assignor.)						
Newman, J., Amenia, N. Y. Implement for filling cartridge-shells	200,149	Feb. 12	267	80	13	283
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New, J. E., Binghamton, N. Y. Sprinkler	203,487	May 7	264	76	13	857
Newell, D. C., Yonkers, N. Y. Crushing and grinding roll	203,364	May 7	135	39	13	838
Newell, G. F., Sr., and J. Croft; said Croft assignor to S. L. Cox, Jr., and G. F. Newell, Jr., Osseo, Wis. Cockle-separator	203,488	May 7	265	76	13	857
Norrington, H. H., West Bay City, Mich. Bank-check book	203,365	May 7	136	39	13	838
Noyes, H. F., Boston, Mass. Carpet-sweeper	203,489	May 7	266	76	13	857
Naatz, R., Berlin, Prussia, Germany. Cutter-head for frizzing-machines	203,552	May 14	356	100	13	877
Nebinger, G. R., Philadelphia, Pa. Piston-packing	203,639	May 14	431	124	13	887
Noe, F. (See Franke, F. P., assignor.)						
Northey, T., Hamilton, Ontario, Canada. Double stuffing-box for steam-pumps	203,353	May 14	356	101	13	877
Neal, H. W., Wellsville, Pa. Whip-socket and rein-holder	204,072	May 21	903	259	13	954
Neuss, Heeslein & Co. (See Thomas, B. M., assignor.)						
Newton, L. W. (See Hess and Newton.)						
Nickerson, J. A., Boston, Mass. Connecting-tip for electrical conductors	203,931	May 21	752	217	13	935
Norton, E., Chicago, Ill. Canister. (Reissue)	8,249	May 21	973	277	13	962
Nay, M. C., Boston, Mass. Sand-guard for carriage-axles	204,104	May 28	1025	291	13	973
Nichols, W. H. (See Pénissat, A., assignor.)						
Nilson, N., Minneapolis, Minn. Vehicle-spring	204,360	May 28	1229	350	13	999
Nitschmann, F., Flatonia, Tex. Plow	204,361	May 28	1230	350	13	999
New England Wardrobe Bedstead Company. (See Maine, S. C., assignor. (Reissue.)						
Newberry, S. L., New York, N. Y. Amalgamator	204,447	June 4	32	10	13	1017
Nicholson File Company. (See Nicholson, W. T., assignor.)						
Nicholson, W. T., assignor to Nicholson File Company, Providence, R. I. File-holder	204,506	June 4	169	54	13	1037
Nolan, J. J., East Saginaw, Mich. Reading attachment to cutter-heads	204,507	June 4	170	55	13	1037
Norcross, J. W., Boston, Mass. Rowlock	204,508	June 4	170	55	13	1037
Norton, C. W. (See Van Gumster, J., assignor.)						
Neal, G. A., Smithfield, Ky. Automatic car-brake	204,679	June 11	202	82	13	1053
Neil, J., Chicago, Ill. Liquid-forcing apparatus	204,680	June 11	204	82	13	1053
Neill, G. W., Boston, Mass. Piano-forte action	204,752	June 11	341	104	13	1063
Newell, T., Sacramento, Cal. Middlings-separator	204,661	June 11	265	82	13	1053
Nichols, D. R., Alexandria Bay, N. Y. Animal-trap	204,753	June 11	342	104	13	1063
Nye, H. F., West Dennis, Mass. Picture-rod molding	204,754	June 11	343	104	13	1063
Nystrom, J. F. (See Woolridge, Nystrom, and Howard.)						
New Haven Folding Chair Company. (See Dann and Kelsey, assignors.)						
Nichols, J. W., Mendon, Mo. Plen's-nest house	205,125	June 18	743	221	13	1118
Nicol, A., Scranton, Pa. Grate for stoves	204,911	June 18	534	156	13	1090
North, L. H., Chicago, Ill. Railway-frog	205,126	June 18	744	221	13	1118
Norton, E., assignor of one-half interest to W. F. Baldwin, Boston, Mass. Broiling-chamber	204,991	June 18	616	180	13	1100
Neisser, H. A., Battle Creek, Mich. Lamp-bracket	205,291	June 25	935	277	13	1148
Neville, G. L., and L. C. Godwin, Portsmouth, Va. Stamp-canceling device	205,292	June 25	935	277	13	1148
New York Plow Company. (See Pentreath and Crosby, assignors.)						
Newell, D. C., Yonkers, N. Y. Belt-shipper	205,408	June 25	1057	313	13	1163
Nichols, H. P., Reading, Mass. Lamp	205,203	June 25	842	250	13	1136
Niles, M. C. and S. S., Oak Park, Ill. Reversible latch	205,204	June 25	843	250	13	1136
Niles, S. S. (See Niles, M. C. and S. S.)						
O'Brien, D., Brooklyn, N. Y. Dumping-car. (Reissue)	8,021	Jan. 1	211	59	13	40
Oehlecker, H. C. F., Hamburg, Germany. Dental articulator	198,853	Jan. 1	131	37	13	29

Alphabetical list of patentees, January to June, inclusive—Continued.

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Okerlund, P., San Francisco, Cal. Fifth-wheel for vehicles	198,809	Jan. 1	91	25	13	22
Oliver, D. B., Pittsburg, Pa. Pile for making skelps	198,854	Jan. 1	132	37	13	29
Olmstead, J. A., Port Richmond, assignor of one-half interest to C. Meyer, New York, N. Y. Rubber overshoe	198,901	Jan. 1	186	52	13	37
Oppenheimer, S., Newark, N. J. Latch and lock combined	198,751	Jan. 1	23	5, 6	13	12
O'Brien, G., London, England. Amalgamator	199,095	Jan. 8	381	113	13	76
Ohl, G. A. (See Burritt and Ohl.)						
Orange Judd Company, *et al.* (See Bausch, J. J., assignor.)						
Orendorff, E. E., Delevan, Ill. Apple-corer	198,954	Jan. 8	244	70	13	53
Osborne, D. D., assignor of one-half interest to W. Howard, Magnolia, Wis. Bed-bottom	199,096	Jan. 8	382	113	13	76
Osborne, H. F. (See Selleck, R. M., assignor.)						
Olds, J. D., Fort Wayne, Ind. Carriage-seat	199,310	Jan. 15	612	178	13	111
Oliver, D. B., Pittsburg, Pa. Pile	199,311	Jan. 15	613	179	13	111
Owen, F. D., Joplin, Mo. Suppository	199,221	Jan. 15	524	.....	13	98
Oerting, P. J. M., *et al.* (See Hansen, C., assignor.)						
Oerting, S., *et al.* (See Hansen, C., assignor.)						
Obert, F. J. (See Daath, J. P., assignor.)						
Oliver, H. F. (See Briggs, O. P., assignor.)						
Osborne, W. F., Ansonia, Conn. Buckle	199,856	Jan. 29	1188	349	13	217
Oliver, R. W., Richmond, Va. Plug-tobacco	199,989	Feb. 5	97	32	13	248
Osborn, B. L. (See Alexander, Osborn, and Anthony.)						
Osburg, F. X., Cincinnati, Ohio. Press for compressing cigars, &c., in packing-boxes	199,990	Feb. 5	97	32	13	248
Oviatt, F. L., Cleveland, Ohio. Cigar-support	200,083	Feb. 5	195	62	13	263
O'Brien, J. (See Randall and O'Brien.)						
O'Donnell, F. B., assignor of one-half interest to G. W. Sutley, Franklin, Pa. Well-tube clamp	200,329	Feb. 12	451	133	13	310
Oliver, J. H., Baltimore, Md. Preserving juices of green corn	200,150	Feb. 12	268	.....	13	283
Ovenden, W. C., Worcester, Mass. Bell-ringer for locomotives	200,330	Feb. 12	452	133	13	310
Owen, A., Williamsport, Pa. Medical compound	200,331	Feb. 12	452	.....	13	310
Orendorf, M. (See Mallory, C. M., assignor.)						
Osborne, T. B., New York, N. Y. Lantern	200,565	Feb. 19	692	203	13	355
O'Neill, A., Baltimore, Md. Manufacture of copper and tinned-copper sheets	200,801	Feb. 26	949	.....	13	402
Osburn, T. F., Jerseyville, Ill. Sawing-machine	200,751	Feb. 26	903	266	13	395
Osgood, N. A., Battle Creek, Mich. Portable folding boat	200,684	Feb. 26	814	239	13	362
Ottinger, D., Erie, Pa. Fire-escape	200,665	Feb. 26	815	240	13	362
Otto, N. A., Deutz, Germany, and F. W. and W. J. Crossley, Manchester, England. Gas-motor engine. (Reissue)	8,107	Feb. 26	974	281	13	406
Outten, G. F., Norfolk, Va. Bottle-stopper fastener	200,666	Feb. 26	815	240	13	362
Owen, H., Quincy, Mass. Try-square	200,628	Feb. 26	772	227	13	375
Osborne, T. D., Louisville, Ky. Watchman's detecter	200,928	Mar. 5	107	36	13	432
Osgood, H. H. (See Smith, W., assignor.)						
Oakford, E. (See Gemuert, C., assignor.)						
Ober, C. H. and R. H., Garrettsville, Ohio. Combined flour chest, sifter, and safe	201,195	Mar. 12	375	116	13	479
Ober, R. H. (See Ober, C. H. and R. H.)						
Ogborn, H., Richmond, assignor of one-half interest to S. Watson, Dublin, Ind. Wardrobe-bedstead	201,282	Mar. 12	471	144	13	492
Osgood, G. A., Stoneham, Mass. Heaters for shoe-makers' tools for finishing soles	201,121	Mar. 12	307	94	13	468
Oberndorfer, A., Norfolk, Va. Bag-lock	201,552	Mar. 19	765	233	13	540
O'Brien, J., New Britain, Conn. Plant-duster	201,441	Mar. 19	651	199	13	524
Oaks, D. B., Pittsburg, Pa. Folding stool	201,823	Mar. 26	1048	330	13	585
Osgood, N. B., Biddeford, Me. Reciprocating churn	201,625	Mar. 26	857	261	13	556
Oistot, J. D., Springfield, Ohio. Driving chain and pulley	201,698	Mar. 26	920	281	13	566
Owen, S. R., and F. M. Mahan, St. Joseph, Mo. Vehicle-top	201,824	Mar. 26	1049	320 321	13	585
Olbrich, H. E. (See Boehmler and Olbrich.)						
Orwig, T. G., Des Moines, Iowa, assignor of three-fourths interest to A. Snook, Oswego, Ill. Barbed fence-wire	201,890	Apr. 2	31	9	13	603
Ottenheimer Brothers. (See Ottenheimer, J., assignor.)						
Ottenheimer, J., assignor to Ottenheimer Brothers, New York, N. Y. Corset	202,044	Apr. 2	185	54	13	625
Oak & Co., L. (See Fogg, J. T., assignor.)						
O'Lally, P. K., Boston, Mass. Bung and bushing	202,284	Apr. 9	450	132	13	666
Ostergard, J., Cherry Creek, Nev. Device for holding and counting coin	202,188	Apr. 9	355	104	13	653
Owens, J. E. (See Miller, C. C., assignor.)						
Osterle, J. G., Francisco, Mich. Washing-machine	202,456	Apr. 16	642	187	13	698
Olds, J. D., Fort Wayne, Ind. Carriage-seat	202,575	Apr. 16	777	224	13	713
Oliver, P. A., Wilkesbarre, Pa. Device for extracting keys	202,457	Apr. 16	643	188	13	698
Osgood, E., Boston, Mass., assignor, by mesne assignments, to E. P. Gleason, New York, N. Y. Rendering leather and other fibrous substances soft and flexible and impervious to gas, and composition for same. (Reissue)	8,186	Apr. 16	843	.....	13	722
Otto, R., Cortland, N. Y. Oscillating chair	202,576	Apr. 16	778	224	13	714
Ogburn, S. D., *et al.* (See Palmer, C., assignor.)						
Oldendorph, J., Jr., Waterloo, Ill. Plow	202,746	Apr. 23	972	279	13	746
Olmsted, D., G. L. Travis, and C. R. Chute, assignors to G. A. Brackett, Minneapolis, Minn. Grain-binder	202,747	Apr. 23	972	279 280	13	746
Overfield, N., Rockaway Beach, N. Y. Portable bathing-house	202,748	Apr. 23	976	280	13	746
Oliver, M. W. (See Gessert, C. F., assignor.)						
Opperman, H., *et al.* (See Mackey, J., assignor.)						
Orth, P., Williamsport, Pa. Game-counter	203,189	Apr. 30	1498	420	13	810
Oakley, J. M., Brooklyn, N. Y. Washing-machine	203,366	May 7	137	39	13	839
Osborne, T. D., Louisville, Ky. Chromatic-printing block	203,400	May 7	267	77	13	857
Overshiner, J. M., Elwood, and T. Shannon, Anderson, Ind. Washing-machine	203,367	May 7	138	40	13	839
Owen, E. W. (See Johntry, J. A., assignor.)						
Oyler, J. H., *et al.* (See Winters, J. R., assignor.)						
Oldrieve, S. R., Cincinnati, Ohio. Device for heating tools	203,554	May 14	357	101	13	877
Ortmann, C. J., and C. Kampf, Whitesborough, N. Y. Curtain-roller	203,759	May 14	561	158	13	903
Osgood, G. N., Boston, Mass. Steam bell-ringer	203,760	May 14	561	159	13	903
Otis Brothers & Co. (See Schmidt, R., assignor.)						
Offner, W., Jersey City Heights, N. J. Tassel	204,073	May 21	904	259	13	954
Ohmer, G., Dayton, Ohio. Cigar-tip cutter	204,074	May 21	905	259	13	954
Olsted, C., Boulder, Colo., assignor to Olsted Furnace Company. Furnace for desulphurizing ores	204,075	May 21	906	259 260	13	954
Olsted Furnace Company. (See Olsted, C., assignor.)						
Osgood, R. R. (See Park, J., assignor.)						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Overbaugh, A. W., assignor to G. R. Wright, New York, N. Y. Reservoir slate-cleaner. (Reissue)	8,241	May 21	963	275	13	961
Owen, J. W. (See Phillippo and Owen.)						
Ogden, J., and J. Garrett, Chester, Pa. Cop-building rail for spinning-mules	204,362	May 28	1231	350	13	999
Oliver, D., Chicago, Ill. Oatmeal-machine	204,165	May 28	1025	292	13	973
Orum, M. L. (See Meller and Orum.) (Reissue.)						
Osborne, A. P., assignor to O. Osborne, Trumansburg, N. Y. Lawn-mower	204,242	May 28	1109	316	13	983
Osborne, O. (See Osborne, A. P., assignor.)						
O'Sullivan, J. F., and E. Bloom; E. Bloom for himself and as administrator of J. F. O'Sullivan, deceased, Jackson, Miss. Mosquito-bar frame	204,243	May 28	1110	317	13	983
Orwig, T. G. (See Handley, E., assignor.)						
Osselin, E. A., Paris, France, and A. Meyer, Syracuse, N. Y. Galvanic ring, bracelet, or necklace	204,502	June 4	77	26	13	1023
Olin, M. M., A. Zwiebel, and W. A. Bennett, Burlington, Wis. Whiffletree-hook	204,682	June 11	266	83	13	1053
O'Connor, W. D., Washington, D. C. Stamping cigars with revenue-stamps	205,127	June 18	745	221	13	1118
Orthp, W. H., Norristown, Pa. Fish-drain for casks	205,128	June 18	745	222	13	1118
Overin, G. P., and J. H. Coldwell, New York, N. Y. Apparatus for working rattan	204,992	June 18	610	181	13	1100
Oliver, D., Chicago, Ill. Oatmeal-machine	205,293	June 25	936	278	13	1148
Osborne, W. H. H., *et al.* (See Crowell, S., assignor.)						
Palmer, T. J., New York, N. Y. Rocking-chair	198,810	Jan. 1	92	25	13	22
Parker, H., Ottawa, Ill. Gopher or ridging attachment for cultivators	198,752	Jan. 1	24	6	13	12
Payne, J. M., Dallas, Texas. Plow	198,902	Jan. 1	186	52	13	37
Percival, T., Napanoch, N. Y. Door-latch	198,811	Jan. 1	92	25	13	22
Perkins, J., San Francisco, Cal. Soluble-ink pen	198,812	Jan. 1	93	26	13	22
Perrin, G. E., Boston, Mass. Spring-hook	198,813	Jan. 1	94	26	13	22
Perry, W. V., Beaver Dam, Wis., assignor of one-half interest to D. Smith, Burlington, N. J. Safety-pocket	198,753	Jan. 1	25	6	13	12
Phelps, I. M., assignor of part interest to T. L. Chase and H. J. Fillman, Philadelphia, Pa., and D. K. Allen, Boston, Mass. Amalgamator	198,904	Jan. 1	189	53	13	38
Phelps, W. E., Elmwood, Ill. Electro-magnetic watchman's time-recorder	198,814	Jan. 1	95	26	13	22
Phelps, W. E., Elmwood, Ill. Electro-magnetic watchman's time-recorder	198,855	Jan. 1	133	38	13	29
Pole, B. C., Washington, D. C. Device for printing tickets and recording cash receipts	198,815	Jan. 1	96	26	13	22
Post & Co. (See Yoe, W. P., assignor.)						
Putney, N. H., Bridgeport, Conn. Pendulum-scales for weighing						
Palmer, A., administratrix. (See Palmer, G. T.)						
Palmer, G. T., A. Palmer, administratrix, and assignor to J. Palmer, Brooklyn, N. Y. Child's carriage	199,097	Jan. 8	382	114	13	76
Palmer, J. (See Palmer, G. T., assignor.)						
Parker, A. (See Johnson, J. M., assignor.)						
Parker, M. A. (See Moodie, E. L., assignor.)						
Payson, J. R., Chicago, Ill. Joist-shoe	199,098	Jan. 8	384	114	13	76
Pierce, C. W., New York, N. Y. Door-hanger	198,907	Jan. 8	289	84	13	60
Pinkham, J., New Market, N. H. Nut-lock	199,099	Jan. 8	385	115	13	76
Pitt, W. A., New York, N. Y. Sewer-trap	199,100	Jan. 8	385	115	13	76
Pitt, W. A., New York, N. Y. Overflow-valve	199,101	Jan. 8	386	115	13	77
Plank, W., De Kalb, Ill. Barrel-cart	199,102	Jan. 8	387	115	13	77
Plotts, G. W., *et al.* (See Hixson, E., assignor.)						
Powers, S. H., assignor of one-third interest to J. L. Dobson, Salisbury, Mo. Horse hay-rake	199,103	Jan. 8	387	116	13	77
Pray, J. F., Boston, Mass. Sulky	199,104	Jan. 8	388	116	13	77
Prentice, C. F., New York, N. Y. Billiard-bridge	199,105	Jan. 8	389	116	13	77
Palmer, W. L. (See Winn and Bliss, assignors.)						
Patterson, C. H., *et al.* (See Barber, O. P., assignor.)						
Patterson, J. M. (See McConnell, E., assignor.)						
Peiffer, C. H., *et al.* (See Peiffer and Richards, assignors.) (Reissue.)						
Peiffer, J., and S. Richards, Valonia, Pa., assignors to said J. Peiffer, C. H. Peiffer, and H. C. Johnson. Apparatus for aging whisky and other spirits. (Reissue)	8,042	Jan. 15	656	192	13	118
Perkins, C. H., Bloomington, Ill. Pipe-coupling	199,312	Jan. 15	615	179	13	111
Perry, F. W., assignor to W. A. Leavitt, Philadelphia, Pa. Bottle-stopper fastener	199,165	Jan. 15	471	139	13	89
Peter, L., St. Paul, Minn. Oil-can jacket	199,222	Jan. 15	524	154	13	98
Pierce, Z. G., Providence, R. I. Safety-pin	199,346	Jan. 15	651	190	13	117
Pillsbury, S., *et al.* (See Zimmerman, A. W., assignor.)						
Piper, O., Manchester, N. H. Shedding mechanism	199,223	Jan. 15	525	154	13	98
Pounds, D. T. (See Crump, T. J., assignor.)						
Purdy, C. G., assignor to himself and M. Kline, New York, N. Y. Machine for polishing mouldings	199,166	Jan. 15	472	139	13	89
Paige, D. O., Detroit, Mich., assignor to Detroit Safe Company. Burglar-proof safe	199,567	Jan. 22	878	257 258	13	162
Parrett, R. J., Albany, Ind. Carpet-stretcher	199,462	Jan. 22	771	226	13	145
Partridge, E. E. (See Partridge, J. W., assignor.)						
Partridge, J. W., Boston, assignor to E. E. Partridge, Brookline, Mass. Back and shoulder brace	199,463	Jan. 22	772	226	13	145
Peall, W. A. (See Jones, J. E., assignor.)						
Peters, P. F., Natick, Mass. Lasting-hammer	199,568	Jan. 22	881	258	13	162
Phillips, J., Jewell City, Kans. Wind-wheel governor	199,464	Jan. 22	773	227	13	145
Phillips, J. J., Norfolk, Va. Shipping-can for oysters	199,569	Jan. 22	882	258	13	162
Pollock, D., Wooster, Ind. Railway-switch	199,570	Jan. 22	882	259	13	162
Pope, F. L., Elizabeth, N. J., assignor to himself, S. C. Hendrickson, J. M. Ashley, and J. D. Lincoln. Electric railway-signal. (Reissue)	8,044	Jan. 22	928	271 272	13	169
Pope, F. L., Elizabeth, N. J., assignor to himself, S. C. Hendrickson, J. M. Ashley, and J. D. Lincoln. Electric railway-signal. (Reissue)	8,045	Jan. 22	932	272	13	169
Prall, J. H. R., Elmira, N. Y. Transom-lifter	199,465	Jan. 22	774	227	13	145
Preako, F. A., New York, N. Y. Fire-escape	199,571	Jan. 22	883	259	13	162
Preston, E. B. (See Caswell, W. A., assignor.)						
Price, F. H., Irvington, and A. S. Campbell, Elizabeth, N. J. Photographic vignetting device	199,466	Jan. 22	774	227	13	145
Parker, D. J. (See Stuart and Parker.)						
Parker, S. O., Littleton, N. H. Glove	199,738	Jan. 29	1077	315	13	200
Parry, H., Milwaukee, Wis. Tilting-chair	199,857	Jan. 29	1189	349	13	217
Pate, T. H., assignor of one-half interest to H. Balus and Z. S. Knickerbocker, Wayne, Mich. Thill-coupling	199,662	Jan. 29	1007	293	13	189
Pattberg & Brothers, L. (See Pattberg and Gaertner, assignors.)						
Pattberg, H., Jersey City Heights, N. J., and A. Gaertner, assignors to L. Pattberg & Brothers, New York, N. Y. Automatic toy	199,858	Jan. 29	1190	349	13	217
Pattengell, H., Schoolcraft, assignor to G. A. Watkins, Detroit, Mich. Composition for slate	199,859	Jan. 29	1191	.....	13	217

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Perry, F. W., assignor to W. A. Leavitt, Philadelphia, Pa. Bottle-stopper. (Reissue)	8,061	Jan. 29	1223	359	13	222
Petersen, T., Boston, Mass. Reefing fore-and-aft sails	199,739	Jan. 29	1077	315	13	200
Phillips, E. F. (See Heaton, L. E., assignor.)						
Pierce, A. W., Oconto, Wis. Door-spring	199,740	Jan. 29	1078	316	13	200
Pirch, A., Denver, Colo. Blacksmith's combined machine	199,741	Jan. 29	1079	316	13	200
Platt, G. H. (See Drake, S. E., assignor.)						
Poor, C., Dubuque, Iowa., assignor to S. S. White, Philadelphia, Pa. Dental drill. (Reissue)	8,065	Jan. 29	1228	360, 361	13	223
Potter, W. R., Doylestown, Ohio. Wagon-coupling	199,860	Jan. 29	1191	350	13	217
Potter, T. (See Snow, A. E., assignor.)						
Powell, T., Stockton, Cal. Derrick	199,660	Jan. 29	1005	292	13	189
Powell, T., Stockton, Cal. Netting for unloading wagons	199,661	Jan. 29	1006	293	13	189
Powell, W. (See Yaux, E. P., assignor.)						
Pratt, S. C., Chicago, Ill. Electro-galvanic chair	199,663	Jan. 29	1038	303	13	189
Prescott, G. B., *et al.* (See Smith, G., assignor.)						
Priestman, E. (See Singleton and Priestman.)						
Primm, W. W., assignor to himself and R. W. Hamilton, Murphysborough, Ill. Reciprocating churn-dash	199,742	Jan. 29	1080	317	13	200
Palmer, C. W., Lynn, and C. Houghton, Boston, Mass., assignors, by mesne assignments, to Merino Shoe Company. Felt shoe. (Reissue)	8,070	Feb. 5	232	71	13	269
Palmer, J., Orr, Minn. Bee-hive	200,084	Feb. 5	196	62	13	263
Parlin & Orendorff. (See Parlin, W. H., assignor.)						
Parlin, W. H., assignor to Parlin & Orendorff, Canton, Ill. Sulky-plow	199,930	Feb. 5	43	14	13	239
Patrick, W. R., assignor of one-half interest to A. C. Merryman, Marinette, Wis. Obtaluing fiber from wood for paper-pulp	200,085	Feb. 5	197	.....	13	264
Pearson, M. H., Leeds, England. Waxing device for sewing-machines	199,991	Feb. 5	98	32	13	249
Pearson, R. P., assignor of one-half interest to E. V. Machette, Jr., Philadelphia, Pa. Loom-temple	200,086	Feb. 5	198	62	13	264
Peck, J. S., Towanda, Pa. Mower	199,992	Feb. 5	99	33	13	249
Phelps, G. H., *et al.* (See Bennett, E. S., assignor.) (Reissue.)						
Plume and Atwood Manufacturing Company. (See Atwood, L. J., assignor.)						
Pope, J. D., Caldwell county, Mo. Corn-planter	200,087	Feb. 5	199	62	13	264
Pope, J. E., and J. S. Anthony, Taunton, Mass. Stove-leg	199,931	Feb. 5	44	14	13	239
Preiss, J., Buffalo, N. Y. Exercising-machine	199,932	Feb. 5	45	14	13	240
Pardessus, S. J., Brooklyn, N. Y. Ventilating sky-light	200,332	Feb. 12	453	134	13	310
Patterson, J. S. (See Griffith and Patterson.) (Reissue.)						
Peck, J. W. (See Schwerdt, S., assignor.)						
Pell, H. W., Rome, N. Y. Vehicle-spring	200,333	Feb. 12	454	134	13	310
Pennock, I. N. and W., Minerva, Ohio. Combined tire upsetter and shears	200,334	Feb. 12	454	134	13	310
Pennock, W. (See Pennock, I. N. and W.)						
Peters, N. I. (See Gordon, J. H., assignor.)						
Phelps, I. M., assignor of part interest to T. L. Chase and H. J. Fillman, Philadelphia, Pa., and D. K. Allen, Boston, Mass. Ore-amalgamator	200,335	Feb. 12	456	135	13	311
Phelps, I. M., assignor of part interest to T. L. Chase and H. J. Fillman, Philadelphia, Pa., and D. K. Allen, Boston, Mass. Ore-crusher	200,336	Feb. 12	457	135	13	311
Phillips, T., Akron, assignor of one-half interest to A. Adams, Cleveland, Ohio. Paper for paper bags and apparatus for making the same	200,337	Feb. 12	458	135	13	311
Photo Engraving Company. (See Moss, J. C., assignor.)						
Pierce, E., and S. Eggers, New Bedford, Mass. Breech-loading gun	200,338	Feb. 12	459	135	13	311
Post, J. F., *et al.* (See Buie, D. M., assignor.)						
Pott, C. W., Sparta, Wis. Horse-collar fastening	200,339	Feb. 12	460	136	13	311
Prahar, L. (See Reed and Prahar.)						
Parker, J. N., Augusta, Me. Cheese-cutter	200,472	Feb. 19	601	177	13	341
Partridge, E. F., assignor to J. Mundell & Co., Philadelphia, Pa. Shoe-tip	200,566	Feb. 19	692	204	13	355
Pearson, A. B., St. Louis, Mo. Platform-scales	200,406	Feb. 19	535	158	13	331
Pennington, J. J., Henryville, Tenn. Wagon gear and brake	200,474	Feb. 19	603	177	13	342
Phillips, C. C., Philadelphia, Pa. Vertical grinding-mill	200,567	Feb. 19	693	204	13	356
Phillips, E. F. (See Reed, T. L., assignor.)						
Pine, J. W., assignor to J. W. Buckley and C. D. Merritt, Brooklyn, N. Y. Extension-ladder	200,475	Feb. 19	604	178	13	342
Pond, C. L., Buffalo, N. Y. Terret for harness	200,476	Feb. 19	606	178	13	342
Powell, L. A. (See Fahnestock and Powell.)						
Patterson, T. L. (See Walker and Patterson.)						
Patteson, W. N., assignor of one-third interest to E. M. Drane, Frankfort, Ky. Car-coupling	200,752	Feb. 26	904	266	13	395
Pfeifer, A. F., Newark, N. J. Transom-lifter	200,753	Feb. 26	905	266	13	395
Pichon, L. A., Paris, France. Scissors, forceps, &c.	200,754	Feb. 26	906	267	13	395
Pierce, S. D. (See King and Pierce.)						
Pirkle, W. J., Cumming, Ga. Plow	200,755	Feb. 26	906	267	13	395
Plumb, D. W. (See Glover, A. B., assignor.)						
Pond, J. F., Cleveland, Ohio. Washing-machine	200,756	Feb. 26	907	267	13	395
Pond, P. (See Benner and Pond.)						
Post, J. F., *et al.* (See Wells, L., assignor.)						
Pratt, H. L., Brooklyn, N. Y. Ratchet bit-brace	200,757	Feb. 26	908	267	13	396
Prescott, M. S., Otisville, Mich. Ironing-table	200,758	Feb. 26	909	268	13	396
Pumphrey, J., Birmingham, England. Antographic printing	200,759	Feb. 26	910	.....	13	396
Paine, E. L., assignor to A. Allbright, Newark, N. J. Electro-magnet	200,929	Mar. 5	108	36	13	432
Palmer, J. A., Noble, Ill. Animal-trap	200,930	Mar. 5	109	37	13	432
Palmer, W. H., Warren, Pa. Folding table	201,042	Mar. 5	223	70	13	449
Park, J. W., Columbia, Texas. Bee-hive	200,931	Mar. 5	109	37	13	432
Parrish, J. E., Centreville, La. Tool-handle	200,932	Mar. 5	110	37	13	432
Paull, G. T. (See Sprout, A. B., assignor.)						
Pearce, G. W., Philadelphia, Pa. Child's carriage	201,043	Mar. 5	224	70	13	449
Perkins, N. S. C., assignor to Dauntless Manufacturing Company, Norwalk, Ohio. Bobbin-winder	201,044	Mar. 5	225	71	13	449
Philippi, P., Beardstown, Ill. Gate	200,840	Mar. 5	28	10	13	419
Pierpont, J., Bushnell, Ill. Sulky-plow	200,841	Mar. 5	28	10	13	419
Pierpont, J., assignor to Pierpont and Tuttle, Bushnell, Ill. Plow-colter	200,842	Mar. 5	29	10	13	419
Pierpont and Tuttle. (See Pierpont, J., assignor.)						
Platt, F. W., assignor to himself and Plume and Atwood Manufacturing Company, Waterbury, Conn. Student-lamp	200,933	Mar. 5	111	37	13	432
Plume and Atwood Manufacturing Company. (See Platt, F. W., assignor.)						
Pond, G. H., New York, N. Y. Tubular boiler	200,873	Mar. 5	61	21	13	424
Prentice, J. H., Saginaw, Mich. Fire-kindler	201,045	Mar. 5	226	71	13	449

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Prusha, W. F., assignor of two-thirds interest to W. B. Brigham, Hudson, and E. Alden, Marlborough, Mass. Metallic nail-strip for boots and shoes	200,839	Mar. 5	27	9	13	419
Parks, W. L. (See Davis, W. S., assignor.)						
Parsons, C. C., New York, N. Y. Composition for crayons	201,283	Mar. 12	473	.....	13	492
Pattison, W. (See Bogenrief and Pattison.)						
Pennell, O. J., Williamsport, Pa. Chisel	201,284	Mar. 12	474	145	13	492
Pentlarge, R., Brooklyn, N. Y. Machine for turning bungs	201,285	Mar. 12	474	145	13	492
Perkins, G. H. and J. H., Philadelphia, Pa., assignor of part interest to J. Le Comte, New York, N. Y., and Le Comte & Perkins Manufacturing Company, (limited,) Philadelphia, Pa., and New York, N. Y. Metallic can	201,122	Mar. 12	308	94	13	468
Perkins, J. H. (See Perkins, G. H. and J. H.)						
Philips, C. S., New York, N. Y. Apparatus for spraying tobacco	201,196	Mar. 12	376	117	13	479
Phillips, G. H., Troy, N. Y. Drop swinging oven-shelf	201,123	Mar. 12	309	94, 95	13	468
Phillips, W. H. (See Bevins, Weis, and Phillips.)						
Pillow, J. A., *et al.* (See Clapp, G. P., assignor.)						
Porter, C. T., Newark, N. J. Journal-box	201,197	Mar. 12	377	117	13	479
Pressure Extract Company. (See Miller, J., assignor.)						
Putnam, A., assignor, by mesne assignments, to T. D. Gere, Owego, N. Y. Seeding-machine. (Reissue)	8,122	Mar. 12	524	160	13	498
Pace, B. T., Salem, Ind. Swivel for watches and lockets	201,357	Mar. 19	569	175	13	512
Page, C. D., Greeley, Col. Irrigating apparatus	201,442	Mar. 19	652	199	13	524
Paling, T. H., Woodstock, Ontario, Canada. Window-shade	201,553	Mar. 19	766	233	13	540
Paré, L., Detroit, Mich. Hatchway	201,356	Mar. 19	568	174, 175	13	512
Paret, J. F. (See Ross, T. J., assignor.) (Reissue.)						
Parker, T. S., Cohoes, N. Y. Hypodermic syringe	201,443	Mar. 19	653	199	13	524
Paul, J. C., Swissvale, Pa. Railway-car	201,585	Mar. 19	803	245	13	544
Payson, C. B., *et al.* (See Beckett, J. R., assignor.) (Reissue.)						
Payson, D. N., *et al.* (See Beckett, J. R., assignor.) (Reissue.)						
Pearce, F. I., Chicago, Ill. Boiler-flue cleaner	201,555	Mar. 19	768	234	13	540
Pearson, J. W., Des Moines, Iowa. Harrow	201,554	Mar. 19	767	233	13	540
Perkins, H. R. (See Harrison, T. W., assignor.)						
Pettit, S. W. (See Alberger, M. H., assignor.)						
Pollock, J., Selma, Ala. Plow	201,355	Mar. 19	568	174	13	512
Post, J. W., New York, N. Y. Sleigh	201,556	Mar. 19	969	234	13	540
Pratt, O., Northampton, Mass., assignor to E. M. Wright, Geneva, N. Y. Fastening the ends of band-saws	201,444	Mar. 19	655	199	13	524
Prentice, G. W., Providence, R. I. Lacing-button	201,445	Mar. 19	655	200	13	524
Purves, T. C., Chicago, Ill. Apparatus for removing sediment from steam-boilers	201,446	Mar. 19	656	200	13	524
Paquet, A. C., Philadelphia, Pa. Machine for stamping letters	201,626	Mar. 26	858	261	13	556
Park, W. R., Boston, Mass. Regulating-cock	201,699	Mar. 26	921	282	13	566
Pattee, D., Des Moines, Iowa. Corn-cultivator	201,627	Mar. 26	859	262	13	557
Paul, A., assignor of one-half interest to Campbell & Clute, Cohoes, N. Y. Yarn-delivery attachment for knitting-machines	201,629	Mar. 26	861	262	13	557
Peters, S., Cohoes, N. Y. Syringe	201,628	Mar. 26	860	262	13	557
Phillips, S. E. (See Johnson and Phillips.)						
Pontifex, J. H. (See Worth and Pontifex.)						
Potter, H. H., Sterlingville, N. Y., assignor of one-half interest to H. H. Doolittle, Philadelphia, Pa. Car-coupling	201,895	Mar. 26	1050	321	13	585
Potter, H. H., Sterlingville, N. Y., assignor of one-half interest to H. H. Doolittle, Philadelphia, Pa. Railway-switch	201,896	Mar. 26	1051	321	13	586
Powers, T. M., St. Louis, Mo. Sheet-meta- pan machine	201,827	Mar. 26	1052	321	13	586
Preston, S. H., North P. O., Pa. Vehicle-gear	201,829	Mar. 26	1055	322	13	586
Price, B. F., Moline, Ill. Stump-extractor	201,828	Mar. 26	1053	322	13	586
Price, J. A., Scranton, Pa. Stove-grate	201,630	Mar. 26	863	262	13	557
Prince, L. F., *et al.* (See Edwards and Lee, assignors.)						
Pritchard, J., San Francisco, Cal. Car-starter	201,700	Mar. 26	921	282	13	566
Pustkuchen, G. (See Sahlfeld, F., assignor.)						
Putnam Nail Company. (See Putnam, S. S., assignor.)						
Putnam, S. S., assignor to Putnam Nail Company, Boston, Mass. Machine for pointing and finishing horseshoe-nails	201,701	Mar. 26	923	282, 283	13	567
Palmer, A. C. and A. H., Utica, N. Y. Telegraphic fire-alarm apparatus	201,941	Apr. 2	79	22	13	610
Palmer, A. H. (See Palmer, A. C. and A. H.)						
Parent, C. E. (See Adgate, J. J., assignor.)						
Partridge, H. (See Ireland, G. H., assignor.)						
Patterson, E. C., Rochester, N. Y. Dust-brush	202,045	Apr. 2	186	54	13	625
Penfield, C. W., assignor to P. and F. Corbin, New Britain, Conn. Sash-fastener	201,942	Apr. 2	80	23	13	610
Perley, C. A., assignor to Thompson, Perley, and Waite, Baldwinsville, Mass. Child's chair and carriage	202,046	Apr. 2	186	54	13	625
Phillips, E. F., Providence, R. I. Combined gas and electric conductor	202,047	Apr. 2	187	54	13	625
Pickins, P. B., New York, N. Y. Work-box	202,048	Apr. 2	188	55	13	625
Poland, S. W., Monson, Mass. Vapor-escape attachment for cooking apparatus	201,943	Apr. 2	81	23	13	611
Portner, R., Alexandria, Va. Beer-cooler	202,049	Apr. 2	188	55	13	625
Prescott, N., Westford, Mass. Bottle-stopper	201,891	Apr. 2	32	9	13	603
Prince, T. (See Robinson, A. J., assignor.)						
Putnam, H. W. (See Sedgwick, C., assignor.)						
Parish, A. (See Stokes, S. E., Jr., assignor.)						
Parsons, F. W., Cleveland, Ohio. Wash-board	202,285	Apr. 9	453	132	13	667
Pattee, J. M. (See Carvalho, S. N., assignor.)						
Peerless Brick Company. (See Adams, T. F., assignor.)						
Pennsylvania Steel Company. (See Richardson, J. T., assignor.)						
Perkins, E. F., *et al.* (See Proctor, D. R., assignor.)						
Perry, R. A. (See Chapman, S. L., assignor.)						
Piper, G. and H., New Holstein, Wis. Rein-holder	202,189	Apr. 9	356	104	13	653
Piper, H. (See Piper, G. and H.)						
Powe, M., Phillipsburg, N. J., assignor to himself and J. Bitters, Easton, Pa. Fifth-wheel for vehicles	202,190	Apr. 9	356	104	13	653
Prescott, D. C., Marinetti, Wis. Direct-acting steam-feed works for circular-saw mills. (Reissue)	8,160	Apr. 9	494	144	13	672
Price, C. B., Louisville, Ky. Invalid-mattress	202,116	Apr. 9	275	81	13	642
Proctor, A. F., *et al.* (See Proctor, D. R., assignor.)						
Proctor, D. R., Gloucester, assignor to A. C. Hill, East Saugus, E. F. Perkins, and A. F. Proctor, Gloucester, Mass. Tap-sole for boots and shoes	202,191	Apr. 9	357	105	13	653

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Palmer, J. W., Port Republic, assignor of one-half interest to G. W. Berlin, Harrisonburg, Va. Pump	202,577	Apr. 16	779	224	13	714
Parent, C. E. (See Adgate, J. J., assignor.)						
Patee, T. H., Boonville, Mo. Machine for making lightning-rods	202,578	Apr. 16	780	225	13	714
Pearce, D. H., and A. W. Taft, Providence, R. I. Center rim for watch-cases	202,458	Apr. 16	644	188	13	698
Pease, C. A., Boston, Mass. Carpet-lining	202,579	Apr. 16	781	225	13	714
Pendleton, P. P., Philadelphia, Pa. Wire clothing for burring and other cylinders	202,370	Apr. 16	559	163	13	685
Perkins, G. H., and S. A. J. Perkins, administratrix of J. H. Perkins, deceased, Philadelphia, Pa.; said S. A. J. Perkins, assignor to said G. H. Perkins. Metallic can	202,371	Apr. 16	559	163	13	686
Perkins, R. B., assignor to E. Miller & Co., Meriden, Conn. Lamp-burner	202,580	Apr. 16	782	225	13	714
Perkins, S. A. J., administratrix. (See Perkins, G. H. and S. A. J.)						
Peux, J. J., Brooklyn, assignor to Robbins and Appleton, New York, N. Y. Crown-push for stem-winders	202,459	Apr. 16	644	188	13	698
Phillips, G. B., Bath-on-the-Hudson, N. Y. Portable forge	202,461	Apr. 16	646	189	13	698
Phillips, T. H., Orwin, Pa. Self-oiling car-wheel	202,581	Apr. 16	783	226	13	714
Phillips, T. H., Orwin, Pa. Wrench	202,582	Apr. 16	783	226	13	714
Phillips, W. C., assignor to himself, C. M. Tucker, and C. E. Remsen, Norwalk, Conn. Fire-escape	202,460	Apr. 16	645	188	13	698
Pienovi, J., Newark, N. J. Rubber clog	202,462	Apr. 16	647	189	13	699
Pingree, H. S. (See Sharood, C. K., assignor.)						
Pollock, J. A. (See Travis, T. W., assignor.)						
Pomeroy, M. M. (See Hooston, M. M., assignor.)						
Pooler, R. H., and W. T. Jones, Serena, Ill. Cartridge-holder	202,463	Apr. 16	648	189	13	699
Popplein, G. J., assignor to Popplein Silicated Phosphate Fertilizer Company, Baltimore, Md. Fertilizer. (Reissue)	8,187	Apr. 16	843	.....	13	722
Popplein Silicated Phosphate Fertilizer Company. (See Popplein, G. J., assignor.) (Reissue.)						
Porter, C. H., assignor to Pratt & Whitney Company, Hartford, Conn. Molder's flask	202,464	Apr. 16	650	190	13	699
Potter, W. W. (See Sprague, W. N., assignor.) (Reissue.)						
Pratt & Whitney Company. (See Porter, C. H., assignor.)						
Price, A. M., *et al.* (See Price, J., assignor.)						
Price, J., Leavitt, assignor to A. M. and J. C. Price, Carroll county, Ohio. Coal-drilling machine	202,372	Apr. 16	560	164	13	686
Price, J. A. (See McClave and Price.)						
Price, J. C., *et al.* (See Price, J., assignor.)						
Prince, W. M., Pittsfield, Mass. Pen	202,465	Apr. 16	651	190	13	699
Purtell, D. W., Milwaukee, Wis. Man-hole plate for sewer-openings	202,373	Apr. 16	561	164	13	686
Pallu, E., assignor to Société Anonyme des Seychelles, Paris, France. Treatment of cocoa-nut fiber for the manufacture of various useful products	202,602	Apr. 23	887	.....	13	735
Palmer, C., assignor to E. A. Hicks, S. D. Ogburn, G. W. and T. K. Davis, Springfield, Tenn. Broom-sewing machine	202,749	Apr. 23	977	281	13	746
Palmer, G. H., Monmouth, Ill. Military accouterments	202,663	Apr. 23	888	255	13	736
Parker, J. M., Leicester, Mass., assignor to Loom Picker Company. Loom-picker. (Reissue)	8,191	Apr. 23	1156	332	13	769
Parkinson, J. (See Morrell and Parkinson.)						
Parkinson, T. (See Morrell and Parkinson.)						
Parshall, L. L. (See Darling, Parshall, and Wendell.)						
Parsons, H. F., New York, assignor to himself and M. J. Dodge, Brooklyn, N. Y. Velocipede	202,665	Apr. 23	891	255	13	736
Pearson, W. F., Houma, La. Balloon	202,750	Apr. 23	979	281	13	747
Pfeiffer, A. (See Starkenberg, F., assignor.)						
Phelps, C. H., Williamsfield, assignor to himself and J. S. Buell, Andover, Ohio. Fence	202,752	Apr. 23	980	282	13	747
Phillips, H. D., Baltimore, Md., and C. H. Williams, Brooklyn, N. Y. Brick-machine	202,861	Apr. 23	1095	314	13	762
Phillips, J. H., Greenville, Pa. Fruit-jar	202,753	Apr. 23	981	282	13	747
Pierpont, G. R., North Haven, Conn. Straw-cutter	202,751	Apr. 23	980	281	13	747
Pitts, M. H., assignor to H. A. Pitts' Sons Manufacturing Company, Chicago, Ill. Mounted horse-power	202,862	Apr. 23	1098	315	13	762
Pitts, M. H., assignor to H. A. Pitts' Sons Manufacturing Company, Chicago, Ill. Grain-separator	202,863	Apr. 23	1099	315	13	762
Pitts' Sons Manufacturing Company, H. A. (See Pitts, M. H., assignor.)						
Plant, W., *et al.* (See Mann, W., assignor.)						
Pliley, O. H., Plymouth, Mich. Earth-auger	202,864	Apr. 23	1100	315	13	762
Poore, T., Scranton, Pa. Boot and shoe	202,865	Apr. 23	1101	316	13	762
Porter, R. W., Nashua, N. H. Shuttle-bobbin	202,664	Apr. 23	890	255	13	736
Potts, S., Philadelphia, Pa. Toy	202,754	Apr. 23	982	282	13	747
Prahar, L., New York, N. Y. Clasp for pocket-books	202,755	Apr. 23	984	283	13	747
Pratt, G. M., assignor to Victor Sewing Machine Company, Middletown, Conn. Micrometer-gage	202,866	Apr. 23	1102	316	13	763
Price, O. V., Mount Vernon, Ohio. Lifting-jack	202,666	Apr. 23	893	256	13	736
Parker, H., Winchester, Mass. Wood-drying apparatus	202,957	Apr. 30	1208	349	13	780
Parker, W. M., Rushville, Ill. Metal-lath machine	202,956	Apr. 30	1206	348	13	779
Parkin, W., assignor to Reed & Barton, Taunton, Mass. Beverage-holder for table use	203,190	Apr. 30	1439	421	13	810
Parmelee, E. W. (See Bates, E. P., assignor.)						
Patterson, L., assignor of one-third interest to S. H. Croyle, Parker City, Pa. Hinge	202,958	Apr. 30	1209	349	13	780
Paulson, L., New York, N. Y. Combined vest and suspenders	203,066	Apr. 30	1310	380	13	793
Peck, Stow & Wilcox Company. (See Shepard, A., assignor.)						
Pearson, F. W., Boston, Mass., assignor to himself and A. Mason, New York, N. Y. Book-support	202,959	Apr. 30	1209	349	13	780
Peer, P. A., Comstock, Mich. Fanning-mill	203,067	Apr. 30	1310	381	13	793
Penland, N. A., Asheville, N. C. Ventilator	202,960	Apr. 30	1210	349	13	780
Pennington, A. S., and E. Beggs, Paterson, N. J. Sprinkler	203,069	Apr. 30	1312	381	13	794
Pekar, E., Budapest, Hungary. Testing flour	203,068	Apr. 30	1311	381	13	793
Perkins, G. H., Philadelphia, Pa., assignor of part interest to J. Le Conte, New York, N. Y., and Atlantic Refining Company, Philadelphia, Pa. Machine for applying flux to cans	203,073	Apr. 30	1317	383	13	794
Perkins, L. C., Webster, Mass. Odometer	203,070	Apr. 30	1312	{381 / 382}	13	794
Pierce, J. (See Goodwin, G. E., assignor.)						
Pierce, J. R., Orfordville, N. H. Spring for horseshoes	203,074	Apr. 30	1319	383	13	795
Pogue, D. C. (See Magee, W., assignor.)						
Pope, G. (See Dillon, G. M., assignor.)						
Pressure Extract Company. (See Miller, J., assignor.)						
Preston, O., Hornellsville, N. Y. Machine for making hollow wire cable	202,961	Apr. 30	1211	350	13	780
Purvine, W., Butte, Montana Ter. Amalgamator	203,075	Apr. 30	1319	383	13	795

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Putnam, S. S., assignor to New Era Coffee Company, Boston, Mass. Table beverage	203,191	Apr. 30	1440	.....	13	810
Packer, W. H. and W. N., Cleveland, Ohio. Station-indicator	203,491	May 7	268	77	13	857
Packer, W. N. (See Packer, W. H. and W. N.)						
Paine, H. M., Newark, N. J., assignor to D. S. Robeson, Philadelphia, Pa. Electro-magnet	203,492	May 7	268	77	13	857
Paradine, T. J., Erie, Pa. Safety valve and cock for steam-cylinders	203,493	May 7	269	77	13	857
Pearson, A. B., St. Louis, Mo. Scale-beam	203,290	May 7	60	18	13	828
Peirce, E. B., Lowell, Mass. Game-board	203,368	May 7	139	40	13	839
Perkins, F. B., Boston, Mass. Valve-operating mechanism for hydraulic elevators	203,494	May 7	270	78	13	858
Perrine, H. L., Freehold, N. J. Brake-shoe	203,495	May 7	272	78	13	858
Pfarre, E. (See Stohlmann and Pfarre.)						
Pfleger, G. (See Westwood and Pfleger.)						
Phelps, G. M., Brooklyn, N. Y. Polarized electro-magnet	203,369	May 7	140	40, 41	13	839
Phillini, G. W., Buffalo, N. Y. Bung-wrench	203,496	May 7	272	78	13	858
Pitts, W. C., assignor of one-half interest to J. H. Bishop, San Marcos, Tex. Horse-power mill	203,292	May 7	61	19	13	828
Platt, C. M., Waterbury, Conn. Button-fastening	203,497	May 7	273	78	13	858
Pringle, H. (See Pringle, W. A. and H.)						
Pringle, W. A. and H., Belleville, Ontario, Canada. Draw-bridge gate	203,370	May 7	141	41	13	839
Proctor, D. C., *et al.* (See Kinsey, S. A., assignor.)						
Pryor, J. D. (See Rigby, N. L., assignor.)						
Paddock, M. H., East Clarkson, N. Y. Calendar-watch	203,640	May 14	432	124	13	887
Palmer, I. H., Lodi, Wis. Wind-engine. (Reissue)	8,235	May 14	628	175	13	910
Parnell, E. W., assignor of one-half interest to J. Simpson, Liverpool, England. Apparatus for the manufacture of caustic alkalies	203,555	May 14	358	101	13	877
Parnell, E. W., assignor of one-half interest to J. Simpson, Liverpool, England. Manufacture of caustic alkalies	203,761	May 14	502	.....	13	903
Patterson, C. E., Covington township, Tioga county, Pa. Calculating-machine	203,763	May 14	564	159	13	903
Patterson, L., Terre Haute, Ind. Grinding-machine	203,762	May 14	563	159	13	903
Paul, G. D., assignor to P. P. Paul, New York, N. Y. Last-block fastener	203,764	May 14	566	159	13	903
Paul, P. P. (See Paul, G. D., assignor.)						
Peiter, T., New York, N. Y. Cutting precious stones, shells, &c.	203,641	May 14	436	.....	13	887
Petry, G. S., Troy Grove, Ill. Motor	203,765	May 14	567	160	13	904
Phegley, W. T., Bloomfield, Ind. Evaporating-pan	203,556	May 14	359	101	13	878
Pickett, J. H., Baltimore, Md. Treating paper or other fabric with tobacco for use as a moth preventive	203,766	May 14	569	.....	13	904
Pierce, G. N. (See Seyfang, G., assignor.)						
Pierson, C. H., and C. W. Ferguson, Janesville, Wis. Nutmeg-grater	203,767	May 14	570	160	13	904
Plumbly, F. K., Buffalo, N. Y. Storing-tank for petroleum	203,557	May 14	360	102	13	878
Pneumatic Tramway Engine Company. (See Hardie, James, and Cooper, assignors.)						
Poirier, J., Oconto, Wis. Axle-adjuster	203,768	May 14	571	160	13	904
Polen, C. W. Hazel Dell, Ill. Garden-hoe	203,643	May 14	438	125	13	888
Polk, J. T., Greenwood, and O. H. Castle, Indianapolis, Ind.; said Castle assignor to said Polk. Green-corn cutter	203,642	May 14	436	124	13	887
Pond, L. W., Eau Claire, Wis. Rafting-boom	203,558	May 14	361	102	13	878
Pope, S., assignor to himself and J. M. Sims, Williamsburg, Miss. Cotton-press	203,644	May 14	439	125	13	888
Porter, A. W., New York, N. Y., assignor of one-fourth interest to G. L. Shorey, Lynn, Mass. Street-lamp regulator	203,769	May 14	571	160	13	904
Post, J. F., *et al.* (See Wells, L., assignor.)						
Price, C. C., Jr., Elizabeth City, N. C. Rowlock	203,770	May 14	572	161	13	904
Price, J. W., Michigantown, Ind. Grinding-mill	203,645	May 14	440	125	13	888
Priestman, S. (See Priestman, W. D. and S.)						
Priestman, W. D. and S., Kingston-upon-Hull, England. Apparatus for working grapple buckets, forks, or skips	203,771	May 14	573	161	13	905
Pyle, S. W. (See Gifford and Pyle.)						
Park, J., assignor of one-half interest to R. R. Osgood, Troy, N. Y. Composition for tempering, lubricating, &c.	204,076	May 21	908	.....	13	955
Parke, L., Mineral Point, Mo. Bee-hive	203,937	May 21	758	218	13	936
Parker, J. (See Scranton, W., assignor.)						
Parnell, E. A., Swansea, Wales. Treating ores of zinc	203,849	May 21	668	.....	13	924
Patrick, W. R., Marinette, Wis. Rotary grinding-machine for the manufacture of paper-pulp from wood	204,077	May 21	909	260	13	955
Payne, W. C., Clinton City, Iowa. Wire fence	203,938	May 21	759	219	13	936
Pelstring, G., Cincinnati, Ohio. Graining-machine	204,078	May 21	910	260	13	955
Perkins, E. L. (See Sawyer, C. E., assignor.)						
Perkins, S. W., Cambridge, Ill. Wagon end-gate	204,079	May 21	911	260	13	955
Perry, S., Newport, N. Y. Hay-tedder	204,080	May 21	912	261	13	955
Peterson, R. (See Stuart, D., assignor.)						
Peterson, W., Philadelphia, Pa. Manufacture of red colors from copperas	203,936	May 21	758	.....	13	936
Phillippo, G. W., and J. W. Owen, Genesco, Ill. Lead-cutter	203,850	May 21	669	189	13	924
Pickens, P. B., New York, N. Y. Shirt	204,081	May 21	915	261	13	955
Pics, J. P., Spades, Ind. School-desk	204,082	May 21	916	262	13	955
Pigeon, N., Brooklyn, N. Y. Manufacturing glucose	203,935	May 21	756	218	13	936
Pitkin, P., and J. B. Dougherty, Rochester, N. Y. Stone-polishing machine	203,934	May 21	754	218	13	935
Pitts, J. G., Newark, N. Y. Moccasin	203,851	May 21	669	189	13	924
Plant, P., Washington, D. C. Ore-separator	204,083	May 21	916	262	13	956
Potter, J. H., East Bridgewater, Mass. Tremolo attachment for organs	203,932	May 21	752	217	13	935
Pouch, A. J., *et al.* (See Brock, W. H., assignor.)						
Powers, J. W., assignor of two-thirds interest to E. S. Purdy and A. H. Armor, Portage, Wis. Vessel for setting milk	203,852	May 21	670	190	13	924
Powers, W. H., *et al.* (See Arnold, H. L., assignor.)						
Powers, W. T., *et al.* (See Arnold, H. L., assignor.)						
Pratt and Whitney Company. (See Grant, Sawyer, and Gardner, assignors.)						
Pressure Extract Company. (See Miller, J., assignor.)						
Provost, P., Minneapolis, Minn. Grain-drier	203,933	May 21	754	217	13	935
Puller, T., and G. W. Warren, Wellsville, N. Y. Halter	204,084	May 21	917	262	13	956
Purdy, E. S., *et al.* (See Powers, J. W., assignor.)						
Page, C. (See Cowan and Page.)						
Pagen, O., Philadelphia, Pa. Railway-rail joint	204,363	May 28	1232	351	13	999
Painter, E., Easthampton, Mass. Suspender-end	204,166	May 28	1026	292	13	973
Palmer, F. G., assignor of one-half interest to J. J. Palmer, Philadelphia, Pa. Lamp	204,364	May 28	1233	351	13	999
Palmer, J. J. (See Palmer, F. G., assignor.)						
Parris, D. E. (See White, T., assignor.)						
Patric, C. E., Springfield, Ohio. Spring-hoe for grain-drills	204,365	May 28	1234	351	13	999
Patterson, J., and N. Wheeler, Sharon, Pa. Burial apparatus	204,366	May 28	1235	351	13	999

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pénissat, A., Clermont-Ferrand, France, assignor to himself and W. H. Nichols, Brooklyn, N. Y. Recovering waste sulphuric acid	204,244	May 28	1110	.....	13	984
Perry, A., Covington, Tenn. Lap-link	204,367	May 28	1236	352	13	1000
Perry, B. (See Brett and Perry.)						
Perry, J. A., Carthage, Ala. Churning apparatus	204,245	May 28	1111	317	13	984
Petchell, C. T., Brooklyn, N. Y. Rubber belting	204,368	May 28	1237	352	13	1000
Pettengill, A., Keene, assignor to himself and F. H. Colony, Harrisville, N. H. Spring air-gun	204,107	May 28	1027	292	13	973
Pierce, H. A., Moline, Ill. Fence-post	204,246	May 28	1112	317	13	984
Pimm, R. W., administrator. (See Hull, J. W.) (Reissue.)						
Poindexter, R. E., Anderson, Ind. Saw	204,369	May 28	1238	352	13	1000
Polen, C. R., Sr., Hazel Dell, Ill. Clod-crusher	204,247	May 28	1113	317	13	984
Pond, D. W., Worcester, Mass. Metal-drilling machine	204,248	May 28	1114	318	13	984
Porter, C. M. (See Roberts, C. A., assignor.)						
Price, W. B. (See Martin, J. F., assignor.)						
Priest, J., Lynn, Mass. Rack for holding and exhibiting shoes	204,249	May 28	1115	318	13	984
Prindle, F. C., Philadelphia, Pa. Movable hopper for tanks, &c.	204,370	May 28	1239	352	13	1000
Purves, T. C., Chicago, Ill. Apparatus for removing sediment from steam-boilers	204,250	May 28	1116	{318 319}	13	984
Palmer, F. D., New York, N. Y. Straw-braid-sewing machine	204,599	June 4	171	55	13	1037
Park, W. R., Philadelphia, Pa. Hydrocarbon-gas lamp	204,448	June 4	33	11	13	1017
Parkhurst, E. R. (See Parkhurst, S. R., assignor.)						
Parkhurst, S. R., assignor to E. R. Parkhurst, Mont Clair, N. J. Wool-washing machine	204,503	June 4	77	27	13	1023
Passoo, L., assignor to M. M. Cady, Dubuque, Iowa. Knock-down barrel	204,600	June 4	173	56	13	1037
Perris, W. G., New York, N. Y. Printers' measuring-scale	204,601	June 4	174	56	13	1037
Pettus, J., *et al.* (See Cooper, G. B. F., assignor.)						
Phelps, W. H., Greenville, Ga. Horse-power	204,602	June 4	175	56	13	1037
Pierce, E. W., Bennington, Vt. Subscription-book	204,504	June 4	78	27	13	1024
Pittman, W. B., Vicksburg, Miss. Mailing-package	204,603	June 4	176	56	13	1037
Porter, J., Greenfield, Mass. Mop-head	204,605	June 4	178	57	13	1038
Post & Co. (See Kirby, J., Jr., assignor.)						
Powell, J. G., Philadelphia, Pa. Escapement for toy watches	204,606	June 4	179	57, 58	13	1038
Powell, J. G., Philadelphia, Pa. Toy watch and clock	204,607	June 4	181	58	13	1038
Pratt, D. W. (See Cimarroe, R., assignor.)						
Prindle, J. A., assignor of one-half interest to J. R. Worswick, Cleveland, Ohio. Steam-gage siphon	204,449	June 4	34	11	13	1017
Proctor, D. C., *et al.* (See Roehl, C., assignor.)						
Palmer, G. E., Cedar Rapids, Iowa. Ironing-board	204,755	June 11	343	104	13	1063
Patton, J. N. (See Johnson, C. C., assignor.)						
Peer, J. A., San Francisco, assignor of one-half interest to R. Smith, Oakland, Cal. Gear-cutting machine	204,756	June 11	344	{104 105}	13	1063
Phillips, Z., Little Rock, Ark. Brick-machine. (Reissue)	8,284	June 11	493	143	13	1080
Pierson, C. T. (See Thurston, S. H., assignor.)						
Pollock, J. L., Hoboken, N. J., assignor to B. T. Babbitt, New York, N. Y. Toilet-soap	204,842	June 11	443	.....	13	1074
Pott, Young & Co. (See Young and Hafely, assignors.)						
Price, J., San Leandro, Cal. Hay-press	204,757	June 11	346	105	13	1064
Packard, F., Brockton, Mass. Shoe or gaiter	205,129	June 18	747	222	13	1118
Parker, Company, C. (See Camp, N. H., assignor.)						
Parmenter, C. O., Amherst, Mass. Manufacture of hats and caps from straw-braid	205,130	June 18	747	222	13	1118
Parr, O. G., Newark, Ohio. Grate-extension	205,131	June 18	748	222	13	1118
Patton, J. N. (See Johnson, C. C., assignor.)						
Paul, J., La Crosse, Wis. Log-slide	204,993	June 18	617	181	13	1100
Peffer, W. A. (See Foster, F. M., assignor.)						
Peirce, L., Salem, Mass. Roofing	205,132	June 18	749	223	13	1118
Peters, S., Cohoes, N. Y. Syringe	204,912	June 18	536	156	13	1090
Piron, S., Paris, France. Hat-finishing machine	204,994	June 18	618	181	13	1101
Place, A. B., Denver, Colo. Coffee-pot	204,995	June 18	619	181	13	1101
Plumb, W. H., Manch Chunk, Pa., assignor to J. A. Sterling, New York, N. Y. Ore-jigger	204,996	June 18	620	182	13	1101
Porter, F. E., assignor of one-half interest to R. B. Smith, Baltimore, Md. Paper-bag machine	205,133	June 18	749	{223 224}	13	1118
Pratt, P. W., Abington, Mass. Furniture-pad	204,913	June 18	537	156	13	1090
Preise, H., New York, N. Y. Argand-lamp burner	205,134	June 18	754	224	13	1119
Prince, S. F., Jr., Philadelphia, Pa. Air-brake	204,914	June 18	538	157	13	1090
Paige, W. H., Springfield, Mass. Street-car	205,205	June 25	844	250	13	1136
Paige, W. H., Springfield, Mass. Open railway-car	205,206	June 25	845	251	13	1136
Palmer, S. M., Glens Falls, N. Y. Horse-collar	205,294	June 25	937	278	13	1148
Parker, I., *et al.* (See Parker, L. H., assignor.)						
Parker, L. H., assignor of one-half interest to I. Parker, Littleton, N. H., and G. M. Glazier and C. T. Lincoln, Boston, Mass. Combined buttoner and button-fastener	205,207	June 25	846	251	13	1136
Parker, W. M., and W. W. Yokom, Parkersburg, Iowa. Feed-steamer	205,409	June 25	1057	314	13	1163
Peck, C., Chicago, Ill., and R. R. Ball, West Meriden, Conn. Milk-cooler	205,295	June 25	938	278	13	1148
Peck, Stow & Wilcox Company. (See Stow, E. E., assignor.)						
Pedder, J. (See Abel and Pedder.)						
Peer, J. A., San Francisco, assignor of one-half interest to R. Smith, Oakland, Cal. Cutting instrument or tool	205,296	June 25	938	279	13	1148
Pentreath, J., and J. Q. Crosby, Newark, N. J., assignors to New York Plow Company, New York, N. Y. Harrow	205,410	June 25	1059	314	13	1164
Philips, E. F. (See Gable, J. W., assignor.)						
Pierron, J. A., Lincoln, Nebr. Feed-cooker	205,411	June 25	1060	314	13	1164
Platt, N. E., *et al.* (See Holub, F., assignor.)						
Pollock, S. L., St. Paul, Minn. Fire-proof shutter	205,297	June 25	940	279	13	1148
Pond, E. A., Rutland, Vt. Sphygmograph	205,412	June 25	1061	315	13	1164
Pope, E. B. (See Sheldon and Pope.)						
Pope, J. L., Brooklyn, and W. S. Sampson, New York, N. Y. Car-coupling	205,298	June 25	941	279	13	1148
Popper, I., New York, N. Y. Packing-box	205,413	June 25	1064	315	13	1164
Porter, F. E., Baltimore, Md., and D. A. Beatson, New York, N. Y. Curtain-cord tightener	205,414	June 25	1065	315	13	1164
Potter, C., Jr. (See Hubbard, J. F., assignor.)						
Potter, T., Philadelphia, Pa. Making oil-cloth	205,415	June 25	1065	.....	13	1164
Powers, E. M., *et al.* (See Sheldon and Pope, assignors.)						
Prött, C., Berlin, Prussia. Valve-gear	205,208	June 25	847	251	13	1136
Quackenbose, G. W., *et al.* (See Hicks, A., assignor.)						
Quincy, E. W., assignor of two-thirds interest to J. Y. and W. H. Mills, Peoria, Ill. Check-row attachment to corn-planters	200,407	Feb. 19	536	156	13	332
Quigg, L., assignor of one-half interest to O. B. Keely, Spring City, and E. S. Shantz, Philadelphia, Pa. Implement for cutting bread, meat, &c.	201,046	Mar. 5	226	71	13	450

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Quie, O. H., Holden, Minn. Windmill	201,286	Mar. 12	476	{145 146}	13	492
Quimby, E. R., Lynn, Mass., assignor of one-half interest to O. C. Mason, Sterling, Ill. Car-coupling	202,117	Apr. 9	276	81	13	643
Quinlan, J. H., Jr. (See Quinlan, N. and J. H., Jr.)						
Quinlan, N. and J. H., Jr., Glens Falls, N. Y. Leather-dressing compound	203,498	May 7	274	.....	13	856
Quinn, J. E. (See Quinn, T. H. and J. E.)						
Quinn, T. H. and J. E., Racine, Wis. Fountain-pen	204,371	May 28	1239	353	13	1000
Quail, W. (See Grover, O. F., assignor.)						
Queen, N. W., *et al.* (See Cooper, G. B. F., assignor.)						
Quinn, J., Omaha, Nebr. Casting car-wheels	204,450	June 4	34	11	13	1017
Quick, E. B., Brooklyn, N. Y. Reverse-way cock	205,209	June 25	847	251	13	1136
Reynolds & Co. (See Reynolds, H., assignor.)						
Reynolds, H., assignor to Reynolds & Co., New Haven, Conn. Molding-machine	198,856	Jan. 1	135	38	13	29
Reynolds, S. F., Auburn, N. Y. Combined land-roller, harrow, and grain-drill	198,778	Jan. 1	60	15	13	17
Rice, F. B., Dunkirk, N. Y. Balanced valve for steam-engines	198,779	Jan. 1	61	15	13	17
Robinson, A., New York, N. Y. Carpet-lining	198,816	Jan. 1	96	27	13	23
Rockwell, D., and N. Doty, Columbus, Ohio. Clamp	198,754	Jan. 1	26	6	13	12
Rowell, B., West Sparta, N. Y. Car-coupling	198,903	Jan. 1	187	53	13	37
Randall, L., Milwaukee, Wis. Advertising medium	198,953	Jan. 8	243	70	13	53
Randolph, T. F., Morristown, N. J. Ditching-machine	199,106	Jan. 8	389	{116 117}	13	77
Redlich & Schnitzler. (See Gordon, J., assignor.)						
Reed, W. F. (See Howell, F. A., assignor.)						
Reistle, C. (See Hinrichs and Reistle.)						
Rich, A. (See Bruner and Rich.)						
Richardson, G. B., Boston, Mass. Salt and spice bottle	198,998	Jan. 8	290	85	13	60
Rousseau, D., New York, N. Y. Switch-signal	199,107	Jan. 8	391	117	13	78
Reed, J. W., Kalamazoo, Mich. Lubricator	199,224	Jan. 15	526	155	13	98
Reynolds, L., assignor to himself and L. D. Reynolds, Dayton, Ohio. Book-binding. (Reissue)	8,039	Jan. 15	653	191	13	117
Reynolds, L. D. (See Reynolds, L., assignor.) (Reissue.)						
Richards, S. (See Peiffer and Richards.) (Reissue.)						
Ridgley, H. R., Ashland, Ohio. Harness-pad	199,225	Jan. 15	526	155	13	98
Riewe, C., Baerwald, Pomerania, Prussia. Materials for insoles, and apparatus for manufacturing the same	199,226	Jan. 15	527	155	13	98
Ritchey, J. B., Allegheny, Pa. Furniture-caster	199,313	Jan. 15	616	179	13	111
Robinson, F. H., assignor of one-half interest to I. B. Tripp, Aurora, Ill. Bracket	199,167	Jan. 15	472	139	13	89
Roemer, W. (See Schmickl, M., assignor.)						
Rogers, A. F. (See Rogers, C. E. and A. F.)						
Rogers, C. E. and A. F., Boston, Mass. Upright-piano action	199,314	Jan. 15	617	{179 180}	13	112
Rogers, S., Pittsburg, Pa. Gate	199,227	Jan. 15	528	155	13	98
Rose, R. M., Brooklyn, N. Y. Darning attachment for sewing-machines	199,315	Jan. 15	620	180	13	112
Ross, A. Q., Cincinnati, Ohio. Gas-retort charger	199,316	Jan. 15	621	180	13	113
Russell, J., Newark, N. J. Manufacture of horseshoes	199,228	Jan. 15	529	156	13	99
Ruthenburg, M. (See Ruthenburg, S. and M.)						
Ruthenburg, S. and M., Cincinnati, Ohio. Cotton-harvester	199,168	Jan. 15	473	139	13	90
Range, H. N., Philadelphia, Pa., assignor of one-half interest to W. H. Frasier, Chicago, Ill. Lapping-machine	199,379	Jan. 22	691	203	13	131
Ranney, H. H., *et al.* (See Kingsbury, A. B., assignor.)						
Ranney, W., *et al.* (See Kingsbury, A. B., assignor.)						
Raymond, W. F., Brooklyn, assignor to himself, C. A. Allen, New York, and A. G. Foster, Seneca Falls, N. Y. Force-pump	199,380	Jan. 22	692	203	13	132
Rees, T., *et al.* (See Acheson, W., assignor.)						
Re Qua, J., Rochester, N. Y. Hand-piece for dental engines	199,469	Jan. 22	777	228	13	145
Reynolds, L., Dayton, Ohio, assignor to himself and L. D. Reynolds. Book-binding. (Reissue)	8,056	Jan. 22	948	275	13	172
Reynolds, L., assignor to Reynolds & Reynolds, Dayton, Ohio. Removable book-binding	199,572	Jan. 22	884	{259 260}	13	102
Reynolds, L. D. (See Reynolds, L., assignor.) (Reissue.)						
Reynolds & Reynolds. (See Reynolds, L., assignor.)						
Rheubottom, J. R., Weedsport, N. Y. Chain-lock for valises	199,468	Jan. 22	776	228	13	145
Rice, Barton & Fales Machine and Iron Company. (See Clement, N. S., assignor.)						
Richardson, M. A., Bridgeport, Conn. Sharpening files	199,573	Jan. 22	886	.....	13	163
Richardson, W. H., Salem, Mass. Counter-stiffener for boots and shoes	199,574	Jan. 22	886	260	13	163
Riker, W., Newark, N. J. Ornamenting metallic surfaces for jewelry, &c.	199,580	Jan. 22	892	262	13	164
Roberts, A. E. (See Roberts, W. and A. E.)						
Roberts, W. and A. E., Grahamstown, Cape of Good Hope. Washing-machine	199,467	Jan. 22	775	227	13	145
Roberts, J., *et al.* (See Havell, G., assignor.) (Reissue.)						
Robinson, C., Cambridge, Mass. Reflector for lamps, &c.	199,575	Jan. 22	887	260	13	163
Rodig, C. H., Cleveland, Ohio. Support for hose-nozzles	199,576	Jan. 22	888	260	13	163
Rohde, J. C. A., Hamburg, Germany. Air-filter for beer-pumps	199,577	Jan. 22	889	261	13	163
Rose, J. F., assignor, by mesne assignments, to himself and B. A. Gray, Tiverton, R. I. Night-chimney for lamps, &c.	199,578	Jan. 22	890	261	13	163
Rose, M., New York, N. Y. Machine for nailing and clamping picture-frames	199,579	Jan. 22	890	261	13	163
Rahner, J. G., Portland, Oreg. Spring-bed and fire-escape	199,861	Jan. 29	1192	350	13	217
Randall, J. C., assignor to A. N. and Y. M. Edwards, Sulphur Springs, Tex. Horse-power	199,862	Jan. 29	1193	350	13	217
Ransom, T. S., Somerville, Mass. Enamel-coated knife and fork handle	199,743	Jan. 29	1061	.....	13	200
Read, C. D., Ayer, Mass. Corn-sheller	199,744	Jan. 29	1061	317	13	201
Reid, S., Chicago, Ill. Lubricator for steam-engines	199,745	Jan. 29	1062	317	13	201
Reynolds, E. D. and O. B., Brockton, Mass. Wheel-hub	199,863	Jan. 29	1194	350	13	218
Reynolds, O. B. (See Reynolds, E. D. and O. B.)						
Richards, E. K., Cambridge, Mass. Separating saccharine matters from air	199,864	Jan. 29	1194	351	13	218
Ricklefsen, O., New York, N. Y. Egg and fruit carrier	199,746	Jan. 29	1064	318	13	201
Robbins, H. W., *et al.* (See McAvoy, H. L., assignor.)						
Robertson, L. O. (See Whitney, G. E., assignor.)						
Robinson, E., Brooklyn, N. Y. Roller-skate	199,664	Jan. 29	1009	294	13	189
Robinson, I. J., assignor to H. Fairbanks, St. Johnsbury, Vt. Try-square and bevel. (Reissue)	8,058	Jan. 29	1221	358	13	222
Rodecker, J. S. (See Leonard, W. R., assignor.)						
Rollings, W. S., *et al.* (See Smith, W., assignor.)						
Ross, W. C., Cincinnati, Ohio. Piston-valve	199,865	Jan. 29	1195	351	13	218
Rowland, J., *et al.* (See Chewning, J. W., Jr., assignor.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Rowland, N., *et al.* (See Chewning, J. W., Jr., assignor.)						
Raddin, J., Lynn, Mass. Vehicle-wheel	200,088	Feb. 5	200	63	13	264
Racey, J. D., Fond du Lac, assignor to himself and O. F. Swift, Oshkosh, Wis. Refrigerator	199,993	Feb. 5	101	33	13	249
Rathbone, Sard & Co. (See Sard, G., Jr., assignor.)						
Raymond, D. R., Osceola, Iowa. Cultivator	200,089	Feb. 5	201	63	13	264
Reckendorfer, J. (See Hoffman and Boman, assignors.)						
Reed, J. C., De Witt, Iowa. Measuring-caddy	199,933	Feb. 5	45	15	13	240
Reed, J. V. (See Vose R., assignor.)						
Reifsnes, G., assignor to American Button Hole, Overseaming, and Sewing Machine Company, Philadelphia, Pa. Retainer for sewing-machine attachments	200,090	Feb. 5	201	63	13	264
Reno, W., La Fayette, assignor to himself, and, by mesne assignments, to E. M. Witter, West Jefferson Ohio. Horse hay-rake	199,994	Feb. 5	102	33	13	249
Rhodes, D., Fredericktown, Mo. Harrow	199,995	Feb. 5	102	34	13	249
Richards, C., assignor of one-half interest to L. W. Sapp, Cleveland, Ohio. Fire-escape	199,934	Feb. 5	46	15	13	240
Rigby, C. F. (See Rigby, S., 3d, and C. F.)						
Rigby S., 3d, and C. F., New Castle, Pa. Liquid-measure	200,091	Feb. 5	202	63	13	264
Roberts and Havell. (See Havell, G., assignor.)						
Rogers, E., assignor to J. C. Gaines, Cleveland, Ohio. Lathe-chuck for turning stone	199,935	Feb. 5	48	15	13	240
Ross, M., Abilene, Kan. Boot-jack	199,996	Feb. 5	103	34	13	249
Rowland, T. F., New York, N. Y. Universal globe-valve	199,936	Feb. 5	49	16	13	240
Ryder, B. F., New Haven, assignor to M. W. Foster, Danbury, Conn. Sewing-machine caster	200,092	Feb. 5	203	64	13	265
Randall, S. J., and J. O'Brien, Port Ludlow, Washington Ter. Insertible saw-tooth	200,219	Feb. 12	332	100	13	293
Read, D. M., and L. Prahar, New York, N. Y. Pocket-book frame	200,340	Feb. 12	460	136	13	311
Reed, C. D., Polo, Ill. Gate	200,341	Feb. 12	461	136	13	312
Relph, F. H., assignor to himself and A. M. Underhill, New York, N. Y. Apparatus for bagging grain	200,342	Feb. 12	462	136	13	312
Renshaw, G., East Palestine, Ohio. Dinner-bucket	200,343	Feb. 12	463	137	13	312
Reynolds, H. (See Brunner and Reynolds.)						
Rice, I. M. (See Root, C. A., assignor.)						
Richardson, R. J. (See Harper, J., assignor.)						
Ricker, J. W., Chelsea, Mass. Washing-machine	200,220	Feb. 12	333	100	13	293
Ripley, E. B., Unionville, Conn. Animal-trap	200,221	Feb. 12	334	101	13	293
Robb, W. (See Goodell and Robb.)						
Roberts, W. (See Halpine, P. C., assignor.)						
Rockey, H. M., Rock Grove, Ill. Rain-water shut-off	200,344	Feb. 12	464	137	13	312
Root, C. A., Andover, Ohio, assignor of one-half interest to I. M. Rice, Windsor, N. Y. Fence	200,222	Feb. 12	335	101	13	293
Rubin, E., and A. F. Stadler, Thun, Switzerland. Combination shell-fuse	200,223	Feb. 12	336	101	13	293
Ruggles, L., Frankfort, Ill. Road-scraper	200,151	Feb. 12	209	80	13	283
Rushworth, J., New York, N. Y. Friction-drum for hoisting-machines	200,345	Feb. 12	465	137	13	312
Radcliffe, W. (See Young, H., assignor.)						
Reed, T. L., assignor of one-half interest to E. F. Phillips, Providence, R. I. Electric conductor for elevator-annunciators, &c	200,569	Feb. 19	696	205	13	356
Reed, W. H., Chicago, Ill. Carbureter	200,568	Feb. 19	695	204	13	356
Rice, R. M. (See Cunningham, Winhofer, and Rice.)						
Richards, J. D., Boston, Mass. Cabinet portfolio	200,477	Feb. 19	606	178	13	342
Richmond, E. T. C. (See Dunne and Richmond.)						
Riggan, J. H., Forestville, N. C. Plow	200,478	Feb. 19	607	179	13	342
Riley, P., Fort Scott, Kan. Fruit-drier	200,479	Feb. 19	608	179	13	342
Rivera, G., Bridgetown, Island of Barbadoes, West Indies. Toilet-cabinet	200,480	Feb. 19	609	179	13	342
Robberson, E. T., *et al.* (See Smalstig, W. C., assignor.)						
Roberts, E. A. L., Titusville, Pa. Torpedo for oil-wells	200,570	Feb. 19	697	205	13	356
Rontey, A. M., New York, N. Y. Chamber-vessel	200,481	Feb. 19	610	180	13	343
Rose, L., London, England. Bottle-stopper	200,409	Feb. 19	538	159	13	332
Roswell, E. R., Stratford, Conn. Lamp-chimney	200,408	Feb. 19	538	159	13	332
Roth, C. A., Washington, D. C. Game apparatus	200,571	Feb. 19	698	205	13	356
Ruge, D., Providence, R. I. Life-preserver	200,572	Feb. 19	699	205	13	356
Raddin, J., Lynn, Mass. Hub for carriage-wheels. (Reissue)	8,108	Feb. 26	978	288	13	406
Ratcliff, F. (See Berry, H., assignor.)						
Reed, G. B., *et al.* (See Maddocks, N. P., assignor.)						
Reese, G. F., Brooklyn, N. Y. Dental-plate mold	200,760	Feb. 26	910	268	13	396
Reese, G. F., Brooklyn, N. Y. Making molds for dental plates	200,761	Feb. 26	912	------	13	396
Reisinger, J. W. H., Meadville, Pa. Book and cover	200,762	Feb. 26	912	268	13	396
Reithmüller, J. C., Pittsburg, Pa. Bale-tie	200,764	Feb. 26	914	269	13	396
Repp, R., Menomonee, Wis. Device for hitching horses to vehicles	200,763	Feb. 26	913	268	13	396
Rhoner, F. (See Wittershausen and Rhoner.)						
Rice, A. B., Brooklyn, N. Y. Hat and bonnet box	200,802	Feb. 26	950	280	13	402
Rice, F. S. (See Wetmore and Rice.)						
Riley, W. P., assignor of one-half interest to T. Maitland, Williamsport, Pa. Tug-link	200,803	Feb. 26	951	280	13	402
Roberts and Havell. (See Weston, E., assignor.) (Reissue.)						
Roda, A., Rochester, N. Y. Rear sight for fire-arms	200,667	Feb. 26	817	240	13	382
Rokker, H. W., Springfield, Ill. Bookbinders' beveling-machine	200,804	Feb. 26	952	280	13	402
Ross, J. S. (See Ross, W. B. and J. S.)						
Ross, W. B. and J. S., assignors of one-half interest to E. R. Campbell and H. Harrison, Nashville, Tenn. Spring-scales	200,765	Feb. 26	915	269	13	396
Rote, J. F., Reading, Pa. Vegetable-cutter	200,668	Feb. 26	817	240 / 241	13	382
Rowell, E., 2d, Salem, Mass. Device for reefing jibs	200,766	Feb. 26	915	269	13	397
Raible, C., Oskaloosa, Iowa. Meal-bin	201,047	Mar. 5	238	72	13	450
Rand, McNally & Co. (See Burns, G., assignor.)						
Raymond, J. B. (See Bloom, H. O., assignor.)						
Read, L., assignor to himself and L. B. Simmons, Henderson, N. Y. Center-board for vessels	200,934	Mar. 5	111	38	13	432
Rebasz, L. A. (See Lillis and Rebasz.)						
Records, B. W. (See Dixson and Records.)						
Rice, E. B., Madison, Wis. Spring-motor	200,843	Mar. 5	30	11	13	419
Richardson, J. G., Cambridgeport, Mass. Fire-escape	200,844	Mar. 5	31	11	13	419
Riches, C., Caister, Great Yarmouth, Great Britain, assignor of one-half interest to H. R. J. Denton, Wolverhampton, England. Grinding-machine	200,935	Mar. 5	112	38	13	432
Richter, H., Chicago, Ill. Bed-lounge	200,845	Mar. 5	32	11	13	420
Rigney, J. J., and W. Hemingray, Shamokin, Pa. Coal-drill	200,936	Mar. 5	114	38	13	433
Ritterband, D. S. (See Traghelm, S., assignor.)						
Robert, F., Monroe, Mich., assignor to himself and P. B. Brady, Toledo, Ohio. Windmill	200,874	Mar. 5	61	21	13	424
Roberts, W. A., and M. E. Gary, Richmond, Va. Pneumatic-fountain stamp	201,048	Mar. 5	239	72	13	450
Robertson, T., Toronto, Canada. Portable tray receiver and elevator for lozenge-machines	201,049	Mar. 5	240	72, 73	13	450
Robinson, F. S., Boston, Mass. Soldering apparatus	200,875	Mar. 5	62	21	13	424

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Roeder, G., New York, N. Y. Rocking-chair	200,937	Mar. 5	115	39	13	433
Root, S., Kentland, Ind. Fire-escape	201,050	Mar. 5	231	73	13	450
Rowland, H., *et al.* (See Gilbert, G., assignor.)						
Rowland, W., *et al.* (See Gilbert, G., assignor.)	201,051	Mar. 5	232	73	13	450
Russell, A. A., Polo, Ill. Implement for cleaning horses	201,198	Mar. 12	378	117	13	479
Randolph, S. P., Seattle, Washington Ter., assignor to Lane & Bodley Company, Cincinnati, Ohio. Gang-edger	201,287	Mar. 12	477	146	13	492
Rathbun, S. B., Dundee, Mich. Rotary churn-dasher	201,124	Mar. 12	310	95	13	468
Ream, J. (See Karns and Ream.)	201,288	Mar. 12	479	146	13	493
Rees, E., Merced, Cal. Shoe-fastening	201,199	Mar. 12	379	117	13	479
Rekart, A., Jennings township, Putnam county, Ohio. Gate	201,289	Mar. 12	479	147	13	493
Richards, A. S., Grand Rapids, Mich. Saw-mill head-block						
Richards, J., Philadelphia, Pa. Lubricator						
Richardson, C. A. (See Twitchell and Richardson.)						
Richardson, M. F. (See Neal, T. H., assignor.)	201,200	Mar. 12	380	118	13	479
Ritchel, C. F., Corry, Pa., assignor to G. H. Hess, Winchester, Va. Flying-machine						
Roberts, E. J., Ashland, Ky., assignor of part interest to D. A. Fisher, G. F. Long, E. Manring, J. Moynihan, L. E. Veyssie, G. Millard, J. Lauterbach, W. B. and L. T. Moore, B. W. Singer, S. S. Savage, E. F. Tracy, G. Burgraff, C. F. Bartell, P. Moriarty, Jr., J. Arzheimer, and A. Miller. Rail-joint	201,290	Mar. 12	480	147	13	493
Robinson, O. M., Upper Jay, N. Y. Holdback for vehicles	201,125	Mar. 12	311	95	13	469
Romer & Co. (See Ahrend, H., assignor.)						
Rood, E. O., Lodi, Ill. Washing-machine	201,126	Mar. 12	311	95	13	469
Ross, G. W., Troy, N. Y. Mucilage-holder	201,127	Mar. 12	313	96	13	469
Rundlett, J. C., Portland, Me. Specie-purse	201,301	Mar. 12	381	118	13	480
Rees, W. M. (See Campbell and Richards, assignors.)						
Reichenbach, A., Limbach, assignor to G. H. Neumann, Oederan, near Chemnitz, Saxony, Knitting-machine	201,447	Mar. 19	657	200 / 201	13	525
Reynolds, I., assignor to Reynolds & Reynolds, Dayton, Ohio. Book-binding	201,450	Mar. 19	662	201	13	525
Reynolds & Reynolds. (See Reynolds, I., assignor.)						
Rich, W. M., Rome, N. Y. Molasses-sampling glass	201,448	Mar. 19	659	201	13	525
Richards, J. F. (See Campbell and Richards.)						
Rider, A. K., Walden, N. Y. Drill-grinder	201,449	Mar. 19	659	201	13	525
Roberts, G. W. (See Larwill, A. L., assignor.)						
Romine, C., Williamsport, Ind. Flour and meal chest with sifting attachment	201,557	Mar. 19	769	234	13	540
Rosenstjerna, A., New York, N. Y. Shoemaker's lamp	201,358	Mar. 19	570	175	13	512
Rosquist, G., Brooklyn, N. Y. Rotary printing-machine	201,558	Mar. 19	770	234	13	540
Ross, T. J., Union, N. Y., assignor to J. F. Paret, Washington, D. C. Adjustable back for stools. (Reissue)	8,131	Mar. 19	812	247	13	546
Rowe, S. S., *et al.* (See Beckett, J. R., assignor. (Reissue.)						
Randall, F. J., Aurora, Ill. Corn harvester and husker	201,830	Mar. 26	1056	322	13	586
Ratcliff, F., Meriden, Conn. Calendar-inkstand	201,831	Mar. 26	1059	323	13	587
Raymond, J. P., Cincinnati, Ohio. Manufacture of paper bags	201,832	Mar. 26	1060	323	13	587
Reilly, H., Brooklyn, N. Y. Bag	201,631	Mar. 26	863	263	13	557
Reynolds, E. D., and O. B., Brockton, Mass. Horse hay-rake	201,833	Mar. 26	1061	323	13	587
Reynolds, O. B. (See Reynolds, E. D., and O. B.)						
Rice, E., Cazenovia, N. Y. Tape-holder	201,835	Mar. 26	1063	324	13	587
Rich, S., Boston, assignor to W. W. Treat, Watertown, Mass. Preserving together cured fish and potatoes	201,834	Mar. 26	1062	.....	13	587
Richman, A. B. (See Murphin, J., assignor.)						
Riggs, B. E. (See Swan and Riggs.)						
Rindge, A., Mendon, Mich. Burglar-alarm	201,836	Mar. 26	1063	324	13	587
Rippin, J., and W. Treyer, Rochester, N. Y. Safe bolt-works	201,702	Mar. 26	926	283 / 284	13	567
Roberts & Havell. (See Weston, E., assignor.) (Reissue.)						
Robinson, C., assignor to Smith & French, Eau Claire, Wis. Plow-clevis	201,837	Mar. 26	1064	324	13	587
Rockfellow, A. G., Ashland, Oreg. Gate	201,703	Mar. 26	927	284	13	567
Rogers, A. H., Springfield, Mass. Elastic-faced printing-type	201,632	Mar. 26	865	263	13	557
Ross, O. B., Monticello, Iowa. Gang cheese-press	201,838	Mar. 26	1065	324	13	587
Rowen, N., Oswego, Kans. Rocking churn with vibrating dasher	201,633	Mar. 26	866	263	13	557
Rumsey, L. M., *et al.* (See Hewitt, H. L., assignor.)						
Rumsey, M., *et al.* (See Hewitt, H. L., assignor.)						
Russell, C. W., *et al.* (See Wheeler and Loring, assignors.)						
Russell, J. E., *et al.* (See Wheeler and Loring, assignors.)						
Rand, A. C., Minneapolis, Minn. Manufacturing illuminating-gas	202,050	Apr. 2	189	55	13	626
Randall, I. H., Boston, Mass. Car-axle box	201,944	Apr. 2	82	23	13	611
Rarick, B. F., W. P., and J., Lincoln township, Kans. Trash-gatherer	202,051	Apr. 2	191	55	13	626
Rarick, J. (See Rarick, B. F., W. P., and J.)						
Rarick, W. P. (See Rarick, B. F., W. P., and J.)						
Rautz, J. C., Minooka, Ill. Railway-switch	201,945	Apr. 2	82	23	13	611
Raymond, S. H., Grand Rapids, Mich. Device for splicing carriage-shafts	201,892	Apr. 2	33	9	13	603
Reed, A. (See Daniels and Reed.)						
Reed, D. C., Kalamazoo, Mich. Harrow	201,946	Apr. 2	83	24	13	611
Reynolds, B. H. (See Spain and Reynolds.)						
Rice, C. R., Somerville, assignor of one-fourth interest to W. S. Choate, Augusta, Me. Vehicle-brake	201,893	Apr. 2	34	10	13	603
Rice, H. C., Louisiana, Mo. Filter and clarifier for tea, coffee, &c	201,947	Apr. 2	84	24	13	611
Rice, M., Augusta, Ga. Cutting and boring attachment for lathes	201,948	Apr. 2	84	24	13	611
Rivers, T. L., St. Louis, Mo., assignor, by mesne assignments, to W. B. Gould, New York, N. Y. Caster. (Reissue)	8,154	Apr. 2	237	69	13	633
Robinson, A. J., assignor to himself and T. Prince, Boston, Mass. Emery-wheel clamp	201,949	Apr. 2	85	24	13	611
Root, D. N., assignor to O. F. Hodges, Dubuque, Iowa. Well-auger	201,950	Apr. 2	86	25	13	611
Roundy, W. H., Marshalltown, Iowa. Fence-post	201,951	Apr. 2	87	25	13	612
Ronse, A. M., Boulder, Colo. Apparatus for regulating reciprocating motion	202,052	Apr. 2	191	56	13	626
Rubel, H. W., Butler, Mo. Bed-bottom	202,053	Apr. 2	192	56	13	626
Rudd, K. E., Cassopolis, Mich. Gate. (Reissue)	8,149	Apr. 2	231	67	13	632
Raetz, C., San Francisco, Cal. Spinning-top	202,118	Apr. 9	278	82	13	643
Rathbun, C. R., and F. W. Adams, Worcester, Mass. Sand-paper roll	202,119	Apr. 9	279	82	13	643
Reed, E. F. (See Macy and Reed.)						
Reed, J. R., Westfield, Mass. Steam-radiator	202,192	Apr. 9	358	105	13	653
Rees, H. A., Lowville, N. Y. Butter-mold	202,120	Apr. 9	280	82	13	643
Reid, J., Brooklyn, assignor to J. L. Mott Iron Works, New York, N. Y. Swinging basin and urinal	202,193	Apr. 9	359	105	13	653
Reynolds, J. R. (See Stannard and Reynolds.)						

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Richardson, J. T., Harrisburg, assignor to Pennsylvania Steel Company, Steel Works, Pa. Brace and plate for point-switches	202,286	Apr. 9	453	132	13	667
Richardson, L. (See Chinnock, G. H., assignor.)						
Ridge, E., Frankford, Philadelphia, Pa. Envelope	202,194	Apr. 9	360	105	13	654
Rigby, J. A., Carson City, Nev Governor	202,121	Apr. 9	281	82, 83	13	643
Roberts, D. C., Chicago, Ill. Ore-separator	202,122	Apr. 9	283	83	13	643
Roberts, O. L., *et al.* (See Collier, F. M., assignor.)						
Roberts, S. H., *et al.* (See Collier, F. M., assignor.)						
Roberts, T. H., *et al.* (See Collier, F. M., assignor.)						
Robinson, J. H., Manchester Bridge, N. Y. Bit for horses	202,195	Apr. 9	361	106	13	654
Rogers, G., Mount Vernon, Ohio. Traction-engine. (Reissue)	8,164	Apr. 9	499	146	13	673
Rogers, T. V. (See Sherman, B. M., assignor.)						
Ryan, J., Honesdale, Pa. Crimping-form	202,123	Apr. 9	284	83	13	644
Rabenberg, J., Breckenridge, Mo. Artificial chicken-mother	202,466	Apr. 16	652	190	13	699
Rabenberg, J., Breckenridge, Mo. Incubator	202,467	Apr. 16	652	191	13	699
Ramsdell, G., Detroit, Mich. Process and apparatus for manufacturing illuminating-gas	202,374	Apr. 16	561	164, 165	13	686
Rand, C. N., Cedar Rapids, Iowa, assignor of one-half interest to J. T. Kiggens. Metal post for wire fences	202,468	Apr. 16	653	191	13	699
Reed, T. L. (See Rounds and Reed.)						
Rees, J. H., Hawthorn, Tenn. Hog-cholera compound	202,583	Apr. 16	784	.....	13	714
Reeves, J. E., St. Joseph, Mo. Holdback for double harness	202,584	Apr. 16	785	226	13	714
Reimherr, F., Munich, Bavaria, Germany. Locomotive-boiler furnace	202,375	Apr. 16	564	165	13	686
Remsen, C. E., *et al.* (See Phillips, W. C., assignor.)						
Reynolds, W. L., *et al.* (See Thomas D., assignor.)						
Rhind, F., Brooklyn, N. Y., assignor of one-half interest to F. A. Lehmann, Washington, D. C. Oil-chandelier	202,585	Apr. 16	785	226, 227	13	714
Rhoads, W. G., Philadelphia, Pa. Flushing-box for water-closets	202,586	Apr. 16	786	227	13	714
Richards, H. E., assignor of two-thirds interest to J. F. and M. C. Richards, Oswego, Ill. Door-hanger	202,587	Apr. 16	788	227, 228	13	714
Richards, J. F., *et al.* (See Richards, H. E., assignor.)						
Richards, M. C., *et al.* (See Richards, H. E., assignor.)						
Richardson, J., Jr., Pomona, Cal. Thumb-rest for sheep-shears	202,469	Apr. 16	654	191	13	699
Richey, J., Cincinnati, Ohio. Coffin and burial-casket	202,470	Apr. 16	654	191	13	700
Riker, W., Newark, N. J. Finger-ring	202,588	Apr. 16	789	228	13	715
Riot, L. M. T. (See Sallière and Riot.)						
Robbins and Appleton. (See Peux, J. J., assignor.)						
Robjohn, T., deceased, assignor, by mesne assignments, to G. H. Wooster, New York, N. Y. Fluting-machine. (Reissue)	8,174	Apr. 16	827	239, 240	13	719
Rockford Watch Company. (See Stoner, B. F., assignor.)						
Rogers, E. T., New York, N. Y. Water-filter	202,471	Apr. 16	655	192	13	700
Rogers, L. H., New York, N. Y. Letter-sheet	202,589	Apr. 16	790	228	13	715
Rose, A. P., assignor to himself and T. Babington, Beowawe, Nev. Hame	202,376	Apr. 16	565	165	13	686
Rosenfield, A., assignor to L. E. Rosenfield, Detroit, Mich. Car-brake	202,472	Apr. 16	656	192	13	700
Rosenfield, L. E (See Rosenfield, A., assignor.)						
Ross, W. R., Dayton, Ohio. Letter-sheet and envelope	202,377	Apr. 16	565	165	13	687
Rounds, T. W., and T. L. Reed, Providence, R. I. Whip	202,378	Apr. 16	566	166	13	787
Rowell, C. G., Dallas, Oreg. Shaft-coupling	202,473	Apr. 16	657	192	13	700
Ruggles, R. B., Windsor, Conn. Latch	202,474	Apr. 16	657	192	13	700
Russell, S., Lewisville, assignor of one-half interest to A. Cox, Spiceland, Ind. Washing-machine	202,475	Apr. 16	658	193	13	700
Rand, A. C., Minneapolis, Minn. Refrigerator	202,867	Apr. 23	1103	316, 317	13	763
Rankin, D. (See Baron, Cash, and Rankin.)						
Rath, E. H. T. C., Newark, N. J. Copying-press	202,756	Apr. 23	984	283	13	747
Ray, J. (See Fox, N., assignor.)						
Reese, C., Baltimore, Md. Table cutlery	202,757	Apr. 23	985	283	13	748
Reitz, A. (See Westwood, J. T., assignor.)						
Rice, D., and G. K. Childs, Philadelphia, Pa. Stretcher and wheeled frame	202,868	Apr. 23	1105	317	13	763
Richard, J. E., assignor of one-half interest to J. S. Hulen, Brooklyn, N. Y. Ventilator for houses	202,869	Apr. 23	1106	317	13	763
Richmond, G. B., Lansing, Mich. Speaking-telephone transmitter	202,870	Apr. 23	1107	317, 318	13	763
Risdon, J. A., Sycamore, assignor of one-half interest to M. Winters, Freeport, Ill. Horse-shoe	202,753	Apr. 23	986	283, 284	13	748
Ritty, S., assignor of one-half interest to J. Dodds, Dayton, Ohio. Horse hay-rake	202,871	Apr. 23	1108	318	13	763
Robbins, M., Lowell, Mass. Scraper for vehicle-wheels	202,872	Apr. 23	1110	318	13	763
Roberson, G. W. and H. F., Shushan, N. Y. Combined harrow and seeding-machine	202,873	Apr. 23	1110	319	13	764
Roberson, H. F. (See Roberson, G. W. and H. F.)						
Rogers, L. H., New York, N. Y. Combined letter-sheet and envelope	202,874	Apr. 23	1112	319	13	764
Roseman, E. D., assignor of one-half interest to C. B. Minshall, Mount Pleasant, Iowa. Fence-post	202,875	Apr. 23	1114	320	13	764
Russell, W. A. (See Cushman, F. A., assignor.) (Reissue.)						
Rutan, P., Sulphur Spring, Ohio. Elevating-ladder	202,876	Apr. 23	1114	320	13	764
Ryan, J., St. Louis, Mo. Steam-trap	202,759	Apr. 23	987	284	13	748
Reed & Barton. (See Parkin, W., assignor.)						
Reed, T. L. (See Morris, H., assignor.)						
Reese, G. and P., New Albany, Ind. Plow	203,192	Apr. 30	1441	421	13	810
Reese, P. (See Reese, G. and P.)						
Rehbein, J., Honesdale, Pa. Churn	203,193	Apr. 30	1442	421	13	810
Rhoades, S. H., Pittston, Pa. Apparatus for storing and discharging liquids	203,194	Apr. 30	1443	421	13	811
Rhoads, W. G., Philadelphia, Pa. Water-closet	203,071	Apr. 30	1313	382	13	794
Rieder, M. (See Doll, Rieder, and Diehlmann.)						
Rieter, H., Winterthur, J. Wehrli, and L. Grübli, Wulflingen, Switzerland, assignors to F. A. and A. E. Kursheedt, New York, N. Y. Embroidering-machine	203,195	Apr. 30	1445	422, 423	13	811
Rieter, H., Jr. (See Grübli, Rieter, and Wehrli.)						
Robertson, E. A. (See Robertson, S. N. and E. A.)						
Robertson, S. N. and E. A., Hampden, Me. Apparatus for catching fish	202,902	Apr. 30	1211	350	13	780
Rockwell, W. H. (See Wadsworth, H., assignor.)						
Rodebaugh, G. W., Jackson, Miss. Gate	203,196	Apr. 30	1450	424	13	811
Roeper, J. J., Philadelphia, Pa. Sectional steam-generator	203,197	Apr. 30	1451	424	13	811
Rogers, L. H. (See Foster, C., assignor.) (Reissue.)						
Roop, J. W., assignor to W. J. Tapp, Louisville, Ky. Bale-tie	202,963	Apr. 30	1213	351	13	781
Ross, D. G. (See McDougall, A., assignor.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Rounds, H. M., Manawa, Wis. Machine for making staves	202,964	Apr. 30	1214	351	13	781
Ruggles, S., Three Rivers, Mass. Bug-exterminator	203,072	Apr. 30	1316	382	13	794
Ryan, J. J., Midland, Mich. Log-tongs	203,198	Apr. 30	1451	424	13	812
Rankins, W. L., Paris, Ky. Convertible car-truck	203,499	May 7	275	79	13	858
Rapp, C. F., Cincinnati, Ohio. Reversible hinge	203,293	May 7	62	19	13	828
Reed, J., Troy, Ohio. Carburetor	203,371	May 7	142	41	13	840
Reistle, C. (See Hinrichs and Reistle.)						
Rhodes, C. E., New Orleans, La. Mosquito-bar frame	203,291	May 7	60	19	13	828
Rhoner, F., and S. Willershausen, New York, N. Y. Rocking-chair	203,294	May 7	63	19	13	828
Rich, D. G., assignor to himself and M. L. Rich, Sand Bank, N. Y. Milking-pail	203,500	May 7	275	79	13	858
Rich, E., administratrix. (See Morrison, G. W., assignor.)						
Rich, M. L. (See Rich, D. G., assignor.)						
Richmond, C. G., Boston, Mass. Lamp-wick	203,373	May 7	145	42	13	840
Richmond, H. and W. S., New York, N. Y. Canceling and writing ink	203,372	May 7	144	.....	13	840
Richmond, W. S. (See Richmond, H. and W. S.)						
Rigby, N. L., assignor to himself and J. D. Pryor, Winfield, Kans. Lamp	203,374	May 7	146	42	13	840
Risley, E. (See Elsey, G., assignor.)						
Robeson, D. S. (See Paine, H. M., assignor.)						
Robinson, A. S., assignor of one-half interest to N. Lyon, Albany, N. Y. Snow-shovel	203,375	May 7	147	42	13	840
Rogers, A. S., and W. W. Fuller, Salem, Mass. Shoe-maker's jack	203,376	May 7	148	42	13	840
Ross, J. G. (See Hawley, M. C., assignor.)						
Royal, G., Truckee, Cal. Track-clearer	203,377	May 7	149	43	13	841
Rude, P. H., assignor of one-half interest to O. Anderson, Clinton, Wis. Gate	203,295	May 7	63	20	13	829
Russell, H., New Richmond, Wis. Mop-wringer	203,501	May 7	276	79	13	858
Raby, J. B., Quincy, and D. J. Sommers, Shady Grove, Pa. Car-coupling	203,772	May 14	574	161	13	905
Ralya, J. J., Cleveland, Ohio. Water purifier and heater for boilers	203,646	May 14	441	126	13	888
Ransom, N. A., Chicago, Ill. Fare-register and ticket-receiver	203,773	May 14	575	162	13	905
Raoul, W. G., Macon, Ga. Air-brake	203,647	May 14	443	126	13	888
Read, H. F., Brooklyn, N. Y. Wrench attachment	203,774	May 14	578	162	13	905
Redd, W. M., and E. M. Sanford, Dunleith, Ill. Grain-separator	203,648	May 14	444	126	13	888
Reed, W. S., Leominster, Mass. Toy	203,775	May 14	580	162	13	905
Reed, W. S., Leominster, Mass. Toy	203,776	May 14	580	163	13	905
Renetzky, A., Lincoln, Ill. Ditching-machine	203,777	May 14	581	163	13	905
Reynolds, H., Marshalltown, Iowa. Fence-barb	203,779	May 14	584	163	13	906
Reynolds, H., assignor to Reynolds & Co., New Haven, Conn. Molding-machine	203,778	May 14	582	163	13	905
Reynolds & Co. (See Reynolds, H., assignor.)						
Rood, L. W., Aurora, Ill. Cane	203,559	May 14	302	102	13	878
Ross, C. E., executrix. (See Everest and Ross.) (Reissue.)						
Rowell, G. D. (See Birge, Woodard, and Rowell.)						
Rubber and Celluloid Harness Trimming Company. (See Lockwood, D. C., assignor.)						
Runton, G. and J., Hoboken, N. J. Desk	203,649	May 14	445	126	13	889
Runton, J. (See Runton, G. and J.)						
Rutherford, A., Walla Walla, Wash. Ter. Adjustable trace-fastening	203,780	May 14	584	164	13	906
Rabbeth, F. J., Pawtucket, R. I. Reservoir-bolster bearing for spindles of spinning machinery	204,085	May 21	918	263	13	956
Rae, J., New York, N. Y. Pressure-indicator for steam-engines	204,086	May 21	919	263	13	956
Rae, J., assignor to T. M. Stewart, New York, N. Y. Carpet-cleaning machine	203,853	May 21	671	190	13	924
Ramsey, R. H., Philadelphia, Pa. Car-transfer apparatus	204,087	May 21	921	263	13	956
Ratcliff, F., Meriden, assignor to Derby Silver Company, Derby, Conn. Flower-vase	203,939	May 21	760	219	13	936
Rawson, S. E. G., Saratoga Springs, N. Y. Suspensory-bandage	204,088	May 21	922	263	13	956
Reckendorfer, J. (See Hoffman, J., assignor.)						
Rees, J., Pittsburg, Pa. Construction of ships	203,940	May 21	761	219	13	936
Reid, J., Crestline, Ohio. Drinking-fountain	203,941	May 21	761	219	13	936
Remington, G. H. (See Remington, G. W., assignor.)						
Remington, G. W., Exeter, assignor of one-half interest to G. H. Remington, Providence, R. I. Carriage-wrench	204,089	May 21	923	264	13	956
Richards, H. E., Oswego, Ill. Exhibitor for cordage	203,854	May 21	672	190	13	924
Richardson, H. W., Philadelphia, Pa. Street-sweeping machine	203,942	May 21	762	220	13	936
Riedle, R. W., Minneapolis, Minn. Earth-closet	203,943	May 21	763	220	13	937
Rigby, A., Upper Stillwater, Me. Hay-rake	204,090	May 21	924	264	13	956
Riker, C. L., New York, N. Y. Letter-sheet and envelope	203,855	May 21	673	190	13	924
Robertson, G. W., assignor to Southard, Robertson & Co., Peekskill, N. Y. Stove-shelf	203,944	May 21	764	220	13	937
Rogers, C. D., assignor to American Screw Company, Providence, R. I. Metal-screw machine	203,946	May 21	765	221	13	937
Rogers, T. B., Jr., Brooklyn, assignor to himself and P. Cooper, New York, N. Y. Shutter bower and fastener	203,945	May 21	765	220	13	937
Rogers, W. C., Papillion, Neb. Sulky-plow	204,091	May 21	924	264	13	956
Rose, I. M., assignor, by mesne assignments, to I. W. Barnum, Brooklyn, N. Y. Tuck-creasing attachment for sewing-machines. (Reissue)	8,236	May 21	956	274	13	960
Royal, G., Truckee, Cal. Track-clearer	204,092	May 21	925	265	13	957
Runstetler, A. and M., assignors to Deere & Mansur Company, Moline, Ill. Corn-planter	204,093	May 21	926	265	13	957
Runstetler, M. (See Runstetler, A. and M.)						
Ramsey, J., Jr., Bellewood, Pa. Car-brake	204,372	May 28	1240	353	13	1000
Ramsey, R. H., Philadelphia, Pa. Car-truck-shifting apparatus. (Reissue)	8,259	May 28	1292	368	13	1007
Randle, Heath & Livermore. (See Bettis and Heath, assignors.)						
Rausch, L., New York, N. Y. Rocking-chair	204,373	May 28	1242	353	13	1000
Rayner, J. B., and E. G. Burr, Springfield, Mass. Sash balance and lock	204,374	May 28	1243	353	13	1000
Reagin, J. (See Hazelwood and Reagin.)						
Reynolds, G. L., Oakland township, Cal. Window-screen	204,375	May 28	1244	354	13	1001
Reynolds, H. A., New York, N. Y., assignor to H. M. Richardson and G. McKee. Velocipede. (Reissue)	8,252	May 28	1284	366	13	1005
Rice, T. B., Jr., Medora, Ill. Field-roller	204,376	May 28	1244	354	13	1001
Richardson, H. M., *et al.* (See Reynolds, H. A., assignor.) (Reissue.)						
Robbins, S., West Medway, Mass. Table	204,377	May 28	1245	354	13	1001
Robellaz, J. L. (See Jennings and Robellaz.)						
Roberts, C. A., assignor of one-half interest to C. M. Porter, Detroit, Mich. Car-coupling	204,251	May 28	1117	319	13	985
Roney, R. J., Syracuse, N. Y. Fish, bait, and oyster can	204,168	May 28	1038	293	13	973
Rosenstock, M. (See Brosemann, Russenberger, and Rosenstock.)						
Rosier, A., Sussex, Wis. Double-tree clevis	204,252	May 28	1118	319	13	985
Russenberger, M. (See Brosemann, Russenberger, and Rosenstock.)						
Ratcliff, F., West Meriden, Conn. Lamp	204,608	June 4	182	58	13	1038
Rate, E. F., Cedar Bluff, Iowa. Corn-husking implement	204,451	June 4	35	11	13	1017
Reinhard, J. F., New York, N. Y. Receptacle for liquids, acids, and oils	204,609	June 4	183	59	13	1038
Rhoades, S. H., Pittston, Pa. Apparatus for storing and discharging oil	204,610	June 4	185	59	13	1038
Rice, M. M., and J. Labar, Slatington, Pa. Desk slate-holder	204,505	June 4	79	27	13	1024

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Richards, M. C., assignor of two thirds interest to H. W. Farley and D. M. Haight, Oswego, Ill. Shipping-package	204,611	June 4	186	59	13	1039
Rinehart, G. W., New Philadelphia, Ohio. Fruit-drier	204,452	June 4	36	12	13	1017
Roberts, T. W. (See Clark and Roberts.)						
Robertson, G. W. (See Taylor, W., assignor.)						
Roehl, C., assignor of three-fourths interest to R. A. Culter, D. C. Proctor, and A. E. Bronson, Peoria, Ill. Hearth for cooking-stoves	204,453	June 4	36	12	13	1018
Rowen, N., and G. Amis, Oswego, Kans. Wheel-plow	204,612	June 4	188	60	13	1039
Royce, J. S., Cuylerville, N. Y. Harvester	204,613	June 4	188	61	13	1039
Royce, J. S., Cuylerville, N. Y. Harvester	204,614	June 4	194	62	13	1040
Ruggles, S. P., Boston, Mass., assignor to E. Thompson, New York, N. Y. Fire-place blower	204,506	June 4	80	27	13	1024
Russell, R. S. T., Stanton, Del. Flour-bolt feeder, &c	204,454	June 4	37	12	13	1018
Ryerson, W. M., Newton, N. J. Harness-saddle tree	204,507	June 4	81	28	13	1024
Rawlings, W. J., assignor to himself and F. and A. Brinkman, Ottawa, Ohio. Jointed brace for vehicle-springs	204,843	June 11	443	130	13	1074
Rice, B., Brooklyn, N. Y. Blinder for horses	204,844	June 11	444	130	13	1074
Rice, E., Providence, R. I. Spool-holder	204,758	June 11	348	105	13	1064
Rice, G. H. (See Sherwood, N. B., assignor.)						
Rice, H. C., Louisiana, Mo. Coffee pot and strainer	204,683	June 11	267	83	13	1053
Ripley, R. C. (See Stowe, C. W., assignor.)						
Roberts, G. S., Brooklyn, N. Y. Case-hardening iron	204,846	June 11	445	.....	13	1074
Robinson, E., Wilmington, Del., assignor to Woodruff Sleeping Car and Parlor Coach Company, Pittsburg, Pa. Sleeping-car	204,684	June 11	268	83	13	1054
Robinson, F. J., Lake Village, N. H. Mop-wringer	204,845	June 11	445	130	13	1074
Rowe, E. G., New York, N. Y. Sad-iron polisher	204,759	June 11	348	105	13	1064
Rundle, H., assignor of one-half interest to G. L. Williams, Edwardsville, Ill. Developing photographic pictures	204,760	June 11	349	.....	13	1064
Rundlet, D. T., Boston, Mass. Lock-hinge	204,761	June 11	350	106	13	1064
Runton, G. and J., Hoboken, N. J. Blind-fastening	204,762	June 11	350	106	13	1064
Runton, J. (See Runton, G. and J.)						
Russell, J. C., Kensington, England. Composition pavement	204,763	June 11	351	.....	13	1064
Rutherford, W. B., and J. T. Hawkins, Rockdale, Tex. Bale-tie	204,764	June 11	354	106	13	1064
Rankin, W. H., Elizabeth, N. J. Saturated sheathing for roofing	205,135	June 18	756	.....	13	1119
Rathmann, H., Buffalo, N. Y. Soap-frame	205,136	June 18	756	224, 225	13	1119
Rawe, W. H. (See Massey and Rawe.)						
Reisinger, J. W. H., Meadville, Pa. Blank-book	205,137	June 18	758	225	13	1120
Rice, A. B., Brooklyn, N. Y. Embroidery-pattern	205,138	June 18	760	225	13	1120
Rice, A. L. (See Rice, G. M., 2d, and A. L.)						
Rice, G. M., 2d, and A. L., Worcester, Mass. Separating animal from vegetable fibers	205,139	June 18	761	.....	13	1120
Richardson, S. M., Boston, Mass. Vehicle-spring	204,915	June 18	530	157	13	1090
Ritty, J., Dayton, Ohio. Car-coupling	204,997	June 18	621	182	13	1101
Robinson, H. S., Boston, Mass. Apparatus for cleansing and bleaching textile fabrics	205,140	June 18	762	225	13	1120
Robinson, J. T. (See Spring and Robinson.)						
Ross, M., San José, Cal. Vineyard-plow	204,998	June 18	622	182	13	1101
Rossman, L. J. (See Rossman, W. F., assignor.)						
Rossman, W. F., assignor of one-half interest to L. J. Rossman, Hudson, N. Y. Ventilator and chimney-cap	205,141	June 18	763	226	13	1120
Rouse, J. H., Somerville, assignor of one-half interest to A. J. Coolidge, Watertown, Mass. Time-indicator for letter-boxes	205,142	June 18	765	226	13	1120
Raetz, C., San Francisco, Cal. Cleansing and scouring device	205,209	June 25	942	279	13	1148
Randall, F. D., and L. D. Dana, Waupaca, Wis. Grinding-machine	205,416	June 25	1066	315	13	1164
Randolph, R. J. (See Bassett, R. A., assignor.)						
Ray, G. W., Watson, Mo. Wheel-cultivator	205,417	June 25	1067	316	13	1165
Reilly, H., Brooklyn, N. Y. Projectile for ordnance. (Reissue)	8,308	June 25	1124	332	13	1172
Reyburn, W. S., and E. A. W. Hunter, Philadelphia, Pa.; said Hunter assignor of one-half interest to B. P. Moulton. Coupling for lightning-rods. (Reissue)	8,304	June 25	1120	331	13	1172
Reynolds, J. B. (See Moreau and Dennis, assignors.)						
Rhynearson, G. W., Cincinnati, Ohio. Cigar bundler and binder	205,300	June 25	943	280	13	1149
Richard, J. E., New York, assignor of one-half interest to J. S. Hulin, Brooklyn, N. Y. Ventilator	205,418	June 25	1068	316	13	1165
Richards, J., assignor to J. A. Fay & Co., Cincinnati, Ohio. Wood-planing machine. (Reissue)	8,297	June 25	1111	329	13	1171
Richards, J. F. (See Campbell and Richards.)						
Richardson, G. M. (See Richardson, M. A. and G. M.)						
Richardson, M. A. and G. M., Chicago, Ill. Sieve	205,210	June 25	848	252	13	1137
Ring, J., St. Louis, Mo. Cooling and freezing apparatus	205,419	June 25	1069	316	13	1165
Rivard, M. J., assignor of one-half interest to F. L. Dohmstreich, Detroit, Mich. Fastening for packing-boxes	205,420	June 25	1070	316	13	1165
Räber, B. (See Schultz, A. L., assignor.)						
Robbins and Myers. (See Steele, A. P., assignor.)						
Robinson, C., *et al.* (See Crandall, L. P., assignor.)						
Robinson, E., Dennison, Ohio. Steam-packing	205,421	June 25	1071	317	13	1165
Rockwell, C. H., Chatham, Mass. Lamp or lantern	205,422	June 25	1072	317	13	1165
Rogers, M. H., Great Barrington, Mass. Newspaper-folding machine	205,301	June 25	944	280, 281	13	1149
Romans, E. and F. H., Indianola, Iowa. Farm-gate	205,211	June 25	849	252	13	1137
Romans, F. H. (See Romans, E. and F. H.)						
Root, J. (See Johnson, L. J., assignor.)						
Root, J. B., New York, N. Y. Road-locomotive	205,212	June 25	850	252, 253	13	1137
Root, J. B., New York, N. Y. Mechanical movement	205,213	June 25	852	253	13	1137
Root, L. O. (See Baker and Root.)						
Rousseau, F. X., Arthabaskaville, Quebec, Canada. Measuring-faucet	205,302	June 25	945	281	13	1149
Ruckel, S. R., Kansas City, Mo. Fruit-picker	205,214	June 25	853	253	13	1137
Ruelle, N. (See Beaudoleil, A., assignor.)						
Russell, C. W., *et al.*, trustee. (See Loring, D. B., assignor.) (Reissue.)						
Russell, E. F., San Francisco, Cal. Amalgamator	205,215	June 25	854	253	13	1137
Russell, J. E., *et al.*, trustee. (See Loring, D. B., assignor.) (Reissue.)						
Ruthrauff, J. M., Washingtonville, Ohio. Harvester	205,423	June 25	1072	317	13	1165
Sailor, I. O., Montgomery City, Mo. Stump-extractor	198,817	Jan. 1	97	27	13	23
Sawyer, S. W. (See Smith, P., assignor.)						
Sechler, J. D., Huntertown, Ind. Milk-strainer	198,905	Jan. 1	190	53, 54	13	38

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Shaler, H. L., Deep River, Conn. Auger	198,857	Jan. 1	136	30	13	30
Shaw, J., Huddersfield, England. Union or joint for pipes	198,818	Jan. 1	98	27	13	23
Shelabarger, B. F., Hannibal, Mo. Car-wheel and lubricator	198,819	Jan. 1	98	27	13	23
Smith, D. (See Perry, W. V., assignor.)						
Smith, J. M., Newark, Ohio. Hot-blast oven	198,820	Jan. 1	99	28	13	23
Smith, P., assignor of one-half interest to S. W. Sawyer, Palmyra, N. Y. Gate	198,858	Jan. 1	137	30	13	30
Spedden, E. (See Spedden, R. R. and E.)						
Spedden, R. R. and E., Astoria, Oregon. Rowlock	198,821	Jan. 1	100	28	13	23
Spencer, E. E. (See Morrison, W. A., assignor.)						
Spencer, W. D., assignor of one-half interest to F. Van Sands, Middletown, Conn. Hasp-lock	198,859	Jan. 1	138	30	13	30
Spooner, T. (See Fairbanks and Spooner.)						
Starck, L., Mayence, Germany. Machine-belting	198,860	Jan. 1	139	30	13	30
Sanford, C. M., Hamppange, N. Y. Girth for harness	198,861	Jan. 1	139	40	13	30
Steller, C. E., Milwaukee, Wis. Sash-fastener	198,755	Jan. 1	27	7	13	13
Stephens, G. T., Ithaca, N. Y. Meat-tenderer	198,756	Jan. 1	28	7	13	13
Stevens, F. B., and J. L. Bond, Port Huron, Mich. Hydrant-valve	198,822	Jan. 1	101	28	13	24
Stiveson, A. O., *et al.* (See King, J. G., assignor.)						
Stone, J. B., Jersey City, N. J. Lock-hinge	198,740	Jan. 1	62	16	13	17
Swartz, S., Buffalo, N. Y., and J. R. Cross, Cleveland, Ohio. Wood-boring machine	198,823	Jan. 1	101	29	13	24
Symons, P., Plainfield, N. J. Grate for cooking and heating stoves	198,909	Jan. 8	291	85	13	61
Scheider, J., New York, N. Y. Gravy-strainer	199,108	Jan. 8	393	117	13	78
Scofield, L. T., Cleveland, Ohio. Pipe-joint	199,109	Jan. 8	394	118	13	78
Scott, H. C., Chicago, Ill. Lamp-burner	199,110	Jan. 8	395	118	13	78
Seaman, J. A., Chicago, Ill. Street-pavement	198,955	Jan. 8	245	70	13	53
Seely, T. (See McCollum and Seely.)						
Selleck, R. M., Newark, N. J., assignor to H. F. Osborne. Saddle and pad screw cutter	8,032	Jan. 8	437	128	13	84
Short, B. W. (See Moffat, W., assignor.)						
Shortan, C., New York, N. Y., assignor, by mesne assignments, to Washburn & Moen Manufacturing Company. Wire-twisting machine. (Reissue)	199,111	Jan. 8	397	118	13	78
Sims, C. B., *et al.* (See Sims, E., assignor.)						
Sims, E., assignor to M. Z., C. B., and J. A. Sims, Aurora, Ill. Manufacture of metal rakes	199,112	Jan. 8	398	118	13	78
Sims, J. A., *et al.* (See Sims, E., assignor.)						
Sims, M. Z., *et al.* (See Sims, E., assignor.)						
Smith, A., Wheeler's Grove, Iowa. Grain-dumping device	199,115	Jan. 8	406	120	13	79
Smith, A. L., Philadelphia, Pa. Bird-cage	198,956	Jan. 8	245	70, 71	13	54
Smith, D., Springfield, Mass. Stop-motion for winding and twisting machinery	199,001	Jan. 8	293	.....	13	61
Smith, G. B., Philadelphia, Pa. Wooden shingle made fire-proof	199,113	Jan. 8	399	119	13	78
Smith, J. D., assignor to R. Emerson and W. A. Talcott, Rockford, Ill. Corn-planter	199,000	Jan. 8	292	85, 86	13	61
Smith, M. H., Halifax, England. Furnace-feeder	199,114	Jan. 8	405	119	13	79
Smith, S. H., assignor of two-thirds interest to G. H. Felt and G. W. Green, Brooklyn, Mich. Windmill	199,116	Jan. 8	407	120	13	79
Spadone, A., Jersey City, N. J. Vulcanized-rubber roll	199,117	Jan. 8	408	120	13	79
Stengel, C., Hamilton, Ohio. Dovetailing-machine	199,118	Jan. 8	410	121	13	80
Stillman, O. B. and J. H. Webster, Boston, Mass. Measuring and discharging apparatus for cooling-tubes of char-furnaces	199,119	Jan. 8	412	121	13	80
Strickland, W. H., *et al.* (See Morris, B. F., assignor.)	199,120	Jan. 8	413	121	13	80
Stumm, E., Philadelphia, Pa. Water-boiler for stoves and ranges	199,121	Jan. 8	413	121	13	80
Sutton, W. H., Purdy, Tenn. Nut-lock	199,002	Jan. 8	293	86	13	61
Sweeney, P., New York, N. Y. Journal for shafts and axles	199,122	Jan. 8	414	122	13	80
Swift, T. F., *et al.* (See Morris, B. F., assignor.)	198,957	Jan. 8	247	71	13	54
Swope, I., St. Louis, Mo. Elastic-welted felt packing	8,031	Jan. 8	435	128	13	83
Sylvester, H., New York, N. Y. Advertising-lantern	199,317	Jan. 15	622	180	13	113
Symonds, T., East Boston, Mass. Dredging-bucket	199,318	Jan. 15	622	181	13	113
Syverson, A., assignor of one-half interest to J. S. Dennis, Chicago, Ill. Sheet-metal elbow. (Reissue)	199,229	Jan. 15	530	156	13	99
Sander, J., Newark, N. J. Meat-chopping machine	199,169	Jan. 15	474	140	13	90
Sanford, C. M., Hamppange, N. Y. Girth for harness	199,319	Jan. 15	623	181	13	113
Scheener, L., New York, N. Y. Satchel, traveling-bag, &c	199,230	Jan. 15	531	156	13	99
Schmickl, M., assignor to himself and W. Roemer, Newark, N. J. Chandelier for oil-burners	199,320	Jan. 15	624	181	13	113
Schnell, L. C., Akron, Ohio. Clinometer	199,321	Jan. 15	625	182	13	113
Selsor, G. W. (See Stamour, J. B., assignor.)						
Senat, P. L., Philadelphia, Pa. Center-board for vessels	199,322	Jan. 15	626	182	13	113
Seng, W., Chicago, Ill. Folding leg for sofa-bedsteads	199,231	Jan. 15	532	156	13	99
Seymer, C., assignor to R. Horstmann, Berlin, Germany. Billiard-cue	199,232	Jan. 15	532	157	13	99
Sherman, J. G. (See Sherman, S. S. and J. G.)	199,323	Jan. 15	627	182	13	113
Sherman, S. S. and J. G., McHenry, Ill. Farm-gate	199,324	Jan. 15	628	182, 183	13	114
Sherman, W. F., Lowell, Mass. Vessel for holding liquids	199,325	Jan. 15	629	183	13	114
Simmons, G. W. (See Howard, T. S. L., assignor.)						
Slaughter, J. C., Crumpton, Md. Fruit-drier	199,233	Jan. 15	533	157, 158	13	99
Spengler, C. G., Hoboken, N. J. Carbureting attachment for gas-burners	199,326	Jan. 15	630	183	13	114
Sprout, J., Cairo, Ill. Non-conducting casing for refrigerators, &c	199,234	Jan. 15	535	158	13	99
Squier, G. L. (See Stevens, H. B., assignor.)	199,330	Jan. 15	634	184	13	115
Stamour, J. B., Philadelphia, Pa., assignor to G. W. Selsor, Germantown, Pa. Sad-iron	199,327	Jan. 15	631	183	13	114
Stauber, F. A. (See Hodel and Stauber.)						
Stevens, H. B., assignor to G. L. Squier, Buffalo, N. Y. Grain-separator	199,328	Jan. 15	632	184	13	114
Stevens, J. H., Cambridge, Mass. Water-closet	199,329	Jan. 15	633	184	13	115
Stevens, M. A., Cohassett, Mass. Railway-signal	199,581	Jan. 22	893	262	13	164
St. John, S. H., Cedar Rapids, Iowa. Barb for fence-wire	199,582	Jan. 22	894	262	13	164
Stone, H. C., Brooklyn, N. Y. Manufacture of boxes	199,471	Jan. 22	779	220	13	146
Strawn, H. J. (See Asbury, W. S., assignor.)	199,470	Jan. 22	778	220, 221	13	146
Strawser, R., Nekoda, Pa. Bee-hive	199,381	Jan. 22	694	204	13	132
Stricker, G., Catawissa, Pa. Vehicle-spring	199,472	Jan. 22	780	220	13	146
Sweet, C. E. (See Norris and Sweet.)	199,475	Jan. 22	784	220	13	146
Socksteder, J., Louisville, Ky. Bottle-capper	199,473	Jan. 22	783	220	13	146
Sargent, J., Rochester, N. Y. Trap for water-closets, &c						
Schneider, J., La Fayette, Ind. Marking-pen						
Schreiber, J., Vienna, Austria. Spring-motor						
Schwiers, F. W., New York, N. Y. Apparatus for hitching and securing runaway horses						
Sergeant, H. C., New York, N. Y. Brick-machine						
Seymour, F. J., Wolcottville, Conn. Separating molten metals						
Shephard, T. N., assignor of one-half interest to W. Fuller, Lincoln, Nebr. Windmill						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sholes, C. L., Milwaukee, Wis., assignor to Type Writer Company. Type-writing machine	199,382	Jan. 22	695	204	13	132
Siemens, F., Dresden, Germany. Hardening, tempering, and pressing glass	199,583	Jan. 22	696	263	13	164
Silver, E., Reading, assignor to J. Keats, Wood Green, England. Gage-lathe	199,584	Jan. 22	696	263	13	164
Singer, D. M., Johnstown, Pa. Combined table and clothes-horse	199,585	Jan. 22	901	263	13	165
Sloane, J. R. (See McDonald, A. E., assignor.)						
Smith, E. S., assignor to Smith & Griggs Manufacturing Company, Waterbury, Conn. Buckle	199,586	Jan. 22	902	264	13	165
Smith, G. C. (See Hall, A. O., assignor.)						
Smith & Griggs Manufacturing Company. (See Smith, E. S., assignor.)						
Smith, H. G., *et al.* (See Blinco, J. D., assignor.)						
Smith, L. T., New Haven, Conn. Corset	199,587	Jan. 22	902	264	13	165
Smith, R. T., assignor, by mesne assignments, to American Shearer Manufacturing Company, Nashua, N. H. Animal-shearing machine. (Reissue)	8,052	Jan. 22	941	274	13	171
Snow, G. K., Watertown, Mass. Die for making collars. (Reissue)	8,046	Jan. 22	934	272	13	169
Soden, T. J., Brooklyn, N. Y. Ice-cream freezer	199,476	Jan. 22	785	231	13	146
Soltmann, G., New York, N. Y. Quadrant parallel section-line ruler	199,588	Jan. 22	903	264	13	165
Spaulding, M. W., Rensselaer Falls, N. Y. Holdback attachment for carriages	199,589	Jan. 22	905	264	13	165
Speer, W. W., Pittsburg, Pa. Cotton-sweep	199,590	Jan. 22	905	265	13	165
Sprague, G., Rockford, Iowa. Rotary-churn dasher	199,474	Jan. 22	783	230	13	146
Sprengle, L. J. (See Brubaker, A., assignor.)						
Starr, E. T., assignor to S. S. White, Philadelphia, Pa. Rocking standard for dental engines	199,477	Jan. 22	786	231	13	147
Stearns, G. C. (See Chandler, H., assignor.)						
Steele, W., Moffatt's Creek, Va. Feed-regulator for millstones	199,591	Jan. 22	906	265	13	166
Steinhoff, H. C., Weehawken, N. J. Door-spring	199,383	Jan. 22	696	204	13	132
Stephens, J., *et al.* (See Crawford, J., assignor.)						
Stevens, F., *et al.* (See Havell, G., assignor.) (Reissue.)						
Stevens, F. E. (See Buzzell, G. H., assignor.)						
Stevens, W. D. (See Dunbar, J., assignor.)						
Stever, J., assignor of one-half interest to D. S. Brinsmade, Birmingham, Conn. Burnishing-machine	199,592	Jan. 22	907	265 / 266	13	166
Stewart, A., Keota, Iowa. Feed-cooker	199,593	Jan. 22	909	266	13	166
Stewart, W. A., Big Rapids, Mich. Feather-renovator	199,478	Jan. 22	787	231	13	147
Stone, H. S., Orange, Ind. Blast-regulator for grain-separators	199,594	Jan. 22	910	266 / 267	13	166
Strasbough, L. W. (See Wantz and Strasbough.)						
Stroub, J. L., New York, N. Y. Clam-baker	199,595	Jan. 22	910	267	13	166
Stuart, J. J., New York, N. Y. Pump	199,596	Jan. 22	911	267	13	167
Sutton, B. F., Brooklyn, N. Y. Syringe	199,479	Jan. 22	788	231	13	147
Swift, A. R., Chicago, Ill. Railway-signal	199,384	Jan. 22	697	204	13	132
Scattergood, J. R., Newark, N. J. Gas-lighter	199,747	Jan. 29	1085	318	13	201
Scharnweber, W. (See Felix and Scharnweber.)						
Schimper Brothers. (See Blust, C., assignor.)						
Schneider, B. B., New York, N. Y. Lamp. (Reissue)	8,066	Jan. 29	1231	361	13	223
Schneider, B. B., New York, N. Y. Lamp. (Reissue)	8,067	Jan. 29	1231	361	13	224
Schreiner, H., Philadelphia, Pa. Car-starter	199,865	Jan. 29	1010	294	13	189
Schwaner, C. C., Winterset, Iowa. Trace-carrier	199,748	Jan. 29	1085	318	13	201
Scopes, E., assignor to N. Lyon, Albany, N. Y. Tool for cutting lines in the sole-edges of boots and shoes	199,749	Jan. 29	1086	318	13	201
Shaw, C., Bridgeport, Conn. Steam-boiler	199,866	Jan. 29	1196	351	13	218
Shepard, F. G., Battle Creek, Mich. Straw-elevator for grain-separators	199,666	Jan. 29	1011	294	13	190
Sherburne, N. H. (See Underwood, A. H., assignor.)						
Simon, G. (See Dalton, J., assignor.)						
Simpson, L. B. (See Simpson and Kimball, assignors.)						
Simpson, W. A., and S. Kimball; said Simpson assignor to L. B. Simpson, Lawrence, Kans. Alarm for locomotives to drive cattle from the track	199,867	Jan. 29	1197	351	13	218
Singleton, W., and E. Priestman, Sheffield, Great Britain. Pocket or spring knife	199,868	Jan. 29	1198	352	13	218
Sipe, A., River Bank, Va. Plow	199,750	Jan. 29	1087	319	13	201
Smith, G., Astoria, assignor to G. B. Prescott, New York, N. Y., and Western Union Telegraph Company. Duplex telegraph	199,869	Jan. 29	1198	352	13	218
Smith, G. W., Hubbardston, Mich. Safety attachment for steam-boilers	199,751	Jan. 29	1088	319	13	202
Smith, W., assignor of four-fifths interest to W. S. Rollings, H. H. Stout, A. R. Tucker, and E. C. Cook, Cicero, Ind. Revolving grate for cook-stoves	199,870	Jan. 29	1201	352	13	219
Smyth, S., Pittston, Pa. Grate for stoves and ranges	199,752	Jan. 29	1089	319	13	202
Snow, A. E., assignor to T. Potter, Philadelphia, Pa. Machine for rubbing oil-cloth	199,753	Jan. 29	1089	320	13	202
Soule, C. W., assignor to F. Tripp, Boston, Mass. Lamp-extinguisher	199,754	Jan. 29	1090	320	13	202
Sparks, W. H. (See Evans and Sparks.)						
Springer, J., San Francisco, Cal. Manufacture of doors, &c	199,871	Jan. 29	1201	353	13	219
Stearns, E. H., Erie, Pa. Head-block for saw-mills	199,667	Jan. 29	1012	295	13	190
Stebbins, M. L. (See Hopkins and Stebbins.)						
Stehley, W. M., King William Court House, Va. Harrow and roller combined	199,755	Jan. 29	1091	320	13	202
Sterzing, E., assignor of one-half interest to A. J. Mongovan, Hartford, Conn. Automatic animal-feeding device	199,872	Jan. 29	1202	353	13	219
Stevens, E. D. (See Horrocks and Stevens.)						
Stewart, R. M., Americus, Ga. Turbine water-wheel	199,873	Jan. 29	1202	353	13	219
Stimson, A. A., Rockport, assignor to himself and J. J. Mills, Chelsea, Mass. Anchor	199,874	Jan. 29	1203	353	13	219
Stuart, W., Fulton, and D. J. Parker, Garden Plain, Ill. Sand-guard for vehicle-wheels	199,668	Jan. 29	1014	295	13	190
Stubbs, J., Mount Pleasant, Iowa. Road-scraper	199,756	Jan. 29	1092	320	13	202
Stockley, A. F., Bishop Creek, Cal. Scrubbing-machine	199,875	Jan. 29	1204	354	13	219
Stone, H. C., Brooklyn, N. Y. Box	199,876	Jan. 29	1205	354	13	219
Stout, H. H., *et al.* (See Smith, W., assignor.)						
Sulouff, D. P., Mifflintown, Pa. Mill-feeding apparatus	199,877	Jan. 29	1207	354	13	220
Sweeney, J., New Haven, Conn. Journal bearing	199,669	Jan. 29	1015	296	13	190
Sanders, E. A., Rockford, Ill. Rolling colter	199,937	Feb. 5	50	16	13	240
Sangster, A. W., assignor of one-half interest to E. M. Jewett, Buffalo, N. Y. Ozone-generator	199,997	Feb. 5	104	34	13	249
Sapp, L. W. (See Richards, C., assignor.)						
Sard, G., Jr., assignor to himself and Rathbone, Sard & Co., Albany, N. Y. Stove-leg	199,938	Feb. 5	51	16	13	240
Sargent, J., Rochester, N. Y. Trap for drains, sewers, &c	200,003	Feb. 5	204	64	13	265
Sawyer, A. A. (See Lombard, N. C., assignor.)						
Schofield, S. C., Freeport, Ill. Grinding-mill	199,999	Feb. 5	106	35	13	250
Schraubstadter, C., *et al.* (See Bettis, J. R., assignor.)						
Schroder, N., *et al.* (See Stevens, J. L., assignor.)						
Schwarz, A., *et al.* (See Boussard, R., assignor.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Schwarz, J., *et al.* (See Boussard, R., assignor.)						
Seavers, H. C., *et al.* (See Stevens, J. L., assignor.)						
Seymour, F. H. (See Hart, W. W., assignor.)						
Shaw, W. T., and G. W. Menz, Louisville, Ky. Steaming-table and heating-oven combined	200,094	Feb. 5	205	64	13	265
Shaw, W. T., and G. W. Menz, Louisville, Ky.	200,000	Feb. 5	106	35	13	250
Shea, M., and J. M. Hamilton, Nashville, Tenn. Carbureter	199,939	Feb. 5	51	16, 17	13	241
Sherburne, W. J., Hastings, Minn. Machine for sawing shingles	199,998	Feb. 5	105	34	13	249
Shoemaker, J. W., and S. Dodsworth, Leavenworth, Kans. Temporary binder	8,075	Feb. 5	236	72	13	209
Shute, G. S., Boston, Mass. Electric and thermostatic fire-alarm. (Reissue)						
Simonds, A. A. (See Farmer, S. E., assignor.)	199,940	Feb. 5	53	17	13	241
Simonds, A. A., Dayton, Ohio. Bed-plate for paper or rag engines	200,095	Feb. 5	206	64	13	265
Simons, H. T., Cambridge, Ohio. Basket-grate						
Simpson, C. B. (See Jackson, G. F., assignor.)						
Slost, I. L. (See Nichols, M., assignor.)						
Smith, S., Hammondsport, N. Y. Sliding door	200,001	Feb. 5	107	35	13	250
Smith, W. D., assignor of one-half interest to F. J. Barber, Prophetstown, Ill. Lamp-wick	200,096	Feb. 5	206	65	13	265
Soelky, C. E., Baltimore, Md. Chimney-cowl	200,002	Feb. 5	107	35	13	250
Spaulding, N. W., San Francisco, Cal. Swage for saw-teeth	200,097	Feb. 5	207	65	13	265
Spellman, W. C. (See Werner, J. F., assignor.)						
Sprague, W., Philadelphia, Pa. Piston	200,098	Feb. 5	208	65	13	265
Sprowles, J. W., Philadelphia, Pa. Paper box for packing hatchets	200,003	Feb. 5	108	36	13	250
Stanley, E. G., Fitchburg, Mass. Curtain-fixture	200,099	Feb. 5	209	65	13	265
Stanley, E. G., Fitchburg, Mass. Folding chair	200,100	Feb. 5	210	66	13	266
Starkey, W., assignor of one-eighth interest to T. Glaze, Pittsburg, Pa. Vise	200,101	Feb. 5	211	66	13	266
Steele, J. W., Chicago, Ill. Culinary utensil	200,102	Feb. 5	212	66	13	266
Stevens, J. L., assignor to N. Schroder and H. C. Seavers, New York, N. Y. Cell-case	200,103	Feb. 5	213	66	13	266
St. John, J. A., *et al.* (See Bettis, J. R., assignor.)						
Stone, H. C., Brooklyn, N. Y. Wood-screw	200,104	Feb. 5	214	67	13	266
Stow, H. M. (See Stow, W. H. and H. M.)						
Stow, W. H., Chicago, Ill., and H. M. Stow, San Francisco, Cal. Street-pavement	200,105	Feb. 5	215	67	13	266
Street, J. W., Cleveland, Ohio. Railway cattle-guard	199,941	Feb. 5	54	17	13	241
Stroope, J. P., Arkadelphia, Ark. Bee-hive	200,004	Feb. 5	109	36	13	250
Strouse, H. L., *et al.* (See Blackburn and Mocsiein, assignors.)						
Sumner, F. A., Old Fort, N. C. Clothes-pounder	199,942	Feb. 5	54	18	13	241
Surdam, W. B., Fort Dodge, Iowa. Window-blind stop	200,005	Feb. 5	109	36	13	250
Sweet, C. T., Cumberland, Ohio. Gate and door fastener	200,106	Feb. 5	217	67	13	266
Swentzel, E. W. (See Gissinger, S., assignor.)						
Swift, O. F. (See Rasey, J. D., assignor.)	200,006	Feb. 5	110	36	13	250
Sycks, J. M., assignor to M. C. Sycks, Delaware, Ohio. Heating-stove						
Sycks, M. C. (See Sycks, J. M., assignor.)						
Schallenberger, G., Rochester, assignor to J. H. Doherty and C. Blattner, Bridgewater, Pa. Crimping-board for boots and shoes	200,346	Feb. 12	466	137	13	313
Schultheis, J. F., New York, N. Y. Life-boat	200,347	Feb. 12	467	138	13	313
Schwerdt, S., assignor of one-half interest to J. W. Peck, Roseville, Ill. Wrench	200,348	Feb. 12	470	138	13	313
Scripture, E. S., assignor to himself, W. H. Harway, and M. W. Hendrickson, Brooklyn, N. Y. Organ-blower	200,349	Feb. 12	470	139	13	313
Searle, H. W., Hamilton, Ontario, Canada. Snow-shovel	200,152	Feb. 12	269	80	13	283
Sedgwick, C., New York, N. Y. Bottle-stopper fastener	200,224	Feb. 12	338	101	13	293
Sellon, C. A., New Hudson, N. Y. Steam-pump governor	200,350	Feb. 12	472	139	13	314
Seymour, F. H. (See Hart, W. W., assignor.)						
Seymour, M. S., *et al.* (See Hicks, A., assignor.)						
Shaw, B. F., Cambridge, Mass. Knitting stockings	200,225	Feb. 12	339	102	13	294
Sholes, C. L., and C. Glidden, assignors, by mesne assignments, to Type Writer Company. Type-writing machine	200,351	Feb. 12	473	139	13	314
Shutt, M., Kiskiminetas township, Armstrong county, assignor of one-half interest to M. P. Kirkland, Apollo, Pa. Post-hole digger	200,352	Feb. 12	474	140	13	314
Sickles, J., Cedar Rapids, Iowa. Fence-post	200,153	Feb. 12	270	80	13	283
Silva, A. P., Elmira, N. Y. Duster-coat	200,226	Feb. 12	341	102	13	294
Smith, J. M., and H. W. C. Thomas, Springfield, Ohio. Grain-drill	200,227	Feb. 12	342	102	13	294
Smith, W. O., Kinmundy, Ill. Steam-vaporizer	200,154	Feb. 12	270	81	13	283
Spielman, W., assignor of one-half interest to M. Connely, Philadelphia, Pa. Railway-switch	200,353	Feb. 12	475	140	13	314
Spofford, C. (See Hoffman and Spofford.)						
Stadler, A. F. (See Rubin and Stadler.)						
Steinborn and Huppelsberg. (See Huppelsberg, F. W., assignor.)						
Stevens, G. L., Brooklyn, assignor to Averill Paint Company, New York, N. Y. Distemper-paint	200,228	Feb. 12	344	.....	13	294
Stevens, J. W., Roundhead, Ohio. Lifting-jack	200,354	Feb. 12	476	140	13	314
Stevenson, G., Zionsville, Ind. Pulverizing-cultivator	200,355	Feb. 12	477	140	13	314
Stewart, W. J., Russell, Iowa. Washing-machine	200,356	Feb. 12	477	141	13	314
Stockwell, Bragg & Co. (See Stockwell, L. W., assignor.)						
Stockwell, L. W., assignor to Stockwell, Bragg & Co., Ravenna, Ohio. Machine for making metal screws	200,155	Feb. 12	271	81, 82	13	283
Sutley, G. W. (See O'Donnell, F. B., assignor.)						
Swett, E. E., Olean, N. Y. Working-barrel for oil-wells	200,357	Feb. 12	478	141	13	315
Synnott, T. W., Wenonah, N. J. Fruit-jar	200,229	Feb. 12	344	102	13	294
Salisbury, W. S., Battle Creek, Mich., assignor of one-half interest to H. J. Brimmer, Adams, N. Y. Coil steam-generator	200,482	Feb. 19	611	180	13	343
Sanders, D. B., and J. Smith, Burlington, Mich. Feather-renovator	200,411	Feb. 19	540	160	13	332
Sandusky, I. B., Fayette county, Ky. Seed-cleaning machine	200,410	Feb. 19	540	159	13	332
Sargent, J., Rochester, N. Y. Sewer-trap	200,573	Feb. 19	700	206	13	357
Sawyer Manufacturing Company. (See Dingee, W. W., assignor.)						
Schmuck, S. H. (See Lyman, F. A., assignor.)						
Schrieber, F., and A. Weigand, New York, N. Y. Insect-trap	200,574	Feb. 19	701	206	13	357
Scott, C. M., St. Louis, Mo. Artificial dam or dyke	200,412	Feb. 19	541	160	13	332
Scott, J. H., Jr. (See Freeman, A. A., assignor.)						
Senour, F. L., Pittsburg, Pa. Globe for street-lamps	200,473	Feb. 19	603	177	13	342
Shaw, G. F. (See Shaw, H. F. and G. F.)						
Shaw, H. F. and G. F., Boston, Mass. Side-hill plow	200,413	Feb. 19	542	160	13	332
Shaw, J. M., Peoria, Ill. Foot-rest	200,483	Feb. 19	612	180	13	343
Shepard, C. G., and P. Adams, Jr., Buffalo, N. Y. Cooking utensil	200,575	Feb. 19	702	206	13	357
Shepherd, F. H., Davenport, Iowa. Vapor-burner	200,484	Feb. 19	612	180	13	343
Sherman, A. R., Natick, R. I. Book-rack	200,576	Feb. 19	703	206	13	357
Shook, L., Pittsburg, Pa. Paddle-wheel	200,577	Feb. 19	704	207	13	357
Sievern, G. F., assignor to himself and A. Walton, Brooklyn, N. Y. Life-boat	200,485	Feb. 19	613	181	13	343
Simon, H. (See Fairbairn and Simon.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Smalstig, W. C., assignor of two-thirds interest to W. McAdams, E. T. Robberson, and G. M. Jones, Springfield, Mo. Feathering paddle-wheel	200,578	Feb. 19	705	207	13	357
Smith, G. K., Brooklyn, N. Y. Carriage-spring	200,580	Feb. 19	708	208	13	358
Smith, J. (See Sanders and Smith.)						
Smith, J. S., *et al.* (See Mentzer, W. G., assignor.)						
Smith, M. H. M., Ithaca, N. Y. Apparatus for attaching harness to the shafts	200,486	Feb. 19	614	181	13	343
Smith, W., Carmi, Ill. Ditching-machine	200,579	Feb. 19	706	207 / 208	13	357
Squires, H. G., Pittsburg, Pa. Inkstand	200,581	Feb. 19	708	208	13	358
Stears, E. A., Brooklyn, N. Y. Household-press for fruits, &c.	200,487	Feb. 19	615	181	13	344
Stephenson, J., New York, N. Y. Car-axle box. (Reissue)	8,084	Feb. 19	724	213	13	360
Stephenson, J., New York, N. Y. Car-axle box. (Reissue)	8,085	Feb. 19	725	213	13	360
Stephenson, J., New York, N. Y. Car-axle box. (Reissue)	8,086	Feb. 19	726	213	13	360
Stephenson, J., New York, N. Y. Car-axle box. (Reissue)	8,087	Feb. 19	728	213	13	361
Stevens, G. W. (See Stevens, J. L. and G. W.) (Reissue.)						
Stevens, J. L. and G. W., San Francisco, Cal., assignors, by mesne assignments, to C. E. Coburn and H. F. Billings, Chicago, Ill. Case for transporting eggs. (Reissue)	8,091	Feb. 19	733	215	13	362
Swett, J. H., Pittsburg, Pa. Mill for rolling metal	200,582	Feb. 19	709	208 / 209	13	358
Sanderson, R. B., Bridgewater, Pa. Bracket	200,767	Feb. 26	916	269	13	397
Satterwhite, H., Martinsville, Ind. Toe-weight for horses	200,669	Feb. 26	818	241	13	331
Scheider, J., New York, N. Y. Spoon and ladle	200,670	Feb. 26	819	241	13	382
Schoonmaker, J. W., assignor of one-half interest to T. J. Garvey, Albany, N. Y. Sliding-door lock	200,768	Feb. 26	916	270	13	397
Seamans, C. O., Chesterton, Ind. Potato-digger	200,769	Feb. 26	917	270	13	397
Searls, A., Newark, N. J. Whip-socket	200,671	Feb. 26	820	241	13	383
Shaw, H. (See Cook and Shaw.)						
Shaw, H., Waveland, Miss., and F. Cook, New Orleans, La. Bale-tie	200,672	Feb. 26	821	242	13	383
Shepard, S., *et al.* (See Tripp, A. F., assignor.)						
Shields, D., Florence, Miss., and R. Z. Liddle, Albany, N. Y. Oil-stove	200,770	Feb. 26	918	270	13	397
Singer Manufacturing Company. (See Diehl, P., assignor.)						
Smith, C. J., Norfolk, Va. Safety-stove	200,771	Feb. 26	919	270	13	397
Smith, S. A., Providence, R. I. Bracket for book-shelves	200,772	Feb. 26	920	271	13	398
Smith, S. A., Providence, R. I. Book-shelf	200,773	Feb. 26	921	271	13	398
Somers, D. M., New York, N. Y. Machine for inserting and clinching metallic staples	200,774	Feb. 26	922	271	13	398
Spedden, R. R., and D. F. Stafford, Astoria, Oregon. Anchor	200,673	Feb. 26	823	242	13	383
Speers, N. W., assignor of one-eighth interest to A. Brown, Memphis, Tenn. Bale-tie and apparatus for applying the same	200,775	Feb. 26	925	272	13	398
Sprengard, J., Cincinnati, Ohio. Cradle	200,805	Feb. 26	953	280	13	403
Stafford, D. F. (See Spedden and Stafford.)						
Stark, G. H. (See Webster, E. A., assignor.)						
Stege, E. R., Chicago, Ill. Apparatus for supplying steam-blast to boiler-furnaces	200,674	Feb. 26	823	242	13	383
Stephens, J. A., assignor of one-half interest to F. Tennant, Metz, Iowa. Draft-equalizer	200,629	Feb. 26	772	227	13	376
Stephens, J. M. (See Nicholson, W. H., assignor.)						
Stietenroth, A. L., assignor of one-half interest to J. V. Le Cand, Natchez, Miss. Cotton-gin	200,776	Feb. 26	926	272	13	398
St. Joseph Reaper and Machine Company. (See Knoblock and Bissell, assignors.)						
Stone, J. M. (See Nix, Stone, and Anderson.)						
Strobridge, T., New Brighton, Pa. Coffee and spice mill	200,777	Feb. 26	927	272	13	398
Salisbury, W. S., Chicago, Ill., assignor of one-half interest to H. J. Brimmer, Adams, N. Y. Water-coil steam-generator	200,938	Mar. 5	116	39	13	433
Samuelson, B., and W. G. Manwaring, Banbury, England. Manufacturing the fingers of harvesting-machines	201,052	Mar. 5	232	73	13	450
Sanborn, A. A. (See Sanborn, Kanouse, and Sanborn.)						
Sanborn, R. H., C. O. Kanouse, and A. A. Sanborn, Newark, N. J. Collar and cuff	200,939	Mar. 5	117	39	13	433
Sangster, H. (See Mcnaar and Sangster.)						
Sawyer, A. M., Athol, Mass. Canister-shot	200,876	Mar. 5	63	22	13	425
Schenck, E., Baltimore, Md. Device for loading cartridges	200,846	Mar. 5	34	12	13	420
Schmitz, P. J., St. Paul, Minn. Horse-collar	200,847	Mar. 5	35	12	13	420
Schofield, C. N., Oshkosh, Wis. Vehicle-spring	200,877	Mar. 5	64	22	13	425
Schroeder, N., Davenport, Iowa. Fire-escape	200,878	Mar. 5	64	22	13	425
Scofield, J. S., Little Sioux, Iowa. Sawmill head-block	200,940	Mar. 5	117	39	13	433
Scott, A. and R., and C. A. Skene, Wamego, Kans. Sheep-wash	200,941	Mar. 5	118	.....	13	433
Scott, R. (See Scott and Skene.)						
Sergeant, W. E., Minneapolis, Minn. Millstone-driver	201,053	Mar. 5	233	74	13	451
Sexton, S. B., Baltimore, Md. Hot-air deflector and evaporator	201,054	Mar. 5	235	74	13	451
Shantz, E. S., *et al.* (See Quigg, L., assignor.)						
Shaw, L. D. B., Boston, Mass. Attachment for lamp-chimneys	200,879	Mar. 5	65	23	13	425
Sherbondy, D. F., *et al.* (See Boote and Hechler, assignors.)						
Shinkle, F. L., and D. F. Stambaugh, Casey, Ill. Sash-balance	201,055	Mar. 5	235	74	13	451
Sievert, H., and F. J. Young, Denison, Iowa. Washing-machine	200,942	Mar. 5	119	40	13	433
Simmons, L. R. (See Read, L., assignor.)						
Simpson, E. B., Bridgewater, Va. Car-seat	201,056	Mar. 5	236	75	13	451
Skaarss, O. N., Hale, Wis. Seed-drill	200,943	Mar. 5	120	40	13	434
Skene, C. A. (See Scott and Skene.)						
Slusser, B., assignor to himself and W. H. C. Goode, Sidney, Ohio. Earth-scraper	201,057	Mar. 5	237	75	13	451
Slusser, B., assignor to himself and W. H. C. Goode, Sidney, Ohio. Revolving earth-scraper	201,058	Mar. 5	238	75	13	451
Smith, C. H., and J. Hewitt, Chicago, Ill. Lightning-rod connection	201,059	Mar. 5	239	75	13	451
Smith, H. S., Brooklyn, N. Y. Shade for children's carriages	200,945	Mar. 5	122	40	13	434
Smith, J. R., New York, N. Y. Telephone	201,060	Mar. 5	239	76	13	451
Smith, J. M. (See Stearns, W. E., assignor.)						
Smith, W., assignor of one-half interest to H. H. Osgood, Adrian, Mich. Car-heater	201,061	Mar. 5	240	76	13	451
Smith, W. H., assignor of one-half interest to W. Ebbitt, New York, N. Y. Valve-coupling for vacuum-pipes	200,944	Mar. 5	121	40	13	434
Smith, W. W., Chicago, Ill. Egg-carrier	201,062	Mar. 5	241	76	13	452
Solar Stove Works. (See Moore, W. N., assignor.) (Reissue.)						
Sprout, A. B., Hughesville, assignor of one-half interest to G. T. Paull, Blairsville, Pa. Fence-post	200,946	Mar. 5	123	41	13	434
Stambaugh, D. F. (See Shinkle and Stambaugh.)						
St. Clair, H. L., Vineland, assignor to himself and S. Leach, Malaga, N. J. Wash-board	201,063	Mar. 5	242	77	13	452
Stearns, G. N., Syracuse, N. Y. Hollow auger	201,064	Mar. 5	242	77	13	452
Stearns, W. E., assignor to himself and J. M. Smith, Rutland, Vt. Wire cutting and bending machine	200,947	Mar. 5	124	41	13	434
Stewart, W., Hartford, Conn. Knob attachment	200,880	Mar. 5	65	23	13	425
Stigleman, G. W., Richmond, Ind. Preparation of photographic negatives	201,065	Mar. 5	243	77	13	452

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stillwell, R. H., Stockton, N. J. Pail and combined hoop and ear	201,066	Mar. 5	244	77	13	452
Strong, W. A., Jr., administrator. (See Moore, W. N.) (Reissue.)						
Swaren, W. A., Robinson, Ill. Heating-drum	200,948	Mar. 5	125	41	13	435
Swarts, J. W., Philadelphia, Pa. Crayon	201,067	Mar. 5	246	.....	13	452
Samelson, M., New York, N. Y. Ash and garbage vault	201,202	Mar. 12	382	118	13	480
Saunders, A. H. (See Saunders, B., assignor.) (Reissue.)						
Saunders, B., Nashua, N. H., assignor, by mesne assignments, to A. H. Saunders. Machine for dressing or sizing yarn. (Reissue)	8,117	Mar. 12	519	158 / 159	13	497
Savage, S. S., *et al.* (See Roberts, E. J., assignor.)	201,203	Mar. 12	383	118	13	480
Savage, W. H. G., Kingston, Ontario, Canada. Brush-bridler						
Scarritt, J., Jr., assignor of one-half interest to H. C. and C. W. Hull, Prophetstown, Ill. Fastening for chair-legs	201,201	Mar. 12	481	147	13	493
Schurr, A. F., Pittsburg, Pa. Protector for soles of boots and shoes	201,128	Mar. 12	314	96	13	469
Seager, S. A. (See Cowles, W., assignor.)						
Selleg, D. N., Newburg, N. Y. Folding rocking-chair	201,129	Mar. 12	315	96	13	469
Sheppard, W. B. (See Tittle, C. C., assignor.)						
Shine, J. A., Mount Olive, N. C. Cotton-planter and fertilizer-distributer	201,204	Mar. 12	383	119	13	480
Shirley, J. R., assignor of one-half interest to J. A. Hinckle, Philadelphia, Pa. Combined sideboard and dining-table	201,292	Mar. 12	481	147	13	493
Shrader, J., St. Louis, Mo. Animal-trap	201,293	Mar. 12	482	148	13	493
Siemens, C. W., Westminster, England. Revolving furnace with regenerators	201,294	Mar. 12	483	148 / 149	13	493
Singer, B. W., *et al.* (See Roberts, E. J., assignor.)						
Small, C. P. (See Starbuck and Small.)						
Smith, C. B., *et al.* (See Theobald, G., assignor.)						
Smith, F. M., Vermillion, Dakota Ter. Hog-catcher	201,205	Mar. 12	385	119	13	480
Smith, G. C., Baltimore, Md. Alarm-register	201,295	Mar. 12	485	149	13	494
Smith, H. J., Mountain View, N. J. Magneto-electric machine	201,296	Mar. 12	486	150	13	494
Smith, J. D., Rockford, Ill. Stump-puller	201,297	Mar. 12	489	150	13	494
Smyser, E. G. (See Teahl, J. H., assignor.)						
Spindler, C. E., *et al.* (See Fuchs, H., assignor.)	201,298	Mar. 12	490	150	13	494
Sprague, R. F., Greenville, Mich. Crosscut-saw handle	201,130	Mar. 12	315	96,97	13	469
Stanley, J. C., New Hartford, Conn. Spinning-machine	201,299	Mar. 12	491	151	13	494
Starbuck, T., and C. P. Small, Savannah, Ga. Sewer-trap						
Stow Flexible Shaft Company, (limited). (See Haskins, J. F., assignor.)	201,206	Mar. 12	385	119	13	480
Stucke, C., Henderson, Minn. Grain-separator						
Sturgeon, W. (See Merrin, W. L., assignor.)	201,451	Mar. 19	663	202	13	525
Sanford, S. T., Norton, Mass. Fastening for shoes	201,452	Mar. 19	663	202	13	525
Sargeant, S. S., Newark, N. J. Trace-carrier						
Saxton, E. R. (See Amidon, C. H., assignor.)	201,559	Mar. 19	771	235	13	540
Scanlan, C. A., Charleston, S. C., assignor of one-fifth interest to E. L. Halsey. Dredging-tongs	201,359	Mar. 19	571	175 / 176	13	512
Scharnweber, H. C., and E. Barkham, Commerce, Mich. Corn-sheller						
Schroder, N., *et al.* (See Stevens, J. L., assignor.)	201,453	Mar. 19	664	202	13	526
Schulze, P., assignor of one-half interest to C. E. Behle, Washington, D. C. Egg-carrier	201,454	Mar. 19	665	202 / 203	13	526
Seamans, O. B., V. A. Bryant, and H. Devling, Coalville, Iowa. Corn-planter						
Seavers, H. C., *et al.* (See Stevens, J. L., assignor.)	201,361	Mar. 19	573	176	13	513
Sevey, W. S. E., and P. C. Manz, New Orleans, La. Bale-band tightener	201,455	Mar. 19	666	203	13	526
Sheldon, C. A., Amity, N. Y. Fire-escape	201,560	Mar. 19	772	235 / 236	13	540
Shellabarger, F. W., Miami county, Ohio. Windmill						
Shepard, C. G., *et al.* (See Adams, P., Jr., assignor.)						
Shepard, W. J., *et al.* (See Adams, P., Jr., assignor.)						
Sherman, J., *et al.* (See Wolbrecht, J. M., assignor.)	201,456	Mar. 19	666	202	13	526
Siegrist, A., Buffalo, N. Y. Rotary steam-engine	201,457	Mar. 19	668	203	13	526
Simonds, N. J., Woburn, Mass. Machine for molding heel-stiffeners for boots and shoes	201,561	Mar. 19	774	236	13	541
Simonson, J. A. S., Brooklyn, N. Y. Child's carriage						
Smart, J. S. (See Little and Smart.)	201,362	Mar. 19	573	176	13	513
Smith, A. S., Boston, Mass. Oil-cup	201,562	Mar. 19	775	236	13	541
Smith, J. H., Monticello, Ark. Stalk-puller	201,458	Mar. 19	669	204	13	526
Smith, J. W., Boston, Mass. Suspender-clasp	201,459	Mar. 19	669	204	13	526
Smith, S., Deersville, Ohio. Wagon-jack	201,363	Mar. 19	575	177	12	513
Smith, S. B., Eminence, Ky., and A. B. McCulley, Decatur county, Tenn. Harrow	201,465	Mar. 19	674	206	13	527
Soule, G. W., Morton, Miss. Cotton and hay press	201,563	Mar. 19	776	236 / 237	13	541
Spaulding, G. H., assignor of one-half interest to W. A. Knowlton, Rockford, Ill. Harvester						
Spear, T., Green Bay, Wis., assignor of one-half interest to A. R. Atkins and J. L. Beckwith, Chicago, Ill. Steering apparatus	201,360	Mar. 19	572	176	13	513
Speer & Sons, A. (See Wansbrough and Speer, assignors.)						
Speer, W. W. (See Wansbrough and Speer.)						
Spencer, W. D., Middleton, assignor to Norwalk Lock Company, South Norwalk, Conn. Padlock	201,564	Mar. 19	779	237	13	541
Squire, P. B., Cleveland, Ohio. Lamp	201,565	Mar. 19	780	237	13	541
St. Amant, F., Boston, Mass. Piano-forte action	201,461	Mar. 19	671	205	13	527
Stanley, J., Newark, N. J. Bridle-bit	201,566	Mar. 19	781	238	13	542
Stanyan, J. M., Milford, N. H. Dough-mixer	201,460	Mar. 19	670	204	13	526
Starkey, E. (See Starkey, W., assignor.)						
Starkey, W., assignor of one-fourth interest to E. Starkey, Pittsburg, Pa. Egg-cup	201,364	Mar. 19	576	177	13	513
Starrett, D. J., Thomaston, Me. Hand hay-rake	201,365	Mar. 19	576	177	13	513
Steffany, F., Brooklyn, N. Y. Pendant for watches	201,462	Mar. 19	672	205	13	527
Stelle, T., *et al.* (See Stockbridge, L. R., assignor.) (Reissue.)						
Stengel, J., Big Rapids, Mich. Fire-escape	201,567	Mar. 19	782	238	13	542
Stevens, J. L., assignor to N. Schroder and H. C. Seavers, New York, N. Y. Egg-carrier	201,568	Mar. 19	782	238	13	542
Stevens, M. A., Cohassett, Mass. Camp-bed	201,463	Mar. 19	672	205	13	527
Stites, C. W. (See Hill, G. C., assignor.)						
Stith, G. W., Clinton, N. C. Water-motor	201,464	Mar. 19	673	205	13	527
Stockbridge, L. R., Haverhill, Mass., assignor, by mesne assignments, to A. B. Crofoot, E. T. Stelle, and A. A. Cass. Balmoral or laced boot. (Reissue)	8,128	Mar. 19	809	246	13	545
Stockham, J. B., assignor of one-half interest to H. O. Bedell and G. H. Lathrop, Jackson, Mich. Planing-machine	201,366	Mar. 19	577	177	13	513
Stone, H. C. (See Bopp, C., assignor.)						
Striedinger, J. H., New York, J. R. F. Kelly, Brooklyn, and K. Korrow, Green Point, N. Y. Apparatus for subaqueous drilling, laying foundations, &c.	201,569	Mar. 19	783	238 / 239	13	542

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sullivan, J. H. (See Davenport, J. W., assignor.)						
Swem, L. W., West Liberty, Iowa. Lamp-extinguisher	201,570	Mar. 19	785	239	13	542
Swett, L. J., St. Albans, Vt. Depot-platform	201,571	Mar. 19	786	239	13	542
Swinford, J. M. C. (See Comstock, A. W., assignor.)						
Sahlfeld, F., New York, N. Y., assignor to himself and G. Pustkuchen, Hoboken, N. J. Apparatus for obtaining glycerine from fats	201,704	Mar. 26	929	285	13	567
Saladee, C. W., Wolcottville, Conn. Torsion-spring for vehicles. (Reissue)	8,135	Mar. 26	1091	331	13	591
Sample, J., J. Grantham, W. M. Ward, Blyth, and M. Waddle, Newsham, near Blyth, England. Wooden key for securing railway-rails	201,839	Mar. 26	1067	325	13	588
Sawyer, F. A., Houston, Tex. Vapor-burner	201,705	Mar. 26	930	285	13	568
Scattergood, T., Mankato, Minn. Carriage-top	201,706	Mar. 26	931	285	13	568
Schermerhorn, J. G., Bloomington, Ill. Paper box	201,707	Mar. 26	931	285	13	568
Schmidt, C., New York, N. Y. Calendar and pen-rack	201,840	Mar. 26	1068	325	13	588
Schofield, J., Cheyenne City, Wyo. Ter. Flooring-clamp	201,709	Mar. 26	933	286	13	568
Schuck, A., Jr., East New York, N. Y. Brush	201,708	Mar. 26	932	286	13	568
Seal, W. D., assignor of one-half interest to G. W. Harvey, Washington, D. C. Faucet	201,634	Mar. 26	866	263	13	558
Seiberling, J. F., Akron, Ohio. Harvester. (Reissue)	8,144	Mar. 26	1109	335	13	593
Shaw, G. F., Boston, Mass. Curtain-fixture	201,710	Mar. 26	933	286	13	568
Sherck, I., Fremont, assignor to himself, I., E. and W. H. Kern, Bellevue, Ohio. Turbine water-wheel	201,635	Mar. 26	867	264	13	558
Showalter, I., Williamstown township, assignor of one-half interest to W. M. Johnson, Tredyffrin, Pa. Shovel	201,711	Mar. 26	934	286	13	568
Simpson, G. H., *et al.* (See Morse, C. H., assignor.)						
Simpson, R., assignor, by mesne assignments, to Highland Foundry Company, Boston, Mass. Stove. (Reissue)	8,137	Mar. 26	1098	333	13	591
Smith, A. J., assignor, by mesne assignments, to H. L. McCormick, Chicago, Ill. Grain-binder. (Reissue)	8,143	Mar. 26	1107	335	13	593
Smith, C., Utica, N. Y. Water-can	201,712	Mar. 26	935	287	13	568
Smith, E. P., Toledo, Ohio. Testing pipes	201,841	Mar. 26	1069	.....	13	588
Smith, E. R. (See Smith, N. C., assignor.)						
Smith & French. (See Robinson, C., assignor.)						
Smith, F. W. (See Hurst and Smith.)						
Smith, G. E., Racine, Wis., assignor to W. Alkin and W. W. Drummond, Louisville, Ky. Founder's molding-machine	201,636	Mar. 26	868	264, 265	13	558
Smith, J. S., and J. M. Davis, Bangor, Me.; said Davis assignor to said Smith. Extension-ladder	201,844	Mar. 26	1072	326	13	588
Smith, N. C., assignor to E. R. Smith, New York, N. Y. Machine for making metal buttons	201,843	Mar. 26	1070	325, 326	13	588
Smith, T. J. (See Clements and Decker, assignors.)						
Smith, T. S., assignor of one-third interest to W. H. Moore, Fair Haven, Conn. Furniture-caster	201,842	Mar. 26	1070	325	13	588
Spreen, H. C., *et al.* (See Stewart, E., assignor.)						
Stark, G. W., Wenona, assignor to himself and D. G. Arnold, West Bay City, Mich. Pail and tub ear	201,845	Mar. 26	1073	326	13	588
Steele, W. M., Philadelphia, Pa. Spindle-step for spinning-machines	201,847	Mar. 26	1074	327	13	589
Stevens, D. A., Toledo, Ohio. Refrigerator	201,713	Mar. 26	935	287	13	569
Stewart, E., assignor to himself, H. C. Spreen, and W. Heising, Madison, Iowa. Beer-pump	201,846	Mar. 26	1073	326, 327	13	588
Stowman, J. S., Baltimore, Md. Preserving green coffee	201,848	Mar. 26	1075	.....	13	589
Strohm, S. D., assignor of one-half interest to W. H. Wright, Philadelphia, Pa. Attachment for dental plugging instruments	201,849	Mar. 26	1076	327	13	589
Stuart, R. J., Yonkers, N. Y. Window-screen	201,714	Mar. 26	937	288	13	569
Sullivan, J., Stonington, Conn. Bush-hammer	201,850	Mar. 26	1077	327	13	589
Swain, G. (See Frost, F. N., assignor.)						
Swan, P., Litchfield, and B. E. Riggs, Homer, Mich. Nut-lock	201,716	Mar. 26	939	288	13	569
Swan, T. B., assignor to himself and O. E. Dorris, Forest City, Ark. Seed-planter	201,715	Mar. 26	938	288	13	569
Swisher, L. V., Maple's Mill, Ill. Corn-planter	201,717	Mar. 26	940	289	13	569
Sauson, W., Berkshire, Vt. Endless-tread horse-power link	202,054	Apr. 2	193	56	13	626
Sargent, J. B., *et al.* (See Gray, R., assignor.)						
Sawyer, A. M., Athol, Mass. Canister-shot	202,055	Apr. 2	193	56	13	626
Scharf, S. R., Washington, D. C., assignor to himself and G. W. Hooker, Brattleborough, Vt. Velocipede	202,056	Apr. 2	194	57	13	626
Schroder, J. L., Hamilton, Ohio, assignor of one-half interest to J. Hargitt. Ball-trap	201,952	Apr. 2	87	25	13	612
Schwarz, W., Koenigsberg, in the Neumark, Prussia. Potato-digger	201,894	Apr. 2	35	10	13	604
Schweitzer, S. F., and G. Kinsey, Lock Seventeen, Ohio. Sack-scales	202,057	Apr. 2	196	57	13	626
Sears, E. C., Clinton, Iowa. Wire-fence tightener	202,058	Apr. 2	197	57	13	627
Sedgwick, C., New York, N. Y., assignor to H. W. Putnam, Bennington, Vt. Bottle-stopper	202,059	Apr. 2	197	58	13	627
Sergeant, H. C., New York, N. Y. Rock-drill	202,060	Apr. 2	198	58	13	627
Sewell, B., *et al.* (See Ewart, W. D., assignor.)						
Seybold, F. J., St. Louis, Mo. Bottle-stopper	201,953	Apr. 2	88	25	13	612
Seybold, F. J., Chicago, Ill. Bottle-stopper fastener	201,954	Apr. 2	90	26	13	612
Shaler, H. L., Deep River, Conn. Auger	202,061	Apr. 2	200	58	13	627
Shellenback, P., assignor of one-half interest to W. E. Drayer, Hamilton, Ohio. Combination-lock	201,955	Apr. 2	90	26	13	612
Shepard, E. E., Buffalo, N. Y. Sash-holder	201,956	Apr. 2	91	26	13	612
Shoots, J. D., assignor of three-fourths interest to R. Colwell and S. D. Conkling, Horseheads, and C. E. Vinton, Elmira, N. Y. Wood-boring machine. (Reissue)	8,155	Apr. 2	238	69	13	633
Simonson, S. (See Davis and Simonson.)						
Sisson, J. D., assignor to Sisson and Tucker, Worcester, Mass. Water-closet cock	201,957	Apr. 2	93	26	13	612
Sisson and Tucker. (See Sisson, J. D., assignor.)						
Slayton, N. B., Rochester, N. Y. Metallic filling for teeth	201,895	Apr. 2	36	.....	13	604
Smith, B. L., Gadsden, Ala. Grinding-mill	202,063	Apr. 2	202	59	13	627
Smith, C. F., Mount Pleasant, N. C. Water-wheel	202,062	Apr. 2	201	59	13	627
Snider, J. W., New Orleans, La. Door-bell	202,064	Apr. 2	203	59	13	627
Snook, A. (See Orwig, T. G., assignor.)						
Spain, D., and B. H. Reynolds, North Lewisburg, Ohio. Washing-machine	202,065	Apr. 2	203	59, 60	13	628
Sparks, W. E., assignor to P. and F. Corbin, New Britain, Conn. Reversible latch	201,958	Apr. 2	93	27	13	613
Spengler, C. G., Hoboken, N. J. Vapor-burner	202,066	Apr. 2	204	60	13	628
Stacey, H., Indianapolis, Ind. Fire-escape	201,896	Apr. 2	38	10	13	604
Stanton, J. W., Brooklyn, N. Y. Apparatus for extinguishing fires	202,067	Apr. 2	205	60	13	628
Stanton, J. W., Brooklyn, N. Y. Fire-extinguisher	202,068	Apr. 2	207	60, 61	13	628
Staples, D. T., Galt's Mills, Va. Millstone-driver	202,069	Apr. 2	209	61	13	628
Staylor, H. M., *et al.* (See Craig, G. W., assignor.)						
St. John, A. P., Mobile, Ala. Pencil-sharpener	202,070	Apr. 2	210	61	13	628

Alphabetical list of patentees, January to June, inclusive—Continued.

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Stockwell, F. E., and J. Minninghoff, assignors to F. J. Meyers, Covington, Ky. Corn-popper	201,950	Apr. 2	94	27	13	613
Strange, E. C., Taunton, Mass. Game apparatus	202,071	Apr. 2	210	61	13	629
Swayne, H. S., Toledo, Ohio. Machine for filling moldings	201,960	Apr. 2	95	27, 28	13	613
Swindells, J., assignor to J. Kirk, Stockport, Great Britain. Stand for casks or barrels	202,072	Apr. 2	211	62	13	629
Schwerin, M., assignor to G. M. Ballard and G. Minchin, Newark, N. J. Caster for trunks. (Reissue)	8,171	Apr. 9	506	147	13	674
Seeber, H. G., Brooklyn, N. Y. Apparatus for drying grain	202,194	Apr. 9	925	84	13	644
Senter, W. F., Marshall, Mo. Corn-planter attachment	202,196	Apr. 9	362	106	13	654
Serrell, E. W., Jr., Castleton, N. Y. Electrical regulator for reeling silk from cocoons	202,125	Apr. 9	286	84	13	644
Seyfert, McManus & Co. (See Steen, J. G., assignor.)						
Sharer, G. (See Warner, J. B., assignor.)						
Shedd, J. H., Providence, R. I. Trap for house-drains and waste-pipes	202,287	Apr. 9	454	133	13	667
Sherman, B. M., assignor of one-half interest to T. V. Rogers, Flint, Mich. Lifting-jack	202,197	Apr. 9	363	106	13	654
Sinderson, C. H., Chemung, Ill. Middlings-separator	202,198	Apr. 9	363	106	13	654
Smalley, R. W., Salem, Mass. Whiffletree attachment	202,199	Apr. 9	364	107	13	654
Smith, C. Q., Maryville, Mo. Cloth measuring and rolling machine	202,288	Apr. 9	455	133	13	667
Smith, D. (See Belt, W. L., assignor.)						
Sneider, C. W., Baltimore, Md. Breech-loading fire-arm	202,196	Apr. 9	287	84	13	644
Soper, R. D., Owatonna, Minn. Herder	202,289	Apr. 9	456	133	13	667
Spiess, C. F., New York, N. Y. Leaf-turner	202,290	Apr. 9	456	133	13	667
Spoerl, C. S. E., and J. G., Brooklyn, N. Y. Rocking-chair	202,291	Apr. 9	457	134	13	667
Spoerl, J. G. (See Spoerl, C. S. E., and J. G.)						
Squire, G. L. (See Stevens, H. B., assignor.)						
Staehli, J. (See Staufenbell and Staehli.)						
Stannard, M., and J. R. Reynolds, Hartford, Conn. Piston water-meter	202,127	Apr. 9	228	85	13	644
Stark, A., Topeka, Kan. Wardrobe-bedstead. (Reissue)	8,161	Apr. 9	495	145	13	673
Staufenbell, C. T., and J. Staehli, San Francisco, Cal. Horse-collar	202,201	Apr. 9	366	107	13	655
Stearns Manufacturing Company. (See Caln, J., assignor.) (Reissue.)						
Steen, J. G., assignor to Seyfert, McManus and Co., Reading, Pa. Hydraulic press	202,292	Apr. 9	458	134	13	668
Stetefeldt, C., assignor, by mesne assignments, to Stetefeldt Furnace Company, San Francisco, Cal. Furnace for roasting pulverized ores. (Reissue)	8,165	Apr. 9	501	146	13	674
Stetefeldt Furnace Company. (See Stetefeldt, C., assignor.) (Reissue.)						
Stevens, H. B., assignor to G. L. Squire, Buffalo, N. Y. Thrashing-machine	202,293	Apr. 9	459	134	13	668
Steves, S. W., New Bedford, Mass. Combined dining and laundry table	202,294	Apr. 9	461	135	13	668
Stewart, F. L., Murrysville, Pa. Compound for defecating saccharine liquids	202,295	Apr. 9	462	.....	13	668
Stewart, G. E., County Line, Mich. Ditching-machine	202,300	Apr. 9	365	107	13	654
Stiles, D. L., Rochester, N. Y. Stove door and window	202,296	Apr. 9	463	135	13	668
Stiles, D. L., Rochester, N. Y. Stove	202,297	Apr. 9	463	136	13	669
Stokes, S. E., Jr., assignor to himself and A. Parish, Philadelphia, Pa. Hoisting-mechanism	202,298	Apr. 9	464	136	13	669
Straub, A. W., Philadelphia, Pa. Mill-pick	202,299	Apr. 9	465	136	13	669
Stump, J. H., Baltimore, Md. Attachment for oil-cans	202,300	Apr. 9	466	136	13	669
Safford, S. H. (See Bancroft and Walker, assignors.) (Reissue.)						
Sandford, L. M., *et al.* (See Weymouth, J. W., assignor.)						
Savage, G. E., assignor to Meriden Britannia Co., West Meriden, Conn. Butter-dish. (Reissue)	8,179	Apr. 16	836	241	13	721
Sawyer, J. T. (See Wilkins, W. F., assignor.)						
Scattergood, J. R., Newark, N. J., assignor, by mesne assignments, of one-half interest to G. H. Kitchen & Co. Gas-lighter. (Reissue)	8,173	Apr. 16	827	239	13	719
Schedler, J., Jersey City Heights, N. J. Tellurian	202,590	Apr. 16	792	228	13	715
Schrenkeisen, M., New York, N. Y. Rocking-chair	202,476	Apr. 16	659	193	13	700
Schutz, M. C., assignor to N. Neat & Co., Boston, Mass. Frame for traveling-bags	202,379	Apr. 16	567	166	13	687
Seilliere, R., and L. M. T. Riot, Paris, France. Application of superheated steam to steam-engines	202,591	Apr. 16	792	229	13	715
Selfridge, T. O., Washington, D. C. Wood-boring machine	202,477	Apr. 16	660	193	13	700
Severance, C. F. (See Severance, J. F., assignor.)						
Severance, J. F., assignor to C. F. Severance, Brockton, Mass. Sash-holder	202,380	Apr. 16	567	166	13	687
Sharood, C. K., assignor to himself and H. S. Pingree, Detroit, Mich. Channeling-tool for boots and shoes	202,478	Apr. 16	661	193	13	701
Shaw, A. B., Medford, Mass. Curtain roller and bracket	202,592	Apr. 16	795	229	13	715
Sherwood, H. H., Fredericktown, Ohio. Fence-post	202,594	Apr. 16	797	229	13	715
Shew, J., Baltimore county, Md., Hand corn-planter	202,593	Apr. 16	796	229	13	715
Shirk, D. B., Brunersville, Pa. Cellar-grating	202,381	Apr. 16	568	166	13	687
Shook, L., Pittsburg, Pa. Steam-boiler	202,382	Apr. 16	569	167	13	687
Shotwell, W. S., San Francisco, Cal. Ore-amalgamator	202,595	Apr. 16	797	230	13	715
Silverberg, M., New York, N. Y. Insole	202,596	Apr. 16	799	230	13	715
Simon, L. T. (See Bostock and Simon.)						
Sisson, G., Providence, R. I. Swage for forming jeweler's dies	202,597	Apr. 16	799	230	13	716
Smith and Egge Manufacturing Company. (See Egge, F., assignor.)						
Spencer, C. A. (See Clarke, A., assignor.)						
Sprague, W. N., South Framingham, Mass., assignor to himself and W. W. Potter. Manufacture of stiffeners for boots and shoes. (Reissue)	8,184	Apr. 16	840	242	13	721
Sprecher, N. N., and I. B. Keller, Reading, Pa. Shirt-scales	202,479	Apr. 16	661	194	13	781
Staver, G. W., Monroe, Wis. Riding corn-cultivator	202,383	Apr. 16	570	167	13	687
Stearns, H. A., Pawtucket, R. I. Machine for folding cotton-batting	202,480	Apr. 16	662	194	13	701
Stein, M. J., New York, N. Y. Meat-chopper	202,600	Apr. 16	801	231	13	716
Stein, W. H., Garnet, Kan. Washing-machine	202,598	Apr. 16	800	231	13	716
Stevens, W. D., Springfield, Mass. Window-screen	202,599	Apr. 16	801	231	13	716
Stoddard, S. P., *et al.* (See Bendix, G. E., assignor.)						
Stolle, J. W. (See Jerauld and Stolle.)						
Stoner, B. F., assignor to Rockford Watch Company, Rockford, Ill. Safety-wheel for watches	202,601	Apr. 16	802	232	13	716
Stoops, N. D., Philadelphia, Pa. Sewing-machine shuttle	202,602	Apr. 16	803	232	13	716
Stouffer, H. C., Canfield, Ohio, assignor of one-half interest to C. C. Trout, Sharon, Pa. Nut-lock	202,603	Apr. 16	805	232	13	716
Sweet, M., Troy, New York. Curry-comb	202,482	Apr. 16	664	195	13	701
Sweet, W., South Granville, N. Y. Butter-worker	202,481	Apr. 16	663	194	13	701
Swope, C. L. (See Moore, T. B., assignor.)						
Syms, W. E., assignor to Crocker Manufacturing Company, Holyoke, Mass. Ornamental paper	202,483	Apr. 16	665	195	13	701
Saltar, J., Jr., assignor to H. B. Smith Machine Company, Smithville, N. J. Loose pulley	202,667	Apr. 23	894	256	13	736
Sangster, J., Buffalo, N. Y. Postage-stamp	202,760	Apr. 23	988	284	13	748
Schleicher, G., Mount Vernon, N. Y. Circular sawing machine	202,668	Apr. 23	894	256, 257	13	736
Scribner, B., Jr., *et al.* (See Glazier, G. W., assignor.)						

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Shamberger, D., and J. Carroll, Beckleysville, Md. Garlic-separator	202,761	Apr. 23	989	284	13	748
Shane, E. (See Shane and Hooker.)						
Shane, J. and E., Preestonica, and G. W. Hooker, Seward, Ill. Fluting device	202,669	Apr. 23	896	257	13	736
Shaw, D., and D. Spence, Pittsburg, Pa. Wire-rolling machine	202,670	Apr. 23	897	257	13	736
Sherwood, L. V. (See Ewing, J. A., assignor.)						
Simonton, J. W. (See Baker and Simonton.)						
Singer, I. A., New York, N. Y. Water-pipe for basins, &c	202,762	Apr. 23	990	285	13	748
Skinner, R. M., Tontogany, Ohio. Harrow	202,671	Apr. 23	898	257	13	736
Slater, J. Y., Baltimore, Md. Separating wool and cotton and similar animal and vegetable fibers from fabrics	202,672	Apr. 23	899	258	13	736
Smith, A. B. (See Clark and Smith.)						
Smith, A. M., Brooklyn, and H. H. Thayer, New York, N. Y. Neck-tie shield	202,673	Apr. 23	900	258	13	737
Smith, C., administratrix. (See Smith, J. F.)						
Smith, F. M., Otisville, Mich. Ironing-table	202,877	Apr. 23	1115	320	13	764
Smith, H. (See Jillson and Smith.)						
Smith, J., Oswego, Ill. Corn-cultivator	202,763	Apr. 23	991	285	13	748
Smith, J. F., deceased, C. Smith, administratrix, Chelsea, Mass. Bench-plane	202,674	Apr. 23	900	258	13	737
Smith, J. T., assignor of one-half interest to W. G. Morris, Aurora, Ill. Harness-pad	202,879	Apr. 23	1116	321	13	764
Smith Machine Company, H. B. (See Saltar, J., Jr., assignor.)						
Smith, T. E., *et al.* (See Glazier, G. W., assignor.)						
Smith, T. S., Sublingua, and C. C. Boyle, Appine, Ga. Seed-planter and fertilizer-distributer	202,878	Apr. 23	1116	320	13	764
Smyth, A. G., Hamilton, Ontario, Canada. Device for converting motion	202,880	Apr. 23	1118	321	13	764
Smyth, D. M., East Northwood, N. H. Electro-magnetic water-raising apparatus	202,764	Apr. 23	992	285	13	748
Société Anonyme des Seychelles. (See Pallu, E., assignor.)						
Speidel, C., Carlsruhe, Baden, Germany. Car-truck	202,881	Apr. 23	1120	322	13	765
Spence, D. (See Shaw and Spence.)						
Spittle, W. F. (See West and Spittle.)						
Spring, J. M. (See Summers, L. P., assignor.)						
Stannard, G. S., assignor to S. S. Jewett & Co., Buffalo, N. Y. Stove-bottom	202,883	Apr. 23	1122	322	13	765
Starkenberg, F., assignor of one-half interest to A. Pfeiffer, Neenah, Wis. Rotary engine	202,882	Apr. 23	1121	322	13	765
Starr, J. F., Jr., Camden, N. J. Louver-ventilator	202,765	Apr. 23	993	285	13	749
Stenberg, O., Helsingfors, Finland, Russia, assignor to J. Blancke, Merseberg, Germany, Rotary engine	202,884	Apr. 23	1123	322	13	765
Stevenson, T. F., Brooklyn, N. Y. Door-chain	202,885	Apr. 23	1124	323	13	765
Stewart, J. G. (See Conner, S., assignor.)						
Stone, E. S., Worcester, Mass. Picker-staff strap for looms	202,675	Apr. 23	901	258	13	737
Straub, J. J., Cedarburg, Wis. Washing-machine	202,887	Apr. 23	1126	323	13	765
Streeter, N. R., Groton, N. Y. Fluting-iron	202,676	Apr. 23	902	259	13	737
Strunz, S., Pittsburg, Pa. Soap-cratching machine	202,886	Apr. 24	1125	323	13	765
Summers, J. P., Tiffin, Ohio. Well-boring and rock-drilling machine	202,677	Apr. 23	903	259	13	737
Summers, L. P., assignor of one-third interest to J. M. Spring, New Britain, Conn. Machine for making fiber	202,766	Apr. 23	994	286	13	749
Swank, J., and A. Jehnke, Denver, Colo. Fire-escape	202,767	Apr. 23	995	286	13	749
Salisbury, S. C., New York, N. Y. Hydrocarbon compound for fuel	203,199	Apr. 30	1452	.....	13	812
Salomon, S. L., C. F. Knoch, and G. A. Semel, New York, N. Y. Can-labeling machine	203,200	Apr. 30	1452	424	13	812
Sarven, J. D., Columbia, Tenn. Carriage-spring	202,965	Apr. 30	1216	351	13	781
Savage, J. B. (See Morse, E. F., assignor.)						
Sawyer, P. A., 2d, Boston, Mass. Carriage-step	203,076	Apr. 30	1320	384	13	795
Schiller, C., Baltimore, Md. Meat-cutting machine	203,201	Apr. 30	1354	425	13	812
Scott, N. T., Westville, Conn. Advertising apparatus	202,966	Apr. 30	1217	352	13	781
Seabury, S., New York, N. Y. Ventilator	202,968	Apr. 30	1219	352	13	781
Searls, A., Newark, N. J. Whip-socket	202,967	Apr. 30	1218	352	13	781
Semel, G. A. (See Salomon, Knoch, and Semel.)						
Semple, R. W., assignor of one-half interest to G. A. Shaw, Toronto, Canada. Door	203,202	Apr. 30	1455	425	13	812
Seneff, A., and A. Hoeffer, Pottsville, Pa.; said Seneff assignor to said Hoeffer. Vegetable-cutter	203,078	Apr. 30	1322	384 / 385	13	795
Shaler, H. L., Deep River, Conn. Manufacture of augers	203,079	Apr. 30	1323	385	13	795
Shaw, G. A. (See Semple, R. W., assignor.)						
Shaw, J. S., Joplin, Mo. Fire-escape	203,077	Apr. 30	1321	384	13	795
Shepard, A., Plantsville, assignor to Peck, Stow & Wilcox Company, Southington, Conn. Coffee-mill	203,204	Apr. 30	1456	426	13	812
Shepherd, W. S., Leeds, England. Machine for cutting out and removing seams	203,203	Apr. 30	1456	425	13	812
Sheridan, E. R., and T. W., Brooklyn, N. Y. Machine for cutting paper. (Reissue)	8,205	Apr. 30	1489	436	13	816
Sheridan, T. W. (See Sheridan, E. R. and T. W.) (Reissue.)						
Sherman, A. R., Natick, R. I. Book-rack	203,080	Apr. 30	1324	385	13	795
Sherman, M. W. (See Tatro, C. T., assignor.)						
Silver, A. (See Silver, W. H., assignor.)						
Silver, W. H., New York, N. Y., assignor to A. Silver, St. Louis, Mo. Dessert-maker	203,081	Apr. 30	1325	385	13	795
Simonson, J. H., East Norwich, N. Y. Baling-press	203,082	Apr. 30	1326	386	13	796
Simpson, A. B., Carter's Station, Tenn. Churn	203,083	Apr. 30	1327	386	13	796
Smith, A. (See Arkell and Smith.) (Reissue.)						
Smith, A. M., Drummondville, Ontario, Canada. Crate	203,205	Apr. 30	1457	426	13	812
Smith, B. (See Arkell and Smith.) (Reissue.)						
Smith, H. T. (See Frost and Smith.)						
Smith, H. R., Minnesota Lake, Minn. Cooking-stove	203,084	Apr. 30	1328	386	13	796
Smith, H. R., Minnesota Lake, Minn. Hay-press	203,086	Apr. 30	1330	387	13	796
Smith, J. H., Monticello, Ark. Peach-cutter	203,085	Apr. 30	1329	386	13	796
Snyder, C., Rousville, Pa. Pumping apparatus for oil-wells	203,206	Apr. 30	1458	426	13	813
Spalding, D. M., South Woodstock, assignor of one-half interest to J. R. Holcomb and E. K. Sperry, Hartford, Conn. Brush and broom holder	203,208	Apr. 30	1460	427	13	813
Sperry, E. K., *et al.* (See Spalding, D. M., assignor.)						
Sprenkle, A. B., *et al.* (See Donnelly, C. J., assignor.)						
Sprenkle, P. B., *et al.* (See Donnelly, C. J., assignor.)						
Springer, H., Vicksburg, Mich. Seed-drill tooth	203,207	Apr. 30	1459	427	13	813
Stambaugh, D. F., Casey, Ill. Carpet-fastener	203,209	Apr. 30	1461	427	13	813
Stauffer, C. M., Berne, Ind. Device for teaching music	203,210	Apr. 30	1462	427	13	813
Stedman and Morse. (See Hebard, A. K., assignor.)						
Stewart, S. D. (See Maranville, H., assignor.)						
Still, P. B., Woodstock, Ill. Corn and pumpkin planter	203,211	Apr. 30	1463	428	13	813
Stricker, G., Catawissa, Pa. Vehicle-spring	203,212	Apr. 30	1464	428	13	813
Stricker, G., Catawissa, Pa. Vehicle-spring	203,213	Apr. 30	1465	428	13	813
Stumpf, F. H., St. Joseph, Mo. Fluting-iron	203,214	Apr. 30	1465	428	13	813
Sweetland, J. B., Pontiac, Mich. Bosom-board	203,215	Apr. 30	1466	429	13	813
Swinburne, T. A., Mount Briddon, Torquay, England. Anchor	203,087	Apr. 30	1331	387	13	796

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Sampson, W. P. (See Sandford and Sampson.)						
Sandford, J. L., and W. P. Sampson, Binghamton, N. Y. Mop holder and wringer	203,378	May 7	150	43	13	841
Sarmiento, F. L., Philadelphia, Pa. Support or picket for strengthening fences	203,502	May 7	277	79	13	859
Sawyer, L. L. (See Buckley and Sawyer.)						
Sayers, G. S., and T. Galligan, Hyde Park, Pa. Clothes-line holder	203,503	May 7	278	80	13	859
Schaefer, P., Lake, (Chicago P. O.,) Ill. Draw-bridge gate	203,296	May 7	64	20	13	829
Schupp, M., assignor to W. Livingston & Co., New York, N. Y. Pocket-book	203,504	May 7	278	80	13	859
Seaman, W. H., Washington, D. C. Metallic retort	203,379	May 7	151	43	13	841
Sebastian, J., New York, N. Y. Draft-equalizer	203,380	May 7	151	43	13	841
Sexton, W. (See Herrmann and Sexton.)						
Shannon, T. (See Overshiner and Shannon.)						
Sloper, B., New York, N. Y. Carburoter	203,505	May 7	279	80	13	859
Smith, E. H., Keeler, Mich. Current-wheel	203,382	May 7	153	44	13	841
Smith, F. (See Moore, J., assignor.) (Reissue.)						
Smith, W. T., Baltimore, Md. Saw-filing machine	203,383	May 7	154	44, 45	13	841
Smoot, W. G., Washington, D. C. Bag tag and fastener	203,381	May 7	152	44	13	841
Snyder, A. P. (See Buzzard and Snyder.)						
Solter, J., Baltimore, Md. Sheet-metal can	203,506	May 7	281	80	13	859
Somes, D. E., Washington, D. C. Apparatus for ventilating and cooling grain. (Reissue)	8,221	May 7	312	90	13	864
Spaulding, R. H. (See Maine, S. C., assignor.)						
Speer & Sons, A. (See Carson, H., assignor.)						
Spofford, N., Haverhill, Mass., assignor to W. A. Ives & Co., New Haven, Conn. Brace for bits. (Reissue)	8,215	May 7	307	88	13	862
Springfield Glazed Paper Company. (See Marsh, J. F., assignor.)						
Starr, E. T., assignor to S. S. White, Philadelphia, Pa. Dental-engine hand-piece	203,297	May 7	65	20	13	829
Starr, E. T., assignor to S. S. White, Philadelphia, Pa. Dental-engine hand-piece	203,298	May 7	66	20	13	829
Starr, E. T., assignor to S. S. White, Philadelphia, Pa. Dental-engine hand-piece	203,384	May 7	156	45	13	841
Stearns, G. N., Syracuse, N. Y. Hollow auger	203,385	May 7	157	45	13	842
Stebbins, J. M., New York, N. Y. Dental engine	203,299	May 7	68	21	13	829
Stewart, B. F., New Philadelphia, Ohio. Permutation-lock						
Stewart, D. (See Brown, J., assignor.)	203,507	May 7	281	.....	13	859
Stewart, F. L., Murrysville, Pa. Clarifying the juices of sorghum and maize	203,387	May 7	160	46	13	842
Stohlmann, F. A., and E. Pfarre, Brooklyn, N. Y. Cauterizer	203,386	May 7	159	46	13	842
Stoner, A., Stony Point, La. Machine for mashing yucca	203,300	May 7	71	21	13	830
Stribley, G., Cincinnati, Ohio. Stay for seams of boots and shoes	203,388	May 7	161	46	13	842
Sumner, D. C., Millbury, Mass. Cloth-finishing machine						
Sanford, E. M. (See Redd and Sanford.)	203,650	May 14	446	127	13	889
Sauer, M. F., Somonauk, Ill. Horse-collar	203,781	May 14	585	164	13	906
Saueressig, P., New York, N. Y. Leader-pipe						
Schermerhorn, W. S. (See Betts, S. N., assignor.)	203,782	May 14	586	164	13	906
Schmidt, R., Yonkers, assignor to Otis Bros. & Co., New York, N. Y. Hydraulic elevator	203,651	May 14	446	127 / 128	13	889
Schneider, J., Indianapolis, Ind. Ice house	203,652	May 14	448	128	13	889
Schramling, F., Sr., and E. L. Day, assignors to themselves and J. C. Day, Philadelphia, Pa. Oatmeal-machine						
Schroeder, S. F. (See Kuntz and Schroeder.)	203,653	May 14	448	128	13	889
Schurheck, C. J., and C. A. Stevenson, New York, N. Y. Loom-shuttle	203,654	May 14	449	128 / 129	13	889
Seaman, J. A., Chicago, Ill. Stave-jointing machine						
Sessions, A., assignor to Winchester Repeating Arms Company, New Haven, Conn. Cartridge-trimming machine	203,655	May 14	450	129	13	889
Setterberg, W., Brooklyn, N. Y. Locking-latch	203,783	May 14	588	164	13	906
Sexton, C., Janesville, Wis. Wheel-cultivator	203,656	May 14	452	129	13	889
Seyfang, G., assignor to G. N. Pierce, Buffalo, N. Y. Bird-cage	203,657	May 14	453	130	13	890
Seymour, T. (See Gordon, S. J., assignor.)						
Sheldon, F. P., Providence, R. I. Machine for threading screws	203,560	May 14	363	102	13	878
Sherwood, I. Q., Bay City, Mich. Step-ladder	203,561	May 14	365	103	13	878
Shinn, J. A., New Castle, Pa. Promoting traction in locomotives	203,784	May 14	589	165	13	906
Shipherd, W. C., Cleveland, Ohio. Bolt	203,658	May 14	454	130	13	890
Shorey, G. L. (See Porter, A. W., assignor.)						
Sibbald, S., Nelsonville, Ohio. Heater	203,659	May 14	456	130	13	890
Sidelinger, G. S., Chelsea, Mass. Anchor	203,660	May 14	456	130	13	890
Simonson, J. A. S., Brooklyn, N. Y. Railway-car	203,661	May 14	457	131	13	890
Simpson, J. (See Parnell, E. W., assignor.)						
Sims, J. M. (See Pope S., assignor.)						
Siprell, D. W., assignor to himself and W. H. Morrison, Monongahela City, Pa. Coal-mining auger	203,785	May 14	590	165	13	906
Skinner, H. (See Smith and Skinner.)						
Smith, A., and H. Skinner, Yonkers, N. Y.; said Skinner assignor to said Smith. Moquette carpet	203,663	May 14	460	131	13	890
Smith, C. A., Columbus, Ohio. Valve-gear for steam-engines	203,662	May 14	459	131	13	890
Smith, C. H., assignor to P. and F. Corbin, New Britain, Conn. Latch	203,787	May 14	592	165	13	907
Smith, M. A., Evansville, Ind. Wash-board	203,786	May 14	592	165	13	906
Sogge, W., Lyons, N. Y. Clover-separator	203,788	May 14	593	166	13	907
Sola, A. A., Brooklyn, N. Y. Tray-lifter for trunks	203,664	May 14	461	131	13	890
Sondermeyer, F., Morrisey, Ill. Millstone-pick	203,562	May 14	365	103	13	879
Spencer, L. G., assignor to E. and T. Fairbanks & Co., St. Johnsbury, Vt. Platform-scales	203,563	May 14	367	103	13	879
Sprague, J. W., Jeffersonville, Ind. Freight-car truck	203,665	May 14	462	132	13	891
Stanton, J. W., Brooklyn, N. Y. Apparatus for extinguishing fires	203,564	May 14	368	104	13	879
Stanton, P. J., and J. Hutchinson, Chicago, Ill. Furnace	203,666	May 14	463	132	13	891
Stark, B. F., West Newton, Pa. Caster-frame for sewing-machines	203,789	May 14	594	166	13	907
Stead, J. C., Brooklyn, N. Y. Combined check and slide valve	203,565	May 14	309	104	13	879
Stebbins, J. M., New York, N. Y. Dental plugger	203,667	May 14	465	132	13	891
Steller, C. E., Milwaukee, Wis. Colter	203,668	May 14	465	133	13	891
Stempel, O. A., Chamois, Mo. Composition for preserving eggs	203,790	May 14	595	.....	13	907
Stephens, C. T., Ithaca, N. Y. Meat-tenderer. (Reissue)	8,233	May 14	626	174	13	910
Sterick, S. T. F., Georgetown, D. C. Vehicle-wheel hub	203,669	May 14	466	133	13	891
Sternberger, L., Philadelphia, Pa. Treadle apparatus for applying power to sewing-machines	203,791	May 14	596	166	13	907
Stevens, J., Port Byron, N. Y. Die for pressing paper vessels, &c	203,670	May 14	468	133	13	891
Stevens, J. N., Toledo, Ohio. Water-filter	203,566	May 14	370	104	13	879
Stevenson, C. A. (See Schurheck and Stevenson.)						
Stewart, A. V. (See Van Kannel, T., assignor.)	203,671	May 14	469	133	13	891
Stewart, J. M., Franklin, Mass. Game apparatus	203,792	May 14	597	166	13	907
Street, G. O., Brooklyn, N. Y. Extension-ring for jewelry						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sturdevant, A. (See Greene and Sturdevant.)						
Stutz, S., Pittsburg, Pa. Ore-crusher	203,793	May 14	597	167	13	907
Stutz, S., Pittsburg, Pa. Ore-crusher	203,794	May 14	599	167	13	907
Summers, D. J. (See Raby and Summers.)						
Sunderman, W. (See Hammer, C. O., assignor.)						
Suris, G. C., Rochester, Pa., assignor to E. W. Bingham. Furnace for burning kilns. (Reissue)	8,230	May 14	622	173	13	910
Sutton, E. S., North Weymouth, Mass. Hammock	203,795	May 14	600	167	13	907
Swain, P. S., New York, N. Y. Combined nozzle and tap	203,672	May 14	469	134	13	891
Sackett, E. W. (See Kurtzmann, J. O., assignor.)						
Salisbury, S. C., New York, N. Y. Utilizing hot air	204,094	May 21	928	266	13	957
Salmon, N., and A. Delaviere, Paris, France. Shirt or sleeve stud	204,095	May 21	930	266	13	957
Sarchet, G. B., Charleston, Ill. Sash-lock	204,096	May 21	931	266	13	957
Saunders, I. J., Coleman Station, Ga. Plow-stock	203,948	May 21	774	222	13	938
Saunders, J., Brooklyn, N. Y. Steam-valve	203,947	May 21	773	221	13	938
Sawyer, C. E., Boston, Mass. Machine for counting labels, &c	204,097	May 21	932	266 / 267	13	957
Sawyer, C. E., assignor of one-half interest to E. L. Perkins, Boston, Mass. Finishing the surfaces of paper or cloth	204,098	May 21	933	.....	13	957
Sawyer, L. L. (See Buckley and Sawyer.)						
Sawyer, N. (See Grant, Sawyer, and Gardner.)						
Schmitz, B., Brooklyn, N. Y. Apparatus for making extracts of coffee, &c	204,099	May 21	934	267	13	958
Schneider, B. B., New York, N. Y. Lamp. (Reissue)	8,250	May 21	974	278	13	902
Scranton, W., assignor to J. Parker, New Haven, Conn. Machine for finishing paper felt and other fabrics	204,100	May 21	935	267	13	958
Selden, G. B., Rochester, N. Y. Hoop-machine	203,940	May 21	775	222	13	938
Setchell, G. C., Norwich, Conn. Engraving-block	203,856	May 21	674	191	13	924
Shoff, R. (See Barnes, T., assignor.)						
Simonin, C. F. A. (See Adamson and Simonin.)						
Smith, E. B., Albany, G. L. Freeman, and D. H. Burrell, assignors to Whitman & Burrell, Little Falls, N. Y. Cheese-vat	203,952	May 21	778	223	13	938
Smith, G. M., Delphi, Ind. Clothes-pounder	204,101	May 21	937	268	13	958
Smith, J. C., Centerville, Iowa. Metallic horse-collar	203,950	May 21	777	222	13	938
Smith, W. C., Jackson, Tenn. Seed-planter	203,951	May 21	777	223	13	938
Snell, S., Watertown, N. Y. Animal-trap	204,102	May 21	937	268	13	958
Southard, Robertson & Co. (See Robertson, G. W., assignor.)						
Spalding, O. D., assignor of two-thirds interest to O. S. and T. F. Williams, Mitchell, Iowa. Grain-elevator	204,103	May 21	938	268	13	958
Sparkes, J. H., assignor to himself, J. Deland, and C. D. Hyndman, Clinton, Ill. Railway-crossing	203,953	May 21	781	224	13	938
Squire, W. J., East Haddam, Conn. Machine for making netting	203,857	May 21	675	191	13	924
Stahn, R. A., South Stillwater, Minn. Shingle-press	203,955	May 21	783	224	13	939
Standish, G. E., and L. S. Bailey, Middleborough, Mass. Harness-saddle	203,954	May 21	782	224	13	939
Stansel, M., Yorkville, Ill. Bed-bottom	204,104	May 21	939	268	13	958
Starr, E. T., assignor to S. S. White, Philadelphia, Pa. Dental tool	203,858	May 21	677	192	13	925
Steinway, C. F. T., New York, N. Y. Grand piano-forte	204,106	May 21	941	269	13	958
Steinway, C. F. T., New York, N. Y. Piano-forte action	204,107	May 21	942	269 / 270	13	959
Steinway, C. F. T., New York, N. Y. Piano-forte	204,108	May 21	943	270	13	959
Steinway, C. F. T., New York, N. Y. Piano-forte agraffe	204,109	May 21	944	270	13	959
Steinway, C. F. T., New York, N. Y. Sounding-board for piano-fortes	204,110	May 21	945	270	13	959
Steinway, C. F. T., New York, N. Y. Capodastro-frame for piano-fortes	204,111	May 21	946	271	13	959
Stetson, G. R., assignor to himself and Morse Twist Drill and Machine Company. New Bedford, Mass. Screw-cutting die	203,956	May 21	783	224	13	959
Stevens, D. E., Newark, Ohio. Bottle-stopper	204,105	May 21	940	269	13	958
Stewart, T. M. (See Rae, J., assignor.)						
Stone, J. H., *et al.* (See Davis, H. D., assignor.)						
Stone, J. M., *et al.* (See Davis, H. D., assignor.)						
Stuart, D., assignor to himself and R. Peterson, Philadelphia, Pa. Cooking-stove	204,112	May 21	947	271	13	959
Steward, C. W. (See Hobart and Steward.)						
Sumner, E. J. (See Johnson, R. P., assignor.) (Reissue.)						
Supple, J., Buffalo, N. Y. Rudder for canal-boats	203,859	May 21	678	193	13	925
Swett, G. W., Troy, N. Y. Melting and treating iron and steel rails and scrap	203,957	May 21	784	.....	13	939
Sanders, E. A., Rockford, Ill. Plow-clevis	204,253	May 28	1119	320	13	985
Sanders, R. D., Birmingham, England. Brake for railway-carriages	204,378	May 28	1246	354 / 355	13	1001
Sargent, W. E. (See Allen, O., assignor.)						
Saunders, A., assignor to D. Saunders' Sons, Yonkers, N. Y. Chuck	204,254	May 28	1120	320	13	985
Saunders' Sons, D. (See Saunders, A., assignor.)						
Savage, B. M. (See Collinge and Savage.)						
Scannell, M. W., Williamsport, Pa. Kitchen-sink	204,255	May 28	1121	320	13	985
Schade, J., and B. H. Lockwood, assignors to themselves and G. H. Sherman, Stamford, Conn. Envelope	204,256	May 28	1122	320	13	985
Schindler, O., Gallatin, Tenn. Clothes-pounder	204,379	May 28	1248	355	13	1001
Schmidt, H. F., Quincy, Ill. Beer-cooler	204,380	May 28	1248	355	13	1001
Schneider, J. (See Miller and Schneider.)						
Schneiderlochner, A., Pittsburg, Pa. Machine for making bridge-eyes	204,381	May 28	1249	356	13	1001
Seely, O., Syracuse, N. Y. Door-spring	204,382	May 28	1249	356	13	1001
Self Acting Cow Milker Manufacturing Company. (See George, W. F., assignor.)						
Sellers, W., assignor to C. Emerson and Sons, Haverhill, Mass. Combined pencil-sharpener and eraser	204,169	May 28	1029	293	13	973
Seybold, F. J. (See Downing, B. J., assignor.)						
Seymour Manufacturing Company. (See Hewitt, M., assignor.)						
Seymour, M. M. (See Longyear and Clark, assignors.)						
Shaw, J., Brooklyn, N. Y., assignor to Hill's Archimedean Lawn Mower Company, Hartford, Conn. Lawn-mower. (Reissue)	8,268	May 28	1303	371	13	1008
Sheeley, F. A., Prairie City, Ill. Coupling air and steam brake-pipes on cars	204,383	May 28	1251	356	13	1002
Shepard, M. A., Lebanon, Ill. Draft-pipe for heaters	204,170	May 28	1029	293	13	974
Sherman, G. H. (See Schade and Lockwood, assignors.)						
Shirley, F. S., New Bedford, Mass. Manufacture of glass from lava	204,384	May 28	1251	356	13	1002
Shoeninger, A., Chicago, Ill. Reversible handle for children's carriages	204,385	May 28	1252	357	13	1002
Siebert, A. (See Grossheim, G., assignor.)						
Sievers, J. H., and H. T. Winkler, Valparaiso, Ind. Wrench	204,386	May 28	1253	357	13	1002
Silver and Deming Manufacturing Company. (See Fawcett, E. W., assignor.)						
Singer, A. A. (See Fischer and Singer.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Slade, C. W. (See Cabot, S., Jr., assignor.)						
Slade, J. M. (See Ford, Slade, and Bayliss.)						
Smith, A. (See Barrett and Smith.)						
Smith, T. S. (See Andrews, E. F., assignor.)						
Smith, W. M., Augusta, Ga. Excavator and submarine plow	204,387	May 28	1254	357	13	1002
Spang, H. W., Reading, Pa. Lightning-conductor	204,257	May 28	1122	321	13	985
Speller, W. P., New York, N. Y. Inkstand	204,388	May 28	1255	357	13	1002
Sperry, A. W., Wallingford, Conn. Corkscrew	204,389	May 28	1256	358	13	1002
Spitz, L., Chicago, Ill. Horse-brake	204,258	May 28	1124	321	13	985
Stallman, G. H., assignor of one-half interest to M. Braun, Cincinnati, Ohio. Inlet-pipe for street-sprinklers	204,172	May 28	1031	294	13	974
Standing, W., De Soto, Ill. Steam-superheater	204,173	May 28	1032	294	13	974
Stansifer, J. M., Union, Ky. Ring for preventing hogs from rooting	204,171	May 28	1030	293	13	974
Steckler, H., Jr., assignor to himself and R. Frotscher, New Iberia, La. Corn-planter	204,390	May 28	1256	358	13	1002
Steers & Co., S. B. (See Morse, E. L., assignor.)						
Stetefeldt, C., San Francisco, Cal., assignor, by mesne assignments, to Stetefeldt Furnace Company. Ore-roasting furnace. (Reissue)	8,266	May 28	1300	370	13	1008
Stetefeldt Furnace Company. (See Stetefeldt, C., assignor.) (Reissue.)						
Strauss, S., Charleston, West Va. Barrel for shipping bottled liquors	204,259	May 28	1125	321	13	986
Strobel, C. and F., Waldo, Ohio. Log-turner	204,391	May 28	1257	358	13	1002
Strobel, F. (See Strobel, C. and F.)						
Stromberg, C. J., Chicago, Ill. Railway coupon-ticket	204,174	May 28	1033	294	13	974
Sudderick, M., Buffalo, N. Y. Hand-guide for piano-fortes	204,260	May 28	1126	321	13	986
Swedberg, C. J., assignor to J. S. Dennis and H. N. Wheeler, Chicago, Ill. Lantern	204,261	May 28	1126	322	13	986
Swindell, H., Allegheny, Pa. Metallurgic furnace	204,392	May 28	1258	359	13	1002
Sanders, B. F., R. G. Dildine, and B. F. Head, Pardee, Kans. Washing-machine	204,616	June 4	197	63	13	1040
Sanford, W. H., assignor of one-half interest to J. E. Griffiths, Detroit, Mich. Money-bag fastener	204,615	June 4	196	62	13	1040
Sanner, F. D. (See Sanner, J. B. and F. D.)						
Sanner, J. B. and F. D., Baltimore, Md. Boiler-covering	204,455	June 4	39	13	13	1018
Schott, J. B., *et al.* (See Chadwick, C., assignor.)						
Schreiber, L., Cincinnati, Ohio. Machine for pitching casks	204,456	June 4	39	13	13	1018
Schultz, J. E., Cincinnati, Ohio. Slide and steam valve	204,617	June 4	197	63	13	1040
Schultz, M., Cincinnati, Ohio. Steam-pump	204,619	June 4	199	63	13	1040
Schuta, M. C., Boston, Mass. Traveling-bag	204,618	June 4	198	63	13	1040
Scott, H. C., Chicago, Ill. Lamp-burner	204,620	June 4	200	64	13	1040
Scott, H. C., Chicago, Ill. Lamp-wick	204,621	June 4	200	64	13	1041
Seeley and Solley. (See Woolley, E., assignor.)						
Sellon, J. A., Belfast, N. Y. Hay-tedder	204,622	June 4	201	64	13	1041
Sennett, A. J., Louisville, Ky., assignor to Bridgeford & Co. Stove-cover	204,623	June 4	201	64	13	1041
Seward, M. F., assignor of one-half interest to L. H. Cherry, Bandera, Tex. Lock-faucet	204,624	June 4	202	65	13	1041
Shirk, W. S., Anderson, Ind. Actuating mechanism for calendar-clocks	204,508	June 4	81	28	13	1024
Shoeninger, A. (See Unzicker, O., assignor.)						
Shoudy, W. H. (See Wood, C. H., assignor.)						
Silsbee, J. W., Binghamton, N. Y. Mucilage-holder	204,625	June 4	203	65	13	1041
Simon, G., New York, N. Y. Trimming	204,626	June 4	204	65	13	1041
Smith, J. D., Rockford, Ill. Stump-extractor	204,627	June 4	205	65, 66	13	1041
Smythe, J. C., assignor to W. Smythe, Plymouth, Pa. Miner's lamp	204,628	June 4	206	66	13	1041
Smythe, W. (See Smythe, J. C., assignor.)						
Solomons, A. A., Savannah, Ga. Medical compound	204,629	June 4	206	.....	13	104[illegible]
Spaulding, A. J., and J. R. Hibbs, Smyrna, Ohio. Harvester safety attachment	204,509	June 4	83	29	13	1024
Spencer, C. F., Rochester, N. Y. Lamp	204,457	June 4	42	13	13	1018
Sperber, A. (See Anderson and Sperber.)						
Starkey, D., assignor of two-thirds interest to R. W. Wheelock and G. B. Trickey, Lawrence, Mass. Device for hitching horses	204,458	June 4	42	14	13	1018
Starkey, J. (See Starkey and Jackson, assignors.)						
Starkey, W., and O. P. Jackson, assignors of one-fourth interest to J. Starkey, Pittsburg, Pa. Indicator for gage-cocks	204,630	June 4	207	66	13	1042
Stevenson, J. W., Richmond, Ind. Gate	204,631	June 4	208	66	13	1042
Stock, J. and J., New York, N. Y. Plate-holder	204,632	June 4	209	67	13	1042
Stokes, R. T., Garnett, Kans. Windlass water-elevator. (Reissue)	8,271	June 4	224	71	13	1044
Sarls, R., and A. Kelman; said Sarls assignor to said Kelman, Narvasota, Tex. Combined planter, cultivator, and cotton-chopper	204,765	June 11	354	106	13	1064
Schaefer, P., St. Peter, Minn. Heater, regulator, and damper combined	204,685	June 11	269	83	13	1054
Schmidt, J. G., Rochester, N. Y. Faucet	204,847	June 11	446	130	13	1074
Schneble, M., Dayton, Ohio, assignor to E. P. Monroe, Newark, N. J. Piston-packing	204,766	June 11	356	107	13	1064
Schuck, J. M., Des Moines, Iowa. Bee-feeder	204,767	June 11	357	107	13	1065
Schutt, H. B., and H. S. Smith, Joliet, Ill. Machine for making wire cables	204,686	June 11	270	84	13	1054
Sherwin, G. E., Hackney, England. Crushing and pulverizing machine	204,849	June 11	448	131	13	1075
Sherwood, N. B., Saratoga Springs, N. Y., assignor of one-half interest to G. H. Rice, Worcester, Mass. Car seat and couch	204,848	June 11	447	131	13	1075
Shlandeman, H., Decatur, Ill. Safety-valve for fermented-liquor casks	204,687	June 11	272	84	13	1054
Shreffler, S. Jr., Morris, Ill. Brick-machine	204,688	June 11	273	84, 85	13	1054
Simpson, J. E., Brooklyn, N. Y. Dry-dock	204,689	June 11	274	85	13	1054
Slate, J. D., Bernardstown, Mass. Breech-loading fire-arm	204,768	June 11	358	107	13	1065
Slater, B., assignor to himself, I. O. Williams, and J. G. Dorrance, Attica, N. Y. Feather-renovator	204,769	June 11	359	107	13	1065
Smith, A. B., Byron, Ill. Fence-post	204,771	June 11	360	108	13	1065
Smith, A. M., Philadelphia, Pa. Sleeping-car	204,855	June 11	453	132 / 133	13	1075
Smith, C. P., Brunswick, Mo. Washing-machine	204,854	June 11	452	132	13	1075
Smith, E. J. (See Hill, A. T., assignor.)						
Smith, H. E., Jersey City, N. J. Clothes-wringer	204,850	June 11	449	131	13	1075
Smith, H. E., Jersey City, N. J. Clothes-wringer	204,851	June 11	450	131	13	1075
Smith, H. E., Jersey City, N. J. Wringer	204,852	June 11	451	132	13	1075
Smith, H. S. (See Schutt and Smith.)						
Smith, R. (See Peer, J. A., assignor.)						
Smith, S., assignor to Smith & Son, Watertown, Conn. Bench-hook	204,853	June 11	451	132	13	1075
Smith, S. C., Norristown, Pa. Hose-clamp	204,770	June 11	360	108	13	1065
Smith & Son. (See Smith, S., assignor.)						
Spalckhaver, W., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Paper-folding machine	204,772	June 11	361	108 / 109 / 110	13	1065
Sparks, T. W., Philadelphia, Pa. Alloy for the manufacture of shot	204,856	June 11	454	.....	13	1076

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Stanton, J. W., Philadelphia, Pa. Fountain-pen	204,857	June 11	455	133	13	1076
Stevens, H. (See Williamson, R. M., assignor.)						
Stewart, J. O., Georgetown, Colo. Amalgamating chloridized ores	204,773	June 11	367	110	13	1065
Stone, W. F., *et al.* (See Hunter, G. W., assignor.) (Reissue.)						
Storer, J. (See Menzies and Blagburn, assignors.)						
Stowe, C. W., assignor of one-half interest to R. C. Ripley, Flint, Mich. Curtain-fixture	204,858	June 11	455	133	13	1076
Stratton, C. H., Salem, Ohio. Carriage-seat	204,859	June 11	456	133	13	1076
Streuby, F., New Orleans, La. Cotton gin and linter feeder	204,690	June 11	276	85	13	1055
Symonds, C. S. C., Philadelphia, Pa. Steam and hydraulic packing	204,860	June 11	457	134	13	1076
Salisbury, S. C., New York, N. Y. Apparatus for burning hydrocarbons	205,143	June 18	765	{226 227}	13	1120
Sandner, H., Hoboken, N. J. Scarf-fastening	204,909	June 18	624	182	13	1101
Sanford, F. V., Chelsea, Mass., assignor of one-half interest to J. W. Bartlett, New York, N. Y. Circuit-changer in electric gas-lighting apparatus	204,916	June 18	540	{157 158}	13	1090
Sargent & Co. (See Brocksieper, F. W., assignor.)						
Sawyer, W. E., New York, and A. Man, Brooklyn, N. Y. Electric lamp	205,144	June 18	767	227	13	1120
Schmelzpfenning, H., Campbellsburg, Ky. Washing-machine	204,917	June 18	543	136	13	1091
Scholler, H. W., Edinburg, Ind. Press for extracting water from starch and other substances	204,918	June 18	544	158	13	1091
Schuesaler, E. (See Schnesaler, J., assignor.)						
Schuessler, J., assignor of one-fourth interest to E. Schuessler, Attica, Ind. Turbine water-wheel	205,145	June 18	771	{227 228}	13	1121
Scutt, H. B., Joliet, Ill. Barb for wire fences	205,000	June 18	624	183	13	1101
Seitz, E. M., Philadelphia, Pa. Photographic-printing frame	205,146	June 18	773	228	13	1121
Senn, J., Evansville, Ill. Hog-cholera compound	205,147	June 18	773	.....	13	1121
Shaw, T., Orange, N. J. Manufacture of forks	205,001	June 18	625	183	13	1101
Sheetz, J. W., Woodstock, Va. Combined washer and wringer	205,003	June 18	627	184	13	1102
Sheldon, C. B., New York, N. Y. Invalid-chair	205,002	June 18	626	184	13	1102
Smeeth, E., and G. P. Harris, Chicago, Ill. Still-column	204,919	June 18	545	{158 159}	13	1091
Smith, J. B., Worcester, Mass. Device for greasing baking-dishes	205,004	June 18	627	184	13	1102
Smith, M. A., assignor to F. W. Brinkmyer and J. E. Harper, Evansville, Ind. Wash-board	205,148	June 18	774	228	13	1121
Smith Machine Company, H. B. (See White, J. J., assignor.)						
Smith, R. B. (See Porter, F. E., assignor.)						
Snyder, A. L., Bryan, Ohio. Sample-reel	205,149	June 18	774	229	13	1122
Snyder, A. T., Connersville, Ind. Caloric-safe	204,920	June 18	547	159	13	1091
Spear, S. S., South Weymouth, Mass. Sash-holder	205,005	June 18	628	184	13	1102
Spring, C., and J. T. Robinson, Hyde Park, Mass. Bracket-saw frame	205,006	June 18	629	185	13	1102
Stanfield, M. M. (See Wood, G. W., assignor.)						
Stearns, E. H., assignor to Stearns Manufacturing Company, Erie, Pa. Head-block for saw-mills. (Reissue)	8,289	June 18	794	{235 236}	13	1125
Stearns Manufacturing Company. (See Stearns, E. H., assignor.) (Reissue.)						
Steele, D. F., *et al.* (See Truesdell, L. W., assignor.)						
Sterling, J. A. (See Plumb, W. H., assignor.)						
Stevenson, E. M., Pulaski, Pa., assignor to J. Irwin. Petroleum-well. (Reissue)	8,287	June 18	791	235	13	1124
St. John, E., Leland, Ill. Knob attachment	204,921	June 18	548	159	13	1091
Stone, S., assignor of one-half interest to O. H. Amy and C. W. Andrews, Faribault, Minn. Grain-separator	205,150	June 18	775	229	13	1122
Stough, W. W. (See Wingler and Stough.)						
Streeter, N. E., Groton, N. Y. Fluting and sad iron holder	204,922	June 18	549	160	13	1091
Stringer, G., and T. Francis, Ithaca, N. Y. Steam-valve	205,007	June 18	630	185	13	1102
Strycker, H., Goshen, Ind. Hog-scalder and feed-steamer	204,923	June 18	549	160	13	1091
Swett, E. E., Olean, N. Y. Rig for drilling oil and other wells	205,105	June 18	724	216	13	1115
Sallada, W. H., Monroe, Iowa. Carpet stretcher and fastener	205,425	June 25	1074	318	13	1166
Sampson, W. S. (See Pope and Sampson.)						
Sanders, M. M., New Baltimore, Mich. Washing-machine	205,424	June 25	1073	{317 318}	13	1166
Sawyer, W. E., New York, and A. Man, Brooklyn, N. Y. Electric-lighting system	205,303	June 25	947	281	13	1149
Sawyer, W. E., New York, and A. Man, Brooklyn, N. Y. Regulator for electric lights	205,305	June 25	951	282	13	1150
Schall, W. H., assignor of one-half interest to L. Weber and J. Smith, Latrobe, Pa. Nut-lock	205,306	June 25	953	282	13	1150
Schofield, C., and R. Wilde, Philadelphia, Pa. Feeding device for carding-machines	205,427	June 25	1076	{318 319}	13	1166
Schultz, A. L., Meissen, assignor to B. Röber, Dresden, Saxony. Feeding fuel to furnaces	205,428	June 25	1077	319	13	1166
Seybold, F. J., St. Louis, Mo. Apparatus for raising water	205,216	June 25	855	254	13	1137
Shaw, L. L., Yarmouth, Me. Warping-machine	205,307	June 25	954	282	13	1150
Sheldon, A. C., and E. B. Pope, St. Louis, Mo., assignor of one-half interest to E. P. McCarty and E. M. Powers. Lamp-reflector	205,308	June 25	955	283	13	1150
Sherman, A. R., Natick, assignor to S. A. Jenks, Lincoln, R. I. Gate-operating mechanism	205,217	June 25	857	254	13	1138
Shoemaker, W. B., Newville, Pa. Bee-hive	205,429	June 25	1078	319	13	1166
Simpson, G. W., Somerville, Mass. Butter-can	205,309	June 25	956	283	13	1150
Smiley, A. N., Bangor, Me. Potato-digger	205,310	June 25	956	283	13	1151
Smith, A. H., *et al.* (See McConoughoy, H. N., assignor.)						
Smith, J., *et al.* (See Schall, W. H., assignor.)						
Smith, O. J., Farmer City, Ill. Watering-trough	205,430	June 25	1079	320	13	1166
Smith, R. (See Peer, J. A., assignor.)						
Snider, M. M., Ames, Iowa. Air-distributing pipe for furnaces	205,431	June 25	1080	320	13	1166
Spaulding, N. W., San Francisco, Cal. Manufacture of saw-teeth	205,311	June 25	957	{283 284}	13	1151
Speckmann, H. P., Louisville, assignor of one-half interest to T. J. Minary, Jefferson county, Ky. Change-gate	205,432	June 25	1081	320	13	1167
Spencer, A. D., assignor of one-half interest to W. Stewart, Baltimore, Md. Packing device for packing-boxes, &c.	205,433	June 25	1082	320	13	1167
Stearns, G. F., Forestville, assignor to himself and R. J. Allyn, Hartford, Conn. Auger	205,218	June 25	860	254	13	1138
Steele, A. P., assignor to Robbins and Myers, Springfield, Ohio. Seeding-machine	205,312	June 25	959	284	13	1151
Stempel, O. A., Chamois, Mo. Treating preserved eggs	205,313	June 25	962	.....	13	1154
Stephens, B. F., Brooklyn, N. Y. Hand-vise	205,434	June 25	1082	321	13	1167
Steuber, M. M., Philadelphia, Pa. Doll	205,314	June 25	962	285	13	1154
Stevens, J. R., Detroit, Mich. Shoe	205,435	June 25	1084	321	13	1167
Stevens, W. L. (See Stitt, R., assignor.)						
Stewart, W. (See Spencer, A. D., assignor.)						
Stitt, R., Cazenovia, assignor of one-half interest to W. L. Stevens, Lock Berlin, N. Y. Butter-tub	205,436	June 25	1084	321	13	1167
Stockmann, C., Brooklyn, N. Y. Fountain-pen	205,437	June 25	1085	321	13	1167
Stone, H. C. (See Mannebach, J., assignor.)						
Stong, J. E., Newtonbrook, Ontario, Canada. Farm-gate	205,438	June 25	1086	322	13	1167

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stough, C. B., Monticello, assignor of one-half interest to H. L. Timmons, Piatt county, Ill. Ditcher	205,439	June 25	1067	322	13	1167
Stow, E. E., Plantaville, assignor to Peck, Stow & Wilcox Company, Southington, Conn. Casting door-knobs	205,219	June 25	861	254	13	1138
Sturtevant, T. L., South Framingham, assignor to W. H. Bowker & Co., Boston, Mass. Disintegrating-mill	205,440	June 25	1069	322	13	1168
Sullivan, D., Bangor, Me. Heater	205,304	June 25	950	282	13	1150
Sweet, G., Dansville, N. Y. Harvester-platform	205,441	June 25	1090	323	13	1168
Taylor, E. C. (See Isbell and Taylor.)						
Taylor, J. G., Brasher Falls, N. Y. Churn	198,906	Jan. 1	101	54	13	38
Tevis, E. L., Philadelphia, Pa. Horseshoe	198,824	Jan. 1	102	29	13	24
Thickett, J., Chicago, Ill. Meal-bin	198,781	Jan. 1	64	16	13	17
Thompson, C. W., Wells, Minn. Barrel-hoop machine	198,825	Jan. 1	103	29	13	24
Thompson, G. W., Brooklyn, assignor of one-fourth interest to J. Cohen, New York, N. Y. Gas-regulator	198,862	Jan. 1	140	40	13	30
Thompson, J. N. (See Thompson, R. C. and J. N.)						
Thompson, R. C. and J. N., Bonham, Texas. Cotton-press	198,907	Jan. 1	102	54	13	38
Thornton, J. T., Providence, R. I. Securing artificial teeth on aluminum plates	198,908	Jan. 1	103	54	13	38
Tiffany, E., assignor of one-half interest to C. Cooper, Bennington, Vt. Knitting-machine	198,757	Jan. 1	29	7, 8, 9	13	13
Tolles, R. B., Boston, Mass. Microscope	198,782	Jan. 1	65	16	13	17
Tolles, R. B., Boston, Mass. Microscope	198,783	Jan. 1	66	16, 17	13	17
Trimble, G. A., Crown Point, N. Y. Folding table	198,826	Jan. 1	105	30	13	24
Trowbridge, W. P., assignor, by mesne assignments, to Automatic Boiler and Engine Company, New Haven, Conn. Water-tube steam-generator	198,863	Jan. 1	141	40, 41	13	30
Tuchfarber, F., Cincinnati, Ohio. Producing imitation-pearl surfaces	198,758	Jan. 1	35	.....	13	13
Talcott, W. A., *et al.* (See Smith, J. D., assignor.)	199,003	Jan. 8	294	86	13	61
Taylor, J. E., Springfield, Mass. Printing attachment for paper-ruling machines	199,123	Jan. 8	415	122	13	80
Thompson, J. G., Clarion, Pa. Turbine water-wheel						
Tillinghast, J. O. (See Alger, D., assignor.)	199,124	Jan. 8	416	122	13	80
Tocpperwein, E. A. F., Boerne, Texas. Adjustable hammer for fire-arms	199,125	Jan. 8	417	122	13	81
Tolhurst, W. H., Troy, N. Y. Centrifugal machine	199,126	Jan. 8	418	123	13	81
Town, E., Wilmington, Del. Screw-propeller						
Tainter, C. C., *et al.* (See Day, J. D., assignor.)						
Tallman, C. H. (See Baron and Tallman.)						
Tarbox & Co., M. H. (See Tarbox, M. H., assignor.)	199,235	Jan. 15	536	158	13	100
Tarbox, M. H., assignor to M. H. Tarbox & Co., Lockport, N. Y. Snatch-block	199,236	Jan. 15	536	158	13	100
Tatum, J. D., Ayer Junction, Mass. Desk	199,237	Jan. 15	537	159	13	100
Taylor, J. F., Charleston, S. C. Steam and hydraulic press	199,331	Jan. 15	634	185	13	115
Taylor, W. H., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Post-office box	919,170	Jan. 15	475	140	13	90
Thomas, A. W., Philadelphia, Pa. Dress-train supporter						
Thrift, W. H. (See Dutot and Thrift.)						
Tillotson, C. N. (See Torney and Tillotson.)	199,238	Jan. 15	538	159	13	100
Torney, W., and C. N. Tillotson, Detroit, Mich. Sewer-trap						
Tripp, L. B. (See Robinson, F. H., assignor.)	199,239	Jan. 15	538	159	13	100
Tschop, A., Harrisburg, Pa. Horse hay-rake	199,332	Jan. 15	636	185	13	115
Turner, C. H., and M. C., Batavia, N. Y. Refrigerator shipping-box						
Turner, M. C. (See Turner, C. H. and M. C.)						
Tuthill, J., *et al.* (See Barber, O. P., assignor.)						
Type Writer Company. (See Clough and Jenne, assignors.)						
Talpey, J. A., Somerville, Mass. Machine for unhairing, scouring, and currying hides	199,597	Jan. 22	912	268	13	167
Taylor, O. L., Fayetteville, N. Y. Gate	199,460	Jan. 22	768	232	13	147
Thomas, W. H., Waycross, Ga. Cultivating implement	199,481	Jan. 22	769	232	13	147
Thompson, C. W., Wells, Minn. Truss-hoop	199,385	Jan. 22	698	205	13	132
Tifft, J. N., deceased, J. V. Tifft and W. C. Bryant, executors, and W. Love, Buffalo, N. Y. Valve-gear for steam-engines. (Reissue)	8,047	Jan. 22	936	273	13	170
Tifft, J. V., executor. (See Tifft and Love.) (Reissue.)	199,482	Jan. 22	790	232	13	147
Trethewey, S., Pittsburg, Pa. Machine for rolling and straightening metal bars						
Type Writer Company. (See Barron, W. J., assignor.)						
Type Writer Company. (See Sholes, C. L., assignor.)	199,878	Jan. 29	1208	354	13	220
Tabor, C. A., Hope Valley, R. I. Stop-motion for railway drawing-heads						
Tannehill, E. M. (See Longsworth and Tannehill.)	199,757	Jan. 29	1093	321	13	202
Tanner, C. H., Boston, Mass. Portable cooking apparatus						
Thomas, E. C. (See Thomas, J. S., assignor.)	199,879	Jan. 29	1209	355	13	220
Thomas, J. S., assignor to E. C. Thomas, Fort Worth, Texas. Jail-cell						
Thompson, H. (See Allen, W. J., assignor.)	199,670	Jan. 29	1016	296	13	190
Throop, G., Auburn, N. Y. Grain-scouring apparatus						
Tripp, F. (See Soule, C. W., assignor.)						
Tucker, A. R., *et al.* (See Smith, W., assignor.)	199,758	Jan. 29	1093	321	13	202
Tucker, M. W., Sumner, Mich. Gate						
Turnbull, T. T. (See Browne, G., assignor.)	199,759	Jan. 29	1094	321	13	203
Turner, J. S., Rockland, Mass. Throat-plate for boot and shoe sewing machines	199,760	Jan. 29	1095	321	13	203
Tyrer, P., Melbourne Colony, Victoria. Cork-extractor	8,062	Jan. 29	1224	359	13	222
Tyson, C., Philadelphia, Pa. Water-tube boiler. (Reissue)						
Taylor, T. F., *et al.* (See Johnson, A. S., assignor.)	8,072	Feb. 5	233	71	13	269
Thompson, E. H., Starke, Fla., assignor to W. A. Amberg. Temporary binder. (Reissue)	200,107	Feb. 5	218	67	13	266
Threlfall, L., Colne, England. Door-spring						
Tinnerholm, C. J., Brooklyn, assignor, by mesne assignments, to Hammonassett Sole Leather Company, New York, N. Y. Tanning compound	200,108	Feb. 5	219	.....	13	267
Titus, G. M., assignor of one-half interest to W. M. Brown, Rock Falls, Ill. Harrow	200,109	Feb. 5	220	68	13	267
Towell, I. (See Harding and Towell.)						
True, J. G., Chatsworth, Ill. Mouth-piece for musical instruments	200,007	Feb. 5	111	37	13	251
Trumbull, H., Central College, Ohio. Clothes-pounder	200,008	Feb. 5	111	37	13	251
Taft, J. W., *et al.* (See Kirby, J. A., assignor.)						
Tatham, B., New York, N. Y. Shot-manufacturing machine. (Reissue)	8,083	Feb. 12	502	147	13	318
Tatham, B., New York, N. Y. Shot-manufacturing machine. (Reissue)	200,359	Feb. 12	480	141	13	315
Tew, W. A., Lima, Ohio. Car-coupling	200,358	Feb. 12	479	141	13	315
Thayer, F. W., Waverly, Mass. Mask						
Thomas, H. W. C. (See Smith and Thomas.)						
Thomas, S., Philadelphia, Pa. Ore-separator	200,360	Feb. 12	481	142	13	315
Thompson, S. R., Brookline, Mass. Bark-cutting machine	200,361	Feb. 12	482	142	13	315
Thomson, R. R., Dansville, Mich. Colter-holder for plows	200,230	Feb. 12	344	103	13	294
Thornburg, L., *et al.* (See Wroth, L., assignor.)						
Towne, H. R., and T. F. Keating, assignors to Yale Lock Manufacturing Company, Stamford, Conn. Prison-lock	200,156	Feb. 12	275	82	13	284

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Tripp, J., Coldwater, Mich. Cotton-harvester	200,362	Feb. 12	484	{142 143}	13	315
Tucker, W. B., Columbus, Ohio. Wheel-hub	200,231	Feb. 12	345	103	13	295
Turner, J. S., Rockland, Mass. Channeling-tool for boot and shoe soles	200,232	Feb. 12	436	103	13	295
Type Writer Company. (See Sholes and Glidden, assignors.)						
Tallman, J. C., New York, N. Y. Manufacture of corsets	200,583	Feb. 19	710	209	13	358
Terry, S. C., assignor of one-half interest to L. J. Brown, Augusta, Mich. Ironing-table	200,584	Feb. 19	711	209	13	358
Teter, W. L. (See Whitney, B., assignor.) (Reissue.)						
Thompson, H. E., Jr., Pittsfield, Mass. Temporary binder	200,488	Feb. 19	615	181	13	344
Thompson, K., and L. G. Bergstrom, Norwalk, Ohio. Rocking-chair fan attachment	200,414	Feb. 19	543	160	13	332
Timmersmann, H., Muscatine, Iowa. Corn-planter	200,415	Feb. 19	544	161	13	333
Townsend, L., Terre Haute, Ind., assignor to C. Guild, Boston, Mass. Leather boarding and graining machine. (Reissue)	8,068	Feb. 19	729	214	13	361
Tweed, P. J., Blair, Neb. Picket-pin	200,489	Feb. 19	616	182	13	344
Tapley, J. F., Springfield, Mass. Temporary binder	200,630	Feb. 26	773	227	13	376
Taylor, G. R., Cranston, R. I. Match-safe	200,778	Feb. 26	927	273	13	398
Tennant, T. (See Stephens, J. A., assignor.)						
Thompson, E. O., Philadelphia, Pa. Tailors' measuring-tool	200,779	Feb. 26	928	273	13	399
Thompson, S., Washington, D. C. Bill-file	200,675	Feb. 26	824	{242 243}	13	383
Tripp, A. F., assignor to himself, S. Shepard, and J. G. Forsyth, Buffalo, N. Y. Casing for cans	200,806	Feb. 26	954	281	13	403
Tripp, W. B., *et al.* (See Hill, N., assignor.)						
Trobridge, J., Cambridge, Mass. Telephone	200,631	Feb. 26	774	228	13	376
True, D., Salisbury, Mass. Boat-knee	200,632	Feb. 26	775	228	13	376
Taylor, H. B., Minerva, Ohio. Bench-plane	201,008	Mar. 5	246	78	13	452
Teepell, F., Akron, Ohio. Millstone-exhaust	200,949	Mar. 5	126	41	13	435
Terry, D. M., Jersey City, N. J. Steam vacuum-pump	200,881	Mar. 5	66	23	13	425
Thomas, D. H., assignor of one-half interest to J. D. Gray, Syracuse, N. Y. Machine for skiving stiffeners for boots and shoes	201,009	Mar. 5	247	78	13	452
Thompson, A. P., assignor to D. P. Boynton, Monmouth, Me. Bench-vise	200,848	Mar. 5	35	12	13	420
Thurston, J. B., Brooklyn, N. Y. Extension-table	200,849	Mar. 5	36	12	13	420
Tower, J. J., and H. W. Kahlke, Brooklyn, N. Y., assignors to said J. J. Tower. Hand-cuff	200,950	Mar. 5	127	42	13	435
Traghelm, S., assignor to D. S. Ritterband, New York, N. Y. Screw-propeller	200,951	Mar. 5	127	42	13	435
Turner, O. W. (See Bee, A., assignor.)						
Teahl, J. H., Reading, assignor to E. G. Smyser, York, Pa. Grain cleaning and scouring machine	201,300	Mar. 12	491	151	13	494
Theobald, G., Newark, N. J., assignor of one-half interest to C. B. Smith and B. A. Bourn, Hartford, Connecticut. Gig-saddle tree	201,132	Mar. 12	317	97	13	469
Thomas, S., Junction City, Oregon. Horse-power	201,207	Mar. 12	388	120	13	480
Thompson, T. H., Benson, Minn. Trace trimming and creasing machine	201,208	Mar. 12	388	120	13	481
Tiffany, O. F., Syracuse, N. Y. Fruit-drier	201,131	Mar. 12	316	97	13	469
Tittle, C. C., assignor of one-half interest to W. B. Sheppard, Cincinnati, Ohio. Flour and meal scoop measure and sieve	201,301	Mar. 12	493	152	13	495
Tracy, E. F., *et al.* (See Roberts, E. J., assignor.)						
Trenholm, F. H., Charleston, S. C. Cart-body	201,209	Mar. 12	389	120	13	481
Tripp, T., East Stoughton, Mass. Turbine water-wheel	201,133	Mar. 12	318	98	13	469
Trowbridge, C. E., assignor to himself and A. F. Whitin, Whitinsville, Mass. Spinning-ring	201,302	Mar. 12	493	152	13	495
Twitchell, F., and C. A. Richardson, Nashua, N. H. Cleaner roll-frame for drawing and spinning machines	201,303	Mar. 12	494	152	13	495
Turneaure, E. (See Turneaure, R., assignor.)						
Turneaure, R., assignor, by mesne assignments, to E. Turneaure, Rochester, N. Y. Shoe-tree	201,210	Mar. 12	390	120	13	481
Taylor, J. W., Brooklyn, N. Y. Chimney-cap	201,466	Mar. 19	676	206	13	527
Taylor, W. H., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Striker for spring locks and latches	201,572	Mar. 19	787	239	13	543
Thompson, R. W., Cleveland, Ohio. Wagon-top	201,367	Mar. 19	577	178	13	513
Tichenor, J. M., Irvington, and H. L. Dexter, Roselle, N. J. Lifting-jack	201,467	Mar. 19	677	206	13	527
Tregoning, J., and M. Hastings, Brooklyn, N. Y. Pump-valve	201,468	Mar. 19	678	207	13	528
Taylor, J. C., *et al.* (See Taylor, L. P., assignor.)						
Taylor, L. P., assignor to J. C. Taylor and I. C. Kilburn, South Orange, N. J. Type-holder	201,718	Mar. 26	941	289	13	569
Taylor, T., Norwalk, assignor to Norwalk Lock Company, South Norwalk, Conn. Door-knob	201,719	Mar. 26	941	289	13	569
Thairlwall, W. C., Boston, Mass. Car brake and starter	201,720	Mar. 26	942	{289 290}	13	570
Thomas, J. C., Milroy, Ind. Shelf step or bracket	201,721	Mar. 26	946	290	13	570
Titus, L. R., Huntington, W. Va. Car-axle box	201,851	Mar. 26	1078	328	13	589
Topham, W. H., Springfield, Mass. Combined box and globe	201,722	Mar. 26	947	290	13	570
Treat, J. E., Boston, Mass. Indicator for pressure-gages	201,637	Mar. 26	871	265	13	558
Treat, W. W. (See Rich, S., assignor.)						
Treyer, W. (See Rippin and Treyer.)						
Teller, A. M., Morrison, Ill. Device for watering animals	201,961	Apr. 2	98	28	13	613
Thayer, L. E., Lansing, Mich. Thill-coupling	201,962	Apr. 2	99	28	13	613
Thomas, A. B., *et al.* (See Ewart, W. D., assignor.)						
Thompson, C. W., Wells, Minn. Machine for making barrel-hoops	202,073	Apr. 2	212	62	13	629
Thompson, Perley, and Waite. (See Perley, C. A., assignor.)						
Townsend, E. E., assignor of one-third interest to H. Dansreau, Thibodeaux, La. Lamp-burner	202,074	Apr. 2	213	62	13	629
Travis, J. N., Owatonna, Minn. Draft-equalizer	202,075	Apr. 2	214	63	13	629
Tunk, K. G., Brooklyn, N. Y. Lamp-extinguisher	202,076	Apr. 2	214	63	13	629
Tunk, K. G., Brooklyn, N. Y. Lamp-extinguisher	202,077	Apr. 2	216	63	13	629
Tyler, J. B., Brooklyn, assignor of one-half interest to T. Davies, Jr., Green Point, N. Y. See-saw	201,897	Apr. 2	39	10	13	604
Taltavull, P., Washington, D. C. Ball-target thrower	202,301	Apr. 9	467	137	13	669
Tenney, C. F., and T. J. Hobbs, Baldwinsville, Mass., assignors to Thompson, Perley, and Waite. Combined carriage and chair. (Reissue)	8,106	Apr. 9	502	146	13	674
Thickstun, J. A., *et al.* (See Macey, C. R., assignor.)						
Thompson, J. H. (See Hilton, C. W., assignor.)						
Thompson, L., San Francisco, Cal. Napkin-holder	202,202	Apr. 9	367	107	13	655
Thompson, Perley, and Waite. (See Tenney and Hobbs, assignors.)						
Tracy, J. N. (See Tracy, T., and J. N.)						
Tracy, T., and J. N., New Britain, Conn. Bed-bottom	202,302	Apr. 9	468	137	13	669
Trowbridge, W. F., *et al.* (See Watkins, H. J., assignor.)						
Trowbridge, W. F., assignor of two-thirds interest to W. F. Brigham and H. J. Watkins, Hudson, Mass. Sewing-machine presser-foot	202,303	Apr. 9	470	137	13	669

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Tucker, A. W., Waxahachie, assignor to Alford & Sorley, Dallas, Tex. Sulky-plow	202,304	Apr. 9	471	138	13	669
Tucker, S. J., assignor to himself, R. E. Blankenship, and J. R. Macmurdo, Richmond, Va. Revenue-register	202,305	Apr. 9	472	138	13	670
Taft, A. W. (See Pearce and Taft.)						
Tasker, S. P. M., Philadelphia, Pa. Pipe-coupling	202,384	Apr. 16	570	167	13	687
Taylor, S., Chicago, Ill. Horse-collar	202,604	Apr. 16	606	233	13	716
Terwilliger, S. S., Tie Siding, Wyoming Territory. Sulky-scraper	202,484	Apr. 16	666	195	13	701
Thomas, D., assignor of six-tenths to W. L. Reynolds and F. W. E. Best, St. Louis, and C. D. Moody, St. Louis county, Mo. Cupola-furnace and process of working iron	202,605	Apr. 16	607	233	13	716
Thomas E., Jackson, N. C. Umbrella-holder for vehicles	202,385	Apr. 16	571	167	13	688
Thompson, T. C., Evanston, Ill. Gaff for vessels	202,485	Apr. 16	667	195	13	702
Thornton, W. H., and A. Beam, New Britain, Conn. Rubber butt-plate for guns	202,606	Apr. 16	609	234	13	717
Thurston, A. L., West Salem, Wis. Coin pocket-book	202,486	Apr. 16	667	196	13	702
Thurston, H. W., Cambridge, assignor to J. W. Fairbanks, Waltham, Mass. Netting-machine	202,386	Apr. 16	572	168	13	688
Travis, T. W., assignor of one-half interest to J. A. Pollock, Philadelphia, Pa. Railway-track	202,607	Apr. 16	609	234	13	717
Trout, C. C. (See Stouffer, H. C., assignor.)						
Tucker, C. M., *et al.* (See Phillips, W. C., assignor.)						
Turner, H. O., Cazenovia, N. Y. Hay-knife	202,487	Apr. 16	668	196	13	702
Twiss, E. N. Marblehead, Mass. Anchor for boats, &c.	202,488	Apr. 16	669	196	13	702
Tygh, J. F., assignor to himself and P. McCrossin, Philadelphia, Pa. Machine for cutting tobacco	202,608	Apr. 16	810	234	13	717
Taylor, B. H., Rosedale, Miss., assignor of one-half interest to E. G. Fields. Rotary engine	202,888	Apr. 23	1126	{323 324}	13	765
Thayer, H. H. (See Smith and Thayer.)						
Thilmany, W., Cleveland, Ohio. Preserving timber	202,678	Apr. 23	905	.....	13	737
Thompson, C., Graham, Mo. Washing-machine	202,889	Apr. 23	1127	324	13	766
Thomson, J. L., New York, and J. Naylor, Jr., Rochester, N. Y.; said Naylor assignor to said Thomson; said Thomson assignor of one-half interest to C. Feigenspan, Newark, N. J. Paper barrel	202,890	Apr. 23	1128	324	13	766
Tooker, R. N., Chicago, Ill. Fire-alarm-signal box	202,891	Apr. 23	1129	325	13	766
Towns, E., Clane, Ill. Governor	202,892	Apr. 23	1130	325	13	766
Travis, C. L. (See Olmsted, Travis, and Chute.)						
Traxler, F. K., Dansville, N. Y. Dog-power	202,679	Apr. 23	906	239	13	737
Trent, J., Mayo Forge, Va. Composition for treating tobacco	202,680	Apr. 23	907	.....	13	738
Tripp, W. B., *et al.* (See Hill, N., assignor.)						
Trout, C. F., Boston, Mass. Coin-package	202,893	Apr. 23	1131	325	13	766
Turley, M., assignor of one-third interest to J. A. Churchill, Council Bluffs, Iowa. Horse-collar	202,895	Apr. 23	1134	326	13	766
Turner, D., Grand Rapids, Mich. Steam-engine	202,894	Apr. 23	1132	326	13	766
Tapp, W. J. (See Roop, J. W., assignor.)						
Tatro, C. T., assignor of one-half interest to M. W. Sherman, Hartford, Conn. Car-ventilator	203,668	Apr. 30	1332	367	13	796
Taylor, H. A. (See Goodwyn, G. W., assignor.)						
Taylor, J. (See Christman and Caldwell, assignors.)						
Taylor, M. J., Brooklyn, N. Y. Envelope	203,091	Apr. 30	1334	388	13	797
Taylor, T., Washington, D. C. Medicated soap	203,090	Apr. 30	1333	.....	13	797
Teats, H., Indianapolis, Ind. Mattress	203,089	Apr. 30	1333	387	13	797
Thomas, M. C., La Fayette, Va. Horse-detacher	203,216	Apr. 30	1467	429	13	813
Thomas, W. H., and T. H. Carter, Mount Sterling, Ky. Rain-water filter	203,092	Apr. 30	1335	388	13	797
Thompson, B. T., *et al.* (See Cutler, H., assignor.)						
Thompson, T. P., Portage, Wis. Well-borer	203,217	Apr. 30	1467	429	13	814
Tiebout, J. (See Whaley, B. B., assignor.)						
Tirrell, J. (See Mudge and Whittaker, assignors.)						
Travis, L. L., Lemon, Pa. Automatic wagon-brake	203,093	Apr. 30	1336	388	13	797
Treman, L. L., Ithaca, N. Y. Meat-tenderer	203,218	Apr. 30	1468	429	13	814
Tufts, J. W., Medford, Mass. Manufacture of articles produced by electro-deposition	202,969	Apr. 30	1220	{352 353}	13	781
Tuggey, W., West Rutland, Vt. Stone-sawing machine	203,219	Apr. 30	1469	430	13	814
Tabor, F. E., Rockville, R. I. Stop-motion for railway drawing-heads	203,389	May 7	163	47	13	843
Tefft, W. H. (See Monakay, E., assignor.)						
Terrill, A. W. (See Fleming, Wayland, and Gilliland, assignors.)						
Terwilliger, S. (See Mase and Terwilliger.)						
Thompson, C. W., Wells, Minn. Machine for goring veneers for barrels	203,509	May 7	283	81	13	859
Thompson, J. F., Cleveland, Ohio. Vehicle-spring	203,508	May 7	282	81	13	859
Tyler, M. A., New Durham, N. H. Machine for trimming boot and shoe heels	203,510	May 7	285	82	13	860
Thompson, H. G., Milford, Conn. Lasting-machine	203,673	May 14	471	134	13	891
Thornton, J., Wellsville, N. Y. Vehicle-spring	203,567	May 14	370	104	13	879
Timby, B. J., assignor to himself and D. P. Hooker, Ridgeway, N. Y. Composition for protecting trees	203,674	May 14	473	.....	13	892
Todd, J., *et al.* (See Way, T. R., assignor.)						
Trezise, T., assignor of two-thirds interest to J. Gillmore, Baltimore, and G. W. Cofran, Mount Winans, Md. Apparatus for hermetically sealing cans	203,796	May 14	600	168	13	907
Tuchfarber, F., Cincinnati, Ohio. Producing metallic pictures	203,568	May 14	371	.....	13	879
Tucker, G. W., Waterbury, Conn. Manufacture of sleigh-bells	203,675	May 14	474	134	13	892
Tufts, D., Pittsburg, Pa. Breech-loading ordnance	203,797	May 14	602	168	13	908
Turner, J. F., Philadelphia, Pa. Weeding implement	203,798	May 14	604	169	13	908
Taylor, C. A., Chicago, Ill. Trunk-fixture	203,860	May 21	679	193	13	925
Taylor, C. W., *et al.* (See Barlow, C., assignor.)						
Terrill, T. B., *et al.* (See Barlow, C., assignor.)						
Tetlow, W., *et al.* (See Hyde, D., assignor.)	203,958	May 21	785	225	13	939
Thomas, B. M., Brooklyn, assignor to Neuss, Hesslein & Co., New York, N. Y. Needle-wrapper	203,959	May 21	785	225	13	939
Tilden, J. N., *et al.* (See Willcox, W. H., assignor.)						
Townsend, C. M., Standing Rock, Dak. Ter. Corn-husking glove	204,113	May 21	948	272	13	959
Tripp, O. P., Belvidere, Ill. Tongue and thill support for vehicles	203,960	May 21	786	225	13	939
Turner, W. S., Phillipps county, Ark. Cotton-planter	204,394	May 28	1260	360	13	1003
Taplin, M., Montpelier, Vt. Saw-mill carriage	204,395	May 28	1261	360	13	1003
Tate, W. H., and J. E. Curtis, Jacksonville, Ark. Cotton-press	204,396	May 28	1262	360	13	1003
Tausley, J., Jr. (See Gornall, R., assignor.)						
Terrell, E. P., and L. A. Williams, West Liberty, Ohio; said Terrell assignor to said Williams. Loom picking mechanism	204,262	May 28	1127	322	13	906
Terry, J. R., Jr., New York, N. Y. Hat and cap sweat	204,397	May 28	1263	360	13	1003
Thatcher, J. M., Jersey City, N. J. Sewer-trap	204,398	May 28	1266	.....	13	1003
Thayer, E. S., Salem, Mass. Compound for currying leather						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Thompson, H., Providence, R. I. Repeating-clock	204,175	May 28	1033	294, 295	13	974
Thompson, M. L., Brooklyn, N. Y. Moth-proof barrel and box	204,263	May 28	1128	322	13	986
Thompson, O. B., Jersey, Ohio. Adjustable axle-nut	204,399	May 28	1266	361	13	1003
Thompson, S. S., assignor to R. Hornback and R. Coss, Sacramento, Cal. Ventilator	204,264	May 28	1128	323	13	986
Tooker, R. N., Chicago, Ill. Fire-alarm signal-box. (Reissue)	8,267	May 28	1301	370	13	1008
Traub, J. F., Detroit, Mich. Spectacle-frames	204,265	May 28	1129	323	13	986
Traub, J. F., Detroit, Mich. Eyeglass	204,266	May 28	1130	323	13	986
Trethewey, S., Pittsburg, Pa. Grinding-machine	204,393	May 28	1259	359	13	1003
Tallman, J. C., assignor to L. C. Warner, New York, N. Y. Corset	204,459	June 4	43	14	13	1018
Tallman, J. C., assignor to L. C. Warner, New York, N. Y. Bosom-pad	204,460	June 4	43	14	13	1018
Taylor, W., assignor to himself and G. W. Robertson, Peekskill, N. Y. Gate for patterns	204,510	June 4	84	28	13	1024
Terrass, J., assignor to W. H. Cook, Akron, Ohio. Broom-rack	204,511	June 4	84	29	13	1024
Thomas, S. B., Arcanum, Ohio. Hog-weighing device	204,633	June 4	209	67	13	1042
Thompson, E. (See Ruggles, S. S., assignor.)						
Thomson, J. C., Barnhart's Mills, Pa. Vacuum-packer for oil-wells	204,512	June 4	85	29	13	1024
Titcomb, F. A., Chicago, Ill. Cigar-box	204,634	June 4	210	67	13	1042
Trickey, G. B., *et al.* (See Starkey, D., assignor.)						
Trimble, J. R. (See Cather, E., assignor.)						
Trump, F., assignor to J. W. Bookwalter, Springfield, Ohio. Combined cast and wrought iron boiler	204,461	June 4	44	14	13	1019
Taylor, A. E., and J. R. Johnson, assignors to Taylor Manufacturing Company, New Britain, Conn. Burglar-alarm	204,861	June 11	458	134	13	1076
Taylor Manufacturing Company. (See Taylor and Johnson, assignors.)						
Thorne, G. L., Buffalo, N. Y. Portable heater	204,862	June 11	459	134	13	1076
Thurston, S. H., Bloomfield, N. J., assignor to C. T. Pierson, Ramapo, N. Y. Tobacco-pipe	204,774	June 11	368	110	13	1066
Ticsing, F. W., New Haven, Conn. Magazine fire-arm	204,863	June 11	460	134	13	1076
Tinney, J. D., *et al.* (See Jingels, A., assignor.)						
Tobin, E., Jr., Oconto, Wis. Sash holder and lock	204,691	June 11	277	86	13	1055
Tubular Rivet Company. (See Bray, M., assignor.) (Reissue.)						
Tucker, W. L., Syracuse, N. Y. Hernial truss	204,775	June 11	368	110	13	1066
Turner, J. L., New York, N. Y. Waste-pipe trap. (Reissue)	8,281	June 11	490	142	13	1080
Tatham, J., Philadelphia, Pa. Indicator for freight-cars	205,151	June 18	777	230	13	1122
Taylor, E. B., assignor of three-fourths interest to R. Williams and J. W. Deering, Portland, Me. Hat-pouncing machine	205,009	June 18	631	185, 186	13	1102
Taylor, J. M., and J. Mackay, Fredericton, New Brunswick, Canada. Rein-holding attachment for harness	205,008	June 18	630	185	13	1102
Telfer, J. C., Cleveland, Ohio. Packing celery tops	205,010	June 18	632	186	13	1103
Templeton, A., Louisville, Ky. Clamp for securing corks in bottles	205,011	June 18	633	186	13	1103
Thompson, J. W., and N. Hunt, assignors of one-half interest to Buckeye Engine Company, Salem, Ohio. Governor	204,924	June 18	550	160	13	1092
Tierman, R. H., Galveston, Tex. Grain-drier	205,012	June 18	634	186	13	1103
Tipton, W., assignor of one-half interest to J. Fisher, Harrisonville, Ohio. Wool-press	205,013	June 18	635	187	13	1103
Tonkin, J. J., assignor of one-half interest to J. N. Van Lew, Richmond, Va. Gage-cock	205,152	June 18	778	230	13	1122
Tregent, A. N., Detroit, Mich. Steam water-heater	205,153	June 18	779	230	13	1122
Tresize, J. Q. A., Washington, D. C. Safety-pin	205,154	June 18	780	231	13	1122
Tripp, F. L., Eau Claire, Wis. Hat-fastener	205,014	June 18	636	187	13	1103
Truesdell, L. W., assignor to D. F. Steele and A. D. Hoogland, Owego, N. Y. Milk-cooler	205,155	June 18	781	231	13	1123
Tucker, E., assignor to E. W. Vaill, Worcester, Mass. Folding rocking-chair	205,015	June 18	636	187	13	1103
Tucker, E., assignor to E. W. Vaill, Worcester, Mass. Folding chair	205,016	June 18	637	187	13	1103
Turman, I., Smithland, Iowa. Grain-separator	205,017	June 18	638	188	13	1104
Turner, J. S., assignor of one-half interest to H. R. Groneweg, Dayton, Ohio. Book-support	205,156	June 18	782	231	13	1123
Tyler, T. W., and W. C. Baskin, Hammond, Ill. Corn-planter	204,925	June 18	552	161	13	1092
Tapley, D. J., New York, N. Y. Cutting attachment for sewing-machines	205,315	June 25	963	285	13	1151
Tays, J. H., New Braunfels, Tex. Draw-gage	205,316	June 25	964	285	13	1151
Teague, J. C., Wabash, Ind. Combined plow and harrow	205,317	June 25	964	285	13	1151
Thierman, J. H., Louisville, Ky. Flavoring liquors	205,443	June 25	1092	323	13	1168
Thomas, D. S., Powell, Ohio. Bee-hive	205,444	June 25	1093	323, 324	13	1168
Thompson, C., *et al.* (See Harrison, T., assignor.)						
Thorn, E., *et al.* (See Holub, F., assignor.)						
Thunen, W., Cherokee, Cal. Vehicle-wheel	205,318	June 25	965	286	13	1152
Timmons, H. L. (See Stough, C. B., assignor.)						
Tracy, J., Waltham, Mass. Balloon	205,319	June 25	967	286	13	1152
Travis, C. L., and C. E. Chute, Minneapolis, Minn. Grain-binder	205,442	June 25	1091	323	13	1168
Trowbridge, W. O., Newton, Mass., assignor to Mason & Hamlin Organ Company. Reed-organ	205,445	June 25	1095	324	13	1168
Turner, N. F., Brooklyn, assignor of one-half interest to G. H. Mellen, New York, N. Y. Ball-target	205,220	June 25	862	255	13	1138
Turner, W. E., New York, N. Y. Device for unwinding thread from spools or bobbins	205,320	June 25	967	286	13	1152
Upjohn, H. U., Kalamazoo, Mich. Device for compressing rubbers in thill-couplings	198,759	Jan. 1	36	0	13	13
Urie, W. T., Warrensburg, Mo. Spark-arrester	198,919	Jan. 1	203	57	13	39
Udell, C. G., Indianapolis, Ind. Step-ladder	199,004	Jan. 8	295	86	13	61
Unverferth, F. W. (See Dixon and Unverferth.)						
Underwood, A. H., Dundee, assignor of one-half interest to N. H. Sherburne, Chicago, Ill. Cooking attachment to coal-oil stoves	199,671	Jan. 29	1016	296	13	190
Underhill, A. M. (See Relph, F. H., assignor.)						
Underhill, H. P., Baltimore, Md. Fertilizer-distributer	200,490	Feb. 19	617	182	13	344
Underwood, H. M. (See Muntzenberger and Underwood.)						
Upton, J. S., Battle Creek, Mich. Grain-separator	200,585	Feb. 19	712	209, 210	13	358
Ulrich, W., Madison, N. J. Running-gear for wagons	200,952	Mar. 5	128	42	13	435
Uhrich, E., Uhrichsville, Ohio. Siphon	201,134	Mar. 12	320	98	13	470
Ufford, A. H., Rockford, Ill. Land-roller	201,368	Mar. 19	578	178	13	514
Underwood, J. R., Hilliard, Ohio. Washing-machine	202,307	Apr. 9	474	138	13	670
Urquhart, J. M., Jefferson, Tex. Percussion-shell	202,203	Apr. 9	368	108	13	655
Underhill, S. W., Croton Point, N. Y. Brick-kiln	202,489	Apr. 16	670	196	13	702
Upton, W., assignor of one-half interest to C. R., J. W., and W. S. Kohl, Philadelphia, Pa. Spike-extractor	202,609	Apr. 16	811	234	13	717
United States Iron Company. (See McKinney, W. S., assignor.)						
Unger, H., Germantown, assignor to himself and J. S. Antrim, Montgomery county, Ohio. Gate-latch	204,267	May 28	1130	323	13	986
Underhill, H. R., Derry, N. H. Plow	204,513	June 4	85	29	13	1025
Underwood, J. B., Fayetteville, N. C., assignor to A. V. Jessup, Coffee-roaster	204,635	June 4	211	67, 68	13	1042

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Unzicker, O., assignor to A. Shoeninger, Chicago, Ill. Velocipede	204,636	June 4	212	68	13	1042
Utterback, A. W., Rappahannock county, Va. Mechanical movement	204,462	June 4	45	15	13	1019
Unwin, J., Sheffield, Great Britain. Etching on glass	205,446	June 25	1096	.....	13	1168
Updegraff, H., Smithfield, Ohio. Breech-loading fire-arm	205,447	June 25	1097	324	13	1168
Van Sands, F. (See Spencer, W. D., assignor.)						
Van Pelt, J. H., New York, N. Y. Temporary binder	199,241	Jan. 15	541	160	13	100
Van Stavoren, S. J., Philadelphia, Pa. Cuspadore	199,333	Jan. 15	637	185	13	115
Vinton, J. H., and M. E. Fitzpatrick, assignor to F. Armstrong, Bridgeport, Conn. Garter	199,240	Jan. 15	539	159	13	100
Vogts, W. A. (See Williamson and Vogts.)						
Von Ehren, F. A. L., New Orleans, La. Aerial vessel	199,334	Jan. 15	637	186	13	115
Vandorstan, A. W., Salem, Oregon. High and low water indicator for steam-boilers	199,598	Jan. 22	915	268	13	167
Van Wormer, M., Dayton, Ohio. Dumping-car	199,761	Jan. 29	1005	322	13	203
Vaux, E. P., assignor of one-half interest to W. Powell, Washington, D. C. Steam street-car	199,762	Jan. 29	1099	322, 323	13	203
Valentine, A. A., New York, and H. A. Morrison, Brooklyn, N. Y. Umbrella-rib tip. (Reissue)	8,073	Feb. 5	234	72	13	269
Van Noorden, E., Boston, Mass. Shears	199,943	Feb. 5	55	18	13	241
Vannorman, A., Sand Hill P. O., Knox county, Mo. Seed-dropper	200,110	Feb. 5	221	68	13	267
Verniaud, C., Quincy, Ill., assignor to himself, B. Arntzen, L. Miller, and J. Weber. Cock and faucet	199,944	Feb. 5	56	18	13	242
Vose, R., assignor to J. V. Reed, New York, N. Y. Spiral spring	199,945	Feb. 5	57	18	13	242
Van Haagen, A., Philadelphia, Pa. Filtering apparatus	200,363	Feb. 12	487	143	13	316
Van Horne, W. J., Schenectady, N. Y. Measure for hats and caps	200,364	Feb. 12	488	143	13	316
Van Nüys, T. C., Bloomington, Ind. Preventing fraud in stamps, checks, bonds, &c	200,365	Feb. 12	489	.....	13	316
Vaughn, G. S., Franklin, Pa. Torpedo for oil-wells	200,491	Feb. 19	619	182	13	344
Very, T. L., *et al.* (See Batchelder, H. J., assignor.)						
Visel, C., Coldwater, Mich. Vat	200,586	Feb. 19	713	210	13	358
Vogellus, P. C., Philadelphia, Pa. Separating tin from tin-scrap	200,587	Feb. 19	713	.....	13	359
Van Patten, F. (See Clapp and Van Patten.)						
Van Wormer, M., Dayton, Ohio. Dumping-car	200,813	Feb. 26	961	283	13	404
Vaill, E. W. (See Wakefield, J. E., assignor.)						
Van Benschoten, H. E., Hillsdale, N. Y. Metallic protector for boot and shoe soles and heels	201,070	Mar. 5	248	73	13	432
Van Norden, T. A., Quincy, Cal. Tobacco-pipe	200,882	Mar. 5	67	23	13	425
Van Brunt, W. A., and S. E. Davis, Horicon, Wis. Cultivator-tooth	201,304	Mar. 12	495	153	13	495
Vandorston, A. W., assignor of one-half interest to J. W. Crawford, Salem, Oregon. Sheet-metal-flanging machine	201,305	Mar. 12	496	153	13	495
Van Liew, D. F., Aurora, Ill. Car-door	201,306	Mar. 12	497	153	13	495
Van Orden, J. M., New York, N. Y. Corset-clasp	201,307	Mar. 12	499	154	13	495
Verpillier, E., Newark, N. J. Ornamental chain	201,135	Mar. 12	321	98	13	470
Veyssie, L. E., *et al.* (See Roberts, E. J., assignor.)						
Vincent, G., Stockton, Cal. Locomotive	201,308	Mar. 12	500	154	13	495
Vincent, G., Stockton, Cal. Car-truck	201,309	Mar. 12	502	154	13	495
Vincent, G., assignor of part interest to W. T. Browne and A. Clark, Stockton, Cal. Car-truck	201,311	Mar. 12	504	155	13	496
Vincent, G., Stockton, and M. A. Wheaton, San Francisco, Cal. Car-truck	201,310	Mar. 12	503	155	13	495
Van Benthuysen, I. E., Brandford, Conn., assignor to T. Kennedy, New York, N. Y. Reversible latch	201,573	Mar. 19	788	240	13	543
Vanclain, J. A. P., La Fayette, Ind., assignor of one-half interest to H. Harrison, Nashville, Tenn. Car-axle box	201,469	Mar. 19	678	207	13	528
Van Doren, L., Washington, D. C., W. T. Van Doren, Jr., administrator. Rotary engine	201,574	Mar. 19	789	240	13	543
Van Doren, W. T., Jr., administrator. (See Van Doren, L.)						
Van Horn, W. J., Schenectady, N. Y. Sweat-leather for hats and caps	201,575	Mar. 19	791	240	13	543
Van Order, C. (See Keene and Van Order.)						
Vasse, W. W. (See Künstler, J., assignor.)						
Vose, R., administrator. (See Bullock, W.) (Reissue.)	201,963	Apr. 2	99	29	13	613
Van Liew, D. F., Aurora, Ill. Grain-car door						
Van Slyck, N. (See Bradt and Van Slyck.)						
Vinton, C. E., *et al.* (See Shoots, J. D., assignor.) (Reissue.)	202,078	Apr. 2	218	.....	13	629
Viol, A., and C. P. Duflot, Paris, France. Bleaching feathers	202,306	Apr. 9	473	138	13	670
Van Houten, W., Pella, Iowa. Coal and potato screen	8,167	Apr. 9	503	146	13	674
Very, E. W., Annapolis, Md. Signal-cartridge. (Reisane)	202,490	Apr. 16	671	197	13	702
Vandenburg, L. W., assignor to himself and W. H. Dimmick, Honesdale, Pa. Harness-pad						
Van Derzee, P. L., New Baltimore, N. Y., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Machine for forming bale-tie hooks	202,491	Apr. 16	672	197	13	702
Van Wagoner, T., Newark, N. J. Sash-cord guide	202,492	Apr. 16	673	197	13	702
Vaughan, P. W. (See Glidden and Vaughan.)						
Valentine, G. B., Annville, Pa. Chain-pump	202,896	Apr. 23	1135	326	13	706
Van Bibber, A., Cincinnati, Ohio. Inking-roller composition for printers	202,897	Apr. 23	1136	.....	13	706
Van Hagen, A., assignor to H. C. Butcher, Philadelphia, Pa. Filtering apparatus. (Reissue)	8,192	Apr. 23	1157	332	13	769
Vannan, F. H., Wilkesbarre, Pa. Expanding mandrel	202,768	Apr. 23	996	286	13	749
Van Tine, W. (See Bell, G. C., assignor.)						
Victor Sewing Machine Company. (See Pratt, G. M., assignor.)						
Voth, E. H. (See Dressell and Voth.)						
Voth, J. G. (See Dressell and Voth.)						
Van Buskirk, W. G., Fishkill Landing, and G. Hay, New York, N. Y. Permutation-lock	202,970	Apr. 30	1221	353	13	782
Van Gelder, J., New York, N. Y. Hat and cap	203,220	Apr. 30	1469	430	13	814
Veronee, C. B., Athens, Ga. Apple corer and slicer	203,221	Apr. 30	1470	430	13	814
Valle, J. H., Dayton, Ohio. Pumping-engine	203,511	May 7	287	82	13	860
Vaill, T. W. (See Wakefield, J. E., assignor.) (Reissue.)						
Van Allen, N., Chicago, Ill. Combined shoulder-brace and suspenders	203,301	May 7	72	21	13	830
Van Baar, R. (See Dani. A., assignor.)						
Van Hoevenbergh, H., Elizabeth, N. J., and W. K. Applebangh, Brooklyn, N. Y. Support for stencil-pens	203,390	May 7	163	47	13	843
Van Viele, N., assignor of three-fourths interest to U. Viele, Elmira, N. Y. Car-starter	203,512	May 7	288	82	13	860
Viele, U. (See Van Viele, N., assignor.)						
Vitt, A. H., Union, Mo. Piston-rod packing	203,391	May 7	164	47	13	843
Vacuum Oil Company. (See Everest and Ross, assignors.) (Reissue.)	203,676	May 14	474	134	13	892
Vanhorn, J. S., assignor to W. H. Woglom, New York, N. Y. Sleeve-protector	203,569	May 14	371	105	13	879
Van Kannel, T., assignor to A. V. Stewart, Cincinnati, Ohio. Curtain-cord tightener						
Van Meredith, M. (See Hunter, W. R., assignor.)						
Van Slyck, N. (See Bradt, H., assignor.)						
Viall, W. G., North Adams, Mass. Shoe	203,677	May 14	475	135	13	892

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Vogel, A., New York, N. Y. Purse	203,678	May 14	475	135	13	892
Vredenburgh, A. C., Kingston, N. Y. Breech-loading fire-arm	203,799	May 14	604	169	13	908
Van Praag, L., assignor to Wood & Hughes, New York, N. Y. Bracelet-fastening	203,864	May 21	729	226	13	940
Van Sicklen, F., New York, N. Y. Sectional trunk	203,861	May 21	787	225	13	939
Vincent, J. J., and G. B. McMillan, Poy Sippi, Wis. Leaf-turner	203,902	May 21	788	226	13	939
Vollbrecht, L. P., Mason, Tex. Camp-stove	203,963	May 21	789	226	13	940
Van Bibber, A., Cincinnati, Ohio. Barrel-lining composition	204,515	June 4	87	30	13	1025
Van Buren, G. W., Jr., assignor of one-half interest to G. W. Hinkle, Mendon, Mich. Feed-steamer	204,514	June 4	86	29	13	1025
Van Gunster, J., assignor of one-half interest to C. W. Norton, Ilion, N. Y. Thermometer attachment for sad-irons	204,637	June 4	213	68	13	1042
Van Hoevenbergh, H., Elizabeth, N. J. Printing-telegraph	204,516	June 4	88	30	13	1025
Voege, A., Brooklyn, N. Y. Screw-cap for bottles, jars, &c.	204,463	June 4	46	15	13	1019
Varicas, L., San Francisco, Cal. Broom-sewing machine	204,864	June 11	462	135	13	1077
Venable, J. K. P., Shelby county, Ky. Bee-hive	204,696	June 11	260	87	13	1055
Vermilya, J. H., *et al.* (See Hunter, G. W., assignor.) (Reissue.)						
Veronee, C. B., assignor of one-half interest to J. Bancroft, Athens, Pa. Treadle attachment for sewing-machines	204,776	June 11	309	111	13	1066
Vaill, E. W. (See Tucker, E., assignor.)						
Valpey, C. R., *et al.* (See Merriam, G. P., assignor.)						
Van Lew, J. N. (See Tonkin, J. J., assignor.)						
Vanvleet, W. B., Vincennes, Iowa. Stock-car	205,157	June 18	782	231	13	1123
Verckler, J. J., (See Horrall and Verckler.)						
Van Buren, J. S., West Troy, N. Y. Stove-damper	205,321	June 25	968	{286 287}	13	1152
Van Skelline, I. J., Brooklyn, N. Y. Wrapper for bonbons	205,448	June 25	1098	325	13	1169
Von Ruville, O., Bruchsal, Baden. Horseshoe	205,221	June 25	863	255	13	1138
Wallace, E. L., Paterson, assignor of one-half interest to J. M. Wallace, of Oakridge, and S. S. Denton, of Vernon, N. J. Dust-screen holder for car-windows	198,917	Jan. 1	201	57	13	39
Wallace, J. M., *et al.* (See Wallace, E. L., assignor.)						
Ward, F. T., and T. Bedworth, Mohawk, N. Y. Spirit-level	198,909	Jan. 1	194	55	13	38
Ward, J. B., San Francisco, Cal. Hot-air engine	198,927	Jan. 1	106	30	13	24
Warren, J. D. (See Molloy and Warren.)						
Washington, G., Woodberry, Md. Lamp-wick measurer and cutter	198,864	Jan. 1	143	41	13	31
Waters, C. H., Groton, assignor to Clinton Wire Cloth Company of Clinton, Mass. Painting wire-cloth. (Reissue)						
Waters, C. H., assignor to Clinton Wire Cloth Company, Groton, Mass. Machine-painted wire-cloth. (Reissue)	8,022	Jan. 1	212	.....	13	40
Webster, W. D., St. Catharines, Canada. Hand-hoe	8,023	Jan. 1	213	.....	13	40
Whitnum, S., Green Point, N. Y. Commode	198,910	Jan. 1	195	55	13	38
Wilkinson, J. M., Phœnixville, Pa. Scrubbing-brush	198,865	Jan. 1	145	41	13	31
Winchell, A. T., Adrian, Mich. Windmill	198,928	Jan. 1	107	30	13	25
Wageoner, G. W., Memphis, Mo. Bee-hive	198,829	Jan. 1	108	31	13	25
Wallace, J., Belfast, Ireland, assignor to I. A. Hopper, Newark, and T. Barbour, Paterson, N. J. Distilling apparatus	199,005	Jan. 8	296	87	13	61
Walter, L. (See Bovier, D., assignor.)	199,006	Jan. 8	297	87	13	62
Washburn & Moen Manufacturing Company. (See Shortau, C., assignor.) (Reissue.)						
Watson, T. A., Boston, Mass. Telephone	199,007	Jan. 8	298	87	13	62
Webster, J. H. (See Stillman and Webster.)						
Weickel, C. (See Weickel, S. J. and C.)						
Weickel, S. J. and C., Laclede, Mo. Corn-planter and seed-drill	199,127	Jan. 8	419	123	13	81
Wells, G. V., Monmouth, Ill. Boot and shoe nailing last	198,958	Jan. 8	248	71	13	54
Weyman, B. F., Pittsburg, Pa. Snuff-package	199,128	Jan. 8	420	123	13	81
Wheeler, H. N., *et al.* (See Betts, L. F., assignor.)						
Whitburn, T., Guildford, England. Ornamenting wood	199,129	Jan. 8	420	.....	13	81
White, F. C. (See Hale, G. C., assignor.)						
Whitelaw, J., Cleveland, Ohio. Game-counter	199,130	Jan. 8	422	124	13	81
Whitman, J. A., Providence, R. I. Pump	199,131	Jan. 8	422	124	13	81
Wilcox Silver Plate Company. (See Babbitt, S. W., assignor.)						
Wildes, E. B. (See Hodges, A. S., assignor.)						
Willets, J. H., New York, N. Y. Overalls	199,133	Jan. 8	425	124	13	82
Williams, C. M., Bethel, Ky. Can-opener	198,959	Jan. 8	249	71	13	54
Williams, G., Groton, assignor of one-half interest to H. C. Holmes, Stonington, Conn. Car-axle box	199,132	Jan. 8	424	124	13	81
Witherbee, T. F., Port Henry, N. Y. Tuyere. (Reissue)	8,033	Jan. 8	437	128	13	84
Witherbee, T. F., Port Henry, N. Y. Tuyere	199,134	Jan. 8	425	125	13	82
Woltz, G. W. J., Greenfield, Ohio. Fire-back	198,960	Jan. 8	250	72	13	54
Wood & Co., A. (See Wood, H., assignor.)						
Wood, H., Conshohocken, assignor to A. Wood & Co., Philadelphia and Conshohocken, Pa. Marking sheet-metal plates	199,135	Jan. 8	426	125	13	82
Worswick Manufacturing Company. (See Claes, W. F., assignor.) (Reissue.)						
Wright, A. S., Moline, Ind. Pump	199,136	Jan. 8	427	125	13	82
Walker, J. C., Livonia, and T. H. Hunt, Alpena, Mich. Window-screen	199,335	Jan. 15	639	{186 187}	13	115
Warren Chemical and Manufacturing Company. (See Kane, F. L., assignor.)						
Waterbury, C. A. (See Boeklen, R., assignor.)						
Waterbury Clock Company. (See Goodrich, A. L., assignor.)						
Welch, W. S., Westfield, N. J. Size for calcimining	199,242	Jan. 15	541	.....	13	100
West, M. C., Spencer, assignor of one-half interest to F. Ferris, Oswego, N. Y. Platform-spring	199,336	Jan. 15	640	187	13	115
Weyburn, E. D., Pittsburg, Pa. Bottle-stopper fastener	199,337	Jan. 15	640	187	13	116
Wheeler, W. C., Oshkosh, Wis. Saw-set	199,338	Jan. 15	641	187	13	116
Wightman, J. C., Boston, Mass. Power sheep-shears	199,243	Jan. 15	542	160	13	101
Wilcox, C. K., Lima, Ohio. Vehicle-wheel hub	199,244	Jan. 15	543	160	13	101
Wilkinson, R. R., Jamestown, Mich. Egg-carrier	199,339	Jan. 15	642	188	13	116
Williamson, T., and W. A. Vogts, Long Island city, N. Y. Fire-kindling	199,245	Jan. 15	543	.....	13	101
Wilmot Manufacturing Company. (See Blackham, E. J., assignor.)						
Winn, G. L., and J. Bliss, Jersey City, N. J., assignors to W. L. Palmer, New York, N. Y. Die for forming articles of plastic material	199,340	Jan. 15	643	188	13	116
Winship, E. B., *et al.* (See Hodges, G., assignor.)						
Winship, T. S., *et al.* (See Hodges, G., assignor.)						
Wolle, C. E., and S. Munyon, Philadelphia, Pa., assignor to said Wolle. Apparatus for carbureting air	199,246	Jan. 15	545	160	13	101
Walker, J., assignor to C. M. Drennan. Ventilator and chimney-cap	199,309	Jan. 22	915	268	13	167

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Wallace, W., and J. King, Ansonia, Conn. Gasket	199,601	Jan. 22	917	269	13	168
Wallis, T. M., Philadelphia, Pa. Cartridge-capping implement	199,600	Jan. 22	916	268	13	167
Walton, F. B., Dallas, Texas. Lubricating device	199,602	Jan. 22	918	269	13	168
Wantz, J. B., and L. W. Strasbough, York, Pa. Washing-machine	199,603	Jan. 22	919	269	13	168
Washburn & Moen Manufacturing Company. (See Doolittle, T. B., assignor.)						
Wattles, J. W., Canton, Mass. Spinning-ring	199,604	Jan. 22	920	269	13	168
Wegmann, F., Naples, Italy. Machine for preparing and treating middlings	199,605	Jan. 22	921	270	13	168
Wheeler, J. E., Lynn, and D. B. Loring, Boston, Mass. Horseshoe-nail machine	199,483	Jan. 22	791	232	13	148
White, S. S. (See Gilbert, J. W., assignor.)						
White, S. S. (See Starr, E. T., assignor.)						
Whiting, J. C. (See Babcock, Whiting, and Chamberlain.)						
Whitney, B. D., Gardiner, Me. Saw-mill head-block	199,386	Jan. 22	699	265	13	133
Whitney, B. D., Gardiner, Me. Saw-mill dog	199,387	Jan. 22	700	265	13	133
Whitwell, T., South Stockton, England. Apparatus for heating air and gases	199,388	Jan. 22	701	{265 266 267}	13	133
Williams, H. S., Boston, Mass. Newspaper-file	199,606	Jan. 22	923	270	13	168
Wilson, F. L., Mason, Mich. Wash-board	199,607	Jan. 22	924	271	13	168
Winchester, E. S., assignor of one-half interest to H. K. Flagler, Boston, Mass. Rock-drill	199,389	Jan. 22	703	{207 208}	13	133
Winslow, G. S., Cedar Rapids, Iowa. Gasket for car-axle boxes	199,390	Jan. 22	705	208	13	134
Wiesinger, T. W., West Milton, Ohio. Auger	199,391	Jan. 22	707	208	13	134
Woerd, C. V., assignor to American Watch Company, Waltham, Mass. Potances for watches	199,392	Jan. 22	707	208	13	134
Woodbridge, T. F., and A. P. Gerlach, Mendota, Ill. Treadle-motion	199,484	Jan. 22	792	233	13	148
Wright, J. L., Wilmot, Wis. Corn-dropper for planters	199,485	Jan. 22	793	233	13	148
Walker, F. C., Indianapolis, Ind. Carpet-cleaner	199,880	Jan. 29	1210	355	13	220
Walls, J. R., Chicago, Ill. Heating and ventilating stove	199,672	Jan. 29	1018	296	13	190
Walther, D., Detroit, Mich. Stove-leg	199,763	Jan. 29	1100	323	13	204
Watkins, G. A. (See Pattengell, H., assignor.)						
Watson, W. W., Montrose, Pa. Calendar	199,764	Jan. 29	1101	323	13	204
Weed, L. A., Brooklyn, N. Y. Paper pillow-sham	199,881	Jan. 29	1211	355	13	220
Weichhart, J., San Francisco, Cal. Hay-cutter	199,882	Jan. 29	1211	356	13	220
Wellington, D., Boston, assignor to E. C. Aldrich, Hyde Park, Mass. Lavatory apparatus	199,765	Jan. 29	1102	323	13	204
Wells, F. E. and F. O., Greenfield, Mass. Screw-cutting die	199,673	Jan. 29	1019	297	13	191
Wells, F. O. (See Wells, F. E. and F. O.)						
Wells, G. A., Hopkinsville, Ky. Writing-ink	199,883	Jan. 29	1212	.....	13	221
Wells, G. W., Middletown, Conn. Thill-coupling	199,884	Jan. 29	1213	356	13	221
Werdermann, R., London, England. Electro-magnetic traction device for locomotives, &c.	199,885	Jan. 29	1214	{356 357}	13	221
West, W. B., Wilmington, Ohio. Rubber cushion for vehicle-springs	199,886	Jan. 29	1215	357	13	221
Western Union Telegraph Company, *et al.* (See Smith, G., assignor.)						
White, S. S. (See Poor, C., assignor.) (Reissue.)	199,766	Jan. 29	1102	324	13	204
Whitehouse, W. T., Boston, Mass. Pocket-knife	199,674	Jan. 29	1020	297	13	191
Whitney, G. A., La Grange, Ohio. Harvester-knife attachment for grindstones	199,767	Jan. 29	1103	324	13	204
Whitney, G. E., Winchester, assignor to L. O. Robertson, trustee, Boston, Mass. Manufacture of horseshoe-nails	199,768	Jan. 29	1105	324	13	204
Whittier, W. H., Fremont, Nebr. Feed-cooker	199,887	Jan. 29	1216	357	13	221
Wight, P. B., Chicago, Ill., assignor of one-half interest to H. B. Merrell, Morristown, N. J., and T. Ferguson, Detroit, Mich. Fire-proof column						
Wilcox, D. S. (See Chapman, S. J., assignor.)						
Wilcox Silver Plate Company. (See Babbitt, S. W., assignor.)						
Williams, M., St. Johnsville, N. Y. Horse-power chain	199,769	Jan. 29	1106	324	13	205
Wise, J. (See Mattocks and Wise.)						
Wolf, H. L. R., Dayton, Ohio. Paper dish	199,675	Jan. 29	1021	297	13	191
Wolf, J. G., New York, N. Y. Stopper-fastening attachment to bottling-machines	199,888	Jan. 29	1217	357	13	221
Worley, C. (See Miller and Worley.) (Reissue.)						
Wright, A. W., New Haven, Conn., assignor to A. L. Bogart, New York, N. Y. Electric attachment for gas-burners	199,676	Jan. 29	1021	297	13	191
Wright, J. T., Columbia, Tenn. Seed-dropper	199,889	Jan. 29	1218	358	13	221
Walker, J. H., Worcester, Mass. Wax-thread sewing-machine	200,111	Feb. 5	222	68	13	267
Warden, W., Minnesota Junction, Wis. Wire fence	199,946	Feb. 5	58	19	13	242
Warden, W., Minnesota Junction, Wis. Barbed fence	199,947	Feb. 5	59	19	13	242
Waring, J. B., Stamford, Conn., assignor of one-half interest to W. O. Allison, New York, N. Y. Mechanism for opening and closing doors or covers of hoistways	200,112	Feb. 5	224	68	13	267
Weber, J., *et al.* (See Verniaud, C., assignor.)						
Weed, C., Charlestown, Mass., assignor to Davidson Rubber Company. Cut-off for flexible pipes	200,113	Feb. 5	226	69	13	267
Werner, J. F., assignor to W. C. Spellman, New York, N. Y. Clock-advertiser	200,009	Feb. 5	112	37	13	251
Whitaker, G. E., Hudson, Mass. Wagon-top	200,010	Feb. 5	113	37	13	251
Whitney, E. R., Magog, Quebec, Canada. Harvester cutter-bar	200,114	Feb. 5	226	69	13	267
Whitney, T. J. (See Hall and Whitney.)						
Wiles, T. S., Albany, N. Y. Ironing-machine	200,011	Feb. 5	113	38	13	251
Williams, H. M., Coldwater, Mich. Spindle and flier for spinning machinery	200,115	Feb. 5	227	69	13	268
Williams, W., *et al.* (See Lauffer, S. D., assignor.)						
Wilson, J. G., New York, N. Y. Connecting blind-slats	199,946	Feb. 5	60	19	13	242
Witter, E. M. (See Reno, W., assignor.)						
Wood, G. W., assignor of one-half interest to H. T. Davis, Athens, Tenn. Clothes-pounder	200,116	Feb. 5	228	70	13	268
Wadsworth, H., Hohokus township, Bergen county, N. J., assignor to Hopkins and Dickinson Manufacturing Company, New York, N. Y. Lock for sliding doors	200,366	Feb. 12	490	144	13	316
Walton, G., assignor of one-half interest to J. Gordon, Cincinnati, Ohio. Reflector for gas-burners	200,233	Feb. 12	346	103	13	293
Webster, U. L., New Haven, Conn. Adjustable pattern for garments	200,234	Feb. 12	347	104	13	293
White, J. A., assignor to A. F. Blair, Philadelphia, Pa. Wire guide for paper-machines	200,367	Feb. 12	492	144	13	316
Whitney, R. W., New York, N. Y., assignor to Wilson Sewing Machine Company, Chicago, Ill. Lock for drawers. (Reissue)	8,079	Feb. 12	497	146	13	317
Williams, E., assignor to himself and C. W. Lamphere, Norwich, N. Y. Valve-gear for steam-engines	200,368	Feb. 12	493	145	13	317
Williamson, R. B., Washington, D. C. Air-cooling apparatus	200,157	Feb. 12	277	83	13	284
Wilson Sewing Machine Company. (See Whitney, R. W., assignor.) (Reissue.)						
Wolf, J. G., New York, N. Y. Alarm-lock	200,235	Feb. 12	348	104	13	295
Wolfrom, E. J., Washingtonville, Ohio. Ironing-board	200,158	Feb. 12	277	83	13	284
Wood, I. N., and A. Morton, Wilmington, Del. Sash-fastener	200,236	Feb. 12	350	104	13	295

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Woodward, C. R. (See Dinkle and Woodward.)						
Wright, M. I. (See Howard, J. R., assignor.)						
Wroth, L., assignor of two-thirds interest to G. W. Kirby and L. Thornburg, Winterset, Iowa. Steam feed-cooker	200,237	Feb. 12	351	104	13	296
Wyckoff, C. P., Mobile, Ala. Boat-detaching apparatus	200,159	Feb. 12	279	83	13	284
Wyscawer, J. K. (See Goldman, I. S., assignor.)						
Waddell, J. O., Newark, N. J. Faucet	200,416	Feb. 19	546	161	13	333
Wakeman, H., New York, N. Y. Journal for car-axles, shafting, &c	200,492	Feb. 19	620	182	13	344
Wakeman, H., New York, N. Y. Armor for flexible tubing	200,493	Feb. 19	621	183	13	344
Wallace & Sons. (See King, J., assignor.)						
Walter, R. L., Washington, D. C. Drawing-pen	200,588	Feb. 19	714	210	13	359
Walton, A. (See Stevern, G. F., assignor.)						
Ward, C. (See Bartlett and Ward.)						
Warner, W. R., Philadelphia, Pa. Machine for printing pills	200,589	Feb. 19	715	210	13	359
Washburn, C. F., Worcester, Mass. Barbed fence-wire	200,494	Feb. 19	621	183	13	344
Washburn & Moen Manufacturing Company. (See Borst, W. E., assignor.)						
Washburn & Moen Manufacturing Company. (See Davis, C. S., assignor.)						
Waterbury Clock Company. (See Northrop, H. D., assignor.)						
Weber, F. C., Brooklyn, and F. Kruse, New York, N. Y. Vest of paper and other materials	200,417	Feb. 19	547	162	13	333
Weigand, A. (See Schreiber and Wiegand.)						
Werner, R. B., St. Joseph, Mo. Combined planter, land-roller, and fertilizer-distributer	200,590	Feb. 19	716	211	13	359
Western Electric Manufacturing Company. (See Farrar, W. B., assignor.)						
White, W. M., Milford, Mich. Hand-rake	200,592	Feb. 19	719	211	13	359
Whitney, B., Rahway, N. J. Grinding-mill. (Reissue)	8,098	Feb. 19	739	216	13	362
Whitney, B., Rahway, N. J., assignor to W. L. Teter. Grinding-mill. (Reissue)	8,097	Feb. 19	738	216	13	362
Whitney, D. D., Beverly, N. J. Thill-coupling	200,591	Feb. 19	718	211	13	359
Wickham, H., Jr., Wankegan, assignor of one-half interest to H. P. Caldwell, Chicago, Ill. Hand branding-stamp	200,418	Feb. 19	548	162	13	333
Wiles, T. S., Albany, N. Y. Ironing-machine	200,419	Feb. 19	549	162	13	333
Williams, M. D., Syracuse, N. Y. Ballot-box	200,495	Feb. 19	622	183	13	345
Willoughby, A. H., Lowell, Mass. Strainer for faucets and water-pipes	200,496	Feb. 19	623	183	13	345
Willson, O. (See Fahnestock and Powell, assignors.)						
Winhofer, J. (See Cunningham, Winhofer, and Rice.)						
Woodward, H. F., New York, N. Y. Overalls. (Reissue)	8,093	Feb. 19	734	215	13	362
Woolcocks, G. O. (See Woolcocks, T. J. and G. O.)						
Woolcocks, T. J. and G. O., Jersey City, N. J. Speaking-tube	200,420	Feb. 19	552	163	13	334
Walker, H. W., and T. L. Patterson, Greenock, Scotland. Flavored sirup	200,780	Feb. 26	929	.....	13	399
Walker, W. B., Boston, Mass. Clasp for supporting garments	200,633	Feb. 26	776	228	13	376
Walsh, T., Montreal, Canada. Rotary water-meter	200,676	Feb. 26	826	243	13	383
Webster, E. A., Springfield, assignor to G. H. Stark, Palmer, Mass. Name-plate for door-knobs, &c	200,634	Feb. 26	776	229	13	376
Welch, T. C., Cincinnati, Ark. Washing-machine	200,635	Feb. 26	777	229	13	376
Wellington, H., Green Point, N. Y. Gasoline cooking-stove	200,636	Feb. 26	778	229	13	376
Wells, I., East Hampton, Conn., assignor of one-half interest to J. F. Post, Wilmington, N. C. and D. D. Barber, Sumter county, S. C. Drench-wheel for hides and skins	200,807	Feb. 26	955	281	13	403
Wendel, A. (See Hunt and Wendel.)						
West, J. B., Geneseo, N. Y. Machine for setting tires	200,637	Feb. 26	782	230	13	377
Weston, E., assignor one-half interest to Roberts & Havell, Newark, N. J. Dynamo electric machine. (Reissue)	8,102	Feb. 26	966	284	13	405
Wetmore, G. C., New York, and F. S. Rice, Ticonderoga, N. Y. Dry-ore separator	200,808	Feb. 26	956	281 282	13	403
Wetzel, E., *et al.* (See Condon, W. F., assignor.)						
White, J. J., Smithville, N. J. Chain-making machine	200,677	Feb. 26	827	243 244	13	383
Whitney, J. F., Hartford, Conn. Check-valve	200,678	Feb. 26	829	244	13	384
Wilder, E., South Hingham, Mass. Device for driving horses	200,781	Feb. 26	929	273	13	399
Willershausen, S., and F. Rhoner, New York, N. Y. Rocking-chair	200,809	Feb. 26	757	232	13	403
Williams, J. S., St. Louis, Mo. Water-motor	200,679	Feb. 26	830	244	13	384
Willis, J. M., Richmond, Ky. Pump	200,782	Feb. 26	930	273	13	399
Wilson, B. A., Providence, R. I. Door-plate	200,810	Feb. 26	958	283	13	403
Wing, L. T. L., Cambridge, assignor of one-half interest to H. O. Hendrikson, Sheldahl, Iowa. Fence-barb	200,783	Feb. 26	931	274	13	399
Woelfel, C., and J. Massey, Chester, Pa. Gigging-machine for napping cloth	200,784	Feb. 26	932	274	13	399
Wolfe, G. G., assignor to W. F. Wolfe, Troy, N. Y. Cooking-stove	200,811	Feb. 26	959	283	13	403
Wolfe, W. F. (See Wolfe, G. G., assignor.)						
Woodbury, J. H., Albany, N. Y. Instep-holder	200,785	Feb. 26	933	274	13	399
Woodruff, O. D., Southington, Conn. Machine for separating iron from foundry refuse	200,638	Feb. 26	784	230	13	377
Woolson, A. N. (See Frost, H. S., assignor.)						
Wakefield, J. E., assignor to E. W. Vaill, Worcester, Mass. Folding chair	200,953	Mar. 5	129	42	13	435
Wallace, F. G., Jackson, assignor to A. E. Hawes and J. Webster, Detroit, Mich. Bed-stone support for grinding-mills	201,071	Mar. 5	249	79	13	452
Wallace, G. T., Mansfield, Ohio. Table-leaf support	200,954	Mar. 5	130	43	13	436
Walrath, A. (See Wieting, A., assignor.)						
Walton, T., Wheeling, West Va. Globe for lamps, &c	201,072	Mar. 5	250	79	13	453
Ward, P. J., St. Mary's, Ind. Cultivator	200,955	Mar. 5	130	43	13	436
Warner, I. D., Bridgeport, Conn. Corset. (Reissue)	8,114	Mar. 5	263	82	13	454
Warren, A. E. (See Berdan and Warren.)						
Weber, E. R., San Francisco, Cal. Watchmaker's oil-cup	200,883	Mar. 5	68	24	13	425
Webster, C. M., assignor to N. Lyon, Albany, N. Y. Show-bracket for drawers and boxes	201,073	Mar. 5	251	79	13	453
Webster, J., *et al.* (See Wallace, F. G., assignor.)						
Weiss, C. H., Eckley, Pa. Brake for light vehicles	200,956	Mar. 5	132	43	13	436
Welch, E. B. (See Anders, G. L., assignor.)						
Western Union Telegraph Company. (See Edison, T. A., assignor.)						
Wheeler, G., New Springville, N. Y. Hammock-support	201,074	Mar. 5	252	79	13	453
Wheeler, H. N., *et al.* (See Betts, L. F., assignor.)						
Whitehead, J., Central City, Col. Dough-raiser	200,957	Mar. 5	132	43	13	436
Whitehead, J., Central City, Col. Cake-cutter	200,958	Mar. 5	133	44	13	436
Whiting, A. F., Norwich, Conn. Seal-lock	201,076	Mar. 5	254	80	13	453
Whiting, E. H. (See Whiting, J. M., assignor.)						
Whiting, J. M., assignor of one-half interest to E. H. Whiting, Providence, R. I. Car wheel and axle	200,884	Mar. 5	69	24	13	426
Whitney, L. W. G., *et al.* (See McLean, A., assignor.)						
Whittlesey, G. D., New London, Conn. Printer's quoin	201,075	Mar. 5	25	80	13	453
Wiel, A., Baltimore, Md. Postal-card file	201,077	Mar. 5	255	80	13	453

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Wieting, A., assignor of one-half interest to A. Walrath, Fort Plain, N. Y. Nut	200,959	Mar. 5	134	44	13	436
Willard, J. G., New York, N. Y. Hydraulic elevator	201,078	Mar. 5	256	80	13	453
Wilson, E., Otto, N. Y. Spring-back for vehicle-seats	200,960	Mar. 5	135	44	13	436
Winchell, J. F., Springfield, Ohio. Force-feed for grain-drills	201,079	Mar. 5	257	81	13	453
Woods, G., Cambridgeport, Mass. Piano case and frame	200,850	Mar. 5	37	13	13	420
Woods, G., Cambridgeport, Mass. Reed-organ	200,851	Mar. 5	38	13, 14	13	421
Worick, J., Ames, Iowa. Grain-separator	201,080	Mar. 5	258	81	13	454
Wagner, D. S., Carlisle, Pa. Cultivator	201,136	Mar. 12	322	99	13	470
Ward, W. H., Auburn, N. Y. Car-coupling	201,312	Mar. 12	505	156	13	496
Ward, W. H., Auburn, N. Y. Car-brake	201,313	Mar. 12	507	156	13	496
Waring, A. B., Yonkers, N. Y. Curling hat-brims	201,137	Mar. 12	323	99	13	470
Warner, H., East Boston, Mass. Music-rack	201,314	Mar. 12	511	156	13	496
Watkins, J., and J. R. Carey, Somerville, Mass. Nutmeg-grater	201,138	Mar. 12	324	99	13	470
Watson, S. (See Ogborn, H., assignor.)						
Watterson, J. A. (See Morel and Fletcher, assignors.)						
Watts, J. E., Lawrence, Mass. Steam or water pressure regulator. (Reissue)	8,124	Mar. 12	526	161	13	498
Way, W. J., assignor of one-half interest to T. C. Chapman, Berlin Heights, Ohio. Sash-holder	201,315	Mar. 12	512	157	13	496
Weis, J. (See Bevins, Weis, and Phillips.)						
Weller, J. C., Valparaiso, Ind. Coffee-pot	201,139	Mar. 12	325	99	13	470
Wellman, S. T., Cleveland, Ohio. Roll for rolling plate-metal	201,211	Mar. 12	392	121	13	481
Weston, E., Newark, N. J. Oiler	201,140	Mar. 12	326	100	13	471
Wheaton, M. A. (See Vincent and Wheaton.)						
Whitin, A. F. (See Trowbridge, C. E., assignor.)						
Wiesebrock, F. W., Brooklyn, N. Y. Effervescent liquid-drawing apparatus	201,141	Mar. 12	327	100	13	471
Wiesebrock, F. W., Brooklyn, N. Y. Glass-lined fountain	201,142	Mar. 12	329	100 101	13	471
Wiesebrock, F. W., Brooklyn, N. Y. Apparatus for drawing effervescent liquids	201,212	Mar. 12	393	121	13	481
Wight, P. B., Chicago, Ill., assignor of one-half interest to H. B. Merrell, Morristown, N. Y. Draw-bridge gate	201,316	Mar. 12	513	157	13	497
Wiley, W. B. (See Amwake, W. F. H., assignor.)						
Willis, W. N., Trappe, Md. Apparatus for converting motion	201,143	Mar. 12	330	101	13	471
Wilson, G. F., Athens, Tenn. Fan attachment	201,318	Mar. 12	515	157	13	497
Wilson, M., London, England. Stench-trap	201,317	Mar. 12	514	157	13	497
Winslow, G. S., Cedar Rapids, Iowa. Switch head-chair	201,213	Mar. 12	393	121	13	481
Winslow, J. L., Portland, Me. Locomotive and fire-box boiler	201,214	Mar. 12	395	122	13	482
Withington, C. B. (See Baker and Withington.)						
Withington & Cooley Manufacturing Company. (See Beebe, C. T., assignor.)						
Wolfe, H. S., Elkhart, Ind. Gate	201,319	Mar. 12	516	158	13	497
Worcester Corset Company. (See Marble, W. A., assignor.)						
Wade, T. I., Stilson, Kan., assignor of one-half interest to T. A. McCormick. Plow	201,576	Mar. 19	791	241	13	543
Walker, E. K., Exeter, N. H. Medicine-spoon	201,369	Mar. 19	579	178	13	514
Walker, J. H., Worcester, Mass. Device for stretching boot-legs	201,370	Mar. 19	580	179	13	514
Walter, W. P., Philadelphia, Pa. Combined bevel, square, and level	201,371	Mar. 19	581	179	13	514
Wansbrough, E., and W. W. Speer, assignor to A. Speer & Sons, Pittsburg, Pa. Plow-cutter	201,470	Mar. 19	679	207	13	528
Ward, E. (See Graham and Ward.)						
Washburn and Moen Manufacturing Company. (See Dodge, T. H., assignor.)						
Waterhouse, R., New York, N. Y. Scarf-ring	201,577	Mar. 19	792	241	13	543
Weed, C. A., assignor to Case, Whiting & Co., Racine, Wis. Plow	201,471	Mar. 19	680	207	13	528
Weidmann, A. (See Dahler and Hoffmann, assignors.)						
West, J. B., Geneseo, N. Y. Screw-driver	201,372	Mar. 19	582	179	13	514
Westcott, J. M., and J. L. Halteman, assignors to Hoosier Drill Company, Milton, Ind. Seeding-machine	201,578	Mar. 19	793	241	13	543
Wheeler, C., Jr., Auburn, N. Y. Harvester	201,579	Mar. 19	794	242 243	13	543
White, J. A. (See Gordon, E. F., assignor.)						
White, J. T., Arlington, assignor of one-half interest to R. S. Merrill, Boston, Mass. Key-fastener	201,373	Mar. 19	583	179	13	514
Wilcox, A. (See Crocker and Wilcox.)						
Will, N., Brooklyn, N. Y. Gas-burning furnace	201,581	Mar. 19	799	243	13	544
Williams, D., West Philadelphia, Pa. Funnel	201,472	Mar. 19	681	208	13	528
Williams, J. O., Toledo, Ohio. Artificial marble	201,580	Mar. 19	798	.....	13	544
Wilmsmann, W., Hagen, Prussia. Apparatus for manufacturing wire	201,582	Mar. 19	800	244	13	544
Wilson, C. H., Chicago, Ill. Apparatus for neutralizing the effects of induced electrical currents	201,374	Mar. 19	583	180	13	514
Wilson Packing Company. (See Haines, P. P., assignor.)						
Wilson, W., Jr. (See Green and Wilson.) (Reissue.)						
Wolbrecht, J. M., assignor to J. Sherman and W. T. Hotchkiss, Washington, D. C. Instrument for transmitting diagrams	201,473	Mar. 19	661	208	13	528
Woods, G., Cambridgeport, Mass., assignor to himself and G. P. Carter. Drying lumber. (Reissue)	8,129	Mar. 19	810	247	13	546
Wotring, J. F., Ogden Centre, Mich. Ditching-machine	201,474	Mar. 19	663	209	13	529
Wright, E. M. (See Pratt, O., assignor.)						
Wright, T. R., Philadelphia, Pa. Scissors	201,475	Mar. 19	685	209	13	529
Wright, W. H., Rochester, N. Y. Vehicle-wheel hub	201,583	Mar. 19	801	244	13	544
Wynkoop, L. D., Owosc, Mich. Turbine water-wheel	201,584	Mar. 19	802	244	13	544
Waddle, M. (See Sample, Grantham, Ward, and Waddle.)						
Waite, W. T., Kansas City, Mo., assignor of two-thirds interest to G. H. and J. F. Conover. Piano-action	201,852	Mar. 26	1079	328	13	589
Wakefield, J. E., Worcester, Mass. Folding table	201,723	Mar. 26	948	290 291	13	570
Walker, H. A., Ramaleburg, N. C. Saw-cleaner for cotton-gins	201,724	Mar. 26	950	291	13	571
Wallace, J. I., *et al.* (See Hoffman, A. D., assignor.)						
Walthall, L. B. (See Covert, Garner, and Walthall.)						
Walworth, C. C., Boston, Mass. Steam-boiler	201,638	Mar. 26	871	265	13	558
Ward, G. J., Jr., San Francisco, Cal. Cooking apparatus	201,725	Mar. 26	950	291	13	571
Ward, W. M. (See Sample, Grantham, Ward, and Waddle.)						
Watkeys, H., Syracuse, N. Y. Car-axle	201,726	Mar. 26	951	291	13	571
Weible, C. E., St. Petersburg, Pa. Working-barrel for oil-pumps	201,853	Mar. 26	1080	328	13	589
Weimer, J., West Alexandria, Ohio. Double vertical mill	201,854	Mar. 26	1081	328 329	13	589
Weston, E., assignor of one-half interest to Roberts and Havell, Newark, N. J. Dynamo-electric machine. (Reissue)	8,141	Mar. 26	1104	334	13	592

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Wheeler, J. E., Lynn, and D. B. Loring, Boston, said Wheeler assignor to himself, J. E. Russell, Leicester, Mass., and C. W. Russell, New York, N. Y., trustees. Machine for finishing horseshoe-nails	201,727	Mar. 26	952	292	13	571
Wheeler, N., Bridgeport, Conn. Refrigerator	201,639	Mar. 26	872	265	13	559
White, G. M., New Haven, Conn. Combined bed and life-raft	201,728	Mar. 26	954	292	13	571
White, R., Lowell, Mass. Charging-magazine for revolvers	201,855	Mar. 26	1082	329	13	590
Williams, G. W., Sr., *et al.* (See Murdock, E. R., assignor.)						
Wilson, G. M., Zaleski, Ohio. Wagon-brake	201,856	Mar. 26	1085	330	13	590
Wilson, W., Jr. (See Green and Wilson.)						
Winsor, J. J., East Saginaw, Mich. Car-heater	201,857	Mar. 26	1086	330	13	590
Wisner, A., Bridgeport, Conn. Apparatus for applying button-staples to shoes, &c	201,858	Mar. 26	1086	330	13	590
Wood, B. L., Taunton, Mass. Car-window	201,859	Mar. 26	1088	331	13	590
Woodward, E. (See Copeland, Woodward, and Brock.) (Reissue.)						
Wormser & Co., S. (See Feltheimer, A., assignor.)						
Worth, S. L., and J. H. Pontifex, London, England. Water-proof garment	201,640	Mar. 26	873	266	13	559
Wright, W. H. (See Strohm, S. D., assignor.)						
Wygant, J. H., assignor to W. H. De Wolf and J. B. Bogert, Hackensack, N. J. Wheeled toy	201,729	Mar. 26	955	292	13	571
Wash, J., Mount Sterling, Ill. Bee-hiver	201,964	Apr. 2	100	29	13	614
Wash, J., Mount Sterling, Ill. Device for removing bees from honey-boxes	201,965	Apr. 2	101	29	13	614
Waterston, P., Edinburg, Scotland. Sewing-machine	201,966	Apr. 2	101	29, 30	13	614
Weems, T. P. S., Youngers, Mo. Cultivator	202,079	Apr. 2	218	64	13	630
Weinhagen, H., Brooklyn, N. Y. Atomizer	201,967	Apr. 2	102	30	13	614
Weiss, A. R., Brooklyn, N. Y. Bottle-stopping machine	202,080	Apr. 2	220	64	13	630
Weston Dynamo Electric Machine Company. (See Weston, E., assignor.)						
Weston, E., assignor to Weston Dynamo Electric Machine Company, Newark, N. J. Dynamo-electric machine	201,968	Apr. 2	103	30, 31	13	614
Wheatley, J. W., assignor to himself and S. D. Embrey, Rappahannock Station, Va. Fertilizer-distributer	202,081	Apr. 2	222	64, 65	13	630
Wheeler, C. A., *et al.* (See Craig, G. W., assignor.)						
White, H. K. (See Knight, S., assignor.)						
Whiteman, L. P., New York, N. Y. Jar for preserves and fruits	201,969	Apr. 2	105	31	13	614
Whitney, L., Delaware county, Ind. Rotary churn	201,900	Apr. 2	41	11	13	605
Whittemore, J. M., Bridesburg, Pa. Breech-loading fire-arm	201,970	Apr. 2	106	31, 32	13	614
Whittemore, S. E., Bristol, R. I. Rubber boot and shoe	202,082	Apr. 2	223	65	13	630
Whittier, S. T., East Corinth, Me. Ademeter	201,901	Apr. 2	43	11	13	605
Wiegman, F. (See Fulmer and Wiegman.)						
Wiley, J. A. (See Belne, J. F., assignor.)						
Wilkinson, L., Brooklyn, N. Y. Atomizer	201,898	Apr. 2	39	11	13	604
Williams, G. R., Dardanelle, Ark. Bale-weighing scales	201,972	Apr. 2	110	32	13	615
Wilson, R., Toledo, Ohio. Machine for purifying and compressing air	202,083	Apr. 2	224	65	13	630
Wilson, H. G., Cincinnati, Ohio. Printer's distributing-galley	201,971	Apr. 2	108	32	13	615
Wilson, T. F., Rochester, Pa. Grate-fender	202,084	Apr. 2	225	65	13	631
Winship, C. A., Brooklyn, N. Y. Sewer-trap	201,899	Apr. 2	41	11	13	605
Withey, A. E., *et al.* (See Collyer, C. W., assignor.)						
Withington and Cooley Manufacturing Company. (See Beebe, C. T., assignor.)						
Wolf, J. G., New York, N. Y. Artificial tree	202,085	Apr. 2	225	66	13	631
Wright, L. W., Brooklyn, N. Y. Apparatus for bleaching or dyeing	201,973	Apr. 2	110	32	13	615
Wright, W. L., Hudson, N. Y. Ventilator for corn-cribs	202,086	Apr. 2	226	66	13	631
Waddill, A. K., Denison, Tex. Car-seat lock	202,308	Apr. 9	475	139	13	670
Wagner, J., Grand Rapids, Wis. Saw-sharpening machine	202,309	Apr. 9	476	139	13	670
Walker, G. W., Malden, Mass. Cooking-stove	202,204	Apr. 9	368	108	13	655
Walker, G. W., Malden, Mass. Cooking-stove	202,205	Apr. 9	369	108	13	655
Walker, O. E., Jamestown, N. Y. Machine for mixing meat	202,206	Apr. 9	370	108	13	655
Walsh, J. E., New York, N. Y. Store-house	202,311	Apr. 9	477	{139 / 140}	13	671
Walter, W., Latrobe, Pa. Nut-lock	202,310	Apr. 9	477	139	13	670
Warner, F. F. (See Brady and Warner.)						
Warner, J. B., assignor to himself and G. Sharer, Hagerstown, Md. Friction-clutch for loose and tight pulleys	202,312	Apr. 9	479	140	13	671
Watkins, H. J., *et al.* (See Trowbridge, W. F., assignor.)						
Watkins, H. J., assignor to himself, W. F. Trowbridge, and W. F. Brigham, Hudson, Mass. Overseaming attachment for sewing-machines	202,313	Apr. 9	480	{140 / 141}	13	671
Watkins, H. J., assignor to himself, W. F. Trowbridge, and W. F. Brigham, Hudson, Mass. Wax-thread sewing-machine	202,314	Apr. 9	482	141	13	671
Watson, W. J. (See Keeler, S., assignor.)						
Weber, A., Detroit, Mich. Hose-nozzle	202,207	Apr. 9	370	109	13	655
Wecker, C. T., Offenbach, Germany. Vehicle-wheel hub	202,315	Apr. 9	484	142	13	671
White, A. W., San José, Cal. Pump-valve	202,128	Apr. 9	200	85	13	644
White, J. R. (See Gladwell and White.)						
White, P., and J. C. Knperle, St. Louis, Mo. Hydrant	202,316	Apr. 9	484	142	13	671
White, W. H., Barre, Mass. Milk-cooler	202,129	Apr. 9	201	85	13	644
Whiting, J. M., assignor of one-half interest to J. Carroll, Providence, R. I. Vehicle-hub	202,208	Apr. 9	371	109	13	655
Whitman, M. J., *et al.* (See Whitman, W. G., assignor.)						
Whitman, W. G., assignor of part interest to J. A. Lomax and M. J. Whitman, Chicago, Ill. Bottle-stopper	202,320	Apr. 9	490	143	13	672
Will, J., Long Point, Ill. Washing-machine	202,317	Apr. 9	486	142	13	672
Wilson, J. E., Bridgeport, Conn. Plaiting-machine	202,211	Apr. 9	373	110	13	656
Wilson, W., New York, N. Y. Collar. (Reissue)	8,169	Apr. 9	505	147	13	674
Witsil, G. L., assignor of one-half interest to N. M. Bennett, Philadelphia, Pa. Game apparatus	202,318	Apr. 9	487	143	13	672
Wood, E. A., Utica, N. Y. Air-valve	202,130	Apr. 9	201	86	13	645
Woodhull, A. M., Freehold, N. J. Sandal	202,209	Apr. 9	372	109	13	655
Woods, J., Jr., Somerville, Mass. Carriage-window	202,131	Apr. 9	202	86	13	645
Woolen Fabric Company, (limited.) (See Field, G. B., assignor.)						
Worthen, W. E., and R. S. Gillespie, New York, N. Y. Stop-valve	202,319	Apr. 9	488	143	13	672
Wyman, C. H., St. Louis, Mo. Egg carrier and tester	202,132	Apr. 9	203	86	13	645
Walker, T. (See Bancroft and Walker.) (Reissue.)						
Ward, A. F., Philadelphia, Pa. Tape-measure	202,610	Apr. 16	812	235	13	717
Warren, E. B., Philadelphia, Pa. Gravel roof	202,493	Apr. 16	673	197	13	707
Warren, W. L., *et al.* (See Laird, W. A., assignor.)						
Washburn, A. K., Bridgewater, Mass. Heel-trimming machine	202,494	Apr. 16	674	198	13	709
Washburn & Moen Manufacturing Company. (See Van Derzee, P. L., assignor.)						
Washburne, O., Sing Sing, N. Y. Condenser for cotton-gins	202,611	Apr. 16	812	235	13	717
Watson, J. (See Chapman, J. L., assignor.)						

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Watson, T. A., Boston, Mass. Telephone call-signal apparatus	202,495	Apr. 16	675	198	13	703
Weed, C. A., Racine, Wis. Pillow-sham	202,387	Apr. 16	573	168	13	688
Wenzel, A. E., Callicoon, N. Y. Bee-hive	202,612	Apr. 16	813	235	13	717
Wesson, D. B., Springfield, Mass. Lock for fire-arms	202,388	Apr. 16	573	168	13	688
Wesson, D. B. (See Joslyn, B. F., assignor.)						
Weymouth, J. W., assignor of two-thirds interest to D. R. Ewing and L. M. Sandford, Des Moines, Iowa. Pruning-shears	202,496	Apr. 16	676	198	13	703
Whitcomb, P. W., Washington, D. C. Stocking drier and stretcher	202,498	Apr. 16	678	199	13	703
White, R., Lowell, Mass. Charging magazine and holster for revolvers	202,613	Apr. 16	815	238	13	718
White, S. S. (See Atkinson, W. H., assignor.)						
White, S. S., Philadelphia, Pa. Electro-magnetic dental engine	202,497	Apr. 16	677	{198 / 199}	13	703
Whiting, W. S., Oxford, assignor to C. French, Seymour, Conn. Machine for reducing and pointing wire	202,614	Apr. 16	718	236	13	718
Whittaker, D., assignor of one-half interest to M. C. Whittaker, Milwaukee, Wis. Clothes-sprinkler	202,616	Apr. 16	820	237	13	718
Whittaker, M. C. (See Whittaker, D., assignor.)						
Whittlesey, W. H., and C. T. Noble, Russell, Iowa. Wheel-plow	202,615	Apr. 16	819	237	13	718
Wiesebrock, F. W., Brooklyn, N. Y. Liquid-cooler	202,389	Apr. 16	574	168	13	688
Wight, P. B., Chicago, Ill., assignor of one-half interest to H. B. Merrell, Morristown, N. J., and T. Ferguson, Detroit, Mich. Fire-proof ceiling	202,617	Apr. 16	821	237	13	718
Wild, F. W., Baltimore, Md., assignor to Domestic Sewing Machine Company. Hand-reamer	202,618	Apr. 16	822	237	13	718
Wilkins, W. F., assignor of one-fourth interest to J. T. Sawyer, Montreal, Canada. Washing-machine	202,391	Apr. 16	576	169	13	688
Williams, R. F. (See Kinter and Williams.)						
Williams, T. O., and W. F. Hubbell, Wauseon, Ohio. Gate	202,620	Apr. 16	823	238	13	719
Wills, W. W., Janesville, Wis. Vehicle-spring	202,390	Apr. 16	575	169	13	688
Willson, J. M. (See Leaher, S., assignor.)						
Wilson, J. M., Philadelphia, Pa. Water-closet	202,619	Apr. 16	822	238	13	718
Wilz, J., Santa Cruz, Cal. Pruning-shears	202,499	Apr. 16	679	199	13	703
Wood, H. S., New York, N. Y. Mirror	202,621	Apr. 16	824	238	13	719
Woodmansee, J. A., New Vienna, Ohio. Car-coupling	202,622	Apr. 16	825	{238 / 239}	13	719
Woodrough, J. R., assignor to himself and Woodrough and McParlin, Cincinnati, Ohio. Hand-saw	202,500	Apr. 16	680	199	13	703
Woodrough and McParlin. (See Woodrough, J. R., assignor.)						
Woolsey, J. W., Henderson, Minn. Stove-pipe-joint lock	202,501	Apr. 16	680	200	13	704
Wooster, G. H. (See Robjohn, T., assignor.) (Reissue.)						
Work, A., Providence, R. I., assignor to B. F. Goodrich, Akron, Ohio. Electric hose-coupling	202,392	Apr. 16	577	170	13	689
Wray, D. A. (See Minnes and Wray.)						
Wright, G. G., *et al.* (See Morris J. P., assignor.)						
Waldron, S. M., *et al.* (See Byrne, J., assignor.)						
Wallach, A., New York, N. Y. Swivel-hook	202,898	Apr. 23	1137	326	13	766
Walton, J. J. (See Walton, W. M. and J. J.)						
Walton, W. M. and J. J., New York, N. Y. Lamp	202,621	Apr. 23	908	260	13	738
Waring, G. E., Jr., Newport, R. I. Pocket check-book. (Reissue)	8,199	Apr. 23	1166	335	13	770
Warker, T., New York, N. Y. Apparatus for drawing effervescent liquids. (Reissue)	8,200	Apr. 23	1167	335	13	770
Warren, C. M., Brookline, Mass. Roofing fabric	202,902	Apr. 23	1142	327	13	767
Warth, A., Stapleton, N. Y. Grinding-machine	202,899	Apr. 23	1138	327	13	767
Warth, A., Stapleton, N. Y. Machine for cutting textile fabrics	202,900	Apr. 23	1139	327	13	767
Warth, A., Stapleton, N. Y. Machine for cutting textile fabrics	202,901	Apr. 23	1140	327	13	767
Washburn, M. P., assignor to himself and C. H. Drew, Kingston, Mass. Horse-cleaner	202,769	Apr. 23	997	287	13	749
Watkeys, H., Syracuse, N. Y. Car-axle	202,622	Apr. 23	909	260	13	738
Watson, W. S., *et al.* (See Batchelder, A. G., assignor.) (Reissue.)						
Watt, G., Sr., Richmond, Va. Harrow	202,903	Apr. 23	1143	328	13	767
Watters, J., New York, N. Y. Buckle loop and fastener for carriage-tops, harness, &c	202,683	Apr. 23	910	260	13	738
Wendell, F. H. (See Darling, Parshall, and Wendell.)						
West, T. P., Danvers, Mass. Sewing-machine presser-foot	202,771	Apr. 23	998	287	13	750
West, W., and W. F. Spittle, Birmingham, England. Button	202,684	Apr. 23	911	260	13	739
Westcott, N., Morrisville, N. Y. Fence	202,905	Apr. 23	1144	328	13	767
Weston, W. L. R., New Milford, Pa. Side-spring vehicle	202,904	Apr. 23	1143	328	13	767
Westwood, J. T., assignor of one-third interest to A. Reitz, Wheeling, W. Va. Elevating-cupboard	202,906	Apr. 23	1145	329	13	767
Wharton Rail Road Switch Company. (See Johnston, E. H., assignor.)						
Wheeler, E. S. and J. E., Westport, Conn. Button	202,907	Apr. 23	1146	329	13	767
Wheeler, J. E. (See Wheeler, E. S. and J. E.)						
Whitcher, F. J. and G. A., Hyde Park, Mass. Gelatine lantern	202,687	Apr. 23	914	261	13	738
Whitcher, G. A. (See Whitcher, F. J. and G. A.)						
White, O. A., Norwalk, Ohio. Camp-bed	202,685	Apr. 23	912	261	13	738
White, W. R., Neoga, Ill. Fence	202,686	Apr. 23	914	261	13	738
Wierman, N. A., Bendersville, Pa. Knife-scourer	202,770	Apr. 23	997	287	13	749
Wilkins, J., Baltimore, Md. Treatment of waste from the separation of animal from vegetable fibers	202,910	Apr. 23	1148	.....	13	768
Williams, C. H. (See Phillips and Williams.)						
Wilson, J. E., Chicago, Ill. Trimmer for sewing-machines	202,908	Apr. 23	1146	329	13	767
Wilson, M., Pocahontas, Ark. Combined transplanter and hoe	202,909	Apr. 23	1147	329	13	767
Wimpee, G. W. and W. F., Centre, Ala. Plow	202,688	Apr. 23	916	261	13	738
Wimpee, W. F. (See Wimpee, G. W. and W. F.)						
Winters, M. (See Risdon, J. A., assignor.)						
Wolfley, J. A., White Cloud, Kan. Grain-bin	202,911	Apr. 23	1148	330	13	768
Wood, D. S., assignor to M. Wood, Oswego, Kan. Weather-strip	202,912	Apr. 23	1149	330	13	768
Wood, J. F. (See Milligan and Wood.)						
Wood, M. (See Wood, D. S., assignor.)						
Woodbury, F. P., Rockford, Ill. Attachment for stenciling-pens	202,913	Apr. 23	1150	330	13	768
Wyman, C. E., Martinsburg, Ind. Spark-arrester	202,914	Apr. 23	1151	330	13	768
Wabash School Furniture Company. (See Curtis, R. K., assignor.)						
Wadsworth, H., Hohokus, N. J., assignor to W. H. Rockwell, New York, N. Y. Master-key lock	203,222	Apr. 30	1471	{430 / 431}	13	814
Wadsworth, H., Hohokus, N. J., assignor to W. H. Rockwell, New York, N. Y. Extension-key	203,223	Apr. 30	1473	431	13	814
Wadsworth, H., Genesco, N. Y. Cut-off	203,224	Apr. 30	1474	{431 / 432}	13	814
Wakeman, H., New York, N. Y. Armor for flexible tubing	203,094	Apr. 30	1337	388	13	797
Waldron, A., New York, N. Y. Water-closet seat	203,225	Apr. 30	1476	432	13	814

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Watson, C. R., Indianapolis, Ind. Grain-car door	203,226	Apr. 30	1477	432	13	815
Weed, J. W., assignor to himself and G. H. Currier, Prescott, Iowa. Cheek-piece for head-stalls	203,095	Apr. 30	1337	389	13	797
Wehrli, J. (See Gröbli, Caflisch, and Wehrli.)						
Wehrli, J. (See Gröbli, Rieter, and Wehrli.)						
Wehrli, J. (See Rieter, Wehrli, and Gröbli.)						
West, C., Pittsburg, Pa. Door-check for carriages, &c.	203,227	Apr. 30	1478	432	13	815
Western Union Telegraph Company. (See Edison, T. A., assignor.)						
Wetherbee, J. O. (See Baker, L. J., assignor.) (Reissue.)						
Whaley, B. B., assignor to himself and J. Tiebout, Brooklyn, N. Y. Lemon-squeezer	203,229	Apr. 30	1479	433	13	815
Wheatley, T. J., Wilkesbarre, Pa. Blasting rocks	203,097	Apr. 30	1338	389	13	797
Wheeler, W. L., assignor to himself and W. Noel, Birmingham, Ill. Thill-coupling	203,096	Apr. 30	1338	389	13	797
White, H. K., assignor to Wilcox & White Organ Company, West Meriden, Conn. Organ-reed	203,228	Apr. 30	1478	433	13	815
Whittaker, G. (See Mudge and Whittaker.)						
Wigginton, H. T., Auvvasse, Mo. Animal-trap	202,971	Apr. 30	1222	353	13	782
Wilcox & White Organ Company. (See White, H. K., assignor.)						
Wiley, R. S., Blountsville, Tenn. Stirrup	202,974	Apr. 30	1225	354	13	782
Wilkins, J., Baltimore, Md. Separating animal from vegetable fiber	203,230	Apr. 30	1480	433	13	815
Wilkins, J., Baltimore, Md. Separating animal from vegetable fiber	203,231	Apr. 30	1480	.....	13	815
Wilson, J. L., and R. G. Morrow, Calhoun, Ga. Plow	202,972	Apr. 30	1223	353	13	782
Wilson, T. M., Venice, Pa. Farm-gate	202,973	Apr. 30	1224	354	13	782
Winsor, A. W. A. (See Cooley and Winsor.)						
Woodbury Bros., *et al.* (See McKnight, W., assignor.)						
Woodward, J. H., *et al.* (See McKnight, W., assignor.)						
Wootten, J. E., Philadelphia, Pa. Grate for steam-boiler furnaces	203,233	Apr. 30	1482	434	13	815
Worthington, H., Liverpool, Great Britain. Sash-holder	203,232	Apr. 30	1481	433	13	815
Wright, M. and P. C., Montpelier, Vt. Stone and glass polisher	203,234	Apr. 30	1483	434	13	815
Wright, P. C. (See Wright, M. and P. C.)						
Wright, W., Warrior Station, Ala. Shears for marking stock	203,098	Apr. 30	1339	389	13	797
Wakefield, J. E., Worcester, Mass., assignor to E. W. Vaill. Folding rocking-chair. (Reissue)	8,217	May 7	308	88	13	863
Walker, A. R., Melbourne, assignor of one-half interest to J. McFadyen, Hotham, Victoria. Apparatus for heating water	203,392	May 7	165	47	13	843
Warner, J., Brooklyn, N. Y. Painting-machine for flat surfaces	203,393	May 7	165	48	13	843
Warner, W. T., Plattsburg, N. Y. Hoisting-bucket	203,523	May 7	300	86	13	861
Warren, E. A., assignor of one-half interest to T. J. Moore, Brooklyn, N. Y. Printer's quoin. (Reissue)	8,210	May 7	302	86	13	862
Watkins, J. R., Baltimore, Md. Door-check	203,302	May 7	72	22	13	830
Wayland, E. (See Fleming, Wayland, and Gilliland.)						
Webster, W. P. (See Hart and Webster.)						
Wellman, D. L., Frazee City, Minn. Cultivator	203,394	May 7	167	48	13	843
West, E., Lockport, N. Y. Faucet	203,513	May 7	299	83	13	860
Westmacott, P. G. B., Elswick, England. Machinery for working masses of metal	203,303	May 7	73	22	13	830
Westwood, W. J., and G. Pfleger, South Bend, Ind. Envelope and paper-fastener	203,514	May 7	299	83	13	860
Wheeler, C. H., San Francisco, Cal., and J. A. Bazin, Canton, Mass., assignors, by mesne assignments, to E. and H. T. Anthony & Co. Stereoscope. (Reissue)	8,218	May 7	300	86	13	863
Wheeler, M. W., *et al.* (See Colbrook, C. H., assignor.)						
Wheeler, N., Bridgeport, Conn. Compound for filling the grain of wood	203,304	May 7	76	.....	13	830
Wheeler, R. W., Bushnell, Ill. Machine for cutting spherical bodies	203,515	May 7	290	83	13	861
White, S. S. (See Starr, E. T., assignor.)						
Whitworth, W., *et al.* (See Colbrook, C. H., assignor.)						
Whittaker, J., Green Point, N. Y. Apparatus for engraving glass by means of a sand-blast	203,395	May 7	168	48	13	843
Widney, C. W. (See Kummerer and Widney.)						
Wilber, A., assignor to J. S. Huffman, Belknap, Iowa. Corn-planter	203,305	May 7	76	23	13	830
Willershausen, S. (See Rhoner and Willershausen.)						
Williams, F. M. (See Harris and Williams.)						
Willringhans, G., Newark, N. J. Handle for traveling-bags	203,516	May 7	292	83	13	861
Wilson, F. W., Manchester, N. H. Retort-lifter	203,397	May 7	169	49	13	844
Wilson, J., Beaver Falls, Pa. Gate	203,396	May 7	168	48	13	843
Winters, J. R., assignor of one-fourth interest to J. H. Oyler and T. McGowan, Chambersburg, Pa., Fire-escape ladder	203,517	May 7	293	84	13	861
Wisda, J., Defiance, Ohio. Brace for thrashing-machines	203,398	May 7	170	49	13	844
Wise, T., Ashland, Mass. Fan-blower	203,306	May 7	77	23	13	830
Wood, C. A., Wappinger's Falls, N. Y. Sleeve or collar button	203,308	May 7	79	24	13	831
Woodward, A. (See Bovey, G. C., assignor.)						
Woolsey, J. (See Everson, C. R., assignor.)						
Wootten, J. E., Philadelphia, Pa. Feed-water heater for locomotives	203,518	May 7	294	84	13	861
Work, A., Providence, R. I. Swivel-joint	203,307	May 7	78	23	13	830
Wortman, P. A., Greenville, Mich., assignor, by mesne assignments, to Ashton Valve Company, Hartford, Conn. Feed-water heater. (Reissue)	8,216	May 7	308	88	13	863
Wright, J. D., Worcester, Mass. Pawl-and-ratchet device	203,519	May 7	295	84	13	861
Wyckoff, G. D., Philadelphia, Pa. Buoy	203,399	May 7	170	49	13	844
Wyman, M. L., Boston, Mass. Hydraulic elevator	203,520	May 7	297	85	13	861
Walker, T., Philadelphia, Pa. Revolving ore-roaster	203,600	May 14	606	169	13	908
Waring, J. B., and J. F. Darrow, New York, N. Y., and F. Winters, Jr., St. Paul, Minn., said Waring assignor to said Darrow and Winters. Hydraulic engine	203,601	May 14	607	169	13	908
Warren, E. A., Brooklyn, N. Y. Supplying water to buildings	203,602	May 14	608	170	13	908
Way, F. K., *et al.* (See Way, T. R., assignor.)						
Way, T. R., assignor to himself, F. K. Way, and J. Todd, Springfield, Ohio. Clothes-wringer	203,603	May 14	609	170	13	908
Webb, R. L. (See Mosman and Webb.)						
Webber, C. C., assignor to J. S. Webber, Holyoke, Mass. Fulling-roll	203,680	May 14	477	135	13	892
Webber, J. S. (See Webber, C. C., assignor.)						
Weber, G. E., Opelika, Ala. Car-coupling	203,679	May 14	476	135	13	892
Webster, E. S., Durand, Ill. Fence-post	203,804	May 14	610	170	13	908
Wellington, H., Green Point, and W. Bourke, New York, N. Y. Cigar-lighter	203,605	May 14	611	170 / 171	13	908
Wells, I., East Hampton, Conn., assignor of one-half interest to J. F. Post, Wilmington, N. C., and D. D. Barber, Sumter county, S. C. Railway-chair	203,570	May 14	372	105	13	879
Whealen, C., and L. Knerr, Jr., Dayton, Ohio. Machinery for making paper boards	203,684	May 14	480	136 / 137	13	893
Wheat, F. H., Lowell, Mass. Spinning-ring	203,683	May 14	479	136	13	893
Wheat, J. J., Indianapolis, Ind. Salting and curing meats	203,681	May 14	478	136	13	892
Wheat, J. J., Indianapolis, Ind. Preserving meats	203,682	May 14	478	136	13	892
Wheeler, M., assignor of one-third interest to T. C. Chittenden and J. C. Armstrong, Watertown, N. Y. Rotary water-meter	203,685	May 14	483	137	13	893

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Wheeler & Wilson Manufacturing Company. (See Boynton, E. S., assignor.)						
White, S. S. (See Hartman, A., assignor.) (Reissue.)						
White, S. S. (See How, W. S., assignor.)						
Whiting, G. T., New York, N. Y. Edge for upholstered surfaces	203,806	May 14	613	171	13	909
Whitford, W., Kendallville, Ind. Nut-lock	203,686	May 14	484	137	13	893
Whiton, D. E., West Stafford, Conn. Drill and lathe chuck attachment	203,571	May 14	373	105	13	879
Widmer, J., New Hartford, Conn. Shuttle-motion for looms	203,572	May 14	374	105 / 106	13	880
Wildbore, J. E., Brooklyn, N. Y. Fire-escape	203,687	May 14	485	137	13	893
Williamson Bros. (See Williamson, W. C., assignor.)						
Williamson, W. C., assignor to Williamson Bros., Philadelphia, Pa. Hoisting-machine	203,808	May 14	614	171	13	909
Wilson, G. M., Zaleski, Ohio. Stirrup	203,807	May 14	613	171	13	909
Wilson, S. H. (See Wilson, W. A., assignor.)						
Wilson, W. A., Boston, assignor to S. H. Wilson, Chelsea, Mass. Electric register and time-recorder	203,689	May 14	486	138	13	894
Winchester Repeating Arms Company. (See Hill, M. V. B., assignor.)						
Winchester Repeating Arms Company. (See Sessions, A., assignor.)						
Winslow, J. L., Portland, Me. Boiler-furnace	203,688	May 14	485	138	13	894
Winters, F., Jr. (See Waring, Darrow, and Winters.)						
Woglom, W. H. (See Vanhorn, J. S., assignor.)						
Wolf, D., Avon, Pa. Plow-point	203,690	May 14	489	138	13	894
Woodard, D. J. (See Birge, Woodard, and Rowell.)						
Woodman, H. N., Springfield, Mass. Fire-kindler	203,809	May 14	615	172	13	909
Wainwright, C. C., Bishop Creek, Cal. Medical compound	203,965	May 21	790	.....	13	940
Waite, D. B., assignor to Waite, Smith & Co., Providence, R. I. Button	204,114	May 21	948	272	13	959
Waite, Smith & Co. (See Waite, D. B., assignor.)						
Walsh, T. H. (See Allen, M., assignor.)						
Walton, G. S., Alleyton, Tex. Bee-hive	204,115	May 21	949	272	13	959
Wark, D., Rochester, N. Y. Cigarette for medical purposes	203,861	May 21	680	193	13	925
Warren, G. W. (See Fuller and Warren.)						
Waskey, R., Blue Ridge, Va. Fan-blower	203,966	May 21	790	226	13	940
Watkeys, H., Syracuse, N. Y. Cartridge-loading device	203,967	May 21	791	227	13	940
Watson, W. (See Caldwell and Watson.)						
Watt, S. P., Jamestown, Neb. Velocipede	203,968	May 21	793	227	13	940
Weir, P. T., New York, N. Y. Measuring attachment for refrigerating milk-wagons	203,969	May 21	793	227	13	940
Weisenborn, E., Hoboken, N. J. Bird-cage	203,970	May 21	794	228	13	940
West, A. H., Hamilton, N. Y. Soap	204,116	May 21	950	.....	13	959
Westerman, C. L., Bloomington, Ill. Egg-tester	204,117	May 21	951	272	13	960
Wheeler, F. T., *et al.* (See Gibson, A. P., assignor.)						
White, S. S. (See Starr, E. T., assignor.)						
Whiteford, D., Chicago, Ill. Lamp	203,971	May 21	795	228	13	940
Whitman & Burrell. (See Smith, Freeman, and Burrell, assignors.)						
Wight, G. R. (See Overbaugh, A. W., assignor.) (Reissue.)						
Wight, P. B., Chicago, Ill., assignor of one-half interest to H. B. Merrell, Morristown, N. J., and T. Ferguson, Detroit, Mich. Fire-proof column	203,972	May 21	796	229	13	940
Wiley, J. A., *et al.* (See Davis, H. D., assignor.)						
Wilhelm, J. H., Denver, Colo. Paring-knife	203,862	May 21	681	193	13	925
Willcox, J. E., *et al.* (See Willcox, W. H., assignor.)						
Willcox, W. H., assignor to J. E. Willcox and J. N. Tilden, Peekskill, N. Y. Exercising-machine	203,973	May 21	799	229	13	941
Williams, O. S., *et al.* (See Spalding, O. D., assignor.)						
Williams, T. F., *et al.* (See Spalding, O. D., assignor.)						
Williams, W. L., New York, N. Y. Wagon-spring	203,863	May 21	681	194	13	925
Wilson, H., Chicago, Ill. Cover for holding tablets	204,118	May 21	951	273	13	960
Wilson, F. C., Chicago, Ill. Jacket-can	204,119	May 21	952	273	13	960
Wingate, J. F., Boston, Mass. Dress-maker's square	204,120	May 21	954	273	13	960
Winters, J. D., Grand Island, Cal. Wagon-derrick	203,974	May 21	799	229	13	941
Winters, J. D., Grand Island, Cal. Netting for unloading wagons	203,975	May 21	800	229	13	941
Woerd, C. V., Waltham, Mass. Compensation-balance	203,976	May 21	801	230	13	941
Wolf, A. N., Allentown, Pa. Grinding-mill	204,121	May 21	954	273	13	960
Wood, A., Grand Rapids, Mich. Side-spring vehicle	203,977	May 21	802	230	13	941
Wood, C., Cochranton, Pa. Grain-separator	203,864	May 21	682	194	13	925
Wood & Hughes. (See Van Praag, L., assignor.)						
Woods, J., assignor to B. F. Johnson, Glasgow, Mo. Tobacco-germer	203,978	May 21	803	230	13	941
Wormser & Co., S. (See Feltheimer, A., assignor.) (Reissue.)						
Wythe, W. W., Erie, Pa. Mechanism for imparting motion to speed-recorders	203,865	May 21	683	194	13	926
Wade, W. H., *et al.* (See Heckmann, L., assignor.)						
Wales, W. A., assignor to W. B. Fowle, Newton, Mass. Escapement	204,400	May 28	1268	361	13	1004
Walker, G. S., Erie, Pa. Bed-bottom	204,401	May 28	1268	361	13	1004
Walton Brothers. (See Chandler, R., assignor.)						
Wasmund, H. F., Tecumseh, Nebr. Harrow	204,268	May 28	1131	324	13	986
Watson, W. M., Tonica, Ill. Saw-sharpener	204,402	May 28	1269	361 / 362	13	1004
Webb, W. H., Conneaut, Ohio. Machine for planing and sawing wood	204,403	May 28	1270	362	13	1004
Weed, F., Lynn, Mass. Cutting-board	204,176	May 28	1037	295	13	974
Weeks, J., Buffalo, N. Y. Scale-beam	204,177	May 28	1037	295	13	974
Wessman, C. B., Newbridge, N. J. Game-counter	204,404	May 28	1271	362	13	1004
Wesson, D. R. (See Joslyn, B. F., assignor.)						
Weyman, B. F., Pittsburg, Pa. Snuff-package. (Reissue)	8,264	May 28	1299	369	13	1008
Wheeler, H. N., *et al.* (See Swedberg, C. J., assignor.)						
Wheeler, N. (See Patterson and Wheeler.)						
Whipple, H. J. P., West Meriden, Conn. Toy pistol	204,405	May 28	1272	363	13	1004
White, H., Chicago, Ill., assignor, by mesne assignments, of two-thirds interest to C. H. Fargo & Co. Shoe-tip. (Reissue)	8,263	May 28	1298	369	13	1007
White, T., Quincy, Ill., assignor of one-half interest to D. E. Parris, Troy, N. Y. Stove-damper	204,406	May 28	1273	363	13	1004
Whitney, A. L., Waltham, assignor to himself and T. H. Hussey, Lowell, Mass. Check-rein guide	204,269	May 28	1132	324	13	987
Wiles, G. W., assignor to himself and J. M. Wyllie, Vincennes, Iowa. Post-office apparatus	204,270	May 28	1133	324	13	987
Williams, B., Chicago, Ill. Self-adjusting bridge	204,407	May 28	1274	363 / 364	13	1004
Williams, G., Mystic Bridge, Conn. Car-axle-box slide	204,178	May 28	1038	295	13	975
Williams, L. A. (See Terrell and Williams.)						
Wilson, W. F., Columbia, Pa. Clothes-drier	204,179	May 28	1039	296	13	975

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Winchell, E. H., Chicago, Ill. Railway-car-ventilator valve	204,271	May 28	1133	324	13	987
Wingard, A., San Francisco, Cal. Paddle-wheel	204,180	May 28	1040	296	13	975
Winkler, H. T. (See Stevers and Winkler.)						
Winn Manufacturing Company. (See Dusenbury and Winn, assignors.)						
Winn, W. H. (See Dusenbury and Winn.)						
Witte, E. L., White Mills, Pa. Labeling bottles	204,272	May 28	1134	325	13	987
Wood, H. S., Rob Roy, Ark. Lap-ring	204,273	May 28	1134	325	13	987
Woods, T. J., Westerly, R. I. Lifting-jack	204,408	May 28	1276	364	13	1004
Wormelle, B., Brighton, Mass. Watch-winding device	204,274	May 28	1135	325	13	987
Wyllie, J. M. (See Wiles, G. W., assignor.)						
Wynkoop, J., and J. Y. Bloomingdale, New Salem, N. Y. Bale-tie	204,409	May 28	1277	364	13	1005
Wagner, J. P., Cleveland, Ohio. Machine for making fire-kindlers	204,464	June 4	47	15	13	1019
Waite, W. C., Burlington, Vt. Needle-wrapper	204,465	June 4	48	16	13	1019
Walker, S., assignor of one-half interest to G. F. Hall, Boston, Mass. Shedding mechanism for fancy looms	204,466	June 4	48	16	13	1019
Ward, G. A., Conneaut, Ohio. Feed-cooking apparatus	204,467	June 4	50	16	13	1019
Warner, L. C. (See Tallman, J. C., assignor.)						
Washburn, B. D., Boston, Mass. Sash-pulley	204,468	June 4	51	16	13	1019
Watt, J. H. and S., assignor to themselves and J. W. Watt, Barnesville, Ohio. Car-wheel	204,638	June 4	214	68	13	1043
Watt, J. W. (See Watt, J. H. and S., assignors.)						
Watt, S. (See Watt, J. H. and S.)						
Weed, C., assignor to Davidson Rubber Company, Boston, Mass. Atomizer	204,469	June 4	52	17	13	1020
Wells, C. S., New Haven, Conn. Lighting apparatus	204,639	June 4	214	69	13	1043
Wells, J. C., Warren, Pa. Balance-valve for steam-engines	204,640	June 4	215	69	13	1043
Wheeler, J. E., Lynn, Mass. Car-axle box	204,641	June 4	216	69	13	1043
Wheelock, R. W., *et al.* (See Starkey, D., assignor.)						
Whipple, C. S., New London, Conn., assignor to Goddard Manufacturing Company. Door-check	204,643	June 4	219	70	13	1043
Whiting, E. B., St. Albans, Vt. Brush-machine	204,642	June 4	218	69	13	1043
Whittier, J. G., Attica, Ind. Metallic shank-stiffener for boots and shoes	204,644	June 4	219	70	13	1043
Wiard, E., and G. C. Avery, assignors to B. F. Avery & Sons, Louisville, Ky. Sulky-plow	204,517	June 4	90	30, 31	13	1025
Wilcox, A. (See Crocker and Wilcox.)						
Wilkerson, B. M., Baltimore, Md. Motor-cable for dental engines	204,645	June 4	220	70	13	1043
Wood, C. H., assignor of one-half interest to W. H. Shoudy, Seattle, Wash. Ter. Car-coupling	204,470	June 4	52	17	13	1020
Woodruff, L., Ellensburg, Oreg. Curing fish	204,647	June 4	221	.....	13	1044
Woolley, E., Newark, N. J., assignor to Seeley and Solley, New York, N. Y. Hat-brim	204,646	June 4	221	70	13	1043
Worswick, J. R. (See Prindle, J. A., assignor.)						
Webb, R. L., assignor to Landers, Frary & Clark, New Britain, Conn. Coffee-mill	204,865	June 11	467	135	13	1077
Webber, H. A., Rockton, Ill. Grain-separator	204,778	June 11	371	111	13	1066
Wheeler, E. S. and J. E., Westport, Conn. Button	204,866	June 11	468	136	13	1077
Wheeler, J. E. (See Wheeler, E. S. and J. E.)						
Wheeler, Melick & Co. (See Melick, J. H., assignor.) (Reissue.)						
White, R. B., Chetopah, Kans. Rope-holding device	204,692	June 11	277	86	13	1055
Wight, P. B., Chicago, Ill., assignor of one-half interest to H. B. Merrill and T. Ferguson, Detroit, Mich. Fire-proof column	204,867	June 11	469	136	13	1077
Wilcox Silver Plate Company. (See Babbitt, S. W., assignor.)						
Wilkes, G., Monroe, Iowa. Running-gear for vehicles	204,868	June 11	469	136	13	1077
Willard, H., assignor to himself and F. W. Coe, Vergennes, Vt. Weighing-scales	204,869	June 11	471	137	13	1077
Williams, G. L. (See Randle, H., assignor.)						
Williams, I. O., *et al.* (See Slater, B., assignor.)						
Williamson, R. M., assignor of one-half interest to H. Stevens, Chicago, Ill. Machine for making wooden boxes	204,870	June 11	471	137	13	1078
Wilson, E. L., assignor of one-third interest to W. H. Kellogg, Chicago, Ill. Ironing-machine	204,777	June 11	370	111	13	1066
Wilson, J. S., assignor to W. Cramp & Sons' Ship and Engine Building Company, Philadelphia, Pa. Governor controlling mechanism	204,693	June 11	278	86	13	1055
Wilson, T. M., Moberly, Mo. Hog-cholera compound	204,694	June 11	279	.....	13	1055
Winebrenner, J. A., Jefferson, assignor of two-thirds interest to M. H. Winebrenner and C. A. Emmert, Chicago, Ill. Irrigating device	204,695	June 11	279	86	13	1055
Winebrenner, M. H., *et al.* (See Winebrenner, J. A., assignor.)						
Woodruff Sleeping Car and Parlor Coach Company. (See Robinson, E., assignor.)						
Wooldridge, J. F., J. F. Nystrom, and L. D. Howard, Richmond, Va. Lump-tobacco machine	204,871	June 11	473	137, 138	13	1078
Warden, J. A., Sewickley, Pa. Device for feeding air to furnaces	204,926	June 18	554	161	13	1092
Waring, G. E., Jr., Newport, R. I. Trap for drain, waste, and sewer pipes	204,928	June 18	556	161	13	1092
Warren, M., Penn Yan, N. Y. Clothes-pin	204,927	June 18	555	161	13	1092
Waters, H. H. (See Kennedy, M., assignor.)						
Watters, W. (See Edgcomb, E. F., assignor.)						
Weeke, C., St. Charles, Mo. Heater	205,018	June 18	638	188	13	1104
Weir Plow Company. (See Wilder, C. O., assignor.)						
Welch, J. H., Georgetown, D. C. Bottle-register	205,019	June 18	639	188	13	1104
Welch, J. H., Georgetown, D. C. Bottle-register	205,158	June 18	783	232	13	1123
Wemple, G. W., West Union, Iowa. Horse-boot	205,159	June 18	784	232	13	1123
Wenger, J. B. (See Coffee, G. H., assignor.)						
West, A. J., West's Mills, Mich. Seed-planter	205,020	June 18	641	188, 189	13	1104
Westinghouse, G., Jr., Pittsburg, Pa. Pipe-coupling. (Reissue)	8,291	June 18	798	236	13	1125
Westwater, W. (See Glaze and Westwater.)						
White, H. J., Boston, Mass. Mustard pot and spoon	204,930	June 18	557	162	13	1092
White, J. E., Cincinnati, Ohio. Fare-box	205,022	June 18	642	189	13	1104
White, J. H., assignor to Wilcox and White Organ Company, West Meriden, Conn. Blow-pedal for organs	205,160	June 18	784	232	13	1123
White, J. J., assignor to H. B. Smith Machine Company, Smithville, N. J. Belt-shifting pulley	204,929	June 18	557	162	13	1092
White, S. C., *et al.* (See Merriam, G. P., assignor.)						
Whiting, E. B., and F. E. Daum, Orange, N. J. Hat-pouncing machine	204,931	June 18	558	162	13	1092
Whightsil, P., assignor to himself and E. Harris, Pickerington, Ohio. Nipping and clinching tool	205,021	June 18	642	189	13	1104
Wilcox, J. A., Rocky Hill, Conn. Cow-fetter	204,933	June 18	559	163	13	1093
Wilcox and White Organ Company. (See White, J. H., assignor.)						
Wilder, C. O., Racine, Wis., assignor of one-half interest to Weir Plow Company, Monmouth, Ill. Vehicle-wheel	205,161	June 18	785	233	13	1123
Wilkerson, B. M., Baltimore, Md. Sled	205,162	June 18	786	233	13	1123
Wilkinson, R. R., Jamestown, Mich. Egg-carrier	204,934	June 18	560	163	13	1093

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Williams, G. F. (See Bancroft, G. D., assignor.)						
Williams, R., *et al.* (See Taylor, E. B. assignor.)						
Wingler, H. C., and W. W. Stough, Shippensburg, Pa. Jump-seat for vehicles	204,932	June 18	558	162, 163	13	1093
Winkler, G. H., Augusta, Ga. Siphon	205,163	June 18	786	233	13	1123
Wixson, R., Sparta, Ga. Turning-plow and attachment	205,164	June 18	787	233	13	1124
Wood, G. W., deceased; H. Wood administratrix and assignor to M. M. Stanfield, New York, N. Y. Dress-shield	205,024	June 18	645	190	13	1104
Wood, H., administratrix. (See Wood, G. W., deceased.)						
Woodruff, W. P., assignor of one-half interest to J. A. Baldwin, Chicago, Ill. Piston-packing	205,165	June 18	787	234	13	1124
Worrell, S. E., Hannibal, Mo. Corn and grain cleaner	204,935	June 18	561	163	13	1093
Worthington, H. S., Covington, Ky. Bale-tie	205,023	June 18	644	190	13	1104
Wright, G., assignor to H. M. Marcy, Chicago, Ill. Locking-seam for metal ware	204,936	June 18	561	164	13	1093
Wright, G. W., Fishersburg, Ind. Sulky-plow	205,025	June 18	645	190	13	1105
Wright, P. (See Wright, R. B. and P.)						
Wright, R. B. and P., Rock Creek, Wyo. Ter. Hay-rake and baling-press	205,026	June 18	646	191	13	1105
Wade, W. H., *et al.* (See Heckmann, L., assignor.) (Reissue.)						
Wadsworth, D. D., Columbus, Nebr. Wind-engine	205,496	June 25	1075	318	13	1166
Wagner, A. G. (See Wagner, A. H., assignor.)						
Wagner, A. H., assignor to A. G. Wagner, Chicago, Ill. Grinding-mill	205,322	June 25	968	287	13	1152
Walter, W., Latrobe, Pa. Nut-lock	205,222	June 25	864	255	13	1138
Walworth, C. C. (See Haydon, J. T., assignor.)						
Waterbury, D., and F. Miller, Kalamazoo, Mich. Harrow-tooth	205,449	June 25	1098	325	13	1169
Watson, E. J., Greenbush, N. Y., and F. Armstrong, Bridgeport, Conn. Animal-shearing machine	205,450	June 25	1099	325	13	1169
Watters, J., Fall River, Mass. Stopping mechanism for looms	205,451	June 25	1100	325	13	1169
Weatherbee, J., and I. Mowder, Port Washington, Ohio. Vegetable-cutter	205,223	June 25	864	255	13	1138
Weber, L., *et al.* (See Schall, W. H., assignor.)						
Wekerle, A., assignor to himself and S. Klingler, New York, N. Y. Barber's chair	205,452	June 25	1100	326	13	1169
Westcott, I. and J., Antwerp, N. Y., assignors to M. M. Westcott. Butter-tub	205,453	June 25	1101	326	13	1169
Westcott, J. (See Westcott, I. and J.)						
Westcott, M. M. (See Westcott, I and J., assignors.)						
Wetherbee, G. C. (See Booth, J. W., assignor.)						
Wharf, J. W. and W. W., Detroit, Mich. Burglar-alarm	205,454	June 25	1102	326	13	1169
Wharf, J. W. and W. W., Detroit, Mich. Sash-holder	205,455	June 25	1102	326	13	1170
Wharf, W. W. (See Wharf, J. W. and W. W.)						
Wheeler, J. E., *et al.*, trustee. (See Loring, D. B., assignor.) (Reissue.)						
Wheeler, J. T., Detroit, Mich. Gas-meter power	205,456	June 25	1103	327	13	1170
White, S. S. (See Bramble and Delhl, assignors.) (Reissue.)						
White, S. W., Pensacola, Fla. Baker and roaster	205,224	June 25	865	256	13	1138
Whitney, C., St. Louis, Mo., assignor to C. W. and W. W. Marsh, Sycamore, Ill. Harvester	205,323	June 25	971	288	13	1152
Whittle, J. W., Syracuse, N. Y. Car-axle	205,324	June 25	975	288	13	1153
Wight, H. C., Worcester, Mass. Calipers	205,225	June 25	866	256	13	1139
Wilcox, N. O., *et al.* (See Cushman, H. T., assignor.)						
Wilde, R. (See Schofield and Wilde.)						
Wiley, A., Bluff Point, Ind. Ditching-plow	205,325	June 25	976	289	13	1153
Winne, W. L., Albany, N. Y. Device for fastening barrel heads and covers	205,226	June 25	867	256	13	1139
Woodruff, J., Detroit, Mich. Fruit-jar holder	205,457	June 25	1103	327	13	1170
Woodward, W. A., North Tunbridge, Vt. Draft-adjuster for plows	205,327	June 25	977	289	13	1153
Woolley, E., Newark, N. J. Hat-finishing machine	205,326	June 25	976	289	13	1153
Workman, R. W., assignor of one-half interest to J. R. Loudon, Rock Hill, S. C. Plow	205,458	June 25	1104	327	13	1170
Yarborough, W. H., Sherman, Texas. Earth-boring machine	198,911	Jan. 1	195	55	13	38
Yoe, W. P., assignor to Post & Co., Cincinnati, Ohio. Padlock	198,918	Jan. 1	202	57	13	39
Yale Lock Manufacturing Company. (See Little, S. A., assignor.) (Reissue.)						
Young, L. S., Cleveland, Ohio, and C. C. Gale, Indianapolis, Ind. Indicator-lock	198,961	Jan. 8	251	72	13	54
Young, W. E., assignor of one-half interest to J. Early, Chicago, Ill. Watchman's time-check	198,962	Jan. 8	252	72	13	54
Yale Lock Manufacturing Company. (See Taylor, W. H., assignor.)						
Yale, R., Afton, N. Y. Gate	199,341	Jan. 15	644	188	13	110
Young, C. L., Newport, Me. Ax	199,342	Jan. 15	645	188	13	110
Yeiser, E., Sheridan, Pa. Plow	199,608	Jan. 22	925	271	13	168
Young, A. E., Boston, Mass. Door-knob extension	199,771	Jan. 29	1107	325	13	205
Yost, L., Thornville, Ohio. Corn-popper	199,770	Jan. 29	1107	325	13	205
Yinger, F. S., assignor of two-thirds interest to W. H. Eisenhart and A. Hake, Mount Wolf, Pa. Lifting-jack	200,117	Feb. 5	229	70	13	268
Youngs, W. H. H., Waverly, Iowa. Fence-post	199,949	Feb. 5	61	20	13	242
Yourtee, S. L. (See Nelon, M. D., assignor.)						
Yule, G., Newark, N. J. Machine for pouncing hats	200,118	Feb. 5	229	70	13	268
Yale Lock Manufacturing Company. (See Towne and Keating, assignors.)						
Young, C., Sandy Hill, N. Y. Suction-box for paper-making machines	200,369	Feb. 12	494	145	13	317
Younger, W. (See Keim, S. J., assignor.)						
Young, H., assignor to W. Radcliffe, New York, N. Y. Stone-sawing machine	200,503	Feb. 19	720	212	13	339
Young, H., assignor to W. Radcliffe, New York, N. Y. Stone-sawing machine	200,504	Feb. 19	722	212	13	340
Youge, R. G., assignor of one-half interest to E. D. Coe, St. Louis, Mo. Stove-pipe shelf	201,081	Mar. 5	259	81	13	454
Young, F. J. (See Sievert and Young.)						
Yale Lock Manufacturing Company. (See Taylor, W. H., assignor.)						
Youmans, G. W., assignor to himself and H. F. Achauer, Zanesville, Ohio. Permutation-lock	201,375	Mar. 19	585	180	13	515
Yale, L., Jr., deceased, S. N. Brooks, Chicago, Ill., administrator and assignor to Yale Lock Manufacturing Company, Stamford, Conn. Lock. (Reisne)	8,158	Apr. 2	242	70, 71	13	632
Yale Lock Manufacturing Company. (See Yale, L., Jr.) (Reissue.)						
Ybarra, L., Madrid, Spain. Revolving fire-arm	202,915	Apr. 23	1151	331	13	768
Young, A. (See McCarroll, W., assignor.)						
Young, A., Philadelphia, Pa. Tripod-head for surveying instruments	202,916	Apr. 23	1152	331	13	768
Young, L. W., Elk City, Pa. Oil-well valve	203,235	Apr. 30	1424	434	13	815
Yahres, J. M., Sharon, Pa. Fire-place	203,522	May 7	299	85	13	861
Young, J., Warsaw, Ind. Bee-hive	203,521	May 7	299	85	13	861
Younger, W. (See Keim, S. J., assignor.)						
Yourtee, S. L. (See Devore and Yourtee.)						
Yeager, G., Flatonia, Tex. Cotton-worm destroyer	204,410	May 28	1278	364	13	1005
Yerkes, J. T., Stuart, Iowa. Spring-seat for vehicles	204,411	May 28	1278	365	13	1005
Young, J., Clayton, Mich. Cultivator	204,412	May 28	1279	365	13	1005
Young, E. and E. R., and F. E. Hafely, assignors to Pott, Young & Co., New York, N. Y. Book-holder	204,872	June 11	476	138	13	1078

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Young, E. R. (See Young and Hafely.)						
Yarbrough, J. W., Girard, La. Fence-post	205,459	June 25	1105	327	13	1170
Yarbrough, W. T., Richmond, Va. Marking plug-tobacco	205,460	June 25	1105	328	13	1170
Yaryan, H. T., Richmond, Ind. Apparatus for refining fat-oils	205,328	June 25	977	289	13	1153
Yokom, W. W. (See Parker and Yokom.)						
Young, B. F., assignor to Young & Wheeler, Boston, Mass. Tire-setting machine	205,227	June 25	867	256 257	13	1139
Young & Wheeler. (See Young, B. F., assignor.)						
Ziegler, J. Q. A. (See Kain, W. H., assignor.)						
Zimmerman, A. W., Dayton, Ohio, assignor to himself, C. W. Miles, Milford, Conn., and S. Pillsbury, New York, N. Y. Refrigerator-car	199,343	Jan. 15	646	189	13	116
Zuern, D., assignor of one-half interest to H. Floyd, Shamokin, Pa. Hydrant-valve	199,890	Jan. 29	1219	358	13	221
Zwicker, J., *et al.* (See Hubel, H., assignor.)						
Zapfle, F. C., New York, N. Y. Fire-extinguisher	199,950	Feb. 5	61	.....	13	242
Ziegenhagen, A., Chicago, Ill. Fire-escape	200,370	Feb. 12	495	145	13	317
Zettl, I., Cincinnati, Ohio. Automatic fan	200,812	Feb. 26	960	283	13	404
Ziegler, G. W., Butler, Pa. Valve-gear for steam-engines	200,639	Feb. 26	786	231	13	378
Zinn and Messer. (See Messer, L., assignor.) (Reissue.)						
Zaehringer, W., New Orleans, La. Billiard chalk-holder	202 087	Apr. 2	227	66	13	631
Zogbaum, F., New York, N. Y. Key for accordions	201 974	Apr. 2	111	33	13	615
Zerban, A., New York, N. Y. Sample-card	202,210	Apr. 9	372	109	13	656
Zahm, E. J. (See Ball, G. S., assignor.)						
Zeller, M. E., Bluffton, O. Trace-carrier	202,502	Apr. 16	681	200	13	704
Zimmerman, M. S., Indian Spring District, Md. Fence	202,503	Apr. 16	681	200	13	704
Zimmerer, A., Nebraska City, Nebr. Fence	203,099	Apr. 30	1339	390	13	797
Ziegler, H. S., Philadelphia, Pa. Stove-polishing compound	203,300	May 7	80	.....	13	831
Zwietusch, O., Milwaukee, Wis. Carbonic-acid-gas generator	203,310	May 7	80	24	13	831
Zangerle, J., Chicago, Ill. Rocking-chair attachment	203,979	May 21	803	231	13	941
Zimmer, D., Zanesville, Ohio. Combined paper-weight and copy-holder	203,866	May 21	683	194	13	926
Zeidler, C. (See Illingworth and Zeidler.)						
Zwiebel, A. (See Olin, Zwiebel, and Bennett.)						
Zimmermann, J. F., New Castle, Mo. Sash-fastener	205,166	June 18	788	234	13	1124
Zoebl, J. A., Milwaukee, Wis. Sled-propeller	204,937	June 18	562	164	13	1093
Zuckschwerdt, G., New York, N. Y. Toy	205,401	June 25	1107	328	13	1170

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Air-cooling apparatus	A. Albertson	198,830	Jan. 1	108	31	13	25
Amalgamator	I. M. Phelps	198,904	Jan. 1	189	53	13	38
Auger	H. L. Shaler	198,857	Jan. 1	136	39	13	30
Awning. Window-	J. Cain	198,792	Jan. 1	76	20	13	19
Axle. Car-	W. F. Brooks	198,870	Jan. 1	150	43	13	32
Axle coupling. Car-	C. M. Kimball	198,747	Jan. 1	18	4	13	11
Acid. Manufacture of tartaric	F. Dietrich	199,039	Jan. 8	326	.....	13	66
Advertising-lantern	H. Sylvester	199,122	Jan. 8	414	122	13	80
Advertising medium	I. Randall	198,953	Jan. 8	243	70	13	53
Advertising medium	G. O'Brien	199,095	Jan. 8	321	113	13	76
Amalgamator	R. E. Orendorff	198,954	Jan. 8	244	70	13	53
Apple-corer	G. Williams	199,132	Jan. 8	424	124	13	81
Axle box. Car-	R. C. Millings	199,306	Jan. 15	609	178	13	111
Advertising-case. Revolving	F. A. L. Von Ehren	199,334	Jan. 15	637	186	13	115
Aerial vessel	J. Peiffer and S. Richards. (Reissue)	8,042	Jan. 15	656	192	13	118
Aging whisky and other spirits. Apparatus for	F. Jourdes	199,209	Jan. 15	514	.....	13	96
Antiseptic composition	E. De Courcy	199,193	Jan. 15	498	147	13	94
Awning	C. L. Young	199,342	Jan. 15	645	188	13	116
Ax	N. Jones	199,207	Jan. 15	513	151	13	96
Axle. Car-	N. Jones	199,208	Jan. 15	514	151	13	96
Axle. Car-	I. Clark	199,353	Jan. 22	666	195	13	128
Arbor for gardens	T. W. Wissinger	199,391	Jan. 22	707	208	13	134
Auger	W. Acheson	199,393	Jan. 22	708	209	13	134
Ax-blanks. Roll for making	G. S. Winslow	199,390	Jan. 22	705	208	13	124
Axle boxes. Gasket for car-	J. P. Frizell	199,419	Jan. 29	1155	339	13	212
Air. Compressing	J. B. Le Clerc and M. A. Cachot	199,724	Jan. 29	1065	311	13	198
Amalgamator. Ore-	A. A. Stimson	199,874	Jan. 29	1203	353	13	219
Anchor	E. Sterzing	199,872	Jan. 29	1202	353	13	219
Animal-feeding device. Automatic	A. H. Barber	199,775	Jan. 29	1111	326	13	205
Animal-trap	J. Blakeley	199,613	Jan. 29	954	278	13	181
Axle box. Car-	J. F. Werner	200,009	Feb. 5	112	39	13	251
Advertiser. Clock-	J. C. Koch, Jr.	199,992	Feb. 5	92	30	13	247
Album	D. McGuire	199,987	Feb. 5	95	31	13	248
Animal-trap	W. H. Goodchild and S. F. Hay	199,903	Feb. 5	13	4	13	235
Apple-paring machine	R. B. Williamson	200,157	Feb. 12	277	83	13	284
Air-cooling apparatus	I. M. Phelps	200,335	Feb. 12	456	135	13	311
Amalgamator. Ore-	E. B. Ripley	200,221	Feb. 12	334	101	13	293
Animal-trap	D. H. Goodell and W. Robb	200,279	Feb. 12	396	117	13	302
Apple-parer	J. E. Meth and W. Lindemann	200,325	Feb. 12	448	132	13	309
Axle-box lid. Car-	W. E. Miller	200,214	Feb. 12	327	98	13	292
Axle. Carriage-	T. L. Reed	200,569	Feb. 19	626	205	13	336
Annunciators, &c. Electric conductor for elevator-	A. A. Freeman	200,385	Feb. 19	517	153	13	328
Axle box. Car-	J. Stephenson. (Reissue)	8,084	Feb. 19	724	213	13	360
Axle box. Car-	J. Stephenson. (Reissue)	8,085	Feb. 19	725	213	13	360
Axle box. Car-	J. Stephenson. (Reissue)	8,086	Feb. 19	726	213	13	360
Axle box. Car-	J. Stephenson. (Reissue)	8,087	Feb. 19	728	213	13	361
Axle box. Car-	J. Dickens	200,519	Feb. 19	643	154	13	348
Axle sleeve. Wagon-	T. Miller	200,744	Feb. 23	886	263	13	393
Ale or beer measure	R. R. Spedden and D. F. Stafford	200,673	Feb. 26	823	242	13	383
Anchor	C. L. Jeffords	200,616	Feb. 26	761	223 224	13	374
Axes. Machine for making	G. W. Millington	200,798	Feb. 26	946	279	13	402
Axle. Car-	G. W. Miltimore	200,746	Feb. 26	888	264	13	394
Axle. Car-	M. W. Hinkle	200,911	Mar. 5	92	32	13	429
Adding-machine	I. Dreyfus	200,901	Mar. 5	84	29	13	428
Air. Machine for compressing and purifying	J. C. Koch, Jr.	200,922	Mar. 5	102	34	13	431
Album. Easel-	C. Löwig	201,028	Mar. 5	207	.....	13	447
Alkalies, and preparations of alumina. Manufacture of caustic	J. A. Palmer	200,930	Mar. 5	109	37	13	432
Animal-trap	G. N. Stearns	201,064	Mar. 5	242	77	13	452
Auger. Hollow	W. H. and F. C. Barden	200,893	Mar. 5	76	26, 27	13	427
Axle box. Car-	J. Conner	200,854	Mar. 5	40	15	13	421
Axle-box lid. Car-	J. Edson	200,903	Mar. 5	86	29	13	428
Axle box. Vehicle-	A. S. Lovett	201,257	Mar. 12	444	137	13	488
Advertising apparatus	G. C. Smith	201,295	Mar. 12	485	149	13	494
Alarm-register	J. Shrader	201,293	Mar. 12	482	148	13	493
Animal-trap	J. W. Lowell	201,258	Mar. 12	445	137	13	488
Axle skeins. Tie-rod for vehicle-	E. C. Kirk	201,536	Mar. 19	749	.....	13	537
Alloy. Bronze	L. M. Boardman	201,321	Mar. 19	531	163	13	507
Amalgamator for stamp-mills	J. McMahel	201,546	Mar. 19	759	231	13	539
Animal-trap	J. Coyne	201,390	Mar. 19	600	184	13	517
Ashes. Apparatus for separating breeze from	R. B. Eason	201,393	Mar. 19	603	195	13	517
Axle box. Car-	J. A. P. Vanclain	201,469	Mar. 19	678	207	13	528
Axle box. Car-	P. E. Jay	201,679	Mar. 26	904	276	13	564
Aging liquors	I. R. Titus	201,851	Mar. 26	1078	328	13	589
Axle box. Car-	J. F. Johnson	201,791	Mar. 26	1018	311	13	581
Axle box. Carriage-	T. Hibbert	201,671	Mar. 26	898	274	13	562
Axle-box lid. Car-							

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Axle Car	H. Watkeys	201,726	Mar. 26	951	201	13	571
Accordions. Key for	F. Zogbaum	201,974	Apr. 2	111	33	13	615
Air. Machine for purifying and compressing	R. Wilsdon	202,083	Apr. 2	224	65	13	630
Alarms. Circuit-closer for	J. F. Callaway	201,991	Apr. 2	128	38	13	617
Animals. Device for watering	A. M. Teller	201,961	Apr. 2	98	28	13	613
Atomizer	H. Weinhagen	201,967	Apr. 2	102	30	13	614
Atomizer	L. Wilkinson	201,808	Apr. 2	39	11	13	604
Auger	H. L. Shaler	202,061	Apr. 2	200	58	13	627
Auger and reamer. Combined	A. E. Brockett	201,908	Apr. 2	50	13	13	606
Auger. Well	D. N. Root	201,950	Apr. 2	86	25	13	611
Axle box. Car	I. H. Randall	201,944	Apr. 2	82	23	13	611
Axle-boxes. Die for making	G. A. Morse	201,975	Apr. 2	75	21	13	610
Axle. Car	N. Jones	201,881	Apr. 2	24	6	13	602
Advertising medium	B. C. Baker	202,214	Apr. 9	37	111	13	656
Awning-frame	C. Kingseed	202,272	Apr. 9	439	128	13	665
Ax	T. K. Downing	202,159	Apr. 9	328	96	13	649
Advertising apparatus	E. Bostock	202,325	Apr. 16	513	150	13	679
Amalgamator	J. W. Bancroft and T. Walker. (Reissue.)	8,175	Apr. 16	830	240	13	720
Amalgamator. Ore	W. S. Shotwell	202,505	Apr. 16	797	230	13	715
Anchor for boats, &c	E. N. Twiss	202,488	Apr. 16	669	196	13	702
Amalgamator	S. F. Charles	202,703	Apr. 23	931	266	13	740
Amalgamator	G. J. Firmin and T. A. D. Forster	202,804	Apr. 23	1037	298 299	13	755
Animals. Shelter for	W. Heaton	202,648	Apr. 23	873	250	13	734
Auger. Earth	O. H. Polley	202,864	Apr. 23	1160	315	13	762
Axle. Car	H. Watkeys	202,682	Apr. 23	900	260	13	738
Advertising apparatus	N. T. Scott	202,906	Apr. 30	1217	352	13	781
Amalgamator	W. Purvine	203,075	Apr. 30	1319	383	13	795
Anchor	T. A. Swinburne	203,087	Apr. 30	1331	387	13	796
Animal-trap	J. P. Boyers	203,109	Apr. 30	1350	393	13	799
Animal-trap	H. T. Wigginton	202,971	Apr. 30	1222	355	13	782
Anvil and vise. Combined	E. E. Leach	203,167	Apr. 30	1416	413	13	807
Apple corer and slicer	C. B. Veronee	203,221	Apr. 30	1470	430	13	814
Augers. Manufacture of	H. L. Shaler	203,079	Apr. 30	1323	385	13	795
Awning. Blind	C. P. Dearborn	202,935	Apr. 30	1186	342	13	777
Axle box. Car	D. A. Hopkins	203,150	Apr. 30	1396	408	13	803
Alloys. Manufacture of manganese	R. Hale	204,266	May 7	30	.....	13	825
Animal-trap	J. H. and W. Morris	203,361	May 7	129	38	13	838
Apple-worm. Device for trapping the	A. Greenman	203,326	May 7	104	30	13	834
Auger. Hollow	G. N. Stearns	203,384	May 7	156	45	13	841
Air-forcing apparatus	O. Millard	203,752	May 14	555	157	13	902
Alkalies. Apparatus for the manufacture of caustic	E. W. Parnell	203,555	May 14	358	101	13	877
Alkalies. Manufacture of caustic	E. W. Parnell	203,761	May 14	502	.....	13	903
Anchor	G. S. Sidelinger	203,660	May 14	456	130	13	890
Auger. Coal-mining	D. W. Siprell	203,725	May 14	590	165	13	906
Auger. Earth	B. F. Mull	203,637	May 14	430	123	13	887
Axle-adjuster	J. Poirier	203,768	May 14	571	160	13	904
Axle and loose wheel. Car	W. S. G. Baker	203,577	May 14	377	107	13	880
Amalgamator	J. H. Hobart and C. W. Stward	203,916	May 21	736	211	13	933
Animal-trap	G. W. McMillon	204,064	May 21	896	256	13	953
Animal-trap	S. Snell	204,102	May 21	937	268	13	958
Auger. Well	J. T. Glass	204,025	May 21	858	245	13	948
Awning	J. Koenig	203,923	May 21	744	214	13	934
Acid. Recovering waste sulphuric	A. Pénissat	204,244	May 28	1110	.....	13	964
Axle-box slide. Car	G. Williams	204,178	May 28	1038	295	13	975
Axle-nut. Adjustable	O. B. Thompson	204,399	May 28	1266	361	13	1003
Axles. Sand-guard for carriage	M. C. Nay	204,164	May 28	1025	291	13	973
Amalgamator	S. L. Newberry	204,447	June 4	32	10	13	1017
Atomizer	C. Weed	204,469	June 4	52	17	13	1027
Axle box. Car	J. E. Wheeler	204,641	June 4	216	69	13	1043
Axle. Vehicle	G. W. Henderson	204,435	June 4	20	7	13	1015
Alloy for the manufacture of shot	T. W. Sparks	204,856	June 11	454	.....	13	1076
Amalgamating chloridized ores	J. O. Stewart	204,773	June 11	367	110	13	1065
Animal-trap	D. R. Nichols	204,753	June 11	342	104	13	1063
Animals. Device for marking	C. P. Housum and H. W. Hill	204,736	June 11	325	99	13	1061
Axle-tree washer	G. Aspinwall and F. C. Clark	204,700	June 11	224	88	13	1056
Ammonia or ether machine	E. Moreau and J. W. Haggerty	205,120	June 18	739	220	13	1117
Apple-corer	J. A. Morrow	205,122	June 18	741	220	13	1117
Auger-handle	W. A. Ives	205,096	June 18	718	213	13	1114
Awning	W. B. Doolittle	205,064	June 18	685	201	13	1110
Axle-arm for vehicle-wheels	R. H. Avery	205,031	June 18	653	192	13	1106
Amalgam. Refining retorted	F. Gutzkow	205,187	June 25	824	.....	13	1133
Amalgamator	E. F. Russell	205,215	June 25	854	253	13	1137
Anchor for check-row cords	L. L. Haworth	205,266	June 25	905	268	13	1144
Atomizer	W. L. Hubbell	205,389	June 25	1039	309	13	1161
Auger	G. F. Stearns	205,218	June 25	860	254	13	1138
Axle. Car	J. W. Whittie	205,324	June 25	975	288	13	1153
Bed-bottom	J. Magers	198,892	Jan. 1	173	49	13	36
Bed-spring	E. C. Barmore	198,833	Jan. 1	110	32	13	26
Bedstead. Camp	R. A. Bradley	198,869	Jan. 1	150	43	13	32
Bedstead-fastening	S. D. Butler	198,836	Jan. 1	113	32	13	26
Belting. Machine	L. Starck	198,860	Jan. 1	139	39	13	30
Bench-dog	Z. Cook	198,763	Jan. 1	41	10	13	14
Bending machine. Wood	S. Swartz and J. R. Cross	198,780	Jan. 1	62	16	13	17
Bird-cage feed-cup holder	A. B. Hendryx	198,846	Jan. 1	124	36	13	28
Boiler feeder. Steam	T. W. Mather	198,850	Jan. 1	128	37	13	28
Boilers. Crown-sheet for steam	W. S. Hudson	198,743	Jan. 1	13	3	13	10
Boilers. Fastening bottoms in	W. H. Cloke	198,794	Jan. 1	78	20	13	19
Boilers. Heating and feeding water for steam	S. M. Fulton	198,737	Jan. 1	6	1	13	9
Boot and shoe machines. Burnisher-head for	Z. Beaudry	198,835	Jan. 1	112	32	13	26
Brake for machinery. Safety	A. A. Frécot	198,799	Jan. 1	81	22	13	20
Brush. Scrubbing	J. M. Wilkinson	198,828	Jan. 1	107	30	13	25
Burial-vault. Portable	J. Chittock	198,872	Jan. 1	152	44	13	32

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bag holder and truck. Combined	E. G. Frisbie and C. H. Johnson	199,051	Jan. 8	338	99	13	68
Bale-tie	S. H. Gilman	198,976	Jan. 8	267	77	13	57
Bed-bottom	D. D. Osborne	199,096	Jan. 8	382	113	13	76
Bee-hive	G. W. Wageoner	199,005	Jan. 8	296	87	13	61
Beefsteak-tenderer	H. R. Fuller	198,974	Jan. 8	266	76	13	57
Bellows	C. W. Dunn, Sr	199,042	Jan. 8	329	96	13	67
Bellows-nozzle	W. E. Edwards and F. J. Gracier	198,932	Jan. 8	223	63	13	50
Billiard-bridge	C. F. Prentice	199,105	Jan. 8	389	116	13	77
Bird-cage	A. L. Smith	199,115	Jan. 8	406	120	13	79
Boot and shoe insole	G. H. Levis	198,989	Jan. 8	281	81	13	59
Boot and shoe nailing last	G. V. Wells	198,958	Jan. 8	248	71	13	54
Bottle. Salt and spice	G. B. Richardson	198,998	Jan. 8	290	85	13	60
Bottle-stopper	J. Klee. (Reissue)	8,034	Jan. 8	438	128	13	84
Bottle-stopper holder	J. Metzger	198,992	Jan. 8	285	83	13	60
Brick-machine	W. H. Kain	199,072	Jan. 8	358	106	13	72
Bridle attachment	T. P. Clinch	199,031	Jan. 8	320	94	13	65
Buckle	G. M. Hotchkiss and J. A. Clinton	199,068	Jan. 8	354	104	13	71
Buckles. Guard for harness	T. P. Kemp	198,946	Jan. 8	237	67	13	52
Burglar-alarm	H. F. Crawford	199,034	Jan. 8	322	95	13	66
Bed-bottoms. Covering for spring	N. Dutton	199,147	Jan. 15	455	134	13	86
Bedsteads. Folding leg for sofa	W. Seng	199,320	Jan. 15	624	181	13	113
Bee-hive	R. Strawser	199,328	Jan. 15	632	184	13	114
Billiard-cue	C. Seymer	199,321	Jan. 15	625	182	13	113
Binder. Temporary	J. H. Van Pelt	199,241	Jan. 15	541	160	13	100
Blind-stop	H. Fellows	199,278	Jan. 15	581	169	13	106
Boiler. Steam	J. Baird	199,139	Jan. 15	495	131	13	85
Boilers. Preventing incrustation in steam	J. North	199,309	Jan. 15	611	.....	13	111
Bolt-holder and clamping-tool	F. Norris and C. E. Sweet	199,220	Jan. 15	523	154	13	97
Book-binding	L Reynolds. (Reissue)	8,039	Jan. 15	653	191	13	117
Boot and shoe jack	G. McKay	199,304	Jan. 15	607	177	13	110
Bottle-stopper fastener	F. W. Perry	199,165	Jan. 15	471	139	13	89
Bottle-stopper fastener	E. D. Weyburn	199,337	Jan. 15	640	187	13	116
Box-fastener	B. S. Atwood	199,138	Jan. 15	444	131	13	85
Boxes. Manufacture of	H. C. Stone	199,327	Jan. 15	631	183	13	114
Bracket	F. H. Robinson	199,167	Jan. 15	472	139	13	89
Brake. Car	A. F. Gue and G. F. Field	199,286	Jan. 15	587	172	13	107
Brake for operating ship's windlasses	L. Garison	199,283	Jan. 15	585	171	13	107
Brake shoe. Car	W. McConway	199,161	Jan. 15	467	138	13	89
Brake. Wagon	F. A. Barlow	199,176	Jan. 15	481	142	13	91
Brush. Painter's	J. W. Howard	199,205	Jan. 15	510	150	13	96
Buckle for shoes, gloves, &c	A. Makiolczyk	199,216	Jan. 15	519	153	13	97
Butter-tray	W. M. Ferris, Jr	199,279	Jan. 15	581	170	13	106
Back and shoulder brace	J. W. Partridge	199,463	Jan. 22	772	226	13	145
Bag-holder	A. Brubaker	199,507	Jan. 22	819	239	13	152
Barrel. Wood-incased	A. W. Blye	199,405	Jan. 22	718	212	13	136
Bee-hive	M. A. and N. J. Carriker	199,513	Jan. 22	825	241	13	153
Binder for letters, &c. Temporary	H. H. and J. R. Edwards	199,525	Jan. 22	841	245	13	155
Book-binding	L Reynolds. (Reissue)	8,056	Jan. 22	948	275	13	172
Book-binding. Removable	I. Reynolds	199,572	Jan. 22	884	259 260	13	162
Boot and shoe counter stiffener	W. H. Richardson	199,574	Jan. 22	886	260	13	163
Boot-cleaner	G. F. Blauvelt	199,497	Jan. 22	804	236	13	150
Boot-jack	J. B. Lauffer	199,557	Jan. 22	870	255	13	161
Bottle-capper	J. Sacksteder	199,581	Jan. 22	893	262	13	164
Brake. Car	A. K. Hadley	199,434	Jan. 22	744	218	13	140
Brake for railway-cars. Vacuum	J. and J. G. Hardy	199,540	Jan. 22	855	250	13	157
Brick-machine	H. C. Sergeant	199,472	Jan. 22	780	229	13	146
Broom-binder	J. W. Cliff	199,412	Jan. 22	725	213	13	137
Buckle	E. S. Smith	199,586	Jan. 22	902	264	13	165
Burial-cases. End for	S. Benton	199,495	Jan. 22	803	235	13	149
Burnishing-machine	J. Stever	199,592	Jan. 22	907	265 266	13	166
Butter. Artificial	W. E. Andrew. (Reissue)	8,048	Jan. 22	937	.....	13	170
Bag-holder	A. L. Hatfield	199,705	Jan. 29	1049	306	13	195
Bale-band tightener	G. Bull and L. Koch	199,617	Jan. 29	962	279	13	182
Bale-tie	T. A. Andrews and A. G. Edwards	199,678	Jan. 29	1023	298	13	191
Bale-tie	S. J. Chapman	199,788	Jan. 29	1127	331	13	208
Bale-tie	W. R. Lenard	199,725	Jan. 29	1066	312	13	198
Bed and fire-escape. Spring	J. G. Rahner	199,861	Jan. 29	1192	350	13	217
Bell-alarm. Centrifugal	C. W. Holtzer	199,828	Jan. 29	1164	342	13	213
Bellows	F. M. McCrory	199,846	Jan. 29	1181	346	13	216
Blacksmith's combined machine	A. Pirch	199,741	Jan. 29	1079	316	13	200
Boiler. Steam	C. Shaw	199,860	Jan. 29	1196	351	13	218
Boiler. Water-tube	C. Tyson. (Reissue)	8,062	Jan. 29	1224	359	13	222
Boilers. Safety attachment for steam	G. W. Smith	199,751	Jan. 29	1088	319	13	202
Bolt for fastening doors, &c	W. F. Hyatt	199,832	Jan. 29	1168	343	13	214
Bolt-threading machine	O. P. Briggs	199,686	Jan. 29	1030	300	13	192
Boot and shoe heel	J. Dalton	199,801	Jan. 29	1139	334	13	209
Boot and shoe insole	T. S. Mattocks and J. Wise	199,842	Jan. 29	1177	345	13	215
Boots and shoes. Machinery for crimping seamless foxings for	H. Hubel	199,714	Jan. 29	1056	309	13	196
Boots and shoes. Machinery for cutting pegs from	H. O. Cheney	199,700	Jan. 29	1128	331	13	208
Boots and shoes. Tool for cutting lines in the sole-edges of	E. Scopes	199,749	Jan. 29	1086	318	13	201
Bottle-stopper	F. W. Perry. (Reissue)	8,061	Jan. 29	1223	359	13	222
Bottling-machine. Stopper-fastening attachment for	J. G. Wolf	199,888	Jan. 29	1217	357	13	221
Box	H. C. Stone	199,876	Jan. 29	1205	354	13	219
Brake-block holder	J. Leitzinger	199,726	Jan. 29	1067	312	13	198
Broiler	J. B. Geyser	199,822	Jan. 29	1159	340	13	213
Buckle	W. F. Osborne	199,856	Jan. 29	1188	349	13	217
Buggy-top	W. H. Hopkins and M. L. Stebbins	199,829	Jan. 29	1165	342	13	214
Burial-case. Metallic	M. M. and G. Heresman	199,708	Jan. 29	1051	307	13	196
Butter-shaper	W. H. and T. Dulaney	199,697	Jan. 29	1042	304	13	194
Button, &c	W. A. L. Miller	199,850	Jan. 29	1184	347	13	216

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bale-tying machine	F. S. Heath	200,059	Feb. 5	168	55	13	259
Bed-clothes clamp	C. M. Bryson	200,025	Feb. 5	120	42	13	254
Bee-hive	J. Palmer	200,064	Feb. 5	196	62	13	263
Bee-hive	J. P. Stroope	200,004	Feb. 5	109	36	13	250
Binder. Temporary	J. W. Shoemaker and S. Dodsworth	199,998	Feb. 5	105	34	13	249
Binder. Temporary	E. H. Thompson. (Reissue)	8,072	Feb. 5	233	71	13	269
Blind-slats. Connecting	J. G. Wilson	199,948	Feb. 5	60	19	13	242
Blind stop. Window	W. B. Surdam	200,005	Feb. 5	109	36	13	250
Book-binding	J. S. Lever	200,068	Feb. 5	177	57	13	261
Boot-jack	M. Ross	199,996	Feb. 5	103	34	13	249
Boring or broaching apparatus	J. J. Love	200,071	Feb. 5	180	58	13	261
Bottle-stopper	W. H. Kelley	199,980	Feb. 5	88	29	13	247
Brake coupling. Car	F. W. Eames	200,031	Feb. 5	135	44	13	254
Brake. Wagon	S. Gorr	200,051	Feb. 5	161	52	13	258
Buildings. Facing for	G. B. Field	200,039	Feb. 5	146	47, 48	13	256
Buildings. Steam apparatus for	J. W. Faxon	200,037	Feb. 5	143	47	13	256
Burglar-alarm	S. D. Lauffer	199,984	Feb. 5	93	30	13	247
Button-fastening	C. E. Bates	200,018	Feb. 5	122	40	13	252
Button or stud fastening	R. Boussard	200,023	Feb. 5	127	42	13	253
Bark-cutting machine	S. R. Thompson	200,361	Feb. 12	482	142	13	315
Bath apparatus. Hot	T. Galbraith	200,275	Feb. 12	393	116	13	302
Bedstead-fastening. Metallic	L. Hull	200,198	Feb. 12	315	94	13	290
Belt for suspending garments	H. A. Hayden	200,293	Feb. 12	410	122	13	304
Boat attaching and detaching apparatus	B. A. Fiske	200,270	Feb. 12	389	115	13	301
Boat-detaching apparatus	C. P. Wyckoff	200,159	Feb. 12	279	83	13	284
Boot and shoe exhibitor	A. C. W. Cain	200,128	Feb. 12	247	75	13	280
Boot and shoe nail	H. N. Allen	200,240	Feb. 12	353	105	13	296
Boot and shoe sole channeling tool	J. S. Turner	200,232	Feb. 12	346	103	13	295
Boots and shoes. Crimping-board for	G. Schallenberger	200,346	Feb. 12	466	137	13	313
Boring and drilling apparatus	J. Hall	200,285	Feb. 12	400	119	13	303
Bottle-packing case	P. and R. P. Aitcheson	200,161	Feb. 12	280	84	13	284
Bottle-stopper fastener	P. H. Caverly	200,257	Feb. 12	372	110	13	298
Bottle-stopper fastener	C. Sedgwick	200,224	Feb. 12	338	101	13	293
Bottle-stopper fastening	J. B. Griffin	200,191	Feb. 12	308	92	13	289
Brake and starter. Car	J. E. Brown	200,167	Feb. 12	286	85	13	285
Brake. Automatic wagon	L. Johannesen	200,308	Feb. 12	426	126, 127	13	306
Brake. Car	J. A. Kirby	200,313	Feb. 12	433	129	13	308
Brooms, &c. Handle-extension attachment for	R. G. Knox	200,203	Feb. 12	320	96	13	291
Bucket. Dinner	G. Renshaw	200,343	Feb. 12	463	137	13	312
Bale-tie	J. R. Blossom	200,428	Feb. 19	559	165	13	335
Bale-tie	J. J. Hagins. (Reissue)	8,094	Feb. 19	735	215	13	362
Bale-tie. Wire	W. E. Borst	200,371	Feb. 19	505	149	13	327
Ballot-box	M. D. Williams	200,495	Feb. 19	622	33	13	345
Barrel	J. D. McEachren	200,468	Feb. 19	597	176	13	341
Bed-bottom	E. A. Jeffery	200,397	Feb. 19	528	156	13	330
Bedstead. Cabinet	J. G. and J. W. Knapp	200,401	Feb. 19	532	157	13	331
Bedstead. Invalid	J. Kaylor	200,543	Feb. 19	668	197	13	352
Bee-feeding device	E. Carter	200,506	Feb. 19	632	186	13	346
Belting	W. H. Curtiss	200,517	Feb. 19	641	189	13	348
Binder. Temporary	H. E. Thompson, Jr	200,488	Feb. 19	615	181	13	344
Bleachers and dyers. Squeezing-machine for	W. Birch	200,427	Feb. 19	558	164	13	333
Book-rack	A. R. Sherman	200,576	Feb. 19	703	206	13	357
Boot and shoe heel plate	L. W. Buxton	200,505	Feb. 19	631	186	13	346
Boot-tree	J. T. Flynn	200,525	Feb. 19	652	192	13	349
Bottle-register	W. S. Lynn	200,552	Feb. 19	680	200	13	351
Bottle-stopper	L. Rose	200,409	Feb. 19	538	159	13	332
Brick surfaces. Wash for covering	F. W. Bartlett and C. Ward	200,498	Feb. 19	625	.....	13	345
Brush	T. J. Connell	200,434	Feb. 19	564	166	13	336
Buckle	W. Bray, Jr	200,501	Feb. 19	627	184	13	346
Buckle	A. E. McConnell	200,466	Feb. 19	595	175	13	341
Burglar-alarm	G. F. Busby	200,372	Feb. 19	505	149	13	327
Butter-pressing apparatus	J. Harlan	200,392	Feb. 18	524	154	13	329
Button	E. W. McGlaulin	200,554	Feb. 19	682	200	13	354
Baby-jumper and carriage. Combined	M. P. Gillen	200,652	Feb. 26	801	236	13	380
Bale-tie	F. Cook	200,644	Feb. 26	791	233	13	378
Bale-tie	F. Cook and H. Shaw	200,700	Feb. 26	851	251	13	387
Bale-tie	A. E. Kimberly	200,659	Feb. 26	810	238	13	381
Bale-tie	J. C. Riethmüller	200,764	Feb. 26	914	269	13	396
Bale-tie	H. Shaw and F. Cook	200,672	Feb. 26	821	242	13	383
Bale-tie and apparatus for applying the same	N. W. Speers	200,775	Feb. 26	925	272	13	398
Barometer	R. M. Lowne	200,739	Feb. 26	892	262	13	393
Barrel-trussing machine	H. W. King	200,733	Feb. 26	887	260, 261	13	392
Bending machine. Sheet-metal	C. Brombacher	200,689	Feb. 26	840	247	13	385
Bending tubular sockets. Machine for	J. H. Alker	200,595	Feb. 26	741	217	13	371
Binder. Temporary	J. F. Tapley	200,630	Feb. 26	773	227	13	376
Bit-brace. Ratchet	H. L. Pratt	200,757	Feb. 26	908	267	13	396
Boat-knee	D. True	200,632	Feb. 26	775	228	13	376
Boat. Portable folding	N. A. Osgood	200,664	Feb. 26	814	239	13	382
Bobbin and spool	R. C. Fay	200,706	Feb. 26	860	253	13	388
Boilers, &c. Making copper bottoms for domestic	T. and T. L. James	200,727	Feb. 26	881	259	13	391
Book and cover	J. W. H. Reisinger	200,762	Feb. 26	912	268	13	396
Bookbinder's beveling-machine	H. W. Rokker	200,804	Feb. 26	952	280	13	402
Book-shelf	S. A. Smith	200,773	Feb. 26	921	271	13	398
Boot and shoe holder	N. Lyon	200,619	Feb. 26	765	225	13	374
Bottle-stopper fastener	G. F. Outten	200,666	Feb. 26	815	240	13	382
Bracket	R. B. Sanderson	200,767	Feb. 26	916	269	13	397
Bracket for book-shelves	S. A. Smith	200,772	Feb. 26	920	271	13	398
Brake. Automatic car	W. L. Card	200,602	Feb. 26	748	.....	13	372
Breweries. Washing shavings in	F. Hinckel. (Reissue)	8,099	Feb. 26	963	284	13	404
Broiler. Meat	J. McConnell	200,622	Feb. 26	767	226	13	375
Brush for scrubbing. Wooden	G. W. Lee	200,736	Feb. 26	890	261	13	392

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Buggy-top. Adjustable	I. Z. Merriam	200,797	Feb. 26	945	278, 279	13	401
Bustle and pannier	S. Dixon	200,647	Feb. 26	795	234	13	379
Button-fastener	H. Burtey	200,691	Feb. 26	842	248	13	385
Bag-holder	W. H. Dungan	200,857	Mar. 5	43	15	13	421
Bale-tie	R. H. Goldsmith	201,003	Mar. 5	182	58	13	441
Bale-tie	I. A. Kilmer	201,019	Mar. 5	198	63	13	445
Bale-tie	R. Hale	201,006	Mar. 5	184	59	13	443
Band cutter. Wire	H. C. Dobson	200,500	Mar. 5	82	29	13	428
Banjo	C. Jansen	200,916	Mar. 5	97	31	13	4.0
Bath. Vapor	W. U. Hoover	201,015	Mar. 5	194	62	13	445
Bed-bottom and fire-escape. Combined	H. Richter	200,845	Mar. 5	32	11	13	420
Bed-lounge	A. Isko	200,865	Mar. 5	51	18	13	422
Bedstead. Invalid	J. W. Park	200,931	Mar. 5	109	37	13	432
Bee-hive	W. H. Nichols	201,041	Mar. 5	222	70	13	449
Bell. Call	J. L. Ketcham	200,920	Mar. 5	100	34	13	430
Boat. Reversible dumping	N. S. C. Perkins	201,044	Mar. 5	225	71	13	449
Bobbin-winder	G. H. Pond	200,873	Mar. 5	61	21	13	424
Boiler. Tubular	D. H. Thomas	201,069	Mar. 5	247	78	13	452
Boot and shoe stiffeners. Machine for skiving	W. Corney	200,979	Mar. 5	154	50, 51	13	439
Boots and shoes. Machine for treeing	W. F. Prusha	200,839	Mar. 5	27	9	13	419
Boots and shoes. Metallic nail-strip for	H. E. Van Benschoten	201,070	Mar. 5	248	78	13	452
Boots and shoes. Metallic protector for the soles and heels of	J. W. Curtis	200,984	Mar. 5	159	52	13	440
Bottle-stopper	A. F. Dietz	200,991	Mar. 5	166	54	13	441
Bottle-stopper	W. H. Hicks	201,011	Mar. 5	189	60	13	444
Bottle-stopper	C. M. Webster	201,073	Mar. 5	251	79	13	453
Bracket for drawers and boxes. Show	C. H. Weiss	200,956	Mar. 5	132	43	13	436
Brake for light vehicles	R. D. Adams	200,887	Mar. 5	71	25	13	426
Brake. Wagon	L. Quigg	201,046	Mar. 5	226	71	13	450
Bread, meat, &c. Implement for cutting	G. W. McGill	200,867	Mar. 5	53	19	13	423
Buckle	H. Hart	201,008	Mar. 5	186	59	13	444
Burglar-alarm	W. T. Farre	200,824	Mar. 5	10	3	13	416
Button	G. Conover	200,978	Mar. 5	154	50	13	439
Buttons. Fastening-plate for shoe	A. Hentshel	201,246	Mar. 12	432	133	13	486
Bedstead. Sofa	H. Ogborn	201,282	Mar. 12	471	144	13	492
Bedstead. Wardrobe	L. Gathmann	201,236	Mar. 12	422	130	13	485
Beer. Apparatus for preserving	H. S. Bartholomew. (Reissue)	8,115	Mar. 12	517	158	13	497
Bit-stock	R. E. Deane	201,165	Mar. 12	348	107	13	474
Boiler. Culinary	J. L. Winslow	201,214	Mar. 12	392	122	13	482
Boiler. Locomotive and fire-box	J. G. Miner	201,273	Mar. 12	460	142	13	490
Boiler. Sectional	J. T. Fanning	201,232	Mar. 12	416	128	13	484
Boiler. Steam	M. Adler	201,146	Mar. 12	332	102	13	472
Bolt-work. Safe	W. Hill	201,247	Mar. 12	433	133	13	486
Boot and shoe heel	A. F. Schurr	201,128	Mar. 12	314	96	13	469
Boot and shoe sole protector	W. A. Marble	201,116	Mar. 12	303	93	13	467
Box and vase. Combined	F. E. Capron	201,092	Mar. 12	276	85	13	464
Bracelet-joint	W. H. Ward	201,313	Mar. 12	507	156	13	496
Brake. Car	S. H. Bevins, J. Weis, and W. H. Phillips	201,150	Mar. 12	336	103	13	472
Brake mechanism for hoisting apparatus	W. H. G. Savage	201,203	Mar. 12	383	118	13	480
Brush-bridler	W. J. Carnes, Jr	201,093	Mar. 12	277	86	13	464
Buckle	R. Pentlarge	201,285	Mar. 12	474	145	13	492
Bung-turning machine	A. Messler	201,268	Mar. 12	635	140	13	489
Button	G. O. Lackey	201,425	Mar. 19	633	194, 195	13	522
Bag-machine	W. S. E. Sevey and P. C. Manz	201,361	Mar. 19	573	176	13	513
Bale-band tightener	F. M. Logue	201,431	Mar. 19	643	196	13	523
Bale-tie	M. A. Stevens	201,463	Mar. 19	672	205	13	527
Bed. Camp	C. H. Goebel	201,343	Mar. 19	554	170	13	510
Bedstead-fastening	W. Fay	201,337	Mar. 19	548	168	13	509
Bedstead. Wardrobe	W. P. Walter	201,371	Mar. 19	581	179	13	514
Bevel, square, and level. Combined	H. W. Collender. (Reissue)	8,133	Mar. 19	814	248	13	546
Billiard-cushion	H. W. Collender. (Reissue)	8,132	Mar. 19	813	248	13	546
Billiard-table cushion	C. H. Amidon	201,379	Mar. 19	590	181	13	515
Bit-brace	H. W. Bassett	201,463	Mar. 19	691	211	13	530
Blanks. Device for receiving and arranging	W. Graham and E. Ward	201,520	Mar. 19	730	.....	13	536
Blasting-powder	J. Hester	201,415	Mar. 19	627	192	13	520
Blind. Outside window	W. H. Doane and G. W. Bugboe	201,506	Mar. 19	714	218	13	534
Blind-stile boring and mortising machine	J. W. Hard	201,412	Mar. 19	625	191	13	520
Boiler. Sectional steam	T. C. Purves	201,446	Mar. 19	656	200	13	524
Boilers. Apparatus for removing sediment from steam	I. Reynolds	201,450	Mar. 19	662	201	13	525
Book-binding	N. J. Simonds	201,457	Mar. 19	668	204	13	526
Boot and shoe heel stiffeners. Machine for molding	L. R. Stockbridge. (Reissue)	8,128	Mar. 19	809	246	13	545
Boot. Balmoral or laced	J. H. Walker	201,370	Mar. 19	580	179	13	514
Boot-legs. Device for stretching	F. A. Keene and C. Van Order	201,423	Mar. 19	635	194	13	521
Brake. Wagon	J. A. Gamewell	201,515	Mar. 19	795	220, 221	13	535
Brick-machine	P. H. Kells. (Reissue)	8,127	Mar. 19	807	246	13	545
Brick-machine	J. Stanley	201,566	Mar. 19	781	232	13	542
Bridle-bit	C. H. Butler	201,496	Mar. 19	705	215	13	532
Broom-brace	J. Blair	201,491	Mar. 19	700	214	13	531
Bung and bush	A. Beck	201,382	Mar. 19	592	182	13	516
Burglar-alarm	A. J. Lytle	201,432	Mar. 19	644	196	13	524
Button-hole cutter	G. W. Prentice	201,445	Mar. 19	655	200	13	524
Button. Lacing	H. Reilly	201,631	Mar. 26	863	263	13	537
Bag	B. X. Blair	201,737	Mar. 26	964	294, 295	13	573
Bag-fastening apparatus	J. S. Covert, M. D. Garner, and L. B. Walthall	201,653	Mar. 26	884	269	13	560
Bag-holder	F. Cook	201,751	Mar. 26	975	298	13	575
Bale-tie	H. M. Fitzhugh	201,603	Mar. 26	836	254	13	553
Barrel	G. M. White	201,728	Mar. 26	954	292	13	571
Bed and life-raft. Combined							

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bed-bottom	G. S. Clements and J. C. Decker	201,750	Mar. 26	974	298	13	575
Bedstead. Table-	E. Kiss	201,793	Mar. 26	1022	312	13	581
Belt-tightener	D. L. Croft	201,596	Mar. 26	928	252	13	582
Blind closer. Window-	A. S. and D. W. Hammond	201,776	Mar. 26	1005	307	13	579
Boiler. Steam-	C. C. Walworth	201,638	Mar. 26	872	265	13	558
Boiler. Stock-feed	C. R. Hardy	201,668	Mar. 26	896	273	13	562
Boilers. Low-water signal for steam-	T. Bingham and T. J. McTighe	201,588	Mar. 26	818	249	13	551
Boilers. Shaking grate-bar for steam-	R. J. Cram	201,752	Mar. 26	976	298	13	575
Bolt-works. Safe	J. Rippin and W. Freyer	201,702	Mar. 26	926	284	13	567
Bomb-lance	D. Kelleher	201,793	Mar. 26	1020	311, 312	13	581
Bomb-lance	D. Kelleher	201,794	Mar. 26	1021	312	13	581
Boot and shoe counter stiffener	F. S. Dawes	201,796	Mar. 26	1023	312	13	581
Boot and shoe lasting machine	G. W. Copeland, E. Woodward, and M. Brock. (Reissue.)	8,138	Mar. 26	1099	333	13	592
Boot. Rubber	J. T. Flynn	201,766	Mar. 26	995	304	13	577
Bottle-stopper fastener	F. N. Frost	201,662	Mar. 26	891	271	13	562
Box and globe. Combined	W. H. Topham	201,722	Mar. 26	947	790	13	570
Box-fastener for egg-cases, &c.	A. Hurst and F. W. Smith	201,788	Mar. 26	1015	310	13	580
Boxes. Machine for trimming wooden	F. Myers	201,822	Mar. 26	1047	320	13	585
Brake and starter. Car	W. C. Thairlwall	201,720	Mar. 26	942	289	13	570
Brake. Automatic railway-	W. L. Card	201,594	Mar. 26	825	251	13	552
Brake. Wagon-	G. M. Wilson	201,856	Mar. 26	1085	330	13	590
Bridle. Safety-	D. Lanster	201,801	Mar. 26	1027	314	13	582
Brush	M. Leiner	201,688	Mar. 26	913	279	13	565
Brush	A. Schuck, Jr.	201,708	Mar. 26	932	286	13	568
Burglar-alarm	A. Rindge	201,836	Mar. 26	1063	324	13	587
Button and stud. Collar and sleeve	P. S. Eddy and O. P. Coggeshall	201,600	Mar. 26	833	253	13	553
Button-staples to shoes, &c. Apparatus for applying	A. Wisner	201,858	Mar. 26	1086	330	13	590
Buttons. Machine for making metal	N. C. Smith	201,843	Mar. 26	1070	325, 326	13	588
Bale-tie	W. H. Howard	202,031	Apr. 2	170	49	13	623
Ball-trap	J. L. Schroder	201,952	Apr. 2	87	25	13	612
Bark. Cutter for reducing	W. E. Nickerson	201,938	Apr. 2	77	22	13	610
Barrel-filling device	T. W. Moran	201,887	Apr. 2	28	8	13	603
Basket	B. G. Melnikheim and W. D. Chase. (Reissue.)	8,148	Apr. 2	231	67	13	632
Bath. Portable shower-	C. R. Furey	202,015	Apr. 2	152	44	13	621
Battery. Galvanic	C. A. Hussey	201,924	Apr. 2	65	17	13	608
Batting. Machine for making cotton-	J. L. Norton	201,940	Apr. 2	78	22	13	610
Bed-bottom	L. Hull	202,032	Apr. 2	170	49	13	623
Bed-bottom	H. W. Rubel	202,053	Apr. 2	192	56	13	626
Bee-hive	J. Wash	201,964	Apr. 2	100	29	13	614
Bees from honey-boxes. Device for removing	J. Wash	201,965	Apr. 2	101	29	13	614
Beer. Fermenting	G. Bartholomae	201,982	Apr. 2	119	35	13	616
Bell. Door-	J. W. Snider	202,064	Apr. 2	203	59	13	627
Billiard-chalk holder	W. Zaehringer	202,087	Apr. 2	227	66	13	631
Binder. Temporary	J. T. Foster	202,013	Apr. 2	150	44	13	621
Bleaching or dyeing. Apparatus for	L. W. Wright	201,973	Apr. 2	110	32	13	615
Boiler-cleaner	A. W. Bishop	201,986	Apr. 2	123	36	13	617
Boiler. Fire-tube	T. Boehmler and H. E. Olbrich	201,988	Apr. 2	126	37	13	617
Boot and shoe lasting machine	G. W. Copeland	201,914	Apr. 2	56	15	13	607
Boot and shoe. Rubber	S. E. Whittemore	202,082	Apr. 2	223	65	13	630
Boot and shoe sole edge trimming machine	C. J. Addy	201,977	Apr. 2	114	33	13	615
Bottle-stopper	N. Prescott	201,891	Apr. 2	32	9	13	603
Bottle-stopper	C. Sedgwick	202,059	Apr. 2	197	58	13	627
Bottle-stopper	F. J. Seybold	201,953	Apr. 2	88	25	13	612
Bottle-stopper fastener	F. J. Seybold	201,954	Apr. 2	90	26	13	612
Bottle-stopping machine	A. R. Wejas	202,080	Apr. 2	220	64	13	630
Brake. Car-	J. V. Ericson	201,917	Apr. 2	59	16	13	607
Brake. Vehicle-	C. R. Rice	201,893	Apr. 2	34	10	13	603
Bridges, &c. Eye-bar for	M. H. Alberger	201,860	Apr. 2	1	1	13	599
Brush. Dust-	E. C. Patterson	202,045	Apr. 2	186	54	13	625
Buckle. Suspender-	G. W. McGill	202,039	Apr. 2	180	52	13	624
Bale-tie	W. S. Davis	202,242	Apr. 9	409	119	13	661
Barrel-pitching machine	H. Lehmann. (Reissue)	8,168	Apr. 9	504	147	13	647
Basin and urinal. Swinging	J. Reid	202,193	Apr. 9	359	105	13	653
Bath	J. Ketzscher	202,270	Apr. 9	436	127	13	664
Bed-bottom	H. S. Cate	202,149	Apr. 9	309	92	13	647
Bed-bottom	T. and J. N. Tracy	202,302	Apr. 9	468	137	13	669
Bed. Sofa-	A. Hansen	202,108	Apr. 9	266	78, 79	13	641
Bedstead. Invalid-	A. J. Goodwin	202,106	Apr. 9	264	78	13	641
Bedstead. Wardrobe-	A. Stark. (Reissue)	8,161	Apr. 9	495	145	13	673
Bee-hive	C. R. Macy	202,114	Apr. 9	273	81	13	642
Bit for horses	J. H. Robinson	202,195	Apr. 9	361	106	13	654
Bolt. Door-	F. Davis	202,158	Apr. 9	327	96	13	649
Books. Machine for preparing fly-leaves for	E. Crawley	202,156	Apr. 9	317	94, 95	13	648
Boot and shoe	F. Goff	202,256	Apr. 9	422	123	13	662
Boot and shoe tap-sole	D. R. Proctor	202,191	Apr. 9	357	105	13	653
Boot. Lady's	J. Dean	202,244	Apr. 9	411	119	13	661
Bottle-stopper	A. E. Barthel	202,138	Apr. 9	298	88	13	645
Bottle-stopper	N. Fritzner	202,100	Apr. 9	259	75	13	640
Bottle-stopper	W. G. Whitman	202,320	Apr. 9	490	143	13	672
Bottle-stopper fastener	A. E. Barthel	202,137	Apr. 9	297	88	13	645
Bottles. Measuring-stopper for	W. L. Keller	202,268	Apr. 9	433	126	13	664
Brick-kiln roof	T. F. Adams	202,212	Apr. 9	376	110	13	656
Bridles. Rosette for	N. Le Blond	202,111	Apr. 9	269	79	13	642
Bung and bushing	P. K. O'Lally	202,284	Apr. 9	450	132	13	666
Butter-mold	H. A. Rees	202,190	Apr. 9	280	82	13	643
Bale-tie	J. Knipscheer	202,552	Apr. 16	755	218	13	711
Bale-tie hooks. Machine for forming	P. L. Van Derzee	202,491	Apr. 16	672	197	13	702
Batting. Machine for folding cotton-	H. A. Stearns	202,480	Apr. 16	662	194	13	701
Bedstead. Invalid-	M. Gillespie	202,343	Apr. 16	531	155	13	682
Bee-hive	D. P. Miller	202,569	Apr. 16	770	222	13	713

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bee-hive	A. E. Wenzel	202,612	Apr. 16	813	235	13	717
Billiard-table cushion	J. E. Boyle. (Reissue)	8,172	Apr. 16	825	239	13	719
Bit-stock	W. A. Ives	202,548	Apr. 16	750	217	13	710
Boiler. Steam-	L. Shook	202,382	Apr. 16	569	167	13	687
Boilers. Bolt for patching	F. A. Bidwell	202,403	Apr. 16	589	173	13	690
Boilers. Device for supplying feed-water to	S. M. Fulton	202,535	Apr. 16	732	212	13	708
Boot and shoe counter support	B. W. Campbell	202,409	Apr. 16	594	175	13	691
Boot and shoe stiffeners. Manufacture of	W. N. Sprague. (Reissue)	8,184	Apr. 16	840	242	13	721
Boot-upper	S. W. Allen and L. Cook	202,393	Apr. 16	579	170	13	689
Boots and shoes. Channeling-tool for	C. K. Sharood	202,478	Apr. 16	661	193	13	701
Boots and shoes. Manufacture of	L. E. De Waru. (Reissue)	8,182	Apr. 16	838	242	13	721
Bosom-form	J. D. Banfield	202,398	Apr. 16	582	171	13	689
Bottle-stopper	W. D. Doremus	202,525	Apr. 16	706	206	13	706
Bottle-stopper	G. W. Gomber	202,434	Apr. 16	621	182	13	695
Brake. Car-	A. Rosenfield	202,472	Apr. 16	656	192	13	700
Brake lever. Wagon-	T. C. Lawrence	202,557	Apr. 16	760	219	13	712
Brakes. Coupling for air-	G. H. Newton	202,368	Apr. 16	555	162	13	685
Brick-kiln	J. Haas	202,542	Apr. 16	744	215	13	709
Brick-kiln	S. W. Underhill	202,489	Apr. 16	670	196	13	702
Brick-machine	W. T. Duvall	202,336	Apr. 16	532	153, 154	13	681
Brick-machine	E. R. and W. E. Gard	202,537	Apr. 16	735	212, 213	13	708
Bridge. Truss-	W. O. Douglas	202,526	Apr. 16	707	206	13	706
Bridles. Safety attachment for	T. E. Clark	202,522	Apr. 16	703	205	13	706
Brush for cleaning boiler-flues	C. C. Miller	202,361	Apr. 16	548	160	13	684
Burglar-alarm	A. L. Linn	202,447	Apr. 16	634	185	13	696
Burial-casket	J. Honrighous	202,440	Apr. 16	626	183	13	695
Butter-worker	F. G. Butler	202,516	Apr. 16	696	204	13	705
Butter-worker	W. Sweet	202,481	Apr. 16	663	194	13	701
Button	S. Cottle	202,412	Apr. 16	596	175	13	691
Button-hole cutter	F. C. Leypoldt	202,446	Apr. 16	633	185	13	696
Button-polishing machine	W. F. Niles	202,369	Apr. 16	556	163	13	685
Baby-walker	J. H. Headley	202,724	Apr. 23	949	271	13	743
Balance. Spring-	C. Forschner	202,807	Apr. 23	1040	299	13	755
Bale-tie	L. W. P. Gray and T. S. Johnson	202,719	Apr. 23	945	270	13	742
Balloon	W. F. Pearson	202,750	Apr. 23	979	281	13	747
Barrels, &c. Compound for lining	M. Ladin	202,534	Apr. 23	1070	.....	13	758
Basins, &c. Waste-pipe for	I. A. Singer	202,762	Apr. 23	990	285	13	748
Bathing-house. Portable	N. Overfield	202,748	Apr. 23	976	280	13	746
Bed. Camp-	O. A. White	202,685	Apr. 23	912	261	13	738
Bedstead. Table-	A. A. Hoffman	202,823	Apr. 23	1059	303	13	757
Bell. Horse-car	J. M. Gaughen	202,645	Apr. 23	871	249	13	734
Bobbin. Shuttle-	R. W. Porter	202,664	Apr. 23	890	255	13	736
Boiler. Steam-	B. T. Babbitt	202,689	Apr. 23	916	262	13	738
Boilers. Fire-box for steam-	G. H. Hoagland	202,819	Apr. 23	1054	302, 303	13	756
Book-binding	J. S. Lever. (Reissue)	8,195	Apr. 23	1161	333	13	769
Book-rack	J. M. Clark	202,790	Apr. 23	1017	292	13	752
Boot and shoe	T. Poore	202,865	Apr. 23	1101	316	13	762
Boot and shoe heels. Manufacture of	S. T. Gates	202,808	Apr. 23	1040	300	13	755
Bottle-stopper	N. Fox	202,714	Apr. 23	940	269	13	741
Bottle-washing machine	C. Michel	202,740	Apr. 23	966	277, 278	13	745
Brake-shoe for railway-cars	R. N. Allen	202,772	Apr. 23	999	287	13	750
Brick-machine	H. D. Phillips and C. H. Williams	202,661	Apr. 23	1095	314	13	762
Buckle	J. B. Gathright	202,644	Apr. 23	870	249	13	734
Bullion. Machine for covering strands for making	R. C. Alton	202,774	Apr. 23	1001	288	13	750
Burglar-alarm	G. W. Eddy	202,798	Apr. 23	1025	294	13	753
Burglar-alarm. Electro-magnetic	C. H. Carter	202,630	Apr. 23	851	245	13	732
Burial-case	L. K. Dutton	202,797	Apr. 23	1024	294	13	753
Button	C. B. Chaffee	202,789	Apr. 23	1016	292	13	752
Button	W. West and W. F. Spittle	202,684	Apr. 23	911	260	13	738
Button	E. S. and J. E. Wheeler	202,907	Apr. 23	1146	329	13	767
Bale-band. Wire	L. T. Newell	202,954	Apr. 30	1204	348	13	779
Bale-tie	C. H. Chase	202,989	Apr. 30	1236	357	13	784
Bale-tie	W. S. McKinney	203,061	Apr. 30	1303	378	13	793
Bale-tie	J. W. Roop	202,963	Apr. 30	1213	351	13	781
Barrel-cover	A. McDougall	203,059	Apr. 30	1301	378	13	792
Barrel for packing fruit	A. Burckard	203,115	Apr. 30	1356	395	13	800
Bed-bottom	H. D. Fitch	203,023	Apr. 30	1272	368	13	788
Bedstead. Invalid-	F. Doll, M. Rieter, and J. G. Diehlmann.	202,936	Apr. 30	1186	342	13	777
Bedstead. Sofa-	H. J. Grimme	203,141	Apr. 30	1384	402	13	803
Beverage-holder for table use	W. Parkin	203,190	Apr. 30	1439	421	13	810
Beverage. Table-	S. S. Putnam	203,191	Apr. 30	1440	.....	13	810
Billiard-table	J. E. Boyle	203,108	Apr. 30	1340	392	13	799
Biscuit. Sugar-coated	J. Holmes	202,944	Apr. 30	1195	.....	13	778
Blacking. Shoe-	J. H. Gordon	203,138	Apr. 30	1383	.....	13	803
Blasting rocks	T. J. Wheatley	203,097	Apr. 30	1338	389	13	797
Bluing-package. Laundry	C. H. Fischer	203,130	Apr. 30	1374	400	13	802
Bobbins. Machine for winding	J. Bullock	203,114	Apr. 30	1354	394	13	799
Book-rack	A. R. Sherman	203,080	Apr. 30	1324	385	13	795
Book-support	F. W. Pearson	202,959	Apr. 30	1209	349	13	780
Boots and shoes. Lasting	T. M. Newhall and A. F. Chase	202,955	Apr. 30	1205	348	13	779
Bosom-board	J. B. Sweetland	203,215	Apr. 30	1466	429	13	813
Box and drawer. Shoe	S. M. Closser	202,993	Apr. 30	1240	358	13	784
Bracket fastening. Scaffold-	R. R. Cooley and A. W. A. Winsor	202,998	Apr. 30	1244	360	13	785
Brake. Automatic wagon-	L. L. Travis	203,093	Apr. 30	1336	388	13	797
Breastpin	W. McKnight	203,176	Apr. 30	1427	416	13	809
Brick and tile machine	P. H. Kells	202,948	Apr. 30	1198	346	13	778
Brick-machine	W. O. Nightengalo	203,188	Apr. 30	1437	420	13	810
Bridle-bit	E. N. Crane	203,001	Apr. 30	1247	361	13	785
Bridle-bits. Manufacture of	F. Crane	203,002	Apr. 30	1248	361	13	785

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brush and broom holder	D. M. Spalding	203,208	Apr. 30	1460	427	13	813
Brush. Shoe	F. H. Kean	203,050	Apr. 30	1295	376	13	791
Buckets. Ear for well	B. F. Felix	202,938	Apr. 30	1188	343	13	777
Buckle	R. J. S. Graham	203,029	Apr. 30	1277	369	13	789
Bug-exterminator	S. Ruggles	203,072	Apr. 30	1316	382	13	794
Bung-fastener	E. Cole	202,996	Apr. 30	1243	359	13	785
Butter-tub fastening	J. Gilberds and C. S. Jackson	203,135	Apr. 30	1380	401	13	803
Button	A. S. Fernald	203,022	Apr. 30	1271	368	13	788
Buttoner	J. Hill	202,943	Apr. 30	1194	345	13	778
Bag tag and fastener	W. G. Smoot	203,381	May 7	152	44	13	841
Bale-tie	C. Battle	203,401	May 7	172	50	13	844
Bale-tie	C. Ewing	203,255	May 7	19	7	13	823
Bale-tie	D. Hall	203,444	May 7	223	63	13	851
Barrels. Machine for goring veneers for	C. W. Thompson	203,509	May 7	283	81	13	859
Basins, &c. Valve attachment for the pipes of wash-	F. E. Kernochan	203,347	May 7	115	33	13	836
Battery-cells. Cap for	W. Boekel	203,405	May 7	175	51	13	844
Bedstead. Sofa	W. J. Myers	203,289	May 7	59	18	13	828
Bee-hive	B. Buzzard and A. P. Snyder	203,321	May 7	93	26	13	832
Bee-hive	J. Young	203,521	May 7	299	85	13	861
Belting for elevators, &c. Metallic	F. H. C. Mey	203,475	May 7	252	73	13	855
Belting. Metallic	F. H. C. Mey	203,476	May 7	253	73	13	855
Binder. Temporary	W. A. Amberg. (Reissue)	8,209	May 7	301	86	13	862
Bit-brace	N. Spofford. (Reissue)	8,215	May 7	307	88	13	862
Blower. Fan	T. Wise	203,306	May 7	77	23	13	830
Blower machine. Fan	A. K. Herr	203,340	May 7	108	32	13	835
Bolt. Door	H. M. Moffett	203,360	May 7	128	37	13	838
Book	J. J. Brunor	203,410	May 7	181	52	13	845
Boot and shoe heel trimming machine	M. A. Tyler	203,510	May 7	285	82	13	860
Boot and shoe heeling machine	C. W. Glidden	203,440	May 7	217	62	13	850
Boots and shoes. Buffing-wheel for finishing	C. C. Green	203,265	May 7	30	10	13	824
Boots and shoes. Stay for seams of	G. Stribley	203,300	May 7	71	21	13	830
Bottle-filling apparatus	H. Codd	203,243	May 7	7	3	13	822
Box. Honey	J. E. Moore	203,483	May 7	260	75	13	856
Boxes. Manufacture of packing	F. Myers	203,486	May 7	262	76	13	856
Bracelet	S. P. Cox	203,426	May 7	200	57	13	847
Brake for locomotives. Steam	J. Hickey	203,454	May 7	232	66	13	852
Brake-shoe	H. L. Perrine	203,495	May 7	272	78	13	858
Brake. Wagon	A. R. Cushman	203,247	May 7	11	4	13	822
Bread. Molding	A. E. Muth	203,363	May 7	134	39	13	838
Brick and tile machine	J. C. McKenzie	203,384	May 7	50	15, 16	13	827
Bridle and halter. Combined	E. Cox	203,324	May 7	95	27	13	832
Brush	B. C. Frobisher	203,256	May 7	20	7	13	823
Brush. Automatic fly	J. P. Kelso	203,402	May 7	239	68	13	853
Brush. Hair	D. B. Lovejoy	203,283	May 7	49	15	13	827
Brush. Paint	J. S. Gilligan	203,259	May 7	24	8	13	824
Building. Agricultural	L. J. Hesse	203,452	May 7	230	65	13	852
Bung	G. Borst	203,316	May 7	87	25	13	832
Buoy	G. D. Wyckoff	203,399	May 7	170	49	13	844
Button-fastening	C. M. Platt	203,497	May 7	273	78	13	858
Button. Sleeve or collar	C. A. Wood	203,308	May 7	79	24	13	831
Back-band hook	J. B. Gathright. (Reissue)	8,227	May 14	619	173	13	909
Bale-tie	J. M. Cutliff	203,599	May 14	397	112	13	883
Ballot-box	S. T. Bacon	203,525	May 14	320	91	13	873
Banjo	C. E. Dobson	203,604	May 14	401	114	13	883
Barrel top show-case	W. H. Grubb	203,613	May 14	408	116	13	884
Basin. Catch	H. Frank. (Reissue)	8,226	May 14	618	172	13	909
Basins. Stench-valve for wash	A. Leverty	203,745	May 14	547	155	13	901
Bed and chair. Camp	A. M. Eastman	203,605	May 14	401	114	13	883
Bedstead. Wardrobe	J. C. Hall	203,728	May 14	527	149	13	899
Beer-cooling apparatus	A. Faulhaber	203,718	May 14	518	147	13	897
Bell-ringer. Steam	G. N. Osgood	203,760	May 14	561	159	13	903
Birl-cage	G. Seyfang	203,657	May 14	453	130	13	890
Boiler and heater. Steam	E. T. Gifford and S. W. Pyle	203,725	May 14	525	149	13	898
Boiler. Portable steam	C. M. Miller	203,750	May 14	553	156	13	902
Boiler. Steam-engine	G. E. Banner	203,698	May 14	498	141	13	895
Boilers. Water-purifier and heater for	J. J. Ralya	203,646	May 14	441	126	13	888
Bolt	W. C. Shipherd	203,658	May 14	454	130	13	890
Bolt trimmer. Stay	J. Cochrane	203,708	May 14	508	145	13	896
Boom. Rafting	L. W. Pond	203,558	May 14	361	102	13	877
Book-clamp	H. C. Bailey	203,576	May 14	376	107	13	880
Boot and shoe seam	C. F. Langford. (Reissue)	8,228	May 14	620	173	13	909
Bottle-stopper fastener	C. O. Hammer	203,615	May 14	409	117	13	884
Bottle-stopper fastener	A. Luthy. (Reissue)	8,234	May 14	627	174	13	910
Bottling-machines. Attachment to	H. Martin	203,748	May 14	551	156	13	902
Box and can for oils and paints	H. B. Everest and A. P. Ross. (Reissue.)	8,225	May 14	617	172	13	909
Brake. Air	W. G. Raoul	203,647	May 14	443	126	13	888
Brick-cleaning machine	J. Hyde and A. Barker	203,622	May 14	415	118	13	885
Brick-machine	I. Morley	203,756	May 14	557	158	13	903
Broom-handles. Machine for varnishing	H. Bradt	203,583	May 14	383	108	13	881
Bung	J. Kirby	203,740	May 14	540	153	13	900
Bung. Ventilating	J. Bersch	203,580	May 14	381	108	13	880
Butter-worker	H. I. Carver	203,533	May 14	333	95	13	874
Button link. Sleeve	C. Hein	203,618	May 14	412	117	13	884
Bag-holder	J. L. Conway	203,891	May 21	708	202	13	929
Balance. Compensation	C. V. Woerd	203,976	May 21	801	230	13	941
Barrel	L. L. Hansen	203,824	May 21	643	181	13	920
Batting or wadding. Device for folding cotton	W. Lewis	204,058	May 21	888	255	13	952
Bed-bottom	M. Stansel	204,104	May 21	939	268	13	958
Bedstead. Invalid	J. Goodwin	204,026	May 21	859	246	13	948
Bee-hive	O. Colvin	203,890	May 21	707	202	13	929
Bee-hive	I. Parke	203,937	May 21	758	218	13	936
Bee-hive	G. S. Walton	204,115	May 21	949	272	13	959
Belt. Endless carrying	T. M. Healey	203,825	May 21	643	181	13	920

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Belt. Electro-galvanic	H. E. Jacobsen	204,835	May 21	651	186	13	922
Belting. Rubber	H. R. Barber	203,990	May 21	818	235	13	943
Bending machine. Sheet-metal	W. T. Holland	204,043	May 21	874	250	13	950
Bending plumbers' traps	E. A. Leland	203,842	May 21	660	187	13	923
Bird-cage	E. Weissenborn	203,970	May 21	794	228	13	940
Blackboard	H. W. Eastman	204,011	May 21	843	241	13	946
Blanks. Machine for arranging and feeding	A. Delkescamp and F. B. Bradley	203,897	May 21	715	205	13	930
Blower. Fan	R. Waskey	203,966	May 21	790	226	13	940
Boiler-covering compound	G. C. Fowler	203,906	May 21	729	.....	13	932
Boiler. Steam	B. T. Babbitt	203,986	May 21	812	233	13	943
Boiler. Steam	B. T. Babbitt	204,987	May 21	814	233	13	943
Bolt and nut	H. A. Harvey	204,036	May 21	869	248	13	949
Bolt-heading machine	C. B. Allen	203,982	May 21	806	231	13	942
Boot and shoe edge burnishing machine	C. J. Addy. (Reissue)	8,246	May 21	908	277	13	962
Boots. Manufacture of	W. R. Miller and M. R. Creighton	204,068	May 21	900	258	13	953
Bottle-stopper	D. E. Stevens	204,105	May 21	940	269	13	958
Box-fastener	O. Geier	203,907	May 21	730	206	13	932
Bracelet-fastening	L. Van Praag	203,964	May 21	789	226	13	940
Brake for elevators	C. H. Mitchell	204,069	May 21	900	258	13	953
Bridle and halter	J. McKibben	203,939	May 21	749	216	13	935
Bronzing-machine	J. O. Kurtzmann	203,841	May 21	658	187	13	922
Bung-stave lock	J. Kirby	203,922	May 21	743	214	13	934
Button	D. B. Waite	204,114	May 21	948	272	13	959
Baker and cooker. Steam	J. A. McClure	204,353	May 28	1230	348	13	998
Bale-tie	L. Arnold	204,183	May 28	1051	298	13	976
Bale-tie	J. Wynkoop and J. Y. Bloomingdale	204,409	May 28	1277	364	13	1005
Barrel and box. Moth-proof	M. L. Thompson	204,263	May 28	1128	322	13	986
Barrel for shipping bottled liquors	S. Strauss	204,259	May 28	1125	321	13	986
Barrel-washer	H. Binder	204,288	May 28	1152	329	13	989
Bed-bottom	T. and O. Howe	204,322	May 28	1089	310	13	981
Bed-bottom	G. S. Walker	204,401	May 28	1268	361	13	1004
Bedstead. Wardrobe	J. C. Hand and F. Caulier	204,321	May 28	1187	338	13	993
Bedstead. Wardrobe	E. Kiss	204,340	May 28	1207	344	13	996
Bedsteads. Invalid attachment for	T. T. Kendrick	204,232	May 28	1098	313	13	982
Belting. Rubber	C. T. Petchell	204,368	May 28	1237	352	13	1000
Bending links. Machine for	H. E. Grant	204,316	May 28	1182	336	13	993
Boiler-brooms. Operating	A. C. Cock	204,200	May 28	1067	304	13	978
Boilers. Apparatus for removing sediment from steam	T. C. Purves	204,250	May 28	1116	318, 319	13	984
Boots and shoes. Manufacture of	J. J. Hurst and W. R. Miller	204,330	May 28	1197	341	13	995
Bottle-stopper	H. Martin	204,350	May 28	1217	347	13	997
Bottle-stopper fastener	L. Kutscher	204,341	May 28	1208	344	13	996
Brake. Car	J. Ramsey, Jr.	204,372	May 28	1240	353	13	1000
Brake for railway-carriages	R. D. Sanders	204,378	May 28	1246	354, 355	13	1001
Brake for railway-trains. Safety	L. Blanck	204,186	May 28	1053	299	13	976
Brake. Horse	I. Spitz	204,258	May 28	1124	321	13	985
Brake pipes on cars. Coupling air and steam	F. A. Sheeley	204,383	May 28	1251	356	13	1002
Brake-shoe	W. McConway. (Reissue)	8,235	May 28	1287	367	13	1006
Brick-kiln	E. F. Andrews	204,182	May 28	1049	297, 298	13	975
Bridge-eyes. Machine for making	A. Schneiderlochner	204,381	May 28	1240	356	13	1001
Bridge. Self-adjusting	B. Williams	204,407	May 28	1274	363, 364	13	1004
Buckle. Trace	A. G. Landon and B. Decker	204,342	May 28	1209	344	13	996
Burial apparatus	J. Patterson and N. Wheeler	204,366	May 28	1235	351	13	999
Burial-casket	W. Hamilton	204,320	May 28	1186	337	13	993
Bag fastener. Money	W. H. Sanford	204,615	June 4	196	62	13	1040
Bale-tie	G. N. Beard	204,525	June 4	97	33	13	1026
Bale-tie	W. Loyd	204,588	June 4	160	52	13	1035
Barrel. Knock-down	L. Passoo	204,600	June 4	173	56	13	1037
Barrel-lining composition	A. Van Bibber	204,515	June 4	87	30	13	1025
Bath. Vapor	C. A. Munro	204,500	June 4	75	26	13	1023
Bedstead. Cabinet	S. C. Maine. (Reissue)	8,270	June 4	223	71	13	1044
Bedstead. Wardrobe	S. C. Maine. (Reissue)	8,269	June 4	222	71	13	1044
Bee-hive	J. W. Elder	204,549	June 4	116	40	13	1029
Bee-hive	W. C. Erb	204,551	June 4	118	40	13	1029
Bird-cages. Feed and water cup for	G. Günther	204,502	June 4	131	44	13	1031
Bit-stock	Q. S. Buckus	204,416	June 4	3	1	13	1013
Blacking. Water-proof	C. H. Broad	204,528	June 4	99	.....	13	1026
Blind-stile-boring machine	E. Cather	204,534	June 4	104	35	13	1027
Blower. Fire-place	S. P. Ruggles	204,506	June 4	80	27	13	1024
Boiler. Combined cast and wrought iron	F. Trump	204,461	June 4	44	14	13	1019
Boiler-covering	J. B. and F. D. Sanner	204,455	June 4	39	13	13	1018
Book. Subscription	E. W. Pierce	204,504	June 4	78	27	13	1024
Book-support	A. E. Dolbear	204,427	June 4	13	5	13	1014
Boot and shoe sole	H. C. Goodrich	204,431	June 4	17	6	13	1015
Boots and shoes. Metallic shank-stiffeners for	J. G. Whittier	204,644	June 4	219	70	13	1043
Bosom-pad	J. C. Tallman	204,460	June 4	43	14	13	1018
Bottle. Dredge	J. W. Haines	204,564	June 4	132	44	13	1031
Bottle-stopper	A. Albertson	204,472	June 4	55	17	13	1020
Bottles, jars, &c. Screw-cap for	A. Voege	204,463	June 4	46	15	13	1019
Bracelet	W. Durand	204,548	June 4	116	39	13	1029
Braid-holder	J. C. Lyon	204,495	June 4	71	25	13	1022
Brake. Automatic wagon	W. L. Collins	204,540	June 4	109	37	13	1028
Brake. Car	J. Johnson	204,491	June 4	68	24	13	1022
Brake. Railway air	H. F. Knapp	204,440	June 4	26	9	13	1016
Broom-rack	J. Terrass	204,511	June 4	84	29	13	1024
Brush. Horse	H. Giesecke. (Reissue)	8,272	June 4	225	72	13	1044
Brush-machine	E. B. Whiting	204,642	June 4	218	69	13	1043
Bung	H. Müller	204,595	June 4	168	54	13	1036
Bale-tie	A. Jingels	204,737	June 11	326	99	13	1061
Bale-tie	W. B. Rutherford and J. T. Hawkins	204,764	June 11	354	106	13	1064

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Battery. Counterpoise	B. Kennon	204,831	June 11	427	126, 127	13	1073
Bee-feeder	J. M. Shuck	204,767	June 11	357	107	13	1065
Bee-hive	J. E. Morgan	204,678	June 11	282	81	13	1053
Bee-hive	J. K. P. Venable	204,696	June 11	280	87	13	1055
Bench-hook	S. Smith	204,853	June 11	451	132	13	1075
Binder. Temporary	B. Brower and J. F. Adams. (Reissue.)	8,277	June 11	486	140, 141	13	1079
Bit-stock	H. C. Hart	204,727	June 11	317	96	13	1060
Blind-fastening	G. and J. Runton	204,762	June 11	350	106	13	1064
Boiler-plates. Inserting bolts in	N. S. Barritt	204,650	June 11	234	73	13	1049
Boiler. Steam	W. Menzies and C. Blagburn	204,750	June 11	339	102, 103	13	1063
Bookbinder's dry-press and sheet-tie	J. W. Jones	204,741	June 11	329	100	13	1061
Book-holder	E. and E. R. Young and F. E. Hafely	204,672	June 11	476	138	13	1078
Boot-legs. Machine for smoothing and finishing	M. V. B. Ethridge	204,662	June 11	245	77	13	1050
Boots and shoes. Manufacture of	C. C. Ballou	204,785	June 11	381	113	13	1067
Boots and shoes. Manufacture of	C. C. Ballou	204,786	June 11	383	114	13	1067
Boots, shoes, hats, &c. Mechanism for forming bats for	A. A. and R. B. Hawley	204,668	June 11	252	79	13	1051
Boxes. Machine for making wooden	R. M. Williamson	204,870	June 11	471	137	13	1078
Brake. Automatic car	G. A. Neal	204,679	June 11	202	82	13	1053
Brick-kiln	E. W. Bingham	204,651	June 11	234	74	13	1049
Brick-machine	Z. Phillips. (Reissue)	8,284	June 11	493	143	13	1080
Brick-machine	S. Shreffler, Jr	204,688	June 11	273	84, 85	13	1054
Bridge. Truss	J. M. McDonald. (Reissue)	8,280	June 11	490	142	13	1080
Bridle-bit	J. A. Fairbanks. (Reissue)	8,278	June 11	488	141	13	1079
Brush-bridle	C. Boeckh	204,652	June 11	236	74	13	1049
Burglar-alarm	A. E. Taylor and J. R. Johnson	204,861	June 11	458	134	13	1076
Button	E. S. and J. E. Wheeler	204,866	June 11	468	136	13	1077
Button. Sleeve	W. Bourke	204,706	June 11	292	91	13	1057
Back-band hook	H. W. Minnemeyer	204,910	June 18	533	156	13	1090
Bale-tie	S. H. Gilman	204,965	June 18	590	172	13	1097
Bale-tie	H. S. Worthington	205,023	June 18	644	190	13	1104
Basin cover. Catch	G. G. Campbell	204,882	June 18	506	148	13	1066
Basket. Wire	N. Davis	205,060	June 18	682	200	13	1109
Bessemer converters. Utilizing heat from	A. Cooper	204,886	June 18	509	149	13	1086
Blind-slat adjuster	R. Loth	204,986	June 18	610	179	13	1000
Boiler for steam fire-engines	M. R. Clapp	204,885	June 18	508	148	13	1086
Boiler-tubes. Coating	R. Brayton, D. June, and O. S. French.	205,038	June 18	660	194	13	1106
Book-binding	G. B. Huntington	205,095	June 18	717	213	13	1114
Book. Blank	J. W. H. Reisinger	205,137	June 18	758	225	13	1120
Book-holder	J. B. Brown	204,947	June 18	573	167	13	1085
Book-support	J. S. Turner	205,156	June 18	782	231	13	1123
Boot and shoe lasting apparatus	H. Gerred	204,963	June 18	589	172	13	1097
Boots and shoes. Manufacture of	G. H. Jones	204,979	June 18	603	176	13	1099
Bosom-board	R. McCoy	205,115	June 18	735	219	13	1117
Bottle-register	J. H. Welch	205,019	June 18	639	188	13	1104
Bottle-register	J. H. Welch	205,158	June 18	783	232	13	1123
Bottle-stopper	T. Massey and W. H. Rawe	204,987	June 18	611	179	13	1100
Bowling-alley	H. J. Heffert, F. M. Müller, and C. A. Meyer.	204,972	June 18	596	174	13	1098
Brake. Air	S. F. Prince, Jr	204,914	June 18	538	157	13	1090
Brick and tile machine	E. Durand	204,957	June 18	581	170	13	1096
Broiling-chamber	E. Norton	204,991	June 18	616	180	13	1100
Buckle. Trace and pad	G. E. Bales	204,940	June 18	566	165	13	1094
Button-fastening	G. B. Fittz	205,071	June 18	694	205	13	1111
Button-hole linings. Machine for making	D. Harris	205,080	June 18	702	208, 209	13	1112
Baker and roaster	S. W. White	205,224	June 25	865	256	13	1138
Balloon	J. Tracy	205,319	June 25	967	286	13	1152
Barrel heads and covers. Device for fastening	W. I. Winno	205,226	June 25	867	256	13	1139
Basket	I. I. Cole	205,335	June 25	1007	298	13	1157
Bed-bottom	B. F. Allen	205,332	June 25	963	291	13	1154
Bee-hive	N. M. Barnes	205,339	June 25	990	293, 294	13	1155
Bee-hive	W. B. Shoemaker	205,429	June 25	1078	319	13	1166
Bee-hive	D. S. Thomas	205,444	June 25	1093	323, 324	13	1168
Belt-shipper	D. C. Newell	205,408	June 25	1057	313	13	1163
Bit-stock	C. M. Knowles	205,400	June 25	1051	311	13	1162
Blood. Making composition articles from	W. H. Dibble. (Reissue)	8,305	June 25	1121	.....	13	1172
Bobbin	J. S. Crowley	205,246	June 25	888	263	13	1142
Boiler-covering	I. L. Merrell	205,199	June 25	838	249	13	1135
Boiler-heads. Machine for flanging	L. Campbell and J. F. Richards	205,241	June 25	884	261, 262	13	1141
Boilers. Crown-sheet for locomotive	J. Meredith	205,406	June 25	1055	313	13	1163
Bonbon-wrapper	I. J. Van Skelline	205,448	June 25	1098	325	13	1169
Book. Copy	D. H. Lueken	205,195	June 25	835	248	13	1135
Boot and shoe counters or stiffeners. Machinery for molding	J. Kieffen	205,191	June 25	830	246, 247	13	1134
Boots. Manufacture of	W. R. Miller	205,200	June 25	839	249	13	1135
Boots. Manufacture of	W. R. Miller	205,288	June 25	931	276	13	1147
Bottle-stopper	A. E. N. Agnel	205,228	June 25	869	257	13	1139
Box-fastener	R. Mead	205,286	June 25	929	276	13	1147
Box. Packing	I. Popper	205,413	June 25	1064	315	13	1164
Box. Wooden	G. A. Mannie	205,280	June 25	919	272	13	1146
Boxes. Fastening packing	M. J. Rivard	205,420	June 25	1070	316	13	1165
Boxes, &c. Packing device for packing	A. D. Spencer	205,433	June 25	1082	320	13	1167
Braid and similar articles. Device for holding coils of	S. B. Fleisher	205,258	June 25	899	266	13	1143
Brake. Automatic wagon	G. Kemmel	205,396	June 25	1048	310	13	1162
Broom	J. W. Booth	205,344	June 25	996	295	13	1155
Brush. Horse	F. Foss	205,374	June 25	1025	303	13	1159

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Bucket. Metal	M. Campbell	205,242	June 25	885	262	13	1141
Burglar-alarm	J. W. and W. W. Wharf	205,454	June 25	1102	326	13	1160
Burial-casket	G. A. Kirchner	205,277	June 25	916	272	13	1145
Butter-tub	R. Still	205,436	June 25	1084	321	13	1167
Butter-tub	I. and J. Westcott	205,453	June 25	1101	326	13	1160
Buttoner and button-fastener. Combined	L. H. Parker	205,207	June 25	846	251	13	1136
Car-coupling	H. J. L. Detto	198,736	Jan. 1	4	1	13	9
Car-coupling	S. N. Keith	198,746	Jan. 1	17	4	13	11
Car-coupling	B. Rowell	198,903	Jan. 1	187	53	13	37
Car. Dumping	D. O'Brien. (Reissue)	8,021	Jan. 1	211	59	13	40
Car-spring	G. F. Godley	198,843	Jan. 1	120	34	13	27
Car-step register	W. Beeson	198,786	Jan. 1	70	18	13	18
Car-wheel and lubricator	B. F. Shelabarger	198,819	Jan. 1	98	27	13	23
Car-windows. Dust-screen holder for	E. L. Wallace	198,917	Jan. 1	201	57	13	39
Carpet-lining	A. Robinson	198,816	Jan. 1	96	27	13	23
Carriage-knob	G. L. Crandal	198,840	Jan. 1	118	34	13	27
Casting metals. Mold for	A. J. Nellis	198,852	Jan. 1	130	.....	13	29
Chair. Rocking	T. J. Palmer	198,810	Jan. 1	92	25	13	22
Churn	H. T. Davis	198,797	Jan. 1	80	21	13	20
Churn	J. A. and W. V. McConnell	198,806	Jan. 1	88	24	13	22
Churn	J. G. Taylor	198,906	Jan. 1	191	54	13	38
Churn. Rotary box	C. Isbell and E. C. Taylor	198,802	Jan. 1	85	23	13	21
Clamp	D. Rockwell and N. Doty	198,754	Jan. 1	26	6	13	12
Commode	S. Whitnum	198,865	Jan. 1	145	41	13	31
Condenser. Injection	W. H. Guild	198,883	Jan. 1	166	47	13	34
Corn-sheller	J. W. Fingar	198,878	Jan. 1	162	46	13	34
Corset	C. W. Foster	198,881	Jan. 1	164	46	13	34
Cotton-cleaner	R. Desha and W. A. Manahan	198,873	Jan. 1	153	44	13	32
Cradle	L. J. Adams	198,784	Jan. 1	68	17	13	18
Cultivators. Gopher or ridging attachment for	H. Parker	198,752	Jan. 1	24	6	13	12
Curtain-fixture	G. W. Cornell	198,839	Jan. 1	117	33	13	27
Can-opener	C. M. Williams	198,959	Jan. 8	249	71	13	54
Can-seaming machine	E. R. Bowie	198,965	Jan. 8	255	73	13	55
Candlestick	J. Musgrove	199,094	Jan. 8	380	113	13	76
Car. Brick-carrying	J. K. Caldwell. (Reissue)	8,027	Jan. 8	431	126	13	82
Car-coupling	W. Dunn	198,972	Jan. 8	264	76	13	56
Car-coupling pin	L. J. Gott	198,937	Jan. 8	238	64	13	51
Car. Refrigerator	R. M. Birdsall	199,019	Jan. 8	308	91	13	64
Car-roof	L. P. Barnes and J. H. Faupel	199,014	Jan. 8	304	89	13	63
Car-seats. Portable hammock attachment for	M. D. Brooks	198,927	Jan. 8	219	62	13	49
Car. Sleeping	W. D. Mann	198,991	Jan. 8	283	82, 83	13	59
Carbureters. Feed-regulator for	G. L. Gray	199,055	Jan. 8	343	100	13	69
Carriage. Child's	G. T. Palmer	199,097	Jan. 8	382	114	13	76
Cart. Barrel	W. Plank	199,102	Jan. 8	387	115	13	77
Casting metal. Chill-mold for	H. R. Benwell	198,925	Jan. 8	216	61	13	49
Centrifugal machine	W. H. Tolhurst	199,125	Jan. 8	417	122	13	81
Chair. Folding bracket	W. A. Brewster	199,024	Jan. 8	313	92	13	64
Chandelier-trimming. Glass	J. H. Hobbs	199,066	Jan. 8	353	104	13	71
Check rower and dropper mechanism. Combined	A. M. Black and J. Babcock	199,020	Jan. 8	309	91	13	64
Cigarette	J. Gordon	198,977	Jan. 8	267	77	13	57
Clasp	A. Christey	198,929	Jan. 8	221	62	13	49
Clevis	W. Kinney	199,073	Jan. 8	359	106	13	72
Cock. Stop	G. C. Bailey. (Reissue)	8,024	Jan. 8	427	125	13	82
Cork-cutting machine	A. Fabre	199,047	Jan. 8	334	98	13	68
Corset	E. K. Bullock	199,027	Jan. 8	316	93	13	65
Corset-steel	C. Jordan	198,984	Jan. 8	274	79	13	58
Cultivator	I. A. Benedict	199,017	Jan. 8	307	90	13	64
Cultivator and seed-drill. Combined	E. G. Matthews	199,081	Jan. 8	366	108, 109	13	74
Cultivator-tongue	W. P. Brown	199,025	Jan. 8	315	92	13	64
Calcimining. Size for	W. S. Welch	199,242	Jan. 15	541	.....	13	100
Calculator	W. Hart	199,289	Jan. 15	591	173	13	108
Can jacket. Oil	L. Peter	199,222	Jan. 15	524	154	13	98
Can. Oil	C. S. S. Baron and C. H. Tallman	199,251	Jan. 15	549	162	13	102
Can. Oil	C. S. S. Baron and C. H. Tallman	199,252	Jan. 15	550	162	13	102
Car-coupling	J. J. Anthony	199,173	Jan. 15	478	141	13	90
Car. Refrigerator	A. W. Zimmerman	199,343	Jan. 15	646	189	13	116
Car-starter	W. Jasper	199,158	Jan. 15	464	137	13	88
Car-wheels. Machine for making molds for	B. Burgess	199,259	Jan. 15	558	164	13	103
Carbureting air. Apparatus for	C. E. Wolle and S. Munyon	199,246	Jan. 15	545	160	13	101
Carriage-seat	J. D. Olds	199,310	Jan. 15	612	178	13	111
Caster. Furniture	J. B. Ritchey	199,313	Jan. 15	616	179	13	111
Casting. Collapsible core for	G. Bisset, Jr	199,179	Jan. 15	485	143	13	92
Chair-bottom	H. S. Hale. (Reissue)	8,041	Jan. 15	655	192	13	118
Chair. Oscillating	G. W. Cummings, Jr	199,189	Jan. 15	496	146	13	93
Chair. Rocking	J. Krapp	199,212	Jan. 15	516	152	13	96
Chandelier. Extension	J. W. Carter	199,183	Jan. 15	491	144	13	92
Chandelier for oil-burners	M. Schmickl	199,169	Jan. 15	474	140	13	90
Churns. Motor for operating	T. J. Crump	199,187	Jan. 15	494	145	13	93
Clinometer	L. C. Schnell	199,319	Jan. 15	623	181	13	113
Clock	A. I. Goodrich	199,198	Jan. 15	503	148	13	95
Clock. Tell-tale	R. Bocklen	199,181	Jan. 15	487	143	13	92
Colter	S. T. Ferguson. (Reissue)	8,038	Jan. 15	652	191	13	117
Commode-covers. Shield for	H. Gerould	199,284	Jan. 15	586	171	13	107
Corset-clasp	D. H. Fanning	199,277	Jan. 15	580	169	13	106
Cuspadore	S. J. Van Staveren	199,333	Jan. 22	637	185	13	115
Can for oysters. Shipping	J. J. Phillips	199,569	Jan. 15	882	258	13	162
Can waxing or soldering apparatus	T. Bown	199,406	Jan. 22	720	212	13	136
Car-coupling	H. M. Grover	199,433	Jan. 22	744	218	13	140
Carpet-stretcher	R. Parrett	199,462	Jan. 22	771	226	13	145
Carriage. Child's	R. G. Britton	199,505	Jan. 22	817	239	13	152
Carriages. Holdback attachment for	M. W. Spaulding	199,589	Jan. 22	905	264	13	165
Cartridge-capping implement	T. M. Wallis	199,600	Jan. 22	916	268	13	167
Chain. Ornamental	J. L. Heeley	199,542	Jan. 22	858	250	13	158

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Chair. Sewing-machine	S. D. Granger	199,535	Jan. 22	852	249	13	157
Chimneys, &c. Ventilating-cap for	A. Barnum	199,399	Jan. 22	713	210	13	135
Churn	J. M. Hill	199,547	Jan. 22	862	252	13	159
Churn-dasher. Rotary	G. Sprague	199,474	Jan. 22	783	230	13	146
Clam-baker	J. L. Stronb	199,595	Jan. 22	910	267	13	166
Clothes-washer	N. H. Long	199,455	Jan. 22	766	224	13	143
Coffee-percolator	J. C. Jensen	199,445	Jan. 22	753	221	13	141
Collars. Die for making	G. K. Snow. (Reissue)	8,046	Jan. 22	934	272	13	169
Cooker. Feed	A. Stewart	199,593	Jan. 22	909	266	13	166
Cooler. Milk	O. S. Bliss	199,404	Jan. 22	717	211	13	136
Corn-husker. Field	G. Meader	199,376	Jan. 22	688	202	13	131
Corn-shelling machine	W. M. Blair	199,496	Jan. 22	803	236	13	150
Cornet	C. G. Conn and E. Dupont	199,516	Jan. 22	827	242	13	153
Corset	L. T. Smith	199,587	Jan. 22	902	264	13	165
Corset-spring	J. Day	199,417	Jan. 22	730	215	13	138
Cotton-sweep	W. W. Speer	199,590	Jan. 22	905	265	13	165
Culinary vessel. Steam	O. S. Bliss	199,403	Jan. 22	716	211	13	135
Cultivating implement	W. H. Thomas	199,481	Jan. 22	789	232	13	147
Cultivator. Wheel	B. F. and L. W. Needham	199,565	Jan. 22	877	257	13	161
Cuspadore	E. A. Heath	199,541	Jan. 22	857	250	13	158
Calendar	W. W. Watson	199,764	Jan. 29	1101	323	13	204
Calendar and clamp. Combined	J. W. Collins	199,796	Jan. 29	1135	333	13	209
Can. Metal	G. Browne	199,616	Jan. 29	962	279	13	182
Car-coupling	A. L. Miller	199,658	Jan. 29	1003	292	13	188
Car. Dumping	M. Van Wormer	199,761	Jan. 29	1095	322	13	203
Car-starter	H. Schreiner	199,665	Jan. 29	1010	294	13	189
Car. Steam street	E. P. Vaux	199,762	Jan. 29	1099	{322 323	13	203
Car. Stock	A. Nicolassen	199,855	Jan. 29	1187	349	13	217
Car-window deflector	D. M. Everstine	199,630	Jan. 29	976	284	13	184
Carbureter	J. Bradley	199,781	Jan. 29	1116	328	13	206
Carpet-cleaner	F. C. Walker	199,880	Jan. 29	1210	355	13	220
Carpet-sweeper	M. R. Bissell	199,612	Jan. 29	953	277	13	181
Carpet-sweeper	B. Figer	199,632	Jan. 29	978	284	13	184
Carriage clip-iron	J. W. Anderson	199,679	Jan. 29	1023	298	13	191
Carriage-curtain loop	G. L. Crandal	199,798	Jan. 29	1137	334	13	209
Carriage-top	D. W. Hazeltine	199,706	Jan. 29	1049	307	13	195
Cartridge	O. Jones and F. W. Marston	199,717	Jan. 29	1058	309	13	197
Cattle-tie	J. E. Littlefield	199,653	Jan. 29	999	291	13	188
Chair-bottom	S. Green	199,824	Jan. 29	1160	341	13	213
Chair. Electro-galvanic	S. C. Pratt	199,663	Jan. 29	1008	293	13	189
Chair. Tilting	H. Parry	199,857	Jan. 29	1189	349	13	217
Churn-dash. Reciprocating	W. W. Primm	199,742	Jan. 29	1080	317	13	200
Churn-dashers. Device for operating reciprocating	J. H. Lawrence	199,836	Jan. 29	1172	344	13	214
Churns. Securing rotary dashers in	J. McAnespey	199,657	Jan. 29	1002	292	13	188
Cigar-box	L. Kaufmann	199,719	Jan. 29	1059	310	13	197
Clock. Pendulum	H. J. and W. D. Davies	199,804	Jan. 29	1143	335	13	210
Clothes-drier	J. K. Miller	199,731	Jan. 29	1071	313	13	199
Clothes-pounder	M. P. Colvin	199,693	Jan. 29	1038	303	13	194
Collars and cuffs. Machine for folding blanks for	G. Boxley	199,615	Jan. 29	956	{278 279	13	181
Column. Fire-proof	P. B. Wight	199,887	Jan. 29	1216	357	13	221
Cooker. Feed	W. H. Whittier	199,768	Jan. 29	1105	324	13	204
Cooking apparatus. Portable	C. H. Tanner	199,757	Jan. 29	1093	321	13	202
Cork-extractor	P. Tyrer	199,760	Jan. 29	1095	321	13	203
Corn-popper	I. Yost	199,770	Jan. 29	1107	325	13	205
Corn-sheller	C. D. Read	199,744	Jan. 29	1081	317	13	201
Corn-stalk cutter	M. Clark and C. A. Heckel	199,691	Jan. 29	1036	302	13	193
Cranberry-picker	L. and Z. Hall and W. Crowell	199,703	Jan. 29	1047	306	13	195
Cranberry-picker	D. Lumbert	199,728	Jan. 29	1068	312	13	198
Crucible. Metallurgic	W. L. Glorieux	199,823	Jan. 29	1160	341	13	213
Cultivator	L. Antholue	199,680	Jan. 29	1025	299	13	191
Cultivator	S. H. Ford	199,634	Jan. 29	980	285	13	185
Cultivator	M. G. Graham	199,701	Jan. 29	1045	305	13	195
Curtain-fixture	F. C. D. McKay	199,729	Jan. 29	1069	313	13	198
Cylinders. Fastening heads in metal	P. B. Clark	199,794	Jan. 29	1133	332	13	208
Caddy. Measuring	J. C. Reed	199,933	Feb. 5	45	15	13	240
Can. Metallic	C. P. Maxfield	199,918	Feb. 5	33	10	13	237
Car registering apparatus	R. McCully	200,073	Feb. 5	183	58, 59	13	261
Car registering apparatus	R. McCully	200,074	Feb. 5	185	59	13	262
Car registering apparatus	R. McCully	200,075	Feb. 5	186	59	13	262
Car registering apparatus	R. McCully	200,076	Feb. 5	187	60	13	262
Cars. Safety-guard for	J. W. Harding and I. Towell	199,974	Feb. 5	83	27	13	246
Carburetor	M. Shea and J. M. Hamilton	200,000	Feb. 5	106	85	13	250
Carbureting apparatus	M. D. Nelon	199,928	Feb. 5	40	13	13	239
Carriages. Canopy-top for	C. E. Fosburgh. (Reissue)	8,074	Feb. 5	236	72	13	269
Cell-case	J. L. Stevens	200,103	Feb. 5	213	66	13	266
Celluloid and other plastic compositions. Manufacture of sheets of	J. W. Hyatt	199,908	Feb. 5	17	5, 6	13	235
Chair. Folding	E. G. Stanley	200,100	Feb. 5	210	66	13	266
Chimney-cowl	C. E. Seelkey	200,002	Feb. 5	107	35	13	250
Cigar-machine	F. Haehnel	200,054	Feb. 5	164	53	13	259
Cigar-support	F. L. Oviatt	200,083	Feb. 5	195	62	13	263
Cigar-wrapper cutter	F. Haehnel	200,055	Feb. 5	166	53	13	259
Cloth-shearing machine	A. A. Forbes	199,970	Feb. 5	79	26	13	245
Clothes-drier	L. C. Cattell	199,958	Feb. 5	68	22	13	244
Clothes-pounder	F. A. Sumner	199,942	Feb. 5	54	18	13	241
Clothes-pounder	H. Trumbull	200,008	Feb. 5	111	37	13	251
Clothes-pounder	G. W. Wood	200,116	Feb. 5	228	72	13	268
Cock and faucet	C. Vernlaud	199,944	Feb. 5	56	18	13	242
Coin and detecting counterfeit coin. Device for receiving and delivering	J. W. Meaker	200,060	Feb. 5	193	61	13	263
Colter. Rolling	E. A. Sanders	199,937	Feb. 5	50	16	13	240
Combs from celluloid, &c. Manufacture of	J. W. Hyatt	199,909	Feb. 5	22	7	13	236

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Compass	A. P. Freshman	200,048	Feb. 5	159	51	13	258
Condenser. Mercury	C. E. Livermore	200,069	Feb. 5	178	57	13	261
Copper. Tinning and finishing sheet	R. McManus	200,079	Feb. 5	193	.....	13	263
Corset-clasp	L. F. McNett	199,921	Feb. 5	35	11	13	238
Cotton. Stowing	D. Hayes	199,975	Feb. 5	83	27	13	246
Culinary utensil	J. W. Steele	200,102	Feb. 5	212	66	13	266
Cultivator	J. M. Graves	199,972	Feb. 5	81	26	13	245
Cultivator	D. R. Raymond	200,089	Feb. 5	201	63	13	264
Curtain-fixture	R. G. Stanley	200,099	Feb. 5	209	65	13	265
Cut-off for flexible pipes	C. Weed	200,113	Feb. 5	226	69	13	267
Can. Oil	J. A. Frey	200,274	Feb. 12	292	116	13	301
Car-coupling	S. J. Keim	200,311	Feb. 12	329	128	13	307
Car-coupling	W. A. Tew	200,359	Feb. 12	480	141	13	315
Cars. Draft apparatus for railway	S. Griffith and J. S. Patterson. (Reissue.)	8,081	Feb. 12	499	147	13	318
Cars. Pushing-bar for railway	I. S. Goldman	200,136	Feb. 12	254	76	13	281
Carpet-fastener	F. O. Clark	200,172	Feb. 12	292	87	13	286
Carriage-top	J. V. Emmitt	200,269	Feb. 12	388	115	13	301
Cartridge-shells. Implement for filling	J. Newman	200,149	Feb. 12	267	80	13	283
Casting wheels	C. F. and J. B. Mobler	200,326	Feb. 12	449	132	13	310
Chain-links. Machine for forming	J. H. Helm	200,196	Feb. 12	313	93	13	289
Chains and like articles. Machine for forming	A. C. Jordan	200,199	Feb. 12	316	94, 95	13	290
Chair-bottom	D. F. Haasz	200,283	Feb. 12	309	118	13	302
Chair. Commode	J. Dawson	200,181	Feb. 12	299	89	13	287
Chair. Folding	E. H. Mahony	200,211	Feb. 12	325	98	13	292
Chair. Rocking	E. A. C. Hesse	200,296	Feb. 12	414	123	13	305
Chair. Rocking	J. Krapp	200,304	Feb. 12	320	96	13	291
Chairs. Safe-guard for	S. K. Luce	200,317	Feb. 12	436	130	13	308
Churn-dasher. Reciprocating	M. R. Heliker	200,194	Feb. 12	311	93	13	289
Churn. Reciprocating	J. T. Irick	200,306	Feb. 12	422	126	13	306
Churns. Device for use in reciprocating	J. Forsyth	200,271	Feb. 12	390	115	13	301
Clocks and watches. Calendar-dial for	W. D. McGloghlon	200,212	Feb. 12	326	98	13	292
Coat. Duster	A. P. Silva	200,226	Feb. 12	341	102	13	294
Coffee-pot	C. C. Kribs	200,205	Feb. 12	321	96	13	291
Cooker. Steam feed	L. Worth	200,237	Feb. 12	351	104	13	296
Cord. Double-winged plaited	F. W. Huppelsberg	200,303	Feb. 12	419	125	13	306
Cord. Machine for covering	F. W. Huppelsberg	200,302	Feb. 12	418	125	13	306
Corn and potato coverer	W. and C. T. Herbert	200,295	Feb. 12	413	123	13	304
Corn. Preserving juices of green	J. H. Oliver	200,150	Feb. 12	268	.....	13	283
Corn shelling and grinding machine	J. G. Morris	200,215	Feb. 12	328	99	13	292
Cultivator-points. Machine for forming	J. Harper	200,287	Feb. 12	402	{119 120	13	303
Cultivator. Pulverizing	G. Stevenson	200,355	Feb. 12	477	140	13	314
Curtain-fixture	J. C. Lake	200,314	Feb. 12	434	129	13	308
Curtain roller and bracket	W. F. Hurrell, Jr.	200,304	Feb. 12	420	125	13	306
Cutter-head	O. Lindblad	200,316	Feb. 12	435	130	13	308
Cabinet. Toilet	G. Rivera	200,480	Feb. 19	609	179	13	342
Car-coupling	M. R. Delay	200,438	Feb. 19	568	167	13	336
Car-coupling	D. R. Halter	200,451	Feb. 19	580	171	13	338
Cars. Draft and buffing apparatus for railway	E. L. Caum. (Reissue)	8,095	Feb. 19	736	216	13	302
Cars. Driving-gear for street	J. Bishop	200,499	Feb. 19	625	184	13	345
Carbureter	W. H. Reed	200,568	Feb. 19	695	204	13	356
Carpet-fastener	W. Aldrich	200,421	Feb. 19	552	163	13	334
Carriage-boot	C. P. Dodge and C. W. Brown	200,440	Feb. 19	569	168	13	336
Carriage-seats. Shifting-rail for	C. Fritschy	200,447	Feb. 19	577	170	13	338
Casks. Machine for washing	A. Muntzenberger and H. M. Underwood.	200,470	Feb. 19	599	176	13	341
Chair fan attachment. Rocking	K. Thompson and L. G. Bergstrom	200,414	Feb. 19	543	160	13	332
Chair. Folding	C. D. Hyde	200,456	Feb. 19	584	172	13	339
Chair. Sewing-machine	F. Chichester	200,508	Feb. 19	633	186	13	346
Chair. Window-cleaning	A. Dornitzer	200,441	Feb. 19	570	168	13	337
Chamber-vessel	A. M. Rontey	200,481	Feb. 19	610	180	13	343
Cheese-cutter	J. N. Parker	200,472	Feb. 19	601	177	13	341
Cheese. Manufacture of	E. V. Lapham	200,547	Feb. 19	676	199	13	353
Churn. Revolving	B. B. Hess	200,531	Feb. 19	658	194	13	350
Churns. Folding stand for rotary	J. McAnespey	200,403	Feb. 19	534	150	13	331
Clock-movement	A. E. Hotchkiss	200,534	Feb. 19	661	195	13	350
Clock striking-movement	W. D. Davies and F. A. Lambert	200,518	Feb. 19	641	189	13	348
Clock striking-movement	H. D. Northrop	200,564	Feb. 19	691	203	13	355
Clutch mechanism	G. Crompton	200,375	Feb. 19	507	150	13	327
Cock for steam-boilers. Stop	J. L. Heald	200,453	Feb. 19	582	172	13	338
Cock. Gage	A. H. Jarecki	200,396	Feb. 19	528	156	13	330
Coffee-roaster	G. H. Downie	200,520	Feb. 19	644	190	13	348
Collar	W. M. House	200,535	Feb. 19	662	195	13	351
Cooker. Feed	A. G. Cunningham, J. Winhofer, and R. M. Rice.	200,515	Feb. 19	639	188	13	347
Cooking utensil	C. G. Shepard and P. Adams, Jr	200,573	Feb. 19	702	206	13	357
Copy-holder	J. D. Moore	200,560	Feb. 19	687	202	13	354
Cord polishing and finishing machine	W. Buckton	200,503	Feb. 19	629	185	13	346
Corset	C. A. Blohm	200,500	Feb. 19	626	184	13	345
Corset	L. H. Foy	200,384	Feb. 19	515	152	13	328
Corsets. Manufacture of	J. C. Tallman	200,583	Feb. 19	710	209	13	358
Candlestick	J. McCarthy	200,661	Feb. 26	812	239	13	381
Cans. Casing for	A. F. Tripp	200,806	Feb. 26	954	281	13	403
Car-coupling	W. N. Patteson	200,752	Feb. 26	904	266	13	395
Car. Dumping	M. Van Wormer	200,813	Feb. 26	961	283	13	404
Car. Stock	W. H. Hayes	200,719	Feb. 26	872	256	13	390
Chain-making machine	J. J. White	200,677	Feb. 26	827	{243 244	13	383
Chair. Rocking	S. Willershausen and F. Rhoner	200,809	Feb. 26	957	282	13	403
Charcoal-kilns. Operating	W. A. Miles	200,662	Feb. 26	812	239	13	381
Clasp and buckle. Combined	J. R. Judd	200,658	Feb. 26	810	238	13	381
Clasp for supporting garments	W. B. Walker	200,633	Feb. 26	776	228	13	376

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Clay tubular bodies and forming collars thereon. Machine for enlarging the ends of	G. D. Goodrich	200,791	Feb. 26	938	276	13	400
Clock-cases. Manufacture of	N. Allen	200,596	Feb. 26	742	217	13	371
Cloth. Gigging-machine for napping	C. Woelfel and J. Massey	200,784	Feb. 26	932	274	13	399
Coal. Purifying	P. F. Morey	200,663	Feb. 26	813	.....	13	382
Coffee and spice mill	T. Strobridge	200,777	Feb. 26	927	272	13	398
Collar and hames. Combined	J. R. Gorby	200,710	Feb. 26	865	254	13	389
Copper and tinned-copper sheets. Manufacture of	A. O'Neill	200,801	Feb. 26	949	.....	13	402
Cornice-mold and mitering device	G. K. Glenn and H. Fern	200,653	Feb. 26	802	236	13	380
Corset-clasp	T. C. Candlish	200,693	Feb. 26	844	248	13	386
Cotton-cleaner	W. Herrmann	200,721	Feb. 26	874	257	13	390
Cotton-gin	A. L. Stietenroth	200,776	Feb. 26	926	272	13	398
Cradle	J. Sprengard	200,805	Feb. 26	953	280	13	403
Cultivator	S. L. Allen	200,681	Feb. 26	833	245	13	384
Cup and other vessels	H. Berry	200,686	Feb. 26	837	246	13	385
Cake-cutter	J. Whitehead	200,958	Mar. 5	133	44	13	436
Can for transporting liquids	J. Graves. (Reissue)	8,113	Mar. 5	262	82	13	454
Car-seat	E. B. Simpson	201,056	Mar. 5	236	75	13	451
Carpet-cleaner	C. Cummings	200,822	Mar. 5	7	3	13	416
Carriage. Child's	G. W. Pearce	201,043	Mar. 5	224	70	13	449
Carriage-top. Shifting	C. Easterling	200,858	Mar. 5	43	16	13	422
Carriages. Safety-top for children's	J. Curren	200,856	Mar. 5	42	15	13	421
Carriages. Shade for children's	H. S. Smith	200,945	Mar. 5	132	40	13	434
Cartridge	G. W. Evans	200,995	Mar. 5	175	56	13	442
Cartridge-box	J. W. Frazier. (Reissue)	8,112	Mar. 5	261	82	13	454
Cartridge-loading device	E. Schenck	200,846	Mar. 5	34	12	13	420
Center-board for vessels	L. Read	200,934	Mar. 5	111	38	13	432
Chair. Folding	J. E. Wakefield	200,953	Mar. 5	129	42	13	435
Chair. Rocking	G. Roeder	200,937	Mar. 5	115	39	13	433
Chest. Apparatus for developing the	D. J. Mosher	201,038	Mar. 5	219	69	13	448
Churn	C. Farmer	200,997	Mar. 5	177	56	13	442
Churn, and device for operating the same. Revolving box-	E. P. Conser	200,897	Mar. 5	80	28	13	427
Churn. Power-	A. W. Decker	200,988	Mar. 5	163	53	13	440
Cigar-pipe	J. G. McCarter	201,031	Mar. 5	212	66	13	447
Cigar-wrappers. Device for forming	O. A. Bishop	200,889	Mar. 5	73	25	13	426
Cigarette	C. G. Emery	200,859	Mar. 5	44	.....	13	422
Clock. Cosmographic	C. Hénard and E. Lasnier	200,830	Mar. 5	16	6, 7	13	417
Clothes-pounder	R. A. Eddy	200,902	Mar. 5	85	29	13	428
Coffee-polishing machine	H. O. Bloom	200,817	Mar. 5	4	1	13	415
Collar and cuff	R. H. Sanborn, C. O. Kanouse, and A. A. Sanborn.	200,939	Mar. 5	117	39	13	433
Cooler. Liquid-	C. A. Maus	200,925	Mar. 5	104	35	13	431
Corset	L. S. Bortree	200,967	Mar. 5	145	47	13	438
Corset	I. D. Warner. (Reissue)	8,114	Mar. 5	263	82	13	454
Corset-stays, &c. Treatment of wood for	J. G. La Fonte	201,022	Mar. 5	200	.....	13	446
Crane	J. M. De Célis	200,898	Mar. 5	80	28	13	427
Crayon	J. W. Swarts	201,067	Mar. 5	246	.....	13	452
Cultivator	P. J. Ward	200,955	Mar. 5	130	43	13	436
Cultivator. Sulky	S. Gesley	201,001	Mar. 5	180	57	13	443
Curtain roller and bracket	J. C. Lake	201,023	Mar. 5	201	64	13	446
Cutter-head	C. M. Coulter	200,980	Mar. 5	155	51	13	439
Can. Metallic	G. H. and J. H. Perkins	201,122	Mar. 12	308	94	13	468
Car-coupling	W. H. Ward	201,312	Mar. 12	505	156	13	496
Car-door	D. F. Van Liew	201,306	Mar. 12	497	153	13	495
Car. Sleeping-	B. F. Manier	201,186	Mar. 12	367	114	13	477
Cars. Tank for stock-	S. Johnson	201,250	Mar. 12	436	134	13	486
Carpet pad. Stair-	G. W. Chipman. (Reissue)	8,116	Mar. 12	518	158	13	497
Cart-body	F. H. Trenholm	201,209	Mar. 12	389	120	13	481
Chain. Ornamental	E. Verpillier	201,135	Mar. 12	321	98	13	470
Chair. Barbers'	H. Geise	201,176	Mar. 12	357	110	13	476
Chair. Folding rocking-	D. N. Selleg	201,129	Mar. 12	315	96	13	469
Chair-leg fastening	J. Scarritt, Jr	201,201	Mar. 12	481	147	13	493
Chair. Rocking-	J. Beiersdorf	201,067	Mar. 12	270	84	13	463
Chisel	O. J. Pennell	201,284	Mar. 12	474	145	13	492
Churn-dasher. Rotary	S. B. Rathbun	201,287	Mar. 12	477	146	13	492
Cigar-package	P. Cauhapé	201,160	Mar. 12	344	106	13	474
Clocks. Electro-magnetic apparatus for synchronizing	J. A. Lund	201,185	Mar. 12	366	114	13	477
Cloth finishing process and apparatus	H. Hebdon	201,112	Mar. 12	297	91	13	467
Clutching device	H. Fuchs	201,105	Mar. 12	288	89	13	466
Coal-breaker	G. B. Markle	201,187	Mar. 12	368	115	13	478
Coffee-pot	J. C. Weller	201,139	Mar. 12	325	99	13	470
Coffin, &c., fastener	A. B. Davis	201,163	Mar. 12	346	107	13	474
Coffin-fastener	J. McCarthy	201,188	Mar. 12	369	115	13	478
Coin holding and counting apparatus	J. W. Meaker	201,264	Mar. 12	452	139	13	489
Corn. Implement for holding hot	J. De Yongh	201,230	Mar. 12	414	127	13	484
Corset	M. Adler	201,145	Mar. 12	331	101	13	472
Corset-clasp	J. M. Van Orden	201,307	Mar. 12	499	154	13	495
Cotton-chopper	F. E. Glover	201,240	Mar. 12	428	131	13	485
Coupling-links. Manufacturing	J. Mann	201,261	Mar. 12	449	138	13	488
Cranberry-picker	A. C. Nickerson	201,280	Mar. 12	467	144	13	491
Crayons. Composition for	C. C. Parsons	201,283	Mar. 12	473	.....	13	492
Cultivator	D. S. Wagner	201,136	Mar. 12	322	99	13	470
Cultivator-tooth	W. A. Van Brunt and S. E. Davis	201,304	Mar. 12	495	153	13	495
Curtain-tassel	L. B. and N. B. Griffith	201,109	Mar. 12	292	90	13	466
Cake holder and cooler	S. W. Larrabee	201,538	Mar. 19	751	229	13	538
Can. Metallic	C. Green and W. Wilson, Jr. (Reissue.)	8,126	Mar. 19	806	245	13	545
Cab spont. Oil-	A. L. Fisher	201,513	Mar. 19	723	220	13	535
Car. Railway-	J. C. Paul	201,585	Mar. 19	803	245	13	544
Car-starter	W. Jasper	201,421	Mar. 19	633	193	13	521
Cars. Draw-bar for railway-	G. F. Godley	201,517	Mar. 19	728	222	13	535
Carriage. Child's	J. A. S. Simonson	201,561	Mar. 19	774	236	13	541
Chair. Rocking-	C. C. Nichols	201,440	Mar. 19	650	198	13	524

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Chimney-cap	J. W. Taylor	201,466	Mar. 19	676	206	13	527
Churn	J. Hnebethal	201,528	Mar. 19	739	225	13	536
Churn	O. O. Moore	201,438	Mar. 19	649	198	13	523
Clamp	E. F. Gordon	201,407	Mar. 19	622	190	13	519
Corn-sheller	H. C. Scharnweber and E. Barkham	201,359	Mar. 19	571	175, 176	13	512
Cornices. Mold for running plaster	J. Y. Brickey	201,493	Mar. 19	702	214	13	531
Corpse-cooler	G. C. Hill	201,525	Mar. 19	735	224	13	536
Corset	I. W. Birdseye	201,490	Mar. 19	700	213	13	531
Cotton opener and cleaner	R. Kitson	201,424	Mar. 19	635	194	13	521
Cultivator-sleeves. Manufacture of	C. P. Buckingham	201,324	Mar. 19	534	164	13	507
Cut-off for engines. Self-adjusting	W. Lowe	201,353	Mar. 19	566	174	13	512
Cylinder with steam-jackets. Steam-	E. D. Leavitt, Jr., and W. Jones	201,429	Mar. 19	642	196	13	522
Calendar and pen-rack	C. Schmidt	201,840	Mar. 26	1068	325	13	588
Calendar. Perpetual time and interest	J. Kachelman, Jr.	201,617	Mar. 26	849	258	13	555
Can. Metallic	C. Green and W. Wilson, Jr.	201,666	Mar. 26	894	272	13	562
Can. Water-	C. Smith	201,712	Mar. 26	935	287	13	568
Cap-extractor	G. W. Hadley	201,774	Mar. 26	1004	306	13	579
Car-coupling	J. Brady	201,644	Mar. 26	877	267	13	559
Car-coupling	J. H. Herriff	201,669	Mar. 26	896	273	13	563
Car-coupling	J. McGeehon	201,812	Mar. 26	1037	317	13	584
Car-coupling	H. H. Potter	201,825	Mar. 26	1050	321	13	585
Car-heater	J. J. Winsor	201,857	Mar. 26	1086	330	13	590
Car-starter	J. Pritchard	201,700	Mar. 26	921	282	13	566
Car-window	B. L. Wood	201,859	Mar. 26	1068	331	13	590
Car window. Railway-	S. Darling	201,598	Mar. 26	832	252	13	553
Carriage-jack	W. A. Foster	201,768	Mar. 26	997	305	13	578
Carriage-top	T. Scattergood	201,706	Mar. 26	931	285	13	568
Cartridge capping and uncapping implement	H. Baylise	201,733	Mar. 26	960	293	13	572
Caster. Furniture-	T. S. Smith	201,842	Mar. 26	1070	325	13	588
Chain and pulley. Driving	J. D. Otstot	201,698	Mar. 26	920	281	13	566
Chimney-cowl	J. W. Androvatt	201,641	Mar. 26	874	266	13	559
Churn	C. C. Briant	201,739	Mar. 26	966	295	13	573
Churn. Reciprocating	N. B. Osgood	201,625	Mar. 26	857	261	13	556
Churn with vibrating dasher. Rocking	N. Rowen	201,633	Mar. 26	866	263	13	557
Cigar-mold	G. W. Hamilton	201,775	Mar. 26	1004	307	13	579
Clothes-drier	E. G., H. C., and E. O. Miller	201,816	Mar. 26	1042	318	13	584
Clothes-pounder	W. E. Armstrong and D. Giesman	201,642	Mar. 26	874	266	13	559
Coal-breaker	J. B. Miller	201,817	Mar. 26	1043	318	13	584
Cock. Regulating-	W. R. Park	201,699	Mar. 26	921	282	13	566
Coffee. Preserving green	J. S. Stowman	201,848	Mar. 26	1075	.....	13	589
Comb. Barber's	T. E. Gravatt	201,773	Mar. 26	1003	306	13	578
Cooking apparatus	G. J. Ward, Jr	201,725	Mar. 26	951	291	13	571
Cop-tube	J. Essex	201,763	Mar. 26	990	302	13	576
Corn-sheller	C. C. Burroughs	201,743	Mar. 26	968	296	13	574
Corsets. Manufacture of	A. Feltheimer	201,764	Mar. 26	991	302	13	577
Cotton-cleaner and condenser	A. T. Hunt	201,676	Mar. 26	902	275	13	563
Cotton-gins. Saw-cleaner for	H. A. Walker	201,724	Mar. 26	950	291	13	571
Cuff. Reversible	C. H. Morse	201,818	Mar. 26	1044	319	13	584
Cultivator. Corn-	D. Pattee	201,627	Mar. 26	859	262	13	557
Curtain-bracket	H. L. Judd	201,682	Mar. 26	906	277	13	564
Curtain-fixture	J. F. Lash	201,799	Mar. 26	1026	313	13	582
Curtain-fixture	G. F. Shaw	201,710	Mar. 26	933	286	13	568
Curtain roller and bracket	J. P. Morris	201,621	Mar. 26	854	260	13	556
Can. Sealed	A. J. Nolty	201,939	Apr. 2	77	23	13	610
Candle-holder, match-safe, and nail-file. Combined	S. Fuld	201,919	Apr. 2	61	16	13	607
Canister	W. Gardner	202,017	Apr. 2	153	45	13	621
Car-coupling	J. Hogan	201,922	Apr. 2	64	17	13	608
Car-coupling	E. H. Janney. (Reissue)	8,153	Apr. 2	235	68, 69	13	633
Car door. Grain-	D. F. Van Liew	201,963	Apr. 2	99	29	13	613
Carding machine. Wool-	P. L. Klein. (Reissue)	8,156	Apr. 2	239	70	13	633
Carpet-lining	R. J. Macdonald	201,929	Apr. 2	69	19	13	608
Carriage-top	I. Cogswell, Jr. (Reissue)	8,151	Apr. 2	233	68	13	632
Carriage-top. Adjustable	C. Dudley	202,004	Apr. 2	368	41	13	619
Carriage-top. Adjustable	O. B. North	202,043	Apr. 2	184	53	13	625
Cartridge capping and uncapping implement	G. L. Bailey	201,903	Apr. 2	45	13	13	605
Casks or barrels. Stand for	J. Swindells	202,072	Apr. 2	211	62	13	629
Caster	T. L. Rivers. (Reissue)	8,154	Apr. 2	237	69	13	633
Caster. Furniture-	J. J. Adgate	201,976	Apr. 2	113	33	13	615
Chair and carriage. Child's	C. A. Perley	202,046	Apr. 2	186	54	13	625
Chair. Convertible	J. H. Martin	201,930	Apr. 2	69	19	13	609
Chair. Reclining	A. Collignon	201,912	Apr. 2	54	14	13	606
Churn. Rotary	L. Whitney	201,900	Apr. 2	41	11	13	605
Clothes-drier	E. O. Darling	202,002	Apr. 2	367	40	13	619
Clothes-pounder	S. Knight	201,926	Apr. 2	66	18	13	608
Cock and box for water-pipes. Stop-	P. Connolly	201,996	Apr. 2	134	39	13	618
Coffee-roaster	W. T. Gilliland	201,920	Apr. 2	62	16	13	607
Coffin	T. E. Daniels and A. Reed	201,872	Apr. 2	15	4	13	600
Coffin-shield	A. H. Mooers	201,936	Apr. 2	75	21	13	610
Cooking apparatus. Vapor-escape attachment for	S. W. Poland	201,943	Apr. 2	81	23	13	611
Cooler. Beer-	R. Portner	202,049	Apr. 2	188	53	13	625
Cord	C. Feickert	202,011	Apr. 2	148	43	13	620
Corn-popper	F. E. Stockwell and J. Minninghoff	201,959	Apr. 2	94	27	13	613
Corset	M. Adler	201,978	Apr. 2	115	34	13	616
Corset	H. T. Marsh	202,038	Apr. 2	180	52	13	624
Corset	J. Ottenheimer	202,044	Apr. 2	185	54	13	625
Cultivator	T. P. S. Weems	202,079	Apr. 2	218	64	13	630
Cultivator and corn-planter. Combined	J. Hamelback	202,026	Apr. 2	165	48	13	623
Curtain roller and bracket	J. S. Henry	202,028	Apr. 2	167	48	13	623
Cut-off valve for water-tanks, &c. Automatic	S. G. Anderson	201,979	Apr. 2	115	34	13	616
Cane	G. P. Clarke	202,094	Apr. 9	251	74	13	639
Cans. Attachment for oil-	J. H. Stamp	202,300	Apr. 9	466	136	13	669
Cap and collar. Combined	M. Isidor	202,262	Apr. 9	427	125	13	663
Car-coupling	J. Chapman	202,220	Apr. 9	394	115	13	650

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Car-coupling	E. A. Howland	202,261	Apr. 9	426	124	13	663
Car-coupling	F. P. Iannarone	202,109	Apr. 9	267	79	13	641
Car-coupling	E. R. Quimby	202,117	Apr. 9	276	81	13	643
Cars. Unloading	G. P. Merrill and P. Dowling	202,182	Apr. 9	348	102	13	652
Card. Sample	A. Zerban	202,210	Apr. 9	372	109	13	656
Carriage and chair. Combined	C. F. Tenney and T. J. Hobbs. (Reissue.)	8,166	Apr. 9	502	146	13	674
Carriage-door. Folding	A. Blink	202,091	Apr. 9	249	73	13	639
Carriage-window	J. Woods, Jr.	202,131	Apr. 9	292	86	13	645
Cartridge. Signal	E. W. Very. (Reissue)	8,167	Apr. 9	503	146	13	674
Caster for trunks	M. Schwerin. (Reissue)	8,171	Apr. 9	506	147	13	674
Centrifugal machine	B. T. Babbitt	202,135	Apr. 9	295	87	13	645
Centrifugal machine	G. F. Eisenhardt	202,251	Apr. 9	417	122	13	662
Chair. Convertible	H. C. Hayman	202,170	Apr. 9	338	99	13	651
Chair. Rocking	C. S. E. and J. G. Spoerl	202,201	Apr. 9	457	134	13	667
Chuck	M. C. Holmes	202,360	Apr. 9	496	124	13	663
Cigar-lighter	I. N. Clawson	202,150	Apr. 9	300	92	13	647
Clock	H. W. Ley	202,375	Apr. 9	443	129	13	665
Clock-case	H. J. Davies	202,095	Apr. 9	252	74	13	639
Cloth measuring and rolling machine	C. Q. Smith	202,288	Apr. 9	455	133	13	667
Cock. Cylinder	G. F. Hammer	202,167	Apr. 9	334	98	13	650
Coin. Device for holding and counting	J. Ostergard	202,188	Apr. 9	355	104	13	653
Collar	W. Wilson. (Reissue)	8,169	Apr. 9	505	147	13	674
Cooler. Milk	W. H. White	202,129	Apr. 9	291	85	13	644
Cotton-gins. Combined feeder and cleaner for	W. L. Crowson	202,238	Apr. 9	403	{117 / 118}	13	660
Cotton-lint room. Fire-proof	Z. N. Morrell	202,283	Apr. 9	449	132	13	666
Cranberry-gatherer	A. K. Gile	202,103	Apr. 9	262	76, 77	13	641
Crimping-form	J. Ryan	202,123	Apr. 9	284	83	13	644
Cultivator	F. C. Leffler	202,112	Apr. 9	270	80	13	642
Cultivator. Harrow	C. La Dow. (Reissue)	8,159	Apr. 9	491	144	13	672
Curry-comb	J. E. Finley	202,161	Apr. 9	329	96	13	649
Can. Metallic	G. H. and J. H. Perkins	202,371	Apr. 16	559	163	13	686
Can. Sheet-metal	M. Brenner	202,514	Apr. 16	693	203	13	705
Can. Transportation oil	N. Du Brul	202,335	Apr. 16	521	153	13	681
Candle-holder	F. Galster	202,342	Apr. 16	531	155	13	682
Canvas-stretcher	E. H. Collins	202,330	Apr. 16	518	152	13	680
Car-coupling	L. M. Dice	202,333	Apr. 16	520	152	13	680
Car-coupling	J. A. Woodmansee	202,622	Apr. 16	825	238	13	719
Carpet-lining	C. A. Pease	202,579	Apr. 16	781	225	13	714
Carriage and chair. Combined	T. and T. P. Longking	202,560	Apr. 16	761	220	13	712
Carriage-seat	J. D. Olds	202,575	Apr. 16	777	224	13	713
Carriage-top adjuster	C. Dudley	202,527	Apr. 16	708	207	13	707
Carriage-top adjuster	P. H. Lindsey	202,355	Apr. 16	544	159	13	684
Carriages. Canopy-adjuster for childrens'	A. Clarke	202,329	Apr. 16	517	151	13	680
Cartridge	R. Morris	202,365	Apr. 16	552	162	13	685
Cartridge-holder	R. H. Pooler and W. T. Jones	202,453	Apr. 16	648	189	13	699
Cartridge-shells. Manufacture of	T. H. Moore	202,363	Apr. 16	550	161	13	684
Caster frame. Trunk	G. B. Jenkinson. (Reissue)	8,180	Apr. 16	837	241	13	721
Ceiling. Fire-proof	P. B. Wight	202,617	Apr. 16	821	237	13	718
Cellar-grating	D. B. Shirk	202,381	Apr. 16	568	166	13	687
Celluloid, &c. Coating articles with	J. W. Hyatt	202,441	Apr. 16	627	184	13	696
Chains. Manufacture of sheet-metal	F. Egge	202,528	Apr. 16	709	209	13	707
Chair	J. Ask	202,505	Apr. 16	683	201	13	704
Chair. Convertible	C. Burnitz	202,327	Apr. 16	515	151	13	680
Chair. Oscillating	R. Otto	202,576	Apr. 16	778	224	13	714
Chair. Rocking	M. Schrenkeisen	202,476	Apr. 16	659	193	13	700
Chandelier. Oil	F. Rhind	202,585	Apr. 16	785	{226 / 227}	13	714
Checks. Blank for bank	F. W. Brooks	202,515	Apr. 16	694	{203 / 204}	13	705
Chicken-mother. Artificial	J. Rabenberg	202,466	Apr. 16	652	190	13	699
Churn with swinging body and reciprocating dasher	S. Kreiter	202,554	Apr. 16	756	218	13	711
Cigar-cutter. Pocket	L. H. Lipman	202,559	Apr. 16	761	220	13	712
Clay sawing and pulverizing machine	W. T. Duvall	202,337	Apr. 16	525	154	13	681
Clog. Rubber	J. Pienovi	202,462	Apr. 16	647	189	13	699
Cocoa-nut. Desiccating	S. T. Chase	202,521	Apr. 16	702	.....	13	706
Coffin and burial casket	J. Richey	202,470	Apr. 16	654	191	13	700
Coffin-handle	P. A. Mowers	202,367	Apr. 16	554	162	13	685
Coffins into graves. Apparatus for lowering	J. W. McCaslin	202,359	Apr. 16	547	160	13	684
Coin and making change. Device for holding	G. S. Ball	202,507	Apr. 16	685	201	13	704
Coin. Device for holding and counting	F. H. Holmes	202,545	Apr. 16	746	215	13	710
Cooler. Liquid	F. W. Wiesebrock	202,389	Apr. 16	574	168	13	688
Cordage. Machine for making	G. L. Brownell	202,406	Apr. 16	591	174	13	690
Corn-stalks. Machine for cutting up	J. Forlow	202,531	Apr. 16	729	211	13	708
Cotton-gin	J. B. Brackett and L. M. Merrill	202,326	Apr. 16	514	151	13	680
Cotton-gins. Condenser for	O. Washburne	202,611	Apr. 16	812	235	13	717
Cultivator. Riding corn	G. W. Staver	202,383	Apr. 16	570	167	13	687
Curry-comb	M. Cole	202,410	Apr. 16	595	175	13	691
Curry-comb	L. A. Griswold	202,426	Apr. 16	623	182	13	695
Curry-comb	M. Sweet	202,462	Apr. 16	664	195	13	701
Curtain roller and bracket	A. B. Shaw	202,592	Apr. 16	795	229	13	715
Curtain-stretcher	J. Conrath	202,411	Apr. 16	595	175	13	691
Cans. Implement for holding and operating oil	M. W. Collins and C. F. Boughton	202,791	Apr. 23	1017	292	13	752
Car. Stock	J. Miller	202,854	Apr. 23	1069	311	13	761
Card. Educational and advertising	G. C. Bell	202,692	Apr. 23	919	263	13	739
Carriage. Child's	C. Gillis	202,715	Apr. 23	941	269	13	742
Carriage-tops, harness, &c. Buckle loop and fastener for	J. Watters	202,683	Apr. 23	910	260	13	738
Cartridge-box	J. W. Frazier	202,642	Apr. 23	868	249	13	733
Cartridges. Implement for capping and uncapping	H. A. Kingsland	202,831	Apr. 23	1067	305	13	758
Chair. Nursery	F. Caulier	202,788	Apr. 23	1015	291	13	752
Check-book. Pocket	G. E. Waring, Jr. (Reissue)	8,199	Apr. 23	1166	335	13	770
Cigar-machine	R. A. Bright, Jr.	202,628	Apr. 23	849	244	13	732

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Clock	H. J. and W. D. Davies	202,795	Apr. 23	1022	293	13	733
Clock. Pendulum	V. Himmer. (Reissue)	8,194	Apr. 23	1160	333	13	769
Clothes-line tightener	S. Conner	202,634	Apr. 23	857	246	13	732
Clothes-pounder	M. P. Colvin	202,792	Apr. 23	1018	292	13	752
Cock. Gage	C. J. Elliott	202,639	Apr. 23	864	247	13	733
Cock. Water	M. Hogan	202,653	Apr. 23	879	252	13	734
Cocoa-nut fiber for the manufacture of various useful products. Treatment of	E. Pallu	202,662	Apr. 23	887	.....	13	735
Coin. Device for detecting counterfeit	A. J. Baker and J. W. Simonton	202,691	Apr. 23	918	262	13	739
Coin-package	C. F. Trout	202,893	Apr. 23	1131	325	13	766
Colors. Manufacture of ultramarine	R. Hoffman	202,822	Apr. 23	1057	.....	13	757
Cotton-gin-saw cleaner	R. S. Munger	202,744	Apr. 23	970	279	13	745
Cultivator. Corn	J. Smith	202,763	Apr. 23	991	285	13	748
Cupboard. Elevating	J. T. Westwood	202,906	Apr. 23	1145	329	13	767
Curry-comb	W. E. Lawrence and C. E. L. Holmes	202,837	Apr. 23	1073	307	13	758
Curtain-cord tightener	J. F. Mienhardt	202,852	Apr. 23	1087	311	13	760
Curtain rollers and fixtures. Rack for	J. F. Almy	202,773	Apr. 23	1000	288	13	750
Cutlery. Table	C. Reese	202,757	Apr. 23	985	283	13	748
Cable. Machine for making hollow wire	O. Preston	202,961	Apr. 30	1211	350	13	780
Calculating-machine	W. W. Hopkins	203,151	Apr. 30	1398	408	13	805
Can-labeling machine	S. L. Salomon, C. F. Knoch, and G. A. Semel	203,200	Apr. 30	1452	424	13	812
Cans. Machine for applying flux to	G. H. Perkins	203,073	Apr. 30	1317	383	13	794
Cannon. Breech-loading	A. Emery	203,020	Apr. 30	1270	367	13	788
Car-coupling	A. H. Clark	203,118	Apr. 30	1359	396	13	800
Car-coupling	W. Dorr	203,011	Apr. 30	1258	365	13	786
Car-door	J. G. and G. M. Brill	202,921	Apr. 30	1173	338	13	775
Car door. Grain	C. R. Watson	203,226	Apr. 30	1477	432	13	815
Car-shutter	J. G. and G. M. Brill	202,920	Apr. 30	1172	338	13	775
Car-window	C. T. Deblois	203,123	Apr. 30	1363	397	13	801
Cars. Running-gear for street	H. C. Hunter and J. Everding	203,154	Apr. 30	1402	409	13	806
Carpet-fastener	D. F. Stambaugh	203,209	Apr. 30	1461	427	13	813
Carpet-stretcher	J. H. Lucas	203,055	Apr. 30	1298	377	13	792
Carriage-step	F. A. Sawyer, 2d	203,076	Apr. 30	1320	384	13	795
Carriages, &c. Door-check for	C. West	203,227	Apr. 30	1478	432	13	815
Chair. Baby's safety	E. Christman and J. Caldwell	202,991	Apr. 30	1238	358	13	784
Churn	M. A. Howe	203,047	Apr. 30	1293	375	13	791
Churn	W. Magee	203,170	Apr. 30	1427	416	13	808
Churn	J. Rehbein	203,193	Apr. 30	1442	421	13	810
Churn	A. B. Simpson	203,083	Apr. 30	1324	386	13	796
Churn-dasher	G. W. Gilbert	203,134	Apr. 30	1379	401	13	803
Cigarette-package	F. S. Kinney	203,164	Apr. 30	1414	412	13	807
Clasp	F. B. Brown	202,924	Apr. 30	1177	339	13	776
Cock or valve. Stop	C. C. Bliss	202,982	Apr. 30	1232	356	13	783
Coffee-mill	A. Shepard	203,204	Apr. 30	1456	426	13	812
Coffee-pot	G. W. Goodwyn	203,137	Apr. 30	1381	402	13	803
Coffee, tea, and other extracts. Apparatus for making	J. Miller	203,178	Apr. 30	1428	417	13	809
Copy-holder	J. W. McGarrett, Jr	203,060	Apr. 30	1302	378	13	792
Corn-sheller	W. H. Hall	203,032	Apr. 30	1280	370	13	789
Corpse-cooler	J. Flaherty	203,024	Apr. 30	1274	368	13	788
Corset-fastening	F. B. Brown	203,113	Apr. 30	1354	394	13	799
Cotton cleaner. Seed	J. W. Clarke	202,931	Apr. 30	1182	341	13	776
Cotton-gin	J. W. Burt, Jr	202,927	Apr. 30	1178	340	13	776
Crate	A. M. Smith	203,205	Apr. 30	1457	426	13	812
Cultivator	O. S. Gandy	203,132	Apr. 30	1377	400	13	802
Cultivator	M. Johnson	203,048	Apr. 30	1293	375	13	791
Cut-off	H. Wadsworth	203,224	Apr. 30	1474	{431 / 432}	13	814
Cut-off for plane-valve engines. Automatic	E. R. Dingley	203,009	Apr. 30	1256	364	13	786
Cages. Fountain-cup for animal	O. Lindermann. (Reissue)	8,219	May 7	310	89	13	863
Cake-cutter and nutmeg-grater. Combined	H. M. Ayers	203,312	May 7	84	24	13	831
Camera-shutter	A. Johnson	203,344	May 7	112	33	13	835
Can. Sheet-metal	J. Salter	203,506	May 7	281	80	13	859
Cans. Machine for filling	V. Barker	203,313	May 7	84	25	13	831
Car-coupling	F. Heavener	203,451	May 7	229	65	13	851
Car. Refrigerator	J. J. Bate	203,236	May 7	1	1	13	821
Car-starter	N. Van Viele	203,512	May 7	288	82	13	860
Cars. Draw-bar for street	J. W. Law	203,281	May 7	45	14	13	826
Carbureter	S. E. Hughes	203,458	May 7	235	67	13	852
Carbureter	J. Reed	203,371	May 7	142	41	13	840
Carbureter	B. Sloper	203,505	May 7	279	80	13	859
Card. Postal	F. W. Brooks	203,409	May 7	179	52	13	845
Carpet-sweeper	H. F. Noyes	203,489	May 7	266	76	13	857
Carriage-top prop	H. S. Crandal	203,246	May 7	10	4	13	822
Carriages. Front gear for	H. Dollason and C. L. Leonard	203,326	May 7	97	28	13	833
Canterizer	F. A. Stohlmann and E. Pfarre	203,387	May 7	160	46	13	842
Chair. Folding rocking	J. E. Wakefield. (Reissue)	8,217	May 7	308	88	13	863
Chair. Rocking	F. Rhoner and S. Willershausen	203,294	May 7	63	19	13	838
Check book. Bank	H. H. Norrington	203,365	May 7	136	39	13	838
Chimney cap or ventilator	P. Mihan	203,477	May 7	255	74	13	855
Chimney. Heating and ventilating	J. Browell	203,317	May 7	88	26	13	832
Churn	B. Clark	203,419	May 7	191	55	13	846
Clocks. Pendulum-adjustment for	H. C. Grawe	203,263	May 7	27	9	13	824
Cloth-finishing machine	D. C. Sumner	203,388	May 7	161	46	13	842
Clothes-drier	W. K. Morgan	203,484	May 7	261	75	13	856
Clothes-line holder	G. S. Sayers and T. Galligan	203,503	May 7	278	80	13	859
Clothes-pounder	W. P. Dungan, Jr	203,430	May 7	206	59	13	848
Cockle-separator	G. F. Newell, Sr., and J. Croft	203,488	May 7	265	76	13	857
Coffee-pot	C. Halstead	203,268	May 7	34	10	13	825
Coffee-pot	F. H. Hunt	203,275	May 7	40	12	13	826
Condenser	R. W. Hamilton	203,337	May 7	105	30, 31	13	834
Cooker. Steam	C. Corning	203,245	May 7	9	4	13	822
Corn-cutting implement	L. Bickel	203,315	May 7	87	25	13	832
Corset-busk	J. D. Banfield	203,400	May 7	171	49	13	844

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Invention.	Name.	No.	Date.	Monthly Volume. Spec.	Drgs.	Official Gazette. Vol.	Page.
Corset-springs. Machine for tipping	T. B. De Forest	203,428	May 7	201	58	13	848
Cultivator	D. L. Wellman	203,394	May 7	167	48	13	843
Cultivator. Rotary	M. Johnson. (Reissue)	8,222	May 7	314	90	13	864
Cultivator-tooth	H. Carson	203,417	May 7	189	55	13	846
Current-wheel	E. H. Smith	203,382	May 7	153	44	13	841
Curry-comb	N. W. Mottinger	203,388	May 7	58	17, 18	13	828
Curtain-fixture	H. Herlt	203,370	May 7	36	11	13	825
Curtain-roller and bracket	C. Buckley and L. L. Sawyer	203,414	May 7	186	54	13	846
Curtain-roller and bracket	C. H. Clark	203,418	May 7	190	55	13	846
Calculating-machine	C. E. Patterson	203,763	May 14	564	159	13	903
Can. Milk	W. J. Alrich	203,694	May 14	495	140	13	894
Cans. Apparatus for hermetically sealing	T. Trezise	203,706	May 14	600	168	13	907
Cane	L. W. Rood	203,559	May 14	362	102	13	878
Car-coupling	J. B. Raby and D. J. Summers	203,772	May 14	574	161	13	905
Car-coupling	G. E. Weber	203,679	May 14	476	135	13	892
Car-heating apparatus	J. W. Graydon	203,611	May 14	407	116	13	884
Car. Railway	J. A. S. Simonson	203,661	May 14	457	131	13	890
Carbureter	D. C. Battey	203,579	May 14	380	107	13	880
Carbureting air and gas. Apparatus for	M. Buell	203,702	May 14	501	142	13	896
Carpet. Moquette	A. Smith and H. Skinner	203,663	May 14	460	131	13	890
Carpet tacker and stretcher	C. A. Briggs	203,531	May 14	331	94	13	874
Carriage. Child's	H. Borchardt	203,582	May 14	382	108	13	881
Carriage. Child's folding	R. Kreter	203,742	May 14	543	154	13	901
Cartridge-loading machine	M. V. B. Hill	203,731	May 14	529	150, 151	13	899
Cartridge-shells. Implement for capping, uncapping, and crimping	L. T. Cornell	203,594	May 14	393	111	13	882
Cartridge-trimming machine	A. Sessions	203,655	May 14	450	129	13	889
Chair	W. H. S. Greene and A. Sturdevant	203,612	May 14	407	116	13	884
Chair. Rocking	A. Dietsch	203,602	May 14	400	113	13	883
Churn-dasher	H. L. Heaton	203,730	May 14	529	150	13	899
Cigar	J. Frey	203,537	May 14	337	96	13	875
Cigar-lighter	H. Wellington and W. Bourke	203,805	May 14	611	170, 171	13	908
Cigar-mold	N. Du Brul	203,715	May 14	516	146	13	897
Clothes-drier	O. Huff	203,543	May 14	342	98	13	876
Clothes-pounder	J. S. Brown	203,532	May 14	332	94	13	874
Clover-separator	W. Sogga	203,788	May 14	593	166	13	907
Cock for steam-boiler gage	D. Jenkins	203,736	May 14	537	152	13	900
Coin detector and coin-receiver. Counterfeit	S. A. Field	203,719	May 14	519	147	13	898
Colter	C. E. Steller	203,668	May 14	465	133	13	891
Cooking utensil	G. H. Henkel	203,541	May 14	340	97	13	875
Corn cutter. Green-	J. T. Polk and O. H. Castle	203,642	May 14	436	124	13	887
Cultivator. Wheel-	C. Sexton	203,656	May 14	452	129	13	889
Curtain-cord tightener	T. Van Kannel	203,569	May 14	371	105	13	879
Curtain-roller	C. J. Ortmann and G. Kampf	203,759	May 14	561	158	13	903
Cutter-head for frizzing-machines	R. Naatz	203,552	May 14	356	100	13	877
Cutter. Rotary	W. F. and J. Barnes	203,578	May 14	378	107	13	880
Can. Jacket	F. C. Wilson	204,119	May 21	952	273	13	960
Can or vessel for liquids	J. P. Adams	203,868	May 21	685	195	13	926
Candle. Electric	L. R. Longworth	203,644	May 21	662	188	13	923
Canister	E. Norton. (Reissue)	8,249	May 21	973	277	13	962
Car-coupling	A. Elliott	204,013	May 21	846	242	13	946
Car-coupling	J. H. Hills	203,912	May 21	733	210	13	933
Car-coupling. Link-guide for	A. M. Miller	203,846	May 21	666	189	13	923
Car-heater	W. M. Jackson	203,918	May 21	738	212	13	933
Car. Railway	R. L. and C. W. Dabney, Jr	204,009	May 21	841	240	13	946
Car-transfer apparatus	R. H. Ramsey	204,087	May 21	921	263	13	956
Cars. Motor for street	J. F. Kelley	204,052	May 21	881	252, 253	13	951
Carpet-cleaning machine	J. Rae	203,853	May 21	671	190	13	924
Cartridge-loading device	H. Watkeys	203,967	May 21	791	227	13	940
Cartridge-package	J. W. Frazier	204,017	May 21	851	243	13	947
Cement. Composition for making hydraulic	C. F. Dunderdale. (Reissue)	8,237	May 21	958	.....	13	960
Chair attachment. Rocking	J. Zangerle	203,979	May 21	803	231	13	941
Chair. Barber and dental	G. W. Archer	203,983	May 21	807	232	13	942
Checking apparatus	J. Casey	204,004	May 21	837	239	13	945
Cheese-vat	E. B. Smith, G. L. Freman, and D. H. Burrell	203,952	May 21	778	223	13	938
Cheroot-machine	A. and J. Marengo	203,926	May 21	747	215	13	934
Churn	L. Cutshawl	204,008	May 21	840	240	13	946
Churn-motor	G. W. Jones	204,049	May 21	879	252	13	951
Churn-motor	W. A. Morgan	204,071	May 21	903	258	13	954
Cigar-box	S. H. Hewlett	204,040	May 21	871	249	13	950
Cigar-tip cutter	G. Ohmer	204,074	May 21	905	259	13	954
Cigars. Apparatus for bundling	W. A. Abbott	203,867	May 21	684	195	13	926
Cigarette for medical purposes	D. Wark	203,961	May 21	680	193	13	925
Clothes-pounder	G. M. Smith	204,101	May 21	937	268	13	958
Coffee, &c. Apparatus for making extracts of	B. Schmitz	204,099	May 21	934	267	13	958
Coffee-roaster	J. Miller	204,067	May 21	896	257	13	953
Column. Fire-proof	P. B. Wight	203,972	May 21	798	229	13	940
Condensing-vessel	E. D. Bangs	203,873	May 21	689	196	13	927
Copperas. Manufacture of red colors from	W. Peterson	203,936	May 21	758	.....	13	936
Cordage. Exhibitor for	H. E. Richards	203,854	May 21	672	190	13	924
Corn-shellers. Cob-elevator for	H. H. Eby	204,012	May 21	844	241	13	946
Corsets. Manufacture of	A. Feltheimer. (Reissue)	8,244	May 21	966	276	13	961
Curtain-roller and bracket	C. Buckley and L. L. Sawyer	204,001	May 21	834	238	13	945
Cutlery. Table	E. Cady	204,002	May 21	836	239	13	945
Can. Fish, bait, and oyster	R. Roney	204,168	May 28	1028	293	13	973
Can. Refrigerating transportation	W. A. Moore	204,239	May 28	1105	315	13	983
Car-coupling	L. Gasser	204,313	May 28	1177	335	13	992
Car-coupling	C. Gifford	204,212	May 28	1080	317	13	980
Car-coupling	C. A. Roberts	204,251	May 28	1117	319	13	985
Car. Sleeping	A. Jaeger	204,230	May 28	1097	313	13	982

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Drgs.	Official Gazette. Vol.	Page.
Cars. Dust-arrester for railway	A. Clarke	204,134	May 28	990	281	13	968
Carbureter. Gas and air	C. C. Duenbury and W. H. Winn	204,413	May 28	1281	365	13	1005
Carriage-seats. Corner-iron for	W. B. C. Hershey	204,326	May 28	1192	339	13	994
Carriages. Reversible handle for children's	A. Shoeninger	204,385	May 28	1252	357	13	1002
Casting apparatus	J. Duff	204,307	May 28	1171	334	13	991
Castings. Molding dovetails in metal	N. Burdick and J. Easterly	204,129	May 28	985	280	13	968
Celluloid and other plastic materials. Apparatus for covering cores and forming tubes of	J. W. Hyatt	204,227	May 28	1093	312	13	981
Celluloid and other plastic materials. Producing tubes and hollow articles from	J. W. Hyatt	204,228	May 28	1094	312	13	982
Celluloid or other plastic compositions. Apparatus for coating bars or springs with	J. W. Hyatt and C. Burroughs	204,229	May 28	1095	312	13	982
Chair. Convertible	M. V. Lunger	204,346	May 28	1212	346	13	997
Chair. Invalid	E. C. Jones	204,231	May 28	1097	313	13	982
Chair. Rocking	L. Rausch	204,373	May 28	1242	353	13	1000
Chuck	A. Saunders	204,254	May 28	1120	320	13	985
Churn	W. W. Barrett and A. Smith	204,124	May 28	981	279	13	967
Churning apparatus	A. N. Myers	204,241	May 28	1108	316	13	983
Churning apparatus	J. A. Perry	204,245	May 28	1111	317	13	984
Clasp for securing ribbons on rolls	H. G. and C. G. Hubert	204,224	May 28	1090	311	13	981
Clevis. Double-tree	A. Reeler	204,252	May 28	1118	319	13	985
Clew-line leader	S. R. Brooks	204,200	May 28	1154	330	13	989
Clock-case	G. and D. B. Hills	204,328	May 28	1193	340	13	994
Clock. Repeating	H. Thompson	204,175	May 28	1033	294, 295	13	974
Clod-crusher	C. R. Polen, Sr.	204,247	May 28	1113	317	13	981
Clothes-drier	W. F. Wilson	204,179	May 28	1039	296	13	975
Clothes-pounder	O. Schindler	204,379	May 28	1248	355	13	1001
Cock. Stop	G. N. Munger	204,162	May 28	1023	291	13	973
Cooler. Beer	H. F. Schmidt	204,380	May 28	1248	355	13	1001
Corkscrew	A. W. Sperry	204,389	May 28	1256	358	13	1002
Corn-sheller	J. W. Miller	204,161	May 28	1021	290, 291	13	972
Corpse-preserver	W. Miller and J. Schneider	204,237	May 28	1103	315	13	983
Cotton-roving can	J. Hill	204,220	May 28	1087	310	13	981
Cotton-worm destroyer	G. Yeager	204,410	May 28	1278	364	13	1005
Cream. Apparatus for raising	J. W. Brady	204,127	May 28	983	280	13	967
Cultivator	J. Young	204,412	May 28	1279	365	13	1005
Cultivator. Harrow	E. Crane. (Reissue)	8,260	May 28	1203	368	13	1007
Cultivator. Harrow	E. Crane. (Reissue)	8,261	May 28	1205	368	13	1007
Cutter. Rotary	C. H. Mellor and M. L. Orum. (Reissue.)	8,265	May 28	1209	370	13	1008
Cutting-board	F. Weed	204,176	May 28	1037	295	13	974
Cans, &c., with liquids. Machine for filling	W. H. Brock	204,477	June 4	58	19, 20	13	1021
Car-coupling	C. H. Wood	204,470	June 4	52	17	13	1021
Carpet	J. C. Duckworth	204,546	June 4	114	39	13	1029
Carriage-dash feet	J. W. Brown	204,530	June 4	101	34	13	1027
Casks. Machine for pitching	L. Schreiber	204,456	June 4	39	13	13	1018
Casting car-wheels	J. Quinn	204,450	June 4	34	11	13	1017
Cement. Manufacture of hydraulic	W. J. Budington	204,532	June 4	102	.....	13	1027
Chair. Folding	H. Closterman, Jr	204,423	June 4	8	3	13	1014
Chair. Folding	A. T. L. Davis	204,543	June 4	111	38	13	1028
Chair seat and back	H. S. Cate	204,480	June 4	61	20	13	1021
Chair. Tilting	C. B. Hitchcock	204,573	June 4	141	47	13	1033
Chin-adjuster	R. S. Ganoung and W. H. Langdon	204,487	June 4	65	22	13	1022
Chisel	W. King	204,439	June 4	26	9	13	1016
Chisel. Turning	H. C. Emery	204,485	June 4	64	22	13	1021
Churn	G. A. Blanchard	204,418	June 4	5	2	13	1013
Churn	S. Kreiter	204,582	June 4	153	50	13	1035
Cigar-box	F. A. Titcomb	204,634	June 4	210	67	13	1042
Cigar-lighter and match-safe. Combined	H. Monk	204,593	June 4	164	53	13	1036
Clasp	A. Christey	204,537	June 4	107	36	13	1027
Clocks. Actuating mechanism for calendar	W. S. Shirk	204,508	June 4	81	28	13	1024
Coffee-roaster	J. B. Underwood	204,635	June 4	211	67, 68	13	1042
Coin. Apparatus for holding and delivering	J. W. Meaker. (Reissue)	8,274	June 4	227	72	13	1044
Coin. Apparatus for holding and delivering	J. W. Meaker. (Reissue)	8,275	June 4	229	72	13	1044
Cooking apparatus. Feed	G. A. Ward	204,467	June 4	50	16	13	1019
Corn-husking implement	E. F. Rate	204,451	June 4	35	11	13	1017
Corset	J. C. Tallman	204,459	June 4	43	14	13	1018
Cotton-gin	J. M. Meriwether	204,443	June 4	28	10	13	1016
Cutter-heads. Beading attachment to	J. J. Nolan	204,597	June 4	170	55	13	1077
Can. Jacketed	W. S. Dyer	204,718	June 11	306	94	13	1050
Cans. Manufacture of sheet-metal	E. T. Covell	204,656	June 11	240	75	13	1050
Car. Refrigerator	M. Haughey	204,729	June 11	319	97	13	1060
Car seat and couch	N. B. Sherwood	204,848	June 11	447	131	13	1075
Car. Sleeping	E. Robinson	204,684	June 11	268	83	13	1054
Car. Sleeping	A. M. Smith	204,855	June 11	453	132, 133	13	1075
Carriage-door	D. E. Gale	204,807	June 11	404	118	13	1070
Carriage-seat	C. H. Stratton	204,859	June 11	456	133	13	1076
Cartridge-extractor	G. H. B. Hooper	204,670	June 11	254	79	13	1052
Centrifugal machine	P. B. Lawson	204,834	June 11	436	128	13	1073
Chain. Ornamental	H. A. Church	204,800	June 11	395	116	13	1069
Chimney-cowl	P. A. Dugaff	204,804	June 11	400	117	13	1069
Cigar-tuck protector	G. E. Gumpert	204,815	June 11	411	120	13	1071
Clothes-drier	P. Dunbar	204,658	June 11	242	76	13	1050
Coffee-mill	R. L. Webb	204,805	June 11	467	135	13	1077
Coffee-pot and strainer	H. C. Rice	204,683	June 11	267	83	13	1053
Colors. Methyl-aniline violet	H. Caro	204,797	June 11	393	.....	13	1068
Column. Fire-proof	P. B. Wight	204,807	June 11	469	136	13	1077
Corn-crib door	A. C. Holmes	204,733	June 11	322	98	13	1061
Corn-sheller	T. Brennan	204,653	June 11	236	74	13	1049
Cotton-gin and linter feeder	F. Streuby	204,690	June 11	276	85	13	1055
Cotton, grain, &c. Machine for cleaning	J. Fitts	204,805	June 11	401	117	13	1069

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Crushing and pulverizing machine	G. E. Sherwin	204,849	June 11	448	131	13	1075
Curtain-fixture	C. W. Stowe	204,858	June 11	455	133	13	1076
Can. Oil	T. J. Griffin	205,075	June 18	697	206	13	1111
Can seam or joint	H. C. Milligan	205,119	June 18	738	220	13	1117
Car-coupling	J. Ritty	204,997	June 18	621	182	13	1101
Car. Stock	W. B. Vanvleet	205,157	June 18	782	231	13	1123
Carbureting air. Apparatus for	H. J. Hyams	204,974	June 18	598	174 / 175	13	1098
Cards. Apparatus for shuffling	H. C. Ash	205,030	June 18	652	192	13	1105
Carriage-seat	D. E. Gale	204,891	June 18	516	151	13	1087
Casks. Fish-drain for	W. H. Ortlip	205,128	June 18	745	222	13	1118
Celery-tops. Packing	J. C. Telfer	205,010	June 18	632	186	13	1103
Chair	L. N. Dann and E. Kelsey	205,059	June 18	680	199 / 200	13	1109
Chair. Folding	E. Tucker	205,016	June 18	637	187	13	1103
Chair. Folding rocking	E. Tucker	205,015	June 18	636	187	13	1103
Chair. Invalid	C. B. Sheldon	205,002	June 18	636	184	13	1102
Chair. Rocking	J. Fernquist	205,070	June 18	694	204	13	1111
Chandelier. Extension	J. A. Evarts	205,068	June 18	691	204	13	1111
Churn	N. B. Brown	205,045	June 18	668	196	13	1107
Churn	J. Campbell. (Reissue)	8,293	June 18	801	237	13	1126
Clock	G. H. Blakesley	205,037	June 18	658	194	13	1106
Cloth-pressing machine	W. Hebdon	205,085	June 18	708	210	13	1113
Clothes-drier	J. J. Largent	205,106	June 18	725	216	13	1115
Clutch	R. W. Johnson	204,977	June 18	602	176	13	1098
Cock. Gage	J. J. Tonkin	205,152	June 18	778	230	13	1122
Coffee-pot	A. B. Place	204,995	June 18	619	181	13	1101
Coffin-fastening	A. T. Large	204,904	June 18	528	154	13	1089
Cooler. Milk	L. W. Truesdell	205,155	June 18	781	231	13	1123
Corks in bottles. Clamp for securing	A. Templeton	205,011	June 18	633	186	13	1103
Corn and grain cleaner	S. E. Worrell	204,935	June 18	561	163	13	1093
Corn-popper	J. Forsyth	205,072	June 18	695	205	13	1111
Corpse-cooler	A. Kinnaird	205,102	June 18	722	215	13	1115
Cotton-cans. Bottom for	J. Hill	204,971	June 18	595	174	13	1098
Cotton-condenser	E. Cook	204,951	June 18	576	168	13	1095
Cotton-picker	G. Custer	205,058	June 18	680	199	13	1109
Cow-fetter	J. A. Wilcox	204,933	June 18	559	163	13	1093
Cradle	A. Bernhard	204,944	June 18	571	167	13	1095
Cultivator	C. D. Carter	204,883	June 18	506	148	13	1086
Curtain-fixture	J. Gillmore	205,073	June 18	695	205	13	1111
Calipers	H. C. Wight	205,225	June 25	866	256	13	1139
Can. Butter	G. W. Simpson	205,309	June 25	956	283	13	1150
Car-coupling	W. C. Gannett	205,260	June 25	900	266	13	1143
Car-coupling	J. L. Pope and W. S. Sampson	205,298	June 25	941	279	13	1148
Car. Open railway	W. H. Paige	205,206	June 25	845	251	13	1136
Car. Street	W. H. Paige	205,205	June 25	844	250	13	1136
Carbureter	W. Morehouse	205,201	June 25	840	249	13	1135
Carding-machines. Feeding device for	C. Schofield and R. Wilde	205,427	June 25	1076	318 / 319	13	1166
Carpet stretcher and fastener	W. H. Sallada	205,425	June 25	1074	318	13	1166
Cartridge-holder	D. C. Farrington	205,180	June 25	817	243	13	1133
Casting door-knobs	E. E. Stow	205,219	June 25	861	254	13	1138
Celluloid and other analogous plastic compositions. Manufacture of sheets of	J. W. Hyatt	205,271	June 25	911	270	13	1145
Cement. Manufacture of hydraulic	J. Dimelow	205,253	June 25	894	------	13	1142
Chair. Barber's	A. Wekerle	205,452	June 25	1100	326	13	1169
Change-gate	H. P. Speckman	205,432	June 25	1081	320	13	1167
Churn	W. Howland	205,388	June 25	1039	308	13	1161
Cigar bundler and binder	G. W. Rhynearson	205,300	June 25	943	280	13	1149
Cigar-package	M. Jonas	205,273	June 25	913	270	13	1145
Cigarette	G. E. Bovee	205,345	June 25	997	295	13	1156
Clasp	F. Armstrong	205,334	June 25	985	291	13	1154
Cleansing and scouring device	C. Raetz	205,299	June 25	942	279	13	1148
Cloth-drying machine	T. Goodall	205,377	June 25	1028	304	13	1159
Cloth-fulishing machine	E. T. Marble	205,281	June 25	930	273	13	1146
Clothes-boiler and washing-machine. Convertible	J. B. Franklin	205,259	June 25	899	266	13	1143
Cock. Reverse-way	E. B. Quick	205,209	June 25	847	251	13	1136
Coffee. Compound for coating roasted	J. T. Cooke	205,356	June 25	1007	------	13	1157
Coin holding and delivering device	C. H. Bliss	205,343	June 25	995	295	13	1155
Comb	M. Butron	205,349	June 25	1000	296	13	1156
Cooker. Feed	C. Gorton	205,262	June 25	901	267	13	1143
Cooker. Feed	J. A. Peirron	205,411	June 25	1060	314	13	1164
Cooler. Milk	C. Peck and R. R. Ball	205,295	June 25	938	278	13	1148
Cooling and freezing apparatus	J. Ring	205,419	June 25	1069	316	13	1165
Corn-dropper	H. H. Hartsock	205,264	June 25	903	267	13	1144
Cultivator. Wheel	G. W. Ray	205,417	June 25	1067	316	13	1165
Curtain-cord tightener	F. E. Porter and D. A. Beatson	205,414	June 25	1065	315	13	1164
Cut-off for engines	J. H. Dunbar	205,368	June 25	1020	302	13	1158
Cutlery. Blank for	G. Abel and J. Pedder	205,329	June 25	979	290	13	1153
Cutting instrument or tool	J. A. Peer	205,296	June 25	938	279	13	1148
Dental articulator	H. C. F. Oehlecker	198,853	Jan. 1	131	37	13	29
Derrick. Portable	A. Meharry	198,895	Jan. 1	175	50	13	36
Desk. School	F. T. Jung	198,922	Jan. 1	206	58	13	40
Disintegrating or mixing machine	D. C. Ebaugh	198,764	Jan. 1	41	11	13	14
Ditching-machine	M. J. Austin	198,785	Jan. 1	69	18	13	18
Dam. Water	H. C. Herron	198,939	Jan. 8	229	65	13	51
Desk. Cabinet	J. A. Moore	199,089	Jan. 8	375	111	13	75
Dish. Covered butter	S. W. Babbitt	199,010	Jan. 8	301	88	13	62
Distilling apparatus	J. Wallace	199,006	Jan. 8	297	87	13	62
Ditching-machine	J. W. Humphreys	198,983	Jan. 8	272	78	13	58
Ditching-machine	T. F. Randolph	199,106	Jan. 8	389	116 / 117	13	77
Door-check	J. W. Craig	198,931	Jan. 8	222	63	13	50
Door-hanger	C. W. Pierce	198,997	Jan. 8	289	84	13	60

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dovetailing-machine	C. Stengel	199,117	Jan. 8	408	120	13	79
Draft-equalizer	A. J. F. Ehrich	199,045	Jan. 8	332	98	13	68
Drawer-pull	J. E. Merriman	199,086	Jan. 8	372	110	13	75
Dredging-bucket	T. Symonds	198,957	Jan. 8	247	71	13	54
Derrick for hay-stackers	A. J. Marks	199,301	Jan. 15	604	176	13	110
Desk	J. D. Tatum	199,236	Jan. 15	536	158	13	100
Die for forming articles of plastic materials	G. L. Winn and J. Bliss	199,340	Jan. 15	643	188	13	116
Dish. Butter	A. C. Lippitt	199,214	Jan. 15	517	152	13	97
Draft-equalizer	B. C. Bradley	199,142	Jan. 15	449	132	13	85
Dredging-machine	J. Menge	199,305	Jan. 15	607	177	13	110
Dress-train supporter	A. W. Thomas	199,170	Jan. 15	475	140	13	90
Drill and planter. Combined	G. W. Grimes	199,200	Jan. 15	505	148	13	95
Dental engines. Hand-piece for	J. W. Gilbert	199,431	Jan. 22	741	218	13	140
Dental engines. Hand-piece for	J. Re Qua	199,469	Jan. 22	777	228	13	145
Dental engines. Rocking-standard for	E. T. Starr	199,477	Jan. 22	786	231	13	147
Door stop and holder	H. Knowlton	199,451	Jan. 22	758	223	13	142
Drill. Rock	E. S. Winchester	199,389	Jan. 22	703	208	13	133
Drilling-machine. Coal and rock	D. McMurtrie	199,377	Jan. 22	689	202	13	131
Dental engine	W. G. A. Bonwill	199,779	Jan. 29	1114	327	13	206
Dental drill	C. Poor. (Reissue)	8,065	Jan. 29	1228	360 / 361	13	227
Derrick	T. Powell	199,660	Jan. 29	1005	292	13	189
Dish. Covered	S. W. Babbitt	199,772	Jan. 29	1108	325	13	205
Dish-washer	E. S. Hampton	199,704	Jan. 29	1048	306	13	195
Door and window fastening	H. Bergman	199,685	Jan. 29	1029	300	13	192
Doors, &c. Manufacture of	J. Springer	199,871	Jan. 29	1201	353	13	219
Drawers for bureaus	C. Harris	199,895	Jan. 29	1162	341	13	213
Drawing-heads. Stop-motion for railway	C. A. Tabor	199,878	Jan. 29	1208	354	13	220
Drill. Corn	J. P. Fulgham	199,920	Jan. 29	1157	340	13	212
Door. Sliding	S. Smith	200,001	Feb. 5	107	35	13	250
Drains, sewers, &c. Trap for	J. Sargent	200,093	Feb. 5	294	64	13	265
Dough-kneading machine	L. Durand	200,183	Feb. 12	302	90	13	288
Drawing and straightening metal bars. Machine for	L. Brightman	200,251	Feb. 12	366	108	13	297
Drill. Grain	J. M. Smith and H. W. C. Thomas	200,327	Feb. 12	342	102	13	294
Drills. Feed-wheel for grain	J. Burroughs	200,253	Feb. 12	369	109	13	298
Dam or dyke. Artificial	C. M. Scott	200,412	Feb. 19	541	160	13	332
Dental plate	J. D. Fahnestock and L. A. Powell	200,445	Feb. 19	575	170	13	337
Ditching-machine	W. Smith	200,579	Feb. 19	706	207 / 208	13	357
Dental-plate mold	G. F. Reese	200,760	Feb. 26	910	268	13	396
Dental plates. Making molds for	G. F. Reese	200,761	Feb. 26	912	------	13	396
Door-plate	B. A. Wilson	200,810	Feb. 26	958	283	13	403
Draft-equalizer	J. A. Stephens	200,629	Feb. 26	772	227	13	376
Draft-equalizer for horse-powers	L. Dodge	200,607	Feb. 26	754	221	13	373
Drill. Rock	C. Burleigh	200,690	Feb. 26	841	247	13	385
Deflector and evaporator. Hot-air	S. B. Sexton	201,054	Mar. 5	235	74	13	451
Dentist's slab and bottle-holder	E. F. Hanks	200,829	Mar. 5	15	5	13	417
Die for molding plastic substances	M. Carty	200,986	Mar. 5	161	52	13	440
Dough-raiser	J. Whitehead	200,957	Mar. 5	132	43	13	436
Dredging-scows. Hopper for pneumatic	R. Cartwright	200,821	Mar. 5	7	2	13	416
Drill. Coal	J. J. Rigney and W. Hemingray	200,936	Mar. 5	114	38	13	433
Drill. Seed	O. N. Skaarnas	200,943	Mar. 5	120	40	13	434
Drills. Force-feed for grain	A. J. Martin	201,029	Mar. 5	209	66	13	447
Drills. Force-feed for grain	J. F. Winchell	201,079	Mar. 5	257	81	13	453
Drilling or boring rocks. Machine for	T. B. Jordan	201,017	Mar. 5	195	62	13	445
Drum. Heating	W. A. Swarin	200,948	Mar. 5	125	41	13	435
Drawing and spinning machines. Clearer-roll frame for	F. Twitchell and C. A. Richardson	201,303	Mar. 12	494	152	13	495
Depot-platform	L. J. Swett	201,571	Mar. 19	786	239	13	542
Diagrams. Instrument for transmitting	J. M. Wolbrecht	201,473	Mar. 19	681	208	13	528
Digging-machine	J. Coast	201,499	Mar. 19	707	215 / 216	13	532
Ditching-machine	J. F. Watring	201,474	Mar. 19	683	209	13	529
Dough-mixer	J. M. Stanyan	201,460	Mar. 19	670	204	13	526
Dredging-tongs	C. A. Scanlan	201,550	Mar. 19	770	235	13	540
Drill. Grain	J. R. Finch	201,341	Mar. 19	552	169	13	510
Drill-grinder	A. K. Rider	201,449	Mar. 19	659	201	13	525
Drills. Machine for making twist	C. F. Jacobsen	201,530	Mar. 19	742	226	13	537
Drilling, laying foundations, &c. Apparatus for submarine	J. H. Striedinger, J. R. F. Kelly, and K. Korrow.	201,569	Mar. 19	783	238 / 239	13	542
Dental plate	S. C. Carter	201,748	Mar. 26	973	297	13	574
Dental plugging instruments. Attachment for	S. D. Strohm	201,849	Mar. 26	1076	327	13	589
Door-securer	G. W. Alexander	201,586	Mar. 26	817	249	13	551
Drill. Grain	J. S. Bogle	201,643	Mar. 26	875	266 / 277	13	559
Drill. Rock	C. H. Chandler	201,651	Mar. 26	883	269	13	560
Dental bracket	W. D. Ewart	201,876	Apr. 2	19	5	13	601
Dentist's tools for cleaning nerve-cavities. Manufacture of	R. B. Donaldson	202,006	Apr. 2	142	41	13	619
Derrick. Portable	W. Cooke	201,997	Apr. 2	134	39	13	618
Derrick. Portable	W. Cooke	201,998	Apr. 2	136	39	13	618
Draft-equalizer	J. N. Travis	202,075	Apr. 2	214	63	13	629
Drill-bit. Oil	J. Grubs	202,023	Apr. 2	160	46	13	622
Drill. Rock	H. C. Sergeant	202,060	Apr. 2	198	58	13	627
Ditching-machine	G. E. Stewart	202,200	Apr. 9	365	107	13	654
Drains and waste-pipes. Trap for house	J. H. Shedd	202,287	Apr. 9	454	133	13	667
Dredger	T. B. Carr	202,228	Apr. 9	394	115	13	659
Drill and fertilizer. Combined grain	M. V. Dadisman	202,240	Apr. 9	406	118	13	660
Dry-closet	P. McMackin	202,278	Apr. 9	445	130	13	665
Dash-rail	J. F. Fowler	202,532	Apr. 16	730	211	13	708
Dental engine. Electro-magnetic	S. S. White	202,497	Apr. 16	677	198 / 199	13	703
Dish. Butter	G. E. Savage. (Reissue)	8,179	Apr. 16	836	241	13	721

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Distance and velocity recorder	G. Göbel	202,433	Apr. 16	619	{181 182}	13	694
Ditcher and cultivator. Combined	O. T. Davies	202,416	Apr. 16	599	176	13	692
Door-hanger	H. E. Richards	202,587	Apr. 16	788	228	13	714
Doubling and twisting machines. Stop-motion for	T. Kershaw	202,550	Apr. 16	753	217	13	711
Draft-equalizer	L. W. Frederick	202,432	Apr. 16	618	181	13	694
Draft-equalizer. Three-horse	W. A. Laird	202,555	Apr. 16	757	219	13	711
Drill. Rock-	W. H. Elliot	202,338	Apr. 16	526	154	13	681
Drilling machine. Coal-	J. Price	202,372	Apr. 16	560	164	13	686
Drilling. Platform for submarine rock-	T. Cumming	202,415	Apr. 16	598	176	13	691
Ditching-machine	T. F. McGough	202,661	Apr. 23	896	{254 255}	13	735
Dog-power	F. K. Traxler	202,679	Apr. 23	906	259	13	737
Door-chain	T. F. Stevenson	202,685	Apr. 23	1124	323	13	765
Draft-equalizer	H. D. Cress	202,705	Apr. 23	933	266	13	740
Desk. School-	R. K. Curtis	202,934	Apr. 30	1184	342	13	777
Dessert-maker	W. H. Silver	203,081	Apr. 30	1325	385	13	795
Ditch-opening machine	H. W. Hill	203,042	Apr. 30	1289	373	13	790
Door	R. W. Semple	203,202	Apr. 30	1455	425	13	812
Door. Sliding	G. R. Kidder	203,051	Apr. 30	1295	376	13	791
Drill tooth. Seed-	H. Springer	203,207	Apr. 30	1459	427	13	813
Dye-stuff or coloring-matter	L. Graf	203,140	Apr. 30	1384	.....	13	803
Dental engine	J. M. Stebbins	203,385	May 7	157	45	13	842
Dental-engine hand-piece	E. T. Starr	203,297	May 7	65	20	13	829
Dental-engine hand-piece	E. T. Starr	203,296	May 7	66	20	13	829
Desk. School-	G. Elsey	203,252	May 7	16	6	13	823
Door-check	J. R. Watkins	203,302	May 7	72	22	13	830
Draft-equalizer	J. Sebastian	203,380	May 7	151	43	13	841
Drawing-heads. Stop-motion for railway	F. E. Tabor	203,389	May 7	163	47	13	843
Drill. Hand-	C. L. Bellamy	203,402	May 7	173	50	13	844
Drilling apparatus. Oil-well-	J. S. Bishop	203,403	May 7	173	50	13	844
Dash-boards. Tool for trimming and finishing the edges of	B. C. Converse	203,591	May 14	390	110	13	862
Dental drill	A. Hartman. (Reissue)	8,231	May 14	623	174	13	910
Dental plugger	J. M. Stebbins	203,667	May 14	465	132	13	891
Dental tool-holder	W. S. How	203,733	May 14	534	151	13	899
Desk	G. and J. Runton	203,649	May 14	445	126	13	889
Detergent composition	J. Daymon	203,712	May 14	513	.....	13	897
Ditching-machine	A. Renetzky	203,777	May 14	581	163	13	905
Drill and lathe-chuck attachment	D. E. Whiton	203,571	May 14	373	105	13	879
Dental gold filling	E. G. and L. Kearsing	203,921	May 21	742	213	13	934
Dental tool	E. T. Starr	203,858	May 21	677	192	13	925
Derrick. Wagon-	J. D. Winters	203,974	May 21	799	229	13	941
Desk. School-	J. P. Pies	204,082	May 21	916	262	13	955
Dough. Preparing-	M. Meinhold	204,065	May 21	896	.....	13	953
Draft-equalizer	M. A. Andrews	203,871	May 21	687	196	13	926
Drawer-support	J. W. Dane	203,894	May 21	711	203	13	929
Dredger. Vacuum-	A. Crosby	203,892	May 21	708	203	13	929
Drying-machine	G. N. Bliss	203,879	May 21	695	199	13	927
Desk. School-	J. Edgar	204,207	May 28	1075	306	13	979
Draft-equalizer	J. Branning	204,289	May 28	1153	329	13	989
Drilling apparatus. Well-	J. B. and G. R. Elliott	204,143	May 28	1001	284	13	969
Drilling machine. Metal-	D. W. Pond	204,248	May 28	1114	318	13	984
Drills. Spring-hoe for grain-	C. E. Patric	204,365	May 28	1234	351	13	999
Drying-kiln	E. T. Geunert	204,211	May 28	1079	307	13	980
Dental engines. Motor-cable for	B. M. Wilkerson	204,645	June 4	220	70	13	1043
Desk. Satchel-	A. O. Kaplan	204,492	June 4	69	24	13	1022
Desk. School-	H. Merz	204,444	June 4	29	10	13	1017
Desk slate-holder	M. M. Rice and J. Labar	204,505	June 4	79	27	13	1024
Door-check	C. S. Whipple	204,643	June 4	219	70	13	1043
Door-sill and weather-strip	E. Handley and T. G. Orwig	204,434	June 4	19	7	13	1015
Dredging-machine	T. L. Lee	204,584	June 4	155	51	13	1035
Drill and planter. Combined	G. W. Grimes	204,488	June 4	65	22, 23	13	1022
Dish. Covered	S. W. Babbitt	204,784	June 11	380	113	13	1067
Dock. Dry-	J. E. Simpson	204,689	June 11	274	85	13	1054
Drawers	H. Cohn	204,714	June 11	300	93	13	1058
Drill. Cotton-seed	W. E. Kelley	204,671	June 11	255	79	13	1052
Dummy. Adjustable	J. N. Lawrence	204,833	June 11	435	127	13	1073
Dye-stuffs. Ethyl-rosaniline	H. Caro	204,798	June 11	394	.....	13	1068
Dye-stuffs from methyl-aniline. Production of	H. Caro	204,796	June 11	391	.....	13	1068
Dye-stuffs produced from naphthylamine	H. Caro	204,799	June 11	395	.....	13	1068
Dishes. Device for greasing baking-	J. B. Smith	205,004	June 18	627	184	13	1102
Ditching-machine	H. Gonnellaz	204,894	June 18	519	152	13	1088
Drain, waste, and sewer pipe trap	G. E. Waring, Jr	204,928	June 18	556	161	13	1092
Drawing-roll saddle	E. Dixon	205,062	June 18	683	201	13	1109
Dress-shield	G. W. Wood	205,024	June 18	645	190	13	1104
Drill. Hand-	S. Morey	204,990	June 18	614	180	13	1100
Drilling oil and other wells. Rig for	E. E. Swett	205,105	June 18	724	216	13	1115
Dental pluggers. Motor for	E. Morcau and S. W. Dennis	205,229	June 25	932	277	13	1147
Ditcher	C. B. Stough	205,439	June 25	1087	322	13	1167
Doll	M. M. Steuber	205,314	June 25	962	285	13	1151
Draw-gage	J. H. Taya	205,316	June 25	964	285	13	1151
Drill. Grain-	E. D. Mead	205,285	June 25	927	275	13	1147
Dyeing apparatus	A. V. Hysore	205,272	June 25	912	270	13	1145
Earth-boring machine	W. H. Yarborough	198,911	Jan. 1	195	55	13	38
Engine. Hot-air	J. B. Ward	198,827	Jan. 1	106	30	13	24
Evaporating-pan	W. A. Morrison	198,900	Jan. 1	185	52	13	37
Elevator, track, and self-discharging bucket. Combined	J. A. Bruner and A. Rich	198,966	Jan. 8	257	73	13	55
Engine. Rotary	G. C. Hale	199,061	Jan. 8	348	102	13	70
Envelope	J. Clowes	199,032	Jan. 8	321	94	13	65
Egg-carrier	R. R. Wilkinson	199,339	Jan. 15	642	118	13	116
Eyeglass for watchmakers	J. H. Mather	199,218	Jan. 15	521	153	13	97
Engines. Regulator for steam-	N. G. Herreshoff	199,544	Jan. 22	859	251	13	158

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Egg and fruit carrier	O. Ricklefsen	199,746	Jan. 29	1084	318	13	201
Egg-tester	E. Halloway	199,643	Jan. 29	988	287	13	186
Electric conducting-cords. Tip for flexible	L. E. Heaton	199,827	Jan. 29	1163	342	13	213
Enameling sheet-iron ware	F. G. and W. F. Niedringhaus	199,735	Jan. 29	1074	.....	13	199
Engine. Rotary steam-	J. S. Hewitt	199,709	Jan. 29	1052	307	13	196
Engine. Rotary	G. Evens	200,036	Feb. 5	142	46	13	256
Engine. Steam-	J. G. Cooper	199,961	Feb. 5	71	23	13	244
Engine. Steam-	J. Hotub	199,978	Feb. 5	86	28	13	246
Engine. Steam-	A. A. Simonds	199,940	Feb. 5	53	17	13	241
Engines. Bed-plate for paper or rag	J. Preiss	199,932	Feb. 5	45	14	13	240
Exercising-machine	R. N. Harrison	200,290	Feb. 12	407	121	13	304
Egg-beater	S. J. Fowler	200,272	Feb. 12	390	.....	13	301
Explosive compound	J. L. and G. W. Stevens. (Reissue)	8,091	Feb. 19	733	215	13	362
Eggs. Case for transporting	C. M. Mallory	200,465	Feb. 19	594	175	13	341
Elevator. Hay-	M. J. Duffee	200,442	Feb. 19	571	169	13	337
Envelope	D. E. Dutrow	200,704	Feb. 26	857	252	13	388
Egg-carrier	E. Weston. (Reissue)	8,102	Feb. 26	966	280	13	405
Electric machine. Dynamo-	F. G. and W. F. Niedringhaus	200,626	Feb. 26	770	.....	13	375
Enameling sheet-iron ware	N. A. Otto and F. W. and W. J. Crossley. (Reissue.)	8,107	Feb. 26	974	281	13	406
Engine. Gas-motor	C. Hunter	200,725	Feb. 26	879	258	13	390
Engine. Reciprocating steam-	W. W. Smith	201,062	Mar. 5	241	76	13	452
Egg-carrier	C. H. Morgan	201,037	Mar. 5	217	68, 69	13	448
Elevator. Hydraulic	J. G. Willard	201,078	Mar. 5	256	80	13	453
Elevator. Hydraulic	J. J. Carter	200,895	Mar. 5	78	27	13	427
Engine for sawing-machines. Steam-	J. Brady	200,970	Mar. 5	148	48	13	438
Engine. Gas-	G. F. Blake	200,890	Mar. 5	73	25	13	426
Engine. Steam-pumping	C. L. Hamilton	200,828	Mar. 5	14	5	13	417
Engines for paper-pulp. Cooling beating-	W. L. Benham	200,853	Mar. 5	40	14	13	421
Envelope	F. W. Wiesebrock	201,141	Mar. 12	327	100	13	471
Effervescent-liquid-drawing apparatus	F. W. Wiesebrock	201,212	Mar. 12	393	121	13	481
Effervescent-liquid-drawing apparatus	H. J. Smith	201,206	Mar. 12	486	150	13	494
Electric machine. Magneto-	W. A. Candee	201,157	Mar. 12	342	105	13	473
Electrode for curative purposes. Galvanic	W. H. Clark	201,095	Mar. 12	279	86	13	464
Engine. Hydraulic	R. B. Kidder	201,113	Mar. 12	300	91	13	467
Engine. Rotary	J. B. Foster	201,273	Mar. 12	417	129	13	484
Engine. Wind-	J. Griswold	201,110	Mar. 12	293	90	13	466
Evaporating-pan	E. M. Folk	201,174	Mar. 12	335	109	13	476
Exercising device	M. Laflin and S. Elliott	201,426	Mar. 19	639	195	13	522
Egg-carrier	P. Schulze	201,453	Mar. 19	664	202	13	526
Egg-carrier	J. L. Stevens	201,568	Mar. 19	782	238	13	542
Egg-carrier	W. Starkey	201,364	Mar. 19	576	177	13	513
Egg-cup	C. H. Wilson	201,374	Mar. 19	583	180	13	514
Electrical currents. Apparatus for neutralizing the effects of induced	R. Marquis	201,543	Mar. 19	757	230	13	538
Elevator feeder. Ear-corn-	C. E. Emery	201,397	Mar. 19	611	187	13	518
Engine for cotton-presses. Steam-	L. Van Doren	201,574	Mar. 19	789	240	13	543
Engine. Rotary	A. Siegrist	201,456	Mar. 19	666	203	13	526
Engine. Rotary steam-	H. Croft, Sr. and H. Croft, Jr	201,334	Mar. 19	544	167	13	509
Engine. Wind-	R. L. Edwards and J. Lee	201,601	Mar. 26	833	253	13	553
Egg-box	E. Weston. (Reissue)	8,141	Mar. 26	1104	334	13	592
Electric machine. Dynamo-	G. W. Cranston	201,753	Mar. 26	977	290	13	575
Elevator. Sand or earth	G. Hart	201,778	Mar. 26	1007	307	13	579
Emery-wheel	N. Fonst	201,661	Mar. 26	890	271	13	561
Engines. Piston for steam-	O. S. Harmon	201,606	Mar. 26	839	254	13	554
Exercising-machine	E. Weston	201,968	Apr. 2	103	30, 31	13	614
Electric machine. Dynamo-	C. W. Baldwin	201,980	Apr. 2	116	34	13	616
Elevator. Hydraulic	A. Caesar	201,910	Apr. 2	53	.....	13	606
Emery-tools. Flux composition for	A. J. Robinson	201,949	Apr. 2	85	24	13	611
Emery-wheel clamp	H. E. Depp	201,874	Apr. 2	16	5	13	601
Engine. Air and steam	J. T. Fogg	202,253	Apr. 9	420	122	13	602
Egg-carrier	C. H. Wyman	202,132	Apr. 9	293	86	13	645
Egg carrier and tester	N. O. Amsden	202,213	Apr. 9	377	111	13	656
Egg-carriers. Fastening for	J. M. Johnston and R. Marshall	202,264	Apr. 9	420	125	13	664
Elevator	J. Macomb	202,181	Apr. 9	347	102	13	652
Elevator. Ice-	W. B. Doty	202,248	Apr. 9	415	121	13	661
Elevator. Steam water-	C. W. Baldwin	202,215	Apr. 9	378	111	13	656
Elevators. Valve-gear for hydraulic	T. A. Henderson	202,171	Apr. 9	339	99	13	651
Engine. Reciprocating steam-	B. T. Babbitt	202,134	Apr. 9	295	87	13	645
Engine. Rotary	G. Rogers. (Reissue)	8,164	Apr. 9	499	146	13	673
Engine. Traction-	E. Ridge	202,194	Apr. 9	360	105	13	654
Envelope	A. Habermicht	202,543	Apr. 16	745	215	13	710
Effervescent liquids. Apparatus for dispensing	A. H. McKitrick	202,450	Apr. 16	637	186	13	697
Elevator and unloader. Hay	G. Bartholomae	202,401	Apr. 16	587	172	13	690
Elevator. Wet-grain	J. Marshall	202,561	Apr. 16	762	220	13	712
Elevators. Safety-check for	J. W. Douglas. (Reissue)	8,177	Apr. 16	834	240	13	750
Engine. Knapsack fire-	M. Fortin	202,429	Apr. 16	615	180	13	694
Engine. Traction-	R. Sellliere and L. M. T. Riot	202,591	Apr. 16	792	229	13	715
Engines. Application of superheated steam to steam-	T. Warker. (Reissue)	8,200	Apr. 23	1167	335	13	770
Effervescent liquids. Apparatus for drawing	J. Arnold	202,775	Apr. 23	1002	288	13	750
Election-stickers. Ready-cut blank for	W. H. Hoffman	202,821	Apr. 23	1056	303	13	757
Engine. Compound	C. M. and E. E. Miller	202,653	Apr. 23	1008	311	13	761
Engine. Portable	W. H. Elliot	202,638	Apr. 23	861	247	13	733
Engine. Rock-drilling	F. Starkenberg	202,882	Apr. 23	1121	322	13	765
Engine. Rotary	O. Stenberg	202,884	Apr. 23	1121	322	13	765
Engine. Rotary	B. H. Taylor	202,888	Apr. 23	1126	{323 324 325 326}	13	765
Engine. Steam-	D. Turner	202,894	Apr. 23	1132		13	766
Engines. Condenser for	W. J. Allen. (Reissue)	8,188	Apr. 23	1153	.....	13	768
Engines. Condenser for steam-	J. Abterdam. (Reissue)	8,193	Apr. 23	1158	333	13	769
Envelope	O. P. Hatfield	202,816	Apr. 23	1051	302	13	756
Egg-beater	J. R. Hughes	201,153	Apr. 30	1400	409	13	805

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Electro-deposition. Manufacture of articles produced by	J. W. Tufts	202,909	Apr. 30	1220	352	13	781
Embalming apparatus	A. H. Hatch	203,033	Apr. 30	1280	370	13	789
Embroidering-machine	I. Grübli, C. A. Caflisch, and J. Wehrli.	203,142	Apr. 30	1385	402	13	803
Embroidering-machine	I. Grübli, H. Rieter, Jr., and J. Wehrli.	203,143	Apr. 30	1388	404	13	804
Embroidering-machine	H. Rieter, J. Wehrli, and I. Grübli	203,195	Apr. 30	1445	422	13	812
End-gate for grain-wagons	W. Ashton	203,101	Apr. 30	1341	390	13	798
Engine. Marine	A. Demo	203,006	Apr. 30	1252	362	13	786
Envelope	M. J. Taylor	203,091	Apr. 30	1334	388	13	797
Envelope. Letter-sheet	C. Foster. (Reissue)	8,206	Apr. 30	1491	436	13	816
Extract-receivers. Floating cover for	J. Miller	203,180	Apr. 30	1429	417	13	809
Eave-trough former	G. Eckel	203,433	May 7	209	60	13	849
Egg-carrier	J. H. McCarren	203,356	May 7	124	36	13	837
Egg-cases. Tray for	D. E. Dutrow	203,431	May 7	207	59	13	848
Electric machine. Magneto-	C. F. Brush	203,412	May 7	184	53	13	845
Electric machines. Armature for dynamo-	C. F. Brush	203,413	May 7	185	54	13	846
Elevator. Hydraulic	M. P. Higgins	203,271	May 7	37	11	13	825
Elevator. Hydraulic	M. L. Wyman	203,520	May 7	297	85	13	861
Elevators. Valve-operating mechanism for hydraulic	F. B. Perkins	203,494	May 7	270	78	13	858
Engine. Pumping-	J. H. Vailo	203,511	May 7	287	82	13	860
Engine. Wind-	H. C. Miner	203,480	May 7	257	74	13	856
Envelope	A. Daul	203,427	May 7	201	58	13	848
Envelope and paper-fastener	W. J. Westwood and G. Pfleger	203,514	May 7	289	83	13	860
Explosive compound	E. Monakay	203,482	May 7	260	.....	13	856
Eggs. Composition for preserving	O. A. Stempel	203,790	May 14	595	.....	13	907
Elevator. Hydraulic	R. Schmidt	203,782	May 14	586	164	13	906
Elevators, &c. Combined clutch and brake of hoisting-drums for	J. S. Lane	203,744	May 14	546	154	13	901
Engine. Hydraulic	J. B. Waring, J. F. Darrow, and F. Winters, Jr.	203,801	May 14	607	169	13	908
Engine. Wind-	I. H. Palmer. (Reissue)	8,235	May 14	628	175	13	910
Engines. Fly-wheel for	P. E. Jay	203,623	May 14	416	119	13	885
Evaporating-pan	W. T. Phegley	203,556	May 14	359	101	13	878
Earth-closet	R. W. Riddle	203,943	May 21	763	220	13	937
Educational appliance	C. A. Bailey	203,988	May 21	815	233	13	943
Egg-tester	C. L. Westerman	204,117	May 21	951	272	13	960
Electrical conductors. Connecting-tip for	J. A. Nickerson	203,931	May 21	752	217	13	935
Elevator-boot	H. W. Caldwell and W. Watson	203,887	May 21	703	201	13	928
Elevator. Grain-	O. D. Spalding	204,103	May 21	938	268	13	958
End gate. Wagon	S. W. Perkins	204,079	May 21	911	260	13	955
Engine. Steam-	J. Baird	203,989	May 21	816	234	13	943
Engine. Wind-	L. Brayman	203,884	May 21	700	200	13	928
Engine. Wind-	J. Hollingsworth	204,044	May 21	874	250	13	950
Engraving-block	G. C. Setchell	203,856	May 21	674	191	13	924
Exercising-machine	W. H. Willcox	203,973	May 21	799	229	13	941
Engine cylinder. Steam-	G. E. Banner	204,282	May 28	1145	327	13	988
Engine standard and cylinder. Steam-	G. E. Banner	204,283	May 28	1146	328	13	988
Engine. Wind-	H. N. Hill	204,221	May 28	1088	310	13	981
Engine. Wind-	J. Longyear and D. W. Clark	204,345	May 28	1212	346	13	997
Envelope	J. Schade and B. H. Lockwood	204,256	May 28	1122	320	13	985
Escapement	W. A. Wales	204,400	May 28	1268	361	13	1004
Excavator and submarine plow	W. M. Smith	204,387	May 28	1254	357	13	1002
Eyeglasses	J. F. Traub	204,266	May 28	1130	323	13	986
Egg-beater	G. Mooney	204,498	June 4	73	25	13	1023
Elevator. Windlass water-	R. T. Stokes. (Reissue)	8,271	June 4	224	71	13	1044
Engine. Rotary	B. Ereso	204,430	June 4	16	6	13	1015
Engine. Steam pumping-	W. C. Heister	204,433	June 4	18	7	13	1015
Engine. Wind-	J. W. Cleland	204,481	June 4	62	21	13	1021
Envelope	M. S. Chapman	204,422	June 4	8	3	13	1013
Ejector for oil-wells	T. B. Gunning	204,725	June 11	314	96	13	1060
Elevators. Hatch for street	P. Hinkle	204,821	June 11	416	122	13	1071
Engine regulator. Steam-	C. C. Jenkins	204,828	June 11	423	126	13	1072
Evaporating-pan	A. D. Martin	204,745	June 11	334	101	13	1062
Eyelet-making machine	A. Delkescamp and F. B. Bradley	204,716	June 11	303	93, 94	13	1058
Egg-carrier	R. R. Wilkinson	204,934	June 18	560	163	13	1093
Embroidery-pattern	A. B. Rice	205,138	June 18	760	225	13	1120
Engine. Rotary steam-	J. F. Brown	205,043	June 18	664	195	13	1107
Ear-piercer	A. Gipperich	205,185	June 25	823	244	13	1133
Eggs. Treating preserved	O. A. Stempel	205,313	June 25	962	.....	13	1151
Electric circuit. Transmitting rhythmical vibrations in an	E. Gray	205,378	June 25	1028	304	13	1159
Electric-lighting system	W. E. Sawyer and A. Man	205,303	June 25	947	281	13	1149
Electric lights. Regulator for	W. E. Sawyer and A. Man	205,305	June 25	951	282	13	1150
Engine. Reciprocating	D. W. Kellogg	205,395	June 25	1047	310	13	1162
Engine. Steam-	J. B. Crawley	205,360	June 25	1012	299	13	1157
Engine. Wind-	D. D. Wadsworth	205,426	June 25	1075	318	13	1166
Engines. Machine for storing the power of wind-	M. Everhart	205,255	June 25	895	265	13	1142
Etching on glass	J. Unwin	205,446	June 25	1096	.....	13	1168
Fabrics. Machine for opening, smoothing, spreading, and guiding	W. Birch	198,787	Jan. 1	71	18	13	18
Fan. Automatic	F. and I. Elkins	198,798	Jan. 1	81	22	13	20
Fifth-wheel for vehicles	P. Okerlund	198,809	Jan. 1	91	25	13	22
File-handle	W. T. Nicholson	198,777	Jan. 1	60	15	13	16
Fire-arms. Extractor for revolving	O. Jones and F. W. Marston	198,745	Jan. 1	15	4	13	11
Fire-escape and spring bed-bottom. Combined	J. G. King	198,848	Jan. 1	136	36	13	23
Fish-trap	D. S. McBryde	198,894	Jan. 1	174	50	13	36
Fishing-rod tip	C. R. Fisher	198,879	Jan. 1	163	46	13	34

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Flour-bolt	F. Kruse	198,889	Jan. 1	171	49, 50	13	35
Fork. Horse hay-	S. Chapman	198,762	Jan. 1	40	10	13	14
Fruit and hop drier	W. Batts	198,791	Jan. 1	75	19, 20	13	19
Fan. Automatic	J. Hay	198,938	Jan. 8	228	64, 65	13	51
Feather-renovator	G. B. Griswold and J. C. Gipson	199,059	Jan. 8	347	101	13	70
Feed-water heater and condenser	A. De Beaumont	199,038	Jan. 8	325	96	13	66
Fence material. Barbed	L. F. Betts	199,018	Jan. 8	308	90	13	64
Fence-post socket	D. A. Hayt	199,064	Jan. 8	351	103	13	71
Fertilizer-distributer	W. M. Boon	199,022	Jan. 8	311	92	13	64
File. Bill-	W. C. Bussey	199,068	Jan. 8	259	74	13	56
Fire-arm. Breech-loading	G. H. Fox	198,973	Jan. 8	265	76	13	57
Fire-arms. Adjustable hammer for	E. A. F. Toepperwein	199,124	Jan. 8	416	122	13	80
Fire-back	G. W. J. Woltz	198,960	Jan. 8	250	72	13	54
Fire-escape	C. and J. G. Brunner	199,026	Jan. 8	315	93	13	65
Fire-escape	H. Burrows	198,928	Jan. 8	220	62	13	49
Fire-escape	J. M. Chandler	199,028	Jan. 8	317	93	13	65
Fire-escape	E. Lumpert	199,078	Jan. 8	364	108	13	73
Fire-escape	J. B. Crocker	198,971	Jan. 8	262	75	13	56
Fruit, &c. Apparatus for drying or cooking	M. H. Smith	199,000	Jan. 8	292	85, 86	13	61
Furnace-feeder	J. Hughes	199,069	Jan. 8	355	105	13	72
Furnace for burning pyrites	J. B. McCurdy	198,940	Jan. 8	238	68	13	52
Furnace for smelting lead	H. H. Burritt and G. A. Ohl	198,967	Jan. 8	258	73	13	55
Furnace-grate	C. W. Durham	199,043	Jan. 8	330	97	13	67
Furnace. Hot-air	O. B. Stillman and J. H. Webster	199,118	Jan. 8	410	121	13	80
Furnaces. Measuring and discharging apparatus for cooling-tubes of char-	C. Ballinger	199,175	Jan. 15	479	142	13	91
Feathers. Machine for cutting down from	P. A. Dailey	199,270	Jan. 15	574	167	13	105
Felt fabrics. Manufacture of ornamental	A. G. Kirk	199,211	Jan. 15	516	151	13	96
Fence. Portable	S.-H. St. John	199,330	Jan. 15	634	184	13	115
Fence-wire. Barb for	J. McNeill	199,162	Jan. 15	468	138	13	89
Fences. Metal barb for	W. A. Greeno	199,199	Jan. 15	504	148	13	95
Fire-escape	E. L. Abbott and J. C. Birdsell	199,171	Jan. 15	475	140	13	90
Fire-extinguisher	H. H. Case	199,184	Jan. 15	492	144	13	93
Fire-kindler	T. Williamson and W. A. Vegta	199,245	Jan. 15	543	.....	13	101
Fire-kindling	J. C. Slaughter	199,232	Jan. 15	532	157	13	99
Fruit-drier	G. W. Baker	199,250	Jan. 15	548	161	13	101
Fruit-gatherer	T. R. Butman	199,182	Jan. 15	489	144	13	92
Furnace-door	C. H. Morgan	199,164	Jan. 15	469	138	13	89
Furnace for heating iron and steel bars	W. A. Stewart	199,478	Jan. 22	787	231	13	147
Feather-renovator	J. Hallner	199,538	Jan. 22	854	250	13	157
Fence. Barbed	W. P. C. Bain	199,490	Jan. 22	797	234	13	148
Fence-wire retainer	W. A. Amberg	199,395	Jan. 22	710	209	13	134
File. Letter-	H. S. Williams	199,606	Jan. 22	923	270	13	163
File. Newspaper-	M. A. Richardson	199,573	Jan. 22	886	.....	13	163
Files. Sharpening	J. C. A. Rohde	199,577	Jan. 22	889	261	13	163
Filter for beer-pumps. Air-	E. N. Dickerson	199,357	Jan. 22	672	197	13	128
Filter for houses. Air-	J. Crawford	199,519	Jan. 22	830	243	13	154
Filter. Water-	W. H. Baker. (Reissue)	8,033	Jan. 22	944	274	13	171
Fire-arm. Breech-loading	W. J. Nunn	199,461	Jan. 22	770	226	13	144
Fire-escape	F. A. Presko	199,571	Jan. 22	883	259	13	163
Fish-hatching apparatus	T. B. Ferguson	199,527	Jan. 22	843	246	13	155
Flue-cap. Ventilating	J. D. McLinden	199,458	Jan. 22	769	225	13	144
Fluid meter and motor. Rotary	E. Anthony	199,397	Jan. 22	712	210	13	135
Fluting-machine	G. E. King. (Reissue)	8,055	Jan. 22	946	275	13	173
Fork. Horse hay-	L. W. Noyes	199,376	Jan. 22	690	203	13	131
Furnace	W. F. Flagg	199,529	Jan. 22	845	247	13	156
Furnace and range. Combined heating	J. P. Beck	199,347	Jan. 22	659	193	13	127
Furnace. Metallurgic-gas	W. S. Gillen	199,362	Jan. 22	677	198	13	129
Furniture structure	C. Kilburn	199,373	Jan. 22	686	201	13	131
Feather-renovator	J. J. Bonney	199,614	Jan. 29	935	273	13	181
Fence	E. Hallett	199,642	Jan. 29	967	287	13	186
Fence. Iron	J. Kinney	199,651	Jan. 29	998	290	13	187
Fire-arms. Lock for	W. H. Baker	199,773	Jan. 29	1109	325	13	205
Fire-kindler	J. Beard	199,683	Jan. 29	1028	299	13	193
Flue cleaner. Boiler-	O. B. Kendall	199,650	Jan. 29	997	290	13	187
Fountain	F. H. Gay and R. J. Follett	199,821	Jan. 29	1159	340	13	212
Fountain. Drinking-	W. F. Cunningham	199,800	Jan. 29	1138	334	13	209
Fountain. Revolving	H. G. Fiske	199,633	Jan. 29	979	284	13	185
Furnace-grate	W. J. Allen	199,609	Jan. 29	951	277	13	181
Furnace grate-bar	N. Henzel and P. W. Liebich	199,707	Jan. 29	1050	307	13	196
Furnaces. Damper-regulator for steam-boiler	W. R. Cole	199,692	Jan. 29	1037	302	13	194
Fence. Barbed	W. Warden	199,947	Feb. 5	59	19	13	242
Fence-barbs. Pinchers for applying	J. W. Edwards	199,965	Feb. 5	75	25	13	245
Fence-post	W. H. H. Youngs	199,949	Feb. 5	61	20	13	242
Fence-post. Metal	H. L. Gockley	199,971	Feb. 5	80	26	13	245
Fence. Wire	W. Warden	199,946	Feb. 5	58	19	13	242
Fence-wire. Barbed	M. P. Mighell	199,924	Feb. 5	37	12	13	238
Fence-wires. Tool for stretching	A. Green	199,904	Feb. 5	14	4	13	235
Fire-alarm. Electric thermostatic	G. S. Shute. (Reissue)	8,075	Feb. 5	236	72	13	269
Fire-alarms. Thermostat for electric	R. F. Bartel	200,017	Feb. 5	121	40	13	252
Fire-arm. Breech-loading	W. Field	200,041	Feb. 5	149	48, 49	13	256
Fire-arm. Breech-loading	W. R. Finch	200,042	Feb. 5	152	49, 50	13	257
Fire-escape	C. Richards	199,934	Feb. 5	46	15	13	240
Fire-extinguisher	F. C. Zapfle	199,950	Feb. 5	61	.....	13	242
Fish-catching device	J. A. Mitchell	199,926	Feb. 5	39	13	13	238
Flask for cooling liquids	A. M. Kloczewski and V. Klobassa	200,065	Feb. 5	174	56	13	260
Fruit. Drying	J. Hyder	199,910	Feb. 5	25	.....	13	236
Furnace. Blast and reverberatory	C. Bennett	200,019	Feb. 5	123	41	13	252
Feathers for bedding. Preparing	A. Hicks	200,197	Feb. 12	314	94	13	290
Fence	J. C. Drake	200,132	Feb. 12	249	76	13	280
Fence	C. A. Root	200,222	Feb. 12	335	101	13	293
Fence-post	A. A. Garver	200,276	Feb. 12	394	116	13	302

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fence-post	J. H. Mudgett	200,217	Feb. 12	331	99	13	292
Fence-post	J. Sickles	200,153	Feb. 12	270	80	13	283
Fence-post. Metallic	W. Langham	200,206	Feb. 12	322	96	13	291
Fence. Wire	C. D. Johnson and L. F. Johnston. (Reissue.)	8,078	Feb. 12	497	146	13	317
Fence-wires. Barb for	C. Brunner and H. Reynolds	200,125	Feb. 12	244	74	13	279
Fertilizer	F. C. Grange	200,189	Feb. 12	307	.....	13	289
Fertilizer-distributer	A. Mekenney	200,324	Feb. 12	447	132	13	309
File-cleaner	W. T. Nicholson	200,218	Feb. 12	331	100	13	293
Filtering apparatus	A. Van Haagen	200,363	Feb. 12	487	143	13	316
Fire-arm. Breech-loading	P. Mauser	200,322	Feb. 12	443	131	13	309
Fire-escape	I. D. Cross	200,260	Feb. 12	377	111	13	299
Fire-escape	E. K. Graves	200,190	Feb. 12	308	92	13	289
Fire-escape	G. Kenyon	200,200	Feb. 12	318	95	13	290
Fire-escape	A. Ziegenhagen	200,370	Feb. 12	495	145	13	317
Filer for spoolers and fly-frames	W. C. Macomber	200,321	Feb. 12	442	131	13	309
Fountain. Parlor	F. Buehlhorn	200,126	Feb. 12	245	74	13	280
Fuel-burner	J. M. Hicks	200,139	Feb. 12	257	77	13	281
Furnace for link-welding	J. H. Helm	200,195	Feb. 12	311	93	13	289
Furnaces. Device for supplying steam and air blast to	E. J. Jones	200,310	Feb. 12	427	{127 128	13	307
Fuse. Combination shell-	E. Rubin and A. F. Stadler	200,223	Feb. 12	336	101	13	293
Faucet	J. O. Waddell	200,416	Feb. 19	546	161	13	333
Feather-renovator	D. B. Sanders and J. Smith	200,411	Feb. 19	540	160	13	332
Feed-water regulator	C. Mendenhall	200,405	Feb. 19	535	158	13	331
Fence	L. P. Judson. (Reissue)	8,096	Feb. 19	737	216	13	302
Fence-wire. Barbed	C. F. Washburn	200,494	Feb. 19	621	183	13	344
Fence-wire stretcher	C. S. Davis	200,377	Feb. 19	510	150	13	327
Fertilizer-distributor	H. P. Underhill	200,490	Feb. 19	617	182	13	344
Fire-escape	G. W. Foster	200,526	Feb. 19	653	192	13	349
Fire-escape	W. B. Garoutte	200,387	Feb. 19	519	153	13	329
Fire-pot or portable furnace	J. W. Fisher	200,523	Feb. 19	650	191	13	349
Foot-rest	J. M. Shaw	200,483	Feb. 19	612	180	13	343
Foot-rest for hot-air registers. Adjustable	J. Bonnet	200,429	Feb. 19	560	165	13	335
Forge	T. C. Morrison, E. J. Mildren, and M. Moore.	200,562	Feb. 19	689	203	13	355
Fruit-drier	P. Riley	200,479	Feb. 19	608	179	13	342
Furnace for heating links	J. H. Helm	200,394	Feb. 19	526	155	13	330
Fan. Automatic	I. Zettl	200,812	Feb. 26	960	283	13	404
Fence	E. Densmore	200,645	Feb. 26	792	233	13	378
Fence-barb	L. T. L. Wing	200,783	Feb. 26	931	274	13	399
Fifth-wheel for carriages	W. W. Grier	200,712	Feb. 26	867	254	13	389
File. Bill-	S. Thompson	200,675	Feb. 26	824	{242 243	13	383
Filter. Water-	J. Foley	200,608	Feb. 26	755	221	13	373
Fire-alarm and signaling apparatus. Magneto-electric	A. S. Hickley	200,723	Feb. 26	876	257	13	390
Fire-arm. Magazine	A. Ball. (Reissue)	8,110	Feb. 26	981	289	13	406
Fire-arm. Revolving	O. Jones	200,794	Feb. 26	941	{277 278	13	401
Fire-arms. Rear sight for	A. Roda	200,667	Feb. 26	817	240	13	382
Fire-escape	H. J. Bowman	200,600	Feb. 26	745	218	13	371
Fire-escape	T. F. Carpenter	200,694	Feb. 26	844	{248 249	13	386
Fire-escape	D. Ottinger	200,665	Feb. 26	815	240	13	382
Fire-extinguisher	T. E. Connelly	200,699	Feb. 26	850	250	13	387
Fireman's hat	J. M. De Celis	200,701	Feb. 26	854	251	13	387
Flour. Manufacture of	C. S. Marple	200,621	Feb. 26	766	225	13	375
Freezing water. Mold for	W. R. Close	200,605	Feb. 26	751	220	13	372
Fruit-basket	L. W. Beecher	200,786	Feb. 26	933	275	13	399
Furnaces. Apparatus for supplying steam-blast to boiler	E. R. Stego	200,674	Feb. 26	823	242	13	383
Fabric. Tubular-woven	S. W. Baker	200,965	Mar. 5	140	46	13	437
Faucet. Vent-	F. C. Lillis and L. A. Rebasz	200,866	Mar. 5	52	18	13	423
Fence-post	A. B. Sprout	200,946	Mar. 5	123	41	13	434
Fertilizer-dropper	J. C. Moltrip	200,837	Mar. 5	24	8	13	418
File. Bill-	J. E. Gorman	201,004	Mar. 5	183	58	13	443
File. Postal-card	A. Wiel	201,077	Mar. 5	255	80	13	453
Fire-arms. Nipple-guard for	N. Fretz	200,999	Mar. 5	178	57	13	442
Fire-escape	J. C. Moore	200,870	Mar. 5	57	20	13	423
Fire-escape	J. G. Richardson	200,844	Mar. 5	31	11	13	419
Fire-escape	S. Root	201,050	Mar. 5	231	73	13	450
Fire-escape	N. Schroeder	200,878	Mar. 5	64	22	13	425
Fire-extinguisher	T. F. Gilliland	200,826	Mar. 5	11	4	13	417
Fire-kindler	J. J. K. Boote and G. L. Hechler	200,972	Mar. 5	149	49	13	438
Fire-kindler	J. H. Prentice	201,045	Mar. 5	226	71	13	449
Fruit-boxes, &c. Handle for	R. E. Morey	201,036	Mar. 5	217	68	13	448
Furnace. Boiler-	W. Ayres	200,815	Mar. 5	2	1	13	415
Furnace. Glass-	J. M. Brookfield	200,973	Mar. 5	150	49	13	439
Fan attachment	G. F. Wilson	201,318	Mar. 12	515	157	13	497
Feed-water heater and purifier	S. Hughes	201,181	Mar. 12	362	{112 113	13	477
Fence-post	F. Dyer and G. Adair	201,170	Mar. 12	352	108	13	475
Filter. Water-	J. Foley	201,102	Mar. 12	285	88	13	465
Filter. Water-	J. Foley	201,103	Mar. 12	286	89	13	466
Fire-alarm. Automatic	J. M. De Celis	201,167	Mar. 12	350	108	13	475
Fire-arm. Breech-loading	J. Aston	201,216	Mar. 12	397	122	13	482
Fire-extinguisher	J. C. Lester and C. J. Fox	201,183	Mar. 12	365	113	13	477
Fire-kindler	F. S. Lewis	201,184	Mar. 12	365	113	13	477
Flat-iron heater	J. A. J. Askew	201,215	Mar. 12	396	122	13	482
Flour chest, sifter, and safe. Combined	C. H. and R. H. Ober	201,195	Mar. 12	373	116	13	479
Flying-machine	C. F. Ritchel	201,200	Mar. 12	380	118	13	479
Fountain. Glass-lined	F. W. Wiesebrock	201,142	Mar. 12	329	{100 101	13	471
Frog	J. Brahn	201,154	Mar. 12	339	104	13	473

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fruit-drier	O. F. Tiffany	201,131	Mar. 12	316	97	13	469
Furnace with regenerators. Revolving	C. W. Siemens	201,294	Mar. 12	483	{148 149	13	493
Furnaces. Burning fuel in metal-working	S. Caddick	201,223	Mar. 12	404	124	13	483
Fare-box	M. M. Moore	201,437	Mar. 19	649	198	13	523
Faucet. Lock-	F. C. Lillis	201,430	Mar. 19	643	196	13	522
Faucet. Measuring and indicating	A. J. Johnson and C. O. Everts	201,533	Mar. 19	745	227	13	537
Fence-post	D. C. Johnson	201,422	Mar. 19	634	193	13	521
Fence-post	D. K. Mahle	201,541	Mar. 19	753	229	13	538
Fence-post. Metallic	E. C. McVitty	201,547	Mar. 19	760	231	13	539
Fence-wire. Barbed	T. H. Dodge	201,507	Mar. 19	718	218	13	534
Filter	G. H. Moore	201,354	Mar. 19	567	.....	13	512
Filtration	C. Gerson	201,516	Mar. 19	727	222	13	535
Fire-arm	A. Henry and D. Fraser	201,524	Mar. 19	734	224	13	536
Fire-escape	C. A. Sheldon	201,455	Mar. 19	666	203	13	526
Fire-escape	J. Stengel	201,567	Mar. 19	782	238	13	542
Fish and animal trap	G. Davis	201,504	Mar. 19	712	217	13	533
Flanging-machine	L. Campbell and J. F. Richards	201,325	Mar. 19	535	164	13	507
Flour and meal chest with sifting attachment	C. Romine	201,557	Mar. 19	769	234	13	540
Flue	H. R. Bash	201,484	Mar. 19	692	212	13	530
Flue cleaner. Boiler-	F. I. Pearce	201,555	Mar. 19	768	234	13	540
Flume	R. H. Campbell	201,326	Mar. 19	537	165	13	503
Funnel	D. Williams	201,472	Mar. 19	681	208	13	528
Furnace. Gas-burning	N. Will	201,581	Mar. 19	709	243	13	544
Faucet	W. D. Seal	201,634	Mar. 26	866	263	13	558
Feather-renovator	A. K. Klock	201,686	Mar. 26	911	278	13	565
Feed-cutter	W. S. Bartle	201,732	Mar. 26	958	293	13	572
Feed-water heater	H. G. Cady	201,649	Mar. 26	882	268	13	560
Fence. Iron	H. L. Jones	201,616	Mar. 26	848	257	13	555
Fence-post	O. E. Butler	201,744	Mar. 26	969	296	13	574
Filter	J. C. Fisher	201,602	Mar. 26	834	253	13	553
Fish and potatoes. Preserving together cured	S. Rich	201,834	Mar. 26	1062	.....	13	587
Flooring-clamp	J. Schofield	201,709	Mar. 26	933	286	13	568
Flower-stand	E. Mots	201,813	Mar. 26	1038	317	13	584
Fork. Carving-	J. W. Gardner	201,663	Mar. 26	892	272	13	562
Fork. Carving-	J. W. Gardner	201,664	Mar. 26	892	272	13	562
Fork. Horse potato-	G. C. Clark	201,652	Mar. 26	883	269	13	560
Furnace for producing gases for heating and other purposes.	P. W. Mackenzie	201,806	Mar. 26	1034	316	13	583
Furnaces. Utilizing waste heat of	J. Hutton	201,613	Mar. 26	847	{256 257	13	554
Feather-renovator	E. H. Cowles	201,871	Apr. 2	13	4	13	600
Feather-renovator	R. Hoover	202,030	Apr. 2	169	49	13	623
Feathers. Bleaching	A. Viol and C. P. Dufiot	202,078	Apr. 2	218	.....	13	629
Fence. Portable	H. M. Dake. (Reissue)	8,152	Apr. 2	234	68	13	632
Fence-post	R. W. McPherrin	202,040	Apr. 2	181	53	13	624
Fence-post	W. H. Roundy	201,951	Apr. 2	87	25	13	612
Fence tightener. Wire-	E. C. Sears	202,058	Apr. 2	197	57	13	627
Fence. Water-bed	J. F. Belue	201,963	Apr. 2	121	35	13	616
Fence-wire. Barbed	T. G. Orwig	201,890	Apr. 2	31	9	13	603
Fences. Barb for wire	J. W. Nadelhoffer	201,889	Apr. 2	31	9	13	603
Fertilizer-distributer	J. W. Wheatley	202,061	Apr. 2	222	65	13	630
Filter and clarifier for tea, coffee, &c.	H. C. Rice	201,947	Apr. 2	84	24	13	611
Filter. Water-	J. M. Curtice	202,000	Apr. 2	137	40	13	619
Fire-arm. Breech-loading	J. M. Whittemore	201,970	Apr. 2	106	22	13	614
Fire-escape	H. Stacey	201,896	Apr. 2	38	10	13	604
Fire-extinguisher	J. W. Stanton	202,068	Apr. 2	207	61	13	628
Fire-extinguisher and escape-tower	A. C. Ellithorpe and C. Haas	202,009	Apr. 2	145	42	13	620
Fire-extinguisher. Automatic	F. Leclere	202,035	Apr. 2	174	51	13	624
Fire-extinguishing apparatus	J. W. Stanton	202,067	Apr. 2	205	60	13	628
Fire-place	O. F. and O. C. Mehurin	201,886	Apr. 2	27	7	13	602
Food. Compressed	E. Grivel	201,878	Apr. 2	21	.....	13	601
Fruit-picker	J. C. Miller	202,042	Apr. 2	183	53	13	625
Felting-machine for making felted and napped fabrics	G. B. Field	202,252	Apr. 9	418	122	13	662
Fence-post	S. N. Lennon	202,179	Apr. 9	346	101	13	650
Fifth-wheel for vehicles	M. Powe	202,190	Apr. 9	356	104	13	653
Fire-arm. Breech-loading	C. W. Sneider	202,126	Apr. 9	297	84	13	644
Fire-escape	J. P. R. James	202,263	Apr. 9	428	125	13	663
Fire-escape	C. R. Mott	202,115	Apr. 9	274	81	13	642
Flooring. Laying	C. Mudge	202,187	Apr. 9	355	104	13	653
Fruits. Packing box and case for	P. C. Burke	202,224	Apr. 9	389	114	13	658
Fuel. Compound to increase the combustion of	D. C. Breed	202,092	Apr. 9	250	.....	13	639
Furnace for roasting pulverized ores	C. Stetefeldt. (Reissue)	8,165	Apr. 9	501	146	13	674
Furnace. Quicksilver-	R. F. Knox	202,274	Apr. 9	441	128	13	665
Furnaces. Heating attachment to boiler and other	S. N. Carvalho	202,148	Apr. 9	307	91	13	647
Fence	M. S. Zimmerman	202,503	Apr. 16	661	200	13	704
Fence-post	H. H. Sherwood	202,594	Apr. 16	797	229	13	715
Fence. Water-bed	F. Feike	202,428	Apr. 16	615	180	13	694
Fence. Water-bed	J. B. Mynatt	202,572	Apr. 16	773	223	13	713
Fences. Metal post for wire	C. N. Rand	202,468	Apr. 16	653	191	13	699
Fertilizer	G. J. Popplein. (Reissue)	8,187	Apr. 16	843	.....	13	722
Filter	R. S. Jennings. (Reissue)	8,183	Apr. 16	839	242	13	721
Filter. Water-	E. T. Rogers	202,471	Apr. 16	655	192	13	700
Finger-ring	W. Riker	202,588	Apr. 16	789	228	13	715
Fire-arm. Breech-loading	W. H. Baker	202,397	Apr. 16	582	171	13	689
Fire-arm. Revolving	B. F. Joslyn	202,350	Apr. 16	538	158	13	683
Fire-arm. Revolving	B. F. Joslyn	202,351	Apr. 16	539	158	13	683
Fire-arms. Lock for	A. T. De Mouncie	202,418	Apr. 16	603	177	13	692
Fire-arms. Lock for	D. B. Wesson	202,388	Apr. 16	573	168	13	688
Fire-escape	J. J. Adgate	202,504	Apr. 16	682	200	13	704
Fire-escape	G. Martin	202,562	Apr. 16	763	220	13	712
Fire-escape	W. C. Phillips	202,460	Apr. 16	645	188	13	698
Fire-place	S. W. Dixon	202,419	Apr. 16	605	177	13	692

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fluting-machine	T. Robjohn. (Reissue)	8,174	Apr. 16	827	{229 240}	13	719
Fodder-cutter	G. Knoth	202,553	Apr. 16	756	218	13	711
Food for animals. Apparatus for preparing	J. McKee	202,360	Apr. 16	548	166	13	684
Forge. Portable	G. B. Phillips	202,461	Apr. 16	646	189	13	698
Friction-clutch	H. Barnes	202,400	Apr. 16	584	172	13	689
Furnace and process of working iron. Cupola	D. Thomas	202,605	Apr. 16	807	233	13	716
Furnace-grate	J. Ashcroft	202,323	Apr. 16	511	149	13	679
Furnace. Heating	H. Holcomb	202,439	Apr. 16	625	183	13	695
Furnace. Locomotive-boiler	F. Reimherr	202,375	Apr. 16	564	165	13	686
Furnace. Metal-heating	J. McCrea	202,566	Apr. 16	768	221	13	712
Fabrics. Machine for cutting textile	A. Warth	202,900	Apr. 23	1139	327	13	767
Fabrics. Machine for cutting textile	A. Warth	202,901	Apr. 23	1140	327	13	767
Faucet. Bung	S. T. Moore	202,855	Apr. 23	1090	312	13	761
Felting process	H. W. Flagg and G. Jackson	202,805	Apr. 23	1038	.....	13	755
Fence	W. M. Landreth	202,836	Apr. 23	1072	306	13	758
Fence	C. H. Phelps	202,752	Apr. 23	980	282	13	747
Fence	N. Westcott	202,905	Apr. 23	1144	328	13	767
Fence	W. R. White	202,686	Apr. 23	914	261	13	738
Fence. Portable	H. and J. Harrington	202,722	Apr. 23	947	271	13	742
Fence-post	E. D. Roseman	202,875	Apr. 23	1114	320	13	764
Fiber. Machine for making	L. P. Summers	202,766	Apr. 23	994	286	13	749
Fiber. Treatment of waste from the separation of animal and vegetable	J. Wilkins	202,910	Apr. 23	1148	.....	13	768
File. Bill	T. Lees	202,732	Apr. 23	955	274	13	744
Filtering apparatus	A. Van Haagen. (Reissue)	8,192	Apr. 23	1157	332	13	769
Fire-alarm signal-box	R. N. Tooker	202,891	Apr. 23	1129	325	13	766
Fire-arm	W. H. Bliss	202,627	Apr. 23	848	244	13	731
Fire-arm. Revolving	L. Ybarra	202,915	Apr. 23	1151	331	13	768
Fire-escape	F. Dettmer	202,708	Apr. 23	935	267	13	741
Fire-escape	J. Swank and A. Jehnke	202,767	Apr. 23	995	286	13	749
Fire-front	J. A. Ewing	202,799	Apr. 23	1026	294	13	753
Fishing apparatus	O. Hesse	202,818	Apr. 23	1053	302	13	756
Fluting device	J. and E. Shane and G. W. Hooker	202,669	Apr. 23	896	257	13	736
Fluting-iron	N. R. Streeter	202,676	Apr. 23	902	259	13	737
Fruit-drier	H. Brown	202,699	Apr. 23	927	265	13	740
Fuel-box	W. McCarroll	202,847	Apr. 23	1084	309	13	760
Funnel	D. B. Lester	202,734	Apr. 23	956	275	13	744
Furnace. Boiler	J. Jenks	202,657	Apr. 23	862	253	13	735
Furnace. Metallurgic	T. D. Morgan	202,743	Apr. 23	969	278	13	745
Furnace. Reverberating	W. Mann	202,845	Apr. 23	1082	309	13	760
Furnace. Smoke-consuming	A. Gross	202,646	Apr. 23	871	250	13	734
Furnaces, &c. Fire-lining and back for	O. Earnshaw	202,637	Apr. 23	860	.....	13	733
Furnaces. Gas-check for blast	D. N. Jones	202,730	Apr. 23	952	{273 274}	13	743
Fabrics. Compound for dressing textile	W. Hebdon and T. F. Mathews	203,038	Apr. 30	1285	.....	13	790
Fan	O. Brueck. (Reissue)	8,207	Apr. 30	1491	436	13	816
Feed-water heater for locomotives	T. H. Irwin	203,158	Apr. 30	1407	{410 411}	13	806
Fence	J. N. Kerr	202,949	Apr. 30	1199	346	13	778
Fence	A. Zimmerer	203,099	Apr. 30	1339	390	13	797
Fiber for use in the arts. Treating palmetto	G. F. Miller and W. G. Benedict	203,177	Apr. 30	1427	.....	13	809
Fiber. Separating animal from vegetable	J. Wilkins	203,230	Apr. 30	1480	433	13	815
Fiber. Separating animal from vegetable	J. Wilkins	203,231	Apr. 30	1480	.....	13	815
File-cutting machine	C. F. Mudge and G. Whittaker	203,065	Apr. 30	1307	380	13	793
Filter. Rain-water	W. H. Thomas and T. H. Carter	203,092	Apr. 30	1335	388	13	797
Fire-escape	J. S. Shaw	203,077	Apr. 30	1331	384	13	795
Fish. Apparatus for catching	S. N. and E. A. Robertson	202,962	Apr. 30	1211	350	13	780
Flour. Testing	E. Pekar	203,068	Apr. 30	1311	381	13	793
Fluting-iron	F. H. Stumpf	203,214	Apr. 30	1465	428	13	813
Food. Apparatus for preserving	E. P. Bates	202,979	Apr. 30	1229	355	13	783
Food from beans. Articles of	S. R. Andres	202,975	Apr. 30	1225	.....	13	782
Foot-coverings, &c. Manufacture of felt	A. A. and R. B. Hawley	203,148	Apr. 30	1394	407	13	805
Foot-warmer	M. E. Beasley	202,919	Apr. 30	1172	337	13	775
Ford or dam. Artificial	J. M. McCue	203,174	Apr. 30	1425	416	13	808
Fuel. Hydrocarbon compound for	S. C. Salisbury	203,199	Apr. 30	1452	.....	13	812
Furnace. Boiler	S. H. Bevins	202,981	Apr. 30	1231	355	13	783
Furnaces. Feeding air to	J. Jenks. (Reissue)	8,203	Apr. 30	1487	435	13	816
Furnaces. Grate for steam-boiler	J. E. Wootten	203,233	Apr. 30	1482	434	13	815
Fan. Automatic	A. C. Meyer	203,358	May 7	126	37	13	837
Faucet	E. West	203,513	May 7	289	83	13	860
Feed-water heater	P. C. Wortman. (Reissue)	8,216	May 7	308	88	13	863
Feed-water heater for locomotives	J. E. Wootten	203,518	May 7	294	84	13	861
Fence-wire. Barbed	O. O. Kittleson	203,349	May 7	117	34	13	836
Fences. Support or picket for strengthening	F. L. Sarmiento	203,502	May 7	277	79	13	859
Finger-ring	W. B. Closson	203,323	May 7	95	27	13	832
Fire-escape	J. Broughton	203,240	May 7	4	2	13	821
Fire-place	J. M. Yahres	203,532	May 7	299	85	13	861
Flower-pots. Machine for making	J. Braslin	203,408	May 7	178	51	13	845
Fog-signal	S. C. Maine	203,473	May 7	250	72	13	855
Fork. Carving	E. Cady	203,415	May 7	188	54	13	846
Fork. Carving	R. W. Hallam	203,445	May 7	224	63	13	851
Fruit-picker	J. Holman	203,457	May 7	235	67	13	852
Fulling-mill	W. H. Mase and S. Terwilliger	203,355	May 7	123	36	13	837
Furnace. Steam-boiler	J. Enright and J. L. Heald	203,253	May 7	17	7	13	823
Furnace. Straw-burning	C. L. Hall	203,267	May 7	33	10	13	825
Furnaces. Combustion of fuel in steam-boiler	G. W. Morrison	203,485	May 7	262	75	13	856
Furnaces. Device for supplying steam and air blasts to	D. S. Elstner	203,434	May 7	209	60	13	849
Fare-register and ticket-receiver	N. A. Ransom	203,773	May 14	575	162	13	905
Faucet-hole attachment to barrels	E. T. Murphy	203,638	May 14	430	124	13	887
Faucet. Measuring	W. J. Lane	203,627	May 14	421	120	13	886
Fence	J. B. Fisher	203,536	May 14	336	96	13	875
Fence-barb	H. Reynolds	203,779	May 14	584	163	13	906
Fence. Hedge	P. S. Jenkins	203,545	May 14	344	98	13	876

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fence. Portable	D. R. Leach	203,628	May 14	422	121	13	886
Fence-post	E. S. Webster	203,804	May 14	610	170	13	908
Fence-post. Metallic	S. Miller	203,753	May 14	555	157	13	902
Filter-bags. Apparatus for washing	O. W. Donner	203,714	May 14	514	146	13	897
Filter. Water	J. N. Stevens	203,566	May 14	370	104	13	879
Fire-arm. Breech-loading	A. C. Vredenburgh	203,799	May 14	604	169	13	908
Fire-escape	T. L. Bennett	203,527	May 14	324	91	13	873
Fire-escape	F. G. Bryant	203,587	May 14	387	109	13	881
Fire-escape	J. E. Wildbore	203,687	May 14	495	137	13	893
Fire-extinguishing apparatus	J. W. Stanton	203,564	May 14	368	104	13	879
Fire-kindler	E. J. Fenn	203,535	May 14	335	95	13	875
Fire-kindler	H. N. Woodman	203,809	May 14	615	172	13	909
Flour. Treatment of	A. Hunter	203,544	May 14	343	98	13	876
Food. Process and compound for preserving	H. M. Jeter	203,737	May 14	538	.....	13	900
Fruits. Preserving	D. M. Mefford. (Reissue)	8,229	May 14	621	173	13	909
Fulling-roll	C. C. Webber	203,680	May 14	477	135	13	892
Furnace	P. J. Stanton and J. Hutchinson	203,666	May 14	463	132	13	891
Furnace. Boiler	J. L. Winslow	203,688	May 14	485	138	13	894
Furnace for burning kilns	G. C. Suris. (Reissue)	8,230	May 14	622	173	13	910
Furnace. Puddling and balling	T. Gledlow and J. Abbott	203,724	May 14	524	148	13	898
Furnace. Reheating	H. McDonald	203,614	May 14	427	123	13	886
Fare-register	J. Bluemel	203,881	May 21	697	199	13	928
Fence-post	W. E. Canedy and E. E. Leach	204,003	May 21	836	239	13	945
Fence. Wire	W. C. Payne	203,938	May 21	759	219	13	936
Filter. Drive-well-point	M. J. Eich	203,900	May 21	720	206	13	931
Fire-escape	J. M. Leecale	204,057	May 21	887	254	13	952
Flower-vase	F. Ratcliff	203,939	May 21	760	219	13	936
Fly-trap	D. S. Kidder	204,053	May 21	883	253	13	951
Fork. Horse hay	J. H. Harter	204,035	May 21	868	248	13	949
Fountain. Drinking	J. Reid	203,941	May 21	761	219	13	936
Fruit-basket	A. P. Gibson	204,023	May 21	856	245	13	948
Fruit-box	A. P. Gibson	204,022	May 21	854	244	13	947
Fuunel. Self-tapping can	A. W. P. Ladd	203,924	May 21	745	214	13	934
Furnace for desulphurizing ore	C. Olated	204,075	May 21	906	{259 260}	13	954
Furnace. Heating	D. L. Jaques	203,836	May 21	652	186	13	922
Fence. Hedge	I. O. Childs	204,197	May 28	1065	303	13	978
Fence. Iron	F. R. Martin	204,236	May 28	1102	315	13	982
Fence-post	O. Allen	204,275	May 28	1136	325	13	987
Fence-post	H. A. Pierce	204,246	May 28	1112	317	13	984
Fence. Wire	W. H. H. Frye	204,312	May 28	1176	335	13	992
Field-roller	T. B. Rice, Jr.	204,376	May 28	1244	354	13	1001
File. Newspaper	D. H. King	204,233	May 28	1099	314	13	982
Fire-alarm signal-box	R. N. Tooker. (Reissue)	8,267	May 28	1301	370	13	1008
Fire-arm. Revolving	B. F. Joslyn	204,334	May 28	1201	342	13	995
Fire-arm. Revolving	B. F. Joslyn	204,335	May 28	1202	343	13	995
Fire-arms. Extractor for revolving	B. F. Joslyn	204,336	May 28	1203	343	13	996
Fire-arms. Extractor for revolving	B. F. Joslyn	204,337	May 28	1203	343	13	996
Fire-escape	I. D. Cross	204,209	May 28	1165	332	13	990
Flour. Manufacturing	R. L. Downton	204,302	May 28	1167	333	13	991
Fruit pitting and cutting machine	C. P. Bowen	204,189	May 28	1058	{300 301}	13	977
Fruit-pitting machine	A. T. Hatch	204,217	May 28	1084	309	13	980
Furnace. Brass-melting	J. Fletcher	204,309	May 28	1173	334	13	992
Furnace-door	P. S. Kemon	204,339	May 28	1205	344	13	999
Furnace. Metallurgic	H. Swindell	204,392	May 28	1258	359	13	1002
Furnace. Ore-roasting	C. Stetefeldt. (Reissue)	8,266	May 28	1300	370	13	1008
Faucet. Lock	M. F. Seward	204,624	June 4	202	65	13	1041
Fence-post	J. M. Hartley and J. F. Dickens	204,565	June 4	133	45	13	1031
File-holder	W. T. Nicholson	204,596	June 4	169	54	13	1037
Filing. Appliances for flat	E. M. Kimball	204,493	June 4	70	24	13	1022
Fire-arm. Revolving	I. Johnson and M. Bye	204,438	June 4	25	8	13	1016
Fire-escape	J. Amess	204,473	June 4	55	18	13	1020
Fire-escape	T. H. Knight, O. H. Curtis, and G. C. Gibbs.	204,581	June 4	152	50	13	1034
Fire-escape	J. G. Kurtz and T. J. Kister	204,583	June 4	154	51	13	1035
Fire-kindlers. Machine for making	J. P. Wagner	204,464	June 4	47	15	13	1019
Fish. Curing	L. Woodruff	204,647	June 4	221	.....	13	1044
Fish-trap	W. J. Clark and T. W. Roberts	204,538	June 4	107	36	13	1027
Flour-bolt feeder, &c	R. S. T. Russell	204,454	June 4	37	12	13	1018
Fruit-drier	G. W. Rinehart	204,452	June 4	36	12	13	1017
Fruit, &c. Package for	E. L. Marshall	204,441	June 4	27	9	13	1016
Faucet	J. G. Schmidt	204,847	June 11	446	130	13	1074
Feather-renovator	B. Slater	204,769	June 11	359	107	13	1065
Feed-water regulator	H. S. Maxim	204,747	June 11	336	101	13	1062
Fence barb. Rail	C. P. Housum	204,735	June 11	324	98	13	1061
Fence-post	A. B. Smith	204,771	June 11	360	108	13	1065
Fence-wire fastener	R. W. Hargrave	204,818	June 11	414	121	13	1071
Fences. Device for holding and driving barbs into	C. P. Housum	204,734	June 11	323	98	13	1061
Filtering, cooling, and water-forcing apparatus. Combined	J. Gainey	204,663	June 11	247	77	13	1051
Fire-arm. Breech-loading	J. McAlpine	204,675	June 11	258	80, 81	13	1052
Fire-arm. Breech-loading	J. D. Slate	204,768	June 11	358	107	13	1065
Fire-arm. Magazine	F. W. Tiesing	204,863	June 11	460	134	13	1076
Fire-extinguisher for lint-rooms	Z. N. Morrell	204,840	June 11	441	129	13	1074
Fruit-picker	W. Y. McConnell and C. M. Dickerson	204,748	June 11	337	102	13	1062
Fabrics. Apparatus for cleaning and bleaching textile	H. S. Robinson	205,140	June 18	702	225	13	1120
Fan. Automatic	R. C. Bryant	205,046	June 18	669	196	13	1107
Fare-box	J. E. White	205,022	June 18	642	189	13	1104
Faucet attachment to casks and barrels	H. Müller	205,123	June 18	742	221	13	1118
Feed-bag	D. Jannopoulo	205,097	June 18	718	213	13	1114
Feed-gage	S. P. Halleck	204,967	June 18	592	173	13	1097

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Feed-water heater	W. Dawson	204,953	June 18	578	169	13	1095
Fence. Portable	S. Bryan	205,047	June 18	670	196	13	1108
Fence-post	B. Calkins	204,948	June 18	574	168	13	1095
Fence-post	W. McMillan	204,909	June 18	533	155	13	1090
Fence-wire	T. V. Allis	205,029	June 18	651	192	13	1105
Fences. Barb for wire	H. B. Scott	205,000	June 18	624	183	13	1101
Fiber-cleaning machine	G. D. Luce	204,906	June 18	530	155	13	1089
Fibers. Separating animal from vegetable	G. M. Jr., and A. L. Rice	205,130	June 18	761	.....	13	1120
Finger-nail trimmer	J. H. Hollman	205,088	June 18	711	211	13	1113
Fire-arm. Magazine	E. F. Edgecomb	205,066	June 18	688	202	13	1110
Fire in oil-tanks, &c. Device for extinguishing	J. H. and T. E. Connelly	204,887	June 18	511	149	13	1087
Fish. Curing	S. W. Griffin	204,966	June 18	592	.....	13	1097
Fluting and sad-iron holder	N. R. Streeter	204,922	June 18	549	160	13	1091
Forks. Manufacture of	T. Shaw	205,001	June 18	625	183	13	1101
Freezing apparatus	E. Fixary	204,961	June 18	586	171	13	1097
Fruit-huller	A. S. Bunker	205,048	June 18	671	196	13	1108
Furnace	H. W. Austin and W. B. Hosford	204,939	June 18	565	165	13	1094
Furnace for heating soldering-irons	J. Burgess	205,049	June 18	672	197	13	1108
Furnaces. Device for feeding air to	J. A. Warden	204,926	June 18	554	161	13	1092
Furniture-pad	P. W. Pratt	204,913	June 18	537	156	13	1090
Faucet	A. Beansoliel and J. Morreau	205,342	June 25	995	294	13	1155
Faucet for compartment-vessels	J. Butcher	205,350	June 25	1001	296	13	1156
Faucet. Measuring	F. X. Rousseau	205,302	June 25	945	281	13	1149
Feather-renovator	C. Emmerick and W. Hamermiller	205,178	June 25	815	242	13	1132
Feed-cutter	W. H. Ahrens	205,229	June 25	870	257	13	1139
Fence	O. A. Clark	205,245	June 25	888	263	13	1142
Fence	S. Craig	205,358	June 25	1010	299	13	1157
Fence	J. Hallner	205,381	June 25	1032	306	13	1160
Fence-post	A. P. Hawson and W. H. Burnham	205,383	June 25	1035	307	13	1160
Fence-post	J. W. Yarbrough	205,459	June 25	1105	327	13	1170
Fence-wire. Barbed	F. Billings	205,234	June 25	877	259	13	1140
Fifth-wheel	J. Kritch	205,279	June 25	918	272	13	1146
Fire-arm. Breech-loading	D. M. Lefever	205,193	June 25	833	247	13	1134
Fire-arm. Breech-loading	H. Updegraff	205,447	June 25	1097	324	13	1168
Fireman's belt-hook	H. Buchholz	205,348	June 25	1000	296	13	1156
Fork. Horse hay	R. N. B. Kirkham	205,276	June 25	916	271	13	1145
Friction-clutch	L. D. Dana	205,302	June 25	1014	300	13	1157
Fruit-picker	S. R. Ruckel	205,214	June 25	853	253	13	1137
Furnace. Blast	D. N. Jones	205,274	June 25	914	271	13	1145
Furnace-door	J. Ashcroft	205,337	June 25	988	292, 293	13	1154
Furnaces. Air-distributing pipe for	M. M. Snider	205,431	June 25	1080	320	13	1166
Furnaces. Feeding fuel to	A. L. Schultz	205,428	June 25	1077	319	13	1166
Gage. Weather-board	W. Z. Marsh	198,772	Jan. 1	52	14	13	16
Gas-regulator	G. W. Thompson	198,862	Jan. 1	140	40	13	30
Gases. Recovery of waste nitrous	B. C. Molloy and J. D. Warren	198,776	Jan. 1	58	.....	13	16
Gate	N. B. Cooksey	198,838	Jan. 1	116	33	13	27
Gate	P. Smith	198,858	Jan. 1	137	39	13	30
Glassware. Manufacture of	J. H. Hobbs	198,741	Jan. 1	11	2	13	10
Glove	A. C. Butte	198,921	Jan. 1	205	58	13	40
Grain-binder	C. Colahan	198,735	Jan. 1	3	1	13	9
Grain-binder	L. Miller	198,898	Jan. 1	179	51	13	36
Grain-binder	L. Miller	198,899	Jan. 1	182	51, 52	13	37
Game-counter	J. Whitelaw	199,130	Jan. 8	422	124	13	81
Gate-hanger	W. S. Dangler	199,037	Jan. 8	324	95	13	66
Glassware. Manufacture of	D. Challinor	199,030	Jan. 8	319	94	13	65
Governor for steam-engines	P. Grimm	198,978	Jan. 8	268	77	13	57
Grain-dumping device	A. Smith	199,112	Jan. 8	398	818	13	78
Grain-separator	H. E. Geiss	198,975	Jan. 8	266	76	13	57
Grain-separator	A. W. and C. T. Kendrick	198,986	Jan. 8	275	79, 80	13	58
Grinding-machine	G. Cowing. (Reissue)	8,030	Jan. 8	434	127	13	83
Garter	J. H. Vinton and M. E. Fitzpatrick	199,240	Jan. 15	539	159	13	100
Gas-burners. Carbureting attachment for	C. G. Spengler	199,323	Jan. 15	627	182	13	113
Gas-retort charger	A. Q. Ross	199,316	Jan. 15	621	180	13	112
Gate	S. Rogers	199,227	Jan. 15	528	155	13	98
Gate	R. Yale	199,341	Jan. 15	644	188	13	116
Gate. Farm	S. S. and J. G. Sherman	199,322	Jan. 15	626	182	13	113
Gearing for transmission of power	J. T. Hawkins	199,203	Jan. 15	508	149	13	95
Glass vessels. Metallic neck for	J. T. Cody	199,264	Jan. 15	569	166	13	104
Governor	H. T. Farnsworth	199,149	Jan. 15	456	134	13	87
Grain-binder	F. E. McNall	199,219	Jan. 15	521	153, 154	13	97
Grain-measure	J. D. Knight	199,150	Jan. 15	465	137	13	88
Grain-separator	B. A. Grant	199,151	Jan. 15	458	135	13	87
Grain-separator	T. C. Histed	199,204	Jan. 15	509	149, 150	13	95
Grain-separator	J. L. Lowe	199,300	Jan. 15	603	176	13	110
Grain-separator	H. B. Stevens	199,233	Jan. 15	533	157, 158	13	99
Gas from gas-wells. Process and apparatus for preparing hydrocarbon	W. S. Gillen	199,363	Jan. 22	678	199	13	130
Gas-purifying apparatus	T. N. Kirkham, D. Hulett, S. Chandler, Jr., and J. Chandler.	199,450	Jan. 22	757	222	13	142
Gas scrubber and washer. Combined	J. Balmore	199,492	Jan. 22	799	235	13	149
Gasket	W. Wallace and J. King	199,601	Jan. 22	917	269	13	168
Gate	W. C. Hooker	199,441	Jan. 22	749	220	13	141
Gate	O. L. Taylor	199,480	Jan. 22	788	232	13	147
Gear-wheels. Apparatus for forming molds for	J. H. Felthousen	199,596	Jan. 22	842	246	13	155
Glass. Hardening, tempering, and pressing	P. Siemens	199,583	Jan. 22	896	263	13	164
Glove-fastener	J. F. Field	199,398	Jan. 22	845	247	13	156
Governor. Wind-wheel	J. Phillips	199,464	Jan. 22	773	227	13	145
Grain-separators. Blast-regulator for	H. S. Stone	199,594	Jan. 22	898	266, 267	13	166
Grate. Shaking	O. P. Jackson	199,552	Jan. 22	866	253	13	160

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Garbage-receiver. Odorless	J. C. Moore	199,734	Jan. 29	1073	314	13	199
Gas-burners. Electric attachment for	A. W. Wright	199,676	Jan. 29	1021	297	13	191
Gas. Compound for producing illuminating	L. Marks	199,654	Jan. 29	1000	.....	13	188
Gas-lighter	J. B. Scattergood	199,747	Jan. 29	1085	318	13	201
Gate	M. S. and C. B. Austin	199,681	Jan. 29	1026	299	13	191
Gate	D. McCurdy	199,847	Jan. 29	1182	347	13	216
Gate	M. W. Tucker	199,758	Jan. 29	1093	321	13	203
Gate. Farm	J. Lepley	199,652	Jan. 29	998	291	13	188
Glove	S. O. Parker	199,738	Jan. 29	1077	315	13	200
Grain-binder	J. Garrard	199,637	Jan. 29	982	286	13	185
Grain-drier	G. Clark	199,793	Jan. 29	1131	332	13	208
Grain-scouring apparatus	G. E. Throop	199,670	Jan. 29	1016	296	13	190
Grain-separators. Straw-elevator for	F. G. Shepard	199,666	Jan. 29	1011	294	13	190
Grain-toller	L. C. Ereckson	199,629	Jan. 29	975	283	13	184
Grinding-machine. Tailor's	A. Jelinek	199,647	Jan. 29	994	289	13	187
Grindstones. Harvester-knife attachment for	G. A. Whitney	199,674	Jan. 29	1020	297	13	191
Gas. Apparatus for the manufacture of	E. J. Jerzmanowski	199,912	Feb. 5	26	8, 9	13	237
Gate and door fastener	C. T. Sweet	200,106	Feb. 5	217	67	13	266
Glove-fastening	G. Havell	200,058	Feb. 5	168	54	13	259
Governor. Meter	W. N. Milsted	199,925	Feb. 5	38	12	13	238
Grate. Basket	H. T. Simons	200,095	Feb. 5	206	64	13	265
Griddle greaser and holder	M. Nichols	199,929	Feb. 5	42	13	13	239
Gun. Machine	E. A. Leland	199,915	Feb. 5	30	9	13	227
Gas-burners. Reflector for	G. Walton	200,233	Feb. 12	346	103	13	295
Gas. Manufacturing	L. A. L. E. P. Dela Peyrouse	200,182	Feb. 12	299	89, 90	13	288
Gate	J. Kesselring	200,201	Feb. 12	318	95	13	290
Gate	C. D. Reed	200,341	Feb. 12	461	136	13	312
Glass vessel. Metal-lipped	T. B. Atterbury	200,120	Feb. 12	240	73	13	279
Grain-bagging apparatus	F. H. Relph	200,342	Feb. 12	462	136	13	312
Gun. Breech-loading	E. Pierce and S. Eggers	200,338	Feb. 12	459	135	13	311
Game apparatus	C. A. Roth	200,571	Feb. 19	698	205	13	356
Garter. Elastic	J. L. Moore	200,561	Feb. 19	688	202	13	355
Gasoline-burner	F. A. Lyman	200,464	Feb. 19	593	175	13	340
Gate	F. J. Borgin	200,430	Feb. 19	560	165	13	335
Gate	S. Cristy and D. Jay	200,514	Feb. 19	639	188	13	347
Gate	J. E. Johnston	200,398	Feb. 19	529	156	13	330
Gate	W. G. Mentzer	200,555	Feb. 19	683	201	13	354
Grain-binder	M. A. Keller	200,544	Feb. 19	669	197, 198	13	352
Grain-separator	J. S. Upton	200,585	Feb. 19	712	209, 210	13	358
Grater. Nutmeg	S. Barker	200,423	Feb. 19	554	163	13	334
Gas lighter and automatic extinguisher	G. S. Dunbar	200,703	Feb. 26	855	252	13	387
Gas-works. By-pass for	H. G. Morris	200,799	Feb. 26	947	270	13	402
Gate	R. Gray	200,655	Feb. 26	807	237	13	380
Gate	J. D. Hagaman	200,716	Feb. 26	870	255	13	389
Gun. Accelerating	A. S. Lyman	200,740	Feb. 26	893	262	13	393
Gas-retort	J. Burns	200,820	Mar. 5	6	2	13	416
Gas-retorts. Charging-scoop for	T. H. Birch	200,888	Mar. 5	72	25	13	426
Gate	J. Flinner	200,825	Mar. 5	10	4	13	416
Gate	M. Kelter and P. Leickem	201,018	Mar. 5	197	63	13	445
Gate	P. Philippi	200,840	Mar. 5	28	10	13	419
Grain and middlings drier	E. H. Gratiot	200,906	Mar. 5	90	31	13	429
Grain-binder	D. McPherson	200,868	Mar. 5	53	19	13	423
Grain-separator	J. Worick	201,080	Mar. 5	258	81	13	454
Grate	G. De Cell and A. W. Jennings	200,989	Mar. 5	163	53	13	440
Grinding-machine	C. Riches	200,935	Mar. 5	112	38	13	432
Gang-edger	S. P. Randolph	201,198	Mar. 12	378	117	13	479
Garment-supporter	C. A. Griswold	201,177	Mar. 12	358	111	13	476
Gas-lighting device. Electric	S. G. L. Fox	201,175	Mar. 12	356	110	13	476
Gas-machine. Vapor-jet	T. B. Fogarty	201,101	Mar. 12	284	88	13	465
Gas-regulator	J. Miller, Jr.	201,270	Mar. 12	457	141	13	490
Gate	A. Rekart	201,288	Mar. 12	479	146	13	493
Gate	H. S. Wolfe	201,319	Mar. 12	516	158	13	497
Gate. Draw-bridge	P. B. Wight	201,316	Mar. 12	513	157	13	497
Grain-binder	W. R. Baker and C. B. Withington	201,149	Mar. 12	335	102, 103	13	472
Grain-binder	E. Dederick	201,228	Mar. 12	411	126	13	483
Grain cleaner and scourer	D. H. Karns and J. Ream	201,251	Mar. 12	437	134, 135	13	487
Grain cleaning and scouring machine	J. H. Teahl	201,300	Mar. 12	492	151	13	494
Grain-separator	C. Stucke	201,206	Mar. 12	385	119	13	480
Grater, Nutmeg	J. Watkins and J. R. Carey	201,138	Mar. 12	324	99	13	470
Game apparatus	C. Eusten	201,398	Mar. 19	613	187	13	513
Garment-supporter	T. J. Carroll	201,327	Mar. 19	538	165	13	508
Gas apparatus. Hydrocarbon	C. Holland	201,527	Mar. 19	738	225	13	536
Grain-binder	A. S. Hoyt	201,346	Mar. 19	556	170, 171	13	510
Grapple	A. L. Larwill	201,427	Mar. 19	640	195	13	522
Grate for fire-places, &c	J. Moore, Jr	201,549	Mar. 19	762	232	13	539
Gymnastic apparatus	J. S. Chamberlin	201,328	Mar. 19	538	165	13	508
Garment. Water-proof	S. L. Worth and J. H. Pontifex	201,640	Mar. 26	873	266	13	559
Garter	C. Coester, Jr., and J. L. Moore. (Reissue.)	8,146	Mar. 26	1113	336	13	594
Gas-light extinguisher	W. H. Hovey	201,611	Mar. 26	843	256	13	554
Gate	M. Jeffries	201,614	Mar. 26	847	257	13	555
Gate	A. G. Rockfellow	201,703	Mar. 26	927	284	13	567
Glass grinding, smoothing, and polishing machine	I. Boger and W. H. King	201,738	Mar. 26	964	295	13	573
Glassware. Flaring and crimping	G. W. Blair	201,589	Mar. 26	819	249	13	551
Glycerine from fats. Apparatus for obtaining	F. Sahlfeld	201,704	Mar. 26	929	285	13	567
Grain-binder	N. B. Fassett. (Reissue)	8,136	Mar. 26	1092	332	13	591
Grain-binder	A. J. Smith. (Reissue)	8,143	Mar. 26	1107	335	13	593
Grain-drier	O. Holden	201,785	Mar. 26	1013	309	13	580
Grain scouring and cleaning machine	M. Forman	201,767	Mar. 26	995	304	13	577

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Gun. Machine	A. H. McAllister	201,810	Mar. 26	1035	316	13	583
Gun-stocks. Attaching fore-ends of	C. A. King	201,618	Mar. 26	851	258	13	555
Game apparatus	E. C. Strange	202,071	Apr. 2	210	61	13	629
Gas and electric conductor. Combined	E. F. Phillips	202,047	Apr. 2	187	54	13	625
Gas-lighter	M. Faloon and D. H. Iseminger	201,918	Apr. 2	60	16	13	607
Gas-lighting	C. D. P. Gibson	202,018	Apr. 2	154	45	13	621
Gas. Manufacturing illuminating	A. C. Rand	202,050	Apr. 2	189	55	13	626
Gate	K. E. Rudd. (Reissue)	8,149	Apr. 2	231	67	13	632
Grain-binder	C. Celahan	201,993	Apr. 2	130	38	13	618
Grain-separator	S. E. Adams	201,975	Apr. 2	112	33	13	615
Grate-fender	T. F. Wilson	202,084	Apr. 2	225	65	13	631
Game apparatus	G. L. Witsil	202,318	Apr. 9	487	143	13	672
Gas. Manufacturing illuminating	T. G. Macy and E. F. Reed	202,279	Apr. 9	446	130	13	666
Gate. Flood	D. Bowles	202,221	Apr. 9	387	113	13	658
Glass face-protector. Plate	C. A. Kirtland	202,175	Apr. 9	343	100	13	651
Governor	J. A. Rigby	202,121	Apr. 9	281	82, 83	13	643
Grading-machine	W. L. Freese	202,163	Apr. 9	331	97	13	650
Grain-drying apparatus	H. G. Seeber	202,124	Apr. 9	285	84	13	644
Grain-meter	J. C. Hunt	202,172	Apr. 9	340	99	13	651
Gun tool and whistle. Combined	A. E. Barthel	202,136	Apr. 9	297	87	13	645
Gas-lighter	J. R. Scattergood. (Reissue)	8,173	Apr. 16	827	239	13	719
Gas. Process and apparatus for manufacturing illuminating	G. Ramsdell	202,374	Apr. 16	561	164; 165	13	686
Gate	E. W. Beebe	202,508	Apr. 16	686	201	13	704
Gate	D. Edgar	202,422	Apr. 16	608	178	13	693
Gate	T. O. Williams and W. F. Hubbell	202,620	Apr. 16	823	238	13	719
Gate and hanger. Farm	J. H. Buscher	202,328	Apr. 16	516	151	13	680
Gems. Setting for	W. A. Bates	202,402	Apr. 16	568	173	13	690
Glass. Tempering	G. E. Hatch	202,544	Apr. 16	745	.....	13	710
Glassware. Glory-hole or reheating-furnace for	W. Fox	202,533	Apr. 16	731	211	13	708
Governor	H. W. Fontz	202,430	Apr. 16	616	180	13	694
Governor. Steam-engine	W. H. Craig	202,332	Apr. 16	519	152	13	680
Guns. Rubber butt-plate for	W. H. Thornton and A. Beam	202,606	Apr. 16	809	234	13	717
Garlic-separator	D. Shamberger and J. Carroll	202,761	Apr. 23	969	284	13	748
Gas-lighting burner. Electric	A. L. Bogart	202,694	Apr. 23	921	263	13	739
Gate	B. B. Huntington	202,728	Apr. 23	951	273	13	743
Glass and glassware. Annealing	H. Gerike	202,909	Apr. 23	1042	.....	13	755
Glassware. Machine for finishing open-ended	D. Challinor	202,631	Apr. 23	853	245	13	732
Glassware. Ornamenting	A. Harcum	202,647	Apr. 23	872	250	13	734
Governor	E. Towns	202,892	Apr. 23	1130	325	13	766
Grain-band	G. A. Brackett	202,697	Apr. 23	925	264	13	739
Grain-bin	J. A. Woltley	202,911	Apr. 23	1148	330	13	768
Grain-binder	N. B. Fassett	202,903	Apr. 23	1030	298	13	754
Grain-binder	D. Olmsted, C. L. Travis, and C. R. Chute	202,747	Apr. 23	972	279; 280	13	746
Grain-separator	J. M., F. W., and C. V. Herman	202,727	Apr. 23	950	272	13	743
Grain-separator	M. H. Pitts	202,863	Apr. 23	1099	315	13	762
Grinding-machine	A. E. Elmer	202,640	Apr. 23	865	248	13	733
Grinding-machine	J. Hunkeler	202,656	Apr. 23	882	253	13	735
Grinding-machine	A. Warth	202,809	Apr. 23	1137	327	13	767
Galley	P. Bresnan	202,983	Apr. 30	1232	356	13	783
Game-counter	P. Orth	202,189	Apr. 30	1438	420	13	810
Gas. Apparatus for washing and condensing coal	R. A. Cross	203,003	Apr. 30	1249	361	13	785
Gas-burner	H. A. Jerauld	203,150	Apr. 30	1409	411	13	806
Gate	G. W. Rodebaugh	203,196	Apr. 30	1450	424	13	811
Gate. Farm	T. M. Wilson	202,973	Apr. 30	1224	354	13	782
Grain-binder	S. D. Locke	203,168	Apr. 30	1417	413; 414	13	807
Grain-drier	H. Cutler	203,004	Apr. 30	1251	362	13	785
Grasses. Machine for exterminating noxious	L. Martin	203,172	Apr. 30	1422	415	13	808
Gun-rest	K. Müller	203,184	Apr. 30	1433	419	13	810
Game-board	E. B. Peirce	203,368	May 7	139	40	13	839
Game-counter for billiard-tables	H. W. Collender	203,422	May 7	194	56	13	847
Gas-burners. Carbureting attachment for	C. Hoff	203,456	May 7	234	66	13	852
Gas-burners, &c. Globe-holder for	E. A. Locke	203,471	May 7	248	72	13	854
Gas generator. Carbonic-acid	O. Zwietusch	203,310	May 7	80	24	13	831
Gas-generator. Metallurgic	M. J. Hamilton	203,446	May 7	225	64	13	851
Gas-lighting burner. Electric	A. L. Bogart	203,406	May 7	176	51	13	845
Gas-meter	C. W. Isbell	203,276	May 7	41	13	13	826
Gas-regulator	E. J. Meredith	203,285	May 7	52	16	13	827
Gate	T. J. Miller	203,479	May 7	256	74	13	855
Gate	P. H. Rude	203,295	May 7	63	20	13	829
Gate	J. Wilson	203,396	May 7	168	48	13	843
Gate. Draw-bridge	W. A. and H. Pringle	203,370	May 7	141	41	13	839
Gate. Draw-bridge	P. Schaefer	203,296	May 7	64	20	13	829
Glass by means of sand-blast. Apparatus for engraving	J. Whittaker	203,395	May 7	168	48	13	843
Grain-cutting machine	V. P. Kimball	203,348	May 7	115	33, 34	13	836
Grain-separator	J. Davies	203,325	May 7	96	27	13	833
Grain ventilating and cooling apparatus	D. E. Somes. (Reissue)	8,221	May 7	312	90	13	864
Game apparatus	J. M. Stewart	203,671	May 14	469	133	13	891
Gas-lighting. Automatic	A. N. Allen	203,693	May 14	491	139	13	894
Gate	J. Arnn	203,575	May 14	376	106	13	880
Gate	J. S. Jewett. (Reissue)	8,232	May 14	625	174	13	910
Gold-leaf cutters. Mold-holder for	E. Henderson	203,620	May 14	414	118	13	885
Governor	G. E. Banner	203,699	May 14	499	141	13	895
Grain-binder	R. O. Kinno	203,625	May 14	417	119	13	885
Grain drying, scouring, and cleaning apparatus	H. B. Hebert	203,540	May 14	339	97	13	875
Grain. Process for washing	J. D'Heureuse. (Reissue)	8,234	May 14	616	172	13	909
Grain-separator	G. Eckles	203,717	May 14	517	147	13	897
Grain-separator	W. M. Redd and E. M. Sanford	203,648	May 14	444	126	13	888
Grapple buckets, forks, or skips. Apparatus for working	W. D. and S. Priestman	203,771	May 14	573	161	13	905
Grater. Nutmeg	C. H. Pierson and C. W. Ferguson	203,767	May 14	570	160	13	904

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Grinding-machine	F. G. Krentzberger	203,741	May 14	541	153; 154	13	901
Grinding-machine	L. Patterson	203,762	May 14	563	159	13	903
Gas apparatus	H. D. Fitch	204,016	May 21	848	242; 243	13	947
Gas apparatus	J. Hanlon	203,909	May 21	731	209; 210	13	932
Gas apparatus	J. Hanlon	203,925	May 21	745	215	13	934
Gate	A. B. Clayton	204,005	May 21	838	230	13	945
Glass with gold, silver, or other metals. Ornamenting	J. Cochum and R. Herrmann	203,838	May 21	655	.....	13	922
Glove. Corn-husking	C. M. Townsend	203,959	May 21	785	225	13	939
Glucose. Manufacturing	N. Pigeon	203,935	May 21	756	218	13	936
Grain-drier	P. Provost	203,933	May 21	754	217	13	935
Grain-masher	L. A. De Lime	203,819	May 21	638	179	13	920
Grain-separator	T. Barnes	203,874	May 21	690	196; 197	13	927
Grain-separator	C. Wood	203,864	May 21	682	194	13	925
Graining-machine	G. Pelstring	204,078	May 21	910	260	13	955
Game apparatus	M. Entenmann	204,208	May 28	1075	306	13	979
Game-counter	C. B. Wessmann	204,404	May 28	1271	302	13	1004
Gas. Apparatus and process of manufacturing illuminating	H. W. Adams	204,181	May 28	1041	296; 297	13	975
Gas-burner	W. Anderson	204,278	May 28	1140	326	13	987
Gas-burners. Scintillating attachment for	W. W. Batchelder	204,286	May 28	1150	329	13	989
Gas-meter	A. C. Blount	204,188	May 28	1056	300	13	976
Gas. Scintillator for lighting	W. W. Batchelder	204,285	May 28	1148	328	13	988
Glass from lava. Manufacture of	F. S. Shirley	204,324	May 28	1251	356	13	1002
Globe-holder	A. G. Bayles and C. A. Hunter	204,184	May 28	1052	298	13	976
Grain-binder	G. H. Howe	204,329	May 28	1194	340; 341	13	994
Grain-decorticating apparatus	A. Ames	204,277	May 28	1139	326	13	987
Grain-distributing machine	H. Fascher and A. A. Singer	204,308	May 28	1172	334	13	992
Grinding-machine	S. Trethewey	204,393	May 28	1259	359	13	1003
Gun. Spring air	A. Pettengill	204,167	May 28	1027	292	13	973
Galvanic-ring bracelet or necklace	E. A. Osselin and A. Meyer	204,502	June 4	77	26	13	1023
Gas. Manufacturing water	E. J. Jerzmanowski	204,437	June 4	23	.....	13	1016
Gas. Process and apparatus for manufacturing heating and illuminating	C. Gearing	204,555	June 4	122	42	13	1030
Gas. Process and apparatus for manufacturing illuminating	C. Gearing	204,554	June 4	120	41	13	1030
Gas-retort	D. Davison	204,544	June 4	112	38	13	1028
Gas-retorts. Lid for	N. Jamin	204,576	June 4	143	48	13	1033
Gases. Apparatus for washing	D. M. Jones	204,577	June 4	144	48	13	1033
Gate	S. W. Moore	204,497	June 4	73	25	13	1023
Gate	J. W. Stevenson	204,631	June 4	208	66	13	1042
Gear. Change-speed	S. D. Locke	204,585	June 4	157	51	13	1035
Glass-molds. Lift for	J. Anderson and A. Sperber	204,514	June 4	93	31	13	1026
Gas-burner	J. Matthewman	204,835	June 11	437	128	13	1073
Gas-burner. Electro-magnetic	W. W. Jacques	204,696	June 11	422	125	13	1072
Gas-burners. Making	G. Bray	204,709	June 11	294	91	13	1057
Gear-cutting machine	J. A. Peer	204,756	June 11	344	104; 105	13	1063
Governor-controlling mechanism	J. S. Wilson	204,693	June 11	278	86	13	1055
Governor. Engine	C. C. Jenkins	204,827	June 11	422	125	13	1072
Grader. Road	M. Ammel	204,699	June 11	283	88	13	1056
Grain-separator	H. A. Webber	204,778	June 11	371	111	13	1066
Grater	D. Block	204,791	June 11	387	115	13	1068
Gas-controlling and lighting apparatus. Thermo and electric	G. D. Bancroft	205,032	June 18	653	193	13	1106
Gas-lighting apparatus. Circuit-changer in electric	F. V. Sanford	204,916	June 18	540	157; 158	13	1090
Gate	A. Lee	205,107	June 18	726	216	13	1115
Globe and reflector for illuminating-burners. Combined	L. Costa	205,057	June 18	679	199	13	1109
Governor	J. W. Thompson and N. Hunt	204,924	June 18	550	160	13	1092
Governor. Engine	R. Hooper	205,089	June 18	711	211	13	1113
Grain-binder	L. Erpelding	205,067	June 18	688	202; 203; 204	13	1110
Grain-binder	A. G. McIntosh	204,989	June 18	612	179; 180	13	1100
Grain-drier	R. H. Tiernan	205,012	June 18	634	186	13	1103
Grain-separator	W. N. Esselstyn	204,889	June 18	513	150	13	1087
Grain-separator	S. Stone	205,150	June 18	775	229	13	1122
Grain-separator	I. Turmah	205,017	June 18	638	188	13	1104
Graining-tool	E. H. Huffman	205,094	June 18	716	213	13	1114
Grate-extension	O. G. Parr	205,131	June 18	748	222	13	1118
Gun. Magazine	A. Burgess. (Reissue)	8,288	June 18	793	235	13	1124
Gas-meter prover	J. T. Wheeler	205,456	June 25	1103	327	13	1170
Gate. Farm	E. and F. H. Romans	205,211	June 25	849	252	13	1137
Gate. Farm	J. E. Strong	205,438	June 25	1086	322	13	1167
Gate-operating mechanism	A. R. Sherman	205,217	June 25	857	254	13	1138
Grain-binder	C. L. Travis and C. R. Chute	205,442	June 25	1091	323	13	1168
Grinding-machine	F. D. Randall and L. D. Dana	205,416	June 25	1066	315	13	1164
Guns. Carriage for machine	D. C. Farrington	205,179	June 25	816	242	13	1132
Harrow	J. Lennon	198,920	Jan. 1	204	58	13	40
Harvester and thrasher	J. Hay	198,801	Jan. 1	83	22, 23	13	21
Hat-bodies. Attaching sweat-leathers to	J. Bigelow	198,868	Jan. 1	148	42, 43	13	32
Hats. Process and machine for stretching	R. Eickemeyer	198,876	Jan. 1	156	45	13	33
Hats. Sweat-leather for	J. Bigelow	198,867	Jan. 1	146	42	13	31
Heater. Tubular	E. E. Gold	198,766	Jan. 1	45	12	13	15
Hinge. Lock	J. B. Stone	198,822	Jan. 1	101	28	13	24
Hitching-bar	A. L. Andrews	198,832	Jan. 1	110	31	13	26

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hoe. Hand	W. D. Webster	198,910	Jan. 1	195	55	13	38
Hoop machine. Barrel	C. W. Thompson	198,825	Jan. 1	103	29	13	24
Hops, and furnace used therefor. Curing	W. W. Edgarton	198,875	Jan. 1	155	44	13	33
Horseshoe	E. L. Tevis	198,824	Jan. 1	102	29	13	24
Horseshoes. Buffer for	C. Hartmann	198,885	Jan. 1	167	47	13	34
Hydrant-valve	F. B. Stevens and J. L. Bond	198,756	Jan. 1	28	7	13	13
Hame	H. E. Cosgrave	199,033	Jan. 8	321	94	13	66
Hame-fastener	W. Moffatt	198,951	Jan. 8	241	69	13	53
Hammocks. Swinging frame for supporting	A. B. Holmes	198,942	Jan. 8	233	66	13	51
Harrow	A. H. Ballagh	199,012	Jan. 8	303	89	13	63
Hide-fleshing machine	E. B. Holcomb and D. A. Clay	198,941	Jan. 8	231	66	13	51
Hoisting-machine	P. C. Johnson	199,071	Jan. 8	357	105	13	72
Hoop machine. Barrel	J. Greenwood	199,058	Jan. 8	346	101	13	70
Hoop-making machine	J. Greenwood	199,056	Jan. 8	344	100	13	69
Horse-power	E. Golucke	199,053	Jan. 8	341	100	13	69
Horseshoe	D. Alger	198,923	Jan. 8	215	61	13	49
House. Portable	J. Boyd	198,926	Jan. 8	217	61	13	49
Houses. Construction of	R. P. and C. G. Lindsay	199,076	Jan. 8	362	107	13	73
Hub. Vehicle	G. P. Bennett	198,924	Jan. 8	216	61	13	49
Hair-curling device	L. Burnham and D. G. Chase	199,260	Jan. 15	561	164	13	103
Harness. Girth for	C. M. Sanford	199,318	Jan. 15	622	181	13	113
Harness-pad	H. R. Ridgley	199,225	Jan. 15	526	155	13	98
Harness-straps. Attaching device for	F. Conway	199,266	Jan. 15	570	166	13	104
Harrow	L. F. Haas	199,287	Jan. 15	589	172	13	107
Harvester. Cotton	S. and M. Ruthenburg	199,168	Jan. 15	473	139	13	90
Hat-holder	O. Jenness	199,294	Jan. 15	596	174	13	109
Hats. Sweat-leather for	J. C. Budd	199,258	Jan. 15	557	164	13	103
Hay-rack	N. B. Cooper	199,186	Jan. 15	493	145	13	93
Heels. Machine for cutting wooden	W. W. Abbott	199,247	Jan. 15	545	161	13	101
Horse-blanket	I. H. Hodgdon	199,292	Jan. 15	595	174	13	108
Horse-collar fastening	J. H. Emerson	199,276	Jan. 15	579	169	13	106
Horse-detacher	F. J. Leidorf	199,298	Jan. 15	601	175	13	109
Horseshoe	H. C. McCeney	199,302	Jan. 15	605	177	13	110
Horseshoes. Manufacture of	J. Russell	199,228	Jan. 15	529	156	13	99
Hub. Vehicle-wheel	C. K. Wilcox	199,244	Jan. 15	543	160	13	101
Hammer. Lasting	P. F. Peters	199,568	Jan. 22	881	258	13	162
Harness. Adjustable stiff crupper for	J. C. McCollum	199,561	Jan. 22	874	256	13	161
Harrow	M. M. Dobbin	199,421	Jan. 22	733	215	13	138
Harrow-tooth	D. L. Garver	199,430	Jan. 22	740	217	13	140
Harvester cutter-bar	R. W. Iliff	199,551	Jan. 22	866	253	13	159
Heating air and gases. Apparatus for	T. Whitwell	199,388	Jan. 22	701	205	13	133
Heating apparatus. Steam	D. Needham	199,564	Jan. 22	876	256	13	161
Heel-burnishing machine	J. W. Dodge	199,523	Jan. 22	837	244	13	155
Hides. Apparatus for handling	J. T. Gorsline	199,534	Jan. 22	850	248, 249	13	157
Hides. Machine for unhairing, scouring, and currying	J. A. Talpey	199,597	Jan. 22	912	267, 268	13	167
Hoe. Weeding	W. Luckhurst	199,375	Jan. 22	688	202	13	131
Hoop. Truss	C. W. Thompson	199,385	Jan. 22	698	205	13	132
Horses. Apparatus for hitching and securing runaway	F. W. Schwiers	199,361	Jan. 22	694	204	13	132
Horseshoe	J. L. Dodge	199,422	Jan. 22	734	216	13	138
Horseshoe-nail machine	J. E. Wheeler and D. B. Loring	199,483	Jan. 22	791	232	13	148
Hose-coupling	W. A. Caswell	199,349	Jan. 22	661	194	13	127
Hose. Carbonic-acid generating attachment to fire-engine	J. S. Halsey	199,436	Jan. 22	746	219	13	140
Hose-nozzles. Support for	C. H. Rodig	199,576	Jan. 22	888	260	13	163
Hose to couplings. Apparatus for attaching	W. A. Caswell	199,350	Jan. 22	662	194	13	127
Hammer, meat-pounder, and hasher. Combined	M. V. Longsworth and E. M. Tannehill	199,838	Jan. 29	1173	344	13	215
Handle. Lifting	N. Hayden	199,826	Jan. 29	1162	341	13	213
Harrow and roller. Combined	W. M. Stehley	199,755	Jan. 29	1091	320	13	202
Harvester cut-off	A. L. and E. C. Long	199,727	Jan. 29	1067	312	13	198
Harvester. Hand-binding	J. P. Manll	199,655	Jan. 29	1000	291	13	188
Hay-cutter	J. Weichhart	199,882	Jan. 29	1211	356	13	220
Heater	J. P. Dauth	199,803	Jan. 29	1142	335	13	210
Hobby-horse	T. J. Hobbs and L. Hunting	199,711	Jan. 29	1053	308	13	196
Horse-power	J. C. Randall	199,862	Jan. 29	1193	350	13	217
Horse-power chain	M. Williams	199,769	Jan. 29	1106	324	13	205
Horses. Instrument for administering balls to	J. Middleditch	199,849	Jan. 29	1184	347	13	216
Horseshoe	R. B. Huguuin	199,830	Jan. 29	1166	342	13	214
Horseshoe-nails. Manufacture of	G. E. Whitney	199,767	Jan. 29	1103	324	13	204
Hose-reel	H. G. Fiske	199,817	Jan. 29	1153	339	13	212
Hub. Wheel	E. D. and O. B. Reynolds	199,863	Jan. 29	1194	350	13	218
Hydrant-valve	D. Zuern	199,890	Jan. 29	1219	358	13	221
Hair-crimper	I. Kann	199,979	Feb. 5	88	29	13	247
Harrow	L. Norton	199,988	Feb. 5	96	32	13	248
Harrow	D. Rhodes	199,995	Feb. 5	102	34	13	249
Harrow	G. M. Titus	200,109	Feb. 5	220	68	13	267
Harrow and clod-crusher. Combined	J. W. Haggard	199,905	Feb. 5	14	5	13	233
Harvester-cutter	A. J. Bigelow	200,021	Feb. 5	125	41	13	253
Harvester cutter-bar	E. R. Whitney	200,114	Feb. 5	226	69	13	267
Hat blocking and banding machine	R. Eickemeyer	200,034	Feb. 5	138	45, 46	13	255
Hat-pouncing machine	G. Yule	200,118	Feb. 5	229	70	13	268
Hatchet	J. C. Chapman	199,930	Feb. 5	69	22	13	244
Heater and steamer. Meat	T. V. Curtis and A. M. Andrews	199,962	Feb. 5	73	24	13	244
Hides and skins. Machine for unhairing and scouring	J. W. McDonald	200,078	Feb. 5	191	60	13	262
Hoistways. Mechanism for opening and closing doors or covers of	J. B. Waring	200,112	Feb. 5	224	68	13	267
Horn into sheets. Machine for cutting	M. M. Goldsmith, G. M. Cruickshank, and S. Brown.	200,050	Feb. 5	160	52	13	258
Horseshoe	E. Murraine	199,927	Feb. 5	40	13	13	239
Hub-attaching device	S. Kepner	199,914	Feb. 5	29	9	13	237
Hub. Wagon	M. D. Golder	200,049	Feb. 5	159	51	13	258

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hydrant and street-washer	J. B. Fish	200,043	Feb. 5	154	50	13	257
Harness	T. Boardman	200,243	Feb. 12	356	106	13	296
Harness-collars and breeching. Bearer for	J. N. Coffin	200,174	Feb. 12	293	87	13	286
Harrow. Revolving	C. Busack	200,127	Feb. 12	246	74	13	280
Harrow. Wheel	F. Bramer and O. W. Badger. (Reissue.)	8,080	Feb. 12	498	146	13	317
Harvester	J. Harris	200,288	Feb. 12	403	120	13	303
Harvester. Cotton	J. Tripp	200,362	Feb. 12	484	142, 143	13	315
Hat-holder	F. Bobbitt	200,244	Feb. 12	357	106	13	296
Hats and caps. Measure for	W. J. Van Horne	200,364	Feb. 12	488	143	13	316
Hitching apparatus	J. M. Catner	200,256	Feb. 12	341	110	13	298
Hoisting-machines. Friction-drum for	J. Rushworth	200,345	Feb. 12	465	137	13	312
Horse-boot	W. H. Franklin	200,273	Feb. 12	391	115	13	301
Horse-collar fastening	C. W. Pott	200,339	Feb. 12	460	136	13	311
Horses' teeth. Instrument for smoothing and leveling	C. D. House	200,300	Feb. 12	417	124	13	305
Horseshoe	D. S. Darling	200,180	Feb. 12	297	89	13	287
Horseshoe	J. R. Howard	200,301	Feb. 12	418	124	13	305
Horseshoe-nails. Making	N. C. Lewis	200,315	Feb. 12	435	129	13	308
Hub. Vehicle	F. M. Atkinson	200,241	Feb. 12	354	105	13	296
Hub. Wheel	W. B. Tucker	200,231	Feb. 12	345	103	13	295
Hydrant	A. C. Austin	200,121	Feb. 12	241	73	13	279
Hydrant-valve	J. Bains	200,162	Feb. 12	282	84	13	284
Hame	J. M. Lasater	200,462	Feb. 19	590	174	13	340
Harness	B. Jones	200,399	Feb. 19	530	156	13	330
Harness to the shafts. Apparatus for attaching	M. H. M. Smith	200,486	Feb. 19	614	181	13	343
Harvester	S. Hevener	200,532	Feb. 19	659	194	13	350
Hat	E. Copleston	200,374	Feb. 19	507	149	13	327
Heater for buildings. Hot-water	J. W. Hardwick	200,391	Feb. 19	523	154	13	329
Hinge for molders' flasks	A. Barker	200,422	Feb. 19	553	163	13	334
Honey-comb. Artificial	A. B. Lawther	200,549	Feb. 19	677	199	13	353
Horse-detacher	N. Johnston	200,541	Feb. 19	667	196	13	351
Horse-power	W. W. Dingee	200,439	Feb. 19	569	168	13	336
Horseshoes. Manufacture of	H. J. Batchelder	200,425	Feb. 19	556	164	13	334
Halter. Safety	A. Henkell	200,720	Feb. 26	874	257	13	390
Hammers. Power mechanism for	B. Murphy	200,748	Feb. 26	900	265	13	394
Harrow. Rotary	S. Hartman	200,656	Feb. 26	808	238	13	381
Harvester	R. Emerson	200,705	Feb. 26	857	252	13	388
Harvester-reel	L. J. McCormick and W. R. Baker	200,796	Feb. 26	944	278	13	401
Hat and bonnet box	A. B. Rice	200,802	Feb. 26	950	280	13	402
Hat-holder	J. M. Castillo	200,695	Feb. 26	846	249	13	386
Hides and skins. Drench-wheel for	L. Wells	200,807	Feb. 26	955	281	13	403
Hinge for gates, &c. Spring	W. Hull	200,657	Feb. 26	809	238	13	381
Horses. Apparatus for administering medicine to	H. Hartman	200,717	Feb. 26	871	256	13	389
Horses. Device for driving	E. Wilder	200,781	Feb. 26	929	273	13	399
Horses to vehicles. Device for hitching	E. Repp	200,763	Feb. 26	913	268	13	396
Horses. Toe-weight for	H. Setterwhite	200,669	Feb. 26	818	241	13	382
Hub-attaching device	F. C Lee	200,735	Feb. 26	880	261	13	392
Hub for carriage-wheels	J. Raddin. (Reissue)	8,108	Feb. 26	978	288	13	406
Hydrant sewer-trap	W. C. Amish	200,597	Feb. 26	743	217	13	371
Hame-strap loop	A. Ableiter	200,886	Mar. 5	70	24	13	426
Hammock-support	G. Wheeler	201,074	Mar. 5	252	79	13	453
Handcuff	J. J. Tower and H. W. Kahlke	200,950	Mar. 5	127	42	13	435
Harvesting-machines. Manufacturing the fingers of	B. Samuelson and W. G. Manwaring	201,052	Mar. 5	232	73	13	450
Hat-folding device	A. C. Fuller	200,906	Mar. 5	89	30	13	429
Hat-mirror	F. J. Hoyt	201,016	Mar. 5	194	62	13	445
Hat-pressing machine	A. C. Fuller	200,905	Mar. 5	87	30	13	428
Heater. Car	W. Smith	201,061	Mar. 5	240	76	13	451
Heating apparatus. Water	R. Freer	200,998	Mar. 5	178	53	13	442
Hoe. Cotton	J. M. Moore	200,926	Mar. 5	105	35	13	431
Hoisting apparatus	C. E. Albro	200,961	Mar. 5	136	44, 45	13	436
Hop-picking box	W. Brooks	200,892	Mar. 5	75	26	13	427
Hop-picking machine	H. G. Locke	201,026	Mar. 5	206	65	13	446
Horse-collar	P. J. Schmitz	200,847	Mar. 5	35	12	13	420
Horses. Implement for cleaning	A. A. Russell	201,051	Mar. 5	232	73	13	450
Hydrometer cup and thief. Combined	C. Cox	200,981	Mar. 5	156	51	13	439
Harvester-rake	J. Miller. (Reissue)	8,119	Mar. 12	520	159	13	498
Harvester-reel	C. E. Fahrney	201,231	Mar. 12	415	128	13	484
Hat-brims. Curling	A. B. Waring	201,137	Mar. 12	323	99	13	470
Hinge	T. T. Bishop	201,219	Mar. 12	401	123	13	482
Hinge for awning-blinds	J. J. Greenough	201,108	Mar. 12	299	90	13	466
Hog-catcher	F. M. Smith	201,205	Mar. 12	385	119	13	480
Holdback for vehicles	O. M. Robinson	201,125	Mar. 12	311	95	13	469
Horse-power	S. Thomas	201,207	Mar. 12	388	120	13	480
Horseshoe-nail blanks. Machine for reducing the shanks of	G. P. Clapp	201,094	Mar. 12	277	86	13	464
Hydrant	W. McNamara	201,263	Mar. 12	451	139	13	489
Hydraulic jack	R. H. and G. T. Lewis	201,114	Mar. 12	300	92	13	467
Harrow	J. K. Miller	201,435	Mar. 19	646	197	13	523
Harrow	J. W. Pearson	201,554	Mar. 19	767	233	13	540
Harrow	S. B. Smith and A. B. McCulley	201,363	Mar. 19	575	177	13	513
Harvester	G. H. Spaulding	201,563	Mar. 19	776	236, 237	13	541
Harvester	C. Wheeler, Jr	201,579	Mar. 19	794	242	13	543
Harvester. Cotton	I. Boone	201,384	Mar. 19	594	182, 183	13	516
Hat-brims. Machine for curling	T. Lees	201,351	Mar. 19	564	173	13	511
Hats and caps. Sweat-leather for	W. J. Van Horne	201,575	Mar. 19	791	240	13	543
Hatchway	L. Paré	201,356	Mar. 19	568	174, 175	13	512
Haversack	J. H. Lambert	201,537	Mar. 19	750	228	13	538
Heaters. Register-box for	J. Moore, Jr	201,551	Mar. 19	764	233	13	539
Hinge. Lock	P. Adams, Jr	201,476	Mar. 19	685	210	13	529
Hoe	W. H. Eggleston	201,395	Mar. 19	605	185	13	517

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hog-dressing machine	I. Boone	201,385	Mar. 19	596	183	13	516
Horses. Toe-weight for	C. Ferrier	201,339	Mar. 19	550	169	13	510
Horseshoes. Attaching calks to	W. Dickinson	201,335	Mar. 19	420	167	13	509
Hose-carriage. Hand	C. Castle	201,388	Mar. 19	599	184	13	516
Hot air. Apparatus for the production of	E. Moreau	201,439	Mar. 19	650	198	13	524
Hub-boring machine	J. Kritch	201,350	Mar. 19	562	172	13	511
Hub. Vehicle-wheel	W. H. Wright	201,583	Mar. 19	801	244	13	544
Hammer. Bush-	J. Sullivan	201,850	Mar. 26	1077	327	13	589
Harness	C. I. Calvert	201,745	Mar. 26	971	297	13	574
Harness-pad machine	J. F. Best	201,735	Mar. 26	962	294	13	572
Harrow	D. L. Garver. (Reissue)	8,142	Mar. 26	1106	334	13	592
Harvester	J. Dusch and H. Lewis	201,759	Mar. 26	985	301	13	576
Harvester	J. F. Selberling. (Reissue)	8,144	Mar. 26	1109	335	13	593
Harvester and husker. Corn	F. J. Randall	201,830	Mar. 26	1056	322	13	586
Hinge for sheet-metal ware, boxes, and other articles	W. W. Flint	201,660	Mar. 26	889	271	13	561
Hoe and cultivator. Horse	T. J. Brown	201,645	Mar. 26	878	267	13	559
Hoisting clamp. Barrel-	W. Bulkeley	201,648	Mar. 26	881	268	13	560
Hoof-parer	J. Künstler	201,687	Mar. 26	912	278	13	565
Horse-power	C. E. Macarthy	201,807	Mar. 26	1033	315	13	583
Horseshoe-nails. Machine for finishing	J. E. Wheeler and D. B. Loring	201,727	Mar. 26	952	292	13	571
Horseshoe-nails. Machine for pointing and finishing	S. S. Putnam	201,701	Mar. 26	923	282 283	13	567
Harness. Double	A. B. Coleman	201,869	Apr. 2	12	3	13	600
Harness-loop	C. B. Bristol	201,989	Apr. 2	127	37	13	617
Harrow	D. C. Reed	201,946	Apr. 2	83	24	13	611
Harrow. Wheel-	E. Bayliss. (Reissue)	8,147	Apr. 2	228	66	13	632
Harvester	C. W. Levalley	202,036	Apr. 2	178	51	13	624
Hat and cap	M. Davis and S. Simmonson	202,005	Apr. 2	142	41	13	619
Heater. Water-	C. Matthews and W. Holt	201,885	Apr. 2	26	7	13	602
Hoops. Machine for making barrel-	C. W. Thompson	202,073	Apr. 2	212	62	13	629
Horse-power link. Endless-tread	W. Samson	202,054	Apr. 2	193	56	13	626
Horseshoes. Weight for	J. Myers	201,937	Apr. 2	76	21	13	610
Hams. Putting up boneless	T. Culver	202,239	Apr. 9	405	118	13	660
Harrow and weed-cutter	J. W. Fees	202,098	Apr. 9	457	75	13	640
Harvester	H. Kelly	202,369	Apr. 9	434	127	13	664
Hat	W. A. Bate	202,217	Apr. 9	383	112	13	657
Herder	R. D. Soper	202,280	Apr. 9	456	133	13	667
Hinge	T. Fowler	202,162	Apr. 9	330	97	13	650
Hoisting-mechanism	S. E. Stokes, Jr.	202,298	Apr. 9	464	136	13	669
Horse-collar	C. T. Staufenbeil and J. Staehli	202,201	Apr. 9	366	107	13	655
Horses from vehicles. Apparatus for detaching	W. A. Bryant	202,223	Apr. 9	389	113	13	658
Hose-nozzle	A. Weber	202,307	Apr. 9	370	109	13	655
Hub. Vehicle-	J. M. Whiting	202,308	Apr. 9	371	109	13	655
Hub. Vehicle-wheel	C. T. Wecker	202,315	Apr. 9	484	142	13	671
Hydrant	P. White and J. C. Kupferle	202,316	Apr. 9	484	142	13	671
Hame	A. P. Rose	202,376	Apr. 16	565	165	13	686
Harness-pad	L. W. Vaadenburg	202,490	Apr. 16	671	197	13	702
Harvester cutter-bar	M. G. Bell	202,510	Apr. 16	689	202	13	705
Hat-pouncing machine	R. Eickemeyer	202,529	Apr. 16	721	210	13	707
Hay-rack	J. B. Hoffman	202,347	Apr. 16	535	156 157	13	683
Heel-trimming machine	A. K. Washburn	202,494	Apr. 16	674	198	13	702
Hoe and brier-hook	C. A. Masterson	202,563	Apr. 16	764	221	13	712
Hog-cholera compound	J. H. Rees	202,583	Apr. 16	784	.....	13	714
Hold-back for double-harness	J. E. Reeves	202,584	Apr. 16	785	226	13	714
Horse-collar	J. B. Ingalls and R. Clark	202,348	Apr. 16	536	157	13	683
Horse-collar	S. Taylor	202,604	Apr. 16	806	233	13	716
Horseshoe-nails. Manufacture of	C. French	202,534	Apr. 16	732	211	13	703
Hose-coupling. Electric	A. Work	202,392	Apr. 16	577	170	13	689
Hose. Machinery for manufacturing	H. J. Merrens	202,451	Apr. 16	638	186	13	697
Hydraulic power-accumulator	W. D. Grimshaw	202,435	Apr. 16	622	182	13	695
Hammock	E. F. Hanks	202,814	Apr. 23	1047	301	13	756
Harness-pad	J. T. Smith	202,879	Apr. 23	1116	321	13	764
Harrow	J. H. Barr	202,780	Apr. 23	1008	289	13	751
Harrow	R. M. Skinner	202,671	Apr. 23	898	257	13	736
Harrow	G. Watt, Sr.	202,903	Apr. 23	1143	328	13	767
Harrow and seeding machine. Combined	G. W. and H. F. Roberson	202,873	Apr. 23	1110	319	13	764
Harvester	N. B. Fassett	202,802	Apr. 23	1028	795 796	13	753
Hat-pouncing machine	W. Keenan	202,829	Apr. 23	1066	305	13	758
Hat-pressing machine	A. Algeo	202,023	Apr. 23	845	243	13	731
Head-light. Locomotive	A. Dressell, E. H., and J. G. Voth	202,711	Apr. 23	937	268	13	741
Heating apparatus	J. P. Avery	202,776	Apr. 23	1003	288	13	750
Hog-cholera compound	A. J. Guinn	202,811	Apr. 23	1044	.....	13	755
Horse-cleaner	M. P. Washburn	202,769	Apr. 23	997	287	13	749
Horse-collar	M. Turley	202,895	Apr. 23	1134	.....	13	766
Horse-power. Mounted	M. H. Pitts	202,802	Apr. 23	1098	315	13	762
Horseshoe	J. A. Risdon	202,758	Apr. 23	986	283 284	13	748
Horseshoe-nail machine	J. T. Hough	202,824	Apr. 23	1060	304	13	757
Hub-attaching device	J. C. Hendry	202,726	Apr. 23	949	272	13	743
Hydrant	P. Connolly	202,793	Apr. 23	1019	293	13	752
Hydraulic power-accumulator	T. M. Maguire	202,660	Apr. 23	885	254	13	735
Hammer for charcoal blooms, cast billets, &c.	G. M. Dillon	203,008	Apr. 30	1255	363	13	786
Harrow and cultivator. Combined	A. Lee	203,053	Apr. 30	1297	376	13	792
Harvester cutter-bar	J. McCormick	203,175	Apr. 30	1426	416	13	809
Hat and cap	J. Van Gelder	203,220	Apr. 30	1469	430	13	814
Headstalls. Check-piece for	J. W. Weed	203,095	Apr. 30	1337	389	13	797
Heating apparatus	E. B. Butterworth	202,928	Apr. 30	1179	340	13	776
Heating water and other fluids. Apparatus for	J. Atkinson	202,917	Apr. 30	1169	337	13	775
Hinge	L. Patterson	202,958	Apr. 30	1209	349	13	780
Hinge. Gate-	G. E. Goodwin	203,136	Apr. 30	1381	401	13	803
Hog-cholera compound	H. C. Collier	202,932	Apr. 30	1183	.....	13	777
Hoop-cutting machine. Barrel-	W. D. Johnson	203,162	Apr. 30	1412	412	13	807

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Horse-detacher	M. C. Thomas	203,216	Apr. 30	1467	429	13	813
Horse-tail tie	B. Blackstone	203,107	Apr. 30	1348	392	13	799
Horses' feet. Pad for	G. A. Kastner	202,947	Apr. 30	1197	345	13	778
Horseshoes. Spring for	J. R. Pierce	203,074	Apr. 30	1319	383	13	795
Harness. Box-loop for	W. G. Hull	203,273	May 7	38	25	13	825
Harrow	J. A. Davis, W. D. Guseman, and H. D. McGeorge.	203,248	May 7	11	13	13	822
Harvester	S. D. Maddin	203,352	May 7	120	35	13	836
Hatchway and door. Sidewalk	P. H. Jackson	203,343	May 7	111	32	13	835
Hay-loader	H. E. Evans	203,254	May 7	18	7	13	823
Hay loader and stacker	P. F. Fleming, E. Wayland, and S. B. Gilliland.	203,332	May 7	101	29	13	833
Heating water. Apparatus for	A. R. Walker	203,392	May 7	165	47	13	843
Hinge for cabinet-desks, &c.	J. A. Moore	203,286	May 7	53	16	13	828
Hinge-joints. Tool for removing pintles from	H. Knickmann	203,466	May 7	245	70	13	854
Hinge. Reversible	C. F. Rapp	203,293	May 7	62	19	13	828
Hog-cholera compound	H. R. and W. N. Budd	203,319	May 7	91	.....	13	832
Hog-ringing implement	H. W. Hill	203,272	May 7	38	12	13	825
Hoisting-bucket	W. T. Warner	203,523	May 7	300	86	13	861
Hoops from the log. Machine for cutting	J. B. Dongherty	203,429	May 7	203	58, 59	13	848
Hop-picking machine	S. D. Locke	203,351	May 7	118	35	13	836
Horse-collars. Fastening for	J. Martin	203,354	May 7	122	36	13	837
Horse-power	G. E. Burt and E. A. Hildreth	203,320	May 7	91	26	13	832
Horseshoe-nails. Machine for making	D. B. Loring	203,282	May 7	46	14	13	826
Hammock	E. S. Sutton	203,795	May 14	600	167	13	907
Harrow	L. Brown	203,585	May 14	385	109	13	881
Harrow	C. Buswell	203,765	May 14	504	143	13	896
Harvester	W. Gangwer	203,609	May 14	405	115	13	864
Harvester-rake	J. H. Lewis	203,630	May 14	423	121 122	13	886
Hats. Manufacture of	G. H. Dimond	203,603	May 14	400	113	13	883
Heater	S. Sibbald	203,639	May 14	456	130	13	890
Heating tools. Device for	S. R. Oldrieve	203,554	May 14	357	101	13	877
Hoe and cultivator	T. V. Curtis and A. M. Andrews	203,598	May 14	397	112	13	883
Hoe. Garden-	C. W. Polen	203,643	May 14	438	125	13	888
Hoisting-machine	W. C. Williamson	203,808	May 14	614	171	13	909
Horse-collar	M. F. Sauer	203,650	May 14	446	127	13	889
Hose-nozzle	J. W. Gray	203,539	May 14	338	96	13	875
Hub. Vehicle-wheel	S. T. F. Sterick	203,669	May 14	466	133	13	891
Halter	T. Puller and G. W. Warren	204,084	May 21	917	262	13	956
Harness attachment	T. B. Hand	203,823	May 21	641	180 181	13	920
Harness. Metal loop for	D. A. Johnson	203,919	May 21	740	212	13	933
Hatchway. Elevator-	J. A. Marker	204,062	May 21	894	256	13	953
Hay-tedder	S. Perry	204,080	May 21	912	261	13	955
Heel and sole trimming machine	J. H. Burrell. (Reissue)	8,239	May 21	960	274	13	961
Hinge	J. A. House	204,045	May 21	875	251	13	950
Hinge	W. S. Mains	204,061	May 21	893	256	13	953
Hoop-machine	G. B. Selden	203,949	May 21	775	222	13	938
Hop-picking machine	H. H. Hatheway	203,910	May 21	732	210	13	932
Horse-collar. Metallic	J. C. Smith	203,950	May 21	777	222	13	938
Hot air. Utilizing	S. C. Salisbury	204,094	May 21	928	266	13	957
Hub-attaching device	J. C. Hendry	203,911	May 21	733	210	13	932
Hydrocarbon generator and burner and gas-generator	C. Holland	203,828	May 21	646	182 183	13	921
Hydrocarbon generator, burner, and lighter	C. Holland	203,832	May 21	649	184 185	13	921
Hydrocarbon vapor-generator and burner	C. Holland	203,826	May 21	644	181 182	13	921
Hydrocarbon-vapor generator and burner	C. Holland	203,827	May 21	645	182	13	921
Hydrocarbon-vapor generator and burner	C. Holland	203,829	May 21	647	183	13	921
Hydrocarbon-vapor generator and burner	C. Holland	203,831	May 21	648	184	13	921
Hydrocarbon-vapor generator and burner and gas-generator.	C. Holland	203,830	May 21	647	183	13	921
Hydrocarbons from fatty matters. Extracting	W. Adamson	203,980	May 21	804	231	13	941
Harness	E. R. Cahoone	204,195	May 28	1063	303	13	978
Harrow	H. F. Wasmund	204,268	May 28	1131	324	13	986
Harrow. Rotary	E. and E. H. McNiel	204,354	May 28	1221	348	13	998
Harvester-gearing	J. Harris	204,148	May 28	1006	285	13	970
Hat and cap sweat	J. R. Terry, Jr.	204,202	May 28	1127	322	13	986
Head-protector for the use of firemen, shipwrecked persons, &c.	F. P. Cummerford	204,204	May 28	1071	305	13	979
Heaters. Draft-pipe for	M. A. Shepard	204,170	May 28	1029	293	13	974
Hogs from rooting. Ring to prevent	J. M. Stansifer	204,171	May 28	1030	293	13	974
Hoisting device. Tobacco-	C. F. Johnson	204,332	May 28	1199	342	13	995
Horse-power	T. C. Bettis and J. W. Heath	204,185	May 28	1032	298 299	13	976
Harrow	E. Murray	204,501	June 4	76	26	13	1023
Harvester	R. Conarroe	204,424	June 4	9	4	13	1014
Harvester	J. S. Royce	204,613	June 4	158	60, 61	13	1039
Harvester	J. S. Royce	204,614	June 4	194	62	13	1040
Harvester. Potato-	D. F. Brown	204,531	June 4	102	34, 35	13	1027
Harvester safety attachment	A. J. Spaulding and J. R. Hibbs	204,509	June 4	83	28	13	1024
Hat-brim	E. Woolley	204,646	June 4	221	70	13	1043
Hay-tedder	J. A. Sellon	204,622	June 4	201	64	13	1041
Head-light. Locomotive	J. Kirby, Jr.	204,580	June 4	149	49, 50	13	1034
Heel-support	G. T. Fisher	204,552	June 4	119	41	13	1029
Horse-power	W. H. Phelps	204,602	June 4	175	56	13	1037
Horses. Device for hitching	D. Starkey	204,458	June 4	42	14	13	1018
Horses. Foot-bath for	S. S. Crocker and A. Wilcox	204,482	June 4	62	21	13	1021
House	J. Decombe	204,545	June 4	113	39	13	1029
Hubs. Chill for	P. H. Burns	204,479	June 4	61	20	13	1021
Hame-fastening	M. Calhoun	204,712	June 11	299	92	13	1058
Hammer	H. Hammond	204,665	June 11	249	78	13	1051

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Harrow. Wheel	F. Bramer	204,793	June 11	388	115	13	1068
Harvester-dropper	W. H. Akens	204,698	June 11	222	88	13	1055
Heater. Portable	G. L. Thorne	204,862	June 11	459	134	13	1076
Heater regulator and damper. Combined	P. Schaefer	204,685	June 11	269	83	13	1054
Hinge. Lock	D. T. Randlet	204,761	June 11	350	106	13	1064
Hog-cholera compound	T. M. Wilson	204,694	June 11	279	.....	13	1055
Horse-collar	W. H. Getzendanner and J. P. Marquardt, Jr.	204,664	June 11	249	77	13	1051
Horses. Blinder for	B. Rice	204,844	June 11	444	130	13	1074
Hose-clamp	S. C. Smith	204,770	June 11	360	108	13	1065
Hubs. Sand-band for vehicle	D. Foglebach	204,719	June 11	307	94	13	1059
Hydraulic-power apparatus	E. M. Bate	204,659	June 11	237	74, 75	13	1049
Hame-fastener	G. M. Marks	205,114	June 18	735	218	13	1117
Harvester	C. Colahan. (Reissue)	8,290	June 18	797	236	13	1125
Harvester cutting apparatus	C. F. Howes	205,092	June 18	714	212	13	1114
Hat-fastener	F. L. Tripp	205,014	June 18	696	167	13	1103
Hat-finishing machine	S. Piron	204,994	June 18	618	181	13	1101
Hat-pouncing machine	E. B. Taylor	205,009	June 18	631	185; 186	13	1102
Hat-pouncing machine	E. B. Whiting and F. E. Daum	204,931	June 18	558	162	13	1092
Hats and caps from straw-braid. Manufacture of	C. O. Parmenter	205,130	June 18	747	222	13	1118
Head-elevator and chin-raiser	J. Heintz	205,086	June 18	709	210	13	1113
Heater	C. Weeke	205,018	June 18	638	188	13	1104
Heater. Steam water	A. W. Tregent	205,153	June 18	779	230	13	1122
Heddle-frames. Screw heddle eye or hook for	D. C. Brown	204,881	June 18	505	147	13	1096
Hen's-nest house	J. W. Nichols	205,125	June 18	743	221	13	1118
Hinge for awning-blinds	C. L. Hasbrouck	205,083	June 18	706	209	13	1112
Hinge. Lock	N. H. Camp	205,051	June 18	674	197	13	1108
Hinge. Lock	B. Lent	204,964	June 18	608	178	13	1099
Hog-cholera compound	J. M. Keltner	204,898	June 18	523	.....	13	1088
Hog-cholera compound	J. Senn	205,147	June 18	773	.....	13	1121
Hog-scalder and feed-steamer	H. Strycker	204,923	June 18	549	160	13	1091
Hoof-moistener holder	G. P. Merriam	205,118	June 18	738	219	13	1117
Hopple	W. S. Mead	205,116	June 18	736	219	13	1117
Horse-boot	G. W. Wemple	205,150	June 18	784	232	13	1123
Horse-power	A. Hall	204,969	June 18	594	173	13	1097
Horses. Mechanism for stopping runaway	T. B. Hand	205,079	June 18	700	207; 208	13	1112
Horseshoe	F. H. Hall	204,968	June 18	593	173	13	1097
Hub. Vehicle-wheel	J. Lane	204,903	June 18	527	154	13	1089
Hydrocarbons. Apparatus for burning	S. C. Salisbury	205,143	June 18	765	226; 227	13	1120
Hydrotherapic apparatus	E. E. G. Bozerian	204,879	June 18	503	147	13	1096
Harrow	J. Pentreath and J. Q. Crosby	205,410	June 25	1059	314	13	1164
Harrow-tooth	D. Waterbury and F. Miller	205,449	June 25	1098	325	13	1169
Harrow. Wheel	F. Bramer. (Reissue)	8,299	June 25	1114	330	13	1171
Harvester	J. Bordwell	205,235	June 25	877	259; 260	13	1140
Harvester	J. M. Ruthrauff	205,423	June 25	1072	317	13	1165
Harvester	C. Whitney	205,323	June 25	971	288	13	1152
Harvester-platform	G. Sweet	205,441	June 25	1090	323	13	1168
Harvester-rake	O. Cooley	205,175	June 25	813	241	13	1132
Hat-finishing machine	E. Woolley	205,326	June 25	976	289	13	1153
Hatchway-doors. Device for opening and closing	J. J. Lacey	205,192	June 25	832	247	13	1134
Hay-tedder	J. M. Hill	205,384	June 25	1035	307	13	1160
Heater	D. Sullivan	205,304	June 25	950	282	13	1150
Hoes. Machine for forming the eyes of	E. L. Keeler	205,394	June 25	1046	310	13	1162
Hog-cholera compound	A. R. Derrickson	205,364	June 25	1016	.....	13	1158
Horse-collar	S. M. Palmer	205,294	June 25	937	278	13	1148
Horse-detaching device	R. Fox	205,182	June 25	820	243	13	1133
Horseshoe	O. Von Ruville	205,221	June 25	863	255	13	1138
Horseshoe-blanks. Machine for manufacturing	F. Holub	205,385	June 25	1036	307; 308	13	1160
Horseshoe-blanks. Machine for rolling	F. Holub	205,386	June 25	1037	308	13	1160
Horseshoe-nail machine	J. P. Flanders and N. W. Goodrich	205,257	June 25	897	265	13	1143
Horseshoe-nails. Machine for making	D. B. Loring. (Reissue)	8,302	June 25	1117	330	13	1172
Hose attachment	J. Dawson	205,251	June 25	892	264	13	1142
Hose-pipe nozzle	J. T. Hayden	205,267	June 25	906	268	13	1144
Hub. Vehicle	A. W. Anthoine	205,333	June 25	984	291	13	1154
Ice-machine	A. Albertson	196,631	Jan. 1	109	31	13	25
Injector	J. D. Lyndo	196,691	Jan. 1	172	49	13	35
Injector. Insect-powder	G. N. Milco	196,807	Jan. 1	89	24	13	22
Iron and steel. Manufacture of	I. L. Bell	196,733	Jan. 1	1	.....	13	9
Inhaler	O. P. Barber	199,140	Jan. 15	446	132	13	85
Insoles, and apparatus for manufacturing the same. Material for	C. Riewe	199,226	Jan. 15	527	155	13	98
Ice-cream freezer	T. J. Soden	199,476	Jan. 22	785	231	13	146
Indicator for steam-boilers. High and low water	A. W. Vandorston	199,598	Jan. 22	915	268	13	167
Ingot-mold stripper	T. James	199,553	Jan. 22	867	254	13	160
Injector	S. Fowden	199,530	Jan. 22	847	247	13	156
Indicator. Speed	W. S. Bates	199,682	Jan. 29	1027	299	13	192
Ink. Writing	G. A. Wells	199,883	Jan. 29	1212	.....	13	221
Insects by fumigation. Device for destroying	T. F. Bingham	199,611	Jan. 29	952	277	13	181
Insects. Powder-duster for destroying	M. Moore	199,733	Jan. 29	1072	314	13	199
Intrenching-tool	J. L. Buskett	199,787	Jan. 29	1126	331	13	208
Ironing-machine	W. and J. Coutie	199,898	Feb. 5	7	3	13	234
Ironing-machine	T. S. Wiles	200,011	Feb. 5	113	38	13	251
Ironing-board	E. J. Wolfrom	200,158	Feb. 12	277	83	13	284
Indexing books	J. Echols	200,381	Feb. 19	513	151	13	328
Inkstand	H. G. Squires	200,381	Feb. 19	708	208	13	358
Insect and vermin fumigator	F. Hanson	200,329	Feb. 19	657	193	13	350
Insect-exterminator	W. T. Daughtrey	200,376	Feb. 19	508	150	13	327
Insect-trap	F. Schreiber and A. Welgand	200,574	Feb. 19	701	206	13	357
Ironing-machine	T. S. Wiles	200,419	Feb. 19	541	162	13	333

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ironing-table	S. C. Terry	200,584	Feb. 19	711	209	13	358
Injector	G. H. Little. (Reissue)	8,104	Feb. 26	970	285	13	405
Injector	G. H. Little. (Reissue)	8,105	Feb. 26	972	285	13	405
Instep-holder	J. H. Woodbury	200,785	Feb. 26	933	274	13	399
Iron from foundry refuse. Machine for separating	O. D. Woodruff	200,638	Feb. 26	784	230	13	377
Ironing-table	P. Dunbar	200,648	Feb. 26	796	234	13	379
Ironing-table	M. S. Prescott	200 758	Feb. 26	909	268	13	396
Insect-powder blower	M. Mark	200,924	Mar. 5	104	35	13	431
Illuminating-flames. Automatic device for raising and lowering	G. P. Ganster	201,237	Mar. 12	423	130	13	485
Inkstand	W. A. Hull	201,249	Mar. 12	435	134	13	486
Irrigating apparatus	C. D. Page	201,442	Mar. 19	632	199	13	502
Ivory and similar substances. Silicious material to imitate	J. W. and C. M. Hyatt	201,348	Mar. 19	560	.....	13	511
Index	J. R. McKnight	201,693	Mar. 26	916	280	13	566
Indicator for pressure-gages	J. E. Treat	201,637	Mar. 26	871	265	13	558
Indicator and alarm. Low-water	F. C. Gilfillan	201,772	Mar. 26	1002	306	13	578
Indicator. Speed	D. Hussey	201,677	Mar. 26	902	276	13	564
Inhaler	L. E. Felton	201,659	Mar. 26	889	271	13	561
Inkstand. Calendar	F. Ratcliff	201,831	Mar. 26	1059	323	13	587
Ironing-board and cutting-table. Combined	W. M. Foskett	201,605	Mar. 26	838	254	13	554
Ironing-table	R. Becker	201,904	Apr. 2	46	12	13	605
Ice-machines. Congealing-plate for	J. P. Jones	202,265	Apr. 9	430	136	13	664
Indicator for ships. Shoal	C. C. Miller	202,184	Apr. 9	351	103	13	652
Incubator	J. Rabenberg	202,467	Apr. 16	652	191	13	699
Insole	M. Silverberg	202,596	Apr. 16	799	230	13	715
Iron. Converting non-chilling iron into chilling	S. A. Ford	202,530	Apr. 16	728	.....	13	708
Ironing-table	E. A. Hill	202,438	Apr. 16	624	183	13	695
Irrigation. Artificial	J. A. Conway	202,331	Apr. 16	518	152	13	680
Ice in separated layers. Forming	A. C. Call	202,787	Apr. 23	1015	291	13	751
Indicating the direction of the wind. Apparatus for	A. J. and F. E. Harris	202,815	Apr. 23	1049	301	13	756
Indicator	J. Freeman	202,643	Apr. 23	869	249	13	734
Insect-powder gun	W. Kennish	202,830	Apr. 23	1067	305	13	758
Ironing-table	F. M. Smith	202,877	Apr. 23	1115	320	13	764
Ice-creeper	O. A. Childs	202,930	Apr. 30	1181	341	13	776
Indicator. Station	W. H. and W. N. Packer	203,491	May 7	268	77	13	857
Ink. Canceling and writing	H. and W. S. Richmond	203,372	May 7	144	.....	13	840
Ice-house	J. Schneider	203,651	May 14	446	127; 128	13	889
Inkstand	D. Mosman and R. L. Webb	203,757	May 14	559	158	13	903
Indicator for steam-engines. Pressure	J. Rae	204,086	May 21	919	263	13	956
Indicator. Station	S. W. Colton	203,889	May 21	706	202	13	929
Inkstand	F. Klingspor, Jr.	204,054	May 21	884	254	13	951
Iron and steel rails and scrap. Melting and treating	G. W. Swett	203,957	May 21	784	.....	13	939
Ironing-table	A. T. Gale	204,019	May 21	852	243	13	947
Ice. Apparatus for forming sheets of	J. Gamgee	204,210	May 28	1077	307	13	980
Illuminating-fluid. Device for testing	S. S. Mann	204,235	May 28	1100	314	13	982
Index-tag for books	E. M. Capen	204,196	May 28	1065	303	13	978
Indicator for vessels. Roll and pitch	R. Chandler	204,133	May 28	989	281	13	968
Inkstand	W. P. Speller	204,388	May 28	1255	357	13	1002
Iron for case or surface hardening. Preparing	S. A. Conrad	204,202	May 28	1069	.....	13	979
Ironing apparatus	A. K. Brettell	204,128	May 28	984	280	13	968
Indicator and gage-cock	W. Starkey and O. P. Jackson	204,630	June 4	207	66	13	1042
Ironing-machine	H. Monk	204,594	June 4	165	54	13	1036
Ironing-table	J. A. Eno	204,550	June 4	117	40	13	1029
Ingot-mold	B. T. Babbitt	204,783	June 11	379	113	13	1067
Inking-pad	F. P. Hammond	204,726	June 11	316	96	13	1060
Iron. Case-hardening	G. S. Roberts	204,846	June 11	445	.....	13	1074
Ironing-board	G. E. Palmer	204,755	June 11	343	104	13	1063
Ironing-machine	E. L. Wilson	204,777	June 11	370	111	13	1066
Irrigating device	J. A. Winebrenner	204,695	June 11	279	87	13	1055
Indicator for freight-cars	J. Tatham	205,151	June 18	777	230	13	1122
Indicator for letter-boxes. Time	J. H. Rouse	205,142	June 18	765	226	13	1120
Ice-locomotive	H. Lainé	205,194	June 25	834	247	13	1134
Ice-tool. Combined	W. H. Barwick	205,169	June 25	807	240	13	1131
Ingots. Treating cast-steel	B. E. Cammell and J. Duffield	205,351	June 25	1001	296	13	1156
Insecticide compound	D. Maurer	205,405	June 25	1055	.....	13	1163
Joist-shoe	J. R. Payson	199,098	Jan. 8	384	114	13	76
Journal for shafts and axles	P. Sweeney	199,121	Jan. 8	413	121	13	80
Japanning	M. Bray	199,504	Jan. 22	814	238	13	151
Jewelry, &c. Ornamenting metallic surfaces for	W. Ricker	199,580	Jan. 22	892	262	13	164
Jail-cell	J. S. Thomas	199,879	Jan. 29	1209	355	13	220
Jar and can. Milk	G. H. Lester	199,837	Jan. 29	1172	344	13	214
Journal-bearing	J. Sweeney	199,669	Jan. 29	1015	296	13	190
Jar. Fruit	G. W. Gomber	200,188	Feb. 12	307	91	13	288
Jar. Fruit	T. W. Synnott	200,229	Feb. 12	344	102	13	294
Journal for car-axles, shafting, &c	H. Wakeman	200,492	Feb. 19	620	182	13	344
Jibs. Device for reefing	R. Rowell, 2d	200,766	Feb. 26	915	269	13	397
Jewelry. Manufacturing pin-tongues for	W. H. Hathaway	201,244	Mar. 12	431	132	13	486
Journal-box	C. T. Porter	201,197	Mar. 12	377	117	13	479
Jewelers. Soldering-tweezers for	C. F. George	201,464	Mar. 19	620	189	13	519
Jar for preserves and fruits	L. P. Whiteman	201,969	Apr. 2	105	31	13	614
Journals and axles. Anti-friction bearing for	T. H. King	202,034	Apr. 2	172	50	13	624
Jar. Fruit	L. Clabaugh	202,093	Apr. 9	250	74	13	630
Jewelers' dies. Swage for forming	G. Sisson	202,597	Apr. 16	799	230	13	716
Jar. Fruit	J. H. Phillips	202,753	Apr. 23	961	282	13	747
Jewel-casket	H. Berry	203,106	Apr. 30	1347	392	13	798
Jewelry. Extension-ring for	G. O. Street	203,792	May 14	597	166	13	907
Jewelry. Wire-trimming for	L. Heckmann	204,149	May 28	1009	287	13	971
Jar holder. Fruit	J. Woodruff	205,457	June 25	1103	327	13	1170
Jewelry. Design for ornamental scroll-work for	L. Heckmann. (Reissue)	8,300	June 25	1116	.....	13	1172
Journal-bearing	D. M. Finlayson	205,256	June 25	896	265	13	1143
Knitting-machine	E. Tiffany	196,757	Jan. 1	99	7, 8, 9	13	13

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Key-retainer	J. W. Johnson	199,447	Jan. 22	754	{221 222}	13	142
Knife scourer and polisher	A. E. McDonald	199,457	Jan. 22	768	225	13	144
Knife and fork handle. Enamel-coated	T. S. Ransom	199,743	Jan. 29	1081	.....	13	200
Knife. Pocket-	W. T. Whitehouse	199,766	Jan. 29	1102	324	13	204
Knife. Pocket or spring	W. Singleton and E. Priestman	199,868	Jan. 29	1198	359	13	218
Knob extension. Door-	A. E. Young	199,771	Jan. 29	1107	325	13	205
Key for locks	G. Finley	199,969	Feb. 5	79	26	13	245
Knife cleaner and sharpener	C. A. Heegaard	199,976	Feb. 5	84	28	13	246
Knife. Pocket-	A. E. Elmer	199,966	Feb. 5	76	25	13	245
Knitting-machines. Loop-wheel for	H. M. Mellor	199,923	Feb. 5	36	12	13	238
Knitting stockings	B. F. Shaw	200,225	Feb. 12	339	102	13	294
Key. Extension-	C. C. Coleman	200,512	Feb. 19	637	187	13	347
Key-fastener	R. McCully	200,404	Feb. 19	534	158	13	331
Knife. Pocket-	C. Luetters	200,551	Feb. 19	679	200	13	353
Knife-scourer	S. K. Luce	200,550	Feb. 19	678	199	13	353
Knitting machine. Circular	G. A. Leighton	200,463	Feb. 19	591	{174 175}	13	340
Knobs. Attaching shanks to door-	J. W. Haines	200,450	Feb. 19	579	171	13	338
Key-board. Transposing	C. A. Agren	200,640	Feb. 26	786	231	13	378
Knitting-machine	T. Langham	201,024	Mar. 5	203	64	13	446
Knob attachment	W. Stewart	200,880	Mar. 5	65	23	13	425
Key-hole guard	W. H. Avery	201,085	Mar. 12	269	83	13	463
Knob alarm. Door-	G. W. McGovern	201,117	Mar. 12	304	93	13	468
Key-fastener	J. T. White	201,373	Mar. 19	583	179	13	514
Knitting-machine	A. Reichenbach	201,447	Mar. 19	657	{200 201}	13	525
Knitting-machine. Yarn-delivery attachment for	A. Paul	201,629	Mar. 26	861	262	13	557
Knob. Door-	T. Taylor	201,719	Mar. 26	941	289	13	569
Knob. Silvered-glass door-	J. W. Haines. (Reissue)	8,139	Mar. 26	1103	334	13	592
Knife for opening cans. Pocket-	D. Martin	201,931	Apr. 2	70	19	13	609
Knob and shank attachment. Door-	P. Brady	201,906	Apr. 2	48	13	13	605
Knife-blades. Manufacture of	S. M. Moore	202,282	Apr. 9	448	131	13	666
Keys. Device for extracting	P. A. Oliver	202,457	Apr. 16	643	188	13	698
Knife. Hay-	H. O. Turner	202,487	Apr. 16	668	196	13	702
Knitting-machines. Cam for	W. J. McDevitt	202,567	Apr. 16	768	222	13	712
Knife-scourer	N. A. Wierman	202,770	Apr. 23	997	287	13	749
Knitting-machine	W. T. Lemon	202,840	Apr. 23	1076	{307 308}	13	759
Key. Extension-	H. Wadsworth	203,223	Apr. 30	1473	431	13	814
Key-fastener	J. W. Johnson	203,161	Apr. 30	1411	411	13	807
Knapsack	H. C. Merriam	204,066	May 21	897	257	13	953
Knife. Hay-	D. L. Garver	204,020	May 21	852	244	13	947
Knife. Paring-	J. H. Wilhelm	203,862	May 21	681	193	13	925
Knitting-machine cam	F. Denzler	204,426	June 4	11	5	13	1014
Kettle. Dinner-	J. S. Hagerty	204,817	June 11	413	121	13	1071
Knitting-machines. Narrowing mechanism for	W. Aiken	204,648	June 11	231	73	13	1049
Knife-sharpener	D. Jr., and A. Gundelfinger	205,077	June 18	699	207	13	1111
Knob attachment	A. Dickerman	205,061	June 18	683	200	13	1109
Knob attachment	E. St. John	204,921	June 18	548	159	13	1091
Kilt suit. Child's	I. Crane	205,176	June 25	814	242	13	1132
Knitting-machines. Narrowing mechanism for	W. Aiken	205,167	June 25	805	239	13	1131
Knitting-machines. Stopping mechanism for	S. Arnold	205,336	June 25	986	292	13	1154
Ladder	A. H. Middleton	198,897	Jan. 1	177	51	13	36
Lamp-wick measurer and cutter	G. Washington	198,864	Jan. 1	143	41	13	31
Land-roller, harrow, and grain-drill. Combined	S. F. Reynolds	198,778	Jan. 1	60	15	13	17
Latch and lock. Combined	S. Oppenheimer	198,751	Jan. 1	23	5, 6	13	12
Latch. Door-	T. Percival	198,811	Jan. 1	92	25	13	22
Level. Spirit-	F. T. Ward and T. Bedworth	198,909	Jan. 1	194	55	13	38
Lock. Combined indicator and seal-	E. B. Caton	198,837	Jan. 1	114	33	13	26
Lock. Hasp-	W. D. Spencer	198,859	Jan. 1	138	39	13	30
Locomotives. Variable exhaust for	G. S. Brainerd	198,780	Jan. 1	73	19	13	19
Loom. Vertical	J. M. Flagg	198,765	Jan. 1	43	11, 12	13	14
Lubricator	J. Farley	198,842	Jan. 1	119	34	13	27
Ladder. Step-	C. G. Udell	199,004	Jan. 8	295	86	13	61
Lamp-burner	C. F. A. Hinrichs and C. Reistle	198,981	Jan. 8	271	78	13	58
Lamp-burner	H. C. Scott	199,109	Jan. 8	394	118	13	78
Lamp shade and chimney. Combined	S. W. Fowler	199,050	Jan. 8	338	99	13	68
Lantern. Signal-	N. Lash	198,988	Jan. 8	280	81	13	59
Limekiln. Portable	H. H. Bourne	198,964	Jan. 8	254	73	13	55
Lock and key	D. Border	199,023	Jan. 8	312	92	13	64
Lock. Door-	J. B. Felter	199,048	Jan. 8	336	98, 99	13	68
Lock. Indicator-	L. S. Young and C. C. Gale	198,961	Jan. 8	251	72	13	54
Lock. Time-	S. A. Little. (Reissue)	8,035	Jan. 8	439	129	13	84
Lubricator	W. Moses	198,952	Jan. 8	242	69	13	53
Lamp	E. J. Blackham	199,254	Jan. 15	552	162	13	102
Lamp-burner	S. C. Catlin	199,144	Jan. 15	451	133	13	86
Lamp-extinguisher	W. S. Asbury	199,249	Jan. 15	547	161	13	101
Lamp-filler	H. and A. T. Hatch	199,290	Jan. 15	592	173	13	108
Lamp-shade cover	F. L. Cutter	199,269	Jan. 15	573	167	13	105
Lamps. Oil-chamber for	H. T. Hanks	199,201	Jan. 15	506	149	13	95
Last	L. Darozier	199,272	Jan. 15	575	168	13	105
Lathe for turning round or polygonal bodies	R. Beal	199,178	Jan. 15	483	143	13	91
Lifting-jack	S. D., J., and L. S. Barrow	199,177	Jan. 15	482	142	13	91
Liquids. Vessel for holding	W. F. Sherman	199,231	Jan. 15	532	156	13	99
Lock. Electric	P. Bowe	199,255	Jan. 15	553	163	13	102
Locomotives. Exhaust-nozzle for	R. N. Allen	199,137	Jan. 15	443	131	13	85
Lubricator	J. W. Reed	199,224	Jan. 15	526	155	13	98
Ladder	A. R. W. Knight	199,556	Jan. 22	870	254	13	160
Ladder. Extension-	G. Carlton	199,514	Jan. 22	826	241	13	153
Lamp. Oil-	W. H. Garlick	199,532	Jan. 22	849	248	13	156
Lamps, &c. Night-chimney for	J. F. Rose	199,578	Jan. 22	890	261	13	163
Lamps, &c. Reflector for	C. Robinson	199,575	Jan. 22	887	260	13	163
Land-roller	R. W. Bunting	199,508	Jan. 22	819	239	13	152

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Land-roller and clod-crusher	W. Gutenberger	199,536	Jan. 22	853	240	13	157
Lapping-machine	H. N. Range	199,379	Jan. 22	691	203	13	131
Latch. Reversible	C. H. Labelle	199,452	Jan. 22	759	223	13	142
Lathe. Gage-	E. Silver	199,584	Jan. 22	898	263	13	164
Lock for valises. Chain-	J. R. Rhenbottom	199,468	Jan. 22	776	228	13	145
Lock. Time-	M. A. Dalton	199,520	Jan. 22	832	243	13	154
Lock. Time-	L. C. and S. M. Lillie	199,454	Jan. 22	764	224	13	143
Lubricating device	F. B. Walton	199,602	Jan. 22	918	269	13	168
Lamp	G. F. Geer	199,699	Jan. 29	1043	304	13	194
Lamp	B. B. Schneider. (Reissue)	8,066	Jan. 29	1231	361	13	223
Lamp	B. B. Schneider. (Reissue)	8,067	Jan. 29	1231	361	13	224
Lamp-chimney	H. S. Fifield	199,815	Jan. 29	1152	338	13	211
Lamp-extinguisher	C. W. Soule	199,754	Jan. 29	1090	320	13	202
Latch. Reversible knob-	J. L. Moesta	199,853	Jan. 29	1186	348	13	217
Lavatory apparatus	D. Wellington	199,765	Jan. 29	1102	323	13	204
Lock for freight-cars	F. J. Hoyt	199,713	Jan. 29	1054	308	13	196
Locomotives, &c. Electro-magnetic traction device for	R. Werdermann	199,885	Jan. 29	1214	{356 357}	13	221
Locomotives to drive cattle from the track. Alarm for	W. A. Simpson and S. Kimball	199,867	Jan. 29	1197	351	13	218
Lubricating compound	R. J. Chard	199,789	Jan. 29	1128	.....	13	208
Lubricator for steam-engines	S. Reid	199,745	Jan. 29	1082	317	13	201
Ladder. Step-	M. Medart	199,922	Feb. 5	36	11	13	238
Ladder. Wire-rope	A. Elton	199,967	Feb. 5	77	25	13	245
Lamp-bracket	J. J. Nolan	200,082	Feb. 5	195	61	13	263
Lamp-burner	L. J. Atwood	200,015	Feb. 5	120	39	13	252
Lamp-reflector	P. Cavalier	200,028	Feb. 5	133	44	13	254
Lamp-wick	W. D. Smith	200,096	Feb. 5	286	65	13	265
Last	T. Dann	199,963	Feb. 5	74	24	13	244
Latch. Gate-	M. Davenport	199,964	Feb. 5	75	24	13	245
Lathe-chuck for turning stone	E. Rogers	199,935	Feb. 5	48	15	13	240
Level	S. Gisainger	199,902	Feb. 5	12	4	13	234
Lifting-jack	F. S. Yinger	200,117	Feb. 5	229	70	13	268
Liquid-measure	S. 3d and C. F. Rigby	200,091	Feb. 5	202	63	13	264
Locks. Tumbler for permutation-	J. Loch	200,070	Feb. 5	179	57	13	261
Loom-temple	R. P. Pearson	200,086	Feb. 5	198	62	13	264
Lubricating compound	C. Johnston	199,913	Feb. 5	28	.....	13	237
Lubricator. Steam-engine	A. Guild and F. B. Clark	200,053	Feb. 5	163	53	13	279
Lamp. Street-	A. Hoen	200,297	Feb. 12	415	123	13	305
Lantern	C. W. Colony	200,176	Feb. 12	294	88	13	287
Lard-refining apparatus	R. Ballymore	200,252	Feb. 12	367	109	13	298
Latch and lock. Knob	W. I. Ludlow	200,318	Feb. 12	437	130	13	308
Lathe-chuck	A. F. Cushman	200,261	Feb. 12	378	111	13	299
Life-boat	J. F. Schulthels	200,347	Feb. 12	467	138	13	313
Lifting-jack	A. J. Landis	200,140	Feb. 12	259	77	13	281
Lifting-jack	J. W. Stevens	200,354	Feb. 12	476	140	13	314
Liquids. Apparatus for measuring, controlling, and registering	F. J. J. Delori	200,184	Feb. 12	303	90	13	288
Lock. Alarm-	J. G. Wolf	200,235	Feb. 12	348	104	13	295
Lock for drawers	W. I. Ludlow	200,319	Feb. 12	439	131	13	308
Lock for drawers	R. W. Whitney. (Reissue)	8,079	Feb. 12	497	146	13	317
Lock for safes, &c. Time-	P. F. King	200,312	Feb. 12	429	128	13	307
Lock for sliding doors	H. Wadsworth	200,366	Feb. 12	490	144	13	316
Lock. Prison-	H. R. Towne and T. F. Keating	200,156	Feb. 12	275	82	13	284
Locomotives. Bell-ringer for	W. C. Ovenden	200,330	Feb. 12	452	133	13	310
Ladder. Extension-	J. W. Pine	200,475	Feb. 19	604	178	13	342
Ladder. Wire	J. Flinn	200,524	Feb. 19	651	192	13	349
Lamp	F. Carrier	200,373	Feb. 19	506	149	13	327
Lamp-chimney	E. R. Roswell	200,408	Feb. 19	538	159	13	332
Lamps. Globe for street-	F. L. Senour	200,473	Feb. 19	603	177	13	342
Lantern	T. B. Osborne	200,565	Feb. 19	692	203	13	355
Leather boarding and graining machine	L. Townsend. (Reissue)	8,088	Feb. 19	729	214	13	361
Life-boat	G. F. Sievern	200,485	Feb. 19	613	181	13	343
Life-preserver	D. Ruge	200,572	Feb. 19	699	205	13	356
Lighting apparatus. Electric	J. King	200,545	Feb. 19	672	198	13	352
Lock. Cylinder-	C. C. Coleman	200,511	Feb. 19	637	187	13	347
Loom	E. Howard	200,536	Feb. 19	662	195	13	357
Lubricator	G. H. Flower	200,446	Feb. 19	576	170	13	331
Lubricator for shafting	A. D. Heffman	200,395	Feb. 19	527	155	13	330
Label-holder	C. M. Bright	200,688	Feb. 26	839	247	13	385
Lamp-burner	A. T. Nord	200,627	Feb. 26	771	227	13	375
Latch. Gate-	T. P. W. Magruder	200,660	Feb. 26	811	239	13	381
Lead. Apparatus for the manufacture of white-	G. L. Irwin	200,726	Feb. 26	880	258	13	391
Leather-skiving machine	C. Amazeen	200,682	Feb. 26	834	245	13	384
Lifting-jack	N. Hill	200,792	Feb. 26	939	277	13	401
Lime-bin	C. A. Lawton	200,618	Feb. 26	764	224	13	374
Lock. Sliding-door	J. W. Schoonmaker	200,768	Feb. 26	916	270	13	397
Locks. Attachment to combination-	R. Beachman	200,599	Feb. 26	744	218	13	371
Loom-shuttle	G. C. Mills	200,745	Feb. 26	897	264	13	393
Lubricator	J. T. Meyer	200,623	Feb. 26	768	226	13	375
Lamp-chimney attachment	L. D. B. Shaw	200,879	Mar. 5	65	23	13	425
Lamp. Oil cook-stove	H. L. Howae	200,913	Mar. 5	93	32	13	429
Lamp. Student-	F. W. Platt	200,933	Mar. 5	111	37	13	432
Lamps, &c. Globe for	T. Walton	201,072	Mar. 5	250	79	13	453
Lathe-head	W. Krutzsch	201,021	Mar. 5	199	64	13	446
Leather straps. Holder for	D. A. Johnson	200,918	Mar. 5	98	33	13	430
Lightning-rod connection	C. H. Smith and J. Hewitt	201,059	Mar. 5	239	75	13	451
Link and cross-head	W. Jackson	200,915	Mar. 5	96	33	13	430
Lock. Bag-	R. Flocke	200,904	Mar. 5	87	30	13	428
Lock. Seal-	A. F. Whiting	201,076	Mar. 5	254	80	13	453
Locomotives. Ash-pan for	J. B. Harrison	200,910	Mar. 5	91	31	13	429
Loom-temple	N. I. Allen	200,814	Mar. 5	1	1	13	415
Lozenge-machines. Portable tray, receiver, and elevator for	T. Robertson	201,049	Mar. 5	230	72, 73	13	450
Lubricator. Axle-	F. W. Carpenter	200,985	Mar. 5	160	52	13	440

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lumber-drier	A. McNeile	201,033	Mar. 5	214	67	13	447
Lumber. Machine for ripping, surfacing, and matching	J. Du Bois	200,992	Mar. 5	167	54, 55	13	441
Labels. Machine for cutting	H. H. Frary and L. Hellman	201,104	Mar. 12	287	89	13	466
Lamp-burner	T. M. Brintnall	201,221	Mar. 12	402	124	13	482
Lamp-stand	R. S. Merrill	201,266	Mar. 12	454	140	13	489
Last-block fastener	F. M. Ellms and J. Mills	201,100	Mar. 12	283	88	13	465
Level and plumb. Spirit-	J. Morss	201,276	Mar. 12	463	142	13	491
Lifting-jack	J. B. Fayette	201,173	Mar. 12	355	109	13	475
Lock. Seal-	H. Ahrend	201,147	Mar. 12	333	102	13	472
Locomotive	G. Vincent	201,308	Mar. 12	590	154	13	495
Lubricator	J. Richards	201,289	Mar. 12	479	147	13	493
Lubricator. Axle-	E. W. Moyer	201,193	Mar. 12	374	116	13	478
Lamp	F. B. Squire	201,565	Mar. 19	780	237	13	541
Lamp-chimney	E. S. Drake	201,509	Mar. 19	719	219	13	534
Lamp-extinguisher	A. Hall	201,411	Mar. 19	625	191	13	520
Lamp-extinguisher	L. W. Swem	201,570	Mar. 19	785	239	13	542
Lamp. Shoemaker's	A. Rosenstjerna	201,358	Mar. 19	570	175	13	512
Land-roller	A. H. Ufford	201,368	Mar. 19	578	178	13	514
Latch. Gate-	W. F. Golden	201,406	Mar. 19	622	189	13	519
Latch. Reversible	I. E. Van Benthuysen	201,573	Mar. 19	788	240	13	543
Leather-stuffing machine	J. W. Hildreth	201,526	Mar. 19	736	224, 225	13	536
Lewises	W. Graham and J. A. Dennison	201,409	Mar. 19	623	190	13	520
Lifting-jack	J. M. Tichenor and H. L. Dexter	201,467	Mar. 19	677	206	13	527
Lifting-jack and tire-tightener	A. W. Comstock	201,502	Mar. 19	711	216	13	533
Lighting device	W. W. Batchelder	201,485	Mar. 19	692	212	13	530
Lock. Bag-	A. Oberndorfer	201,552	Mar. 19	765	233	13	546
Lock. Permutation-	G. W. Youmans	201,375	Mar. 19	585	180	13	515
Lock. Time-	P. F. King	201,535	Mar. 19	747	228	13	537
Lock. Trunk-	J. Arnold	201,480	Mar. 19	689	211	13	529
Locks and latches. Striker for spring	W. H. Taylor	201,572	Mar. 19	786	239	13	543
Lubricator	W. A. Clark	201,332	Mar. 19	541	167	13	508
Lubricator. Loose-pulley	W. G. Beach	201,487	Mar. 19	696	212	13	530
Lubricator. Steam-engine	G. W. Farnham	201,402	Mar. 19	619	188	13	519
Lumber. Drying	G. Woods. (Reissue)	8,129	Mar. 19	815	247	13	546
Lumber for running through V-shaped flumes. Bunching	N. P. Chipman	201,330	Mar. 19	540	166	13	508
Ladder. Extension	J. S. Smith and J. M. Davis	201,844	Mar. 26	1072	326	13	588
Lamp-burner	H. C. Alexander	201,730	Mar. 26	956	293	13	572
Lamp-burner. Argand	C. M. Lungren	201,805	Mar. 26	1031	315	13	583
Lantern. Railway-	M. M. Buck	201,741	Mar. 26	967	296	13	573
Latch-fastening	B. Hollingsworth	201,675	Mar. 26	901	275	13	563
Latch for sliding doors	W. S. Carlisle	201,747	Mar. 26	972	297	13	574
Lathe. Oval-turning	H. C. Heckendorn	201,781	Mar. 26	1009	308	13	579
Lathes, &c. Friction-clutch for	J. W. Anthoine	201,587	Mar. 26	818	249	13	551
Leather-work. Cutting-block for	E. Nicholson	201,622	Mar. 26	854	259	13	556
Letter-stamping machine	A. C. Paquet	201,626	Mar. 26	858	261	13	556
Lubricating composition for journal-bearings	J. Johnson. (Reissue)	8,140	Mar. 26	1163	.....	13	592
Lubricator	J. Barry	201,731	Mar. 26	957	293	13	572
Lubricator. Vehicle-axle	L. H. Hinamann	201,673	Mar. 26	899	275	13	563
Label-holder	S. L. Lewis	201,928	Apr. 2	68	18	13	608
Lamp	C. M. Cass	201,867	Apr. 2	10	3	13	600
Lamp. Alcohol-	J. W. Cooper	201,913	Apr. 2	55	14	13	606
Lamp-burner	E. E. Townsend	202,074	Apr. 2	213	62	13	629
Lamp-extinguisher	K. G. Tunk	202,076	Apr. 2	214	63	13	629
Lamp-extinguisher	K. G. Tunk	202,077	Apr. 2	216	63	13	629
Lamp. Time-indicating night-	H. Behn, Sr.	201,864	Apr. 2	6	2	13	599
Latch. Reversible	W. E. Sparks	201,958	Apr. 2	93	27	13	613
Lathe. Gage-	J. May	201,932	Apr. 2	71	19, 20	13	609
Lathes. Cutting and boring attachment for	M. Rice	201,948	Apr. 2	84	24	13	611
Lock	L. Yale, Jr. (Reissue)	8,158	Apr. 2	242	70	13	633
Lock. Combination-	P. Shellenback	201,955	Apr. 2	90	26	13	612
Lock. Hasp-	C. Fichter	201,877	Apr. 2	20	5	13	601
Locomotives and other steam-engines. Exhaust mechanism for	H. G. Ashton	201,862	Apr. 2	5	1	13	599
Ladder. Extension-	D. D. Hays	202,169	Apr. 9	337	98	13	650
Lamp	G. H. Chinnock	202,234	Apr. 9	399	116	13	659
Lamp	H. Craighead	202,236	Apr. 9	401	117	13	660
Lamp-shade	G. H. Chinnock	202,232	Apr. 9	397	116	13	659
Lamp-shade and base. Combined	G. H. Chinnock	202,233	Apr. 9	398	116	13	659
Lavatory	A. J. Bell	202,139	Apr. 9	296	88	13	646
Leaf-turner	C. F. Spiess	202,290	Apr. 9	456	133	13	667
Leather shaving and whitening machine	J. G. Buzzell	202,226	Apr. 9	391	114	13	658
Lifting-jack	B. M. Sherman	202,197	Apr. 9	363	106	13	655
Lock-bolt and handle. Combined	W. S. Montgomery	202,186	Apr. 9	354	103	13	654
Lock. Car-seat	A. K. Waddill	202,308	Apr. 9	475	139	13	670
Locomotive head-light	C. Byrne	202,227	Apr. 9	392	115	13	658
Locomotives. Variable exhaust for	G. S. Brainerd	202,144	Apr. 9	303	90	13	646
Locomotives. Variable exhaust for	G. S. Brainerd	202,145	Apr. 9	304	90	13	646
Lubricator	W. A. Clark	202,235	Apr. 9	399	117	13	659
Lacing hook	E. Maynz	202,564	Apr. 16	764	221	13	712
Ladder. Extension-	G. M. Evans	202,426	Apr. 16	612	179	13	694
Ladder. Fire-escape	J. P. Morris	202,364	Apr. 16	551	161	13	685
Ladles for molten metal. Apparatus for mounting and transporting	W. Aiken and W. W. Drummond	202,321	Apr. 16	509	149	13	679
Lamp-burner	R. B. Perkins	202,580	Apr. 16	782	225	13	714
Lamp-wick	O. Mayo	202,358	Apr. 16	546	160	13	684
Latch	M. C. and S. S. Niles	202,573	Apr. 16	774	223	13	713
Latch	R. B. Ruggles	202,474	Apr. 16	657	192	13	700
Latch. Door-	S. Black	202,404	Apr. 16	589	175	13	690
Leather and other fibrous substances soft and flexible and impervious to gas, and composition for same. Rendering	E. Osgood. (Reissue)	8,186	Apr. 16	843	.....	13	722
Letter-sheet	L. H. Rogers	202,589	Apr. 16	790	228	13	715

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Letter-sheet and envelope	W. R. Ross	202,377	Apr. 16	565	165	13	687
Lifting-jack	S. Lesher	202,354	Apr. 16	543	159	13	684
Lightning-rods. Machine for making	T. H. Pateo	202,578	Apr. 16	580	225	13	714
Lock	G. E. Bendix	202,511	Apr. 16	689	202	13	705
Locks and latches. Spindle and fastening for door	M. C. and S. S. Niles	202,574	Apr. 16	775	223	13	713
Loom-harness	T. A. Emmons	202,339	Apr. 16	529	154	13	682
Ladder. Elevating-	P. Rutan	202,876	Apr. 23	1114	320	13	764
Lamp	W. Boekel	202,693	Apr. 23	920	263	13	739
Lamp	W. M. and J. J. Walton	202,681	Apr. 23	908	260	13	738
Lantern	A. L. Baron, E. F. Cash, and D. Rankin	202,779	Apr. 23	1005	289	13	750
Lantern. Gelatine	F. J. and G. A. Whitcher	202,687	Apr. 23	914	261	13	738
Lathe-chuck. Watchmaker's	J. E. Lavey	202,838	Apr. 23	1074	307	13	759
Leather-folding machine	R. H. Lufkin	202,844	Apr. 23	1081	309	13	760
Letter-sheet and envelope. Combined	L. H. Rogers	202,874	Apr. 23	1112	319	13	764
Lifting-jack	J. M. McClintock	202,849	Apr. 23	1085	310	13	760
Lifting-jack	N. McIntyre	202,730	Apr. 23	966	277	13	745
Lifting-jack	O. V. Price	202,666	Apr. 23	893	256	13	736
Log-turner	J. H. Driscoll and L. Balcom	202,712	Apr. 23	938	268	13	741
Logotypes. Manufacture of	G. W. Glazier	202,716	Apr. 23	942	269	13	742
Loom-picker	J. M. Parker. (Reissue)	8,191	Apr. 23	1156	332	13	769
Looms. Picker-staff strap for	E. S. Stone	202,675	Apr. 23	901	258	13	737
Lubricator	G. H. Hoagland	202,820	Apr. 23	1035	303	13	757
Lubricator	C. D. Lynch	202,736	Apr. 23	958	275, 276	13	744
Ladder. Fire-escape	W. W. Clark, B. A. and S. Bowman	203,119	Apr. 30	1360	396	13	800
Lamp-burner	G. Hillegass	203,043	Apr. 30	1289	373	13	790
Lamp. Self-lighting	E. G. Haller	203,145	Apr. 30	1301	406, 407	13	804
Latch	A. E. Dietz	203,007	Apr. 30	1254	363	13	786
Lath machine. Metal-	W. M. Parker	202,956	Apr. 30	1206	348	13	779
Lemon-squeezer	B. B. Whaley	203,029	Apr. 30	1479	433	13	815
Lint-room	R. F. Baughn and W. M. Harrison	203,103	Apr. 30	1344	391	13	798
Liquid-measure	A. Bernstein	203,105	Apr. 30	1346	391	13	798
Liquids. Apparatus for storing and discharging	S. H. Rhoades	203,194	Apr. 30	1443	91	13	811
Lock. Master-key	H. Wadsworth	203,222	Apr. 30	1471	430, 431	13	814
Lock. Permutation-	W. G. Van Buskirk	202,970	Apr. 30	1221	353	13	782
Lock. Seal-	W. Dunn	203,012	Apr. 30	1259	365	13	786
Locks and latches. Spindle-fastener for	A. Johnson	203,160	Apr. 30	1410	411	13	806
Lockets. Die for forming settings for	H. Henrich	203,040	Apr. 30	1287	343	13	790
Loom. Circular	H. Morris	203,183	Apr. 30	1431	418	13	809
Loom-picker	A. A. Gordon	203,139	Apr. 30	1383	402	13	803
Loom-shuttles. Bobbin for	J. P. Buzzell	202,929	Apr. 30	1180	340	13	776
Ladder. Fire-escape	J. R. Winters	203,517	May 7	293	84	13	864
Ladder. Step-	F. Dyer	203,327	May 7	97	28	13	833
Lamp	P. Haedicke	203,443	May 7	222	63	13	850
Lamp	N. L. Rigby	203,374	May 7	146	42	13	840
Lamp-burner	C. F. A. Hinrichs and C. Reistle	203,342	May 7	110	32	13	835
Lamp. Electric	C. F. Brush	203,411	May 7	181	52, 53	13	845
Lamp. Street-	H. S. Belden	203,237	May 7	2	1	13	821
Lamp-wick	C. C. Richmond	203,373	May 7	145	42	13	840
Last	J. E. Chenette	203,322	May 7	94	27	13	832
Lathe stone-chuck	J. Evans	203,436	May 7	213	61	13	849
Leather-dressing compound	N. and J. H. Quinlan, Jr	203,498	May 7	274	.....	13	858
Line-throwing apparatus	E. S. Hunt	203,274	May 7	39	12	13	825
Lock. Indicator-	T. Lalor. (Reissue)	8,212	May 7	303	87	13	862
Lock. Permutation-	B. F. Stewart	203,299	May 7	68	21	13	829
Locks. Register for indicator-	T. Lalor. (Reissue)	8,213	May 7	305	87	13	862
Locket	S. P. Cox	203,425	May 7	199	57	13	847
Ladder. Step-	I. Q. Sherwood	203,561	May 14	365	103	13	878
Lamp regulator. Street-	A. W. Porter	203,769	May 14	571	160	13	904
Lamp-wick raiser	J. Hinks	203,542	May 14	341	97, 98	13	876
Lantern	A. M. Daburn	203,716	May 14	517	146	13	897
Last-block fastener	G. D. Paul	203,764	May 14	566	159	13	903
Lasting-machine	H. G. Thompson	203,673	May 14	471	134	13	891
Latch	C. H. Smith	203,787	May 14	592	165	13	907
Latch. Locking-	W. Setterberg	203,783	May 14	588	164	13	906
Laundry apparatus	S. J. Gordon	203,610	May 14	406	115, 116	13	884
Lifting-jack	W. M. Crawford	203,711	May 14	513	145	13	897
Locomotives. Promoting traction in	J. A. Shinn	203,784	May 14	589	165	13	906
Loom	M. A. Furbush and C. H. Knowlton	203,722	May 14	522	148	13	898
Loom-shuttle	C. J. Schurbeck and C. A. Stevenson	203,653	May 14	448	128	13	889
Loom-shuttle motion	J. Widmer	203,572	May 14	374	105, 106	13	880
Labels, &c. Machine for counting	C. E. Sawyer	204,097	May 21	932	256, 257	13	957
Ladder. Fire-escape	J. J. Lucas	204,059	May 21	889	255	13	952
Lamp	B. B. Schneider. (Reissue)	8,250	May 21	974	278	13	962
Lamp	D. Whiteford	203,971	May 21	795	228	13	940
Last blocks. Machine for trimming	J. C. Kingston	203,840	May 21	656	187	13	922
Lathe for turning masts and spars	H. Kean	203,920	May 21	740	213	13	933
Lead-cutter	G. W. Phillippo and J. W. Owen	203,850	May 21	669	189	13	924
Leaf-turner	J. J. Vincent and G. B. McMillan	203,962	May 21	788	226	13	939
Leather or paper board. Coloring and sizing	E. Andrews	203,810	May 21	629	177	13	919
Letter sheet and envelope	C. L. Riker	203,855	May 21	673	190	13	924
Lock	J. Klinzing	204,035	May 21	885	254	13	951
Lock for doors. Extension-	J. Moore	204,070	May 21	901	258	13	954
Lock. Sash-	G. B. Sarchet	204,096	May 21	931	266	13	957
Lock. Seal-	E. J. Brooks	203,996	May 21	824	236	13	944
Loom	H. D. Davis	203,895	May 21	712	204	13	930
Lubricant	C. Johnston	203,839	May 21	655	.....	13	922
Lubricator. Vehicle-axle	L. Espenschied	203,821	May 21	640	180	13	920
Lumber-drying apparatus	R. P. Johnson. (Reissue)	8,240	May 21	962	275	13	961

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Labeling bottles	E. L. Witte	204,272	May 28	1134	325	13	987
Ladder	F. A. Copeland	204,295	May 28	1160	331	13	990
Ladder. Step-	J. J. Brady	204,191	May 28	1060	301	13	977
Lamp	J. S. Butler	204,193	May 28	1062	302	13	977
Lamp	E. S. Drake	204,303	May 28	1168	333	13	991
Lamp	E. S. Drake	204,304	May 28	1169	343	13	991
Lamp	E. S. Drake	204,305	May 28	1169	333	13	991
Lamp	E. S. Drake	204,306	May 28	1170	334	13	991
Lamp	F. G. Palmer	204,364	May 28	1233	351	13	999
Lamp for cooking	H. S. Fifield	204,144	May 28	1002	285	13	970
Lantern	C. J. Swedberg	204,361	May 28	1126	322	13	986
Lap-link	A. Perry	204,367	May 28	1236	352	13	1000
Lap-ring	H. S. Wood	204,273	May 28	1134	325	13	987
Latch. Gate-	H. Unger	204,367	May 28	1130	323	13	986
Leather. Compound for currying	E. S. Thayer	204,398	May 28	1266	.....	13	1003
Lemon squeezer and shaker. Combined	H. L. Heaton	204,325	May 28	1191	339	13	994
Lifting-jack	T. J. Woods	204,408	May 28	1276	364	13	1004
Lightning-conductor	H. W. Spang	204,257	May 28	1122	321	13	985
Lightning-rod	D. Munson	204,359	May 28	1227	350	13	999
Lock	C. C. Dickerman	204,139	May 28	995	283	13	969
Lock. Seal-	F. G. Hunter	204,226	May 28	1092	311	13	981
Lock. Vehicle-seat	D. Kirk	204,234	May 28	1099	314	13	982
Log-turner	C. and F. Strobel	204,391	May 28	1257	358	13	1002
Loom-picker	C. T. Grilley	204,213	May 28	1080	308	13	980
Loom-picking mechanism	E. P. Terrell and L. A. Williams	204,396	May 28	1262	360	13	1003
Lamp	F. Ratcliff	204,608	June 4	182	58	13	1038
Lamp	C. Spencer	204,457	June 4	42	13	13	1018
Lamp-burner	F. and C. Buehrig	204,478	June 4	60	20	13	1021
Lamp-burner	H. C. Scott	204,620	June 4	200	64	13	1040
Lamp. Hydrocarbon gas-	W. R. Park	204,448	June 4	33	11	13	1017
Lamp. Miner's	J. C. Smythe	204,628	June 4	206	66	13	1041
Lamp-wick	H. C. Scott	204,621	June 4	200	64	13	1041
Lantern. Sportmen's	A. Ferguson	204,486	June 4	64	22	13	1022
Letter-packages. Tie for	J. Merscllis	204,496	June 4	72	25	13	1022
Lighting apparatus	C. S. Wells	204,639	June 4	214	69	13	1043
Liquors, acids, and oils. Receptacle for	J. F. Reinhard	204,609	June 4	183	59	13	1038
Looms. Shedding-machine for fancy	S. Walker	204,466	June 4	48	16	13	1019
Lamp for light-houses. Self-lighting	J. Forrest	204,806	June 11	401	{117 118	13	1060
Last-block fastener	C. C. Johnson	204,830	June 11	497	126	13	1072
Leather water-proofing compound	W. P. Jenney	204,829	June 11	425	.....	13	1072
Liquid-forcing apparatus	J. Neil	204,680	June 11	264	82	13	1053
Lock. Hasp-	T. V. Allis	204,779	June 11	373	{111 112	13	1066
Loom-shuttle attachment	W. A. Doherty	204,717	June 11	305	94	13	1059
Lubricator	J. L. Knight	204,672	June 11	255	80	13	1052
Ladder. Fire-escape	S. Davis	204,952	June 18	577	169	13	1095
Ladder. Fire-escape	D. E. Gibbons	204,893	June 18	518	151	13	1088
Ladder-truss. Adjustable	G. H. Fox	204,962	June 18	588	172	13	1097
Lamp-burner. Argand	H. Preise	205,134	June 18	754	224	13	1119
Lamp. Electric	W. E. Sawyer and A. Man	205,144	June 18	767	227	13	1120
Lap-link	M. Howard	205,091	June 18	714	212	13	1114
Last-pulling machine	C. C. Johnson	205,100	June 18	721	214	13	1115
Latch	F. W. Brockaieper	205,041	June 18	662	195	13	1107
Lifting-jack	V. H. Felt	204,960	June 18	585	171	13	1096
Lock. Sash-	W. M. Griscom	205,076	June 18	698	207	13	1111
Log-slide	J. Paul	204,993	June 18	617	181	13	1100
Log-turner	G. J. Kautz	204,980	June 18	604	177	13	1099
Lubricating compound	G. G. Munger	205,124	June 18	743	.....	13	1118
Lubricator	H. Alton	204,874	June 18	497	145	13	1085
Lamp	H. P. Nichols	205,203	June 25	842	250	13	1136
Lamp-bracket	B. A. Neisser	205,291	June 25	935	277	13	1148
Lamp or lantern	J. Felt	205,181	June 25	818	243	13	1133
Lamp or lantern	C. H. Rockwell	205,422	June 25	1072	317	13	1165
Lamp-reflector	A. C. Sheldon and E. E. Pope	205,308	June 25	955	283	13	1150
Lamp socket and stand	J. Gallinger	205,376	June 25	1027	304	13	1159
Latch. Gate-	J. S. and J. Matthews	205,404	June 25	1054	312	13	1163
Latch. Reversible	M. C. and S. S. Niles	205,204	June 25	843	250	13	1136
Leather. Tramping-drum for use in the manufacture of	F. Knapp	205,399	June 25	1050	311	13	1162
Lightning-rod coupling	W. S. Reyburn and E. A. W. Hunter. (Reissue.)	8,304	June 25	1120	331	13	1172
Link-bending machine	W. Jones	205,190	June 25	827	{245 246	13	1134
Liquors. Flavoring	J. H. Thierman	205,443	June 25	1092	323	13	1168
Lock. Time-	T. F. Keating	205,275	June 25	914	271	13	1145
Locomotive. Road-	J. B. Root	205,212	June 25	850	{252 253	13	1137
Loom-picker	J. G. Garland	205,261	June 25	901	267	13	1143
Loom-stopping mechanism	J. Watters	205,451	June 25	1100	325	13	1169
Loom take-up	G. H. Holmes. (Reissue)	8,298	June 25	1113	329	13	1171
Lubricator. Vehicle-axle	A. Beausoleil	205,233	June 25	876	259	13	1140
Manure-grinder	T. C. Garlington	198,882	Jan. 1	165	47	13	34
Meal-bin	J. Thickett	198,781	Jan. 1	64	16	13	17
Meat-tenderer	C. T. Stephens	198,755	Jan. 1	27	7	13	13
Microscope	R. B. Tolles	198,782	Jan. 1	65	16	13	17
Microscope	R. B. Tolles	198,783	Jan. 1	66	16, 17	13	17
Microscopes. Object-glass for	E. Gundlach	198,914	Jan. 1	198	56	13	39
Middlings purifying and separating machine	G. Milbank	198,775	Jan. 1	54	14, 15	13	16
Molded articles. Composition for	J. P. Hayden	198,884	Jan. 1	167	.....	13	34
Molding-machine	H. Reynolds	198,856	Jan. 1	135	38	13	29
Musical instrument. Mechanical	O. H. Arno	198,866	Jan. 1	145	42	13	31
Metallic fastener	G. W. McGill	199,065	Jan. 8	373	110	13	75
Microscope	J. J. Bausch	199,015	Jan. 8	306	90	13	63

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Mill for reducing grain	C. A. W. Jaquett	199,070	Jan. 8	356	105	13	72
Mill. Grinding-	E. Harrison	199,062	Jan. 8	350	103	13	71
Mill-pick	W. B. Morris	198,906	Jan. 8	288	84	13	60
Millstone-balancing device	J. P. Moore	199,088	Jan. 8	374	111	13	75
Music-leaf turner	W. Liddell	198,990	Jan. 8	281	81	13	59
Meat-chopping machine	J. Sander	199,317	Jan. 15	622	180	13	113
Meats, &c. Apparatus for preserving	T. G. Amee	199,248	Jan. 15	546	161	13	101
Moldings. Machine for polishing	C. G. Purdy	199,166	Jan. 15	472	139	13	89
Mortising and boring machine	R. L. and R. S. Greenleo	199,285	Jan. 15	586	{171 172	13	107
Mower-knife sharpening-tool. Holder for a	F. R. Caden and T. H. McCray	199,261	Jan. 15	562	165	13	103
Muzzle. Calf-	R. S. Hazen, Sr	199,156	Jan. 15	462	136	13	88
Mail-bag catcher	J. A. Boals	199,499	Jan. 22	806	{236 237	13	150
Marble and similar surfaces. Ornamenting	G. Hubmann	199,366	Jan. 22	681	.....	13	130
Marquetry	J. Dill	199,522	Jan. 22	836	244	13	155
Mashing. Process and apparatus for	G. Ellenberger. (Reissue)	8,050	Jan. 22	930	273	13	170
Match-safe and lamp. Combined	C. Jacobi	199,444	Jan. 22	753	221	13	141
Metals, Separating molten	F. J. Seymour	199,475	Jan. 22	784	230	13	146
Middlings. Machine for preparing and treating	F. Wegmann	199,605	Jan. 22	921	270	13	168
Millstones. Feed-regulator for	C. P. Kemmerer	199,371	Jan. 22	685	201	13	130
Millstones. Feed-regulator for	W. Steele	199,591	Jan. 22	906	265	13	166
Mortar. Composition for black	C. A. Didden	199,420	Jan. 22	733	.....	13	138
Mosquito-net frame	H. Nyvall	199,566	Jan. 22	877	257	13	161
Motor. Spring-	J. Schreiber	199,470	Jan. 22	778	{228 229	13	146
Mangle. Clothes-	H. Albers	199,677	Jan. 29	1022	298	13	191
Medical powders. Machine for putting up	W. E. Heeren	199,645	Jan. 29	980	288	13	186
Medicinal agents. Pad for external application of	E. H. Flagg	199,818	Jan. 29	1155	339	13	212
Mill-feeding apparatus	D. P. Sulouff	199,877	Jan. 29	1207	354	13	220
Millstone-dressing device	R. Lytle	199,840	Jan. 29	1175	345	13	215
Millstone-dressing machine	R. Lytle	199,839	Jan. 29	1174	{344 345	13	215
Millstone-exhaust	D. Brubaker	199,688	Jan. 29	1034	301	13	193
Mosquito-bar. Portable	A. A. Cowing	199,695	Jan. 29	1040	303	13	194
Mandrel. Forging-	J. H. Alker	199,892	Feb. 5	2	1	13	233
Mill. Grinding-	S. C. Schofield	199,999	Feb. 5	106	35	13	250
Millstone-pick	H. D. Coleman	199,960	Feb. 5	70	22	13	244
Mower	G. S. Peck	199,992	Feb. 5	99	33	13	249
Musical instruments. Mouth-piece for	J. G. True	200,007	Feb. 5	111	37	13	251
Mask	F. W. Thayer	200,358	Feb. 12	479	141	13	315
Meats. Preserving	J. Brace	200,248	Feb. 12	363	.....	13	297
Medical compound	A. Owen	200,331	Feb. 12	452	.....	13	310
Miner's squib	G. Hayes	200,193	Feb. 12	310	92	13	280
Motor for propelling vehicles or mechanical horses	J. Doyle	200,266	Feb. 12	384	114	13	300
Motor. Hydraulic	J. M. Bois	200,245	Feb. 12	357	106	13	296
Mower	J. Harris	200,289	Feb. 12	404	{120 121	13	303
Mower and reaper knives. Machine for sharpening	H. F. and M. L. Bush	200,170	Feb. 12	290	86	13	286
Music-holder. Adjustable	L. D'Auria	200,262	Feb. 12	380	112	13	300
Meats. Preserving	D. C. Link. (Reissue)	8,090	Feb. 19	732	214	13	361
Mill. Grinding-	B. Whitney. (Reissue)	8,097	Feb. 19	738	216	13	362
Mill. Grinding-	B. Whitney. (Reissue)	8,098	Feb. 19	739	216	13	366
Mill-spindle bush and tram	E. G. Cushing	200,436	Feb. 19	565	167	13	334
Mill. Vertical grinding-	C. C. Phillips	200,567	Feb. 19	693	204	13	358
Motion. Converting reciprocating into rotary	E. Meredith	200,556	Feb. 19	684	201	13	352
Motor	J. K. Cummings	200,516	Feb. 19	640	188	13	346
Manure and guano distributer	R. J. Jordan and J. H. Barron	200,729	Feb. 26	882	259	13	391
Manure from night-soil. Apparatus for the manufacture of	C. M. Kimball	200,731	Feb. 26	884	260	13	391
Match-safe	G. R. Taylor	200,778	Feb. 26	927	273	13	398
Meat and vegetable cutter	W. H. Goodchild	200,709	Feb. 26	862	{253 254	13	388
Metal plates to structures. Securing	W. G. Hyndman. (Reissue)	8,100	Feb. 26	964	284	13	404
Mill. Grinding-	D. Hess	200,722	Feb. 26	875	257	13	390
Motor. Water-	J. S. Williams	200,679	Feb. 26	830	244	13	384
Magnet. Electro-	E. L. Paine	200,929	Mar. 5	108	36	13	432
Meal-bin	C. Raible	201,047	Mar. 5	228	72	13	450
Mechanical movement	J. W. Mullins	201,039	Mar. 5	220	69	13	449
Medical compound	H. and M. Hawkins	201,010	Mar. 5	188	.....	13	444
Mills. Bed-stone support for grinding-	F. G. Wallace	201,071	Mar. 5	249	79	13	524
Millstone-driver	W. E. Sergeant	201,053	Mar. 5	233	74	13	451
Millstone-exhaust	F. Teepell	200,949	Mar. 5	126	41	13	435
Mop-heads and wringers to pails. Clamp for attaching	L. Grube	201,005	Mar. 5	183	59	13	443
Motor. Spring-	E. B. Rice	200,843	Mar. 5	30	11	13	419
Mower. Lawn-	E. A. Hildreth	201,012	Mar. 5	189	60, 61	13	447
Musical instruments. Chart for key-board	F. E. Mason	201,030	Mar. 5	211	66	13	443
Mail-bag	A. Call	201,156	Mar. 12	341	105	13	473
Medicated oil	J. H. Normand and L. Dufilho	201,194	Mar. 12	375	.....	13	479
Middlings-separator	L. Gathmann	201,234	Mar. 12	419	129	13	485
Middlings-separator	L. Gathmann	201,235	Mar. 12	420	129	13	485
Motion. Apparatus for converting	W. N. Willis	201,143	Mar. 12	330	101	13	471
Mucilage-holder	S. S. Newton	201,279	Mar. 12	466	143	13	491
Mucilage-holder	G. W. Ross	201,127	Mar. 12	313	96	13	469
Music-rack	H. Warner	201,314	Mar. 12	511	156	13	496
Musical top	C. Gernert	201,106	Mar. 12	289	89	13	466
Machinery from an irregular power. Device for driving light	M. Everhart	201,399	Mar. 19	613	187	13	518
Manhole and cover	T. Kerr	201,340	Mar. 19	561	172	13	511
Marble, Artificial	J. O. Williams	201,580	Mar. 19	798	.....	13	544
Meats, Powder for curing	E. Gorges	201,344	Mar. 19	555	.....	13	510
Metal. Machine for expanding and contracting	G. W. Ford	201,403	Mar. 19	620	189	13	519
Mill for pulverizing	J. W. Hyatt	201,347	Mar. 19	558	171	13	511
Mirror and other frames	G. Eastman	201,394	Mar. 19	604	185	13	517

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Mirrors. Silvering glass	T. Carney	201,497	Mar. 19	705	.....	13	532
Molding in sand. Machine for	W. Aiken and W. W. Drummond	201,377	Mar. 19	589	101	13	515
Motor. Water-	W. F. Eyster	201,511	Mar. 19	721	219	13	534
Motor. Water-	G. W. Stith	201,464	Mar. 19	673	205	13	527
Motor. Weight-	A. Barker	201,482	Mar. 19	690	211	13	530
Mower	R. Eickemeyer	201,396	Mar. 19	605	186	13	517
Mud-pipe cleaner	H. Green	201,410	Mar. 19	624	190	13	526
Musical instruments. Valve-action for brass	T. Artaud	201,380	Mar. 19	591	181	13	515
Musical top	T. W. Harrison	201,345	Mar. 19	555	170	13	510
Measuring-gage	N. C. Larsen	201,798	Mar. 26	1025	313	13	582
Meat. Solution for preserving	F. McCulley	201,811	Mar. 26	1037	.....	13	584
Milk-stirrer	H. O. Freeman	201,771	Mar. 26	1001	306	13	578
Mill. Double vertical	J. Weimer	201,854	Mar. 26	1061	328 329	13	589
Mill. Grinding	D. Hess	201,784	Mar. 26	1012	309	13	580
Mill. Stamp	J. M. McFarland	201,692	Mar. 26	915	280	13	566
Mitering-machine	W. E. Eastman	201,657	Mar. 26	887	270	13	561
Molding-machine. Founder's	G. E. Smith	201,636	Mar. 26	868	264 265	13	558
Motor	W. D. Edgar and W. S. Day	201,761	Mar. 26	987	301 302	13	576
Motor	C. C. Gish	201,665	Mar. 26	893	272	13	562
Mill. Grinding	B. L. Smith	202,063	Apr. 2	202	59	13	627
Mills. Grinding-stones for paint	R. Byrne	201,990	Apr. 2	127	37	13	617
Millstone-dresser	T. P. Benton	201,865	Apr. 2	7	2	13	600
Millstone-driver	D. T. Staples	201,909	Apr. 2	209	61	13	628
Moldings. Machine for filling	H. S. Swayne	201,960	Apr. 2	95	27, 28	13	613
Motion. Apparatus for regulating reciprocating	A. M. Rouse	202,052	Apr. 2	191	56	13	625
Motion. Device for transmitting and arresting	B. F. Cloud	201,868	Apr. 2	11	3	13	600
Motor	C. Hüebner	201,923	Apr. 2	64	17	13	608
Motor. Spring-	F. D. Everett and A. Dubroy	202,010	Apr. 2	147	43	13	620
Mallet-handle	G. B. Goddard	202,165	Apr. 9	332	97	13	650
Mattress. Invalid	C. B. Price	202,116	Apr. 9	275	81	13	642
Meat-mixing machine	O. E. Walker	202,206	Apr. 9	370	108	13	655
Medical compound	H. Bowie	202,141	Apr. 9	300	.....	13	646
Medical compound	T. P. Childs	202,231	Apr. 9	396	.....	13	659
Medical compound	G. P. Delisser	202,246	Apr. 9	414	.....	13	661
Middlings-separator	C. H. Sinderson	202,198	Apr. 9	363	106	13	654
Mill-pick	A. W. Straub	202,299	Apr. 9	465	136	13	669
Millstones. Lubricating bearings for	J. W. Batty	202,218	Apr. 9	381	112	13	657
Meat-chopper	M. J. Stein	202,600	Apr. 16	801	231	13	716
Mirror	H. S. Wood	202,621	Apr. 16	824	238	13	719
Miter-machine	G. Lennartson	202,445	Apr. 16	632	185	13	666
Molder's flask	C. H. Porter	202,464	Apr. 16	650	190	13	699
Molding machine. Sand-	W. Aiken and W. W. Drummond	202,322	Apr. 16	510	149	13	679
Mailing-package	F. J. Grotevent	202,720	Apr. 23	945	270	13	742
Mandrel. Expanding-	F. H. Vannan	202,768	Apr. 23	996	286	13	749
Mechanical movement	J. C. Davis	202,707	Apr. 23	934	267	13	741
Medical compound	H. Falk	202,801	Apr. 23	1027	.....	13	753
Micrometer-gage	G. M. Pratt	202,866	Apr. 23	1102	316	13	763
Military accouterments	G. H. Palmer	202,663	Apr. 23	888	255	13	736
Millstones. Balancing	H. H. Kendrick	202,731	Apr. 23	954	274	13	743
Molded articles. Composition for manufacturing	W. H. Dibble	202,636	Apr. 23	859	247	13	733
Motion. Device for converting	A. G. Smyth	202,880	Apr. 23	1118	321	13	764
Motor	W. K. Azbill	202,626	Apr. 23	848	244	13	731
Match-machine	C. J. Donnelly	203,125	Apr. 30	1366	398	13	801
Mattress	H. Teats	203,089	Apr. 30	1333	387	13	797
Meat-cutting machine	C. Schiller	203,201	Apr. 30	1454	425	13	812
Meat-tenderer	L. L. Treman	203,218	Apr. 30	1468	429	13	814
Mechanical movement	P. Broadbooks	203,111	Apr. 30	1352	393	13	799
Mechanical movement	P. Broadbooks	203,112	Apr. 30	1353	394	13	799
Mill. Fanning-	P. A. Peer	203,067	Apr. 30	1310	381	13	793
Mill. Grinding-	D. J. and E. J. Ames	203,100	Apr. 30	1340	390	13	797
Mill. Grinding-	P. L. Elting	203,126	Apr. 30	1368	398	13	801
Mill. Grinding-	P. T. Elting	203,127	Apr. 30	1369	399	13	801
Millstone-ventilator	G. Moench	203,181	Apr. 30	1430	417	13	809
Motion. Device for transmitting	H. C. Hunter and J. Everding	203,155	Apr. 30	1404	410	13	806
Music-teaching device	C. M. Stauffer	203,210	Apr. 30	1462	427	13	813
Magnet. Electro-	H. M. Paine	203,492	May 7	268	77	13	857
Magnet. Polarized electro-	G. M. Phelps	203,369	May 7	140	40, 41	13	839
Metal. Machinery for working masses of	P. G. B. Westmacott	203,303	May 7	73	22	13	830
Metals. Preparing and coating	J. J. McCullough. (Reissue)	8,220	May 7	311	89	13	863
Mill. Horse-power	W. C. Pitts	203,292	May 7	61	19	13	828
Mirrors, brushes, &c. Composition frame for hand	G. Eastman	203,251	May 7	15	6	13	823
Mop holder and wringer	J. L. Sandford and W. P. Sampson	203,378	May 7	150	41	13	841
Mosquito-bar frame	C. E. Rhodes	203,291	May 7	60	19	13	828
Motive power	M. C. Kummerer and C. W. Widney	203,350	May 7	117	34	13	836
Musical instrument. Mechanical	M. Gally	203,257	May 7	21	8	13	823
Martingale-ring	D. C. Lockwood	203,631	May 14	425	122	13	886
Mattresses. Frame for supporting wire-	W. J. Boda	203,700	May 14	500	142	13	895
Meat. Prepared	E. Gunkel	203,614	May 14	408	.....	13	884
Meat. Preserving	J. J. Wheat	203,682	May 14	478	136	13	892
Meat. Salting and curing	J. J. Wheat	203,681	May 14	478	136	13	892
Meat-tenderer	C. T. Stephens. (Reissue)	8,233	May 14	626	174	13	910
Mechanical movement	E. A. Howe	203,734	May 14	535	152	13	900
Mechanical movement	J. W. Mullins	203,738	May 14	560	158	13	903
Mill. Grinding-	J. W. Price	203,645	May 14	440	125	13	888
Millstone-pick	F. Sondermeyer	203,562	May 14	365	103	13	879
Molding-machine	H. Reynolds	203,772	May 14	582	161	13	905
Motor	G. S. Petry	203,765	May 14	567	160	13	904
Medical compound	C. C. Wainwright	203,965	May 21	790	.....	13	940
Milk. Vessel for setting	J. W. Powers	203,852	May 21	670	190	13	924
Mill. Grinding-	J. Mills	203,930	May 21	750	216 217	13	935

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Mill. Grinding	A. N. Wolf	204,121	May 21	954	273	13	999
Millstones while at work. Device for leveling and tramming	J. T. Beckwith	203,878	May 21	694	199	13	927
Moccasin	J. G. Pitts	203,851	May 21	669	189	13	924
Moldings. Machine for veneering	J. A. Dayton	203,896	May 21	714	205	13	930
Magnet. Multipolar-	A. K. Eaton	204,141	May 28	999	284	13	969
Manure-spreader	J. S. Kemp. (Reissue)	8,254	May 28	1286	366	13	1006
Marble. Composition for artificial	J. F. Martin	204,348	May 28	1215	.....	13	997
Meat-chopper	E. W. Fawcett	204,209	May 28	1076	306 307	13	979
Meat-chopping machine	J. Meahl and A. Kwoczalla	204,355	May 28	1222	348	13	998
Military accouterments	C. Harkins	204,322	May 28	1188	338	13	994
Milking cows. Apparatus for	W. F. George	204,314	May 28	1179	336	13	993
Mordants and dye-stuffs. Composition to be used as	S. Cabot, Jr.	204,130	May 28	986	.....	13	968
Mosquito-bar frame	J. F. O'Sullivan and E. Bloom	204,243	May 28	1110	317	13	983
Mosquito-net frame	E. Bloom	204,187	May 28	1056	300	13	976
Mower. Lawn-	F. G. Johnson	204,153	May 28	1013	288	13	971
Mower. Lawn-	A. P. Osborne	204,242	May 28	1109	316	13	983
Mower. Lawn-	J. Shaw. (Reissue)	8,208	May 28	1303	371	13	1008
Music-box	W. Meissner	204,356	May 28	1223	348	13	998
Musical instrument. Mechanical	M. J. Matthews	204,352	May 28	1219	347	13	997
Mustache-guard	C. H. Barrows	204,125	May 28	982	279	13	967
Mailing-package	W. B. Pittman	204,603	June 4	176	56	13	1037
Meat-roaster	C. Mackh	204,590	June 4	162	53	13	1035
Mechanical movement	A. W. Utterback	204,462	June 4	45	15	13	1019
Medical compound	A. A. Solomons	204,629	June 4	206	.....	13	1041
Mill. Grinding	W. N. Cosgrove	204,541	June 4	110	37	13	1028
Millstone-cooling apparatus	W. Daniels	204,542	June 4	111	37, 38	13	1028
Mop-head	J. Porter	204,605	June 4	178	57	13	1038
Mortising-machine	D. E. Henderson	204,569	June 4	137	46	13	1032
Mucilage-holder	J. W. Silsbee	204,625	June 4	203	65	13	1041
Mangle	J. F. Baldwin	204,701	June 11	284	88, 89	13	1056
Meat-cutter	A. R. Gillis	204,811	June 11	407	119	13	1070
Middlings-separator	T. Newell	204,681	June 11	265	82	13	1053
Motor. Double-acting fluid-	D. G. Haskins	204,728	June 11	318	97	13	1060
Mask	G. W. Howland	205,093	June 18	716	212	13	1114
Mattress filling, &c. Preparing palmetto fiber and pine leaves for	W. G. Benedict	205,035	June 18	656	.....	13	1106
Motion. Device for converting	C. Cole	205,055	June 18	677	198	13	1109
Musical instrument. Mechanical	J. H. Chase	204,949	June 18	575	168	13	1095
Musical instruments. Key-board for	C. Brown	205,044	June 18	665	195	13	1107
Musical transposing-board	L. Anderson	204,876	June 18	499	145	13	1085
Mustard pot and spoon	H. J. White	204,930	June 18	557	162	13	1092
Mangle	H. Albers	205,168	June 25	806	239	13	1131
Marble. Artificial	A. Brault	205,346	June 25	997	.....	13	1156
Match-box	W. A. Morse	205,302	June 25	842	250	13	1136
Mechanical movement	J. B. Root	205,213	June 25	852	253	13	1137
Milk and provision rack	R. A. Bassett	205,170	June 25	807	240	13	1131
Mill. Disintegrating-	T. L. Sturtevant	205,440	June 25	1089	322	13	1168
Mill. Grinding-	A. H. Wagner	205,322	June 25	968	287	13	1152
Mirror for exhibiting samples. Multiplying-	L. G. Francis	205,375	June 25	1025	304	13	1159
Motion. Mechanism for transmitting	J. S. Adams	205,331	June 25	980	290	13	1154
Mucilage-bottle stopper	H. T. Cushman	205,247	June 25	889	263	13	1142
Musical notation	L. D. Holtermann	205,387	June 25	1038	308	13	1161
Nail machine. Rotary cut-	R. C. Grant	198,844	Jan. 1	121	35	13	27
Nut-lock	A. G. and R. Heinle	198,740	Jan. 1	10	2	13	10
Nut-lock	J. Pinkham	199,099	Jan. 8	385	115	13	76
Nut-lock	W. H. Sutton	199,120	Jan. 8	413	121	13	80
Neck-wear. Holder for	E. D. Dougherty	199,195	Jan. 15	500	147	13	94
Nut-lock	F. B. Davis	199,191	Jan. 15	497	146	13	94
Nut-lock	E. McConnell	199,303	Jan. 15	606	177	13	110
Nut-blanks. Machine for cutting and punching	G. B. Hill	199,546	Jan. 22	861	252	13	158
Nail machine. Cut-	J. W. Chewning, Jr.	199,791	Jan. 29	1129	331	13	208
Needle. Weaving-	H. Ball	199,774	Jan. 29	1110	326	13	205
Nut-lock	L. Landeker and H. S. Laird	199,834	Jan. 29	1170	343	13	214
Neck-tie	J. H. Fleisch	200,045	Feb. 5	156	50	13	257
Nut-lock	J. and J. Collman, Jr.	200,513	Feb. 19	638	188	13	340
Name-plate for door-knobs, &c	E. A. Webster	200,634	Feb. 26	776	229	13	376
Nail-rods. Machine for finishing	G. Gilbert	201,002	Mar. 5	121	58	13	443
Nozzle and spout. Combined ventilating	L. F. Betts	200,816	Mar. 5	2	1	13	415
Nut	A. Wieting	200,959	Mar. 5	134	44	13	436
Nut-lock	G. W. Goodwyn	200,862	Mar. 5	47	16	13	422
Needle-sharpener	C. E. Lombard	201,115	Mar. 12	302	92	13	467
Nut-lock	N. B. Acheson	201,144	Mar. 12	331	101	13	471
Nails. Spring-head for picture-	W. E. Jones	201,534	Mar. 19	746	227	13	537
Neck-tie retainer	O. P. Hurd	201,419	Mar. 19	631	193	13	521
Numbering-machine	C. Ewing	201,401	Mar. 19	616	188	13	519
Nail. Picture-	H. L. Judd	201,681	Mar. 26	905	277	13	564
Neck-tie fastener	T. W. Jones, Jr	201,792	Mar. 26	1019	311	13	581
Nut. Lock-	P. Swan and B. E. Riggs	201,716	Mar. 26	939	288	13	569
Napkin-supporter	M. Burnett	201,863	Apr. 2	6	2	13	599
Napkin-holder	L. Thompson	202,202	Apr. 9	367	107	13	655
Nut-lock	R. Dunn	202,249	Apr. 9	416	121	13	661
Nut-lock	W. Walter	202,310	Apr. 9	518	139	13	670
Nail-plate-feeding mechanism	C. Ellis	202,425	Apr. 16	611	179	13	693
Netting-machine	H. W. Thurston	202,386	Apr. 16	572	168	13	688
Nut-lock	S. Brunson	202,407	Apr. 16	592	174	13	690
Nut-lock	H. C. Stouffer	202,603	Apr. 16	805	232	13	716
Neck-tie shield	A. M. Smith and H. H. Thayer	202,673	Apr. 23	900	258	13	757
Nozzle. Bellows-	T. H. Bullock	202,700	Apr. 23	928	265	13	740
Nut-lock	G. O. Bailey, J. A. Emmert, and A. L. Cappa.	202,690	Apr. 23	917	262	13	739
Nut-lock	J. L. Hayward	202,723	Apr. 23	948	271	13	742
Nut-lock	A. Needs	202,859	Apr. 23	1094	313	13	762

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Nut-lock	W. W. Lunger	203,169	Apr. 30	1420	414	13	807
Nut-lock	R. A. Kelly	203,464	May 7	241	69	13	853
Nozzle and tap. Combined	P. S. Swain	203,672	May 14	469	134	13	891
Nut-lock	L. D. Maupin	203,633	May 14	426	122	13	886
Nut-lock	W. Whitford	203,686	May 14	484	137	13	893
Needle-wrapper	B. M. Thomas	203,958	May 21	785	225	13	939
Netting. Machine for making	W. J. Squire	203,857	May 21	675	191 / 192	13	924
Newspaper wrapping and pasting machine	P. A. Chalfant	203,888	May 21	704	201 / 202	13	929
Nut-lock	R. Ely	204,014	May 21	846	242	13	946
Nut-cracker	F. A. Humphrey	204,225	May 28	1091	311	13	981
Nail-extractor	J. C. Chapman	204,536	June 4	106	36	13	1027
Needle-wrapper	W. C. Waite	204,465	June 4	48	16	13	1019
Newspaper-folding machine	C. Kahler	204,578	June 4	145	48, 49	13	1033
Nut-lock	J. B. Lowry	204,587	June 4	159	52	13	1035
Nut-lock	A. T. Hill	204,731	June 11	321	97	13	1060
Nut-machine	J. R. Blakeslee	204,705	June 11	289	90	13	1056
Nipping and clinching tool	P. Whightsil	205,021	June 18	642	189	13	1104
Nozzle	C. E. Clark	204,950	June 18	575	168	13	1095
Nut-lock	G. H. Coffee	205,054	June 18	676	198	13	1108
Newspaper-folding machine	M. H. Rogers	205,301	June 25	944	280 / 281	13	1149
Nut-lock	W. H. Schall	205,306	June 25	953	282	13	1150
Nut-lock	W. Walter	205,222	June 25	864	255	13	1138
Oiler	J. J. Newbaker	198,808	Jan. 1	90	25	13	22
Ore-roasting apparatus	H. F. Howell	198,767	Jan. 1	46	12	13	15
Oven. Hot-blast	J. M. Smith	198,820	Jan. 1	99	28	13	23
Overshoe. Rubber	J. A. Olmstead	198,901	Jan. 1	186	52	13	37
Ore-crusher	E. Gimson	198,936	Jan. 8	227	64	13	50
Organ-stop action	H. R. Moore	199,090	Jan. 8	376	111 / 112	13	75
Ornamenting wood	T. Whitburn	199,129	Jan. 8	420	.....	13	81
Overalls	J. H. Willets	199,133	Jan. 8	425	124	13	82
Ore-separators, &c. Apparatus for collecting dust from	J. P. Conkling	199,367	Jan. 15	571	167	13	104
Ore-washing apparatus for hydraulic mining	J. M. Allenwood, (reissue)	8,037	Jan. 15	651	191	13	117
Ore-jigger	S. Bradley	199,502	Jan. 22	811	238	13	151
Organ action. Reed	L. K. Fuller	199,429	Jan. 22	739	217	13	139
Oil-cloth. Machine for rubbing	A. E. Snow	199,753	Jan. 29	1069	320	13	202
Ointment	C. J. Beattie	199,684	Jan. 29	1028	.....	13	192
Organ stop-action	W. H. Clarke	199,795	Jan. 29	1134	333	13	209
Observatory. Aerial	N. C. Lombard	199,986	Feb. 5	94	31	13	248
Oils. Vessel for storing and transporting	T. J. McGarry. (Reissue)	8,071	Feb. 5	232	71	13	269
Ozone-generator	A. W. Sangster	199,997	Feb. 5	104	34	13	249
Oil-cars. Gage for indicating the amount of water in	L. A. Heard	200,138	Feb. 12	255	77	13	281
Oils from organic substances. Manufacturing	D. M. Buie	200,168	Feb. 12	287	85	13	285
Ore-crusher	I. M. Phelps	200,336	Feb. 12	457	135	13	311
Ore-separator	S. Thomas	200,360	Feb. 12	481	142	13	315
Organ-blower	E. S. Scripture	200,349	Feb. 12	470	139	13	313
Organ. Reed	J. Meissner	200,146	Feb. 12	265	79	13	282
Oil-saver and casing-head	E. J. Northrup	200,471	Feb. 19	601	177	13	342
Organ-pipe	A. Gemünder	200,449	Feb. 19	579	171	13	337
Organ. Reed	H. F. Graetzel	200,528	Feb. 19	656	193	13	351
Overalls	H. F. Woodward. (Reissue)	8,093	Feb. 19	734	215	13	368
Ore-mill	J. W. Foulks	200,790	Feb. 26	937	276	13	400
Ore separator. Dry	G. C. Wetmore and F. S. Rice	200,808	Feb. 26	956	281 / 282	13	403
Oven. Baking	M. Nichols	200,625	Feb. 26	770	226	13	375
Obstetrical supporter	J. Loree	201,027	Mar. 5	206	65	13	447
Organ. Reed	G. Woods	200,851	Mar. 5	38	13, 14	13	421
Oiler	E. Weston	201,140	Mar. 12	326	100	13	471
Oiling wagon wheels. Device for	C. Maus	201,259	Mar. 12	446	138	13	488
Organ-reed	W. L. Merrin	201,267	Mar. 12	455	140	13	489
Oven-shelf. Drop-swinging	G. H. Phillips	201,123	Mar. 12	309	95	13	468
Oil-cup	A. S. Smith	201,362	Mar. 19	573	176	13	513
Oiling wheel-axles	H. D. Goodrich	201,518	Mar. 19	729	222	13	535
Ore crusher and grinder	C. M. Brown	201,646	Mar. 26	879	267	13	560
Organ-stop draw-knob	L. L. Hodges	201,674	Mar. 26	900	275	13	563
Oven. Domestic	A. M. Blakesley	201,736	Mar. 26	963	294	13	573
Overalls	S. Laskey	201,800	Mar. 26	1026	313	13	582
Odometer	S. T. Whittier	201,901	Apr. 2	43	11	13	605
Oil from fish. Extracting	H. Loring	201,884	Apr. 2	26	7	13	602
Oil. Treating linseed	H. A. Clark	201,992	Apr. 2	129	.....	13	618
Oven. Baker's	J. Kohnle	201,883	Apr. 2	25	7	13	602
Ordnance. Loading attachment for	D. D. Johnson	202,174	Apr. 9	341	100	13	651
Ore-separator	D. C. Roberts	202,122	Apr. 9	283	83	13	643
Oil. Machine for treating oleaginous seeds for the extraction of	A. B. Lawther	202,839	Apr. 23	1074	307	13	759
Oiler. Machine	S. Hutchinson, Jr	202,729	Apr. 23	952	273	13	743
Odometer	L. C. Perkins	203,070	Apr. 30	1312	382	13	794
Ore-crusher	P. W. Gates	202,940	Apr. 30	1189	343	13	778
Ore-crusher	P. W. Gates	202,941	Apr. 30	1190	344	13	778
Ore-crusher	A. B. Lipsey	203,054	Apr. 30	1298	377	13	792
Ore-separator	J. Collom	202,995	Apr. 30	1241	359	13	784
Organ-reed	H. K. White	203,228	Apr. 30	1478	433	13	815
Overshoe or gaiter	C. Houghton	203,152	Apr. 30	1400	409	13	805
Organ-pipe	A. A. M. Gavioli	203,438	May 7	215	61	13	849
Oakum. Manufacture of	W. E. Geer	203,723	May 14	523	.....	13	898
Oatmeal-machine	F. Schraming, Sr., and E. S. Day	203,652	May 14	448	128	13	889
Ordnance. Breech-loading	D. Tufts	203,707	May 14	602	168	13	903
Ore-crusher	S. Stutz	203,793	May 14	597	167	13	907
Ore-crusher	S. Stutz	203,794	May 14	599	167	13	907
Ore-roaster. Revolving	T. Walker	203,800	May 14	606	169	13	908

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Ore-washer	A. A. Kent	203,547	May 14	346	99	13	876
Oils by filtration and trickling. Extracting	W. Adamson and C. F. A. Simonin	203,981	May 21	905	231	13	942
Ore-separator	P. Plant	204,063	May 21	916	262	13	956
Ore-washer	C. O. Bagley	203,872	May 21	688	196	13	926
Organ stop-action	G. R. Ellis	203,901	May 21	720	206	13	931
Organs. Tremolo attachment for	J. H. Potter	203,932	May 21	752	217	13	935
Overshoes. Attachment to rubber	J. W. Baker	203,813	May 21	633	178	13	919
Oatmeal-machine	G. H. Cormack	204,137	May 28	993	282	13	969
Oatmeal-machine	D. Oliver	204,165	May 28	1025	292	13	973
Organ-case	L. C. Carpenter	204,131	May 28	987	281	13	968
Oil. Apparatus for storing and discharging	S. H. Rhoades	204,610	June 4	185	59	13	1038
Oiling slides and guides. Machine for	A. N. Bates	204,524	June 4	97	32	13	1026
Oatmeal-machine	S. Miles	204,837	June 11	439	128	13	1073
Ores, &c. Machine for crushing and grinding	T. McGlew	204,676	June 11	360	81	13	1052
Organs. Valve-tremolo for	J. H. Holden	204,732	June 11	392	98	13	1060
Ore-jigger	W. H. Plumb	204,996	June 18	620	182	13	1101
Organs. Blow-pedal for	J. H. White	205,160	June 18	784	228	13	1123
Oatmeal-machine	D. Oliver	205,253	June 25	936	278	13	1148
Oil-cloth. Making	T. Potter	205,415	June 25	1065	.....	13	1164
Oils. Apparatus for refining fat	H. T. Yaryan	205,328	June 25	977	289	13	1153
Organ. Reed	G. Blatchford	205,341	June 25	993	294	13	1155
Organ. Reed	W. O. Trowbridge	205,445	June 25	1095	324	13	1168
Ozone-generator	G. F. H. Bartlett	205,340	June 25	992	294	13	1155
Padlock	W. P. Yoe	198,918	Jan. 1	202	57	13	39
Painting wire-cloth	C. H. Waters. (Reissue)	8,022	Jan. 1	212	.....	13	40
Paper-box machine	H.R. Heyland A. Brehmer. (Reissue)	8,020	Jan. 1	206	58, 59	13	40
Paper. Machine for reducing wood to pulp for	W. H. Haskins	198,845	Jan. 1	123	35	13	28
Paper-pulp distributer for coating articles	I. Jennings	198,887	Jan. 1	169	48	13	34
Pearl surfaces. Producing imitation	F. Tuchfarber	198,758	Jan. 1	35	.....	13	13
Pen. Soluble ink	J. Perkins	198,812	Jan. 1	93	26	13	22
Pianos. Pedal attachment for	L. Mathias	198,893	Jan. 1	174	50	13	36
Pile for making skelps	D. B. Oliver	198,854	Jan. 1	132	37	13	29
Pin. Safety	W. A. Butler	198,912	Jan. 1	197	56	13	39
Pin. Safety	J. P. Lindsay	198,890	Jan. 1	171	49	13	35
Pipes. Union or joint for	J. Shaw	198,818	Jan. 1	98	27	13	23
Planter. Corn	G. W. Brown	198,760	Jan. 1	36	9	13	13
Planter. Corn	J. R. Dodge, Jr., and W. G. Mast	198,874	Jan. 1	154	44	13	32
Plow	W. L. Mathews	198,773	Jan. 1	53	14	13	16
Plow	J. M. Payne	198,902	Jan. 1	186	52	13	37
Pocket. Safety	W. V. Perry	198,753	Jan. 1	25	6	13	12
Poke	D. S. and L. W. Ludlum	198,805	Jan. 1	87	24	13	21
Press	S. R. Bartlett	198,834	Jan. 1	111	32	13	26
Press. Cotton	R. C. and J. N. Thompson	198,907	Jan. 1	192	54	13	38
Printer's composing-stick	H. C. Fenton	198,913	Jan. 1	197	56	13	39
Printing-surfaces. Producing	J. P. Jamison	198,847	Jan. 1	125	36	13	22
Printing tickets and recording cash-receipts. Device for	B. C. Pole	198,855	Jan. 1	133	38	13	29
Pump reel. Sand	M. B. McManus	198,774	Jan. 1	53	14	13	16
Packing. Elastic welted felt	I. Swope	199,002	Jan. 8	293	86	13	61
Pavement. Street	J. A. Seaman	199,110	Jan. 8	305	118	13	78
Peg-float	J. W. Fifield	199,049	Jan. 8	337	99	13	68
Pencils. Adding-register for	C. C. Fields	198,934	Jan. 8	225	63	13	50
Pipe-joint	L. T. Scofield	199,108	Jan. 8	393	117	13	78
Planter and seed-drill. Corn	S. J. and C. Welckel	199,127	Jan. 8	419	213	13	81
Planter. Corn	J. D. Smith	199,113	Jan. 8	399	119	13	78
Plow attachment	J. McBride	199,082	Jan. 8	369	109	13	74
Plow. Gang and sulky	J. R. McCormick	199,083	Jan. 8	369	109 / 110	13	74
Plow. Reversible	C. Daniel	199,036	Jan. 8	324	95	13	66
Plow. Reversible	B. F. Morris	199,093	Jan. 8	379	113	13	76
Potato-digger	S. Hartshorne	199,063	Jan. 8	350	103	13	71
Pottery-kiln	I. and G. Marsh	199,080	Jan. 8	366	108	13	74
Press. Hay	F. B. Boalt	199,021	Jan. 8	310	91	13	64
Press. Portable hay and cotton	A. A. Gehrt	199,052	Jan. 8	339	100	13	69
Printing attachment for paper-ruling machines	J. E. Taylor	199,003	Jan. 8	294	86	13	61
Propeller. Screw	E. Town	199,126	Jan. 8	418	123	13	81
Propelling boats	T. Fetherston	198,933	Jan. 8	284	63	13	50
Pruning-knife	E. Hixson	199,065	Jan. 8	352	104	13	71
Pulverizing-machine	H. B. Moore	198,993	Jan. 8	286	83	13	60
Pulverizing-machine	H. B. Moore	198,994	Jan. 8	287	84	13	60
Pump	J. A. Whitman	199,131	Jan. 8	422	124	13	81
Pump	A. S. Wright	199,136	Jan. 8	427	125	13	82
Pump and measuring-faucet combined	S. M. Cawker	198,909	Jan. 8	260	74	13	56
Pump-plunger	J. Knouse	199,074	Jan. 8	360	106	13	73
Pumping fluids from casks, &c. Apparatus for	W. F. Class. (Reissue)	8,025	Jan. 8	429	126	13	82
Pumping fluids from casks, &c. Apparatus for	W. F. Class. (Reissue)	8,026	Jan. 8	430	126	13	82
Punch. Portable hand	M. L. Gutmann	199,060	Jan. 8	348	101	13	70
Paneling-machine	H. J. Cordesman, Jr	199,268	Jan. 15	572	167	13	105
Pantaloons	J. W. Davis	199,273	Jan. 15	576	168	13	105
Paper-cutting machine	G. R. Clarke	199,146	Jan. 15	452	133	13	86
Paper shutter for windows	W. Hipkins	199,291	Jan. 15	593	173	13	108
Piano action. Upright	A. H. Hastings	199,154	Jan. 15	460	136	13	87
Piano action. Upright	C. E. and A. F. Rogers	199,314	Jan. 15	617	179 / 180	13	112
Pile	D. B. Oliver	199,311	Jan. 15	613	179	13	111
Pile-driver	N. F. Libby and P. Hatch	199,299	Jan. 15	602	176	13	109
Pin. Safety	Z. G. Pierce	199,346	Jan. 15	651	190	13	117
Pipe-coupling	C. H. Perkins	199,312	Jan. 15	615	179	13	111
Pipes. Joining the ends of lead	A. L. Bricknell	199,180	Jan. 15	485	143	13	92
Pitcher. Ale	S. Crowell	199,188	Jan. 15	495	145	13	93
Pivot-turning attachment	W. N. Manning	199,217	Jan. 15	520	153	13	97
Planter. Corn	R. H. Avery	199,344	Jan. 15	647	189 / 190	13	117
Plow	J. W. Mahoney	199,215	Jan. 15	519	152	13	97

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Plow. Sulky	C. A. Hague	199,153	Jan. 15	459	135	13	87
Pole-crab for vehicles	R. S. Grummon	199,152	Jan. 15	458	135	13	87
Post-office box	W. H. Taylor	199,331	Jan. 15	634	185	13	115
Press. Hydraulic	A. B. Lawther	199,297	Jan. 15	600	175	13	109
Press. Steam and hydraulic	J. F. Taylor	199,237	Jan. 15	537	150	13	100
Pressure-gage for steam-boilers	J. Helwig	199,157	Jan. 15	463	137	13	88
Pump. Double-acting steam	A. F. Hall	199,288	Jan. 15	590	172	13	108
Paper folding and counting machine	N. S. Clement	199,354	Jan. 22	667	195 / 196	13	123
Paper-machines. Making seams in woven wire-work for	J. Dunbar	199,359	Jan. 22	674	197	13	129
Paper panels to imitate wood	C. Hansen	199,435	Jan. 22	745	.....	13	140
Paper-pulp from salt-water fibrous plants. Manufacture of	W. E. Farrell	199,427	Jan. 22	737	.....	13	139
Pavement. Street	I. Merchant	199,562	Jan. 22	874	256	13	161
Pen. Marking	J. Schneider	199,471	Jan. 22	779	229	13	146
Pencil-sharpener	W. H. Keys	199,443	Jan. 22	756	222	13	142
Photographic-plate holder	B. F. Baltzley	199,491	Jan. 22	798	234	13	149
Photographic viguetting device	F. H. Price and A. S. Campbell	199,466	Jan. 22	774	227	13	145
Piano-hammer	A. O. Hall	199,537	Jan. 22	853	249	13	157
Picture-frames. Machine for nailing and clamping	M. Rose	199,579	Jan. 22	890	261	13	163
Pin. Safety	W. A. Butler	199,511	Jan. 22	823	240	13	153
Pins. Machine for planing octagonal blanks for clothes	A. Hall, Jr	199,364	Jan. 22	680	199	13	130
Planter. Corn	E. L. Bergstresser	199,401	Jan. 22	715	211	13	135
Planter. Corn	J. W. Fawkes. (Reissue)	8,054	Jan. 22	945	274	13	171
Planters. Check-rower attachment for corn	E. R. Carr	199,410	Jan. 22	723	213	13	137
Planters. Corn-dropper for	J. L. Wright	199,485	Jan. 22	793	233	13	148
Plow	E. H. Babcock, J. C. Whiting, and O. H. Chamberlain	199,398	Jan. 22	713	210	13	135
Plow	F. A. Barrows	199,493	Jan. 22	801	235	13	149
Plow	L. J. Lowe	199,558	Jan. 22	671	255	13	161
Plow	E. Yelser	199,608	Jan. 22	925	271	13	168
Plow, Wheel	C. L. Jackson	199,443	Jan. 22	751	220	13	141
Press. Baling	W. H. Burgess	199,509	Jan. 22	820	240	13	152
Press. Cotton and hay	G. Ertel	199,360	Jan. 22	675	198	13	129
Press. Fuel	N. Aldrich	199,394	Jan. 22	709	209	13	134
Propeller. Screw	E. J. Hulbert	199,549	Jan. 22	864	253	13	159
Propeller. Screw	E. J. Hulbert	199,550	Jan. 22	865	253	13	159
Pulley-block	E. B. Beach	199,400	Jan. 22	714	210	13	135
Pump	J. J. Stuart	199,596	Jan. 22	911	267	13	167
Pump. Force	W. F. Raymond	199,380	Jan. 22	692	203	13	132
Pump. Lubricating	E. G. Felthousen	199,428	Jan. 22	738	217	13	139
Packing-case	W. Jordan	199,718	Jan. 29	1058	310	13	197
Packing. Compound for steam	J. Johnson	199,833	Jan. 29	1169	.....	13	214
Painting barrels. Machine for	M. L. Deering	199,623	Jan. 29	967	281	13	183
Paper dish	H. L. R. Wolf	199,675	Jan. 29	1021	297	13	191
Paper pillow-sham	L. A. Weed	199,881	Jan. 29	1211	355	13	220
Paper to render it incombustible. Treating	O. Mayo	199,656	Jan. 29	1002	.....	13	188
Pen. Fountain	A. T. Cross	199,621	Jan. 29	965	280	13	183
Percentage, &c. Device for calculating	J. L. Knight	199,721	Jan. 29	1061	310	13	197
Piano-forte	E. Gabler	199,635	Jan. 29	981	285	13	185
Piano-forte action	J. Brinsmead	199,687	Jan. 29	1033	300 / 301	13	193
Pipes and hose. Coupling for soft-metal	S. A. Brumbaugh	199,784	Jan. 29	1123	329	13	207
Plaiting-machine	C. Fichter	199,813	Jan. 29	1149	338	13	211
Planter. Corn	R. Brown and W. Houston	199,783	Jan. 29	1121	329	13	207
Plow	D. P. Ferguson	199,812	Jan. 29	1149	337	13	211
Plow	A. Newsom	199,736	Jan. 29	1075	314	13	199
Plow	A. Sipe	199,750	Jan. 29	1087	319	13	201
Plow. Gang and sulky	H. L. Daniels	199,622	Jan. 29	966	281	13	183
Plow. Sulky	E. C. Budd	199,689	Jan. 29	1035	302	13	193
Plow. Sulky	S. E. Drake	199,626	Jan. 29	972	283	13	183
Plow-wheel attachment	H. Gale	199,636	Jan. 29	982	285	13	185
Pocket-book frame	C. Blust	199,778	Jan. 29	1113	321	13	205
Powder for cannons	T. T. S. Laidley	199,723	Jan. 29	1064	311	13	198
Pulley. Belt	P. Medart	199,848	Jan. 29	1183	347	13	216
Pump. Oscillating	P. A. Clark	199,792	Jan. 29	1130	332	13	208
Pump. Rotary	A. Noteman	199,737	Jan. 29	1075	315	13	199
Punch for cutting letters	J. A. Hitter, Jr	199,710	Jan. 29	1053	308	13	196
Punch for metal	S. H. Jenkins	199,715	Jan. 29	1057	309	13	197
Pan. Frying	J. Edgar and A. Bardell	200,033	Feb. 5	137	45	13	255
Paper box for packing hatchets	J. W. Sprowles	200,003	Feb. 5	108	36	13	250
Paper-pulp. Obtaining fiber from wood for	W. R. Patrick	200,085	Feb. 5	197	.....	13	264
Pavement. Street	W. H. and H. M. Stow	200,105	Feb. 5	215	67	13	266
Pen-holder	J. Hoffman and C. W. Boman	200,061	Feb. 5	171	55	13	260
Piston	W. Sprague	200,098	Feb. 5	208	65	13	265
Plane. Bench	J. B. Boyce	199,956	Feb. 5	67	21	13	248
Planter. Corn	W. M. Carriker	200,027	Feb. 5	132	43	13	254
Planter. Corn	J. V. Cloyd	200,029	Feb. 5	133	44	13	254
Planter. Corn	J. D. Pope	200,067	Feb. 5	199	62	13	264
Plotting-instrument. Surveyor's	D. F. Hitt	200,060	Feb. 5	170	55	13	259
Plow attachment	W. R. Fowler	200,047	Feb. 5	158	51	13	258
Plow. Reversible	P. Bonchet	199,954	Feb. 5	65	21	13	248
Plow. Sulky	S. T. Ferguson	200,038	Feb. 5	144	47	13	256
Plow. Sulky	W. H. Parlin	199,930	Feb. 5	43	14	13	249
Pole-sweep for vehicles	J. Ives	199,911	Feb. 5	25	8	13	246
Postal card	M. Lee	200,067	Feb. 5	176	57	13	260
Press for compressing cigars, &c., in packing boxes	F. X. Osburg	199,990	Feb. 5	97	32	13	248
Pressure gage. Steam	O. W. Bayley	199,953	Feb. 5	64	21	13	248
Projectile for heavy guns	R. Hadfield	199,973	Feb. 5	82	27	13	249
Propeller. Steering	T. F. Levens	199,985	Feb. 5	94	31	13	247
Pulley apparatus. Screw-hoisting	A. Box	199,955	Feb. 5	66	21	13	248
Pump. Air	W. S. Burgess	200,026	Feb. 5	131	43	13	254

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Pump. Steam	J. Evans	200,035	Feb. 5	141	46	13	255
Punch. Railway-conductor's alarm and fare-register-ing	R. McCully	200,077	Feb. 5	150	60	13	262
Paint. Distemper	G. I. Stevens	200,228	Feb. 12	344	.....	13	294
Paper and other fabrics. Machine for feeding, past-ing, and cutting	G. L. Jaeger	200,307	Feb. 12	423	136	13	306
Paper. Asbestus sheathing	P. C. Halpine	200,192	Feb. 12	310	92	13	289
Paper. Book of carbon	J. S. McDonald	200,145	Feb. 12	283	79	13	282
Paper collar	J. H. Hoffman and C. Spofford	200,298	Feb. 12	416	124	13	305
Paper for paper bags, and apparatus for making the same	T. Phillips	200,337	Feb. 12	458	135	13	311
Paper-machines. Doctor for	G. F. Jones	200,309	Feb. 12	426	127	13	307
Paper-machines. Wire-guide for	J. A. White	200,367	Feb. 12	492	144	13	316
Paper-making machines. Felt-washer for	G. W. Lewthwaite	200,209	Feb. 12	324	97	13	291
Paper-making machines. Suction-box for	C. Young	200,369	Feb. 12	494	145	13	317
Pattern for garments. Adjustable	U. L. Webster	200,234	Feb. 12	347	104	13	295
Pavements. Composition for	E. S. Bradford	200,123	Feb. 12	242	.....	13	279
Pen. Ruling	J. C. Moss	200,328	Feb. 12	450	133	13	310
Perforating-machine	R. W. Mackall	200,142	Feb. 12	281	78	13	282
Piano-tuning pin	J. Lautenschlager	200,207	Feb. 12	323	97	13	291
Picture-hook	R. S. Merrill	200,213	Feb. 12	326	98	13	292
Pillow. Spring	E. L. Grable	200,281	Feb. 12	388	118	13	302
Pin. Clothes	S. L. Hotchkiss	200,299	Feb. 12	416	124	13	305
Planter attachment. Corn	J. J. Carey	200,171	Feb. 12	291	86	13	286
Planter. Corn	J. W. Harbin	200,286	Feb. 12	401	119	13	303
Planter. Cotton-seed	J. Lytch	200,141	Feb. 12	259	78	13	281
Plow	H. Gale. (Reissue)	8,082	Feb. 12	500	147	13	318
Plow-colter holder	R. B. Thomson	200,220	Feb. 12	344	103	13	294
Plow. Sulky	B. C. Bradley and C. A. Hague	200,249	Feb. 12	364	108	13	297
Pocket-book frame	D. M. Read and L. Prahar	200,340	Feb. 12	460	136	13	311
Post-hole digger	M. Shutt	200,352	Feb. 12	474	140	13	314
Press. Copying	W. L. Cousland	200,131	Feb. 12	248	75	13	280
Presses. Platen for oil	S. Britt	200,250	Feb. 12	365	108	13	297
Pump	S. B. Elzey	200,185	Feb. 12	304	91	13	288
Pump governor. Steam	C. A. Sellon	200,350	Feb. 12	472	139	13	314
Paddle-wheel	L. Shook	200,577	Feb. 19	704	207	13	357
Paddle-wheel. Feathering	W. C. Smalstig	200,578	Feb. 19	705	207	13	357
Paging-machine	E. Gorenflo	200,527	Feb. 19	654	192 / 193	13	349
Paper-pulp. Machine for preparing wood for making	W. W. D. Jeffers	200,540	Feb. 19	665	196	13	351
Pen. Drawing	R. L. Walter	200,588	Feb. 19	714	210	13	359
Phonograph or speaking-machine	T. A. Edison	200,521	Feb. 19	646	191	13	348
Pillow	H. J. Buell	200,504	Feb. 19	630	185	13	346
Pin. Picket	P. J. Tweed	200,489	Feb. 19	616	182	13	344
Picture-exhibitor	J. C. Koch	200,460	Feb. 19	589	173 / 174	13	339
Pitman-connection	R. M. Lamson	200,461	Feb. 19	590	174	13	340
Planter. Corn	H. Timmermann	200,415	Feb. 19	544	161	13	333
Planter, land-roller, and fertilizer-distributer. Com-bined	R. B. Werner	200,590	Feb. 19	716	211	13	359
Planter. Seed	L. J. Corbin. (Reissue)	8,089	Feb. 19	730	214	13	361
Planters. Check-row attachment to corn	E. W. Quincy	200,407	Feb. 19	536	159	13	332
Plow	W. S. Moon	200,559	Feb. 19	687	202	13	354
Plow	J. H. Riggan	200,478	Feb. 19	607	179	13	342
Plow and seeder	P. H. Elliott	200,444	Feb. 19	574	169	13	337
Plow. Side-hill	H. F. and G. F. Shaw	200,413	Feb. 19	542	160	13	332
Plow. Sulky	R. C. Buckley	200,502	Feb. 19	628	185	13	346
Portfolio. Cabinet	J. D. Richards	200,477	Feb. 19	606	178	13	342
Postmarking and stamp-canceling machine	R. L. Grinnan	200,389	Feb. 19	521	154	13	329
Press for fruits, &c. Household	E. A. Stears	200,487	Feb. 19	615	181	13	344
Press. Seal	S. Larkin	200,548	Feb. 19	676	199	13	353
Printing pills. Machine for	W. R. Warner	200,589	Feb. 19	715	210	13	359
Punching sheet-metal tubing. Machine for	E. O. Higgins	200,454	Feb. 19	583	172	13	338
Padlock. Combination	H. M. King and S. D. Pierce	200,617	Feb. 26	763	224	13	374
Paper-bag machine	A. B. Glover	200,654	Feb. 26	803	236 / 237	13	380
Paper collar	S. Bates	200,685	Feb. 26	837	246	13	385
Peg-cutter	C. A. Corman	200,768	Feb. 26	935	275	13	400
Photograph-frame	A. Griffin	200,713	Feb. 26	868	255	13	389
Piano-forte sound-board	G. W. Lyon	200,741	Feb. 26	894	263	13	393
Pie-turner	N. P. Maddocks	200,742	Feb. 26	894	263	13	393
Planter. Cotton-seed	M. L. Nix, J. M. Stone, and L. An-derson	200,750	Feb. 26	902	265	13	395
Planters. Self-dropper for	J. Butterfield	200,692	Feb. 26	843	248	13	386
Plow	J. C. Knoblock and T. M. Bissell	200,734	Feb. 26	880	261	13	392
Plow	W. J. Pirkle	200,755	Feb. 26	906	267	13	395
Plow-clevis	D. A. Kennedy	200,730	Feb. 26	883	259	13	391
Plow. Corn	P. Brannan	200,787	Feb. 26	934	.....	13	400
Plow. Sulky	N. Elmer	200,650	Feb. 26	797	234 / 235	13	379
Plowshare and point. Manufacture of combined	C. M. French	200,707	Feb. 26	861	253	13	388
Pocket-book clasp	L. Messer. (Reissue)	8,106	Feb. 26	973	286	13	406
Potato-digger	C. O. Seamans	200,760	Feb. 26	917	270	13	397
Press. Cotton	E. M. Ivens and J. H. Dorand	200,615	Feb. 26	760	223	13	374
Printing apparatus. Traveling	K. Gray	200,711	Feb. 26	865	254	13	389
Printing. Autographic	J. Pumphrey	200,759	Feb. 26	910	.....	13	396
Pump	J. M. Willis	200,782	Feb. 26	930	273	13	399
Pump reel for deep wells. Sand	D. C. Brawley and W. H. H. Morris	200,687	Feb. 26	838	246 / 247	13	385
Padlock	H. A. Deraismes	200,990	Mar. 5	164	53	13	440
Pail and combined hoop and ears	R. H. Stilwell	201,066	Mar. 5	244	77	13	452
Paper-folding machine	E. Nordblom and L. Hansen	200,838	Mar. 5	25	8, 9	13	418
Passenger-register. Platform	S. Hastings	201,009	Mar. 5	186	60	13	444
Photographic negatives. Preparation of	G. W. Stigleman	201,065	Mar. 5	243	77	13	452

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Piano case and frame	G. Woods	200,850	Mar. 5	37	13	13	420
Picture-frame	F. H. Moore	201,035	Mar. 5	216	68	13	448
Piano. Bench	H. P. Taylor	201,068	Mar. 5	246	78	13	452
Planter. Cotton	W. H. Bowman	200,968	Mar. 5	145	47	13	438
Plow	H. Gale	200,861	Mar. 5	46	16	13	422
Plow-colter	J. Pierpont	200,842	Mar. 5	29	10	13	419
Plow-regulator	D. M. Johnson	200,919	Mar. 5	99	34	13	430
Plow. Shovel	T. W. Boyle	200,819	Mar. 5	5	2	13	415
Plow. Sulky	J. C. Leidy	201,025	Mar. 5	204	64, 65	13	446
Plow. Sulky	J. Pierpont	200,841	Mar. 5	28	10	13	419
Pneumatic, hydraulic, or steam pressure apparatus	J. W. Hyatt	200,914	Mar. 5	95	32	13	430
Pocket-book. Specie	G. W. Amesbury	200,963	Mar. 5	137	45	13	437
Policeman's club	J. Christmann	200,987	Mar. 5	162	53	13	440
Printer's quoin	G. D. Whittlesey	201,075	Mar. 5	253	80	13	453
Printing-machine. Rotary	G. Newsum	200,927	Mar. 5	106	36	13	432
Printing-press	W. H. Goldin	200,837	Mar. 5	12	4, 5	13	417
Propeller. Screw	S. Tragheim	200,951	Mar. 5	127	42	13	435
Pump. Lift and force	N. Malmquist	200,923	Mar. 5	103	35	13	431
Pump. Steam vacuum	D. M. Terry	200,881	Mar. 5	66	23	13	425
Padlock	W. F. H. Amwake	201,064	Mar. 12	268	83	13	463
Palmetto-leaves, &c. Machine for treating	G. F. Miller and W. G. Benedict	201,269	Mar. 12	457	141	13	490
Paper-bag machine	R. W. and M. Murphy	201,277	Mar. 12	463	143	13	491
Paper-bag machine	R. W. and M. Murphy	201,278	Mar. 12	465	143	13	491
Paper-pulp from wood. Manufacture of	S. M. Allen	201,063	Mar. 12	266	83	13	463
Paper-pulp. Machine for reducing wood to	N. Bly	201,152	Mar. 12	338	104	13	473
Patterns. Apparatus for grading	D. F. Hartford	201,111	Mar. 12	294	91	13	467
Paving, &c. Plastic compound for	J. S. Morel and D. R. Fletcher	201,274	Mar. 12	461	.....	13	491
Photographic camera	A. L. Hudson	201,248	Mar. 12	434	133	13	486
Planter and fertilizer-distributer. Cotton	J. A. Shine	201,204	Mar. 12	383	119	13	480
Plow	S. H. Bogenrief and W. Pattison	201,153	Mar. 12	339	104	13	473
Plow	P. H. Burns and W. G. McElhany	201,222	Mar. 12	403	124	13	482
Plow	E. J. Camp	201,225	Mar. 12	407	125	13	483
Plow	J. Nourse and J. A. Howe	201,281	Mar. 12	468	144	13	492
Plow-clevis	H. T. Noble	201,120	Mar. 12	307	94	13	468
Plow frame. Gang	J. Currie	201,097	Mar. 12	282	87	13	465
Plow. Hilling	G. A. De Long	201,099	Mar. 12	282	87, 88	13	465
Plow. Sulky	T. B. Chamberlin	201,227	Mar. 12	410	126	13	483
Pocket-book fastening	L. Messer. (Reissue)	8,123	Mar. 12	525	161	13	493
Power. Device for transmitting	J. F. Haskins	201,178	Mar. 12	359	111	13	476
Press for marking cigars	G. G. Bild	201,088	Mar. 12	271	84	13	463
Pressure regulator. Differential	S. A. Hand	201,243	Mar. 12	430	132	13	486
Pressure regulator. Steam or water	J. E. Watts. (Reissue)	8,124	Mar. 12	526	161	13	498
Printing-press	A. Campbell	201,226	Mar. 12	408	125 / 126	13	483
Propeller for vessels. Atmospheric	T. H. Neal	201,119	Mar. 12	306	93	13	468
Pump	W. S. Davis	201,164	Mar. 12	347	107	13	474
Purse. Specie	J. C. Rundlett	201,201	Mar. 12	281	118	13	480
Padlock	W. D. Spencer	201,564	Mar. 19	779	237	13	541
Painting-machine	C. T. Brandon	201,322	Mar. 19	532	163	13	507
Paper. Machine for reducing wood to pulp for	W. J. Baxendale and D. Barry	201,486	Mar. 19	695	212	13	530
Paper. Machine for reducing wood to pulp for	J. G. Moore	201,550	Mar. 19	762	232	13	539
Piano-forte action	F. St. Amant	201,461	Mar. 19	671	205	13	529
Pin. Dowel	B. F. Allen	201,378	Mar. 19	589	181	13	515
Planing-machine	J. B. Stockham	201,366	Mar. 19	577	177	13	514
Plant-duster	J. O'Brien	201,441	Mar. 19	651	199	13	523
Planter attachment. Check-row	W. Armsworth and J. H. Brown	201,479	Mar. 19	688	210	13	529
Planter. Corn	C. Berryman	201,489	Mar. 19	697	213	13	531
Planter. Corn	O. C. Green	201,521	Mar. 19	731	223	13	536
Planter. Corn	O. B. Seamans, V. A. Bryant, and H. Devling.	201,454	Mar. 19	665	202 / 203	13	526
Planter. Seed	P. B. Doty	201,508	Mar. 19	718	218 / 219	13	534
Plow	J. C. Carpenter	201,387	Mar. 19	598	183	13	516
Plow	L. Eberlé, Sr., E. Eberlé, and L. Eberlé, Jr.	201,510	Mar. 19	720	219	13	534
Plow	J. Pollock	201,355	Mar. 19	568	174	13	512
Plow	T. L. Wade	201,576	Mar. 19	791	241	13	543
Plow	C. A. Weed	201,471	Mar. 19	680	207	13	528
Plow-cutter	E. Wansbrough and W. W. Speer	201,470	Mar. 19	679	207	13	528
Press. Cotton and hay	G. W. Soule	201,465	Mar. 19	674	206	13	527
Press. Hay and cotton	P. K. Dederick. (Reissue)	8,130	Mar. 19	811	247	13	546
Printing-machine. Rotary	G. Rosquist	201,558	Mar. 19	770	234	13	540
Printing. Preparing transfer-sheets or matrices for	C. T. Moore	201,436	Mar. 19	647	197	13	528
Pulping machine. Wood	F. A. Cushman	201,501	Mar. 19	710	216	13	533
Pump and condenser for motive-power engines, &c	R. M. Marchant	201,542	Mar. 19	754	230	13	538
Pump. Ships'	J. Edson	201,336	Mar. 19	546	168	13	504
Pump-valve	J. Tregoning and M. Hastings	201,468	Mar. 19	678	207	13	528
Packing for stuffing-boxes, &c	W. F. Kearney	201,683	Mar. 26	906	277	13	564
Paddle-wheels. Adjustable float for	G. Brown	201,740	Mar. 26	966	295	13	573
Pail and tub ear	G. W. Stark	201,845	Mar. 26	1073	326	13	588
Pan machine. Sheet-metal	T. M. Powers	201,827	Mar. 26	1052	321	13	586
Paper bag	O. E. Davidson	201,755	Mar. 26	979	299	13	575
Paper-bag machine	O. E. Davidson	201,754	Mar. 26	978	299	13	575
Paper bags. Manufacture of	J. P. Raymond	201,832	Mar. 26	1060	323	13	587
Paper box	J. G. Schermerhorn	201,707	Mar. 26	931	285	13	568
Paper. Machine for damping	W. Bullock. (Reissue)	8,145	Mar. 26	1112	336	13	193
Paper-making machine	J. W. Dixon	201,757	Mar. 26	981	300	13	576
Pencil-holder	S. Hill	201,672	Mar. 26	890	274	13	563
Piano-action	W. T. Waite	201,852	Mar. 26	1079	328	13	589
Picture-hook	H. L. Judd	201,680	Mar. 26	905	276	13	564
Picture-hook	R. S. Merrill	201,695	Mar. 26	917	280	13	566
Pipes. Testing	E. P. Smith	201,841	Mar. 26	1069	.....	13	588
Planing-machine	W. R. Norris	201,624	Mar. 26	856	260 / 261	13	556

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Planter. Corn	L. V. Swisher	201,717	Mar. 26	940	289	13	569
Planter. Seed	T. B. Swan	201,715	Mar. 26	938	288	13	569
Plow	C. Koppenhefler	201,786	Mar. 26	1014	310	13	580
Plow-clevis	C. Robinson	201,837	Mar. 26	1064	324	13	587
Plow. Sulky	J. B. Fisher	201,765	Mar. 26	991	303	13	577
Plow. Sulky	H. L. Hewitt	201,670	Mar. 26	897	273 / 274	13	563
Plows. Draft attachment for	M. Harris	201,777	Mar. 26	1006	307	13	579
Plows. Harrow attachment for	J. M. McPike	201,694	Mar. 26	917	280	13	566
Pocket	Y. Chow	201,595	Mar. 26	827	252	13	552
Post-hole spade	Z. L. Hoover	201,787	Mar. 26	1015	310	13	580
Press. Gang cheese	O. B. Ross	201,838	Mar. 26	1065	324	13	587
Pressing straw, corn-stalks, &c., for fuel. Machine for	E. R. Murdock	201,820	Mar. 26	1045	319	13	585
Printers' chases. Milling-machine for dressing	R. W. Hartnett	201,780	Mar. 26	1008	308	13	579
Printer's galley	J. W. Munday	201,819	Mar. 26	1044	319	13	584
Printing-press	G. T. Frazee	201,770	Mar. 26	998	305	13	578
Propeller. Screw	J. C. Capern	201,650	Mar. 26	882	268	13	560
Pruning-knife	J. M. Helck	201,782	Mar. 26	1011	309	13	580
Pulley-block. Self-binding	W. F. Hurrell, Jr.	201,612	Mar. 26	844	256	13	554
Pulley. Sash	E. H. N. Clarkson, and W. H. H. Kealer.	201,749	Mar. 26	974	298	13	574
Pump	R. Bean	201,734	Mar. 26	961	294	13	572
Pump. Beer	E. Stewart	201,846	Mar. 26	1073	326 / 327	13	588
Pump suction-pipe	E. O. Leermo	201,689	Mar. 26	913	279	13	565
Pumps. Working barrel for oil	C. E. Weible	201,853	Mar. 26	1080	328	13	589
Padlock. Permutation	G. W. Grove	202,022	Apr. 2	159	46	13	622
Painting broom-handles. Machine for	H. Bradt and N. Van Slyck	201,866	Apr. 2	8	2, 3	13	600
Paper-making. Device for cleaning rope for	W. H. Downing and O. W. Chamberlain.	202,008	Apr. 2	144	42	13	620
Pen-holder	G. R. Bickers	201,985	Apr. 2	122	36	13	617
Pencil-sharpener	A. P. St. John	202,070	Apr. 2	210	61	13	628
Pessary	R. Lockwood	202,037	Apr. 2	179	52	13	624
Piano-string	H. W. Gray	202,020	Apr. 2	157	46	13	622
Pillow. Spring	T. W. Cardozo	201,911	Apr. 2	54	14	13	606
Potato-bug catcher	W. D. Ensign	201,916	Apr. 2	58	15	13	607
Potato-digger	D. B. Muchmore	201,888	Apr. 2	29	8	13	603
Potato-digger	W. Schwarz	201,894	Apr. 2	35	10	13	604
Pottery-ware. Machine for forming	C. Breitschwerth	201,907	Apr. 2	48	13	13	606
Printer's distributing-galley	H. G. Wilson	201,971	Apr. 2	108	32	13	615
Pump	W. Burlingham	201,909	Apr. 2	51	14	13	606
Pump and check valve. Compressible	A. W. Johnson	201,880	Apr. 2	23	6	13	602
Pan. Dust	G. Macardale	202,277	Apr 9	392	115	13	665
Paper-bag holder	S. L. Chapman	202,230	Apr. 9	395	116	13	659
Paper. Machine for making wood pulp for	R. D. Mossman	202,185	Apr. 9	353	103	13	653
Paper-pulp from wood. Machine for making	B. F. Barker	202,216	Apr. 9	380	111	13	657
Paper-pulp from wood. Machine for making	W. A. Doane	202,097	Apr. 9	255	75	13	640
Pencil-sharpener	E. D. Miller	202,183	Apr. 9	350	103	13	652
Piano-action. Electro-magnetic	M. Delaney	202,096	Apr. 9	253	74	13	639
Plaiting-machine	J. E. Wilson	202,211	Apr. 9	373	110	13	656
Planter attachment. Corn	W. F. Senter	202,196	Apr. 9	362	106	13	654
Planter. Corn and cotton-seed	B. F. Adams	202,133	Apr. 9	294	87	13	645
Planter. Seed	G. I. Butler	202,147	Apr. 9	306	91	13	647
Plow	E. Barber	202,090	Apr. 9	248	73	13	639
Plow. Sulky	A. W. Tucker	202,304	Apr. 9	471	138	13	669
Press follower. Baling	E. M. Ivens	202,110	Apr. 9	269	79	13	642
Press. Hydraulic	J. G. Steen	202,292	Apr. 9	458	134	13	668
Psychrometer	N. M. Lowe	202,276	Apr. 9	444	129	13	665
Pulleys. Friction clutch for loose and tight	J. B. Warner	202,312	Apr. 9	479	140	13	671
Pump	W. S. Laney	202,178	Apr. 9	345	101	13	652
Pump-valve	A. W. White	202,128	Apr. 9	290	85	13	644
Paddle-wheel. Feathering	T. Cullen	202,523	Apr. 16	705	205	13	706
Pan. Dust	E. E. Mann	202,357	Apr. 16	546	159	13	684
Paper boxes from pulp. Machine for the manufacture of	W. J. Keefe	202,352	Apr. 16	540	158	13	683
Paper. Ornamental	W. E. Syms	202,483	Apr. 16	665	195	13	701
Paper-pulp. Machine for making pails from	M. E. Hubbard	202,547	Apr. 16	749	216	13	710
Paper-pulp. Mechanism for pressing and finishing hollow articles of	W. J. Keefe	202,353	Apr. 16	542	158	13	683
Pen	W. M. Prince	202,465	Apr. 16	651	190	13	699
Piano	G. Caddick	202,408	Apr. 16	593	174	13	691
Piano-forte action. Upright	A. H. Hastings. (Reissue)	8,185	Apr. 16	841	242	13	722
Pillow-sham	C. A. Weed	202,387	Apr. 16	533	168	13	688
Pipe-coupling	S. P. M. Tasker	202,354	Apr. 16	570	167	13	687
Plaiting-machine	J. Hochheimer	202,346	Apr. 16	534	156	13	682
Planter. Hand corn	J. Shew	202,593	Apr. 16	706	221	13	715
Plow. Sulky	J. F. Glidden and P. W. Vaughan	202,538	Apr. 16	738	307 / 308 / 309	13	709
Plow. Sulky	H. F. Jerauld and J. W. Stolle	202,349	Apr. 16	537	157	13	683
Plow. Wheel	W. H. Whittlesey and C. T. Noble	202,615	Apr. 16	819	237	13	718
Pocket-book. Coin	A. L. Thurston	202,486	Apr. 16	667	196	13	702
Propeller-blades. Reversing	C. M. Bailey	202,396	Apr. 16	581	171	13	689
Pruning-shears	J. W. Weymouth	202,496	Apr. 16	676	198	13	703
Pruning-shears	J. Wilz	202,499	Apr. 16	679	199	13	703
Pump	H. Berg	202,512	Apr. 16	691	203	13	705
Pump	J. W. Palmer	202,577	Apr. 16	779	224	13	714
Pump. Oil	C. McCarthy and C. Giles	202,565	Apr. 16	765	221	13	712
Paper barrel	J. L. Thomson and J. Naylor, Jr.	202,890	Apr. 23	1128	334	13	766
Paper pail	A. and I. Jennings. (Reissue)	8,190	Apr. 23	1155	332	13	769
Paper-pulp. Stock-grinder for	F. A. Cushman. (Reissue)	8,197	Apr. 23	1163	334	13	770
Paper-pulp. Wood-grinder for	F. A. Cushman. (Reissue)	8,198	Apr. 23	1164	334	13	770
Paper tubes. Machine and process for making	A. G. Batchelder. (Reissue)	8,196	Apr. 23	1169	339	13	769
Pen point. Fountain	J. Holland	202,655	Apr. 23	154	269	13	735

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pens. Attachment for stenciling	F. P. Woodbury	202,713	Apr. 23	940	269	13	768
Pencil	J. Holland	202,654	Apr. 23	880	252	13	734
Pin. Clothes	H. L. Clark and A. B. Smith	202,704	Apr. 23	932	266	13	740
Pins. Die for cutting wooden	B. Chalfant	202,702	Apr. 23	930	266	13	740
Pistol-holster	W. N. Le Page	202,733	Apr. 23	956	275	13	744
Pitchforks. Machine for making	H. B. Kinney	202,658	Apr. 23	883	253	13	735
Plane. Bench	J. F. Smith	202,674	Apr. 23	900	258	13	737
Planter and fertilizer distributer. Seed	T. S. Smith and C. C. Boyle	202,878	Apr. 23	1116	320	13	764
Planter. Corn	R. H. Avery	202,025	Apr. 23	847	243	13	731
Plow	G. S. Haven	202,817	Apr. 23	1052	302	13	756
Plow	J. Oldendorph, Jr.	202,746	Apr. 21	972	279	13	746
Plow	G. W. and W. F. Wimpee	202,688	Apr. 23	916	261	13	738
Plow-colter	J. Augspurger	202,624	Apr. 23	846	243	13	731
Pocket-book clasp	L. Prahar	202,755	Apr. 23	964	283	13	747
Press. Copying	E. H. T. C. Rath	202,756	Apr. 23	964	283	13	747
Press. Hay and cotton	M. Lahaussois	202,835	Apr. 23	1071	306	13	758
Printers. Inking-roller composition for	A. A. Van Bibber	202,897	Apr. 23	1130	.....	13	766
Printing apparatus. Electro-magnetic	G. Hillen and J. Crockett	202,650	Apr. 23	876	251	13	734
Printing-machines. Lapping for	C. D. Jillson and H. Smith	202,826	Apr. 23	1062	.....	13	757
Pulley. Loose	J. Saltar, Jr	202,667	Apr. 23	894	256	13	736
Pulp-grinding machine	J. W. Brightman	202,698	Apr. 23	926	{264 265}	13	740
Pump	A. Lucasse and J. A. Newell	202,659	Apr. 23	884	254	13	735
Pump. Ammoniacal gas	J. Enright	202,641	Apr. 23	866	248	13	733
Pump. Chain	G. B. Valentine	202,896	Apr. 23	1135	326	13	766
Pump. Cream	G. A. Baron	202,778	Apr. 23	1004	289	13	750
Pump. Double-acting	C. Heister	202,725	Apr. 23	949	272	13	743
Pump. Double-acting suction and force	N. Clute	202,633	Apr. 23	856	246	13	732
Pumping-machine	A. H. Low	202,841	Apr. 23	1078	308	13	759
Packing. Oil-well	H. S. Cate	202,988	Apr. 30	1236	357	13	784
Packing. Oil-well	L. W. Headley	203,044	Apr. 30	1290	.....	13	791
Pan. Patty	S. J. Frost and H. T. Smith	202,939	Apr. 30	1189	343	13	777
Paper bag	J. Arkell, B. and A. Smith. (Reissue)	8,202	Apr. 30	1485	435	13	815
Paper basket	R. B. Crane	202,999	Apr. 30	1245	360	13	785
Paper baskets. Making seamless	R. B. Crane	203,000	Apr. 30	1246	360	13	785
Paper-cutting machine	E. R. and T. W. Sheridan. (Reissue)	8,205	Apr. 30	1489	436	13	816
Peach-cutter	J. H. Smith	203,085	Apr. 30	1330	386	13	796
Picture-rod molding	L. J. Baker. (Reissue)	8,208	Apr. 30	1492	437	13	816
Pipe and tobacco. Pocket-case for	E. S. May	203,058	Apr. 30	1301	378	13	792
Pipe-coupling	G. H. Griggs	202,942	Apr. 30	1192	344	13	778
Pistols, &c. Extension-stock for	S. W. Johnson	202,946	Apr. 30	1196	345	13	778
Pitcher. Ice	H. B. Beach	202,980	Apr. 30	1230	355	13	783
Plane. Carpenter's	L. Bailey	202,918	Apr. 30	1171	337	13	775
Planter. Corn	H. E. Foster	203,025	Apr. 30	1274	368	13	788
Planter. Corn	A. Heckman	203,149	Apr. 30	1395	408	13	805
Planter. Corn and pumpkin	P. B. Still	202,211	Apr. 30	1463	428	13	813
Planter. Seed	S. B. Davis	203,122	Apr. 30	1362	397	13	801
Plow	G. and P. Reese	203,192	Apr. 30	1441	421	13	810
Plow	J. L. Wilson and R. G. Morrow	202,972	Apr. 30	1223	353	13	782
Plow and marker. Corn	C. M. Burns	202,985	Apr. 30	1234	356	13	783
Plow-stock	S. Carnes	202,987	Apr. 30	1235	357	13	784
Plows. Riding attachment to	H. M. Freeman	203,027	Apr. 30	1276	369	13	789
Press. Baling	J. H. Simonson	203,082	Apr. 30	1326	386	13	796
Press. Hay	H. R. Smith	203,086	Apr. 30	1330	387	13	796
Pressure-regulator	W. D. Dickey	203,124	Apr. 30	1365	398	13	801
Printing-press	H. A. Manley	203,171	Apr. 30	1421	415	13	808
Pumping apparatus for oil-wells	C. Snyder	203,206	Apr. 30	1458	426	13	813
Packing. Piston-rod	A. H. Vitt	203,391	May 7	164	47	13	843
Pail. Milking	D. G. Rich	203,500	May 7	275	79	13	858
Painting-machine for flat surfaces	J. Warner	203,393	May 7	165	48	13	843
Pan. Sheet-metal	J. Edgar	203,328	May 7	98	28	13	833
Paper-cutting machine	T. S. Greenman	203,441	May 7	220	62	13	850
Paper. Manufacture of ornamental	J. F. Marsh	203,474	May 7	251	72	13	855
Paper. Reducing wood to pulp for	A. H. Fisher	203,437	May 7	214	.....	13	849
Pawl-and-ratchet device	J. D. Wright	203,519	May 7	295	84	13	861
Pen-holder	J. F. Johnson	203,460	May 7	238	68	13	853
Pen. Perforating	T. A. Edison	203,329	May 7	99	28	13	833
Pens. Support for stencil	H. Van Hoevenbergh and W. K. Applebaugh.	203,390	May 7	163	47	13	843
Piano-forte action	G. Bothner	203,407	May 7	177	51	13	845
Pipe joint. Sheet-metal	J. Moore. (Reissue)	8,214	May 7	306	87	13	862
Pitcher. Crockery	T. Loughran	203,472	May 7	249	72	13	855
Plane. Bench	R. S. Griffin	203,442	May 7	222	63	13	850
Planter. Corn	A. Wilber	203,305	May 7	76	23	13	830
Planters. Check-rower for corn	H. N. McConoughey	203,357	May 7	125	37	13	837
Plow. Sulky	J. W. Eberhart	203,432	May 7	208	60	13	848
Plows. Wheel attachment for	J. Clayton	203,420	May 7	192	55	13	847
Pocket-book	M. Schupp	203,504	May 7	278	80	13	859
Potato-digger	H. C. Miner	203,481	May 7	258	75	13	856
Press and sausage-stuffer. Lard and fruit	S. J. Keim	203,345	May 7	113	33	13	835
Pressing and molding substances into blocks. Machine for	W. Münzer	203,362	May 7	130	38	13	838
Printer's quoin	E. A. Warren. (Reissue)	8,210	May 7	302	86	13	862
Printing block. Chromatic	T. D. Osborne	203,490	May 7	267	77	13	857
Printing machine. Plate	T. C. Kenworthy and A. McGregor	203,465	May 7	241	69, 70	13	853
Printing-press	E. L. Gilman	203,335	May 7	103	30	13	834
Pump	S. M. Cole	203,421	May 7	193	56	13	847
Pump-rod attachment for deep wells	V. C. Gilmore	203,260	May 7	25	8	13	824
Pumps. Motor for operating	J. W. Law	203,280	May 7	45	14	13	826
Packing case or box for bottles	A. Hackelberg	203,727	May 14	526	149	13	898
Packing for piston and other rods	W. Crain	203,596	May 14	376	112	13	882
Packing. Piston	G. R. Nebinger	203,639	May 14	431	124	13	887
Paper-boards. Machinery for making	C. Wheelen and L. Knerr, Jr	203,684	May 14	480	{136 137}	13	893

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Paper vessels, &c. Die for pressing	J. Stevens	203,670	May 14	468	133	13	891
Pencil. Artificial slate	R. Lanstrom	203,549	May 14	353	.....	13	877
Pencils. Machine for sharpening	F. Livingston	203,550	May 14	353	100	13	877
Picture-rod molding	L. J. Baker	203,526	May 14	323	91	13	873
Pictures. Producing metallic	F. Tuchfarber	203,568	May 14	371	.....	13	879
Pipe. Leader	P. Saueressig	203,781	May 14	585	164	13	906
Plow-point	D. Wolf	203,690	May 14	489	138	13	894
Precious stones, shells, &c. Cutting	T. Peiter	203,641	May 14	436	.....	13	887
Press. Brick	A. A. Moore	203,735	May 14	536	157	13	902
Press. Cotton	S. Pope	203,644	May 14	439	125	13	888
Printing-machines. Sheet-delivering apparatus for	C. B. Cottrell	203,710	May 14	511	145	13	897
Printing-machines. Sheet-delivery apparatus for	C. B. Cottrell	203,709	May 14	510	145	13	896
Purse	A. Vogel	203,678	May 14	475	135	13	892
Painting canvas. Machine for	W. Levin	203,849	May 21	661	188	13	923
Paper and other fabrics. Machine for pasting together and drying rolls or continuous sheets of	J. Caller	203,886	May 21	702	201	13	928
Paper box	G. A. Dunn	203,899	May 21	719	206	13	931
Paper-cutting machines. Expanding-drum for	W. E. Hudson	203,833	May 21	650	185	13	921
Paper felt, and other fabrics. Machine for finishing	W. Scranton	204,100	May 21	935	267	13	958
Paper or cloth. Finishing the surfaces of	C. E. Sawyer	204,098	May 21	933	.....	13	957
Paper-pulp from wood. Rotary grinding-machine for the manufacture of	W. R. Patrick	204,077	May 21	909	260	13	955
Paper-pulp. Machine for preparing wood fiber for	J. C. McIntyre	203,928	May 21	748	216	13	935
Paper-weight and copy-holder. Combined	D. Zimmer	203,806	May 21	683	194	13	926
Pen-holder	J. Hoffman	204,041	May 21	982	279	13	959
Pen. Writing	L. B. Bertram. (Reissue)	8,242	May 21	964	275	13	961
Piano-forte	C. F. T. Steinway	204,108	May 21	943	270	13	959
Piano-forte action	C. F. T. Steinway	204,107	May 21	942	{269 270}	13	959
Piano-forte agraffe	C. F. T. Steinway	204,109	May 21	944	270	13	959
Piano-forte. Grand	C. F. T. Steinway	204,106	May 21	941	269	13	958
Piano-fortes. Capodastre-frame for	C. F. T. Steinway	204,111	May 21	946	271	13	959
Piano-fortes. Sounding-board for	C. F. T. Steinway	204,110	May 21	945	270	13	959
Pin. Brooch	J. Jenkins	204,047	May 21	876	251	13	950
Pipe. Cement and asphaltum	M. Allen	204,869	May 21	686	195	13	926
Pipe joint. Water	F. P. Hallberg	204,033	May 21	866	248	13	949
Planing-machine	J. B. D. Leavitt	204,056	May 21	886	254	13	952
Planter. Corn	G. W. Brown	203,997	May 21	826	{236 237}	13	944
Planter. Corn	D. and D. F. Lase. (Reissue)	8,245	May 21	967	276	13	962
Planter. Corn	A. and M. Runstetler	204,093	May 21	926	265	13	957
Planter. Cotton	W. S. Turner	203,960	May 21	786	225	13	939
Planter. Seed	W. C. Smith	203,951	May 21	777	223	13	938
Plow-stock	I. J. Saunders	203,948	May 21	774	222	13	938
Plow. Sulky	J. B. Fisher	203,963	May 21	722	207	13	931
Plow. Sulky	W. C. Rogers	204,091	May 21	924	264	13	956
Press. Baling	J. R. Blossom	203,880	May 21	696	199	13	927
Press. Shingle	R. A. Stahn	203,955	May 21	783	224	13	939
Propellers. Bearing for screw	J. Baird	204,875	May 21	691	{197 198}	13	927
Pump	J. S. Beal	203,814	May 21	633	178	13	919
Pump	T. Dowling. (Reissue)	8,243	May 21	965	276	13	961
Pump for oil-wells. Steam	H. W. Fancett	204,015	May 21	847	242	13	947
Paddle-wheel	A. Wingard	204,180	May 28	1040	296	13	975
Paddle-wheel. Aerial	R. W. Cowan and C. Page	204,296	May 28	1161	332	13	990
Paper and other fabrics. Marbleizing	G. Grossheim	204,146	May 28	1005	286	13	970
Paper-pulp from wood. Manufacture of	H. B. Meech. (Reissue)	8,256	May 28	1229	367	13	1006
Paper-pulp from wood. Manufacture of	H. B. Meech. (Reissue)	8,257	May 28	1230	367	13	1006
Paper-pulp from wood. Manufacture of	H. B. Meech. (Reissue)	8,258	May 28	1230	368	13	1006
Paper-pulp pail	E. Hubbard	204,223	May 28	1089	311	13	981
Pea-nut warmer	F. A. Bowdoin	204,190	May 28	1059	301	13	977
Pen. Fountain	T. H. and J. E. Quinn	204,371	May 28	1239	353	13	1000
Pencil-sharpener and eraser. Combined	W. Sellers	204,169	May 28	1029	293	13	973
Piano-forte tuning attachment	H. F. Jacobs	204,152	May 28	1012	287	13	971
Piano-fortes. Hand-guide for	M. Sudderick	204,260	May 28	1126	321	13	985
Pipe. Stand	E. Lewis and W. A. Maloney	204,344	May 28	1210	345	13	996
Planing and sawing wood. Machine for	W. H. Webb	204,403	May 28	1270	362	13	1004
Planter and plow. Corn	D. Hays	204,218	May 28	1085	309	13	981
Planter. Corn	H. Steckler, Jr	204,390	May 28	1256	358	13	1002
Plow	T. M. Moore	204,358	May 28	1226	349	13	998
Plow	F. Nitschmann	204,361	May 28	1230	350	13	999
Plow-clevis	E. A. Sanders	204,253	May 28	1119	320	13	985
Pocket for garments	Y. Chow	204,199	May 28	1067	304	13	978
Pole. Carriage	A. R. Bartram. (Reissue)	8,253	May 28	1283	366	13	1005
Post-office apparatus	G. W. Wiles	204,270	May 28	1133	324	13	987
Press. Cotton	E. L. Morse	204,240	May 28	1107	316	13	983
Press. Cotton	W. H. Tate and J. E. Curtis	204,395	May 28	1261	360	13	1003
Press. Power	J. L. Lewis	204,158	May 28	1018	290	13	972
Pump	A. S. Baker	204,280	May 28	1142	327	13	988
Pumps. Machinery for operating	J. W. Hull. (Reissue)	8,262	May 28	1297	369	13	1007
Punching and beveling metal. Machine for	J. Morgan. (Reissue)	8,251	May 28	1283	365	13	1005
Paper. Wall	J. S. Monroe	204,446	June 4	31	.....	13	1017
Patterns. Gate for	W. Taylor	204,510	June 4	84	28	13	1024
Pavement. Wood	H. Akerhielm	204,414	June 4	1	1	13	1013
Picks, &c. Manufacture of	J. Besler	204,417	June 4	4	1, 2	13	1013
Pin. Metallic tent	A. S. Daggett	204,425	June 4	11	4	13	1014
Pipe-coupling nipple	C. M. Handover	204,506	June 4	134	45	13	1031
Planter. Hand corn and bean	A. Hoag	204,574	June 4	142	47	13	1033
Plate-holder	J. and J. Stock	204,632	June 4	209	67	13	1042
Plow	H. R. Underhill	204,513	June 4	85	29	13	1025
Plow-colter	C. Daniels	204,494	June 4	63	21	13	1021
Plow. Sulky	E. Wiard and G. C. Avery	204,517	June 4	90	30, 31	13	1025
Plow. Wheel	N. Rowen and G. Amis	204,612	June 4	188	60	13	1039
Power. Apparatus for transferring	J. W. Hawley	204,508	June 4	135	45, 46	13	1032

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Press. Cotton and hay	S. T. McCanless	204,442	June 4	28	9	13	1016
Printer's composing-stick	O. F. Grover	204,432	June 4	17	6	13	1015
Printer's measuring-scale	W. G. Perris	204,601	June 4	174	56	13	1037
Propeller. Screw	W. S. Hull	204,575	June 4	142	47	13	1033
Pulley. Sash	B. D. Washburn	204,468	June 4	51	16	13	1019
Pump. Centrifugal	C. Chadwick	204,535	June 4	105	35	13	1027
Pump. Steam	M. Schultz	204,619	June 4	199	63	13	1040
Packing. Piston	M. Schneble	204,766	June 11	356	107	13	1064
Packing. Steam and hydraulic	C. S. C. Symonds	204,860	June 11	457	134	13	1076
Pail. Milk	S. Crane	204,802	June 11	398	116	13	1069
Paper bag	J. Arkell	204,720	June 11	375	112	13	1066
Paper chair seat and back	N. Harwood	204,667	June 11	251	78	13	1051
Paper-folding machine	W. Spalckhaver	204,772	June 11	361	108, 109, 110	13	1065
Pavement. Composition	J. C. Russell	204,763	June 11	351	.....	13	1064
Peat bricks. Apparatus for the manufacture of	F. Hack	204,816	June 11	412	121	13	1071
Pen. Fountain	J. W. Stanton	204,857	June 11	455	133	13	1076
Photographic pictures. Developing	H. Rundle	204,760	June 11	349	.....	13	1064
Piano-forte action	G. W. Neill	204,752	June 11	341	103	13	1063
Picture-rod molding	H. F. Nye	204,754	June 11	343	104	13	1063
Pictures. Producing panoramic	H. Decker	204,657	June 11	241	75	13	1050
Plaiting-machine	W. Beukler	204,704	June 11	288	89, 90	13	1056
Planing timber. Machine for	H. Atkinson	204,781	June 11	377	112	13	1066
Planter, cultivator, and cotton-chopper. Combined	R. Sarlls and A. Kelman	204,765	June 11	354	106	13	1064
Planter. Seed	R. O. Bean	204,703	June 11	287	89	13	1056
Plants. Machine for distributing poison upon	J. Goodheart	204,720	June 11	307	95	13	1059
Plow attachment	J. D. Munson	204,841	June 11	442	129	13	1074
Plow. Steam	J. Beard	204,790	June 11	386	114	13	1068
Pocket for garments	B. Grechebaum	204,723	June 11	312	95	13	1059
Pole tip. Vehicle	S. Maneer	204,744	June 11	333	101	13	1062
Pot-lid	W. Geary	204,810	June 11	406	119	13	1070
Press for molding plates, &c., from veneers and other materials. Hot	G. Gardner	204,808	June 11	404	118	13	1070
Press. Hay	J. Price	204,757	June 11	346	105	13	1064
Presses. Mat for oil	A. C. Lausten and A. B. Lawther	204,742	June 11	331	100	13	1062
Printer's quoin	H. A. Hempel	204,820	June 11	415	122	13	1071
Printing-surfaces. Metallic plate for the formation of	J. Brown	204,795	June 11	391	.....	13	1068
Packing. Piston	W. P. Woodruff	205,165	June 18	787	234	13	1124
Painting wire-cloth. Apparatus for	M. Kennedy	204,981	June 18	605	177	13	1099
Pan. Bake	C. Jackson	204,975	June 18	599	175	13	1098
Paper bag	N. J. Alexander	205,028	June 18	650	192	13	1105
Paper-bag machine	F. E. Porter	205,133	June 18	749	223, 224	13	1118
Photographic-printing frame	E. M. Seitz	205,146	June 18	773	228	13	1121
Piano-stringing device	S. Mennig	204,908	June 18	532	155	13	1089
Pin. Clothes	M. Warren	204,927	June 18	555	161	13	1092
Pin. Safety	J. Q. A. Treaize	205,154	June 18	780	231	13	1123
Pipe-coupling	T. T. Farnsworth	205,069	June 18	692	204	13	1111
Pipe-coupling	G. Westinghouse, Jr. (Reissue)	8,291	June 18	798	236	13	1125
Planter. Corn	T. W. Tyler and W. C. Baskin	204,925	June 18	552	161	13	1092
Planter. Seed	J. C. Barlow	204,941	June 18	567	166	13	1094
Planter. Seed	J. Laude	204,983	June 18	607	178	13	1099
Planter. Seed	A. J. West	205,020	June 18	641	188, 189	13	1104
Plow	J. Lane	204,902	June 18	527	154	13	1089
Plow and attachment. Turning	R. Wixson	205,164	June 18	787	233	13	1124
Plow. Sulky	F. M. Foster	204,890	June 18	515	150	13	1087
Plow. Sulky	G. W. Wright	205,025	June 18	645	190	13	1105
Plow. Vineyard	M. Ross	204,998	June 18	622	182	13	1101
Potato-slicer	A. Harrington	204,895	June 18	520	152	13	1088
Press. Baling	H. D. Coleman	205,056	June 18	677	199	13	1109
Press. Butter	N. S. Long	205,109	June 18	730	217	13	1116
Press. Cigar-packer	N. Du Brul	205,065	June 18	687	201	13	1110
Press for extracting water from starch and other substances	H. W. Scholler	204,918	June 18	544	158	13	1091
Press. Hay and cotton	P. K. Dederick. (Reissue)	8,292	June 18	800	237	13	1126
Press. Wool	W. Tipton	205,013	June 18	635	187	13	1103
Printing-presses. Inking apparatus for	W. P. Kidder	204,900	June 18	524	153	13	1088
Propeller. Screw	M. Chase	205,053	June 18	675	198	13	1108
Pulley. Belt-shifting	J. J. White	204,929	June 18	557	162	13	1092
Pulverizer. Soil	S. McColm	204,968	June 18	611	179	13	1100
Pulverizing apparatus	H. Bolthoff	204,945	June 18	571	167	13	1095
Pump	C. H. Duwelius and H. Crivel	204,958	June 18	583	171	13	1096
Pump. Double-acting	H. J. Humphrey	204,973	June 18	597	174	13	1098
Pump. Double-action	C. A. Carr	205,052	June 18	675	198	13	1108
Pump. Submerged	B. J. C. Howe	204,896	June 18	521	152	13	1088
Packing. Steam	E. Robinson	205,421	June 25	1071	317	13	1165
Padlock	W. Bohannan	205,171	June 25	808	240	13	1131
Padlock	J. W. Gable	205,183	June 25	821	243	13	1131
Paper, &c. Reducing wood to pulp for	B. F. Brown	205,347	June 25	998	295	13	1156
Pen. Fountain	C. Stockmann	205,437	June 25	1085	321	13	1167
Pen. Pneumatic stencil	T. A. Edison	205,370	June 25	1022	302	13	1158
Pessary	J. W. Dawson	205,363	June 25	1015	300	13	1158
Piano-stool	J. Bramble and H. M. Deihl. (Reissue.)	8,294	June 25	1107	328	13	1170
Picture-frame	A. S. Davis	205,250	June 25	891	264	13	1142
Pile-driver	G. H. Cavanagh	205,244	June 25	887	262	13	1141
Planing machine. Box	J. Mannebach	205,401	June 25	1052	312	13	1163
Planing machine. Wood	J. Richards. (Reissue)	8,297	June 25	1111	329	13	1171
Planter. Check-row corn	H. N. McConoughey	205,283	June 25	924	275	13	1146
Planter. Seed	R. L. Cleveland	205,174	June 25	811	241	13	1132
Plow	N. P. Bowsher	205,236	June 25	879	260	13	1140
Plow	R. W. Workman	205,458	June 25	1104	327	13	1170

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Plow and harrow. Combined	J. C. Teague	205,317	June 25	964	285	13	1151
Plow. Ditching	A. Wiley	205,325	June 25	976	289	13	1153
Plows. Draft-adjuster for	W. A. Woodward	205,327	June 25	977	289	13	1153
Pole for agricultural implements	L. B. Kenney	205,397	June 25	1049	311	13	1162
Potato-digger	A. N. Smiley	205,310	June 25	956	283	13	1151
Press. Baling	P. K. Dederick. (Reissue)	8,296	June 25	1110	329	13	1171
Printing machine. Spool	M. W. Brush and J. J. Hartnett	205,173	June 25	810	241	13	1131
Printing-machines. Inking apparatus for	J. F. Hubbard	205,189	June 25	826	245	13	1133
Printing-press	C. B. Cottrell	205,357	June 25	1008	298	13	1157
Projectile for ordnance	H. Reilly. (Reissue)	8,308	June 25	1124	332	13	1172
Pulley frame. Sash	O. S. Garretson	205,184	June 25	822	244	13	1133
Railway. Inclined-plane	R. Knudsen	198,888	Jan. 1	170	48	13	35
Refrigerator	E. B. Jewett	198,768	Jan. 1	48	12, 13	13	15
Reservoir and wash-stand. Combined	A. D. Lufkin	198,770	Jan. 1	50	13	13	15
Rowlock	R. R. and E. Spedden	198,821	Jan. 1	100	28	13	23
Rake. Horse hay	T. C. Lord	199,077	Jan. 8	362	107	13	73
Rake. Horse hay	S. H. Powers	199,103	Jan. 8	387	116	13	77
Rakes. Manufacture of metal	E. Sims	199,111	Jan. 8	397	118	13	78
Retort for separating zinc from gold and silver alloys	E. Balbach, Jr. (Reissue)	8,029	Jan. 8	433	127	13	83
Rowlock	J. A. Baines	199,011	Jan. 8	302	89	13	63
Rubber roll. Vulcanized	A. Spadone	199,116	Jan. 8	407	120	13	79
Radiator. Steam	W. H. Brown	199,257	Jan. 15	556	163	13	103
Rails. Chair for switch	S. H. Havens	199,155	Jan. 15	461	136	13	88
Railway-signal	M. A. Stevens	199,234	Jan. 15	535	158	13	99
Rake. Horse hay	M. C. Burr	199,143	Jan. 15	449	132, 133	13	86
Rake. Horse hay	A. Tschop	199,239	Jan. 15	538	159	13	100
Rectifying apparatus	A. J. and A. B. Gallagher	199,281	Jan. 15	583	170	13	107
Rectifying apparatus	A. J. and A. B. Gallagher	199,282	Jan. 15	584	171	13	107
Refrigerator shipping-box	C. H. and M. C. Turner	199,332	Jan. 15	636	185	13	115
Refrigerators, &c. Non-conducting casing for	J. Sproat	199,324	Jan. 15	628	182, 183	13	114
Roof and floor. Fire-proof	F. L. Kane	199,210	Jan. 15	515	151	13	96
Ruler	H. M. Barrows and W. Kennish	199,253	Jan. 15	551	162	13	102
Rail-joint	H. W. Hammersmith	199,437	Jan. 22	747	219	13	140
Railway-signal	A. R. Swift	199,384	Jan. 22	697	204	13	132
Railway-signal. Electric	F. L. Pope. (Reissue)	8,044	Jan. 22	928	271, 272	13	169
Railway-signal. Electric	F. L. Pope. (Reissue)	8,045	Jan. 22	932	272	13	169
Railway-switch	D. Pollock	199,570	Jan. 22	882	259	13	162
Rake. Horse hay	W. Adriance	199,486	Jan. 22	794	233	13	148
Rake. Horse hay	W. Aldrich	199,487	Jan. 22	795	233	13	148
Rake. Horse hay	J. C. Holton	199,440	Jan. 22	749	220	13	141
Rawhides. Machine for boarding or breaking	W. Coupe	199,415	Jan. 22	727	214	13	137
Rivet-setting machine	M. Bray	199,503	Jan. 22	812	238	13	151
Rolling and straightening metal bars. Machine for	S. Trethewey	199,482	Jan. 22	790	232	13	147
Rolling metals. Roll for	D. Jones	199,368	Jan. 22	683	200	13	130
Rolling-mill	C. H. Morgan	199,459	Jan. 22	769	225	13	144
Rowing-machine	G. Goldie	199,432	Jan. 22	742	218	13	140
Rubber article	H. P. Dunbar and T. C. Lothrop. (Reissue.)	8,043	Jan. 22	727	271	13	169
Ruler. Quadrant, parallel section-line	G. Soltmann	199,588	Jan. 22	903	264	13	165
Radiator	W. F. Cunningham	199,799	Jan. 29	1137	334	13	209
Rail-joint	G. E. Morris and C. W. Gregory. (Reissue.)	8,050	Jan. 29	1221	350	13	222
Raker and loader. Hay	W. W. Dean	199,805	Jan. 29	1144	336	13	210
Ribbon-block	T. Hagerty	199,641	Jan. 29	987	287	13	186
Rule and gage. Board	D. L. Densmore	199,807	Jan. 29	1145	336	13	210
Railway cattle-guard	J. W. Street	199,941	Feb. 5	54	17	13	241
Railway-rail joint	J. B. Allen	200,013	Feb. 5	118	39	13	252
Railway-switches. Electric signaling apparatus for	S. C. Hendrickson	199,977	Feb. 5	85	28	13	246
Railway tube. Wire-rope	W. Eppelsheimer	199,901	Feb. 5	11	4	13	234
Railways. Tube for wire-rope	W. Eppelsheimer	199,900	Feb. 5	10	3	13	234
Rake. Horse hay	W. Reno	199,994	Feb. 5	102	33	13	249
Ram. Hydraulic	I. B. Millington	200,081	Feb. 5	194	61	13	263
Refrigerator	G. E. Acklom	199,891	Feb. 5	1	1	13	233
Refrigerator	J. D. Racey	199,993	Feb. 5	101	33	13	249
Rock-boring machine, (hydraulic)	A. Brandt	200,024	Feb. 5	128	42	13	253
Roofing. Applying nail-heads on metal	J. L. Boyer	199,957	Feb. 5	68	22	13	243
Rule for making straight and circular lines	W. V. Marshall	199,917	Feb. 5	32	10	13	237
Rails and ties from cars. Unloading	D. S. Moore	200,148	Feb. 12	266	79	13	282
Railway-switch	W. Spielman	200,353	Feb. 12	475	140	13	314
Range. Cooking	N. A. Boynton	200,247	Feb. 12	361	107, 108	13	297
Reel	S. A. Elliott	200,268	Feb. 12	387	114	13	301
Refrigerator for cooling beer kegs and bottles	J. Cawood	200,129	Feb. 12	247	75	13	280
Register	H. Clarke	200,259	Feb. 12	374	110, 111, 112, 113	13	299
Roll. Crushing	G. Daverio	200,263	Feb. 12	380	114	13	300
Roof. Composition	M. B. Bailey	200,122	Feb. 12	242	73	13	279
Ruler. Parallel	J. C. Moss	200,216	Feb. 12	339	99	13	292
Rain-gage	L. Dunne and E. T. C. Richmond	200,443	Feb. 19	572	169	13	337
Rake. Hand	W. M. White	200,592	Feb. 19	719	211	13	350
Rolling metal. Mill for	J. H. Swett	200,582	Feb. 19	709	208, 209	13	358
Ruling machine. Paper	J. McAdams	200,553	Feb. 19	681	200	13	353
Radiator. Steam	W. H. Brown	200,601	Feb. 26	746	219	13	371
Railway-track	G. Lehlback	200,737	Feb. 26	891	262	13	392
Recarburizer for use in the pneumatic process	R. W. Hunt and A. Wendel	200,724	Feb. 26	877	.....	13	390
Refrigerating apparatus	J. L. Alberger. (Reissue)	8,109	Feb. 26	979	288	13	406
Refrigerator for cooling articles under ground	S. P. Miller	200,624	Feb. 26	768	226	13	375
Register	J. Bennor and P. Pond	200,642	Feb. 26	788	232	13	378

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Invention.	Name.	No.	Date.	Monthly Volume. Spec.	Monthly Volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Rolling blanks for carriage-axle clips. Machine for	E. D. Clapp and F. Van Patten	200,603	Feb. 26	749	219, 220	13	372
Radiator. Steam-	J. H. Cunningham	200,983	Mar. 5	158	52	13	440
Railway. Elevated	A. Brandon	200,969	Mar. 5	146	47	13	438
Refrigerator-box	G. D. Cunliffe	200,982	Mar. 5	157	51	13	440
Radiator. Steam-	W. H. Brown	201,091	Mar. 12	274	85	13	464
Rail-joint	E. J. Roberts	201,290	Mar. 12	480	147	13	493
Rake	W. H. Kretsinger	201,254	Mar. 12	440	136	13	488
Range. Cooking-	W. H. Barnes	201,086	Mar. 12	269	84	13	463
Rivets or clasps. Machinery for applying	E. Morse	201,192	Mar. 12	372	116	13	478
Rivets. Tool for cutting	A. S. McDowell	201,262	Mar. 12	450	139	13	488
Rolling plate-metal. Roll for	S. T. Wellman	201,211	Mar. 12	392	121	13	481
Roofs. Ridge-saddle for	W. Darby	201,098	Mar. 12	282	87	13	465
Railway. Street-	J. R. Beckett. (Reissue)	8,125	Mar. 19	804	245	13	544
Rake. Hand-	J. Benedict	201,320	Mar. 19	531	163	13	505
Rake. Hand hay-	D. J. Starrett	201,365	Mar. 19	556	177	13	512
Range. Cooking and heating	J. Briggs	201,494	Mar. 19	703	214	13	531
Railway-rail-joint fastening	J. M. Bucklin	201,647	Mar. 26	889	208	13	560
Railway-rails. Woolen key for securing	J. Sample, J. Grantham, W. M. Ward, and M. Waddle.	201,839	Mar. 26	1067	325	13	588
Railway-switch	H. H. Potter	201,826	Mar. 26	1051	321	13	586
Railway-track	H. A. Haarmann	201,667	Mar. 26	895	273	13	562
Rake. Horse hay-	E. D. and O. B. Reynolds	201,833	Mar. 26	1061	323	13	587
Refrigerator	D. A. Stevens	201,713	Mar. 26	935	287	13	569
Refrigerator	W. Wheeler	201,639	Mar. 26	872	265	13	559
Revolvers. Charging-magazine for	R. White	201,855	Mar. 26	1082	329	13	590
Rings. Device for sizing	E. Davies	201,654	Mar. 26	885	269	13	561
Rosette-awl Machine for making wood	J. H. Burnshow	201,742	Mar. 26	967	296	13	574
Rule, square, and comb. Combined	G. R. Drew	201,599	Mar. 26	832	253	13	553
Railway-switch	R. Gray	202,021	Apr. 2	157	46	13	622
Railway-switch	J. C. Rautz	201,945	Apr. 2	82	23	13	611
Rake. Horse hay-	C. La Dow. (Reissue)	8,157	Apr. 2	240	70	13	633
Rein-holder	G. H. Hess	202,029	Apr. 2	168	49	12	623
Rolling sucker-rod blanks. Machine for	J. H. Alker	201,861	Apr. 2	2	1	13	599
Rudder	J. L. Knight	201,927	Apr. 2	67	18	13	608
Radiator. Steam-	J. R. Reed	202,192	Apr. 9	358	105	13	653
Rails. Pilo for re-rolling old	L. Jones	202,266	Apr. 9	432	126	13	664
Rake. Horse hay-	W. B. Jackson	202,173	Apr. 9	341	99	13	651
Rein-holder	G. and H. Piper	202,189	Apr. 9	356	104	13	653
Revenue-register	S. J. Tucker	202,305	Apr. 9	472	138	13	670
Railing. Metallic	W. H. Brines	202,405	Apr. 16	590	173	13	690
Railway-frog	L. Murphy	202,455	Apr. 16	642	187	13	698
Railway-track	T. W. Travis	202,607	Apr. 16	809	234	13	717
Raw hides. Machine for boarding and breaking	W. Coupe	202,414	Apr. 16	597	176	13	691
Razor-strop	J. Lamont. (Reissue)	8,181	Apr. 16	857	241	13	721
Reamer. Hand-	F. W. Wild	202,618	Apr. 16	822	237	13	716
Refrigerating apparatus	H. and J. Bell, and J. J. Coleman	202,509	Apr. 16	687	202	13	705
Retorts, crucibles, &c. Machine for making	W. Morgan	202,366	Apr. 16	553	162	13	685
Revolvers. Charging-magazine and holster for	R. White	202,613	Apr. 16	815	236	13	718
Roof. Gravel	E. B. Warren	202,493	Apr. 16	673	197	13	702
Rail. Compound	C. Conrad	202,635	Apr. 23	858	247	13	732
Railway-switch	J. W. Close	202,632	Apr. 23	854	245, 246	13	732
Railway turn-tables, &c. Locking device for	E. H. Johnston	202,828	Apr. 23	1065	305	13	758
Rake. Horse hay-	E. Knapp	202,833	Apr. 23	1069	306	13	758
Rake. Horse hay-	S. Ritty	202,871	Apr. 23	1108	318	13	763
Refrigerator	A. C. Rand	202,867	Apr. 23	1103	316, 317	13	763
Roof battening	N. H. Brown	202,784	Apr. 23	1012	290	13	751
Roofing fabric	C. M. Warren	202,902	Apr. 23	1142	327	13	767
Rail. Curved street-	W. W. Humphrey	202,945	Apr. 30	1195	345	13	778
Railway-switch	C. F. Gessert	203,133	Apr. 30	1378	401	13	802
Rasp-machine	C. F. Mudge and G. Whittaker	203,064	Apr. 30	1305	379, 380	13	793
Rivers. Removing bars of	H. F. Knapp. (Reissue)	8,204	Apr. 30	1488	435	13	816
Rivet	P. Clifford	202,994	Apr. 30	1240	359	13	784
Roofing-tile	H. E. Merrill	202,953	Apr. 30	1203	347	13	779
Railway track. Street-	J. A. Kirby	203,463	May 7	240	69	13	853
Retort-lifter	F. W. Wilson	203,397	May 7	169	49	13	844
Retort. Metallic	W. H. Seaman	203,379	May 7	151	43	13	841
Roll. Crushing and grinding	D. C. Newell	203,364	May 7	135	39	13	838
Roofing-slates. Fastening	G. Maranville	203,353	May 7	124	35	13	836
Rope tramway and apparatus	T. H. Day	203,249	May 7	12	5	13	822
Railway-chair	I. Wells	203,570	May 14	372	105	13	879
Rake. Cranberry-	A. K. Gile	203,538	May 14	338	96	13	875
Rake. Horse hay-	J. Deuel	203,601	May 14	399	113	13	883
Rakes. Machine for constructing hand-	N. B. Holcomb	203,732	May 14	533	151	13	899
Register	H. Clarke	203,707	May 14	505	143, 144	13	896
Register	W. C. McGill	203,749	May 14	552	156	13	902
Register and time-recorder. Electric	W. A. Wilson	203,689	May 14	486	138	13	894
Rowlock	C. C. Price, Jr	203,770	May 14	572	161	13	904
Railway-crossing	J. H. Sparkes	203,953	May 21	781	224	13	938
Railway. Portable	N. W. Condict, Jr	204,007	May 21	840	240	13	945
Railway-track. Portable	N. W. Condict, Jr	204,006	May 21	839	240	13	945
Rake. Hay-	A. Rigby	204,090	May 21	924	264	13	956
Refrigerating milk-wagons. Measuring attachment for	P. T. Weir	203,969	May 21	793	227	13	940
Rice-hulling machine	W. C. Howard	203,917	May 21	737	212	13	933
Rivet	M. Bray	203,815	May 21	634	178	13	919
Rivets. Machine for inserting	T. Boardman	203,882	May 21	698	200	13	928
Rudder for canal-boats	J. Supple	203,859	May 21	678	193	13	925
Railway-gate	C. P. Austin	204,279	May 28	1141	326, 327	13	988

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Railway-gate	J. M. McCaffrey and J. Larkin	204,160	May 28	1030	290	13	972
Railway-rail joint	O. Pagen	204,363	May 28	1232	351	13	999
Refrigerator	R. T. Hambrook	204,216	May 28	1083	309	13	980
Rein guide. Check-	A. L. Whitney	204,269	May 28	1132	324	13	987
Rowlock	I. C. Mayo	204,159	May 28	1019	290	13	972
Rubber-cutting machine	C. Ford, J. M. Slade, and F. Baylies.	204,145	May 28	1003	285	13	970
Rule. Lumber-	A. J. Colburn	204,293	May 28	1158	331	13	990
Radiator. Steam-	T. W. H. Mosely	204,445	June 4	30	10	13	1017
Rake and loader. Hay	E. G. Hastings	204,567	June 4	134	45	13	1032
Refrigerator-building	J. Lorenze and F. W. Bender	204,586	June 4	158	51	13	1035
Rendering apparatus	T. I. Alberdingk	204,471	June 4	53	17	13	1030
Riveting device	E. Bourne	204,476	June 4	57	18, 19	13	1030
Rowlock	J. W. Norcross	204,598	June 4	170	55	13	1037
Railway-switch	J. Briody	204,710	June 11	295	92	13	1057
Railway-switch	E. H. Bronson	204,711	June 11	298	92	13	1058
Rake. Horse hay-	J. H. Melick. (Reissue)	8,279	June 11	489	141	13	1080
Rivet-setting machine	M. Bray. (Reissue)	8,276	June 11	484	140	13	1079
Rope-holder	J. Mizner	204,838	June 11	440	129	13	1073
Rope-holding device	R. B. White	204,692	June 11	277	86	13	1055
Rules. Registering attachment for measuring	W. Holmström	204,823	June 11	412	123	13	1071
Rails. Rerolling old	T. Glaze and W. Westwater	205,074	June 18	696	205, 206	13	1111
Railway-frog	L. H. North	205,126	June 18	744	221	13	1118
Rake and baling-press. Hay-	R. B. and P. Wright	205,026	June 18	646	191	13	1105
Rattan working apparatus	G. P. Overin and J. H. Coldwell	204,992	June 18	616	181	13	1100
Rein-holding attachment for harness	J. M. Taylor and J. Mackay	205,008	June 18	630	185	13	1102
Reservoir and stove-pipe shelf. Combined water-	J. W. Barton	204,942	June 18	569	166	13	1094
Ripping and cutting device. Combined	C. Bean	205,034	June 18	655	193	13	1106
Rolling mill. Metal-	W. R. Jenkins, Jr	204,976	June 18	600	175, 176	13	1098
Roof covering and sheathing	W. H. Kershaw	204,899	June 18	523	153	13	1086
Roofing	L. Peirce	205,132	June 18	749	223	13	1118
Roofing. Saturated sheathing for	W. H. Rankin	205,135	June 18	756	.....	13	1119
Rail-joint	L. I. Baker and L. O. Root	205,338	June 25	990	293	13	1155
Rail-joint	O. Eckert and J. W. Levan	205,369	June 25	1021	302	13	1158
Rail-joint	W. A. Hawthorn	205,265	June 25	904	268	13	1144
Rail-joint	A. Meharry	205,287	June 25	930	276	13	1147
Railway ditching-machine	D. Horrie	205,270	June 25	908	269	13	1144
Railway-switch bar	R. Gurley	205,379	June 25	1030	305	13	1159
Roofing. Sheet-metal	W. S. Grafton	205,186	June 25	824	244	13	1133
Roofing. Sheet-metal	M. Horrie	205,188	June 25	825	244	13	1133
Roofs. Closing seams of sheet-metal	H. E. Bottum	205,172	June 25	809	240	13	1131
Rowlock	J. Forbes, Jr	205,372	June 25	1023	303	13	1159
Sash-balance	C. Messenger	198,896	Jan. 1	176	50	13	36
Sash-fastener	S. Cole	198,795	Jan. 1	78	21	13	19
Sash-fastener	C. E. Stellier	198,861	Jan. 1	139	40	13	30
Scales for weighing pasteboard	F. Fairbanks and T. Spooner	198,877	Jan. 1	161	45	13	33
Scales for weighing. Pendulum-	N. H. Putney	198,815	Jan. 1	95	26	13	22
Scraper. Road-	J. Fleming	198,880	Jan. 1	163	46	13	34
Seeder. Broad-cast	H. H. Monroe	198,750	Jan. 1	21	5	13	12
Sewing-machine feeding mechanism	T. K. Keith	198,915	Jan. 1	199	56	13	39
Sewing-machines. Trimming mechanism for	T. Briggs	198,790	Jan. 1	74	19	13	19
Shaft-tug	J. and W. B. Miller	198,851	Jan. 1	130	37	13	29
Sled-runner attachment for vehicles	F. Kuempel	198,748	Jan. 1	19	5	13	11
Spark-arrester	W. T. Urie	198,919	Jan. 1	203	57	13	39
Spark-extinguisher	B. V. Crumrine	198,796	Jan. 1	79	21	13	20
Spine diseases. Machine for treating	M. Case	198,871	Jan. 1	151	43	13	32
Spinning-mules. Shipping mechanism for	A. Howland and H. Lawton	198,742	Jan. 1	12	3	13	10
Spring-hook	G. E. Perrin	198,813	Jan. 1	94	26	13	22
Steam-generator. Water-tube	W. P. Trowbridge	198,863	Jan. 1	141	40, 41	13	30
Steamer. Culinary	H. T. King	198,769	Jan. 1	49	13	13	15
Steel. Apparatus for hardening and tempering sheet-	A. Lüttges	198,804	Jan. 1	87	24	13	21
Stone-breaker	S. L. Marsden	198,849	Jan. 1	127	36	13	28
Stove-pipe expander and contractor	H. Imhof	198,886	Jan. 1	168	47	13	34
Stoves. Grate for cooking and heating	P. Symons	198,823	Jan. 1	101	29	13	24
Strainer. Milk-	J. D. Sechler	198,905	Jan. 1	190	53, 54	13	38
Stump-extractor	I. O. Sailor	198,817	Jan. 1	97	27	13	23
Saddle and pad screw cutter	R. M. Selleck	198,955	Jan. 8	245	70	13	53
Saddle-bags	A. Hoff	199,067	Jan. 8	353	104	13	71
Saw-mill-carriage attachment	A. J. McCollum and T. Seely	199,024	Jan. 8	371	110	13	74
Sawing-machines. Gage for	O. Bonney, Jr	198,963	Jan. 8	253	72	13	55
Scaffold. Ladder-	W. Kyle	198,947	Jan. 8	237	68	13	52
Screw-driver	W. L. Gilchrist	198,935	Jan. 8	226	64	13	50
Screw-tap. Collapsible	J. M. Johnson	198,945	Jan. 8	236	67	13	52
Sewer-trap	W. A. Pitt	199,100	Jan. 8	385	115	13	76
Sewing-machine	G. Hancock. (Reissue)	8,028	Jan. 8	432	127	13	83
Sewing-machine. Revolving-hook	J. W. Corey	198,970	Jan. 8	261	74, 75	13	56
Shafts and axles. Anti-friction bearing for rotary	J. Lange and A. Eisenbraun	198,987	Jan. 8	279	80	13	59
Sheet-metal elbow	A. Syverson. (Reissue)	8,031	Jan. 8	435	128	13	83
Sheet metal. Machine for drying and scouring	A. P. Hine	198,980	Jan. 8	270	78	13	57
Sheet-metal plates. Marking	H. Wood	199,135	Jan. 8	426	125	13	82
Shingles made fire-proof. Wooden	G. B. Smith	199,001	Jan. 8	283	.....	13	61
Show-case	F. A. Howell	198,982	Jan. 8	272	78	13	58
Show-stand for Christmas-trees, &c	J. C. Eckardt	199,044	Jan. 8	331	97	13	67
Shutter. Window-	G. Hayes	198,979	Jan. 8	269	77	13	57
Skate. Roller-	S. A. Allen	199,009	Jan. 8	300	88	13	62
Slate. Covering the sides and roofs of buildings with	E. N. Leslie	199,075	Jan. 8	361	107	13	73
Snuff-package	B. F. Weyman	199,128	Jan. 8	420	123	13	81
Soap. Medicated	E. L. Moodie	199,087	Jan. 8	373	.....	13	75
Spooling-machines. Bobbin-holder for	H. Doak	199,040	Jan. 8	327	96	13	66
Springs. Fastening for seat	Z. Cobb	198,930	Jan. 8	221	62	13	50
Spring. Vehicle	L. J. Bazzoni	199,016	Jan. 8	306	90	13	63
Spring equalizer. Vehicle	D. C. Markham	198,948	Jan. 8	238	68	13	52
Stave-making machine	J. Greenwood	199,057	Jan. 8	345	101	13	70

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stove and furnace lining	A. S. Hodges	198,940	Jan. 8	230	65	13	51
Stove-ovens. Platform-door for	E. Barrows	199,013	Jan. 8	304	89	13	63
Stoves and ranges. Water-boiler for	E. Stumm	199,119	Jan. 8	412	121	13	80
Strainer. Gravy-	J. Schelder	198,999	Jan. 8	291	85	13	61
Sugar. Apparatus for refining raw	G. A. Jasper	198,944	Jan. 8	235	67	13	51
Sugar. Refining raw	G. A. Jasper	198,943	Jan. 8	234	66	13	51
Sulky	J. F. Pray	199,104	Jan. 8	388	116	13	77
Switch-signal	D. Rousseau	199,107	Jan. 8	391	117	13	78
Sad-iron	J. B. Stamour	199,325	Jan. 15	629	183	13	114
Sash-fastener	I. Cogswell	199,265	Jan. 15	570	166	13	104
Sash-fastener	W. T. Doremus	199,194	Jan. 15	499	147	13	94
Satchel, traveling-bag, &c.	I. Schener	199,229	Jan. 15	530	156	13	99
Saw-mill dog	C. J. Leach	198,213	Jan. 15	517	152	13	96
Saw-set	W. C. Wheeler	199,338	Jan. 15	641	187	13	116
Saws. Machine for manufacturing circular	W. E. Nickerson	199,308	Jan. 15	610	178	13	111
Screen. Window-	J. C. Walker and T. H. Hunt	199,335	Jan. 15	639	186, 187	13	115
Sewer-trap	W. Torney and C. N. Tillotson	199,238	Jan. 15	538	159	13	100
Sewers. Check-valve for	C. Naeher	199,307	Jan. 15	609	178	13	111
Sewing-machine. Button-hole	T. S. L. Howard	199,206	Jan. 15	511	150	13	96
Sewing-machine darning attachment	R. M. Rose	199,315	Jan. 15	620	180	13	112
Shaft-supporter for carriage-harness	G. C. Eastman	199,148	Jan. 15	435	134	13	86
Shedding mechanism	O. Piper	199,223	Jan. 15	525	154	13	98
Sheep-shears. Power	J. C. Wightman	199,243	Jan. 15	542	160	13	101
Shutter-fastening	J. H. Clark	199,302	Jan. 15	562	165	13	104
Sink-trap	H. W. Clapp	199,145	Jan. 15	451	133	13	86
Skirt. Hoop-	F. A. Brewster. (Reissue)	8,040	Jan. 15	654	191	13	118
Snatch-block	M. H. Tarbox	199,235	Jan. 15	536	158	13	100
Spring for vehicles. Torsion-	W. H. Brace	199,256	Jan. 15	555	163	13	102
Spring. Platform-	M. C. West	199,336	Jan. 15	640	187	13	115
Spring. Vehicle-	G. Stricker	199,329	Jan. 15	633	184	13	115
Sprinkler. Garden-	A. Hodel and F. A. Stauber	199,293	Jan. 15	595	174	13	108
Squares. Spacing T-	J. D. Day	199,192	Jan. 15	498	146	13	94
Stamp. Canceling-	H. A. Coats	199,185	Jan. 15	493	145	13	93
Stamp. Hand-	W. H. Keeler	199,295	Jan. 15	597	174	13	109
Stencil-plate	D. G. Garretson	199,197	Jan. 15	502	148	13	95
Stone-sawing machinery	J. Langstaff	199,160	Jan. 15	466	137	13	88
Stove. Coal-oil	J. A. Frey	199,290	Jan. 15	592	170	13	107
Stove-grate	J. A. Lawson	199,296	Jan. 15	599	175	13	109
Stoves and ranges. Reversible center-piece for	J. Dutot and W. H. Thrift	199,275	Jan. 15	578	169	13	106
Suppository	F. D. Owen	199,221	Jan. 15	524	.....	13	98
Safe. Burglar-proof	D. O. Paige	199,567	Jan. 22	878	257, 258	13	142
Satchel and traveling-bag handle	G. Havell. (Reissue)	8,051	Jan. 22	940	274	13	170
Saw-filing machine	O. W. Le Mar	199,453	Jan. 22	759	223, 224	13	143
Saw-mill dog	B. D. Whitney	199,387	Jan. 22	700	205	13	133
Saw-mill head-block	B. D. Whitney	199,386	Jan. 22	699	205	13	133
Scales. Platform-	W. B. Daniels	199,356	Jan. 22	671	197	13	128
Screen. Window-	C. Matheny	199,560	Jan. 22	873	255	13	161
Screw-cutting-die holder	J. F. Brinckmann	199,408	Jan. 22	721	212	13	136
Sewing-machine. Straw-braid	C. F. Bosworth	199,500	Jan. 22	808	237	13	150
Shearing machine. Animal-	R. T. Smith. (Reissue)	8,052	Jan. 22	941	274	13	171
Shutter	A. Bijur	199,402	Jan. 22	716	211	13	135
Sifter. Ash-	A. B. Kingsbury	199,449	Jan. 22	757	222	13	142
Sink-trap	J. H. Codding	199,413	Jan. 22	726	213	13	137
Sled-propeller	J. B. Erwin	199,361	Jan. 22	676	198	13	129
Spark-arrester	A. O. Denio	199,521	Jan. 29	836	244	13	154
Spinning-ring	J. W. Wattles	199,604	Jan. 22	920	269	13	168
Spring. Door-	H. C. Steinhoff	199,383	Jan. 22	696	204	13	132
Square and protractor. Centering-	E. Ericson	199,425	Jan. 22	736	216	13	139
Stall. Horse-	J. H. Clark	199,411	Jan. 22	724	213	13	137
Stamp. Hand-	W. T. Morgans	199,460	Jan. 22	770	226	13	144
Steam. Device for absorbing the noise of escaping	G. H. Buzzell	199,312	Jan. 22	824	241	13	153
Stove. Car-	F. C. Conley	199,414	Jan. 29	726	214	13	136
Stove. Oil-	P. Martin	199,456	Jan. 22	767	224, 225	13	144
Stove-pipe thimble	H. Dixon and F. W. Unverferth	199,423	Jan. 22	734	216	13	138
Stove-polish liquid	G. G. Briggs	199,407	Jan. 22	720	.....	13	136
Stove. Wood heating-	S. S. Jewett	199,446	Jan. 22	754	221	13	142
Stoves. Attachment to kerosene-	A. Freeman	199,531	Jan. 22	848	248	13	156
Stoves, &c. Draft apparatus for	J. B. Andrews	199,396	Jan. 22	711	209	13	134
Stoves. Shelf for cooking-	W. A. King	199,555	Jan. 22	869	254	13	160
Syringe	B. F. Sutton	199,479	Jan. 22	788	231	13	147
Saccharine matters from air. Separating	E. K. Richards	199,864	Jan. 29	1194	351	13	218
Sails. Reefing fore-and-aft	T. Petersen	199,739	Jan. 29	1077	315	13	200
Saw. Circular	J. F. Milligan	199,851	Jan. 29	1185	348	13	216
Saw. Circular	J. F. Milligan	199,852	Jan. 29	1185	348	13	216
Saw-mill head-block	E. H. Stearns	199,667	Jan. 29	1012	295	13	190
Sawing machine. Scroll-	R. McChesney	199,845	Jan. 29	1180	346	13	215
Scale-platform	F. Fairbanks	199,811	Jan. 29	1148	337	13	211
Scales. Weighing-	C. Becker	199,776	Jan. 29	1111	326	13	205
Scraper. Road-	J. Stubbs	199,756	Jan. 29	1092	320	13	202
Screw-cutting die	F. E. and F. O. Wells	199,673	Jan. 29	1019	297	13	191
Scrubbing-machine	A. F. Stockley	199,875	Jan. 29	1204	354	13	219
Seed-dropper	J. T. Wright	199,889	Jan. 29	1218	358	13	221
Sewer-valve	J. Dikeman	199,696	Jan. 29	1041	304	13	194
Sewing-machine	A. Beck. (Reissue)	8,063	Jan. 29	1225	360	13	222
Sewing machine. Boot and shoe	C. Dancel	199,802	Jan. 29	1140	335	13	210
Sewing machines. Throat-plate for boot and shoe	J. S. Turner	199,759	Jan. 29	1094	321	13	203
Shoe. Low	T. J. Greenwood	199,639	Jan. 29	984	286	13	185
Skate	G. Klotz	199,720	Jan. 29	1060	310	13	197
Skate. Roller-	E. Robinson	199,664	Jan. 29	1009	294	13	189
Slate. Composition for	H. Pattengell	199,859	Jan. 29	1191	.....	13	217

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Spool-box	G. Harrington	199,644	Jan. 29	989	288	13	186
Spool rack. Rope	B. F. Felix and W. Scharnweber	199,631	Jan. 29	977	284	13	184
Spring. Carriage-	J. W. and W. J. Hewitt	199,646	Jan. 29	993	289	13	187
Spring. Door-	A. W. Pierce	199,740	Jan. 29	1078	316	13	200
Spring for vehicles. Torsion-	W. Evans and W. H. Sparks	199,810	Jan. 29	1147	337	13	211
Spring. Locomotive-	J. Jenkins. (Reissue)	8,057	Jan. 29	1220	358	13	221
Springs. Rubber cushion for vehicle-	W. B. West	199,826	Jan. 29	1215	357	13	221
Sprinkler. Lawn-	H. G. Fiske	199,816	Jan. 29	1152	338	13	212
Square and bevel. Try-	I. J. Robinson. (Reissue)	8,058	Jan. 29	1221	358	13	222
Stave-dressing machine	H. H. Miller	199,730	Jan. 29	1069	313	13	199
Steam condensing and gas and air compressing apparatus.	E. Bürgin	199,786	Jan. 29	1224	330	13	207
Steam-generator	T. L. Jones	199,648	Jan. 29	995	289, 290	13	187
Steam-generator. Water-tube	A. D. Brock	199,782	Jan. 29	1118	328, 329	13	206
Stirrup-suspender for riding-saddles	L. F. Johnston	199,716	Jan. 29	1057	309	13	197
Stove and range grate	S. Smyth	199,752	Jan. 29	1089	319	13	202
Stove. Heating and ventilating	J. R. Walls	199,672	Jan. 29	1018	296	13	190
Stove-leg	F. S. Berry	199,777	Jan. 29	1112	326	13	205
Stove-leg	D. Walther	199,763	Jan. 29	1100	323	13	204
Stove-pipe adjuster	W. P. Cook	199,618	Jan. 29	963	280	13	182
Stoves. Cooking attachment to coal-oil	A. H. Underwood	199,671	Jan. 29	1016	296	13	190
Stoves. Fire-plate for	H. L. McAvoy	199,844	Jan. 29	1179	346	13	215
Stoves. Revolving grate for cook-	W. Smith	199,870	Jan. 29	1201	352	13	219
Straw-cutter	W. V. and D. J. Dorault	199,808	Jan. 29	1145	336	13	210
Suspender-strap	L. Netzner	199,659	Jan. 29	1004	292	13	189
Syringe. Enema-	M. Maltson	199,843	Jan. 29	1177	346	13	215
Sash-fastener	A. W. Lozier	199,916	Feb. 5	31	10	13	237
Sash-fastener	M. McComb	199,920	Feb. 5	34	11	13	238
Saw. Circular	J. K. Lockwood. (Reissue)	8,076	Feb. 5	237	72	13	270
Saw-set	J. F. Fields	200,040	Feb. 5	148	48	13	256
Saw-teeth. Swage for	N. W. Spaulding	200,097	Feb. 5	207	65	13	265
Saws. Apparatus for hardening and tempering	S. E. Farmer	199,968	Feb. 5	78	25	13	245
Screw. Wood-	H. C. Stone	200,104	Feb. 5	214	67	13	266
Seed-dropper	A. Vannorman	200,110	Feb. 5	221	68	13	267
Sewing-machine attachments. Retainer for	G. Rehfuss	200,090	Feb. 5	201	63	13	264
Sewing-machine caster	B. F. Ryder	200,092	Feb. 5	203	64	13	265
Sewing machine. Straw-braid	F. Blackburn and V. Mocslcin	200,022	Feb. 5	126	42	13	253
Sewing-machine. Wax-thread	J. H. Walker	200,111	Feb. 5	222	68	13	267
Sewing-machine waxing device	M. H. Pearson	199,991	Feb. 5	98	32	13	249
Shears	E. Van Noorden	199,943	Feb. 5	55	18	13	241
Shingle-packing machine	W. A. Bennett	199,895	Feb. 5	4	2	13	233
Shingle-sawing machine	W. J. Sherburne	199,939	Feb. 5	51	16, 17	13	241
Shirt and drawers. Combined	E. S. Bennett. (Reissue)	8,068	Feb. 5	230	70	13	268
Shoe	W. H. Land	199,983	Feb. 5	92	30	13	247
Shoe. Felt	C. W. Palmer and C. Houghton. (Reissue.)	8,070	Feb. 5	232	71	13	269
Sinks. Grease-arrester for	W. T. Aikins	200,012	Feb. 5	117	38	13	252
Skate	S. Horsford	199,906	Feb. 5	15	5	13	235
Slate-frame	J. W. Hyatt	199,907	Feb. 5	16	5	13	235
Sled. Boy's	J. Y. Chapman	199,897	Feb. 5	7	2	13	233
Spice-box	T. W. Burger	199,896	Feb. 5	6	2	13	233
Spinning machinery. Spindle and flier for	H. M. Williams	200,115	Feb. 5	227	69	13	268
Spring. Door-	L. Threlfall	200,107	Feb. 5	218	67	13	266
Spring. Spiral	R. Voce	199,945	Feb. 5	57	18	13	242
Spring. Vehicle-	W. McCord	200,072	Feb. 5	182	58	13	261
Steaming-table and heating-oven. Combined	W. T. Shaw and G. W. Menz	200,094	Feb. 5	205	64	13	265
Stone-cutting tool	R. L. Arendell	200,014	Feb. 5	119	39	13	252
Stone. Treating artificial	A. S. Johnson	200,064	Feb. 5	173	56	13	260
Stove. Coal-oil	S. D. Baldwin	199,952	Feb. 5	63	20	13	242
Stove-door	G. Sard, Jr.	199,938	Feb. 5	51	16	13	240
Stove. Heating-	J. M. Sycks	200,006	Feb. 5	110	36	13	250
Stove-leg	J. E. Pope and J. S. Anthony	199,931	Feb. 5	44	14	13	239
Stove. Oil-	T. Hall and T. J. Whitney	200,056	Feb. 5	166	54	13	259
Stove. Oil-	A. F. Kibbe	199,981	Feb. 5	89	29, 30	13	247
Stove-pipe shelf and utensil-stand	G. McAdams	199,919	Feb. 5	34	10	13	238
Straw-cutter	J. Baron	199,803	Feb. 5	3	1	13	233
Saddle tree. Harness-	J. H. Gordon	200,280	Feb. 12	397	118	13	302
Sash-fastener	I. N. Wood and A. Morton	200,236	Feb. 12	350	104	13	295
Satchel-frame	A. F. H. Goepel	200,135	Feb. 12	253	76	13	281
Saw-handle	E. M. Boynton	200,165	Feb. 12	285	85	13	285
Saw-tooth. Insertible	S. J. Randall and J. O'Brien	200,219	Feb. 12	332	100	13	293
Scarf	C. W. Lyford	200,210	Feb. 12	325	97	13	292
Scraper. Road-	L. Ruggles	200,151	Feb. 12	269	80	13	283
Screws. Machine for making metal	L. W. Stockwell	200,155	Feb. 12	271	81, 82	13	283
Seeding-machine	H. Barsalou	200,163	Feb. 12	283	84	13	285
Sewing-machine shuttle	J. F. Hutton	200,305	Feb. 12	421	125	13	306
Shawl-strap and head-rest. Combined	E. P. Cowan	200,179	Feb. 12	296	88	13	287
Shoe. Balmoral	T. J. Greenwood	200,282	Feb. 12	398	118	13	302
Shot-manufacturing machine	B. Tatham. (Reissue)	8,063	Feb. 12	502	147	13	318
Shovel. Snow-	H. W. Searle	200,152	Feb. 12	269	80	13	283
Shut-off. Rain-water	H. M. Rockey	200,344	Feb. 12	464	137	13	312
Skate. Roller-	J. Forsyth	200,186	Feb. 12	305	91	13	288
Skylight. Ventilating-	S. J. Pardessus	200,332	Feb. 12	453	134	13	310
Slate-frame attachment	C. Goldthwait	200,137	Feb. 12	255	77	13	281
Sod-cutter and cotton-chopper	J. Moore	200,327	Feb. 12	449	133	13	310
Spring. Carriage-	J. A. Lewis	200,208	Feb. 12	323	97	13	291
Spring. Vehicle-	M. E. Burris	200,169	Feb. 12	288	86	13	286
Spring. Vehicle-	H. W. Pell	200,333	Feb. 12	454	134	13	310
Spring. Wagon-seat	E. H. Merrill	200,147	Feb. 12	265	79	13	282
Stamp. Postage-	J. Fox	200,187	Feb. 12	306	91	13	288
Stamps, checks, bonds, &c. Preventing fraud in	T. C. Van Nüys	200,365	Feb. 12	489	.....	13	316
Steam-generator. Sectional	H. Heino	200,294	Feb. 12	411	123	13	304

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Street-receiver and stench-trap	J. Gisel	200,277	Feb. 12	395	117	13	302
Saddle. Riding-	J. R. Dempsy	200,378	Feb. 19	511	151	13	328
Satchel-handle	G. Havell	200,530	Feb. 19	657	194	13	350
Saw mill. Circular	F. C. Frost	200,448	Feb. 19	578	170	13	338
Sawing machine. Circular	C. H. Jones	200,542	Feb. 19	668	197	13	351
Scales. Platform-	A. B. Pearson	200,406	Feb. 19	535	158	13	331
Scales. Weighing-	C. A. Fredericks	200,386	Feb. 19	518	153	13	329
Screen	J. H. Cavanagh	200,433	Feb. 19	563	166	13	326
Screw-threads on bolts, &c. Machine for impressing	C. Fairbairn and H. Simon	200,522	Feb. 19	648	191	13	349
Seed-cleaning machine	I. B. Sandusky	200,410	Feb. 19	540	159	13	332
Sewer-trap	J. Sargent	200,573	Feb. 19	700	206	13	357
Sewing-machine embroidering attachment	G. E. Hart	200,452	Feb. 19	581	171	13	338
Sewing-machine ruffler	G. W. Burgess	200,431	Feb. 19	562	165	13	335
Shingle-sawing machine	D. Lane	200,546	Feb. 19	674	198	13	352
Shoe-tip	E. F. Partridge	200,566	Feb. 19	692	204	13	355
Signaling apparatus. Pneumatic	D. H. Iseminger	200,457	Feb. 19	585	173	13	339
Skate	E. H. Barney	200,424	Feb. 19	555	164	13	334
Soldering device	F. B. Davis	200,437	Feb. 19	567	167	13	336
Speaking-tube	T. J. and G. O. Woolcocks	200,420	Feb. 19	552	163	13	334
Spring. Carriage-	G. K. Smith	200,580	Feb. 19	706	208	13	358
Spring. Vehicle-	D. F. Cooper	200,435	Feb. 19	565	166	13	336
Stamp. Hand branding-	H. Wickham, Jr	200,418	Feb. 19	548	162	13	333
Stamp. Hand branding-	T. M. Chapman	200,507	Feb. 19	632	186	13	346
Stave-jointer	W. S. Salisbury	200,482	Feb. 19	611	180	13	353
Steam-generator. Coil	A. W. Humphry	200,537	Feb. 19	663	195	13	341
Steamer. Feed-	H. Young	200,593	Feb. 19	720	212	13	359
Stone-sawing machine	H. Young	200,594	Feb. 19	722	212	13	360
Stone-sawing machine	H. H. Huntley	200,538	Feb. 19	664	196	13	351
Stove-leg	C. N. Buzzell	200,432	Feb. 19	563	166	13	335
Stove-ovens. Shelf for	A. H. Willoughby	200,496	Feb. 19	623	181	13	345
Strainer for faucets and water-pipes	C. C. Jerome	200,458	Feb. 19	586	173	13	339
Stuffing-box for steam-engines	C. C. Jerome	200,459	Feb. 19	587	173	13	339
Stuffing-box for steam-engines	A. Holbrook	200,612	Feb. 26	758	222	13	373
Saw frame. Buck-	T. F. Osburn	200,751	Feb. 26	903	266	13	395
Sawing-machine	J. A. and J. S. George	200,708	Feb. 26	862	253	13	388
Scales for weighing. Spring-	S. J. Austin	200,683	Feb. 26	835	245	13	384
Scales. Platform-	W. B. and J. S. Ross	200,765	Feb. 26	915	269	13	396
Scales. Spring-	L. A. Pichon	200,754	Feb. 26	906	267	13	395
Scissors, forceps, &c	R. Munroe	200,747	Feb. 26	900	264	13	394
Screw-driver	M. Barbour	200,684	Feb. 26	836	246	13	385
Seeding-machines. Sweeper for	P. Diehl	200,606	Feb. 26	753	221	13	372
Sewing-machine. Shuttle	H. W. Fuller. (Reissue)	8,103	Feb. 26	909	265	13	405
Sewing-machines. Mechanism for marking cloth in	A. Guild and F. B. Clark	200,715	Feb. 26	869	255	13	389
Shaft with reverse-motion counter	T. E. Lewis	200,738	Feb. 26	891	262	13	393
Shoe-exhibitor	A. P. Fuller	200,651	Feb. 26	800	235	13	379
Shoulder-brace and suspenders. Combined	H. W. Walker and T. L. Patterson	200,780	Feb. 26	929	.....	13	399
Sirup. Flavored	H. S. Barnes and J. I. Miller	200,598	Feb. 26	744	218	13	371
Spoke-tenoning and felly-boring machine	R. W. Eaton	200,649	Feb. 26	796	234	13	379
Spoke-tenoning machine	J. Scheider	200,670	Feb. 26	819	241	13	382
Spoon and ladle	H. Gardiner	200,610	Feb. 26	756	222	13	373
Spring. Car-	H. Owen	200,623	Feb. 26	772	227	13	375
Square. Try-	J. Dewe	200,702	Feb. 26	854	251	13	387
Stamp. Postage-	D. M. Somers	200,774	Feb. 26	922	271	13	398
Staples. Machine for inserting and clinching metallic	G. G. Wolfe	200,811	Feb. 26	959	283	13	403
Stove. Cooking-	B. F. Clement	200,604	Feb. 26	751	220	13	372
Stove door. Cooking-	H. Wellington	200,636	Feb. 26	778	229	13	376
Stove. Gasoline cooking-	D. Shields and R. Z. Liddle	200,770	Feb. 26	918	270	13	397
Stove. Oil-	C. J. Smith	200,771	Feb. 26	919	270	13	397
Stove. Safety-	W. F. Condon	200,697	Feb. 26	848	{249 250}	13	386
Stove. Self-extinguishing	J. Dwyer and G. H. Barbour. (Reissue.)	8,101	Feb. 26	965	284	13	404
Stoves. Culinary attachment to base-burning heating-	G. L. Damon	200,823	Mar. 5	8	3	13	416
Safe. Burglar-proof	F. L. Shinkle and D. F. Stambaugh	201,055	Mar. 5	235	74	13	451
Sash-balance	J. S. Scofield	200,940	Mar. 5	117	39	13	433
Sawmill head-block	N. Johnson	200,833	Mar. 5	20	7, 8	13	418
Saw-teeth. Securing insertible	W. Dixson and B. W. Records	200,899	Mar. 5	81	28	13	428
Sawing-machine	B. Slusser	201,057	Mar. 5	237	75	13	451
Scraper. Earth-	B. Slusser	201,058	Mar. 5	238	75	13	451
Scraper. Revolving earth-	R. Frost	201,000	Mar. 5	179	57	13	442
Semoline, middlings, or sharps to flour. Apparatus for reducing	J. L. Knight	201,020	Mar. 5	198	63	13	445
Sewer-trap	I. E. Myrick	201,040	Mar. 5	220	69, 70	13	449
Sewing-machine motor	A. and R. Scott, and C. A. Skene	200,941	Mar. 5	118	.....	13	433
Sheep-wash	A. I. Hogan	200,912	Mar. 5	93	32	13	429
Shingle-cutting machine	H. Band	200,818	Mar. 5	5	2	13	415
Shoe	A. M. Sawyer	200,876	Mar. 5	63	22	13	425
Shot. Canister-	J. C. Knoeppel	200,921	Mar. 5	101	34	13	430
Shutter-fastening	G. L. Anders	200,963	Mar. 5	138	45	13	437
Signal apparatus. Magnetic-	M. L. Hitchcock	201,014	Mar. 5	193	61	13	445
Slasher	F. S. Robinson	200,875	Mar. 5	62	21	13	424
Soldering apparatus	C. French	200,660	Mar. 5	45	16	13	422
Spring. Car-	C. N. Schofield	200,877	Mar. 5	64	22	13	425
Spring. Vehicle-	W. A. Roberts and M. E. Gary	201,048	Mar. 5	229	72	13	450
Stamp. Pneumatic fountain	W. S. Salisbury	200,938	Mar. 5	116	39	13	433
Steam-generator. Water-coil	F. Koskul	200,834	Mar. 5	21	.....	13	418
Stone. Manufacturing artificial	F. Koskul	200,835	Mar. 5	22	.....	13	418
Stone. Manufacturing artificial	A. McLean	201,039	Mar. 5	213	.....	13	447
Stone preservative and renovating compound	W. Hailes and J. Gray	200,964	Mar. 5	49	17, 18	13	422
Stove. Coal-oil	W. A. Strong, Jr. (Reissue)	8,111	Mar. 5	260	82	13	454
Stove. Cooking-	E. Bussey	200,975	Mar. 5	152	49	13	439
Stove-oven	R. G. Yonge	201,061	Mar. 5	239	81	13	454
Stove-pipe shelf	E. Bussey	200,974	Mar. 5	151	49	13	439
Stove-shelf							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Strainer for milk-pails. Adjustable	M. Campbell	200,976	Mar. 5	152	50	13	439
Surveyors' transits. Centering device for	W. L. F. Martens	200,836	Mar. 5	23	8	13	418
Syringes. Cap for glass	E. Hagerty	200,909	Mar. 5	91	31	13	429
Saddle tree. Gig-	G. Theobald	201,132	Mar. 12	317	97	13	469
Sash-holder	W. J. Way	201,315	Mar. 12	512	157	13	496
Saw handle. Crosscut-	R. F. Sprague	201,298	Mar. 12	490	150	13	494
Saw-mill head-block	A. S. Richards	201,199	Mar. 12	379	117	13	479
Saw-sharpening machine	J. A. Miller	201,271	Mar. 12	458	141	13	490
Scoop, measure, and sieve. Flour and meal	D. F. Petter. (Reissue)	201,301	Mar. 12	493	152	13	495
Screw. Drive-	C. T. Beebe	8,121	Mar. 12	523	160	13	498
Scythe-fastenings. Craw-socket for	F. M. Irons	201,218	Mar. 12	401	123	13	482
Seaming, grooving, and beading metal pipes. Machine for	A. Putnam. (Reissue)	201,182	Mar. 12	364	113	13	477
Seeding-machine	F. E. Cudell	8,122	Mar. 12	524	160	13	498
Sewer-gas trap	T. Starbuck and C. P. Small	201,161	Mar. 12	345	106	13	474
Sewer-trap	J. McCloskey	201,299	Mar. 12	494	151	13	494
Sewing-machine take-up	A. W. Vandorston	201,260	Mar. 12	447	138	13	488
Sheet-metal-flanging machine	B. D. Morrell	201,305	Mar. 12	496	153	13	495
Shock-binder	E. Rees	201,275	Mar. 12	462	142	13	491
Shoe-fastening	R. Turneaure	201,124	Mar. 12	310	95	13	468
Shoe-tree	G. A. Osgood	201,210	Mar. 12	390	120	13	481
Shoe-makers' tools for finishing soles. Heater for	A. G. Haumann. (Reissue)	201,121	Mar. 12	307	94	13	468
Shutter	J. R. Shirley	8,118	Mar. 12	520	159	13	497
Sideboard and dining-table. Combined	H. B. Dyer	201,292	Mar. 12	481	147	13	493
Sidewalks. Joint for	E. Uhrich	201,171	Mar. 12	353	109	13	475
Siphon	S. R. Bailey	201,134	Mar. 12	320	98	13	470
Sleigh-standard	J. C. Stanley	201,148	Mar. 12	334	102	13	472
Spinning-machine	C. E. Trowbridge	201,130	Mar. 12	315	96, 97	13	469
Spinning-ring	A. Carter	201,302	Mar. 12	493	152	13	495
Spring for mattresses	F. Grinnell	201,158	Mar. 12	343	105	13	473
Sprinkling-pipe	H. P. Kirkham	201,242	Mar. 12	429	132	13	486
Stall for vessels. Horse-	E. Delong	201,253	Mar. 12	439	135	13	487
Steam and fume box	M. Wilson	201,168	Mar. 12	350	108	13	475
Stench-trap	J. A. Lawson	201,317	Mar. 12	514	157	13	497
Stove. Cooking-	F. E. Cudell	201,256	Mar. 12	442	{136 137}	13	488
Stove-evaporator	T. Gemmell	201,162	Mar. 12	345	106	13	474
Stove. Heating-	J. A. Lawson	201,238	Mar. 12	426	{130 131}	13	485
Stoves. Fire-box for	J. D. Smith	201,255	Mar. 12	441	136	13	487
Stump-puller	A. De La Montagnie	201,297	Mar. 12	489	150	13	494
Sugar-pressing machine	F. E. Brandis	201,229	Mar. 12	412	{126 127}	13	483
Surveying-instruments. Spindle attachment for	G. S. Winslow	201,155	Mar. 12	340	105	13	473
Switch head-chair	W. M. Rich	201,213	Mar. 12	393	121	13	481
Sampling glass. Molasses-	J. G. Beecher	201,448	Mar. 19	659	201	13	525
Sash-fastener	G. W. Grafflin, Jr	201,383	Mar. 19	593	182	13	516
Sash-holder	F. Clark	201,408	Mar. 19	623	190	13	520
Saw-guide	W. H. Abrams	201,498	Mar. 19	706	215	13	532
Saw-mill head-block	G. W. Atkins	201,376	Mar. 19	588	180	13	515
Saw-set	T. Hodgson	201,481	Mar. 19	689	211	13	529
Saw-sharpening machine	O. Pratt	201,416	Mar. 19	628	192	13	520
Saws. Fastening the ends of band-	R. Waterhouse	201,444	Mar. 19	655	199	13	524
Scarf-ring	T. R. Wright	201,577	Mar. 19	792	241	13	543
Scissors	A. Altenburg and W. C. Hill	201,475	Mar. 19	685	209	13	529
Screen. Window-	P. Finders	201,478	Mar. 19	687	210	13	522
Screen. Window-	J. B. West	201,512	Mar. 19	722	220	13	535
Screw-driver	J. M. Westcott and J. L. Halteman	201,372	Mar. 19	582	179	13	514
Seeding-machine	F. E. Cudell	201,578	Mar. 19	793	241	13	543
Sewer-gas trap	A. F. Foster	201,391	Mar. 19	602	184	13	517
Sewer-pipes. Device for finishing the sockets of	E. L. Chamberlin	201,342	Mar. 19	553	170	13	510
Shaft-supporter for vehicles	J. W. Davenport	201,329	Mar. 19	539	166	13	508
Shingle-shaving machine	A. D. Marr	201,503	Mar. 19	712	217	13	533
Shirt	S. T. Sanford	201,433	Mar. 19	645	197	13	523
Shoe-fastening	P. N. Horsley	201,451	Mar. 19	663	202	13	525
Shutter-fastening	J. Jenkins	201,417	Mar. 19	629	192	13	521
Skirt-supporter	T. Graether	201,531	Mar. 19	744	226	13	537
Sled	J. W. Post	201,519	Mar. 19	730	223	13	535
Sleigh	P. P. Haines	201,556	Mar. 19	769	234	13	540
Soldering-tool	W. F. Hastings	201,522	Mar. 19	732	223	13	536
Spindles. Bobbin-socket for	E. K. Walker	201,414	Mar. 19	627	191	13	520
Spoon. Medicine-	W. P. Hansell	201,369	Mar. 19	579	178	13	514
Spring. Car-	M. L. Ballard	201,523	Mar. 19	733	223	13	536
Spring coupling. Carriage-	Z. Cobb	201,381	Mar. 19	592	182	13	516
Spring. Door-	F. Hutchinson and W. H. Graham	201,500	Mar. 19	708	216	13	532
Springs. Utilizing worn-out	J. H. Smith	201,490	Mar. 19	631	193	13	521
Stalk-puller	T. Spear	201,562	Mar. 19	775	236	13	541
Steering apparatus	J. Jenkins	201,360	Mar. 19	572	176	13	513
Stocking-supporter	T. J. Ross. (Reissue)	201,532	Mar. 19	744	227	13	537
Stools. Adjustable back for	W. K. Fuller	8,131	Mar. 19	832	247	13	546
Stump-extractor	R. Briney	201,514	Mar. 19	724	220	13	535
Sucker-rod socket or drill-grab	J. W. Smith	201,386	Mar. 19	597	183	13	516
Suspender-clasp	C. J. Landerbach	201,458	Mar. 19	669	204	13	526
Suspender-socket	T. S. Parker	201,422	Mar. 19	641	195	13	522
Syringe. Hypodermic	W. W. Elmer	201,443	Mar. 19	653	199	13	524
Salt. Apparatus for the manufacture of	W. T. Doremus	201,762	Mar. 26	969	302	13	576
Sash-fastener	R. D. MacLennan	201,655	Mar. 26	885	270	13	561
Scales. Weighing-	J. L. Follett	201,020	Mar. 26	833	259	13	556
Screen. Window-	R. J. Stuart	201,604	Mar. 26	837	254	13	553
Screw-cutting die	M. C. Johnson	201,714	Mar. 26	937	288	13	569
Service-box	E. W. Meyer	201,790	Mar. 26	1017	311	13	581
Sewer and other traps	W. F. Downey	201,814	Mar. 26	1039	317	13	584
Sewing Book-	E. S. Boynton	201,758	Mar. 26	984	301	13	576
		201,590	Mar. 26	820	250	13	551

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sewing-machine	P. Langlois	201,797	Mar. 26	1024	313	13	582
Shelf step or bracket	J. C. Thomas	201,721	Mar. 26	946	290	13	570
Shingling-bracket	T. McClelland and J. A. Grant	201,691	Mar. 26	915	279	13	565
Shoulder-brace and suspenders. Combined	C. H. Cushman	201,597	Mar. 26	829	252	13	552
Shovel	I. Showalter	201,711	Mar. 26	934	286	13	568
Show-case	W. H. Dealy	201,756	Mar. 26	980	300	13	575
Sickle-grinder	A. D. Hoffman	201,610	Mar. 26	842	255	13	554
Sieve and strainer. Combined	T. M. Hill	201,609	Mar. 26	842	255	13	554
Siphon	E. Cardarelli	201,746	Mar. 26	971	297	13	574
Sirup-gage	J. Bryan	201,593	Mar. 26	824	251	13	552
Spark-arrester	J. Kirkland	201,685	Mar. 26	911	278	13	565
Spark arrester and extinguisher	J. W. Ledyard	201,803	Mar. 26	1029	314	13	582
Speaking-machine	T. A. Edison	201,760	Mar. 26	986	301	13	576
Spinning-machine. Spindle-step for	W. M. Steele	201,847	Mar. 26	1074	327	13	589
Splint-cutting machine	W. Lynch	201,806	Mar. 26	1032	315	13	583
Spoke-dressing machine	J. L. Brown	201,592	Mar. 26	822	250 / 251	13	552
Spring for vehicles. Torsion	C. W. Saladee. (Reissue)	8,135	Mar. 26	1091	331	13	591
Springs. Machine for bending elliptic	W. Harty	201,607	Mar. 26	840	255	13	554
Sprinkler. Oil-well	J. C. Lorenz	201,619	Mar. 26	851	259	13	555
Stamp. Postage and revenue	A. C. Fox	201,769	Mar. 26	997	305	13	578
Stereoscope	W. H. Lewis	201,804	Mar. 26	1030	314	13	583
Stool. Folding	D. B. Oaks	201,823	Mar. 26	1048	320	13	585
Stove	R. Simpson. (Reissue)	8,137	Mar. 26	1098	333	13	591
Stove-grate	J. A. Price	201,630	Mar. 26	863	262	13	557
Stump-extractor	B. F. Price	201,828	Mar. 26	1053	322	13	586
Sugar. Manufacturing coffee-	F. O. Matthiessen	201,809	Mar. 26	1035	------	13	583
Syringe	S. Peters	201,628	Mar. 26	860	262	13	557
Saccharification. Reducing vegetable substances to prepare the same for	J. W. Gaff	202,016	Apr. 2	152	44	13	621
Sad-iron heater	J. Conrad	201,995	Apr. 2	132	38	13	618
Saddle-tree	B. F. Melton	201,934	Apr. 2	74	21	13	609
Sash-fastener	C. W. Penfield	201,942	Apr. 2	80	23	13	610
Sash-holder	E. E. Shepard	201,956	Apr. 2	91	26	13	612
Saw-mills. Log-carriage for	W. Lamb. (Reissue)	8,150	Apr. 2	232	67	13	632
Scales. Bale-weighing	G. R. Williams	201,972	Apr. 2	110	32	13	615
Scales. Sack-	S. F. Schweitzer and G. Kinsey	202,057	Apr. 2	196	57	13	626
Scales. Weighing-	C. Berst	201,984	Apr. 2	122	35	13	617
Scythe-fastening	C. T. Beebe	201,905	Apr. 2	47	12	13	605
Seam-pressing mechanism	C. W. Collyer	201,994	Apr. 2	131	38	13	618
See-saw	J. B. Tyler	201,897	Apr. 2	39	10	13	604
Sewer-trap	C. A. Wluship	201,899	Apr. 2	41	11	13	605
Sewing-machine	P. Waterston	201,966	Apr. 2	101	29, 30	13	614
Sewing-machine. Boot and shoe	L. R. Blake	201,987	Apr. 2	124	36, 37	13	617
Shafts. Device for splicing carriage-	S. H. Raymond	201,892	Apr. 2	33	9	13	603
Sheet metal. Machine for straightening	E. A. Harvey	202,027	Apr. 2	166	48	13	623
Sheck-binder	T. J. Fulmer and F. Wiegman	202,014	Apr. 2	151	44	13	621
Shoe. Marsh-	R. K. Jordan	201,882	Apr. 2	24	6	13	602
Shot. Canister-	A. M. Sawyer	202,055	Apr. 2	192	56	13	626
Spring. Door-	H. C. Jones	202,033	Apr. 2	171	50	13	624
Spring. Spiral	G. E. Gray	202,019	Apr. 2	156	45	13	621
Steamer. Feed-	W. K. Hill	201,921	Apr. 2	63	17	13	608
Saccharine liquids. Compound for defecating	F. L. Stewart	202,295	Apr. 9	462	------	13	668
Sand-paper roll	C. R. Rathbun and F. W. Adams	202,119	Apr. 9	279	92	13	643
Sandal	A. M. Woodhull	202,209	Apr. 9	372	109	13	655
Sash-fastener	O. R. Cooke	202,152	Apr. 9	311	93	13	648
Sash-fastener	O. R. Cooke	202,154	Apr. 9	314	93	13	648
Sash-fastener	L. S. Gibson	202,254	Apr. 9	420	122	13	662
Sash-fastener	M. L. Kingsley	202,273	Apr. 9	440	128	13	665
Sash. Window-	G. W. Dickinson	202,247	Apr. 9	415	120	13	661
Saw-mill head-block	J. Cain. (Reissue)	8,162	Apr. 9	497	145	13	673
Saw mills. Direct-acting steam-feed works for circular-	D. C. Prescott. (Reissue)	8,160	Apr. 9	494	144	13	672
Saw-sharpening machine	J. Wagner	202,309	Apr. 9	476	139	13	670
Screen. Coal and potato	W. Van Houten	202,306	Apr. 9	473	138	13	670
Seal-fastening	S. Keeler	202,267	Apr. 9	433	126	13	664
Sewerage-connections. Gas and water valve for	W. L. Belt	202,219	Apr. 9	395	112	13	657
Sewer-trap	J. Dunn and T. H. Birdsall	202,250	Apr. 9	417	121	13	661
Sewing-machine needle	W. C. Cross	202,237	Apr. 9	402	117	13	660
Sewing-machine overseaming attachment	H. J. Watkins	202,313	Apr. 9	480	140 / 141	13	671
Sewing-machine presser-foot	W. F. Trowbridge	202,303	Apr. 9	470	137	13	669
Sewing-machine. Wax-thread	H. J. Watkins	202,314	Apr. 9	482	141	13	671
Shell. Percussion-	J. M. Urquhart	202,203	Apr. 9	368	108	13	655
Shoe-shanks. Machine for making metallic	J. Hyslop, Jr. (Reissue)	8,163	Apr. 9	498	145	13	673
Shutter-worker	P. C. Close	202,151	Apr. 9	311	92	13	647
Sifter. Ash-	J. E. Cumings	202,157	Apr. 9	326	95	13	649
Silk from cocoons. Electrical regulator for reeling	E. W. Serrell, Jr.	202,125	Apr. 9	286	84	13	644
Skid	C. A. and J. A. Koehler	202,177	Apr. 9	344	101	13	652
Sky-light	M. T. Durkin	202,160	Apr. 9	329	96	13	649
Spring. Door-	C. Ferchlandt	202,099	Apr. 9	258	75	13	640
Square. Adjustable centering-	H. B. Little	202,180	Apr. 9	346	101	13	652
Stench-trap	T. G. Knight	202,176	Apr. 9	343	100	13	652
Store-house	J. E. Walsh	202,311	Apr. 9	477	139 / 140	13	671
Stove	D. L. Stiles	202,297	Apr. 9	463	136	13	669
Stove and furnace grate	W. B. Geddes	202,102	Apr. 9	260	76	13	640
Stove. Cooking-	G. W. Walker	202,304	Apr. 9	368	108	13	655
Stove. Cooking-	G. W. Walker	202,305	Apr. 9	369	108	13	655
Stove door and window	D. L. Stiles	202,296	Apr. 9	463	135	13	668
Stump-extractor	C. Haines	202,107	Apr. 9	266	78	13	641
Switches. Brace and plate for point-	J. T. Richardson	202,286	Apr. 9	453	132	13	667
Saddle-bag	A. L. Hernstein	202,345	Apr. 16	533	156	13	682

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sash-balance	W. K. Axbill	202,324	Apr. 16	512	150	13	679
Sash-cord guide	T. Van Wagoner	202,492	Apr. 16	673	197	13	702
Sash-holder	J. F. Severance	202,380	Apr. 16	567	166	13	687
Saw. Hand-	J. R. Woodrough	202,500	Apr. 16	680	199	13	703
Scraper. Sulky-	S. S. Terwilleger	202,484	Apr. 16	666	195	13	701
Scraper. Sulky road-	N. D. Edmondson	202,423	Apr. 16	609	178	13	693
Scraping-tool	L. F. A. Legouge	202,444	Apr. 16	631	184	13	696
Screen. Window-	W. D. Stevens	202,509	Apr. 16	801	231	13	716
Screw-threads. Device for cutting	M. Minahan	202,302	Apr. 16	549	161	13	684
Seeding-machine	J. C. Mundel	202,571	Apr. 16	772	223	13	713
Sewer-cleaning device	E. M. Chapin	202,519	Apr. 16	279	82	13	706
Sewer-openings. Man-hole plate for	D. W. Purtell	202,373	Apr. 16	561	164	13	696
Sewing-machine	G. Hancock. (Reissue)	8,178	Apr. 16	835	241	13	721
Sewing-machine shuttle	N. D. Stoops	202,602	Apr. 16	803	232	13	716
Sewing-machines. Ruffling attachment for	J. A. Davis. (Reissue)	8,176	Apr. 16	831	240	13	720
Shaft-coupling	C. G. Rowell	202,473	Apr. 16	657	192	13	700
Shaft-journal and box therefor	W. H. Atkinson	202,395	Apr. 16	580	170	13	689
Sheep-shears. Thumb-rest for	J. Richardson, Jr	202,469	Apr. 16	654	191	13	699
Sheep-skin. Artificial	C. A. Evans	202,427	Apr. 16	614	------	13	694
Sheet-metal vessels or utensils. Handle for	F. Grosjean	202,540	Apr. 16	742	214	13	709
Sheet-metal vessels or utensils. Handle for	F. Grosjean	202,541	Apr. 16	743	214	13	709
Shirt-scales	N. N. Spreecher and I. B. Keller	202,479	Apr. 16	661	194	13	701
Shirts. Manufacture of	W. D. Lawton	202,558	Apr. 16	760	219	13	712
Shovel	T. B. De Forest	202,524	Apr. 16	705	205	13	706
Shutter-worker	T. Corrigan	202,413	Apr. 16	596	176	13	691
Silk and other threads. Spindle for cleaning and smoothing	E. J. Martin	202,448	Apr. 16	635	185	13	697
Smoke and cinder conveyer for railway-trains	J. Casey	202,518	Apr. 16	698	204	13	705
Soda. Manufacture of bicarbonate of	G. T. Lewis and W. J. Menzies	202,356	Apr. 16	545	159	13	684
Spark-arrester	A. Elliott	202,424	Apr. 16	610	179	13	693
Spike-extractor	W. Upton	202,609	Apr. 16	811	234	13	717
Spinning frames. Thread-guard support for ring-	J. Doyle	202,420	Apr. 16	607	178	13	692
Spooling-machine	T. Kershaw	202,549	Apr. 16	751	217	13	711
Spoons. Making sheet-metal	M. Fowler	202,431	Apr. 16	617	181	13	694
Spring. Carriage-	J. Enders	202,340	Apr. 16	529	155	13	682
Spring. Vehicle-	J. Batt	202,506	Apr. 16	684	201	13	704
Spring. Vehicle-	J. Enders	202,341	Apr. 16	530	155	13	682
Spring. Vehicle-	W. W. Wills	202,390	Apr. 16	575	169	13	688
Sprinkler	W. S. Doughty	202,334	Apr. 16	521	153	13	681
Sprinkler. Clothes-	D. Whittaker	202,616	Apr. 16	820	237	13	718
Steam-trap	J. L. Chapman	202,520	Apr. 16	701	205	13	706
Steel. Utilizing scrap-	T. M. Carnegie	202,517	Apr. 16	697	------	13	705
Stem-winders. Crown-push for	J. J. Peux	202,459	Apr. 16	644	188	13	698
Stocking drier and stretcher	P. W. Whitcomb	202,498	Apr. 16	678	199	13	703
Stocking-supporter	F. Armstrong	202,394	Apr. 16	579	170	13	689
Stove-grate	W. McClare and J. A. Price	202,449	Apr. 16	636	186	13	697
Stove-pipe-joint lock	J. W. Woolsey	202,501	Apr. 16	680	200	13	704
Sulphur from its ores. Separating	R. G. Leckie	202,443	Apr. 16	630	184	13	696
Satchel. Folding	A. McKinnon	202,850	Apr. 23	1086	310	13	670
Sawing-machine. Circular	G. Schleicher	202,668	Apr. 23	894	257	13	736
Scales. Weighing-	T. Fairbanks	202,900	Apr. 23	1026	295	13	753
Settee. Folding	H. T., L. B., and F. F. Morse	202,856	Apr. 23	1090	312	13	761
Sewing-machine	J. McCloskey	202,738	Apr. 23	902	276 / 277	13	744
Sewing-machine	R. W. Morrell, T. and J. Parkinson	202,857	Apr. 23	1092	313	13	761
Sewing machine. Broom-	C. Palmer	202,749	Apr. 23	977	281	13	746
Sewing machine. Glove-	C. M. Boland	202,695	Apr. 23	922	263 / 264	13	739
Sewing-machine presser-foot	T. P. West	202,771	Apr. 23	998	287	13	750
Sewing-machine trimmer	J. E. Wilson	202,908	Apr. 23	1146	329	13	767
Sewing-machine work-trimmer	H. H. Hallett	202,721	Apr. 23	946	274	13	742
Sifter. Clay-	N. Goddard	202,717	Apr. 23	943	270	13	742
Skirt-exhibitor	G. W. Everett	202,713	Apr. 23	940	269	13	741
Sleeve-supporter	J. P. Lindsay	202,735	Apr. 23	957	275	13	744
Slimes. Machine for drying	J. W. Dillon	202,709	Apr. 23	936	267	13	741
Soap-crutching machine	S. Strunz	202,886	Apr. 23	1125	323	13	765
Spark-arrester	C. E. Wyman	202,914	Apr. 23	1151	330	13	768
Speculum	J. C. Hall	202,813	Apr. 23	1046	300	13	755
Spring. Vehicle-	W. Michael	202,851	Apr. 23	1087	310 / 311	13	760
Spring. Vehicle-	G. P. Muldoon and E. P. Davis	202,858	Apr. 23	1094	313	13	761
Stamp. Hand-	E. D. Chamberlain. (Reissue)	8,201	Apr. 23	1168	335	13	770
Stamp. Postage-	J. Sangster	202,760	Apr. 23	988	284	13	748
Staple-hook	N. Burnham	202,786	Apr. 23	1014	291	13	751
Starch. Process and apparatus for drying	T. Kingsford	202,832	Apr. 23	1068	306	13	758
Steam-trap	J. Ryan	202,759	Apr. 23	987	284	13	748
Steamer. Feed-	D. D. Darling, L. L. Parshall, and F. H. Wendell	202,706	Apr. 23	933	267	13	741
Stench-trap	R. G. M. Nowell	202,860	Apr. 23	1095	314	13	762
Stilts	L. Bordewich	202,782	Apr. 23	1011	290	13	751
Stove-back. Portable	W. C. Barkalow	202,777	Apr. 23	1004	289	13	750
Stove-bottom	G. S. Stannard	202,883	Apr. 23	1122	322	13	765
Stove. Heating-	F. J. Gould	202,718	Apr. 23	943	270	13	742
Straw-cutter	G. R. Pierpont	202,751	Apr. 23	980	281	13	747
Stretcher and wheeled frame	D. Rice and G. K. Childs	202,868	Apr. 23	1105	317	13	763
Surveying instruments. Tripod-head for	A. Yonng	202,916	Apr. 23	1152	331	13	768
Swivel-hook	A. Wallach	202,898	Apr. 23	1137	326	13	766
Sand from water. Apparatus for separating	E. S. Bennett	203,104	Apr. 30	1345	391	13	798
Sash-holder	H. Worthington	203,232	Apr. 30	1481	433	13	815
Sawing logs. Machine for spirally	S. T. Moffett	203,182	Apr. 30	1430	418	13	809
Scale and counterfeit-coin detecter. Postal	H. Maranville	203,057	Apr. 30	1300	377	13	792
Scow. Dumping-	P. L. Murphy	203,185	Apr. 30	1435	419	13	810
Scythe-fastener	W. H. Kretsinger	203,166	Apr. 30	1416	413	13	807
Seams. Machine for cutting out and removing	W. S. Shepherd	203,203	Apr. 30	1456	425	13	812

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Sewing-machine motor	J. Haworth	203,035	Apr. 30	1282	371	13	790
Sewing-machine thread-controller	D. Barcellos	203,102	Apr. 30	1343	390 391	13	798
Sewing-machines. Feeding mechanism for button-hole	W. J. Martin	203,173	Apr. 30	1424	416	13	808
Shaft-coupling	H. C. Hunter and J. Everding	203,156	Apr. 30	1405	416	13	806
Shafts or spindles. Step-box for	J. W. Collet	202,997	Apr. 30	1244	360	13	785
Shafting. Machine for straightening	J. E. Atwood	202,978	Apr. 30	1227	355	13	782
Shears for marking stock	W. Wright	203,098	Apr. 30	1339	389	13	797
Shoe	T. J. Greenwood	203,030	Apr. 30	1278	370	13	789
Shoe-peg blanks. Machine for making	A. C. Gallahue	203,131	Apr. 30	1374	400	13	802
Slate	M. Frankenstein	203,026	Apr. 30	1275	369	13	788
Sled	R. Armstrong	202,976	Apr. 30	1227	354	13	782
Soap. Medicated	T. Taylor	203,090	Apr. 30	1333	.....	13	797
Spark-arrester	J. T. Connelly and H. C. Huston	203,121	Apr. 30	1361	396	13	800
Spike	E. Lawrence	202,952	Apr. 30	1202	347	13	779
Spring. Carriage	J. D. Sarven	202,965	Apr. 30	1216	351	13	781
Spring. Vehicle	G. Stricker	203,212	Apr. 30	1464	428	13	813
Spring. Vehicle	G. Stricker	203,213	Apr. 30	1465	428	13	813
Sprinkler	A. S. Pennington and E. Beggs	203,069	Apr. 30	1312	381	13	794
Sprinkler. Clothes	J. E. New	203,187	Apr. 30	1436	419	13	810
Stalk-cutter	E. Dominy	203,010	Apr. 30	1257	364	13	786
Stave-making machine	H. M. Rounds	202,964	Apr. 30	1214	351	13	781
Steam-generator	S. T. Hyde	203,157	Apr. 30	1406	410	13	806
Steam-generator. Sectional	J. J. Reeper	203,197	Apr. 30	1451	424	13	811
Stirrup	R. S. Wiley	202,974	Apr. 30	1225	354	13	782
Stirrup. Saddle	M. T. Burke	203,026	Apr. 30	1178	339	13	776
Stone and glass polisher	M. and P. C. Wright	203,234	Apr. 30	1483	434	13	815
Stone-sawing machine	W. Tuggey	203,219	Apr. 30	1469	430	13	814
Stove. Cooking	H. R. Smith	203,084	Apr. 30	1328	386	13	796
Stove. Heating	M. Campbell	203,117	Apr. 30	1358	395	13	800
Strawberry-vine cutter	G. Kingsland	202,951	Apr. 30	1201	347	13	779
Sulky-cushion	T. H. Brown	202,925	Apr. 30	1177	339	13	776
Swing	D. B. Hubbard	203,049	Apr. 30	1295	375	13	791
Saddle-loop	A. Gilliam	203,258	May 7	23	8	13	824
Saw filer. Gin	E. L. Harris	203,338	May 7	106	31	13	834
Saw-filing machine	W. T. Smith	203,383	May 7	154	44, 45	13	841
Saw-mill dog	D. Lane	203,469	May 7	247	71	13	854
Saw-mills. Log-carriage gear for	W. Lamb	203,467	May 7	245	71	13	854
Scale-beam	A. B. Pearson	203,290	May 7	60	18	13	823
Sewers. Construction of wooden	A. T. Herrmann and W. Sexton	203,341	May 7	109	32	13	815
Sewing-machine. Button-hole attachment	G. M. Morris and J. P. Hollenbeck	203,287	May 7	54	16, 17	13	823
Shade-roller. Spring	C. Bissmann	203,404	May 7	174	50	13	844
Shears for cutting sheet material	D. F. Hartford	203,449	May 7	228	65	13	851
Shoe	B. M. Gibson	203,439	May 7	216	61	13	850
Shoemaker's jack	A. S. Rogers and W. W. Fuller	203,376	May 7	148	42	13	840
Shoulder-brace and suspenders. Combined	N. Van Allen	203,301	May 7	72	21	13	830
Shovel. Dust	J. A. Johntry	203,277	May 7	42	13	13	826
Shovel-handle	J. F. Milligan	203,359	May 7	127	37	13	837
Shovel. Snow	A. S. Robinson	203,375	May 7	147	42	13	840
Sleigh-knee	F. Larson and F. D. Livermore	203,470	May 7	248	71	13	854
Snap-hook	C. P. Bonfoey	203,238	May 7	3	1	13	821
Snap-hook	R. W. Jones	203,461	May 7	238	68	13	853
Sorghum and maize. Clarifying the juices of	F. L. Stewart	203,507	May 7	281	.....	13	859
Spherical bodies. Machine for cutting	R. W. Wheeler	203,515	May 7	290	83	13	861
Spinning-machines. Flier-bearing for	E. A. Cowper	203,424	May 7	199	57	13	847
Spinning mules and jacks. Winding-on regulator for	C. H. Colbrook	203,244	May 7	8	3, 4	13	822
Spring brace. Vehicle	A. Elliott	203,330	May 7	99	29	13	833
Spring. Vehicle	J. F. Thompson	203,508	May 7	282	81	13	859
Sprinkler	J. E. New	203,487	May 7	264	76	13	857
Stalk-cutter	S. B. and H. J. Adams	203,311	May 7	82	24	13	831
Stamp. Hand	J. F. W. Dorman. (Reissue)	8,223	May 7	316	90	13	864
Stereoscope	C. H. Wheeler and J. A. Bazin. (Reissue.)	8,218	May 7	309	88	13	863
Stove-hearth	S. A. Kinsey	203,278	May 7	42	13	13	826
Stove. Heating	M. C. Hawley	203,269	May 7	34	10, 11	13	825
Stove-oven shelf	B. F. Clement	203,242	May 7	5	2	13	821
Stove-pipe thimble	P. Milan	203,478	May 7	256	74	13	855
Stove-polishing compound	H. S. Ziegler	203,309	May 7	80	.....	13	831
Swivel-joint	A. Work	203 307	May 7	78	23	13	830
Saddle-tree fork	C. M. Lane and M. C. Franklin	203,626	May 14	420	120	13	885
Satchels. Safety attachment for hand	W. R. Hunter	203,735	May 14	536	152	13	900
Saw-filing machine	L. A. Hays	203,616	May 14	410	117	13	884
Sawing machine. Drag	J. Alexander	203,692	May 14	491	139	13	894
Scales. Platform	J. P. Chatillon	203,589	May 14	389	110	13	881
Scales. Platform	L. G. Spencer	203,563	May 14	367	103	13	879
Screw-threading machine	F. P. Sheldon	203,560	May 14	363	102	13	878
Seeding-machine	J. B. Birge, D. J. Woodard, and G. D. Rowell.	203,529	May 14	326	92	13	873
Sewing machine. Book	E. S. Boynton	203,530	May 14	327	92-94	13	874
Sewing-machines. Caster-frame for	B. F. Stark	203,789	May 14	594	166	13	907
Sewing-machines. Treadle apparatus for applying power to	L. Sternberger	203,791	May 14	596	166	13	907
Shoe	W. G. Viall	203,677	May 14	475	135	13	892
Shoe-lace fastener	L. Aya	203,696	May 14	497	141	13	895
Shoe. Wood-sole	W. Gampert	203,608	May 14	404	115	13	884
Show-stand	E. Leger	203,629	May 14	423	121	13	886
Sifter. Ash	J. W. Baldwin	203,697	May 14	497	141	13	895
Skirt	S. Fellner	203,607	May 14	403	114	13	883
Sleeve-protector	J. S. Vanhorn	203,676	May 14	474	134	13	892
Sleigh-bells. Manufacture of	G. W. Tucker	203,675	May 14	474	134	13	892
Sleighs. Adjustable draft-bar for	W. Burke	203,703	May 14	502	142	13	896
Smoke-stack. Locomotive	I. H. Congdon	203,592	May 14	392	111	13	882
Snap-hook	L. J. Bristol	203,584	May 14	384	109	13	881

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Sphygmometer	A. T. Keyt	203,548	May 14	347	99 100	13	876
Spinning-machine	J. B. Mackie	203,632	May 14	425	122	13	886
Spinning-machine ring	N. I. Allen	203,573	May 14	375	106	13	880
Spinning mohair, &c. Bobbin for	T. Mitchell	203,754	May 14	556	157	13	902
Spinning-ring	F. H. Wheat	203,683	May 14	479	136	13	893
Spinning-ring holder, &c.	G. D. Edmands	203,606	May 14	402	114	13	883
Spring for seats	C. Kilburn	203,739	May 14	539	153	13	900
Spring. Vehicle	J. Thornton	203,567	May 14	376	104	13	879
Stave-jointing machine	J. A. Seaman	203,654	May 14	449	128 129	13	889
Steam-generator	T. P. Franke	203,721	May 14	520	148	13	898
Steamer or boiler for feed	F. E. Mills and C. Clager	203,636	May 14	429	123	13	887
Stench-trap. Sewer-pipe	L. H. Colborne	203,590	May 14	389	110	13	882
Stirrup	G. M. Wilson	203,807	May 14	613	171	13	909
Stove	S. N. Betts	203,528	May 14	325	92	13	873
Stove. Elevated-oven cooking	J. Jewett	203,546	May 14	346	99	13	876
Stoves. Long center for	W. Devore and S. L. Yourtee	203,713	May 14	514	146	13	897
Stud for frames and fender-bars	W. T. Merserveau	203,551	May 14	355	100	13	877
Stuffing-box for steam-pumps. Double	T. Northey	203,553	May 14	356	101	13	877
Saddle. Harness	G. E. Standish and L. S. Bailey	203,954	May 21	782	224	13	939
Salve	J. G. Miller	203,848	May 21	667	.....	13	924
Sash-fastener	J. M. Keech	204,051	May 21	881	252	13	951
Sash. Window	I. T. Dyer	203,820	May 21	639	180	13	930
Saw-grinding machine	S. Bevan	203,993	May 21	820	235	13	943
Saw-mill carriage	H. Groves	203,908	May 21	730	209	13	932
Scales. Weighing	F. Fairbanks	203,902	May 21	721	207	13	931
Scoop	A. Button	203,885	May 21	701	200	13	928
Screw-cutting die	J. J. Grant, N. Sawyer, and F. N. Gardner.	204,028	May 21	862	246	13	948
Screw-cutting die	G. R. Stetson	203,956	May 21	783	224	13	939
Screw machine. Metal	C. D. Rogers	203,946	May 21	765	221	13	937
Screw-threads. Die for cutting	M. C. Johnson	204,048	May 21	878	251	13	950
Sewing-machine	J. L. Follett	203,904	May 21	727	208	13	932
Sewing-machine	J. L. Follett	203,905	May 21	728	208	13	932
Sewing-machine tuck-creasing attachment	I. M. Rose. (Reissue)	8,236	May 21	956	274	13	960
Shafts. Bearing for rub-roll	D. Hyde	204,046	May 21	876	251	13	950
Ships. Construction of	J. Rees	203,940	May 21	761	219	13	936
Shirt	P. B. Pickens	204,081	May 21	915	261	13	955
Shoe-tip	J. W. Hyatt	204,834	May 21	651	185	13	922
Shovel. Fire	A. Bardell	203,991	May 21	819	235	13	943
Shutter bower and fastener	T. B. Rogers, Jr	203,945	May 21	765	220	13	937
Slate-cleaner. Reservoir	A. W. Overbaugh. (Reissue)	8,241	May 21	963	275	13	961
Soap	A. H. West	204,116	May 21	950	.....	13	959
Sower. Fertilizer	C. F. Johnson, Jr. (Reissue)	8,247	May 21	969	277	13	962
Speed-recorders. Mechanism for imparting motion to	W. W. Wythe	203,865	May 21	683	194	13	926
Spinning machinery. Reservoir-bolster bearings for spindles of	F. J. Rabbeth	204,085	May 21	918	263	13	956
Spring. Wagon	W. L. Williams	203,863	May 21	681	194	13	925
Square. Dress-makers'	J. F. Wingate	204,120	May 21	954	273	13	960
Stamp. Hand	B. B. Hill	203,915	May 21	736	211	13	933
Stamp. Hand canceling	B. B. Hill	203,914	May 21	735	211	13	933
Stamp. Rubber pocket	S. W. Garrison	204,021	May 21	853	244	13	947
Stencil-plate	A. C. Barnes, Jr	203,992	May 21	820	235	13	943
Stone-polishing machine	P. Pitkin and J. B. Dougherty	203,934	May 21	754	218	13	935
Stove. Camp	L. P. Vollbrecht	203,963	May 21	789	226	13	940
Stove. Cooking	D. Stuart	204,112	May 21	947	271	13	959
Stove or lamp. Oil	E. Blackman	203,994	May 21	822	236	13	944
Stove-shelf	G. W. Robertson	203,944	May 21	764	220	13	937
Strainer. Milk	H. More	203,847	May 21	666	189	13	923
Street-sweeping machine	H. W. Richardson	203,942	May 21	762	219	13	936
Stud. Shirt or sleeve	N. Salmon and A. Delaviere	204,095	May 21	930	266	13	957
Suspensory-bandage	S. E. G. Rawson	204,088	May 21	922	263	13	956
Syringe. Flexible	M. Mattson. (Reissue)	8,238	May 21	959	274	13	960
Sad-iron stand	K. E. Keeler	204,338	May 28	1204	343	13	996
Sash balance and lock	J. B. Rayner and E. G. Burr	204,374	May 28	1243	353	13	1000
Saw	R. E. Poindexter	204,369	May 28	1238	352	13	1000
Saw-mill carriage	M. Taplin	204,394	May 28	1260	360	13	1003
Saw-mill head-block	J. Brett and B. Perry	204,192	May 28	1060	301 302	13	977
Saw-sharpener	W. M. Watson	204,402	May 28	1269	361 362	13	1004
Scale-beam	J. Weeks	204,177	May 28	1037	295	13	974
Scintillator for lighting tinder-cord	W. W. Batchelder	204,284	May 28	1147	328	13	988
Scraper. Earth	J. H. Edmondson	204,142	May 28	999	284	13	969
Screen	G. F. Halley	204,147	May 28	1005	286	13	970
Screen. Window	G. L. Reynolds	204,375	May 28	1244	354	13	1001
Scythe-snath fastening	M. Hewitt	204,327	May 28	1193	340	13	994
Seed and fertilizer distributer	W. Harper	204,323	May 28	1189	339	13	994
Seed-distributer	J. W. Dooley	204,301	May 28	1166	332	13	991
Sewer-trap	J. M. Thatcher	204,397	May 28	1263	360	13	1003
Sewer-trap valve	P. J. Conwery	204,135	May 28	991	282	13	969
Sewing-machine needle-bar	W. Cook and S. Hill	204,294	May 28	1159	331	13	990
Sewing-machine shuttle-driving mechanism	E. Brosemann, M. Russenberger, and M. Rosenstock.	204,291	May 28	1155	330	13	989
Sewing-machine table	S. Hill	204,219	May 28	1086	309	13	981
Sewing-machine table	T. Lanston	204,157	May 28	1016	289	13	971
Sheet-metal vessels. Handle for	F. Groejean	204,319	May 28	1185	337	13	993
Shipping-case	J. H. Byrne	204,194	May 28	1063	302	13	978
Shoe-tip	H. White. (Reissue)	8,263	May 28	1298	369	13	1007
Shoes. Rack for holding and exhibiting	J. Priest	204,249	May 28	1115	318	13	984
Shot. Tin-plated	L. Crooke	204,298	May 28	1163	.....	13	990
Shovels. Manufacture of	H. M. Myers	204,163	May 28	1024	291	13	973
Sink. Kitchen	M. W. Scannell	204,255	May 28	1121	330	13	985

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Slate. Apparatus for grinding and shaping	J. W. Hyatt	204,151	May 28	1010	287	13	971
Snuff-package	B. F. Weyman. (Reissue)	8,264	May 28	1299	369	13	1008
Soldering square cans. Machine for	R. Gornall	204,315	May 28	1180	336	13	993
Spectacle-frame	J. F. Traub	204,365	May 28	1129	323	13	986
Spinning-mules. Cop-building rail for	J. Ogden and J. Garrett	204,362	May 28	1231	350	13	999
Spinning-mules. Winding-on mechanism for	G. Gurney	204,214	May 28	1081	308	13	980
Spring. Door-	O. Seely	204,382	May 28	1249	356	13	1001
Spring. Vehicle-	N. Nilson	204,360	May 28	1229	350	13	999
Sprinkler	J. M. Josiue	204,333	May 28	1200	392	13	995
Sprinklers. Inlet-pipe for street-	G. H. Stallman	204,172	May 28	1031	294	13	974
Steam-generator	A. J. Collinge and B. M. Savage	204,201	May 28	1068	304	13	978
Steam-generator	M. Cullen	204,203	May 28	1070	305	13	979
Steam-superheater	W. Standing	204,173	May 28	1032	294	13	974
Stone-sawing machine	G. Jennings and J. L. Robellaz	204,331	May 28	1198	{341 {342	13	995
Stove-damper	T. White	204,406	May 28	1273	363	13	1004
Stove for burning crude hydrocarbon and other oils	P. Martin	204,349	May 28	1215	347	13	997
Stoves. Fire-pot lining for	R. J. King	204,155	May 28	1015	288	13	971
Sulphur. Apparatus for refining	H. H. Eames	204,206	May 28	1073	306	13	979
Suspender-ends	E. Painter	204,166	May 28	1026	292	13	973
Saddle-tree. Harness	W. M. Ryerson	204,507	June 4	81	28	13	1024
Sandal	J. G. Cunningham	204,483	June 4	63	21	13	1021
Sausage-stuffer	H. J. Bachtel	204,521	June 4	94	32	13	1026
Sewing-machine	F. D. Elderfield	204,429	June 4	14	5, 6	13	1015
Sewing-machine button-hole attachment	G. F. Hildenbrand and P. J. Eckes	204,572	June 4	139	47	13	1032
Sewing-machine feed mechanism	A. Burgess	204,533	June 4	103	35	13	1027
Sewing-machine feed-operating mechanism	T. K. Keith	204,579	June 4	148	49	13	1034
Sewing-machine. Running-stitch	J. Heberling	204,604	June 4	177	57	13	1037
Sewing-machine. Straw-braid	F. D. Palmer	204,599	June 4	171	55	13	1037
Sheet metal. Machine for cutting	H. B. and M. C. Asher	204,415	June 4	2	1	13	1013
Shingle	H. S. Gordner	204,558	June 4	126	43	13	1030
Shingle sawing and jointing machine	J. A. Mumford	204,499	June 4	74	26	13	1023
Shipping-package	M. C. Richards	204,611	June 4	186	59	13	1039
Sifter. Ash-	E. Baldwin, Jr	204,474	June 4	56	18	13	1020
Siphon. Steam-gage	J. A. Prindle	204,449	June 4	34	11	13	1017
Smoke-stack. Locomotive	W. F. Beecher	204,522	June 4	95	32	13	1026
Spinning-frame	W. D. Isett	204,436	June 4	21	7, 8	13	1015
Spinning-ring	D. J. Hurley	204,489	June 4	67	23	13	1022
Spring and axle. Vehicle	S. W. Ludlow	204,589	June 4	161	52	13	1035
Spring for vehicles. Side	J. Foster	204,553	June 4	119	41	13	1030
Spring. Vehicle-	S. Gilzinger	204,556	June 4	125	42	13	1030
Square, bevel, and miter. Try-	E. H. Eaton	204,428	June 4	13	5	13	1014
Stamp. Hand-	E. D. Chamberlain	204,421	June 4	7	3	13	1013
Stave-jointing machine	W. Brown	204,529	June 4	100	34	13	1026
Stay and clasp for narrow fabrics	W. E. Barrows	204,523	June 4	96	32	13	1026
Steamer. Feed-	G. W. Van Buren, Jr	204,514	June 4	86	29	13	1025
Stirrup	M. T. Burke	204,420	June 4	6	3	13	1013
Stove-cover	A. J. Sennett	204,623	June 4	201	64	13	1041
Stove. Gas or oil	E. A. Jackson	204,490	June 4	68	23	13	1022
Stove hearth. Cooking-	C. Koehl	204,433	June 4	36	12	13	1018
Stove. Oil-	D. W. Goodell	204,537	June 4	126	42	13	1030
Stove-pipe shelf	W. L. Hess	204,570	June 4	138	46	13	1032
Stove-shelf and heating-drum	W. T. Bowen	204,475	June 4	57	18	13	1020
Stump-extractor	J. D. Smith	204,627	June 4	205	65, 66	13	1041
Sad-iron polisher	E. G. Rowe	204,759	June 11	348	105	13	1064
Saddle. Harness-	F. Koch	204,673	June 11	257	80	13	1052
Safe. Burglar-proof	H. Gross	204,614	June 11	409	120	13	1070
Sash-balance	E. Eberly	204,660	June 11	243	76	13	1050
Sash-fastener	J. Broughton	204,794	June 11	390	116	13	1068
Sash-holder	G. H. Earnest	204,659	June 11	242	76	13	1050
Sash holder and lock	E. Tobin, Jr	204,691	June 11	277	86	13	1055
Saw-gummer	G. Mercer	204,749	June 11	338	102	13	1062
Saw mill. Circular-	H. Atkinson	204,782	June 11	378	113	13	1067
Saw-tooth	C. Adams	204,697	June 11	281	87	13	1055
Sawing machine. Drag-	D. Gates	204,809	June 11	405	119	13	1070
Sawing machine. Drag-	D. Miller and W. H. Johnson	204,836	June 11	438	128	13	1073
Scales. Weighing-	H. Willard	204,869	June 11	471	137	13	1077
Screw-driver	R. S. Gladding	204,812	June 11	408	119	13	1070
Sewing-machine	C. F. Harlow. (Reissue)	8,283	June 11	492	142	13	1080
Sewing machine. Broom-	L. Varicas	204,864	June 11	463	135	13	1077
Sewing-machine. Button-hole	E. Moreau	204,873	June 11	477	{138 {139 {140	13	1078
Sewing-machine needle-clamp	H. Barclay	204,789	June 11	385	114	13	1067
Sewing-machine shuttle	G. W. Hunter. (Reissue)	8,285	June 11	495	143	13	1080
Sewing-machine table	M. Gritzner	204,724	June 11	313	96	13	1059
Sewing-machine treadle attachment	C. B. Veronee	204,776	June 11	369	111	13	1066
Shackles. Prisoner's	G. S. Hickox	204,669	June 11	253	79	13	1051
Signaling apparatus	W. Gravit	204,721	June 11	308	95	13	1059
Skeps or other baskets. Machine for making	W. Illingworth and C. Ziedler	204,825	June 11	419	{124 {125	13	1072
Slate-frame attachment	F. G. Johnson	204,740	June 11	329	100	13	1061
Soap. Toilet-	J. L. Pollak	204,843	June 11	443	.....	13	1074
Spark-extinguisher	J. Johnson	204,739	June 11	328	99	13	1061
Spinning-ring and traveler	E. T. Lanphear	204,832	June 11	434	127	13	1073
Spoke-throating machine	G. R. Cramer	204,801	June 11	396	116	13	1069
Spool-holder	E. Rice	204,758	June 11	348	105	13	1064
Spring. Vehicle-	J. Bowman	204,707	June 11	293	91	13	1057
Springs. Jointed brace for vehicle-	W. J. Rawlings	204,843	June 11	443	120	13	1074
Stall cushion. Horse	J. H. Clark	204,655	June 11	239	75	13	1050
Stamp-canceler	G. B. Dennis. (Reissue)	8,282	June 11	491	142	13	1080
Stave-jointer	J. C. Moore	204,751	June 11	340	103	13	1063
Steam-generator	J. W. Bookwalter	204,792	June 11	387	115	13	1068
Steel. Bath for tempering	J. Humphreys	204,824	June 11	418	123	13	1071

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Steel. Tempering-	G. Banister	204,788	June 11	385	.....	13	1067
Stencil	C. H. Dana	204,803	June 11	399	117	13	1069
Stove-leg	I. T. Montrose	204,839	June 11	440	129	13	1074
Stoves. Ventilator attachment for cook-	J. Harding	204,819	June 11	414	122	13	1071
Saddle. Harness-	S. Magnus	205,112	June 18	733	218	13	1116
Saddle. Riding-	J. B. Gathright	204,892	June 18	516	151	13	1087
Saddle. Riding-	A. D. Jones	204,978	June 18	692	176	13	1099
Safe. Caloric	A. T. Snyder	204,930	June 18	547	159	13	1091
Sample-reel	A. L. Snyder	205,149	June 18	774	229	13	1122
Sash-fastener	J. F. Zimmermann	205,166	June 18	788	234	13	1124
Sash-holder	S. S. Spear	205,005	June 18	628	184	13	1102
Sash. Window-	J. L. Joyce	205,101	June 18	721	215	13	1115
Saw-frame. Bracket	C. Spring and J. T. Robinson	205,006	June 18	629	185	13	1102
Saw-mill head-block	E. H. Stearns. (Reissue)	8,289	June 18	794	{235 {236	13	1125
Saw-teeth	W. E. Brooke	205,042	June 18	663	195	13	1107
Scales. Weighing-	G. W. Craig	204,888	June 18	512	149	13	1087
Scarf-fastening	H. Sandnér	204,999	June 18	624	182	13	1101
Screw-swaging machine	M. D. Luehrs	204,907	June 18	530	155	13	1089
Seam for metal ware. Locking-	G. Wright	204,936	June 18	561	164	13	1093
Sewing-machine-driving attachment	G. Bell	204,943	June 18	570	166	13	1094
Sewing-machine fly-wheel	A. Decker	204,954	June 18	579	169	13	1096
Shawl. Shetland	F. Farrand	204,959	June 18	584	171	13	1096
Sheep-protector	C. Gilbert	204,964	June 18	590	172	13	1097
Shoe or gaiter	F. Packard	205,129	June 18	747	222	13	1118
Shovel	J. Johnson	204,897	June 18	522	153	13	1088
Siphon	G. H. Winkler	205,163	June 18	786	233	13	1123
Sled	B. M. Wilkerson	205,162	June 18	786	233	13	1123
Sled-propeller	J. A. Zoebl	204,937	June 18	562	164	13	1093
Sleigh	J. J. Cobb	204,884	June 18	507	148	13	1086
Soap-frame	H. Rathman	205,136	June 18	756	{234 {235	13	1119
Sower. Seed-	W. A. Horrall and J. J. Verckler	205,090	June 18	713	211	13	1113
Spittoon	T. W. Barnhill	205,033	June 18	654	193	13	1106
Spring fastening. Vehicle-seat-	R. H. Guyer	205,078	June 18	699	207	13	1112
Spring. Vehicle-	S. M. Richardson	204,915	June 18	539	157	13	1090
Stamps. Stamping cigars with revenue-	W. D. O'Connor	205,127	June 18	745	221	13	1118
Steam-trap	J. H. Blessing. (Reissue)	8,286	June 18	789	234	13	1124
Still-column	E. Smeeth and G. P. Harris	204,919	June 18	545	{158 {159	13	1091
Stopper-sleeve	A. J. Haws	205,084	June 18	707	210	13	1113
Stove-damper	E. Bussey	205,050	June 18	673	197	13	1108
Stove-grate	A. Nicol	204,911	June 18	534	156	13	1090
Stove. Oil-	P. Martin	205,113	June 18	734	218	13	1116
Stove-pipe shelf	T. Hill	205,087	June 18	710	210	13	1113
Surgical tube. India-rubber	R. Lockwood	204,905	June 18	529	154	13	1089
Suspension-hook	F. Anderson	204,875	June 18	498	145	13	1085
Syringe	S. Peters	204,912	June 18	536	156	13	1090
Sad-iron	I. P. Chalfant	205,352	June 25	1003	297	13	1156
Sad-iron and heater	C. Ezard	205,371	June 25	1023	303	13	1159
Sash-fastener	L. W. Knight	205,278	June 25	917	272	13	1146
Sash-fastener	F. Marten	205,403	June 25	1053	312	13	1163
Sash-holder	J. W. and W. W. Wharf	205,455	June 25	1102	326	13	1170
Saw. Drag-	F. Mayrhofer	205,197	June 25	837	248	13	1135
Saw-teeth. Manufacture of	N. W. Spaulding	205,311	June 25	957	{283 {284 {297 {298	13	1151
Scales. Weighing-	H. S. Cochran	205,354	June 25	1005		13	1157
Scraper. Road-	S. G. L. Morrow	205,290	June 25	934	277	13	1147
Seeding-machine	A. P. Steele	205,312	June 25	959	284	13	1151
Sewing-machine needle	A. C. Carey	205,243	June 25	886	262	13	1141
Sewing-machine shuttle	W. T. Willott	205,254	June 25	894	265	13	1142
Sewing-machine. Cutting attachment for	D. J. Tapley	205,315	June 25	963	285	13	1151
Shearing machine. Animal-	P. J. Watson	205,450	June 25	1099	325	13	1169
Shoe	J. R. Stevens	205,435	June 25	1084	321	13	1167
Shutter. Fire-proof	S. L. Pollock	205,297	June 25	940	279	13	1148
Sieve	M. A. and G. M. Richardson	205,210	June 25	848	252	13	1137
Sled-propeller	J. Mahedy	205,196	June 25	836	248	13	1135
Snatch-block	T. J. Bray	205,237	June 25	880	260	13	1141
Soap-holder	W. H. Dewees	205,365	June 25	1016	300	13	1158
Sphygmograph	E. A. Pond	205,412	June 25	1061	315	13	1164
Spinning-mule	J. Hackaley	205,380	June 25	1031	{305 {306	13	1160
Spring. Car-	C. M. Higginson	205,269	June 25	907	269	13	1144
Stamp-canceling device	G. L. Neville and L. C. Godwin	205,292	June 25	935	277	13	1148
Steam. Apparatus for combustion of fuel for generation of	O. Marland	205,282	June 25	921	{273 {274 {275	13	1146
Steamer. Feed-	W. M. Parker and W. W. Yokom	205,409	June 25	1057	314	13	1163
Stereotype-block	A. Henning	205,268	June 25	907	268	13	1144
Still. Oil-	G. Miles	205,407	June 25	1056	313	13	1163
Stove-damper	J. S. Van Buren	205,321	June 25	968	{286 {287	13	1152
Stove. Gas-	W. M. Jackson	205,391	June 25	1042	309	13	1161
Stove. Magazine-	W. W. Baldwin	205,232	June 25	874	{238 {239	13	1140
Stove-pipe damper	S. Crowell	205,177	June 25	814	242	13	1132
Strawberry-protector	T. Delany	205,252	June 25	893	264	13	1142
Syringe. Vaginal	H. T. Chamberlin	205,353	June 25	1004	297	13	1156
Table. Folding	G. A. Trimble	198,826	Jan. 1	105	30	13	24
Teaching history, &c. Apparatus for	N. Loverin	198,749	Jan. 1	20	5	13	11
Teeth on aluminum plates. Securing artificial	J. T. Thornton	198,908	Jan. 1	190	54	13	38
Telegraphy. Morse telephonic	E. Gray	198,738	Jan. 1	7	2	13	10
Thill-coupling	D. A. Johnson	198,803	Jan. 1	86	23	13	21

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Thill-couplings. Device for compressing rubbers in	H. U. Upjohn	198,759	Jan. 1	36	9	13	13
Time-recorder. Electro-magnetic watchman's	W. E. Phelps	198,814	Jan. 1	95	26	13	22
Tobacco measuring and packing machine	C. C. Clawson	198,793	Jan. 1	77	20	13	19
Trace-carrier and back-band buckle	J. T. Gathright	198,800	Jan. 1	82	22	13	20
Trough for cattle. Fountain watering-	S. Johnson	198,744	Jan. 1	15	4	13	11
Truck. Water-carrying	F. M. and A. B. Blackman and D. T. Grifling.	198,734	Jan. 1	3	1	13	9
Turnstile-register	B. P. Card	198,761	Jan. 1	38	9	13	14
Tanning leather	G. Goodwin	199,054	Jan. 8	342	.....	13	69
Telephone	A. E. Dolbear	199,041	Jan. 8	328	96	13	67
Telephone	T. A. Watson	199,007	Jan. 8	298	87	13	62
Testing the quality of rolling stock, &c. Machine for	S. G. Elek	199,046	Jan. 8	333	98	13	68
Thrashing-machines. Band-cutting feeder for	M. H. Joslyn	198,985	Jan. 8	274	79	13	58
Thrashing-machines. Feeder for	R. R. Moore	198,995	Jan. 8	288	84	13	60
Time-check. Watchman's	W. E. Young	198,962	Jan. 8	252	72	13	54
Tongue support. Wagon-	T. Morgan	199,092	Jan. 8	379	112	13	75
Tuyere	T. F. Witherbee. (Reissue)	8,033	Jan. 8	437	128	13	84
Tuyere	T. F. Witherbee	199,134	Jan. 8	425	125	13	82
Table-leaf support	E. Flather and W. Houghtaling	199,150	Jan. 15	457	134	13	87
Telephone	E. Berliner	199,141	Jan. 15	447	132	13	85
Thrashing-machines. Band-cutting feeder for	H. K. Andrews	199,172	Jan. 15	477	141	13	90
Thrashing-machines. Band-cutting feeder for	W. E. Harwell	199,202	Jan. 15	507	149	13	95
Tug-holder. Elastic	W. S. Mead	199,163	Jan. 15	469	138	13	89
Type-writing machine	J. M. Clough and W. K. Jenne	199,263	Jan. 15	563	165	13	104
Table and clothes-horse. Combined	D. M. Singer	199,585	Jan. 22	901	263	13	165
Tacks. Machine for making lasting-	T. B. Cox	199,416	Jan. 22	728	214	13	137
Telegraph wires. Insulating underground-	D. Brooks	199,506	Jan. 22	818	239	13	152
Thermometer	J. S. F. Huddleston	199,442	Jan. 22	750	220	13	141
Time-signal	J. A. De Macedo	199,419	Jan. 22	732	215	13	138
Tinware	I. F. Kearns	199,370	Jan. 22	684	201	13	130
Tobacco-drying machine	W. B. Isaacs	199,367	Jan. 22	682	200	13	130
Tongs. Pipe-	G. A. Harbaugh	199,539	Jan. 22	855	250	13	157
Top-spinning device	E. D. Mackintosh	199,559	Jan. 22	872	255	13	161
Transom-lifter	J. H. R. Prall	199,465	Jan. 22	774	227	13	145
Transplanting-tool	J. C. Bowman	199,501	Jan. 22	810	237	13	151
Treadle-motion	T. F. Woodbridge and A. P. Gerlach	199,484	Jan. 22	792	233	13	148
Tree-protector	H. R. Daggett	199,355	Jan. 22	670	196	13	128
Truck. Warehouse-	R. Kent	199,372	Jan. 22	685	201	13	130
Truss and supporter	A. M. Dye	199,424	Jan. 22	735	216	13	139
Tug and attachment. Harness-	J. D. Blinco	199,498	Jan. 22	806	236	13	150
Type-writing machine	W. J. Barron	199,494	Jan. 22	802	235	13	149
Type-writing machine	C. L. Sholes	199,382	Jan. 22	695	204	13	132
Telegraph. Duplex-	G. Smith	199,869	Jan. 29	1198	352	13	218
Thill-coupling	T. H. Pate	199,602	Jan. 29	1007	293	13	189
Thill-coupling	G. W. Wells	199,884	Jan. 29	1213	356	13	221
Tile machines. Roller for drain-	A. Horrocks and E. D. Stevens	199,712	Jan. 29	1054	308	13	196
Tire-tightener	E. S. Gibbs	199,700	Jan. 29	1044	305	13	195
Tobacco. Marking-frame for plug-	D. W. De Forrest	199,624	Jan. 29	969	282	13	183
Tobacco-pail	J. T. Emerick	199,628	Jan. 29	974	283	13	184
Tobacco-plugs. Finishing	A. Miller and C. Worley. (Reissue)	8,060	Jan. 29	1222	359	13	222
Torpedo boat. Spar-	W. H. Mallory	199,841	Jan. 29	1176	345	13	215
Toy. Automatic	H. Pattberg and A. Gaertner	199,858	Jan. 29	1190	349	13	217
Trace-carrier	C. C. Schwaner	199,742	Jan. 29	1085	318	13	201
Tumbling-barrel	J. C. Coonley and T. T. Graham	199,797	Jan. 29	1136	333	13	209
Table. Folding	W. W. Hart	200,057	Feb. 5	167	54	13	259
Tanning compound	C. J. Tinnerholm	200,108	Feb. 5	219	.....	13	267
Telegraphs. Synchronous movement for electric	T. A. Edison	200,032	Feb. 5	136	45	13	254
Thill-coupling	C. L. Alexander, B. L. Osborn, and J. G. Anthony.	199,951	Feb. 5	62	20	13	242
Tobacco. Labeling plugs of	H. W. Hunt	200,062	Feb. 5	172	55	13	260
Tobacco-pipe	W. Demuth	200,030	Feb. 5	134	44	13	254
Tobacco. Plug-	R. W. Oliver	199,989	Feb. 5	97	32	13	248
Tub-ear	T. and W. M. Dunham	199,899	Feb. 5	9	3	13	234
Type	J. R. Bettis	200,020	Feb. 5	124	41	13	252
Table. Folding	W. W. Hart	200,291	Feb. 12	408	122	13	304
Table. Library-	H. Closterman	200,173	Feb. 12	293	87	13	246
Tallying-machine	W. N. Durant	200,267	Feb. 12	386	114	13	301
Teeth. Artificial	W. P. Hall	200,284	Feb. 12	400	119	13	303
Telegraph-insulator	D. Brooks, Jr.	200,124	Feb. 12	243	74	13	279
Terret. Harness-	C. B. Bristol	200,166	Feb. 12	286	85	13	285
Thill-coupling	E. L. Marshall	200,143	Feb. 12	262	78	13	282
Ticket. Railway-	W. E. Davis	200,264	Feb. 12	382	113	13	300
Tire upsetter and shears. Combined	I. N. and W. Pennock	200,334	Feb. 12	454	134	13	310
Tobacco. Marking plug-	J. T. Drummond	200,133	Feb. 12	251	76	13	280
Tobacco-package	T. E. Allen	200,239	Feb. 12	352	105	13	296
Tobacco. Plug-	F. S. Kinney	200,202	Feb. 12	319	95	13	291
Tobacco-stem flattener	N. H. Borgfeldt	200,246	Feb. 12	360	107	13	297
Tongs. Blacksmiths'	J. H. Alker	200,238	Feb. 12	351	105	13	296
Torpedo for oil-wells	J. J. Boyer	200,164	Feb. 12	284	84	13	285
Trace-carrier	W. B. Hayden	200,292	Feb. 12	409	122	13	304
Trunk	J. Cottner	200,178	Feb. 12	296	88	13	287
Truss	A. Adamson	200,160	Feb. 12	279	83	13	284
Tube-cleaner	J. S. Godfrey	200,278	Feb. 12	395	117	13	302
Type-writing machine	C. L. Sholes and C. Glidden	200,351	Feb. 12	473	139	13	314
Tap with turnable outlets	C. G. Fischer	200,383	Feb. 19	515	152	13	328
Target	E. B. Beer	200,426	Feb. 19	557	164	13	335
Temperature of apartments. Device for indicating and automatically regulating the	E. Armstrong	200,497	Feb. 19	624	184	13	345
Terret. Harness-	C. L. Pond	200,476	Feb. 19	606	178	13	342
Thermostat. Mercurial	W. B. Farrar	200,382	Feb. 19	514	152	13	328
Thill-coupling	D. D. Whitney	200,391	Feb. 19	718	211	13	339
Tile-laying machine	J. I. and W. J. Mettler	200,557	Feb. 19	684	201	13	354
Tin from tin-scrap. Separating	P. C. Vogellus	200,587	Feb. 19	715	.....	13	350
Torpedo for oil-wells	E. A. L. Roberts	200,570	Feb. 19	697	205	13	356

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Torpedo for oil-wells	G. S. Vaughn	200,491	Feb. 19	619	182	13	344
Toy money-box	W. H. Lotz	200,402	Feb. 19	532	157	13	331
Treadle. Machine-	S. Haas	200,390	Feb. 19	522	154	13	329
Truck. Barrel-	J. O. A. Bennett. (Reissue)	8,092	Feb. 19	734	215	13	362
Tube expander and trimmer	J. E. Minshull	200,558	Feb. 19	685	201 / 202	13	354
Tubing. Armor for flexible	H. Wakeman	200,493	Feb. 19	621	183	13	344
Twin hook	H. H. Cole	200,510	Feb. 19	636	187	13	347
Tailor's measuring-tool	E. O. Thompson	200,779	Feb. 26	928	273	13	389
Telegraph-relay	G. Allan and J. W. Brown	200,680	Feb. 26	832	245	13	384
Telephone	J. Trobridge	200,631	Feb. 26	774	228	13	376
Tether	W. B. Mathews	200,620	Feb. 26	765	225	13	374
Thill-coupling	H. Howell	200,793	Feb. 26	940	277	13	401
Tile or brick kiln	R. G. McCullough	200,743	Feb. 26	895	263	13	393
Tire-setting machine	J. B. West	200,637	Feb. 26	782	229	13	377
Tobacco-curing apparatus	D. V. Davis	200,789	Feb. 26	936	276	13	400
Toy carriage	H. Groth	200,714	Feb. 26	869	255	13	389
Transom-lifter	A. F. Pfeifer	200,753	Feb. 26	905	266	13	395
Truck. Car-	J. G. Divoll	200,646	Feb. 26	793	233	13	379
Tug-link	W. P. Riley	200,803	Feb. 26	951	280	13	402
Tug. Spring draft-	A. T. Nichols	200,749	Feb. 26	902	265	13	394
Table. Extension-	J. B. Thurston	200,849	Mar. 5	36	12	13	420
Table. Folding	W. H. Palmer	201,042	Mar. 5	223	70	13	449
Table. Kitchen-	J. Bliss	200,891	Mar. 5	74	26	13	426
Table-leaf support	G. T. Wallace	200,954	Mar. 5	130	43	13	436
Tea-kettle	N. A. Menear and H. Sangster	201,034	Mar. 5	215	67	13	448
Telegraph. Acoustic	T. A. Edison	200,993	Mar. 5	171	55	13	441
Telegraph perforator and transmitter. Automatic-	T. A. Edison	200,994	Mar. 5	173	55	13	441
Telephone	J. E. Smith	201,060	Mar. 5	239	76	13	451
Thill-coupling	H. J. Iles	200,832	Mar. 5	19	7	13	417
Tobacco-pipe	T. A. Van Norden	200,882	Mar. 5	67	23	13	425
Tool-handle	J. E. Parrish	200,932	Mar. 5	110	37	13	432
Toy money-box	B. M. Abell and F. Brecht	200,885	Mar. 5	69	24	13	426
Toy musical-instrument	L. Anderson	200,964	Mar. 5	139	45	13	437
Transom-lifter	W. B. Mitchell	200,869	Mar. 5	55	19	13	423
Twisting yarn into hanks. Device for	B. S. and A. Jennings	200,917	Mar. 5	98	33	13	430
Tap and faucet. Combined	M. A. Farrell	201,172	Mar. 12	354	109	13	475
Target thrower. Ball-	J. G. Mole	201,118	Mar. 12	305	93	13	468
Tea, coffee, &c. Apparatus for making	J. Miller	201,272	Mar. 12	459	141	13	490
Telegraph-key	H. E. Blake	201,089	Mar. 12	272	84	13	464
Thill-coupling	R. A. Goldsmith	201,107	Mar. 12	290	90	13	466
Tobacco. Device for handling hogsheads of	V. Black	201,220	Mar. 12	402	123	13	482
Tobacco. Package for plug-	E. R. Hearn	201,245	Mar. 12	431	132	13	486
Tobacco-spraying apparatus	C. S. Phillips	201,196	Mar. 12	376	117	13	479
Toy. Bell-	P. H. Hillard	201,180	Mar. 12	361	111	13	476
Toy pistol	J. McConnell	201,189	Mar. 12	370	115	13	478
Trace trimming and creasing machine	T. H. Thompson	201,208	Mar. 12	388	120	13	481
Truck. Car-	G. S. Banger and L. D. Hurd	201,217	Mar. 12	399	122 / 123	13	482
Truck. Car-	G. Vincent	201,309	Mar. 12	502	154	13	495
Truck. Car-	G. Vincent	201,311	Mar. 12	504	155	13	496
Truck. Car-	G. Vincent and M. A. Wheaton	201,310	Mar. 12	503	155	13	495
Tubing upon spindles. Apparatus for placing elastic	W. Cowles	201,096	Mar. 12	280	97	13	465
Tachometer or speed-indicator	E. Buss	201,495	Mar. 19	704	215	13	532
Telegraph-wire. Insulated	M. H. Alberger	201,477	Mar. 19	686	210	13	529
Telegraph-wires. Insulator for	J. Matthewman	201,544	Mar. 19	758	230	13	538
Telephone. Speaking-	A. G. Bell	201,488	Mar. 19	697	213	13	531
Thrashing-machines. Dust-conveyer for	E. S. Churchman	201,331	Mar. 19	540	166	13	503
Tile-laying machine	J. I. and W. J. Mettler	201,548	Mar. 19	761	231 / 232	13	530
Tobacco-cutter	J. Farrar	201,338	Mar. 19	549	169	13	509
Tobacco-pulp. Machine for coating paper with	T. J. Ferguson	201,340	Mar. 19	551	169	13	510
Tongue support. Wagon-	L. D. Brown	201,323	Mar. 19	533	164	13	507
Toy revolver	A. Dahler and F. W. Hoffmann	201,392	Mar. 19	603	185	13	517
Trace-carrier	S. S. Sargeant	201,452	Mar. 19	663	202	13	525
Track-clearer	C. Bopp	201,492	Mar. 19	701	214	13	531
Truck. Car-	S. Lord	201,540	Mar. 19	753	229	13	538
Truck for street-cars	S. Lord	201,539	Mar. 19	752	229	13	538
Table. Folding	J. E. Wakefield	201,723	Mar. 26	948	291	13	570
Tack. Plumber's	H. C. Milligan	201,697	Mar. 26	910	281	13	566
Tape-holder	E. Rice	201,835	Mar. 26	1063	324	13	587
Telegraph-wires. Insulator for	W. C. Johnson and S. E. Phillips	201,615	Mar. 26	848	257	13	555
Thrashing-machine. Feeder for	M. L. Mery	201,696	Mar. 26	918	281	13	566
Thread-holder	J. Dunn	201,656	Mar. 26	886	270	13	561
Tickets. Machine for making wired	A. Kimball	201,684	Mar. 26	907	278	13	564
Toy	E. R. Ives	201,678	Mar. 26	903	276	13	564
Toy. Wheeled	J. H. Wygant	201,729	Mar. 26	955	292	13	571
Trace-carrier	R. R. Hart	201,779	Mar. 26	1007	308	13	579
Type. Elastic-faced printing-	A. H. Rogers	201,632	Mar. 26	865	263	13	557
Type-holder	L. P. Taylor	201,718	Mar. 26	941	289	13	569
Table. Surgical operating-	T. McIlroy	201,933	Apr. 2	73	20	13	609
Tap for casks. Safety-	I. Conradt	201,870	Apr. 2	13	4	13	600
Teeth. Metallic filling for	N. B. Slayton	201,895	Apr. 2	36	.....	13	604
Telegraphic fire-alarm apparatus	A. C. and A. H. Palmer	201,941	Apr. 2	79	22	13	610
Thill-coupling	L. E. Thayer	201,902	Apr. 2	99	28	13	613
Tobacco cutter. Plug-	S. P. Dick and D. R. Musselman	201,915	Apr. 2	57	15	13	607
Toy ark	G. H. Ireland	201,879	Apr. 2	22	6	13	601
Toy trundle	G. W. Craig	201,999	Apr. 2	137	39	13	619
Toy wheeled vehicle	J. K. Barton	201,981	Apr. 2	118	34	13	616
Trash-gatherer	B. F., W. P., and J. Rarick	202,051	Apr. 2	191	55	13	626
Tree. Artificial	J. G. Wolf	202,085	Apr. 2	225	66	13	631
Type-writing machine	B. Halstead	202,024	Apr. 2	160	47	13	622
Table. Combined dining and laundry	S. W. Steves	202,204	Apr. 9	461	135	13	668
Target	J. Göbbels	202,255	Apr. 9	421	123	13	662

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Target thrower. Ball-	P. Taltavull	202,301	Apr. 9	467	137	13	669
Thrashing-machine	H. B. Stevens	202,293	Apr. 9	459	134	13	668
Tire-upsetter	J. W. Bodge	202,220	Apr. 9	386	113	13	658
Tobacco. Manufacture of plug-	D. W. DeForest	202,245	Apr. 9	412	120	13	661
Tongs. Pipe-	H. Badcock	202,089	Apr. 9	248	73	13	639
Tool-handle	P. A. Gladwin	202,105	Apr. 9	264	78	13	641
Top. Spinning-	C. Raetz	202,118	Apr. 9	278	82	13	643
Toy. Flying-	C. Mettam	202,281	Apr. 9	448	131	13	666
Toy money-box	J. W. Hoard. (Reissue)	8,170	Apr. 9	505	147	13	674
Trace. Wire-rope harness-	F. M. Collier	202,153	Apr. 9	313	93	13	648
Tray machine. Wooden-	J. S. Brown and L. Kimball, Jr.	202,146	Apr. 9	305	91	13	646
Tuyere	J. F. Maguire	202,280	Apr. 9	447	131	13	666
Type-writing machine	G. A. Brady and F. F. Warner	202,143	Apr. 9	301	89, 90	13	646
Tape-measure	A. F. Ward	202,610	Apr. 16	812	235	13	717
Telegraph. Electro-harmonic	F. A. Gower and M. J. Matthews	202,539	Apr. 16	739	214	13	709
Telegraph. Underground-	J. B. Hyde	202,442	Apr. 16	629	184	13	696
Telegraph-wires. Coupling for	A. R. Lane	202,556	Apr. 16	758	219	13	711
Telephone-call signal apparatus	T. A. Watson	202,495	Apr. 16	675	198	13	703
Tellurian	J. Schedler	202,590	Apr. 16	792	228	13	715
Thrashers. Band-cutting feeder for	M. M. Hooton	202,546	Apr. 16	747	216	13	710
Tile-machine	M. Moore	202,454	Apr. 16	641	187	13	697
Tobacco-cutting machine	J. F. Tygh	202,608	Apr. 16	810	234	13	717
Tobacco-plants. Machine for setting	F. M. Meyer	202,452	Apr. 16	639	186	13	697
Tobacco-washer	H. Messmer	202,568	Apr. 16	769	222	13	712
Torpedo-boat	H. Mortensen	202,453	Apr. 16	640	187	13	697
Trace-carrier	M. E. Zeller	202,502	Apr. 16	681	200	13	704
Traveling-bag frame	M. C. Schutz	202,379	Apr. 16	567	166	13	687
Telephone transmitter. Speaking-	G. B. Richmond	202,870	Apr. 23	1107	317	13	763
Thill-coupling	E. R. Mason	202,846	Apr. 23	1083	309	13	760
Timber. Preserving	W. Thilmany	202,678	Apr. 23	905	.....	13	737
Tobacco. Composition for treating	J. Trent	202,680	Apr. 23	907	.....	13	738
Tobacco-stem crusher	N. H. Borgfeldt	202,696	Apr. 23	924	264	13	739
Toy	S. Potts	202,754	Apr. 23	982	282	13	747
Toy pistol. Top-spinning	C. Mohr	202,742	Apr. 23	968	278	13	745
Toy vehicle	F. R. Hoard	202,651	Apr. 23	877	251	13	734
Trace-coupling	J. Forney	202,806	Apr. 23	1039	299	13	755
Transplanter and hoe. Combined-	M. Wilson	202,909	Apr. 23	1147	329	13	767
Tread-mill	R. A. Brown	202,783	Apr. 23	1012	290	13	751
Truck. Car-	E. J. Marsters and R. A. Fisher	202,737	Apr. 23	961	276	13	744
Truck. Car-	C. Speidel	202,891	Apr. 23	1120	322	13	765
Truss	L. T. J. Lubin	202,842	Apr. 23	1078	308	13	759
Truss	L. T. J. Lubin	202,843	Apr. 23	1080	308	13	759
Tablet holder. Erasive	O. Cleveland	203,120	Apr. 30	1360	396	13	800
Tea, coffee, and other extracts. Device for making	J. Miller	203,179	Apr. 30	1428	417	13	809
Telegraph. Speaking-	T. A. Edison	203,013	Apr. 30	1260	365	13	787
Telegraph. Speaking-	T. A. Edison	203,014	Apr. 30	1262	365, 366	13	787
Telegraph. Speaking-	T. A. Edison	203,015	Apr. 30	1263	366	13	787
Telegraphs. Circuit for acoustic or telephonic	T. A. Edison	203,019	Apr. 30	1268	367	13	788
Telephone call-signal	T. A. Edison	203,017	Apr. 30	1266	366	13	787
Telephone or speaking-telegraph	T. A. Edison	203,018	Apr. 30	1267	367	13	787
Telephone. Speaking-	T. A. Edison	203,016	Apr. 30	1265	366	13	787
Thill-coupling	W. L. Wheeler	203,096	Apr. 30	1338	389	13	797
Tongs. Log-	J. J. Ryan	203,198	Apr. 30	1451	424	13	812
Tool	W. M. Lamb	203,052	Apr. 30	1296	376	13	792
Torpedo for oil-wells	W. Haus	203,034	Apr. 30	1281	371	13	790
Toy. Jumping	C. E. Chinnock	202,990	Apr. 30	1237	358	13	784
Toy. Trundle	E. C. Kirkpatrick	203,165	Apr. 30	1415	412	13	807
Trace-carrier	W. B. Burns	202,986	Apr. 30	1235	357	13	784
Trace-holder	J. Gallaspie	203,028	Apr. 30	1277	369	13	789
Truck. Car-	G. M. Brill	202,922	Apr. 30	1174	338	13	775
Truck. Garbage-	H. B. Gurler	203,144	Apr. 30	1390	406	13	804
Truck. Railway-car	C. M. Kimball	203,163	Apr. 30	1413	412	13	807
Truck sides. Machine for making freight-car-	R. H. Briggs and J. H. Dougherty	202,984	Apr. 30	1233	356	13	783
Tubing. Armor for flexible	H. Wakeman	203,094	Apr. 30	1337	388	13	797
Tuyere	A. K. Herr	203,041	Apr. 30	1288	373	13	790
Tuyere	J. Mackey	203,056	Apr. 30	1299	377	13	792
Type-writing machine	B. A. Brooks	202,923	Apr. 30	1175	338, 339	13	775
Tap. Champagne-	W. and R. Bentley	203,314	May 7	86	25	13	831
Target thrower. Ball-	M. E. Card	203,416	May 7	188	54	13	846
Telegraphic and other lines. Isochronous and synchronous movements for	P. La Cour	203,423	May 7	195	56, 57	13	847
Telephones. Circuit for speaking-	E. Gray	203,264	May 7	28	9	13	824
Tent, awning, &c.	M. R. Kunkely	203,279	May 7	43	13	13	826
Thrashing-machine	J. Brown	203,318	May 7	90	26	13	832
Thrashing-machine brace	J. Wisda	203,398	May 7	170	49	13	844
Tongue support. Wagon-	D. B. Hart and W. P. Webster	203,339	May 7	107	31	13	834
Torpedo and means of propelling the same. Submarine	J. Eriesson	203,435	May 7	211	61	13	849
Toy steam-fire-engine apparatus	G. H. Ireland	203,459	May 7	237	67, 68	13	853
Track-clearer	G. Royal	203,377	May 7	140	43	13	841
Traveling-bag handle	G. Willringhaus	203,516	May 7	292	83	13	861
Truck. Convertible car-	W. L. Rankine	203,499	May 7	275	79	13	858
Tank for petroleum. Storing-	F. K. Plumbly	203,537	May 14	360	102	13	878
Tap. Barrel-	R. H. Byrne and E. D. Knight	203,706	May 14	505	143	13	896
Telegraph cable. Submarine-	W. T. Henley	203,619	May 14	413	118	13	885
Telegraph-pole	W. O. Lewis	203,746	May 14	548	155	13	901
Telegraphic-stock reporters. Paper-carrier for	T. S. McDowell	203,635	May 14	429	123	13	886
Telephone alarm-bells. Indicator for	C. W. Jones	203,738	May 14	538	152	13	900
Ticket-case	L. E. Heaton	203,617	May 14	411	117	13	884
Time-check. Electro-magnetic watchmen's	W. O. Lewis	203,747	May 14	549	155	13	902
Tobacco for use as a moth-preventive. Treating paper or other fabric with	J. H. Pickett	203,766	May 14	569	.....	13	904

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tobacco stripping and drying machine	W. Davies	203,600	May 14	398	113	13	883
Tongs. Pipe-	J. Corbin	203,503	May 14	393	111	13	882
Toy	W. S. Reed	203,775	May 14	580	162	13	905
Toy	W. S. Reed	203,776	May 14	580	163	13	905
Toy. Trundling-	J. R. King	203,624	May 14	417	119	13	885
Trace-fastening. Adjustable-	A. Rutherford	203,780	May 14	584	164	13	906
Trees. Composition for protecting	B. J. Timby	203,674	May 14	473	.....	13	892
Truck. Freight-car	J. W. Sprague	203,665	May 14	462	132	13	891
Trunks. Tray-lifter for	A. A. Sola	203,664	May 14	461	131	13	890
Tumbling-barrel	L. Crooke	203,595	May 14	395	111	13	882
Tablets. Cover for holding	H. Willson	204,118	May 21	951	273	13	960
Tanks. Man-hole cover for oil-	W. H. Brock	203,817	May 21	636	179	13	920
Tanks. Man-hole cover for petroleum-	W. H. Brock	203,816	May 21	635	179	13	919
Tassel	W. Offner	204,073	May 21	904	259	13	954
Tea-case	J. A. Anderson	203,870	May 21	687	195	13	926
Telephone. Speaking-	W. Gillett	204,024	May 21	857	245	13	948
Telephone. Speaking-	E. Gray	204,027	May 21	860	246	13	948
Telephone. Speaking-	E. Gray	204,029	May 21	863	246	13	948
Telephone. Speaking-	J. J. McTighe. (Reissue)	8,248	May 21	971	277	13	962
Tempering, lubricating, &c. Composition for	J. Park	204,076	May 21	908	.....	13	955
Tiles. Machine for making paving and building	A. H. Austin	203,811	May 21	630	177	13	919
Time-detecter. Watchman's	J. C. Marvil	204,063	May 21	895	256	13	953
Tobacco. Device for marking plug-	H. C. Holbrook	204,042	May 21	873	250	13	950
Tobacco-germer	J. Woods	203,975	May 21	803	230	13	941
Tongue and thill support for vehicles	O. P. Tripp	204,113	May 21	948	272	13	959
Toy bank	D. J. MacLean	203,927	May 21	747	216	13	934
Track-clearer	W. T. Gruntler	204,031	May 21	865	247	13	949
Track-clearer	G. Royal	204,092	May 21	925	265	13	957
Trading-pit	R. S. Jennings	203,837	May 21	654	186	13	922
Tree-protector	T. Doak	203,898	May 21	718	206	13	930
Trunk-fixture	C. A. Taylor	203,860	May 21	679	193	13	925
Trunk. Sectional	F. Van Sicien	203,961	May 21	787	225	13	939
Truss	M. M. Macdonald	204,060	May 21	891	255	13	952
Twine-holder	J. Hill	203,913	May 21	734	211	13	933
Table	S. Robbins	204,377	May 28	1245	354	13	1001
Tablet. Writing-	W. O. Davis	204,138	May 28	994	283	13	969
Tanks, &c. Movable hopper-	F. C. Prindle	204,370	May 28	1239	352	13	1000
Target. Spherical	S. A. Darrach	204,300	May 28	1166	332	13	991
Tea and coffee pots. Knob for	W. B. Choate	204,198	May 28	1066	303	13	978
Telegraph-repeater	F. Catlin	204,132	May 28	988	281	13	968
Thrashers. Clover-hulling attachment for	J. Allonas	204,276	May 28	1138	326	13	987
Ticket. Railway coupon-	C. J. Stromberg	204,174	May 28	1033	294	13	974
Tile for fire-proof buildings. Bridge-	M. F. Lyons	204,347	May 28	1213	346	13	997
Tin. Coating lead articles with	J. J. and L. Crooke	204,297	May 28	1162	.....	13	990
Tire-setter	J. A. Miles	204,238	May 28	1105	315	13	983
Tire-upsetter	M. W. Griffiths	204,317	May 28	1183	336	13	993
Toy pistol	A. F. Able	204,123	May 28	980	279	13	967
Toy pistol	H. J. P. Whipple	204,405	May 28	1272	363	13	1004
Trace and hame-tug coupling	G. Hazlewood, Jr., and J. Reagin	204,324	May 28	1190	339	13	994
Track-clearer	A. Day	204,305	May 28	1071	305	13	979
Tire. Coating lead articles with	(8,259)		May 28	1292	368	13	1007
Truck shifting apparatus. Car-	R. H. Ramsey. (Reissue)	204,281	May 28	1144	327	13	988
Truss. Hernial	D. E. Banks and T. M. Merck	204,136	May 28	992	282	13	969
Tubing. Manufacture of metal	B. C. Converse	204,516	June 4	88	30	13	1025
Telegraph. Printing-	H. Van Hoevenbergh	204,559	June 4	127	43	13	1031
Telephone. Speaking-	E. Gray	204,560	June 4	128	43	13	1031
Telephone. Speaking-	E. Gray	204,637	June 4	213	68	13	1042
Thermometer attachment for sad-irons	J. Van Gunster	204,547	June 4	115	39	13	1029
Thill-coupling	J. Dufour	204,494	June 4	71	24	13	1022
Thill-coupling	J. J. D. Kingsbury	204,563	June 4	131	44	13	1031
Tire tightener. Vehicle-	G. A. Hall	204,592	June 4	163	53	13	1036
Tobacco-curing apparatus	J. S. Melvin	204,539	June 4	108	36, 37	13	1028
Tobacco machine. Fine-cut-	G. B. F. Cooper	204,526	June 4	97	33	13	1026
Tongs. Roofing-	T. B. Beeson	204,607	June 4	161	56	13	1038
Toy watch and clock	J. G. Powell	204,606	June 4	179	57, 58	13	1038
Toy watches. Escapement for	J. G. Powell	204,618	June 4	198	63	13	1040
Traveling-bag	M. C. Schutz	204,561	June 4	130	44	13	1031
Tree-protector	J. Grant and A. G. Cook	204,626	June 4	204	65	13	1041
Trimming	G. Simon	204,520	June 4	94	.....	13	1026
Troche	C. F. Asche	204,527	June 4	98	33	13	1026
Tube-bending apparatus	J. Brady	204,419	June 4	6	2	13	1013
Tubing. Riveting-machine for	W. E. Brooke	204,730	June 11	320	97	13	1060
Tapping water-pipes. Device for	W. W. Hawkes	204,708	June 11	293	91	13	1057
Telegraph box. Fire and district alarm	J. J. Bradley	204,813	June 11	409	120	13	1070
Thrashing-machine	J. E. Glover	204,738	June 11	327	99	13	1061
Tire setting and cooling apparatus	W. John	204,715	June 11	302	93	13	1058
Tobacco-cutting machine	J. W. Crossley, A. A. Hagen, and G. Juengst.	204,871	June 11	473	137, 138	13	1078
Tobacco machine. Lump-	J. F. Woolridge, J. F. Nystrom, and L. D. Howard.						
Tobacco-pipe	S. H. Thurston	204,774	June 11	368	110	13	1066
Towel-rack	W. H. Castle	204,713	June 11	300	93	13	1058
Trace attachment	J. B. McNair	204,677	June 11	261	81	13	1053
Traveling-bags. Fastening device for	J. W. Lieb	204,743	June 11	332	100	13	1062
Truss. Hernial	W. L. Tucker	204,775	June 11	368	110	13	1066
Turn-table	C. A. Greenleaf	204,722	June 11	310	95	13	1059
Table. Extension-	H. W. Kinney	204,982	June 18	606	178	13	1099
Tellurian	M. Mac Vicar	205,111	June 18	731	217, 218	13	1116
Testing-machine	F. S. Kinney	204,901	June 18	525	153	13	1088
Thill-coupling	G. W. Haskell	205,082	June 18	705	209	13	1112
Torpedo for oil-wells	J. Briscoe	205,040	June 18	661	194	13	1107
Toy	J. H. Hawes	204,970	June 18	594	173	13	1098
Toy pistol	L. Braun	205,039	June 18	661	194	13	1107
Truss	D. Deveron and H. Lackmann	204,955	June 18	579	169	13	1096

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Table	C. Kado	205,303	June 25	1045	310	13	1162
Target. Ball-	N. F. Turner	205,220	June 25	882	255	13	1138
Thrashing-machine frame	T. Harrison	205,263	June 25	903	267	13	1144
Thread-finishing device	T. Kohn. (Reissue)	8,301	June 25	1116	330	13	1172
Thread from spools or bobbins. Device for unwinding	W. E. Turner	205,320	June 25	967	286	13	1152
Tire-setting machine	B. F. Young	205,227	June 25	867	256 / 257	13	1139
Tobacco. Marking plug-	W. T. Yarbrough	205,460	June 25	1105	328	13	1170
Tobacco. Device for packing smoking-	W. J. Cussen	205,361	June 25	1014	300	13	1157
Toy	G. Zuckschwerdt	205,461	June 25	1107	328	13	1170
Toy pistol	J. Brunner	205,240	June 25	883	261	13	1141
Trace-fastening	L. P. Crandall	205,359	June 25	1011	299	13	1157
Trough. Watering-	O. J. Smith	205,430	June 25	1079	320	13	1166
Truck. Car-	S. D. Hurd	205,300	June 25	1040	309	13	1161
Trunk-catch	J. Arnold	205,335	June 25	965	291	13	1154
Tubing. Sheet-metal	J. S. Brooks	205,238	June 25	882	261	13	1141
Umbrella	E. Evans	198,841	Jan. 1	118	34	13	27
Umbrella tip-cup	H. S. Frost	199,196	Jan. 15	501	147	13	94
Umbrella-runner	A. Good	199,638	Jan. 29	963	286	13	185
Underwear	C. L. Bradley	199,780	Jan. 29	1115	327 / 328	13	206
Umbrella rib-tip	A. A. Valentine and H. A. Morrison. (Reissue.)	8,073	Feb. 5	234	72	13	269
Undersuit. Combination	C. L. Bradley. (Reissue)	8,069	Feb. 5	231	71	13	269
Universal joint for connecting rotary shafts	J. L. Follett	200,046	Feb. 5	157	51	13	258
Umbrella-runner	H. S. Frost	200,609	Feb. 26	756	221	13	373
Under-garment	A. A. Danzig	202,001	Apr. 2	138	40	13	619
Umbrella-cases. Machine for eyeleting	W. Harnah	202,168	Apr. 9	336	98	13	650
Umbrella-holder	J. H. Bowers	202,140	Apr. 9	300	88	13	646
Umbrella-holder for vehicles	E. Thomas	202,385	Apr. 16	571	167	13	688
Umbrella tip-cup	A. Dittrich	202,710	Apr. 23	936	268	13	741
Upholstered surfaces. Edge for	G. T. Whiting	203,806	May 14	613	171	13	909
Underdrain	W. Henning	204,038	May 21	870	249	13	950
Valve for steam-engines. Balanced	F. B. Rice	198,779	Jan. 1	61	15	13	17
Valve for steam-engines. Oscillating	R. H. D. Morrison	198,916	Jan. 1	201	57	13	39
Valve for steam-engines	O. Adams. (Reissue)	8,036	Jan. 8	441	130	13	84
Valve. Overflow-	W. A. Pitt	199,101	Jan. 8	386	115	13	77
Valve. Service-	P. Magnus	199,079	Jan. 8	365	108	13	73
Ventilator for mines, cellars, and buildings	J. C. Morgan	199,091	Jan. 8	378	112	13	75
Vessels. Center-board for	P. L. Senat	199,230	Jan. 15	531	156	13	99
Valve-gear for steam-engines	J. N. Tift and W. Love. (Reissue)	8,047	Jan. 22	936	273	13	170
Vehicle-body	K. A. Hughson	199,548	Jan. 22	863	252	13	159
Vehicle-seat	T. J. Hickey	199,545	Jan. 22	861	251	13	158
Velocipede	A. M. Buchanan	199,409	Jan. 22	722	213	13	136
Velocipede	J. A. Crandall	199,518	Jan. 22	830	243	13	154
Ventilating railway-cars and ships	J. M. Keating	199,554	Jan. 22	868	254	13	160
Ventilator	H. M. Farnam	199,426	Jan. 22	736	217	13	139
Ventilator and chimney-cap	J. Walker	199,599	Jan. 22	915	268	13	167
Ventilator for windows	L. D. Harvey	199,438	Jan. 22	748	219	13	140
Vise	E. P. Cook and J. F. Hall	199,517	Jan. 22	829	242	13	153
Valve for bib-cocks and faucets. Check-	O. Collier	199,694	Jan. 29	1039	303	13	194
Valve. Piston-	W. C. Rose	199,865	Jan. 29	1195	351	13	218
Valve. Stop-	J. F. Ffield	199,814	Jan. 29	1150	338	13	211
Varnishing-machine	T. B. Dooley	199,625	Jan. 29	970	282	13	183
Ventilator. Automatic stove-pipe	E. P. Corby	199,619	Jan. 29	964	280	13	182
Ventilator. Stove-pipe	E. P. Corby	199,620	Jan. 29	965	280	13	183
Vinegar-generator	J. B. Notascher	199,854	Jan. 29	1186	348	13	217
Valve. Universal globe-	T. F. Rowland	199,936	Feb. 5	49	16	13	240
Vest. Chest-protecting	G. F. Jackson	200,063	Feb. 5	173	56	13	260
Vise	W. Starkey	200,101	Feb. 5	211	66	13	266
Valve. Balanced slide-	F. H. Ball	200,342	Feb. 12	355	106	13	296
Valve-gear	F. H. Ball. (Reissue)	8,077	Feb. 12	496	146	13	317
Valve-gear for steam-engines	E. Williams	200,368	Feb. 12	493	114	13	317
Valve. Safety-	H. G. Ashton	200,119	Feb. 12	239	73	13	279
Vaporizer. Steam-	W. O. Smith	200,154	Feb. 12	270	81	13	283
Ventilator	I. W. Canfield, Jr., and C. H. Demarest	200,255	Feb. 12	371	109	13	298
Valve. Balanced rotary	J. S. Glenn	200,388	Feb. 19	520	153	13	329
Vapor-burner	F. H. Shepherd	200,484	Feb. 19	612	180	13	343
Vat	C. Visel	200,586	Feb. 19	713	210	13	358
Veneer-cutting machine	J. D. McEachren	200,467	Feb. 19	596	176	13	341
Vest of paper and other material	F. C. Weber and F. Kruse	200,417	Feb. 19	547	162	13	333
Valve. Check-	J. F. Whitney	200,678	Feb. 26	839	244	13	384
Valve for steam-engines. Balanced	G. A. Haworth	200,718	Feb. 26	872	256	13	390
Valve-gear for steam-engines	G. W. Ziegler	200,639	Feb. 26	786	231	13	378
Valve. Rotary	D. W. Jones	200,728	Feb. 26	882	259	13	391
Vegetable-cutter	J. F. Rote	200,668	Feb. 26	817	240 / 241	13	382
Vehicles. Clip for	D. Kirk	200,795	Feb. 26	943	278	13	401
Vessels, &c. Apparatus for cleaning hulls of	H. J. Cole	200,696	Feb. 26	847	249	13	386
Vessels. Pin-rail for	T. W. Hyde	200,643	Feb. 26	759	222	13	373
Valve-coupling for vacuum-pipes	W. H. Smith	200,944	Mar. 5	121	40	13	434
Valve for steam-engines	E. Cope and J. R. Maxwell	200,855	Mar. 5	41	15	13	421
Varnishing-machines	G. Burns	200,894	Mar. 5	76	27	13	427
Vehicle running-gear	J. A. Hinson	201,013	Mar. 5	192	61	13	445
Vehicle running-gear	I. H. Mulford	200,872	Mar. 5	60	21	13	424
Vehicle-seats. Spring-back for	E. Wilson	200,960	Mar. 5	135	44	13	436
Veneer-cutting machine	C. T. Fairchild	200,996	Mar. 5	175	56	13	442
Vise. Bench-	A. P. Thompson	200,848	Mar. 5	35	12	13	420
Valve. Balanced slide-	R. G. Bishop	201,151	Mar. 12	337	104	13	472
Vault. Ash and garbage	M. Samelson	201,202	Mar. 12	382	118	13	480
Vehicle running-gear	H. V. Caton	201,159	Mar. 12	344	106	13	473
Velocipede	E. N. Higby	201,179	Mar. 12	360	111	13	476
Velocipede. Ice-	V. A. Menuez	201,265	Mar. 12	453	140	13	489

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ventilator or smoke-cowl	R. S. Godfrey	201,241	Mar. 12	428	131	13	486
Valve	G. H. Little and J. S. Smart	201,352	Mar. 19	565	173	13	511
Vault	E. Harkness	201,413	Mar. 19	626	191	13	520
Vapor-burner	F. A. Sawyer	201,705	Mar. 26	930	285	13	568
Vehicle-gear	S. H. Preston	201,822	Mar. 26	1055	322	13	586
Vehicle-top	S. R. Owen and F. M. Mattan	201,824	Mar. 26	1040	321	13	585
Vehicles. Distance-register for	W. F. Heywood	201,608	Mar. 26	841	255	13	554
Vise. Pipe and rod	O. Breckenridge	201,591	Mar. 26	821	250	13	551
Valve. Balanced slide-	H. M. Hamblin	202,025	Apr. 2	164	47, 48	13	622
Vapor-burner	C. G. Spengler	202,006	Apr. 2	204	60	13	618
Velocipede	S. R. Scharf	202,056	Apr. 2	194	57	13	606
Ventilator for corn-cribs	W. L. Wright	202,086	Apr. 2	236	68	13	631
Valve. Air-	E. A. Wood	202,130	Apr. 9	291	86	13	645
Valve-gear for engines	C. Brown	202,222	Apr. 9	398	113	13	658
Valve-motions. Link for	S. Hamblin	202,106	Apr. 9	333	98	13	650
Valve. Stop-	W. E. Worthen and R. S. Gillespie	202,319	Apr. 9	488	143	13	672
Vehicle-gear	J. J. Gallagher	202,164	Apr. 9	332	97	13	650
Vehicle running-gear	J. Bowman	202,142	Apr. 9	300	89	13	646
Ventilator. Car-	C. A. Daniels	202,241	Apr. 9	409	119	13	660
Vessels. Gaff for	T. C. Thompson	202,485	Apr. 16	667	195	13	702
Valve	F. Brown	202,785	Apr. 23	1013	291	13	751
Valve for barrels, kegs, &c.	J. Byrne	202,629	Apr. 23	849	245	13	732
Vehicle. Side-spring	P. F. Milligan and J. F. Wood	202,741	Apr. 23	907	278	13	745
Vehicle. Side-springs	W. L. Weston	202,804	Apr. 23	1143	328	13	767
Velocipede	H. F. Parsons	202,665	Apr. 23	891	255	13	730
Ventilator for houses	J. E. Richard	202,869	Apr. 23	1106	317	13	763
Ventilator. Louver-	J. F. Starr, Jr	202,765	Apr. 23	993	285	13	749
Vessel. Compartment-	J. Butcher	202,701	Apr. 23	929	265	13	740
Valve-gearing for steam-engines	J. Everding	203,128	Apr. 30	1370	399	13	802
Valve. Oil-well	L. W. Young	203,235	Apr. 30	1484	434	13	815
Valve. Steam-engine	E. Cope	202,933	Apr. 30	1183	341	13	777
Vegetable-cutter	A. Seneff and A. Hoeffer	203,078	Apr. 30	1322	384 / 385	13	795
Vehicle-top adjuster	L. Everett	202,937	Apr. 30	1188	342	13	777
Ventilating ships	B. F. Delano	203,005	Apr. 30	1251	362	13	786
Ventilator	N. A. Penland	202,960	Apr. 30	1210	349	13	780
Ventilator	S. Seabury	202,968	Apr. 30	1219	352	13	781
Ventilator. Car-	C. T. Tatro	203,088	Apr. 30	1332	387	13	796
Ventilator. Corn-crib	R. W. Hazen	203,036	Apr. 30	1293	371	13	790
Ventilator for chimneys	W. B. Austin	202,977	Apr. 30	1236	354	13	782
Vest and suspenders. Combined	L. Paulson	203,066	Apr. 30	1310	380	13	793
Valve and cock for steam-cylinders. Safety	T. J. Paradine	203,493	May 7	269	77	13	857
Valve attachment to utilize escape-steam. Safety-	H. G. Ashton. (Reissue)	8,211	May 7	302	87	13	862
Vegetable-cutter	H. E. Hewitt	203,453	May 7	231	66	13	852
Vehicle-top	T. E. and J. H. Hayes	203,450	May 7	228	65	13	851
Ventilator	C. M. Handover	203,447	May 7	226	64	13	851
Vessel-loading apparatus	N. C. Gielstrup and I. A. Field	203,334	May 7	102	30	13	834
Valve. Combined check and slide	J. C. Stead	203,565	May 14	369	104	13	879
Valve for compressed-air engines	R. Hardie, J. James, and G. Cooper	203,529	May 14	528	150	13	899
Valve-gear for engines	A. Collmann	203,534	May 14	334	95	13	875
Valve-gear for steam-engines	C. A. Smith	203,602	May 14	459	131	13	890
Vehicle-top	J. Kuntz and S. F. Schroeder	203,743	May 14	544	154	13	901
Vehicle-top adjuster	C. W. Grinnell and F. Bulckens	203,726	May 14	526	149	13	898
Vehicles. Spring-bottom for	E. D. Cramer	203,597	May 14	396	112	13	882
Vessels. Construction of hulls of steam-	R. C. Brown	203,586	May 14	386	109	13	881
Vinegar. Apparatus for making	J. C. Appenzeller	203,574	May 14	375	106	13	880
Vise, wrench, and pinchers. Combined	D. F. Brown, Sr.	203,701	May 14	501	142	13	895
Valve for hydrants, street-washers, &c	P. H. Donahoe	204,010	May 21	842	241	13	946
Valve. Puppet-	H. F. Frisbie	204,018	May 21	851	243	13	947
Valve. Steam-	J. Saunders	203,947	May 21	773	221	13	938
Vegetable-cutter	J. H. Boyle	203,883	May 21	699	200	13	928
Vehicle. Side-spring	A. Wood	203,977	May 21	802	230	13	941
Velocipede	S. P. Watt	203,968	May 21	793	227	13	940
Valve-gear for engines	L. C. Mason	204,351	May 28	1218	347	13	997
Vehicle running-gear	P. Letalle	204,343	May 28	1209	345	13	996
Vehicle. Side-bar	J. Kauffman	204,154	May 28	1014	288	13	971
Vehicles. Spring-seat for	J. T. Yerkes	204,411	May 28	1278	365	13	1005
Velocipede	H. A. Reynolds. (Reissue)	8,252	May 28	1284	366	13	1005
Ventilator	S. S. Thompson	204,264	May 28	1128	323	13	986
Ventilator-valve. Railway-car	E. H. Winchell	204,271	May 28	1133	324	13	987
Valve for steam-engines. Balance-	J. C. Wells	204,640	June 4	215	60	13	1043
Valve. Slide and steam	J. E. Schultz	204,617	June 4	197	63	13	1040
Velocipede	O. Unzicker	204,636	June 4	212	68	13	1042
Valve for engines. Piston-	R. W. Aitken	204,649	June 11	232	73	13	1049
Valve for fermented-liquor casks. Safety-	H. Shlaudeman	204,687	June 11	272	84	13	1054
Vehicle. Hand-power	A. Lewis	204,674	June 11	257	80	13	1052
Vehicle running-gear	G. Wilkes	204,868	June 11	469	136	13	1077
Valve. Steam-	G. Stringer and T. Francis	205,007	June 18	630	185	13	1102
Vehicle-top	D. Jannopoulo	205,098	June 18	719	214	13	1114
Vehicle-top adjuster	J. Lamson and J. Brotherton	205,104	June 18	724	215	13	1115
Vehicles. Jump-seat for	H. C. Wingler and W. W. Stough	204,932	June 18	558	162 / 163	13	1093
Ventilator and chimney-top	W. F. Rossman	205,141	June 18	763	226	13	1120
Valve-gear	C. Prött	205,208	June 25	847	251	13	1136
Varnishing-machine	T. B. Dooley	205,367	June 25	1019	302	13	1158
Vault-cover. Illuminating	W. Dale. (Reissue)	8,295	June 25	1110	329	13	1171
Vaults, areas, cellar-ways, &c. Illuminating-door for	T. Hyatt. (Reissue)	8,307	June 25	1123	332	13	1172
Vegetable-cutter	J. Weatherbee and I. Mowder	205,223	June 25	854	255	13	1138
Velocipede	H. Ackermann	205,330	June 25	980	290	13	1153
Veneer-cutting machine	L. Anderson	205,220	June 25	871	258	13	1139
Veneer-cutting machine	T. Hauvey	205,382	June 25	1034	306	13	1160
Ventilator	J. E. Richard	205,419	June 25	1068	316	13	1165
Vise. Carpenter's	E. H. Brower	205,239	June 25	882	261	13	1141
Vise. Hand-	B. F. Stephens	205,434	June 25	1082	321	13	1167

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Whiffletree-hook	D. A. Hagan	198,739	Jan. 1	9	2	13	10
Whiffletree plate and clevis	H. A. Luttgens	198,771	Jan. 1	51	13	13	15
Windmill	A. T. Winchell	198,829	Jan. 1	108	31	13	25
Wire-cloth. Machine-painted	C. H. Waters. (Reissue)	8,023	Jan. 1	213	.....	13	40
Wood receptacle and burning-fluid can. Combined Kindling-	S. H. Bradford	198,788	Jan. 1	72	19	13	18
Water-closet	L. P. Clark	199,029	Jan. 8	318	93	13	65
Water-wheel	D. L. Cross	199,035	Jan. 8	323	95	13	66
Water-wheel. Turbine	J. G. Thompson	199,1.3	Jan. 8	415	122	13	80
Winding and twisting machinery. Stop-motion for	D. Smith	198,956	Jan. 8	245	70, 71	13	54
Windmill	S. H. Smith	199,114	Jan. 8	405	119	13	79
Windmills. Mechanism for transmitting power of	J. S. Adams	199,008	Jan. 8	269	88	13	62
Wire-twisting machine	C. Shortan. (Reissue)	8,032	Jan. 8	437	128	13	84
Wool-combing machine	S. Metcalfe	198,950	Jan. 8	240	68, 69	13	52
Wagons. Lap-seat for	G. W. Damon	199,271	Jan. 15	575	168	13	105
Water-closet	J. H. Stevens	199,326	Jan. 15	630	183	13	114
Water-wheels. Finme for	J. P. Drouillard	199,274	Jan. 15	577	168	13	105
Windmill	J. and J. B. Cushman	199,190	Jan. 15	496	146	13	94
Windmill	G. Hodges	199,345	Jan. 15	649	190	13	117
Wagon-standard	J. Hobba	199,439	Jan. 22	748	219	13	141
Wash-board	F. L. Wilson	199,607	Jan. 22	924	271	13	168
Wash-stand	W. E. Buser	199,510	Jan. 22	822	240	13	152
Washing-machine	W. and A. E. Robarts	199,467	Jan. 22	775	227	13	145
Washing-machine	J. B. Wantz and L. W. Strasbough	199,603	Jan. 22	919	269	13	168
Washing-machines. Clamp for	C. A. Dodge	199,358	Jan. 22	673	197	13	129
Watch-guard tip	C. E. Hayward	199,365	Jan. 22	681	200	13	130
Watches. Potance for	C. V. Woerd	199,392	Jan. 22	707	208	13	134
Water-closet. Ship's	J. E. Jones	199,369	Jan. 22	683	200	13	130
Water-closet valve	J. Demarest	199,418	Jan. 22	731	215	13	138
Water-closets, &c. Trap for	J. Sargent	199,582	Jan. 22	894	262	13	164
Water-meter. Piston	H. Chandler	199,351	Jan. 22	663	194	13	127
Water-meter. Piston	H. Chandler	199,352	Jan. 22	665	195	13	128
Water-wheel	D. Cushman. (Reissue)	8,049	Jan. 22	938	273	13	150
Wells. Device for raising and lowering tubes in oil-	H. M. Gillespie	199,533	Jan. 22	850	248	13	157
Wells. Ram for opening crevices in	A. Alexander	199,468	Jan. 22	795	234	13	148
Wheel. Vehicle	J. H. Moss	199,563	Jan. 22	875	256	13	161
Whip-socket	A. H. Law	199,574	Jan. 22	687	502	13	131
Winding and reeling cotton, silk, worsted, &c	W. L. Bright, G. Ingham, and J. Fielding.	199,348	Jan. 22	660	193	13	127
Windmill	T. N. Shephard	199,473	Jan. 22	783	230	13	146
Window-frame	M. Casey	199,515	Jan. 22	826	241	13	153
Wire-barbing machine	T. B. Doolittle	199,524	Jan. 22	838	245	13	155
Wrench and saw set. Combined	J. Backer	199,489	Jan. 22	796	234	13	148
Wagon-coupling	W. R. Porter	199,860	Jan. 29	1191	350	13	217
Wagon running-gear	A. J. Beach	199,610	Jan. 29	952	277	13	181
Wagons. Netting for unloading	T. Powell	199,661	Jan. 29	1006	293	13	189
Warping-machines. Stop-motion for	J. B. Greenhalgh	199,702	Jan. 29	1047	305	13	195
Washing-machine. Boiler	J. P. Le Grange	199,722	Jan. 29	1064	311	13	198
Watch-case spring	J. Laurent	199,835	Jan. 29	1171	343	13	214
Watch-crown	A. Milné and A. Jourdain	199,732	Jan. 29	1072	314	13	199
Water. Apparatus for deaerating	E. Bürgin	199,785	Jan. 29	1123	330	13	207
Water-closet bowl	J. L. Hutchinson	199,831	Jan. 29	1168	341	13	214
Water-closet slop-safe	J. Demarest	199,806	Jan. 29	1145	336	13	210
Water-wheel. Turbine	R. M. Stewart	199,873	Jan. 29	1202	351	13	219
Well-boring machine	J. Haas and J. Manning	199,640	Jan. 29	985	{286 {287	13	185
Wells. Polish-rod adjuster for oil-	A. M. Kleckner	199,809	Jan. 29	1146	337	13	211
Wheat-steaming apparatus	J. Burkholder	199,690	Jan. 29	1026	302	13	193
Wheel. Car-	G. W. Eddy	199,627	Jan. 29	973	283	13	184
Wheels. Sand-guard for vehicle-	W. Stewart and D. J. Parker	199,668	Jan. 29	1014	295	13	190
Wheelbarrow	W. Eckert	199,698	Jan. 29	1042	304	13	194
Windows and transoms. Device for operating	J. Kelly	199,649	Jan. 29	996	290	13	187
Wrench	J. McLaren. (Reissue)	8,064	Jan. 29	1227	360	13	223
Wagon-jack	M. C. Flanders	200,044	Feb. 5	155	50	13	257
Wagon-top	G. E. Whitaker	200,010	Feb. 5	115	37	13	251
Wagons. Device for propelling	E. Baker	200,016	Feb. 5	120	39	13	252
Washing-machine	J. T. Greenwood, Jr	200,052	Feb. 5	162	52	13	258
Wheel. Vehicle-	J. Raddin	200,088	Feb. 5	200	64	13	264
Whiffletree	R. R. Beavers	199,894	Feb. 5	4	2	13	253
Windmill-wheel	A. Klotz	200,066	Feb. 5	175	56	13	260
Wagon. Dumping-	C. F. Dinkle and C. R. Woodward	200,265	Feb. 12	383	113	13	300
Walls, ceilings, faces, &c. Fire-proof material for	M. F. Lyons	200,320	Feb. 12	441	131	13	309
Wash-board	S. L. Caverly	200,258	Feb. 12	373	110	13	299
Washing-machine	J. W. Ricker	200,220	Feb. 12	333	100	13	293
Washing-machine	W. J. Stewart	200,356	Feb. 12	477	141	13	314
Water-closets. Preventing the siphoning of traps of	P. McDermott and J. P. Hyde	200,323	Feb. 12	446	132	13	309
Weather-strip	A. W. Comstock	200,177	Feb. 12	295	83	13	287
Well-tube clamp	F. B. O'Donnell	200,329	Feb. 12	451	133	13	310
Wells. Drop-weight for oil-	M. T. McCormick	200,144	Feb. 12	262	78	13	282
Wells. Working-barrel for oil-	E. E. Swett	200,357	Feb. 12	478	141	13	315
Wheel. Car-	C. E. Candee	200,254	Feb. 12	370	109	13	298
Wire-cloth for the construction of fly-traps, &c. Joining sheet metal to	S. M. Cook	200,130	Feb. 12	248	75	13	280
Wrench	S. Schwerdt	200,348	Feb. 12	470	138	13	313
Wrench. Pipe-	C. C. Coleman	200,175	Feb. 12	294	87	13	287
Wagon-gear and brake	J. J. Pennington	200,474	Feb. 19	603	177	13	342
Washing-machine	C. H. Horne	200,435	Feb. 19	583	172	13	339
Washing-machine	J. Metals	200,469	Feb. 19	598	176	13	341
Watch-case	O. Domon	200,379	Feb. 19	511	151	13	328
Watch-plate	J. L. Hutchinson and H. Dehouck	200,539	Feb. 19	665	196	13	351
Watches and clocks. Escapement for	J. M. Hitchcock	200,533	Feb. 19	660	194	13	350
Watches. Stem winding and setting device for	O. Domon	200,380	Feb. 19	512	151	13	328
Water-closets. Disinfecting attachment to	J. F. Nanlty	200,563	Feb. 19	690	203	13	355

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wells. Steam-heater for oil-	J. Harris	200,393	Feb. 19	525	155	13	350
Wheel. Car-	E. Kaselowsky	200,400	Feb. 19	531	157	13	331
Wool-washing machine	J. Clegg	200,509	Feb. 19	635	187	13	347
Wagon-box fastening	C. G. Conkling	200,698	Feb. 26	849	250	13	387
Wagon-gearing and tongue-support	C. Baumgaertner	200,641	Feb. 26	788	231	13	378
Washing-machine	W. H. Nicholson	200,800	Feb. 26	948	279	13	402
Washing-machine	J. F. Pond	200,756	Feb. 26	907	267	13	395
Washing-machine	T. C. Welch	200,635	Feb. 26	777	229	13	376
Watch-balances. Gage for adjusting the hair-springs of	J. Kinehan	200,732	Feb. 26	885	260	13	392
Water-meter. Rotary	T. Walsh	200,676	Feb. 26	826	243	13	383
Whip-socket	A. Searls	200,671	Feb. 26	820	241	13	383
Window-cleaning device	E. P. Hall	200,611	Feb. 26	757	222	13	373
Window hanging and fastening	J. Q. Ingham	200,614	Feb. 26	759	223	13	373
Wagon running-gear	F. Gordon	200,863	Mar. 5	48	17	13	422
Wagon running-gear	W. Ulrich	200,932	Mar. 5	128	42	13	435
Wash-board	C. H. Baldwin	200,852	Mar. 5	39	14	13	421
Wash-board	H. L. St. Clair	201,063	Mar. 5	242	77	13	452
Washing-machine	B. F. Comstock	200,896	Mar. 5	79	28	13	427
Washing-machine	H. Sievert and F. J. Young	200,942	Mar. 5	119	40	13	433
Watches. Reversible pinion for	W. P. Huntoon	200,831	Mar. 5	18	7	13	417
Watchmakers' oil-cup	E. R. Weber	200,883	Mar. 5	68	24	13	425
Watchman's detecter	T. D. Osborne	200,928	Mar. 5	107	36	13	432
Water-regulator	H. Mueller and J. Gross	200,871	Mar. 5	59	20	13	424
Water-wheel. Turbine	A. Bee	200,966	Mar. 5	142	47	13	437
Water-wheel. Turbine	G. A. Harbaugh	201,007	Mar. 5	185	59	13	444
Wheel and axle. Car	J. M. Whiting	200,884	Mar. 5	69	24	13	426
Windmill	F. Robert	200,874	Mar. 5	61	21	13	424
Window	G. H. Gerken	200,907	Mar. 5	89	31	13	429
Wire cutting and bending machine	W. E. Stearns	200,947	Mar. 5	124	41	13	434
Wrench	A. Berdan and A. E. Warren	200,971	Mar. 5	149	48	13	438
Wash-boiler	W. A. Miller	201,190	Mar. 12	371	115	13	478
Washing-machine	J. W. Calef	201,234	Mar. 12	406	125	13	483
Washing-machine	C. A. Dodge	201,169	Mar. 12	351	108	13	475
Washing-machine	E. O. Reed	201,126	Mar. 12	311	95	13	469
Water-meter. Piston	A. Bergstrom. (Reissue)	8,120	Mar. 12	522	160	13	498
Water-pipes. Trap for	O. Gillig	201,239	Mar. 12	427	131	13	485
Water-trap	L. Brandeis	201,090	Mar. 12	273	85	13	464
Water-wheel. Turbine	T. Tripp	201,133	Mar. 12	318	98	13	469
Well tools. Joint for oil-	J. L. Alexander	201,062	Mar. 12	265	83	13	463
Wells. Combined elevator and clamp for sucker-rods of oil-	J. A. Morrison	201,191	Mar. 12	371	116	13	478
Windmill	G. B. Dean	201,166	Mar. 12	349	107	13	474
Windmill	O. H. Quie	201,286	Mar. 12	476	145	13	492
Wood. Ornamenting	W. King	201,252	Mar. 12	438	135	13	487
Wagon-bolster plate	S. S. Crocker and A. Wilcox	201,333	Mar. 19	543	167	13	509
Wagon-jack	M. J. Hurd	201,529	Mar. 19	741	226	13	537
Wagon-jack	S. Smith	201,459	Mar. 19	669	204	13	526
Wagon. Side-bar	W. H. and W. H. Colby	201,389	Mar. 19	599	184	13	517
Wagon-top	R. W. Thompson	201,367	Mar. 19	577	178	13	513
Wash-basins. Valve for	J. S. Gilbert	201,405	Mar. 19	621	189	13	519
Washing-machine	A. McGraw and J. Gilbaugh	201,434	Mar. 19	645	197	13	523
Watches and lockets. Swivel for	B. T. Pace	201,357	Mar. 19	569	175	13	512
Watches. Calendar for	E. H. Hull	201,418	Mar. 19	630	192	13	521
Watches. Pendant for	F. Steffany	201,462	Mar. 19	672	205	13	527
Water-meter and motor-piston	J. C. Dennert	201,505	Mar. 19	713	217	13	533
Water-wheel. Turbine	L. D. Wynkoop	201,584	Mar. 19	802	244	13	544
Wheel guard. Carriage-	G. R. Maugham	201,545	Mar. 19	758	231	13	539
Wind-wheel	M. Everhart	201,400	Mar. 19	615	187	13	518
Windmill	F. W. Shellabarger	201,560	Mar. 19	772	236	13	540
Window-shade	T. H. Paling	201,553	Mar. 19	766	233	13	540
Wire. Apparatus for manufacturing	W. Wilmsmann	201,582	Mar. 19	800	244	13	544
Wash-board	C. Everts	201,658	Mar. 26	896	270	13	561
Wash-board	J. Murphin	201,821	Mar. 26	1046	319	13	585
Washing-machine	L. Caldwell. (Reissue)	8,134	Mar. 26	1089	331	13	590
Watch-case spring	P. F. Wilson	201,623	Mar. 26	835	260	13	556
Water-closet supply apparatus	H. C. Meyer	201,815	Mar. 26	1040	318	13	584
Water-wheel	S. P. Mackey	201,690	Mar. 26	914	279	13	565
Water-wheel. Turbine	I. Sherck	201,635	Mar. 26	867	261	13	558
Wheel. Vehicle-	A. C. Hendricks	201,783	Mar. 26	1011	309	13	580
Whiffletree-hook	G. W. Jackman	201,789	Mar. 26	1016	310	13	580
Wagons. Spring-seat for	J. F. King	201,925	Apr. 2	66	18	13	608
Wash-board	I. Darling	202,003	Apr. 2	140	40, 41	13	619
Washing-machine	D. Spain and B. H. Reynolds	202,065	Apr. 2	203	59, 60	13	628
Watch. Chronograph-	C. H. Meylan	202,041	Apr. 2	183	53	13	624
Watch-going barrel	F. Fitt	202,012	Apr. 2	149	43	13	621
Water-closet cock	J. D. Sisson	201,957	Apr. 2	92	26	13	612
Water in pipes. Utilizing power of	J. C. Estey	201,875	Apr. 2	18	5	13	601
Water-wheel	C. F. Smith	202,062	Apr. 2	201	59	13	627
Weather-strip	J. W. H. Doubler	202,007	Apr. 2	143	42	13	620
Wheel. Vehicle-	C. Deaderick	201,873	Apr. 2	16	4	13	601
Wood-boring machine	J. D. Shoots. (Reissue)	8,155	Apr. 2	238	69	13	633
Work-box	P. B. Pickens	202,048	Apr. 2	188	55	13	625
Wringer. Clothes-	S. Arnold	201,902	Apr. 2	44	12	13	605
Wash-bench and wringer. Combined	P. H. Cooney	202,155	Apr. 9	316	93	13	648
Wash-board	F. W. Parsons	202,285	Apr. 9	433	132	13	667
Wash-stand	H. S. Hale	202,257	Apr. 9	422	123	13	663
Washing-machine	J. W. Gladwell and J. R. White	202,104	Apr. 9	283	77	13	641
Washing-machine	J. R. Underwood	202,307	Apr. 9	474	138	13	670
Washing-machine	J. Will	202,317	Apr. 9	486	142	13	672
Washing-machine. Steam	D. J. H. Davies	202,243	Apr. 9	410	119	13	661
Water-meter. Piston	M. Stannard and J. R. Reynolds	202,127	Apr. 9	288	85	13	644
Wave-power. Mechanism for utilizing	C. W. Lord	202,113	Apr. 9	271	80	13	642
Weather-strip	H. B. Alvord	202,088	Apr. 9	247	73	13	639

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Invention.	Name.	No.	Date.	Monthly Volume. Spec.	Monthly Volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Welding chain-links. Machine for	J. Haley	202,258	Apr. 9	423	123, 124	13	663
Wheel. Vehicle	T. Burnett	202,225	Apr. 9	390	114	13	658
Wheel. Vehicle	T. H. King	202,271	Apr. 9	437	127	13	664
Whiffletree attachment	R. W. Smalley	202,199	Apr. 9	364	107	13	654
Window-cleaner	W. C. Gayton	202,101	Apr. 9	259	76	13	640
Wrench	C. W. Hilton	202,250	Apr. 9	425	134	13	663
Wash-board	G. Gallup	202,536	Apr. 16	734	312	13	708
Washing-machine	J. Dunn	202,421	Apr. 16	607	178	13	693
Washing-machine	J. G. Oesterle	202,456	Apr. 16	642	187	13	698
Washing-machine	S. Russel	202,475	Apr. 16	658	193	13	700
Washing-machine	W. H. Stein	202,508	Apr. 16	800	231	13	716
Washing-machine	W. F. Wilkins	202,391	Apr. 16	576	169	13	688
Watch-cases. Center-rim for	D. H. Pearce and A. W. Taft	202,458	Apr. 16	644	188	13	698
Watch-key. Adjustable	W. Haines	202,344	Apr. 16	533	156	13	682
Watches. Safety-wheel for	B. F. Stoner	202,601	Apr. 16	802	232	13	716
Water-closet	J. M. Wilson	202,619	Apr. 16	822	238	13	718
Water-closets. Flushing-box for	W. G. Rhoads	202,586	Apr. 16	786	227	13	714
Water-pipes. Fish-guard for	J. G. L. Boettcher	202,513	Apr. 16	692	203	13	705
Weaner. Calf-	W. C. and G. L. Banks	202,399	Apr. 16	583	171	13	689
Well boring and drilling apparatus	J. R. Davis	202,417	Apr. 16	600	177	13	692
Wells. Method of, and apparatus for, obtaining oil from oil-	N. S. Minness and D. A. Wray	202,570	Apr. 16	771	222	13	713
Wheel and axle. Carriage	W. H. Kinter and B. F. Williams	202,551	Apr. 16	754	218	13	711
Wheel. Self-oiling car-	T. H. Phillips	202,581	Apr. 16	783	226	13	714
Whiffletree-hook	W. Heston	202,437	Apr. 16	624	183	13	695
Whip	T. W. Rounds and T. L. Reed	202,378	Apr. 16	566	166	13	687
Wire clothing for burring and other cylinders	F. P. Pendleton	202,370	Apr. 16	559	163	13	685
Wire. Machine for reducing and pointing	W. S. Whiting	202,614	Apr. 16	818	236	13	718
Wood-boring machine	T. O. Selfridge	202,477	Apr. 16	660	193	13	700
Wrench	T. H. Phillips	202,582	Apr. 16	783	226	13	714
Wagon. Dumping	J. H. Nelson	202,745	Apr. 23	971	279	13	746
Wagon-top	V. B. Grinnell	202,810	Apr. 23	1044	300	13	755
Washing-machine	J. G. Beardsley	202,781	Apr. 23	1009	290	13	751
Washing-machine	J. J. Straub	202,887	Apr. 23	1126	323	13	765
Washing-machine	C. Thompson	202,889	Apr. 23	1127	324	13	766
Water-closet	M. Hogan	202,652	Apr. 23	878	251, 252	13	734
Water-closet bowl. Drip-tray for	C. Harrison. (Reissue)	8,189	Apr. 23	1154	331	13	768
Water-meter. Rotary	J. Johnson	202,827	Apr. 23	1063	304	13	757
Water-raising apparatus. Electro-magnetic	D. M. Smyth	202,764	Apr. 23	992	285	13	748
Weather-strip	D. S. Wood	202,912	Apr. 23	1149	330	13	768
Well-boring and rock-drilling machine	J. P. Summers	202,677	Apr. 23	903	259	13	737
Wells. Lining bored	J. Dollard	201,796	Apr. 23	1024	293	13	753
Wheels. Scraper for vehicle	M. Robbins	202,872	Apr. 23	1110	318	13	763
Whiffletree-hook	N. Hill	202,649	Apr. 23	875	251	13	734
Whip-rack	S. A. Darrach	202,794	Apr. 23	1021	293	13	752
Windmill	S. E. Jarvis	202,825	Apr. 23	1061	304	13	757
Wire-rolling machine	D. Shaw and D. Spence	202,670	Apr. 23	897	257	13	736
Wire-rolling machines. Guide for	W. W. McCallip	202,848	Apr. 23	1084	310	13	760
Wire rope and cable	T. Hager	202,812	Apr. 23	1045	300	13	755
Wool and cotton and similar animal and vegetable fibers from fabrics. Separating	J. Y. Slater	202,672	Apr. 23	899	258	13	736
Wagon. Side-bar	W. Fenstermacher	203,021	Apr. 30	1271	367	13	788
Wash-board	J. R. Finley	203,129	Apr. 30	1373	400	13	802
Washing-machine	W. Haas	203,031	Apr. 30	1279	370	13	789
Washing-machine	H. H. McMaster	203,062	Apr. 30	1303	379	13	793
Watch-cases. Center-rim for	T. A. Hopkins	203,046	Apr. 30	1292	374	13	791
Water. Apparatus for raising	J. C. Kile	202,950	Apr. 30	1200	347	13	779
Water-closet	M. Hogan	203,045	Apr. 30	1291	374	13	791
Water-closet	W. G. Rhoads	203,071	Apr. 30	1313	382	13	794
Water-closet seat	A. Waldron	203,225	Apr. 30	1476	432	13	814
Water-closets. Disinfecting attachment to	J. F. Naulty	203,186	Apr. 30	1436	419	13	810
Water-meter. Oscillating	J. Helmlich and L. O. Dehnel	203,039	Apr. 30	1285	372	13	790
Water-purifier	I. Brach	203,110	Apr. 30	1351	393	13	799
Well-borer	T. P. Thompson	203,217	Apr. 30	1467	429	13	814
Whiffletree	A. Hance	203,146	Apr. 30	1392	407	13	805
Whip-socket	A. Searls	202,967	Apr. 30	1218	352	13	781
Wick-raiser. Auxiliary	E. F. Morse	203,063	Apr. 30	1304	379	13	793
Wire. Device for holding coils of	A. K. Hebard	203,037	Apr. 30	1284	372	13	790
Wood-drying apparatus	H. Parker	202,957	Apr. 30	1208	349	13	780
Wool. Mechanism for hardening or felting hollow articles of	A. A. and R. B. Hawley	203,147	Apr. 30	1393	407	13	805
Wringer. Clothes-	C. B. Camp and N. Gardner	203,116	Apr. 30	1357	395	13	800
Wringing-machines. Roll for	G. P. Clark	202,992	Apr. 30	1239	358	13	784
Wall-protector	G. C. Bovey	203,241	May 7	5	2	13	821
Wash-boiler bottom	C. R. Everson	203,331	May 7	100	20	13	833
Washing-machine	C. A. Dodge	203,350	May 7	14	6	13	823
Washing-machine	J. M. Oakley	203,366	May 7	137	39	13	839
Washing-machine	J. M. Overshiner and T. Shannon	203,367	May 7	138	40	13	839
Watches. Winding attachment for	C. W. Hoehn	203,455	May 7	233	66	13	852
Weather-strip	H. C. W. Harris and F. M. Williams	203,448	May 7	227	64	13	851
Wheels. Sand-band for vehicle	C. Breed	203,239	May 7	3	1	13	821
Windlass. Portable hand-	O. Frederickson	203,333	May 7	101	29	13	834
Window-shade	A. W. Lane	203,468	May 7	246	71	13	854
Wire-drawing	V. D. P. Kenerson and C. H. Morgan	203,346	May 7	114	------	13	835
Wood. Compound for filling the grain of	N. Wheeler	203,304	May 7	76	------	13	830
Wrench	G. S. Goodspeed	203,262	May 7	26	9	13	824
Wrench. Bung	G. W. Phillipi	203,496	May 7	272	78	13	858
Wrench. Pipe-	L. Glynn	203,261	May 7	26	9	13	824
Wringer. Mop-	H. Russell	203,501	May 7	276	79	13	858
Wagon. Dumping-	M. Budgo	203,588	May 14	387	110	13	881
Wagon trestle. Platform-	L. M. Fitch	203,720	May 14	520	147	13	898
Wash-board	M. A. Smith	203,786	May 14	592	165	13	906

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Washing-machine	T. Austin	203,695	May 14	496	140	13	895
Washing-machine	G. Burkhardt	203,704	May 14	503	143	13	896
Watch. Calendar-	M. H. Paddock	203,640	May 14	432	124	13	887
Watch. Stem-winding	H. Abbott	203,524	May 14	319	91	13	873
Water-meter. Rotary	M. Wheeler	203,685	May 14	483	137	13	893
Water to buildings. Supplying	E. A. Warren	203,802	May 14	608	170	13	908
Weeding implement	J. F. Turner	203,798	May 14	604	169	13	908
Wells. Temper-screw for oil-	H. J. Miller	203,751	May 14	554	156	13	902
Wire-cutting machine	J. Adt	203,691	May 14	490	138	13	894
Wrench	J. S. Birch	203,581	May 14	381	108	13	881
Wrench attachment	H. F. Read	203,774	May 14	578	162	13	905
Wringer. Clothes-	W. Hill	203,621	May 14	414	118	13	885
Wringer. Clothes-	T. R. Way	203,803	May 14	609	170	13	908
Wagons. Netting for unloading	J. D. Winters	203,975	May 21	800	229	13	941
Wash-bench	C. Barlow	203,877	May 21	694	198	13	927
Wash-boiler	J. J. Hall	204,034	May 21	867	248	13	949
Washing-machine	C. and A. W. Guyer	204,032	May 21	866	247	13	949
Washing-machine	W. L. Hess and L. W. Newton	204,039	May 21	871	249	13	950
Waste-trap	D. Healy	204,037	May 21	869	249	13	940
Watch	D. A. A. Buck	204,000	May 21	830	237, 238	13	944
Watch-escapement	D. A. A. Buck	203,999	May 21	828	237	13	944
Watch-plate	D. A. A. Buck	203,998	May 21	827	237	13	944
Water-gate or stop-valve	A. C. Austin	203,985	May 21	811	233	13	942
Water-meter. Oscillating	A. C. Austin	203,812	May 21	632	178	13	919
Water-meter. Piston	H. L. Arnold	203,984	May 21	808	232	13	942
Water-meter. Piston	J. Barnes	203,876	May 21	693	198	13	927
Water-wheel gate	J. S. Ladow	204,050	May 21	880	252	13	951
Wheel and axle. Car	D. M. Cummings	203,893	May 21	710	203	13	929
Whip-socket and rein-holder	H. W. Neal	204,072	May 21	903	259	13	954
Windlass. Wire-cable	J. P. Manton	203,845	May 21	664	188	13	923
Wire-coiling machine	C. E. Green	204,030	May 21	864	247	13	940
Wool-washing machine	W. H. Bradley	203,905	May 21	823	236	13	944
Wrench. Carriage-	G. W. Remington	204,089	May 21	923	264	13	956
Wrench. Pipe-	D. Fisher	203,822	May 21	640	180	13	920
Wringing-machine	I. Copeland	203,818	May 21	637	179	13	920
Warming and ventilating buildings. Apparatus for	L. Bennet	204,126	May 28	982	280	13	967
Wash-board	F. Kueny	204,156	May 28	1015	288	13	971
Wash-boiler	A. Friedley	204,311	May 28	1175	335	13	992
Wash-stands, water-closets, &c. Sealing-cover for bowls of	F. Grosjean	204,318	May 28	1184	337	13	993
Washing-machine	E. S. M. Ford	204,310	May 28	1175	335	13	992
Watch-regulator	G. Bichsel	204,287	May 28	1151	329	13	989
Watch-winding device	B. Wormello	204,274	May 28	1135	325	13	987
Watches. Winding-click for	C. T. Higginbotham	204,150	May 28	1009	287	13	971
Water-meter. Piston	T. Melling	204,357	May 28	1224	349	13	998
Water-wheel	W. S. Clay	204,292	May 28	1156	330	13	989
Weather-strip	D. Austin	204,122	May 28	979	279	13	967
Whip-socket and rein-holder. Combined	B. J. Downing	204,140	May 28	997	283	13	969
Wrench	J. H. Sievers and H. T. Winkler	204,386	May 28	1253	357	13	1002
Wringer. Mop-	W. Haas	204,215	May 28	1082	308	13	980
Washing-machine	J. Arnold	204,518	June 4	92	31	13	1025
Washing-machine	B. F. Sanders, R. G. Dildine, and B. F. Head.	204,616	June 4	197	63	13	1040
Watch-chain bar	W. S. Hicks. (Reissue)	8,273	June 4	226	72	13	1044
Weighing device. Hog-	S. B. Thomas	204,663	June 4	209	67	13	1042
Wells. Bull-wheel for artesian	M. B. McManus	204,591	June 4	162	53	13	1036
Wells. Vacuum-packer for oil-	J. C. Thomson	204,512	June 4	85	29	13	1024
Wheel. Car-	J. H. and S. Watt	204,638	June 4	214	68	13	1043
Wire. Apparatus for finishing zinc-coated	E. H. Hill	204,571	June 4	138	46	13	1032
Wool-washing machine	S. R. Parkhurst	204,503	June 4	77	26	13	1023
Washing-machine	W. M. Fitzwater	204,661	June 11	244	76	13	1050
Washing-machine	W. Harris	204,666	June 11	250	78	13	1051
Washing-machine	C. P. Smith	204,854	June 11	452	132	13	1075
Waste-pipe trap	J. L. Turner. (Reissue)	8,281	June 11	490	142	13	1080
Water-drawer	W. M. Mathes	204,746	June 11	335	101	13	1062
Water plug or hydrant	M. Hogan	204,822	June 11	417	123	13	1071
Water-proofing composition	W. W. Baxter	204,702	June 11	287	------	13	1056
Whiffletree-hook	M. M. Olin, A. Zwiebel, and W. A. Bennett.	204,682	June 11	266	83	13	1053
Wire-cables. Machine for making	H. B. Scutt and H. S. Smith	204,686	June 11	270	84	13	1054
Wire. Manufacture of	W. Bansen	204,787	June 11	383	114	13	1067
Wringer	H. E. Smith	204,852	June 11	451	132	13	1075
Wringer. Clothes-	H. E. Smith	204,850	June 11	449	131	13	1075
Wringer. Clothes-	H. E. Smith	204,851	June 11	450	131	13	1075
Wringer. Mop-	F. J. Robinson	204,845	June 11	445	130	13	1074
Wagon-cover	D. Jannopoulo	205,099	June 18	720	214	13	1114
Wardrobe	M. Doyle	204,956	June 18	581	170	13	1096
Wash-board	M. A. Smith	205,148	June 18	774	228	13	1121
Washer and wringer. Combined	J. W. Sheetz	205,003	June 18	627	184	13	1102
Washer. Atmospheric clothes-	A. A. Brooks and H. D. Crooker	204,880	June 18	504	147	13	1086
Washing-machine	C. A. Dodge	205,063	June 18	684	201	13	1110
Washing-machine	H. Schmelzpfenning	204,917	June 18	543	158	13	1091
Washing piece goods. Device for	S. Arnold	389,445	June 18	563	164, 165	13	1093
Water-closet	W. Bishop	205,036	June 18	657	193	13	1106
Water-wheel. Turbine	J. Schuessler	205,145	June 18	771	227, 228	13	1121
Well. Petroleum-	E. M. Stevenson. (Reissue)	8,287	June 18	791	235	13	1124
Wells. Casing-spear for oil-	J. Bole	204,878	June 18	502	147	13	1085
Wheel. Vehicle-	C. O. Wilder	205,161	June 18	785	233	13	1123
Whiffletree-hook	N. M. Bowen	204,946	June 18	572	167	13	1095
Whiffletree-hook	W. S. Mead	205,117	June 18	737	219	13	1117
Whiffletree-hook	E. E. Morse	205,121	June 18	740	220	13	1117

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Whip. Leather	E. B. Light	204,985	June 18	609	178	13	1099
Wire-barbing machine	F. Billings	204,877	June 18	499	145, 146	13	1085
Wire-cutter	S. D. Locke	205,108	June 18	728	217	13	1116
Wire-cutting machine	J. Adt	205,027	June 18	649	191	13	1105
Wire-cutting tool	C. M. Knowles	205,103	June 18	723	215	13	1115
Wrench. Pipe	J. Hartman, Jr	205,081	June 18	704	209	13	1112
Wagon-cover	C. H. Cutler	205,248	June 25	890	263	13	1142
Wagons. Device for unloading header	N. Archibald	205,231	June 25	872	258	13	1139
Wagons. Platform gear for	H. L. Kingsley	205,398	June 25	1049	311	13	1162
Warping-machine	L. L. Shaw	205,307	June 25	954	282	13	1150
Washing-machine	R. E. McCauley	205,198	June 25	837	248	13	1135
Washing-machine	M. M. Sanders	205,424	June 25	1073	318	13	1166
Washing-machine. Pounder	C. A. Dodge	205,366	June 25	1017	301	13	1158
Water-closet	M. J. McEwan	205,284	June 25	925	275	13	1146
Water-raising apparatus	F. J. Seybold	205,216	June 25	855	254	13	1137
Water-wheel. Turbine	L. J. Johnson	205,392	June 25	1043	309	13	1161
Wheel. Vehicle	W. Thunen	205,318	June 25	965	286	13	1152
Whiffletree-hook	J. Marcellus	205,402	June 25	1053	312	13	1161
Windlass	J. P. Manton. (Reissue)	8,303	June 25	1118	330, 331	13	1172
Windmill	F. Forster	205,373	June 25	1024	303	13	1159
Wire-barbing tool	J. H. Hill and W. H. Jayne. (Reissue.)	8,306	June 25	1122	331	13	1172
Yoke and combined draft-tongue and equalizer. Neck	R. Atkin	199,174	Jan. 15	479	141	13	91
Yoke. Neck	J. Heimerl	199,543	Jan. 22	850	251	13	158
Yoke fastener. Neck	A. W. Comstock	200,643	Feb. 26	791	232	13	378
Yoke attachment for wagon-tongues. Neck	A. J. Clemmons and H. M. Hills	200,977	Mar. 5	153	50	13	439
Yarn. Machine for dressing or sizing	B. Saunders. (Reissue)	8,117	Mar. 12	519	158	13	497
Yarn. Dynamometer for testing the strength of	M. Lee	201,802	Mar. 26	1028	314	13	582
Yucca. Machine for mashing	A. Stoner	203,386	May 7	159	46	13	842
Yokes. Clip for neck	W. W. Lunger	205,110	June 18	731	217	13	1116
Yoke adjuster. Neck	J. Dalton	205,249	June 25	890	264	13	1142
Zinc sulphate. Utilizing	C. Fahlberg	200,134	Feb. 12	252	.....	13	281
Zinc. Treating ores of	E. A. Parnell	203,849	May 21	668	.....	13	924

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
Ayer, G., Thomaston, Conn., assignor to Thomas Clock Company, New York, N. Y. Clock-face	10,625	Apr. 16	13	678
Allen, F. E., Yonkers, N. Y. Carpet	10,398	Jan. 15	13	11
Allen, R., assignor to A. Smith & Sons Carpet Company, Yonkers, N. Y. Carpet	10,443	Feb. 12	13	278
Same	10,444	Feb. 12	13	278
Same	10,714	June 11	13	1048
Archer, G. W., Rochester, N. Y. Piano-stool leg	10,705	June 4	13	1012
Atterbury, T. B., Pittsburg, Pa. Glassware	10,643	Apr. 23	13	730
Atwater, R. M., Millville, N. J., assignor to J. Whitall, R. P. Smith, J. Mickle, Jr., C. Roberts, C. A. Tatum, and W. H. Nicholson, Philadelphia, Pa., and New York, N. Y. Bottle	10,407	Jan. 22	13	126
Baggs, A. H., Bridgeport, Ohio. Pressed-glass table-set	10,706	June 4	13	1012
Barclay, H., assignor to J. H. Gay, Philadelphia, Pa. Carpet	10,399	Jan. 15	13	11
Barkentin, G. S., assignor to E. Miller & Co., Meriden, Conn. Statuette	10,513	Mar. 12	13	458
Barker, W., West Troy, N. Y. Cuff	10,500	Feb. 26	13	370
Barlow, J., and J. Moses, Trenton, N. J. Handles for covered dishes	10,538	Mar. 19	13	501
Bartlett, T. H., Boston, Mass., assignor to E. Miller & Co., West Meriden, Conn. Statuette	10,505	Mar. 5	13	410
Bawden, J., *et al.* (See Read, J. A., assignor.)				
Beam, D. A., Newark, N. J., assignor to Wheeler, Parsons & Hayes, New York, N. Y. Ornamental chain	10,619	Apr. 9	13	638
Beattie, W. C., assignor to Reed & Barton, Taunton, Mass. Handles of forks, spoons, knives, &c.	10,615	Apr. 2	13	598
Becklind, W. (See Stockhausen and Becklind.)				
Beebe, C. T., Jackson, Mich. Shovel-handles	10,532	Mar. 12	13	458
Benton, A. H., Minneapolis, Minn. Lamp	10,434	Feb. 5	13	202
Bigelow Carpet Company. See McCallum, W., assignor.)				
Same. (See Pine, E., assignor.)	10,684	May 21	13	918
Bissell, F. S., Pittsburg, Pa. Parlor-stove				
Blabon, G. C., *et al.* (See Plock, F., assignor.)				
Blacsius, E. V., New York, N. Y. Mirror-frame	10,405	Jan. 15	13	11
Bosworth, F. S., assignor to Weybosset Mills, Providence, R. I. Fancy cassimere	10,692	May 28	13	970
Same	10,693	May 28	13	970
Same	10,694	May 28	13	970
Same	10,695	May 28	13	970
Same	10,696	May 28	13	970
Same	10,697	May 28	13	970
Same	10,698	May 28	13	970
Same	10,699	May 28	13	970
Same	10,700	May 28	13	970
Same	10,701	May 28	13	970
Same	10,702	May 28	13	970
Bourn, A. O., Bristol, R. I. Rubber fabric	10,390	Jan. 8	13	48
Bradley & Hubbard Manufacturing Company. (See Seidensticker, F. S., assignor.)				
Briggs, G. D., assignor to W. C. Greene & Co., Providence, R. I. Breastpin	10,652	Apr. 30	13	774
Britner, G. C., Brooklyn, N. Y. Buttons	10,391	Jan. 8	13	48
Brittin, E. L. (See Gill and Brittin.)				
Britton, W., assignor to J. T. Mauran, Providence, R. I. Breastpin	10,630	Apr. 9	13	638
Bromley, J. H., assignor to J. Bromley & Sons, Philadelphia, Pa. Carpet	10,710	June 4	13	1012
Bromley & Sons, J. (See Bromley, J. H., assignor.)				
Brown, J. A. (See Fuller and Brown.)				
Burgess, J. W., East Orange, N. J. Dish-handles	10,501	Feb. 26	13	370
Burnham, C. A., West Somerville, assignor to E. J. Lane, Boston, Mass. Crochet fabric	10,626	Apr. 16	13	678
Burrows, W., Brooklyn, assignor to J. L. Mott Iron Works, New York, N. Y. Fire place heater	10,424	Jan. 29	13	170
Same. Stoves and ranges	10,549	Mar. 26	13	550
Burton, G. D., New Ipswich, N. H. Street or park lamp	10,497	Feb. 19	13	326
Byron, W., assignor to Vulcanite Jewelry Company, New York, N. Y. Bracelet	10,612	Apr. 2	13	598
Byron, W., New York, N. Y. Bracelet	10,677	May 14	13	872
Camp, N. H., West Meriden, assignor to C. Parker Company, Meriden, Conn. Hinge	10,715	June 11	13	1048
Campbell, Jones & Co. (See Franz, H., assignor.)				
Carpenter, F., Burrillville, R. I. Cassimeres	10,613	Apr. 2	13	598
Chicago Stamping Company. (See Morgan, E., Jr., assignor.)				
Clark, S., Brooklyn, N. Y. Inkstand	10,413	Jan. 29	13	170
Collender, H. W., New York, N. Y. Billiard-table leg	10,637	Apr. 16	13	678
Combs, G., *et al.* (See Read, J. A., assignor.)				
Conner, J. M., Greenville, N. J. Font of printing-types	10,450	Feb. 19	13	326
Same	10,665	May 7	13	820
Same	10,681	May 14	13	872
Same	10,685	May 21	13	918
Cornwall, H. (See Hammond, H., assignor.)				
Crane, F., Bloomfield, N. J. Buckle	10,704	May 28	13	970
Culbert, A., New York, N. Y. Hinges	10,529	Mar. 19	13	501
Cussen, W. J., Richmond, Va. Tobacco-bags	10,725	June 18	13	1084
Same	10,726	June 18	13	1084
Daniel, E., Paris, France, assignor to Roxbury Carpet Company. Carpet	10,400	Jan. 15	13	11
Darling, G. S., Chicago, Ill. Foot-piece for treadles	10,412	Jan. 22	13	126
Davies, H. J., Brooklyn, N. Y. Clock-case	10,689	May 21	13	918
Davis, J. C. S., *et al.* (See Plock, F., assignor.)				
Davis, J. H., Ypsilanti, Mich. Match-safes	10,644	Apr. 23	13	730
De Hart, W., assignor to S. Sanford, Amsterdam, N. Y. Carpet	10,451	Feb. 19	13	326
Estey & Co., J. (See Hayward, S., assignor.)				
Faas, C. A., Wrentham, Mass. Gem-setting	10,732	June 25	13	1130
Fallows, J., assignor to F. Gutekunst, Philadelphia, Pa. Badge	10,540	Mar. 19	13	501
Fisher, E., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	10,468	Feb. 19	13	326

Alphabetical list of patentees of designs, January to June, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Fisher, E., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	10,469	Feb. 19	13	326
Same.....same	10,470	Feb. 19	13	326
Same.....same	10,471	Feb. 19	13	326
Same.....same	10,472	Feb. 19	13	326
Same.....same	10,473	Feb. 19	13	326
Fisher, J., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	10,452	Feb. 19	13	326
Same.....same	10,453	Feb. 19	13	326
Same.....same	10,454	Feb. 19	13	326
Same.....same	10,455	Feb. 19	13	326
Same.....same	10,456	Feb. 19	13	326
Same.....same	10,457	Feb. 19	13	326
Same.....same	10,458	Feb. 19	13	326
Same.....same	10,459	Feb. 19	13	326
Same.....same	10,460	Feb. 19	13	326
Same.....same	10,461	Feb. 19	13	326
Same.....same	10,462	Feb. 19	13	326
Same.....same	10,463	Feb. 19	13	326
Same.....same	10,464	Feb. 19	13	326
Same.....same	10,465	Feb. 19	13	326
Same.....same	10,466	Feb. 19	13	326
Same.....same	10,467	Feb. 19	13	326
Fisk, H. G., New York, N. Y. Scarf	10,506	Mar. 5	13	410
Fogelstrand, O. F., New Britain, assignor to Hart, Bliven & Mead Manufacturing Company, Kensington, Conn. Inkstand	10,397	Jan. 8	13	48
Folsom, J. L., Brooklyn, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	10,550	Mar. 26	13	550
Same.....same	10,551	Mar. 26	13	550
Same.....same	10,552	Mar. 26	13	550
Same.....same	10,553	Mar. 26	13	550
Same.....same	10,554	Mar. 26	13	550
Same.....same	10,555	Mar. 26	13	550
Same.....same	10,556	Mar. 26	13	550
Same.....same	10,557	Mar. 26	13	550
Same.....same	10,558	Mar. 26	13	550
Same.....same	10,559	Mar. 26	13	550
Same.....same	10,560	Mar. 26	13	550
Same.....same	10,561	Mar. 26	13	550
Same.....same	10,562	Mar. 26	13	550
Same.....same	10,563	Mar. 26	13	550
Same.....same	10,564	Mar. 26	13	550
Same.....same	10,565	Mar. 26	13	550
Same.....same	10,566	Mar. 26	13	550
Same.....same	10,567	Mar. 26	13	550
Same.....same	10,568	Mar. 26	13	550
Same.....same	10,569	Mar. 26	13	550
Same.....same	10,570	Mar. 26	13	550
Same.....same	10,571	Mar. 26	13	550
Same.....same	10,572	Mar. 26	13	550
Same.....same	10,573	Mar. 26	13	550
Same.....same	10,574	Mar. 26	13	550
Same.....same	10,575	Mar. 26	13	550
Same.....same	10,576	Mar. 26	13	550
Fowler, S. W., assignor to F. H. Lovell & Co., New York, N. Y. Lamp-chimney	10,414	Jan. 29	13	179
Franz, H., assignor to Campbell, Jones & Co., Pittsburg, Pa. Glassware	10,731	June 25	13	1134
Fuller, N., and J. A. Brown, Boston, Mass. Wooden cigar-lighter	10,707	June 4	13	1012
Geistodt, L., Paris, France. Bottles	10,709	June 4	13	1012
Giesecke, G., Leipzig, Saxony, Germany. Font of printing-types	10,622	Apr. 9	13	638
Gill, G., and E. L. Brittin, Derby, Conn. Handles for spoons, forks, &c	10,609	Mar. 26	13	550
Gorham Manufacturing Company. (See Wilkinson, G., assignor.)				
Graef, C. H., Edgewater, N. Y. Bracelet	10,415	Jan. 29	13	179
Same.....same	10,416	Jan. 29	13	179
Gray, L. N. B., Boston, Mass. Wall-pockets	10,507	Mar. 5	13	410
Greasley, E., Philadelphia, Pa. Fringe	10,720	June 11	13	1048
Greene & Co., W. C. (See Briggs, G. D., assignor.)				
Griffith, H., Brooklyn, N. Y. Scarf-pin	10,645	Apr. 23	13	730
Grimshaw, J., Paterson, N. J. Handkerchief	10,703	May 28	13	970
Guild, G. M., Boston, Mass. Cases of upright pianos	10,498	Feb. 19	13	325
Guirand, E., New York, assignor to W. B. Kendall, Brooklyn, N. Y. Carpets	10,514	Mar. 12	13	458
Guiraud, E., New York, N. Y. Carpet	10,666	May 7	13	820
Gutekunst, F. (See Fallows, J., assignor.)				
Hammarth, J., assignor to Wallace Brothers, Wallingford, Conn. Spoons	10,654	Apr. 30	13	774
Hammond, H., assignor to H. Cornwall, Hartford, Conn. Hammers	10,656	Apr. 30	13	774
Hart, Bliven & Mead Manufacturing Company. (See Foglestrand, O. F., assignor.)				
Hart, E., Cleveland, Ohio. Furniture-drawers	10,717	June 11	13	1048
Hartford Carpet Company. (See Folsom, J. L., assignor.)				
Same.....(See Heinigke, O., assignor.)				
Same.....(See Horan, H., assignor.)				
Same.....(See Nordman, H., assignor.)				
Same.....(See Rollings, J. E., assignor.)				
Same.....(See Smith, J. H., assignor.)				
Same.....(See Smith, W. H., assignor.)				
Harrington, G. H., and W. A. Richardson, Worcester, Mass. Pistol-handles	10,621	Apr. 9	13	638
Same.....same	10,646	Apr. 23	13	730
Hayden, N., Essex, Conn. Lifting-handle	10,401	Jan. 15	13	11
Hayward, S., Boston, Mass., assignor to J. Estey & Co., Brattleborough, Vt. Organ-case	10,635	Apr. 16	13	678
Hedstrom, J. A., New York, N. Y. Bracelet	10,642	Apr. 16	13	678
Heinigke, O., New Utrecht, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpets	10,577	Mar. 26	13	550
Same.....same	10,578	Mar. 26	13	550
Same.....same	10,579	Mar. 26	13	550
Same.....same	10,580	Mar. 26	13	550
Same.....same	10,581	Mar. 26	13	550
Same.....same	10,582	Mar. 26	13	550
Hemingray Glass Company. (See Hemingray, R., assignor.)				
Hemingray, R., Covington, Ky., assignor to Hemingray Glass Company, Cincinnati, Ohio. Lamp-shade	10,678	May 14	13	872

Alphabetical list of patentees of designs, January to June, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Heysinger, I. W., Philadelphia, Pa. Fountain-pen cases	10,653	Apr. 30	13	774
Hobbs, J. H., Wheeling, W. Va. Glassware	10,392	Jan. 8	13	48
Same.....Glass shades	10,502	Feb. 26	13	370
Hoffman, H. J., assignor to Potter, Sons & Co., Philadelphia, Pa. Oil-cloths	10,533	Mar. 12	13	458
Same.....same	10,534	Mar. 12	13	458
Holly, H. H., New York, N. Y. Billiard-table leg	10,638	Apr. 16	13	678
Holmes, J., Boston, Mass. Sleeveless crocheted jacket	10,445	Feb. 12	13	278
Hood, M. C., Boston, Mass. Perfumery-bottles	10,716	June 11	13	1048
Hope, J., Providence, R. I. Shirt-front	10,499	Feb. 19	13	326
Hopkins, T. E., West Fitchburg, Mass. Cassimere	10,386	Jan. 1	13	7
Horan, H., East Orange, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpets	10,583	Mar. 26	13	550
Same.....same	10,584	Mar. 26	13	550
Same.....same	10,585	Mar. 26	13	550
Same.....same	10,586	Mar. 26	13	550
Same.....same	10,587	Mar. 26	13	550
Same.....same	10,588	Mar. 26	13	550
Same.....same	10,589	Mar. 26	13	550
Same.....same	10,590	Mar. 26	13	550
Same.....same	10,591	Mar. 26	13	550
Same.....same	10,592	Mar. 26	13	550
Same.....same	10,610	Mar. 26	13	550
Same				
Hoyting, G., Thomaston, Conn., assignor to S. Thomas Clock Company, New York, N. Y. Pendulum-weight	10,627	Apr. 16	13	678
Huggins, J. S. (See Rogers and Huggins.)				
Hull, W. A., New York, N. Y. Inkstand-frames	10,655	Apr. 30	13	774
Hutchison, J., Nowark, N. J., assignor to Potter, Sons & Co., Philadelphia, Pa. Oil-cloths	10,515	Mar. 12	13	458
Same.....same	10,516	Mar. 12	13	458
Ihlenburg, H., assignor to MacKellar, Smiths & Jordan, Philadelphia, Pa. Font of printing-types	10,408	Jan. 22	13	126
Same.....same	10,417	Jan. 29	13	179
Same.....same	10,446	Feb. 12	13	278
Same.....same	10,447	Feb. 12	13	278
Same.....same	10,517	Mar. 12	13	458
Same.....same	10,518	Mar. 12	13	458
Same.....same	10,667	May 7	13	820
Same.....same	10,668	May 7	13	820
Same.....same	10,712	June 4	13	1012
Same.....same	10,669	May 7	13	820
Jackson, W. W., assignor to MacKellar, Smiths & Jordan, Philadelphia, Pa. Font of printing-types	10,733	June 25	13	1130
Same.....same	10,387	Jan. 1	13	7
Jennings, A. G., Brooklyn, N. Y. Lace fabric	10,388	Jan. 1	13	7
Same.....Lace purling	10,448	Feb. 12	13	278
Jennings, W. P., Brooklyn, N. Y. Fringed lace fabric	10,628	Apr. 16	13	678
Jones, M. C., Thomaston, Conn., assignor to S. Thomas Clock Company, New York, N. Y. Clock-case	10,616	Apr. 2	13	598
Kaldenberg, F. J., New York, N. Y. Umbrella-handles				
Karsch, J. M., *et al.* (See Penchard, C., assignor.)				
Kendall, W. B. (See Guiraud, E., assignor.)	10,519	Mar. 12	13	458
Kendall, W. B., Brooklyn, N. Y. Carpets	10,647	Apr. 23	13	730
Kimberly, S., Norfolk, Va. Packages	10,474	Feb. 19	13	326
Kirschner, D. C., assignor to S. Sanford, Amsterdam, N. Y. Carpet				
Knowles, J. R., *et al.* (See Ladd, S. J., assignor.)				
Knowles, S. M., *et al.* (See Ladd, S. J., assignor.)	10,521	Mar. 12	13	458
Ladd, S. J., assignor to J. B. and S. M. Knowles, Providence, R. I. Spoon-handles				
Lane, E. J. (See Burnham, C. A., assignor.)	10,718	June 11	13	1048
Leeser, L. A., Baltimore, Md. Wall-pocket	10,623	Apr. 9	13	638
Little, A., New York, N. Y. Font of printing-types	10,520	Mar. 12	13	458
Lomas, J. R., assignor to B. Shoninger, New Haven, Conn. Piano-case	10,593	Mar. 26	13	550
Same.....Organ-case	10,604	Mar. 26	13	550
Same.....same				
Lovell & Co., F. H. (See Fowler, S. W., assignor.)				
Lowell Manufacturing Company. (See Fisher, J., assignor.)				
Same.....(See Fisher, J., assignor.)				
Same.....(See Ney, E. J., assignor.)				
Same.....(See Swapp, C. W., assignor.)				
Luchs, A. N., New York, N. Y. Collar and cuff box	10,435	Feb. 5	13	232
MacKellar, Smiths & Jordan. (See Ihlenburg, H., assignor.)				
Same.....(See Jackson, W. W., assignor.)				
Same.....(See Ruthven, E. C., assignor.)				
Same.....(See Smith, E., assignor.)				
Maddock, T., New York, N. Y. Handles of table-ware	10,395	Jan. 8	13	48
Magee, F. A., Chelsea, assignor to Magee Furnace Company, Boston, Mass. Oil-stoves	10,657	Apr. 30	13	774
Magee Furnace Company. (See Magee, F. A., assignor.)				
Mahran, J. T. (See Britton, W., assignor.)	10,543	Mar. 19	13	501
McCallum, W., Yonkers, assignor to Bigelow Carpet Company, New York, N. Y. Carpets	10,402	Jan. 15	13	11
McNair, D., assignor to Roxbury Carpet Company, Boston, Mass. Carpets	10,634	Apr. 16	13	678
McNeven, J., New York, N. Y. Child's dress	10,523	Mar. 12	13	458
Meinberg, F., New York, N. Y. Brow-bands for bridles				
Meriden Britannia Company. (See Smith, W. M., assignor.)				
Meyer, C. T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	10,425	Jan. 29	13	179
Same.....same	10,426	Jan. 29	13	179
Same.....same	10,427	Jan. 29	13	179
Same.....same	10,428	Jan. 29	13	179
Same.....same	10,429	Jan. 29	13	179
Same.....same	10,430	Jan. 29	13	179
Same.....same	10,431	Jan. 29	13	179
Same.....same	10,432	Jan. 29	13	179
Same.....same	10,433	Jan. 29	13	179
Same.....same	10,437	Feb. 5	13	232
Same.....same	10,438	Feb. 5	13	232
Same.....same	10,439	Feb. 5	13	232
Same.....same	10,440	Feb. 5	13	232
Same.....same	10,441	Feb. 5	13	232
Same.....same	10,442	Feb. 5	13	232
Same.....same	10,658	Apr. 30	13	774
Same.....same	10,659	Apr. 30	13	774
Same.....same	10,660	Apr. 30	13	774

Alphabetical list of patentees of designs, January to June, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Meyer, C. T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	10,661	Apr. 30	13	774
Same.....same	10,662	Apr. 30	13	774
Same.....same	10,663	Apr. 30	13	774
Same.....same	10,670	May 7	13	820
Same.....same	10,671	May 7	13	820
Same.....same	10,672	May 7	13	820
Same.....same	10,721	June 11	13	1048
Same.....same	10,722	June 11	13	1048
Same.....same	10,723	June 11	13	1048
Same.....same	10,724	June 11	13	1048
Meyer, V. E. (See Meyer, C. T., and V. E.)				
Mickle, J., Jr., *et al.* (See Atwater, R. M., assignor.)				
Same.....(See Tatum, C. A., assignor.)				
Miller & Co., E. (See Barkentin, G. S., assignor.)				
Same.....(See Bartlett, T. H., assignor.)				
Miller, I. M. (See Miller, J. W. and I. M.)				
Miller, J. E., Pittsburg, Pa. Glassware	10,727	June 18	13	1084
Miller, J. W., and I. M., Newark, N. J. Button-stud and other jewelry	10,403	Jan. 15	13	11
Same.....Buttons, studs, &c.	10,522	Mar. 12	13	458
Miller, W. A. L., San Francisco, Cal. Cabinet jewelry	10,650	Apr. 23	13	730
Messinger, H., Buffalo, N. Y. Badge	10,629	Apr. 16	13	678
Moore, E. C., Yonkers, assignor to Tiffany & Co., New York, N. Y. Spoon and fork handles	10,524	Mar. 12	13	458
Morgan, E., Jr., assignor to Chicago Stamping Company, Chicago, Ill. Tea canister or caddy	10,393	Jan. 8	13	48
Same.....Canister or caddy front	10,394	Jan. 8	13	48
Morgans, M., Jr., Brooklyn, N. Y. Handles of spoons, ladles, &c.	10,436	Feb. 5	13	232
Moses, J. (See Barlow and Moses.)				
Mott Iron Works, J. L. (See Burrows, W., assignor.)				
Ney, E. J., Lowell, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	10,475	Feb. 19	13	326
Same.....same	10,476	Feb. 19	13	326
Same.....same	10,477	Feb. 19	13	326
Same.....same	10,478	Feb. 19	13	326
Same.....same	10,479	Feb. 19	13	326
Same.....same	10,480	Feb. 19	13	326
Same.....same	10,481	Feb. 19	13	326
Same.....same	10,482	Feb. 19	13	326
Same.....same	10,483	Feb. 19	13	326
Same.....same	10,484	Feb. 19	13	326
Same.....same	10,485	Feb. 19	13	326
Same.....same	10,486	Feb. 19	13	326
Same.....same	10,487	Feb. 19	13	326
Same.....same	10,488	Feb. 19	13	326
Nicholson, W. H., *et al.* (See Atwater, R. M., assignor.)				
Same.....(See Tatum, C. A., assignor.)				
Nirdlinger, A. H., assignor to Stein Manufacturing Company, Rochester, N. Y. Burial-casket molding	10,611	Mar. 26	13	550
Noble, W. J., New York, N. Y. Burial-casket	10,630	Apr. 16	13	678
Nordman, H., New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpets	10,541	Mar. 19	13	501
Norman, O., Boston, Mass. Billiard-table leg	10,639	Apr. 16	13	678
North American Iron Works. (See Tweeddale, W., assignor.)				
Norton, E., Chicago, Ill. Caddy	10,542	Mar. 19	13	501
Norton, R. S., Troy, N. Y. Cuff	10,535	Mar. 12	13	458
Nyholm, E. B., Philadelphia, Pa. Knitted fabric	10,389	Jan. 1	13	7
Pardoe, W. A., assignor to A. Smith & Sons Carpet Company, Yonkers, N. Y. Carpet	10,449	Feb. 12	13	278
Parker Company, C. (See Camp, N. H., assignor.)				
Parker, W. E., New Britain, assignor to C. B. Stanley & Co., New Britain, Conn. Chessmen	10,508	Mar. 5	13	410
Penchard, C., assignor to W. M. and W. E. Watson, and J. M. Karsch, New York, N. Y. Chairs	10,594	Mar. 26	13	550
Same.....same	10,595	Mar. 26	13	550
Same.....same	10,596	Mar. 26	13	550
Same.....same	10,597	Mar. 26	13	550
Pennell, T. E., Brooklyn, N. Y., assignor to T. Potter, Sons & Co., Philadelphia, Pa. Oil-cloths	10,526	Mar. 12	13	458
Same.....same	10,527	Mar. 12	13	458
Piggott, G. W., New York, N. Y. Carpets	10,544	Mar. 19	13	501
Pirie, M. H., assignor to A. Pirie & Sons, Aberdeen, Scotland. Writing-paper	10,640	Apr. 16	13	678
Same.....same	10,641	Apr. 16	13	678
Pirie & Son. (See Pirie, M. H., assignor.)				
Plock, F., New York, N. Y., assignor to G. W. and G. C. Blabon, and J. C. S. Davis, Philadelphia, Pa. Oil-cloth	10,385	Jan. 1	13	7
Porter, F. E., Baltimore, Md. Wall-pockets	10,624	Apr. 9	13	638
Post, C. M., Plainfield, N. J., assignor to T. Potter, Sons & Co., Philadelphia, Pa. Oil-cloths	10,525	Mar. 12	13	458
Potter, Sons & Co., T. (See Hoffman, H. J., assignor.)				
Same.....(See Hutchinson, J., assignor.)				
Same.....(See Pennell, T. E., assignor.)				
Same.....(See Post, C. M., assignor.)				
Prohar, L., New York, N. Y. Pocket-book frame	10,409	Jan. 22	13	126
Pyne, E., New York, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet	10,708	June 4	13	1012
Read, J. A., Philadelphia, Pa., assignor to G. Coombs and J. Bawden, Freehold, N. J. Summer-piece or register-front	10,679	May 14	13	872
Redway, A. J., Avondale, Ohio. Stove	10,728	June 18	13	1084
Reed & Barton. (See Beattie, W. C., assignor.)				
Reed, J. R., Westfield, Mass. Coffin-rail	10,404	Jan. 15	13	11
Same.....coffin-screw	10,410	Jan. 22	13	126
Rhoner, F. (See Willerhausen and Rhoner.)				
Richardson, W. A. (See Harrington and Richardson.)				
Richers, C. F., assignor to Wood & Hughes, New York, N. Y. Spoon and fork handles	10,536	Mar. 12	13	458
Same.....same	10,537	Mar. 12	13	458
Rinckwitz, R., New York, N. Y. Badge	10,538	Mar. 12	13	458
Robert, A., Brooklyn, N. Y. Watch-case or locket	10,411	Jan. 22	13	126
Roberts, C., *et al.* (See Atwater, R. M., assignor.)				
Same.....(See Tatum, C. A., assignor.)				
Rogers & Brother, C. (See Rogers and Huggins, assignors.)				
Rogers, C. B., and J. S. Huggins, assignors to C. Rogers & Brother, West Meriden, Conn. Casket-screw	10,631	Apr. 16	13	678
Rogers, J., New Canaan, Conn. Group of statuary	10,719	June 11	13	1048
Rollings, J. E., New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpets	10,598	Mar. 26	13	550
Same.....same	10,599	Mar. 26	13	550

Alphabetical list of patentees of designs, January to June, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Rollings, J. C., New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpets	10,600	Mar. 26	13	550
Same.....same	10,601	Mar. 26	13	550
Same.....same	10,602	Mar. 26	13	550
Same.....same	10,603	Mar. 26	13	550
Roxbury Carpet Company. (See Daniel, E., assignor.)				
Same.....(See McNair, D., assignor.)				
Same.....(See Stearns, S. J., assignor.)				
Ruthven, E. C., assignor to MacKellar, Smiths & Jordan, Philadelphia, Pa. Font of printing types	10,489	Feb. 19	13	326
Sampson, E. C. (See Meyers, C. T. and V. E., assignors.)				
Sanford, S. (See De Hart, W., assignor.)				
Same.....(See Kirschner, D. C., assignor.)				
Same.....(See Uster, C., assignor.)				
Seidensticker, F. R., assignor to Bradley and Hubbard Manufacturing Company, West Meriden, Conn. Extension lamp-fixture	10,686	May 21	13	918
Shuler, Buckwater & Co. (See Wemyss, A., assignor.)				
Shirley, F. S., New Bedford, Mass. Glass and lava ware	10,729	June 18	13	1084
Shoeninger, A. (See Unzicker, O., assignor.)				
Shoeninger, B. (See Lomas, J. R., assignor.)				
Simpson, Hall, Miller & Co. (See Vasseur, H., assignor.)				
Smith, D. L., assignor to Waterbury Buckle Company, Waterbury, Conn. Buckles	10,682	May 14	13	872
Same.....same	10,683	May 14	13	872
Smith, E. A., assignor to Waterbury Buckle Company, Waterbury, Conn	10,690	May 21	13	918
Smith, J. H., Enfield, assignor to Hartford Carpet Company, Hartford, Conn. Carpets	10,547	Mar. 19	13	501
Same.....same	10,548	Mar. 19	13	501
Smith, M., Pittsburg, Pa. Glassware	10,688	May 21	13	918
Smith, R., assignor to MacKellar, Smiths & Jordan, Philadelphia, Pa. Font of printing-types	10,673	May 7	13	820
Smith, R. P., *et al.* (See Atwater, R. M., assignor.)				
Same.....(See Tatum, C. A., assignor.)				
Smith & Sons' Carpet Company, A. (See Allen, R., assignor.)				
Same.....(See Pardoe, W. A., assignor.)				
Smith, W. H., Enfield, assignor to Hartford Carpet Company, Hartford, Conn. Carpets	10,545	Mar. 19	13	501
Same.....same	10,546	Mar. 19	13	501
Smith, W. M., assignor to Meriden Britannia Company, Meriden, Conn. Funeral ornament	10,396	Jan. 8	13	48
Spicers & Peckham. (See Spicer, W. R., assignor.)				
Spicer, W. A., assignor to Spicers & Peckham, Providence, R. I. Stove	10,687	May 21	13	918
Stanley & Co., C. B. (See Parker, W. E., assignor.)				
Starr, J. F., Jr., Camden, N. J. Sheet-metal water-pipe	10,632	Apr. 16	13	678
Stattmann, C., Chicago, Ill. Muff	10,617	Apr. 2	13	598
Stearns, T. J., assignor to Roxbury Carpet Company, Boston, Mass. Carpets	10,529	Mar. 12	13	458
Same.....same	10,530	Mar. 12	13	458
Same.....same	10,605	Mar. 26	13	550
Same.....same	10,606	Mar. 26	13	550
Same.....same	10,633	Apr. 16	13	678
Same.....same	10,674	May 7	13	820
Stein Manufacturing Company. (See Nirdlinger, A. H., assignor.)				
Steinan, A., Jr., Cincinnati, Ohio. Set of jewelry	10,648	Apr. 23	13	730
Stevens, E., Cromwell, Conn. Toy money-box	10,509	Mar. 5	13	410
Stockhausen, M., and W. Becklind, New York, N. Y. Cigar-box	10,730	June 18	13	1084
Storm, G., Philadelphia, Pa. Perfumery-bottles	10,607	Mar. 26	13	550
Sturdy, A. W., Attleborough, Mass., assignor to Sturdy Brothers & Co., New York, N. Y. Sleeve-buttons	10,503	Feb. 26	13	370
Sturdy Brothers & Co. (See Sturdy, A. W., assignor.)				
Swapp, C. W., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpets	10,490	Feb. 19	13	326
Same.....same	10,491	Feb. 19	13	326
Same.....same	10,492	Feb. 19	13	326
Same.....same	10,493	Feb. 19	13	326
Swarts, J. W., Philadelphia, Pa. Crayons	10,608	Mar. 26	13	550
Tatum, C. A., *et al.* (See Atwater, R. M., assignor.)				
Tatum, C. A., New York, N. Y., assignor to himself, J. Whitall, R. P. Smith, J. Mickle, Jr., C. Roberts, and W. H. Nicholson. Bottles	10,675	May 7	13	820
Thomas Clock Company, S. (See Ager, G., assignor.)				
Same.....(See Hoyting, G., assignor.)				
Same.....(See Jones, M. C., assignor.)				
Tiffany & Co. (See Moore, E. C., assignor.)				
Turner, J. B., Rochester, N. Y. Advertising-monuments	10,649	Apr. 23	13	730
Tweeddale, W., assignor to North American Iron Works, Brooklyn, N. Y. Fountain-basin or flower-bed	10,418	Jan. 29	13	179
Same.....Vase	10,618	Apr. 2	13	598
Unzicker, O., assignor to A. Shoeninger, Chicago, Ill. Hobby-horse	10,734	June 25	13	1130
Ustor, C., assignor to S. Sanford, Amsterdam, N. Y. Carpet	10,494	Feb. 19	13	326
Same.....same	10,713	June 4	13	1012
Vasseur, H., assignor to Simpson, Hall, Miller & Co., Wallingford, Conn. Spoon-handle	10,691	May 21	13	918
Vulcanite Jewelry Company. (See Byron, W., assignor.)				
Wallace Brothers. (See Hammarth, J., assignor.)				
Same.....(See Wallace, H. L., assignor.)				
Wallace, H. L., assignor to Wallace Brothers, Wallingford, Conn. Spoons	10,504	Feb. 26	13	370
Same.....same	10,664	Apr. 30	13	774
Waterbury Buckle Company. (See Smith, D. L., assignor.)				
Same.....(See Smith, E. A., assignor.)				
Watson, W. E., *et al.* (See Penchard, C., assignor.)				
Watson, W. M., *et al.* (See Penchard, C., assignor.)				
Webb, C. J., Randalstown, Ireland. Towels	10,495	Feb. 19	13	326
Same.....same	10,496	Feb. 16	13	326
Wemyss, A., Philadelphia, Pa., assignor to Sheeler, Buckwater & Co. Cook-stove	10,512	Mar. 5	13	410
Weason, D. B., Springfield, Mass. Pistol-handle	10,421	Jan. 29	13	179
Same.....same	10,422	Jan. 29	13	179
Same.....same	10,423	Jan. 29	13	179
Weybosset Mills. (See Bosworth, F. S., assignor.)				
Wheeler, F. E. (See Wheeler, R. and F. E.)				
Wheeler, Parsons & Hayes. (See Beam, D. A., assignor.)				
Wheeler, R. and F. E., Utica, N. Y. Cook-stove	10,419	Jan. 29	13	179
Whitall, J., *et al.* (See Atwater, R. M., assignor.)				
Same.....(See Tatum, C. A., assignor.)				

Alphabetical list of patentees of designs, January to June, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Wiener & Co. (See Wiener, S., assignor.)				
Wiener, S., assignor to Wiener & Co., Newark, N. J. Harness-trimming	10,406	Jan. 15	13	11
Wilhelm, G. F., New York, N. Y. Fur trimming	10,531	Mar. 12	13	458
Wilkinson, G., assignor to Gorham Manufacturing Company, Providence, R. I. Handles of spoons and forks	10,430	Jan. 29	13	179
Willershausen, S., and F. Rhoner, New York, N. Y., assignors to said Rhoner. Rocking-chair frames	10,511	Mar. 5	13	410
Williams, E., New York, N. Y. Badge	10,711	June 4	13	1012
Witthaus, E. L., Baltimore, Md. Sample-box	10,614	Apr. 2	13	598
Wood & Hughes. (See Richors, C. F., assignors.)				
Wood, R. O., Buffalo, N. Y. Badge	10,636	Apr. 16	13	678
Woodford, J. B., Worcester, Mass. Organ-case	10,510	Mar. 5	13	410
Zoepfel, E. H., New York, N. Y. Jewel-case	10,651	Apr. 23	13	730

LIST OF TRADE-MARKS REGISTERED, JANUARY TO JUNE, 1878, INCLUSIVE.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Abrams & Carroll, San Francisco, Cal. Lemonade compound	6,147	May 28	13	970
Adriance, Platt & Co., Poughkeepsie and New York, N. Y. Reaping-machines and mowing-machines	5,480	Jan. 8	13	48
Agalite Fiber Company, New York, N. Y. Mineral product utilized in the manufacture of paper and otherwise	5,983	Apr. 30	13	774
Ahrens, C. A., New York, N. Y. Cigars	5,771	Mar. 19	13	501
Allan & Co., J. C., assignors to R. V. Pierce, Buffalo, N. Y. Medical compound	5,949	Apr. 30	13	773
Allen & Co., New York, N. Y. All kinds of manufactured tobacco	5,643	Feb. 12	13	278
Allen & Co., E. S., Cleveland, Ohio. Cigars	6,023	May 7	13	820
Allen & Dunning, Paterson, N. J. Smoking-tobacco	6,240	June 18	13	1083
Allen, E. H., Jr., New York, N. Y. Flannels, sheetings, shirtings, denims, &c	6,224	June 11	13	1048
Allison & Hearn, New York, N. Y. Medicinal preparation known as "Horrassa Compound"	5,974	Apr. 30	13	774
American Meter Company, New York, N. Y., and Philadelphia, Pa. Gas and water registering apparatus	5,762	Mar. 19	13	501
Same.....same	5,763	Mar. 19	13	501
Same.....same	5,764	Mar. 19	13	501
American Plumbers' Publishing Company, New York, N. Y. Newspaper periodical	5,642	Feb. 12	13	278
American Powder Company, Boston, Mass. Gunpowder	6,225	June 11	13	1048
Ames, Manning & Ames, Hagerstown, Md. Fertilizers	5,712	Mar. 5	13	410
Andrews & Co., C. E., Milwaukee, Wis. Baking-powder	5,714	Mar. 12	13	457
Same.....Prepared coffee, spices, and mustard	6,024	May 7	13	820
Anthony & Co., E. and H. T., New York, N. Y. Photographic materials and appliances	5,600	Feb. 5	13	232
Appleton, G. W., Haddonfield, N. J., and Philadelphia, Pa. Medicinal compound	5,601	Apr. 2	13	598
Armington & Sims, Lawrence, Mass. Steam-engines	5,910	Apr. 23	13	729
Asche, C. F., Hamburg, Germany. Bronchial lozenges	5,898	Apr. 23	13	729
Aschermann & Co., E., Milwaukee, Wis. Cigars	6,187	June 11	13	1047
Aschermann, C. A., Davenport, Iowa. Bitters	6,244	June 18	13	1083
Ash & Brother, L., New York, N. Y. Cigars and cigarettes	6,256	June 18	13	1084
Atkins, Hertel & Co., Baltimore, Md. Medicinal preparation	6,114	May 21	13	918
Auffm'ordt & Co., C. A., New York, N. Y. Silk ribbons	6,164	June 4	13	1012
Au Sable Horse-Nail Company, Keeseville and New York, N. Y. Horseshoe-nails	5,829	Apr. 9	13	638
Babbitt, B. T., New York, N. Y. Laundry-powder	5,798	Apr. 2	13	597
Same.....Cream of tartar	5,799	Apr. 2	13	597
Same.....Collars and cuffs	5,800	Apr. 2	13	597
Same.....Soap	5,857	Apr. 16	13	677
Same.....same	6,226	June 18	13	1083
Bachert, P., Buffalo, N. Y. Coffee extract or essence	5,621	Feb. 5	13	232
Bacon, Baldwin & Co., New York, N. Y. Beaver cloths	6,283	June 25	13	1130
Same.....same	6,284	June 25	13	1130
Baetjer, W. T., Baltimore, Md. Cologne	5,952	Apr. 30	13	773
Barnes, Bancroft & Co., Buffalo, N. Y. Cotton goods	5,488	Jan. 8	13	48
Barnum, E. E., New York, N. Y. Pills	5,873	Apr. 16	13	678
Barnum, F. W., Danbury, Conn. Cologne	5,466	Jan. 1	13	8
Bartholomew & Co., New York, N. Y. Water-closets	5,699	Mar. 5	13	410
Batchelor & Brothers, Philadelphia, Pa. Cigars, cigarettes, and smoking-tobacco	6,213	June 11	13	1048
Bateman, E. S. and F., Spring Mills, N. J. Cultivators	5,601	Feb. 5	13	232
Baxter, J., Memphis, Tenn. Cigars	6,189	June 11	13	1047
Beck & Feldcamp, Chicago, Ill. Smoking-tobacco	6,285	June 25	13	1130
Becker & Co., H., New York, N. Y. Flour	5,671	Feb. 26	13	370
Same.....same	5,672	Feb. 26	13	370
Beckman, Noble & Co., Westfield, Mass. Cigars	5,697	Mar. 5	13	410
Same.....same	5,698	Mar. 5	13	410
Same.....same	5,716	Mar. 12	13	457
Bennett & Sloan, New Haven, Conn. Baking-powder	6,227	June 18	13	1083
Bethold, H., Stapleton, N. Y. Beef-oil	6,190	June 11	13	1047
Bickford, W., Boston, Mass. Liniment	5,569	Jan. 29	13	180
Binghamton Oil Refining Company, Binghamton, N. Y. Product of petroleum for toilet purposes	5,510	Jan. 15	13	11
Binns, G., Jr., Brooklyn, N. Y. Lubricating oil or compound	6,104	May 21	13	917
Blake & Johnson, Waterbury, Conn. Rivets and burs	5,463	Jan. 1	13	8
Blakely, J., New York, N. Y. Cigars, cigarettes, and cheroots	5,830	Apr. 9	13	638
Bloomfield & Co., J. C., New York, N. Y. Extracts and carmines of dye-woods	5,975	Apr. 30	13	774
Bohlen & Co., H., Philadelphia, Pa. Gin	6,228	June 18	13	1083
Bowker & Co., W. H., Boston, Mass. Fertilizers, manures, and fertilizing compounds and ingredients	5,511	Jan. 15	13	11
Same.....Fertilizers	5,627	Feb. 12	13	277
Same.....Food for fowls, &c	5,673	Feb. 26	13	370
Same.....same	5,726	Mar. 12	13	457
Boyd & Co., St. Louis, Mo. Plug-tobacco	5,481	Jan. 8	13	48
Boyer, W. W., Baltimore, Md. Canned and hermetically-sealed goods	5,569	Jan. 29	13	180
Bradford, T. S., La Grange, Ga. Medicinal preparation	6,115	May 21	13	918
Brady, A. E., New York, N. Y. Eye-water	5,820	Apr. 2	13	598
Brand & Co., J. H., Louisville, Ky. Mustard	6,231	June 18	13	1083
Brandeis, L., Brooklyn, N. Y. Stench-traps	6,168	June 4	13	1012
Brandt Brothers, Newark, N. J. Carbonated beverages	5,532	Jan. 22	13	126
Brecht, G. V., St. Louis, Mo. Cutlery	5,782	Mar. 26	13	550
Brewer, H. and J., Springfield, Mass. Toilet-soaps	5,512	Jan. 15	13	11
Brickey, F. W., Prairie du Rocher, Ill. Flour	5,845	Apr. 9	13	638
Brokhahne, W., New York, N. Y. Cutlery	5,602	Feb. 5	13	232
Same.....same	5,603	Feb. 5	13	232
Brown & Co., H., Hamilton, N. C. Fertilizers	6,026	May 7	13	820

List of trade-marks registered, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Brown Medicine and Manufacturing Company, Leavenworth, Kans. Medicinal preparations	5,690	Mar. 5	13	410
Brown, T., Erie, Pa. Lubricating-oil	5,951	Apr. 30	13	773
Same.....same	6,056	May 14	13	871
Buchanan & Lyall, New York, N. Y. Plug chewing-tobacco	5,553	Jan. 22	13	126
Same.....Chewing and smoking tobacco	5,554	Jan. 22	13	126
Same.....Cigars	5,685	Feb. 26	13	370
Buchanan & Lyall, Brooklyn, N. Y. Cigars and cigarettes, fine-cut and plug chewing-tobacco, snuff, and smoking-tobacco	5,950	Apr. 30	13	773
Buchanan, S. C., Camden, Ark. Liniments, ointments, and eye-waters	5,995	May 7	13	819
Buck, C. H., Toledo, Ohio. Gentlemen's shirts	5,917	Apr. 23	13	729
Buffalo Grape Sugar Company, Buffalo, N. Y. Starch	5,505	Jan. 15	13	11
Same.....same	5,506	Jan. 15	13	11
Same.....same	5,507	Jan. 15	13	11
Same.....same	5,508	Jan. 15	13	11
Same.....same	5,635	Feb. 12	13	278
Same.....same	5,636	Feb. 12	13	278
Same.....same	6,282	June 25	13	1130
Bulkley & Moore, New York, N. Y. Plug-tobacco	5,715	Mar. 12	13	457
Burdett Organ Company, (limited,) Erie, Pa. Reed-organs	5,513	Jan. 15	13	11
Burnham, J. A., Chicago, Ill. Toilet preparation for the complexion	5,626	Feb. 12	13	277
Burns & Byram, Philadelphia, Pa. Roasted and ground coffee, spices, and mustard	6,108	May 21	13	918
Burrage, C. R., San Francisco, Cal. Medicinal preparation	6,107	May 21	13	918
Same.....Soda and cream of tartar	6,188	June 11	13	1047
Same.....Medicinal compounds	6,257	June 18	13	1064
Same.....Carbonate of soda	6,229	June 18	13	1063
Same.....Cream of tartar	6,230	June 18	13	1063
Buser, W. E., Chillicothe, Ohio. Lounges	5,874	Apr. 16	13	678
Butler, J. E., Golconda, Ill. Remedy for piles	6,025	May 7	13	820
Callender, B. F., Detroit, Mich. Compound paste or mucilage	6,293	June 25	13	1130
Calvert & Co., J., Bordeaux, France. Wines and brandies	5,858	Apr. 16	13	677
Calvert, F., Lowell, Mass. Platters	5,533	Jan. 22	13	126
Camp & Blair, Milford, Del. Dried or evaporated fruit	5,490	Jan. 8	13	48
Carpenter, E. P., Worcester, Mass. Organ mechanism or actions	5,860	Apr. 16	13	677
Carter Brothers & Co., Pittsburg, Pa. Baking-powder	6,136	May 28	13	970
Carter, Dinsmore & Co., Boston, Mass. Writing-ink	6,192	June 11	13	1047
Same.....same	6,193	June 11	13	1047
Same.....Mucilage	6,194	June 11	13	1047
Cassebeer, H. A., Jr., New York, N. Y. Pharmaceutical preparations	6,205	June 11	13	1048
Caswell & Co., J., New York, N. Y. Cotton goods	5,893	Apr. 23	13	729
Caswell, Hazard & Co., New York, N. Y., and Newport, R. I. Medicinal preparation	6,097	May 21	13	917
Chambers, R. M., Lynchburg, Va. Smoking-tobacco	5,837	Apr. 9	13	638
Chapin & Gore, Chicago, Ill. Champagne wine	6,003	May 7	13	819
Chapin, S. H., Garden City, N. Y. Medicinal preparation	5,783	Mar. 26	13	550
Chase & Co., E. H., Louisville, Ky. Whisky	6,057	May 14	13	871
Chesebrough Manufacturing Company, New York and Brooklyn, N. Y. Emollient and remedial preparations of petroleum	6,041	May 14	13	871
Church & Co., New York, N. Y. Saleratus and soda	5,628	Feb. 12	13	277
Same.....Saleratus	5,629	Feb. 12	13	277
Clafin, Larrabee & Co., Boston, Mass. Spool-cotton	5,954	Apr. 30	13	773
Clark & Co., Baltimore, Md. Liniment	5,847	Apr. 9	13	638
Claudius, C., Canandaigua, N. Y. Cigars	6,096	May 21	13	917
Clen & Co., Paris, France. Medicines	6,085	May 14	13	872
Clerc, J. B., Bordeaux, France. Claret wines	6,263	June 18	13	1064
Cleveland Brothers, Albany, N. Y. Baking-powder	5,875	Apr. 16	13	678
Clum, A. L., Red Wing, Minn. Medicinal preparation	5,570	Jan. 29	13	180
Clybourn, C. A., Chicago, Ill. Glue	5,604	Feb. 5	13	232
Coats, J. & P., Paisley, Scotland, and Pawtucket, R. I. Spool or cotton thread	5,729	Mar. 12	13	457
Coburn & Co., New Haven, Conn. Baking-powder	5,953	Apr. 30	13	773
Cochran, H. M., McConnelsville, Ohio. Plug chewing-tobacco	5,838	Apr. 9	13	638
Cohn & Co., M. J., Memphis, Tenn. Cigars	5,822	Apr. 2	13	598
Coffin, Altemus & Co., Philadelphia, Pa. Cotton sheetings	5,700	Mar. 5	13	410
Colby, A. A., New York, N. Y. Mineral water	5,482	Jan. 8	13	48
Cole & Co., R. F., New York, N. Y. Printers' galleys	6,001	May 7	13	819
Collins Company, Collinsville, Conn. Edge-tools	5,681	Feb. 26	13	370
Same.....same	5,778	Mar. 19	13	501
Same.....same	5,779	Mar. 19	13	501
Same.....same	6,111	May 21	13	918
Same.....same	6,112	May 21	13	918
Colton, J. W., Westfield, Mass. Flavoring-extracts	6,191	June 11	13	1047
Same.....same	6,245	June 18	13	1063
Comes, D. D., Ridgefield, N. J. Adhesive materials	5,846	Apr. 9	13	638
Consolidated Fruit Jar Company, New York, N. Y. Screw-caps for fruit-jars	5,947	Apr. 23	13	730
Coriell, I., Baltimore, Md. Harness-blacking	6,172	June 4	13	1012
Coussens & Tabler, Nashville, Tenn. Pile-ointment	5,848	Apr. 9	13	638
Cox & Co., S. J., Chelsea, Mass. Pile-cure	5,908	Apr. 23	13	729
Cox, G., Paterson, N. J. Lace articles and lace edgings	5,918	Apr. 23	13	729
Coyle, Laughlin & Co., Philadelphia, Pa. Coffee	6,027	May 7	13	820
Cram & Melcher, Chicago, Ill. Medicinal compounds	6,214	June 11	13	1048
Crandall, J. A., Brooklyn, N. Y. Toys	5,859	Apr. 16	13	677
Crane Brothers, Westfield, Mass. Paper	5,919	Apr. 23	13	729
Crane, Hastings & Co., San Francisco, Cal. Whisky	6,294	June 25	13	1130
Crouse & Sons, D., Utica, N. Y. Smoked or cured meats	5,674	Feb. 26	13	370
Crowell, J. W., Philadelphia, Pa. Cigars	5,821	Apr. 2	13	598
Cullingworth, Gregory & Ellison, Richmond, Va. Plug-tobacco	5,967	Apr. 30	13	773
Culp & Co., J. D., San Francisco, Cal. Cigars, cigarettes, and smoking and chewing tobacco	6,028	May 7	13	820
Cusseu, W. J., assignor to Catlin Tobacco Company, Richmond, Va. Tobacco-bags	6,040	May 14	13	871
Cuthbert, Hamilton & Co., Philadelphia, Pa., and New York, N. Y. Teas	5,701	Mar. 5	13	410
Dabbs Brothers, Philadelphia, Pa. Bronchial troches, lozenges, or wafers	5,514	Jan. 15	13	11
Daily, S., Brooklyn, N. Y. Bacon, hams, and cured and pickled meats	5,483	Jan. 8	13	48
Danion & Almy, Westvale, Concord, Mass. Shaker flannels	6,169	June 4	13	1012
Daughaday & Co., J. W., Philadelphia, Pa. Printing-presses	5,839	Apr. 9	13	638
Dausman & Drummond Tobacco Company, Alton, Ill. Plug chewing-tobacco	5,618	Feb. 5	13	232
Davids & Co., T., New York, N. Y. Writing fluid or ink	6,038	May 14	13	871
Davies, H. J., Brooklyn, N. Y. Clocks	6,116	May 21	13	918

List of trade-marks registered, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Davis & Co., C., Boston, Mass. Soap	5,489	Jan. 8	13	48
Davis & Co., W. C., Cincinnati, Ohio. Stoves and ranges	6,232	June 18	13	1063
Davis, Chambers & Co., Pittsburg, Pa. White and red lead	6,004	May 7	13	819
Davison, C. E., East Boston, Mass. Liniment	5,657	Feb. 19	13	326
Dayton Leather and Collar Company, Dayton, Ohio. Horse-collars	6,264	June 18	13	1064
Dean, W. G., Brooklyn, N. Y. Mustard	5,784	Mar. 26	13	550
De Bary, F., New York, N. Y. Oranges	5,509	Jan. 15	13	11
De Bretton, J. D., Desdier Landing, La. Fever specific	5,572	Jan. 29	13	180
De Cordova, C., New York, N. Y. Medicinal preparation for the cure of headache	6,246	June 18	13	1064
De Land & Co., H. A., Fairport, N. Y. Saleratus, bicarbonate of soda, supercarbonate of soda, and sal-soda	6,137	May 28	13	970
Deming, W. N., Providence, R. I. Remedies for catarrh, throat, and pulmonary diseases	5,976	Apr. 30	13	774
De Petforren, H. H., New York, N. Y. Medicinal preparation	6,098	May 21	13	917
De Rojer, C., Rochester, N. Y. Snuff	6,253	June 18	13	1048
Detwiler & Co., J. S., Philadelphia, Pa. Wheaten grits	5,534	Jan. 22	13	126
Deutsch & Fuchs, New York, N. Y. Cigars and smoking-tobacco	5,605	Feb. 5	13	232
Dick, D., New York, N. Y. Medical compound	5,920	Apr. 23	13	729
Dietz, R. E., New York, N. Y. Animal-traps	5,984	Apr. 30	13	774
Dill, J. G., Richmond, Va. Plug-tobacco	5,658	Feb. 19	13	326
Distin, H., New York, N. Y. Brass-band instruments	6,042	May 14	13	871
Double Thread Sewing Company, Boston, Mass. Articles of clothing	5,497	Jan. 8	13	48
Same.....same	5,498	Jan. 8	13	48
Same.....Boots and shoes	5,499	Jan. 8	13	48
Same.....same	5,500	Jan. 8	13	48
Dreydoppel, W., Philadelphia, Pa. Soap	5,717	Mar. 12	13	457
Driggs, N. S., and W. S. Lynn, Indianapolis, Ind. Medical preparation	6,005	May 7	13	819
Du Bois, A. M., Cobden, Ill. Medicinal preparation	5,571	Jan. 29	13	180
Duke, B. L., Durham, N. C. Smoking-tobacco	6,206	June 11	13	1048
Duminy & Co., Ay, France. Champagne wine	5,535	Jan. 22	13	126
Dunham Hosiery Company, Naugatuck, Conn. Knitted or woven under-shirts and under-drawers	6,135	May 28	13	970
Du Puy, E. A., Brooklyn, N. Y. Medicinal articles	6,059	May 14	13	871
Dwyer, J. H., Lynn, Mass. Burnishing-ink	6,117	May 21	13	918
Same.....same	6,118	May 21	13	918
Eagle Pencil Company, New York, N. Y. Lead-pencils	5,606	Feb. 5	13	232
Same.....same	5,850	Apr. 9	13	638
Eavenson & Sons, J., Philadelphia, Pa. Soap	6,207	June 11	13	1048
Ecker & Co., Philadelphia, Pa. Soap	6,160	May 28	13	970
Eddystone Manufacturing Company, (limited,) Chester and Philadelphia, Pa. Dry-goods	6,127	May 21	13	918
Same.....same	6,157	May 28	13	970
Eggert, H., New York, N. Y. Cigars	6,006	May 7	13	819
Egyptian Embalmer Company, New York, N. Y. Embalming preparations	6,062	May 14	13	871
Ehrich & Co., New York, N. Y. Apparatus for curling hair	5,996	May 7	13	819
Ehrman & Co., M., San Francisco, Cal., and New York, N. Y. Teas	5,467	Jan. 1	13	8
Same.....Coal-oil	6,195	June 11	13	1047
Eliel, S., Bloomington, Ill. Cigars	5,750	Mar. 19	13	501
Elkins, W. L., Philadelphia, Pa. Lubricating and illuminating oils	6,060	May 14	13	871
Same.....same	6,061	May 14	13	871
Same.....same	6,063	May 14	13	871
Elkinton, J. S. and T., Philadelphia, Pa. Soap	6,029	May 7	13	820
Emerson, Smith & Co., Beaver Falls, Pa. Saws and files	5,876	Apr. 16	13	678
Emery, C. G., Brooklyn, N. Y. Smoking-tobacco and cigarettes	5,556	Jan. 22	13	126
Empire Mill Company, St. Louis, Mo. Flour	5,491	Jan. 8	13	48
Eppinger, I., New York, N. Y. Plug-tobacco	5,468	Jan. 1	13	8
Erie Preserving Company, Brant and New York, N. Y. Canned fruits and vegetables	5,691	Mar. 5	13	410
Eureka Fire Hose Company, New York, N. Y. Hydraulic hose	5,591	Jan. 29	13	180
Same.....same	5,592	Jan. 29	13	180
Same.....same	5,593	Jan. 29	13	180
Faber, E., Port Richmond, N. Y. Lead-pencils	5,644	Feb. 12	13	278
Same.....same	5,645	Feb. 12	13	278
Same.....same	5,646	Feb. 12	13	278
Fahys, J., Brooklyn, N. Y. Watch-cases	6,086	May 14	13	872
Fairbanks & Co., E. and T., St. Johnsbury, Vt. Weighing-scales	6,131	May 28	13	969
Fairchild & Shelton, Bridgeport, Conn. Soap	5,469	Jan. 1	13	8
Falk, J. M., New York, N. Y. Medicinal preparations	6,196	June 11	13	1047
Fanning, D. H., Worcester, Mass. Corsets	5,535	Jan. 22	13	126
Fay & Co., Boston, Mass. Cigars	6,272	June 25	13	1130
Fehl & Co., G., St. Louis, Mo. Cigars	5,862	Apr. 16	13	677
Felgenspan & Co., Newark, N. J. Lager-beer	6,247	June 18	13	1064
Felgner & Son, F. W., Baltimore, Md. Smoking and chewing tobacco and cigarettes	5,730	Mar. 12	13	457
Fell, W. J., Faulkland, Del. Coffee, spices, and mustard	6,064	May 14	13	871
Same.....Mustard, spices, and roasted coffee	6,091	May 21	13	917
Same.....same	6,092	May 21	13	917
Ferré, J., Paris, France. Medical preparation	5,594	Jan. 29	13	180
Same.....same	5,595	Jan. 29	13	180
Same.....same	5,596	Jan. 29	13	180
Finch, W., New York, N. Y. Flour	5,713	Mar. 5	13	410
Fink, Brother & Co., Baltimore, Md. Roasted and ground coffee	5,877	Apr. 16	13	678
Fischer & Lansing, New York, N. Y. Encaustic tiling	5,476	Jan. 1	13	8
Fish, Clark & Flagg, New York, N. Y. Gloves	6,215	June 11	13	1048
Same.....same	6,216	June 11	13	1048
Fitzpatrick, Davis & Co., Fisherton, Wash. Ter. Canned meat, fish, fruit, and vegetables	6,039	May 7	13	820
Fitzpatrick, J. G., New York, N. Y. Corsets and waists	5,921	Apr. 23	13	729
Flagg, A. J., Claremont, N. H. Cough and lung sirup	5,515	Jan. 15	13	11
Fleisher, S. B. and M., Philadelphia, Pa. Braid	6,208	June 11	13	1048
Fleming, W. M., New York, N. Y. Perfume for the breath	6,295	June 25	13	1130
Fletcher, C. M., Brooklyn, N. Y. Medicinal preparations of the coca-leaf	5,647	Feb. 12	13	278
Fletcher Manufacturing Company, Providence, R. I. Kerosene-wick	5,536	Jan. 22	13	126
Fletcher, N. B., Lynn, Mass. Burnishing-ink	6,030	May 7	13	820
Folger & Co., J. A., San Francisco, Cal. Lemonade-powder	5,537	Jan. 22	13	126
Same.....Teas	5,538	Jan. 22	13	126
Same.....same	5,539	Jan. 22	13	126
Same.....same	5,540	Jan. 22	13	126
Forsyth & Co., W. R., Pittsburg, Pa. Baking-powder	5,718	Mar. 12	13	457
Fox & Plant, Newark, N. J. Fancy dry-goods	5,811	Apr. 2	13	598

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Foxen, Newman & Co., Detroit, Mich. Cigars	6,007	May 7	13	819
Same.....same	6,132	May 28	13	969
Frazer, G. W., Cleveland, Ohio. Pile-ointment	6,149	May 28	13	970
Froy, J. and A., New York, N. Y. Cigars	6,156	May 28	13	970
Frishmuth, Bro. & Co., Philadelphia, Pa. Chewing and smoking tobacco	6,119	May 21	13	918
Fruh, C. D. S., Philadelphia, Pa. Mouth or tooth wash and tooth-powder	5,849	Apr. 9	13	638
Fuget & Sons, S., Philadelphia, Pa. Cigars	5,997	May 7	13	819
Fuller & Co., A. G., Danville, Va. Smoking and chewing tobacco, cigars, cigarettes, and snuff	5,607	Feb. 5	13	232
Furey, E. F., Camden, N. J. Medical preparation	5,659	Feb. 19	13	326
Gaff & Co., J. W., Cincinnati, Ohio. Compressed yeast	5,517	Jan. 15	13	11
Same.....Whisky	5,977	Apr. 30	13	774
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco, cigars, cigarettes, and snuff	5,516	Jan. 15	13	11
Same.....same	6,173	June 4	13	1012
Gale, D. M., Worcester, Mass. Beautifier for the complexion	5,573	Jan. 29	13	180
Gantz, G. F., New York, N. Y. Stove-polish and plumbago	5,608	Feb. 5	13	232
Gardiner, J. M., New York, N. Y. Smoking and chewing tobacco and snuff	6,248	June 18	13	1084
Gem City Tobacco Works, Quincy, Ill. Plug chewing-tobacco	5,484	Jan. 8	13	48
Same.....same	5,557	Jan. 22	13	126
George, R. F., Galveston, Tex. Sarsaparilla extracts	6,120	May 21	13	918
Gere, R. N., Geddes, N. Y. Salt	6,016	May 7	13	819
Gill, W. P., Brooklyn, N. Y. Gros-grain ribbons	5,754	Mar. 19	13	501
Gillen Brothers, Galesburg, Ill. Cigars	5,735	Mar. 12	13	457
Gillespie Bros. & Co., Pittsburg, Pa. Oil-well supplies	5,485	Jan. 8	13	48
Gillies & Bro., W., New York, N. Y. Coffee, mustard, and spices	6,082	May 14	13	872
Gillott & Sons, J., Birmingham, England and New York, N. Y. Steel pens	5,731	Mar. 12	13	457
Same.....same	5,732	Mar. 12	13	457
Same.....same	5,733	Mar. 12	13	457
Same.....same	5,734	Mar. 12	13	457
Gillott & Sons, J., Birmingham, England. Steel pens	6,176	June 4	13	1012
Same.....same	6,177	June 4	13	1012
Same.....same	6,178	June 4	13	1012
Same.....same	6,179	June 4	13	1012
Same.....same	6,180	June 4	13	1012
Same.....same	6,181	June 4	13	1012
Girard Wrench Manufacturing Company, Girard, Pa. Wrenches	5,880	Apr. 16	13	678
Glazier, F., Hartford, Conn. Cassimeres	5,879	Apr. 16	13	678
Goelz & Co., J. P., Milwaukee, Wis. Cigars	6,065	May 14	13	871
Goode, T. F., Boydton, Va. Mineral water	5,878	Apr. 16	13	678
Goodwin & Co., New York, N. Y. Fine-cut chewing-tobacco	5,702	Mar. 5	13	410
Goodwyn, P. M., New Orleans, La. Yeast-powder	5,772	Mar. 19	13	501
Goodyear's Metallic Rubber Shoe Company, Naugatuck, Conn. Boots and shoes made wholly or in part of india-rubber	6,165	June 4	13	1012
Gorrell, J. G., Ossian, Ind. Burning-fluids	5,922	Apr. 23	13	729
Graham, J. C., Philadelphia, Pa. Woolen or worsted yarns	5,840	Apr. 9	13	638
Greene & Co., W. C., New York, N. Y., and Providence, R. I. Wire and coral jewelry	5,660	Feb. 19	13	326
Greenebaum, B., San Francisco, Cal. Overalls, jumpers, and garments of outside wear	6,138	May 28	13	970
Greenfield & Son, E., New York, N. Y. Candy	5,622	Feb. 5	13	232
Gregg, W. H., Elmira, N. Y. Liniment	5,955	Apr. 30	13	775
Griswold, C. A., New York, N. Y. Ladies' corsets	6,139	May 28	13	970
Gross & Son, D. W., Harrisburg, Pa. Fluid chemical preparation for cleansing silk, &c	5,968	Apr. 30	13	774
Grove, E. W., Paris, Tenn. Medicine for chills	5,773	Mar. 19	13	501
Gutmann & Rice, New York, N. Y. Cigars	6,286	June 25	13	1130
Gutta Percha Paint Company, Cleveland, Ohio. Mixed paints	5,802	Apr. 2	13	598
Hadley Company, Boston, Mass. Thread	6,197	June 11	13	1047
Hagerty Bros. & Co., New York, N. Y. Nursing-bottles	6,121	May 21	13	918
Haines Brothers, New York, N. Y. Pianos	5,620	Feb. 5	13	232
Haines, E. W., San Francisco, Cal. Medicine for horses	5,518	Jan. 15	13	11
Haines, J. P., New York, N. Y. Polish for metals and glass	5,648	Feb. 12	13	278
Hall, T. H., New York, N. Y. Cigars, cigarettes, and smoking-tobacco	5,704	Mar. 5	13	410
Same.....same	5,719	Mar. 12	13	457
Same.....same	6,036	May 7	13	820
Hall, W. H., New York, N. Y. Toilet preparation	5,502	Jan. 15	13	10
Hamilton Manufacturing Company, Lowell, Mass. Cotton fabrics	6,141	May 28	13	970
Hansen, L. G., New York, N. Y. Cotton yarn	5,894	Apr. 23	13	729
Hantsch & Crouse, Reading, Pa. Cigars and cigarettes	5,677	Feb. 26	13	370
Hart, G. S., New York, N. Y. Cheese	6,133	May 28	13	969
Same.....same	6,170	June 4	13	1012
Hawley, B. R., Hyde Park, Ill. Cook-stoves	5,703	Mar. 5	13	410
Hayes Brothers, Chicago, Ill. Soda-water, seltzer-water, and ginger-pop	6,296	June 25	13	1130
Hayes, J. F., Philadelphia, Pa. Troches, lozenges, pills, pastiles, and similar preparations	5,969	Apr. 30	13	774
Haynes, A. C., Philadelphia, Pa. Worsted braid	5,924	Apr. 23	13	729
Heathman & Co., G. W., Dayton, Ohio. Crackers, biscuits, or wafers	5,471	Jan. 1	13	8
Hecker & Co., G. V., New York, N. Y. Flour	5,675	Feb. 26	13	370
Same.....same	5,676	Feb. 26	13	370
Same.....same	5,692	Mar. 5	13	410
Same.....same	5,774	Mar. 19	13	501
Same.....same	5,823	Apr. 2	13	598
Same.....same	5,838	Apr. 9	13	638
Same.....same	6,008	May 7	13	819
Same.....same	6,067	May 14	13	871
Heim, A., New York, N. Y. Leather beltings and lacings	5,736	Mar. 12	13	457
Heintzelman, R. B., and C. B. Coe, New York, N. Y. Medicines for the relief of catarrh, &c	5,831	Apr. 9	13	638
Hess & Co., S. F., Rochester, N. Y. Smoking-tobacco	5,705	Mar. 5	13	410
Same.....Cigars	5,978	Apr. 30	13	774
Hetherington, J. E., Cincinnati, Ohio, and New York, N. Y. Medicinal preparation	6,043	May 14	13	871
Hewins & Hollis, Boston, Mass. Suspenders and braces	5,470	Jan. 1	13	8
Heywood, J., New York, N. Y. Medicinal preparation	6,274	June 25	13	1130
Hilson, E., New York, N. Y. Cigars, cigarettes, and smoking and chewing tobacco	5,841	Apr. 9	13	638
Hinckel, F., Albany, N. Y. Lager-beer	6,068	May 14	13	872
Hirsch & Co., D., New York, N. Y. Cigars and cigarettes and smoking and chewing tobacco	6,275	June 25	13	1130
Hirsch, J., New York, N. Y. Cigars	6,142	May 28	13	970
Hodgman & Co., New York, N. Y. Rubber goods	5,804	Apr. 2	13	598
Holland, J. W. and C. G., Danville, Va. Chewing-tobacco	5,851	Apr. 9	13	638
Same.....Twist-tobacco	5,493	Jan. 8	13	48

List of trade-marks registered, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Holland, J. W. and C. G., Danville, Va. Chewing-tobacco	5,852	Apr. 9	13	638
Same.....Smoking and chewing tobacco	5,853	Apr. 9	13	638
Same.....Chewing-tobacco	5,854	Apr. 9	13	638
Same.....same	5,923	Apr. 23	13	729
Holman Liver Pad Company, New York, N. Y. Medicated salts	5,574	Jan. 29	13	180
Same.....Perforated plasters for medicinal purposes	6,140	May 28	13	970
Holmes & Co., New York, N. Y. Biscuit	5,803	Apr. 2	13	598
Hood, Bonbright & Co., Philadelphia, Pa. Dry-goods	5,985	Apr. 30	13	774
Hottel, H., and L. Painter, Woodstock, Va. Flour	5,693	Mar. 5	13	410
Houghton & Co., E. F., Philadelphia, Pa. Medical preparation	5,492	Jan. 8	13	48
Howard, E. D. and C. M., Fredonia, N. Y. Watches	5,720	Mar. 12	13	457
Same.....same	5,721	Mar. 12	13	457
Howard, H. H., Rochester, N. Y. Beverages from lime-fruit	6,174	June 4	13	1012
Same.....Dye-stuffs	6,175	June 4	13	1012
Howard, R. L., Buffalo, N. Y. Paper-cutting machines	6,198	June 11	13	1047
Howard, Sanger & Co., New York, N. Y. Combs	6,265	June 18	13	1084
Howe & French, Boston, Mass. Isinglass	6,054	May 14	13	871
Hoyt & Co., E. W., Lowell, Mass. Cologne	5,630	Feb. 12	13	277
Hoyt & Co., W. A., Boston, Mass. Cologne	5,661	Feb. 19	13	326
Hinestis & Dasenbury, Troy, N. Y. Linen collars and cuffs	6,006	May 14	13	871
Hughes, H. G., Poultney, Vt. Roofing-slate	6,253	June 18	13	1083
Hull, C. B., Detroit, Mich. Fine-cut chewing-tobacco	6,053	May 14	13	871
Humphreys, F., New York, N. Y. Medicinal preparation of witch-hazel	5,925	Apr. 23	13	730
Hunnewell & Co., J. W., Boston, Mass. Refined petroleum	5,541	Jan. 22	13	126
Hunt, W., Maysville, Ky. Cigars	6,221	June 11	13	1048
Hurst, Miller & Co., Baltimore, Md. Boots and shoes	6,267	June 25	13	1130
Hutter, K., New York, N. Y. Bottle-stoppers	5,640	Feb. 12	13	278
Hyman, N., New York, N. Y. Corset and corset-clasp	5,496	Jan. 8	13	48
Iron Clad Paint Company, Cleveland, Ohio. Paints	5,470	Jan. 1	13	8
Irwin, A. E., Brooklyn, N. Y. Fine-cut chewing-tobacco and cigars	5,881	Apr. 16	13	678
Jacobs, W. H., Hamilton, Ohio. Cough-mixtures	5,737	Mar. 12	13	458
Jacoby & Co., S., New York, N. Y. Cigars, cigarettes, and smoking and chewing tobacco	5,944	Apr. 23	13	730
Same.....same	5,956	Apr. 30	13	775
Jacoby, M., New York, N. Y. Cigars, cigarettes, and smoking-tobacco	5,979	Apr. 30	13	774
Jacobs & Co., G. M., New York, N. Y. Spool-thread	5,525	Jan. 15	13	11
Jackson Company, Nashua, N. H. Cotton sheetings, shirtings, and other cotton goods	5,526	Jan. 15	13	11
Same.....same	5,527	Jan. 15	13	11
Jaff & Sohn, J., Vienna, Austria. Buttons	6,032	May 7	13	820
Jaffe & Pinkus, O., New York, N. Y. Linen goods	6,031	May 7	13	820
Jayne & Son, D., Philadelphia, Pa. Medical preparation	5,523	Jan. 15	13	11
Same.....same	5,524	Jan. 15	13	11
Jayne & Son, D., Philadelphia, Pa. Medicinal preparation	5,738	Mar. 12	13	458
Same.....same	5,739	Mar. 12	13	458
Same.....same	5,740	Mar. 12	13	458
Same.....same	5,741	Mar. 12	13	458
Same.....same	5,742	Mar. 12	13	458
Same.....same	5,743	Mar. 12	13	458
Jenkins, T. C., Pittsburg, Pa. Coffee	5,609	Feb. 5	13	232
Same.....same	5,610	Feb. 5	13	233
Jenkins & Son, T. R., Baltimore, Md. Lard	5,694	Mar. 5	13	410
Jenney, W. P., Brooklyn, N. Y. Leather-dressing	5,542	Jan. 22	13	126
Jewett & Co., S. S., Buffalo, N. Y. Cooking-stoves	6,258	June 18	13	1084
Same.....same	6,259	June 18	13	1084
Same.....Parlor-stoves	6,276	June 25	13	1130
Jocelyn, A. H., New York, N. Y. Silicate erasible-surface material for memorandum-books, &c	5,998	May 7	13	819
Johns, H. W., Brooklyn, N. Y. Material for covering roofs, steam-boilers, and pipes composed wholly or in part of asbestus	5,760	Mar. 19	13	501
Joly, C., Philadelphia, Pa. Lager-beer	5,686	Feb. 26	13	370
Joseph Dixon Crucible Company, Jersey City, N. J. Pens, pencils, and pen-holders	5,655	Feb. 12	13	278
Justl, H. D., Philadelphia, Pa. Dental supplies	5,892	Apr. 16	13	678
Kaufman Bros. & Bondy, New York, N. Y. Cigars	5,472	Jan. 1	13	8
Keefe, J. I., Philadelphia, Pa. Soap, candles, and borax	5,744	Mar. 12	13	458
Keller, W. L., Baltimore, Md. Medical preparation	5,909	Apr. 23	13	729
Kelley, P. H., Indianapolis, Ind. Cologne	6,087	May 14	13	872
Kellogg, G. A., Brooklyn, N. Y. Preparation for removing freckles, &c	6,070	May 14	13	872
Kelly, J. Y., Georgetown, Ky. Tonic bitters	5,785	Mar. 26	13	550
Kennedy, G. G., Boston, Mass. Medicine	6,069	May 14	13	872
Kerbs & Spiess, New York, N. Y. Cigars, cigarettes, and smoking and chewing tobacco	5,558	Jan. 22	13	126
Same.....same	5,575	Jan. 29	13	180
Same.....same	5,576	Jan. 29	13	180
Same.....same	5,577	Jan. 29	13	180
Same.....same	5,578	Jan. 29	13	180
Same.....same	5,579	Jan. 29	13	180
Same.....same	5,580	Jan. 29	13	180
Same.....same	5,581	Jan. 29	13	180
Same.....same	5,582	Jan. 29	13	180
Same.....same	5,583	Jan. 29	13	180
Same.....same	5,584	Jan. 29	13	180
Same.....same	5,585	Jan. 29	13	180
Same.....same	5,806	Apr. 2	13	598
Same.....same	5,832	Apr. 9	13	638
Same.....same	5,957	Apr. 30	13	775
Same.....same	6,297	June 25	13	1130
Keyon & Son, J. M., Medford, Mass. Hair-restorative	5,999	May 7	13	819
King, O., New York, N. Y. Compressed yeast	5,910	Apr. 23	13	729
Kirk & Co., J. S., Chicago, Ill. Soap	5,986	Apr. 30	13	774
Same.....same	5,987	Apr. 30	13	774
Same.....same	5,988	Apr. 30	13	774
Kloman, Park & Co., Pittsburg, Pa. Axes	6,234	June 18	13	1083
Knowles, Taylor & Knowles, East Liverpool, Ohio. Earthenware	5,503	Jan. 15	13	10
Kreisher, J., Albany, N. Y. Confectionery	5,597	Jan. 29	13	180
Krug & Co., Reims, France. Champagne wine	5,755	Mar. 19	13	501
Same.....same	5,756	Mar. 19	13	501
Lake Shore Watch Company, Fredonia, N. Y. Watches	6,122	May 21	13	918

List of trade-marks registered, January to June, inclusive—Continued.

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Lang, M., Brooklyn, N. Y. Cordials	5,745	Mar. 12	13	458
Langdon Manufacturing Company, Manchester, N. H. Cotton piece-goods	6,235	June 18	13	1083
Lanterman & Stewart, Grayville, Ill. Flour	5,623	Feb. 5	13	232
Lauferty, E., New York, N. Y. Lye and potash	5,521	Jan. 15	13	11
Lee & Sturges, New York, N. Y. Rags and paper-stock	5,855	Apr. 16	13	677
Larrabee & Co., E. J., Albany, N. Y. Biscuits	5,856	Apr. 16	13	677
Same.....same	6,277	June 25	13	1130
Same.....same	6,009	May 7	13	819
Leidersdorf & Co., B., Milwaukee, Wis. Smoking-tobacco	5,842	Apr. 9	13	638
Same.....same	5,884	Apr. 16	13	678
Letson, E., Brooklyn, N. Y. Preparation of magnesia	5,543	Jan. 22	13	126
Levy Brothers, New York, N. Y. Cigars and cigarettes	5,650	Feb. 12	13	278
Same.....same	5,651	Feb. 12	13	278
Lewis & Co., P. S., St. Louis, Mo. Wine	6,250	June 18	13	1084
Libby, C., Chicago, Ill. Shoes	5,473	Jan. 1	13	8
Lichtenstein & Bro., A., New York, N. Y. Cigars and cigarettes	5,559	Jan. 22	13	126
Lichtenstein Brothers & Co., New York, N. Y. Cigars, cigarettes, chewing and smoking tobacco, and snuff	5,899	Apr. 23	13	739
Same.....Cigars, cigarettes, fine-cut and plug chewing-tobacco, smoking-tobacco, and snuff	5,900	Apr. 23	13	739
Liebes Brothers & Co., San Francisco, Cal. Cigars	5,652	Feb. 12	13	278
Same.....same	5,653	Feb. 12	13	278
Lisner, G., New York, N. Y. Gloves	5,883	Apr. 16	13	678
Lockwood Company, Waterville, Me. Cotton goods	6,240	June 18	13	1084
Loeser, F., Brooklyn, N. Y. Semi-tropical fruits	5,495	Nov. 21	13	46
Loewenherz, J., Hoboken, N. J. Cigars, cigarettes, and smoking-tobacco	5,926	Apr. 23	13	730
Loker Tobacco Company, St. Louis, Mo. Plug-tobacco	5,544	Jan. 22	13	126
Same.....same	5,611	Feb. 5	13	232
Lomax, J. A., Chicago, Ill. Mineral waters	6,199	June 11	13	1047
London Manufacturing Company, New York, N. Y. Essence of meats	6,072	May 14	13	872
Loomis, J. D., Suffield, Conn. Cigars	6,010	May 7	13	819
Same.....same	6,099	May 21	13	917
Same.....same	6,100	May 21	13	917
Same.....same	6,101	May 21	13	917
Lord & Taylor, New York, N. Y. Millinery goods	6,071	May 14	13	872
Low & Brothers, A. A., New York, N. Y. Cotton jeans, drills, sheetings, and shirtings	6,278	June 25	13	1130
Lowenthal & Co., S., Cincinnati, Ohio. Cigars	6,002	May 7	13	819
Lown, W. J., Washington, D. C. Roasted and ground coffee	5,494	Jan. 8	13	48
Luks, E. C., Shenandoah, Pa. Medicinal preparation	5,786	Mar. 26	13	550
Lyon, A., New York, N. Y. Umbrellas and parasols	6,241	June 18	13	1083
Lozano, Pendas & Co., New York, N. Y. Cigars, cigarettes, and smoking and chewing tobacco	6,044	May 14	13	871
Same.....same	6,045	May 14	13	871
Maegerlin & Son, C., Chicago, Ill. Prepared skins for racking beer	6,134	May 28	13	969
Mager, V. E., New York, N. Y. Medicinal capsules	5,663	Feb. 19	13	326
Maillard, H., New York, N. Y. Cocoa	5,757	Mar. 19	13	501
Mallery, Wheeler & Co., New Haven, Conn. Locks and builders' hardware	6,236	June 18	13	1084
Marburg Brothers, Baltimore, Md. Smoking and chewing tobacco	6,143	May 28	13	970
Same.....Chewing-tobacco, cigars, cigarettes, and snuff	6,217	June 11	13	1048
Markley, Alling & Co., Chicago, Ill. Axes	5,901	Apr. 23	13	739
Marshall, D., Carthage, Ind. Medicinal preparations	6,073	May 14	13	872
Martin & Co., E. R., Rouillac, France. Brandy	6,014	May 7	13	819
Martinez, J., Mobile, Ala. Cigars	6,161	May 28	13	970
Mason Company, J. S., Philadelphia, Pa. Blacking	5,613	Feb. 5	13	232
Matchett, R., Allegheny, Pa. Liniments	6,209	June 11	13	1048
Mauger, V. E., New York, N. Y. Medicinal capsules	5,662	Feb. 19	13	326
Same.....Playing-cards	5,870	Apr. 16	13	678
Mann, W., Haddonfield, N. J. Copying-paper and copying-books	6,159	May 28	13	970
Manran, J. T., Providence, R. I. Jewelry	5,980	Apr. 30	13	774
Mayer, D. A., New York, N. Y. Wines	5,545	Jan. 22	13	126
Mayo, W. F., Chelsea, Mass. Boots and shoes	6,237	June 18	13	1083
McCarthy, J. D., Augusta, Ga. Medical compound	5,624	Feb. 5	13	232
McCoy & Co., New York, N. Y. Cigars, cigarettes, and smoking and chewing tobacco	5,464	Jan. 1	13	8
Same.....same	5,465	Jan. 1	13	8
Same.....same	5,474	Jan. 1	13	8
Same.....same	5,561	Jan. 22	13	126
Same.....same	5,562	Jan. 22	13	126
Same.....same	5,612	Feb. 5	13	232
Same.....same	6,102	May 21	13	917
Same.....same	6,260	June 18	13	1084
McDonald, J. H., Stapleton, N. Y. Lubricating-grease	6,132	June 4	13	1012
McKeone, Son & Co., C., Philadelphia, Pa. Soap	6,200	June 11	13	1047
McMurray, L., Baltimore, Md. Preserved green corn	5,546	Jan. 22	13	126
McNarama & Co., P., Covington, Ky. Plug chewing-tobacco	6,109	May 21	13	918
Megler & Co., J. G., Brookfield, Wash. Ter. Canned meats and fish	6,011	May 7	13	819
Same.....same	6,012	May 7	13	819
Meisel, A., Brooklyn, N. Y. Toys	6,088	May 14	13	872
Meizer & Co., A., Evansville, Ind. Soap	5,547	Jan. 22	13	126
Merchants' Tobacco Company, Boston, Mass. Plug-tobacco	6,255	June 18	13	1048
Merwin, W. R., Detroit, Mich. Medicine	5,528	Jan. 15	13	11
Meyer Brothers & Co., St. Louis, Mo. Toilet and other brushes	5,793	Mar. 26	13	550
Meyer & Dickinson, Philadelphia, Pa. Ribbons	5,863	Apr. 16	13	677
Miami Powder Co., Xenia, Ohio. Gunpowder for sporting purposes	6,094	May 21	13	917
Middlesex Company, Lowell, Mass. Cassimeres	5,560	Jan. 22	13	126
Miles, G. N., Stockton, Cal. Insect-destroying powder	6,037	May 7	13	820
Miles, J. E., San Francisco, Cal. Coal-oil	6,267	June 18	13	1084
Miller, D. & Co., New York, N. Y. Ruffling	5,632	Feb. 12	13	278
Miller, F. A., Philadelphia, Pa. Medicines for horses, cattle, and poultry	5,654	Feb. 12	13	278
Miller & Son, J., Philadelphia, Pa. Shirts, overalls, and underwear	6,013	May 7	13	819
Miner & Co., A. W., Belmont, N. Y. Hay-rakes	6,251	June 18	13	1084
Minot, Hooper & Co., New York, N. Y. Woven cotton fabrics	5,885	Apr. 16	13	678
Morris, J. H., Richmond, Va. Fluids for preventing incrustation in steam-boilers	5,631	Feb. 12	13	278
Morten, F. M. and E. C., Cincinnati, Ohio. Chewing-tobacco	6,074	May 14	13	872
Mount Tom Thread Company, East Hampton, Mass. Spool-cotton	5,548	Jan. 22	13	126
Same.....Spool cotton or thread	5,805	Apr. 2	13	598

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Mundell, C. W., Brooklyn, N. Y. Boots and shoes	6,236	June 18	13	1083
Mundell & Co., J. Philadelphia, Pa. Boots and shoes	5,970	Apr. 30	13	774
Myers, A. and H., Philadelphia, Pa. Whisky	5,911	Apr. 23	13	729
Myers & Brothers, H., Savannah, Ga. Cigars	5,812	Apr. 2	13	598
Myers & Co., Philadelphia, Pa. Wool detergent and bleaching compound	5,761	Mar. 19	13	501
Nashua Manufacturing Company, Nashua, N. H. Cotton goods	6,102	May 28	13	970
National Needle Company, Springfield, Mass. Needles	6,222	June 11	13	1048
Naumburg, Kraus, Lauer & Co., New York, N. Y. Clothing for men's, youth's, and boys' wear	6,033	May 7	13	820
Nelson, H., Boston, Mass. Cigars, cigarettes, and smoking and chewing tobacco	5,958	Apr. 30	13	773
Neuss, Hesslein & Co., New York, N. Y. Cotton goods	5,679	Feb. 26	13	370
New York Chemical Works, New York, N. Y. Chemical preparations for washing, cleansing, soap-making, &c	6,093	May 14	13	917
Nervine & Griswold, Holbrook and Riverhead, New York. Chewing and smoking tobacco	6,015	May 7	13	819
Newman & Co., L., New Haven, Conn. Corsets	5,678	Feb. 26	13	370
Nichols, G. W., Brooklyn, N. Y. Cigars	5,614	Feb. 5	13	232
Nicholson File Company, Providence, R. I. File	6,034	May 7	13	820
Niessing, W., New York, N. Y. Cigars	5,824	Apr. 2	13	598
Norton, G., New York, N. Y. Extracts for making table-sauces	6,075	May 14	13	872
Norton & Wilder, St. Louis, Mo. Ready-mixed paints	5,871	Apr. 16	13	678
Nottingham Manufacturing Company, New York, N. Y., and Jersey City, N. J. Railroad supplies	5,682	Feb. 26	13	370
Nürnberger Ultramarine Fabrik, (Johannes Zeltner,) Nürnberg, Bavaria. Wash-blue	5,746	Mar. 12	13	458
Same.....same	5,775	Mar. 19	13	501
Oakley & Keating, New York, N. Y. Washing-machine	6,017	May 7	13	819
O'Donnell, C. F., New York, N. Y. Whisky	5,814	Apr. 2	13	598
Same.....same	6,124	May 21	13	918
Oliver & Robinson, Richmond, Va. Smoking-tobacco	5,927	Apr. 23	13	730
Same.....same	5,945	Apr. 23	13	730
Same.....Cigars	6,150	May 28	13	970
Olliffe, W. M., New York, N. Y. Medicinal preparation	5,787	Mar. 26	13	550
Ordway & Clark, Haverhill, Mass. Boots, shoes, and slippers	5,813	Apr. 2	13	598
Same.....Leather	5,864	Apr. 16	13	677
Orton, D. S., Northampton, N. Y. Granulated pepsin, a remedy for dispepsia	6,000	May 7	13	819
Ottenheimer Brothers, New York, N. Y. Corsets	6,046	May 14	13	871
Ovens & Son, R., Buffalo, N. Y. Biscuits, crackers, cakes, and snaps	6,238	June 18	13	1083
Pace, J. B., Richmond, Va. Chewing and smoking tobacco	5,912	Apr. 23	13	729
Pace, Talbott & Co., Danville, Va. Chewing and smoking tobacco	6,089	May 14	13	872
Palacio, C., New York, N. Y. Cigars	5,930	Apr. 23	13	730
Same.....same	5,931	Apr. 23	13	730
Palmer Baking Powder Company, Philadelphia, Pa. Baking-powder	5,664	Feb. 19	13	326
Pangborn, J. W., Jersey City, N. J. Wash-stand	5,531	Jan. 15	13	11
Partridge Brothers, Augusta, Me. Medical compound	6,677	May 14	13	872
Patapsco Guano Company, Baltimore, Md. Fertilizers	5,816	Apr. 2	13	598
Patterson & Co., R. A., Richmond, Va. Chewing-tobacco	6,252	June 18	13	1048
Paula, Coelho & Mohlfield, New York, N. Y. Coffee	5,861	Apr. 16	13	677
Peabody & Co., H. W., Boston, Mass. Refined petroleum	6,183	June 4	13	1012
Peck, W. T., Westfield, N. J. Medicinal preparation	5,748	Mar. 12	13	458
Pegram, B. R., Jr., New York, N. Y. Flour	5,615	Feb. 5	13	232
Peloubet, Pelton & Co., New York, N. Y. Cabinet or reed organs	5,706	Mar. 5	13	410
Pennsylvania Salt Manufacturing Company, Philadelphia, Pa. Chemicals and acids	5,504	Jan. 15	13	11
Perkins, G. H., Philadelphia, Pa. Metallic cans	6,261	June 18	13	1084
Phillips, J. F., Jersey City, N. J. Musical toy	5,549	Jan. 22	13	126
Phillips, W. W., Richmond, Va. Smoking and chewing tobacco	5,815	Apr. 2	13	598
Pine, Adams & Dunham, Troy, N. Y. Standing collars made of linen	5,929	Apr. 23	13	730
Pings & Pinner, New York, N. Y. Kid gloves	6,019	May 7	13	819
Same.....same	6,020	May 7	13	819
Pioneer Tobacco Company, Brooklyn, N. Y. Plug-tobacco	5,522	Jan. 15	13	11
Same.....same	5,819	Apr. 2	13	598
Pitkin & Co., G. W., Chicago, Ill. Liquid paints	6,151	May 28	13	970
Pitt, J. H., Bellaire, Ohio. Baking-powder	5,586	Jan. 29	13	180
Plumb, J. S., Syracuse, N. Y. Antiseptic, deodorizer, and embalmer	5,665	Feb. 19	13	326
Plummer & Son, W. E., Buffalo, N. Y. Starch	5,959	Apr. 30	13	773
Pogue, E. H., Hillsborough, N. C. Smoking-tobacco	6,018	May 7	13	819
Popham, W. H., New York, N. Y. Hog's lard	6,262	June 18	13	1084
Pollock, J., Cleveland, Ohio. Biscuits, crackers, jumbles, snaps, and fancy cakes	6,076	May 14	13	873
Portner, R., Alexandria, Va. Lager-beer	5,776	Mar. 19	13	501
Potter & Wrightington, Boston, Mass. Fish of all kinds	5,747	Mar. 12	13	458
Powell, R. S., and J. J. Turner, New York, N. Y. Medicine	5,902	Apr. 23	13	729
Powell, W. S., Baltimore, Md. Drugs and chemicals	6,110	May 21	13	918
Pratt & Co., A. W., New York, N. Y. Liquid drier	5,928	Apr. 23	13	730
Preston, E. B., Chicago, Ill. Hose-nozzles	5,900	Apr. 30	13	773
Procter & Gamble, Cincinnati, Ohio. Soap and candles	6,291	June 25	13	1130
Same.....Soap	5,616	Feb. 5	13	232
Same.....Candles	5,633	Feb. 12	13	278
Providence Tool Company, Providence, R. I. Sewing-machines	5,895	Apr. 23	13	729
Putnam Nail Company, Boston, Mass. Horseshoe-nails	5,982	Apr. 30	13	774
Quelting, J. J., New York, N. Y. Essential oils	5,865	Apr. 16	13	677
Rafferty & Williams, New York, N. Y. Fertilizers and fertilizing materials	5,750	Mar. 12	13	458
Rowson & Sons, J., Cincinnati, Ohio. Salted, pickled, and cured or smoked pork	5,749	Mar. 12	13	458
Raymond, H. V., Brooklyn, N. Y. Soap	5,606	Feb. 19	13	326
Read, C. H., New York, N. Y. Printed publications	5,817	Apr. 2	13	598
Red Wing Mills, Red Wing, Minn. Flour	5,765	Mar. 19	13	501
Reed, G. W. M., New Haven, Conn. Tonic	5,843	Apr. 9	13	638
Reinecke, F., Allegheny, Pa. Medical compound	5,825	Apr. 2	13	598
Relief Manufacturing Company, New York, N. Y. Medicinal preparation	6,103	May 21	13	917
Renauld, Francois & Co., New York, N. Y. Moet & Chandon champagne wines	5,587	Jan. 29	13	180
Reynolds, J. E., East Orange, N. J. Carpet-warp	5,520	Jan. 15	13	11
Same.....same	5,806	Apr. 2	13	598
Reynolds & Reynolds, Dayton, Ohio. Inks	5,563	Jan. 22	13	126
Rhodes & Lewis, San José, Cal. Cough-mixture	5,932	Apr. 23	13	730
Richard & Wood, Woodberry, Md. Yeast	5,833	Apr. 9	13	638
Richardson, C., Newark, N. J. Saws and saw attachments	5,981	Apr. 30	13	774
Richardson, J. C., St. Louis, Mo. Medicinal preparation	5,687	Feb. 26	13	370
Richmond, S. A., St. Joseph, Mo. Medicinal preparation	5,788	Mar. 26	13	550
Riker, J. L. and D. S., New York, N. Y. Soda-ash, caustic soda, bleaching-powder, &c	6,038	May 7	13	820

List of trade-marks registered, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Riquelme, M., New Orleans, La. Smoking-tobacco	5,519	Jan. 15	13	11
Same.....Cigars	5,564	Jan. 22	13	126
Robb, M. K., Brooklyn, N. Y. Molasses candy	5,477	Jan. 1	13	8
Roberts, R. J., West Brighton, N. Y. Needles	6,047	May 14	13	871
Same.....same	6,048	May 14	13	871
Roberts, Thropp & Co., Three Rivers, Mich. Thrashing-machines	5,565	Jan. 22	13	126
Rodgers Allekton Company, San Francisco, Cal. Chemical solution for preserving dead bodies	5,933	Apr. 23	13	730
Rohling & Rabenstein, Cincinnati, Ohio. Cigars	5,758	Mar. 19	13	501
Rose, D. C., Brooklyn, N. Y. Cigars	5,886	Apr. 16	13	678
Roseheim, H., Baltimore, Md. Whiskies	5,707	Mar. 5	13	410
Roulhac & Co., Durham, N. C. Smoking-tobacco	6,184	June 4	13	1012
Roundy, Peckham & Co., Milwaukee, Wis. Smoking-tobacco	5,989	Apr. 30	13	774
Rowell, C., San Francisco, Cal. Medical compound	6,166	June 4	13	1012
Rowland & Newbrandt, Philadelphia, Pa. Smoking and chewing tobacco	5,887	Apr. 16	13	678
Russell & Erwin Manufacturing Company, New Britain, Conn. Builders' hardware	5,866	Apr. 16	13	677
Russell, T., New York, N. Y. Spool-cotton	6,202	June 11	13	1048
Russell, W. T., La Fayette, Ga. Medicinal preparations	6,201	June 11	13	1047
Ryan & Cummiskey, St. Louis, Mo. Plug-tobacco	5,684	Feb. 13	13	370
Salomon, S., New York, N. Y. Cigars	5,711	Mar. 5	13	410
Same.....same	5,723	Mar. 12	13	457
Sanborn, G. H., Brooklyn, N. Y. Paper-cutting machines	6,239	June 18	13	1083
Sattler & Co., Baltimore, Md. Whisky	5,789	Mar. 26	13	550
Sawyer, H., Chelsea, Mass. Washing-blue	6,049	May 14	13	871
Schindler, S. S., and C. H. S. Davis, Meriden, Conn. Baking-powder	5,708	Mar. 5	13	410
Schmitt, J., New York, N. Y. Cigars	5,791	Mar. 26	13	550
Schneider, P., New York, N. Y. Cigar-boxes	5,961	Apr. 30	13	773
Same.....same	5,962	Apr. 30	13	773
Schunemann, T., Detroit, Mich. Cigars	5,913	Apr. 23	13	729
Scott & Brother, T. S., Philadelphia, Pa. Paper carpets and paper oil-cloths	5,904	Apr. 23	13	729
Scott, C. W., Hartford, Conn. Medicinal preparation	5,935	Apr. 23	13	730
Scott, Q. A., Pittsburg, Pa. Preparations for filling teeth	6,050	May 14	13	871
Seeley, I. B., Philadelphia, Pa. Trusses for the treatment of hernia, &c	5,794	Mar. 26	13	550
Same.....Instruments for the treatment of hernia, &c	5,795	Mar. 26	13	550
Same.....Elastic surgical bandages	5,796	Mar. 26	13	550
Seeley, N., New York, N. Y. Material used as paint on the bottom of vessels	6,171	June 4	13	1012
Seidenberg & Co., Key West, Fla., and New York, N. Y. Cigars	5,991	Apr. 30	13	774
Same.....Cigarettes	6,135	May 28	13	978
Same.....Leaf-tobacco	6,185	June 4	13	1012
Same.....Cigars and cigarettes	6,186	June 4	13	1012
Seidner & Sons, L., Baltimore, Md. Artificial fertilizers	5,790	Mar. 26	13	550
Seliers & Co., R. E., Pittsburg, Pa. Medicinal compound	5,827	Apr. 2	13	508
Senour, Simrall & Norman, Covington, Ky. Plug chewing-tobacco	5,670	Feb. 19	13	326
Sharpless, L. C., Philadelphia, Pa. Food for infants and invalids	6,203	June 11	13	1048
Shaw Plow Company, H. C., Stockton, Cal. Plows	5,710	Mar. 5	13	410
Simpson, A. C., Danville, Cal. Remedies for coughs, colds, &c	6,125	May 21	13	918
Simpson, W., Springfield, Mass. Cigars	6,126	May 21	13	918
Same.....same	6,279	June 25	13	1130
Slade, D. & L., Chelsea and Boston, Mass. Bread-raising preparation	5,934	Apr. 23	13	730
Slauson & Co., A., New York, N. Y. Confectionery	6,270	June 18	13	1084
Same.....same	6,268	June 18	13	1084
Same.....same	6,269	June 18	13	1084
Slote, Woodman & Co., New York, N. Y. Scrap-books	5,896	Apr. 23	13	729
Smith, C. L., Plymouth, Pa. Shirts	5,903	Apr. 23	13	729
Smith, C. T., New York, N. Y. Spool-cotton	5,844	Apr. 9	13	638
Smith, D., Philadelphia, Pa. Medicinal preparation	6,055	May 7	13	820
Smith, Dixon & Co., Baltimore, Md. Paper bags	5,897	Apr. 23	13	729
Smith & Dove Manufacturing Company, Andover, Mass. Flax threads, twines, and yarns	5,669	Feb. 19	13	326
Smith, E. A., Brooklyn, N. Y. Cigars, cigarettes, and smoking-tobacco	6,145	May 28	13	970
Smith, E. S., New York, N. Y. Veterinary medicines	6,210	June 11	13	1048
Smith & Egge Manufacturing Company, Bridgeport, Conn. Locks and keys	5,835	Apr. 9	13	638
Same.....Chains	5,890	Apr. 16	13	678
Smith, F. G., New York, N. Y. Piano-fortes and organs	5,777	Mar. 19	13	501
Smith, Hanway & Co., Baltimore, Md. Baking-powder	5,668	Feb. 19	13	326
Same.....same	5,834	Apr. 9	13	638
Smith, J. W., New York, N. Y. Medical compound	5,496	Jan. 8	13	48
Smith, M. M., New York, N. Y. Cigars	5,567	Jan. 22	13	126
Same.....same	5,568	Jan. 22	13	126
Smith Refrigerator and Manufacturing Company, Michigan City, Ind. Refrigerators	5,826	Apr. 2	13	508
Smith, R. M., Ludlow, Ky. Plug-tobacco	5,751	Mar. 12	13	458
Smith, S. T., Kasson, Minn., assignor to S. H. and E. Y. Moore, Chicago, Ill. Stove-polish	6,211	June 11	13	1048
Smurr, T. A., Ottawa, Ill. Medicinal compound	5,767	Mar. 19	13	501
Solar & Guardias, New York, N. Y. Ointment	6,200	June 25	13	1130
Solvay & Co., Bouffioulx, Belgium, and Varangeville, Dombasle, France. Certain chemical products	5,946	Apr. 23	13	730
Spalding & Brother, A. G., Chicago, Ill. Base-ball supplies	5,797	Mar. 26	13	550
Spaulding, N. H., Boston, Mass. Pens	6,078	May 14	13	872
Sperry, Wade & Co., Davidson county, Tenn. Whisky	5,963	Apr. 30	13	773
Spillmann, Wolff & Co., New York, N. Y. Braid	5,766	Mar. 19	13	501
Standard Oil Company, Pittsburg, Pa. Illuminating and lubricating oils	6,281	June 25	13	1130
Stark & Co., E. H., Worcester, Mass. Boots and shoes	5,905	Apr. 23	13	729
State of Kentucky Tobacco Manufacturing Company, Louisville, Ky. Chewing-tobacco	5,683	Feb. 26	13	370
Steinan Jewelry Company, Cincinnati, Ohio. Jewelry	5,667	Feb. 19	13	326
Steketee, G. G., Grand Rapids, Mich. Anti-bilious root and plant pills	5,566	Jan. 22	13	126
Stern, E., New York, N. Y. Whisky	6,021	May 7	13	820
Stevens, G. L., Brooklyn, N. Y. Prepared calcimine	5,906	Apr. 23	13	729
Stiner, J., New York, N. Y. Baking-powder	5,966	Apr. 30	13	773
St. Louis Beef Canning Company, St. Louis, Mo. Packed and hermetically-sealed meats	5,487	Jan. 8	13	48
Same.....Canned meats	5,550	Jan. 22	13	126
Stone, L. B., Boston, Mass. Mineral and metallic paints	5,889	Apr. 16	13	678
Strait, M. D., St. Louis, Mo. Butter compound	5,709	Mar. 5	13	410
Straiton & Storm, New York, N. Y. Cigars, cigarettes, and smoking-tobacco	5,475	Jan. 1	13	8
Same.....Cigars	5,680	Feb. 26	13	370
Same.....Cigars, cigarettes, and smoking-tobacco	5,867	Apr. 16	13	677
Same.....same	6,144	May 28	13	970
Strauss & Co., L., San Francisco, Cal., and New York, N. Y. Blankets	6,288	June 25	13	1130

List of trade-marks registered, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Strauss & Co., L., San Francisco, Cal., and New York, N. Y. Blankets	6,289	June 25	13	1130
Suich, G., San Francisco, Cal. Smoking-tobacco	5,990	Apr. 30	13	774
Sullivan & Burk, Detroit, Mich. Cigars	5,807	Apr. 2	13	508
Susafeld, Lorach & Co., New York, N. Y. Watch-springs	5,634	Feb. 12	13	278
Sutton, J. R., New York, N. Y. Cigars, cigarettes, and chewing and smoking tobacco	5,722	Mar. 12	13	457
Swain & Co., C. D., Boston, Mass. Mineral waters	5,818	Apr. 2	13	508
Swartz & Co., C., South Norwalk, Conn. Cigars, cigarettes, and chewing-tobacco	6,152	May 28	13	970
Sweetser & Son, F., New York, N. Y. Cotton goods	6,242	June 18	13	1083
Swift, C. T., Atlanta, Ga. Medical compound	5,888	Apr. 16	13	678
Taggart & Son, J. H., Philadelphia, Pa. Newspaper	5,752	Mar. 12	13	458
Taylor, B. C., Dayton, Ohio. Horse hay-rakes	5,810	Apr. 2	13	508
Taylor, J. S., San Francisco, Cal. Cream-tartar	6,055	May 14	13	871
Taylor Manufacturing Company, St. Louis, Mo. Yeast-powder	6,280	June 25	13	1130
Teller, M. S., Sandy Hill, N. Y. Condition-powders	6,271	June 18	13	1084
Thompson & Dale, Boston, Mass. Medicine for the cure of catarrh	5,478	Jan. 1	13	8
Thornton & Co., J., New York, N. Y., and Philadelphia, Pa. Needles	6,105	May 21	13	918
Thurber & Co., H. K. and F. B., New York, N. Y. Salt	5,672	Apr. 16	13	678
Same.....Italian paste	5,907	Apr. 23	13	729
Thurber T., Auburn, N. Y. Anti-friction metals	6,223	June 11	13	1148
Tilt & Son, B. B. Silk handkerchiefs, scarfs, book-marks, badges, and dress-goods other than dress-trimmings	6,298	June 25	13	1130
Townsend, V. P. D., New York, N. Y. Liniment	5,551	Jan. 22	13	126
Townsend, Wilson & Co., Providence, R. I. Medicinal preparation	5,992	Apr. 30	13	774
Treat, W. W., Watertown, Mass. Minced fish	5,588	Jan. 29	13	180
Same.....Article of food	5,589	Jan. 29	13	180
Tresilian, T., Gloucester, Mass. Hammocks	6,254	June 18	13	1048
Trigg & Co., G. P., New York, N. Y. Cod-fish	5,809	Apr. 2	13	508
Troth Brothers, Philadelphia, Pa. Hams	6,095	May 21	13	917
Tryon, Son & Co., G. R., Philadelphia, Pa. Metal for anti-friction purposes	5,688	Feb. 26	13	370
Tucker, E., Brooklyn, N. Y. Cigars	5,617	Feb. 5	13	232
Tuthill, C. E., Greenport, N. Y. Water-proof wearing-apparel	5,637	Feb. 12	13	278
Udell, Schmieding & Co., St. Louis, Mo. Axle-grease	6,218	June 11	13	1048
Underndorfer, L., New York, N. Y. Cigars, cigarettes, and smoking and chewing tobacco	6,158	May 28	13	970
Underwood & Co., W., Boston, Mass. Canned baked beans	5,598	Jan. 29	13	180
Union Lubricator Manufacturing Company, Boston, Mass. Machinery-grease	5,641	Feb. 12	13	278
Union Manufacturing Company, Toledo, Ohio. Wash-boards	6,212	June 11	13	1048
Union Steam Mills Company, St. Louis, Mo. Wheat, corn, and rye flour	5,638	Feb. 12	13	278
Same.....same	5,639	Feb. 12	13	278
Same.....same	5,640	Feb. 12	13	278
Upmann, C., New York, N. Y. Cigars	5,973	Apr. 30	13	774
Upton & Co., Salem, Mass. Pile-ointment	6,243	June 18	13	1083
Van Bibber, A., Cincinnati, Ohio. Composition for printers' inking-rollers	6,079	May 14	13	872
Van Buskirk, R., Peekskill, N. Y. Medicinal tonic	6,113	May 21	13	918
Van Dyke, T. E., Philadelphia, Pa. Medicinal preparation	5,993	Apr. 30	13	774
Van Wagoner & Williams, New York, N. Y. Door-springs	5,942	Apr. 23	13	730
Vlahov, R., Sebenico, Dalmatia, Austria. Medical compound	5,656	Feb. 12	13	278
Veiller, Jayne & Co., Green Point and New York, N. Y. Sirups	5,619	Feb. 5	13	232
Venable & Co., S. W., Petersburg, Va. Chewing-tobacco	6,219	June 11	13	1048
Vergnole, J., New Orleans, La. Bitters	6,080	May 14	13	872
Vogeler, Meyer & Co., Baltimore, Md. Solid and fluid medicinal preparations	5,971	Apr. 30	13	774
Same.....Fluid medicinal preparations	5,972	Apr. 30	13	774
Vought & Killgore, Dover, N. J. Medicinal preparation	5,696	Mar. 5	13	410
Wadsworth, Martines & Longman, Brooklyn, N. Y. Illuminating-oils	6,163	May 28	13	970
Wakeman, A., Jr., and E. A. Thompson, New York, N. Y. Sugars	5,753	Mar. 12	13	458
Wakeman & Fierz, New York, N. Y. Bees-wax	6,273	June 25	13	1130
Walker, J. H., Worcester, Mass. Boots and shoes	5,590	Jan. 29	13	180
Same.....same	5,695	Mar. 5	13	410
Wallach's Sons, H., New York, N. Y., and Paterson, N. J. Shirts	6,083	May 14	13	872
Walsh, J. R., Chicago, Ill. Tea	5,892	Apr. 16	13	678
Walz, A., New Orleans, La. Bitters	5,936	Apr. 23	13	730
Wander, E. H., New York, N. Y. Caps for toy pistols, &c	5,915	Apr. 23	13	729
Waring, Belknap & Co., W. C., Yonkers, N. Y. Hats	5,792	Mar. 26	13	550
Warner & Co., W. R., Philadelphia, Pa. Medicines	5,625	Feb. 5	13	232
Same.....Medicinal preparation	5,724	Mar. 12	13	457
Warnick & Brown, Utica, N. Y. Cigars	6,090	May 14	13	872
Warren, Lober & Co., Philadelphia, Pa. Roofing cement and felt	5,501	Jan. 8	13	48
Weeks & Potter, Boston, Mass. Essence of petroleum for medicinal purposes	5,836	Apr. 9	13	638
Same.....Medicinal preparation	5,994	Apr. 30	13	774
Wei De Meyer, F. W., New York, N. Y. Catarrh remedy	5,943	Apr. 23	13	730
Weikel & Smith Spice Company, Philadelphia, Pa. Coffees, spices, and mustards	5,869	Apr. 16	13	678
Same.....Roasted and ground coffee, spices, and mustard	5,891	Apr. 16	13	678
Same.....Potash	6,052	May 14	13	871
Same.....Coffee and spices	6,220	June 11	13	1048
Same.....Saleratus, soda, borax, and concentrated lye	6,292	June 25	13	1130
Welch & Creighton, New York, N. Y. Ostrich feathers and fancy feathers generally	5,914	Apr. 23	13	729
Wells, Richardson & Co., Burlington, Vt. Preparation for coloring butter	6,127	May 21	13	918
West, L. M., Rockford, Ill. Leather dressing	5,552	Jan. 22	13	126
Western File Company, (limited,) Beaver Falls, Pa. Files	5,939	Apr. 23	13	730
Same.....same	5,940	Apr. 23	13	730
Same.....same	5,941	Apr. 23	13	730
Weston, B., Dalton, Mass. Writing-paper	5,868	Apr. 16	13	677
Weyman, B. F., Pittsburg, Pa. Snuff	5,726	Mar. 12	13	457
Same.....Smoking-tobacco	5,948	Apr. 23	13	730
Same.....Snuff	6,146	May 28	13	970
Same.....Plug-tobacco	6,148	May 28	13	970
Same.....Snuff	6,153	May 28	13	970
Same.....Cigars	6,154	May 28	13	970
Wheeler & Ailing, Newark, N. J. Shirts	6,204	June 11	13	1048
Wheeler, W. O., Sharon, Conn. Milk	5,725	Mar. 12	13	457
Whitbeck & Co., H. D., Auburn, N. Y. Cathartic pills	6,167	June 4	13	1012
Same.....Healing-balsam	6,299	June 25	13	1130
White, M. C., New York, N. Y. Ague-cures	5,938	Apr. 23	13	730
Same.....Medicinal preparation for the cure of neuralgia	6,081	May 14	13	872
Whitman, Sons & Co., E., Baltimore, Md. Wheat-fans	5,689	Feb. 26	13	370

List of trade-marks registered, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Whitney, W. H., New York, N. Y. Medicinal preparations	6,106	May 21	13	918
Wilder, D. H., Corry, Pa. Wooden ware	5,780	Mar. 19	13	501
Willett, J., Boston, Mass. Artificial stone and artificial-stone goods, such as garden-vases, &c	6,051	May 14	13	871
Willimantic Linen Company, Hartford, Conn. Spool-cotton	5,768	Mar. 19	13	501
Same.....same.	5,769	Mar. 19	13	501
Same.....same.	5,770	Mar. 19	13	501
Wilmerding, Biddle & Blaset, New York, N. Y. Toweling	5,937	Apr. 23	13	730
Wilson & McCallay, Middleton, Ohio. Plug chewing-tobacco	6,123	May 21	13	918
Witthaus, E. L., Baltimore, Md. Smoking-tobacco and cigarettes	5,530	Jan. 15	13	11
Wolf, W. B., Baltimore, Md. Glossing or polishing solution	5 781	Mar. 19	13	501
Wolley & Sons, R., Cincinnati Ohio. Leather	6,128	May 21	13	918
Woodard, H. S., Bloomington, Ill. Liniment	5,529	Jan. 15	13	11
Woodbury, Weston & Co., Whitfield, N. H. Medical compound	5,964	Apr. 30	13	773
Woodman, G. B., Philadelphia, Pa. Flour	6,130	May 21	13	918
Woodside, Green & Labaree, Cincinnati, Ohio. Cigars	6,022	May 7	13	820
Zeilin & Co., J. H., Philadelphia, Pa. Medicinal preparations	5,965	Apr. 30	13	773
Zerban, A., New York, N. Y. Dry-goods	5,727	Mar. 12	13	457
Ziegler, H. S., Philadelphia, Pa. Stove-polish	6,084	May 14	13	872

LIST OF LABELS REGISTERED, JANUARY TO JUNE, 1878, INCLUSIVE.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Abbott & Co., C. W., Baltimore, Md. "Angostura Aromatic Bitters"	1,449	Mar. 19	13	501
Abrams, L. H., Philadelphia, Pa. "Chemical Spirit Gas"	1,511	May 7	13	820
Allen & Co., E. S., Cleveland, Ohio. "Guarantee"	1,423	Feb. 26	13	370
Allen, W., Fort Edward, N. Y. "Allen's Compound Extract of Butternut for the Blood"	1,448	Mar. 19	13	501
American Cigar Company, Westfield, Mass. "El Circulo De Oro, Five-Cent Cigar"	1,374	Jan. 22	13	125
American Hosiery Company, New Britain, Conn. "International Exhibition Underwear and Hosiery"	1,506	Apr. 30	13	774
Angell, E. C., New York, N. Y. "Kokoleon. An Exquisite Emollient"	1,582	June 25	13	1130
Same....."Romaleon. An exquisite Emollient"	1,583	June 25	13	1130
Ashwell & Co., New York, N. Y. "Ashwell's Solid Cooked Corned Beef"	1,337	Jan. 1	13	8
Atwater, W. G., New York, N. Y. "Malarial Cure"	1,487	Apr. 23	13	730
Bairstow, W. A., Warren, Pa. "Bairstow's Ivorytype Colors"	1,519	May 7	13	820
Barto, H. D., Rochester, N. Y. "Dart's Cough Syrup," &c	1,347	Jan. 8	13	48
Beers & Co., Columbus, Ohio. "The Great American Cure and Preventive for Hog Cholera"	1,558	May 28	13	970
Beiermeister & Son, Troy, N. Y. "Yoke Band"	1,481	Apr. 16	13	678
Same....."Yoke Band Collar"	1,488	Apr. 23	13	730
Bell, Wm. G., Boston, Mass. "Wm. G. Bell & Co., Boston, Mass., U. S. A. Manufacturers and Proprietors of Bell's Celebrated Sausage Spice"	1,439	Mar. 12	13	458
Bennett, W. W., Little Cooley, Pa. "Bennett's Great Rheumatic Compound—The Lame Man's Friend"	1,450	Mar. 19	13	501
Bensel & Co., New York, N. Y. "Stripped, Sample Warranted"	1,451	Mar. 19	13	501
Blackford, S., St. Paul, Minn. "Dr. E. B. Halliday's Blood Purifier"	1,468	Apr. 9	13	638
Bond, J. R., Brooklyn, N. Y. "Rome's Tooth-Powder"	1,376	Jan. 29	13	180
Boorum & Pease, New York, N. Y. "¼ Ream Artist's Music Paper, No.—"	1,574	June 18	13	1064
Brainard, Armstrong & Co., New York, N. Y., and Philadelphia, Pa. "Any Lady Using Our Silk will be Presented with One of These by Sending One of Our Empty Spools to Either Office"	1,455	Mar. 26	13	550
Bucklen, H. E., Elkhart, Ind. "Bucklen's Arnica Salve"	1,440	Mar. 12	13	458
Cahill, R., Brooklyn, N. Y. "Information for the Trade"	1,377	Jan. 29	13	180
Cairo City Coal Company, Cairo, Ill. "Cairo City Coal Co."	1,489	Apr. 23	13	730
Case, M. W. (See Ziegler and Case.)				
Cassebeer, H. A., Jr., New York, N. Y. "Cassebeer's Ammonia Lozenges"	1,564	June 11	13	1048
Caswell, Hazard & Co., New York, N. Y., and Newport, R. I. "Beef Tonic"	1,513	May 7	13	820
Same.....same.	1,514	May 7	13	820
Chase, H. S., St. Louis, Mo. "Stannou's Gold for Permanent Fillings"	1,456	Mar. 26	13	550
Childs, W. H. H., New York, N. Y. "Child's Prize-Medal Roofing-Felt"	1,454	Mar. 19	13	501
Claflin & Co., H. B., New York, N. Y. "Extra Dress Styles"	1,305	Feb. 19	13	326
Same....."These Prints are Guaranteed to be full Madder," &c	1,406	Feb. 19	13	326
Cole, L., Aurora, Ill. Cole's Business Record"	1,551	May 28	13	970
Colgate & Co., New York, N. Y. "Jabon Económico De Colgate & Ca."	1,302	Jan. 22	13	125
Collins Company, Collinsville, Conn. "The Charter Oak Axe"	1,398	Feb. 5	13	232
Same....."Manufactured from Extra Cast-Steel"	1,550	May 21	13	918
Continental Bank Note Company, New York, N. Y. "Tint for Bank Checks and Drafts"	1,386	Jan. 29	13	180
Convery, J. R., Baltimore, Md. "Convery, The Sign Painter"	1,457	Mar. 26	13	550
Cooper, E. F., East Weymouth, Mass. "Cooper's Great Rheumatic Cure"	1,531	May 14	13	872
Cornwall & Brother, Louisville, Ky. "Oriental Company Family German Soap"	1,407	Feb. 19	13	326
Same....."Cornwall & Brother's Dixie's delight"	1,408	Feb. 19	13	326
Same....."Cornwall & Brother National Soap"	1,409	Feb. 19	13	326
Same....."Cornwall & Brother Game Soap"	1,410	Feb. 19	13	326
Same....."Albion Vegetable Oil Soap"	1,411	Feb. 19	13	326
Same....."Cromwell & Brother Bluing Soap"	1,412	Feb. 19	13	326
Same....."Blue Bell Cornwall & Brother"	1,413	Feb. 19	13	326
Same....."Cornwall & Brother Kentucky Soap"	1,414	Feb. 19	13	326
Crane Brothers, Westfield, Mass. "Warranted All Linen"	1,500	Apr. 23	13	730
Same....."Japanese Mills"	1,501	Apr. 23	13	730
Culver, T., New York, N. Y. "Hamburger Boneless Ham"	1,415	Feb. 19	13	326
Detweiler & Co., J. S., Philadelphia, Pa. "Delaware Wheaten Grits"	1,339	Jan. 1	13	8
Same....."Pennsylvania Oaten Grits"	1,338	Jan. 1	13	8
Deusner, P., Jr., Kokomo, Ind. "Cash Sale"	1,340	Jan. 1	13	8
Same....."Deusner's Ticket System"	1,458	Mar. 25	13	550
Same....."Deusner's Merchandise Ticket"	1,584	June 25	13	1130
De Voy, M., New York, N. Y. "Camellia Lotion for Beautifying and Healing the Skin	1,575	June 18	13	1064
Dinglinger, N. A., New York, N. Y. "Fearless"	1,585	June 25	13	1130
Dohme & Co., G. C., Baltimore, Md. "Sulphide of Arsenicum"	1,429	Mar. 5	13	410
D'Ossone, C. V., Philadelphia, Pa. "D'Ossone's London Writing and Copying Fluid"	1,462	Apr. 2	13	598
Dudley & Co., Brooklyn, N. Y. "Dudley's Emulsion of Pure Cod-Liver Oil"	1,459	Mar. 26	13	550
Du Puy, E. A., Brooklyn, N. Y. "Swiss Kumyss, or Lacto Pepticum"	1,341	Jan. 1	13	8
Dushane, J. A., Baltimore, Md. "Count Your Paper"	1,387	Feb. 5	13	232
Same....."Woodbine Mills"	1,388	Feb. 5	13	232
Same....."Sheets to the Quire"	1,389	Feb. 5	13	232
Same....."Guaranteed Full Count"	1,390	Feb. 5	13	232
Dustin, S. B., Utica, N. Y. "Mighill Dustin's Celebrated Ointment or Salve"	1,510	Apr. 30	13	774
Dyer, B. W., New York, N. Y. "Compound Witch Hazel Pills"	1,342	Jan. 1	13	8
Same....."Compound Witch Hazel Hair Restorer"	1,353	Jan. 15	13	11
Same....."Witch Hazel Ointment"	1,416	Feb. 19	13	326
Same....."Witch Hazel (Hamamelis) Bitters"	1,502	Apr. 30	13	774
Eason, R., New York, N. Y. "Hussey's Special Message and Letter Box"	1,375	Jan. 22	13	125
Eastman & Fitch, Concord, N. H. "Dr. Shonyo's German Bitters"	1,441	Mar. 12	13	458
Eggleston, J. S., Auburn, N. Y. "J. S. Eggleston's Non-Corrosive Preparation"	1,532	May 14	13	872
Elbert Brother & Co., Washington, D. C. "The American Corn, Bunion, and Wart Cure"	1,391	Feb. 5	13	232
Elgin Ink Company, Elgin, Ill. "Elgin Black Ink"	1,573	June 11	13	1048
Ezekiel, W. A., Cincinnati, Ohio. "On All Cash Sales of Twenty-Five Cents" &c	1,515	May 7	13	820
Same....."These Segars are Made by Cubans at Key West, Florida, &c."	1,552	May 28	13	970
Fairbanks, F. C. (See Smith and Fairbanks.)				
Fairbanks, J., Chicago, Ill. "Fairbanks' Sunday-School Collection-Box"	1,430	Mar. 5	13	410
Farrington, J. T., New York, N. Y. "Farrington's Celebrated Glue"	1,554	May 28	13	970
Ferre, J. C., Springfield, Mass. "Hooker's Stomach Bitters"	1,399	Feb. 12	13	278
Fickardt, G. H., Circleville, Ohio. "Angelica Bitters or Poor Man's Tonic"	1,553	May 28	13	970
Fish, Storer & Davis, Shelby, Ohio. "C. F. Fish Fancy Flour"	1,561	May 28	13	970

List of labels registered, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Fletcher, C. M., New York, N. Y. "Coca Bitters, The Great South American Tonic"	1,400	Feb. 12	13	278
Frash & Co., New York, N. Y. "Extra Dry"	1,329	Jan. 1	13	8
French, A. S., East Hampton, N. Y. "French's Freckle Remover"	1,392	Feb. 5	13	232
French, D. H., Hudson, Ill. "French's Rubber Cement"	1,431	Mar. 5	13	410
French, Richards & Co., Philadelphia, Pa. "French, Richards & Co. Strictly Pure Lead, &c."	1,567	June 11	13	1048
Same..... "French's Selected Calcined Plaster"	1,568	June 11	13	1048
Friend, J. (See Stone and Friend.)				
Früh, C. D. S., Philadelphia, Pa. "Kamillen Seife, Chamomile Soap"	1,516	May 7	13	820
Gaab, G., Cincinnati, Ohio. "Grand Havana-Filler Hand-Made"	1,586	June 25	13	1130
George, R. F., Galveston, Tex. "Tuxpan Chewing-Gum"	1,533	May 14	13	872
Gerard, W., Brooklyn, N. Y. "Gerard's Preventive"	1,425	Feb. 26	13	370
Gooding, F. M., Millington, Md. "Britton's Ague Pills"	1,555	May 28	13	970
Goodyear Rubber Company, New York, N. Y. "The Goodyear Union Syringe, No. 3," &c.	1,570	June 11	13	1048
Gorham, J. R., Jr., Newburg, N. Y. "Black's Expectorative"	1,348	Jan. 8	13	48
Gray, J. R., Ayer, Mass. "Solidified Glycerine"	1,424	Feb. 26	13	370
Greene, Tweed & Co., New York, N. Y. "Blake's Belt Stud"	1,490	Apr. 23	13	730
Halpruner, W. S., San Francisco, Cal. "Dr. Halpruner Healing Salve"	1,452	Mar. 19	13	501
Hance, R. A., Philadelphia, Pa. "Robert A. Hance's Elixir Coca Comp."	1,363	Jan. 22	13	125
Hastings, L. A., Lawrence, Mass. "Herrshaw's Cure"	1,442	Mar. 12	13	458
Hegeman & Co., New York, N. Y. "Hegeman & Co.'s Celebrated Pastile or Witch Hazel Lozenges"	1,565	June 11	13	1048
Heintzelman, R. B., New York, N. Y. "Catareba Cigarettes"	1,545	May 21	13	872
Heppenheimer & Maurer, New York, N. Y. "Mercedes"	1,330	Jan. 1	13	8
Same..... "Daisy"	1,331	Jan. 1	13	8
Same..... "The Start"	1,332	Jan. 1	13	8
Same..... "Seventh Daughter"	1,333	Jan. 1	13	8
Same..... "Best Havana"	1,334	Jan. 1	13	8
Same..... "Determino"	1,335	Jan. 1	13	8
Same..... "Dido"	1,354	Jan. 15	13	11
Same..... "Good Taste"	1,355	Jan. 15	13	11
Same..... "Old Abe"	1,356	Jan. 15	13	11
Same..... "Murray Hill"	1,357	Jan. 15	13	11
Same..... "Idol"	1,358	Jan. 15	13	11
Same..... "Penelope"	1,378	Jan. 29	13	180
Same..... "Elfin"	1,379	Jan. 29	13	180
Same..... "Special Artist"	1,380	Jan. 29	13	180
Same..... "Forest Home"	1,393	Feb. 5	13	232
Same..... "Old Mill"	1,464	Apr. 2	13	598
Same..... "Pow-Wow"	1,465	Apr. 2	13	598
Same..... "American Cousin"	1,466	Apr. 2	13	598
Same..... "Fascination"	1,469	Apr. 9	13	638
Same..... "Dispatch"	1,470	Apr. 9	13	638
Same..... "Amateurs"	1,482	Apr. 16	13	678
Same..... "El Boca"	1,517	May 7	13	820
Same..... "La Noblesa"	1,534	May 14	13	872
Same..... "Early Rose"	1,571	June 11	13	1048
Same..... "Sure Pop"	1,572	June 11	13	1048
Same..... "Ever Faithful"	1,588	June 25	13	1130
Hesselroth, L., Chicago, Ill. "Hesselroth's Universal Healing Plaster"	1,566	June 11	13	1048
Hetherington, J. E., Cincinnati, Ohio. "Hetherington's Tropic-Fruit Laxative"	1,547	May 21	13	918
Same..... same	1,576	June 18	13	1084
Same..... same	1,577	June 18	13	1084
Higgins & Co., C. S., Brooklyn, N. Y. "Higgins' German Laundry Soap"	1,463	Apr. 2	13	598
Hill & Buss, Boston, Mass. "Hill's Creamed Castor-Oil"	1,518	May 7	13	820
Hoffman, M., New York, N. Y. "Liebig Coca-Beef Tonic, (Peptonized)"	1,587	June 25	13	1130
Holbrook & Co., Salem, Mass. "Aromatic Extract of Jamaica Ginger".	1,483	Apr. 16	13	678
Hood & Co., M. C., Boston, Mass. "Hood's French Cologne"	1,546	May 21	13	918
Howard, S. F., and L. E. Wardell, Springfield, Mass. "Sterling Silver Polish"	1,443	Mar. 12	13	458
Howe, G. V., Otwell, Ind. "G. V. Howe's Cherry Tonic"	1,460	Mar. 26	13	550
Jeffers, P., Chicago, Ill. "Jeffers' Original Bronchial Cigarettes," &c.	1,348	Jan. 1	13	8
Same..... Jeffers' French Catarrh Cure"	1,394	Feb. 5	13	232
Jenney, W. P., Brooklyn, N. Y. "Tunyoap Watertight"	1,417	Feb. 19	13	326
Jones, A. W., Boston, Mass. "Mrs. Jones' Burn Ointment"	1,556	May 28	13	970
Kelley, P. H., Indianapolis, Ind. "Kelley's French Eau de Cologne"	1,544	May 14	13	872
Kellogg, E. H., New York, N. Y. "Anti-Corrosive Car Box Oil"	1,418	Feb. 19	13	326
Kerbs & Spiess, New York, N. Y. "Grand Victory"	1,503	Apr. 30	13	774
Kimball, D. B., Syracuse, N. Y. "Kimball's Metallic Roofing Paint"	1,491	Apr. 23	13	730
King, J. O., New York, N. Y. "Manhattan Mills"	1,426	Feb. 26	13	370
Same..... "Lawrence Thread"	1,427	Feb. 26	13	370
Kittredge & Co., W. C., Whitehall, N. Y. "The Deodorizing Garbage and Ash Box"	1,484	Apr. 16	13	678
Langdon & Co., T., New York, N. Y. "The Amazon Steel"	1,447	Mar. 12	13	458
Lee, E. C., Boston, Mass. "Genuine Persian Tooth Paste"	1,349	Jan. 8	13	48
Lee, J. P., Chicago, Ill. "Dr. Macalister's Cough Mixture"	1,548	May 21	13	918
Levy Brothers, New York, N. Y. "Legion of Honor"	1,401	Feb. 12	13	278
Levy & Co., B., Boston, Mass. "Beauté Du Teint, Levy's French Cream"	1,559	May 28	13	970
Lewis, P. C., Windham, N. Y. "Lewis' Improved Potato Bug Exterminator"	1,359	Jan. 15	13	11
Lies & Co., G. P., New York, N. Y. "The American Popular Five Cent Cigar"	1,444	Mar. 12	13	458
Littell & Shaw, New York, N. Y. "Prof. Shaw's Fragrant Antiseptic Cologne," &c.	1,381	Jan. 29	13	180
Long, S., Philadelphia, Pa. "Silver White Lead"	1,535	May 14	13	872
Long Island Brewery, Brooklyn, N. Y. "Family Ale"	1,428	Feb. 26	13	370
Lowell, J. A. & Co., Boston, Mass. "Curtis"	1,560	May 28	13	970
Lyndon, E. S., Athens, Ga. "Worm Oil"	1,492	Apr. 23	13	730
Magee, G. V., Philadelphia, Pa. "Parisian Dress Renovator"	1,493	Apr. 23	13	730
Magill, H. A., Louisville, Ky. "Magill's Chill Cure"	1,432	Mar. 5	13	410
Marshall, M. W., Fond du Lac, Wis. "Marshall's Rheumatic Oil Liniment"	1,350	Jan. 8	13	48
Same..... "Marshall's Rheumatic Liniment," &c.	1,351	Jan. 8	13	848
Same..... "Marshall's Lung Syrup for Coughs, Colds," &c.	1,395	Feb. 5	13	232
Same..... "Marshall's Improved Condition Powder for Horses and Cattle"	1,396	Feb. 5	13	232
Martin, C. S., New York, N. Y. "Martin's Ready Printed Perforated Addresses"	1,471	Apr. 9	13	638
McCalvey, J., Frankford, Philadelphia, Pa. "The Eradicator"	1,578	June 18	13	1084
McKelway, G. L., Philadelphia, Pa. "Syrup Glycerole of Ferrous Chloride"	1,563	June 4	13	1010
Medlar, J. B., Rockford, Ill. "Oil Gem"	1,520	May 7	13	820
Same..... "Ink Photo"	1,521	May 7	13	820
Melzer, A., Evansville, Ind. "Benzine Soap"	1,364	Jan. 22	13	125
Merchants' Tobacco Company, Boston, Mass. "Merchants' Tobacco Company, Boston"	1,445	Mar. 12	13	458

List of labels registered, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Merrell & Co., W. S., Cincinnati, Ohio. "Fluid Hydrastis"	1,519	May 7	13	820
Miller & Co., J. L., New York, N. Y. "The Great Novelty of the Age, &c."	1,461	Mar. 26	13	550
Miller, F. L., Philadelphia, Pa. "To Protect the Public Against Counterfeits," &c.	1,402	Feb. 12	13	278
Mozley, H., St. Louis, Mo. "Dr. H. Mozley's Lemon Elixir," &c.	1,433	Mar. 5	13	410
Murphy, J. J., Baltimore, Md. "Murphy's Irish Cough Syrup"	1,505	Apr. 30	13	774
Myers, H. M., Beaver Falls, Pa. "H. M. Myers, Solid Steel"	1,504	Apr. 30	13	774
Newman, C. T., Manchester, N. H. "Dr. B. Hazelton's Indian Liniment"	1,472	Apr. 9	13	638
Norton & Wieder, St. Louis, Mo. "St. Louis Villa and Cottage Paints"	1,485	Apr. 16	13	678
Ordway, A. P., Lawrence, Mass. "Dr. Kaufman's Sulphur Bitters"	1,473	Apr. 9	13	638
Same..... "Dr. Ordway's Sulphur Sarsaparilla"	1,536	May 14	13	872
Same..... "Dr. Ordway's Sulphur Medical Discovery"	1,537	May 14	13	872
Same..... "Dr. Ordway's Sulphur Blood Purifier"	1,538	May 14	13	872
Osborn, F. C., Syracuse, N. Y. "The —— Business Directory"	1,352	Jan. 8	13	48
Painter & Calvert, San Francisco, Cal. "The Stock Ointment"	1,494	Apr. 23	13	730
Patch, J. W., Boston, Mass. "Our Favorite Nursing-Shield"	1,522	May 7	13	820
Perry, J. A., Pawtucket, R. I. "Perry's Harness Oil Soap"	1,397	Feb. 5	13	232
Pioneer Tobacco Company, Brooklyn, N. Y. "Wood Tag"	1,530	May 7	13	820
Place, F. B., Sedalia, Mo. "Place's Salus Illuminating Gas"	1,495	Apr. 23	13	730
Pratt & Co., A. W., New York, N. Y. "A. W. Pratt & Co., Manufacturers of Varnishes," &c.	1,365	Jan. 22	13	125
Ramsey, T., Cleveland, Ohio. "Union Color Company. Burnt Sienna"	1,589	June 25	13	1130
Raymer, T. C., Chicago, Ill. "Pneumonic Compound Medicines for Swine"	1,446	Mar. 12	13	458
Reynolds, J. E., East Orange, N. J. "Eureka Carpet Warp"	1,361	Jan. 15	13	11
Ricksecker, T., New York, N. Y. "Ricksecker's Bay Rum Shaving Stick"	1,419	Feb. 19	13	326
Riker, W. B., and W. H. Riker, New York, N. Y. "Riker's American Face Powder"	1,420	Feb. 19	13	326
Riker, W. H. (See Riker W. B., and W. H.)				
Roseborough, J. E., Shiloh, Ohio. "Dr. J. E. Roseborough's Compound for Stomach and Heart"	1,474	Apr. 9	13	638
Schumacher and Ettlinger, New York, N. Y. "Amoresis"	1,541	May 14	13	872
Schmidt & Co., New York, N. Y. "Puro Habana"	1,523	May 7	13	820
Scott, C. L., Philadelphia, Pa. "Scott's Cocoanut Macaroons"	1,524	May 7	13	820
Sherman, R. H., Norwich, Conn. "Dr. Button's Coffee"	1,475	Apr. 9	13	638
Simpson, Sons & Co., W., Philadelphia, Pa. "Merino Finish"	1,453	Mar. 19	13	501
Sloan & Co., Philadelphia, Pa. "Bunsen's Dyspepsia Cure"	1,434	Mar. 5	13	410
Same..... "Byerly's Gonorrhœa Mixture"	1,435	Mar. 5	13	410
Same..... "Sloan's Lacto-Phosphate of Lime, Iron, and Cod-Liver Oil"	1,436	Mar. 5	13	410
Smith & Co., L. A. L., Palatine, Ill. "Prof. Dykes' Beard Elixir"	1,590	June 25	13	1130
Smith, M. W., and C. F. Fairbanks, Chicago, Ill. "Sunday-School Class Box"	1,372	Jan. 22	13	125
Same..... "Fairbanks' Improved Class-Collection Box"	1,437	Mar. 5	13	410
Smith, T. B., Covington, Ky. "Smith's Agricultural Liniment"	1,579	June 18	13	1084
Snyder, A., Sherman, Tex. "Design for Medicine Label"	1,438	Mar. 5	13	410
Steinau Jewelry Company, Cincinnati, Ohio. "Imperial Casket"	1,421	Feb. 19	13	326
Stevens, A. T., Brooklyn, N. Y. "Household Mixed Paint"	1,496	Apr. 23	13	730
Stewart, Ralph & Co., Philadelphia, Pa. "Ralph's Scotch Snuff"	1,366	Jan. 22	13	125
Same..... "Ralph's Carolina Snuff"	1,367	Jan. 22	13	125
Same..... "Scotch Snuff of a Very Superior Quality"	1,368	Jan. 22	13	125
Same..... "Ralph's Scotch Snuff"	1,369	Jan. 22	13	125
Same..... "Stewart, Ralph & Co., Manufacturers of Scotch Snuff"	1,370	Jan. 22	13	125
Stone, R. T., and J. Friend, Petersburg, Va. "Cook's Root and Herb Alterative"	1,549	May 21	13	918
Stuart, C. R., Cleveland, Ohio. "Hop Tonic"	1,569	June 11	13	1048
Swart, O. A., Margaretville, N. Y. "English Feed for Horses and Cattle"	1,539	May 14	13	872
Sweetser, F., New York, N. Y. "Hillsdale M. 'T.' G. Company"	1,540	May 14	13	872
Sylvester & Dunn, San José, Cal. "Sylvester's Cure for Neuralgia and Diphtheria"	1,371	Jan. 22	13	125
Tarr, C. A., Biddeford, Me. "Tarr's Pain Cure"	1,476	Apr. 9	13	638
Tennessee Manufacturing Company, Nashville, Tenn. "Rock City Sheeting"	1,525	May 7	13	820
Thompson & Bedford, New York, N. Y. "Mineral Olive Oil"	1,486	Apr. 16	13	678
Thomson, Langdon & Co., New York, N. Y. "The Never-Break Corset-Clasp"	1,382	Jan. 29	13	180
Same..... "The Amazon Steel"	1,447	Mar. 12	13	458
Townsend, Wilson & Co., Providence, R. I. "Wilson's Salicyliated Pure Castile Soap"	1,506	Apr. 30	13	774
Same..... "Wilson's Carburetted Acid Phosphate, &c"	1,507	Apr. 30	13	774
Walcott, E. H., Natick, Mass. "Walcott's Remedy for Pain"	1,373	Jan. 22	13	125
Walz, A., New Orleans, La. "Malakof Bitters"	1,543	May 14	13	872
Wardwell, L. E. (See Howard and Wardwell.)				
Warner & Co., W. R., Philadelphia, Pa. "Parvules"	1,467	Apr. 2	13	598
Warrock, L., Jacksonville, Fla. "Florida Orange Marmalade"	1,593	June 25	13	1130
Wells, S. C., Leroy, N. Y. "Shiloh's Belladonna Plaster"	1,403	Feb. 12	13	278
Wenck & Beltor, New York, N. Y. "Wenck's American Cologne"	1,422	Feb. 19	13	326
Western File Company, (limited,) Beaver Falls, Pa. "Economy Works, Cast-Steel Files"	1,478	Apr. 9	13	638
Same..... "Western File Works"	1,479	Apr. 9	13	638
Same..... "Beaver File Works"	1,480	Apr. 9	13	638
Same..... "Western Files"	1,497	Apr. 23	13	730
Same..... "Beaver File Works"	1,498	Apr. 23	13	730
Same..... "Economy Works, Superior Files"	1,499	Apr. 23	13	730
Western Manufacturing Company, San Francisco, Cal. "No. 1 Laundry Blueing, &c"	1,477	Apr. 9	13	638
Same..... "Edwards' Superior Laundry Blueing"	1,542	May 14	13	872
Whipple & Co., W. W., Portland, Me. "Wallingford's Garget Cure"	1,562	May 28	13	970
Whitlock, P., Richmond, Va. "Whitlock's Key West"	1,526	May 7	13	820
Wicks & Co., W., New York, N. Y. "La Eminengia"	1,557	May 28	13	970
Same..... "May Queen"	1,591	June 25	13	1130
Willard, O. J., Mayville, N. Y. "The Chautauqua Tin-Lined Butter Package"	1,509	Apr. 30	13	774
Williams & Co., M. F., Gettysburg, Pa. "Williams' Vegetable Pain Exterminator"	1,581	June 18	13	1084
Williams & Moore, Stockton, Cal. "Williams & Moore's Mexican Insect-Powder"	1,592	June 25	13	1130
Willimantic Linen Company, Hartford, Conn. "Willimantic Six-Cord, Warranted 200 Yards, White, 12"	1,383	Jan. 29	13	180
Same..... "American Silk-Finish Spool-Cotton"	1,384	Jan. 29	13	180
Same..... "Reid's Six-Cord Thread"	1,385	Jan. 29	13	180
Wood, M. M., Brooklyn, N. Y. "Wood's Saccharine Antiseptic"	1,404	Feb. 12	13	278
Woodard, H. S., Bloomington, Ill. "Dr. Z. Waters' Indian Vegetable Cathartic and Liver Pills"	1,344	Jan. 1	13	8
Same..... "Dr. Z. Waters' Raspberry Balsam"	1,345	Jan. 1	13	8
Same..... "Dr. Z. Waters' Honey Balsam"	1,346	Jan. 1	13	8
Worden, H., New York, N. Y. "The Fashionable Ink, Perfumed"	1,580	June 18	13	1084
Zentgraf, C. F., New York, N. Y. "Nuremberg Ultramarine Works, Wash Blue in Balls"	1,336	Jan. 1	13	8
Ziegler, P. W., and M. W. Case, Philadelphia, Pa. "Doctor Case's Cough Cordial"	1,527	May 7	13	820
Same..... "Doctor Case's Liniment and Cancer Cure"	1,528	May 7	13	820
Same..... "Doctor Case's Liver Remedy"	1,529	May 7	13	820
Zinsser & Co., W., New York, N. Y. "Preserving Fluid for Bottle and Export Lager Beer and Ale"	1,360	Jan. 15	13	11

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Allen, H. R., Indianapolis, Ind. Limb receiver and pump	170,217	Jan. 28, 1878	13	125
Edwards, O., Florence, Mass. Skate	192,643	May 9, 1878	13	875
Page, C. G., deceased, P. W. Page, Washington, D. C., administratrix and assignor of one-half interest to Western Union Telegraph Company, New York, N. Y. Induction-coil apparatus and circuit-breaker	4,588	June 8, 1878	13	872
Potter, T. O., assignor to A. Nichols, Boston, Mass. Suspenders	194,616	Jan. 9, 1878	13	8
Root, S. C., Bristol, Conn. Clock-dial	6,580	Dec. 28, 1877	13	8
Stuart, D., Philadelphia, Pa. Kettle	4,865	May 27, 1878	13	918

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OF THE

UNITED STATES PATENT OFFICE.

VOLUME XIV.

JULY 2 TO DECEMBER 31, INCLUSIVE,

1878.

WASHINGTON:
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1879.

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ERRATA.

On page 37, No. **205,670,** in heading, inventor's name, for "Murdock" read *Murdoch.*
On page 44, No. **8,319,** (reissue,) first claim, fifth line, strike out "substantially as and;" fourth claim, fourth line, strike out same words.
On page 65, No. **205,831,** in heading, assignee's name, for "Orvis" read *Oris.*
On page 129, No. **206,215,** in heading, assignee's name, for "John" read *Jehu.*
On page 211, No. **206,695,** in heading, assignee's name, for initial letter "R." read *K.*
On page 245, No. **206,914,** title, for "Treadles" read *Treadle-Motions.*
On page 246, No. **206,930,** for "ammonia, alum" read *ammonia-alum.*
On page 287, No. **207,213,** inventor's name, for "Share" read *Share.*
On page 291, No. **207,244,** residence of inventor, for "Baraboo" read *Sauk City.*
On page 332, No. **207,506,** in claim, first line, for reference-letter "E" read *A.*
On page 357, No. **207,618,** in claim, for "needle-guide" read *thread-guide.*
On page 366, No. **207,713,** in heading, after "assignors to" insert *themselves and.*
On page 377, in decision of U. S. Circuit Court, District of New Jersey, for George B. "Tussell" read George B. *Turrell.*
On page 457, No. **208,261,** add to title, after "Steam-Boilers" *and Steam-Pipes.*
On page 488, add to list of labels: 1,707.—Title: "SYRUP OF DOVER'S POWDER."—*W. L. Gregory,* Buffalo, N. Y. — Application filed September 25, 1878.
On page 510, No. **208,613,** inventor's name, for "Frederick" read *Fredrick.*
On page 670, No. **209,537,** in title, after "Ill." insert *assignor of one-half his right to W. H. Earls, of same place.*
On page 805, No. **210,309,** title, for "weather-strips" read *combined sash-lock and weather-strips.*
On page 816, No. **210,370,** assignee's name, for "Hem" read *Henn.*
On page 830, No. **210,436,** last date in title, for "1873" read 1878.
On page 837, No. **210,487,** assignee's name, for "Maish" read *Marsh.*
On page 880, No. **210,720,** in heading, for "assignor of one-half their right to George E. Southard" read *said Southard assignor of all his right, viz: one-third, and said Hallock and Crowell assignors of one-fourth, each, of their right (all jointly assigning an undivided one-half interest in said invention) to George E. Southard.*
On page 891, No. **210,800,** in heading, after "Pa." insert *assignor to The United States Patent Company, (limited,) of Philadelphia, Pa.*
On page 975, No. **210,896,** fourth claim, third line, for "specific" read *epicyclic.*

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, &c.

OFFICIAL GAZETTE—July—December, 1878.

DIGEST OF DECISIONS.

[The names of court cases are designated by an asterisk, (*).]

ABANDONMENT.

1. No period of delay *per se* is sufficient to deprive an inventor of his patent.

[Berlug *vs.* Haworth, 117.

2. After invention perfected long delay in applying for patent will not defeat the inventor's rights, it being clear from the attendant circumstances that there was no intention to abandon and no abandonment in fact of the invention.

[*Sprague *et al. vs.* Adriance *et al.*, 308.

3. Nor is it material to the right of protection that in the interval of delay other inventors have devised and patented the same thing, this being wholly without the knowledge or acquiescence of the first inventor.

[*Ibid., 308.

4. Even if it were otherwise, and his conduct operated as an estoppel, whether his assignees, without notice, could be likewise concluded, *Quære?*

[*Ibid., 308.

5. The case distinguished from *Fruit Jar Company* vs. *Wright*, (4 Otto, 96,) wherein the inventor was silent, although cognizant of the use of the invention by others, the further distinction being that in the former case there was public use and sale for more than two years prior to the filing of the application to affect the validity of the patent.

[*Ibid., 308.

6. Mere delay in applying for patent after invention made, works no forfeiture of right.

[*Kelleher *et al. vs.* Darling, 673.

7. After final rejection upon the merits and no appeal taken, unimportant amendments or mere requests for reconsideration will not save the case from abandonment under the statute.

[B. H. Jenks, 747.

8. Simpson filed application papers for patent, but without model or the payment of the fee, in January and February, 1848, the invention involving the coating of a metallic wire with gutta-percha for electrical insulation. Thereafter another application for the invention was filed by him, in all respects complete, (June, 1849,) which was rejected by the Examiner in October, 1849. January 21, 1851, Simpson, upon request made, received a refund of twenty dollars, balance of fee, as allowed by law if a case be withdrawn after first rejection. In December, 1858, a new application was filed by Simpson, which was refused by the Commissioner, on appeal, February, 1859, and still another application, filed October 8, 1859, was finally rejected upon appeal to the Circuit Court for the District of Columbia, April 9, 1861. May 4, 1866, Simpson filed the application upon which the patent issued. *Held*, upon the proofs, that, in spite of poverty and wrongful Office action, Simpson had exercised exemplary diligence in seeking his patent; that in the long interval he had neither actually nor constructively abandoned the invention, and that, as against adverse public use and priority claimants, he was entitled to be treated as a continuing applicant since January, 1848.

[*Colgate *vs.* Western Union Telegraph Company, 943.

9. Where the law allowed the refund of the balance of a fee, upon condition of the withdrawal of a case at a certain stage, Simpson, who received such balance upon request, but without expressly withdrawing the case, or otherwise manifesting such intention, declared not to be prejudiced by the mistaken Office action.

[*Ibid., 943.

(See Public Use; Practice in Patent Office, 2; Trade-Mark, 9, 10.)

AGGREGATION.

(See Invention, 2, 7.)

APPLICATION.

(See Patent, 2; Practice in Patent Office, 1; Prior Invention, 3.)

ARTICLE.

(See Claims, 6; Patents, 2.)

ASSIGNEES.

(See Assignment and License; Abandonment, 4.)

ASSIGNMENT AND LICENSE.

1. A license to the defendants to manufacture the article described in a certain patent held by them will not relieve from the charge of infringement where the device actually made differs somewhat from that set forth in the patent.

[*Miller's Falls Company *vs.* W. A. Ives & Co., 203.

2. The grant of the full and exclusive right to use and sell the invention within a limited territory, the grantor reserving a right (not the exclusive right) to make: *Held*, under all the circumstances, to vest a right to make in the grantees.

[*Hamilton *vs.* Kingsbury & Davis, 448.

3. If the invention could not be made except at the will or after further arrangement with the grantor, then the right to use and sell is valueless, and the consideration paid is without return.

[*Ibid., 448.

4. So, too, if the exclusive right to make never left the grantor, the words of reservation retaining in himself a right to make, are useless, and their presence in the deed of conveyance without significance.

[*Ibid., 448.

5. To give effect to every part of the instrument, it was ruled that the exclusive right to make within the territory was enjoyed in common by grantor and grantees.

[*Ibid., 448.

6. "Legal representatives" includes assignees as well as executors and administrators in its terms, under the particular circumstances.

[*Ibid., 448.

(See Trade-Marks, 4, 8.)

CLAIMS.

1. Where claims are clear and explicit, their scope cannot be restricted or enlarged by reference to features or operations not therein expressly mentioned or necessarily implied from the language therein employed.

[Joseph Funk, 158.

2. The retention of old elements in a claim for a combination when there is nothing in common between them and the new ones added by the applicant, is a misstatement of his invention.

[Ibid., 158.

3. Such claims, therefore, rejected on references showing the old elements.

[Ibid., 158.

4. The office of a claim is to clearly and distinctly set forth what an applicant regards to be peculiarly his own invention.

[Ibid., 158.

5. A claim which exceeded in its terms the invention actually made, and anticipated possible future improvements, yet undevised, was disallowed.

[Scott *vs.* Ford *et al.*, 413.

6. The patent being for a new dye product, the article is protected without regard to any one method of manufacture: *Hence* the claim, which included not only the particular processes practiced by the inventors, but "any other method which will produce a like result," is no broader than the actual invention.

[*Badische Anilin and Soda Fabrik *vs.* Higgin *et al.*, 414.

7. Nor does it in effect monopolize a result. The term "result," as used in the claim, taken in connection with the other words, simply means to include any other method than that of the patent, which will obtain a like product resulting. It is something tangible, and not a mere idea.

[*Ibid., 414.

(See Infringement, 1; Practice in Courts, 12; Reissue, 3.)

COMBINATION.

(See Claims, 2; Invention.)

COMMISSIONER OF PATENTS.

The office of Commissioner of Patents does not disqualify the individual from obtaining a patent thereafter for an invention made while holding office.

[*Foote *vs.* Frost *et al.*, 860.

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(See Labels.)

DAMAGES AND PROFITS.

1. Where an invention is confined to improvements in machine details it is necessary in accounting to distinguish between profits arising from the sale of the completed machine and those which are justly due to the use of the patented details.

[*Garretson *vs.* Clark *et al.*, 485.

2. Other features than those infringed, equally essential and beneficial, may contribute to the value of the organized machine; *Hence*, in any just estimate, these should be eliminated and the inquiry directed to the benefit of the infringed elements considered alone.

[*Ibid., 485.

3. Nor is it any true measure that the machine, as improved, commands a virtual monopoly of the market. Other circumstances quite aside from the value of the added improvements may tend to give them a fictitious importance.

[*Ibid., 485.

4. Accordingly, where the plaintiff proved nothing but the profits of the finished machine, and it was not shown that these were due entirely to the presence of the patented details, nominal damages alone were awarded.

[*Ibid., 485.

5. In every case reliable and tangible evidence must be given tending either to apportion the profits and damages between the patented and unpatented parts, or else, if these be calculated upon the entire machine, then it must clearly appear that the value of the machine as a marketable article is properly and legally attributable to the patented features.

[*Ibid., 485.

6. Whatever distinctive profit belongs to the use of the patented improvement, the plaintiff is entitled to recover.

[*Schillinger *vs.* Gunther, 713.

7. But where the *quantum* of such profit is not shown affirmatively by license-fee or otherwise, and it does not appear that the profits of infringing manufacture are wholly due to the use of the improvement, nominal damages alone can be awarded.

[*Ibid., 713.

8. Certain findings of the master accordingly overruled, the profits of manufacture not being apportioned between those arising from the general character of the pavement and those pertaining to the use of the specific improvement patented.

[*Ibid., 713.

9. In a suit in equity for the infringement of a patent by the use of the patented invention, the patentee is entitled to recover the profits resulting to the infringer from the use of the invention.

[*Knox *et al. vs.* Great Western Quicksilver Mining Company, 897.)

10. In such case the patentee is not limited in his recovery in equity to the amount of the royalty established by him for the use of his invention.

[*Ibid., 897.

11. The profits which the patentee is entitled to recover in equity from the infringer by use of the patented invention are not the profits of the business, but the value of the advantages derived by the infringer from the use of the invention over what he would have by the use of other machines then known and open to the public, and adequate to produce an equally beneficial result.

[*Ibid., 897.

12. The fact that the general result of the business is unprofitable does not affect the recovery. The question is, What advantage in the reduction of cost, &c., has been derived from the use of the invention?

[*Ibid., 897.

13. The account should be extended to the time of the taking, including the profits resulting from the use of the invention, whether by means of the particular machine in use at the time of the commencement of the suit, or of others subsequently constructed and used.

[*Ibid., 897.

14. For the purposes of an account of profits, the comparison of the invention should be made with other machines in existence, or known, and open to public use at the time of the infringement complained of, and not with machines subsequently invented, or for the first time constructed or known, or machines not open to public use.

[*Ibid., 897.

DEGREE.

(See Invention, 6.)

DESIGNS.

To constitute a new design, that would be patentable as such, it must be so different from all others existing before as to appear to be such to ordinary observers.

[*Perry *et al. vs.* Starrett, 599.

(See Infringement, 16; Particular Patents, 29, 30, 31.)

DILIGENCE.

(See Abandonment; Interference, 1.)

DISCLAIMER.

The disclaimer has no relation to the statements of effect or result contained in the specification, but simply concedes that certain subject-matter stated is not of the invention of the patentee.

[*Schillinger *vs.* Gunther, 713.

(See Reissue, 5.)

DOUBLE USE.

(See Invention, 2, 4; Particular Patents, 39, 41.)

DUPLICATION.

(See Infringement, 7; Invention, 1.)

ESTOPPEL.

1. An interference in the Patent Office in which priority of invention was awarded against the patent in suit does not conclude the complainant from maintaining his action thereon. The question before the Office did not directly concern the existing patent, but whether another should issue to the contesting applicant, and however it might be were the parties the same, since the respondent here was a stranger to the former proceeding, there is no estoppel.

[*Perry *et al. vs.* Starrett, 599.

2. The objection of estoppel or *res judicata* urged by each party to the suit against the other, because of prior controversies, not maintained. The requisite identities of cause of action, parties to the suit, character or quality of the parties, and subject-matter in contest not existing between the present and the preceding cases.

[*Blackwell & Co. *vs.* Dibrell & Co., 635.

(See Abandonment, 4.)

EQUIVALENTS.

1. The term "equivalents" in the claims being construed with reference to the essential characteristics of the invention set forth in the specification relieves the patent from the objection of lack of novelty. The prior devices accomplish the same result by different means, and are not "equivalents" under the limitation.

[*Miller's Falls Co. *vs.* W. A. Ives & Co., 203.

2. Celluloid and rose pearl held to be the substantial equivalent of the hard rubber or vulcanite in all essentials necessary to the successful practice of the invention, and their use a violation of the rights under the Cummings patent.

[*Goodyear Dental Vulcanite Co. *et al. vs.* Preterre, 346.

3. The facts established by the evidence in relation to such equivalency being different from those appearing in *Goodyear Dental Company* vs. *Davis et al.*, (12 OFFICIAL GAZETTE, 561,) that case not deemed to be in point, although it declared the non-equivalent character of celluloid.

[*Ibid., 346.

4. It is now well settled that the patentee or owner of a patent for a combination is as much entitled to equivalents as the patentee or owner of any other class of inventions. By an equivalent in such a case it is meant that the element or ingredient substituted for the one withdrawn performs the same function as the other, and that it was well known at the date of the patent in question as a proper substitute for the one omitted in the patented combination.

[*American Whip Co. *vs.* Lombard, 900.

(See Infringement, 15; Joint Invention, 2; Prior Invention, 2.)

EXPIRATION OF PATENTS.

1. Patents granted under the act of March 2, 1861, remain in force for the full term of seventeen years. A prior foreign patent for the same invention does not operate to abridge the duration of the grant.

[*Quinby *vs.* Randall *et al.*, 748.

2. By the provisions of the patent act of July 8, 1870, Congress never intended to extend the term of the domestic patent beyond the legal term secured to the foreign patentee when the domestic patent was granted.

[*Henry *vs.* Providence Tool Co., 855.

3. *Hence*, Letters Patent No. 119,846, granted Alexander Henry, October 10, 1871, for improvement in rifled fire-arm, expired by limitation of law with the original English patent, granted for fourteen years from November 15, 1860.

[*Ibid., 855.

4. The prolongation of the English patent for a further term after the expiration of the original does not save the domestic patent from lapsing under the statute.

[*Ibid., 855.

EVIDENCE.

(See Damages and Profits, 5; Practice in Courts; Priority of Invention; Public Use; Reissue, 1.)

FOREIGN PATENT.

(See Expiration of Patent.)

GRANT.

(See Assignment and License.)

IMPROVEMENTS.

(See Damages and Profits, 1, 3; Infringement, 9, 14.)

INFRINGEMENT.

1. As the described invention related strictly to grain-drills in which a toothed or fluted cylinder revolves within the seed-cup to distribute the grain, the claims were correspondingly construed, and drills with revolving wheels or disks declared to be beyond the scope of the patent.

[*Moore *et al. vs.* Thomas, Ludlow & Rogers, 1.

2. A loose shaft passing axially through the seed-cylinder, and having a short bearing against it near one end, there being also a short external bearing of the cylinder against the side of the seed-cup, (Moore patent of 1860,) is not infringed by a shaft which journals within a hub attached to a seed wheel or disk, the hub bearing externally against the case side.

[*Ibid., 1.

3. The wheel and its hub do not constitute a cylinder in the strict sense, and it is unimportant whether the shaft-bearing extends the full length of the hub or not. Since the invention of the patentee is a cylinder in which the shaft-bearing must be for only a short distance of the cylinder length, the two devices are materially different.

[*Ibid., 1.

4. Nor is it an infringement where the shaft bears for the full length of the seed-wheel and that of the loose hub or thimble contiguous to it.

[*Ibid., 1.

5. The invention of the patentee under which the defendants manufacture having been completed at about the date of that contained in the complainants' patent, and there being no lack of diligence in applying for protection, the court construed complainants' patent strictly to avoid infringement and to sustain both grants.

[*Ibid., 1.

6. The slight bevel of incline given the hub of the defendants' seed-wheel is an incident of the method of casting, and has no function when the hub and wheel are in operation. It does not infringe the complainants' machine wherein the end bearing of the cylinder is designedly beveled for a specific purpose and to effectively aid its working.

[*Ibid., 1.

7. Though the defendants' machine had but a single graver or cutting-tool, while that of the complainants carried a set of three hundred and twenty-four, yet as the manner of cutting—the *modus operandi*—of the two machines was essentially the same, infringement was decreed.

[*Hart, Bliven & Mead Manufacturing Co. *vs.* Sargeant & Co., 45.

8. Differences which are merely formal, not affecting the substantial principle of operation of the machine, held not sufficient to avoid liability from unlicensed use.

[*Ibid., 45.

9. The principle of the invention, the construction of the device by the same general mechanical means being retained by the defendants, infringement occurs, notwithstanding they may make a more perfect instrument.

[*Miller's Falls Co. *vs.* W. A. Ives & Co., 203.

10. It is an infringement even though other devices may be employed in conjunction to supplement the functions of the plaintiff's mechanism, aside from these the mechanism of the two parties being substantially the same.

[*Sprague *et al. vs.* Adriance *et al.*, 308.

11. To repair a dental plate made according to the Cummings patent (Reissue No. 1,904) by the substitution of a new for an old portion, with teeth embedded, is an infringement of the patent.

[*Goodyear Dental Vulcanite Co. *vs.* Preterre, 346.

12. Such repairs, which in fact practice the entire invention, (the patent not being confined to any size or shape of plate) distinguished from those cases wherein defective machine parts are corrected or changed without damage.

[*Ibid., 346.

13. So, too, it is an infringement of the patent if the teeth be embedded in rubber according to its terms, although the remaining portion of the base-plate be made entirely of gold.

[*Ibid., 346.

14. That the original invention has been supplanted in the trade by the improved device of the defendant is no test of non-infringement. In so far as he may use the invention, even though it be in connection with his own additions, which have rendered it of such increased value, he is liable.

[*Turrell *vs.* Spaeth, 377.

15. It is an equivalent means and an infringement of the Lovatt patent to use a lever and an eccentrically-pivoted cam in lieu of the longitudinal adjusting-screw in effecting the simultaneous movement of the sole and heel clamps of the skate.

[*Turrell *vs.* Spaeth, 377.

16. Infringement of a design patent may exist notwithstanding that the alleged infringing article is made to carry a distinguishing name or distinguishing marks of other character.

[*Perry *et al. vs.* Starrett, 599.

17. A fastening for metal boxes in which a projection struck out from the box-body snaps into a corresponding indentation in the rim or cover is infringed by a fastening wherein a perforation in the rim is substituted for the indentation.

[*Parker *vs.* Remhof, 601.

18. The sides of the perforation are the same in function with the indentation, and the two fasteners mechanical equivalents.

[*Ibid., 601.

19. A change of location of a part in a patented combination, where there is no new function performed by the changed member in its new location, will not evade a patent.

[*Knox *et al. vs.* Great Western Quicksilver Mining Co., 897.

(See Assignment and License, 1; Damages and Profits; Particular Patents.)

INTERFERENCE.

1. Diligence on the part of an inventor first to conceive is only to be considered in view of the efforts of another, who, although second to conceive the invention, is the first to reduce it to practice.

[Bering *vs.* Haworth, 117.

2. Questions as to patentability of issue, non-interference, and alleged new matter in the claims of the reissue applicant, raised for the first time at final hearing, and then without special motion respecting them, are regarded with little favor.
[Davis *vs.* Schaff, 345.

3. Since the reissue applicant had been an applicant for original patent at the same time with the contesting patentee, the latter is without benefit in relation to the character of the proof offered, contrary to the Office rule which ordinarily prevails when an applicant is in interference with a prior patent.
[Ibid., 345.

4. An interference is proper which includes several parties having substantially the same combination of parts, although these parts may be differently designated or named by the contestants.
[Hoe *et al. vs.* Scott, 447.

5. Where the testimony of the successful interference contestant was thought to disclose the statutory bar of public use, the case was remanded to the Primary Examiner, so that if rejected by him the party might pursue his remedy of appeal.
[Quimby *vs.* Randall *et al.*, 748.

6. In interferences in trade-mark cases Office Rule 86 and section 4939, Revised Statutes, do not restrict the Office to the determination of the question of priority of adoption, but all evidence pertinent in showing ownership in a trade-mark is to be received and considered.
[Hoosier Drill Co. *vs.* Ingels, 785.

7. No analogy between trade-marks and patents, or applications for patents, is created by the phrase "priority of invention" occurring in section 4904 Revised Statutes. Neither prior invention, use, or adoption is necessary to entitle one to the registration of a trade-mark, if the same mark on same class of goods has not been registered or received for registration.
[Ibid., 785.

8. Section 4944 Revised Statutes, providing for an action on the case for making in the Patent Office a false and fraudulent entry respecting a trade-mark, does not supersede or obviate the necessity of an interference proceeding.
[Ibid., 785.

9. An admission of public use, in the statement, more than two years prior to filing application concludes the interference if the opponent be a patentee; but if there be other applicants to the contest to be affected by such admission, proofs must be taken that their rights may be preserved.
[J. W. Wheat, 787.

(See Estoppel, 1; Preliminary Statement.)

INVENTION.

1. There is no invention in arranging the completed device, in series, upon a single machine-frame, the device itself being old.
[*Moore *et al. vs.* Thomas, Ludlow, and Rogers, 1.

2. The employment of an old instrument to perform in its new location its usual function, and not modified in its operation by its new relations, is a mere double use.
[E. Campbell, 83.

3. However important, convenient, and satisfactory the results may be which are thus accomplished, such an arrangement is not an invention.
[Ibid., 83.

4. The particular furnace construction being substantially old for other ores, and the process, in a metallurgic sense, old for mercury ores, to introduce these latter ores into the furnace in like manner and with the same furnace-effects as when other ores are treated, involves no invention.
[Huttner & Scott *vs.* Knox & Osborn, 118.

5. A claim of such scope and character included in the interference was accordingly rejected.
[Ibid., 118.

6. A metallic lath with alternating elevations and depressions of a retaining shape being old, it is no invention to simply give to one of the depressions a greater curve to better retain the mortar as against expansion of the lath, &c.
[C. H. Carter, 201.

7. Distinct mechanisms producing by their co-operation, in a single organized machine, new and highly useful results, constitute a patentable combination and not a mere aggregation.
[Scott *vs.* Ford *et al.*, 413.

8. Old elements newly combined to produce distinctive effects are not anticipated by prior organizations of the same elements accomplishing substantially different results, even though the language of the claim may construe with equal facility to cover each particular combination.
[Hoe *et al. vs.* Scott, 447.

9. The introduction of a flavoring-extract, whether in substitution of another or as an additional ingredient of a beverage composition otherwise well known, may be a patentable improvement if new and advantageous results follow.
[*Rogers *vs.* Ennis, 601.

10. It is substantially a new composition of matter, and as such may be protected.
[*Ibid., 601.

11. It is not invention to change one well-known material for another, or to apply a well-known process, without some adaptation, more than every skilled mechanic could apply to a new art or subject; but a change in the form of a machine or instrument, though slight, if it works a successful result, not before accomplished in a similar way in the art to which it is applied, or in any other, is patentable.
[*Isaacs *vs.* Abrams, 861.

JOINT INVENTORS.

1. The scope of a joint invention, and of a patent founded thereon, ascertained and limited in view of pre-existing devices which had been produced by one of the joint inventors.
[*Hopkins & Dickinson Manufacturing Co. *vs.* Corbin *et al.*, 3.

2. Even though they may be equivalents, the joint invention should not be made to relate back and include the pre-existing devices, which were the sole invention of one of the joint patentees.
[*Ibid., 3.

3. The case might be different were the joint invention, like those preceding, made by but one of the parties, and there was nothing in the language of his patent or in his actions as to public use, &c., to preclude their acceptance as equivalents.
[*Ibid., 3.

4. A patent issued to joint applicants for an invention actually made by but one of them is absolutely void.
[Barsaloux, James & Lyon, 233.

5. Once issued it cannot be rendered valid by any act of the parties or of the Patent Office.
[Ibid., 233.

(See Particular Patents, 25.)

JURISDICTION.

1. The Circuit Court of the United States has jurisdiction of a suit in equity instituted in said court, to restrain the infringement of a trade-mark registered in accordance with the provisions of act of Congress of July 8, 1870, (16 Stats. at Large, chap. 230,) irrespective of the residence of the parties to the suit.
[*Durrell *vs.* Bohmer, 270.

2. The fact that both complainant and respondent are citizens of the same State does not deprive the court of jurisdiction.
[*Ibid., 270.

3. The act of July 8, 1870, (16 U. S. Stats. at Large, chap. 230,) and of March 3, 1875, (18 Stats. at Large, part 3, chap. 137, sec. 1,) construed with reference to said jurisdiction.
[*Ibid., 270.

4. A foreign corporation without charter from a State, but transacting business therein and amenable to the process service of its courts in accordance with local law, is *found* within the State in the sense of the judiciary acts, and may be sued in the United States Circuit Court.
[*Williams & Albright *vs.* Empire Transportation Co. *et al.*, 523.]

LABELS.

The use of a label in the sale of the merchandise it is intended to designate prior to the registry of such label in the Patent Office amounts to a publication thereof, and is a defeat of right agreeably to the provisions of the copyright law, of which the label act of June 18, 1874, is a part.
[*Marsh *et al. vs.* Warren, *et al.*, 678.

LACHES.

(See Abandonment; Trade-Marks.)

LEGAL REPRESENTATIVES.

(See Assignment and License, 6.)

LICENSE.

(See Assignment and License.)

LOCATION OF PARTS.

(See Infringement, 19; Invention, 2.)

MATERIAL.

(See Equivalent, 2; Invention, 9, 10, 11; Particular Patents, 10, 44.)

MISJOINDER OF INVENTORS.

(See Joint Inventors, 4, 5.)

MODEL.

(See Prior Invention, 4; Reissue, 1, 4.)

PATENTS.

1. It is what was known at the date of completed invention, and not when the application was filed, which fixes the scope of a patent.
[*Sprague *et al. vs.* Adriance *et al.*, 308.

2. The process of making and the article made are, in legal contemplation, distinct inventions. Both may be included in a single patent, but none the less the need of a full, clear, and exact description, according to the statute, is indispensable in each case.
[*Kelleher *et al. vs.* Darling, 673.

(See Expiration of Patent; Joint Invention, 1, 4, 5; Prior Invention, 4.)

PARTICULAR PATENTS.

AMIDON—*Bit-Stock.*

1. The novelty of Letters Patent No. 73,279, granted C. H. Amidon, January 14, 1868, for "improvement in bit-stock," sustained. The patent of Amidon is not anticipated by that of Dexter H. Chamberlain, granted in 1854 for an awl-holder. The Chamberlain device is not only different in purpose, but is lacking in the peculiarities which distinguish the Amidon bit-stock.
[*Miller's Falls Co. *vs.* W. A. Ives & Co., 263.

BARKER—*Buckets for Chain-Pumps.*

2. A solid rubber chain-pump bucket bearing tightly upon the well-tube bore, with slightly convex (hemispherical) upper surface, and with a drip-hole through the bucket length (Reissue No. 6,531, W. C. Barker, July 6, 1875) is infringed by a solid cylindro-conical metal bucket having a like drip-hole and incased in a rubber covering; the cylindrical portion of the bucket fitting the tube-bore, while the cone is superposed. (Patent No. 160,125, D. F. Stowe, February 23, 1875.)
[*Barker *vs.* Stowe, 559.

3. In both the contour and elasticity of the bucket permit ready adjustment to irregularities in the tube and hold it in place with the pump at rest, while the drip-hole allows the retained water to escape below.
[*Ibid., 559.

4. It is of no moment that the perforation in defendant's bucket being nearer the bearing-rim insures the more complete discharge of the water. The function is not different in the new position, nor does the change involve more than mechanical skill.
[*Ibid., 559.

5. Plaintiff's patent (Reissue 6,531, original No. 116,138, June 20, 1871,) declared void by reason of prior knowledge and public use of a bucket possessing the substantial characteristics of that set forth and claimed.
[*Ibid., 559.

BARNES—*Corset-Spring.*

6. Patent No. 56,345, granted to S. H. Barnes, July 17, 1866: *Held* to be invalid by reason of public use.
[*Egbert *vs.* Lippman *et al.*, 822.

CUMMINGS—*Artificial Gums and Palates.*

7. Cummings patent (Reissue No. 1,904) construed to include celluloid and rose-pearl as equivalents.
[*Goodyear Dental Vulcanite Co. and Bacon *vs.* Preterre, 346.

CUMMINGS—*Catch for Spectacle-Cases.*

8. Letters Patent No. 26,891, granted George N. Cummings, January 24, 1860, (extended 1874,) for improved catch for spectacle-cases, are valid, and are not anticipated by the previous state of the art.
[*Parker *vs.* Remhof, 601.

FOOTE—*Wire Bag-Fastener.*

9. The patent of the complainant (No. 135,809) is for a wire bag-fastener. A patent of prior date (No. 57,947, August, 1866,) to his invention, setting forth a device of similar structural plan, but made of a slotted metal plate instead of wire, and intended as a fastener for the lacings of shoes and corsets: *Held*, under the circumstances of the case, not to affect his patent.
[*Foote *vs.* Frost *et al.*, 860.

10. The shoe-lace fastener was not shown to be practicable, and this, too, although the place of suit rendered such evidence more than usually accessible. Its absence, with operativeness disputed, deemed significant, and the substitution of wire for the metal plate to be more than a mere change of material. If the first working device thereby resulted, then the prior invention did not anticipate that of the complainant.
[*Ibid., 860.

GRAEBE & LIEBERMANN—*Dyes.*

11. Artificial alizarine differs essentially from the chemically pure alizarine of the laboratory and from the alizarine of the madder plant. Additional coloring principles of distinctive character are contained which render the composite product a novel one.
[*Badische Anilin and Soda Fabrik *vs.* Higgin *et al.*, 414.

12. Reissue Letters Patent No. 4,321, (Div. B,) granted Graebe and Liebermann for improvement in dies or coloring matters from anthracene, April 4, 1871, are for the same invention as the original patent, and are valid.
[*Ibid., 414.

HENRY—*Rifled Fire-Arms.*

13. Letters Patent No. 119,846, granted to Alexander Henry, October 10, 1871, expired by limitation of law with English patent, granted for fourteen years from November 15, 1860, and the same was void by reason of prior public use.
[*Henry *vs.* Providence Tool Co, 855.

HOLLY—*Water-Supply Regulator.*

14. Reissue Letters Patent No. 5,132, granted to Birdsill Holly, is for the same invention as that contained in the original patent, and is valid.
[*Holly *vs.* Union City, 5.

HORTON—*Auger-Handle.*

15. The scope of Reissue Letters Patent No. 4,187, granted Miller's Falls Company's assignees, November 29, 1870, (original patent No. 35,856, J. M. Horton,) for "improvement in auger-handle," defined.
[*Miller's Falls Co. *vs.* W. A. Ives & Co., 263.

HULL—*Gage-Lathe.*

16. Patent No. 53,003, to L. Hull, for gage-lathe, and reissue of same, No. 7,262, construed and sustained.
[*American Whip Co. *vs.* Lombard, 900.

17. The invention, consisting chiefly in the combination, in a machine for shaping whip-stocks, of a holding and feeding mechanism with revolving cutters having their axis of rotation at right angles, or nearly so, to the axis of the stocks, and of guides for directing and controlling the action of the cutters, as described in the specification and shown in the drawings, is infringed by a machine in which numerous blades are substituted for the burrs of the patentee, and where a formal change merely is made in the clamping and advancing mechanism by combining the two in one apparatus instead of performing the operation by two separate devices.
[*Ibid., 900.

ISAACS—*Railway-Track Brooms.*

18. Patent No. 180,717, to M. C. Isaacs, in which the claim is for "a railway-track broom, constructed with a brush of uneven face—that is, one portion of the brush longer than the other"—sustained.
[*Isaacs *vs.* Abrams, 861.

JONES—*Graduating Carpenters' Squares.*

19. The second claim of Reissue Letters Patent No. 5,408, granted the Hart, Bliven & Mead Manufacturing Co., assignees, May 13, 1873, is invalid. That the gravers, in graduating the carpenter's square, commence at the measuring-edge and advance across the face of the square is an invention anticipated by Letters Patent of Heman Whipple, No. 16,817, granted March 17, 1857.
[*Hart, Bliven & Mead Manufacturing Co. *vs.* Sargeant *et al.*, 45.

20. The novelty of the third, fifth, and sixth claims of the reissue patent, and their infringement by the machine described in Letters Patent of Charles S. Bennett, June 14, 1870, (1) determined.
[*Ibid., 45.

KELLEHER AND RANDLETT—*Boot and Shoe Pacs.*

21. The process of smooth-crimping the instep of a moccasin-pac, (claim 4, Reissue Letters Patent No. 6,098, granted Kelleher and Randlett, October 27, 1874,) by manipulating the tip and front pieces of the pac in the act of sewing them together with a flat seam in such manner that the dissimilar edges of the two pieces shall coincide beneath the needle, is an invention not contemplated in the original patent, (No. 122,030, December 19, 1871,) and the reissue is so far invalid.
[*Kelleher *et al. vs.* Darling, 673.

22. That an expert in attempting to unite the parts of the pac by

lap-seams, according to the invention set forth, might discover the means or manipulation necessary to produce the smooth crimp will not justify a claim therefor, the original patent failing to disclose any such invention.

[*Ibid., 673.

LOVATT—*Skates.*

23. Reissue Letters Patent No. 7,151, granted G. B. Tussell, assignee, May 30, 1876, for "Improvement in Skates," are valid. That the general combination claim of the original patent (No. 28,495, John Lovatt, May 29, 1860,) has been replaced by others containing subdivisions of the combination is no objection, the characteristic features of invention being retained.

[*Turrell *vs.* Spaeth, 377.

24. *Gill vs. Wells* (22 Wall.) contains nothing at variance with, nor any imputation upon, the validity of reissue patents when of this nature.

[*Ibid., 377.

MCGREGOR AND VOLL—*Sash-Fastener.*

25. The invention being joint, (Reissue No. 6,693, October 11, 1875,) construed with reference to prior inventions of one of the joint patentees, and the claim limited accordingly.

[*Hopkins & Dickinson Manufacturing Co. *vs.* Corbin *et al.*, 3.

MOORE—*Seed-Drill.*

26. Letters Patent Nos. 30,685, November 20, 1860, and No. 31,819, March 26, 1861, granted to Hiram Moore, construed. The first mentioned is not infringed by the machine described in patent to Jessup, June 6, 1861, (No. 32,627,) and the last named contains nothing patentable in view of the first.

[*Moore *et al. vs.* Thomas, Ludlow, and Rogers, 1.

NISHWITZ—*Harvesters.*

27. Reissue Letters Patent No. 3,372, granted Frederick Nishwitz, April 13, 1869, (original patent February 10, 1858,) for improvement in harvesters, are valid.

[*Sprague *et al. vs.* Adriance *et al.*, 308.

OSGOOD—*Base-Ball Covers.*

28. The third claim in Reissue Letters Patent No. 7,046, granted to J. H. Osgood April 11, 1876, declared to be invalid. A double cover being old for other game-balls its use in a base-ball, to which the claim had been limited, is merely nothing but ordinary mechanical adaptation.

[*Mahn *vs.* Harwood *et al.*, 859.

PERRY—*Stove Design.*

29. The patent granted to John S. Perry and others, May 26, 1874, for a design for stoves, held to be valid; the *first* claim being interpreted to cover the element of external form as an entirety, without regard to that of the individual parts; the *second*, the element of ornamentation; and the *fifth*, the appearance resulting from the combination of the two elements of form and ornamentation.

[*Perry *et al. vs.* Starrett, 599.

30. These claims were infringed by the unlicensed sale of a stove "having both form and ornamentation so like those to which said claims relate that whether regard be had to such form or to such ornamentation separately, or to the combined effect of the two, the stoves so sold are calculated, by reason of such resemblance, to deprive the complainants of a part of that market to which under their patent they are exclusively entitled."

[*Ibid., 599.

31. The Hecla adjudged to be in appearance substantially like the patented design, (the Argand,) the general effect, both of form and of ornamentation, being the same, notwithstanding minor differences which require study and fixing them in mind to enable a person to tell one from the other when they are not side by side.

[*Ibid., 599.

ROGERS—*Beverages.*

32. Letters Patent of J. J. Rogers, granted July 10, 1877, and December 25, 1877, for beverage compositions, are valid.

[*Rogers *vs.* Ennis, 601.

SCHILLINGER—*Concrete Pavements.*

33. Reissue Letters Patent No. 4,364, granted J. J. Schillinger, May 2, 1871, (original Patent No. 105,599, July 19, 1870,) construed to be, after disclaimer entered March 1, 1875, (VII OFFICIAL GAZETTE, 387,) for a concrete pavement formed in blocks or sections, and with tar-paper or its equivalent interposed in the joints during the process of laying the pavement to make the sections separable.

[*Schillinger *vs.* Gunther, 713.

34. Such joint or separation as might result from the natural shrinkage of contiguous sections in settling is not of the invention; that consists in the *artificial* division consequent upon interposing tar-paper, or, temporarily, a trowel or cutting instrument to fit the joint.

[*Ibid., 713.

SIMPSON—*Insulating Submarine Cables.*

35. Letters Patent No. 65,019, granted G. B. Simpson May 21, 1867 are valid, and construed to be for the use, as a conductor of electricity, of a metallic wire insulated by a coating of gutta-percha.

[*Colgate *vs.* Western Union Telegraph Co., 943.

36. The gist of the invention lies in the discovery of the fact that gutta-percha is a non-conductor of electricity, and in the application of that fact to practical use, by combining gutta-percha with a metallic wire, in the manner and by the means specified, and then using the cable thus formed for conducting electricity along the inclosed wire.

[*Ibid., 943.

37. The simple coating of a metallic wire with gutta-percha to protect it from mechanical abrasion, or for any purpose other than that involving the use of the covered wire as an insulated electrical conductor, is not of the invention.

[*Ibid., 943.

38. *Hence*, the prior existence and use of metallic wires coated with gutta-percha, without knowledge of the electrical insulating quality of the coating, cannot impeach a patent based upon the discovery of that fact, and this, too, notwithstanding the pre-existing wires may be capable of use in the manner contemplated by the patent.

[*Ibid., 943.

39. The use of the coated wire as an electrical conductor was not a mere double use, nor one analogous to any of its uses which had preceded. Nor is the invention lessened because of the known electrical non-conductivity of the genus of substances (gums and resins) to which gutta-percha belongs. The wide range and activity of the search for a superior electrical insulator, suitable for telegraphic purposes, forbids the conclusion that the knowledge of this quality in gutta-percha was a simple deduction from the established characteristics of its genus.

[*Ibid., 943.

40. Equally unsound is the view that the use of gutta-percha instead of india-rubber to insulate a wire is a mere change of material—an obvious substitution without patentable merit. The gutta-percha made the insulation for the first time practically perfect, and the change was not one producing merely the same result, nor was it such as involved simple mechanical skill.

[*Ibid., 943.

SNOW—*Method of Cutting Out Collars.*

41. Patent No. 132,547, to G. K. Snow, for the method of cutting out collars from paper or other suitable material, independent of the means of cutting, in such a way as to bring the wide parts of one series opposite the narrow parts of the adjoining series: *Held* to be void, in view of the fact that linen collars had been cut in this mode by hand long before the date of this invention, and that in various branches of manufacture material had been cut in such a way as to bring the wide part of one article against the narrow part of the next, so as to save material. Even had the limitation contended for been adapted to collars cut from a stock precisely wide enough for his collars, the method would only be a neat application of a well-known operation, and would not be patentable.

[*Snow *vs.* Taylor, 861.

WARNER—*Hubs.*

42. Reissued Letters Patent No. 5,366, granted April 22, 1873, for hub for vehicles are for the same invention as the original letters, (No. 61,900, granted Alma Warner, February 5, 1867,) notwithstanding other and different things are described and claimed, and the invention is a patentable improvement over that of Sarven, which it has been heretofore declared to infringe. (9 *Blatch.*, 524.)

[*E. Hall & Co. *vs.* Jones *et al.*, 378.

WESTHEAD—*Device for Arranging Tapes, Ribbons, &c.*

43. Letters Patent No. 50,518, granted October 3, 1865, to Marcus B. Westhead, are valid for the full term of seventeen years, and are not anticipated by English provisional specification No. 496 of 1863.

[*Goff *et al. vs.* Stafford *et al.*, 748.

PRACTICE IN THE COURTS.

1. In the absence of any proper proof of the right or title of the applicants, and because the affidavit was lacking in that definiteness and particularity necessary to justify a search-warrant, relief by such process, under Sec. 7, Trade-Mark Act of August 14, 1876, denied.

[*J. M. O'Donnell, 379.

2. It is dangerous practice to issue search-warrants against several individuals not associated together, or against their premises because a general sweeping affidavit is made.

[*Ibid., 379.

3. The plaintiff having failed to give adequate evidence as to damages and profits, objections to the admissibility of defendant's proofs become unimportant. They are not called upon to report until the plaintiffs have made out a case. (*Black* vs. *Munson*, Hunt, J., North Circ., N. Y., June 19, 1877.)

[*Garretson *vs.* Clark *et al.*, 485.

4. There being no inadvertence in taking the testimony, it appearing from the record that the inadequacy of the proofs had been excepted to, and no other or further evidence to be offered, a new reference to the master refused.

[*Ibid., 485.

5. A plea to a bill of complaint alleging facts, which if true may show that one of the defendants has no interest in the suit, not overruled, but saved to the defendant to the hearing, then to be considered in the light of the evidence in the case.

[*Williams & Albright *vs.* Empire Transportation Co. *et al.*, 523.

6. A plea in defense, that "the invention named was in public use and on sale more than two years prior to the supposed invention of the complainants," overruled as not within any one of those allowed by statute.

[*Kelleher *et al. vs.* Darling, 673.

7. There being two patents in suit, Reissue 6,098 and 6,099, for boot and shoe pacs, both of which had been introduced by the complainants, thus affording *prima facie* evidence of first and original inventorship, and the respondents having failed to set up separate defenses for the shoe-pac patent as distinct from those for the boot-pac, judgment awarded for complainant without regard to any plea alleged other than that of non-infringement.

[*Ibid., 673.

8. When properly pleaded and proven, the statutory defense "that the invention had been patented or described in some printed publication prior to the supposed invention or discovery" by the patentee to the suit, is sustained, if the conflicting patent, whether foreign or domestic, was duly issued or the complete description was published prior to the date of the patent in contest.

[*Ibid., 673.

9. Parties defending under such statutory provision are not at liberty to set up any date of invention other than that of the patent or publication relied upon. The effect of these as evidence can only be what is given by the act of Congress.

[*Ibid., 673.

10. On the contrary, if the patent in suit be accompanied with the application papers, or if parol proof be submitted, a date of invention much earlier than that arising by presumption from the patent itself may be fixed.

[*Ibid., 673.

11. Where the thing patented is an entirety, the statutory defenses must be addressed to the invention itself, not merely to some one or more of the separate features which it comprises.

[*Ibid., 673.

12. But this does not prevent each patent in suit, or each invention contained therein as set forth in the distinct claims, from being made the subject of separate pleas in defense, if the party so elects.

[*Ibid., 673.

(See Damages and Profits; Jurisdiction; Trade-Marks, 7.)

PRACTICE IN THE PATENT OFFICE.

1. A pending application is in nowise affected by the entry of a second or any subsequent application for the same invention by the same inventor.

[Peter Langlois, 84.

2. There is no abandonment of the earlier case, and all the applications are to be treated as if filed by independent inventors.

[Ibid., 84.

3. If, however, a patent issues upon one of the applications, no claim will be allowed thereafter in the remaining case or cases which covers subject-matter set forth in the patent.

[Ibid., 84.

4. It is opposed to good practice to reiterate objections to the merits if the Examiner is satisfied that no mistake has been made in the final rejection.

[B. H. Jenks, 747.

5. Applicant having in his original specification described an improved trimmer in a sewing-machine as applicable to any single or double thread, straight or zigzag stitch sewing-machine: *Held* that an amendment stating that it was immaterial how such stitch was made, whether by a vibrating cloth-plate or by a vibrating needle, was not new matter.

[J. Bigelow, 821.

6. Appeal cases returned from an appellate tribunal to the Primary Examiner for further action must take precedence over all other applications awaiting action, except similar appeal cases previously returned.

[Ibid., 821.

(See Abandonment, 7; Claims; Interference; Preliminary Statement; Reissue, 1.)

PRELIMINARY STATEMENT.

1. The phrase "on or about," when used in a preliminary statement strictly construed and evidence of the transaction *prior* to the date mentioned in connection with such phrase, excluded.

[Bering *vs.* Haworth, 117.

2. A preliminary statement must set forth the character and extent of use of an invention from the time of its perfection until the time of the filing of the application for letters patent.

[Dermody *vs.* Pennock, 202.

3. Extent of use need not be set forth by the contestant in his preliminary statement, if the date assigned for completion and use of the invention is within two years of the filing of the application.

[J. W. Wheat, 787.

PRINTED PUBLICATION.

1. English Letters Patent No. 1,486, dated June 13, 1863, were sealed and the complete specification filed in December, 1863. Domestic Letters Patent No. 50,318, for the same invention, were granted to foreign patentee October 3, 1865, upon an application filed July 15, 1865. *Doubted*, whether under the circumstances English provisional specification No. 496, filed February 24, 1863, but not published until October 17, 1863, was a prior publication sufficient to overcome the *prima facie* presumption of first and original inventorship in favor of the patentee.

[*Goff *et al. vs.* Stafford *et al.*, 748.

2. The knowledge derived from a prior publication must, in order to defeat a patent, be sufficient to enable those skilled in the art to practice the invention, failing which requisite English provisional specification No. 496, of 1863, was declared to be inadequate to invalidate the patent in suit.

[*Ibid., 748.

(See Labels; Practice in Courts, 8.)

PRIOR INVENTION.

1. A patent held to be conclusive evidence of prior invention against a subsequent applicant who fails to show that he made the invention prior to the filing of the application by the patentee, although the patentee may not have made or reduced the invention to practice prior to the filing of his application.

[Leighton *vs.* Barker, 199.

2. Devices equivalent in principle or mode of operation, and produced by the inventor previous to the one in interference, may serve to fix the date of invention. But the equivalency must clearly appear, failing which, priority was awarded in disregard of the pre-existing forms.

[Bird & Boggs *vs.* Walsh, 234.

3. Mere applications for patent cannot be considered on the question of novelty. To make the things described and shown in them available, there must be evidence that such things were actually constructed in working form.

[*Barker *vs.* Stowe, 559.

4. Experimental models or incomplete devices, not capable of use as operative machines, cannot impair the rights of the patentee, but if the invention has been made and practiced prior to himself, however restricted such knowledge and use may be, it is fatal to the patent.

[*Kelleher *et al. vs.* Darling, 673.

(See Abandonment, 2, 3; Interference, 1; Practice in Courts, 10; Printed Publication.)

PUBLIC USE.

1. Evidence adduced in an interference between an application for reissue and a prior patent showing public use of the invention claimed for more than two years prior to the filing of the original application considered fatal to the reissue application in view of sections 4886 and 4916 Revised Statutes.

[Funck *vs.* Doty, 157.

2. If others practice the invention in this country, whether with or without the knowledge or consent of the patentee, more than two years prior to the filing of his application, the patent is invalid under the existing law.

[*Kelleher *et al. vs.* Darling, 673.

3. The policy introduced in the act of March 3, 1839, and followed in the existing act of July 8, 1870, (sections 4886 and 4920 Revised Statutes,) makes a public use of an invention more than two years prior to filing the application for patent equivalent to an absolute abandonment to the public.

[J. Bigelow, 821.

4. Consent and allowance of the inventor are not necessary to the forfeiture, but *a fortiori* consent to a use in public not followed by an application for patent within two years afterward renders the patent when granted invalid.

[Ibid., 821.

5. *Hence*, where the invention had been made and used in one instance in public as early as 1855, but for which the application

for patent was not filed until 1866, it was declared to be abandoned and the reissue patent (original No. 56,345, S. H. Barnes, July 17, 1866,) invalid.

[Ibid., 221.

6. Public use in this country of the invention of the foreign patentee more than two years prior to filing the application for domestic patent is a defeat of the patent by the terms of the existing law of 1870. The public use thus made essential is a use in public, not necessarily a use by the public generally.

[*Henry *vs.* Providence Tool Co., 855.

7. Rifled shot-guns obtained from the foreign patentee, Henry, and containing the patented improvements, having been used in public in this country by at least one or two persons more than two years prior to filing the domestic application, *Held* to defeat the domestic patent thereafter granted, (No. 119,846, October 10, 1871.)

[*Ibid., 855.

(See Abandonment, 5; Interference, 5, 9; Joint Invention, 3; Practice in Courts, 6; Preliminary Statement, 2, 3; Particular Patents, 5, 6, 13.)

REDUCTION TO PRACTICE.

(See Prior Invention, 1, 3.)

REISSUES.

1. Extraneous proofs as to a model destroyed by fire, or as to other lost or destroyed records, not received in reissue applications.

[Dermody *vs.* Pennock, 202.

2. Although the original patent may contain a satisfactory specification of invention, yet if the specification of claim be inadequate to proper protection, the defect is within the language of the reissue section (4916 Revised Statutes) and may be remedied.

[*Badische Anilin and Soda Fabrik *vs.* Higgin *et al.*, 414.

3. So far as the claim is wanting in rightful scope, the patent is inoperative. To reissue the patent, that a claim to fully cover the invention may be entered, is warranted by the statute.

[*Ibid., 414.

4. A suggestion in the specification, or an indication in the drawing or model of the original patent, may oftentimes justify an enlarged description of the invention upon reissue, but if the new description embody a distinct invention, enough should be found in the original specification to apprise others that such additional feature is included.

[*Kelleher *et al. vs.* Darling, 673.

5. A correction of a mistake as to a certain effect said to be obtained is the office of a reissue and not of a disclaimer.

[*Schillinger *vs.* Gunther, 713.

(See Interference, 2, 3; Particular Patents, 22, 24.)

RES JUDICATA.

(See Estoppel, 2.)

REPAIRS.

(See Infringement, 11, 12.)

RESULT.

(See Claim, 7.)

SEARCH-WARRANT.

(See Practice in Courts, 1, 2.)

TERM OF PATENT.

(See Expiration of Patent.)

TRADE-MARKS.

An application for the registration of a trade-mark cannot be amended by substituting therefor an essentially different mark not contained in the application as originally filed.

[E. Block & Co., 235.

2. The Commissioner of Patents is prohibited from registering as a trade-mark the name of a person merely, by section 4930 Revised Statutes. Nor was such a name a lawful trade-mark under the common law prior to the act of July 8, 1870, when, by long usage in designating a certain class of manufactures, it had become generic in its character.

[The Consolidated Fruit Jar Co., 269.

3. The owners of a patent have the right by virtue thereof to stamp goods manufactured thereunder with the name of the patentee. Such right succeeds to the public on the expiration of the patent, and the exclusive monopoly, therefore, of such name as a trade-mark cannot lawfully be vested in the present or former owners of the patent.

[Ibid., 269.

4. A, the original proprietor of the medicine and its trade-mark, in making assignment to the grantees, through whom mediately the complainants claim, reserved certain territory from the grant, no part of which thereafter vested in the complainants. The respondents, manufacturing in one of the excepted districts, derived title to the medicine and the mark from B, whose independent interest therein, distinct from that of A or his grantees, had been judicially declared in an action brought by the latter to restrain his alleged unlicensed use thereof: *Held*, that the respondents are without liability.

[*Manhattan Medicine Co. *vs.* Wood *et al.*, 519.

5. Trade-marks are an entirety and are incapable of exclusive use at different places by more than one independent proprietor, for, in seeking redress, in order to establish an exclusive right to the mark the party must show an exclusive right to the commodity to which it is attached.

[*Ibid., 519.

6. Rights to a trade-mark may be forfeited if the mark is deceptively used to designate a spurious article, and a party thus affected can convey no valid title in the mark to another.

[*Ibid., 519.

7. Equity will not decree for an account of past gains and profits where there has been laches in bringing suit and long acquiescence in the adverse use of the mark by others.

[*Ibid., 519.

8. Disregard of territorial limits allotted by license of proprietor, and misuse of the trade-mark, are a forfeiture of right and a defeat to any valid conveyance by the wrong-doers.

[*Ibid., 519.

9. Voluntary relinquishment of the original mark of the proprietor for another devised by the grantees themselves is a forfeiture of right to the old mark no less than its misuse to designate a spurious article.

[*Ibid., 519.

10. Long-continued disuse of a trade-mark may work a forfeiture of right as against another who has in the meantime adopted it.

[*Blackwell & Co. *vs.* Dibrell & Co., 633.

11. More especially is this true if the mark, though of possible arbitrary significance in its original selection, has become "localized" in the interval, and a geographical meaning attached to its use and to the associated goods.

[*Ibid., 633.

12. "Durham Smoking Tobacco" is indicative of tobacco marketed and manufactured at Durham, North Carolina, and it is a fraud upon the public to attach the term to tobacco from other localities.

[*Ibid., 633.

13. Whatever the rights of the complainants as against parties resident in Durham, injunction decreed respecting the respondents, who manufacture in Richmond, Virginia, and whose use of the trade-mark "Durham" tends to deceive.

[*Ibid., 633.

14. A dealer in dry white oxide of zinc has no remedy against another who uses the same trade-mark to distinguish the oxide when ground in oil.

[*Société la Anonyme des Mines et Fonderies de Zinc de la Vieille Montagne *vs.* Baxter *et al.*, 679.

15. The wares to which the trade-mark "Capcine" was applied having been falsely and fraudulently represented to the public, injunction to restrain use of trade-name was refused.

[*Seabury *et al. vs.* Grosvenor, 679.

16. There is nothing in the law or in public policy opposed to the registration of Masonic or other society symbols as trade-marks.

[W. C. Thomas, 221.

(See Interference, 6, 7, 8; Jurisdiction, 1.)

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DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of Ohio.

HIRAM MOORE, *et al.* COMPLAINANTS, *vs.* THOMAS, LUDLOW & ROGERS, DEFENDANTS.

[*In Equity.—Before Judges* BROWN *and* SWING.—*Decided July*, 1877.]

As the described invention related strictly to grain-drills in which a toothed or fluted cylinder revolves within the seed-cup to distribute the grain, the claims were correspondingly construed, and drills with revolving wheels or disks declared to be beyond the scope of the patent.

A loose shaft passing axially through the seed-cylinder, and having a short bearing against it near one end, there being also a short external bearing of the cylinder against the side of the seed-cup, (Moore patent of 1860,) is not infringed by a shaft which journals within a hub attached to a seed wheel or disk, the hub bearing externally against the case side.

The wheel and its hub do not constitute a cylinder in the strict sense, and it is unimportant whether the shaft-bearing extends the full length of the hub or not. Since the invention of the patentee is a cylinder in which the shaft-bearing must be for only a short distance of the cylinder length, the two devices are materially different.

Nor is it an infringement where the shaft bears for the full length of the seed-wheel and that of the loose hub or thimble contiguous to it.

The invention of the patentee under which the defendants manufacture having been completed at about the date of that contained in the complainants' patent, and there being no lack of diligence in applying for protection, the court construed complainants' patent strictly to avoid infringement and to sustain both grants.

The slight bevel of incline given the hub of the defendants' seed-wheel is an incident of the method of casting, and has no function when the hub and wheel are in operation. It does not infringe the complainants' machine wherein the end bearing of the cylinder is designedly beveled for a specific purpose and to effectively aid its working.

There is no invention in arranging the completed device, in series, upon a single machine frame, the device itself being old.

[*Messrs. Bowman, Pringle,* and *Scot,* for complainants; *Messrs. Wood* and *Boyd,* for defendants.]

[This was a bill to recover damages for the infringement of Letters Patent No. 30,685, November 20, 1860, and No. 31,819, March 26, 1861, granted Hiram Moore for certain improvements in seed-drills. The defendants manufactured under the patent of Gilbert Jessup, No. 32,627, granted June 26, 1861.]

BROWN, *J.:*

Complainants claim to recover for an infringement of the second and third claims of Moore's patent of 1860, and for the sixth claim of his patent of 1861. I will proceed to dispose of these claims in their order. The second claim of the patent of 1860 is as follows:

2. I claim the combination of the separate bearings of the cylinder with a single shaft-bearing in the cylinder, shorter than the cylinder and larger than the shaft, in the manner and for the purposes substantially as specified.

To understand exactly the nature of complainants' invention it is necessary to examine with some care the language of his specification. After setting forth the general nature of his improvement, he says:

The object of my said improvements is more evenly and equally to distribute the grain or seed to be sowed, and to render the machine more simple and less liable to get out of order, and they relate particularly to that class of seeding-machines in which a toothed distributing-cylinder is used at the bottom of a seed box or hopper in order to distribute the grain or seed. They consist, first, in combining a conduit or passage for the grain, arranged between the bottom of the hopper and the discharging-orifice, with the oblique discharging-orifice and the distributing-cylinder. Second, in combining separate bearings for the cylinders with a single bearing in the cylinder for the shaft, in the manner hereinafter described. By this means we attain important advantages. The warping or twisting of the seed-box is a fruitful source of trouble in machines of this class, for the hopper, being rigidly fastened at the bottom of the seed-box any warping or twisting of the latter will cause the hopper to change its position relative to the shaft, and if the cylinder be firmly fastened upon its shaft it will bind against the sides of the hopper, and in its bearings producing much friction and increasing the draft of the machine and its liability to get out of order. By having the shaft-bearing in the cylinder larger than the shaft and short, the evil effects of a displacement of the cylinder will be obviated in a great measure, as the axis of the cylinder need not be coincident or even parallel with the axis of the shaft, but may vary considerably from it without the cylinder binding upon the shaft, and the cylinder will still be controlled by the revolution of the shaft, the cylinder being retained in place within the hopper by its own independent bearings. I am aware that distributing-cylinders have before this been placed loosely upon shafts at the bottom of hoppers, but without separate bearings, so that they cannot retain their proper relative position within and to the hoppers, and consequently the flow of seed or grain is irregular and uneven.

Bearing in mind that his actual invention was an improvement in machines in which a tooth distributing-cylinder was used; that in his specifications he announces that his improvements relate particularly to that class of seeding-machines; that the cylinder is a prominent feature in all of his claims; that the evil which the device set forth in the second claim was designed to remedy, "is said to be a fruitful source of trouble in machines of this class," I think the words "shaft-bearing in the cylinder, shorter than the cylinder and larger than the shaft," were intended to be limited to that class of machines having cylinders, and not flanged disks or wheels, for the distribution of seed. When they are applied to machines having toothed distributing-cylinders, the value of claimants' invention is at once manifest. If the shaft-bearing were made the whole length of the cylinder, the shaft would have to be made much smaller than the bearing in order to get the lateral play so essential to prevent binding and friction, and the longer the bearing the smaller would have to be the shaft. But if the bearing be very short, a difference of one-thirty-second of an inch between the shaft and the bearing will allow sufficient play. The value, too, of an independent bearing for the cylinder is no less obvious. By this means the cylinder is retained in its exact relative position to the hopper, while its position to the shaft may constantly change without binding or impairing the operation of the machine.

Defendants' device is constructed on a different principle. In his machine the seed is distributed by a revolving wheel or disk, with flanges upon the periphery. There is nothing in the wheel which answers the definition of a cylinder, unless this word be extended and construed to include the hub. Webster defines a cylinder to be "a long circular body, of uniform diameter, and its extremities forming equal parallel circles."

I think the application of this term to the hub of the wheel is unwarranted by the definition, or by the common acceptance of the term.

Complainant states in his specifications that distributing-cylinders have, before this, been placed loosely around shafts at the bottom of the hoppers, but without separate bearings, so that they cannot retain their proper relative position within and about the hoppers, and consequently the flow of seed or grain is irregular and uneven. Now, it being conceded that the shaft may be made smaller than the bearing without infringing the second claim, and admitting that separate bearings may be used for the hub or cylinder, provided that the short shaft-bearing be not also used, it seems to make no practical difference in the operation of defendants' devices whether the shaft-bearing in the hopper be made shorter than the hub or not. If defendants' witnesses, Blanchard, Bogle, and Ludlow, are to be believed, and they seem to be uncontradicted, there is no liability to warping or twisting in their machine, and, hence, no utility in a shaft-bearing shorter than the hub. I think complainants' exhibit, "defendants' seed-cup," is not an infringement of this claim even upon complainants' theory, since the bearing is of a uniform size throughout the whole length of the hub, with the exception of a slight and immaterial coring out in the middle; neither do I regard defendants' exhibit, "Thomas, Ludlow & Rogers' seeder," an infringement, since the flanged wheel has no hub at all, but simply a square hole in the center for the reception of the shaft, and, hence, no separate bearings, the wheel dropping upon its periphery when the shaft is removed. It is true there is a hub or thimble upon one side of the wheel, separate from the wheel, which revolves with the shaft upon a bearing of its own within the casing, and perhaps this might constitute a separate bearing for the wheel, within the meaning of the patent; but as the square apertures through the hub and the wheel are the same size, the shaft-bearing cannot be said to be shorter than the cylinder, unless the other side of the hopper, which contains a round hole for the passage of the shaft, be also construed as to a part of the cylinder. I do not think it will warrant this construction.

There is more difficulty about complainants' exhibit, "defendants' hopper, with seed-cup and driving-shaft;" and upon complainants' theory of the construction of their patent there would be an infringement, inasmuch as the hub has a separate bearing of its own, and a shaft-bearing shorter than the hub and larger than the shaft, but holding, as we do, that complainants' patent was intended to apply to a different class of machines, and that the short hub of the vertical distributing-wheel or disk used by defendants is not embraced in the word "cylinder," used so often in complainants' specifications, we also feel bound to hold there is no infringement in defendants' device.

There are strong equities in favor of the defendant arising from the respective dates of their inventions. It is well settled that an invention is not patentable until a machine has been perfected; and, if not actually used, made capable of useful operation. (*Agawan* vs. *Jordan*, 7 Wall., 583; *Seymour* vs. *Osburn*, 11 Wall., 552; *Goodyear* vs. *Day*, 2 Wall., Jr., 299; *Coffin* vs. *Ogden*, 18 Wall., 120.) Within this definition Moore's invention was not patentable until the spring of 1859, although it seems that as early as the summer of 1857 he had made some experiments and completed rough drawings of his invention, in the State of Michigan, in or near Grand Rapids. In the spring of 1858 he seems to have had a contrivance substantially in the form of his invention, which he kept in his house and worked as a model. He left Michigan in March, 1858, and moved to Wisconsin, and during the winter of 1858–'59 had a full-sized drill completed, containing seed-cups like his exhibit, operated by a square wooden shaft, which was experimented with by his nephew in sowing wheat on his farm, on or about April 27, 1859. From all his testimony, I think we are not authorized to conclude that his invention was perfected before the spring of that year.

While these experiments were going on, one Gilbert Jessup, in another State, and some hundreds of miles distant, with no opportunity or suspicion of piracy, was perfecting an invention embodying the substantial principle of defendants' device. While the exact day upon which his invention was so far perfected as to be patentable cannot be ascertained, the testimony shows that he had completed twelve machines by May, 1859. It is scarcely probable that he would have made that number of machines until after he had perfected his invention, and I think, under all the circumstances, we are authorized to conclude that he was entitled to a patent quite as soon if not sooner than Moore. He appears to have commenced proceedings to obtain a patent as soon as May, 1860, but owing to some delay on the part of his solicitors in New York, his application was not placed upon file until after the Moore patent had been issued. It is very difficult to fix the precise relative dates of these inventions, but in view of the fact that no suspicion of bad faith attaches to Jessup; that his invention was at once put into practical operation and the manufacture of machines commenced on a large scale, we think the Court is bound to sustain his invention if possible, particularly as the principle upon which it operates is quite different from that of the complainant's device.

The third claim of complainant's patent of 1860 is as follows:

"I claim a distributing-cylinder for seeding-machines, having a beveled bearing, substantially in the manner and for the purposes specified."

Here again complainant limits himself to distributing-cylinders, evidently having reference to the periphery feeding-cylinder set forth in his specifications. The value of a beveled bearing in cylinders of this kind results from the tendency of particles of earth, chaff, and dust carried on the periphery of his wheel to work toward the end and into the bearings, whence they are discharged with the seed. If we are to believe the testimony of defendants' witnesses upon this point, it would appear that the construction of their seed-wheel is such as to prevent the dust and chaff from entering the bearings of the seed-wheels, the repeated revolutions of the wheels having a tendency to throw such particles toward the periphery, and that the taper of the hub performs no function whatever in sowing the grain. It seems, too, that the operation of molding both hub and periphery is assisted by a slight taper from the center outward, and if the beveling in the hub is greater than the conveniences of molding requires, it is so slight as apparently to play no part in the operation of the machine. Upon this point defendants' witness, Bogle, testifies as follows:

I have never discovered any difficulty arising from the effects of dirt or straw getting into the bearings of the seed-wheel in casing. In fact, the seed-cups referred to as manufactured by our company are so constructed that there is no liability whatever of dirt, straw, or obstructions getting into said bearings, the hub of the distributing-wheel being entirely incased by casing, said casing being so formed that it affords a conducting-surface by means of which the grain is carried over the bearing down into the seed and against the vertical face of the distributing-wheel, thus being prevented from coming in contact with the bearings of said wheel in any manner. The said casing is fitted closely to the vertical face of the distributing-wheel, and the rotating motion of the wheel inclines the grain or other material finding its way into the seed-cup toward the inner periphery of the carrying-flange found upon the vertical face of the wheel, thus conducting it directly away from contact with the bearings of the wheel and casing, and if the space between the casing and face of the wheel was even large enough to permit dirt, straw, or other obstructions to pass through, the motion of the wheel, aided by gravity, would tend to carry such obstructions immediately toward the flange of the wheel, as above stated, thereby preventing any trouble whatever that might occur under a different construction of the seed-cylinder and its casing."

The sixth claim of Moore's patent of 1861 is as follows:

"I claim the combination of a removable driving-shaft with a series of seeding-cylinders having independent bearings, whereby said shaft can at pleasure be removed to allow any of said cylinders to be taken out for repairs without displacing the rest, substantially as described."

The same principle of construction allied to the two prior claims will also limit this to the tooth distributing-cylinders described in the specifications.

It seems to me, too, that so far as this claim is concerned there is nothing in the patent of 1861 not already found, or at least suggested to a mechanic of ordinary intelligence, in the patent of 1860. The shaft used in the earlier patent, being smaller than its bearing, must have been removable, and as the later patent does not claim any particular device for removing, it is satisfied by any shaft which is removable. Nothing else is set up in this claim but a multiplication of the seeding-cylinders described in the first patent. This is not patentable.

The bill must be dismissed.

U. S. Circuit Court—District of Connecticut.

HOPKINS & DICKINSON MANUFACTURING COMPANY *vs.* P. AND F. CORBIN, FREDERICK H. NORTH, AND CHARLES PECK. HOPKINS & DICKINSON MANUFACTURING COMPANY *vs.* PARKER & WHIPPLE COMPANY AND H. J. P. WHIPPLE.

The scope of a joint invention, and of a patent founded thereon, ascertained and limited in view of pre-existing devices which had been produced by one of the joint inventors.

Even though they may be equivalents, the joint invention should not be made to relate back and include the pre-existing devices, which were the sole invention of one of the joint patentees.

The case might be different were the joint invention, like those preceding, made by but one of the parties, and there was nothing in the language of his patent or in his actions as to public use, &c., to preclude their acceptance as equivalents.

[*Charles G. Blake*, for the plaintiffs; *Charles E. Mitchell* and *Oreille H. Platt*, for the defendants.]

SHIPMAN, *J.*:

These two cases are separate bills in equity, wherein the defendants in each case are charged with an infringement of reissued letters patent, dated October 11, 1875, and issued to the plaintiffs, as assignees, by mesne assignments, of George Voll and George McGregor. The original patent to Voll and McGregor was dated March 30, 1869.

The invention is an improved sash-lock or sash-fastener. An ordinary form of sash-lock consists of a base-plate fastened to the top rail of the lower sash, a striking-plate or hook-plate fastened to the top rail of the upper sash, and a vibrating lever, which is pivoted upon the base-plate, and which engages with each plate so as to prevent either sash from being opened.

In the invention which is described in the reissue a bolt is mounted in and moved with the vibrating lever, which bolt slides backward and forward in a line parallel to the axis of the lever. When the lever is in proper position, as the bolt slides forward it shoots beyond a catch segment or projection upon the base-plate, so as to hold the vibrating lever and prevent it from being turned until the bolt is retracted. When the bolt is retracted, and is disengaged from the catch-segment, the vibrating lever can be turned and the sash can be opened. The improvement is one form of a self-locking sash-fastener, the object of which is to prevent the lever from being moved by a knife inserted between the sashes from the outside of the window.

The claim of the reissue is—

A vibrating lever, provided with a bolt in combination with a striking-plate or hook, and with a catch-segment behind which the bolt can pass, formed upon the plate upon which the lever is pivoted, the whole constituting a sash-fastener, and the parts enumerated in the claim being and operating substantially as specified.

The defendants' devices are substantially alike. Each has a base-plate, a vibrating lever mounted upon the base-plate, a bolt mounted upon and moving with the vibrating lever, a striker-plate or hook, and a socket or depression upon the base-plate, so formed as to receive the bolt, which moves up and down. The difference between the plaintiffs' and defendants' devices consists in the fact that in the defendants' devices the bolt moves in a line perpendicular to the line of the lever instead of moving in a line parallel to the line of the lever, and engages with a socket or depression upon the base-plate, instead of engaging with a projection from the base-plate.

The main question is that of infringement, and it is

practically conceded by the defendants that the determination of this question depends upon the proper construction of the plaintiff's reissued patent. In order to construe the claim, it is important to ascertain what was the actual invention of the original patentees.

A horizontally-moving bolt to lock the vibrating lever to the striker-plate or hook and a vertically-moving bolt for the same purpose were old in the art, and were mentioned in the specification of the reissue. In each of these devices the bolt shot into a socket or depression upon the striker-plate.

In January, 1868, George Voll, one of the joint patentees, invented a sash-lock in which a horizontally-moving bolt was received, and was locked in a hole or socket in a "stump" or projection upon the base-plate. Application was made by Voll for a patent on February 25, 1868, which application was rejected on August 6, 1868, upon the ground that the invention had been anticipated in the patent of Brockseifer and Sargent, dated May 11, 1858, one of the patents which is referred to in the plaintiff's reissue. No appeal was taken. Twelve or eighteen of these locks were manufactnred in February, 1868, by Voll, and were sent to the store of George McGregor, Voll's employer. What became of these locks does not appear. Two or three weeks after the rejection, Voll invented another sash-fastener which consisted of a vertically-moving bolt, which engaged with a catch segment or projection upon the base-plate. A completed bolt of this kind was made, and the device was sent to a firm of patent solicitors, who reported that it was unpatentable. Voll and McGregor then united their skill and efforts, and invented the device which is the subject of this controversy, and for which a patent was issued to them jointly on March 30, 1869.

The invention of Voll and McGregor was the combination of a horizontally-moving bolt and a catch-segment upon the base-plate. It was not broadly the transfer of a known locking device and its eqnivalent from the striker-plate to the base-plate. In January, 1868, Voll had transferred a socket from the striker-plate to the base-plate, and had connected a bolt with such socket. The second lock of Voll—viz., the combination of vertically-moving bolt and projection upon the base-plate—was a second stage in the improvement. The invention of Voll and McGregor was the final one of a series of separate inventions, in which series the prior inventions were made by one person before he was joined by his associate inventor. Each invention was distinct and was separated from its successor by a completed, perfected, and operative device. The prior inventions, although they may not have been abandoned by the sole inventor, were not included by the joint inventors in their joint invention. This is not the case of a joint invention which is the result of a progressive series of steps which were taken by the two minds assisting each other in some degree. Neither is it the case of an invention which was completed by two acting jointly, after a series of experiments, not resulting in a perfected or an operative device, had been made by one of the inventors acting alone. In such a case a court does not carefully dissect the invention to ascertain what parts of the whole were furnished by each person.

In this case Voll first invented a means of locking upon the base-plate. Whether this invention was patentable or not under the claim in his application it is not necessary to consider. He next invented another combination by which the same result was produced. It is agreed that this invention was patentable. The joint inventors thereafter invented a third device, which was the combination of Voll's horizontal bolt and catch-segment. This was the only result of the joint labors and inventive skill of the two inventors.

Having thus ascertained the exact extent of the joint invention, the question next arises as to the proper construction to be given to the joint patent.

The specification which was attached to the application for a reissue evidently contained in the description of the device the words "socket or depression;" by an amendment of the plaintiffs these words were erased wherever they occurred, and "catch-segment" were substituted therefor before the reissue was granted. The plaintiffs seek to have their claim so construed as to include within the patent a locking device as well by means of a socket or depression upon the base-plate as by means of a projection thereon.

The invention which was actually made by the joint patentees covers a very narrow ground. It is to be noticed that the defendants do not attack the validity of the patent if it is confined to the joint invention. This invention was not broadly the combination of the old ingredients of socket or projection so arranged as to lock the lever upon the base-plate, because that combination had been made by Voll; but it was an improvement upon the combination of Voll, and was subsidiary to his second invention. The joint patent, being subsidiary to the prior invention of one of the patentees, should not be extended so as to embrace the original invention. "Where a combination of machinery already exists up to a certain point, and the patentee makes an addition or improvement to the machinery, he must confine his patent to the improvement." (*Barrett* vs. *Hall*, 1 Mas., 447.) This limitation is sustained by the language of the reissue.

If Voll had been the sole inventor and patentee of the joint invention, he might well have contended that his patent should be so construed as to embrace the different forms of locking devices upon the base-plate which he invented, if such construction was not inconsistent with the language of his claim, and if he had not abandoned to the public any particular combinations, upon the principle that "the actual invention of the party is a necessary auxiliary to the construction of the language which he has employed in describing it." (Curtis on Patents, sec. 453.) But, inasmuch as the joint invention was within a very narrow compass, and the devices which are now claimed to be equivalents had anticipated it, the joint invention should not be made to relate back and include the pre-existing devices, although they were the sole invention of one of the joint patentees. "It is impossible that one person can be at the same time the joint and the sole inventor of the same invention." (*Barrett* vs. *Hall*, 1 Mas., 447.)

It is not intended to suggest any modification of the well-understood principle that the inventor of a combination is entitled to invoke the aid of equivalents, (*Seymour* vs. *Osborne*, 11 Wall., 516,) but to simply assert that where an invention is merely a combination subordinate to pre-existing devices, and has been limited to such sub-combination by the language of the claim, the patentee cannot successfully insist that he is entitled to the pre-existing devices, and that this is true when one of the joint inventors of the junior invention is also the inventor of the senior invention.

Under this construction of the plaintiffs' reissue the defendants do not infringe, inasmuch as they use a vertically-moving bolt in combination with a socket upon the base-plate.

It is insisted by the plaintiffs that Voll and McGregor are estopped to deny that they were the joint inventors of the patented invention. Neither of the joint inventors have made this denial. They have each denied that they were the joint inventors of the device which their assignees seek to have protected by the reissne, but which the inventors insist was simply an improvement of the sole and unpatented invention of one of them.

The testimony of Voll and McGregor is seriously criticised in connection with their alleged willingness to make oath for a pecuniary consideration to the application for a reissue wherein the joint invention is stated so broadly as to include Voll's sole invention. I have not thought it necessary to pass upon this question of fact, as their present testimony is so corroborated by the exhibits in the case as to remove doubt in regard to the character of the sole and joint invention.

Let a decree be entered dismissing the bill, with costs.

Circuit Court of the United States—District of Indiana.

In Chancery, No. 3,544.—*Decided June* 3, *A. D.* 1878.

BIRDSILL HOLLY *vs.* UNION CITY, INDIANA.

[*May Term*, 1878.—*Before* Hon. THOMAS DRUMMOND, *J.*]

DRUMMOND, *J.*:

This case having been brought on to be finally heard upon the pleadings and proofs, at the November Term of this court, 1876, before their honors, Judge Drummond and Judge Gresham, holding the said term of court, and having been fully argued by J. E. Hatch, Esq., and George Harding, Esq., for the complainant, and by L. L. Leggett, Esq., and M. D. Leggett, Esq., for the defendants, and the case having been submitted on the oral arguments of the said counsel, and written briefs filed at the same time, and due deliberation having been thereon had, this court finds:

First. That the letters patent granted Birdsill Holly, of Lockport, New York, March 2, 1869, and reissued August 2, 1870, and again reissued November 5, 1872, which said reissue was numbered 5,132, on the first claim of which the present suit is founded, are good and valid in law, so far as relates to the first claim thereof, when said first claim is limited to the device described in the said reissued letters patent, and its substantial equivalents; that the said reissued patent is for the same invention as the original patent, and that the method of supplying a city with water, in the first claim of the said reissue, is the invention of the said Holly, and that the said claim is not anticipated by any of the prior patents and uses pleaded in this case, and that the title to said reissued patent is in said Holly.

Second. That the defendant, by its use within the jurisdiction of this court, in connection with its water-pumping machinery, of the device shown and set forth in "Exhibit Union City Regulator," has infringed the said reissued letters patent and violated the rights of the said Holly, as secured by the first claim of said reissued Letters Patent No. 5,132, and it is therefore ordered, adjudged, and decreed, and this court, by virtue of the power therein vested, doth order, adjudge, and decree:

First. That the complainant do recover of the said defendant the profits, gains, and advantages that have arisen or accrued to said defendant from the use, between the date of the said reissued patent and the entry of this decree, of the said system of water-works described in said claim, as well as the damages that have resulted to the complainant by reason of the said unlawful use.

Second. That an account of the said profits and of the said damages be taken and stated and reported to this court by W. P. Fishback, Esq., who is hereby appointed special master commissioner for that purpose, and that the defendant, by its officers, appear before the said master, from time to time, on notification from him and under his direction, and that the attorneys, agents, servants, and employés of the said defendant appear before the said master from time to time as he may direct, and that the complainants may examine the said officers, employés, agents, attorneys, and servants of the said defendant, under oath, as to the several matters pending on the said reference; and that the said defendant, by its officers, produce before the master, on oath, all such deeds, contracts, specifications, papers, writings, and books, as the said master shall direct, that are in their custody or under their control or subject to their order, and that relate in any manner to the said matters which shall be pending before the said master; and that the said master have all the authority and power conferred upon masters in like cases by the 77th and 78th rules prescribed by the Supreme Court of the United States, as rules of practice for the courts of equity of the United States.

Third. That an injunction issue out of and under the seal of this court against the said defendant, commanding it, its attorneys, agents, workmen, officers, servants, and employés, to desist from making, using, or vending any system of water-works whereby the water is pumped directly into the water-mains, the apparatus for that purpose being supplied with contrivances like, or substantially like, those shown and described in said reissued letters patent, by which the pressure within the mains may be preserved, in a great degree, uniform—sufficiently so for practical purposes—or whereby it may be increased or diminished at pleasure, or from in any manner infringing upon or violating any right or privilege granted or secured to the complainant by the said reissued letters patent.

Fourth. That the parties and master may apply, upon due notice to this court upon the foot of this decree, for such other and further order of instruction as may be necessary.

Fifth. That the complainant do recover the costs in this case to be taxed.

TO SUBSCRIBERS.—Great care will hereafter be taken in mailing THE OFFICIAL GAZETTE to subscribers, and in case of its non-receipt the fault will not be in the Patent Office. When each issue shall have been mailed, the Office will assume that it has done its duty by the subscribers, and will not send extra numbers except upon receipt of 10 cents for each copy ordered.

The New Classification.

The commission appointed by the Commissioner of Patents to revise the Official Classification of Subjects of Invention has completed its labors, and the following classification has been adopted, and will supersede the one now in use:

CLASSES OF INVENTIONS.

Advertising	40	Masonry	72
Aeration and bottling	1	Measuring instruments	73
Apparel	2	Mechanical powers	74
Arms and projectiles, making	86	Metal bending and straightening	153
Artificial limbs	3	Metal boring and drilling	77
Artificial stone, lime, and cements	106	Metal forging, punching, and shearing	78
Baths and closets	4	Metal founding	22
Beds	5	Metal ornamentation	158
Bee-culture	6	Metal personal ware, making	79
Bleaching and dyeing	8	Metal-rolling	80
Boats	9	Metal bolts, nuts, rivets, and screws	10
Book-binding	11	Metal tempering, annealing, and cementation	148
Boots and shoes	12	Metal tools and implements, making	76
Brakes and gins	13	Metal tubing and wire	134
Bread, cracker, and lozenge making	107	Metal turning, planing, and milling	82
Brewing and fermenting	7	Metal-working tools	81
Bridges	14	Metallurgy	75
Brushing and scrubbing	15	Mills	83
Builders' hardware	16	Music	84
Butchering	17	Nails, spikes, needles, and pins	85
Caoutchouc and minor plastics	18	Nut and bolt locks	151
Carding	19	Oils, fats, and glue	87
Care of live stock	119	Optics	88
Carpentry	20	Ordnance	89
Carriages and wagons	21	Ore	90
Chains, staples, and horseshoes	59	Packing and storing vessels	150
Chairs	155	Painting and graining	91
Chemicals and medicines	23	Paper-making	92
Clasps and buckles	24	Paper manufactures	93
Clay and pottery	25	Paving	94
Cloth	26	Photography	95
Coating with metal	96	Plows	97
Coffins	27	Pneumatics	98
Composite roofing	154	Preserving	99
Coopering	147	Presses	100
Cordage	28	Printing	101
Crinoline and corsets	29	Projectiles	102
Curtain-fixtures	156	Pumps	103
Cutlery	30	Railway-cars	105
Dairy	31	Railways	104
Dentistry	32	Refrigeration	62
Distillation	124	Roofing	108
Drafting	33	Safes	109
Driers	34	Seeders and planters	111
Educational appliances	35	Sewing-machines	112
Electricity	36	Sheet-metal-ware making	113
Excavating	37	Ships	114
Explosives	52	Signals	116
Felting and hats	38	Silk	117
Fences	39	Spinning	118
Fertilizers	71	Stationery	120
Fine arts	41	Steam-boilers	122
Fire-arms	42	Steam-engines	121
Fishing and trapping	43	Steam-furnaces	110
Fluid-pressure regulators	50	Steam-valves	136
Fuel	44	Stone-working	125
Furniture	45	Stoves and furnaces	126
Games and toys	46	Sugar and salt	127
Garden and orchard	47	Surgery	128
Gas	48	Tanning	129
Glass	49	Thrashing	130
Grinding and polishing	51	Tobacco	131
Hardware, making	53	Toilet	132
Harness	54	Trunks and equipments	133
Harrows and diggers	55	Umbrellas and fans	135
Harvesters	56	Vegetable cutters and crushers	146
Hides, skins, and leather, chemical treatment	149	Wagon, car, and track irons	152
Hoisting	57	Washing apparatus	141
Horology	58	Water distribution	137
Hose and belting	60	Water-wheels	138
Household articles	65	Weaving	139
Hydraulic engineering	61	Wheelwright-machines	157
Jewelry	63	Wire-working	140
Journals and bearings	64	Wood-sawing	143
Knitting and netting	66	Wood-turning	142
Lamps and gas-fittings	67	Wood-working	144
Laundry	68	Wood-working tools	145
Leather	69		
Locks and latches	70		
Locomotives	123		
Marine propulsion	115		

The above classes have been grouped, for Office purposes, to form the following—

DIVISIONS.

Division No. 1, Tillage. *Examiner*, Fox. *Classes:* Harrows and Diggers, 55; Plows, 97; Seeders and Planters, 111.

Div. No. 2, Farm Stock and Products. *Examiner*, Jayne. *Classes:* Bee Culture, 6; Brushing and Scrubbing, 15; Butchering, 17; Dairy, 31; Fences, 39; Care of Live Stock, 119; Tobacco, 131; Vegetable Cutters and Crushers, 146.

Div. No. 3, Metallurgy, Distillation, and Refrigeration. *Examiner*, Dyrenforth. *Classes:* Fishing and Trapping, 43; Gas, 48; Refrigeration, 62; Metallurgy, 75; Ore, 90; Metal Coating, 96; Distillation, 124; Sugar and Salt, 127.

Div. No. 4, Civil Engineering. *Examiner*, Pond. *Classes:* Bridges, 14; Carpentry, 20; Excavating, 37; Hydraulic Engineering, 61; Masonry, 72; Railways, 104; Roofing, 108; Curtain Fixtures, 156.

Div. No. 5, Fine Arts, Toys, and Apparel. *Examiner*, Burke. *Classes:* Apparel, 2; Crinoline and Corsets, 29; Educational Appliances, 35; Fine Arts, 41; Games and Toys, 46; Jewelry, 63; Music, 84; Photography, 95; Toilet, 132; Umbrellas and Fans, 135.

Div. No. 6, Chemistry. *Examiner*, Antisell. *Classes:* Brewing and Fermenting, 7; Bleaching and Dyeing, 8; Chemicals and Medicines, 23; Explosives, 52; Fertilizers, 71; Oils, Fats, and Glue, 87; Painting and Graining, 91; Preserving, 99; Hides, Skins, and Leather, 149.

Div. No. 7, Harvesting and Milling. *Examiner*, Parkinson. *Classes:* Brakes and Gins, 13; Garden and Orchard, 47; Harvesters, 56; Mills, 83; Thrashing, 130.

Div. No. 8, Furniture, Bread Making, and Laundry. *Examiner*, Tilden. *Classes:* Beds, 5; Furniture, 45; Laundry, 68; Bread, Cracker, and Lozenge Making, 107; Washing Apparatus, 141; Chairs, 155.

Div. No. 9, Hydraulics and Pneumatics. *Examiner*, Durnall. *Classes:* Aeration and Bottling, 1; Baths and Closets, 4; Pneumatics, 98; Pumps, 103; Water Distribution, 137; Water-Wheels, 138.

Div. No. 10, Carriages, Wagons, and Railway-Cars. *Examiner*, Sanders. *Classes:* Carriages and Wagons, 21; Railway-Cars, 105.

Div. No. 11, Leather Working, Machines, and Articles. *Examiner*, Chapman. *Classes:* Boots and Shoes, 12; Clasps and Buckles, 24; Harness, 54; Hose and Belting, 60; Leather, 69; Tanning, 129; Trunks and Equipments, 133.

Div. No. 12, Mechanical Engineering. *Examiner*, Schoepf. *Classes:* Hoisting, 57; Journals and bearings, 64; Household Articles, 65; Mechanical Powers, 74; Presses, 100.

Div. No. 13, Metal Working. *Examiner*, Church. *Classes:* Chains, Staples, and Horseshoes, 59; Hardware Making, 53; Metal Bending and Straightening, 153; Metal Bolts, Nuts, Rivets, and Screws, 10; Metal Boring and Drilling, 77; Metal Forging, Punching, and Shearing, 78; Metal Personal Ware Making, 79; Metal Rolling, 80; Metal Tubing and Wire, 134; Metal Tools and Implements Making, 76; Metal Turning, Planing, and Milling, 82; Nails, Spikes, Needles, and Pins, 85; Nut and Bolt Locks, 151; Arms Making, 86; Wagon, Car, and Track Irons, 152.

Div. No. 14, Metal Working, Grinding, and Polishing, and Packing Vessels. *Examiner*, Stocking. *Classes:* Grinding and Polishing, 51; Metal Founding, 22; Metal Tempering, Annealing, and Cementation, 148; Metal-Working Tools, 81; Packing and Storing Vessels, 150; Sheet Metal Ware Making, 113; Wire Working, 140.

Div. No. 15, Plastics. *Examiner*, Hedrick. *Classes:* Artificial Stone, Lime, and Cement, 106; Caoutchouc and Minor Plastics, 18; Clay and Pottery, 25; Composite Roofing, 154; Felting and Hats, 38; Fuel, 44; Glass, 49; Paving, 94; Paper Making, 92; Stone Working, 125.

Div. No. 16, Electricity, Measuring Instruments, and Optics. *Examiner*, Townsend. *Classes:* Drafting, 33; Electricity, 36; Horology, 58; Measuring Instruments, 73; Optics, 88.

Div. No. 17, Printing and Paper Manufactures. *Examiner*, Freeman. *Classes:* Advertising, 40; Book-Binding, 11; Paper Manufactures, 93; Printing, 101; Stationery, 120.

Div. No. 18, Steam Engineering. *Examiner*, Fowler. *Classes:* Driers, 34; Fluid-Pressure Regulators, 50; Locomotives, 123; Steam-Boilers, 122; Steam-Engines, 121; Steam-Furnaces, 110; Steam-Valves, 136.

Div. No. 19, Stoves and Lamps. *Examiner*, Catlin. *Classes:* Lamps and Gas-Fittings, 67; Stoves and Furnaces, 126.

Div. No. 20, Surgery and Hardware. *Examiner*, Wilkinson. *Classes:* Artificial Limbs, 3; Builders' Hardware, 16; Coffins, 27; Cutlery, 30; Dentistry, 32; Locks and Latches, 70; Safes, 109; Surgery, 128.

Div. No. 21, Textiles. *Examiner*, Appleton. *Classes:* Carding, 19; Cloth, 26; Cordage, 28; Knitting and Netting, 66; Sewing-Machines, 112; Silk, 117; Spinning, 118; Weaving, 139.

Div. No. 22, Guns, Ships, and Wood-Working. *Examiner*, Bartlett. *Classes:* Boats, 9; Coopering, 147; Fire-arms, 42; Marine Propulsion, 115; Ordnance, 89; Projectiles, 102; Ships, 114; Signals, 116; Wood-Turning, 142; Wood-Working Machines, 144; Wood-Working Tools, 145; Wood-Sawing, 143; Wheelwright Machines, 157.

The classes of inventions have been grouped into these twenty-two Divisions, the primary object being to separate the work of the Office into parts, each capable of being handled by a single Examiner. So far as possible the Divisions have been constituted of cognate inventions. This rule could not be strictly followed, however, because the number of classes to be assigned to any one Division must be determined by the amount of work which the classes so grouped would impose upon an Examiner and the force at his command, usually three or four Assistant Examiners and a clerk. Hence, the Divisions here noted are rather

divisions of the Office work than divisions of inventions; therefore, persons ordering copies will order by the Class number rather than the Division number. Under each one of these classes there are several subclasses upon which the Examiners are at present at work. As soon as they are completed they will be published, together with the present information in relation to the new classification.

Of the above classes, all have been photo-lithographed except Artificial Limbs, Class 3; Builders' Hardware, Class 16; Coffins, Class 27; Coopering, Class 147; Cutlery, Class 30; Dentistry, Class 32; Locks and Latches, Class 70; Locomotives, Class 103; Nut and Bolt Locks, Class 151; Safes, Class 109; Steam-Boilers, Class 122; Steam-Engines, Class 121; Steam-Furnaces, Class 110, Steam-Valves, Class 136; Surgery, Class 128; Wheelright-Machines, Class 157; Wood-Sawing, Class 143; Wood-Turning, Class 142; Wood-Working, Class 144; Wood-Working Tools, Class 145; and these are all being reproduced, and before the end of the year it is expected that photo-lithographic copies of the drawings of any patent ever issued by the Government can be obtained in this Office for 25 cents per single copy, or 10 cents each where more than twenty copies are desired. A photo-lithographic copy of any current issue (specification and drawing) can be had at the same price.

The specifications of all patents issued since July 1, 1871, are in print, and will be furnished, with the drawing, without extra charge. The specifications of most of the patents issued from November 20, 1866, to July 1, 1871, are in print, and where such is the case the Office will furnish them with the drawings; but it will not undertake to reprint copies which have been exhausted.

CAVEATS.—Inventors filing caveats in the Office should be careful to describe their invention or improvement with accuracy, and illustrate such inventions as are capable of illustration with care and thoroughness.

Caveats are placed in the hands of the Examiners, who should not be expected to understand what the inventor means unless the latter has sufficiently matured his invention to clearly describe and illustrate it.

Caveats are sometimes filed in the Patent Office stating that the caveator is engaged in a series of experiments intended to accomplish certain results, and giving nothing more than a vague hint of the means by which the result is to be attained. As the courts have frequently decided that results are not patentable, the practice of the Patent Office is to the effect that a caveat cannot cover more ground than a patent. So, where a caveat describes more than one invention, the Examiner frequently overlooks a portion of the caveat, knowing that under the rules caveators are confined to a single invention.

Complaints are often made that caveats have been overlooked, and patents issued to subsequent applicants, when the fault lies in the hasty preparation of the caveat papers. The rules are explicit, that the caveat must describe the invention as fully as the inventor is able to do; that the drawings shall be of the same size as the drawings to accompany an application for a patent, (8 by 13 inches, on a sheet 10 by 15 inches, with an inch margin all round,) and on tracing-muslin, or light bristol-board or drawing-paper, which can be folded without breaking. A careful compliance with the rules will greatly facilitate the work of the Office, and will go a long way toward insuring the accuracy which is so necessary in securing their just rights to inventors.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

ANNUAL INDEX FOR 1877.—The annual index for 1877 is now ready for delivery, and will be mailed to all subscribers to the OFFICIAL GAZETTE free of charge. Extra copies of the yearly index, bound in full law binding, can be purchased of the Patent Office for $2, or unbound for $1. Hereafter no annual index will be sent gratis to subscribers to the GAZETTE, but at the end of each volume a complete half-yearly index will be furnished.

THE issue of June 25 closed Vol. 13 of the OFFICIAL GAZETTE, and the half-yearly index for that volume will soon be ready for delivery. It will be sent out gratis to subscribers, together with the title-page, digest of Commissioner's decisions, &c., and should be bound with the numbers of the GAZETTE, the weekly index upon each number being first removed.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

TRADE-MARKS.

[Each certificate bearing date July 2, 1878.]

6,300.—LUBRICATING COMPOUND.—*Beatty, Heine & Co.*, New York, N. Y. Application filed May 7, 1878.

"The word-symbol 'EXCELSIOR' and the monogram 'X. L. COMP.,' together with the figures upon the left, showing the style of packages and a lubricating-cup, and upon the right a steam-engine."

6,301.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *David Buckner*, Brooklyn, N. Y. Application filed June 20, 1878.

"The representations of the gold coins of the United States, of the denominations of twenties, tens, fives, and two-dollar-and-one-half pieces, lapped as in the fac-simile, and the word-symbol 'VENI, VIDI, VICI.'"

6,302.—BLANKETS.—*Murphy, Grant & Co.*, San Francisco, Cal., and New York, N. Y. Application filed June 17, 1878.

"The word-symbol 'DUNDERBERG.'"

6,303.—ALES AND LAGER-BEER.—*Quinn & Nolan*, Albany, N. Y. Application filed June 21, 1878.

"The word-symbol 'BEVERWYCK.'"

6,304.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Isaac R. Sweezey*, Huntington, N. Y. Application filed June 20, 1878.

"The letter 'S' and the rectangular figure formed of parallel lines, composing the border, with the letters 'B' in each four circles in the border."

6,305.—SPOOL-COTTON.—*Lewis Coleman & Co.*, Boston, Mass. Application filed May 24, 1878.

"Word-symbol 'PUTNAM' and the figures of the horseman and the declivity which one of them is descending, as shown in the fac-simile, the same representing the escape of Gen. Israel Putnam from a body of British dragoons."

6,306.—CIGARETTES AND SMOKING AND CHEWING TOBACCO.—*David Hirsch & Co.*, New York, N. Y. Application filed June 25, 1878.

"The word-symbol 'SUCCESS.'"

6,307.—CIGARETTES AND SMOKING AND CHEWING TOBACCO.—*David Hirsch & Co.*, New York, N. Y. Application filed June 25, 1878.

"The word-symbol 'MEPHISTO.'"

6,308.—CIGARETTES AND SMOKING AND CHEWING TOBACCO.—*David Hirsch & Co.*, New York, N. Y. Application filed June 25, 1878.

"The word-symbol 'JUPITER.'"

6,309.—CIGARETTES AND SMOKING AND CHEWING TOBACCO.—*David Hirsch & Co.*, New York, N. Y. Application filed June 25, 1878.

"The word-symbol 'FALSTAFF.'"

6,310.—VINEGAR.—*Alden & Brother*, St. Louis, Mo. Application filed May 24, 1878.

"The word-symbol 'THE ALDEN.'"

6,311.—TONIC.—*Craft & Taylor*, Detroit, Mich. Application filed June 13, 1878.

"The word-symbol 'HOPTONIC.'"

6,312.—MALT.—*Dole Brothers*, Boston, Mass. Application filed May 31, 1878.

"The central picture, with the labeled bags of malt, illustrating the legend of the 'House that Jack Built,' and 'DOLE, BROS., BOSTON.'"

6,313.—CIGARS.—*S. Fuget & Sons*, Philadelphia, Pa. Application filed June 22, 1878.

"The word 'ORLANDO.'"

6,314.—SOAP.—*Goetzmann & Son*, Rochester, N. Y. Application filed June 3, 1878.

"The words 'GOETZMANN & SON' and the female figure, table, and scroll inclosed within an oval border."

6,315.—CORN-STARCH.—*T. Kingsford & Son*, Oswego, N. Y. Application filed June 4, 1878.

"The arbitrary designation 'KINGSFORD.'"

6,316.—MINERAL WATER, SELTZER, SODA-WATER, AND THE LIKE LIQUIDS.—*George L. S. Kimberly*, Baltimore, Md. Application filed June 14, 1878.

"The letters 'G. L. S. K.' in monogram.

6,317.—PLUG CHEWING-TOBACCO.—*W. & A. Leaman*, New York, N. Y. Application filed June 5, 1878.

"The letters and words 'GOLDEN RAYS.'"

6,318.—WHISKY.—*Mohr, Mohr & Co.*, Cincinnati, Ohio. Application filed February 23, 1878.

"The words 'OLD SILVER MEDAL.'"

6,319.—PAINTS AND COLORS.—*Reuben E. Nichols*, Philadelphia, Pa. Application filed June 12, 1878.

"The figure of the fanciful-shaped escutcheon and suspended scroll, as shown."

6,320.—LIQUID DRIERS.—*A. W. Pratt & Co.*, New York, N. Y. Application filed February 4, 1878.

"The title or designation 'PRATT.'"

6,321.—LOCOMOTIVE-ENGINE-BOILER TUBES.—*Joseph T. Ryerson*, Chicago, Ill. Application filed April 13, 1878.

"The arbitrarily-selected letters 'R. R.'"

6,322.—CIGARS.—*Theodore Schunemann*, Detroit, Mich. Application filed June 13, 1878.

"The word-symbol 'DRUMMER' and the representation of a salesman exhibiting cigars to an intending purchaser, as shown."

6,323.—METALLIC PENS.—*Frederick Soennecken*, Bonn, Rhenish Prussia, Germany. Application filed June 17, 1878.

"The exhibition and arrangement of the mammoth pen, eagle, and the conected scroll."

6,324.—TOILET-SOAP.—*John W. Thomas*, New Orleans, La. Application filed March 7, 1878.

"The pictorial representation of a hare."

6,325.—ESSENCE OF VINEGAR.—*Verein für Chemische Industrie*, Mayence and Frankfort-on-the-Main, Germany. Application filed June 12, 1878.

"An exterior or main triangular figure, in the interior of which are formed four smaller triangles by means of three lines intersecting with the sides of the exterior triangle. The upper horizontal line of the lines forming the interior triangles is extended at both sides beyond the outer triangle, and the ends square or tipped at the upper side, as shown."

LABELS.

[Each certificate bearing date July 2, 1878.]

1,594.—Title: "BRENENSTUHL'S ELASTIC WATERPROOF LEATHER DRESSING," &c.—*Ellis J. Heyer* and *William F. Brenenstuhl*, Boston, Mass. Application filed June 24, 1878.

1,595.—Title, (Print.) "PHILLIPS' HANDLE ADVERTISER," &c.—*John E. Phillips*, Philadelphia, Pa. Application filed June 22, 1878.

1,596.—Title: "CENTRAL IRON WORKS MARINE FLANGE."—*Joseph T. Ryerson*, Chicago, Ill. Application filed June 22, 1878.

1,597.—Title: "CENTRAL IRON WORKS MARINE FLANGE, 55,000," &c.—*Joseph T. Ryerson*, Chicago, Ill. Application June 22, 1878.

1,598.—Title: "CENTRAL IRON WORKS S. F. B., 50,000," &c.—*Joseph T. Ryerson*, Chicago, Ill. Application filed June 22, 1878.

1,599.—Title: "CENTRAL IRON WORKS."—*Joseph T. Ryerson*, Chicago, Ill. Application filed June 22, 1878.

1,600.—Title: "BARON GERARD MENDE'S PRESERVING COMPOUND." *Andrew U. Sheldon*, Nevada, Iowa. Application filed June 17, 1878.

1,601.—Title: "CAVALIER."—*Boies, Fay & Conkey*, Chicago, Ill. Application filed May 31, 1878.

1,602.—Title: "MAY BLOSSOM."—*Boies, Fay & Conkey*, Chicago, Ill. Application filed May 31, 1878.

1,603.—Title: "HAPPY DAY."—*Boies, Fay & Conkey*, Chicago, Ill. Application filed May 31, 1878.

1,604.—Title: "GLEAMING GOLD."—*Boies, Fay & Conkey*, Chicago, Ill. Application filed May 31, 1878.

1,605.—Title: "FIRST MATE."—*Boies, Fay & Conkey*, Chicago, Ill. Application filed May 31, 1878.

1,606.—Title: "OCEAN QUEEN."—*Boies, Fay & Conkey*, Chicago, Ill. Application filed May 31, 1878.

1,607.—Title: "THE CRACK NEW YORKER."—*Kerbs & Spiess*, New York, N. Y. Application filed June 19, 1878.

1,608.—Title: "M. OTTENHEIMER & SON, COMPRESSED COOKED SPICED BEEF."—*M. Ottenheimer & Son*, Baltimore, Md. Application filed May 31, 1878.

1,609.—Title: "DR. KAUFMANN'S SULPHUR POROUS PLASTER."—*Ordway Brothers*, Lawrence, Mass. Application filed June 21, 1878.

DESIGNS.

[Each design bearing date July 2, 1878.]

10,735 to 10,737 inclusive.—CARPETS.—*Alfred Heald*, Philadelphia, Pa., assignor to *Hugh McCallum, Orlando Crease, Andrew J. Sloan*, and *William McCallum*, same place. Applications filed June 10, 1878. Term of patents 3½ years.

10,738.—ORNAMENTAL CORNER AND CORNICE BRICK.—*Nels Larson*, St. Olaf, Iowa. Application filed June 11, 1878. Term of patent 7 years.

10,739.—CARPET.—*Thomas J. Stearns*, Boston, Mass., assignor to *Roxbury Carpet Company*, same place. Application filed June 22, 1878. Term of patent 3½ years.

10,740.—PIANO.—*Christian F. T. Steinway*, New York, N. Y., assignor to *himself* and *William Steinway*, same place. Application filed June 20, 1878. Term of patent 14 years.

10,741.—UPRIGHT PIANO-FORTE CASE.—*Christian F. T. Steinway*, New York, N. Y., assignor to *himself* and *William Steinway*, same place. Application filed June 20, 1878. Term of patent 14 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

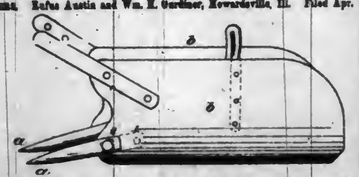
JULY 2, 1878.

205,462. DENTAL TOOLS. Robert Arther, Baltimore, Md. Filed Apr. 12, 1878.



Claim.—As an article of manufacture, a disk for the separation of the teeth, when formed with a thickened periphery, as and for the purpose set forth.

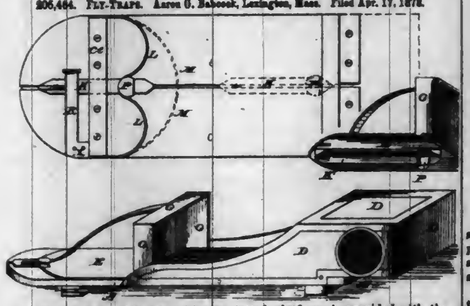
206,463. FENDERS. Rufus Austin and Wm. H. Gardiner, Kewanneville, Ill. Filed Apr. 10, 1878.



Claim.—1. The two sharp-pointed conically-shaped lifters *a a*, arranged in a pair and adjustably attached to the two fenders or shields *b b*, combined with a wheeled cultivator, arranged and operating as set forth.

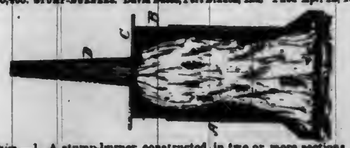
2. In combination with the said lifters and fenders, constructed in pairs, as described, the vertical bars *d d*, the screw-rod, and the spiral spring on the rod between the bars, constructed and arranged and operating as set forth.

206,464. FLY-TRAPS. Aaron G. Babcock, Lexington, Mass. Filed Apr. 17, 1878.



Claim.—In combination with the slotted platform A, provided with the box D and springs L E, the plate E, having front G F and flange K, provided with the catch S and stop P, substantially as described.

206,465. STUMP-BURNERS. David Bates, Fort Branch, Ind. Filed Apr. 13, 1878.



Claim.—1. A stump-burner constructed in two or more sections, adjustable within each other, for the purpose of accommodating stumps of different heights, substantially as described.

2. In a stump-burner, the outer cylinder A, having the flaring bottom *a*, adapted to embrace the spur-roots of a stump, substantially as described.

3. The inner adjustable cylinder B, constructed with a flat top, C, and a smoke-discharge pipe, D, in combination with a stationary outer cylinder, substantially as described, for the purpose specified.

4. The combination of the outer cylinder A, provided with the flaring bottom, with the inner adjustable cylinder B, having the flat top C and pipe D, substantially as herein shown and described.

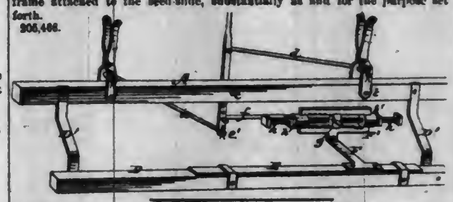
206,466. CHECK-ROWERS. Alfred R. Biddle, Marco, Ill. Filed June 12, 1878.

Brief.—Between the connecting-rod and the seed-slide is interposed a sliding block having set-screws and jam-nuts for adjusting the devices.

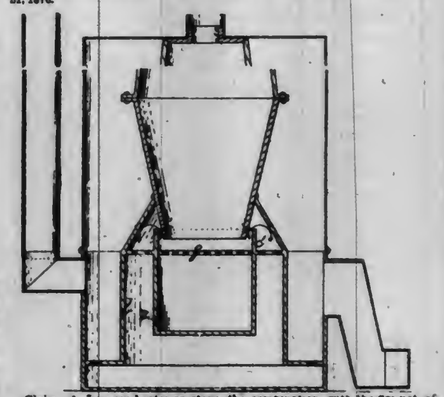
Claim.—1. In combination with the seed-slide of a corn-planter and forked levers and rods, through which power is transmitted, the intermediate arm and frame F', carrying a sliding block controlled by set-screws abutting at each end, substantially as and for the purpose described.

2. In combination with the bar A, carrying forked levers and a handle-lever pivoted to it, the rod *f* and sliding block *g*, controlled by set-screws in a frame attached to the seed-slide, substantially as and for the purpose set forth.

206,466.



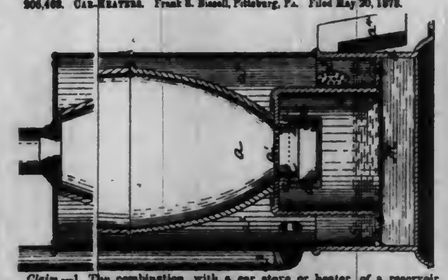
206,467. SELF-EXTINGUISHING CAR-STOVES. Frank S. Bissell, Pittsburg, Pa. Filed May 31, 1878.



Claim.—1. In a car heater or stove, the combination, with the fire-pot, of a reservoir arranged in the base of the stove, and communicating with the fire-pot at its base, but above the grate, by means of a tortuous passage or ports, substantially as described, which pass around the ash-pit, for the purpose specified.

2. The combination, in a car heater or stove, of the reservoir arranged in the base thereof, the grate and fire-pot, and a ring surrounding the grate and inclosing the lower end of the fire-pot, at a suitable distance therefrom, to form a channel for the passage of water, guard the reservoir, and deflect ashes, substantially as specified.

206,468. CAR-HEATERS. Frank S. Bissell, Pittsburg, Pa. Filed May 30, 1878.



Claim.—1. The combination, with a car stove or heater, of a reservoir arranged in the base and communicating with the fire-pot through a slot or ports in the sides of the ash-pit just below the grate, as at *a*, substantially as and for the purpose specified.

2. The combination, in a reservoir-base for self-extinguishing stoves, of the outer and inner shell, forming the main and supplemental communicating reservoirs, and the slotted ash-pit, substantially as specified.

3. The combination, with the reservoir, slotted ash-pit, and grate, of the flange or curtain arranged within the ash-pit to guard the slots thereof, substantially as specified.

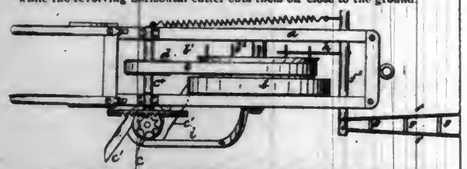
205,469. PRESERVE JARS AND CANS. Henry Blackburn, Nashville, Tenn. Filed Apr. 26, 1878.



Claim.—The combination, with a preserving-vessel, of an apertured plug and an elastic cap provided with a venting-aperture, and adapted to hermetically close the jar and to retain the tying device, as and for the purposes set forth.

205,470. STALK TRIMMER AND CUTTER. L. I. Bodenhamer, Kernersville, N. C. Filed May 21, 1878.

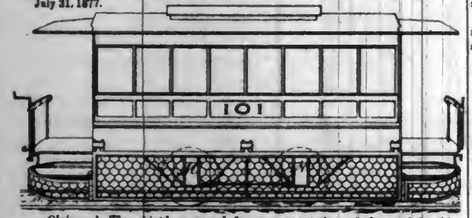
Brief.—The pivoted trimmer on the front of the machine has a vertical or chopping movement, calculated to trim down the side branches of stalks, while the revolving horizontal cutter cuts them off close to the ground.



Claim.—1. The blades *f f*, having the cross-bars or cutters *g*, and secured together at their rear ends and to the vertical arm *f*, in combination with the shaft *f'*, having arm *h*, and wheel *h*, having pins h^2, for the purposes set forth.

2. The single driving-wheel *b*, provided with the side pulleys b^1 and projecting pins b^2, arranged in combination with and for the purpose of operating simultaneously the horizontal cutters c^1 and the vertical cutters or trimmers *f*, substantially as set forth.

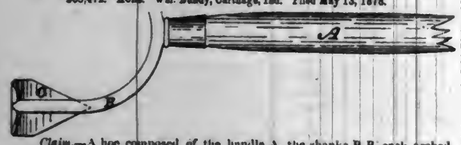
205,471. FENDERS FOR STREET-CARS. S. Briase and Wm. Barbe, New York, N. Y. Filed July 31, 1877.



Claim.—1. The shield or guard for cars, consisting of the straight side pieces provided with rectangular openings for the axle-boxes of the car, in combination with the hinged semicircular ends, constructed and arranged substantially as and for the purposes described.

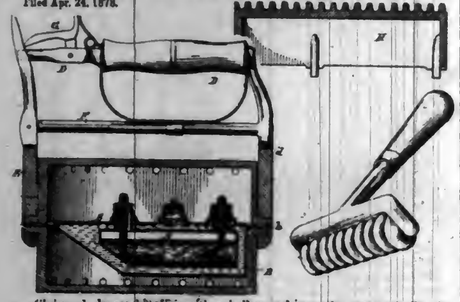
2. The shield or guard constructed and operating as described, in combination with the braces by which it is detachably connected with the car, as set forth.

205,472. HOES. Wm. Bundy, Carthage, Ind. Filed May 13, 1878.



Claim.—A hoe composed of the handle A, the shanks B B, each arched and bowed in the manner shown, and the hooked and pointed blades C C, all substantially as described, and for the purpose specified.

205,473. SAD-IRON AND FLUTER. William Chalmers and William N. Reynolds, Detroit, Mich. Filed Apr. 24, 1878.



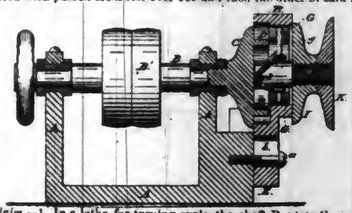
Claim.—1. In combination with a hollow sad-iron, the automatically-adjusting lamp A, provided with the water-jacket B, and suspended on its trunnions *b b*, substantially as and for the purpose set forth.

2. In combination with a sad-iron provided with a handle, D, the pivoted lever E, bar F, and spring-dog G, all constructed and arranged to operate substantially as and for the purpose set forth.

3. In combination with a sectional sad-iron provided with an internal heating device, the hollow and interchangeable fluting attachment H, substantially as and for the purpose set forth.

205,474. LATHES FOR TURNING OVALS. Morgan Chittenden and William A. Lyon, Danbury, Conn. Filed Nov. 13, 1877.

Brief.—Oval picture-frames of different sizes can be perfectly turned by means of a chuck-plate, to which the frame is secured, and which is operated by rings sliding against each other in recesses in a vertically-adjustable head-plate. Each of said rings is provided with a rod, which rods pass through a short shaft carrying the chuck-plate and a washer, at right angles to each other, the inner ring being attached to a head-plate in the driving-shaft, and the outer one held loosely in an opening in the adjustable head-plate. The rods are lubricated to cause them to slide easily through the short shaft by means of a lubricated wick passed crosswise over one and then the other of said rods.



Claim.—1. In a lathe for turning ovals, the shaft B, plate C, ring D, and rod *d*, in combination with the ring G, rod *g*, shaft H, and head-plate E, arranged substantially as shown and specified.

2. In a lathe for turning ovals, the combination of the shaft H, rings D and G, rods *d* and *g*, and the lubricating-wick *h*, arranged as shown, and for the purpose specified.

3. The combination of the adjustable head-plate E, lever F, rings D G, and shafts B and H, all arranged as shown, and for the purpose set forth.

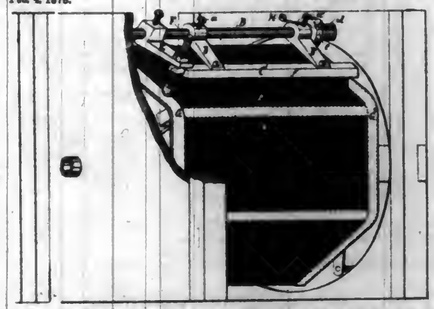
4. The lathe herein described, consisting of the frame A, shaft B, plate C, rings D G, shaft H, adjustable head-plate E, and chuck-plate K, all constructed and arranged substantially as shown and herein described.

205,475. CIGARETTE MOUTH-PIECE. Abraham B. Citron, Berlin, Prussia. Filed May 15, 1878.



Claim.—The glass cigarette mouth-piece A, made of cylindrical form, and with the hole at the inner end *a* contracted, and having a rounded outer end, *b*, substantially as and for the purpose specified.

205,476. FLOUR-BOLTS. M. C. Cogswell, Brooklyn, and W. H. Finn, Oswego, N. Y. Filed Feb. 4, 1878.



Claim.—1. The combination, with a flour-bolt, of the brush C, a cam (one or more) on the axle-shaft of the bolt, corresponding in form to the perimeter of the bolt, and a spring arranged to press the brush toward the bolts, all constructed to operate as and for the purpose described.

2. The combination of the bolt provided with the rims or cams G G', (one or more,) the swinging brush C, arm E, and screw shaft or bolt F, made adjustable in said arm, whereby the brush is made adjustable to the bolt, all as described.

3. The combination of the bolt provided with the rims or cams G G', (one or more,) the swinging brush C, the arm E, the shaft B, the spring *d*, with the adjustable collar *e*, whereby the tension of said spring may be varied, all as and for the purpose described.

205,477. CAR-DOORS. Robert H. Colemna, St. Joseph, Mo. Filed June 3, 1878.

Brief.—A grain-car door composed of two thicknesses of boards, with an interposed metal strip at top, and spurs which support it on vertical slide-rods. The door rests in grooved guideways. A sliding hook and latch secure the door when slid up and swung to the roof. A slotted cattle guard bar slides laterally upon a pin, and is locked over the spurs, or upon the lower ends of the vertical rods, by a latch notching into it, which is, in turn, held by a second toothed latch.

Claim.—1. The described sliding door for grain-cars as made of two thicknesses of boards, battens *h i j*, the interposed metal strip *l* at the top, and the spurs D D, having eyes at their outer ends, and having their other ends flattened and secured between the two thicknesses, as shown, and for the purposes set forth.

2. In combination with the door A, the spurs D D, made and bent and applied between the two thicknesses of the door, as set forth, and the vertical rods E E, adapted at their tops to support the door when elevated by the agency only of the eyes of the spurs and the tops of the rods.

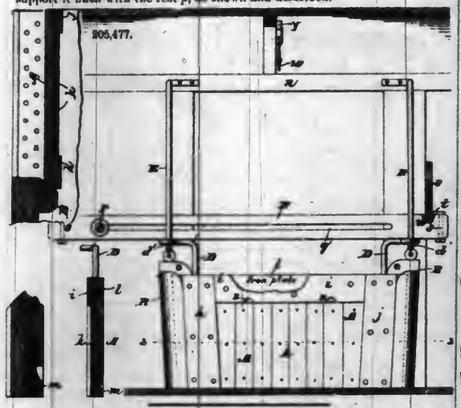
3. In combination, the vertically-sliding door and its spurs D D, the guide-rods E E, and the grooved guideways B B, substantially as shown and described.

4. In combination, the door A, guide-rods E E, slotted cattle-guard F, and a locking device for securing the same, substantially as shown and described.

5. In combination with the vertically-sliding door A and guide-rods E E, the hooked slide-bar *w x* and drop-catch *y* on the under side of the roof, substantially as shown and described.

6. The guide-rods E E, applied to the car, as shown, and provided each with a rest, *p*, and the notch *o*, adapted to receive the eye of the spur D and support it flush with the rest *p*, as shown and described.

205,477.

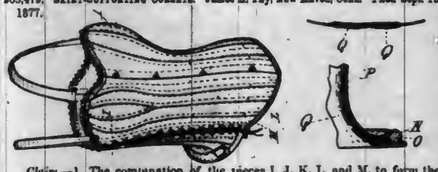


205,478. MANUFACTURE OF GLASS LAMP-CHIMNEYS. Edward D. Ditbridge, Allegheny, assignor to himself and Ditbridge Glass Company, (limited,) Pittsburg, Pa. Filed May 7, 1878.



Claim.—The lamp-chimney C, having a beaded top, *z*, substantially as described.

205,479. SKIRT-SUPPORTING CORSETS. James H. Fay, New Haven, Conn. Filed Sept. 13, 1877.



Claim.—1. The combination of the pieces J, J, K, L, and M, to form the breast portion of a corset, substantially as shown and described.

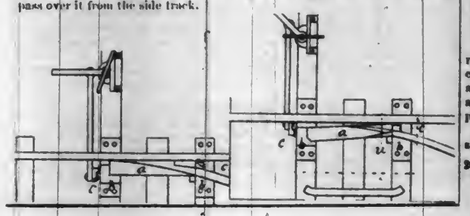
2. A bosom-pad corset in which the gores, tapering toward each end, are inserted between separate sections, the edges of which are sewed together below the gores in seams parallel with the front edges of the corset, substantially as shown, and for the purposes specified.

3. The curved stays Q, in combination with a corset flaring at the lower end or portion of the back, substantially as described.

4. The combination, in a skirt-supporting corset, of the curved stays Q with a flexible rim, substantially as shown and described.

205,480. RAILWAY-SWITCHES. Edwin Gerdon, Hyde Park, and John A. Duggan, Quincy, Mass. Filed Mar. 15, 1878.

Brief.—A point switch-rail has journals at its end, upon which it can be turned about a quarter of one revolution. It is provided with grooves, so that when set for the side track a train can pass over it from the main track in the opposite direction, and also so that when set for the main track a train can pass over it from the side track.



Claim.—A combined rotating switch-rail and guard-rail, *c*, hung and rotating upon pins *c c*, bearing upon and turning in boxes *b b*, substantially as described.

205,481. TRIPODS FOR SURVEYING-INSTRUMENTS. William Gurley, Troy, N. Y., assignor to W. & L. E. Gurley. Filed Oct. 24, 1877.



Claim.—1. A tripod-leg having two side strips, A A', adapted to be pivoted to a tripod-head, the intervening sliding end rod B, and the two separate screw-clamps C C', applied to and around the lower portion of the said side strips and intermediate end rod, substantially as shown and described.

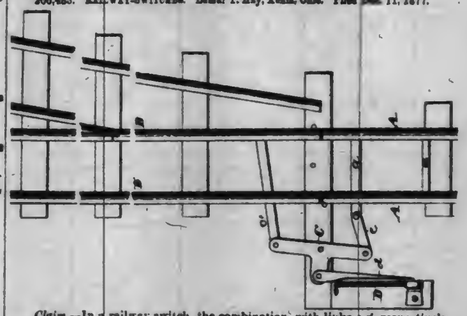
2. A tripod-leg having two upper side strips, A A', of bow form, and adapted to be pivoted to a tripod-head, intermediate sliding end rod B, separate screw-clamps C C', and hollow brace H, all combined substantially as shown and described.

205,482. CIGAR-CASES. Oscar Hammerstein, New York, N. Y. Filed May 4, 1878.



Claim.—A cigar-case made cylindrical at the middle and tapering toward the ends, and extensible and separable at or near the middle, substantially as herein shown and described.

205,483. RAILWAY-SWITCHES. Lemar T. Hay, Xenia, Ohio. Filed Dec. 11, 1877.

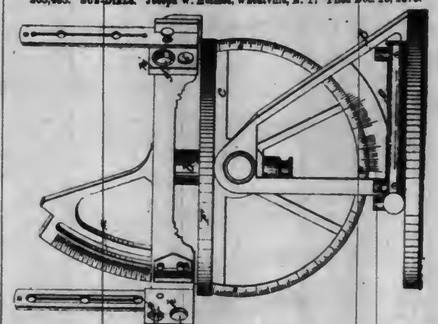


Claim.—In a railway-switch, the combination, with links *c c'*, respectively pivoted to bar *a*, connecting the switch-rails A and movable rail B, of the three-armed lever C, directly operating said links, and the switch-lever D, which latter engages, by connection *d*, with the actuating-arm of said lever C, substantially as set forth.

205,484. PHOTOGRAPHIC NEGATIVES. Gebhard Hoelle and Adolph Hoester, Belleville, Ill. Filed Apr. 9, 1878.

Claim.—A photographic negative consisting of a glass plate having a ground-glass surface, and provided with a sensitized coating for the reception of the photographic image, substantially as and for the purpose set forth.

205,485. SUN-DIALS. Joseph W. Holmes, Wheatville, N. Y. Filed Dec. 18, 1878.



Claim.—1. In a solar-time indicator, the combination of a graduated quadrant or segment of a circle, mounted on a horizontal axis, a pivoted graduated circle and a fixed graduated circle, both mounted directly upon the segment, and a gnomon consisting of an arc of a circle and a traversing arm, having the apertures and fixed upon the pivoted circle, all substantially as and for the purposes set forth.

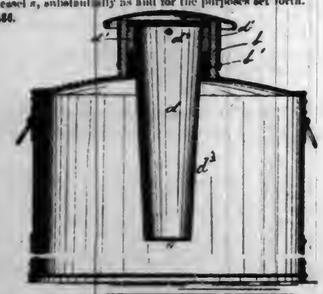
2. The combination of the detachable sights with the traversing arm, all substantially as and for the purpose set forth.

205,486. REFRIGERATING-PLUGS FOR CANS. Jas. J. Johnson, East Liverpool, Ohio. Filed Feb. 8, 1878.

Claim.—The inverted vertically-adjustable cone-shaped prong *d*, provided

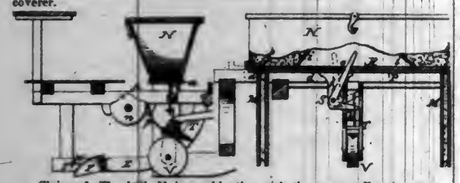
with a rim or collar, *d*, and handle *d*², and held within and by the nozzle *b* of the vessel *a*, substantially as and for the purposes set forth.

205,486.



205,487. CORN-PLANTER. Francis E. Jessi, Prosport, Ill., assignor of one-half his right to Hiram Bright, same place. Filed Mar. 11, 1878.

Brief.—To a cross-rod, and extending rearward, is a pivoted hanger, composed of two arms, between the lower ends of which is journaled a wheel, that is rotated by contact with the ground. From a cross-bar on the hanger projects an arm that engages one end of a crank-lever, for imparting a vibratory movement to the seed-slide. To the runners is adjustably attached a hinged coverer.



Claim.—1. The drills M, in combination with the runners E and coverers F, hinged thereto, substantially as expressed.

2. The shaft W, provided with the cams *l* and *n*, having, respectively, the ropes *m* and *p*, in combination with the drills M, hanger T, bell-crank lever S, and seed-trough N, having bottoms P R, substantially as set forth.

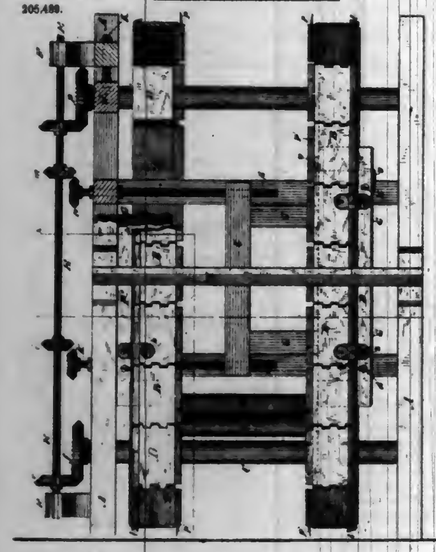
3. The lever *w*, connected with the wheel *t* by a band, *v*, in combination with the shaft W, having cams *l* and *n*, drills M, hanger T, bell-crank lever S, and seed-trough N, having bottoms P R, substantially as described.

205,488. WIRE-DRAWING PINCHERS. Virgil D. P. Kenerson, Worcester, Mass. Filed Mar. 20, 1878.



Claim.—A pair of wire-drawing pinchers, wherein the jaws are arranged to offset or bend over the extremity of the wire when the pinchers are closed thereon, substantially as and for the purpose set forth.

205,489.



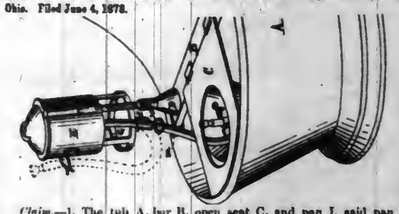
205,489. MACHINES FOR STRETCHING CLOTH. George D. King, Oswego, N. Y., assignor to M. C. Thompson, same place. Filed Jan. 29, 1878.

Brief.—The endless tentering chain belts may run parallel or at an angle to each other, and are adjusted, by means of devices enumerated in the first claim, to accommodate cloth of different widths.

Claim.—1. The combination of the shaft E, gears *l m k n*, screws S S, and sliding frame G, in the manner and for the purpose stated.

2. The combination of the angular adjustable wheels D and endless chain composed of the links B with the adjustable plate P, sliding frame G, and intermediate mechanism connecting the same, for operation as and for the purpose set forth.

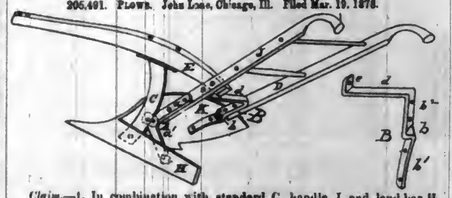
205,490. ATTACHMENTS FOR BATHS. Edward Kuessner and Ferdinand Avril, Cincinnati, Ohio. Filed June 4, 1878.



Claim.—1. The tub A, bar B, open seat C, and pan I, said pan being located below the opening in the seat, and having within it a support for the tube of a douche, the parts being combined to operate substantially as specified.

2. In combination with a bathing-vessel, the douche-vessel E, constructed substantially as described, and adapted to be used in connection with said bathing-vessel, for the purpose specified.

205,491. PLOWS. John Lone, Chicago, Ill. Filed Mar. 19, 1878.

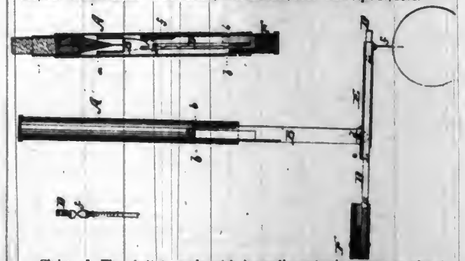


Claim.—1. In combination with standard C, handle J, and land-bar H, the single bar A, bent at right angles near its center L, shape, and extending from the handle J to the rear part of the land-bar H, and detachably bolted to the handle J and land-bar H, and the angle *a*², attached to the standard C some distance above the end, as shown, all arranged and combined as shown.

2. In combination with the mold-board handle D and mold-board K, the bar B, having the shoulder *b*, arm *b*¹, and arm *b*², and arm *b*³ attached directly to the mold-board K, and the end of the handle D resting on the shoulder *b* and against the mold-board K, as shown, and the arm *b*² extending above the shoulder *b* on the inside of handle D, and thereto attached directly with two bolts, as shown, as and for the purpose set forth.

3. In combination with the beam-handle J, mold-board handle D, and mold-board K, the bar B, having the shoulder *b*, arm *b*², and arm *b*³, brace *d* and ear *e* in a single bar, and arm *b*¹ directly attached to the mold-board K, and the end of the handle D resting on the shoulder *b* and against the mold-board K, as shown, and the arm *b*² extending upward on the inside of the mold-board handle D, and thence bent, forming brace *d*, extending from the mold-board handle D to the beam-handle J, and the ear *e* formed on the end of the brace *d*, as shown, and the bar B, attached with bolts directly to both handles J and D, as shown, all as and for the purpose set forth.

205,492. COIN-TESTERS. Emil Loeber, West Hoboken, N. J. Filed Apr. 10, 1878.



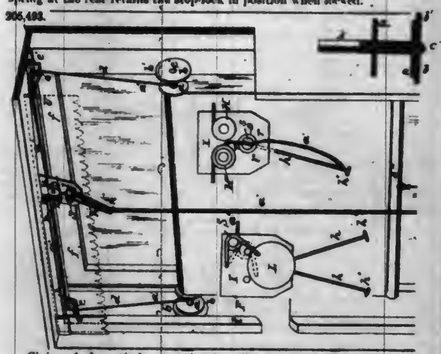
Claim.—1. The shell A, made with inwardly-projecting stops or pins *b*, and combined with the slide B, having head *a*, and with the scale-beam D, pivoted to said slide so that it can be swung at right angles thereto outside of the shell, substantially as herein shown and described.

2. The combination of the pivoted sleeve E with the notched beam D, carrying weight F, and with the spring-catch *e*, for operation substantially as specified.

205,493. CURTAIN-FIXTURES. John K. Macfarlane, St. Louis, Mo. Filed Mar. 18, 1878.

Brief.—The curtain is entirely suspended, and the cords, which are attached to spools at the ends of the roller, after passing over pulleys at the upper corners and at the center, pass through a stop-lock. This consists of a fixed spindle with an outer cylindrical sheath. The cords pass through holes in both, and through a loop in a pendent rod attached to the sheath. By pulling the cord to one side the sheath may be turned on the spindle, jamming the cord fast. The spools have a large loose friction-wheel, so that when the roller has reached the top the curtain may still be rolled and unrolled. In a groove in the outer edge of this wheel may be inserted a friction-band of india-rubber, and also an india-rubber buffer in the end of the spindle. A spring at the rear retains the stop-lock in position when locked.

205,493.



Claim.—1. In a window-curtain, the roller G, as provided with the spools *a*, having thereto attached the axle-extension *c'* and friction-disks *b*, as stated.

2. In combination with a curtain-roller, the friction-disks *b* and check-plate J, whereby, though the rise of the curtain is arrested, the curtain may still be rolled and unrolled, as specified.

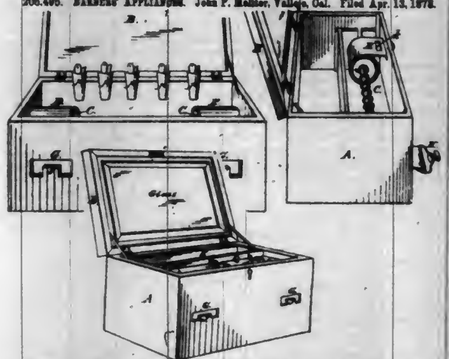
3. The stop-lock arranged on plate *I*, consisting of the disk-plate L, having thereto attached socket *a* for the reception of spindle *a*, provided with holes *r r'*, *r*, to engage, through the action of the rod *h*, to the retention or release of the cords *a'*, as and for the purpose herein stated.

205,494. BURR-BUSHES. George H. Miner, San Francisco, Cal. Filed Jan. 14, 1878.



Claim.—The bush or ring A, tapering on its inside, and provided with the shallow screw-threads at the lower edge of its interior, substantially as and for the purpose described.

205,495. BARBERS' APPLIANCES. John P. Meltzer, Vallejo, Cal. Filed Apr. 13, 1878.



Claim.—1. The box or cabinet A, with its lid or hinged cover B, and having the straps D, mounted upon the spring-rollers C inside of it, said box being provided with the openings G, through which the straps are drawn, substantially as and for the purpose above described.

2. The box or cabinet A, having the openings G, with their projections J, in combination with the straps C, with their openings G, said straps being mounted upon spring-rollers inside of the box, so as to be drawn out through the openings G, and retained or latched upon the projections J, substantially as and for the purpose described.

3. The tonsorial cabinet A, having the straps D, mounted upon spring-rollers C inside of it, said straps being arranged to be drawn outside of the box or case, in combination with the key-hole openings or slots *p* in the bottom of the cabinet, substantially as and for the purpose herein specified.

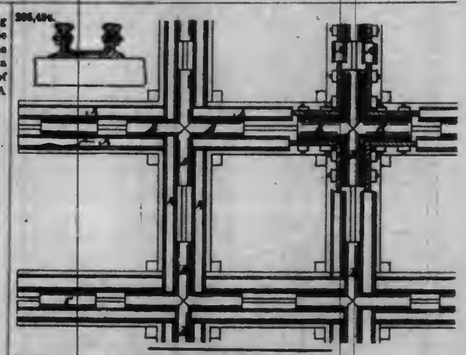
4. The box or chest A, with its openings G, and having the straps D, mounted upon spring-rollers C inside of it, so as to be drawn out through said openings, and having the key-hole slots *p* in its bottom, and the trays Q S, placed inside of it, all combined and arranged to operate substantially as and for the purpose above described.

205,496. RAILWAY-CROSSINGS. William J. Murden, Indianapolis, Ind. Filed Mar. 11, 1878.

Brief.—The main and wing rails of the crossing are united by U or channel-iron fish-plates.

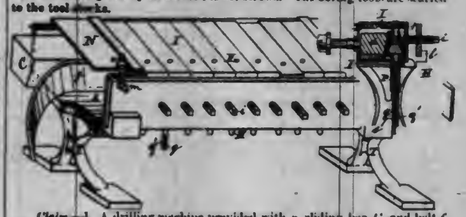
Claim.—A railroad-crossing consisting of a series of main track and wing rails united together by channel-iron fish-plates having their sides that bolt to said rails parallel, in the manner and for the purpose substantially as shown and described.

205,496.



205,497. MACHINES FOR BORING BRUSH-BLOCKS. A. Howaday, New Orleans, La. Filed Nov. 16, 1877.

Brief.—As many of the boring-tools as desired are thrown into contact with the driving-belt by means of the set-screws. The boring-tools are scarfed to the tool-shanks.



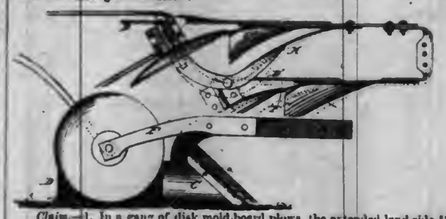
Claim.—1. A drilling-machine provided with a sliding bar, C, and belt *f*, drill-spindles H, and adjustable bearings I, as described, and for the purpose specified.

2. In combination with the bar C and strap *f*, the pulleys G, set-screws *i*, and frame I, substantially as described.

3. In combination with the spindle H and drill *g*, having scarfed and undercut shanks, the sleeve F, substantially as described.

205,498. ROTARY MOLD-BOARD PLOWS. H. Palmer, New York, N. Y. Filed Dec. 20, 1877.

Brief.—The beam and share are of ordinary construction. The mold-board is disk-formed, supported both on the convex and concave sides, having a radius greater than the depth of the furrow. The land-side of a single plow extends to some distance to the rear of the mold-board. Two plows or more may be arranged in a gang, and the beams connected by a spring-brace. When two or more plows are used, the advance plows have a short land-side to allow the turning of the furrow.

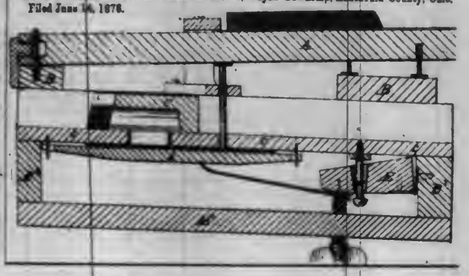


Claim.—1. In a gang of disk mold-board plows, the extended land-side D of the rear plow, in combination with the short land-side D' of the advance plow, and connecting spring-brace H, as and for the purpose specified.

2. The braces F F', in combination with the plow-beam and disk mold-board, fitting closely to the concave surface, thus forming both a support and a cleaner, as shown and described.

3. The supporting spring-brace, in combination with the advance plow, substantially as and for the purpose described.

205,499. ORGAN-ACTIONS. James R. Parker, Wayne Township, Ashtabula County, Ohio. Filed June 16, 1878.



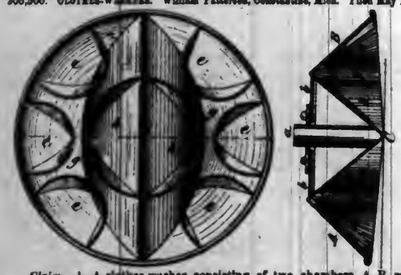
Claim.—1. In a musical instrument, the combination of reed-valves, valve-springs, and an adjustable or movable spring-bar, arranged substantially as described, whereby the pressure of the springs upon the valve may be varied by the adjustment of the spring-bar.

2. The combination of reed-valves, valve-springs, and an adjustable spring-bar, arranged inside the valve-chamber, and an adjusting device extending outside such chamber, substantially as set forth, whereby the pressure of the springs upon the valves may be varied at the will of the user or operator.

3. The combination of an adjustable or movable spring-bar and one or more stop devices, substantially as set forth, whereby the range of motion of the spring-bar is limited.

4. The combination, in a musical instrument, of keys, tracker or push pins, reed-valves, valve-springs, an adjustable or movable sprieg-bar, an adjusting device to operate the bar, and a stop device or devices to limit the range of adjustment of the bar, substantially as and for the purposes set forth.

206,500. CLOTHES-WASHER. William Patterson, Constantine, Mich. Filed May 11, 1878.



Claim.—1. A clothes-washer consisting of two chambers, A B, with inclined bases, and each provided with suction devices, a diametrical rocker-ridge, C, and a handle, D, substantially as described.

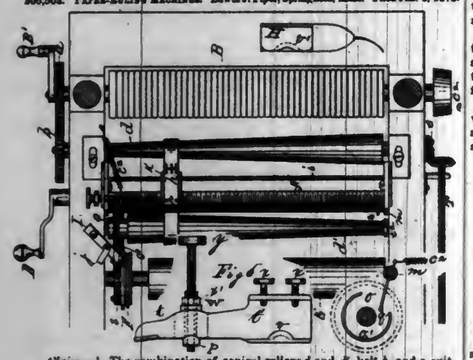
2. In a clothes-washer consisting of two chambers meeting at a diametrical rocker-ridge, the combination of the suction-cones *e e* and *h h* with air-compressing chambers *g g*, and a handle by which to rock the washer, as and for the purpose described.

206,501. BARBED FENCE-WIRE. Ole Pedersen, Joliet, Ill. Filed Apr. 26, 1877.



Claim.—The combination, with the twisted wires *a a*, of the cast-metal barb D, provided with the pointed spurs *c*, *d*, *e*, and *f*, projecting radially therefrom, and having the body of the barb elongated, so that its ends project beyond the outer edges of the spurs, and provided with the longitudinal grooves curved to receive and fit the angle of the twisted wires *a a*, substantially as shown and described.

206,502. PAPER-RULING MACHINE. Edwin J. Piper, Springfield, Mass. Filed Jan. 5, 1878.



Claim.—1. The combination of conical rollers *d* and *d'*, belt *h*, and a suitable belt-shipping device, the striker-head and cams F, striker-arm *t*, and pen or striker beam H, constructed and arranged substantially as and for the purpose set forth.

2. The combination of the gate *m*, arm *q*, gear-wheel *o*, with its broken lateral rim, rollers *d'* and *d*, and belt *h*, substantially as and for the purpose set forth.

3. In combination, the rollers B and C, rollers *d* and *d'*, belt *h*, gear-wheel *o*, with its broken lateral rim, striker-head and cams F, arm *q*, gate *m*, striker-arm *t*, and pen or striker beam H, all constructed and arranged substantially as and for the purpose set forth.

4. The combination, with roller *d'*, of gear-wheel *o*, with its lateral cut rim *o'*, arm *q* on gate *m*, gate *m*, gear *s*, and cam-head F, substantially as set forth, and for the purpose specified.

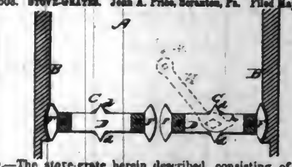
5. The combination of beam H, striker-beam arm *t*, and jaw *t'*, cam-head F, gear *s*, gear-wheel *o* and its lateral rim *o'*, arm *q* on gate *m*, and gate *m*, substantially as set forth and described.

6. The combination of the pen or striker beam H, jaw *t'*, screws *x x*, and striker-arm *t*, substantially as and for the purpose set forth.

7. The combination, with arm *t*, of bolt P, washer W, nut *x'*, and screw *y*, substantially as specified and set forth.

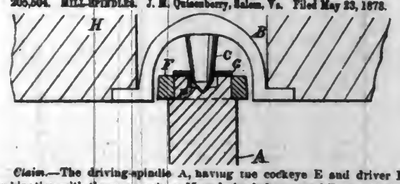
8. The combination, in a paper-ruling machine, of the cone-shaped rollers *d* and *d'*, one driving the other by a belt or its equivalent, and the gate *m* and pen or striker beam H, and their intermediate connecting devices, substantially as and for the purpose set forth.

206,503. STOVE-GRATE. John A. Price, Scranton, Pa. Filed May 23, 1878.



Claim.—The stove-grate herein described, consisting of the reversible sections C C, geared together, as shown, having the cutting-arms F F arranged to project beyond the surfaces of the sections at substantially right angles thereto, and constructed either with or without the central projections or points *d d*, substantially as described, for the purpose specified.

206,504. MILL-SPINDLES. J. M. Quisenberry, Salem, Va. Filed May 23, 1878.



Claim.—The driving-spindle A, having the cockeye E and driver F, in combination with the runner-stone H and the balance-rynd B, provided with the centrally-depending balance-pivot C, whereby the suspension and driving points are brought to the line of the lower surface of the runner-stone, substantially as and for the purpose set forth.

206,505. VAPOR-BURNERS. Edward F. Reed, Chelsea, Mass. Filed Apr. 6, 1877.

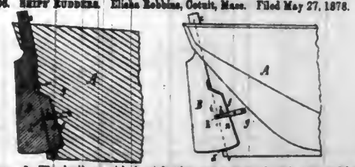


Claim.—1. In a vapor-burner, the combination of the central conducting-tube B, provided with gas-orifices *b b*, the casing A, entirely surrounding said central tube, and having gas-orifices *a a* in its lowermost portion, and the conducting-tube C, the orifices *a a* being located above the conducting-tube, for the purpose of causing a jet of gas or flame to impinge thereon, substantially as shown and described.

2. In a vapor-burner provided with an air-inlet, F, the combination, with the exterior conducting-tube C, of the plate K and wings or guards I I, arranged substantially as shown and described, so as to confine the flame from the initiatory supply of fluid to one side of said air-inlet, in order to obviate flickering of the illuminating-flame, as set forth.

3. In a vapor-burner having a lateral supply-tube, C, the combination, with said tube, of a plate or holder, K, arranged directly thereunder, and adapted to direct the heat from the initiatory supply of fuel solely upon said supply-tube, for the objects named.

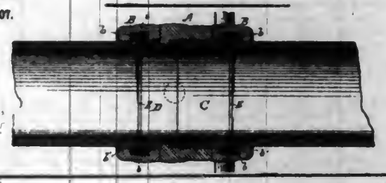
206,506. SHIPS' RUDDERS. Elisha Robbins, Cotuit, Mass. Filed May 27, 1878.



Claim.—1. The hull provided with the run-recess *f* and the rudder-post and foot-bearings, arranged in line as set forth, in combination with the rudder having the pivotal post *e* and the blade-extension *c*, disposed relatively to the said bearings in manner as represented.

2. The hull provided with the run-recess *f* and the intermediate pivotal bearing *k*, in combination with the rudder provided with the forward extension *c* of its blade and the notch or recess *b* therein to receive such bearing *k*, as specified.

206,507.



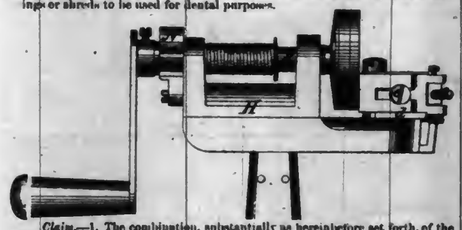
206,507. HOSE-COUPLINGS. Stephen Sibley, Chelsea, Mass. Filed Feb. 26, 1878.

Claim.—1. The binding-rings B B, provided with the interior seat *b* and ridge *b'*, in combination with the flanged end of the hose, the annular washer E, the swivel D, and bush C, as described.

2. The method herein described of connecting the body of the coupling and the swivel by compressing the body upon the swivel, substantially as and for the purpose set forth.

206,508. APPARATUS FOR REDUCING METAL FOR DENTAL PURPOSES. Nelson B. Clayton, Rochester, N. Y. Filed Sept. 5, 1877.

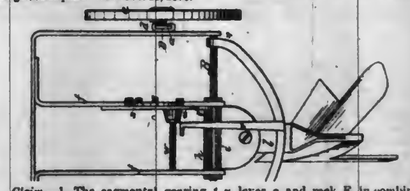
Brief.—The ingot of metal is attached to the end of a mandrel pressed forward by a spring, while a cutter turning on a vertical pivot, the edge extending radially across the ingot, operates upon the metal to produce shavings or shreds to be used for dental purposes.



Claim.—1. The combination, substantially as hereinbefore set forth, of the fixed bed-plate, the endwise-moving ingot-bearing shaft mounted in fixed bearings therein, its feeding-spring, and the knife-rest, adjustable on a fixed pivot on the bed-plate in the line of the ingot-bearing shaft, for the purposes specified.

2. The knife-rest constructed, as described, with a rounded or cam-shaped pivoted end, adapted to bear upon the ingot and regulate its pressure upon the cutter.

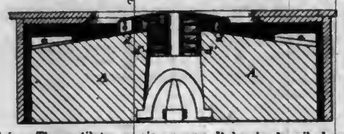
206,509. PLOWS. Charles P. Snow, Freeport, Ill., assignor of one-half his right to Hiram Bright, same place. Filed Feb. 23, 1878.



Claim.—1. The segmental gearing *t w*, lever *x*, and rack E, in combination with the sleeve *h*, lips *i*, plow-beam *l*, and bar *m*, substantially as set forth.

2. As a means for allowing the lateral movement of the plow-beam *l*, the curved bar *m*, hinged at each end on the axle B, and provided on its under surface with the lips *n*, and on its upper surface with the foot-lever *p*, in combination with the sleeve *h*, having lips *i*, between which the plow-beam is pivoted, substantially as set forth.

206,510. MILLSTONE-VENTILATORS. H. F. Stinde, Steelesville, Ill. Filed Mar. 22, 1878.



Claim.—The ventilator or air-conveyer H, herein described, capped and flanged to fit and close the eye of the runner-stone, provided with the upper series of hood-mouthed spiral air-ducts descending into the eye of the stone, and becoming therein the lower series of spiral air-delivering passages, whereby the air for cooling and ventilating the burrs is gathered and forced between the grinding-surfaces, substantially as set forth.

206,511. FIRE-ESCAPES. Daniel C. Striffer, St. Louis, Mo. Filed Feb. 15, 1878.

Brief.—The ladder-sections are extended by a cable, which extends in a line down the center of the several sections, and passes over pulleys at the top and bottom of each section, those at the top being placed at an angle to the plane of the rounds, and those at the bottom being parallel with the rounds, whereby the cable passes in front of and back of each section without crossing between the rounds of a section. The ladder is brought to the desired angle and secured there by a windlass and rope above and one below the truck-floor. It is leveled or adjusted at its base by spring-locked hand-levers pivoted to the carriage, their outer ends carrying the ladder-pivots. When the ladder is employed the truck-springs are prevented from yielding to its load by means of clamping-levers bearing against vertical arms secured to truck-frame. A sliding clutch pulley or drum is employed, whereby the draft of the animals may be utilized to extend the sections.

Claim.—1. The herein-described tackle, in which the rope is secured to the lower end of the top ladder, B^3, and passes over the pulley d^1, placed at the top of the second ladder, B^1, so as not to be parallel with the rungs of said ladder B^2; thence passes down the back of said ladder, over the pulley d^2, placed parallel with the rungs and at the bottom of said ladder B^2; thence passes upward over the pulley d^3, similarly arranged to that of d^1, but at the top of the third ladder, B^3; thence passes down the back of said ladder, and so on in a similar manner and in center line of all the ladders, and in combination therewith, as herein shown and described, as and for the purposes set forth.

2. The herein-described tackle, consisting of the rope secured to the lower end of the top ladder, B^3, and passing over the pulley d^3, placed at the top of the second ladder, so as to be not parallel with the rungs of said ladder B^2; thence passing down the back of said ladder over the pulley d^2, placed parallel with the rungs and at bottom of said ladder B^2; thence passing upward and over the pulley d^1 similarly arranged to that of d^3 at the top of the third ladder, B^3; thence passing down the back of said ladder, and so on in a similar manner and in center line of all the ladders nested within each other, and in combination with a carriage carrying a windlass, by means whereof the raising and lowering of said ladders is accomplished, in the manner and for the purposes set forth.

3. The windlass E, controlled by ratchet and pawl, the chain e^3, the swinging bar E', consisting of a V-shaped bent bar, its center point brought below the wagon-axle and connecting to said chain, the opposite side of the bar E' being journaled to the truck, which carries a nest of ladders, all said parts being combined to operate substantially as and for the purpose set forth.

4. The combination of the windlass E, chain e^3, the swinging bar E', the windlass F, rope f^3 f^4, the sections of ladders journaled at *c*, all said parts mounted on a carriage, as herein shown and described, to operate substantially as set forth.

5. The hand attachment consisting of the lever C, having its fulcrum at c^1, engaging the bearing *c* of the ladders, the spring-lever c^2, engaging any of the holes in a plate, c^3, all said parts being combined with ladders mounted on a carriage, to operate in the manner and for the purpose set forth.

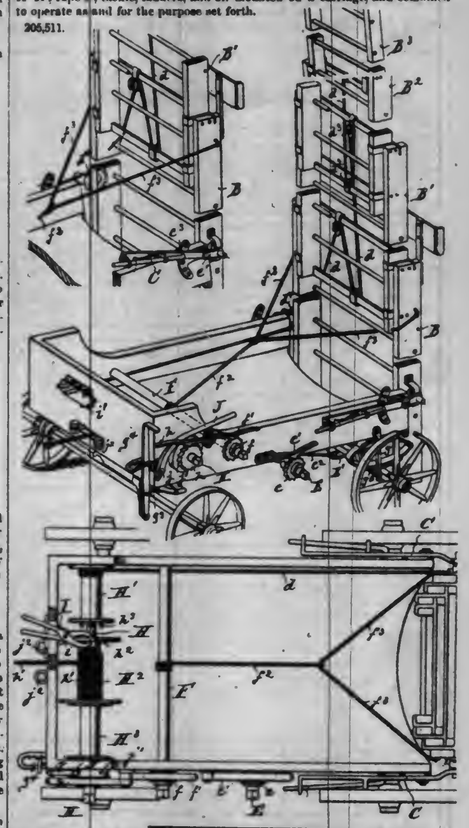
6. The wagon-spring lock consisting of the hand-lever, connecting-rod, locking-levers, rigid bars, in combination with a spring-wagon.

7. The loose or movable pulley H^3, having holes h^3 and carrying the rope h^1, in combination with the tight or rigid pulleys H^1 H^2, the turn-shaft H, the tackle connecting to a system of ladders mounted on a carriage.

8. The pair of locking-levers I, in combination with the adjustable pulley H^3, the pulleys H^1 H^2, the turn-shaft H, the rope h^1, and tackle, ladders, and carriage, all constructed and combined as set forth.

9. The friction-brake J, disk-wheel f^7, turn-shaft H, carrying pulleys H^1 H^2 H^3, rope h^1, tackle, ladders, and all mounted on a carriage, and combined to operate as and for the purpose set forth.

206,511.



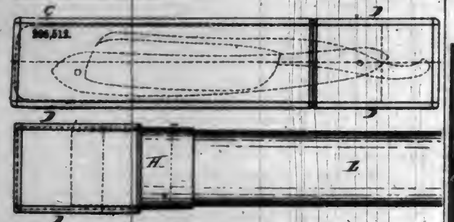
206,512. RAZOR-STROPS. Joseph R. Torrey, Worcester, Mass. Filed June 13, 1878.

Brief.—The packing ring or sheet packs both the case and its cover to the strop.

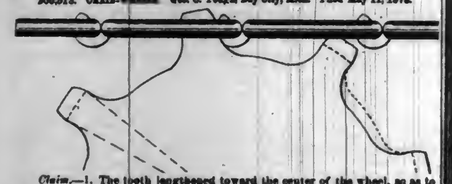
Claim.—1. The combination, with the case C and chambered strop F, of the box-handle D and projecting sheath H, substantially as and for the purposes set forth.

2. The combination, with the strop F, of the box handle D and sheath H, substantially as and for the purposes set forth.

206,512.



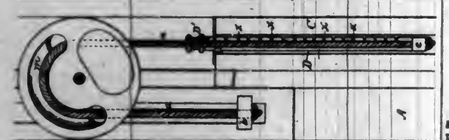
206,513. CHAIN-WHEEL. Geo. G. Tough, Bay City, Mich. Filed May 11, 1878.



Claim.—1. The tooth lengthened toward the center of the wheel, so as to allow the center of cross-bar of the chain to drop below the pitch-line of the tooth.

2. The tooth so formed that a line drawn on each side for a certain distance would intersect in or near the center of the wheel.

206,514. SASH-BALANCE. M. J. Trusal and Henry P. Urey, Edensburg, Pa. Filed Mar. 21, 1878.



Claim.—1. The porcelain disk or sheath F, formed with the central hole *f*, side holes *f f*, circular groove *m*, and projection *n*, substantially as and for the purpose set forth.

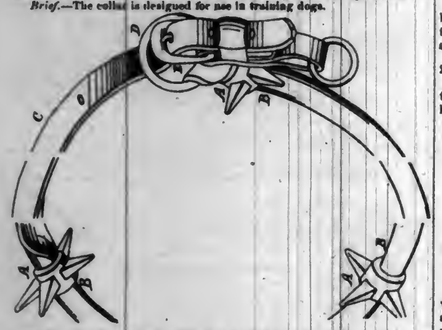
2. The combination of balance-sash cord *a*, fixed permanently to the upper sash B and adjustably to the lower sash C, with the porcelain disk or sheath F, constructed as described, as and for the purpose set forth.

3. The combination of the grooved sash C, the cord *a*, and the sliding bar D, provided with the lug *e* at or near its lower end, and a series of notches, *x x*, in its edge, with the plate E, as and for the purpose herein set forth.

4. The hooked spring A, in combination with the notched bar D and plate E, substantially as set forth, and for the purpose named.

206,515. DOG-COLLAR. Mathew Van Culin, Delaware City, Del. Filed Apr. 10, 1878.

Brief.—The collar is designed for use in training dogs.



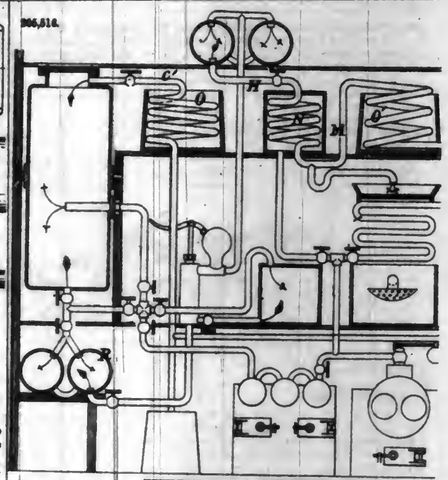
Claim.—As an improved article of manufacture, a dog-collar consisting of the round strap B, provided with the revolving spikes A, cast solid, ring D, and strap C, all constructed and operating substantially as and for the purpose set forth.

206,516. REFINING FAT-OILS. Homer T. Taryan, Richmond, Ind. Filed Feb. 23, 1878.

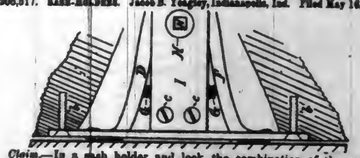
Brief.—In removing fixed oils from seeds by percolation of a hydrocarbon through the bruised seeds, a portion of the solvent always remains behind in the marc, which renders the latter unfit for many uses for which it is otherwise suitable. The object in this application is to remove this residual hydrocarbon by means of superheated steam.

Claim.—The herein-described process, which consists in treating the residuum of vegetable substances from which the oil has been extracted by the use of a hydrocarbon solvent with superheated steam, for the purpose of removing and recovering the solvent, substantially as specified.

206,516.

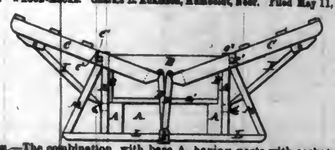


206,517. SASH-HOLDERS. Jacob B. Yeagley, Indianapolis, Ind. Filed May 16, 1878.



Claim.—In a sash holder and lock, the combination of the notched or grooved pivoted check shanks D F, spring G, elliptical tumbler H, key K, case-plates I and J, and the window-frame face-plate C, the several parts constructed and relatively arranged to operate substantially as herein shown and described.

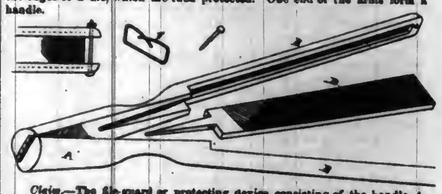
206,518. WAGON-RACKS. Charles E. Adamson, Humboldt, Nebr. Filed May 11, 1878.



Claim.—The combination, with base A, having posts with sockets *a*', and bed B, of the hinged rack C, having end posts, pivots *c*', the bars D, hinged to a casting, E, the end-slotted cross-bar F in two parts, hinged together, the staple G, rod H, and pivoted braces I, as and for the purpose specified.

206,519. FILE-GUARD. Mary P. Ayres, San Francisco, Cal. Filed May 20, 1878.

Brief.—Grooves on the inner sides of two arms, hinged together, receive the edges of a file, which are thus protected. One end of the arms form a handle.



Claim.—The file-guard or protecting device consisting of the handle A, with its projecting forks B, with their grooved edges fitted to inclose the edges of the file, and secured in place by means of the loop F, or equivalent device, said guard being removable, substantially as shown, and for the purpose herein described.

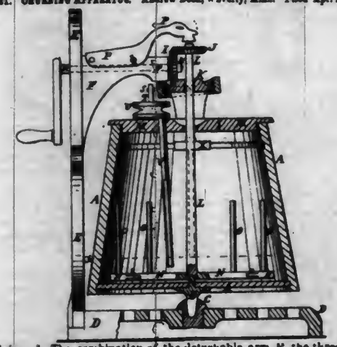
206,520. HARROW-TEETH FASTENINGS. James H. Bailey and Thomas K. Bailey, Salsbia, Mo. Filed May 13, 1878.



Claim.—The tooth-holder plates C, made with teeth or points *c*' upon their inner sides, with teeth-bearings *c*', and with stops or lugs *c*' projecting from

their outer sides, and the cycbolts D, made with elongated apex *d*' upon their rear ends and fins or wings *d*' upon the opposite sides of their rear parts, in combination with the teeth B and the bars A of the harrow-frame, substantially as herein shown and described.

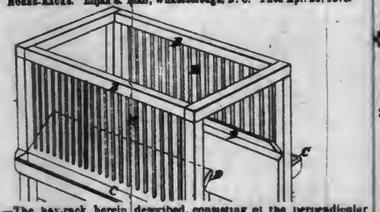
206,521. OILING APPARATUS. Andrew Bock, Waverly, Minn. Filed Apr. 22, 1878.



Claim.—1. The combination of the detachable arm F, the three beveled gear wheels I J K, the dasher-shaft L, the cross-bar N, provided with the projecting arms O, and the stationary downwardly-projecting arms W, with the cover M, the rotating churn-body A, and the arm F, standard E, and platform D, substantially as herein shown and described.

2. The combination of the oscillating cam-ring B, the bellows U, and the pipe V with the revolving churn-body A, the cover M, and the arm F of the standard E, substantially as herein shown and described.

206,522. HORSE-RACKS. Elijah S. Blair, Wilkesborough, N. C. Filed Apr. 29, 1878.



Claim.—The hay-rack herein described, consisting of the perpendicular bars E, short inclined bottom D, terminating along the upper inner edge of the trough, and feed-trough C, having an imperforated bottom, whereby the hay-seed is forced by gravity down the inclined bottom directly into the feed-trough, to be eaten by the animal, as set forth.

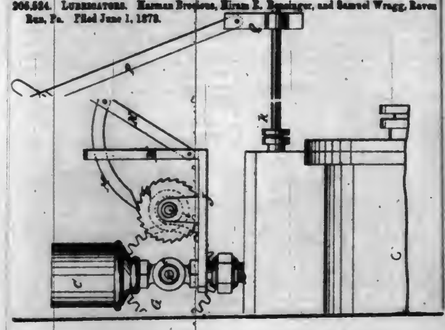
206,523. CART-DOGS. Elisha Breed, Minneapolis, Minn. Filed Feb. 14, 1878.

Brief.—The dog is pivoted between ears formed upon a metallic band tapering each way from the center, and provided with a tang extending down to the end of a wooden handle tapering each way from its largest diameter. The tang is secured in the handle by a series of metallic rings tapered to fit the handle.

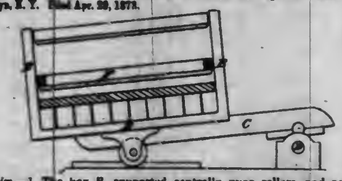


Claim.—In combination with the handle A, tapered as described, and the metal ring B E, with its tang B' and hook bearing or legs C C, the ferrules F and hook D, substantially as and for the purposes set forth.

206,524. LUBRICATORS. Harman Brobst, Hiram F. Reninger, and Samuel Wragg, Reven Run, Pa. Filed June 1, 1878.



206,525. ORE-SEPARATORS. Smith W. Bullock, New ark, N. J., assignor to Daniel Barnum, Brooklyn, N. Y. Filed Apr. 29, 1878.

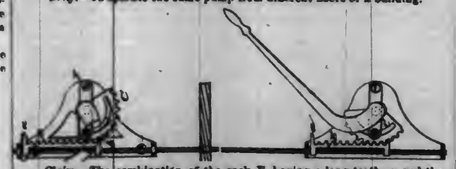


Claim.—1. The box B, supported centrally upon rollers, and provided with the rigid arm C, in combination with the crank-shaft D, the arm being secured to the crank-shaft, thereby producing the compound motion set forth.

2. The box B, provided at its bottom with cleats J, in combination with a false bottom, E, supported at an incline upon the pins, substantially as set forth.

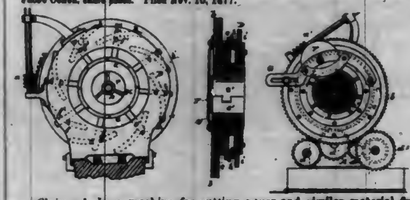
206,526. PUMP-HANDLES. John Chegwidden, New York, N. Y. Filed May 18, 1878.

Brief.—To operate the same pump from different floors of a building.



Claim.—The combination of the rack E, having a long tooth, *e*, and the toothed sector C having the short tooth *b*, substantially as shown and described.

206,527. MACHINE FOR CUTTING PAPER. Louis P. Cohen, New York, N. Y., assignor to Jacob Cohen, same place. Filed Nov. 10, 1877.

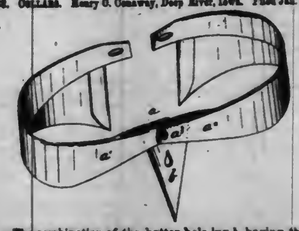


Claim.—1. In a machine for cutting paper and similar material from a roll into disk-shaped lengths, a circular knife mounted upon a bar which is caused to revolve around the roll by suitable mechanism, substantially as described, so that the foremost end of the said bar shall revolve around the common center more rapidly than its rear end, as and for the purposes set forth.

2. The combination of the circular knife F, mounted upon a curved bar, G, the wheels *b* and *c*, carrying the said bar and rotated at different rates of speed by suitable mechanism, and the clearing-plate L, as and for the purpose set forth.

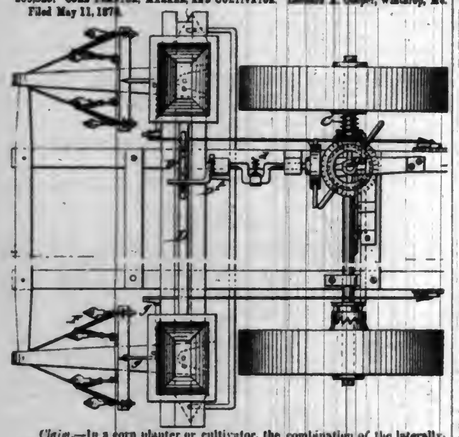
3. The clamping device herein described, consisting of the combination of the clamping-shells *d e*, having stems which slide in the grooves in the standard, the ring *i*, provided with cam-pieces *h* and pins *f*, the worm and segment gearing *n*, the fingers *p*, the grooved disk-plate *r*, and the conical adjusting-rod *s*, substantially as shown and described.

206,528. COLLARS. Henry O. Conaway, Deep River, Iowa. Filed Jan. 31, 1878.



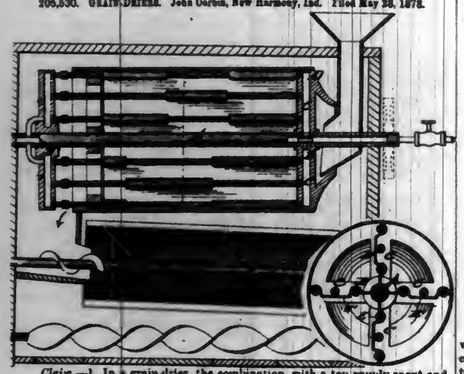
Claim.—The combination of the button-hole lug *b*, having the bearing or bearings *a*', and the collar *a*, composed of the parts *a' a'*, having their rear ends pivoted together and to the lug *b* by the bearing or bearings *a'*, on which they turn freely, substantially as and for the purposes set forth.

206,529. CORN PLANTER, MARKER, AND CULTIVATOR. Leonard A. Cooper, Winthrop, Me. Filed May 11, 1878.



Claim.—In a corn planter or cultivator, the combination of the laterally-reciprocating slide-piece of the seed-dropper with an oscillating forked lever, reciprocating and spring-acted crank shaft, and revolving wheels operated from the supporting axle, and engaging, by diametrical arms, alternately the diametrical arms of the crank shaft, substantially as and for the purpose set forth.

206,530. GRAIN-DRIERS. John Corbin, New Harmony, Ind. Filed May 28, 1878.



Claim.—1. In a grain-drier, the combination, with a top supply-spout and a bottom conducting-spout at opposite ends, of an inclined revolving drier, consisting of a fixed or stationary hollow ring and a loose or sliding hollow ring, applied by hollow radial arms to the inclined hollow center shaft, and connected by longitudinal connecting-pipes, the pipes being surrounded by a cylindrical jacket having a conical extension around the supply-spout, and being open above the discharge-spout, substantially as set forth.

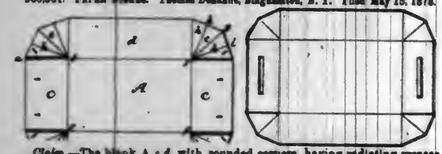
2. The combination, with a hollow inclined center shaft, of a fixed or stationary hollow ring and a loose or sliding hollow ring applied to the shaft by hollow radial arms, and connected by longitudinal pipes of the rings and arms, substantially as set forth.

3. The combination of the loose hollow end ring, applied by radial arms and axially-keyed hub to the center shaft, with the hollow center shaft and flexible connecting-pipes, substantially as set forth.

4. The combination, in a grain-drier, of a hollow center shaft, having fixed and loose rings and hollow radial arms, both connected by longitudinal steam-pipes, with a jacket or cylinder attached to the fixed ring, substantially as set forth.

5. The combination, in a grain-drier, of a hollow center shaft, having a fixed ring at one end and an adjustable ring at the opposite end, applied by hollow arms to the shaft, with longitudinal steam-pipes, connecting rings and arms, an exterior encircling jacket, and with radial partitions between the pipes of the arms, substantially as specified.

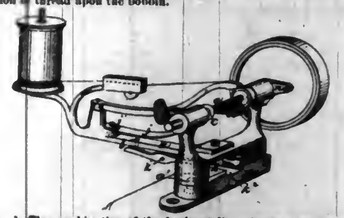
206,531. PAPER STERES. Thomas Donahue, Binghamton, N. Y. Filed May 15, 1878.



Claim.—The blank A *c d*, with rounded corners, having radiating creases therein, adapted to be alternately folded out and in, said creases allowing the sides to be set vertical or flaring, substantially as and for the purposes set forth.

206,532. BOBBIN-WINDERS. William Duchemin, Boston, Mass. Filed Oct. 11, 1877.

Brief.—The friction-wheel of the winder is held against the fly-wheel of the machine with a yielding pressure, which friction-wheel is released from contact, when the bobbin is full, by the action of a lever depressed by the accumulation of thread upon the bobbin.

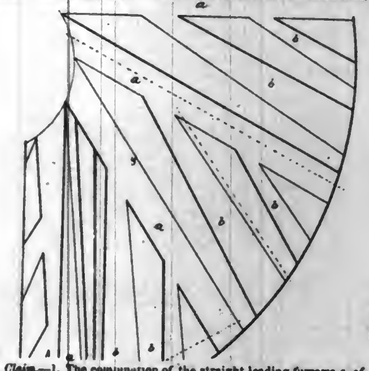


Claim.—1. The combination of the horizontally-swinging frame, devices, substantially as described, for holding the frame and releasing it when the bobbin is filled, and a spring which acts to maintain the friction-pulley with a yielding pressure against the fly-wheel, and is thrown out of action by the aforesaid devices when the bobbin is filled, as set forth.

2. The combination of the horizontally-pivoted frame *a* of a latch-lever, *k*, a pin adapted to be moved by the bobbin and operate said lever, and a spring-plate, *m*, arranged to be caught by the shoulder of the lever, substantially as set forth.

3. A bobbin-winding device arranged adjacent to and operated by the driving-wheel of a sewing-machine, and provided with devices, substantially as set forth, whereby the reverse motion of the bobbin-holding shaft is prevented.

206,533. MILLSTONE-DRESSERS. Robert L. Duncan, Decatur, Ga. Filed Dec. 26, 1877.



Claim.—1. The combination of the straight leading-furrows *a*, of uniform width, extending from the eye to the periphery, with faces of gradually-increasing curvature, and the discharge-furrows *b*, of increasing width and curvature toward the periphery, as set forth.

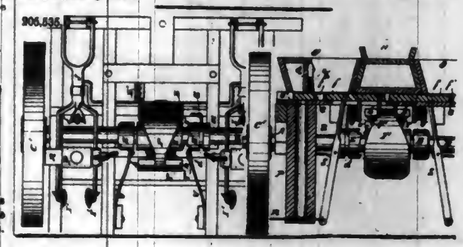
2. The combination of the leading-furrows *a* and discharge-furrows *b*, when the bottom faces of each gradually increase in curvature toward the outer ends, as set forth.

206,534. HARNESS-SADDLE TREES. Wm. Fawcett, New York, N. Y. Filed Dec. 6, 1877.



Claim.—As an improved article of manufacture, a saddle-tree for either single or double harness, or riding-saddle, constructed of layers or veneers of wood, bent in proper form, with the grain running crosswise of each other, and glued or otherwise secured together, all substantially as set forth, and for the purpose specified.

206,535. [illegible]



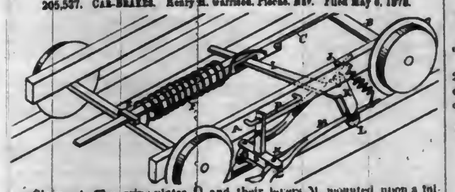
206,535. CORN PLANTERS AND MARKERS. Francis C. Frost, Anoka, Minn. Filed Mar. 9, 1878.

Claim.—The combination, substantially as described, of the double cam F, having a serrated hub and mounted loosely on the rotary axle B, the latter carrying a rigid draft-wheel, and also the fixed collar E and the sliding serrated and grooved collar E', the yielding and perforated feed-slides *f f*, provided with the pins T T, arranged for contact with the working faces of the said cam, the slides R R, connected with the slides *f f* by means of the pivoted levers S S, the lever G, the seed-boxes, the vertically-adjustable pair of triple shovels I I', and the boxes P P, for the purposes set forth.

206,536. PREPARING GOLD AND SILVER ORES FOR MILLING. Robert M. Fryer, San Francisco, Cal. Filed May 1, 1877.

Claim.—The process of preparing gold and silver ores for milling, rendering them friable, and making the metal cleaner for amalgamation, which consists in subjecting each charge of ore to a low degree of heat and a minimum amount of air, and then increasing the amount of air until a malignant heat varying from 1,800° to 3,000° Fahrenheit is obtained, substantially as and for the purpose above described.

206,537. CAR-BRAKES. Henry H. Garrison, Pioche, Nev. Filed May 6, 1878.



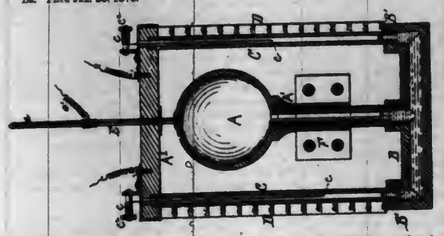
Claim.—1. The gripe-plates O and their levers M, mounted upon a fulcrum-bar, as shown, in combination with the operating-lever I, draw-bar C, and spring F of a car, substantially as shown, and for the purpose herein described.

2. The gripe-plates O and their levers M, mounted upon the fulcrum-bar S, said bar having a forward and backward motion upon the guide P, in combination with the lever having the peculiarly-shaped operating-arm K, with its cam-shaped ends, substantially as shown, and for the purpose herein described.

3. The lever I, mounted upon the fulcrum-pin J, and having the peculiar double cam-shaped operating-head K, working between the gripe-levers M, in combination with the spring uniting these levers, substantially as shown, and for the purpose herein described.

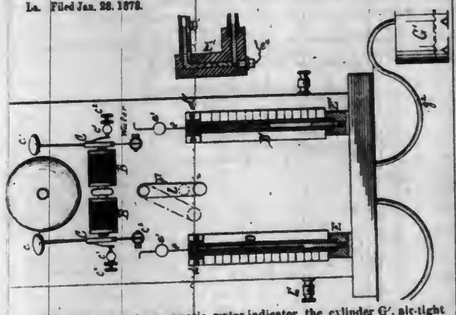
4. The gripe-plates O, with their levers M, mounted upon the fulcrum-bar S, so as to have a motion forward and back, in combination with the lever and the operating-head K, so mounted upon its fulcrum-pin that the griping action of the plates O shall tend to spread their levers apart and increase the gripe, substantially as shown, and for the purpose herein described.

206,538. THERMOSCOPES FOR FIRE-ALARM INDICATORS. Aristide Gerard, New Orleans, La. Filed Jan. 26, 1878.



Claim.—In a thermoscope or fire-alarm indicator, the vessel A and tube A', containing confined air, tube B, containing mercury, rod E, tubes C C', and adjustable needles *c c*, the whole combined and arranged to operate substantially as described.

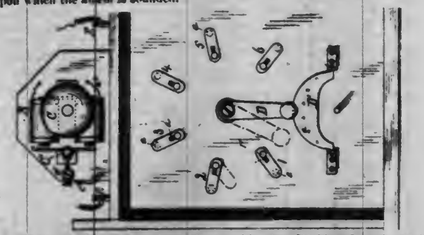
206,539. ELECTRIC AUTO-PNEUMATIC WATER-INDICATORS. Aristide Gerard, New Orleans, La. Filed Jan. 26, 1878.



Claim.—In an auto-pneumatic water-indicator, the cylinder G', air-tight tube *g'*, mercury-tube E', wire *e'*, tube D', adjustable needle *c*, and screw *c'*, in combination with an electric alarm, substantially as described.

206,540. SWITCHES FOR ANNUNCIATOR-ALARMS. Aristide Gerard, New Orleans, La. Filed Jan. 26, 1878.

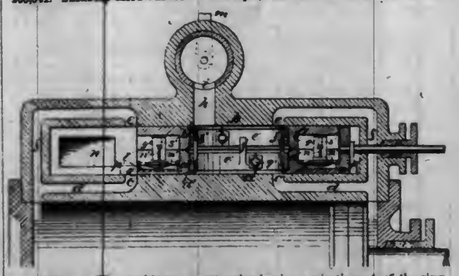
Brief.—Normally, an alarm is sounded at receiving-station. As soon as such alarm is sounded a switch will break the original circuit and close the same through any one of a series of switch-pins corresponding to the branch upon which the alarm is sounded.



Claim.—1. In an annunciator, the movable plate D', hinged as shown, in combination with the switch D and springs *a*, substantially as described.

2. In an annunciator, the plate D', springs *a*, switch D, switch-buttons 1, 2, 3, &c., posts E E' *e e'*, wires *e' e² e³*, magnets B, armature *c*, gong C, and clapper C', the whole constructed and arranged to operate substantially as described.

206,541. BALANCED SLIDE-VALVES. W. R. Gleyre, Cerro Gordo, Ill. Filed Dec. 26, 1877.



Claim.—1. The combination, with valve having projections *c'*, of the ring *d'*, projecting into each half of valve, having an outward circumferential rib, and held by rings *e'*, having the overlapping fingers *f'*, as and for the purpose set forth.

2. The split rings *e'*, having fingers *f'*, and tapering adjusting-screws *g'*, for expanding the hoop *d'*, as herein specified.

3. The combination, with valve having ears *i*, recess *i'*, and diaphragm *m'*, of the springs *g'*, resting on portion *a²* and against the back of portion *b'*, the screws *h'*, the threaded stud *n'*, and the squared sleeve *o'*, as and for the purpose specified.

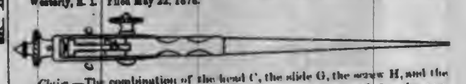
4. The diaphragm *m'*, in combination with the part *a'*, having passages *o' r'*, for forcing the two parts of the valve apart, as herein shown and described.

206,542. SHOES. Leopold Graf, Newark, N. J. Filed Aug. 11, 1877.



Claim.—As an improvement in the manufacture of boots and shoes, the quarter E, having its lower front corner cut away, as shown and described, to receive the elastic gore-piece G, for the purpose specified.

206,543. COMPASSES. Thomas H. Grigg, West Meriden, Conn., assignor to Geo. G. Stillman, Westerly, R. I. Filed May 22, 1878.



Claim.—The combination of the head C, the slide G, the screw H, and the pins I, I', upon the legs of the compasses, substantially as and for the purpose herein described.

206,544. MACHINES FOR CROZING AND CHAMFERING STAVES. Geo. W. Grodhaus and Geo. C. Grodhaus, Bellaire, Ohio. Filed Dec. 5, 1877.

Brief.—The barrel is placed upon a yielding disk supported upon a platform provided with a series of springs arranged immediately around a vertical shaft passing through the center of said disk, and secured in position by an upper disk vertically adjustable upon said shaft, while the staves are evened, crozed, and chamfered by means of suitable tools arranged and held in a box revolving upon said shaft. The crozing-tool is held from contact with the staves by a bent spring, and fed to its work by a wedge-shaped key working against the rear of said tool, and operated by a handle in the top of the shaft, and connected to the key by a spring-actuated rod.

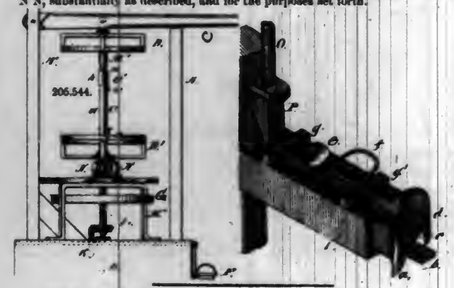
Claim.—1. The platform B, the springs N N', and the shaft M, in combination with the movable lever C, with its depending disk D, substantially as described, and for the purposes set forth.

2. The handle M', provided with the guides A and the cam *x*, in combination with the sliding rod O, the helical spring O', the key P, the shaft M, and the tool-box I, substantially as described, and for the purposes set forth.

3. The tool-box I, provided with the tools *a b c d*, the bridges *g g'*, the set-screw *e*, and the spring *f*, in combination with the shaft M, the handle M', the sliding rod O, provided with the key P and the helical spring O', the disk D', and the springs M N, substantially as described, and for the purposes set forth.

4. The platform B, the shaft E, provided with the shoe F, and the beveled cog-wheel K, in combination with the shaft M, provided with the beveled cog-wheel L, the disk D, the lever C, the uprights A A', the disk D', and the springs N N, substantially as described, and for the purposes set forth.

206,544.



206,545. HORSE HAY-RAKES. Wm. H. Hall, Tiffin, Ohio. Filed May 8, 1878.



Claim.—1. The combination of the stationary friction-blocks W with the friction-wheels J, the pivoted friction-blocks K, the horizontal levers L, a foot-lever, O, the wheels A, the rake-head D, and the thill-frame S, substantially as herein shown and described.

2. The combination of the pendulum-arm Q, standard E, foot-lever O, and rocking axle and thill-frame S, as and for the purpose specified.

3. The combination of the wire teeth F, having their upper ends bent back upon themselves to form springs, and the cap-plates G, provided with grooves upon their inner sides, with the rake-head D, the hobbing-board H, and the arms or brackets I, substantially as herein shown and described.

206,546. BOTTLE-STOPPER FASTENERS. Halvor Halverson, Hasbra, N. H., assignor to O. W. Whittemore, same place. Filed May 22, 1878.

Brief.—The paste and the staples are made of wrought iron.



Claim.—1. A bottle-stopper provided with two staples, E, and an upper disk, C, and a lower disk, F, constructed and arranged as set forth.

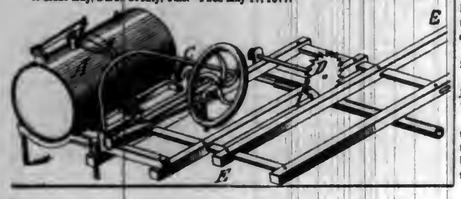
2. A bottle-stopper consisting of the two disks C and F, staples E E, and rubber cap J, in combination with the cam H, yoke K, and securing-wire L, all constructed and operating substantially in the manner shown and described, and for the purpose set forth.

206,547. EGG-TESTER. Fred. B. Harris, Batavia, N. Y., assignor of one-half his right to Adin G. Gage, same place. Filed Oct. 20, 1877.



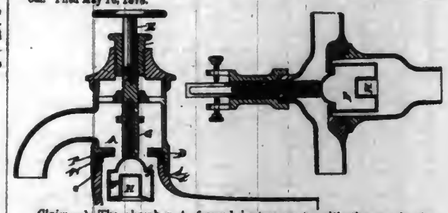
Claim.—An egg-tester in which the mirror is arranged horizontally on the bottom, the egg-holder inclined, and the larger end of the box left open, as shown and described.

206,548. MECHANISM FOR REMOVING SAWDUST. Madison Hay, Union City, Ind., assignor to Isaac Hay, Darke County, Ohio. Filed May 17, 1877.



Claim.—In combination with the saw D and hopper I, the exhaust-steam pipe C, ejector-nozzle G G, and discharge-pipe E, all arranged as and for the purpose set forth.

206,549. VALVES FOR BASINS. Thomas Hennessy and Michael H. Dorgan, San Francisco, Cal. Filed May 16, 1878.

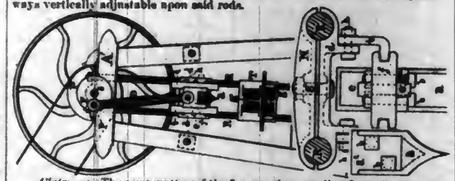


Claim.—1. The chamber A, formed in two parts, with the supply-pipe, having screw-threads at *e*, in combination with the adjustable seat D P W and bearing-shoulders *d d'*, so as to form a double joint, substantially as herein described.

2. The hollow float-valve F, with its concaved lower surface, and the cavity H, dome-shaped top, and stem, in combination with the seat D, whereby the pressure of water balances the valve, either open or closed, substantially as herein described.

205,550. MACHINES FOR SPLITTING WOOD. Edwin A. Hildreth, Harvard, Mass. Filed Feb. 17, 1876.

Brief.—The wood to be split is placed upon a table or platform vertically adjustable, (for the purpose of receiving pieces of wood of different lengths,) upon rods connecting the upper and lower portions of the main frame, and split by an ax having a wide extended cross-head above its splitting-edge, for the purpose of fully severing the pieces from each other, and working in guide-ways vertically adjustable upon said rods.



Claim.—1. The combination of the frame-rods extending from the upper to the lower cross-bar, guideways, vertically-sliding cross-head and knife, and the table to rest the wood upon, attached to the frame-rods, substantially as described.

2. The combination of the adjustable tables T with the rods E E, semi-cylindrical recesses in the table formed to fit onto said rods, the clamp N, and bolt *g*, to adjust and hold the table in position, substantially as described.

3. The combination, with the driving-shaft, eccentric-wrist, pitman, and guideways in a wood-splitting machine, of the sliding head *f*, with a wide extended cross-head above the splitting-edge of the knife, said cross-head being formed to open the wood while splitting the same, for the purpose of fully severing the pieces from each other, substantially as described.

4. The combination, in a wood-splitting machine, of the vertically-sliding ax-head *f* with the pitman-arm D, forked at its lower end to receive a bearing, *e e*, on both front and rear of the sliding head, substantially as shown.

5. The combination of the track-pieces *t t*, bolts *b b*, and flanges on the track-bed *d* with a thin removable piece between the track and bed-flange, which can be taken out when it becomes necessary to compensate for the wear of the tracks.

6. The combination of the vertically-sliding head *f*, which carries the splitting-knife, with the tracks *t t*, the driving-pitman D, and the pitman journal or bearing *e*, applied to the sliding head *f* below the upper extremity of the sliding-head track-grooves, substantially as set forth.

7. The knife-edge support or back-bed *a*, formed hollow and flanged up against the sliding head-block *f*, substantially as described.

8. The combination, in a wood-splitting machine, of the cross-head, having beveled grooves in the sides, with the adjustable tracks *t t* on both sides, beveled to correspond, producing a more perfect fit when the tracks are brought nearer together to compensate for the wear, substantially as shown.

206,551. GRAIN STEAMER AND DRIER. Fredrick A. Hoffmann, Baldwin City, Kans., assignor to himself and Samuel Welch, same place. Filed Apr. 27, 1878.



Claim.—In a grain steamer and drier, the combination, with an outer box having horizontal partition, and an interior conducting-tube having perforated upper portion, of a steam-guard extending over the steam-supply opening and down toward the partition, substantially as specified.

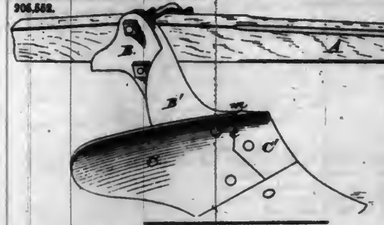
206,552. PLOWS. Charles E. Hunter, Fredericksburg, Va. Filed Oct. 23, 1877.

Claim.—1. The standard B of a plow, having the curve *n*, horizontal projection *m*, flange B', and point *d* upon said flange, as and for the purpose set forth.

2. The standard B, as described, having the flange B' and the projection *m*, curved toward the land side, to form a face for the mold-board, in combination with the mold-board, cast in two pieces, C and C', said parts being united by an angular joint, and secured directly to the standard by bolts, substantially as described.

3. The standard B, provided with a perpendicular part and curve, *n*, in combination with the under inclined land-side E, substantially as described.

206,562.



205,563. AUTOMATIC WATER-FLOW REGULATORS. John P. Hutchinson, Brooklyn, N. Y. Filed Apr. 17, 1878.



Claim.—1. A water-flow regulator attachment adapted to be secured to the mouth or outlet of a faucet or valve, serving to check the flow of water, and operating by the pressure of water solely on the side nearest the source of the water, substantially as specified.

2. A water-flow regulator attachment adapted to be secured to the mouth or outlet of a faucet or valve, and consisting of a cylindric shell, serving as a nozzle, and a movable yielding disk, capable of being set to open at variable points, and operated by the water solely on the side nearest the source of the water, to permit the escape of water, substantially as specified.

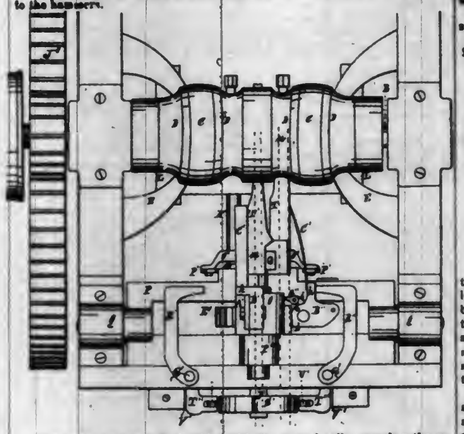
3. A water-flow regulator attachment, consisting of a cylindric shell adapted to be secured to the mouth of a faucet and to serve as a nozzle therefor, a yielding disk, controlling the passage of water through such shell, a spring for actuating said yielding disk against the pressure of the water on the same, and an adjustable disk or its equivalent, supporting the spring, substantially as and for the purpose specified.

4. A water-flow regulator attachment comprising the combination of a cylindric shell, a yielding disk, operating in conjunction with the seat to control the flow of water, an adjustable perforated disk, arranged within the shell in line with said yielding disk, and serving as a guide for the latter, and a spring interposed between said adjustable perforated disk and said yielding disk, so as to exert a force against the pressure of water, substantially as specified, whereby a very simple device is obtained.

5. A water-flow regulator attachment comprising the combination of a cylindric shell, a piston-valve controlling the flow of water therein, a spring for actuating said valve, and an externally screw-threaded perforated disk, engaging with a screw-thread in the shell and adapted to be adjusted therein, substantially as specified.

206,564. MACHINES FOR FORGING HORSESHOE-NAILS. John A. Hutchinson, Chicago, Ill., and Daniel Armstrong, Keeseville, N. Y., assignors to Sheridan Horse Nail Company, Cleveland, Ohio. Filed Apr. 16, 1878.

Brief.—A vibrating duplex rod-carrier presents the rods alternately to the forging devices. In each guide-tube of the carrier is a spring for elevating the rod, after every blow of the revolving hammer, to a position where it can be fully operated upon by the side hammers. While one rod is being forged another is automatically advanced, until its end strikes a gage, by a peculiarly constructed feeding mechanism. The anvil is mounted on a pivoted frame, which falls (after the completion of the forging operation) sufficiently to permit the vibration of the carrier, to present the forged rod to one of a pair of cutters, by which the nail is cut off, and also to again present the other rod to the hammers.



Claim.—1. The shaft B, provided with the central collar carrying the revolving hammer *c'*, in combination with the cam-shoulders D D and collars C C, substantially as and for the purpose set forth.

2. The driving-shaft B, with its central collar carrying the revolving hammer, the cam-shoulders D D and collars, in combination with the slides F F, side hammers G G, and pivoted anvil-frame and anvil, substantially as and for the purpose specified.

3. The driving-shaft with its central collar carrying the revolving hammer, the cam-shoulders D D and collars, slides F F, side hammers, and pivoted anvil-frame and anvil, in combination with the shaft N, cams L L, and connecting-gears, whereby the anvil is lowered after the nail is formed, to permit the removal of the nail and rod, as and for the purpose set forth.

4. The combination of the guide T, spring *n'*, and pivoted anvil-frame K P with the side hammers G G' and revolving hammer *c'*, substantially as described, and for the purpose specified.

5. The combination, with the side hammers and revolving hammer, of a vibrating rod-carrier, means for lifting the rod from the anvil to a position to be fully operated upon by the side hammers, and suitable mechanism for operating said hammers, substantially as and for the purpose set forth.

6. In combination with a vibrating anvil-frame, a duplex vibrating rod-carrier mounted on said anvil-frame, means for elevating said anvil-frame, side hammers, and a revolving hammer, substantially as and for the purpose specified.

7. The combination, with side hammers G and G', revolving hammer *c'*, and vibrating frame K P, of the vibrating rod-carrier U and cutters W W, substantially in the manner as described, and for the purpose set forth.

8. The cam-shoulders D D, collars C C, connected with the slides carrying the side hammers by universal joints, revolving hammer *c'*, and anvil I, in combination with a duplex vibrating rod-carrier arranged to present the rods alternately to the action of the hammers, substantially as and for the purpose specified.

9. In combination with the vibrating anvil-frame K P, cams L L for raising said frame, side hammers and revolving hammer, the duplex vibrating rod-carrier U, guides T T thereon, and shears or cutters W, in the manner substantially as and for the purpose set forth.

10. The segment-gear F' E', arms G'' G'', cams I' I', shaft J', and its operating-gears, in combination with the vibrating duplex rod-carrier and vibrating anvil-frame, side hammers, and revolving hammer, substantially as described, and for the purpose set forth.

11. The combination of the cutters or shears W W with the vibratory anvil-frame, the shaft N', arms O', and cam M', arranged to co-operate with the said vibratory frame, substantially as described, and for the purpose set forth.

12. In combination with the vibrating frame and its anvil, the side hammers or dies, and revolving hammer, the duplex vibrating rod-carrier, arranged and operating to present the rods alternately to the action of the hammers, substantially in the manner as and for the purpose specified.

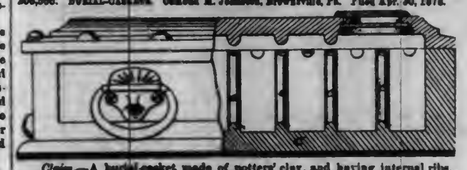
13. In combination with the vibrating rod-carrier, guide T, spring *n'*, pivoted clamp B', and spring C', substantially as described, and for the purpose specified.

14. The vibrating arm R', pivoted clamp B', and vibrating rod-carrier, arranged and co-operating substantially as set forth, and for the purpose specified.

15. The arms R' R'', cam S', arms T'' T''', springs V', vibrating standards, pivoted clamps B' B''', and vibrating rod-carrier, arranged and co-operating in the manner as set forth, and for the purpose specified.

16. The herein-described feeding device, consisting of the arm *d'*, projection or shoulder *g*, and dog *e''*, in combination with the clamp B', substantially as described, and for the purpose specified.

206,565. BURIAL-CASKETS. Osmond M. Johnston, Brownsville, Pa. Filed Apr. 30, 1878.



Claim.—A burial-casket made of potters' clay, and having internal ribs, substantially as shown and described.

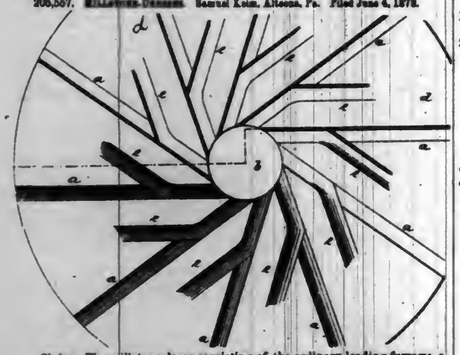
206,566. MILLSTONE-DRESSER. Thomas D. Jones, Syracuse, N. Y. Filed Apr. 13, 1878. Patented in England, Apr. 20, 1877.



Claim.—1. The principal lands *a*, extended tangential from the eye E to the within-described second circle, and the bosom-furrows adjacent to said lands, widening toward the eye and terminating the intervening land central between the principal lands and midway the bosom of the stone, in combination with the skirt-furrows *b b b* and lands a^1 a^1 a^1, all of equal dimensions, and arranged tangential to the within-described first circle, the land a^1 constituting a continuation of the principal land extended from the eye, all constructed, arranged, and combined substantially in the manner described and shown, for the purpose set forth.

2. The within-described method of dressing the face of millstones, consisting in applying thereto diamond-quartz in such quantity as to cover the said surface, and then subjecting the same to a direct rubbing or scouring action by means of a wooden block or equivalent instrument, whereby the surface of the stone is stippled or filled with minute indentations, substantially as set forth.

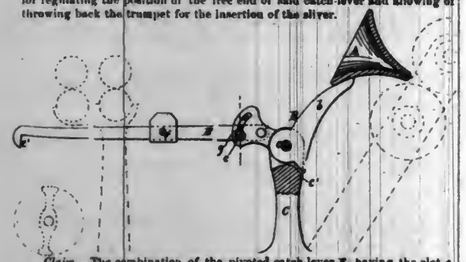
206,557. MILLSTONE-DRESSER. Samuel Koin, Altoona, Pa. Filed June 4, 1878.



Claim.—The millstone-dress consisting of the ordinary leading-furrows *a*, running from the eye of the stone to the skirt thereof, and the short intersecting furrows *c*, running diagonally from said leading-furrows near the eye of the stone, gradually decreasing in depth, and terminating upon the flooring surface *d*, as and for the purpose set forth.

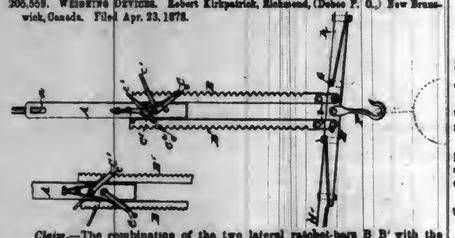
206,558. STOP-MOTIONS FOR DRAWING-FRAMES. W. S. Kelley, North Weare, N. H. Filed May 11, 1878.

Brief.—The catch-lever and the trumpet-lever are adjustably connected, for regulating the position of the free end of said catch-lever and allowing of throwing back the trumpet for the insertion of the sliver.



Claim.—The combination of the pivoted catch-lever E, having the slot *g* and the stud *e* secured therein, and the elbow-lever B, having the arm *b'*, provided with a circular slot, D, with the trumpet A and standard C, as and for the purpose set forth.

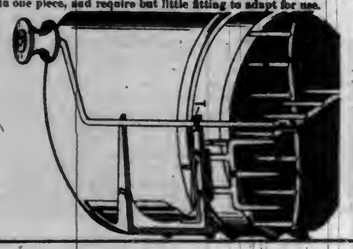
206,559. WEIGHING DEVICES. Robert Kirkpatrick, Richmond, (Debec P. O.,) New Brunswick, Canada. Filed Apr. 23, 1878.



Claim.—The combination of the two lateral ratchet-bars B B' with the central suspension-bar A, having spring-pawls C C', arranged to engage in the teeth of the said side bars, and with the lever E, pivoted to the ends of the side bars B B', and provided with the central hook F and the detachable handles H H', one of the latter, H, being graduated to serve as a scale-beam, substantially as shown and described, and for the purpose set forth.

206,560. FLOUR SIFTER, SCOOP, AND STRAINER. W. P. Kistler, Cincinnati, Ohio. Filed May 14, 1878.

Brief.—Supporting-brackets D, agitator F, and breaker E may each be cast in one piece, and require but little fitting to adapt for use.



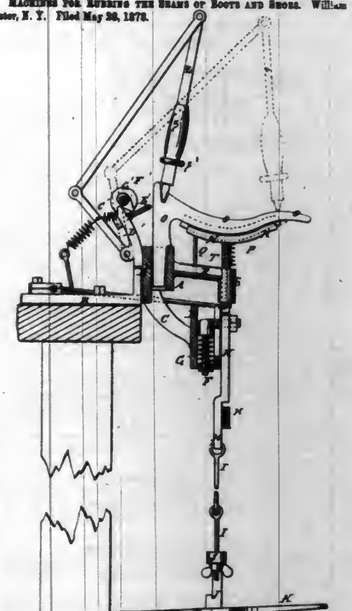
Claim.—The combination, in a flour-sifter, of agitator F, armed with teeth I, with a stationary breaker, E, substantially as and for the purpose specified.

206,561. SKATE-SHARPENERS. Harry U. Kistner and Edwin M. Hummel, Selin's Grove, Pa. Filed Jan. 12, 1878.



Claim.—The combination, with a skate-sharpener having a body with extension-arms, of a set of tools pivoted and locked to the arms in open or closed position, as and for the purpose specified.

206,562. MACHINES FOR RIVETING THE SHANK OF BOOTS AND SHOES. William Manley, Rochester, N. Y. Filed May 20, 1878.



Claim.—1. The combination of the sockets D, the springs G, and the guide-pins F with the arms C, that support the clamps H I, and with the bolts E, that pivot the clamp-bars H, substantially as herein shown and described.

2. The combination of the cross-head J with the single treadle K and the two connecting-rods I of the two clamp-bars H, substantially as herein shown and described.

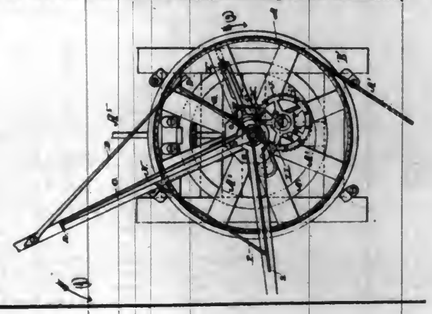
3. The combination of the curved bar N, having its sides concave, the pins P Q, the springs T, and the socket and arm S B with the form O, the socket-block A, and the clamps L, substantially as herein shown and described.

4. The two-band seam-rubber F' G', made with one edge thin and flat and the other edge thick and round, substantially as herein shown and described.

5. The combination of the arms D' and the pins E' with the socket-block A, substantially as herein shown and described.

206,563. HORSE-POWERS. Wm. G. McComas, Colerain, Ohio. Filed Nov. 10, 1877.

Brief.—The horse-power is designed for raising weights and releasing them to fall, as in beater-presses, the disengagement being effected automatically.



Claim.—1. The combination, with the drum A and sweep C, having hooked rod D, each turning on the central shaft B, having pinion B', of the gear J, provided with the stops *f f'* and sliding bar E, having shoulders E' E', substantially as and for the purposes set forth.

2. The wheel J, constructed with the series of holes *f'* in its rim, and provided with the fixed stop *f* and adjustable stop *f'*, and meshing with a pinion, F', on the fixed central shaft, in combination with the bar E, constructed as described, and the operating and hoisting mechanism of the horse-power, substantially as and for the purpose set forth.

206,564. KNIVES FOR CUTTER-HEADS. Patrick C. McGrath, Plattsburg, N. Y. Filed May 25, 1878.

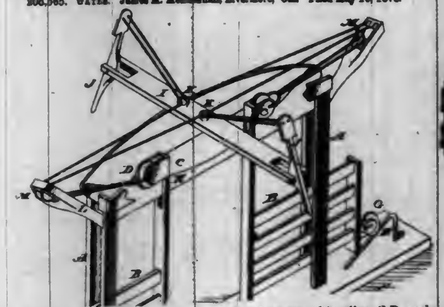


Claim.—1. The holder B, screw-clamped at the rear to the cutter-head, and rabbeted in front to receive the plane-knife, as shown and described.

2. The knife-holder B, having rabbet for knife, and grooves *b'* in its thickened part, to allow the use of a punch, as set forth.

3. The knife-holder B, provided with the rib *b'* upon the rear part of the inner side thereof, as and for the purpose specified.

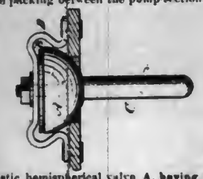
206,565. GATES. James M. Mendenhall, Livermore, Cal. Filed May 16, 1878.



Claim.—The gates A, provided at diagonal corners with rollers G D, cords K K, pulleys M M, and levers J J, in combination with the stationary parallel pairs of inclined guides E, all constructed, arranged, and operated as set forth.

206,566. PUMP-VALVES. Wm. L. Miller, Santa Rosa, Cal. Filed Apr. 30, 1878.

Brief.—E is the packing between the pump-sections.



Claim.—1. The elastic hemispherical valve A, having the metallic backing-disk B and shouldered stem C, as herein shown and described.

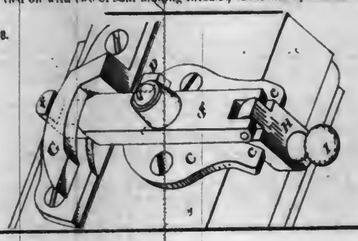
2. The flexible strap D, in combination with the valve A, as herein shown and described.

206,567. STAR BRAIDS. August Moll, Brooklyn, N. Y. Filed Feb. 2, 1877.



Claim.—As a new article of manufacture, a flat star-braid having a single-braided body composed of an uneven number of binding-threads, and with the pearls tied off with two of said binding-threads, substantially as described.

206,568.

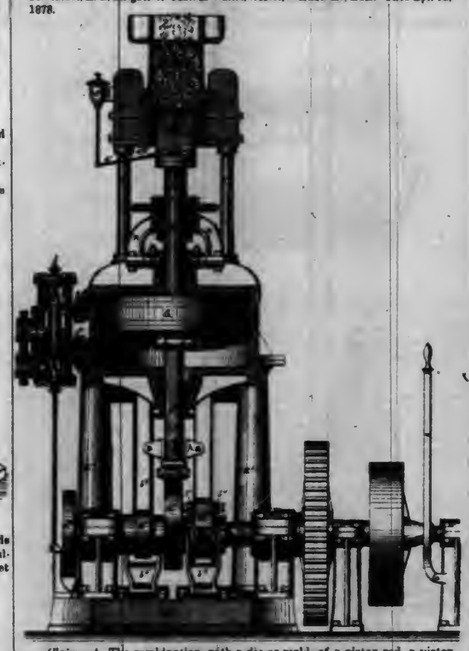


206,568. FASTENERS FOR MEETING-RAILS OF SASHES. J. B. Morris, Cincinnati, Ohio. Filed June 8, 1878.

Brief.—A horizontally-swinging latch-bar is pivoted to the lower sash, one end being provided with a lip which engages with a catch upon the upper sash, the other end having a hinged extension which drops over the front edge of the lower sash.

Claim.—The improved sash lock or fastening comprising notched or shouldered plate C e, boxing stud E and stump D, the swinging latch-bar F, having lip *f*, and hinged pendant H I, all upon the lower sash, and catch or spur G upon the upper sash, substantially as represented and described.

206,569. PRESSES FOR PRESSING BRICKS AND CONCRETE BLOCKS. Augustus F. Hagis, Providence, R. I., assignor to Chas. E. Whitin, trustee, Whitinsville, Mass. Filed Apr. 12, 1878.



Claim.—1. The combination, with a die or mold, of a piston-rod, a piston, a steam-cylinder, a valve for admitting and exhausting steam to and from one end of the cylinder, and a plunger which is mounted upon the piston-rod, and is forced into the mold by the pressure of steam upon the piston, substantially as described.

2. The combination, with a mold, a plunger, a piston, and a piston-rod carrying the plunger, of a steam-cylinder for the piston, provided with a steam and exhaust port at one end and a passage or port at its opposite end, and a valve or valves which admit and exhaust steam to and from one end of the cylinder and control the passage at the opposite end, for cushioning the piston against the initial force of the live steam, substantially as described.

3. The combination, with a mold, a movable head-block, which opens the mold, a plunger, a piston and its rod, and a steam-cylinder and its valve, of a mechanical lifting device for forcing the plunger through the mold, substantially as described, whereby the compressed contents of the mold are ejected therefrom, as set forth.

4. The combination, with a mold, of a hopper which is smaller at the top than at the bottom, substantially as described, whereby concrete may freely pass downward to the mold, as set forth.

5. The combination, with a mold having a hardened cutting-edge at its top, of a sliding head-block provided with a hardened cutting-edge, substantially as described, whereby particles of rock and concrete will not obstruct the movement of the block in closing the mold, as set forth.

6. The combination, with the mold and a plunger provided with ducts, of an exterior reservoir connected with the plunger, substantially as described, whereby lubricating matter is supplied to the plunger while at work, and thence distributed upon the surface of the mold, as set forth.

7. The combination, with the plunger, piston-rod, and piston, of a head on the rod below the plunger and a recess or chamber to which the head is accurately fitted, substantially as described, whereby the fall of the plunger rod and piston is relieved from shock by the cushioning of air in the chamber, as set forth.

206,570. RAILROAD-CAR AND COACH HEATERS. C. C. Newton, Cleveland, Ohio. Filed June 22, 1877.

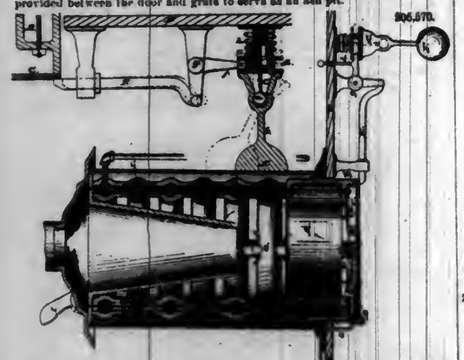
Brief.—Any accident to the cars, such as jamming, tilting, or breaking asunder, oscillates the weighted lever, which withdraws the trigger or catch-bar, and the swinging ash-pit door is automatically opened and the fire dumped on the ground.

Claim.—1. In a car-stove, the combination, with the hinged door of the ash-pit, of a trigger or catch-bar and suitable mechanism whereby the door may be automatically opened and the contents of the stove deposited on the ground.

2. The combination, with the hinged door of the ash-pit and trigger or catch-bar, of the ball-and-socket movement with the weighted lever, whereby said door is opened and the fire dumped on the ground when the car tips on its side or its level changes from whatever cause.

3. The combination of the hinged door and the grate supported thereon and secured thereto by the pin *a*, upon which it rotates, a suitable space being provided between the door and grate to serve as an ash pit.

206,570.

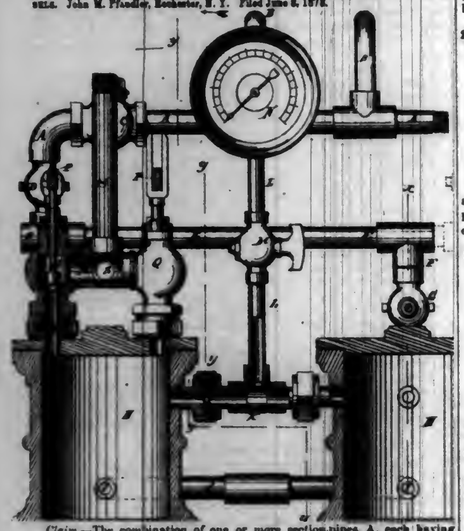


206,571. MANUFACTURE OF BOOTS AND SHOES. Joel Northrop, Olive Br., N. Y. Filed May 11, 1878.



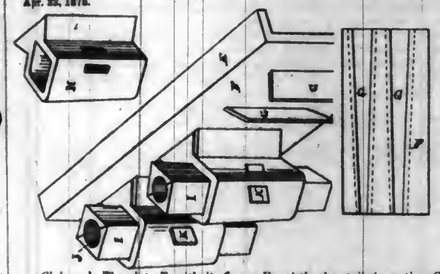
Claim.—In combination with the quarters of a boot or shoe provided with eyelet-holes, the elastic tongue A, having two rows of hooks on its under side, and adapted to cover the front opening, as and for the purpose specified.

206,572. APPARATUS FOR REGULATING THE PRESSURE IN A SERIES OF FERMENTING-VESSELS. John M. Pfaudler, Rochester, N. Y. Filed June 6, 1878.



Claim.—The combination of one or more section-pipes, A, each having branch pipes B, connecting it with one or more fermentation-vessels, and the check-valve C and stop-cock D, with the main pipe E, connected by branch pipe F and stop-cock G to the intercommunicating cylinders or receivers H, provided or connected with pressure-gage N, safety-valve Q, and blow-off cocks I, substantially as and for the purpose set forth.

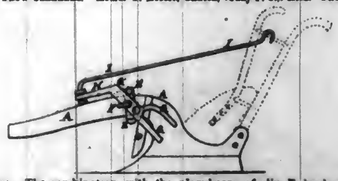
206,573. GUIDES FOR THE STEMS OF STAMP-MILLS. F. P. Picking, Fiesbe, Nev. Filed Apr. 22, 1878.



Claim.—1. The plate F, with its flange E and the dovetailed mortises G, in combination with the holder or box H, substantially as shown, and for the purpose herein described.

2. The metal box or holder H, made tapering, in combination with the tapering wooden bushing I and the locking-key K, substantially as shown, and for the purpose herein described.

206,574. PLOW-CLEANERS. Homer T. Rector, Clinton, (Cody P. O.,) Miss. Filed May 4, 1878.



Claim.—The combination, with the plow-beam, of clip E, hook-staple F, the forked bar G, provided with crank-arm H, arranged to make a half-revolution when swung forward, and the rod I, having hook at its rear end, as and for the purpose specified.

206,575. WEIGHING ATTACHMENTS FOR PEN AND PENCIL HOLDERS. Charles C. Redmond, San José, Cal., assignor of one-half his right to Wm. H. Henderson, same place. Filed Dec. 18, 1877.

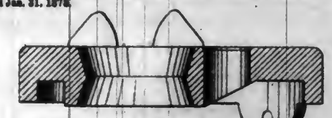
Claim.—The combination, with a pen or pencil holder, of the armed plug *F b b* and pivoted lever D, having balance E and hook *c*, or their equivalents, substantially as and for the purpose set forth.

206,576. PEPPER OR TABLE-SALT BOTTLES. Joseph A. Robbins, Boston, Mass., assignor of one-half his right to William E. Carlton and Elphas W. Arnold, same place. Filed June 6, 1878.



Claim.—In combination with the perforated cap C and bottle A B, the secondary perforated disk H, provided with the stud E, connected to the said perforated cap, so as to be suspended within the lower extremity of the neck of bottle, as and for the purposes set forth.

206,577. COVERS FOR CASING-HEADS OF OIL-WELLS. William Y. Rehrbach, Kribb's Farm, Pa. Filed Jan. 31, 1878.



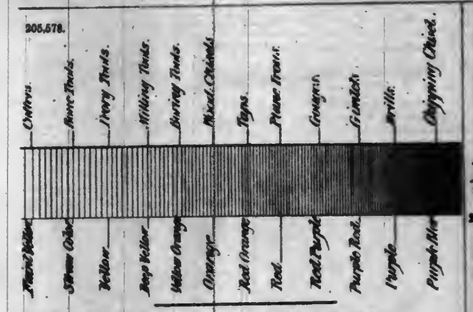
Claim.—1. A cover for the casing-heads of oil-wells, having a guide-hole for the tubing that is made with a double flare or taper inward and downward direction, so as to prevent catching of thimbles, substantially as specified.

2. A cover for the casing-heads of oil-wells, having top lugs sidewise of the guide-hole for the tubing, to prevent spreading of elevators or clamps, substantially as specified.

206,578. CHROMATIC TEMPERING-SCALES. Joshua Rose and Park Benjamin, New York, N. Y. Filed Jan. 26, 1878.

Claim.—A chromatic tempering-scale having the colors or gradations of color assumed by steel in the process of tempering, and having letters, characters, or words printed upon it, or in proximity to it, to indicate the color appropriate to the tool or article to be tempered, substantially as herein specified.

206,578.



206,579. FIRE-ESCAPES. Edward Roe, Indiana, Pa. Filed May 16, 1878.

Brief.—Foot-rings connected by rigid links having an eye at each end constitute the escape-ladder, which is suspended from a bracket having a broad flat hook-like end, whereby the foot-rings are held in parallel line to the wall of the building.



Claim.—The bracket K, driven into a wall, having a broad flat hook, and holding the escape away from the wall, in combination with foot-rings, connected by rigid links, having eyes at each end, as and for the purpose described.

206,580. TELEPHONE CALL-SIGNALS. Saml. E. Buck, Catskill, N. Y. Filed Feb. 27, 1878.

Brief.—By depressing the lever carrying contact-point the circuit-connections are shifted so that the main line current passes through the diaphragm and the contact-point, which, by depression of lever, are brought lightly into contact.

Claim.—1. The combination of an adjustable contact-point carried by a lever, by which it can be thrown at pleasure into or out of contact with the diaphragm of a bell-telephone, the said diaphragm and point being the terminals of an electric circuit, and adjusted so that the vibration of the diaphragm alternately makes and breaks the circuit, substantially as herein shown and described.

2. The lever F, provided with an adjustable point and connected with one of the line-wires of the telephone, in combination with the diaphragm C, connected with one of the terminals of the helix D, substantially as herein shown and described.

3. The alarm attachment consisting, essentially, of the lever F, having the adjustable platinum-pointed screw *e* and thumb-piece *h*, the screw *d*, and insulated screw *j*, in combination with the telephone, consisting of the magnet B, helix D, and diaphragm C, substantially as herein shown and described.

206,581. CLOTHES-DRIERS. Nathan Scarritt, Kansas City, Mo. Filed Aug. 24, 1877.

Brief.—Each of the vertical tiers of hinged arms can be raised and lowered independently, and sustained in position for use, when so raised, by means of the hook and loop and the top sliding ring and spring.



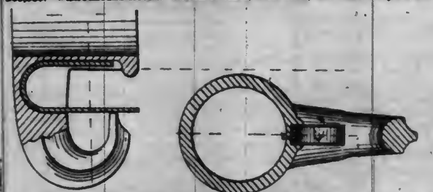
Claim.—The combination of the hinged arms F, arranged in horizontal and vertical tiers, the connecting-cords G, the loops H, the hooks I, the supporting-cords J, the sliding ring K, and the spring-catch L, with the upright shaft C of a clothes-horse, substantially as herein shown and described.

206,582. SLATES. Chas. C. Shepherd, Passaic, N. J. Filed May 27, 1878.



Claim.—The combination, with the slate *a b*, provided with the side pieces *c*, of the drawer for the copy-slips, consisting of the front *g*, end *h*, and bottom *f*, and arranged to slide endwise between the pieces *c*, substantially as set forth.

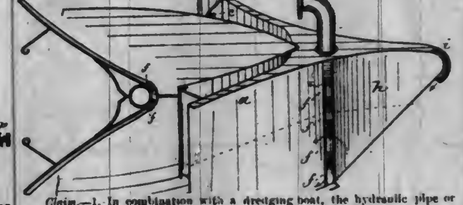
206,583. WHIFFLETREE-HOOKS. Othniel J. Smith, Waxwaksen, Wis. Filed May 15, 1878.



Claim.—The combination of the whiffletree-hook, having a groove in the ferrule and a semicircular cavity in the hook, with a U-shaped band-spring sprung into a cavity, and bearing by its outer end on the end of the hook, substantially as described.

206,584. HYDRAULIC DREDGING APPARATUS. E. Smith, Norwich, N. Y. Filed June 7, 1878.

Brief.—A dredging apparatus having wings and a cutting-prow is attached to the bow of a boat by webs or plates extending from the wings to the sides of the bow, the entire apparatus being adjustable vertically. A water-pipe connects with a suitable water-forcing apparatus on the boat, and the pipe is formed with an opening extending its full length within the apparatus, and said opening communicates with outlets formed by a corrugated plate, through which outlets the water is forced against the matter to be removed, the water being spread and held against the surface by the peculiar formation of the wings, which extend along the sides of the bow of the boat. A smaller pipe connecting with the main pipe also throws a stream of water down along the cutting-edge of the prow of the apparatus to facilitate its action.

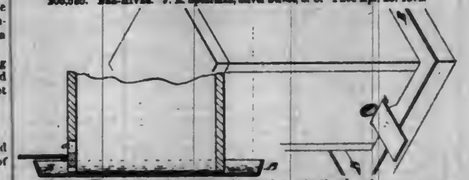


Claim.—1. In combination with a dredging boat, the hydraulic pipe or water-course provided with outlets, and the directing or guide plates arranged vertically upon said boat, substantially as and for the purpose set forth.

2. A dredging-machine consisting of a hydraulic pipe or water-course provided with lateral outlet and directing plates, vertically arranged, and adjustable upon the boat, substantially as and for the purpose described.

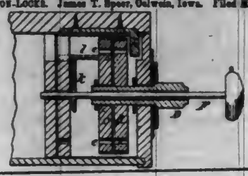
3. A dredging-machine consisting of the wings *a* and water-outlets *f*, in combination with the plow or central portion *h* and curved pipe *i*, substantially as and for the purpose specified.

206,585. BEE-HIVES. J. R. Spearman, Silver Street, S. C. Filed Apr. 25, 1878.



Claim.—The combination, with a bottomless hive having bee-entrance *c*, of a surrounding water-pan, B, the hive being placed in the pan to bring the water within the hive, as shown and described.

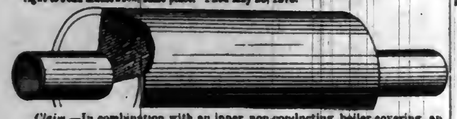
206,586. PERMUTATION-LOCKS. James T. Speer, Colwin, Iowa. Filed May 10, 1878.



Claim.—1. The combination of the disks *c d*, having notches *g* and holes *e*, the hollow spindle D, and spindle F, carrying the rods *k l*, substantially as herein shown and described.

2. The apertured and notched plate E, the disks *c d*, spindle F, carrying the rods *l*, and the hollow spindle D, in combination, substantially as herein shown and described.

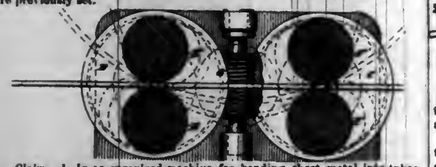
206,587. BOILER-COVERINGS. Alex. Sweeney, San Francisco, Cal., assignor of one-half his right to John Matheson, same place. Filed May 28, 1878.



Claim.—In combination with an inner non-conducting boiler covering, an outer water-proof covering of whiting and oil, substantially as set forth.

206,588. METAL-BENDING MACHINES. Stephen P. M Tasker, Philadelphia, Pa. Filed May 25, 1878.

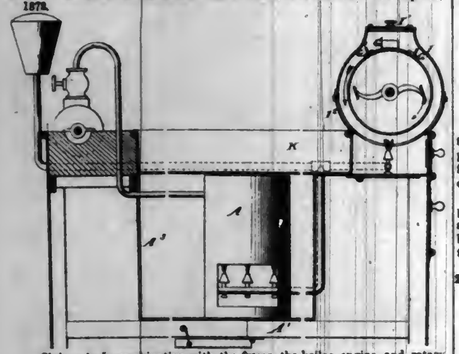
Brief.—Two pairs of rolls are journaled between two pairs of annular disks, the latter being fastened to the upright standards, between which operates the entire mechanism. On the peripheries of two opposite disks is cut a thread, into which a worm-shaft is geared to revolve said disks, by which operation the two pairs of rolls are inclined inward each toward the other. The lower roll of each pair is then revolved, and bends the metal to the curvature previously set.



Claim.—1. In an organized machine for bending sheet metal into tubes, two pairs of rolls, E E' F F', adapted to be inclined each pair inward toward the other, substantially as shown and described.

2. As a device for both supporting and inclining the two pairs of rolls E E' F F', the disks B B' C C' and the worm-wheel shaft G, the whole arranged and operated substantially as shown and described.

206,589. COFFEE OR NUT ROASTERS. Wm. E. Vernon, Oskaloosa, Iowa. Filed Apr. 11, 1878.



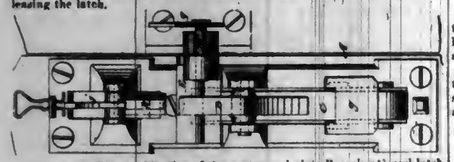
Claim.—1. In combination with the frame, the boiler, engine, and rotary roaster and pan K, placed in such relation to the boiler that it is heated by the waste heat of the steam-generator, substantially as set forth.

2. In combination, the boiler, the casing A', and the pan K and roaster, substantially as set forth.

3. In combination with the case I, fitted with delivery-doors P P, and cylinder G, with a corresponding delivery-door, the flanges G', for delivering the materials across the space between the cylinder and its casing, substantially as set forth.

206,590. GATE-LATCHES. Charles Waller, Jr., Baraboo, Wis. Filed May 23, 1878.

Brief.—The latch catches on the back side of the pivoted pentagonal striker. The striker is held in position by a spring whose force is adjustable, and to disengage the latch a push against the object to which it is attached, sufficient to overcome the force of the spring, turns the striker, thereby releasing the latch.



Claim.—1. The combination of the pentagonal plate B, spring C, and latch E, substantially as herein shown and described.

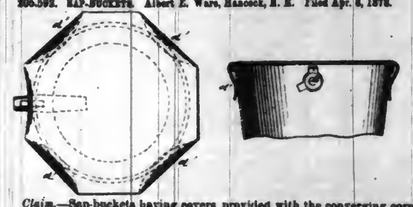
2. The combination of the right-angled apertured plate *g* with the spring C, substantially as shown and described.

206,591. WAGON-AXLES. Patrick R. Walsh, Vallejo, Cal. Filed Oct. 4, 1877.



Claim.—The removable spindle B, provided with an extension-piece, E, and screw D, in combination with the axle A, provided with a female screw, as set forth.

206,592. SAP-BUCKETS. Albert E. Ware, Hancock, N. H. Filed Apr. 6, 1878.



Claim.—Sap-buckets having covers provided with the converging corner-pieces *d'*, adapted to serve as clasps to retain the cover in place and as an emptying-spout, substantially as shown and described.

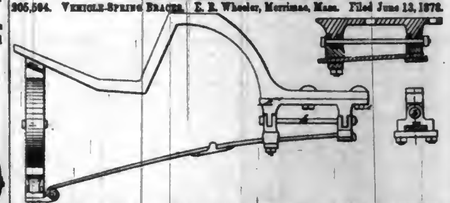
206,593. HEEL-SHAVES FOR BOOTS AND SHOES. F. P. Warren, Springfield, Mass. Filed Oct. 10, 1877.



Claim.—1. As an improved article of manufacture, a shave consisting of the combination of the body A, having raised face C and slots D, the blade B, and set-screws *e d*, all arranged substantially as specified.

2. As an improved article of manufacture, a shave the body of which has the raised part C, for the purpose stated, and provided with slots for the adjustment of the blade, substantially as specified.

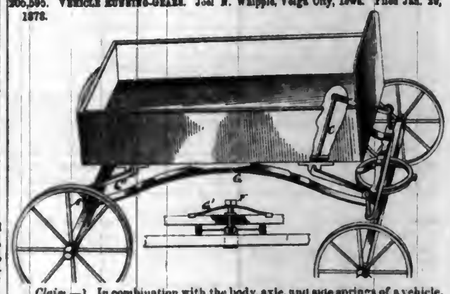
206,594. VEHICLE-SPRING BRACES. E. R. Wheeler, Merrimac, Mass. Filed June 13, 1878.



Claim.—1. As an improvement in hanging carriage-bodies, the combination of a carriage-body having a cut-under or wheel-house, and being supported on one or more elliptic front springs, with a center spring that extends from a shackle of the front head-block back to a double flexible center shackle of the body, substantially as and for the purpose set forth.

2. The combination, with the front head-block of a carriage-body supported on an elliptic front spring or springs, of a center spring that is shackled at the front to a bottom plate of the head-block, and at the rear to lower flexible shackles pivoted to upper fixed shackles of the carriage-body, substantially as specified.

206,595. VEHICLE RUNNING-GEARS. Joel H. Whipple, Volga City, Iowa. Filed Jan. 29, 1878.



Claim.—1. In combination with the body, axle, and axle-springs of a vehicle, the double crank-bars C C', turning on bearings on the body, and supports at both their lower ends on posts attached to the hind axle and front cross-bar, substantially as set forth.

2. In combination with the front axle of a vehicle, a king-bolt, F, attached thereto by a hinge-joint, which gives the king-bolt transverse oscillation, and spring G', resting on the axle and bearing against the king-bolt, substantially as set forth.

206,596. MACHINES FOR RAISING LEATHER FROM TAN-VATS. Albert Whiting and Joseph A. Smith, Rochester, N. Y. Filed May 23, 1878.

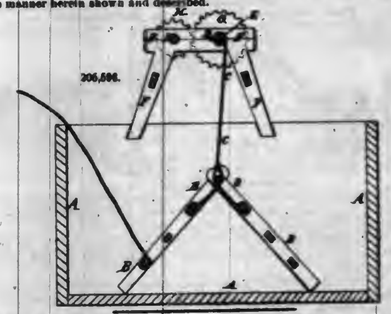
Claim.—1. The rock or false bottom B, made in two parts or sections, hinged to each other at the center to adapt it to be raised at the center into an angular position to raise and support the hides, substantially as herein shown and described.

2. The combination of the two hoisting-ropes C and the adjusting-rope K with the hinged sections of the rack or false bottom, substantially as herein shown and described.

3. The combination of the shaft E, provided with pins D, with the two hoisting-ropes C and the hinged sectional rack or false bottom B, substantially as herein shown and described.

4. The combination of the two gear-wheels G H, the shaft I, and the crank J in the movable frame F with the shaft E, the hoisting-ropes C, and the hinged sectional rack or false bottom B, all adapted to be used in connection with the vat A, substantially as herein shown and described.

5. The hoisting-ropes C, having their lower ends branched to adapt them to be applied to the hinged sectional rack or false bottom B in substantially the manner herein shown and described.



206,597. BLOCKS FOR FORMING HAT-BRIMS. Charles H. White, Danbury, assignor to himself and Geo. A. Shepard, Bethel, Conn. Filed May 20, 1878.

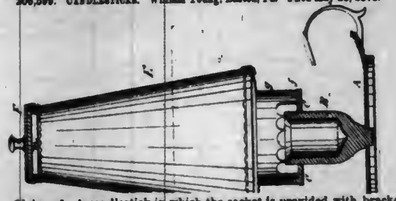


Claim.—A hat-brim form, A, made with a sectional detachable flange, B, substantially as herein shown and described.

206,598. CEMENT. Ebenezer Willis Ayer, Mass. Filed Dec. 7, 1877.

Claim.—The cement consisting of particles of iron in combination with plaster, clay, or some like substance, to hold them temporarily in position, and some mild acid to cause oxidation of the particles of iron, by means of which oxidation the cement shall become hardened and solidified without the action of fire or heat, substantially as described.

206,599. CANDLESTICKS. William Young, Easton, Pa. Filed May 28, 1878.



Claim.—1. A candlestick in which the socket is provided with brackets *c*, having studs *f*, for supporting the chimney, substantially as herein shown and described.

2. The combination of the candlestick having a socket, B, provided with brackets *c*, and the mica chimney E, having the apertured lower portion *g*, substantially as herein shown and described.

3. The combination of the cap F, having the elastic lining *m*, with the chimney E, substantially as shown and described.

206,600. SECURING RAILWAY-RAILS. Amos Joseph Acaster, Sheffield, England. Filed Jan. 2, 1878. Patented in England, Dec. 12, 1876.

Brief.—Rails are secured at their joints by longitudinally-ribbed and correspondingly-grooved wedge-keys, whose contact-surfaces are roughened or serrated to prevent slipping.



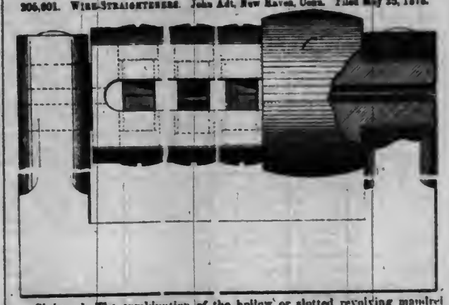
Claim.—1. The combination, in a rail-fastening, of rails with wedge-keys, one key having a longitudinal rib, adapted to a corresponding groove in the other key, substantially as described.

2. In a rail-fastening, the railroad-rails combined with and secured by wedge-keys, having their adjoining faces roughened or serrated, and one face being provided with a longitudinal rib, adapted to a corresponding groove in the other face, all substantially as described.

3. The combination of wedge-keys with longitudinally ribbed or grooved rails, to which the said keys are adapted, substantially as set forth.

4. The combination of wedge-keys with the rails, and with longitudinally-ribbed wedge-sheaths interposed between the said wedges and rails, all substantially as described.

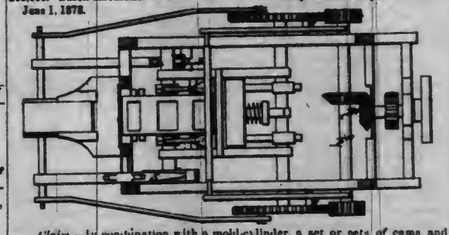
206,601. WIRE-STRAIGHTENERS. John Ash, New Haven, Conn. Filed May 25, 1878.



Claim.—1. The combination of the hollow or slotted revolving mandrel with a series of dies arranged therein, and opposite radial screws bearing upon the two ends of the said dies for the purpose of adjustment, substantially as described.

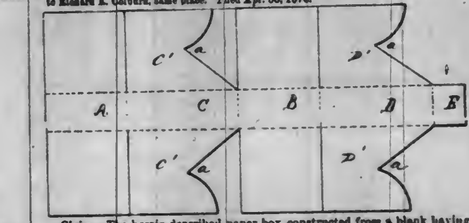
2. In a wire-straightening machine, the combination of the revolving mandrel with a series of straightening-dies, each die divided transversely in the center and adjustable independently of each other within the said mandrel, substantially as described.

206,602. BRICK-MACHINES. James E. Allen and P. F. Duby, Greensborough, N. C. Filed June 1, 1878.



Claim.—In combination with a mold-cylinder, a set or sets of cams and intermediate mechanism for securing pressure on the brick from opposite directions without pressing upon the cylinder, as herein set forth.

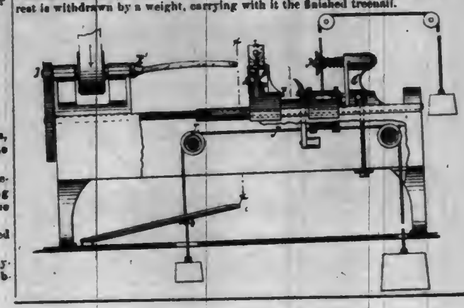
206,603. PAPER BOXES. Charles M. Arthur, Ansonia, Conn., assignor of one-half his right to Richard R. Colburn, same place. Filed Apr. 30, 1878.



Claim.—The herein-described paper box, constructed from a blank having the sides A C B D in a continuous piece, and the two sides C D each constructed, respectively, with a projection, C' D', at one or both ends, and the said projections having a V-shaped notch, *a*, cut in the corresponding edge, substantially as described.

206,604. MACHINES FOR TURNING TREENAILS. W. S. Auchincloss, Wilmington, Del. Filed May 20, 1878.

Brief.—The square end of the blank is loosely inserted in a chuck mounted on the end of a lathe-spindle. The other end of the blank is put between two adjustable die-blocks secured to a slide-rest, which is automatically fed toward the head-stock by a screw working in two half-nuts. When the slide-rest reaches a desired point the feed-screw is automatically released, and the slide-rest is withdrawn by a weight, carrying with it the finished treenail.



Claim.—1. The combination, in a machine for turning treenails or other similar articles, of a chuck mounted on the end of a lathe-spindle, and adapted to engage with the end of the blank or stick to be turned, two or more die-blocks secured in a slide-rest, and adapted to be set to the size of the article to be turned, and suitable cutters, constructed and adapted for cutting wood, which are also secured to the slide-rest, the parts being so constructed that they allow the cutters to follow the direction of the grain in the stick, substantially as and for the purpose set forth.

2. The combination of die-blocks and cutters, constructed to cut wood, and arranged on separate frames upon the slide-rest, so as to form a clasp around the treenail or other similar article turned, which frame can be adjusted at will and unclasped at any moment, so as to release the treenail, or aid in the adjustment of the dies or the sharpening of the cutters, all substantially as shown, and for the purpose set forth.

3. The combination, with the slide-rest which supports the cutters and the lower die-block, the hinged lever which carries the upper die-block, and with the spring catch for locking and releasing said hinged lever, of an adjusting screw for setting the die-blocks to correspond to the desired diameter of the article to be turned, substantially as set forth.

4. The combination, with a slide-rest, its feed-screw, and with two half-nuts adapted to be moved to or from said feed-screw, of a lever-frame, which serves to move the half-nuts, a catch for locking said lever-frame, a stop for releasing the catch, and a weight or spring for moving the lever-frame automatically, substantially as shown and described.

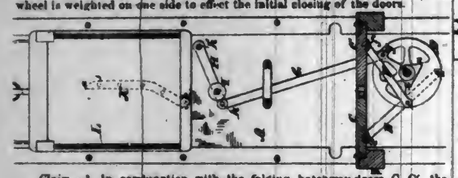
5. The combination, with a slide-rest, its feed-screw, two half-nuts, operated by a lever-frame, a catch for locking the lever-frame, a stop for releasing said catch, and a weight or spring for operating the lever-frame, of a weight adapted to draw back the slide-rest automatically as soon as the lever-frame is moved, substantially as set forth.

6. The combination, in a machine for turning treenails or other articles, of a chuck mounted on the spindle of the turning-machine, and adapted to engage with the end of the blank, a slide-rest carrying two die-blocks and two cutters, a feed-screw for moving the slide-rest forward, mechanism for releasing the feed-screw and for drawing back the slide-rest, and a spring-supported cup mounted in the tail-stock of the turning-machine, all constructed and adapted to operate substantially as shown and described.

7. The combination, in a machine for turning treenails or other articles, of a chuck mounted on the spindle of the turning-machine, and adapted to engage with the end of the blank, a slide-rest which carries two die-stocks and two cutters, and a foot-lever which connects with the slide-rest, substantially as and for the purpose set forth.

205,605. HATCHWAY-DOOR MECHANISMS. Reuben F. Bancroft, Camden, N. J., and John L. Ashmore, Philadelphia, Pa. Filed Apr. 19, 1878.

Brief.—An inclined rail on the cage, pressing against a friction-roller on a lever pivoted at one end to the wall, and at the other to a lever pivoted to the periphery of a wheel on the wall, forces down the levers, and partly rotates the wheel. The wheel, being connected to the doors by levers pivoted on its periphery, by its movement forces up the doors by means of the levers. The wheel is weighted on one side to effect the initial closing of the doors.



Claim.—1. In combination with the folding hatchway-doors C C', the wheel D and levers E F, arranged and operating substantially as shown and described.

2. In combination with the wheel D, the levers G H, substantially as shown and described.

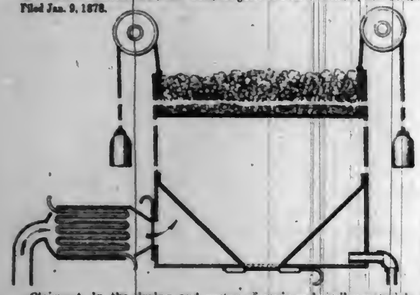
3. In combination with levers G H and roller I, the car L and inclined rail K, substantially as shown and set forth.

4. The combination of doors C C', wheel D, and levers E F G H, substantially as shown and described.

5. The combination of doors C C', wheel D, levers E F G H, roller I, and rail K on car L, substantially as shown and described.

6. In combination with folding doors C C' and levers E F, the wheel D, weighted or formed heavier at one side than on the other, substantially as and for the purpose set forth.

205,606. PROCESSES FOR STEAMING AND DRYING GRAIN. Abraham De Bevoise, Brooklyn, and Frederic A. Lockenbach, New York, assignors to John E. Mulford, New York, N. Y. Filed Jan. 9, 1878.



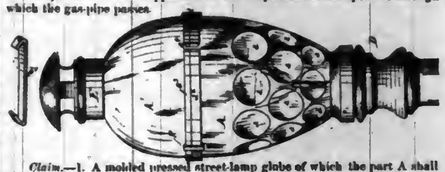
Claim.—1. In the drying and curing of grain and similar materials, the process which consists in passing steam through the mass, and then into and through an absorbent material constituting a porous cover to the outlet of the drying-chamber, and adapted to hold in suspension any condensation of steam passing through the same, and finally drying the grain by the application of dry heat, substantially as specified.

2. The apparatus for drying grain and similar material, consisting of the chamber for receiving the material to be dried, provided with suitable inlets for admitting air or steam directly into said chamber, and inclosed on the top or sides, or both, with a removable cover containing an absorbent material, substantially as described.

3. In a grain-drying apparatus, the combination of the chamber, having a funnel-shaped perforated bottom, and provided with steam and air pipes communicating with the space surrounding said bottom, and a receptacle holding an absorbent material adapted to serve as a cover or inclosure to the grain-chamber, substantially as described.

206,607. STREET-LAMPS. John Bird, Pittsburg, Pa. Filed Feb. 16, 1878.

Brief.—Air is to be supplied from below by means of the apertare through which the gas-pipe passes.



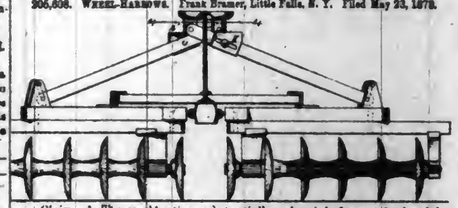
Claim.—1. A molded pressed street-lamp globe of which the part A shall be in one piece, having the lenses *a a* and thread *a'*, to secure the same to the lamp-post, substantially as described and shown.

2. In a molded pressed street-lamp globe, the part A, made of one piece, having ring a^2 and thread a^1, and lenses *a*, substantially as and for the purposes set forth.

3. The combination, in a street-lamp globe, of the parts A and A', rings a^2 and a^3, and the fastener F, substantially as described, and as and for the purpose set forth.

4. In a street-lamp globe, the parts A and A', fastener F, rings a^2 and a^3, combined with the block D and post C, substantially as described and shown.

206,608. WHEEL-HARROWS. Frank Bramer, Little Falls, N. Y. Filed May 23, 1878.



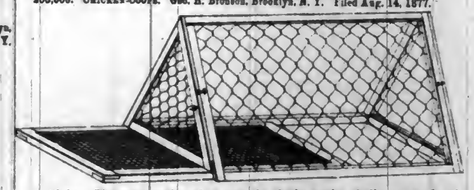
Claim.—1. The combination, substantially as hereinbefore set forth, of the tongue, the wheel-gangs pivoted on opposite sides thereof, and capable of vibrating relatively thereto to conform to undulations in the surface over which they pass, and the stiffening-bar adapted to engage with the wheel-gangs and tongue to render the machine rigid, and capable of being disengaged to render the machine flexible.

2. The combination, substantially as hereinbefore set forth, of the tongue and the gang-frames, hinged on opposite sides thereof, one gang-frame being hinged in advance of the other.

3. The combination, substantially as hereinbefore set forth, of pivoted gang-frames, arched or inclined supports for the driver's seat, pivoted at their outer ends to the gang-frames and at their inner ends to the seat, and adjusting devices by which the inclination of the bars and the height of the seat may be varied.

4. The combination, substantially as hereinbefore set forth, of the tongue or intermediate frame, gang-frames pivoted thereto, an arched or straddling seat-support pivoted upon the gang-frames and to the seat, beneath which the inner ends of the supporting-bars cross each other, and slotted plates provided with inclined surfaces, mounted on the supporting-bars and acting upon the under surface of the seat, or an extension thereof.

206,609. CHICKEN-COOPS. Geo. H. Bronson, Brooklyn, N. Y. Filed Aug. 14, 1877.



Claim.—The construction of a coop for fowls made wholly or partly of wire-cloth or wire-netting, in combination with a movable metallic bottom, substantially in the manner and for the purpose specified.

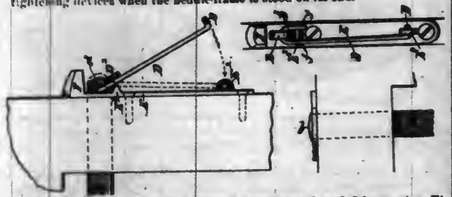
206,610. BELT-FASTENERS. Simeon Budlong and W. O. Talcott, Providence, R. I. Filed May 3, 1878.



Claim.—A belt-fastener composed of a plate and barbed penetrating points or hooks, substantially as described.

206,611. HEDDLE-ROD TIGHTENERS. J. Butterworth, Worcester, Mass. Filed Nov. 7, 1877.

Brief.—The invention relates to improvements in heddle-rod tighteners, and consists in special combinations set forth in the claims. The fulcrum-piece is notched to prevent displacement of the lever, the latter having its hook also notched for the same purpose. The guard prevents injury to the tightening devices when the heddle-frame is stood on its end.

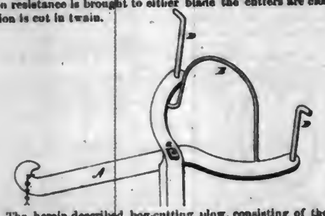


Claim.—1. In combination with rod B, perforated at *d*, fulcrum-piece E^1, having depressions *f*, and loop or eye E^2, the wire lever D, having hooked end D^1 and recessed offset end D^2, for the purpose set forth.

2. In combination with the plate E, provided with the guard-lug F, rod tightening and securing devices, substantially as and for the purpose set forth.

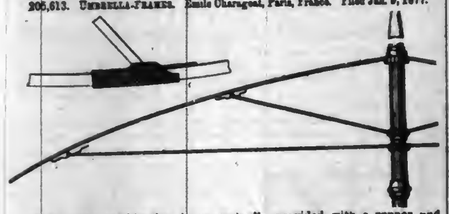
206,612. BOG-CUTTING PLOWS. Aras B. Cady, Bethlehem, Conn., assignor of one-half his right to F. Candee, same place. Filed May 13, 1878.

Brief.—Shear-cutting blades are pivoted together, with handles in the rear, and a spring to keep them apart, and draft-chains are applied at the front. When resistance is brought to either blade the cutters are closed and the obstruction is cut in twain.



Claim.—The herein-described bog-cutting plow, consisting of the pair of blades A B, hinged together, each provided with a handle, D, for holding the plow, combined with a spring to force the blades open, and a draft for the forward end of each blade to a common point, so that force applied draws the blades together, substantially as described.

206,613. UMBRELLA-FRAMES. Emile Charagnat, Paris, France. Filed Jan. 9, 1877.



Claim.—The combination, in an umbrella provided with a runner and stretchers constructed and arranged to hold the ribs composing the frame in an extended position without the employment of the usual spring-catches on the stick, of an auxiliary runner and a second set of stretchers, substantially as and for the purpose described.

205,614. CASES FOR CARBOYS. John H. Coleman, New York, N. Y. Filed Mar. 27, 1878.



Claim.—The glass bottle inclosed in a sheet-metal holder having trunnions, and provided with a packing between the glass and holder, in combination with the wooden case having the removable upper portion and the bearings for the trunnions in the front and back *h h'* and within the slots *s* of the sides *y*, substantially as set forth.

205,615. PILES. John Corry, Manitowoc, Wis. Filed May 20, 1878.

Brief.—Two sections of pile are connected together by a sleeve rigidly bolted to one, but loosely fitting the other, so that it may move in an endwise direction, and that the part in the ground may not be pulled out in ice-jams. The sleeve is composed of several sticks of timber surrounding the pile and fastened together by metal hoops.



Claim.—1. A pile consisting of two sections, the upper section being endwise movable relatively to the lower section, as and for the purpose specified.

2. The combination, with the pile-section *a*, of the pile-section *b* and a sleeve, C, adapted to fit loosely and slide upon the section *a*, substantially as specified.

3. The pile-section *b*, having the sleeve C, composed of the timbers *c*, bolted thereto, and the bands *d*, secured to and bracing the said timbers, substantially as specified.

205,616. MANUFACTURE OF HYDRAULIC CEMENT. Uriah Cummings and Lewis J. Bennett, Buffalo, N. Y. Filed June 5, 1878.

Claim.—1. The method of producing hydraulic cement consisting, essentially, in first crushing and disintegrating the calcined and the vitrified portions of the natural cement-stone, then separating the vitrified portion by screening or bolting, and, lastly, reducing the vitrified portion separately to powder, substantially as specified.

2. As an improved article of manufacture, hydraulic cement having the vitrified portion of the cement-stone removed by screening, as and for the object stated.

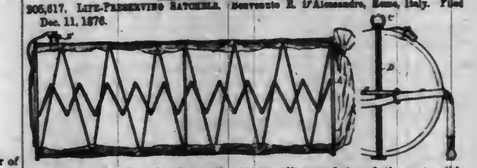
3. As an improved article of manufacture, hydraulic cement produced from the vitrified portion of the cement-stone, substantially in the manner as and for the purpose specified.

4. The method of producing hydraulic cement, consisting in disintegrating the properly-calcined and the vitrified stone, then separating the vitrified portion from the former and separately reducing the same to powder, and, lastly, reincorporating the same with the former, as and for the object specified.

5. The compound cement hereinbefore described, consisting of the properly-calcined and disintegrated portion and the vitrified and powdered parts of cement-stone, the latter being separately reduced to such powder and then mixed with the former, as and for the object specified.

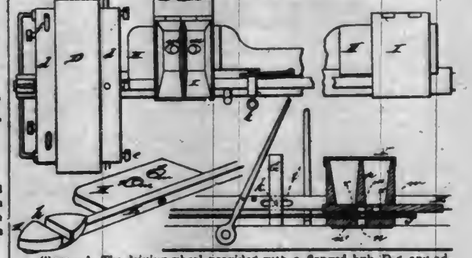
6. The method of utilizing the waste product of a kiln—viz., the scoria or vitrified portion of cement-stone—consisting in crushing and grinding the same to a fine powder, substantially as hereinbefore stated.

206,617. LIFE-PRESERVING HATCHES. Benvenuto R. D'Alessandro, Rome, Italy. Filed Dec. 11, 1876.



Claim.—The combination, with the traveling-satchel and the extensible compartment, of the protecting ledge or flap F, adapted to inclose and cover said compartment when folded, and the retaining elastic bands D, rings C, and the catch M, all constructed, arranged, and operating substantially as and for the purposes specified.

206,618. CORN-PLANTERS. Oscar E. Deming, Mount Olivet, Ky. Filed Apr. 6, 1878.



Claim.—1. The driving-wheel provided with a flanged hub, D *d*, and adjustable shuttle-drivers *f* and shuttle F, combined with adjustable feed-slides and a cut-off mechanism, as herein specified.

2. The oval or diamond-shaped shuttle F, operated by the adjustable drivers *f* in the flange *d*, combined with a feed-bar, and operating two or more adjustable feed-slides in movable hoppers, as herein specified.

3. The oval or diamond-shaped shuttle F, with slot *h*, adapted to throw the feed mechanism out of action, and allow the drivers *f* to pass idly through the slot, as specified.

4. The combination of the shuttle F *h* with the slotted feed-bar, rest, and gage-pin, as and for the purpose described.

5. The cut-off J, with openings *n'* and lever O, arranged and combined to serve, relatively to two or more slides, H *m*, and movable hoppers I *n*, as herein specified.

6. The lever O, adapted to serve the double function of operating the cut-off, and also to throw the shuttle and feed mechanism out of gear by means of gage-pin *k*, as specified.

205,619. MOTORS FOR DENTAL PLUGGERS. Samuel W. Dennis, San Francisco, Cal., assignor, by mesne assignments, to himself and John B. Reynolds, same place. Filed Oct. 29, 1877.



Claim.—1. The combination together in one machine or instrument of the following parts or elements, viz: a cylinder or chamber, A, having induction-passage *a* and induction-ports *e e f* and exhaust-ports *d d' d' f'* in its shell, the

piston B, having induction-ports *g g'*, passages *h h'*, and exhaust-ports *i i'*, and the valve C, traveling within the piston at a right angle to its reciprocation, and acting to control the piston-ports, substantially as herein described, for the purpose of producing a vibration of the piston by the action of compressed or exhaust air, as set forth.

2. The combination, with the piston B, having induction-ports *g g'*, exhaust-ports *i i'*, and passages *h h'* in its top and bottom, of the valve C, traveling within the piston at a right angle to the reciprocation thereof, and operated to control the admission and exit of the air to and from the cylinder both above and below the piston, substantially as and for the purpose set forth.

3. In motors for operating dentists' instruments, the combination, with the cylinder A, of the piston B, a single valve, C, carried by the piston and moving at right angles to the reciprocation of the same, and passages and ports operating in connection with the said valve to move the piston in both directions by compressed air and to cushion it on the upward stroke, substantially as described.

206,620. CRUSHER. Samuel B. Donaldson, Scottsborough, Ala. Filed May 22, 1878.



Claim.—1. In combination with a vertical dasher-shaft, having a pinion, *f*, upon its upper pivot, the gear-wheel G, with shaft *h*, the pinion *i* on opposite end of said shaft, and the shaft *m*, with loose cog-wheel L, ratchet-wheel *p*, pawl *n*, and spring S, substantially as and for the purposes herein set forth.

2. The plate P, fastened by bolts or screws *s s* to the lid B, the spring S, and shaft *m*, in combination with the stands J J, provided with the hinged caps I I and the clips *k k*, substantially as and for the purpose set forth.

206,621. VEGETABLE-SLICER. Newton Edwards, Decatur, Ill. Filed Apr. 2, 1878.

Brief.—A rhomboidal-shaped box is provided with a slide having a cutter or blade fixed therein. The partitions are adjustable, by means of which the box may be varied to adapt it to greater or less quantities of vegetables.



Claim.—1. In a vegetable-slicer, a rhomboidal-shaped box, A, in combination with a slide, C, arranged to operate in the bottom of said box, and having a cutter, D, fixed obliquely therein, substantially as and for the purpose specified.

2. The interchangeable followers F F', operating jointly with the box A, having grooves H, and the movable partitions E E', substantially as and for the purpose specified.

3. The cutter D, having turned-up ends, in combination with the slide C, having sides with grooves, in which the turned-up ends of the cutter are seated and held by a bolt, substantially as and for the purpose set forth.

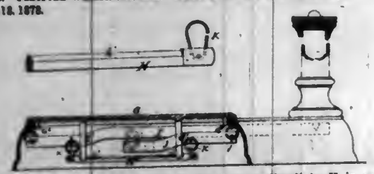
206,622. DRAW-BARS FOR STREET-CARS. Anson W. Eggleston, Chicago, Ill. Filed Mar. 28, 1877.



Claim.—1. The guard *c*, plate H, and pin *e*, in combination with the draw-bar C, provided with the hook B and curved bar C, substantially as and for the purpose specified.

2. The draw-bar C, provided with a hook, D, in combination with the iron H, guard *c*, and stop *a*, substantially as and for the purposes set forth.

206,623. PLATFORM WEIGHING-SCALES. Thaddeus Fairbanks, St. Johnsbury, Vt. Filed May 18, 1878.



Claim.—1. The longitudinal bars H *h'* and suspending-links K, in combination with a platform, G, having notched arms G', resting on said bars, levers I J, and suitable connections to a weighing-beam, D, as and for the purposes herein specified.

2. The longitudinal bars H *h'* and suspending-links K, in combination with a platform, G, having notched arms G', levers I J, having knife-edges *i j*, weigh-rod E, and beam D, substantially as herein specified.

206,624. VALVES FOR REED-ORGANS. Asa S. Field, Brattleborough, Vt., assignor to J. Estey & Co., same place. Filed Apr. 30, 1878.



Claim.—1. In a reed-organ, a tracker-pin with a T-head or cross-piece rigidly affixed to its lower end, said cross-piece being arranged in such a manner as to act upon and lift the valve bodily from its seat, substantially as set forth.

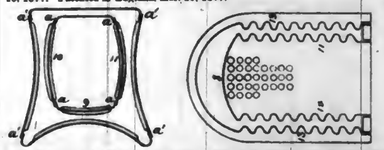
2. In a reed-organ, a tracker-pin provided with a rigidly-attached cross-piece, and said cross-piece attached to the valve or valves by means of flexible connecting-pieces, either on the face or back of the valve, substantially as set forth.

3. In a reed-organ, two or more valves arranged on opposite sides of a tracker-pin and attached to a cross-piece rigidly affixed to the pin by means of flexible connections *a a*, substantially as set forth.

4. In a reed-organ, the combination of the tracker-pin C, provided with a rigidly-attached cross-piece, D, with the valve E, cut in parts, and each part attached separately and flexibly to the cross-piece, substantially as shown and specified.

5. In a reed-organ, the combination of a tracker-pin, C, with a rigidly-attached cross-piece on its lower end, with the valve E and the spring *c* arranged to press upon the valve or cross-piece in the prolongation of the axis of the tracker-pin, substantially as set forth.

206,625. FIRE-BOXES FOR STEAM-BOILERS. Samson Fox, Leeds, Great Britain. Filed Oct. 10, 1877. Patented in England, Mar. 10, 1877.

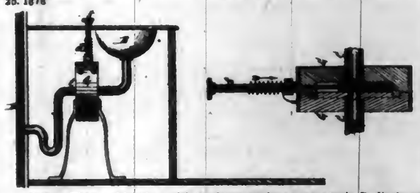


Claim.—1. A fire-box having its top plate 8, front plate 9, and side plates 10 and 11 provided with corrugations extending partly across each plate, with uncorrugated borders *a*, for the convenient attachment of the plates, and having each of said plates convex toward the steam-pressure, as herein specified.

2. The boiler 13, having its top, front, and side plates partly corrugated, with uncorrugated borders *a'*, and having each of said plates convex toward the steam-pressure, as herein specified.

3. A fire-box having its top, front, and side plates partly corrugated, with uncorrugated borders *a*, and having each of said plates convex toward the steam-pressure, in combination with a boiler surrounding said fire-box, and having its top, front, and side plates partly corrugated, with uncorrugated borders *a'*, and having each of said plates convex toward the steam-pressure, as herein specified.

206,626. VALVES FOR WATER-CLOSETS, &c. Caroline C. Frost, New York, N. Y. Filed Mar. 25, 1878.



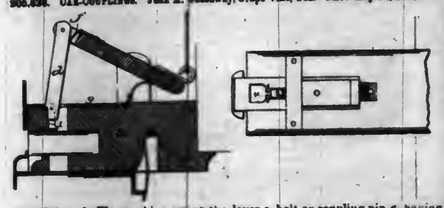
Claim.—The combination, with the bowl, basin, or receptacle B, discharge-pipe D, and pipe C, of the vertically-sliding valve S, provided with an opening, *b*, and having a rigid stem connected directly with the handle *f*, the box G, inclosing and forming a guide for said valve, and the spring *d* for retracting the same, all constructed and arranged substantially as described.

206,627. HAND-RUBBERS. Charles B. Fuller, Worcester, Mass., assignor of one-half his right to Fred. A. McClure, same place. Filed May 27, 1878.



Claim.—The hand washing-machine or scrubber hereinbefore described, consisting of the parallel wood rolls A, having journals *a*, the metal side pieces B B, having perforations *b*, slots *c*, and arched grooves *c*, the arched back piece C, with its edges supported within said grooves *c*, and the handle D, all constructed and combined substantially as set forth.

206,628. CAR-COUPLINGS. John M. Causeway, Grape Vine, Tex. Filed May 24, 1878.

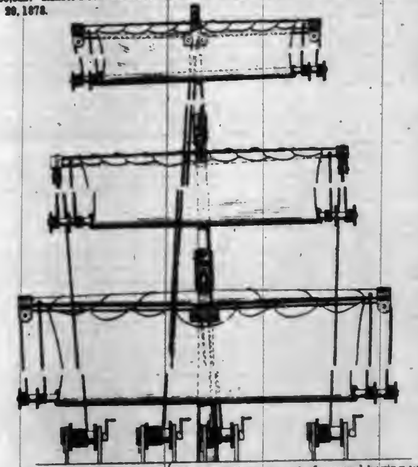


Claim.—1. The combination of the lever *c*, bolt or coupling-pin *a*, having a notch in the front side of its lower end, so as to snap over the top of the draw-head, and spring *f*, substantially as shown.

2. The combination of the lever *c*, pin *d*, spring *f*, sliding plate *g*, and spring *i* upon the under side of the lever, substantially as described.

3. The link-holder *e*, having the hole 2, points 3, and large hole 4, in combination with the coupling-pin, having the projection 1 upon its lower end, substantially as shown.

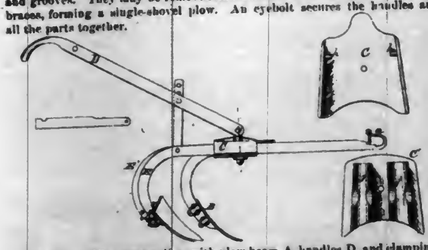
206,629. REEFING AND FURLING SAILS. Carl E. S. Goderts, Philadelphia, Pa. Filed Apr. 29, 1878.



Claim.—The combination, with the stationary yard of a vessel having pulley-blocks at its opposite ends, of a sail having its upper edge secured to said yard, a loose boom or roller attached to the lower edge of said sail and having drums at its opposite ends, two ropes, each having one end attached to one of said drums, and passing over the respective pulleys on the yard and thence to the deck, said ropes and the sail being so relatively arranged that the unrolling of the sail winds portions of the ropes upon the drums, and vice versa, substantially as set forth.

206,630. CULTIVATORS. Joseph George, Springhead, Mo. Filed Apr. 9, 1878.

Brief.—Side beams held to main beam by clamping-plates with flanges and grooves. They may be removed and bars substituted to hold the handle-braces, forming a single-shovel plow. An eyebolt secures the handles and all the parts together.



Claim.—1. The combination, with plow-beam A, handles D, and clamping-plates C C', of an eyebolt, *c*, arranged as described, to simultaneously secure the forward ends of the handles and bind together the clamping-plates, substantially as described.

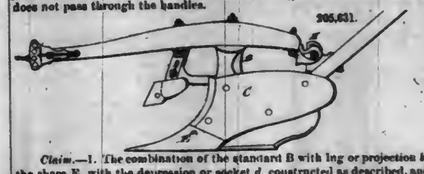
2. The combination of the perforated plow-beam A, the notched side beams or standards E E', the clamp-plate C, having lugs *h*, the clamp-plate C', having tongues *j*, the bolt *c*, handles D, and vertical bars G, attached to the handles above and the side standards below, substantially as described.

3. A bar having its forward end notched to receive the lug of the clamp-plate, combined with the said clamp-plates C C', the vertical bars G, and the handles D, and extending rearwardly from the clamp-plates to support the handles, substantially as described.

206,631. PLOWS. Lewis Gibbs, Canton, Ohio, assignor to himself, John R. Bucher, and William A. Wikidal, same place. Filed Mar. 2, 1878.

Brief.—The rocking plate upon the head of the standard, the double plates connecting beam and handle, and the slotted colter-arm allow the vertical adjustment of the beam. Cross-bolt in clevis rigid with draft-link. The round does not pass through the handles.

206,631.

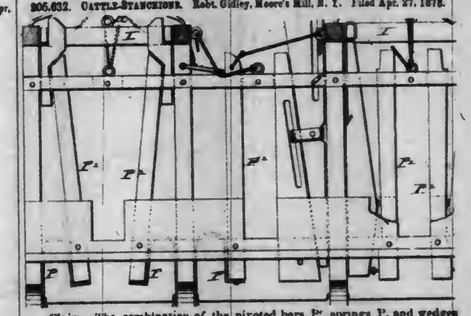


Claim.—1. The combination of the standard B with lug or projection *b* and the share E, with the depression or socket *d*, constructed as described, and for the purpose set forth.

2. The adjustable handle-brace frame L L, made in two pieces, connected together and to the handles, substantially as set forth.

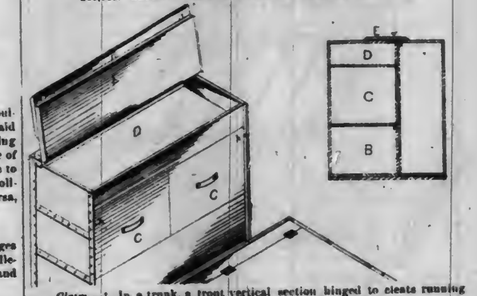
3. In a plow, the combination of a jointed clevis at the rear end of the beam, made in two parts, for attachment to the beam and handle, and a knee-colter attached to the standard by a lug, bolt, and ratchet, both admitting of up and down movement, as herein specified.

206,632. CATTLE-STANCHIONS. Robt. Gidley, Moore's Mill, N. Y. Filed Apr. 27, 1878.



Claim.—The combination of the pivoted bars F', springs F, and wedges suspended from and operated by a pivoted frame, I, substantially as and for the purposes herein set forth.

206,633. TRUNKS. John H. Gill, Rolla, Mo. Filed Aug. 31, 1877.

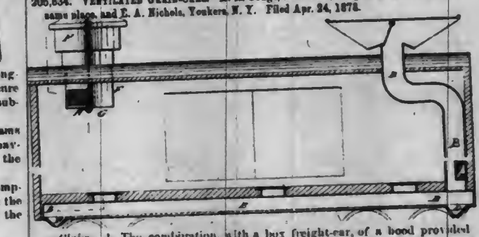


Claim.—1. In a trunk, a front vertical section hinged to cleats running across the bottom of the trunk, substantially as and for the purpose set forth.

2. The front vertical section of a trunk hinged to cleats running across the bottom of the trunk, in combination with the main body of the trunk, having small apartment D, with its light lid E, substantially as and for the purpose set forth.

3. In a trunk, a front vertical section hinged to cleats running across the bottom of the trunk, in combination with the main body of the trunk, having apartment B and drawers C, substantially as described, and for the purpose set forth.

206,634. VENTILATED GRAIN-CARS. H. A. Gouge, New York, assignor to Samuel Ehrhar, same place, and E. A. Nichols, Yonkers, N. Y. Filed Apr. 24, 1878.

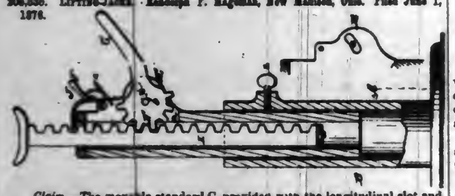


Claim.—1. The combination, with a box freight-car, of a hood provided with means for securing an inward-forced current of air, regardless of the direction in which the car is moved, the pipe R, cinder-outlets D, by which cinders

taken in by the hood are freely discharged from the pipe, and perforated plates E in the floor of the car, and communicating through the perforations with the pipe B, all constructed and arranged substantially as described, for forcing fine jets of air freed from cinders upward through the bulk freight of the car while in motion, as set forth.

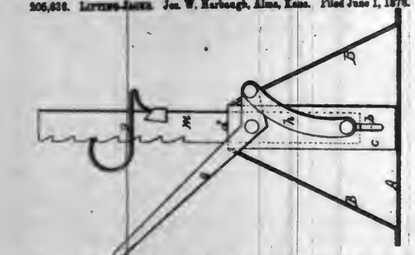
2. The combination of a drip-pan, G, and pipe H with the air-outlet F of a grain-car ventilator, substantially as shown and described.

206,636. LIFTING-JACKS. Randolph P. Magowan, New Madison, Ohio. Filed June 1, 1878.



Claim.—The movable standard C, provided with the longitudinal slot and slotted flanges E *e*, in combination with the fixed standards A B, the set-screw D, the toothed lever F G, spring-pawl J J', and rack-bar I L, combined and operating as set forth, for the purpose specified.

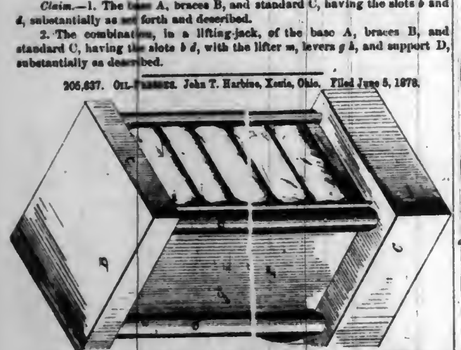
206,636. LIFTING-JACKS. Jos. W. Harbaugh, Alma, Kans. Filed June 1, 1878.



Claim.—1. The base A, braces B, and standard C, having the slots *b* and *d*, substantially as set forth and described.

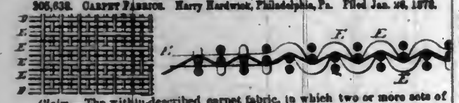
2. The combination, in a lifting-jack, of the base A, braces B, and standard C, having the slots *b d*, with the lifter *m*, levers *g h*, and support D, substantially as described.

206,637. OIL-PRESSES. John T. Harbine, Xenia, Ohio. Filed June 5, 1878.



Claim.—As an improvement in oil-presses, the top piece B, uprights *a a*, cylinder-bottom C, having recess or box *b* and collar *c*, and the press-box P P', having detachable front side or cover, all combined and operating substantially as and for the purpose herein shown and specified.

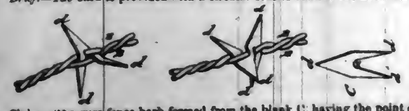
206,638. CARPET FABRICS. Harry Hardwick, Philadelphia, Pa. Filed Jan. 26, 1878.



Claim.—The within-described carpet fabric, in which two or more sets of figuring-warps are combined with the usual fine binding-wefts and with wefts E, which appear upon one or both faces of the fabric, to aid in forming the pattern, and are bound down by the figuring-warps, so as to form a single and homogeneous fabric, as set forth.

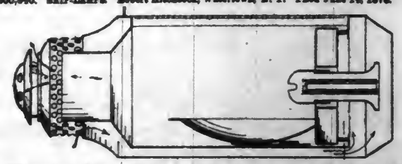
206,639. BARBED FENCES. Edwin Haverhill, Joliet, Ill., assignor of one-half his right to Paul Smith, same place. Filed June 1, 1878.

Brief.—The barb is provided with a circular seat to receive the main wire.



Claim.—The wire fence barb formed from the blank C, having the point *d*, the points *d' d'*, bent in opposite directions, and the circular opening *x*, to receive the main wire B, adapted to be applied to a wire fence, as shown and specified.

206,640. SHIP-LAMPS. Robert Hitchcock, Watertown, N. Y. Filed June 14, 1878.



Claim.—1. A ship standing-light or ship box-lamp in which all the parts, with the exception of the glass panes and their frames, are communicating air-chambers, receiving all the air for the supply of the lamp from without, and discharging the products of combustion through the same top, substantially as shown and set forth.

2. The combination, in a lamp case or box, of a double roof, a double back, a double bottom, and tubular uprights uniting the roof and bottom, all constituting substantially air-tight intercommunicating chambers, as set forth.

3. The combination, with the double and internally-communicating top and bottom and uprights of a ship-lamp, of a top consisting of an exterior and interior cylinder, the former of which is foraminous, the two forming flanges to the annular opening of the air-chamber, the said top being surmounted by two caps having an annular opening between them, the upper being a chamber provided with openings, as shown and set forth.

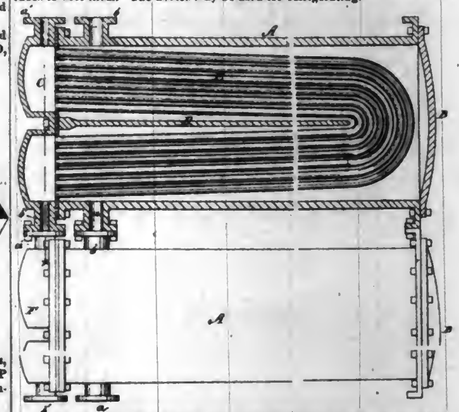
4. For ship or other lamps burning heavy or light oils, fat, or other illuminating material, a lamp proper provided with an elliptical burner, in combination with a box or case surrounding the same, through the parts of which, made hollow, as shown and set forth, all the air used for the combustion passes, as specified.

5. In a ship or other lamp, in combination with an Argand burner of cylindrical or elliptical formation of wick-tube, the wick-tube surrounded by a jacket or cylinder extending below the tank, said cylinder being provided with the deflector, as shown and set forth.

6. In a lamp for ship and other uses, the burner communicating with an air-chamber and oil-tank, as herein shown and described, so as that the air shall pass both through and around the burner between it and the tank, substantially as and for the purposes described.

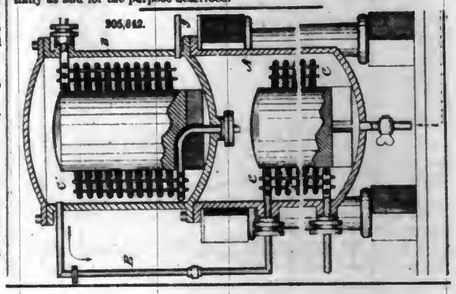
206,641. CONDENSERS FOR ICE-MACHINES. Daniel L. Holden, Philadelphia, Pa. Filed May 8, 1878.

Brief.—The volatilized gas is condensed as it passes through the U-shaped tubes, the partition D acting as a deflector for the water passing around the tubes to cool them. The device may be used for refrigerating.



Claim.—1. The combination, with a containing-case having a longitudinal partition, of a series of U-shaped tubes opening through the end of the case, and a two-compartment removable head placed over the end of said tubes for separately closing in the same, substantially as and for the purpose described.

2. The case A, having removable head B, removable head C, partition D, inlet *a*, and outlet *b*, in combination with the series of U-shaped tubes E and the two-compartment removable head F, having inlet *a'* and outlet *b'*, substantially as and for the purpose described.

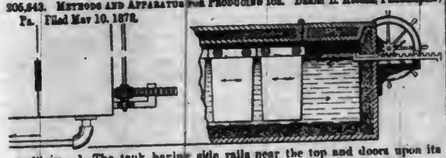


206,642. APPARATUS FOR REFRIGERATING THE NON-CONGEALABLE LIQUID EMPLOYED IN THE MANUFACTURE OF ICE. Daniel L. Holden, Philadelphia, Pa. Filed May 9, 1878.

Claim.—1. The combination of two containing-cylinders or cases, having separate sets of coils, the coils of each cylinder being in communication with the space about the coils in the other cylinder, substantially as shown and described.

2. The combination, with the cylinder A and coil C, of the cylinder D and coil C', the cylinder D having an inlet, *y*, near the bottom, and an outlet, E, near the top, communicating with the coil C below, substantially as shown and described.

206,643. METHODS AND APPARATUS FOR PRODUCING ICE. Daniel L. Holden, Philadelphia, Pa. Filed May 10, 1878.

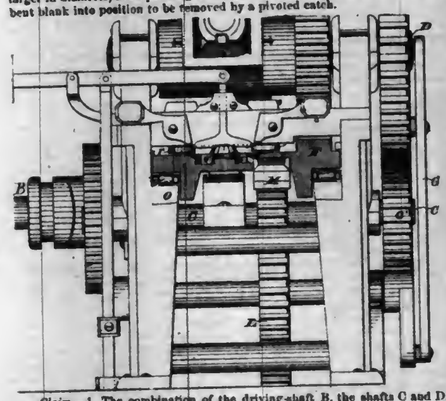


Claim.—1. The tank having side rails near the top and doors upon its upper surface at each end, in combination with a set of disconnected carriers provided with cans and means for advancing the same, whereby the carriers are made to abut against each other in traversing the tank and be separately inserted and removed at the ends, substantially as and for the purpose described.

2. The method of freezing water in cans, which consists in immersing the cans containing the water in a current of non-congealable fluid reduced below the freezing-point, and feeding them gradually from the discharge end, or point of least cold, to the inlet end, or point of greatest cold, substantially as and for the purpose described.

206,644. HORSESHOE-MACHINES. Frank Holub, Chicago, Ill., assignor of two-thirds his right to Nathan E. Platt and Edwin Thorn, same place. Filed June 28, 1878.

Brief.—Reciprocating table with double rack, and geared so as to travel faster on the return; weighted levers with inclined ends for holding blank, and plunger for feeding the same; two pairs of bending-wheels, the rear pair larger in diameter, and operating to swage the heels; and pins for raising the bent blank into position to be removed by a pivoted catch.



Claim.—1. The combination of the driving-shaft B, the shafts C and D, with their gears, the segmental pinion, the slotted pitman, the rock-shaft and its crank and wheel L, the reciprocating bed-plate, and its upper and lower rack-bars, substantially as described.

2. The combination of the shafts and gearing, the double-racked table reciprocated thereby, the pivoted jaws, the plunger, weighted lever, cam-rod, and cams, whereby the heated blank is fed to the table, substantially as described.

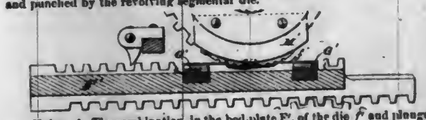
3. The combination of the anvil or former, the bent grooves *o o*, and the two sets of bending and heel-swaging friction-wheels, substantially as described.

4. The combination, with the reciprocating table and anvil, of the two sets of laterally-oscillating bending and swaging friction-wheels, the rear set being of greater diameter than the front set, and provided with holding-flanges on their peripheries, substantially as described.

5. The combination of the reciprocating table, the blank-lifting plungers, the inclined plane, and the adjustable pivoted catch Z, whereby the blanks are raised and removed from the machine, substantially as described.

206,645. MACHINES FOR UNBENDING, PUNCHING, AND SWAGING HORSESHOE-BLANKS. Frank Holub, Chicago, Ill., assignor of two-thirds his right to Nathan E. Platt and Edwin Thorn, same place. Filed June 26, 1878.

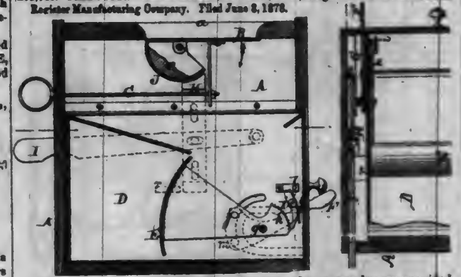
Brief.—The plungers swage up and thicken the heels, and are operated by the cam on the frame, and, while held by the plungers, the blank is creased and punched by the revolving segmental die.



Claim.—1. The combination, in the bed-plate F', of the die *f'* and plungers G' G', connected by spring-lever H', and operated by cam K', substantially as described.

2. The combination of the die *f'*, spring-plungers G' G', cam K', and adjustable revolving creasing and punching die M', substantially as described.

206,646. FARE-BOXES. Wm. H. Herman, New York, N. Y., assignor to the Herman Patent Register Manufacturing Company. Filed June 3, 1878.



Claim.—1. The combination, in a fare-box, of a money-drawer provided with a lid which is adapted to be locked, a tilting platform for dumping the money dropped into the fare-box down in the money-drawer, and a stop which prevents the money-drawer from being withdrawn before the platform is tilted up and the money deposited thereon has been dumped into the money-drawer, substantially as and for the purpose set forth.

2. The combination, in a fare-box, of a money-drawer provided with a lid which is adapted to be locked, a stop which prevents the money-drawer from being withdrawn before its lid is locked, a tilting platform for dumping the money into the money-drawer, and a stop which prevents the money-drawer from being withdrawn before the platform is tilted up, all constructed and adapted to operate substantially as shown and described.

3. The combination, with the money-drawer D and its swinging lid E, of the toothed segment h, lever-pawl i, and locking-lever F, all adapted to operate substantially as described.

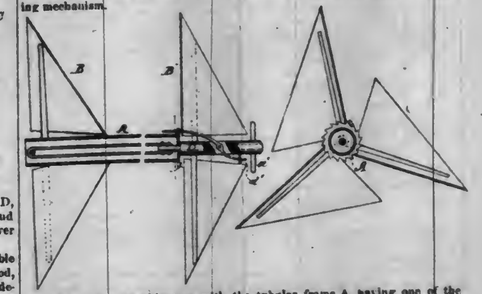
4. The combination, with the box A, the money-drawer D, and its swinging lid E, of the locking-lever F, having the laterally-projecting pin *m*, the grooved plate G, and a device for locking the lid of the money-drawer, all constructed and adapted to operate substantially as described.

5. The combination, with the box A, of a tilting platform, B, having the projection J, a vertical slide, H, lever I, and a money-drawer, D, having the leg *r*, all adapted to operate substantially as described.

6. The combination, with the box A, tilting platform B, having the projection J, the vertical slide H, and lever I, of a money-drawer, D, having the leg *r* and swinging lid E, a locking-lever, F, having the laterally-projecting pin *m*, the grooved plate G, and a device for locking the lid of the money-drawer, all constructed and adapted to operate substantially as described.

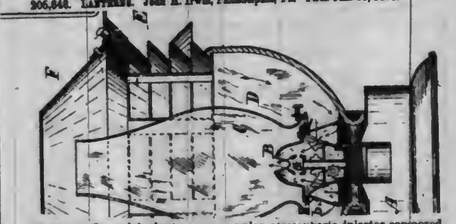
206,647. FLYING TOYS. William S. Hull, Jackson, Miss. Filed Mar. 6, 1877.

Brief.—The spring, after being wound up, may be held so wound by a locking mechanism.



Claim.—The combination, with the tubular frame A, having one of the propellers rigidly attached thereto at one end, of the propeller-shaft C and propeller B', connected with the tube by means of a torsional spring, together with a spring-catch or locking device, substantially as shown and described.

206,648. LANTERNS. John R. Irvin, Philadelphia, Pa. Filed Jan. 30, 1878.

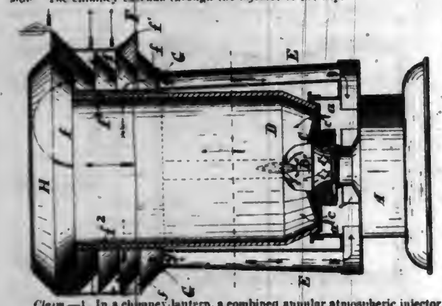


Claim.—1. In a globe lantern, an annular atmospheric injector composed of a series of deflecting-plates inclined inwardly and downwardly, arranged above the globe, in combination with a chimney extending up within the injector to a point above the inlet-openings for the currents of air, and a closed top arranged above the chimney, substantially as described.

2. The annular injector E, in combination with the globe D, burner B, chimney C, and top F, arranged and operating substantially as described.

206,649. LANTERNS. John H. Irwin, Philadelphia, Pa. Filed Mar. 14, 1878.

Brief.—The inclined plates inject on the windward and eject on the leeward side. The chimney extends through the injector to the cap.



Claim.—1. In a chimney-lantern, a combined annular atmospheric injector and ejector, arranged around the upper end of the chimney, in combination with one or more conducting-tubes leading from the injector to an air-chamber around the burner and below the chimney, a chimney extending from the burner up through the injector and ejector to the top thereof, or nearly so, and an air-space above the chimney opening into the injector, and covered with a close top, whereby the gases escaping from the chimney are turned downward into the injector, and discharged thence between the inclined plates at one side, substantially as described.

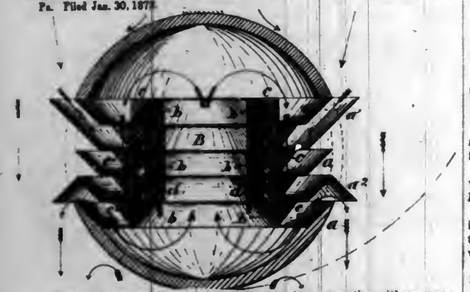
2. An annular air injector and ejector composed of inclined plates *f* and ring *f'*, in combination with the annular plate G, closing the space between the plates and chimney at the bottom of the device, and one or more tubes, E, inserted in the plate G, and connecting with an air-space around the burner, substantially as described.

3. The annual air injector and ejector composed of the plates *f* and *f'*, in combination with the chimney D, the upper end of which is fitted within the band, substantially as described.

4. The air-tubes E, opening into the air-space below the chimney, in combination with the chimney D, annular injector and ejector F, constructed substantially as specified, and top H, substantially as described.

5. The removable chimney D, in combination with the air injector and ejector F, within which it is held, and the removable top H, substantially as described.

206,650. COMBINED ATMOSPHERIC INJECTOR AND EJECTOR. John H. Irwin, Philadelphia, Pa. Filed Jan. 30, 1877.



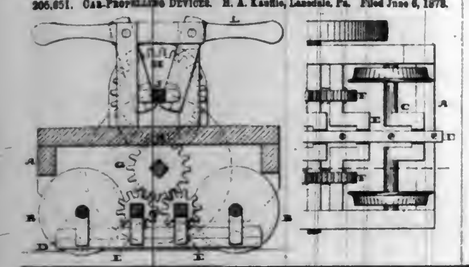
Claim.—1. An annular atmospheric injector, in combination with an atmospheric ejector arranged within the former, and operating in connection therewith, substantially as described.

2. An annular atmospheric injector, in combination with an ejector arranged within the former, and chambers or receiving-compartments arranged above and below the injector, whereby a balancing effect is secured and a continuous circulation produced, substantially as described.

3. The injector deflecting-plates *a* and *a'*, in combination with the ejector deflecting-plates *b*, constructed, arranged, and operating substantially as described.

4. The deflecting-plates *a a'* of the injector, in combination with the supporting and deflecting-plates *c*, substantially as described.

206,651. CAR-PROPELLING DEVICES. H. A. Kaufle, Lansdale, Pa. Filed June 6, 1878.

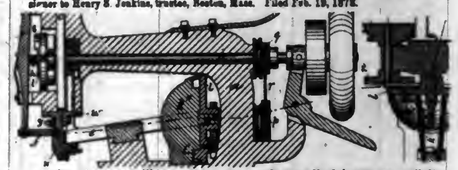


Claim.—1. The combination, with the truck A, of the shafts E, with centrally-arranged cranks, the wheels B, with axles having centrally-arranged cranks, and the centrally-arranged connecting-bar D, substantially as and for the purpose set forth.

2. The pinions G H, crank-shafts E E, having separated pinions F, and the connecting-bar D, in combination with the crank-axles C of the wheels B, substantially as and for the purpose set forth.

3. The levers L, crank-shaft J, pinions H G F, crank-shafts E, and connecting-bar D, in combination with the wheels B, with crank-axles C, substantially as and for the purpose set forth.

206,652. NAILING-MACHINES FOR BOOTS AND SHOES. Joseph E. Kimball, Abington, assignor to Henry S. Jenkins, trustee, Boston, Mass. Filed Feb. 19, 1878.



Claim.—1. In a nailing-machine, the herein-described hopper or nail-distributer, consisting of the stationary receptacle *k* and oscillating plate *l*, with its projections or lifters *l' l'*, as and for the purpose set forth.

2. In combination with the laterally-adjustable railways *e' e'*, the vibrating hammers *s' t' t'* and the cam or eccentric *u*, by which one hammer only is worked at a time on the railway in a line with the throat or nail-tube, as set forth and described.

3. In combination with a reciprocating cutter, *z*, and its connection to the rocking levers 3, the hinged lever 5 and cam or projection 8 on the driving-shaft *b*, as and for the purpose set forth and described.

4. In a nailing-machine, the combination of the vertically-adjustable throat *x*, stationary nail-tube *w*, and the vertically-adjustable and horizontally-reciprocating cutter *z*, as and for the purpose set forth and described.

5. In a nailing-machine, the combination of a nail-tube or throat and a reciprocating cutter, *z*, located directly within said nail-tube or throat, and adapted to pass transversely through it, for the purpose of shortening the nail while suspended in such throat previous to its being driven, as set forth.

206,653. SECURING HANDLES TO TIN CUPS. George W. Knapp, Baltimore, Md., assignor to himself, John C. Matthai, and Jas. E. Ingram, same place. Filed June 10, 1878.

Brief.—The extension of bottom blank is cut from waste part of the sheet metal. The handle is so bent as to require the upper part to be sprung over the rim, thereby causing it to clamp the cup.

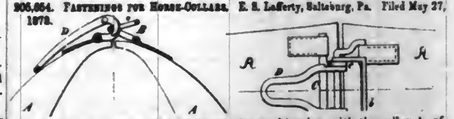


Claim.—1. The improvement in securing handles to tin cups consisting of a bottom having an upward-projecting extension inclosed in the side grooves formed upon lower end of the handle in the usual manner, as set forth.

2. The sheet-metal bottom, flanged in the usual manner, and provided with the extension *d*, of any suitable shape, adapted to be fastened to the handle of tin cups or other sheet-metal vessels, as set forth.

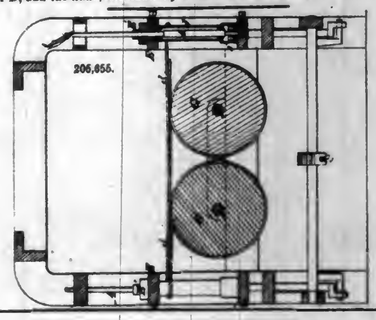
3. The improved sheet-metal vessel, consisting of cylindrical body *a*, having a bottom provided with the upward-projecting extension *d*, which is secured to the lower end of handle *b*, the upper part *b'* of which clasps the rim of the vessel, as shown and described.

206,654. FASTENINGS FOR HORSE-COLLARS. E. S. Lafferty, Saltsburg, Pa. Filed May 27, 1878.



Claim.—In a horse-collar fastening, the combination, with the collar A, of the piece C, having the arms *c c*, with perforations to receive the lever D, the lever D, and the links, substantially as described and shown.

206,655.



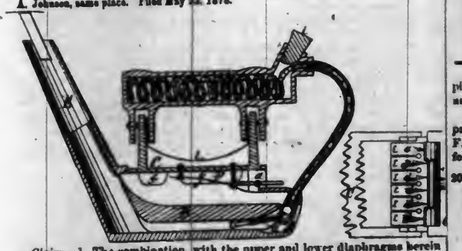
206,656. RIND-STRIPPING FRAMES. Edwin T. Leapley, Phenix, R. I. Filed Mar. 2, 1878.

Brief.—The step and bolster rails traverse, and the ring-rail remains stationary. To avoid the usual friction of the driving-band on the sides of the groove in the common whirl, a plain cylindrical spindle-whirl is employed, its axial length being about equal to the length of the traverse of the spindle, thus permitting the driving-band to remain in a fixed position, and the long whirl to pass freely up and down through it. Oil is conducted from the bolster to the step through the elongated whirl.

Claim.—1. The combination, in a ring-spinning frame, of a fixed ring-rail, traversing spindle, and traversing step-rail and bolster-rail, a spindle-driving drum working in fixed bearings, and a plain cylindrical spindle-whirl, which is fast on the spindle, and the axial length of which is equal, or thereabout, to the length of traverse of the spindle, as and for the purpose herein described.

2. The elongated whirl secured to the traversing spindle, and constructed with a passage through it, in combination with the bolster and step for conducting the oil under cover of the whirl from the bolster to the step-bearing of said spindle, essentially as described.

206,656. SAD-IRONS. John Liddell, Rockford, Ill., assignor of one-half his right to Charles A. Johnson, same place. Filed May 23, 1878.

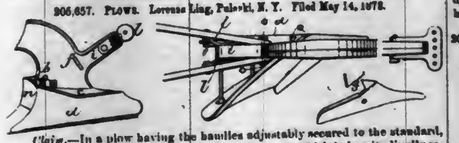


Claim.—1. The combination, with the upper and lower diaphragms herein described, forming an air-chamber to conduct the air over the heated upper surface of the lower diaphragm, of a gas-tube located between the lower diaphragm and bottom of the sad-iron, and a feeding-tube connecting said gas-tube and a hollow handle, substantially as set forth.

2. The combination of the upper and lower diaphragms herein described, forming an air-chamber, through which the air from the forward end of the iron is conducted over the heated upper surface of the lower diaphragm, by which it is heated in its passage to the burners, as and for the purpose hereinbefore set forth.

3. The combination, with the lower diaphragm and the upper plate or cover, of a second diaphragm, dividing the space into two chambers or flues, to conduct the cool air received at the rear portion of the iron between the upper diaphragm and the under surface of the cover forward, to be returned with the rearward current over the heated upper surface of the lower diaphragm to the burners, substantially as and for the purpose hereinbefore set forth.

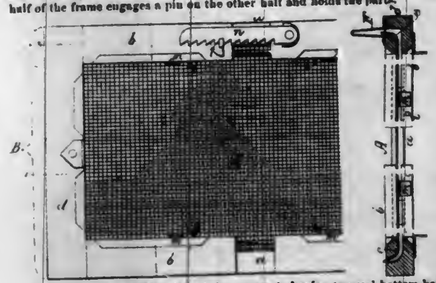
206,657. PLOWS. Lorenzo Ling, Pulaski, N. Y. Filed May 14, 1878.



Claim.—In a plow having the handles adjustably secured to the standard, the standard *b*, formed with the arm or extension *i*, which is longitudinally recessed on both sides, and the links *l l*, detachably secured in the recesses on said arm, in combination with the handles *m m* and the fastening-bolts, substantially as and for the purposes herein set forth.

206,658. WINDOW-SCREENS. Edwin L. Lloyd, Philadelphia, Pa. Filed May 11, 1878.

Brief.—The screen has guide-bars on its sides part way, leaving the ends free. These bars are inserted in grooves in the sides of the screen-frame, which is divided midway at its sides. The two parts slide upon the guide-bars and are limited by stops. The slots or recesses in which the screen freely moves in the frame are curved up and form openings at the ends of the frame, and have a metallic cap over the opening. A pivoted toothed latch at the end of one-half of the frame engages a pin on the other half and holds the parts.

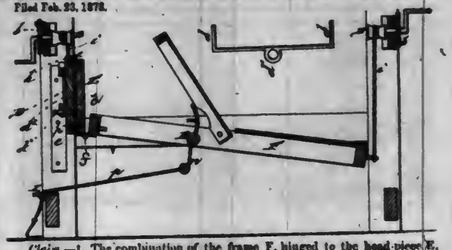


Claim.—1. The combination of the screen A, having top and bottom bars *a*, which do not extend to the ends of the screen, with the adjustable frames B, having curved or angular slots *s*, which receive and guide those portions of the screen A, projecting beyond the ends of the bars *a*, all substantially as described.

2. The combination of the screen A, unconfined at the end, with an adjustable frame B, having a slotted post, *d*, and casing F, as specified.

3. The combination of the adjustable portions B of the frame, arranged to embrace three sides of the screen, with the notched or toothed bar *n* and lug *t*, as set forth.

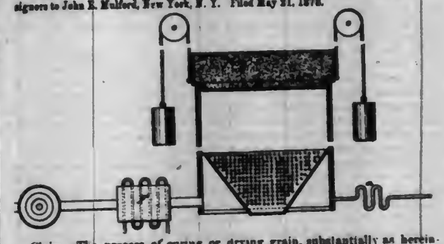
206,659. INVALID-BEDSTEADS. James W. Levins and Hiram Gunsa, Clintonville, Pa. Filed Feb. 23, 1878.



Claim.—1. The combination of the frame F, hinged to the head-piece E, pivoted to the slide D, the ropes *i i*, and pulleys or drums B B, with cranks and ratchets, substantially as and for the purposes set forth.

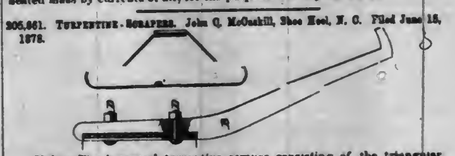
2. The combination of the slide D, the head-piece E, pivoted thereto and provided with holes *x*, the pins *d d*, handle *d'*, and springs *d''*, and the frame F, hinged to the head-piece E, all substantially as and for the purposes set forth.

206,660. METHODS OF DRYING, CURING, AND RENOVATING INDIAN CORN AND OTHER CEREAL GRAINS. Frederic A. Lockenbach, New York, and A. De Bevoise, Brooklyn, assignors to John E. Mulford, New York, N. Y. Filed May 21, 1878.



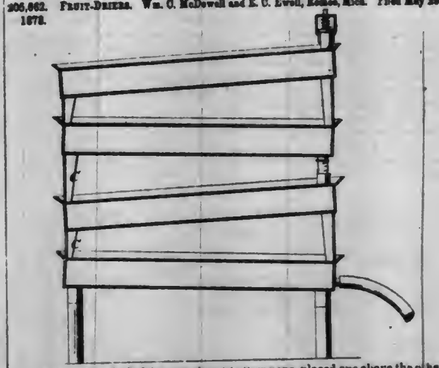
Claim.—The process of curing or drying grain, substantially as herein-before explained, the same consisting in heating the mass by the application of dry heat, killing the germ of the grain by the application of steam heat, drying the steamed grain by the application of dry heat, and then cooling the heated mass by currents of air, for the purposes and objects named.

206,661. TURPENTINE-SCRAPERS. John C. McCaskill, Shoe Heel, N. C. Filed June 15, 1878.



Claim.—The improved turpentine-scraper consisting of the triangular plate having an upper and lower edge, *a a'*, the handle B, and the screw-bolts D D, all constructed as shown and described.

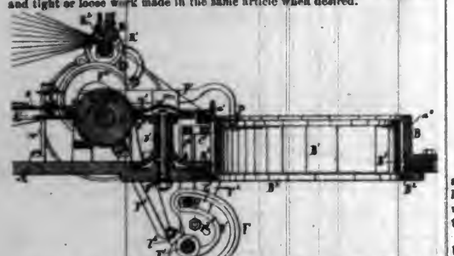
206,662. FRUIT-DRIERS. Wm. C. McDowell and E. C. Ewell, Romeo, Mich. Filed May 20, 1878.



Claim.—In a fruit-drier, a series of hollow pans, placed one above the other, and inclining alternately in opposite directions, connected together by flexible pipes at opposite corners, the bottom pan provided with a steam-inlet and the top pan with an escape-valve, all substantially as and for the purposes herein set forth.

205,665. KNITTING-MACHINE. William H. McNary, Brooklyn, assignor to John V. D. Reed, New York, N. Y. Filed Jan. 24, 1878.

Brief.—The horizontal pattern-wheel is provided with various devices for controlling the rotary and lateral motions of the needle-cylinder through the intermediate mechanism. The lengths of the stitches are regulated by a peculiar cam and its accessories acting upon the needle-slide. The wiper is spring-toothed. The feed-rollers are yielding and removable, and their speed is automatically changeable, so that the amount of yarn supplied may be regulated, and tight or loose work made in the same article when desired.



Claim.—1. The combination, in a knitting-machine, of cam F, crank P, shaft P', passing through slot P² P² in the cam from one to the other of the two arms, of the vertical slide C⁵ and friction-roller upon the shaft P', by means of which the distance the needles descend may be regulated to vary the length of stitch without changing the height of the needles when at their highest point, substantially as specified.

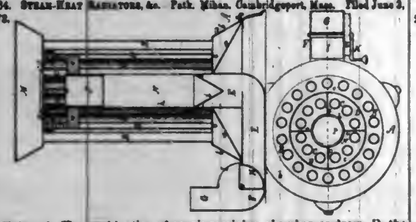
2. The combination, with mechanism in a knitting-machine, of the spring-teeth in the wiper P, operated by the wiper-lever P'', cam N N' upon the driving-shaft, spring p^3 p^4, and fulcrum-pin p^5, with adjustable arm p^6, as shown and described.

3. The combination, in a knitting-machine, with the connecting and operating mechanism and with the needle-ring and needles, of the horizontal index-wheel E, provided with fixed pins *j*, inclines h h^1, segments of gear h^2 h^3, and small switch *k*, and the switch-lever *c*, provided with the slide *f* and button *g*, the latter provided with the gear g^1, angular and square portions *i* and i^1 i^2, spring g^2, pins g^3 g^4 g^5, and the pin *k* in the center of said button, for controlling the oscillations of the needle-ring to give the desired form to the articles knitted, substantially as specified.

4. The combination of the feed-rollers R R' and guide R², for supplying a uniform quantity of material to each needle, and the pivoted lever *v*, adjusting-nut r^2, spring r^1, and the supports H H', provided with the slots *x' x'*, for removing the upper roller, for the purposes specified.

5. The combination, in a knitting-machine, for changing automatically the speed of the feed-rollers and the amount of yarn supplied to the needles, for the purpose of making tight and loose work in the same article when desired, of the frame H, swinging frame t^1, with their train of gearing, spring w^1, acting on the swinging frame t^1, pinions t^2, forks u u^1 of the swinging frame t^1, pins u^2 u^3, and lever u^4, with its angles or bevels *q q'*, cam u^5, lever *w*, pivoted piece q^2, pin *k*, and angle *f'*, substantially as specified.

205,664. STEAM-HEAT RADIATORS, &c. Fath. Miban, Cambridgeport, Mass. Filed June 3, 1878.

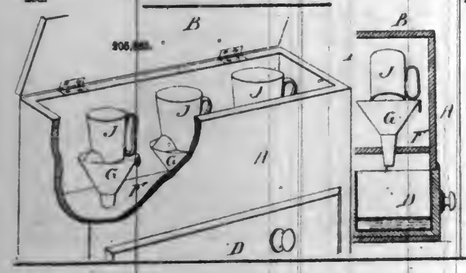


Claim.—1. The combination of an air-receiving chamber or dram, D, the hollow base A, cap M, and the internal and external ranges of steam-pipes B C, arranged therewith and to operate substantially as set forth.

2. The combination of the cylindro-conical air-deflector and distributer N, hollow base A, cap M, drum D, and the internal and external ranges of steam-pipes B C, arranged as set forth.

3. The cylindro-sectoral damper H, in combination, and arranged substantially as described, with its cylindrical case F, having one air-inlet, G, and one air-outlet pipe, E, and one or more intervening openings or educts, I, all being arranged and to operate essentially as and for the purpose or purposes as specified.

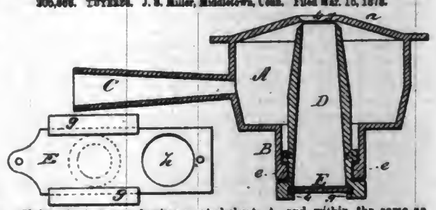
205,666.



205,665. RECEPTACLES FOR GROCERS' MEASURES. Michael B. Miller and Absalom B. Worman, Brodyville, Pa. Filed Apr. 22, 1878.

Claim.—The combination of the box A, lid B, drawer D, and perforated partition or support F, all arranged substantially as described.

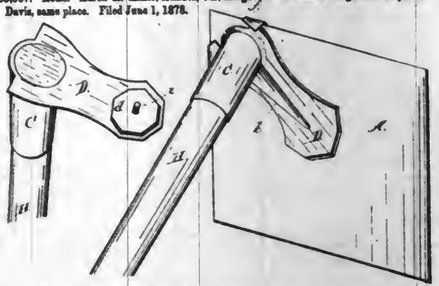
205,666. TUYERES. J. S. Miller, Middletown, Conn. Filed Mar. 16, 1878.



Claim.—1. A tuyere having a wind-chest, A, and within the same an axial tube, D, having its exterior wall inclined toward the discharge-opening *b* of said wind-chest, and its bore of equal diameter with said opening at its upper end, and increasing in conical form to its lower end or mouth, substantially as specified.

2. In a tuyere, the combination, with the wind-chest having the axial blast-opening *b* and neck B, of the axial tube D, adjustable upon inclines in said neck, and having its upper exterior wall of conical form, converging toward said blast-opening, substantially as specified.

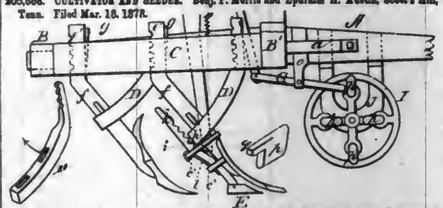
205,667. HOES. Aaron H. Miller, Atlanta, Ga., assignor of one-half his right to Joseph H. Davis, same place. Filed June 1, 1878.



Claim.—1. The brace F', with its inclined hooks *f* and wrench *w*, constructed and adapted to serve as specified relatively to the blade A *a*, as set forth.

2. The trench-hoe described, consisting of the square blade A *a*, corner brace F', having hooks *f* and their connections, adapted to be applied to the corner of the hoe, as and for the purpose specified.

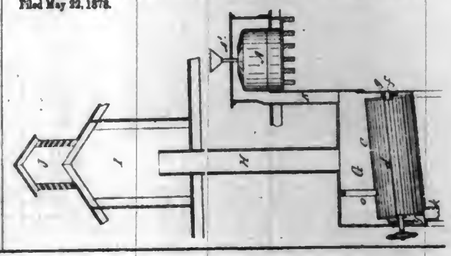
205,668. CULTIVATOR AND SEEDER. Benj. F. Morris and Ephraim H. Austin, Scott's Hill, Tenn. Filed Mar. 16, 1878.



Claim.—1. The combination, with a plow-standard having spaced loops *c'*, and a ratcheted brace having a rear tooth, *i*, of the adjustable subsoil-plow E, having a ratcheted shank, *k*, and a wedge or key, *l*, behind said shank, substantially as specified.

2. The combination, with the beam C, a ratcheted plow-standard, *f*, having spaced loops *c'*, and an adjustable subsoiler, E, having ratcheted shank *k*, of the slotted brace D, correspondingly ratcheted, and having a rear tooth, *i*, adapted to engage the ratchets of the shank of said subsoiler, substantially as specified.

205,669. MEAL COOLING AND DRYING APPARATUS. Orville M. Morse, Silver Creek, N. Y. Filed May 22, 1878.



Claim.—The combination and arrangement, with the millstones A and closed meal-spout B, of the inclined reel C, provided with elevating-buckets *d*, and inclosing-case G, having an ascending air-flue, H, for cooling and drying the meal in its passage from the stones to the bolt, substantially as set forth.

205,670. FLOWER-STANDS. Richard Murdock, Baltimore, Md. Filed Apr. 13, 1878.



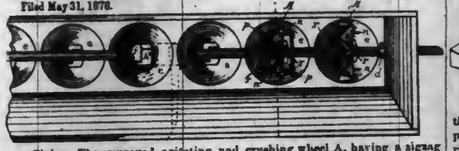
Claim.—1. The frame C, having the pin *c'* and the depression *c'''*, combined with the bifurcated arm E, having the projection *c* and pin-hole *c''*, substantially as specified.

2. The frame C and clamp G, the latter being constructed in two parts, and having perforations, as shown, combined with the removable arms D, having pins which rest in the perforations of said clamp, substantially as described.

3. The combination of the base A and removable depressed plate I, substantially as specified.

4. The base A, having a flanged top and buttons *e*, combined with the frame C, having the foot B, substantially as described.

205,671. FEED ATTACHMENTS FOR GUANO-DRILLS. Henry P. Warbasse, Libertytown, Md. Filed May 31, 1878.



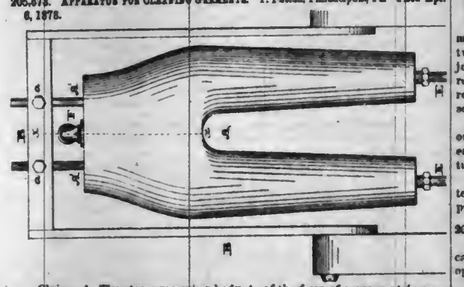
Claim.—The improved agitating and crushing wheel A, having a zigzag periphery, with the side angles *r* and depressions *s*, and the transverse pins *n*, to which are attached the rims *p*, in combination with the concave-shaped feed-hopper *e* and feed-aperture, as set forth.

205,672. FIRE-EXTINGUISHERS. Henry S. Parmelee, New Haven, Conn. Filed Feb. 26, 1878.

Claim.—1. In a fire-extinguisher, the combination, with the supply-pipe provided with a revolving distributer consisting of a neck having one or more large ports, and a loosely-fitting ring surrounding said neck and covering the ports thereof, said ring having radial openings formed therein, of a hard metal cap, arranged to fit over and protect the revolving distributer, substantially as set forth.

2. The combination, with the base *a*, neck *b*, and revolving distributer *d*, of the hard-metal cap *g*, secured to the base by fusible solder, substantially as and for the purpose described.

205,673. APPARATUS FOR CLEANING GARMENTS. T. Patten, Philadelphia, Pa. Filed Apr. 6, 1878.



Claim.—1. The steam-receiving body A, of the form of a garment, in combination with the frame B, supporting said body and adapted to have swinging motions, substantially as and for the purpose set forth.

2. The body A, in combination with the frame B, rods A', and screws *c*, substantially as and for the purpose set forth.

3. The steam-receiving body A, of the form of a garment, in combination with an automatic blow-off valve, F', substantially as and for the purpose set forth.

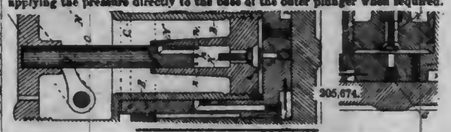
205,674. HYDRAULIC JACKS. Matthias Pennypacker, Philadelphia, Pa. Filed Mar. 15, 1878.

Claim.—1. A telescopic hydraulic jack made up of a plurality of plungers, fitting one within the other, and constructed with tight heads and one or more ducts, E, whereby the inner plunger and the intermediate cylinder in which it works constitute a pump to apply pressure through said duct or ducts to the chamber beneath the said intermediate cylinder, as explained.

2. The concentric rams B C, connected by a duct, E, communicating with the interior of the lower or out ram at a point remote from the bottom, so as to transfer pressure from one to the other after the inner ram has been raised, substantially as set forth.

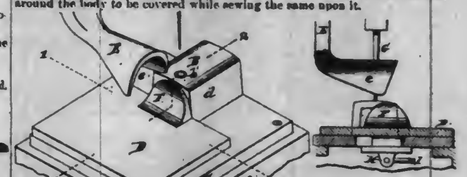
3. The combination, with the inner ram C, of an outer ram, B, provided with a series of connecting-ducts, c' c^2, at different heights, in order to graduate the pressure between them, as set forth.

4. A hydraulic jack constructed with two or more concentric rams, B C, and with a removable plug, G, in the bottom of the outer one, to provide for applying the pressure directly to the base of the outer plunger when required.



205,675. SEWING-MACHINE GUIDES. Geo. M. Peters, Columbus, Ohio. Filed Aug. 10, 1875.

Brief.—The needle-plate is raised above the level of the feed-plate, and to the latter is attached a lip of the same curvature as the presser-foot above it, the whole being designed to hold the material down upon and partially around the body to be covered while sewing the same upon it.



Claim.—1. The raised needle-plate E, in combination with a presser-foot the bottom of which is shaped to hold the material closely down upon and partially around the body to be covered, and down upon that portion of material on the needle-plate, substantially as and for the purpose set forth.

2. The combination of presser-foot E, needle-plate B, elevated above the level of the feed-plate, and lip F, substantially as and for the purposes set forth.

3. The combination of presser-foot E, needle-plate B, elevated above the level of the feed-plate, feed-plate D, and lip F, substantially as and for the purposes set forth.

4. The combination, substantially as specified, of a raised needle-plate, presser-foot, and feed plate, moving above the table in a plane below that of the needle-plate, and formed to give lateral support to the article undergoing the operation of sewing.

5. The combination, substantially as specified, of a raised needle-plate and a feed-plate moving above the table in a plane below that of the needle-plate, and formed to give lateral support to the article undergoing the operation of sewing.

205,676. SHEET-METAL CANS. Robert Porter, Philadelphia, Pa. Filed May 10, 1878.

Brief.—The band is inserted inside of the depending flange of the top. Both are then placed on the body of the can. All three are then soldered together. Paper may be put in the bead to prevent its being broken in during soldering. In detaching top, bead may be cut entirely around, or a part may be left to serve as hinge.



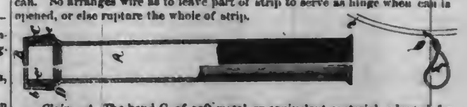
Claim.—1. A can or other vessel having a top, lid, or end, and an intermediate band or ring of soft brass, or equivalent metal or material, located between its body and the flange of such top, lid, or end, and formed with a projecting fillet or bead, said band being soldered to the body and top or end, respectively, forming the connection between said parts, and adapted to be readily cut to permit the detachment of said top, lid, or end, substantially as set forth.

2. The band or ring C, of soft brass or equivalent material, having a fillet or bead around its edge, and adapted to form between the body and top or end of a can or other vessel a connection which may be readily cut, substantially as and for the purpose set forth.

3. In combination with the band or ring C, of soft brass or equivalent material, having the fillet or bead *c*, the soft filling c', substantially as and for the purpose set forth.

205,677. SHEET-METAL CANS. Isaac Porter, Philadelphia, Pa. Filed June 8, 1876.

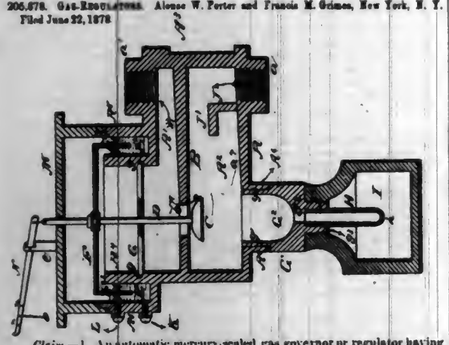
Brief.—Solder covers the rib, giving soft metal the same appearance as can. So arranges wire as to leave part of strip to serve as hinge when can is opened, or else rupture the whole of strip.



Claim.—1. The band C, of soft metal or equivalent material, adapted for soldering or attachment to a can, A, having a cover, B, with rim C, and formed with a rib or bead, *c*, and provided with a ripping wire or string, D, substantially as shown and described.

2. The combination of the can A, cover B, ripping-wire D, and a band of soft or thin metal or other material, located between the can and rim of cover, and inclosing the ripping-wire, substantially as shown and described.

205,678. GAS-REGULATORS. Alonzo W. Porter and Francis M. Grimes, New York, N. Y. Filed June 22, 1878.



Claim.—1. An automatic mercury-sealed gas governor or regulator having a detachable mercury trap, I, and pendent tube H, arranged directly under the mercury seal to catch the mercury in case of overflow, and secure the same therein, for the purpose hereinbefore described.

2. The combination of mercury trap or receptacle I, with tube H, closed at its lower end, except perforation *h*, and block G^1, having pocket G^2, substantially as and for the purpose set forth.

3. In a gas-governor, horizontal partition B, arranged below the mercury-seal and inclined on its surface, so as to conduct the spilled mercury to opening *b* thereof, and the mercury-trap I, arranged substantially as and for the purpose set forth.

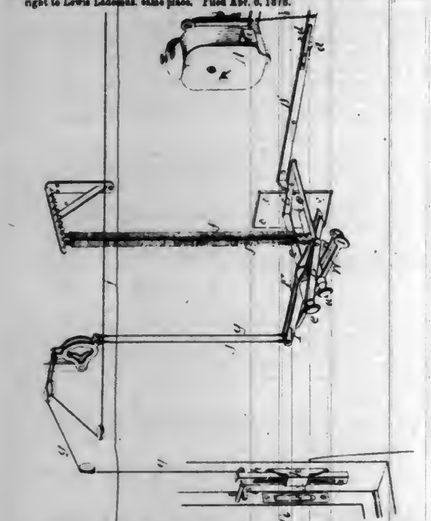
4. In a gas-governor, a guard for preventing mercury from spattering into the inlet-tube, substantially as and for the purpose set forth.

5. The method of protecting a mercurial gas-seal from contact with the air, consisting in providing a superposed layer of glycerine, substantially as and for the purpose set forth.

6. A casing consisting of casing A, extension A^1 a^1 a^2, vertical cylinders A^2 A^3, partition B, inlet-guard J, and coupling A^4, substantially as and for the purpose set forth.

7. The method of protecting the casing and float of a gas-regulator from injury by mercury or glycerine, consisting in coating the exposed surface with bees-wax or its equivalent, substantially as and for the purpose set forth.

205,679. BURGLAR-ALARMS. Thomas Powell, Philadelphia, Pa., assignor of one-half his right to Lewis Ledoux, same place. Filed Apr. 6, 1878.



Claim.—1. The combination of the spring arms or levers F, adapted to be controlled by the doors or windows, the arm f', resting upon the ends of said arms or levers, the alarm apparatus A and its notched arm *a*, and devices, substantially as described, whereby the movement of the arm f' is caused to effect the release of the arm *a*, as set forth.

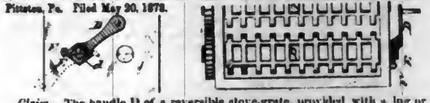
2. The combination of the shaft *s*, and the levers F hung thereto, with the shaft *w*, arranged beneath the shaft *s*, and carrying levers W, in line vertically with the levers F, as set forth.

3. The combination of the operating arm or lever F, the sliding bolt *b*, and connecting devices with the window-sash G, having a pin, *i*, as specified.

4. The combination of the operating-lever F, the sliding bolt *b*, and connecting devices with the window-sash G, having an adjustable arm, *v*, as specified.

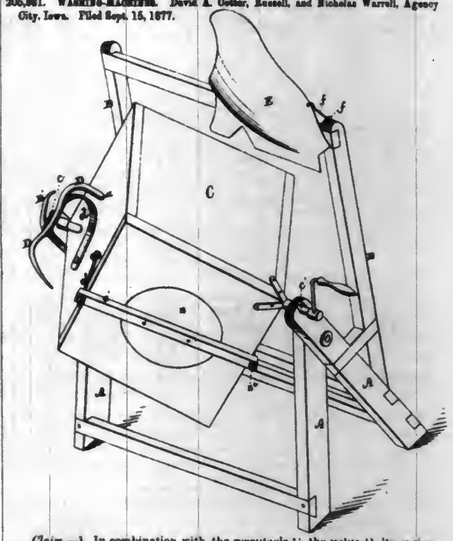
5. The combination of the actuating-lever F, the lever S, having a projecting arm, *s'*, devices for connecting the two levers, and the stop *t*, as set forth.

206,680. REVERSIBLE STOVE-GRATES. John A. Price, Scranton, and William McClave, Pittston, Pa. Filed May 30, 1878.



Claim.—The handle D of a reversible stove-grate, provided with a lug or projection, E, in combination with a stop, F, substantially as described, for the purpose specified.

206,681. WASHING-MACHINES. David A. Cotter, Russell, and Nicholas Warrell, Agency City, Iowa. Filed Sept. 15, 1877.



Claim.—1. In combination with the receptacle C, the valve D, its spring-support *d*, and operating arm or projection D', substantially as and for the purpose specified.

2. The receptacle C, having the journals *c c'* and valve D *d*, in combination with the supporting-frame A A, having the valve-operating arm or projection D', substantially as and for the purpose set forth.

3. In a washing-machine, the receptacle C, in combination with a trough, E, constructed substantially as shown, hinged to the frame B B at one side of the center of the receptacle C, and means to hold the said trough in an elevated position when not in use without detaching it from said frame, substantially as shown and described.

206,682. REED-ORGANS. John F. Richardson, Cambridgeport, Mass. Filed May 6, 1878.



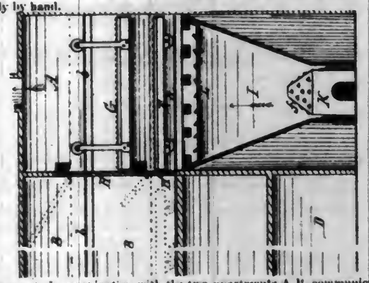
Claim.—1. The tube-board E, in combination with the channels *m i* and valve-openings *n*, all constructed and arranged substantially as herein set forth.

2. The tube-board E, mounted directly over the channels *m i*, and at the rear of the tube-board D, as and for the purpose set forth.

3. The channels *m i*, provided with partitions *m'*, in combination with the tube-board E and valve-openings *n*, substantially as specified.

205,683. FRUIT-DRYING HOUSES. Wm. H. Rogers, Williamson, N. Y. Filed May 11, 1878.

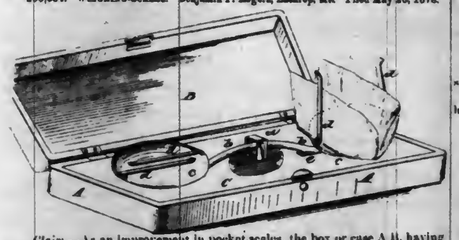
Brief.—The valves *h* in the sheet-metal diaphragm L are to be adjusted severally by hand.



Claim.—1. In combination with the two apartments A B, communicating with each other, as described, the two sets of tracks *a a* and *b b*, one resting on the floor and the other being elevated, and the two sets of cars E E and G, running respectively on said tracks and forming two separate drying-floors, movable from one apartment to the other, as shown and described, and for the purpose specified.

2. In a fruit-drying house such as described, the diaphragm L, interposed in the trunk I between the furnace and the drying-room, constructed with a series of flanges, *h h*, cut in the body of the same, and arranged to graduate or regulate the passage of heat into the drying-room by the bending of said flanges up or down over the slots *g g*, as shown and described, and for the purpose specified.

205,684. WEIGHING-SCALES. Benjamin F. Rogers, Lathrop, Mo. Filed May 30, 1878.



Claim.—As an improvement in pocket-scales, the box or case A B, having hinged partition or platform C upon which is arranged the standard *c*, having pivoted curved beam *b*, carrying the detachable pans *e e*, provided with hinged supports *d d*, the box A being subdivided into compartments *f' f'*, and the cover provided with cushions *k k*, substantially as and for the purposes herein shown and described.

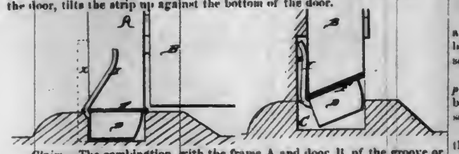
205,685. FENCE-POSTS. John D. Romaine, Springdale, Iowa. Filed Oct. 13, 1877.



Claim.—The combination of the metallic base A, pointed at its lower end, and having shoulder A' and stiffening-rib C at its upper part, with the wooden post B and bolt *c*, substantially as and for the purposes set forth.

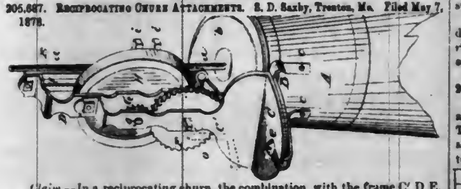
205,686. WEATHER-STRIPS. Nelson Rowan and M. D. Miller, Oswego, Kans. Filed June 1, 1878.

Brief.—A loose strip without hinges rests in a groove in the door-sill, and has a covering overlapping the edges of the groove. The bottom of the door is beveled, and a projection on the strip, pressed into a recess in the frame by the door, tilts the strip up against the bottom of the door.



Claim.—The combination, with the frame A and door B, of the groove or gutter C, formed in the sill of the door-frame, the loose strip D, placed therein, the lining or covering F, extending beyond the strip on both sides, and adapted to rest closely upon the outer side of the sill only when tilted, and arm I, substantially as and for the purposes set forth.

205,687. RECIPROCATING CHURN ATTACHMENTS. S. D. Saxby, Trenton, Mo. Filed May 7, 1878.



Claim.—In a reciprocating churn, the combination, with the frame C' D E, having the longitudinal or vertical slot *l* and the rocking I *i*, arranged crosswise to the slot *l*, and provided with a ribbed connecting-piece, *k*, fitting into the said slot, of the fly-wheel H, having the cam stud or projection *h*, pinions F G, and dasher-staff *s*, connected to the upright E of the above-mentioned frame, substantially as shown and described, for the purpose specified.

205,688. DOUBLE-ACTING FORCE-PUMPS. Christian Schmidt, Lancaster, Pa. Filed Mar. 18, 1878.



Claim.—1. The combination, with the cylinder A, having wings *a a*, connected by tubes *b b'*, open at both ends, of the top and bottom pieces B B', having valve-chambers C C^2 C^3 C^4, and passages leading from the top and bottom of tube *b*, respectively, to valve-chambers C C^2, from thence to the top and bottom of the cylinder, then to valve-chambers C^3 C^4, and finally to the top and bottom of tube *b'*, substantially as and for the purposes herein shown and specified.

2. The improved double-acting pump herein described, consisting of the cylinder A, having wings *a a*, connected by open tubes *b b'*, diaphragm D, recessed midway in the cylinder, piston-rod E, having pistons F G, and top and bottom pieces B B', having passages, valves, and valve-chambers C C^2 C^3 C^4, all constructed, arranged, and operating substantially as herein described, for the purposes shown and specified.

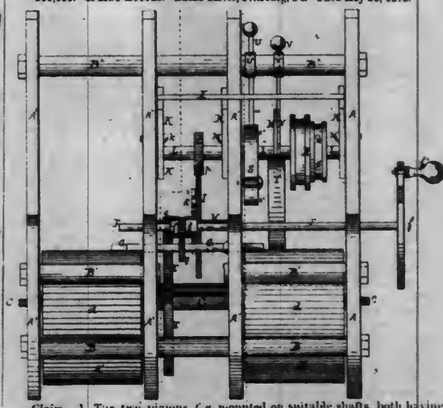
205,689. AXLE-SKEINS. Gottlieb Schroyer, Columbus, Ohio. Filed May 24, 1878.



Claim.—1. The axle-skein re-enforced and threaded upon its interior, substantially as and for the purpose specified.

2. The combination, with the axle-skein threaded upon its interior, of the hollow-center screw-plug, substantially as and for the purpose specified.

206,690. SPRING MOTORS. Elisha Shiver, Pittsburg, Pa. Filed May 20, 1878.



Claim.—1. The two pinions *f g*, mounted on suitable shafts, both having a simultaneous motion into and out of gear with the spur-wheel E, such motion being imparted from the winding-shaft, substantially as and for the purposes set forth.

2. The swinging frame K, carrying the pulley-shaft L and two pinions, *l p*, in combination with the spur-wheel I, whereby the same attachments may be made operative in machines running in opposite directions, substantially as set forth.

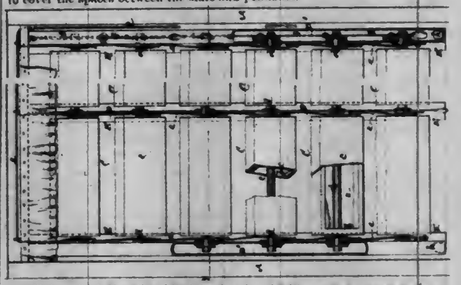
3. The spring T, thrown into and out of contact with the fly-wheel S by the trip-arm V, for stopping and starting, in combination with the rubber bar S and pressure-lever U, for regulating the speed, substantially as described.

4. The drum *n* on the shaft L, in combination with the rubber bar S, having a spring-extension provided with a series of notches or ratchet-teeth, and the pressure-lever U, the lower end of which is adapted to engage in any desired one of the notches or ratchet-teeth, and thereby regulate the speed, substantially as set forth.

5. The wood pulley R, having working-faces of different diameters, and divided longitudinally into two halves, clamped upon the shaft by the screws r^2, passing from one half into the other, substantially as and for the purposes set forth.

206,691. VENETIAN BLINDS. Theodor Simis, Hamburg, Germany. Filed May 22, 1878.

Brief.—The slats of a Venetian blind are made of skeleton-frames, which are covered with cloth or translucent material, to subdue and diffuse the light. The axes of the slats are received in bearings inserted in pendent flaps of the same material, which are also provided on their outer edges with projections to cover the spaces between the slats and pendants.



Claim.—1. A Venetian blind having its slat-like sections constructed of open frames covered or closed by a flexible translucent material, substantially as specified.

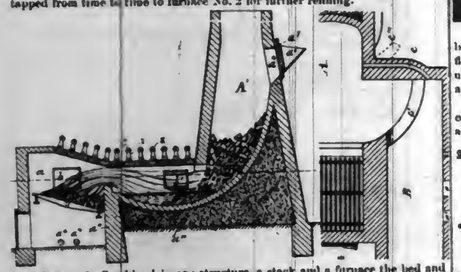
2. A Venetian blind having its slat-like sections of a cellular construction, formed of open frames covered or closed on its opposite sides by a flexible material, essentially as described.

3. The combination, with the slat-like adjustable blind-sections C C, of the flexible pendent supporting-webs D D', provided on their outer edges with flexible flaps E, substantially as and for the purpose described.

4. The flexible pendent supporting-webs D' at the sides of the blind, formed double or hollow for reception of the cord by which the slat-like sections of the blind are adjusted, essentially as specified.

205,692. MELTING AND REFINING IRON, AND FURNACES THEREFOR. Wm. Steicher, Jr., Troy, N. Y. Filed Sept. 2, 1877.

Brief.—The iron is fed continuously from the inclined hopper into the stack of the first furnace, where it is melted by the combined heat of both furnaces, runs down the curved bed and hearth of furnace No. 1, from which it is tapped from time to time to furnace No. 2 for further refining.



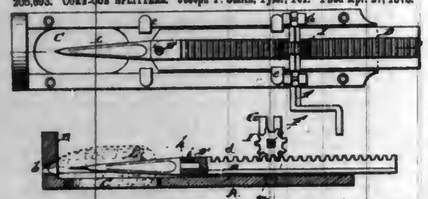
Claim.—1. Combined in one structure, a stack and a furnace the bed and hearth of which respectively are constructed practically in a continuous curve, the furnace being provided with a tap-hole for delivering molten metal, and the stack with a charging-opening in its wall, through which unmelted metal is placed in the stack, substantially as and for the purposes herein specified.

2. A furnace consisting of a fire-chamber, a vertical stack with charging-door, an incline to receive the charge, and a hearth, combined with a second furnace provided with a tap-hole and a spout or channel connecting the hearths of the two furnaces, whereby charges of unmelted iron may be introduced and melted during the work of further melting, refining, and tapping off, and the whole operation of the combined apparatus be conducted uninterruptedly, substantially as herein specified.

3. The removable top for the furnace, consisting of a series of separate rows of fire-brick, h, each clamped between jaws C, substantially as described, the separate series resting side by side on the respective walls of the furnace, as specified.

4. The first furnace A, having the stack A', provided with an incline uniting with the curve of the hearth of the furnace, combined with the lower second furnace B, spout or channel c, and bridge-wall c', substantially as set forth.

205,693. CORN-COB SPLITTERS. Joseph F. Smith, Tyler, Tex. Filed Apr. 27, 1878.



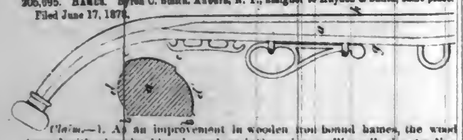
Claim.—1. In a machine for splitting corn cobs and other similar articles, the head-block B, with countersunk opening b, in combination with a tapering pin operated by a rack and pinion, substantially as and for the purposes set forth.

2. The combination of the bed A with head-block B, having countersunk hole b and friction-roller m, the slide D, with rack-bar a and splitting-pin L, and the shaft F, with pinion I, all constructed substantially as and for the purposes set forth.

205,694. STOVE-POLISHING COMPOSITIONS. Shadrach T. Smith, Kasson, Minn., assignor to Samuel H. Moore and Edward T. Moore, Chicago, Ill. Filed May 29, 1878.

Claim.—The within-described compound for stove-polish, consisting of plumbago, lamp-black, rosin, gum-arabic, borax, and whisky, in about the proportions herein set forth.

206,695. HAMES. Byron C. Smith, Auburn, N. Y., assignor to Hayden & Smith, same place. Filed June 17, 1878.

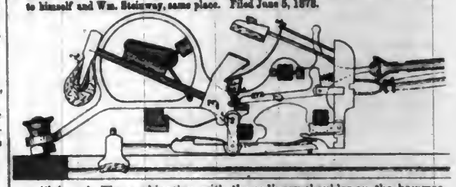


Claim.—1. As an improvement in wooden iron bound hames, the wood formed with edge shoulders b c and an intervening swelling rib, d, extending uniformly throughout its length, in combination with irons adapted to such shoulders and ribbed surface, and supported and re-enforced thereby, substantially as herein set forth.

2. The inner iron h of a hame, arranged upon the beveled or sloping wood core or body formed by the edge shoulders b c and the intervening swelling rib d' of the wood, in the manner and for the purpose specified.

3. A wooden core or body for iron bound hames having edge shoulders and an intervening swelling rib extending throughout its length, for the purpose stated.

205,696. PIANO-FORTE REPEATING-ACTIONS. C. F. T. Steinway, New York, N. Y., assignor to himself and Wm. Steinway, same place. Filed June 5, 1878.



Claim.—1. The combination, with the ordinary shoulder on the hammer-butt in a piano-forte action, of an extra nose, b, and a tongue of elastic and flexible material secured directly to the end of said nose, and adapted by its own inherent elasticity to produce a continuous escapement, when constructed and arranged substantially as herein shown and described.

2. The combination, with the hammer-butt in a piano-forte action, of a corrugated strip of india-rubber, provided with two or more ribs, and arranged substantially as and for the purpose set forth.

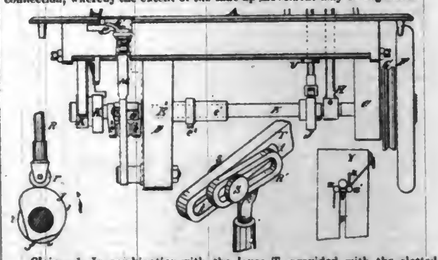
206,697. BARBED FENCE-WIRES. Spencer H. St. John and Justus M. St. John, Cedar Rapids, Iowa, assignors to J. S. McDaniel, D. E. McDaniel, and S. H. St. John, same place. Filed Mar. 21, 1878.



Claim.—Fence-wire having barbs composed of two angled pieces crotched over a central wire from opposite sides, and held in place by other wires pressing into the angle of the barbs' intersection, substantially in the manner and for the purpose set forth.

205,698. SEWING-MACHINES. William J. Stewart, St. Louis, Mo. Filed Oct. 10, 1876.

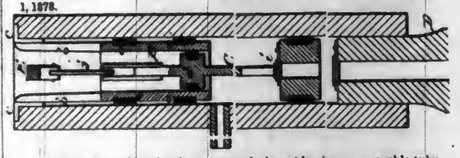
Brief.—The take-up, needle-bar, and shuttle are operated from a single shaft composed of two parts, in such a manner as that the shuttle can be timed in relation to the needle and take-up. The take-up operates positively to take up the slack of the thread in its downward movement. Its motion is derived from a cam on the main shaft. The pitman, by which motion is transmitted to the take-up lever from the cam, is connected to the latter by an adjustable connection, whereby the extent of the take-up movement may be regulated.



Claim.—1. In combination with the lever T, provided with the slotted ends t, the pitmen R and R', movable pin S, cam J, and spring V, substantially as and for the purpose set forth.

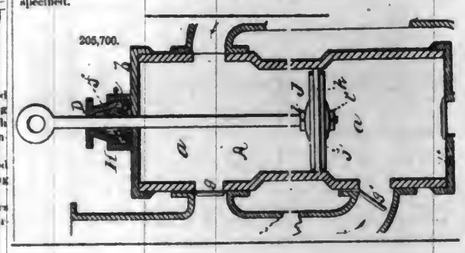
2. The combination, in the shaft E E', of the needle-driving crank c, shuttle-driving crank c^2, take-up driving-cam J, and adjustable coupling c^1 c^2, substantially as and for the purpose set forth.

205,699. LIFTING AND FORCE PUMPS. Thomas B. Swan, Mechanics Falls, Me. Filed June 1, 1878.



Claim.—The combination, in a pump, of a barrel having a removable tubular cylinder grooved for packing above its spout, and secured by rod b c, and a piston-rod having a valveless head working in said removable cylinder, and a valved head working in the said barrel below the cylinder, substantially as specified.

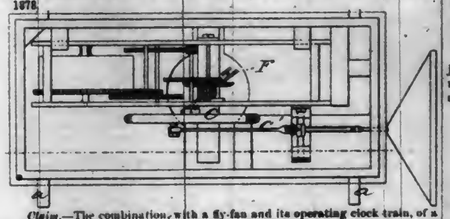
205,700.



205,702. COMBINED SUCTION AND FORCE PUMPS. Nelson J. Tubbs and John Wagner, St. Joseph, Mo. Filed May 25, 1878.

Claim.—The barrel A, having the side pipes and valves, as described, in combination with the caps b b', the former having the packing-cup c, to receive the compressing-cup f, attached to the plate D, all secured together by through-bolts and fastening-nuts, substantially as specified.

205,701. FLY-FAN MOTORS. Hardaway A. Turner, Bedford County, Va. Filed June 15, 1878.



Claim.—The combination, with a fly-fan and its operating clock train, of a fly, F, having a sheath, b, a spiral spring, c, in said sheath, and the wings G, having lateral guideways e, a tang, d, adapted to enter the sheath, and an adjusting-screw, i, arranged and operating substantially as set forth.

206,702. BARBED-WIRE FENCES. Andrew J. Upham, Sterling, Ill., assignor of one-third his right to John H. Lawrence, same place. Filed June 10, 1878.

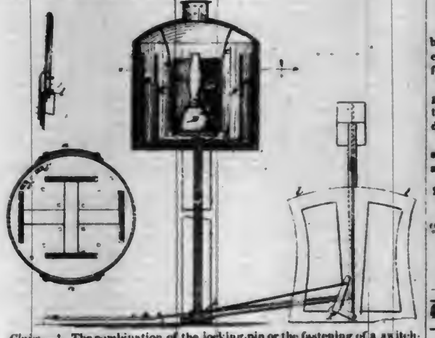


Claim.—1. The barb B, consisting of a single wire, b, twisted, bent, coiled, or corrugated, as described, at b', to make a retaining seat or boss when used in a fence cable or panel, and having pointed ends b'' b'', substantially as and for the purposes set forth.

2. The combination of barb B, constructed as described, with the wire-fence cable A, substantially in the manner and for the purposes set forth.

206,703. RAILWAY-SWITCH SIGNALS. R. L. Vernon and G. W. Vernon, Greensborough, N. C. Filed May 14, 1878.

Brief.—During and by the operation of the switch lever a red danger-signal light is exhibited, which is changed into a purple light at the moment the switch-rail comes in position, and which, by the locking of the lever, is changed into a blue safety or all-right signal light.

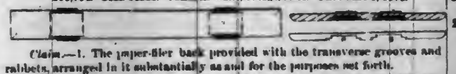


Claim.—1. The combination of the locking-pin or the fastening of a switch-stand with the rotating shaft, a rotating danger-signal consisting of red glasses attached to the shaft, and the lantern composed of a stationary windowed cylinder and the lamp suspended therein, the rubber stops f, all as shown and described.

2. The combination, with the switch-rails and the switch-stand, of the rod passing through slot in switch-lever, and also attached to the pin, and connected with the rotary shaft for operating a signal, all as shown and described, for the purpose specified.

3. The combination of the fixed lamp and cylinder, having the windows a a, the red and blue glasses fixed in sockets of cross-heads or bars attached to the rotary shaft, so that one set of glasses will revolve around the other, the switch lever and stand, the locking-pin, and mechanism connecting the lever-pin and shafts, also the switch-rails, all as shown and described, for the purpose specified.

206,704. BILL-FILES. James H. Waite, Orange, Mass. Filed June 3, 1878.



Claim.—1. The paper-filer back provided with the transverse grooves and rabbets, arranged in it substantially as and for the purposes set forth.

2. The paper-filer back provided with the transverse grooves and rabbets, and the removable slides to fit the said rabbets and extend across the grooves, as set forth.

3. The paper-filer back provided with the transverse grooves and rabbets, the removable slides, and endless elastic bands, arranged and applied essentially as shown and described.

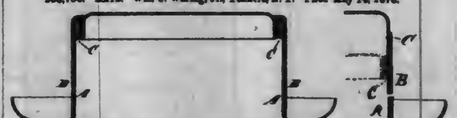
206,705. NUT-LOCKS. William Walter, Lauvale, Pa. Filed June 4, 1878.

Brief.—The dog is held in contact with the ratchet-teeth on the nut by the spring. The latter is adapted to be withdrawn from the dog when the nut can be unscrewed.



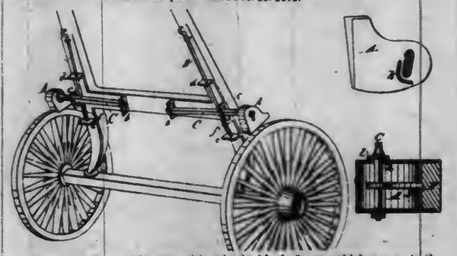
Claim.—The combination of the bolt a, grooves c, plate d, having the projections e, and made to project beyond the side of the nut to receive the dog, nut g, having the ratchets formed upon it, dog h, and spring l, the spring being adapted to be withdrawn from the dog, substantially as shown and described.

206,706. HATS. Wm. C. Waring, Jr., Yonkers, N. Y. Filed May 14, 1878.



Claim.—A hat having a body of felt or other material, A, and having applied to its side crown a covering, B, united at its upper edge with the body by a seam, C, which is concealed by telescoping the crown, and bringing the said seam within the telescoped part of the crown, substantially as herein described.

206,707. BRAKES FOR VEHICLES. Charles T. Warren, Atlanta, Ga., assignor of one-half his right to Geo. W. Leonard, same place. Filed Feb. 15, 1878.



Claim.—1. In combination with a brake-block frame, which supports the brake-block, a shaft carrying the same and provided with a guide, b, which enters a corresponding slot cut in one of the face plates, substantially as and for the purposes set forth.

2. The combination, as before set forth, of rod D, guides d and e, shaft C, guides b e, and spring f, the whole being connected with a brake-block, and the shaft C being capable of a rectilinear motion, substantially as shown and described.

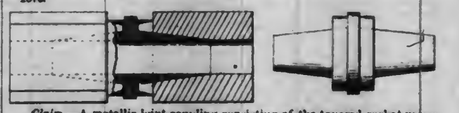
3. The brake-block frame A, provided with slots a and k and interior spring g, the whole combined with an adjusting-shaft, substantially as shown and described.

206,708. CARPET FABRICS. Benjamin Weiand, Philadelphia, Pa., assignor of one-half his right to Joseph Whiteley, same place. Filed Jan. 28, 1878.



Claim.—A carpet fabric in which are combined figuring-warps A, figuring-wefts B and D, face binding-warps a, and face binding-wefts b, all substantially as specified.

206,709. COUPLINGS FOR THE JOINTS OF LOGS. O. Wells, Newberry, S. C. Filed June 22, 1878.



Claim.—A metallic joint-coupling consisting of the tapered socket pieces, their encircling flange, and the sharp-edged annular lips, all constructed substantially as herein shown and described, and for the purpose set forth.

206,710. GOVERNORS FOR MARINE ENGINES. George Westinghouse, Jr., Pittsburg, Pa., assignor of four-tenths his right to Ralph Bagley, H. H. Westinghouse, T. W. Walsh, J. Caldwell, and S. H. Sprague, same place. Filed May 20, 1878.

Claim.—1. The combination of a centrifugally-acting revolving governor, a pair of differential pistons in a cylinder or cylinders, and a valve operated by such governor in opening the escape-port, substantially as set forth.

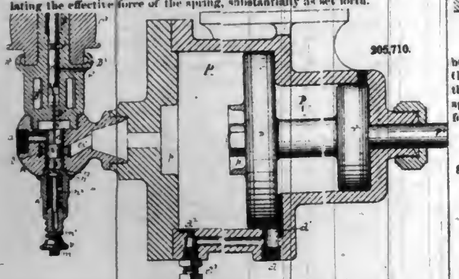
2. The combination of a piston-stem connected with the throttle, a pair of pistons of different diameters in a suitable cylinder or cylinders, steam-supply ports to one side of each piston, a steam-escape port, a', opened and closed by a valve which is operated by the governor, substantially as set forth.

3. A piston-stem, P³, from which to make connection with the throttle, such piston-stem carrying two pistons, P' P², of different diameters, a cylinder, F, a free or open port, *d*', a choked or reduced port, *d*², and a valve-governed escape port, *a*', the combination being substantially as set forth.

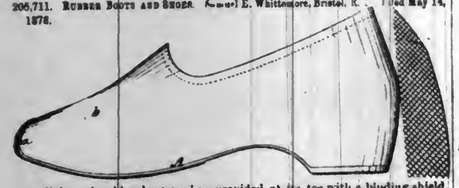
4. The combination of a governor, a pair of differential pistons in a cylinder, a valve operated by the governor in opening the escape port of such cylinder, and a spring with variable tension, for varying the effect produced by the governor, and thereby varying the speed of the main engine, substantially as set forth.

5. In combination with a governor and a valve governing the escape port of a differential cylinder, a lever, *h*, interposed in the line of connection from the governor to the valve, a spring connected therewith, and means of regulating the effective force of the spring, substantially as set forth.

205,710.

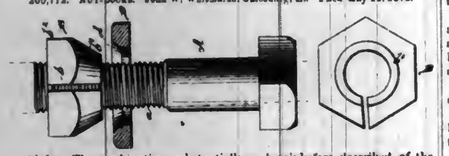


205,711. RUBBER BOOTS AND SHOES. Samuel E. Whittemore, Bristol, R. I. Filed May 14, 1878.



Claim.—A rubber boot or shoe provided at its toe with a binding-shield, which protects the toe, is united to the sole and upper, and overlies the joint or seam at which the sole and upper are united, substantially as described.

205,712. NUT-LOCKS. John W. Whitmarsh, Galesburg, Ill. Filed May 11, 1878.



Claim.—The combination, substantially as hereinbefore described, of the inversely tapering screw-threaded bolt A, the washer D, having the counter-sunk seat *d*, and the conical nut B, split lengthwise on one side only, whereby the conical end of the nut enters the countersunk seat *d* of the washer, which compresses the nut on the bolt, and the inverse taper of the threaded portion of the bolt effectually locks the nut on the bolt.

205,713. MEDICINAL BEVERAGES. Robert R. Wood, Richmond, Va. Filed June 24, 1878.

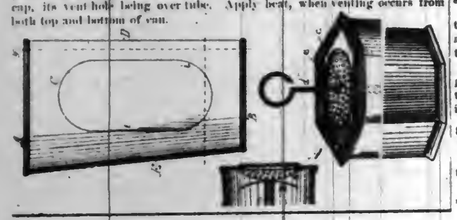
Brief.—The carbonate, with flavoring and any medicinal powder, is inclosed in small boxes, sufficient for one glass of the beverage. The acid is in solution in water (twenty-five grains to each fluid dram) to avoid deliquescence.

Claim.—1. In a package for producing effervescent and medicinal beverages, the combination of the dry carbonates and flavoring or medicinal powders with a suitable acid in solution and of a definite strength, substantially as shown.

2. The package for producing beverages herein set forth, consisting in two or more boxes or packages, each containing the carbonate with flavor in a powdered and dry form, and a bottle of the acid solution, with a suitable measure, all inclosed in one box, for the purpose set forth.

205,714. MEAT-CANS. Friedrich Yenginger, Baltimore, Md. Filed May 23, 1878.

Brief.—Fill the can; lay upper perforated plates on the contents; slide the tube on the wire; force both down through contents to seat tube in socket in perforated plate at bottom of can; withdraw wire; place on and solder the cap, its vent-hole being over tube. Apply heat, when venting occurs from both top and bottom of can.



Claim.—1. The longitudinally-tapering can for preserving meat, having the flat side D at right angles to the adjoining sides C, and the rounded and tapering side E, with the heads A and B, as shown and described.

2. The combination, with the vent of a meat-can, of the top and bottom convex perforated plates *e n*, connected by the tube *c*, as and for the purpose set forth.

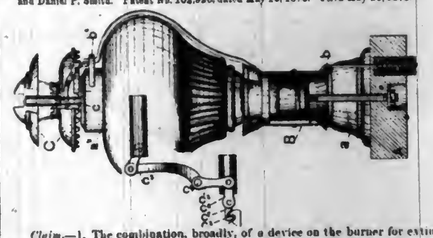
205,715. TRACE-BUCKLES. Burnit G. Latta, Friendship, assignor of one-half his right to H. D. Blakeslee, Buffalo, N. Y. Filed Dec. 18, 1877.



Claim.—The combination, with the bail H, attached to the hame-ring, of a buckle-frame provided with an open concave bed, D D', and the tongue-plate G *g*, pivoted to the rear part of the buckle-frame and curved upward to clear the rear cross-piece D', and then curved down to press the trace into the open space between the cross-bars D D', substantially as and for the purpose set forth.

REISSUES.

8,309. LAMP-EXTINGUISHERS. William C. Ebert, Hannibal, Mo., assignor to James Harris and Daniel P. Smith. Patent No. 102,926, dated May 10, 1870. Filed May 10, 1878.



Claim.—1. The combination, broadly, of a device on the burner for extinguishing the flame and lever mechanism, substantially as described, with mechanism, substantially as described, on the body of the lamp for actuating the lever mechanism.

2. The combination of an extinguishing device upon the burner with an independent sleeve upon the lamp, adapted to move in a vertical direction, for the purpose of actuating the extinguisher, substantially as described.

3. The combination of an extinguishing device upon the burner with independent spring mechanism upon the body, adapted automatically to actuate the extinguishing device when the lamp tips over, substantially as described.

4. The combination of an extinguisher on the burner, having lever mechanism for moving the same, substantially as described, with actuating mechanism extending through the base of the lamp, adapted to hold the extinguishing device in an inoperative position when the lamp rests on a table or other support, substantially as described.

5. In combination with the sliding tube in the burner, the intermediate connections and the sleeve B, substantially as described.

6. In combination with an actuating device fixed upon the body of the lamp, an extinguisher and lever mechanism for moving the same, located upon the removable burner, as described.

7. In combination with the extinguisher, the intermediate connections and spring *b*', as described.

8. In combination with the extinguisher of a lamp, an actuating device, substantially as described, which is projected below the lower surface of the lamp while extinguishing, and which has its movement reversed to uncover the wick by contact with the support on which the lamp may be placed.

9. In a self-extinguishing lamp, a device, substantially as described, which prevents extinguishing by means of its contact with the support on which the lamp stands when it rests, as and for the purpose set forth.

10. A self-extinguishing lamp, substantially as described, so constructed that its extinguisher is prevented from operating when lifted by its hand-piece, but which will be operated if lifted by its bowl.

11. A self-extinguishing lamp, substantially as described, constructed in such manner that it will be prevented from extinguishing when it is carried in an inclined position with the hand-piece in the grasp, but which will allow the extinguisher to be operated when the grasp is released.

12. A self-extinguishing lamp, substantially as described, constructed in such manner that it will, by its weight, when placed upon a table or other support, set the extinguisher in position ready to extinguish the flame when the lamp is accidentally overturned.

13. In a self-extinguishing lamp, a removable burner provided with an extinguisher, and an operating device connected to the extinguisher in such manner that its upward movement will cause the extinguisher to move downwardly away from the wick, and its downward movement will move the extinguisher in an upward direction to surround the wick and extinguish the flame.

14. In combination with a lamp having an extinguishing device attached to a removable burner, an independent actuating device attached to the lamp, and intermediate means, substantially as described, for uniting the two together.

15. In combination with a self-extinguishing lamp, a hand-piece to be grasped when the lamp is to be carried, and which requires movement to allow the extinguisher to be operated, but is prevented from moving when the lamp is carried with the hand-piece in the grasp.

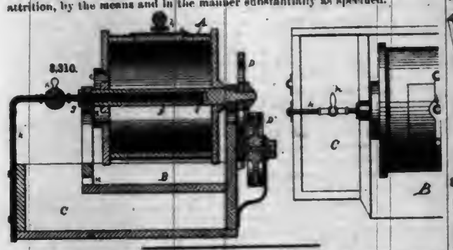
8,310. RUMBLERS FOR CLEANING CASTINGS. Lyman I. Todd, Chicago, Ill. Patent No. 103,034, dated May 11, 1875. Filed Nov. 21, 1877.

Claim.—1. The rumble A, in combination with the tank C, provided with the shelf B, for the purpose set forth.

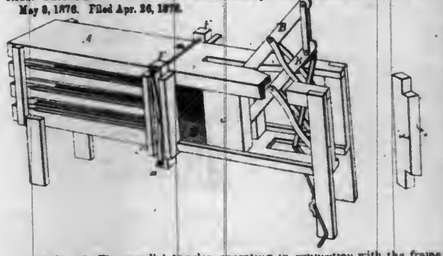
2. The rumble for cleaning castings, constructed with a lining of wood, substantially as specified.

3. The process of cleaning castings, which consists in subjecting them to attrition while they are immersed in water, and wherein the water serves to facilitate the cleaning, and also acts as a cushion to prevent injury from the attrition, by the means and in the manner substantially as specified.

8,310.



8,311. BALING-PRESSES. Peter K. Dederick, Albany, N. Y. Patent No. 177,217, dated May 9, 1876. Filed Apr. 26, 1878.



Claim.—1. The parallel toggles, operating in connection with the frame, pitman, and crank, and the traverser of the continuous press, as and for the purposes set forth.

2. A procumbent or horizontal baling-press, having a feed-orifice at its side, in combination with a reciprocating traverser, C, and bale-chamber A.

8,312. BALING-PRESSES. Peter K. Dederick, Albany, N. Y. Patent No. 132,630, dated Oct. 29, 1872; Reissue No. 7,984, dated Dec. 11, 1877. Filed May 25, 1878.



Claim.—1. The eccentric spur-wheels H and I, operated by the sweep J, in combination with the toggle or crank G and pitman F, substantially for the purpose set forth.

2. The spur-wheels H and I, in combination with the toggle or crank G and pitman F and traverser C, substantially for the purpose set forth.

3. The follower S, staff T, friction-strap V', and wheel U, combined and arranged substantially as described, for the purpose specified.

4. The follower S, staff T, friction-strap V', and wheel U, in combination with the door V and bale-chamber D, for the purpose set forth.

5. The crank, eccentric, or cam G Z, connected to the reciprocating traverser C, and in combination with the press-case B D, provided with movable retainers, for the purpose set forth.

6. The toggle G F, connected to the reciprocating traverser C, in combination with the press-case B D, provided with a yielding head or resistance, for the purpose set forth.

7. The press-box B, reciprocating traverser C, in combination with a bale-chamber, D, provided with a movable partition between the forming and finished bales.

8. The process of forming the bale within the chamber by means of a movable partition, the traverser, and the previously-compressed bale, substantially as described.

9. The traverser C, provided with slots *e' e'* in its vertical sides, to receive the ends of movable retainers and allow the latter to project behind the material into the baling-chamber and prevent the expansion of said material back into the press-box, substantially as described.

10. In a baling-press, the crank, eccentric, or cam or the toggle F G, in combination with the reciprocating traverser C and baling-chamber B D, provided with a movable partition-frame for the bales.

11. The bale-chamber D, provided with stationary retaining-shoulders, in combination with a movable partition for the bales.

12. The combination, with the bale-chamber D, provided with movable retainers, of a movable partition-frame for the bales.

8,313. SCREENS FOR CARDING-MACHINES. William J. English, Providence, R. I., assignor to Maturin R. Capron, same place. Patent No. 153,429, dated July 28, 1874. Filed Mar. 19, 1878.

Brief.—The screen is composed of hollow metallic triangular bars resting upon projections from the ribs or end plates. Through-rods in the broad metallic tips or ends serve to secure the bars in position and impart the proper rigidity to the screen.

Claim.—1. A card-screen composed of hollow metallic triangular bars A, ribs B, having projections *a a* on their inside surfaces for the support of the ends of hollow bars A, and hollow metallic ends C C, these parts secured by through-rods *b b*, all substantially as and for the purpose described.

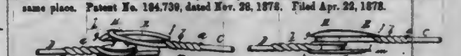
2. In a card-screen, the combination of the side ribs B, provided on their inside surfaces with projections *a a*, with the hollow sheet-metal bars A, secured to the ribs by the projections *a a* and through-bolts *b b*, substantially as and for the purpose described.

3. The bars forming part of the card-screen, made of hollow sheet metal, having their surfaces near the cylinder curved, and the edges of the sheets secured together at their lower sides, all constructed substantially as and for the purpose described.

8,313.



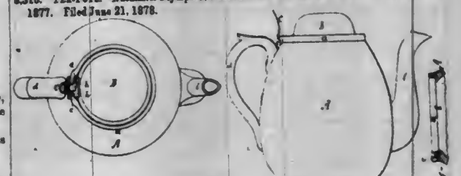
8,314. BALE-TIES. Charles H. Victory, Albany, N. Y., assignor to William F. Rockefeller, same place. Patent No. 194,730, dated Nov. 28, 1876. Filed Apr. 22, 1878.



Claim.—1. In a bale-tie, the combination, with one end thereof, of a double hook or fastening device, held comparatively rigid in position by its neck being encircled and clasped by an eye or loop formed by twisting the end of the tie-wire back upon itself, and provided with a projecting or elongated end or point to rest upon the base of the oblong loop upon the other end of the bale-tie when the latter is locked or secured in position upon the bale, for the purposes stated.

2. The elongated parts H and I, provided with rounded ends *f*, *g*, *h*, and *i*, connected with a neck having a flange or collar, in combination with the loops E and F, substantially as shown and described.

8,315. TEA-POTS. Nathaniel Plympton, Boston, Mass. Patent No. 196,312, dated Dec. 18, 1877. Filed June 21, 1878.



Claim.—1. An open earthenware or porcelain vessel or tea-pot, A, provided with the notches *c* and *f*, arranged in its mouth-rim *a*, substantially as set forth.

2. The pot-cover B, provided with the handle C, arranged with it, as set forth, and notched or having a neck, as described, to enter and co-operate with the notch *c*, arranged in the mouth-rim *a* of the body of the pot.

3. The open tea-pot or vessel A, provided with the notch *c* in its rim *a*, in combination with the cover B, furnished with the necked or notched handle C, arranged with such cover, as specified.

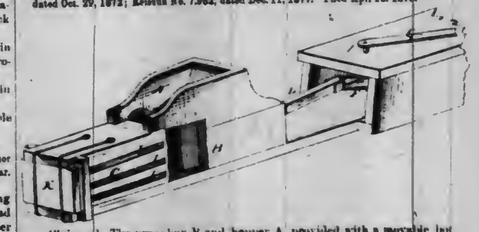
4. The open tea-pot or vessel A, provided with the notch *c* and recess *e*, in combination with the cover B, furnished with the necked or notched handle C, arranged with it, as set forth.

5. The open vessel or tea-pot A, provided with the notches *e* and *f*, arranged in its rim *a*, substantially as shown, in combination with the cover B, furnished with the necked or notched handle C, arranged with it, essentially as represented.

6. The open vessel or tea-pot A, provided with the recess *e* and the notches *c* and *f*, arranged in its mouth-rim *a*, as shown, in combination with the cover B, furnished with the necked or notched handle C, constructed and arranged with such cover, essentially as set forth.

7. The open vessel or tea-pot A, having the part or flange surrounding its mouth provided on its outer edge with a recess, *f*, and also having a cover, B, disconnected with the said pot, and furnished with a hooked handle or a projection to enter and catch against or in such notch or recess, and so co-operate therewith as to prevent the cover from falling off the pot or out of place while the pot is in the act of being inclined for discharge of liquid from its nose or spout.

8,316. HAY AND COTTON PRESSES. Peter K. Dederick, Albany, N. Y. Patent No. 132,566, dated Oct. 29, 1872; Reissue No. 7,982, dated Dec. 11, 1877. Filed Apr. 18, 1878.



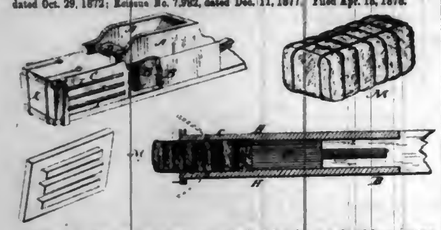
Claim.—1. The press-box B and hopper A, provided with a movable bottom, in combination with the pitman and crank or toggle I, F, substantially for the purpose set forth.

2. The combination of the sweep or horse-lever with the crank F and pitman L, for operating the traverser of a baling-press.

3. The crank or toggle I, F, in combination with the traverser E, receiving-box B, and bale-chamber C, substantially as described.

4. The combination of the crank or toggle I, F with the traverser E, receiving-box B, bale-chamber C, and end door K, substantially as described.

8,317. HAY AND COTTON PRESSES. Peter K. Dederick, Albany, N. Y. Patent No. 132,566, dated Oct. 29, 1872; Reissue No. 7,982, dated Dec. 11, 1877. Filed Apr. 13, 1878.



Claim.—1. The above-described method of forming a bale of hay, cotton, or other fibrous material by means of additional charges of material forced within a chamber, then gradually compressing and completing the bale.

2. In a press for baling hay or other loose fibrous material, the oblong quadrilateral bale-chamber C, in combination with the press-box B and reciprocating traverser E, arranged at the end of said bale-chamber, whereby the bales are built up endwise, as set forth.

3. A procumbent or horizontal baling-press provided with a reciprocating traverser, E, and bale-chamber C, so constructed, combined, and operated that the pressed material and the face of the traverser constitute opposite vertical walls of the press-box B, as set forth.

4. A procumbent or horizontal baling-press provided with a reciprocating traverser, E, having tying slots in its face for passing the ties for binding the bales, and in combination with the receiving-box B and bale-chamber C, for the purpose set forth.

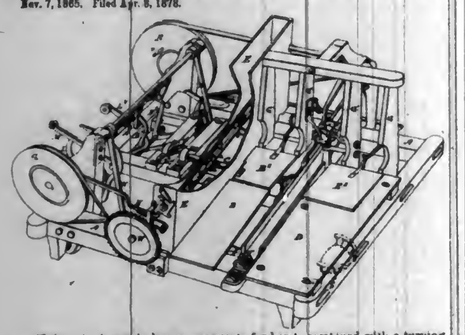
5. The process of forming bales within the bale-chamber C by means of the previously compressed and finished bale M and the reciprocating traverser E, substantially as described.

6. In a baling-press in which the bales are pressed and ejected through the end, as set forth, the press-box B, reciprocating traverser E, and bale-chamber C.

7. In a baling-press in which the hay is pressed into bales within a procumbent or horizontal bale-chamber, as set forth, the press-box B, in combination with a reciprocating traverser, E, and bale-chamber C.

8. As a new article of manufacture, an oblong quadrilateral bale of hay, straw, or other loose fibrous material, built up in successive and separate compressed sections transversely of the bale, and bound together longitudinally of the bale, substantially as described.

8,318. GRAIN-BINDERS. Albert Goodyear, 2d, Hamden, Conn. Patent No. 50,814, dated Nov. 7, 1865. Filed Apr. 8, 1878.



Claim.—1. A supply box or receptacle for bands combined with a turning feed apparatus which intermittently discharges the bands, substantially as set forth.

2. A supply box or receptacle for bands and a feed apparatus which intermittently discharges the bands, combined with a narrow throat, wherein the band is received and retained until wanted, and a reciprocating pallet, which statedly forces said band through said throat and finally discharges it.

3. A tray wherein the bands are deposited, combined with devices located in said tray for clamping and twisting the band, substantially as set forth.

4. A tray wherein the bands are deposited, combined with a holding device for one end of the band, and a rotating twisting device at the other end to seize and twist the band.

5. A tray, E, wherein the bands are deposited, combined with one or more twisters, T, to seize and twist the band, substantially as set forth.

6. A tray wherein the bands are deposited, provided with band-feed apparatus, and combined with two pivoted arms, each of which bears at its outer end a band-holder, whereby the band is removed from said tray and carried around the bundle, and its ends delivered to the band-securing mechanism.

7. A band-carrier mounted upon a reciprocating carriage, whereby it receives the band from a receptacle at one side of the binding-platform, and carries it beneath the binding-table, to deliver it around the center of a sheaf, as set forth.

8. A band-receiving tray mounted upon a reciprocating carriage, whereby the band is received at one side of the binding-platform and conveyed beneath the binding-table, combined with two pivoted arms, whereby the ends of the band are carried around the bundle and delivered to the band-securing mechanism.

9. A band-twisting device composed, essentially, of a rotating shaft having one or more hook points or fingers, which engage with and twist together the ends of the band.

10. A band-twisting device, which consists, essentially, of a rotating toothed shaft or wheel, the teeth whereof are elongated and hooked in the plane of rotation, so that as they rotate they will gather toward the center any object which comes within their points.

11. A reciprocating band-carrier, which receives the band at one side of the binding-platform, and carries it laterally to a point opposite the center of the sheaf and places it around the sheaf, combined with a rotating band-twisting device, which seizes and twists together the ends of the band, as set forth.

12. A revolving band-twisting device consisting of a revolving head with spirally-radial hooks or fingers with rounded surfaces, whereby the parts of the band are seized and twisted together.

13. A movable binding-table adapted to support the bundle while being bound, and then to permit the same to be discharged by gravity, combined with a band-carrying mechanism having a lateral movement below said table, which alternately advances to bring the band to the bundle, and retreats when the binding has been completed.

14. A binding-table movable upon points or hinges, and maintained in position by an elastic support, combined with automatic mechanism whereby said support is overcome at stated times, and said table permitted to swing downward and discharge the bundle by gravity.

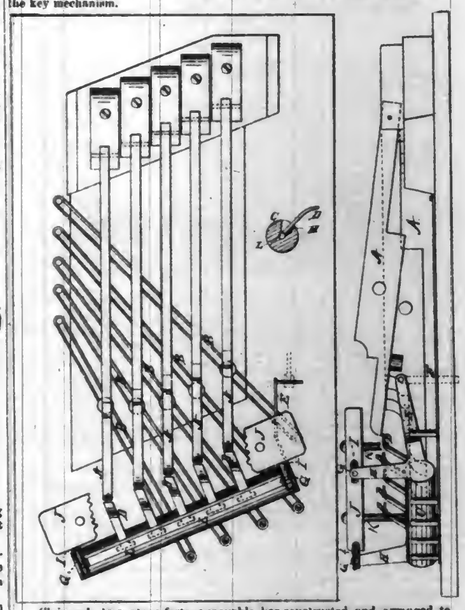
15. The reciprocating band-carrier I, traveling upon a guideway, combined with the tappet-lever L and connecting parts M N O and the operative crank K, as set forth.

16. The band-tray I, provided with the band-twister T and pinion U, combined with the gear-wheel W, whereby said twister is rotated at the proper time.

17. The combination, in an automatic binder, of a binding-table and a reciprocating grain-gathering arm or compressor, the combination operating to allow the grain to be bundled by the reciprocations of the gatherer or compressor, and the bundle to be discharged by gravity.

8,319. PIANO-FORTE ATTACHMENTS. M. W. Haskell, Syracuse, N. Y. Patent No. 153,708, dated Aug. 4, 1874. Filed May 2, 1877.

Brief.—Provides for holding off the strings a single or any number of the dampers, at option, which have been raised through the medium of its key or keys, by means of interposing devices and a pedal operating independently of the key mechanism.



Claim.—1. In a piano-forte, a movable bar constructed and arranged to operate while acted upon and retained by means of a pedal to arrest or suspend the action of either a single one or a larger number, at option, of such dampers as are removed from the strings by means independent of said bar or its pedal, substantially as and for the purposes hereinbefore described.

2. The movable bar C, provided with arms or hangers, or their equivalent, by which it may be sustained, or the direction of its motion guided or governed, and whereby it will operate to catch or act upon the dampers, their lifting-levers, keys, or connections in a piano-forte, substantially as and for the purposes set forth.

3. A single bar arranged to move in a plane horizontally, or nearly so, and constructed to arrest and hold up or off the strings the dampers, one or more, at option of the player, substantially as and for the purposes set forth.

4. As an attachment for a piano-forte of ordinary construction, a movable bar adapted to operate for the arrest or to suspend the action of either a single damper or a larger number of the dampers of such piano, at option of the player, substantially as and for the purposes hereinbefore described.

5. In a piano-forte, a series of tongues hinged or otherwise attached to a movable bar, and arranged to operate substantially as and for the purposes hereinbefore set forth.

6. In combination with the dampers, damper lifters, levers, or connections of a piano-forte, a series of tongues and movable bar, arranged to operate substantially as and for the purposes set forth.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 2d DAY OF JULY, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Acaster, A. J., Sheffield, England. Securing railway-rails	205,600	July 2	138	42, 43	14	27
Adamson, C. E., Humboldt, Nebr. Wagon-rack	205,518	July 2	57	17	14	16
Adt, J., New Haven, Conn. Wire-straightener	205,601	July 2	140	43	14	27
Allen, J. E., and P. F. Duffy, Greensborough, N. C. Brick-machine	205,602	July 2	141	43	14	27
Armstrong, D. (See Hutchinson and Armstrong.)						
Arnold, E. W., *et al.* (See Robbins, J. A., assignor.)						
Arthur, C. M., assignor of one-half interest to R. R. Colburn, Ansonia, Conn. Paper-box	205,603	July 2	142	44	14	27
Arthur, R., Baltimore, Md. Dental tool	205,462	July 2	1	1	14	9
Ashmore, J. I. (See Bauercroft and Ashmore.)						
Auchincloss, W. S., Wilmington, Del. Machine for turning tree-nails	205,604	July 2	142	44	14	27
Austin, E. H. (See Morris and Austin.)						
Austin, R., and W. H. Gardiner, Howardsville, Ill. Fender	205,463	July 2	2	1	14	9
Avril, F. (See Kuessner and Avril.)						
Ayres, M. P., San Francisco, Cal. File-guard	205,519	July 2	59	17	14	16
Babcock, A. G., Lexington, Mass. Fly-trap	205,464	July 2	2	1	14	9
Bagley, R., *et al.* (See Westinghouse, G., Jr., assignor.)						
Bancroft, R. F., Camden, N. J., and J. I. Ashmore, Philadelphia, Pa. Hatchway-door mechanism	205,605	July 2	145	44	14	28
Barbe, W. (See Brisac and Barbe.)						
Barley, J. H. and T. K., Sedalia, Mo. Harrow-tooth fastening	205,520	July 2	59	17	14	16
Barley, T. K. (See Barley, J. H. and T. K.)						
Barnum, D. (See Bullock, S. W., assignor.)						
Bates, D., Fort Brauch, Ind. Stump-burner	205,465	July 2	3	1	14	9
Beck, A., Waverly, Minn. Churning apparatus	205,521	July 2	60	18	14	17
Benjamin, P. (See Rose and Benjamin.)						
Bennett, L. J. (See Cummings and Bennett.)						
Bensinger, H. E. (See Brocious, Bensinger, and Wragg.)						
Biddle, A. R., Maroa, Ill. Check-rower	205,466	July 2	4	2	14	9
Bird, J., Pittsburg, Pa. Street-lamp	205,607	July 2	147	45	14	28
Bissell, F. S., Pittsburg, Pa. Self-extinguishing car-stove	205,467	July 2	5	2	14	9
Bissell, F. S., Pittsburg, Pa. Car-heater	205,468	July 2	6	2	14	9
Blackburn, H., Nashville, Tenn. Preserve jar and can	205,469	July 2	7	2	14	10
Blair, E. S., Wilkesborough, N. C. Horse-rack	205,522	July 2	61	18	14	17
Blakeslee, H. D. (See Latta, E. G., assignor.)						
Bodenhamer, L. I., Kernersville, N. C. Stalk trimmer and cutter	205,470	July 2	7	3	14	10
Bramer, F., Little Falls, N. Y. Wheel-harrow	205,608	July 2	148	45	14	28
Bright, H. (See Josel, F. E., assignor.)						
Bright, H. (See Snow, C. P., assignor.)						
Brisac, S., and W. Barbe, New York, N. Y. Fender for street-cars	205,471	July 2	8	3	14	10
Broad, E., Minneapolis, Minn. Cant-dog	205,523	July 2	62	18	14	17
Brocious, H. E. Bensinger, and S. Wragg, Raven Run, Pa. Lubricator	205,524	July 2	63	18	14	17
Bronson, G. H., Brooklyn, N. Y. Chicken-coop	205,609	July 2	150	45	14	28
Bucher, J. R., *et al.* (See Gibbs, L., assignor.)						
Budlong, S., and W. O. Talcott, Providence, R. I. Belt-fastener	205,610	July 2	150	45	14	28
Bullock, S. W., Newark, N. J., assignor to D. Barnum, Brooklyn, N. Y. Ore-separator	205,525	July 2	64	19	14	17
Bundy, W., Carthage, Ind. Hoe	205,472	July 2	9	3	14	10
Butterworth, J., Worcester, Mass. Heddle-rod tightener	205,611	July 2	151	46	14	29
Cady, A. B., assignor of one-half interest to F. Candee, Bethlehem, Conn. Bog-cutting plow	205,612	July 2	152	46	14	29
Caldwell, J., *et al.* (See Westinghouse, G., Jr., assignor.)						
Candee, F. (See Cady, A. B., assignor.)						
Capron, M. R. (See English, W. J., assignor.) (Reissue.)						
Carlton, W. E., *et al.* (See Robbins, J. A., assignor.)						
Chalmers, W., and W. N. Reynolds, Detroit, Mich. Sad-iron and fluter	205,473	July 2	10	3, 4	14	10
Charageat, E., Paris, France. Umbrella-frame	205,613	July 2	153	46	14	29
Chegwidden, J., New York, N. Y. Pump-handle	205,526	July 2	66	19	14	17
Chittenden, M., and W. A. Lyon, Danbury, Conn. Lathe for turning ovals	205,474	July 2	11	4	14	10
Citroen, A. B., Berlin, Prussia. Cigarette mouth-piece	205,475	July 2	12	4	14	10
Cogswell, M. C., Brooklyn, and W. H. Finn, Oswego, N. Y. Flour-bolt	205,476	July 2	12	4	14	10
Cohen, J. (See Cohen, L. P., assignor.)						
Cohen, L. P., assignor to J. Cohen, New York, N. Y. Machine for cutting paper	205,527	July 2	66	19	14	17
Colburn, R. R. (See Arthur, C. M., assignor.)						
Coleman, J. H., New York, N. Y. Case for carboys	205,614	July 2	153	46	14	29
Coleman, R. H., St. Joseph, Mo. Car-door	205,477	July 2	13	5	14	10
Conaway, H. O., Deep River, Iowa. Collar	205,528	July 2	68	20	14	17
Cooper, L. A., Winthrop, Mo. Corn-planter, marker, and cultivator	205,529	July 2	69	20	14	18
Corbin, J., New Harmony, Ind. Grain-drier	205,530	July 2	70	20	14	18
Corry, J., Menekaune, Wis. Pile	205,615	July 2	154	47	14	29
Cotter, D. A., Russell, and N. Watrell, Agency City, Iowa. Washing-machine	205,681	July 2	234	69	14	38
Cummings, U., and L. J. Bennett, Buffalo, N. Y. Manufacture of hydraulic cement	205,616	July 2	155	.....	14	29
D'Alessandro, B. B., Rome, Italy. Life-preserving satchel	205,617	July 2	157	47	14	29

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Davis, J. H. (See Müller, A. H., assignor.)						
De Bevoise, A. (See Luckenbach and De Bevois.)						
De Bevoise, A., Brooklyn, and F. A. Luckenbach, assignors to J. E. Mulford, New York, N. Y. Steaming and drying grain	205,606	July 2	146	44	14	28
Dederick, P. K., Albany, N. Y. Baling-press. (Reissue)	8,311	July 2	272	80	14	43
Dederick, P. K., Albany, N. Y. Baling-press. (Reissue)	8,312	July 2	273	81	14	43
Dederick, P. K., Albany, N. Y. Hay and cotton press. (Reissue)	8,316	July 2	278	82	14	43
Dederick, P. K., Albany, N. Y. Hay and cotton press. (Reissue)	8,317	July 2	279	82	14	44
Deming, O. S., Mount Olivet, Ky. Corn-planter	205,618	July 2	157	47	14	29
Dennis, S. W., assignor, by mesne assignments, to himself and J. B. Reynolds, San Francisco, Cal. Motor for dental pluggers	205,619	July 2	159	48	14	29
Dithridge, E. D., Allegheny, assignor to himself and Dithridge Glass Company, (limited,) Pittsburg, Pa. Manufacture of glass lamp-chimneys	205,478	July 2	15	5	14	11
Dithridge Glass Company, (limited.) (See Dithridge, E. D., assignor.)						
Donahue, T., Binghamton, N. Y. Paper dish	205,531	July 2	71	21	14	18
Donaldson, S. B., Scottborough, Ala. Churn	205,620	July 2	161	48	14	30
Dorgan, M. H. (See Hennessy and Dorgan.)						
Duchemin, W., Boston, Mass. Bobbin-winder	205,532	July 2	72	21	14	18
Duffy, P. F. (See Allen and Duffy.)						
Duncan, R. L., Decatur, Ga. Millstone-dress	205,533	July 2	73	21	14	18
Duygan, J. A. (See Gordon and Duygan.)						
Ebert, W. C., Hannibal, Mo., assignor to J. Harris and D. P. Smith. Lamp-extinguisher. (Reissue)	8,309	July 2	268	80	14	42
Edwards, N., Decatur, Ill. Vegetable-slicer	205,621	July 2	162	48	14	30
Eggleston, A. W., Chicago, Ill. Draw-bar for street-cars	205,622	July 2	163	49	14	30
English, W. J., assignor to M. R. Capron, Providence, R. I. Screen for carding-machines. (Reissue)	8,313	July 2	275	81	14	43
Estey & Co., J. (See Field, A. S., assignor.)						
Ewell, E. C. (See McDowell and Ewell.)						
Fairbanks, T., St. Johnsbury, Vt. Platform weighing-scales	205,623	July 2	164	49	14	30
Fawcett, W., New York, N. Y. Harness saddle-tree	205,534	July 2	74	21	14	18
Field, A. S., assignor to J. Estey & Co., Brattleborough, Vt. Valve for reed-organs	205,624	July 2	165	49	14	30
Finn, W. H. (See Cogswell and Finn.)						
Fox, S., Leeds, Great Britain. Fire-box for steam-boilers	205,625	July 2	166	49	14	30
Foy, J. H., New Haven, Conn. Skirt-supporting corset	205,479	July 2	16	5	14	11
Frost, C. C., New York, N. Y. Valve for water-closets, &c.	205,626	July 2	166	50	14	30
Frost, F. C., Anoka, Minn. Corn planter and marker	205,535	July 2	74	22	14	19
Fryer, R. M., San Francisco, Cal. Preparing gold and silver ores for milling	205,536	July 2	76	.....	14	19
Fuller, C. B., assignor of one-half interest to F. McClure, Worcester, Mass. Hand-rubber	205,627	July 2	167	50	14	30
Gage, A. G. (See Harris, F. B., assignor.)						
Gardiner, W. H. (See Austin and Gardiner.)						
Garrison, H. H., Pioche, Nev. Car-brake	205,537	July 2	77	22	14	19
Gassaway, J. H., Grape Vine, Tex. Car-coupling	205,628	July 2	168	50	14	31
Gederén, C. E. S., Philadelphia, Pa. Reefing and furling sails	205,629	July 2	169	50, 51	14	31
George, J., Springfield, Mo. Cultivator	205,630	July 2	170	51	14	31
Gerard, A., New Orleans, La. Thermoscope for fire-alarm indicators	205,538	July 2	79	22	14	19
Gerard, A., New Orleans, La. Electric anto-pneumatic water-indicator	205,539	July 2	80	22	14	19
Gerard, A., New Orleans, La. Switch for annunciator-alarms	205,540	July 2	81	23	14	19
Gibbs, L., assignor to himself, J. R. Bucher, and W. A. Wikidal, Canton, Ohio. Plow	205,631	July 2	171	51	14	31
Gibson, H. (See Lovina and Gibson.)						
Gidley, R., More's Mill, N. Y. Cattle-stanchion	205,632	July 2	173	52	14	31
Gill, J. H., Rolla, Mo. Trunk	205,633	July 2	174	52	14	31
Gluyas, W. R., Cerro Gordo, Ill. Balanced slide-valve	205,541	July 2	82	23	14	19
Goodyear, A., 2d, Hamden, Conn. Grain-binder. (Reissue.)	8,318	July 2	280	82, 83	14	44
Gordon, E., Hyde Park, and J. A. Duygan, Quincy, Mass. Railway-switch	205,480	July 2	17	6	14	11
Gouge, H. A., assignor to S. Shethar, New York, and E. A. Nichols, Yonkers, N. Y. Ventilated grain-car	205,634	July 2	175	52	14	31
Graf, L., Newark, N. J. Shoe	205,542	July 2	83	23	14	19
Grigg, T. H., West Meriden, Conn., assignor to G. G. Stillman, Westerly R. I. Compass	205,543	July 2	83	23	14	19
Grimes, F. M. (See Porter and Grimes.)						
Grodhaus, G. C. (See Grodhaus, G. W., and G. C.)						
Grodhaus, G. W., and G. C., Bellaire, Ohio. Machine for crozing and chamfering staves	205,544	July 2	84	24	14	19
Gurley, L. E., *et al.* (See Gurley, W., assignor.)						
Gurley, W., Troy, N. Y., assignor to W. and L. E. Gurley. Tripod for surveying-instruments	205,481	July 2	18	6	14	11
Hageman, R. F., New Madison, Ohio. Lifting-jack	205,635	July 2	176	53	14	32
Hall, W. H., Tiffin, Ohio. Horse hay-rake	205,545	July 2	86	24	14	20
Halvorson, H., assignor to G. W. Whittemore, Nashua, N. H. Bottle-stopper fastener	205,546	July 2	87	24	14	20
Hammerstein, O., New York, N. Y. Cigar-case	205,482	July 2	19	6	14	11
Hanchett, M. W., Syracuse, N. Y. Piano-forte attachment. (Reissue)	8,319	July 2	283	84	14	44
Harbaugh, J. W., Alma, Kan. Lifting-jack	205,636	July 2	177	53	14	32
Harbin, J. T., Xenia, Ohio. Oil-press	205,637	July 2	178	53	14	32
Hardwick, H., Philadelphia, Pa. Carpet fabric	205,638	July 2	179	54	14	32
Harris, F. B., assignor of one-half interest to A. G. Gage, Batavia, N. Y. Egg-tester	205,547	July 2	88	25	14	20
Harris, J., *et al.* (See Ebert, W. C., assignor.) (Reissue.)						
Havenhill, E., assignor of one-half interest to P. Smith, Joliet, Ill. Barbed fence	205,639	July 2	179	54	14	32
Hay, I. (See Hay, M., assignor.)						
Hay, I. T., Xenia, Ohio. Railway-switch	205,483	July 2	20	6, 7	14	11
Hay, M., Union City, Ind., assignor to I. Hay, Darke county, Ohio. Mechanism for removing sawdust	205,548	July 2	88	25	14	20
Hayden and Smith. (See Smith, B. C., assignor.)						
Henderson, W. H. (See Redmond, C. C., assignor.)						
Hennessy, T., and M. H. Dorgan, San Francisco, Cal. Valve for basins	205,549	July 2	89	25	14	20
Hildreth, E. A., Harvard, Mass. Machine for splitting wood	205,550	July 2	90	25, 26	14	20
Hitchcock, R., Watertown, N. Y. Ship's lamp	205,640	July 2	180	54	14	32
Hoefle, G., and H. Homeier, Belleville, Ill. Photographic negative	205,484	July 2	21	.....	14	11
Hoffmann, F. A., assignor to himself and S. Welch, Baldwin City, Kan. Grain steamer and drier	205,551	July 2	92	26	14	20
Holden, D. L., Philadelphia, Pa. Condenser for ice-machines	205,641	July 2	182	54	14	32
Holden, D. L., Philadelphia, Pa. Apparatus for refrigerating the non-congealable liquid employed in the manufacture of ice	205,642	July 2	183	55	14	33
Holden, D. L., Philadelphia, Pa. Method and apparatus for producing ice	205,643	July 2	184	55	14	33
Holmes, J. W., Wheatville, N. Y. Sun-dial	205,485	July 2	21	7	14	11
Holub, F., assignor of two-thirds interest to N. E. Platt and E. Thorn, Chicago, Ill. Horse-shoe machine	205,644	July 2	185	55, 56	14	33
Holub, F., assignor of two-thirds interest to N. E. Platt and E. Thorn, Chicago, Ill. Machine for creasing, punching, and swaging horseshoe-blanks	205,645	July 2	187	57	14	33
Homeier, A. (See Hoefle and Homeier.)						

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Hornum Patent Register Manufacturing Company. (See Hornum, W. H., assignor.)						
Hornum, W. H., New York, N. Y., assignor to Hornum Patent Register Manufacturing Company. Fare-box	205,646	July 2	188	57	14	33
Hull, W. S., Jackson, Miss. Flying toy	205,647	July 2	190	57	14	33
Hummel, E. M. (See Kistner and Hummel.)						
Hunter, C. E., Fredericksburg, Va. Plow	205,552	July 2	93	26	14	20
Hutchinson, J. A., Chicago, Ill., and D. Armstrong, Keeseville, N. Y., assignors to Sheridan Horse Nail Company, Cleveland, Ohio. Machine for forging horseshoe-nails	205,554	July 2	95	27, 28	14	21
Hutchinson, J. P., Brooklyn, N. Y. Automatic water-flow regulator	205,553	July 2	94	26	14	21
Ingram, J. E., *et al.* (See Knapp, G. W., assignor.)						
Irwin, J. H., Philadelphia, Pa. Lantern	205,648	July 2	191	58	14	33
Irwin, J. H., Philadelphia, Pa. Lantern	205,649	July 2	193	58	14	34
Irwin, J. H., Philadelphia, Pa. Combined atmospheric injector and ejector	205,650	July 2	194	58, 59	14	34
Jenkins, H. S., trustee. (See Kimball, J. E., assignor.)						
Johnson, C. A. (See Lidell, J., assignor.)						
Johnson, J. J., East Liverpool, Ohio. Refrigerating plug for cans	205,486	July 2	23	7	14	11
Johnston, O. M., Brownsville, Pa. Burial-casket	205,555	July 2	99	28	14	21
Jones, T. D., Syracuse, N. Y. Millstone-dress	205,556	July 2	100	29	14	21
Josel, F. E., assignor of one-half interest to H. Bright, Freeport, Ill. Corn-planter	205,487	July 2	23	8	14	12
Kaufle, H. A., Lansdale, Pa. Car-propelling device	205,651	July 2	196	59	14	34
Keim, S., Altoona, Pa. Millstone-dress	205,557	July 2	101	29	14	22
Kelley, W. S., North Ware, N. H. Stop-motion for drawing-frames	205,558	July 2	102	29	14	22
Kenerson, V. D. P., Worcester, Mass. Wire-drawing pinchers	205,488	July 2	25	8	14	12
Kimball, J. E., Abington, assignor to H. S. Jenkins, trustee, Boston, Mass. Nailing-machine for boots and shoes	205,652	July 2	197	59	14	34
King, G. D., assignor to M. C. Thompson, Oswego, N. Y. Machine for stretching cloth	205,489	July 2	26	8, 9	14	12
Kirkpatrick, R., Richmond, Debeck P. O., New Brunswick, Canada. Weighing device	205,559	July 2	102	29	14	22
Kistler, W. F., Cincinnati, Ohio. Flour sifter, scoop, and strainer	205,560	July 2	103	30	14	22
Kistner, H. W., and E. M. Hummel, Selin's Grove, Pa. Skate-sharpener	205,561	July 2	104	30	14	22
Knapp, G. W., assignor to himself, J. C. Matthai, and J. E. Ingram, Baltimore, Md. Securing handles to tin cups	205,653	July 2	199	60	14	34
Kuessner, E., and P. Avril, Cincinnati, Ohio. Attachment for baths	205,490	July 2	27	9	14	12
Ladomus, L. (See Fowell, T., assignor.)						
Lafferty, E. S., Saltsburg, Pa. Fastening for horse-collars	205,654	July 2	200	60	14	34
Lane, J., Chicago, Ill. Plow	205,491	July 2	28	9	14	12
Lanphear, E. T., Phenix, R. I. Ring-spinning frame	205,655	July 2	201	60	14	35
Latta, E. G., Friendship, assignor of one-half interest to H. D. Blakeslee, Buffalo, N. Y. Trace-buckle	205,715	July 2	267	79	14	42
Lawrence, J. H. (See Upham, A. J., assignor.)						
Leonard, G. W. (See Warren, C. T., assignor.)						
Lidell, J., assignor of one-half interest to C. A. Johnson, Rockford, Ill. Sad-iron	205,656	July 2	202	60	14	35
Ling, L., Pulaski, N. Y. Plow	205,657	July 2	203	61	14	35
Lloyd, E. L., Philadelphia, Pa. Window-screen	205,658	July 2	204	61	14	35
Lovina, J. W., and H. Gibson, Clintonville, Mo. Invalid-bedstead	205,659	July 2	205	61	14	35
Luckenbach, F. A. (See De Bevoise and Luckenbach.)						
Luckenbach, F. A., New York, and A. De Bevoise, Brooklyn, assignor to J. E. Mulford, New York, N. Y. Drying, curing, and renovating Indian corn, &c.	205,660	July 2	206	62	14	35
Lueders, E., West Hoboken, N. J. Coin-tester	205,492	July 2	29	9	14	12
Lyon, W. A. (See Chittenden and Lyon.)						
Macfarlane, J. K., St. Louis, Mo. Curtain-fixture	205,493	July 2	30	10	14	12
Manley, W., Rochester, N. Y. Machine for rubbing the seams of boots and shoes	205,562	July 2	105	30, 31	14	22
Mathewson, J. (See Sweeney, A., assignor.)						
Matthai, J. C., *et al.* (See Knapp, G. W., assignor.)						
McCaskill, J. C., Shoe Heel, N. C. Turpentine-scraper	205,661	July 2	208	62	14	35
McClave, W. (See Price and McClave.)						
McClure, F. (See Fuller, C. B., assignor.)						
McComas, W. G., Colerain, Ohio. Horse-power	205,563	July 2	106	31	14	22
McDaniel, D. E., *et al.* (See St. John, S. H. and J. M., assignors.)						
McDaniel, J. S., *et al.* (See St. John, S. H. and J. M., assignors.)						
McDowell, W. C., and E. C. Ewell, Romeo, Mich. Fruit-drier	205,662	July 2	208	62	14	35
McGrath, P. C., Plattsburg, N. Y. Knife for cutter-heads	205,564	July 2	108	31	14	23
McNary, W. H., Brooklyn, assignor to J. V. D. Reed, New York, N. Y. Knitting-machine	205,663	July 2	209	62, 63	14	36
Mendenhall, J. M., Livermore, Cal. Gate	205,565	July 2	109	31	14	23
Mihan, P., Cambridgeport, Mass. Steam-heat radiator, &c.	205,664	July 2	215	64	14	36
Miller, A. H., assignor of one-half interest to J. H. Davis, Atlanta, Ga. Hoe	205,667	July 2	218	64, 65	14	36
Miller, J. S., Middletown, Conn. Tuyere	205,666	July 2	217	64	14	36
Miller, M. D. (See Rowen and Miller.)						
Miller, M. R., and A. B. Worman, Bradysville, Pa. Receptacle for grocers' measures	205,665	July 2	216	64	14	36
Miller, W. L., Santa Rosa, Cal. Pump-valve	205,566	July 2	110	32	14	23
Mixer, G. H., San Francisco, Cal. Bung-bush	205,494	July 2	31	10	14	13
Molitor, J. P., Vallejo, Cal. Barber's appliance	205,495	July 2	32	10, 11	14	13
Moll, A., Brooklyn, N. Y. Star braid	205,567	July 2	110	32	14	23
Moore, E. Y., *et al.* (See Smith, S. T., assignor.)						
Moore, S. H., *et al.* (See Smith, S. T., assignor.)						
Morden, W. J., Indianapolis, Ind. Railway-crossing	205,496	July 2	33	11	14	13
Morris, B. F., and E. H. Austin, Scott's Hill, Tenn. Cultivator and seeder	205,668	July 2	218	65	14	36
Morris, J. R., Cincinnati, Ohio. Sash-fastener	205,568	July 2	111	32	14	23
Morse, O. M., Silver Creek, N. Y. Meal cooling and drying apparatus	205,669	July 2	220	65	14	36
Mulford, J. E. (See De Bevoise and Luckenbach, assignors.)						
Mulford, J. E. (See Luckenbach and De Bevoise, assignors.)						
Murdock, R., Baltimore, Md. Flower-stand	205,670	July 2	221	65, 66	14	37
Nagle, A. F., Providence, R. I., assignor to C. E. Whitin, trustee, Whitinsville, Mass. Press for pressing bricks and concrete blocks	205,569	July 2	111	33	14	23
Nawadny, A., New Orleans, La. Machine for boring brush-blocks	205,497	July 2	34	11	14	13
Newton, C. C., Cleveland, Ohio. Railway-car and coach heater	205,570	July 2	116	34	14	23
Nichols, E. A., *et al.* (See Gouge, H. A., assignor.)						
Northrop, J., Otisville, N. Y. Manufacture of boots and shoes	205,571	July 2	117	34	14	24
Nusbaum, H. P., Libertytown, Md. Feed attachment for guano-drills	205,671	July 2	221	66	14	37
Palmer, N., New York, N. Y. Rotary mold-board plow	205,498	July 2	35	11	14	13
Parker, J. R., Wayne township, Ashtabula county, Ohio. Organ action	205,499	July 2	35	12	14	13
Parmelee, H. S., New Haven, Conn. Fire-extinguisher	205,672	July 2	222	66	14	37
Patterson, W., Constantine, Mich. Clothes-washer	205,500	July 2	37	12	14	14
Patton, T., Philadelphia, Pa. Apparatus for cleaning garments	205,673	July 2	224	66	14	37
Pederson, O., Joliet, Ill. Barbed fence-wire	205,501	July 2	38	12	14	14
Pennypacker, M., Philadelphia, Pa. Hydraulic jack	205,674	July 2	224	67	14	37
Peters, G. M., Columbus, Ohio. Sewing-machine guide	205,675	July 2	226	67	14	37
Pfaudler, J. M., Rochester, N. Y. Apparatus for regulating the pressure in a series of fermenting-vessels	205,572	July 2	118	34	14	24

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Picking, F. P., Ploche, Nev. Guide for the stems of stamp-mills	205,573	July 2	119	35	14	24
Piper, E. J., Springfield, Mass. Paper-ruling machine	205,502	July 2	39	12, 13	14	14
Platt, N. E., *et al.* (See Holub, F., assignor.)						
Plympton, N., Boston, Mass. Tea-pot. (Reissue)	8,315	July 2	277	83	14	43
Porter, A. W., and F. M. Grimes, New York, N. Y. Gas-regulator	205,678	July 2	229	68	14	38
Porter, L., Philadelphia, Pa. Sheet-metal can	205,677	July 2	228	68	14	37
Porter, R., Philadelphia, Pa. Sheet-metal can	205,676	July 2	227	68	14	37
Powell, T., assignor to L. Ladomus, Philadelphia, Pa. Burglar-alarm	205,679	July 2	232	68, 69	14	38
Price, J. A., Scranton, Pa. Stove-grate	205,503	July 2	42	13	14	14
Price, J. A., Scranton, and W. McClave, Pittston, Pa. Reversible stove-grate	205,680	July 2	233	69	14	38
Quisenberry, J. M., Salem, Va. Mill-spindle	205,504	July 2	42	13	14	14
Rector, H. T., Clinton, (Cady P. O.,) Mich. Plow-cleaner	205,574	July 2	120	35	14	24
Redmond, C. C., assignor of one-half interest to W. H. Henderson, San José, Cal. Weighing attachment for pen and pencil holders	205,575	July 2	120	35	14	24
Reed, E. F., Chelsea, Mass. Vapor-burner	205,505	July 2	43	13	14	14
Reed, J. V. D. (See McNary, W. H., assignor.)						
Reynolds, J. B. (See Dennis, S. W., assignor.)						
Reynolds, W. N. (See Chalmers and Reynolds.)						
Richardson, J. P., Cambridgeport, Mass. Reed-organ	205,682	July 2	235	70	14	38
Robbins, E., Cotuit, Mass. Ship's rudder	205,506	July 2	44	14	14	14
Robbins, J. A., assignor of one-half interest to W. E. Carlton and E. W. Arnold, Boston, Mass. Pepper or table-salt bottle	205,576	July 2	121	36	14	24
Rockefeller, W. F. (See Victory, C. H., assignor.) (Reissue.)						
Rogers, B. F., Lathrop, Mo. Weighing-scales	205,684	July 2	237	70	14	39
Rogers, W. H., Williamson, N. Y. Fruit-drying house	205,683	July 2	236	70	14	38
Rohrbach, W. Y., Krisb's Farm, Pa. Cover for casing-heads of oil-wells	205,577	July 2	121	36	14	24
Romaine, J. D., Springdale, Iowa. Fence-post	205,685	July 2	238	71	14	39
Rose, J., and P. Benjamin, New York, N. Y. Chromatic tempering-scale	205,578	July 2	122	36	14	24
Row, E., Indiana, Pa. Fire-escape	205,579	July 2	123	37	14	25
Rowen, N., and M. D. Miller, Oswego, Kans. Weather-strip	205,686	July 2	239	71	14	39
Rusk, S. E., Catskill, N. Y. Telephone call-signal	205,580	July 2	124	37	14	25
Saxby, S. D., Trenton, Mo. Reciprocating churn attachment	205,687	July 2	239	71	14	39
Scarritt, N., Kansas City, Mo. Clothes-drier	205,581	July 2	124	37	14	25
Schmidt, C., Lancaster, Pa. Double-acting force-pump	205,688	July 2	240	71, 72	14	39
Schreyer, G., Columbus, Ohio. Axle-skein	205,689	July 2	241	72	14	39
Shepard, G. A. (See White, C. H., assignor.)						
Shepherd, C. C., Passaic, N. J. Slate	205,582	July 2	125	37	14	25
Sheridan Horse Nail Company. (See Hutchinson and Armstrong, assignors.)						
Shethar, S., *et al.* (See Gouge, H. A., assignor.)						
Shiver, E., Pittsburg, Pa. Spring motor	205,690	July 2	242	72, 73	14	39
Sibley, S., Chelsea, Mass. Hose-coupling	205,507	July 2	45	14	14	15
Simis, T., Hamburg, Germany. Venetian blind	205,691	July 2	245	73	14	39
Slayton, N. B., Rochester, N. Y. Apparatus for reducing metal for dental purposes	205,508	July 2	45	14	14	15
Sleicher, W., Jr., Troy, N. Y. Melting and refining iron, and furnace therefor	205,692	July 2	246	73	14	40
Smith, B. C., assignor to Hayden & Smith, Auburn, N. Y. Hame	205,695	July 2	249	74	14	40
Smith, D. P., *et al.* (See Ebert, W. C., assignor.) (Reissue.)						
Smith, E., Norwich, N. Y. Hydraulic dredging apparatus	205,584	July 2	126	38	14	25
Smith, J. A. (See Whiting and Smith.)						
Smith, J. F., Tyler, Tex. Corn-cob splitter	205,693	July 2	248	74	14	40
Smith, O. J., Wauwatosa, Wis. Whiffletree-hook	205,583	July 2	126	38	14	25
Smith, P. (See Havenhill, E., assignor.)						
Smith, S. T., Kasson, Minn., assignor to S. H. and E. Y. Moore, Chicago, Ill. Stove-polishing composition	205,694	July 2	249	.....	14	40
Snow, C. P., assignor of one-half interest to H. Bright, Freeport, Ill. Plow	205,509	July 2	47	14	14	15
Spearman, J. R., Silver Street, S. C. Bee-hive	205,585	July 2	127	38	14	25
Speer, J. T., Oelwein, Iowa. Permutation-lock	205,586	July 2	128	38	14	25
Sprague, S. H., *et al.* (See Westinghouse, G., Jr., assignor.)						
Steinway, C. F. T., assignor to himself and W. Steinway, New York, N. Y. Piano-forte repeating-action	205,696	July 2	250	74, 75	14	40
Steinway, W. (See Steinway, C. F. T., assignor.)						
Stewart, W. J., St. Louis, Mo. Sewing-machine	205,698	July 2	252	75	14	40
Stillman, G. G. (See Grigg, T. H., assignor.)						
Stinde, H. F., Steelville, Ill. Millstone-ventilator	205,510	July 2	48	15	14	15
St. John, J. M. (See St. John, S. H. and J. M.)						
St. John, S. H. and J. M., assignors to J. S. and D. E. McDaniel and S. H. St. John, Cedar Rapids, Iowa. Barbed fence-wire	205,697	July 2	251	75	14	40
Strifler, D. O., St. Louis, Mo. Fire-escape	205,511	July 2	49	15	14	15
Swan, T. B., Mechanic Falls, Me. Lifting and force pump	205,699	July 2	254	76	14	40
Sweeney, A., assignor of one-half interest to J. Mathewson, San Francisco, Cal. Boiler-covering	205,587	July 2	129	39	14	26
Talcott, W. O. (See Dudlong and Talcott.)						
Tasker, S. P. M., Philadelphia, Pa. Metal-bending machine	205,588	July 2	129	39	14	26
Thompson, M. C. (See King, G. D., assignor.)						
Thorn, E., *et al.* (See Holub, F., assignor.)						
Todd, L. I., Chicago, Ill. Rumbler for cleaning castings. (Reissue)	8,310	July 2	270	80	14	42
Torrey, J. R., Worcester, Mass. Razor-strop	205,512	July 2	52	15	14	15
Tough, G. C., Bay City, Mich. Chain-wheel	205,513	July 2	53	16	14	16
Tresch, M. J., and H. F. Urey, Edenburg, Pa. Sash-balance	205,514	July 2	53	16	14	16
Tubbs, N. J., and J. Wagner, St. Joseph, Mo. Combined suction and force pump	205,700	July 2	254	76	14	41
Turner, H. A., Bedford county, Va. Fly-fan motor	205,701	July 2	255	76	14	41
Upham, A. J., assignor of one-third interest to J. H. Lawrence, Sterling, Ill. Barbed-wire fence	205,702	July 2	256	76	14	41
Urey, H. F. (See Tresch and Urey.)						
Vernon, G. W. (See Vernon, R. L. and G. W.)						
Vernon, R. L. and G. W., Greensborough, N. C. Railway-switch signal	205,703	July 2	256	77	14	41
Vernon, W. E., Oskaloosa, Iowa. Coffee or nut roaster	205,589	July 2	130	39	14	26
Victory, C. H., assignor to W. F. Rockefeller, Albany, N. Y. Bale-tie. (Reissue)	8,314	July 2	276	81	14	43
Von Culin, M., Delaware City, Del. Dog-collar	205,515	July 2	54	16	14	16
Wagner, J. (See Tubbs and Wagner.)						
Waite, J. H., Orange, Mass. Bill-file	205,704	July 2	258	77	14	41
Waller, C., Jr., Baraboo, Wis. Gate-latch	205,590	July 2	131	39	14	26
Walsh, P. R., Vallejo, Cal. Wagon-axle	205,591	July 2	132	40	14	26
Walter, W., Latrobe, Pa. Nut-lock	205,705	July 2	258	77	14	41
Ware, A. E., Hancock, N. H. Sap-bucket	205,592	July 2	132	40	14	26
Waring, W. C., Jr., Yonkers, N. Y. Hat	205,706	July 2	259	77	14	41
Warrell, N. (See Cotter and Warrell.)						
Warren, C. T., assignor of one-half interest to G. W. Leonard, Atlanta, Ga. Brake for vehicles	205,707	July 2	260	78	14	41

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Warren, F. P., Springfield, Mass. Heel-shave for boots and shoes	205,593	July 2	133	40	14	26
Weiand, B., assignor of one-half interest to J. Whiteley, Philadelphia, Pa. Carpet fabric	205,708	July 2	261	78	14	41
Welch, S. (See Hoffmann, F. A., assignor.)						
Wells, O., Newberry, S. C. Coupling for the joints of logs	205,709	July 2	262	78	14	41
Welsh, T. W., *et al.* (See Westinghouse, G., Jr., assignor.)						
Westinghouse, G., Jr., assignor of four-tenths interest to R. Bagley, H. H. Westinghouse, T. W. Welsh, J. Caldwell, and S. H. Sprague, Pittsburg, Pa. Governor for marine engines	205,710	July 2	262	78	14	41
Westinghouse, H. H., *et al.* (See Westinghouse, G., Jr., assignor.)						
Wheeler, E. R., Merrimac, Mass. Vehicle-spring brace	205,594	July 2	134	40	14	26
Whipple, J. N., Volga City, Iowa. Vehicle running-gear	205,595	July 2	134	41	14	26
White, C. H., Danbury, assignor to himself and G. A. Shepard, Bethel, Conn. Block for forming hat-brims	205,597	July 2	136	41	14	27
Whiteley, J. (See Weiand, B., assignor.)						
Whitin, C. E., trustee. (See Nagle, A. F., assignor.)						
Whiting, A., and J. A. Smith, Rochester, N. Y. Machine for raising leather from tan-vats	205,596	July 2	135	41	14	26
Whitmarsh, J. W., Galesburg, Ill. Nut-lock	205,712	July 2	205	79	14	42
Whittemore, G. W. (See Halvorson, H., assignor.)						
Whittemore, S. E., Bristol, R. I. Rubber boot and shoe	205,711	July 2	264	79	14	42
Wikidal, W. A., *et al.* (See Gibbs, L., assignor.)						
Willis, E., Ayer, Mass. Cement	205,598	July 2	137	.....	14	27
Wood, R. B., Richmond, Va. Medicinal beverage	205,713	July 2	266	.....	14	42
Worman, A. B. (See Miller and Worman.)						
Wragg, S. (See Brocious, Bensinger, and Wragg.)						
Yaryan, H. T., Richmond, Ind. Refining fat-oils	205,516	July 2	55	16	14	16
Yeagley, J. B., Indianapolis, Ind. Sash-holder	205,517	July 2	56	17	14	16
Young, W., Easton, Pa. Candlestick	205,599	July 2	137	41	14	27
Yunginger, F., Baltimore, Md. Meat-can	205,714	July 2	267	79	14	42

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 2d DAY OF JULY, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Annunciator-alarms. Switch for	A. Gerard	205,540	July 2	81	23	14	19
Axle-skein	G. Schreyer	205,589	July 2	241	72	14	30
Axle. Wagon-	P. R. Walsh	205,591	July 2	132	40	14	26
Bale-tie	C. H. Victory. (Reissue)	8,314	July 2	276	81	14	43
Barber's appliance	J. P. Molitor	205,495	July 2	32	10, 11	14	13
Basins. Valve for	T. Hennessy and H. Dorgan	205,549	July 2	80	25	14	20
Bath attachment	E. Knessner and F. Avril	205,490	July 2	27	9	14	12
Bedstead. Invalid-	J. W. Lovins and H. Gibson	205,659	July 2	205	61	14	35
Bee-hive	J. R. Spearman	205,585	July 2	127	38	14	25
Belt-fastener	S. Budlong and W. O. Talcott	205,610	July 2	150	45	14	28
Bending machine. Metal-	S. P. M. Tasker	205,588	July 2	129	39	14	26
Blind. Venetian	T. Simis	205,601	July 2	245	73	14	39
Bobbin-winder	W. Duchemin	205,532	July 2	72	21	14	18
Boiler-covering	A. Sweeney	205,567	July 2	130	39	14	26
Boilers. Fire-box for steam-	S. Fox	205,625	July 2	166	49	14	30
Boot and shoe nailing machine	J. E. Kimball	205,659	July 2	197	59	14	34
Boot and shoe. Rubber	S. E. Whittemore	205,711	July 2	264	79	14	42
Boot and shoe seams. Machine for rubbing	W. Manley	205,502	July 2	105	30, 31	14	22
Boots and shoes. Heel-shave for	F. P. Warren	205,583	July 2	133	40	14	26
Boots and shoes. Manufacture of	J. Northrup	205,571	July 2	117	34	14	24
Bottle. Pepper or table-salt	J. A. Robbins	205,576	July 2	121	36	14	24
Bottle-stopper fastener	R. Halvorson	205,546	July 2	87	24	14	20
Braid. Star	A. Moll	205,567	July 2	110	32	14	23
Brake. Car-	H. H. Garrison	205,537	July 2	77	22	14	19
Brake. Vehicle-	C. T. Warren	205,707	July 2	260	78	14	41
Brick-machine	J. E. Allen and P. F. Duffy	205,602	July 2	141	43	14	27
Brush-blocks. Machine for boring	A. Nawadny	205,497	July 2	34	11	14	13
Bucket. Sap-	A. E. Ware	205,592	July 2	132	40	14	26
Buckle. Trace-	E. G. Latta	205,715	July 2	267	79	14	42
Bung-bush	G. H. Mixer	205,494	July 2	31	10	14	13
Burglar-alarm	T. Powell	205,679	July 2	232	68, 69	14	38
Burial-casket	O. M. Johnston	205,555	July 2	99	28	14	21
Can. Meat-	F. Yunginger	205,714	July 2	267	79	14	42
Can. Sheet-metal	I. Porter	205,677	July 2	228	68	14	37
Can. Sheet-metal	R. Porter	205,676	July 2	227	68	14	37
Cans. Refrigerating-plug for	J. J. Johnson	205,486	July 2	23	7	14	11
Candlestick	W. Young	205,599	July 2	137	41	14	27
Cant-dog	E. Broad	205,523	July 2	62	18	14	17
Car and coach heater. Railway-	C. C. Newton	205,570	July 2	116	34	14	23
Car-coupling	J. H. Gassaway	205,628	July 2	168	50	14	31
Car-door	R. H. Coleman	205,477	July 2	13	5	14	10
Car-heater	F. S. Bissell	205,468	July 2	6	2	14	9
Car-propelling device	H. A. Kauffie	205,651	July 2	196	59	14	34
Car. Ventilated grain-	H. A. Gouge	205,634	July 2	175	52	14	31
Cars. Draw-bar for street-	A. W. Eggleston	205,622	July 2	163	49	14	30
Cars. Fender for street-	S. Brisac and W. Barbe	205,471	July 2	8	3	14	10
Carboys. Case for	J. H. Coleman	205,614	July 2	153	46	14	29
Carding-machines. Screen for	W. J. English. (Reissue)	8,313	July 2	275	81	14	43
Carpet fabric	H. Hardwick	205,638	July 2	179	54	14	32
Carpet fabric	B. Weiand	205,708	July 2	261	78	14	41
Castings. Rumbler for cleaning	L. I. Todd. (Reissue)	8,310	July 2	270	80	14	42
Cement	E. Willis	205,598	July 2	137	.....	14	27
Cement. Manufacture of hydraulic	W. Cummings and J. Bennett	205,616	July 2	155	.....	14	29
Chain-wheel	G. C. Tough	205,513	July 2	53	16	14	16
Check-rower	A. R. Biddle	205,466	July 2	4	2	14	9
Chicken-coop	G. H. Bronson	205,609	July 2	150	45	14	28
Churn	S. B. Donaldson	205,620	July 2	161	48	14	30
Churn attachment. Reciprocating	S. D. Saxby	205,687	July 2	239	71	14	39
Churning apparatus	A. Beck	205,521	July 2	60	18	14	17
Cigar-case	O. Hammerstein	205,462	July 2	19	6	14	11
Cigarette mouth-piece	A. B. Citroen	205,475	July 2	12	4	14	10
Cloth-stretching machine	G. D. King	205,489	July 2	26	8, 9	14	12
Clothes-drier	N. Scarritt	205,581	July 2	124	37	14	25
Coffee or nut roaster	W. E. Vernon	205,589	July 2	130	39	14	26
Coin-tester	E. Lueders	205,492	July 2	29	9	14	12
Collar	H. O. Conaway	205,526	July 2	68	20	14	17
Compasses	T. H. Grigg	205,543	July 2	83	23	14	19
Corn and other cereal grains. Drying, curing, and renovating Indian	F. A. Luckenbach and A. De Bevoise.	205,660	July 2	206	62	14	35
Corn-cob splitter	J. F. Smith	205,693	July 2	248	74	14	40
Corset. Skirt-supporting	J. H. Foy	205,479	July 2	16	5	14	11
Cultivator	J. George	205,630	July 2	170	51	14	31
Cultivator and seeder	B. F. Morris and E. H. Austin	205,668	July 2	218	65	14	36
Cups. Securing-handles to tin	G. W. Knapp	205,653	July 2	199	60	14	34
Curtain-fixture	J. K. Macfarlane	205,493	July 2	30	10	14	12
Dental pluggers. Motor for	S. W. Dennis	205,619	July 2	159	48	14	29

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dental purposes. Apparatus for reducing metal for	N. B. Slayton	205,508	July 2	45	14	14	15
Dental tool	R. Arthur	205,462	July 2	1	1	14	9
Dog-collar	M. Von Culin	205,515	July 2	54	16	14	16
Drawing-frames. Stop-motion for	W. S. Kelley	205,558	July 2	102	29	14	22
Dredging apparatus. Hydraulic	E. Smith	205,584	July 2	126	38	14	25
Drills. Feed attachment for guano-	H. P. Nusbaum	205,671	July 2	221	66	14	37
Egg-tester	F. B. Harris	205,547	July 2	88	25	14	20
Fare-box	W. H. Hornum	205,646	July 2	188	57	14	33
Fence. Barbed	E. Havenhill	205,639	July 2	179	54	14	32
Fence. Barbed-wire	A. J. Upham	205,703	July 2	256	76	14	41
Fence-post	J. D. Romaine	205,685	July 2	238	71	14	39
Fence-wire. Barbed	O. Pederson	205,501	July 2	38	12	14	14
Fence-wire. Barbed	S. H. and J. M. St. John	205,697	July 2	251	75	14	40
Fender	R. Austin and W. H. Gardiner	205,463	July 2	2	1	14	59
Fermenting-vessels. Apparatus for regulating the pressure in a series of	J. M. Pfandler	205,572	July 2	118	34	14	24
File. Bill-	J. H. Waite	205,704	July 2	258	77	14	41
File-guard	M. P. Ayres	205,519	July 2	59	17	14	16
Fire-alarm indicators. Thermoscope for	A. Gerard	205,538	July 2	79	23	14	19
Fire-escape	E. Row	205,579	July 2	123	37	14	25
Fire-escape	D. O. Strifler	205,511	July 2	49	15	14	15
Fire-extinguisher	H. S. Parmelee	205,672	July 2	229	66	14	37
Flour-bolt	M. C. Cogswell and W. H. Finn	205,476	July 2	12	4	14	10
Flower-stand	R. Murdock	205,670	July 2	221	65, 66	14	37
Fly-trap	A. G. Babcock	205,464	July 2	2	1	14	9
Fruit-drier	W. C. McDowell and E. C. Ewell	205,662	July 2	208	62	14	35
Fruit-drying house	W. H. Rogers	205,683	July 2	236	70	14	38
Garments. Apparatus for cleaning	T. Patton	205,673	July 2	224	66	14	37
Gas-regulator	A. W. Porter and F. M. Grimes	205,678	July 2	229	68	14	38
Gate	J. M. Mendenhall	205,565	July 2	109	31	14	23
Gold and silver ores for milling. Preparing	R. M. Fryer	205,536	July 2	76	.....	14	19
Governor for marine engines	G. Westinghouse, Jr	205,710	July 2	262	78	14	41
Grain-binder	A. Goodyear, 2d. (Reissue)	8,318	July 2	280	82, 83	14	44
Grain-drier	J. Corbin	205,530	July 2	70	20	14	18
Grain steamer and drier	F. A. Hoffmann	205,551	July 2	92	26	14	20
Grain steaming and drying	A. De Bevoise and F. A. Luckenbach	205,606	July 2	146	44	14	28
Grocer's measures. Receptacle for	M. R. Miller and A. B. Worman	205,665	July 2	216	64	14	36
Hame	R. C. Smith	205,695	July 2	249	74	14	40
Harrow-tooth fastening	J. H. and T. K. Barley	205,520	July 2	59	17	14	16
Harrow. Wheel-	F. Bramer	205,608	July 2	148	45	14	28
Hat	W. C. Waring, Jr	205,706	July 2	259	77	14	41
Hat-brims. Block for forming	C. H. White	205,597	July 2	136	41	14	27
Hatchway-door mechanism	R. F. Bancroft and J. I. Ashmore	205,605	July 2	145	44	14	28
Heddle-rod tightener	J. Butterworth	205,611	July 2	151	46	14	29
Hoe	W. Bundy	205,472	July 2	9	3	14	10
Hoe	A. H. Miller	205,667	July 2	218	64, 65	14	36
Horse-collar fastening	R. S. Lafferty	205,654	July 2	200	60	14	34
Horse-power	W. G. McComas	205,563	July 2	106	31	14	22
Horse-rack	E. S. Blair	205,522	July 2	61	18	14	17
Horseshoe-blanks. Machine for creasing, punching, and swaging	F. Holub	205,645	July 2	187	57	14	33
Horseshoe-machine	F. Holub	205,644	July 2	185	55, 56	14	33
Horseshoe-nails. Machine for forging	J. A. Hutchinson and D. Armstrong	205,554	July 2	95	27, 28	14	21
Hose-coupling	S. Sibley	205,507	July 2	45	14	14	15
Hydraulic jack	M. Pennypacker	205,674	July 2	224	67	14	37
Ice. Apparatus for refrigerating the non-congealable liquid employed in the manufacture of	D. L. Holden	205,642	July 2	183	55	14	33
Ice-machines. Condenser for	D. L. Holden	205,641	July 2	182	54	14	32
Ice. Method and apparatus for producing	D. L. Holden	205,643	July 2	184	55	14	33
Indicator. Electric auto-pneumatic water-	A. Gerard	205,539	July 2	80	22	14	19
Injector and ejector. Combined atmospheric	J. H. Irwin	205,650	July 2	194	58, 59	14	34
Iron and furnace therefor. Melting and refining	W. Sleicher, Jr	205,692	July 2	246	73	14	40
Jar and can. Preserve	H. Blackburn	205,469	July 2	7	2	14	10
Knife for cutter-heads	P. C. McGrath	205,564	July 2	108	31	14	23
Knitting-machine	W. H. McNary	205,663	July 2	209	62, 63	14	36
Lamp-chimneys. Manufacture of glass	E. D. Dithridge	205,478	July 2	15	5	14	11
Lamp-extinguisher	W. C. Ebert. (Reissue)	8,309	July 2	268	80	14	42
Lamp. Ship's	R. Hitchcock	205,640	July 2	180	54	14	32
Lamp. Street-	J. Bird	205,607	July 2	147	45	14	28
Lantern	J. H. Irwin	205,648	July 2	191	58	14	33
Lantern	J. H. Irwin	203,649	July 2	193	58	14	34
Latch. Gate-	C. Waller, Jr	203,590	July 2	131	39	14	26
Lathe for turning ovals	M. Chittenden and W. A. Lyon	205,474	July 2	11	4	14	10
Leather from tan-vats. Machine for raising	A. Whiting and J. A. Smith	205,596	July 2	135	41	14	26
Lifting-jack	R. F. Hageman	205,635	July 2	176	53	14	32
Lifting-jack	J. W. Harbaugh	203,636	July 2	177	53	14	32
Lock. Permutation-	J. T. Speer	205,586	July 2	128	38	14	25
Logs. Coupling for the joints of	O. Wells	205,709	July 2	262	78	14	41
Lubricator	H. Brocious, H. E. Bensinger, and S. Wragg.	205,524	July 2	63	18	14	17
Meal cooling and drying apparatus	O. M. Morse	205,669	July 2	220	65	14	36
Medicinal beverage	R. B. Wood	205,713	July 2	266	.....	14	42
Mill-spindle	J. M. Quisenberry	205,504	July 2	42	13	14	14
Mills. Guide for the stems of stamp-	F. P. Picking	205,573	July 2	119	35	14	24
Millstone-dress	R. L. Duncan	205,533	July 2	73	21	14	18
Millstone-dress	T. D. Jones	205,556	July 2	100	29	14	21
Millstone-dress	S. Keim	205,557	July 2	101	29	14	22
Millstone-ventilator	H. F. Stinde	205,510	July 2	48	15	14	15
Motor. Fly-fan	H. A. Turner	205,701	July 2	255	76	14	41
Motor. Spring-	E. Shiver	205,690	July 2	242	72, 73	14	39
Nut-lock	W. Walter	205,705	July 2	258	77	14	41
Nut-lock	J. W. Whitmarsh	205,712	July 2	265	79	14	42
Oils. Refining fat-	H. T. Yaryan	205,516	July 2	55	16	14	16
Ore-separator	S. W. Bullock	205,525	July 2	64	19	14	17
Organ-action	J. R. Parker	205,499	July 2	35	12	14	13
Organ. Reed-	J. P. Richardson	205,682	July 2	235	70	14	38
Organs. Valve for reed-	A. S. Field	205,624	July 2	165	49	14	30
Paper box	C. M. Arthur	205,603	July 2	142	44	14	27

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Paper-cutting machine	L. P. Cohen	205,527	July 2	66	19	14	17
Paper dish	T. Donahue	205,531	July 2	71	21	14	18
Pen and pencil holders. Weighing attachment for	C. C. Redmond	205,575	July 2	120	35	14	24
Photographic negative	G. Hoelle and A. Hoemeier	205,484	July 2	21	.....	14	11
Piano-forte attachment	M. W. Hanchett. (Reissue)	8,319	July 2	283	84	14	44
Piano-forte repeating action	C. F. T. Steinway	205,696	July 2	250	74, 75	14	40
Pile	J. Corry	205,615	July 2	154	47	14	29
Planter and marker. Corn	F. C. Frost	205,535	July 2	74	22	14	19
Planter. Corn	O. S. Denning	205,618	July 2	157	47	14	29
Planter. Corn	F. E. Josel	205,487	July 2	23	8	14	12
Planter, marker, and cultivator. Corn	L. A. Cooper	205,529	July 2	69	20	14	18
Plow	I. Gibbs	205,631	July 2	171	51	14	31
Plow	C. E. Hunter	205,552	July 2	93	26	14	20
Plow	J. Lane	205,491	July 2	28	9	14	12
Plow	L. Ling	205,657	July 2	203	61	14	35
Plow	C. P. Snow	205,509	July 2	47	14	14	15
Plow. Bog-cutting	A. B. Cady	205,612	July 2	152	46	14	29
Plow-clearer	H. T. Rector	205,574	July 2	120	35	14	24
Plow. Rotary mold-board	N. Palmer	205,498	July 2	35	11	14	13
Press. Baling	P. K. Dederick. (Reissue)	8,311	July 2	272	80	14	43
Press. Baling	P. K. Dederick. (Reissue)	8,312	July 2	273	81	14	43
Press for pressing bricks and concrete blocks	A. F. Nagle	205,569	July 2	111	33	14	23
Press. Hay and cotton	P. K. Dederick. (Reissue)	8,316	July 2	278	82	14	43
Press. Hay and cotton	P. K. Dederick. (Reissue)	8,317	July 2	279	82	14	44
Press. Oil	J. T. Harbine	205,637	July 2	178	53	14	32
Pump. Combined suction and force	N. J. Tubbs and J. Wagner	205,700	July 2	254	76	14	41
Pump. Double-acting force	G. Schmidt	205,688	July 2	240	71, 72	14	39
Pump-handle	J. Chegwidden	205,526	July 2	66	19	14	17
Pump. Lifting and force	T. B. Swan	205,699	July 2	254	76	14	40
Pump-valve	W. L. Miller	205,566	July 2	110	32	14	23
Radiator, &c. Steam-heat	P. Mihan	205,664	July 2	215	64	14	36
Railway-crossing	W. J. Morden	205,496	July 2	33	11	14	14
Railway-rails. Securing	A. J. Acaster	205,600	July 2	138	42, 43	14	27
Railway-switch	E. Gordon and J. A. Duygan	205,420	July 2	17	6	14	11
Railway-switch	L. T. Hay	205,483	July 2	20	6, 7	14	11
Railway-switch signal	R. L. and G. W. Vernon	205,703	July 2	256	77	14	41
Rake. Horse hay	W. H. Hall	205,545	July 2	86	24	14	20
Razor-strop	J. R. Torrey	205,512	July 2	52	15	14	15
Rubber. Hand	C. B. Fuller	205,627	July 2	167	50	14	30
Rudder. Ship's	E. Robbins	205,506	July 2	44	14	14	14
Ruling-machine. Paper	E. J. Piper	205,502	July 2	39	12, 13	14	14
Sad-iron	J. Lidell	205,656	July 2	202	60	14	35
Sad-iron and flutер	W. Chalmers and W. N. Reynolds	205,473	July 2	10	3	14	10
Saddle tree. Harness	W. Fawcett	205,534	July 2	74	21	14	18
Sails. Reefing and furling	C. E. S. Gederen	205,629	July 2	169	50, 51	14	31
Sash-balance	M. J. Tresh and H. F. Urey	205,514	July 2	53	16	14	16
Sash-fastener	J. B. Morris	205,568	July 2	111	32	14	23
Sash-holder	J. B. Yeagley	205,517	July 2	56	17	14	16
Satchel. Life-preserving	B. B. D'Alessandro	205,617	July 2	157	47	14	29
Sawdust. Mechanism for removing	M. Hay	205,548	July 2	88	25	14	30
Scales. Platform weighing	T. Fairbanks	205,623	July 2	164	49	14	30
Scales. Weighing	B. F. Rogers	205,684	July 2	237	70	14	39
Screen. Window	E. L. Lloyd	205,658	July 2	204	61	14	35
Sewing-machine	W. J. Stewart	205,698	July 2	252	75	14	40
Sewing-machine guide	G. M. Peters	205,675	July 2	226	67	14	37
Shoe	L. Graf	205,542	July 2	83	23	14	19
Sifter, scoop, and strainer. Flour	W. F. Kistler	205,560	July 2	103	30	14	22
Skate-sharpener	H. U. Kistner and E. M. Hummel	205,561	July 2	104	30	14	22
Slate	C. C. Shepherd	205,582	July 2	125	37	14	25
Spinning frame. Ring	E. T. Lanphear	205,635	July 2	201	60	14	35
Spring brace. Vehicle	E. R. Wheeler	205,594	July 2	134	40	14	26
Stalk trimmer and cutter	L. I. Bodenhamer	205,470	July 2	7	3	14	10
Stanchion. Cattle	R. Gidley	205,632	July 2	173	52	14	31
Stave crozing and chamfering machine	G. W. and G. C. Grodhaus	205,544	July 2	84	24	14	19
Stove-grate	J. A. Price	205,503	July 2	42	13	14	14
Stove-grate. Reversible	J. A. Price and W. McClave	205,690	July 2	233	69	14	38
Stove-polishing composition	S. T. Smith	205,694	July 2	249	.....	14	40
Stove. Self-extinguishing car	F. S. Bissell	205,467	July 2	5	2	14	9
Stump-burner	D. Bates	205,465	July 2	3	1	14	9
Sun-dial	J. W. Holmes	205,485	July 2	21	7	14	11
Surveying-instruments. Tripod for	W. Gurley	205,481	July 2	18	6	14	11
Tea-pot	N. Plympton. (Reissue)	8,315	July 2	277	82	14	43
Telephone call-signal	S. E. Rusk	205,580	July 2	123	37	14	25
Tempering-scale. Chromatic	J. Rose and P. Benjamin	205,578	July 2	122	36	14	24
Toy. Flying	W. S. Hull	205,647	July 2	190	57	14	33
Trunk	J. H. Gill	205,633	July 2	174	52	14	31
Turning treenails. Machine for	W. S. Auchincloss	205,604	July 2	142	44	14	27
Turpentine-scraper	J. C. McCaskill	205,661	July 2	208	62	14	35
Tuyere	J. S. Miller	205,666	July 2	217	64	14	36
Umbrella-frame	E. Charageat	205,613	July 2	153	46	14	29
Valve. Balanced slide	W. R. Gluyas	205,541	July 2	82	23	14	19
Vapor-burner	E. F. Reed	205,505	July 2	43	13	14	14
Vegetable-slicer	N. Edwards	205,621	July 2	162	48	14	30
Vehicle running-gear	J. N. Whipple	205,595	July 2	134	41	14	26
Wagon-rack	C. E. Adamson	205,518	July 2	57	17	14	16
Washer. Clothes	W. Patterson	205,500	July 2	37	12	14	14
Washing-machine	D. A. Cotter and N. Warrell	205,681	July 2	234	69	14	38
Water-closets, &c. Valve for	C. C. Frost	205,626	July 2	166	50	14	30
Water-flow regulator. Automatic	J. P. Hutchinson	205,553	July 2	94	26	14	21
Weather-strip	N. Rowen and M. D. Miller	205,686	July 2	239	71	14	39
Weighing-device	R. Kirkpatrick	205,559	July 2	102	29	14	22
Wells. Cover for casing-heads of oil	W. Y. Rohrbach	205,577	July 2	121	36	14	24
Whiffletree-hook	J. O. Smith	205,583	July 2	126	38	14	25
Wire-drawing pinchers	V. D. P. Kenerson	205,488	July 2	25	8	14	12
Wire-straightener	J. Adt	205,601	July 2	140	43	14	27
Wood-splitting machine	E. A. Hildreth	205,550	July 2	90	25, 26	14	20

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DECISIONS OF THE COURTS.

U. S. Circuit Court—District of Connecticut.

HART, BLIVEN & MEAD MANUFACTURING COMPANY *vs.* SARGEANT & CO., AND JOSEPH B. SARGEANT.

The second claim of reissue Letters Patent No. 5,408, granted the Hart, Bliven & Mead Company, assignees, May 13, 1873, is invalid. That the gravers in graduating the carpenter's square, commence at the measuring-edge and advance across the face of the square is an invention anticipated by Letters Patent of Heman Whipple No. 16,817, granted March 17, 1857.

The novelty of the third, fifth, and sixth claims of the reissue patent, and their infringement by the machine described in Letters Patent of Charles S. Bennett, June 14, 1870, (?) determined.

Though the defendants' machine had but a single graver or cutting-tool, while that of the complainants carried a set of three hundred and twenty-four, yet as the manner of cutting—the *modus operandi*—of the two machines was essentially the same, infringement was decreed.

Differences which are merely formal, not affecting the substantial principle of operation of the machine, held not sufficient to avoid liability from unlicensed use.

[*Chas. E. Mitchell* and *Benj. F. Thurston*, for complainants; *Charles F. Blake* and *John S. Beach*, for defendants.]

SHIPMAN, *J.*:

This is a bill in equity, founded upon the alleged infringement by the defendants of reissued letters patent, dated May 13, 1873, and granted to the plaintiffs, as assignees of Horace K. Jones, for improvements in machinery for graduating carpenters' squares. The original patent to the plaintiffs, then known as "The Hart Manufacturing Company," was dated August 10, 1869.

The following were alleged to be the peculiar features of the invention:

First. The cutting of the graduation marks or lines commenced at the measuring-edge, and from thence extended inward, instead of commencing at or near the center of the square, whereby a clear and not a ragged cut was made at the measuring-edge, and danger of deviation from the proper point at the edge was avoided. This peculiarity had been anticipated by the invention of Heman Whipple, which was patented March 17, 1857.

Second. The lengths of the lines graved were regulated by arresting the cutting action of the graver when in motion, and allowing it to continue its forward movement without cutting the square, making what is called a "flying cut." This peculiarity is thus further described in the specification:

> The gravers * * * are operated in such manner, by means of cams and springs, that the said gravers can be alternately thrown into and out of action during their stroke, and remain in action for a predetermined period of time to cut graduation-marks of varying lengths.

The advantages of this mode of operation are that the lines are made of uniform depths, and that the inner end of the mark terminates abruptly, and that the chip is lifted from the line by the onward movement of the graver.

Third. The tool rests in the holder in a groove of the exact inclination of its sides, into which it fits, and is pressed into its position by a set-screw. This insures the tool always being reinserted in the same position when removed from the machine for sharpening.

Fourth. A new clamping device is used which holds firmly squares of varying tapers. The device is thus described in the specification:

> P is a fixed jaw for holding the square to be graduated. This jaw is rigidly secured to the frame of the machine so that its under face is parallel to the axis of the shaft D, or, in other words, parallel to that longitudinal line upon which the points of the series of gravers act. M is the movable jaw of the vise, which is held in place by screws passing through slots in the jaw M into the frame, so that said jaw is free to play up and down at either or both ends; and it is pressed up against the fixed jaw P (or against any object placed between said jaws) by means of the cam N, operated by the treadle O to bear upon the jaw M near the middle of its length.

The gravers of plaintiffs' machine are arranged in sets, mounted on horizontal bars supported by two vertical revolving disks. There is a separate graver and separate tool-holder for each mark, so that to graduate a square twenty-four inches long to sixteenths of an inch three hundred and twenty-three gravers and tool-holders are required. One machine of this kind was in use at the factory of the plaintiffs for about eighteen months. During this time, Charles S. Bement,

a workman in their employ, undertook to make, and did make, for them an improved machine which had but one graver and one tool-holder, and in which the square passed under the tool by means of an intermittent feed. A patent for this machine, which the deponents are now using, was granted to Mr. Bement on June 14, 1870.

The plaintiffs claimed upon the trial that the Bement machine infringed the 2d, 3d, 5th, and 6th claims of their patent. It is unnecessary to examine the question of infringement of the 2d claim, as it was conceded that it was anticipated by the Whipple invention. The three remaining claims are as follows:

3. The construction of the tool and socket so that the edge of the tool fits into a V-shaped recess, the angle of which is in line with the working-point of the tool, substantially as and for the purpose herein described.

5. In a machine for cutting graduations on squares, &c., the combination of the gravers I and their holders H with cams G and springs *d*, for throwing the gravers out of action at predetermined periods of time during the stroke of the same to cut graduation-marks of varying lengths, substantially as described.

6. The clamping device for holding squares of varying tapers to be graduated, consisting of the fixed jaw P, the rocking adjustable jaw M, and the cam N, in combination, substantially as described.

There is no question of infringement in regard to the 3d and 6th claims. The only question upon this part of the case is that of novelty.

The defendants insist that the V-shaped recess of the third claim was anticipated by the patent of Millington and George, dated August 8, 1854, and by the patent of Horace K. Jones, of January 31, 1865, but in neither of these patents are the V-shaped grooves so arranged as, in the language of the plaintiffs' expert, to "take hold of the cutting-edge of the tool. They are not so arranged as to be invariably in the plane in which the tool makes its stroke." The essence of this claim is that the angle of the V is in line with the working-point of the tool. In the Millington and George patent the groove is on the upper side of the cutter, and in the Jones patent, of 1865, the tool was held by the back and one side. The result was that in these two machines the cutting-edges were not necessarily placed accurately, and required frequent adjustment.

The defendants insist that the device which is mentioned in the 6th claim was anticipated by patents to Louis Filliers, dated April 16, 1861, and to Jeremy W. Bliss, dated November 30, 1852.

These were improved hand-vices, and have no relevancy to a clamp which shall uniformly hold in proper position an article to be graduated by machinery. Such a clamp must be so made that the square shall be necessarily placed in the position which is requisite to insure accuracy. In the plaintiffs' machine, the square was secured by a movable clamp from below the surface. This clamp pressed the square against a shelf, so that the fall of the square was parallel to the plane of action of the graver.

The defendants deny both infringement of the fifth claim and its novelty.

The gist of the fifth claim is "the flying cut," as it is termed in the specification. This peculiarity is described in the claim to be the combination "for throwing the gravers out of action at predetermined periods of time during the stroke of the same to cut graduation-marks of varying lengths." The motion of the graver continues after cutting action has ceased.

The plaintiffs' machine contains an entire set of gravers. These revolve in a true circle, and the square remains stationary. The defendants' machine has but one graver, and the square is moved along by an intermittent feed. The graver returns to its work, after one mark has been made, in a flattened circle. The form of the two machines is necessarily very different, but the mode of operation by which the cutting of the graduating-marks is effected is the same. Each machine has a "flying cut." In each the cutting commences at the edge of the square, and the cutters are thrown out of their work during the stroke by the action of a spring and cam at a predetermined point, when cutting ceases and the forward motion of the cutters is continued. The differences in the mode of operation are formal and not substantial.

The defendants' machine is what it would naturally be from its early history. It was designed to be simply an improvement upon the plaintiffs' structure. It was made with the elder machine before the eye of the inventor. The leading features of the elder machine are retained, while a single graver was ingeniously substituted to do the work of a set of gravers.

Upon the question of novelty, the defendants rely upon the Whipple machine. It is only necessary to say that this machine does not have the flying cut. There is no progressive movement of the graver after it has ceased to cut. "The mark is terminated by arresting the forward motion of the carriage upon which the gravers are mounted." Differences of construction between the Whipple and the plaintiffs' machines are pointed out by the plaintiffs, which it is not necessary to examine.

Let there be a decree for an injunction and an accounting in respect to the 3d, 5th, and 6th claims.

The New Classification.

The commission appointed by the Commissioner of Patents to revise the Official Classification of Subjects of Invention has completed its labors, and the following classification has been adopted, and will supersede the one now in use:

CLASSES OF INVENTIONS.

Advertising	40	Excavating	37
Aeration and bottling	1	Explosives	52
Apparel	2	Felting and hats	38
Arms and projectiles, making	86	Fences	39
Artificial limbs	3	Fertilizers	71
Artificial stone, lime, and cements	106	Fine arts	41
Baths and closets	4	Fire-arms	42
Beds	5	Fishing and trapping	43
Bee-culture	6	Fluid-pressure regulators	50
Bleaching and dyeing	8	Fuel	44
Boats	9	Furniture	45
Book-binding	11	Games and toys	46
Boots and shoes	12	Garden and orchard	47
Brakes and gins	13	Gas	48
Bread, cracker, and lozenge making	107	Glass	49
Brewing and fermenting	7	Grinding and polishing	51
Bridges	14	Hardware, making	53
Brushing and scrubbing	15	Harness	54
Builders' hardware	16	Harrows and diggers	55
Butchering	17	Harvesters	56
Caoutchouc and minor plastics	18	Hides, skins, and leather, chemical treatment	149
Carding	19	Hoisting	57
Care of live stock	110	Horology	58
Carpentry	20	Hose and belting	60
Carriages and wagons	21	Household articles	65
Chains, staples, and horse-shoes	59	Hydraulic engineering	61
Chairs	155	Jewelry	63
Chemicals and medicines	23	Journals and bearings	64
Clasps and buckles	24	Knitting and netting	66
Clay and pottery	25	Lamps and gas-fittings	67
Cloth	26	Laundry	68
Coating with metal	96	Leather	69
Coffins	27	Locks and latches	70
Composite roofing	154	Locomotives	123
Coopering	147	Marine propulsion	115
Cordage	28	Masonry	72
Crinoline and corsets	29	Measuring instruments	73
Curtain-fixtures	156	Mechanical powers	74
Cutlery	30	Metal bending and straightening	153
Dairy	31	Metal boring and drilling	77
Dentistry	32	Metal forging, punching, and shearing	78
Distillation	124	Metal founding	22
Drafting	33	Metal ornamentation	158
Driers	34	Metal personal ware, making	79
Educational appliances	35	Metal-rolling	80
Electricity	36	Metal bolts, nuts, rivets, and screws	10
Metal tempering, annealing, and cementation	148	Seeders and planters	111
Metal tools and implements, making	76	Sewing-machines	112
Metal tubing and wire	134	Sheet-metal-ware making	113
Metal turning, planing, and milling	82	Ships	114
Metal-working tools	81	Signals	116
Metallurgy	75	Silk	117
Mills	83	Spinning	118
Music	84	Stationery	120
Nails, spikes, needles, and pins	85	Steam-boilers	122
Nut and bolt locks	151	Steam-engines	121
Oils, fats, and glue	87	Steam-furnaces	110
Optics	88	Steam-valves	136
Ordnance	89	Stone-working	125
Ore	90	Stoves and furnaces	126
Packing and storing vessels	150	Sugar and salt	127
Painting and graining	91	Surgery	128
Paper-making	92	Tanning	129
Paper manufactures	93	Thrashing	130
Paving	94	Tobacco	131
Photography	95	Toilet	132
Plows	97	Trunks and equipments	133
Pneumatics	98	Umbrellas and fans	135
Preserving	99	Vegetable cutters and crushers	146
Presses	100	Wagon, car, and track irons	152
Printing	101	Washing apparatus	141
Projectiles	102	Water distribution	137
Pumps	103	Water-wheels	138
Railway-cars	105	Weaving	139
Railways	104	Wheelwright-machines	157
Refrigeration	62	Wire-working	140
Roofing	108	Wood-sawing	143
Safes	109	Wood-turning	142
		Wood-working	144
		Wood-working tools	145

The above classes have been grouped, for Office purposes, to form the following—

DIVISIONS.

Division No. 1, Tillage. *Examiner*, Fox. *Classes:* Harrows and Diggers, 55; Plows, 97; Seeders and Planters, 111.

Div. No. 2, Farm Stock and Products. *Examiner*, Jayne. *Classes:* Bee Culture, 6; Brushing and Scrubbing, 15; Butchering, 17; Dairy, 31; Fences, 39; Care of Live Stock, 119; Tobacco, 131; Vegetable Cutters and Crushers, 146.

Div. No. 3, Metallurgy, Distillation, and Refrigeration. *Examiner*, Dyrenforth. *Classes:* Fishing and Trapping, 43; Gas, 48; Refrigeration, 62; Metallurgy, 75; Ore, 90; Metal Coating, 96; Distillation, 124; Sugar and Salt, 127.

Div. No. 4, Civil Engineering. *Examiner*, Pond. *Classes:* Bridges, 14; Carpentry, 20; Excavating, 37; Hydraulic Engineering, 61; Masonry, 72; Railways, 104; Roofing, 108; Curtain Fixtures, 156.

Div. No. 5, Fine Arts, Toys, and Apparel. *Examiner*, Burke. *Classes:* Apparel, 2; Crinoline and Corsets, 29; Educational Appliances, 35; Fine Arts, 41; Games and Toys, 46; Jewelry, 63; Music, 84; Photography, 95; Toilet, 132; Umbrellas and Fans, 135.

Div. No. 6, Chemistry. *Examiner*, Antisell. *Classes:* Brewing and Fermenting, 7; Bleaching and Dyeing, 8; Chemicals and Medicines, 23; Explosives, 52; Fertilizers, 71; Oils, Fats, and Glue, 87; Painting and Graining, 91; Preserving, 99; Hides, Skins, and Leather, 149.

Div. No. 7, Harvesting and Milling. *Examiner*, Parkinson. *Classes:* Brakes and Gins, 13; Garden and Orchard, 47; Harvesters, 56; Mills, 83; Thrashing, 130.

Div. No. 8, Furniture, Bread Making, and Laundry. *Examiner*, Tilden. *Classes:* Beds, 5; Furniture, 45; Laundry, 68; Bread, Cracker, and Lozenge Making, 107; Washing Apparatus, 141; Chairs, 155.

Div. No. 9, Hydraulics and Pneumatics. *Examiner*, Durnall. *Classes:* Aeration and Bottling, 1; Baths and Closets, 4; Pneumatics, 98; Pumps, 103; Water Distribution, 137; Water-Wheels, 138.

Div. No. 10, Carriages, Wagons, and Railway-Cars. *Examiner*, Sanders. *Classes:* Carriages and Wagons, 21; Railway-Cars, 105.

Div. No. 11, Leather Working, Machines, and Articles. *Examiner*, Chapman. *Classes:* Boots and Shoes, 12; Clasps and Buckles, 24; Harness, 54; Hose and Belting, 60; Leather, 69; Tanning, 129; Trunks and Equipments, 133.

Div. No. 12, Mechanical Engineering. *Examiner*, Schoepf. *Classes:* Hoisting, 57; Journals and bearings, 64; Household Articles, 65; Mechanical Powers, 74; Presses, 100.

Div. No. 13, Metal Working. *Examiner*, Church. *Classes:* Chains, Staples, and Horseshoes, 59; Hardware Making, 53; Metal Bending and Straightening, 153; Metal Bolts, Nuts, Rivets, and Screws, 10; Metal Boring and Drilling, 77; Metal Forging, Punching, and Shearing, 78; Metal Personal Ware Making, 79; Metal Rolling, 80; Metal Tubing and Wire, 134; Metal Tools and Implements Making, 76; Metal Turning, Planing, and Milling, 82; Nails, Spikes, Needles, and Pins, 85; Nut and Bolt Locks, 151; Arms Making, 86; Wagon, Car, and Track Irons, 152.

Div. No. 14, Metal Working, Grinding, and Polishing, and Packing Vessels. *Examiner*, Stocking. *Classes:* Grinding and Polishing, 51; Metal Founding, 22; Metal Tempering, Annealing, and Cementation, 148; Metal-Working Tools, 81; Packing and Storing Vessels, 150; Sheet Metal Ware Making, 113; Wire Working, 140.

Div. No. 15, Plastics. *Examiner*, Hedrick. *Classes:* Artificial Stone, Lime, and Cement, 106; Caoutchouc and Minor Plastics, 18; Clay and Pottery, 25; Composite Roofing, 154; Felting and Hats, 38; Fuel, 44; Glass, 49; Paving, 94; Paper Making, 92; Stone Working, 125.

Div. No. 16, Electricity, Measuring Instruments, and Optics. *Examiner*, Townsend. *Classes:* Drafting, 33; Electricity, 36; Horology, 58; Measuring Instruments, 73; Optics, 88.

Div. No. 17, Printing and Paper Manufactures. *Examiner*, Freeman. *Classes:* Advertising, 40; Book-Binding, 11; Paper Manufactures, 93; Printing, 101; Stationery, 120.

Div. No. 18, Steam Engineering. *Examiner*, Fowler. *Classes:* Driers, 34; Fluid-Pressure Regulators, 50; Locomotives, 123; Steam-Boilers, 122; Steam-Engines, 121; Steam-Furnaces, 110; Steam-Valves, 136.

Div. No. 19, Stoves and Lamps. *Examiner*, Catlin. *Classes:* Lamps and Gas-Fittings, 67; Stoves and Furnaces, 126.

Div. No. 20, Surgery and Hardware. *Examiner*, Wilkinson. *Classes:* Artificial Limbs, 3; Builders' Hardware, 16; Coffins, 27; Cutlery, 30; Dentistry, 32; Locks and Latches, 70; Safes, 109; Surgery, 128.

Div. No. 21, Textiles. *Examiner*, Appleton. *Classes:* Carding, 19; Cloth, 26; Cordage, 28; Knitting and Netting, 66; Sewing-Machines, 112; Silk, 117; Spinning, 118; Weaving, 139.

Div. No. 22, Guns, Ships, and Wood-Working. *Examiner*, Bartlett. *Classes:* Boats, 9; Coopering, 147; Fire-arms, 42; Marine Propulsion, 115; Ordnance, 89; Projectiles, 102; Ships, 114; Signals, 116; Wood-Turning, 142; Wood-Working Machines, 144; Wood-Working Tools, 145; Wood-Sawing, 143; Wheelwright Machines, 157.

The classes of inventions have been grouped into these twenty-two Divisions, the primary object being to separate the work of the Office into parts, each capable of being handled by a single Examiner. So far as possible the Divisions have been constituted of cognate inventions. This rule could not be strictly followed, however, because the number of classes to be assigned to any one Division must be determined by the amount of work which the classes so grouped would impose upon an Examiner and the force at his command, usually three or four Assistant Examiners and a clerk. Hence, the Divisions here noted are rather divisions of the Office work than divisions of inventions; therefore, persons ordering copies will order by the Class number rather than the Division number. Under each one of these classes there are several subclasses upon which the Examiners are at present at work. As soon as they are completed they will be published, together with the present information in relation to the new classification.

Of the above classes, all have been photo-lithographed except Artificial Limbs, Class 3; Builders' Hardware, Class 16; Coffins, Class 27; Coopering, Class 147; Cutlery, Class 30; Dentistry, Class 32; Locks and Latches, Class 70; Locomotives, Class 103; Nut and Bolt Locks, Class 151; Safes, Class 109; Steam-Boilers, Class 122; Steam-Engines, Class 121; Steam-Furnaces, Class 110, Steam-Valves, Class 136; Surgery, Class 128; Wheelright-Machines, Class 157; Wood-Sawing, Class 143; Wood-Turning, Class 142; Wood-Working, Class 144; Wood-Working Tools, Class 145; and these are all being reproduced, and before the end of the year it is expected that photo-lithographic copies of the drawings of any patent ever issued by the Government can be obtained in this Office for 25 cents per single copy, or 10 cents each where more than twenty copies are desired. A photo-lithographic copy of any current issue (specification and drawing) can be had at the same price.

The specifications of all patents issued since July 1, 1871, are in print, and will be furnished, with the drawing, without extra charge. The specifications of most of the patents issued from November 20, 1866, to July 1, 1871, are in print, and where such is the case the Office will furnish them with the drawings; but it will not undertake to reprint copies which have been exhausted.

TRADE-MARKS.

[Each certificate bearing date July 9, 1878.]

6,326.—SPICED SEASONINGS.—*William G. Bell & Co.*, Boston, Mass. Application filed May 25, 1878.

"The pictorial representation of a bell with a stag's head above and surrounded by representations of meats, game, fish, poultry, and celery, as shown."

6,327.—CIGARS.—*Louis Cohn*, Chicago, Ill. Application filed May 21, 1878.

"The fancifully-selected words 'LAUREL WREATH,' the representation of a bee-hive, and the pictorial laurel wreath, all as shown."

6,328.—REFINED PETROLEUM.—*W. H. Crossman & Brother*, New York, N. Y. Application filed June 12, 1878.

"The fancifully-selected words 'AMERICAN EAGLE.'"

6,329.—REFINED PETROLEUM FOR ILLUMINATING PURPOSES.—*W. H. Crossman & Brother*, New York, N. Y. Application filed June 25, 1878.

"The fancifully-selected word-symbol 'PALACE.'"

6,330.—LINIMENT.—*Damas B. Dewey*, Brooklyn, N. Y. Application filed June 22, 1878.

"The device, picture, or pictorial representation of the fabled Centaur."

6,331.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Goodman Grodjinski*, Brooklyn, N. Y. Application filed June 11, 1878.

"The arbitrarily-selected word 'KNOW.'"

6,332.—CANNED SOUP, MEATS, FISH, AND FOWL.—*James H. W. Huckins*, Boston, Mass. Application filed June 24, 1878.

"The pictorial representation of a young farmer carrying a sheaf of Indian corn in his arms, as shown."

6,333.—TEA.—*James W. Hamblet*, Brooklyn, N. Y. Application filed June 25, 1878.

"The fancifully-selected words 'EXTRA CONSOLATION.'"

6,334.—LARD.—*T. Robt. Jenkins & Son*, Baltimore, Md. Application filed June 25, 1878.

"The representation of a butterfly and the words 'LA MARIPOSA.'"

6,335.—COTTON-PRESSES.—*Kingsland, Ferguson & Co.*, St. Louis, Mo. Application filed June 24, 1878.

"The arbitrarily-selected word 'PLANTER.'"

6,336.—BOILER-IRON.—*Joseph T. Ryerson*, Chicago, Ill. Application filed June 22, 1878.

"The arbitrarily-selected words and letters 'MARINE FLANGE, T. S.'"

6,337.—CIGARS.—*Voigt & Winter*, Cincinnati, Ohio. Application filed June 10, 1878.

"The arbitrarily-selected words 'EL FLORENTINE' and the monogram 'V. & W.'"

6,338.—LARD.—*William H. Popham & Co.*, New York, N. Y. Application filed July 1, 1878.

"The representation of a llama, as shown."

6,339.—COLLARS, CUFFS, AND BOSOMS.—*Reversible Collar Company*, Boston, Mass. Application filed July 1, 1878.

"The arbitrary word 'LISENE.'"

6,340.—PIANO-FORTES AND PARTS THEREOF.—*Steinway & Sons*, New York, N. Y. Application filed June 20, 1878.

"A figure having the semblance of a lyre, as shown."

6,341.—GUM RESEMBLING INDIA-RUBBER.—*The Rubberoid Company*, Bristol and Philadelphia, Pa. Application filed June 10, 1878.

"The fanciful word 'RUBBEROID.'"

6,342.—WIRE-GAUZE FLY-TRAPS.—*Thomas W. Brown*, Belmont, assignor to *National Manufacturing Company*, Boston, Mass. Application filed June 15, 1878.

"The arbitrarily-selected word 'BALLOON.'"

6,343.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Morris Hirsch*, Brooklyn, N. Y. Application filed July 2, 1878.

"The word-symbol 'THE ANNEX.'"

8,344.—FLOUR.—*S. S. Marvin & Co.*, Pittsburg, Pa. Application filed September 28, 1877.

"The word-symbol 'BREAKFAST CAKE.'"

6,345.—LAMP-CHIMNEYS.—*Muzzy & Co.*, Pittsburg, Pa. Application filed June 22, 1878.

"The term or designation 'KEYSTONE.'"

6,346.—FLOUR.—*S. S. Marvin & Co.*, Pittsburg, Pa. Application filed February 12, 1878.

"The word-symbol 'BATTER CAKE.'"

6,347.—FLOUR.—*S. S. Marvin & Co.*, Pittsburg, Pa. Application filed February 12, 1878.

"The word-symbol 'FLANNEL CAKE.'"

6,348.—ANTI-RHEUMATIC MIXTURE.—*Wladislaw L. Jurgielewicz*, New Orleans, La. Application filed March 2, 1878.

"The word 'JURGIELEWICZ'S' and the representation of a globe."

6,349.—COD-LIVER OIL.—*W. H. Schiefelin & Co.*, New York, N. Y. Application filed May 6, 1878.

"The three cod-fish in the position forming a triangle, as described, and the word 'NORGE,' the letters forming said word placed, in the position as described, within circle surmounted by a caduceus, all as shown."

6,350.—STOVE-POLISH.—*I. X. L. Stove Polish Company*, Grand Rapids, Mich. Application filed July 1, 1878.

"The arbitrary letters 'I. X. L.'"

6,351.—FRIED POTATOES.—*George F. Sleeper*, Lynn, Mass. Application filed June 21, 1878.

"The arbitrarily-selected words 'REVERE BEACH.'"

6,352.—PAPER-CUTTING MACHINES.—*The Standard Machinery Company*, Mystic River, Conn. Application filed June 29, 1878.

"The arbitrarily-selected word 'EXCELSIOR.'"

6,353.—PERFUMERY.—*Young, Ladd & Coffin*, New York, N. Y. Application filed June 29, 1878.

"The fancifully-selected words 'TALLY HO.'"

LABELS.

[Each certificate bearing date July 9, 1878.]

1,610, (Print.)—Title: "CABALISTE."—*Heppenheimer & Maurer*, New York, N. Y. Application filed June 28, 1878.

1,611, (Print.)—Title: "RARUS."—*Heppenheimer & Maurer*, New York, N. Y. Application filed June 28, 1878.

1,612, (Print.)—Title: "MABILLE."—*Heppenheimer & Maurer*, New York, N. Y. Application filed June 28, 1878.

1,613, (Print.)—Title: "HELIOS."—*Heppenheimer & Maurer*, New York, N. Y. Application filed June 28, 1878.

1,614.—Title: "ZEIGLER'S AGUE PAD."—*J. Walter Zeigler & Co.*, Sunbury, Pa. Application filed June 27, 1878.

1,615.—Title: "THE EGG PRESERVER."—*A. B. Thornton*, Boonville, Mo. Application filed May 20, 1878.

1,616.—Title: "CUTTER'S INFALLIBLE RHEUMATIC REMEDY," &c.—*Wilson Cutter*, Burlington, N. J. Application filed June 29, 1878.

1,617.—Title: "ORLANDO."—*S. Fuguet & Sons*, Philadelphia, Pa. Application filed June 22, 1878.

1,618.—Title: "ORLANDO."—*S. Fuguet & Sons*, Philadelphia, Pa. Application filed June 22, 1878.

1,619.—Title: "KINGSFORD'S OSWEGO PURE STARCH."—*Thomson Kingsford*, Oswego, N. Y. Application filed June 24, 1878.

1,620.—Title: "KINGSFORD'S OSWEGO SILVER GLOSS STARCH."—*Thomson Kingsford*, Oswego, N. Y. Application filed June 24, 1878.

1,621.—Title: "WINE, BEEF, CINCHONA, AND PYROPHOSPHATE OF IRON."—*Otto C. Rappold*, Brooklyn E. D., N. Y. Application filed June 26, 1878.

1,622.—Title: "CONZATH'S COMPLEXION POWDER."—*Weller & Co.*, St. Louis, Mo. Application filed February 28, 1878.

DESIGNS.

[Each design bearing date July 9, 1878.]

10,742.—CLOCK-CASE.—*Nathaniel L. Bradley*, Meriden, Conn., assignor to *Bradley & Hubbard Manufacturing Company*, of same place. Application filed June 12, 1878. Term of patent 7 years.

10,743.—GLASSWARE.—*George W. Blair*, Pittsburg, Pa. Application filed July 1, 1878. Term of patent 7 years.

10,744.—CAR-BASKET.—*Andrew S. Brownell*, Watertown, Mass. Application filed May 22, 1878. Term of patent 7 years.

10,745.—FONT OF PRINTING-TYPES.—*Heinrich Ehlert*, Berlin, Prussia, assignor to *James Conner's Sons*, New York, N. Y. Application filed June 15, 1878. Term of patent 7 years.

10,746 to 10,749 inclusive.—MIRROR-FRAMES.—*William S. Kreps*, Brooklyn, N. Y., assignor to *White, Potter & Paige Manufacturing Company*, same place. Applications filed June 27, 1878. Term of patents 7 years.

10,750.—PAPER CASES FOR CIGARETTES.—*Adolph Pearl*, Brooklyn, N. Y. Application filed August 3, 1877. Term of patent 3½ years.

10,751.—STOVE-POLISH PACKAGE.—*Henry S. Ziegler*, Philadelphia, Pa. Application filed May 28, 1878. Term of patent 3½ years.

10,752.—FONT OF PRINTING-TYPES.—*John K. Rogers*, Brookline, Mass. Application filed May 6, 1878. Term of patent 3½ years.

10,753.—COVERINGS FOR CHAIRS, &c.—*Joseph H. Travis*, New York, N. Y., assignor to *M. & H. Schrenkeisen*, same place. Application filed March 6, 1878. Term of patent 3½ years.

DISCLAIMER.

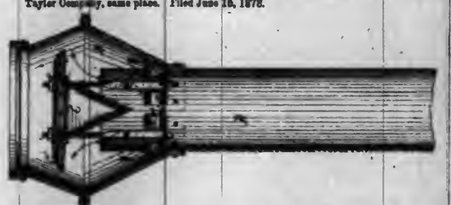
84,517.—*Silas B. Terry*, Waterbury, Conn.; patented December 1, 1868; disclaimer filed July 5, 1878.

"Disclaims combining a dead-beat and recoil escapement, except when the same is produced from flattened metal by bending into the shape and for the purpose substantially as described in the specification of said patent."

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

JULY 9, 1878.

205,716. SPARK-ARRESTERS. Joseph Allcock, Mansfield, Ohio, assignor to the Aultman & Taylor Company, same place. Filed June 15, 1878.

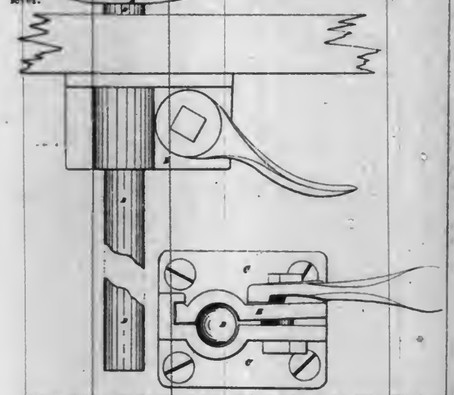


Claim.—1. The lateral openings *a* through the barrel or cylinder of the smoke-pipe, provided with the flaring lips or flanges extending inwardly, substantially as and for the purpose described.

2. The flaring lips to the lateral openings *a* in the barrel or cylinder, those at the bottom extending inwardly and those at the top outwardly, in combination with the cone C and head or bonnet B, constructed and arranged substantially as and for the purpose described.

205,717. BENCH-DOGS. Daniel M. Burdsey, Syracuse, N. Y. Filed Dec. 15, 1877.

Brief.—The dog is vertically adjustable in a frame secured to the under side of a carpenter's bench, said frame having a rigid clamping-jaw formed in its under side, and provided with a lug or grooved part, serving as a hinge for an adjustable jaw, having a cam projection in its outer surface. The dog is secured at any desired position by a cam-lever, in connection with the cam projection and a spring interposed between the projection and cam on the lever.



Claim.—The bench-plate C, adapted to be secured on the under side of a work-bench, the hook B, with circular stem D, with each other, and the lever clamping bar or strap E, operated by a cam and lever, substantially and as herein specified.

205,718. SPINDLE-BEARINGS FOR SPINNING-MACHINES. John Birkenhead, Mansfield, Mass. Filed June 3, 1878.

Brief.—The step and bolster are in one piece, the latter being slitted helically, so as to make it elastic and permit of its springing a little laterally.



Claim.—1. The combined step and elastic bolster, substantially as and for use as described.

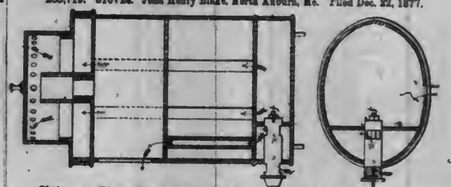
2. The combination of the oil-reservoir with the connected step and the elastic bolster, essentially as specified.

3. The combination of the tubular standard or guard with the oil-receiver, the connected step, and the elastic bolster, all being arranged substantially as set forth.

4. The combination of the spindle and the elastic bolster, applied thereto as described, with the whirl-supporting cap arranged to encompass such bolster and extend down within the oil-receiver, as set forth.

5. The combination of the spindle A, whirl-supporting cap B, elastic bolster E, step F, guard G, and oil-receiver D, all being arranged and applied substantially as shown and described.

205,719. STOVES. John Henry Blake, North Auburn, Me. Filed Dec. 22, 1877.



Claim.—1. The valve or register, Figs. 11 and 12, in combination with the base-piece, Fig. 2, as set forth.

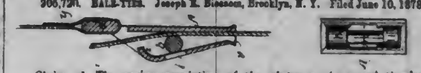
2. The base-piece, with its compartments and aperture, in combination with the valves or registers, Figs. 11 and 12, as herein described.

3. The ventilator, Figs. 4 and 5, as herein described, when employed as set forth.

4. In combination with the ventilating and fire registers of the fire and oven doors, the pipe, Fig. 10, operating as set forth

5. The combination of the smaller compartment in the base, Fig. 2, the registers, Figs. 11 and 12, the tubes, whose position is indicated in Fig. 2, and the oven, Fig. 1, as described.

206,720. BALE-TIES. Joseph R. Bissoon, Brooklyn, N. Y. Filed June 10, 1878.



Claim.—1. The casing consisting of the plates *a a' c e* and the bar *d*, arranged to permit the introduction of the roller *b* within the casing, and to hold it therein by passing the end *g* of the band around the bar, as set forth.

2. The combination, with the sides *a a'* and bar *d*, of the wire *c*, arranged below the said bar *d*, as and for the purpose set forth.

3. The casing provided with openings at either or all four of the sides, as set forth.

4. The casing with its bar *d* arranged centrally, for the purpose set forth.

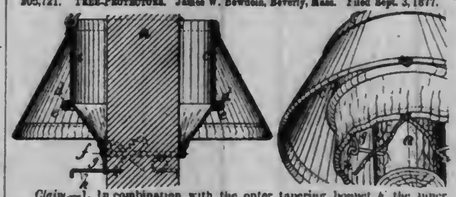
5. The bale-tie having recesses *m*, for the passage of rivet-heads between the casing and roller, substantially as specified.

6. The casing with its flaring mouth *e*, for the purpose set forth.

7. A bale-tie consisting of a case, A, with an internal tapering recess containing a loose roller or wedge, and with holes in the opposite ends for the passage through the same and across the recess of a tying or securing wire, *c*, all as set forth.

8. The combination of the casing and a cross-bar, *d*, opposite the mouth of the casing, flattened, *a*) described, and shown in Fig. 2, for the purpose set forth.

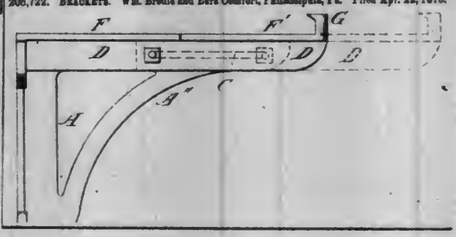
205,721. TREE-PROTECTORS. James W. Bewdoin, Beverly, Mass. Filed Sept. 3, 1877.



Claim.—1. In combination with the outer tapering bonnet *b*, the inner flexible cylindrical bonnet *c*, provided midway with an annular flexible roll, *e*, and terminating in a gathering seam and string, *f*, the two bonnets being united at their upper ends, substantially as and for the purpose set forth.

2. In combination with the double bonnet *b c*, the gathering seam and string *f*, the rings or loops *g g g*, and stationary guides *h h h*, as and for the purpose set forth and shown.

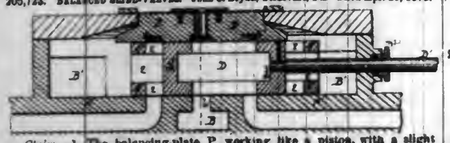
206,722. BRACKETS. Wm. Brodie and Bern Comfort, Philadelphia, Pa. Filed Apr. 22, 1878.



Claim.—1. As a new article of manufacture, an extensible shelf-supporting bracket, consisting of the frame A, extension-arm A', having the slotted slide D, guided and held by the stop-bolt E, the whole being so arranged that the two surfaces F and F' are substantially in the same plane, both when the bracket is extended and when it is closed, substantially as and for the purposes described.

2. The herein-described bracket, consisting of the slotted arm A', slide D, lug G, stop E, and frame A, the bearing-surface of the bracket being so constructed that its inner and outer extremities are always above the intermediate parts of such surface, substantially as and for the purpose set forth.

205,723. BALANCED SLIDE-VALVES. John C. Bryan, Titusville, Pa. Filed Apr. 29, 1878.



Claim.—1. The balancing-plate P, working like a piston, with a slight range of motion, through a hole in the top plate of the steam-chest, and with its lower surface underlying the edges of the hole in the top plate, in combination with a side-valve having a bearing-extension at each end beyond the valve-foot proper, whereby the balancing-plate, while free to perform its function as such, also bears on the whole, or nearly the whole, upper surface of the valve when the latter is at the ends as well as at the middle of its stroke, substantially as set forth.

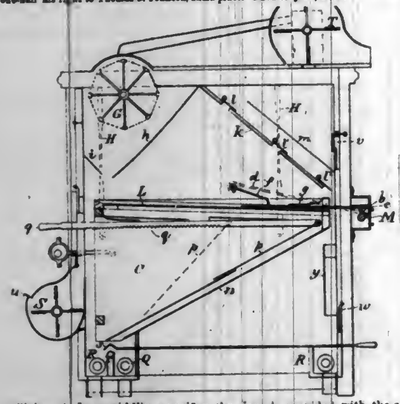
2. The balancing-plate P, working in the top plate of the steam-chest, as described, and overlapping the end extensions of the valve, as described, and having a steam-port through or past the same, in combination with a flexible gasket to cover the joint of the balancing-plate and cover, and also in combination with a valve having an open top and end extensions, substantially as set forth.

3. The balancing-plate P, having a slight vertical, but no longitudinal, motion, made with a hole through or past the same, and recesses *s s'* in its lower face, immediately over the open ends or mouths of the cylinder-ports, in combination with the described valve and gasket, substantially as set forth.

4. The valve D, having the end extensions described, in combination with central steam-port B, end exhaust-ports B' B', and balancing-plate P, having end extensions, substantially as set forth.

5. A slide-valve having a bearing-extension at each end, which projects beyond the valve-foot proper, and having also an end opening through such extension for an endwise exhaust from the valve, substantially as set forth.

205,724. MIDDLINGS-SEPARATORS. Winfield S. Burroughs, Friendship, Ind., assignor of one-half his right to Thomas S. Johnson, same place. Filed May 15, 1878.



Claim.—1. In a middlings-purifier, the sieve L, provided with the arm *b* and spring *g*, in combination with the cam *c* on the shaft M, substantially as and for the purpose set forth.

2. In a middlings-purifier having the series of sieves L, provided with the arms *b*, and arranged in a horizontal plane beneath the bolt-reel G, the rock-shaft W, having lever *d*, operated by the cam *e*, provided with the knockers *f*, substantially as and for the purpose set forth.

3. A shaker for middlings-purifiers, having the fixed carrier *n*, the fixed half-carrier *o*, and adjustable half-carrier *p*, having notched lever *q*, in combination with the conveyers P and Q, substantially as and for the purpose set forth.

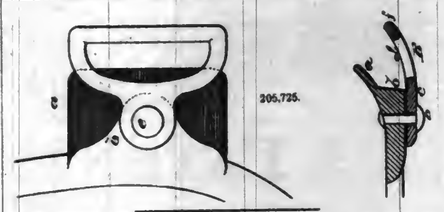
4. In a middlings-purifier, the sliding partition *t*, having valves *l l* P, and the carrier *h*, both placed above the sieve L, in combination with the suction-fan T, the revolving bolt, and the shaker B, substantially as and for the purpose set forth.

5. The blast-fan S, in combination with the shaker B and the section C, having the fixed carrier *n* and the adjustable half-carrier *p*, substantially as and for the purpose set forth.

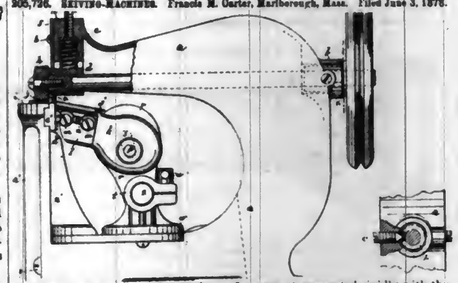
6. In a tailings-chamber of a middlings-purifier, the funnel *y* and hand-hole *x*, provided with the slide *x*, substantially as and for the purpose set forth.

205,725. HAME-TUG DUES. Wm. H. Bustin, Boston, Mass. Filed Mar. 9, 1878.

Claim.—The hame having the curved plate or guard *a*, extending to the rear thereof, the perforated bearing *b*, and the elongated tug-loop B, pivoted thereto by means of a transverse rivet, *c*, substantially as specified.



205,726. SKIVING-MACHINES. Francis M. Carter, Marlborough, Mass. Filed June 3, 1878.



Claim.—1. In a skiving-machine, the post *a'*, connected rigidly with the front of the frame *a*, and provided with the small top plate *i*, to support the material being skived, combined with a gage connected with the side of the post, to direct the material, the dimensions of the plate *i* being such as to permit the material to be grasped by hand close up to the feed-roller and knife, substantially as described.

2. In a skiving-machine, the adjustable part *c*, bearing *l*, adjustable standard *r*, and adjustable jaw *k*, combined with a jaw opposed to jaw *k*, to hold the knife, substantially as and for the purpose described.

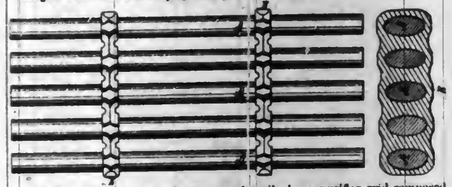
3. The jaws *k l*, the standard *r*, and an adjustable device to hold the jaw *k* and standard in adjusted position, as shown and described.

4. The jaws *k* and *l* and the knife, combined with a device, substantially as described, to adjust the jaw *l* with reference to jaw *k*, to raise or lower the forward edge of the knife, as and for the purpose set forth.

5. The combination, with the head 10 and the notched box *d*, of the cross-bar to enter the notch in the bearing, to operate substantially as described.

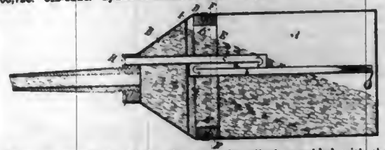
6. In a skiving-machine, the post *a'* and top plate *i*, provided with a straight rear edge in substantially the plane of the rear face of the feed-wheel, combined with a knife extended upward and diagonally across said straight edge of the plate, substantially as described.

205,727. SCREENS OR GUIDS FOR GAS-PURIFIERS. Hannibal H. Church, Lawrence, Mass., assignor to Lawrence Gas Company, same place. Filed Apr. 4, 1878.



Claim.—As a new manufacture, the described gas-purifier grid composed of the series of wooden bars A and the metallic perforated holders B B, arranged and combined as set forth.

205,728. OIL-CANS. Lyman Crawford, North Bennington, Vt. Filed Aug. 1, 1877.



Claim.—1. An oil-can of the character described, provided with the revertible vent-tube *a b c*, attached to the cap or cover thereof, so as to be removable from the oil-reservoir, substantially as shown and described.

2. An oil-can provided with the described strainer-diaphragm I, and means, situated below said diaphragm, for replenishing the oil-reservoir, substantially as shown and described.

3. An oil-can constructed in two apartments or chambers, A and B, separated by a strainer-diaphragm, and united by the joint E F at the top of the oil-reservoir, substantially as shown and set forth.

4. The combination, in an oil-can, of drip-sink H, revertible vent-tube *a b c*, joint E F, and strainer-diaphragm I, substantially as described and set forth.

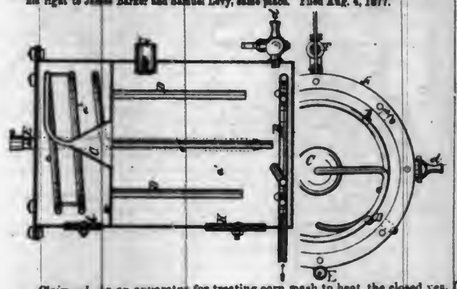
5. The combination, in an oil-can, of the revertible vent-tube *a b c*, with the strainer-diaphragm I, said tube and strainer both being attached to the upper or removable section of the can, substantially as shown and described.

205,729. PROCESSES OF TREATING CORN MASH. Matjas Oziner, New York, N. Y., assignor of part of his right to James Barker and Samuel Levy, same place. Filed Aug. 3, 1877.

Brief.—An improved process of treating corn mash in closed vessels preparatory to the manufacture of beer and vinegar.

Claim.—The process of treating corn mash in which the mash is treated to heat in a closed vessel, and the vapors of the spirit contained in the mash are more or less condensed in the said vessel and returned to the mash, until the mash is raised to the boiling point, when the condensation ceases, the heating being continued until the temperature of the mash is raised to about 220° Fahrenheit, as described.

205,730. APPARATUS FOR MASHING. Matjas Oziner, New York, N. Y., assignor of part of his right to James Barker and Samuel Levy, same place. Filed Aug. 4, 1877.

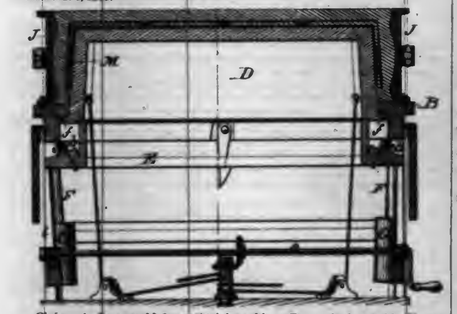


Claim.—1. In an apparatus for treating corn mash to heat, the closed vessel A, having partition *a*, dividing it into an upper chamber, *a'*, and lower or heating chamber *a'*, together with the tubes D, extending from near the bottom of said lower chamber to said partition, and thence opening into said upper chamber, as and for the purpose specified.

2. In an apparatus for treating corn mash to heat, the combination, in a closed vessel, A, having the chambers *a'* and *a'*, of the coil *c* in the upper chamber, having the funnel C in the lower chamber, and the depending pipe *c'*, together with the tubes D, as described, all arranged to operate as and for the purpose specified.

3. In combination, the closed vessel A, having partition *a*, funnel C, coil *c*, pipe *c'*, and pipes D, the entrance-conduit E, the cock *d*, and valves F and G, together with suitable heating-coil B, all arranged as described, and to operate as set forth.

205,731. MOLDS FOR ARTIFICIAL-MARBLE COFFINS. Taylor E. Daniels, Chicago, Ill. Filed Jan. 8, 1878.



Claim.—1. In a mold for artificial-marble coffins, a bed or table, B, provided with a central opening, a core adapted to fit within said opening, and mechanism, substantially such as shown, for raising and lowering the core.

2. The mold consisting of the bed or table B, the outside mold-frame J thereon, and the vertically-movable core D, inserted through the table from below.

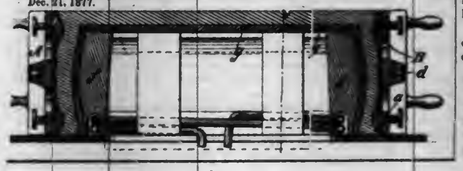
3. In combination with the movable core D, the cords and weights for elevating the same, and the cords and take-up devices for drawing it downward.

4. In combination with the bed or table B and vertically-adjustable core D, locking devices K, for holding the core and table in close contact.

5. In a coffin-mold, the combination of a table, B, and outside sectional detachable mold-frame J thereon, and a core, D, mounted in and capable of being lowered through the table, substantially as described and shown.

6. The frame M, consisting of the longitudinal and transverse bars and the wooden strips, as shown, adapted to fit upon the core D, as shown, in order to be incorporated in the coffin when the mold is filled.

205,732. MOLDS FOR ARTIFICIAL-STONE COFFINS. Taylor E. Daniels, Detroit, Mich. Filed Dec. 21, 1877.



Claim.—1. The coffin-mold consisting of the notched side pieces and the end pieces provided with the swinging arms *d*, having the eccentrics *e* attached thereto, as shown.

2. The sectional mold-frame A, provided with the internal detachable face-plates B, as shown and described, whereby the single frame is adapted for use in molding coffins of different sizes and forms.

3. In a coffin-mold, the combination of an outside frame and an internal sectional expansible core, whereby the material may be compressed and the air expelled therefrom, substantially as shown and described.

4. The coffin-mold having a hollow core containing the internal heating-pipe, substantially as shown.

5. A mold for artificial-stone coffins provided with a facing or surfacing of celluloid, substantially as described.

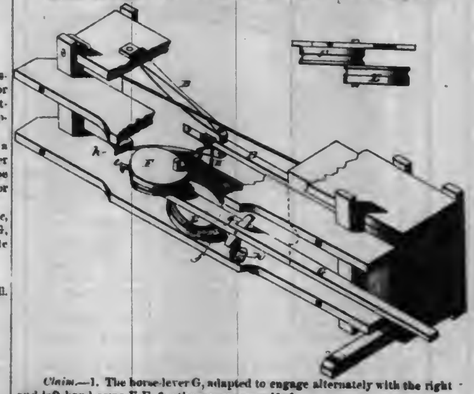
205,733. FILTER AND IRRIGATING-NOZZLE. Samuel Dawson, Hempstead, N. Y. Filed Sept. 26, 1877.

Brief.—The nozzle is attached to a faucet. The liquid passes through the strainer, and through the spiral passages formed in the stem or core, and escapes in the form of foam.



Claim.—The nozzle B, in combination with the tube A, filter *d*, and spring *e*, all substantially as described and set forth.

205,734. BALING-PRESSES. Peter K. Dederick, Albany, N. Y. Filed June 11, 1878.



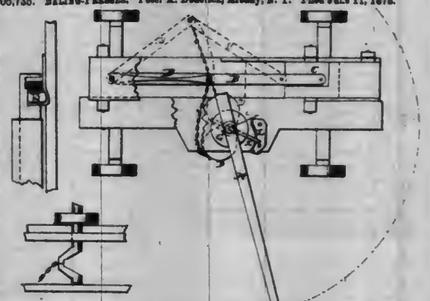
Claim.—1. The horse-lever G, adapted to engage alternately with the right and left hand cams E F, for the purpose specified.

2. The combination, with right and left cams E F, operated from the horse-lever, of the toggle B and suitable connecting-chains, substantially as described, for the purpose specified.

3. The cams E F, provided respectively with the projections or stops *e f*, in combination with the horse-lever G, having the pivoted catch-bar *g*, substantially as described.

4. The shifting-plates *h h*, adapted to engage and disengage the catch-bar from the cams, substantially as described.

205,735. BALING-PRESSES. Peter K. Dederick, Albany, N. Y. Filed June 11, 1878.



Claim.—1. In that class of procumbent baling-presses in which the hay is forced into a bale-chamber by a reciprocating traverser, as set forth, the cam, eccentric, or crank mounted on the frame or case of a baling-press, in combination with the loose or adjustable sweep or horse-lever, constructed so as to be rotated, as set forth.

2. The toggle B, connected to and in combination with the cam, eccentric, or crank and shaft and loose or adjustable sweep or horse-lever N, rotated as described.

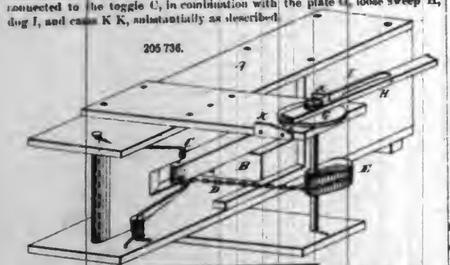
205,736. BALING-PRESSES. Peter K. Dederick, Albany, N. Y. Filed Jan. 19, 1878.

Claim.—1. In that class of baling-presses in which the material is fed or pressed in sections by a reciprocating traverser, the eccentric or cam E, connected with the toggle C by a chain or other flexible connection, in combination with a loose sweep or horse-lever, substantially as described, for the purpose specified.

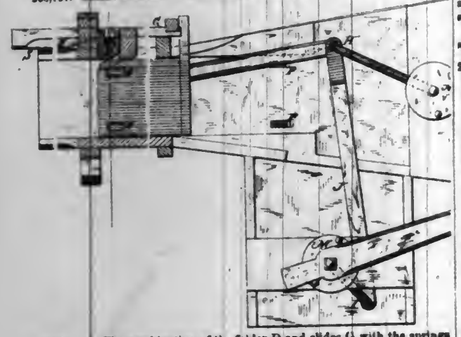
2. The plate G, having the shoulders O P, in combination with the loose sweep H, clog I, and cams K K, substantially as described.

3. In that class of baling-presses in which the material is forced into the bale chamber in sections by a reciprocating traverser, the eccentric or cam E, connected to the toggle C, in combination with the plate G, loose sweep H, dog I, and cams K K, substantially as described.

205,736.



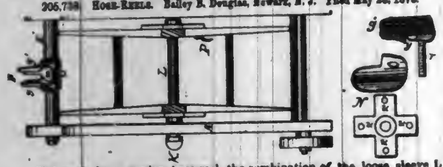
205,737. BALING-PRESSES. Peter K. Dederick, Albany, N. Y. Filed Dec. 21, 1877.



Claim.—1. The combination of the folder D and slides G with the springs R S, separately or together, for the purpose specified.

2. The combination of the toggle H and crank I, connected as set forth, when adjustably connected to the sweep or horse-lever, for the purpose specified.

205,738. HOSE-REELS. Bailey B. Douglas, Newark, N. J. Filed May 26, 1878.

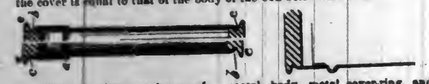


Claim.—1. In a garden hose-reel, the combination of the loose sleeve L and screw-rod K with the collars N, formed with wings n and secured upon the sides of the reel, as shown, said devices being mounted within a frame, constructed substantially as described, and adapted to operate as set forth.

2. The nozzle-holder F, composed of the two shell-shaped pieces g g', screw-rod e, and lip y, in combination with the herein-described frame, having a hose-reel mounted therein, substantially as specified.

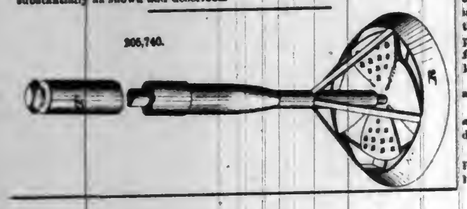
205,739. CORRUGATED WOOD AND SHEET-METAL BOXES. J. W. Dowling, Rochester, N. Y. Filed May 6, 1878.

Brief.—The box may be of any desired shape. No solder or rivets required at the ends. The upper portion of the body is turned inward, strengthening the box and reducing the diameter, so that the diameter of the band of the cover is equal to that of the body of the box below the bead.



Claim.—A box consisting of a metal body, metal cover-ring, and of wooden heads formed at their periphery into an annular groove, *c*, to receive the flange *b* of the body, and into an annular projecting bead or finger-rest, *a*, substantially as shown and described.

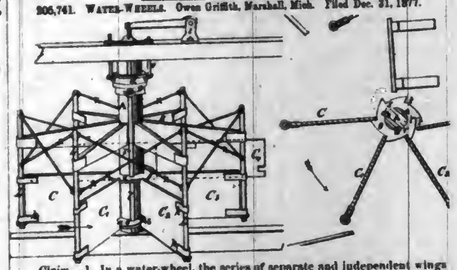
205,740.



205,740. CHURN-DASHERS. John E. Finley, Memphis, Tenn. Filed Jan. 28, 1878.

Claim.—Jointly with the propeller-blades and the dasher-shaft, the conical rim R, connected to the shaft, substantially as described.

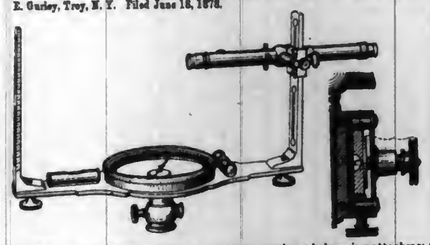
205,741. WATER-WHEELS. Owen Griffith, Marshall, Mich. Filed Dec. 31, 1877.



Claim.—1. In a water-wheel, the series of separate and independent wings C, C_1, C_2, &c., hinged in a vertical line at the periphery and held radially during a portion of their revolution by a stop near the axis A; when arranged substantially as herein shown and described.

2. The stops *a a*, in combination with the wings C, C_1, &c., when arranged substantially as and for the purpose herein shown and specified.

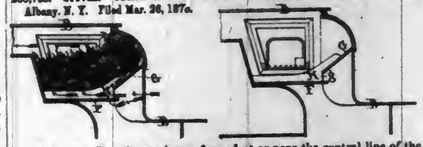
205,742. TELESCOPE ATTACHMENTS FOR SURVEYORS' COMPASSES. Wm. Gurley and Lewis E. Gurley, Troy, N. Y. Filed June 18, 1878.



Claim.—1. A telescope having a supporting-axis and clamping attachment, substantially as described, whereby the telescope can be secured upon one of the sight-vanes on a surveyor's compass so as to turn on the supporting-axis in a plane essentially parallel to the plane of sight of the sight-vanes.

2. A telescope having a supporting-axis and clamping attachment furnished with adjusting devices, substantially as described, whereby the telescope can be secured upon either of several sight-vanes of somewhat different shape or inclination of surface on different compasses, and adjusted thereon to turn upon the said supporting-axis, with the optical axis of the telescope in a plane essentially parallel to the plane of sight of the sight-vanes.

205,743. STOVES. Charles A. Hamlin, Greenbush, assignor to the Reason Stove Works, Albany, N. Y. Filed Mar. 26, 1877.



Claim.—1. The air-opening *g*, formed at or near the central line of the fire by the plates F and G, provided with stripe H, for sustaining the fuel during combustion, as and for the purpose herein specified.

2. The inclined plate G, provided with stripe H, for forming channel-ways beneath the fuel on said plate, whereby the air admitted into the fire-box through the opening *g* is directed upward and forward, so as to force the flame from the burning fuel to the front of the fire-box in such manner that it will reverberate against the top of the stove, as herein set forth.

3. The combination of the plates F and G and the stripe H, as and for the purpose herein specified.

205,744. TUYERES. John M. Hartman, Philadelphia, Pa., assignor to Tawa & Hartman, same place. Filed Feb. 26, 1878.

Brief.—A siphon or suction pump draws the water through the tuyere. Both the inlet and outlet pipes extend to the nose of the tuyere, and the latter pipe is provided with a small hole, and is carried to a higher level than the top of the tuyere, for the purpose of enabling the air contained within the tuyere to readily escape. An overhanging lip prevents the trickling iron from entering the nose and burning through the bottom side of the tuyere. As the operation of a furnace requires a frequent change of nozzles, a detachable cap is formed upon the T-piece, through which piece, when the cap is removed, the desired nozzle can be slipped into its place in the tuyere. To allow the parts to yield when subjected to expansion or contraction, the tuyere-pipe is formed with a faced joint, and is connected with the tuyere by a weighted lever.

Claim.—1. A water-cooled tuyere formed with a projecting upper lip, *a'*, and a recess, a^2, below, as herein described.

2. The combination, in a hollow tuyere, A, of the inlet and outlet pipes a' a^2, extending to near the nose of the tuyere, and the air-outlet a^3, as herein described.

3. With a water-cooled tuyere, the combination of a siphon or suction pump to draw the water through the cavity of the tuyere, as and for the purpose herein described.

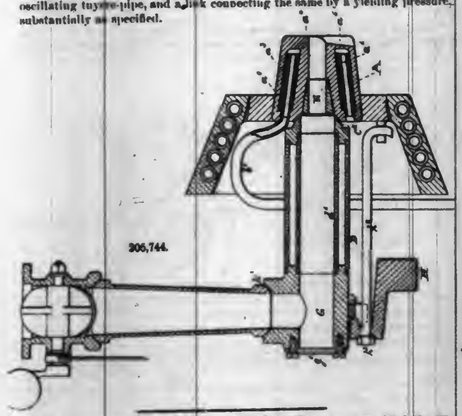
4. The hollow tuyere A, in combination with the inlet and outlet pipes a' a^2, the latter being provided with the air-hole a^3, and the bend b^2 above the level of the water-cavity in the tuyere.

5. A tuyere-pipe formed of two or more hollow rigid cylinders, D *d'*, inclosing an air-space between them, the T-piece G, and the faced cap C', as herein described.

6. The combination of the taper nozzle N, the tuyere-pipe *d'*, of larger internal diameter than the nozzle, and the removable cap *g'* upon the T-piece G.

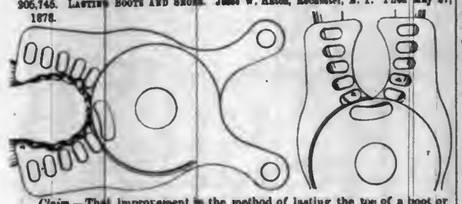
7. The combination of the fulcrum b^1, the connecting-link b^1, and a yielding tension upon the said link by the weighted lever H, or its equivalent, to secure the joint O' by a flexible pressure, as herein described.

8. The combination of an oscillating joint upon a water-cooled tuyere, an oscillating tuyere-pipe, and a link connecting the same by a yielding pressure, substantially as specified.



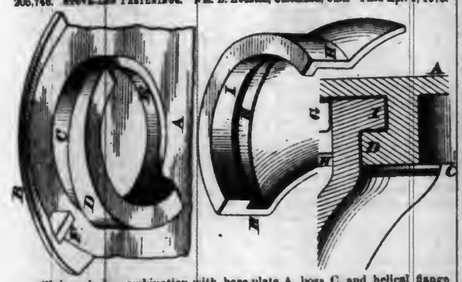
205,744.

205,745. LASTING BOOTS AND SHOES. James W. Hatch, Rochester, N. Y. Filed May 27, 1878.



Claim.—That improvement in the method of lasting the toe of a boot or shoe which consists in holding the edge of the upper down upon the inner sole by toe-crimping jaws, then drawing and ruffling the edge thus held by hand-operated devices, and finally by said jaws crowding such ruffled edge held up in front of the jaws, as described, over upon the inner sole toward the central portion of the toe of the inner sole, all substantially as and for the purpose stated.

205,746. STOVE-LID FASTENINGS. Wm. B. Houston, Cincinnati, Ohio. Filed Apr. 1, 1878.



Claim.—1. In combination with base-plate A, boss C, and helical flange D, the leg or foot G, having a helical flange, I, that engages with the one D when said leg is screwed to the stove by the rotation of neck H either around or within the boss C, substantially as herein described and set forth.

2. The combination of base-plate A, flanged boss C D, flanged leg G I, guiding-curb E, and one or more lugs, F, substantially as herein described and set forth.

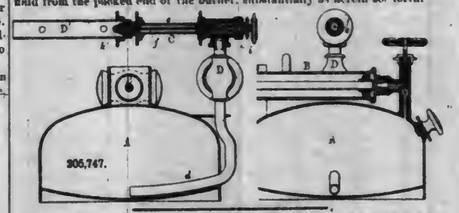
205,747. BLOW-PIPES. John S. Hull, Cincinnati, Ohio. Filed Dec. 13, 1877.

Claim.—1. The fluid-reservoir A, air-pump B, and burner C, having the nozzle *k* and pin *f*, entering and operating within the same, combined with the combustion-tube D', surrounding the said nozzle, substantially as and for the purposes specified.

2. In combination with the combustion tube or chamber D', a series of reducing devices adapted for insertion to the said tube or chamber, substantially as shown and specified.

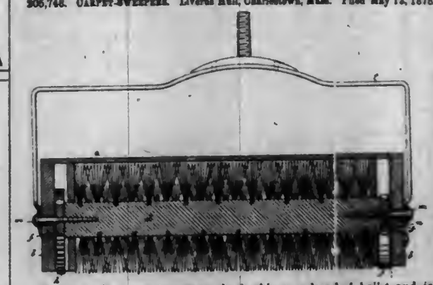
3. In combination with a device for reducing the diameter of the combustion tube or chamber by being inserted therein, a blast-pipe one end of which is introduced to the interior of the said reducing device, substantially as herein shown and described.

4. In combination with the packing-chamber, formed by enlarging an extension of the tube *c* of the burner and the pointed wire *f*, a series of cork-rings surrounding the said wire, adapted, when compressed by the packing gland *l*, to form a close joint, and thereby prevent the leakage of vapor or fluid from the packed end of the burner, substantially as herein set forth.



205,747.

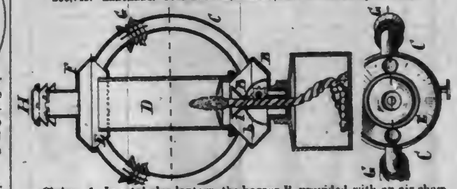
205,748. CARPET-SWEEPERS. Livens Hull, Charlestown, Mass. Filed May 13, 1878.



Claim.—1. In a carpet-sweeper, the bushings *n*, brush *d*, ball *t*, and journals *m*, said journals serving to secure the ball and the brush to the bushings, in combination with the dumping-case *a*, driving-wheels *g*, placed at opposite ends and upon opposite sides of the brush, pinions *f*, and friction-wheels *j*, all to operate substantially as described.

2. The combination, in a carpet-sweeper, of the case *a*, bushings *n*, brush *d*, ball *t*, and journals *m*, said journals serving to secure the ball and the brush to the bushings, substantially as described.

205,749. LANTERNS. John H. Irwin, Philadelphia, Pa. Filed May 11, 1878.



Claim.—1. In a tubular lantern, the burner B, provided with an air-chamber, *b*, in combination with the tubes C and air-injectors G, inserted in the tubes between their upper and lower ends, substantially as described.

2. In a lantern provided with an air-space around the burner and at the top of the chimney, the tubes C, connecting the two air spaces or chambers, in combination with the injectors G, arranged within the tubes between their extremities and the chimney D, substantially as described.

3. The burner B, provided with an air-chamber, *b*, in combination with the tubes C, provided with air-injectors G, the chimney D, and the top F, provided with an ejector, H, substantially as described.

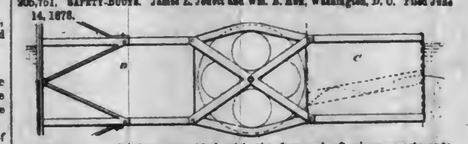
205,750. COMMINUTED ASPHALT FOR ROOFING, &c. H. W. Johns, New York, N. Y. Filed Dec. 14, 1875.

Brief.—Asphaltum is crushed or pulverized to particles of uniform size, and when used is mixed with a weak solvent, which unites the surfaces of the granules, but does not reduce them to a dissolved condition.

Claim.—1. Comminuted asphalt when mixed with a weak solvent, so as to unite the surfaces of the granules, and not to reduce them to a dissolved condition.

2. Comminuted asphalt, when mixed or treated substantially as herein described, as a surface-dressing, and to be used for roofs, pavements, and other similar purposes.

205,751. SAFETY-BUOYS. James E. Jouett and Wm. B. Hoff, Washington, D. C. Filed June 14, 1878.



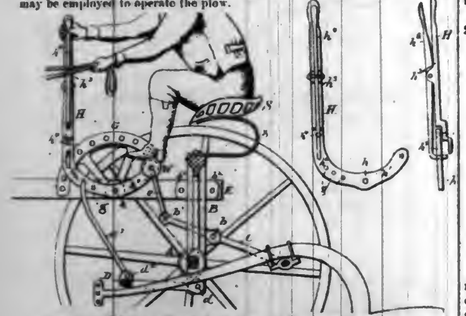
Claim.—1. A life-buoy provided with the fore and aft air-compartments C and D and the intermediate open compartment, the latter being provided with the reel for carrying a line, by which construction the line is automatically unreeled as the buoy drifts, substantially as described.

2. A life-buoy provided with a head or shield constructed substantially as described, so as to be adapted to readily catch in the strand and anchor the buoy, substantially as shown.

3. A life-buoy constructed substantially as described, the after air-compartment of which is provided with a water-tight sleeve, through which the line passes from the reel, substantially as shown.

205,752. SULKY-PLOWS. John Lane, Chicago, Ill., assignor of one-half his right to the Chicago Plow Manufacturing Company, same place. Filed Jan. 15, 1878.

Brief.—U-shaped frame or carrier pivoted to arch of axle, and having its forward portion resting upon plow-beam, and connected with an L-shaped lever for operating the same; said lever being also connected, by means of a link on which is a foot-roll, with an arm-extension of a rocking frame or support, to which the plow-beam is attached, whereby the hand and foot of the driver may be employed to operate the plow.



Claim.—1. The lever H, rod d^3, and carrier D, arranged and operating as shown, with rod-link e, extension b^1, and support C, all arranged and operating substantially as shown, and for the purposes set forth.

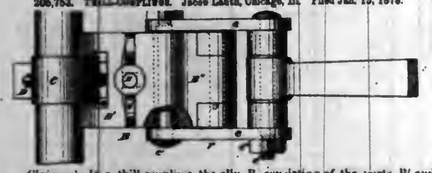
2. The lever H, carrying the lock-lever h^4, with segment G, connected therewith, as shown, and operating with rod d^3 and carrier D, also with rod-link e, foot-roll w, extension b^1, and support C, all arranged and combined substantially as shown, and for the purpose set forth.

3. The carrier D, bent and formed as shown, and the ends of the arms pivoted on the pivot-centers d d_1, and extended forward of the axle to near the forward end of the plow-beam, where its forward end rests on top of the plow-beam, and rod d^3, and lever H, all arranged and operating substantially as shown, and for the purpose set forth.

4. The lever H, rod-link e, extension b^1, and support l^1, arranged as shown, and having the foot-roll w attached to the rod-link e, and all arranged and operating substantially as shown, and for the purpose set forth.

5. The rod-link e, connecting the short arm h^1 of the lever H and extension b^1, and the top end of rod-link e, extending and supporting the foot-roll w, as shown, all arranged and operating substantially as shown, and for the purpose set forth.

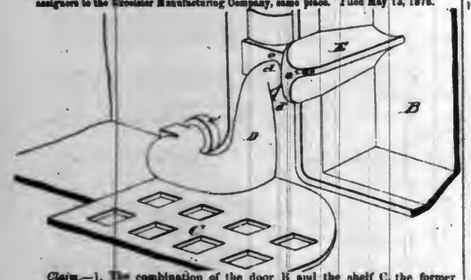
205,753. THILL-COUPLINGS. Jacob Leath, Chicago, Ill. Filed Jan. 15, 1878.



Claim.—1. In a thill-coupling, the clip B, consisting of the parts B' and B'', hinged to each other at their forward ends, in combination with the bolt E, extending above the clip and arranged near the rear end of the beat B'', and having thereon the movable hand-nut E', substantially as and for the purposes specified.

2. In combination, the link F, consisting of the side pieces e e, connected to each other by bolts and nuts, the clip B, consisting of the parts B' and B'', hinged to each other at their forward ends, the bolt E, and the nut E', substantially as and for the purposes specified.

205,754. STOVE-OVEN SHELVES. Ezekiel C. Little and David H. Hatton, St. Louis, Mo., assignors to the Excelsior Manufacturing Company, same place. Filed May 13, 1878.



Claim.—1. The combination of the door B and the shelf C, the former having the projection E, having the bevel e, and the latter having the projection D, provided with the extension d and rib d^1, substantially as described.

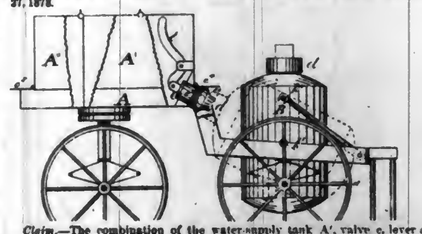
2. The door B, having the projection E, provided with the extension e^1, and having the bevel e, in combination with the shelf C, having the projection D, provided with the extension d and the rib d^1, as and for the purpose described.

205,755. REIN-HOLDERS. William M. McCown, Portland, Oreg. Filed June 3, 1878.



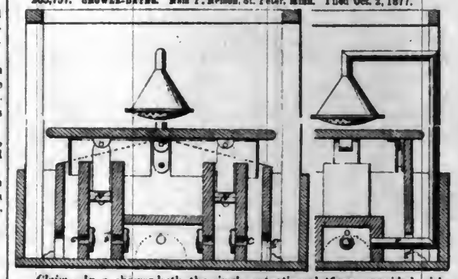
Claim.—The combination, in a machine for holding driving lines, substantially as described, of the rods or guide-bars b b b b with the eccentric-clamp A, the travelers B and C, the endless belt c, the pulleys D D, and chain or line d.

205,756. CHEMICAL FIRE-ENGINES. Wm. Morrison, Toronto, Ontario, Canada. Filed May 27, 1878.



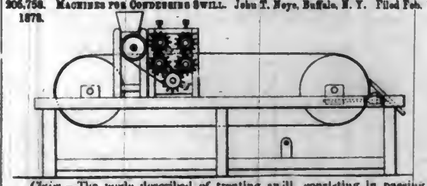
Claim.—The combination of the water-supply tank A', valve c, lever c^1, nozzle c^2, and hose-piece c^3 with the tilting gas-producing cylinder B of a chemical fire-engine, by which combination and arrangement the gas-producing cylinder B is more speedily charged and recharged than by the usual practice, as specified and described.

205,757. SHOWER-BATHS. Nels P. Nelson, St. Peter, Minn. Filed Oct. 2, 1877.



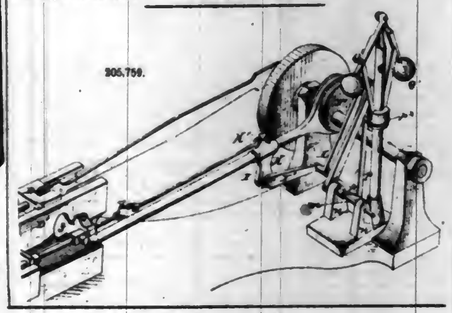
Claim.—In a shower bath, the single actuating-platform, provided with the depending casing, which covers the upper portion of the pump apparatus, in combination with the jointed connections, which engage respectively with the plunger-rods of said pumps, substantially as described.

205,758. MACHINES FOR CONDENSING SWILL. John T. Noye, Buffalo, N. Y. Filed Feb. 16, 1878.



Claim.—The mode described of treating swill, consisting in passing it between plain rollers, whereby the solid portions are condensed without dividing the same, transferring it to an endless reticulated band, and again compressing it on the band between rollers, as set forth.

205,759.



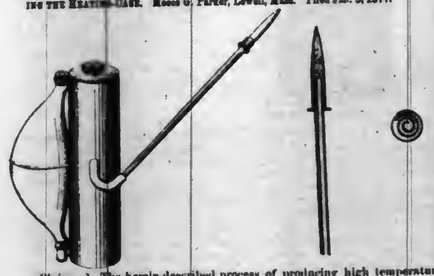
205,759. VALVE-GEARS FOR ENGINES. Ferris Ogden, Mansfield, Ohio, assignor to the Aultman & Taylor Company, same place. Filed May 28, 1878.

Claim.—1. The adjustable bracket K, connected with the eccentric-rod which operates the main valve, and carrying the rock-shaft or arms, through which an independent movement is imparted to the cut-off valve, substantially as described.

2. The rigidly-connected crank-arms I I', through which an independent movement is imparted to the cut-off valve, connected with and operated by the movement of the single eccentric which operates the main valve, substantially as and for the purpose described.

3. The rock-shaft and its arms I I', connected with the valve eccentric-rod, and also connected, through link L and the rock-shaft n and its arms p, with the sliding sleeve or collar on the governor-shaft, for giving an independent movement to the cut-off valve, substantially as described.

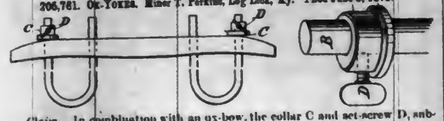
205,760. PROCESS OF PRODUCING AND MAINTAINING A HIGH DEGREE OF HEAT BY HYDROCARBON-VAPOR BLAST ON HEATED METALLIC SALT SPONGE, AND MODES OF PREPARING THE HEATING-CASE. Moses G. Parker, Lowell, Mass. Filed Jan. 5, 1877.



Claim.—1. The herein-described process of producing high temperatures by forcing a current of air impregnated with hydrocarbon vapors through a metallic salt sponge, some part of which had been previously heated to redness, as herein set forth.

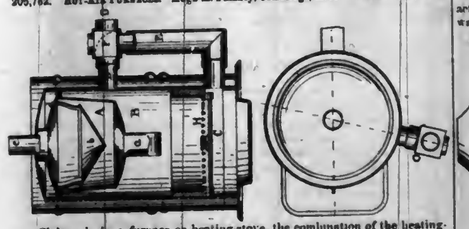
2. The mode of preparing the heating-case for the hydrocarbon-vapor blast, which consists in charging the case with an adherent metallic salt sponge, with or without the commixture of a suitable scrap to promote adhesion and the free passage of the blast, as hereinbefore set forth.

205,761. OX-YOKES. Miner T. Perkins, Log Lick, Ky. Filed June 5, 1878.



Claim.—In combination with an ox-bow, the collar C and set-screw D, substantially as described.

205,762. HOT-AIR FURNACES. Hugh M. Phinney, Cambridge, Mass. Filed Nov. 20, 1877.

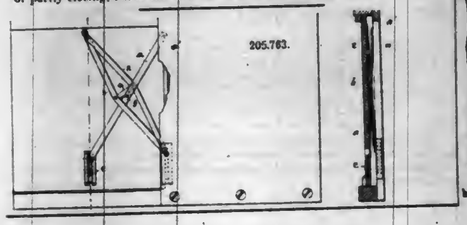


Claim.—1. In a furnace or heating-stove, the combination of the heating-chamber A, entirely surrounded by the combustion-chamber B, and provided with a cold air inlet, a, and a hot-air outlet, c, and also with a cone-shaped deflector, A, arranged immediately over the cold-air inlet, with the said combustion-chamber B, substantially as and for the purposes described.

2. The hereinbefore-described system of air-passages and drafts, together with a regulating-damper in a box, whereby an indirect-draft opening from the ash-pit and a direct-draft opening from the combustion-chamber are brought together in the box and regulated by that damper.

3. In a furnace or heating-stove, the combination of the ash-pit C, indirect draft E, leading from said ash-pit directly to the direct draft, the direct draft D, opening from a combustion-chamber above the fire, and the damper F, hinged in the box G at the juncture of said direct and indirect drafts, as shown, to act as a regulator, as described, and to alternately serve in closing, or partly closing, either the direct or indirect draft, as set forth.

205,763.



205,763. DOOR-HANGERS. Edwin Prescott, Hampton Falls, N. H. Filed May 3, 1878.

Brief.—Forms a door-hanger of two levers,—one truss-shaped, with a fulcrum-piece at one side of its center, the other pivoted to the fulcrum-piece at one side of its center and passing through the truss. One end of the truss-shaped lever is pivoted to the door, while the other slides freely in a slot in the door-post. The reverse is true of the other lever. The parts of the levers between the fulcrum-piece and the points of connection on the door are longer than those between the fulcrum-piece and the door-post.

Claim.—1. A post-lever and door-lever, connected substantially as described, whereby the opposite ends of each lever are made to move past opposite sides of the other lever, substantially as described.

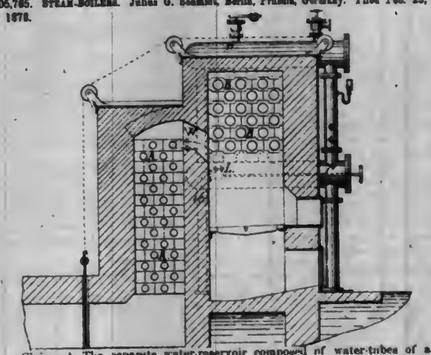
2. The post and door-levers pivoted together at a point one side of the center of their length, and adapted to move one lever beyond the other at opposite ends upon opposite sides, to operate substantially as and for the purpose described.

3. As a new article of manufacture, hangers consisting of a lever, a, and a truss-shaped lever composed of parts 2 3 and fulcrum-piece 4, the lever a passing through an opening or recess in lever c, substantially as described.

205,764. MANUFACTURE OF WIRE. William L. Reynolds and Calvin Haskell, St. Louis, Mo. Filed Apr. 8, 1878.

Claim.—The herein-described mode of devitrifying wire and other forms of iron and steel, which consists in boiling or steeping the metal in hot water, substantially as described.

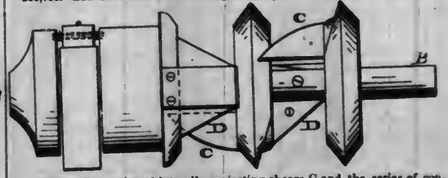
205,765. STEAM-BOILERS. Julius G. Schmidt, Berlin, Prussia, Germany. Filed Feb. 23, 1878.



Claim.—1. The separate water-reservoir composed of water-tubes of a tubular boiler, in combination with the steam-generator, situated so high above the former that its lower row of tubes is filled with water, for the purpose specified, and substantially as described.

2. The construction of the steam generator of a tubular boiler in such a way that its steam-containing tubes are subjected only to the radiant heat of the burning fuel, while all the tubes containing water are subjected to the action of direct heat, and in a direction opposite to the current of the feed-water.

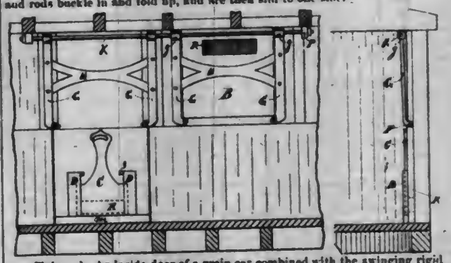
205,766. HARVESTER-CUTTERS. Job Smythe, Hallsport, N. Y. Filed Oct. 13, 1877.



Claim.—The series of laterally-projecting shears C and the series of connected beds D, in combination with the horizontal shaft B, both shears and beds being mounted on said shaft, substantially as and for the purpose set forth.

205,767. GRAIN-CAR DOORS. David F. Speer, Indianapolis, Ind., assignor to himself, David H. Parmlee, and E. F. Miller, same place. Filed May 13, 1878.

Brief.—A grain-car door provided with an auxiliary door in held down by rigid vertical bars pivoted to a horizontal rod at the top of the car. The door and rods buckle in and fold up, and are then slid to one side.



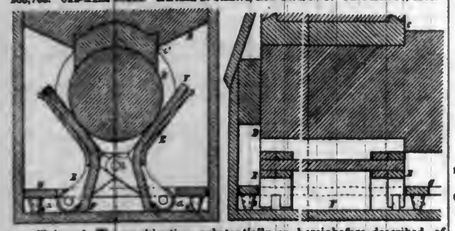
Claim.—1. An inside door of a grain-car combined with the swinging rigid bars G G, hinged at or near the top of the car, and lying in a vertical plane

with the door, securely bracing down the door in its place in the door-frame, and preventing it from being raised until it is pushed inward at the top, thereby releasing the downward pressure of the bars G G on the door, and permitting it to be folded up, in the manner substantially as shown and described.

2. In combination with the slide-bar K, the hinge-bars G G, with the brace H and the inside car-door B, by means of which the door can be released from downward pressure and removed from the door-frame, folded up, and secured to the top of the car or moved to one side of the door-frame, in the manner and for the purpose substantially as shown and described.

3. An inside car-door having a delivery-opening, E, and gate C, in combination with the swinging hinged rigid bars G G, united to the car by hinge-joints, and lying in a vertical plane with the door when it is down, whereby the door is braced downward in the door-frame, substantially as shown and described.

206,768. CAR-AXLE BOXES. Marshall B. Stafford, New York, N. Y. Filed Mar. 15, 1878.

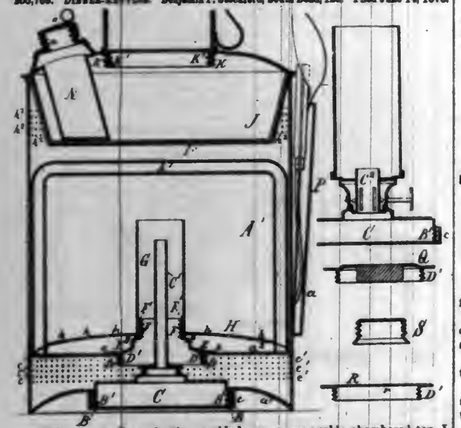


Claim.—1. The combination, substantially as hereinbefore described, of the frames E E and the conducting-strips F F, adapted to be used in combination with the journal D, as set forth.

2. The combination, with the frames E E, of the adjusting-plate G, substantially as hereinbefore set forth.

3. The combination, with the journal and housing of a railroad-car, of strips of felt connected together by supporting frame-work, and extending from the lower part of the housing up against the sides of the journal, and the rollers *a a*, attached to said supporting frame-work and resting on the bottom of the housing, whereby the said strips of felt are adapted to move easily in unison to adjust themselves to the motion of the journal, substantially as hereinbefore set forth.

206,769. DINNER-KETTLES. Benjamin F. Stockford, South Bend, Ind. Filed June 14, 1878.



Claim.—1. A dinner-kettle provided with a removable chambered top, I or J, or both, a screw-threaded aperture, as at B, in its bottom a^3, for the introduction of a lamp, a^4, a diaphragm, a^2, with a screw-threaded aperture through it, as at D, for the admission of the lamp burner and chimney, or of devices such as E Q R, a chamber, A^2, for receiving food, and inlet and outlet draft-passages c^1 b^2, substantially as and for the purposes described.

2. The combination, with the dinner-kettle having a centrally-perforated bottom, a^1, and a centrally-perforated diaphragm, a^2, of the screw-threaded hood E F, whereby the chimney G and the lamp C may be employed, or the lamp shown in Fig. 2 substituted for the one shown in Fig. 1, or either of the devices Q R S used, as occasion requires, substantially as and for the purpose described.

3. The combination, with the dinner-kettle having a centrally-perforated bottom, a^1, and perforated diaphragm a^2, for the purpose described, of the convex perforated plate H and ball-shaped tube A^1, substantially as described.

4. The combination of the depressed flaring pan I, which closes the top of the dinner-kettle, the draft-passages c^1 b^2 in the sides of the kettle, diaphragm a^2, lamp C, and bottom a^1, substantially as shown and described.

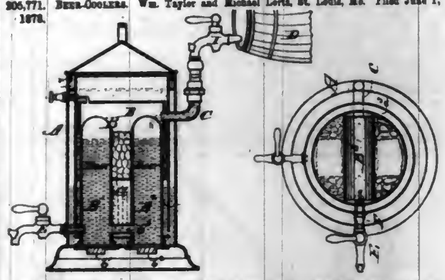
5. The vessel-cover J, of flaring form, provided with a supply-opening and with a discharging-opening, the latter having a strainer beneath it, in combination with the draft-passages in the sides of the kettle, and the perforated diaphragm a^2, bottom a^1, and lamp C, substantially as described.

6. The dinner-kettle having its screw-connections in the food and lamp sections formed of zinc, and the joints formed by these connections covered with the metal of which the body of the kettle is formed, substantially as shown and described.

206,770. UTILIZING WASTE TIN-SCRAP. Mosher A. Sutherland, New York, N. Y. Filed July 5, 1877.

Claim.—The within process of utilizing tin scraps, which consists in heating them to a welding heat in a reverberatory furnace prepared in the usual way for puddling iron, and working them with the puddling-iron into balls preparatory to forming them into blooms, substantially as set forth.

206,771. BEER-COOLERS. Wm. Taylor and Michael Lorts, St. Louis, Mo. Filed June 1, 1878.



Claim.—1. The combination of the cooler A, chamber B, having the removable caps b^1 b^2, the pipe C, and cock E, substantially as described.

2. The combination of the cooler A, the chamber B^1 B^2 B^3, caps b^1 b^2, pipe C, and cock E, substantially as described.

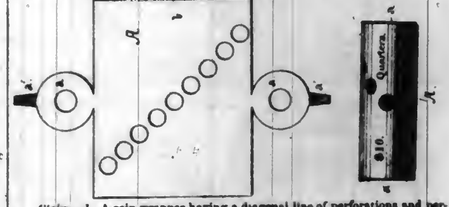
206,772. BOXES. Chas. Tellner, Pulaski, N. Y. Filed Dec. 12, 1877.



Claim.—1. In combination with the base A and lid C, the intermediate piece B, forming a part of the body of the box, connected to the lid and base, and adapted to serve therewith, as herein specified.

2. The rods D, in combination with a three-part box, A B C, having the parts connected, as shown, and provided with the recesses b b, as herein specified.

206,773. COIN-WRAPPERS. William L. Ungar, Baltimore, Md. Filed Mar. 26, 1878.



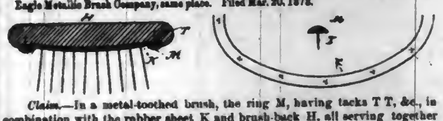
Claim.—1. A coin-wrapper having a diagonal line of perforations and perforated end covers, substantially as described.

2. A coin-wrapper having one or both of its end covers adapted to be secured at diametrically-opposite points, at or beyond the edge of the roulean, substantially as described.

3. The wrapper A, having gummed edge *b* and end covers *c*, with gummed tangs *c'*, substantially as described.

4. In combination with the wrapper A, diagonally perforated, as shown, and having gummed edge *b*, the perforated end covers *c*, having gummed tangs *c'*, substantially as described.

206,774. BRUSHES. Charles J. Walker and James A. Horton, Boston, Mass., assignors to the Eagle Metallic Brush Company, same place. Filed Mar. 20, 1878.



Claim.—In a metal-toothed brush, the ring M, having tacks T T, &c., in combination with the rubber sheet K and brush-back H, all serving together for the purpose set forth, substantially as described.

206,775. PLAITING-MACHINES. Lucius C. Wert, Kalamazoo, Mich. Filed Apr. 3, 1878.



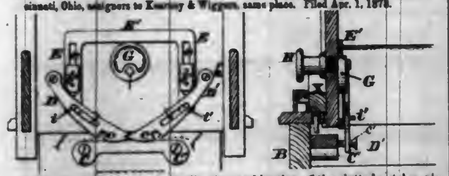
Claim.—1. In a plaiting-machine, the blade-frame with its incisions B B, extension ends C, and guards D, substantially as described.

2. The blades A A, with their needles *a a*, substantially as and for the purpose described.

3. The base-frame with notches *b b*, guards J, guide-springs G G, with their bars I, handles H, and guides K K, with their shoulders *a a*, combined and arranged substantially as described, and for the purpose set forth.

4. The roller O, consisting of the connected corrugated rollers X X', of varying size, and adapted to operate in combination with a plaiting-board, substantially as and for the purpose described.

206,776. LOCKING DEVICES FOR CRADLES. Henry H. Wiggers and John F. Wessler, Cincinnati, Ohio, assignors to Kearney & Wiggers, same place. Filed Apr. 1, 1878.



Claim.—1. In a locking cradle, the combination of the slotted catches pivoted to the cradle, and the pins secured to the vertically-operating slides and adapted to move in the slots in said catches, whereby the latter are operated.

2. As a locking device for cradles, the combination of the slotted catches D D', the yoked slide E E E', and the eccentric G, substantially as and for the purposes specified.

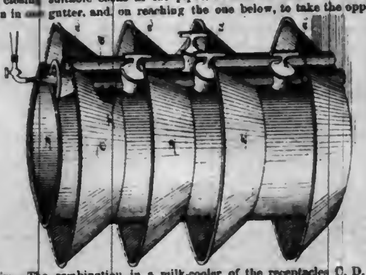
3. The yoked slide E E E', working on the guides F F, for the purpose of operating the catches D D' of a locking cradle.

4. As a device for operating the locking parts D D' of a cradle, the combination of the eccentric G and slide E E E', substantially as and for the purposes described.

5. The eccentric lock for cradles, formed by combining the eccentric G, the slide E E E', pins *i i*, the slotted catches D D', and the screws *c c'*, substantially as and for the purposes described.

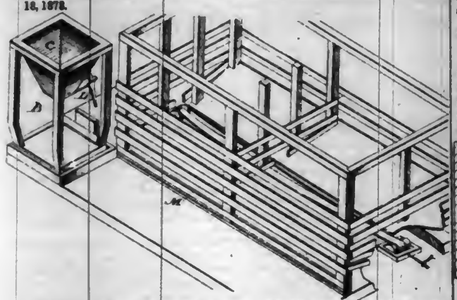
206,777. MILK-COOLERS. Daniel B. Wooster, Marshfield, Vt. Filed Mar. 10, 1877.

Brief.—Milk is placed in a receptacle, around which, at different heights on the outside, are formed gutters. Between two partitions in each of these gutters, a short distance apart, pass two vertical pipes from top to bottom of the can, which pipes are provided with stop-cocks at different heights, and with holes opening into the gutters. Water is poured into the upper gutter, and, by closing suitable cocks in the pipes, the water is caused to take one direction in one gutter, and, on reaching the one below, to take the opposite course.



Claim.—The combination, in a milk-cooler, of the receptacles C, D, and E, the tin partitions *a a a*, and the tubes F and G, as substantially set forth and described.

206,778. METHODS OF HANDLING GRAIN. Stanley E. Worrell, Hannibal, Mo. Filed Mar. 18, 1878.



Claim.—1. The combination of the bin-bottom with the drag-belt and trough, substantially as described.

2. The combination of the weighing-hopper, supported by legs on the scales, with lever and gate, as set forth.

3. In combination with the bin-bottom M, the sagged drag-belt H and trough D, with the hopper C, with gate and lever L, on scales B, substantially as described.

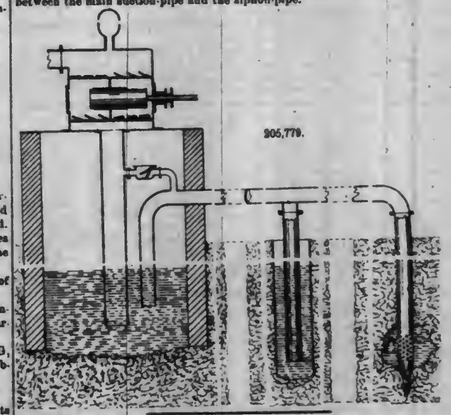
206,779. HYDRAULIC CONNECTIONS FOR A SERIES OF WELLS OR CISTERNS. Wm. E Werthen, New York, N. Y. Filed May 31, 1878.

Brief.—When the water in the main well falls lower than in the other wells, the water in the supply-wells siphons over into the main well.

Claim.—1. The combination of several wells by means of a suction-pipe in each auxiliary well and a siphon-pipe in the main well, combined substantially as before set forth.

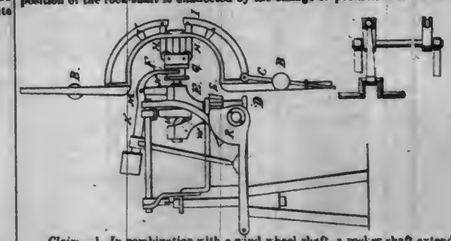
2. The combination, substantially as before set forth, of the main and auxiliary wells with a single pump by means of the suction-pipe of the main well, a suction-pipe for each auxiliary well, and the siphon-pipe delivering into the main well.

3. The combination, substantially as before set forth, of the suction-pipe of a main well, the auxiliary suction-pipe, the siphon-pipe, and the connection between the main suction-pipe and the siphon-pipe.



206,780. WIND-ENGINES. Anton Zwiebel, Burlington, Wis. Filed Feb. 8, 1878.

Brief.—No tail-vane is used, but the wheel is thrown out of the wind by the action of the balls and their connections. The driving-shaft is connected to the power-transmitting rock-shaft by a ball-and-socket joint, so that the position of the rock-shaft is unaffected by the change of position of the wheel.

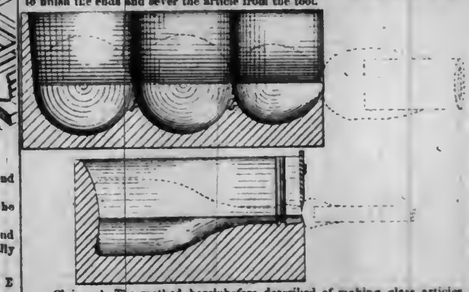


Claim.—1. In combination with a wind-wheel shaft, a rocker-shaft extending out in the same direction therewith, and a lever connecting said rocker-shaft to a pitman by ball-and-socket joint, said pitman being connected to the crank on the main driving-shaft, so that by means of the ball-and-socket joint the rocker-shaft may remain in position when the wheel is turned edgewise to the wind, substantially as described.

2. Balls B, arm I, clutch F, block G, arm K, connecting-rod O, lever Q, and segment-wheel R, meshing into wheel S, in combination with shaft D, substantially as and for the purpose described.

206,781. MANUFACTURE OF GLASSWARE. Thomas B. Atterbury, Pittsburg, Pa. Filed July 1, 1878.

Brief.—The open molds have a hemispherical or half-sectional configuration of the article to be molded made therein. The molten glass which forms the article is placed in the open mold, and by rotation with the tool, the force of gravitation, the plasticity of the glass, and by blowing, the articles are formed. Stationary cutting-ribs on the molds, and pivoted knives, serve to finish the ends and sever the article from the tool.



Claim.—1. The method hereinbefore described of making glass articles which are round in cross-section, consisting in rotating the plastic glass under its own weight in a segmental former.

2. The method hereinbefore described of making hollow glass articles which are round in cross-section, consisting of simultaneously blowing and rotating the plastic glass under its own weight in a segmental former.

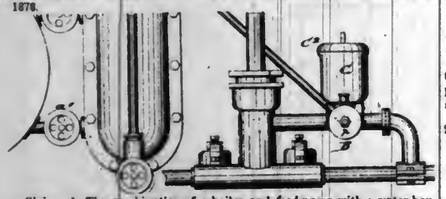
3. The method hereinbefore described of making solid or hollow glass articles which are round in cross-section, consisting of rotating the plastic glass in a segmental former to shape the article, and upon a cutter or cutters to sever and finish the end or ends of the same.

4. A glass-former for forming glass articles, substantially as hereinbefore described, the working face of which is a half-circle or a segment thereof in cross-section, substantially as set forth.

5. An open mold or former for forming glass articles by rotation therein, substantially as and for the purposes described.

6. A segmental circular former having a groove or grooves in which to form the article or articles by rotation therein, and one or more cutters to sever and finish the same at one or both ends, substantially as described.

205,782. FEED-WATER REGULATORS. Joseph S. Bodie, Philadelphia, Pa. Filed May 23, 1878.



Claim.—1. The combination of a boiler and feed-pump with a water-box, connected to boiler and having a water-gage, interior float-regulated valve, and with a casing or cylinder having spring-acted and annularly-grooved piston, and being connected to water-box and feed-pump, substantially as and for the purpose set forth.

2. The combination, in a feed-water regulator, of the cylinder or casing B, being connected by steam-pipe with the valve of water-box, and by side portions to feed-pump and suction-pipe, with a sliding and spring-acted piston, B', having central annular groove and guide-rod, adjusting-nut, and pivoted ball or bridle, substantially as specified.

3. The combination, in a feed-water regulator, with the feed-pump and cylinder, of a cup for the exit of air accumulating in the feed-pump, the cup having an interior float and valve for regulating the water-level and preventing overflow, substantially as set forth.

4. The combination, in a feed-water regulator, of the air-escape cup C, having cover with center hole, with a perforated bottom sleeve having interior perforated cup-valve, and with a guided float-valve having air-exit holes, and top stem with fixed valve, substantially as set forth.

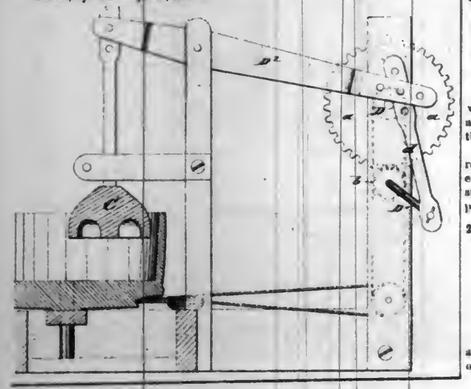
205,783. BUNG AND TAP BUSHINGS. Gustave W. Bert, Philadelphia, Pa., assignor of one-half his right to Wm. W. Bower, same place. Filed May 15, 1878.



Claim.—1. The combination, in a bung and tap bushing, of a tapered metallic sleeve, having an external screw-thread to fit into the head or stave of a keg, barrel, or vat, and a series of packing-rings, of rubber cloth, fitted by compression within an internal recess in the sleeve, and retained in position by a packing-screw engaging an internal screw-thread thereon, substantially as set forth.

2. The combination, in a bung and tap bushing, of a tapered metallic sleeve, having an external screw-thread extending from its larger to or near its smaller end, and an internal recess, having a dovetailed or inclined bottom, a sleeve of compressed packing fitting within said recess and affording bearing for a bung and spigot clear of the outer sleeve, and a packing-screw which engages an internal thread on said outer sleeve above the packing, these members being arranged to provide a clear open space for the passage of the bung and spigot, and a flush top for the bushing when inserted in a keg, substantially as set forth.

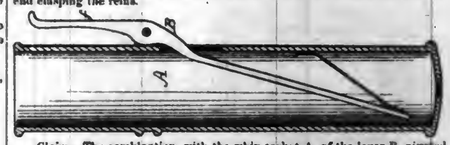
205,784. WASHING-MACHINES. John H. Carrier, Barton R. Baker, and William McCarty, London, Ky. Filed Apr. 23, 1878.



Claim.—A washing-machine employing a pounder and rotary tub, and having its pounder-stem operated by means of the lever D^3, crank-rod *d*, crank-shaft D^1, pinion *b*, and crank-shaft D, having cog-wheel *a*, all arranged substantially as shown and described.

205,785. WHIP-SOCKET AND REIN-HOLDER. Ezra Cornell, Lyons, N. Y. Filed Dec. 24, 1877.

Brief.—The whip, entering, presses the lower end of the lever, the upper end clasping the reins.



Claim.—The combination, with the whip-socket A, of the lever B, pivoted to the said socket, one end passing within the socket and standing across the passage thereof, and the other end resting outside the socket, and serving as a clamp to the reins, as shown and described, and for the purpose specified.

205,786. HOT-AIR REGISTERS. John W. Collins, Washington, D. C. Filed Mar. 13, 1878.

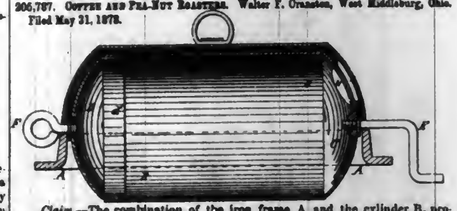


Claim.—1. The combination, with the hot-air-register frame adapted to be permanently fixed in a chimney or wall, of a series of slats, held therein at one end by a locking-plate, M, which is prevented from working out of place by the face-plate E, substantially as described.

2. The combination, with a hot-air-register frame adapted to be permanently fixed in a chimney or wall, of a series of slats, held therein at one end by a locking-plate extending entirely across the frame, and prevented from dropping down from the slat-journals by a dovetail connection, U, or by being slipped behind guides N or other suitable holding devices, substantially as described.

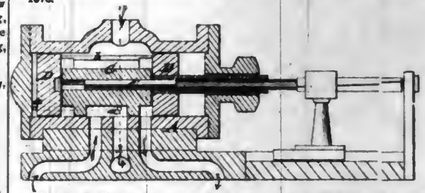
3. The hot-air register consisting of the permanent frame A B C, a series of removable slats, F, a locking-plate, M, for the upper journals of the slats, and a removable plate, G, for their lower journals, substantially as described for the purpose specified.

205,787. COFFEE AND PEA-NUT ROASTERS. Walter F. Cranston, West Middleburg, Ohio. Filed May 31, 1878.



Claim.—The combination of the iron frame A and the cylinder B, provided with a stationary head, C, and a detachable crank-pivot, E, at one end, and a detachable head, D, and a handle-pivot, F, at the other end, and having a mica plate, H, secured in an opening in one of its heads, substantially as herein shown and described.

205,788. SLIDE AND STEAM VALVES. George W. Dixon, Spring Lake, Mich. Filed May 4, 1878.



Claim.—1. The combination of the reciprocating plunger of a valve casing with an interior main valve, operated by an axially-reciprocating valve-rod and reciprocating socketed arm, so as to alternately open the steam-ducts of the reciprocating plunger, substantially as and for the purpose set forth.

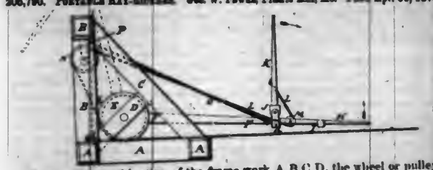
2. The combination of a valve-rod having square end portions, fitting a reciprocating socketed arm at one end and an interior main valve at the other end, with a directly reciprocating plunger having top slot for admitting the steam, and with side steam-ducts, so as to set the valve properly on the supply-ports of the pump-cylinder, substantially as and for the purpose specified.

205,789. SHAFT-LUG PROTECTORS. C. E. Edmands, East Corinth, Me. Filed Feb. 4, 1878.



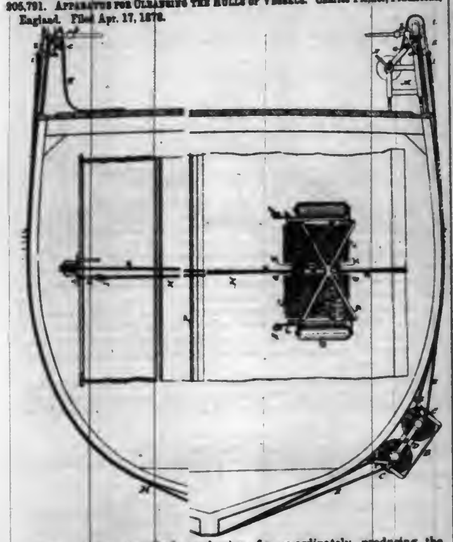
Claim.—A shaft-lug protector, *a*, of the form herein shown and described, and having rivets *b* formed thereon and adapted to pass through the substance of the loop, substantially as and for the purposes specified.

205,790. PORTABLE HAY-RIGGERS. Geo. W. Fowks, Prairie Hill, Mo. Filed Apr. 30, 1878.



Claim.—The combination of the frame-work A B C D, the wheel or pulley E, the lever F, the rake-head G H I, the hinged rake-head J K, the guide-pulleys or staples M N P Q, and the cords O L O with each other, substantially as herein shown and described.

205,791. APPARATUS FOR CLEANING THE HULLS OF VESSELS. Charles Fielder, Plumstead, England. Filed Apr. 17, 1878.



Claim.—1. The described mechanism for co-ordinately producing the advancing and receding movements of the brush-frame and the rotary movements of the brushes by means of the same ropes or chains, consisting of ropes H H, passing around pulleys G G upon the axles of the brushes, having their several extremities attached, as described, the whole being operated by a winch or other suitable power, substantially as specified.

2. The described apparatus for cleaning the hulls of vessels and other submerged structures, consisting of two or more rotary brushes, connected, as shown, by endless belts or chains, adjusted in a frame adapted to travel over the surface of the structure to be cleaned, which frame is confined in the path or line of action, and, together with the rotary brushes which it carries, have imparted to them their respective appropriate motions from the same ropes or chains by which the said mechanism is confined in its path of duty.

3. The guide E, in combination with frame B and ropes H H, substantially as shown and described.

4. The combination of ropes H H, brush-frame B, pulleys G G, brushes C C, endless belt or chain D, and guide R, operated by a winch or other suitable mechanism, substantially as described and set forth.

5. The combination of frame B, equipped with two or more rotary brushes, connected by endless belts or chains, as hereinbefore described and claimed, with air-bags or floats Q Q, the whole being attached to the vessel or other structure, and the several movements thereof controlled by the ropes H H, having their ends attached, substantially as described, of which the hauling in and paying out are regulated by any suitable motor located on the deck of the vessel, substantially as described and set forth.

205,792. APPARATUS FOR DISTILLATION OF OILS. H. Frasch, Cleveland, Ohio. Filed Aug. 3, 1877.

Brief.—Oil is distilled and separated into liquids of different gravity by passing it in thin sheets over successive vaporizing-surfaces of increasing temperature, condensing the vapors in the respective chambers in which they are formed, and collecting the graded condensed products. Different gravities of oil are collected in one vaporizing and condensing chamber by providing troughs at different elevations on the sides of the condensing-hood, the vaporizing-surface also increasing in temperature from above downward. Streams of cold water are passed down the outer sides of the condensing-hood.

Claim.—1. The combination, with the vaporizer, of the hood or condenser and a pipe, which latter conveys the liquid above the vaporizer and discharges it over the latter, said hood or condenser being made readily removable from the vaporizer, and connected with the remaining apparatus by a water-joint at its base, substantially as set forth.

2. The combination, with the vaporizer, of the hood or condenser formed with the water-chamber on its top, said water-chamber extending over its entire upper surface, and provided with notched or serrated sides, adapted to discharge its contents in little streams or drippings over the vertical sides of the hood, substantially as set forth.

3. The combination, with the vaporizer H, provided with the trough D, of the hood or condenser F and trough E, substantially as set forth.

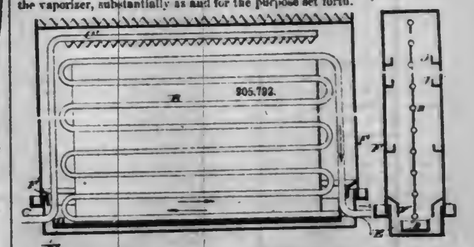
4. The combination, with the vaporizer and condenser, of the distillate-receivers J J', &c., formed in a vertical series upon the side wall of the condenser, substantially as set forth.

5. The condenser or hood F, provided with the deflecting flanges or drips F', substantially as set forth.

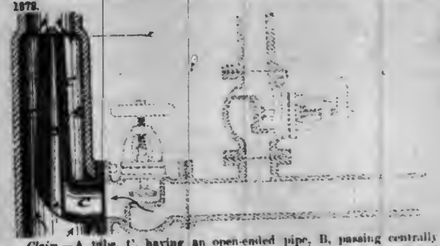
6. The apparatus for separating from oil its more volatile ingredients and for collecting the different products, which consists in a vaporizer, feeding mechanism for delivering the liquid to be treated in drops, films, spray, or other disseminated form upon the vaporizer, said vaporizer being disconnected from any condensing surface that would direct any condensed ingredient back into the liquid that has passed over the vaporizer, and a condenser adjacent to the vaporizer, said vaporizer and condenser each provided with separate conduits and receptacles for collecting the products, substantially as and for the purposes set forth.

7. In an apparatus for separating from oil its more volatile ingredients and for collecting the different products, a vaporizer, feeding mechanism for delivering the liquid to be treated in drops, films, spray, or other disseminated form upon the vaporizer, said vaporizer being disconnected from any condensing-surface that would direct any product of condensation back into the liquid that has passed over the vaporizer, and in connection therewith a condenser substantially parallel with and in such close proximity to the vaporizer that the vapors set free will be condensed as soon as they are given off, said condenser and vaporizer provided with separate conduits to gather the respective products, substantially as and for the purposes set forth.

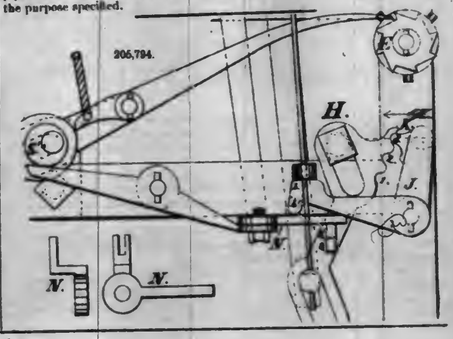
8. In an apparatus for separating from oil its more volatile ingredients, and for collecting separately those condensable ingredients that are of different specific gravity, a vaporizer, feeding mechanism for delivering the liquid in drops, films, spray, or other disseminated form upon the vaporizer, said vaporizer being disconnected from any condensing surface that would direct any product of condensation back into the liquid that has passed over the vaporizer, and, in combination therewith, a condenser closely adjacent to the vaporizer, adapted to condense the vapors as soon as they are given off without permitting them to mix with those given off from the hotter portions of the vaporizer, said condenser provided with conduits at different points for collecting separately the condensed vapors given off from differently-heated portions of the vaporizer, substantially as and for the purpose set forth.



205,793. CONDENSERS FOR STEAM-ENGINES. John H. Gable, Shamokin, Pa. Filed June 3, 1878.



Claim.—A tube, C, having an open-ended pipe, B, passing centrally through the straight part thereof, and in one piece therewith, as shown and described, to adapt it to be inserted in a water-pipe, the receiving or suction pipe of a pump at the side of a vessel, or in a stream of running water, for the purpose specified.

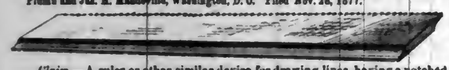


205,794. SHUTTLE-BOX MOTIONS FOR LOOMS. Robt. B. Goodyear, Philadelphia, assignor of one-half his right to Wadsworth, Shore & Co., Cardington, Pa. Filed Nov. 14, 1877.

Brief.—The rod that supports the shuttle-boxes is connected to one end of a bell-crank lever, to the opposite end of which is secured a toothed sector, that meshes with teeth on a plate which is so arranged that as it moves up and down it also moves toward and away from said sector. Projections are arranged on the outside of the plate and on the inside of the bell-crank lever, and are engaged by the said finger as it is raised, the proper projection for the finger to engage with being determined by suitable pattern mechanism.

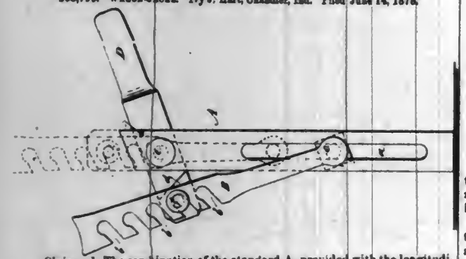
Claim.—The right-angle lever J, one arm having a series of steps, *b b'*, the other arm having a pivoted segment provided with a series of teeth, in combination with the double-slotted sliding plate H, provided with a series of steps, *a a'*, and notches 1 2 3, the finger N, and mechanism for operating said finger, as shown and described, and for the purpose specified.

205,795. RULERS. John W. Green, Pontiac, Mich., assignor of one-half his right to Ben. M. Plumb and Jas. H. Mandeville, Washington, D. C. Filed Nov. 28, 1877.



Claim.—A ruler or other similar device for drawing lines, having a notched edge, substantially as described.

205,796. WAGON-JACKS. Ivy J. Hart, Chandler, Ind. Filed June 14, 1878.



Claim.—1. The combination of the standard A, provided with the longitudinal slot *a*, the slide B, provided at its lower end with the bolt *e*, working in said slot, and having the notches *b* in its widened upper portion, and the lever D, pivoted to the standard and provided with the bolt *f*, engaging with the notches *b*, substantially as and for the purpose shown and described.

2. The combination, with the notched slide or lifter B, of the lever D, having the overhanging head or shoulder *d*, and provided with the bolt *f*, the standard A, having the inclined upper end, and the pin or stud *g*, projecting from said standard, substantially as and for the purpose shown and described.

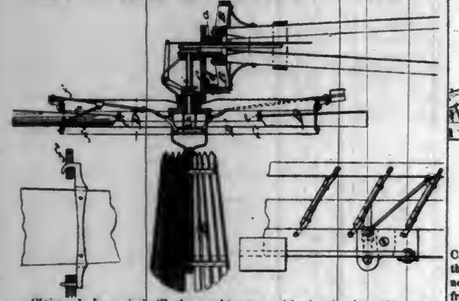
205,797. PENCILS. Edwin C. Haviland, Sydney, New South Wales. Filed Feb. 8, 1878.



Claim.—1. A pencil having a revolving many-chambered barrel or magazine for leads, a nozzle or cap-piece adapted to receive and hold the leads from any one of the chambers, and a device, substantially as described, for locking the barrel to the nozzle, as and for the purpose set forth.

2. The combination of the revolving barrel A, nozzle D, having the split tapering tube E, the rod B, and head F, substantially as shown and described.

205,798. WIND-ENGINES. Sanford Hasen, Ripon, Wis. Filed Apr. 26, 1878.



Claim.—1. In a windmill, the combination, with the circular table at the top of the tower, of a wheel-supporting yoke, traversing by a flanged center sleeve and by a wheeled carriage with safety-hook on the same, substantially as and for the purpose described.

2. The combination of the fixed table at the top of the tower and of a wheel-supporting yoke traversing thereon with a wheel having fixed and radially-winged vane, the wheel being interposed between the tower and the vane, substantially as specified.

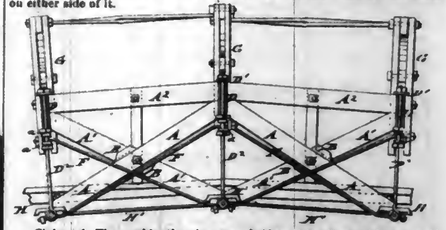
3. The combination of the spider-frame of the wheel, having fixed inner and outer rings, with the swinging wings, adjusted by a movable ring and centrifugal governor-balls, substantially as set forth.

4. In a windmill, the combination of the wings of the wheel, having cross-straps with straight pins at one end and hooks at the opposite end, with a fixed outer ring of the supporting spider-frame, and with a movable ring adjusted by centrifugal governors, substantially as described.

5. The combination of the swinging wings of the wheel with the fixed inner and outer rings of the supporting spider-frame, a movable connecting-ring, and with connecting and shifting rods and centrifugal governing-balls regulated from base of the tower, substantially as specified.

205,799. TRUSS-BRIDGES. Wm. Irelan, Oak Springs, Iowa. Filed Apr. 27, 1878.

Brief.—The members of each panel consist of horizontal top and diagonal thrust braces, diagonal tension-rods, vertical rods at the ends of the panel, and horizontal rods at its bottom. The top brace and diagonal braces at their upper ends rest in sockets in vertical shoes, which are formed by vertical and horizontal ribs on flat plates. The lower ends of the diagonal braces rest in similar horizontal shoes. Bolted to the horizontal shoes is the looped end of a transverse rod, which retains the nuts on the ends of the horizontal and diagonal rods, and to the threaded prolongation of which the looped end of the vertical rod is secured by a nut. The upper ends of the vertical rods are secured to the upper and lower sides of the vertical shoes by nuts. Just below these shoes are cross-plates similarly attached to the vertical rods, which serve to retain the upper ends of the diagonal rods. One diagonal brace extends entirely across the panel, and its counter, cut in two pieces, rests in fixed shoes on either side of it.



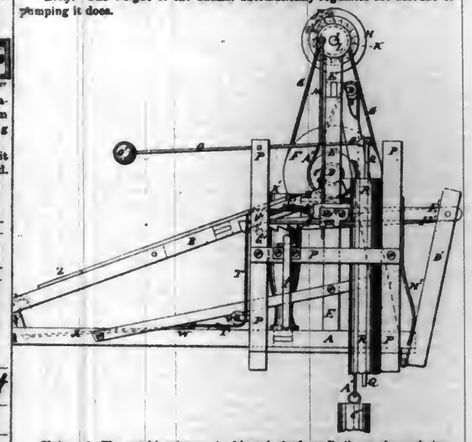
Claim.—1. The combination, in a truss-bridge, of the diagonal braces A A', the connecting top brace A², the vertical and horizontal shoes D H, the horizontal top cross-plates D', the vertical stay-bolts D², and the diagonal stiffening-rods F, as and for the purpose set forth.

2. The combination of the diagonal braces, of which one brace is made of two sections, supported on center shoes of the intersecting brace, with vertical and horizontal end shoes, and with vertical, diagonal, and horizontal stiffening-rods, connected to the loop-shaped ends of transverse joist-bearing rods, substantially as specified.

3. The combination of the diagonal braces and connecting top braces, resting on vertical and horizontal shoes, strapped together by stay-bolts, with transverse cross-plates and with the vertical roof-sustaining posts, substantially as specified.

206,800. STOCK-PUMPS. Summit B. King, Mason, Mich. Filed May 21, 1878.

Brief.—The weight of the animal automatically regulates the amount of pumping it does.



Claim.—1. The combination of the hinged platform B, the cords or chains C, the shaft D, the pulley F, the endless chain or band G, the loose pulley H the pawl and ratchet J K, the shaft I, the crank or cranck-wheel L, the connecting-rod M, the weighted lever O, the cord A', and the weight C' with the frame-work A E and the piston-rod Q of the pump R, substantially as herein shown and described.

2. The combination of the guide-rods S, the guide-block N, the cord T, the lever W, the chains X, the elbow-levers Y, and the trap Z with the hinged platform B, the frame-work A E P, and the connecting-rod M, that operates the pump-lever O, substantially as herein shown and described.

3. The combination of the pivoted connecting-bar E' with the hinged bar D', the spring H', the pivoted rack-bar F', the pin G', the weighted lever I', and the staple or projection J' with the sliding guide-block N, the hinged platform B, and the frame P, substantially as herein shown and described.

206,801. OVERALLS. Stephen Laskey, Chicago, Ill. Filed June 7, 1878.

Claim.—1. Overalls or other pantaloon garments constructed with a fly stay-piece, *c* or *c'*, formed of a continuation of the body fabric of the garment at either side of the fly-opening, substantially as and for the purpose set forth.

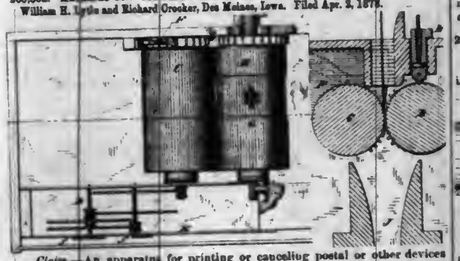
2. Overalls or other pantaloon garments constructed with the fly stay-pieces *c* and *c'*, formed of a continuation of the body fabric of the garment at the sides of the fly-opening, substantially as and for the purpose set forth.

3. The improvement in the manufacture of overalls and similar pantaloon garments herein set forth, which consists in forming the stay piece or pieces for re-enforcing the crotch of the fly of the body fabric in the manner substantially as described and shown.



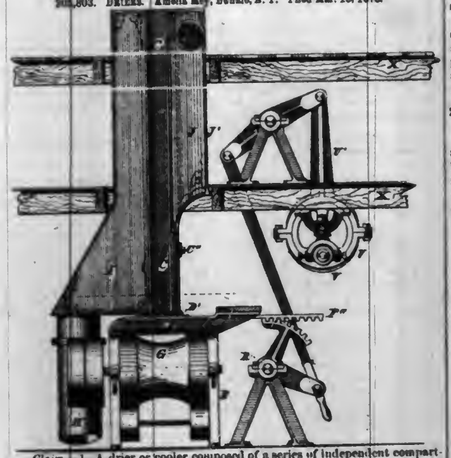
206,801.

206,802. MACHINES FOR CANCELING AND REGISTERING LETTERS AND POSTAL CARDS. William H. Lytle and Richard Crocker, Des Moines, Iowa. Filed Apr. 2, 1878.



Claim.—An apparatus for printing or canceling postal or other devices upon envelopes, postal or other cards or wrappers, and registering and delivering the same, consisting of the box K, having the rollers B and C, inking device H, registering mechanism D, feed-opening I, and delivery guides J, all constructed and arranged to operate as set forth.

205,803. DRIERS. Amelia May, Buffalo, N. Y. Filed Mar. 15, 1878.



Claim.—1. A drier or cooler composed of a series of independent compartments, A, having walls formed of V or U shaped metallic slats E, placed one upon the other, each compartment being provided with an air-chamber, I, and having a sliding bottom provided with an adjustable discharge-aperture, substantially as and for the use and purpose specified.

2. A drier or cooler composed of a series of independent compartments, A, having front and rear walls formed of angular slats E, placed into removable frames E', said compartments being divided by a series of columns, C', forming the end walls for said compartments, and provided with separate air-chambers I, as and for the purpose stated.

3. A drier and cooler embodying the following elements, to wit: a series of compartments, A, each provided with an independent air-chamber, I, and an adjustable sliding bottom, a common discharge-duct, J, and a horizontal conveyer, H, operating below the compartments A, as specified.

4. A drier and cooler in which the end walls are formed of columns C, having offsets C', and the side walls formed of metallic slats E, set into removable frames E', as and for the object stated.

5. In a drying and cooling apparatus, the front and rear walls E, composed of V or U shaped metallic slats, placed one above the other into frames E', said frames being secured together, as described, and held to the apparatus, substantially in the manner as and for the purpose specified.

6. In a drying and cooling apparatus, the walls E, composed of metallic slats, placed one above the other, said slats being placed into frames E', secured together by the rod E'', as and for the purpose specified.

7. In driers or coolers, an air-chamber, I, having one wall in common with said drier or cooler, and extending from top to bottom of the same, said chamber being provided with partition-walls I', separating said chamber into compartments, each of which has an induction-pipe, H, and a discharge through the common wall of said apparatus, substantially as and for the purpose specified.

8. The slides F, composed of two plates, one movably arranged upon the other, with their upper surfaces flush and even, the movable slide being provided with means, such as hereinbefore specified, for changing the distance between the abutting ends of said plates, as and for the object stated.

9. The slides F, composed of two plates, F F', the latter being arranged within guides of the former, and provided with means, substantially as specified, for changing its position relative to the plate F, and thereby the size of the aperture *e* between them, as and for the object stated.

10. A bottom for the compartments A, composed of two plates, arranged side by side, with their upper surfaces flush and even, and capable of being adjusted relative to the distance between them, whereby an adjustable discharge for said compartment is produced, substantially as and for the purpose stated.

11. The discharge-slide for the compartments A, composed of two plates, F F', operated by the adjusting-screws *f'*, counter-shaft *a'*, with suitable connecting-gearing, said slide being reciprocated underneath said compartment, as and for the purpose stated.

205,804. PACKING FOR OIL-WELL CASINGS. John Q. Miller, Emlenton, Pa. Filed Feb. 28, 1878.

Brief.—Packs the well at the bottom of the water-casing, where the well is made smaller.



Claim.—1. The combination, with the section C, of an elastic packing, D, and guide-sleeve D', extending below said section, as and for the purpose described.

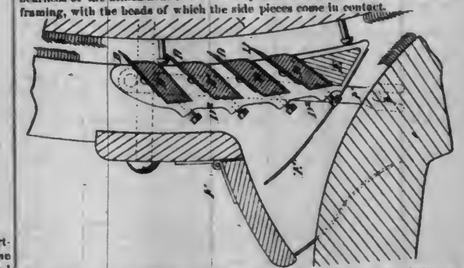
2. The combination, with the section C, the packing D, and sleeve D', of the ring E and coupling B, all arranged as set forth.

3. The combination, with the sections A C, having the coupling B, the ring E, and the sleeve D', of the ring F and the straps F', arranged to operate as specified.

4. The combination of a short bottom section, coupled to the lower end of a casing in the upper larger section of an oil-well hole, with an exterior elastic sleeve or packing extending below the edge of the section, and having a compressing top ring, interior shorter sheet-metal sleeve, and exterior retaining straps extending below the lower edge of the packing, substantially as and for the purpose specified.

205,805. CLEARING ATTACHMENTS FOR CARDING-MACHINES. Egidi Moog, Oggersheim, Bavaria, Germany. Filed Nov. 30, 1877.

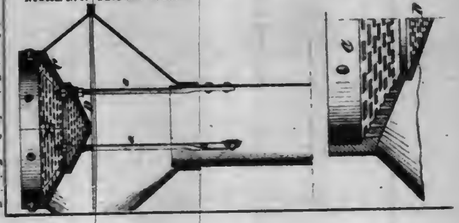
Brief.—The attachment, consisting of grooved side arms, in which are adjustably placed blocks carrying scraping-knives, and a collecting-trough back of the knives, is placed in the space between the main cylinder, top flats, and doffer, and supported on swinging side arms, the lower ends of which are slotted and rest on bolts on the side framing of the machine. The nearness of the attachment to the main cylinder is regulated by screws in the framing, with the heads of which the side pieces come in contact.



Claim.—1. The clearing attachment for carding-machines, consisting of the grooved side pieces D², bottom connecting-piece E, rear collecting-trough F, pivoted supporting-arms F, and adjustable rails and knives D' D, all constructed as herein described, and adapted for use in the manner set forth.

2. The combination of the pivoted arms, having forked lower ends, with the clearing attachment D² D' D E, for adjustably hanging said attachment to the frame of a carding-machine, and holding it in proper relation to the carding-cylinder, as herein set forth.

205,806. SPARK-ARRESTERS FOR LOCOMOTIVES. Edward Osborn and Charles S. Osborn, Newton, N. J. Filed Nov. 1, 1877.



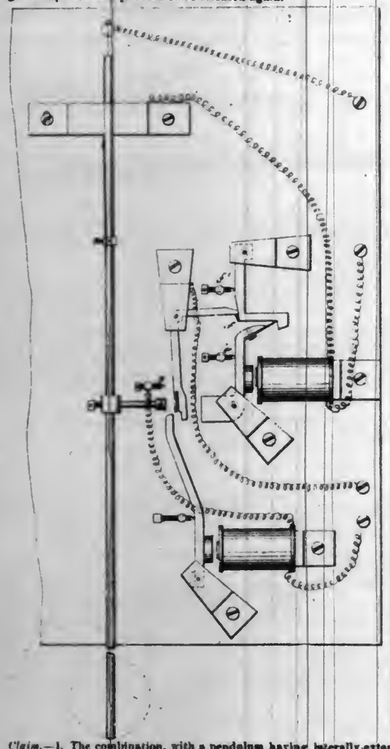
Claim.—In a spark-arrester, the combination of the inverted truncated cone C, secured in the exit-orifice of a smoke-stack, with the inverted conical point D, adjusted in place by means of the rods *a*, the whole provided with inverted conical rectangular orifices graduated in size from the center to the circumference, substantially as described.

205,807. PROCESSES OF COLORING PHOTOGRAPHS. Susan M. H. Pennington, Evansville, Ind. Filed May 3, 1878.

Claim.—The process for preparing photographs for coloring, consisting in first immersing the photograph in a clearing-solution of rosin and paraffine, each previously dissolved in turpentine, and then applying to the face a coat of rosin dissolved in alcohol, and to the back a coat of the clearing solution, substantially as set forth.

205,808. ELECTRIC GRAPITY-ESCAPEMENTS FOR PENDULUMS. John F. Pratt, San Francisco, Cal. Filed Apr. 13, 1878.

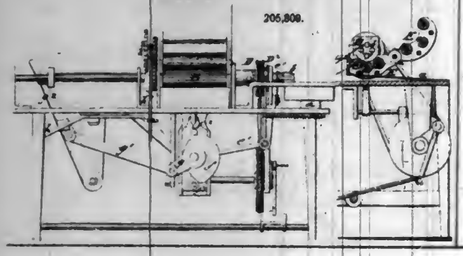
Brief.—Pendulum, when near vertical position, closes a circuit to magnet, whereby a weight falls and impels the pendulum. At the same time an independent circuit and second electro-magnet are brought to action, whereby the weight is replaced in a position to be released again.



Claim.—1. The combination, with a pendulum having laterally-extending contact-arm, of a gravity-lever that is dropped by closing one electric circuit, so as to impart an impulse to the pendulum by gravity, but returned to its position and relatched by the closing of a second electric circuit and the opening of the first circuit, substantially as and for the purpose set forth.

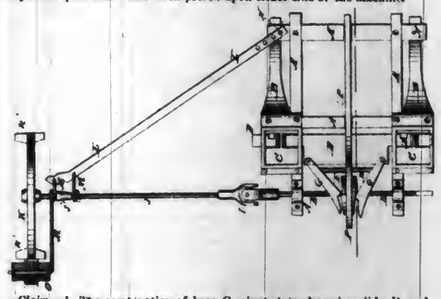
2. The combination, with a pendulum having contact-pin and lateral arm, and with an independent bridge having vertical arm and contact-spring, of a gravity-lever dropped by a releasing-lever and armature of an electro-magnet, placed in circuit with the contact pin and spring of pendulum and bridge, and relatched by the armature-lever of a second electro-magnet placed in circuit with the gravity-lever and its banking-screw, substantially as described.

205,809.



205,810. CHECK-ROW ATTACHMENTS FOR SEED-PLANTERS. Geo. W. Rogers, Frankford, Mo. Filed Mar. 14, 1878.

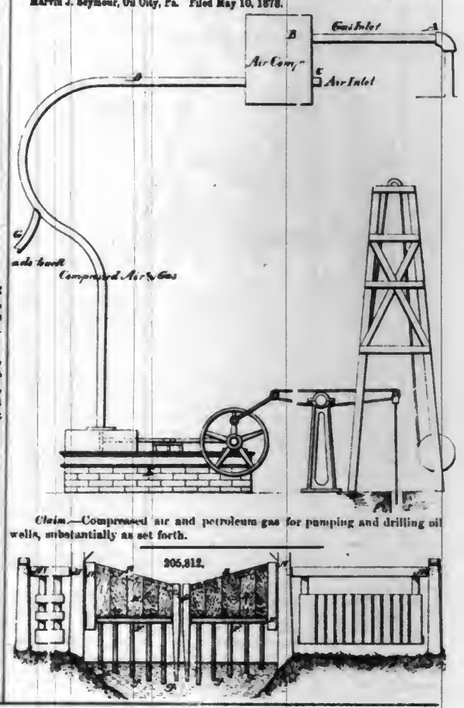
Brief.—Two bars pivoted to seed-slide, and connected by a cord, have their rear ends formed with inclined shoulders, and forked, to straddle the shaft, on which is secured a wheel having cam-shoulders, which strike the inclined shoulders of said bars, so as to alternately push said seed-slide in opposite directions. Marker-wheel provided with a reversible scraper, which is adapted to operate upon said wheel when placed upon either side of the machine.



Claim.—1. The combination of bars C, pivoted to dropping-slide D and connected together by a cord or bar, H, the shaft E, and cam-wheel F, all constructed and arranged to operate as described.

2. The combination of the rods M, the collar *f*, the scraper O, the bar L, and the pins N with the shaft J, the marking-wheel K, and the frame A of a seed-planter, substantially as herein shown and described.

205,811. DRILLING AND PUMPING OIL-WELLS BY COMPRESSED AIR AND PETROLEUM-GAS. Marvin J. Seymour, Oil City, Pa. Filed May 10, 1878.



Claim.—Compressed air and petroleum gas for pumping and drilling oil wells, substantially as set forth.

205,812.

205,812. FLOOD-GATES. John T. Simpson, Meigs Township, Muskingum County, Ohio. Filed Dec. 17, 1876.

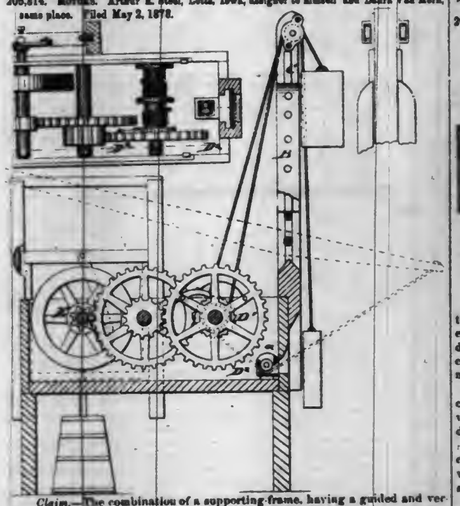
Claim.—A swinging flood-gate consisting in the combination, with the swinging gates E E, of the rock-shafts F F, journaled to the lower edges of said gates, said rock-shafts having palings *g g* secured thereto, substantially as set forth.

205,813. FEED-WATER HEATERS. James C. Stead, Green Point, N. Y. Filed June 12, 1878.



Claim.—The supplementary steam generator or drum D, set on the bridge-wall of a furnace in an inclined position, or having the upper portion of its shell inclined, in combination with a pipe connecting the highest exposed part of the drum with the steam-space in the boiler, and another pipe connecting the lower end of the drum with the lower part of the boiler, substantially as and for the purposes set forth.

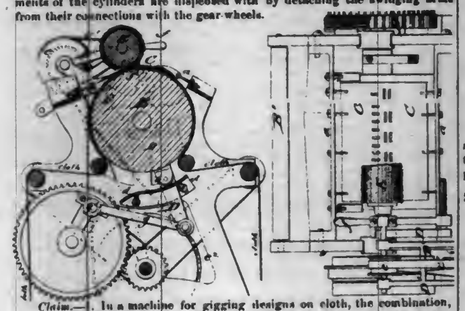
205,814. MOTORS. Arthur B. Stead, Lotts, Iowa, assignor to himself and Laura Van Horn, same place. Filed May 2, 1878.



Claim.—The combination of a supporting-frame, having a guided and vertically-adjustable pulley-post, with two ropes, having a larger driving and a smaller winding-up weight, and with a revolving drum or cylinder and suitable power-transmitting gearing and mechanism, substantially as specified.

205,815. MACHINES FOR GIGGING DESIGNS ON CLOTH. Max Strakosch, Brünn, Austria. Filed Mar. 23, 1878.

Brief.—A stencil-plate intervenes between the drawing and gigging cylinders. The drawing-cylinder is reciprocated vertically and the gigging-cylinder horizontally. The cloth may receive either a continuous or intermittent feeding motion. When the cloth is fed continuously the reciprocating movements of the cylinders are dispensed with by detaching the swinging arms from their connections with the gear-wheels.

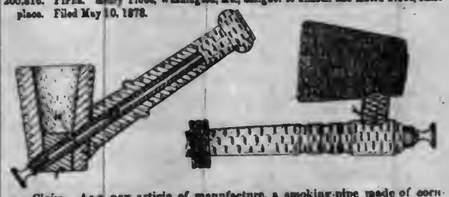


Claim.—1. In a machine for gigging designs on cloth, the combination, with a drawing-roller and a stationary stencil arranged above the same, of a gigging-cylinder and mechanism, substantially as described, for imparting to the said drawing-roller a rotary and a vertical reciprocating motion and to the gigging-cylinder a rotary and a horizontal reciprocating movement back and forth over the stencil-plate, essentially as set forth.

2. The combination of the main cylinder B, stencil-plate C, and swinging arms D of the main or drawing cylinder, having anti-friction rollers *b*, with adjustable side guides *d* of the supporting frame, to produce the raising of the cloth to the stencil-plate or the lowering of the same, substantially as specified.

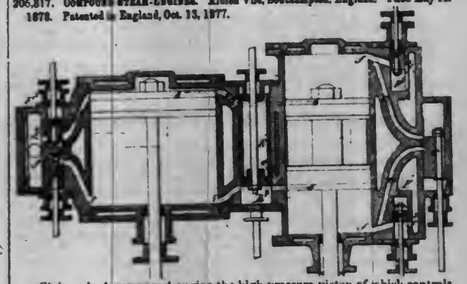
3. The combination of the main and gigging cylinders B E, intermediate stencil-plate C, and oscillating arms D D', having side rollers *b*, with suitable reciprocating mechanism, and with adjustable side guides *d*, to produce simultaneously the forward or backward motion of the cylinders with the raising or lowering of the cloth, substantially as described, and for the purpose specified.

205,816. PIPES. Henry Tibbe, Washington, Mo., assignor to himself and Anton Tibbe, same place. Filed May 10, 1878.



Claim.—As a new article of manufacture, a smoking-pipe made of corn-cob, in which the interstices are filled with a plastic, self-hardening cement, substantially as and for the purpose set forth.

205,817. COMPOUND STEAM-ENGINES. Albion Vile, Southampton, England. Filed May 13, 1878. Patented in England, Oct. 13, 1877.



Claim.—1. A compound engine the high pressure piston of which controls the admission of steam to the low-pressure cylinder, in which the steam is exhausted from either end of the high-pressure cylinder directly to the condenser or atmosphere on the closing by the high-pressure piston of the port connecting the two cylinders, in order to avoid compression in the high-pressure cylinder, substantially as herein set forth.

2. The combination, with a compound engine in which the high-pressure cylinder controls the steam to the low-pressure cylinder, of separate exhaust valves and ports for each end of both cylinders, substantially as shown and described.

3. The combination, with a compound engine in which the high-pressure cylinder controls the steam to the low-pressure cylinder, of a blank equilibrium-valve, for controlling the admission of steam to the high-pressure cylinder, substantially as set forth.

4. The combination, in a compound engine, of blank exhaust-valves, substantially as shown and described.

5. The combination, with a compound engine in which the high-pressure cylinder controls the steam to the low-pressure cylinder, of two reversing valves, as described, fitted in corresponding cylinders or chambers communicating with the two cylinders by ports, the said valves and ports being arranged to control the passage for the steam from the high to the low pressure cylinder, as specified.

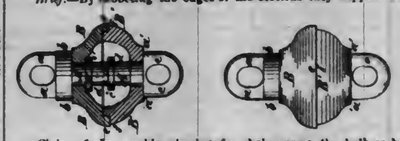
205,818. CIGARETTE-HOLDERS. José R. Villasana, New York, N. Y. Filed Feb. 1, 1878.



Claim.—A cigarette-holder having a spring-clamp applied thereto, held by a chain, and removable to different positions, for preventing the unrolling of the cigarette and the dropping of the same, substantially as and for the purpose described.

205,819. CHAIN-PUMP BUCKETS. Elbert White, Stamford, Conn. Filed Jan. 22, 1878.

Brief.—By rabbeting the edges of the sections they support each other.



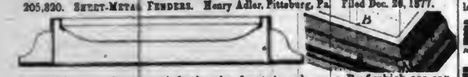
Claim.—1. In a rubber bucket for chain pumps, the bulb or body composed of sections B B', placed upon an eyed screw-shank, A, and with the circumferential edge of one section rabbeted upon the edge of the other, the whole held and adjusted by means of a nut upon said screw-shank, substantially as described.

2. Hollow buckets or valves of two sections, of spheroidal form, and rabbeted together, forming an adjustable bucket, substantially as described.

3. In a bucket for chain-pumps, the bulb or body composed of the sections B B', placed upon a shank, A, and with the edges of the two sections rabbeted upon each other, substantially as and for the purpose set forth.

4. The shank A, constructed with the loop *a*, shoulder *b*, loop *c*, and bearings *a'*, in combination with the two sections B B', substantially as herein set forth.

205,820. SHEET-METAL FENDERS. Henry Adler, Pittsburg, Pa. Filed Dec. 26, 1877.



Claim.—A sheet-metal fender the front A and apron B of which are constructed of one piece, and the end pieces C secured to the apron through the medium of a double or compound seam, and the ends of the front and end pieces united by means of corner-pieces D, substantially as herein described, and for the purpose set forth.

205,821. FENDER-BARS. Henry Adler, Pittsburg, Pa. Filed Dec. 26, 1877.

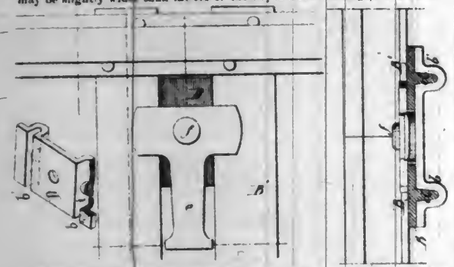


Claim.—1. A fender-bar provided on its under surface with a recess or recesses for the reception of the head of a screw-bolt, whereby said fender-bar and its posts may be secured to the fender, substantially as herein described, and for the purpose set forth.

2. A hollow post for a fender-bar provided with a screw-nut, in combination with a bolt and screw-nut for uniting the fender-bar with the fender, substantially as and for the purpose set forth.

205,822. RAILWAY-TRACK CONNECTIONS. Wm. C. Allison, Philadelphia, Pa. Filed June 19, 1878.

Brief.—Cross-ties of T-iron are riveted to each rail near its end, the ends of the rails on each side of the track being placed opposite to each other. A clamping-plate formed with two grooves, for receiving the ribs of the ties of two adjacent sections, is connected by a bolt with a plate which can be turned over the tops of the ties, firmly buckling them together. This plate has an arm at right angles to its length, which can be pressed down between the ties, preventing unbuckling. A projection in the groove of the clamping-plate locks with a recess in the tie, preventing lateral displacement. The groove may be slightly wider than the rib of the tie, to allow curving of the track.



Claim.—1. The combination of the cross-ties of adjoining railroad track sections with a clamping-plate beneath the ties and a turn-buckle situated above the same and pivoted to the said plate, all substantially as set forth.

2. A locking device for connecting together the adjoining sections of a railroad track, the said device consisting of a clamping-plate and a turn-buckle pivoted to the same, both plate and turn-buckle being adapted to the cross-ties of adjoining sections, substantially as set forth.

3. The combination of the cross-ties B B', of adjoining sections with a clamping-plate, D, having grooves for receiving the vertical flanges of the said cross-ties, and a turn-buckle pivoted to the said plate, all substantially as specified.

4. The combination of the notched T-shaped cross-ties with the grooved clamping-plates, having projections in the grooves adapted to the notches in the ties, as described.

5. The combination of the cross-ties and turn-buckle with clamping-plates having grooves *b b'*, one or both of which is wider than the vertical flange of the cross-ties, as set forth.

6. The combination of the cross-ties, clamping-plate, and turn-buckle E, having a tongue, *e*, as set forth.

205,823. MANUFACTURE OF ARTIFICIAL STONE. H. Bacon, Charleston, Me. Filed June 24, 1878.

Claim.—1. An artificial stone composed of cement and sand or gravel united, and solidified by dampening with a diluted chemical solution of water, spirits of ammonia, sal-soda, or any other alkaline carbonate, isinglass, white glue, and Irish or Iceland moss, substantially as and for the purpose set forth.

2. The herein-described liquid compound, consisting of water, spirits of ammonia, sal-soda, or any other alkaline carbonate, isinglass, white glue, and Iceland or Irish moss, substantially in the proportions named, and diluted, as set forth, for the purpose of producing the crystallization of the artificial stone, as described.

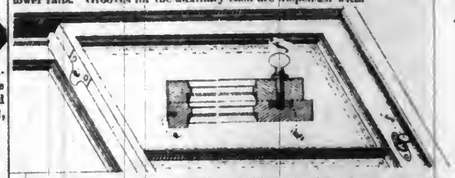
205,824. COMPOUNDS FOR ARTIFICIAL STONE. E. H. Barrett, Minneapolis, Minn. Filed June 17, 1878.

Claim.—1. The herein-described chemical compound, consisting of vinegar, iodine dissolved in alcohol, caoutchouc dissolved in ether, tannic acid, carbonate of ammonia, carbonate of potash, and gum-arabic dissolved in water, substantially in the proportions above named, and diluted, as set forth, for the purpose of producing the crystallization of the artificial stone, as described.

2. An artificial stone composed of cement and sand or gravel moistened with the diluted chemical mixture or compound formed of the ingredients described, substantially as and for the purpose set forth.

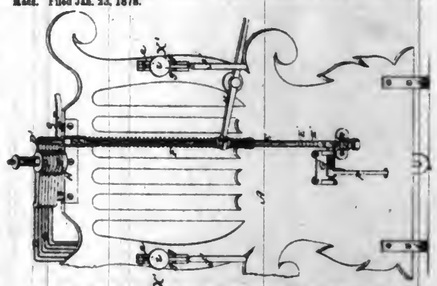
205,825. DOUBLE-WINDOW SASHES. Henry Barth, Cincinnati, Ohio. Filed Apr. 20, 1878.

Brief.—A removable auxiliary sash is secured to the permanent sash by lips engaging with the meeting-rail, and by a nut and thumb-screw on the lower rails. Grooves for the auxiliary sash are dispensed with.



Claim.—The combination, with a double sash, of the lips *e*, adapted to engage the meeting-rail of the permanent sash, nut *g*, and screw *f*, or their equivalents, for enabling the two component sashes to be operated in conjunction when desired, substantially as set forth.

205,826. MUSIC-LEAF TURNERS. Charles L. Bayrd, Wakefield, and Simon Paul, Waltham, Mass. Filed Jan. 23, 1878.



Claim.—1. In a music-leaf turner, the combination of a stationary bearing-pin, a series of hubs or base-pieces journaled thereon, each carrying a pivoted finger arranged to turn in its bearing, a series of springs whereby the hubs and fingers are independently impelled, a stop-pin whereby one or all of the hubs and fingers are held in position to turn the music-leaves when released, and mechanism, substantially as described, actuating the stop-pin to independently release the hubs and turning-fingers, as set forth.

2. In a music-leaf turner employing a series of spring-impelled hubs, D, journaled on a stationary bearing-pin, C, at the upper end of a rack or support, A, and a series of pivoted fingers, D', depending from said hubs, the combination, with said hubs and turning-fingers, of a ratcheted stop-pin, E, located on the rack or support, impelled downwardly by a spring, F, and regulated in its descent by an escapement, G, substantially as described.

3. In combination with the rack or support A, provided with leaf-turning mechanism, substantially as described, located at its upper end, the clamp O, also located at the upper end of the rack or support, and the vertically-adjustable clamp O', located below the clamp O, substantially as and for the purpose specified.

4. In combination with the rack or support A, having the slot or guide V, the adjustable shelf or bracket S, arranged to be held and guided in the slot, and provided with a clamp, O', for holding the sheets or leaves of music, and suitable locking devices, whereby the shelf or bracket is held at any desired height, substantially as described.

5. In combination with the shelf or bracket S, the shaft R, having the clamping-finger O', sprig T, and lever V, as set forth.

6. In combination with a music-leaf turner having spring-impelled turning-fingers, the spring finger or detent Y, arranged to bear against the outer surface of an unturned leaf with a yielding pressure, said finger being adapted to yield to allow the leaf to turn when its turning-finger is released, and to regain its position to prevent the turning of the succeeding leaf, as set forth.

7. The combination of the spring-impelled hubs or base-pieces D, provided with bearings *d d'*, the angular depending fingers D', arranged to vibrate in said bearings, and stops K, whereby the vibration of said turning-fingers in one direction is limited, substantially as and for the purpose specified.

8. The combination of the chambered hubs or base-pieces D, constructed as described, the coiled springs D^2, the bearing-pin C, and the sliding stop-pin E, as set forth.

9. The stop-pin E, having ratchet-teeth E', and adapted to be automatically depressed by a spring, F, combined with the hubs or base-pieces D, and the spring-escapement G, substantially as described.

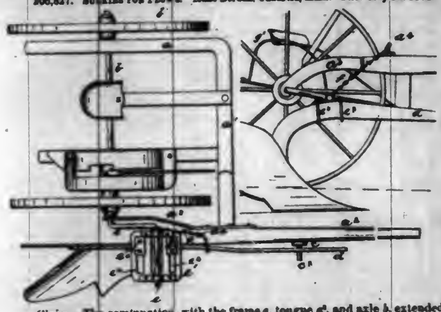
10. In combination with the stop-pin E, the lever a, whereby said pin is elevated, as set forth.

11. In combination with the rack or support A, the clamps X' X', pivoted to the back of said rack, and arranged to grasp the music-rack of a piano, whereby the rack or support is enabled to be inclined at different angles, as set forth.

12. The escapement G, consisting of the rock-shaft *m*, pawls *n n'*, spring *o*, and lever *p*, combined with the downwardly-impelled ratcheted pin E, substantially as described.

13. In combination with the rack or support, the clamps X', each composed of the following elements, to wit: a bearing-piece, *c*, rigidly attached to the rack or support A; a jaw, *f*, pivoted to said bearing-piece and provided with lugs *g g*; and a jaw, *f'*, pivoted to said lugs and provided with a screw, *i*, substantially as described.

205,827. SHARES FOR PLOWS. Isaac Berdan, Chatfield, Minn. Filed May 22, 1878.



Claim.—The combination, with the frame *a*, tongue *a'*, and axle *b*, extended and formed into a crank, *c*, on the outer side of the wheel *b'*, of the plate *c'*, having slots *c''*, adjusting-arm *c*, provided with horizontal pin *c'*, beam *d*, attached by suitable clevises to the plate *c'*, so that its forward end has a free vertical movement, and chain *f*, all arranged substantially as and for the purposes set forth.

205,828. CULTIVATORS. Frank T. Bertrand, Rockford, Ill. Filed May 20, 1878.



Claim.—1. The combination, with a bed-plate having a raised bearing on one end for the adjustable attachment of the arm of the standard-holder, and a projecting annular flange on its opposite end, of a standard-holder provided with an annular flange, which fits within the annular flange on the bed-plate, while the forward end of the holder is connected with the bed-plate by a break-pin, substantially as set forth.

2. The combination, with a bed-plate having a raised bearing on one end for the reception of a break-pin, of a standard-holder provided with a series of holes in its forward end, whereby the standard may be adjustably secured to the bed-plate by means of a break-pin, substantially as set forth.

3. The combination, with a bed-plate provided with a raised bearing for the reception of a break-pin, and an annular flange on its opposite end, of a standard-holder provided with a series of holes in its forward end and an annular flange on its rear end, substantially as set forth.

205,829. MECHANICAL MOVEMENTS. Frederick Blackburn and Valentine Mosslein, Philadelphia, Pa., assignees of three-fifths of their right to Henry Friedberger and Henry L. Strouse, same place. Filed Dec. 29, 1877.



Claim.—The wheel A, having one or more inclined teeth or groups of inclined teeth, and a rib, *b*, the continuity of which is interrupted where the inclined teeth occur, in combination with the wheel B, having any desired number of teeth or groups of teeth corresponding with the teeth of the wheel A, and arranged substantially as described, so as to be locked by the passage of the rib *b* between the ends of the teeth or groups of teeth, as set forth.

205,830. PRESERVING OR PRESERVING FISH, MEAT, &c. Samuel Bliss, Chicago, Ill. Filed Sept. 8, 1877.

Claim.—1. A brine or composition for preserving fish, meat, &c., consisting of a solution of starch-sugar or glucose and common salt, in substantially the proportions described.

2. The herein-described process for preserving fish, meat, &c., consisting in first striking with salt, and then packing in a pickle or brine composed of a solution of starch-sugar or glucose and common salt, substantially as and for the purpose set forth.

205,831. MOP-HEADS. Lyman F. Brooks, Lebanon, N. H., assignor to Orvis J. Richardson, same place. Filed May 7, 1878.



Claim.—A mop-head provided with two spring-jaws of different lengths, each of which has its outer end bent, so that the end pieces will lie in practically the same horizontal plane when the mop is secured between said jaws, substantially as set forth.

205,832. BORDER-TILES. John S. Brown, Washington, D. C. Filed June 8, 1877.



Claim.—1. Border-tiles having coupling-joints vertically extended along their ends, substantially as and for the purpose herein specified.

2. Border-tiles having coupling-joints of the same form at their two ends, substantially as and for the purpose herein specified.

3. Border-tiles having vertical coupling-joints at their ends formed with two or more angles or turns in a horizontal direction, substantially as and for the purpose herein specified.

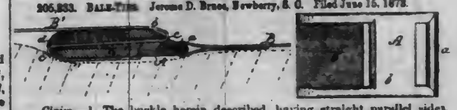
4. Border-tiles having upon their upper surfaces or tops bosses or forms in relief at regular intervals, and so arranged that when two or more tiles are coupled together these projections are continuously regular in position, substantially as and for the purpose herein specified.

5. Border-tiles having angular or scalloped indentations in their upper edges at regular intervals from end to end, substantially as and for the purpose herein specified.

6. Border-tiles curved longitudinally in arcs of various circles, and so proportioned in length that a certain number of equal circle will exactly fill the circle of which each is an arc, substantially as and for the purpose herein specified.

7. Border-tile pilasters of greater height and width than the main border-tiles, and having each one or more coupling-joints for forming terminals and corners to or intermediate reliefs on tile-borders, substantially as and for the purpose herein specified.

205,833. BALE-TIES. Jerome D. Bruce, Newberry, S. C. Filed June 15, 1878.



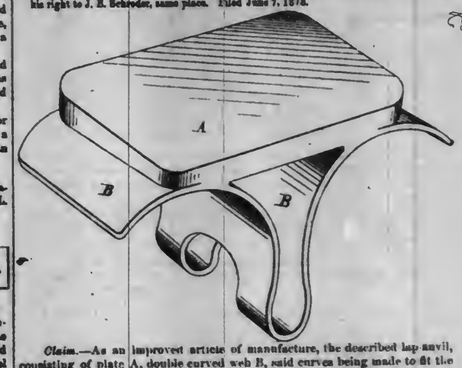
Claim.—1. The buckle herein described, having straight parallel sides, with a rounded pintle at one end for a loosely-hinged attachment to the band, and flat opposing faces *b b'*, arranged upon opposite sides of a longitudinal channel, substantially as and for the purpose described.

2. The buckle A, having rounded pintle *c*, flat opposing faces *b b'*, and a rounded end, *d*, as and for the purpose described.

3. The buckle A, having rounded pintle *c*, and flat opposing faces *b b'*, made with sharp or chisel edges at *c c'*, substantially as and for the purpose described.

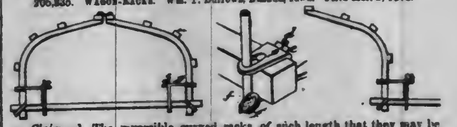
4. The bale-tie herein described, consisting of the buckle, having straight parallel sides, with pintle *c*, and flat opposing faces *b b'*, in combination with the bale-band B B', the end B' being bent first around the face *b*, and then around *b'*, and secured by the pressure of the buckle against the bale, as set forth.

205,834. SHOE-MAKERS' LAP-IRONS. John O. Burkle, Cincinnati, Ohio, assignee of one-half his right to J. B. Schroder, same place. Filed June 7, 1878.



Claim.—As an improved article of manufacture, the described lap-anvil, consisting of plate A, double curved web B, said curves being made to fit the front and inside of the legs when in use, curving slightly underneath the legs, and terminating in an enlarged loop at the bottom, as set forth.

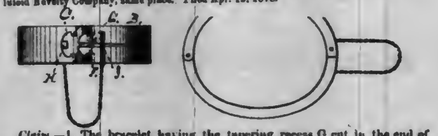
205,835. WAGON-RACKS. Wm. T. Burrows, Nashua, Iowa. Filed Mar. 9, 1878.



Claim.—1. The reversible curved racks, of such length that they may be arranged to extend across the bed to form a hog-rack, or outward from the same to form a hay-rack, substantially as described.

2. The slotted angle-iron D and the loop F, with partition *f*, bolt *d*, and nut *e*, in combination with the beam, cross-bar, and stake, substantially as and for the purposes set forth.

205,836. BRACELETS. Wm. E. Carpenter, Newark, N. J., assignor to himself and the Celluloid Novelty Company, same place. Filed Apr. 19, 1878.

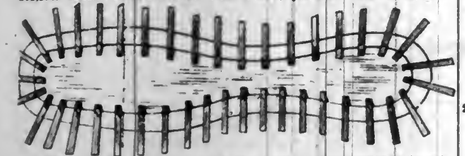


Claim.—1. The bracelet having the tapering recess G cut in the end of section B, thereby forming the spring-catch F, the two parts being made to spring together to close into the catch C, substantially as and for the purpose specified.

2. The catch C, having in it the pin H, in combination with the spring-catch F, substantially as and for the purpose set forth.

3. The divided spring-catch F, in combination with the spring I, substantially as and for the purpose specified.

206,837. LASTING BOOTS AND SHOES. Amos F. Chase, Lynn, Mass. Filed June 26, 1878.



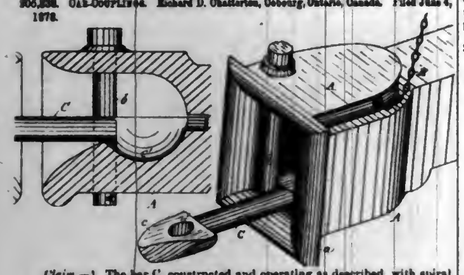
Claim.—1. The improvement in lasting boots or shoes consisting in uniting the upper to the insole or lasting-strip by connections of independent strips of metal, having the body laid flat and the ends hooked into the respective parts to be secured together, substantially as shown and described.

2. The improvement in lasting boots or shoes consisting in first applying to an insole or lasting-strip threads or ribbons of metal, projecting radially, and then assembling the parts upon the last and passing the free ends of said metallic pieces through the edge of the upper and securing them, substantially as described.

3. As a new article of manufacture, an insole or lasting-strip provided with threads or ribbons of metal, projecting radially therefrom, substantially as described.

4. As a new article of manufacture, the insole or lasting-strip having threads or ribbons of metal attached thereto by one end, and the free ends radiating from the perimeter.

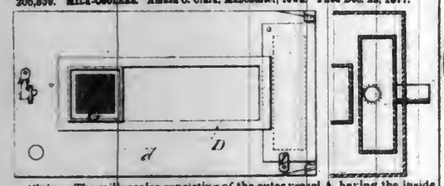
206,838. CAR-COUPLING. Richard D. Chatterton, Cobourg, Ontario, Canada. Filed June 4, 1878.



Claim.—1. The bar C, constructed and operating as described, with spiral or screw-shaped arrow-head *a* and counter-weight *c'*, in combination with the draw-head A, provided with jaws *a b*, one removable, as and for the purposes set forth.

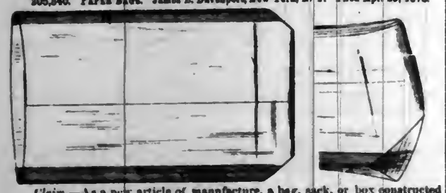
2. The combination of the bar C, constructed with spiral arrow-head *c* and counter-weight *c'*, the draw-heads A A', provided with holding-jaws *a b*, and the chain E, for turning the draw-bar to release it, all substantially as herein described.

206,839. MILK-COOLERS. Amasa C. Clark, Manchester, Iowa. Filed Dec. 22, 1877.



Claim.—The milk-cooler consisting of the outer vessel A, having the inside flange *a*, the depending milk-receptacle C, having the broad flange *d*, covering the flange *a*, the water-trough D, having the strainer G, extending down into the milk-vessel and resting on said flange *d*, and side pipes *f* and *b*, substantially as specified.

206,840. PAPER BAGS. James B. Davenport, New York, N. Y. Filed Apr. 29, 1878.



Claim.—As a new article of manufacture, a bag, sack, or box constructed of paper or card-board, and having the body of the material made thicker or stronger at the creases, bends, or folds, or the portions subject to the greatest wear or strain, substantially as specified.

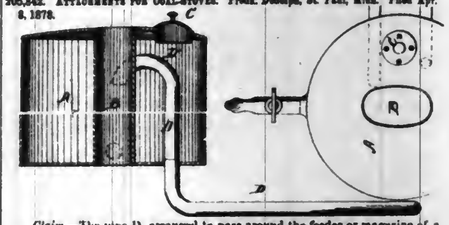
206,841. BOXES FOR WATER-CLOSET PAPER. P. C. Dawson, Providence, R. I. Filed Dec. 24, 1877.

Claim.—A box or receptacle for water-closet paper, substantially as described, from which the paper can be taken in only small quantities at a time, and having a top and bottom which gradually approach each other as the paper is withdrawn, and remaining constantly locked in whatever position they may be while gradually closing together.



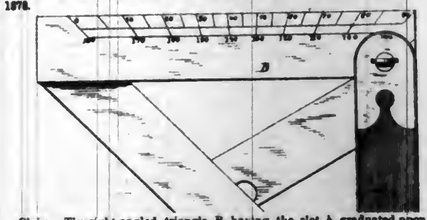
206,841.

206,842. ATTACHMENTS FOR COAL-STOVES. Frodk. Dodolph, St. Paul, Minn. Filed Apr. 8, 1878.



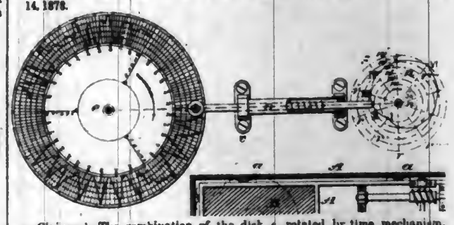
Claim.—The pipe D, arranged to pass around the feeder or magazine of a coal-stove, having one end opening immediately above the bottom of the vessel A, and the other end passing through the bottom to near the top, and curved downward, as shown at D', in combination with said vessel A, the central pipe B, and the perforated cap C, substantially as and for the purposes herein set forth.

206,843. COMBINED SQUARE, BEVEL, &c. Aaron F. Dickey, Somerset, Pa. Filed May 13, 1878.



Claim.—The right-angled triangle B, having the slot *b*, graduated upon one side with inches, &c., and upon the opposite side with degrees, and intermediate diagonal bar or plate *c*, substantially as shown and described.

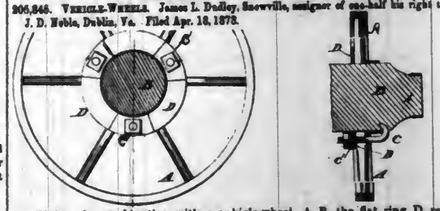
206,844. SPEED-RECORDERS. Heinrich Derpmüller, Munich-Gladbach, Germany. Filed May 14, 1878.



Claim.—1. The combination of the disk *d*, rotated by time mechanism, and having its paper face, or a part thereof, divided into concentric circles, the spring-slide *o*, carrying a marker at one end, the heart-shaped cam *a*, bearing edgewise against the other end of said slide, and having its two curves so proportioned that equal angular movements of said cam will force said slide longitudinally equal distances, substantially as and for the purpose set forth.

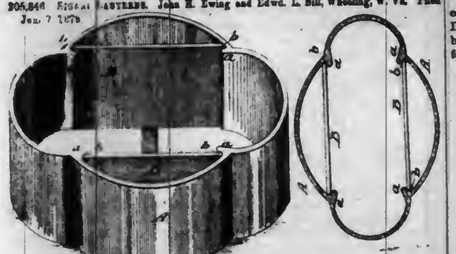
2. The combination, with the inner case A, provided on its outer surface with springs *s*, of the outer case A', inclosing said inner case, substantially as and for the purpose set forth.

206,845. VEHICLE-WHEELS. James L. Dudley, Snowville, assignor of one-half his right to J. D. Noble, Dublin, Va. Filed Apr. 18, 1878.



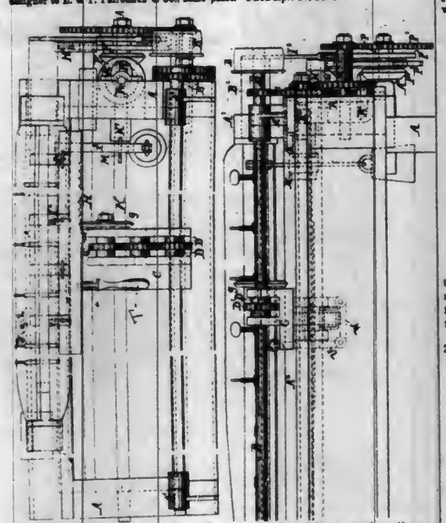
Claim.—In combination with a vehicle-wheel, A B, the flat ring D, reenforced around its securing-bolt apertures *e* by additional plates *e' e'*, and provided with the hooked securing bolts or braces C, substantially as shown and described.

206,846. EQUATORIALS. John H. Ewing and Edwd. L. Bill, Wheeling, W. Va. Filed Jan. 7, 1878.



Claim.—The combination, with the globe or chimney A, having a series of vertical projecting flanges, *a*, whereby a series of vertical grooves or recesses, *b*, are formed, with removable and interchangeable slides or lenses B, of different color, substantially as and for the purpose herein shown and described.

206,847. DEVICES FOR NOTCHING SCALE-BEAMS. Henry Fairbanks, St. Johnsbury, Vt., assignor to E. & T. Fairbanks & Co., same place. Filed Apr. 30, 1878.



Claim.—1. In a dividing engine, the combination, with the carriage C, carrying the cutter *g*, of the push-bar K, cam R², lever F, and spring N, whereby the push-bar is grasped by the lever and moved in one direction only, as herein specified.

2. In a dividing engine, the combination, with the carriage C, of the push-bar K, cam R², lever F, and springs N L, whereby, after the push-bar has been moved in one direction, a return motion is induced, as herein specified.

3. The combination, with the frame A, having the offset *a*, of the lever F, shaft H, with its eccentric X, and carriage C, carrying the cutter *g*, whereby the carriage is securely held in place during the cutting of each notch, as herein specified.

4. In a dividing engine, the cross-key M in the longitudinally moving bar K, in combination with the moving cam R² and returning means L, as herein specified.

5. In a dividing and notching machine, the clamping-lever F and its operating means H X, in combination with suitable provision a on the framing A, for insuring a firm holding of the carriage which supports the milling tool during the period of its operation, as herein specified.

6. In a dividing engine, the double clamping means F, actuated as specified, and adapted to engage the carriage C at one period with the fixed framing A, and at another period with the longitudinally-traversing bar K, as and for the purposes specified.

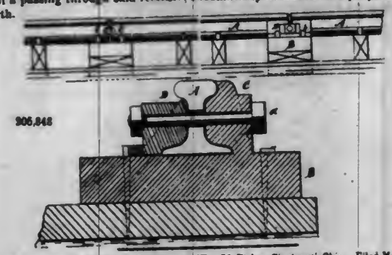
7. In a dividing and notching machine, the spring-lever H', in combination with the cam P², and with the cam or eccentric X and clamping-means F, for engaging the carriage C firmly with the frame, and providing for imperfections and wear, as herein specified.

8. In a dividing and notching machine, the hand-lever T and its connections, in combination with the spring N and clamping-lever F, adapted to allow the convenient liberation of the carriage C from the push-bar K when required, for the purposes specified.

206,848. RAILWAY-RAIL JOINTS. John E. Ferguson, Chicago, Ill. Filed June 10, 1878.

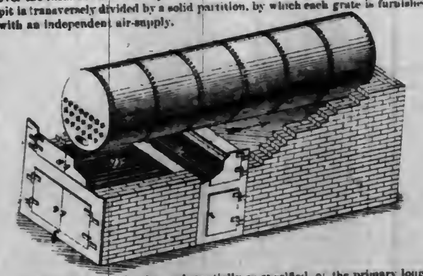
Brief.—A railway-rail joint consisting of a chair, constructed with a tread-surface extending to the top of the rail on one side, and a splice-piece on the opposite side overlapping the ends of the rails, and fitting the neck or web of the rail, the several parts being secured together by a bolt passing through the tread and splice-pieces, and through elongated recesses in the end of the rails.

Claim.—A railroad chair, consisting of a base, B, tram C, permanently connected with the base and extending to the top of the rail, and splice-piece D, in combination with rails A, having elongated recesses *c* in their ends, and bolt *a* passing through said recesses, substantially as and for the purposes set forth.



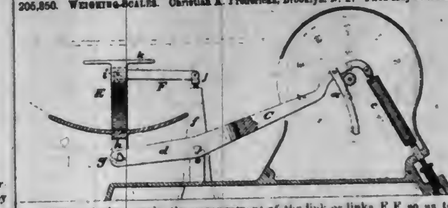
206,849. SMOKE-PREVENTING FURNACES. Wm. M. Fisher, Cincinnati, Ohio. Filed May 27, 1878.

Brief.—The unconsumed products of combustion from the front grate pass over the incandescent fuel upon the rear grate and are consumed. The ash-pit is transversely divided by a solid partition, by which each grate is furnished with an independent air-supply.



Claim.—The combination, substantially as specified, of the primary longitudinal grate, the secondary transverse grate, and the solid transverse partition at the junction of the grates, dividing the ash-pit down to the bottom, so as to form a separate transverse air-chamber for supplying the transverse grate with fresh air from the side of the furnace.

206,850. WEIGHING-SCALES. Christian A. Fredericks, Brooklyn, N. Y. Filed May 7, 1878.



Claim.—1. In a scale, the arrangement of the link or links F F so as to take hold of the platform or its frame on each side at a point above where the frame rests upon the beam, substantially as and for the purposes set forth.

2. In a scale, the combination of the forked beam C, pivoted at *a e*, the frame E, arranged to rest upon the beam at two points, *g g*, and the link or links F F, pivoted at *f f*, and to the frame E or its attached platform at *i i*, the points *i f* being above the points *e g*, all substantially as and for the purposes set forth.

3. In a scale, the combination of the frame E, the link or links F F, arranged to take hold of the same on each side and preserve its equilibrium, the forked or double beam C, and the spring *c*, all arranged substantially as set forth.

4. The frame E, curved and adapted to receive a scoop, and provided also with flattened caps *k k*, or their equivalents, constructed and adapted to receive and support a platform, substantially as set forth.

206,851. BRICK-KILN FURNACES. Jacob Frare and John C. Stevens, Allegheny, Pa. Filed June 21, 1877.



Claim.—1. In a brick-kiln furnace, the double flues in the walls between the several furnaces, for the purpose of conveying an equal quantity of air into the furnace-chambers in aid of combustion, substantially as described.

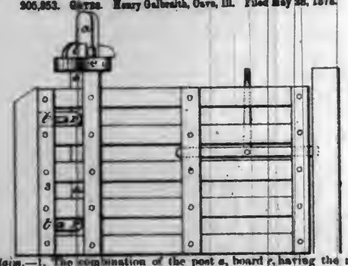
2. In a furnace for brick-kilns, the double flues between the several furnaces, terminating in the dome of the combustion-chambers in the openings *c' c'*, in combination with said combustion-chamber D' and flue D, substantially as described and shown.

205,852. CONSTRUCTION OF STORE-FRONTS. Charles J. Furst and Charles Rudolph, Chicago, Ill. Filed Dec. 17, 1877.



Claim.—The method of constructing store-fronts, consisting in supporting the door and window frames by suspension from the lintel A, instead of directly from the foundation, whereby the unequal settling of the foundation will not strain such frames, substantially as described.

205,853. GATES. Henry Galbraith, Cuva, Ill. Filed May 28, 1878.

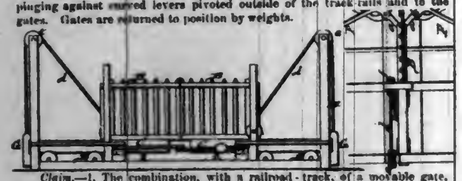


Claim.—1. The combination of the post *a*, board *c*, having the mortise *i*, so that it can be adjusted back and forth, gate *b*, and keys *l*, substantially as shown.

2. The weight-bar *p*, provided with the arms *r*, in combination with the uprights *s* of the gate, and the keys *t*, substantially as set forth.

205,854. RAILWAY-GATES. Thomas O. Garlington, La Fayette, Ala. Filed Apr. 30, 1878.

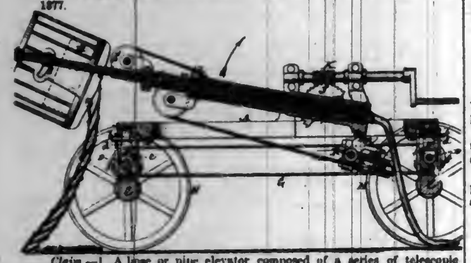
Brief.—Sliding gates opened by the wheels of an approaching train impinging against curved levers pivoted outside of the track-rails and to the gates. Gates are returned to position by weights.



Claim.—1. The combination, with a railroad-track, of a movable gate, the curved levers or arms F, the short pivoted arms *a*, the weights G, cables *d*, and pulleys, substantially as and for the purposes set forth.

2. In a railroad gate, the combination of the gates B B, secured upon the beams *c c*, supported upon flanged rollers D D, the short pivoted arms *a a* at the inner end of each beam *c*, and the curved pivoted levers F F, connected to said arms, substantially as described.

205,855. HOSE-ELEVATOR AND FIRE-ESCAPE. Ivers Gibbs, Worcester, Mass. Filed Oct. 16, 1877.

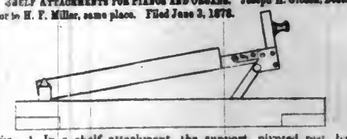


Claim.—1. A hose or pipe elevator composed of a series of telescopic tubes or frames, the inner one of which carries the hose to be elevated, and the outer one of which is hung to rock on or about a transverse axis, in combination with the screw K and worm-wheel or sector J, substantially as and for the purposes herein described.

2. The combination, with a series of raising and lowering or telescopic tubes or frames, the lower one of which is fitted to rock in or on bearings transversely to the axial line of the tubes, of a platform or base carrying said tubes, and made adjustable independently of the ground or surface on which the apparatus rests, laterally or to opposite sides of the plane in which said tubes are rocked, substantially as specified.

3. The combination of the screws D D, the sliding plates or frames E, operated by said screws, and having reverse inclines *d d* on them, the pulleys *f f*, and connecting rope or chain G, the laterally-tilting platform A, actuated by said inclines, and having mounted on it a column of raising and lowering tubes, the bolsters B, the axles C, and the wheels H H, substantially as specified.

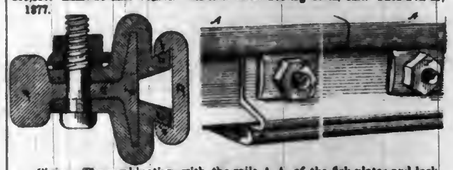
205,856. SHELF ATTACHMENTS FOR PIANOS AND ORGANS. Joseph H. Gibson, Boston, Mass., assignor to H. F. Miller, same place. Filed June 3, 1878.



Claim.—1. In a shelf attachment, the support, pivoted rest, base, and connecting devices, jointed to the rest and support on one side and the base on the other, to move the support positively outward as the rest is turned down, substantially as described.

2. In a shelf attachment for music, the combination, with the pivoted support, of a pivoted rest, adapted when turned down to take a bearing against the under side of the support to maintain the rest in operative position, substantially as and for the purpose set forth.

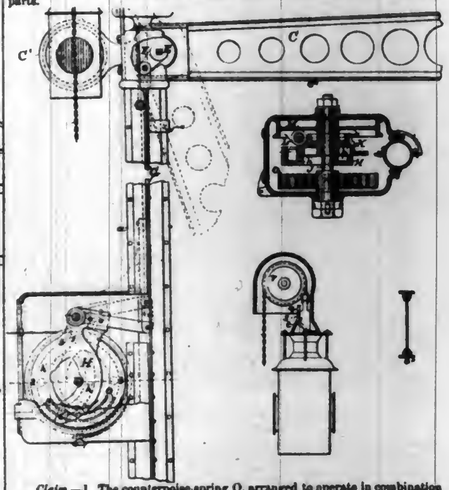
205,857. RAILWAY-RAIL JOINTS. Walter R. Gillis, Bowling Green, Ohio. Filed Dec. 29, 1877.



Claim.—The combination, with the rails A A, of the fish-plates and lock-bar, provided with the angular and ribbed or barbed jaws, substantially as and for the purpose described.

205,858. RAILWAY-SIGNALS. Jos. T. Haley, Altoona, Pa. Filed Nov. 22, 1877.

Brief.—The compensating device takes up any slack in the operating rope, and sets the semaphore at "danger" in case of breakage to the operating parts.

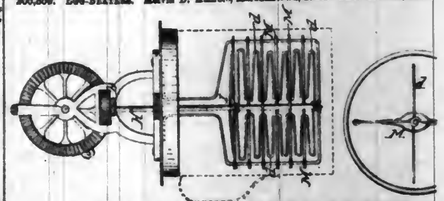


Claim.—1. The counterpoise-spring O, arranged to operate in combination with the compensator H and semaphore C, substantially as and for the purpose specified.

2. The rope-drum M and crank-wheel K, arranged to operate in combination with the compensator H, and with the operating-rope and semaphore C, substantially as and for the purpose specified.

3. The compensator H, spring O, crank-wheel K, rope-drum M, and semaphore C, all operating in combination, substantially as and for the purpose specified.

205,859. BEE-BEATERS. Melvin D. Hamblo, Marshalltown, Iowa. Filed Dec. 14, 1877.



Claim.—1. In an egg-beater, the shaft H, provided with the beater I, composed of the series of loops *d*, as shown, in combination with the stripper I, the sides of which are connected by the rods M, passing through the loops *d*, substantially as shown and described.

2. In an egg-beater, the stripper I, secured to the cover B, and having its sides connected by the rods M, each alternate one passing on opposite sides of the vertical shaft H, in combination with the beater I, composed of the open loops *d*, all being arranged substantially as shown and described.

205,860. EYEGLASSES. Albert E. Hawkes, Austin, Tex. Filed May 31, 1878.



Claim.—In combination with the lenses of eyeglasses, the connecting-spring made in two separate parts, and the clasps attached, as specified, for connecting them and permitting adjustment, for the purpose of strengthening or weakening the spring.

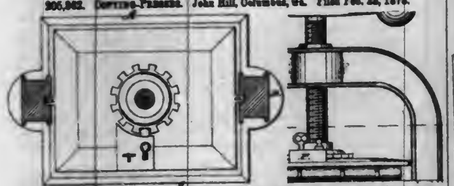
205,861. VALVES. William Henderson, East Cambridge, Mass. Filed June 17, 1878.



Claim.—1. The combination, with the tank A and chamber B, of the tube D, with its two series of ports, *a* and *b*, and the valves F and *d*, operated by one stem, substantially as and for purposes stated.

2. In combination with the tube D and valves F *d*, the valve *c*, or its equivalent, for stopping flow of water through the tube D and valve *d*, substantially as and for purposes stated.

205,862. COPYING-PRESSES. John Hill, Columbus, Ga. Filed Feb. 23, 1878.

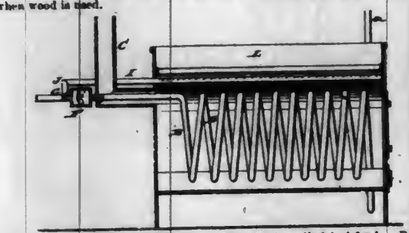


Claim.—1. The combination, in a letter-press, with a non-rotating platen and the screw-arm swiveling therein, of locking devices, substantially as described, adapted to prevent freedom of motion between the same, for the purpose set forth.

2. In a screw letter-press, the combination of a notched disk fixed upon the screw and a movable locking-bolt secured to the platen, substantially as described.

205,863. STEAM FIRE-ENGINES. James M. Hill, Ann Arbor, Mich. Filed May 11, 1878.

Brief.—Arranged to feed automatically. The coil may support the fuel when wood is used.



Claim.—1. The coil-pipe D, arranged within the cylindrical fire-box B the entire length thereof, and communicating with the water-supply at one end, and having steam-exit at the other end, as herein set forth.

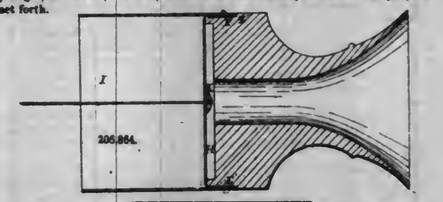
2. The combination of the tank E, having connecting-pipe provided with check-valve *d*, with the horizontal coil D, and return perforated steam-pipe I, arranged between the fire-box B and the perforated bottom H of the feed-box L, as and for the purpose specified.

3. The combination of the cylinder F, rod A, with fan *i* and crank *k'*, the rod *m*, with spring *p*, and the stop-cock *n* in the supply-pipe *a*, substantially as and for the purposes herein set forth.

205,864. ACOUSTIC TELEPHONES. Jas. R. Holcomb, York, Ohio. Filed June 10, 1878.

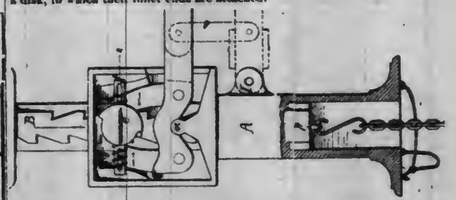
Claim.—1. In acoustic telephones, an improvement consisting of the mouth-piece having a flaring opening and converging to the inner end, in open relation to and in combination with the recess, diaphragm, chamber, and line, arranged substantially as and for the purpose set forth.

2. The recess H and mouth-piece, arranged in combination with the diaphragm, chamber I, and line, constructed substantially as and for the purpose set forth.



205,865. LIFTING-JACKS. Edgar O. Howland, Philadelphia, Pa. Filed May 31, 1877.

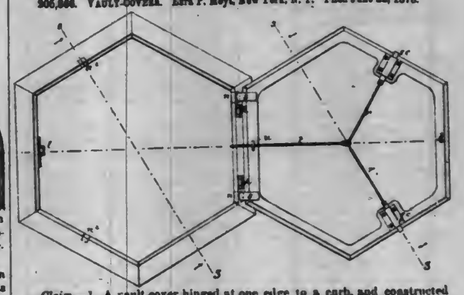
Brief.—The springs and abutments serve to engage and disengage the pawls in raising or lowering. Reversal of the springs is effected by rotating a disk, to which their inner ends are attached.



Claim.—1. The combination, in a hoisting-jack, capstan, or windlass, of the following elements, namely: a toothed stem, an operating-lever carrying two pawls adapted to the teeth of the stem, abutments adjacent to the pawls, a spring or springs for acting on said pawls, and a device, substantially as described, whereby the action of the said spring or springs on the pawls may be reversed, all substantially as and for the purpose specified.

2. The combination of the sliding stem B and its eye *p* with the standard A, open at the bottom and provided with a supporting-hook, as specified.

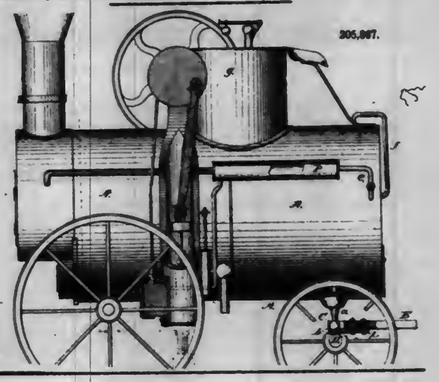
205,866. VAULT-COVERS. Ezra P. Hoyt, New York, N. Y. Filed June 22, 1878.



Claim.—1. A vault-cover hinged at one edge to a curb, and constructed with one or more safety projections or rigid catches at or near its hinge-edge, engaging with sockets or notches in the curb, in combination with one or more spring-catches opposite, or nearly opposite, said rigid catches, for locking the cover in its seat.

2. The combination of a curb, a cover, hinges at one edge of said cover, one or more spring-catches opposite, or nearly opposite, said hinges, a cord or chain for tripping said catch or catches, and one or more spring-lifters opposite said hinges, for elevating the released cover sufficiently to keep it unlocked, substantially as herein shown and described.

205,867.



206,867. PORTABLE ENGINES. Edward Huber, John C. Titus, Edward Durfee, and James F. Swinnerton, Marion, Ohio, assignors to Huber Manufacturing Company, same place. Filed Apr. 30, 1878.

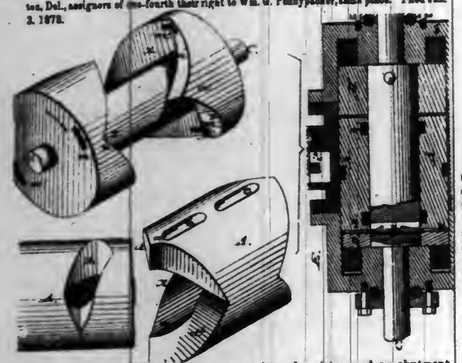
Claim.—1. The combination, with the horizontal boiler A, of the feed-water heater and mud or sediment extractor M, the two being connected by a pipe *f*, leading from the top of the latter, and the exhaust-steam heater F and pipe *e* connected thereto, for conducting water from the pump and introducing it at the side of the heater M, all arranged as shown and described, for the purpose specified.

2. The combination, substantially as described, of the hollow fire-bridge located in the large central fire-flue, the dome steam-pipe, and the exit steam-pipe leading to the steam-chest, for the purpose of superheating the steam, as specified.

3. The combination, with a portable engine, of the fixed and adjustable sections of the smoke-stack and the friction-clamp, consisting of a band and screw, applied and arranged as shown and described, for the purpose specified.

4. In combination with a portable engine, the bolster *b*, having a socket open on the front side, the hounds *c*, the tongue E, standard *e*, and axle D, as shown and described.

206,868. ROTARY STEAM-ENGINES. William Hosten and Henry B. Wickersham, Wilmington, Del., assignors of one-fourth their right to Wm. G. Pennypacker, same place. Filed Jan. 2, 1878.



Claim.—1. The combination, in an engine, of a piston and an abutment having corresponding spiral faces, as described, forming two or more intermediate chambers, as set forth.

2. The combination, in an engine, of a piston and abutment having spiral faces, arranged as described, to afford at all times a piston area equal to that of the entire end of the abutment, as set forth.

3. The combination, in an engine substantially of the character described, of the pistons, abutment, and packings arranged to prevent any communication between the chambers at the opposite ends of the abutment, substantially as specified.

4. The combination of the pistons and abutments, constructed substantially as set forth, and ports or passages forming communications through the pistons, with the chambers between the same and the abutment, as specified.

5. The combination of a piston and abutment, constructed substantially as described, and devices for preventing the rotation of the sliding piece without interfering with its reciprocating movements.

6. The combination of a cylinder, a shaft, carrying pistons, an intermediate reciprocating abutment, and ports for passing steam or other fluid to and from chambers between the faces of the pistons and abutment, as set forth.

7. The cylinder E, its chambers *w*, and slotted rings F, combined with the abutment and pistons, substantially as specified.

8. The combination, with the revolving blocks or pistons, of the rings or disks F and valves *t*, arranged to operate substantially as set forth.

9. The combination of the rotating pistons, sliding abutment A, and balls *g*, for preventing the rotation of the abutment, substantially as set forth.

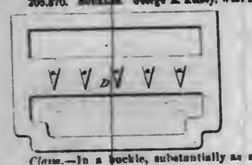
10. In an engine constructed substantially as described, the ports *a a'*, forming communications between the chambers on opposite sides of the shaft, substantially as specified.

206,869. ENVELOPES. Walter B. Knighton, Philadelphia, Pa. Filed Nov. 2, 1877.



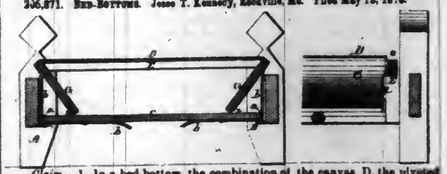
Claim.—As a new article of manufacture, the within-described envelope, having a series of pockets, the said envelope being formed of strips or folds of paper united at the ends and lower edge, and by streaks of gum at suitable intervals throughout the length of the strip, all substantially as described.

206,870. BUCKLES. George R. Kelsey, West Haven, Conn. Filed June 13, 1878.



Claim.—In a buckle, substantially as shown and described, the central cross-bar D, having one or more spurs, *o*, struck up from between its edges, bent slightly outward, but not projecting beyond either edge of this bar, for the purpose set forth.

206,871. BED-BOTTOMS. Jesse T. Kennedy, Rockville, Md. Filed May 13, 1878.



Claim.—1. In a bed-bottom, the combination of the canvas D, the pivoted wings G G, and the fastening-straps *b*, substantially as and for the purposes herein set forth.

2. The combination of the canvas D, wings G G, with pivots *e e*, the notched cross-bars E E, straps *b*, and cross-bars C C, having slots *a* and headed pins *i*, or their equivalents, substantially as and for the purposes herein set forth.

206,872. VEHICLE-BRAKES. James A. Kirby, Chicago, Ill., assignor of two-thirds his right to D. J. Avery and Jos. W. Taft, same place. Filed Sept. 24, 1877.

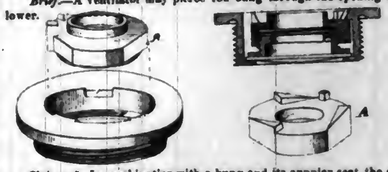


Claim.—1. The rod *k*, having the lever *j* and crank *l*, in combination with the rods *i*, levers *g*, arms *f*, and brake-bar F, operated by spring-power at each end of the brake-bar, for holding the brake-bar and shoes away from the wheels, substantially as specified.

2. The herein-described brake, consisting of the bar F, connecting-rods, and springs, in combination with the arms *f*, rods *i*, shaft *k*, and lever *j*, substantially as described.

206,873. BUNG-LOCKS. Josiah Kirby, Cincinnati, Ohio. Filed Apr. 26, 1878.

Brief.—A ventilator may pierce the bung through the opening in the follower.

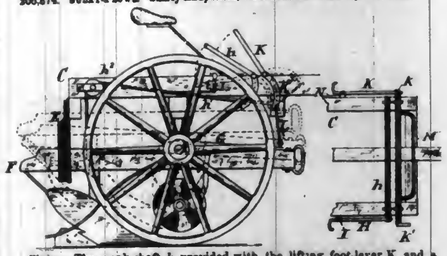


Claim.—1. In combination with a bung and its annular seat, the securing-follower A, arranged to be operated to release and secure the bung by means of the engagement of a key with an obstruction upon any portion of its underlying or concealed surface.

2. A bung-lock consisting of the bushing and the expansible follower, substantially as specified, the follower being in two parts, having a screw-threaded connection, the whole arranged to be operated to release and secure the bung by means of the engagement of a key upon any portion of its underlying or concealed surface.

3. In combination with a bung, an annular seat and a follower arranged to secure the bung up to the annular seat, and provided with an orifice through which a ventilator can be introduced to perforate the bung.

206,874. SULKY-PLOWS. Smiley Kirkpatrick, Waterman, Ill. Filed Apr. 13, 1878.



Claim.—The crank-shaft *k*, provided with the lifting foot-lever K, and a depressing foot-lever, M, both attached to said shaft, in combination with the rock-shaft *h*, provided with the lifting foot-lever H, the plow-beam F, connected at its rear and front ends to the shafts, respectively, as specified, and the catch-springs I N, substantially as and for the purpose set forth.

206,875. MACHINES FOR MAKING WOODEN BARRELS. John Kiser, Nevada, Ohio. Filed Mar. 6, 1878.

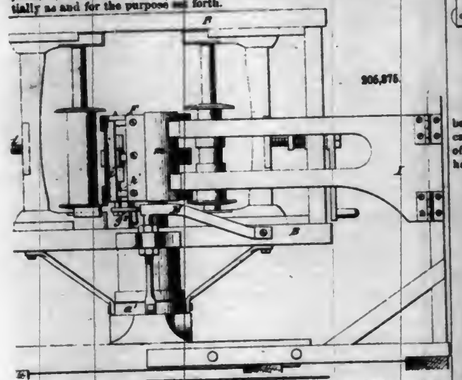
Brief.—The barrel or other cylindrical vessel is formed upon a collapsible cylinder formed of a central forming-block and two wings or arms hinged or pivoted thereto, and held together by springs, and expanded and contracted by means of cams mounted upon a vertical rod passing through the wings, and operated by a crank at the lower end of the rod. The free end of the strip to form the body of the vessel is supported upon a rest rigidly attached to a main frame. The lapping ends are held until fastened by an arm hinged to a standard in the main frame, and provided at its free end with a curved metallic plate.

Claim.—1. In combination with the forming-block of a machine for making cylindrical vessels, the arms or wings E, hinged or pivoted thereto and connected together by springs, and provided with means for their expansion and contraction, substantially as and for the purpose set forth.

2. In combination with the block or cylinder F, the hinged or pivoted arms or wings E, connected together by springs *h h*, rod or axis G, provided with cams *g g*, or their equivalents, plate *i*, and rod or axis *k*, provided with cam *j*, or its equivalent, substantially as and for the purpose set forth.

3. The rest or support H, attached to the frame B, in combination and arranged with the block F and its arms E E, so as to support the free end of the piece designed to form the body or side of the vessel, substantially as and for the purpose set forth.

4. The swinging arm I, provided at its free end with a curved metallic plate, *m*, in combination with the block F and its arms or wings E E, substantially as and for the purpose set forth.



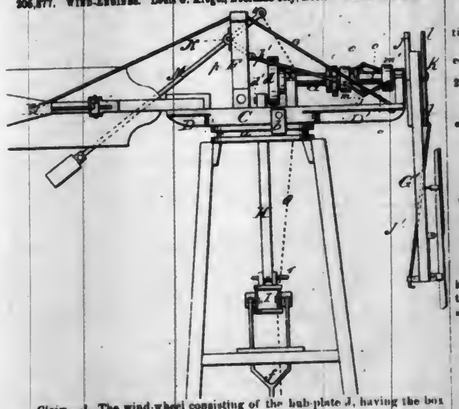
206,876. BAND-SAWS. John Kraus, Chicago, Ill., assignor, by mesne assignments, of two-thirds his right to John W. Munday and Edwd. S. Evarts, same place. Filed Mar. 30, 1877.

Brief.—The steel is first drawn into a rod of suitable size, then forced between rollers and flattened, after which teeth are cut upon one edge of the band.



Claim.—A flattened wire band-saw, substantially as specified.

206,877. WIND-ENGINES. Louis G. Krogel, Nebraska City, Nebr. Filed Mar. 9, 1878.



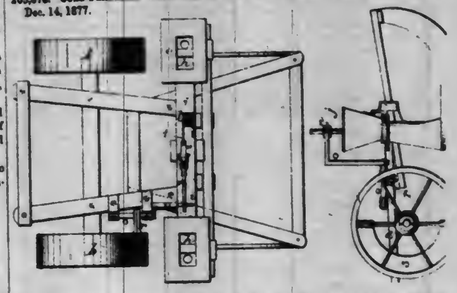
Claim.—1. The wind-wheel consisting of the hub-plate J, having the box *g'* and the hexagonal flange *g''*, the arms *g'*, secured to the faces of the said flange, and the wind-sails J', journaled in the said arms, substantially as set forth.

2. The combination, with a wind-wheel having the vibratory wind-sails J' and the tubular shaft G, with a movable collar, *m*, and a fixed collar, *m'*, of the toggle-jointed rods *e*, connecting the said collars, the rotatory rod *l*, the pin *i*, the connecting-rods *j*, the spoke-wheel K, and the rods J', substantially as specified.

3. The combination, with the tubular shaft G, having transverse slots *i*, and the movable and fixed collars *m m'*, of the shaft L in the shaft G, the pin *i*, the toggle-jointed rods *e*, the connecting-rods *j*, and a sliding mechanism for the said movable collar, substantially as specified.

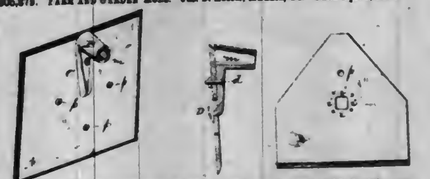
4. The combination, with the tubular shaft G and the inside rotary shaft L, of a fixed and a movable collar on the former, toggle-jointed rods connecting said collars, rods connecting the shaft L and the rods *e*, the jointed rods *p p'*, the rock-shaft N, and weighted arm *n*, substantially as specified.

205,878. CORN-PLANTERS. Jacob Leimbach and Geo. H. Wilson, Oskaloosa, Iowa. Filed Dec. 14, 1877.



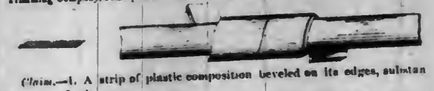
Claim.—The combination of the upright pivoted hand-lever *j*, perforated bar *n*, link *w*, spring *l*, having hook *t*, and the crank-lever *o*, having arm *r*, carrying a friction-roller, with the seed-slide, and one or more cams on the side of the driving-wheel, all constructed substantially as and for the purposes herein set forth.

206,879. FARM AND GARDEN HOES. Jas. S. Lester, Atlanta, Ga. Filed Apr. 8, 1878.



Claim.—The combination of the reversible hoe-blade, provided with a central orifice having straight sides and rounded corners and four equidistant bolt-holes, *p*, the arm C, connected to the socket B, and having at its extremity the lip D, which forms a projection, *l*, and shoulder *a*, said arm being secured to the blade by a single screw or bolt, *d*, through holes *p*, and capable of being adjusted in the central orifice to allow any edge of the blade to act upon the earth, as set forth.

206,880. STRIPS FOR COATING ARTICLES WITH CELLULOID AND OTHER PLASTIC COMPOSITIONS. David C. Lockwood, Newark, N. J., assignor to the Rubber and Celluloid Harness Trimming Company, same place. Filed Dec. 19, 1877.



Claim.—1. A strip of plastic composition beveled on its edges, substantially as set forth.

2. A core covered with a strip of plastic composition beveled on both edges, substantially as specified.

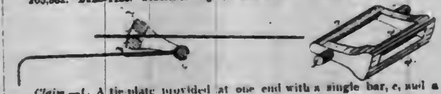
205,881. BOTTLE-STOPPER FASTENERS. Heinrich Loehr, New York, N. Y. Filed June 3, 1878.

Brief.—The opening in the cap-plate grasps tightly the shank of the stopper.



Claim.—The bent cap D, having a catch, K, and the plug or stopper B, having a close-fitting projection, *b*, and with the pin I, in combination with the link F and the band C, having a flattened front section or part, all constructed and operating substantially as and for the purpose specified.

205,882. BALE-TIES. Francis M. Logue, Vicksburg, Miss. Filed Jan. 24, 1878.



Claim.—1. A tie-plate provided at one end with a single bar, *c*, and at the opposite end with two bars, *d d'*, as described, and for the purpose set forth.

2. A bale-tie provided with cross-bars *c d d'* and side pins *f f'*, as described, and for the purpose set forth.

205,883. STOVE OR FURNACE GRATES. Josiah G. Macfarlane, Wilkins Township, Allegheny County, assignor to James Macfarlane, Towanda, Pa. Filed May 20, 1878.

Brief.—A slight movement of the rock-shaft operates the reciprocating bars. The weighted catch being withdrawn, the grate is dumped.

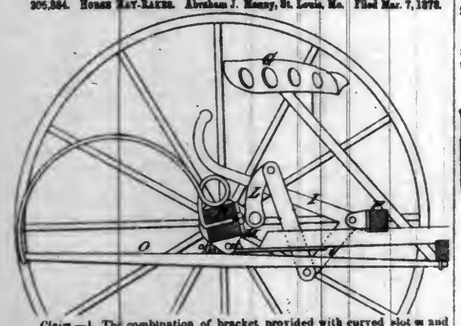
Claim.—1. The combination, in an agitating-grate, of the series of fixed bars, the movable bars provided with guide-rods, the single rock-shaft set off the center of the grate, and the cranks for operating the reciprocating bars from the rock-shaft, the whole constructed and operating substantially as and for the purpose specified.

2. In a dumping and agitating grate, the combination of fixed and reciprocating bars, the latter operated from a rock-shaft, said the former pivoted on the rock shaft, so that both fixed and movable bars can turn on the same center, substantially as and for the purpose specified.



205,863.

205,884. HORSE HAY-RAKES. Abraham J. Meany, St. Louis, Mo. Filed Mar. 7, 1878.

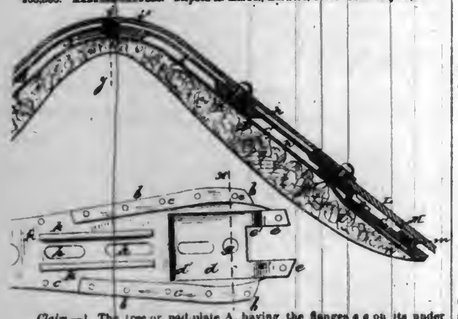


Claim.—1. The combination of bracket provided with curved slot *m* and corrugated face *m'* and arm *L*, provided with corrugated face *l* and connecting-bolt N, for the purpose set forth.

2. The combination of rake-head B, bracket M, with slot *m*, concentric with the axis of rotation of the rake-head, and corrugated surface *m'*, whose ribs extend radially to the axis of rotation of the rake-head, and the arm *L*, with corrugations matching those *m'*, for the purpose set forth.

3. The gearing-bars O, having sliding connection to the cross-bar E, and pivoted to the lower part of the rake-head, to avoid the depression of the rear ends of the bars O when the rake is in the discharging position, substantially as set forth.

205,885. HARness-SADDLES. Stephen A. Marlor, Hartford, Conn. Filed May 20, 1878.



Claim.—1. The tree or pad-plate A, having the flanges *a a* on its under side, perforated wings or side flanges *b b*, prongs *c c*, perforations *f g i*, and slots *h h h*, substantially as and for the purpose herein shown and described.

2. As an improvement in harness and coach pads, the combination of the flanged and slotted pad-plate A, constructed as described, with the back-band B and foundation piece G, whereby a channel, C, is formed for the ready insertion, adjustment, and removal of the pad and terret nuts, substantially as and for the purpose herein shown and described.

3. The flexible foundation-piece G, cut out at *n' n*, and having the fastening-plate *l* and catch-plate and lug H *m*, substantially as and for the purpose herein shown and described.

4. The combination of the flexible foundation-piece G, having plates *l* H *m*, and cut out at *n' n*, with the skirt L, having slotted catch-plate M, engaging, by its bridge *p*, with tongue *m* of plate H, substantially as and for the purpose herein shown and described.

5. As an improvement in harness and coach pads, the combination of the flanged and slotted pad-plate A, back-band B, foundation-piece G, cushion-piece D, and welt E, substantially as and for the purpose herein shown and described.

6. As an improvement in harness and coach pads, the combination of the flanged pad-plate A, having circular recess *x* on its under side, with the flexible nut-fastening N and nut *y*, substantially as and for the purpose herein shown and described.

205,886. LAWN-SPRINKLERS. Rufus M. Merrill, Chicago, Ill. Filed Aug. 26, 1877.

Claim.—1. A nozzle, A, in combination with a rotary spiral sprinkler or distributer, arranged upon said nozzle entirely outside the nozzle, whereby the flow of water through said nozzle out of the latter is unimpeded, and the sprinkler acts upon a free jet after it has left the nozzle, substantially as described.

2. The nozzle A, in combination with a collar, F, mounted loosely upon the outer end thereof, and a spiral blade or bladee, E, attached to the collar and arranged with reference to the orifice of the nozzle, substantially as and for the purpose set forth.

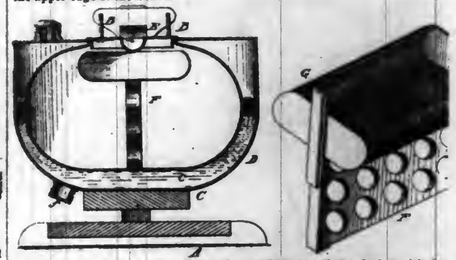
3. A spiral blade, E, for rotary sprinklers, made concave-convex in form, and provided with a flange, *e*, on its concave side, arranged at one edge thereof, substantially as and for the purpose set forth.

205,886.



205,887. CHURNS. Samuel H. Millirce, Knoxville, Tenn., assignee of one-half his right to Horace Foster, same place. Filed Mar. 25, 1878.

Brief.—A swinging churn partly surrounded by a water-jacket; a perforated dasher fixed to and within it, and a tray made of wire-cloth fixed upon the upper edge of the dasher.



Claim.—1. In a vibratory churn, the combination of the dasher with the butter-gatherer formed of a perforated trough having inwardly-curved sides, substantially as described, for the purpose herein shown and specified.

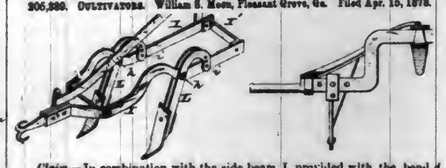
2. The combination of the frame A, bails B B, swinging churn-box D, having double bottom, dasher F, and butter-gatherer G, all combined, arranged, and operating substantially as described, for the purpose herein set forth.

205,888. PIPE-COVERS. Charles M. Mitchell, Waterbury, Conn. Filed Mar. 4, 1878.



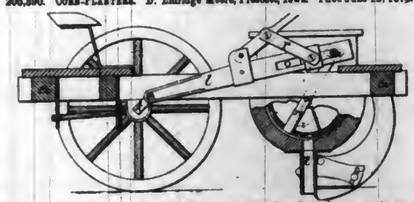
Claim.—The herein-described smoking-pipe cover, consisting of the combination of the band A, the rim B, hinged to the band A, and having one part of the hinge and the clasp as a part thereof, the ring D, and perforated cap C, substantially as described.

205,889. CULTIVATORS. William S. Moon, Pleasant Grove, Ga. Filed Apr. 15, 1878.



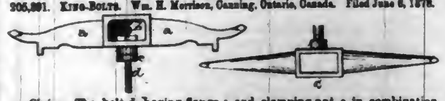
Claim.—In combination with the side beam I, provided with the bend *d*, the plow-foot L, formed of a metal bar, bent double in the center, with one arm on each side of the side beam, and provided with rearwardly and downwardly curved tops, and connected to the beam at two points, as shown at *h i*, as and for the purposes set forth.

205,890. CORN-PLANTERS. D. Eldridge Moore, Prescott, Iowa. Filed June 12, 1878.



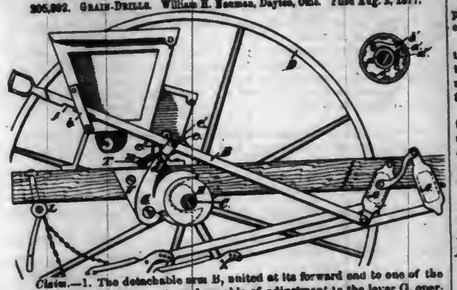
Claim.—The combination of the cranked axle, slotted connecting-rod *l*, sliding block *q*, and a lever for operating it, with the bar *m*, levers *n*, and the seed-slides, substantially as shown.

205,891. KING-BOLTS. Wm. H. Morrison, Canning, Ontario, Canada. Filed June 6, 1878.



Claim.—The bolt *d*, having flange *e* and clamping-nut *c*, in combination with the metallic head block *a*, provided with recess *b*, open from the front, so that access may be had to the nut at all times, substantially as shown.

205,892. GRAIN-DRILLS. William H. Norman, Dayton, Ohio. Filed Aug. 2, 1877.



Claim.—1. The detachable arm B, united at its forward end to one of the connected swinging beams A, and capable of adjustment to the lever G, operated by a cam, E, or equivalent device, whereby the hoes can be either adjusted in straight or zigzag ranks by hand or have a constant reciprocating motion, substantially as specified.

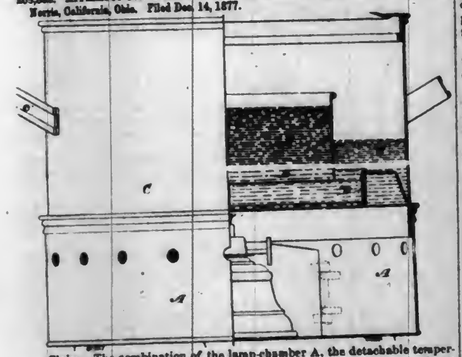
2. The arm B, having a widened portion, *a''*, and a slot, *a*, in combination with the stud *a'* and the screw *d* of the arm G, substantially as specified.

3. In combination with the cam-wheel E and arm B, connected to the beams A, the trifurcated lever G, pivoted to the bearing-plate F, substantially as specified.

4. The bell-crank arm K, hung upon the shaft J, and having pivoted to it the loose gear wheel M, and provided in its rear with a heart-shaped aperture, in combination with the cams *f'* upon the lifting-bar, whereby the driving-gears become automatically disengaged when the drill is backed or when the hoes are lifted, as and in the manner set forth.

5. The perforated adjustable grass-seed distributer T, hung in brackets under the hopper, whereby the seed can be made to fall either in the front or in the rear of the hoes, as specified.

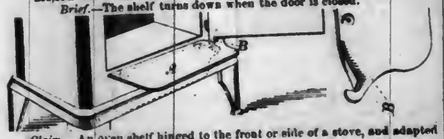
205,893. APPARATUS FOR TEMPERING CREAM PREPARATORY TO MAKING BUTTER. Eli Norris, California, Ohio. Filed Dec. 14, 1877.



Claim.—The combination of the lamp-chamber A, the detachable tempering-chamber C, for containing water, the removable skeleton frame or stand D, and the cream receptacle E, constructed and operating together substantially as described.

205,894. OVEN-SHELVES. Robert S. Oliver, Albany, N. Y. Filed Apr. 6, 1878.

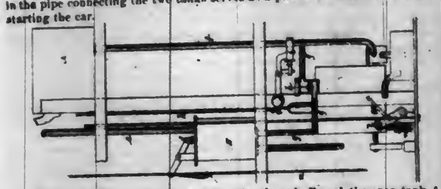
Brief.—The shelf turns down when the door is closed.



Claim.—An oven shelf hinged to the front or side of a stove, and adapted to be raised from a perpendicular to a horizontal position by the hook or arm C, or its equivalent, in combination with the oven-door and projecting lip B.

205,895. HYDRAULIC ELEVATORS. Charles R. Otis, Yonkers, N. Y. Filed Jan. 12, 1878.

Brief.—The upper tank is filled through the lower tank, so that the water in the pipe connecting the two tanks serves as a pressure-column to aid in first starting the car.



Claim.—1. The combination of the closed tank B and the open tank A with the motor C, substantially as specified.

2. The combination of the closed tank B and the motor C with the water pipe *e*, whereby a temporary increased pressure is obtained when starting the elevator, essentially as described.

3. In a hydraulic elevator having supply-tanks arranged at different altitudes, the combination, with the supply pipe or pipes to the motor from said tanks, of an independent connecting pressure or supply pipe, *e*, between the upper portion of the upper tank and the intermediate or lower tank, substantially as and for the purpose or purposes herein set forth.

4. The combination, with the upper tank A and lower or intermediate tank B, of the supply-pipe *f*, connecting the motor of the elevator with the upper tank A, the pipe *g*, connecting the intermediate tank with the pipe *f*, a check-valve, *h*, applied to said pipe *g*, and a valve, *i*, arranged to intercept the water in the pipe *f* above the pipe *g*, and made capable of control by the operator, essentially as described.

5. The combination of the independent connecting pressure and supply pipe *e* with the upper and lower tanks A B, the supply-pipe *f* to the motor from the upper tank, the valve *i* in said pipe *f*, subject to control by the operator, and the pipe *g*, provided with a check-valve, *h*, and connecting the pipe *f* below the valve *i* with the lower tank B, substantially as specified.

205,896. TRUSSES. Andrew H. Parker, Chicago, Ill. Filed Apr. 17, 1878.



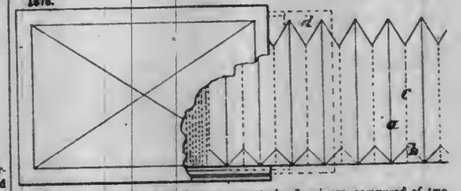
Claim.—1. In a truss, the supporting-arm B, in combination with a pad connected thereto by a universal joint and arranged with its thick end uppermost, and an adjusting device arranged above the joint and acting positively and directly upon the upper end of the pad, whereby it is depressed inward and downward, substantially as and for the purpose set forth.

2. A short tapering truss-pad, C, provided with an inclined or sloping face, *c*, at its thin end, in combination with the arm B and the depressing device, whereby, when the upper end of the pad is depressed, the lower end is prevented from projecting beyond the plane of the arm, substantially as and for the purpose set forth.

3. The supporting-arm B, provided with the screw-hole *f*, in combination with the pad C, attached to the arm by a universal joint, and an adjusting-screw, F, all arranged substantially as described.

4. The pad C, constructed as specified, in combination with the supporting-arm B, provided with the screw-holes *f* and *b'*, arranged one above the other below the joint, and the adjusting-screw F, substantially as and for the purpose set forth.

206,897. PAPER POCKETS FOR CIGARS. Orville L. Parmenter, South Evanston, assignor to Jessie T. Parmenter, same place, and Seneca D. Kimbark, Chicago, Ill. Filed Feb. 6, 1878.



Claim.—1. A series of pockets or receptacles for cigars, composed of two thicknesses of suitable material, fastened together at one edge and along the transverse lines *a*, and perforated transversely along the lines *c* between the lines *a*, substantially as and for the purpose set forth.

2. The method of constructing cigar pockets or receptacles by folding a strip of material of suitable width upon itself once, and then fastening the two thicknesses together along transverse lines arranged sufficiently far apart to provide an inclosed space large enough to hold a single cigar, and perforating the strip transversely between the fastening lines, substantially as described.

3. An elastic chain-strip of cigar pockets, composed of a single piece of material folded upon itself, fastened together along the transverse lines *a*, bent or creased at the folded edge on a zigzag line, *b*, and perforated along the lines *c*, substantially as described.

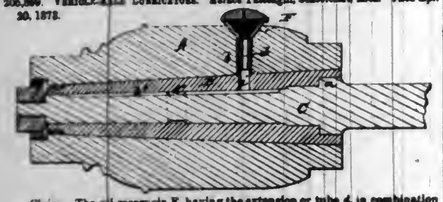
206,898. EGG AND FRUIT CARRIERS. Orville L. Parmenter, South Evanston, assignor to Seneca D. Kimbark, Chicago, Ill., and Jessie T. Parmenter. Filed Apr. 3, 1878.



Claim.—1. An egg-carrier consisting of a sheet of paper or paper-board and a series of receptacles or pockets attached to one side thereof, and arranged so that by folding up the sheet the pockets are closed and covered, substantially as described.

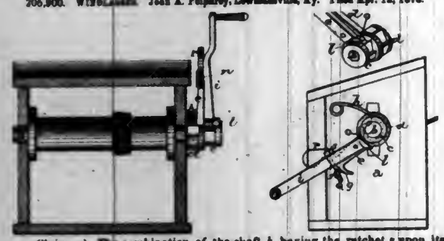
2. The sheet or covering A, in combination with the straight strips B and folded strips C, connected together as described, and attached to the sheet A, substantially as set forth.

205,899. VEHICLE-AXLE LUBRICATORS. Horace Pattengill, Schoolcraft, Mich. Filed Apr. 20, 1878.



Claim.—The oil reservoir F, having the extension or tube *d*, in combination with the externally and internally threaded tube *b*, forming a permanent seat for said tube *d* in the hub, as herein set forth.

206,900. WINDLASSES. John A. Pelphrey, Leesmansville, Ky. Filed Apr. 12, 1878.



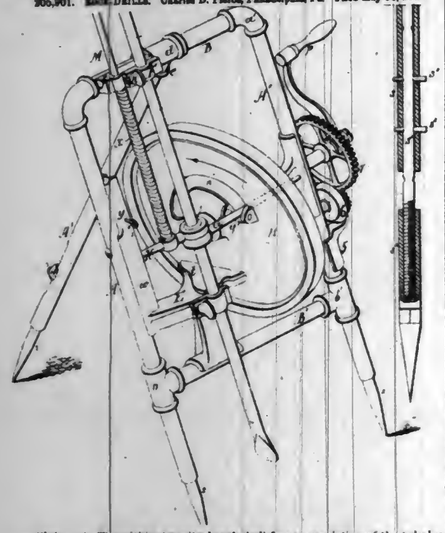
Claim.—1. The combination of the shaft *b*, having the ratchet *c* upon its outer end and rigidly secured thereto, ratchet *d*, moving loosely thereon, crank *e*, and handle or lever *f*, substantially as shown.

2. The crank *e*, having the shoulder *g*, in combination with the handle *f*, catch *n*, and spring *r*, substantially as described.

3. The lever or handle *f*, having the feet or catches *l o*, in combination with the ratchet *c*, having a portion of its surface made smooth and its other part provided with teeth, substantially as set forth.

4. In a windlass, the combination of a loose ratchet, a crank and a pawl, *h*, to prevent them from flying backward, with a frictional lever and cam, for the purpose of regulating the speed at which the bucket shall descend, substantially as specified.

205,901. ROCK-DRILLS. Charles D. Pierce, Philadelphia, Pa. Filed May 31, 1878.



Claim.—1. The within described rock drill frame, consisting of the tubular legs A A', tubular cross-bars B and B', and T and elbow pieces, by which the said legs and bars are connected together, as specified.

2. The said frame, consisting of the legs A A', cross-bars B B', and connections, in combination with a third tubular leg, A', hinged to the cross-bar B through the medium of a T-piece, *d*, all substantially as set forth.

3. The combination of the drill-rod and its arm G, the slotted wheel H, by which the within-described movements are imparted to said arm G, and the arm K, adapted to the drill-rod, and having a guided rod, M, and spring, all substantially as specified.

4. The combination of a drill-rod, a spring-arm, and a sleeve embracing the rod and arranged to turn in the arm.

5. The combination of the drill-rod, the slotted wheel H, the arm G, the arm K, and a device for supporting the said arm when it has to be used as a pawl for retaining the drill-rod, as herein specified, and shown in Fig. 2.

6. The combination of the frame with a bracket, E, secured to the frame and forming a guide, *w*, for the arm K, and having a platform for receiving the arm G, all as set forth.

7. The combination of the tubular slotted leg of a drill-rod frame with a pointed rod, adjustable in the leg and confined thereto by a set-screw, 3, and clamping-washer 4, carried by the rod, as described.

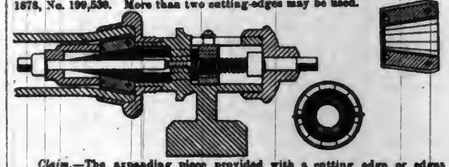
8. The combination of the frame of a rock-drilling machine with a grinding-wheel driven from the main shaft I of the machine, substantially as specified.

9. The combination of the cross-bars B B' of the machine with detachable bracing-rods S, interposed between said cross-bars and the roof or floor of a tunnel, as specified.

10. The bracing-rods S, each composed of a tube, *s*, adjustable rod *s'*, and adjustable point *s''*, as specified.

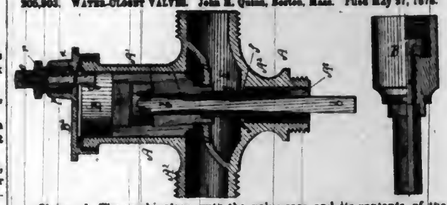
206,902. APPARATUS FOR DETACHING HOSE FROM COUPLINGS. Everett B. Preston, Chicago, Ill. Filed Apr. 16, 1878.

Brief.—Applies cutting-edges to tube-expander patented January 23, 1878, No. 199,530. More than two cutting-edges may be used.



Claim.—The expanding piece provided with a cutting edge or edges lying in the direction of the axis.

206,903. WATER-CLOSET VALVES. John H. Quinn, Boston, Mass. Filed May 27, 1878.



Claim.—1. The combination, with the valve-case and its contents, of the regulating-screw *o*, under the arrangement substantially as described, whereby such screw is accessible from the outside of the valve-case, substantially as and for purposes stated.

2. In combination with the screws *m* and *o* and the orifice *n*, through which the screw *m* passes, the check-nut or tubular screw-plug *r*, substantially as and for purposes stated.

3. The combination, with the valve-case and the valve B, of the screws *m* and *o* and the plug *r*, the screw *m* being raised or lowered by the screw *o*, and the plug *r* serving to clamp the screw *o* to the cap of the valve-case, and the whole being substantially as and for purposes stated.

4. The combination, with the case A and valve B and tube *g*, fixed to and moving with said valve, of the valve *h* and stem *h*, substantially in manner as shown and described.

5. The combination, with the case A and its shelf *f'*, and valve B, with its bore *d*, of the valve *h*, stem *h*, and tube *g*, essentially as described, whereby water is shut out from access to the chamber B' after passing the valve-opening E, substantially as and for purposes stated.

206,904. SEWING-MACHINES. George Ashton, Philadelphia, Pa., assignor to the American Button Hole, Overseaming, and Sewing Machine Company, same place. Filed Mar. 29, 1878.



Claim.—The combination of the driving-shaft A of a sewing-machine, having a collar, *a*, and threaded portions *b* and *c*, with the loose pulley D, the nut E, adapted to the thread *b*, and having arms *h*, washer *m*, and the nut F, adapted to the thread *c*, and serving as a stop for the nut E, as set forth.

206,905. MACHINES FOR BENDING HORSESHOES. J. J. Reimer, Hoboken, N. J. Filed June 20, 1878.

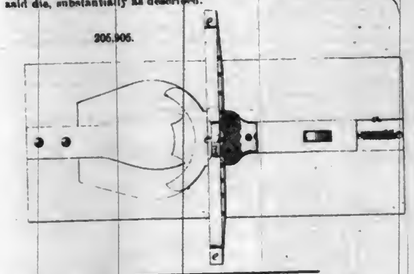
Claim.—1. In a machine for bending horseshoe-blanks having toe and heel calks, and having a ledge or offset in front of the toe-calk to form the clip, the combination of a toe-shaping die, having a forked projection adjacent to its shaping-edges to receive the toe-calk, and having a ridge on the forked projection to enter the depression in the rear, with a follower which co-operates with said die, and which is provided with a cavity to receive the ledge or offset and preserve the shape thereof during bending, substantially as described.

2. In a machine for bending horseshoe-blanks having toe and heel calks, the combination of a toe-shaping die, having a forked projection adjacent to its shaping-edge to receive the toe-calk and hold the blank in position during the bending operation, with a follower co-operating with said die, substantially as described.

3. In a machine for bending horseshoe-blanks having toe and heel calks, the combination of a toe-shaping die, having a forked projection adjacent to its shaping-edge to receive the toe-calk, with a follower which co-operates with said die and carries anti-friction rolls on its bearing-edge, to permit the toe-calk to adjust itself in the forked projection and to facilitate the bending operation, substantially as described.

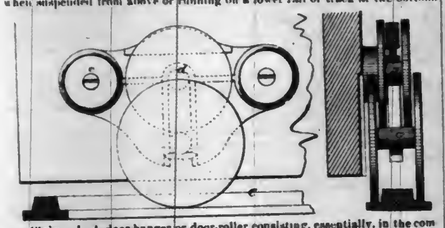
4. In a machine for bending horseshoe-blanks having toe and heel calks, and having a depressed ledge behind the toe-calk to increase the width of the shoe, the combination of a toe-shaping die, having a forked projection adjacent to its shaping-edge to receive the toe-calk, and having a ridge on the forked projection to enter the depression in the rear ledge and preserve the shape thereof during the bending operation, and a follower co-operating with said die, substantially as described.

205,906.



206,906. ROLLER ATTACHMENTS FOR SLIDING DOORS. Alex. K. Eidt, Waldo, N. Y. Filed Feb. 22, 1877.

Brief.—The main truck wheel has two treads formed by two heads of the same diameter, and an interposed axle-hub, and with this double-track wheel is combined a differential anti-friction roller, likewise having two heads, the axle-hub of which bears on the heads or the track-wheel, the construction giving a very easy running roller support, adapted for sliding doors or gates, either when suspended from above or running on a lower rail or track at the bottom.



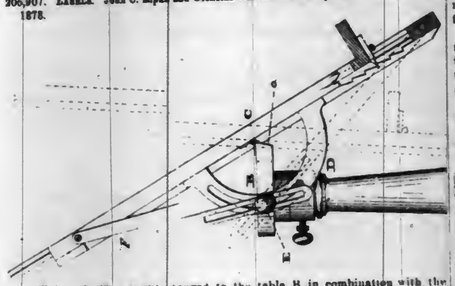
Claim.—1. A door-hanger or door-roller consisting, essentially, in the combination, with a suitable cap or casing, with or without a shank for its attachment to a door, of a track-roller and a single anti-friction roller, the axes of which are retained in the same vertical plane, and the periphery of the anti-friction roller constructed and arranged to rest upon the axle or journals of the track-roller, substantially as set forth.

2. The combination, with a suitable cap or casing, of a single anti-friction roller and a track-roller, adapted to embrace the sides of the track, said rollers being arranged with their axes constantly in the same vertical plane, and the periphery of the anti-friction roller supported upon the axle or journals of the track-roller, substantially as set forth.

3. The combination, with a casing or support provided with an elongated slot, of a single anti-friction roller and a track-roller, both of which are retained in proper position by means of a keeper located below the axle or trunnions of the track-roller, substantially as set forth.

4. In a door-hanger or door-roller, the combination, with a double wheel, having two heads of equal diameter, of an interposed wheel or anti-friction roller, the one wheel straddling the other and forming bearings for the hubs or trunnions thereof, substantially as set forth.

206,907. EASELS. John C. Ripka and Nicholas Van Roos, Philadelphia, Pa. Filed Mar. 18, 1878.



Claim.—1. The easel C, hinged to the table B, in combination with the slotted segments D, secured to the easel, and bolts or studs E, passing through the segments into said table B, substantially as and for the purpose set forth.

2. The easel C, hinged to the table B, in combination with the slotted segments D, slotted braces F, and the bolts E, common to both segments and braces, substantially as and for the purpose set forth.

3. The table B, having a beveled face, *a*, the bevel extending downward and inward, in combination with the easel hinged to the upper side of said table, whereby it may be inclined both to the front and rear, substantially as and for the purpose set forth.

205,908. ADJUSTABLE STOVE-PIPES. J. P. Bewlett, Richmond, Ind. Filed June 10, 1878.

Brief.—Can be adjusted vertically and laterally.

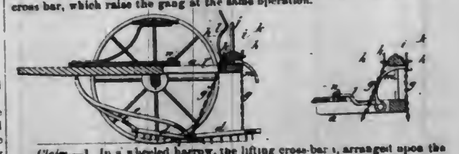


Claim.—1. An overlapping stove-pipe provided with transverse slots enlarged at one end and curved, as shown, in combination with fastening devices, substantially as herein shown and described.

2. An overlapping stove-pipe provided with transverse enlarged and curved slots D D and slots or holes F F, in combination with an inside lining and fastening devices, substantially as herein shown and described.

205,909. GANG-HARROWS. Elwood Haddick and J. M. Haddick, Jackson County, Ind. Filed Feb. 4, 1878.

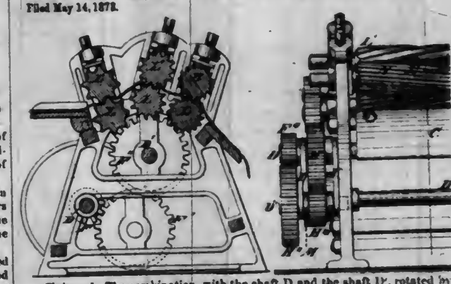
Brief.—A looped handle and chain are used to lift each harrow separately; and the same chain serves to lift the harrow when raised by the lever and cross bar, which raise the gang at the same operation.



Claim.—1. In a wheeled harrow, the lifting cross-bar *i*, arranged upon the vertical fixed guide-pins *j*, and having loops *h* on its opposite sides, in combination with the chains *g*, having the hand-holds *k*, resting upon said loops, the lifting cam-armed lever *l m*, and the harrows *d*, all constructed and arranged as and for the purpose set forth.

2. The lifting-lever *l*, having curved cam-end arms *m*, in combination with the harrows, the lifting cross-bar *i*, and its guide-pins *j*, said bar being supported upon the curved arms and raised thereby, as set forth.

206,910. HEMP AND FLAX BRAKES. Colston Sanford, Brooklyn, assignor to Mallory & Sanford American and Foreign Flax and Hemp Dressing Machine Company, New York, N. Y. Filed May 14, 1878.

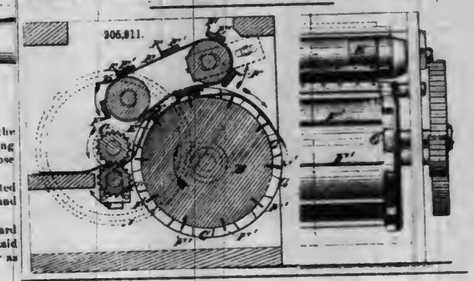


Claim.—1. The combination, with the shaft D and the shaft D', rotated by intermediate gearing from the shaft D, of the gear or gears K, attached to the brake roller or rollers L, the transmitting-gear turning on the shaft D', the pinion F''', attached to the shaft D', the oscillating arm or arms I, having bearings on the shaft D', shaft D'' having a bearing or bearings in the said arm or arms, the gear H''', intermeshing with the gear H and attached to the shaft D'', the gear H'', attached to the shaft D'' and intermeshing with the pinion F''', the crank-wheel G, attached to the shaft D, and the connecting rod M, all constructed and operating substantially as and for the purpose set forth.

2. The combination, with the braking rollers having an oscillating or reciprocating rotary motion, substantially as described, of the gears K K', attached to the said rollers in relation with the flutes on the said rollers, to cause the said flutes to intermesh midwise between each other, substantially as and for the purpose set forth.

3. The backward and forward rotating or reciprocating braking rollers L L', having on their surfaces the spirally-intermeshing flutes for increasing the rubbing action of the flutes of the said rollers upon the material from which the fiber is to be separated, substantially as and for the purpose set forth.

205,911.



206,911. FIBER-MACHINES. Gaiton Sanford, Brooklyn, assignor to Mallory & Sanford American and Foreign Flax and Hemp Dressing Machine Company, New York, N. Y. Filed May 14, 1878.

Claim.—The combination of the cylinder B, carrying scrapers F', feed-rolls C C', belt or belts E, carrying scrapers F', and bars or lags E', made of wood or other material that will not injure the edges of scrapers, said lags being attached to the belt or belts E, and arranged to present their outer faces to the edges of the scrapers F', substantially as and for the purpose set forth.

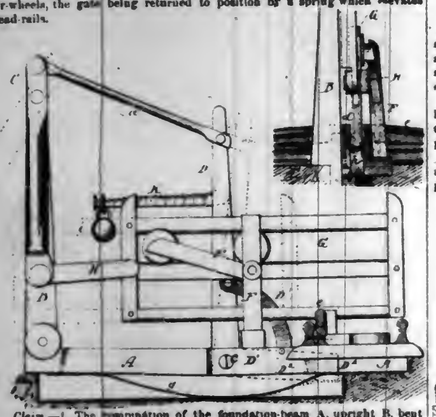
206,912. CATAMENIAL SACKS. Gustav Sebilling, Chicago, Ill., assignor of one-half his right to Carl G. Von Platen, same place. Filed May 27, 1878.



Claim.—The herein-described apparatus, composed of cup A, having ring a, the neck B, having thimble b, valve E, and spring c, and the bag C, having stopper e, in combination with a suitable trussing device, the whole to be constructed and arranged as and for the purpose set forth.

206,913. RAILWAY-GATES. Absalom Selser, Athens, Tenn. Filed Apr. 9, 1878.

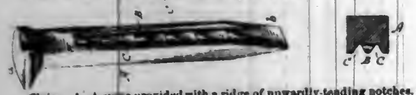
Brief.—A counterbalanced sliding gate operated by lever connections, which are actuated by tread-rails, which are depressed by the flanges of the car-wheels, the gate being returned to position by a spring which elevates tread-rails.



Claim.—1. The combination of the foundation-beam A, upright B, bent lever D', lever C, and connecting-rods a H, with the sliding gate G, pivoted rails e e, and spring g, all arranged and operating substantially in the manner herein described, for the purposes shown and specified.

2. In a railroad gate constructed and operating substantially as described, the beam or bracket K, having adjustable weight i, when arranged on the actuating lever and operating substantially as and for the purpose herein shown and specified.

206,914. RAILROAD-SPIKES. David Servis, New York, N. Y., assignor of one-half his right to Charles F. Startevant, same place. Filed May 15, 1878.

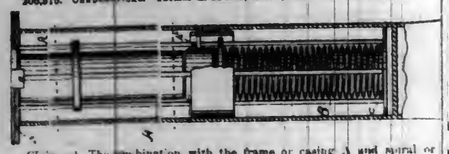


Claim.—1. A spike provided with a ridge of upwardly-tending notches, and a groove on each side of the said notches, substantially as and for the purpose set forth.

2. A spike provided with a ridge of notches, and a groove on each side of such notches, said grooves widening gradually in a downward direction, substantially as and for the purpose set forth.

3. The body A of a spike, having head a and beveled point b, and provided with notches B and grooves C C', constructed and arranged substantially as described and shown.

206,916. CANDLESTICKS. Thomas H. Shahan, Boston, Mass. Filed June 28, 1878.



Claim.—1. The combination, with the frame or casing A and spiral or other suitable spring of a candlestick, of a sleeve connected with the upper end of said spring, and arranged to slide on the exterior of the frame or casing, substantially as and for the purpose described.

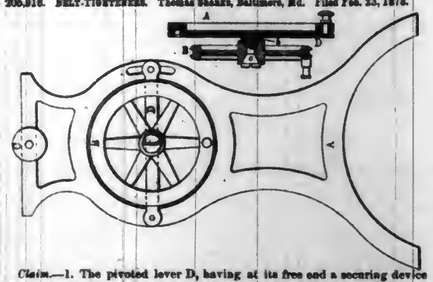
2. In a candlestick, the combination and arrangement of a spiral or other suitable spring for being compressed and secured against reaction, substantially as and for the purpose described.

3. The swinging lid l, having opening m, in combination with the candlestick-casing A, having a spiral or other suitable spring, B, substantially as described, for the purpose specified.

4. The swinging lid l, having opening m and flange n, in combination with a candlestick having a spiral or other suitable spring, B, substantially as described, for the purpose specified.

5. The swinging lid l, having opening m, flange n, and under-projecting lip o, in combination with a candlestick having a spiral or other suitable spring, B, substantially as described, for the purpose specified.

206,916. BELT-TIGHTENERS. Thomas Shanks, Baltimore, Md. Filed Feb. 23, 1878.

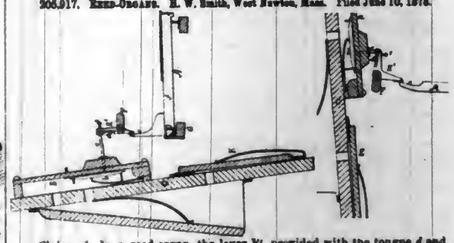


Claim.—1. The pivoted lever D, having at its free end a securing device and carrying the driving-pulley B, combined with the frame A, provided with a slot in the form of an arc of a circle, by means of which securing device and slot the lever may be held at any point within the range of its vibration, substantially as specified.

2. The slotted frame A and driven pulley C, combined with the vibratory lever D, carrying the driving-pulley B and a securing device, whereby the distance between the centers of the two pulleys may be nicely regulated for the purpose of tightening the belt, as specified.

3. The vibratory lever D and driving-wheel B, each having a conical axial bearing, as described, combined with the screw-bolt c, as and for the purposes specified.

206,917. REED-ORGANS. H. W. Smith, West Newton, Mass. Filed June 10, 1878.



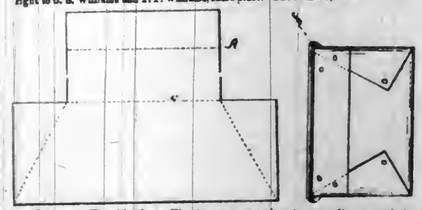
Claim.—1. In a reed organ, the lever E', provided with the tongue d and the adjusting-screw s, and combined and arranged, with the reed-valve b, push-pin c, and the key A, substantially as and for the purposes set forth.

2. In a reed-organ, the lever E', arranged and combined with the reed-valve b, push-pin c, and the key A, all being essentially as shown, and to enable the push-pin to be moved in by such lever on the key being struck.

206,918. BALE-TIES. Moses C. Smith, Starkville, assignor to Edwin S. Lenox, New York, N. Y. Filed Jan. 24, 1877.

Claim.—In the art of baling hay, the mode or process of uniting the ends of the bale-wire about the bale while in the press and under pressure, by first overlapping the ends, and then twisting the lapped ends and overlapped portions of the bale-tie in opposite directions, substantially as shown and described.

206,919. ELEVATOR-CUPS. Orlando D. Spalding, Mitchell, Iowa, assignor of two-thirds his right to O. S. Williams and T. F. Williams, same place. Filed June 8, 1878.

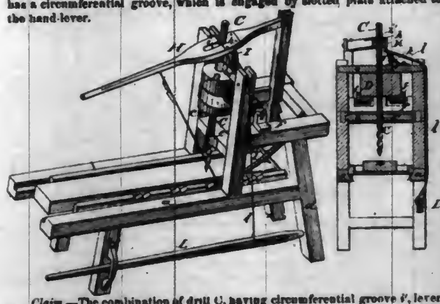


Claim.—1. The blank A, Fig. 1, constructed substantially as and for the purpose specified.

2. The elevator cup described, constructed from the blank A, of a single plate of metal, or of leather or textile fabric, and supported by the wire f, substantially as specified.

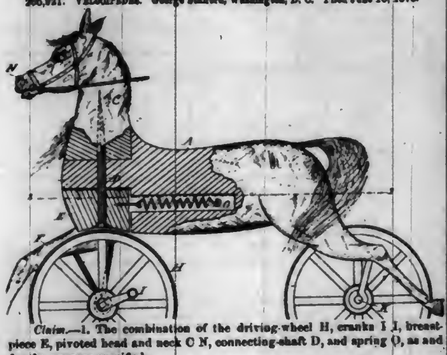
206,920. POST-BORING MACHINES. Chas. F. Stahler, Shimersville, Pa. Filed Mar. 4, 1878.

Brief.—Posts or other objects to be bored are placed on a carriage, which is pushed forward by hand, and the motion of which is regulated by ratchets cut in one side of its frame, and by a spring-pawl, which is raised by the same hand-lever which raises the drill. A hinged block, acted upon by a spring, secures the drill in its upper position until relieved by a foot-lever. The drill has a circumferential groove, which is engaged by slotted plate attached to the hand-lever.



Claim.—The combination of drill C, having circumferential groove b', lever H, having slot i and slotted plate k, hinged block I, spring k, cord l, and lever L, substantially as and for the purpose shown and specified.

206,921. VELOCIPEDES. George Stafford, Washington, D. C. Filed June 10, 1878.

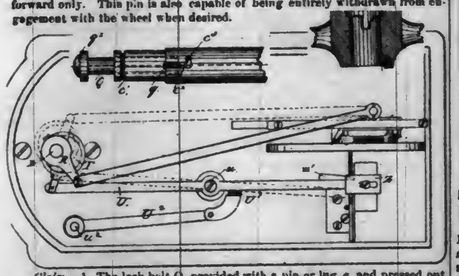


Claim.—1. The combination of the driving-wheel H, cranks I J, breast-piece E, pivoted head and neck C N, connecting-shaft D, and spring Q, as and for the purpose specified.

2. The combination, with the driving-wheel H, of the front legs F F, projecting forward on each side of said wheel, so as to form laterally and in front thereof, as shown, guards therefor.

206,922. SEWING-MACHINES. Charles F. St. John, Springfield, Ohio. Filed Apr. 24, 1878.

Brief.—The length of feed is regulated by a wedge attached to the feed-actuating lever by a sliding connection. It is operated by a link and screw-stud, the latter projecting above the bed of the machine. The machine is provided with a clutch consisting of a rod working in the main shaft, and carrying a pin adapted to engage a recess in the hand-wheel when the latter is moved forward only. This pin is also capable of being entirely withdrawn from engagement with the wheel when desired.



Claim.—1. The lock-bolt Q, provided with a pin or lug, q, and pressed out by a spring, q', in combination with the wheel P, recessed as shown, and with the shaft C, formed with longitudinal and lateral slots c c', to cause the bolt to engage with the wheel, or admit of retaining it in retracted position, when desired.

2. The combination of the feed-lever U and the slide U', provided with a wedge-shaped head, u', adjustable on said feed-lever, to regulate the length of stitch by means of a connecting-bar, U², and screw-stud u², as described.

206,923. MACHINES FOR MAKING BARRELS. Clark W. Thompson, Wells, Minn. Filed May 1, 1877.

Brief.—The blank consists of a single veneer scored at the ends. This blank is rolled up and placed in the machine, and the ends are compressed by advancing formers or dies. These dies are withdrawn and an elastic truss-hoop thrust upon the barrel by pushing rods.

Claim.—1. In a machine for making barrels, two forming-dies operated by screw-shafts, and simultaneously forced upon both ends of the barrel by the rotation of the shafts in one direction, in combination with mechanism, substantially as described, for reversing the direction of rotation of the shafts, whereby the dies are simultaneously withdrawn from both ends of the barrel, substantially as described.

2. In a machine for making barrels, the combination, with the dies E E, of right and left hand screw-shafts for supporting and actuating the dies, substantially as set forth.

3. In a machine for making barrels, the combination, with a forming-die which compresses the barrel into the desired form, of a hoop which is thrust upon the end of the barrel by the advancing die, and independent mechanism for applying an elastic compressing-hoop, which is passed over the end of the barrel after the die is withdrawn from contact with the barrel, substantially as set forth.

4. In a machine for making barrels, a forming-die which compresses the ends of the staves into the desired shape, a contracting-hoop adapted to retain the ends of the staves in the position in which they have been placed by forming-die, and mechanism, substantially as described, which expands the contracting-hoop and places it upon the end of the barrel.

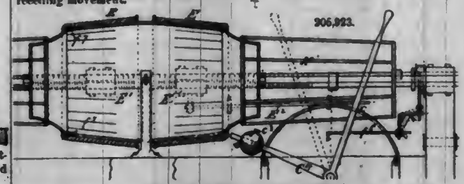
5. In a machine for making barrels, a forming-die which compresses the end of the staves into the desired shape, a contracting-hoop mechanism, substantially as set forth, which expands the hoop and places it upon the end of the barrel after the forming-die has been withdrawn from the barrel, and a support for the barrel separate and apart from the forming-die, substantially as described.

6. In a machine for making barrels, the combination, with the forming-dies, of a retaining-hoop which is forced upon the end of the barrel by the advancing die, and mechanism, actuated by the said die, for withdrawing the said hoop from the barrel, substantially as set forth.

7. In a machine for making barrels, a forming-die which compresses the ends of the staves into the desired shape as it advances upon one end of the barrel, and a hoop arranged at the opposite end of the barrel, in combination with a hoop-driving mechanism, substantially as described, whereby, when the forming-die recedes from the end of the barrel, the said hoop is advanced upon the opposite end of the barrel.

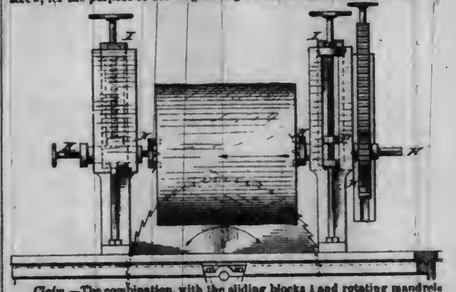
8. In a machine for making barrels, the combination of the following elements, namely: a forming-die which advances upon the barrel and compresses the ends of the staves into the desired shape, a hoop placed upon the ends of the staves by the said advancing die, a locking device which holds the hoop in its place upon the barrel when the die begins its receding movement from the barrel, and mechanism connecting the die with the hoop, substantially as described, to withdraw the hoop from the barrel as the die is completing its receding movement.

206,923.



206,924. CIRCULAR-SAW MILLS. Wm. Thompson, Jonathan Dickey, and Noah P. Watts, Kokomo, Ind. Filed June 20, 1878.

Brief.—The log is held between two longitudinally-adjustable mandrels mounted in vertically-adjustable bearings. One of said mandrels is provided with a pinion, which meshes with a rack vertically adjustable by a leading-screw, for the purpose of rotating the log a suitable distance after every cut.



Claim.—The combination, with the sliding blocks I and rotating mandrels K, adapted to be raised and lowered by the leading-screws E, of the vertically-arranged rack adapted to be raised and lowered by the leading-screw E', and the pinion on one of the rotating mandrels meshing with the vertical rack for rotating the log in the mandrels, substantially as and for the purpose described.

206,925. COOK-STOVES. Charles Truesdale, Cincinnati, Ohio, assignor of one-half his right to William Bayer & Co., same place. Filed May 8, 1878.

Brief.—By removing the reservoir and inserting the plate P (of peculiar construction, see claims 2 and 3) in guides provided therefor in the reservoir-chamber, the stove is converted from an incased-reservoir to a six-hole stove.

Claim.—1. An incased-reservoir stove capable of being readily converted into a six-hole stove by fitting in the rear portion of the same a detachable plate, which plate cuts off the downward or direct exit of the products of combustion and deflects them upwardly, substantially as herein described.

2. In combination with the flues E F F' and chamber I of an incased-reservoir stove, the deflector P p p' Q Q' R and grooves O O', substantially as herein described.

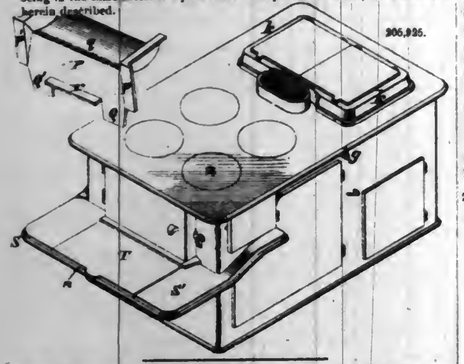
3. The detector or cut-off plate I' *p p'* Q Q *q* R *r*, cast in one piece, and adapted for converting an inclosed reservoir stove into a six-hole stove, substantially as herein described.

4. In combination with a stove-hearth, S S' *s*, having the portions S *s* below the level of the portion S', or vice versa, the laterally-swinging hearth plate or shelf T, substantially as herein described.

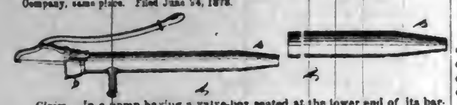
5. In combination with the laterally-swinging hearth-plate T, having a flange, W', at its free edge, the wedge-shaped leg or projection X, immovably attached to the stove, for the purpose described.

6. The pivoted and laterally-swinging hearth plate T, extending from the wing S or S' of the hearth proper to the opposite edge, or nearly to the opposite edge, of said hearth, the upper surfaces of said members T and S or S' being in the same horizontal plane when said plate T is closed, substantially as herein described.

205,925.

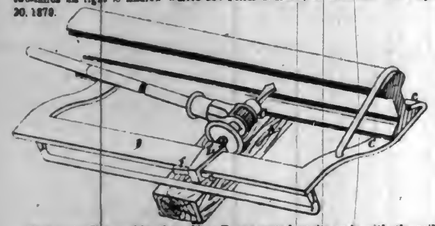


205,926. PUMPS. J. Warren Tuck, New Britain, Conn., assignor to Union Manufacturing Company, same place. Filed June 24, 1878.



Claim.—In a pump having a valve-box seated at the lower end of its barrel, the barrel A and its tapering end *d*, consisting of one and the same piece of seamless wrought metal, with parallel cylindrical sides, terminating in the open-up truncated cone-shaped end, substantially as described, and for the purpose specified.

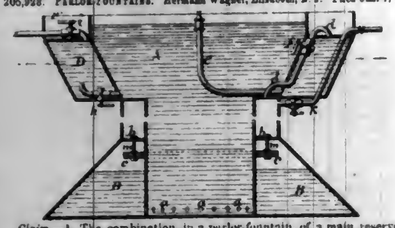
205,927. RAILROAD-TRACK DRILLS. Flavius J. Underwood, North Springfield, assignor of two-thirds his right to Andrew Warren and Perrin G. March, St. Louis, Mo. Filed Apr. 30, 1878.



Claim.—1. The combination of bar D, connected at its ends with the rail by arms C, and carrying an adjustable center-block, E, with center-hole *e*, to receive the center *g* of the ratchet-drill, and locked in position by a key, F, or equivalent locking device, as set forth.

2. The clamping and supporting bail H, in combination with the frame D C C, for the purpose set forth.

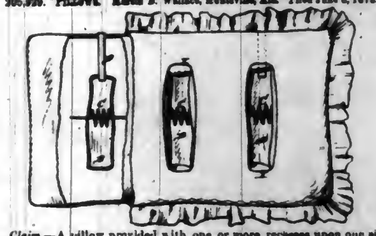
205,928. PARLOR FOUNTAINS. Hermann Wagner, Elizabeth, N. J. Filed Jan. 7, 1878.



Claim.—1. The combination, in a parlor-fountain, of a main reservoir for water or other liquid, a secondary compartment, which communicates with the main reservoir near its bottom, a compartment for compressed air, a perforated diaphragm between the secondary compartment and the compressed air compartment, and a float-valve which serves to close the perforations of the diaphragm and prevents the water from rising into the compressed air compartment, all arranged and operating substantially as and for the purpose described.

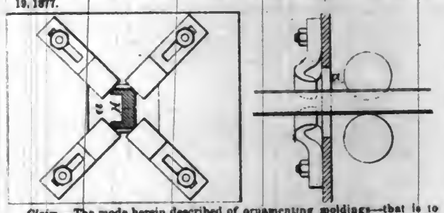
2. The combination, in a parlor-fountain, of a tube, *d*, forming a connection between the compressed-air compartment and jet-compartment, a tube, *h*, serving to blow air into the compressed-air compartment, a tube and stop-cock, *h*, for letting the water flow into the jet-compartment, and air-escape pipe *i*, all combined and operating substantially as and for the purpose set forth.

206,929. PILLOWS. Martin B. Wallace, Hunterville, Ala. Filed June 6, 1878.



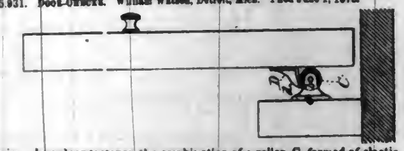
Claim.—A pillow provided with one or more recesses upon one side, and having a pillow-case with openings corresponding with said recesses, for the purpose set forth.

206,930. ORNAMENTING MOLDINGS. Washington Wallick, Philadelphia, Pa. Filed Nov. 19, 1877.



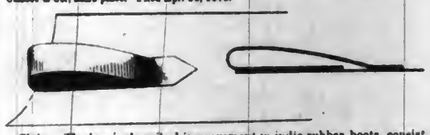
Claim.—The mode herein described of ornamenting moldings—that is to say, by first applying two or more coats of enamel of different colors, and then cutting or scraping away portions of the outer coat or coats by passing the coated molding between or in contact with knives or cutters, substantially as described.

206,931. DOOR-CHECKS. William Watson, Detroit, Mich. Filed June 1, 1878.



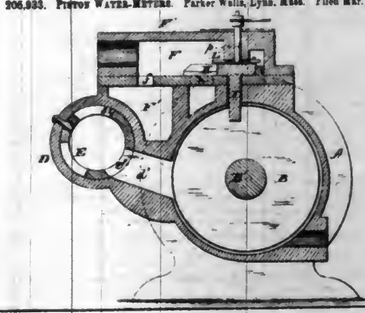
Claim.—In a door-fastener, the combination of a roller, C, formed of elastic material, supported in the path of the door, and an angular catch, D, secured upon the door, and adapted to strike, compress, and ride over said roller when the door is opened, substantially as specified.

206,932. INDIA-RUBBER BOOTS. George Watkinson, New Haven, Conn., assignor to the L. Candee & Co., same place. Filed Apr. 30, 1878.



Claim.—The herein-described improvement in india-rubber boots, consisting of a strap composed of a rubber outside and a lining, doubled into loop form, the two ends brought together, and the strap secured at its inner side to the outside of the boot-leg, substantially as described.

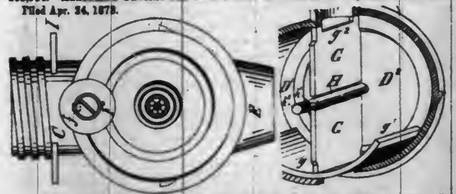
206,933. PISTON WATER-METERS. Parker Wells, Lynn, Mass. Filed Mar. 30, 1878.



Claim.—1. The combination, with the cylinder A, and double or connected pistons B B, of the cylindrical chest D, with ports *d d'* and *d'' d'''*, and *i i*, and the cylindrical valve E, with grooves *e e* and ports *e' e''*, all substantially as and for the purposes herein set forth.

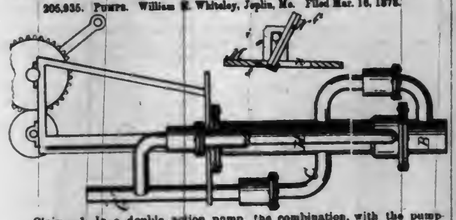
2. The combination, with the cylinder A, with pistons B, and cylindrical chest D, with valve E, of the chest F F', with ports *h h'*, and valve H, having stem I, operated by the piston B, for the purposes set forth.

206,934. MEASURING DEVICES FOR SHOT-CANISTERS. Norman C. Wey, Hiawatha, Kans. Filed Apr. 24, 1878.



Claim.—The combination, with the canister A, having inclined bottom B and compartments *b*, of the oscillating measuring-valve, consisting of the case D, having openings at C and E, diametric plate G, slotted to receive bolt H, and segmental cut-off plate or wings *g g'*, secured to one end of the diametric plate, as set forth.

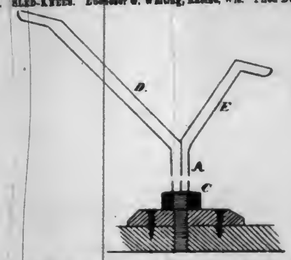
206,935. PUMPS. William R. Whiteley, Joplin, Mo. Filed Mar. 16, 1878.



Claim.—1. In a double-action pump, the combination, with the pump-barrel A, having a supply-pipe, B, with upwardly-opening valve *o* and the unvalved pistons, approaching to and receding from each other alternately, of the pipe F, opening at one end into the pump-barrel between the pistons, and at the other into the supply-pipe below its valve, the discharge-pipe G', opening into the pump-barrel opposite pipe F, and provided with valve *c*, the pipes H N, opening into the upper and lower chambers of the pump-barrel, the valve *f* in pipe H, and a connection between the pipes H and G' above the valve of the latter, substantially as specified.

2. The pump-valve consisting of the seat M, having stop *s* and vertically-slotted posts *o*, and the plate N', having journals *i*, substantially as specified.

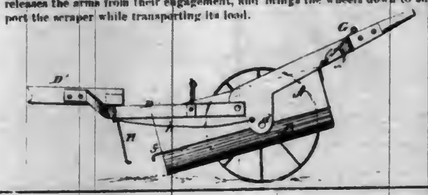
206,936. SLED-KNEES. Ebenezer G. Whiting, Racine, Wis. Filed Dec. 2, 1877.



Claim.—A sled-knee with screw B on the bottom of the same, nut C to screw down onto the runner, forming a shoulder for the same, with straight part A, and prongs D and E, all in combination, substantially as described.

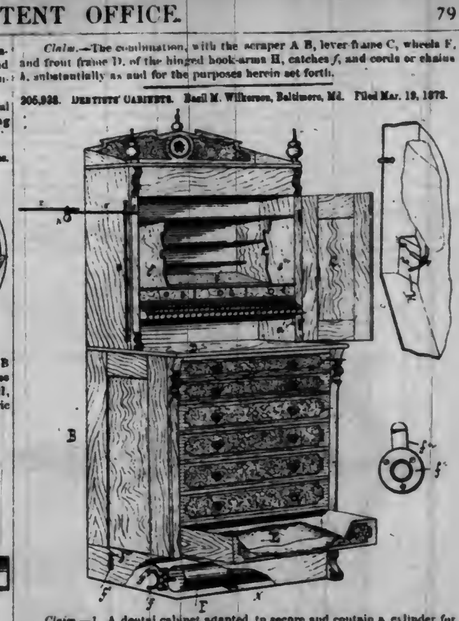
205,937. ROAD-SCRAPERS. Francis T. Wilson and George W. Hall, Nevada, Iowa. Filed Mar. 12, 1878.

Brief.—A lever-frame is supported upon the spindles of the wheels, and to the upper forward corners of said frame are attached, upon common pivots, the scraper and a front draft-frame. To cause the front edge of the scraper to enter the ground the rear detaining-latch is withdrawn and the lever-frame thrown forward, which lifts the wheels from the ground, and to hold the scraper in proper position for work swinging arms attached to the front frame are caused to engage with catches attached to the front of the scraper by means of cords connecting the arms and lever-frame. A reverse movement releases the arms from their engagement, and brings the wheels down to support the scraper while transporting its load.



Claim.—The combination, with the scraper A B, lever-frame C, wheels F, and front frame D, of the hinged hook-arms H, catches *f*, and cords or chains *h*, substantially as and for the purposes herein set forth.

206,938. DENTISTS' CABINETS. Basil M. Wilkerson, Baltimore, Md. Filed Mar. 19, 1878.



Claim.—1. A dental cabinet adapted to secure and contain a cylinder for liquefied nitrous-oxide gas, which cylinder is provided with a suitable cock adapted to be actuated by the foot of the operator, substantially as described.

2. In combination with the cabinet B, having clamp N, the cylinder F, having foot-cock *f*, as set forth.

3. A dental cabinet adapted to contain a pair of gas-cylinders and a gas bag, communicating by means of hose, provided with a three-way cock, substantially as described.

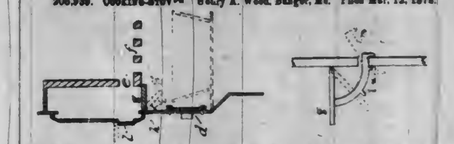
4. In combination with the cabinet B, the cylinder F, foot-cock *f*, having slot *g*, and the detent *f'''*, as set forth.

5. In a dental cabinet, the drawer *b*, having perforated ledge H, as and for the purpose set forth.

6. In a dental cabinet, an instrument-tray vertically adjustable upon a rod, O, and arranged to fold within the cabinet when not in use, substantially as described.

7. In combination with the cabinet A, the tray *c*, vertically and horizontally adjustable, and adapted to turn within the cabinet, as set forth.

206,939. COOKING-STOVES. Henry A. Wood, Bangor, Me. Filed Mar. 12, 1878.



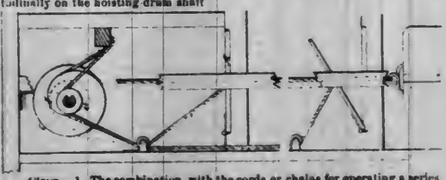
Claim.—1. In a cooking-stove substantially of the within-described construction, the draft-stopping plate *g*, cutting off the connection between the space *e* and the stove-draft *d*, substantially as specified.

2. The combination of the hinged plate *g*, handle *j*, stop *i*, and lug *w*, or its equivalent, substantially as and for the purposes set forth.

3. In a cooking-stove provided with an anti-clinker grate and clinker door *l*, a hinged plate, *g*, adapted to be supported in the different positions described, serving either as a draft-stopper or ash-chute, and operated from the outside of the stove independently of the door *k*, substantially as specified.

206,940. HATCHWAY-DOOR MECHANISMS. Charles O. Yale, New York, N. Y. Filed Feb. 21, 1878.

Brief.—The hatchway doors are opened successively by cords passing over a grooved wheel, and volute spirals on its sides, and spirally grooved drums, one on each side of the wheel, the wheel and drums traveling longitudinally on the hoisting-drum shaft.



Claim.—1. The combination, with the cords or chains for operating a series of hatchway-doors, of a wheel adapted to travel longitudinally on its shaft and act upon the several hatch cords or chains successively, for holding the respective hatch doors open as the load ascends or descends through the hatches

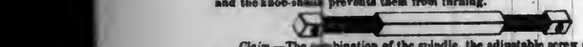
2. The combination, with a traveling-wheel at the sides thereof, and moving on the same shaft, of devices for lifting or lowering the hatch-cords, for opening and closing the hatches, respectively, as the load ascends or descends through them.

3. The combination, with the traveling-wheel and lifting devices at the sides thereof, of drums for maintaining the cords under proper tension, while the hatches are closed, as set forth, each having guides or guiding-grooves for the cords, substantially as specified.

4. The arrangement and combination, with and upon the main or drum shaft of a hatchway hoisting-gear, of a complete mechanism for opening, holding open, and closing the hatches consecutively and automatically, as the load passes through the hatchway.

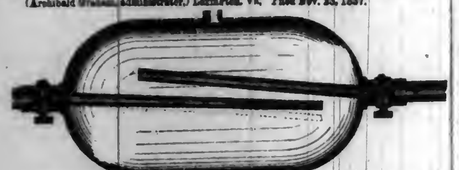
206,941. KNOB ATTACHMENTS. Alonzo P. Young, Boston, Mass. Filed May 30, 1878.

Brief.—The screws are adjusted until the spindle is at the length desired, and the knob-shank prevents them from turning.



Claim.—The combination of the spindle, the adjustable screw or screws in its ends, and the angular recessed knob-shanks, adapted to the head of the screw and spindle, substantially as described, and for the purpose set forth.

206,942. METHODS OF AND APPARATUS FOR EXTINGUISHING FIRES. William A. Graham, (Archibald Graham, administrator,) Lexington, Va. Filed Nov. 23, 1877.



Claim.—1. The method or process of extinguishing fires by means of a properly-directed stream of mingled carbonic-acid gas and water projected by the pressure or expansive force of the mingled mass from which the stream is derived.

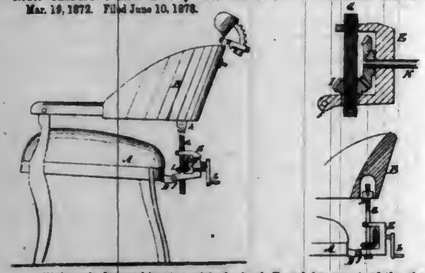
2. The combination of a strong vessel for containing the mixture of carbonic-acid gas and water under pressure with a stop-cock, flexible hose-tube, and a nozzle, substantially as and for the purpose specified.

3. The combination of fixed pipes or tubes, arranged by or through a building, with a stationary or fixed fountain or tank, for forcing mingled carbonic-acid gas and water, by its own elasticity, through such pipes, substantially as specified.

4. An improved method of extinguishing fires, consisting, first, in condensing carbonic-acid gas by artificial pressure or in generation; second, controlling it by a suitable vessel, and, finally, in directing its flow to the desired place, substantially as specified.

REISSUES.

8,320. BARBERS' CHAIRS. Anthony Abel, New York, N. Y. Patent No. 124,713, dated Mar. 19, 1872. Filed June 10, 1878.



Claim.—1. In combination with the back B and bottom A of the chair, a screw, G, and suitable nut, connected by joint-connections thereto, substantially as and for the purpose described.

2. In combination with the bottom A and back B of a chair, the screw G, bead-wheels I and J, yoke E, shaft K, and crank L, arranged to operate substantially as and for the purposes described.

8,321. PRINTERS' FURNITURE. Henry A. Hempel, Buffalo, N. Y., assignor to Joseph A. Diugess and Magdalena Hempel, same place. Patent No. 145,809, dated Dec. 23, 1873. Filed June 11, 1878.



Claim.—1. The combination of a pair of quoins, provided with rack-bars *g*, with a pinion-key, whereby the two quoins are geared together and caused to move in opposite directions in tightening and loosening the quoins, substantially as set forth.

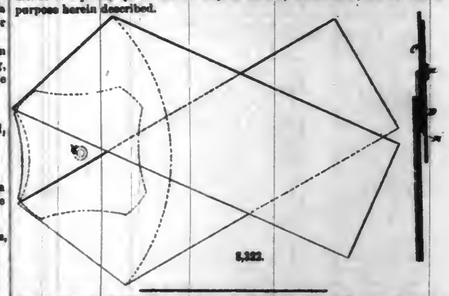
2. A pair of quoins, D D, provided with parallel rack-bars *g g*, adapted to be operated simultaneously by a pinion-key inserted between them, substantially as set forth.

3. The combination of the quoins D D, provided with rack-bars *g g*, the pinion I, and double inclined frame or bar E, substantially as shown and described.

8,322. SCARFS. Charles Loeb, New York, N. Y. Patent No. 177,136, dated May 9, 1876. Filed May 14, 1878.

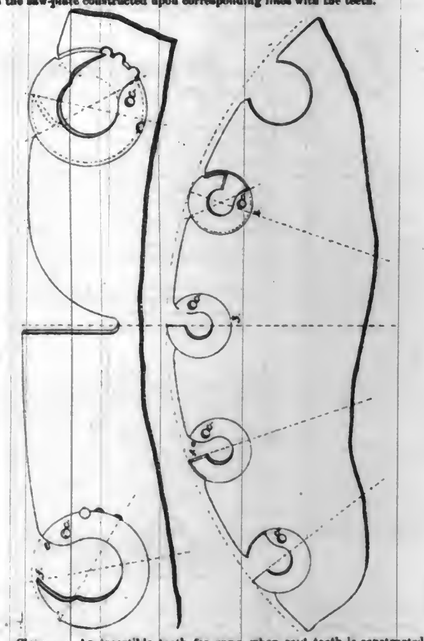
Claim.—1. The combination, with the flaps of a scarf, of a center-piece secured and movable between, under, or behind, and independently of the flaps, to provide for changing its wearing-surface, substantially as herein described and shown.

2. The polygonal center-piece attached to the back part of the scarf by means of a pivot, upon which it may be turned, substantially as and for the purpose herein described.



8,323. INSERTIBLE SAW-TEETH. Warren P. Miller, Brooklyn, N. Y., assignor, by mesne assignments, to E. Nee & Co. Patent No. 56,804, dated Oct. 9, 1866. Filed June 24, 1878.

Brief.—An insertible tooth constructed upon circular lines comprising more than one hundred and eighty degrees of a circle is inserted in a cavity in the saw-plate constructed upon corresponding lines with the teeth.

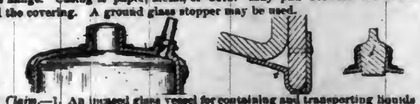


Claim.—1. An insertible tooth for saws, when said tooth is constructed upon circular lines comprising more than one hundred and eighty degrees of a circle, and inserted into a cavity or seat in the saw-plate of a shape to fit said tooth, substantially as specified.

2. A cavity or seat in a saw-plate for holding an insertible tooth, when constructed upon circular lines comprising more than one hundred and eighty degrees of a circle, substantially as specified.

8,324. INCASED GLASS VESSELS. Daniel W. Norris, Elgin, Ill. Patent No. 195,385, dated Sept. 18, 1877. Filed June 17, 1878.

Brief.—Elastic metallic rim of various styles extending under the bottom as a flange. Casing is paper, metal, or both. May pad between the vessel and the covering. A ground glass stopper may be used.



Claim.—1. An incased glass vessel for containing and transporting liquids having an elastic metallic rim extending under the edges of the bottom, for the purpose of furnishing a support for the vessel without excluding light through the bottom when the incased vessel is raised, substantially as described.

2. The combination of a glass vessel, paper side case, and metal top covering, substantially as described.

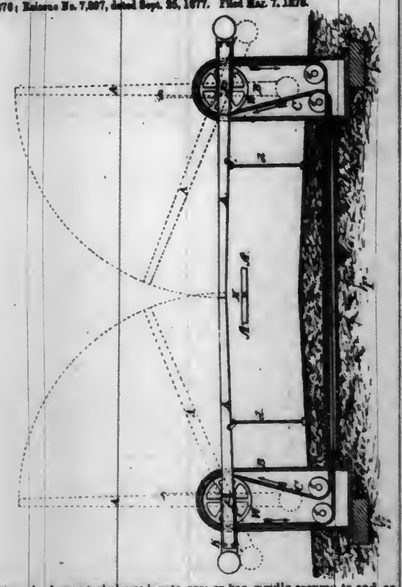
3. In combination with an incased glass vessel, a glass neck or collar around the supply or discharge orifice, having external screw-threads, a metal covering around the periphery of the collar, and having screw-threads, and a screw cap, ring, or nozzle adapted to overlapping the metal covering, substantially as described.

4. In an incased glass vessel, the combination of the lifting bail or handle and the inclosing case with a screw-neck and a cap or ring screwing or otherwise secured around said screw-neck, and lapping over the top covering, whereby, in lifting the vessel, the whole or a portion of the weight is supported by the screw-neck, substantially as described.

5. An incased glass vessel provided with one or more glass supply and discharge necks, having external metal coverings screwing or otherwise secured around said neck or necks and attached to the top covering, in combination with a lifting bail or handle, whereby, in carrying the vessel, the whole or a portion of the weight is supported by the glass neck or necks, substantially as described.

6. An incased glass vessel having a glass discharge-neck, a metallic collar permanently attached to the periphery of said neck, and also to the casing, and having a pouring-spout permanently attached to said peripheral collar, substantially as described.

8,325. GATES. Joseph S. Winsor, Providence, R. I., assignor, by mesne assignments, to Stephen A. Jenks. Patent No. 161,300, dated May 26, 1874; Reissue No. 7,451, dated Dec. 26, 1876; Reissue No. 7,897, dated Sept. 26, 1877. Filed MAR. 7, 1878.



Claim.—1. A counterbalanced gate arm or bar, rigidly secured to and so as to turn with its pivotal bolt or shaft, said shaft being journaled to a post or standard, B, substantially as and for the purpose specified.

2. A gate consisting of the vertically-swinging bars A A, pivoted or journaled to the posts B, substantially as described, and connected together by means of ropes or chains, rods, and pulleys, or other suitable mechanism, so as to operate simultaneously, as set forth.

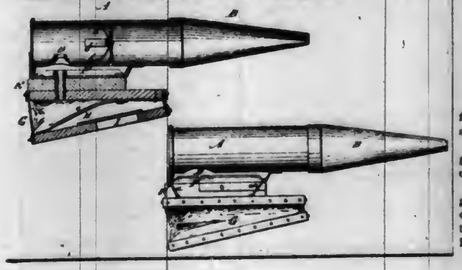
3. The combination of the hollow posts B with a lateral connection, T, for the protection of the operating mechanism, substantially as set forth.

4. The combination of the bars A with the pivoted supports *d*, substantially as and for the purpose specified.

5. The vertically-swinging gate-bars A, arranged so as to come in contact before they reach a horizontal position, and thereby arrest or stop their downward motion, substantially as set forth.

6. The bars A, having their ends constructed so as to interlock when closed, substantially as and for the purpose specified.

8,326. DEVICES FOR DESTROYING INSECTS BY FUMIGATION. Tracy F. Bingham, Abronia, Mich. Patent No. 199,611, dated Jan. 29, 1878. Filed May 14, 1878.



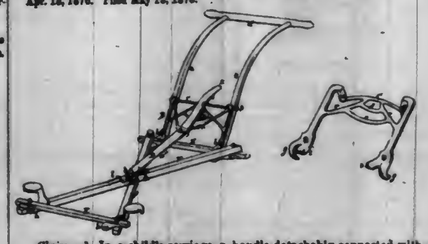
Claim.—1. The herein-described fumigating apparatus, consisting of the stove A, having cone-shaped opening D, and provided with the tapering nozzle B, perforated fire-plate C, and shield F, the several parts being adapted for operation in connection with the bellows G, substantially as and for the purpose specified.

2. The combination of the stove A, having cone-shaped opening D, and provided with tapering nozzle B, perforated fire-plate C, and shield F, with the block E and bellows G, provided with the springs H and valve I, and exhaust-nozzle, substantially as and for the purpose specified.

3. The combination of the stove A, provided with the cone-shaped opening D and shield F, with the block E and exhaust-nozzle of the bellows G, substantially as and for the purpose specified.

4. The combination of a stove and bellows, substantially as described, the air-inlet of the former being separated by an open space from the air-outlet of the latter, as and for the purpose specified.

8,327. REVERSIBLE HANDLES FOR CHILDREN'S CARRIAGES. Francis W. Whitney, Leominster, Mass., assignor to F. A. Whitney Carriage Company. Patent No. 176,156, dated Apr. 18, 1876. Filed May 13, 1878.



Claim.—1. In a child's carriage, a handle detachably connected with the axle by connecting means substantially as described, and a lever to connect the handle and reach, as and for the purpose set forth.

2. In a child's carriage, a handle connected with the running-gear by a hook-and-eye connection, to permit their ready disengagement, combined with a lever and a spring connected therewith, the lever and spring co-operating with the handle and a locking device located upon the reach, to permit the handle to be held firmly in position, or to be readily removed from the carriage.

3. In a child's carriage, eyes or projections A, attached to each axle, and a locking member attached to the reach, combined with a handle provided with hooks, and a lever connected with the handle and provided with one member of a locking device, to permit the detachment of the handle and lever from one axle and its attachment to the other axle without the removal of nuts, substantially as described.

4. In combination with eyes attached to the axle of a child's carriage, the hooks *g* and feet *i*, formed on the lower extremity of the handle-irons, to connect the handle with the carriage, substantially in the manner and for the purpose specified.

5. The combination, with the handle of a child's carriage, connected by hooks to eyes attached to the axle, and the projection *k*, placed at or near the center of the reach F, of the pivoted lever D, spring *f*, and brace *d*, substantially as and for the purpose described.

6. The lever D and spring *f*, combined with the braces C *d*, substantially as described.

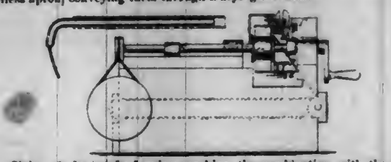
7. The combination, with the lever and reach, of the locking devices *i k* G, substantially as described.

8. The detachable reversible handle provided with a brace near its lower end, combined with the lever pivoted upon such brace, and with a brace attached to the lever and pivoted upon the handle, to turn when the lever is turned, substantially as shown and described.

9. The handle provided with a brace connecting the side pieces at a point near their lower ends, and mechanism, substantially as described, to connect the handle with the axle, combined with a lever pivoted upon the brace, and adapted at its outer or free end to be detachably connected with the reach, substantially as described.

8,328. MACHINES FOR MAKING COP-TUBES. Robert Douglas, Glasgow, Scotland, assignor, by mesne assignments, to James Wood, Fall River, and Caleb L. Smith, Lowell, Mass. Patent No. 196,192, dated Apr. 30, 1872. Filed May 20, 1878.

Brief.—Gripers on an endless traveling band draw the continuous tube from the hollow mandrel, upon which it is formed, and shears, also carried on the band, cut off cop-lengths of tubes, which are conducted by a chute to an endless apron, conveying them through a drying-chamber.

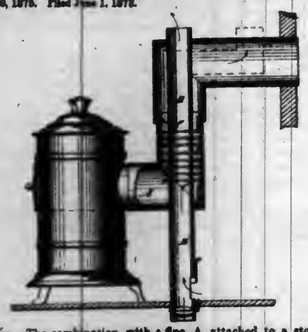


Claim.—1. In a tube-forming machine, the combination, with the tube-forming mandrel, of an endless belt and gripers carried thereon, adapted to seize the tube and carry it forward, substantially as set forth.

2. The combination, with a tube-forming mandrel, of a series of traveling gripers, adapted to draw from the mandrel the tube formed thereon, and a cutting apparatus, substantially as described.

3. The combination, with a hollow mandrel and a series of traveling gripers, of the cutting and drying apparatus herein described, said devices co-operating to form a cylindrical paper tube to deliver it from the mandrel, to cut it into proper lengths, and to dry it for use without flattening or collapsing the body of the tube, substantially as set forth.

8,329. KEATING-DUFFIE. Lewis T. Houghton, Worcester, Mass. Patent No. 106,461, dated Aug. 16, 1870. Filed June 1, 1878.



Claim.—The combination, with a flue, A, attached to a stove, of the air-supply pipe B B', extending through the same, and communicating with the outer air, and provided with a damper and radiators, substantially as shown and described, for the purpose specified.

8,330. COOKING-RANGE. Jno. Magee, Chelsea, Mass., assignor to the Magee Furnace Company. Patent No. 120,416, dated July 16, 1872. Filed June 20, 1876.

Claim.—1. An elevated hot-closet for a portable range or stove attached to a stove and supported thereby.

2. For a cooking range or stove, an elevated hot-closet, adapted to be attached to the stove-top and supported thereon.

3. An inclosed elevated hot-closet, arranged to receive a smoke-pipe through the body thereof, for the purpose of heating the inclosed space therein, provided with a door or doors.

4. An elevated inclosed hot-closet having the lower portion of its two sides or ends recessed or curved backward from the main front thereof, thereby occupying less room on the stove-top, and adapted to be fastened thereto and supported thereby, substantially as shown herein and described.

5. A hot-closet for a cooking stove or range made in the form of an oblong box with a door or doors formed on one side thereof, in combination with downwardly-projecting supporting plates or pieces, made to unite with the stove-top and to rest upon the outer edges of three sides thereof, for the better support of the closet and a more perfect gathering of the heated air arising from said top, substantially as herein shown and described.

6. An elevated removable hot-closet to a portable range, made partly of cast-iron, and adapted to be attached to the range-top and made self-supporting thereby, said cast-iron giving the closet a more firm and steady support.

8,330.

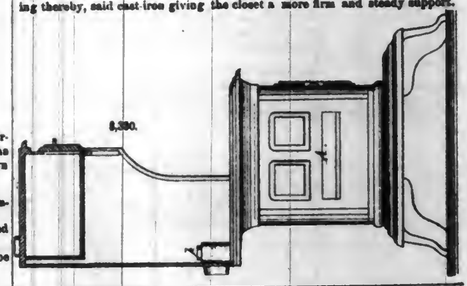


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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 9th DAY OF JULY, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abel, A., New York, N. Y. Barber's chair. (Reissue)	8,320	July 9	531	151	14	80
Adler, H., Pittsburg, Pa. Sheet-metal fender	205,820	July 9	403	115	14	64
Adler, H., Pittsburg, Pa. Fender-bar	205,821	July 9	404	116	14	64
Allison, W. C., Philadelphia, Pa. Railway-track connection	205,822	July 9	404	116	14	64
Allonas, J., assignor to Aultman & Taylor Company, Mansfield, Ohio. Spark-arrester	205,716	July 9	287	85	14	49
American Button Hole, Overseaming, and Sewing Machine Company. (See Rehfuss, G., assignor.)						
Atterbury, T. B., Pittsburg, Pa. Manufacture of glassware	205,781	July 9	356	103, 104	14	57
Aultman & Taylor Company. (See Allonas, J., assignor.)						
Aultman & Taylor Company. (See Ogden, F., assignor.)						
Avery, D. J., *et al.* (See Kirby, J. A., assignor.)						
Bacon, H., Charleston, Me. Manufacture of artificial stone	205,823	July 9	405	.....	14	64
Badia, J. S., Philadelphia, Pa. Feed-water regulator	205,782	July 9	359	104	14	58
Baker, B. R. (See Carrier, Baker, and McCarty.)						
Barker, J., *et al.* (See Cziner, M., assignor.)						
Barrett, E. H., Minneapolis, Minn. Compound for artificial stone	205,824	July 9	406	.....	14	64
Barth, H., Cincinnati, Ohio. Double-window sash	205,825	July 9	407	116	14	64
Bayrd, C. L., Wakefield, and S. Paul, Waltham, Mass. Music-leaf turner	205,826	July 9	407	116	14	64
Berdan, L., Chatfield, Minn. Sulky for plows	205,827	July 9	410	117	14	65
Bert, G. W., assignor of one-third interest to W. M. Bower, Philadelphia, Pa. Bung and tap bushing	205,783	July 9	362	104	14	58
Bertrand, F. T., Rockford, Wis. Cultivator	205,828	July 9	411	117	14	65
Bill, E. L. (See Ewing and Bill.)						
Bingham, T. F., Abronia, Mich. Device for destroying insects by fumigation. (Reissue)	8,326	July 9	537	153	14	81
Birdseye, D. M., Syracuse, N. Y. Bench-dog	205,717	July 9	288	85	14	49
Birkenhead, J., Mansfield, Mass. Spindle-bearing for spinning-machines	205,718	July 9	289	85	14	49
Blackburn, F., and V. Mosslein, assignors of three-fifths interest to H. Friedberger and H. L. Stronse, Philadelphia, Pa. Mechanical movement	205,829	July 9	412	117	14	65
Blake, J. H., North Auburn, Me. Stove	205,719	July 9	290	85, 86	14	49
Bliss, S., Chicago, Ill. Preserving fish, meat, &c.	205,830	July 9	413	.....	14	65
Blossom, J. R., Brooklyn, N. Y. Bale-tie	205,720	July 9	292	86	14	49
Bowdoin, J. W., Beverly, Mass. Tree-protector	205,721	July 9	293	86	14	49
Bower, W. M. (See Bert, G. W., assignor.)						
Brodie, W., and E. Comfort, Philadelphia, Pa. Bracket	205,722	July 9	294	86	14	49
Brooks, L. F., assignor to O. J. Richardson, Lebanon, N. H. Mop-head	205,831	July 9	414	117	14	65
Brown, J. S., Washington, D. C. Border-tile	205,832	July 9	414	118	14	65
Bruce, J. D., Newberry, S. C. Bale-tie	205,833	July 9	416	118	14	65
Bryan, J. C., Titusville, Pa. Balanced slide-valve	205,723	July 9	295	87	14	50
Burkle, J. G., assignor of one-half interest to J. B. Schroder, Cincinnati, Ohio. Shoemaker's lap-iron	205,834	July 9	417	118	14	65
Burroughs, W. S., assignor of one-half interest to T. S. Johnson, Friendship, Ind. Middlings-separator	205,724	July 9	296	87	14	50
Burrows, W. T., Nashua, Iowa. Wagon-rack	205,835	July 9	418	118	14	65
Bustin, W. H., Boston, Mass. Hame-tug eye	205,725	July 9	298	88	14	50
Candee & Co., L. (See Watkinson, G., assignor.)						
Carpenter, W. B., assignor to himself and Celluloid Novelty Company, Newark, N. J. Bracelet	205,836	July 9	419	119	14	65
Carrier, J. H., B. R. Baker, and W. McCarty, London, Ky. Washing-machine	205,784	July 9	363	104	14	58
Carter, F. M., Marlborough, Mass. Skiving-machine	205,726	July 9	298	88	14	50
Caswell, E., Lyons, N. Y. Whip-socket and rein-holder	205,785	July 9	363	105	14	58
Celluloid Novelty Company. (See Carpenter, W. B., assignor.)						
Chase, A. F., Lynn, Mass. Lasting boots and shoes	205,837	July 9	419	119	14	66
Chatterton, R. D., Coburg, Ontario, Canada. Car-coupling	205,838	July 9	420	119	14	66
Chicago Plow Manufacturing Company. (See Lane, J., assignor.)						
Church, H. H., assignor to Lawrence Gas Company, Lawrence, Mass. Screen or grid for gas-purifiers	205,727	July 9	300	88	14	50
Clark, A. C., Manchester, Iowa. Milk-cooler	205,839	July 9	421	120	14	66
Collins, J. W., Washington, D. C. Hot-air register	205,786	July 9	364	105	14	58
Comfort, E. (See Brodie and Comfort.)						
Cranston, W. F., West Middleburg, Ohio. Coffee and pea-nut roaster	205,787	July 9	365	105	14	58
Crawford, L., North Bennington, Vt. Oil-can	205,728	July 9	300	88	14	50
Crocker, R. (See Lytle and Crocker.)						
Cziner, M., assignor of part interest to J. Barker and S. Levy, New York, N. Y. Treating corn mash	205,729	July 9	301	.....	14	51
Cziner, M., assignor of part interest to J. Barker and S. Levy, New York, N. Y. Apparatus for mashing	205,730	July 9	302	89	14	51

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Daniels, T. E., Chicago, Ill. Mold for artificial marble coffins	205,731	July 9	304	89	14	51
Daniels, T. E., Detroit, Mich. Mold for artificial-stone coffins	205,732	July 9	305	89	14	51
Davenport, J. B., New York, N. Y. Paper bag	205,840	July 9	422	120	14	66
Dawson, P. C., Providence, R. I. Box for water-closet paper	205,841	July 9	422	120	14	66
Dawson, S., Hempstead, N. Y. Filter and irrigating-nozzle	205,733	July 9	306	90	14	51
Dederick, P. K., Albany, N. Y. Baling-press	205,734	July 9	307	90	14	51
Dederick, P. K., Albany, N. Y. Baling-press	205,735	July 9	307	90	14	51
Dederick, P. K., Albany, N. Y. Baling-press	205,736	July 9	309	90	14	51
Dederick, P. K., Albany, N. Y. Baling-press	205,737	July 9	310	91	14	52
Dedolph, F., St. Paul, Minn. Attachment for coal-stoves	205,842	July 9	423	120	14	66
Dickey, A. F., Somerset, Pa. Combined square, bevel, &c.	205,843	July 9	424	121	14	66
Dickey, J. (See Thompson, Dickey, and Watts.)						
Dingens, J. A., *et al.* (See Hempel, H. A., assignor.) (Reissue.)						
Dixon, G. W., Spring Lake, Mich. Slide and steam valve	205,788	July 9	366	106	14	58
Dorpmüller, H., Munich-Gladbach, Germany. Speed-recorder	205,844	July 9	425	121	14	66
Douglas, B. B., Newark, N. J. Hose-reel	205,738	July 9	311	91	14	52
Douglas, R., Glasgow, Scotland, assignor, by mesne assignments, to J. Wood, Fall River, and C. L. Smith, Lowell, Mass. Machine for making cop-tubes. (Reissue)	8,328	July 9	540	154	14	81
Dowling, J. W., Rochester, N. Y. Combined wood and sheet-metal box	205,739	July 9	312	91	14	52
Dudley, J. L., Snowville, assignor of one-half interest to J. D. Noble, Dublin, Va. Vehicle-wheel	205,845	July 9	426	121	14	66
Durfee, E. (See Huber, Titus, Durfee, and Swinnerton.)						
Edmunds, C. E., East Corinth, Me. Shaft-lug protector	205,789	July 9	367	106	14	58
Eagle Metallic Brush Company. (See Walker and Horton, assignors.)						
Evarts, E. S., *et al.* (See Krans, J., assignor.)						
Ewing, J. H., and E. L. Bill, Wheeling, West Va. Signal-lantern	205,846	July 9	427	121	14	67
Excelsior Manufacturing Company. (See Little and Nation, assignors.)						
Fairbanks & Co., B. and T. (See Fairbanks, H., assignor.)						
Fairbanks, H., assignor to E. and T. Fairbanks & Co., St. Johnsbury, Vt. Device for notching scale-beams	205,847	July 9	427	122	14	67
Fawk, G. W., Prairie Hill, Mo. Portable hay-ricker	205,790	July 9	368	106	14	59
Ferguson, J. E., Chicago, Ill. Railway-rail joint	205,848	July 9	430	122	14	67
Fielder, C., Plumstead, England. Apparatus for cleaning the hulls of vessels	205,791	July 9	369	106 and 107	14	59
Finley, J. E., Memphis, Tenn. Churn-dasher	205,740	July 9	312	92	14	52
Fisher, W. M., Cincinnati, Ohio. Smoke-preventing furnace	205,849	July 9	430	122	14	67
Foster, H. (See Millvee, S. N., assignor.)						
Franz, J., and J. C. Stevens, Allegheny, Pa. Brick-kiln furnace	205,851	July 9	432	123	14	67
Frasch, H., Cleveland, Ohio. Apparatus for distillation of oils	205,792	July 9	370	107	14	59
Frederick, C. A., Brooklyn, N. Y. Weighing-scales	205,850	July 9	431	123	14	67
Friedberger, H., *et al.* (See Blackburn and Moeslein, assignors.)						
Furst, C. J., and C. Rudolph, Chicago, Ill. Construction of store-fronts	205,852	July 9	433	123	14	68
Gable, J. H., Shamokin, Pa. Condenser for steam-engines	205,793	July 9	373	107	14	59
Galbraith, H., Cave, Ill. Gate	205,853	July 9	434	123	14	68
Garlington, T. C., La Fayette, Ala. Railway-gate	205,854	July 9	434	124	14	68
Gibbs, I., Worcester, Mass. Hose-elevator and fire-escape	205,855	July 9	435	124	14	68
Gibson, J. H., assignor to H. F. Miller, Boston, Mass. Shelf attachment for pianos and organs	205,856	July 9	437	124	14	68
Gillis, W. R., Bowling Green, Ohio. Railway-rail joint	205,857	July 9	438	124	14	68
Goodyear, R. B., Philadelphia, assignor of one-half interest to Wolfenden, Shore & Co., Cardington, Pa. Shuttle-box motion for looms	205,794	July 9	374	108	14	60
Graham, A., administrator. (See Graham, W. A., assignor.)						
Graham, W. A., Lexington, Va.; A. Graham, administrator. Method and apparatus for extinguishing fires	205,942	July 9	529	151	14	80
Green, J. W., Pontiac, Mich., assignor of one-half interest to B. M. Plumb and J. H. Mandeville, Washington, D. C. Ruler	205,795	July 9	375	108	14	60
Griffith, O., Marshall, Mich. Water-wheel	205,741	July 9	313	92	14	52
Gurley, L. E. (See Gurley, W. and L. E.)						
Gurley, W. and L. E., Troy, N. Y. Telescope attachment for surveyors' compasses	205,742	July 9	314	92	14	52
Hall, G. W. (See Wilson and Hall.)						
Halsey, J. T., Altoona, Pa. Railway-signal	205,858	July 9	438	125	14	68
Hamble, M. D., Marshalltown, Iowa. Egg-beater	205,859	July 9	440	125	14	68
Hamlin, C. A., Greenbush, assignor to Ransom Stove Works, Albany, N. Y. Stove	205,743	July 9	316	92	14	52
Hart, I. J., Chandler, Ind. Wagon-jack	205,796	July 9	376	108	14	60
Hartman, J. M., assignor to Taws and Hartman, Philadelphia, Pa. Tuyere	205,744	July 9	317	93	14	52
Haskell, C. (See Reynolds and Haskell.)						
Hatch, J. W., Rochester, N. Y. Lasting boot and shoe	205,745	July 9	318	93	14	53
Haviland, E. C., Sydney, New South Wales. Pencil	205,797	July 9	376	108	14	60
Hawkes, A. K., Austin, Tex. Eyeglass	205,860	July 9	441	125	14	69
Hazen, S., Ripon, Wis. Wind-engine	205,798	July 9	377	109	14	60
Hempel, H. A., assignor to J. A. Dingens and M. Hempel, Buffalo, N. Y. Printer's furniture. (Reissue)	8,321	July 9	531	152	14	80
Hempel, M., *et al.* (See Hempel, H. A., assignor. (Reissue.)						
Henderson, W., East Cambridge, Mass. Valve	205,861	July 9	442	125	14	69
Hill, J., Columbus, Ga. Copying-press	205,862	July 9	443	126	14	69
Hill, J. M., Ann Arbor, Mich. Steam feed-cooker	205,863	July 9	444	126	14	69
Hoe & Co., R. (See Miller, W. P., assignor.) (Reissue.)						
Hoff, W. H. (See Jouett & Hoff.)						
Holcomb, J. R., York, Ohio. Aconstic telephone	205,864	July 9	445	126	14	69
Horton, J. A. (See Walker and Horton.)						
Houghton, L. T., Worcester, Mass. Heating-drum. (Reissue)	8,329	July 9	541	154	14	82
Houston, W. B., Cincinnati, Ohio. Stove-leg fastening	205,746	July 9	319	93	14	53
Howland, E. O., Philadelphia, Pa. Lifting-jack	205,865	July 9	446	127	14	69
Hoyt, E. P., New York, N. Y. Vault-cover	205,866	July 9	447	127	14	69
Huber, E., J. C. Titus, E. Durfee, and J. F. Swinnerton, assignors to Huber Manufacturing Company, Marion, Ohio. Portable engine	205,867	July 9	449	128	14	70
Huber Manufacturing Company. (See Huber, Titus, Durfee, and Swinnerton, assignors.)						
Hull, J. S., Cincinnati, Ohio. Blow-pipe	205,747	July 9	320	93	14	53
Hull, L., Charlestown, Mass. Carpet-sweeper	205,748	July 9	322	94	14	53
Huston, W., and B. N. Wickersham, assignors of one-fourth interest to W. G. Pennypacker, Wilmington, Del. Rotary steam-engine	205,868	July 9	451	128	14	70
Irelan, W., Oak Springs, Iowa. Truss-bridge	205,799	July 9	379	109	14	60
Irwin, J. H., Philadelphia, Pa. Lantern	205,749	July 9	322	94	14	53
Jenks, S. A. (See Winsor, J. S., assignor.) (Reissue.)						
Johns, H. W., New York, N. Y. Comminuted asphalt for roofing, &c.	205,750	July 9	324	.....	14	53
Johnson, T. S. (See Burroughs, W. S., assignor.)						
Jouett, J. E., and W. B. Hoff, Washington, D. C. Safety-buoy	205,751	July 9	325	94	14	53
Kearney and Wiggers. (See Wiggers and Wesseler, assignors.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Keighton, W. B., Philadelphia, Pa. Envelope	205,869	July 9	453	129	14	70
Kelsey, G. R., West Haven, Conn. Buckle	205,870	July 9	453	129	14	70
Kennedy, J. T., Rockville, Mo. Bed-bottom	205,871	July 9	454	129	14	70
Kimbark, S. D., *et al.* (See Parmenter, O. L., assignor.)						
King, S. R., Mason, Mich. Stock-pump	205,800	July 9	380	109	14	60
Kirby, J., Cincinnati, Ohio. Bung-lock	205,873	July 9	456	130	14	70
Kirby, J. A., assignor of two-thirds interest to D. J. Avery and J. W. Taft, Chicago, Ill. Vehicle-brake	205,872	July 9	455	129	14	70
Kirkpatrick, S., Waterman, Ill. Sulky-plow	205,874	July 9	457	130	14	70
Kisor, J., Nevada, Ohio. Machine for making wooden barrels	205,875	July 9	458	130	14	70
Krauss, J., assignor of two-thirds interest, by mesne assignments, to J. W. Munday and E. S. Evarts, Chicago, Ill. Band-saw	205,876	July 9	460	131	14	71
Kregel, L. G., Nebraska City, Neb. Wind-engine	205,877	July 9	460	131	14	71
Lane, J., assignor to Chicago Plow Manufacturing Company, Chicago, Ill. Sulky-plow	205,752	July 9	326	94, 95	14	54
Laskey, S., Chicago, Ill. Overalls	205,801	July 9	381	109	14	60
Lauth, J., Chicago, Ill. Thill-coupling	205,753	July 9	328	95	14	54
Lawrence Gas Company. (See Church, H. H., assignor.)						
Leimbach, J., and G. H. Wilson, Oskaloosa, Iowa. Corn-planter	205,878	July 9	462	131	14	71
Lenox, E. S. (See Smith, M. C., assignor.)						
Lester, J. S., Atlanta, Ga. Farm and garden hoe	205,879	July 9	462	132	14	71
Levy, S., *et al.* (See Cziner, M., assignor.)						
Little, E. C., and D. H. Nation, assignor to Excelsior Manufacturing Company, St. Louis, Mo. Stove-oven shelf	205,754	July 9	329	95	14	54
Lockwood, D. C., assignor to Rubber and Celluloid Harness Trimming Company, Newark, N. J. Strip for coating articles with celluloid and other plastic compositions	205,880	July 9	464	132	14	71
Loeb, C., New York, N. Y. Scarf. (Reissue)	8,322	July 9	532	152	14	80
Loehr, H., New York, N. Y. Bottle-stopper fastener	205,881	July 9	464	132	14	71
Logue, F. M., Vicksburg, Miss. Bale-tie	205,882	July 9	465	132	14	71
Lortz, M. (See Taylor and Lortz.)						
Lytle, W. H., and R. Crocker, Des Moines, Iowa. Machine for canceling and registering letters and postal cards	205,802	July 9	382	110	14	61
Macfarlane, I. G. Wilkins township, Allegheny county, Pa., assignor to J. Macfarlane, Towanda, Pa. Stove or furnace grate	205,883	July 9	466	133	14	71
Macfarlane, J. (See Macfarlane, I. G., assignor.)						
Magee Furnace Company. (See Magee, J., assignor.)						
Magee, J., Chelsea, Mass., assignor to Magee Furnace Company. Cooking-range. (Reissue)	8,330	July 9	541	154	14	82
Mallory and Sanford American and Foreign Flax and Hemp Dressing Machine Company. (See Sanford, G., assignor.)						
Mandeville, J. H., *et al.* (See Green, J. W., assignor.)						
Manny, A. J., St. Louis, Mo. Horse hay-rake	205,884	July 9	467	133	14	72
March, P. G., *et al.* (See Underwood, F. J., assignor.)						
Marker, S. A., Hartford, Conn. Harness-saddle	205,885	July 9	468	133 and 134	14	72
McCarty, W. (See Carrier, Baker, and McCarty.)						
McCown, W. M., Portland, Oreg. Rein-holder	205,755	July 9	330	96	14	54
Merrill, R. M., Chicago, Ill. Lawn-sprinkler	205,886	July 9	470	134	14	72
Mey, A., Buffalo, N. Y. Drier	205,803	July 9	383	110 and 111	14	61
Miller, E. P., *et al.* (See Speed, D. F., assignor.)						
Miller, H. F. (See Gibson, J. H., assignor.)						
Miller, J. Q., Emlenton, Pa. Packing for oil-well casings	205,804	July 9	386	111	14	61
Miller, W. P., Brooklyn, N. Y., assignor, by mesne assignments, to R. Hoe & Co. Insertible saw-tooth. (Reissue)	8,323	July 9	533	152	14	80
Millivee, S. N., assignor of one-half interest to H. Foster, Knoxville, Tenn. Churn	205,887	July 9	471	134	14	72
Mitchell, C. M., Waterbury, Conn. Pipe-cover	205,888	July 9	471	134	14	72
Moeslein, V. (See Blackburn and Moeslein.)						
Moog, E., Oggersheim, Bavaria, Germany. Cleaning attachment for carding-machines	205,805	July 9	387	111	14	61
Moon, W. S., Pleasant Grove, Ga. Cultivator	205,889	July 9	472	135	14	72
Moore, D. E., Prescott, Iowa. Corn-planter	205,890	July 9	473	135	14	72
Morrison, W., Toronto, Ontario, Canada. Chemical fire-engine	205,756	July 9	330	96	14	54
Morrison, W. H., Canning, Ontario, Canada. King-bolt	205,891	July 9	474	135	14	72
Munday, J. W., *et al.* (See Krans, J., assignor.)						
Nation, D. H. (See Little and Nation.)						
Nauman, W. H., Dayton, Ohio. Grain-drill	205,892	July 9	474	135 and 136	14	73
Nelson, N. P., St. Peter, Minn. Shower-bath	205,757	July 9	331	96	14	54
Noble, J. D. (See Dudley, J. L., assignor.)						
Norris, D. W., Elgin, Ill. Incased glass vessel. (Reissue)	8,324	July 9	534	152 and 153	14	80
Norris, E., California, Ohio. Apparatus for tempering cream preparatory to making butter	205,893	July 9	477	136	14	73
Noye, J. T., Buffalo, N. Y. Machine for condensing swill	205,758	July 9	332	97	14	54
Ogden, F., assignor to Aultman & Taylor Company, Mansfield, Ohio. Valve-gear for engines	205,759	July 9	333	97	14	55
Oliver, R. S., Albany, N. Y. Oven-shelf	205,894	July 9	477	136 and 137	14	73
Osborn, C. S. (See Osborn, E., and C. S.)						
Osborn, E., and C. S., Newton, N. J. Spark-arrester for locomotives	205,806	July 9	388	111	14	61
Otis, C. R., Yonkers, N. Y. Hydraulic elevator	205,895	July 9	478	137	14	73
Parker, A. H., Chicago, Ill. Truss	205,896	July 9	479	137	14	73
Parker, M. G., Lowell, Mass. Producing and maintaining a high degree of heat by hydro-carbon-vapor blast on heated metallic salt sponge, and mode of preparing the heating-case	205,760	July 9	335	97	14	55
Parmenter, J. T., *et al.* (See Parmenter, O. L., assignor.)						
Parmenter, O. L., assignor to J. T. Parmenter, South Evanston, and S. D. Kimbark, Chicago, Ill. Paper pocket for cigars	205,897	July 9	481	137	14	73
Parmenter, O. L., South Evanston, assignor to S. D. Kimbark, Chicago, Ill., and J. T. Parmenter. Egg and fruit carrier	205,898	July 9	483	138	14	73
Parmilee, D. H., *et al.* (See Speed, D. F., assignor.)						
Pattengill, H., Schoolcraft, Mich. Vehicle-axle lubricator	205,899	July 9	484	138	14	74
Paul, S. (See Bayrd and Paul.)						
Pelphrey, J. A., Lowmansville, Ky. Windlass	205,900	July 9	484	138	14	74
Pennington, S. M. H., Evansville, Ind. Coloring photographs	205,807	July 9	389	.....	14	62
Pennypacker, W. G. (See Huston and Wickersham, assignors.)						
Perkins, M. T., Log Lick, Ky. Ox-yoke	205,761	July 9	336	98	14	55
Phinney, H. M., Cambridge, Mass. Hot-air furnace	205,762	July 9	337	98	14	55
Pierce, C. D., Philadelphia, Pa. Rock-drill	205,901	July 9	485	139	14	74
Plumb, B. M., *et al.* (See Green, J. W., assignor.)						
Pratt, J. F., San Francisco, Cal. Electric gravity-escapement for pendulums	205,808	July 9	390	112	14	62
Prescott, E., Hampton Falls, N. H. Door-hanger	205,763	July 9	338	98	14	55
Preston, E. B., Chicago, Ill. Apparatus for detaching hose from couplings	205,902	July 9	487	139	14	74

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Quinn, J. H., Boston, Mass. Water-closet valve	205,903	July 9	488	139	14	74
Ransom Stove Works (See Hamlin, C. A., assignor.)						
Rehfuss, G., assignor to American Button Hole, Overseaming, and Sewing Machine Company. Sewing-machine	205,904	July 9	490	140	14	74
Reimer, J. J., Hoboken, N. J. Machine for bending horseshoes	205,905	July 9	490	140	14	74
Resor & Co., W. (See Truesdale, C., assignor.)						
Reynolds, W. L., and C. Haskell, St. Louis, Mo. Manufacture of wire	205,764	July 9	339	.....	14	55
Richardson, O. J. (See Brooks, L. F., assignor.)						
Rider, A. K., Walden, N. Y. Roller attachment for sliding doors	205,906	July 9	492	140	14	75
Ripka, J. C., and N. Van Rees, Philadelphia, Pa. Easel	205,907	July 9	494	141	14	75
Roberts, R., St. Joseph, Mo. Cigar-machine	205,809	July 9	391	112	14	62
Rogers, G. W., Frankfort, Mo. Check-row attachment for seed-planters	205,810	July 9	392	112	14	62
Rowlett, J. F., Richmond, Ind. Adjustable stove-pipe	205,908	July 9	494	141	14	75
Rubber and Celluloid Harness Trimming Company. (See Lockwood, D. C., assignor.)						
Ruddick, E. and J. M., Jackson county, Ind. Gang-harrow	205,909	July 9	495	141	14	75
Ruddick, J. M. (See Ruddick, E. and J. M.)						
Rudolph, C. (See Furst and Rudolph.)						
Sanford, G., Brooklyn, assignor to Mallory and Sanford American and Foreign Flax and Hemp Dressing Machine Company New York, N. Y. Hemp and flax brake	205,910	July 9	496	141	14	75
Sanford, G., Brooklyn, assignor to Mallory and Sanford American and Foreign Flax and Hemp Dressing Machine Company, New York, N. Y. Fiber-machine	205,911	July 9	499	142	14	76
Selser, A., Athens, Tenn. Railway-gate	205,913	July 9	501	142	14	76
Servis, D., assignor of one-half interest to C. F. Sturtevant, New York, N. Y. Railway-spike	205,914	July 9	501	142	14	76
Seymour, M. J., Oil City, Pa. Drilling and pumping oil-wells by compressed air and petroleum gas	205,811	July 9	393	113	14	62
Schilling, G., assignor of one-half interest to C. G. Von Platen, Chicago, Ill. Catamenial sack	205,912	July 9	500	142	14	76
Schmidt, J. G., Berlin, Prussia, Germany. Steam-boiler	205,765	July 9	340	98, 99	14	55
Schroder, J. B. (See Burkle, J. G., assignor.)						
Shahan, T. H., Boston, Mass. Candlestick	205,915	July 9	503	143	14	76
Shanks, T., Baltimore, Md. Belt-tightener	205,916	July 9	504	143	14	76
Simpson, J. T., Meigs township, Muskingum county, Ohio. Flood-gate	205,812	July 9	395	113	14	63
Smith, C. L., *et al.* (See Douglas, R., assignor.) (Reissue.)						
Smith, H. W., West Newton, Mass. Reed-organ	205,917	July 9	505	143	14	76
Smith, M. C., Starkville, assignor to E. S. Lenox, New York, N. Y. Bale-tie	205,918	July 9	505	143	14	76
Smythe, J., Hallsport, N. Y. Harvester-cutter	205,766	July 9	341	99	14	55
Spalding, O. D., assignor of two-thirds interest to O. S. and T. F. Williams, Mitchell, Iowa. Elevator-cup	205,919	July 9	506	144	14	76
Spees, D. F., assignor to himself, D. H. Parmilee, and E. P. Miller, Indianapolis, Ind. Grain-car door	205,767	July 9	341	99	14	55
Stafford, G., Washington, D. C. Velocipede	205,921	July 9	508	144	14	77
Stafford, M. B., New York, N. Y. Car-axle box	205,768	July 9	342	99	14	56
Stahler, C. F., Shimersville, Pa. Post-boring machine	205,920	July 9	507	144	14	77
Stead, J. C., Green Point, N. Y. Feed-water heater	205,813	July 9	395	113	14	63
Steel, A. R., assignor to himself and L. Van Horn, Letts, Iowa. Motor	205,814	July 9	396	113	14	63
Stevens, J. C. (See Franz and Stevens.)						
St. John, C. P., Springfield, Ohio. Sewing-machine	205,922	July 9	509	144, 145	14	77
Stockford, B. F., South Bend, Ind. Dinner-kettle	205,769	July 9	343	100	14	56
Strakosch, M., Brünn, Austria. Machine for gigging designs on cloth	205,815	July 9	397	114	14	63
Strouse, H. L., *et al.* (See Blackburn and Moeslein, assignors.)						
Sturtevant, C. F. (See Servis, D., assignor.)						
Sutherland, M. A., New York, N. Y. Utilizing waste tin-scraps	205,770	July 9	345	.....	14	56
Swinnerton, J. F. (See Huber, Titus, Durfee, and Swinnerton.)						
Taft, J. W., *et al.* (See Kirby, J. A., assignor.)						
Taws and Hartman. (See Hartman, J. M., assignor.)						
Taylor, W., and M. Lortz, St. Louis, Mo. Beer-cooler	205,771	July 9	346	100	14	56
Thompson, C. W., Wells, Minn. Machine for making barrels	205,923	July 9	510	145	14	77
Thompson, W., J. Dickey, and N. P. Watts, Holton, Ind. Circular-saw mill	205,924	July 9	513	145	14	77
Tibbe, A. (See Tibbe, H., assignor.)						
Tibbe, H., assignor to himself and A. Tibbe, Washington, Mo. Pipe	205,816	July 9	399	114	14	63
Titus, J. C. (See Huber, Titus, Durfee, and Swinnerton.)						
Tollner, C., Pulaski, N. Y. Box	205,772	July 9	347	100	14	56
Truesdale, C., assignor of one-half interest to W. Resor & Co., Cincinnati, Ohio. Cook-stove	205,925	July 9	514	146	14	77
Tuck, J. W., assignor to Union Manufacturing Company, New Britain, Conn. Pump	205,926	July 9	515	146	14	78
Underwood, F. J., North Springfield, assignor of two-thirds interest to A. Warren and P. G. March, St. Louis, Mo. Railway-track drill	205,927	July 9	516	146	14	78
Union Manufacturing Company. (See Tuck, J. W., assignor.)						
Unger, W. L., Baltimore, Md. Coin-wrapper	205,773	July 9	349	100	14	56
Van Horn, L. (See Steel, A. R., assignor.)						
Van Rees, N. (See Ripka and Van Rees.)						
Vile, A., Southampton, England. Compound steam-engine	205,817	July 9	399	114, 115	14	63
Villasana, J. R., New York, N. Y. Cigarette-holder	205,818	July 9	401	115	14	63
Von Platen, C. G. (See Schilling, G., assignor.)						
Wagner, H., Elizabeth, N. J. Parlor-fountain	203,928	July 9	517	147	14	78
Walker, C. J., and J. A. Horton, assignors to Eagle Metallic Brush Company, Boston, Mass. Brush	205,774	July 9	349	101	14	56
Wallace, M. B., Huntsville, Ala. Pillow	205,929	July 9	518	147	14	78
Wallick, W., Philadelphia, Pa. Ornamenting moldings	205,930	July 9	519	147	14	78
Warren, A., *et al.* (See Underwood, F. J., assignor.)						
Watkinson, G., assignor to L. Candee & Co., New Haven, Conn. India-rubber boot	205,932	July 9	520	148	14	78
Watson, W., Detroit, Mich. Door-check	205,931	July 9	520	147	14	78
Watts, N. P. (See Thompson, Dickey, and Watts.)						
Wells, P., Lynn, Mass. Piston water-meter	205,933	July 9	521	148	14	78
Wesseler, J. F. (See Wiggers and Wesseler.)						
West, L. C., Kalamazoo, Mich. Plaiting-machine	205,775	July 9	350	101	14	56
Wey, H. C., Hiawatha, Kan. Measuring device for shot-canisters	205,934	July 9	522	148, 149	14	79
White, E., Stamford, Conn. Chain-pump bucket	205,819	July 9	402	115	14	63
Whitely, M. W., Joplin, Mo. Pump	205,935	July 9	523	149	14	79
Whiting, E. G., Racine, Wis. Sled-knee	205,936	July 9	524	149	14	79
Whitney Carriage Company, F. A. (See Whitney, F. W., assignor.) (Reissue.)						
Whitney, F. W., Leominster, Mass., assignor to F. A. Whitney Carriage Company. Reversible handle for children's carriages. (Reissue)	8,327	July 9	538	153	14	81
Wickersham, H. N. (See Huston and Wickersham.)						
Wiggers, H. H., and J. F. Wesseler, assignors to Kearney and Wiggers, Cincinnati, Ohio. Locking device for cradles	205,776	July 9	352	101	14	57

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wilkerson, B. M., Baltimore, Md. Dentist's cabinet	205,938	July 9	524	150	14	79
Williams, O. S., *et al.* (See Spalding, O. D., assignor.)						
Williams, T. F., *et al.* (See Spalding, O. D., assignor.)						
Wilson, F. T., and G. W. Hall, Nevada, Iowa. Road-scraper	205,937	July 9	524	150	14	79
Wilson, G. H. (See Leibach and Wilson.)						
Winsor, J. S., Providence, R. I., assignor, by mesne assignments, to S. A. Jenks. Gate. (Reissue)	8,325	July 9	536	153	14	81
Wolfenden, Shore & Co. (See Goodyear, R. B., assignor.)						
Wood, H. A., Bangor, Me. Cooking-stove	205,939	July 9	527	150	14	79
Wood, J., *et al.* (See Douglas, R., assignor.) (Reissue.)						
Wooster, D. B., Marshfield, Vt. Milk-cooler	205,777	July 9	353	102	14	57
Worrell, S. E., Hannibal, Mo. Handling grain	205,778	July 9	353	102	14	57
Worthen, W. E., New York, N. Y. Hydraulic connection for a series of wells or cisterns	205,779	July 9	354	102	14	57
Yale, C. O., New York, N. Y. Hatchway-door mechanism	205,940	July 9	527	151	14	79
Young, A. E., Boston, Mass. Knob attachment	205,941	July 9	529	151	14	80
Zwiebel, A., Burlington, Wis. Wind-engine	205,780	July 9	355	102, 103	14	57

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 9th DAY OF JULY, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Asphalt for roofing, &c. Comminuted	H. W. Johns	205,750	July 9	324	.....	14	53
Axle box. Car	M. B. Stafford	205,768	July 9	342	99	14	56
Bale-tie	J. R. Blossom	205,730	July 9	392	86	14	49
Bale-tie	J. D. Bruce	205,833	July 9	416	118	14	65
Bale-tie	F. M. Logue	205,882	July 9	465	132	14	71
Bale-tie	M. C. Smith	205,918	July 9	505	143	14	76
Bale-tie	C. W. Thompson	205,923	July 9	510	145	14	77
Barrels. Machine for making	J. Kisor	205,875	July 9	458	130	14	70
Barrels. Machine for making wooden	N. P. Nelson	205,757	July 9	331	96	14	54
Bath. Shower	J. T. Kennedy	205,871	July 9	454	129	14	70
Bed-bottom	T. Shanks	205,916	July 9	504	143	14	76
Belt-tightener	D. M. Birdseye	205,717	July 9	288	85	14	49
Bench-dog	J. S. Hull	205,747	July 9	320	94	14	53
Blow-pipe	J. G. Schmidt	205,765	July 9	340	98, 99	14	55
Boiler. Steam	W. H. Morrison	205,891	July 9	474	135	14	72
Bolt. King	G. Watkinson	205,932	July 9	520	148	14	78
Boot. India-rubber	A. F. Chase	205,837	July 9	419	119	14	66
Boots and shoes. Lasting	J. W. Hatch	205,745	July 9	318	93	14	53
Boots and shoes. Lasting	C. F. Stahler	205,920	July 9	507	144	14	77
Boring machine. Post	H. Lochr	205,881	July 9	464	132	14	71
Bottle-stopper fastener	C. Tollner	205,772	July 9	347	100	14	56
Box	J. W. Dowling	205,739	July 9	312	91	14	52
Box. Combined wood and sheet-metal	W. B. Carpenter	205,836	July 9	419	119	14	65
Bracelet	W. Brodie and E. Comfort	205,722	July 9	294	86	14	49
Bracket	G. Sanford	205,910	July 9	496	141	14	75
Brake. Hemp and flax	J. A. Kirby	205,872	July 9	455	129	14	70
Brake. Vehicle	W. Irelan	205,799	July 9	379	109	14	60
Bridge. Truss	C. J. Walker and J. A. Horton	205,774	July 9	349	101	14	56
Brush	G. R. Kelsey	205,870	July 9	453	129	14	70
Buckle	G. W. Bert	205,763	July 9	362	104	14	58
Bung and tap bushing	J. Kirby	205,873	July 9	456	130	14	70
Bung-lock	J. E. Jonett and W. B. Hoff	205,751	July 9	325	94	14	53
Buoy. Safety	E. Norris	205,893	July 9	477	136	14	73
Butter. Apparatus for tempering cream preparatory to making	L. Crawford	205,728	July 9	300	88	14	50
Can. Oil	T. H. Shahan	205,915	July 9	503	143	14	76
Candlestick	H. C. Wey	205,934	July 9	522	148, 149	14	79
Canisters. Measuring device for shot	R. D. Chatterton	205,838	July 9	420	119	14	66
Car-coupling	D. F. Spees	205,767	July 9	341	99	14	55
Car door. Grain	E. Moog	205,805	July 9	387	111	14	61
Carding-machines. Cleaning attachment for	L. Hull	205,748	July 9	322	94	14	53
Carpet-sweeper	F. W. Whitney. (Reissue)	8,327	July 9	538	153	14	81
Carriages. Reversible handle for children's	G. Schilling	205,912	July 9	500	142	14	76
Catamenial sack	D. C. Lockwood	205,880	July 9	464	132	14	71
Celluloid and other plastic compositions. Strip for coating articles with	A. Abel. (Reissue)	8,320	July 9	531	151	14	80
Chair. Barber's	S. N. Millives	205,887	July 9	471	134	14	72
Churn	J. E. Finley	205,740	July 9	312	92	14	52
Churn-dasher	R. Roberts	205,809	July 9	391	112	14	62
Cigar-machine	O. L. Parmenter	205,897	July 9	481	137	14	73
Cigars. Paper pocket for	J. R. Villasana	205,818	July 9	401	115	14	63
Cigarette-holder	M. Strakosch	205,815	July 9	397	114	14	63
Cloth. Machine for gigging designs on	W. F. Cranston	205,787	July 9	365	105	14	58
Coffee and pea-nut roaster	T. E. Daniels	205,731	July 9	304	89	14	51
Coffins. Mold for artificial-marble	T. E. Daniels	205,732	July 9	305	89	14	51
Coffins. Mold for artificial-stone	W. L. Unger	205,773	July 9	349	100	14	56
Coin-wrapper	J. M. Hill	205,863	July 9	444	126	14	69
Cooker. Steam feed	W. Taylor and M. Lortz	205,771	July 9	346	100	14	56
Cooler. Beer	A. C. Clark	205,839	July 9	421	120	14	66
Cooler. Milk	D. B. Wooster	205,777	July 9	353	102	14	57
Cooler. Milk	R. Douglas. (Reissue)	8,328	July 9	540	154	14	81
Cop-tubes. Machine for making	H. H. Wiggers and J. F. Wesseler	205,776	July 9	352	101	14	57
Cradles. Locking device for	F. T. Bertrand	205,828	July 9	411	117	14	65
Cultivator	W. S. Moon	205,889	July 9	472	135	14	72
Cultivator	B. M. Wilkerson	205,938	July 9	525	150	14	79
Dentist's cabinet	W. Watson	205,931	July 9	520	147	14	78
Door-check	E. Prescott	205,763	July 9	338	98	14	55
Door-hanger	A. K. Rider	205,906	July 9	492	140	14	75
Doors. Roller attachment for sliding	A. Mey	205,803	July 9	383	110, 111	14	61
Drier	W. H. Nauman	205,892	July 9	474	135, 136	14	73
Drill. Grain	C. D. Pierce	205,901	July 9	485	139	14	74
Drill. Rock	J. C. Ripka and W. Van Rees	205,907	July 9	494	141	14	75
Easel	O. L. Parmenter	205,898	July 9	483	138	14	73
Egg and fruit carrier	M. D. Hamble	205,859	July 9	440	125	14	68
Egg-beater	I. Gibbs	205,855	July 9	435	124	14	68
Elevator and fire-escape hose	O. D. Spalding	205,919	July 9	506	144	14	76
Elevator-cup	C. R. Otis	205,895	July 9	478	137	14	73
Elevator. Hydraulic	W. Morrison	205,756	July 9	330	96	14	54
Engine. Chemical fire	A. Vile	205,817	July 9	399	114, 115	14	63
Engine. Compound steam	E. Huber, J. C. Titus, E. Durfee, and J. F. Swinnerton	205,867	July 9	449	128	14	70
Engine. Portable	W. Huston and H. N. Wickersham	205,868	July 9	451	128	14	70
Engine. Rotary steam	S. Hazen	205,798	July 9	377	109	14	60
Engine. Wind	L. G. Kregel	205,877	July 9	460	131	14	71
Engine. Wind	A. Zwiebel	205,780	July 9	355	102, 103	14	57
Engines. Condenser for steam	J. H. Gable	205,793	July 9	373	107	14	59
Envelope	W. B. Keighton	205,869	July 9	453	129	14	70
Eyeglass	A. K. Hawkes	205,860	July 9	441	125	14	69
Feed-water heater	J. C. Stead	205,813	July 9	395	113	14	63
Feed-water regulator	J. S. Badia	205,782	July 9	359	104	14	58
Fender-bar	H. Adler	205,821	July 9	404	116	14	64
Fender. Sheet-metal	H. Adler	205,820	July 9	403	115	14	64
Fiber-machine	G. Sanford	205,911	July 9	499	142	14	76
Filter and irrigating nozzle	S. Dawson	205,733	July 9	306	90	14	51
Fires. Method and apparatus for extinguishing	W. A. Graham	205,942	July 9	529	151	14	80
Fish, meat, &c. Preserving	S. Bliss	205,830	July 9	413	.....	14	65
Fountain. Parlor	H. Wagner	205,928	July 9	517	147	14	78
Furnace. Brick-kiln	J. Franz and J. C. Stevens	205,851	July 9	432	123	14	67
Furnace. Hot-air	H. M. Phinney	205,762	July 9	337	98	14	55
Furnace. Smoke-preventing	W. M. Fisher	205,849	July 9	430	122	14	67
Gas-purifiers. Screen or grid for	H. H. Church	205,727	July 9	300	88	14	50
Gate	H. Galbraith	205,853	July 9	434	123	14	68
Gate	J. S. Winsor. (Reissue)	8,325	July 9	536	153	14	81
Gate. Flood	J. T. Simpson	205,812	July 9	395	113	14	63
Glass vessel. Incased	D. W. Norris. (Reissue)	8,324	July 9	534	152, 153	14	80
Glassware. Manufacture of	T. B. Atterbury	205,781	July 9	356	103, 104	14	57
Grain. Handling	S. E. Worrell	205,778	July 9	353	102	14	57
Harrow. Gang	E. and J. M. Ruddick	205,909	July 9	495	141	14	75
Harvester-cutter	J. Smythe	205,766	July 9	341	90	14	55
Hatchway-door mechanism	C. O. Yale	205,940	July 9	527	151	14	79
Hay-ricker. Portable	G. W. Fawk	205,790	July 9	366	106	14	59
Heating-drum	L. T. Houghton. (Reissue)	8,329	July 9	541	154	14	82
Hoe. Farm and garden	J. S. Lester	205,879	July 9	462	132	14	71
Horseshoe-bending machine	J. J. Reimer	205,905	July 9	490	140	14	74
Hose from coupling. Apparatus for detaching	E. B. Preston	205,902	July 9	487	139	14	74
Hose-reel	B. B. Douglas	205,738	July 9	311	91	14	52
Hot-air register	J. W. Collins	205,786	July 9	364	105	14	58
Hydrocarbon-vapor blast on heated metallic salt sponge, and mode of preparing the heating-case. Process of producing and maintaining a high degree of heat by	M. G. Parker	205,760	July 9	335	97	14	55
Insects by fumigation. Device for destroying	T. F. Bingham. (Reissue)	8,326	July 9	537	153	14	81
Kettle. Dinner	B. F. Stockford	205,769	July 9	343	100	14	56
Knob attachment	A. E. Young	205,941	July 9	529	151	14	80
Lantern	J. H. Irwin	205,749	July 9	322	94	14	53
Lantern. Signal	J. H. Ewing and E. L. Bill	205,846	July 9	427	121	14	67
Letters and postal cards. Machine for canceling and registering	W. H. Lytle and R. Crocker	205,802	July 9	382	110	14	61
Lifting-jack	E. O. Howland	205,865	July 9	446	127	14	69
Loom-shuttle-box motion	R. B. Goodyear	205,794	July 9	374	108	14	60
Lubricator. Vehicle-axle	H. Pattingill	205,899	July 9	484	138	14	74
Mash. Treating corn	M. Cziner	205,729	July 9	301	.....	14	51
Mashing. Apparatus for	M. Cziner	205,730	July 9	302	89	14	51
Mechanical movement	F. Blackburn and V. Moeslein	205,829	July 9	412	117	14	65
Middlings-separator	W. S. Burroughs	205,724	July 9	296	87	14	50
Moldings. Ornamenting	W. Wallick	205,930	July 9	519	147	14	78
Mop-head	L. F. Brooks	205,831	July 9	414	117	14	65
Motor	A. R. Steel	205,814	July 9	396	113	14	63
Music-leaf turner	C. L. Bayrd and S. Paul	205,826	July 9	407	116	14	64
Oils. Apparatus for distillation of	H. Frasch	205,792	July 9	370	107	14	59
Organ. Reed	H. W. Smith	205,917	July 9	505	143	14	76
Oven-shelf	R. S. Oliver	205,894	July 9	477	136, 137	14	73
Overalls	S. Laskey	205,801	July 9	381	109	14	60
Packing for oil-well casings	J. Q. Miller	205,804	July 9	386	111	14	61
Paper bag	J. B. Davenport	205,840	July 9	422	120	14	66
Pencil	E. C. Haviland	205,797	July 9	376	108	14	60
Pendulums. Electric gravity escapement for	J. F. Pratt	205,808	July 9	390	112	14	62
Photographs. Coloring	S. M. H. Pennington	205,807	July 9	389	.....	14	62
Pianos and organs. Shelf attachment for	J. H. Gibson	205,856	July 9	437	124	14	68
Pillow	M. B. Wallace	205,929	July 9	518	147	14	78
Pipe	H. Tibbe	205,816	July 9	399	114	14	63
Pipe-cover	C. M. Mitchell	205,888	July 9	471	134	14	72
Plaiting-machine	L. C. West	205,775	July 9	350	101	14	56
Planter. Corn	J. Leimbach and G. H. Wilson	205,878	July 9	462	131	14	71
Planter. Corn	D. E. Moore	205,890	July 9	473	135	14	72
Planters. Check-row attachment for seed	G. W. Rogers	205,810	July 9	392	112	14	62
Plow. Sulky	L. Berdan	205,627	July 9	410	117	14	65
Plow. Sulky	S. Kirkpatrick	205,874	July 9	457	130	14	70
Plow. Sulky	J. Lane	205,752	July 9	326	94, 95	14	54
Press. Baling	P. K. Dederick	205,734	July 9	307	90	14	51
Press. Baling	P. K. Dederick	205,735	July 9	307	90	14	51

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Press. Baling	P. K. Dederick	205,736	July 9	309	90	14	51
Press. Baling	P. K. Dederick	205,737	July 9	310	91	14	52
Press. Copying	J. Hill	205,862	July 9	443	126	14	69
Printer's furniture	H. A. Hempel. (Reissue)	8,321	July 9	531	152	14	80
Pump	M. W. Whiteley	205,935	July 9	523	149	14	79
Pump	J. W. Tuck	205,926	July 9	515	146	14	78
Pump bucket. Chain	E. White	205,819	July 9	402	115	14	63
Pump. Stock	S. R. King	205,800	July 9	380	109	14	60
Railway-gate	T. C. Garlington	205,854	July 9	434	124	14	68
Railway-gate	A. Selser	205,913	July 9	501	142	14	76
Railway-rail joint	J. E. Ferguson	205,848	July 9	430	122	14	67
Railway-rail joint	W. R. Gillis	205,857	July 9	438	124	14	68
Railway-signal	J. T. Halsey	205,858	July 9	438	125	14	68
Railway-spike	D. Servis	205,914	July 9	501	142	14	76
Railway-track connections	W. C. Allison	205,822	July 9	404	116	14	64
Railway-track drill	F. J. Underwood	205,927	July 9	516	146	14	78
Rake. Horse hay	A. J. Manny	205,884	July 9	467	133	14	72
Range. Cooking	J. Magee. (Reissue)	8,330	July 9	541	154	14	82
Rein-holder	W. M. McCown	205,755	July 9	330	96	14	54
Ruler	J. W. Green	205,795	July 9	375	108	14	60
Saddle. Harness	S. A. Marker	205,885	July 9	468	133 / 134	14	72
Sash. Double-window	H. Barth	205,825	July 9	407	116	14	64
Saw. Band	J. Krans	205,876	July 9	460	131	14	71
Saw mill. Circular	W. Thompson, J. Dickey, and N. P. Watts.	205,924	July 9	513	145	14	77
Saw-tooth. Insertible	W. P. Miller. (Reissue)	8,323	July 9	533	152	14	80
Scale-beams. Device for notching	H. Fairbanks	205,847	July 9	427	122	14	67
Scales. Weighing	C. A. Frederick	205,850	July 9	431	123	14	67
Scarf	C. Loeb. (Reissue)	8,322	July 9	532	152	14	80
Scraper. Road	F. T. Wilson and G. W. Hall	205,937	July 9	524	150	14	79
Sewing-machine	G. Rehfuss	205,904	July 9	490	140	14	74
Sewing-machine	C. P. St. John	205,922	July 9	509	144 / 145	14	77
Shaft-lug protector	C. E. Edmunds	205,789	July 9	367	106	14	58
Shoemaker's lap-iron	J. G. Burkle	205,834	July 9	417	118	14	65
Skiving-machine	F. M. Carter	205,726	July 9	298	88	14	50
Sled-knee	E. G. Whiting	205,936	July 9	524	149	14	79
Spark-arrester	J. Allonas	205,716	July 9	287	85	14	49
Spark-arrester for locomotives	E. and C. S. Osborne	205,806	July 9	388	111	14	61
Speed-recorder	H. Dorpmuller	205,844	July 9	425	121	14	66
Spinning-machines. Spindle-bearing for	J. Birkenhead	205,718	July 9	289	85	14	49
Sprinkler. Lawn	R. M. Merrill	205,886	July 9	470	134	14	72
Square, bevel, &c. Combined	A. F. Dickey	205,843	July 9	424	121	14	66
Stone. Compound for artificial	E. H. Barrett	205,824	July 9	406	.....	14	64
Stone. Manufacture of artificial	H. Bacon	205,823	July 9	405	.....	14	64
Store-fronts. Construction of	C. J. Furst and C. Rudolph	205,852	July 9	433	123	14	68
Stove	J. H. Blake	205,719	July 9	290	85, 86	14	49
Stove	C. A. Hanlin	205,743	July 9	316	92	14	52
Stove. Cook	C. Truesdale	205,925	July 9	514	146	14	77
Stove. Cooking	H. A. Wood	205,939	July 9	527	150	14	79
Stove-leg fastening	W. B. Honston	205,746	July 9	319	93	14	53
Stove or furnace grate	I. G. Macfarlane	205,883	July 9	466	133	14	71
Stove-oven shelf	E. C. Little and D. H. Nation	205,754	July 9	329	95	14	54
Stove-pipe. Adjustable	J. F. Rowlett	205,908	July 9	494	141	14	75
Stoves. Attachment for coal	F. Dedolph	205,842	July 9	423	120	14	66
Swill. Machine for condensing	J. T. Noye	205,758	July 9	332	97	14	54
Telephone. Acoustic	J. R. Holcomb	205,864	July 9	445	126	14	69
Telescope attachment for surveyors' compasses	W. and L. E. Gurley	205,742	July 9	314	92	14	52
Thill-coupling	J. Lauth	205,753	July 9	328	95	14	54
Tile. Border	J. L. Brown	205,832	July 9	414	118	14	65
Tin-scrap. Utilizing waste	M. A. Sutherland	205,770	July 9	345	.....	14	56
Tree-protector	J. W. Bowdoin	205,721	July 9	293	86	14	49
Truss	A. H. Parker	205,896	July 9	479	137	14	73
Tug eye. Hame	W. H. Bustin	205,725	July 9	298	88	14	50
Tuyere	J. M. Hartman	205,744	July 9	317	93	14	52
Valve	W. Henderson	205,861	July 9	442	125	14	69
Valve. Balanced slide	J. C. Byran	205,723	July 9	295	87	14	50
Valve-gear for engines	F. Ogden	205,759	July 9	333	97	14	55
Valve. Slide and steam	G. W. Dixon	205,788	July 9	366	106	14	58
Vault-cover	E. P. Hoyt	205,866	July 9	447	127	14	69
Velocipede	G. Stafford	205,921	July 9	508	144	14	77
Vessels. Apparatus for cleansing the hulls of	C. Fielder	205,791	July 9	369	106 / 107	14	59
Wagon-jack	I. J. Hart	205,796	July 9	376	108	14	60
Wagon-rack	W. T. Burrows	205,835	July 9	418	118	14	65
Washing-machine	J. H. Carrier, B. R. Baker, and W. McCarty	205,784	July 9	363	104	14	58
Water-closet paper. Box for	P. C. Dawson	205,841	July 9	422	120	14	66
Water-closet valve	J. H. Quinn	205,903	July 9	488	139	14	74
Water-meter. Piston	P. Wells	205,933	July 9	521	148	14	78
Water-wheel	O. Griffith	205,741	July 9	313	92	14	52
Wells by compressed air and petroleum gas. Drilling and pumping oil	M. J. Seymour	205,811	July 9	393	113	14	62
Wells or cisterns. Hydraulic connection for a series of	W. E. Worthen	205,779	July 9	354	102	14	57
Wheel. Vehicle	J. L. Dudley	205,845	July 9	426	121	14	66
Whip-socket and rein-holder	E. Caswell	205,785	July 9	363	105	14	58
Windlass	J. A. Pelphrey	205,900	July 9	484	138	14	74
Wire. Manufacture of	W. L. Reynolds and C. Haskell	205,764	July 9	339	.....	14	55
Yoke. Ox	M. T. Perkins	205,761	July 9	336	98	14	55

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COMMISSIONER'S DECISIONS.

EDWARD CAMPBELL.—*Appeal.*

[*In the matter of the application of Edward Campbell for Letters Patent for* "IMPROVEMENT IN THE MANUFACTURE OF FLOUR," *filed May* 10, 1877.—*Decided June* 22, 1878.]

The claims in this case do not constitute a proper combination nor a patentable method.

DOOLITTLE, *Assistant Commissioner:*

Applicant's rejected claims are as follows:

1. In a mill for grinding grain, the combination of the millstones C C', the curb F, and meal-spout F', provided with a thermometer G, substantially, &c.

2. The method, substantially as above described, of producing a uniform grade of meal flowing from one, two, or more sets of millstones, by arranging a thermometer within the pathway of the flow of the meal from the respective sets of stones, so as to indicate the temperature thereof, and by which the feed to the respective sets of stones may be increased or diminished, so that the meal flowing from all the stones will be of the same temperature, substantially, &c.

I think the first claim does not set forth a patentable combination, as there is no co-operation of the thermometer with the millstones, curb, and meal-spout in the performance of their mechanical functions. The latter-named devices have to do with the grinding of the grain, while the thermometer performs no other function than to indicate the temperature of the grain when ground. It is a mere aggregation.

If applicant has made any invention it is included in the second claim, which amounts, in terms, substantially to a claim for an improvement in the art of milling, by the use of a device to indicate and regulate the temperature of the meal as it flows from the millstones; but applicant does not deny that under the old method, called "low grinding," it was customary for the miller to ascertain whether the meal was too hot by the hand, and to thus regulate the relative position of the stones.

Pallett, in his work on "Miller, Millwright, and Engineer," published in 1866, says, on page 73, that—

It is not the fineness that destroys the life of the flour, but the heat produced by too great a pressure from the stones rubbing together when grinding, as nearly all the flour may be taken out of the wheat which will pass for superfine.

He points out how, when the stones grind too close, or when too dull, irregular, &c., it may be determined by testing the meal with the hand as it passes from the stones. If the stones grind too hot, a thermometer may answer better than the hand to determine accurately the temperature of the meal. Still this use would evince the exercise of intelligent judgment only.

The use of the hopper-boy, under the old system of low grinding, for cooling the meal before bolting, did not, as intimated by applicant, obviate the necessity of previously testing the meal with the hand, to determine whether the stones were too close, although when the hopper-boy was used it was not as essential to determine the exact temperature of the meal as under the present system of high grinding, where it is possible to pass the flour directly from the stones to the bolting apparatus. Something must be allowed to good sense and mechanical skill, and that is all that is shown in placing a thermometer in a meal-spout to ascertain the temperature of the meal.

The employment of an old instrument to perform in its new location its usual function, and not modified in its operation by its new relations, is a mere double use, and however important, convenient, and satisfactory the results may be which are thus accomplished, such an arrangement is held not to be invention by the courts of this country or of England.

In a decision that was affirmed by the House of Lords, where the subject of the plaintiff's patent was apparatus to supply compressed air in excavating and constructing foundations under water, the same apparatus having been used for sinking shafts on land, the judge in the lower court instructed the jury as follows:

I think if one man invents a new mode of looking at the moon, somebody else cannot take out a patent for using the same mode to look at the sun, nor for any mere application of it to a different purpose. If a man were to take out a patent for a telescope, to be used to make observations on land, I do not think any one could say, "I will take out another patent for that telescope, to be used for making observations on the sea." I therefore direct you, that, in point of law, in my judgment, the supposed invention was not an invention of any manner of new manufacture in manner and

form, as the plaintiff has alleged. (*Bush* vs. *Fox*, 5 Cl., and Fin. 715. Higgins' Digest, p. 40.)

This case is cited and approved, amongst others, by the U. S. Supreme Court in *Dunbar and Hopper* vs. *Myers and Eunson*, (11 OFFICIAL GAZETTE, 35,) where the old doctrine was reiterated that the mere application of an old process, machine, or device to a new use was not patentable; that there must be some new process or some new machinery to produce the result in order that the supposed inventor may properly have a patent for the alleged improvement.

The decision of the Board of Examiners-in-Chief is affirmed.

PETER LANGLOIS.—*Interlocutory Appeal.*

[*In the matter of the application of Peter Langlois, filed October 24, 1877, for* "IMPROVEMENT IN SEWING-MACHINES."—*Decided February 27, 1878.*]

A pending application is in nowise affected by the entry of a second or any subsequent application for the same invention by the same inventor.

There is no abandonment of the earlier case, and all the applications are to be treated as if filed by independent inventors.

If, however, a patent issues upon one of the applications, no claim will be allowed thereafter in the remaining case or cases which covers subject-matter set forth in the patent.

SPEAR, *Commissioner:*

Upon April 22, 1876, the appellant filed an application for letters patent for certain improvements in sewing-machines, which application, the Examiner holds, is for substantially the same subject-matter as is embraced in the present application, and which was not filed until October 24, 1877.

The Examiner declines to further consider the present application upon its merits until the old one, which is still pending, has been formally abandoned, and from this requirement the appeal is taken.

I do not find anything in the law or rules which will sustain the Examiner in the position he has taken. There is nothing to prevent an inventor from filing an unlimited number of applications for the same subject-matter, if some benefit, real or imagined, would seem to justify the additional expense. The treatment of such multiple applications would not differ, in any particular, from the treatment of so many independent applications filed by different inventors for the same subject-matter, the only precaution to observe being that, after one of the applications had passed to issue and been patented, no other should be allowed in which the claims that it contains construe with the subject-matter of the patent already granted. Until the first patent issues, however, the Office cannot refuse to receive and act upon all amendments which may be made in the usual routine business of prosecuting applications for letters patent; and, indeed, after a patent has been granted there is no constructive abandonment of the remaining applications, but the interposition of an implied prohibition of the statute, to the effect that there can be no subsequent patent for subject-matter already secured.

The Examiner will proceed to dispose of the cases in hand as if they were applications of independent invention, being properly careful that, in event one of them is patented, the claims of the other, if subsequently allowed, shall be restricted, so as to not conflict with the matter contained in the former—the patented case.

The New Classification.

The commission appointed by the Commissioner of Patents to revise the Official Classification of Subjects of Invention has completed its labors, and the following classification has been adopted, and will supersede the one now in use:

CLASSES OF INVENTIONS.

Advertising	40	Masonry	72
Aeration and bottling	1	Measuring instruments	73
Apparel	2	Mechanical powers	74
Arms and projectiles, making	86	Metal bending and straightening	153
Artificial limbs	3	Metal boring and drilling	77
Artificial stone, lime, and cements	106	Metal forging, punching, and shearing	78
Baths and closets	4	Metal founding	22
Beds	5	Metal ornamentation	158
Bee-culture	6	Metal personal ware, making	79
Bleaching and dyeing	8	Metal-rolling	80
Boats	9	Metal bolts, nuts, rivets, and screws	10
Book-binding	11	Metal tempering, annealing, and cementation	148
Boots and shoes	12	Metal tools and implements, making	76
Brakes and gins	13	Metal tubing and wire	134
Bread, cracker, and lozenge making	107	Metal turning, planing, and milling	82
Brewing and fermenting	7	Metal-working tools	81
Bridges	14	Metallurgy	75
Brushing and scrubbing	15	Mills	83
Builders' hardware	16	Music	84
Butchering	17	Nails, spikes, needles, and pins	85
Caoutchouc and minor plastics	18	Nut and bolt locks	151
Carding	19	Oils, fats, and glue	87
Care of live stock	119	Optics	88
Carpentry	20	Ordnance	89
Carriages and wagons	21	Ore	90
Chains, staples, and horse-shoes	59	Packing and storing vessels	150
Chairs	155	Painting and graining	91
Chemicals and medicines	23	Paper-making	92
Clasps and buckles	24	Paper manufactures	93
Clay and pottery	25	Paving	94
Cloth	26	Photography	95
Coating with metal	27	Plows	97
Coffins	27	Pneumatics	98
Composite roofing	154	Preserving	99
Coopering	147	Presses	100
Cordage	28	Printing	101
Crinoline and corsets	29	Projectiles	102
Curtain-fixtures	156	Pumps	103
Cutlery	30	Railway-cars	105
Dairy	31	Railways	104
Dentistry	32	Refrigeration	62
Distillation	124	Roofing	108
Drafting	33	Safes	109
Driers	34	Seeders and planters	111
Educational appliances	35	Sewing-machines	112
Electricity	36	Sheet-metal-ware making	113
Excavating	37	Ships	114
Explosives	52	Signals	116
Felting and hats	38	Silk	117
Fences	39	Spinning	118
Fertilizers	71	Stationery	120
Fine arts	41	Steam-boilers	122
Fire-arms	42	Steam-engines	121
Fishing and trapping	43	Steam-furnaces	110
Fluid-pressure regulators	50	Steam-valves	136
Fuel	44	Stone-working	125
Furniture	45	Stoves and furnaces	126
Games and toys	46	Sugar and salt	127
Garden and orchard	47	Surgery	128
Gas	48	Tanning	129
Glass	49	Thrashing	130
Grinding and polishing	51	Tobacco	131
Hardware, making	53	Toilet	132
Harness	54	Trunks and equipments	133
Harrows and diggers	55	Umbrellas and fans	135
Harvesters	56	Vegetable cutters and crushers	146
Hides, skins, and leather, chemical treatment	149	Wagon, car, and track irons	152
Hoisting	57	Washing apparatus	141
Horology	58	Water distribution	137
Hose and belting	60	Water-wheels	138
Household articles	65	Weaving	139
Hydraulic engineering	61	Wheelwright-machines	157
Jewelry	63	Wire-working	140
Journals and bearings	64	Wood-sawing	143
Knitting and netting	66	Wood-turning	142
Lamps and gas-fittings	67	Wood-working	144
Laundry	68	Wood-working tools	145
Leather	69		
Locks and latches	70		
Locomotives	123		
Marine propulsion	115		

The above classes have been grouped, for Office purposes, to form the following—

DIVISIONS.

Division No. 1, Tillage. *Examiner*, Fox. *Classes:* Harrows and Diggers, 55; Plows, 97; Seeders and Planters, 111.

Div. No. 2, Farm Stock and Products. *Examiner*, Jayne. *Classes:* Bee Culture, 6; Brushing and Scrubbing, 15; Butchering, 17; Dairy, 31; Fences, 39; Care of Live Stock, 119; Tobacco, 131; Vegetable Cutters and Crushers, 146.

Div. No. 3, Metallurgy, Distillation, and Refrigeration. *Examiner*, Dyrenforth. *Classes:* Fishing and Trapping, 43; Gas, 48; Refrigeration, 62; Metallurgy, 75; Ore, 90; Metal Coating, 96; Distillation, 124; Sugar and Salt, 127.

Div. No. 4, Civil Engineering. *Examiner*, Pond. *Classes:* Bridges, 14; Carpentry, 20; Excavating, 37; Hydraulic Engineering, 61; Masonry, 72; Railways, 104; Roofing, 108; Curtain Fixtures, 156.

Div. No. 5, Fine Arts, Toys, and Apparel. *Examiner*, Burke. *Classes:* Apparel, 2; Crinoline and Corsets, 29; Educational Appliances, 35; Fine Arts, 41; Games and Toys, 46; Jewelry, 63; Music, 84; Photography, 95; Toilet, 132; Umbrellas and Fans, 135.

Div. No. 6, Chemistry. *Examiner*, Antisell. *Classes:* Brewing and Fermenting, 7; Bleaching and Dyeing, 8; Chemicals and Medicines, 23; Explosives, 52; Fertilizers, 71; Oils, Fats, and Glue, 87; Painting and Graining, 91; Preserving, 99; Hides, Skins, and Leather, 149.

Div. No. 7, Harvesting and Milling. *Examiner*, Parkinson. *Classes:* Brakes and Gins, 13; Garden and Orchard, 47; Harvesters, 56; Mills, 83; Thrashing, 130.

Div. No. 8, Furniture, Bread Making, and Laundry. *Examiner*, Tilden. *Classes:* Beds, 5; Furniture, 45; Laundry, 68; Bread, Cracker, and Lozenge Making, 107; Washing Apparatus, 141; Chairs, 155.

Div. No. 9, Hydraulics and Pneumatics. *Examiner*, Durnall. *Classes:* Aeration and Bottling, 1; Baths and Closets, 4; Pneumatics, 98; Pumps, 103; Water Distribution, 137; Water-Wheels, 138.

Div. No. 10, Carriages, Wagons, and Railway-Cars. *Examiner*, Sanders. *Classes:* Carriages and Wagons, 21; Railway-Cars, 105.

Div. No. 11, Leather Working, Machines, and Articles. *Examiner*, Chapman. *Classes:* Boots and Shoes, 12; Clasps and Buckles, 24; Harness, 54; Hose and Belting, 60; Leather, 69; Tanning, 129; Trunks and Equipments, 133.

Div. No. 12, Mechanical Engineering. *Examiner*, Schoepf. *Classes:* Hoisting, 57; Journals and bearings, 64; Household Articles, 65; Mechanical Powers, 74; Presses, 100.

Div. No. 13, Metal Working. *Examiner*, Church. *Classes:* Chains, Staples, and Horseshoes, 59; Hardware Making, 53; Metal Bending and Straightening, 153; Metal Bolts, Nuts, Rivets, and Screws, 10; Metal Boring and Drilling, 77; Metal Forging, Punching, and Shearing, 78; Metal Personal Ware Making, 79; Metal Rolling, 80; Metal Tubing and Wire, 134; Metal Tools and Implements Making, 76; Metal Turning, Planing, and Milling, 82; Nails, Spikes, Needles, and Pins, 85; Nut and Bolt Locks, 151; Arms Making, 86; Wagon, Car, and Track Irons, 152.

Div. No. 14, Metal Working, Grinding, and Polishing, and Packing Vessels. *Examiner*, Stocking. *Classes:* Grinding and Polishing, 51; Metal Founding, 22; Metal Tempering, Annealing, and Cementation, 148; Metal-Working Tools, 81; Packing and Storing Vessels, 150; Sheet Metal Ware Making, 113; Wire Working, 140.

Div. No. 15, Plastics. *Examiner*, Hedrick. *Classes:* Artificial Stone, Lime, and Cement, 106; Caoutchouc and Minor Plastics, 18; Clay and Pottery, 25; Composite Roofing, 154; Felting and Hats, 38; Fuel, 44; Glass, 49; Paving, 94; Paper Making, 92; Stone Working, 125.

Div. No. 16, Electricity, Measuring Instruments, and Optics. *Examiner*, Townsend. *Classes:* Drafting, 33; Electricity, 36; Horology, 58; Measuring Instruments, 73; Optics, 88.

Div. No. 17, Printing and Paper Manufactures. *Examiner*, Freeman. *Classes:* Advertising, 40; Book-Binding, 11; Paper Manufactures, 93; Printing, 101; Stationery, 120.

Div. No. 18, Steam Engineering. *Examiner*, Fowler. *Classes:* Driers, 34; Fluid-Pressure Regulators, 50; Locomotives, 123; Steam-Boilers, 122; Steam-Engines, 121; Steam-Furnaces, 110; Steam-Valves, 136.

Div. No. 19, Stoves and Lamps. *Examiner*, Catlin. *Classes:* Lamps and Gas-Fittings, 67; Stoves and Furnaces, 126.

Div. No. 20, Surgery and Hardware. *Examiner*, Wilkinson. *Classes:* Artificial Limbs, 3; Builders' Hardware, 16; Coffins, 27; Cutlery, 30; Dentistry, 32; Locks and Latches, 70; Safes, 109; Surgery, 128.

Div. No. 21, Textiles. *Examiner*, Appleton. *Classes:* Carding, 19; Cloth, 26; Cordage, 28; Knitting and Netting, 66; Sewing-Machines, 112; Silk, 117; Spinning, 118; Weaving, 139.

Div. No. 22, Guns, Ships, and Wood-Working. *Examiner*, Bartlett. *Classes:* Boats, 9; Coopering, 147; Fire-arms, 42; Marine Propulsion, 115; Ordnance, 89; Projectiles, 102; Ships, 114; Signals, 116; Wood-Turning, 142; Wood-Working Machines, 144; Wood-Working Tools, 145; Wood-Sawing, 143; Wheelwright Machines, 157.

The classes of inventions have been grouped into these twenty-two Divisions, the primary object being to separate the work of the Office into parts, each capable of being handled by a single Examiner. So far as possible the Divisions have been constituted of cognate inventions. This rule could not be strictly followed, however, because the number of classes to be assigned to any one Division must be determined by the amount of work which the classes so grouped would impose upon an Examiner and the force at his command, usually three or four Assistant Examiners and a clerk. Hence, the Divisions here noted are rather divisions of the Office work than divisions of inventions; therefore, persons ordering copies will order by the Class number rather than the Division number. Under each one of these classes there are several subclasses upon which the Examiners are at present at work. As soon as they are completed they will be published, together with the present information in relation to the new classification.

Of the above classes, all have been photo-lithographed except Artificial Limbs, Class 3; Builders' Hardware, Class 16; Coffins, Class 27; Coopering, Class 147; Cutlery, Class 30; Dentistry, Class 32; Locks and Latches, Class 70; Locomotives, Class 103; Nut and Bolt Locks, Class 151; Safes, Class 109; Steam-Boilers, Class 122; Steam-Engines, Class 121; Steam-Furnaces, Class 110, Steam-Valves, Class 136; Surgery, Class 128; Wheelright-Machines, Class 157; Wood-Sawing, Class 143; Wood-Turning, Class 142; Wood-Working, Class 144; Wood-Working Tools, Class 145; and these are all being reproduced, and before the end of the year it is expected that photo-lithographic copies of the drawings of any patent ever issued by the Government can be obtained in this Office for 25 cents per single copy, or 10 cents each where more than twenty copies are desired. A photo-lithographic copy of any current issue (specification and drawing) can be had at the same price.

The specifications of all patents issued since July 1, 1871, are in print, and will be furnished, with the drawing, without extra charge. The specifications of most of the patents issued from November 20, 1866, to July 1, 1871, are in print, and where such is the case the Office will furnish them with the drawings; but it will not undertake to reprint copies which have been exhausted.

CAVEATS.—Inventors filing caveats in the Office should be careful to describe their invention or improvement with accuracy, and illustrate such inventions as are capable of illustration with care and thoroughness.

Caveats are placed in the hands of the Examiners, who should not be expected to understand what the inventor means unless the latter has sufficiently matured his invention to clearly describe and illustrate it.

Caveats are sometimes filed in the Patent Office stating that the caveator is engaged in a series of experiments intended to accomplish certain results, and giving nothing more than a vague hint of the means by which the result is to be attained. As the courts have frequently decided that results are not patentable, the practice of the Patent Office is to the effect that a caveat cannot cover more ground than a patent. So, where a caveat describes more than one invention, the Examiner frequently overlooks a portion of the caveat, knowing that under the rules caveators are confined to a single invention.

Complaints are often made that caveats have been overlooked, and patents issued to subsequent applicants, when the fault lies in the hasty preparation of the caveat papers. The rules are explicit, that the caveat must describe the invention as fully as the inventor is able to do; that the drawings shall be of the same size as the drawings to accompany an application for a patent, (8 by 13 inches, on a sheet 10 by 15 inches, with an inch margin all round,) and on tracing-muslin, or light bristol-board or drawing-paper, which can be

folded without breaking. A careful compliance with the rules will greatly facilitate the work of the Office, and will go a long way toward insuring the accuracy which is so necessary in securing their just rights to inventors.

THE "Rules of Practice," containing full instructions for filing applications, caveats, &c., and all the essential forms required in practice before the Office, are furnished gratuitously on application to the Commissioner of Patents; also copies of the "Patent Laws," being extracts from the Revised Statutes, so far as they relate to patent matters.

TRADE-MARKS.

[Each certificate bearing date July 16, 1878.]

6,354.—FLY-POISON.—*John C. Allan*, Buffalo, N. Y. Application filed July 5, 1878.
"The words 'FLY BRICK,' 'THE LITTLE GIANT FLY KILLER,' and the large letter 'A.'"

6,355.—WRITING-FLUID.—*Carter, Dinsmore & Co.*, Boston, Mass. Application filed May 23, 1878.
"The arbitrarily-selected title 'CARTER.'"

6,356.—STOVE-POLISH.—*William Frankfurth & Co.*, Milwaukee, Wis. Application filed June 25, 1878.
"The arbitrarily-selected word 'UNIVERSUM.'"

6,357.—WHISKEY.—*A. Hanford & Co.*, New York, N. Y. Application filed May 27, 1878.
"The arbitrarily-selected letters 'Q P,' used in connection with the words 'HANFORD'S PURIFIED WHISKEY.'"

6,358.—WHISKEYS.—*Lilienthal & Co.*, New York, N. Y., Cincinnati, Ohio, and San Francisco, Cal. Application filed June 27, 1878.
"The words 'CYRUS NOBLE,' in combination with the device of a coronet."

6,359.—SOAP.—*William Mulcahey*, Middlebury, Vt. Application filed June 20, 1878.
"The word-symbol 'GLOBE.'"

6,360.—BITTERS.—*Toussaint Mesplié*, Washington, D. C. Application filed July 3, 1878.
"The arbitrary symbol-word 'WASCOPUM.'"

6,361.—MEDICINAL PREPARATIONS.—*Francis L. Neufeld*, Lancaster, Pa. Application filed May 3, 1878.
"The monogram, as shown, used in connection with the title or designation 'NEUFELD.'"

6,362.—MIXED PAINTS AND COLORS IN OIL.—*Thomas Ramsay*, Cleveland, Ohio. Application filed June 14, 1878.
"The plain shield, a spread eagle, and one or more United States flags, all as shown."

6,363.—WHISKEY.—*J. W. Gaff & Co.*, Cincinnati, Ohio. Application filed June 3, 1878.
"The word-symbol 'EXCELSIOR,' used in connection with the title or designation 'Howe & Hubbell, Cincinnati.'"

6,364.—COD-FISH.—*Lynde & Hough*, San Francisco, Cal. Application filed June 22, 1878.
"The symbol of an anchor."

6,365.—CIGARS.—*N. W. Tansill & Co.*, Chicago, Ill. Application filed June 6, 1878.
"The word-symbol 'CUSTER.'"

6,366.—CHEMICAL COMPOUND FOR THE COMPLEXION.—*Charles R. Burrage*, San Francisco, Cal. Application filed June 18, 1878.
"The word-symbol "WAXEN QUEEN."'

6,367.—ICE-CREAM AND WATER-ICES.—*William Lee Darling*, New York, N. Y. Application filed June 8, 1878.
"The word-symbol 'ALLEGRETTI.'"

6,368.—COTTON-GINS.—*Eagle Cotton Gin Company*, Bridgewater, Mass. Application filed March 4, 1878.
"The word-symbol 'EAGLE.'"

6,369.—CIGARS, CIGARETTES, SMOKING AND CHEWING TOBACCO, AND SNUFF.—*G. W. Gail & Ax*, Baltimore, Md. Application filed June 26, 1878.
"The word-symbol 'CAPRICE.'"

6,370.—CAPSULES FOR ADMINISTERING MEDICINES.—*John R. Planten*, Brooklyn, N. Y. Application filed June 26, 1878.
"The word-symbol 'EUREKA.'"

6,371.—PLUG CHEWING-TOBACCO.—*R. A. Patterson & Co.*, Richmond, Va. Application filed July 9, 1878.
"The arbitrarily-selected words 'SHELL ROAD.'"

6,372.—BREAD.—*Ernst A. Rosebrock*, Louisville, Ky. Application filed June 5, 1878.
"The vignette bearing the initials or letters 'E. A. R.'"

6,373.—SODA-WATER, SELTZER-WATER, AND GINGER-POP.—*Sass & Hafner*, Chicago, Ill. Application filed March 12, 1878.
"The letters 'S. & H.'"

6,374.—MEDICINAL PREPARATION.—*George S. Weaver*, Albany, N. Y. Application filed June 18, 1878.
"A crowned lion (lion issuant) rising or coming up from a heraldic bar or bearing, and holding in his paws a shuttle."

6,375.—SPOOL-COTTON.—*William Warren*, New York, N. Y. Application filed July 6, 1878.
"The arbitrarily-selected words 'BELL ISLE.'"

6,376.—LAGER-BEER.—*C. Conrad & Co.*, Mainz-Gelsenheim-on-the-Rhine, Germany, and St. Louis, Mo. Application filed January 29, 1877.
"The word 'BUDWEISER,' the monogram composed of the letters and character 'C. C. & Co.,' and our firm-name 'C. CONRAD & Co.'"

6,377.—CIDER.—*Green & Clark*, St. Louis, Mo. Application filed May 3, 1878.
"The pictorial illustration of a village landscape containing in details the various operations required for the complete manufacture of cider."

6,378.—WHISKEY.—*A Hanford & Co.*, New York, N. Y. Application filed June 12, 1878.
"The words 'HANFORD'S CHESNUT GROVE.'"

6,379.—CIGARS.—*Sanchez & Haya*, New York, N. Y. Application filed June 28, 1878.
"The representation of the lady shown."

6,380.—CIGARS.—*Henry Stahlschmidt*, Evansville, Ind. Application filed March 23, 1878.
"The words 'LITTLE GEM.'"

6,381.—SMOKING AND CHEWING TOBACCO.—*Thomas C. Williams & Co.*, Richmond, Va. Application filed February 28, 1878.
"The words 'LUCY HINTON,' together with the portrait of a lady, as represented."

6,382.—SPOOL-COTTON.—*William Warren*, New York, N. Y. Application filed July 6, 1878.
"The arbitrarily-selected words 'OUR OWN.'"

6,383.—MEDICINAL PREPARATION.—*R. E. Sellers & Co.*, Pittsburg, Pa. Application filed March 15, 1878.
"The word-symbol 'PEERLESS,' and the circular device containing the monogram, the five-pronged star, &c."

DESIGNS.

[Each design bearing date July 16, 1878.]

10,754.—FABRICS.—*Charles Heritage*, Warren, Mass. Application filed June 28, 1878. Term of patent 3½ years.

10,755.—COFFIN-HANDLES.—*William M. Smith*, West Meriden, Conn., assignor to *Meriden Britannia Company*, same place. Application filed July 1, 1878. Term of patent 14 years.

10,756.—SPOONS.—*Herman Vasseur*, Wallingford, Conn., assignor to *Simpson, Hall, Miller & Co.*, same place. Application filed July 1, 1878. Term of patent 7 years.

LABELS.

[Each certificate bearing date July 16, 1878.]

1,623.—Title: "DAVID'S PRIZE SOAP."—*D. S. Brown & Co.*, New York, N. Y. Application filed July 3, 1878.

1,624.—Title: "D. S. BROWN & CO. JUNIPER TAR AND GLYCERINE SAPONIFIED."—*D. S. Brown & Co.*, New York, N. Y. Application filed July 3, 1878.

1,625.—Title: "HENRY'S LIVER PILLS."—*William H. Caterson*, Philadelphia, Pa. Application filed July 2, 1878.

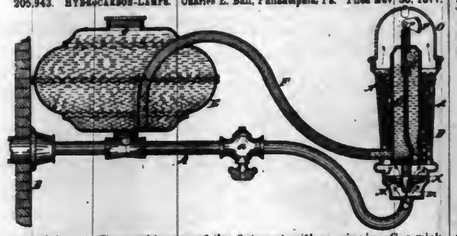
1,626.—Title: "VINUM DIGESTIVUM, (DIGESTIVE WINE.)"—*Wm. Procter, Jr., & Co.*, Philadelphia, Pa. Application filed June 27, 1878.

1,627.—Title: "GENEVA LINIMENT."—*W. S. Schermerhorn*, Castleton, N. Y. Application filed July 6, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

JULY 16, 1878.

205,943. HYDROCARBON-LAMPS. Charles E. Ball, Philadelphia, Pa. Filed Nov. 30, 1877.

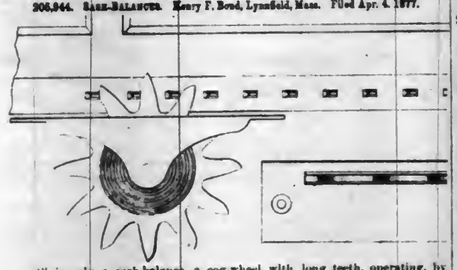


Claim.—1. The combination of the fixture A with an air-pipe, C, a wick-burner, D, a hydrocarbon-fluid reservoir, E, and a siphon supply-pipe, F, substantially as and for the purpose set forth.

2. In combination with a wick-burner, D, and a pipe, A, for supplying air to said burner, the diaphragm K, rod L, and disk M, for regulating the supply of air and preventing a too violent blast, substantially as shown and described.

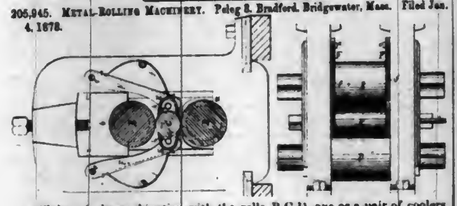
3. In combination with the burner D and air-pipe A, the shot-packing for preventing noise, substantially as shown and described.

205,944. SASH-BALANCES. Henry F. Bond, Lynnfield, Mass. Filed Apr. 4, 1877.



Claim.—In a sash-balance, a cog wheel with long teeth, operating, by means of a spring, upon a rack whose teeth or lugs are set obliquely, substantially as described above, and so that the varying tension of the spring shall be offset by the varying leverage of the cog-wheel, as and for the purpose hereinbefore set forth.

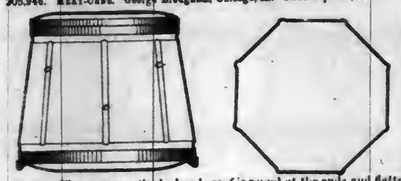
205,945. METAL-ROLLING MACHINERY. Paleg S. Bradford, Bridgewater, Mass. Filed Jan. 4, 1878.



Claim.—1. In combination with the rolls B C D, one or a pair of coolers, E E, substantially as described, arranged with the intermediate roll C, in manner and provided with operative mechanism essentially as and for the purpose or purposes set forth.

2. The guide-bearings G G, provided with the holes *f f*, in combination with the three rolls B C D and one or more coolers, E E, substantially as described, arranged with the intermediate roll C, in manner and provided with inducts and educts and operative mechanism essentially as set forth.

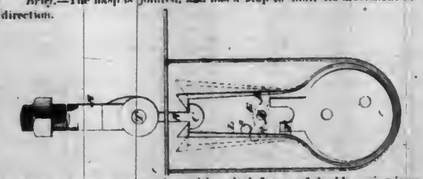
205,946. MEAT-CANS. George Brougham, Chicago, Ill. Filed Sept. 10, 1877.



Claim.—The meat can the body whereof is round at the ends and flattened in the intermediate portion, substantially as set forth.

205,947. HASP-LOCKS. Cornelius Collins, Jr., Kingsland, and George Thomas, Jersey City, assignors of one-third their right to Claude M. Gignoux, Morristown, N. J. Filed Feb. 23, 1878.

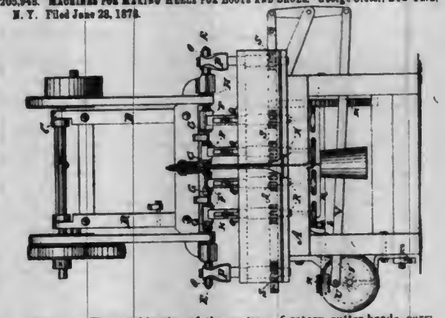
Brief.—The hasp is jointed, and has a stop to limit its movement in one direction.



Claim.—1. The combination, with a lock-frame, of double spring-jaws, a pivoted block provided with wards, or projections and depressions, a key-post, and a stop situated between said spring-jaws, and a jointed bolt provided with a web or stop to limit the motion in one direction only, and formed at one end to spread and engage with said double spring-jaws, so that said bolt cannot be withdrawn without the use of a double key with wards to correspond to the wards of the tumbler-block, all arranged substantially as set forth.

2. The combination, with a lock-frame provided with double spring-jaws, and a tumbler-block containing wards, of a jointed bolt provided with a stop on the bolt near the joint to limit its motion in one direction, arranged to operate substantially in the manner and for the purposes specified.

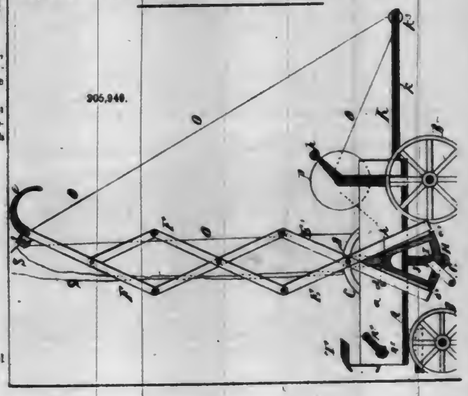
205,948. MACHINES FOR MAKING HEELS FOR BOOTS AND SHOES. George Oreier, New York, N. Y. Filed June 28, 1878.



Claim.—1. The combination of the system of rotary cutter-heads, carrying straight-edged knives P, and mounted on the end of a swinging frame, H, with the system of vises Q, patterns P, and rolls O, for making boot and shoe heels of wood or other material, substantially as herein set forth.

2. The combination of the system of vises Q, having spur-wheels upon their spindles or shafts R, with the spur-wheels S, rack T, and a system of suitable cutters, the whole arranged for joint operation by connecting mechanism, substantially as herein described, for the purposes specified.

3. The combination of the crank-shaft *a*, rods *c*, swinging frame G, and hanging frame D, the latter carrying a system of rotary cutters, all substantially as and for the purpose set forth.



205,949. FIRE-ESCAPES. Diedrich L. Dieckmann, New York, N. Y. Filed Dec. 11, 1877.

Brief.—Ordinary lazy-tong lever-frame carrying endless rope ladder and canvas chute, said ladder being secured in position, when frame is extended, by means of the sliding frame in the truck-body. The lazy-tong frame is pivoted in adjustable brackets capable of being rocked upon their pivots by means of a sliding gear, which also is employed to operate the windlass, whereby the frame is raised or lowered. When folded the frame rests upon adjustable stops or rests upon top of truck-body.

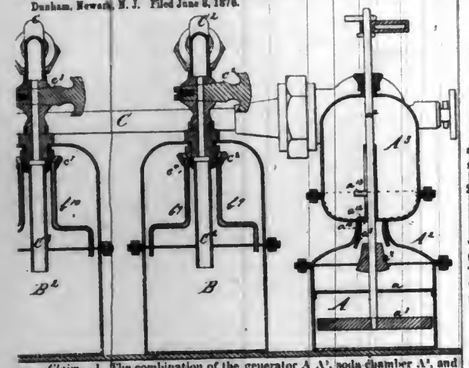
Claim.—1. The brackets H H', with cog-bar h', as shown, in combination with the cog-wheel I on axle I' and the extensible frame F, substantially as and for the purpose set forth.

2. The endless rope-ladder O, in combination with the extensible frame F and frame K, rollers f f', and reel P, substantially as and for the purpose set forth.

3. The resting-device R, consisting of the arms r r' and levers r^2, r^3, and R', in combination with the arms E E' E^2 E^3 of the frame F and the truck A, substantially as and for the purpose set forth.

4. In a fire-escape, the combination and arrangement of the frames F K, brackets H H', shafts G, axle I', cog-wheels I g, rope ladders O, chute S, and truck A, substantially as set forth.

205,950. APPARATUS FOR CHARGING WATER WITH CARBONIC-ACID GAS. Humphrey B. Dunham, Newark, N. J. Filed June 8, 1878.



Claim.—1. The combination of the generator A A^1, soda-chamber A^3, and the vertical shaft a^7 with the valves a^8 and a^{10} and the stirring cross-bar a^9, all constructed and arranged to operate substantially in the manner and for the purposes set forth.

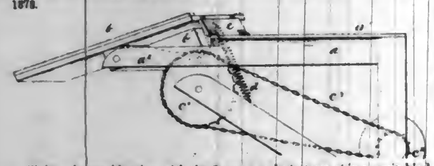
2. The combination of the reservoir B with the fountain-pipes and apparatus for operating them inside the reservoir, arranged substantially as described, to throw a stream of water vertically into the top of said reservoir to mix it with the carbonic-acid gas held above the water, all constructed and arranged to operate substantially in the manner and for the purposes set forth.

3. The combination of the generator A A^3, soda-chamber A^3, with their shaft and valves, and two or more reservoirs, B and B^1, with connecting pipes and valves, arranged substantially as described, to alternately charge and discharge said reservoirs, for the purposes set forth.

4. The combination of the generator A A^3, soda-chamber A^3, shaft and valves, the water-pipes, and injector, with reservoir B, all constructed and arranged to operate substantially in the manner and for the purposes set forth.

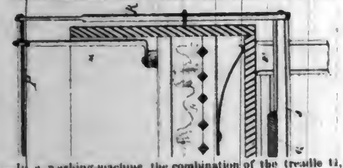
5. The combination of a gas and water reservoir with vertical fountain-pipes, constructed substantially as described, and arranged inside of the reservoir, to mix and circulate the water in connection with the carbonic-acid gas, substantially as set forth.

205,951. SWEAT-CARRIERS FOR HARVESTERS. F. M. Yeager, Oxford, Kans. Filed May 24, 1878.



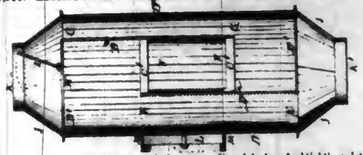
Claim.—In combination with the frame a and platform a' in a grain-binding machine, the tilting table b, having the fingers c' and cam-block b', apron c, hinged to the platform a', and pulley c', having pin c^2, and connected by suitable belt with the driving mechanism of the binder, substantially as and for the purposes set forth.

205,952. WASHING-MACHINES. John W. Elston, Frankfort, Ind. Filed May 15, 1878.



Claim.—In a washing-machine, the combination of the treadle H, cross-piece J, connecting-rods K, horizontal rod P, and arms M with an upper pounding-frame and a lower spring-bedding frame, as set forth.

205,953. HEATING-DRUMS. George B. Follett, Green Bay, Wis. Filed Dec. 29, 1877.



Claim.—The combination of the drum D, with heads D' D' and the partitions D^2 D^2, connected by braces C^2 C^2, and forming the flues E F G, the double-acting damper I, and conical end pieces J J, with collars K K', all constructed substantially as and for the purposes herein set forth.

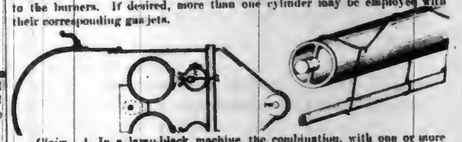
205,954. MATCH-SAFES. John Gilbert, Newark, N. J., assignor to James, Arkman & Co., same place. Filed May 15, 1878.



Claim.—A match-safe constructed, with the exception of the lid, from a single blank of sheet metal, shaped as shown, and bent to form a receptacle shaped substantially as set forth.

205,955. MACHINES FOR MAKING LAMP-BLACK. John K. Hallock and Erastus R. Blood, Erie, Pa., assignors, by mesne assignments, to Frank Gunnison, same place. Filed Jan. 26, 1878.

Brief.—A cylinder revolves above a series of gas-jets, and is provided with a suitable scraper to remove the lamp-black as it is deposited. Below the cylinder is a trough for collecting the material scraped from the cylinder. The whole is inclosed in a suitable case having tubes for the admission of air to the burners. If desired, more than one cylinder may be employed with their corresponding gas-jets.



Claim.—1. In a lamp-black machine, the combination, with one or more burners, of a cylinder adapted to be revolved, and arranged above said burners, as described, whereby the flame from said burner shall impinge upon the exterior surface of the cylinder, for the purposes mentioned.

2. In a lamp-black machine, the combination, with one or more burners, of a hollow cylinder adapted to be revolved, arranged above said burners, as and for the purposes described, and adapted for the application to the interior thereof of means for keeping its exterior surface cool, for the purposes set forth.

3. A lamp-black machine which has a cylinder provided with devices whereby it can be revolved, and a series of burners whereby lamp-black may be deposited upon its exterior surface, and a device for removing the lamp-black thus deposited from said cylinder while the same is revolving, substantially as set forth.

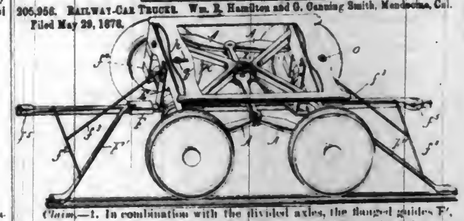
4. A lamp-black machine which has a depositing-surface, below which is arranged a burner, so that the flame thereof shall impinge against it, and a surrounding case for inclosing said depositing-surfaces and burner, and adapted to retain the undeposited lamp-black and allow the products of combustion to gradually escape, substantially as set forth.

5. A lamp-black machine which has a depositing-surface, with burners located with relation thereto, as and for the purposes described, and a surrounding case for retaining the undeposited lamp-black, and air-ducts or conduits G g, formed within said case, by which the atmospheric air can pass from the exterior of said case directly to the burners within without disturbing the inclosed products of combustion, as set forth.

6. In a lamp-black machine, the surrounding case, as described, provided with the openings or exits through which the products of combustion can escape, as set forth.

7. In a lamp-black machine which has a burner or burners and a superimposed depositing-surface, the air-guides, constructed and adapted to operate, with relation to the said burner and surface, substantially as and for the purposes described.

205,956. RAILWAY-CAR TRUCKS. Wm. B. Hamilton and O. Canning Smith, Mendocino, Cal. Filed May 29, 1878.



Claim.—1. In combination with the divided axles, the flanged guides F', levers D D, cross-bar B, and levers A A A A, substantially as and for the purposes set forth.

2. In combination with the axles and with the levers A A A A and cross-bar B, the braces K and L, connected together and secured to the axle-beams, substantially as and for the purposes described.

3. In combination with the divided axles, the flanged guides F', levers D D, cross-bar B, levers A A A A, braces K L, and frame N, substantially as and for the purpose described.

205,957. WINDOW-VENTILATORS. Lorenzo D. Harvey, Sheboygan, Wis. Filed Jan. 17, 1878.



Claim.—1. The upper deflector A, in combination with the window casing or frame B, and the fixed bar a, to which the lower end of said deflector is fastened and arranged, so that the window-sash can move past or stand flush with it, substantially as and for the purpose set forth.

2. The combination, with the window casing or frame B, of the lower deflector, consisting of the pivoted grooved pieces C C, having folding or textile end pieces c c, and board D, substantially as and for the purpose set forth.

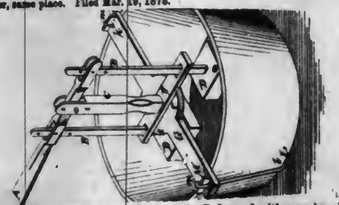
205,958. THILL-COUPLINGS. Alfred Harvey, Scranton, and Milton R. Thurber, Nicholson, Pa. Filed Apr. 29, 1878.



Claim.—1. An attachment for thill-couplings, consisting of a strong spring connected to the coupling, so that one part shall bear against the eye on the end of the thill to prevent rattling of the joint, and another part press against the pivotal locking-bolt, outside the coupling, to prevent said bolt from working out, substantially as described.

2. In a thill-coupling, the metal spring consisting of the loop E, coils F, and ends G H, combined with the pivotal locking-bolt K, having the lateral recess m, substantially as described, for the purpose specified.

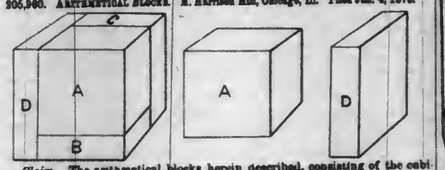
205,959. POUNDER WASHING-MACHINES. Peter Hassenpflug, Homer, Ill., assignor to B. H. Towner, same place. Filed Mar. 19, 1878.



Claim.—1. The combination, with upright C, formed with annular shoulder c, and cross-bar G, formed with semicircular extensions g, of guide-bar F, fitted between said shoulder and cross-bar, and pounder-shafts E, passing freely through openings in the guide-bar, said guide-bar being located above the level of the water, and not pivoted to either the upright or the pounder-shafts, substantially as set forth.

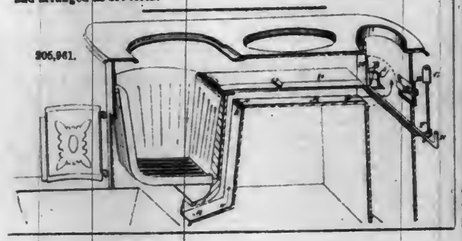
2. In a lever-pounder washing-machine, the combination, with the supporting cross-bar, of the tie-rods formed with hooked extremities to engage with the chine of a wash-tub, the upper looped ends of said tie-rods passing through oblong slots made in the cross-bar, and adjustably locked therein by the engagement of key-wedges therewith, substantially as set forth.

205,960. ARITHMETICAL BLOCKS. H. Harrison Hill, Chicago, Ill. Filed Jan. 4, 1878.



Claim.—The arithmetical blocks herein described, consisting of the cubical block A and the parallelopiped-shaped blocks B, C, and D, all constructed and arranged as set forth.

205,961.



205,961. COOKING-STOVES. Geo. E. Hopkin, Philadelphia, Pa. Filed Mar. 26, 1878.

Claim.—1. In a cook-stove, the dust-flue A, constructed to pass from beneath the back part of the fire-chamber, up the front oven-plate, and along horizontally in the top oven-plate to the smoke-flue or flues of the stove, substantially as described.

2. The combination of the dust-damper B with the flue A and the main damper H H by the bent lever C, substantially as shown.

3. In combination with a stove provided with the dust-flue A, the door E, substantially as shown.

4. In the construction of the dust-flue A, and in combination with a stove containing such a dust-flue, the removable plate D, as shown.

205,962. ELECTRIC LIGHTS. Philip O. Jenkins, Washington, D. C. Filed May 20, 1878.

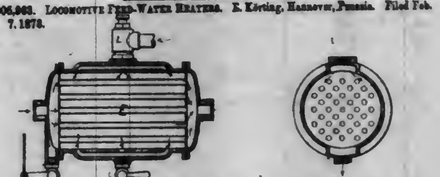


Claim.—1. The excavated carbon points a, Fig. 1, the carbon-cylinder, Fig. 2, the slits b b, and the lock-notch c, substantially as and for the purposes herein described.

2. The combination embracing the sphere form, Fig. 9, of lime or other refractory substance, suspended by hooks h h above the voltaic arc, and the arc flame applied to said sphere, contradistinguishing it from other modes of bringing said substance to incandescence, all in the manner and for the purposes herein set forth.

3. The combination of excavated carbon points a, with their slits b, and lock-notch c, forming the cylinder, Fig. 2, composed of continuous carbon points, with clock-work or other motive power to gradually move them forward necessary to maintain the points, and without which a full voltaic arc cannot be maintained without remission.

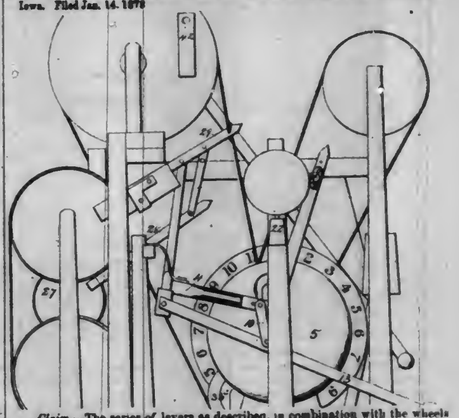
205,963. LOCOMOTIVE FEED-WATER HEATERS. E. Körting, Hannover, Prussia. Filed Feb. 7, 1878.



Claim.—1. On a locomotive or other traveling engine, the combination of an injector, a surface-heater located between the injector and water-reservoir, and a pipe conducting exhaust-steam to the heater, as shown.

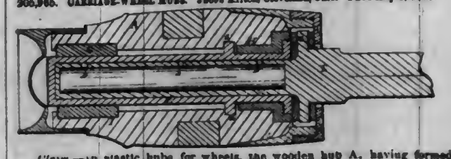
2. On a locomotive-engine, the combination of a feed-water injector, a surface-heater located between the injector and tender, a pipe conducting exhaust-steam to the heater, and a cock or valve to regulate or stop the flow of exhaust-steam, as shown.

205,964. MECHANICAL MOVEMENTS. William Kees, Farmersburg Township, Clayton County, Iowa. Filed Jan. 14, 1878.



Claim.—The series of levers as described, in combination with the wheels 5 on shaft 2, with its driving-pulley 4, and the auxiliary spring-pulley 27, and weights 3, 22, and 42.

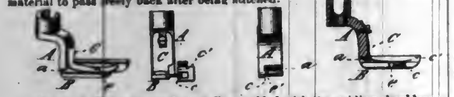
205,965. CARRIAGE-WHEEL HUBS. Jacob Kritch, Cleveland, Ohio. Filed May 8, 1878.



Claim.—An elastic hube for wheels, the wooden hub A, having formed therein an annular groove or recess provided at each end with a shoulder in which to secure the elastic ring or cushion G, as herein described, and for the purpose specified.

206,966. PRESSER-FOOT FOR SEWING-MACHINES. J. A. Lakin, Westfield, Mass. Filed Jan. 10, 1878.

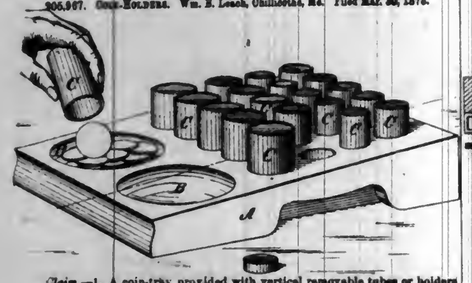
Brief.—The shank is provided with a spring pressing down upon the top of the foot, which has a guide-edge projecting both above and below the main part of the same. One of the pieces of material to be sewed is placed beneath the presser foot, against the guiding-edge, and the other on top of the same, beneath the spring. They are thus united a distance equal to the thickness of the presser-foot apart, a slot extending back from the needle-hole permitting the stitches to pass out. A slot in the shank permits the upper piece of material to pass freely back after being stitched.



Claim.—1. The horizontal piece B, provided with the guiding-shoulders c and c', the needle-hole e, and the opening e', combined with the shank A, adapted to be attached to the presser-bar of a sewing-machine, and having the offset or recess a, for the sewed work to pass through, substantially as described.

2. The combination of the part B, provided with the guiding-shoulders c and c', the needle-hole e, and opening e', the shank A, adapted to be secured to the presser-bar of a sewing-machine, and the work-presser C, all substantially as and for the purpose described.

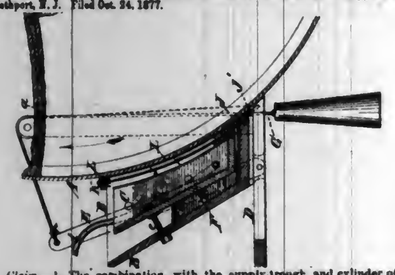
206,967. COIN-HOLDERS. Wm. B. Leach, Chillicothe, Mo. Filed Mar. 30, 1878.



Claim.—1. A coin-tray provided with vertical removable tubes or holders C, each adapted to receive and retain a given number of coins.

2. A coin-tray consisting of a base-board or frame, A, provided with pockets B, to receive small or fractional amounts of coin, and with vertical removable tubes C, each adapted to receive a given amount of coin.

206,968. APPARATUS FOR COOLING AND SPREADING GLUE. Edward W. Leggett, Elizabethport, N. J. Filed Oct. 24, 1877.



Claim.—1. The combination, with the supply-trough and cylinder of an apparatus for cooling and spreading glue, of a heater placed between the cooling-cylinder and the supply-trough, to prevent the chilling of the glue at a distance from said cylinder, substantially as specified.

2. The combination, with the cooling-cylinder A and supply-trough B, of the cords or wires I., for cutting the cooled sheet of glue into longitudinal strips, substantially as described.

3. The combination, with the supply-trough and cooling-cylinder, of the tubular packing J J', extended and supported by the internal stiffener *j*, substantially as and for the purpose set forth.

4. The combination, with the cooling-cylinder A and supply-trough B, of the heater C, made adjustable relatively to said cylinder, to regulate the distance of the said heater from the cooling-cylinder, substantially as and for the purpose described.

206,969. CLOD-CRUSHERS. Daniel Locke, Overton, Ill. Filed June 24, 1878.

Brief.—The rear roller is set at less depth in the ground than the others, and has a regular motion imparted to it by the driving-wheels. The other rollers act independently, and revolve as they pass over the ground.



Claim.—The combination of the frame a, toothed rollers g, driving-wheels j, adjustable axles k, gears i and l, and caster-wheel r, substantially as set forth.

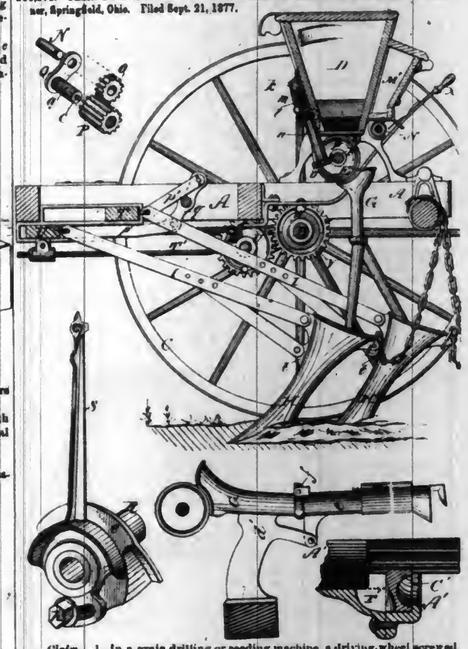
206,970. APPARATUS FOR CUTTING ICE. Joseph T. Martin, Newark, N. J. Filed Apr. 11, 1878.



Claim.—1. The cutters D and propellers E on the same shaft, working in the frame B, secured to the front of the boat A, by which propellers the boat is moved forward, substantially as and for the purpose specified.

2. The combination of cutters D and propellers E on the same shaft, with the boat A and rudder G, substantially as and for the purpose set forth.

206,971. GRAIN DRILLING AND SEEDING MACHINES. Phineas P. Mast and Chas. O. Gardner, Springfield, Ohio. Filed Sept. 21, 1877.



Claim.—1. In a grain drilling or seeding machine, a driving-wheel screwed directly upon the feed-shaft, so that it can unscrew when turned backward, substantially as shown, and for the purpose described.

2. In the feed-operating mechanism or gearing of a grain drill or seeder, a wheel screwed upon its shaft or bearing, so that when turned backward it will unscrew and permit the feeding devices to remain inoperative, and that it will then permit the machine to advance again to its original position before commencing to actuate the feeding devices.

3. In a grain-drill, the combination of rotary grain and grass seeding shafts provided with pinions and an intermediate adjustable pinion, which may be thrown into and out of action at will, in order that the grass-seeder may be driven from the grain-feeding shaft or the latter operated alone, at will, as shown and described.

4. In combination with the main feed-pinion J and grass-seeder pinion O, the swinging arm Q, journaled on the grass-seeder shaft, the pinion J, mounted on the arm Q, and the bolt c, arranged to lock the parts in position, as shown and described.

5. In combination with the pinions J O, swinging arm Q, and pinion P, the slotted grain-hopper end and the bolt for securing the swinging arm, as shown.

6. In combination with the feed-shaft F, the rotary sleeve R, secured against end movement thereon, and provided with the enlarged oblique disk or flange *a*, working between fixed bearings.

7. In combination with the sleeve R, having the oblique or inclined disk or flange *a*, a rigid bearing on one side of the same, and the adjustable screw *f*, bearing against the opposite side of the same.

8. In combination with the sleeve R, the slotted arm or lever S, journaled thereon, and the lateral bolt h, inserted, as shown, to secure the parts together, face to face.

9. In combination with the axle, having the loose wheel V and the clutch W mounted thereon, and the wheel provided with the notches or stops, the hand-lever connected with the clutch and provided with the lip to enter the notches, substantially as shown.

10. A continuous broadcasting-tube, divided at or near its middle into two sections, the upper section provided with the lugs *f* and arm *d'*, and the lower section provided with lugs and a pin receiving arm, as shown, whereby the two sections may be united directly to each other.

11. In a broadcasting tube or conductor for seeding-machines, the combination of a vertically-sliding mouth or end section, the body-section provided with teeth *t'*, and having the mouth-section mounted thereon, and a transverse fastening-pin, *b'*, substantially as shown.

12. In a force-feed for grain-drills and seeders, the combination of a cup or case, a feed-roll, substantially such as shown, and a ring or rosette having, substantially, its entire top exposed to agitate and move the grain resting thereon.

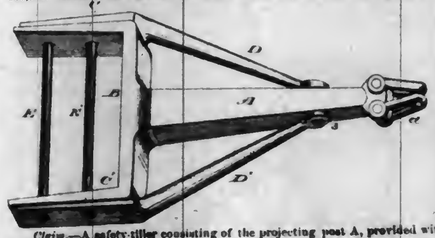
13. The combination of the feed-roll, having ends of different diameters, the rosette C', and the cup or case A', provided with the lip or guard *q'*, extending forward over the grain channel or passage beyond the vertical axis of the roll, but cut away on one side, in order to expose the top of the rosette and permit the inside face of the latter to extend above it, as shown.

14. In combination with the feed-roll of two different diameters and the ring or rosette C', the feed cup or case having the channel *r'* in its interior, adjacent to the face of the ring.

15. In a force-feed for grain-drills, the combination of a cup or case containing a feed-roll and a lip or guard, *q'*, with a rotary ring or rosette, having its upper edge extended above the level of the lip and exposed to the superincumbent grain.

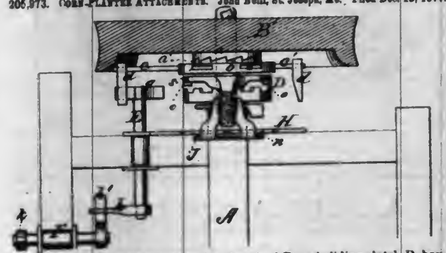
16. In an adjustable force-feed of the character shown and described, an inclined or beveled ring or rosette, C', as shown.

206,972. RUDDERS FOR VESSELS. James C. Morton, East Deering, Me. Filed Jan. 26, 1878.



Claim.—A safety-tiller consisting of the projecting post A, provided with the arms C and C', forged thereon or otherwise solidly united thereto, adapted to straddle the crown or head of the rudder, and to be bolted thereto by bolts passing through the same, as set forth, with the side braces D and D' and the shackles *d* and *d'*, substantially as described.

206,973. CORN-PLANTER ATTACHMENTS. John Neill, St. Joseph, Mo. Filed Dec. 15, 1877.

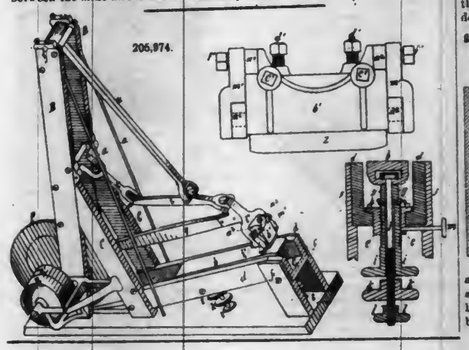


Claim.—1. The combination, with the wheel B' and sliding clutch D, having sockets *z*, of the spokes *c c'*, of different lengths, the V-shaped plate *g*, the transverse rock-shaft E, having forked arm *h*, the longitudinal shaft F, having arm *h'*, engaging the arm *h*, and the arm *k*, engaging the dropper-slide of a corn-planter, substantially as specified.

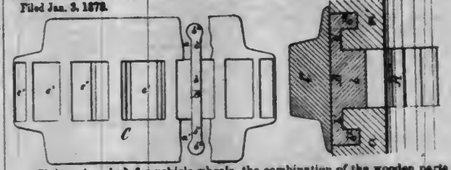
2. The combination, with the rock-shaft E, having V-shaped plate *g*, of a transporting-wheel having a clutch device provided with tappets of different lengths, striking the said plate upon opposite sides in alternation, whereby a rocking motion is imparted to said shaft, as and for the purpose specified.

3. The combination, with the wheel of a corn-planter, having a projecting hub-sleeve and a ratchet, *a*, of a sliding clutch fitting on the said sleeve, having a ratchet, *a'*, the socket-flange *b*, and an inner ratchet, *f*, the concentric guides H J, the slide K, the forked lever F, having arms *e*, and the spring S, between the slide and lever, substantially as specified.

206,974.

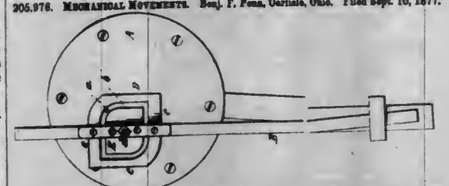


206,975. VEHICLE-HUBS. Edwin S. Parmelee and Bryan A. Treat, Naugatuck, Conn. Filed Jan. 3, 1878.



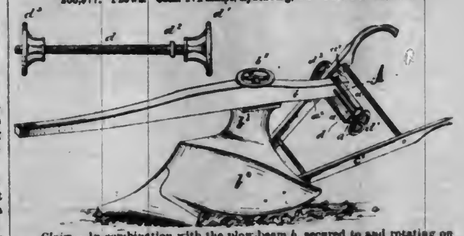
Claim.—In a hub for vehicle-wheels, the combination of the wooden parts *a a'*, the metal plates B, with their wedge-shaped bodies *b*, arms *b'*, and pins *b'*, together with the metal ring C, with its openings *c'*, all arranged to operate as and for the purpose specified.

206,976. MECHANICAL MOVEMENTS. Benj. F. Penn, Carlisle, Ohio. Filed Sept. 10, 1877.



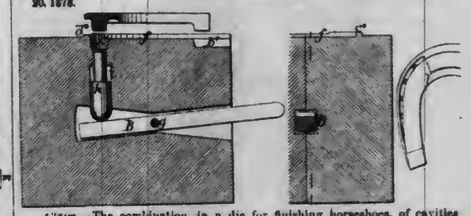
Claim.—A mechanical movement consisting of the disk A, provided with a crank-wrist, *c*, and an elongated opening, *b*, the connecting-rod B, provided with a pin, *d*, the slotted yoke D, and the plate E, all combined and arranged as and for the purposes described.

206,977. PLOWS. Oscar F. Phillips, Lynchburg, Va. Filed Feb. 25, 1878.



Claim.—In combination with the plow-beam *b*, secured to and rotating on the standard *b'* of the plow *b'*, and having its rear end extended between the handles *c c'* and handle *c*, the bolt *d*, having the attachments d^1, shoulder d^2, and nut d^3, and clevis *A*, composed of the horizontal parallel bars *a a* and vertical plate a^1 and lugs a^2, the end of said beam sliding horizontally between the fixed bars *a a* on the bolt *d*, all constructed and operating as shown and described.

206,978. DIES FOR FINISHING HORSESHOES. John J. Reimer, Hoboken, N. J. Filed June 20, 1878.



Claim.—The combination, in a die for finishing horseshoes, of cavities a^6 b^6 b^6 for the heel and toe calks, a depression, *f*, for the body of the horse shoe, and a raised rim, c^6 d^6 c^6, the side portions c^6 of which enter the nail-hole crosses, and the depressed front portion d^6 supports the ledge *d* of the blank, substantially as and for the purpose set forth.

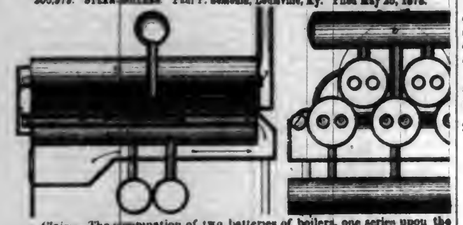
206,979. MACHINES FOR STONING, GLAZING, AND PEBBLING LEATHER. Edward B. Parkhurst, Woburn, Mass. Filed June 25, 1877.

Claim.—1. The combination of bed *b*, cushions *g*, sleeves *c*, provided with interior screw-threads, sleeves *l*, provided with exterior threads, screw-rods *j*, secured to bed *b* and provided with the actuating-nuts *k*, and the set-screws *m*, all constructed, combined, and arranged to operate substantially as described, whereby the resistance of the springs may be increased or diminished by compressing or releasing the same, or the bed may be raised or lowered, each independent of the other, for the purposes specified.

2. In a leather-dressing machine, the combination of the inclined adjustable bed *b*, the tool-holder *r*, rigidly attached to the pitman *q* and pivoted to the arm S, which is connected to the standard B by means of the swinging arms *l* and *n*, so that the tool will be operated in a straight line and in close proximity to the table when moved in one direction, and be elevated therefrom when moved in a reverse direction, substantially as specified.

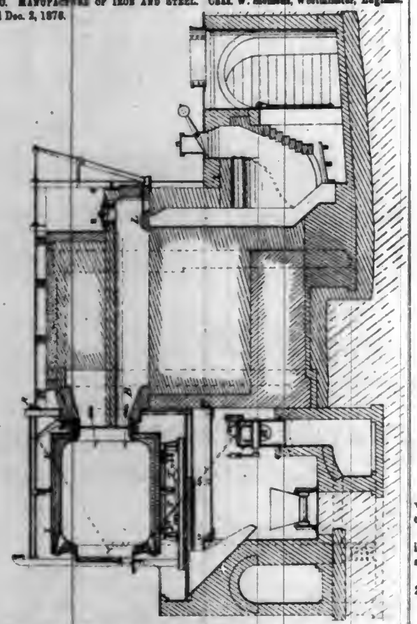
3. In combination with the forked head *r*, the carriers *m' m'*, the glass-holder, with its terminals a^3 a^3, constructed as described, and the locking-bolts *f'*, interchangeable in the threaded holes h' h^{xx} h^{xx}, and serving to lock the glass-holder at the desired angle relatively to the carriers, all substantially as described and shown, and for the purposes specified.

205,979. STEAM-BOILERS. Paul P. Semonin, Louisville, Ky. Filed May 25, 1878.



Claim.—The combination of two batteries of boilers, one series upon the top of the other, and so constructed and arranged that the products of combustion first heat the under sides of both batteries, then pass through the flues of the under series, and thence return through the upper series to the uptake, substantially as shown.

205,980. MANUFACTURE OF IRON AND STEEL. Chas. W. Siemens, Westminster, England. Filed Dec. 2, 1876.



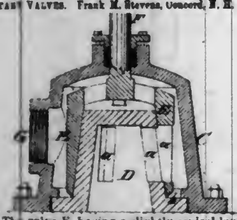
Claim.—The improvement in the art of producing wrought-iron direct from the ore hereinbefore described, which consists in charging the crushed ore into the rotator, together with such proportions of other ores or fluxing material as will give a fluid slag, tapping off the said slag before a welding heat is attained, and reducing and boiling the metallic iron in the presence of a second and welding cinder formed within the rotator after the earthy matters have been removed, whereby the boiling up of the metallic iron is aided, substantially as described.

205,981. MANUFACTURE OF TOUGHENED ENAMELED GLASS. Frederick Siemens, Dresden, Germany. Filed Feb. 18, 1878. Patented in England, May 30, 1877.

Claim.—1. The method, substantially as herein described, of producing enameled toughened glass by applying to glass a coating of enamel, and then securing the same thereon by a toughening or hardening process.

2. As a new article of manufacture, toughened or hardened glass coated with enamel.

205,982. ROTARY VALVES. Frank M. Stevens, Concord, N. H. Filed Oct. 9, 1877.

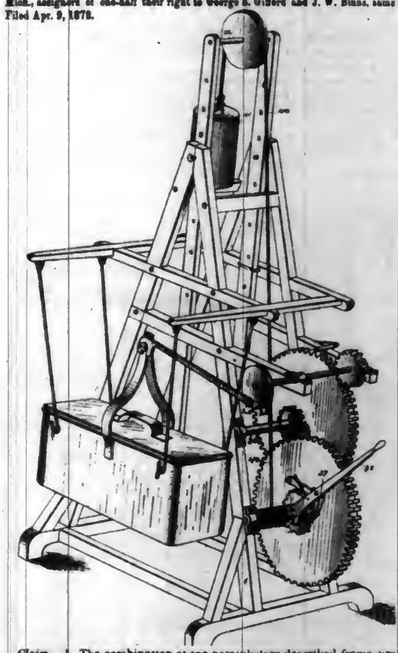


Claim.—1. The valve E, having a slightly-conical inner face, ground to fit a conical valve-seat, chamfered at *b*, made open at the top to admit the steam, and provided with a stem, F, and a slit or slits, *a*, all substantially as and for the purposes set forth.

2. The valve E, having a slightly-conical inner face, ground to fit a conical valve-seat, made open at the top to admit the steam, and provided with slits *a a* and a stem, F, and the whole inclosed within a chamber, C, having an outlet, G, and a space within the said chamber surrounding the valve E and communicating with the said outlet, all substantially as set forth.

3. A valve having a slightly-conical inner surface to fit a conical seat, an axial stem by which to rotate or oscillate it, and a chamfered bottom, as and for the purposes set forth.

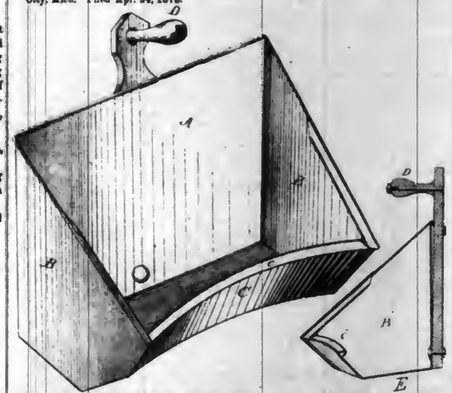
205,983. MACHINES FOR OPERATING CHURNS. John E. Vail and James B. Vail, Adrian, Mich., assignors of one-half their right to George S. Gifford and J. W. Binns, same place. Filed Apr. 9, 1878.



Claim.—1. The combination of the hereinbefore described frame, provided with an adjustable vertical extension, with the rope 40 and weight 41 and the operating mechanism, as set forth.

2. The combination of the arm 38, provided with a pawl, 39, with the hereinbefore-described windlass, cog-wheels, and suspended churn, all constructed and arranged substantially as shown and described.

205,984. INSECT AND BUG GATHERERS. Loren A. Walsworth and Egbert F. Merritt, Union City, Mich. Filed Apr. 24, 1878.



Claim.—The combination of the receptacle A, having the forwardly projecting handle D, bottom E, partially-lipped tapering sides B, and the upwardly and outwardly projecting concave lipped front C, substantially as shown and described.

205,985. STOVE-PIPE VENTILATORS. Theo. E. Way, Springfield, Ohio, assignor of one-half his right to Augus McKay and P. H. Ellsworth, Hot Springs, Ark. Filed June 1, 1878.

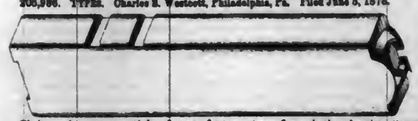
Claim.—1. In a stove-pipe ventilator, the internal rings C C, applied substantially as and for the purpose described.

2. The stove-pipe ventilator provided with the internal grooves or seats, having the round rings seated therein, in the manner shown and described.

205,985.

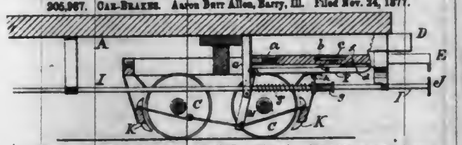


205,986. TYPES. Charles S. Westcott, Philadelphia, Pa. Filed June 5, 1878.



Claim.—As a new article of manufacture, type for printing having its vertical edges rounded off or blunted, substantially as and for the purpose described.

205,987. CAR-BRAKES. Aaron Batt Allen, Barry, Ill. Filed Nov. 24, 1877.



Claim.—1. The rod I, with head J, anchor *k*, with bifurcated adjunct *x*, spool *g*, spiral spring *g'*, and brake-arm F, substantially as shown, and for the purpose specified.

2. The adjustable brake-head E, with slot *e* and bolt *b*, spring *d*, and brake-arm F, substantially as shown and described.

3. The brake-arm F, with catch *e* and spring *d*, hanger G, swinging lever H, and brake-head E, with notches *f*, substantially as set forth.

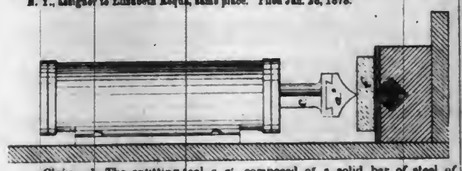
4. The swinging lever H, hanger G, with brake-arm F, bow M, rods L N N', spring *c*, and shoes K, substantially as specified.

5. The buffer D, brake-head E, brake-arm F, with notch *e* and spring *d*, pivotal lever H, hangers G, and rod I, with anchor *k*, spiral spring *g'*, and bifurcated part *x*, substantially as shown, and for the purpose specified.

205,988. MANUFACTURE OF PISTOL-SPRINGS. Theo. B. Andrews, Baltimore, Md., assignor of two-thirds his right to John D. Morris and Henry Keidel, same place. Filed Nov. 23, 1877.

Claim.—The herein-described improvement in the art of making steel mainsprings for pistols, consisting in cutting from soft sheet-steel plates having a width corresponding to the length desired for the spring, tempering said plates to the degree of hardness usually imparted to wood saw blades, and then clipping therefrom pieces of the proper width for springs, as set forth.

205,989. SPLITTING AND SHAPING STONE BY MACHINERY. Abram W. Andrews, Brooklyn, N. Y., assignor to Elizabeth Roqua, same place. Filed Jan. 26, 1878.

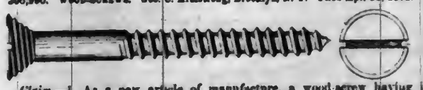


Claim.—1. The splitting-tool *a a'*, composed of a solid bar of steel of quadrangular form, and having the angles for splitting-edges, as set forth.

2. The elastic cushion or bed *s* upon the anvil, for adjusting and holding the stone in the required position, substantially as set forth.

3. The combination of the chisel or tool *a* and the bed or cushion *s* with the anvil *b* and the driving or piston rod *c*, for the purposes of a stone-splitting machine, in the manner substantially as set forth.

205,990. WOOD-SCREWS. Geo. C. Armstrong, Brooklyn, N. Y. Filed Apr. 13, 1878.



Claim.—1. As a new article of manufacture, a wood-screw having its head provided on the under side with a screw-thread of a pitch concordant with the thread on the body of the screw, substantially as and for the purpose herein set forth.

2. A screw the head-slot of which is dented or corrugated upon its vertical sides, substantially as and for the purpose set forth.

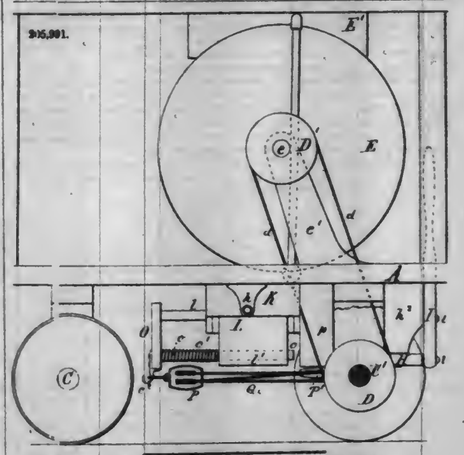
205,991. STREET-CAR PROPELLERS. John B. Atwater, Geneva, Ill. Filed June 25, 1878.

Claim.—1. In a street-car, the combination of an upper reservoir, E', having an outlet-pipe, *e*, and cock *e'*, a motor-wheel, E, on a shaft having a pulley or pulleys, D', and the car-axle C', having a pulley or pulleys, D, and a chain or chains, *d*, substantially as and for the purpose set forth.

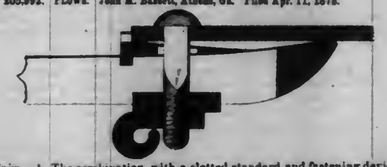
2. The combination of the car-axle C', having a square formation, *f*, the clutching device F, having a tension-spring, *f'*, and oblique face *f'*, the winding cam G, having an oblique face, *g*, and the pumping mechanism, substantially as and for the purpose set forth.

3. The combination, in a street-car, of the quicksilver-reservoir E', the motor-wheel E, the reservoir K, pumping mechanism, clutching mechanism, and car-axle C', substantially as and for the purpose described.

205,991.



205,992. PLOWS. John M. Bassett, Athens, Ga. Filed Apr. 11, 1878.



Claim.—1. The combination, with a slotted standard and fastening device, of the independent plate adapted to give bearing to the plow or plowshare, said plate being made tapering or wedge-shaped in longitudinal section, substantially as set forth.

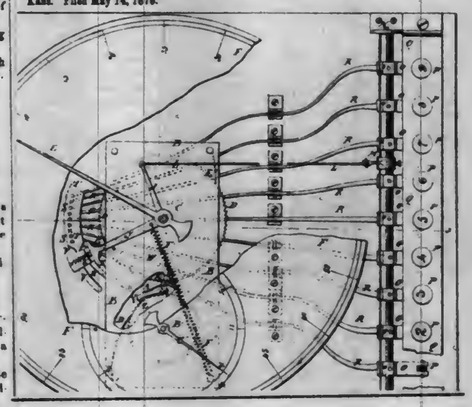
2. The combination, with a slotted standard and fastening device, of the plate adapted to give bearing to the plow or plowshare, said plate being made with a stop-piece on its rear side, which fits in the space formed by the slot of the standard, and secures the plate against lateral displacement thereon, substantially as set forth.

3. The combination, with the slotted standard and fastening device, of a plate adapted to give bearing to the plow or plowshare, said plate being made with the right-angular shoulders on its front upper side and the lateral stop-piece on its rear body, substantially as set forth.

4. The combination, with a slotted standard and plate having the two longitudinal grooves in which the respective branches of the standard are seated, of the bolt and nut which clamp said plate to the rear side of the standard, substantially as set forth.

5. The combination, with the slotted standard and fastening device, of the grooved plate clamped to the rear side of the standard, and the independent plate clamped to the front side of the standard, said latter plate being adapted to give bearing to the plow or plowshare, substantially as set forth.

205,993. ADDING-MACHINES. William F. Berland and Herman Hoffmann, Leavenworth, Kans. Filed May 14, 1878.

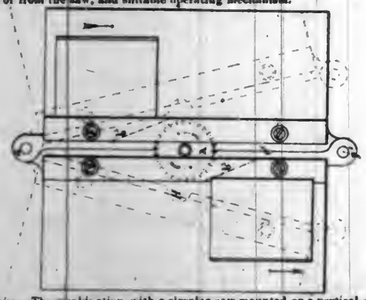


Claim.—1. The combination of the springs G′, the levers O, provided with the pawls *o*′, the shaft N, provided with the notches or stops *n*′, the arm M, the connecting-rod L, the elbow-lever J, the spring-pawl G K, and the retraction-spring F′, with the toothed wheel D, the shaft C, the pointer E, and the dial-plate F, substantially as herein shown and described.

2. The combination of the springs G′, the levers O, provided with the cams *o*′, the shaft N, the levers R, the spring-pins S U, and the curved bar V, with the spring-pawl G K, for withdrawing the said pawl G K from the toothed wheel D, substantially as herein shown and described.

205,894. BOX-TAPERING MACHINE. John Bozarth, Philadelphia, Pa. Filed June 6, 1878.

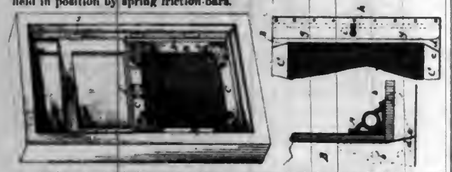
Brief.—The sides of wooden boxes are edged off flush with the ends by means of a circular saw mounted on a vertical shaft, a centrally-divided and hinged table, upon which the boxes are placed and fed upon opposite sides of the saw, and provided with guards adapted to be moved in parallel lines toward or from the saw, and suitable operating mechanism.



Claim.—The combination, with a circular saw mounted on a vertical shaft, of one or more guards adapted to be moved in parallel lines toward or from the center of said shaft and secured in the desired position, and a centrally-divided and hinged table, all arranged substantially as and for the purposes specified.

205,895. WINDOW-SCREEN. John Brisse, Alvarado, Cal. Filed Mar. 30, 1878.

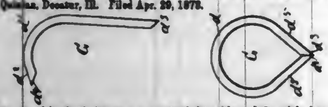
Brief.—The frame has inclined joints, so that the netting fastened to two sides is tightened by the inclines of the side pieces wedging upon those of the end pieces. The corners are then secured by angle-plates. The screen is also held in position by spring friction-bars.



Claim.—1. A window-screen frame composed of the parts B B C C, with dovetails or inclined faces *c d* at the ends, and the angle pieces or plates A A, and the friction-bar D, with its springs *f f*, substantially as herein described and shown.

2. In combination with the window-screen frame, constructed of the strips B B C C, with dovetails or inclined faces *c d* at their ends, as described, the holding angle pieces or plates A, with their flanges *a a*, provided with holes *b b*, constructed and applied substantially as and for the purpose set forth.

205,896. RING-BLANK FOR SWINE. Wm. D. Brown, Indianapolis, Ind., assignor to Chambers, Bering & Quinlan, Decatur, Ill. Filed Apr. 29, 1878.



Claim.—The ring-blank G, having two straight sides, *d d*′, with beveled ends *d*′ *d*′, and a curved part, *d*′, formed near the short straight end *d*′, adapted to be bent and form a ring with two short straight sides, *d*′ *d*′, and a curved part, *d*′, and form a joint at the extreme ends of the straight parts, in the manner and for the purpose set forth and described.

206,897. PUNCHING-PRESS. William E. Brooks, Trenton, N. J. Filed May 24, 1878.

Brief.—Cuts two washers and perforates the larger all at the same time.



Claim.—1. The die B, with its detachable punches *g* and *s* and detachable punch-holding plate, in combination with the die H and punches F and *e*, as and for the purposes set forth.

2. The improved punching-press consisting of the frame, its sliding head E, die B, punches H, F, *e*, and *s*, stripper C, and crank-shaft D, constructed and combined as and for the purposes set forth.

3. In a punching-press, the stripper C, with the attached rods *c*′, in combination with the angular stripper-bar G′, attached to the sliding head E, for pushing out the piece cut by punch and die, and for supporting and guiding the small punches, and the small punches *s*, all constructed and arranged as shown and described.

206,898. STEAM DRILLING-MACHINES. Samuel G. Bryar, Bangor, assignor to himself and Joseph A. Newhall, East Bangor, Mass. Filed June 21, 1878.



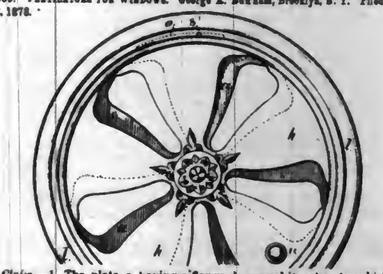
Claim.—1. The cylinder A, provided with the annular grooves *m m*′, connected by the steam-passage *n*, in combination with the piston, substantially in the manner and for the purpose shown.

2. The arrangement of a steam-passage through the several pistons or parts of the same piston in a cylinder, in one of which passages is a valve so formed that when the pressure of live steam is in one direction the steam-passage in that direction will be closed by the valve, while at the other end of the same passage the dead steam or air at that end of the cylinder will escape into and from said steam-passage through an exhaust in the cylinder, for the purpose shown and described.

3. The piston B², having an annular groove, *b*, in which groove are two holes, *j j*, opening into a steam passage, *c*, through said piston, in combination with the valve *d*, which valve, pressed in one direction by live steam, is closed at one end and is open at the other end, and whereby the dead steam or air escapes through the open end of the passage into the groove *b*, and through the exhaust *l* in the cylinder, substantially as shown and described.

4. The combination of the ratchet *i i*, &c., formed upon the piston B, and the pawl *g* and the spring *h*, operating in the sleeve *f*, which is attached to the cylinder A, substantially in the manner and for the purpose shown and described.

205,899. VENTILATORS FOR WINDOWS. George R. Buffum, Brooklyn, N. Y. Filed June 22, 1878.



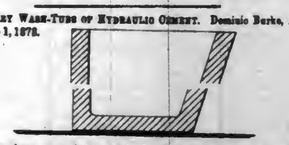
Claim.—1. The plate *a*, having a flange, *b*, around its edge, by which the ventilator can be cemented to the window-glass, in combination with the sheet-metal clips *c* and screws, substantially as specified.

2. The window-glass ventilator, made by combining the flanged plate *a b* with the plate *h*, both having ventilating-openings, and said plate *h* lapping over the window-glass, so as to prevent the ventilator becoming disconnected, as set forth.

3. In a window-ventilator, the concealed groove *c* in the plate *h*, passing partly through such plate, in combination with the plate *a* and stud *s*, substantially as set forth.

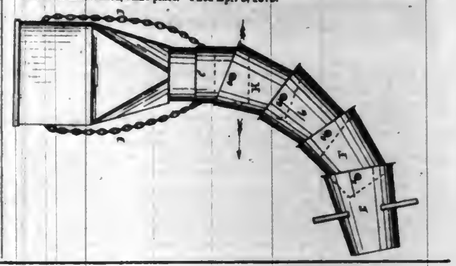
4. In the window-glass ventilator, the circular plates *a* and *h*, having the ventilating-openings, and of increased thickness around the pivot-pin, as set forth.

206,900. STATIONARY WASH-TUBS OF HYDRAULIC CEMENT. Dominic Burke, New York, N. Y. Filed June 1, 1878.



Claim.—A stationary wash-tub of hydraulic cement, cast in molds, as set forth.

206,901. GRAIN-SPOUTS FOR ELEVATORS. Frank M. Campbell, St. Louis, Mo., assignor to Robert S. McCormick, same place. Filed Apr. 6, 1878.



Claim.—In spouts or nozzles for discharging grain from elevators, the tapering sections E, F, G, and H, the end of one section fitting loosely in that of the other and pivoted together at two opposite sides of their diameters, so that said spout can be bent in two opposite directions, and provided with a collar and sleeve for rotating the spout, and suspending-chains D, as and for the purpose set forth.

206,902. SLEEVE-BUTTONS. John M. Chandler, Fredonia, N. Y. Filed Jan. 7, 1878.

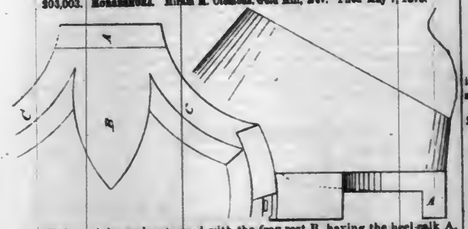


Claim.—1. The stud or button-shank B, provided with the edge or wedge-shaped portion B′, substantially as and for the purpose specified.

2. The wedge-shaped portion B′ of a button-shank, in combination with the notch C of a safety attachment, substantially as and for the purpose set forth.

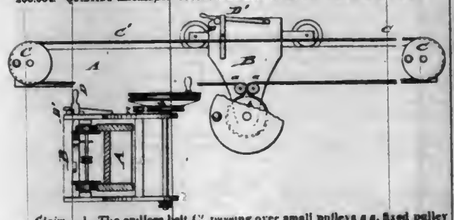
3. The combination, with the stud or button-shank whose eye is formed with the inner wedge-shaped wall, of the spring-metal safety attachment, which latter is formed with a notch in both its end and central side body, respectively, adapted to engage with said wedge-shaped wall, substantially as set forth.

206,903. HORSESHOES. Hiram M. Clemens, Gold Hill, Nev. Filed May 7, 1878.



Claim.—A horseshoe formed with the frog-rest B, having the heel-calk A, and united to the shoe by the side pieces C C, the whole forming one continuous shoe, substantially as and for the purpose set forth.

206,904. QUILTING-MACHINES. John J. Crull, Linn Creek, Mo. Filed Feb. 26, 1878.

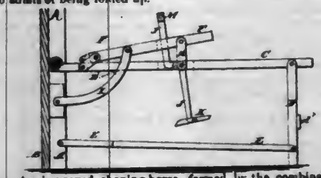


Claim.—1. The endless belt C′, passing over small pulleys *a a*, fixed pulley *b*, and large pulleys C C, combined with the slide-lever D and drop-lever D′, as and for the purpose specified.

2. In a quilting-machine, the combination of the sewing-machine carriage, having laterally-sliding lever for setting the clutch device, with a pivoted drop-lever engaging a notch on the slide-lever for unclutching and stopping the carriage for the purpose of filling bobbins, as described.

206,905. FOLDING SHAVING-HORSES. S. E. Cross, Hillsborough, Ill. Filed June 15, 1878.

Brief.—The parts constituting the shaving horse are all so pivoted to each other as to admit of being folded up.



Claim.—An improved shaving-horse, formed by the combination of the pivoted board C, the pivoted connecting-bars E, the slotted board F, its pivoted connecting-bars G H, the pivoted curved bar I, the pivoted lever J, the pivoted foot-board K, the stop L, and the jaws M with each other and the bars A, substantially as herein shown and described.

206,906. BIT-CLAMPS. Alfred H. Crockford, Newark, N. J. Filed May 2, 1878.

Brief.—The shank of the bit is inserted in a recessed socket, which is open at one side, and is formed at the end of the stock. The bit is centered and clamped by a screw, the end of which is conically recessed, and bears against the conically-tapered end of the shank.



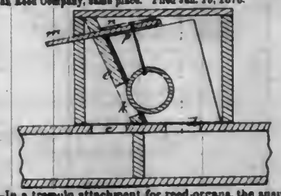
Claim.—1. The combination of the socket of an auger or drill stock, being open at one side and recessed to correspond with the enlarged shank end of the bit, with the shank end and a centering-top clamp-screw of the socket, bearing on the conically-tapering end of the shank, substantially as and for the purpose set forth.

2. The combination, in a bit-clamp, of the auger or drill stock having a side recessed socket and centering clamp-screw for the shank end of the bit, with an angular offset that extends above the head of the clamp-screw, substantially as set forth.

206,907. NON-CONDUCTING COMPOUNDS. George R. Evans, San Francisco, Cal., assignor of one-half his right to Garrett H. Hopper, same place. Filed June 11, 1878.

Claim.—A fire-resisting and non-conducting compound, consisting of petrified wood as a base, in combination with mica and talc in certain proportions, combined with a coherent tenacious material, substantially as and for the purpose herein specified.

206,908. REED-ORGAN TREMOLOS. William F. Ewell, Worcester, Mass., assignor to the Munroe Organ Reed Company, same place. Filed Jan. 16, 1878.



Claim.—In a tremolo attachment for reed-organs, the suspended valve D, in combination with a means of adjusting its point of suspension, substantially as and for the purpose set forth.

206,909. FLUID-DISCHARGING APPARATUS. Geo. F. Fogarty, Boston, Mass. Filed Feb. 1, 1878.



Claim.—1. The bushing and valve-seat and valve, in combination with the spindle provided with the covering-arms, the valve turning with the spindle and the arms, and acting to cover and uncover the holes in the valve-seat, substantially as described.

2. The bushing and valve-seat and valve, in combination with the spindle provided with the covering-arms and a strainer supported by the spindle, substantially as described.

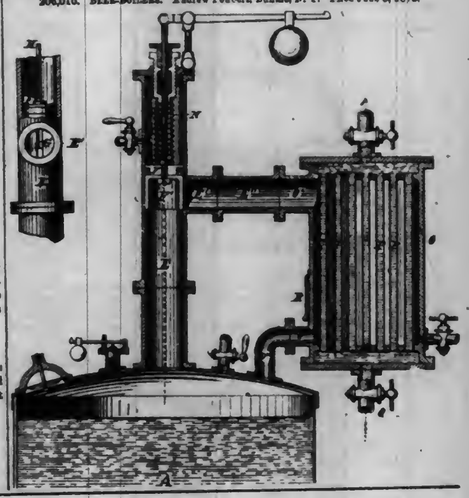
3. The bushing, valve-seat, and valve, in combination with the spindle, the covering-arms, and a coiled spring-packing arranged to press the valve and arms against opposite sides of the valve seat, substantially as described.

4. The bushing, the valve-seat, and the loose spindle having arms to cover the openings 6, in combination with a valve and a stop to control the rotation of the spindle and valve, substantially as described.

5. The tap part and its collar, provided with lugs and notches to surround the head of the spindle and co-operate with the bushing and arms of the spindle, substantially as described.

6. The tap part provided with a collar and a lug and with a screw-threaded end, substantially as described.

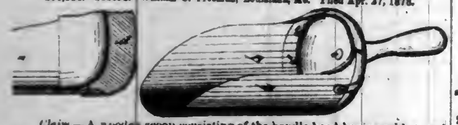
206,910. BEER-BOILERS. Andrew Feubert, Buffalo, N. Y. Filed June 8, 1878.



Claim.—1. The combination, with the boiler A, of the tube E, provided with the slotted aperture G, piston F, connections E' E'', condenser O, and pipes O'' O''', substantially as specified, whereby the gases are passed through said condenser and returned to the boiler in liquid form, the escape being automatically regulated, substantially in the manner and for the purpose specified.

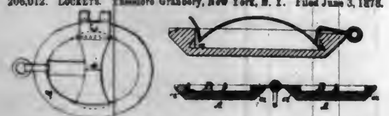
2. In an apparatus for boiling wort for beer, an escape-pipe having an escape-aperture, the size of which is automatically varied by the varying pressure of the gases in the apparatus acting upon a piston within said escape-pipe, a condenser and tube or tubes returning the escaped gases in liquid form to said boiler, as and for the purpose specified.

206,011. SCOOPS. William O. Freeman, Louisiana, Mo. Filed Apr. 27, 1878.



Claim.—A wooden scoop consisting of the handle head having rabbet, and the bowl secured in said rabbet by longitudinal straps, as shown and described, for the purpose specified.

206,012. LOCKETS. Theodore Granbery, New York, N. Y. Filed June 3, 1878.

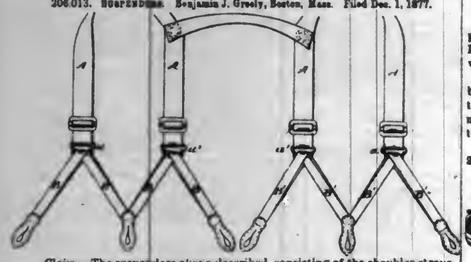


Claim.—1. The method of attaching the hinge plates to a locket, which consists in forming in opposite sides of the cavities of the locket-halves undercut recesses opening inwardly, and inserting metallic plates in said cavities, the ends thereof projecting into the said undercut recesses, substantially as and for the purpose described.

2. A locket having the sides or halves A, provided with the cavities having the undercut side recesses *a a*, substantially as and for the purpose set forth.

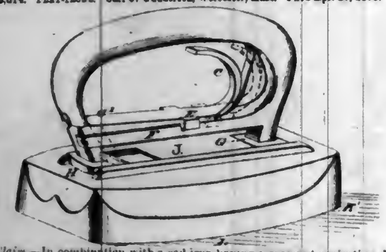
3. A locket having cavities and the recesses *a a*, in combination with the plate B, provided with the hinge leaves *c c*, substantially as and for the purpose herein specified.

206,013. SUSPENDERS. Benjamin J. Greely, Boston, Mass. Filed Dec. 1, 1877.



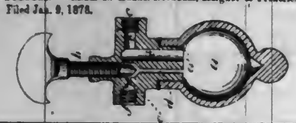
Claim.—The suspenders above described, consisting of the shoulder-straps A A and M button straps B B', the front and rear ends of one shoulder-strap being connected by B, and of the other shoulder-strap by B', as set forth.

206,014. FLAT-IRONS. Carl G. Gunderson, Worcester, Mass. Filed Apr. 27, 1878.



Claim.—In combination with a sad-iron having a recessed projection, J, a detachable handle, provided with a rigid projection or lug, G, and a projection or lug, H, attached to a sliding arm, C', held normally out of engagement with the recessed projection J by the action of the spring D, substantially as shown and described.

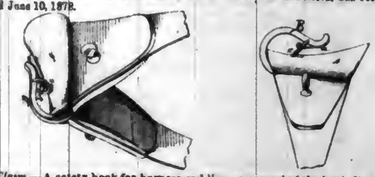
206,015. VAPOR-BURNERS. William R. Hanks, Needham, assignor to Frederick A. Brown, Newton, Mass. Filed Jan. 9, 1878.



Claim.—In combination with the circuit of water-pipes A A' C C', the pistons B B', reciprocating alternately in the pipes A A', and the piston-rods D D', one of which is adapted for connection with the power and the other with the machinery to be driven, substantially as described and shown.

2. In combination with the circuit of pipes A A' C C', to hold a solid body or column of water, and the pistons B B', with their rods D D', dividing the circuit into two halves or portions, the reservoirs E E', with their connecting-pipes and stop-cocks, constructed and arranged to operate substantially as and for the purpose set forth.

206,016. SAFETY-HOOKS FOR HARNESS-SADDLES. William H. Henderson, San José, Cal. Filed June 10, 1878.



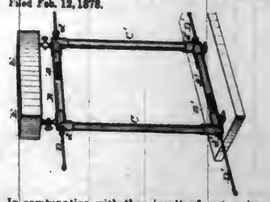
Claim.—A safety-hook for harness-saddles, composed of the hook B, spring *a*, cross-bar *b*, and ring *c*, all arranged substantially as shown and described.

206,017. TOBACCO-QUID PROTECTORS. Simeon S. Henderson, North Washington, assignor to himself and John W. Wenner, Forest, Ohio. Filed May 29, 1878.



Claim.—The tobacco-quid protector formed of two concavo-convex plates A B, hinged to each other at one edge, to adapt it for holding a quid of tobacco when in the mouth, substantially as herein shown and described.

206,018. APPARATUS FOR TRANSMITTING POWER AND MOTION. Carl L. Hearich, San Francisco, Cal. Filed Feb. 12, 1878.



Claim.—1. In combination with the circuit of water-pipes A A' C C', the pistons B B', reciprocating alternately in the pipes A A', and the piston-rods D D', one of which is adapted for connection with the power and the other with the machinery to be driven, substantially as described and shown.

2. In combination with the circuit of pipes A A' C C', to hold a solid body or column of water, and the pistons B B', with their rods D D', dividing the circuit into two halves or portions, the reservoirs E E', with their connecting-pipes and stop-cocks, constructed and arranged to operate substantially as and for the purpose set forth.

206,019. HAND LASTING-TOOLS FOR BOOTS AND SHOES. Franklin P. Hinds, Quincy, Mass., assignor of one-half his right to David Whittemore, same place. Filed Nov. 20, 1877.



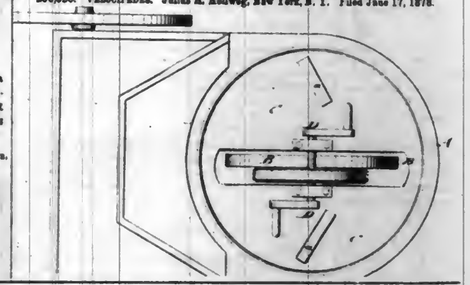
Claim.—1. In a boot and shoe lasting apparatus, the combination, with a pair of nippers and an automatic tack feeding and driving mechanism, of a trigger for operating the driving mechanism, all substantially as shown and described.

2. In a hand lasting-tool, the combination, with the tack feeding and driving mechanism, of a trigger, all substantially as described, and for the purpose set forth.

3. The automatic feeding device consisting of the hopper A^1, the agitator G, with its bell-crank lever *a* and friction-cushion *e*, the chute *t*, and spring fingers *d d'*, in combination with the driver D, substantially as described, with any suitable means for operating the driver and for giving the agitator a reciprocating motion.

4. The spring-fingers *d d'*, operating to close the chute and to present a tack to the driver, substantially as described.

206,020. VELOCIPEDES. Julius H. Hollweg, New York, N. Y. Filed June 17, 1878.



Claim.—A velocipene consisting of two wheels on rear axle, a single front drive-wheel, a hand crank-shaft, D, and a circular platform, C, having foot-pieces *a a*, the front axle and shaft D being connected by belt and pulleys, as shown and described.

206,021. FASTENINGS FOR HAT-ELASTICS. Moses K. Holt, Haverhill, Mass. Filed June 3, 1878.



Claim.—The curved plate A, having socket B in the middle of its concavity, and provided with holes *a'* on each side of the concavity, as and for the purpose specified.

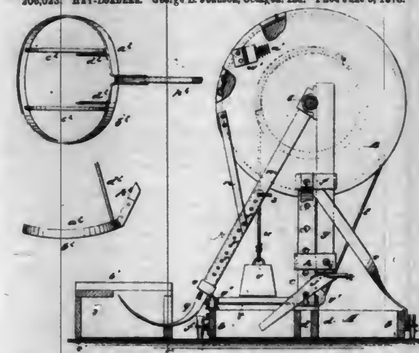
206,022. INDEXES. Francis L. Hutter, Harrisburg, Pa. Filed Mar. 30, 1878.



Claim.—1. A book in which one of the back leaves is provided on its vertical edge with an index consisting of the letters of the alphabet, properly spaced, and of a series of figures or other indicating characters, arranged substantially as shown and set forth.

2. The index *d*, attached to the vertical edge of one of the back leaves of the book, and consisting of the letters of the alphabet, properly spaced, and of a series of figures, all arranged substantially as shown and described.

206,023. HAT-LOADERS. George L. Johnson, Octagon, Ind. Filed June 6, 1878.



Claim.—1. The combination of the adjustable fork *q* with the wheel B, substantially as and for the purpose specified.

2. The combination, with the adjustable fork, of wheel B, operating-rope *t*, wheel C, and counterbalance-weight *o*, substantially as shown and described.

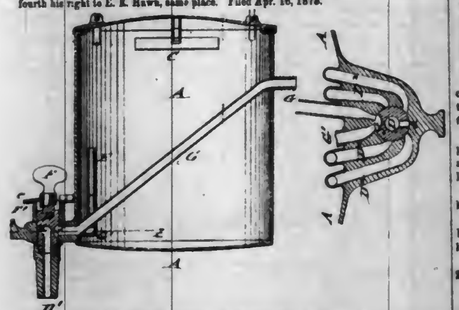
3. The combination of the buffer-spring a^1 with the wheel B, substantially as herein shown and described.

4. The fork n^3, consisting of the shank p^2, hoop b^2, cross-bars c^2, and tines d^2, substantially as shown and described.

5. The combination, in a hay-derrick, of the movable bars *g*, cam-levers *j*, and wheel B, carrying the fork *q*, as herein shown and described.

6. The platform b^1, having slots c^1, in combination with the fork *q*, as herein shown and described.

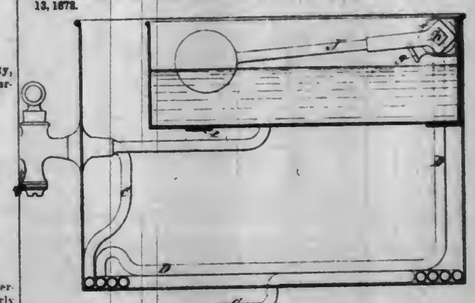
206,024. LIQUID-MEASURES. Marcus M. Kendall, Leavenworth, Ind., assignor of one-fourth his right to E. B. Hawn, same place. Filed Apr. 16, 1878.



Claim.—1. In a liquid-measure, the measuring can or vessel A, the series of discharge-pipes terminating at different heights within said vessel, and the horizontal channels D', communicating with said vertical pipes, in combination with the faucet-barrel D', having the dial-plate F', and the plug D, having the opening *d* and pointer *e*, all constructed and relatively arranged as herein set forth, for the purpose specified.

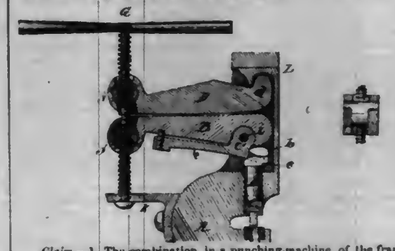
2. The combination, in a liquid-measure, of the inlet or feed pipe G, the measuring-vessel A, having a channel or return-pipe, G', the faucet or plug having the bore *d* and recess *f*, and the barrel D', as and for the purpose set forth.

206,025. AERATED-LIQUOR APPARATUS. Thomas C. Knox, New York, N. Y. Filed June 13, 1878.



Claim.—In combination with a pipe or coil of pipe leading from the source of supply to the ebullition-faucet, a tank or reservoir provided with an automatic and self-regulating valve, communicating with said pipe or coil, for supplying said reservoir from said source, substantially as and for the purpose herein described.

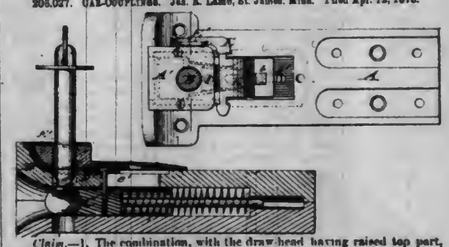
206,026. PUNCHING-MACHINES. William Krutzsch, Dayton, Ohio, assignor to Geo. B. Hoglen and Frank M. Hoglen, same place. Filed Apr. 23, 1878.



Claim.—1. The combination, in a punching-machine, of the frame A, provided with bracket K, cam-levers B and D, the punch-plunger *b*, and the die L, having a smooth working-surface, all constructed and operating as herein set forth.

2. The combination of the frame A and levers B, D, and C with the swivel-joints *j* and E, and the bracket K and operating-screw G, constructed and arranged as specified.

206,027. CAR-COUPLINGS. Jas. B. Lamb, St. James, Minn. Filed Apr. 13, 1878.



Claim.—1. The combination, with the draw-head having raised top part, coupling-pin, and sliding and spring-acted link-follower, of a front slide-piece to support pin in raised position independent of follower, substantially as and for the purpose set forth.

2. The combination of the draw-head having raised top part, coupling-pin, and sliding and spring-acted link-follower with a guided front slide-piece and a forked rear slide-piece attached to follower, and with a hinged spring-lock and cam-lever, substantially as and for the purpose described.

3. The slide-piece D, arranged in an inclined recess of the front of draw-head to support the pin when the link is drawn out, substantially as set forth.

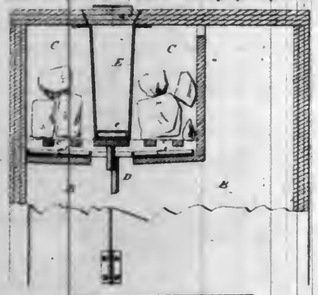
4. The combination, with the front slide-piece D, of the rear slide-piece D', connected by a pin, *e*, with the follower, and working in a slot, *e'*, of draw-head, substantially as and for the purpose described.

206,028. REFRIGERATORS. Jas. W. Lawrence, New York, N. Y., assignor to Walter S. Lawrence, same place. Filed May 14, 1878.

Brief.—The salt and ice chamber E preserves the ice in the ice-box for a much longer time, besides rendering an additional refrigerating chamber for the food to be preserved in the provision-chamber.

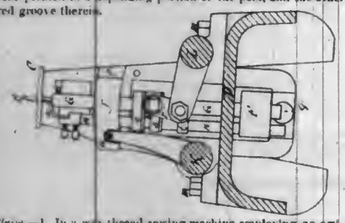
Claim.—The combination, in a refrigerator having elevated ice-chamber C in the provision-chamber B, of the salt and ice chamber E, made air-tight, and placed inside the ice-chamber, as and for the purpose specified.

206,028.



206,029. SEWING-MACHINES. Albert Leavitt, Boston, assignor to David Whittemore, Quincy, Mass. Filed May 9, 1878.

Brief.—The post of a wax-thread sewing-machine is made of two pieces fastened together. The needle and cast-off bars are carried in two blocks—the lower one pivoted to a depending portion of the post, and the other sliding in a curved groove therein.



Claim.—1. In a wax-thread sewing-machine employing an awl above and a hook-needle and cast-off below the work-plate, the supporting post or frame, composed of parts A B, forming, when united, the curved slot or slideway *p*, and connected at their tops by the plate C, all constructed, combined, and arranged as and for the purposes specified.

2. The combination of the work-support, constructed as described, with block J, needle-bar G, cast-off bar H, pivoted block F, and rock-shaft K, all constructed and arranged to operate together substantially as and for the purposes specified.

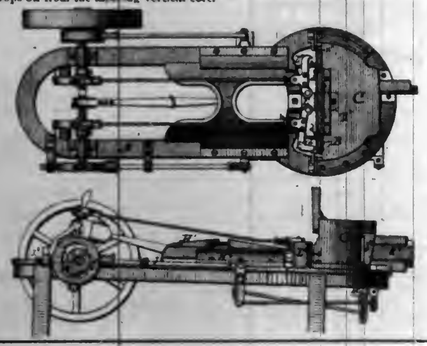
206,030. GAS-COCKS. Daniel C. Lyons, Chelsea, Mass. Filed Dec. 11, 1877.



Claim.—The combination, with stuffing box A, of the tube B, having head *a*, aperture *b* at a distance from the head a little greater than the depth of the stuffing-box, and a nozzle, C, all constructed and arranged as shown and described, for the purpose specified.

206,031. MACHINES FOR FORMING TIN-CAN BODIES. Emmett Mather and Geo. B. Gleason, Chicago, Ill., assignors to the Wilson Packing Company, same place. Filed Mar. 8, 1878.

Brief.—The blanks drop from feed-chute onto holding-pins. A former clamps blank between itself and a core, throws its wings forward and bends the blank about the core, and the lapped edges of the blank are forced into a groove in the core by a knife-edge. The parts then separate, and the completed can-body drops off from the tapering vertical core.

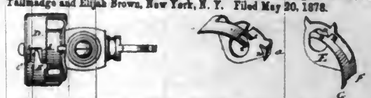


Claim.—1. The machine for bending can-bodies, provided with a vertical core or former of the size and shape of the can to be formed, suspended at the top, and vertical formers for bending the blank around the core, the formers being automatically operated, and sustained at their side, edges, or backs, whereby we are enabled to discharge the blank automatically after it has been shaped.

2. The machine for bending can-bodies, wherein are combined a vertical central core conforming to the shape and size of the can, and suspended at its end, and automatically-operated mechanism for bending the blank around the core, substantially as set forth.

3. In a machine for shaping can-bodies, the combination, with the vertical central core, having a groove at the point where the seam is made, with automatically-operated mechanism for bending the blank around the core, and a knife-edge for pressing the ends of the blank into the groove in the core.

206,032. AUTOMATIC GAS-LIGHTERS. John L. Miller, Washington, D. C., and Henry H. Tallmadge and Elijah Brown, New York, N. Y. Filed May 20, 1878.



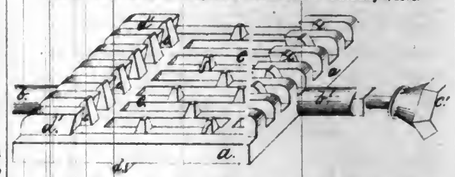
Claim.—1. The feed-spring D, having its upper end extended and slotted, substantially as and for the purpose set forth.

2. The hammer-trip A, formed with an angular face, 2, for forcing down and confining the hammer, substantially as and for the purpose set forth.

3. The hammer-plate E, having its lower end serrated at F, and provided with the lip G, substantially as and for the purpose set forth.

4. The open bot-cover I, with a central longitudinal slot, in combination with the securing-screw extended and formed with a button, substantially as and for the purpose set forth.

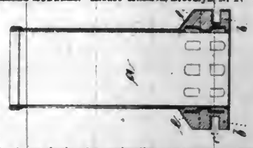
206,033. STOVE-GRATES. Henry Miller, Providence, R. I. Filed May 4, 1878.



Claim.—1. The combination, with the frame *a*, provided with the bearing *b* and hollow sleeve *b'*, of the grate *c*, supported on the projections *d*, and the rod by which it is connected with the knob *c'*, substantially as and for the purpose described.

2. The combination, with the frame *a*, provided with the projections *d*, hollow sleeve *b'*, and upward-projecting clearer *d'* at the ends, of the grate *c*, provided with the projections *f* and raking-points *e*, the latter arranged to pass between the clearers, and the knob *c'* arranged to screw into the grate, the whole operating substantially as and for the purpose set forth.

206,034. UMBRELLA-RUNNERS. Alonzo Milliken, Brooklyn, N. Y. Filed June 17, 1878.



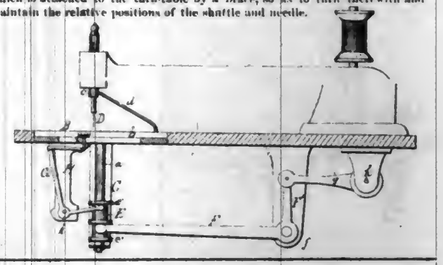
Claim.—1. A notch-ring for umbrellas or parasols, composed of a tube with surrounding cast-metal blocks, grooved for the reception of the joint-wire, and having the slots for the ends of the ribs or stretchers, substantially as set forth.

2. The metal tube *a*, having burrs or fins, in combination with the blocks *b* of the notch-ring cast around such burrs or fins, and secured by the same to the tube, substantially as set forth.

3. The notch-ring having the blocks *b* and cap *c*, that connects the blocks *b* and covers the ends of the slots for the ribs or stretchers, cast in one piece around the tube *a*, substantially as set forth.

206,035. TURN-TABLES FOR SEWING-MACHINES. E. Morgan, San Francisco, Cal., assignor to Morgan Machine Manufacturing Company, same place. Filed Oct. 10, 1877.

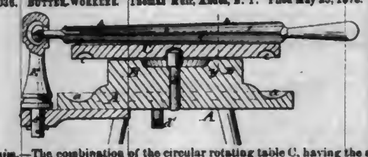
Brief.—A portion of the bed-plate, circular in form, has the shuttle-race made therein, and is supported from beneath and caused to turn on an axis coincident to the axis of the needle. The needle works in a movable bushing, which is attached to the turn-table by a brace, so as to turn therewith and maintain the relative positions of the shuttle and needle.



Claim.—1. In combination with a sewing-machine frame or bed-plate, a circular turn-table, B, having a shuttle-race cut therein diametrically across it, and arranged to turn within a recess or opening in the bed-plate, whereby the shuttle-race and its shuttle may be turned at any desired angle across the bed-plate, substantially as herein set forth and described.

2. In a sewing-machine, the turn-table B, having a shuttle-race, in combination with the movable needle-bushing, connected, substantially as described, to the said turn-table, so as to turn therewith, for the purpose set forth.

206,036. BUTTER-WORKERS. Thomas Muir, Ardes, N. Y. Filed May 25, 1878.



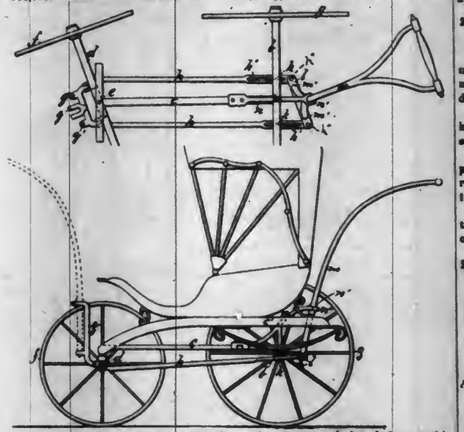
Claim.—The combination of the circular rotating table C, having the annular groove *c* on its under side, with the circular guttered supporting-table A, provided with the elevated disk B, upon which the table C is pivoted, said disk B being smaller in diameter than the rotating table C, substantially as and for the purpose set forth.

206,037. BUTTONS. Charles H. Mumford, Providence, R. I. Filed May 6, 1878.



Claim.—The combination of the button *f*, provided with a hollow shank, *d*, having within it a contracted neck, *e*, with the back *a*, provided with the split shank *b*, having on its exterior the annular recess *c*, all constructed substantially as and for the purpose described.

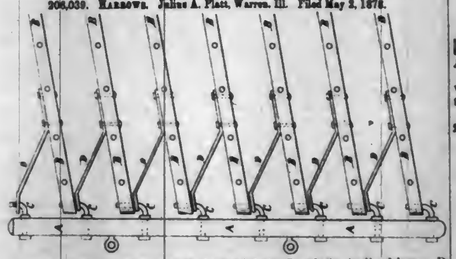
206,038. CHILDREN'S CARRIAGES. Geo. E. Phelps, Appleton, Wis. Filed Apr. 10, 1878.



Claim.—1. In combination with the stationary rear axle *b* and the movable front axle *d*, as described, the parallel rods *h h*, jointed to the front axle *d*, and sliding upon the rear axle *b*, the connecting-link *l*, forked handle *m m' m'*, and the bearing *n n' n''*, or its equivalent, as and for the purpose set forth.

2. In combination with the stationary rear axle *b* and the movable front axle *d*, parallel rods *h h*, detachable forked handle *m m' m'*, and the front bearing *q q' q''*, as and for the purpose set forth.

206,039. HARROWS. Julius A. Platt, Warren, Ill. Filed May 2, 1878.

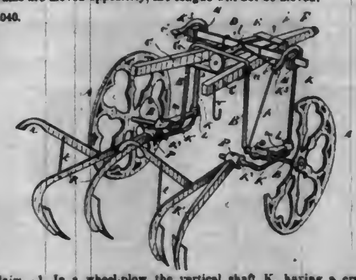


Claim.—The combination of the hook-bolts C and the inclined braces D with the transverse draw-bar A and the inclined tooth-bars B, substantially as herein shown and described.

206,040. WHEEL-CULTIVATORS. Francis W. Passy, Carthage, Ind. Filed June 4, 1878.

Brief.—Vertical shafts on each side have cranks at the bottom, extending rearward, for the attachment of the drag-bars. They also have cranks at the top, connected to the pivoted tongue. By swinging one plow laterally, or both in one direction, the rear end of the tongue will move to the same side. If the plow-beams are moved oppositely, the tongue will not be moved.

206,040.



Claim.—1. In a wheel-plow, the vertical shaft K, having a crank, K^1, above and a crank, K^1, below, and a crank-axle or hinge, K^2, at the rear end of the crank K^1, combined with the plow-beam R, in the manner and for the purpose set forth and described.

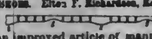
2. In a wheel-plow, the arms *m m*, having clamps O O and vertical sleeves L L, combined with the arched axle B and crank-shafts K K, in the manner and for the purpose set forth and described.

3. In a wheel-plow, the tongue F, with lever E and connecting-rods *e e'*, combined with the cranks K^2 K^1 and plow-beams R, in the manner and for the purpose set forth and described.

4. The rods K, with cranks K^2 and K^1, combined with the rear end of the tongue F, in the manner and for the purpose substantially as set forth and described.

5. The plow-beams R, combined with the crank-bar K^1 K K^1 and rear end of the tongue F, in the manner and for the purpose substantially as shown and described.

206,041. BOOTS AND SHOES. Ether F. Richardson, Reading, Mass. Filed Dec. 19, 1877.



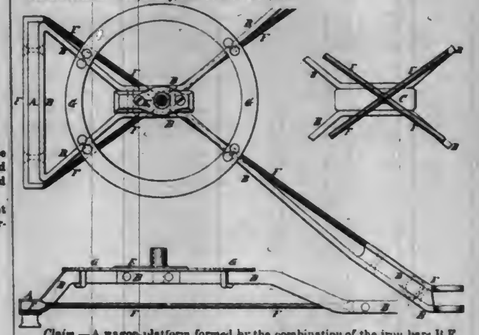
Claim.—1. As an improved article of manufacture, a shoe having its sole united to its upper by tapering fastenings separated from a strip of non-fibrous material, substantially such as described, reduced in width, and drawn or forced doubled into openings in the sole and upper, substantially as described.

2. The improved non-fibrous fastening-strip made broad to form contiguous heads, and reduced between the heads to form points, substantially as described.

3. A metallic fastening for uniting thicknesses of leather, it being composed of two members, each having a head, and adapted to be beat at its narrow central portion to form two contiguous members when in place in the leather to be united, substantially as described.

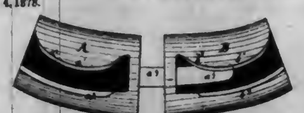
4. The improved non-fibrous fastening-strip herein described, made broad to form contiguous heads, reduced at intervals to form points, and corrugated or roughened to afford additional hold in the leather, substantially as described.

206,042. IRON PLATFORMS FOR WAGONS. William B. Remig, Lehighton, assignor to himself and Chas. H. Weiss, Kohley, Pa. Filed June 17, 1878.



Claim.—A wagon-platform formed by the combination of the iron bars it F with the spring-block A, the connecting-blocks C D D, the socket-plate E, and the fifth-wheel G, substantially as herein shown and described.

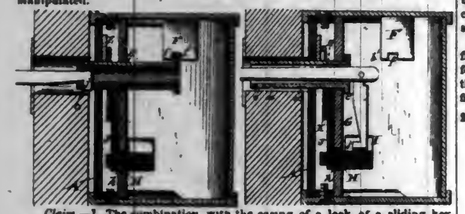
206,043. HORSE-COLLAR CLAMPS. Joseph P. Schmitz and Herbert W. Cooper, Winona, Minn. Filed June 4, 1878.



Claim.—In a clamp for horse-collars, the combination of the socket A, provided with the flanged slot a^1 a^2 in its side, and a square curved pin, a^3, upon its end, and the socket B, provided with the flanged slot b^1 b^2 in its side and the rectangular slot b^3 in its end, said slot b^3 being made of a greater length horizontally than the breadth of the pin a^3, substantially as herein shown and described.

206,044. LOCKS. Alex. Schneider, Youngstown, Ohio, assignor of one-half his right to Louis Wellendorf, same place. Filed June 19, 1878.

Brief.—The sliding key-tube has to be withdrawn before the bolt can be manipulated.



Claim.—1. The combination, with the casing of a lock, of a sliding key-tube provided with one or more grooves that partially surround said tube and a spring-pressed catch-plate, adapted to engage with said groove or grooves, substantially as set forth.

2. The combination, with a sliding key-tube provided with a collar on its rear end, said collar having a slot formed therein, of a depending slotted bar, substantially as set forth.

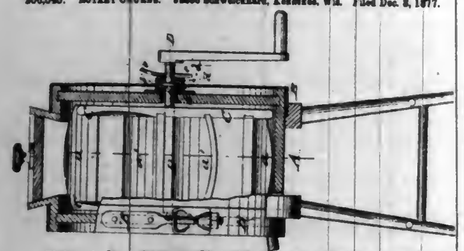
3. The combination, with the casing of a lock, of a sliding key-tube and a lock-bolt provided with a rack located beneath said tube and near the front plate of the lock, substantially as set forth.

4. The combination, with the front plate of a lock-casing, of a partition-plate having an elongated slot formed therein, and a lock-bolt located on one side of said partition, and a rack for actuating said lock-bolt on the other side of the same, substantially as set forth.

5. The combination, with a sliding key-tube, of a lock-bolt located beneath said tube and a two-part key, the several parts being constructed so that the key bit cannot engage with the rack until the key-tube is withdrawn, substantially as set forth.

6. The combination, with a sliding key-tube and means for securing it in place, of a key provided with a projection for engagement in a slot formed in the outer end of the key-tube, substantially as set forth.

206,045. ROTARY CHURNS. Jacob Schweickhard, Kohnstoo, Wis. Filed Dec. 8, 1877.

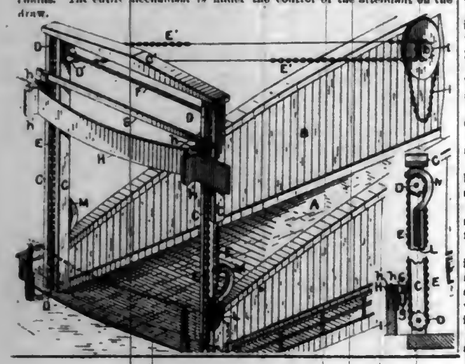


Claim.—1. In a churn provided with two sets of paddles, *a a* and *a' a'*, arranged at a reversed incline on the diametrical bar C, the outer and inner paddles extended beyond the opposite sides of the frame, for the purpose set forth.

2. The combination, with the shaft D, having collar *b'*, of the box *b* having guide-hooks *c'*, washers *d*, and forked wedge *e*, as and for the purpose specified.

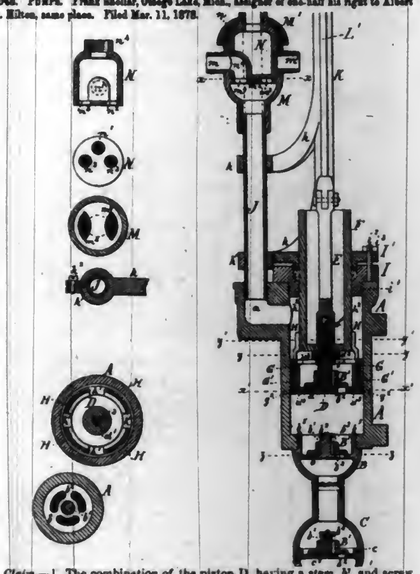
206,046. BARRIERS FOR DRAW-BRIDGES. Albert R. Sherman, Natick, assignor to Stephen A. Jenks, Lincoln, R. I. Filed June 22, 1878.

Brief.—A barrier is adapted to rest on posts on the abutment when the draw is open. When the draw is closed a transverse hooked bar adapted to be raised and lowered is made to raise the barrier engaging loops thereon. The bar and operating mechanism are carried by the draw. The barrier is counterbalanced by weights suspended by goose-neck loops to the operating-chains. As the bar disengages from the barrier, the said loops pass over upon the sheaves, which latter take directly the down-draft of the weights off the chains. The entire mechanism is under the control of the attendant on the draw.



Claim.—The adjustable valve D, hinged to the inner side of the feed-box A, and extending vertically downward, with its lower end curved below the roller C, in combination with the arm E and sliding bar F, pivoted to the outer side of the feed-box A, and operated by the turning-rod G, substantially as and for the purposes set forth.

206,048. PUMPS. Frank Sheller, Otsego Lake, Mich., assignor of one-half his right to Albert M. Hilton, same place. Filed Mar. 11, 1878.



Claim.—1. The combination of the piston D, having a stem, *b'*, and screw *d'*, the plunger F, and the piston-rod E, whereby the said parts are united, substantially as set forth.

2. The combination of the plunger F, having stays H, the piston D, having a conical surface, *d'*, stem *b'*, screw *d'*, adjusting-washers *d'*, and expansible wedge-shaped ring G, and the piston-rod E, whereby the packing G' of the piston is expanded or relieved, substantially as set forth.

3. The combination of a valve-seat diaphragm, having ports *b'*, triangular valve-stem *b'*, and check-nut *b'*, and the valve B', having a cylindrical central hole, *b'*, substantially as and for the purpose set forth.

4. The combination of the piston D, having recesses *d'*, and the valve-chamber B, having lugs *b'*, substantially as and for the purpose set forth.

5. The strainer C C', being united at *c*, and having diaphragm *c'*, ports *b'*, stem *b'*, and valve B', having check-nut *b'*, substantially as set forth.

6. The pump-cylinder A, in combination with the removable valve-chamber B, having diaphragm *b*, ports *b'*, stem *b'*, and valve B', substantially as set forth.

7. The combination of the pump-cylinder A, discharge-pipe J, fulcrum-stand K, having arms *k*, clamps k^1, and set-screws k^2, substantially as set forth.

8. The valve-chamber M, in combination with the pump and its conducting or discharge pipe J, having diaphragm m^2, ports m^3 m^4, hose-connections m m^1, and adjustable lid M', in combination with the valve N, having ports n^1 n^2 n^3 and pipe-socket n^4, whereby the use of an air-chamber can be dispensed with and the discharge of the water is never entirely cut off, and thus bursting prevented, substantially as and for the purpose set forth.

9. The expansible wedge-shaped packing-ring G, having stepped ends *g* and a water-tight joint, g^2, substantially as set forth.

206,049. VALVES FOR WATER-CLOSETS. Wm. Smith, San Francisco, Cal. Filed Jan. 4, 1878.



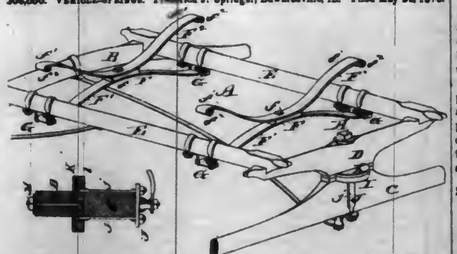
Claim.—1. The chamber A I, with a single inlet controlled by a valve, *a*, and two outlets, N N', with detached channels *d e e'*, controlled by a plunger, R, in combination with the air-tight chamber J, having the outlet-passage *f g*, constructed to operate substantially as and for the purpose set forth.

2. In a water-closet valve, the three detached channels *d e e'* within the valve-chamber, connecting with the outlets N N', in combination with the plunger R, having ports *e e*, constructed and applied to operate substantially as described and set forth.

3. In a water-closet valve having the inlet *b*, outlets N N', detached channels *d e e'*, and pressure-chamber J, the valve *a* and plunger R, rigidly connected together, and operated in one direction by pressure upon a stem or spindle, K, and in the opposite direction by the action of a spring and the pressure of the incoming stream of water, constructed and applied to operate substantially as herein described and set forth.

4. A valve for controlling the supply of water to the basin and trap or ejector of water-closets, having one inlet, *b*, controlled by a valve, and two outlets, N N', communicating with the chamber of the valve through three detached channels, *d e e'*, controlled by a plunger, substantially as herein described, whereby the water admitted to the valve is directed first to the basin, then to the trap or ejector-pipe, and lastly to the basin again, for the purposes set forth.

206,050. VEHICLE-SPRINGS. Frederick J. Springer, Edwardsville, Ill. Filed May 24, 1876.



Claim.—1. The carriage-spring F, consisting of the parts F^1 F^1, shaped and connected as described, and having the eyes f^2 f^2, arranged as described, in combination with the clips G G and side bars E E, operating substantially as described and shown.

2. The spring F, consisting of the parts F^1 F^1, curved and connected at their centers *f f*, as shown, and having their ends f^2 f^2 curved in the reverse direction, and provided with the eyes f^2 f^2, arranged as described, in combination with the clips G G and side bars E E, as and for the purpose described.

3. The combination of the bolt H, plate I, bolster D, axle C, clip J, side bars E E, the spring F, constructed and connected as specified, and clips G G, substantially as described, and for the purpose set forth.

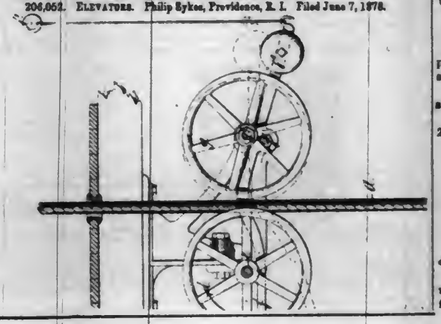
206,051. BUTTER-TUBS. Lemra Stone, Dryden, N. Y. Filed May 7, 1878.



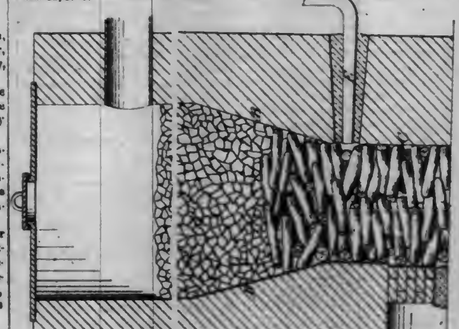
Claim.—1. The cover made either of the parts *a a'* and *b b'*, or of the skeleton form a'' a''' and *b b'*, and having an open space, *c*, for its insertion in the tub, and a wedge or key, *c*, for locking the same in the cross or chine of the top of the tub, substantially as set forth.

2. The locking-rod *f*, inserted through the wedge *c* and parts a'' a''', as shown and described.

206,052. ELEVATORS. Philip Sykes, Providence, R. I. Filed June 7, 1878.



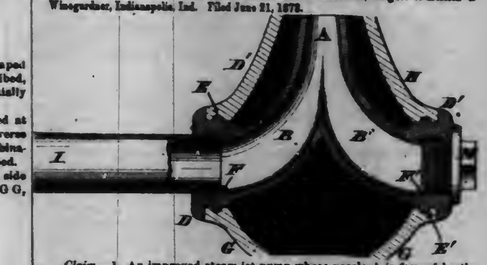
206,053. PROCESSES FOR THE MANUFACTURE OF GAS. Wm. J. Taylor, Chester, N. J. Filed Oct. 12, 1877.



Claim.—1. The process of manufacturing gas, which consists in charging into the producer a fluxing material with the fuel to be made into gas, and applying an air-blast continuously through a small tuyere or tuyeres under sufficient pressure to maintain a high temperature, whereby the fluxing material is kept constantly in a molten or fluent state, and which is tapped out to maintain the continuous process, substantially as described.

2. The process of manufacturing gas, which consists in charging into the producer a fluxing material with the fuel to be made into gas, and applying an air-blast continuously through a small tuyere or tuyeres under sufficient pressure to maintain a high temperature, whereby the fluxing material is kept constantly in a molten or fluent state, and which is tapped out to maintain the continuous process, and the introduction of steam in such air-blast, substantially in the manner and for the purpose herein set forth.

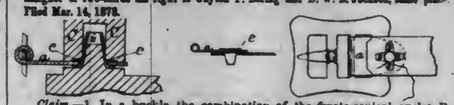
206,054. STEAM-JET PUMPS. Hansen P. Tennant, East Germantown, assignor to Kerrick & Winegardner, Indianapolis, Ind. Filed June 21, 1878.



Claim.—1. An improved steam-jet pump whose nozzle A is formed by the junction of two branch pipes, B B', extending to opposite sides of the shell G H, which shell is cast around said nozzle and pipes, substantially as herein described.

2. An improved steam-jet pump consisting of the nozzle A, branch pipes B B', necks C C', flanges D D', and collars E E', the shell G H being cast around said necks C C' and collars E E', substantially as herein described and set forth.

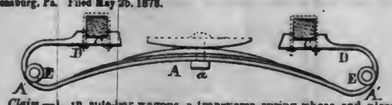
206,055. EYELETS FOR SEWERED BUCKLES TO STRAPS. Charles W. White, Boston, Mass., assignor of two-thirds his right to Guyton P. Loring and D. W. B. Jackson, same place. Filed Mar. 14, 1878.



Claim.—1. In a buckle, the combination of the frusto-conical eyelet B, provided with the flange *c*, with the attaching-plate *a*, substantially as described, for the purpose specified.

2. The eyelet B, provided with the inner flange *c*, formed from the outer surface of the eyelet, all substantially as and for the purpose described.

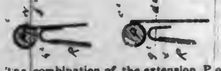
206,056. SPRINGS FOR SIDE-BAR WAGONS. George W. Wingler and Will W. Slough, Shippensburg, Pa. Filed May 25, 1878.



Claim.—1. In side-bar wagons, a transverse spring whose end pieces are connected by hinge-joints to the mainspring and rigidly to the side bars.

2. The vehicle-spring composed of main piece A and end pieces D, having recesses C, in combination with the side bars of a vehicle, substantially as and for the purpose described.

206,057. ELECTRIC GAS-LIGHTING APPARATUS. J. P. Tirrell, Somerville, Mass. Filed Oct. 18, 1877.



Claim.—1. The combination of the extension P of valve-spindle M, insulated as described, and having cut-away places *v w*, with the spring-fingers d^2 f^2, rest-plates g^2 h^2, and arm *g*, all arranged relatively to each other and connected by wires, substantially as described, for the purpose specified.

2. The insulated stud J, having arms *g h*, which are insulated from each other, and one, *g*, from the stud, and connected, the one with one pole and the other with the other pole of an electro-magnet, all substantially as described.

3. The bent spring a^3 and its regulating-screw, in combination with the lever carrying the armature and the circuit-breaker, substantially as described.

4. The combination, with the circuit-breaker L and terminal K, of wires *k l*, connected with opposite poles of an electro-magnet, E, arms *h g*, metallic spindle P, having cut-away portions *v w*, fingers d^2 f^2, connected to wires S T, and the rest-plates R R', connected with wires V U, substantially as and for the purpose set forth.

5. The combination of pivoted spring-lever H, carrying armature F, and having pin U projecting therefrom, and the pivoted circuit-breaker L, having slot *t* in its end and embracing said pin, substantially as and for the purpose set forth.

6. The combination of pivoted spring-lever H, carrying armature F and spring-pawl O, and having pin U projecting therefrom, the pivoted circuit-breaker L, having a slot embracing said pin, and the ratchet-wheel N, arranged upon the gas-cock spindle, substantially as described.

7. The combination, with lever H, of the circumferentially-adjustable pin P, the bent spring-pawl O, rigidly secured to said pin, and the ratchet-wheel N, whereby the pressure of the spring-pawl upon said wheel may be adjusted as desired.

206,058. ROPES. Vincent P. Travers, New York, N. Y. Filed Apr. 29, 1878.



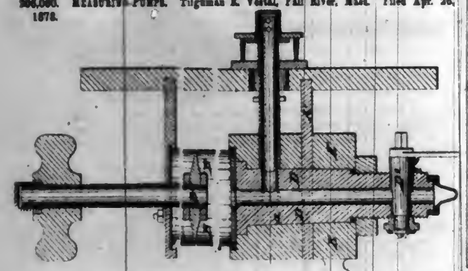
Claim.—A rope consisting of combined strands A, in each of which cotton and hemp strands *b a* are uniformly twisted together, with the cotton strands outermost and covering the hemp, all as set forth.

206,059. HAMMOCK-EYES. Thomas Trenllias, Gloucester, Mass. Filed June 17, 1878.



Claim.—The hammock eye or attachment, substantially as set forth, consisting of the eyelet-shaped part A, the head or flat ring *d*, and the arcal guard *c*, all being essentially and for application to a hammock in manner as explained.

206,060. MEASURING-PUMPS. Tilghman R. Vestal, Fall River, Mass. Filed Apr. 26, 1878.

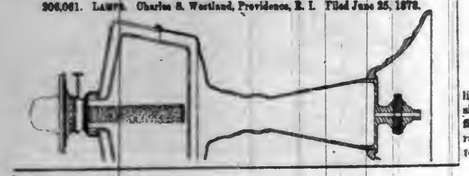


Claim.—1. The combination of a graduated cylinder, having tightly-closing supports or heads and interior piston, with a bottom plug, connecting with one or more supply-pipes, and having a fixed adjusting-ring, and a discharge faucet and spout, substantially as specified.

2. In a measuring-pump, the combination of a graduated cylinder and interior elastic piston, having hollow piston-rod and top cap, with tightly-closing supports or heads, adjustable center plug and discharge-faucet, and one or more supply-pipes, substantially as and for the purpose described.

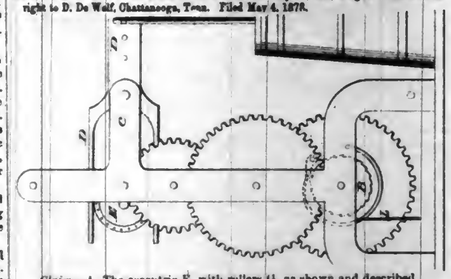
3. The combination of a faucet-plug, having radial perforations, with one or more supply-pipes, having valves inside of the vessels, and with means for turning the pipes for opening or closing the valves, substantially as specified.

206,061. LAMPS. Charles S. Westland, Providence, R. I. Filed June 25, 1878.



Claim.—The combination, with a lamp for burning explosive or inflammable oils or fluids, of a closed receptacle containing carbonic acid gas under pressure, so located with relation to the burner that in case of an explosion the compressed gas will be liberated, substantially as and for the purposes herein set forth.

206,062. MOTIVE POWERS. John E. Woolverton, Indianapolis, Ind., assignor of one-half his right to D. De Wolf, Chattanooga, Tenn. Filed May 4, 1878.



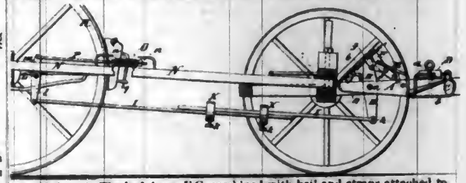
Claim.—1. The eccentric E, with rollers G, as shown and described.

2. The eccentric E, with rollers M, as shown and described.

3. The eccentric E, in combination with forked lever D, as shown and described.

4. The combination of the gearing and churn, as shown and described.

206,063. AUTOMATIC WAGON-BRAKES. W. P. Wood, Leon, Iowa. Filed May 21, 1878.

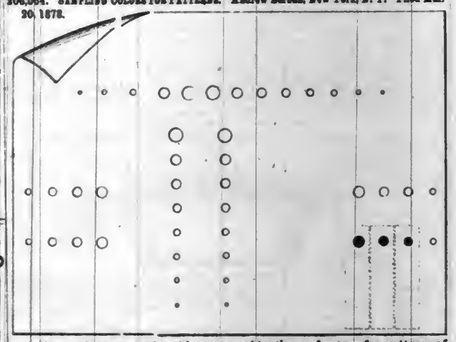


Claim.—1. The lock-lever F G, combined with bail and straps attached to single-trees to pull the brake from the wheels.

2. The lever F, extended above bail E, and connected at *f'*, by a link, *i*, to a spiral spring, J, as and for the purpose set forth.

3. The straps *b*, in combination with the single-trees C, and with the bail E, sliding in guides *d* on the end of the double-tree D, to slide the bail E by the pull of the horses, substantially as and for the purpose set forth.

206,064. SAMPLING COLORS FOR PATTERNS. Andrew Zerban, New York, N. Y. Filed Mar. 20, 1878.



Claim.—The mode of making up combinations of colors for patterns of woven and printed goods, which consists in arranging for selection differently-colored samples for observation through the holes of a perforated sheet of the given ground color, substantially as described.

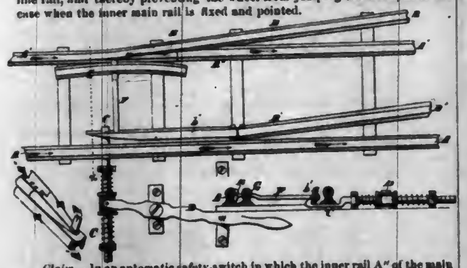
206,065. ROTARY WATER-METERS. Nathan B. Acheson, Youngstown, Ohio. Filed Sept. 7, 1877.



Claim.—In a fluid-meter, the combination of the case L, central closed cylindrical block E, forming an annular passage, the disk G, having suspended shaft F, attached to the upper surface thereof, with pendent radial rings or floats G', and the inlet A and outlet B, of unequal size, all constructed and arranged as described, whereby the fluid obtains a circular motion from the inlet to the exit, as and for the purpose herein set forth.

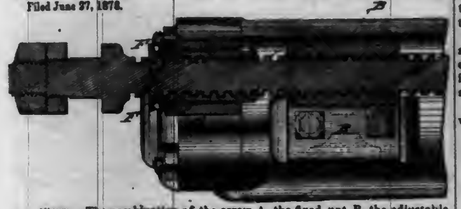
206,066. RAILWAY-SWITCHES. Alexander R. Adams, George E. Cain, and Robert Sinceatre, Huntington, Ind. Filed Aug. 9, 1877.

Brief.—To the forward end of the inner fixed main-line rail is pivoted a short downwardly sloping and tapering point-bar, which is connected to an opposite switch-rail, the said bar acting as a guard to the wheel-flanges, while the treads are passing from the outer fixed sliding-rail onto the inner fixed main-line rail, and thereby preventing the wheel from jumping the track, as is the case when the inner main rail is fixed and pointed.



Claim.—In an automatic safety-switch in which the inner rail A" of the main track extends forward nearly to the outer rail B of the side track, and in connection therewith sustains and supports car-wheels passing from the rails A', a tapering guard-bar, E, pivoted upon or at the front end of said inner rail A", and operating as a guide for the flanges of the car-wheels, substantially as and for the purpose specified.

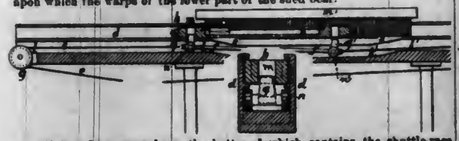
206,067. FEED SCREWS AND NUTS FOR ROCK-DRILLS, &c. Robert Allison, Port Carbon, Pa. Filed June 27, 1878.



Claim.—The combination of the screw A, the fixed nut B, the adjustable sleeve-nut C, with collar F, and the set-screw D, substantially as and for the purposes herein set forth.

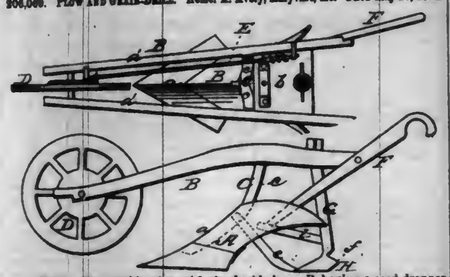
206,068. LOOMS FOR WEAVING WIRE FABRICS. Jos. Asbach, Chemnitz, Saxony. Filed Aug. 22, 1877.

Brief.—The shuttle driver or carriage is provided with a channel or way inside the batten, and over the central portion, in front of the reed, in a plate, upon which the warps of the lower part of the shed bear.



Claim.—In a power-loom, the batten *d*, which contains the shuttle-race and a channel or way for its driver, the bottom of which channel or way is depressed near its middle part, in combination with the carriage *f*, having wheels *n* and *n'*, and fixed lugs or fingers *q* and *q'*, and the shuttle A, having holes *m* and *m'*, substantially as set forth, and for the purpose described.

206,069. PLOW AND GRAIN-DRILL. Homer A. Avery, Maryville, Mo. Filed May 29, 1878.



Claim.—The combination, with the double beam B, having a seed-dropper mechanism, and a double plow, A, of the spout G, the subsoil-shovel on the end of the said spout, and a dividing-blade connecting the plow and shovel, substantially as specified.

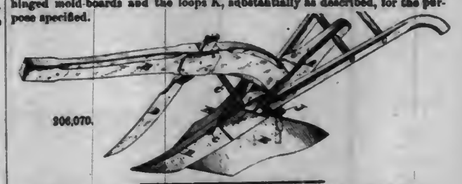
206,070. SIDE-HILL PLOWS. John W. Barnett and Thomas J. Hobbs, Fountain Creek, Tenn. Filed Apr. 29, 1878.

Brief.—Hinged wings on either side of a plow that may be alternately raised and lowered to form a mold-board or land-side, and operate as a side-hill plow.

Claim.—1. The combination, with the plow-standard, of the mold-boards E E, each hinged to a single plate, F, which lies under the plow-point, and is held in place, together with said point, by a single bolt or screw, G, substantially as described.

2. The stop J, pivoted at its center to the standard A, combined with the hinged mold-boards and the loops K, substantially as described, for the purpose specified.

206,070.



206,071. CLUTCHES. Francis G. Bates, Springfield, Mass. Filed Mar. 27, 1878.

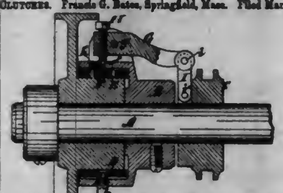


Claim.—1. In combination with the friction-ring E, cleft at *e*, and having slots or openings e^1 e^1 on either side of said cleft, a double sliding wedge or two sliding wedges, *g' g'*, arranged to enter said slots or openings and draw the ends e^2 e^2 of the friction-ring toward each other.

2. In combination with the shell or false hub B, the friction-ring E, cleft at *e*, having slots or openings e^1 e^1 and double wedge G, said ring being fastened in the shell B at a point directly opposite the cleft *e*, or midway between its ends, and the wedges *g' g'* being arranged to enter the openings e^1 e^1, substantially as shown and described.

3. In a friction-clutch, the combination, with a friction-ring, of a double wedge, *g*, substantially as and for the purpose set forth.

206,072. CLUTCHES. Francis G. Bates, Springfield, Mass. Filed Mar. 27, 1878.



Claim.—1. The friction-ring D, cleft so as to cause its ends to lap or break joints, substantially as shown and described.

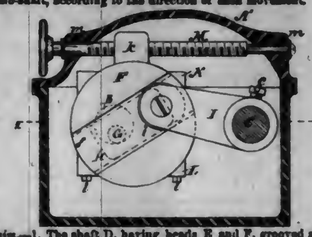
2. The friction-ring D, having lapping ends d^2 d^2 and slots or openings E E, in combination with the sliding plug or wedge F, substantially as shown and described.

3. The combination of the sliding plug or wedge F and lever G with a swivel-connection, *h f*, substantially as shown and described.

4. The combination of shaft A, shell B, spool C, friction-ring D, sliding plug or wedge F, lever G, swivel-connection *h f*, and arm I, substantially as shown and described.

206,073. MECHANISM FOR OPERATING DOUBLE-CHECK. Francis G. Bates, Springfield, and Louis E. Hartmann, Greenfield, Mass. Filed Apr. 3, 1878.

Brief.—By turning the screw-spindle the adjusting-shaft may be moved so as to recede from the driving-shaft and approach the comb-shaft, and vice versa, the effect of which is to increase or decrease the rocking motion of said comb-shaft, according to the direction of such movement.



Claim.—1. The shaft D, having heads E and F, grooved at *e* and *f*, substantially as shown and described.

2. In combination with the shaft B, having wrist G, the shaft C, having crank-arm I and wrist *i*, and shaft D, having grooved heads E and F, substantially as shown and described.

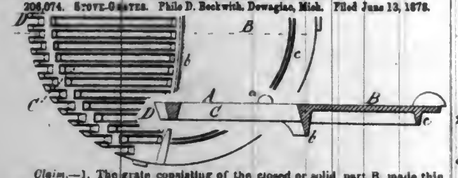
3. In combination with the shaft D, the blocks K L and the screw-spindle M, connected substantially as described, for adjusting said shaft D relatively to the shafts C and B, substantially as shown and described.

4. In combination with the driving-shaft B and a shaft, C, deriving a rocking motion therefrom when said driving-shaft is rotated, an intermediate shaft, D, and mechanism, substantially as described, for adjusting the same

between said shafts B and C, whereby the extent of motion of the latter may be varied, substantially as and for the purpose set forth.

5. In combination with the shaft D, the bearing blocks K L, fastened thereon and to each other by adjusting-screws *l l*, substantially as shown and described.

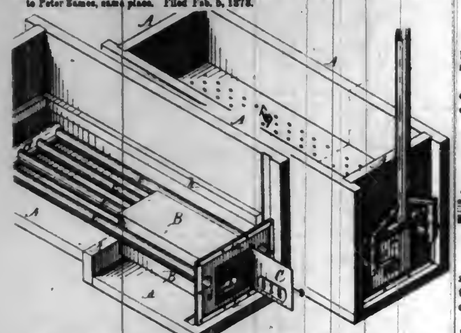
206,074. STOVE-GRATES. Philo D. Beckwith, Dowagiac, Mich. Filed June 13, 1878.



Claim.—1. The grate consisting of the closed or solid part B, made thin and strengthened by ribs, and the thick open part C, substantially as and for the purpose specified.

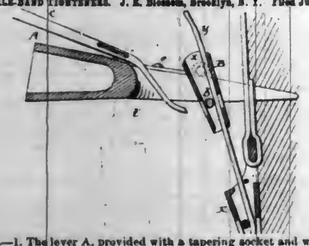
2. The movable grate stayed by ribs, as described, and provided with the closed surface B back of its center, and with the open surface C and toothed periphery D, substantially as described.

206,075. FEED-STEAMERS. Frederick Bigalow, Rockford, Ill., assignor of one-half his right to Peter Samee, same place. Filed Feb. 5, 1878.



Claim.—A feed-steamer consisting in the combination, with boiler A and fire-box B, of the flues *c*, which connect the rear end of said fire-box with the transverse flue *d*, and the forward return-flues *e*, said flues being in the same horizontal plane with the fire-box, and leaving the top surface of the same freely exposed to the water, substantially as set forth.

206,076. BALE-BAND TIGHTENERS. J. R. Blossom, Brooklyn, N. Y. Filed June 13, 1878.



Claim.—1. The lever A, provided with a tapering socket and with a wedge or roller, *b*, which automatically wedges itself between the band and the face of the socket as the end of the lever is raised, substantially as and for the purpose set forth.

2. The combination, with the lever A, of the swinging case B, provided with a roller, *b*, as set forth.

3. The lever provided with one or more pointed prongs, *a*, socket *x*, and roller *b*, as described.

4. The griping device adapted to seize and hold a bale-band, combined with the lever A, and adjustable to and from the end thereof, as set forth.

5. The combination of the lever, socket, roller, and supplementary device for raising the roller, as set forth.

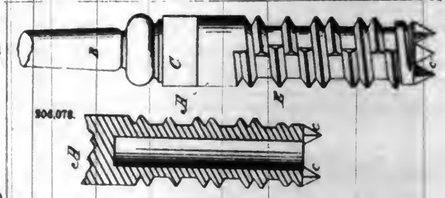
206,077. FERTILIZERS. Thomas J. Boykin and Jas. W. Garner, Baltimore, Md. Filed Mar. 1, 1878.

Claim.—The within described compound, consisting of the following ingredients, in about the proportions set forth—that is to say, dissolved bone, three (3) bushels; ground plaster, three (3) bushels; nitrate of soda, forty (40) pounds; sulphate of soda, forty (40) pounds; and sulphate of ammonia, thirty-three (33) pounds, the whole forming a compound to be mixed with a suitable base, for the purpose specified.

206,078. POSTS FOR FENCES, &c. Alden P. Bowes, Michigan City, Ind. Filed June 10, 1878.

Claim.—1. In a fence-post, the hollow base A, provided with interrupted screw-threads E, and cutter *c*, substantially as and for the purpose described.

2. A fence-post consisting of the hollow screw-threaded portion A, having cutters *c* and shank C, and the mortised and nicked part B, as and for the purpose specified.



206,079. VARNISHES. Caspar J. Breidbach and Carl Breidbach, New York, N. Y. Filed Oct. 12, 1877.

Claim.—The varnish composed of copal, turpentine, gutta-percha, and nut-oil, in substantially the proportions set forth.

206,080. GATES. John N. Brokaw, Ovid, Mich. Filed June 7, 1878.



Claim.—1. The wheel D, made in two parts, and inclosing between the parts an annular disk, said disk having a central opening and provided with a pivot-pin, all substantially as set forth.

2. The combination of wheel D and disk D', constructed substantially as described, with pin d^3, supporting-bar or hinge E, and gate A, all arranged to operate substantially as set forth.

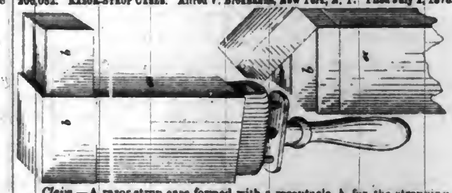
206,081. RAZOR-STROPS. Alfred V. Brokhahn, New York, N. Y. Filed July 1, 1878.



Claim.—1. A razor-strop having its body or sustaining-frame formed with a lateral receptacle or cavity, A, for the retention of the razor, opening upon the side of the strop, between the stropping-bands, and provided with a spring-opening hinged lid, B, substantially as herein shown and described.

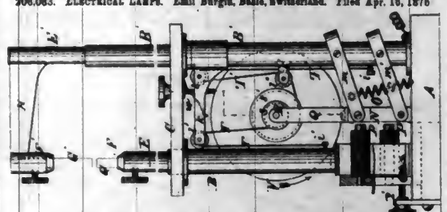
2. In a razor-strop provided with the lateral receptacle A, a hinged lid, B, provided with an inwardly-projecting lug, C, adapted to support the end of the razor and elevate it by the act of opening the lid, so as to present it to the ready grasp of the fingers, substantially as herein shown and described.

206,082. RAZOR-STROP CASES. Alfred V. Brokhahn, New York, N. Y. Filed July 1, 1878.



Claim.—A razor-strop case formed with a receptacle, *b*, for the stropping-paste, arranged directly on the extremity of its closed end, and integral with the strop-case, substantially as herein shown and described.

206,083. ELECTRICAL LAMPS. Emil Bürgin, Basle, Switzerland. Filed Apr. 16, 1878.

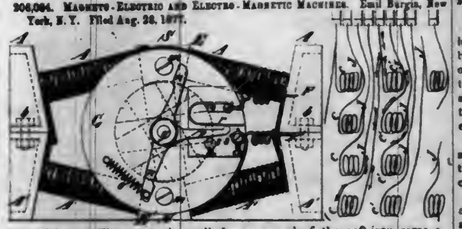


Claim.—1. In an electric lamp, the combination of an electro-magnet, P P', armature N, parallel bars *m m'*, pivoted to the said armature, and the pulley-support Q, attached to said armature, whereby, when the said armature is pulled laterally by the said magnet, the said armature and pulley-support are also lifted by the said magnet, substantially as and for the purpose described.

2. The combination, with the magnet P P, the armature N, and the bars *m m'*, constructed and operating substantially as described, of the adjusting-screw P', attached to the said magnet, substantially as and for the purpose described.

3. The combination, with the vertically-moving bars E E', carrying carbon-holders, of a magnet, P P, an armature, N, bars *m m'*, pivoted at one end to said armature and at the other end to a suitable support, the spring O, wheel V, and pulleys *a a'*, connected with the armature by a support, Q, cords or chains T T', and sheaves *b' b''*, all constructed and operating substantially as and for the purpose specified.

206,084. MAGNETO-ELECTRIC AND ELECTRO-MAGNETIC MACHINES. Emil Bürgin, New York, N. Y. Filed Aug. 26, 1877.

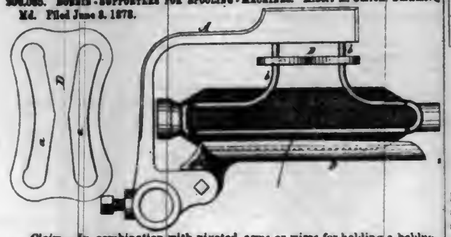


Claim.—1. The generative cylinder composed of the soft-iron cores *a*, arranged in helical relation with the shaft *g*, and wound with the coils *c* and *c'*, said coils being connected with each other successively and with the commutator, and the ranks of coils being connected with each other by junctions J, substantially as and for the purpose specified.

2. The conjoined magnets A A', each having its pole in the middle, and having its parts on each side of said pole inclined toward corresponding parts in the other magnet, said magnets being united at their extremities to give a mutual bracing or truss-like action, to prevent springing against the cores of the generative cylinder, substantially as and for the purpose specified.

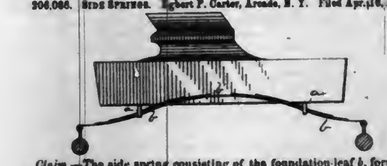
3. The combination, with the poles N and S, having the extensions *m*, of the oscillating armature *n*, having the projecting arm *p*, the stops *s* and *t'*, and the circuit-breaker *r'*, substantially as and for the purpose set forth.

206,085. BOBBIN-SUPPORTERS FOR SPOOLING-MACHINES. Albert H. Carroll, Baltimore, Md. Filed June 3, 1878.



Claim.—In combination with pivoted arms or wires for holding a bobbin, in the manner described, during the spooling operation, a weight attached to said arms or wires to counteract them and adjust itself downward thereon, as described.

206,086. SIDE SPRINGS. Robert P. Carter, Arcade, N. Y. Filed Apr. 10, 1878.



Claim.—The side spring consisting of the foundation-leaf *b*, formed in the shape of an arch, with its feet curved outward, and the sectional reversely-curved leaves *c*, attached closely upon the top of said foundation-leaf at each side of its center *b'*, which is left free, substantially as described.

206,087. FIRE-ESCAPES. Frederick A. Copeland and Robert W. Taylor, La Crosse, Wis., said Taylor assignor to said Copeland. Filed Jan. 20, 1878.

Brief.—A rail extends along the building near the top, and a carriage having an endless rope extending to the ground is caused to travel thereon by means of the endless rope and a chain connecting three chain-pulleys, two of which are on the axles of the carriage-wheels, and one on a wheel carrying the endless rope, the latter wheel and its chain-pulley being connected by a sliding clutch, to operate the chain when it is desired to cause the carriage to travel along the rail. An automatic governor to regulate the descent of the endless rope is used.

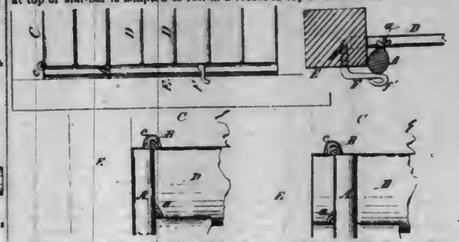
Claim.—1. A fire-escape consisting of a rail fixed to a building, a carriage adapted to travel thereon, and a rope combined with and adapted to rotate the supporting-wheels of the carriage, so as to cause the propulsion of the carriage upon the rail from below, substantially as described.

2. The combination, with the supporting-wheels *e*, of the chain-pulleys *e p*, geared rigidly thereto, the endless chain C', the loose chain-pulley C P, an endless rope and pulley, P, and a clutch for connecting the same with the loose chain-pulley, substantially as and for the purpose described.

3. The flanged pulley P, having teeth d^2, in combination with tube c^4, having pinion b^2 and pivoted weighted arms d^3, the spring g^4, stem f^3, links h^3, and brake-shoes i^3, substantially as and for the purpose described.

206,088. SHUTTERS. Biram C. Davis, Binghamton, N. Y. Filed May 1, 1878.

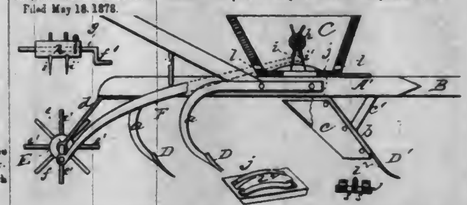
Brief.—A spring-arm with screw-shank in one side of sash-frame presses upon the slat-bar, when rolled under it, and also, by swinging vertically upon its shank, is adapted to hold the slats open at different angles. An offset-staple at top of slat-bar is adapted to roll in a recess in top of sash-frame.



Claim.—1. In a window-blind of rolling slats, the combination, with a laterally-rolling slat-operating bar, of a spring-arm secured in the stile and adapted to allow said bar to be rolled thereunder, and to hold it against the side of the stile and upon the slats, and to hold the latter open at different angles.

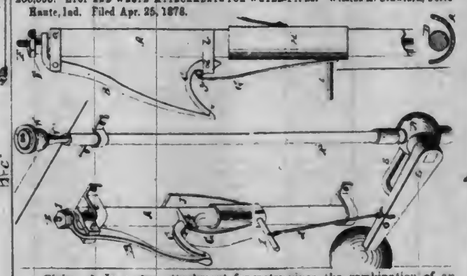
2. The combination, with a laterally-rolling slat connecting bar, of an offset-staple at the top of said bar, adapted to roll in the rail-recess, for the purpose stated.

206,089. CORN AND COTTON PLANTERS. Stephen S. Clary and John P. Clary, Bolton, Tex. Filed May 18, 1878.



Claim.—The combination, with the hopper C, having removable slotted plate *j*, provided with the raised angular rib *j*, forming slots *s*, and the hub *h*, having spaced arms *i i'*, engaging said slots, and the crank-arm *f'*, of the pit-man F, shaft *e*, crank-arm *f*, and hub E, having radial arms *e'*, substantially as specified.

206,090. STOP AND WASTE ATTACHMENTS FOR WATER-PIPES. Witnica A. Crawford, Terre Haute, Ind. Filed Apr. 25, 1878.



Claim.—1. In a stop attachment for water-pipes, the combination of an ebonite and a cast-iron attachment, which, by the variable contraction of the two, will operate a stop valve, for the purposes set forth.

2. The combination of an adjustable releasing thermometer, connecting wire, cord, or chain, weight or spring, and arm with a stop and waste valve, or similar valve or valves, in the manner and for the purposes herein set forth.

3. The combination of an adjustable releasing thermometer, connecting wire, cord, or chain, weight or spring, and arm, and air valve or valves with a stop and waste or other valve or valves, in the manner and for the purposes herein set forth.

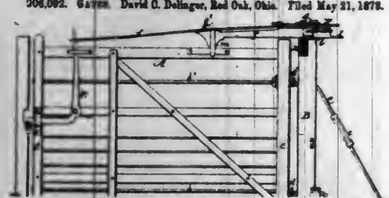
206,091. BORING-MACHINES. Henry C. Cloyd, West Alexandria, Ohio. Filed June 1, 1878.

Brief.—A rack-bar having two oblique tangs, which slide in two obliquely-slotted guides attached to one of the two uprights, engages and disengages a gear-wheel keyed to the driving-shaft, which has its bearings in the sash of the machine. The rack-bar is locked in position by a gravitating-dog, which enters a notch in the edge of the bar.



Claim.—The combination, with the uprights B, its obliquely slotted guides *l*, the sash D, driving-shaft E, having gear G, and the driven shaft C, of the rack F, having oblique tangs *k k'*, engaging said guides, and an edge notch, *n*, and a gravitating-dog, H, substantially as and for the purposes set forth.

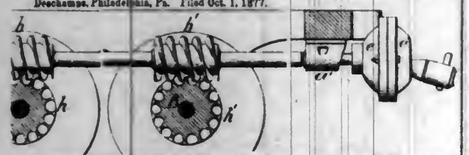
206,092. GATES. David C. Dolinger, Red Oak, Ohio. Filed May 21, 1878.



Claim.—1. The dungeon levers G G, having pendent cords *k*, the chains L *k*, pivoted gate-lever I, having cross-bar or head *l* and arms *n n*, that embrace the upper rail of the gate, and the pivot-post B and gate, all combined and operating as shown and described.

2. In combination with the gate A, the lever I, having the fixed guide *c'*, the rod *f*, attached to latch E, the wires *k k*, lever F, pivoted on stud *g*, and the levers G, all as shown and described, to operate as specified.

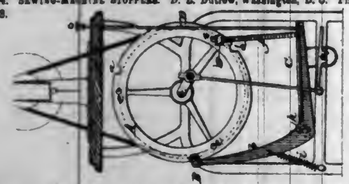
206,093. DRIVING, CUTTING, AND BEARING APPLIANCES FOR RAILWAY-CARS. Francis G. Deschamps, Philadelphia, Pa. Filed Oct. 1, 1877.



Claim.—1. The combination, in a railroad-car or car-truck, of a horizontal shaft, the axle or axles, and intervening worm and worm-wheel gearing; through the medium of which the axle or axles are driven by the shaft, with a universally-jointed coupling, through which the horizontal shaft of one car or truck is driven from that of the adjoining car or truck, all substantially as set forth.

2. The within described coupler and driver, consisting of a socket, *c c'*, on one shaft, a ball, H, on the adjoining shaft, and a sphere, *m*, contained within a chamber formed by a groove in the socket and a coinciding groove in the ball, substantially as described.

206,094. SEWING-MACHINE STOPPERS. D. E. Dutrow, Washington, D. C. Filed Apr. 18, 1878.



Claim.—1. The combination, with a balance or other wheel provided with notches *a a* and intervening spaces, of a buffer, B, treadle C, and rod D, whereby the said buffer may be caused to act upon the periphery of the wheel previous to engaging with the notches thereof, as and for the purposes set forth.

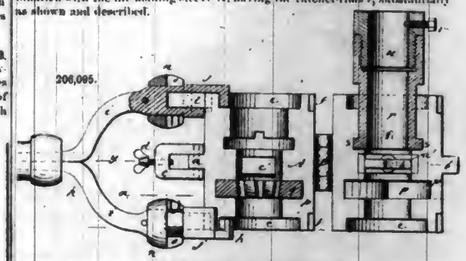
2. The driving-wheel of a sewing-machine provided with pins *c*, in combination with the buffer *g*, operated by mechanism substantially as described, whereby the operator may control the same, substantially as described.

3. The treadle C, carrying the stop B and buffer *g*, in combination with the rod D and arm stop *c*, whereby said stop and buffer may be operated by the arm of the operator, substantially as described.

206,095. MACHINES FOR CUTTING AND THREADING PIPE. Joseph B. Eaton and Charles Latham, Shamokin, Pa.; said Eaton assignor to said Latham. Filed Apr. 2, 1878.

Brief.—Each arm of the forked handle is suitably recessed to fit one of the notched rims of the device, and contains two pawls, either of which may be thrown out of engagement with the teeth of the rims by a collar provided with a cam-lug.

Claim.—The forked handle *h*, having the pawls *l m*, and collars *n*, in combination with the die-holding sleeve A, having the ratchet-rims *c*, substantially as shown and described.



206,096. GRAIN-VENTILATORS. Benjamin F. Elliott, Cedar Rapids, Iowa. Filed Mar. 9, 1878.

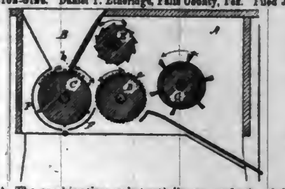


Claim.—1. The combination of ducts B, screen *c*, flue C, and supports *a a'*, substantially as and for the purpose specified.

2. The combination of flue C and ducts B with the outside walls of the bin, having holes *c*, provided with screen *c'*, substantially as and for the purposes set forth.

3. The combination of bin A, having holes *c* and screen *c'*, with ducts B, having screen *c*, and flue C, having holes *c'*, substantially as and for the purposes set forth.

206,097. COTTON-GINS. Daniel T. Etheridge, Falls County, Tex. Filed June 6, 1878.



Claim.—1. The combination, substantially as set forth, of the breaking or thrashing cylinder, the stationary pins or teeth in conjunction with which said cylinder acts, and the saw-cylinder, for joint operation as described.

2. The combination of the breaking or thrashing cylinder, the stationary pins or teeth in conjunction with which said cylinder acts, the saw-cylinder, and the clearing-drum, for operation, as set forth.

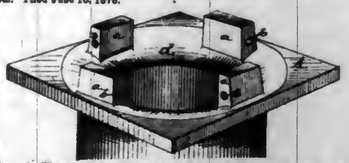
3. In combination, the breaking or thrashing cylinder, the stationary pins or teeth in conjunction with which said cylinder acts, the saw-cylinder, the clearing-drum, the hopper, and the receiving-apron, extending around below the breaking-cylinder, and between said cylinder and the saw-cylinder, as set forth.

4. The combination of the hopper and receiving-apron, the breaking-cylinder and stationary breaking-teeth, the saw-cylinder, the clearing-drum, and the brush-cylinder, under the arrangement and for operation as set forth.

5. In combination with the hopper and the saw-cylinder, the intermediate-feed-cylinder C, arranged to deliver bolls from the hopper to the saw-cylinder, these parts being arranged together for operation as shown and set forth.

6. In combination with the feed-cylinder C, the hopper, and the saw-cylinder, the clearing-drum arranged above and slightly to the rear of the saw-cylinder, so as to occupy a position intermediate between said cylinders, as shown and set forth.

206,098. SHIELDS FOR THE TOPS OF CRUCIBLES OR MELTING-POTS. John Fair, San Francisco, Cal. Filed June 10, 1878.



Claim.—1. The protector formed of fire-proof material, having a central opening, and adapted to rest upon the top edge of a crucible or melting-pot, and project either outwardly or inwardly therefrom, or both.

2. The protector A, having one or more pairs of perforated lugs or ears, substantially as described, and for the purpose set forth.

3. The fire-proof protector A, adapted to rest upon the top edge of a crucible, and provided with a central opening, the wall of which is beveled or inclined, substantially as and for the purpose set forth.

206,099. BAKE-PANS. Lucius G. Fisher, Jr., Chicago, Ill. Filed June 27, 1878.

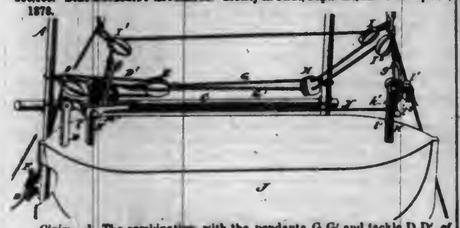
Claim.—1. A jointless baking-dish consisting of a compound sheet composed of paper and a soft pliable facing material secured thereto, substantially as set forth.

2. A dish made from a single sheet of paper, having united thereto a thin facing of soft pliable material capable of being molded with the paper, as set forth.

206,099.



206,100. BOAT-DETACHING APPARATUS. Bradley A. Fiske, Naperville, Ill. Filed Apr. 30, 1878.



Claim.—1. The combination, with the pendants G G' and tackle D D', of the block E, whereby the links *g g'* of the pendants are drawn up to the davit-heads when the boat is detached, substantially as and for the purpose set forth.

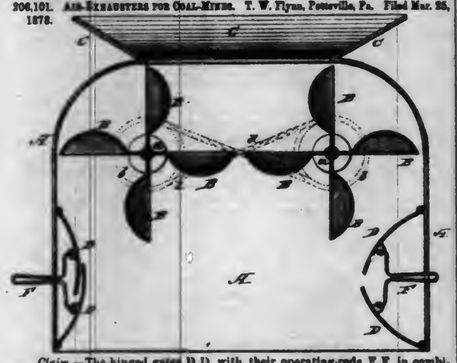
2. The blocks D E and tackle D', in combination with the pendants G G' and blocks I' P, substantially as and for the purpose set forth.

3. The blocks D E and tackle D', in combination with the pendants G *g* G' *g'* and blocks H I P P, arranged as shown and described.

4. In a boat detaching and attaching device, the upright K, having the projection *k*, and pivoted hooked lever L, having the sliding pin P, substantially as and for the purpose set forth.

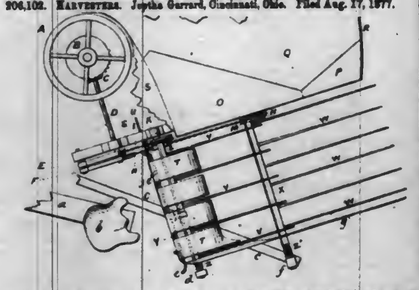
5. In a boat detaching and attaching apparatus, the upright K, having the projections *k k'*, pivoted hooked lever L, having the sliding pin P P and cap *l*, in combination with the rope, chain, or other material, N, and lever *m*, substantially as and for the purpose set forth.

206,101. AIR-EXHAUSTERS FOR COAL-MINES. T. W. Flynn, Pottsville, Pa. Filed Mar. 25, 1878.



Claim.—The hinged gates D D, with their operating-rods F F, in combination with the casing A and fans B B, substantially as and for the purposes herein set forth.

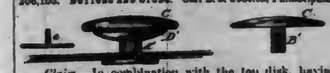
206,102. HARVESTERS. Jeptha Garrard, Cincinnati, Ohio. Filed Aug. 17, 1877.



Claim.—1. The combination of a vibrating platform, consisting of two or more consecutively-acting sections, W V, the inclined slotted guard T, and a seat or support, *b*, for the binder, located facing and in close proximity to the guard T, so as to bring the binder's lap in position to receive the grain, as described.

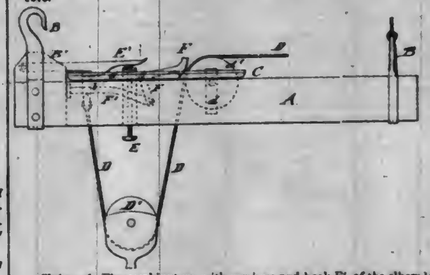
2. The combination of a supplemental platform, composed entirely of vibrating fingers, with a main platform, upon which the grain accumulates in the intervals of motion of the supplemental platform, and from which it is delivered heads foremost upon and transversely to said vibrating fingers in their intervals of rest.

206,103. BUTTONS AND STUDS. Carl E. S. Goderis, Philadelphia, Pa. Filed Apr. 29, 1878.



Claim.—In combination with the top disk, having a projecting screw-threaded shank, and with the bottom disk, provided with a screw-threaded stem, the intermediate detachable cover-clamping disk, constructed with a projecting sleeve, which forms a bearing upon which to button an article, and which surrounds the shank of the top disk, substantially as shown and described.

206,104. HAY ELEVATOR AND CARRIER. Willis F. Goddard, Orwell, Ohio. Filed Feb. 14 1878.

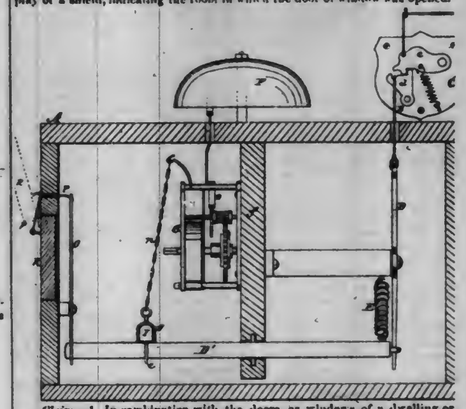


Claim.—1. The combination, with carriage and hook E', of the elbow-lever F and rod F', the former concaved and provided with eccentric clamp end, and the latter having an enlarged head, as and for the purpose specified.

2. The combination, in a hay elevator and carrier, of carriage C, having fulcrumed clamp-lever F and horizontally-guided pivot-rod F', with hoisting and conveying rope D, locking-hook E', and head-block B' of track, to release the clamp-lever from rope for descent of fork, substantially as specified.

206,105. COMBINED BURGLAR-ALARM AND INDICATOR. Chas. E. Hart and Toby Johnson, Lake Lillian, Minn. Filed Mar. 11, 1878.

Brief.—By the opening of one of the doors or windows which are connected with the alarm, a spring-dog releases a catch and a strong spring operates a system of levers, which cause the sounding of the alarm, and the display of a shield, indicating the room in which the door or window was opened.



Claim.—1. In combination with the doors or windows of a dwelling or other building, the wires B', releasing devices C, wires B, levers D and D', springs E, chain *n*, spring *m*, and clock-work and gong, substantially as shown and described, to operate as specified.

2. In combination with the doors or windows of a dwelling or other building, the main wires B' and wires B, the pivoted spring-dog *c* and catch *d*, as shown and described.

3. The combination of the levers D', the bar I, provided with fingers, the spring *m*, chain *n*, and alarm mechanism, all as shown and described.

4. The combination of the vertical levers O, cords P, hinged name-shields R, and horizontal levers D', substantially as shown and described, for the purpose specified.

5. The combination of the name-indicating shields, the alarm mechanism, the levers D', and means for connecting said parts, and wires for connecting with the doors and windows of a building, substantially as shown and described.

206,106. CYLINDER PAPER-MAKING MACHINES. J. Hatch, South Windham, Conn. Filed June 19, 1878.

Claim.—1. The combination, with the stationary part of the vat, the cylinder revolving therein, and the oscillating side pieces B', of the oscillating bottom E, attached to the said side pieces, substantially as and for the purpose described.

2. The combination, with the oscillating bottom E, the attached side pieces B', and the stationary part of a cylinder paper-making machine, of oscillating supports for the said bottom, substantially as and for the purpose specified.

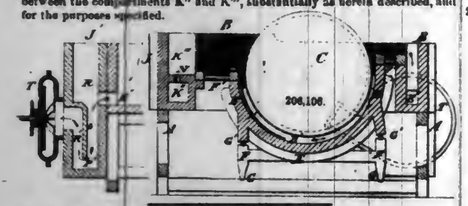
3. The combination, with the oscillating bottom and attached side pieces B and the stationary part of the vat, of the flexible connector F', substantially as and for the purpose set forth.

4. The combination of the cylinder and vat of a cylinder paper-making machine and the adjustable regulating-plate H, for adjusting the sectional dimensions of parts of the channel between the bottom of the said vat and the said cylinder, substantially as and for the purpose specified.

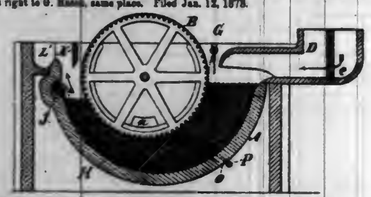
5. The combination, with the receiving-box for the mixed pulp, water, and size, having compartments for the separation of froth, as herein described, of a gate, O, for regulating the head of said mixture in that compartment of the said box from which the said mixture flows to the vat, substantially as and for the purpose described.

6. The combination, with the outlet of a cylinder paper-making machine, and a pump for conveying the overflow of the vat back to a receiving-box, substantially as described, of a box, J', having the compartments R and R', communicating by the passage P', the said compartment R' being connected with the pump, substantially as and for the purpose described.

7. The receiving-box for maintaining a head of mixed pulp and water to cause a current through the vat, as herein described, provided with compartments K K' K'' K''', passages n n', and the perforated bottom or floor N, between the compartments K'' and K''', substantially as herein described, and for the purposes specified.



206,107. PAPER-MAKING MACHINE. J. Hatch, South Windham, Conn., assignor of one-half his right to G. Hatch, same place. Filed Jan. 12, 1878.



Claim.—1. The combination, in a cylinder paper-making machine, with the vat and cylinder of the same, of a receiver of water and pulp, higher than the general level of the pulp and water in the vat, in which a head is maintained for maintaining a current in the direction in which the cylinder revolves, substantially as and for the purpose set forth.

2. The combination of the blanket K and eccentric-roller J, for producing uniform velocity of current and regulating the velocity thereof, substantially as herein described.

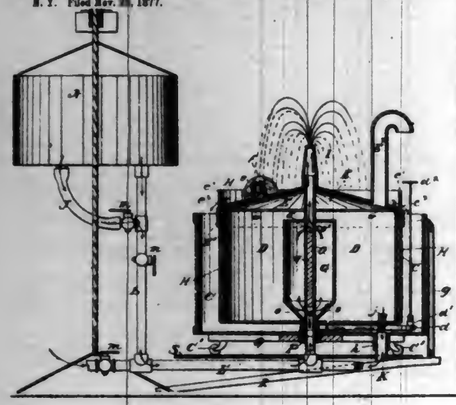
3. The combination, with the pulp and water receiving box D, of the perforated septum or partition E, for distributing the pulp equally to the cylinder, substantially as and for the purpose set forth.

4. The combination, with the vat A and cylinder B, of the apron G, for preventing the deposit of pulp and formation of paper on the cylinder before entering the current, substantially as herein described.

5. The combination, with the vat A and cylinder B, of the partition or dividing bar K, for preventing the drawing of the web from the emerging portion of the cylinder, substantially as herein described.

6. The combination, with the vat of a cylinder paper-making machine, of one or more oscillating pieces in the sides of said vat, for producing lateral to-and-fro motion of the water and pulp in said vat, substantially as and for the purpose specified.

206,108. MILK-COOLING APPARATUS. Varnum P. Hill, Hannibal, and John G. Hill, Mexico, N. Y. Filed Nov. 21, 1877.



Claim.—1. The combination of the central tube I with the pipes L L', leading from the water-reservoir A, and communicating with the central cooler G through the bottom of the milk-pan.

2. In a milk-pan, the combination of an internal milk-box with an external cooling-pan extending up level with the cover, and a jet or spray tube extending through the center and discharging on top of the box, substantially as shown and described.

3. The combination, with the cooling-pan C, of the cover E, having the upwardly-extending rim e', perforated at e², as and for the purpose set forth.

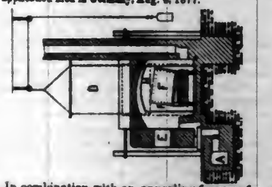
4. The milk-pan cover E, having short tubes s, covered by the glass caps f, for excluding the air and condensing the vapor arising from the milk, said vapor, when condensed, running down the sides of the caps onto the cover E, as explained.

5. In a milk-cooler, the central cooling-chamber G, provided with an obstructed tube, O, and with water-inlets o and outlets o', substantially as shown and described.

6. The internally-tapped nut P, arms Q, and casters C', in combination with a milk-pan, as shown and described.

7. A central supply-tube, O, having at its lower end a U-shaped tube, d, provided with a faucet, d', and handle d², substantially as shown and described.

206,109. GLASS ANNEALING AND WORKING FURNACES. Wilhelm Hirsch, Radeberg, near Dresden, Saxony. Filed June 6, 1878. Patented in France, Aug. 13, 1877, and in England, Jan. 23, 1878; application filed in Germany, Aug. 6, 1877.



Claim.—1. In combination with an annealing-furnace for glassware, consisting of a single chamber having working-holes E, the boxes or receptacles F, placed on trucks G, substantially as and for the purpose stated.

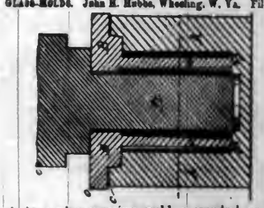
2. The combination, with the chamber of an annealing-furnace, of the trucks G, supporting the boxes or receptacles F thereon in an inclined position, substantially as described.

206,110. COIN-HOLDER. D. Gardner Hitchcock, Syracuse, N. Y., assignor of one-half his right to Henry Clark, same place. Filed June 27, 1878.



Claim.—In combination with the circular ends a a, constructed of sufficient width for forming a gumming-surface, the frame c, having a continuous longitudinal slot, c', with each other, and the transparent backing secured to the circular ends a a, the whole device constituting a coin-package, substantially as herein set forth, and for the purposes specified.

206,111. GLASS-MOLDS. John H. Hobbs, Wheeling, W. Va. Filed July 1, 1878.



Claim.—1. In a glass-pressing mold, a mandrel or mandrels arranged within the mold-cavity alongside the path of the pressing-plunger, and firmly held or supported each at its lower end at the time the heaviest operative pressure is applied, in combination with the plunger which does the pressing, substantially as set forth.

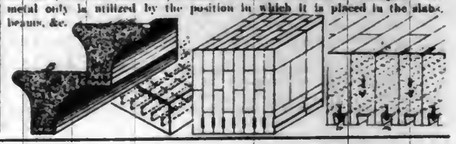
2. In combination with a pressing-mold and plunger, a ring-plate carrying one or more mandrels, which shall be stationary between plunger and mold-face while the pressing is being done, substantially as set forth.

3. One or more stationary mandrels firmly held or supported at both ends in the cavity of a pressing-mold, alongside the path of the plunger, in combination with plunger and mold, substantially as set forth.

4. The combination of mold, plunger, mandrels, and guide or index, substantially as set forth.

206,112. COMPOSITION FLOORS, ROOFS, PAVEMENTS, &c. Thaddeus Hyatt, New York, N. Y., assignor to Elizabeth A. L. Hyatt, trustee for Rosie L. Hyatt, Thaddeus F. Hyatt, Clotilde S. Hyatt, James H. L. Hyatt, and Annie F. Hyatt. Filed June 21, 1876.

Brief.—Hydraulic cements and concretes are combined with metal bars and rods, so as to form slabs, beams, and arches. The tensile strength of the metal only is utilized by the position in which it is placed in the slabs, beams, &c.



Claim.—The manufacture, use, and application of the aforesaid materials, and the modes, means, and processes connected therewith, when the same are employed for the purposes and in the manner substantially as hereinbefore set forth, and illustrated by my drawings.

206,113. CRUCKS. William A. Ingalls, Boston, Mass. Filed May 24, 1878.

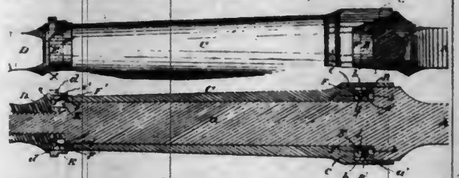


Claim.—1. The socketed, slotted, and threaded body B, containing the jaws A, and the spiral surfaces i, pertaining to said jaws, combined with the internally threaded locket D, provided with the ring f and projections g, as set forth.

2. The combination of the locket D, ring f, projections g, slotted and socketed body B, and jaws A, having extensions A' and spiral surfaces i, all as set forth.

3. The jaws A and the inclined spiral surfaces i, pertaining thereto, combined with the longitudinally movable guide projections g, as set forth.

206,114. VEHICLE-AXLE BOXES. Harry L. Isham, Plattsburg, N. Y. Filed June 11, 1878.



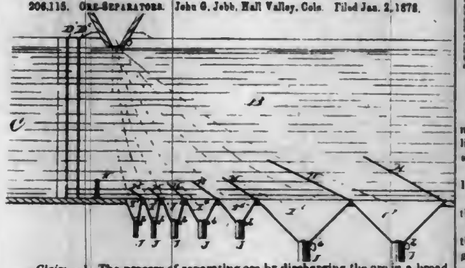
Claim.—1. A rubber cushion-ring, B, with a leather or other suitable washer, F, in combination with the axle A a, having a recess, a', turned in its shoulder, substantially as and for the purpose set forth.

2. The combination, with the axle A a, having the recess or groove a', and box C, of the rubber ring or cushion B, having a channel, b, and perforations b', substantially as and for the purpose set forth.

3. The combination of a channeled perforated rubber ring, B b b', and leather or other suitable washer F, with or without the channel f and perforations f', with the axle A a, having the recess a', and box C, substantially as and for the purpose set forth.

4. The rubber cushion E, having a channel, e, and perforations e', in combination with the nut D, having a recess, d', substantially as and for the purpose set forth.

206,115. ORE-SEPARATORS. John O. Jobb, Hall Valley, Colo. Filed Jan. 2, 1878.



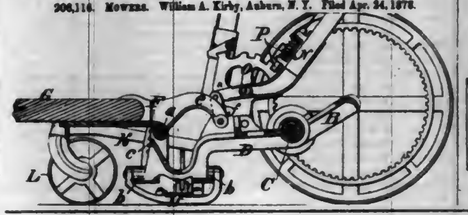
Claim.—1. The process of separating ore by discharging the ore in a broad thin sheet into a current of water of uniform depth, whereby the varying specific gravity of the different minerals under treatment and the propulsive force of the water are utilized to effect the separation, substantially as set forth.

2. An ore-separating tank having its top and bottom parallel on the inside, and the bottom provided with a series of graduated traps or traps of varying sizes, a hopper on top arranged to discharge the ore in a broad thin sheet, and suitable inlet and outlet for a steady stream of water of uniform depth, for the purposes herein set forth.

3. The combination of the separating-tank B and the gates D' D², &c., provided with graduated openings and arranged at the inlet to the tank, for the purposes set forth.

4. The lids or valves H, in combination with the traps, for the purposes set forth.

206,116. MOWERS. William A. Kirby, Auburn, N. Y. Filed Apr. 24, 1878.



Claim.—1. In a moving machine, the combination of the main frame D, hinged to the axle-frame B and tongue G, and provided with the cutter-bar, and a caster-wheel, L, attached to said frame D in advance of the inner shoe, as described and shown.

2. The main frame provided with a slotted perforated arm, c, and arm d, in combination with a pivoted bar having the caster-wheel attached, and a transverse pin to limit the upward movement of said bar on its pivot.

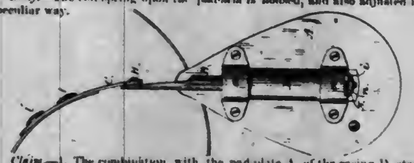
3. In combination with the main frame D, hinged to the tongue and axle-frame, and provided with the cutter-bar, a caster-wheel having a free downward but limited upward movement in relation to the main frame, and connected thereto at or near the hinge of the finger-bar, substantially as shown and described.

4. The combination of the hinged axle-frame B, tongue G, main frame D, hinged to both the axle-frame and the tongue, and provided with the cutter-bar, and a hand-lever mounted on said main frame and connected with the tongue, substantially as shown.

5. In a jointed frame machine such as shown, the tongue-plate pivoted to the main frame, on which the cutter is mounted, and provided with a backwardly-extending arm, and the hand-lever mounted on said main frame and connected with the tongue-extension, as described and shown.

206,117. HERNIA-TRUSSES. Heinrich Leewy, Berlin, Germany. Filed Nov. 6, 1877.

Brief.—The coil spring upon the pad-arm is housed, and also adjusted in a peculiar way.



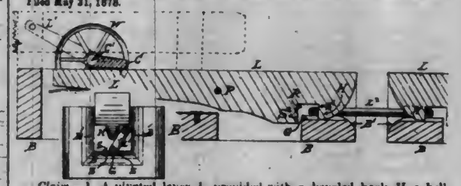
Claim.—1. The combination, with the pad-plate A, of the casing D, stem B, and spring F, substantially as described.

2. The combination, with the spring F and the stem B, which is adapted to oscillate within the casing D, of the washer W and recess a, for governing the movements of said stem B, substantially as described.

206,118. PAINTS. Martin L. Maloney, Washington, D. C., assignor of one-half his right to Jackson Prouty, same place. Filed June 26, 1878.

Claim.—A paint composed of a varnish of linseed-oil, shellac, and driers, to which are subsequently added asphalt, shellac, copal, dammar, sugar of lead, red lead, crude turpentine, Venetian red, and spirits of turpentine, in about the proportions stated, the whole being well dissolved and combined by heat, to form my improved paint.

206,119. CAR-COUPLINGS. Edward H. McGinty and Francis Mead, Centre Junction, Iowa. Filed May 31, 1878.



Claim.—1. A pivoted lever, L, provided with a beveled hook, H, a bell-mouthed buffer and draw-bar, provided with a longitudinal groove in its lower lip, and a loop-link, L', all in combination, substantially as shown and described.

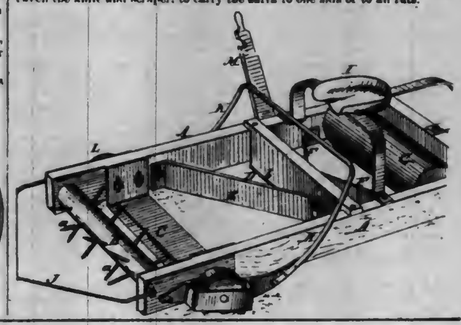
2. The hook H, bell-mouthed draw-bar B, with groove G, and loop-link L', in combination.

3. The bell-mouthed buffer and draw-bar B, provided in its lower lip with the groove G, for engaging the link L' in the act of uncoupling.

4. The bell-mouthed buffer and draw-bar B, provided in its lower lip with the shoulders S S, for the purpose of supporting the link L', and also with the groove G, for the purpose of receiving the bill of a hook, H.

206,120. ROAD-GRADERS. Benj. C. Meguier, Osage, Iowa. Filed May 27, 1878.

Brief.—A frame carrying a revolving pick or toothed roller at its front to loosen the earth, a crown knife or blade in the rear of the pick to cut under the surface and leave the earth in condition for the scraper, and a compressing-roller in the rear. A wing or share is arranged diagonally of the frame, between the knife and scraper, to carry the earth to one side or to fill ruts.

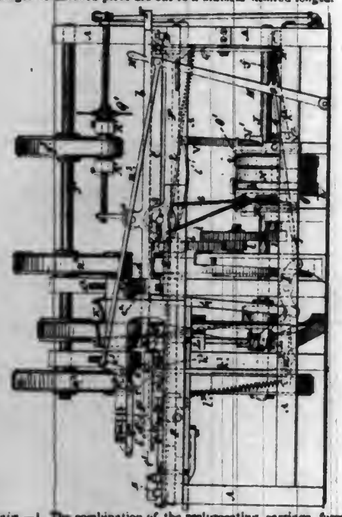


Claim.—1. The grading and leveling machine consisting of the front pick B *a*, the cross blade or knife C, the cross-scraper D, and the rear pressing and hardening roll G, all constructed and arranged to operate substantially as herein set forth.

2. In combination with the front pick, the cross blade or knife, and the cross-scraper, the intermediate wing or share E, for the purpose specified.

206,121. TENONING-MACHINES. Michael J. Mellina, New York, N. Y. Filed June 6, 1878.

Brief.—A plank or board is passed lengthwise through the machine, and, at desired spaces, double flat tenons are produced, and the stuff is cut in two in the middle of the double tenon, so as to produce pieces of uniform length, which have tenons at each end. The shoulders of the tenons are automatically beveled, and the remnants of the stuff which are too short to furnish the desired length of tenoned piece are cut to a uniform desired length.



Claim.—1. The combination of the reciprocating carriage, formed in sections to leave a break or opening in it, with upper and lower rotating cutter-heads, arranged in relation with said carriage-sections, substantially as and for the purpose specified.

2. The combination of the saw D^1, for dividing the double tenon, with the cutter-heads E E^1, constructed as described, and the reciprocating divided carriage C C^1, substantially as specified.

3. The combination, with the section C of the reciprocating carriage, of the feed-rollers D D^1, the half-clutch *p*, attached to one of said rollers, and the rotating half-chuck *q*, having a fixed relation relatively to said carriage, substantially as specified.

4. The combination, with the carriage-sections C C^1, the cutter-heads E E^1, having duplicate rows of cutters *e e'*, and the stop *s*, of the stop-lever G, capable of motion in direction of the length of the carriage, and adjustable up and down between the carriage-sections, essentially as and for the purpose described.

5. The adjustable and yielding gage A^1, attached to the carriage-section C^1, in combination with the carriage-section C and the rotating cutter-heads E E^1, substantially as specified.

6. The sliding bar S, in combination with the yielding gage A^1, the stop-lever G, the taut and slack cords *t t'*, attached to said bar, and the belt-shifting lever V, substantially as and for the purposes described.

7. The combination, with the reciprocating carriage C C^1, of the reversely-operating loose pulleys O O^1, the intermediate flat pulley N, with its shaft *k*, the gears *l*, connecting said shaft with the pinions *m*, by which the carriage is moved backward and forward, the belt-shifting lever V, having attached to it a sliding bar, V^1, for controlling one of the belts by which motion is given to the carriage, the levers G G^1, controlling the other belt, by which the motion of the carriage is reversed, and the hooked coupling-lever F, essentially as and for the purposes specified.

8. The spring hook or clearer I^1, in combination with the reciprocating carriage C C^1, the cutter-heads E E^1, and the saw D^1, by which the plank is cut up into tenoned sections, essentially as described.

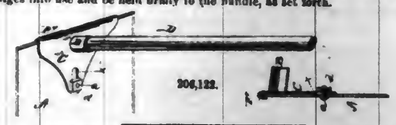
9. The hinged rising and falling outer guiding-strip b^1 on the carriage-section C^1, in combination with the rising and falling gate T^1, and means for raising and lowering said strip and gate, substantially as specified.

10. The combination, with the reciprocating carriage C C^1 and the upper and lower rotating cutter-heads E E^1, of the rotating cutter K^1, carried by a laterally-swinging frame or support, and means applied to the carriage for automatically adjusting said cutter-head K^1 successively into opposite lateral positions, whereby it is made to cut a dovetail or bevel on opposite ends of the double tenon as the carriage is moved backward and forward, essentially as described.

11. The saw Q', made capable of adjustment up or down, for regulating the length of the remnant and squaring the rear end of the plank, in combination with the reciprocating carriage C C^1, the adjustable gage A^1, the rotating cutter-heads E E^1, and the saw D^1, for dividing the double tenon, substantially as specified.

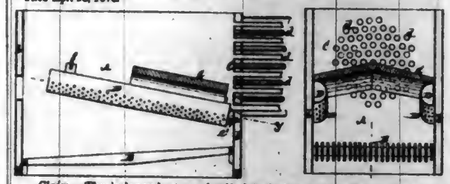
206,122. HOES. Able R. Hiron, Kansas City, Mo. Filed May 15, 1878.

Claim.—In combination with a square hoe-blade, A, having a central bolt-hole, the plate C, formed at one end with the elongated catch or hook F and at the other end with the slot *x*, and having the socket B on its face and the fastening-bolt *a*, whereby the blade can be changed to bring either of its four edges into use and be held firmly to the handle, as set forth.



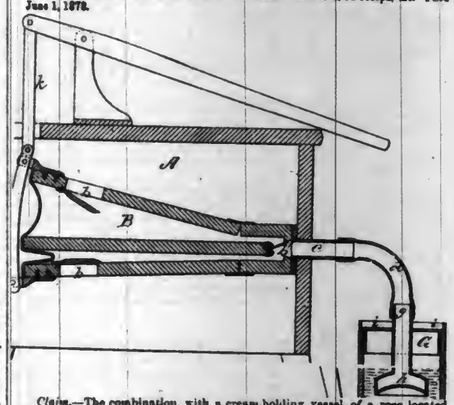
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206,123. SMOKE-CONSUMING FURNACES FOR BOILERS. Daniel S. Olds, Stamford, Conn. Filed Apr. 12, 1878.



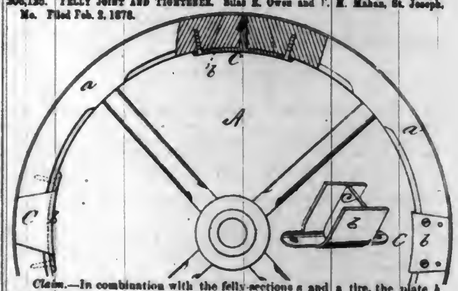
Claim.—The independent semi-cylindrical pipes or distributers D, having nozzles *c*, and constructed with flat sides to lie against the sides of the fire-box, and having lugs, whereby they may be attached by bolts or hooks / in an ordinary boiler, as and for the purpose described.

206,124. ATMOSPHERIC CHURNS. Silas R. Owen and P. M. Mahan, St. Joseph, Mo. Filed June 1, 1878.



Claim.—The combination, with a cream-holding vessel, of a rose located therein, a blower or bellows, and a pipe connecting the rose and bellows, whereby air is forced within the vessel, substantially as specified.

206,125. FELLY JOINT AND TIGHTENER. Silas R. Owen and P. M. Mahan, St. Joseph, Mo. Filed Feb. 2, 1878.



Claim.—In combination with the felly-sections *a* and a tire, the plate *b*, having *b* transverse wedge, *c*, formed entire with said plate, adapted to be driven between the felly-sections and receive their ends in the plate *b*, said plate being permanently secured to the felly, substantially as specified.

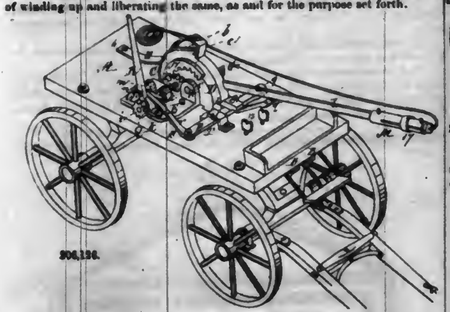
206,126. APPARATUS FOR PROJECTING LIFE-SAVING LINES, &c. Lewin A. Peck, Boston, Mass. Filed Dec. 10, 1877.

Claim.—1. The pinion P, with its shaft *i* and a means of rotating the same, in combination with the driving-wheel D, provided with a toothed rack, N, for the purpose of drawing back the projectile-arm L against the resistance of its actuating-spring, substantially as described.

2. The spring-catch T, consisting of the pivoted arm *p*, spring *q*, and wedge-shaped projection V, in combination with the notched driving-wheel D, substantially as and for the purpose set forth.

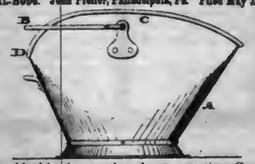
3. The arm *r*, in combination with the spring-catch T and lever R, for releasing the driving-wheel and liberating the actuating-power, substantially as and for the purpose described.

4. One or more actuating-springs, B, of the form and arrangement shown, in combination with the connecting-strap C and driving-wheel D, and a means of winding up and liberating the same, as and for the purpose set forth.



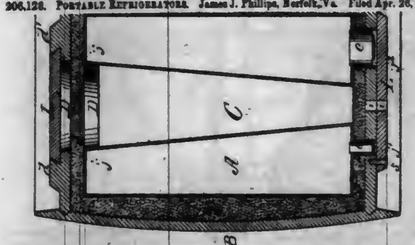
206,126.

206,127. COAL-HODS. John Pfeifer, Philadelphia, Pa. Filed May 21, 1878.



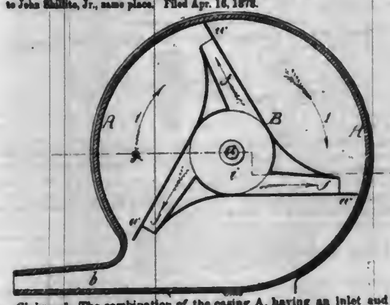
Claim.—The coal-hod having overhanging top portions C, extending from front to rear thereof, and a tight-lined rear portion, D, whose upper edge is lower than the resting-place of the bail B, substantially as and for the purpose set forth.

206,128. PORTABLE REFRIGERATORS. James J. Phillips, Norfolk, Va. Filed Apr. 26, 1878.



Claim.—The combination, with a can, *A*, having a central ice-chamber, C^1, and apile and stopper necks *a b*, of an outside casing, B, having in one end the openings f^1 f^2, to receive the necks, and in the other an opening, *f*, to receive the plug D^1, the plug D under plug D^1 closing the ice-chamber C^1, the stopples *e e'*, and the slides L, substantially as specified.

206,129. FAN-BLOWERS. Ira M. Phelps, Philadelphia, Pa., assignor of one-half his right to John Shillito, Jr., same place. Filed Apr. 16, 1878.



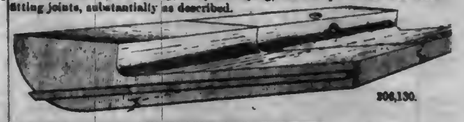
Claim.—1. The combination of the casing A, having an inlet and outlet, with the wheel B, having a hollow hub, *i*, and hollow arms *f*, which afford communication between the hollow hub and the interior of the casing, and the fronts of which form or carry fanning-blades, all substantially as set forth.

2. The combination of the wheel B and its hollow arms *f*, open at the outer ends, with blades *w*, projecting beyond the ends of the arms, as specified.

3. The combination of the wheel B, having a hollow hub, *i*, the casing A, and the annular flange *m* around the inlet-opening, as set forth.

206,130. COMBINED CURB-STONE AND GUTTER FOR STREETS. Theodore W. Phinney, Chicago, Ill. Filed Apr. 13, 1878.

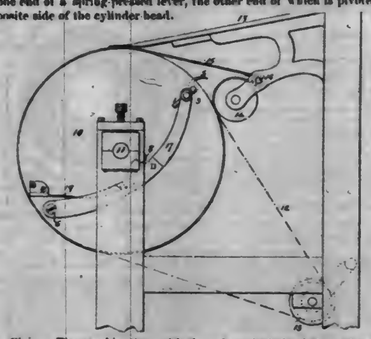
Claim.—As a new article of manufacture, a combined curb-stone and gutter, A, molded in sections from concrete, which are then dried or hardened to form a finished article, like tiling, ready for laying, and are provided with close-fitting joints, substantially as described.



206,130.

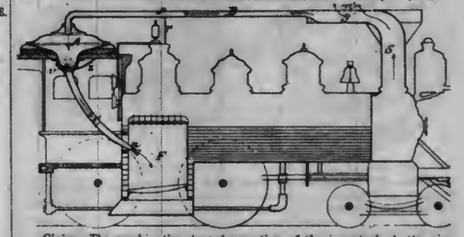
206,131. GRIPER-MOTIONS FOR PRINTING-MACHINES. George Proctor, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Jan. 24, 1878.

Brief.—On the crank-arm of the griper-shaft works a sliding hub pivoted to one end of a spring-pressed lever, the other end of which is pivoted on the opposite side of the cylinder-head.



Claim.—The combination, with the griper-shaft 3, of the rock-arm 1, hub 2, and controlling-lever 17, substantially as described.

206,132. SPARK-ARRESTERS. David B. Proctor, Gloucester, Mass. Filed Apr. 22, 1878.



Claim.—The combination, in a locomotive, of the receptacle A, the pipe B, connecting the smoke-stack with said receptacle, and the pipe C, connecting said receptacle with the fire-box, and adapted to be shut off or disconnected from the receptacle, all as set forth.

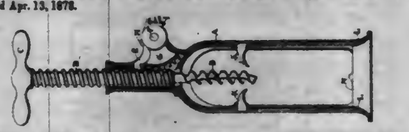
206,133. FEED-WATER HEATERS. John J. Ralya, Cleveland, Ohio. Filed June 17, 1878.



Claim.—1. In combination with the exhaust-steam pipe B, the open-ended water-supply pipe C, passing through the said exhaust-pipe, the chamber, and the cup or pocket D, constructed and arranged substantially as and for the purpose set forth.

2. The cover or cap E, having connected therewith portions of the exhaust-pipe B and of the water-pipe C, entering into the exhaust-pipe, and also the cup or pocket D, and whereby all these parts may be removed together, when constructed and arranged substantially as shown and described.

206,134. CORE-EXTRACTORS. John H. Richardson and William J. Taylor, Marinette, Wis. Filed Apr. 13, 1878.



Claim.—1. The casing A, having its lower end made flaring, and provided with packing L, in combination with cork-extracting devices applied thereto, for the purposes herein set forth.

2. The combination of the casing A, screw B, with worm D, and the toothed segmental lever D, substantially as and for the purposes herein set forth.

3. The knives or hooks K K, in combination with the casing A and the screw or worm D, for the purposes herein set forth.

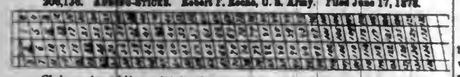
206,135. COOLING AND FREEZING APPARATUS. John Ring, St. Louis, Mo. Filed May 28, 1878.

Brief.—The space between the two concentric shells is filled with a metallic packing having ragged edges, to assist the vaporization of the volatile fluid, which enters at the hollow gudgeons, and is carried and distributed over the packing as the cylinder revolves by means of the troughs J. Some non-congealable is placed in the trough B.



Claim.—The combination of the two concentric shells G H, lifting-troughs J, hollow gudgeons C C, cross-pipes C' C', and trough B, substantially as and for the purposes set forth.

206,136. ADDING-STICKS. Robert F. Roche, U. S. Army. Filed June 17, 1878.



Claim.—An adding-stick having two spiral rows of figures from 0 upward upon its periphery, with the figures so coincident as to form also longitudinal rows, substantially as described.

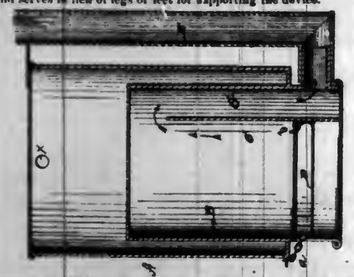
206,137. BAG-HOLDERS. Silas Robbins, Mooresville, Ohio. Filed June 6, 1878.



Claim.—In a bag-holder, the combination, with the cross shaped bracket, having the pins F fixed in its horizontal part B, of the hoop D, pivoted thereto, as shown and described, to operate as specified.

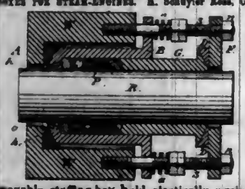
206,138. FEED-COOKERS. Orrin L. Sturtevant, Ogden, Iowa. Filed May 29, 1878.

Brief.—The open-bottomed fire-box extends below the bottom of the water-tank, and serves in lieu of legs or feet for supporting the device.



Claim.—The combination of the water-tight tank A, the closed-top and open-bottom cylinder B, projecting within the tank, and provided with a partition, C, forming a diving-flue, ti, and the exit-pipe E, all constructed substantially as set forth.

206,139. STUFFING-BOXES FOR STEAM-ENGINES. H. Schuyler Ross, Chicago, Ill. Filed Nov. 16, 1877.



Claim.—1. A movable stuffing-box held elastically against a ring with flat and curved faces, in combination with an adjustable external gland.

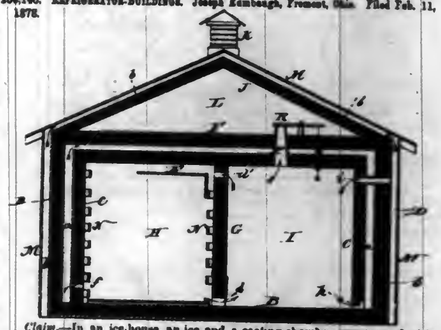
2. A movable stuffing-box bearing against a ring with flat and curved faces, combined with an external adjustable gland, having also a flat and curved joint-ring, for the purpose set forth.

3. In a movable stuffing-box, an external adjustable gland, G, and flange F, having between them a flat and curved joint-ring, D, for the purpose set forth.

4. In a movable stuffing-box, B, having an external adjustable gland, G, the spring or springs *a a*, bearing against the flange of said box.

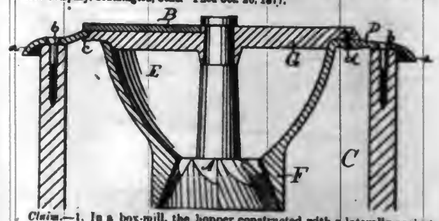
5. A steam-packing apparatus consisting of a movable box, B, gland G, flange F, and rings A and D, in which the pressure maintained by the gland against the packing is exerted through the packing and upon the joint between the box B and the cylinder-head.

206,140. REFRIGERATOR-BUILDINGS. Joseph Rambaugh, Fremont, Ohio. Filed Feb. 11, 1878.



Claim.—In an ice-house, an ice and a cooling chamber, constructed with two sets of double walls, with continuous air-line between them, a double roof with ventilator, an exterior casing open at bottom, forming a continuous flue around the entire ice-house, and passage *d*, *d'*, *f*, *h*, and *i*, substantially as shown and described, and for the purposes herein set forth.

206,141. COFFEE AND SPICE MILLS. Ames Shepard, Plantsville, assignor to Peck, Stow & Wilcox Company, Southington, Conn. Filed Oct. 26, 1877.



Claim.—1. In a box-mill, the hopper constructed with a laterally-projecting flange, which forms the top of the mill, and adapted for securing it to the box, substantially as described, and for the purpose specified.

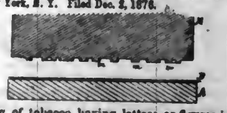
2. In a coffee or spice mill, the combination of the following elements, viz: first, the hopper formed with an outwardly-turned flange or box-top at its upper edge, and provided with recesses on two opposite sides; second, the cross-bar provided with projections at each end, and at one end with the hook *c*, which takes under the outwardly-turned flange of the hopper; and, third, a single screw or rivet which takes into the flange of the hopper at the end of the cross-bar which is opposite the hook, substantially as described, and for the purpose specified.

206,142. COMBINED GUM-BOX AND SPINNING-TOY. Frank Sibley and Jas. Holmwood, Jr., Buffalo, N. Y. Filed June 17, 1878.



Claim.—A combined box and spinning-top composed of the circular box A and cover C, provided respectively with central openings *d c*, and the peg D, substantially as shown and described.

206,143. MARKING OF PLUG-TOBACCO. Chas. Sieller, Jersey City, N. J., assignor to P. Lorillard & Co., New York, N. Y. Filed Dec. 2, 1878.



Claim.—A plug of tobacco having letters or figures impressed into it of tobacco of a different color or shade from the body of the plug, as herein specified.

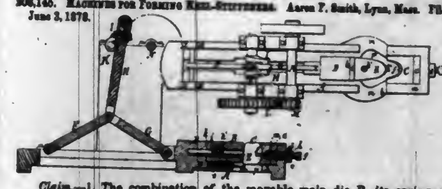
206,144. MODES OF PREVENTING LOSS OF HEAT IN CHARGING GAS-RETORTS. James Slade, Yonkers, N. Y. Filed July 3, 1878.

Claim.—In the manufacture of illuminating-gas, using the ordinary bench of retorts, the mode of preventing loss of heat at the time when the coal is throwing off gas the fastest, which consists in charging the retorts in each bench successively at stated intervals, the retort undergoing the operation of charging being the one farthest removed from the retort or retorts last charged.



206,144.

206,145. MACHINES FOR FORMING KEEL-STUFFERS. Aaron F. Smith, Lynn, Mass. Filed June 3, 1878.



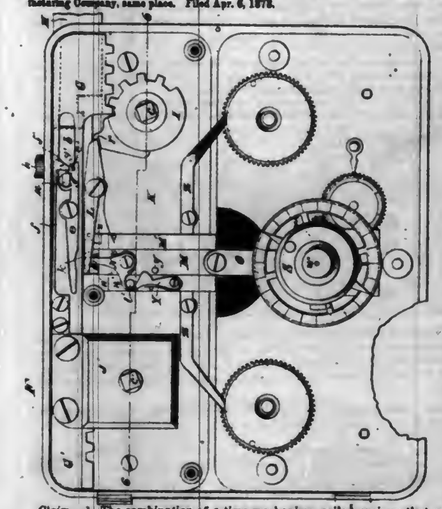
Claim.—1. The combination of the movable main die B, its spring or elastic cushion *i*, the auxiliary or stretching die E, the slide or carriage D, and the female die C, all being applied and to operate substantially as set forth.

2. The combination of the discharger *f* and its spring *e* and holding-screw *h* with the three dies B C E, the carrier D, and the elastic cushion *c*, all being applied and to operate substantially as explained.

3. The combination of the central counter-blank movable supporter *m* and its operative spring *n* with the carriage and the dies B C, arranged and applied as set forth.

4. The chambered holding-screw *d*, provided with the spring *e*, adjusting-screw *g*, and ejector *f*, in combination with the die C and its elastic spring or cushion *c*, all as set forth.

206,146. TIME-LOCKS. Emery Stockwell, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Apr. 6, 1878.



Claim.—1. The combination of a time mechanism, coiled springs that are wound by a key, one for casting and the other for retracting bolt-work, and mechanism connecting with independent bolt-work, all so constructed and arranged that the operation of winding the springs places the bolt-work in the proper position for shutting the door, substantially as described.

2. The combination, in a time-lock, of a time mechanism, a mechanism to automatically cast and retract independent bolt-work, a mechanism for holding and casting the bolt-work by snubbing action, and a projecting part on the exterior of the lock-case, which, when operated by hand, shifts the fastening from the automatic bolt-work-actuating mechanism to the snubbing-acting mechanism, substantially as described.

3. The combination of the rack-bars, the spring-barrels, and the bolt-work, substantially as described.

4. The combination of the rack-bars, the spring-barrels, and the spring-pawl, substantially as described.

5. The combination of the rack-bars, the spring-barrels, the spring-pawl, and the hook-lever, substantially as described.

6. The combination of the rack-bars, the spring-barrels, the spring-pawl, the hook-lever, and the spring catch and plunger, substantially as described.

7. The combination of the rack-bars, the left-hand barrel moving with the front bar, the right-hand barrel for moving the front bar, and the stud and slot loosely connecting the bars, substantially as described.

8. The combination of the spring-plunger, the spring-catch, the hook-lever, and the stud *a*, for operating together substantially as described.

9. The combination of the stud *a*, the hook-lever, the spring-latch, and the reciprocating slide-bar, substantially as described.

10. The combination of the right-hand spring-barrel, the spring-pawl, the spring-latch, and the reciprocating slide-bar, substantially as described.

11. The combination of the slide-bar, the spring-latch, the pin *b'*, the spring-pawl, and the hook-lever, substantially as described.

12. The combination of the slide-bar, the spring-latch, the friction-spring stop, the pin 7, the stirrup, and the seventh-day cam, substantially as described.

13. The combination of the slide-bar and the stirrup having a central aperture, provided with projections, substantially as described.

14. The stirrup composed of two parts, pivoted together at the top, held together at the bottom by a yielding spring, and having a central aperture provided with projections pointing in opposite directions, in combination with cam Q, substantially as described.

15. The sleeve P, provided with cam Q and radial and transverse slots, substantially as described.

16. The combination of the sleeve, the stirrup, and the seventh-day cam, and pin 7, substantially as described.

17. The combination of the dial and arbor, rigidly connected, and the pointer-disk and sleeve and cam, rigidly connected, and capable of simultaneous adjustment with respect to the dial and arbor, substantially as described.

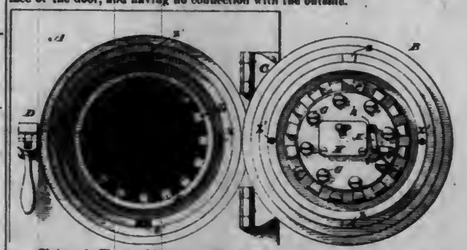
18. The combination of the supplemental unlocking mechanism with the reciprocating link *z*, spring-pawl, and right-hand spring-barrel, substantially as described.

19. The combination of the front rack-bar for carrying the left-hand spring-barrel, the winding-arbors of the spring-barrels, and the key-apertures through the lock-case door, so arranged that the right-hand barrel must be wound first, and that the winding of it will bring the arbor of the left-hand barrel opposite the left-hand key-aperture, substantially as described.

20. The combination of the bolt-work, the grooved friction-rollers, the roller-sockets, and the shouldered caps and screw-bolts, substantially as described.

206,147. SAFE AND VAULT FASTENINGS. Emery Stockwell, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Mar. 16, 1878.

Brief.—A circular centrally-pivoted rotary bolt-work is combined with a non-rotating safe-door and time-lock, the bolt-work being applied to the inner face of the door, and having no connection with the outside.



Claim.—1. The combination, with a non-rotating safe or vault door, of a centrally-pivoted separate rotating bolt-work and a time-lock connected with the bolt-work by intermediate mechanism, substantially as described, by which the bolt-work may be alternately cast and retracted at predetermined times, the bolt-work being applied to the inner face of the door, so as to have no connection by a spindle or otherwise with its outer face, substantially as described.

2. The combination, with a non-rotating safe or vault door, of a centrally-pivoted separate rotating bolt-work and a cap-plate secured to the inner face of the door over the body of the bolt-work, so as to back it up and afford a seat for a time-lock, substantially as described.

3. The combination of a centrally-pivoted rotating bolt-work, a circular door, and fixed pins and pin-holes *x* and *x'*, or interlocking lugs and slots, whereby the door is secured against turning to rotate the bolt-work and effect unlocking, substantially as described.

4. The combination, with a circular non-rotating safe or vault door, of a concentric centrally-pivoted separate rotating bolt-work applied to the inner face of the door, so as to have no connection with its outer face, substantially as described.

206,148. OATMEAL-MACHINES. Robert Stuart, Cedar Rapids, Iowa. Filed June 24, 1878.



Claim.—As an improvement in machines for preparing oats and other cereals for table use, the combination of two perforated metal plates arranged to move upon or over each other, and each provided with perforations which coincide with the perforations of the other plate at one point of the movement, substantially as and for the purpose specified.

206,149. MACHINES FOR PREPARING MOLDINGS FOR GILDING. Charles G. Stuart, New York, N. Y. Filed Dec. 11, 1877.

Brief.—The invention consists in the means for the application of pressure to the mixture of glue and whiting with which the moldings are to be coated, so that the mixture may be used in a less fluid condition than has been done heretofore.

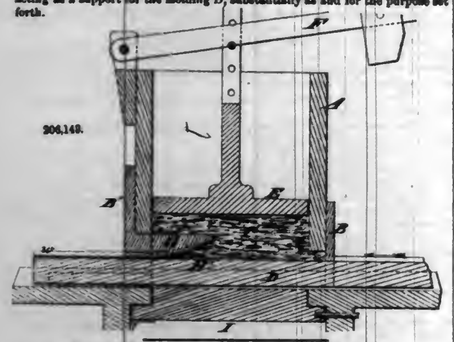
Claim.—1. The combination, with the box for containing the white-stuff, templet B, fitted to the contour of the wood molding, and a templet, B', fitted to the exterior contour of the coating of white, of means for producing artificial pressure upon said white-stuff, for rendering said white-stuff more adherent to the molding, and for enabling a less fluid mixture of said white-stuff to be used, substantially as and for the purpose described.

2. The combination, with the box A and templets B B', one of which is fitted to the contour of the wood molding and the other fitted to the exterior contour of the coating of white, of the weighted or loaded follower E, substantially as and for the purpose specified.

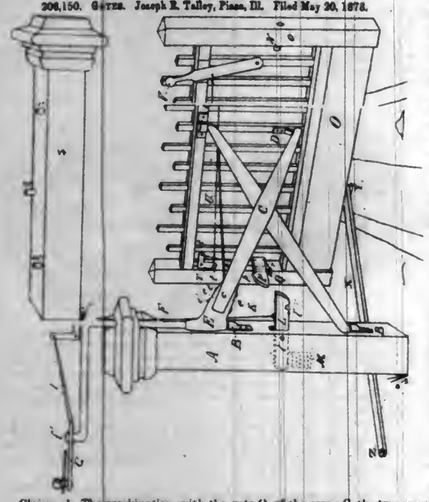
3. The combination of the box A, the templets B B', fitted, one to the contour of the wool molding, the other to the exterior contour of the casting of white, the follower H, and the weighted lever F, substantially as and for the purpose specified.

4. The combination, with the box A, of a hinged or removable bottom, I, acting as a support for the molding D, substantially as and for the purpose set forth.

206,149.



206,150. GATES. Joseph R. Talley, Piasa, Ill. Filed May 20, 1878.



Claim.—1. The combination, with the gate O, of the crane C, the two arms crossing one another, as shown, their rear ends turning on the gate-post B, the front ends hinged near the middle and top and bottom of the gate, as set forth.

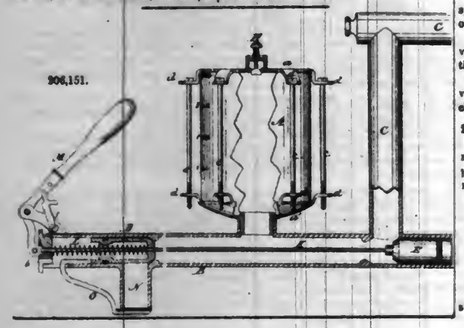
2. The combination, with the gate O and crane C, of the connecting-rod X, for the purpose set forth.

3. The combination, with the crane C, of the hinge-bracket E and the crank F, with end f, engaging in socket of the bracket, to open and close the gate.

4. The combination of crank F, T-crank G, bell-crank J, wires I and K, and spring-latch L, for the purpose set forth.

5. The combination of spring-latch L, catch P, pin R, wires or cords S and U, and bell-crank T, for the purpose set forth.

206,151.

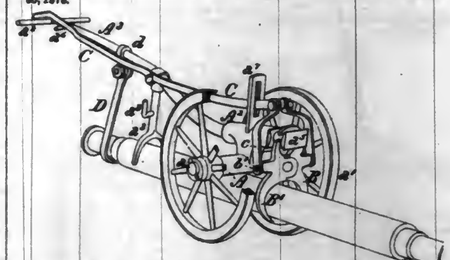


206,151. MEASURING-FAUCETS. Robert W. Tavener, West Bay City, Mich., assignee of one-half his right to Henry H. Herrington, same place. Filed June 12, 1878.

Claim.—1. The spring-closed valves D and E and connecting-stem K, in combination with the barrel B, supply-pipe C, and measuring-vessel A, said valves being so arranged as to simultaneously close the supply-pipe and open the discharge, or vice versa, as shown and described.

2. The valve D, having the cut-off F attached, and the barrel B, having nozzle N, combined as shown and described, for the purpose specified.

206,152. TRUCKS FOR MOVING RAILWAY-AXLES, &c. B. Thomas, Chicago, Ill. Filed Apr. 20, 1878.

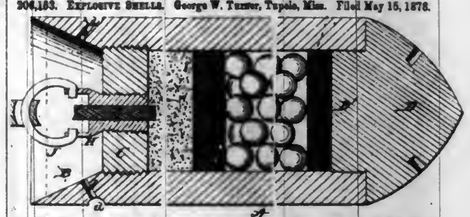


Claim.—1. The combination, in a truck for moving railroad-axles, &c., of a supporting-axle and wheels, a tongue and suspending-arm at right angles to said supporting-axle, a pair of claws or nippers suspended from said arm and pivoted together below their point of suspension, a lever pivoted to the tongue and connected by links with said claws, and a recessed foot or swinging hook depending from the tongue, the combination being and operating substantially as and for the purpose set forth.

2. The combination of the tongue, the recessed foot or swinging hook depending therefrom, the suspending-arm, claws or nippers hung upon said arm and connected by a pivot-pin below their point of suspension, each claw having a projection at right angles to its pivot, and links connecting said claws with a lever pivoted to the tongue, so as to open and close the claws, substantially as set forth.

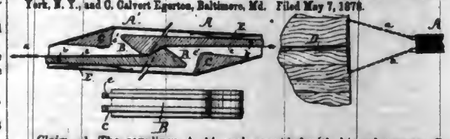
3. The combination of the tongue and suspending-arm, the pivoted claws and their operating lever and links, and a swinging hook or recessed foot depending from the tongue, substantially as set forth.

206,153. EXPLOSIVE SHELLS. George W. Turner, Tupelo, Miss. Filed May 15, 1878.



Claim.—A bomb-shell composed of the body A, with breech-pin C, having hollow screw-tube H, for forming a passage for the fuse, and forming a rear chamber, B, the screw-cap or point D, and a caudal appendage, L, confined within the chamber B, substantially as and for the purposes herein set forth.

206,154. ELECTRIC-SIGNAL APPARATUS FOR RAILWAY-TRAINS. Dexter H. Walker, New York, N. Y., and C. Calvert Egerton, Baltimore, Md. Filed May 7, 1878.



Claim.—1. The couplings A A', each provided with hinged tongues B, springs E, and circuit-closers C, and adapted to directly connect with each other, substantially as described.

2. In combination with the couplings A, the coupling A', each being provided with tongues B, having metallic strips c c, adapted to be attached to the connections, as set forth.

3. In combination with the connections a a, the couplings A A', each provided with tongue B, having enlarged end, spring E, strips c c, and circuit-closer C, substantially as set forth.

206,155. SPINNING-RING HOLDERS. J. W. Wattles, Canton, Mass. Filed Nov. 27, 1877.

Brief.—The annulus which supports the ring is provided with an abutment, which projects from its upper edge, and with a hole, that permits the passage of the screw for operating against the body of the ring. The abutment may be made separate from the annulus and screwed to the rail.

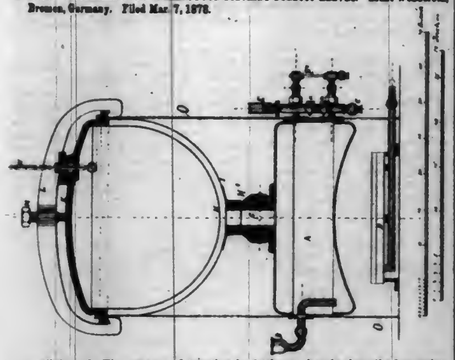


Claim.—1. In combination with the ring rail B and the clamp-screw D, screwed therein, and with the adjustable ring A, provided with the eccentric-flange a, the sustaining-annulus E, having the screw-passage or hole g, and also having the abutment C arranged with it, and the screw D and the flange a, substantially as specified.

2. A shank or annulus, E, adapted to extend into the rail-opening, and provided with an abutment, C, projecting from it, and to aid in sustaining the ring, substantially as described.

3. The supporting-annulus E, provided with the abutment C, projecting from its upper edge, and also having the screw-passage g arranged in it, (the said annulus,) and with respect to such abutment, substantially as set forth.

206,156. PROCESSES AND APPARATUS FOR COLORING TOBACCO-LEAVES. Ernst Wunderath, Bremen, Germany. Filed Mar. 7, 1878.

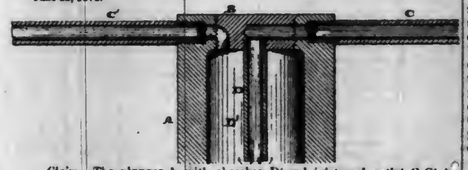


Claim.—1. The process of treating leaf-tobacco herein described, consisting of moistening the same with a flavoring compound or mixture, and subjecting the moistened tobacco in a hermetically-closed vessel to the action of external heat for generating vapors within said vessels, as and for the purpose set forth.

2. The tobacco-moistening compound, consisting of a decoction of fennel and wine, as and for the purpose set forth.

3. The apparatus herein shown for carrying out my process, consisting, essentially, of the removable double-walled kettle H I, having a neck, H', the supporting-stand O, stationary boiler A, having the neck O, the cover K, yoke L, and screw M, as and for the purpose set forth.

206,157. PLUNGERS FOR PRESSING GLASS. George W. Weyman, Philadelphia, Pa. Filed June 12, 1878.



Claim.—The plunger A, with chamber D' and inlet and outlet C C', in combination with the cap B, having channels a a', and the pipe D, suspended from the cap and occupying a portion of the chamber D', whereby the remaining portion receives the steam or hot air above the bottom of the tube, substantially as and for the purpose set forth.

206,158. TREATING RAGS FOR OBTAINING PAPER STOCK AND FERTILIZERS. Hans Wieninger and L. Rosmüller, Gottingen, Germany. Filed May 26, 1878.

Brief.—Treats with lime-water, so as to destroy the wool and produce fertilizers. The cotton, linen, &c., are not injured, and are used for paper-stock.

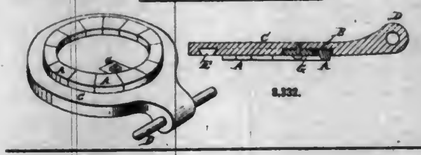
Claim.—The within-described method of treating rags, &c., for obtaining paper-stock and fertilizing material—that is to say, subjecting the said rags to the action of hot lime-water, substantially as set forth.

REISSUES.

8,331. ARMPIT-SHIELDS. William E. Beamer, New York, N. Y. Patent No. 132,948, dated Oct. 22, 1872. Filed July 1, 1878.



Claim.—As a new article of manufacture, a formed seamless armpit-shield, substantially as set forth.



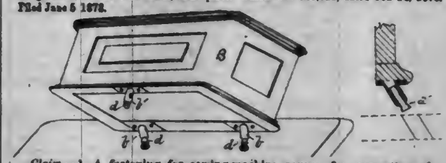
8,332.

8,332. CLACK-VALVES FOR PUMPS. Wm. G. D. Body, Virginia City, Nev. Patent No. 193,685, dated July 31, 1877. Filed Apr. 24, 1878.

Claim.—1. The valve C, having the dovetailed groove E made in its face, and the connecting-slot F, for the introduction of the face-blocks A, substantially as herein described.

2. The groove E, for receiving the face-blocks A, and the connecting-slot F, with its key-block G and screw H, substantially as and for the purpose herein described.

8,333. SEWING-MACHINE TABLES. Wm. H. Boyer, Baltimore, Md., assignor, by mesne assignments, to Abner Greenleaf, same place. Patent No. 143,611, dated Oct. 14, 1873. Filed June 5 1878.

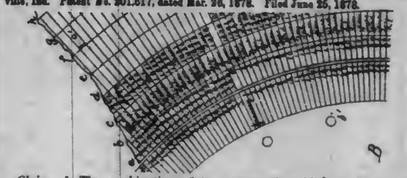


Claim.—1. A fastening for sewing-machine covers, &c., consisting of a metallic hook or peg, adapted to enter openings in the table-top and retain the cover in place, provided with a buffer or cushion of soft material projecting beyond the metallic part of the fastening, as shown, for the purposes specified.

2. A fastening for sewing-machine covers, &c., consisting of a metallic hook or peg, adapted to enter openings in the table-top and retain the cover in place, provided with a cavity for the reception and retention of a buffer or cushion, in combination with such buffer or cushion, substantially as and for the purposes set forth.

3. The flanged pegs b b', having a conically-shaped hole therein, in combination with buffers or cushions of soft material inserted therein, substantially as and for the described purposes.

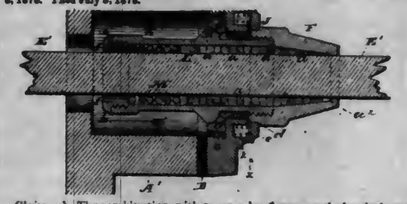
8,334. PERPETUAL TIME AND INTEREST CALCULATORS. John Kachelman, Jr., Evansville, Ind. Patent No. 201,617, dated Mar. 26, 1878. Filed June 25, 1878.



Claim.—1. The combination of two concentric tables, A B, the one a revolving table, B, having the twelve months, with their corresponding dates, upon its margin, and the other a stationary table, A, having arranged between concentric circles a b c d e f g h the number of days in a common year, beginning with 0 and ending with 364, the names of days in a whole year in consecutive order, the numbers of years from 1700 to 1992, or equivalent, with the name of each 1st day of March marked after each leap-year, and the computations of interest for capitals of various amounts, as $100 and upward, and for various interests, as 3 per cent. and upward, whereby calculations of time and interest, or determinations of weekly days for a given time, are pointed out, and can be read off from the table A by means of one movement each of the table B, substantially as set forth.

2. In the described time and interest computing calendar, the combination of the stationary columns b c and c d, whereby the names of the days for each January 1 are found in column b c opposite the corresponding years in column c d of the perpetual calendar, substantially as set forth.

8,335. STUFFING-BOXES FOR STEAM-ENGINES. C. T. Sleeper, Chicago, Ill., assignor, by mesne assignments, to O. C. Jerome and David Andrews. Patent No. 180,948, dated Aug. 8, 1876. Filed July 5, 1878.



Claim.—1. The combination, with an annular flange on the head of a cylinder or valve-box, of a face-plate secured to the outer end of said annular flange, and a packing-receptacle having a rocking bearing within the recess in the face-plate, substantially as set forth.

2. The combination, with a face-plate provided with a recess in its face which is located toward the cylinder, of a tubular packing-sleeve having a rocking bearing, and a ring interposed between the recess in the face-plate and the rocking bearing on the packing-sleeve, substantially as set forth.

3. The combination, with a face-plate provided with a recess in its face adjacent to the cylinder to which it is secured, of a packing-receptacle having an inner converging packing-space, and provided on its outer surface with a rocking bearing which rests against a ring located in the recess in the face-plate, substantially as set forth.

4. The combination, with a face-plate having a recess formed in its face which is placed toward the cylinder, of a packing-receptacle provided with a convex bearing, and a ring located in the recess of the face-plate, said ring formed with an annular concave bearing, substantially as set forth.

5. The combination, with a face-plate having a recess formed in one side

thereof, of a packing-receptacle provided with a collar between its ends, said collar being inclosed in the recess in the face-plate, substantially as set forth.

6. The combination, with a face-plate having a recess formed in one side thereof, of a packing-receptacle having an inner converging space for metallic packing, and provided with a collar between its opposite ends, said collar being located within the recess in the face-plate, substantially as set forth.

7. The combination, with a face-plate having a recess formed in one side thereof, of a receptacle for metallic packing, supported within the recess in the face-plate by a rocking bearing, which latter is adapted to have a radial movement, substantially as set forth.

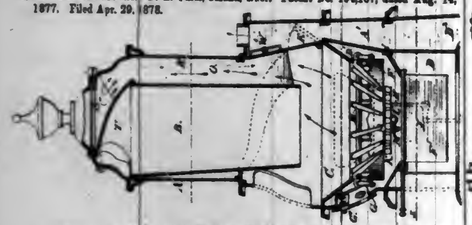
8. A tubular sleeve provided with an annular outside rocking bearing between its opposite ends, substantially as set forth.

9. The combination, with a packing-receptacle having an interior converging space for metallic packing, of a face-plate provided with a recess for the reception of the rocking bearing on the packing-receptacle, and means for keeping the rocking bearing steam-tight by spring-pressure, substantially as set forth.

10. The combination, with a packing-receptacle, of a face-plate having a recess in its side located adjacent to the cylinder-head, the inner end of said recess being of greater diameter than the opening within the annular flange on the cylinder-head, whereby the ring against which rests the packing-receptacle may have any desired extent of radial movement, regardless of the diameter of the opening in the annular flange, substantially as set forth.

11. The combination, with an annular face-plate, of a packing-receptacle provided with a rocking bearing, and constructed and arranged to extend through the opening in the annular face-plate, substantially as and for the purpose set forth.

8,336. PARLOR-STOVES. D. E. Paris, Omaha, Nebr. Patent No. 194,107, dated Aug. 14, 1877. Filed Apr. 29, 1878.



Claim.—1. A series of lifting bars or fingers arranged radially in a circle along the bottom part of the fire-box, inclosed within the body of the stove, and adapted to be simultaneously raised or lowered by means of a lever or crank arranged on the outside of the stove, and connected with said lifting bars or fingers by suitable intermediate mechanism.

2. A fender or foot-rest extending across the front of the stove, in combination with the grate or fire-pot bars and suitable connecting-links, whereby said foot-rest or fender is adapted to operate as a shaker or lever for the grate or fire-pot bars, substantially as and for the purpose set forth.

3. The combination, with the upward turning or lifting bars or fingers, of a fire-pot having a central dumping bottom or grate, surrounded by said fingers or bars, and suitable devices for operating said fingers or bars, substantially as described, and for the purpose set forth.

4. The combination of a lever or shaker arranged upon the outside of a stove, a series of lifting fingers or bars arranged in a circle below the fire-pot of said stove, and suitable intermediate devices connecting said shaker or lever with all of said fingers or bars, and adapted to produce a vertical vibration thereof, substantially as described, and for the purpose set forth.

5. A movable ring or frame located below the fire-box of a stove, a series of loosely-pivoted lifting fingers, arranged substantially as shown, suitable pivoted links connecting said ring or frame with said lifting-fingers, and a suitable lever or shaker connected to said ring or frame, whereby said lifting-fingers may be simultaneously operated, substantially as described, and for the purpose set forth.

8,337. COUPLING-VALVES FOR STEAM AND AIR BRAKES. John W. Gardner, Cleveland, and Thomas W. Ranson, Black River, Ohio. Patent No. 126,220, dated June 25, 1872. Filed June 27, 1878.

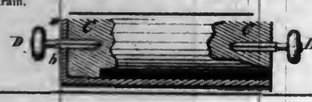


Claim.—1. The combination of the sliding sleeve C, provided with packing-ring *d*, with a spring, D, shell A, and valve B, substantially as herein shown and described.

2. A butt-coupling consisting of the shells A A', provided with sliding sleeves C C' and valves B B', constructed substantially as herein shown and described.

3. A butt-coupling consisting of two shells with contiguous faces alike, each having in it a valve which will be automatically opened by coupling said shells together, and will be automatically closed by uncoupling, said shells having in their contiguous faces elastic packing-rings, which will coincide and come in contact when the shells are coupled, and will be pressed against each other to tighten the joint by the fluid-pressure in the pipes, said coupling-shells being so united as not to be separated by ordinary fluid-pressure within the pipes, and yet to separate without breakage when subjected to an unusual external strain.

8,338.



8,338. FLUTING-MACHINES. Hannah Locke, Washington, D. C., assignor to Dan. E. Paris, West Troy, N. Y. Patent No. 96,320, dated Nov. 16, 1869. Filed July 2, 1878.

Claim.—1. A fluting device consisting of a flat corrugated bed-plate and a revolving corrugated roller having a heating-core.

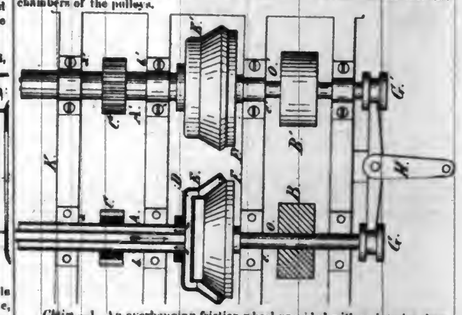
2. A fluting device consisting of a flat corrugated bed-plate and a revolving corrugated roller, open at one end to admit a heating core, constructed as herein shown and described.

3. A fluting device consisting of a flat corrugated bed, adapted to be heated by contact with a stove-top, and a revolving roller, capable also of being heated by a core, substantially as described.

4. The combination and arrangement of the adjustable handles D and D', the heater C, and corrugated roller B of a fluting-machine, substantially as and for the purpose described.

8,339. FRICTION FEED-CLUTCHES FOR CIRCULAR-SAW MILLS. Jos. W. Zimmerman, Manistee, Mich. Patent No. 182,340, dated Sept. 19, 1876. Filed May 20, 1878.

Brief.—Two shafts revolving in opposite directions, and capable of being alternately connected with a saw-mill carriage to drive it forward or backward, are connected by a friction-clutch formed of a conical overhanging friction-pulley mounted on the end of a sliding shaft, and an overhanging chambered concave friction-pulley mounted on the end of a hollow shaft. The pulleys are thrown in and out of gear by a double bell-crank lever and grooved pulleys upon the outer ends of the sliding shafts. The pulleys are kept cool by cool water flowing through tubes in the hollow shafts into the chambers of the pulleys.



Claim.—1. An overhanging friction-wheel provided with an interior chamber for the admission of water to cool the same, while preventing the contact of water with the friction-surfaces, substantially as and for the purposes set forth.

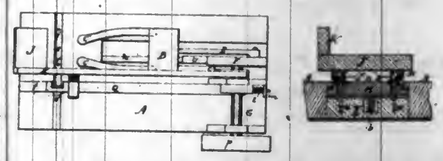
2. The combination of a hollow friction-wheel with a hollow shaft communicating therewith, as and for the purposes set forth.

3. The friction-wheel E, provided with a chamber, D, and tubular shaft A, as and for the purposes set forth.

4. The combination of the conical overhanging friction-wheel F, the overhanging chambered concave friction-wheel E, tubular shaft A, and water-pipe I, substantially as and for the purposes set forth.

8,340. MACHINES FOR MAKING HORSESHOES. Hazen J. Batchelder, Hampden, Vt., assignor, by mesne assignments, to himself and Theodore S. Very. Patent No. 180,448, dated Aug. 1, 1876. Filed May 13, 1878.

Brief.—Improvement on invention described in Letters Patent No. 171,258, granted to patentee December 21, 1875. The heated rod is introduced into the receiving-recess, located below the plane of movement of the benders, and a blank severed therefrom while the machine is in operation, the severed portion being raised at the proper time to a position where it will be struck by the benders. Hammers on the punch and creaser-carrier fit around the bent blank on the former, and prevent the blank from spreading while it is being creased and punched. The blank is indented or punched from both sides, leaving a thin intervening web, which is afterward opened out by a pritchel. The lower punches are stationary, and project through openings in the yielding anvil-block.



1. In a machine for making horseshoes, the recess *c'* in the bed of the machine, located below the plane of the benders, combined with the benders, the lifting device, the stationary cutter located at one side of said recess, and the horizontally-moving cutter working crosswise of the recess, and arranged to be entirely withdrawn therefrom excepting when cutting off a blank, said recess extending in both directions from the cutters, as set forth.

2. In a horseshoe-machine, the combination of the series of rising and falling punches *d*, the series of stationary punches *a*, the anvil H, and the former D, as set forth.

3. The combination of the anvil H, carrying the former D, and provided with the series of holes *s s*, and the block I, provided with the series of punches *a a*, with the creasing and punching dies *c d*, and the hammers M M, substantially as and for the purpose set forth.

4. As an improved article of manufacture, a horseshoe provided on its opposite sides with coinciding cavities *k k'*, separated by intervening webs, as and for the purpose specified.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 16th DAY OF JULY, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Acheson, N. B., Youngstown, Ohio. Rotary water-meter	206,065	July 16	669	193	14	102
Adams, A. B., G. E. Cain, and R. Simonton, Huntington, Ind. Railway-switch	206,066	July 16	670	193	14	103
Allen, A. B., Barry, Ill. Car-brake	205,987	July 16	592	171	14	93
Allison, R., Port Carbon, Pa. Feed-screw and nut for rock-drills, &c	206,067	July 16	671	194	14	103
Andrews, A. W., assignor to E. Requa, Brooklyn, N. Y. Splitting and shaping stone by machinery	205,989	July 16	594	171	14	93
Andrews, D., *et al.* (See Sleeper, C. T., assignor.) (Reissue.)						
Andrews, T. B., assignor of two-thirds interest to J. D. Moritz and H. Keidel, Baltimore, Md. Manufacture of pistol-springs	205,988	July 16	593	.....	14	93
Armstrong, G. C., Brooklyn, N. Y. Wood-screw	205,990	July 16	594	171	14	93
Asbach, J., Chemnitz, Saxony. Loom for weaving wire fabrics	206,068	July 16	671	194	14	103
Atwater, J. B., Geneva, Ill. Street-car propeller	205,991	July 16	595	171 / 172	14	93
Avery, H. A., Maryville, Mo. Plow and grain-drill	206,069	July 16	672	194	14	103
Ball, C. E., Philadelphia, Pa. Hydrocarbon lamp	205,943	July 16	545	155	14	87
Barnett, J. W., and T. J. Hobbs, Fountain Creek, Tenn. Side-hill plow	206,070	July 16	673	194	14	103
Bassett, J. M., Athens, Ga. Plow	205,992	July 16	597	172	14	93
Batchelder, H. J., Montpelier, Vt., assignor, by mesne assignments, to himself and T. S. Very. Machine for making horseshoes. (Reissue)	8,340	July 16	787	225	14	116
Bates, F. G., Springfield, Mass. Clutch	206,071	July 16	674	195	14	103
Bates, F. G., Springfield, Mass. Clutch	206,072	July 16	675	195	14	103
Bates, F. G., Springfield, and L. E. Hartmann, Greenfield, Mass. Mechanism for operating doffer-combs	206,073	July 16	676	195 / 196	14	103
Beamer, W. F., New York, N. Y. Armpit-shield. (Reissue)	8,331	July 16	776	222	14	115
Beckwith, P. D., Dowagiac, Mich. Stove-grate	206,074	July 16	677	196	14	104
Beyer, A. (See Shrake, F. T., assignor.)						
Bigalow, F., assignor of one-half interest to P. Sames, Rockford, Ill. Feed-steamer	206,075	July 16	678	196	14	104
Binns, J. W., *et al.* (See Vail, J. E. and J. B., assignors.)						
Blood, E. R. (See Hallock and Blood.)						
Blossom, J. R., Brooklyn, N. Y. Bale-band tightener	206,076	July 16	679	197	14	104
Body, W. C. D., Virginia City, Nev. Clack-valve for pumps. (Reissue)	8,332	July 16	776	222	14	115
Bond, H. F., Lynnfield, Mass. Sash-balance	205,944	July 16	546	155	14	87
Borland, W. P., and H. Hoffman, Leavenworth, Kan. Adding-machine	205,993	July 16	598	172	14	93
Bowes, A. P., Michigan City, Ind. Post for fences, &c	206,078	July 16	680	197	14	104
Boyer, W. H., assignor, by mesne assignments, to A. Greenleaf, Baltimore, Md. Sewing-machine table. (Reissue)	8,333	July 16	777	222	14	115
Boykin, T. J., and J. W. Carmer, Baltimore, Md. Fertilizer	206,077	July 16	680	.....	14	104
Bozorth, J., Philadelphia, Pa. Box-trimming machine	205,994	July 16	600	173	14	94
Bradford, P. S., Bridgewater, Mass. Metal-rolling machinery	205,945	July 16	547	155	14	87
Breidbach, C. J. and C., New York, N. Y. Varnish	206,079	July 16	681	.....	14	104
Breidbach, C. (See Breidbach, C. J. and C.)						
Brizee, J., Alvarado, Cal. Window-screen	205,995	July 16	601	173	14	94
Brokaw, J. N., Ovid, Mich. Gate	206,080	July 16	682	197	14	104
Brokhahne, A. V., New York, N. Y. Razor-strop	206,081	July 16	682	197	14	104
Brokhahne, A. V., New York, N. Y. Razor-strop case	206,082	July 16	683	198	14	104
Brooke, W. E., Trenton, N. J. Punching-press	205,997	July 16	602	173 / 174	14	94
Brougham, G., Chicago, Ill. Meat-can	205,946	July 16	547	155	14	87
Brown, E. (See Miller, Tallmadge, and Brown.)						
Brown, F. A. (See Hanks, W. R., assignor.)						
Brown, W. D., Indianapolis, Ind., assignor to Chambers, Bering & Quinlan, Decatur, Ill. Ring-blank for swine	205,996	July 16	601	173	14	94
Bryer, S. G., Saugus, assignor to himself and J. A. Newhall, East Saugus, Mass. Steam drilling-machine	205,998	July 16	603	174	14	94
Buffham, G. R., Brooklyn, N. Y. Ventilator for windows	205,999	July 16	605	174	14	94
Bürgin, E., Basle, Switzerland. Electrical lamp	206,083	July 16	684	198	14	104
Bürgin, E., New York, N. Y. Magneto-electric and electro-magnetic machine	206,084	July 16	685	198	14	105
Burke, D., New York, N. Y. Stationary wash-tub of hydraulic cement	206,000	July 16	606	174	14	94
Cain, G. E. (See Adams, Cain, and Simonton.)						
Campbell, F. M., assignor to R. S. McCormick, St. Louis, Mo. Grain-spout for elevators	206,001	July 16	606	175	14	94
Carmer, J. W. (See Boykin and Carmer.)						
Carroll, A. H., Baltimore, Md. Bobbin-supporter for spooling-machines	206,085	July 16	687	198	14	105
Carter, E. P., Arcade, N. Y. Side spring	206,086	July 16	688	199	14	105
Chambers, Bering & Quinlan. (See Brown, W. D., assignor.)						
Chandler, J. M., Fredonia, N. Y. Sleeve-button	206,002	July 16	607	175	14	95
Clark, H. (See Hitchcock, D. G., assignor.)						
Clary, J. P. (See Clary, S. S. and J. P.)						
Clary, S. S. and J. P., Belton, Tex. Corn and cotton planter	206,089	July 16	691	200	14	105
Clemons, H. M., Gold Hill, Nev. Horseshoe	206,003	July 16	608	175	14	95
Cloyd, H. C., West Alexandria, Ohio. Boring-machine	206,091	July 16	694	200	14	106
Collins, C., Jr., Kingsland, and G. Thomas, Jersey City, assignors of one-third interest to C. M. Gigneux, Morristown, N. J. Hasp-lock	205,947	July 16	548	156	14	87

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cooper, H. W. (See Smitz and Cooper.)						
Copeland, F. A., and R. W. Taylor, La Crosse, Wis.; said Taylor assignor to said Copeland. Fire-escape	206,087	July 16	689	199	14	105
Crall, J. J., Linn Creek, Mo. Quilting-machine	206,004	July 16	608	175	14	95
Crawford, W. A., Terre Haute, Ind. Stop and waste attachment for water-pipes	206,090	July 16	692	200	14	105
Cress, S. E., Hillsborough, Ill. Folding shaving-horse	206,005	July 16	609	176	14	95
Creter, G., New York, N. Y. Machine for making heels for boots and shoes	205,948	July 16	549	156	14	87
Crocklord, A. H., Newark, N. J. Bit-clamp	206,006	July 16	610	176	14	95
Davis, B. C., Binghamton, N. Y. Shutter	206,088	July 16	690	199, 200	14	105
Delinger, D. C., Red Oak, Ohio. Gate	206,092	July 16	693	201	14	106
Deschamps, F. O., Philadelphia, Pa. Driving, coupling, and braking appliances for railway-cars	206,093	July 16	696	201	14	106
De Wolf, D. (See Woolverton, J. E., assignor.)						
Dieckmann, D. L., New York, N. Y. Fire-escape	205,949	July 16	550	156, 157	14	88
Dunham, H. B., Newark, N. J. Apparatus for charging water with carbonic-acid gas	205,950	July 16	552	157, 158	14	88
Dutrow, D. E., Washington, D. C. Sewing-machine stopper	206,094	July 16	696	201	14	106
Eaton, J. B., and C. Latham, Shamokin, Pa.; said Eaton assignor to said Latham. Machine for cutting and threading pipe	206,095	July 16	697	201	14	106
Egerton, C. C. (See Walker and Egerton.)						
Elliott, B. F., Cedar Rapids, Iowa. Grain-ventilator	206,096	July 16	698	202	14	106
Ellsworth, P. H., *et al.* (See Way, T. R., assignor.)						
Elston, J. W., Frankfort, Ind. Washing-machine	205,952	July 16	555	158	14	88
Etheridge, D. T., Falls county, Tex. Cotton-gin	206,097	July 16	699	202	14	106
Evans, G. R., assignor of one-half interest to G. H. Hopper, San Francisco, Cal. Non-conducting compound	206,007	July 16	611	.....	14	95
Ewell, W. F., assignor to Munroe Organ Reed Company, Worcester, Mass. Reed-organ tremolo	206,008	July 16	611	176	14	95
Feix, J., San Francisco, Cal. Shield for the tops of crucibles or melting-pots	206,098	July 16	700	202	14	106
Fisher, L. G., Jr., Chicago, Ill. Bake-pan	206,099	July 16	702	202	14	106
Fiske, B. A., Naperville, Ill. Boat-detaching apparatus	206,100	July 16	702	203	14	107
Flynn, T. W., Pottsville, Pa. Air-exhauster for coal-mines	206,101	July 16	704	203	14	107
Fogerty, G. F., Boston, Mass. Fluid-discharging apparatus	206,009	July 16	613	176	14	95
Follett, G. B., Green Bay, Wis. Heating-drum	205,953	July 16	556	159	14	88
Foubert, A., Buffalo, N. Y. Beer-boiler	206,010	July 16	614	177	14	95
Freeman, W. C., Louisiana, Mo. Scoop	206,011	July 16	615	177	14	96
Gardiner, C. O. (See Mast and Gardiner.)						
Gardner, J. W., Cleveland, and T. W. Ransom, Black River, Ohio. Coupling-valve for steam and air brakes. (Reissue)	8,337	July 16	784	224	14	116
Garrard, J., Cincinnati, Ohio. Harvester	206,102	July 16	704	203	14	107
Gederén, C. E. S., Philadelphia, Pa. Button and stud	206,103	July 16	706	204	14	107
Gifford, G. S., *et al.* (See Vail, J. E. and J. B., assignors.)						
Gignoux, C. M. (See Collins and Thomas, assignors.)						
Gilbert, J., assignor to James Atkman & Co., Newark, N. J. Match-safe	205,954	July 16	557	159	14	88
Gleason, G. R. (See Mather and Gleason.)						
Goddard, W. F., Orwell, Ohio. Hay elevator and carrier	206,104	July 16	707	204	14	107
Granbery, T., New York, N. Y. Locket	206,012	July 16	616	177	14	96
Greely, B. J., Boston, Mass. Suspenders	206,013	July 16	617	177	14	96
Greenleaf, A. (See Boyer, W. H., assignor.) (Reissue.)						
Gunderson, C. G., Worcester, Mass. Flat-iron	206,014	July 16	617	178	14	96
Gunnison, F. (See Hallock and Blood, assignors.)						
Hallock, J. K., and E. R. Blood, assignors, by mesne assignments, to F. Gunnison, Erie, Pa. Machine for making lamp-black	205,955	July 16	558	159	14	88
Hamilton, W. R., and G. C. Smith, Mendocino, Cal. Railway-car truck	205,956	July 16	560	159, 160	14	88
Hanks, W. R., Needham, assignor to F. A. Brown, Newton, Mass. Vapor-burner	206,015	July 16	618	178	14	96
Hart, C. E., and T. Johnson, Lake Lillian, Minn. Combined burglar-alarm and indicator	206,105	July 16	708	204	14	107
Hartmann, L. E. (See Bates and Hartmann.)						
Harvey, A., Scranton, and M. R. Thurber, Nicholson, Pa. Thill-coupling	205,958	July 16	562	160	14	89
Harvey, L. D., Sheboygan, Wis. Window-ventilator	205,957	July 16	561	160	14	89
Hatch, G. (See Hatch, J., assignor.)						
Hatch, J., assigner of one-half interest to G. Hatch, South Windham, Conn. Paper-making machine	206,107	July 16	712	205	14	108
Hatch, J., South Windham, Conn. Cylinder paper-making machine	206,106	July 16	709	205	14	107
Hauersperger, P., assignor to B. H. Towner, Homer, Ill. Pounder washing-machine	205,959	July 16	563	161	14	89
Hawn, E. R. (See Kendall, M. M., assignor.)						
Henderson, S. S., North Washington, assignor to himself and J. W. Wenner, Forest, Ohio. Tobacco-quid protector	206,017	July 16	619	178	14	96
Henderson, W. H., San José, Cal. Safety-hook for harness-saddles	206,016	July 16	618	178	14	96
Henrich, C. L., San Francisco, Cal. Apparatus for transmitting power and motion	206,018	July 16	620	199	14	96
Hill, H. H., Chicago, Ill. Arithmetical block	205,960	July 16	564	161	14	89
Hill, J. S. (See Hill, V. P., and J. S.)						
Hill, V. P., Hannibal, and J. S. Hill, Moira, N. Y. Milk-cooling apparatus	206,108	July 16	714	206	14	108
Hilton, A. M. (See Shollar, F., assignor.)						
Hinds, F. P., assignor of one-half interest to D. Whittemore, Quincy, Mass. Hand lasting-tool for boots and shoes	206,019	July 16	620	179, 180	14	96
Hirsch, W., Radeberg, near Dresden, Saxony. Glass annealing and working furnace	206,109	July 16	716	206	14	108
Hitchcock, D. G., assignor of one-half interest to H. Clark, Syracuse, N. Y. Coin-holder	206,110	July 16	717	206	14	108
Hobbs, J. H., Wheeling, West Va. Glass-mold	206,111	July 16	718	207	14	108
Hobbs, T. J. (See Barnett and Hobbs.)						
Hoe & Co., R. (See Preston, G., assignor.)						
Hoffmann, H. (See Borland and Hoffmann.)						
Hoglen, F. M., *et al.* (See Kratzsch, W., assignor.)						
Hoglen, G. R., *et al.* (See Kratzsch, W., assignor.)						
Hollweg, J. H., New York, N. Y. Velocipede	206,020	July 16	623	180	14	96
Holmwood, J., Jr. (See Sibley and Holmwood.)						
Holt, M. K., Haverhill, Mass. Fastening for hat-elastics	206,021	July 16	623	180	14	97
Hopkin, G. E., Philadelphia, Pa. Cooking-stove	205,961	July 16	564	161	14	89
Hopper, G. H. (See Evans, G. R., assignor.)						
Hutter, F. L., Harrisburg, Pa. Index	206,022	July 16	624	180	14	97
Hyatt, E. A. L., trustee. (See Hyatt, T., assignor.)						
Hyatt, T., New York, N. Y., assignor to E. A. L. Hyatt, trustee. Composition floor, roof, pavement, &c.	206,112 a-area	July 16	719	207, 208	14	108
Ingalls, W. A., Boston, Mass. Chuck	206,113	July 16	723	208	14	109
Isham, H. L., Plattsburg, N. Y. Vehicle-axle box	206,114	July 16	724	209	14	109
Jackson, D. W. B., *et al.* (See White, C. W., assignor.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
James, Atkman & Co. (See Gilbert, J., assignor.)						
Jebb, J. G., Half Valley, Col. Ore-separator	206,115	July 16	725	209	14	109
Jenkins, P. O., Washington, D. C. Electric light	205,962	July 16	565	161	14	89
Jenks, S. A. (See Sherman, A. R., assignor.)						
Jerome, C. C., *et al.* (See Sleeper, C. T., assignor.) (Reissue.)						
Johnson, G. L., Octagon, Ind. Hay-loader	206,023	July 16	624	181	14	97
Johnson, T. (See Hart and Johnson.)						
Kachelman, J. Jr., Evansville, Ind. Perpetual time and interest calculator. (Reissue)	8,334	July 16	778	223	14	115
Keidel, H., *et al.* (See Andrews, T. B., assignor.)						
Kendall, M. M., assignor of one-half interest to E. R. Hawn, Leavenworth, Ind. Liquid-measure	206,024	July 16	625	181	14	97
Kerrick and Winegardner. (See Tenant, H. P., assignor.)						
Kirby, W. A., Auburn, N. Y. Mower	206,116	July 16	727	209	14	109
Knox, T. C., New York, N. Y. Aerated-liquor apparatus	206,025	July 16	626	181	14	97
Körting, E., Hannover, Prussia. Locomotive feed-water heater	205,963	July 16	566	162	14	89
Koss, W., Farmersburg township, Clayton county, Iowa. Mechanical movement	205,964	July 16	567	162	14	89
Kritch, J., Cleveland, Ohio. Carriage-wheel hub	205,965	July 16	568	162	14	89
Krutzsch, W., assignor to G. R. and F. M. Hoglen, Dayton, Ohio. Punching-machine	206,026	July 16	627	181	14	97
Lakin, J. A., Westfield, Mass. Presser-foot for sewing-machines	205,966	July 16	569	163	14	90
Lamb, J. R., St. James, Minn. Car-coupling	206,027	July 16	629	182	14	97
Latham, C. (See Eaton and Latham.)						
Lawrence, J. W., assignor to W. S. Lawrence, New York, N. Y. Refrigerator	206,028	July 16	630	182	14	97
Lawrence, W. S. (See Lawrence, J. W., assignor.)						
Leach, W. B., Chillicothe, Mo. Corn-holder	205,967	July 16	570	163	14	90
Leavitt, A., Boston, assignor to D. Whittemore, Quincy, Mass. Sewing-machine	206,029	July 16	631	182	14	98
Leggett, E. W., Elizabethport, N. J. Apparatus for cooling and spreading glue	205,968	July 16	571	163	14	90
Locke, D., Creston, Ill. Cod-crusher	205,969	July 16	572	163	14	90
Loewy, H., Berlin, Germany. Hernia-truss	206,117	July 16	728	209	14	109
Lorillard & Co., P. (See Siedler, C., assignor.)						
Loring, G. P., *et al.* (See White, C. W., assignor.)						
Lucha, H., Washington, D. C., assignor to D. E. Paris, West Troy, N. York. Fluting-machine. (Reissue)	8,338	July 16	786	224	14	116
Lyons, D. C., Chelsea, Mass. Gage-cock	206,030	July 16	632	183	14	98
Mahan, F. M. (See Owen and Mahan.)						
Maloney, M. L., assignor of one-half interest to J. Prouty, Washington, D. C. Paint	206,118	July 16	729	.....	14	109
Martin, J. T., Newark, N. J. Apparatus for cutting ice	205,970	July 16	573	164	14	90
Mast, P. P., and C. O. Gardiner, Springfield, Ohio. Grain drilling and feeding mechanism	205,971	July 16	573	164, 165	14	90
Mather, E., and G. R. Gleason, assignors to Wilson Packing Company, Chicago, Ill. Machine for forming tin-can bodies	206,031	July 16	633	183, 184	14	98
McCormick, R. S. (See Campbell, F. M., assignor.)						
McGinty, E. H., and F. Mead, Centre Junction, Iowa. Car-coupling	206,119	July 16	730	210	14	109
McKay, A., *et al.* (See Way, T. R., assignor.)						
Mead, F. (See McGinty and Mead.)						
Mequier, B. C., Osage, Iowa. Road-grader	206,120	July 16	731	210	14	109
Merritt, E. F. (See Walsmith and Merritt.)						
Miller, H., Providence, R. I. Stove-grate	206,033	July 16	636	184	14	98
Miller, J. L., Washington, D. C., and H. H. Tallmadge, and E. Brown, New York, N. Y. Automatic gas-lighter	206,032	July 16	634	184	14	98
Milliken, A., Brooklyn, N. Y. Umbrella-runner	206,034	July 16	637	184	14	98
Moreau, E., assignor to Moreau Machine Manufacturing Company, San Francisco, Cal. Turn-table for sewing-machines	206,035	July 16	638	185	14	98
Moreau Machine Manufacturing Company. (See Moreau, E., assignor.)						
Moritz, J. D., *et al.* (See Andrews, T. B., assignor.)						
Morrington, H. H. (See Tavener, R. W., assignor.)						
Morton, J. C., East Deering, Me. Rudder for vessels	205,972	July 16	578	165	14	91
Muir, T., Andes, N. Y. Butter-worker	206,036	July 16	639	185	14	99
Mullins, M. J., New York, N. Y. Tenoning-machine	206,121	July 16	732	210, 211	14	110
Mumford, C. H., Providence, R. I. Button	206,037	July 16	639	185	14	99
Munroe Organ Reed Company. (See Ewell, W. F., assignor.)						
Neill, J., St. Joseph, Mo. Corn-planter attachment	205,973	July 16	579	165, 166	14	91
Newhall, J. A. (See Bryer, S. G., assignor.)						
Nixon, A. R., Kansas City, Mo. Hoe	206,122	July 16	736	211	14	110
Olds, D. S., Stamford, Conn. Smoke-consuming furnace for boilers	206,123	July 16	736	211	14	110
Owen, S. R., and F. M. Mahan, St. Joseph, Mo. Atmospheric churn	206,124	July 16	737	211	14	110
Owen, S. R., and F. M. Mahan, St. Joseph, Mo. Felly joint and tightener	206,125	July 16	738	212	14	110
Paris, D. E., Omaha, Nebr. Parlor-stove. (Reissue)	8,336	July 16	782	224	14	116
Paris, D. E. (See Luchs, H., assignor.) (Reissue.)						
Parkhurst, E. B., Woburn, Mass. Machine for stoning, glassing, and pebbling leather	205,974	July 16	580	166	14	91
Parmelee, E. S., and B. A. Treat, Naugatuck, Conn. Vehicle-hub	205,975	July 16	581	166	14	91
Peck, L. A., Boston, Mass. Apparatus for projecting life-saving lines, &c	206,126	July 16	738	212	14	110
Peck, Stow & Wilcox Company. (See Shepard, A., assignor.)						
Penn, B. F., Carlisle, Ohio. Mechanical movement	205,976	July 16	582	166	14	91
Pfeifer, J., Philadelphia, Pa. Coal-hod	206,127	July 16	741	212	14	111
Phelps, G. E., Appleton, Wis. Child's carriage	206,038	July 16	640	186	14	99
Phelps, I. M., assignor of one-half interest to J. Shillito, Jr., Philadelphia, Pa. Fan-blower	206,129	July 16	742	213	14	111
Phillips, J. J., Norfolk, Va. Portable refrigerator	206,128	July 16	741	213	14	111
Phillips, O. F., Lynchburg, Va. Plow	205,977	July 16	583	167	14	91
Phinney, T. W., Chicago, Ill. Combined curbstone and gutter for streets	206,130	July 16	743	213	14	111
Platt, J. A., Warren, Ill. Harrow	206,039	July 16	641	186	14	99
Preston, G., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Griper motion for printing-machines	206,131	July 16	744	213, 214	14	111
Proctor, D. R., Gloucester, Mass. Spark-arrester	206,132	July 16	745	214	14	111
Prouty, J. (See Maloney, M. L., assignor.)						
Pusey, F. W., Carthage, Ind. Wheel-cultivator	206,040	July 16	642	186	14	99
Ralya, J. J., Cleveland, Ohio. Feed-water heater	206,133	July 16	746	214	14	111
Ransom, T. W. (See Gardner and Ransom.) (Reissue.)						
Reimer, J. J., Hoboken, N. J. Die for finishing horseshoes	205,978	July 16	583	167	14	91
Requa, E. (See Andrews, A. W., assignor.)						
Richardson, E. F., Reading, Mass. Boot and shoe	206,041	July 16	643	187	14	99
Richardson, J. R., and W. J. Taylor, Marinette, Wis. Cork-extractor	206,134	July 16	747	215	14	111
Ring, J., St. Louis, Mo. Cooling and freezing apparatus	206,135	July 16	748	215	14	112
Rissmüller, L. (See Wiesinger and Rissmüller.)						
Robbins, S., Monroeville, Ohio. Bag-holder	206,137	July 16	750	215	14	112
Roche, R. F., United States Army. Adding-stick	206,136	July 16	749	215	14	112

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Romig, W. B., Lehighton, assignor to himself and C. H. Weiss, Eckley, Pa. Iron platform for wagons	206,042	July 16	644	187	14	99
Ross, H. S., Chicago, Ill. Stuffing-box for steam-engines	206,139	July 16	751	216	14	112
Rumbaugh, J., Fremont, Ohio. Refrigerator-building	206,140	July 16	753	216	14	112
Sames, P. (See Bigalow, F., assignor.)						
Schmitz, J. P., and H. W. Cooper, Winona, Minn. Horse-collar clamp	206,043	July 16	645	187	14	99
Schneider, A., assignor of one-half interest to L. Wellendorf, Youngtown, Ohio. Lock	206,044	July 16	645	187, 188	14	100
Schweickhard, J., Kekoskee, Wis. Rotary churn	205,945	July 16	647	188	14	100
Semonin, P. F., Louisville, Ky. Steam-boiler	205,979	July 16	584	167	14	92
Shepard, A., Plantsville, assignor to Peck, Stow & Wilcox Company, Southington, Conn. Coffee and spice mill	206,141	July 16	753	217	14	112
Sherman, A. R. Natick, assignor to S. A. Jenks, Lincoln, R. I. Barrier for draw-bridges	205,946	July 16	648	188	14	100
Shillito, J., Jr. (See Phelps, I. M., assignor.)						
Shollar, F., assignee of one-half interest to A. M. Hilton, Otsego Lake, Mich. Pump	205,948	July 16	650	189	14	100
Shrake, F. T., assignor of one-half interest to A. Beyer, New Philadelphia, Pa. Middlings-feeder for millstones	205,947	July 16	650	189	14	100
Sibley, F., and J. Holmwood, Jr., Buffalo, N. Y. Combined gum-box and spinning toy	206,142	July 16	754	217	14	112
Siedler, C., Jersey City, N. J., assignor to P. Lorillard Company, New York, N. Y. Marking plug-tobacco	206,143	July 16	755	217	14	112
Siemens, C. W., Westminster, England. Manufacture of iron and steel	205,980	July 16	585	167, 168	14	92
Siemens, F., Dresden, Germany. Manufacture of toughened enameled glass	205,981	July 16	588	.....	14	92
Simonton, R. (See Adams, Cain, and Simonton.)						
Slade, J., Yonkers, N. Y. Preventing loss of heat in charging glass-retorts	206,144	July 16	755	217	14	112
Sleeper, C. T., Chicago, Ill., assignor, by mesne assignments, to C. C. Jerome and D. Andrews. Stuffing-box for steam-engines. (Reissue)	8,335	July 16	779	223	14	115
Smith, A. F., Lynn, Mass. Machine for forming heel-stiffeners	206,145	July 16	756	218	14	113
Smith, G. C. (See Hamilton and Smith.)						
Smith, W., San Francisco, Cal. Valve for water-closets	205,949	July 16	652	189	14	101
Springer, F. J., Edwardsville, Ill. Vehicle-spring	206,050	July 16	654	189	14	101
Stevens, F. M., Concord, N. H. Rotary valve	205,982	July 16	588	169	14	92
Stockwell, E., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Time-lock	206,146	July 16	758	218, 219	14	113
Stockwell, E., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Safe and vault fastening	206,147	July 16	763	219	14	113
Stone, L., Dryden, N. Y. Butter-tub	206,051	July 16	655	190	14	101
Stough, W. W. (See Wingler and Stough.)						
Stuart, C. C., New York, N. Y. Machine for preparing moldings for gilding	206,149	July 16	765	220	14	113
Stuart, R., Cedar Rapids, Iowa. Oatmeal-machine	206,148	July 16	765	219	14	113
Sturtevant, O. L., Ogden, Iowa. Feed-cooker	206,138	July 16	750	216	14	112
Sykes, P., Providence, R. I. Elevator	206,052	July 16	656	190	14	101
Talley, J. R., Pinos, Ill. Gate	206,150	July 16	767	220	14	114
Tallmadge, H. H. (See Miller, Tallmadge, and Brown.)						
Tavener, R. W., assignor of one-half interest to H. H. Norrington, West Bay City, Mich. Measuring-faucet	206,151	July 16	768	220	14	114
Taylor, R. W. (See Copeland and Taylor.)						
Taylor, W. J., Chester, N. J. Manufacture of glass	206,053	July 16	656	190	14	101
Taylor, W. J. (See Richardson and Taylor.)						
Tenant, H. P., East Germantown, assignor to Kerrick & Winegardner, Indianapolis, Ind. Steam-jet pump	206,054	July 16	659	190	14	101
Thomas, G. (See Collins and Thomas.)						
Thomas, N., Chicago, Ill. Truck for moving railway-axles, &c	206,152	July 16	769	220	14	114
Thurber, M. K. (See Harvey and Thurber.)						
Tirrell, J. P., Somerville, Mass. Electric gas-lighting apparatus	206,057	July 16	661	191	14	102
Towner, B. H. (See Hanersperger, P., assignor.)						
Traverse, V. P., New York, N. Y. Rope	206,058	July 16	663	191	14	102
Treat, B. A. (See Parmelee and Treat.)						
Tresilian, T., Gloucester, Mass. Hammock-eye	206,059	July 16	664	192	14	102
Turner, G. W., Tupelo, Miss. Explosive shell	206,153	July 16	770	221	14	114
Vail, J. B. (See Vail, J. E. and J. B.)						
Vail, J. E. and J. B., assignors of one-half interest to G. S. Gifford and J. W. Binns, Adrian, Mich. Machine for operating churns	205,983	July 16	589	169	14	92
Very, T. S. (See Batchelder, H. J., assignor.) (Reissue.)						
Vestal, T. R., Fall River, Mass. Measuring-pump	206,060	July 16	664	192	14	102
Walker, D. H., New York, N. Y., and C. C. Egerton, Baltimore, Md. Electric-signal apparatus for railway-trains	206,154	July 16	771	221	14	114
Walsworth, L. A., and E. F. Merritt, Union City, Mich. Insect and bug gatherer	205,984	July 16	590	170	14	92
Wattles, J. W., Canton, Mass. Spinning-ring holder	206,155	July 16	772	221	14	114
Way, T. R., Springfield, Ohio, assignor of one-half interest to A. McKay and P. H. Ellsworth, Hot Springs, Ark. Stove-pipe ventilator	205,985	July 16	591	170	14	92
Weiss, C. H. (See Romig, W. B., assignor.)						
Wellendorf, L. (See Schneider, A., assignor.)						
Wenderoth, E., Bremen, Germany. Process and apparatus for coloring tobacco-leaves	206,156	July 16	773	221	14	115
Wenner, J. W. (See Henderson, S. S., assignor.)						
Westcott, C. S., Philadelphia, Pa. Type	205,986	July 16	591	170	14	93
Westland, C. S., Providence, R. I. Lamp	206,061	July 16	666	192	14	102
Weyman, G. W., Philadelphia, Pa. Plunger for pressing glass	206,157	July 16	774	222	14	115
White, C. W., assignor of two-thirds interest to G. P. Loring and D. W. B. Jackson, Boston, Mass. Eyelet for securing buckles to straps	206,055	July 16	660	191	14	101
Whittemore, D. (See Hinds, F. P., assignor.)						
Whittemore, D. (See Leavitt, A., assignor.)						
Wiesinger, H., and L. Rissmüller, Gottingen, Germany. Treating rags for obtaining paper stock and fertilizers	206,158	July 16	775	.....	14	115
Wilson Packing Company. (See Mather and Gleason, assignors.)						
Wingler, G. W., and W. W. Stough, Shippensburg, Pa. Spring for side-bar wagons	206,056	July 16	661	191	14	101
Wood, W. P., Leon, Iowa. Automatic wagon-brake	206,063	July 16	667	193	14	102
Wolverton, J. E., Indianapolis, Ind., assignor of one-half interest to D. De Wolf, Chattanooga, Tenn. Motive power	206,062	July 16	667	192	14	102
Yale Lock Manufacturing Company. (See Stockwell, E., assignor.)						
Yeager, F. M., Oxford, Kans. Sheaf-carrier for harvesters	205,951	July 16	554	158	14	88
Zerban, A., New York, N. Y. Sampling colors for patterns	206,064	July 16	668	193	14	102
Zimmerman, J. W., Manistee, Mich. Friction feed-clutch for circular-saw mills. (Reissue)	8,339	July 16	786	225	14	116

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 16th DAY OF JULY, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adding-machine	W. P. Borland and H. Hoffmann	205,983	July 16	508	172	14	93
Adding-stick	R. F. Roche	206,136	July 16	749	215	14	112
Arithmetical block	H. H. Hill	205,960	July 16	564	161	14	89
Armpit-shield	W. E. Beames. (Reissue)	8,331	July 16	776	222	14	115
Axle box. Vehicle	H. L. Isham	206,114	July 16	724	209	14	109
Bag-holder	S. Robbins	206,137	July 16	750	215	14	112
Bale-band tightener	J. R. Blossom	206,076	July 16	679	197	14	104
Bit-clamp	A. H. Crockford	206,006	July 16	610	176	14	95
Blower. Fan	I. M. Phelps	206,129	July 16	742	213	14	111
Boat-detaching apparatus	B. A. Fiske	206,100	July 16	702	203	14	107
Boiler. Beer	A. Foubert	206,010	July 16	614	177	14	95
Boiler. Steam	P. F. Semonin	205,979	July 16	584	167	14	92
Boot and shoe	E. F. Richardson	206,041	July 16	643	187	14	99
Boot and shoe heels. Making	G. Creter	205,948	July 16	549	156	14	87
Boots and shoes. Hand lasting-tool for	F. P. Hinds	206,019	July 16	620	179, 180	14	96
Boring-machine	H. C. Cloyd	206,091	July 16	694	200	14	106
Box-trimming machine	J. Bozorth	205,994	July 16	600	173	14	94
Brake. Automatic wagon	W. P. Wood	206,063	July 16	667	193	14	102
Brake. Car	A. B. Allen	205,987	July 16	592	170, 171	14	93
Brakes. Coupling-valve for steam and air	J. W. Gardner and T. W. Ranson. (Reissue.)	8,337	July 16	784	224	14	116
Bridges. Barrier for draw	A. R. Sherman	206,046	July 16	648	188	14	100
Burglar alarm and indicator. Combined	C. E. Hart and T. Johnson	206,105	July 16	708	204	14	107
Butter-tub	L. Stone	206,051	July 16	655	190	14	101
Butter-worker	T. Muir	206,036	July 16	639	185	14	99
Button	C. H. Mumford	206,037	July 16	639	185	14	99
Button. Sleeve	J. M. Chandler	206,002	July 16	607	175	14	95
Button and stud	C. E. S. Gederén	206,103	July 16	706	204	14	107
Calculator. Perpetual time and interest	J. Kachelman, Jr. (Reissue)	8,334	July 16	778	223	14	115
Can bodies. Machine for forming tin	E. Mather and G. R. Gleason	206,031	July 16	633	183, 184	14	98
Can. Meat	G. Brougham	205,946	July 16	547	155	14	87
Car-coupling	J. R. Lamb	206,027	July 16	629	182	14	97
Car-coupling	E. H. McGinty and F. Mead	206,119	July 16	730	210	14	109
Car propeller. Street	J. B. Atwater	205,991	July 16	595	171, 172	14	93
Cars. Driving, coupling, and braking appliance for railway	F. O. Deschamps	206,093	July 16	695	201	14	106
Carriage. Child's	G. E. Phelps	206,038	July 16	640	186	14	99
Chuck	W. A. Ingalls	206,113	July 16	721	208	14	109
Churn. Atmospheric	S. R. Owen and F. M. Mahan	206,124	July 16	737	211	14	110
Churn. Rotary	J. Schweickhard	206,045	July 16	647	188	14	100
Churns. Machine for operating	J. E. and J. B. Vail	205,983	July 16	589	169	14	92
Clod-crusher	D. Locke	205,969	July 16	552	163	14	90
Clutch	F. G. Bates	206,071	July 16	674	195	14	103
Clutch	F. G. Bates	206,072	July 16	675	195	14	103
Coal-hod	J. Pfeifer	206,127	July 16	741	212	14	111
Cock. Gage	D. C. Lyons	206,040	July 16	632	183	14	98
Coffee and spice mill	A. Shepard	206,141	July 16	753	217	14	112
Coin-holder	D. G. Bitchcock	206,110	July 16	717	206	14	108
Coin-holder	W. B. Leach	205,967	July 16	550	163	14	90
Cooker. Feed	O. L. Sturtevant	206,138	July 16	750	216	14	112
Cooling and freezing apparatus	J. Ring	206,135	July 16	748	215	14	112
Cork-extractor	J. H. Richardson and W. J. Taylor	206,134	July 16	747	215	14	111
Cotton-gin	D. T. Etheridge	206,097	July 16	699	202	14	106
Crucibles or melting-pots. Shield for the tops of	J. Feix	206,098	July 16	700	202	14	106
Cultivator. Wheel	F. W. Pusey	206,040	July 16	642	186	14	99
Curbstone and gutter for streets. Combined	T. W. Phinney	206,130	July 16	743	213	14	111
Doffer-combs. Mechanism for operating	F. G. Bates and L. E. Hartman	206,073	July 16	676	195, 196, 104, 105	14	103
Drilling and seeding machine. Grain	P. P. Mast and C. O. Gardiner	205,971	July 16	573	164	14	90
Drilling-machine. Steam	S. G. Bryer	205,998	July 16	603	174	14	94
Drills, &c. Feed screw and nut for rock	R. Allison	206,067	July 16	671	194	14	103
Drum. Heating	G. B. Follett	205,953	July 16	556	159	14	88
Electric light	P. O. Jenkins	205,962	July 16	565	161	14	89
Elevator	P. Sykes	206,052	July 16	656	190	14	101
Elevator and carrier. Hay	W. F. Goddard	206,104	July 16	707	204	14	107
Elevators. Grain-spout for	F. M. Campbell	206,001	July 16	606	175	14	94

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Eyelet for securing buckles to straps	C. W. White	206,055	July 16	660	191	14	101
Faucet. Measuring	R. W. Tavener	206,151	July 16	768	220	14	114
Feed-water heater	J. J. Ralya	206,133	July 16	746	214	14	111
Feed-water heater. Locomotive	E. Körting	205,963	July 16	566	162	14	89
Felly joint and tightener	S. R. Owen and F. M. Mahan	206,125	July 16	738	212	14	110
Fences, &c. Post for	A. P. Bowes	206,078	July 16	680	197	14	104
Fertilizer	T. J. Boykin and J. W. Carmer	206,077	July 16	680	.....	14	104
Fire-escape	F. A. Copeland and R. W. Taylor	206,087	July 16	689	199	14	105
Fire-escape	D. L. Dieckmann	205,949	July 16	550	156, 157	14	88
Flat-iron	C. G. Gunderson	206,014	July 16	617	178	14	96
Floor, roof, pavement, &c. Composition	T. Hyatt	206,112	July 16	719	207, 208	14	108
Fluid-discharging apparatus	G. F. Fogerty	206,009	July 16	613	176	14	95
Fluting-machine	H. Luchs. (Reissue)	8,338	July 16	786	224	14	116
Furnace for boilers. Smoke-consuming	D. S. Olds	206,123	July 16	736	211	14	110
Furnace. Glass annealing and working	W. Hirsch	206,109	July 16	716	206	14	108
Gas. Apparatus for charging water with carbonic acid	H. B. Dunham	205,950	July 16	552	157, 158	14	88
Gas-lighter. Automatic	J. L. Miller, H. H. Tallmadge, and E. Brown.	206,032	July 16	634	184	14	98
Gas-lighting apparatus. Electric	J. P. Tirrell	206,057	July 16	661	191	14	102
Gas. Manufacture of	W. J. Taylor	206,053	July 16	656	190	14	101
Gas-retorts. Preventing loss of heat in charging	J. Slade	206,144	July 16	755	217	14	112
Gate	J. W. Brokaw	206,080	July 16	682	197	14	104
Gate	D. C. Delinger	206,092	July 16	695	201	14	106
Gate	J. R. Talley	206,150	July 16	767	220	14	114
Glass. Manufacture of toughened enameled	F. Siemens	205,981	July 16	588	.....	14	92
Glass-mold	J. H. Hobbs	206,111	July 16	718	207	14	108
Glass. Plunger for pressing	G. W. Weyman	206,157	July 16	774	222	14	115
Glue. Apparatus for cooling and spreading	E. W. Leggett	205,968	July 16	571	163	14	90
Grader. Road-	B. C. Megquier	206,120	July 16	731	210	14	109
Gum-box and spinning-toy. Combined	F. Sibley and J. Holmwood, Jr	206,142	July 16	754	217	14	112
Hammock-eye	T. Tresdian	206,059	July 16	664	192	14	102
Harrow	J. A. Platt	206,039	July 16	641	186	14	99
Harvester	J. Gerrard	206,102	July 16	704	203	14	107
Harvesters. Sheaf-carrier for	F. M. Yeager	205,951	July 16	554	158	14	88
Hat-elastics. Fastening for	M. K. Holt	206,021	July 16	623	180	14	97
Hay-loader	G. L. Johnson	206,023	July 16	624	181	14	97
Heel-stiffeners. Machine for forming	A. F. Smith	206,145	July 16	756	218	14	113
Hoe	A. R. Nixon	206,122	July 16	736	211	14	110
Horse-collar clamp	J. P. Schmitz and H. W. Cooper	206,043	July 16	645	187	14	99
Horseshoe	H. M. Clemons	206,003	July 16	608	175	14	95
Horseshoes. Die for finishing	J. J. Reimer	205,978	July 16	583	167	14	91
Horseshoes. Machine for making	H. J. Batchelder. (Reissue)	8,340	July 16	787	225	14	116
Hub. Carriage-wheel	J. Kritch	205,965	July 16	568	162	14	89
Hub. Vehicle-	E. S. Parmelee and B. A. Treat	205,975	July 16	581	166	14	91
Ice-cutting apparatus	J. T. Martin	205,970	July 16	573	164	14	90
Index	F. L. Hutter	206,022	July 16	624	180	14	97
Insect and bug gatherer	L. A. Walsworth and E. F. Merritt	205,984	July 16	590	170	14	92
Iron and steel. Manufacture of	C. W. Siemens	205,980	July 16	585	167, 168	14	92
Lamp	C. S. Westland	206,061	July 16	666	192	14	102
Lamp-black. Machine for making	J. K. Hallock and E. R. Blood	205,955	July 16	558	159	14	88
Lamp. Electrical	E. Bürgin	206,083	July 16	684	198	14	104
Lamp. Hydrocarbon	C. E. Ball	205,943	July 16	545	155	14	87
Leather. Machine for stoning, glassing, and pebbling	E. B. Parkhurst	205,974	July 16	580	166	14	91
Life-saving lines, &c. Apparatus for projecting	L. A. Peck	206,126	July 16	738	212	14	110
Liquid-measure	M. M. Kendall	206,024	July 16	625	181	14	97
Liquor apparatus. Aerated-	T. C. Knox	206,025	July 16	626	181	14	97
Lock	A. Schneider	206,044	July 16	645	187, 188	14	100
Lock. Hasp-	C. Collins, Jr., and G. Thomas	205,947	July 16	548	156	14	87
Lock. Time-	E. Stockwell	206,146	July 16	758	218, 219	14	113
Locket	T. Granbery	206,012	July 16	616	177	14	96
Loom for weaving wire fabrics	J. Asbach	206,068	July 16	671	194	14	103
Magneto-electric and electro-magnetic machine	E. Bürgin	206,084	July 16	685	198	14	105
Match-safe	J. Gilbert	205,954	July 16	557	159	14	88
Mechanical movement	B. F. Penn	205,976	July 16	582	166	14	91
Mechanical movement	W. Koss	205,964	July 16	567	162	14	89
Milk-cooling apparatus	V. P. and J. S. Hill	206,108	July 16	714	206	14	108
Millstones. Middlings-feeder for	F. T. Shrake	206,047	July 16	650	189	14	100
Mines. Air-exhauster for coal	T. W. Flynn	206,101	July 16	704	203	14	107
Moldings for gilding. Machine for preparing	C. C. Stuart	206,149	July 16	765	220	14	113
Motive-power	J. E. Woolverton	206,062	July 16	666	192	14	102
Mower	W. A. Kirby	206,116	July 16	727	209	14	109
Non-conducting compound	G. R. Evans	206,007	July 16	611	.....	14	95
Oatmeal-machine	R. Stuart	206,148	July 16	765	219	14	113
Ore-separator	J. G. Jebb	206,115	July 16	725	209	14	109
Organ tremolo. Reed-	W. F. Ewell	206,008	July 16	611	176	14	95
Paint	M. L. Maloney	206,118	July 16	729	.....	14	109
Pan. Bake-	L. G. Fisher, Jr.	206,099	July 16	702	202	14	106
Paper-making machine	J. Hatch	206,107	July 16	712	205	14	108
Paper-making machine. Cylinder	J. Hatch	206,106	July 16	709	205	14	107
Paper-stock and fertilizers. Treating rags for obtaining	H. Wiesinger and L. Riesmüller	206,158	July 16	775	.....	14	115
Patterns. Sampling colors for	A. Zerban	206,064	July 16	668	193	14	102
Pipe cutting and threading machine	J. B. Eaton and C. Latham	206,095	July 16	697	201	14	106
Pipes. Stop and waste attachment for water-	W. A. Crawford	206,090	July 16	692	200	14	105
Pistol-springs. Manufacture of	T. B. Andrews	205,988	July 16	593	.....	14	93
Planter attachment. Corn-	J. Neill	205,973	July 16	579	165, 166	14	91
Planter. Corn and cotton	S. S. and J. P. Clary	206,089	July 16	691	200	14	105
Plow	J. M. Bassett	205,992	July 16	597	172	14	93
Plow	O. F. Phillips	205,977	July 16	583	167	14	91
Plow and grain-drill	H. A. Avery	206,069	July 16	672	194	14	103
Plow. Side-hill	J. W. Barnett and T. J. Hobbs	206,070	July 16	673	194	14	103

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Power and motion. Apparatus for transmitting	C. L. Henrich	206,018	July 16	620	179	14	96
Press. Punching-	W. E. Brooke	205,997	July 16	602	173, 174	14	94
Printing-machines. Griper motion for	G. Preston	206,131	July 16	744	213, 214	14	111
Pump	F. Shollar	206,048	July 16	650	189	14	100
Pump. Measuring-	T. R. Vestal	206,060	July 16	664	192	14	102
Pump. Steam-jet	H. P. Tenant	206,054	July 16	659	190	14	101
Pumps. Clack-valve for	W. C. D. Body. (Reissue)	8,332	July 16	776	222	14	115
Punching-machine	W. Krutzsch	206,026	July 16	627	181	14	97
Quilting-machine	J. J. Crall	206,004	July 16	608	175	14	95
Railway-switch	A. B. Adams, G. E. Cain, and R. Simonton.	206,066	July 16	670	193	14	103
Railway-trains. Electric signal apparatus for	D. H. Walker and C. C. Egerton	206,154	July 16	771	221	14	114
Razor-strop	A. V. Brokhahne	206,081	July 16	682	197	14	104
Razor-strop case	A. V. Brokhahne	206,082	July 16	683	198	14	104
Refrigerator	J. W. Lawrence	206,028	July 16	630	182	14	97
Refrigerator-building	J. Rumbaugh	206,140	July 16	753	216	14	112
Refrigerator. Portable	J. J. Phillips	206,128	July 16	741	213	14	111
Rolling machinery. Metal-	P. S. Bradford	205,945	July 16	547	155	14	87
Rope	V. P. Travers	206,058	July 16	663	191	14	102
Rudder for vessels	J. C. Morton	205,972	July 16	578	165	14	91
Saddles. Safety-hook for harness	W. H. Henderson	206,016	July 16	618	178	14	96
Safe and vault fastening	E. Stockwell	206,147	July 16	763	219	14	113
Sash-balance	H. F. Bond	205,944	July 16	546	155	14	87
Saw mill. Circular-	J. W. Zimmerman. (Reissue)	8,339	July 16	786	225	14	116
Scoop	W. C. Freeman	206,011	July 16	615	177	14	96
Screen. Window-	J. Brizee	205,995	July 16	601	173	14	94
Screw. Wood-	G. C. Armstrong	205,990	July 16	594	171	14	93
Sewing-machine	A. Leavitt	206,029	July 16	631	182	14	98
Sewing-machine. Presser-foot	J. A. Lakin	205,966	July 16	569	163	14	90
Sewing-machine stopper	D. E. Dutrow	206,094	July 16	696	201	14	106
Sewing-machine table	W. H. Boyer. (Reissue)	8,333	July 16	777	222	14	115
Sewing-machine turn-table	E. Moreau	206,035	July 16	638	185	14	98
Shaving-horse. Folding	S. E. Cress	206,005	July 16	609	176	14	95
Shell. Explosive	G. W. Turner	206,153	July 16	770	221	14	114
Shutter	B. C. Davis	206,088	July 16	690	199, 200	14	105
Spark-arrester	D. R. Proctor	206,132	July 16	745	214	14	111
Spinning-ring holder	J. W. Wattles	206,155	July 16	772	221	14	114
Spooling-machines. Bobbin-supporter for	A. H. Carroll	206,085	July 16	627	198	14	105
Spring for side-bar wagons	G. W. Wingler and W. W. Stough	206,056	July 16	661	191	14	101
Spring. Side	E. P. Carter	206,086	July 16	688	199	14	105
Spring. Vehicle-	F. J. Springer	206,050	July 16	654	189	14	101
Steamer. Feed-	F. Bigalow	206,075	July 16	678	196	14	104
Stone by machinery. Splitting and shaping	A. W. Andrews	205,989	July 16	594	171	14	93
Stove. Cooking-	G. E. Hopkin	206,961	July 16	564	161	14	89
Stove-grate	P. D. Beckwith	206,074	July 16	677	196	14	104
Stove-grate	H. Miller	206,033	July 16	636	184	14	98
Stove. Parlor-	D. E. Paris. (Reissue)	8,336	July 16	782	224	14	116
Stove-pipe ventilator	T. R. Way	205,985	July 16	591	170	14	92
Stuffing-box. Steam-engine	H. S. Ross	206,139	July 16	751	216	14	112
Stuffing-box. Steam-engine	C. T. Sleeper. (Reissue)	8,335	July 16	779	221	14	115
Suspenders	B. J. Greely	206,013	July 16	617	177	14	96
Swine. Ring-blank for	W. D. Brown	205,996	July 16	601	173	14	94
Tenoning-machine	M. J. Mullins	206,121	July 16	732	210, 211	14	110
Thill-coupling	A. Harvey and M. R. Thurber	205,958	July 16	562	160	14	88
Tobacco-leaves. Process and apparatus for coloring	E. Wenderoth	206,156	July 16	773	221	14	115
Tobacco. Marking plug	C. Siedler	206,143	July 16	755	217	14	112
Tobacco-quid protector	S. S. Henderson	206,017	July 16	619	178	14	96
Truck for moving railway-axles, &c	N. Thomas	206,152	July 16	769	220	14	114
Truck. Railway-car	W. R. Hamilton and G. C. Smith	205,956	July 16	560	159, 160	14	88
Truss. Hernia	H. Loevy	206,117	July 16	728	209	14	109
Type	C. S. Westcott	205,986	July 16	591	170	14	93
Umbrella-runner	A. Milliken	206,034	July 16	637	184	14	98
Valve. Rotary	F. M. Stevens	205,982	July 16	588	169	14	92
Vapor-burner	W. R. Hanks	206,015	July 16	618	178	14	96
Varnish	C. J. and C. Breidbach	206,079	July 16	681	.....	14	104
Velocipede	J. H. Hollweg	206,020	July 16	623	180	14	96
Ventilator. Grain-	B. F. Elliott	206,096	July 16	698	202	14	106
Ventilator. Window-	G. R. Buffham	205,999	July 16	605	174	14	94
Ventilator. Window-	L. D. Harvey	205,957	July 16	561	160	14	88
Wagons. Iron platform for	W. B. Romig	206,042	July 16	644	187	14	99
Wash-tub of hydraulic cement. Stationary	D. Burke	206,000	July 16	606	174	14	94
Washing-machine	J. W. Elston	205,952	July 16	555	158	14	88
Washing-machine. Pounder	P. Hauersperger	205,959	July 16	563	161	14	89
Water-meter. Rotary	N. B. Acheson	206,065	July 16	669	193	14	102
Water-closet valve	W. Smith	206,049	July 16	652	189	14	101

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COMMISSIONER'S DECISIONS.

BERING vs. HAWORTH—*Interference.*

[*In the matter of the interference between the application of James E. Bering, filed May 28, 1877, and the application of Lysander L. Haworth, filed April 13, 1877.*—"IMPROVEMENT IN CORN-PLANTERS."—*Decided June 17, 1878.*]

Diligence on the part of an inventor first to conceive is only to be considered in view of the efforts of another, who, although second to conceive the invention, is the first to reduce it to practice.

No period of delay *per se* is sufficient to deprive an inventor of his patent.

The phrase "on or about," when used in a preliminary statement strictly construed and evidence of the transaction *prior* to the date mentioned in connection with such phrase, excluded.

DOOLITTLE, *Assistant Commissioner:*

The special improvement in controversy relates to check-row corn-planters, and consists in a device for carrying or transferring the check-row cord or knotted wire over from one row to the other as the planter traverses the field.

The issue, as declared by the Primary Examiner, is as follows:

An arm pivoted to a stake in the ground, so as to carry the check-row cord or wire over laterally as the planter approaches the end of the field.

Haworth's application was filed April 13, 1877, and Bering's May 28, 1877.

The testimony in behalf of Bering is clear in showing that he had this invention in view as early as the 22d of January, 1877, when he illustrated his idea by the use of a needle and thread. January 25 or 26, he made an experimental model, a portion of which is put in evidence, and showed it to several parties on the 26th and 29th of January. This model fully illustrated the working of the invention. I think that January 26 may be considered as the date of the completion of the invention by him, not in a form actually to be used in the field, but in a manner sufficient to demonstrate its successful operation.

It is alleged by Haworth, in his preliminary statement, that he conceived the invention in controversy on or about the 1st of May, 1875. In his testimony he fixes the date of his conception as about the 10th of May, 1875—at the time he made a certain visit to Fairburg, Illinois, to examine the operation of wire check-row corn-planters. This statement is urged as a variance from his preliminary statement, but it is not a material one, and certainly it does not make in his favor. On his return from this visit about the time mentioned, he explained to his brother, George Haworth, his idea, and illustrated it by an experiment in their shop in Decatur, Illinois. This experiment consisted of fastening one end of a cord to the floor and passing it over a board or scantling a few feet high, the other end of the cord being held by one of the parties at a distance of fifty or sixty feet from the board. The board was held in its position by Haworth, who placed his foot against the bottom thereof. By these means, they testify, and by holding the cord tight, they were able to move the board and cord laterally, in the manner desired, in transferring a check-cord in the field from one row to another. No evidence was adduced as to this experiment, except the testimony of these brothers; still I fail to see anything in the record affecting adversely the credibility of their testimony. Brothers are not incompetent witnesses for each other, even under the narrow restrictions of the common law. In modern practice, objections to the testimony of witnesses on the ground of relationship or interest go to their credibility rather than to their competency.

It is true that the unsupported allegation of an inventor that he conceived an invention at a certain date is not sufficient to establish such fact, as it is mere testimony of a mental operation which assumed no tangible form; but that is not the state of the case here, as the conception of the invention by Haworth in May, 1875, was followed immediately by an actual experiment, which illustrated the principle of this invention quite as clearly and fully as the experiment made by his opponent, Bering, on the 22d of January, 1877, with a needle and thread.

A further discrepancy between the preliminary statement and evidence on the part of Haworth is urged from the fact that in the former it is set forth that he had a full-sized model of the anchor made, which was completed on or about the 1st of February, 1877, and that on or about the 15th of February, 1877, he made a full-sized working machine, which worked perfectly, whereas it is alleged in his testimony that these things were done in January. In Haworth's forty-seventh answer, in his testimony in chief, he says that he made one full-sized machine on or about the 1st day of February, 1877, and one model similar to "Exhibit B" about the middle of February, which was sent to the Patent Office. This model, "Exhibit B," he testifies to have made between the 15th and 21st of January, 1877, and on the latter-named day showed it to several members of his family at his father's residence. The experiments made in January are alleged to be inconsistent with his preliminary statement; but the same model shown on the 29th of January, 1877, cannot be considered as inconsistent with the phrase "on or about the 1st of February, 1877." Where such a phrase is permitted to be used in a preliminary statement, a little latitude must be allowed, and the applicant cannot be confined to the specific dates mentioned; neither is it sufficient to discredit the testimony of an inventor that he fails to set forth therein all the facts connected with his invention. It is sufficient if he correctly sets forth in that statement the leading facts in his case—viz., the dates of conception, reduction to form of models or drawings, completion of the invention, and extent of use. But throwing out of consideration all experiments or models made in January, 1877, prior to the 29th, we find that on that day Haworth showed a model illustrating the invention, and during the month following made a full-sized operative machine.

The only question remaining is, then, In view of the fact that the date of the conception has been clearly established by Haworth, did he exercise reasonable diligence in perfecting the invention?

The Examiner of Interferences has correctly stated the principle of law on this point, and that is that diligence on the part of an inventor first to conceive is only to be considered in view of the efforts of another who, although second to conceive the invention, is the first to reduce it to practice. "The question of diligence is not an absolute, but a relative one," and must be considered in reference to the art to which the invention relates, and to the efforts of others in the direction of its introduction to the knowledge of the public. (*Am. Nich. Pavement Co.* vs. *City of Elizabeth*, 6 Fisher, 424; *Kendall* vs. *Winsor*, 21 How., 322.) Unless laches is such that it amounts to evidence of the abandonment of an invention, it should not be urged against an inventor, unless another in the meantime has given to the world the benefit of its disclosure. No period of delay *per se* is sufficient to deprive an inventor of his patent. (*Russell and Erwin Manufacturing Co.* vs. *Mallory*, 5 Fisher, 632.)

Haworth's final experiments and reduction to practice were contemporaneous with, if they did not precede, the efforts of Bering, and he was first also to assert his claims as original inventor by his prior application. Priority belongs to him, and the decision of the Board of Examiners-in-Chief is affirmed.

SUPPLEMENT.—MOTION TO REHEAR.

One part of this motion to rehear is based upon the assertion in the former decision that, when a party is permitted in his preliminary statement to set forth that he did certain things toward completing his invention "on or about" a specified time, he should be allowed some latitude in his proof. In this case, having alleged that he completed a full-sized model "on or about" February 1, 1877, proof was admitted showing that the same was completed on January 29, 1877.

After due consideration, the Commissioner and myself both agree that it was a mistake to allow the applicant using this expression to adduce proof of this matter prior to the specific date alleged.

Where parties are required, as now, by Rule 53 of Office Practice, to show in their preliminary statements the dates of original conception, reduction to drawings or models, and of completion of the invention, and by the same rule are held "strictly" to such dates, they ought not to be permitted to introduce proof showing prior dates of such transactions. This would in effect subvert both the spirit and letter of the rule. The same rule provides how these preliminary statements, which constitute the only pleadings in the case, can be amended before testimony is taken. And this mode is in harmony with the general practice of amending pleadings in the courts. This construction would necessitate the leaving out of consideration all that Haworth did in January, 1877. Still the facts remain established that Haworth was the first to conceive this invention; that, in comparison with the efforts of his opponent, he was reasonably diligent in reducing the same to practice; that such reduction was contemporaneous with acts done by his opponent in the same direction; that he was first and the only one who actually put the invention at work in the field, and that finally he was first to apply for a patent. These facts the Commissioner regards sufficient in justifying the awarding of priority to Haworth.

July 6, 1878.

H. J. HUTTNER AND ROBERT SCOTT.—*Interlocutory Appeal.*

[*Interlocutory appeal from the Board of Examiners-in-Chief in the matter of the interference between the Letters Patent No.* 183,934, *granted H. J. Huttner and Robert Scott, October* 31, 1876, *and the application for Letters Patent of R. F. Knox and Joseph Osborne, filed April* 2, 1875, *for* "ORE-ROASTING PROCESS AND APPARATUS.—*Decided June* 8, 1878.]

The particular furnace construction being substantially old for other ores, and the process, in a metallurgic sense, old for mercury ores, to introduce these latter ores into the furnace in like manner and with the same furnace-effects as when other ores are treated, involves no invention.

A claim of such scope and character included in the interference was accordingly rejected.

SPEAR, *Commissioner:*

Motion was made by counsel for Huttner and Scott to dissolve the interference so far as it relates to the second claim in interference. This claim is as follows:

The process of obtaining volatile metals from their ores, which consists in subjecting a body of pulverized ore, in divided masses, to the direct and indirect action of reducing-gases at a high temperature, passing to and from said mass, whereby the reduction of the ore and the distillation of the resultant metal are simultaneously effected, and the evolved vapors conveyed directly away and separated, as specified.

It appears to be admitted, or at least it is not denied, that the apparatus of Knox and Osborne, in all the

essential features necessary to carry out the process stated in the claim under consideration, is not new. It is shown in the patent granted Hegeler and Matthiesson, November 25, 1873, for a furnace for desulphurizing, drying, and calcining ores or other substances. That apparatus appears to have been contemplated for non-volatilizable ores, which were simply to be freed from sulphur by the action of this apparatus, and the pulverized ores, from which the sulphur had been thus eliminated, were to pass down through the openings between the series of inclined shelves, and to be carried away by means provided for that purpose. But the apparatus of Hegeler and Matthiesson is made with a series of inclined shelves, on which the pulverized ore rests in divided masses, while subjected to heated air, and the products of combustion passing between the shelves and over the masses; and this apparatus would, if filled with the pulverized cinnabar, (the sole treatment of which is the object of Knox and Osborne,) and if subjected to the passage of the products of combustion with the ordinary excess of oxygen above what was necessary to unite with the carbon of the fuel, undoubtedly operate in the way indicated in the claim under consideration.

It is also shown to be old to subject the ore of mercury in lumps to the action of the products of combustion which pass through and over the mass, and which, in their passage, it may be inferred, desulphurize the ore, and convert both the sulphur and quicksilver into gaseous form, in order that they may go over and be condensed and the valuable part thereby retained. This is illustrated in the patent of Dresser, granted December 29, 1868. Quicksilver ores have also been reduced by treatment in a retort in contact with some desulphurizing substance, the whole being subjected to heat applied externally to the retort.

The question to be decided is, whether the use of the old furnace, with the series of inclined shelves, in the reduction of the ore of quicksilver in powdered condition, by subjecting the said powdered ore to the action of the products of combustion therein, amounts to a new and patentable process.

Undoubtedly a process may be patentable though carried out by means of machinery altogether old. (*Cochrane et al.* vs. *Deener et al.*, 11 OFFICIAL GAZETTE, 687.) But there must be some new and useful mode of operation, or some new result arising from the special adaptation of the old apparatus to the new purpose.

In the present case, the action of the products of combustion and air intermixed therewith upon the ore is precisely the same as in the patent of Dresser. The heat volatilizes both the mercury and the sulphur. At the same time the oxygen of the air, carried along with the products of combustion, unites with the sulphur, forming sulphurous-acid gas, thus leaving the mercury free. Chemically the process is the same as in the Dresser patent. The difference (and I can see no other) lies in the treatment of the ore in pulverized condition, and in "divided masses"—that is to say, lying in separate masses on the series of inclined shelves. But this separation of the pulverized masses is due wholly to the peculiar construction of the apparatus, which consists of the series of inclined shelves. This construction retains the pulverized ore in masses adapted conveniently to receive the heat from the passing products of combustion, and to expose these masses to the heat therefrom obtained. But this is no more than is done in the patent of Hegeler and Matthiesson. The shelved construction of the furnace is purely mechanical in effect. It is contemplated for reducing finely-divided ores, irrespective of the special nature of those ores, or any special mode of treatment within the capacity of the furnace. I do not see that this construction of furnace, therefore, can enter as an element, either directly or indirectly, into the process to render it new and patentable. Whether ores be placed in the furnace of such nature that when the sulphur is combined with the oxygen and driven off as sulphurous-acid gas, the residuum remains as a solid or liquid; or whether the ore be cinnabar, and both the sulphur and quicksilver are volatilized, the effect of the shelved construction is the same. The same is true of that part of the construction or operation referred to in the claim as the "direct and indirect action of the reducing gases." It is set forth that the direct action is that of the reducing-gases passing over the pulverized ore, in immediate contact therewith; the indirect action is that of the heat conveyed by the shelves to the masses of ore lying therein. Whether the distinction be essential or not, obviously it is the same, whatever the ore used, since it arises from the construction of the apparatus. In my judgment, these applicants have done no more than to add to the old form of furnace shown in the Dresser patent the improvement devised by Hegeler and Matthiesson. The advantages arising from the old furnace thus improved are those of the speedier treatment by means of the pulverized and divided masses, and those of the direct application of the heated air and products of combustion. But the effect is the sum of the effects of the two old elements, and the union of the two is, therefore, not patentable. (*Hailes and Treadwell* vs. *Van Wormer*, 5 OFFICIAL GAZETTE, p. 89.)

The furnace, thus improved, has a direct and invariable function. Whichever of the materials referred to in the application and references may be placed therein its action is the same. The effect may, indeed, be different on the different materials, but these differences are not due to the shelved construction; at least, as I have said, the shelves, considered by themselves, produce no effect upon one material which they do not produce upon another. The whole invention, in my judgment, lies in the apparatus, and the apparatus, so far as it could, by any interpretation, be included in the claim under discussion, is old.

The decision is reversed, and the interference dissolved.

The Examiner will notify Knox and Osborne that the claim is refused.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

ANNUAL INDEX FOR 1877.—The annual index for 1877 is now ready for delivery, and will be mailed to all subscribers to the OFFICIAL GAZETTE free of charge. Extra copies of the yearly index, bound in full law binding, can be purchased of the Patent Office for $2, or unbound for $1. Hereafter no annual index will be sent gratis to subscribers to the GAZETTE, but at the end of each volume a complete half-yearly index will be furnished.

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TRADE-MARKS.

[Each certificate bearing date July 23, 1878.]

6,384.—FLOUR.—*C. B. Anders & Brother*, Frederick, Md. Application filed July 6, 1878.
"The word 'LINGANORE.'"

6,385.—CANDY.—*Oliver Rice Chase*, Boston, Mass. Application filed January 11, 1878.
"The fanciful words 'ATLANTIC CABLE.'"

6,386.—RAZORS.—*George F. Creutzburg*, Philadelphia, Pa. Application filed July 1, 1878.
"The representation of an eagle."

6,387.—SMOKING-TOBACCO AND CIGARETTES.—*Charles Early*, Richmond, Va. Application filed June 26, 1878.
"A cut, print, or pictorial representation (which may be of any single color or of varying colors) of two human hands forming a cigarette, as shown."

6,388.—MEDICINAL PREPARATION FOR THE CURE OF COUGHS, COLDS, &c.—*Howard Brothers*, Fredonia, N. Y. Application filed April 15, 1878.
"The autograph signature 'HOWARD BROS.'"

6,389.—GROCERS' WRAPPING-PAPER.—*Thomas D. Hubbard*, Columbus, Ohio. Application filed June 22, 1878.
"The arbitrarily-selected words 'ROPE GOLDEN,' above and below, in connection with the symbol of a rope."

6,390.—REMEDY FOR SEA-SICKNESS.—*Robert R. Kent*, East Boston, Mass. Application filed June 29, 1878.
"The word 'DESOTO' and the circular figure and the letters 'BKR' inclosed therein."

6,391.—PLUG-TOBACCO.—*Ligget & Myers Company*, St. Louis, Mo. Application filed July 1, 1878.
"A white cross, with the spaces intervening between the arms of the cross printed in red, and having a blue center, the whole design being circular in outline, and substantially as shown."

6,392.—PAPER BAGS.—*Smith, Dixon & Co.*, Baltimore, Md. Application filed July 3, 1878.
"The word 'ONE' in connection with the figure '2.'"

6,393.—CLAY FOR CRUCIBLES.—*Emil Thiele*, Stapleton, N. Y. Application filed July 5, 1878.
"The term or designation 'CROWN,' in connection with radial lines, as shown."

6,394.—PAPER-CUTTING MACHINES.—*The Standard Machinery Company*, Mystic River, Conn. Application filed July 3, 1878.
"The word-symbol 'LITTLE GIANT.'"

6,395.—FIRE-EXTINGUISHING COMPOUND.—*The Protective Fire Annihilator Company*, New York, N. Y. Application filed July 12, 1878.
"The arbitrarily-selected words 'THE FIRE KING.'"

6,396.—SOAP.—*D. S. Brown & Co.*, New York, N. Y. Application filed July 3, 1878.
"The shaving-cup with the letter 'B' thereon, and a brush-handle sticking out of the cup."

6,397.—FLOUR OF MUSTARD.—*John H. Brand & Co.*, Louisville, Ky. Application filed July 3, 1878.
"The symbol of the bee-hive, used in connection with the arbitrary word 'BURROWES.'"

6,398.—CERTAIN MEDICINAL PREPARATIONS.—*Thomas Carter*, Oakland, Cal. Application filed May 6, 1878.
"The word 'AUSTRALIAN' and the figure of a kangaroo over the same."

6,399.—COTTON PRINTS.—*Coffin, Altemus & Co.*, Philadelphia, Pa., New York, N. Y., Boston, Mass., and Baltimore, Md. Application filed May 6, 1878.
"A female figure wearing a Highland costume."

6,400.—COTTON PIECE-GOODS.—*Naumkeag Steam Cotton Company*, Salem, Mass. Application filed June 6, 1878.
"The figure, representation, or symbol of a stork, in combination with the figure, representation, or symbol of a turtle."

6,401.—STOVE-POLISH.—*Phœnix Plumbago Mining Company*, Philadelphia, Pa. Application filed May 25, 1878.
"The designation 'KEYSTONE.'"

6,402.—WASHING-POWDER.—*Frederick Phillips*, Philadelphia, Pa. Application filed June 28, 1878.
"The word 'BUCKET.'"

6,403.—CARPETS.—*Roxbury Carpet Company*, Boston, Mass. Application filed June 13, 1878.
"A straight line extending longitudinally of the fabric from end to end, at the back of the same."

6,404.—BOILER-IRON.—*Joseph T. Ryerson*, Chicago, Ill., assignor to *Charles L. Bailey & Co.*, Harrisburg, Pa. Application filed June 22, 1878.
"The arbitrarily-selected letters 'S. F. B., T. S.'"

6,405.—SMOKING AND CHEWING TOBACCO AND CIGARS.—*Henry Welsh*, New York, N. Y. Application filed July 2, 1878.
"The fanciful or arbitrarily-selected word 'PERI.'"

6,406.—SMOKING AND CHEWING TOBACCO AND CIGARS.—*Henry Welsh*, New York, N. Y. Application filed July 2, 1878.
"The fanciful or arbitrarily-selected word 'CONTEST.'"

6,407.—SMOKING AND CHEWING TOBACCO AND CIGARS.—*Henry Welsh*, New York, N. Y. Application filed July 2, 1878.
"The fanciful or arbitrarily-selected word 'CLIO.'"

6,408.—SMOKING AND CHEWING TOBACCO AND CIGARS.—*Henry Welsh*, New York, N. Y. Application filed July 2, 1878.
"The fanciful or arbitrarily-selected word 'CAMILLA.'"

6,409.—SMOKING AND CHEWING TOBACCO AND CIGARS.—*Henry Welsh*, New York, N. Y. Application filed July 2, 1878.
"The fanciful or arbitrarily-selected word 'IDEAL.'"

6,410.—SMOKING AND CHEWING TOBACCO AND CIGARS.—*Henry Welsh*, New York, N. Y. Application filed July 2, 1878.
"The fanciful or arbitrarily-selected word 'MONARCH.'"

LABELS.

[Each certificate bearing date July 23, 1878.]

1,628.—Title: "CAPWELL'S KIDNEY REGULATOR."—*E. C. Capwell & Co.*, Phenix, R. I. Application filed July 13, 1878.

1,629.—Title: "DR. AUGUSTINE'S SUPPOSITORIES FOR PILES."—*James A. Hall*, Elmira, N. Y. Application filed July 12, 1878.

1,630.—Title: "DR. AUGUSTINE'S LAXATIVE PILLS."—*James A. Hall*, Elmira, N. Y. Application filed July 12, 1878.

1,631.—Title: "PATENT RADIANT JET BLACK."—*New York Dyeing and Printing Establishment*, New York, N. Y. Application filed July 16, 1878.

1,632.—Title: "GENEVA TOOTH-WASH."—*W. S. Schermerhorn*, Castleton, N. Y. Application filed July 12, 1878.

1,633.—Title: "THE GREAT NATIONAL REMEDY."—*Williamson & Burnley*, Hazlehurst, Miss. Application filed May 3, 1878.

1,634.—Title: "SURE CURE FOR SICK HEADACHE."—*Hackley & Eldridge*, Janesville, Wis. Application filed May 20, 1878.

1,635.—Title: "SAM'L S. SCOTT'S GREAT HAIR RESTORATIVE."—*Samuel S. Scott*, Dubuque, Iowa. Application filed July 8, 1878.

DESIGNS.

[Each design bearing date July 23, 1878.]

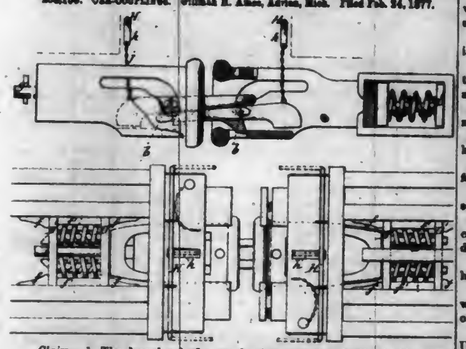
10,757.—SHOES.—*James F. Emerson*, Wakefield, Mass. Application filed May 24, 1878. Term of patent 7 years.

10,758 and 10,759.—PLUSH OR OTHER GOODS.—*Thomas Goodall* Sanford, Me. Applications filed July 10, 1878. Term of patents 7 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

JULY 23, 1878.

206,159. CAR-COUPLING. Gilman H. Ames, Adrian, Mich. Filed Feb. 26, 1877.



Claim.—1. The draw-head of a car having curved or inclined side slots and open at its top, but having an uninterrupted face-plate or closed front, in combination with a coupling-bar adapted to operate for uncoupling through the open-top draw-head and be held in coupled positions by said closed front, substantially as herein set forth.

2. The draw-head having vertical and lateral play upon its point of connection with the car, and the coupling-bar having freedom for movement in any plane, as well as a frontward and rearward movement upon its connections with the draw-head for conjoint action, for the purpose described.

3. The draw-head having the curved or inclined side slots and the yoke or shank, as herein set forth.

4. The draw-head open at the top, and provided with the side beads to give strength and to increase the wearing-surface of its curved or inclined side slots, substantially as described.

5. The draw-head having an open top, an uninterrupted face-plate or closed front, and a weighted coupling-bar working therein, as described, in combination with the uncoupling-shaft H, its center lever k, and connecting-chain *j*, the radius of said lever having such relation to the point of connection with the coupling-bar as to cause the under coupling-bar to have a forward movement to loosen it from the hook of the upper bar as said lever is raised through part of its arc, and a rearward and upward movement through the open-top draw-head as said lever completes its upward turn or half-circle from its starting-point, whereby the complete separation of the bars is effected and maintained until the cars are separated, as described.

206,160. TYPE-WRITING MACHINES. Benj. F. Bellows, Weeping Water, Nebr. Filed Apr. 16, 1877.

Brief.—The movable type are arranged in a type-holder, and embrace capitals, lower-case, numerals, and punctuation-marks. Their rear ends are struck by a hammer to make the impression, and they are retracted by coiled springs around the shank of each type. The type-holder is attached to two arms, which are connected at their lower ends to a pin, which, when the machine is at rest, lies at the bottom of a vertical slot. The operating-keys pass through slotted slides, which are connected to pivoted segmental plates, which latter act on the said pin, and operate to raise the type-holder to different horizontal positions. A lateral arm also extends from the type-holder to another plate, which is operated by segmental slotted plates connected by links to a second slotted slide, through which the operating-keys pass. By the latter means the type-holder is drawn to one side or the other, to bring a different vertical column of type in line. In certain cases these two sets operate simultaneously or in conjunction, and the type-holder is elevated and drawn to one side at the same time. The operating-keys also pass through another slotted plate, which carries a vertically-slotted upwardly-extending arm, which operates to draw down a pin on a rock-shaft, to which the handle of the hammer is attached, thus throwing the hammer against the rear ends of the type. An inking-ribbon is interposed between the faces of the type and the cylindrical platen. The holding catch or pawl consists of a standard with a jaw pivoted thereto, which engages with a rack on the under side of the paper-carriage. The said standard is connected with the slide, that is operated by all the keys, by a lever. When the catch is pulled down, the jaw flies upward and backward, and engages a tooth in the rack bar, and as the catch rises the jaw goes forward, and thus advances the paper-carriage. The catch can also be depressed to allow the carriage to be drawn back.

Claim.—1. In a type-writer, the combination of the case of printing-characters M with the hammer A, said hammer being operated by the keys, in combination with slide P, pin *i*, and shaft *j*, substantially as herein shown and described.

2. The combination of working-keys, slides P, Q, and R, and operating-keys 5 and 6, attached to mechanism, substantially as described, to operate the type-holder M, as herein shown and described.

3. The combination of movable jaw B', provided with small rollers *b'* *b'*, with permanent jaw B' and spring *b'*, forming the catch B, all as herein shown and described, and for the purpose herein specified.

4. The combination of hammer A with weight D and operating mechanism, substantially as described, for the purpose specified.

5. The propelling and holding catch E, composed of the jaw *s*, pivoted to the upright *r*, in combination with the rack-bar F, as herein shown and described.

6. The pivoted jaw *s*, having spring *s'*, in combination with the vertically-moving standard *r*, forming the catch E, as herein shown and described.

7. The combination of slide P, lever *x*, and vertically-sliding catch E, as herein shown and described.

8. The combination of key 11 with elbow-lever H and bed-plate I, as and for the purposes specified.

9. The combination of key 30, levers *p* and *q*, spacer G, and gear-wheel *e'*, substantially as herein shown and described, and for the purpose specified.

10. The combination of the adjustable and movable inclined spacer G, composed of the incline *a*, carrier-bar *b*, and set-screw *d*, as herein shown and described.

11. The combination of working-keys, slide P, pin *i*, and hammer A, as herein shown and described.

12. The combination of key 6 with levers N and plate O, having slot which passes over pin *n*, for the purpose of moving the type-holder M from one position to another, as herein shown and described.

13. The combination of the working-keys with slides Q, lever R', and plate U, having slot which passes over pin *m*, as herein shown and described.

14. The combination of the cam-faced levers with the type-holder M, as and for the purposes specified.

15. The projection *n*, attached to lever Y, in combination with pin *r'* in standard *r*, as herein shown and described.

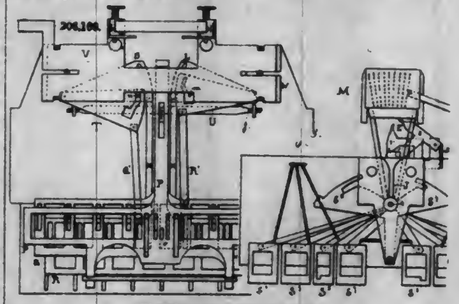
16. The paper-holding attachment composed of main roll C and smaller rolls C^1 and C^2, in combination with spring *x*, as herein shown and described.

17. The combination of slide Q, lever Q', plate T, and pin *n*, as and for the purposes specified.

18. The working-keys, in combination with cam-faced levers, for the purpose of raising the type-holder M, as herein shown and described.

19. The combination of the plate V, connecting-rod M', and type-holder M, as herein shown and described.

206,160.



206,161. PURIFYING FEED-WATER FOR BOILERS. Edward Bohlig, Eisenach, Germany. Filed Apr. 6, 1877.

Claim.—The process of purifying water to be used in steam-boilers, which consists in mixing oxide of magnesium therewith in a separate tank or vessel, then heating the water, as described, and allowing it to settle before feeding it to the steam-boiler, substantially as and for the purpose herein specified.

206,162. SPROCKETS. Addison Bradford, Amsterdam, N. Y. Filed May 24, 1876.

Brief.—The length of each blade is adjusted as well as each blade in its relation to the main frame

Claim.—1. The combination, with the series of rods *a*, forming blade A, and fastened at their outer extremities to connecting-bar D, of cross-rod G, to which stem *d* is rigidly secured, and arms F, upon which said cross-rod has sliding movement, substantially as set forth.

2. The combination, with rods *a* and connecting-bar D, formed with stem *d*, of cross-rod G, having perforated end bodies, clamp-screws *g*, and arms F, substantially as set forth.

3. The combination, with the series of rods *a'*, forming blade A', and connecting bar D, formed with stem *d'*, of the supporting-bar E, to which said stem is pivoted angular arm H, and suitable means for adjusting the stem relative to said arm, substantially as set forth.

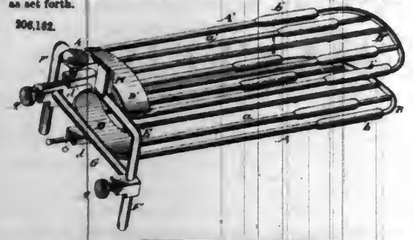
4. The combination, with the series of rods *a'*, forming blade A', and connecting bar D', formed with stem *d'*, which is secured by pivotal engagement to supporting-bar E, of the angular arm H and adjusting-screw A, which latter passes through the free extremity of said arm, substantially as set forth.

5. The combination, with the series of rods *a'*, forming blade A', and con-

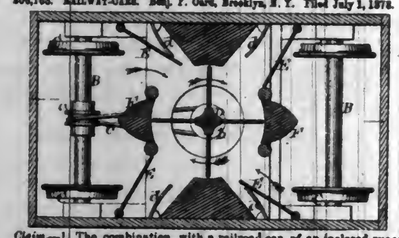
necting-bar D', provided with stem d', pivoted to supporting-bar E, of the angular arm G, formed with an opening, through which said stem passes, and adjusting-screw h, substantially as set forth.

6. In a speculum-blade formed with a series of rods fastened in a connecting cross-bar at their outer extremities, the combination, with an adjustable extension-body, of a connecting-rod which extends rearward through an opening in said cross-bar and projects from out the stem of the same, substantially as set forth.

206,162.



206,163. RAILWAY-CARS. Benj. F. Card, Brooklyn, N. Y. Filed July 1, 1878.



Claim.—1. The combination, with a railroad-car, of an inclosed space beneath the bottom of the car, with a fan or suction wheel, D, for softening or deadening the noise of the car-wheels, and the mechanism for driving the fan or suction wheel D, substantially as described.

2. The combination, with a railroad-car, of an inclosed space beneath the bottom of the car, with the pulley *b*, mounted on the shaft of the fan or suction wheel D, and pulley *c*, mounted on the car axle B, and a belt, *c*, connecting and operating the same, substantially as described.

3. The combination, with a railroad-car, of an inclosed space beneath the bottom of the car, forming a central air-chamber, with fan or suction wheel D, arranged within said chamber, and gates or valves E E, pivoted near the sides of the car, and partitions or segments F F, forming a rest for the gates or valves E E and the springs *d d*, substantially as described.

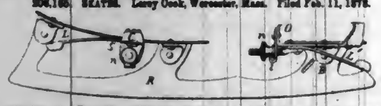
4. The combination, with a railroad-car, of an inclosed space beneath the bottom of the car, said space being lined with sponge, felt, or other sound-absorbing material, substantially as described.

206,164. GUN-SIGHTS. Philon F. Garner, Cleveland, Ohio. Filed Apr. 27, 1878.



Claim.—The block D, having the different-colored faces, sight projections, and thumb-piece E, in combination with the base B, hood C, and spring F, substantially as and for the purpose set forth.

206,165. SEATER. Leroy Cook, Worcester, Mass. Filed Feb. 11, 1878.



Claim.—1. The adjustable thumb-nut *n* and the flange or lip *l*, constructed and combined so as to move the clamp backward or forward, as described, for the purposes set forth.

2. The combination of the sole-clamp C, standard S, flange or lip *l*, the adjustable thumb-nut *n*, connecting rod or bar *b*, toggle-joint J, and the spring-lever L, when constructed as described, to operate the clamps C with one movement of the lever L, substantially as and for the purpose set forth.

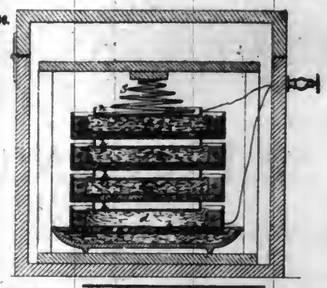
3. The combination of the clamp C, provided with the slot or sliding groove *g*, with the pin *f*, the runner R, and bracket B, when constructed and arranged to operate substantially as described, and for the purpose set forth.

206,166. GALVANIC BATTERIES. Elisha B. Cotton, Boston, Mass. Filed Sept. 17, 1877.

Claim.—1. The combination, in a battery, of the electro-positive and electro-negative elements, an intervening body of crystals, and an auxiliary pressure device, for insuring the approach of the elements as the crystals dissolve, as set forth.

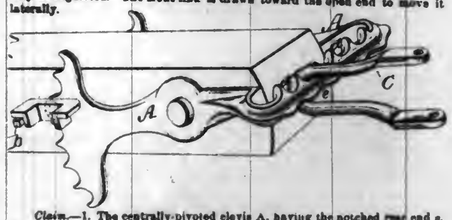
2. A galvanic battery composed of a series of alternate copper and zinc trays superimposed one upon the other, and compressed by a spring, S, the copper trays containing sulphate of copper in crystals, and each of the zinc trays soldered to the copper tray above it, and separated from the copper tray below it by a layer of any suitable substance moistened with a solution of sulphate of zinc, substantially as and for the purpose set forth.

206,166.



206,167. PLOW-CLEVISES. Joseph F. Ellis and Clark Robinson, Eau Claire, Wis. Filed Jan. 5, 1878.

Brief.—The rear bolt engages the notched ends of the clevis, but opposite each is half cut away, so that by turning the bolt the height of the clevis may be regulated. The front link is drawn toward the open end to move it laterally.



Claim.—1. The centrally-pivoted clevis A, having the notched rear end *c*, in combination with the rotating notched locking-bolt E, as shown.

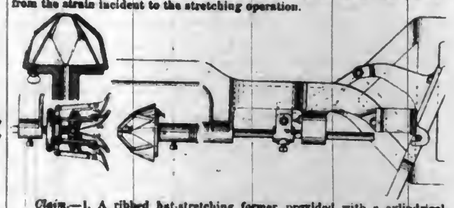
2. The combination of the pivoted clevis A, having the notched rear end *c*, the rotary locking-bolt E, and the stop *b*, as shown.

3. The centrally-pivoted clevis A, having the two notched ends *c*, in combination with a single notched bolt locking both ends, as shown and described.

4. The clevis A, having the horizontal front, with notched ribs *d* and *e*, in combination with the pendent clevis C, having the contracted upper and widened lower end, as and for the purpose described.

206,168. HAT-STRETCHING MACHINES. Rudolf Eickemeyer, Yonkers, N. Y. Filed June 28, 1878.

Brief.—The base of the ribbed stretching-former is cylindrical in form, to admit of the free rotation of the hat thereon between the operations of the stretching devices. The former has a circular opening in its lower portion to receive a shouldered disk, which is mounted on the upper end of the operating-spindle, and is adjusted thereon by set-screws. The operating-lever has a long curved arm attached to it, which is connected to the spindle by a link, and in operation has the effect of a toggle-lever, and relieves the foot of the operator from the strain incident to the stretching operation.



Claim.—1. A ribbed hat-stretching former provided with a cylindrical base, substantially as described, whereby the hat may be freely rotated thereon between the operations of the stretching devices, as set forth.

2. The combination, with a spindle and a former, of a disk mounted on the spindle, and fitted to support and axially adjust the former, substantially as described.

3. The combination, with stretching-fingers, a spindle, and a former, of a disk which is mounted on the spindle, and provided with devices for uniting the former and disk, and attaining a self-adjustment of the ribs of the former with relation to the stretching-fingers, substantially as described.

4. The combination, with the sliding spindle and a link pivoted thereto, of a bell-crank treadle-lever, pivoted at its short arm to the link and thence to the spindle, substantially as described, whereby the strain of the stretching operation is mainly relieved from the foot of the operative, as set forth.

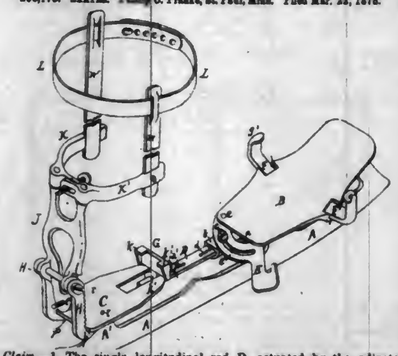
206,169. MAIL-BAG FASTENERS. George H. Payman, Washington, D. C. Filed Dec. 19, 1877.

Brief.—The mouth of the bag is closed by means of a cord, both ends of which are secured by serrated spring-pawls pivoted in a case; or one end may be held securely and the other released, if desired.



Claim.—A device for fastening mail-bags, consisting of the case A, made in two parts, having end openings for the cords and side opening for the pawl-levers, in combination with the serrated pawls and the springs, substantially as and for the purpose herein shown and described.

206,170. SEATER. Philip C. Franke, St. Paul, Minn. Filed Mar. 22, 1878.



Claim.—1. The single longitudinal rod D, actuated by the adjustable slotted lever E *e'*, in combination with the adjustable clamping-levers F F' *g' g'* and toe-plate B of a skate, arranged and operating substantially as hereinbefore shown and described.

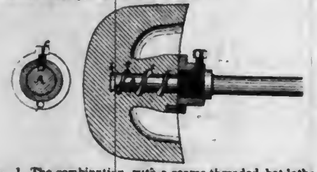
2. The single longitudinal rod D, actuated by the adjustable slotted lever E *e'*, in combination with the adjustable heel-clamp G and heel-plate C, arranged and operated substantially as hereinbefore specified.

3. The stationary heel-stop H, formed with the connecting-bar *p p'*, adapted to straddle the standard A', and secured in place by a screw, *r*, substantially as and for the purposes set forth.

4. The adjustable ankle-clamp K K', arranged as described, in combination with the stationary heel-stop H, substantially as hereinbefore set forth.

5. The adjustable leg-support L and metal straps *w w'*, in combination with the adjustable ankle-clamp K K' and supporting-frame J, arranged and operating substantially as hereinbefore set forth.

206,171. HAT-BLOCKS AND SPINDLES FOR HAT FOUNDING AND FINISHING MACHINES. Carlos W. Glover, Danbury, Conn. Filed June 28, 1878.



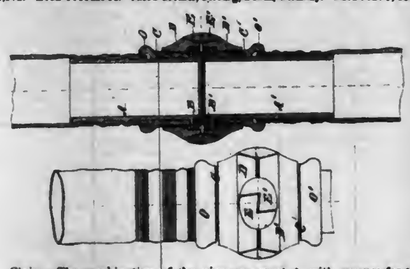
Claim.—1. The combination, with a coarse-threaded hat-lathe spindle, of a hat-block having an axial opening threaded to receive the spindle, substantially as described.

2. The combination, with a hat-lathe spindle having a coarse thread at its end, and a finely-threaded enlargement at the inner end of the coarse thread, of a hat-block and a collar, respectively threaded to receive the coarse and fine threads of the spindle, substantially as described.

3. The combination, with the threaded block and collar, of a set-screw in the collar, and the spindle threaded, enlarged, and provided with a longitudinal groove in the enlarged threaded portion thereof, for receiving the set-screw, substantially as described.

4. The combination, with the hat-lathe spindle, the block, and the collar, of a pin occupying coincident holes in the block and collar, substantially as described.

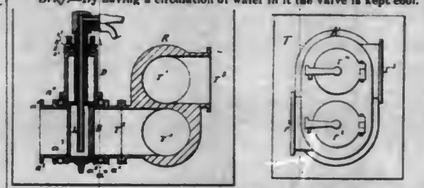
206,172. HOSE-COUPLINGS. Jacob Grether, Freiburg, Baden, Germany. Filed June 5, 1878.



Claim.—The combination of the piece or spigot A, with grooves for the reception of india-rubber or leather rings B in its end, the sliding ring C, with screw-thread at one end and projecting part O at its other end, and the coupling-muff D, with hook-like projecting parts E, with the end of a hose, forming one half of a coupling, and arranged to operate with similar parts at the end of another hose, substantially in the manner and for the purpose herein described.

206,173. VALVES FOR REGENERATIVE HOT-BLAST STOVES. John M. Hartman, Philadelphia, Pa. Filed May 14, 1878.

Brief.—By having a circulation of water in it the valve is kept cool.



Claim.—1. In hot-blast valves for regenerative fire-brick stoves, the valve-body A, cast in one piece with the flanges a' a', combined with the water-coil *a*, embraced by said flanges, and adapted to cool the cast portions of the valve-body, substantially as specified.

2. In hot-blast valves for regenerative stoves, the combination of a body, A, a sliding disk-valve having inlet and outlet cooling-pipes, and a removable cap for the reception of the valve, as herein described.

3. In hot-blast valves for regenerative stoves, the combination of the hollow sliding stem C, one or more adjustable flat plates, k^1 k^2, having beveled engaging-surfaces, as shown, for compressing a metallic packing-ring, *k*, against the stem by means of spring-bolts k^3, substantially as specified.

4. In hot-blast valves for regenerative stoves, the combination of the casing T, an inlet or outlet valve, and an intermediate attachment, R, having one or more openings, r^1 r^2, into the stove, each of which has two or more openings leading therefrom, substantially as set forth.

5. The valve-body A, sliding disk-valve B, and removable cover D, adapted when said valve is raised to receive the same, combined with a hoisting and counterbalancing gear, whereby the said valve and valve and cover may readily be removed from the said valve-body, substantially as specified.

206,174. PENCIL-SHARPENING DEVICES. William Haskell, Chicago, Ill. Filed June 21, 1878.



Claim.—The spring-holder A, open on one side, cut away at E, and provided with a holder, B, forming a stop for the pencil, substantially as described.

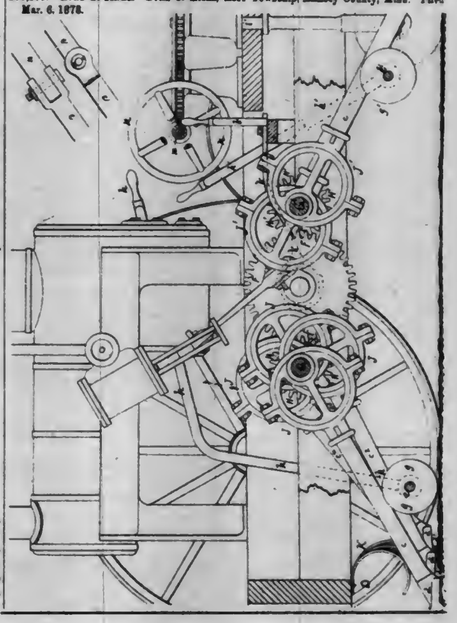
206,175. FIRE-PROOF ROOFING COMPOSITION. Edwin W. Hickman, Lake, Wis. Filed Oct. 15, 1877.

Brief.—Marble or stone mud, one peck; fine or ground sand, one peck; land-plaster or grindstone-dust, one peck; hydrated plaster-of-paris, one-tenth peck; coal-tar, three gallons; pine-tar, one gallon; plastering-hair, one pound.

Claim.—1. A roofing composition containing marble-mud, sand, plaster of paris, tar, and hair, substantially as set forth.

2. A roofing composition consisting of marble-mud, sand, hydrated plaster of paris, coal-tar, pine-tar, and plastering-hair, substantially in the proportions stated.

206,176. ROAD-ENGINES. John C. Hicks, Rose Township, Ramsey County, Minn. Filed Mar. 6, 1878.

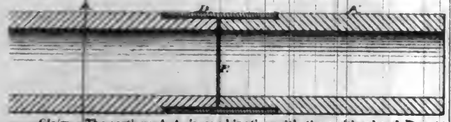


1*

Claim.—. The combination, with the levers e, operated by the cams J', of the grooved guiding rollers g', made adjustable by the shaft a' and levers h', in the manner and for the purpose substantially as hereinbefore specified.

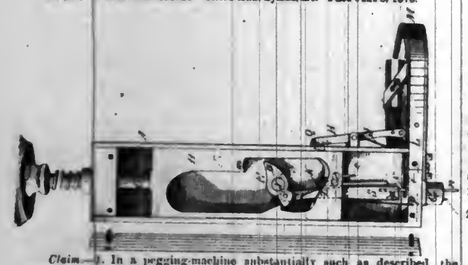
2. The combination, with the pushing-levers, actuated by the cams, of the springs K, arranged and operated substantially as hereinbefore specified.

206,177. WOODEN-PIPE JOINTS. William H. Horton, San Francisco, Cal. Filed May 27, 1878.



Claim.—The sections A A, in combination with the uniting-band D, said sections being fitted to enter the band from opposite ends, and leave a space, E, between their meeting ends for the admission of water, substantially as shown, and for the purpose herein described.

206,178. PEGGING-MACHINES. Orison Huff, Lyman, Me. Filed June 3, 1878.

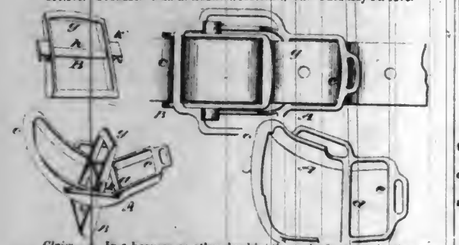


Claim.—1. In a pegging-machine substantially such as described, the case A, lever E, slide B, arm S, striker *f*, chisel *d*, awl *a*, incline *i*, slot *v*, and nipple G, constructed and arranged to operate substantially as and for the purpose set forth and specified.

2. In a pegging-machine substantially such as described, the lever H, provided with the stud Q and pawl L, in combination with the slide B, substantially as and for the purpose specified.

3. In a pegging-machine substantially such as described, the bracket M, in combination with the case A, pawl L, lever H, stud Q, and slide B, substantially as and for the purpose set forth and specified.

206,179. BUCKLES. John H. Huntrem, Janesville, Wis. Filed May 14, 1878.



Claim.—1. In a harness or other buckle, the main frame A, having irregular concave sides, and notches *f f* upon their outer surfaces, and provided with cross-bar *d* and tongue projecting from the inner surface of the end bar *c*, in combination with the sliding bail B, all substantially as shown and described.

2. In a harness or other buckle, the sliding bail B, provided with end bars *g* and *g*, grooved lugs *k k*, and cross-bar *h*, in combination with the buckle-frame A, all constructed substantially as shown and described.

206,180. OVEN-DOORS. Rufus J. King, Dayton, Ohio. Filed Mar. 12, 1878.



Claim.—1. The combination, with the oven or cooking chamber, of a stove-door having an interior facing or lining of fire-tile, soap-stone, or other opaque solid non-conducting substance, having a glazed or enameled surface directly exposed to the heat of the oven, as and for the purpose specified.

2. An oven-door having an interior opaque glazed non-conducting facing, and a dead-air chamber between the outer metallic shell and the non-conducting facing, as and for the purpose set forth.

3. The combination, in an oven-door, of the shell A B, opaque glazed non-conducting lining C, retaining-frame D, and dead-air chamber E, the whole constructed and arranged in the manner and for the purpose specified.

206,181. WINDOW-SCREENS. John Klusster, Allentown, Pa. Filed May 15, 1878.

Brief.—Extensible screen-frames are held in sliding contact by means of metallic dovetail blocks in dovetail grooves.

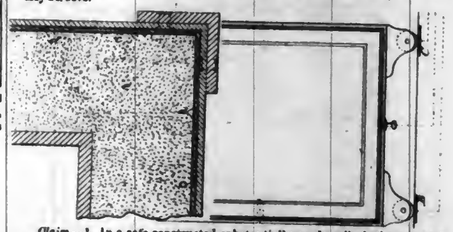
Claim.—The combination, with sliding frames for adjustable window-screens, having dovetail grooves E in their sliding rails, of dovetail-formed blocks of metal, F, whereby the frames are retained in sliding contact with each other, and are not liable to swell and stick fast in damp weather, all as described.

206,182.



Side View.

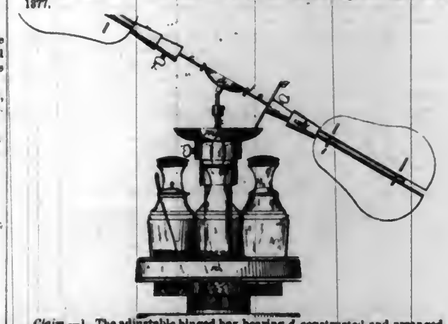
206,182. ELECTRO-MAGNETIC BURGLAR-ALARMS. Max Kolcosa, New York, N. Y. Filed May 24, 1878.



Claim.—1. In a safe constructed substantially as described, the composition plates composed of water-glass, alum, powdered burned clay, fresh or unburned clay, and borax, as and for the purpose specified.

2. In combination with a safe or vault, the following elements, namely: an electric circuit, an alarm apparatus, door-plates B C, a relay provided with an anchor, one or more circuit-breakers, and a battery, in connection with the insulating composition plates, composed of water-glass, alum, powdered burned clay, fresh or unburned clay, and borax, as herein described, arranged alternately between layers of metal plates, all substantially as and for the purpose herein described.

206,183. AUTOMATIC-FAN ATTACHMENTS. George R. Kress, Pittsburg, Pa. Filed Oct. 15, 1877.



Claim.—1. The adjustable hinged box-bearing *d*, constructed and arranged to operate substantially as set forth.

2. The wheel *g* on the horizontal shaft *e*, in combination with the collar circular platform *m*, substantially as and for the purpose as set forth.

3. The adjustable extension hinged collar circular platform *m*, constructed and arranged to operate substantially as set forth.

206,184. MECHANICAL MOVEMENTS. J. R. Little, Jamaica Plain, Boston, Mass. Filed June 27, 1878.

Brief.—Two revolving shafts, in different planes and at right angles, are connected by a pitman, swiveled to a crank on either shaft.

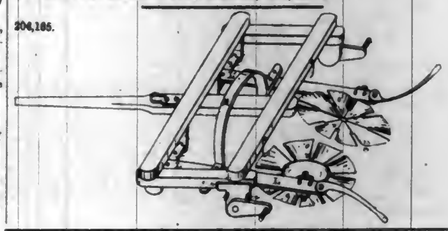


Claim.—1. The combination of the two cranks, the swivels, and the connecting-link, arranged and applied substantially as described.

2. In combination with the two cranks and the swivels, arranged and pivoted together as described, the connecting-link pivoted to the swivels, and constructed so as to be capable of lengthwise adjustment, as explained.

3. In combination with two shafts, arranged and provided with cranks, as set forth, the two swivels and their connecting-link pivoted together and to the wrists of the cranks, all being essentially as specified.

206,185.



206,186. CULTIVATORS. James Mallon, Baton Rouge, La. Filed Dec. 22, 1877.

Brief.—The frame is rectangular, and is supported upon two wheels having adjustable crank-axles. The cultivator-beams are pivoted to a rock-bar supported upon the forward beam of the frame, and have both a vertical and horizontal motion. The cultivators are of the disk form, the outer edges being cut into sections, the concave sides facing inward, and adjustable on their own axes in the line of draft, so as to take in more or less land.

Claim.—The improved cultivator herein described, provided with adjustable beams L L', each furnished with revolving cutters, the blades of which are curved, substantially as described, and operated on an adjustable bearing, for the purpose set forth.

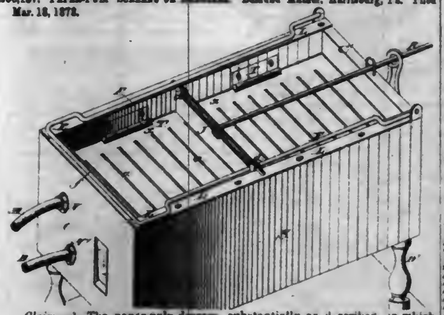
206,186. FLOUR-BOLTING MACHINES. Moritz Martin, Bitterfeld, Prussia. Filed Mar. 6, 1878. Patented in France, Nov. 14, 1876, and in Austria, Jan. 12, 1877.



Claim.—1. The cylinder consisting of the two disks *b* and *b'*, provided with the hollow trunnions *a* and *a'* and the circular ribs *d* and *d'*, and having the stays *s* and the ring *c*, adjustable by screws *f*, substantially as described.

2. The means of fastening the gauze to the rib *d* of the disk *b'*, or to the rings *s* or *k* of the cylinder, consisting of the adjustable strap *h*, as and for the purpose described.

206,187. PAPER-PULP SCREENS OR DRESSERS. Edward Mather, Harrisburg, Pa. Filed Mar. 18, 1878.



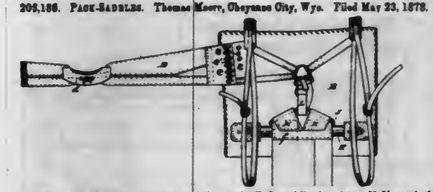
Claim.—1. The paper-pulp dresser, substantially as described, in which the flow of the pulp through the screen is mainly effected by atmospheric pressure caused by continuous exhaustion of the air from the closed space beneath the screen, mounted stationary in a stationary pulp-vat, and wherein the exhaustion of air from the aforesaid space is effected by any well-known device for such purpose placed exterior to the pulp-vat.

2. A stationary screen and vat adapted for dressing paper-pulp by atmospheric pressure, in combination with a paper-pulp agitator, whereby the pulp is stirred properly without contact of the stirrer with the screen-plates, in the manner as and for the purpose set forth.

3. A pneumatic paper-pulp dresser in which the air-port is opened and closed automatically by a float-valve, E, to regulate solely the air-current, substantially as and for the purpose set forth.

4. A stationary paper-pulp screen, X W, and pulp-vat S C A B N', in combination with the stirrer R J *b b* and switches F F, whereby the pulp is properly agitated without contact of said stirrer with said screen, in the manner set forth.

206,188. PACK-SADDLES. Thomas Moore, Cheyenne City, Wyo. Filed May 23, 1878.



Claim.—1. The combination of the pads B B, stiffening-bars E E, and the saddle-tree, all arranged substantially as shown, for the purposes stated.

2. In combination with a pack-saddle and girth, the strap L, connected to the saddle, and provided at one end with a ring or loop, M, the said strap folded, substantially as described, once through the said ring or loop and twice through a loop on the end of the girth, for the purposes specified.

3. A pack-saddle girth provided at its ends with a D-shaped metallic loop, J, having its straight or interior bar bound to the girth and its curved or exterior bar connected to the straight bar by means of connecting parts, substantially as specified.

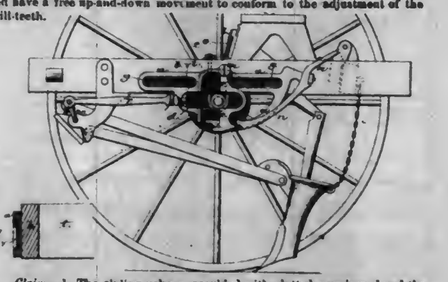
4. A cargo-girth for pack-saddles, the said girth rendered adjustable in length by means of the adjusting-straps O O, substantially as and for the purposes specified.

5. The cargo-girth belts N' and N'', the latter provided with one or more buckles and the former with one or more fastening-straps, Q Q, the latter being folded substantially as specified, or back and forth through loops on the said belts, and fastened by means of one of the said buckles, for the purposes set forth.

6. The broad lateral bands or straps, connected by a narrow central connecting-piece, the whole constituting the crupper D, in combination with a pack-saddle, substantially as and for the purposes specified.

206,189. GRAIN-DRILLS. Elias M. Morgan, Belleville, Ill., assignor to Henry Rastabler, same place. Filed Jan. 16, 1877.

Brief.—A slotted yoke is secured in a frame attached to one side of the main frame, into which takes a projection on the inside of the hub of one of the bearing-wheels, for imparting an intermittent reciprocating movement to the yoke and an oscillating movement to a cross-bar, to which the drag-bars are attached by a connecting-rod. The seed-funnels are held adjustable by pins, and have a free up-and-down movement to conform to the adjustment of the drill-teeth.



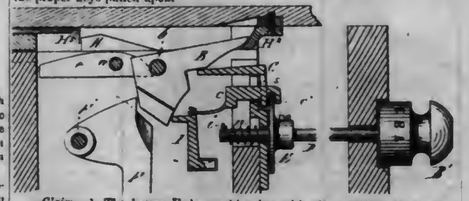
Claim.—1. The sliding yoke *e*, provided with slotted openings *d* and the flanged openings *g g*, for attaching it to the frame *b*, and the two parallel flanges *c c'*, in combination with the roller *i* and the ground-wheel *c*, or their equivalents, substantially in the manner and for the purpose set forth.

2. The adjustable flange *c'*, in combination with the yoke *e* and hand-brace *n*, for the purpose described.

3. The flanges *l l* at the upper end of funnel *k*, in combination with pins *s s* in the cross-piece *i* of frame *b*, for the purpose of seconding the funnel *k* to cross-piece, as set forth.

206,190. TILL-ALARMS. Milo L. Morgan, Northampton, Mass. Filed Jan. 24, 1878.

Brief.—The construction and combination of parts is such that an alarm may be given by pulling the knob of the drawer or by pulling the wrong keys. To open the drawer the knob must be first set to the proper position, and then the proper keys pulled upon.



Claim.—1. The levers F, in combination with the tumblers B and the tumbler-plate C, substantially as described.

2. The combination of the levers F, the tumblers B, the tumbler-plate C, and the dogs *e*, substantially as set forth.

3. The dogs *e*, arranged to be moved along the rod *e*, in combination with the tumblers B, whereby any desired number of the tumblers may be set to unlock the till or give the alarm without removing the dogs from their rod, substantially as set forth.

4. The tilting trip I, provided with the catch *i'*, in combination with the bell-hammer L, whereby the latter is secured and released to strike the alarm, substantially as described.

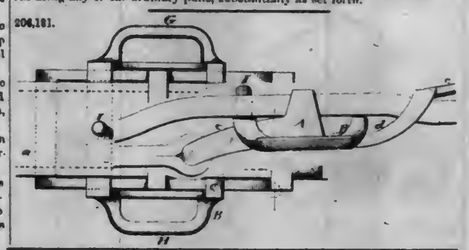
5. The combination of the tumblers B, the stop H', and the trip I, as a means of releasing the bell-hammer to strike an alarm by the outward movement of the till, substantially as described.

6. The combination of the lever H, the stop H', the bell-hammer L, and the trip I, whereby the bell-hammer is automatically set for the alarm by pushing in the till, substantially as set forth.

7. The rod D, disk E, having a recess, *d*, and the link *c*, trip I, and hammer L, whereby an alarm may be given by the simple movement of the rod without operating the pulls or tumblers, and whereby the disk may be thrown out of connection with the alarm and the alarm obtained by the operation of the tumblers alone, substantially as set forth.

8. The rod D, disk E, link *c*, and tumbler-plate C, whereby the till may be unlocked and opened by the simple longitudinal movement of the rod without using any of the ordinary pulls, substantially as set forth.

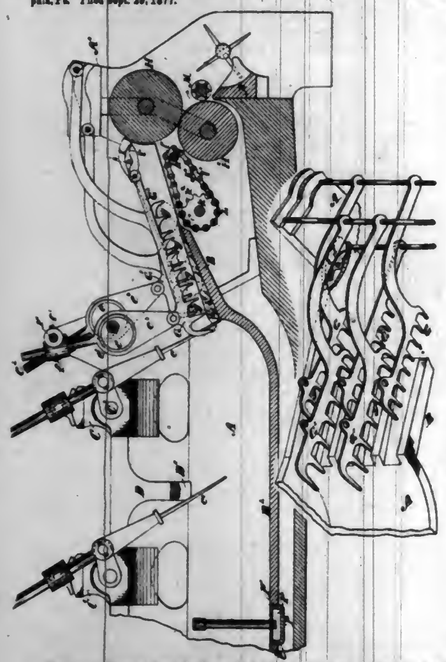
206,191.



206,191. TRACE-BUCKLES. Albert Otner, Janesville, Wis., assignor of two-thirds his right to Charles H. Payne and Hiram Oliver, same place. Filed Jan. 15, 1878.

Claim.—A trace-buckle consisting of the part A, provided with cross bars *a b*, inclines *d e*, and loop *c*, in combination with the sliding part B, formed with cross-bars *f g*, tongue I, and loops G H, substantially as set forth.

206,192. WOOL-WASHING MACHINES. Frank P. Pendleton and Josiah K. Proctor, Philadelphia, Pa. Filed Sept. 29, 1877.



Claim.—1. The two-branched standard D, in combination with the standards C and C' and girt D', substantially as shown and described.

2. In a wool-washing machine, a lifting mechanism composed of two or more series of independent parallel carrier-bars, combined with mechanism, substantially as described, for alternately reciprocating each series, the rear ends of the bars in each set being lifted upon their return stroke by the reciprocating mechanism, substantially as set forth.

3. The combination of the shaft E, eccentrics *e e*, straps e^1 e^1, with attached levers e^2 and e^2, swivels *f f*, and shaft F, with the bars of a carrier or lifting device, substantially as shown and described.

4. The combination, with the bowl A and incline B, of the carrier-bars G G', shafts E and F, swivels *f*, eccentrics *e e*, and straps e^1 e^1, with attached levers e^2 and e^2, constructed and operating substantially as shown and described.

5. In a wool-washing machine having a bowl, an incline, squeeze-rolls H H, fork, and carrier, and operating to scour stock by passing the same through said bowl and delivering it to said rolls, a water-conductor arranged below said incline to discharge or eject its fluid contents upwardly and above the false bottom B^1 into the stock during the passage of the latter over it on its way to the squeeze-rolls, as set forth.

206,193. COMBINED CLAMP AND SOLDERING APPARATUS. George H. Perkins, Philadelphia, Pa. Filed June 7, 1878.



Claim.—1. A combined clamp and soldering apparatus for metal cans, consisting of a base upon which one or more cans are set, and clamp-sides projecting above the tops of the cans and adapted to be locked against them, substantially as described.

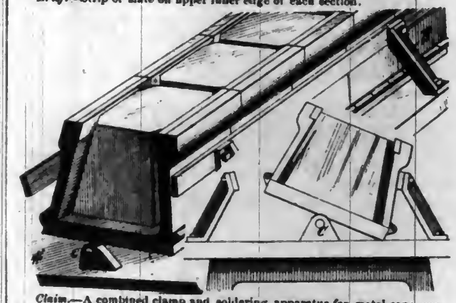
2. A combined clamp and soldering apparatus for metal cans, consisting, essentially, of a base upon which one or more cans are set and clamp-sides hinged to the base, projecting above the tops of the cans, so as to form, in connection therewith, a V-shaped groove, and adapted to be locked against the cans, so as to retain them in position, the whole arranged to tilt from side to side, substantially as and for the purposes set forth.

3. In combination with the clamp-sides D E, clamping-faces H H^1, formed of slate or its equivalent, for the purpose set forth.

4. In combination with the clamp-sides D E, hinged below to the base and united together above by a rigid lock, an adjustable clamp-face, H^1, attached to one of the sides, for the purpose specified.

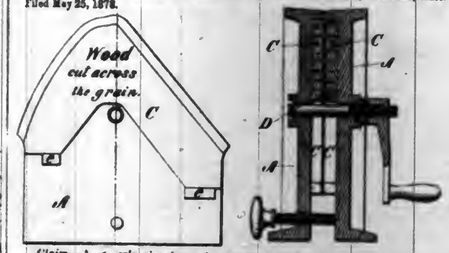
206,194. COMBINED CLAMP AND SOLDERING APPARATUS. George H. Perkins, Philadelphia, Pa. Filed June 7, 1878.

Brief.—Strip of slate on upper inner edge of each section.



Claim.—A combined clamp and soldering apparatus for metal cans, consisting of a rocking base upon which one or more cans are set, clamp-sides hinged to the base, and standards on both sides of the apparatus, in such position relatively to the apparatus as to uphold against the can the clamp-side toward which the apparatus is tilted, the other clamp-side being retained by its own weight and inclination against the can, substantially as shown and described.

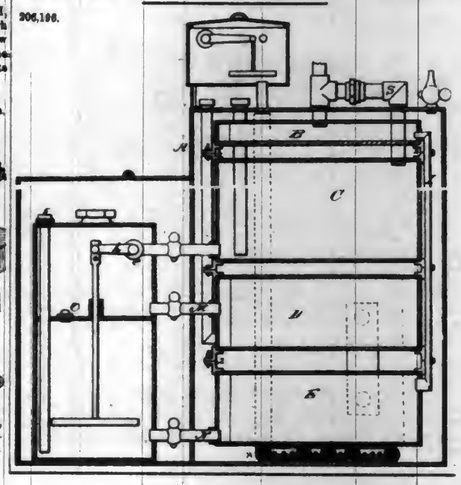
206,195. CRIMPING-MACHINES FOR BOOTS AND SHOES. J. S. Perkins, Worcester, Mass. Filed May 25, 1878.



Claim.—1. A crimping-jaw, A, provided with an inwardly-projecting flange, or flange and lugs, arranged to hold the wool lining C in place and protect its edge from wear, substantially as described.

2. The combination, with a pair of crimping-jaws, of a clamping-bolt, D, provided with the hemispherical bearings at one or both sides, substantially as herein set forth.

206,196.



206,196. CARBURETERS. Alonzo W. Porter, New York, N. Y., assignor of one-tenth his right to Geo. L. Sherry, Lynn, Mass. Filed June 22, 1878.

Claim.—1. The process of carbureting gas or air for illuminating purposes, which consists in heating the hydrocarbon spirits and gas or air in separate compartments to the same temperature, mixing them at or near the coincident temperature to secure a homogeneous combination of the gas and vapors, and at the same time maintaining the uniform temperature of the gas or air and hydrocarbon spirits, as set forth.

2. The combination, with a carbureter, of the pressure-regulator Z, having its metallic portions coated with bees-wax and the mercury thereof sealed with glycerine, substantially as described.

3. The combination, with a carbureter and its pressure-regulator, of a drip-pipe, Y, leading from the regulator to the lower carbureting-chamber, substantially as and for the purpose set forth.

4. The combination, with a carbureter having a hydro-thermostat, of a counterbalance-weight attached to the operating devices of the hydro-thermostat, which will automatically close the waste-cock when the proper action of the thermostat is interrupted by wear or breakage of the seal in the air-box, substantially as described.

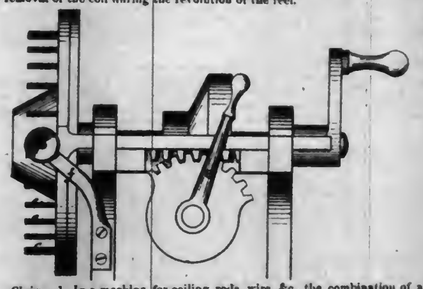
5. The combination, with a carbureter, of a hydro-thermostat having an air-cock for setting the working parts of the hydro-thermostat to any temperature, as and for the purpose set forth.

6. In combination with the carbureting-compartments D E, an automatic feed-box having a partition, L, with an opening and a plug, for feeding all or a part of the carbureting-compartments, at the will of the operator, whereby a portion of the carbureting capacity of the machine is thrown into use or disuse, substantially as described, and for the purpose set forth.

7. The separate compartments B, C, D, and E, constructed with their seams and joints to the outer surface, and connected together and held apart by means of lugs and bolts, for the purposes set forth.

206,197. MACHINES FOR COILING WIRE, &c. John Prosser, Pittsburg, Pa., assignor to himself and Lewis, Oliver & Phillips. Filed Mar. 27, 1878.

Brief.—An annular stripper, D, is arranged to be advanced over the reel by means of rack and segmental gear operated by a lever. The coil, when disengaged, is prevented from striking in its fall against the pins of the reel by a projecting deflector affixed to the face-plate of the reel, thus permitting the removal of the coil during the revolution of the reel.

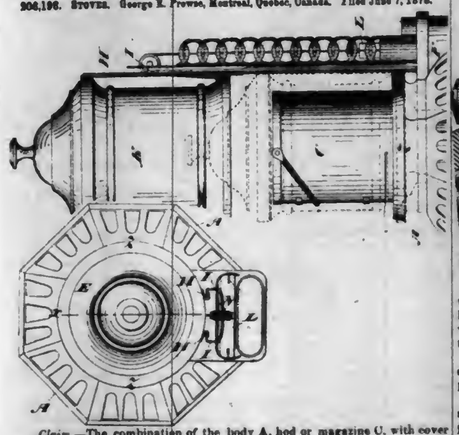


Claim.—1. In a machine for coiling rods, wire, &c., the combination of a reel, a stripper adapted to remove the coil from the reel without arresting the motion thereof, and mechanism for actuating the stripper, substantially as specified.

2. The coiling-reel provided with a deflector, for insuring the disengagement of the coil during its discharge, substantially as specified.

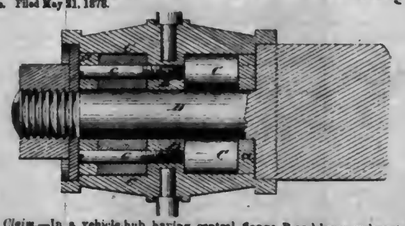
3. The combination, in a machine for coiling wire, &c., of the coiling reel, provided with a deflector, the stripper, and mechanism for operating the stripper, substantially as and for the purpose specified.

206,198. STOVES. George R. Prowse, Montreal, Quebec, Canada. Filed June 7, 1878.



Claim.—The combination of the body A, hod or magazine C, with cover E, having the slides H, guides I, and counter-balance L, substantially as described.

206,199. VEHICLE-WHEEL HUBS. Thos. J. Stanwood and Gustavus W. Parker, Brunswick, Me. Filed May 21, 1878.



Claim.—In a vehicle-hub having central flange B and loose or inserted ends or heads *a a*, the friction-rollers C C, journaled upon screw-threaded pins *c c*, which also serve to secure the ends *a a* to the central flange B, substantially as herein described, for the purpose set forth.

206,200. FOUNTAIN-PEN HOLDERS. Wm. W. Stewart, Brooklyn, N. Y. Filed June 20, 1878.

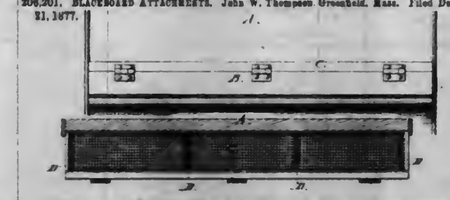


Claim.—1. An ink-holding or reservoir pen-holder with an elastic section, combined with an adjusting-slide bearing upon said elastic section, to adjust its elasticity to suit the habit of the user, for the purpose set forth.

2. An ink-holding or reservoir pen-holder with walls divided by longitudinal slits, so as to become elastic, combined with a movable band or ring, to regulate and adjust the elasticity of said wall, in the manner and for the purpose set forth.

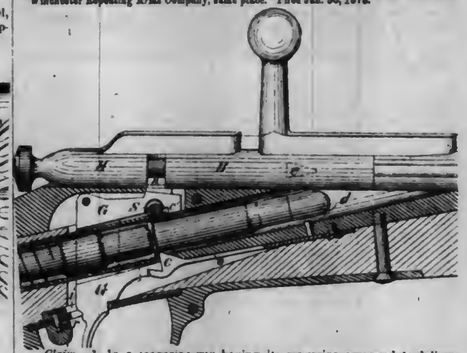
3. The removable plug for the lower end of the reservoir, provided with the hollow central pin, secured by a nut and a rotating collet, provided with a stop to limit its rotation, and perforated, as described, to constitute a gate or valve for the ink vent, as set forth.

206,201. BLACKBOARD ATTACHMENTS. John W. Thompson Greenfield, Mass. Filed Dec. 21, 1877.



Claim.—In combination with the blackboard A, the tray B and screen C, when said screen is securely fastened to its frame and supported by strips or stays D, as and for the purpose set forth.

206,202. MAGAZINE FIRE-ARMS. Wm. W. Wetmore, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Jan. 30, 1878.



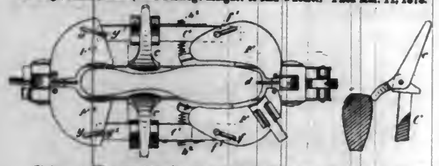
Claim.—1. In a magazine-gun having its magazine arranged to deliver the cartridges directly forward to the chamber of the barrel, the detent *e*, located so as to act last upon the under side of the cartridge, in combination with the trigger G, arranged to operate said detent, substantially as and for the purpose set forth.

2. The combination of the trigger G, with the two detents *e* and *e'*, with the spring *o*, when constructed or arranged to operate substantially as and for the purpose set forth.

3. The projection *d*, or its equivalent, arranged in the passage from the magazine, to operate upon the passing cartridges, substantially as and for the purpose set forth.

4. The cut-off or stop S, in combination with the trigger G, said parts being constructed and arranged to operate substantially as set forth.

206,203. LASTING-MACHINES FOR BOOTS AND SHOES. John E. Wheeler, Lynn, and M. V. B. Eldridge, Boston, Mass.; said Eldridge assignor to said Wheeler. Filed Mar. 11, 1878.



Claim.—1. The combination of the divided rocking fore-block *b*, either with or without a compressible or elastic lining, *b'*, and hinged or pivoted to the standards B, as shown, with the said standards B and the springs *b²*, whereby the upper is clamped on a last by the upward rocking movement of said divided fore-block upon the same when the last is compressed therein, substantially as described.

2. The combination of the divided rocking fore-rest *b*, either with or without an elastic or compressible lining, *b'*, with the standards C and springs *b²*, the said fore-blocks acting, when the last is compressed therein, to clamp the upper upon the same in relation to the sides of the last, substantially as described.

3. The combination of the dividing rocking fore-block *b*, arranged and operating substantially as described, with the yielding forked lever J, provided with suitable connecting mechanism for operating the lasting-plates, all operated together substantially as described.

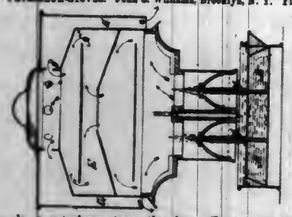
4. The combination of the divided rocking fore-block *b*, arranged and operated substantially as described, with the closing levers and blocks D D' E E', and their holding and depressing downholds *d e* and suitable connecting mechanism, all operating together substantially as described.

5. The combination of the closing heel and toe blocks *d' e'* with the fore-lasting and heel-lasting plates F and F', pivoted to said heel and toe blocks, and guided by pins upon the standards C, and operated by the closing of said heel and toe blocks, substantially as and for the purpose described.

6. The combination of the lasting-plates F F', respectively, with the side standards C and movable toe and heel blocks D' E' by means of pivoted connections on the toe and heel blocks and slots and pins *f f' g g'*, for the purpose of giving to said plates *f f'* longitudinal and transverse closing and sliding motion, substantially as and for the purpose described.

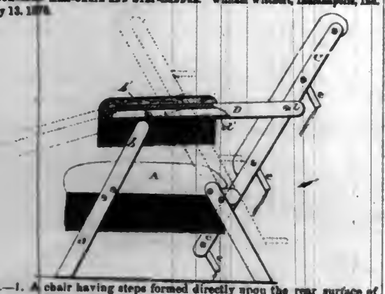
7. The combination, with the toe and heel lasting plates F F', operated by the closing of the toe and heel blocks D' E', of the shank-lasting levers *e*, pivoted to the said standards C, and conformed at their inward edges to fit the shank of the last, and adjusted to fit the leather thereon, substantially as described.

206,204. PETROLEUM-STOVES. John S. Williams, Brooklyn, N. Y. Filed Sept. 20, 1877.



Claim.—In a petroleum-stove, the drum E, constructed with internal deflecting plates and passages, as set forth, in combination with the external annular passage G, provided to conduct the hot air, &c., from the burners in a downward direction, substantially as and for the purpose set forth.

206,205. COMBINED ARM-CHAIR AND STEP-LADDER. William Witthoft, Indianapolis, Ind. Filed May 13, 1878.



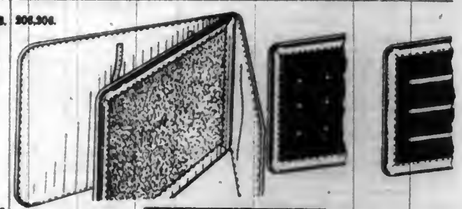
Claim.—1. A chair having steps formed directly upon the rear surface of its back, so that the back and ladder will be formed in a single piece, substantially as shown.

2. The combination of the hinged adjustable back C and frame *c c*, provided with steps *e*, with its pivoted arms D D, furnished with slotted plates *d' d'*, and the seat A, standards *b b*, and screw-heads *b' b'*, all substantially as and for the purpose set forth.

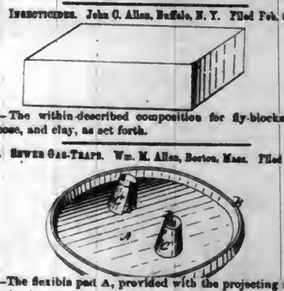
206,206. POCKET-BOOKS FOR FISHERMEN. Frank M. Yerriston, Cambridge, Mass. Filed June 3, 1878.

Claim.—A pocket-book for fishermen having the leaf A composed of a sheet of cork covered with a sheet or sheets of absorbent material, in the manner and for the purpose set forth.

206,206.



206,207. WASTE-PIPE VALVES. John Q. Adams, Brooklyn, N. Y. Filed June 7, 1878.

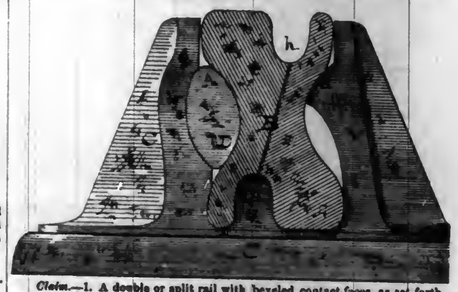


Claim.—1. The combination, with basin C, having outlets *c' c²*, of the chamber F, having a valve, D, at the lower end of the neck, that connects with basin, and the curved waste-pipe trap L, having valve M, as and for the purpose specified.

2. The combination of the downwardly-opening plug-valve D, the crank F, the connecting-rod G, the arm H, the rod I, and the spring K with the discharge-opening of a basin or tub, substantially as herein shown and described.

206,208. RAILWAY-RAILS. Samuel Aldred, Charlton, England. Filed May 31, 1878.

Brief.—A compound reversible rail, with beveled contact-surfaces and outer concave sides, is secured in a chair having a supporting-shoulder on one side and a recess on opposite side to receive the securing key or wedge, the bottom of chair having a tongue which enters a corresponding groove in rail.



Claim.—1. A double or split rail with beveled contact-faces, as set forth, and concave outer sides, combined with a chair, C, provided with shoulder *d* on one side, and gap *d* on the other to receive the key *D*, as set forth.

2. A split rail with symmetrical parts A A, having concave sides and edge or face groove *h*, combined with the chair C, provided with shoulder *d*, gap *e*, and tongue *g*, as set forth.

206,209. INSECTICIDES. John C. Allen, Buffalo, N. Y. Filed Feb. 6, 1878.

Claim.—The within-described composition for fly-blocks, consisting of arsenic, glucose, and clay, as set forth.

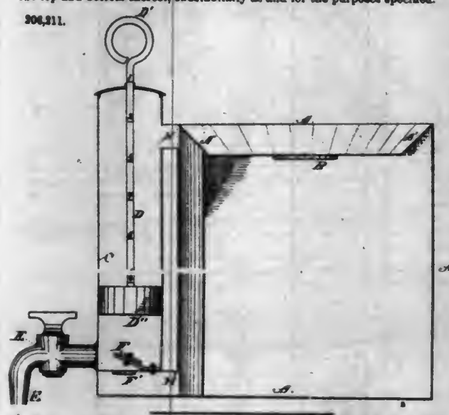
206,210. SEWER GAS-TRAPS. Wm. M. Allen, Boston, Mass. Filed May 29, 1878.

Claim.—The flexible pot A, provided with the projecting rim B and compressible projections or teats C, all in one piece, substantially as and for the purpose set forth.

206,211. LIQUID-MEASURES. Charles D. Austin, Amsterdam, N. Y. Filed Feb. 18, 1878.

Claim.—The herein-described measuring-tank, having the depressed top A', provided with central hole B, the metallic pump-barrel C, arranged eccentrically at side of said tank and extending above the top thereof, and provided with a solid piston, D'', graduated piston-rod D, valve and valve-seat F and F', and stop-cock E, having a tapering nozzle, E', and the exit and return passage-ways H H', forming a communication between the tank and pump-barrel at the top and bottom thereof, substantially as and for the purposes specified.

206,211.



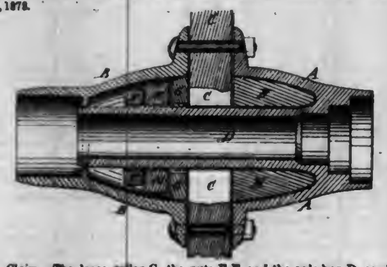
206,212. FLOOR-SCRUBBERS. Frederick A. Balch, Hingham, Wis. Filed Apr. 6, 1878.



Claim.—1. The brush A, with one edge of its back extended, as described, and the rabbeted back C, provided with a rib, *d*, and rubber D, combined with the pivoted water-pan F, substantially as set forth.

2. A water-pan or box, essentially triangular in cross-section, one side whereof is composed of a scrub-brush and India-rubber floor-rubber, pivoted to said pan, and a handle projecting from another side, with suitable springs to close the edge of said pan against the rubber, as set forth.

206,213. VEHICLE-WHEEL HUBS. George Bartlett, Gananoque, Ontario, Canada. Filed June 6, 1878.



Claim.—The loose collar G, the nuts E F, and the axle-box D, combined with sections A B and block H, as specified, to prevent end-play of the spokes in hub.

206,214. EXERCISING-MACHINES. Samuel M. Barnett, New York, N. Y. Filed Nov. 22, 1877.

Claim.—1. The combination, with the frame of an exercising-machine and foot-rests, of a seat capable of being rocked forward and backward, substantially as and for the purposes specified.

2. The combination, in an exercising-machine, of elastic stretchers and a seat capable of being rocked forward and backward, substantially as and for the purposes specified.

3. The combination, with an exercising-machine, of a seat capable of having both a sliding and a rocking movement, substantially as and for the purposes specified.

4. The combination, in an exercising-machine, with a seat and a supporting slide-piece, of means for locking the seat rigidly to the slide-piece and for locking the slide-piece rigidly to the frame of said machine, so that the seat may be rocked or slid relatively to the slide-piece, substantially as and for the purposes specified.

5. The combination, with an exercising-machine, of foot-rests provided with straps adapted to be adjusted lengthwise to suit feet of different sizes, substantially as specified.

6. The combination, with an exercising-machine, of foot-rests provided with heel-recesses and straps adjustable lengthwise, substantially as specified.

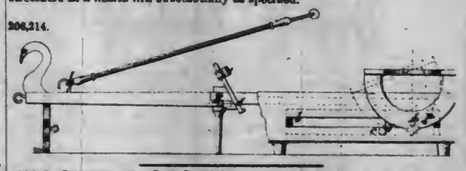
7. The combination, with an exercising-machine, of a tongue made in two parts, having contiguous lapped ends and a screw securing them together and securing a leg for supporting them, substantially as specified.

8. A stretcher for exercising purposes composed of an elastic core and a loose bag-like sheath or covering loosely surrounding such core, substantially as specified.

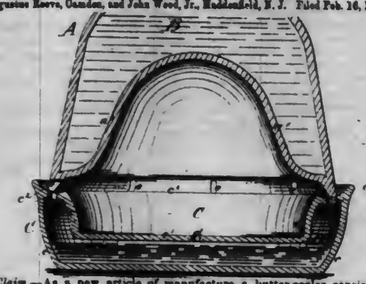
9. The combination, in an exercising-machine, with a sliding seat and grooves or ways for the same, of elastic cushions or stops, substantially as and for the purpose specified.

10. The combination, with an exercising-machine, of a prop for the tongue thereof, adapted to be detached and used in connection with the elastic stretchers as a health-lift, substantially as specified.

206,214.

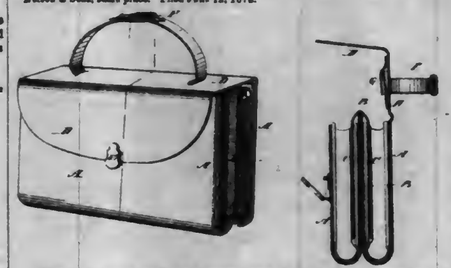


206,215. REFRIGERATORS. Jacob Bunsel, Stockton Township, Camden County, assignor to Augustus Reeve, Camden, and John Wood, Jr., Haddonfield, N. J. Filed Feb. 16, 1878.



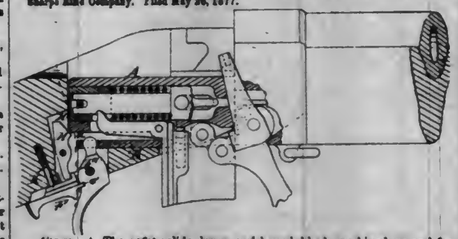
Claim.—As a new article of manufacture, a butter-cooler consisting of two hollow, porous, or unglazed earthenware vessels, A C, the former having a bottom edge with notches *c*, and the latter an annular perforated channel, *c'*, as shown and described.

206,216. BOOK-HOLDERS. William R. E. Barth, New York, N. Y., assignor to Thomas Nelson & Sons, same place. Filed June 12, 1878.



Claim.—A prayer-book and hymnal case, A, made with a central partition, B, provided with pockets C upon its opposite sides, to receive the adjacent boards of the covers of the two books, having a flap, D, upon the edge of one side, to overlap and be secured to the other side, and provided with a handle, F, substantially as herein shown and described.

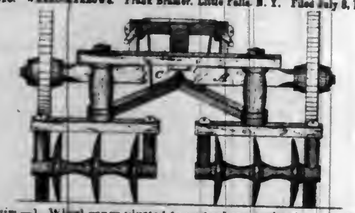
206,217. BREECH-LOADING FIRE-ARMS. Hugo Borchardt, Bridgeport, Conn., assignor to Sharps Rifle Company. Filed May 26, 1877.



Claim.—1. The safety-slide, lever, and breech-block combined, as and for the purpose specified.

2. In a breech-loading gun, the combination of the upward and downward sliding breech-block A, having the portion *e*, pivoted lever H, having the incline surface H', the check-slide F, having the projection F', and the trigger C, having the slot or opening *c'*, all operated substantially as described.

206,218. WHEEL-HARROWS. Frank Bramer, Little Falls, N. Y. Filed July 8, 1878.



Claim.—1. Wheel gangs pivoted to a wheel or carrying frame, and capable of swinging freely laterally relatively thereto, substantially as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the wheel or carrying frame, the coupling frame suspended therefrom, and the wheel-gangs mounted on the coupling frame.

3. The combination, substantially as hereinbefore set forth, of the wheel or carrying frame, the tongue, the coupling-frame pivoted in front of and crossing the axle, and the wheel gangs mounted on the rear of the coupling frame, whereby the gangs can swing clear of the carrying-wheels.

4. The combination, substantially as hereinbefore set forth, of the wheel or carrying frame, the coupling-frame pivoted thereto, and the wheel-gangs pivoted on the coupling frame, whereby the gangs can swing vertically, laterally, and at an angle, as well as be adjusted relatively to the tongue.

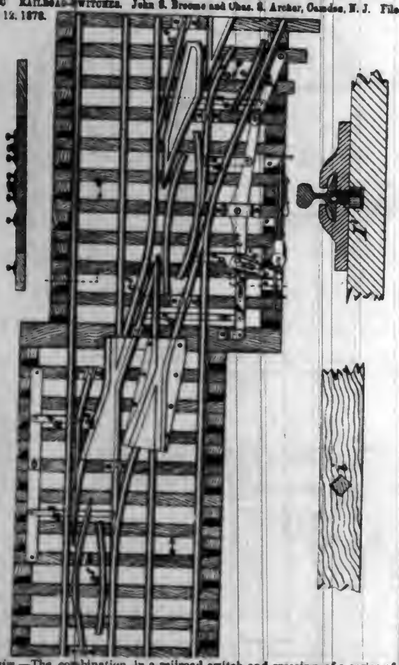
5. The combination, substantially as hereinbefore set forth, of the wheel or carrying frame, the coupling-frame, the wheel-gangs, and the lifting-levers on the carrying-frame, whereby the gangs may be lifted clear of the ground.

206,219. HORSE-COLLARS. William Henry Briggs, Lenara, Iowa. Filed Mar. 14, 1878.



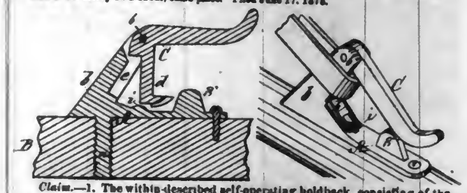
Claim.—In a horse-collar, the sections A B, secured at their tops by strips *a*, and provided at their bottoms with loops *g*, to receive the ends of the hames, said collar being secured about the neck of the animal by the straps which fasten the hames at the bottom, as and for the purpose set forth.

206,220. RAILROAD-SWITCHES. John S. Broome and Chas. S. Archer, Camden, N. J. Filed Jan. 14, 1878.



Claim.—The combination, in a railroad switch and crossing, of a series of pivoted switch-tongues connected by links with a vibrating double-armed lever, and a hand-lever and counter-balance for operating one of the pivoted tongues independently of the others, substantially as set forth.

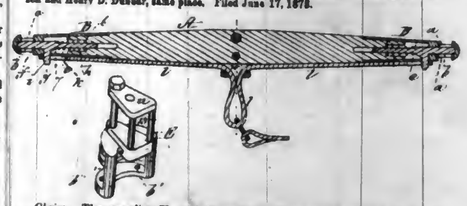
206,221. HOLDBACKS FOR VEHICLES. Oliver Brothers, Jr., North Hartland, Vt., assignor to himself and Henry D. Dunbar, same place. Filed June 17, 1878.



Claim.—1. The within-described self-operating holdback, consisting of the plate A, with its arm *b* and projection *g*, in combination with the angular latch C, pivoted to the arm *b*, and constructed to operate substantially in the manner and for the purpose set forth.

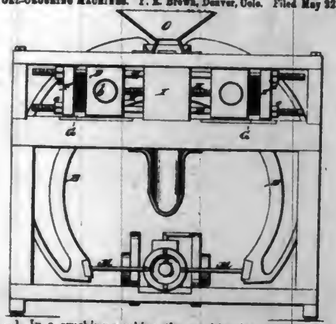
2. In combination with the plate A, rib *i*, and arm *b*, the angular latch C, provided with the bifurcated foot-piece *h*, substantially as and for the purpose set forth.

206,222. HORSE-DETACHERS. Oliver Brothers, Jr., North Hartland, Vt., assignor to himself and Henry D. Dunbar, same place. Filed June 17, 1878.



Claim.—The coupling E, with its guides *m m* applied to the center of the whiffletree A, in combination with the strap or cord *l*, caps B B, with their recesses *a a*, and spring-bolts *b b*, substantially as and for the purpose specified.

206,223. ORE-CRUSHING MACHINES. F. B. Brown, Denver, Colo. Filed May 22, 1878.

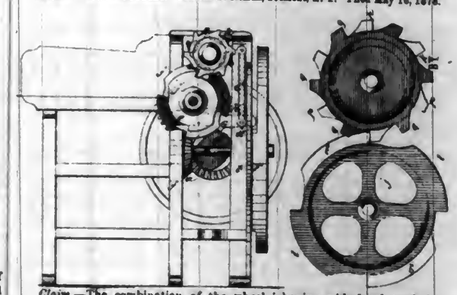


Claim.—1. In a crushing-machine, the combination of movable bearing-blocks D D, interposed bridge-block I, and adjusting-rods H H, for the purpose of regulating the size of the crushed ore, substantially as set forth.

2. In a crushing-machine, the combination of bearing-blocks D D, tie-rods E E, flanges F F, and elastic cushions G G, interposed between said flanges and said bearing-blocks, for the purpose set forth.

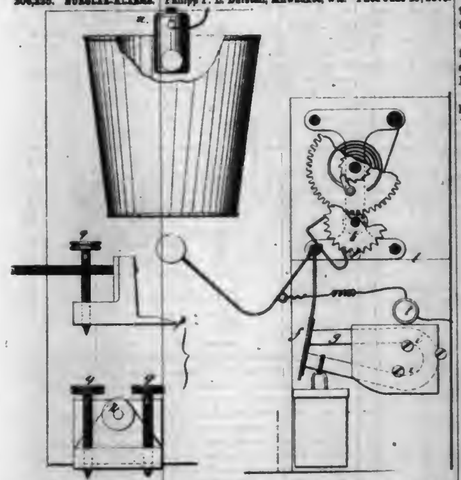
3. In a crushing-machine, yoke-shaped levers B B, pivoted near their upper ends and tapering to their lower ends, in combination with connecting-rods M M and cross-head and piston of a steam-engine, substantially as set forth.

206,224. STRAW-CUTTERS. Charles Brustman, Fremont, N. Y. Filed May 16, 1878.



Claim.—The combination of the wheel *j*, having wide-faced teeth *l m*, arranged in different planes, and the wheel *k*, having teeth *p q*, arranged in different planes, substantially as herein shown and described.

206,225. BURGLAR-ALARMS. Philipp F. L. Bertsall, Milwaukee, Wis. Filed June 15, 1878.



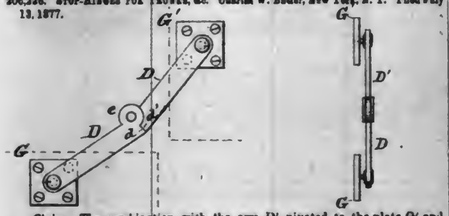
Claim.—1. A permanent magnet, in combination with clock-work and a bell or drum, the magnet serving to hold the alarm out of action when the apparatus is set, and freeing itself from its armature to permit the alarm to sound when jarred or disturbed, substantially as set forth.

2. The weight *k*, in combination with the swinging permanent magnet, substantially as and for the purposes set forth.

3. The door or window fastening consisting of the angle-plate *o*, carrying screws *q q r*, and having a wedge, *p*, whereby it serves as a means for securing a door or window and the burglar-alarm to the same, substantially as set forth.

4. The combination of the circuit-wires *s r*, binding parts *t u*, and a suitable battery and signaling device with the hammer and armature mechanism *c*, *c'*, and *f*, the magnet *g'*, and bell or drum *n*, as and for the purpose set forth.

206,226. STOP-HINGES FOR TRUNKS, &c. Charles W. Butler, New York, N. Y. Filed July 13, 1877.



Claim.—The combination, with the arm D', pivoted to the plate G' and provided with the projecting lip *d'*, of the arm D, pivoted to the plate G and arm D', and provided with the face *d*, substantially as described, and for the purpose set forth.

206,227. STOVE-PIPE DAMPERS. Charles B. Clark, Buffalo, N. Y. Filed Dec. 20, 1877.



Claim.—1. A stove-pipe damper consisting of a circular disk, slotted, as described, from the center to the periphery, the edges of said slot being provided with lips on opposite sides to form a socket for the spindle, substantially as set forth.

2. The combination, with the disk, slotted from the center to the periphery, and provided with lips at the edge of said slot, and with a permanent journal on the periphery of the disk, as described, of the short spindle adapted to said lips on the edges of the slot, substantially as set forth.

3. The combination of the damper-spindle, having its inner end flattened, and the rigid jaws *h h*, arranged near the center of the damper, substantially as and for the purpose set forth.

4. The combination, with the disk, slotted from the center to the periphery, and having independent lips at the edges of said slot, one of which is constructed with a ridge, *e*, of the short spindle, adapted to said lips, and having a notch, *r'*, at its end, resting on said ridge, substantially as shown and described.

206,228. LOCKING VALVES. Patrick Connolly, Brooklyn, N. Y. Filed May 24, 1878.

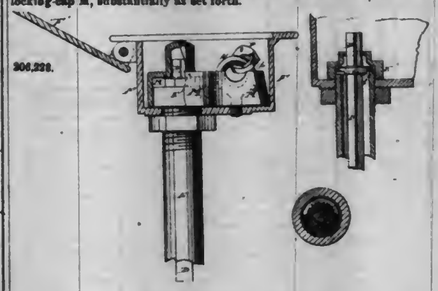
Claim.—1. In combination with the rod D, connecting with the valve controlling the water-supply, a cap, M, applied and removed at will, with locking means, P, for securing it, adapted to serve as and for the purposes herein specified.

2. In combination with the box F, having a cover, F', and valve-rod D, the eye H, cap M, and separate padlock P, adapted for joint operation, as and for the purposes herein specified.

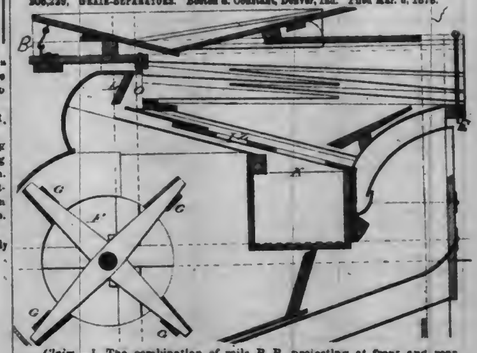
3. The combination, with a stop-cock-rod protecting pipe, E, of a box, F, for protecting the valve-operating mechanism, secured to the upper end of such pipe E by means of a cap, E', adapted to allow of the passage of the rod D therethrough, substantially as and for the purposes described.

4. The combination, with the rod D, pipe E, box F, and cap E', of the locking-cap M, substantially as set forth.

206,229.



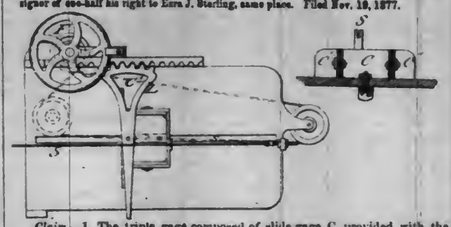
206,229. GRAIN-SEPARATORS. Boston S. Constant, Denver, Ind. Filed Mar. 6, 1878.



Claim.—1. The combination of rails B B, projecting at front and rear beyond the upright of the mill, the cross-bar E of the shoe, projecting beyond the shoe at each side, and the suspending-links C, substantially as set forth.

2. The combination of the fan F and weights G.

206,230. GAGES FOR PAPER-CUTTING MACHINES. Charles Cranston, Brooklyn, N. Y., assignor of one-half his right to Ezra J. Sterling, same place. Filed Nov. 10, 1877.

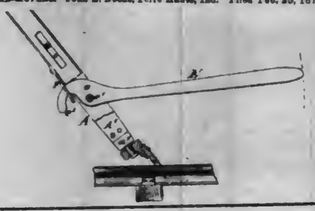


Claim.—1. The triple gage composed of slide-gage C, provided with the longitudinally-adjustable side-gages C' C², whereby the fronts, heads, and tails of book-work can be simultaneously cut.

2. The rigid stop-bar S, provided with notches, in combination with a sliding gage, substantially as described.

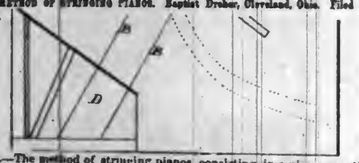
3. The combination, with the sliding gage, of a stop-bar having special elongated notches for permitting the adjustment of the gage therein, substantially as and for the purpose described.

206,231. CAR-MOVERS. John B. Deeds, Terre Haute, Ind. Filed Feb. 26, 1878.



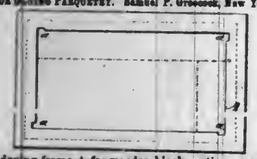
Claim.—The combination of the standard A and sliding bar C of a car-starter with the cam-lever E *c*, having the hook *c'*, and with the link F, substantially as and for the purpose set forth.

206,232. METHOD OF STRINGING PIANOS. Baptist Dreher, Cleveland, Ohio. Filed Apr. 15, 1878.



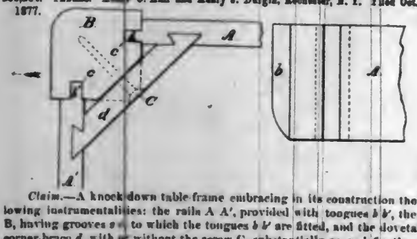
Claim.—The method of stringing pianos, consisting, in a piano sounding-board, having an opening, D, of the combination of the strings B, as shown and described, whereby the tensile strain is equally divided and brought to bear on both the front and rear sides of the board, substantially as and for the purpose set forth.

206,233. CLAMPS FOR LAYING PARQUETRY. Samuel F. Greocock, New York, N. Y. Filed Jan. 31, 1878.



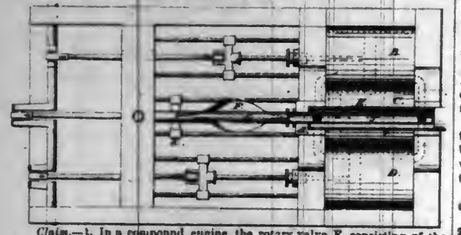
Claim.—The drying-frame A for wooden block sections, provided with the notch a at one or more of the corners, as and for the purpose specified.

206,234. TABLES. Henry O. Hall and Henry J. Durgin, Rochester, N. Y. Filed Oct. 13, 1877.



Claim.—A knock-down table-frame embracing in its construction the following instrumentalities: the rails A A', provided with tongues *b b'*, the leg B, having grooves *a a'* to which the tongues *b b'* are fitted, and the dovetailed corner-brace *d*, with or without the screw C, substantially as and for the purposes set forth.

206,235. COMPOUND ENGINES. Moses B. Harvey, Leavenworth, assignor to Samuel H. Ellis, South Leavenworth, Kans. Filed June 20, 1876.



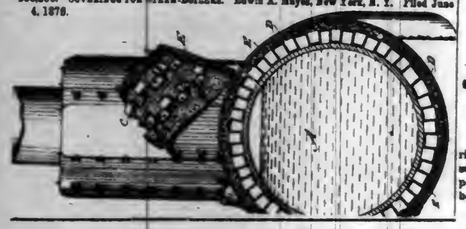
Claim.—1. In a compound engine, the rotary valve E, consisting of the inner tube *f* and an outer tube, *e*, provided with suitable ports, constructed and arranged substantially as shown, and for the purpose described.

2. The valve E, herein described, consisting of the outer tube *e* and the inner tube *f*, provided with the spiral flanges F, arranged substantially as shown, and for the purpose specified.

3. The combination, with a valve, E, consisting of outer tube *e* and inner tube *f*, provided with spiral flanges F, of cross-head K, having stud *k*, arranged substantially as and for the purpose set forth.

4. The combination of the cylinders B C D with valve E, consisting of outer tube *e* and inner tube *f*, provided with spiral flanges F and cross-head K, all constructed and arranged substantially as shown and herein described.

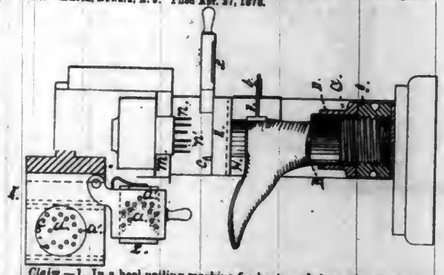
206,236. COVERINGS FOR STEAM-BOILERS. Edwin A. Hayes, New York, N. Y. Filed June 4, 1878.



Claim.—1. In a boiler-covering, the combination of the corrugated strips C, felt D, and canvas E, the sections being connected by hooks and eyes, as shown and described.

2. In combination with a casing constructed as described, a wire, *j*, arranged as shown and described, for the purpose specified.

206,237. MACHINES FOR ATTACHING HEELS TO BOOTS AND SHOES. Patrick Hogan and Daniel Whitlock, Newark, N. J. Filed Apr. 27, 1878.



Claim.—1. In a heel-nailing machine for boots and shoes, the combination of the die or bed E, having two sets of perforations, *a* and *a'*, and the driving-plate *m*, provided with two sets of rods, *n* and *n'*, of variable lengths, substantially as and for the purposes specified.

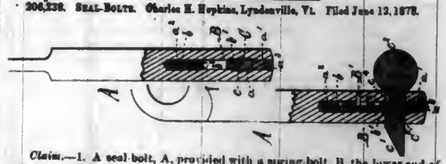
2. In combination with the bed E and driving-plate *m*, the adjustable awing-loader K, provided with the spring-bottom L, substantially as set forth.

3. In a boot and shoe heeling machine, the combination of the sliding bed H^4 and last-standard B, and adjustable stop F, and nailing loading mechanism, all arranged and operating substantially as and for the purpose specified.

4. In a boot and shoe heeling machine, the combination of the sliding bed D, the nut I, and screw-shaft C, all arranged substantially as set forth.

5. The adjustable clamp, having the plate R, either open or closed at the end for receiving the section of the heel, and having the lever S, arm *e*, slide *f*, jaws *h*, and springs *i*, combined and operating substantially as and for the purpose set forth.

206,238. SEAL-BOLTS. Charles H. Hopkins, Lyndonville, Vt. Filed June 12, 1878.



Claim.—1. A seal-bolt, A, provided with a spring-bolt, B, the lower end of which has a tenon, *b'*, narrower than the thickness of the body of the sealing-pin, in combination with a sealing-pin, C, provided with a mortise, *c*, constructed with a flat end and side walls and an inclined bottom, whereby lateral and end access to the end of the seal-pin by picking instruments is prevented, while at the same time the pin cannot be withdrawn backward, substantially as and for the purpose set forth.

2. The combination of the seal-bolt A, having a mortise, *a*, the spring-bolt B, having the tenon *b'*, and the sealing-pin C, having the mortise *c* *c'*, with flat end and side walls and an inclined bottom, and a head, *c'*, substantially as and for the purpose described.

3. The seal-bolt A, provided with a spring-bolt, B, which is prevented from turning, and is limited in its "throw" with respect to the mortise *a*, in combination with a seal-pin, C, having the inclined surface *c'* and the mortise *c*, with inclined bottom and a flat end and side walls, substantially as and for the purpose described.

4. A soft-metal seal-pin, C, provided with a hard-metal wearing and protection portion, *c'*, substantially as and for the purpose described.

206,239. SEWING-MACHINES. Jas. A. House, Bridgeport, Conn. Filed May 20, 1878.

Brief.—Supplementary mechanism is arranged beneath the bed of the machine, in rear of the needle-plate, whereby an intermittent motion is imparted to two pattern-cams, one of which slightly overlaps the other. A forked cloth-clamp is carried by a lever provided at its rear end with a friction-roller, engaging with the peripheries of said cams, and which is kept in contact therewith by means of a spring acting on a sliding block to which the lever is pivoted. The clamp rests on the needle-plate, one fork on each side of the needle, and when the jaws of the same are not clamped together the usual line of stitching is made. When the material is clamped and the supplementary mechanism put in motion by the operator, the clamp is operated by the cams to produce a single ornamental figure, the mechanism then stopping until again set in motion.



Claim.—1. The combination, in a sewing-machine, of a supplementary fabric-clamp and horizontally-rotating cams or pattern wheels having irregular edges or peripheries, to impart to the clamp, by their simultaneous action, compound irregular endwise and vibratory movements, substantially as herein-before set forth.

2. The combination, in a sewing-machine, substantially as hereinbefore

set forth, of a pivoted lever provided with the fabric-clamp and friction-roller, intermittently-operating cams or pattern-wheels, and a spring by which to keep the lever in position to be operated by the cams.

3. The combination, substantially as hereinbefore set forth, of mechanism for forming the usual row of stitches, a supplementary clamp to hold the goods during the pauses in the formation of said row, the clamp-lever, its roller, cam-wheels acting at their edges upon said roller, and supplementary intermittently-operating feeding devices, actuating the cam-wheels.

4. The combination, substantially as hereinbefore set forth, of the cloth-clamp, its lever acted upon by a spring, and provided with a roller, the cam-wheels, their gear-wheels, and intermittently-operating mechanism, substantially such as described, actuated from the main driving-shaft, whereby the cams, when set in motion, make a single revolution to complete the working of a figure, and then pause.

5. The combination of the cams, their gear-wheels, the ratchet-wheel provided with the stop, the spring-pawl, the reciprocating plate upon which the pawl is secured, and the controlling-slide to start the supplementary feed, substantially as described.

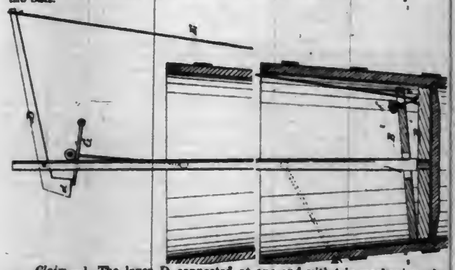
6. The combination of the cams, their pinions, the ratchet-wheel provided with the stop, its detent, the reciprocating plate, its spring-pawl, the needle-lever, and the controlling-slide for starting the supplementary feed, these members being and operating substantially as hereinbefore set forth.

7. The combination of the bed-plate or frame, the supplementary-frame, its brackets, the bracket-shafts, the cams, and mechanism, substantially such as described, for operating the cams.

8. The combination of mechanism, substantially such as described, for forming the ordinary or connecting row of stitches, the supplementary cloth-clamp, and intermittently-acting supplementary mechanism, substantially such as described, actuating said cloth-clamp when thrown into operation to work a single irregular or ornamental figure laterally to and connected with said ordinary row, and then stopping preparatory to the adjustment of the fabric for the continuation of the formation of the ordinary stitching, the combination being and operating substantially as described, whereby the figures may be worked at any desired distances apart, and each by a separate and distinct operation of the supplementary mechanism thrown into operation by the operator, and regularly and positively intermitted, as set forth.

206,240. ANIMAL-TRAPS. Albert E. Hoy, Racine, Wis. Filed May 9, 1878.

Brief.—The pressure of the animal upon the false bottom B^2 operates the lever through the cords *s* E to spring the trap, in addition to the strain upon the bait.



Claim.—1. The lever D, connected at one end with trip mechanism pivoted on standard C, and having the bent notched end *d*, in combination with end-notched pin G, to hold the bail, as shown and described.

2. The combination, with the cord E and the false bottom or boards B^1 B^2, of the cord *s* and bait *f*, substantially as and for the purpose shown and described.

206,241. SPEAKING-TELEPHONES. John E. Irwin, Philadelphia, Pa. Filed June 12, 1878.



Claim.—1. In an acoustic telegraph, a receiver composed of attenuated points *e f*, set in substantially rigid bases and interposed in the line B, said points being in contact and subjected to a certain degree of pressure, as set forth, combined with a battery, A, and reproducer E, as set forth.

2. The rigid sonorous plate *g*, supported by a post, *h*, and provided with the pointed wire *s*, combined with the pointed wire *f*, adjustable in the solid base *i*, for the purpose set forth.

3. The rigid sonorous plate *g*, supported upon the post *h*, and the wires *e f*, pointed at their ends, combined with the piston *k*, screwed into the socket *m*, and the worm-pinion *n* and tangent-screw *p*, substantially as and for the purpose set forth.

4. The attenuated points *e f*, set in substantially rigid bases and interposed in the line of a conductor, for the purpose set forth, combined with mechanism whereby the required adjustment of said points may be secured at will.

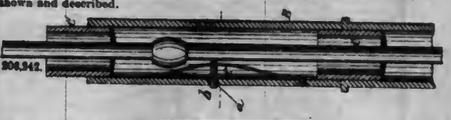
206,242. ROCK-WASHERS FOR OIL-WELLS. Frank Jeannerat and Lewis E. Simons, Edensburg, Pa. Filed June 12, 1878.

Brief.—The oil sprays out through a series of holes, which are prevented from clogging by the reciprocating pin *a*.

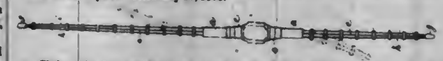
Claim.—1. The combination, in oil-pumping apparatus, of the spring-supported pin *b* and the ball E, substantially as herein shown and described.

2. The combination of the tube B, having the apertures *a*, the spring *c*, carrying the pin *b*, and means for moving the said spring, substantially as shown and described.

206,242.



206,243. SURGICAL EXPLORERS. Charles R. Jamison, Boston, Mass., assignor to Codman & Shurtleff, same place. Filed May 27, 1878.



Claim.—1. An explorer composed of flexible rods or stripes *h i*, extended through a central tube, *a*, but not connected therewith, and a central strip, *c*, secured at and projecting beyond each end of the tube between the strips *h i*, with the free ends of which it is connected, thereby making each end of the explorer flexible, to operate substantially as and for the purposes described.

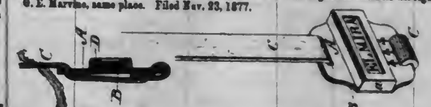
2. The tube, fixed spring *c*, and collars combined with the loose springs *h i* and bottons *g*, to operate substantially as described.

3. The tube, springs *h i*, and collars combined with India-rubber or other flexible covering applied thereto, substantially as described.

4. The tube *a*, springs *h i*, and flexible covering combined with the loose handle *o*, surrounding the tube, to operate substantially as and for the purpose described.

5. An explorer composed of a rigid central portion and flexible spring-formed ends, the flexible inner or entering end to be moved in any direction by the manipulation of the outer flexible end, substantially as described, to adapt the instrument to follow and indicate the shape of an irregular passage, as and for the purposes set forth.

206,244. BAGGAGE-CHECKS. Wm. H. Johnson, Delhi, N. Y., assignor of one-half his right to G. E. Martine, same place. Filed Nov. 23, 1877.



Claim.—The baggage-check consisting of the plates A B, constructed and united by the strap C, as shown, and the folded strip D, bearing a series of station-names mounted between the plates, as described and shown.

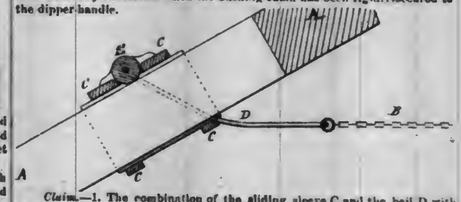
206,245. DEVICES FOR HANGING WALL-PAPER. A. Johnson, Kewanee, Ill. Filed June 3, 1878.

Claim.—1. The combination, with a paper-retaining roller and a jaw attached to fulcrumed handles, of curved arms and guide-rollers extending beyond the roller for bringing the paper in proper position on the wall, substantially as described.

2. The combination, with a padded roller and retaining-jaw applied to the ends of fulcrumed handles, of pivoted and curved arms, having guide-rollers at the outer ends, the arms being locked in position and capable of being swung into position inside of the roller, for the purpose specified.

206,246. DREDGES. James Keefe, Port Eads, La. Filed Apr. 16, 1878.

Brief.—The object of the sleeve through which the dipper-handle slides, and to which the backing-chain is attached, is to permit the dipper to descend to the bottom without loosening the backing-chain from its drum, which has been necessary heretofore when the backing-chain has been rigidly secured to the dipper-handle.



Claim.—1. The combination of the sliding sleeve C and the bail D with the dipper-handle A and the backing-chain B, substantially as herein shown and described.

2. The combination of the roller E with the sliding sleeve C, the bail D, the dipper-handle A, and the backing-chain B, substantially as herein shown and described.

206,247. BRICK-MACHINES. L. B. Kennedy, Waxahatchie, Tex. Filed Apr. 13, 1878.

Claim.—1. In a brick-machine, the combination of levers F E, bars G O N, and plunger M, substantially as set forth.

2. The brick-machine with hand-lever F, plunger M, and adjusting-keys K, substantially as set forth.

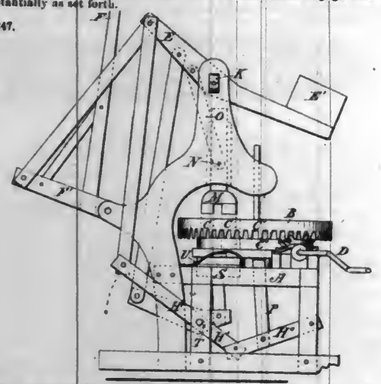
3. A brick-machine having revolving table B, operating-lever F, plunger M, and the counter-balance E', substantially as set forth.

4. In a brick-machine, the combination of hand-lever F and operating

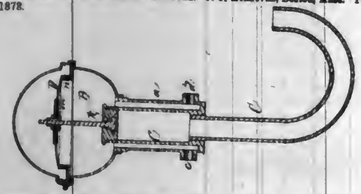
plungers or parts M S with the revolving table, having molds C, substantially as set forth.

5. A brick-machine having a movable mold-bottom C″, with slots and catches I″, and plunger-bar P, with head P′, arranged to engage with them, substantially as set forth.

206,247.



206,248. AUTOMATIC PRESSURE-REGULATORS. J. J. Kenneran, Boston, Mass. Filed June 15, 1878.



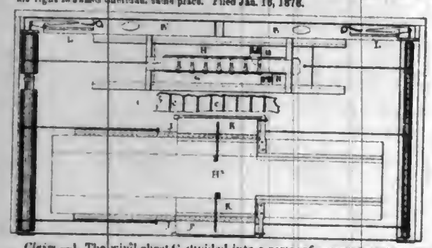
Claim.—The supply-pipe C, diaphragm-chamber B, diaphragm D, and valve I, in combination with tube a, surrounding supply-pipe C, and provided at its lower end with branch pipes c d, all constructed and arranged as set forth.

206,249. SHOE-HORNS. Julius Klaucke, Solingen, Germany. Filed June 17, 1878.



Claim.—The combination of the eccentrically-pivoted lever D with the hinged jaw C, the rigid arm B, and shoe-horn proper, A, as shown and described, whereby when said lever is raised its eccentric head will act on the jaw to cause it to bite the leather, as specified.

206,250. REED-ORGANS. Alex. R. Koerber, Toronto, Ontario, Canada, assignor of one-half his right to James Sheridan, same place. Filed Jan. 16, 1878.



Claim.—1. The wind-chest C, divided into a series of compartments, *c*, corresponding with the central or accompaniment notes, and connected by air-passages with the independent air-bellows, in combination with the valves G, arranged to control the admission of air in such manner that the notes corresponding to the said compartments may be played as treble or bass notes.

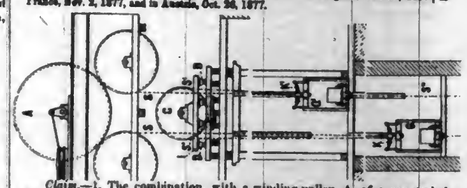
2. The traveling cams H, in combination with the valves G, wind-passages E E′, bellows B B′, and the subdivided wind-chest C, substantially as shown and described.

3. The combination, with the wind-chest C, having the subdivided central section-valves G and cams H, of the swell-valve J′, substantially as shown and described.

4. The valve J, connected with the cams H and inclosed within a chamber, K, provided with a swell-valve, J′, and arranged to be operated by the movement of the treble swell valve, substantially as and for the purpose specified.

5. The wind-inlet valves I, operated from the front of the instrument for the purpose of suddenly admitting air to the bellows, all when arranged to operate substantially as and for the purpose specified.

206,251. ELEVATORS. Friedrich Koepe, Bochum, Prussia. Filed June 24, 1878. Patented in Germany, Aug. 1, 1877; in England, Nov. 19, 1877; in Belgium, Oct. 31, 1877; in France, Nov. 2, 1877, and in Austria, Oct. 26, 1877.



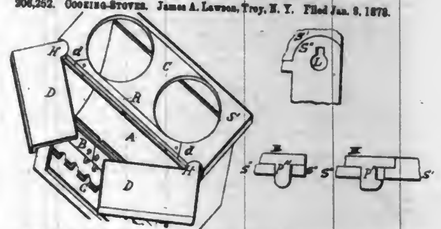
Claim.—1. The combination, with a winding-pulley, A, of a counterbalanced winding-rope, S, which is simply hung or passed over the said pulley and actuated by friction alone, as and for the purpose specified.

2. The combination, with the winding-pulley A and the rope S, of the pulleys C C′, the springs D, the brake-blocks E E′, and the auxiliary or safety ropes S′ S′, as described, and for the purpose set forth.

3. The combination, with the pulley A and winding-rope S and safety-ropes S′ S′, of the balancing-rope S″, attached with its ends to the under side of the two cages, as and for the purpose described.

4. In combination with the pulley A, winding-rope S, and cages G G′, the springs K K′, as specified, and for the purpose set forth.

206,252. COOKING-STOVES. James A. Lawson, Troy, N. Y. Filed Jan. 9, 1878.



Claim.—1. In a cooking stove or range, the combination of the fuel-supply aperture A, formed in the boiler-hole top at the front and over the fire chamber, and the two horizontally-swinging covers D D, pivoted to the top, each operating independently of the other, to uncover a part of the fuel-supply aperture, and both to uncover the whole of it, and arranged in horizontal continuity with the top, as shown and described.

2. In a cooking-stove, the combination of the fuel-supply aperture A, formed in the top and at the front, and the two horizontally-swinging pivoted covers D D, the semicircular turn-plates H H, formed with the covers, the coinciding table-plates S″, formed in the stove-top, the pivoting-apertures L, and the feathered pivot P″, arranged to operate as and for the purposes herein described and set forth.

3. In a cooking stove or range, the fuel-supply aperture A, formed in the boiler-hole top at the front and over the fire-chamber, and the two horizontally-swinging covers D D, pivoted to the top with the center-piece rest R, removable by means of its flange, dowel, or pins, combined and arranged to uncover the whole area of the fire-chamber top, in the manner as shown and described.

4. In a cooking-stove, the combination of the fuel-supply aperture A, formed in the top and at the front, the two horizontally-swinging pivoted covers D D, the removable center-piece rest R, with the doors B B opening into the fire-chamber at the front beneath the top, arranged to operate as and for the purposes described and set forth.

206,253. RAILWAY-CARS. James T. Leighton and Dominicus E. Leighton, New Haven, Conn. Filed Dec. 14, 1877.

Brief.—Convertible from an open car for summer use into a closed car for winter use.

Claim.—1. For the purpose of converting an open-sided car into a closed-sided car, separate and single posts H H, adapted to be attached to the upper and lower fixed portions D N of the sides of the car, one of which separate and single posts carries the upper door, I, and said attachable posts form window-jamb ways for separate and independent sliding sash, substantially as herein set forth.

2. In a convertible car, the combination, with fixed lower posts, F, extending above the window-sills, one of which carries a section, E, of the entrance-door, of separate and single posts H, and the fixed top and lower side casing, one of which separate and single posts carrying a coincident section, I, of said entrance-door, and both of said single attachable posts forming window-jamb ways for separate sliding sash, substantially as herein set forth.

3. A car constructed in sections of transverse seats, said sections having fixed corner-posts C, lower side paneling, D, top side casing, N, side doors, E I, and separate single attachable door and window posts H, whereby said car may be converted from an open summer-car to a closed winter-car.

4. The attachable single posts provided with the metal tenon or tongue at its lower end and a dowel-pin at its upper end, in combination with the lower fixed post provided with the top slot, whereby the two posts are united together and to the top of the car.

5. The joining ends of the fixed and single attachable posts, made oblique, in combination with the fastening metal tenons, as described.

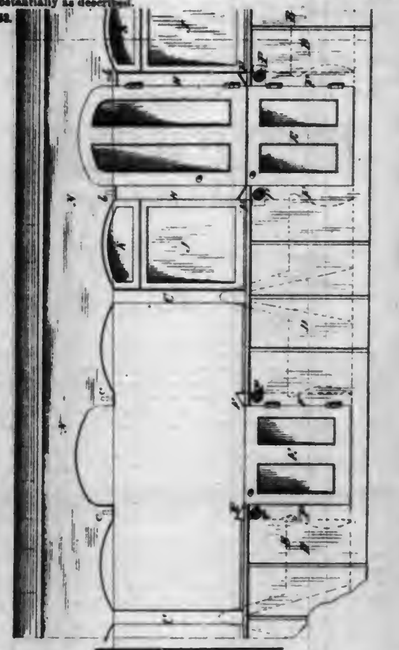
6. The combination, with the fixed doorway-posts provided with top slots, and the attachable single posts provided with metal tenons, of the locking knobs or catches, for securing the attachable posts when adjusted in place.

7. The combination, in a convertible car, of the single attachable door and window posts with meeting sash, for the purpose stated.

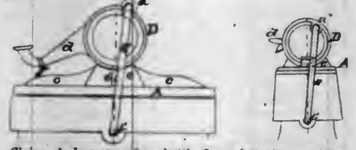
8. A convertible car having lower side paneling and top side casing, forming sash-boxes to receive the upper and lower sections of meeting sash, when the car is adapted for use as an open-sided car.

9. The combination, in a convertible car, of the separate and single attachable door and window posts H, the side casing N D, and the fixed corner-posts C, substantially as described.

206,254.



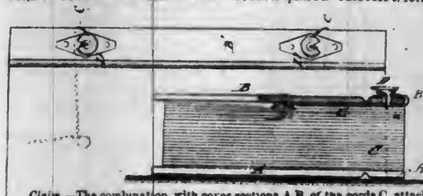
206,254. BOTTLE, JUG, AND JAR COVERS. John M. Lewis, Lockport, N. Y. Filed Mar. 23, 1878.



Claim.—1. In a cover for a bottle, &c., a fastening consisting, essentially, of a circular ring, D, having in its periphery a semicircular notch, *a′*, lugs *f*, and the handle *d*, with projections *g*, and the bail E, secured to the bottle or jar A within the recesses *b′*, as and for the object specified.

2. A cover for a bottle, &c., having its top side provided with a central curved projection, *e*, and radial ribs *e c′*, two of which, at opposite places, project up higher than the bed *e*, to form guards for the eccentric D, substantially as and for the purpose stated.

206,255. TEMPORARY BINDERS. John Lockhart, Philadelphia, Pa. Filed June 6, 1878.



Claim.—The combination, with cover-sections A B, of the cords C, attached to the edge-strip A′, the tubular clamps D, having notch in its top flange and attached to edge-strip B′, and the belaying-clamps D′, attached to section B, as and for the purpose specified.

206,256. BED-BOTTOMS. Erwin W. Maxson, West Lenox Pa. Filed Nov. 26, 1877.

Brief.—A stiff wooden slat supporting, through the medium of spiral springs and cross-bars, a series of flexible metallic slats or straps, the tension of said straps being adjusted by means of peculiarly-shaped brackets and hook-bolts, which form levers of the third order for the purpose.

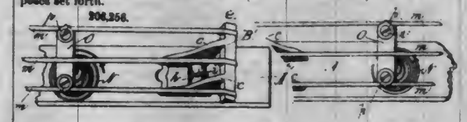
Claim.—1. The spring supports or brackets B, constructed as described—that is, with the side arms or pieces *c c*, cross-piece *c*, holes *f*, and hole *h′*, substantially as and for the purpose set forth.

2. In combination with a wooden slat, and with the series of metal straps *m*, the brackets B B′, and the cross blocks or bars O, the clasps or buttons *p q*, applied to the block, as shown, and serving to hold the outer straps to position.

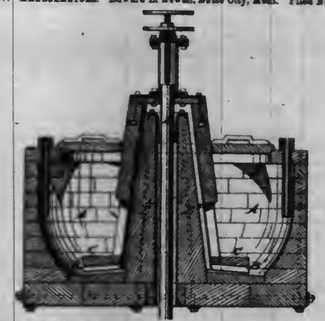
3. In combination with the wooden slats, the brackets B B′, constructed as described, and applied to the slat by means of the hook-bolts *i* and nuts *j*, as shown and set forth.

4. In combination, the slat A, brackets B B′, spiral springs N, cross-pieces O, and metal straps *m*, the combination being substantially as and for the purposes set forth.

206,256.

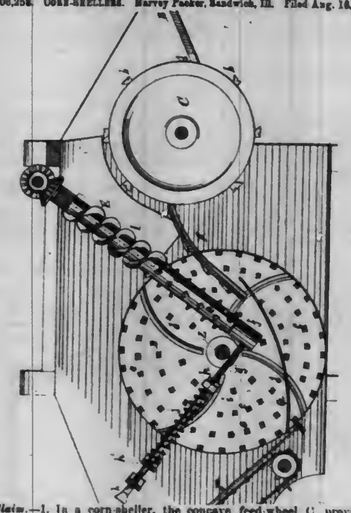


206,257. AMALGAMATORS. Edward L. Wewell, Butte City, Mont. Filed Nov. 6, 1877.



Claim.—A wooden amalgamating-pan constructed with curved side walls formed of horizontal layers, connected by vertical bolts, inclined bottom and base blocks, connected by lateral bolts, and a hollow center cone or standard, bolted rigidly to the bottom, substantially as shown, and for the purpose described.

206,258. CORN-SHELLERS. Harvey Packer, Sandwich, Ill. Filed Aug. 10, 1877.



Claim.—1. In a corn-sheller, the concave feed-wheel C, provided with brackets *b* or cups, for the purpose of feeding the ears to the shelling devices, substantially as specified.

2. In a corn-sheller, one or more shafts, E, each provided with a worm, *i*, or teeth *e*, and projecting beyond the picker-wheel into the hopper, for the purpose of facilitating the feeding of the ears, and also to aid in shelling, substantially as specified.

3. In a corn-sheller, one or more shafts, E, each provided with a worm or teeth, the lower end of each shaft being located in an automatically-adjustable bearing, for the purpose of adjusting the position of the shafts without changing the space between the shaft and the picker-wheel, as may be required in shelling ears of different sizes, substantially as specified.

4. In a corn-sheller, the shoe or plate F, in combination with the wheel D and shaft E, arranged in an inclined position, and with a space between the plate and picker-wheel, so that the grains will pass out without traversing the length of the shelling-space, substantially as and for the purpose set forth.

5. The combination of the feed-wheel C, picker-wheel D, shafts E, provided with a worm or teeth, and shoe F, substantially as and for the purposes specified.

6. The shaft E, provided with a worm or teeth, adjustable bearing *f*, rod

g, and spring *j*, so that the shaft will move in line with the face of the picker-wheel, combined substantially as and for the purposes specified.

7. The concave feed-wheel C, having the projections *b*, in combination with the hopper B, substantially as specified.

8. The combination of the feed-wheel C, feeding endwise, and plates F G, with the picker-wheel D and shafts E, substantially as described.

9. The combination of the bearings *h h'*, rods *g*, springs *j*, and the set-screw *k*, for adjusting the downward pressure of the shafts E, substantially as described.

206,359. WAINTAGE-RODS. Eli S. Prime, Baltimore, Md. Filed May 14, 1878.



Claim.—1. A wantage-rod provided with one or more suitable scales reading from the same zero-line, and movable as to a projecting gage-lip, so that it may be moved out of position until said gage-lip has been adjusted to the stave, and then moved into position to obtain a true reading of the wet-line.

2. A wantage-rod provided with one or more suitable scales reading from the same zero-line, combined with a slide bearing a gage-lip, whereby the scale may be moved out of adjustment while the instrument is being arranged in position, and then moved into adjustment to obtain a true reading of the wet-line.

3. A wantage-rod provided with one or more suitable scales reading from the same zero-point, constructed with an axial hole and a longitudinal slot penetrating to said hole, combined with a sliding rod, *x*, fitted to said hole, and a gage-lip, which is fixed to said rod and projects through said slot, as set forth.

4. A wantage-rod provided with one or more suitable scales reading from the same zero-line, and also provided with an addition scale or scales of suitable graduation, reading from one end of said rod, so that the same instrument may be employed to measure both "outs" and "ins," as described.

206,360. ANIMAL-TRAPS. Delano F. Randall, Smith Road, Ohio. Filed Sept. 12, 1877.



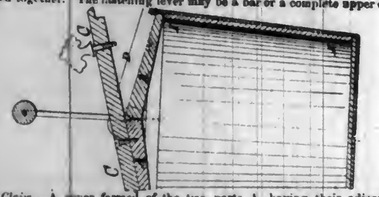
Claim.—1. The pricks or barbs D, firmly attached to the pole C, in combination with the hinged guard E, secured in place by plate F, substantially as set forth.

2. The combination of the pricks or barbs D with the hinged guard E and spring G, substantially as set forth.

3. The curved guide-bolt H and the spring G, socketed in the pole C, in combination with the hinged guard E, slots *e*, and barbs D, substantially as and for the purposes set forth.

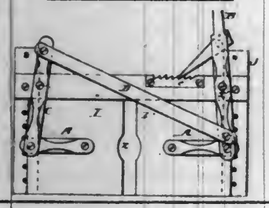
206,361. COVERS FOR BUTTER-PACKAGES AND OTHER VESSELS. George J. Record, Cincinnati, Ohio. Filed June 13, 1878.

Brief.—The vessel is lined with removable wood veneer. If of tin, the vessel should be a trifle smaller than the cover and be made of two pieces, the ears over the seams to strengthen the seams. The two-part cover may be hinged together. The fastening lever may be a bar or a complete upper cover.



Claim.—A cover formed of the two parts A, having their adjacent or straight edges beveled or rounded, and the lever C, attached to the one part and overlapping the other part, whether the said lever be made narrow in the form of a bar or wide in the form of a circle, substantially as herein shown and described.

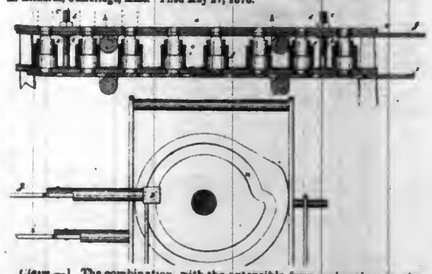
206,362.



206,362. MOE-TRAPS. Jeremiah W. Reed and Charles P. Reed, De Graff, Ohio. Filed June 26, 1878.

Claim.—The frame J, provided with longitudinal guides for the sliding plates I I', in combination with the levers B C, arms A A, and bar D, connecting the upper end of the lever C and the lever B, below its fulcrum, all constructed and arranged to operate as set forth.

206,363. MEASURING AND DISCHARGING APPARATUS FOR BONE-BLACK FURNACES. Edwd. K. Richards, Cambridge, Mass. Filed May 27, 1878.



Claim.—1. The combination, with the extensible frame *a b* and measuring-boxes, of the covering-plate *g*, discharge-plate *i*, and supporting-rollers *h j*, substantially as and for the purpose described.

2. In a bone-black apparatus, the combination, with a measure-holding frame, of covering and discharging plates thereder, and a cam, *m*, for operating the said plates, substantially as described.

206,364. FISHING-RODS. John A. Robertson, Boston, Mass. Filed June 6, 1878.

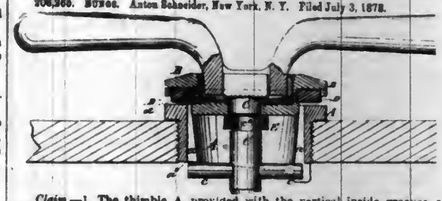


Claim.—1. A fishing-rod in which the butt is in two parts, the handle portion being tubular, and the other (the first or largest length of the rod) inclosed partially within the handle, while the bore of the handle is elliptical, or thereabout, in form, to enable the portion of the rod's length within such bore to adapt itself to the curve of the remainder, substantially as and for purposes stated.

2. In a fishing-rod in which the butt is in two portions, as stated, the bearing between the two, as shown at *f*, in combination with the socket in the bottom of the bore of the handle, the joint permitting of the requisite slip between the parts, and serving to exclude water from such bore, substantially as and for purposes stated.

3. In a fishing-rod, the combination, with the butt or lower end of the rod, of an external tubular handle, forming a butt in two parts, a portion of one being inclosed in the bore of the other, and with requisite slip motion between them to allow of the various degrees of curvature with the bearing of the rod, substantially as and for purposes stated.

206,365. BUNGS. Anton Schneider, New York, N. Y. Filed July 3, 1878.



Claim.—1. The thimble A, provided with the vertical inside grooves, *s*, the inclines a^1, and the stops a^2, in combination with the cap B, provided with the turnable central bolt, C, having the cross-head *c*, and with the packing-rings D E, substantially as and for the purpose set forth.

2. The packing-ring D, provided at intervals with the bosses or raised portions *d*, substantially as and for the purposes set forth.

206,366. EXTRACTING FUEL FROM WASTE. Nicolaus Schröder, Creuznach, Prussia. Filed Sept. 14, 1876.

Claim.—The method herein described of separating unconsumed coal from its ashes and other impurities, which consists in first screening in sieves the unconsumed coal with its ashes and impurities, to remove the ashes, sand, dust, and lighter materials; then submerging the sieves with their contents in a water-tank, and imparting a vertically-reciprocating movement to them, whereby the light combustible parts will float on the top, and the heavier materials sink; and, finally, in tilting the sieves, so that the light combustible materials will float on the water in the tank, leaving the heavier materials in the sieves, substantially as and for the purpose set forth.

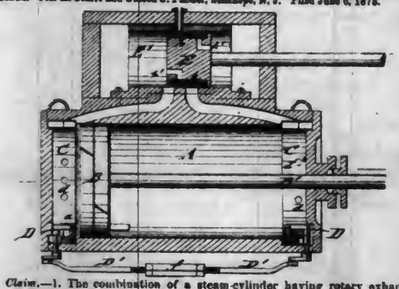
206,367. VENTILATING BOOTS AND SHOES. Isaac Schwartzwald, New York, N. Y. Filed Feb. 6, 1878.



Claim.—1. The combination of the ventiduct B, placed vertically in the sole or heel of a boot or shoe, and extending below the same, with openings in the sides thereof opposite to and connecting with air-passages traversing the sole, substantially as described.

2. In a boot or shoe, a flat spring-valve fitting in a groove extending partly across the sole, and partly through the top of the ventiduct, by means of which the ventiduct is prevented from turning in its position, and its open end is closed.

206,368. ROTARY EXHAUST-CYLINDERS AND BALANCED SLIDE-VALVES FOR STEAM-ENGINES. Jos. M. Searle and Gideon G. Palmer, Stanhope, N. J. Filed June 6, 1878.



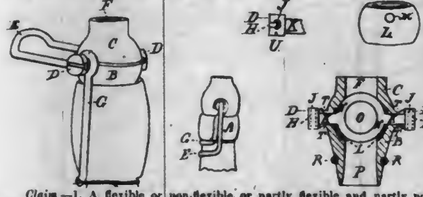
Claim.—1. The combination of a steam-cylinder having rotary exhaust-rings and connecting exhaust-ports at both ends with a piston having projecting lugs, and with ring-connecting crank mechanism, that closes the exhaust-ports at one end and simultaneously opens the exhaust-ports at the opposite end of the cylinder, substantially as specified.

2. The combination of the cylinder A, having radial exhaust-ports at both ends, inner rotary exhaust-rings C, having radial holes, crank, recesses, and cheeks, piston B, having projecting lugs at opposite sides, and ring-connecting cranks D and exterior crank-rod D', substantially as and for the purpose described.

3. The combination of a steam-cylinder having exhaust-ports and rotary exhaust-rings at the ends and steam-supply ports with a balanced piston-valve, guided in a fixed sleeve of the valve-chest, substantially as set forth.

4. The combination, with a steam-cylinder having exhaust-ports and rotary exhaust-rings and steam-supply ports, of a balanced steam-valve, guided in a sleeve of the valve-chest, and having split packing rings and steam-openings below the rings, substantially as described.

206,369. BOTTLE-STOPPERS. Frederick J. Seybold, St. Louis, Mo. Filed Mar. 19, 1878.



Claim.—1. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, and having filling and discharge aperture F P, the part B being adapted to fit the mouth of a receptacle, and the parts having pintle-projections T T, whereby they may be held on a receptacle by a neck-fastening having suitable bearings therefor, as and for the purpose set forth.

2. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, constructed in two parts, B and C, one of which parts is adapted to fit the mouth of a receptacle, and having filling and discharging aperture F P, pintle-projections T T, whereby it may be held on a receptacle by the bearings of a neck-fastening, and cavity or recess S, in which a lining may rest, as and for the purpose set forth.

3. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit the mouth of a receptacle, and having filling and discharging aperture F P, pintle-projections T T, whereby it may be held on a receptacle by the bearing of a neck-fastening, and a cavity or recess, S, in combination with the inner lining or jacket, L, having pintle-apertures M, as and for the purpose set forth.

4. The flexible or non-flexible rotary stopple N, having filling and discharging aperture O, and pintles K K, with heads D D, having inletting-slots H H, and apertures J J for the lever, as and for the purpose set forth.

5. The flexible or non-flexible lining or jacket L, having perforations U for the pintles, as and for the purpose set forth.

6. The looped or bail lever W W, having parts U V at each end, and in planes at right angles to each other, as and for the purpose set forth.

7. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit the mouth of a receptacle, and having filling and discharging aperture F P, pintle-projections T T, in combination with a rotary stopple having pintles, as and for the purpose set forth.

8. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, and having filling and discharging aperture F P, pintle-projections T T, cavity or recess S, and inner lining or jacket, L, having pintle-apertures M, in combination with a rotary stopple having pintles, as and for the purpose set forth.

9. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit the mouth of a receptacle, and having a filling and discharging aperture, F P, pintle-projections T T, cavity or recess S, and inner lining or jacket, L, having pintle-apertures M, in combination with a rotary stopple having pintles, as and for the purpose set forth.

10. A flexible or non-flexible rotary stopple, having aperture O and pintles K K, with heads D D, having lever-apertures J J and inletting-slots H H, in combination with the lever W W, having parts U V at each end, as and for the purpose set forth.

11. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, and having filling and discharging aperture F P, and pintle-projections T T, having recess Y, in combination with a neck-fastening having bearings *b* and the adjusting-plug Z, as and for the purpose set forth.

13. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, and having filling and discharging aperture F P, pintle-projections T T, with recess Y, cavity or recess S, and inner lining or jacket L, having pintle-apertures M, and a rotary stopple having pintles, in combination with a neck-fastening having bearings *b* and the adjusting-plug Z, as and for the purpose set forth.

14. The ball-lever W W, with ports U V at each end, in combination with stopple N, having pintles K K, with heads D D, having slots H H and apertures J J, as and for the purpose set forth.

15. The combination of a neck-fastening, G, having standards, and a pivotal ball-lever, W W, having sides or shafts, there being a greater breadth between standards of the neck-fastening than between the two shafts of the lever, whereby, when the lever is sprung past the neck-fastening, it is locked or held there by the neck-fastening, as and for the purpose set forth.

16. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, C, and having filling and discharging aperture F P, and pintle-projections T T, in combination with a rotary stopple, having pintles, a jacket, L, having pintle-apertures M, and a neck-fastening for holding the parts together and to a receptacle-mouth, as and for the purpose set forth.

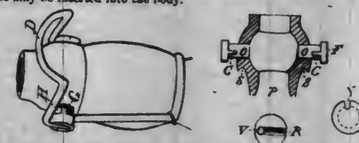
17. A flexible or non-flexible, or partly flexible and partly non-flexible stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, and having filling and discharging aperture F P, and pintle-projections T T, in combination with a rotary stopple, having pintles, a jacket, L, having pintle-apertures M, a neck-fastening for holding the parts together and to a receptacle, and a lever, W W, as and for the purpose set forth.

18. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, and having filling and discharging aperture F P, and pintle-projections T T, with slot Y, in combination with a rotary stopple, having pintles, a jacket, L, having pintle-apertures M, a neck-fastening having bearings, suitable means for revolving the stopple, and the adjusting-plug Z, as and for the purpose set forth.

19. A flexible or non-flexible rotary stopple, having pintles and filling and discharging aperture, in combination with the lining or jacket L, having pintle-apertures M, as and for the purpose set forth.

206,370. BOTTLE-STOPPERS. Frederick J. Seybold, St. Louis, Mo. Filed Mar. 19, 1878.

Brief.—When the body is flexible the plug is flexible or non-flexible. When the body is non-flexible the plug is flexible. Hence the plug of one piece may be inserted into the body.



Claim.—1. A continuous case having a filling and discharging aperture, pintle-apertures U, and flange or shoulder S, as and for the purpose set forth.

2. A continuous flexible case having pintle-apertures U and filling and discharging apertures, as and for the purpose set forth.

3. A continuous flexible case having pintle-apertures U and filling and discharging apertures, in combination with a revolving stopper having pintles, as and for the purpose set forth.

4. The combination of a stopper having pintles and a continuous flexible case having pintle-apertures and a filling and discharging aperture, with a neck-wire or other suitable means for attaching the same to a receptacle, as and for the purpose set forth.

5. The combination of a stopper having pintles and a continuous flexible case having pintle-apertures and a filling and discharging aperture, and a neck-wire or other suitable means for attaching the same to a receptacle, with a lever or other suitable means of rotating the stopper, as and for the purpose set forth.

6. A continuous flexible or non-flexible case having filling and discharging aperture and pintle-apertures, in combination with a flexible revolvible stopper having pintles, as and for the purpose set forth.

7. The combination of a flexible stopper having pintles and a continuous flexible or non-flexible case having pintle-apertures and a filling and discharging aperture, with a neck-wire or other suitable means for attaching the same to a receptacle, as and for the purpose set forth.

8. The combination of a flexible stopper having pintles and a continuous flexible or non-flexible case having pintle-apertures and a filling and discharging aperture, and a neck-wire or other suitable means for attaching the same to a receptacle, with a lever or other suitable means for rotating the stopper, as and for the purpose set forth.

9. A stopper having pintles, constructed with a hole, V, extending longitudinally into the same, and with slot R, as and for the purpose set forth.

10. A stopper with pintles O, having recess R and holes V, in combination with a bail-lever having projections W, as and for the purpose set forth.

11. The combination of a stopper with pintles, one having recess R and hole V, and the other having recess R only, with a bail-lever having projections W, and a neck-fastening having hooks H, as and for the purpose set forth.

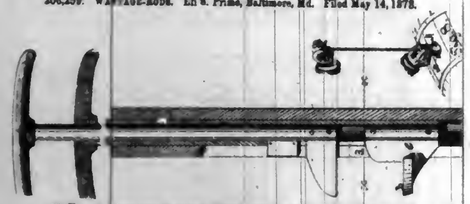
g, and spring *j*, so that the shaft will move in line with the face of the picker-wheel, combined substantially as and for the purposes specified.

7. The concave feed-wheel C, having the projections *b*, in combination with the hopper B, substantially as specified.

8. The combination of the feed-wheel C, feeding endwise, and plates F G, with the picker-wheel D and shafts E, substantially as described.

9. The combination of the bearings *h h'*, rods *g*, springs *j*, and the set-screw *k*, for adjusting the downward pressure of the shafts E, substantially as described.

206,259. WANTAGE-RODS. Eli S. Prime, Baltimore, Md. Filed May 14, 1878.



Claim.—1. A wantage-rod provided with one or more suitable scales reading from the same zero-line, and movable as to a projecting gage-lip, so that it may be moved out of position until said gage-lip has been adjusted to the stave, and then moved into position to obtain a true reading of the wet-line.

2. A wantage-rod provided with one or more suitable scales reading from the same zero-line, combined with a slide bearing a gage-lip, whereby the scale may be moved out of adjustment while the instrument is being arranged in position, and then moved into adjustment to obtain a true reading of the wet-line.

3. A wantage-rod provided with one or more suitable scales reading from the same zero-point, constructed with an axial hole and a longitudinal slot penetrating to said hole, combined with a sliding rod, *x*, fitted to said hole, and a gage-lip, which is fixed to said rod and projects through said slot, as set forth.

4. A wantage-rod provided with one or more suitable scales reading from the same zero-line, and also provided with an addition scale or scales of suitable graduation, reading from one end of said rod, so that the same instrument may be employed to measure both "outs" and "ins," as described.

206,260. ANIMAL-POKER. Delano P. Randall, Smith Road, Ohio. Filed Sept. 12, 1877.



Claim.—1. The pricks or barbs D, firmly attached to the pole C, in combination with the hinged guard E, secured in place by plate F, substantially as set forth.

2. The combination of the pricks or barbs D with the hinged guard E and spring G, substantially as set forth.

3. The curved guide-bolt H and the spring G, socketed in the pole C, in combination with the hinged guard E, slots *e*, and barbs D, substantially as and for the purposes set forth.

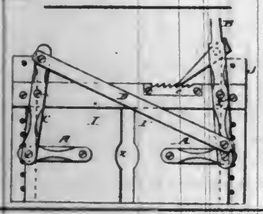
206,261. COVERS FOR BUTTER-PACKAGES AND OTHER VESSELS. George J. Record, Canaseat, Ohio. Filed June 13, 1878.

Brief.—The vessel is lined with removable wood veneer. If of tin, the vessel should be a trifle smaller than the cover and be made of two pieces, the ears over the seams to strengthen the seams. The two-part cover may be hinged together. The fastening lever may be a bar or a complete upper cover.

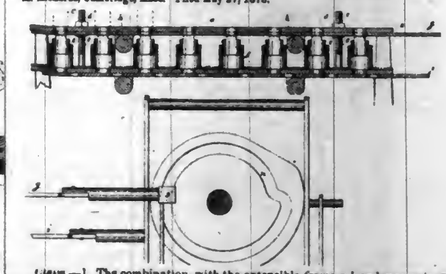


Claim.—A cover formed of the two parts A, having their adjacent or straight edges beveled or rounded, and the lever C, attached to the one part and overlapping the other part, whether the said lever be made narrow in the form of a bar or wide in the form of a circle, substantially as herein shown and described.

206,262.



206,263. MEASURING AND DISCHARGING APPARATUS FOR BONE-BLACK FURNACES. Edwd. K. Richards, Cambridge, Mass. Filed May 27, 1878.



Claim.—1. The combination, with the extensible frame *a b* and measuring-boxes, of the covering-plate *g*, discharge-plate *i*, and supporting-rollers *h j*, substantially as and for the purpose described.

2. In a bone-black apparatus, the combination, with a measure-holding frame, of covering and discharging plates therefor, and a cam, *m*, for operating the said plates, substantially as described.

206,264. FISHING-RODS. John A. Robertson, Boston, Mass. Filed June 6, 1878.



Claim.—1. A fishing-rod in which the butt is in two parts, the handle portion being tubular, and the other (the first or largest length of the rod) inclosed partially within the handle, while the bore of the handle is elliptical, or thereabout, in form, to enable the portion of the rod's length within such bore to adapt itself to the curve of the remainder, substantially as and for purposes stated.

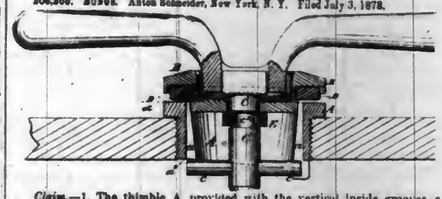
2. In a fishing-rod in which the butt is in two portions, as stated, the bearing between the two, as shown at *f*, in combination with the socket in the bottom of the bore of the handle, the joint permitting of the requisite slip between the parts, and serving to exclude water from such bore, substantially as and for purposes stated.

3. In a fishing-rod, the combination, with the butt or lower end of the rod, of an external tubular handle, forming a butt in two parts, a portion of one being inclosed in the bore of the other, and with requisite slip-motion between them to allow of the various degrees of curvature with the bearing of the rod, substantially as and for purposes stated.

206,265. MOUSE-TRAPS. Jeremiah W. Reed and Charles F. Reed, De Graff, Ohio. Filed June 26, 1878.

Claim.—The frame J, provided with longitudinal guides for the sliding plates I I', in combination with the levers B C, arms A A, and bar D, connecting the upper end of the lever C and the lever B, below its fulcrum, all constructed and arranged to operate as set forth.

206,266. BUNGS. Anton Schneider, New York, N. Y. Filed July 3, 1878.



Claim.—1. The thimble A, provided with the vertical inside grooves, *c*, the inclines *a'*, and the stops *a''*, in combination with the cap B, provided with the turnable central bolt, C, having the cross-head *c*, and with the packing-rings D E, substantially as and for the purpose set forth.

2. The packing-ring D, provided at intervals with the bosses or raised portions *d*, substantially as and for the purposes set forth.

206,266. EXTRACTING FUEL FROM WASTE. Nicolaus Schröder, Creuznach, Prussia. Filed Sept. 14, 1878.

Claim.—The method herein described of separating unconsumed coal from its ashes and other impurities, which consists in first screening in sieves the unconsumed coal with its ashes and impurities, to remove the ashes, sand, dust, and lighter materials; then submerging the sieves with their contents in a water-tank, and imparting a vertically-reciprocating movement to them, whereby the light combustible parts will float on the top, and the heavier materials sink; and, finally, in tilting the sieves, so that the light combustible materials will float on the water in the tank, leaving the heavier materials in the sieves, substantially as and for the purpose set forth.

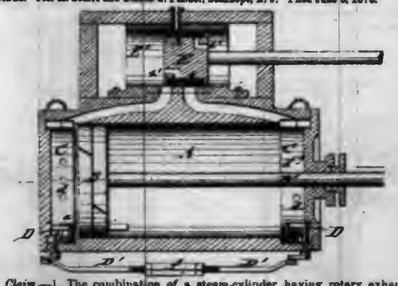
206,267. VENTILATING BOOTS AND SHOES. Isaac Schwartzwald, New York, N. Y. Filed Feb. 6, 1878.



Claim.—1. The combination of the ventiduct B, placed vertically in the sole or heel of a boot or shoe, and extending below the same, with openings in the sides thereof opposite to and connecting with air-passages traversing the sole, substantially as described.

2. In a boot or shoe, a flat spring-valve fitting in a groove extending partly across the sole, and partly through the top of the ventiduct, by means of which the ventiduct is prevented from turning in its position, and its open end is closed.

206,268. ROTARY EXHAUST-CYLINDERS AND BALANCED SLIDE-VALVES FOR STEAM-ENGINES. Jos. M. Searle and Gideon G. Palmer, Bonhope, N. J. Filed June 6, 1878.



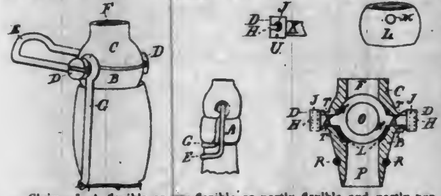
Claim.—1. The combination of a steam-cylinder having rotary exhaust-rings and connecting exhaust-ports at both ends with a piston having projecting lugs, and with ring-connecting crank mechanism, that closes the exhaust-ports at one end and simultaneously opens the exhaust-ports at the opposite end of the cylinder, substantially as specified.

2. The combination of the cylinder A, having radial exhaust-ports at both ends, inner rotary exhaust-rings C, having radial holes, crank, recesses, and cheeks, piston B, having projecting lugs at opposite sides, and ring-connecting cranks D and exterior crank-rod D', substantially as and for the purpose described.

3. The combination of a steam-cylinder having exhaust-ports and rotary exhaust-rings at the ends and steam-supply ports with a balanced piston-valve, guided in a fixed sleeve of the valve-chest, substantially as set forth.

4. The combination, with a steam cylinder having exhaust-ports and rotary exhaust-rings and steam-supply ports, of a balanced steam-valve, guided in a sleeve of the valve-chest, and having split packing-rings and steam-openings below the rings, substantially as described.

206,269. BOTTLE-STOPPERS. Frederick J. Seybold, St. Louis, Mo. Filed Mar. 19, 1878.



Claim.—1. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, and having filling and discharge aperture F P, the part B being adapted to fit the mouth of a receptacle, and the parts having pintle-projections T T, whereby they may be held on a receptacle by a neck-fastening having suitable bearings therefor, as and for the purpose set forth.

2. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, constructed in two parts, B and C, one of which is adapted to fit the mouth of a receptacle, and having filling and discharging aperture F P, pintle-projections T T, whereby it may be held on a receptacle by the bearings of a neck-fastening, and cavity or recess S, to which a lining may rest, as and for the purpose set forth.

3. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit the mouth of a receptacle, and having filling and discharging aperture F P, pintle-projections T T, whereby it may be held on a receptacle by the bearing of a neck-fastening, and a cavity or recess, S, in combination with the inner lining or jacket, L, having pintle-apertures M, as and for the purpose set forth.

4. The flexible or non-flexible rotary stopple N, having filling and discharging aperture O, and pintles K K, with heads D D, having inletting-slots H H, and apertures J J, for the lever, as and for the purpose set forth.

5. The flexible or non-flexible lining or jacket L, having perforations U for the pintles, as and for the purpose set forth.

6. The looped or bail lever W W, having parts U V at each end, and in planes at right angles to each other, as and for the purpose set forth.

7. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit the mouth of a receptacle, and having filling and discharging aperture F P, pintle-projections T T, in combination with a rotary stopple having pintles, as and for the purpose set forth.

8. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, and having filling and discharging aperture F P, pintle-projections T T, cavity or recess S, and inner lining or jacket, L, having pintle-apertures M, in combination with a rotary stopple having pintles, as and for the purpose set forth.

9. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit the mouth of a receptacle, and having a filling and discharging aperture, F P, pintle-projections T T, cavity or recess S, and an inner lining or jacket, L, having pintle-apertures M, in combination with a rotary stopple having pintles and lever E W W for revolving the stopples, as and for the purpose set forth.

10. A flexible or non-flexible rotary stopple, having aperture O and pintles K K, with heads D D, having lever-apertures J J and inletting-slots H H, in combination with the lever W W, having parts U V at each end, as and for the purpose set forth.

11. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, and having filling and discharging aperture F P, and pintle-projections T T, in combination with a neck-fastening, which holds the parts together and to a receptacle, as and for the purpose set forth.

12. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, and having a filling and discharging aperture, F P, and pintle-projections T T, having recess Y, in combination with a neck-fastening having bearings *b* and the adjusting-plug Z, as and for the purpose set forth.

13. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, and having filling and discharging aperture F P, pintle-projections T T, with recess Y, cavity or recess S, and inner lining or jacket L, having pintle-apertures M, and a rotary stopple having pintles, in combination with a neck-fastening having bearings *b* and the adjusting-plug Z, as and for the purpose set forth.

14. The bail-lever W W, with ports U V at each end, in combination with stopple N, having pintles K K, with heads D D, having slots H H and apertures J J, as and for the purpose set forth.

15. The combination of a neck-fastening, G, having standards, and a pivotal bail-lever, W W, having sides or shafts, there being a greater breadth between standards of the neck-fastening than between the two shafts of the lever, whereby, when the lever is sprung past the neck-fastening, it is locked or held there by the neck-fastening, as and for the purpose set forth.

16. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, C, and having filling and discharging aperture F P, and pintle-projections T T, in combination with a rotary stopple, having pintles, a jacket, L, having pintle-apertures M, and a neck-fastening for holding the parts together and to a receptacle-mouth, as and for the purpose set forth.

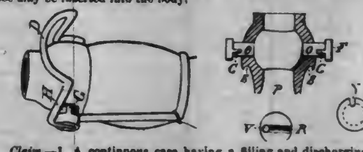
17. A flexible or non-flexible, or partly flexible and partly non-flexible stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, and having filling and discharging aperture F P, and pintle-projections T T, in combination with a rotary stopple, having pintles, a jacket, L, having pintle-apertures M, a neck-fastening for holding the parts together and to a receptacle, and a lever, W W, as and for the purpose set forth.

18. A flexible or non-flexible, or partly flexible and partly non-flexible, stopple-case, made in two parts, B and C, one of which is adapted to fit a receptacle-mouth, and having filling and discharging aperture F P, and pintle-projections T T, with slot Y, in combination with a rotary stopple, having pintles, a jacket, L, having pintle-apertures M, a neck-fastening having bearings, suitable means for revolving the stopple, and the adjusting-plug Z, as and for the purpose set forth.

19. A flexible or non-flexible rotary stopple, having pintles and filling and discharging aperture, in combination with the lining or jacket L, having pintle-apertures M, as and for the purpose set forth.

206,270. BOTTLE-STOPPERS. Frederick J. Seybold, St. Louis, Mo. Filed Mar. 19, 1878.

Brief.—When the body is flexible the plug is flexible or non-flexible. When the body is non-flexible the plug is flexible. Hence the plug of one piece may be inserted into the body.



Claim.—1. A continuous case having a filling and discharging aperture, pintle-apertures U, and flange or shoulder S, as and for the purpose set forth.

2. A continuous flexible case having pintle-apertures U and filling and discharging apertures, as and for the purpose set forth.

3. A continuous flexible case having pintle-apertures U and filling and discharging apertures, in combination with a revolving stopper having pintles, as and for the purpose set forth.

4. The combination of a stopper having pintles and a continuous flexible case having pintle-apertures and a filling and discharging aperture, with a neck-wire or other suitable means for attaching the same to a receptacle, as and for the purpose set forth.

5. The combination of a stopper having pintles and a continuous flexible case having pintle-apertures and a filling and discharging aperture, and a neck-wire or other suitable means for attaching the same to a receptacle, with a lever or other suitable means of rotating the stopper, as and for the purpose set forth.

6. A continuous flexible or non-flexible case having filling and discharging aperture and pintle-apertures, in combination with a flexible revoluble stopper having pintles, as and for the purpose set forth.

7. The combination of a flexible stopper having pintles and A continuous flexible or non-flexible case having pintle-apertures and a filling and discharging aperture, with a neck-wire or other suitable means for attaching the same to a receptacle, as and for the purpose set forth.

8. The combination of a flexible stopper having pintles and a continuous flexible or non-flexible case having pintle-apertures and a filling and discharging aperture, and a neck-wire or other suitable means for attaching the same to a receptacle, with a lever or other suitable means for rotating the stopper, as and for the purpose set forth.

9. A stopper having pintles, constructed with a hole, V, extending longitudinally into the same, and with slot R, as and for the purpose set forth.

10. A stopper with pintles O, having recess R and holes V, in combination with a bail-lever having projections W, as and for the purpose set forth.

11. The combination of a stopper with pintles, one having recess R and hole V, and the other having recess R only, with a bail-lever having projections W, and a neck-fastening having hooks H, as and for the purpose set forth.

12. A stopper with pintles having one or more recesses, Y, as and for the purpose set forth.

13. A stopper with pintles having recess Y, in combination with sling Z, as and for the purpose set forth.

14. Pintles O, having stop G, in combination with hooks H, as and for the purpose set forth.

206,271. STOPPERS AND STOPPER-FASTENERS. Frederick J. Seybold, Chicago, Ill. Filed Sept. 15, 1877.



Claim.—1. The cam sphere or spheroid A, having aperture F and journals B E, as and for the purpose set forth.

2. The semicircular neck-wire N, having the upward-extending hooks L L and tying wire O, as and for the purpose set forth.

3. The cam sphere or spheroid A, having filling and discharging aperture, in combination with the neck-wire N O L L, as and for the purpose set forth.

4. The cam sphere or spheroid A, having filling and discharging aperture, in combination with suitable means, substantially as stated, for connecting the sphere or spheroid with the receptacle, as and for the purpose set forth.

5. The looped lever C, having projecting ends P P, attached to or formed thereon, as and for the purpose set forth.

6. The cam sphere or spheroid A, constructed with the filling and discharging aperture, in combination with the tubular flanged gasket, as and for the purpose set forth.

7. The cam sphere or spheroid A, having filling and discharging aperture, in combination with the neck-wire N O L L and a tubular flanged gasket, as and for the purpose set forth.

8. The looped lever C, constructed with one or more projections, P, in combination with a rotating stopper, as and for the purpose set forth.

9. The combination of the looped lever C with the cam sphere or spheroid A, having a filling and discharging aperture, and the neck-wire N O L L, as and for the purpose set forth.

10. The combination of the looped lever C with the cam sphere or spheroid A, having filling and discharging aperture, and the tubular flanged gasket, with any suitable means for operatively connecting them to a receptacle, as and for the purpose set forth.

11. The combination of the looped lever C with the cam sphere or spheroid A, having a filling and discharging aperture, the neck-wire N O L L, and the tubular flanged gasket, as and for the purpose set forth.

12. A sphere or spheroidal stopper having a filling and discharging aperture whose longitudinal axis passes through the sphere or spheroid to one side of the center of the same, as and for the purpose set forth.

13. An open yielding gasket having a body adapted to fit into a receptacle-mouth, and an outward flange concave on its upper and under surface, as and for the purpose set forth.

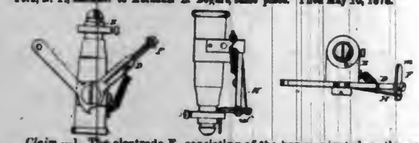
14. An open gasket having a tubular portion adapted to fit a bottle mouth and neck, and provided with a flange on its upper end, the flange being concave on its under and upper surface, and adapted to fit and support a spherical stopper, in combination with a bottle, as and for the purpose set forth.

15. The combination of an open gasket, a bottle, and a pintled rotary spherical stopper, having a passage through the same, through which the bottle may be filled or emptied, as and for the purpose set forth.

16. An open yielding gasket having a body adapted to fit into a receptacle-mouth, and having an outward flange concave on its upper and under surface, and a rotary journaled stopper having a filling and discharging aperture, in combination with suitable means for operatively securing them onto a receptacle-mouth, as and for the purpose set forth.

17. An open gasket having a body adapted to fit a receptacle-mouth, the body having at or near the top of the same a flange the contour of whose entire upper surface is a concave adapted to fit and support a spherical rotary stopper, as and for the purpose set forth.

206,272. ELECTRODES FOR ELECTRIC GAS-LIGHTING BURNERS. Adolph T. Smith, New York, N. Y., assignor to Abraham L. Bogart, same place. Filed May 10, 1878.



Claim.—1. The electrode F, consisting of the bar *m*, pivoted on the upper end of the vibrating arm D, and operated, substantially as described, by means of a straight spring, H, the upper end of which is attached to the heel of the said bar *m*, and the lower end to the arm D, as and for the purpose set forth.

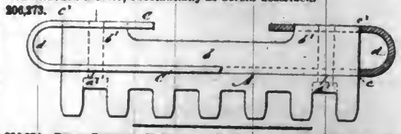
2. The metallic bar *m*, pivoted on the upper end of the vibrating arm D, and actuated by a straight spring, H, one end of which is attached to the heel of the bar *m*, and its other end to the vibrating arm D, in combination with a fixed electrode, E, located near the orifice of the burner-tip, as and for the purpose set forth.

206,273. CHAIN-LINKS FOR HORSE-POWERS. Edward A. Smith, St. Albans, Vt. Filed June 15, 1878.

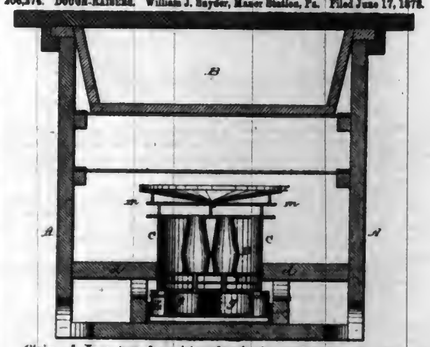
Claim.—1. An endless-chain link composed of a cast-metal toothed bar provided with a rib or fin, *b*, and extensions *b'*, and a steel strap provided with slots or openings *a a'*, for engagement with said rib and extensions, and attached to said bar by heating and shrinking, substantially as herein described.

2. In combination with the toothed bar A and its rib or fin *b* and extensions *b'*, the strap C, provided with slots or openings for engagement with said rib and extensions, and having its ends bent upward and inward to form the eyes *d*, and pressed downward so as to lie between said bar and the tread-board when attached thereto, substantially as herein described.

206,273.



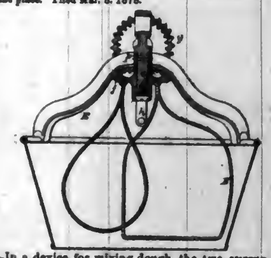
206,274. DOUGH-RAISERS. William J. Snyder, Manor Station, Pa. Filed June 17, 1878.



Claim.—1. In a tray for raising dough, the combination of a frame, A, tray B, a furnace, C, consisting of the body A, cylinder D, for surrounding the chimneys, deflector *m*, and convex basin E, the deflector *m* being of less diameter than the basin, substantially as shown.

2. The combination of a tray with slanting sides and folding legs, and a furnace underneath, substantially as described, and for the purpose set forth.

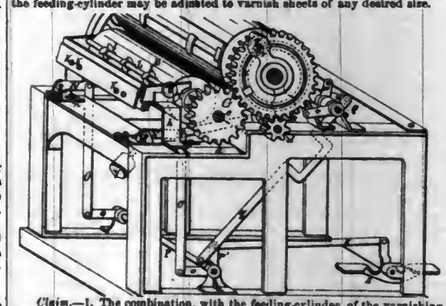
206,275. DOUGH-MIXERS. Benj. F. Sparrow, Cambridgeport, Mass., assignor to Herbert F. Sparrow, same place. Filed Mar. 8, 1878.



Claim.—In a device for mixing dough, the two stirrup-shaped cutters or stirrers fixed to and extended from a single gear-wheel, *f*, as described, in combination with the single gear-wheel *g* and frame E, constructed and arranged to operate as set forth.

206,276. VARNISHING-MACHINES. John Spencer, Chicago, Ill. Filed June 6, 1878.

Brief.—A machine for varnishing sheets of paper, &c. The varnishing-roller, with the varnish-trough, is mounted on a sliding frame, which is operated by suitable mechanism, whereby the contact of the varnish-roller with the feeding-cylinder may be adjusted to varnish sheets of any desired size.

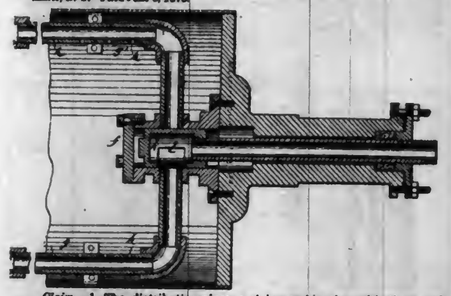


Claim.—1. The combination, with the feeding-cylinder, of the varnishing-roller, varnish-trough, the sliding frame, the toggle-joints N, rock-shafts P Q, connecting-rods O *g*, arms *e w*, and cams R R, substantially as described and shown.

2. The combination, with the feeding-cylinder, of the varnishing-roller, varnish-trough, the sliding frame, the toggle-joints N, rock-shaft P, connecting-rod O, bar *s*, and pedal S, substantially as described and shown.

3. The combination, with the varnishing-roller E, of the shaft J, having weighted lever Y, and the scrapers *f*, adjustable upon such shaft, substantially as described and shown.

206,277. ROTARY BOILERS FOR BOILING AND STEAMING PAPER-STOCK. John Thorpe, Fort Miller, N. Y. Filed June 6, 1878.

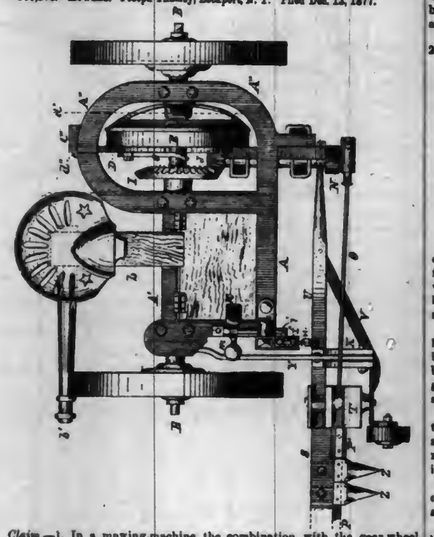


Claim.—1. The distributing-pipes *g g'*, in combination with the supply-pipe *d* and a cut-off, substantially as and for the purposes set forth.

2. The steam-supply pipe *d*, passing through the hollow axle of the boiler, the steam-cylinder *f*, revolving with the boiler and carrying the distributing-pipes *g g'*, and a cut-off to admit steam to the distributing-pipes alternately, combined and arranged substantially as set forth.

3. The cone-plugs *i* at the ends of the distributing steam-pipes, for the purposes set forth.

206,278. MOWERS. Joseph Tildsley, Lockport, N. Y. Filed Dec. 13, 1877.



Claim.—1. In a mowing-machine, the combination, with the gear-wheel E, secured to the shaft B, of the intermediate gear-wheels G H, link M, and eccentric-lever Q, as and for the purpose stated.

2. The combination, with the gear-wheel E, fixed to the shaft B, of the intermediate gear-wheels G H, pinion F, bevel-wheel I, and bevel-pinion J, said wheels G H being secured to the link M, and capable of being thrown into and out of gear with the gear-wheel E, as specified.

3. The combination, with the frame A, of the plate D, having an angular recess in its lug *d*, the forward and upper end of which is formed into a partial sphere, and the bolt W, having the semicircular depression in one of the sides of its head, said bolt being inserted into the said recess, as and for the purpose specified.

4. The pole *b'*, projecting laterally from the seat-support *b*, and arranged to reach beyond the frame A, and provided with a notch in its extremity to carry the finger and cutter bars, substantially as and for the purpose set forth.

5. The knife and finger bars P S, secured to and operating within the shoe T, in combination with the ball-pivoted curved rod U, brace V, bridge X, and push-bar Y, said push-bar being pivoted within the bridge X, connecting said bars U V on the forward end of said bridge, whereby said knife and finger bars are dragged along, substantially as and for the purpose specified.

206,279. MAGAZINE FIRE-ARMS. William Trabue, Louisville, Ky. Filed Mar. 14, 1878.

Brief.—The carrier is pivoted at the side of the receiver, and swings on its pivot in the arc of a circle to deliver the cartridge to the barrel. It is operated by a crank-lever, which is worked by the reciprocating bolt.

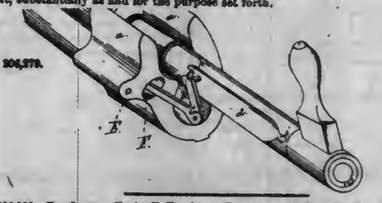
Claim.—1. The swinging carrier C, formed, as described, with the two chambers *a b*, and a communicating channel between said chambers, and having the groove F at one end, in combination with the reciprocating bolt and bell-crank lever G, substantially as and for the purposes set forth.

2. In combination with the bolt D, having the cut away *d* and bevels *h i*, and the lever G, adapted to be vibrated by the reciprocation of the bolt, the curved groove or slot F in the rear of the swinging carrier, substantially as and for the purposes set forth.

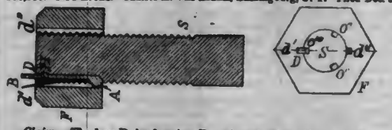
3. The bolt D, cut away on either side in concentric arcs, whereby the carrier is permitted to swing from a center, as set forth.

4. The carrier C, having the sides of the channel between the chambers *a b* in concentric arcs, coincident with the sides of the cut-away portion of the bolt, substantially as and for the purpose set forth.

206,279.

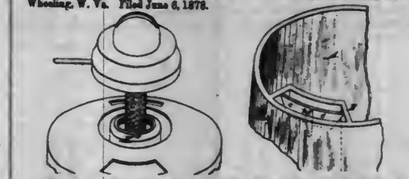


206,280. NUT-LOCKS. Charles H. Van Arnam, Lansingburg, N. Y. Filed Dec. 8, 1877.



Claim.—The key D, leaf-spring B, and projections N and A, formed on the key, in combination with the recess H and groove O', formed in the threaded bolt S, and the groove *d'*, formed in the threaded nut F, arranged to operate as and for the purposes herein described and set forth.

206,281. TUBULAR LAMPS AND LANTERNS. Thomas Walton and Archibald W. Paull, Wheeling, W. Va. Filed June 6, 1878.



Claim.—1. In combination with a lamp or lantern base having an air-chamber beneath the burner or cone, a tube or tubes serving to conduct air from a point above the globe to said air-chamber, said tubes being connected with the removable upper portion and separable from the top of the air-chamber, in order to expose said top free from all obstructions, substantially in the manner and for the purposes explained.

2. In a tubular lamp or lantern, the combination, with the globe, which is hinged to its base, of the connecting tubes or channels, secured to and movable with the foraminated bottom, and serving to make or break the connection between the air-chamber and the main conducting-tubes, accordingly as the globe is properly located for use or swung back out of the way, substantially as shown and described.

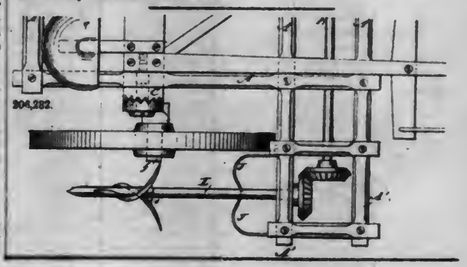
3. The combination of the lamp or lantern globe, the air-tubes formed therewith or as a part thereof, the foraminated plate covering the bottom of said globe, the connecting-tubes attached to and movable with said foraminated plate, and the air-chamber receiving air from the tubes and conducting it to the burner, substantially as shown and described.

4. In combination with the vertical strip which depends within the mouth of the air-tube, a second strip at right angles to the first, adapted to direct and control the exterior currents of air, substantially as shown and described.

5. In combination with the vertical flange on the dome, which serves to hold the globe in place, the horizontal plate of equal width with (or greater than) the air-tubes, said plate being provided with depending wings, and operating to prevent too sudden admission of air to the tube, substantially as set forth.

6. The herein-described dome, composed of the central vertical section, the cap, the two projecting rims, and the air-passages, located and arranged substantially as shown and described.

206,282.



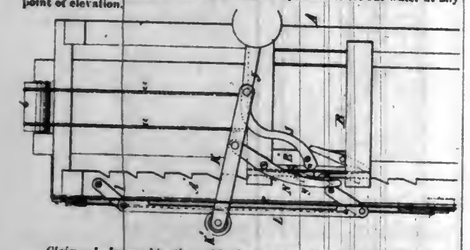
206,282. HEDGE-PLASHING MACHINES. Alva S. Warren, Atlas, Ill. Filed May 4, 1878.

Claim.—1. The gatherer J, constructed as described, in combination with the frame-work extension A′ and the shaft L, for bending, gathering, and dividing the upper branches of the hedge, substantially as herein set forth.

2. The twisting device mounted upon shaft L at its rear end, consisting of two prongs curved spirally in opposite directions, and connected together and to the shaft by a brace, as shown and described.

206,283. ELEVATORS. Amos Whittemore, Cambridgeport, Mass. Filed June 24, 1878.

Brief.—The counter-weight tank is supplied by water from the pipe above. A valve in the bottom of the tank may be operated to let out water at any point of elevation.



Claim.—1. In combination with the platform B of an elevator and suspension ropes or chains a a, the water-holder D, the mechanism for actuating the valve H, and the supply-pipe E, with its cock e, and mechanism for actuating this cock, substantially as described.

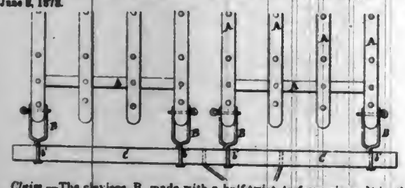
2. The lever G, applied to water-holder D, and its valve H, in combination with rod F, having a vertical and a lateral movement, and also with a rope, g, and an elevator-platform, substantially as described.

3. In combination with an elevator-platform, the loaded lever J, pressing, by its nose n, against the friction-brakes y y, through the medium of a spring, S, substantially as described.

4. The teeth t, in combination with the brake-spring S, loaded lever J, and notched upright A′, substantially as described.

5. Levers N, K, and J, in combination with the friction-brakes y y, bow-spring S, wheel K′, and the vertically and laterally movable rod L, substantially as described.

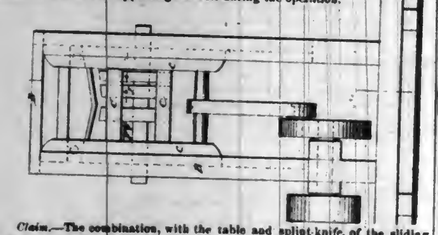
206,284. HARROWS. Addison H. Whiteside and Milton R. Whiteside, Osborn, Ill. Filed June 8, 1878.



Claim.—The clevises B, made with a half-twist to form rings b′ in their forward parts, in combination with the forward ends of the side bars of the harrow-sections A and with the long draw bar C, substantially as herein shown and described.

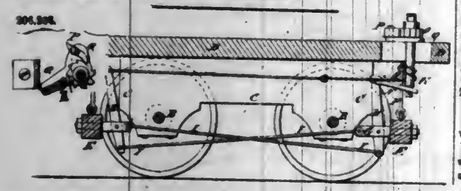
206,285. MACHINES FOR MAKING BASKET-SPLINTS. David Wickersham and Thomas B. Brown, Fairfield, (New Waterford P. O.,) assignors to themselves and Allen B. Cope, New Waterford, Ohio. Filed May 30, 1878.

Brief.—Splints of different widths, for making berry-baskets, are formed by means of a splint-knife and a series of spur-cutters attached to laterally-adjustable holders, all mounted in a vertically-reciprocating sash, in connection with a table for supporting the bolt during the operation.



Claim.—The combination, with the table and splint-knife, of the sliding sash C, having laterally-adjustable holders, carrying cutters J, for cutting splints of different widths, as shown and described.

206,286.

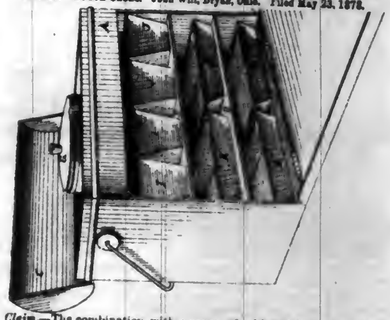


206,286. CAR-BRAKES. Wm. H. Wilder and Charles W. Conant, Gardner, Mass. Filed June 26, 1878.

Claim.—1. The combination of the arm or bar N, the second lever H, and its rod I with the brake-bars E, the free lower end of the brake-shaft K, the chain, or chain and rod M, and the first lever H and its rod I, substantially as herein shown and described.

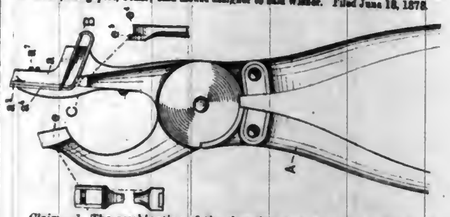
2. The combination of the ratchet-wheel O, the pawl P, the plate Q, provided with a slotted arm, and the bolt R, with the free lower end of the brake-shaft K, substantially as herein shown and described.

206,287. LUNCH-CASES. John Will, Bryan, Ohio. Filed May 23, 1878.



Claim.—The combination, with a cover, of a hinged front piece, the latter, when closed, overlapping the sides, and the former overlapping the whole top portion, substantially as shown and described.

206,288. TOOLS FOR FASTENING BUTTONS TO BOOTS AND SHOES. Albert Wisner and James A. House, Bridgeport, Conn.; said House assignor to said Wisner. Filed June 18, 1878.



Claim.—1. The combination of the clamping-piece B upon one part of the pinchers with the toe c^2 upon the other part, substantially as described.

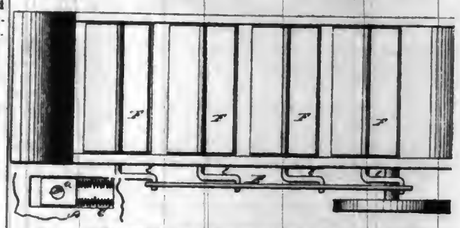
2. In combination with the jaw A, the spring clamping-piece, substantially as described.

3. In combination with the spring C, the jaw a, having the curved recesses a^2, as described.

4. In combination with the clamping-piece B, the toe-piece c^2, having the cam-surface c^4 and guard flange c^5, as described.

5. The spring-plate C, having its shank c, provided with a right-angled flange, c^4, as and for the purpose described.

206,289. CURRENT AND TIDE WHEELS. Wm. Algur, Grand Rapids, Mich. Filed Feb. 8, 1878.



Claim.—1. The combination of the polygonal-shaped drum B, having stationary bearings, the polygonal-shaped drum B′, having yielding bearings, the endless chains C C, and the paddles D D, substantially as and for the purposes herein set forth.

2. The adjustable gates F F, in combination with the wheel composed of the endless chains C C and paddles D D, for the purposes herein set forth.

3. The chutes G G, arranged within the wheel, composed of the endless chains C C and paddles D D, for the purposes herein set forth.

4. The combination of the frame A, pulleys B B′, endless chains C C, paddles D D, adjustable gates F F, chutes G G and H, and opening I, all constructed substantially as and for the purposes herein set forth.

206,290. ASPHALTUM OR CEMENT PIPES. Michael Allen, New York, N. Y. Filed June 7, 1878.

Claim.—1. In an asphaltum or cement pipe, the combination of a coiled veneer and sheet metal, as set forth.

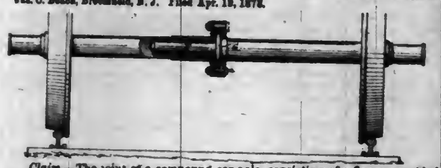
2. In an asphaltum or cement pipe, the combination of a coiled veneer, mounted upon cloth or other strong material, and a coil or band of sheet metal, as set forth.

3. An asphaltum or cement pipe having embedded therein coils of veneer, mounted upon cloth, and a band or coil of sheet metal, in combination with the rings B and E and a sleeve, L, as set forth.

206,290.

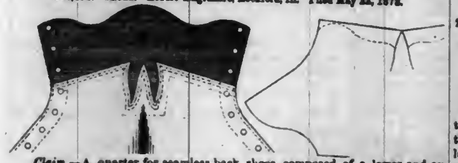


206,291. CAR-AXLES. Richard W. Allen, Hudson, N. Y., assignor of one-half his right to Jas. C. Beach, Broomfield, N. J. Filed Apr. 19, 1878.



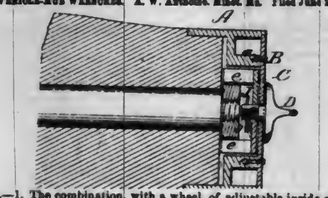
Claim.—The joint of a compound car-axle, consisting of a flange provided with a cylindrical socket connecting with a second cylindrical socket of less diameter in one section of the axle, in combination with a circular collar, a journal, and loose ring on the other section, the collar or some part thereof being in the same plane with the face of the flange, and the ring and the flange being secured together, substantially as and for the purpose set forth.

206,292. SHOES. Robert Anglemire, Rockford, Ill. Filed May 22, 1878.



Claim.—A quarter for seamless-back shoes, composed of a lower and an upper section, each section cut from the same or different kinds of leather in a single piece, the lower section formed with a vertical slot in its upper edge on each side of the back vertical center line, and the upper section formed with a depending portion to underlie the vertical slots in the under section, substantially as and for the purpose hereinbefore set forth.

206,293. VEHICLE-HUB WRENCHES. A. W. Arthaine, Minot, Me. Filed June 22, 1878.



Claim.—1. The combination, with a wheel, of adjustable inside slide-jaws arranged within the outer portion of the hub, and adapted to be engaged with or disengaged from the spindle-nut, substantially as specified.

2. The slides C C, having the wrench-jaws c arranged entirely within the outer end of the hub, in combination with a turn-button or lever device extending through the outer plate of said hub, and adapted to throw the slides apart for disengagement and to draw them together for engagement with the spindle-nut, substantially as specified.

3. A wheel having wrench-jaws c arranged within the outer hub-band, and adapted to be simultaneously engaged with or disengaged from the spindle-nut, and a yielding catch, also within said hub-band, engaging said jaws and holding them off the nut when disengaged therefrom, substantially as specified.

4. In a hub, the combination, with the outer band A and face-plate B, of the jaw-slides C C, having studs f and notches i, the catches d, the lever or turn-button D, and the spring-pressure plate J, having notched ends, substantially as specified.

206,294. BROOMS. Myron L. Barter, Aurora, Ill., assignor to himself and Joseph J. Walton, New York, N. Y. Filed May 14, 1878.



Claim.—The pins a, when used for the purpose specified, and held in place in the manner described.

206,295. FRUIT-CARRIERS. James Ross, Berlin, Md. Filed Feb. 21, 1878.

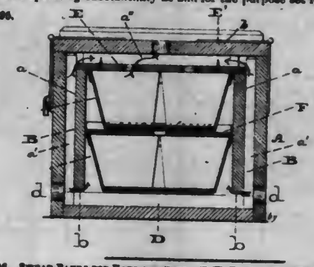
Brief.—Interior chamber, of wood or metal, may be provided with a bottom and used without the exterior case. Horizontal partitions may have cleats, forming squares to rest on the boxes as elevated covers for the baskets.

Claim.—1. The box A, with vertically-extending battens C on its sides, horizontally-extending battens D on its bottom, and openings d in its sides near the bottom, in combination with the chamber B, resting on the bottom of the box, and having its side pieces, a, suspended over the bottom battens D, so as to leave thereunder the spaces or channels b, which are adjacent to the side openings, d, the latter constituting a side inlet for air common to both box A and chamber B, substantially as and for the purpose set forth.

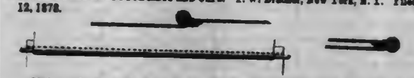
2. The box A and chamber B, with side air-spaces, a′, and bottom air-spaces, b, said box having a perforated lid, E′, and the chamber B a perforated cover, E, with an interrening air-space, a″, between said lid and cover, substantially as and for the purpose set forth.

3. The box A, with bottom openings d, the perforated lid E′, the inside chamber, B, with surrounding air-spaces a′, and bottom spaces or channels, b, the perforated cover E, and the slatted covering partition or partitions F, combined and operating substantially as and for the purpose set forth.

206,296.



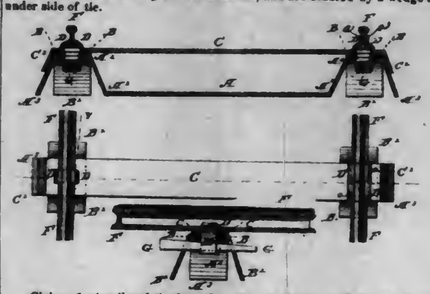
206,296. SWEAT-BANDS FOR HATS AND CAPS. T. W. Brocher, New York, N. Y. Filed July 12, 1878.



Claim.—A sweat for hats and caps having a cord, reed, or spring-rod attached to the body of the sweat or band by means of a covering lapping over the reed and secured to the band by a row of stitches passing through the lapped portion of the covering, and through the band at a distance from its edge, substantially as shown and described.

206,297. RAILWAY-TRACES. Gideon W. Cottingham, Denison, Tex. Filed June 20, 1878.

Brief.—The tie is formed of an upper and lower plate or bar having their outer ends bent to form supports, and a shorter plate extending at right angles to, and located between, the other two, said plate also having turned-down ends. The rails are secured upon this tie by bisected clamps, the lower portions of which pass through a slot in the tie, and are secured by a wedge on under side of tie.



Claim.—1. A railroad-tie formed of the metal bars A, B B, and C, constructed and arranged, as described, to form a support at each end for supporting the rails, as set forth.

2. The combination of the railroad-tie A B B C, constructed as described, the rails F F, and clamps D, for securing the rails to the tie and the different parts of the tie together, and a device for tightening up said parts, substantially as set forth.

3. A bisected clamp, with wedge-key for securing the rail to a metallic tie made of several parts, and said parts being united together by the same clamp, substantially as herein set forth.

4. The bisected clamp D, having its upper portion extended to form fish bars, in combination with the rails F, tie A B B C, and wedge-key G, substantially as and for the purposes herein set forth.

5. The combination of the metallic railroad-tie, made in several parts, the rails, bisected clamps, and wedge-keys, all constructed substantially as set forth.

206,298. BUCKLE AND LOOP FASTENINGS. George L. Crandal, Binghamton, N. Y. Filed June 13, 1878.



Claim.—1. In a buckle and loop fastening for carriage-curtains and harness, the back plate, f, having one or more integral clinching-points, g, in combination with separate lap-hinge plates d, having cross-slits e, corresponding with said clinching-points, for the purpose of securing the buckle in proper relation to the loop.

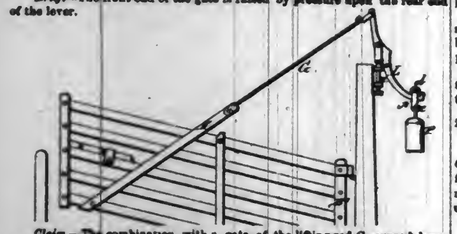
2. The combination, with a back plate, *f*, having integral clinching-points *g*, of the separate buckle lap-hinge plate *d* and the loop *c*, both the latter having cross-slits *c* *h*, coincident with said clinching-points, when secured to the curtain or strap by an interior clinch fastening all, substantially as herein set forth.

3. The bottom plate of the box-loop, provided with the cross-slits *h* and the holes *i*, in combination with the back plate *f* and its integral clinching-points *g*, for the purpose stated.

4. The combination, with a buckle-loop having a separate bottom plate secured thereto, as described, of the back plate and the buckle-hinge lap, secured to said loop bottom plate, in the manner described.

206,299. GATES. Benj. Cross, Alexandria, Pa. Filed June 3, 1878.

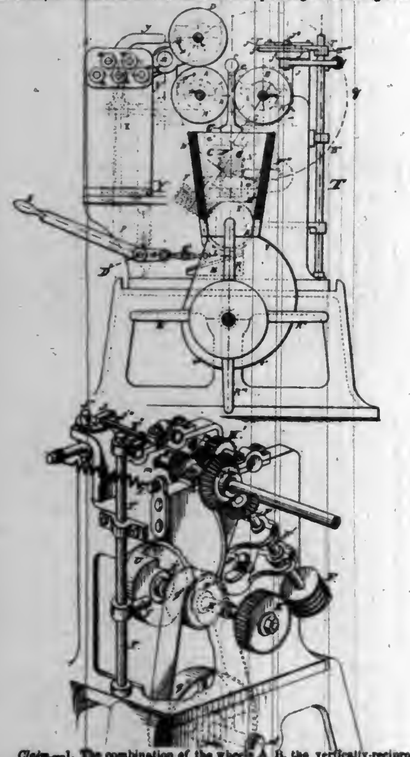
Brief.—The front end of the gate is raised by pressure upon the rear end of the lever.



Claim.—The combination, with a gate, of the lifting-rod G, curved lever L, traveling roller *d*, and weight P, constructed and arranged substantially as specified.

206,300. CURL-STRING MACHINES. Paul Ouzbert, Lyons, France. Filed Oct. 24, 1877.

Brief.—Machine straightens the wire and forms it into cylindrical, conical, double-conical, hour-glass, or other shaped coils of constant or varying diameter, cuts coils into desired lengths, and compresses them longitudinally, and automatically delivers them. The diameters of coils are varied by using different-shaped cams placed beneath the standard. By one motion of a lever the belt is shifted, the feed-pressure thrown on or off, and the standard which determines the shape of the coil set in motion. By throwing a pivoted and inclined shaft out of gear and setting the vertical shaft properly, the machine becomes a straightener only, or a straightener and maker of a coil of constant diameter, the vertical shaft and cutter and compressing device being inactive.



Claim.—1. The combination of the wheels A B, the vertically-reciprocating standard C, having the guide passage or aperture *c* at its upper end, substantially as and for the purpose set forth.

2. The combination of vertical shaft T, arm *f*, cam-faced wheel U, spring-shears, and connecting arms and links, substantially as set forth.

3. In a spiral-spring machine, an automatic compressing device provided with arms for receiving the separate coils as completed, and for forcing them through a compressing-drum, substantially as described.

4. The combination of revolving hub Q, having radial arms R R' R'' R''', and the slotted eccentric-drum V, substantially as described.

5. In a spiral-spring machine, the combination of the main driving-shaft and the coiling and straightening devices with devices for throwing said driving-shaft coiling and straightening devices out of or into action and operative engagement simultaneously, substantially as and for the purpose set forth.

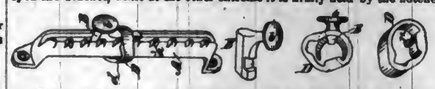
6. The combination of lever N, shaft D', arms O O' O'' E'', wedges L X' X'', levers X X, fork *y*, and intermediate links, substantially as and for the purpose set forth.

7. The combination of the driving-shaft *m*, swinging shaft F' and intermediate gears, worm-wheel F, oblique-toothed wheel K, shaft E', and a variable device for lifting the standard C, substantially as described, and for the purpose set forth.

8. The combination of the main driving-shaft and the coiling devices with the shaft F' of the worm-wheel F, cams E and U on shaft E', and the oblique-toothed wheel K, substantially as described.

206,301. CURTAIN-CORD TIGHTENERS. Matthew L. Cummings, Philadelphia, Pa., assignor to John M. Sheldon, same place. Filed May 18, 1878.

Brief.—The bracket has a longitudinal slot, in which slides the keeper. One side of this slot has raised notches. A ring surrounds the bracket and fits in a recess in the keeper. The ring can be turned through but a quarter-rotation, at one extreme of which it can be freely slid, and with it the keeper, upon the bracket, while at the other extreme it is firmly held by the notches.



Claim.—A shade or curtain cord holder composed of a notched and slotted keeper, A, slide B, and notched and encircling ring D, adjustable upon the keeper by a partial rotation and sliding of said ring, substantially as shown and described.

206,302. CARRIAGE-SPRINGS. David Dalzell, South Egremont, Mass. Filed Mar. 16, 1878.



Claim.—An elliptic spring for vehicles formed in a single piece, or of separable parts united at the extreme ends, in combination with an interposed rubber cushion, arranged within each extremity of such spring, and a vertical check-bolt, *c*, substantially as described.

206,303. ADDRESSING-MACHINES. Charles C. Dyer, Plymouth, Mass. Filed June 1, 1877.

Brief.—From an opening in the bottom of the case projects a spring-seated roller, between which and a roller fixed above it the printed and previously-gummed strip passes. The case being pressed upon the pile of papers to be addressed and moved forward, the strip is pushed out over a damping-wick, and under a cutter and presser pivoted to the front of the case. A stop is applied to the lower roller to limit its motion.



Claim.—1. In combination with a receptacle for containing and guiding a slip of paper, a feeding device, substantially as described, projecting below the body of the receptacle, grasping said slip and moving it to variable extents at will by means of friction upon a pile of papers being labeled, as herein specified.

2. In combination with cutters A^1 B and a receptacle, A A^2, for containing and guiding a slip of paper, *m*, the feed-rollers D^1 D^2, the former projecting below the body A, as herein specified.

3. The wick E and reservoir A^2, for supplying fluid thereto for moistening a previously-prepared slip, *m*, in combination with the cutter and presser B and stationary cutter A^1, for shearing off and pressing portions of said slip, as herein specified.

4. The wick holder or presser G and paper-presser H, in combination with the wick E and its water-supplying means, and with a cutting device, A^1 B, and feeding means D^1 D^2, as and for the purposes herein specified.

5. In an addressing-machine having a cutter, B, and suitable mechanism for wetting and feeding forward a previously-gummed slip, *m*, of paper containing addresses, the guides A^2 A^3, in combination with the bend or case A^2, having a space, a^4, between to facilitate the introduction of the paper, as herein specified.

6. The combination of the pivoted knife B, stationary knife A^1, and single-twisted flat spring C with the casing A^2, guides A^3 A^4, and suitable feeding and wetting means D^1 D^2 E, as herein specified.

7. The roll D^1, having a radial slot, in combination with the spring F and with the roll D^2, knives A^1 B, and body or frame of an addressing-machine, all arranged to operate substantially as herein set forth.

206,304. ELECTRIC RECORDERS. Lawrence Dunne, Morgantown, W. Va. Filed May 18, 1878.

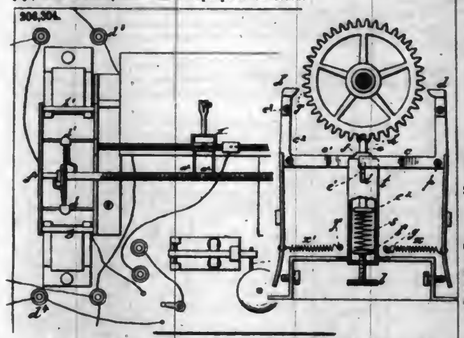
Claim.—1. The wheel A, with teeth tapering to an edge, and having two obtuse angles at their base, in combination with the pallets d d^3, arms c c^2, having elbows c^3 c^4, and the armatures a a^1, as and for the purposes set forth.

2. The slotted tube *f*, detent *e*, having angle *h*, and the studs e^1 and button e^2, for the purposes set forth.

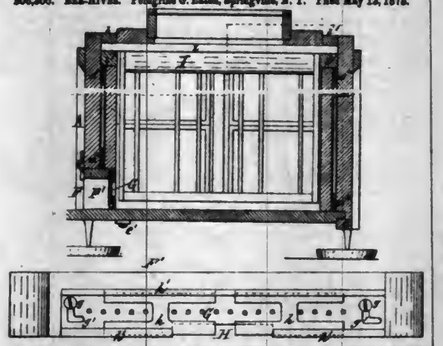
3. The spring *s* and thumb-screw *l*, with button *l'*, in combination with the detent, for the purposes set forth.

4. The combination of the detent *c*, screw-cap *f*, springs *s* s^1, thumb-screws *y* *y'*, and arms *s* s^1, as and for the purposes set forth.

206,304.



206,305. BEE-HIVES. Peregrine G. Eaton, Springville, N. Y. Filed May 13, 1878.



Claim.—1. The combination, with the entrance-frame F', provided with studs *g*, of the plate G, constructed with the notch H in its lower edge, and having L-shaped slots *g'*, for raising and lowering the plate G, and sliding gates *h* *h*, for covering or uncovering the notch H, substantially as and for the purpose set forth.

2. The comb-frames I, having projecting top pieces, *i*, secured together by longitudinal stripe *i'* *i'*, arranged respectively on the upper and lower sides of the projecting portions of the top pieces, *i*, substantially as and for the purpose set forth.

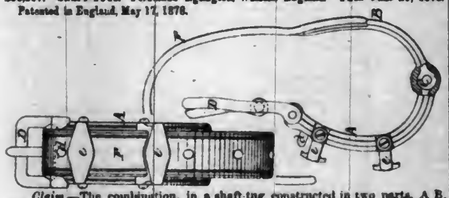
3. In a bee-hive, the open frame E, provided with rubber stripe *n*, in combination with the inner frame, O, covered with glass or canvas, and secured in the open frame by pivoted buttons *p*, substantially as and for the purpose set forth.

206,306. FRAMES FOR SPECTACLES AND EYEGLASSES. George D. Edmondson, Detroit, Mich. Filed Apr. 13, 1878.



Claim.—The improved spectacles or eyeglasses herein described, wherein the frames A are provided with ribs *a* and bearing and binding surfaces *b*, and are combined with the lenses provided with grooves *c* and surfaces *d*, substantially as and for the purposes set forth.

206,307. SHAFT-TUGS. Ferdinand Eglington, Walsall, England. Filed June 20, 1878. Patented in England, May 17, 1878.

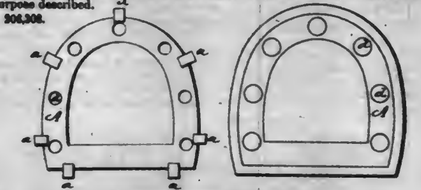


Claim.—The combination, in a shaft-tug constructed in two parts, A B, hinged together at C, of the strap F, buckle D, stationary lug *d*, and hinged loops *e*, constructed and arranged substantially as described.

206,308. INDIA-RUBBER BOOTS. Lewis Elliott, Jr., New Haven, Conn., assignor to The L. Candee & Co., same place. Filed July 1, 1878.

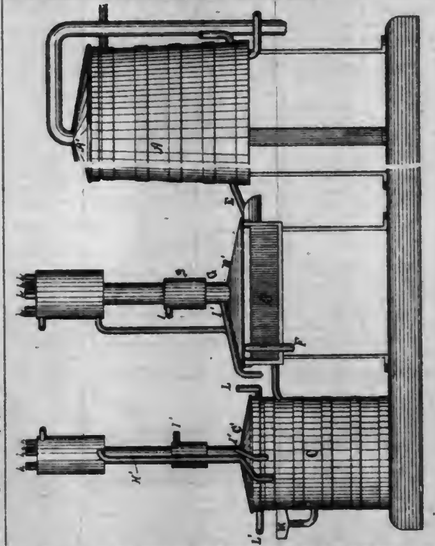
Claim.—A heel-plate for heels of india-rubber boots and shoes, constructed without outwardly-projecting spurs *s*, the extent of the projections corresponding with the outer surface of the heel of the shoe, substantially as and for the purpose described.

206,309.



206,309. PROCESSES AND APPARATUS FOR RECOVERING WASTE SULPHURIC ACID. Fernando F. Farrar and Frank P. Gill, Waterford, Pa.; said Gill assignor to said Farrar. Filed Mar. 20, 1878.

Brief.—Process consists in mixing the tar of oil-refineries with hot water and steeping the mixture to separate the acid from the tar. The acid and water are again reheated in shallow pans to remove remaining dirt and tar in the form of scum. The liquor is finally passed through evaporators till of such strength as to require glass or platinum vessels. The apparatus consists of the devices set forth in third, fourth, and fifth claims.



Claim.—1. In the process of reclaiming acid from the residuum-tar from refineries, and as part of said process, the mixing of said tar with hot water, and then steeping said mixture by the application of heat, and then allowing the mixture to settle, so that the acid and water can be drawn off from below the tar, substantially as set forth.

2. In the process of restoring acid from residuum-tar, and as part of said process, the heating of the solution derived from the first stage of said process, and the removal of the scum from the top, while the purer liquor escapes from the bottom of the vessel in which the operation takes place, as set forth.

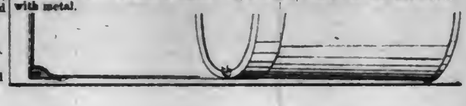
3. An apparatus for treating residuum-tar from refineries for reclaiming the acid therein contained, which consists of the following devices, to wit: a mixing, steeping, and separating tank, A, provided with a steam-coil, D D', and an educt-pipe, E, at or near its bottom; a heating-tank, B, provided with an induct and educt pipe, as set forth, and a steam-heating coil, F F'; and, lastly, one or more evaporating tanks, C, provided with inducts and educts, as described, and a steam-coil for heating their contents, said parts being arranged with relation to each other, and operating together, substantially in the manner and for the purposes set forth.

4. The evaporating-tank C of an apparatus for reclaiming acid from residuum tar, provided with a steam-coil, L, and circulating-tubes O, with deflected nozzles *o*, arranged as described, whereby the heat from the said coil shall cause the liquor to flow through the tubes O and deflected nozzles *o* in such a manner as gives to the liquor both a vertical and horizontal circulation, substantially as and for the purposes mentioned.

5. In combination with the circulating-tubes O, with nozzles *o*, arranged as described, the wing N and scum-trap M, substantially as and for the purposes mentioned.

206,310. PICKLE-CANS. Edward H. Foote, Somerville, Mass. Filed Dec. 22, 1877.

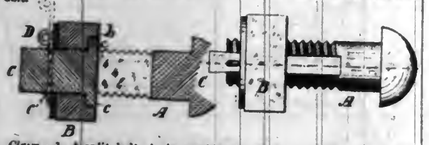
Brief.—The can is lined and sealed with a mixture of paraffine and resin, and the construction claimed effects a tight closure without contact of contents with metal.



Claim.—The combination of a can body having a contracted mouth, a can cover having a depending rim, and a band soldered to the can-body to form a sealing-channel, and bent over the top of the cover, as and for the purpose described.

206,311. NUT-LOCKS. Walter S. Gilman, Chicago, Ill. Filed Jan. 15, 1878.

Brief.—A split bolt is provided with a wedge-shaped pin having a T-head on its smaller end, to fit a corresponding recess in the inner face of the nut. The nut, with the pin in position, is turned on the bolt, the pin spreading the bolt behind the nut as it advances. Any tendency of the nut to turn backward causes it to leave the pin, thus locking the nut on the widened end of the bolt.

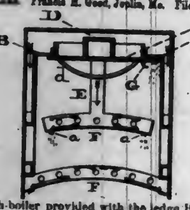


Claim.—1. A split bolt, A, in combination with a wedging-key, C, provided with a T head, c, at its thin end, and the nut B, substantially as described.

2. The nut B, provided with a circular seat, b, in its inner face, in combination with the wedge C, provided with a T-head, c, at its thin end, the thickness of which is equal to the depth of cut in the inner face of the nut, substantially as and for the purpose set forth.

3. The nut and split bolt, in combination with the wedge C, provided with the slot c', and the pin D, substantially as and for the purpose set forth.

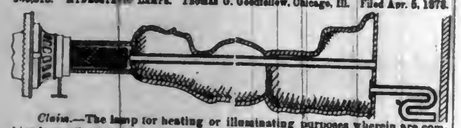
206,312. WASH-BOILERS. Francis H. Good, Joplin, Mo. Filed May 27, 1878.



Claim.—1. The wash-boiler provided with the ledge B, supporting the removable bottom C D, and having a drain-opening, a', in combination with the sliding covering-plate G, substantially as and for the purpose set forth.

2. The wash-boiler having the ledge B, provided with opening a', and covering-plate G, in combination with the pipes E and horizontal pipes F, of curved form, whereby drainage may be effectually accomplished, substantially as and for the purpose set forth.

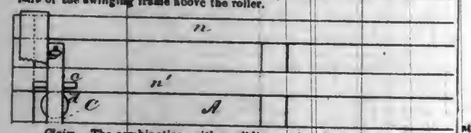
206,313. HYDROSTATIC LAMPS. Thomas G. Goodfellow, Chicago, Ill. Filed Apr. 6, 1878.



Claim.—The lamp for heating or illuminating purposes wherein are combined an oil-reservoir at the bottom, a water-reservoir located next higher than the oil-reservoir, and connected therewith by a suitable pipe, and a wick or other filling-receptacle, located above the water-reservoir and connected with the oil-reservoir, the pipe from the water-reservoir to the oil-reservoir being provided with a trap or cut-off, substantially as and for the purpose set forth.

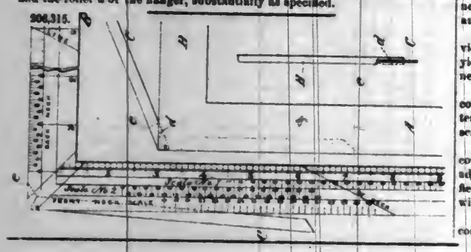
206,314. GATES. John Greig, Morris, Ill. Filed June 1, 1878.

Brief.—A friction-preventing guide is secured to the inside of one of the bars of the swinging frame above the roller.



Claim.—The combination, with a sliding and swinging gate, A, having bars a a', of the post B, having the swinging hanger C, provided with a central roller, d, the horizontal guide-bar c, seated in a groove of the hanger and extending on each side thereof, the bar w, bearing against said guide-bar c, and the roller d of the hanger, substantially as specified.

206,315.

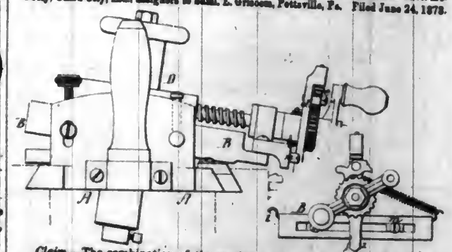


206,315. DRAFTING-SQUARES FOR GARMENTS. Caleb H. Griffin, Boston, assignor, by mesne assignments, to Elizabeth E. Durgin, Malden, Mass. Filed June 3, 1878.

Claim.—1. The square A B, provided with the pivoted arm C, slot d, and shoulder e, arranged to operate substantially as and for the purpose set forth and specified.

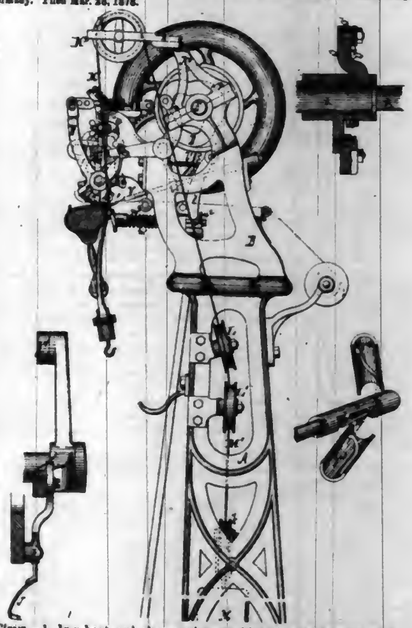
2. The square A B, provided with an inch-scale, and with the auxiliary scales Nos. 1 and 2, arranged to operate substantially as and for the purpose set forth and specified.

206,316. MILLSTONE-DRESSING MACHINES. Walter Grissom, Pottsville, Pa., and Thos. McFeely, Union City, Ind., assignors to Saml. E. Grissom, Pottsville, Pa. Filed June 24, 1878.



Claim.—The combination of the carriage A, having at each end a handle or means of attaching a handle, with the pivoted frame B, carrying the tool-slide D, and provided with duplex devices for operating the feed-screw, all substantially as and for the purpose herein set forth.

206,317. BOOT AND SHOE SEWING MACHINES. Hermann C. Gros, Reutlingen, Württemberg, Germany. Filed Mar. 28, 1878.



Claim.—1. In a boot and shoe sewing machine, the combination of the stitch-forming devices, the rigid combined back and welt guide s, yielding feed-gage f, and oscillating lever F, and mechanism, substantially as described, for operating said lever, substantially as and for the purposes set forth.

2. The combination of the stitch-forming devices, the combined back and welt guide s, top rest b, and yielding feed-gage f, lever F, cam D, and connecting mechanism, substantially as described, and the feed-operating mechanism, as set forth.

3. The combination, with the reciprocating needle and work-guiding devices of a boot and shoe sewing machine, of a yielding feed-gage adapted to yield in the arc of a circle parallel with and at one side of the path of the needle, substantially as and for the purpose set forth.

4. In a boot or shoe sewing machine having a curved barbed needle, the combination of a feed-gage, f, which is constructed with two shanks, and extends radially to the needle-axis, with the feed-lever F, substantially as described.

5. In a boot or shoe sewing machine having a curved barbed needle, the combination, with the oscillating slotted lever N, of a needle-stock which is adjustable concentrically to the axis of the needle-circle, substantially as specified, so that the point of contact of the needle with the work can be altered without altering the position of the lever, substantially as described.

6. In a boot or shoe sewing machine having a curved barbed needle, the combination of an oscillating lever, T, one arm of which carries the compound needle-guide and barb-protector t t', and the other arm of which is provided with a cam-slot, U, with a wrist-pin which is fitted in said cam-slot, and mechanism for giving motion to said wrist-pin, the whole being adapted to operate substantially as described.

7. The combination of the oscillating lever T, provided with the compound needle-guide and barb-protector, and the cam-slot U, having the segmental enlargement U' and stop s', with the counter-stop s', spring s, and wrist-pin R, substantially as described.

8. The combination, with the oscillating lever T, of a needle-guide, t, which is adjustable concentrically to the axis of the needle-circle, substantially as specified, so as to occupy the proper position relatively to the needle, substantially as described.

9. The combination of the oscillating lever T, substantially as specified, provided with the radial sockets, as shown, with the needle-guide t, provided with a shank adapted to fit and be inserted into either of said sockets, as required, for the purpose set forth.

10. The combination, with the oscillating needle-stock lever N, the needle-guide lever T, and awl-stock lever O, of a wrist-pin, R, arranged to communicate motion to said levers from the main shaft of the machine, substantially as described.

11. The combination, with the oscillating needle-stock lever N and oscillating awl-stock lever O, having the needle and awl secured thereto, respectively, and provided with the cam-slots P and Q, of the wrist-pin R, arranged relatively to the needle-axis, substantially as described, so that said wrist-pin is nearest to said axis when the needle or awl is out of the work, and farthest from said axis when the needle or awl pierces the work, as and for the purpose set forth.

12. The combination, with the oscillating needle-stock lever N of the awl-stock lever O, each having a cam-slot, substantially as described, of the wrist-pin R, mechanism, substantially as described, for operating the same, said wrist-pin projecting through both of said cam-slots, and mechanism, substantially as described, for controlling the position of the wrist-pin in relation to the axes of said levers, whereby when thick stuff is being sewed the needle has a different or longer retrograde movement than when thin stuff is sewed, while in its forward movement the needle always reaches the same point, as set forth.

13. The combination, with the wrist-pin R and the axis on which it turns, of a sliding box, Q², spring q², stop q¹, reciprocating wedge Q², eccentric C, connecting-bar c, and gage-lever Q¹, all adapted to operate substantially as described, and for the object specified.

14. The combination, in a sewing-machine, of the reciprocating curved barbed needle and the looper v, and mechanism for actuating the same, whereby a compound reciprocating and rocking motion is imparted thereto, substantially as and for the purpose set forth.

15. The combination, with the stitch-forming mechanism of a sewing-machine, of the longitudinally-reciprocating looper v and mechanism, substantially as described, whereby a different rotary motion is given to said looper on its return from that imparted to it on its forward movement.

16. The combination of the looper v, its shaft V, the head v', the lever W, the sectional sleeve V¹ V², and its spiral grooves, the inwardly-yielding arms or pins x¹ and x², and the spring x, all adapted to operate substantially as described.

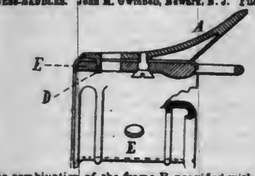
17. The combination, with the oscillating feed F, of a longitudinal reciprocating rod, G, slotted bearing g', pivoted bearing g', and spiral spring g, all adapted to operate substantially as and for the purpose described.

18. The herein-described mechanism for producing the lateral motion of the feed-lever and feed-gage, consisting of the horizontal parallel bars X Y, the cross-rods y' y², the oblique slotted plate Z, and the lever Z', and the cam for operating said lever, the whole being combined and adapted to operate substantially as described.

19. The combination, with the vibrating lever Z and feeding mechanism, of the claw J, substantially as described.

20. In a boot or shoe sewing machine, having a curved barbed needle, the combination, with the feed and sewing mechanism, of a swinging support composed of the jack L', horizontal bar U', rope M', connected to said bar, the pulleys K K' L L' L', and the weight M, or its equivalent, the whole being combined and adapted to operate substantially as described.

206,318. HARNESS-SADDLES. John M. Gwinnell, Newark, N. J. Filed Dec. 18, 1877.



Claim.—The combination of the frame E, provided with a recess, and the seat A, provided with an opening and lip, D, extending downward through the jockey and into said recess, as set forth.

206,319. JOURNAL-BOXES FOR ROLLING-MILL PINIONS. Homer Hamilton, Youngstown, Ohio, assignor, by mesne assignment, of one-half his right to Brown, Bonnell & Co., same place. Filed May 23, 1878.



Claim.—1. A journal-box in one piece of metal, lined as described, having the grooves f f', the end shoulders a' a², and the rounded lining-bearing a at the inner end for the shoulder of the pinion B, as herein set forth.

2. A journal-box constructed substantially as herein described, having a perpendicular height equal to the diameter of the pinion B of a rolling-mill, whereby the several boxes when in place will be equal in height to the pitch-line of the several pinions, to obtain the advantages stated.

3. A journal-box in one piece of metal, lined as described, having the top interior grooves f f' formed by the longitudinal box ridges i i i i, in the manner and for the purpose set forth.

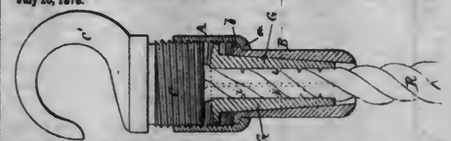
4. A journal-box of one piece of metal, lined, and having the top grooves f f' formed as described, in combination with the housings and the pinions of rolling-mills, all constructed substantially as and for the purpose described.

206,320. DRILL-CHUCKS. George W. Hayden, Worcester, Mass. Filed Mar. 13, 1878.



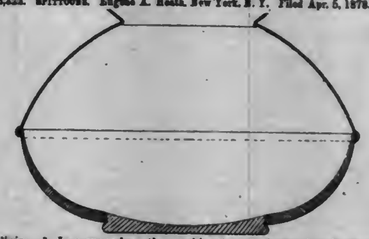
Claim.—The improved drill-chuck, consisting of the body or hub A, having conical projection A', with radial slots d and central opening, e, the jaws D, made with rectangular rear corners, inclined top edges, and slots i, the jaw-retaining pins I, and operating-sleeve B, having wrench-nut end B' and internal conical surface, all constructed, combined, and operating in the peculiar manner herein shown and described.

206,321. COMBINED HOSE SOCKET AND CLAMP. H. L. Heaton, West Jefferson, Ohio. Filed July 10, 1878.



Claim.—The thimble A, having interior screw-threads and interior circumferential shoulder a below said threads, the tapering thimble B, and the bisected tapering clamp G G, having interior teeth i i, in combination with a solid screw-plug, C, substantially as and for the purposes herein set forth.

206,322. SPITTOONS. Eugene A. Heath, New York, N. Y. Filed Apr. 5, 1878.



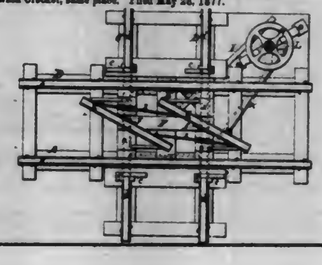
Claim.—1. In a cuspadore, the combination of a bottomless bowl of heavy material, the excess of weight in which is near its base, a detachable bottom, (for insertion in the opening in the base of such bowl,) formed from wood, paper, paper-pulp, rubber, or other light and soft material of an opposite nature to metal, and a breast and receiving-mouth of the usual shape, such breast and receiving-mouth being attached to the bowl by soldering, all applied as and for the purposes substantially as herein shown and set forth.

2. In a cuspadore, the combination of a bowl, breast, and receiving-mouth of the usual form, the bottom of the bowl of such vessel being removed, and a detachable bottom, (arranged for insertion in the open base of the vessel,) formed from wood, paper-pulp, rubber, or other material of a softer nature than metal, all substantially as and for the purposes as herein shown and described.

3. In a cuspadore, the combination of a bowl or body formed in one piece from heavy material, the base or bottom of such vessel being removed, a detachable bottom, (for insertion in the open base of the vessel,) formed from light material in contradistinction to metal, and a flaring receiving-mouth of the usual form, all substantially as and for the purposes as herein shown and described.

4. The combination, in a cuspadore, of a bottomless bowl or body, having a receiving-mouth of the conventional form, and a detachable bottom, (arranged for insertion in the open base of such vessel,) formed from soft material, substantially as and for the purposes as herein shown and set forth.

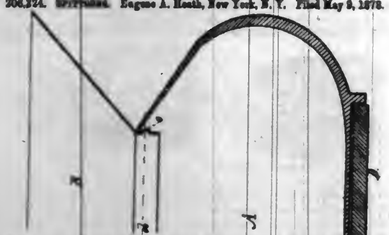
206,323. RAILWAY-CROSSINGS. Henry Obance, Fostoria, Ohio, assignee of one-half his right to Rowsen Crocker, same place. Filed May 28, 1877.



Claim.—1. The rails *g g*, connected by the rods *h h*, and mounted on the chairs *f f*, which are pivoted to the sill F, to which the standard H is attached, all combined substantially as and for the purposes set forth and described.

2. The rails *g g*, rods *h h*, chairs *f f*, sill F, and standard H, in combination with the lever I, fulcrum J, rod K, crank L, shaft M, wheel N, and chairs *e e*, substantially as and for the purposes described.

206,324. SPITTOONS. Eugene A. Heath, New York, N. Y. Filed May 9, 1878.

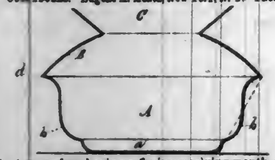


Claim.—1. In a cuspadore, the combination of a body composed of a bottom, bowl, and breast, cast from metal in one piece, the excess of weight in which is distributed below the line of center of gravity of such body, an auxiliary bottom, formed from wood, paper, paper pulp, rubber, or some similar light material, and a flaring receiving-mouth, formed from light sheet metal or other light material, all substantially as and for the purposes as herein shown and set forth.

2. The combination, in a cuspadore, of the receiving mouth B, the vessel-body A, cast from metal, and the auxiliary bottom D, formed from wood, paper, rubber, or some cellular material, all arranged, applied, and operating as and for the purposes as herein shown and set forth.

3. The combination, in a cuspadore, of the vessel-body A, having a mouth to the top, provided with an annular groove, *g*, and the receiving-mouth B, having depending neck *d*, provided on its periphery with sections of a rib, *s*, all substantially as and for the purposes as herein shown and set forth.

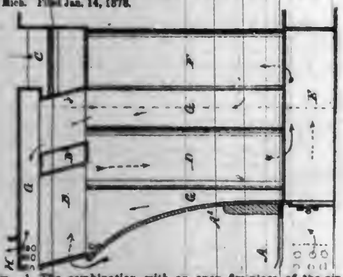
206,325. CUSPADORES. Eugene A. Heath, New York, N. Y. Filed May 9, 1878.



Claim.—1. A cuspadore having a flaring receiving-mouth, a curved breast, to which the receiving mouth is attached, and a body or bowl, the walls of which are formed on two opposing curves, the upper curve thereof uniting with the base of the breast, forming an outwardly-projecting cusp-point, the lower curve terminating in a flattened bottom, and projecting beyond a line drawn from the extreme of the projecting cusp-point to the base of the vessel, forming a rocking-point, on which the vessel turns when righting itself, said vessel in all its parts being formed from light material of the same gage, all substantially as and for the purposes as herein shown and set forth.

2. In a cuspadore, the combination of the receiving-mouth C, convex breast B, and bowl A, the body of which has a projecting curved portion, *b*, and a flattened base, *a*, the apex of such bowl and the base of breast B uniting and forming projecting cusp-point *d*, the curved part *b* of the bowl A projecting beyond a line drawn from the point of the projecting cusp *d* to the base of the flattened bottom *a*, the entire vessel being constructed from material of the same thickness throughout, all substantially as and for the purposes as herein shown and set forth.

206,326. FIRE-PLACES. George H. Hess, Chicago, Ill., assignor to Louisa M. Hess, Grand Rapids, Mich. Filed Jan. 14, 1878.



Claim.—1. The combination, with an open fire-place, of the air space or chamber G, the flues B, D, and F, surrounded by and passing through said chamber, the flue B being provided with the damper *b*, as specified, the chamber E, the air-flues I, and the outlet H, the whole arranged and constructed substantially as specified.

2. The combination, with the outlet H, of the air-passages formed between the duplicate flues B and connecting-ducts B′, such air-passages being inclined, as shown, to conduct the air toward said outlet, substantially as herein specified.

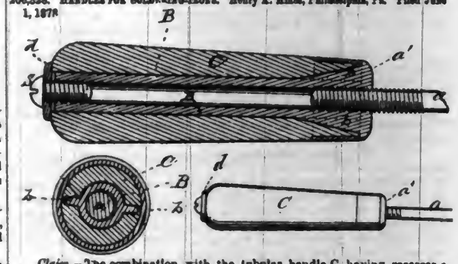
3. The combination, with the air-chamber G, traversed by smoke-flues substantially as described, of the inlet I and outlet H, placed or located and constructed as shown, substantially as and for the purposes specified.

206,327. PADLOCKS. Louis Hillebrand, Philadelphia, Pa., assignor of one-half his right to Daniel Wolf, same place. Filed June 26, 1878.



Claim.—A padlock having a sliding shackle and a locking bolt or bolts, in combination with an independent bolt engaging with the shackle when the lock is open, and adapted to be operated by an extra key for entire disengagement from the shackle, whereby the latter may be removed, substantially as and for the purpose set forth.

206,328. HANDLES FOR SOLDERING-IRONS. Henry K. Hiaes, Philadelphia, Pa. Filed June 1, 1878.



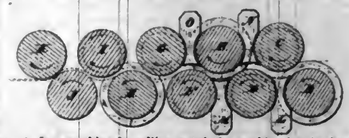
Claim.—The combination, with the tubular handle C, having recesses *c*, of the metallic tube B, female threaded at each end, having wings *b* and collar *a′*, and extending nearly through said handle, the washer *d*, and set-screw S, substantially as specified.

206,329. ATTACHMENTS FOR SEWING-MACHINES. A. P. Holcomb, Silver Creek, N. Y., assignor to Huntley, Holcomb & Hine, same place. Filed June 1, 1878.



Claim.—An attachment for sewing-machines combining in its construction a plate for attaching it to the table of such machines, a hem-turner for the heavy or thick cloth, and a guide for the bolting-cloth, they being arranged one above the other, and having apertures for the insertion of the different kinds of cloth upon their opposite edges, substantially as set forth, and for the purpose specified.

206,330. ROLLING-MILLS. Alex. Hooven and Wm. H. Adle, Norristown, Pa. Filed Jan. 15, 1878.

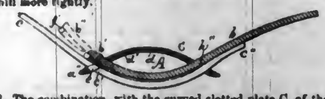


Claim.—1. In a machine for rolling metal, the combination, in the manner described and shown, of a series of rollers arranged relatively to each other, so that each roller shall be nearer the roller which follows than to the one which precedes it, and so that two reductions of the metal are effected by three rollers at one operation, all as specified.

2. In a rolling-machine, the reducing-rolls, arranged as described, and geared to run at different speeds, for the purpose of producing a combined drawing and compressing action upon the metal, all as specified.

206,331. TUGS FOR HARNESS. William O. Hull, Sing Sing, N. Y. Filed Jan. 25, 1878.

Brief.—The straps are arranged in connection with the curved slotted plate, so that any draft on the straps reduces the distance between them, and clamps the thill more tightly.



Claim.—1. The combination, with the curved slotted plate C, of the strap *b*, passing through one of the slots and secured at the opposite end, and the strap *c*, passing over both slots outside the strap *b*, the straps forming with the plate a recess, A, to receive the thill passing between the two, as set forth.

2. The combination of the curved plate C, its openings *h h″* and tongue *e*, the strap *c*, and strap *b*, having at the end a wedge, *f*, as and for the purpose set forth.

206,332. APPLICATION OF CEMENTS, GLASS, METALS, AND GLASS IN FORMING ILLUMINATED OR OTHER GRATINGS, VAULT-COVERS, ROOFS, &c. Thaddeus Hyatt, New York, N. Y., assignor to Elizabeth A. L. Hyatt, for herself and as trustee for Bessie L. Hyatt, Thaddeus P. Hyatt, Clotilde S. Hyatt, James M. L. Hyatt, and Annie F. Hyatt. Filed July 16, 1878.

Claim.—1. Generally, the manufactures as herein described and illustrated, and the modes, means, and processes connected therewith, when the same are employed for the purposes and in the manner substantially as herein set forth, and illustrated by my drawings.

2. Spider-web or beam gratings, as a new manufacture, with reference to preventing condensed moisture and increasing the light-area of illuminating-gratings, and as a means of making weather and walking surfaces, substantially in the manner and for the purposes as herein described and illustrated.

3. Curving the under faces of the glasses of illuminating-gratings, when the same are combined with a layer or bond of absorbent material at the base of the glasses to receive and drink up the condensed moisture, substantially as herein set forth.

4. Setting the glasses of illuminating-gratings by means of side adhesion, in connection with an enlarged area of the side surface of such glasses, and in some cases also with serrated or roughened side surfaces, with reference to increasing the percentage of illuminating-surface in such gratings, substantially as herein set forth.

5. Spider-web or beam gratings made of cast-steel or malleable iron, and from hoop-iron or steel blades, as a new manufacture, and combining the same, as a core or skeleton, with glass or other materials, for illumination or ornamentation, substantially as herein set forth.

6. Illuminating-gratings of combined metal, glass, and papier-maché, substantially as herein set forth.

7. Illuminating-gratings, including mounts of baked clay, artificial stone, and papier-maché, combined with glass, substantially as he in set forth.

8. Strengthening hydraulic-cement or artificial-stone and papier-maché gratings by means of tie-metals, or of a metallic core or skeleton, substantially as herein set forth.

9. Facing illuminating-gratings, including mounts, with a walking and weather surface of magnesian or Sorel cement, substantially as herein set forth.

10. Artificial-stone gratings made of magnesian cement, substantially as herein set forth.

11. Ornamental illuminating-surfaces formed by combinations of colored mounts or colored baked clay or artificial-stone gratings set with glass, said mounts and gratings being either made wholly of colored material or faced with colors, substantially as herein set forth.

12. Ornamental illuminating-surfaces formed by combinations of colored "tiles," "slips," and "dots," with glasses shaped to match the same, substantially as herein set forth.

13. Tiles, slips, and dots made of hydraulic cements and concretes, and combining the same with glass to form illuminating-surfaces, substantially as herein set forth.

14. Geometrical glasses of shapes and sizes to match the "stock sizes" of the baked-clay tiles, slips, and dots on the market, substantially as herein set forth.

15. Combining the glasses of illuminating-gratings with colored hydraulic cements and concretes, to form ornamental illuminating-gratings.

16. Combining the glasses of illuminating-gratings with hydraulic cements and concretes of different colors, to form party-colored and design surfaces, substantially as herein set forth.

17. Combining the glasses of illuminating-gratings with hydraulic cements and concretes made party-colored or "mosaic" by means of fragments of irregular shape, obtained by breaking or crushing pieces of pottery, colored ware, tiles of baked clay, or hardened cakes made of magnesian or other hydraulic cements, substantially as herein set forth.

18. Illuminating-gratings, with design-surfaces in cement, colored or otherwise, produced by means of glasses of such contour and so placed with reference to each other as to develop the design required, the design-heads of the glasses standing above the level of the metal plate containing them, and thus forming channels to receive the cement or inlays, substantially as herein set forth.

19. Illuminating-gratings formed with flaring or splayed light-holes, produced by either the under face of the glass being molded in splayed form, or by casting the grating in the form of a shell of pyramidal openings, or by molding the under surface of the mounts or stone gratings with flaring light-holes, substantially as herein set forth.

20. Artificial-stone or concrete lights made by first molding and hardening the concrete in suitable form to be applied, and then applying the same as a mount or stone grating to the metal foundation, and securing the same to the meshes of the grating, or to the face of the metal plate, by the agency of hydraulic cement, substantially as herein set forth.

21. The mode herein described of securing illuminating-grating panels to the bed-frame without drilling or bolting, vertical seams being formed at the bearing-lines, of such depth as to enable the cement packing to likewise hold the panels to their seats by side adhesion, substantially as herein set forth.

22. The mode of constructing the bed-frame of illuminating-gratings in detached parts, and putting the same together by means of interlocking heads and grouting, and combining illuminating-gratings with such foundations, to construct walking and illuminating surfaces, substantially as herein set forth.

23. Sectional panel-gratings as a new manufacture, substantially as herein set forth.

24. Illuminating and ornamental roofs and weather-surfaces, substantially as herein set forth.

25. Illuminating, ornamental, and safe walking-surfaces, substantially as herein set forth.

26. Transparent burglar and fire proof weather or window surfaces and constructions, substantially as herein set forth.

27. Illuminating and ornamental hydraulic scagliola weather and walking surfaces, substantially as herein set forth.

28. Concrete lights formed with protecting-lines or net-work of metal, the same forming a portion of the walking-surface, and at the same time forming, of preference, the metallic strength of the grating, substantially as herein set forth.

29. Concrete slabs formed with flat tie-metals in the nature of a "watting," or cross-ties, for giving tensional strength to the slab in all directions, substantially as herein set forth.

30. Method of laying flag-stones upon a beam foundation, with under spaces to avoid effects of frost, substantially as herein set forth.

31. Concrete coal-hole plates and coal-hole slabs, protected against spalling by means of an encircling band of metal around the edge of the coal-hole plate, and around the mouth of the coal-hole, substantially as herein set forth.

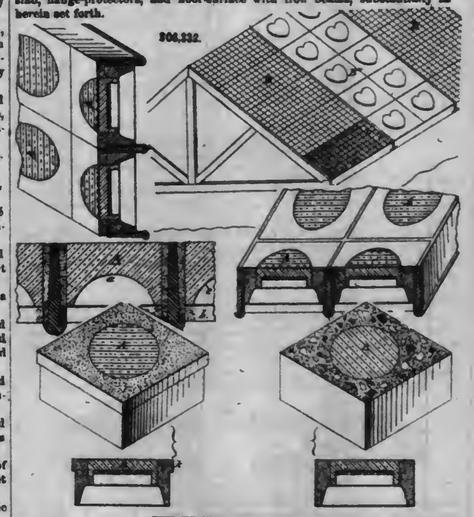
32. Composite hydraulic slabs of concrete, made by combining a Portland-cement base with a magnesian wearing and weather surface, substantially as herein set forth.

33. Open-work or ventilating concrete and hydraulic-cement constructions, to serve as railings, gratings, guards, &c., substantially as herein set forth.

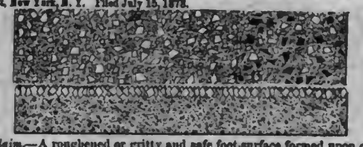
34. Beam-flange protectors, and the means of fastening the same by bolts extending up into the arches or through the ceiling, substantially as herein set forth.

35. Fire-proof ceiling and floor construction by combination of ceiling-slab, flange-protectors, and floor-surface with iron beams, substantially as herein set forth.

206,332.

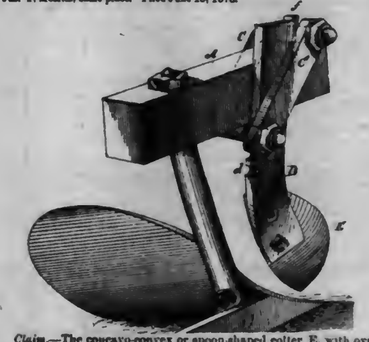


206,333. CEMENT AND CONCRETE WALKING-SURFACES. Thaddeus Hyatt and Theodore Hyatt, New York, N. Y. Filed July 16, 1878.



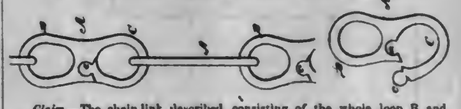
Claim.—A roughened or gritty and safe foot-surface formed upon cement, concrete, and baked-clay bodies by modes, means, and processes substantially and for the purposes as herein set forth, and illustrated by our drawings.

206,334. FLOW-COULTERS. Edwin Jarrell, Thorntown, Ind., assignor of one-half his right to Jas. T. McKim, same place. Filed June 15, 1878.



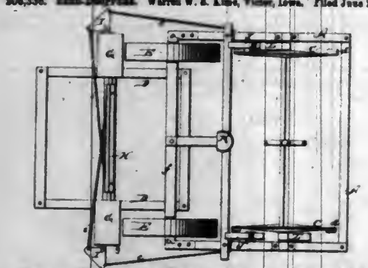
Claim.—The concavo-convex or spoon-shaped colter E, with oval cutting-edge, adapted to turn a shallow furrow on the land-side beyond the plane of the furrow, having adjusting-shank D, provided on its rear edge with notches *d*, combined with the beam A, clamp C C′, and wedge *f*, as specified.

206,335. CHAIN-LINKS. George Kampf, Union, N. Y. Filed June 15, 1878.



Claim.—The chain-link described, consisting of the whole loop B and jointed loop C, made in one piece, and forming link A, the loop C having a dovetailed free end, *c*, adapted to fit in a dovetailed recess, *c*, as and for the purposes set forth.

206,336. SEED-DROPPERS. Warren W. S. Kine, Victor, Iowa. Filed June 28, 1878.

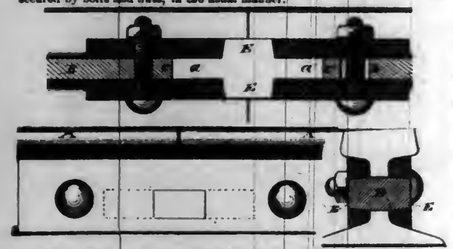


Claim.—1. The seed-slide H, cross-cords *i i*, angle-levers I I, cords *e e*, levers J J, and revolving arms L L, all arranged substantially as and for the purposes set forth.

2. The front frame, D, with runners F, seed-boxes G, and seed-slide or bar H, in combination with the rear hinged frame, A, wheels E, arms L, levers J, cords *e e*, angle-levers I, and cross-cords *i i*, all arranged substantially as and for the purposes set forth.

206,337. RAIL-JOINTS. Christopher Lewis, Columbus, Ohio. Filed Apr. 29, 1878.

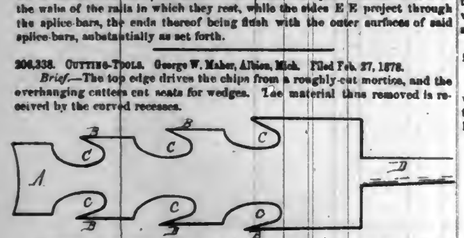
Brief.—A rail-joint in which the webs of the adjacent rails have rectangular slots, into which takes a Greek-cross-formed bar, the central lateral bearings of which enter correspondingly-shaped holes in the fish-plates, the extending end portions being clamped between the fish-bars, and all being secured by bolts and nuts, in the usual manner.



Claim.—The combination, with the adjacent ends of two rails, the same having longitudinal openings formed in their web portions, of a supporting-bar of Greek-cross form, the ends *a a'* of which are equal in width to that of the webs of the rails in which they rest, while the sides E E project through the splice-bars, the ends thereof being flush with the outer surfaces of said splice-bars, substantially as set forth.

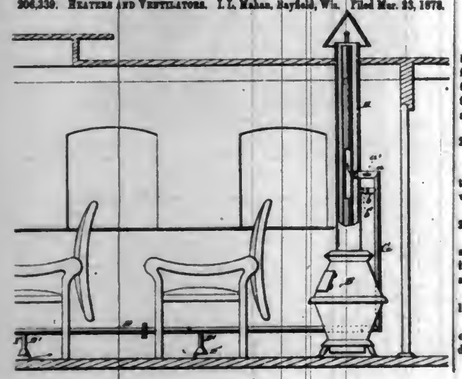
206,338. CUTTING-TOOLS. George W. Maher, Albion, Mich. Filed Feb. 27, 1878.

Brief.—The top edge drives the chips from a roughly-cut mortise, and the overhanging cutters cut seats for wedges. The material thus removed is received by the curved recesses.



Claim.—The flat cutting-tool described, consisting of the core-driver A and the wedge-seat cutters B, regularly increasing in size, and provided with curved recesses C, substantially as and for the purpose set forth.

206,339. HEATERS AND VENTILATORS. I. L. Mahan, Mayfield, Wis. Filed Mar. 23, 1878.

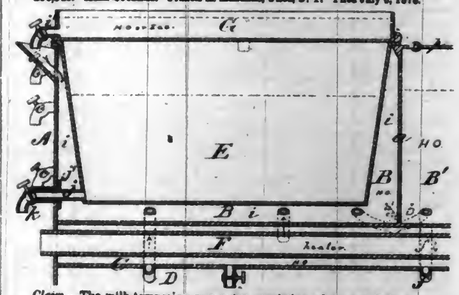


Claim.—1. The horizontal pipe D, provided with a series of vertical branches, D', terminating in inverted funnels F, and said pipe connected with the smoke-pipe of a heater, B, substantially as and for the purposes herein set forth.

2. The combination, with the smoke-pipe C, of a heater, B, the exterior cylinder H, forming communication with the horizontal pipe D, having series of branches D', with funnels F at their lower ends, for the purposes set forth.

3. The combination of a heater, B, with smoke-pipe C, having exterior cylinder H, the horizontal pipe D, having branches D', with funnels F, and the vertical pipe G, with branches *a b*, having valves or stop-cocks *a' b'*, respectively, substantially as and for the purposes herein set forth.

206,340. MILK-COOLERS. Francis X. Manahan, Utica, N. Y. Filed July 6, 1878.



Claim.—The milk-tempering apparatus consisting of the pan E, its hinged pan-lid G, having stop-cock *i*, the reservoir-compartment B about the pan, having at one end the vertical series of cocks *c* and the spout *n*, and at the other end the chamber B', separated therefrom by a vertical wall, *a*, and connected thereto by the external horizontal bent tube *b*, opening into the lower portions of said reservoir and chamber, and having a stop-cock, *b'*, substantially as specified.

206,341. BOTTLE-STOPPER FASTENERS. Henry Martin, New York, N. Y. Filed June 24, 1878.



Claim.—The combination, in a stopper-fastener, of a vibrating U-shaped arm, which is bent to form inclined bearing portions terminating in ledges at their upper ends, a stopper which is connected directly to the free ends of the vibrating arm, and a neck-wire having loops in which the vibrating arm slides and locks, the whole being adapted to operate substantially as described.

206,342. SASH-FASTENERS. Jacob B. Matthews, Athens, Tenn., and August Petersohn, Washington, D. C.; said Petersohn assignor to said Matthews. Filed June 26, 1878.

Brief.—The holding-lever swings in the arc of a circle, and is provided with a button, which operates in a rectangular slot in the case. Said slot terminates in an enlargement, in which the button turns to fasten the bolt in a locked position.



Claim.—In a sash-fastener, the combination, with the lever D and case C, having the slot F', terminating at its lower end in a second slot, F, round in form and of an increased size, of the curved centrally-pivoted button E, attached to the lever D, which button and slot F serve to lock the lever in position when its holding or lower end is projected into the casing, substantially as shown and described, for the purpose set forth.

206,343. EMBALMING COMPOSITION. Richard J. McGowan, New York, N. Y., assignor to the Egyptian Embalmer Company, same place. Filed June 19, 1878.

Claim.—An embalming composition consisting of a solution of saltpeter, thymol, chloride of aluminum, salicylic acid, and glycerine in alcohol and water, substantially as and for the purpose set forth.

206,344. RETURN STEAM-TRAPS. Thos. E. McNeill, New York, N. Y. Filed Apr. 29, 1878.

Claim.—1. The combination, in a return steam trap, of the valve-operating arm G, the pivoted lever E, under control of the bucket or float, and the rolling or sliding weights F F', adapted to the lever and connected to each other, all substantially as specified.

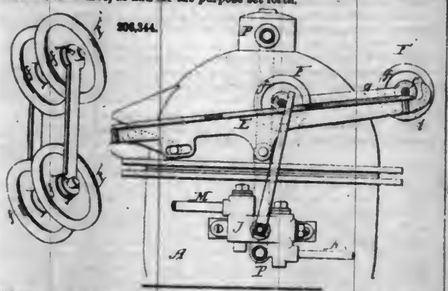
2. The combination of the pivoted lever E with the spindles *e*, disks *f*, and links *g*, all substantially as set forth.

3. The combination of a rolling or sliding weight or weights with the pivoted lever E, having at each end an inclined portion, *i*, or equivalent retaining device, as described.

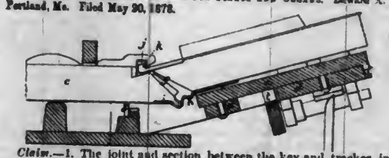
4. The combination of the reservoir A, the valve-box J, its chambers *e*, *x*, and *w*, pipes M, N, and P, and valves *z z'*, the arm G and its arms *x z*, and devices for vibrating said arm, all substantially as specified.

5. The combination of the reservoir A of a steam-trap with an inlet-pipe communicating with said reservoir at the bottom, but carried upward to a point at, near, or above the level of the top of the reservoir, and there provided with a check-valve, as and for the purpose set forth.

206,344.



206,345. TRANSPOSITION KEY-BOARDS FOR PIANOS AND ORGANS. Edward S. Millikin, Portland, Me. Filed May 20, 1878.



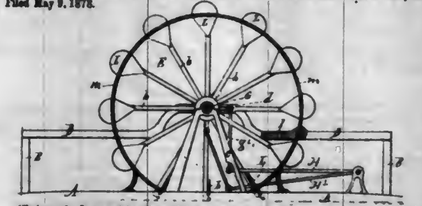
Claim.—1. The joint and section between the key and tracker, in combination with the bend *k*, groove *j*, point *i*, and spring *h*, to operate as herein described.

2. The combination of the sliding bed *a* and pins *b* and *b'* with the keys of the key-board, when separable from the tracker *c* by means of the joint and section, as herein specified, and shown in Figs. 4 and 5.

3. The sliding bed *a*, having guide-pins, as described, in combination with the bed *d*, slotted as described, the said bed *a* being adapted to be raised or depressed or moved inwardly and outwardly, as herein set forth.

4. In combination with the sliding bed *a*, the long keys, their pivots, the supplemental trackers *c'*, and their pivots *w*, as shown and described.

206,346. WATER-VELOCIPEDES. William D. Moore, New York, N. Y., assignee of three-fourths his right to Mary A. T. Rooney, Mary E. Rooney, and Eliza Tobin, same place. Filed May 9, 1878.



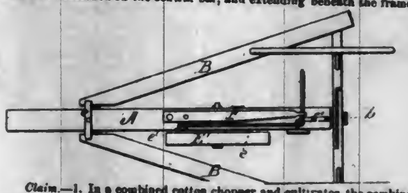
Claim.—1. In combination with a boat or vessel formed in two detachable sections, two independent paddle-wheels, armed with adjustable feathering floats, and arranged for separate operation by treadles and cranks, substantially as herein shown and set forth.

2. The combination, in a sectional boat or vessel, of the floats A A', each having framing B C D, carrying two independent paddle-wheels, E, mounted on crank-shafts G, operating treadles H, and saddle I, all arranged and operating substantially as and for the purposes as herein shown and set forth.

3. The combination of the independent paddle-wheels E, having a series of shafts, *b*, rotating or rocking floats I, and the guide *m*, such guide arranged to "feather" the floats *b* and control them when not immersed in the water, all arranged and operating substantially as herein shown and set forth.

206,347. COMBINED COTTON CHOPPER AND CULTIVATOR. William Mullens, Flat Creek, Tenn. Filed Mar. 16, 1878.

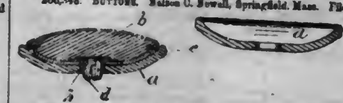
Brief.—A short spring is employed on the rear of the central bar to assist in lifting the chopper. The chopper-rod is bent at right angles at its forward end, and receives motion from the spokes of the wheel. The chopper operates on a block fastened on the central bar, and extending beneath the frame.



Claim.—1. In a combined cotton chopper and cultivator, the combination, with the central beam A, carrying the chopper mechanism, of the lateral side bars B, having cultivating-shovels, and flexibly jointed at their ends to the beam A, substantially as specified.

2. The combination, with the beam A, having the chopper mechanism thereon, of the diverging side bars B, flexibly jointed thereto, their overlapping end pieces C, and a pivot-bolt, *b*, substantially as specified.

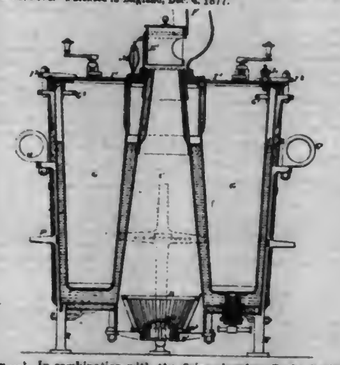
206,348. BUTTONS. Nelson C. Sewall, Springfield, Mass. Filed June 6, 1878.



Claim.—1. A button composed of the back *a*, provided with a border, *c*, made of hard rubber, and an interior cloth-covered button, *b*, said back *a* and button *b* being united and combined substantially as and for the purpose set forth.

2. The combination, with the hard rubber back *a* and cloth-covered button *b*, of the eyelet *h*, substantially as and for the purpose set forth.

206,349. PORTABLE COOKING APPARATUS. Constantin Nikiforeff, Warsaw, Russian Empire. Filed Feb. 20, 1878. Patented in England, Dec. 4, 1877.

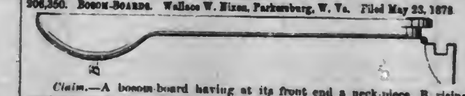


Claim.—1. In combination with the firing-chamber C, the basket-shaped fire-grate D, ring D', with shaking lever D', and the fuel-hopper E, with regulating-valve E' and side flue F, substantially as herein described.

2. The combination, with the receptacle A and caldron G, of the cover composed of the central stationary hopper and flue, supporting portion I', and the hinged flaps I, secured by suitable clamps, substantially as described.

3. The combination of the receptacles A and G, fire-chamber C, grate D, fuel-hopper E, regulating-valve E', side flue F, and hinged cover I I', constituting an improved portable cooking apparatus, substantially as herein described.

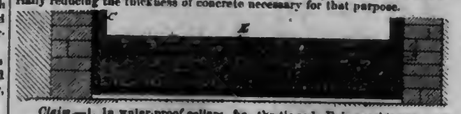
206,350. BOSOM-BOARDS. Wallace W. Hixon, Parkersburg, W. Va. Filed May 23, 1878.



Claim.—A bosom-board having at its front end a neck-piece, B, rising gradually on the face of the board, substantially as and for the purposes described.

206,351. WATER-PROOF CELLARS. Tobias New, Brooklyn, N. Y. Filed June 24, 1878.

Brief.—Improvement on Reissue No. 7,920; and consists in embedding horizontal iron rods in the concrete floor of a cellar, which bind the mass together, counterbalancing upward pressure of the water beneath, and materially reducing the thickness of concrete necessary for that purpose.

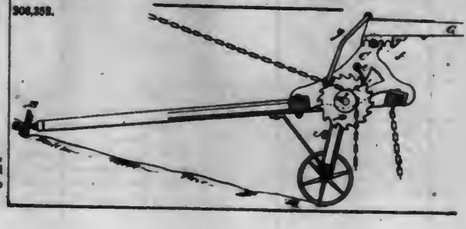


Claim.—1. In water-proof cellars, &c., the tie-rods E, in combination with layers of concrete or equivalent material, substantially as and for the purpose set forth.

2. In water-proof cellars, &c., the tie-rods E, in combination with layers of concrete and water-proof lining, substantially as and for the purpose set forth.

3. The improved method herein described of resisting the upward pressure of water, the same consisting of tie-rods, in combination with layers of concrete or other equivalent material, substantially as set forth.

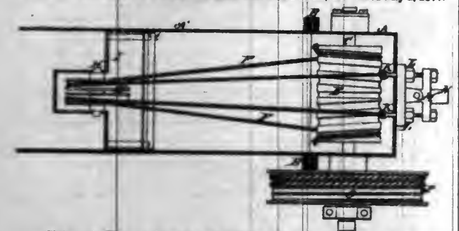
206,352.



206,352. STUMP-EXTRACTORS. Ira M. Soyer, St. Cloud, Minn. Filed June 22, 1878.

Claim.—The combination of the lever G *g* with the double-slotted plate *g'*, the fulcrum *f*, windlass D *d e*, the stump-chain bracing-shoe B, and anchor-chain, as herein set forth.

206,353. HYDRAULIC ELEVATORS. William O'Keefe, St. Louis, Mo. Filed July 2, 1877.



Claim.—1. The combination of cylinder A, shaft C, passing through the same and carrying drums or pulleys E, and drum, pulley, or wheel G, respectively inside and outside said cylinder, chain, cable, or band F, and piston I, substantially as set forth.

2. The combination of drums E and G on shaft C, cylinder A, piston I, and chains, cables, or bands F, and equalizer M, substantially as set forth.

3. The combination of cylinder A, shaft C, passing transversely through the same, carrying drums E, and drum, pulley, or wheel G, chains, cables, or bands F, pulleys D, piston I, stuffing-boxes L, and equalizer M, substantially as set forth.

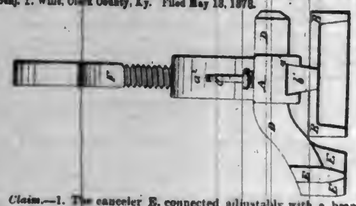
206,354. KNITTING-MACHINE NEEDLES. Samuel Peberdy, Philadelphia, Pa. Filed June 27, 1878.



Claim.—1. The combination, in a knitting-needle, of a stem, A, with a latch-lever, D, a portion of the arm *r* of which forms an inclined projection above the upper edge of the stem, when the said latch-lever is closed, all substantially as set forth.

2. The combination of the stem A, provided with the elevation *v*, with the latch-lever D, having an arm, *i*, as set forth.

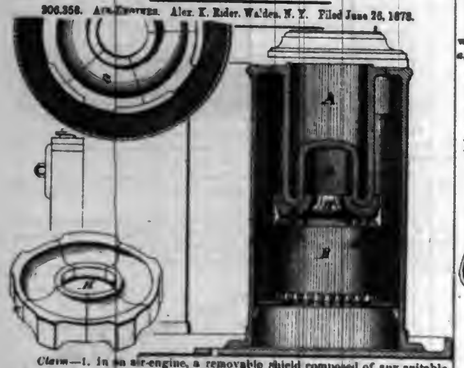
206,355. BRANDING-STAMPS. Miner T. Perkins, Log Lick, assignor of one-half his right to Benj. T. Wills, Clark County, Ky. Filed May 13, 1878.



Claim.—1. The canceler E, connected adjustably with a branding-stamp holder by an arm, D, and screw F, as shown and described.

2. The combination of the arm D, provided with a canceling device, E, upon one end thereof, and the clamping-screw and handle F, with the holder A *a*^{1} *a*^{2}, the letters B *b'*, and the set-screw C, substantially as herein shown and described.

206,356. AXE-EXTRACTOR. Alex. K. Rider, Walden, N. Y. Filed June 26, 1878.



Claim.—1. In an air-engine, a removable shield composed of any suitable refractory material, and interposed between the heater and combustion-chamber of the engine, substantially as set forth.

2. In an air-engine, a removable shield constructed of any suitable refractory material, and provided with a central passage or opening, said shield interposed between the heater and combustion-chamber of the engine, substantially as set forth.

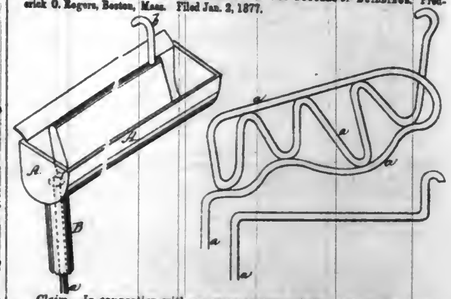
3. The combination, with the heater and combustion-chamber of an air-engine, of a shield composed of any suitable refractory material and provided with radial wings, substantially as set forth.

4. The combination, with the heater and combustion-chamber of an air-engine, of a shield provided with feet or lugs, which rest upon an annular ledge in the combustion-chamber, substantially as set forth.

5. A shield for air-engines constructed with central and circumferential passages, substantially as set forth.

6. The combination, with the heater and combustion-chamber of an air-engine, of a shield interposed between said heater and combustion-chamber and suitable refractory lining for the fire box or chamber, the several parts being arranged to constitute a reverberatory chamber around the sides of the heater, substantially as set forth.

206,357. DEVICES FOR MELTING SNOW AND ICE IN THE GUTTERS OF BUILDINGS. Frederick O. Rogers, Boston, Mass. Filed Jan. 2, 1877.



Claim.—In connection with an eaves-gutter and its conductor or leader, the air and water tight heating-pipe *a*, extending within and throughout the entire length of the conductor B and the gutter A, substantially in the manner described, and adapted to circulate hot air, steam, or hot water, as and for the purposes set forth.

206,358. UNDERWAISTS. Clementine B. Robbins, South Abington, Mass. Filed June 22, 1878.



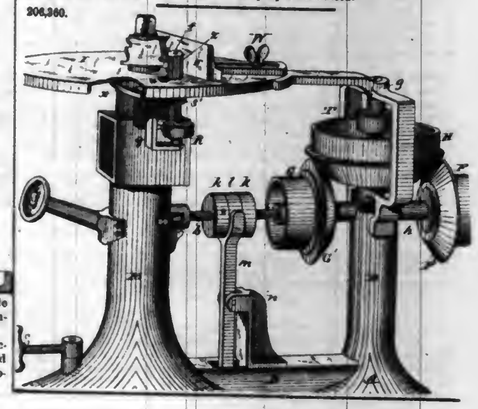
Claim.—The improved under-waist described, consisting of the pieces A A C C G G, gores B B D D, yoke E E, and sleeves F F, constructed and arranged to operate substantially as and for the purpose set forth and specified.

206,359. NUT-LOCKS. Walter P. Scofield, Chattanooga, Tenn. Filed May 29, 1878.



Claim.—The combination of the rails and the fish-plates, as constructed, with the bolts or pins D D, the cam and recessed faced collar E, and rubber *e*, constructed substantially as and for the purpose set forth.

206,360.



206,360. VARIETY MOLDING MACHINES. Samuel J. Shimer and Geo. J. Shimer, Milton, Pa. Filed Apr. 20, 1878.

Brief.—Two tubular uprights are furnished with bearings for the counter-shaft of two beveled friction-pulleys, by which motion is given to the cutter-head, which is mounted in bearings provided in a housing, which can be raised and lowered at will. By a shifting device, which is partly covered by the hollow base connecting the uprights, the motion is reversed. A removable feeding device hinged to the under side of the table works against the stuff, which travels past a suitable guide.

Claim.—1. The combination, as hereinbefore described, of the two tubular uprights D E, with bearings, the hollow bed or base B, connecting the uprights at the base, the endwise-movable counter-shaft *b*, arranged in the bearings near the upper ends of the uprights, the shifting mechanism, a portion of which is concealed by the hollow base, and the friction-gear, all constructed and arranged to operate as set forth.

2. The adjustable combined belt-pulley and bevel-cone herein described, with the recessed hub *i*, for the purpose explained.

3. In a reversible shaping machine, the combination of the lever-arm S, having an eccentric, P, attached at its lower end, and working between two springs, *g' g'*, on the shifting-bar, with a pivoted lever, *m*, having collar *l* encircling the counter-shaft *b*, substantially as and for the purpose set forth.

4. The combination of the lever S, eccentric P, shifting-rod 2, pivoted forked lever *m*, collar *l*, counter-shaft *b*, and pulleys F, G, and H, substantially as and for the purpose set forth.

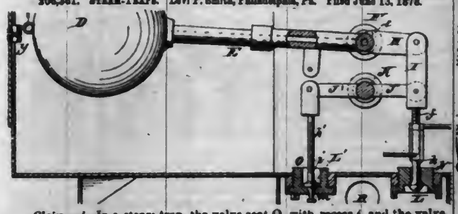
5. The combination, as hereinbefore described, with the tubular upright E, supporting at its upper end the stationary table I, of the movable housing L, constructed with the bearings 3 3, and the rack attachment M, the vertical mandrel L^2, journaled in the bearings 3 3 of the housing, and the worm-wheel N, arranged at the lower end of the inclined shaft Q, and engaging with the cogs of the attachment M, all constructed and arranged as shown and described.

6. In combination with the table I, having a curved slot, *w'*, a supporting-frame suspended to the under side thereof and carrying a feed-roll, which passes upwardly through the said slot, for the purpose set forth.

7. In combination with the slotted table I, having a guide or gage, the self-adjusting feed-roll *z*, passing upwardly through the slot in said table, and operated by driving mechanism, substantially as described.

8. In a molding-machine, the combination, with revolving cutters, of the pattern 6, with center 7, adapted to receive the object to be molded, and the compound guide 4, having slot 8 in its face-plate, operated in the manner as set forth.

206,361. STEAM-TRAPS. Levi P. Smith, Philadelphia, Pa. Filed June 13, 1878.



Claim.—1. In a steam-trap, the valve-seat O, with recess *i*, and the valve L', working within the recess and provided with the head *m* below the valve-seat, in combination with the stem *h'*, float D, and lever E, substantially as and for the purposes herein set forth.

2. In a steam-trap, the combination of the float D, lever E H, stirrup I, rock-shaft K, with arms J J', valve L, and seat N, and the valve L', with head *m*, and seat O, with recess *i*, substantially as and for the purposes herein set forth.

3. The combination, in a steam trap, with the hollow float D and hollow lever E, of the shaft F, having one end solid and supported on a stud, *a*, with spring *b* to act thereon, and the other end of the shaft hollow and forming a ground joint, *d*, with the hollow plug G, substantially as and for the purposes herein set forth.

4. In a steam-trap, the combination of the hollow float D, with hollow stem E, the hollow ground joint shaft F, with arm H, the stirrup I, rock-shaft K, with arms J J', valve L', with head *m* and stem *h'*, and the valve-seat O, with recess *i*, all constructed substantially as and for the purposes herein set forth.

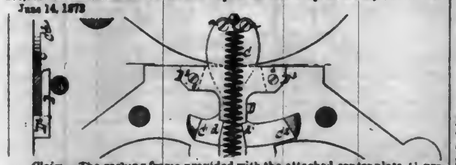
206,362. BALE-TIES. Moses C. Smith, Starkville, assignor to Edwin S. Lenox, New York, N. Y. Filed Dec. 10, 1877.



Claim.—1. The herein-described bale-tie A, having its ends C D twisted and locked together, substantially in the manner and for the purpose specified.

2. The mode or process of securing wire bale-ties about bales of hay or other similar substances while in the press, substantially as shown and described.

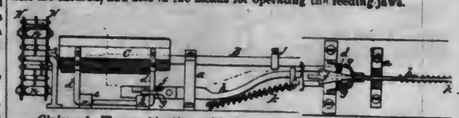
206,363. ROCKING-CHAIRS. Christian S. E. Speerl and John G. Speerl, Brooklyn, N. Y. Filed June 14, 1878.



Claim.—The rocking frame provided with the attached center plate, C, projecting downwardly, and having its lower free end constructed with lateral shouldered projections C^1 C^2, in combination with the base-frame B, having the attached plate D, between which and the side rails of said frame the center plate, C, swings, the edges of said plate D serving as stops to the shouldered projections C^1 C^2 of the center plate, all substantially as and for the purpose described.

206,364. GREEN-CORN KNIVES. Welcome Sprague, Buffalo, N. Y., assignor of one-half his right to the Erie Preserving Company, same place. Filed June 1, 1878.

Brief.—The novelty consists in the peculiar construction of the cutter-head, the cutters being opened and closed simultaneously, and the cutters and scrapers being so arranged that the centering of the ears and even cutting of the kernels are insured, and also in the means for operating the feeding-jaws.



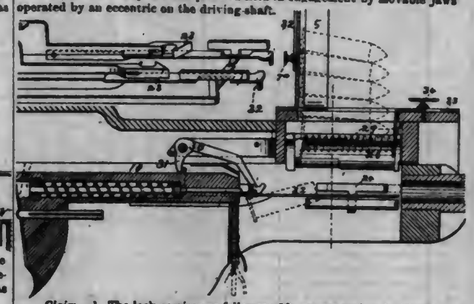
Claim.—1. The combination, with the circular frame N, of the cutters *a a'*, attached to the inner ends of arms P P', pivoted with their outer ends to said frame, links *p*, connecting each adjacent pair of arms P P', and elastic band *q*, substantially as shown, and for the purpose set forth.

2. The combination, with the circular frame N, of a series of cutters, *a a'*, attached to arms P P', all connected by links *p*, and a set of scrapers, *s*, attached to arms S, all connected by links *t*, and arranged in the rear of the cutters, and made concave on the side facing the cutters, for facilitating the cutting of the ears of corn, substantially as and for the purpose set forth.

3. The combination, with the jaws C C, arms *d d*, and plunger B, provided with collar *j*, of the rod *k*, wedge *f*, inclined guide-pieces *g*, and spring *k*, substantially as and for the purpose set forth.

206,365. MACHINE-GUNS. James P. Taylor, Elizabethtown, assignor of one-half his right to John Barter, Knoxville, Tenn. Filed Nov. 30, 1877.

Brief.—A longitudinally sliding rod is carried by the lock carriers or bolts, which rod comes in contact with a stop on the forward movement of said bolts, whereby a pivoted catch is retracted and the firing-bolt drawn back. At the proper time a cam carried on the driving-shaft moves the catch laterally and releases the firing-bolt. When the extractors have seized the discharged shells they are clamped and held in engagement by movable jaws operated by an eccentric on the driving-shaft.



Claim.—1. The lock carriers or followers 16, constructed as herein shown and described, and carrying the firing-pins and the devices for retracting and releasing the same, as explained.

2. The combination of the spring firing-pin, the latch, the sliding rod, and the stop with the cam adapted to retract said latch and cause the discharge of the piece, as explained.

3. The combination, with the firing-pin, the sliding rod, and latch, of a retractible stop, to prevent the operation of the firing mechanism when desired.

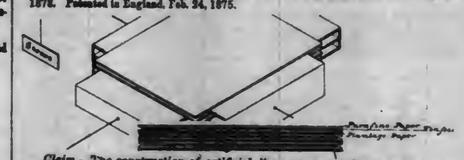
4. A machine-gun provided with cartridge-extractors 23 and a locking device, 24, moved relatively to the said extractors by an independent connection with the main shaft, substantially as set forth.

5. The spring guiding-jaws 32 32, in combination with the firing-chamber and extractor, and with an ejector, 30 31, for knocking the shell or cartridge out from between said jaws, as explained.

6. The plate 33, projecting down within the hopper-throat to serve as a guide for the points of the cartridges, and adjustable by means of a set-screw, 34, to suit cartridges of different lengths.

7. The combination, with the guide-plates 5 and back plate 6, of the extension-plate 7, to serve as a guide in introducing the cartridges, as explained.

206,366. TELEGRAPHIC ACCUMULATORS AND CONDENSERS. Herbert A. Taylor, Cornhill, London, and Alex. Muirhead, 159 Camden Road, Middlesex County, England. Filed May 16, 1878. Patented in England, Feb. 24, 1875.



Claim.—The construction of artificial lines or accumulators having also power of conduction by combining the following parts: first, conducting-strips of paper prepared with plumbago or other conducting material, by which the current passes through the instrument; second, metal foil or other conducting material having an earth connection, through which it charges and discharges itself; third, separating sheets of dielectric or insulating material, the whole arranged substantially as described.

206,367. MAGAZINE FIRE-ARMS. Frank W. Tiesing, New Haven, Conn. Filed Feb. 13, 1878.

Brief.—A detent or stop for regulating the flow of cartridges from the magazine to the chamber of the barrel is operated by the bolt in its backward and forward movements to open and close the breech.



Claim.—1. The combination, in a magazine fire-arm, of the longitudinally-sliding breech, the holder *f*, and dog *d*, substantially as and for the purpose described.

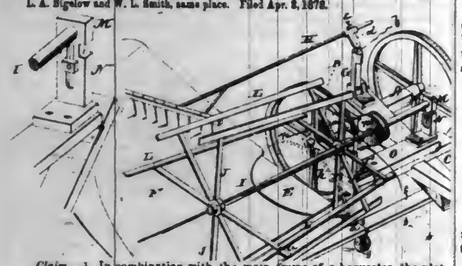
2. The combination, in a magazine fire-arm, of a longitudinally-sliding breech-piece, the holder *f*, dog *d*, ejector *g*, with its upward projection *m*, and notch *r* on the under side of the breech piece, substantially as described.

3. The combination, in a magazine fire-arm, of a longitudinally-sliding breech-piece, the holder *f*, dog *d*, ejector *g*, with its upward projection *m*, and notch *r* on the under side of the breech-piece, with a spring, *i*, between the ejector and holder, and common to both, substantially as described.

4. The combination, in a magazine fire-arm, of a longitudinally-sliding breech piece, holder *f*, dog *d*, and stop or slide *w*, substantially as and for the purpose described.

5. The combination, in a magazine fire-arm, of the holder *f*, dog *d*, and the follower in the magazine, constructed with an annular projection, R, substantially as and for the purpose specified.

206,368. HARVESTERS. Nathaniel J. Titus, Portland, N. Y., assignor of one-half his right to L. A. Bigelow and W. L. Smith, same place. Filed Apr. 8, 1878.

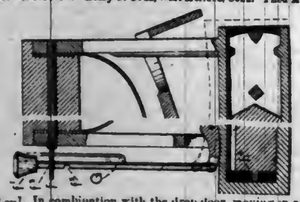


Claim.—1. In combination with the main frame of a harvester, the platform F, secured to the hinged cutter-bar, the board E, hinged to the platform, and the reel J L, mounted upon the hinged board O, all substantially as and for the purposes herein set forth.

2. The combination of the knuckle and swivel joint *b d*, the rake-handle H, adjustable therein, standard G, and set-screw *e*, all substantially as and for the purposes herein set forth.

3. The combination of the reel-shaft J, slides M M, standards N N, and hinged board O, as and for the purposes herein set forth.

206,369. SAD-IRONS. Henry B. Todd, West Meriden, Conn. Filed May 14, 1878.



Claim.—1. In combination with the drop-door, moving in a vertical plane and having a lever-arm pivoted at one end to the iron, an actuating-rod, substantially as described, for moving the lever-arm.

2. In combination with the drop-door and connecting-lever, the actuating-rod, having notches *f*', the spring G, and plate *f*, substantially as described.

3. In a sad-iron, a drop-door at the rear thereof, attached to an arm pivoted near the front of the sad-iron, and operated by a parallel projecting thumb-lever, substantially as shown and described.

206,370. WATER-CLOSETS. William Turton, Brooklyn, N. Y. Filed July 10, 1878.



Claim.—1. The combination, with the plunger-receptacle B and bell-trap overflow-plunger C, of a partition interposed between the plunger-receptacle B and pan A, to prevent the overflow and trap of the plunger from becoming clogged, substantially as described.

2. The combination, with the hopper A and plunger-seat E, of the plunger composed of jacket *i*, bell *h*, nipple *j*, rod *e*, and strainer *k*, substantially as described.

206,371. MOP-WRINGERS. Charles A. Valle, Worcester, Mass., assignor to Joseph M. Rice, same place. Filed Mar. 18, 1878.

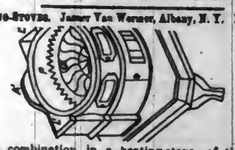


Claim.—1. A mop-wringer consisting, essentially, of a flexible spiral or volute spring, A, provided with means for supporting or attaching it to the tub or pail for operation, substantially as set forth.

2. The spring-volute A, provided with end hook A' and looped ears C, for the purposes set forth.

3. In combination with the flexible volute A, the supporting-head C B, provided with guard finger or projection F, for the purpose set forth.

206,372. HEATING-STOVES. James Van Wormer, Albany, N. Y. Filed May 23, 1877.



Claim.—The combination, in a heating-stove, of the exterior vertical descending flues, *l' l'*, isolated from each other and from the ascending flue, but not from the stove, and the connected lateral side base-flues, *l'' l''*, central lateral base-flue, *A''*, and connected rear ascending flue, *A'*, as herein shown and described.

206,373. STEAM-VALVES. Caleb C. Walworth, Boston, Mass. Filed July 3, 1878.



Claim.—The combination, in a steam-valve having the body A, stand B, spindle C, and stuffing-box D, of the open evaporating cup or cups E, substantially as shown and described, and for the purpose specified.

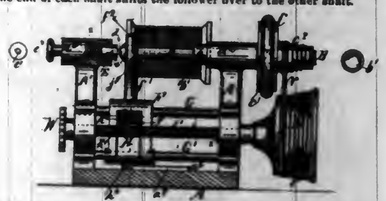
206,374. METALLURGIC FURNACES. Wm. M. Watson, Towles, Ill. Filed Nov. 3, 1877.



Claim.—The combination, substantially as hereinbefore described, in a metallargic furnace, of the single bridge-wall D, having the central passage or chamber *a*, and a series of air-holes, *s*, communicating with said chamber through the bridge-wall immediately below the grate-bars, an air distributer and regulator, and the divisions D', having interior chambers *d* and air-passages *d'*, as and for the purposes set forth.

206,375. BOBBIN-WINDERS FOR SEWING-MACHINES. J. C. White, New York, N. Y. Filed Nov. 21, 1877.

Brief.—The thread-guide and spring-presser are carried by a sliding block, moved from one end to the other of the device by the screw-threaded arms of a follower-block situated between the lower projecting portions of the block, coming in contact with one of two screw-shafts on opposite sides of the bars on which the block and follower slide, being held there by a lug on the bottom of the follower coming in contact with a spline on the base-plate. A pin near the end of each shaft shifts the follower over to the other shaft.



Claim.—1. The sliding block F, provided with the arm *f'*, spring-presser *f''*, guide *f'''*, and opening *f*, substantially as and for the purpose set forth.

2. The follower H, provided with the arms h^1 h^2 and lug h^3, in combination with the worm-shafts I I', with pins i^1 i^2, guide-piece a^4, and sliding block F, substantially as and for the purpose set forth.

3. The worm-shafts I I', provided with pins i^1 i^2 and cog-wheels W W, in combination with the follower H, having the arms h^1 h^2 and the sliding block F, substantially as and for the purpose set forth.

206,376. TOY MONEY-BOXES. Samuel Whitman, Green Point, N. Y. Filed Dec. 6, 1877.

Brief.—The springs are intended to prevent the loss or ready extraction of the coins by way of the deposit-opening.



Claim.—One or more springs, B, arranged within a toy bank, below the aperture through which the money is dropped, for the purposes herein set forth.

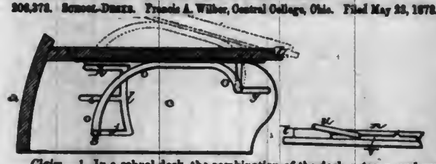
206,377. MANUFACTURE OF BOOTS AND SHOES. H. Wight, Natick, Mass., assignor to Charles H. Wight, Brooklyn, N. Y. Filed June 24, 1878.



Claim.—1. In the manufacture of boots and shoes, the vamp provided with a central longitudinal slit over the instep part, which is spread or opened, and a tongue secured by its edges to the edges of the slit, substantially as shown and described.

2. The vamp V' and boot-leg L', in combination, in the manner and for the purposes set forth.

206,378. SCHOOL-DESKS. Francis A. Wilbur, Central College, Ohio. Filed May 23, 1878.



Claim.—1. In a school-desk, the combination of the desk *a*, top *n*, and supporting-brackets for connecting them together, that are adjustable at their rear ends, and movable back and forth and up and down at their front ends, substantially as shown.

2. A desk, *a*, having the double ends *c d*, having suitable grooves in their inner sides, the spaces between the ends being adapted to receive the supporting-brackets for the top, substantially as described.

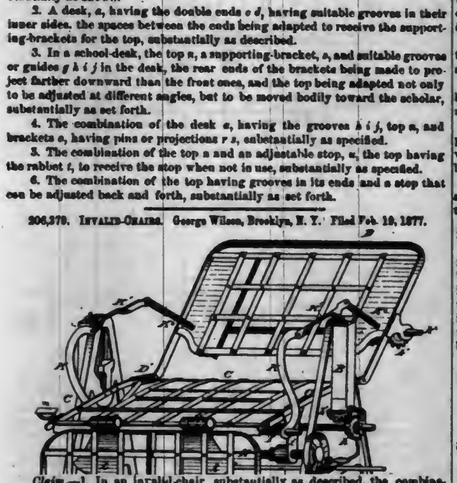
3. In a school-desk, the top *n*, a supporting-bracket, *s*, and suitable grooves or guides *g h i j* in the desk, the rear ends of the brackets being made to project further downward than the front ones, and the top being adapted not only to be adjusted at different angles, but to be moved bodily toward the scholar, substantially as set forth.

4. The combination of the desk *a*, having the grooves *h i j*, top *n*, and brackets *s*, having pins or projections *r x*, substantially as specified.

5. The combination of the top *n* and an adjustable stop, *u*, the top having the rabbet *t*, to receive the stop when not in use, substantially as specified.

6. The combination of the top having grooves in its ends and a stop that can be adjusted back and forth, substantially as set forth.

206,379. INVALID-CHAIRS. George Wilson, Brooklyn, N. Y. Filed Feb. 19, 1877.



Claim.—1. In an invalid-chair, substantially as described, the combination of the geared screws and their seat-suspending nuts with the main frame, for raising and lowering the seat in plane, substantially as set forth.

2. The combination of the shafts H I, worm-wheel J, worm J^1, gears j j^1, levers K, and arms K^1, connected with the back-frame D, for adjusting it to an angle with relation to the seat-frame C, substantially as described.

3. The combination of the shaft H, worm-quadrants L, worms M, and gears *m m'*, for adjusting the leg-sections E with relation to the seat-frame C, substantially as described.

4. The combination, with the seat C, of the stirrups *n* at the corners thereof, for the purpose set forth.

206,380. ROTARY ENGINES. Wm. C. Wolfe, Johnstown, Pa. Filed May 13, 1878.

Claim.—1. In a rotary engine, the hollow base *b*, forming a chamber through which the feed-water passes on its way to the boiler, the water being heated from the top plate of the boiler, substantially as shown.

2. A rotary engine having a hollow base, *b*, in which is secured the plate or partition *x*, to form the chamber *z*, for the purpose of heating the feed-water by means of the exhaust-steam, substantially as described.

3. The combination of the pedestal A, having a transverse opening through it, and driving-wheel *g*, having a tapering groove in its outer edge, with the tapering abutment *o*, passed up through the bottom of the case into the said groove, and held in position by the screw-plug *m*, substantially as set forth.

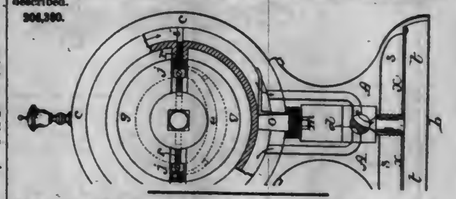
4. The driving-shaft S, made square at its center, in combination with the driving-wheel *g*, having the opening through its center made larger at the ends than the center, so as to allow the shaft a slight movement without affecting the wheel, substantially as specified.

5. In a rotary engine, the combination of the tapering shaft S, hubs 3, having the flanges 3 in their inner ends, and glands *l*, the glands being provided with heads that are smaller in diameter than the bodies, so that the glands can be screwed their whole length into the hub, substantially as shown.

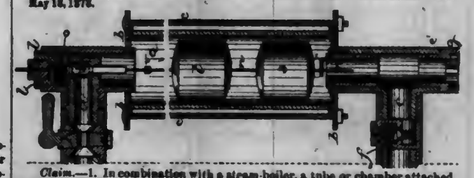
6. The piston-rods *r*, having the adjustable blocks *f* attached thereto, in combination with the cam *c*, substantially as described, as a means of adjusting the pistons in and out.

7. The combination of the base A, having a transverse slot through it to receive the valve-box, with the tapering valve *d*, having a longitudinal groove to receive the steam, and a transverse groove to discharge the exhaust-steam, all arranged and constructed to operate, in a rotary engine, substantially as described.

206,380.



206,381. WATER-INDUCTORS FOR STEAM-BOILERS. Wm. C. Wolfe, Johnstown, Pa. Filed May 14, 1878.



Claim.—1. In combination with a steam-boiler, a tube or chamber attached thereto, communicating with the water at one end and the steam-space at the other, and provided with valves *f g i*, and double floats for operating the valve *i*, constructed and arranged to operate substantially as shown.

2. The combination of the tube *e*, having the pipes *d e*, for connecting it to the boiler, with the valve *i* and two floats connected thereto, substantially as described.

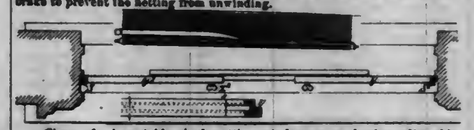
3. In a water-conductor for steam-boilers, the combination of the rod *n*, having a float, *s*, valve *i*, and stop *v* secured permanently thereto, with the movable float *t*, spring *o*, and a regulating device, *l*, substantially as shown.

4. The tube or chamber *e*, connected to the boiler by the pipe *e*, which is provided with the automatic valves *f g*, whereby the water in the boiler is prevented from rising in the tube, but the water in the tube can pass into the boiler until equilibrium is restored, substantially as set forth.

5. The puppet-valve *i*, connected to the rod *n*, and having a regulating-spring placed upon its top, for controlling the entrance of the steam to the tube or chamber, substantially as shown.

206,382. WINDOW-SCREENS. Frederick W. Wood, New York, N. Y. Filed July 2, 1878.

Brief.—The frame consists of adjustable top and bottom bars, and side rollers provided with wire trunnions fitting in sockets in the end of the bars. The bars consist of a center piece having a dovetail projection fitting in grooves in two end-pieces. The set-screws are a little to one side, so that the netting may be clamped in the groove on the opposite side of the bar. The netting is tacked on the rollers. Holding-strips of leather or other slightly elastic material are stretched upon the roller between the trunnions, serving as a brake to prevent the netting from unwinding.



Claim.—1. A portable single-netting window-screen, having adjustable top and bottom bars, independent of each other, and adapted to receive and clamp the upper and lower edges of the netting, each of said bars being composed of a middle piece having a dovetail tongue, two end pieces having matching grooves, and a pair of thumb-screws to unite the parts, substantially as herein specified.

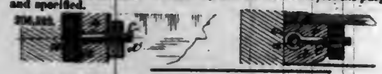
2. The combination, in a window-screen, of adjustable top and bottom bars having pivotal sockets at their ends, and a pair of edge rollers pivoted in said sockets, with netting attached at its ends to said rollers and tightened thereby, as herein specified.

3. The combination, in a window-screen, of adjustable top and bottom bars having pivotal sockets at their ends, a pair of edge rollers pivoted in said sockets, netting attached at its ends to said rollers, and holding-strips applied to said netting upon said rollers, substantially as herein shown and described, for the purpose set forth.

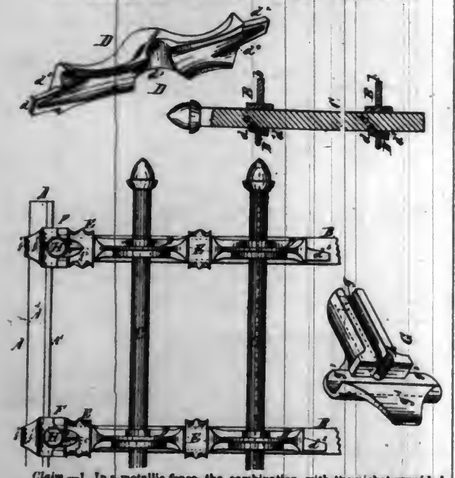
206,383. SASH-HOLDERS. William D. Wright, Baltimore, Md. Filed May 7, 1878.

Brief.—A rod provided with an eye at one end, through which the sash-cord passes, and screw-threaded at the other, is passed through the sash. The sash may be held in any position by tightening the nut on the rod, the effect being to clamp the cord between the ring and a metal plate, which is retained in a groove in the sash.

Claim.—The combination, with a window frame and sash, of a rod, cord, or rope, D, screw threaded rod C, having eye *c*, thumb-nut *d'*, and plate *d*, all arranged and operating substantially as herein set forth, for the purposes shown and specified.



206,304. METALLIC FENCES. James Young, Kenton, Ohio. Filed Feb. 1, 1878.



Claim.—1. In a metallic fence, the combination, with the picket provided with one or more conical recesses and a cross-rail, of a clamp having a conical projecting lug or stud, substantially as described, for the purpose specified.

2. The clamp D, provided with a tapering recess, *d'*, substantially as shown, and for the purpose specified.

3. The clamp D, provided with a conical lug or projection, *d*, a tapering recess, *d'*, and the tapering ears or projections *d''*, all arranged and constructed substantially as described, for the purpose specified.

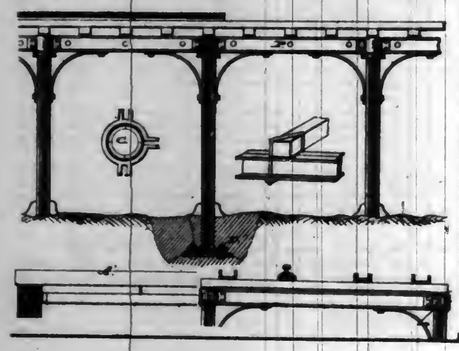
4. The combination of the T-shaped cross-rail B, the picket C, having conical recesses *c*, the clamp D, having a tapering recess, *d'*, on its rear face, and a conical projection, *d*, formed centrally at or near the upper edge of said recess, and provided with lips *d''*, the upper edge of which inclines from the base toward the extremity, and said lips being located as described, and the clip E, all constructed, arranged, and operating substantially as and for the purposes specified.

5. In a metallic fence, the combination, with the T-shaped post A and T-shaped cross-rail B, of the two-part clamp F G, constructed to practically inclose said post and rail, and the bolt H, all constructed substantially as described, for the purpose specified.

6. The combination of the clip E and cross-rail B, the plate *b* of which is provided with a recess, *b'*, with the two-part clamp F G, the section G of which is provided with a horizontal groove and lug, *g*, and the lip or projection *f'* of the section F, the bolt H, and post A, all constructed, arranged, and operating substantially as described, for the purpose specified.

206,305. ELEVATED RAILWAYS. John W. Post, New York, N. Y. Filed July 11, 1878.

Brief.—The supporting-columns are filled with a packing of cork to prevent noise. The packed longitudinal and cross girders are supported at their ends by split collars resting upon rings near the top of the columns. The rails rest in continuous chairs, the edges of which are turned up over the rail-flanges, and over the spikes which secure the rails to the cross-ties, an interposed packing being located between rail and chair. Sound-deadening buffers, with cushioned ends, are suspended from the cross-ties, their ends bearing lightly against the longitudinal girders.



Claim.—1. In combination with the superstructure of an elevated railway, the hollow columns for supporting the same and the cork packing within said columns, substantially as and for the purposes specified.

2. In combination with the columns or standards of an elevated railway and the girders thereof, the split collars and their lugs for securing the girders to the columns, substantially as specified.

3. In combination with the columns, the collars, and the girders, the packing interposed between the surfaces of the same, substantially as specified.

4. In combination with the girder, the packing at the sides of the same and plates and strips for confining it in place, substantially as specified.

5. In combination with an elevated railroad structure, the continuous chair, having the upturned edges thereof bent down in such a manner as to form a perfect lock for the spike holding the rail.

6. In combination with the superstructure of an elevated railway, the continuous rail-chair provided with longitudinal slots at intervals throughout its length, as and for the purpose specified.

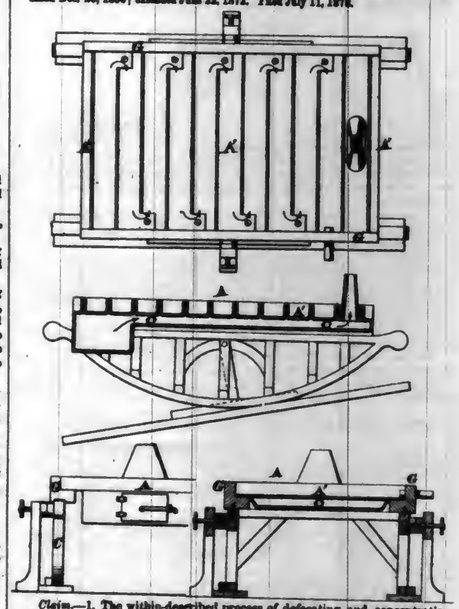
7. The combination, in an elevated railway, of the rail, its continuous chair, and the intervening packing, substantially as specified.

8. In combination with the cross-ties and the longitudinal girders, the U-shaped staples passing diagonally over the ties and through the flanges of said girders, on opposite sides thereof, substantially as and for the purposes specified.

9. The transverse beam secured to the tie, and provided with buffs or bumpers at each end, and held lightly against the girders, thereby materially lessening the vibration of the same, substantially as specified.

REISSUES.

8,341. PROCESSES AND APPARATUS FOR EVAPORATING AND DEFECATING CANE-JUICE. Dual H. Cook, Mansfield, Ohio. Patent No. 20,631, dated June 22, 1858; Reissue No. 807, dated Dec. 30, 1859; extended June 22, 1872. Filed July 11, 1878.



Claim.—1. The within-described process of defecating and concentrating raw sugar-juices by passing the same in a moving body through an open evaporating-pan exposed to the direct action of the fire, substantially as and for the purposes described.

2. An evaporating-pan furnished with transverse ledges, in combination with a fire-furnace, a portion of the bottom surface of the pan, near each side, being unexposed to the direct heat of the furnace, so that while the intermediate surface of the bottom of the pan is intensely heated, the other portions remain comparatively cool, substantially as and for the purposes set forth.

3. In combination with an evaporating-pan for evaporating a moving body of liquid, means, substantially as described, for elevating or depressing either end of the pan to regulate the flow of the liquid through the same, as set forth.

4. An evaporating apparatus which allows of a circulation of the stream of sirup, boils it at the center of the pan, and cools it at the sides of the same, and affords facilities for regulating the flow of the stream, substantially as and for the purposes set forth.

5. The combination, in an evaporating-pan, of the sheet-metal bottom A' and the wooden sides G G, substantially as and for the purposes described.

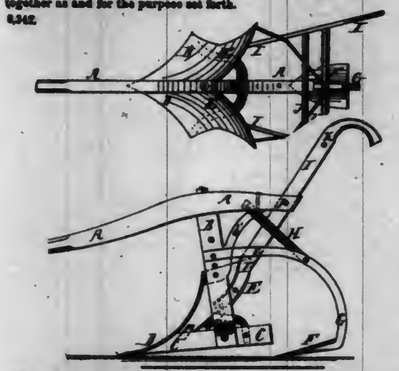
6. In combination with an open evaporating-pan having transverse ledges arranged across the line of draft of the frame of the furnace, and capable of receiving a greater or less inclination, for the purpose of regulating the flow of the juices through it, a furnace of less width than the pan, substantially as and for the purposes described.

8,342. SUBSOIL-PLOWS. Ira M. Griffin, Maryville, Mo. Patent No. 155,438, dated Sept. 29, 1874. Filed July 3, 1878.

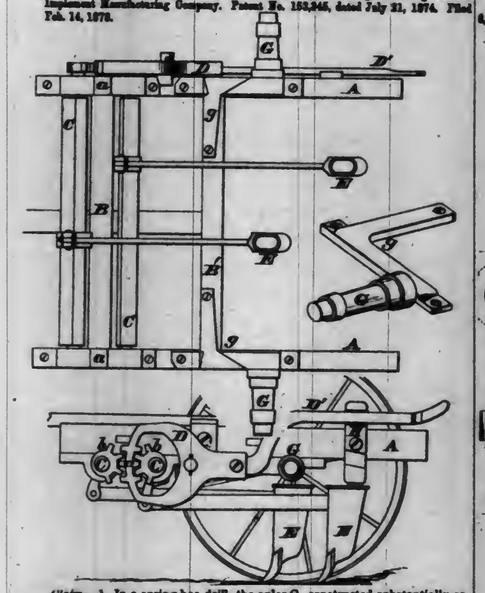
Claim.—1. The combination of the subsoil-plow plate F, the adjustable curved standard G, and the adjustable braces H with the standard B, the foot C, the double point D, the double mold-board E, and the handles I, substantially as herein shown and described.

2. The double plow B D and the subsoil-plow F, combined and arranged together as and for the purpose set forth.

8,342.



8,343. SEEDERS. John F. Keller, Hagerstown, Md., assignor to Hagerstown Agricultural Implement Manufacturing Company. Patent No. 153,345, dated July 21, 1874. Filed Feb. 14, 1878.

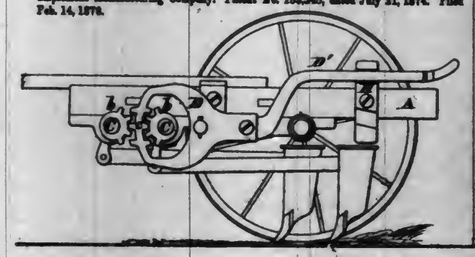


Claim.—1. In a spring-hoe drill, the axles G, constructed substantially as described, in combination with the bars A A B' and hoes E, as and for the purposes set forth.

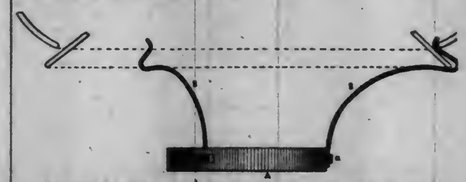
2. The combination, in a spring-hoe drill, of the crooked axle crossing the machine forward of the foremost line of hoes, with the hoes arranged relatively to one another, substantially as described, so as to permit the hoes to be raised when meeting with obstructions.

3. In a spring-hoe drill, the short axle G, with crooked arms *g*, constructed substantially as described, so as to act as a brace to strengthen the machine.

8,344. SEEDERS. John F. Keller, Hagerstown, Md. assignor to Hagerstown Agricultural Implement Manufacturing Company. Patent No. 153,345, dated July 21, 1874. Filed Feb. 14, 1878.



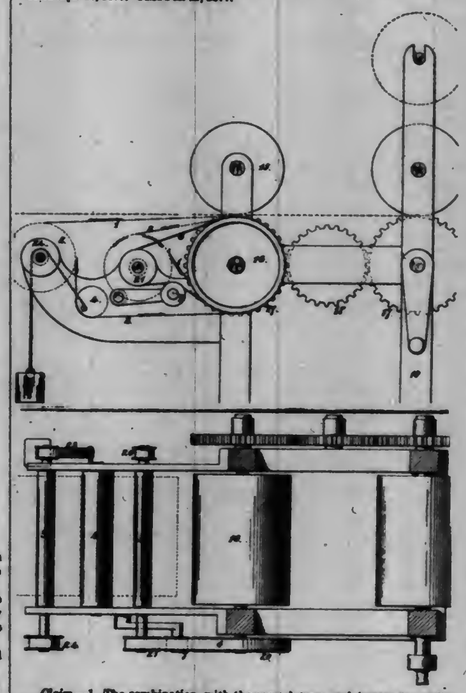
8,345. LAMP-SHADE HOLDERS. Elliott P. Gleason, Brooklyn, N. Y. Patent No. 94,906, dated Nov. 16, 1869. Filed June 1, 1878.



Claim.—1. In a globe or shade holder for gas or other burners, the combination of the arms B, having a flattened and half-round formation, with the ring A, provided with the straps *a*, constructed substantially as and for the purposes set forth.

2. A shade-holder for gas or other burners consisting of the ring A, provided with supporting-arms B, having their outer ends bent into the particular form represented in the drawing, for the purpose of enabling them to support a shade or globe either on the inner or outer side of its lower edge or rim, all in the manner shown and described.

8,346. PRINTING-MACHINES. Richard M. Hoe, New York, N. Y. Patent No. 160,951, dated Apr. 27, 1875. Filed Feb. 19, 1877.



Claim.—1. The combination, with the second type and impression cylinders of a perfecting printing-press, an offset-web, and its winding-pulleys, of means for alternately winding the said web from one pulley-shaft around the said impression-cylinder and onto the companion pulley-shaft, and then rewinding the same in the reverse direction, all substantially as described.

2. The combination, with the impression-cylinder 16, of the offset-web, its winding-pulleys 3 5, and suitable gearing for driving the pulleys alternately in opposite directions to wind the offset-web from one pulley-shaft to the other, whereby opposite sides of said offset web or sheet are alternately presented to the printed surface, substantially as described.

3. The combination of impression-cylinder 16, offset-web, winding-pulleys 3 5, guide-roll 4, and suitable gearing for driving the pulleys 3 5 alternately in opposite directions, substantially as described.

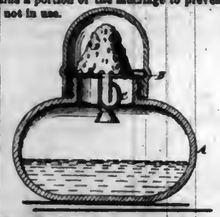
4. The combination of impression-cylinder 16, offset-web, winding-pulleys, gearing to alternate the motion of the winding-pulleys, and a suitable tension device changeable from one pulley to the other, substantially as described.

8,347. MUCILAGE-BOTTLES. George B. Wight, New York, N. Y. Patent No. 172,896, dated Jan. 18, 1876. Filed Mar. 26, 1878.

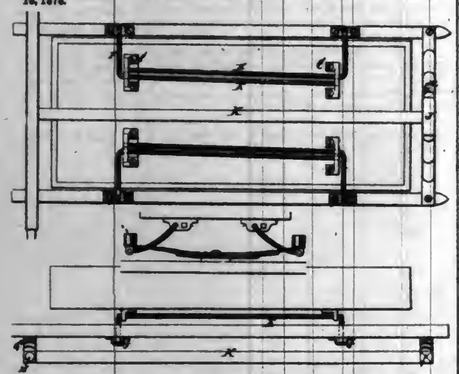
Claim.—1. The combination of the metallic cap B, provided with the S-tube C and the sponge D, with the neck of a mucilage-bottle, A, substantially as herein shown and described.

2. The cap for mucilage-bottles, constructed substantially as hereinbefore set forth, provided with a cut-off or trap, which allows the mucilage to flow out freely, but retains a portion of the mucilage to prevent the entrance of air to the bottle when not in use.

8,347.



8,348. VEHICLE-SPRINGS. Wm. F. Whitney, Poughkeepsie, N. Y., assignor of one-half interest to Edwd. Storm, same place. Patent No. 160,522, dated Oct. 26, 1875. Filed Apr. 16, 1878.



Claim.—1. The combination, with the body and side bars of a slide-bar wagon, of torsion-springs consisting of torsion rods or bars and attached arms, the said rod or bar and arm of each spring being connected, one with the body and the other with one of the side bars, substantially as herein described.

2. The combination, with the body and side bars of a side-bar wagon, of a torsion-spring consisting of a torsion rod or bar and an attached arm, when the said rod or bar is arranged lengthwise of the body and the said arm is connected with the side bar, substantially as herein described.

3. The combination, with the body and side bars of a side-bar wagon, of two or more torsion-springs, each applied to act independently of the other or others between the body and one of the side bars, substantially as herein described.

4. The combination, with the body and one of the side bars of a side-bar wagon, of a torsion-spring consisting of a torsion rod or bar, one end of which is rigidly secured to the body of the wagon and the other end of which is furnished with an arm, which is connected with the side bar, substantially as herein described.

5. The combination of a torsion-spring, one end of which is rigidly secured to the bottom of the body of a side-bar wagon and the other end of which is furnished with an arm attached to one of the side bars of the said wagon, and a bearing attached to the said body for the support of the said spring near the said arm in such manner as to permit the said spring to turn or twist freely, substantially as herein described.

6. The combination, with the side bars, the body, and the axle or bolster of a side-bar wagon, of torsion-springs applied between the body and side bars and semi-elliptical or flexion springs applied between the side bars and the axle or bolster, substantially as herein described.

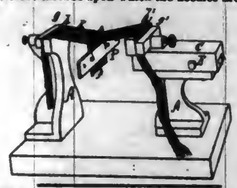
8,349. MACHINE FOR POLISHING THE EYES OF MACHINE-NEEDLES. John Berry, Springfield, Mass., assignor to the National Needle Company, same place. Patent No. 165,533, dated July 12, 1875. Filed Aug. 4, 1877.

Brief.—The needles are held in a clamp, with their eyes all in the same relative position. The threads charged with the polishing mixture are passed through the eyes, and clamped against stationary pieces by adjustable blocks. The clamp is operated by hand.

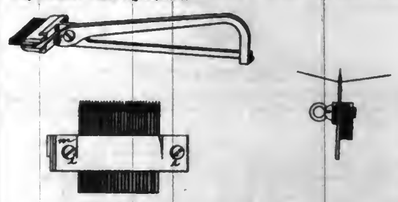
Claim.—1. The device for polishing the eyes of needles, consisting of the fixed pieces *h* and *h'*, the movable jaws *g* and *g'*, operating in combination with the pieces *h* and *h'*, to grasp the threads extending through the series of needles, and the clamp P, for holding the needles firmly in a line with the eyes all in the same relative position, substantially as described.

2. The adjustable head-block C, arranged upon the upright A, in combination with the jaws *g* and *g'*, operating in connection with the parts *h* and *h'*, to grasp and hold the threads upon which the needles are strung, substantially as set forth.

8,349.



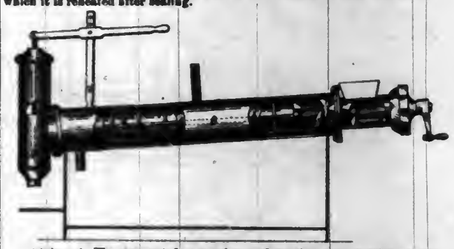
8,350. ART OF POLISHING THE EYES OF MACHINE-NEEDLES. John Berry, Springfield, Mass., assignor to the National Needle Company, same place. Patent No. 165,533, dated July 12, 1875. Filed Aug. 30, 1877.



Claim.—The improvement in the art of polishing the eyes of needles, which consists in first arranging a series of needles with their points and eyes in the same direction, retaining them firmly in position in a hand-clamp, which permits of handling said hand-clamp and said series of clamped needles together, so that the polishing-threads may be passed through the eyes of the needles while so held, and in reciprocating the whole series by hand upon said polishing-threads, so as to simultaneously polish all of the surface of the eyes, substantially as set forth.

8,351. APPARATUS AND PROCESSES FOR PRESERVING AND CANNING GREEN CORN. G. Lewis Merrell and Oscar F. Seale, Syracuse, N. Y. Patent No. 145,561, dated Dec. 16, 1873; Reissue No. 5,797, dated Mar. 17, 1874. Filed July 17, 1878.

Brief.—By means of a jacketed cylinder the corn, &c., is cooked, steam being introduced at the feeding end. It is stirred in transit down the inclined cylinder, and at the lower end, by means of a plunger, is forced into cans, in which it is reheated after sealing.



Claim.—1. The process of preserving and canning corn or other vegetables, which consists in cooking the same by steam while in transit through a cooking-chamber, and introducing the same by a suitable device directly into cans with the least possible exposure to the air.

2. In an apparatus for both preserving and canning corn, a cooking-chamber having devices to produce a flow of fresh corn or other vegetable through the chamber and cause an exit of cooked food from it, in combination with a canning device at the exit end of the cooking-chamber for introducing the cooked material into the can.

3. The process of preserving and canning green corn or other vegetable, which consists in cooking the same by steam while in transit through a cooking-chamber, introducing the same by a suitable device directly into cans with the least possible exposure to the air, and finally reheating the same in the sealed cans.

THE GRAPHIC CO.

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 23d DAY OF JULY, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adams, J. Q., Brooklyn, N. Y. Waste-pipe valve	206,207	July 23	850	242	14	128
Adle, W. H. (See Hooven and Adle.)						
Aldred, S., Charlton, England. Railway-rail	206,208	July 23	851	242	14	128
Alger, W., Grand Rapids, Mich. Current and tide wheel	206,289	July 23	942	266	14	140
Allan, J. C., Buffalo, N. Y. Insecticide	206,209	July 23	851	243	14	128
Allen, M., New York, N. Y. Asphaltum or cement pipe	206,290	July 23	943	267	14	140
Allen, R. N., Hudson, N. Y., assignor of one-half interest to J. C. Beach, Bloomfield, N. J. Car-axle	206,291	July 23	944	267	14	141
Allen, W. M., Boston, Mass. Sewer gas-trap	206,210	July 23	852	243	14	128
Ames, G. H., Adrian, Mich. Car-coupling	206,159	July 23	791	227	14	121
Anglemire, R., Rockford, Ill. Shoe	206,292	July 23	944	267	14	141
Anthoine, A. W., Minot, Me. Vehicle-hub wrench	206,293	July 23	945	268	14	141
Archer, C. S. (See Broome and Archer.)						
Austin, C. D., Amsterdam, N. Y. Liquid-measure	206,211	July 23	852	243	14	128
Balch, F. A., Hingham, Wis. Floor-scrubber	206,212	July 23	853	243	14	129
Barnett, S. M., New York, N. Y. Exercising-machine	206,214	July 23	855	244	14	129
Bartlett, G., Gananoque, Ontario, Canada. Vehicle-wheel hub	206,213	July 23	854	244	14	129
Baxter, J. (See Taylor, J. P., assignor.)						
Baxter, M. L., Aurora, Ill., assignor to himself and J. J. Walton, New York, N. Y. Broom	206,294	July 23	946	268	14	141
Beach, J. C. (See Allen, R. N., assignor.)						
Bellows, B. F., Weeping Water, Nebr. Type-writing machine	206,160	July 23	794	{227 228}	14	121
Bensel, J., Stockton township, Camden county, assignor to A. Reeve, Camden, and J. Wood, Jr., Haddenfield, N. J. Refrigerator	206,215	July 23	856	244	14	129
Berry, J., assignor to National Needle Company, Springfield, Mass. Machine for polishing the eyes of machine-needles. (Reissue)	8,349	July 23	1067	306	14	156
Berry, J., assignor to National Needle Company, Springfield, Mass. Polishing the eyes of machine-needles. (Reissue)	8,350	July 23	1068	306	14	156
Berth, W. R. E., assignor to T. Nelson & Sons, New York, N. Y. Book-holder	206,216	July 23	857	244	14	129
Bigelow, L. A., *et al.* (See Titus, N. J., assignor.)						
Bogart, A. L. (See Smith, A. T., assignor.)						
Bohlig, E., Eisenach, Germany. Purifying feed-water for boilers	206,161	July 23	797	.....	14	121
Borchardt, H., Bridgeport, Conn., assignor to Sharps Rifle Company. Breech-loading fire-arm	206,217	July 23	857	245	14	129
Boss, J., Berlin, Md. Fruit-carrier	206,295	July 23	946	268	14	141
Bracher, T. W., New York, N. Y. Sweat-band for hats and caps	206,296	July 23	948	268	14	141
Bradford, A., Amsterdam, N. Y. Speculum	206,162	July 23	797	228	14	121
Bramer, F., Little Falls, N. Y. Wheel-harrow	206,218	July 23	859	245	14	130
Briggs, W. H., Lemars, Iowa. Horse-collar	206,219	July 23	860	246	14	130
Broome, J. S., and C. S. Archer, Camden, N. J. Railway-switch	206,220	July 23	860	246	14	130
Brothers, O., Jr., assignor to himself and H. D. Dunbar, North Hartland, Vt. Holdback for vehicles	206,221	July 23	862	246	14	130
Brothers, O., Jr., assignor to himself and H. D. Dunbar, North Hartland, Vt. Horse-detacher	206,222	July 23	863	246	14	130
Brown, Bonnell & Co. (See Hamilton, H., assignor.)						
Brown, F. R., Denver, Colo. Ore-crushing machine	206,223	July 23	864	247	14	130
Brown, T. B. (See Wickersham and Brown.)						
Brustman, C., Fremont, N. Y. Straw-cutter	206,224	July 23	865	247	14	130
Burstall, P. F. L., Milwaukee, Wis. Burglar-alarm	206,225	July 23	866	247	14	131
Butler, C. W., New York, N. Y. Stop-hinge for trunks, &c	206,226	July 23	868	248	14	131
Candee & Co., L. (See Elliott, L., Jr., assignor.)						
Card, B. F., Brooklyn, N. Y. Railway-car	206,163	July 23	798	228	14	122
Carnes, P. P., Cleveland, Ohio. Gun-sight	206,164	July 23	799	229	14	122
Chance, H., assignor of one-half interest to R. Crocker, Fostoria, Ohio. Railway-crossing	206,323	July 23	985	280	14	145
Clark, C. B., Buffalo, N. Y. Stove-pipe damper	206,227	July 23	868	248	14	131
Codman & Shurtleff. (See Jennison, C. R., assignor.)						
Conant, C. W. (See Wilder and Conant.)						
Connolly, P., Brooklyn, N. Y. Locking-valve	206,228	July 23	869	248	14	131
Constant, B. S., Denver, Ind. Grain-separator	206,229	July 23	871	248	14	131
Cook, D. M., Mansfield, Ohio. Process and apparatus for evaporating and defecating cane-juice. (Reissue)	8,341	July 23	1059	304	14	154
Cook, L., Worcester, Mass. Skate	206,165	July 23	799	229	14	122
Cope, A. B. (See Wickersham and Brown, assignors.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cottingham, G. W., Denison, Tex. Railway-track	206,297	July 23	949	269	14	141
Crandal, G. L., Binghamton, N. Y. Buckle and loop fastening	206,298	July 23	949	269	14	141
Cranston, C., assignor of one-half interest to E. J. Sterling, Brooklyn, N. Y. Gage for paper-cutting machines	206,230	July 23	872	249	14	131
Crocker, R. (See Chance, H., assignor.)						
Cross, B., Alexandria, Pa. Gate	206,299	July 23	951	269	14	142
Cucherat, P., Lyons, France. Coil-spring machine	206,300	July 23	951	269, 270	14	142
Cummings, M. L., assignor to J. M. Sheldon, Philadelphia, Pa. Curtain-cord tightener	206,301	July 23	955	271	14	142
Cutten, E. B., Boston, Mass. Galvanic battery	206,166	July 23	890	229	14	122
Dalzell, D., South Egremont, Mass. Carriage-spring	206,302	July 23	955	271	14	142
Deeds, J. B., Terre Haute, Ind. Car-mover	206,231	July 23	873	249	14	131
Doten, C. C., Plymouth, Mass. Addressing-machine	206,303	July 23	956	271	14	142
Dreher, B., Cleveland, Ohio. Stringing pianos	206,232	July 23	874	249	14	132
Dunbar, H. D. (See Brothers, O., Jr., assignor.)						
Dunne, L., Morgantown, W. Va. Electric recorder	206,304	July 23	959	271, 272	14	142
Durgin, E. E. (See Griffin, C. H., assignor.)						
Durgin, H. J. (See Hall and Durgin.)						
Eaton, P. G., Springville, N. Y. Bee-hive	206,305	July 23	961	272, 273	14	143
Edmondson, G. D., Detroit, Mich. Frame for spectacles and eyeglasses	206,306	July 23	962	273	14	143
Eglington, F., Walsall, England. Shaft-tug	206,307	July 23	963	273	14	143
Egyptian Embalmer Company. (See McGowan, R. J., assignor.)						
Eickemeyer, R., Yonkers, N. Y. Hat-stretching machine	206,168	July 23	892	230	14	122
Elliott, L., Jr., assignor to L. Candee & Co., New Haven, Conn. India-rubber boat	206,308	July 23	964	273	14	143
Ellis, J. F., and C. Robinson, Eau Claire, Wis. Plow-clevis	206,167	July 23	891	229	14	122
Ellis, S. H. (See Harvey, M. B., assignor.)						
Erie Preserving Company. (See Sprague, W., assignor.)						
Ethridge, M. V. B. (See Wheeler and Ethridge.)						
Farrar, F. F., and F. P. Gill, Waterford, Pa.; said Gill assignor to said Farrar. Process and apparatus for recovering waste sulphuric acid	206,309	July 23	964	274	14	143
Fayman, G. H., Washington, D. C. Mail-bag fastener	206,169	July 23	895	230	14	122
Foote, E. H., Somerville, Mass. Pickle-can	206,310	July 23	966	275	14	143
Franke, P. C., St. Paul, Minn. Skate	206,170	July 23	895	230	14	123
Gill, F. P. (See Farrar and Gill.)						
Gilman, W. S., Chicago, Ill. Nut-lock	206,311	July 23	967	275	14	144
Gleason, E. P., Brooklyn, N. Y. Lamp shade and holder. (Reissue)	8,345	July 23	1063	305	14	155
Glover, C. W., Danbury, Conn. Hat-block and spindle for hat-pouncing and finishing machines	206,171	July 23	897	230	14	123
Good, F. H., Joplin, Mo. Wash-boiler	206,312	July 23	968	275	14	144
Goodfellow, T. G., Chicago, Ill. Hydrostatic lamp	206,313	July 23	969	275	14	144
Greig, J., Morris, Ill. Gate	206,314	July 23	970	276	14	144
Grether, J., Friburg, Baden, Germany. Hose-coupling	206,172	July 23	898	231	14	123
Griffin, C. H., Boston, assignor, by mesne assignments, to E. E. Durgin, Malden, Mass. Drafting-square for garments	206,315	July 23	971	276	14	144
Griffin, L. M., Maryville, Mo. Subsoil-plow. (Reissue)	8,342	July 23	1061	304	14	154
Griscom, S. E. (See Griscom and McFeely, assignors.)						
Griscom, W., Pottsville, Pa., and T. McFeely, Union city, Indiana, assignors to S. E. Griscom, Pottsville, Pa. Millstone-dressing machine	206,316	July 23	972	276	14	144
Groocock, S. P., New York, N. Y. Clamp for gluing parquetry	206,233	July 23	874	249	14	132
Gros, H. C., Reutlingen, Wurttemberg, Germany. Boot and shoe sewing machine	206,317	July 23	973	277, 278	14	144
Gwinnell, J. M., Newark, N. J. Harness-saddle	206,318	July 23	980	279	14	145
Hagerstown Agricultural Implement Manufacturing Company. (See Keller, J. F., assignor.) (Reissue.)						
Hall, H. O., and H. J. Durgin, Rochester, N. Y. Table	206,234	July 23	875	250	14	132
Hamilton, H., assignor, by mesne assignments, of one-half interest to Brown, Bonnell & Co., Youngstown, Ohio. Journal-box for rolling-mill pinions	206,319	July 23	980	279	14	145
Hartman, J. M., Philadelphia, Pa. Valve for regenerative hot-blast stoves	206,173	July 23	899	231	14	123
Harvey, M. B., Leavenworth, assignor to S. H. Ellis, South Leavenworth, Kan. Compound engine	206,235	July 23	875	250	14	132
Haskell, W., Chicago, Ill. Pencil-sharpening device	206,174	July 23	810	231	14	123
Hays, E. A., New York, N. Y. Covering for steam-boilers	206,236	July 23	877	250	14	132
Hayden, G. W., Worcester, Mass. Drill-chuck	206,320	July 23	962	279	14	145
Heath, E. A., New York, N. Y. Spittoon	206,322	July 23	984	280	14	145
Heath, E. A., New York, N. Y. Spittoon	206,324	July 23	986	280	14	146
Heath, E. A., New York, N. Y. Cuspadore	206,325	July 23	987	281	14	146
Heaton, H. L., West Jefferson, Ohio. Combined rope socket and clamp	206,321	July 23	983	280	14	145
Hess, G. H., Chicago, Ill., assignor to L. H. Hess, Grand Rapids, Mich. Fire-place	206,326	July 23	988	281	14	146
Hess, L. H. (See Hess, G. H., assignor.)						
Hickman, E. W., Lake, Wis. Fire-proof roofing composition	206,175	July 23	811	.....	14	123
Hicks, B. C., Rose township, Ramsey county, Minn. Road-engine	206,176	July 23	811	231, 232	14	123
Hillebrand, L., assignor of one-half interest to D. Wolf, Philadelphia, Pa. Padlock	206,327	July 23	989	281	14	146
Hines, H. K., Philadelphia, Pa. Handle for soldering-irons	206,328	July 23	990	281	14	146
Hoe, R. M., New York, N. Y. Printing-machine. (Reissue)	8,346	July 23	1065	305	14	155
Hogan, P., and D. Whitlock, Newark, N. J. Machine for attaching heels to boots and shoes	206,237	July 23	878	250, 251	14	132
Holcomb, A. P., assignor to Huntley, Holcomb, and Hine, Silver Creek, N. Y. Attachment for sewing-machines	206,329	July 23	991	282	14	146
Hooven, A., and W. H. Adle, Norristown, Pa. Rolling-mill	206,330	July 23	992	282	14	146
Hopkins, C. H., Lyndonville, Vt. Seal-bolt	206,238	July 23	879	251	14	132
Horton, W. N., San Francisco, Cal. Wooden-pipe joint	206,177	July 23	812	232	14	124
House, J. A., Bridgeport, Conn. Sewing-machine	206,239	July 23	880	251, 252	14	132
House, J. A. (See Wisner and House.)						
Hoy, A. H., Racine, Wis. Animal-trap	206,240	July 23	884	252	14	133
Huff, O., Lyman, Me. Pegging-machine	206,178	July 23	813	232	14	124
Hull, W. G., Sing Sing, N. Y. Tug for harness	206,331	July 23	993	282	14	146
Huntley, Holcomb & Hine. (See Holcomb, A. P., assignor.)						
Huntress, J. H., Janesville, Wis. Buckle	206,179	July 23	814	232	14	124
Hyatt, E. A. L., trustee. (See Hyatt, T., assignor.)						
Hyatt, T., New York, N. Y., assignor to E. A. L. Hyatt, trustee. Application of cements, clays, metals, and glass in forming illuminated and other gratings, vault-covers, roofs, &c.	206,332	July 23	993	283, 284	14	146
Hyatt, T. and T., New York, N. Y. Cement and concrete walking-surfaces	206,333	July 23	1000	285	14	147
Irwin, J. H., Philadelphia, Pa. Speaking-telephone	206,241	July 23	885	252	14	133
Jarrell, E., assignor of one-half interest to J. T. McKim, Thornton, Ind. Plow-colter	206,334	July, 23	1001	285	14	147

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Jeannerat, F., and L. E. Simons, Edenburg, Pa. Rock-washer for oil-wells	206,242	July 23	886	253	14	133
Jennison, C. R., assignor to Codman and Shurtleff, Boston, Mass. Surgical explorer	206,243	July 23	887	253	14	133
Johnson, A., Kewanee, Ill. Device for hanging wall-paper	206,245	July 23	889	253	14	133
Johnson, W. H., assignor of one-half interest to G. E. Marvine, Delhi, N. Y. Baggage-check	206,244	July 23	888	253	14	133
Kampf, G., Utica, N. Y. Chain-link	206,335	July 23	1002	285	14	147
Keefe, J., Port Eads, La. Dredge	206,246	July 23	890	254	14	133
Keller, J. F., Hagerstown, Md., assignor to Hagerstown Agricultural Implement Manufacturing Company. Seeder. (Reissue)	8,343	July 23	1062	304	14	155
Keller, J. F., Hagerstown, Md., assignor to Hagerstown Agricultural Implement Manufacturing Company. Seeder. (Reissue)	8,344	July 23	1062	305	14	155
Kennedy, L. B., Waxahatchie, Tex. Brick-machine	206,247	July 23	890	254	14	133
Kennevan, J. J., Boston, Mass. Automatic-pressure regulator	206,248	July 23	391	254	14	134
Kime, W. W. S., Victor, Iowa. Seed-dropper	206,336	July 23	1002	285	14	148
King, R. J., Dayton, Ohio. Oven-door	206,180	July 23	815	233	14	124
Klaucke, J., Solingen, Germany. Shoe-horn	206,249	July 23	892	254	14	134
Kluenter, J., Allentown, Pa. Window-screen	206,181	July 23	816	233	14	124
Koepe, F., Bochum, Prussia. Elevator	206,251	July 23	894	255	14	134
Koerber, A. R., assignor of one-half interest to J. Sheridan, Toronto, Ontario, Canada. Reed-organ	206,250	July 23	893	255	14	134
Kolosena, M., New York, N. Y. Electro-magnetic burglar-alarm	206,182	July 23	817	233	14	124
Koonze, M. E., *et al.* (See Moore, W. D., assignor.)						
Kress, G. R., Pittsburg, Pa. Automatic-fan attachment	206,183	July 23	818	233	14	124
Lawson, J. A., Troy, N. Y. Cooking-stove	206,252	July 23	895	255	14	134
Leighton, D. R. (See Leighton, J. T. and D. R.)						
Leighton, J. T. and D. R., New Haven, Conn. Railway-car	206,253	July 23	897	256	14	134
Lenox, E. S. (See Smith, M. C., assignor.)						
Lewin, J. M., Lockport, N. Y. Bottle, jug, and jar cover	206,254	July 23	899	256	14	135
Lewis, C. Columbus, Ohio. Rail-joint	206,337	July 23	1003	286	14	148
Lewis, Oliver, and Phillips. (See Prosser, J., assignor.)						
Little, J. R., Jamaica Plain, Boston, Mass. Mechanical movement	206,184	July 23	818	234	14	124
Lockhart, J., Philadelphia, Pa. Temporary binder	206,255	July 23	900	256	14	135
Mahan, I. L., Bayfield, Wis. Heater and ventilator	206,339	July 23	1005	286	14	148
Maher, G. W., Albion, Mich. Cutting-tool	206,338	July 23	1004	286	14	148
Mallon, J., Baton Rouge, La. Cultivator	206,185	July 23	819	234	14	125
Manahan, F. X., Utica, N. Y. Milk-cooler	206,340	July 23	1005	287	14	148
Martin, H., New York, N. Y. Bottle-stopper fastener	206,341	July 23	1007	287	14	148
Martin, M., Bitterfield, Prussia. Flour-bolting machine	206,186	July 23	820	234	14	125
Marvine, G. E. (See Johnson, W. H., assignor.)						
Mather, E., Harrisburg, Pa. Paper-pulp screen or dresser	206,187	July 23	821	234	14	125
Matthews, J. S., Athens, Tenn., and A. Petersohn, Washington, D. C.; said Petersohn assignor to said Matthews. Sash-fastener	206,342	July 23	1008	287	14	148
Maxson, E. W., West Lenox, Pa. Bed-bottom	206,256	July 23	901	257	14	135
McFeely, T. (See Griscom and McFeely.)						
McGowan, R. J., assignor to Egyptian Embalmer Company, New York, N. Y. Embalming composition	206,343	July 23	1009	.....	14	148
McKim, J. T. (See Jarrell, E., assignor.)						
McNeill, T. E., New York, N. Y. Return-steam trap	206,344	July 23	1009	287, 288	14	148
Merrill, G. L., and O. F., Soule, Syracuse, N. Y. Apparatus and process for preserving and canning green corn. (Reissue)	8,351	July 23	1069	.....	14	156
Milliken, E. K., Portland, Me. Transposition key-board for pianos and organs	206,345	July 23	1011	288, 289	14	149
Moore, T., Cheyenne City, Wyo. Ter. Pack-saddle	206,188	July 23	823	235	14	125
Moore, W. D., assignor of three-fourths interest to M. A. T. Rooney, M. E. Koonze, and E. Tobin, New York, N. Y. Water-velocipede	206,346	July 23	1013	289	14	149
Morgan, E. M., assignor to H. Rentchler, Bellville, Ill. Grain-drill	206,189	July 23	825	235	14	125
Morgan, M. L., Northampton, Mass. Till-alarm	206,190	July 23	826	235, 236	14	125
Muirhead, A. (See Taylor and Muirhead.)						
Mullens, W., Flat Creek, Tenn. Combined cotton chopper and cultivator	206,347	July 23	1014	290	14	149
National Needle Company. (See Berry, J., assignor.) (Reissue.)						
Nelson, & Sons., T. (See Berth, W. R. E., assignor.)						
New, T., Brooklyn, N. Y. Water-proof cellar	206,351	July 23	1018	291	14	149
Newell, E. L., Butte City, Mont. Ter. Amalgamator	206,257	July 23	902	257	14	135
Newell, N. C., Springfield, Mass. Button	206,348	July 23	1015	290	14	149
Nikiforoff, C., Warsaw, Russia. Portable cooking apparatus	206,349	July 23	1016	290, 291	14	149
Nixon, W. W., Parkersburg, West Va. Bosom-board	206,350	July 23	1017	291	14	149
Noyes, I. M., St. Cloud, Minn. Stump-extractor	206,352	July 23	1019	291	14	150
O'Keefe, W., St. Louis, Mo. Hydraulic elevator	206,353	July 23	1020	292	14	150
Oliver, H., *et al.* (See Orser, A., assignor.)						
Orser, A., assignor of two-thirds interest to C. H. Payne and H. Oliver, Janesville, Wis. Trace-buckle	206,191	July 23	828	236	14	126
Packer, H., Sandwich, Ill. Corn-sheller	206,258	July 23	903	257	14	135
Palmer, G. G. (See Searle and Palmer.)						
Parker, G. W. (See Stanwood and Parker.)						
Paull, A. W. (See Walton and Paull.)						
Payne, C. H., *et al.* (See Orser, A., assignor.)						
Peberdy, S., Philadelphia, Pa. Knitting-machine needle	206,354	July 23	1021	292	14	150
Pendleton, F. P., and J. K. Proctor, Philadelphia, Pa. Wool-washing machine	206,192	July 23	829	236, 237	14	126
Perkins, G. H., Philadelphia, Pa. Combined clamp and soldering apparatus	206,193	July 23	832	237	14	126
Perkins, G. H., Philadelphia, Pa. Combined clamp and soldering apparatus	206,194	July 23	833	237	14	126
Perkins, J. S., Worcester, Mass. Crimping-machine for boots and shoes	206,195	July 23	834	238	14	126
Perkins, M. T., Log Lick, assignor of one-half interest to B. T. Wills, Clark county, Ky. Branding-stamp	206,355	July 23	1022	292	14	150
Petersohn, A. (See Matthews and Petersohn.)						
Porter, A. W., New York, N. Y., assignor of one-tenth interest to G. L. Shorey, Lynn, Mass. Carburetor	206,196	July 23	835	238, 239	14	127
Post, J. W., New York, N. Y. Elevated railway	206,385	July 23	1057	304	14	154
Prime, E. S., Baltimore, Md. Wantage-rod	206,259	July 23	905	258	14	136
Proctor, J. K. (See Pendleton and Proctor.)						
Prosser, J., Pittsburg, Pa., assignor to himself and Lewis, Oliver & Phillips. Machine for coiling wire, &c	206,197	July 23	839	239	14	127
Prowse, G. R., Montreal, Canada. Stove	206,198	July 23	840	240	14	127
Randall, D. P., Smith Road, Ohio. Animal-poke	206,260	July 23	907	258	14	136
Record, G. J., Conneaut, Ohio. Cover for butter-packages and other vessels	206,261	July 23	908	258	14	136
Reed, C. F. (See Reed, J. W. and C. F.)						

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Reed, J. W. and C. F., Degraff, Ohio. Hog-trap	206,262	July 23	909	258	14	136
Reeve, A., *et al.* (See Bensel, J., assignor.)						
Rentchler, H. (See Morgan, E. M., assignor.)						
Rice, J. M. (See Vaile, C. A., assignor.)						
Richards, E. K., Cambridge, Mass. Measuring and discharging apparatus for bone-black furnaces	206,263	July 23	909	259	14	136
Rider, A. K., Walden, N. Y. Air-engine	206,356	July 23	1023	292, 293	14	150
Robbins, C. B., South Abingdon, Mass. Underwaist	206,358	July 23	1025	293	14	150
Robertson, J. A., Boston, Mass. Fishing-rod	206,264	July 23	910	259	14	136
Robinson, C. (See Ellis and Robinson.)						
Rogers, F. O., Boston, Mass. Device for melting snow and ice in the gutters of buildings	206,357	July 23	1024	293	14	150
Rooney, M. A. T., *et al.* (See Moore, W. D., assignor.)						
Schneider, A., New York, N. Y. Bung	206,265	July 23	911	259	14	136
Schröder, N., Creuznach, Prussia. Extracting fuel from waste	206,266	July 23	912	.....	14	136
Schwarzwald, L., New York, N. Y. Ventilating boots and shoes	206,267	July 23	913	259	14	136
Scofield, W. P., Chattanooga, Tenn. Nut-lock	206,359	July 23	1026	293	14	150
Searle, J. M., and G. G. Palmer, Stanhope, N. J. Rotary exhaust-cylinder and balanced slide-valve for steam-engines	206,268	July 23	914	260	14	137
Seybold, F. J., St. Louis, Mo. Bottle-stopper	206,269	July 23	915	260	14	137
Seybold, F. J., St. Louis, Mo. Bottle-stopper	206,270	July 23	918	260	14	137
Seybold, F. J., Chicago, Ill. Stopper and stopper-fastener	206,271	July 23	919	260, 261	14	138
Sharps Rifle Company. (See Borchardt, H., assignor.)						
Sheldon, J. M. (See Cummings, M. L., assignor.)						
Sheridan, J. (See Koerber, A. R., assignor.)						
Shimer, G. J. (See Shimer, S. J. and G. J.)						
Shimer, S. J. and G. J., Milton, Pa. Variety molding machine	206,360	July 23	1026	294, 295	14	151
Shorey, G. L. (See Porter, A. W., assignor.)						
Simons, L. E. (See Jeannerat and Simons.)						
Smith, A. T., assignor to A. L. Bogart, New York, N. Y. Electrode for electric gas-lighting burners	206,272	July 23	921	261	14	138
Smith E. A., St. Albans, Vt. Chain-link for horse-powers	206,273	July 23	922	261	14	138
Smith, L. F., Philadelphia, Pa. Steam-trap	206,361	July 23	1029	295	14	151
Smith, M. C., Starkville, assignor to E. S. Lenox, New York, N. Y. Bale-tie	206,362	July 23	1030	295	14	151
Smith, W. L., *et al.* (See Titus, N. J., assignor.)						
Snyder, W. J., Manor Station, Pa. Dough-raiser	206,274	July 23	923	261	14	138
Soule, O. F. (See Merrell and Soule.)						
Sparrow, B. F., assignor to H. F. Sparrow, Cambridgeport, Mass. Dough-mixer	206,275	July 23	924	262	14	138
Sparrow, H. F. (See Sparrow, B. F., assignor.)						
Spencer, J., Chicago, Ill. Varnishing-machine	206,276	July 23	925	262	14	138
Spoerl, C. S. E. and J. G., Brooklyn, N. Y. Rocking-chair	206,363	July 23	1031	296	14	151
Spoerl, J. G. (See Spoerl, C. S. E. and J. G.)						
Sprague, W., assignor of one-half interest to Erie Preserving Company, Buffalo, N. Y. Green-corn knife	206,364	July 23	1032	296	14	151
Stanwood, T. J., and G. W. Parker, Brunswick, Me. Vehicle-wheel hub	206,199	July 23	841	240	14	127
Sterling, E. J. (See Cranston, C., assignor.)						
Stewart, W. W., Brooklyn, N. Y. Fountain-pen holder	206,200	July 23	841	240	14	127
Storm, E. (See Whitney, W. F., assignor.) (Reissue.)						
Taylor, H. A., Cornhill, London, and A. Muirhead, 159 Camden Road, Middlesex county, England. Telegraphic accumulator and condenser	206,366	July 23	1036	297	14	151
Taylor, J. P., Elizabethton, assignor of one-half interest to J. Baxter, Knoxville, Tenn. Machine-gun	206,365	July 23	1033	296, 297	14	151
Thompson, J. W., Greenfield, Mass. Blackboard attachment	206,201	July 23	843	240	14	127
Thorpe, J., Fort Miller, N. Y. Rotary boiler for boiling and steaming paper-stock	206,277	July 23	927	262	14	139
Tiesing, F. W., New Haven, Conn. Magazine fire-arm	206,367	July 23	1037	297, 298	14	152
Tildsley, J., Lockport, N. Y. Mower	206,278	July 23	928	263	14	139
Titus, N. J., assignor of one-half interest to L. A. Bigelow and W. L. Smith, Portland, N. Y. Harvester	206,368	July 23	1039	298	14	152
Tobin, E., *et al.* (See Moore, W. D., assignor.)						
Todd, H. B., West Meriden, Conn. Sad-iron	206,369	July 23	1040	298	14	152
Trabue, W., Louisville, Ky. Magazine fire-arm	206,279	July 23	930	263	14	139
Turton, W., Brooklyn, N. Y. Water-closet	206,370	July 23	1041	299	14	152
Vaile, C. A., assignor to J. M. Rice, Worcester, Mass. Mop-wringer	206,371	July 23	1042	299	14	152
Van Arnam, C. H., Lansingburg, N. Y. Nut-lock	206,280	July 23	932	264	14	139
Van Wormer, J., Albany, N. Y. Heating-stove	206,372	July 23	1043	299	14	152
Walton, J. J. (See Baxter, M. L., assignor.)						
Walton, T., and A. W. Paull, Wheeling, W. Va. Tubular lamp and lantern	206,281	July 23	932	264	14	139
Walworth, C. C., Boston, Mass. Steam-valve	206,373	July 23	1044	300	14	152
Warren, A. S., Atlas, Ill. Hedge-plashing machine	206,282	July 23	935	264	14	140
Watson, W. M., Tonica, Ill. Metallurgic furnace	206,374	July 23	1044	300	14	152
Wetmore, W. W., assignor to Winchester Repeating Arms Company, New Haven, Conn. Magazine fire-arm	206,202	July 23	843	241	14	127
Wheeler, J. E., Lynn, and M. V. B. Ethridge, Boston, Mass.; said Ethridge assignor to said Wheeler. Lasting-machine for boots and shoes	206,203	July 23	846	241	14	128
White, J. C., New York, N. Y. Bobbin-winder for sewing-machines	206,375	July 23	1045	300	14	152
Whiteside, A. H. and M. S., Onarga, Ill. Harrow	206,284	July 23	937	265	14	140
Whiteside, M. S. (See Whiteside, A. H. and M. S.)						
Whitlock, D. (See Hogan and Whitlock.)						
Whitney, W. F., assignor of one-half interest to E. Storm, Poughkeepsie, N. Y. Vehicle-spring. (Reissue)	8,348	July 23	1066	306	14	156
Whitnum, S., Green Point, N. Y. Toy money-box	206,376	July 23	1047	301	14	153
Whittemore, A., Cambridgeport, Mass. Elevator	206,283	July 23	936	265	14	140
Wickersham, D., and T. B. Brown, Fairfield, New Waterford P. O., assignors to themselves and A. B. Cope, New Waterford, Ohio. Machine for making basket-splints	206,285	July 23	938	265	14	140
Wight, C. H. (See Wight, H., assignor.)						
Wight, G. R., New York, N. Y. Mucilage-bottle. (Reissue)	8,347	July 23	1066	305	14	155
Wight, H., Natick, Mass., assignor to C. H. Wight, Brooklyn, N. Y. Manufacture of boots and shoes	206,377	July 23	1047	301	14	153
Wilber, F. A., Central College, Ohio. School-desk	206,378	July 23	1048	301	14	153
Wilder, W. H., and C. W. Conant, Gardner, Mass. Car-brake	206,286	July 23	939	266	14	140
Will, J., Bryan, Ohio. Lunch-case	206,287	July 23	940	266	14	140
Williams, J. S., Brooklyn, N. Y. Petroleum-stove	206,204	July 23	848	241	14	128
Wills, B. T. (See Perkins, M. T., assignor.)						
Wilson, G., Brooklyn, N. Y. Invalid-chair	206,379	July 23	1049	302	14	153
Winchester Repeating Arms Company. (See Wetmore, W. W., assignor.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wisner, A., and J. A. House, Bridgeport, Conn.; said House assignor to said Wisner. Tool for fastening buttons to boots and shoes	206,288	July 23	940	266	14	140
Witthoft, W., Indianapolis, Ind. Combined arm-chair and step-ladder	206,205	July 23	849	242	14	128
Wolf, D. (See Hillebrand, L., assignor.)						
Wolfe, W. C., Johnstown, Pa. Rotary engine	206,380	July 23	1051	302	14	153
Wolfe, W. C., Johnstown, Pa. Water-inductor for steam-boilers	206,381	July 23	1053	303	14	153
Wood, F. W., New York, N. Y. Window-screen	206,382	July 23	1054	303	14	153
Wood, J., Jr., *et al.* (See Bensel, J., assignor.)						
Wright, W. D., Baltimore, Md. Sash-holder	206,383	July 23	1055	303	14	153
Yerrinton, F. M., Cambridge, Mass. Pocket-book for fishermen	206,206	July 23	849	242	14	128
Young, J., Kenton, Ohio. Metallic fence	206,384	July 23	1056	303	14	154

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 23d DAY OF JULY, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Acid. Process and apparatus for recovering waste sulphuric	F. F. Farrar and F. P. Gill	206,309	July 23	964	274	14	143
Addressing-machine	C. C. Doten	206,303	July 23	956	271	14	142
Amalgamator	E. L. Newell	206,257	July 23	902	257	14	135
Animal-poke	D. P. Randall	206,260	July 23	907	258	14	136
Animal-trap	A. H. Hoy	206,240	July 23	884	252	14	133
Axle. Car-	R. N. Allen	206,291	July 23	944	267	14	141
Baggage-check	W. H. Johnson	206,244	July 23	888	253	14	133
Bale-tie	M. C. Smith	206,302	July 23	1030	295	14	151
Basket-splints. Machine for making	D. Wickersham and T. B. Brown	206,285	July 23	938	265	14	140
Battery. Galvanic	E. B. Cutten	206,166	July 23	800	229	14	122
Bed-bottom	E. W. Maxson	206,256	July 23	901	257	14	135
Bee-hive	P. G. Eaton	206,305	July 23	961	272, 273	14	143
Binder. Temporary	J. Lockhart	206,255	July 23	900	256	14	135
Blackboard attachment	J. W. Thompson	206,301	July 23	843	240	14	127
Boilers. Covering for steam-	E. A. Hayes	206,236	July 23	877	250	14	132
Boilers. Purifying feed-water for	E. Bohlig	206,161	July 23	797	.....	14	121
Boilers. Water-inductor for steam-	W. C. Wolfe	206,381	July 23	1053	303	14	153
Bolt. Seal-	C. H. Hopkins	206,238	July 23	879	251	14	132
Book-holder	W. R. E. Berth	206,216	July 23	857	244	14	129
Boot and shoe crimping machine	J. S. Perkins	206,195	July 23	834	238	14	126
Boot and shoe lasting machine	J. E. Wheeler and M. V. B. Ethridge	206,303	July 23	846	241	14	128
Boot. India-rubber	L. Elliott, Jr.	206,308	July 23	964	273	14	143
Boots and shoes. Machine for attaching heels to	P. Hogan and D. Whitlock	206,237	July 23	878	250, 251	14	132
Boots and shoes. Manufacture of	H. Wight	206,377	July 23	1047	301	14	153
Boots and shoes. Tool for fastening buttons to	A. Wisner and J. A. House	206,288	July 23	940	266	14	140
Boots and shoes. Ventilating	L. Schwarzwald	206,267	July 23	913	259	14	136
Bosom-board	W. W. Nixon	206,350	July 23	1017	291	14	149
Bottle, jug, and jar cover	J. M. Lewin	206,254	July 23	899	256	14	135
Bottle-stopper	F. J. Seybold	206,269	July 23	915	260	14	137
Bottle-stopper	F. J. Seybold	206,270	July 23	918	260	14	137
Bottle-stopper fastener	H. Martin	206,341	July 23	1007	287	14	148
Brake. Car-	W. H. Wilder and C. W. Conant	206,286	July 23	939	266	14	140
Brick-machine	L. B. Kennedy	206,247	July 23	890	254	14	133
Broom	M. L. Baxter	206,294	July 23	946	268	14	141
Buckle	J. H. Huntress	206,179	July 23	814	232	14	124
Buckle and loop fastening	G. L. Crandal	206,298	July 23	949	269	14	141
Buckle. Trace-	A. Orser	206,191	July 23	828	236	14	126
Bung	A. Schneider	206,265	July 23	911	259	14	136
Burglar-alarm	P. F. L. Burstall	206,225	July 23	866	247	14	131
Burglar-alarm. Electro-magnetic	M. Koloseus	206,182	July 23	817	233	14	124
Butter-packages and other vessels. Cover for	G. J. Record	206,261	July 23	908	258	14	136
Button	N. C. Newell	206,348	July 23	1015	290	14	149
Can. Pickle-	E. H. Foote	206,310	July 23	966	275	14	143
Cane-juice. Process and apparatus for evaporating and defecating	D. M. Cook. (Reissue)	8,341	July 23	1059	304	14	154
Car-coupling	G. H. Ames	206,159	July 23	791	227	14	121
Car-mover	J. B. Deeds	206,231	July 23	873	249	14	131
Car. Railway-	B. F. Card	206,163	July 23	798	228	14	122
Car. Railway-	J. T. and D. R. Leighton	206,253	July 23	897	256	14	134
Carbureter	A. W. Porter	206,196	July 23	835	238, 239	14	127
Cellar. Water-proof	T. New	206,351	July 23	1018	291	14	149
Cement and concrete walking-surfaces	T. and T. Hyatt	206,333	July 23	1000	284, 285	14	147
Cements, clays, metals, and glass in forming illuminated or other gratings, vault-covers, roofs, &c. Application of	T. Hyatt	206,332	July 23	993	283, 284	14	146
Chain-link	G. Kampf	206,335	July 23	1002	285	14	147
Chair. Invalid-	G. Wilson	206,379	July 23	1049	302	14	153
Chair. Rocking-	C. S. E. and J. G. Spoerl	206,363	July 23	1031	296	14	151
Chair and step-ladder. Combined arm-	W. Witthoft	206,205	July 23	849	242	14	128
Clamp and soldering apparatus. Combined	G. H. Perkins	206,193	July 23	832	237	14	126
Clamp and soldering apparatus. Combined	G. H. Perkins	206,194	July 23	833	237	14	126
Cooking apparatus. Portable	C. Nikiforoff	206,349	July 23	1016	290, 291	14	149
Cooler. Milk-	F. X. Manahan	206,340	July 23	1005	287	14	148
Corn. Apparatus and process for preserving and canning green	G. L. Merrell and O. F. Soule. (Reissue.)	8,351	July 23	1069	.....	14	156
Corn-sheller	H. Packer	206,258	July 23	903	257	14	135
Cotton chopper and cultivator. Combined	W. Mullens	206,347	July 23	1014	290	14	149
Cultivator	J. Mallon	206,185	July 23	819	234	14	125

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Current and tide wheel	W. Alger	206,289	July 23	942	266	14	140
Curtain-cord tightener	M. L. Cummings	206,301	July 23	955	271	14	142
Cuspadore	E. A. Heath	206,325	July 23	987	281	14	146
Cutting-tool	G. W. Maher	206,338	July 23	1004	286	14	148
Desk. School-	F. A. Wilber	206,378	July 23	1048	301	14	153
Dough-mixer	B. F. Sparrow	206,275	July 23	924	262	14	138
Dough-raiser	W. J. Snyder	206,274	July 23	923	261	14	138
Dredge	J. Keefe	206,246	July 23	890	254	14	133
Drill-chuck	G. W. Hayden	206,320	July 23	982	279	14	146
Drill. Grain-	E. M. Morgan	206,189	July 23	825	235	14	125
Electric recorder	L. Dunne	206,304	July 23	959	271, 272	14	145
Elevator	F. Koepe	206,251	July 23	894	255	14	134
Elevator	A. Whittemore	206,283	July 23	936	265	14	140
Elevator. Hydraulic	W. O'Keefe	206,353	July 23	1020	292	14	150
Embalming composition	R. J. McGowan	206,343	July 23	1009	.....	14	148
Engine. Air-	A. K. Rider	206,356	July 23	1023	292, 293	14	150
Engine. Compound	M. B. Harvey	206,235	July 23	875	250	14	132
Engine. Road-	B. C. Hicks	206,176	July 23	811	231, 232	14	123
Engine. Rotary	W. C. Wolfe	206,380	July 23	1051	302	14	153
Engines. Rotary exhaust-cylinder and balanced slide-valve for steam-	J. M. Searle and G. G. Palmer	206,268	July 23	914	260	14	137
Exercising-machine	S. M. Barnett	206,214	July 23	855	244	14	129
Fan attachment. Automatic	G. R. Kress	206,183	July 23	818	233	14	124
Fence. Metallic	J. Young	206,384	July 23	1056	303	14	154
Fire-arm. Breech-loading	H. Borchardt	206,217	July 23	857	245	14	129
Fire-arm. Magazine	F. W. Tiesing	206,367	July 23	1037	297, 298	14	152
Fire-arm. Magazine	W. Trabue	206,279	July 23	930	263	14	139
Fire-arm. Magazine	W. W. Wetmore	206,202	July 23	843	241	14	127
Fire-place	G. H. Hess	206,326	July 23	988	281	14	146
Fishing-rod	J. A. Robertson	206,264	July 23	910	259	14	136
Flour-bolting machine	M. Martin	206,186	July 23	820	234	14	125
Fruit-carrier	J. Boss	206,295	July 23	946	268	14	141
Fuel from waste. Extracting	N. Schroder	206,266	July 23	912	.....	14	136
Furnace. Metallurgic	W. M. Watson	206,374	July 23	1044	300	14	152
Furnaces. Measuring and discharging apparatus for bone-black	E. K. Richards	206,263	July 23	909	259	14	136
Gas-lighting burners. Electrode for electric	A. T. Smith	206,272	July 23	921	261	14	138
Gas-trap. Sewer	W. M. Allen	206,210	July 23	852	243	14	128
Gate	B. Cross	206,209	July 23	951	269	14	142
Gate	J. Greig	206,314	July 23	970	276	14	144
Grain-separator	B. S. Constant	206,229	July 23	871	248	14	131
Gun. Machine-	J. P. Taylor	206,365	July 23	1033	296, 297	14	151
Gun-sight	P. P. Carnes	206,164	July 23	799	229	14	122
Harrow	A. H. and M. S. Whiteside	206,284	July 23	937	265	14	140
Harrow. Wheel-	F. Bramer	206,218	July 23	859	245	14	130
Harvester	N. J. Titus	206,368	July 23	1039	298	14	152
Hat pouncing and finishing machines. Hat-block and spindle for	C. W. Glover	206,171	July 23	807	230	14	123
Hat-stretching machine	R. Eickemeyer	206,168	July 23	802	230	14	122
Hats and caps. Sweat-band for	T. W. Bracher	206,296	July 23	948	268	14	141
Heater and ventilator	I. L. Mahan	206,339	July 23	1005	286	14	148
Hedge-plashing machine	A. S. Warren	206,282	July 23	935	264	14	140
Hinge for trunks, &c. Stop-	C. W. Butler	206,226	July 23	868	248	14	131
Hog-trap	J. W. and C. F. Reed	206,262	July 23	909	258	14	136
Holdback for vehicles	O. Brothers, Jr.	206,221	July 23	862	246	14	130
Horse-collar	W. H. Briggs	206,219	July 23	860	246	14	130
Horse-detacher	O. Brothers, Jr.	206,222	July 23	863	246	14	130
Horse-powers. Chain link for	E. A. Smith	206,273	July 23	922	261	14	138
Hose-coupling	J. Grether	206,172	July 23	808	231	14	123
Hub. Vehicle-wheel	G. Bartlett	206,213	July 23	854	244	14	129
Hub. Vehicle-wheel	T. J. Stanwood and G. W. Parker	206,199	July 23	841	240	14	127
Insecticide	W. Sprague	206,209	July 23	851	243	14	128
Knife. Green-corn	S. Peberdy	206,364	July 23	1032	296	14	151
Knitting-machine needle	T. Walton and A. W. Paull	206,354	July 23	1021	292	14	150
Lamp and lantern. Tubular	T. G. Goodfellow	206,281	July 23	932	264	14	139
Lamp. Hydrostatic	E. P. Gleason. (Reissue)	206,313	July 23	969	275	14	144
Lamp-shade holder	C. D. Anstin	8,345	July 23	1063	305	14	155
Liquid-measure	J. Will	206,211	July 23	852	243	14	128
Lunch-case	G. H. Fayman	206,287	July 23	940	266	14	140
Mail-bag fastener	J. R. Little	206,169	July 23	805	230	14	122
Mechanical movement	W. Griscom and T. McFeely	206,184	July 23	818	234	14	124
Millstone-dressing machine	S. J. and G. J. Shimer	206,316	July 23	972	276	14	144
Molding-machine. Variety	J. Tildsley	206,360	July 23	1026	294, 295	14	151
Mower	G. R. Wight. (Reissue)	206,278	July 23	928	263	14	139
Mucilage-bottle	J. Berry. (Reissue)	8,347	July 23	1066	305	14	155
Needles. Machine for polishing the eyes of machine-	J. Berry. (Reissue)	8,349	July 23	1067	306	14	156
Needles. Polishing the eyes of machine	W. S. Gilman	8,350	July 23	1068	306	14	156
Nut-lock	W. P. Scofield	206,311	July 23	967	275	14	144
Nut-lock	C. H. Van Arnam	206,359	July 23	1026	293	14	150
Nut-lock	F. R. Brown	206,280	July 23	932	264	14	139
Ore-crushing machine	A. R. Koerber	206,223	July 23	864	247	14	130
Organ. Reed-	R. J. King	206,250	July 23	893	255	14	134
Oven-door	L. Hillebrand	206,180	July 23	815	233	14	124
Padlock	C. Cranston	206,327	July 23	989	281	14	146
Paper-cutting machines. Gage for	A. Johnson	206,230	July 23	872	249	14	131
Paper. Device for hanging wall-	E. Mather	206,245	July 23	889	253	14	133
Paper-pulp screen or dresser	J. Thorpe	206,187	July 23	821	234	14	125
Paper-stock. Rotary boiler for boiling and steaming	S. P. Groocock	206,277	July 23	927	262	14	139
Parquetry. Clamp for gluing	O. Huff	206,233	July 23	874	249	14	132
Pegging-machine	W. W. Stewart	206,178	July 23	813	232	14	124
Pen holder. Fountain-	W. Haskell	206,200	July 23	841	240	14	127
Pencil-sharpening device		206,174	July 23	810	231	14	123

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Pianos and organs. Transposition key-board for	R. K. Milliken	206,345	July 23	1011	288, 289	14	149
Pianos. Stringing	B. Dreher	206,232	July 23	874	249	14	132
Pipe. Asphaltum or cement	M. Allen	206,290	July 23	943	267	14	140
Pipe-joint. Wooden	W. N. Horton	206,177	July 23	812	232	14	124
Plow-clevis	J. F. Ellis and C. Robinson	206,167	July 23	801	229	14	122
Plow-colter	E. Jarrell	206,334	July 23	1001	285	14	147
Plow. Subsoil-	I. M. Griffin. (Reissue)	8,342	July 23	1061	304	14	154
Pocket-book for fishermen	F. M. Yerrington	206,206	July 23	849	242	14	128
Pressure-regulator. Automatic	J. J. Kennevan	206,248	July 23	891	254	14	134
Printing-machine	R. M. Hoe. (Reissue)	8,346	July 23	1065	305	14	155
Rail-joint	C. Lewis	206,337	July 23	1003	286	14	148
Railway-crossing	H. Chance	206,323	July 23	985	280	14	145
Railway. Elevated	J. W. Post	206,385	July 23	1057	304	14	154
Railway-rail	S. Aldred	206,208	July 23	851	242	14	128
Railway-switch	J. S. Broome and C. S. Archer	206,220	July 23	860	246	14	130
Railway-track	G. W. Cottingham	206,297	July 23	949	269	14	141
Refrigerator	J. Bensel	206,215	July 23	856	244	14	129
Rolling-mill	A. Hooven and W. H. Adle	206,330	July 23	992	282	14	146
Rolling-mill pinions. Journal-box for	H. Hamilton	206,319	July 23	980	279	14	145
Roofing-composition. Fire-proof	E. W. Hickman	206,175	July 23	811	.....	14	123
Rope socket and clamp. Combined	H. L. Heaton	206,321	July 23	983	280	14	145
Sad-iron	H. B. Todd	206,369	July 23	1040	298	14	152
Saddle. Harness-	J. M. Gwinnell	206,318	July 23	980	279	14	145
Saddle. Pack-	T. Moore	206,188	July 23	823	235	14	125
Sash-fastener	J. S. Matthews and A. Petersohn	206,342	July 23	1008	287	14	148
Sash-holder	W. D. Wright	206,383	July 23	1055	303	14	153
Screen. Window-	J. Kluenter	206,181	July 23	816	233	14	134
Screen. Window.	F. W. Wood	206,382	July 23	1054	303	14	153
Scrubber. Floor-	F. A. Balch	206,212	July 23	853	243	14	129
Seed-dropper	W. W. S. Kime	206,336	July 23	1002	285	14	148
Seeder	J. F. Keller. (Reissue)	8,343	July 23	1062	304	14	155
Seeder	J. F. Keller. (Reissue)	8,344	July 23	1062	305	14	155
Sewing-machine	J. A. House	206,239	July 23	880	251, 252	14	132
Sewing-machine attachment	A. P. Holcomb	206,329	July 23	991	282	14	146
Sewing-machine bobbin-winder	J. C. White	206,375	July 23	1045	300	14	152
Sewing machine. Boot and shoe	H. C. Gros	206,317	July 23	973	277, 278	14	144
Shoe	B. Anglemire	206,292	July 23	944	267	14	141
Shoe-horn	J. Klaucke	206,249	July 23	892	254	14	134
Skate	L. Cook	206,165	July 23	799	229	14	122
Skate	P. C. Franke	206,170	July 23	805	230	14	123
Snow and ice in the gutters of buildings. Device for melting	E. O. Rogers	206,357	July 23	1024	293	14	150
Soldering-iron handle	H. K. Hines	206,328	July 23	990	281	14	146
Spectacles and eyeglasses. Frame for	G. D. Edmonson	206,306	July 23	962	273	14	143
Speculum	A. Bradford	206,162	July 23	797	228	14	121
Spittoon	E. A. Heath	206,322	July 23	984	280	14	145
Spittoon	E. A. Heath	206,324	July 23	986	280	14	146
Spring. Carriage-	D. Dalzell	206,302	July 23	955	271	14	142
Spring machine. Coil-	P. Cucherat	206,300	July 23	951	269, 270	14	142
Spring. Vehicle-	W. F. Whitney. (Reissue)	8,348	July 23	1066	306	14	156
Square for garments. Drafting-	C. H. Griffin	206,315	July 23	971	276	14	144
Stamp. Branding-	M. T. Perkins	206,355	July 23	1022	292	14	150
Steam-trap	L. F. Smith	206,361	July 23	1029	295	14	151
Steam-trap. Return	T. E. McNeill	206,344	July 23	1009	287, 288	14	148
Stopper and stopper-fastener	F. J. Seybold	206,271	July 23	919	260, 261	14	138
Stove	G. R. Prowse	206,198	July 23	840	240	14	127
Stove. Cooking-	J. A. Lawson	206,252	July 23	895	255	14	134
Stove. Heating-	J. Van Wormer	206,372	July 23	1043	299	14	152
Stove. Petroleum-	J. S. Williams	206,204	July 23	848	241	14	128
Stove-pipe damper	C. B. Clark	206,227	July 23	868	248	14	131
Stoves. Valve for regenerative hot-blast	J. M. Hartman	206,173	July 23	809	231	14	123
Straw-cutter	C. Brustman	206,224	July 23	865	247	14	130
Stump-extractor	I. M. Noyes	206,352	July 23	1019	291	14	150
Surgical explorer	C. R. Jennison	206,243	July 23	887	253	14	133
Table	H. O. Hall and H. J. Durgin	206,234	July 23	875	250	14	132
Telegraphic accumulator and condenser	H. A. Taylor and A. Muirhead	206,366	July 23	1036	297	14	151
Telephone. Speaking-	J. H. Irwin	206,241	July 23	885	252	14	133
Till-alarm	M. L. Morgan	206,190	July 23	826	235, 236	14	125
Toy money-box	S. Whitnum	206,376	July 23	1047	301	14	153
Tug for harness	W. G. Hull	206,331	July 23	993	282	14	146
Tug. Shaft-	F. Eglington	206,307	July 23	963	273	14	143
Type-writing machine	B. F. Bellows	206,160	July 23	794	227	14	121
Underwaist	C. B. Robbins	206,358	July 23	1025	293	14	150
Valve. Locking-	P. Connolly	206,228	July 23	869	248	14	131
Valve. Steam-	C. C. Walworth	206,373	July 23	1044	300	14	152
Valve. Waste-pipe	J. Q. Adams	206,207	July 23	850	242	14	128
Varnishing-machine	J. Spencer	206,276	July 23	925	262	14	138
Velocipede. Water-	W. D. Moore	206,346	July 23	1013	289	14	149
Wantage-rod	E. S. Prime	206,259	July 23	905	258	14	136
Wash-boiler	F. H. Good	206,312	July 23	968	275	14	144
Water-closet	W. Turton	206,370	July 23	1041	299	14	152
Wells. Rock-washer for oil-	F. Jeannerat and L. E. Simons	206,242	July 23	886	253	14	133
Wire, &c. Machine for coiling	J. Prosser	206,197	July 23	839	239	14	127
Wool-washing machine	F. P. Pendleton and J. K. Proctor	206,192	July 23	829	236, 237	14	126
Wrench. Vehicle-hub	A. W. Anthoine	206,293	July 23	945	268	14	141
Wringer. Mop-	C. A. Valle	206,371	July 23	1042	299	14	152

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COMMISSIONER'S DECISIONS.

JOSEPH FUNCK.—*Interference.*

[*In the matter of the interference between the application of Joseph Funck for reissue of Letters Patent No.* 184,855, *filed April* 3, 1877, *and the reissue patent of H. H. Doty, No.* 7,867, *for* "IMPROVEMENT IN LAMPS."—*Decided May* 27, 1878.]

Evidence adduced in an interference between an application for reissue and a prior patent showing public use of the invention claimed for more than two years prior to the filing of the original application considered fatal to the reissue application in view of sections 4886 and 4916, Rev. Stats.

Where claims are clear and explicit, their scope cannot be restricted or enlarged by reference to features or operations not therein expressly mentioned or necessarily implied from the language therein employed.

[*C. S. Whitman*, U. S. special counsel for Funck; *M. Bailey*, for Doty.]

MOTION TO DISSOLVE.

DOOLITTLE, *Acting Commissioner:*

In March last a motion was made on the part of Doty, the patentee, before the Examiner of Interferences to dissolve the above-entitled interference, on the ground that the subject-matter involved therein was in public use for more than two years prior to the filing of Funk's original application. That application was filed October 19, 1876.

On hearing the motion the Examiner of Interferences found that the party making the motion relied upon evidence which in its original form was in the possession of the Light-House Board, and that the evidence presented here was of a secondary character. But in view of the importance of the controversy not only to the immediate parties but to the Government, who had used and was contemplating further use of the invention, the Examiner recommended that the interference be suspended and the Light-House Board be requested to furnish this Office such evidence and information as it might possess relating to the matter of public use. His recommendation was adopted, and, upon formal request being made, the Light-House Board furnished this Office a copy of a report of Mr. Charles S. Whitman, special counsel of the United States, made to the Light-House Board, "in the matter of the claim of H. H. Doty against the United States for burning mineral oil in light-houses," containing extracts of testimony adduced in a former proceeding in interference between an application for reissue by said Doty and the patent of Funck. This testimony had not been filed in this Office, for the reason that the interference proceeding was dissolved before the completion of the taking of the testimony; but the testimony which had been adduced up to that time in behalf of Funck remained in possession of the examiner in chancery in this city before whom it was taken.

Upon receiving the above printed report it was forwarded to the Examiner of Interferences, who resumed the consideration of the motion to dissolve.

On the first day of the present month the Examiner of Interferences recommended to the Commissioner that this interference be dissolved, on the ground that the testimony set forth in Mr. Whitman's report showed that a lamp embracing the matter in dispute had been in continuous public use at the Government light-house, Brandywine Shoals, during the years 1861, 1862, and 1863, and that such use, continuing through three years prior to the filing of Funck's application, amounted to a statutory bar to the grant of a patent thereon.

On reviewing the Examiner's decision it was thought desirable that a more complete copy of the testimony relating to this matter than was contained in Mr. Whitman's report should be obtained from the Light-House Board, and especially that the original lamp used at Brandywine Shoals, as above mentioned, and in possession of the Examiner in Chancery, be had before the final determination of this motion.

Upon making this desire known to the Light-House Board, a certified copy of the testimony requested, with the lamp mentioned attached thereto, was furnished. Notice was given to the respective parties, and a hearing was had on the 20th instant.

This testimony taken in a legal proceeding authorized by statute in behalf of an applicant now seeking from the Government a reissue of his patent, and

offered by him in the relation of the history of his own invention, is now considered by virtue of sections 4886 and 4916, Rev. Stats. The last-named section provides that a reissue application "shall be subject to revision and restriction in the same manner as original applications are." And the former section prohibits the grant of a patent to one whose invention has been in public use or on sale for more than two years prior to his application.

It is as proper for the Office to consider evidence of this character in regard to public use as it is to consider the sworn statement of an applicant that he made the invention prior to its description in any printed publication—a needful act when, under the same section, such publication is urged against his application.

The subject-matter involved in this interference, as stated by the Primary Examiner, is found in the 1st, 2d, 3d, 4th, and 5th claims of the reissue application of Funck. They are as follows:

1. A vertically-adjustable cylinder exterior to the air-passage on the outside of the wick-case, whereby a column of air of uniform width is caused to rise in a direction parallel to the axis of the burner.
2. An annular unobstructed air-passage of uniform width adjoining the exterior of the wick-case, as and for the purpose described.
3. An annular air-passage of uniform width located between the adjustable cylinder and the chimney, as and for the purposes described.
4. The combination of the adjustable cylinder with annular air-passages on either side thereof, as and for the purposes described.
5. The combination of a vertically-adjustable chimney, an annular air-passage contiguous to the wick-case, and an annular air-passage contiguous to the chimney, as and for the purposes described.

This matter is set forth in Doty's patent, but not claimed.

The evidence submitted in regard to the public use of the device which is the subject of the several claims in dispute consists of the lamp already mentioned used by the light-house authorities at the light-house at Brandywine Shoals and the testimony of Jesse Deputy, who identifies this lamp as one among several others used by him at that place during the years 1861, 1862, and 1863, while employed there as a light-house keeper. Although fourteen years had passed since he saw the lamp, yet he is enabled to identify it with positiveness by certain repairs and other ear-marks thereon, and by the arrangement and mutual relation of the deflector, the air-passages surrounding the same, and the union of the deflector and chimney-holder.

This lamp undoubtedly possesses all the features comprised in the claims in issue. There is an air-passage on the outside of the wick-case whereby a column of air of uniform width is caused to rise in a direction parallel to the axis of the burner, and there is a vertically-adjustable cylinder exterior to this air-passage. This vertically-adjustable cylinder, in the lamp produced in evidence, consists of a ferrule which slides upon the outer air-jacket and to which is attached the chimney-bracket. This meets the first claim. Between the outer wick-case and ferrule there is an annular unobstructed air-inlet of uniform width, which is the subject of the second claim; there is an annular air-passage of uniform width located between this ferrule and the chimney, which meets the terms of the third claim; there exists a combination of the adjustable cylinder (ferrule) with annular air-passages on either side thereof, which is the subject of the fourth claim; and, in conclusion, there is the combination of a vertically-adjustable chimney, an annular air-passage contiguous to the wick-case, and an annular air-passage contiguous to the chimney, which is the subject of the fifth claim.

The lamp used as above stated is a two-wick burner, and is what is known as the Lepaute burner. It is an improvement on what is known as the Fresnel lamp. Its history is set forth on page 209 of Major Elliott's report on "European Light-House Systems," published in 1873, as follows:

In 1849, M. Henry Lepaute, Sr., who had been a colaborer in the experiments and construction of the apparatus designed and calculated by M. Augustin Fresnel, sought to apply to third-order lenses more powerful burners than those then in use. After his own drawings he then had made by M. Blazy-Jallifier a two-wick burner of special construction. The two wicks, respectively fifty-four and twenty-eight millimeters in exterior diameter, were separated by a double air-space, and an air-tube was placed around the larger wick. These tubes were elongated and enlarged below, and the chimney-holder slipped over the outside. This burner gave an intensity of from four to five carcel units and consumed two hundred grams of colza oil per hour. Some experiments made in 1845 in the workshops of M. Henry Lepaute, Sr., and M. Leonor Fresnel, engineer of the *corps des ponts et chausseés* and director of the French light-house service, verified the principal results by one of his assistants. These new burners were adopted by the Kingdom of the Netherlands for the light-houses of Bowershaven, (1845-1847,) Scheveningen, (1851,) Renesse, and Schiermontkoog. The French government, while recognizing the merits of these burners, did not adopt them, not wishing to alter the standard burners invented by Messrs. Fresnel and Arago. For this reason M. Henry Lepaute continued to make them only when specially ordered. * * *

There is a tag attached to the lamp in evidence with this statement thereon:

Burner from Brandywine Shoal light-house furnished by Henry Lepaute in 1850.

This lamp has no central button-deflector or upwardly-tapering air-tube, possessed, respectively, by the patentee and reissue applicant herein, nor a deflector and chimney-holder adjustable independently of each other, as set forth in the sixth claim of Funck's present application.

But the claims now in interference are clear and explicit, and must be construed as having the precise scope, however wide or narrow, given by the language therein employed, and cannot be restricted or enlarged by particular modes of operation or by the existence of other features known to the art not expressly mentioned or necessarily implied by the terms of the claims themselves. (*Keystone Bridge Company* vs. *Phœnix Iron Company*, 12 OFFICIAL GAZETTE, 980.)

Viewed in this light, it is of no consequence in the determination of the present question whether the lamp used at Brandywine Shoals has an independent adjustable chimney-holder and deflector or whether the ferrule with which the chimney-holder rises and falls properly deflects the light upon the lenses below the upper rim of the chimney-holder.

That the ferrule and chimney-bracket of this lamp are adjustable above and below the wick-case, and that the annular air-passages exist therein, as set forth in the claims in interference, needs but a simple inspection of the same to discover.

The advantageous use of mineral oils in light-house lamps has no doubt been enhanced by the respective improvements made by the contestants, but neither has the right to assert title to the features of the Lepaute lamp. Whatever is shown in the lamp used at Brandywine Shoals in 1861, 1862, and 1863 was not invented by them, and was in public use years before the filing of their applications for those patents.

This interference is therefore dissolved, and those claims of the reissue applicant on which this proceeding was based are rejected.

JOSEPH FUNCK, ASSIGNOR TO THE UNITED STATES.

Appeal.

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of Joseph Funck for the reissue of Letters Patent No. 184,855, granted November 28, 1876, for "IMPROVEMENT IN LAMPS." Application for reissue filed April 3, 1877.—Decided August 10, 1878.*]

The office of a claim is to clearly and distinctly set forth what an applicant regards to be peculiarly his own invention.

The retention of old elements in a claim for a combination when there is nothing in common between them and the new ones added by the applicant, is a misstatement of his invention.

Such claims, therefore, rejected on references showing the old elements.

[*Charles S. Whitman*, U. S. special counsel for applicant.]

SPEAR, *Commissioner:*

The Primary Examiner rejected the following six claims of the reissue application, viz:

1. A vertically-adjustable cylinder exterior to the air-passage on the outside of the wick-case, whereby a column of air of uniform width is caused to rise in a direction parallel to the axis of the burner.
2. A light-house burner having a vertically-adjustable cylindrical deflector located in the air-space between the wick-tube and chimney-holder, whereby the inner current of air is thrown into the flame at its most advantageous zone and the outer air-current is drawn up along the surface of the chimney and injected into the flame above the inner current.
3. A light-house burner having a vertically-adjustable cylindrical deflector located in the air-space between the wick-tube and the chimney-holder and an open tube located in the central air-passage.
4. A Fresnel or concentric wick-burner having an air-passage between the outer wick-tube and the adjustable outer deflection, and an air-passage exterior to the tube located in the interior or central air-space.
5. The combination of the adjustable cylinder with annular air-passages on either side thereof, as and for the purposes described.
6. A Fresnel or concentric wick-burner having an air-passage between the chimney and the adjustable outer deflector, an air-passage between the outer wick-tube and the outer deflector, and an air-passage exterior to the tube located in the interior or central air-space.

The Board of Examiners-in-Chief, July 2, 1878, reversed the action of the Examiner with respect to claim 3, and affirmed his action as to the remaining five claims. The present appeal is taken to review the adverse decision of the Board.

Claims 1 and 5 are identical with claims 1 and 4, respectively, of a former series contained in this case, which the Acting Commissioner, under date of May 27, 1878, declared to be unpatentable because the subject-matter covered by them had been in public use more than two years prior to the filing of the application for original patent by the applicant, Funck. Claim 2 is also within the finding of the Acting Commissioner in relation to the public use of the feature in lamp construction which it covers, an inspection of the Brandywine Shoals light, referred to in his decision, which yet remains in the custody of this Office, fully justifying the conclusion. These claims, therefore, viz., the 1st, 2d, and 5th, are in their nature *res adjudicata*, and, having once been denied the applicant, cannot be allowed.

Claim 4 was properly rejected on English patent to Farquhar, No. 727, of 1872. It fully anticipates the subject-matter the applicant seeks to cover by the claim, and must stand as a bar to its allowance.

Something may be said in objection to the remaining claims irrespective of the sufficiency of the references cited against them.

The office of the claim is to clearly and distinctly set forth what an applicant regards to be peculiarly his own invention. If the improvement consists in some addition to or alteration of an existing structure, whether it be by the introduction of new features having no conjoint function with the old parts, or by substantial reorganization, in which new elements may or may not enter as co-operative factors, in either event, the claim should express no more and no less than is necessary to convey an accurate understanding of the actual invention which had been made.

If, for example, additional feature, valuable in its way, and yet entirely independent of the old elements, so far as coacting with them, is incorporated in a device, it must be manifest that the claim should cease when it had specified the single feature. To continue beyond this and enumerate other parts belonging to the old structure improved upon is as much an offense against clearness and precision as to state as elements of a combination claim parts which have no office whatever to perform in accomplishing the specific result.

The retention of the old elements in the claim when there is nothing in common between them and the one newly added to the machine is a misstatement of invention, giving a fictitious importance to the improvement and defeating any accurate judgment of its merit because of the obscurity resulting from the erroneous association.

Thus, of the claims in hand, the third, hitherto favorably considered by the Board, specifies as distinguishing characteristics of the lamp it seeks to cover, first, that it shall have "a vertically-adjustable cylindrical deflector, located in the air-space between the wick-tube and the chimney-holder;" and, second, "an open tube located in the central air-passage."

It cannot be seriously argued that there is any combination in function between the two parts specified, for each performs its individual office whether the other be absent or present, and when both are assembled in the same structure there is nothing but a summation of the distinctive effects of each without that characteristic modification which invariably marks the true co-operation of mechanical elements. If, then, there is no combination it remains to inquire whether both the features specified are novel and actually distinctive of the invention made by Funck. According to the rule hitherto laid down if either of the elements named is old in the art it must be eliminated from the claim, since it can manifestly form no part of the invention in the absence of any co-operative function performed.

The first feature, viz: "a vertically-adjustable cylindrical deflector, located in the air-space between the wick-tube and the chimney-holder," is certainly as old as the Brandywine Shoals light, now on file in the Office, and publicly used in 1861.

Disregarding this misleading element of the claim, the second—"an open tube located in the central air-passage"—is fully met in English Patent No. 727, of 1872, which is therefore a proper reference in rejection. Such being the state of the art the applicant manifestly did nothing more so far as concerns claim 3 than unite in a single lamp structure the valuable parts of previously-existing lamps, the old features in their new relations not contributing jointly to any common effect, but maintaining their individuality and that of their distinctive effects throughout.

The unpatentable nature of such improvements has more than once been decreed. (*Hailes* vs. *Van Wormer*, 20 Wall.; *Gould* vs. *Winchin*, 13 OFFICIAL GAZETTE, 1081.)

So, too, respecting claim 6, the same course of reasoning must necessarily exclude as elements of the Funck invention "an air-passage between the chimney and the adjustable outer deflector" and "an air-passage between the outer wick-tube and the outer deflector," for the reason that they are features of the Brandywine light long since in public use, and in the particular assemblage called for by the claim, have no coactive function with the other element specified, viz: "an air-passage exterior to the tube located in the interior

or central air-space." With the claim thus simplified it is not difficult to see that it is met by the English Patent No. 727, of 1872, rather than by the Doty reissue patent which has been cited. True enough, the latter has a central tube as called for by the strict letter of the claim, but it is not a tube in the same sense or for the same purpose contemplated by Funck, and can never become so. Its sole purpose is to serve as a housing for the adjustable button-rod, and from top to bottom there is not a single inlet which would make it an air-tube as the one is which is shown and described by Funck and by the English patent. In the case of *Paper Bag Company* vs. *Murphy*, 13 OFFICIAL GAZETTE, 366, Justice Clifford, speaking upon this very point, says: * * * "the court or jury * * * are not to judge about similarities or differences by the names of things, but are to look at the machines, or several devices, or elements in the light of what they do or what office or function they perform and how they perform it." * * * So that, following this plain rule which has long been recognized in construing patents, the inevitable conclusion presents itself that the tube of Doty is different from that of Funck, for they perform radically different functions and accomplish radically different results. Since, then, the Doty patent is not in point its validity as a reference need not be further discussed, and claim 6 will be rejected on English Patent 727, of 1872, instead, following as in claim 3, the authority of *Hailes* vs. *Van Wormer* to the effect that simple juxtaposition of various old devices where each is left to work out its own peculiar office, the result being but a simple aggregation of the contributive functions of the individual members, does not amount to patentable invention.

The action of the Board is affirmed as to claims 1, 2, 4, 5, and 6, and is reversed as to claim 3.

The entire six clauses are rejected for the reasons herein set forth.

TRADE-MARKS.

[Each certificate bearing date July 30, 1878.]

6,411.—SMALL-BEER, SODA, SARSAPARILLA, AND MINERAL WATERS, AND GINGER-ALE.—*Richard Alexander*, Kinderhook, N. Y. Application filed July 8, 1878.
"The word 'EXCELSIOR.'"

6,412.—CIGARS.—*Reuben A. Brown*, Westfield, Mass. Application filed July 16, 1878.
"The word-symbol 'BAG-DAD.'"

6,413.—COW-MILKING DEVICES.—*William Crozier*, Northport, N. Y. Application filed May 20, 1878.
"The representation of the cow with the milking applied to its teats."

6,414.—LAGER-BEER.—*Delaney & Griffin*, New York, N. Y. Application filed June 27, 1878.
"A symbol representing a hemisphere penetrated by a streak of lightning."

6,415.—STOVE-POLISH.—*Phœnix Plumbago Mining Company*, Philadelphia, Pa. Application filed July 18, 1878.
"The fanciful and arbitrarily-selected word 'MAGIC.'"

6,416.—WHISKY.—*Charles H. Ross & Co.*, Baltimore, Md. (Re-registration.) Application filed July 20, 1878.
"The word-symbol 'MONUMENTAL.'"

6,417.—WHISKY.—*Charles H. Ross & Co.*, Baltimore, Md. (Re-registration.) Application filed July 20, 1878.
"The word-symbol 'THOMPSON.'"

6,418.—WHISKY.—*Charles H. Ross & Co.*, Baltimore, Md. (Re-registration.) Application filed July 20, 1878.
"The word-symbol "J. JACKSON.'"

6,419.—WHISKY.—*Charles H. Ross & Co.*, Baltimore, Md. (Re-registration.) Application filed July 20, 1878.
"The word-symbol 'PATAPSCO.'"

6,420.—WHISKY.—*Charles H. Ross & Co.*, Baltimore, Md. (Re-registration.) Application filed July 20, 1878.
"The word-symbol 'MONONGAHELA MOUNTAIN DEW.'"

6,421.—BRAID.—*Spelman Brothers*, New York, N. Y. Application filed July 22, 1878.
"The arbitrarily-selected word 'BOULEVARD.'"

6,422.—FINE RUBBER GOODS.—*Davidson Rubber Company*, Boston, Mass. Application filed July 5, 1878.
"The arbitrarily-selected and fanciful word-symbol 'DAVIDSON.'"

6,423.—JEWELRY AND SILVER AND PLATED WARE.—*John H. Johnston*, New York, N. Y. Application filed June 11, 1878.
"The arbitrary letters 'C. P. F.' and 'S. B. M. C.'"

6,424.—CIGARS.—*S. Jacoby*, New York, N. Y. Application filed February 11, 1878.
"A central line, *b*, extending across the top and front of the box."

6,425.—SOAP.—*Lautz & Brothers & Co.*, Buffalo, N. Y. Application filed July 5, 1878.
"The pictorial representation of a man holding a bar of soap in one of his hands."

6,426.—LUBRICATING-OILS.—*Austin Stevens*, Brooklyn, N. Y. Application filed June 17, 1878.
"The arbitrary symbol-word 'PEERLESS.'"

6,427.—WATER-PROOF CLOTH.—*The Rubberoid Company*, Bristol and Philadelphia, Pa. Application filed June 10, 1878.
"The word 'RUBBEROID,' disposed in border lines of arch form, united at their ends, and inclosing the representation of a tree."

6,428.—DRIED BEEF.—*Charles H. Wilcox*, Earlville, N. Y. Application filed July 10, 1878.
"The picture of a beef animal, upon the side of which is a white parallelogram containing a monogram composed of the letters 'C. H. W.'"

6,429.—BONESET BOURBON TONIC.—*Henry Chambers*, Louisville, Ky. Application filed July 11, 1878.
"The picture of the boneset plant and the autograph signature of Chambers & Brown."

6,430.—BOURBON WHISKY.—*Bleecker & Co.*, Albany, N. Y. Application filed May 8, 1878.
"The arbitrarily-selected word 'TAYLOR.'"

6,431.—ALE AND PORTER.—*Burnell & Simpkins*, San Francisco, Cal. Application filed July 20, 1878.
"The word-symbol 'ALBION' and the cask."

6,432.—CORSET-CLASPS.—*James G. Fitzpatrick*, New York, N. Y. Application filed July 9, 1878.
"The word 'CHAMPION.'"

6,433.—SEWING-MACHINES.—*Tryber & Sweetland*, Chicago, Ill. Application filed June 28, 1878.
"The eagle and crown, as shown."

LABELS.

[Each certificate bearing date July 30, 1878.]

1,636.—Title: "CATERSON'S CONSTITUTION INVIGORATING SYRUP." *Wm. M. Caterson*, Philadelphia, Pa. Application filed July 20, 1878.

1,637.—Title: "CLYSTERIUM FOR THE CURE OF LEUCORRHEA, INFLAMMATION, &c."—*D. Tillotson Gale*, Albany, N. Y. Application filed July 3, 1878.

1,638.—Title: "EXTRACT SWEET CLOVER."—*D. Tillotson Gale*, Albany, N. Y. Application filed July 22, 1878.

1,639.—Title: "FRENCH BAKING POWDER."—*James Hewson*, Kansas City, Mo. Application filed July 18, 1878.

1,640.—Title: "CENTRAL CITY SUPER-PHOSPHATE."—*E. B. Crofut & Co.*, Syracuse, N. Y. Application filed July 24, 1878.

1,641.—Title: "AUSTRALIAN BALM—THE BEST IN THE WORLD." *Marshall & Co.*, Milwaukee, Wis. Application filed July 25, 1878.

DESIGNS.

[Each design bearing date July 30, 1878.]

10,760.—CROCHET-STITCH.—*Caroline A. Burnham*, West Somerville, assignor to *Thomas Dalby* and *Edwin J. Lane*, Boston, Mass. Application filed June 28, 1878. Term of patent 3½ years.

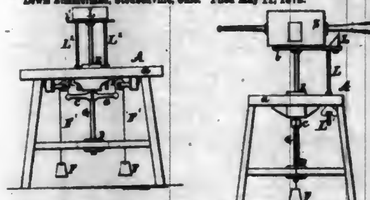
10,761.—STOCKING.—*Martin Landenberger*, Philadelphia, Pa., assignor to *Martin Landenberger Manufacturing Company*, same place. Application filed July 1, 1878. Term of patent 7 years.

10,762 and 10,763.—HAT AND COAT RACKS.—*John O. Montignani*, Albany, N. Y., assignor of one-half his right to *Nelson Lyon*, same place. Applications filed June 4, 1878. Term of patents 7 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

JULY 30, 1878.

206,306. APPARATUS FOR RECEIVING GLASS CASTS FROM MOLDS. Robert J. Beatty and Lewis Zimmerman, Steubenville, Ohio. Filed May 11, 1878.



Claim.—1. The vertically-moving platform *b*, adapted to receive the cast and carry it down vertically out of and away from the mold, substantially as set forth.

2. The adjustable rest *b'* and guide L, in combination with the adjustable vertically-moving platform *b*, substantially as and for the purposes set forth.

3. The combination, with the frame A, having guides or bearings D E, and the platform *b*, having the vertical shaft G, extending downward from its under side, of the adjustable arms *c*, pulleys I, and cords and weights F' F, substantially as set forth.

206,307. ARTIFICIAL TREES AND FLOWERS. Francis C. Bowen, Brooklyn, N. Y. Filed Jan. 7, 1878.



Claim.—1. A stalk or trunk, A, provided with kerfs, openings, pins, or other suitable means of fastening, to receive and sustain in position flowers, twigs, branches, leaves, or blossoms, natural or artificial, for the purpose of representing natural plants, shrubs, or trees, substantially as and for the purpose set forth.

2. The combination, with a stalk or trunk, A, provided with kerfs, openings, pins, or other suitable means for connecting with and sustaining in position twigs, boughs, flowers, or leaves, natural or artificial, of a border-frame provided with openings, pins, or other suitable means for connecting with and supporting stalks, trunks, leaves, flowers, pots, pedestals, or figures, substantially as and for the purpose set forth.

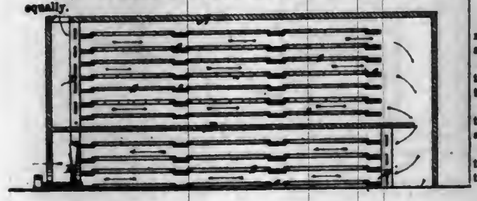
206,308. CLASPS. F. Barton Brown, Boston, Mass. Filed June 6, 1878.



Claim.—The double clasp above described, consisting of the three levers *a*, *a'*, and *b*, hinged together by the pin *d*, one end of *b* acting with *a* to form one pair of griping-jaws, and the other end of *b* acting with *a'* to form a second pair of griping-jaws, substantially as described.

206,309. DRYING APPARATUS. Thomas Clegg, Lawrence, Mass. Filed May 13, 1878.

Brief.—The heaters are so constructed as to heat and distribute the air equally.



206,310. JAIL-BARS. Calvin J. Coe, Lowville, N. Y., assignor to himself and John Pixley, same place. Filed Mar. 27, 1878.

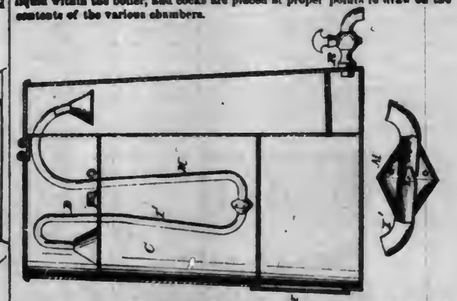
Brief.—An interior rod of wrought-iron is surrounded by a wrought tube, a space being left between the two, which is filled up with chilled metal, the core, surface, and filling forming one solid bar



Claim.—As a new manufacture, a jail-bar consisting of a core and face of malleable metal and intervening body of chilled or hardened metal, all united in one bar, substantially as set forth.

206,311. DISINFECTER. Matyas Csiker, Stapleton, assignor of one-half his right to Frederick A. Kelling and George J. Greenfield, Richmond County, N. Y., and the remaining one-half to Frederick A. Kelling, trustee. Filed May 9, 1878.

Brief.—A closed boiler having a flaring opening into a pipe extending from its upper surface. This pipe carves and returns through the cover, and near the floor is placed horizontally. It terminates in a jet-orifice within another pipe, (the joint being surrounded by a jacket having very minute perforations,) which passes through the cover, and ends in a rose-jet in adjoining compartment. Below the boiler is a space for a heater, and above is a covered space for heating any fluid. A water-gage serves to show the depth of the liquid within the boiler, and cocks are placed at proper points to draw off the contents of the various chambers.



Claim.—The combination, with the chamber, its shelves, and air-propelling apparatus, of a heater, D, situated at the entrance, and a supplementary heater, *D'*, situated between the heater D and the outlet, as set forth.

206,312. APPARATUS FOR SEPARATING THE ALCOHOLIC FROM THE NITROGENOUS PORTIONS OF FERMENTED LIQUORS, AND FOR MAKING EXTRACTS. Edward D. Dibbridge, Allegheny, Pa. Filed Jan. 22, 1878



Claim.—1. An apparatus for separating the alcoholic from the nitrogenous portions of fermented liquors, and for making extracts, consisting of a closed chamber, having a pipe opening from its upper part into the outer chamber and returning back into said chamber, and provided with a jet-tube located opposite the open end of a pipe extending outside of the chamber, the adjoining ends of said pipes being surrounded by a jacket or chamber provided with perforations, the combined areas of which latter are less than the area of the first-mentioned pipe, whereby the steam is caused to pass through said pipe and carry the liquid with it out through the last-mentioned pipe, substantially as specified.

2. In combination with the compartment C and pipes I' and M' and the injector, the compartment D above the compartment C, for the purpose of feed preparation when the apparatus is so employed.

206,313. APPARATUS FOR FROSTING GLASSWARE. Edward D. Dibbridge, Allegheny, Pa. Filed Jan. 22, 1878

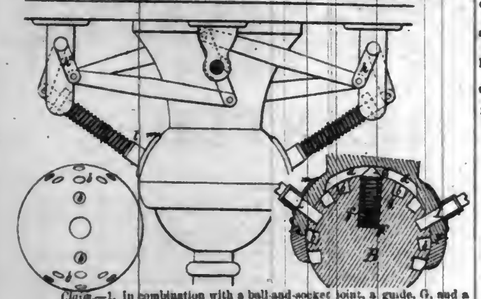
Claim.—1. As an improvement in apparatus for frosting glassware by means of acids, the jar A, provided with the guide and support B, substantially as described.

2. As an improvement in apparatus for frosting glassware, the combination of a jar or cell for holding the acid with an interior support for the article to be frosted, substantially as described.

3. As an improvement in apparatus for frosting glassware, the combination of a series of jars, A, having supports B, to form a battery, substantially as described.

4. As an improvement in apparatus for frosting glassware, the combination of a series of jars, A, having the supports B, to form a battery, with the trough D, substantially as described.

206,393. BALL-JOINTS. William Ellinger, Baltimore, Md. Filed July 3, 1878.



Claim.—1. In combination with a ball-and-socket joint, a guide, G, and a groove or grooves, *d*, and a locking bolt or pin, substantially as and for the purpose described.

2. A guiding groove or grooves, *d*, for a stop locking-pin, provided in the socket of a ball-joint, substantially as and for the purpose described.

3. A guide, G, for a stop locking-pin, provided on the ball of a ball-and-socket joint, substantially as and for the purpose described.

4. Stop-holes *b*, provided in the ball of a ball-and-socket joint, in combination with an entering stop locking-pin, substantially as and for the purpose described.

5. The combination of a ball, a socket, groove or grooves *d*, guide G, stop-holes *b*, and a locking bolt or pin, substantially as and for the purpose described.

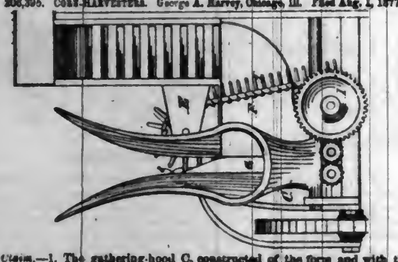
6. In combination with a ball-and-socket joint, provided with mechanism for sustaining a platform or other superincumbent structure, spring-bolts and a lever mechanism, whereby two spring-bolts may be operated by turning a single knob on either side of the platform, substantially as and for the purpose described.

206,394. HAMMERS. Eugene F. Goodman, Lockport, N. Y. Filed Nov. 26, 1877.



Claim.—A hammer, substantially as described, having pointed claws beveled to an edge on the outside along the slot.

206,395. CORN-HARVESTERS. George A. Harvey, Chicago, Ill. Filed Aug. 1, 1877.



Claim.—1. The gathering-hood C, constructed of the form and with the curves substantially as and for the purpose set forth.

2. The guide-arm E, provided with the ledge *s*, in combination with the gathering-chain F, having teeth *f*, arranged and operating substantially as and for the purpose set forth.

3. The gathering-hood C, in combination with the flanged arm E and toothed chain F, arranged and operating substantially as and for the purpose set forth.

4. The elastic guard or cover G, hinged to the gatherer, and held in position by a spring, substantially as and for the purpose set forth.

5. The rollers H, constructed with longitudinal grooves, and arranged with ribs slightly intermeshing, so that the bits is at their outer edges only, substantially as and for the purpose set forth.

6. The steel facing-strips *h'*, attached to the outer edges of the flanges or ribs *h* of the picking-rollers H, substantially as and for the purpose set forth.

7. The axis B, bent vertically, as described, in combination with a pair of picking-rollers, H, arranged just in front of or just in the bend of the axle, substantially as and for the purpose set forth.

206,396. MANUFACTURE OF BARREL-HEADS AND OTHER ARTICLES FROM PAPER-PULP. George W. Lawsey, Hartford, Conn., assignor to the American Paper Barrel Company. Filed Dec. 26, 1877.

Claim.—1. The combination of the movable side compressors *f* and the movable end compresser *p*, both advancing to compress the pulp, and retracting therefrom simultaneously, substantially as set forth.

2. The annular vertically movable gate *d'*, surrounding the chamber *b'*, in combination with the side compressors *f*.

3. The combination of the movable side compressors *f* and the interspace compressors *k*.

4. In combination, the movable end presser *p* and the movable end-presser guide and mold-closer *s*.

5. In combination, the screw-shaft *e*, nuts *f*, toggle-arms *g*, ring *h*, toggle-arm *i*, side compressors *j*, nuts *n*, toggle arms *o*, and end presser *p*.

6. In combination, the chamber *b'*, disk *y*, annular gate *d'*, rods *d'*, and chamber *b'*.

7. In combination, the screw-shaft *e*, nuts *f*, toggle-arms *g*, ring *h*, toggle-arms *i*, and side compressors *j*.

8. In combination, the movable side compressors *j*, the movable end presser *p*, the movable forming-disk *y*, and the operating-rod *z*.

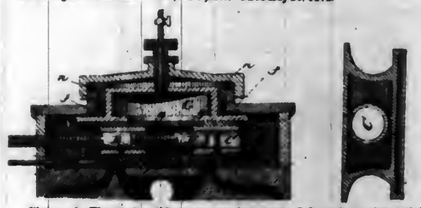
9. In combination, the plate *m*, movable side compressors *j*, socket-plate *w*, mold-closer *s*, and end presser *p*.

206,397. LIFE-PRESERVERS. Marcus Marx, New York, N. Y. Filed June 19, 1878.



Claim.—The life-preserver A, provided with the compressible pipe B^1, extending into said life-preserver, in combination with the rigid supply-orifice, B, having the seat B^2 and controlling-valve $C C^2$, as and for the purpose described.

206,398. SLIDE-VALVES FOR STEAM-ENGINES. C. M. Miller, Canton, Ohio, assignor of one-half his right to C. Aultman & Co., same place. Filed May 30, 1878.



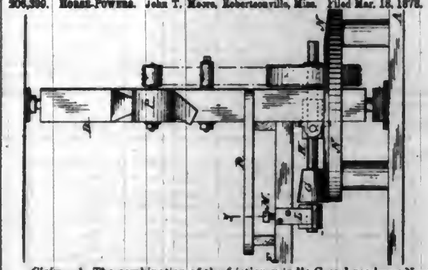
Claim.—1. The main slide-valve, having ports S S' and a substantially-cylindrical passage, C, in combination with piston cut-off valves D D, closely fitting the cylindrical passage, substantially as described.

2. The main slide valve, having the substantially-cylindrical passage C, and having ports S S', the mouths of which extend in a narrow slit nearly or quite around the walls of the passage C, substantially as described, for the purposes specified.

3. The main slide-valve, having the substantially-cylindrical passage C, and having the ports S S', with narrow mouths extending substantially around the passage C, in combination with the enlarged or chambered steam-passages *t* back of said mouths, substantially as described.

4. The sliding cylinder G, screw-cap H, and collar *f*, in combination with the gland *a*, having a V-shaped lower edge, and with the packing arranged in the space between the ports G *f a*, substantially as described.

206,399. HORSE-POWERS. John T. Moore, Robertsonville, Miss. Filed Mar. 18, 1878.

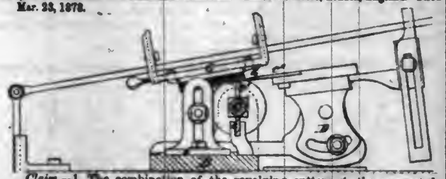


Claim.—1. The combination of the friction-spindle G and roadway N with the driving-lever F, adjustable platform R, and spindle D, substantially as and for the purpose specified.

2. The friction-spindle G and journal H, in combination with the adjusting mechanism M K and spindle D, substantially as and for the purpose specified.

3. The combination of the friction spindle G, journal H, adjusting mechanism M K, and pulley I with the lever F, spindle D, and roadway N, substantially as and for the purposes described.

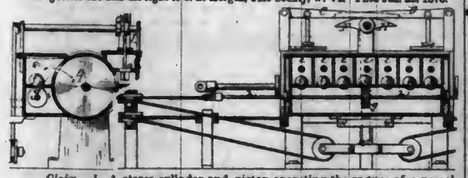
206,400. MACHINES FOR TRIMMING BRISTLES. Alfred W. Moore, London, England. Filed Mar. 23, 1878.



Claim.—1. The combination of the revolving cutters *c'*, the support *d*, adjustable to or from the said cutters, the quadrant or standard D, pivoted to said support and adjustable thereupon, the cutting-plate *c''*, and suitable guides for a brush in its movement to bring its bristles in position to be cut by said cutters and cutting plate, substantially as set forth.

2. The combination, with suitable cutting apparatus, of the rod F and the brush-carriage G, oscillating laterally thereupon, substantially as and for the purpose set forth.

206,401. DEVICES FOR WORKING THE RUDDERS OF VESSELS. John Morgan, Wheeling, assignor of one-half his right to S. B. Morgan, Ohio County, W. Va. Filed Jan. 22, 1878.



Claim.—1. A steam-cylinder and piston operating the rudder of a vessel, in combination with a series of chambers containing valves to relieve the pressure in the cylinder, substantially as described.

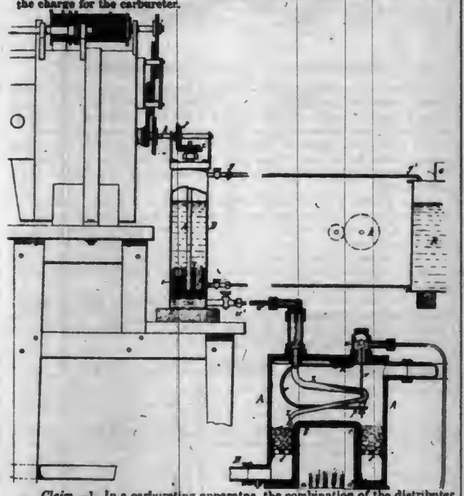
2. The combination of the cylinder A, chambers *c*, provided with ball-valves *f*, and the lower exhaust-chamber, provided with means for operating said valves, substantially as described.

3. The combination of the reciprocating projection *g* under the control of the pilot, by means of a system of ropes and pulleys, substantially as described, with a series of exhaust-chambers, *c*, provided with ball-valves *f*, substantially as set forth.

4. The combination of the lever *c''*, stops *m m'*, rod *h*, and a projection, *g*, with a series of ropes and pulleys and the lever *c''*, substantially as described.

206,402. CARBURETING APPARATUS. Claude André Puyoulx, Paris, France. Filed Feb. 15, 1878. Patented in France, Nov. 22, 1877.

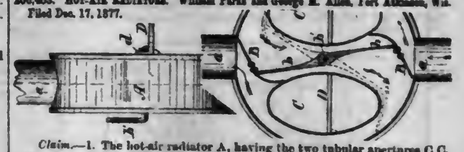
Brief.—The distributer is connected with the blower by the gear in such a way that a certain regulated proportion of hydrocarbon will enter the carbureter with a given volume of air. The upper and lower disks in the distributer are fixed, while the middle one turns with the shaft. The holes in this pass under those of the upper disk, become filled with hydrocarbon, and deliver it, on the further revolution of the disk, to the holes in the lower disk, from which it finally passes to the carbureter. The holes in the middle disk thus measure the charge for the carbureter.



Claim.—1. In a carbureting apparatus, the combination of the distributer D with the hydrocarbon-reservoir R and chamber A, the distributer being provided with the revolving shaft A and two or more perforated disks, *s t r*, substantially as specified.

2. In a carbureting apparatus, the carbureter A, provided with the chamber *m*, valve *x*, stem *v*, and U-shaped regulator *s o p*, substantially as specified.

206,403. HOT-AIR RADIATORS. William Parks and George M. Allen, Fort Atkinson, Wis. Filed Dec. 17, 1877.

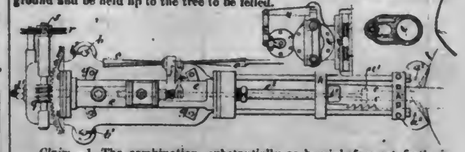


Claim.—1. The hot-air radiator A, having the two tubular apertures C C, with their surrounding passages, as described, in combination with the dampers B B, constructed to operate as described, and shown in Fig. 2, for the purpose specified.

2. The shelf D, as described, in combination with damper-rod *b'*, as described, for the purpose specified.

206,404. DRAG-SAWING MACHINES. Allen Ransome, The Eskertons, Clapham Common, England. Filed May 7, 1878.

Brief.—A horizontally-operating drag-saw is actuated by a steam-cylinder pivoted horizontally upon a bed-plate or frame, adapted to rest flat on the ground and be held up to the tree to be felled.



Claim.—1. The combination, substantially as hereinbefore set forth, in portable tree-felling machinery, of the bed-plate or frame, adapted to rest flat upon the ground and be held up to the tree to be felled, the cylinder pivoted upon the frame, the piston, the saw attached to the piston-rod, and devices, substantially such as described, for turning the pivoted cylinder upon the frame, for the purpose specified.

2. The combination of the bed-plate or frame, the pivoted horizontally-turning cylinder, its guides, and the toothed arc, substantially as and for the purposes set forth.

3. The combination of the bed-plate or frame, adapted to abut at one end against a tree to be felled, and to be staked down to the ground, the turning cylinder, the saw operated by the piston, the cross-head *a'*, adjustable lengthwise of the bed-plate, the chains, and their guide-pulleys, these members being constructed and operating substantially as hereinbefore set forth.

4. The combination, substantially as hereinbefore set forth, of the bed-plate or frame, the turning cylinder, the piston, the saw attached to the piston-rod, the cross-head A, also attached to the piston-rod, the guide-bars on which the cross-head works, the bar *s*, attached to the cross-head, the rotary valve, and the connections between the valve and said bar, for the purpose specified.

5. The combination of the bed-plate or frame, the pivoted cylinder, the toothed arc on the cylinder, the worm engaging therewith, the wheel on the worm-axis, the lever, and the pawls, these members being constructed and operating substantially as hereinbefore set forth.

206,405. HARNESS-SADDLES. Abraham F. Risser and Michael G. Lang, Joliet, assignors to said Risser and Baltzer K. Reitz, Chicago, Ill. Filed Nov. 26, 1877.

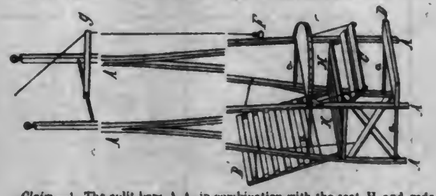


Claim.—1. The saddle-tree A, constructed with a raised seat or housing, *a*, on each side, and provided with inwardly-projecting lugs or flanges *a'* at its lower ends, substantially as and for the purpose set forth.

2. The saddle-tree A, constructed with the seat *a* on each side, and rests or flanges *a'* at its lower ends, in combination with the independent and detachable loop-irons B, provided with nuts *t'*, and the tarret, whereby the loop-irons are secured to the tree, substantially as described.

3. The tree A, provided with the holes *d d'* in its central portion, and a stud, d^3, in combination with the seat E, provided with a hole, *e*, and the projections d^1 d^2 on its lower side, all constructed and operating substantially as described.

206,406. SWINGS. William R. Tothill, Chicago, Ill. Filed Nov. 12, 1877.



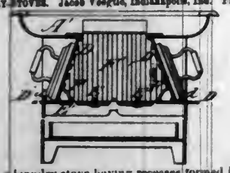
Claim.—1. The split bars A A, in combination with the seat H and rods *e*, substantially as specified.

2. The improved swing herein described, consisting of the bars A, seat H, back and front B C, foot-rest D, arm *g*, and cord F, all constructed and arranged to operate substantially as specified.

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3. The detachable bracket K, having the projection *b* and hook *c*, in combination with the eyebolt *d* and side bar A, substantially as and for the purpose specified.

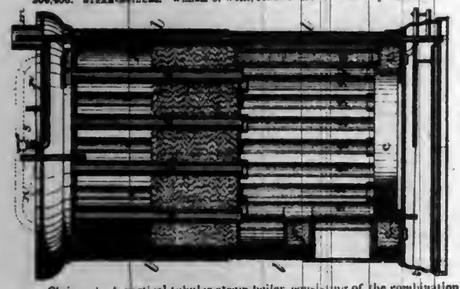
206,407. LAUNDRY-STOVES. Jacob Voegtle, Indianapolis, Ind. Filed Apr. 19, 1878.



Claim.—1. In a laundry-stove having recesses formed in the sides for the reception of sad-irons, the plates D, D', and lining-plates F, arranged in the manner shown and described, for the purpose set forth.

2. The combination of the plates D, D', and F with the expanded upper portion A' of the stove, all formed, constructed, and arranged substantially as set forth.

206,408. STEAM-BOILERS. William C. Wolfe, Johnstown, Pa. Filed May 18, 1878.

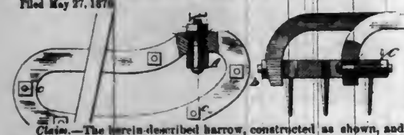


Claim.—1. A vertical tubular steam-boiler, consisting of the combination of the upper portion *h*, through which the flues *i* pass, a single row of vertical pipes, *g*, inclosing the fire-chamber, the horizontal annular chamber *c*, surrounding the grate, and an outer inclosing case, *l*, having its lower portion made removable, substantially as shown.

2. The combination of the tubes *g*, extension-sockets 7, chamber *c*, and crown-sheet, the sockets having an internal screw to receive the end of the pipe and an external screw-thread to screw into the annular chamber *c* or crown-sheet, whereby each tube may be independently removed and replaced, substantially as described.

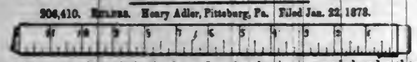
3. In combination with the boiler, substantially as herein described, the exhaust-pipe running from the engine through the boiler, and provided at its upper end with a nozzle for increasing the draft in the uptake and at its lower end with a horizontal perforated projection, whereby a jet of steam is supplied and mingled with the air under the grate for the better combustion of the fuel, said pipe being provided with suitable cocks, substantially as set forth.

206,409. HARROW ATTACHMENTS FOR WHEEL-PLOWS. James A. Wood, Guysonville, Ind. Filed May 27, 1878.



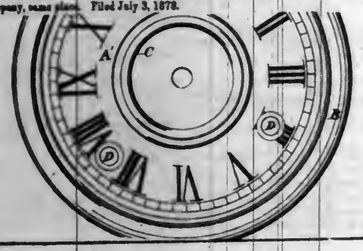
Claim.—The herein-described harrow, constructed as shown, and having its beams provided with transverse elongated slots C C, and fastening devices passing through said slots and adapted to be applied to different-shaped beams of double or other plows, substantially as specified.

206,410. RULERS. Henry Adler, Pittsburg, Pa. Filed Jan. 22, 1878.



Claim.—A rule made in the form of a prism having a rounded and a sharp edge, the sides being spaced off and marked with figures and provided with a detachable T, whereby a ruler, measurer, paper-tearer, and receptacle for pens and pencils is formed, substantially as herein described.

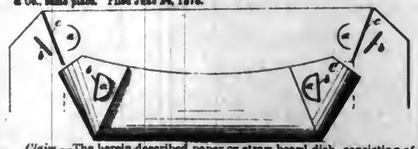
206,411. CLOCK-FACES. George Ager, Thomaston, Conn., assignor to Seth Thomas Clock Company, same place. Filed July 3, 1878.



Claim.—1. The metallic plate or body A herein described, made in one piece and in the same plane, and having the raised border-ring B and inner concentric raised ring C attached to its front, as herein specified.

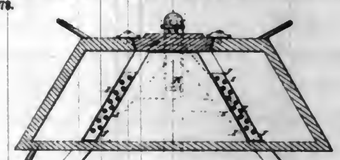
2. The combination, with the circular metallic plate A, made in one piece and in the same plane, of the circular paper dial-face A', made in one piece and in the same plane throughout, and secured to the metallic body A, and the raised border-ring B and the raised central and concentric ring C, both attached to the clock-face, substantially as herein specified.

206,412. PAPER DISHES. Peter M. Aulabaugh, Dayton, Ohio, assignor to Aulabaugh, Orume & Co., same place. Filed June 24, 1878.



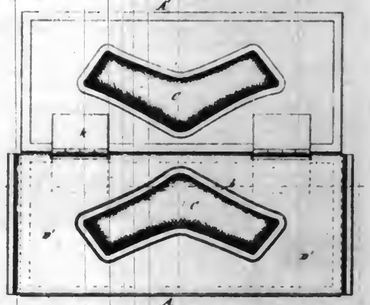
Claim.—The herein-described paper or straw-board dish, consisting of the blank A, slit at the corners, as at *c*, and provided with the slots *b* and tongues *a*, formed within the side and end pieces, and arranged so that the strain is borne by the tongues longitudinally, substantially as and for the purpose specified.

206,413. CHURNS. Charles V. Baker and Jacob W. Baker, Middleburne, Ohio. Filed May 10, 1878.



Claim.—A vibrating churn provided with straight bottom and acute-angled ends on each side of beaters I J, as shown and described, for the purpose specified.

206,414. COMBINED BLOTTER AND MOISTENER. Wm. W. Bosch, New York, N. Y., assignor to Rudolf Mayer, same place. Filed May 20, 1878.



Claim.—1. A double moistening device formed of two similar halves or hollow shells, A A', hinged to each other on one side and capable of being opened apart or closed together, and provided with coinciding moistening-pads on their meeting faces, substantially as herein shown and described.

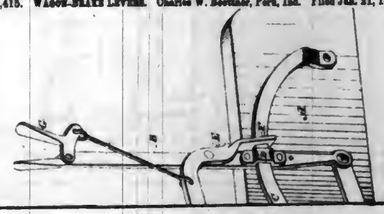
2. A combined blotter and moistener formed of a hollow shell, A, adapted to retain moisture, and having its upper surface provided with a moistening-pad, C, and its under surface fitted with a blotting-pad, D, as herein shown and described.

3. A combined blotter and moistener formed of a hollow shell, A A', adapted to retain moisture, having a flat upper surface fitted with a moistening-pad and a curved rocking under surface fitted with a blotting-pad, as shown and described.

4. A moistening device formed of a hollow shell, having its top fitted with a central moistening-pad, together with a marginal absorbing-cushion encircling the moistening-pad, as shown and described.

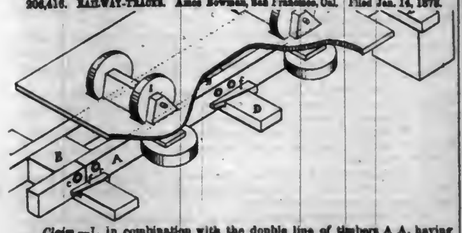
5. The combination of a moistening device, adapted to sustain a blotter, with a blotting-pad formed as a sleeve to be slipped thereupon, and having an opening cut therein to permit the projection of the moistening-pad through the same, substantially as herein shown and described.

206,415. WAGON-BRAKE LEVERS. Charles W. Bostaar, Peru, Ind. Filed Jan. 21, 1878.



Claim.—In combination with the lever B and arc C, the trip-lever G, dog E, and trip-rod H, when constructed, arranged, and combined as and for the purposes hereinbefore set forth.

206,416. RAILWAY-TRACES. Ames Bowman, San Francisco, Cal. Filed Jan. 14, 1878.

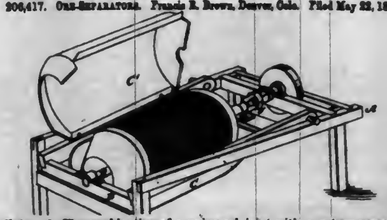


Claim.—1. In combination with the double line of timbers A A, having their joints broken, as described, the splicing-block B, applied between the joints and middles of the opposite bearing-rails, the three rails and blocks being keyed rigidly together, substantially as and for the purposes described.

2. In combination with the compound stringer or double rail A A, united by splicing-blocks B, and bound together by the bolts C, the notched sleepers or cross ties D, having the combined track secured in the notch *e* by the taper wedges or keys *f*, substantially as and for the purpose above described.

3. The compound stringer or double rail A A, in combination with the vertical posts C, the upper ends of said vertical posts serving as splice-blocks for connecting the joints and binding the ends of the rails together, substantially as above specified.

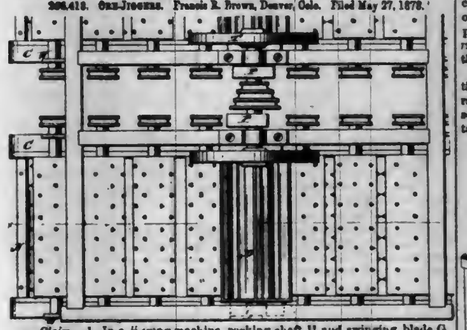
206,417. ORE-SEPARATORS. Francis R. Brown, Denver, Colo. Filed May 22, 1878.



Claim.—1. The combination of a universal joint with a rotary screen or sizer and a hinged vertically-adjustable frame, which serves as a bearing for the sizer-shaft, substantially as set forth.

2. The combination of fixed frame A and a screen or sizer with hinged vertically-adjustable sub-frame B, tank C, and hinged tank-cover C', said tank and cover being attached to said sub-frame, and said tank being provided with outlets *c' c² c³*, which discharge separately the different sizes of crushed ore, substantially as set forth.

206,418. ORE-JIGGERS. Francis R. Brown, Denver, Colo. Filed May 27, 1878.



Claim.—1. In a jigging-machine, rocking shaft H and swinging blade G, in combination with lifters F and cam-shaft S, for producing pulsation, substantially as set forth.

2. In a jigging-machine or concentrator, the combination, with a tank, screen, and pulsating device, of a horizontal series of valves and a vertical series of valves, substantially as and for the purposes set forth.

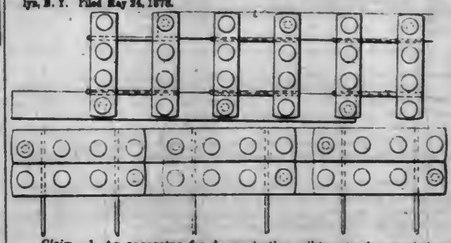
3. In a jigging-machine, an angular discharge-plate, in combination with a pocket and agitating devices, said discharge-plate serving both to raise the upper particles of ore out of the water before discharge, and to exclude them from the pocket, substantially as and for the purposes set forth.

206,419. INSTRUMENTS FOR RINGING SWINE. Wm. D. Brown, Indianapolis, Ind., assignor to William B. Chambers, J. Ed. Boring, and William J. Quinlan, Decatur, Ill. Filed July 1, 1878.



Claim.—In a hog-ringing instrument, the V-shaped jaw C D, with grooves *f f'*, operating in connection with a curved jaw, E, substantially as shown and described.

206,420. APPARATUS FOR DEMONSTRATING MILITARY TACTICS. Wm. H. Brownell, Brooklyn, N. Y. Filed May 24, 1878.

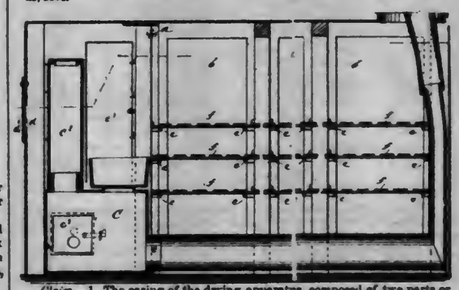


Claim.—1. An apparatus for demonstrating military tactics, consisting, essentially, of a pair of parallel main bars, having short bars carrying miniature figures of soldiers pivoted to said main bars, arranged and adapted to operate as and for the purpose set forth.

2. A series of pairs of short parallel bars, carrying figures representing men, and the guide-rods and long main bars, in combination, arranged and adapted to operate substantially as herein shown and described.

3. A bar carrying figures representing soldiers and provided with fixed horizontal rods, in combination with a second bar having perforations and adapted to slide on said rods, arranged and adapted to operate as and for the purpose set forth.

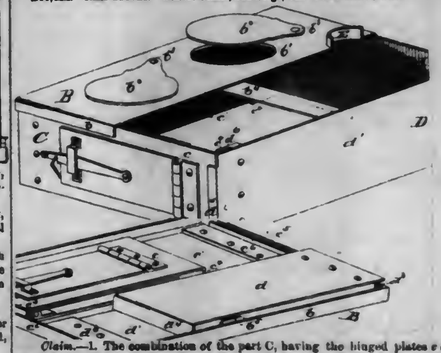
206,421. DRYING APPARATUS FOR FRUITS, &c. A. Coleman, Lexington, Ohio. Filed June 18, 1878.



Claim.—1. The casing of the drying apparatus, composed of two parts or compartments having a like form and dimension in cross-section, and jointed or fitted together, and secured detachably by bolts *a*, as described, and said parts containing, respectively, the stove C, having spiliar *e* and the shelves or racks *f*, and pipe B, all combined and arranged as shown and described, for the purpose specified.

2. The combination, with the drying-chamber A B, having an air-induction opening, *d*, at the front end and air-exit at the rear end, of the box-like radiator C', located immediately before the opening *d*, all as shown and described, whereby a heated current of fresh air is caused to circulate horizontally through the drier, as specified.

206,422. CAMP-STOVES. Wm. B. Collier, San Diego, Cal. Filed June 1, 1878.

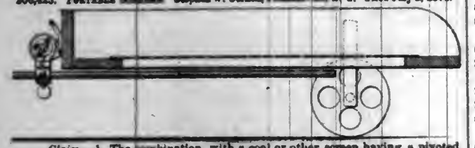


Claim.—1. The combination of the part C, having the hinged plates *e e'*, the flanges *e² e³ e⁴*, and plate *e⁵*, and the part D, having the hinged plates *d d'*, the flanges *d² d³ d⁴*, and plate *d⁵*, substantially as described.

2. The combination of the plate *c*, having the flange *c'*, and the plate *d*, having the flange *d²*, and plate *c⁵*, substantially as described.

3. The combination of the plate B, having the flange *b*, and the parts C and D, the part C having the plates *e e'*, hinged together and provided with the flange *e²* and plate *e⁵*, and the part D having the plates *d d'*, hinged together and provided with the flange *d²* and plate *d⁵*, substantially as described.

206,423. PORTABLE SCREENS. Stephen W. Cornell, Flemingville, N. Y. Filed July 1, 1878.



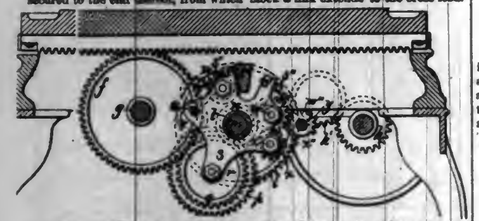
Claim.—1. The combination, with a coal or other screen having a pivoted sleeve and thumb-screw, of a forked supporting-rod, so as to set the screen to any angle of inclination, substantially as specified.

2. The combination of a coal or other screen, having side wheels, with a supporting-rod, and with mechanism for throwing the rod under screen, so as to move it from place to place, substantially as described, and for the purpose set forth.

3. The combination of a coal or other screen, having side wheels at lower part and an adjustable sleeve and pivot-joint and clamp-screws at upper end, with a forked supporting-rod, on which the screen may be adjusted, and which may be folded below screen, substantially as specified.

206,424. METAL-PLANING MACHINES. Orril R. Chaplin, Boston, Mass. Filed Sept. 28, 1877.

Brief.—Spring-dogs on the platen (one at each end) alternately strike against and operate (at the termination of each forward and backward reciprocation) a lever connected with the rocking frame, thereby tilting said frame, and throwing one gear in, and the other out of, contact with the driving-gear of the platen. Projections on the rocking frame, provided with regulating-screws, prevent the frame from rocking so far as to cause the gears to "bottom" into the driving-gear of the platen by alternately striking against a cross-bar. Two gears journaled in the rear part of the rocking frame engage with two half-gears on a rock-shaft, and impart a semi-revolution to a block secured to the end thereof, from which block a link extends to the cross-feed.



Claim.—1. The combination of the rocking plates *s s*, the pinions *u u w x*, the half-gears *w'' x''*, the wheels *o p*, and intermediate gears *v v'*, rock-shaft *y*, and the head or block *z*, as and for the purpose set forth.

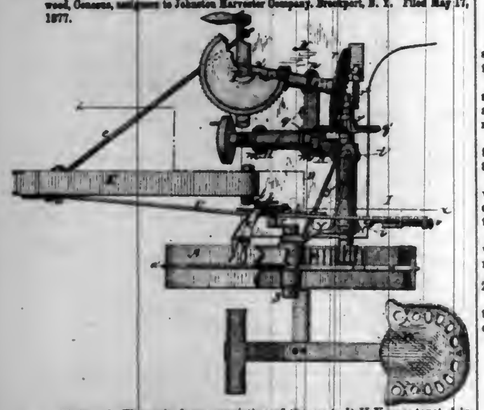
2. The herein-described spring-dogs 7 7, consisting of the tubular receptacles 9 9, bolt or pins 10 10, springs 12 12, and heads or collars 13 13, as herein set forth and shown.

3. The combination of the rocking frames *s s* and their gears and pinions, as set forth, with the shipping-lever 1, knee-lever 16 18, having notches 15 15 and spring 19, and the spring-dogs 7 7, as and for the purpose set forth.

4. The combination of the single pulley *h*, intermediate gears *h' i u x w*, the wheels *o p*, and intermediate gears *v v'*, and driving-gear *f*, rack *d*, and reciprocating bed-plate *b*, as herein set forth and described.

5. In combination with the gear-carrying rocking frames *s s*, the projections *s' s'*, regulating-screws *s'' s''*, and bar or stationary stop *s'''*, as and for the purpose set forth and described.

206,425. HARVESTERS. Orville Cooley and Myron M. Oliver, Brockport, and Stephen E. Sherwood, Geneseo, assignors to Johnston Harvester Company, Brockport, N. Y. Filed May 17, 1877.



Claim.—1. The main frame consisting of the parts D H Y, constructed in the form substantially as described.

2. The casting H, constructed with the vertical standards *c c*, for the support of the main pinion-shaft I, the vertical standards *m m*, for the support of crank-shaft M, and the vertical standard *n*, for the support of the rake-operating shaft N, substantially as described.

3. The casting H, constructed, as described, with the standards *i c*, *m m*, and *n*, in combination with the tubular bearings *o o' o''* and the floor-plate D, substantially as described.

4. The automatic backing-ratchet *r*, in combination with the main pinion-shaft I, the crank-shaft M, and the rake-shaft N, substantially as described, for the purpose specified.

5. The combination of the lifting-bar U, the tongue, the bracket T, and a front and rear connection between the lifting-bar and the main frame or platform in front and rear of the axle, substantially as described, for the purpose specified.

6. The combination of the lifting-bar U, the tongue, the bracket T, the supporting-bar L, and a connection between the lifting-bar and the main frame in rear of the axle, substantially as described.

7. The combination of the two adjustable supporting-bars, or their equivalents, with the lifting-bar, the bracket and tongue, and the main frame, substantially as described.

8. The combination of the yoke Y, the bracket T, the tongue, the lifting-bar U, and the front and rear supporting-bars, or their equivalents, with the main frame, substantially as described.

9. The driver's seat, mounted upon the axle outside the main driving-wheel, in combination with the adjusting and supporting bracket T upon the inside of the wheel, substantially as described, for the purpose specified.

10. In a harvester, an inclined bar mounted upon the tongue and an arm of the driving-wheel axle, and having the weight of the main frame adjustably suspended from it by connection at the front and rear inward corners of the main frame or platform, substantially as described.

11. In a harvester, the yoke Y, by which the main frame is adapted to oscillate around the axle of the driving-wheel as a center, combined with the supporting-arm T, attached to said axle independently of the yoke and adjusting-lever carried thereby, whereby the frame is supported, raised, and lowered upon the arm and held to the center by the yoke, substantially as described.

206,426. CONCRETE PAVEMENTS. Andrew B. Dean, Louisville, Ky. Filed Jan. 23, 1878.



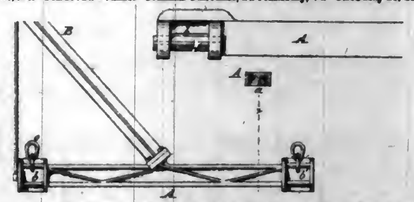
Claim.—The method of constructing a bowlder pavement which consists in making a foundation of a layer of broken stone, a layer of small broken stone, and a layer of fine gravel, all rammed or rolled to form a bowlder bed, a mastic binder, arranging the bowlders and ramming the same in position, then covering the bowlders with a mastic binder and a thin layer of sand or a coating of fine gravel, in the manner as hereinbefore described.

206,427. PRINTERS' CHASES. William K. Everdell, Mont Clair, N. J. Filed May 7, 1878.



Claim.—A printer's chase formed of a flat base-plate provided with a raised marginal rim which is beveled inwardly, and adapted for use with stereotype-blocks of reduced thickness, substantially as herein shown and described.

206,428. PLATFORM-SCALES. Franklin Fairbanks, St. Johnsbury, Vt. Filed May 28, 1878.



Claim.—1. A scale-platform lever having its fulcrumed arm formed in the shape of a three-sided elongated box, with internal zigzag braces, substantially as herein shown and described.

2. A platform-scale lever having its fulcrumed arm formed in the shape of a three-sided elongated box, with internal zigzag braces, and having its long arm B attached to the fulcrumed arm A at a point where the zigzag braces *a a* meet in an apex, substantially as and for the purpose set forth.

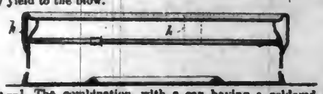
3. A platform-scale lever having its fulcrum-arm A arranged parallel with the fulcrum-line, and having its long arm B extended obliquely from the center of its fulcrumed arm A, substantially as herein shown and described.

4. A scale-platform lever having its fulcrumed arm A arranged parallel with the pivot or fulcrum line, and having its pivots arranged directly on the ends of the said fulcrumed arm A and equidistant on each side of its longitudinal center line, substantially as and for the purpose set forth.

5. A scale-platform lever having the ends of its fulcrumed bar provided with covered or inclosed cavities or sockets *b b'*, in which its pivots are arranged and protected, substantially as herein shown and described.

206,429. SHEET-METAL CANS. Jos. S. Field, Brooklyn, N. Y. Filed June 26, 1878.

Brief.—Uses sections of metal to break the soldered joint. Strengthens the can-body by an ogee curve and wire, so that the raised rim only of the cover may yield to the blow.



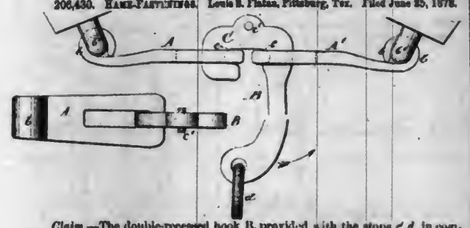
Claim.—1. The combination, with a can having a soldered removable cover, of a supporting-wire around the can near the place where the solder of the cover is applied, substantially as set forth.

2. The can-cover made with a rim that is stiffened by corrugations and soldered to the can, substantially as set forth.

3. The sheet-metal can formed with a contracted cylindrical mouth and a compound curve in the metal between the mouth and body, in combination with the cover that rests upon the cylindrical mouth and has a bead around the top, and is soldered at the edge of the rim to the can, substantially as set forth.

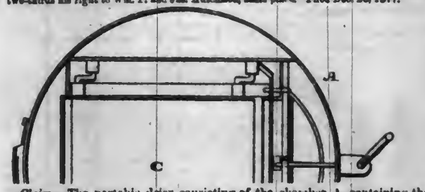
4. The combination, with the can and removable cover soldered to place, of one or more short sections of hard metal, *h*, introduced between the rim of the cover and the can, substantially as set forth.

206,430. HAME-FASTENINGS. Louis B. Flaten, Pittsburg, Tex. Filed June 25, 1878.



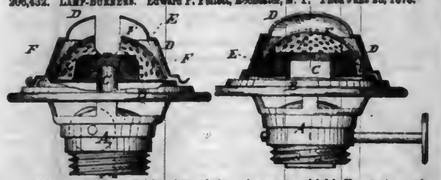
Claim.—The double-recessed hook B, provided with the stops *c' d*, in combination with the slotted metallic hame-straps A A', substantially as shown and described, and for the purpose set forth.

206,431. DRIERS FOR GRAIN, &c. Daniel A. Flemerfelt, Delaware Station, N. J., assignor of two-thirds his right to Wm. F. and Jas. Hutchison, same place. Filed Dec. 20, 1877.



Claim.—The portable drier consisting of the chamber A, containing the series of pans C, operated as described, supporting the operating mechanism of the pans, and containing the drying apparatus, substantially as and for the purpose set forth.

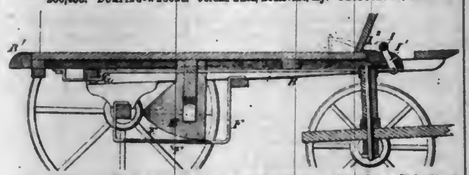
206,432. LAMP-BURNERS. Edward F. Follett, Rochester, N. Y. Filed June 26, 1878.



Claim.—1. The combination of the wire-gauze shield E, constructed as described, with the perforated plate B, the wick-tube C, and the cone D of a lamp-burner, substantially as herein shown and described.

2. The combination of the perforated sheet-metal cap F, constructed as described, with the wire-gauze shield E, and with the perforated plate B, the wick-tube C, and the cone D of a lamp-burner, substantially as herein shown and described.

206,433. DUMPING-WAGONS. Jordan Giles, Louisville, Ky. Filed June 15, 1878.



Claim.—1. The combination, in a dumping wagon, of the frame B, inclined from front to rear, and hangers F, with the bed D, resting on the segmental quadrant-formed standards E, and detent for supporting the end of the bed when loaded, so that, when released it has a tendency to run back by gravity, substantially as set forth.

2. In combination, the hangers F, the standards E, supporting the bed, and pins D' and stirrups D', placed in relation to the standard, substantially as set forth.

3. In combination with the swinging bed D and frames B B', the sliding bar G, actuated by the rod H, and levers and shafts I I' P, for locking the bed on the frame, substantially as set forth.

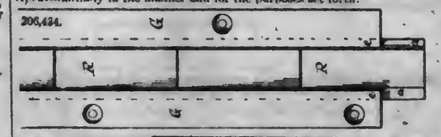
206,434. RATCHETED GUIDES FOR ELEVATORS. L. S. Graves, Rochester, N. Y. Filed Mar. 1, 1878.

Claim.—1. As an improvement in safety guide-tracks for elevators, the metallic ratchets R, having projecting flanges *a*, in combination with the wooden guide-track, whereby the projecting shoulders *c* of which retain the ratchet-sections in position without other fastenings, substantially in the manner and for the purposes set forth.

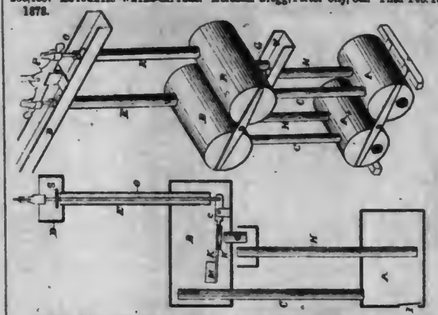
2. In combination with the wooden grooved guide-track G for elevators, the metallic ratchet-sections R, resting one upon another, and being retained within the groove *g* by means of the overlapping lips or shoulders *c*, substantially as and for the purposes set forth.

3. The metallic ratchet-sections R, provided with projecting flanges *a*, in combination with the overlapping lips or flanges *c* of the wooden guide-tracks G, substantially in the manner and for the purposes set forth.

206,424.

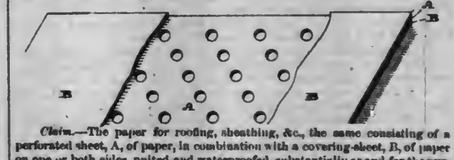


206,435. AUTOMATIC WATER-LIFTERS. Abraham Gregg, Forest City, Cal. Filed Feb. 16, 1878.



Claim.—The combination of two air-compressing water-lifters, each of which consists of two cylinders or vessels, A B, which are connected by a tube, C, the vessel B being connected with an elevated water-supply by a tube, E, the lower vessel, *a*, having the vertical discharge-pipe H, and the vessel B having the discharge-spout D, and having the lever N, with its float M and valve N, arranged to open and close the discharge-passage, in combination with the vertical rods O, which are connected by the balanced beam P, each of said rods being provided with a valve, S, all combined and arranged to operate substantially for the purpose described.

206,436. ROOFING-PAPER. Jonathan H. Greene, Philadelphia, Pa. Filed May 31, 1878.



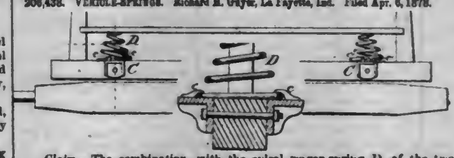
Claim.—The paper for roofing, sheathing, &c., the same consisting of a perforated sheet, A, of paper, in combination with a covering-sheet, B, of paper on one or both sides, united and waterproofed, substantially as and for the purpose set forth.

206,437. COLLARS. Rupert Cromidge, New York, assignor to George B. Cluett, Brother & Co., Troy, N. Y. Filed Mar. 19, 1878.



Claim.—The combination of curved graduated band B, outer folds, A A, and the inner ply, D, located above the band, and leaving a thin section, in which the button-hole C is made, as and for the purposes explained.

206,438. VEHICLE-SPRINGS. Richard M. Gray, La Fayette, Ind. Filed Apr. 6, 1878.



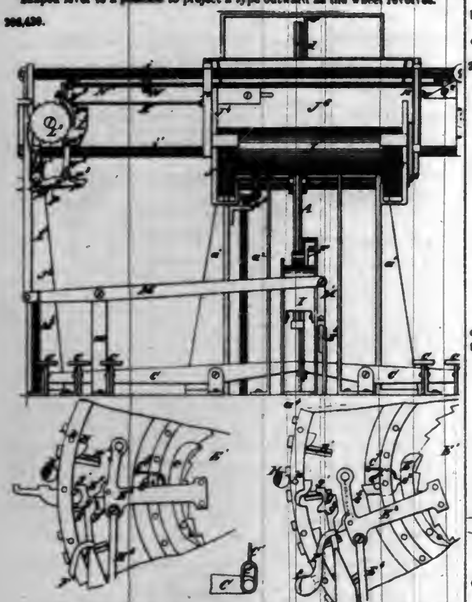
Claim.—The combination, with the spiral wagon-spring D, of the two brackets C C, each suitably connected to the bolster opposite to the other, to form a bearing for the broad base of the spring, and each provided with suitable fastening devices, by which the spring is connected thereto, all substantially as herein shown and specified.

206,439. TYPE-WRITING MACHINES. Wm. A. Hall, St. Louis, Mo. Filed Nov. 13, 1877.

Brief.—To a continuously revolving type-wheel are pivoted the type, which are projected outward from the same in the following manner: To a stationary frame, in close proximity to the side of the type-wheel, are pivoted a series of triggers, one for each key, which are by links connected with the key-levers.

Loosely mounted on the same shaft with the type wheel is a ratchet, which carries an arm provided with projections. On the side of the type-disk is fixed a pawl adapted to engage with the ratchet. When a key is depressed the cam-face of the trigger is turned so as to force the pawl, which revolves with the type-wheel, into a notch of the ratchet, which is thus moved for a short distance, carrying with it its arm, which acts to force outward a cam-shaped lever to a position to project a type outward as the wheel revolves.

206,439.



Claim.—1. In a type-writer, a revolving disk or frame having types pivoted thereto, substantially as described.

2. In a type-writer, a revolving disk or frame having two sets of types, B B B and B² B² B², pivoted thereto, substantially as described.

3. The combination, in a type-writer, of an independently-rotating disk or frame, having types pivoted thereto, and a series of keys corresponding to such types and connected respectively therewith, substantially as described.

4. The combination of the disk or frame A, having the types B B B pivoted thereto, and the paper-cylinder J', substantially as described.

5. The combination of the disk A, types B B B, pivoted to said disk, and rack G, substantially as described.

6. The combination of the disk A, types B B B, rack G, arm E', and ratchet E', substantially as described.

7. The combination of the disk A, types B B B, pawl E, ratchet E', arm E', and rack G, substantially as described.

8. The combination of the frame D, triggers C' C' C', wires C' C' C', pawl E, and ratchet E', substantially as described.

9. The combination of the rack G and the arm E', having the folding end E², substantially as described.

10. The combination of the lever F, roll f, types B B B, disk A, and arm E', having the folding end E², substantially as described.

11. The combination of the disk A, types B B B, and bar H, substantially as described.

12. The combination of the wire C', having the loop c', and the key C, substantially as described.

13. The combination of the disk A, having the stop a^2, triggers C' C' C', and frame D, substantially as described.

14. The combination of the pawl E, having the depression e, and the trigger C', having the projection c^2, substantially as described.

15. The combination of the frame D, triggers C' C' C', and springs C' C' C', substantially as described.

16. The combination of the disk A, types B B B, and springs B' B' B', substantially as described.

17. The combination of the disk A, pivoted types B B B, rack G, and cylinder J', substantially as described.

18. The combination of the pivoted type B B B, having the projections b^2, and the rack G, having the teeth g g^2, substantially as described.

19. The combination of the trigger C', pawl E, spring e^2, rod E², arm E', and ratchet E', substantially as described.

20. The combination of the keys C C C, wires C' C' C', triggers C' C' C', frame D, disk A, pawl E, and ratchet E', substantially as described.

21. The combination of the pivoted triggers C' C' C', pawl E, and ratchet E', substantially as described.

22. The combination of the lever G, bent g^2, arm E', folding end E², and spring e^2, substantially as described.

23. The combination of the keys C C C, wires C' C' C', triggers C' C' C', frame D, pawl E, ratchet E', arm E', rack G, and the disk A and type B B B, substantially as described.

24. The combination of the ratchet E', arm E', rod E', lever E', link M', lever M, and spring M', substantially as described.

25. The combination of the disk A, pivoted type B B B, rack G, standard g', and spring g^2, substantially as described.

26. The combination of the disk A, pivoted type B B B, and the pivoted rack G, substantially as described.

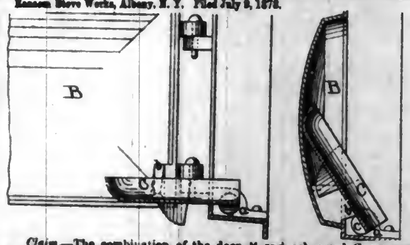
27. The combination of the carriage J, stop N, rod N', lever N², lever P, hook L², and ratchet L', substantially as described.

28. The combination of the carriage J, rod N', stop n^2, levers N² P, hook L², spring P², and ratchet L', substantially as described.

29. The combination of the carriage J, stop N, rod N', lever N², cord K², pawl O, ratchet L', drum L, and spring K', substantially as described.

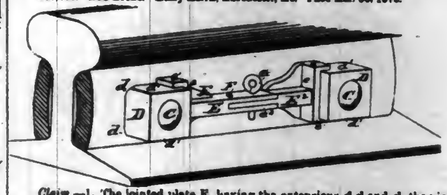
30. The bracket J', plate J², and tape J³, combined as and for the purpose of adjusting the latter to papers of different widths.

206,440. AUTOMATIC ASH-GUARDS FOR STOVES. C. A. Hamlin, Greenbush, assignor to Ransom Stove Works, Albany, N. Y. Filed July 8, 1878.



Claim.—The combination of the door B and ash guard C, arranged to co-operate as herein described, for automatically discharging the ashes into the stove, as specified.

206,441. NUT-LOCKS. Henry Harris, Rochester, Mn. Filed Mar. 30, 1878.



Claim.—1. The jointed plate E, having the extensions e^2 e^2 and e^3, the pin G, and the nuts D D, rounded at d d, substantially as described.

2. The jointed plate E, having the extensions e^2 e^2 e^2 e^3, the pin G, and the nuts D D, rounded at d d, combined and operating substantially as described.

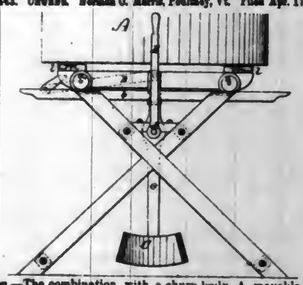
206,442. VEHICLE-WHEELS. J. W. Harris, Waynesborough, assignor of one-half his right to James W. Wade, Augusta County, Va. Filed Mar. 11, 1878.



Claim.—1. In a wheel, the metal spokes f, having their inner ends upset and secured in the tapered grooves e by the bands B, and their outer ends forced into countersinks or apertures in the tire of the wheel, substantially as specified.

2. As a means for securing the rim D in place, the spokes f, the outer ends of which pass through the band i and filling l, and enter countersinks in the tire h, substantially as specified.

206,443. CHURNS. Norman G. Harris, Poultney, Vt. Filed Apr. 17, 1878.



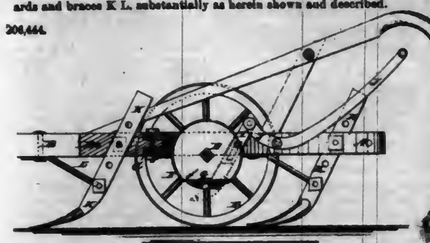
Claim.—The combination, with a churn-body, A, movable in a horizontal plane, of an oscillating weight or pendulum, C, substantially as and for the purpose herein specified.

206,444. COMBINED SEED-PLANTER AND CULTIVATOR. Sheldon E. Harris, Whitesburg, Tenn. Filed Apr. 27, 1878.

Claim.—The combination of the hollow cylinder F, provided with the door

f', the dropping-slide G, the spring H, the bent sliding bar I, and the bent lever J, with the axle D, the wheels E, the frame A B A, and the plow standards and braces K L, substantially as herein shown and described.

206,444.

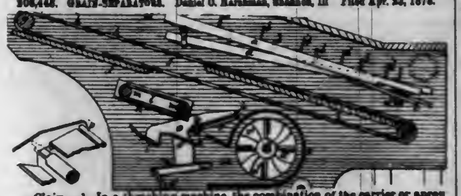


206,445. GRATES FOR OPEN FIRE-PLACES. Frank H. Hart, Rochester, N. Y., assignor of one-half his right to Henry S. Hebard, same place. Filed May 21, 1878.



Claim.—As an improvement in open fire-place grates, a detachable dumping-grate provided on its under side with a segmental web or lug, i, in combination with a shaker-bar, B, having a bifurcated end, and pivoted at a point outside of the shaking and dumping portion of the grate, substantially as shown and described, whereby the grate, while being readily detachable, may be shaken or dumped without being uncoupled from the shaker bar, as and for the purposes set forth.

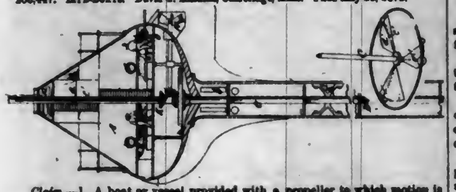
206,446. GRAIN-SEPARATORS. Daniel O. Harshman, Shannon, Ill. Filed Apr. 23, 1878.



Claim.—1. In a thrashing-machine, the combination of the carrier or apron f, whose upper lay travels in an upward direction, and the grain-gathering boards i j, located, respectively, under the lower portion of the upper lay and upper portion of the lower lay of said carrier, and the rakes a a, the upper ends of which terminate over that portion of the carrier f which extends between the separated inner ends of boards i j, all as shown and described, for the purpose specified.

2. In a thrashing-machine, the combination, with the shoe k, the carrier f, and boards i j, of the short apron l and its board n, the latter two being located beneath that portion of the carrier which spans the space between the boards i j, as and for the purpose specified.

206,447. LIFE-BOATS. David B. Jenkins, Cambridge, Mass. Filed May 30, 1878.



Claim.—1. A boat or vessel provided with a propeller to which motion is imparted by means of a series of rotating hinged blades or wings attached to a shaft and actuated by the force of the water as the vessel rises and falls, substantially as specified.

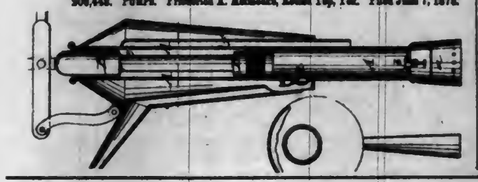
2. The combination, with a vessel or boat, A, of a central vertical shaft, C, extending below the boat and provided with rotating hinged blades or wings, as and for the purpose set forth.

3. The combination, with the vessel A, of the shaft C and open cylinder B, as and for the purpose set forth.

4. The combination, with the vessel A, of a central shaft extending above and below the vessel and provided on each extension with hinged sectoral blades, as and for the purpose set forth.

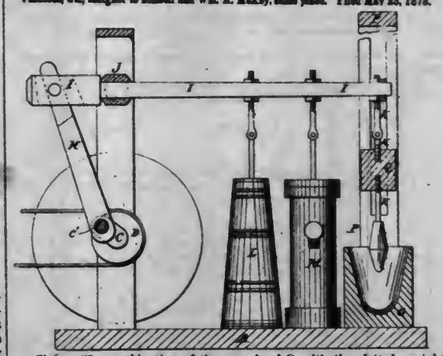
5. The combination, with a vessel, A, of an electrical apparatus, e, actuated by the rotating shaft C', provided with the sectoral blades, substantially as and for the purpose set forth.

206,448. PUMPS. Friedrich A. Holmecke, Round Top, Tex. Filed June 7, 1878.



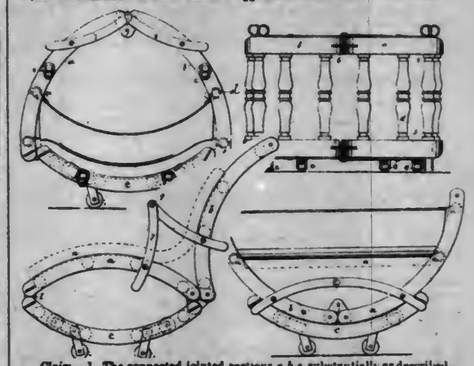
Claim.—The combination, in a hand-pump, of a cylindrical pump-barrel, having an exterior surrounding casing and air-chamber, with a solid plunger and with overflow-holes, and with a discharge-pipe passing through the air-chamber, to prevent overflow of liquid, substantially as described.

206,449. MACHINES FOR OPERATING KNIT-BEARERS, COVERS, &c. William J. Henderson, Valdosta, Ga., assignor to himself and Wm. H. McKay, same place. Filed May 23, 1878.



Claim.—The combination of the cross-head Q, with the slotted upright guide-frame P, the lever I, the rock-shaft J, the connecting-bar H, and the crank-shaft C, substantially as herein shown and described.

206,450. CONVERTIBLE CHAIRS. Charles J. Higgins, Hallowell, Me. Filed Mar. 8, 1878.



Claim.—1. The connected jointed sections a b c, substantially as described, adapted, by change in position with reference to each other and the floor, to form either a crib, chair, or safety-parlor, substantially as set forth.

2. The opposite connected rims a b c, in combination with a bed-bottom, to form a crib when the ribs are placed in proper position with relation to the floor, substantially as described.

3. The connected sections a b c, substantially as described, adapted, by change in position with reference to each other and the floor, to form either a crib, chair, or safety-parlor, in combination with rollers to convert the crib or chair in a rolling crib, carriage, or chair, substantially as set forth.

4. The connected rims adapted, by continuous connection, to form a safety-parlor, and by partial disconnection and inversion a crib, in combination with a removable bed-bottom provided with side pieces and braces, 7 and 8, substantially as described.

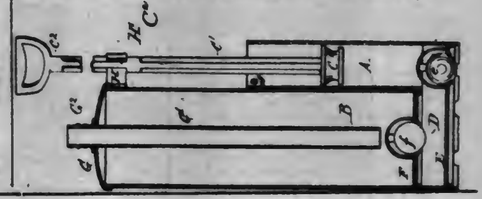
5. The opposite connected rims adapted to form a safety-parlor, and by partial inversion to form a crib, in combination with rollers to convert the crib into a rolling crib or carriage.

6. The combination, with the sections a b, of the arm-braces to hold the sections in upright position, substantially as described.

7. The sections a, b, and c, in combination with and connected at the angles of the triangular links 6, substantially as described.

8. As a new article of manufacture, the opposite connected rims, adapted, when both are parallel with the floor, to form a safety-parlor, and shaped as described, to permit such rims to rock, as set forth, when arranged as shown, to form a crib, substantially as set forth.

206,451. HAND-PUMPS. James M. Holland, Wilmington, Del. Filed June 13, 1878.

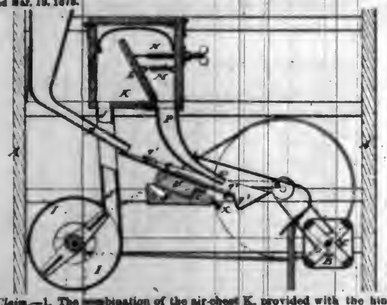


Claim.—1. In a force-pump, the combination of the cylinder A with cylinder B, having the downward tube G^1 from top G arranged with plates E and F and valves *f* and *e*, operated by a plunger, C, with guide, substantially for the purpose set forth.

2. In a force-pump provided with double cylinders A and B, the escape-water tubes formed by connections a^1 and a^2, substantially as herein shown and described.

3. In a plunger in one cast piece, the piston C, rod C', ribbed for strength, stops C^2, and handle, substantially as herein shown and described.

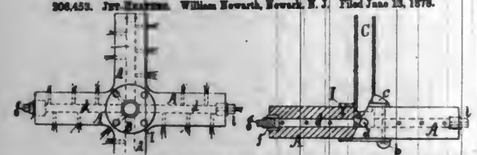
206,452. OAT-SEPARATORS. Denison L. Howard and Thomas D. Atkinson, Ottawa, Mich. Filed Mar. 19, 1878.



Claim.—1. The combination of the air-chest K, provided with the hinged partition L, the spiral spring M, the set-screw N, the arched plate O, and the tapering discharge-spout P, with the spout J of the fan-blower I, and with the oscillating separating-pan Q, substantially as herein shown and described.

2. The combination of the adjustable bar U and its fastening bolts V and adjusting-screws X with the separating-pan Q, and with the bar W, that supports and oscillates the said pan, substantially as herein shown and described.

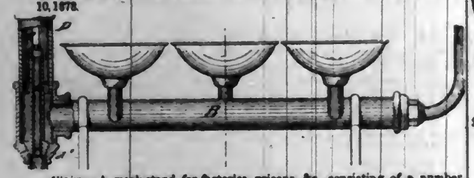
206,453. JET-HEATERS. William Howarth, Newark, N. J. Filed June 13, 1878.



Claim.—1. A jet-heater constructed of wood, substantially as and for the purpose set forth.

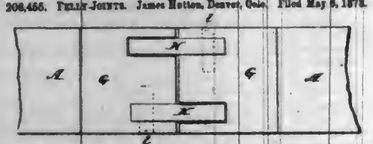
2. The combination of the body of the heater with the lead pipe C, the flange I, screws a or bolts *b*, and solder *c*, substantially as and for the purpose set forth.

206,454. WASH-STANDS FOR FACTORIES, &c. Wm. Humphrey, Jackson, Mich. Filed July 10, 1878.



Claim.—A wash-stand for factories, prisons, &c., consisting of a number of wash-basins supported on a horizontal main pipe, in connection with a water-supply pipe-overflow, and valved discharge-pipe, substantially as set forth.

206,455. FELLY-JOINTS. James Hutton, Denver, Colo. Filed May 9, 1878.



Claim.—1. The adjacent felly-caps G G of a vehicle-wheel connected by two keys, K K, arranged in opposite recesses of the caps and held by one screw, *l*, in each cap, as shown and described.

2. The combination, with wheel fellies A and spokes B, of the adjustable spoke-thimble C, the caps G, and the keys K, as and for the purpose specified.

206,456. GRAIN THRASHER AND SEPARATOR. Byron Jackson, Woodland, Cal. Filed Sept. 10, 1877.

Claim.—1. The combination, with the feeder and elevator, of the mechanism for operating them, consisting of the gearing E, journaled in the solid rear hanger I, whereby said gearing is rigidly held together, substantially as shown, and for the purpose herein described.

2. The combination, with the cylinder and feeder of a thrasher, of conveying mechanism for bringing the straw to said feeder, geared together, as described, and clutch or other mechanism for connecting and disconnecting said feeder at will, substantially as shown, and for the purpose herein described.

3. The combination, with the thrashing-cylinder and the concave, of the feeder N, mounted in the top of the machine and conducting the grain to the cylinder in a line substantially tangential to its rotation, substantially as shown, and for the purpose herein described.

4. The jointed concave hangers, having the movable cap X, arranged to be thrown back, as shown, to allow access to the concave, and the adjusting device, consisting of the segments Y and pinions Z, substantially as shown, and for the purpose herein described.

5. The combination, with segment Y, of the lever formed with pinion-hub, having the plain or convex face B, with a corresponding meeting of the hanger-faces, these being forced together by a jam-nut, substantially as shown, and for the purpose herein described.

6. The cylinder-hangers and end castings, cast in one piece, and secured together by a plate of iron, V, so as to form a complete cylinder-case, with boxes kept in line independently of any supporting-frame, substantially as shown, and for the purpose herein described.

7. The spreader P, mounted above the cylinder and having the adjusting device Q, in combination with the feeder and thrashing-cylinder, substantially as shown, and for the purpose herein described.

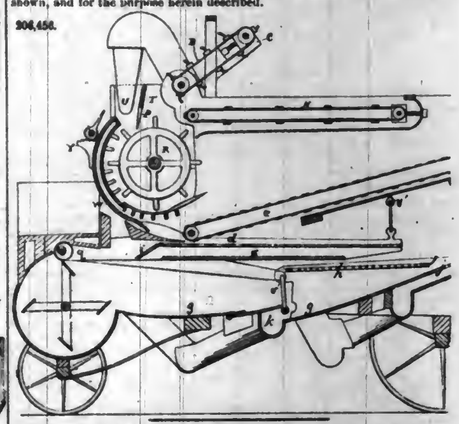
8. The thrashing-cylinder B, having the feeder N, delivering the straw up on the top in a line tangential to and in the direction of its rotation, in combination with the concave *c'*, having the solid and grated sections, substantially as shown, and for the purpose herein described.

9. In combination with the dressing-shoe *g'*, mounted upon the eccentric *q* at the front and the arm *w'* at the rear, the finishing-shoe *h*, mounted upon the oscillating arms *c'*, and having a connecting-rod to the eccentric *q*, so as to produce by means of the same crank or eccentric in one shoe a compound motion and a direct end shake in the other, substantially as shown, and for the purpose herein described.

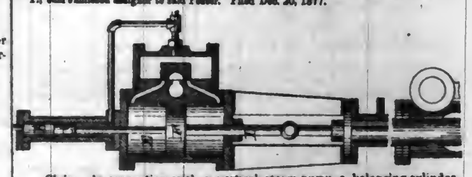
10. The fan-blast wheel F, mounted at the front end of the machine above the wheels, so that its case F' occupies the position of a bolster and allows the front wheels to be turned freely beneath the body, thus enabling the size of the machine to be reduced, substantially as shown, and for the purpose herein described.

11. The combination, with the feeder and elevator, of the gearing E, journaled in the solid hanger I, and provided with the housing H, substantially as shown, and for the purpose herein described.

206,456.

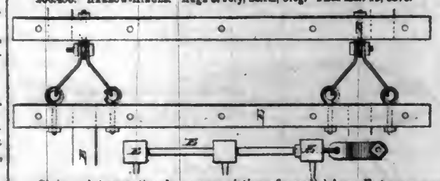


206,457. VERTICAL STEAM-PUMPS. Henry A. Jamieson and William Foster, Brooklyn, N. Y., said Jamieson assignor to said Foster. Filed Dec. 20, 1877.



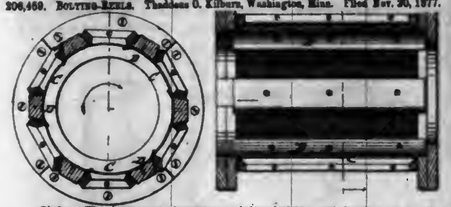
Claim.—In connection with a vertical steam-pump, a balancing-cylinder and piston, with the necessary steam and air pipes for balancing and equalizing the stroke of pump, substantially as described, and for the uses and purposes above set forth.

206,458. HARROW-HINGES. Hugh S. Jory, Salem, Oreg. Filed Mar. 19, 1878.



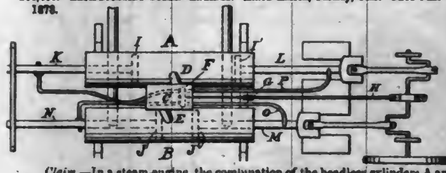
Claim.—A two-section harrow consisting of parallel bars E, transversely connected, and having the opposite ends of each section connected by a V-shaped hinge-brace, as shown and described.

206,459. BOLTING-REELS. Thaddeus O. Kilburn, Washington, Minn. Filed Nov. 30, 1877.



Claim.—The improved circular revolving bolting-reel, having pieces C of bolting-cloth and tin sheets or facings D, arranged in alternating succession, and with the rear edges of said facings overlapping the forward edges of the bolting-cloth sections, as shown and described, for the purpose specified.

206,460. RECIPROCATING STEAM-ENGINES. Aaron Kissell, Findlay, Ohio. Filed June 7, 1878.



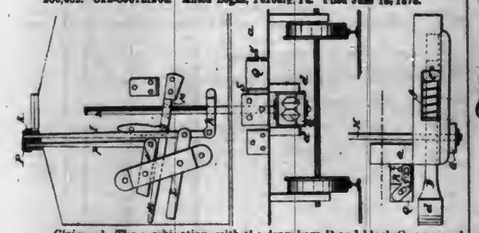
Claim.—In a steam-engine, the combination of the headless cylinders A and B, provided with the pistons I I' and J J', having their rods K L M N connected by the cross-rods O and P, constructed and arranged substantially as and for the purposes set forth.

206,461. SAMPLE-CARDS. Raimund Kutzer, San Francisco, Cal. Filed Feb. 22, 1878.



Claim.—An improved pattern-card provided with an advertising head, a sample of material fastened thereon by its upper edge, and overlying and protecting illustrations of articles of dress for which the overlying sample is appropriate, as described.

206,462. CAR-COUPLINGS. Milton Logan, Foxburg, Pa. Filed June 18, 1878.



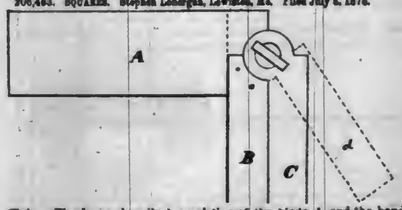
Claim.—1. The combination, with the draw-bars D and block G, arranged as described, of the rod H and weighted lever M, having the opening for engagement with said lever, substantially as and for the purpose specified.

2. The combination, with the rod H, block G, and draw-bars D, of the arm *h*, connecting-rod I, and levers K L, as shown and described, for the purpose specified.

3. The combination, with the weighted lever M, of the short lever N, connecting-rod *p*, and lever P, as shown and described, for the purpose specified.

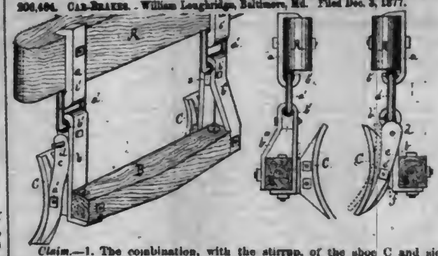
4. The combination, with the platform *a*, of the extension-buffer, composed of the parts Q R and connecting-straps S S, as shown and described, for the purpose specified.

206,463. SQUARES. Stephen Lonergan, Lewiston, Me. Filed July 8, 1878.



Claim.—The device described, consisting of the blade A and the handle, composed of the parts B, C, and *d*, when combined and arranged as described, for the purpose set forth.

206,464. CAR-BRAKES. William Loughridge, Baltimore, Md. Filed Dec. 3, 1877.



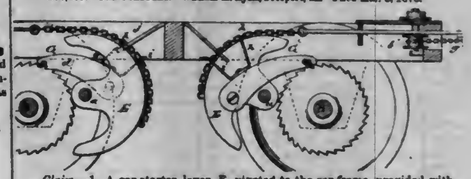
Claim.—1. The combination, with the stirrup, of the shoe C and side spring *c*, substantially as described.

2. The combination, with the shoe C and stirrup, of the spring *c* and pin *d*, substantially as described.

3. The combination, with the link *a'*, of the stirrup-rubbers *b'* and swiveling self-adjusting shoe C, substantially as described.

4. The open stirrup *b''*, adapted to be closed upon or clasp the end of the brake-beam, and provided with means for the attachment of the shoe, substantially as described.

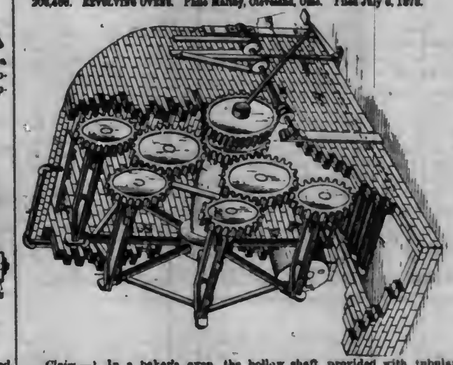
206,465. CAR-STARTERS. William H. Lyon, Freeport, Ill. Filed Mar. 6, 1878.



Claim.—1. A car-starter lever, E, pivoted to the car-frame, provided with a pawl, and flexibly connected with the draw-bar, in combination with two springs and a ratchet-wheel, arranged as shown and described.

2. The combination, with the pawl G, of the spring *g*, having arms *h i*, and the arm *j*, secured to the car frame, substantially as shown and described.

206,466. REVOLVING OVENS. Philo Maltby, Cleveland, Ohio. Filed July 6, 1878.



Claim.—1. In a baker's oven, the hollow shaft provided with tubular arms, and the shelves or tables for supporting the dough, substantially as specified.

2. In combination with the rotating shaft and its arms, the train of spur-gearing, and stationary gear-wheel for rotating the shelves or tables and keeping the same in horizontal position, substantially as specified.

3. In combination with the tables or shelves, the adjustable frame to prevent warping, substantially as specified.

4. The combination of the hollow main shaft, its tubular arms, the shelves or tables and their gearing, and the stationary gear-wheel, all constructed and arranged to operate substantially as specified.

5. In combination with the hollow shaft and its arms, a fan-blower connected therewith by means of a suitable pipe, whereby a current of air may be established through said shaft and into the arms, for the purpose of cooling the same, substantially as specified.

6. In combination with the oven, the fan-blower and jet-chamber in the upper part of the oven, substantially as and for the purpose specified.

7. In combination with the oven and blower, the coiled pipe in the lower part of the oven and connected to the blower, and the pipe passing to the front and under the grate into the furnace, thereby creating a more intense heat, substantially as specified.

206,467. BEAN-HUSKING APPARATUS FOR BOOTS AND SHOES. William Manley, Rochester, N. Y. Filed June 19, 1878.

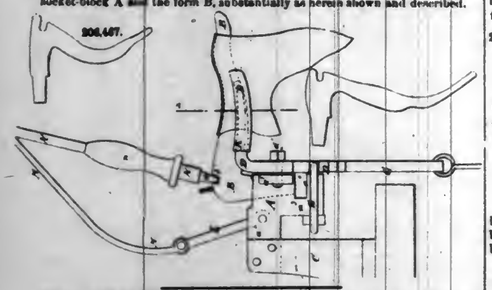
Claim.—1. The combination of the socket block A, provided with the lugs a^1 a^2 a^3 a^4 and the hub a^5, the form B, the pivoted clamps D, the spring or springs E, and the cross-head lever C, all substantially as herein shown and described.

2. The combination of the connecting-rod H, the treadle I, and the spring J with the pivoted clamps D, the spring or springs E, and the form B, sub-

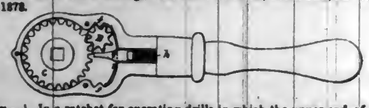
stantially as herein shown and described.

3. The combination of the pivoted bars L M N and the rubber O with the socket-block A and the form B, substantially as herein shown and described.

206,467.



206,468. RATCHET-DRILLS. Jas. D. McAulis, Beaver Falls, Pa., assignee of two-thirds his right to W. S. Kerachan, Mineral Ridge, Ohio, and J. W. Forbes, Beaver Falls, Pa. Filed May 22, 1878.



Claim.—1. In a ratchet for operating drills in which the upper end of the drill is secured in a ratchet-wheel, the toothed wheel C and smaller toothed wheel D, arranged to intermesh therewith, in combination with the teeth *f* of the casing and partition *g*, substantially as shown and described.

2. In combination with the herein-described toothed wheel C, smaller intermeshing toothed wheel D, and case A, with teeth *f* upon the interior of the chamber which confines the smaller wheel, the partition *g*, with springs *h* and *i*, constructed substantially as and for the purposes herein shown and described.

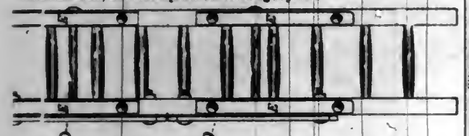
206,469. STOPPER-HOLDERS FOR MUCILAGE-BOTTLES. J. S. Mercer, New York, N. Y. Filed June 21, 1878.



Claim.—A stopper-holder for mucilage-bottles, consisting of a bent wire section having an eye at the lower part and hook ends at the upper part, and of one or more wire arms with hook ends hung to the eye of the first section, substantially as set forth.

206,470. COMBINED LADDER AND TRESTLE. Thomas Hiteel, Fishfield, Ind. Filed June 7, 1878.

Brief.—A ladder is hinged in two places, and braces secured by nut and bolt hold the sections turned down to the middle section to form a trestle. Props bolted to the end sections swing out laterally. When the sections are to form a ladder the braces and props are adjusted to suitable apertures by the nuts and bolts, and form splices for the hinged joints.



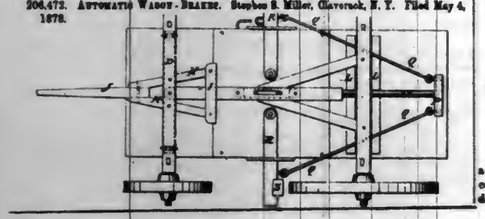
Claim.—A combined ladder and trestle, composed of an ordinary ladder hinged in two places and provided with the braces D D and props E E, which serve also as a joint-splice when the device is used as a ladder, substantially as herein shown and specified.

206,471. BUTTONS AND STUDS. James W. Miller, Newark, and Isaac M. Miller, Orange, N. J. Filed May 10, 1878.



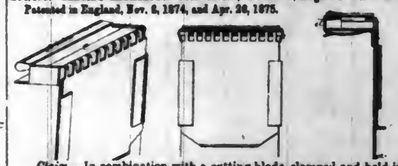
Claim.—A button consisting of the annular part A, to which is secured an inner rim or flange, B, in combination with a stud having a disk secured to each end thereof, the inner rim or flange being adapted to be upset over the upper of the two disks, to unite the parts which form the button, substantially as set forth.

206,472. AUTOMATIC WAGON-BRAKE. Stephen S. Miller, Claverack, N. Y. Filed May 4, 1878.



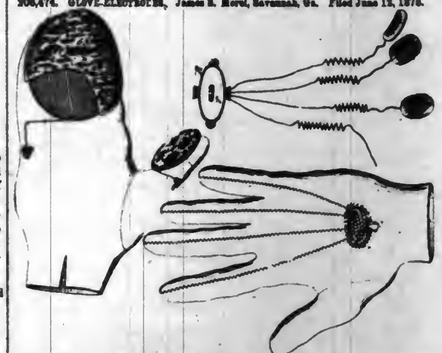
Claim.—The combination, with a wagon-body rigidly secured to the rear gearing and sliding therewith on the reach, of the brake-bar R, pivoted to the body, and connected by rods Q with a cross-bar, P, attached to the rear end of the reach, as shown and described.

206,473. SHAVING APPARATUS. John Monks, Gloucester, England. Filed Dec. 3, 1877. Patented in England, Nov. 6, 1874, and Apr. 26, 1875.



Claim.—In combination with a cutting-blade, clamped and held in a suitable frame, a guard-plate provided with interstices adjustable relatively to the blade, and having the plate *a*, that extends at right angles, or nearly so, to the blade and forms a handle, substantially as set forth.

206,474. GLOVE-ELECTRODES. James S. Moral, Savannah, Ga. Filed June 18, 1878.

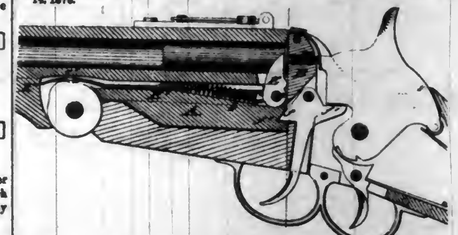


Claim.—1. A glove-electrode consisting of a glove provided with metallic surfaces and conducting-wires, and with means for connecting it with a magneto-electric apparatus, substantially as herein described.

2. A glove or mitten provided with metallic surfaces and conducting-wires, and having said metallic surfaces covered or coated with sponge, substantially as and for the purpose herein described.

3. A glove or mitten provided with metallic surfaces and conducting-wires, in combination with a magneto-electric battery, substantially as and for the purpose herein described.

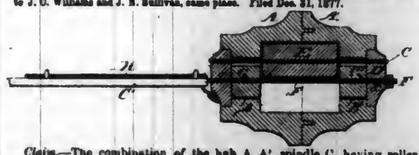
206,475. BREECH-LOADING FIRE-ARMS. John T. Morrison, Fort Concho, Tex. Filed May 14, 1878.



Claim.—1. The combination, in a breech-loading fire-arm, of a pivoted ejector actuated by the pivoted barrel, in combination with a sliding ejector-bar, having a forked end bearing above pivot of ejector, and a spring-bolt bearing on a point below the same, the ejector-bar being slotted at the opposite end, and engaged by a projecting pin and eccentric enlargement of the fixed pivot portion of the stock, substantially as and for the purpose set forth.

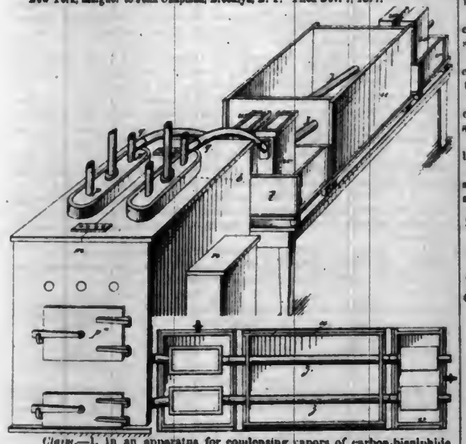
2. In a fire-arm, the pivoted locking-bolt B, having catch *f*, that enters a recess in bottom piece of the barrel, and the heel *f'*, that is acted upon by a shoulder of the hammer, as shown and described.

206,476. VEHICLE-HUBS. Wm. Mullins, Flat Creek, Tenn., assignee of two-thirds his right to J. C. Williams and J. N. Sullivan, same place. Filed Dec. 31, 1877.



Claim.—The combination of the hub A A', spindle C, having roller M, auxiliary twin spindle F, having rollers G G', and lever H, all constructed and combined to operate substantially as and for the purpose herein shown and described.

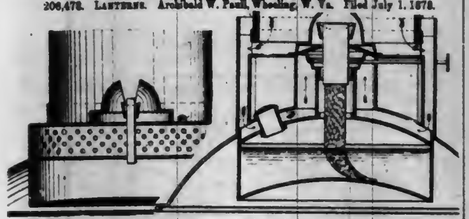
206,477. APPARATUS FOR MANUFACTURE OF CARBON-BISULPHIDE. Dubois D. Parmelee, New York, assignor to John Chapman, Brooklyn, N. Y. Filed Nov. 7, 1877.



Claim.—1. In an apparatus for condensing vapors of carbon-bisulphide, the combination of the rectangular boxes *t*, *u*, and *v*, condensers W, and the tubes *x*, passing through the intermediate box *v* at an inclination and connecting the condensers, substantially as described.

2. The combination of the furnace with its retorts and heating-flues, the rectangular condensers, the intermediate box *u*, and tubes *x*, all substantially as set forth.

206,478. LANTERNS. Archibald W. Paull, Wheeling, W. Va. Filed July 1, 1878.

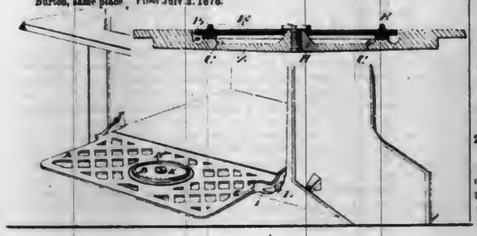


Claim.—1. In a lantern having a single globe wherein the descending and ascending currents are counterbalanced by reverse currents from or toward the exterior, the combination, with said globe and its foraminated bottom, of air ducts or channels receiving fresh air from a point at or near the base of the globe and conducting the same to the under side of the close-walled burner-cone, and having also a communication with the space exterior to said cone and within the globe, for the purposes and objects named.

2. In a lantern having a single globe provided with a foraminated bottom, the combination, with such globe, of an air-chamber provided with ducts or channels arranged, substantially as shown, so as to receive or arrest air from the exterior of the globe and at a point at or near the base thereof, directing this air beneath the base of the burner-cone, said ducts or channels communicating also with the flame-chamber exterior to the cone, the whole being arranged so that air may be admitted to this flame-chamber either from the air-chamber or from without the lantern, and so that the currents within the globe must be counterbalanced by reverse currents passing through the burner-cone, in the manner and for the purposes set forth.

3. In a lantern having a single globe provided with a foraminated bottom, the combination, with said globe, of an air-chamber receiving air from the exterior of such globe at or near the base thereof, which air is directed beneath the base of the burner-cone, said air-chamber also having a communication with the interior of the globe or flame-chamber beneath the base thereof and exterior to the cone, the inlets to the flame-chamber and to the air-chamber being relatively located and proportioned, substantially as explained, so that the currents which pass down through the cone must be crossed and intercepted or otherwise counterbalanced by those which pass down outside the cone and by others forced in from the lantern, substantially as shown and described.

206,479. TUBE-TABLES FOR STOVES. John T. Peet, Cincinnati, Ohio, assignor to Redway & Burton, same place. Filed July 2, 1878.



Claim.—1. In a stove turn-table, the disk B, provided with ridge E and ridge D, substantially as set forth.

2. A stove turn-table consisting of disk B, provided with ridges D E, in combination with bottom Z, made smooth, substantially as and for the purposes set forth.

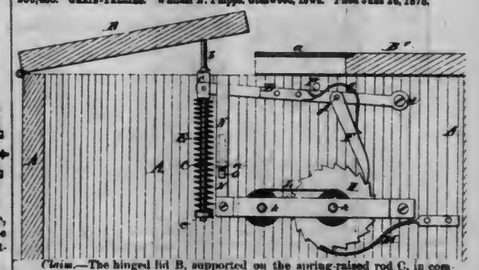
3. A stove turn-table consisting of disk B, provided with ridges D E, in combination with bottom Z, provided with bearings C, substantially as and for the purposes set forth.

4. A stove turn-table consisting of disk B, provided with ridges D E, in combination with bottom Z, bearings C, axis H, and broad-headed screw, &c., substantially as and for the purposes set forth.

5. In combination with a stove turn-table, the anti-friction axis H and broad-headed screw, substantially as and for the purposes set forth.

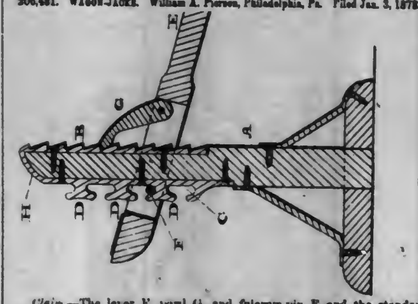
6. In combination with the automatic oven shelf and door herein described, a turn-table consisting of disk B, provided with ridge E and ridge D, substantially as and for the purposes set forth.

206,480. GRAIN-TALLIES. William H. Phipps, Glenwood, Iowa. Filed June 26, 1878.



Claim.—The hinged lid B, supported on the spring-raised rod C, in combination with the pivoted lever D, having the pawl F, and moving between the stops N P, and with the ratchet-wheel H, rollers J K, and indicator-tape L, substantially as and for the purpose set forth.

206,481. WAGON-JACKS. William A. Pierson, Philadelphia, Pa. Filed Jan. 3, 1878.



Claim.—The lever E, pawl G, and fulcrum-pin F, and the standard A, with the ratchet B and bearing-bar C on opposite sides, in combination with the crook H, continuous of the bar and overhanging the standard, substantially as and for the purpose set forth.

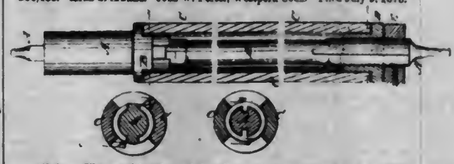
206,482. PICKLE-FORKS. Samuel Poole, Brooklyn, N. Y. Filed June 28, 1878.



Claim.—1. The fifter formed of the handles *a a'*, lever-arms *c c'*, joint *b*, spring *h*, and claws or holders *d d'*, substantially as set forth.

2. The lever-arms *c c'*, formed as half-cylinders, in combination with the claws or holders *d d'*, joint *b*, lever-handles *a a'*, and spring *h*, as set forth.

206,483. MILL-SPINDLES. John W. Porter, Westport, Conn. Filed July 9, 1878.

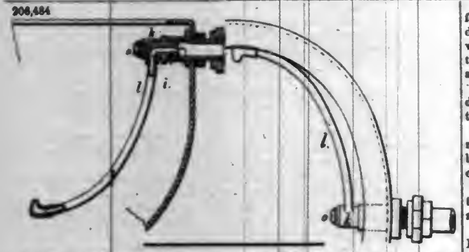


Claim.—The combination of the sleeve C, the clutches B D, and the collar E with the spindle A, substantially as herein shown and described.

206,484. BIDET WATER-CLOSETS. John Reid, Brooklyn, assignor to the J. L. Mott Iron Works, New York, N. Y. Filed June 17, 1878.

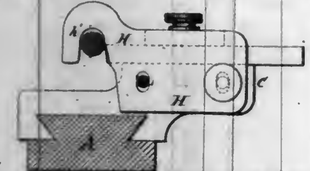
Claim.—The combination, with the deflector or spreader in a water-closet, of the plug *i*, barrel *k*, tube *l*, and nozzle *s*, constructed and applied substantially as set forth, whereby the bidet attachment receives its water through the same pipe as the water that washes the closet.

206,484



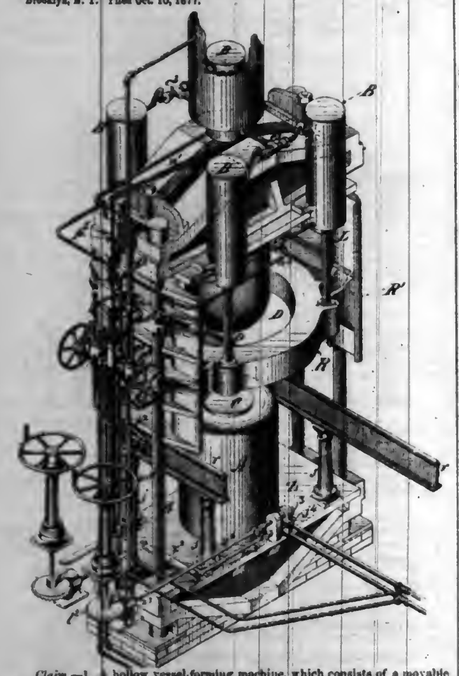
206,485. WORK-SUPPORTS FOR METAL-TURNING LATHES. Hans Renn, Jersey City, N. J. Filed July 1, 1878.

Brief.—The hook is formed with a tapering recess, so that it may fit upon and support different sizes of work.



Claim.—The bushing H, having vertical slots, and a hook, A', provided with a tapering cavity, in combination with the tool-holder C and the mandrel of a screw or pin machine, as and for the purpose set forth.

206,486. MACHINES FOR FORMING IRON VESSELS. Thomas P. Rowland, Green Point, Brooklyn, N. Y. Filed Oct. 10, 1877.



Claim.—1. A hollow vessel-forming machine, which consists of a movable female die, a fixed male die, and a binding or clamping apparatus acting against the metal blank resting on the female die, the female die and binding-ring being operated by opposing hydraulic presses, the presses operating the binding-ring being provided with apparatus whereby their pressure is gradually released, thereby allowing the advance of the female die over the male die, substantially as described.

2. In an apparatus for forming hollow iron vessels, which consists of a stationary male die, a female die, and a binding-ring operated by independent hydraulic pressure, and a carriage operated by a hydraulic ram, for the purpose of causing the entrance and withdrawal of the vessel from the press, the pipes, valves, and connections shown, which connect the presses with the water-pressure, and the escape-pipes, and are so constructed that a single operator can from one position control the opposing hydraulic presses and the carriage-ram, substantially as described.

3. The combination, in a hollow-vessel-forming machine, of a male and female die and a binding-ring, which binding-ring is held against the female die by means of the pressure of water in a hydraulic press or presses provided with a relief-valve controlled by the operator, whereby the pressure between the ring and the die can be gradually relieved during the formation of the vessel, substantially as described.

4. The combination, in a vessel-forming machine, of a female die, D^1, male die D, and binding-ring R, operated by a hydraulic press or presses, B, having the relief-valve e^4 and overflow-tank T, substantially as described.

5. The combination of a female die, D^1, operated by a hydraulic press, male die D, and ring R, operated by hydraulic press or presses B, the said ring being connected with the female die D^1 by connecting-rods P, for the purpose of increasing the upward force on the die D^1, substantially as described.

6. A welding apparatus which consists of a die surrounded by a fire-box through which a current of air is forced, the said die being arranged to enter a corresponding die, for the purpose of welding a ring, as set forth.

7. In a hollow-vessel-forming machine, a male and female die and the ring R, the said ring being provided with a cutting or shearing apparatus corresponding in shape to the outline of the vessel to be formed, substantially as described.

206,487. BUTTONS AND STUDS. John A. Rupert, Pawtucket, R. I., assignor of one-half his right to W. A. Beatty & Co., same place. Filed June 3, 1878.



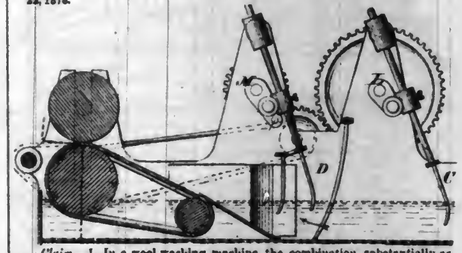
Claim.—In a two-part button, the combination of the cap c, the notched slide m, the bolt b, having the laterally-protruding pin d, and the spring f, with the perforated hollow post e and chambered hollow shank c, substantially in the manner and for the purposes shown and described.

206,488. STOVE-LEGS. Richard D. Ryerson, Clinton, assignor to himself and Jonathan R. Ryerson, Dexter, Me. Filed Sept. 14, 1877.



Claim.—The foot C, made adjustable by the screw B in a nut upon leg A, and having a socket to receive the stem of caster-wheel D E, as shown and described.

206,489. WOOL-WASHING MACHINES. Frederick G. Sargent, Graniteville, Mass. Filed Jan. 22, 1878.

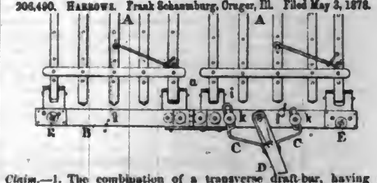


Claim.—1. In a wool-washing machine, the combination, substantially as shown and described, of two or more swinging carrier-rakes, delivering the fiber one to another, each arranged to move at a speed greater than that of the one from which it receives the fiber, for the purpose described.

2. In combination with the rake C, the rake D, arranged to move at a greater rate of speed than the first.

3. In a wool-washing machine, the combination of a swinging delivery-rake, two press-rolls, and an endless rubber apron, extending from a point beneath the rake to and around one of the rolls, as described and shown, whereby the fiber is delivered automatically to the rolls, and the apron caused to serve the double purpose of a conveyer and a yielding surface to press the fiber.

206,490. HARROWS. Frank Schaumburg, Cruger, Ill. Filed May 3, 1878.



Claim.—1. The combination of a transverse draft-bar, having several attached harrows, with a draft-tongue adjustably attached upon the front of said bar, adjustable for the purpose of angling the draft or course of said harrows more or less obliquely, as described.

2. A harrow having a laterally-adjustable oblique tongue pivoted upon a transverse bar, to which the harrows are hinged or jointed abreast.

3. In a harrow, the combination, with the tongue D and bar B, of the side braces C C, for the purpose of angling the harrows, substantially as described.

4. The combination and arrangement of the bar B, braces C, and tongue D, as described.

5. In a harrow with angling adjustable tongue D and bar B, supported on runners E, the two or more harrows A A, having temporary connection I in the rear in adjoining harrows, as described.

206,491. WATER-POWER CLOSET-VENTILATORS. W. Selvey, Springfield, Mass. Filed Mar. 22, 1878.



Claim.—1. The combination of the ventilator-case A A^3, spindle a, fan D, water-wheel case d, tube f f, and water-wheel E, all constructed and operating substantially as and for the purpose described.

2. The combination, with the water-supply pipe i, of the water-wheel case d, water-wheel E, spindle a, fan D, and ventilator-case A A^3, substantially as and for the purpose set forth.

3. The combination, with exhaust-pipe K and discharge-pipe C^1 and water-supply pipe i, of the ventilator-case A A^3, spindle a, fan D, water-wheel E, and water-wheel case d, substantially as and for the purpose set forth.

4. The combination, with the water-supply pipe of a water-closet or of a building, of a water-wheel, E, and ventilating-fan D, arranged in cases A and d, and suitably connected with said water-supply pipe i and suction and discharge pipes K and C^1, whereby, when water is set in motion in said water-supply pipe by the act of admitting water to the receiver, a fan is caused to rotate for the purpose of ventilation, substantially as set forth.

206,492. BOTTLE-STOPPERS AND STOPPER-FASTENERS. Frederick J. Seybold, St. Louis, Mo. Filed May 22, 1878.



Claim.—1. A spherical stopper having pintles, and having a filling and discharging passage, which consists of a recess in one side of the stopple, cutting away a portion of the circumference, as and for the purpose set forth.

2. The pintles R, each pintle being constructed with two or more grooves cut on the circumference of the same, the grooves being of different depths for the purpose of giving adjustability to the pintle as regards tightness in binding the same to the mouth of a receptacle, as and for the purpose set forth.

3. The bail-lever W, constructed with the grooves or indentations Y and Z, as and for the purpose set forth.

4. The binding-wire O, constructed with a bend or protuberance at each end, and with an intermediate coil where the wire attaches to the pintle, as and for the purpose set forth.

5. The gasket B, constructed with walls of sufficient height to entirely cover one end of the filling and discharging aperture, so as to prevent the liquid from passing out of the descending end of the aperture, the gasket having the opening N and the flange M, as and for the purpose set forth.

6. The gasket B, constructed with its side walls reaching up to the top of the pintles, or thereabout, but not so high as the top of the sphere or stopper, and with the opening N, in combination with a pintled stopper, having the passage D cut into the circumference of the same, as and for the purpose set forth.

7. A stopper having pintles, in combination with the binding-wires O, constructed with a simple hook or protuberance where they are attached to the neck-wire, and having a coil where they pass around the pintle, and with a neck-wire, as and for the purpose set forth.

8. The combination of a stopper having pintles, binding-wires O, constructed with a simple hook or protuberance where they are attached to the neck-wire, and having a coil where they pass around the pintle, a neck-wire having detours, and bail-lever W, as and for the purpose set forth.

9. A pintled stopper attached operatively to a bottle by means of neck-fastenings, the end bearings of each fastening being on opposite, or nearly opposite, sides of the bottle-neck at points on the bottle-neck ninety degrees, or thereabout, from a vertical line through the pintles, as and for the purpose set forth.

10. The combination of a pintled stopper, binding-wires O, constructed with a simple hook or protuberance where they are attached to the neck-wire, and having a coil where they pass around the pintle, and a neck-wire, as and for the purpose set forth.

206,493. BOTTLE-STOPPERS AND STOPPER-FASTENERS. Frederick J. Seybold, St. Louis, Mo. Filed Dec. 3, 1877.



Claim.—1. A cylindrical or cylindroidal stopper adapted to rest and be rotated over the mouth of a receptacle, having a filling and discharging passage in a plane substantially at right angles to its axis, and provided with means for securely holding the bearing portions of a neck fastening, as and for the purpose set forth.

2. A cylindrical or cylindroidal stopper adapted to rest and be rotated over the mouth of a receptacle, and having a curved or angular filling and discharging recess or passage laterally across it, as and for the purpose set forth.

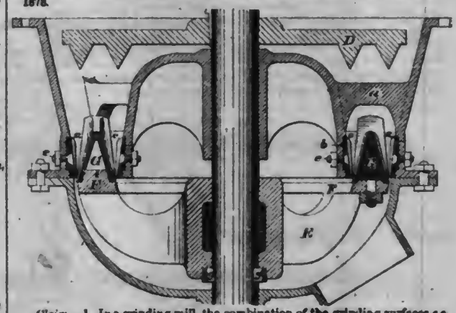
3. A gasket having a tubular portion to fit the interior of the neck of a receptacle, a flange to rest on the neck, with its upper surface trough-shaped, as and for the purpose set forth.

4. A cylindrical or cylindroidal stopper adapted to rest and be rotated over the mouth of a receptacle, and having a filling and discharging passage, in combination with a gasket having its lower portion adapted to fit into the mouth of a receptacle, and having a flange with its upper surface trough-shaped, as and for the purpose set forth.

5. A cylindrical or cylindroidal stopper adapted to be rotated over the mouth of a receptacle, and having a filling and discharging passage, in combination with a gasket adapted to rest on a bottle-mouth, and having a flange with its upper surface trough-shaped, and a neck-fastening having pintle-bearings, as and for the purpose set forth.

6. The combination of a cylindrical or cylindroidal stopper adapted to be retained and rotated over the mouth of a receptacle, and having a filling and discharging orifice, with a gasket whose lower portion is adapted to fit into a receptacle-mouth, and having a flange trough-shaped on its upper surface, and with a suitable neck-fastening and a suitable means for rotating the stopper, as and for the purpose set forth.

206,494. GRINDING-MILLS FOR BARK. Robert H. Shaltis, Kingston, N. Y. Filed May 17, 1878.



Claim.—1. In a grinding mill, the combination of the grinding-surfaces c c, the spider E, the rim F of the spider provided with raised segments and bolt-holes through the rim between them, and the grinding-ring G, provided with segmental or partitioned recesses on its under side to engage the segments on the rim, and bolts to engage the bolt-holes, substantially as set forth.

2. The sections c c, of hardened cast metal, provided with beveled recesses d d in their ends to receive the heads of the fastening-screws, substantially as set forth.

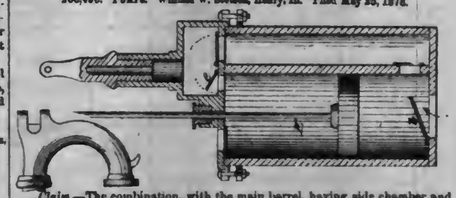
206,495. EAVES-TROUGH HANGERS. John P. Spies, Fairview, Ill. Filed Apr. 9, 1878.

Brief.—The hanger is riveted centrally beneath the trough to an encircling band, which embraces the inner and outer edge of the trough, and fastened by screws to the cornice just under the eaves.



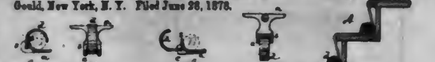
Claim.—The eaves-trough hanger herein described, consisting of the parts B D, riveted together and correspondingly shaped to fit the trough, with the ends of the part D bent inwardly to hold the trough in place, and the inner end of the part B extended and perforated to receive screws, by which the hanger is attached to the cornice of a building, as shown and described.

206,496. PUMPS. William W. Bottom, Henry, Ill. Filed May 25, 1878.



Claim.—The combination, with the main barrel, having side chamber and top valve-chamber, communicating with the main barrel by alternately working by top, bottom, and side valves, of a goose-neck discharge-pipe screwed into a tubular extension of the top valve-chamber, and having projecting ear or bearings for the operating-lever of the piston-rod, substantially as set forth.

206,497. STAIR-ROD FASTENERS. Charles E. Stearns, Boston, Mass., assignor to William B. Gould, New York, N. Y. Filed June 28, 1878.

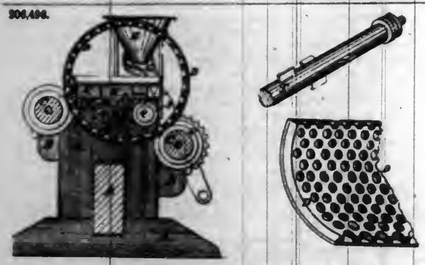


Claim.—The stair-rod fastener A, composed of the plate a, having the bent up end b and perforated ears c, and of the hook d, pivoted to said plate a, substantially as herein shown and described.

206,498. GRAIN-SEPARATORS. Samuel Stone, Bristol, Tenn. Filed June 11, 1878.

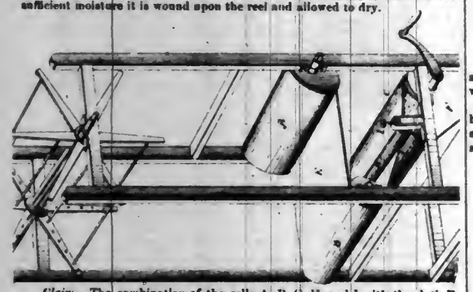
Claim.—In a grain-separator, the combination of the pitted cylinder D, the reciprocating frame H, and the rotary stirrer arranged under said frame, as and for the purpose specified.

206,498.



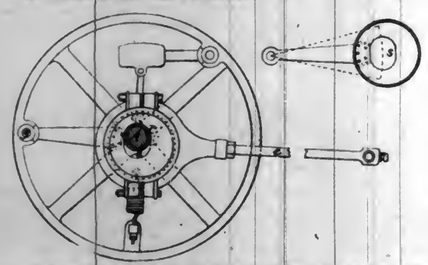
206,499. MACHINES FOR SPONGING AND DRYING CLOTH. Moses C. Swift, New Bedford, Mass. Filed Aug. 13, 1877.

Brief.—The cloth is wound upon the lower roll, which is partially submerged in the trough. The cloth to be sponged is then wound with the saturated cloth upon the upper roll. When the cloth to be sponged has absorbed sufficient moisture it is wound upon the reel and allowed to dry.



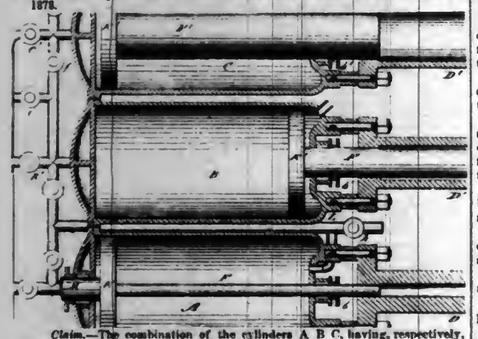
Claim.—The combination of the rolls A, B, C, H, and I with the cloth E and the trough F, substantially as and for the purpose set forth.

206,500. GOVERNORS FOR VALVE-MOTIONS. Harris Tabor, Corning, N. Y., assignor to B. W. Payne & Sons, same place. Filed Feb. 12, 1878.



Claim.—The combination, substantially as before set forth, of the revolving shaft, connecting-wheel, eccentric, vibratable arm of the eccentric, fly-weight, and spring, the last two being directly connected with the said eccentric.

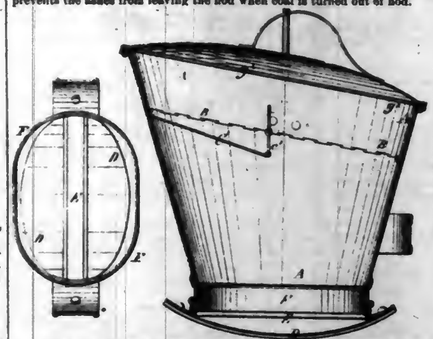
206,501. STEAM AND HYDRAULIC PRESSES. John F. Taylor, Glenville, Conn. Filed Feb. 1, 1878.



Claim.—The combination of the cylinders A B C, having, respectively, chambers D D' D², pistons E E' E², and rams F F' F², said cylinders being connected with pipe G, that furnishes a supply of live or exhaust steam, whereby the cotton or other material is reduced fifty per cent. by twice-exhausted steam, then this bulk again reduced fifty per cent. by a once-exhausted steam, and finally this reduced to the minimum bulk by live steam.

206,502. ASH-SIFTERS. Benj. R. Tenney, Poughkeepsie, N. Y., assignor to Jane Ann Tenney, same place. Filed June 26, 1878.

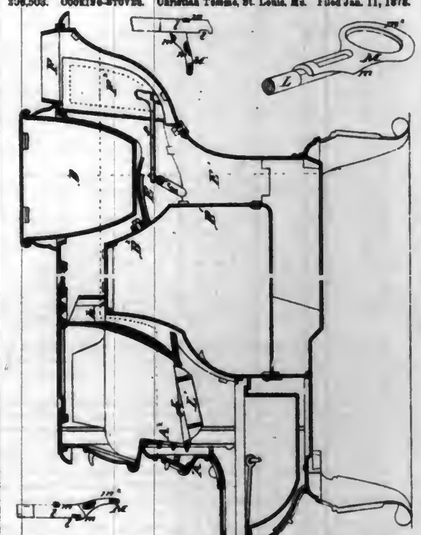
Brief.—Rocker is detachable, so is the sieve and its attached apron, which prevents the ashes from leaving the hod when coal is turned out of hod.



Claim.—1. The combination of the detachable wire screen B and inclined apron C with a coal-scuttle, box, or other vessel, A, made either of metal or wood, substantially as herein shown and described.

2. The combination of the rocker formed of the curved plate D, the straight bar or plate E, and the flange F with the bottom of a coal-scuttle, box, or vessel, A, made either of metal or wood, substantially as herein shown and described.

206,503. COOKING-STOVES. Christian Temme, St. Louis, Mo. Filed Jan. 11, 1878.



Claim.—1. The combination of a water-reservoir with a stove having an outflue, F, placed back of said reservoir, and the dampers placed in said outflue so as to expose the whole sides of the water-reservoir to the direct heat of the fire, substantially as set forth.

2. The water-reservoir D, vertical flue-plates E', and partition-plate E, in combination with the dampers F³, placed in the outflue of the stove, substantially as set forth.

3. The heating-space H', surrounding the sides and back of the fire-lining, and having supply-openings H in the front of the stove at each side of the doors, in combination with the central discharge-flue, A, projecting above the fire-lining oven crown-sheet and discharging into the stove-flues, as and for the purpose set forth.

4. The shaker-handle M, forked at one end, and provided with top and bottom cross-bars *u u*, which engage top and bottom notches *l l* in the grate-rod I, as and for the purpose set forth.

5. The combination, in the shaker-handle M, of the hand eye m' and legs or bars m, for engaging the recesses *l* in the grate-rod, as and for the purpose set forth.

6. The dampers F³, in combination with the rods *f* and rock-shaft *f'*, as and for the purpose set forth.

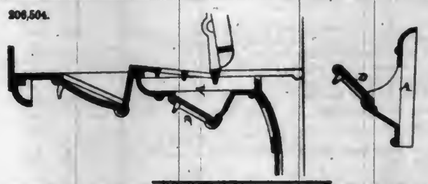
7. The dampers F³, placed in the outflue F, in combination with the flue-partitions E, rods *f*, and rock-shaft *f'*, as and for the purpose set forth.

206,504. STOVE-DOORS. Christian Temme, St. Louis, Mo. Filed Apr. 11, 1878.

Brief.—The supplementary door is placed opposite the clinker-cleaning space.

Claim.—The drop-door D, hinged in the swinging fire-grate door A, as and for the purpose set forth.

206,504.

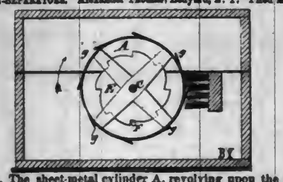


206,505. SCRAPER ATTACHMENTS FOR SHOVEL-PLOWS. Henry D. Terrell, Statesville, Ga. Filed June 14, 1878.



Claim.—The scraper having a flat middle portion and two side wings, which are inclined to the rearward, and provided with downwardly and rearwardly twisted upper edges and upper corners, curved forward, as and for the purpose set forth.

206,506. GRAIN-SEPARATORS. Alexander Thomas, Ledyard, N. Y. Filed May 11, 1878.



Claim.—1. The sheet-metal cylinder A, revolving upon the inclined axis of the central shaft C, and perforated with longitudinal cup-slits *g* in circumferential rows G, arranged to break joints each with the other, and having the plates or tongues bent outward, forming a cup, substantially as and for the purpose set forth.

2. The combination of the cylinder A, constructed as described, with the cam-wheel E, secured upon the cylinder-shaft C, to vibrate the cylinder A by contact with the stationary pin F, or its equivalent, substantially as shown and described.

206,507. BENCH-PLANES. Justus A. Trust, New Britain, Conn. Filed June 3, 1878.

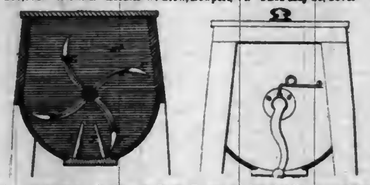
Brief.—A metal beading-plane handle and frame having a longitudinal rabbet, against which is placed a series of separately-formed, slotted, and detachable plane-stocks carrying suitable bits, is provided with screws having a coarse thread at one end and a fine thread at the other, and carrying lever-nuts, by means of which the plane-stocks are securely clamped to the handle.



Claim.—1. The plane handle and frame having a longitudinal rabbet and provided with clamping mechanism, in combination with a separately-formed plane-stock and its cutting-iron, adapted, when united, to be readily attached and detached to and from the side of said frame, substantially as described, and for the purpose specified.

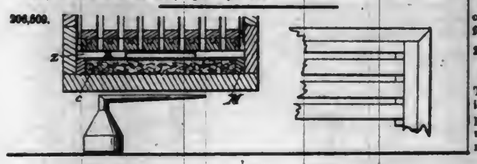
2. The frame B, having screws *c c*, with fine and coarse threads, in combination with the lever-nuts *b b* and the slotted flange of a plane-stock, substantially as described, and for the purpose specified.

206,508. CHURNS. Ezekiel W. Trow, Newport, Vt. Filed May 16, 1878.



Claim.—The rotary dashers or floats C, curved longitudinally and having the broad blade-like ends, in combination with the curved churn-bottom and the stationary pegs or stops J, arranged alternately in parallel rows, substantially as described, for the purpose specified.

206,509.

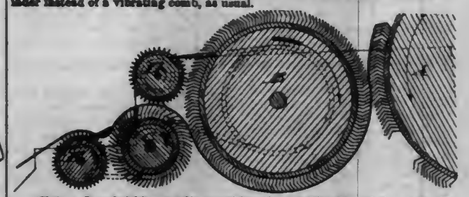


206,509. BED-RIVES. Peter A. Westervelt, College Grove, Tenn. Filed Mar. 2, 1878.

Claim.—The chamber *c* within the frame M, filled with cedar or other wood shavings, to which the moth and moth-miller have an antipathy, covered with wire netting *n*, in combination with entrance-chamber Z, provided with opening E, substantially as and for the purpose specified.

206,510. STRIPPING ATTACHMENTS TO CARDING-MACHINES. Marcian E. Whitcomb and John Elias, Holyoke, Mass. Filed Mar. 2, 1878.

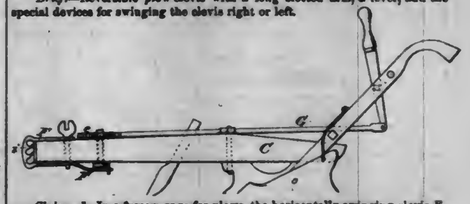
Brief.—Toothed cylinders are used to remove the fiber from the doffer-cylinder instead of a vibrating comb, as usual.



Claim.—In a finishing carding-machine, the combination of the doffer B and stripper C, the stripper clothed with long wire, and turning in an opposite direction from and moving at a slower speed than the doffer, thus carrying the sliver over the roll C, for the purposes described.

206,511. PLOWS. William E. Whitcomb, Barre, Vt. Filed May 18, 1878.

Brief.—Reversible plow-clevis with a long slotted arm, a lever, and the special devices for swinging the clevis right or left.



Claim.—1. In a furrow-gage for plows, the horizontally-swinging clevis F, provided with the slotted extension F', in combination with the sleeve *g*, enlarged at the top end to fit the countersunk washer *h*, plow-beam C, and the bolt I, substantially as and for the purpose specified.

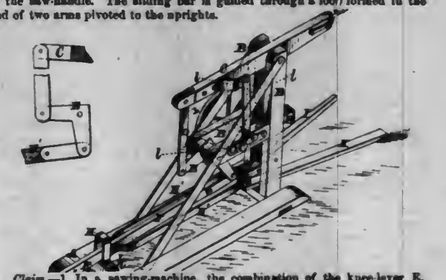
2. In a furrow-gage for plows, the clevis F, provided with slotted extension F', in combination with the crank-pin *a*, slotted crank plate *a'*, washer-bolt *b*, and sleeve *c*, all constructed, arranged, and operating as and for the purpose set forth.

3. In a furrow-gage for plows, the rod G, provided with rack *e*, in combination with guide *d'*, pinion *d*, sleeve *c*, crank-plate *a'*, and bolt *b*, constructed and arranged in the manner and for the purpose as specified.

4. In a furrow-gage for plows, the swinging clevis F, rod G, provided with rack *e*, pinion *d*, crank wheel or plate *a'*, bolt *b*, and sleeve *c*, all combined and arranged to operate in the manner substantially as shown and described.

206,512. SAWING-MACHINES. Elbert F. Wilcox, Hoosick, Ill. Filed Dec. 26, 1877.

Brief.—A lever is fulcrumed between uprights and connected to a right-angled lever at its angle, and connected to a sliding bar carrying the saw, or to the saw-handle. The sliding bar is guided through a loop formed in the end of two arms pivoted to the uprights.



Claim.—1. In a sawing-machine, the combination of the knee-lever E, saw-bar F, hand-lever I, and arms H' H', substantially as and for the purpose set forth.

2. The combination of the beam C with intermediate mechanism for operating the saw-handle F, link *l*, and balance-wheel L, substantially as and for the purpose set forth.

3. The hand-lever I, in combination with uprights B B, sliding bar or saw-handle guide, and adjusting device consisting of the loop or eye H and arms or plates H' H', substantially as and for the purpose set forth.

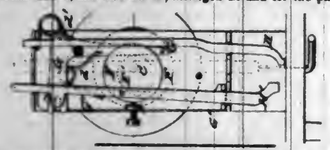
4. The foot-lever K, in combination with the device consisting of the loop or eye H and arms or plates H' H', substantially as and for the purpose set forth.

206,513. SEWING-MACHINES. Daniel Williamson, Sunbury, Pa., assignor to Daniel Beakley and Sybilla Williamson, same place. Filed Apr. 20, 1878.

Brief.—The invention consists in an improved four-motioned top feed. The presser-foot bar and feed-bar are both pivoted to the same lever, and one is raised as the other is lowered. This lever is of bell-crank form, and one arm projects downward to engage with a cam, which imparts the necessary movement thereto. Another cam, through a swinging lever, gives the horizontal movement to the feed-bar.

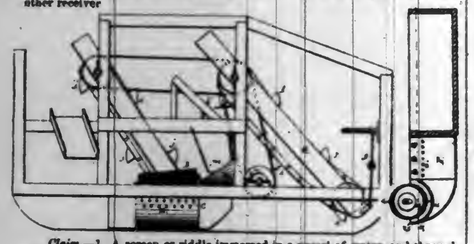
Claim.—The combination, with the cams F F', of the levers G G', springs *d d'*, presser-foot H, and feed-bar H', arranged as and for the purpose specified.

206,513.



206,514. APPARATUS FOR OBTAINING AND WASHING SAND. David O. Williams, Newark, Ohio. Filed June 6, 1878.

Brief.—An apparatus for obtaining and washing sand, consisting of a riddle or screen combined with an ordinary dredging-boat, the screen being constructed and operated substantially the same as that embraced in Patent No. 64,091, granted April 23, 1867, to David Farnier, suitable chutes being provided for conducting the sand from the dredging-buckets to the screen, and an elevating device being also provided for elevating the washed sand from a receptacle into which it passes from the screen, and depositing it in a boat or other receiver



Claim.—1. A screen or riddle immersed in a vessel of water, and through which is flowing a stream of water, in combination with an ordinary dredging-boat for supplying the said screen with unwashed sand, substantially as herein described, and for the purpose set forth.

2. A cylindrical screen immersed in a vessel of water, through which screen and vessel flow a current or currents of water, in combination with an ordinary dredging-boat having elevators for supplying and charging into the interior of said screen unwashed sand, substantially as herein described, and for the purpose set forth.

3. The combination of a cylindrical screen immersed in a vessel of water, through which screen and vessel flows a current of water, a dredging-boat having elevators for supplying the interior of said screen with unwashed sand, a receptacle for receiving the sand after being washed, and elevators for conveying the washed sand from said receptacle, substantially as herein described, and for the purpose set forth.

4. The combination of the screen D, vessel C, receptacle F, elevators *f j*, and chutes *l*, *m*, *n*, and *k*, constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

206,515. SHOE-NAILS. Ephraim L. Wires, Milford, Mass., assignor of one-half his right to Joseph M. Estabrook, same place. Filed Feb. 27, 1875.

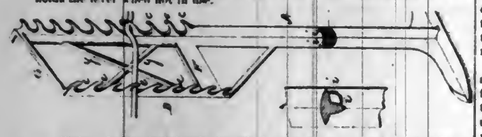


Claim.—1. A nail having a flat-sided point, the side of which forms at its junction with the body a right angle with the lower side of the shoulder *a*, as and for the purpose specified.

2. A nail whose body or shank is provided with one or more shoulders, *b*, from the entering end toward the butt or head, at right angles to the shank, the said shoulders presented toward the entering end, as and for the purpose specified.

206,516. WAGON-JACKS. Jos. J. Adgate, New York, N. Y. Filed July 10, 1878.

Brief.—The main standard and foot of the jack is made of T-shaped malleable iron, and the whole is cast in one piece. The receptacle on the side holds the lever when not in use.



Claim.—1. The jack herein described, cast of one piece of metal, consisting of the standard A, provided with upturned teeth or hooks *c*, and the bar D, connected as represented, and provided with the downwardly-projecting teeth or hooks *e*, and the braces F G and *g g*, as and for the purpose set forth.

2. In combination with the body of a jack, constructed substantially as herein described, the lever J, provided with the curves *n* and *o*, as and for the purpose specified.

206,517. PADLOCKS. Hermann Ahrend, Newark, N. J., assignor to Remer & Co., same place. Filed July 10, 1878.



Claim.—1. In a lock, a spring-tumbler, *b*, with projection *b*, in combination with a pawl or catch, substantially as described.

2. The tumbler provided with the projection *b* and the rounded or beveled part *f*, in combination with the key G, having the beveled part *k*, substantially as and for the purpose set forth.

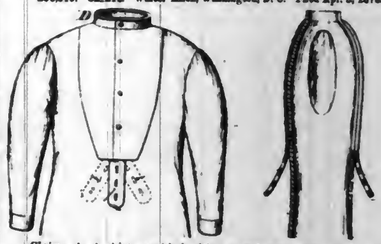
3. The tumbler provided with projection *b*, having the opening *c*, in combination with projection *h*, key G, and catch, substantially as and for the purpose specified.

206,518. CHECK-HOOKS FOR MARTINGALES. George A. Allen, West Bay City, Mich. Filed Oct. 1, 1877.



Claim.—In combination with the curved hook B, having a slot, C, in its base, the sliding post A, having a screw-shank passing through the slot and held by a nut, the post being of such height as to join with the point of the hook B, and close the opening when the check-rein is drawn forward, as herein set forth.

206,519. SKIRTS. Walter Allen, Washington, D. C. Filed Apr. 5, 1878.



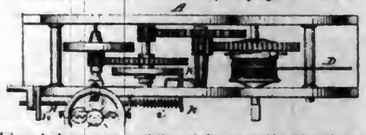
Claim.—1. A shirt provided with a re-enforcing strip or yoke-piece, superposed on the body fabric at the back and extending downward to the waist of the shirt, substantially as set forth.

2. A shirt constructed with a yoke-piece extending to the waist, and provided with means to afford a rear support for the drawers, substantially as set forth.

3. A dress-shirt constructed with a tab at back on or about the waist-line, substantially as set forth.

4. A shirt constructed with drawer-supporting tabs at front and back, having a plurality of button-holes or buttons or other fastenings, arranged vertically, to afford means for regulating the height of the drawers, substantially as set forth.

206,520. CHURN-MOTORS. James A. Alexander, Sulphur Springs, Tex. Filed June 6, 1878.



Claim.—A churn-motor consisting of the adjustable weight C, operating-cord D, motor A, having a brake-drum, and screw-threaded rod H, having coiled spring *i*, and brake-plate *k*, provided with the friction-roller *p*, all constructed and combined to operate substantially as and for the purpose herein shown and specified.

206,521. DRYING APPARATUS. Daniel Asbury, Charlotte, N. C. Filed June 24, 1878.

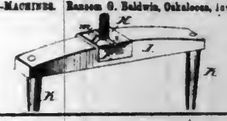


Claim.—1. In a drying apparatus, the combination, with the drying room or house, and a furnace or flue extending through the same, of an air-induction tube forming the top of said furnace or flue, and having its ends extending through the walls of the room or house, and provided with perforations in its upper side, as shown and described.

2. In a drying apparatus, the combination, with the drying room or house, and a furnace or flue extending through the same, of an air-induction tube forming the top of said furnace or flue, and having its ends extending through the walls of the room or house, and provided with perforations in its upper side, and the perforated air-induction tube, as set forth, extending through the room and connected with the fire-box of the furnace, all as shown and described.

3. In a drying apparatus, the combination, with the furnace and tube D, having perforations *a*, of the detachable guard E, having perforations *b*, which are so located as not to be coincident with those of the furnace-tube, as and for the purpose specified.

206,522. WASHING-MACHINES. Ransom O. Baldwin, Oskaloosa, Iowa. Filed May 7, 1878.



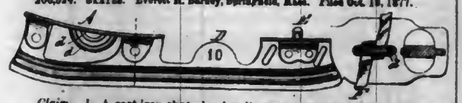
Claim.—In a washing-machine, the pinion-shaft *c*, driven by the bevel-wheel F, suitably journaled upon the tub A, in combination with the pin *i*, passing through said shaft, plate H, provided with a groove, *n*, to receive the pin *i*, and with downwardly-projecting flanges *k*, embracing the cross-bar *l*, carrying pins K K, and fitting on the shaft *c*, and jam-nut *n*, all constructed as shown and described, for the purpose set forth.

206,523. BOOT-JACKS. Stephen B. Bartine, Totterville, assignor of one-half his right to John W. Bartine, New York, N. Y. Filed May 16, 1878.



Claim.—A boot-jack constructed with a toe-presser having a T-head at its lower end to rest on the top of the boot, and a cylindrical or partially cylindrical rod or stem, a swivel sliding on said rod or stem, and a pair of connecting-links pivoted to said swivel and to a heel jack, said sliding swivel operating to permit said presser to work at different angles and to be turned on its longitudinal axis, substantially as herein set forth.

206,524. SKATES. Everett H. Barney, Springfield, Mass. Filed Oct. 19, 1877.



Claim.—1. A cast-iron skate having its runner provided with a longitudinal strengthening rib continuous from end to end on each side thereof, parallel, or nearly so, with the bottom line of the runner, and intermediate between the sole and heel plates and the bottom of said runner, substantially as and for the purpose set forth.

2. In combination with a cast-iron skate, the semicircular loops *d d*, cast on the under side of the foot-plate A, substantially as and for the purpose set forth.

3. In a cast-iron skate, the pin D, cast on the runner B, and bearing on its side a cast number to indicate size, substantially as set forth.

4. In a cast-iron skate, the combination of the runner B and ribs *c c* with foot-plate A, the semicircular loops *d d*, and heel-button E, substantially as and for the purpose set forth.

5. The fastenings for a cast-iron skate, consisting of the combination of the heel-button E, cast thereon, the strap F, and the semicircular loops *d d*, cast on the under side of the foot-plate, substantially as and for the purpose set forth.

206,525. BOTTLE-STOPPER FASTENERS. Albrecht E. Berthel, Detroit, Mich. Filed Feb. 6, 1878.

Brief.—The metallic cap and the rubber plate are separate, and unattached one to the other, so that when the rubber plate is worn out it may be readily replaced by a new one.



Claim.—1. The combination of the yoke B', pivoted to the neck-wire, the lever G, having cam F, pivoted upon the said yoke, the cap C', with depressed center *c'*, and the flat rubber plate D below such cap, both said cap and plate being provided with perforated ears, through which the arms of the yoke pass, substantially as described and shown.

2. In a bottle-stopper fastener, the neck-wire B and the bearing-boxes C, strung upon such neck-wire and provided with vertically-arranged holes, forming an adjustable pivot for the lower ends of the yoke, constructed substantially as described and shown.

206,526. CURRY-COMBS. Horace Beach, Prairie Du Chien, Wis. Filed June 3, 1878.



Claim.—1. A curry-comb having several series of broad and rounded teeth of the general form of finger-nails, the teeth of the several series varying in size, the series so arranged that the highest portion of the teeth of one series shall be in a line with the depressed portion of the teeth in the series next adjacent, substantially as shown and described.

2. As a new article of manufacture, a curry-comb having on its face several series of broad and rounded teeth, *b b' b''*, of varying sizes, and arranged as described, and on its back the scraper *a*, substantially as and for the purposes set forth.

206,527. LEVER-PRESSES. Valentine Becker, Cincinnati, Ohio, assignor of one-half his right to Frederick Becker, same place. Filed Dec. 6, 1877.

Claim.—1. In a lever-press, a sheath or case, B, having an enlargement at the base and a receptacle for a pawl and journals, substantially as shown and described.

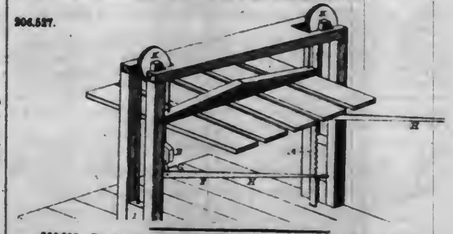
2. In a lever-press, pawl C, levers D and E, spring E', and button F, in combination with sheath B, substantially as described, and for the purpose specified.

3. In a lever-press, the lever H, having an upwardly-curved extension, I, and lever G, in combination with sheath or case B, substantially as described, and for the purpose specified.

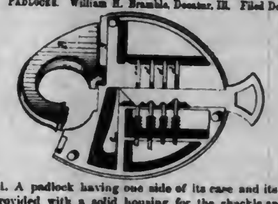
4. In a lever-press, the combination of levers H G D E, pawl C, and spring F' with sheath B and ratchet-bar A, substantially as described, and for the purpose herein set forth.

5. In a lever-press, the combination of sheath B and levers with the weight I and pulley K, substantially as described and herein set forth.

206,527.



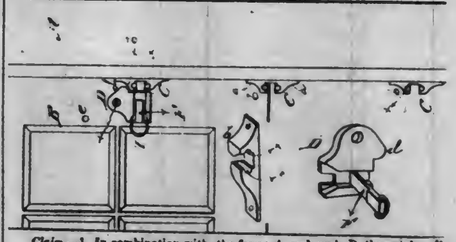
206,528. PADLOCKS. William H. Bramble, Decatur, Ill. Filed Dec. 14, 1877.



Claim.—1. A padlock having one side of its case and its rim cast in one piece, and provided with a solid housing for the shackle-spindle and solid webs or partitions, which afford bearings for the tumblers and springs, and which occupy the space between the back and the front plate, and serve as interior abutments for the front plate, as set forth.

2. The combination, in a padlock, of a hasp having a spindle provided with lateral gatings, and a series of sliding spring-tumblers, which surround the spindle and engage with the gatings therein, substantially as described.

206,529. SASH-FASTENERS. James C. Brannon, Independence, Kans., assignor of one-half his right to William L. Crippin and Prior W. Hockett, same place. Filed Apr. 27, 1878.

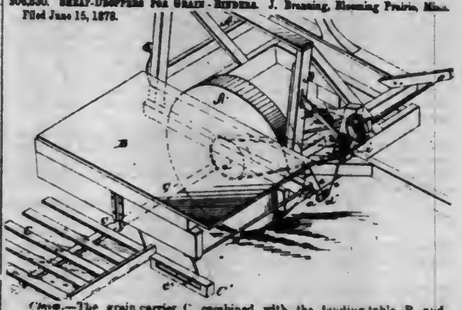


Claim.—1. In combination with the frame A and sash B, the catches C, with legs *b*, and the pivoted plate D, with projecting nose *d*, as and for the purposes set forth.

2. The hinged locking-bar F, placed in a recess in the swinging plate D, in combination with the legs *b b* on the catches C, for the purposes set forth.

3. The legs *b b*, formed with the grooves *e e*, in combination with the ring I in the locking-bar F, for the purposes set forth.

206,530. SELF-DROPPERS FOR GRAIN-BINDERS. J. Branning, Blooming Prairie, Minn. Filed June 15, 1878.



Claim.—The grain carrier C, combined with the binding table B, and adapted to be automatically operated by means of crank-arm D, bead I, lever E, and wheel A, in conjunction with the movements of the machine, substantially as and for the purposes set forth.

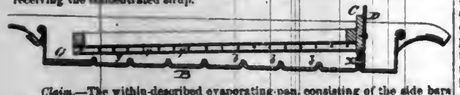
206,531. POST-SOCKETS. Stephen Britt, Brooklyn, N. Y. Filed June 12, 1878.



Claim.—A post-socket, A, for supporting an upright post, such as telegraph-poles, fence-posts, &c., provided with an extension, B, constructed of the outwardly-flaring wings *b b*, substantially as and for the purpose specified.

206,532. SUGAR EVAPORATORS AND SKIMMERS. R. M. Brooks and J. M. Brooks, Jenkinsville, Ga. Filed Jan. 16, 1878.

Brief.—A lid covering a greater portion of the evaporating-pan causes the steam to escape at one end and carry along the scum to a cooling-surface at one end, where the pan has a double bottom, and where the scum collects for removal to an outer trough. Perforated side troughs below the lid also receive, skim, and conduct it to the cooling end of the pan. A separate chamber, having a communication with the main pan, provided with a valve, is for receiving the concentrated sirup.



Claim.—The within-described evaporating-pan, consisting of the side bars A A, bottom B, having the low cross-bars *b* formed therewith, division E, partition C, with aperture *x*, and gate D, the perforated troughs H H, and a lid covering nearly the entire pan, all constructed substantially as and for the purposes herein set forth.

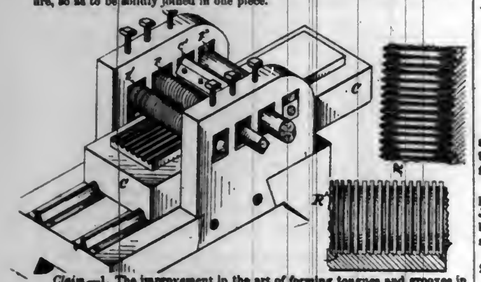
206,533. WATCH-REGULATORS. Leonard C. Briggs, Boston, Mass. Filed Apr. 1, 1878.



Claim.—In combination with the regulator B, having a rounded end, the adjustable straight bar E, having the notches P, slot S, and bifurcated end T, embracing the adjusting-screw H, having groove F and notches V, substantially as and for the purposes set forth.

206,534. MANUFACTURE OF COMPOUND LUMBER. William E. Brock, New York, assignor of one-half his right to Jane Thompson, Brooklyn, N. Y. Filed May 31, 1878.

Brief.—Tongues and grooves are formed in the surfaces of boards, for making what is known as "compound lumber," by means of a longitudinally-reciprocating table, upon which the boards are placed and forced by an upper feed-roll under a rotary cutter-head having knives or cutters, which dress the surface of the board; then under a compressing-roll having V-shaped annular grooves, for forming the V-shaped grooves in the boards; then under another compressing-roll having annular ribs with parallel sides, which completes the tongues and grooves, after which said boards are brought together under pressure, so as to be solidly joined in one piece.



Claim.—1. The improvement in the art of forming tongues and grooves in the adjoining surfaces of the parts used in making compound lumber described, consisting in forming the grooves and intermediate tongues by compression.

2. As an improved article of manufacture, compound lumber composed of two or more layers of wood, the adjoining surfaces of which are provided with interlocking tongues and grooves, and the tongues of which consist of the original surface of wood to the same depth condensed therein.

3. In combination, the rolls R and R', the former provided with annular ribs having beveled V-shaped sides and the latter with annular ribs having parallel sides, the latter arranged to run in the grooves first made by the former, as shown and described.

4. In combination, the roll R, provided with annular ribs having V-shaped sides, the roll R', having annular ribs provided with parallel sides and spaces between the same, and the cutter C', provided with a knife or knives for preparing a smooth surface for the operations of the rolls R and R', substantially as described.

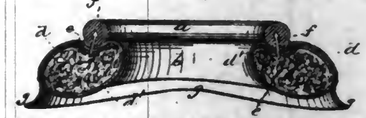
5. The rolls R and R', the cutter C', and the roll R², in combination, as shown and described.

6. The roll R, provided with annular ribs having beveled or V-shaped sides, in combination with a movable carriage arranged to support and carry lumber under the ribs to be grooved, as shown and described.

7. The roll R², provided with annular ribs having parallel sides, in combination with a movable carriage arranged to support and carry lumber under the ribs to be grooved, as shown and described.

8. The roll R, the roll R', and the carriage C or movable bed, in combination, as and for the purposes set forth.

206,535. HORSE-COLLARS. William H. Brownson, St. Paul, Minn. Filed Dec. 22, 1877.

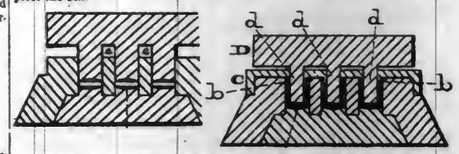


Claim.—1. In combination with the bent rim *a*, the pad *b*, formed of two overlapped strips of leather, *d d'*, the latter being bent around to form a pad-case, and stitched to the welt *e*, and the former extended outward beyond the pad to form a housing, *g*, and stitched thereto, substantially as specified.

2. The combination, with a horse-collar open at the withers, and provided with buckles at each side of said opening, of the double billet and the neck-guard *f'*, and housing *l* secured thereto, substantially as specified.

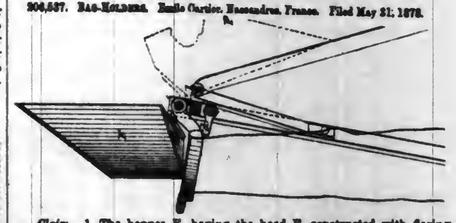
206,536. MOLDS FOR MAKING MEDICINAL COMPRESSED WAFERS, PILLS, LOZENGES, &c. Charles Carter, Philadelphia, Pa. Filed Dec. 4, 1877.

Brief.—The mold or flask plate is adjusted to the bed-plate, and the matrices filled with the coating material. The guide-plate C is then adjusted, its small rim or edge projecting in the coating material, and the core-plate introduced by its pins into the perforations of the guide-plate, and by suitable pressure a cavity is produced. The core-plate is then removed and the cavity filled with the medicament. Pressure is now applied to the medicament by the core-plate, after which the same is removed and the slight cavity remaining above the medicament filled with coating material, when the guide-plate is removed and the plunger E adjusted, and sufficient pressure applied to complete the pill.



Claim.—In an apparatus for molding and coating pills, wafers, and the like, the combination, with a core-plate having pins *d*, and a flask with matrices in which the pills or wafers are both molded and coated, of the perforated plate C, applied to the flask and formed with short tubular flanges *b* upon its under side, the said flanges being around the perforations of the plate and projecting into the matrices of the flask, substantially as herein shown and described, and for the purposes specified.

206,537. BAG-HOLDERS. Emile Cartier, Hazendrus, France. Filed May 31, 1878.



Claim.—1. The hopper E, having the hood F, constructed with flaring sides and top, extending entirely over the mouth of the hopper, in combination with the supporting-stand and bag-holding devices, substantially as specified.

2. The combination of the rock-shaft *I*, mounted in suitable bearings, and provided with the clamping-toes *d d* and locking-tooth *f*, the swinging handle J, provided with a suitable shoulder for engaging said locking-tooth, and the bag-supporting bow, the whole being supported upon a suitable stand or frame, substantially as described.

206,538. IRON FENCES. George R. Clark and Frank Lothrop, Dubuque, Iowa. Filed May 8, 1878.

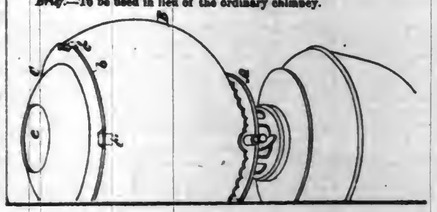


Claim.—1. The clamp B B', substantially as and for the purpose set forth.

2. In combination, the rails A A', the clamp B B', and the sliding section C, substantially as and for the purpose set forth.

206,539. METALLIC TOPS FOR BURNER-GLOBES. A. Combe, Philadelphia, Pa. Filed May 21, 1878.

Brief.—To be used in lieu of the ordinary chimney.



Claim.—1. A metallic disk for glass globes, having a central opening, *c*, and adapted to be fitted to a globe as a substitute for a lamp-chimney, substantially as set forth.

2. The combination, with a burner, A, of a glass globe, B, and metallic disk C, having central opening *c*, said globe and disk forming a substitute for a chimney, substantially as shown and described.

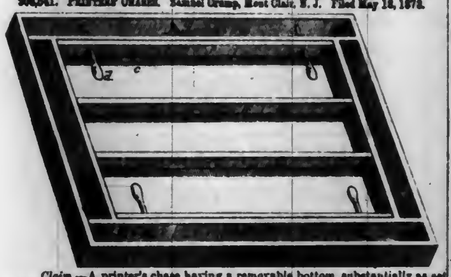
206,540. MEANS FOR ATTACHING SAW-HANDLES. R. Crosby, Boston, Mass. Filed June 26, 1878.



Claim.—1. The bow-frame provided with holes for the reception of the clasp-screws, which permit them to move therein freely, combined with the clamp-screws and screw-threaded clamps fitted to the ends of the clamp-screws, to operate as and for the purpose described.

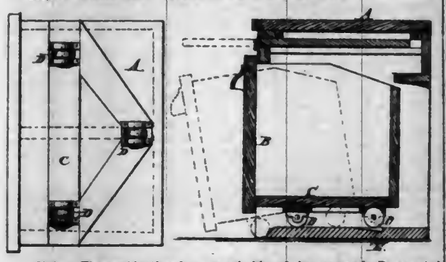
2. The bow, screw-threaded clamp *d*, and steadying-pin, combined with a clamp-screw adapted to extend freely and loosely through a hole in the bow, and fit the screw-threads of the clamp, to operate substantially as described.

206,541. PRINTERS' CHASES. Samuel Crump, Mont Clair, N. J. Filed May 16, 1878.



Claim.—A printer's chase having a removable bottom, substantially as set forth.

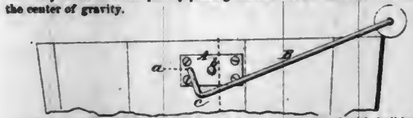
206,542. GROCERS' BINS. Rowland K. Curtis, Wabash, Ind. Filed June 24, 1872.



Claim.—The combination, in a grocer's bin, of the receptacle B, mounted on a triangular frame, C, provided with rollers D at its angles, of the casing A, having a recess, E, for the reception of the rear wheel, in order to retain the receptacle in place when fully inserted in the casing, and provided with a beveled front edge at its bottom, to facilitate the tilting and the insertion of the receptacle, substantially as specified.

206,543. PAIL AND EAR. Walter M. Dallman, Syracuse, N. Y. Filed July 1, 1878.

Brief.—Steadies the pail by passing the bail around a stud at one side of the center of gravity.

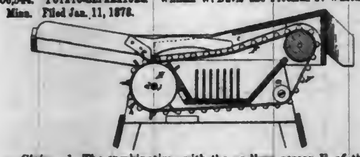


Claim.—1. The above-described ear-piece A, constructed with bail-hole *a*, or spur, and projecting pin *b*, substantially as above described.

2. The above-described bail B, constructed with a hook or loop at each end, and bent at the point *c*, substantially as and for the purposes above described.

3. The combination of the ear-piece A, constructed with the bail-hole *a* and projecting pin *b*, and the bail B, hooked or looped at each end and bent upward around and under the pin *b*, with the vessel A, substantially as and for the purposes above set forth.

206,544. POTATO-SEPARATORS. William W. Davis and Freeman P. Wilson, Minneapolis, Minn. Filed Jan. 11, 1878.



Claim.—1. The combination, with the endless screen F, of the vertically-shaking inclined screen D, substantially as and for the purpose specified.

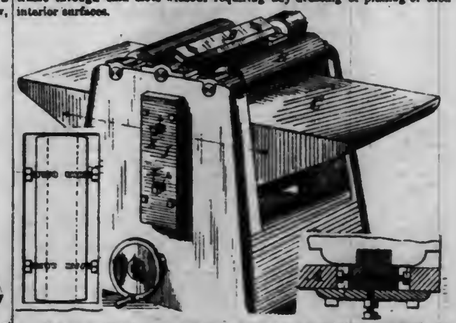
2. The combination, with the endless screen F and inclined screen D, provided with the cams *c c*, of the revolving heads H H, provided with the lugs or pins A, substantially as and for the purpose set forth.

3. The combination, with the endless screen, of the screen D, provided with the extension side bars and the pivoted bars *i i*, substantially as and for the purpose set forth.

4. The herein-described potato-separator, consisting of the inclined vertically shaking screen, the endless screen, and transverse inclined screen inclosed by said endless screen, the several parts constructed and arranged to operate substantially as specified.

206,545. WOOD-PLANING MACHINES. William H. Deane, Cincinnati, Ohio, assignor to J. A. Fay & Co., same place. Filed June 8, 1878.

Brief.—The frame or stand, with its sides and connecting girts, are all cast in one piece. Vertical slots are formed in the sides of the frame for the reception of separate and detachable guides or ways, upon which slide a vertically-adjustable table. Said guides are adapted to be applied to the sides of the frame through said slots without requiring any dressing or planing of their interior surfaces.



Claim.—1. The frame or stand constructed substantially as set forth, the sides and ends thereof being composed of a single piece of casting, and slots being formed in the sides for the ways or guides of the table arranged and moving between such sides.

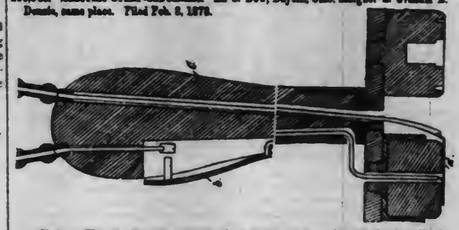
2. The combination, substantially as before set forth, of the connectedly-cast housings or sides of the frame, provided with slots, the table arranged and moving between such housings, and the detachable ways or guides fitted in said slots.

3. The combination, substantially as before set forth, of the side or housing of the frame having a slot, and detachable way or guide inserted in said slot, and set-screws to fix the guide in the slot.

4. The combination, substantially as before set forth, of the side or housing of the frame having a slot, and detachable way or guide inserted in said slot, and set-screws to fix the guide in the slot, and backing-screws to bear against the back of the guide.

5. The combination, substantially as before set forth, of the side or housing of the frame having a slot, and detachable way or guide inserted in said slot, and set-screws to fix the guide in the slot, a plate to cover the guide, and backing-screws to bear against the back of the guide.

206,546. ELECTRIC STAMP-CANCELERS. Eli S. Bow, Dayton, Ohio, assignor to Graham B. Dennis, same place. Filed Feb. 9, 1878.



Claim.—The combination, in an electric stamp-canceler, of the handle C, non-conducting carrier F, the wires from an electric battery, one of which is attached to a coil or die of platinum, and the spring-plate *b*, arranged upon the side of the handle and constructed as described, whereby, when the handle is grasped, the die is kept constantly and uninterruptedly heated, and whereby when laid aside the circuit is automatically broken, as set forth.

206,547. CHANNELING-TOOLS. Edward F. Edgecomb, Mechanics Falls, Me. Filed June 20, 1878.



Claim.—1. The handle A *a*², in combination with tool-head B, having hollow shank, and with the knife-holder C *c c'*, as herein specified, for the purpose set forth.

2. The tool-head B, having slot *b'* and oblique knife-slot *b*, and screw *b*², in combination with the slotted knife-holder C *c c'* and knife *x*, as specified.

3. The pivoted adjustable gage D *d d'*, combined with the tool-head B and knife *a*, as specified.

206,548. PACKINGS FOR STEAM-ENGINES. John W. Edmonds, Jersey City, N. J., assignor to himself and Chas. W. Benton, same place. Filed July 17, 1878.



Claim.—A packing for steam-engines or other similar purposes, constructed with a woven or knitted sheath or cover, *b*, inclosing a series of strands of yarn or cotton, *c*, between which is placed a composition consisting of black-lead, talc, and sulphur, the sheath or cover *b* having an external coating, *a*, composed of paraffine-wax, black-lead, and tallow, substantially as set forth.

206,549. SPARK-ARRESTERS. Austin Elbert, Warrensburg, Mo. Filed June 4, 1878.



Claim.—1. In a spark-arrester for steam-engines, the flaring mouthed flue E, having flange *a* around its outer edge, and terminating in a cone-shaped bottom, F, having openings *b*, and provided with screen G, operated by rod *d*, the whole being held and supported by braces *e*, in combination with the crown or top B, having central opening C and downwardly-projecting flanges D, substantially as and for the purpose specified.

2. In a spark-arrester for steam-engines, the combination of the crown or top B, having central opening C and downwardly-projecting flanges D, and flaring-mouthed flue E, having flange *a*, cone-shaped bottom F, provided with openings *b*, and screen G, with the smoke-stack A, substantially as and for the purpose specified.

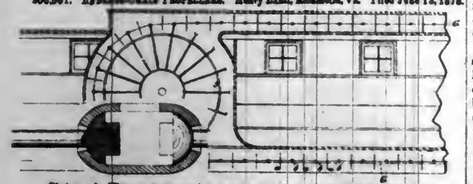
206,550. EXTENSION LAMP-FIXTURES. J. A. Evarts, Meriden, assignor to Bradley & Hubbard Manufacturing Company, West Meriden, Conn. Filed July 12, 1878.



Claim.—1. The combination of the outer sliding tube, the inner stationary slotted tube, the vertical rod within said inner tube, the brake hinged to the sliding tube and so as to bear upon the inner tube, and connection between said brake and the rod through the slot in the tube, substantially as described.

2. The combination of the outer sliding tube, the inner stationary slotted tube, the vertical rod within said inner tube, the brake hinged to the sliding tube and so as to bear upon the inner tube, and connection between said brake and the rod through the slot in the tube, and the extension or bearing surface *d* within the inner tube, substantially as described.

206,551. EXPANSIBLE-CHAIN PROPELLERS. Henry Exall, Richmond, Va. Filed June 13, 1878.



Claim.—1. The endless-chain propeller consisting of jointed rod-sections having disk blades or paddles rigidly secured at their centers to the rod sections and between the joints of the same, substantially as described.

2. The endless chain consisting of rod-sections having terminal cuts, knobs, or heads, combined with an inclosing-shell adapted to couple the rod sections and form a hold for the grabs of the wheel, as set forth.

3. The combination, with the chain-propeller G, consisting of jointed rod-sections, coupling-wheels, and rigid disks, of the drive-wheel having radial grabs, seats, or sockets adapted to receive said coupling-shells and rotate the chain, as described.

4. The drive-wheel consisting of a central hub, with radial tubular spokes braced by a ring, in combination with grabs or sockets arranged detachably upon the ends of said spokes, as and for the purpose described.

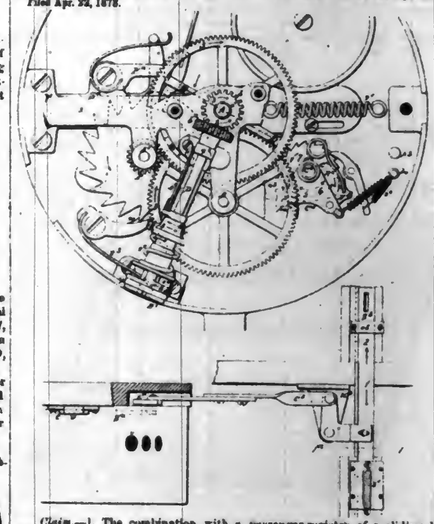
5. The combination, with the drive-wheels and the endless-chain propeller, as described, of the hull having wells or compartments for the wheels, made of greater dimensions, in cross-section, at the portion of the peripheries of the wheels in contact with the chain, as shown and described.

6. In a boat propelled by an endless-chain propeller, the method of ventilating the same by means of a current of air produced in a closed return-chain box, provided with suitable ventilating-pipes, substantially as set forth.

206,552. STOCKING-SUPPORTERS. Charles W. Foster, New Haven, Conn. Filed Jan. 3, 1878.

Claim.—The combination of the jaw *a*, the jaw *b*, constructed with a shoulder, *f*, and hinged to the jaw *a*, and both jaws extending to the rear of the pivot with a slide, *e*, surrounding the point, and having its inner end constructed to form a cam to operate between the said two parts *a b*, to open and close them, substantially as described.

206,553. PASSENGER-REGISTERS. John W. Fowler and Daniel F. Lewis, Brooklyn, N. Y. Filed Apr. 22, 1878.



Claim.—1. The combination, with a passenger-register, of a sliding bar drawn longitudinally in one direction by a spring or its equivalent, a fixed key-socket communicating with a slot in said bar, and a key-wedge adapted to actuate said bar by being simply thrust into said slot through said socket and then withdrawn.

2. An actuating device for passenger-registers, consisting of a slotted bar of the required length drawn longitudinally in one direction by a spring or its equivalent, a series of fixed key-sockets communicating with the slots in said bar, and a key-wedge adapted to actuate said bar by being simply thrust into either of said slots through the communicating socket and then withdrawn.

3. A sliding actuating-bar drawn longitudinally in one direction by a spring or its equivalent, and driven in the opposite direction by means of a key-wedge thrust into either one of a series of slots in said bar through a communicating fixed socket, in combination with a face-strip, which supports said bar, and also said sockets, as herein specified.

4. A sliding actuating-bar drawn longitudinally in one direction by a spring or its equivalent, and driven in the opposite direction by means of a key-wedge thrust into either one of a series of slots in said bar through a communicating fixed socket, in combination with a bell-crank, a connecting-bar, and a bell-crank lever, for transmitting motion from said bar to a register-slide or its equivalent at right angles to said slotted bar.

5. A sliding actuating-bar drawn longitudinally in one direction by a spring or its equivalent, and driven in the opposite direction by means of a key-wedge thrust into either one of a series of slots in said bar through a communicating fixed socket, in combination with a bell-crank, a connecting-bar, and a bell-crank lever, for transmitting motion from said bar to a register-slide or its equivalent, said connecting-bar having an adjusting joint to prevent lost motion.

6. The combination of a sliding actuating-bar drawn longitudinally in one direction by a spring or its equivalent, and driven in the opposite direction by means of a key-wedge thrust into a slot in said bar through a communicating fixed socket, and a register-slide or its equivalent, carrying a combined feed-pawl and hammer, to which motion is thus transmitted, the registration of a unit being effected by one motion of said parts, and an alarm struck at the end of each return motion, substantially as herein set forth.

7. The combination of a sliding actuating-bar drawn longitudinally in one direction by a spring or its equivalent, and driven in the opposite direction by means of a key-wedge thrust into a slot in said bar through a communicating fixed socket, with a register-slide or its equivalent, a combined feed-pawl and hammer carried by said slide, a ratchet-wheel driven by said pawl, and a double detent-pawl engaging with said ratchet-wheel, so as to cause the latter to throw back the hammer of said feed-pawl after a partial stroke, as herein specified.

8. The combination of a rotary hundreds-shaft driven at its inner or rear end by a hundreds-carrying mechanism, a hundreds dial at the outer end of said shaft, and an interposed sleeve-hub adjustable upon said shaft by means of a set-screw, and removable therefrom, substantially as herein illustrated and described, for correcting said dial and exposing said carrying mechanism without disturbing the latter.

9. In combination with a rotary hundreds-dial or its equivalent, a ratchet-wheel on the shaft of the same and a feed-pawl engaging with said ratchet-wheel, a rocking bell-crank carrying said pawl, a cam revolving once per hundred units and engaging with a stud-pin on said crank, and a spring for instantaneously actuating said wheel through the medium of said pawl and crank when the latter is released by said cam, substantially as herein shown and described.

10. In combination with a rotary hundreds-dial or its equivalent, a ratchet-wheel on the shaft of the same and a feed-pawl engaging with said ratchet-wheel, a rocking bell-crank carrying said pawl, a cam revolving once per hundred units and engaging with a stud-pin on said crank, a spring for instantaneously actuating said wheel through the medium of said pawl and crank when the latter is released by said cam, and a stop-stud engaging with said feed-pawl to arrest its effective motion, substantially as herein specified.

11. In combination with a rotary hundreds-dial or its equivalent, a ratchet-wheel on the shaft of the same and a feed-pawl engaging with said ratchet-wheel, a rocking bell-crank carrying said pawl, a cam revolving once per hundred units and engaging with a stud-pin on said crank, a spring for instantaneously actuating said wheel through the medium of said pawl and crank when the latter is released by said cam, and a detent-pawl to prevent retrograde motion of said ratchet-wheel, substantially as herein shown and described.

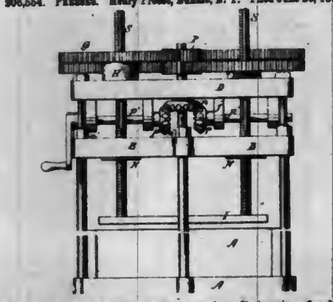
12. In combination with a rotary hundreds-dial or its equivalent, a ratchet-wheel on the shaft of the same and a feed-pawl engaging with said ratchet-wheel, a rocking bell-crank carrying said pawl, a cam revolving once per hundred units and engaging with a stud-pin on said crank, a spring for instantaneously actuating said wheel through the medium of said pawl and crank when the latter is released by said cam, a detent-pawl to prevent retrograde motion of said ratchet-wheel, and a stop-stud engaging with said feed-pawl to arrest its effective motion, as herein described, for the purpose set forth.

13. In combination with a rotary hundreds-dial or its equivalent, a ratchet-wheel on the shaft of the same and a feed-pawl engaging with said ratchet-wheel, a rocking bell-crank carrying said pawl, a cam revolving once per hundred units and engaging with a stud-pin on said crank, and a safety-cam following said main cam to oscillate said crank in the event of any failure of its retracting-spring.

14. In combination with a trip-hand adapted to be set at zero at will independently of the registering mechanism and a radial setting-shaft having a fixed gear at its inner end, a matching-gear on the trip-hand shaft arranged behind said fixed gear, so as to be held in place thereby, and constructed with a frictional sleeve-hub, to the outer end of which said trip-hand is attached.

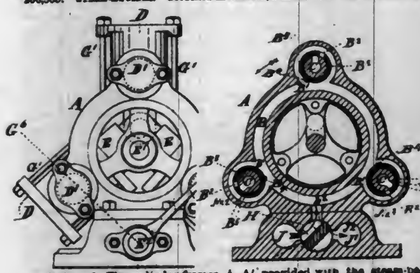
15. In combination with a radial setting-shaft having a fixed gear at its inner end, a matching-gear on the trip-hand shaft, arranged behind said fixed gear and constructed with a frictional hub, and a trip-hand attached by a frictional hub to said frictional hub of said gear, as herein specified, for the purposes set forth.

206,554. PRESSES. Henry Preece, Buffalo, N. Y. Filed June 26, 1878.



Claim.—The bed-plate A, stationary plate B, bearing fixed nuts N, and plate D, in combination with pistons I, slotted screws S, gears G, having their central openings provided with feathers *r*, and operating mechanism P *a p p'*, substantially as set forth.

206,555. STEAM-ENGINES. Frederick A. Gardner, Buffalo, N. Y. Filed June 15, 1878.



Claim.—1. The cylinder-frames A A', provided with the steam-passages B B', in combination with the cylinders D, having trunnions and ports, as specified, and a base provided with longitudinal steam-passages J J' and reversing-valve E', substantially as described.

2. The crank-shaft composed of the parts E' E', in combination with the sleeve F', perforated piston-rods F, and frames A A', substantially as specified, and for the purposes described.

3. The sleeves B', in combination with the trunnion C', packing B' B', tightening-glands D', and frames A A' substantially as and for the purposes specified.

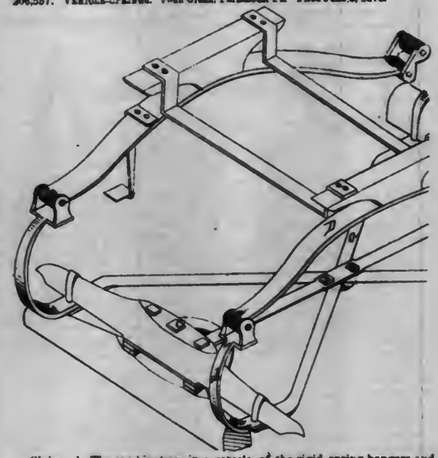
4. The combination of three oscillating cylinders, having trunnions C', removable port-sleeves B', a supporting-frame on each side, having steam-passages leading to the trunnion-ports, a base provided with passages for admitting steam to the passages in the frames A A', and for receiving the exhaust therefrom, and a reversing-valve, all arranged for joint operation, substantially as described.

206,556. LEATHER BELTING. Timothy Gingras, Buffalo, N. Y., assignor of three-fourths his right to W. H. Gardner, Geo. P. Putnam, and Bradford Taber, same place. Filed Apr. 1, 1878.

Claim.—The combination, in lapping corresponding ends A and A', having their corners cut straight across at B, with double-pointed tacks C at the angles formed by said lines *b* with the terminal lines of the belting, whereby the corners of the belting ends are prevented from curling and clumpness of construction attained, substantially as set forth.



206,557. VEHICLE-SPRINGS. John Glenn, Parnassus, Pa. Filed June 8, 1878.

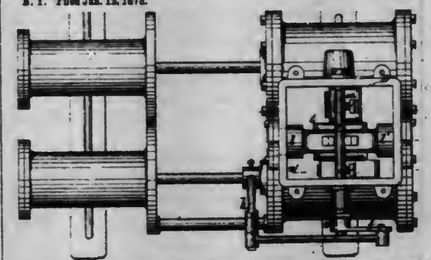


Claim.—1. The combination, in a vehicle, of the rigid spring-hangers and the half-elliptic side springs, said springs pivoted on the hangers of the head-block, and suspended from the hangers of the rear axle by a link or links, substantially as and for the purpose specified.

2. The coupling for vehicles, composed of the center rod or perch and the diagonal cross-braces, clipped or otherwise connected to the center rod at the point of crossing, substantially as and for the purpose specified.

3. In a vehicle, the combination of the diagonal cross-braces, the rigid spring-hangers, with extensions for attachment of the cross-braces, and the semi-elliptic side springs, substantially as and for the purpose specified.

206,558. VALVE-ACTIONS OF DUPLEX ENGINES AND PUMPS. Wm. H. Guild, Jr., Brooklyn, N. Y. Filed Jan. 12, 1878.

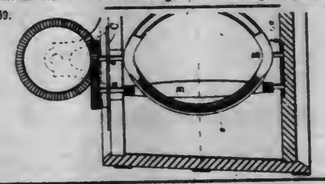


Claim.—1. The combination, with two direct-acting engines the pistons of which are simultaneously at different positions in their respective strokes, of induction and eduction valves, the movements of all of which are produced or controlled by the reciprocating motion of the piston of one of said engines, and which are organized to control the motion of the pistons of both engines, substantially as specified.

2. The combination, with the two direct-acting engines, of a main valve for controlling the motion of one of said engines, an auxiliary valve for completing the throw of said main valve, and a main valve for the other of said engines, deriving its motion from the engine which is controlled by the auxiliary valve, essentially as described.

3. The combination, with one and the same driving rock-shaft, of the auxiliary valve which controls the motion of one engine and the main valve which controls the motion of the other engine, substantially as specified.

206,559.

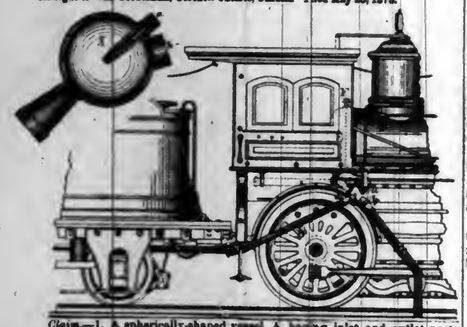


206,559. CHURNS. Caleb Guyer, Tyrone, Pa. Filed May 31, 1878.

Claim.—1. In combination with the bucket A, the revoluble dashers B, connected by gearing in such manner as to permit their movement of rotation to be reversed, the said dashers being provided with tapering slots *e*, and relatively arranged in the manner described, whereby each dasher is caused to pass within or across the circuit of rotation of the other, substantially as and for the purposes set forth.

2. In combination with the driving-shafts *a a* of the dashers and the fixed half of the bucket-top, the locking device C, consisting of a sliding plate provided with rectangular bearing-openings *c''*, substantially as and for the purpose herein specified.

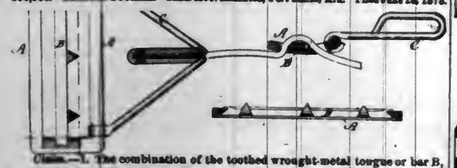
206,560. FIREBOX LOCOMOTIVE-TENDERS. Joseph Haggas, Uxbridge, assignor of one-half his right to Wm. Goodenham, Toronto, Ontario, Canada. Filed May 25, 1878.



Claim.—1. A spherically-shaped vessel, A, having inlet and outlet ports and a steam-pipe, all arranged as described, and provided with suitable suction and discharge pipes, combined with a locomotive-boiler, for the purpose of raising water to the locomotive-tank, substantially as set forth.

2. An injector having a suction-pipe provided with the joint *g*, constructed as described, and a tender-supply pipe and connections, combined with and arranged with relation to a locomotive-boiler, substantially as and for the purpose specified.

206,561. HARNESS-BUCKLES. Saml. McC. Hamilton, Fort Smith, Ark. Filed June 14, 1878.



Claim.—1. The combination of the toothed wrought-metal tongue or bar B, having notched ends, with the frame A, having end bars provided with shoulders for limiting the adjustment of said bar and preventing its detachment, as specified.

2. The back band buckle formed of the rectangular frame A, having sliding toothed tongue B and the hook C, hinged thereto, as shown and described.

206,562. CAR-STARTERS. Jacob Mansell, Philadelphia, Pa., assignor to himself, Thomas H. Kemble, and James F. McGinnis, same place. Filed July 1, 1878.

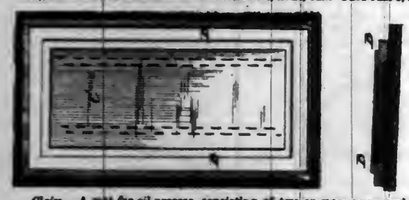


Claim.—1. The combination of the axle *i* and its ratchet *m*, the frame F, hung to the axle and carrying the pawl J, the bell-crank lever E, the rod B, spring M, and connecting-rod D, all substantially as specified.

2. The combination of the axle and its ratchet, the pawl J and its yoke *n'*, the frame F, bell-crank lever E, connecting-rod D, having a cam, *s*, and the spring-rod B, as specified.

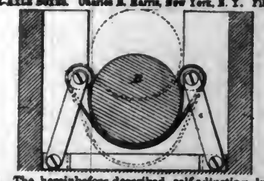
3. The combination of the rod T, its nuts *y' y'*, and the hinged arm W with the pole of the car and its brace *z*, as specified.

206,563. MATS FOR OIL-PRESSES. John T. Harbine, Xenia, Ohio. Filed June 6, 1878.



Claim.—A mat for oil presses, consisting of two or more or several thicknesses or layers of wire-cloth, having an upper and lower layer of fibrous material and a rim or flange, B, all arranged and combined substantially as shown and described, for the purpose specified.

206,564. CAR-AXLE BOXES. Charles B. Harris, New York, N. Y. Filed July 8, 1878.



Claim.—1. The hereinbefore-described self-adjusting lubricant-conveyer for car-axle boxes, consisting of the endless apron bearing against the opposite sides of the journal, above the level of the oil-supply, partially enveloping the journal at bottom, yieldingly supported and partially submerged at its under side in the lubricant.

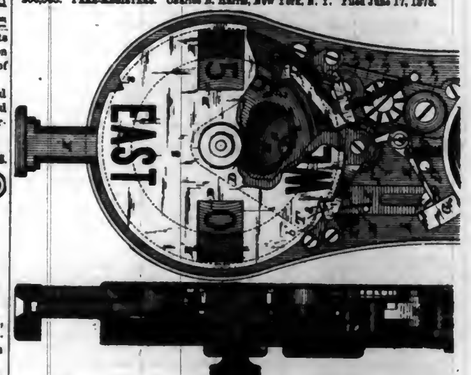
2. The combination, substantially as hereinbefore set forth, of the journal, the endless apron, and the self-adjusting rollers around which the apron passes at opposite sides of the journal, above its bottom, whereby the upper side of the apron is pressed up to the journal, above the level of the oil in the reservoir, and the lower portion of the apron depends from the rollers into the oil, as described.

3. The combination, substantially as hereinbefore set forth, of the frame, the hinged arms carried thereby, the rollers, and the endless apron.

4. The combination of the oil-well or box-frame, the journal, and the self-adjusting lubricating endless apron, yieldingly supported at the opposite sides of the journal and loosely depending beneath the journal into the oil.

5. The combination of the oil-well, the journal, the inwardly-inclined arms, the frame loosely fitting in the oil-well, and having the arms pivoted to it, the rollers supported in the arms, and the lubricant-conveyer, these members being constructed and operating substantially as hereinbefore set forth.

206,565. FARE-REGISTERS. Charles B. Harris, New York, N. Y. Filed June 17, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, of a fare-register with a direction-indicator, locked from indicating a different direction of travel without making a permanent record of the fares collected.

2. The combination, substantially as hereinbefore set forth, with the registering mechanism of a fare-register, of an indicator or sign inclosed in the same casing with the registering mechanism, and incapable of being changed to indicate a different direction of travel without resetting or bringing the register to the zero or starting-point.

3. The combination, substantially as hereinbefore set forth, of primary or temporary registering mechanism, secondary or permanent registering mechanism, and an indicator or sign showing the direction of travel, and so organized that a different direction of travel cannot be indicated without bringing the primary register to zero or starting-point and transferring its record to the permanent register.

4. The combination, substantially as hereinbefore set forth, of registering mechanism, an indicator or sign which indicates the direction of travel, and a surrounding casing, provided with windows or openings therein, for the purpose of inspecting the register and the direction-indicator or sign.

5. The combination, substantially as hereinbefore set forth, in a single case, of registering mechanism, alarm mechanism, an actuator, handle, or push-bar for working the register and sounding an alarm, and an indicator which indicates the direction of travel, whereby the sounding of the alarm announces the registry of the fare, and the indicator shows in which direction of travel of the car or vehicle the registry was made.

6. The combination, substantially as hereinbefore set forth, of the registering mechanism and alarm with a punch carried by the actuating push-bar or handle, the punch being capable of having its actuations registered and announced, or of being operated without actuating the registering mechanism or sounding an alarm.

7. The combination, substantially as hereinbefore set forth, of registering mechanism, an actuator or push-bar, and a punch or canceling device mounted in an axial bore or opening in the push-bar.

8. The combination, substantially as hereinbefore set forth, with the registering mechanism, of a fare-register, of an actuator or push-bar provided with jaws or a slotted head for the reception of a ticket or strip to be punched or canceled.

9. The combination, substantially as hereinbefore set forth, of registering mechanism, an alarm, and an actuator or push-bar for operating the register and alarm, slotted for the reception of a ticket or strip to be punched or canceled.

10. The combination, substantially as hereinbefore set forth, of the primary registering mechanism, the secondary or transfer registering mechanism, the alarm, the actuator or push-bar for actuating the mechanism and alarm, and the punch or canceling device carried by the actuator.

11. The combination, substantially as hereinbefore set forth, of primary registering mechanism, secondary or permanent registering mechanism, and a punch or canceling device, the actuations of which are first registered by the primary register and then transferred to the secondary register as a permanent record.

12. The combination, substantially as hereinbefore set forth, with the alarm mechanism of a fare-register, of a vibrating diaphragm or disk to shield and protect it, whereby tampering with the alarm mechanism is prevented without impairing its efficiency.

13. The combination, substantially as hereinbefore set forth, of an alarm, a perforated cover to permit of the free escape of the sound, and a vibrating diaphragm or disk interposed between the perforated cover and the alarm.

14. The combination, substantially as hereinbefore set forth, of the primary registering-disks with a pawl or detent to engage a notch or tooth in one of the disks, whereby, when the disks are being reset, back rotation beyond the starting-point, or that indicating no register, is prevented.

15. The combination, substantially as hereinbefore set forth, of the direction-indicator disk, inclosed within the register-casing, with a button, knob, or handle outside the casing, to actuate or reverse the indicator.

16. The combination, substantially as hereinbefore set forth, of the primary registering-disks, having a notch in their peripheries, the direction-indicator plate, also provided with a notch in its periphery, and the pronged locking latch or plate to lock the indicator-plate from turning until the registering-disks are brought to a certain point.

17. The combination, substantially as hereinbefore set forth, of the push-bar or actuator, the bell-hammer and the actuating-wheel of the bell-hammer, provided on its periphery with ratchet-teeth engaged by a pawl to prevent back rotation, and on its face or crown with ribs or projections, one of which is acted upon by the push-bar to rotate the wheel, while another actuates the bell-hammer.

18. The combination, substantially as hereinbefore set forth, of the primary registering mechanism, the secondary registering mechanism, the transferring-wheel provided with an opening for the reception of a key, a notched plate or detent partially overlapping the opening in the transfer-wheel, and a key the end of which is notched or ratcheted, whereby the key, when inserted to actuate the transfer-wheel, can be turned in one direction only.

19. The combination, substantially as hereinbefore set forth, with the primary and permanent registering mechanism of a fare-register, of a key for accomplishing the transfer of the record from one to the other mechanism, provided with a notched or ratcheted actuating end.

20. The combination, substantially as hereinbefore set forth, of the transfer-wheel with a double-armed locking-plate or detent, one arm of which nominally overlaps the opening in the transfer-wheel, and the other nominally engages with the teeth in the actuating-wheel of the primary register to prevent back rotation thereof, whereby the actuating-key, when turned in the proper direction, retracts the detent from engagement with the actuating-wheel of the primary register, and permits said register to be reset and the transfer of its record accomplished.

21. The combination, substantially as hereinbefore set forth, of the push-bar, with the punch bar or die inclosed therein, and provided with a locking end adapted to engage the teeth of the actuating-wheel of the primary register when the push-bar is forced inward, whereby the actuating-wheel is locked from forward rotation and the punch adapted to be worked without registering its actuations or sounding the alarm, by reciprocating the push-bar thereon within limits not sufficient to carry the pawl on the push-bar above the actuating-wheel so as to engage its teeth.

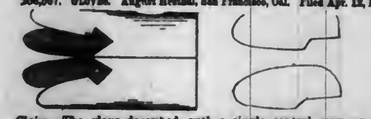
206,566. NUT-LOCKS. Henry Hemelright, Pottstown, Pa., assignor of one-half his right to Edmund Guest, same place. Filed Apr. 27, 1878.



Claim.—1. The method of locking a nut on a bolt, which consists in applying the tap-nut to the ordinary bolt in the usual way, and then crimping or forcing the threads of the nut into the threads of the bolt by means of a tool, substantially as shown and described.

2. A tool for locking nuts on bolts, one face of which is provided with a hammer-head, C, and the other face recessed and provided with sharp penetrating-edges *d*, concentric to the recess, and adapted for use as set forth.

206,567. GLOVES. August Hesthal, San Francisco, Cal. Filed Apr. 12, 1878.



Claim.—The glove described, with a single central seam on the back, having the body and the index and little fingers and the front part of the middle fingers formed from a single blank, with the back of the middle fingers and the entire thumb made from separate pieces secured to such blank, substantially as described and shown.

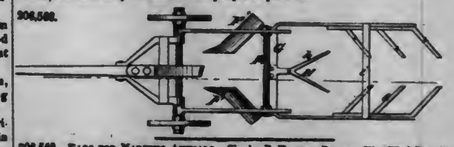
206,568. POTATO-DIGGERS. Campbell P. Higgins, East Linn, N. Y. Filed June 10, 1878.

Brief.—The front plows turn the earth away from the ridge, the horizontal plow passes under the ridge, and the breaker-plow and fingers separate the potatoes from the earth.

Claim.—1. The combination, with plows F and F', of the horizontal blade G, for cutting under the ridge left by the action of the said plows, substantially as and for the purpose described.

2. The combination, with the plows F and F', blade G, and breaker or plow H, of the separator-frame and its extension *i*, said frame being pivoted at the rear of the said breaker, for separating the roots from the disintegrated earth, substantially as and for the purpose specified.

206,569.



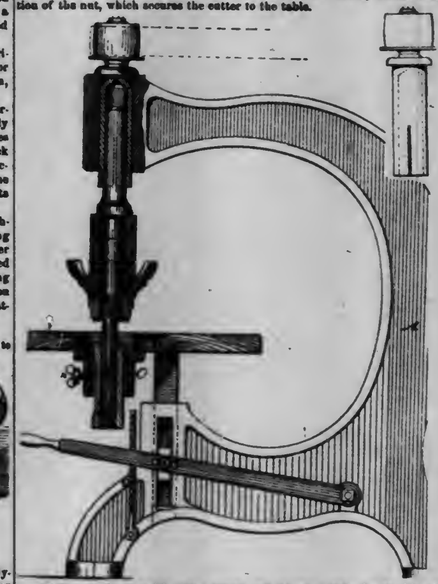
206,569. TAGS FOR MARKING ANIMALS. Charles P. Houzeau, Decatur, Ill. Filed June 13, 1878.



Claim.—A sheet-metal tag stamped and embossed with figures or characters, and formed of an oblong plate having a perforation, *e*, adjacent to one of its ends, and a groove or crescent perforation cut out of the edge of the opposite end, through both of which a link or ring is to pass, substantially as and for the purpose described.

206,570. MOLDING AND CARVING MACHINES. C. F. H. Heß, Covington, Ky., assignor to J. A. Fay & Co., Cincinnati, Ohio. Filed June 8, 1878.

Brief.—The driving-arbor has its bearing in the overhanging bracket-arm of the C-shaped frame. The driving-arbor, being a hollow split tube, receives the spindle and retains it frictionally. The lower extension of the spindle has a bearing in a sleeve, which can be adjusted up and down in a box secured to the table of the machine, and provided with a cavity for the reception of the nut, which secures the cutter to the table.



Claim.—1. In a machine for molding and carving wood, the combination, substantially as specified, of the driving-arbor, the spindle of the removable cutting-tool, and the bearing which supports the extended end of the tool-spindle, whose other end is secured to the driving-arbor.

2. In a machine for molding and carving wood, the combination, substantially as specified, of the extension of the cutter-spindle, the socketed box in the table, and the bearing fitted in said box.

3. In a machine for molding and carving wood, the combination, substantially as specified, of the extension of the cutter-spindle, the socketed box in the table, and the adjustable and removable bearing fitted in said box.

206,571. MODES OF COVERING, LIGHTING, AND VENTILATING AREAS, VAULTS, &c. Theodore Hyatt, New York, N. Y. Filed July 22, 1878. Patented in England, Oct. 2, 1868.



Claim.—An illuminating-surface composed of glass and asphalt, substantially as and for the purposes described herein, and illustrated by the drawings.

206,572. WATCHMEN'S TIME-INDICATORS. Friedrich Imbsenner, Brooklyn, N. Y. Filed Nov. 24, 1877.

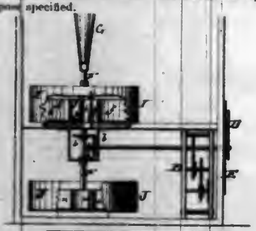
Claim.—1. The combination of the arbor *a* of a clock-work with the rotary

funnel G, stationary receiver I, hand D, dial E, and lower receiver, J, substantially as and for the purpose specified.

2. The receiver I, constructed with a tapering partition, *h*, between the chambers *i j*, which chambers have open bottoms, substantially as and for the purpose described.

3. The lower receiver, J, having partition *m*, combined with the upper receiver, I, having tapering partition *h*, and with the funnel G, substantially as and for the purpose specified.

206,572.



206,573. STREET-LAMPS. James Irwin, Allegheny, Pa. Filed July 13, 1878.



Claim.—1. The slotted cast-metal cap or globe-frame for street-lamps, substantially as specified.

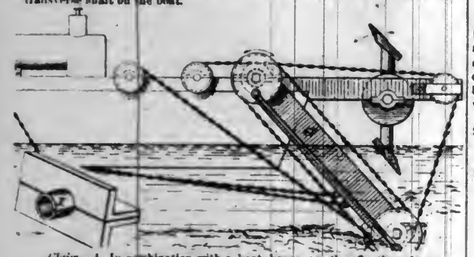
2. The combination, in a street-lamp, of the standard, the hinged cap or globe-frame, and the set screw or screws for adjusting the cap, substantially as specified.

206,574. PAINTS. William H. James, Havana, N. Y. Filed July 13, 1878.

Claim.—The within-described compound for paint, consisting of boiled linseed oil, rosin, boiled coal-oil, bees-wax, zinc, gilders' whiting, Japan drier, and ultramarine blue, substantially as herein set forth.

206,575. DREDGING-MACHINES. Thomas M. Jones, Kansas City, Mo. Filed June 13, 1878.

Brief.—The dredging-wheel is attached to a frame suspended from a boat or other support in the usual manner; but the cutting-blades, instead of being arranged radially, are arranged at an angle to that diameter of the wheel which coincides with the points of their attachment. The propelling-wheels are placed at the stern of the boat, and their paddles are also arranged at a similar angle to the diameter of the wheels. It is designed that the current created by the propelling wheels shall co-operate with the current of the dredging-wheel to facilitate the removal of the material. The frame of the dredging-wheel is braced by diagonal chains extending from near the lower ends thereof to a transverse shaft on the boat.



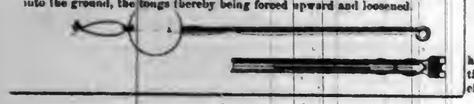
Claim.—1. In combination with a boat, barge, or other floating structure, a paddle-wheel provided with a series of paddles or floats, beveled from the rear to a sharp front edge, and set at an angle of about fifteen degrees to the diameter of the circle in which they rotate, and a dredging-wheel supported from the boat by a hinged frame, and provided with blades inclined at an angle to its diameter, whereby the current of water and earth thrown up by the dredging-wheel is carried to the rear, substantially as specified.

2. In combination with the dredging wheel and its operating mechanism, the paddle-wheels by which the boat is propelled, said dredging and paddle wheels being so arranged relatively that the current established by the paddles of the propelling-wheels will assist in carrying off the deposits thrown up by the dredging-wheel, substantially as specified.

3. In combination with the arms which carry the dredging-wheel, the chains extending from or near the ends of said arms diagonally under the bottom of the boat to the drums on opposite sides of said boat mounted on a transverse shaft, whereby the dredging-machine may be rigidly braced in any desired position, substantially as specified.

206,576. TRANSPLANTERS. Larkin F. Johnston, Pocahontas, Ark. Filed Feb. 9, 1878.

Brief.—The prong *c* has a bifurcated point, in which the plant is placed, and held by the spring-tongs, which release the plant as the prong is pressed into the ground, the tongs thereby being forced upward and loosened.



Claim.—A transplanter consisting of the prong *d* for making holes, the prong *c*, provided with a covering foot, and a rod, *e*, for adjusting the distance between the hills, in combination with the tongs *h*, substantially as shown.

206,577. CIGAR-LIGHTERS. James M. Koop, Jersey City, N. J., assignor to George Selden, Erie, Pa. Filed Feb. 12, 1878.

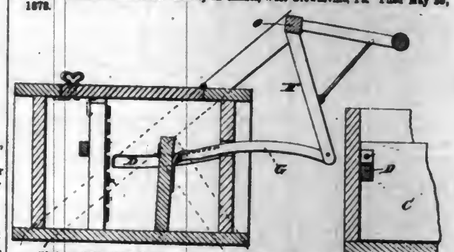


Claim.—1. The combination, with the inclosing-case of a pocket lighting device, of the hinged hammer *h*, made removable without necessitating the removal of screws or other fastenings.

2. In a pocket lighting device, the combination of the removable hammer *h* and actuating-spring *m*, arranged and operating substantially as and for the purpose described.

3. The combination of the removable hammer *h*, separate actuating-spring *m*, and suspended yielding apron *s* with the feed-wheel *f*, all arranged and operating substantially as described.

206,578. WASHING-MACHINES. Harvey H. Kinder, West Brownsville, Pa. Filed May 20, 1878.



Claim.—The curved ways D, secured to the sides of the box, the notched upright board C, moving on said ways and operated by the curved metallic lever G, bar F, rock-shaft O, and handle *k* K, all combined and operating substantially as herein set forth.

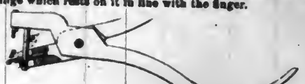
206,579. OIL-CUPS. Alden D. Kilbern, Oakland, Cal. Filed Mar. 20, 1878.



Claim.—In a lubricating cup, the combination, with the feed-tube D, having an open upper end, of the reversible plug F F', fitting into the said tube, and constructed with one end solid and imperforate and with an air-passage, *s*, in the other end, so that by setting the solid end F' of the plug into the top of the feed-tube the air will be entirely shut off from the top of the oil-chamber, and by reversing the plug and placing the end F in the said tube the air will be admitted to the oil-chamber, substantially as described and shown.

206,580. TOOLS FOR REMOVING PINTLES FROM HINGE-JOINTS. Henry Kalkmann, East New York, N. Y. Filed July 5, 1878.

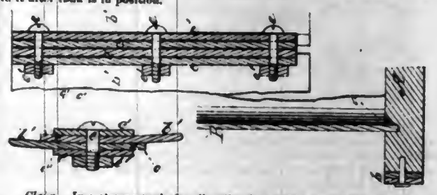
Brief.—The slide in the lower jaw rides in and out, and keeps the pintle of the hinge which rests on it in line with the finger.



Claim.—The combination, in a tool for removing pintles from hinge-joints, of two pivoted jaws, one provided with a sliding base-plate, D, having one or more notches or their equivalents, and the other provided with a rod, E, passing through a hole in said base-plate and provided with one or more ejecting-fingers, all adapted to operate substantially in the manner set forth.

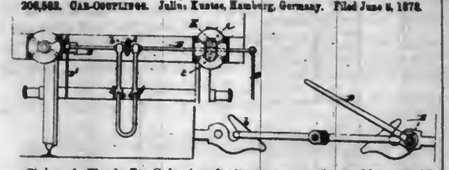
206,581. OIL-TANKS. William Koch and George Koch, Monroe, Pa. Filed May 4, 1878.

Brief.—The groove in which the tank rests is made tight by forcing oakum in it after tank is in position.



Claim.—In a storing tank for oil-wells, the combination of the bottom A, having the hoop *b* and an annular groove, *a*, in its plane surface for the reception of the barrel B, provided with sections *b'*, having joined edges *c*, the clamp-plates *c'*, and bolts *c c'*, substantially as specified.

206,582. CAR-COUPLINGS. Julius Kunze, Hamburg, Germany. Filed June 6, 1878.

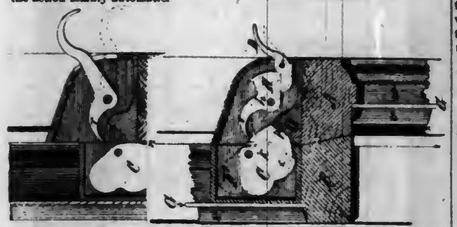


Claim.—1. The buffer C, having duplicate rods *c c*, in combination with the rod B, arranged to extend across the end of the vehicle beyond said buffer, the lever D, secured to said shaft outside of the buffer, and the coupling loop or link, essentially as described.

2. The slotted brackets E G, in combination with the rod B, one or more levers, D D', for operating said rod, and a coupling loop or link controlled by the rod B, substantially as specified.

206,583. FASTENERS FOR THE MEETING-RAILS OF SASHES. Benjamin Lander, Brooklyn, N. Y. Filed Nov. 9, 1877.

Brief.—A swinging locking-cam having one or more teeth is pivoted in a suitable frame mortised into one of the meeting-rails, and this cam engages and coacts with a fixed surface, having corresponding teeth, attached to the opposite meeting-rail, there being also a vibrating piece, preferably in two parts, a pointed or toothed arm, and a trigger or tripping device, whereby the cam can be forced back so as to clear the moving sash, there being no springs, and the action mainly automatic.

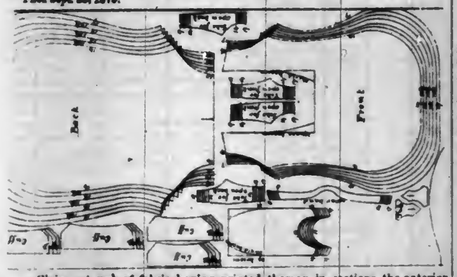


Claim.—1. The combination of the swinging cam C, having one or more teeth or points, *p*, attached to one sash of the window, with the fixed surface O, having corresponding teeth or corrugations, and attached to the other sash of the window, substantially as described.

2. The combination of a swinging locking-cam attached to one sash of a window and a vibrating piece attached to the other sash of the window, whereby the cam can be forced back so as to clear the moving sash, substantially as described.

3. The combination of the locking-cam C, vibrating piece H, and trigger or tripping device D, substantially as described.

206,584. PATTERN-MARKED FABRICS FOR GARMENTS. William C. Lawson, Brooklyn, N. Y. Filed Sept. 26, 1878.



Claim.—A web of fabric having printed thereon in sections the exterior lines of all the parts necessary to the manufacture of a garment of any one of two or more different sizes, substantially as shown and described.

206,585. CUSPADORES. August Ledig, Philadelphia, Pa., assignor to A. Ledig & Son, same place. Filed June 11, 1878.



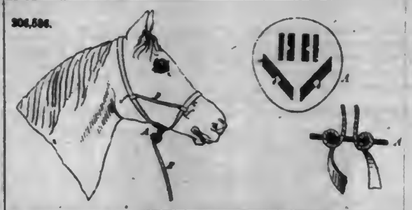
Claim.—The cuspadore having a sheet-metal base portion, B, with depression forming the circumferential shoulder *e*, in combination with the annulus C, circumscribing said depression and supporting the cuspadore, substantially as and for the purpose set forth.

206,586. HALTERS. Somers S. Leland, Quincy, Mich. Filed June 18, 1878.

Claim.—1. In a halter composed of a continuous strap, the fastening-plate A, having slots *a* and studs *b*, to which the ends of such strap are secured, substantially as described and shown.

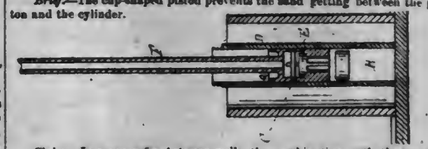
2. A halter composed of the continuous strap B, ring C, and plate A, provided with the slots *a* and studs *b*, substantially as and for the purpose specified.

206,586.



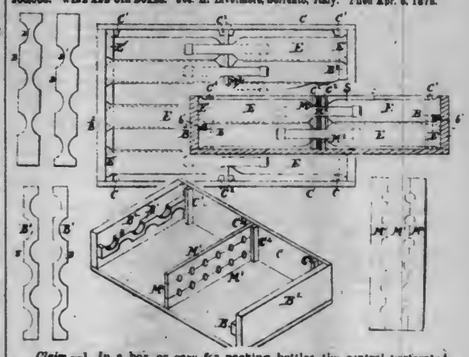
206,587. LIFT-PUMPS. John E. Leonard, Bay City, Mich. Filed Mar. 22, 1878.

Brief.—The cup-shaped piston prevents the sand getting between the piston and the cylinder.



Claim.—In a pump for Artesian wells, the combination, with the case D, of the hollow plunger C, provided with valve E and with sand-cup G, and the tubular plunger-rod F, connected water-tight to the said plunger, so that the water which enters the tubular plunger-rod is forced from below the plunger up through the same on its downward stroke, constructed and arranged substantially as described and shown.

206,588. WINE AND OIL BOXES. Jos. H. Livermore, Sorrento, Italy. Filed Apr. 6, 1878.



Claim.—1. In a box or case for packing bottles, the central perforated partition M' M' M', working between the cleats C' C' and adapted to engage and hold the necks of bottles, in combination with the removable butt-rests B, guided by the cleats C', and having recesses on each edge, as herein specified.

2. A bottle-case having a divided perforated partition, M' M' M', and removable butt-rests B, having the bevels *b'*, adapted to engage and retain bottles by their bottom flanges F', so as to resist end movement thereby, as herein specified.

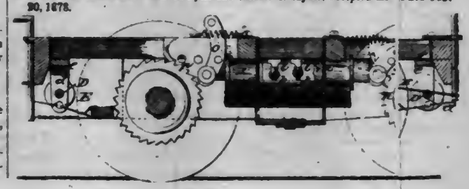
206,589. SAFETY-VALVES. Frederick Lankenheimer, Cincinnati, Ohio. Filed May 14, 1878.



Claim.—1. In a spring-loaded safety-valve, the bonnet J, in combination with the abutment or screw I, lever M, pivot N, and fulcrum L, so arranged as to form a locked or sealed safety-valve, substantially as shown and described.

2. In a spring-loaded safety-valve, the series of washers P, for the purpose of adjusting the compression of the spring, in combination with said spring, substantially as shown and described.

206,590. CAR-STARTERS. Wm. H. Lynn and Charles C. Snyder, Freeport, Ill. Filed June 20, 1878.



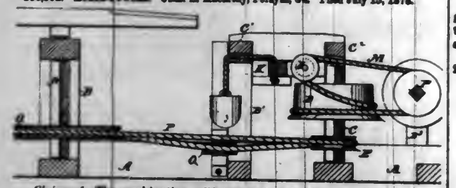
Claim.—The combination, with the operating crank-shafts D of the frictional rollers E, by which motion is transmitted from the car-wheels to the air-pump pistons and its piston-rods, of the hinged or pivoted pendants *d*, having the springs *d'*, to enable them to withdraw the frictional rollers from the car-wheels, substantially as and for the purpose set forth.

206,591. COMBINED WATCH-KEY AND PENCIL-CASE. Geo. W. Mabie, Brooklyn, N. Y. Filed Apr. 16, 1878.



Claim.—The combination, with the tube or barrel A of the pencil-case, of the adjustable jaws B B, arranged within or in concentric relation to said barrel, and the telescopic inner tube C, for operating said jaws, arranged to slide within said barrel, substantially as specified.

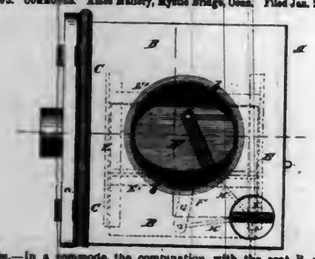
206,592. HORSE-POWER. Chas. K. Macarthy, Kenyon, Wis. Filed July 15, 1878.



Claim.—1. The combination, with two pulleys in the same plane, having a rope belt passing around the same, of a third wheel or pulley, having a single flange and a tapering periphery, the said wheel being arranged at right angles to the others and wrapped with the belt, substantially as described.

2. The combination of the frame-work A, the wheel D, having tension-pulley I and speed-pulley F, the endless rope belt M, and the master-wheel O, with lever-arms, the latter located at a distance from the wheel D, to give passage to the team, and connected with the shaft of said wheel by belt P and pulley E, substantially as and for the purpose described.

206,593. COMMODES. Amos Mallory, Mystic Bridge, Conn. Filed Jan. 24, 1878.



Claim.—In a commode, the combination, with the seat B, of the guide-frame E E' F', slide F, connecting-rod G, crank H, and knob or button I, substantially as and for the purposes herein set forth.

206,594. HARNESS-TREES. John H. Martin, Columbus, Ohio. Filed June 6, 1878.



Claim.—1. The combination, with a harness-tree yoke having its ends provided with transverse pivots or journals, of lower pad-plates having screw-holes and upwardly-projecting seats, the tops of which form bearings for said pivots or journals, upper retaining-plates having screw-holes to coincide with those of the lower plates, and each provided at one end with hooks or caps for fitting over the yoke-pivots or their bearings, and at the other end with a loop for the attachment of the trace-supporting strap, and suitable screws for holding said upper and lower plates together, all so arranged that the top leathers or skirts of the pads may be firmly secured between the lower pad-plates and upper retaining-plates, substantially as and for the purpose set forth.

2. The combination, with a harness-tree yoke having pivots or journals formed at its ends, of lower pad-plates provided with terret-screw holes and having upwardly-projecting seats, the tops of which form bearings for the yoke-pivots or journals, and openings at each end of said seats, upper or retaining plates having also terret-screw holes, and each provided at one end with cups or hooks for fitting over the yoke-pivots, and terminating in tongues for fitting into the openings at the ends of the bearing-seats, and at the other end having a loop for the attachment of the trace-supporting strap, and suitable terret-screws for holding the retaining-plate and lower pad-plate together, substantially as described, and for the purpose set forth.

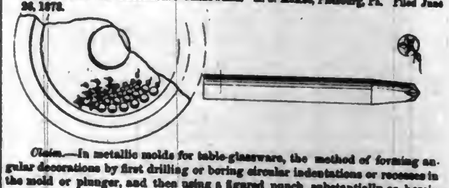
3. A harness-tree provided with a supplemental hook, I, for suspending the traces when not in use.

4. The combination, with the end of a harness-tree yoke having a pivot or journal formed thereon, of a pad-plate, B, having an upwardly-projecting seat for said pivot or journal, and a suitable cap or caps for retaining said pivot or journal upon said seat.

206,595. HOG-CHOLERA COMPOUND. J. T. Mason, Ulysses, Nebr. Filed May 29, 1878.

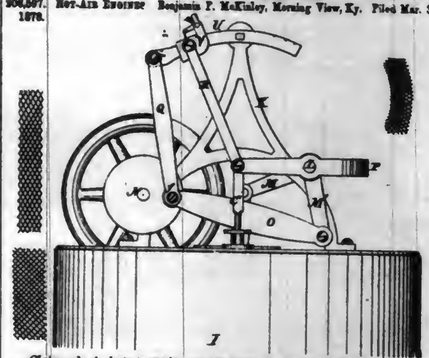
Claim.—The within-described medical compound, consisting of red oxide of iron, ferrocyanide of iron, soda sulphis, ferri sulphas, potassii chloras, sulphur, indigo, zinci sulphas, and arsenious acid, combined substantially as and for the purposes herein set forth.

206,596. MOLDS FOR DECORATING GLASSWARE. H. S. McKee, Pittsburg, Pa. Filed June 26, 1878.



Claim.—In metallic molds for table-glassware, the method of forming angular decorations by first drilling or boring circular indentations or recesses in the mold or plunger, and then using a figured punch, substantially as herein set forth.

206,597. HOT-AIR ENGINE. Benjamin P. McKinley, Morning View, Ky. Filed Mar. 30, 1878.



Claim.—1. A hot-air-engine regenerator, consisting of two corrugated disks or plates, combined with a reciprocating displacer having wings adapted to enter the corrugation of the disks, and a regenerating annular packing of finely-divided metallic pieces arranged about the periphery of same.

2. The combination of an imperforate reciprocating displacer with an annular packing of finely-divided metallic pieces arranged about the periphery of and in contact with said displacer, substantially as described.

3. In a hot-air engine, a reciprocating displacer made variable as to length of stroke, whereby the motion of the engine may be controlled, substantially as described.

4. The vibrating lever U, connected at one end with the driving mechanism, in combination with the sliding and adjustable head V, pitman R, and displacer, substantially as set forth.

5. In a hot-air engine, the regenerating annular packing F, composed of straight strips of wire-cloth, cut diagonally to the weaving and bent into shape, as set forth.

6. The case T, having at the top concentric pendent flanges *f* and a central opening for the air, in combination with a regenerating-chamber composed of concentrically-corrugated disks, and a working-cylinder, B, arranged concentrically with respect to the opening in the case, substantially as shown and described.

7. The combination, with the regenerating-chamber of a hot-air engine, of a furnace having a wall, H, with a corrugated upper surface and an outside annular exit-flue about the same, substantially as described.

8. The combination, with the regenerating-chamber of an air-engine, of a furnace having a wall, H, with an annular exit-flue, the case O, having inlet-holes *d* and the outer case, I, having an inlet at the cool side of the regenerator, substantially as and for the purpose described.

9. The combination of the pitmen C and C' of the working piston and the displacer, the main rock-shaft L, having arm M M', the connecting-rod O, crank-pin *f*, shaft N, connecting-rod Q, rock-shaft and vibrating lever T U, sliding head V, pitman R, and U-shaped lever-frame P, substantially as and for the purpose described.

206,598. WATCH-STEMS. Alex. Milne and Armand Jourdain, Newark, N. J. Filed June 13, 1878.



Claim.—1. In the stem-winding crown attachment for watches, the threaded key-pipe B, having the adjustable nut C, in combination with the collar D, substantially as and for the purposes specified.

2. In combination with the watch-case pendant H and the threaded key-pipe B, having the adjustable nut C, the collar D, provided with the spring F and point *e*, substantially as and for the purpose set forth.

206,599. CAR-AXLES. William H. Murphy, Syracuse, N. Y. Filed May 8, 1878.

Claim.—1. The sleeve A, having an enlarged end, *b*, forming a receiving-socket for the end of the sleeve B and for the abutting shoulder *d* on the solid axle, in combination with end lock-nuts *c*, whereby the meeting ends of the axle-sleeves form a lapping joint, which incloses the abutting shoulder, as and for the purpose specified.

2. The solid axle E, provided with surface channels *m*, in combination with the sleeve-shafts A B, provided with lateral holes *i* in the end bearing-surfaces *e*, as and for the purpose stated.

3. The above-described car-axle, composed of the solid axle-piece E, inserted within and supporting the hollow sleeves A B, the hollow sleeves A B, lock-nuts *c*, and lubricating-grooves in axle-piece, constructed and operating together substantially as above described.

206,599.



206,600. CARRIAGE-WINDOWS. Fred. A. Holder, Augusta, Ky. Filed June 26, 1878.

Brief.—The frame is semicircular in cross-section, fitting the glass on the inner side, and on the outer having nibs, which pass through the leather, and are turned down over the glass in recesses in its outer edge. The glass has a rib on the outside, which, with the leather, fully fills up the concavity of the frame, and another on the inner side at the end of the turned-down nibs, protecting the same from being caught and pulled up, both ribs also serving to strengthen the glass and entire device.



Claim.—1. The frame A, of concave-convex form, having securing-nibs *a*, combined with a support of non-flexible material, *b*, which fits closely into the concave and supports the frame, as and for the purpose set forth.

2. The combination of the frame A *a* with the glass B, having supporting and strengthening flange *b*, operating in the concave of the frame A, as specified.

3. The frame A, having securing-nibs *a*, in combination with the glass B *b*, having notches *b''*, corresponding to the nibs *a*, in which said nibs operate, as and for the purpose set forth.

4. The combination of the frame A, having nibs *a*, with the glass B, with projections *b*, notches *b''*, and projecting guard *b'*, as specified, for the purpose set forth.

206,601. PAVING AND FLOORING TILES. Tobias New, New York, N. Y. Filed July 9, 1878.

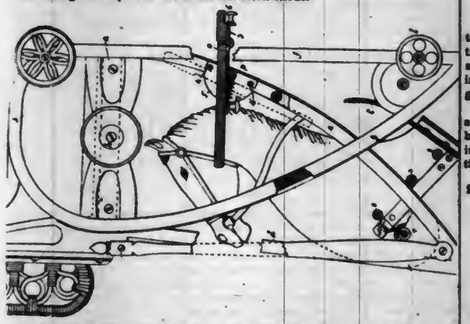


Claim.—1. As a new article of manufacture, a series of tiles forming a design or a section of a design, and provided with a retaining-backing, substantially as set forth.

2. The method herein described of binding together a series of tiles to place them on the market, consisting in cementing to the under sides of the tiles a series of metallic strips, *b*, substantially as described.

206,602. CHILDREN'S CHAIRS. John Nichols, Baldwinville, assignor to Heywood Brothers & Co., Gardner, and Thompson, Farley & Wales, Baldwinville, Mass. Filed Apr. 22, 1878.

Brief.—Composed essentially of a main and an auxiliary seat and two rocker-like leg sections or frames, forming, first, a high chair; second, a carriage, (being turned forward to lie, as it were, on the front face of one of the leg-sections;) and, third, a rocker, one of the leg-sections being shifted so that the curved portions of both leg sections form a continuous rocker, the auxiliary seat being in use in both the latter transformations.



Claim.—1. The combination, with seat a and legs to support it as a high chair, of the auxiliary seat located at the rear of the back of the main seat, to operate substantially as described.

2. The main and auxiliary seats, combined with the fixed and movable legs, curved at their inner edges, as at *e g*, to serve as a high chair or as a rocker.

3. The combination, with the seat a and fixed legs, of horse-head-like pieces *s*, pivoted thereto, substantially as and for the purpose described.

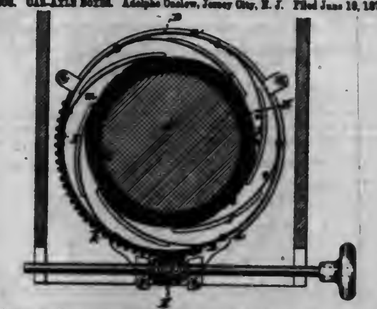
4. The combination, with the seat a and legs and pivoted horse-head-like pieces *s*, of a dash-board, substantially as described.

5. The combination, with the auxiliary seat a and fixed legs, of the pivoted legs *f g*, adapted to be turned so that the narrow ends of such legs will project in front of or at the rear of such seat, according to whether the apparatus is being used as a carriage or rocker.

6. In combination with the auxiliary seat attached to the back of the main seat, a pair of legs provided at each end with rollers *i m*, located thereon in front of the center of the main seat, to operate substantially as described.

7. The pivoted foot-board and locking device, combined with the leg *e* and notched plate connected therewith, to operate substantially as described.

206,603. CAR-AXLE BOXES. Adolphe Coulew, Jersey City, N. J. Filed June 10, 1878.



Claim.—1. The annular case C C, provided with segmental or sectional convolute ribs on its interior, in combination with the circularly-adjustable band D, having attached flexible segmental pressers for operation upon a circular gasket, which surrounds the axle, substantially as specified.

2. The combination of the screw E with the circularly-adjustable band D, having a toothed sector or rack, *k*, the annular case C C, the sectional convolute rib I, and the flexible segmental pressers J, essentially as described.

3. The annular case C C, constructed of independent sections or halves, connected together to admit of their adjustment apart, and of a conical construction on their inner sides or faces *m*, in combination with the flexible packing-ring or washer G, the circular gasket H, and devices for compressing said gasket between the conical sides of the annular case-sections C C, substantially as specified.

4. In combination with the hollow inner cheek of the axle-box, a packing-ring loosely inserted therein and composed of a circular band having attached flexible pressers, an annular case having sectional convolute guides for the direction of said pressers, and one or more flexible packings made capable of being tightened by the adjustment of the band, essentially as described.

206,604. MANUFACTURE OF COPPER ALLOYS CONTAINING MANGANESE. Percival M. Parsons, Melbourne House, Blackheath, England. Filed Mar. 20, 1878. Patented in England, Feb. 7, 1878.

Claim.—The method of manufacturing copper alloys containing manganese which consists in adding to copper alloys, while melted, a suitable proportion of melted spiegeleisen, ferro-manganese, or other carburet of iron containing a sufficient quantity of manganese, as and for the purpose set forth.

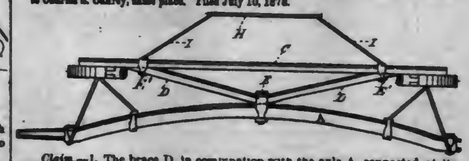
206,605. METHODS OF FASTENING PORCELAIN AND OTHER KNOBS TO THEIR SHANKS. Emery Parker, New Britain, Conn., assignor to the Russell & Erwin Manufacturing Company, same place. Filed July 12, 1878.



Claim.—1. The method of fastening porcelain, mineral, and other knobs to their shanks, consisting in combining the knob and shank by means of a screw-thread upon the exterior of the shank and interior of the knob, and a plug of soft metal, or other fusible substance, which in a state of fusion is introduced into cavities in the knob and shank, and, upon hardening, binds the two together, substantially as described.

2. As an article of manufacture, a porcelain, mineral, or other knob, consisting of a threaded shank and a head having a threaded socket, the said parts being held in attachment by a plug of soft metal or other fusible material entering a cavity in the head and the longitudinal cavity in the shank, and binding the knob and shank together, substantially as herein described.

206,606. TROTTING-BULKERS. Harry S. Paul, Camden, N. J., assignor of one-half his right to Charles S. Gaffrey, same place. Filed July 10, 1878.



Claim.—1. The brace D, in combination with the axle A, connected at its middle with the axle and at its ends with the rear cross-bar C, or with the shafts B B near said cross-bar, substantially as and for the purpose set forth.

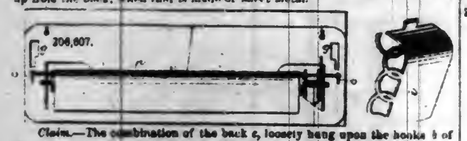
2. The combination of the clips E' E' with the brace D and the cross-bar C, or with the shafts near the bar, substantially as and for the purpose set forth.

3. The combination of the stays I I with the seat H and the end clips E' E' of the brace D, substantially as set forth.

206,607. WINDOW-CORNICES. John Peterman, Meaden, Mich. Filed July 5, 1878.

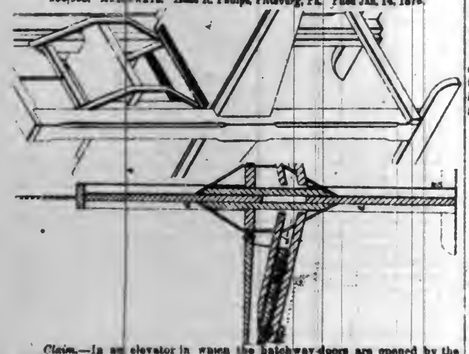
Brief.—The back, to which are attached the shade-roller, curtain-rod, and cornice, is loosely hung by hooks above the window. The cornice and

curtain-rod have projections at their ends, which are passed into slots in the back, and afterward slid downward in the slots, which, being much narrower at the bottom, hold them firmly in place. The shade-roller brackets are struck up from the back, when that is made of sheet metal.



Claim.—The combination of the back *c*, loosely hung upon the hooks *b* of the window-frame, with the roller *e* for the curtain, the cornice *f*, and rod or wire *n*, the back being provided with the slots *g g*, substantially as described.

206,608. HATCHWAYS. Isaac N. Philips, Pittsburg, Pa. Filed Jan. 14, 1878.



Claim.—In an elevator in which the hatchway-doors are opened by the cage as it passes between them and closed by gravity, the doors constructed with upper horizontal sides *h* and lower inclined sides *i*, the same being provided with suitable anti-friction rollers, and arranged to travel along inclined ways, so that when closed their upper surfaces shall be in the same plane with floor of the building, substantially as shown and described.

206,609. CORN-HUSKING IMPLEMENTS. John W. Preston, Buffalo, N. Y. Filed Jan. 10, 1878.

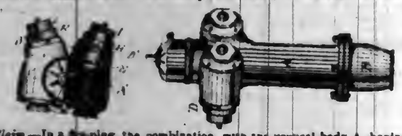


Claim.—As a new article of manufacture, a corn-husking implement composed of the top plate A and shank C, arranged as shown, and having a sharpened or serrated edge, *b*, substantially as set forth.

206,610. EXTRACTING METALS FROM THEIR ORES. John Thomas, Ottumwa, Iowa. Filed Feb. 26, 1878.

Claim.—The process herein described of extracting metals, which consists in mixing the ores with a flux composed of sulphate of iron, salt, black oxide of manganese, and saltpeter made into a fixed alkali by the addition of charcoal, as described, then subjecting them in closed crucible to a dull red heat without access of air, to chloridize the metals, and finally washing out the metal chlorides, substantially as herein described.

206,611. FIRE-HYDRANTS. Sand Nuney, San Francisco, Cal. Filed May 20, 1878.



Claim.—In a fire-plug, the combination, with the vertical body A, having central valved water-passage, of the two obliquely-diverging outlets D D near the top of the said body, closed by two independent valves, E, and the couplings D', provided with removable couplings H and caps I, constructed and arranged substantially as described and shown.

206,612. SWITCH-RAIL CHAIRS. George W. Rawson, Belleville, Ill. Filed Apr. 13, 1877.

Brief.—Chairs are formed with bearing cheeks on each side, one of such height as to take the tread of the wheel, and the other to take the flange of the wheel when upon the adjacent rail.



Claim.—1. A railway-switch chair having bearing cheeks of different heights, substantially as described.

2. A head-chair constructed with cheeks made in vertical extension on either side, as described, whereby the weight of the passing wheels is transferred from the rail to the chair, substantially as described.

3. A stub-switch chair one of whose side bearings is in horizontal plane with the tread of the rail, and whose opposite side bearing is grooved and in a plane lower than that of the rail-tread, substantially as described.

206,613. TURNSTILE-REGISTERS. Robert P. Reilly and Walter P. Speller, New York, N. Y. Filed June 10, 1878.



Claim.—The combination, with the support A and turnstile B and its shaft, of the plate C, provided upon its upper surface with shoulders *c c*, and around its periphery with projections or teeth *b b*, spring-pawl *d*, and arm *e* of the registering mechanism, substantially as shown and described, for the purpose set forth.

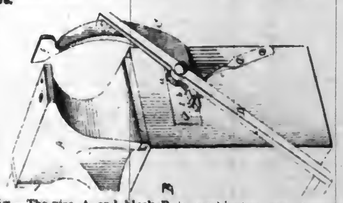
206,614. COAL-HODS. Henry S. Reynolds, Green Point, N. Y. Filed July 5, 1878.



Claim.—1. In a coal-hod, the combination, with the body and hollow base having interlocked beads at their joined edges, of a bottom having a flange flaring upward within the body and a projecting bead at its lower edge, which extends under the interlocked beads of the base and body, substantially as described.

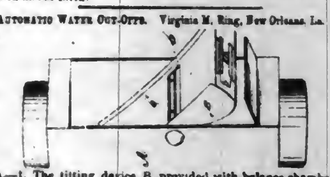
2. In a coal-hod, the combination of the body B, having at its lower edge the outwardly-projecting concave-convex bead *b*, the base A, having at its upper edge the inwardly-projecting concave-convex bead *a*, interlocking with the bead of the body, and the bottom C, having the upwardly-flaring flange *d* and the outwardly-projecting bead *c*, extending under the interlocked beads of the body and base, substantially as described.

206,615. CALKING-VISES. Fall. Rickard and A. C. La Brash, Minneapolis, Minn. Filed Apr. 17, 1878.



Claim.—The vise A and block B, in combination with the swinging arm C, provided with a face, *f*, lever D, and spring *e*, all constructed, arranged, and operated as set forth.

206,616. AUTOMATIC WATER CUT-OFFS. Virginia M. Ring, New Orleans, La. Filed June 22, 1878.



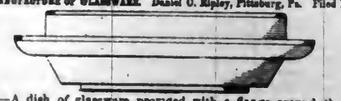
Claim.—1. The tilting device B, provided with balance-chamber B', open at top, as at *b'*, the feed-orifice *b*, controlled by the perforated graduating-slide *b'*, and the weight C, operating as and for the purpose set forth.

2. The shed D, secured to the case A *a*, constructed and adapted to allow the unclean water to waste and to catch all drippings from the overbalanced tilter and direct them to the cistern, as and for the purpose specified.

3. The deflectors E, in combination with the open-topped balance-chamber B' *b'* and tilting mechanism B C, as specified.

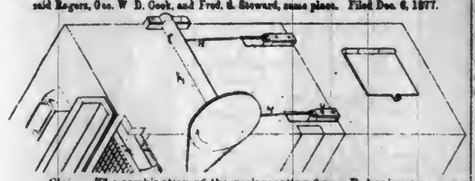
4. The combination of the case A, provided with deflectors E and shed D, with the tilting device B C, having the open-topped chamber B' *b'*, fed through the graduated orifice *b b'*, all constructed, arranged, and operating as set forth, for the purpose specified.

206,617. MANUFACTURE OF GLASSWARE. Daniel C. Ripley, Pittsburg, Pa. Filed Mar. 14, 1878.



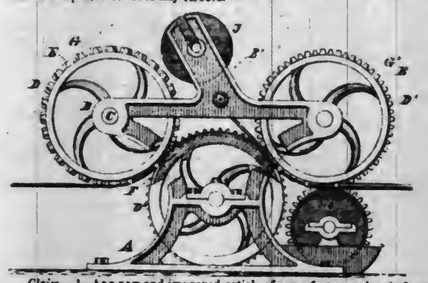
Claim.—A dish of glassware provided with a flange around the bowl, below the lip or rim thereof, to form a drip or overflow channel, said bowl being formed either with or without a foot, substantially as and for the purpose specified.

206,618. FRUIT-DRIERS. James L. Rogers and Jos. A. Tuttle, Atlanta, Ga., assignors to said Rogers, Geo. W. D. Cook, and Fred. G. Steward, same place. Filed Dec. 6, 1877.



Claim.—The combination of the reciprocating frame E, having arms projecting through slots of the casing, and the rollers F F, geared together, chains *x*, connected to the rollers, and the projecting arms and latches *s*, all constructed, arranged, and operating as set forth.

206,619. MACHINES FOR MANUFACTURING MOTH-TRAPS FOR TREES, &c. Eugene Rehlmann, Lockport, N. Y. Filed May 11, 1878.



Claim.—1. As a new and improved article of manufacture, a band of paper or similar material, having a band of fibrous or textile fabric secured to one of its sides by portions of said fabric passing through incisions in the said paper, &c., band, as and for the object specified.

2. As an improved article of manufacture, compound bands of paper or similar material and textile or fibrous fabric, the latter being saturated with a poisonous substance, as stated.

3. The compound band hereinbefore described, consisting of a layer of paper and a layer of cotton batting or analogous materials, the two layers being secured together by portions of the latter being passed through incisions in the former, and fastened on the under side by means of a water-proof paint, as stated.

4. The compound band hereinbefore described, consisting of a layer of paper and a layer of cotton batting or similar materials, secured together as specified, the matting being saturated with a poisonous substance, as stated, and the band adapted to be applied to a tree for protection, as stated.

5. In a machine for perforating and securing the bands, the combination of two standards, A, carrying between them the rollers D D', provided with the projecting teeth E and roller D', having the grooves F, and the roller J, as and for the purpose stated.

6. The machine for perforating, attaching, and securing the bands, consisting of two standards, A, rollers D, D', D'', J, and O, arranged within said standards, substantially as and for the use and purpose specified.

206,620. WAISTCOATS. Daniel B. Ryan, New York, N. Y. Filed Apr. 12, 1878.



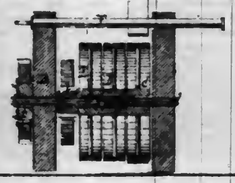
Claim.—1. A waistcoat having a vertically-adjustable back, substantially as described.

2. A waistcoat, V, provided with a vertically-adjustable strap or straps, *a*, substantially as described.

3. A waistcoat provided with a vertically-adjustable strap or straps, *a*, and a flap, C, substantially as described.

4. A waistcoat provided with a vertically-adjustable strap or straps, *a*, and a vertically-adjustable flap, C, substantially as described.

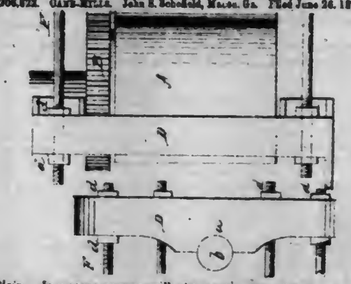
206,621. CHARGING SPEED. Wilhelm R. Schirmann, Dusseldorf, Prussia. Filed July 10, 1878.



Claim.—1. The combination, with the several transmitting-gears of a compound apparatus, substantially as described, for transmitting motion with variable speed, of separate clutches, one for each gear, substantially as and for the purpose set forth.

2. The combination, with the shaft A, fixed pulley C, sleeve *c*, and its attached pulley D and gear *k*, of the gears *l m* and gear *n*, provided with a clutch, allowing it to turn loosely in one direction, but causing it to engage with the shaft A when turned in the opposite direction, substantially as described.

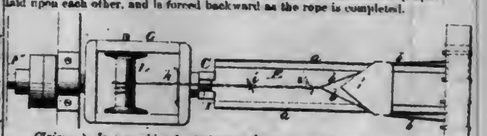
206,622. CANE-MILLS. John S. Schofield, Macon, Ga. Filed June 26, 1878.



Claim.—In a sorgo or cane mill, the combination of the two separate and independent frames D D, made of metal, and forming the half-bearings *a a*, the rollers A A, with journals *b b*, and the bolts F, with a nut, *d*, on each side of each frame, substantially as and for the purposes herein set forth.

206,623. MACHINES FOR MAKING BARBED HOOPS FOR WIRE FENCES. Hiram B. South, Joliet, Ill. Filed June 25, 1878.

Brief.—The wires are twisted by the revolutions of the pivoted frame, and the barbs are inserted by the operator as the twisting progresses. The carriage holds the wires a sufficient distance apart to allow them to be properly laid upon each other, and is forced backward as the rope is completed.

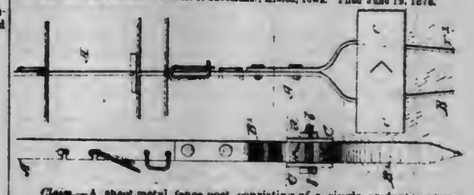


Claim.—1. In a machine for twisting wires for wire fences, a movable carriage for separating the wires, the same arranged to be moved backward by the twisting of the wires, substantially as herein set forth.

2. In a machine for twisting wires for wire fences, the carriage D, mounted upon wheels *d d*, and provided with guide-rollers *e e*, in combination with the rails *a a*, said carriage being adapted to be moved backward by the wires *b b*, substantially as and for the purposes herein set forth.

3. The combination of the rotating frame G, provided with slotted hollow trunnion I, latch K, and roller L, with the wire-spools B B, rails *a a*, and carriage D, all substantially as and for the purposes herein set forth.

206,624. FENCE-POSTS. Gilbert J. Shoemaker, Albion, Iowa. Filed June 19, 1878.



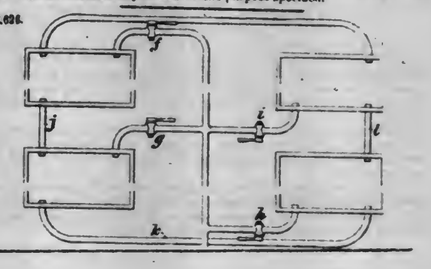
Claim.—A sheet-metal fence-post consisting of a single or double strap post, A, with a foot composed of two inclined pointed prongs, B B', and the cross-plates C C, adjustably fastened to the prongs by a bolt, substantially as and for the purposes herein set forth.

206,625. PROCESSES FOR GRAINING. Oscar Maness, Aurora, Ind. Filed May 6, 1878.

Brief.—Instead of using ordinary graining tools, fashioned (soft) or similar plastic material into various designs, and uses such as the tool.

Claim.—The process of producing designs upon wood or other surfaces by the use of plastic material, such as putty, by molding the material into forms and rolling it over or otherwise applying it to the surface to which the design is to be given, substantially as and for the purpose specified.

206,626.

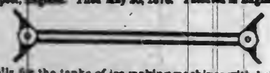


206,626. PROCESSES AND APPARATUS FOR MAKING ICE. Joshua Siddeley and Frederick H. Mackay, Liverpool, England. Filed May 20, 1878. Patented in England, May 10, 1875.

Claim.—1. The process herein described for making clear block ice, which consists in replacing water which has become highly aerated by fresh water, and transferring the aerated water from tank to tank throughout the tanks of a progressive series, substantially as specified.

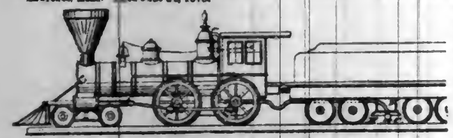
2. The combination, in an ice-machine, of a series of tanks and their connections, for establishing communication between the tanks, the whole arranged substantially as herein specified, so that the water to be frozen may pass from one tank to another throughout the series, substantially as and for the purpose specified.

206,627. CELLS FOR THE TANKS OF ICE-MACHINES. Joshua Siddeley and Frederick H. Mackay, Liverpool, England. Filed May 20, 1878. Patented in England, May 10, 1875.



Claim.—Cells for the tanks of ice-making machines with hollow end pieces continuous with the cavity of the cell, through which and the body of the cells the same fluid may circulate.

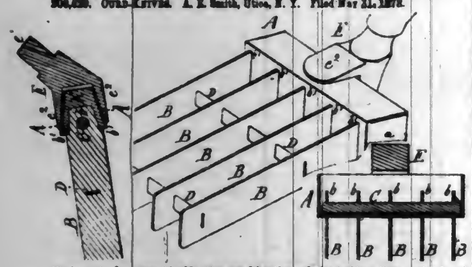
206,628. APPARATUS FOR DESTROYING VEGETATION ON RAILROADS. Louisa B. Simpson, Lawrence, Kans. Filed June 24, 1878.



Claim.—1. In combination with the tender of a locomotive, one or more perforated or slotted pipes extending transversely under the same and connected with the boiler of a locomotive, substantially as specified.

2. In combination with the perforated or slotted pipe or pipes, the deflector located above the same, substantially as and for the purpose specified.

206,629. CURD-KNIVES. A. E. Smith, Utica, N. Y. Filed Mar 21, 1878.

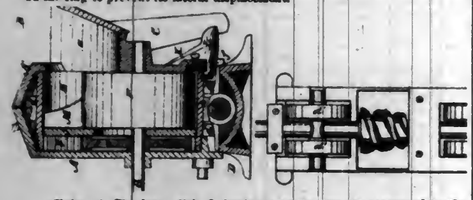


Claim.—1. In a curd knife, the combination of the hollow thin metal head A, having a soft or hard metal as a filling, the knife-blades B, having shoulders *b'*, shanks *b*, and holes *c*, and the pin C, substantially as and for the purpose set forth.

2. The combination of the curd-knife head A, made of thin outer metal and a soft or hard inner metal filling, and the holder E, having a pin, *e'*, and clasp *e²*, substantially as and for the purpose described.

206,630. COMBINED CIDER MILL AND PRESS. David A. Smith, Greencastle, Pa. Filed July 2, 1878.

Brief.—The cylinder is placed eccentrically within the ring to crush the apples fed between them. The partition-disk separates the cylinder from the side gearing. The plate opposite to the disk is made adjustable, and is perforated to allow the expressed juice to pass through into the spout. The friction-wheels beneath the ring are located on opposite sides of the row of teeth on the ring to prevent its lateral displacement.



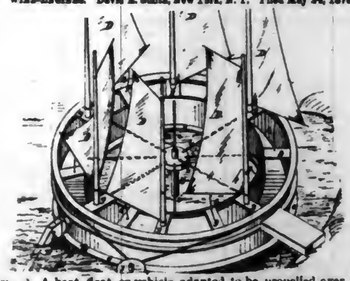
Claim.—1. The loose disk J, having a perforation to accommodate the eccentric location of the cylinder, combined with said cylinder and ring, and interposed between the cylinder and its gear-wheel, substantially as described.

2. The combination, with the cylinder F and ring E, of the cheek-plate K, located in a recess in the casing A', and made adjustable, substantially as described.

3. The ring E, having an external set of gear-teeth, in combination with the base-plate having friction-rollers *d*, arranged upon opposite sides of the projecting gear-teeth, and a shaft, I, provided with a worm engaging with the teeth, as described.

4. The combination, with the ring E and cylinder F, of the case A A', made in sections, the section A' having an opening divided by an adjusting-wing, *a*, and provided with a hopper upon one side of said ring, and a scraper and chute for the pomace upon the other side, as set forth.

206,631. WIND-ENGINES. David R. Smith, New York, N. Y. Filed May 24, 1878.



Claim.—1. A boat, float, or vehicle adapted to be propelled over an endless track, in combination with a sail or sails for propelling the same.

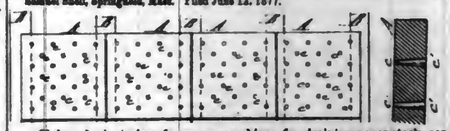
2. The herein-described combination of a suitable sail or sails, D, with a suitable sail frame or frames, A, and an endless track for guiding said frame, the weight of said frame or frames A being supported by water, in which the said frame floats.

3. The combination of a circular floating sail-frame, A, and sails D, as described.

4. The combination of a circular floating sail-frame, A, sails D, and hollow guide *c*, as described.

5. The combination of a circular floating sail-frame, A, and sails D, said sails D being cut, rigged, and set like the fore-and-aft sails of sailing-vessels.

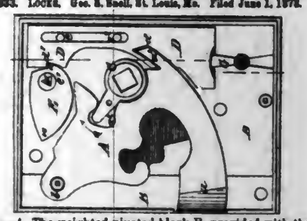
206,632. PERFORATED TILES FOR DRAINING PAPER-STOCK AND FOR OTHER PURPOSES. Samuel Sall, Springfield, Mass. Filed June 12, 1877.



Claim.—1. A strainer for use in machines for draining paper-stock, consisting of a flat tile, A, provided with a series of vertical conical openings, *c*, as shown and described.

2. As an improvement for draining paper-stock, a bottom composed of a series of concrete or tile supports, B, and a series of tile slabs, A, arranged thereon and provided with tapering perforations *c*, as and for the purpose shown and described.

206,633. LOCKS. Geo. S. Snell, St. Louis, Mo. Filed June 1, 1878.



Claim.—1. The weighted pivoted block E, provided with the pivoted key-hole *f* and the catch *a*, in combination with the sliding tumbler or tumblers D, having the notch or notches *d'*, and with the key G, substantially as and for the purpose set forth.

2. A lock formed of the combination of the casing B, the swinging bolt A *a*, having the tail projection *a¹* and the opening *a²*, the sliding tumblers D, provided with the notches *d d'*, and the pivoted catch-block E, all arranged to operate in combination with the spindle-cam C *c'* and by the force of gravity, substantially as and for the purpose set forth.

206,634. SASH-HOLDERS. Charles R. Stoller, Milwaukee, Wis. Filed May 21, 1878.



Claim.—1. The adjuster G, consisting in the peculiar arrangement of the rubber friction-block I, as secured in a recess by shoulders K projecting points J, plate L, and rivet M, all substantially as and for the purpose specified.

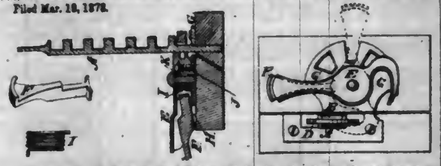
2. The combination of the device consisting of lift F, adjuster G, and arm H, provided with hook N, with the catch O, all substantially as and for the purpose specified.

3. As a new article of manufacture, a combined window-sash adjuster, lift, and lock, consisting in lift F, arm H, provided with hook N, adjuster G, provided with rubber friction-bearings I, as secured thereto by shoulder K, projecting point J, plate L, and rivet M, base-plate D, and catch O, all substantially as and for the purpose specified.

206,635. PREPARATION OF PEROXIDE OF IRON. Richard Steinau and Charles Steinau, Brunswick, Germany. Filed Apr. 26, 1878.

Claim.—The within-described process of producing and collecting peroxide of iron by causing water contained in a suitable vessel to rise and fall through a layer or mass of iron scraps, thereby exposing said scraps to the alternate action of water and atmospheric air, and collecting the peroxide in the vessel containing the water, substantially as described.

206,636. FASTENERS FOR MEETING-RAILS OF SASHES. Charles R. Stoller, Milwaukee, Wis. Filed Mar. 19, 1878.



Claim.—In a sash-fastener, the lever E, having the sleeve K, and the plate G, having the sleeve J, in combination with the standard A, latch F, and spring I, substantially as shown and described.

206,637. PAPER-TUBE MACHINES. Charles B. Sullwell, Worcester, Mass., assignor to Alfred Adams, Cleveland, Ohio, and E. B. Taggart, Watertown, N. Y. Filed May 3, 1875.



Claim.—1. The combination, substantially as hereinbefore set forth, of the roll or shaft from which the paper is drawn, actuating-rolls or feeding mechanism, and an inclined sharp-edged shoe intermediate the paper roll and feeding mechanism, across the surface of which the strip is drawn and then deflected at an angle of about forty-five degrees from its previous line of travel, whereby the strip is instantly doubled upon itself at the corners of the shoe simply by the strain on the paper.

2. The combination, substantially as hereinbefore set forth, of the roll or shaft from which the paper is drawn, the pasting device, the feeding mechanism, and the inclined sharp-edged shoe intermediate the pasting device and feeding mechanism, across the surface of which shoe the strip is drawn and then deflected at an angle of about forty-five degrees from its previous line of travel, whereby the strip is drawn forward under tension, its edges pasted, and the strip then folded and its edges united, as set forth.

3. The combination, substantially as hereinbefore set forth, of the sharp-edged shoe, across the surface of which the strip is drawn, and a friction-bar on the side of the strip opposite to that next the shoe, whereby the strain on the paper is increased at the corners of the shoe, and the edge folds formed by the conjoint operation of the shoe and bar.

4. The combination, substantially as hereinbefore set forth, of a roll or shaft from which the paper is drawn, actuating-rolls or feeding mechanism for drawing the paper forward under tension, a paste-reservoir, a shoe having a straight edge of a length equal the width of the tube to be formed and terminating in square or sharp corners, across which edge the strip is drawn intermediate the paper roll and the feeding mechanism, and deflected at an angle of about forty-five degrees from its previous line of travel, and a finger which guides one edge of the strip under the other, for the purposes specified.

5. The combination, substantially as hereinbefore set forth, of the shoe, the friction-bar, and the overhanging fingers, by the conjoint operation of which the fold is formed.

6. The combination of a roll or shaft from which the paper strip is drawn under tension, a paste-reservoir for supplying paste to one edge of the strip, an inclined sharp-edged or square-cornered shoe, across which the strip is drawn and deflected at an angle of about forty-five degrees to its previous line of travel, actuating or feeding rolls, a knife carried by one of said rolls, and drawing-rolls, these members being constructed and operating substantially as hereinbefore set forth, whereby the strip is pasted, folded, pressed, and severed into blanks.

206,638. MACHINERY FOR MAKING SATCHEL-BOTTOM PAPER BAGS. Charles B. Sullwell, Worcester, Mass., assignor to Alfred Adams, Cleveland, Ohio, and E. B. Taggart, Watertown, N. Y. Filed June 21, 1878.

Claim.—1. The combination, substantially as hereinbefore set forth, of the tube-forming plate and the paste-cup mounted on the swinging bracket, to adjust it laterally relatively to the edge of the paper.

2. The combination, substantially as hereinbefore set forth, of the sectional actuating-cylinder, the rock-shaft mounted on the center section thereof, and carrying the oscillating pins which perforate the tubular blank to aid in opening its mouth, the locking spring latch on the cylinder, and the releasing-cam on the frame.

3. The combination, substantially as hereinbefore set forth, of the sectional actuating-cylinder, the rock-shaft mounted on the center section thereof, and carrying the oscillating pins which perforate the tubular blank to aid in opening its mouth, and the slotted or toothed guard-plate which insures the perforation of the paper by the pins before the blank passes between the actuating cylinders.

4. The combination, substantially as hereinbefore set forth, of the sectional actuating-cylinder and the transverse oscillating cutting-knives, mounted on the outer sections, to make the transverse edge cuts in the tubular blank.

5. The combination, substantially as hereinbefore set forth, of two cylinders, oscillating knives, their rock-shaft and cam, mounted in one cylinder, and corresponding grooves or recesses in the other cylinder, whereby the oscillation of the knives is controlled by the action of the cam upon the cylinder.

6. The combination, substantially as hereinbefore set forth, of the cylinder, the oscillating knives, and the slitting-knives, whereby the blank is cut longitudinally and transversely on each side of the central seam.

7. The combination, substantially as hereinbefore set forth, of two cylinders, perforating-pins centrally arranged upon one cylinder, and cutting and slitting knives mounted on the other cylinder, whereby the bag-blank is cut on each side of the central seam and the opening of the mouth of the blank facilitated.

8. The combination, substantially as hereinbefore set forth, of the two actuating-cylinders, the carrier-cylinder, and the interposed break-plate, whereby the unfolding of the tubular blank is prevented.

9. The combination, substantially as hereinbefore set forth, of the break-plate, the carrier-cylinder, and the pasting-roll.

10. The carrier-cylinder, constructed, substantially as hereinbefore set forth, with a positively-driven central section, and with independently-driven outer sections moving at a greater velocity, in combination with driving mechanism substantially such as described.

11. The combination, substantially as hereinbefore set forth, of the positively-driven central section of the carrier-cylinder, its independently-driven outer sections, and the holding and carrying bands, moving at a greater speed than the central section, to maintain tension in the blank.

12. The combination, substantially as hereinbefore set forth, of the carrier-cylinder, the retaining-roll, and the rotary creaser and severing-knife, whereby the forward end of the blank is held in contact with the cylinder after the severance of the preceding blank.

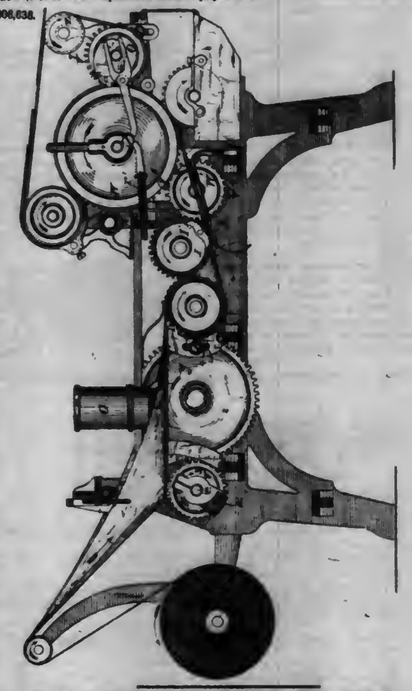
13. The combination, substantially as hereinbefore set forth, of the carrier-cylinder, its traveling bands, and the oscillating folding-arm traveling faster than and overtaking the bag-blank, to form the first of its final folds.

14. The combination, substantially as hereinbefore set forth, of the carrier-cylinder, its traveling bands, the oscillating folder, and the folding-roller which forms the final fold.

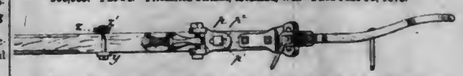
15. The combination, substantially as hereinbefore set forth, of the sectional carrier-cylinder, the carrier-bands, the oscillating folder, the folding roller, and the compressing-roller, whereby the final folds are compressed.

16. The combination, substantially as hereinbefore set forth, of the carrier-cylinder, its bands, the folding roller, the compressing-roller, and the guides, whereby the finished blank is caused to conform to the surface of the roller after being compressed.

17. The satchel-bottom paper-bag-forming machine hereinbefore set forth, consisting of the combination of the tube-forming, preliminary cutting, pasting, opening, creasing, carrying, final folding, and discharging mechanisms, operating successively as described, whereby the bags are completely formed at one continuous operation from a paper web.



206,639. PLOWS. Friederich Steidle, Menasha, Wis. Filed June 13, 1878.



Claim.—1. The combination, in a plow, of a laterally-adjusting screw, carried by the beam and connected to the plow-standard by a fixed arm, with a supporting clamping device adjustably connecting the beam with the handle, substantially as and for the purpose herein set forth.

2. The slotted screw-carrying plate *p*, having the beam-lapping ears *p'*, in combination with the screw-eyed connecting-arm *n*, fixed to the plow, whereby said plate has an automatic adjustment in the line of the beam, to compensate for the lateral adjustment of the beam and prevent injury to the adjusting screw-threads, as set forth.

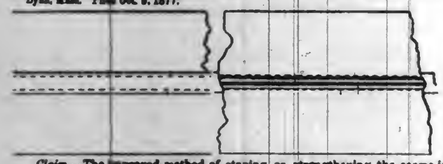
3. The colter arm *x'*, having a convex bearing, *z*, in combination with the side link *y* and laterally-adjusting beam, whereby the latter may be turned upon its standard without twisting the colter.

206,640. DRESS-TRIMMING. August Sturm, New York, N. Y. Filed July 5, 1878.



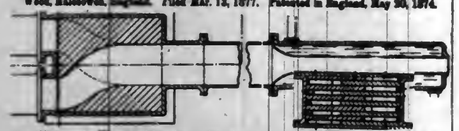
Claim.—As a new article of manufacture, a dress-trimming consisting of a supporting fabric and a thread or fabric secured thereto and provided with loose or pendent loops, the supporting fabric being ruffled or frilled, substantially as described and shown.

206,641. METHOD OF STAYING THE SEAMS OF BOOTS AND SHOES. Daniel A. Sutherland, Lynn, Mass. Filed Oct. 6, 1877.



Claim.—The improved method of staying or strengthening the seams in uppers of boots and shoes by corrugating the parts united outside of and adjacent to the line of juncture, and then placing a strip or band of leather or other suitable material over the seam and connecting it to the united portions outside of the said corrugations, all substantially as and for the purpose set forth.

206,642. APPARATUS FOR PREPARING GASEOUS FUEL. William S. Sutherland, Ossett's Wood, Halesowen, England. Filed Mar. 12, 1877. Patented in England, May 30, 1876.



Claim.—1. The combination, with the mixing-chamber, of the air and gas supply pipes, and a series of plates or parallel diaphragms having spaces opening to the air and gas supply pipes, so that the gas and air issue in alternate layers, substantially as and for the purpose specified.

2. The combination, with the mixing-chamber and the parallel plates for mixing the air and gas, of the pipe leading to the combustion-chamber, and the water-jacket or covering surrounding the combustion pipe, substantially as and for the purpose specified.

206,643. PROCESSES FOR PREPARING GASEOUS FUEL. William S. Sutherland, Ossett's Wood, Halesowen, England. Filed Mar. 12, 1877. Patented in England, May 30, 1876.

Claim.—The process or method herein set forth for obtaining heat from the combustion of gaseous fuel and atmospheric air, when such gaseous fuel and air are intimately mixed together in the proportions necessary for complete combustion previous to ignition, and are caused to travel toward the point of ignition at such a speed as will prevent the back travel of the flame.

206,644. FEATHER-RENOVATOR. Warren S. Taylor, Sharon, Pa. Filed June 22, 1878.

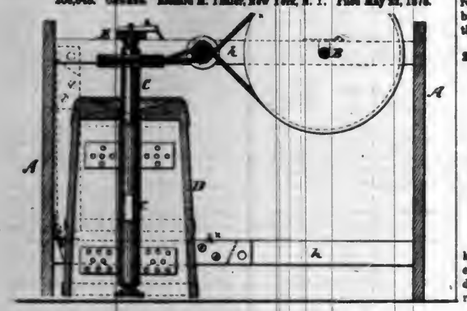


Claim.—1. The combination of the conical steam-chamber a^2 a^3 a^4 with the cylinder A and shaft F f, as specified.

2. The perforated bottom a, in combination with the annular valve G g and conical steam-chamber, as and for the purpose specified.

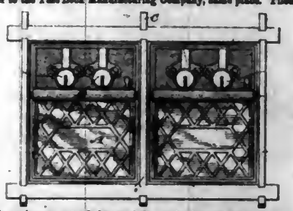
3. The cylinder A, the conical chamber a^2, the surrounding perforated pipe C, and the perforated bottom a and valve G g, combined and arranged as herein specified, for the purpose set forth.

206,645. CHURN. Richard M. Thaler, New York, N. Y. Filed May 22, 1878.



Claim.—The frame A, constructed with the upper side rails, h h, and hinged lower side rail, h^5, and with the perforated transverse rail E, which is hinged to one of the rails h, and adapted to be locked to the opposite rail, the frame A being adapted to receive and operate the churn D, in manner as and for the purpose herein shown and described.

206,646. MASTER-KEY DEVICES FOR POST-OFFICE BOXES. Henry B. Towne, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed July 8, 1878.



Claim.—A series or set of doors, lids, or locks, each of which is provided with a lock-bolt controllable by either of two independent key-actuated mechanisms, the whole so arranged that the same key will operate one of the mechanisms on every door, while the other mechanism on each door can be operated by its own key and no other.

206,647. RAILWAY-TRACKS. Thomas W. Travis, Philadelphia, Pa., assignor to himself, John A. Pollock, and James G. Caren, same place. Filed July 9, 1878.

Brief.—The rails are secured in position upon iron cross-ties by clamping blocks or plates, whose upper portions embrace the webs and flanges of the rails, and the lower ends, which rest in sockets at the ends of the ties, are separated by a vertical wedge formed in the bottom of the sockets, whereby the weight of the passing load causes the clamps to firmly clasp the rails.

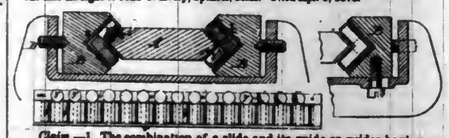


Claim.—1. The within-described rail-fastening, consisting of a pair of clamping-blocks adapted to the rail, and having downward extensions for being acted upon by a wedge, as specified.

2. The combination of the tie A, its boxes or receptacles having wedge-shaped projections e, the rails F, and clamping-blocks E, adapted to the rails and having extensions e arranged to bear upon the wedge e, as set forth.

3. The combination of the tie A and its boxes or receptacles B, the rails F, the clamping-blocks E, having extensions e, the wedges e, and the elastic blocks D, as specified.

206,648. CROSS-HEADS AND OTHER SLIDES. William Tucker, East Brookfield, assignor of one-half his right to John G. Avery, Spencer, Mass. Filed Apr. 5, 1878.

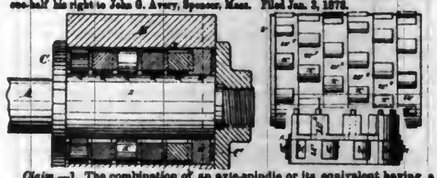


Claim.—1. The combination of a slide and its guide or guides having parallel facings of hardened metal, an interposed series of solid journalless friction-rollers of like hardened metal, and a carrier having a socket or cell for each roller, and supported out of contact with said facings by said rollers, substantially as herein described.

2. The combination of a slide and its guide or guides having angular faces, presenting two sets of parallel flat surfaces at each edge of the slide, with series of cylindrical rollers interposed between said surfaces, respectively, and a single carrier for the adjacent series of rollers at each edge of the slide, substantially as herein specified.

3. A roller-carrier for angular slides made of V shape in cross-section, with roller-sockets in each edge, the rollers being retained in said sockets by caps bars attached to said edges, substantially as herein shown and described, for the purpose set forth.

206,649. ANTI-FRICTION JOURNAL-BOXES. William Tucker, East Brookfield, assignor of one-half his right to John G. AVERY, Spencer, Mass. Filed Jan. 3, 1878.

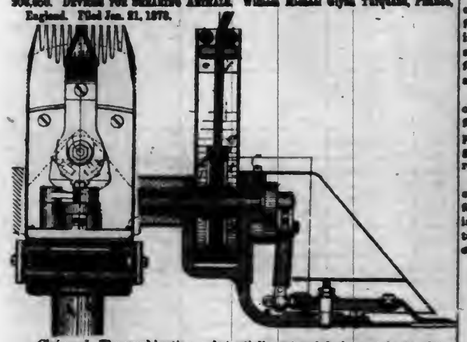


Claim.—1. The combination of an axle-spindle or its equivalent having a hardened cylindrical surface, a box or its equivalent having a concentric hardened surface, and a large number of short cylindrical rollers of hardened metal distributed uniformly between said surfaces in several parallel circumferential rows, with the axes of no two rollers in line with each other longitudinally, said rollers being kept in order or position by means of a loose sleeve having a bearing or pocket for each roller, as herein shown and described, for the purpose specified.

2. An anti-friction sleeve consisting of a series of parallel rings rivoted together, each ring containing a series of short cylindrical rollers in separate parallel bearings or pockets.

3. An anti-friction sleeve consisting of a series of parallel rings rivoted together, each ring containing a series of short cylindrical rollers in parallel bearings or pockets, with the axes of no two rollers in line with each other longitudinally, substantially as herein shown and described, for the purposes set forth.

206,650. DEVICES FOR BEARING ARMIALS. William Michael Glynn Tarquand, Pimlico, England. Filed Jan. 21, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, of the main frame, the driving-pulley, and the hinged belt-guiding frame.

2. The combination of the hinged belt-guiding frame, the pulley revolving in said frame, and the two sets of rollers, the one set mounted on axes at right angles to those of the other set, substantially as set forth.

3. The combination, substantially as hereinbefore set forth, of the angular forked main frame, the handle, the pulley-shaft mounted in the frame in line with the handle, the band-pulley, and the belt-guiding frame, hinged so as to be capable of rocking about the axis of the pulley.

4. The hinged sectional belt-guiding frame, constructed, substantially as set forth, of united side pieces and a detachable bent edge piece.

5. The combination, substantially as hereinbefore set forth, of the main frame, the movable cutter, its vibrating lever, the pivot-post upon which the lever is mounted, and the rollers at the heel of the lever, whereby the pressure upon the lever to keep the knife down to its work and compensate wear may be regulated, as set forth.

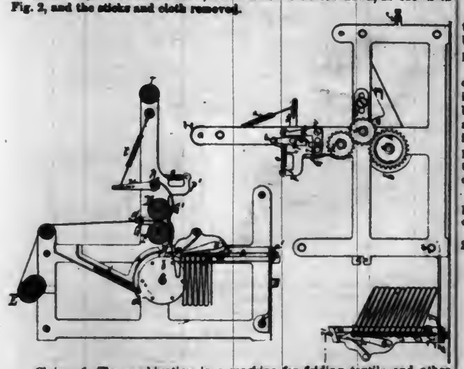
6. The combination of the pulley driving-shaft, the crank-wheel, the short pitman, the bell-crank lever, the doubly-pivoted link, connected at one end with the bell-crank lever by a ball-and-socket joint, and the vibrating cutter-lever, similarly connected to the other end of said link, these members being constructed and operating substantially as hereinbefore set forth.

7. The combination, with the main frame, of the detachable casing, having the internal projecting plate to keep out clogging matter, as set forth.

8. The combination of the angular main frame and the casing detachably connected therewith, and provided with flanges and ribs to slide upon the vertical portion of the frame, as set forth.

206,651. CLOTH-FOLDING MACHINES. Albin Warth, Stapleton, N. Y. Filed Apr. 3, 1878.

Brief.—The cloth is passed through feed-rollers to a series of folding-sticks, which are fed from the chutes c to raising-disks b, having circumferential projections d. The folding-sticks are successively elevated by the revolution of the disks and carried into the receiving-grooves e. When the grooves are filled, or the piece of cloth folded, the receiver is turned down, as shown in Fig. 2, and the sticks and cloth removed.



Claim.—1. The combination, in a machine for folding textile and other materials, of chutes which contain a series of folding-sticks, a mechanism for raising the folding-sticks, a receiver provided with guide-grooves e for receiving, and with latches e for retaining, the folding-sticks, and feed-rollers for presenting the material to be folded to the folding-sticks, all combined and adapted to operate substantially as and for the purpose shown and described.

2. The combination, in a machine for folding textile and other materials, of chutes which contain a series of folding-sticks, a mechanism for raising the folding-sticks, a receiver provided with guide-grooves to receive, and with latches to retain, the folding-sticks, a friction-slide fitted into said guide-grooves, and feed-rollers for presenting the material to be folded to the folding-sticks, all combined and adapted to operate substantially as set forth.

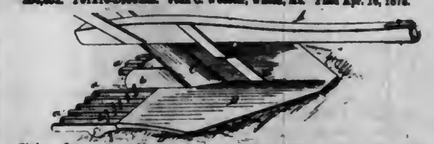
3. The combination, in a machine for folding textile and other materials, of chutes which contain a series of folding-sticks, a mechanism for raising the folding-sticks, a receiver provided with guide-grooves for receiving the folding-sticks, feed-rollers for carrying the material to be folded to the folding mechanism, and a spring-supported apron for presenting the material to be folded to the folding-sticks, all combined and adapted to operate substantially as shown and described.

4. The combination, in a machine for folding textile and other materials, of chutes which contain a series of folding-sticks, a mechanism for raising the folding-sticks, a receiver provided with guide-grooves for receiving the folding-sticks, feed-rollers for presenting the material to be folded to the folding-sticks, and a guide-bar with adjustable stops for keeping the material to be folded in the proper relation to the folding mechanism, all combined and adapted to operate substantially as set forth.

5. The combination, in a machine for folding textile and other materials, of chutes which contain a series of folding-sticks, mechanism for raising the folding-sticks, a receiver adapted to receive the folding-sticks, feed-rollers for presenting the material to be folded to the folding-sticks, and interchangeable gears h i k, for changing the relative speed of the feed-rollers and the stick-raising mechanism, substantially as shown and described.

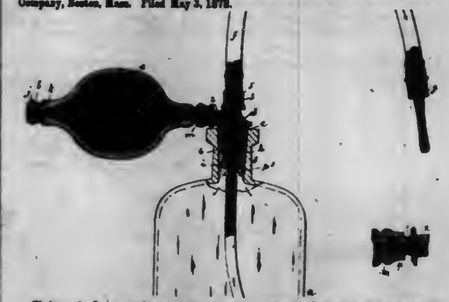
6. The combination, in a machine for folding textile and other materials, of chutes which contain a series of folding-sticks, mechanism for raising the folding-sticks, feed-rollers for presenting the material to be folded to the folding-sticks, and a receiver adapted to receive the folding-sticks, and to be turned down from its working position to a position convenient for the removal of the package, substantially as set forth.

206,652. POTATO-DIGGERS. John C. Webster, Wilton, Me. Filed Apr. 16, 1878.



Claim.—In a potato-digger, the combination, with the beam A, of the plowshare or digger D, the cutter-shaped standard C, constructed with a hollow rearwardly-projecting extension or case, b, all formed in one piece, substantially as and for the purpose specified.

206,653. SYRINGE APPARATUS. Chas. Wood, Charlestown, assignor to Davidson Rubber Company, Boston, Mass. Filed May 3, 1878.

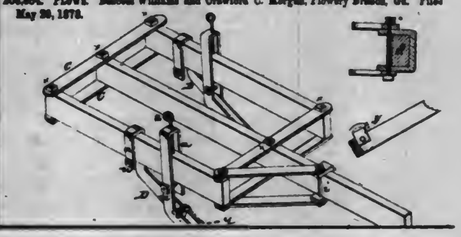


Claim.—1. In a syringe apparatus, the stopper d, provided with projections 2 3 6, and with a liquid-receiving tube having a connected tube, p, combined with an elastic bulb, a check-valve, and a flexible liquid-discharging pipe, f, all substantially as and for the purpose described.

2. As an improved article of manufacture, a syringe apparatus consisting of the following elements, viz: a bottle, an elastic bulb provided with an air-inlet, a check-valve to prevent the passage of air from the bottle back into the bulb, and a stopper provided with a connected flexible discharging-pipe, and also with a liquid-receiving tube, and with an opening communicating with the interior of the bottle, and of means to close the said opening while the liquid passes from the discharging-pipe, and to uncover the said opening to permit the escape of air compressed above the surface of the liquid in the bottle to check the flow of liquid therefrom, substantially as described.

3. The combination of the bulb and its portion 4 with the screw-threaded portion 2 of the stopper, provided with openings 7, to operate substantially as described.

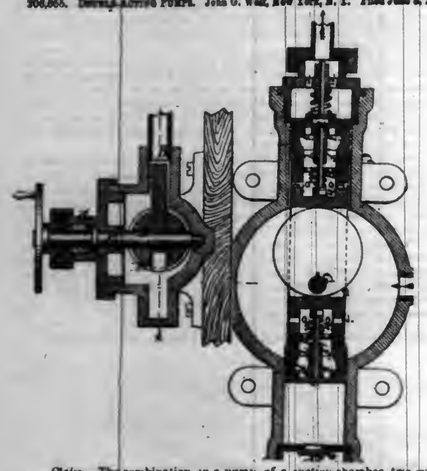
206,654. PLOWS. Beacon Williams and Crawford C. Morgan, Flowery Branch, Ga. Filed May 20, 1878.



Claim.—1. The foot D, made of bar iron, with its ends bent to straddle the beam, as seen at *a a*, and having bolts *a a* for holding them in position, and provided with a set-screw, *c*, for securing and allowing of their adjustment on the beam, substantially as and for the purposes set forth.

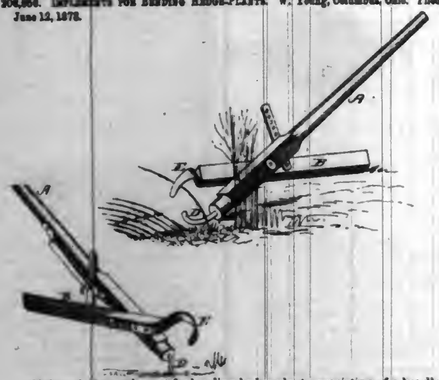
2. The revolving eccentrically-pivoted plate *g*, in combination with a plow-foot and shoe, substantially as and for the purposes herein set forth.

206,865. DOUBLE-ACTING PUMPS. John O. Wolf, New York, N. Y. Filed June 5, 1878.



Claim.—The combination, in a pump, of a suction-chamber, two cylinders radiating from said suction-chamber in opposite directions, two pistons, one for each cylinder, a rod or bar extending through the suction-chamber and forming a rigid connection between the two pistons, suitable chambers formed in the ends of this bar and communicating with the suction-chamber and with the interior of the pistons, a shaft which extends into the suction-chamber, an eccentric mounted on this shaft and acting directly on the bar connecting the two pistons, suitable valves applied to the pistons and cylinders, and discharge pipes or channels extending from the outer ends of said cylinders, all constructed and adapted to operate substantially as shown and described.

206,866. IMPLEMENTS FOR BENDING HEDGE-PLANTS. W. Young, Columbus, Ohio. Filed June 12, 1878.



Claim.—1. An implement for bending hedge-plants, consisting of a handle, A, and short bar B, pivoted together so as to cross each other, and provided, respectively, with hooks D E in their short ends, said hooks being bent toward each other, substantially as described, for the purpose specified.

2. The handle A and short bar B, adapted for adjustment to change the position of the hooks with respect to each other, substantially as described, for the purpose specified.

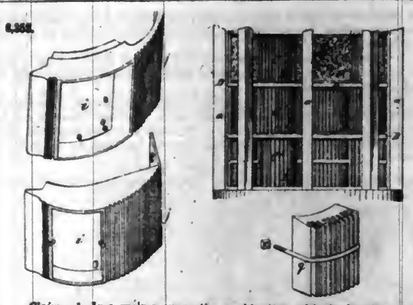
3. An implement for bending hedge-plants, consisting of two crossed pieces pivoted together and provided with hooks to grasp the plant between them, one above the other, such hooks being made adjustable to and from each other by suitable means, substantially as described.

4. An implement for bending hedge-plants, consisting of a long handle or lever provided with hooks or bearings to grasp the plants or canes, so that when turned sidewise it will bend down the plants or canes into the proper position for tying, substantially as described.

REISSUES.

8,362. GRAIN-SCOURERS. Simeon Horton, Alpheus Babcock, (per Norman Babcock Committee,) Norman Babcock, and Carlos Ewell, Silver Creek, N. Y., assignees of Roby L. Horton and Byron C. Horton, administrators of Chase B. Horton, deceased. Patent No. 144,980, dated Nov. 25, 1873. Filed Apr. 19, 1878.

8,363.



Claim.—1. In a grain-scourer, the combination, with the brush J, arranged in a protecting-socket, *i*, of an inclined or curved plate, arranged in front of the brush and adapted to lift the grain upon the face of the brush, and an air-passage, *g*, arranged in front of such inclined or curved plate, substantially as set forth.

2. The tangential rubber for grain-scouring cylinders, constructed with a front end, *j*, adapted to force the grain into contact with the case, and with a socket, *i*, to hold a brush, J, or its equivalent, and to protect the edges thereof, substantially as herein described.

3. A tangential rubber for grain-scouring cylinders, having metallic rasping-surfaces *f n* at its respective ends, and an intermediate changeable brushing or rubbing surface, J, formed and operating substantially as herein set forth.

4. A tangential rubber for grain-scouring cylinders, having a wooden rubbing-block, O, held in a socket, *i*, and constructed with an effective surface formed by saw-kerfs, substantially as specified.

5. The combination, with the perforated scouring shell A, provided with horizontal rings D, forming scouring-chambers C, of the scouring-brushes J, or their equivalents, arranged within the chambers C, or projecting into the same, and inclined or curved plates *j*, for forcing the material between the faces of the brushes and the perforated scouring-cylinder, substantially as shown and described.

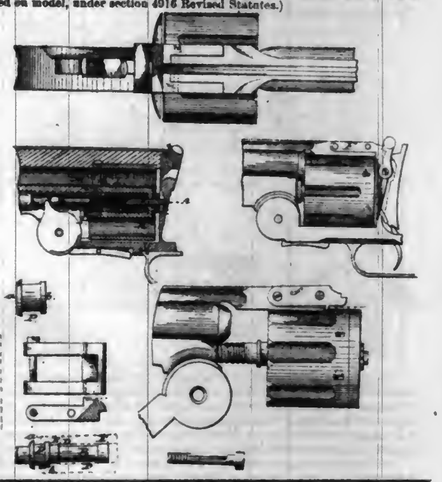
8,363. KNIT FABRICS FOR STOCKINGS, &c. Charles E. Wilkeman, Pontiac, Mich., assignee of one-half interest to F. A. Hitchcock. Patent No. 174,330, dated Feb. 29, 1876. Filed Mar. 27, 1878.



Claim.—As a new article of manufacture, a fulled knit woolen fabric provided with a lining of woolen loops, substantially as herein set forth.

8,364. REVOLVING FIRE-ARMS. George W. Schofield, U. S. Army. Patent No. 193,820, dated July 31, 1877. Filed July 6, 1878.

Brief.—The cylinder-stop is hinged to the rear of the barrel, and can be thrown up to remove the cylinder from the pistol. (New claims in reissue based on model, under section 4916 Revised Statutes.)



Claim.—1. The ejector-stud A, having squared shoulders, so that it can be removed by means of a wrench, substantially as set forth.

2. A movable gas-collar having shoulders at each end, substantially as described and shown.

3. The movable gas-collar P, provided with the shoulders *a* and *b*, substantially as described and shown.

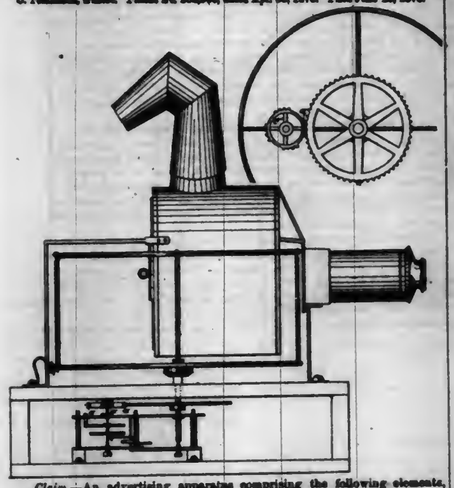
4. A recessed base-pin, in combination with a movable gas-collar and a recess, M, in the cylinder, substantially as set forth.

5. In revolving fire-arms, a pivoted or hinged cylinder-stay and locking-shoulder, substantially as herein set forth.

6. In revolving fire-arms, a pivoted or hinged cylinder-stay, forming the rear end of the barrel, substantially as described.

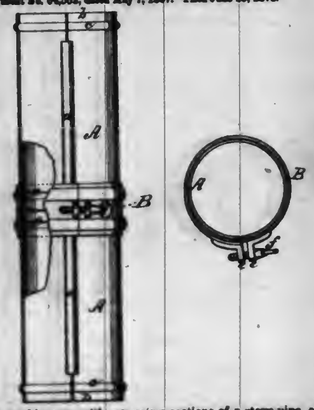
7. In revolving fire-arms, a pivoted or hinged cylinder-stay and cylinder-stay-fastening device, substantially as shown and described.

8,365. ADVERTISING APPARATUS. Edson T. Scott, Waterville, Conn., assignor to Frederick G. Tomlinson, trustee. Patent No. 202,966, dated Apr. 30, 1878. Filed June 13, 1878.



Claim.—An advertising apparatus comprising the following elements, viz: a circular frame arranged to move in a horizontal plane, a magic lantern having its hood or body arranged within the circumference of said circular frame, a lens, and mechanism for giving an intermittent rotary movement to the circular frame, all substantially as and for the purpose herein set forth.

8,366. JOINTS FOR STOVE-PIPES. Daniel L. Millikin, Boston, Mass., and Hannah M. Pillsbury, Claremont, N. H., executrix of Oliver M. Pillsbury, deceased, assignors to E. M. Hazelton, Chicago, Ill. Patent No. 94,563, dated May 7, 1877. Filed June 15, 1878.



Claim.—1. The combination, with adjoining sections of a stove-pipe, of a band clamped around the joint of said sections, and having the end lugs, *a a*, and adjusting-screw *f*, adapted to draw said lugs toward each other, substantially as specified.

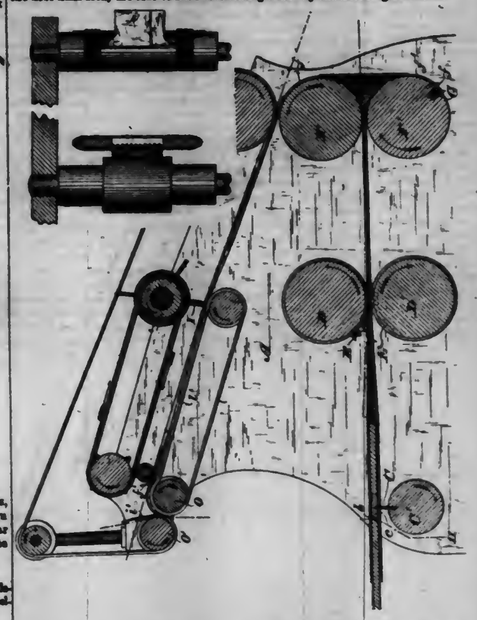
2. The combination, with the adjoining sections of a stove-pipe, of a clamp-band and draw-fastening, which tightens the band around the sections, and secures it at one and the same operation, substantially as specified.

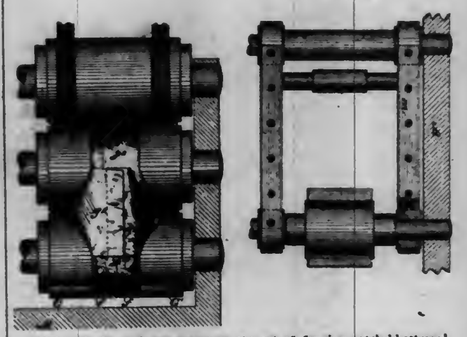
3. The adjustable band B, provided with circumferential grooves *b*, fitting over the corresponding beads *c*, near the ends of the sections A of a pipe, as herein shown, and substantially as described.

4. The combination, with the sections A of a pipe, having each a bead, *c*, near its end, of a band, B, having corresponding groove *b*, adapted to receive said beads, and clamped around the joint of the said sections, substantially as set forth.

8,367. PAPER-BAG MACHINES. Charles B. Stilwell, Worcester, Mass., assignor, by mesne assignments, to Alfred Adams, Cleveland, Ohio, and Byron B. Taggart, Watertown, N. Y. Patent No. 205,321, dated July 2, 1878. Filed Feb. 5, 1878.

Brief.—Cuts, folds, pastes, and delivers completed bag by continuous rotary mechanism. A paper tube, as it passes into the machine, is cut transversely upon the under side opposite the seam by the cutter G; then longitudinally upon the upper side at each side of the seam by cutters E; then transversely through both plies by cutters G, these latter cuts terminating inwardly at the longitudinal cuts above mentioned, thus leaving the seam portion *f* of the tube for subsequent feeding and folding by the strain upon the paper itself. The tube has its forward end opened by straining its upper and lower plies in opposite directions on two diverging surfaces, which also forms the angular folds of the bottom. The lower ply is then released, the upper inward seam-ply draws the tube between a pasting and pressing roll, and then beneath a folder traveling faster in the same direction, which folder M makes the first final fold, the last of such folds being made by the finishing-rolls O O.





Claim.—1. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of making a preliminary central transverse cut through the side of the tubular blank opposite that which contains the seam, whereby the integrity of the seam is preserved, for the purposes specified.

2. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of partially severing a continuous blank, or series of unsevered blanks, by making longitudinal cuts through both plies on each side of the central longitudinal seam of the blank, whereby the seam remains unsevered until after the formation of the primary bottom fold.

3. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of subjecting a tubular blank in its passage through the machine, prior to the formation of its primary bottom fold, to the action of a series of cutters, the first of which perforates the side of the tube opposite the seam transversely and centrally to a width which partially determines the shape of the primary folds, the second of which cutters forms two parallel longitudinal slits through both sides or plies of the

tube, with their ends intersecting the cut first formed, the third of which cutters makes two transverse cuts extending from one end of the slits last formed to the edge of the blank in the line of the first transverse cut, thus leaving the blank connected to the web by a central slip of width equal to the distance between the two parallel longitudinal slits, whereby the strip aids in the formation of the primary fold and secures a continuous feed of a series partially severed blanks by the strain upon the paper itself.

4. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of determining the form of bottom of the bag by the conjoint operation of a series of knives operating successively upon the tubular blank, and of two moving diverging surfaces, between which the blank is continuously fed, and to which surfaces the contiguous sides of the blank are automatically caused temporarily to conform as they move over said surfaces, by means substantially such as hereinbefore set forth.

5. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of feeding a tubular blank through the machine in a continuous strip or series of unsevered blanks, whereby the blank being folded is connected with the one in advance of it until after the opening fold is made.

6. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of feeding a continuous tubular blank or series of unsevered tubular blanks through the machine in a continuous strip or web, forming the bottom fold thereon, and applying paste to such fold so formed prior to severing its connecting strip, whereby the strain upon the paper is utilized in the formation and pasting of the primary fold.

7. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of feeding a tubular blank or series of connected blanks continuously through the machine, with the central seam next the working surfaces or cylinders upon which the primary folds are formed by the strain upon the paper itself.

8. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of opening the end of a tubular blank and forming the first fold thereof by means of the conjoint action of two adjacent diverging moving surfaces, substantially such as described, between which the blank is continuously fed, and to which surfaces the contiguous sides of the blank are caused temporarily to conform as they move over said surfaces by means substantially such as described, whereby the fold is formed while the blank is in motion simply by the strain upon the paper itself.

9. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of continuously feeding a tubular blank between adjacent diverging moving surfaces, one of which surfaces is provided with pins which penetrate the tube before or during its passage between the diverging surfaces, retain their hold upon one side thereof until the primary folds are formed, and then release it by the continued diverging movement of the surfaces and the strain upon the paper itself, or by the withdrawal of the pins, as the case may be.

10. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of pressing down the first fold of the tubular blank by means of the conjoint operation of two adjacent diverging surfaces, between which the blank is continuously fed, to which surfaces the contiguous sides of the blank are caused temporarily to conform as they move over said surfaces by means substantially such as described, and upon which surfaces the fold is formed, while the blank is in motion, by the strain upon the paper itself, and a compressor, substantially such as described, whereby the fold is pressed flat upon the blank immediately after being formed.

11. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of forming the first of the final folds of the blank by means of the conjoint operation of bands, substantially such as described, which hold the edges of the blank outside of the portions to be folded while passing continuously through the machine, and a following folder, substantially such as described, which travels continuously faster than the blank on an independent carrier, and in the same direction therewith, while forming the fold.

12. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method hereinbefore set forth of forming the finishing fold of the blank by means of the conjoint operation of bands, substantially such as described, which hold the edges of the blank outside of the portions to be folded while passing continuously through the machine, and finishing-rolls or compressing surfaces, substantially such as described, between which the blank is guided by the bands at an angle with the line of motion of the blank, and compressed while being held thereby.

13. The hereinbefore-described novel art of forming satchel-bottomed paper bags by automatic machinery, which consists in subjecting a tubular blank continuously and successively to the operations of mechanism substantially such as hereinbefore set forth, which partially cuts the blank, opens, pastes, cuts, folds, and compresses it, whereby the bags are completely formed from a tubular blank while passing continuously through the machine.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 30th DAY OF JULY, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adams, A., *et al.* (See Stilwell, C. B., assignor.)						
Adgate, J. J., New York, N. Y. Wagon-jack	206,516	July 30	1213	348	14	178
Adler, H., Pittsburg, Pa. Ruler	206,410	July 30	1101	314	14	164
Ager, G., assignor to S. Thomas Clock Company, Thomaston, Conn. Clock-face	206,411	July 30	1101	315	14	164
Ahrend, H., assignor to Romer & Co., Newark, N. J. Padlock	206,517	July 30	1214	349	14	178
Alexander, J. A., Sulphur Springs, Tex. Churn-motor	206,520	July 30	1216	360	14	178
Allen, G. A., West Bay City, Mich. Check-hook for harness	206,518	July 30	1215	349	14	178
Allen, G. M. (See Parks and Allen.)						
Allen, W., Washington, D. C. Shirt	206,519	July 30	1215	349, 350	14	178
American Paper Barrel Company. (See Laraway, G. W., assignor.)						
Asbury, D., Charlotte, N. C. Drying apparatus	206,521	July 30	1217	350	14	178
Atkinson, T. D. (See Howard and Atkinson.)						
Aulabaugh, Crume & Co. (See Aulabaugh, P. M., assignor.)						
Aulabaugh, P. M., assignor to Aulabaugh, Crume & Co., Dayton, Ohio. Paper dish	206,412	July 30	1102	315	14	164
Aultman & Co., C. (See Miller, C. M., assignor.)						
Avery, J. G. (See Tucker, W., assignor.)						
Babcock, A., *et al.* (See Horton, C. B., assignor.) (Reissue.)						
Babcock, N., *et al.* (See Horton, C. B., assignor.) (Reissue.)						
Baker, C. V. and J. W., Middleborne, Ohio. Churn	206,413	July 30	1103	315	14	164
Baker, J. W. (See Baker, C. V. and J. W.)						
Baldwin, R. G., Oskaloosa, Iowa. Washing-machine	206,522	July 30	1218	350	14	178
Barney, E. H., Springfield, Mass. Skate	206,524	July 30	1220	351	14	179
Barthel, A. F., Detroit, Mich. Bottle-stopper fastener	206,525	July 30	1221	351	14	179
Bartine, J. W. (See Bartine, S. B., assignor.)						
Bartine, S. B., Tottenville, assignor of one-half interest to J. W. Bartine, New York, N. Y. Boot-jack	206,523	July 30	1219	351	14	179
Beach, H., Prairie du Chien, Wis. Curry-comb	206,526	July 30	1222	351	14	179
Beach, W. W., assignor to R. Meyer, New York, N. Y. Combined blotter and moistener	206,414	July 30	1103	315	14	164
Beatty & Co., W. A. (See Rupert, J. A., assignor.)						
Beatty, R. J., and L. Zimmerman, Steubenville, Ohio. Apparatus for receiving glass casts from molds	206,386	July 30	1073	307	14	161
Becker, F. (See Becker, V., assignor.)						
Becker, V., assignor of one-half interest to F. Becker, Cincinnati, Ohio. Lever-press	206,527	July 30	1222	352	14	179
Beckley, D., *et al.* (See Williamson, D., assignor.)						
Benton, C. W. (See Edmonds, J. W., assignor.)						
Bering, J. E., *et al.* (See Brown, W. D., assignor.)						
Bliss, J. (See Whitcomb and Bliss.)						
Boettner, C. W., Pern, Ind. Wagon-brake lever	206,415	July 30	1105	316	14	164
Bowen, F. C., Brooklyn, N. Y. Artificial trees and flowers	206,387	July 30	1074	307	14	161
Bowman, A., San Francisco, Cal. Railway-track	206,416	July 30	1106	316	14	165
Bramble, W. H., Decatur, Ill. Padlock	206,528	July 30	1223	352	14	179
Bradley & Hubbard Manufacturing Company. (See Evarts, J. A., assignor.)						
Branning, J., Blooming Prairie, Minn. Sheaf-dropper for grain-binders	206,530	July 30	1225	352	14	179
Brannon, J. C., assignor of one-half interest to W. L. Crippin and P. W. Hockett, Independence, Kan. Sash-fastener	206,529	July 30	1224	352	14	179
Briggs, L. C., Boston, Mass. Watch-regulator	206,533	July 30	1227	353	14	180
Britt, S., Brooklyn, N. Y. Post-socket	206,531	July 30	1226	353	14	180
Brock, W. E., New York, assignor of one-half interest to J. Thompson, Brooklyn, N. Y. Manufacture of compound lumber	206,534	July 30	1228	353	14	180
Brooks, J. M. (See Brooks, R. M. and J. M.)						
Brooks, R. M. and J. M., Jenkinsville, Ga. Sirup evaporator and skimmer	206,532	July 30	1226	353	14	180
Brown, F. B., Boston, Mass. Clasp	206,388	July 30	1076	307	14	161
Brown, F. R., Denver, Colo. Ore-separator	206,417	July 30	1107	316	14	165
Brown, F. R., Denver, Colo. Ore-jigger	206,418	July 30	1108	316, 317	14	165
Brown, W. D., Indianapolis, Ind., assignor to W. B. Chambers, J. E. Bering, and W. J. Quinlan, Decatur, Ill. Instrument for ringing swine	206,419	July 30	1110	317	14	165
Brownell, W. H., Brooklyn, N. Y. Apparatus for demonstrating military tactics	206,420	July 30	1110	317	14	165
Brownson, W. H., St. Paul, Minn. Horse-collar	206,535	July 30	1230	354	14	180
Caffrey, C. S. (See Paul, H. B., assignor.)						
Carson, J. G., *et al.* (See Travis, T. W., assignor.)						
Carter, C., Philadelphia, Pa. Mold for making medicinal compressed wafers, pills, lozenges, &c	206,536	July 30	1230	354	14	180
Cartier, E., Nassandres, France. Bag-holder	206,537	July 30	1232	354	14	180
Chambers, W. B., *et al.* (See Brown, W. D., assignor.)						
Chaplin, O. R., Boston, Mass. Metal-planing machine	206,424	July 30	1114	318, 319	14	166
Chapman, J. (See Parmelee, D. D., assignor.)						
Clark, G. R., and F. Lothrop, Dubuque, Iowa. Iron fence	206,538	July 30	1233	354	14	180

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Clegg, T., Lawrence, Mass. Drying apparatus	206,389	July 30	1076	307	14	161
Chett, Brother & Co. (See Greenidge, R., assignor.)						
Coe, C. J., assignor to himself and J. Pfister, Lowville, N. Y. Jail-bar	206,390	July 30	1078	308	14	161
Coleman, A., Lexington, Ohio. Drying apparatus for fruits, &c	206,421	July 30	1111	318	14	165
Collier, W. B., San Diego, Cal. Camp-stove	206,422	July 30	1113	318	14	165
Combs, A., Philadelphia, Pa. Metallic top for burner-globes	206,539	July 30	1235	355	14	180
Cook, G. W. D., *et al.* (See Rogers and Tuttle, assignors.)						
Cooley, O., and M. M. Oliver, Brockport, and S. E. Sherwood, Conesus, assignor to Johnston Harvester Company, Brockport, N. Y. Harvester	206,425	July 30	1116	320	14	166
Cornell, S. W., Pleasantville, N. Y. Portable screen	206,423	July 30	1114	318	14	166
Crippin, W. L., *et al.* (See Brannon, J. C., assignor.)						
Crosby, R., Boston, Mass. Attaching saw-handles	206,540	July 30	1234	355	14	181
Crump, S., Mont Clair, N. J. Printer's chase	206,541	July 30	1235	355	14	181
Curtis, R. K., Wabash, Ind. Grocer's bin	206,542	July 30	1236	355	14	181
Cziner, M., Stapleton, assignor to F. A. Kelling, trustee, and G. J. Greenfield, Richmond county, N. Y. Digester	206,391	July 30	1078	308	14	161
Dallman, W. M., Syracuse, N. Y. Bail and ear	206,543	July 30	1236	356	14	181
Davidson Rubber Company. (See Weed, C., assignor.)						
Davis, W. W., and F. P. Wilson, Minneapolis, Minn. Potato-separator	206,544	July 30	1237	356	14	181
Dean, A. B., Louisville, Ky. Concrete pavement	206,426	July 30	1118	320	14	166
Dennis, G. B. (See Dow, E. S., assignor.)						
Dithridge, E. D., Allegheny, Pa. Apparatus for frosting glassware	206,392	July 30	1080	308	14	161
Doane, W. H., assignor to J. A. Fay & Co., Cincinnati, Ohio. Wood-planing machine	206,545	July 30	1238	356	14	181
Dow, E. S., assignor to G. B. Dennis, Dayton, Ohio. Electric stamp-canceler	206,546	July 30	1239	356	14	181
Edgecomb, E. F., Mechanics Falls, Me. Channeling-tool	206,547	July 30	1240	357	14	181
Edmonds, J. W., assignor to himself and C. W. Benton, Jersey City, N. J. Packing for steam-engines	206,548	July 30	1241	357	14	182
Ellinger, W., Baltimore, Md. Ball-joint	206,393	July 30	1081	309	14	162
Elliott, A., Warrensburg, Mo. Spark-arrester	206,549	July 30	1242	357	14	182
Estabrook, J. M. (See Wires, E. L., assignor.)						
Evarts, J. A., Meriden, assignor to Bradley & Hubbard Manufacturing Company, West Meriden, Conn. Extension lamp-fixture	206,550	July 30	1243	357	14	182
Everdell, W. K., Mont Clair, N. J. Printer's chase	206,427	July 30	1119	320	14	166
Ewell, C., *et al.* (See Horton, C. B., assignor.) (Reissue.)						
Exall, H., Richmond, Va. Endless-chain propeller	206,551	July 30	1244	358	14	182
Fairbanks, E., St. Johnsbury, Vt. Platform-scales	206,428	July 30	1120	321	14	166
Fay & Co., J. A. (See Doane, W. H., assignor.)						
Fay & Co., J. A. (See Huff, C. F. H., assignor.)						
Field, J. S., Brooklyn, N. Y. Sheet-metal can	206,429	July 30	1121	321	14	166
Flatau, L. S., Pittsburg, Tex. Hame-fastening	206,430	July 30	1122	321	14	167
Flumerfelt, D. A., assignor of two-thirds interest to W. F. and J. Hutchison, Delaware Station, N. J. Drier for grain, &c	206,431	July 30	1123	321	14	167
Follett, E. P., Rochester, N. Y. Lamp-burner	206,432	July 30	1123	322	14	167
Forbes, J. W., *et al.* (See McAulis, J. D., assignor.)						
Foster, C. W., New Haven, Conn. Stocking-supporter	206,552	July 30	1246	359	14	182
Foster, W. (See Jamieson and Foster.)						
Fowler, J. W., and D. F. Lewis, Brooklyn, N. Y. Passenger-register	206,553	July 30	1247	359	14	182
Froese, H., Buffalo, N. Y. Press	206,554	July 30	1251	360	14	183
Gardner, F. A., Buffalo, N. Y. Steam-engine	206,555	July 30	1252	360	14	183
Gardner, W. H., *et al.* (See Gingras, T., assignor.)						
Giles, J., Louisville, Ky. Dumping-wagon	206,433	July 30	1124	322	14	167
Gingras, T., assignor of three-fourths interest to W. H. Gardner, G. P. Putnam, and B. Taber, Buffalo, N. Y. Leather belting	206,556	July 30	1253	360	14	183
Glenn, J., Parnassus, Pa. Vehicle-spring	206,557	July 30	1254	361	14	183
Goodesham, W. (See Haggas, J., assignor.)						
Goodman, E. F., Lockport, N. Y. Hammer	206,394	July 30	1082	309	14	162
Gould, W. B. (See Stearns, C. E., assignor.)						
Graves, L. S., Rochester, N. Y. Ratcheted guide for elevators	206,434	July 30	1125	322	14	167
Greene, J. H., Philadelphia, Pa. Roofing-paper	206,436	July 30	1127	323	14	167
Greenfield, G. J., *et al.* (See Cziner, M., assignor.)						
Greenidge, R., New York, assignor to G. B. Cluett, Brother & Co., Troy, N. Y. Collar	206,437	July 30	1128	323	14	167
Gregg, A., Forest City, Cal. Automatic water-lifter	206,435	July 30	1126	322	14	167
Guest, E. (See Hemelright, H., assignor.)						
Guild, W. H., Jr., Brooklyn, N. Y. Valve-action of duplex engines and pumps	206,558	July 30	1255	361	14	183
Guyer, C., Tyrone, Pa. Churn	206,559	July 30	1257	362	14	184
Guyer, R. H., La Fayette, Ind. Vehicle-spring	206,438	July 30	1128	323	14	167
Haggas, J., Uxbridge, Ontario, assignor of one-half interest to W. Goodesham, Toronto, Canada. Feeding locomotive-tenders	206,560	July 30	1258	362	14	184
Hall, W. A., St. Louis, Mo. Type-writing machine	206,439	July 30	1129	323 / 324	14	167
Hamilton, S. M., Fort Smith, Ark. Harness-buckle	206,561	July 30	1259	362	14	184
Hamlin, C. A., Greenbush, assignor to Ransom Stove Works, Albany, N. Y. Automatic ash-guard for stoves	206,440	July 30	1132	325	14	168
Hansell, J., assignor to himself, T. H. Kemble, and J. P. McClintic, Philadelphia, Pa. Car-starter	206,562	July 30	1259	362	14	184
Harbine, J. T., Xenia, Ohio. Mat for oil-presses	206,563	July 30	1260	363	14	184
Harshman, D. O., Shannon, Ill. Grain-separator	206,446	July 30	1137	326	14	169
Harris, C. B., New York, N. Y. Car-axle box	206,564	July 30	1261	363	14	184
Harris, C. B., New York, N. Y. Fare-register	206,565	July 30	1262	363 / 364	14	184
Harris, H., Knob Noster, Mo. Nut-lock	206,441	July 30	1133	325	14	168
Harris, J. W., Waynesborough, assignor of one-half interest to J. W. Weade, Augusta county, Va. Vehicle-wheel	206,442	July 30	1134	325	14	168
Harris, N. C., Pomfret, Vt. Churn	206,443	July 30	1134	325	14	168
Harris, S. E., Whitesburg, Tenn. Combined seed-planter and cultivator	206,444	July 30	1135	326	14	168
Hart, F. N., assignor of one-half interest to H. S. Hebard, Rochester, N. Y. Grate for open fire-places	206,445	July 30	1136	326	14	169
Harvey, G. A., Chicago, Ill. Corn-harvester	206,395	July 30	1083	309 / 310	14	162
Haskins, D. G., Cambridge, Mass. Life-boat	206,447	July 30	1138	326	14	169
Hazelton, E. H. (See Milliken and Pillsbury, assignors.) (Reissue.)						
Hebard, H. S. (See Hart, F. N., assignor.)						
Helmecke, A., Round Top, Tex. Pump	206,448	July 30	1140	327	14	169
Hemelright, H., assignor of one-half interest to E. Guest, Pottstown, Pa. Nut-lock	206,566	July 30	1268	364	14	185
Henderson, W. J., assignor to himself and W. H. McKey, Valdosta, Ga. Machine for operating rice-beaters, churns, &c	206,449	July 30	1141	327	14	165
Hesthal, A., San Francisco, Cal. Glove	206,567	July 30	1268	364	14	189
Heywood, Brothers & Co., *et al.* (See Nichols, J., assignor.)						

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Higgins, C. J., Hallowell, Me. Convertible chair	206,450	July 30	1142	327	14	169
Higgins, C. P., East Line, N. Y. Potato-digger	206,568	July 30	1269	365	14	185
Hitchcock, P. A. (See Wakeman, C. E., assignor.) (Reissue.)						
Hockett, P. W., *et al.* (See Brannon, J. C., assignor.)						
Holland, J. M., Wilmington, Del. Hand-pump	206,451	July 30	1143	328	14	169
Horton, B. C., administrator. (See Horton, C. B.) (Reissue.)						
Horton, C. B., deceased, R. L., and B. C. Horton, administrators and assignors to S. Howes, A. and N. Babcock, and C. Ewell, Silver Creek, N. Y. Grain-scourer. (Reissue)	8,352	July 30	1361	391	14	196
Horton, R. L., administrator. (See Horton, C. B.) (Reissue.)						
Honsum, C. P., Decatur, Ill. Tag for marking animals	206,569	July 30	1270	365	14	185
Howard, D. L., and T. D. Atkinson, Nottawa, Mich. Ore-separator	206,452	July 30	1144	328	14	170
Howarth, W., Newark, N. J. Jet-heater	206,453	July 30	1146	328	14	170
Howes, S., *et al.* (See Horton, C. B., assignor.) (Reissue.)						
Huff, C. F. H., Covington, Ky., assignor to J. A. Fay & Co., Cincinnati, Ohio. Molding and carving machine	206,570	July 30	1271	365	14	185
Humphrey, W., Jackson, Mich. Wash-stand for factories, &c	206,454	July 30	1147	328	14	170
Hutchison, J., *et al.* (See Flumerfelt, D. A., assignor.)						
Hutchison, W. F., *et al.* (See Flumerfelt, D. A., assignor.)						
Hutton, J., Denver, Colo. Felly-joint	206,455	July 30	1148	330	14	170
Hyatt, T., New York, N. Y. Covering, lighting, and ventilating areas, vaults, &c	206,571	July 30	1272	365 / 366	14	185
Imbaenser, F., Brooklyn, N. Y. Watchman's time-indicator	206,572	July 30	1273	366	14	185
Irwin, J., Allegheny, Pa. Street-lamp	206,573	July 30	1274	366	14	186
Jackson, B., Woodland, Cal. Grain thrasher and separator	206,456	July 30	1149	330 / 331	14	170
James, W. H., Havana, N. Y. Paint	206,574	July 30	1275	.....	14	186
Jamieson, H. A., and W. Foster, Brooklyn, N. Y.; said Jamieson assignor to said Foster. Vertical steam-pump	206,457	July 30	1152	330	14	170
Johnston Harvester Company. (See Cooley, Oliver, and Sherwood, assignors.)						
Johnston, L. F., Pocahontas, Ark. Transplanter	206,576	July 30	1278	367	14	186
Jones, T. M., Kansas City, Mo. Dredging-machine	206,575	July 30	1275	366 / 367	14	186
Jory, H. S., Salem, Oreg. Harrow-hinge	206,458	July 30	1153	330	14	170
Jourdain, A. (See Milné and Jourdain.)						
Keep, J. M., Jersey City, N. J., assignor to G. Selden, Erie, Pa. Cigar-lighter	206,577	July 30	1279	367	14	186
Kelling, F. A., trustee, *et al.* (See Cziner, M., assignor.)						
Kemble, T. H., *et al.* (See Hansell, J., assignor.)						
Kernohan, W. S., *et al.* (See McAulis, J. D., assignor.)						
Kilborn, A. D., Oakland, Cal. Oil-cup	206,579	July 30	1281	368	14	186
Kilburn, T. O., Washington, Minn. Belting-reel	206,459	July 30	1154	331	14	171
Kinder, H. H., West Brownsville, Pa. Washing-machine	206,578	July 30	1280	367	14	186
Kissell, A., Findlay, Ohio. Reciprocating steam-engine	206,460	July 30	1155	331	14	171
Knickmann, H., East New York, N. Y. Tool for removing pintles from hinge-joints	206,580	July 30	1282	368	14	186
Koch, G. (See Koch, W. and G.)						
Koch, W. and G., Monroe, Pa. Oil-tank	206,581	July 30	1282	368	14	186
Kuntze, J., Hamburg, Germany. Car-coupling	206,582	July 30	1283	368	14	187
Kutnow, S., San Francisco, Cal. Sample-card	206,461	July 30	1155	331	14	171
La Brash, A. C. (See Rickard and La Brash.)						
Lander, B., Brooklyn, N. Y. Sash-fastener	206,583	July 30	1284	369	14	187
Lang, M. G. (See Risser and Lang.)						
Laraway, G. W., Hartford, Conn., assignor to American Paper Barrel Company. Manufacture of barrel-heads and other articles from paper-pulp	206,396	July 30	1084	310 / 311	14	162
Lawson, W. C., Brooklyn, N. Y. Pattern-marked fabric for garments	206,584	July 30	1285	369	14	187
Ledig & Son, A. (See Ledig, A., assignor.)						
Ledig, A., assignor to A. Ledig & Son, Philadelphia, Pa. Cuspadore	206,585	July 30	1286	370	14	187
Leland, S. S., Quincy, Mich. Halter	206,586	July 30	1286	370	14	187
Leonard, J. E., Bay City, Mich. Lift-pump	206,587	July 30	1287	370	14	187
Lewis, D. F. (See Fowler and Lewis.)						
Livermore, J. H., Barker, N. Y. Wine and oil box	206,588	July 30	1288	370	14	187
Logan, M., Foxbury, Pa. Car coupling	206,462	July 30	1156	331	14	171
Lonergan, S., Lewiston, Me. Square	206,463	July 30	1157	332	14	171
Lothrop, F. (See Clark and Lothrop.)						
Loughridge, W., Baltimore, Md. Car-brake	206,464	July 30	1157	332	14	171
Lunkenheimer, F., Cincinnati, Ohio. Safety-valve	206,589	July 30	1289	371	14	187
Lynn, W. H., Freeport, Ill. Car-starter	206,465	July 30	1158	332	14	171
Lynn, W. H., and C. C. Snyder, Freeport, Ill. Car-starter	206,590	July 30	1290	371	14	187
Mabie, G. W., Brooklyn, N. Y. Combined watch-key and pencil-case	206,591	July 30	1292	371	14	188
Macarthy, C. E., Forsythe, Ga. Horse-power	206,592	July 30	1292	372	14	188
Mackay, F. N. (See Siddeley and Mackay.)						
Mallory, A., Mystic Bridge, Conn. Commode	206,593	July 30	1293	372	14	188
Maltby, P., Cleveland, Ohio. Revolving oven	206,466	July 30	1159	332 / 333	14	171
Manley, W., Rochester, N. Y. Seam-rubbing apparatus for boots and shoes	206,467	July 30	1161	333	14	171
Martin, J. H., Columbus, Ohio. Harness-tree	206,594	July 30	1294	372	14	188
Marx, M., New York, N. Y. Life-preserver	206,397	July 30	1086	311	14	162
Maxson, J. T., Ulysses, Nebr. Hog-cholera compound	206,595	July 30	1296	.....	14	188
McAulis, J. D., Beaver Falls, Pa., assignor of two-thirds interest to W. S. Kernohan, Mineral Ridge, Ohio, and J. W. Forbes, Beaver Falls, Pa. Ratchet-drill	206,468	July 30	1162	333	14	172
McClintic, J. P., *et al.* (See Hansell, J., assignor.)						
McKee, H. S., Pittsburg, Pa. Mold for decorating glassware	206,596	July 30	1296	372	14	188
McKey, W. H. (See Henderson, W. J., assignor.)						
McKinley, B. F., Morning View, Ky. Hot-air engine	206,597	July 30	1297	373	14	188
Mercer, J. S., New York, N. Y. Sponge-holder for lancilage-bottles	206,469	July 30	1163	333	14	172
Meyer, R. (See Beach, W. W., assignor.)						
Mikeal, T., Plainfield, Ind. Combined ladder and trestle	206,470	July 30	1164	334	14	172
Miller, C. M., assignor of one-half interest to C. Aultman & Co., Canton, Ohio. Slide-valve for steam-engines	206,398	July 30	1087	311	14	162
Miller, I. M. (See Miller, J. W. and I. M.)						
Miller, J. W., Newark, and I. M. Miller, Orange, N. J. Button and stud	206,471	July 30	1164	334	14	172
Miller, S. S., Claverack, N. Y. Automatic wagon-brake	206,472	July 30	1165	334	14	172
Milliken, D. L., Boston, Mass., and H. M. Pillsbury, Claremont, N. H., executrix of O. M. Pillsbury, deceased, assignors to E. H. Hazelton, Chicago, Ill. Joint for stove-pipes. (Reissue)	8,356	July 30	1365	392	14	197
Milné, A., and A. Jourdain, Newark, N. J. Watch-stem	206,598	July 30	1299	374	14	188
Monks, J., Gloucester, England. Shaving apparatus	206,473	July 30	1165	334	14	172
Moore, A. W., London, England. Machine for trimming bristles	206,400	July 30	1090	312	14	163
Moore, J. T., Robertsonville, Miss. Horse-power	206,399	July 30	1088	311	14	162
Morel, J. S., Savannah, Ga. Glove electrode	206,474	July 30	1166	335	14	172
Morgan, C. C. (See Williams and Morgan.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Morgan, J., Wheeling, assignor of one-half interest to S. B. Morgan, Ohio county, W. Va. Device for working the rudders of vessels	206,401	July 30	1091	312	14	163
Morgan, S. B. (See Morgan, J., assignor.)						
Morrison, J. T., Fort Concho, Tex. Breech-loading fire-arm	206,475	July 30	1167	335	14	172
Mott Iron Works, J. L. (See Reid, J., assignor.)						
Mullins, W., assignor of two-thirds interest to J. C. Williams and J. N. Sullivan, Flat Creek, Tenn. Vehicle-hub	206,476	July 30	1168	335	14	172
Murphy, W. H., Syracuse, N. Y. Car-axle	206,509	July 30	1300	374	14	188
Neider, F. A., Augusta, Ky. Carriage-window	206,600	July 30	1301	374	14	189
New, T., New York, N. Y. Paving and flooring tile	206,601	July 30	1302	374	14	189
Nichols, J., Baldwinsville, assignor to Heywood Brothers & Co., Gardner, and Thompson, Perley & Waite, Baldwinsville, Mass. Child's chair	206,602	July 30	1303	375	14	189
Oliver, M. M. (See Cooley, Oliver, and Sherwood.)						
Onslow, A., Jersey City, N. J. Car-axle box	206,603	July 30	1304	375	14	189
Paquelin, C. A., Paris, France. Carbureting apparatus	206,402	July 30	1092	312	14	163
Parker, E., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Fastening porcelain and other knobs to their shanks	206,605	July 30	1307	376	14	189
Parks, W., and G. M. Allen, Fort Atkinson, Wis. Hot-air radiator	206,403	July 30	1094	313	14	163
Parmelee, D. D., New York, assignor to J. Chapman, Brooklyn, N. Y. Apparatus for manufacture of carbon bisulphide	206,477	July 30	1169	335, 336	14	173
Parsons, P. M., Melbourne House, Blackheath, Kent county, England. Manufacture of copper alloys containing manganese	206,604	July 30	1305	.....	14	189
Paul, H. B., assignor of one-half interest to C. S. Caffrey, Camden, N. J. Trotting sulky	206,606	July 30	1308	376	14	189
Pauli, A. W., Wheeling, W. Va. Lantern	206,478	July 30	1172	336	14	173
Payne & Sons, B. W. (See Tabor, H., assignor.)						
Peet, J. T., assignor to Redway and Burton, Cincinnati, Ohio. Turn-table for stoves	206,479	July 30	1174	336	14	173
Peterman, J., Mendon, Mich. Window-cornice	206,607	July 30	1309	376	14	189
Pfister, J. (See Coe, C. J., assignor.)						
Phillips, I. H., Pittsburg, Pa. Hatchway	206,608	July 30	1310	376, 377	14	190
Phipps, W. N., Glenwood, Iowa. Grain-tally	206,480	July 30	1175	337	14	173
Pierson, W. A., Philadelphia, Pa. Wagon-jack	206,481	July 30	1176	337	14	173
Pillsbury, H. M., executor. (See Milliken and Pillsbury.) (Reissue.)						
Pillsbury, O. M. (See Milliken and Pillsbury.) (Reissue.)						
Pollock, J. A., *et al.* (See Travis, T. W., assignor.)						
Poole, S., Brooklyn, N. Y. Pickle-fork	206,482	July 30	1177	337	14	173
Porter, J. W., Westport, Conn. Mill-spindle	206,483	July 30	1177	337	14	173
Preston, J. W., Buffalo, N. Y. Corn-husking implement	206,609	July 30	1310	377	14	190
Prosser, J., Ottumwa, Iowa. Extracting metals from their ores	206,610	July 30	1311	.....	14	190
Putnam, G. P., *et al.* (See Gingras, T., assignor.)						
Quinlan, W. J., *et al.* (See Brown, W. D., assignor.)						
Rainey, S., San Francisco, Cal. Fire-hydrant	206,611	July 30	1311	377	14	190
Ransom Stove Works. (See Hamlin, C. A., assignor.)						
Ransome, A., Eukestons, Clapham Common, England. Drag-sawing machine	206,404	July 30	1094	313	14	163
Rawson, G. W., Belleville, Ill. Switch-head chair	206,612	July 30	1312	377	14	190
Redway and Burton. (See Peet, J. T., assignor.)						
Reid, J., Brooklyn, assignor to J. L. Mott Iron Works, New York, N. Y. Bidet water-closet	206,484	July 30	1178	338	14	173
Reilly, R. P., and W. P. Speller, New York, N. Y. Turnstile-register	206,613	July 30	1314	378	14	190
Reiss, H., Jersey City, N. J. Work-support for metal-turning lathes	206,485	July 30	1178	338	14	174
Reitz, B. K. (See Risser and Lang, assignors.)						
Reynolds, H. S., Green Point, N. Y. Coal-hod	206,614	July 30	1315	378	14	190
Rickard, P., and A. C. La Brash, Minneapolis, Minn. Calking-vise	206,615	July 30	1315	378	14	190
Ring, V. M., New Orleans, La. Automatic water cut-off	206,616	July 30	1316	378	14	190
Ripley, D. C., Pittsburg, Pa. Manufacture of glassware	206,617	July 30	1316	379	14	190
Risser, A. F., and M. G. Lang, Joliet, assignors to said Risser and B. K. Reitz, Chicago, Ill. Harness-saddle	206,405	July 30	1096	313	14	163
Rogers, J. L., and J. A. Tuttle, assignors to said Rogers, G. W. D. Cook, and F. S. Steward, Atlanta, Ga. Fruit-drier	206,618	July 30	1317	379	14	191
Romer & Co. (See Ahrend, H., assignor.)						
Rowland, T. F., Green Point, Brooklyn, N. Y. Machine for forming iron vessels	206,486	July 30	1179	338, 339, 340	14	174
Ruhlmann, E., Lockport, N. Y. Machine for manufacturing moth-traps for trees, &c.	206,619	July 30	1318	379	14	191
Rupert, J. A., assignor of one-half interest to W. A. Beatty & Co., Pawtucket, R. I. Button and stud	206,487	July 30	1184	340	14	174
Russell & Erwin Manufacturing Company. (See Parker, E., assignor.)						
Ryan, D. E., New York, N. Y. Waistcoat	206,620	July 30	1319	379	14	191
Ryerson, J. R. (See Ryerson, R. D., assignor.)						
Ryerson, R. D., Clinton, assignor to himself and J. R. Ryerson, Dexter, Me. Stove-leg	206,488	July 30	1185	341	14	174
Sargent, F. G., Graniteville, Mass. Wool-washing machine	206,489	July 30	1186	341	14	174
Selden, G. (See Keep, J. M., assignor.)						
Selvey, W., Springfield, Mass. Water-power closet-ventilator	206,491	July 30	1188	341	14	175
Seybold, F. J., St. Louis, Mo. Bottle-stopper and stopper-fastener	206,492	July 30	1190	342	14	175
Seybold, F. J., St. Louis, Mo. Bottle-stopper and stopper-fastener	206,493	July 30	1191	342	14	175
Schaumburg, F., Cruger, Ill. Harrow	206,490	July 30	1187	341	14	174
Schofield, G. W., U. S. Army. Revolving fire-arm. (Reissue)	8,354	July 30	1363	391	14	196
Schofield, J. S., Macon, Ga. Cane-mill	206,622	July 30	1321	380	14	191
Schurmann, W. R., Dusseldorf, Prussia. Changing speed	206,621	July 30	1320	380	14	191
Scott, N. T., Westville, Conn., assignor to F. C. Toulinson, trustee. Advertising apparatus. (Reissue)	8,355	July 30	1364	392	14	197
Scutt, H. B., Joliet, Ill. Machine for making barbed ropes for wire fences	206,623	July 30	1321	380	14	191
Sherwood, S. E. (See Cooley, Oliver, and Sherwood.)						
Shoemaker, G. J., Albion, Iowa. Fence-post	206,624	July 30	1322	380	14	191
Shultis, R. H., Kingston, N. Y. Grinding-mill for bark	206,494	July 30	1193	342	14	175
Siddeley, J., and F. N. Mackay, Liverpool, England. Process and apparatus for making ice	206,626	July 30	1324	381	14	192
Siddeley, J., and F. N. Mackay, Liverpool, England. Cell for the tanks of ice-machines	206,627	July 30	1325	381	14	192
Sidmore, O., Aurora, Ind. Graining	206,625	July 30	1323	.....	14	191
Simpson, L. B., Lawrence, Kans. Apparatus for destroying vegetation on railroads	206,628	July 30	1325	381	14	192
Smith, A. E., Utica, N. Y. Curd-knife	206,629	July 30	1326	381	14	192
Smith, D. A., Greencastle, Pa. Combined cider mill and press	206,630	July 30	1327	382	14	192
Smith, D. R., New York, N. Y. Wind-engine	206,631	July 30	1328	382	14	192
Snell, G. S., St. Louis, Mo. Lock	206,631	July 30	1330	382	14	192
Snell, S., Holyoke, Mass. Perforated tile for draining paper-stock and for other purposes	206,632	July 30	1330	382	14	192
Snyder, C. C. (See Lynn and Snyder.)						
Speller, W. P. (See Reilly and Speller.)						
Spiss, J. P., Fairview, Ill. Eaves-trough hanger	206,495	July 30	1194	342	14	175
Stearns, C. E., Boston, Mass., assignor to W. B. Gould, New York, N. Y. Stair-rod securer	206,497	July 30	1196	343	14	175
Steinau, C. (See Steinau, R. and C.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Steinau, R. and C., Brunswick, Germany. Preparation of peroxide of iron	206,635	July 30	1333	.....	14	192
Steller, C. E., Milwaukee, Wis. Sash-holder	206,634	July 30	1332	383	14	192
Steller, C. E., Milwaukee, Wis. Sash-fastener	206,636	July 30	1333	383	14	193
Stetson, W. W., Henry, Ill. Pump	206,496	July 30	1195	343	14	175
Steward, F. S., *et al.* (See Rogers and Tuttle, assignors.)						
Stilwell, C. B., Worcester, Mass., assignor to A. Adams, Cleveland, Ohio, and B. B. Taggart, Watertown, N. Y. Paper-tube machine	206,637	July 30	1334	383	14	193
Stilwell, C. B., Worcester, Mass., assignor to A. Adams, Cleveland, Ohio, and B. B. Taggart, Watertown, N. Y. Machinery for making satchel-bottom paper bags	206,638	July 30	1337	384, 385, 386	14	193
Stilwell, C. B., Worcester, Mass., assignor, by mesne assignments, to A. Adams, Cleveland, Ohio, and B. B. Taggart, Watertown, N. Y. Paper-bag machine. (Reissue)	8,357	July 30	1366	392, 393	14	197
Stone, S., Bristol, Tenn. Grain-separator	206,498	July 30	1196	343	14	175
Stridde, F., Menasha, Wis. Plow	206,639	July 30	1341	386	14	193
Sturm, A., New York, N. Y. Dress-trimming	206,640	July 30	1343	386	14	194
Sullivan, J. N., *et al.* (See Mullins, W., assignor.)						
Sutherland, D. A., Lynn, Mass. Staying the seams of boots and shoes	206,641	July 30	1343	387	14	194
Sutherland, W. S., Coomb's Wood, Halesowen, England. Apparatus for preparing gaseous fuel	206,642	July 30	1344	387	14	194
Sutherland, W. S., Coomb's Wood, Halesowen, England. Process for preparing gaseous fuel	206,643	July 30	1345	.....	14	194
Swift, M. C., New Bedford, Mass. Machine for sponging and drying cloth	206,499	July 30	1197	343	14	176
Tabor, B., *et al.* (See Gingras, T., assignor.)						
Tabor, H., assignor to B. W. Payne & Sons, Corning, N. Y. Governor for valve-motions	206,500	July 30	1198	344	14	176
Taggart, B. B., *et al.* (See Stilwell, C. B., assignor.)						
Taylor, J. F., Glenville, Conn. Steam and hydraulic press	206,501	July 30	1199	344	14	176
Taylor, W. B., Sharon, Pa. Feather-renovator	206,644	July 30	1346	387	14	194
Temme, C., St. Louis, Mo. Cooking-stove	206,503	July 30	1201	344, 345	14	176
Temme, C., St. Louis, Mo. Stove-door	206,504	July 30	1202	345	14	176
Tenney, B. R., assignor to J. A. Tenney, Poughkeepsie, N. Y. Ash-sifter	206,502	July 30	1200	344	14	176
Tenney, J. A. (See Tenney, B. R., assignor.)						
Terrell, H. D., Starrsville, Ga. Scraper attachment for shovel-plows	206,505	July 30	1203	345	14	177
Thaler, K. M., New York, N. Y. Churn	206,645	July 30	1347	387	14	194
Thomas, A., Ledyard, N. Y. Grain-separator	206,506	July 30	1203	346	14	177
Thomas Clock Company, S. (See Ager, G., assignor.)						
Thompson, J. (See Brock, W. E., assignor.)						
Thompson, Perley & Waite, *et al.* (See Nichols, J., assignor.)						
Toulinson, F. C., trustee. (See Scott, N. T., assignor.) (Reissue.)						
Tothill, W. S., Chicago, Ill. Swing	206,406	July 30	1097	313	14	163
Towne, H. R., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Master-key device for post-office boxes	206,646	July 30	1347	388	14	194
Traut, J. A., New Britain, Conn. Bench-plane	206,507	July 30	1204	346	14	177
Travis, T. W., assignor to himself, J. A. Pollock, and J. G. Carson, Philadelphia, Pa. Railway-track	206,647	July 30	1348	388	14	194
Trow, E. W., Newport, Vt. Churn	206,508	July 30	1205	346	14	177
Tucker, W., East Brookfield, assignor of one-half interest to J. G. Avery, Spencer, Mass. Cross-head and other slides	206,648	July 30	1349	388	14	194
Tucker, W., East Brookfield, assignor of one-half interest to J. G. Avery, Spencer, Mass. Anti-friction journal-box	206,649	July 30	1351	389	14	194
Turquand, W. M. G., Pimlico, Middlesex county, England. Device for shearing animals	206,650	July 30	1352	389	14	195
Tuttle, J. A. (See Rogers and Tuttle.)						
Voegtle, J., Indianapolis, Ind. Laundry-stove	206,407	July 30	1098	314	14	164
Wakeman, C. E., Pontiac, Mich., assignor of one-half interest to P. A. Hitchcock. Knit fabric for stockings, &c. (Reissue)	8,353	July 30	1362	391	14	196
Warth, A., Stapleton, N. Y. Cloth-folding machine	206,651	July 30	1355	389	14	195
Weade, J. W. (See Harris, J. W., assignor.)						
Webster, J. C., Wilton, Me. Potato-digger	206,652	July 30	1357	390	14	195
Weed, C., Charlestown, assignor to Davidson Rubber Company, Boston, Mass. Syringe apparatus	206,653	July 30	1357	390	14	195
Westervelt, P. A., College Grove, Tenn. Bee-hive	206,509	July 30	1206	346	14	177
Whitcomb, M. H., and J. Bliss, Holyoke, Mass. Stripping attachment to carding-machines	206,510	July 30	1207	347	14	177
Whitcomb, W. E., Barre, Vt. Plow	206,511	July 30	1208	347	14	177
Wilcox, E. F., Hoopeston, Ill. Sawing-machine	206,512	July 30	1210	347	14	177
Williams, B., and C. C. Morgan, Flowery Branch, Ga. Plow	206,654	July 30	1358	390	14	195
Williams, D. C., Newark, Ohio. Apparatus for obtaining and washing sand	206,514	July 30	1211	348	14	178
Williams, J. C., *et al.* (See Mullins, W., assignor.)						
Williamson, D., assignor to D. Beckley and S. Williamson, Sunbury, Pa. Sewing-machine	206,513	July 30	1210	347	14	177
Williamson, S., *et al.* (See Williamson, S., assignor.)						
Wilson, F. P. (See Davis and Wilson.)						
Wires, E. L., assignor of one-half interest to J. M. Estabrook, Milford, Mass. Shoe-nail	206,515	July 30	1212	348	14	178
Wolf, J. G., New York, N. Y. Double-acting pump	206,655	July 30	1359	390	14	196
Wolfe, W. C., Johnstown, Pa. Steam-boiler	206,408	July 30	1098	314	14	164
Wood, J. A., Gaynorsville, Ind. Harrow attachment for wheel-plows	206,409	July 30	1100	314	14	164
Yale Lock Manufacturing Company. (See Towne, H. R., assignor.)						
Young, W., Columbus, Ohio. Implement for bending hedge-plants	206,656	July 30	1360	391	14	196
Zimmerman, L. (See Beatty and Zimmerman.)						

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 30th DAY OF JULY, 1878.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Advertising apparatus	N. T. Scott. (Reissue)	8,355	July 30	1364	392	14	197
Alloys containing manganese. Manufacture of copper	P. M. Parsons	206,604	July 30	1305	.....	14	189
Areas, vaults, &c. Covering, lighting, &c	T. Hyatt	206,571	July 30	1272	365 366	14	185
Axle box. Car	C. B. Harris	206,564	July 30	1261	363	14	184
Axle box. Car	A. Onslow	206,603	July 30	1304	375	14	189
Axle. Car	W. H. Murphy	206,599	July 30	1300	374	14	188
Bag-holder	E. Cartier	206,537	July 30	1232	354	14	180
Bail and ear	W. M. Dallman	206,543	July 30	1236	356	14	181
Ball-joint	W. Ellinger	206,393	July 30	1081	309	14	162
Bee-hive	P. A. Westervelt	206,509	July 30	1206	346	14	177
Belting. Leather	T. Gingras	206,556	July 30	1253	360	14	183
Blotter and moistener. Combined	W. W. Beach	206,414	July 30	1103	315	14	164
Boiler. Steam	W. C. Wolfe	206,408	July 30	1098	314	14	164
Bolting-reel	T. O. Kilburn	206,459	July 30	1154	331	14	171
Boot and shoe seams. Staying	D. A. Sutherland	206,641	July 30	1343	387	14	194
Bootjack	S. B. Bartine	206,523	July 30	1219	351	14	179
Boots and shoes. Seam-rubbing apparatus for	W. Manley	206,467	July 30	1161	333	14	171
Bottle-stopper and stopper-fastener	F. J. Seybold	206,492	July 30	1190	342	14	175
Bottle-stopper and stopper-fastener	F. J. Seybold	206,493	July 30	1191	342	14	175
Bottle-stopper fastener	A. E. Barthel	206,525	July 30	1221	351	14	179
Box. Wine and oil	J. H. Livermore	206,588	July 30	1288	370	14	187
Brake. Automatic wagon	S. S. Miller	206,472	July 30	1165	534	14	172
Brake. Car	W. Longbridge	206,464	July 30	1157	332	14	171
Brake lever. Wagon	C. W. Boettner	206,415	July 30	1105	316	14	164
Bristles. Machine for trimming	A. W. Moore	206,400	July 30	1090	312	14	163
Buckle. Harness	S. M. Hamilton	206,561	July 30	1259	362	14	184
Burner-globes. Metallic top for	A. Combs	206,539	July 30	1234	355	14	180
Button and stud	J. W. and I. N. Miller	206,471	July 30	1164	334	14	172
Button and stud	J. A. Rupert	206,487	July 30	1184	340	14	174
Can. Sheet-metal	J. S. Field	206,429	July 30	1121	321	14	166
Car-coupliug	J. Kuntze	206,582	July 30	1283	368	14	187
Car-coupling	M. Logan	206,462	July 30	1156	331	14	171
Car-starter	J. Hansell	206,562	July 30	1259	362	14	184
Car-starter	W. H. Lynn	206,465	July 30	1158	332	14	171
Car-starter	W. H. Lynn and C. C. Snyder	206,590	July 30	1290	371	14	187
Carbon-bisulphide. Apparatus for manufacture of	D. D. Parmelee	206,477	July 30	1169	335 336	14	173
Carbureting apparatus	C. A. Paquelin	206,402	July 30	1092	312	14	163
Card. Sample	S. Kutnow	206,461	July 30	1155	331	14	171
Carding-machine. Stripping attachment to	M. H. Whitcomb and J. Bliss	206,510	July 30	1207	347	14	177
Carriage-window	F. A. Neider	206,600	July 30	1301	374	14	189
Chair. Child's	J. Nichols	206,602	July 30	1303	375	14	189
Chair. Convertible	C. J. Higgins	206,450	July 30	1142	327	14	169
Channeling-tool	E. F. Edgecomb	206,547	July 30	1240	357	14	181
Churn	C. V. and J. W. Baker	206,413	July 30	1103	315	14	164
Churn	C. Guyer	206,559	July 30	1257	362	14	184
Churn	N. C. Harris	206,443	July 30	1134	325	14	168
Churn	E. W. Trow	206,508	July 30	1205	346	14	177
Churn	R. M. Thaler	206,645	July 30	1347	387	14	194
Churn-motor	J. A. Alexander	206,520	July 30	1216	350	14	178
Cider mill and press. Combined	D. A. Smith	206,630	July 30	1327	382	14	192
Cigar-lighter	J. M. Keep	206,577	July 30	1279	367	14	186
Clasp	F. B. Brown	206,388	July 30	1076	307	14	161
Clock-face	G. Ager	206,411	July 30	1101	315	14	164
Cloth-folding machine	A. Warth	206,651	July 30	1355	389	14	195
Cloth. Machine for sponging and drying	M. C. Swift	206,499	July 30	1197	343	14	176
Coal-hod	H. S. Reynolds	206,614	July 30	1315	378	14	190
Collar	R. Greenidge	206,437	July 30	1128	323	14	167
Commode	A. Mallory	206,593	July 30	1293	372	14	188
Corn-husking implement	J. W. Preston	206,609	July 30	1310	377	14	190
Cornice. Window	J. Peterman	206,607	July 30	1309	376	14	189
Cross-head and other slides	W. Tucker	206,648	July 30	1349	388	14	194
Curry-comb	H. Beach	206,526	July 30	1222	351	14	179
Cuspadore	A. Ledig	206,585	July 30	1286	370	14	187
Cut-off. Automatic water	V. M. Ring	206,616	July 30	1316	378	14	190
Digester	M. Cziner	206,391	July 30	1078	308	14	161
Dredging-machine	T. M. Jones	206,575	July 30	1275	366 367	14	186
Drill. Ratchet	J. D. McAulie	206,468	July 30	1162	333	14	172
Drying apparatus	D. Asbury	206,521	July 30	1217	350	14	178

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Drying apparatus	T. Clegg	206,389	July 30	1076	307	14	161
Eaves-trough hanger	J. P. Spiss	206,495	July 30	1194	342	14	175
Electrode. Glove-	J. S. Morel	206,474	July 30	1166	335	14	172
Elevators. Ratcheted guide for	L. S. Graves	206,434	July 30	1125	322	14	167
Engine. Hot-air	B. F. McKinley	206,597	July 30	1297	373	14	188
Engine. Reciprocating steam	A. Kissell	206,460	July 30	1155	331	14	171
Engine. Steam	F. A. Gardner	206,555	July 30	1252	360	14	183
Engine. Wind	D. R. Smith	206,631	July 30	1322	382	14	192
Fabric for garments. Pattern-marked	W. C. Lawson	206,584	July 30	1285	369	14	187
Fabric for stockings, &c. Knit	C. E. Wakeman. (Reissue)	8,353	July 30	1362	391	14	196
Fare-register	C. B. Harris	206,565	July 30	1262	363, 364	14	184
Feather-renovator	W. B. Taylor	206,644	July 30	1346	387	14	194
Felly-joint	J. Hutton	206,455	July 30	1142	329	14	170
Fence. Iron	G. R. Clark and F. Lothrop	206,532	July 30	1233	354	14	180
Fence-post	G. J. Shoemaker	206,624	July 30	1322	380	14	191
Fences. Machine for making barbed ropes for wire-	H. B. Scott	206,623	July 30	1321	380	14	191
Fire-arm. Breech-loading	J. T. Morrison	206,475	July 30	1167	335	14	172
Fire-arm. Revolving	G. W. Schofield. (Reissue)	8,354	July 30	1363	391	14	196
Fork. Pickle-	S. Poole	206,482	July 30	1177	337	14	173
Fruit-drier	J. L. Rogers and J. A. Tuttle	206,618	July 30	1317	379	14	191
Fruit, &c. Drying apparatus for	A. Coleman	206,421	July 30	1111	318	14	165
Fuel. Apparatus for preparing gaseous	W. S. Sutherland	206,642	July 30	1344	387	14	194
Fuel. Process for preparing gaseous	W. S. Sutherland	206,643	July 30	1345	.....	14	194
Glass casts for molds. Apparatus for receiving	R. J. Beatty and L. Zimmerman	206,386	July 30	1073	307	14	161
Glassware. Apparatus for frosting	E. D. Dithridge	206,392	July 30	1080	308	14	161
Glassware. Manufacture of	D. C. Ripley	206,617	July 30	1316	379	14	190
Glassware. Mold for decorating	H. S. McKee	206,596	July 30	1296	372	14	188
Glove	A. Hesthal	206,567	July 30	1268	364	14	185
Governor for valve-motions	H. Tabor	206,500	July 30	1198	344	14	176
Grain-binders. Sheaf-dropper for	J. Brauning	206,530	July 30	1225	352	14	179
Grain, &c. Drier for	D. A. Flumerfelt	206,431	July 30	1124	321	14	167
Grain-scourer	C. B. Horton. (Reissue)	8,352	July 30	1361	391	14	196
Grain-separator	D. O. Harshman	206,446	July 30	1137	326	14	169
Grain-separator	S. Stone	206,498	July 30	1196	343	14	175
Grain-separator	A. Thomas	206,506	July 30	1203	346	14	177
Grain-separator	W. N. Phipps	206,480	July 30	1175	337	14	173
Grain-tally	O. Sidmore	206,625	July 30	1323	.....	14	191
Graining	F. N. Hart	206,445	July 30	1136	326	14	169
Grate for open fire-places	R. K. Curtis	206,542	July 30	1236	355	14	181
Grocer's bin	S. S. Leland	206,586	July 30	1286	370	14	187
Halter	L. S. Flatau	206,430	July 30	1122	321	14	167
Hame-fastening	E. F. Goodman	206,394	July 30	1082	309	14	162
Hammer	G. A. Allen	206,518	July 30	1215	349	14	178
Harness check-hook	J. H. Martin	206,594	July 30	1294	372	14	188
Harness-tree	F. Schaumburg	206,490	July 30	1187	341	14	174
Harrow	O. Cooley, M. M. Oliver, and S. E. Sherwood.	206,425	July 30	1116	320	14	166
Harvester. Corn-	G. A. Harvey	206,395	July 30	1083	309, 310	14	162
Hatchway	I. H. Philips	206,608	July 30	1310	376, 377	14	190
Heater. Jet-	W. Howarth	206,453	July 30	1146	328	14	170
Hedge-plants. Implement for bending	W. Young	206,656	July 30	1360	391	14	196
Hinge. Harrow-	H. S. Jory	206,458	July 30	1153	330	14	170
Hinge-joints. Tool for removing pintles from	H. Knickmann	206,580	July 30	1282	368	14	186
Hog-cholera compound	J. T. Maxson	206,595	July 30	1296	.....	14	188
Horse-collar	W. H. Brownson	206,535	July 30	1230	354	14	180
Horse-power	C. E. Macarthy	206,592	July 30	1292	372	14	188
Horse-power	J. T. Moore	206,399	July 30	1088	311	14	162
Hub. Vehicle-	W. Mullins	206,476	July 30	1168	335	14	172
Hydrant. Fire-	S. Rainey	206,611	July 30	1311	377	14	190
Ice-machines. Cell for the tanks of	J. Siddeley and F. N. Mackay	206,627	July 30	1325	381	14	192
Ice. Process and apparatus for making	J. Siddeley and F. N. Mackay	206,626	July 30	1324	381	14	192
Iron. Preparation of peroxide of	R. and C. Steinau	206,635	July 30	1333	.....	14	192
Iron vessels. Machine for forming	T. F. Rowland	206,486	July 30	1179	338, 339, 340	14	174
Jail-bar	C. J. Coe	206,390	July 30	1078	308	14	161
Journal-box. Anti-friction	W. Tucker	206,649	July 30	1351	389	14	194
Key device for post-office boxes. Master-	H. R. Towne	206,646	July 30	1347	388	14	194
Knife. Curd-	A. E. Smith	206,623	July 30	1326	381	14	192
Knobs to their shanks. Fastening porcelain and other	E. Parker	206,605	July 30	1307	376	14	189
Ladder and trestle. Combined	T. Mikeal	206,470	July 30	1164	334	14	172
Lamp-burner	E. P. Follett	206,432	July 30	1123	322	14	167
Lamp-fixture. Extension	J. A. Evarts	206,550	July 30	1243	357	14	182
Lamp. Street-	J. Irwin	206,573	July 30	1274	366	14	186
Lantern	A. W. Paull	206,478	July 30	1172	336	14	173
Lathes. Work-support for metal-turning	H. Reiss	206,485	July 30	1178	338	14	174
Life-boat	D. G. Haskins	206,447	July 30	1138	326	14	169
Life-preserver	M. Marx	206,397	July 30	1086	311	14	162
Lock	G. S. Snell	206,633	July 30	1330	382	14	192
Locomotive-tenders. Feeding	J. Haggas	206,560	July 30	1258	362	14	184
Lumber. Manufacture of compound	W. E. Brock	206,534	July 30	1228	353	14	180
Medicinal compound wafers, pills, lozenges, &c. Mold for making	C. Carter	206,536	July 30	1230	354	14	180
Military tactics. Apparatus for demonstrating	W. H. Brownell	206,420	July 30	1110	317	14	165
Mill. Cane-	J. S. Schofield	206,622	July 30	1321	380	14	191
Mill for bark. Grinding-	R. H. Shultis	206,494	July 30	1193	342	14	175
Mill. Spindle-	J. W. Porter	206,483	July 30	1177	337	14	173
Molding and carving machine	C. F. H. Huff	206,570	July 30	1271	365	14	185
Moth-traps for trees, &c. Machine for manufacturing	E. Ruhlmann	206,619	July 30	1318	379	14	191
Mucilage-bottles. Sponge-holder for	J. S. Mercer	206,469	July 30	1163	333	14	172
Nut-lock	H. Harris	206,441	July 30	1133	325	14	168
Nut-lock	H. Hemelright	206,566	July 30	1268	364	14	185
Oil-cup	A. D. Kilborn	206,579	July 30	1281	368	14	186
Ore-separator	F. R. Brown	206,417	July 30	1107	316	14	165
Ore-separator	D. L. Howard and T. D. Atkinson	206,452	July 30	1144	328	14	170

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ore-jigger	F. R. Brown	206,418	July 30	1108	316, 317	14	165
Ores. Extracting metals from their	J. Prosser	206,610	July 30	1311	.....	14	190
Oven. Revolving	P. Maltby	206,466	July 30	1159	333	14	171
Packing for steam-engines	J. W. Edmonds	206,548	July 30	1241	357	14	182
Padlock	H. Ahrend	206,517	July 30	1214	349	14	178
Padlock	W. H. Bramble	206,528	July 30	1223	352	14	179
Paint	W. H. James	206,574	July 30	1275	.....	14	186
Paper-bag machine	C. B. Stilwell. (Reissue)	8,357	July 30	1366	392, 393	14	197
Paper-bags. Machinery for making satchel-bottom	C. B. Stilwell	206,638	July 30	1337	384, 385, 386	14	193
Paper dish	P. M. Aulabaugh	206,412	July 30	1102	315	14	164
Paper-pulp. Manufacture of barrel-heads and other articles from	G. W. Laraway	206,396	July 30	1084	310, 311	14	162
Paper roofing	J. H. Greene	206,436	July 30	1127	323	14	167
Paper stock and for other purposes. Perforated tile for draining	S. Snell	206,632	July 30	1330	382	14	192
Paper-tube machine	C. B. Stilwell	206,637	July 30	1334	383	14	193
Passenger-register	J. W. Fowler and D. F. Lewis	206,553	July 30	1247	359	14	182
Pavement. Concrete	A. B. Dean	206,426	July 30	1118	320	14	166
Plane. Bench-	J. A. Trant	206,507	July 30	1204	346	14	177
Planing machine. Metal-	O. R. Chaplin	206,424	July 30	1114	318, 319	14	166
Planing machine. Wood-	W. H. Doane	206,545	July 30	1238	356	14	181
Planter and cultivator. Combined seed	S. E. Harris	206,444	July 30	1135	326	14	168
Plow	F. Striddle	206,639	July 30	1341	386	14	193
Plow	W. E. Whitcomb	206,511	July 30	1208	347	14	177
Plow	B. Williams and C. C. Morgan	206,654	July 30	1358	390	14	195
Plows. Harrow attachments for wheel-	J. A. Wood	206,409	July 30	1100	314	14	164
Plows. Scraper attachment for shovel-	H. D. Terrell	206,505	July 30	1203	345	14	177
Post-socket	S. Britt	206,531	July 30	1226	353	14	180
Potato-digger	C. P. Higgins	206,568	July 30	1269	365	14	185
Potato-digger	J. C. Webster	206,652	July 30	1357	390	14	195
Potato-separator	W. W. Davis and F. P. Wilson	206,544	July 30	1237	356	14	181
Press	H. Froese	206,554	July 30	1251	360	14	183
Press. Lever-	V. Becker	206,527	July 30	1222	352	14	179
Press. Steam and hydraulic	J. F. Taylor	206,501	July 30	1199	344	14	176
Presses. Mat for oil-	J. T. Harbine	206,563	July 30	1260	363	14	184
Printer's chase	S. Cramp	206,541	July 30	1235	355	14	181
Printer's chase	W. K. Everdell	206,427	July 30	1119	320	14	166
Propeller. Endless-chain	H. Exall	206,551	July 30	1244	358	14	182
Pump	F. A. Helmecke	206,448	July 30	1140	327	14	169
Pump	W. W. Stetson	206,496	July 30	1195	343	14	175
Pump. Double-acting	J. G. Wolf	206,655	July 30	1359	390	14	196
Pump. Hand-	J. M. Holland	206,451	July 30	1143	328	14	169
Pump. Lift-	J. E. Leonard	206,587	July 30	1287	370	14	187
Pump. Vertical steam-	H. A. Jamieson and W. Foster	206,457	July 30	1152	330	14	170
Radiator. Hot-air	W. Parks and G. M. Allen	206,403	July 30	1094	313	14	163
Railway-track	A. Bowman	206,416	July 30	1106	316	14	165
Railway-track	T. W. Travis	206,647	July 30	1348	388	14	194
Railways. Apparatus for destroying vegetation on	L. B. Simpson	206,628	July 30	1325	381	14	192
Rice-beaters, churns, &c. Machine for operating	W. J. Henderson	206,449	July 30	1141	327	14	169
Rudder of vessel. Device for working	J. Morgan	206,401	July 30	1091	312	14	163
Ruler	H. Adler	206,410	July 30	1101	314	14	164
Saddle. Harness-	A. F. Risser and M. G. Lang	206,405	July 30	1096	313	14	163
Sand. Apparatus for obtaining and washing	D. C. Williams	206,514	July 30	1211	348	14	178
Sash-fastener	J. C. Brannon	206,529	July 30	1224	352	14	179
Sash-fastener	B. Lander	206,583	July 30	1284	369	14	187
Sash-fastener	C. E. Steller	206,636	July 30	1333	383	14	193
Sash-holder	C. E. Steller	206,634	July 30	1332	383	14	192
Saw-handles. Attaching	R. Crosby	206,540	July 30	1234	355	14	181
Sawing-machine	E. F. Wilcox	206,512	July 30	1210	347	14	177
Sawing machine. Drag-	A. Ransome	206,404	July 30	1094	313	14	163
Scales. Platform-	F. Fairbanks	206,428	July 30	1120	321	14	166
Screen. Portable	S. W. Cornell	206,423	July 30	1114	318	14	166
Sewing-machine	D. Williamson	206,513	July 30	1210	347	14	177
Shaving apparatus	J. Monks	206,473	July 30	1165	334	14	172
Shearing animals. Device for	W. M. G. Turquand	206,650	July 30	1352	389	14	195
Shirt	W. Allen	206,519	July 30	1215	349, 350	14	178
Shoe-nail	E. L. Wires	206,515	July 30	1212	348	14	178
Sifter. Ash-	B. R. Tenney	206,502	July 30	1200	344	14	176
Sirup evaporator and skimmer	R. M. and J. M. Brooks	206,532	July 30	1226	353	14	180
Skate	E. H. Barney	206,524	July 30	1220	351	14	179
Spark-arrester	A. Elliott	206,549	July 30	1242	357	14	182
Speed. Changing	W. R. Schürmann	206,621	July 30	1320	380	14	191
Spring. Vehicle-	J. Glenn	206,557	July 30	1254	361	14	183
Spring. Vehicle-	R. H. Guyer	206,438	July 30	1128	323	14	167
Square	S. Lonergan	206,463	July 30	1157	332	14	171
Stair-rod securer	C. E. Stearns	206,497	July 30	1196	343	14	175
Stamp-canceler. Electric	E. S. Dow	206,546	July 30	1239	356	14	181
Stocking-supporter	C. W. Foster	206,552	July 30	1246	359	14	182
Stove. Camp-	W. B. Collier	206,422	July 30	1113	318	14	165
Stove. Cooking-	C. Temme	206,503	July 30	1201	344, 345	14	176
Stove-door	C. Temme	206,504	July 30	1202	345	14	176
Stove. Laundry-	J. Voegtle	206,407	July 30	1098	314	14	164
Stove-leg	R. D. Ryerson	206,488	July 30	1185	341	14	174
Stove-pipe joint	D. L. Milliken and O. M. Pillsbury. (Reissue.)	8,356	July 30	1365	392	14	197
Stoves. Automatic ash-guard for	C. A. Hamlin	206,440	July 30	1132	325	14	168
Stoves. Turn-table for	J. T. Peet	206,479	July 30	1174	336	14	172
Sulky. Trotting-	H. B. Paul	206,606	July 30	1308	376	14	189
Swine. Instrument for ringing	W. D. Brown	206,419	July 30	1110	317	14	165
Swing	W. S. Tothill	206,406	July 30	1097	313	14	163
Switch-head chair	G. W. Rawson	206,612	July 30	1312	377	14	190

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Syringe apparatus	C. Weed	206,653	July 30	1357	390	14	195
Tag for marking animals	C. P. Housum	206,569	July 30	1270	365	14	185
Tank. Oil	W. and G. Koch	206,581	July 30	1282	368	14	186
Thrasher and separator. Grain	B. Jackson	206,456	July 30	1149	329 330	14	170
Tile. Paving and flooring	T. New	206,601	July 30	1302	374	14	189
Time-indicator. Watchman's	F. Imhaeuser	206,572	July 30	1273	366	14	185
Transplanter	L. F. Johnston	206,576	July 30	1278	367	14	186
Trees and flowers. Artificial	F. C. Bowen	206,387	July 30	1074	307	14	161
Trimming. Dress	A. Sturm	206,640	July 30	1343	386	14	194
Turnstile-register	R. P. Reilly and W. P. Speller	206,613	July 30	1314	378	14	190
Type-writing machine	W. A. Hall	206,439	July 30	1129	323 324	14	167
Valve-action for duplex engines and pumps	W. H. Guild, Jr.	206,558	July 30	1255	361	14	183
Valve for steam-engines. Slide	C. M. Miller	206,398	July 30	1087	311	14	162
Valve. Safety	F. Lunkenheimer	206,589	July 30	1289	371	14	187
Ventilator. Water-power closet	W. Selvey	206,491	July 30	1188	341	14	175
Vise. Calking	P. Rickard and A. C. La Brash	206,615	July 30	1315	378	14	190
Wagon. Dumping	J. Giles	206,433	July 30	1124	322	14	167
Wagon-jack	J. J. Adgate	206,516	July 30	1213	348	14	178
Wagon-jack	W. A. Pierson	206,481	July 30	1176	337	14	173
Waistcoat	D. E. Ryan	206,620	July 30	1319	379	14	191
Wash-stand for factories, &c	W. Humphrey	206,454	July 30	1147	328	14	170
Washing-machine	R. G. Baldwin	206,522	July 30	1218	350	14	178
Washing-machine	H. H. Kinder	206,578	July 30	1280	367	14	186
Watch-key and pencil-case. Combined	G. W. Mabie	206,591	July 30	1292	371	14	188
Watch-regulator	L. C. Briggs	206,533	July 30	1227	353	14	180
Watch-stem	A. Milné and A. Jourdain	206,598	July 30	1299	374	14	188
Water-closet. Bidet	J. Reid	206,484	July 30	1178	338	14	173
Water-lifter. Automatic	A. Gregg	206,435	July 30	1126	322	14	167
Wheel. Vehicle	J. W. Harris	206,442	July 30	1134	325	14	168
Wool-washing machine	F. G. Sargent	206,489	July 30	1186	341	14	174

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COMMISSIONER'S DECISIONS.

JOHN LEIGHTON.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of John Leighton, filed May 8, 1877, and Letters Patent No. 179,393, granted to Stephen Barker, July 4, 1876, for* "IMPROVEMENT IN MAKING STEEL."]

A patent held to be conclusive evidence of prior invention against a subsequent applicant who fails to show that he made the invention prior to the filing of the application by the patentee, although the patentee may not have made or reduced the invention to practice prior to the filing of his application.

[The judgment of the Examiner of Interferences in favor of Barker was reversed by a majority of the Board of Examiners-in-Chief, one member dissenting.]

SPEAR, *Commissioner:*

The invention in controversy consists of a process for making puddled steel from certain specified kinds of pig-iron in specified proportions, other ingredients being added in the melting of the iron, the relative quantities of these ingredients also being well defined. The invention further consists in refining puddled steel thus produced by melting it in a crucible together with certain proportions of other so-called chemicals. The invention in the patent and in the application is limited to the specified ores and chemicals, and to the specified proportions thereof.

As to the standing of Barker, the Examiner of Interferences and the Examiners-in-Chief agree that he does not carry back the date of his invention beyond the date of his application; but the majority of the Board appear to be of the opinion, and it was urged by counsel for Leighton at the hearing, that Barker never made the invention at all. I do not find in the testimony evidence upon this point sufficient, in my judgment, to overthrow the patent. The oath of the inventor and the patent issued thereupon stand, unless it be shown clearly and conclusively that the patentee was not the inventor or was not the first inventor of the invention claimed.

The application of Barker in this case was made in due form, with a description conceded to be sufficiently full, clear, and exact to enable any one skilled in the art to make and use the invention. It certainly does not follow that Barker is not the inventor because he fails to prove the date of his invention back of the date of the application, or to show any practical use of the invention before the application was made for the patent. I agree with the dissenting member of the Board that, since it appears clear that under the patent, and in accordance with the directions laid down in the specification of the patent, a superior quality of steel can be made, the law is satisfied in that respect. It is enough that the inventor has perfected his invention, and is able to furnish the Patent Office such specification and model as the law requires. Having done this, the patent, in so far as prerequisites to its validity, either by way of experiment or use, are material, is valid.

There is no evidence tending directly to show that Barker derived the invention from Leighton, and the most that could be urged was that the circumstances are shown to be such as to make it probable that the invention was obtained from Leighton, and was not of Barker's own devising. But even this must fail if it does not appear that prior to the date of Barker's patent, the 26th of June, 1876, Leighton used or disclosed the precise invention in controversy. Assuming, then, that Barker does not prove the date of his invention prior to the date of the filing of his application, the question which remains to be considered is whether the evidence shows clearly and conclusively that Leighton made the invention at an earlier date. The burden of proof was upon him, and the evidence must be sufficient to overthrow the patent. He must prove that the invention was actually reduced to practice, and that it was the precise invention in controversy.

What Leighton did at New Jersey, what experiments he made at Knoxville, and what his general experience and information in relation to the manufacture of iron and steel were, are matters which have no other bearing upon the case than as they tend to show he was skilled in this art and was investigating and experimenting in the particular line of the invention. I find no satisfactory evidence tending to show that he made or used the invention in controversy before his experiment at Kingston, about the 6th of April, 1876. The evidence as to what he did there should be compared critically with the statement of his invention as set forth in his application and embodied in the claims.

The testimony of Leighton is very far from being clear or consistent with itself. He says that he made steel at Knoxville experimentally in November, 1875, but there is no evidence that it was made in accordance with the invention in controversy, and it may, instead, have been made in accordance with his patent of 1874. Indeed, he says (Int. 26, cross-examination) that he professed to make steel at Knoxville in 1875 in conformity with his patent. In answer to question 11, direct examination—

State whether you manufactured steel in the manner described in your application at Kingston; and, if so, how long a time and in about what "quantities?" [he says] I made it in conformity with my letters patent; one year and a half or nearly two years from April 6, 1874; about twenty tons.

Interrogatory 12. State whether that steel was cast or puddled steel.

Ans. About one-half of it was puddled steel and the other half cast-steel.

Interrogatory 13. State whether or not the cast-steel was made in accordance with your description in a pending application for a patent.

Ans. It was made precisely as the application.

It must be borne in mind that of the two claims in his application, the first, and apparently the principal, claim is for making the puddled steel. The second claim for the supplementary process relates to the manufacture of cast-steel out of the puddled steel produced by the first process. These answers quoted would therefore seem clearly to indicate that he used at Kingston the process for making puddled steel described in his patent of 1874, and that only the refining process of the second claim was used at Kingston at the time stated. But he states, also, in answer to cross-question 22, that the process described in his pending application was the same as that conceived by him in 1873. This is not supported by any evidence, and is highly improbable in itself, first, because he did not describe it in his patent of 1874, which was for a kindred invention, (a very similar process for making steel;) and, second, because it does not appear that he was at that time at all acquainted with the peculiar kinds of iron specified in the application in interference. On cross-examination he also testified that he used, in a charge of four hundred pounds, equal parts of the Carter, Eagle, Pottsdale, Embreville, and Unaka cold-blast iron, but that he did not confine himself to these kinds of iron; that he always used equal quantities of these irons, and that he used the red hematite ore in lumps. When questioned as to what chemicals he put in, he answered: "The same I have in my pending application." Called upon to name them, he replies: "Manganese, oyster-shells, and soda-ash, and I cannot just now recollect the balance." He further stated the proportions to be, in a charge of four hundred pounds one pound or one and a half of the manganese, one to two pounds and sometimes four or five pounds of oyster-shells, from a pound and a half to two pounds and a little more of soda-ash, and four pounds and upward of the "red hematite, fossiliferous ore." This relates to the first process or first part of the invention. In the experiment at Kingston, when the puddled steel was reduced to cast-steel, he says, in answer to interrogatory 95, that he used seventy or eighty pounds of puddled steel, "about one and one-half pound manganese, about two pounds of oyster-shell, one-half pound 'carbon of soda,' and about one-half pound soda-ash."

Referring now to the application in interference, I find the proportions of the different brands of iron very far from being the same as those indicated in this part of his testimony as used at Kingston. In the claim the proportions are two hundred pounds of the Carter cold-blast, fifty of the Eagle, twenty-five of the Pottsdale, fifty of the Embreville, and fifty of Unaka. He states in the specification that other and equivalent brands of iron may be used; but he does not state that the proportions may be varied, nor do I find any evidence that the proportions stated are immaterial, except his own not very satisfactory statement upon examination. Further, what are called the chemicals are not the same in the testimony and in the application. The specification requires, in the charge heretofore stated, three pounds of magnetic oxide of iron to be introduced while the iron is melting; one and one-half pound of black oxide of manganese; one-half pound of carbonate of soda; three pounds of pulverized oyster-shells; four pounds common salt; and one-fourth pound soda-ash, or their known chemical equivalents. The amount of magnetic ore varies, being three pounds in the claim and four and upward in the testimony. (Answer to interrogatory 59.) Of so common an ingredient as salt, four pounds of which are called for by the claim, he had no recollection when he gave his testimony. The soda-ash in the claim is only one-fourth pound in the charge of about four hundred pounds; in his testimony he made it six times as much. (Interrogatory 55.) He also omitted in his testimony to mention the carbonate of soda. The same variance exists between the second part of the invention, as described in the testimony and as stated in the specification. Making no mention of the amount of the charge, and leaving it to be assumed as the four hundred pounds specified in the first process, he prescribes in his specification that to make cast-steel from the puddled there shall be added one-half pound black oxide of manganese, one pound salt, and one-half pound powdered oyster-shells. The salt is added in the specification, and the carbon of soda and soda-ash omitted, and it is altogether uncertain whether the proportions are the same or not.

Now, if the claim means anything, it requires all the ingredients mentioned, or their chemical equivalents, and substantially the same proportions. All these are represented as necessary to constitute the invention; and if that be true, then, according to his own testimony, the invention with which he experimented at Kingston on the 6th day of June was not the invention in controversy, either as respects metals or chemicals. Ingredients and proportions which he does not recollect cannot be assumed, for the burden of proof is upon him, and he must show conclusively the prior use of the invention.

I have discussed the matter as set forth upon his first examination. The applicant was subsequently recalled, and, being asked to explain (question 290) what he meant by the words "using equal quantities of each," in his answer to questions 23 and 24, (cross-examination,) he says he meant that he "should use one-fifth quantities of each." And he also, in answer to question 291, states the proportions of the metals used the same in his application. His memory appears to have been refreshed, though in what manner he does not explain. It seems incredible to me—considering the alleged great importance of the invention, the long course of study and experiment which, according to the representations, had led up to it, and that it was one of the great objects of his coming to this country, and of his business arrangement in Tennessee, to produce this result—that he should not have been able to remember the proportions of the metals and the names of the ingredients used in the process, if he had the ingredients and the proportions definitely fixed in his mind at that time, or if there were any definite proportions necessary, and the processes were not as elastic as the Board understood them to be; and as I cannot change the issue, but must accept the definition of the invention as made by the parties, I am forced to conclude that either the invention at that time was in an utterly experimental condition, or else that he was using, somewhat loosely, his patented invention of 1874.

It should be borne in mind, too, that in respect to the experiment at Kingston, Leighton had invited a number of witnesses, in order that they might observe the process and see the remarkable results of it. Not one of these witnesses was able to tell what were the ingredients used or the proportions, or anything more than that puddled and cast steel were made, and that some chemicals were used. Indeed, in the manufacture of the cast-steel, Leighton himself testifies that something was put into the crucible by Savage, his assistant, (who was not called as a witness,) the amount of which he, Leighton, was ignorant. At first he testified that he did not know what the material was, but afterward recalled this statement, and testified that he knew the material, but did not know the quantity of it, and did not state in his testimony what the material was.

Leighton's case rests wholly upon the Kingston experiment. In the absence of any corroborating testimony as to the nature of the process used and the exact quantities of the specified materials, Leighton himself should at least have been clear and explicit in his statements, in order to produce any favorable impression against the patent of Barker. This he certainly has not done, and, were it not for the suspicion raised against the claim of Barker as an original inventor, the testimony relating to the Kingston experiment would never have received any serious consideration as against the patent.

Failing to prove that he made the invention prior to the filing of the Barker application, Leighton has failed to take the first step necessary to show that Barker derived the invention from him.

I do not deem it necessary to refer to the testimony indicating that Leighton never followed anything but the 1874 patent, or to go into a discussion of the various circumstances which had more or less to throw a cloud upon the case on both sides. The course pursued by Harger and McCarty in first negotiating with Leighton for an interest in his patent and afterward making terms with Barker is in nowise inconsistent with the theory that Barker made the invention. They relinquished negotiations with Leighton when they found that his title to the invention was not clear. Desiring to acquire an interest in an effectual process for producing steel, it is certainly not unreasonable that they should have commenced negotiations with Barker if they found that he had devised such process.

I place the decision on the ground that the invention (if there be any) in controversy is exactly what the contestants have described and particularly claim, and that the Board erred in considering the strict definition immaterial; that it was also an error to hold that the Barker patent is invalid by reason of his failure to show reduction to practice prior to the granting of the patent, or that the patent could be overthrown on mere inferences from supposed skill in metallurgy on the part of Leighton and lack of skill on the part of Barker.

I am of opinion that Barker's patent must be held to be valid, inasmuch as it is not shown that he was not an original inventor, and not proved on the part of Leighton that he made the invention in controversy prior to the filing of Barker's application.

The decision of the Board is, therefore, overruled, and priority of invention awarded to Barker.

CHARLES H. CARTER.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of Charles H. Carter for patent for* "IMPROVEMENT IN METALLIC LATHS."—*Decided September* 18, 1878.]

A metallic lath with alternating elevations and depressions of a retaining shape being old, it is no invention to simply give to one of the depressions a greater curve to better retain the mortar as against expansion of the lath, &c.

DOOLITTLE, *Assistant Commissioner:*

March 2, 1858, a patent was granted to Birdsall Cornell, of New York, for what he calls "an improved metallic surface for receiving and supporting a coating of plaster, &c., to be used in the construction of fire-proof and burglar-proof partitions."

He describes this metallic surface as being composed—

of sheets of metal of suitable thickness after the said sheets have been swaged into alternating depressions and elevations of a dovetail shape, or other suitable shape, substantially as represented in the accompanying drawings. The said sheets may be secured to uprights made of strips of thick sheet-iron bent into the shape represented in the drawings, or to any other suitable supports.

He says he is aware that narrow angular strips of sheet metal have been combined with each other in such a manner as to form surfaces for the reception of a coating of plaster, and that patents have been granted to Palmer Sumner and to John B. Cornell for varieties of such combinations; but what he claims is—

Forming metallic surfaces for the reception of coatings of plaster, &c., of sheets of metal after they have been swaged into alternating elevations and depressions of a retaining shape, substantially as represented in the accompanying drawings.

It will be seen that the essence of Cornell's invention is the swaging of the lath into "alternating elevations and depressions of a retaining shape," whether the top and bottom surfaces are straight or curved, or whether these surfaces are united by angular or curvilinear lines, as shown in his drawing.

Now, the present applicant alleges that he has found that the mortar is best retained in place by uniting these surfaces when straight by an abrupt reverse curve. Affidavits of practical experts are submitted setting forth such advantage; but that all the expansion, when it occurs, is taken up alone by these abrupt curves, as alleged, is not apparent, and appears inconsistent with the known principles of expansion, which not only increases the linear dimensions of the metal, but its entire bulk, the increase in bulk being about three times the linear expansion. Admitting that the reverse curve of applicant, by affording a deeper recess for the mortar, secures it more perfectly against the accidents of expansion, jarring, &c., than the slighter curve of applicant, still the language of that patent, as above quoted, contemplates that the sheet metal shall be bent into such shapes as shall best accomplish the proper retention of the mortar, and applicant has done nothing more than perfect an invention in detail which, in general principle of operation, was devised by another. In a case in which the Supreme Court admitted that the defendant had improved the patented article of plaintiff in construction and appearance, still it held that the defendant had merely carried forward the idea of the patentee without making a distinct invention.

But a mere carrying forward or new or mere extended application of the original thought—a change only in *form, proportions, or degree*, doing substantially the same thing in the same way by substantially the same means *with better results*—is not such invention as will sustain a patent. These rules apply alike, whether what preceded was covered by a patent or restricted only in public knowledge and use. In neither case can there be an invasion of such domain and an appropriation of anything found there. In one case everything belongs to the prior patentee, in the other to the public at large. (*Smith* vs. *Nichols*, 21 Wallace, 112; *Dunbar and Hopper* vs. *Meyer and Eunson*, 11 OFFICIAL GAZETTE, 35.)

The decision of the Board of Examiners-in-Chief is affirmed.

J. E. DERMODY.—*Interference.*

[*Appeal from the decision of the Examiner of Interferences in the matter of the interference between the application of J. E. Dermody, filed March* 14, 1878, *and the patent No.* 152,508, *granted to J. S. Pennock, June* 23, 1874, *for* "IMPROVEMENT IN ROLLING-MILLS."—*Decided August* 30, 1878.]

A preliminary statement must set forth the character and extent of use of an invention from the time of its perfection until the time of the filing of the application for letters patent.

SPEAR, *Commissioner:*

Motion was made before the Examiner by Pennock to require Dermody to amend his preliminary statement in order to make it more explicit in regard to the nature and extent of the use of the invention by him.

Dermody states substantially in the preliminary statement already filed, that, after some months of experimental use in the year 1871, he had perfected the invention and had it in use upon a set of rollers in Pennock's mill. He also states that he was in Pennock's employment at that time, and continued in that employment until June, 1874; but he leaves off in his narration of the nature and extent of the use at the point when the apparatus was perfected, viz., in the latter part of 1871 or early in 1872. Plainly, it is very important to know for several reasons the history of this apparatus from that time onward. There can be no just or intelligent adjudication of the case without it. Applicant's general statement that he "never consented to its public use," or to its being placed in any other rolling-mill, and never for a moment relinquished his claim, is not sufficient.

It is due to one party making a full statement that the Office should require it of his opponent, and that which is required in this case appears to be strictly within the rule.

Considering that Pennock's patent was granted in 1872, that Dermody admits knowledge of Pennock's application, and must be held to have had knowledge of his patent, and, in view of all this, delayed six years the assertion of his right, if he had any, this does not appear to be a case calling for any relaxation of the rules.

The decision of the Examiner must, therefore, be overruled, and Dermody will be required to state definitely, as the rule requires, the nature and extent of the use after the completion of the apparatus.

F. A. WILLIAMS.—*Interlocutory Appeal.*

[*Interlocutory appeal in the matter of the application of F. A. Williams for reissue of Letters Patent No.* 66,197, *for* "IMPROVEMENT IN ELEVATED RAILWAY."—*Decided June* 18, 1878.]

Extraneous proof as to a model destroyed by fire, or as to other lost or destroyed records, not received in reissue applications.

DOOLITTLE, *Assistant Commissioner:*

There is no evidence whatever that either the specification, drawing, or model, as originally filed, showed bolt-holes in the bed-plate. On the contrary, the Examiner has shown in his answers to this appeal that the existence of such a feature was not consistent with his suggestions and criticisms made before the destruction of the model by fire.

To permit proof extraneous from the Office records, on which to base a reissue of a patent, is entirely inadmissible under the statute at all times, and the Office does not feel authorized, without special act of Congress, to receive such proof as to the contents of lost or destroyed records in absence of any official copies of the same.

In suits at law secondary proof of the contents of an instrument is admissible where the original has been destroyed or lost, but for this Office the character of proof as to reissue applications is specifically prescribed by statute. The only exception made is by the latter part of section 4916 Rev. Stats., which allows the Commissioner to receive proof satisfactory to himself that certain new matter was part of the original invention; but this is in cases where neither model nor drawing was filed with the original specification.

The decision of the Examiner is affirmed.

THE government fee on making application for a patent is $15. This entitles the applicant to an examination as to the merits of his alleged invention, and he should, and generally will, receive such information from the Office as will enable him to determine about how much, if anything, in the case, is new. When a patent is allowed the final government fee is $20, which must be paid before the patent can issue, and within six months after the date of allowance. In a large proportion of the applications coming before the Office these are all the fees required by law.

DECISIONS OF THE COURTS.

U. S. Circuit Court—District of Connecticut.

THE MILLER'S FALLS COMPANY *vs.* W. A. IVES & CO., A CORPORATION.—*Two cases.*

The scope of Reissue Letters Patent No. 4,187, granted Miller's Falls Company's assignees, November 29, 1870, (original patent No. 35,856, J. M. Horton,) for "improvement in auger-handle," defined.

The principle of the invention, the construction of the device by the same general mechanical means being retained by the defendants, infringement occurs, notwithstanding they may make a more perfect instrument.

The novelty of Letters Patent No. 73,279, granted C. H. Amidon, January 14, 1868, for "improvement in bit-stock," sustained.

The term "equivalents" in the claims being construed with reference to the essential characteristics of the invention set forth in the specification relieves the patent from the objection of lack of novelty. The prior devices accomplish the same result by different means, and are not "equivalents" under the limitation.

The patent of Amidon is not anticipated by that of Dexter H. Chamberlain, granted in 1854, for an awl-holder. The Chamberlain device is not only different in purpose, but is lacking in the peculiarities which distinguish the Amidon bit-stock.

A license to the defendants to manufacture the article described in a certain patent held by them will not relieve from the charge of infringement where the device actually made differs somewhat from that set forth in the patent.

[*Charles E. Mitchell*, for plaintiffs; *Benjamin F. Thurston*, for defendants.]

OPINION.—*March* 23, 1877.

SHIPMAN, *J.:*

These are two bills in equity, each of which is brought to restrain the defendant corporation from an alleged infringement of letters patent granted to James M. Horton on July 8, 1862, and reissued for the second time to the Miller's Falls Manufacturing Company, on November 29, 1870, and also from an infringement of letters patent granted to Charles H. Amidon on the 14th day of January, 1868. Each patent is now owned by the plaintiffs. The Horton patent was for an improvement in instruments for operating tools, such as augers, bits, &c., the shanks of which are of variable sizes. The Amidon patent was for an improvement in bit-stocks. The infringement complained of in the first suit was the making and selling by the defendants of bit-braces known in the market as the "Ives" brace and the "Ives novelty;" the second suit was brought to restrain the defendants from making the "Centennial" and the "Centennial novelty" braces, the manufacture of which last-named tools was commenced after the first suit had been brought. The two bills of complaint may be treated as substantially one action. The principal defense as against the Horton patent is non-infringement, and as against the Amidon patent is want of novelty.

The Horton device was an auger-handle provided with a metal band, called in the patent a barrel, around its center, the lower portion of which barrel is formed into a projecting cylinder or socket, recessed or slotted upon its opposite sides. The recesses receive two jaws, the ends of which are curved so as to lie loosely in the recesses and act as hinges upon which the jaws swing. Along the center axis of the cylinder there is a rectangular tapering bore, large enough to receive the shank of the boring-tool. A revolving nut, which forces the jaws together, is fitted upon the screw-threads which are cut upon the periphery of the cylindrical portion of the cylinder. When the nut is near the handle, the lower part of the jaws swing upon their hinge parts so as to receive the shank of the tool to be used. When the nut is screwed up, the curved ends of the jaws inclose the shoulder of the auger-shank. The claims are:

1. The combination of the barrel A, provided with a socket, C, jaws B and D, and nut N, working on a screw, for holding a boring-tool, substantially in the manner described and specified.

2. The socket C of the barrel A, having cavities *b b*, in combination with the jaws B D, having curved ends to fit therein, to allow the necessary lateral movement in the socket without falling out, substantially as described and specified.

The Amidon brace consists, as described in the patent—

First, in the construction and use of two jaws, which conform to the taper of the bit-shank, and are forced equally upon said shank at both ends by a screw-nut or other device; second, in the special construction of the end of the bit-stock to hold said jaws and retain them always in place; third, in the formation of the groove in the edge of each jaw so that the shoulders of the bit-shank are inclosed and the accidental withdrawal of the bit prevented; and, fourth, in a particular not material to the present case.

The bit-stock has at one end the ordinary swiveled head, and at the other the clamping mechanism which is the subject of the invention. The end of the stock which receives the shank, and is called the foot, is cylindrical, and has a male-screw thread cut upon its outer surface. A slot is cut vertically through the foot, and within this slot rest the jaws which seize and hold the shank. At the bottom of the slot is bored a cylindrical cavity with an enlarging orifice. A thimble or nut is constructed with a female-screw thread corresponding at its lower portion with the thread on the foot, while the upper part is protuberant and contracted toward the mouth at the upper end. This nut screws upon the foot and forces the jaws upon the shank. These jaws are in thickness suitable to fill loosely the slot. Their lower ends are attached to each other by a curved wire, which is rigidly set in one part and projects loosely through the other part. The upper and lower ends of the jaws are beveled so that they may be forced together by the inclined surfaces of the nut and the cavity at the bottom of the slot, when the nut is screwed upon the foot. In the opposing surfaces of the jaws are formed grooves, which, when the jaws are in position, form a recess of square section. This recess is made tapering, so as to correspond with the taper of the bit-shank, and is largest at the outer end, so that the shoulders of the bit-shank may be inclosed within the jaws and the removal of the bit prevented except by relaxing the pressure of the jaws. As the jaws are loosely connected at the lower ends by the wire, they may either move apart, as on a pivot at that end, or they may be moved bodily away from each other so as to accommodate a bit-shank of any size or taper.

The three claims which are material to this case are:

1. In combination with the jaws G G, or their equivalents, constructed to move away from or toward each other in the manner described, so that they may conform to the taper of the bit-shank, the screw-thimble F, or its equivalent, to force the said jaws upon said shank, as and for the purpose set forth.

2. The jaws G G, constructed with the groove formed substantially as set forth, so as to inclose the taper sides and the shoulders of the shank, as and for the purpose described.

3. The cavity D, formed with a beveled orifice, as shown, in combination with the jaws G G, constructed with correspondingly beveled ends, as and for the purpose shown and described.

The "Ives" brace is substantially like the Amidon. The "novelty" brace differs from the "Ives" mainly in the fact that in the thimble the threaded portion is

separated from the swell portion, and the nose or head of the thimble is attached fixedly to the socket. The lower portion of the thimble revolves toward the foot, and by its revolution produces the same effect as if the whole thimble revolved.

1. As to the character of the Horton invention and the construction of the Horton patent.

Devices for holding tools or articles which have shanks of variable sizes and tapers were known prior to the date of the Horton patent, and consisted broadly of clamping-jaws and a nut which caused the jaws to effect a gripe upon the tool to be held. Then the clamp described in the Mechanics' Magazine (volume 14, page 116) consisted of two jaws, with a recess in them to hold whatever was placed therein. The jaws are forced together by a dome-headed nut acting upon their noses. The "Stever chuck" had a slotted socket with a screw-thread, and two jaws, which clamp the tool by a screw-nut or sleeve acting upon the jaws. The "Meriden Cutlery chuck" held a slotted socket, with a round tapering bore at the bottom of the chuck, and two jaws forced together by a collar or sleeve, which moves forward upon the socket without any screw-thread, and is retained in its place by friction. The D. H. Chamberlain awl-holder, patented in 1854, which will be more particularly considered hereafter, has a socket, a dome-headed nut moving upon the screw on the socket, which nut acts upon two jaws, which approach each other and grasp the shank of an awl or other similar instrument.

The peculiar features of the Horton handle consisted in combining with the handle or stock of a boring-tool a slotted cylinder, provided with a rectangular tapering bore for holding firmly the shank of a boring-tool, and hinged jaws working in the slot, having the necessary lateral movement to receive, without displacement, variable sizes of tools, and a nut moving on the screw-thread upon the circumference of the cylinder, which nut clamps the jaws together so as to hold the shank. The shank is held firmly in place by the tapering bore and by the jaws, which seize the angular portion of the bit, and serve not only to draw out the auger from the wood, but also help to prevent the auger-shank from being twisted in its place as the bit enters the wood. The nut wedges the swinging jaws against the edges of the shank of the tool and binds the projecting noses of the jaws against the upper end of the shank, so as to hold the tool firmly in position as it advances in the wood, and so as to draw it back as it is endeavored to be pulled out. Neither of the pre-existing devices had this combination of barrel, slotted socket with threaded outer surface, tapering bore, hinged jaws, and nut. It is not claimed by the learned expert of the defendants that the Horton invention was anticipated by any of the devices placed in evidence. The patent was for a handle of a boring-tool having these described elements in combination, which several elements are formed substantially as described in the specification. The first claim was for the entire combination of the several elements. The second claim omitted the encircling nut and made prominent the shape of the jaws, by which lateral movement was permitted in the socket without the jaws falling out.

2. The next question is whether the "Ives" and the "novelty" braces infringe the Horton patent.

These braces, which are substantially a reproduction of the Amidon brace, are manifestly an improvement upon the Horton invention, but have its leading features. These features in the defendants' braces are a threaded and slotted cylinder, which loosely holds a pair of movable jaws, pivoted at the foot or secured by a projection at the bottom of the slot, and inclosing a bit-shank, which they are made to clamp firmly by the action of an encircling nut, which is forced upon the shank at both ends, and closes the noses of the jaws over the top of the shank so that the tool is held and retained in its proper position. The tapering bore of the Horton patent is transferred in the defendants' braces to the faces of the jaws, and becomes the tapering grooves which inclose the shank as the jaws are pressed against it by the action of the nut or thimble. The defendants insist that the jaws of the "Ives" braces and of the Horton patent are not the same, because they say that the only office of the Horton jaws is to prevent the auger-bit from being withdrawn from the handle, and are a substitute for the nut or rivet which secures the handle of an old-fashioned auger, while the Ives jaws gripe the shank and prevent its turning around in the handle. But the Horton jaws do not merely hold the auger-bit in the handle, they also resist any tendency to turn around or to be twisted in the handle. Arguing upon this idea that the office of the jaws in the two devices is different, the defendants easily prove that the respective jaws are radically different from each other, and that the grooved jaws of the Amidon bit-holder, which grasp the shank so that it cannot turn, perform a different office from the jaws of the Horton handle, which they say serve merely to withdraw the auger-bit; but the premises being unsatisfactory, I am of opinion that the conclusion is also untenable. The principle of the Horton invention is reproduced in the Amidon and the defendants' bit-stocks; and while that principle is developed so as to make a more perfect instrument, it is developed in substantially the same way and by the same general mechanical means. The lateral movement which is mentioned in the second claim of the Horton patent is produced in the "novelty" brace by the jaws being loosely pivoted together in the bottom or foot of the cylinder instead of swinging in recesses or cavities of the cylinder, as in the Horton patent, and is produced in the "Ives" brace by the movement of the jaws in a projection substantially similar to the arrangement in the Horton cylinder. The hinge-like movement of the jaws is substantially alike in each brace.

3. Is the Amidon patent invalid for want of novelty?

That the "Ives" and "novelty" braces infringe the Amidon patent is not practically denied, and the principal question which remains, as to these two braces, is the validity of the patent. The Amidon bit-stock is an improvement upon the Horton handle, and it becomes important to ascertain wherein the improvements consist. They are found in the shape of the jaws and of the nut or thimble, and in the cavity at the bottom of the socket. These jaws are beveled at the upper and lower ends, so that they are forced together by the surfaces of the thimble and of the cavity at the foot of the cylinder. The grooves of the jaws are so tapered as to fit the edges and shoulders of the shank and the protuberant portion of the sleeve gives the jaws such a capacity of movement that they can take in a bit-shank beyond the end of its shoulder, and the jaws will conform to the shape of the shank. The bevel of the jaws at their upper and lower ends, whereby the jaws are forced together, and the taper of the grooves in the jaws, are the peculiar and distinguishing features of the jaws. The protuberant swell of the thimble, whereby the jaws have greater capacity of adjustment to the taper and shoulder of the bit-shank, and the contracting mouth of the thimble which draws the noses of the jaws together over the top of the shank, are the peculiar features of the thimble. The recess at the bottom of the slot formed with a beveled orifice has its office to force the lower ends of the jaws together as they are forced by the pressure of the thimble against the walls of the cavity. The peculiar formation of these parts of the combination constitutes the patentable features of the Amidon patent.

The question of novelty depends materially upon the construction which is given to the patent, and to its first claim, which is as follows:

In combination with the jaws G G or their equivalents, constructed to move away from or toward each other, in the manner described, so that they may conform to the taper of the bit-shank, the screw-thimble F or its equivalent, to force the said jaws upon said shank, as and for the purpose set forth.

If this claim means the jaws G G, or any jaws constructed so as to move away from or toward each other, in the general manner described, so that they may conform to the taper of the bit-shank, in combination with the screw-thimble F, or any thimble which forms the jaws upon the shank, the claimed invention was probably well known. Such a construction would limit the patentable part of the invention to the third claim, and would make it consist of the recess at the bottom of the slot in combination with beveled jaws; but such a construction is not in accordance with the actual invention or with the specification. The peculiarities of the jaws G G are minutely described, and stress is laid upon the peculiar shape of the jaws, which evidently constituted, in the mind of the patentee, the distinctive feature of his invention. The protuberance and convergence of the screw-thimble are described, though the same prominence is not given to the thimble as to the jaws.

The first claim specified the peculiarly-shaped jaws G G, or jaws which are substantially formed like the jaws G G, in the following particulars, viz., which are constructed to loosely fill the slot and so that they may move apart on a pivot or may be moved bodily away from or toward each other; in the described manner, and thus conform to the taper of different bit-shanks, in combination with the peculiarly-shaped screw-thimble F, or a thimble which is so constructed as to allow by its protuberance the range of movement of the jaws which thimble F permits, and also to bind the heels and noses of the jaws upon the shank. This claim has special reference to jaws pivoted and beveled, which have the range of movement between the laterally-supporting walls of a slotted cylinder which the jaws G G have, in combination with the encircling thimble, which by its protuberant shape also gives the jaws their capacity of movement and by its convergence clamps the noses of the jaws.

The grooves are particularly specified in the second claim, which is for the peculiarly-shaped jaws G G, with tapered and grooved faces.

The third claim is for the cavity D in the bottom of the slot, with a beveled orifice, in combination with the jaws G G, which combination permits a lateral movement of the jaws within the cylinder, and the closing of the heels of the jaws within the cylinder, and the closing of the heels of the jaws when acted upon by the thimble.

This statement of the invention and this construction of the patent excludes from the consideration of anticipatory devices the Stackpole brace of 1862, the Stackpole patent of 1867, the Goodell brace and the Bartholomew brace of 1867. The jaws of neither of these braces have tapering ends or noses, which are closed over the shoulders of the bit-shank, and which are acted upon by a protuberant and convergent sleeve or thimble. These devices were not, however, mainly relied upon by the defendants, who chiefly urged as an anticipatory invention the Dexter H. Chamberlain awl-holder, patented in 1854. This tool is a useful one for holding the shanks of awls, or other similar small tools, but could not be relied upon to endure the strain and twist which necessarily come upon an auger or bit whose radially-cutting edges are forced by successive revolutions into the wood. The tool consists of a pair of clamps, each one of which is cylindrical upon the outside. The upper and lower ends are conical, which ends are cut off and do not run to a point. Through the center of the inside of each one of the clamps is cut a triangular groove from top to bottom, so that when the clamps are placed together the triangles face each other, and make a uniform straight square groove throughout the extent of the clamps or jaws. These jaws inclose the shank of an awl, and are screwed together and kept in place by a dome-shaped screw-nut. These jaws are not like the Amidon jaws, loosely placed in a slotted socket, to give lateral motion, nor are they so constructed as to accommodate themselves to bit-shanks of varying taper, nor is the dome-shaped sleeve the equivalent of the protuberant and converging sleeve of the Amidon patent. In brief, the Chamberlain holder has neither the movable nor tapered jaws nor the thimble of the Amidon bit-stock.

On February 16, 1876, the plaintiffs or their predecessors licensed the defendants to make two thousand braces of their patent, No. 111,649, dated February 7, 1871, for a royalty of ten per cent. on the net prices for which the defendants sold the braces. They did not manufacture the precise invention represented in their patent, but made a quantity of the braces known as the "Ives" brace, and which are made according to the Amidon patent. I have not seen the Ives patent, and therefore do not understand precisely the difference between the two articles, but understand from the testimony of the defendants' expert that there is less capacity of lateral movement of the jaws at the foot of the brace in the Ives patent than in the Amidon, and that the elder patent is broader than the Ives patent. The defendants were licensed only to make the article which was shown in their patent. On December 30, 1875, the defendants by agreement submitted to a preliminary injunction against manufacturing the "Ives" brace, and conceded that it was an infringement of the Amidon patent, without conceding any other question in the case in regard to other braces. It was further agreed that in any accounting the defendants shall account for all "Ives" braces, in accordance with the terms of said agreement of February 11, 1871, (*Feb.* 16, 1876?)

Upon this state of facts, I think that the "Ives" brace is not protected by the license, and it is also true that the plaintiffs have agreed that the infringement is to be paid for as if it were so protected.

The questions in regard to the "Centennial" and "Centennial novelty" braces only remain.

These two braces differ from the "Ives" and the "novelty" mainly in this, that the jaws are attached to the side walls of the beveled cavity in the foot, and that these side walls move on a pivot toward each other when operated upon by the screw-thimble, and so pinch the jaws together. This accomplishes the same result in substantially the same way in which it is accomplished in the Amidon patent, where the heels of the jaws are forced together in the beveled orifice by the screw-thimble acting directly upon the jaws. As it is expressed in the patent, the jaws are "forced together by the inclined surfaces of the thimble F and the cavity D, when the said thimble is screwed on the foot." It is not material whether the walls of the orifice pinch the jaws or the jaws are pinched against the walls. These two braces, differing from the other braces of the defendants only in the particular which has been named, infringe also the third claim of the Amidon patent, and, equally with the other braces, infringe the first and second claims of that patent and also of the Horton patent.

There should be a decree for an injunction against the four braces of the defendants and for an accounting.

TRADE-MARKS.

[Each certificate bearing date August 6, 1878.]

6,434.—FERTILIZERS.—*Henry Duvall & Co.*, Baltimore, Md. Application filed May 23, 1878.
"The word-symbol 'PATUXENT.'"

6,435.—HEATING AND COOKING STOVES.—*Detroit Stove Works*, Detroit, Mich. Application filed July 2, 1878.
"The word-symbol 'JEWEL.'"

6,436.—TICKINGS.—*Eagle and Phœnix Manufacturing Company*, Columbus, Ga. Application filed June 17, 1878.
"The arbitrarily-selected letters 'A O A,' in the order named."

6,437.—CASSIMERES.—*Franklin Glazier*, Hartford, Conn. Application filed July 24, 1878.
"The word-symbol 'HOPEWELL.'"

6,438.—FLOUR.—*George V. Hecker*, New York, N. Y. Application filed May 7, 1878.
"A series of boundary panels or spaces arranged continuously around an inner open space, and formed by the intersection of continuous boundary-lines, as represented."

6,439.—COFFEES AND SPICES.—*John Prusso*, Oakland, Cal. Application filed July 20, 1878.
"The seated figure holding the scales and sword."

6,440.—LARD.—*Fidel G. Pierra*, Brooklyn, N. Y. Application filed July 23, 1878.
"The mountain-peaks, the sun, and the word 'ANDES.'"

6,441.—FLOUR.—*Red Wing Mills*, Red Wing, Minn. Application filed July 26, 1878.
"The word-symbol 'CORNER STONE.'"

6,442.—FLOUR.—*Red Wing Mills*, Red Wing, Minn. Application filed July 26, 1878.
"The word-symbol 'OLD GLORY.'"

6,443.—MEDICINAL PREPARATIONS.—*Theo. H. Videto*, Hyde Park, Mass. Application filed June 28, 1878.
"The arbitrarily-selected letters and words 'A. B. C. ORIENTAL.'"

6,444.—MEDICINAL PREPARATION.—*Jacob L. Wallach*, Chicago, Ill. Application filed June 21, 1878.
"The fanciful or arbitrarily-selected words 'GUNDEL BUNDEL.'"

6,445.—CIGARS.—*Henry Welsh*, New York, N. Y. Application filed July 2, 1878.
"The fanciful or arbitrarily-selected word 'GESUNDHEIT.'"

6,446.—PLUG OR CHEWING TOBACCO.—*Henry Welsh*, New York, N. Y. Application filed July 2, 1878.
"The fanciful or arbitrarily-selected word 'CONQUEST.'"

6,447.—PLUG OR CHEWING TOBACCO.—*Henry Welsh*, New York, N. Y. Application filed July 2, 1878.
"The fanciful or arbitrarily-selected word 'TEST.'"

6,448.—PLUG OR CHEWING TOBACCO.—*Henry Welsh*, New York, N. Y. Application filed July 2, 1878.
"The fanciful or arbitrarily-selected word 'HECTOR.'"

6,449.—PLUG OR CHEWING TOBACCO.—*Henry Welsh*, New York, N. Y. Application filed July 2, 1878.
"The fanciful or arbitrarily-selected word 'REPOSE.'"

6,450.—BAKING-POWDER.—*George W. Kendall*, New Orleans, La. Application filed July 26, 1878.
"The rectangular figure and the representation of a spoon, as shown."

6,451.—CHURNS.—*Tiffin Union Churn Company*, Tiffin, Ohio. Application filed April 5, 1878.
"The word 'UNION.'"

6,452.—SPOOL-COTTON.—*Alfred D. Warren*, Worcester, Mass. Application filed July 6, 1878.
"The arbitrarily-selected word 'LONSDALE.'"

DESIGNS.

[Each design bearing date August 6, 1878.]

10,764.—SEWING-MACHINE BRACKET-ARM.—*George S. Darling*, Chicago, Ill., assignor to *Wilson Sewing Machine Company*, same place. Application filed July 22, 1878. Term of patent 14 years.

10,765.—CRACKERS.—*Charles S. Fowler*, Brooklyn, and *Lucius A. Rockwell*, New York, N. Y. Application filed July 3, 1878. Term of patent 7 years.

10,766.—CHAIRS.—*Grove M. Harwood*, Troy, and *Robert Wood*, West Troy, assignors to *The Henry I. Seymour Chair Manufactory*, West Troy, N. Y. Application filed January 3, 1878. Term of patent 14 years.

10,767 to 10,769, inclusive.—FONTS OF ORNAMENTAL PRINTING-TYPES.—*Julius Herriet*, New York, N. Y., assignor to *David Wolfe Bruce*, same place. Applications filed July 15 and 23, 1878. Term of patents 14 years.

10,770 to 10,772, inclusive.—OIL-CLOTHS.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed July 24, 1878. Term of patents 3½ years.

10,773.—POCKET-LAMP.—*Charles S. Tallmadge*, Cincinnati, Ohio. Application filed June 15, 1878. Term of patent 7 years.

10,774.—OVERSHOES.—*George Watkinson*, New Haven, Conn., assignor to *The L. Candee & Co.*, same place. Application filed July 12, 1878. Term of patent 7 years.

10,775.—HAND-WHEEL FOR GLOBE AND ANGLE VALVES, &c.—*Joseph L. Wolcott*, Toledo, Ohio, assignor to *Shaw, Kendall & Co.*, same place. Application filed March 15, 1878. Term of patent 7 years.

LABELS.

[Each certificate bearing date August 6, 1878.]

1,642.—Title: "CLARK'S IMPROVED BLIND HINGES FOR WOOD."—*Clark & Co.*, Buffalo, N. Y. Application filed July 25, 1878.

1,643.—Title: "VOLNEY'S CARDAMOM COMPOUND."—*Charles H. Davis*, Haverhill, Mass. Application filed July 25, 1878.

1,644.—Title: "HEALTH FOOD COMPANY'S GLUTEN SOAP.—*Frank Fuller*, New York, N. Y. Application filed July 22, 1878.

1,645.—Title: "LYDIA E. PINKHAM'S LIVER PILLS."—*William H. Pinkham*, Lynn, Mass. Application filed July 26, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

AUGUST 6, 1878.

206,657. SNAP-HOOKS. Charles W. Blakeslee, Northfield, Conn., assignor of one-half his right to Joseph H. Hopkins and Levi S. Wooster, same place. Filed Mar. 20, 1878.



Claim.—The snap-hook tongue *b*, having the one ear *b'* and the sleeve *b''*, in combination with the hook-body *a* and the spring *d*, all substantially as described, and for the purposes set forth.

206,658. BALING-PRESSES. Joseph B. Hanson, Brooklyn, N. Y. Filed June 10, 1878.

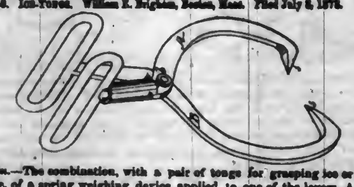


Claim.—1. A platen provided with a longitudinal central rib or projection, constructed and arranged to force the material of the bale from the middle of its width toward the sides, as set forth.

2. A platen provided with one or more strips, *A*, protruding at the center, and applied upon the platen plate or bars, or between the latter, substantially as and for the purpose set forth.

3. A platen provided with the protruding strip or strips *A*, and with grooves *a*, to receive the bands, as set forth.

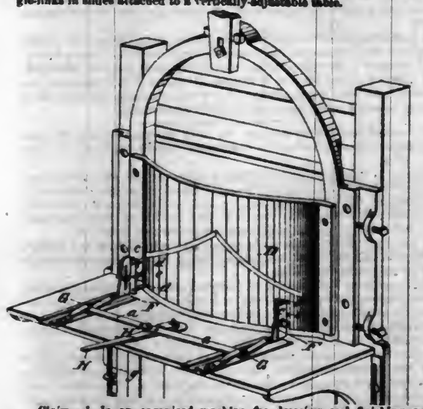
206,659. ICE-TONGS. William E. Brigham, Boston, Mass. Filed July 6, 1878.



Claim.—The combination, with a pair of tongs for grasping ice or other substance, of a spring weighing device applied to one of the levers, *A* or *B*, at a point between the handle and the pivot *b*, substantially as and for the purpose set forth.

206,660. MACHINES FOR PLANING CHAIR-BACKS. D. Pullock, Fort Atkinson, Wis. Filed June 22, 1877.

Brief.—The curved surfaces of chair-backs are dressed and finished with a smooth surface the entire curved face by a single continuous transverse stroke, by means of an inclined reciprocating blade adapted to the longitudinal curvature of the back, and a curved face-plate, in which the knife is carried transversely across the back, in connection with two laterally-adjustable heads, between which the backs are held edgewise, said heads being operated by toggle-links in slides attached to a vertically-adjustable table.

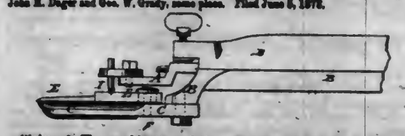


Claim.—1. In an organized machine for dressing and finishing curved chair-backs, the combination, substantially as shown and described, of devices adapted to support the chair-back, a face-plate curved to correspond with the curvature of the back and arranged to reciprocate transversely across the same, and a cutting-blade mounted in the face-plate, with its edge inclined and curved to correspond with the face-plate and back.

2. The presser-heads F, arranged as and for the purpose described, in combination with the links G, bars *a*, and lever H.

3. In combination with the heads F, the vertically-adjustable plates *e*, provided with the studs *d d* and *e*, constructed and arranged to operate substantially as herein described.

206,661. SHEEP-SHEARING MACHINES. Warren S. Burgess, Norristown, Pa., assignor to John E. Dager and Geo. W. Grady, same place. Filed June 5, 1878.

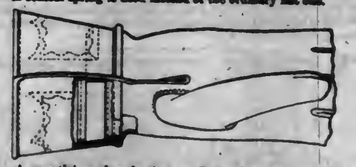


Claim.—1. The combination of the cutter-plate C, provided with two or more stationary cutters, one or more vibrating cutters, E, and the screws F I, with each other, and with the vibrating lever A and the frame or case B of a clipping-machine, to adapt it for use for shearing sheep, substantially as herein shown and described.

2. The combination of the guard-bars J with the lower side of the edges of the stationary cutters C, substantially as herein shown and described.

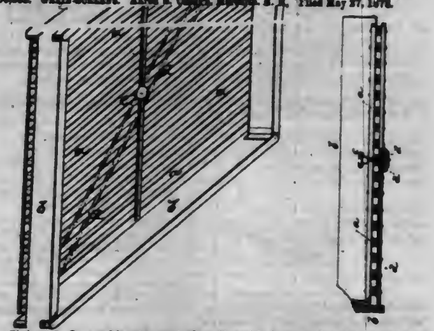
206,662. GAUNTLET-FASTENERS. Emma B. Burr, Kingsborough, N. Y. Filed Dec. 14, 1877.

Brief.—A conical spring is used instead of the ordinary flat one.



Claim.—A gauntlet or glove having a cuff provided with a conical spring inserted in the smaller end of the cuff, for the purposes herein set forth.

206,663. GRAIN-SCREENS. Aaron B. Church, Meredith, N. H. Filed May 27, 1878.



Claim.—1. In combination with the adjustable bars or slats of a screen or sieve, the elastic rods *d d* and clamping-screw *c*, for the purposes described.

2. In an adjustable sieve or screen, the elastic rods *d d* and set-screw *c*, operating as shown and described.

3. An adjustable screen with pivoted corners, in combination with elastic rods to hold the sieve when fixed, one of the rods being fastened to the screen at one corner, the other to the diagonally-opposite corner, and both free to move longitudinally through a set-screw or guide near the center.

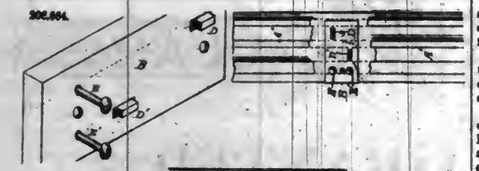
4. The combination of the bars *a a* with the sides *b b* and the rods *d d* and set-screw *c* in an adjustable screen, as and for the purposes shown and set forth.

5. The combination, in a screen or riddle having adjustable bars, of elastic guide-rods and a clamping device.

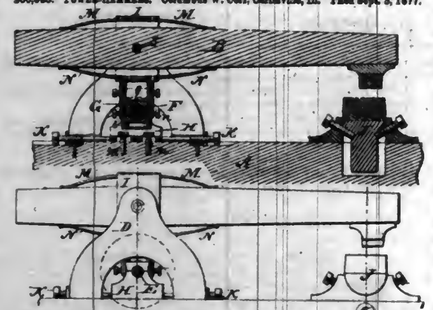
206,664. SASH-FASTENERS. William H. Coffman and Nathaniel Havens, Carroll, Ohio. Filed May 17, 1878.

Claim.—The combination of the plate B, recessed into the side of the window-casing, the two springs C C', attached to the said plate and provided with stop-lugs D D', and push-pins E E', with the sash-rack G, all arranged as described, for holding both sashes in any desired position, substantially as described.

206,664.



206,665. Power-Hammers. Columbus W. Carr, Cartlerille, Ill. Filed Sept. 3, 1877.



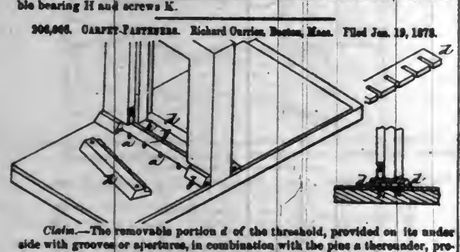
Claim.—1. In a power-hammer, the combination of the rocking cradle I, the independently-vibrating hammer-beam pivoted therein, and the two semi-elliptic metal springs M and N, secured in the top and bottom of the cradle, respectively, with their ends bearing on the beam on opposite sides of its pivot, as shown and described.

2. In combination with the rocking cradle having the hammer-beam and springs mounted therein and the slotted arm depending rigidly therefrom, the eccentric F and the sliding block G mounted thereon within the slotted arm.

3. In combination with the rocking cradle and the sliding block G, mounted in its slotted arm, the eccentric F, having its shaft mounted in longitudinally-adjustable bearings.

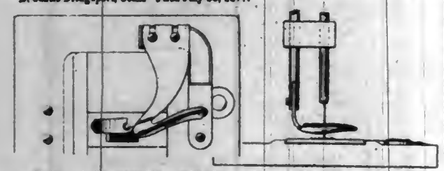
4. In combination with the shaft E, having the eccentric mounted thereon, and arranged to operate the hammer-beam in the manner described, the movable bearing H and screws K.

206,666. Carpet-Fasteners. Richard Curtin, Boston, Mass. Filed Jan. 19, 1878.



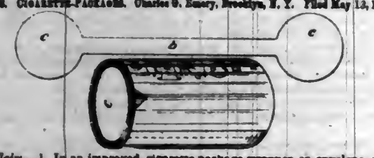
Claim.—The removable portion *d* of the threshold, provided on its under side with grooves or apertures, in combination with the pins *a* thereunder, projecting up from the floor, substantially as and for the purpose set forth.

206,667. Fur-Controlling Guides for Sewing-Machines. George H. Dimond and Saml. D. Castle Bridgeport, Conn. Filed July 30, 1877.



Claim.—A fur-controlling guide for sewing-machines, having one or more curvilinear-shaped blades to turn the hair out of the line of the seam, constructed and operating substantially as described.

206,668. Cigarette-Packages. Charles O. Emery, Brooklyn, N. Y. Filed May 13, 1878.



Claim.—1. In an improved cigarette-package wrapper or envelope, a side strip of paper or other similar material, pasted or gummed to extend from top to bottom and connect with a free flap over the top and a flap gummed over the tuck in the bottom, substantially as set forth.

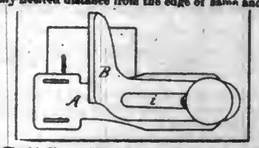
2. An improved receptacle for cigarettes, consisting of the ordinary tubular wrapper or receptacle, having a tucked bottom, with the addition of a strip of paper or other similar material pasted or gummed thereon to extend down the side or sides and across the tuck in the bottom, substantially as set forth.

3. An improved package-wrapper for cigarettes, having a strip extending up the side and gummed or pasted over the lap or joint, and connected with or forming a part of a free flap over the top, arranged to protect or cover the exposed ends of the cigarettes, substantially as set forth.

4. An improved package-wrapper for cigarettes, having a strip, *b*, gummed or pasted down over the lap or joint in the wrapper, with terminals or prolongations *c c*, one of which is gummed or pasted over the bottom tuck or fold, and the other of which is left to fold freely over the exposed ends of the cigarettes, substantially as set forth.

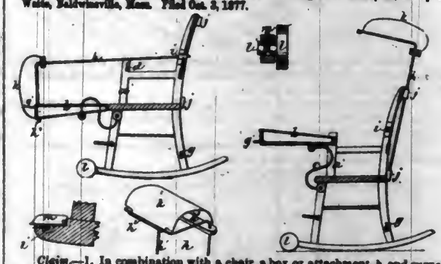
206,669. Sewing-Machine Attachments. Thomas D. Emery, Harrison, assignor of one-half his right to Wm. S. Nash, Windham, Me. Filed Feb. 20, 1878.

Brief.—A binder and gage so combined, and made adjustable in relation to each other and the needle-plate, that the binding can be attached to the material at any desired distance from the edge of same and parallel thereto.



Claim.—The binding-guide A, having slot *a*, in combination with gage B, provided with slot *b*, the two being capable of adjustment relatively to each other and the throat-plate of a sewing-machine, substantially as described, for the purpose set forth.

206,670. Nursery-Chairs. Henry H. Griffin, Gardner, assignor to Thompson, Parley & Wales, Baldwinsville, Mass. Filed Oct. 3, 1877.



Claim.—1. In combination with a chair, a box or attachment, *b*, and curved links *c c*, pivoted, as described, to the chair-frame and to the box, whereby the box is adapted to be elevated above the seat to form a toy-box, depressed to the level of the seat to form a continuation of the same, and reversed and swung under the seat between the legs of the chair, the box and chair being provided with suitable means, in addition to the links, whereby the box is held in the positions named.

2. In combination with the chair *a*, having recesses *d d* in its arms, the box or attachment *b*, pivoted, as described, to the pivoted links *c c*, and provided with lugs *f f*, adapted to enter the recesses *d d*, and secure the box *b* to the chair-arms, as set forth.

3. In combination with the chair *a* and box or attachment *b*, adapted, as described, to convert the chair into a crib, the frame *h*, adapted to constitute side rails to the crib and to support the outer end of the box *b*, substantially as described.

4. In combination with the chair *a*, having arms *a' a'* and sockets *i i* and *j j j j*, the frame *h*, adapted to be arranged horizontally or vertically, substantially as and for the purpose specified.

5. In combination with a chair having a pin, *g*, on a stretcher between its rear legs, the box or attachment *b*, connected to the chair, as described, and provided with a staple or projection, *g'*, substantially as and for the purpose specified.

6. In combination with a rocking-chair having journal-boxes and pivoted catches *m* in the front ends of its rockers, and provided with a box or attachment, *b*, adapted to be supported in front of the chair-seat, the detachable wheels *l*, having slotted journals *F*, whereby the action of the rockers is prevented when the box *b* is supported in front of the chair-seat, and the chair is enabled to be easily moved about, substantially as described.

206,671. Sole-Edge-Trimming Machines for Boots and Shoes. Charles H. Holmes, Poughkeepsie, assignor to the New York Edge Trimmer Company, New York, N. Y. Filed Jan. 5, 1878.

Claim.—1. A machine for trimming the edges of the soles of boots and shoes, having in combination the following elements, viz: a hinged and vertically-adjustable table for supporting the jack, a feed-pinion, a guide-roller head, a jack with rack-teeth for the pinion and slot for the guide-roller head, and a cutting device, substantially as and for the purpose described.

2. In a machine for trimming the edges of the soles of boots and shoes, a conical guide-roller with beveled edge and recessed upper surface, substantially as and for the purpose described.

3. In a machine for trimming the edges of the soles of boots and shoes, a conical guide-roller with beveled edge and recessed upper surface, in combination with a cutting device, and a jack provided with rack-teeth for the gears of a feed-pinion, and a slot for the reception of a guide-roller head, substantially as and for the purpose described.

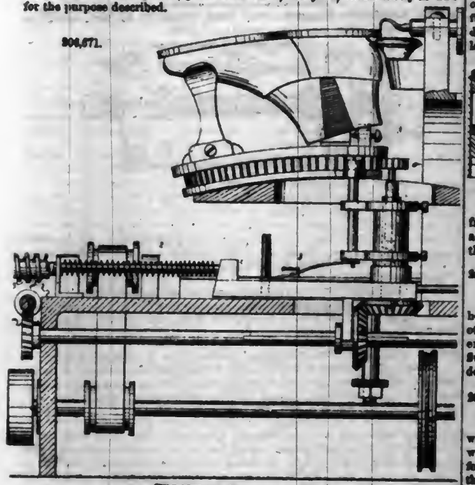
4. In a machine for trimming the edges of the soles of boots and shoes, a hinged and vertically-adjustable table and a jack with rack-teeth to receive the gears of a feed-pinion and a slot for the reception of a guide-roller head, in combination with an automatic horizontally-adjustable feed-pinion and guide-roller head, substantially as and for the purpose described.

5. In a machine for trimming the edges of the soles of boots and shoes, a horizontally-sliding jack, in combination with a conical and bevel-edged guide-roller, substantially as and for the purpose described.

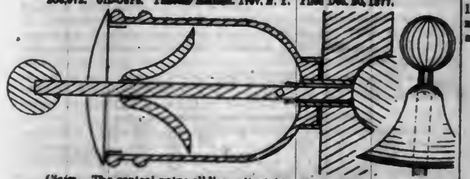
6. In a machine for trimming the edges of the soles of boots and shoes, a guide-roller head for the jack, combined with a device for withdrawing the guide-roller head from its slot in the under side of the jack, substantially as described.

7. In a machine for trimming the edges of the soles of boots and shoes, a table for supporting the jack, constructed with a slot to permit the horizontal adjustment of a feed-pinion, guide-roller head, and jack, substantially as and for the purpose described.

206,672.

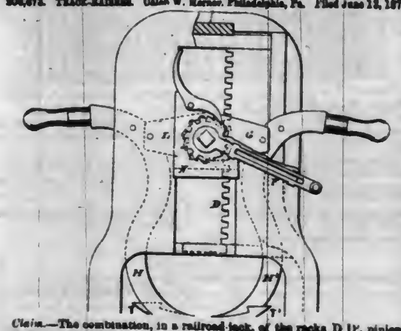


206,672. Oil-Cups. Timothy Kellogg, Troy, N. Y. Filed Dec. 20, 1877.



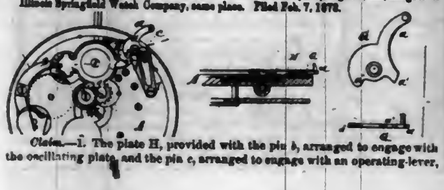
Claim.—The conical valve sliding adjustably upon the tube *r*, in combination with said tube and an oil-cup, substantially as and for the purpose described.

206,673. Track-Raisers. Caleb W. Harner, Philadelphia, Pa. Filed June 13, 1878.



Claim.—The combination, in a railroad-jack, of the racks D D', pinions E E', shaft M, extension crank-handles F F', walking-beam G, tongs H H', transverse casing S, having for its ends slides N N', all as described and shown.

206,674. Stem Winding and Setting Watches. Otis Hoyt, Springfield, Ill., assignor to Illinois Springfield Watch Company, same place. Filed Feb. 7, 1878.

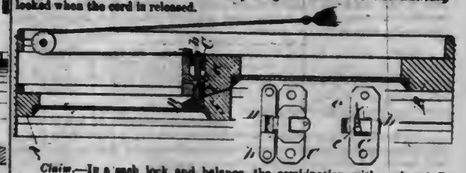


Claim.—1. The plate H, provided with the pin *b*, arranged to engage with the oscillating plate, and the pin *c*, arranged to engage with an operating-lever, in combination with each lever, whereby either can operate independent of the other, substantially as specified.

2. The plate H, provided with the pins *b c*, in combination with the lever G, provided with a projection, *c'*, and fork I, having spring-arms for insuring the proper engagement of the train of gear, substantially as specified.

206,675. Rack-Ballasts. William E. Kay, Brooklyn, N. Y. Filed Dec. 22, 1877.

Brief.—A spring-bolt on one of the meeting-rails, notched and beveled, presses against a projecting pin, and is retracted by a lifting-lever, which is operated by a cord and tassel passing over a pulley at the top of the window-frame; the construction adapting the device to be unfastened and the window raised by a single movement in pulling the cord, and automatically locked when the cord is released.



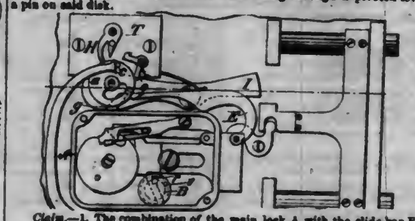
Claim.—In a sash lock and balance, the combination, with sashes A B, frame C, and catch D, of the spring-bolt *b*, notched, beveled on under side, and pressed against a projecting pin, *c*, together with lever E, for retracting the same, as shown and described.

206,676. Medical Compounds. William J. Klapp, Osage Mission, Kans. Filed May 28, 1878.

Claim.—A medical compound as a remedy for spasms, palpitation of the heart, and epileptic fits, consisting of a fluid compound prepared of bromide of potassium, fluid extract of English valerian, bromide of ammonium, fluid extract of skull-cap, fluid extract of bitter-sweet, fluid extract of black cohosh, fluid extract of hyoscyamus, fluid extract of stramonium, fluid extract of belladonna, and water, mixed in the proportions as above substantially described.

206,677. Time-Locks. William Kook and Joseph L. Hall, Cincinnati, Ohio; said Kook assignor to said Hall. Filed Apr. 27, 1878.

Brief.—The bolt-work is held by the main lock-bolt. When said bolt is withdrawn at an improper time it slides a bar, which acts on a pivoted and weighted lever to cast it down and dog the bolt-work. At the proper period for unlocking, a time-disk provided with a lug is moved into position to cause the bar on the main lock-bolt, when said bolt is withdrawn, to be elevated and not act on the weighted lever, thus permitting the bolt-work to be retracted. If the time mechanism should fail to move the disk it may be operated by means of an independent permutation lock acting through a pivoted lever on a pin on said disk.



Claim.—1. The combination of the main lock A with the slide-bar E, the pivoted lever I, provided with the incline *g*, the time attachment T, and disk *a*, provided with the pin *c*, all arranged to operate in connection with the train-bolts of a safe or vault door, substantially as described.

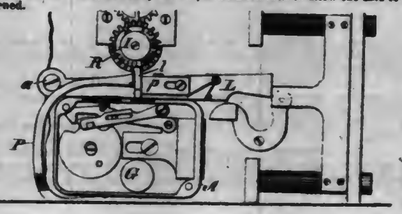
2. The combination of the main lock A and slide-bar E with the pivoted lever I, provided with the incline *g*, all arranged to operate substantially as described, whereby the unlocking of the main lock will cause the lever I to dog the train-bolts, substantially as described.

3. The combination of the main lock A with the slide-bar E, the pivoted lever I, provided with the incline *g*, the time attachment T, disk *a*, provided with the pin *c*, and guard-lock B, with the lever-connection F, all constructed and arranged to operate in connection with the bolt-work of a safe or vault door, substantially as described.

4. The screw-cap J, provided with the projection *r*, in combination with one or more tumblers, and the bar *r*, arranged to operate substantially as described, whereby the cap is prevented from being detached except when the bar rests in the notch of the tumblers, as set forth.

206,678. Time-Locks for Safes. William Kook and Joseph L. Hall, Cincinnati, Ohio; said Kook assignor to said Hall. Filed May 16, 1878.

Brief.—The bolt-work is secured by the bolt of the main lock and a separate dogging-lever. When the lock-bolt is retracted the fence-bar of the main lock raises the lever to unclog the bolt-work. The said lever is provided with an adjustable stop, upon which the time-disk acts to secure it for a predetermined time. If the time-disk should fail to release the lever its adjustable stop may be removed by an independent permutation-lock to allow the safe to be opened.



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Claim.—1. In combination with the pivoted or dogging lever L, the main lock A, having its rocking bar arranged to operate or raise the lever by means of a projection on one or both, substantially as described, whereby the bolt of the main lock and the lever L can both be disconnected from the bolt-work by operating the main lock, as set forth.

2. The main lock A and the pivoted lever L, provided with an adjustable stop, *l*, in combination with the dial E, the said parts being arranged to operate substantially as described, whereby the lever can be retained in position to dog the bolt-work even when the bolt of the main lock is withdrawn, or, if desired, can be released even when the time attachment is in operation.

3. The combination of a time attachment provided with the dial *k*, the lever L, provided with the adjustable stop *l*, the main lock A, and the guard-lock G, with the lever I', all arranged to operate substantially as described, whereby the parts can be released and the door unlocked in case the time attachment stops or fails to operate.

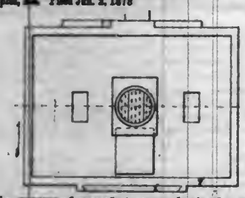
206,879. GRATE. Franklin M. Lawrence, Portland, Me. Filed Jan. 2, 1878.



Claim.—1. The combination of the handle *d*, having the end which enters the socket shaped as shown at A, with the socket-piece *i* and the grate, the said handle and socket to operate as herein described.

2. The combination, with the grate, as described, having the stop *g*, of the hook *a*, lever *c*, having projection *e*, and handle *d*, to operate as specified.

206,880. PROCESSES OF MAKING LEAD PIGMENT. Geo. T. Lewis, Philadelphia, Pa., and E. O. Bartlett, Joplin, Mo. Filed Jan. 2, 1878.



Claim.—The process of manufacturing a basis of a pigment by treating carbonated galena (native sulphuret of lead) mixed with carbon, by subjecting the same to the action of heat and oxygen in a compound reducing and oxidizing furnace, or other furnace capable of oxidizing the sulphuret of lead and collecting the fumes, as above described.

206,881. ANNUNCIATORS. Adalvin B. Lyman, Cleveland, Ohio. Filed June 28, 1878.

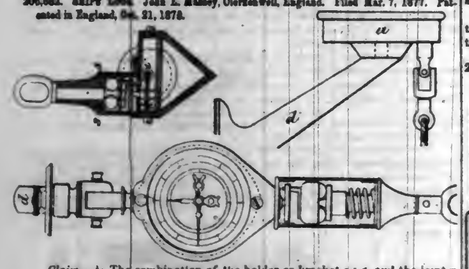


Claim.—1. In electric annunciators, the bent armature E, attached to the arm F of the bracket by pins *a a*, held tightly in said arm, and being loose in the holes of the armature through which they pass, and having the end of said armature inserted in a slot under the finger *e*, substantially as described, and for the purpose specified.

2. The name-plate G, hinged to the arm H of the bracket, and provided with a flange, I, in combination with the armature and magnets, substantially as described, and for the purpose set forth.

3. The combination of the magnets B C, bracket D, name-plate hinged thereto and provided with a flange, I, armature E, attached to said bracket by pins *a a*, and slot under the finger *e*, all constructed and arranged to operate, in relation to each other, substantially as described, and for the purpose set forth.

206,882. SHIPS' LOGS. John E. Massey, Gateshead, England. Filed Mar. 7, 1877. Patented in England, Oct. 21, 1876.



Claim.—1. The combination of the holder or bracket *e f d*, and the joint *v w* at the end of the bracket, and serving to support the registering part of the log, substantially as set forth.

2. The combination of the dial *b*, two hands, *c*, and extra wheel *x'*, planted to gear into the second forty-two-toothed wheel, *x*, of the ordinary train of wheels, substantially as set forth.

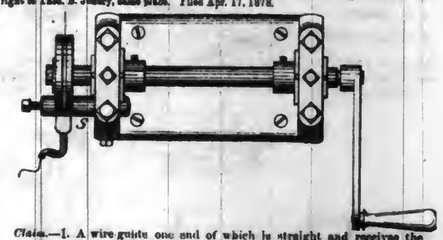
3. The spherical *p*, in combination with the shaft and face-plate, substantially as set forth.

4. The combination of a log and speed-gage with the following instrumentalities, viz: dial *b*, two hands, *c*, extra wheel *x'*, planted to gear into second forty-two-toothed wheel, *x*, of train of wheels, towing-case *g*, provided with a wheel, *k*, on the shaft and at right angles to same shaft, and connected to the indicating part of log and speed-gage by suitable intermediate mechanism, substantially as described.

5. The flat box or case with elliptical frame terminating cylindrically, in combination with dial *b*, two hands, *c*, and extra wheel planted to gear into second forty-two-toothed wheel, substantially as set forth.

6. The combination of same flat box or case with elliptical frame terminating cylindrically, with dial *b*, having one circle only thereon divided from one to one hundred miles, and one index-hand, *c*, substantially as set forth.

206,883. WIRE-COILING MACHINES. Wm. F. Moody, Chicago, Ill., assignor of one-half his right to Thos. B. Jeffery, same place. Filed Apr. 17, 1878.

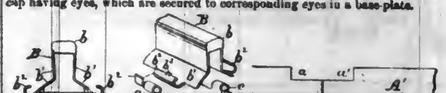


Claim.—1. A wire-guide one end of which is straight and receives the wire from the rollers, and the other end bent into a helical form for bending and delivering the wire in a spiral form, substantially as described.

2. The wire-guide or former consisting of a tube bent into a helical form, in combination with the stud S and rollers D D, substantially as described, and for the purpose set forth.

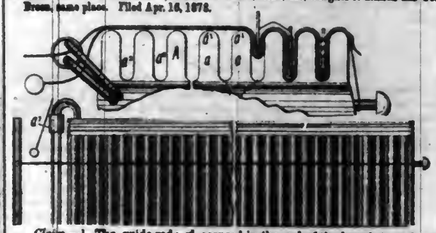
206,884. RAIL-JOINTS. Francis M. Morgan, Elizabeth City, N. C. Filed July 9, 1878.

Brief.—The meeting ends of the rails have their tread portions cut away, and are inserted in a cap which straddles their webs, the lower edges of said cap having eyes, which are secured to corresponding eyes in a base-plate.



Claim.—The combination, with the rails A A', having the mortises *a a'* on their joining ends, of the cap B, having the solid head *b* and the loops or eyes *b'*, and the base-plate C, having the eyes or loops *c c* and bolt D, substantially as and for the purposes set forth.

206,885. FLUTING-MACHINES. Francis M. Hixon, Lena, Ill., assignor to himself and Geo. Brom, same place. Filed Apr. 16, 1878.



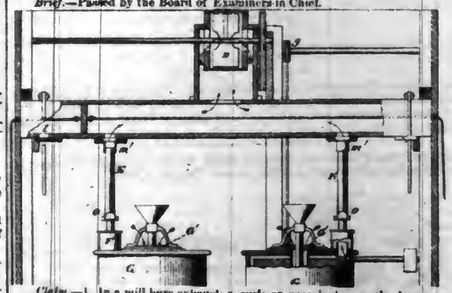
Claim.—1. The guide-rods *a'*, secured in the end of the board A, and provided with the adjustable gage *a'*, as described.

2. In combination with the guide-rods holding the cloth against vertical movement, an adjustable gage for determining its lateral position, as described.

3. The combination, with a fluting-bed, of a thread or threads arranged thereon underneath the material to be operated upon, substantially as and for the purpose set forth.

206,886. EXHAUST APPARATUS FOR MILLSTONES. James Phippen, Dundas, Minn. Filed Nov. 30, 1877.

Brief.—Passed by the Board of Examiners-in-Chief.



Claim.—1. In a mill burr exhaust, a curb or case inclosing the burrs or stones, and provided with an inlet tube, *G'*, for the passage of external or cold air between the burrs and through their channels or grooves, in combination

with a condenser connected thereto by a short tube, *p*, extending down through the curb and in a line with or slightly beyond the skirt of the burrs or stones, a condenser, and a fan or suction-blast, all arranged and operating substantially as and for the purpose set forth.

2. In a mill-burr exhaust, the combination, with the condenser F upon the curb G, of the pipe E, provided with the cut-off *o* and telescopic-joint connection *m*, by which the said pipe is detachably connected to the condenser, and when detached therefrom closed at its free or detached end, substantially as set forth.

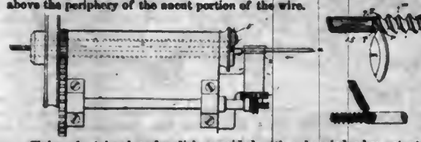
206,887. BUTTONS AND STUDS. Martin Ransom, Chicago, Ill. Filed May 13, 1878.



Claim.—In a button, the combination of the stem B, provided, as shown, with the shoulder *r*, neck *s*, and flange *t*, the loose toothed disk C, screw D, and fixed toothed disk C', substantially as described.

206,888. MACHINES FOR CUTTING THREADS ON WIRE. E. F. Richardson, Reading, Mass. Filed Jan. 5, 1878.

Brief.—The wire is fed to the cutting-disk longitudinally, through a guiding-rest, by means of a pair of annularly-grooved feed-rollers. A cutting-disk is attached to the head, set at reversed angles to the axis of the wire, and, when said head is revolved, is made to traverse around the periphery of the wire, and, by the angularity of its movement, to so embed itself into the wire surface as to displace the metal on both sides, thus forming a thread prominent above the periphery of the uncut portion of the wire.



Claim.—1. A head and a disk provided with a beveled edge set at an angle to the wire or rod to be cut, differing from the angle of the thread to be formed thereon, in combination with a feed to move the wire or rod longitudinally, in operate substantially as and for the purpose described.

2. The wire-guiding rest to hold the wire, in combination with the edged disk to roll over the periphery of the wire and cut into it as the wire is moved longitudinally, and feeding mechanism to simultaneously move the wire, substantially as described.

3. In the manufacture of screws, the herein-described method of raising the thread, consisting in cutting into the periphery of a wire or rod at an angle differing from the pitch of the screw-thread to be produced, and then crowding or shoving the portion of the wire or rod between its periphery and the central uncut portion of the wire laterally with relation to such uncut portion, and raising it as a thread prominently, forming edges above the original surface of the wire, substantially as described.

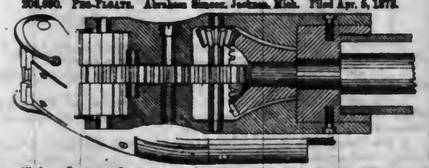
206,889. SHUTTLECOCKS. William P. Shannon, Chicago, Ill. Filed June 15, 1878.



Claim.—1. The bell-mouthed shuttlecock or shell A, having the feathers *c*, substantially as and for the purpose specified.

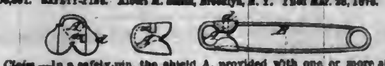
2. The combination of the shell A, having the feathers *c*, with the handle B, having the stop or shoulder *a* and extension or shaft *b*, substantially as described.

206,890. PEG-PLOATS. Abraham Simcox, Jackson, Mich. Filed Apr. 5, 1878.



Claim.—In a peg-float, the combination, with the vertical shaft and train of gearing, of the cutters and curved head, provided with the guard-springs, all arranged as shown and described, for the purpose set forth.

206,891. SAFETY-PINS. Albert M. Smith, Brooklyn, N. Y. Filed Mar. 28, 1878.



Claim.—In a safety-pin, the shield A, provided with one or more straps, *c*, and flange *d*, in combination with the pin B, secured to the shield by means of the said straps and flange, substantially in the manner and for the purpose set forth.

206,892. GOVERNORS. Charles B. Smith, Newark, N. J. Filed Jan. 14, 1878.



206,893. SHUTTLECOCKS. Moses G. Smith, McGrawville, N. Y. Filed May 17, 1878.



Claim.—1. In a corset, the combination of the two breast-sections B and C, having converging pockets, narrowing from the bottom to the top, containing a series of converging bones, and the sections A, having straight pockets and bones extending from the top to the lower edge of the corset, substantially as and for the purposes specified.

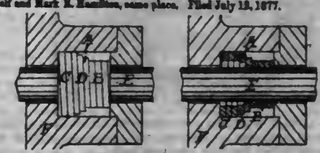
2. A corset having three front breast-sections, A B C, and under arm-section, D, with bones and pockets *a a*, all constructed and arranged to operate as described.

206,894. HARPOONS. William Taylor, Portland, Me. Filed May 21, 1878.



Claim.—In a harpoon, in combination with the pole *h* and line *m*, the socket *c*, as described, and provided with a hole for the pin *i*, and the head *a*, having slot *b*, socket *g*, hole *h*, and wings *e*, substantially as described.

206,895. PACKINGS FOR STEAM-ENGINES. Aloha Vivarttas, New York, N. Y., assignor to himself and Mark B. Hamilton, same place. Filed July 13, 1877.



Claim.—1. The packing A, composed of two parts, either of which may be radially contracted or expanded independently of the other, as and for the purposes described.

2. The packing A, consisting of the parts B and C, combined with the helix or tapered spiral D, as described, when the convolutions of D, by overlapping, form between themselves a tight or impervious joint, substantially as herein shown and set forth.

3. The packing A, consisting of the spirals B and C, as herein shown and described.

4. The combination, with the packing A, constructed as shown, of the reinforcement *c* or *b*, as and for the purposes set forth.

5. The combination, with the packing A, constructed as shown, of the arming *c'* or *b'*, as and for the purposes set forth.

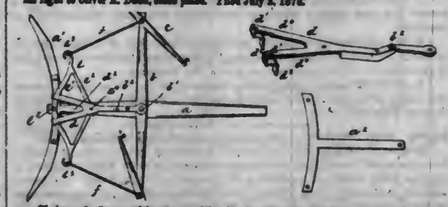
6. The combination of the packing A, as described, with the stuffing-box F and rod E, substantially as herein shown and described.

7. The combination of the packing A, as described, with the cylinder F and piston-rod E, substantially as herein shown and described.

8. The combination of the packing A, as described, with the plate *d*, substantially as herein shown and described.

9. The packing A, having the parts B and C, combined with the helix D, as described, when, by the elasticity and flexibility of D, the necessary freedom of motion is permitted to the parts B and C, as herein shown and described.

206,896. DRAFT-EQUALIZERS. Alexander Wheaton, Fayette, Iowa, assignor of two-thirds his right to Oliver A. Dead, same place. Filed July 8, 1878.



Claim.—1. In combination with the double-tree *b* and tongue *a*, the rocking equalising-bar *c*, having hooks or eyes *c'*, and pivoted to the said tongue in rear of said double-tree, and rods *f*, arranged to operate substantially as and for the purposes set forth.

2. The bifurcated bar *d*, having the loops *d'* and flanges *d'*, in combination with the rocking bar *c'*, composed of the supporting-arms *e'* and sliding bar *e'*, having stop *e'* and hooks or eyes *e'*, rods *f*, double-tree *b*, and tongue *a*, substantially as and for the purposes set forth.

206,897. LOCOMOTIVES. Jacob J. Anthony, Sharon Springs, N. Y. Filed May 21, 1878.

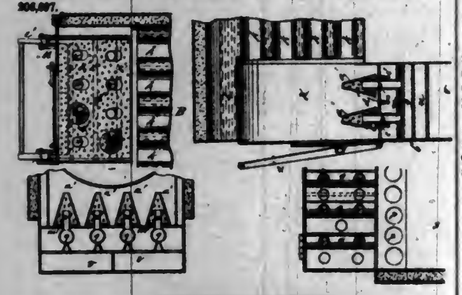
Claim.—1. The tubes *g*, pipes *w*, perforated cones *s'*, and grate *m*, in combination, substantially as herein shown and described.

2. The movable grate *d'* and the cones *a'*, in combination, substantially as herein shown and described.

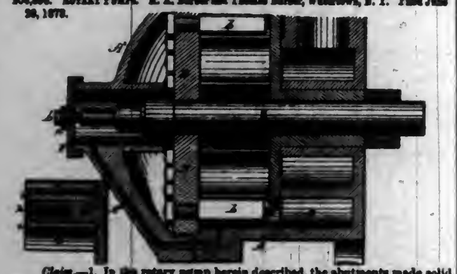
3. The fire-box E, having the movable grate *d'*, perforated cones *a'*, and air-tubes *g w*, and provided with a closed front and air-tight ash-pit, *v*, substantially as herein shown and described.

4. The combination of the adjustable deflector P with the blower O, the fire *e*, tube *q*, pipes *v*, and perforated cone *a'*, as shown and described.

206,697.



206,698. ROTARY PUMPS. H. A. Barber and Thomas Barber, Watertown, N. Y. Filed June 26, 1878.



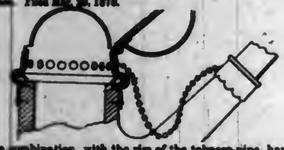
Claim.—1. In the rotary pump herein described, the abutments made solid in one piece, held stationary to the case, and having the shaft S passing through the center, for the purposes herein set forth.

2. The cut-outs *f*, formed in the cone A between the inlet-ports E', for the purposes herein set forth.

3. In the rotary pump herein described, the combination of the stud or pin *a*, formed with the chamber *c*, the rotary valve C, with concentric depression *i*, and the cap *h*, substantially as and for the purposes herein set forth.

4. The pump-case A, provided with cap-plate A^2, having the chamber I and the passage *m'*, in combination with the shaft S and disk B, the inner end of the chamber being closed by the shaft, substantially as set forth.

206,699. TOBACCO-PIPE. Jacob M. Beam, Sellit's Grove, Pa., assignor to himself and Harry U. Kistner, same place. Filed May 29, 1878.



Claim.—1. The combination, with the rim of the tobacco-pipe, having rear socket and front groove, of a detachable lid having rear and front hooks for being readily attached to or detached from the bowl, substantially as set forth.

2. The combination, with the bowl of a tobacco-pipe, of a cover having a center slot and hinged auxiliary lid closing the same, substantially as described.

3. The combination, with the bowl of a tobacco-pipe, of a detachable lid having center slot, with hinged auxiliary lid, and interior friction-plate attached to the auxiliary lid, substantially as shown and described.

4. A lid for tobacco-pipes, having air-holes at the lower part, a central slot, and a hinged lid, with a metal friction-plate, substantially as and for the purpose described.

206,700. WIRE-ROPE WAYS. Ambrose Hatchly, Knoxville, Cal. Filed June 7, 1878.

Brief.—A wire-rope way in which the direction of the rope may be changed from a straight line without the buckets, clutches, or other objects attached to the rope being broken or interfering with the action of the pulley. A grooved pulley is mounted so as to revolve in a horizontal plane, and a supplemental pulley is mounted therein, so that its edge is in line with the periphery of the main pulley. A plate is mounted on the main pulley, and is so arranged as to engage with a suitably-located stop or lug, whereby the revolution of the main pulley is stopped and the friction of the rope is transferred to the supplemental pulley, which revolves in its bearings in the main pulley. Back of the plate a recess is cut in the edge of the main pulley, into which projects the forked arm of a bell-crank lever, operating a cam on top of the plate, in such a manner that when a bucket or other object on the cable catches in the forked arm of the bell-crank lever, said lever operates the cam, so as to press back the catch and allow the main pulley to revolve until the bucket passes it, after which the main pulley continues to revolve until the stop-plate again engages with its lug or *stop*.

Claim.—1. The large directing-pulley A, mounted so as to rotate upon its axis when required, and having its edge slotted or notched at E, to admit the clutch, bucket, or other attachment to the cable without its coming in contact with the edge of the wheel, substantially as herein described.

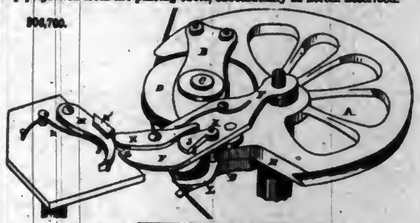
2. The directing-pulley A, recessed to receive the supplemental anti-friction pulley D, mounted to rotate within the recess in the main pulley, and independent of its motion, substantially as herein described.

3. The plate F, secured to and projecting beyond the periphery of the pulley A, so that the point G will engage the movable lug N', and prevent the rotation of the pulley A except when desired, substantially as herein described.

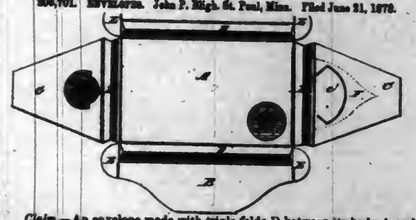
4. The cam H and the arm J, having the forked lever-arm L extending into the notch E, so that any attachment or projection upon the moving cable shall operate the levers and cam, and disengage the point G from the lug N' and allow the large pulley A to rotate, substantially as shown, and for the purpose herein described.

5. The large grooved pulley A, with supplemental grooved pulley D, mounted in its periphery so that their grooves shall be in the same plane, in combination with the plate F, spring holding-catch M, with its lug N', and the disengaging-cam H, arm J, and notched lever-arm L, fitted to be actuated by any projection from the passing cable, substantially as herein described.

206,700.



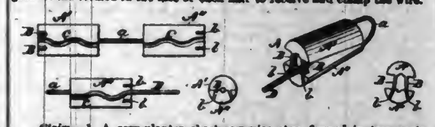
206,701. ENVELOPES. John P. High, St. Paul, Minn. Filed June 21, 1878.



Claim.—An envelope made with triple folds D between its body A and its side and end flaps B C, strengthened at the corners by corner flaps E, having a small flap, *e'*, cut out of one of its end flaps C, and covered by an additional end flap, F, and having one or more plates, G, of isinglass or equivalent substances, secured over holes formed through it, substantially as herein shown and described.

206,702. CHECK-ROW-WIRE STOPS FOR CORN-PLANTERS. William R. Chambers, Decatur, Ill., assignor to Chambers, Baring & Quinlan, same place. Filed July 27, 1878.

Brief.—The stop is formed in two parts and united by a loop. One part is provided with slots to receive tongues on the other. Curved or irregular grooves are formed in the faces of each half to receive and clamp the wire.



Claim.—1. A corn-planter check-row-wire stop, formed in two parts, A' A'', united by a loop, *c*, substantially as and for the purpose specified.

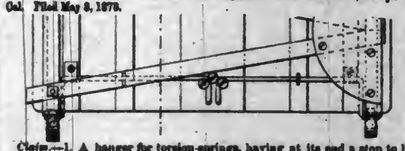
2. The part A', having tongues B B, combined with the part A'', having slots *b b*, substantially as and for the purpose specified.

3. The part A', having tongues B B, combined with the part A'', having oblique slots *b b*, by which the inserted tongues B are held without other aid, substantially as and for the purpose specified.

4. The corn-planter check-row-wire stop, formed in two parts, A' A'', having curved or crooked grooves *c* in their adjacent faces, when used in combination with sections of wire D, for firmly securing said wire to the parts A' A'', substantially as described, and for the purpose specified.

5. Stops A, formed in two parts, A' A'', united by loop *c*, and having curved grooves *c*, tongues B, and slots *b*, combined with section D, substantially as and for the purpose specified.

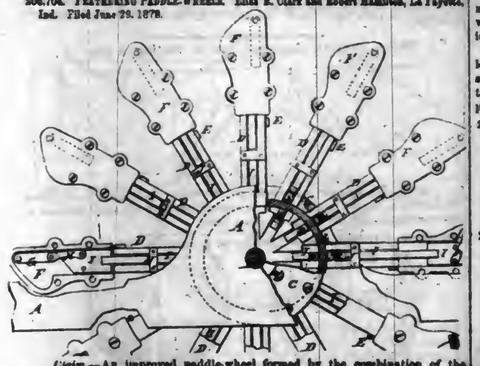
206,703. VEHICLE TORSION-SPRINGS. F. M. Chapin and Joshua Gustacker, Cuffy's Cove, Cal. Filed May 8, 1878.



Claim.—1. A hanger for torsion-springs, having at its end a stop to limit the movement thereof, as shown and described.

2. The torsion-spring in combination with the hanger, having an end or shoulder to limit the upward motion of spring, as specified.

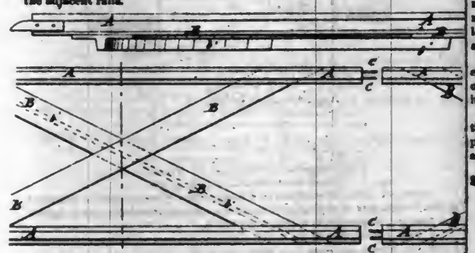
206,704. FEATHERING PADDLE-WHEELS. Elias R. Clark and Robert Hamilton, La Fayette, Ind. Filed June 29, 1878.



Claim.—An improved paddle-wheel formed by the combination of the hubs C, the radial arms D, the recessed metal heads F, the paddles G, pivoted at their outer corners, the short connecting-bars H, the sliding bars I, provided with the stops K, and the eccentric flanges L, with each other and the shaft A, substantially as herein shown and described.

206,705. PORTABLE RAILWAYS. Robert Dudley and John Turl, New York, N. Y., assignors to L. Pascal, same place. Filed May 20, 1878.

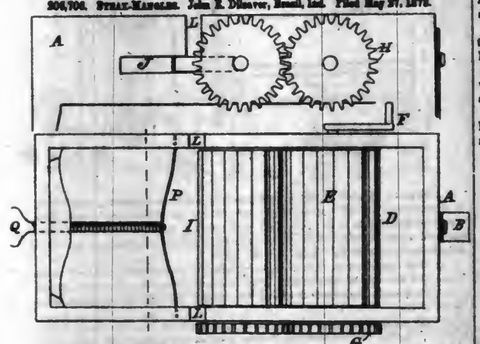
Brief.—The rails are connected in pairs by diagonal cross-plates, the bottom one of which has a downward-projecting web, and the several pairs or sections of track are connected at their ends by fish-plates secured to one section, and their free or projecting ends being curved on their upper outer portions, to allow the sections to be disconnected by raising the meeting ends of the sections sufficiently high to permit said curved ends to pass clear of the webs of the adjacent rails.



Claim.—1. The combination, with the ends of the sections of a portable railway, of the aligning-arms C C, beveled on the upper part of the outer end, as and for the purpose specified.

2. A portable railroad-track in which the rails A are connected in pairs by diagonal cross-plates B, and in which the lower plate B has a rib, *b'*, formed upon its lower side, substantially as herein shown and described.

206,706. STRAW-MACHINE. John R. Dinsmore, Bunell, Ind. Filed May 27, 1878.



Claim.—In combination, the frame A, provided with the horizontal slots J and vertical slots L, rollers D and I, having corrugations E, and cog-wheels G, having teeth H, blocks O, curved spring P, and thumb-screw Q, substantially as and for the purposes set forth.

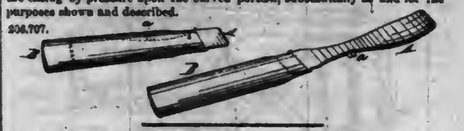
206,707. GRAPE-PEELERS. Truman P. Deane, New York, N. Y. Filed Jan. 21, 1878.

Brief.—A thin metal blade is curved only in the direction of its length, and is provided on its side with a short projecting cutting-spur, about as long as the thickness of ordinary orange-peel. This blade is detachably held in a suitable hollow handle or case, and when taken out and reversed is slid therein, being held within the handle by pressure on the curved portion of the blade or orange-peeler.

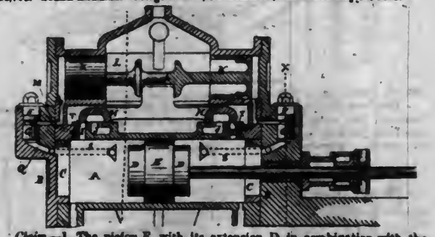
Claim.—1. The herein-described blade for an orange-peeler, the same being made of thin metal, curved only in the direction of its length, and provided with a cutting prong or spur upon its side or back, the whole adapted to be incased in a flat handle, as shown and described.

2. In combination with the blade A, curved only in the direction of its length, and provided with the cutting prong or spur *a*, the hollow handle B, serving to hold said blade in position for use, and adapted to confine it within the casing by pressure upon the curved portion, substantially as and for the purposes shown and described.

206,707.



206,708. STEAM-ENGINES. George E. Dow, San Francisco, Cal. Filed May 14, 1878.



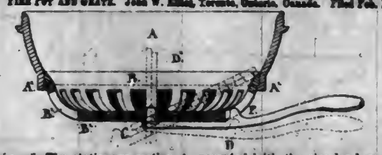
Claim.—1. The piston E, with its extension D, in combination with the chambers C at the ends of the cylinders, and the grooved supplemental valves G, provided with ports P, with the exhaust-passages M and steam-passage R, and the passage Q, all constructed and arranged substantially as and for the purpose herein described.

2. The grooved valve G, moving in the chamber F, having the supplemental exhaust-passages M P' and steam-passage R, and the passage Q, communicating with the main cylinder, in combination with the steam-passage U, leading above the valve G, substantially as and for the purpose herein described.

3. The main piston E, with its extensions D and the chambers C at the end of the cylinder, in combination with the main valve H, with its two sets of steam and exhaust passages I and J, and the small steam-port T, opening into the main cylinder, substantially as and for the purpose herein described.

4. The piston E, with its extensions D and the chambers C at the ends of the cylinder, in combination with the supplemental valve G, as shown, and the passage Q and the passages S, from the acting side of the piston, substantially as and for the purpose herein described.

206,709. FIRE POT AND GRATE. John W. Elliot, Toronto, Ontario, Canada. Filed Feb. 18, 1877.



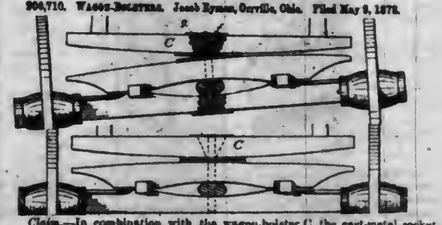
Claim.—1. The stationary section A, provided with the circular lugs A' and notches E E, in combination with the movable section B, substantially as shown and described.

2. The compound grate B C, consisting of the sections B and C, arranged to revolve together as a single grate or independently of each other by the lever D, substantially in the manner and for the purpose specified.

3. In combination with a grate supported at its circumference and provided with a central angular socket, the lever D, provided with the tapering stud D', substantially as and for the purpose specified.

4. In combination with the grate C and movable fire-pot section B, the lever D, provided with the stud D' and upwardly-projecting piece F, arranged and operating substantially as and for the purpose specified.

206,710. WAGON-BOLSTERS. Jacob Ryman, Orrville, Ohio. Filed May 9, 1878.

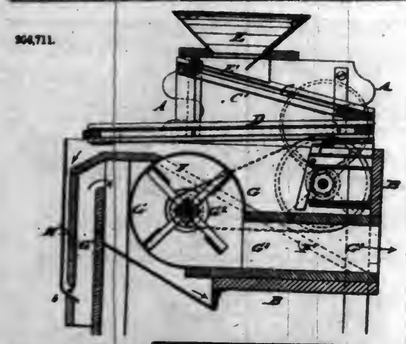


Claim.—In combination with the wagon bolster C, the cast-metal socket for lining the king-bolt hole, having at the top a flange, *g*, and forming an elongated or oblong slot, which gradually tapers through the part *f'*, to form a round hole at the lower part, as shown and described.

206,711. GRAIN-SEPARATORS. John T. Ryan, Bethalto, Ill. Filed Apr. 29, 1878.

Claim.—The combination, with the sieve C and screen D, arranged above the fan, of the inclined conducting-boards F F, arranged on either side of the fan, the leg H, having inclined board *b* and opening *a*, the section-leg G^1, and the suction-fan G^2, all arranged substantially as and for the purpose specified.

206,711.



206,712. LOCKS. James W. Peebles, Lumpkin, Ga. Filed July 12, 1878.

Brief.—A knob on one side of the lock actuates the cam that operates the latch and bolt, while the bolt is operated by a key, and the latch by another cam from the other side.

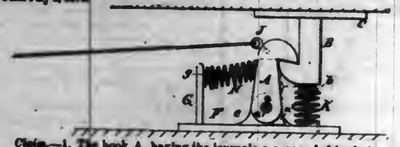


Claim.—1. The combination, in a lock, of a latch, a cam operated from the inside and arranged to lift the latch, and a sliding bolt having shoulders *c c'*, arranged to permit the play of the cam in lifting the latch, but to afford a bearing against the bolt when the cam is turned to a greater extent, substantially as specified.

2. The combination of the latch, bolt, cam F, and shoulders *c w*, arranged as described, so that the bolt is locked by the cam when in a forward position, as specified.

3. The combination of the latch, bolt, cam F, and plate *n* with the case and its key-hole *y*, as set forth.

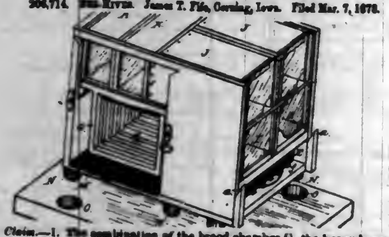
206,713. SEWING-FASTENINGS. Pedro P. Fernandez, San Juan, Porto Rico, West Indies. Filed July 2, 1878.



Claim.—1. The hook A, having the journals *a a*, rounded heel *a'*, and flat-surfaced toe *a''*, formed therewith, in combination with the plate F and its journal-bearings *e e*, the arm G and its boss or stud *g*, and the coiled spring H, as shown and described, for the purpose specified.

2. The rigid hook B, having the boss or stud *b* formed thereon, in combination with the swinging hook A and its actuating spring H, and the coiled spring K, attached to the plate C, as shown and described, for the purpose specified.

206,714. FIRE-KINDS. James T. Fife, Corning, Iowa. Filed Mar. 7, 1878.



Claim.—1. The combination of the brood-chamber G, the honey boxes I I, arranged at the side of said brood-chamber, and the upper honey-boxes J J, surrounding the boxes I I and extending over a portion of the brood-chamber, as shown and described.

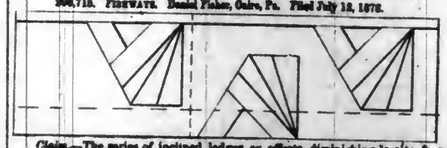
2. The rectangular revolving doors B and D, pivoted eccentrically, as described, and serving to close the openings or open them to either part width or full width at will.

3. The combination of the feed and air chamber F, troughs *f*, and adjustable and reversible gauze shutter F, as and for the purpose set forth.

4. A hive and hive-table provided with interposed feet or supports, by which the hive-bottom is sustained at an elevation above the table when desired, and with openings to receive said feet or supports when the hive-bottom is to rest directly on the table.

5. The honey-boards of pasteboard or paper, constructed and applied, in combination with the honey-boxes I J K, as herein described, for the purpose specified.

206,715. FIREWATS. Daniel Fisher, Cairo, Pa. Filed July 12, 1878.



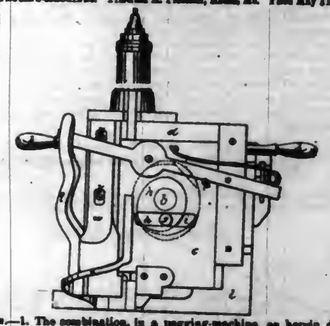
Claim.—The series of inclined ledges or offsets, diminishing in size from the bottom to the top in each series, in combination with the spout or chute *a*, substantially as and for the purposes set forth.

206,716. BALL-TARGETS. Horace P. Fletcher, San Francisco, Cal. Filed June 22, 1878.



Claim.—A ball-target for trap-shooting, composed of the shot proof remnant hemispheres A and shank B, all cast integral, substantially as set forth.

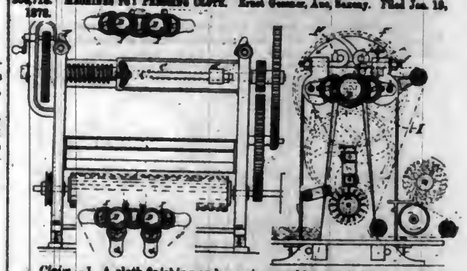
206,717. PEGGING-MACHINES. Tristram E. Fletcher, Kellis, Me. Filed May 31, 1878.



Claim.—1. The combination, in a pegging-machine, as herein described, of the lever *k*, arm *n*, spring-lever *o*, plate *c*, vertical adjustable arm *g*, knife *e*, and spring *f*, to operate as herein described.

2. The combination of the knife *e*, arm *g*, support *m*, cams *c*, and index *p* with the lever *o* and plate *c*, as herein set forth.

206,718. MACHINES FOR FINISHING CLOTH. Ernst Gessner, Aue, Saxony. Filed Jan. 19, 1878.



Claim.—1. A cloth finishing and pressing machine consisting, essentially, of a revolving cylinder, a press-box, and a curved sheet-metal press-plate, attached at one side to the press-box and passing partially around the cylinder, and attached at its other edge to an axially-adjustable shaft, all combined substantially as and for the purpose set forth.

2. The combination, with a single cylinder, of diametrically-opposed press-boxes and the curved sheet-metal press-plate, arranged as described, to continue the smooth passage of the cloth from one to the other of the press-boxes, as set forth.

3. The combination, with a pair of cylinders, of two oppositely-placed press-boxes and an intermediate double press-box, together with the curved sheet-metal press-plates I, as and for the purpose described.

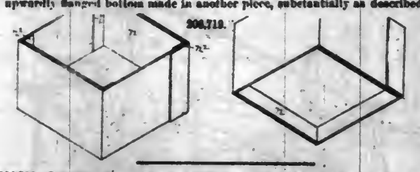
4. The combination, with the cylinder B and press-plate I, of the pivoted vertical bars D D, carrying press-boxes C C, the springs F, and nuts *f*, substantially as shown and described.

206,719. FRUIT-BOXES. Andrew P. Gibson, Chicago, Ill., assignor to Lucius G. Fisher, Jr., and Francis T. Wheeler, same place. Filed May 31, 1878.

Claim.—1. A fruit-box bottom made in one piece, creased, cut, and bent, substantially as indicated in Fig. 2, so as to give downwardly-projecting flanges *a* as a means of support and upwardly-projecting ends *a'* (with or without corner-pieces *a''*) for connecting with and bracing the body or sides of the box.

2. A fruit box having the sides made in one piece and a downwardly and upwardly flanged bottom made in another piece, substantially as described.

206,719.

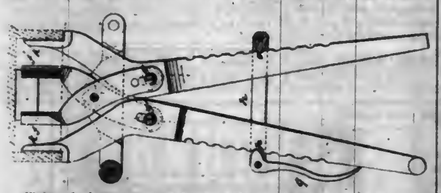


206,720. TRITURATING AND REDUCING CYLINDERS. A. Giddings, Cleveland, Ohio. Filed June 3, 1878.



Claim.—In a sectional interior lining for grinding-cylinders, a removable section, C, consisting in the combination, with a series of metallic plates connected together and formed at suitable intervals with longitudinal projections or heads *c*, of a sectoral-shaped piece, D, which secures said section to the cylinder end by screw-bolts or similar fastenings, substantially as set forth.

206,721. AXLE-NUT WRENCHES. John S. Gifford, Fairfield, Me. Filed June 20, 1878.



Claim.—1. A wagon wrench having end jaws *f f'*, whose operating-levers *e e'* have flattened ends *b b'* and shoulders *m m'*, as shown and described, for the purpose specified.

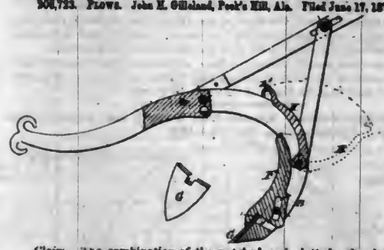
2. The holding-link A, provided with cam-stud *p* and handle *g*, in combination with the wagon-wrench, substantially as described.

206,722. RAILWAY-CAR TRUCKS. Nathaniel F. Gilman, Rochester, Minn. Filed Apr. 12, 1878.



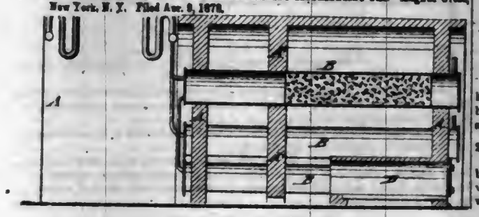
Claim.—The truck formed of the frame C, wheels D on horizontal axles E, and wheels *a b* on vertical axles F, the wheels D bearing on the top of lower flange of a single I-beam, A, and the wheels *a b* bearing, respectively, on the side edges of the upper and lower flanges, as and for the purpose specified.

206,723. PLOWS. John H. Gilleland, Peak's Hill, Ala. Filed June 17, 1878.



Claim.—The combination of the notched and slotted collar-lever F and the cam-lever H with the standard B of a plow, for clamping and holding the plow-hoe G, substantially as specified.

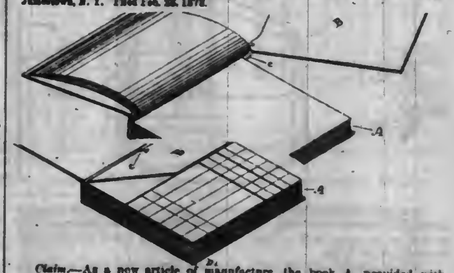
206,724. APPARATUS AND PROCESSES FOR MAKING ILLUMINATING-GAS. Magnus Gross, New York, N. Y. Filed Aug. 6, 1878.



Claim.—1. The process herein described of manufacturing illuminating gas free from an excess of carbon, carbonic oxide, and light carbureted hydrogen, which consists in passing the commingled steam and hydrocarbon vapors through an incandescent porous material to fix the gases, and periodically turning off the supply of naphtha and blowing out the deposited carbon by means of steam, and conducting the same into the furnace in the form of carbonic oxide and carbureted hydrogen, substantially as described.

2. The combination, with the furnace having a transverse wall, A', with opening *a*, of the bench of retorts B, extending through the partition-wall A' and through the end walls of the furnace, to receive suitable steam and hydrocarbon supply pipe, and having also a body of porous material located in the chamber or vault next to the fire, substantially as and for the purpose described.

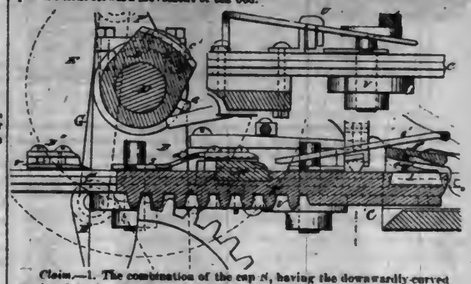
206,725. BLOTTER-TABLETS. Milo Harris, Charles E. Meade, and Nathaniel W. Meade, Jamestown, N. Y. Filed Feb. 26, 1878.



Claim.—As a new article of manufacture, the book A, provided with blotter B, secured to the back of the book by the flexible strip or band *c*, whereby both sides of the blotter may be utilized, substantially as shown and described.

206,726. MACHINES FOR MAKING HORSESHOES. D. H. Hatch, Clifton Park, N. Y. Filed May 28, 1878.

Brief.—The bar is fed in until its end abuts against a peculiarly-formed gage, and a blank is then cut therefrom by the shears. A reciprocating bed provided with two formers carries the blanks to the bending and creasing devices. Two holders provided with spring-dogs for stripping the bent blanks from the formers are arranged on the stationary bed of the machine. The first former (to which the blank is confined by a swinging cap) carries the blank between the first pair of benders and to the first holder, which strips it from the former on the retrograde movement of the bed. Upon the next advance of the bed the second former engages the blank left in the first holder and carries it to the second pair of benders, which hold and sustain it while the creaser is acting, and to the second holder, from which it is discharged upon the next forward movement of the bed.



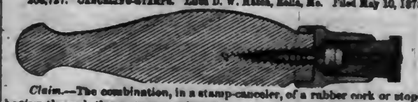
Claim.—1. The combination of the cap S, having the downwardly-curved arm *b* and die L, with the horizontally-movable bed C and the fixed cross-bar *a* of the bed A and the formers *s*, whereby as the movable bed advances the cap is brought down and held on the die by contact of said arm with the cross-bar, as shown and described.

2. The combination, in a horseshoe-machine, of the gage U, having the grooved face and cut-away side, with the shears O and benders or formers *s*, substantially as herein shown and described.

3. The combination of the bed C, having the teeth *a* and notches *c*, notched levers V V', locking-levers W W', followers A', and the formers *s*, as herein shown and described.

4. The combination of the movable bed C, dies L M, formers *s*, holders B' B'', and arm D', carrying the creasing-dies *c'*, substantially as shown and described.

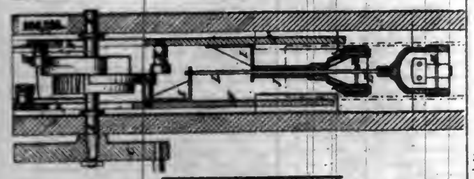
206,727. CANCELING-STAMPS. Ellen D. W. Hatch, Rolla, Mo. Filed May 10, 1878.



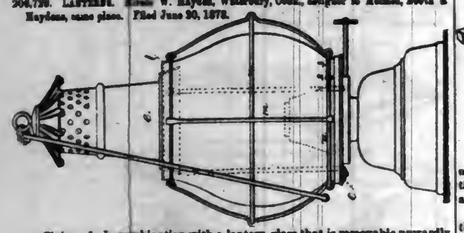
Claim.—The combination, in a stamp-canceler, of a rubber cork or stopper, having through the center a steel cutting-tube, with a metallic end piece chambered to receive and hold the stopper carrying the cutting-tube, substantially as described.

206,728. PUMPS. Eugene Hawkes, San Diego, Cal. Filed Dec. 24, 1877.

Claim.—The combination of the two double cams D, the two sliding slotted bars F, provided with the studs E and H, and the brackets I, with the two valve-stems J L of the two valves K M, working in line with each other, and with the crank-shaft B, substantially as herein shown and described.



206,729. LANTERNS. Simon W. Hayden, Waterbury, Conn., assignor to Holmes, Booth & Haydens, same place. Filed June 20, 1878.



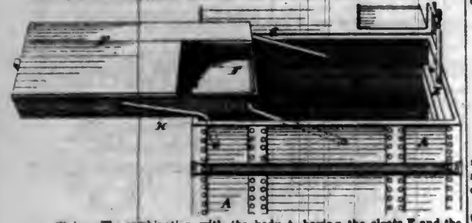
Claim.—1. In combination with a lantern-glass that is removable upwardly outside the top, the metal ring *l*, fitting the upper end of the glass, the wires *m*, forming the guard, and the band *n* around the lower end of the glass, substantially as set forth.

2. In a guard for the removable glass of a lantern, the band *n*, with the interlocking hooks 2 and 3, that secure the guard around the lower part of the glass, substantially as set forth.

3. The combination, in a lantern, of a glass removable upwardly outside of the metal top portion *c* of the lantern, a bail or supporting-ring, and a connection between the top of the lantern and the bail, that allows the bail to be separated from the lantern previous to the removal of the glass, as set forth.

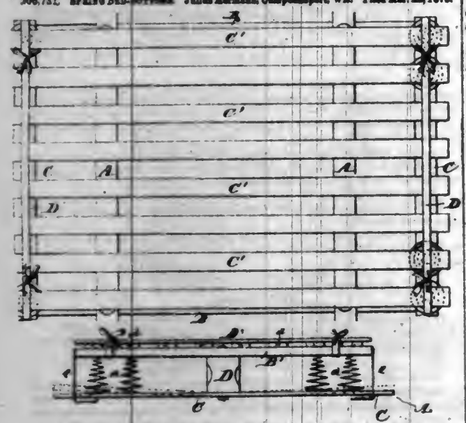
206,730. TRUNKS. John W. Henry, Jamestown, Ind. Filed Feb. 5, 1878.

Brief.—The tray is pivoted to the body of the trunk by four bars, two of which are bent at their upper ends, and the other two at their lower ends, and the tray is thus adapted to be swung out over the end of the trunk.



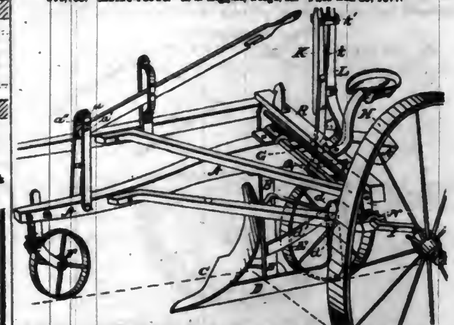
Claim.—The combination, with the body A, having the cleats E and the tray F, of the bars G H, pivoted to said body and tray, the upper ends of bars G being bent upward, and the lower ends of bars H being bent downward, as shown and described.

206,731. SPRING BED-BOTTOMS. Julius Hermann, Sheyboygport, Wis. Filed Mar. 23, 1878.



Claim.—In a bed-bottom, the combination, with the slat-supporting portions, consisting of parallel pieces C C B' B', having slat-securings pins *d d*, and the interposed bricks D and springs *a a*, of the longitudinal slats B *b*, having the cross-pieces A A so arranged in connection therewith as to leave the ends *b* of the said slats B *b* unsupported, substantially as shown and described, for the purpose set forth.

206,732. RIDING-PLOWS. R. S. Higgins, Nauge, Ill. Filed Dec. 20, 1877.

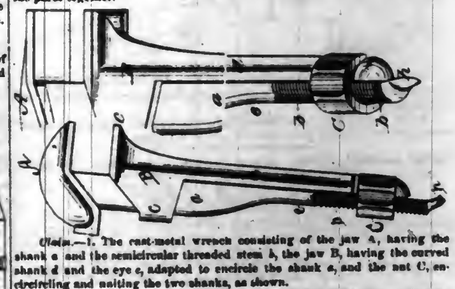


Claim.—1. The combination, with the beam A, standard E, and share C, of the land-side D, constructed with a vertical arm, *d*, forming a bearing for the furrow-wheel, and the rod or bar *d'*, for bracing said arm to the beam and standard, substantially as shown and described.

2. The combination of beam A, provided with plate Q, having notches *q*, the crank-axle G, the lever K, the bar L, fulcrumed to the bent lever K, and constructed with a hook, *f*, adapted to engage in said notches, and the supporting-wheels E and H, all arranged substantially as shown and described, for surrounding the plow in the furrow.

206,733. WRENCHES. Henry H. Hill, Moline, Ill. Filed Dec. 20, 1877.

Brief.—To set up the wrench, bayonet the shank of one jaw into the eye on the other, and rotate the nut previously applied to the latter till the threaded end is sufficiently drawn down to enable the small end to be bent over to hold the parts together.



Claim.—1. The cast-metal wrench consisting of the jaw A, having the shank *a* and the semicircular threaded stem *b*, the jaw B, having the curved shank *d* and the eye *e*, adapted to encircle the shank *a*, and the nut C, encircling and uniting the two shanks, as shown.

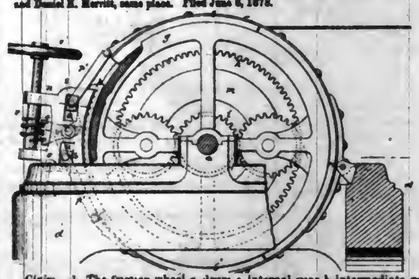
2. In combination with the jaw B, the nut C, the sliding jaw A, having the threaded shank *b*, with its end *h* bent downward in the manner shown, to prevent the separation of the parts.

3. In combination with the jaw B, having the eye *e*, the jaw A, provided with a wide shank, *a*, threaded portion *b*, and the reduced and rounded part *c*, to admit of the application of the jaw B, as described and shown.

4. In combination with the shank *a*, the wrench head or jaw A, extending diagonally across said shank from front to rear and provided with the central outwardly-curved strengthening-rib *g*, of the form shown and described.

5. A cast-metal wrench having two jaws, with arms or shanks cast thereon, united by means of the nut C, encircling both shanks, and the eye *e* cast upon one jaw and encircling the shank of the other, as shown.

206,734. HOISTING-MACHINES. Maximilian Jacker, Marquette, Mich., assignor to himself and Daniel H. Merritt, same place. Filed June 6, 1878.

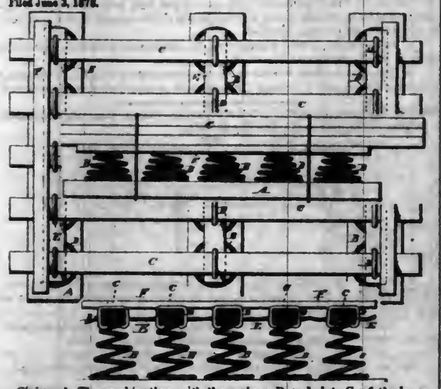


Claim.—1. The friction-wheel *g*, drum *e*, internal gear *h*, intermediate gear *i*, main shaft *a*, gear-wheel *l*, and brake *q*, combined and arranged substantially as and for the purposes set forth.

2. The gear-segment *t*, sliding boxes *s s*, links *u*, and worm *v*, for operating the brake-strap, substantially as set forth.

3. The combination, with the flanged friction-wheel *g*, of the shoe *p* on a brake-hand, *n*, swinging on pin *n*, and the strap *q*, secured midway to frame *d* by the pin *q'*, link connected to the boxes *s* and provided with shoes *s'*, as and for the purpose specified.

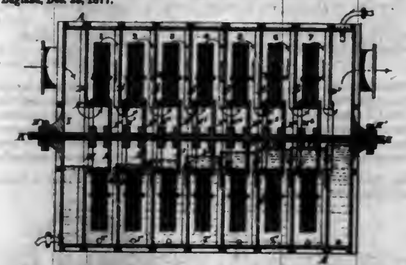
206,735. SPRING BED-BOTTOMS. Edward J. Johnson and Morton E. Mills, Twinsburg, Ohio. Filed June 3, 1878.



Claim.—1. The combination, with the springs B and plate C, of the loops D and cushions E, substantially as and for the purpose described.

2. The combination, with the springs B and plate C, of the loops D, cushions E, and braces F, substantially as and for the purpose described.

206,736. APPARATUS FOR CONDENSING, WASHING, AND PURIFYING GAS AND OTHER VAPORS. Thomas H. Kirkham, Westminster, David Halett, London, and Samuel Chandler, Jr., Southwark, England. Filed May 17, 1878. Patented in England, Dec. 20, 1877.



Claim.—1. The annular plates O, arranged in cisterns between disks L and boxes M, secured to the shaft K, to revolve within each compartment or chamber, in combination with the partitions D, against which the said boxes M bear, as set forth.

2. The vessel A, divided into compartments by partitions D, having central openings, plates G being secured to said partitions at varying heights to regulate the depth of the compartments, substantially as set forth.

206,737. DRAFT-EQUALIZERS. Mason Lewis, Union, Ill. Filed May 20, 1878.



Claim.—The lever A, connected with tongue by clevis B, and having pulleys C C, in combination with the swiveled curved bar D and levers E F, the latter having pivoted segmental plates F' at their short ends, as shown and described, for the purpose specified.

206,738. RAILROAD-RAILS. Louis Leypoldt, New York, N. Y. Filed July 6, 1878.

Brief.—A rail having a dovetail groove in its tread-surface filled with a packing of rubber or equivalent material extending above the metal of the rail.



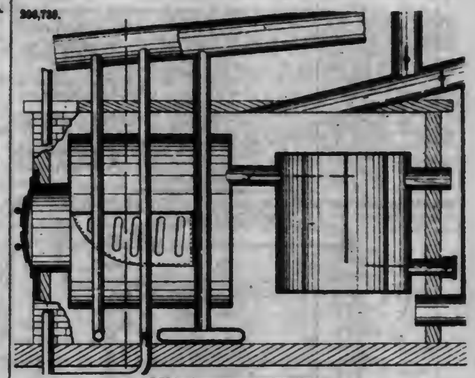
Claim.—A railroad-rail packed with rubber or leather, that projects slightly above the tread, to deaden the sound, as set forth.

206,739. COMBINED HEATER AND VENTILATOR. W. B. Macdonald, Allegheny, Pa. Filed June 26, 1878.

Claim.—1. The combination, with a heater, of ventilating flues or ducts that are connected with the apartments, soil-pipe, &c., to be ventilated, and conducted through the heater to a collecting and discharging foul-air flue, substantially as and for the purpose set forth.

2. The combination, with the hot-air flue and air-chamber of a heater, of ducts connecting the hot-air flue with a foul-air flue and with bottom of air-chamber, the hot-air flue and ducts being provided with dampers to use heater either for heating or ventilating, substantially as set forth.

206,740.



206,740. COMBINED SPOOL-HOLDER AND CASKET DEVICE. Edward MacEwan, Manchline, North Britain. Filed Dec. 10, 1877.



Claim.—The casket for holding spools, bobbins, or other articles, and for providing a game device or apparatus for amusement, consisting of the box A, capable of being rotated on a screw-spindle, B, screwed to the bottom of the casket, which also rotates on the projection *b* at the base *c*, the interior of said casket being provided with removable pins P and central projection G, while on its outer portions are designated numbers, figures, or words adapted to the game to be played, all said parts being constructed and arranged to operate substantially as set forth.

206,741. RAIL-JOINTS. Palmer T. Madison, Indianapolis, Ind., assignor of one-half his right to George W. Tyre, same place. Filed Apr. 29, 1878.

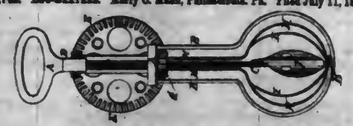
Brief.—Split bolts having alternate right and left hand threaded ends are employed at rail-joints, in combination with an alternately right and left hand screw-tapped fish-plate.



Claim.—1. A rail-joint secured by bolts having halved ends, and provided alternately with right and left handed screw-threads, substantially as herein shown and specified.

2. In combination with the other parts of a rail-joint, the several bolts C^1, C^2, C^3, and C^4, alternately having right and left handed threads cut thereon, and all entering into a common splice-bar, B^1, substantially as herein shown and specified.

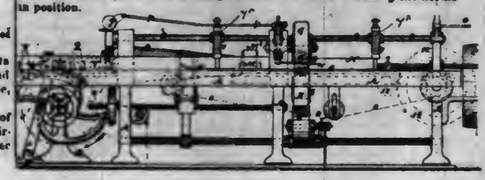
206,742. ESS-BEATERS. Harry C. Mann, Philadelphia, Pa. Filed July 11, 1878.



Claim.—The revolving shaft C, having the spiral disk J, forming screw or propeller shaped blades, in combination with the handle A, bent wire B, having bottom eye, the revolving beater H I, and the gearing D E G, substantially as and for the purpose set forth.

206,743. SEWING-MACHINES. William Martin, Jr., David B. Dawson, and Robert Orchar, Dundee, North Britain. Filed May 16, 1877. Patented in England, May 6, 1876.

Brief.—The thread-barrel is given its reciprocating motion by a cam-wheel, which bears against a pin in a lever carrying a toothed segment working in a rack upon a rod connected with the said barrel. As soon as the pin has passed the highest points of the cam the barrel is returned to its first position by a weight, and the mechanism employed to drive the cam thrown out of gear until the needle is again threaded. A frictional clasp is employed to regulate the speed of the feeding-chain and the tension upon the needle. The invention also comprises a new arrangement of devices for retaining the needle in position.



Claim.—1. The combination of cam R, lever S, provided with pin s and toothed quadrant, rack U, spindle V', threader *w*, lever *a*, clutches *b* and *c*, and devices connecting such parts, as and for the purposes set forth.

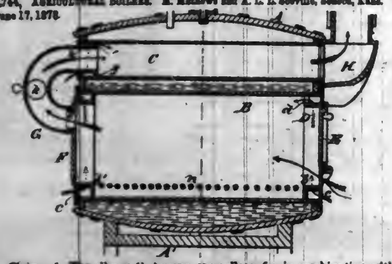
2. The combination, with the needle of the fixed inner guide O, thread-barrel tube M, and standard M', as and for the purposes set forth.

3. The combination, with the driving-cone I, of the front driving-cone Q, clutches *b* and *c*, spring *q*, tangent-screw *d*, worm *c'*, thread-barrel N, and connecting mechanism, as and for the purpose set forth.

4. The combination of the presser 6, brackets 7, parallel bar 8, and coiled springs 7', as and for the purpose set forth.

5. The friction-disks 10 11, spur-gearing 12, friction-clutch 13, and shaft 14, for regulating the rate of travel of the pitch-feeding chain and the degree of tension on the spiral needle, substantially as set forth.

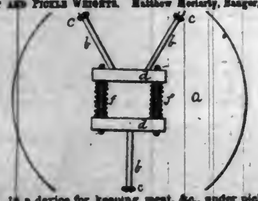
206,744. AGRICULTURAL BOILERS. M. Mathews and A. L. L. Scoville, Seneca, Kans. Filed June 17, 1878.



Claim.—1. The elbows G, having the collars *f g*, in combination with the cylinder B and flues C, as herein shown and described.

2. The combination, in an agricultural boiler, of the barrel A, sheet-metal cylinder B, cast-iron heads D F, elbows G, flues C, and smoke-box H, as herein shown and described.

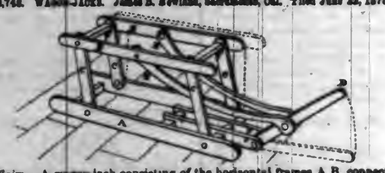
206,745. MEAT AND PICKLE WEIGHTS. Matthew Moriarty, Bangor, Me. Filed Dec. 31, 1877.



Claim.—1. In a device for keeping meat, &c., under pickle, the combination of the disk and holding-prongs with extension-springs and retracting-handles, substantially as set forth.

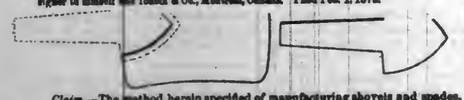
2. The combination of the disk *c*, prongs *b*, guides *e e*, springs *f f*, and handles *d d*, substantially as set forth.

206,746. WAGON-JACKS. James B. Howland, Sacramento, Cal. Filed June 22, 1878.



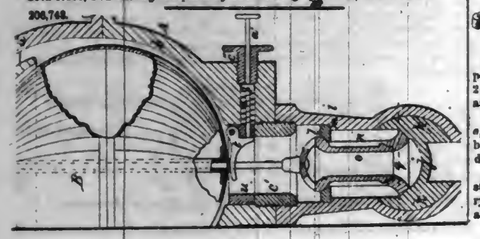
Claim.—A wagon-jack consisting of the horizontal frames A B, connected together by links C, and operated by the lever D and connecting-bar E E, substantially as above described.

206,747. MANUFACTURE OF SHOVELS AND SPADES. Joseph Paradis, Longueil, Quebec, assignor to himself and Iodoin & Co., Montreal, Canada. Filed Feb. 1, 1878.



Claim.—The method herein specified of manufacturing shovels and spades, consisting in cutting an opening in the upper part of the blade, applying the heart-shaped ends of the straps so as to lap at their edges upon the blade at both sides, and uniting the parts by one welding operation, as set forth.

206,748.



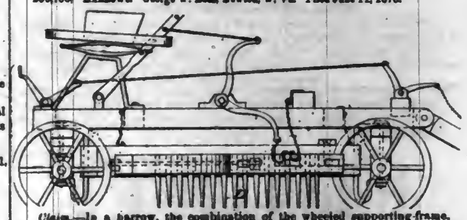
206,749. SIGNALING APPARATUS. William Roberts, Jr., Calumet, Mich., assignor to himself and John Daniell, same place. Filed May 22, 1878.



Claim.—1. The combination of rod *a*, working between rolls *b*, the stop-pin *c*, working in hole of said rod, and the plate *d*, having stop-pin hole, as and for the purpose described.

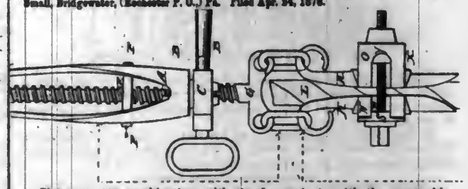
2. The stop-pins *c*, in combination with the rod *a*, said rod *a* having indicating marks and holes for the stop pins, substantially as set forth.

206,750. HARROWS. George W. Ross, Newton, W. Va. Filed June 11, 1878.



Claim.—In a harrow, the combination of the wheeled supporting-frame, having a transverse beam and a hinged smoothing harrow or rake at the rear end, with a suspended and vertically-movable center reach, with hinged harrow-sections, that are connected at the outer ends by chains to the cross-beam of the frame, and with lever mechanism for operating the smoothing and side harrows from the driver's seat, substantially as and for the purpose specified.

206,751. TEMPER-SCREWS AND CABLE-CLAMPS FOR DRILLING OIL-WELLS. Johnston Small, Bridgewater, (Rochester P. O.,) Pa. Filed Apr. 24, 1878.

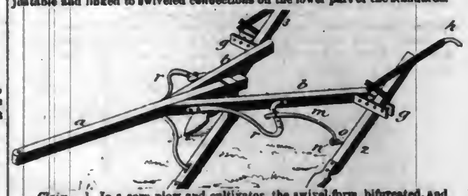


Claim.—1. The combination, with the frame A A, with the removable disk E and set-screws F F, of the temper-screw G, having the square and beveled threads H, swivel-nut B B, constructed in two parts, and the locking-bar C, having the set-screw D, substantially as and for the purposes set forth.

2. The cable-clamping jaws K K, having the projections N and O, provided with the horizontal elongated slot X and bulge Y, in combination with the rolling washer S, rolling nut T, and bolt P, substantially as and for the purpose set forth.

206,752. CORN-PLOWS. Peter Soderlund, Swede Point, Iowa. Filed May 11, 1877.

Brief.—The outside standards pivoted in a forked bracket, which is swiveled to the beam. Adjustable handles are secured to the standards, by which the latter have an independent motion in any direction. The braces are adjustable and linked to swiveled connections on the lower part of the standards.

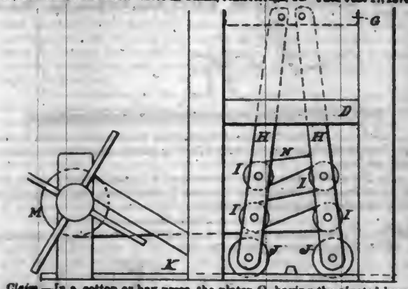


Claim.—1. In a corn plow and cultivator, the swivel-form, bifurcated, and perforated standard-bearers *g g*, carrying the pivoted and adjustable standards 2 and 3, in combination with rigid branches *b b* of the beam *a*, substantially as and for the purposes shown and described.

2. The adjustable braces or stays *m*, linked key-bolts *n*, swiveled bearers *o*, and fixed fastenings and adjusting devices *r*, in combination with a plow-beam and a plow-standard, substantially as and for the purposes shown and described.

3. The rigid forked beam *a b b*, the central, front pivotal, and guiding standard 1, the adjustable pivoted and swiveled standards 2 and 3, each carrying an adjustable handle, 4, arranged and combined to operate substantially as and for the purposes shown and described.

206,753. BALING-PRESSES. Jacob M. Toland, Jonesborough, Va. Filed June 17, 1878.



Claim.—In a cotton or hay press, the platen G, having the pivoted levers H H, provided with the pulleys I and guide-wheels J, working in the ways in the base-sill K, and the tapering windlass-drum M, the whole constructed and operating substantially as described.

206,754. BARBED FENCES. Henry M. Underwood, Kenosha, Wis., assignor to himself, Urban J. Lewis, Courtland A. Dewey, and George Hale. Filed July 12, 1878.

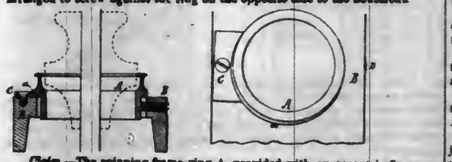


Claim.—1. The barbed wire consisting of ordinary merchantable tacks B, secured between strands *a*, twisted together, substantially as described and shown.

2. The barbed wire consisting of tacks arranged in pairs, with their heads against each other, and secured by four strands, *a*, twisted together, substantially as described and shown.

206,755. SPINNING-FRAME RINGS. Jos. W. Wattles, Canton, Mass. Filed Nov. 20, 1877.

Brief.—For adjusting the concentricity of the ring with respect to the spindle. The ring is provided with an eccentric flange. Extended up from the rail, and adjacent to the eccentric flange of the ring, is an abutment, preferably concave at its edge next the periphery of the flange. A set-screw is arranged to screw against the ring on the opposite side to the abutment.



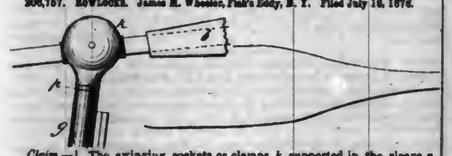
Claim.—The spinning-frame ring A, provided with an eccentric flange, *c*, and applied to the rail B so as to be adjustable therein, as set forth, in combination with the abutment C and the clamp-screw D, applied to the rail and arranged with such ring and flange in manner and to operate therewith substantially as specified.

206,756. REEL-HOLDERS. D. H. Weaver and Martin Hostwele, Spring Creek, Va. Filed Apr. 13, 1878.



Claim.—The combination, with the supporting-plate A B C, having lug *c*, V-shaped edge *b*, and catch *d'*, of the clamp D, having the spiral spring E on its upper journal, *e*, as shown and described, to form a reversible line or rein holder.

206,757. ROWLOCKS. James M. Wheeler, Fish's Eddy, N. Y. Filed July 16, 1878.



Claim.—1. The swinging sockets or clamps *k*, supported in the sleeve *g*, substantially as described, in combination with the ball *e* upon the oar, substantially as set forth.

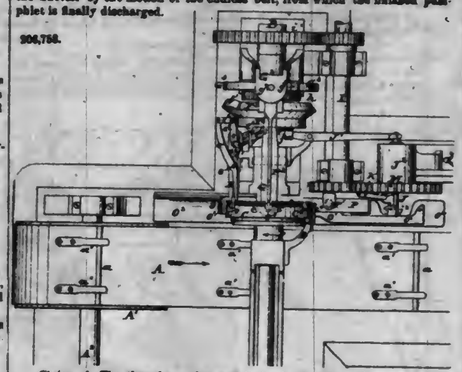
2. The adjustable counterpoise *b*, in combination with the oar, substantially as set forth.

3. The sleeve *g*, tube A, shanks *l*, and sockets *k*, combined and arranged substantially as and for the purposes set forth.

206,758. PUNCHING, KNOTTING, AND STRINGING MACHINES FOR TAGS, PAMPHLETS, &c. John Winter, St. Louis, Mo., assignor of one-half his right to Chas. Macchemyer, same place. Filed Apr. 16, 1878.

Brief.—The endless carrier has stops and spring-clasps, which hold pamphlet. It carries the same under puncher and stringer, and stops. The stringer passes through the puncher. The latter first descends and punches a hole through the pamphlet. The thread-carrying reel is then operated by mutilated pinions, and a section of string is brought under stringer, which then descends and forces one end of string through the punched hole of pamphlet, the sheave having been operated by a cam on shaft to sever a section of string, which several end is passed through pamphlet. The other end of string, held by clasps of reel, is now released. The carrier is now operated to move forward, brings a new pamphlet to the puncher, and carries the first one to the knotting devices. It passes to the latter under a spring-plate, which brings the ends of the string together by a V-shaped notch in said plate. The forceps pass under the string, grasp it near the forward end, and rotate around the knotting-spindle, laying a loop around the same, and another loop across the first as the forceps are moved in and out. The ends of the string are laid in the jaws of the knotting-spindle, which close when the latter is withdrawn. The loops are thereby forced off the spindle, and as the carrier now begins to move, the knot is drawn tight, and the end of the string finally pulled out of the jaws of the knotter by the motion of the endless belt, from which the finished pamphlet is finally discharged.

206,758.



Claim.—1. The thread-carrying reel C, having a series of notches, C^n, in combination with the punch F and stringer G, substantially as and for the purpose set forth.

2. The thread-carrying reel C, having a series of notches, c^2, in combination with the punch F, stringer G, and sheave E, substantially as and for the purpose set forth.

3. The sheave E, having its arms e^2 connected to the rock-arm e^3 by links e^4, in combination with the cam-projection e^5 and arm e^6, substantially as and for the purpose set forth.

4. The thread-carrier reel C, having thread-groove *c*, in combination with the fixed jaw c^2, spring-jaw c^1, stem c^3, and fixed cam-plate D, substantially as and for the purpose set forth.

5. The hollow punch F, through which passes the stringer G, in combination with the thread-carrier reel C, having notches C^2, and the endless carrier A, substantially as and for the purpose set forth.

6. The combination of the carrier-wheel M, forceps K, cam L', spindle J, jaws j^2 j^3, lever J^3, cam j^4, and housing J^5, substantially as and for the purpose set forth.

7. The spindle J and jaws j^2 j^3, in combination with spring l^2 and housing J^5, as and for the purpose set forth.

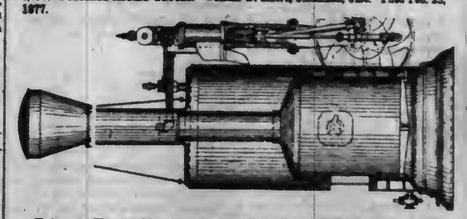
8. The combination of the carrier-wheel M, bar L, spring *l*, forceps K, and fixed cam L', as and for the purpose set forth.

9. The combination of the knotting device J K, &c., with the spring-plate P_1 having a V-shaped notch at its rear end, substantially as and for the purpose set forth.

10. The combination of the fixed guide-throat O, formed of plates O^1 O^2, with the reel C, punch F, stringer G, and carrier A, substantially as and for the purpose set forth.

11. The endless carrier A, in combination with the rotary thread-carrier C, punch F, stringer G, and knotter K J, as and for the purpose set forth.

206,759. PORTABLE-ENGINE TRUCKS. William D. Allord, Cincinnati, Ohio. Filed Feb. 23, 1877.



Claim.—1. The combination, substantially as specified, of a trunnioned combined boiler and engine, a carriage therefor, bearings on the carriage for said trunnions, and the means for raising and lowering such bearings, so that the combined boiler and engine may be lifted and turned into a horizontal position for transportation, and may also be set down in a vertical position on the ground when it is to be worked.

2. The truck having a pivoted frame the side sills of which are disconnected at one end, and bearings mounted on said disconnected ends of the side sills, substantially as described, whereby the truck is adapted to engage trunnions on a combined engine and boiler, to lift the same for carrying it.

3. The truck-frame provided with the adjustable bearings for the trunnions of the boiler, and means for shifting said bearings after the portable engine has been mounted on the truck, as and for the purpose specified.

206,760. Saw-Frames. Emanuel Andrews, Williamsport, Pa. Filed Mar. 23, 1878.

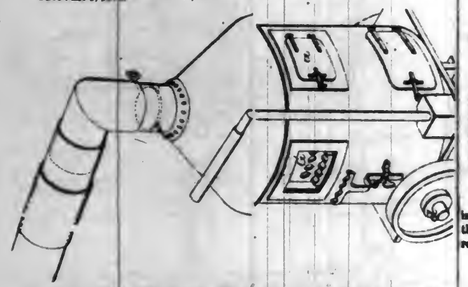
Brief.—The frame is formed of two wooden end pieces and a spring-metal back, secured at its ends to the wooden pieces by bands.



Claim.—1. A self-straining frame for wood-saws, having the wooden end pieces A A', in which the saw B is secured, and the spring-metal back C, secured at its ends to the said wooden end pieces, substantially as described and shown.

2. The elastic metal back C, secured to the wooden end pieces by bands *c c'*, substantially as described and shown.

206,761. Glory-Hole Furnaces for Finishing Glassware. Richard M. Atwater, Millville, N. J., assignor to James Whitall, Robert P. Smith, John Mickle, Jr., Charles Roberts, William E. Tuckerman, and Charles A. Tatum, of the cities of Philadelphia and New York. Filed June 5, 1878.



Claim.—1. The combination, substantially as described, of a portable glory-hole furnace with an articulated smoke-pipe which communicates with a fixed chimney, and will accommodate itself to the different positions to which the said furnace may be adjusted, all substantially as described.

2. The combination of a portable glory-hole furnace with a flexible or articulated blast-pipe communicating with a fixed blast-pipe, substantially as described.

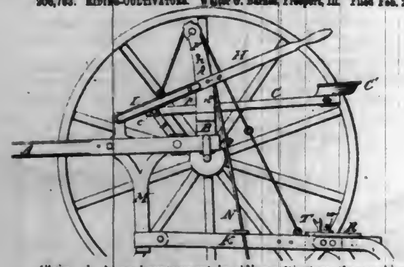
206,762. Manufacture of Gun-Bands. Walter Baker, Rico, N. Y. Filed Oct. 20, 1877.



Claim.—1. As an improvement in the art of making gun-bands, the herein-described method of forming the same, with the shoulders *f* and the lugs *a*, from a narrow rod or bar of metal by means of dies, substantially as set forth.

2. The dies A and B, having their faces curved, as shown, and provided with the recess C and the shoulders *c*, for forming gun-bands, as set forth.

206,763. Riding-Cultivators. Walter G. Barnes, Freeport, Ill. Filed Feb. 28, 1878.



Claim.—1. As an improvement in riding-cultivators, the combination of the tongue A, having adjustable rose-plates E E' E E', connecting-arms D D, and pivoted converging seat-bars C C, carrying the seat C', whereby the throw and elevation of the seat may both be regulated, substantially as and for the purpose herein shown and described.

2. The combination, with the flanged rose-plates E E, of the arms D D, having perforations *f*, bolts *g g*, rose plates E' E', having recesses *h h* and thumb-nuts *i i*, substantially as and for the purpose herein shown and set forth.

3. The combination of the adjustable arms D D, flanged wedge-plates *d d*, bolts *e e*, and pivoted converging seat-arms C C, substantially as and for the purpose hereinbefore set forth.

4. The combination of the pivoted cultivator-beams K K, having keepers P P, hinged sway-bars N N, perforated cross-bar O, and adjusting-bolts *u u*, substantially as and for the purpose herein shown and described.

5. The combination of the slotted plates R, adjustable foot-pieces T, having heads S, and jam-nuts *w*, substantially as and for the purpose herein shown and described.

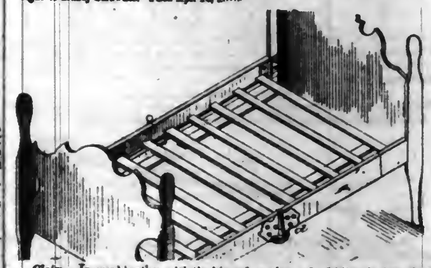
206,764. Eyeglasses for Carriages. Richard T. Barton, New Haven, Conn. Filed July 9, 1878.



Claim.—1. The combination, with the plate B and arms *c*, curved as shown and described, of the shank *b*, hook C, ears *c*, and the shoulders *d*, for the purpose set forth.

2. The plate B, formed with curved arms *c*, in combination with the shank *b*, curved as shown, and having the hook C, shoulders *d*, and ears *c*, substantially as and for the purpose described.

206,765. Folding Bedstead. Samuel Beahm, Buchanan, Mich., assignor of one-half his right to Sidney Sarewan. Filed Apr. 18, 1878.



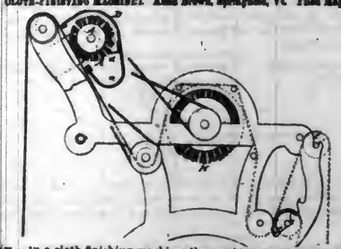
Claim.—In combination with the hinged sections of a folding bedstead, the inwardly-projecting flanges or supports *d d*, located around the lower ends of the hinge-pintles, and supporting in a measure the sides of the bedstead and relieving the hinges of strain, substantially as shown and set forth.

206,766. Flow-Stocks. Preine Beane, Maysville, Ga. Filed July 1, 1878.



Claim.—In combination with the beam A, the bifurcated standard D, pivoted to or upon said beam, the bar E, secured to said beam A, provided with the threaded end, the ratchet-teeth *e*, and the nut F, and extending downward and rearward through said standard, and the pawl G, pivoted within the latter and engaging with said ratchet-bar, substantially as and for the purpose specified.

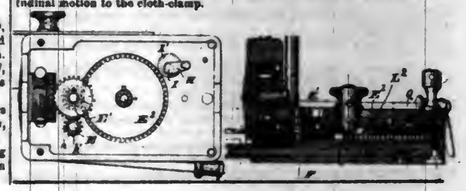
206,767. Cloth-Finishing Machines. Adna Brown, Springfield, Vt. Filed May 13, 1878.



Claim.—In a cloth-finishing machine, the combination of a series of bearings, F *f*, with a revolving brush, H, a sock-brush, A, a guard, D, having a projection, *d*, and with a final roller, *b*, substantially as and for the purpose described.

206,768. Button-Hole Attachments for Sewing-Machines. Samuel J. Baird, Richmond, Va., assignor to George Trull, New York, N. Y. Filed May 1, 1878.

Brief.—The present invention is an improvement upon applicant's former patents, and consists in pivoting the cloth-clamp lever at the rear end of the attachment, in improved means for operating the cams which impart the lateral vibratory motion to the same, in improved form of shifting-plate, and in improved means for adjusting the racks, which are actuated to give the longitudinal motion to the cloth-clamp.



Claim.—1. The combination of the chambered turret, the single ratchet-wheel inclosed therein, the crown-wheel, also inclosed in the turret, the screw-shaft on which the ratchet-wheel and crown-wheel are mounted in contact with each other, and the covering-plate closing the opening into the turret and confining the ratchet and crown-wheel therein, all substantially as hereinbefore set forth, whereby the parts are protected, confined in a small space, and may readily be removed.

2. The combination of the turret, the ratchet-wheel, the driving-shafts, the adjustable cross-bar connecting the driving-shafts, and the rod adjustably connected with said bar, substantially as and for the purposes specified.

3. The combination of the casing having a chambered turret, the reciprocating driving-shafts, the single ratchet-wheel, the vertically-rotating crown-wheel connected to the ratchet and inclosed with it in the turret, the horizontal master-wheel engaging with the crown-wheel beneath the casing-top and at the base of the turret, the vertical cam-shaft E, and its pinion, driven directly by the master-wheel, substantially as and for the purpose described.

4. The combination, substantially as hereinbefore set forth, of the intermittingly-operated ratchet-wheel, the crown-wheel, the master-wheel driven thereby, the cam-shaft E, its pinion, the cloth-clamp-oscillating lever pivoted at its heel, and its cam-frame or shifting-plate provided with a slot in which the two wipers of the cam-shaft operate, in the manner specified.

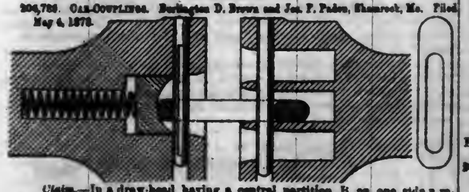
5. The combination, substantially as hereinbefore set forth, of the cloth-clamp-oscillating lever pivoted at its heel, the cam-frame or shifting-plate having the inclined slot G' in its front end, the cam-shaft E, working in said slot and provided with the wipers *h h'*, the adjusting-handle or turning-lever interlocking with the casing-top, and its crank-arm and pin engaging the slot in the rear end of the shifting-plate.

6. The combination of the oscillating lever F, pivoted at its heel, the reciprocating cloth-clamp, the double-racked plate, the rack-engaging pinion, the rack-adjusting frame L², the cam-frame or shifting-plate by which the lever F is oscillated, and the handle or turning lever operating both the said cam-frame and the adjusting-frame, these members being constructed and operating substantially as hereinbefore set forth.

7. The combination, substantially as hereinbefore set forth, of the double-racked bar, its adjusting-frame slotted at the rear, the crank working in said slot, the beel rod connected to said frame at front and turning in the casing, and the leg on the heel of the frame, between which and the crank the rod passes.

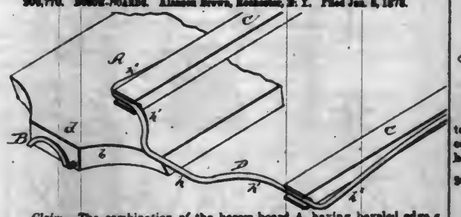
8. The combination of the master-wheel, the pinion on its shaft, the great pinion driven thereby, the rack-pinion, and the laterally-adjustable rack-bar, substantially as and for the purposes specified.

206,769. Gas-Couplings. Burlington D. Brown and Jos. F. Paden, Shamrock, Mo. Filed May 4, 1878.



Claim.—In a draw-head having a central partition, E, on one side a receiving-mouth of large size, provided with a setting-slide for the pin, and lateral stops *s*, and on the other side a setting-mouth having horizontal partitions dividing it into directing-sockets *e* of small vertical depth, one above the other, for the link, which has an elongated end to extend back into the directing-socket, substantially as specified.

206,770. Broom-Boards. Alanson Brown, Rochester, N. Y. Filed Jan. 8, 1878.



Claim.—The combination of the broom-board A, having beveled edge *a*, projection *d*, and hook B, with the stretcher, composed of the cross-bar C', side bars, C C, pivoted in the ends thereof, and the double-acting spring D, forming straight center piece, A, curves A^1 A^1, and inclined arms A^2 A^2, all constructed substantially as and for the purposes herein set forth.

206,771. Brick-Machines. John K. Caldwell, Philadelphia, Pa. Filed Dec. 11, 1877.

Claim.—1. In a brick-machine having a rotary mold cylinder or wheel, C, the combination therewith of a hopper, E, provided with a separate measuring-chamber, E', substantially as shown and described, and for the purpose set forth.

2. In a brick machine having a mold-wheel, C, the combination, with the latter, of the hopper E, having the separate measuring-chamber E' in communication therewith, said measuring-chamber having the capacity of its mouth adjustable or variable, substantially as and for the purpose set forth.

3. In a brick-machine, the hopper E, having a division forming a separate measuring-chamber, E', and an inclined slide, G, arranged substantially as shown, so as to adjust the area of the entrance to said measuring-chamber, as and for the purpose set forth.

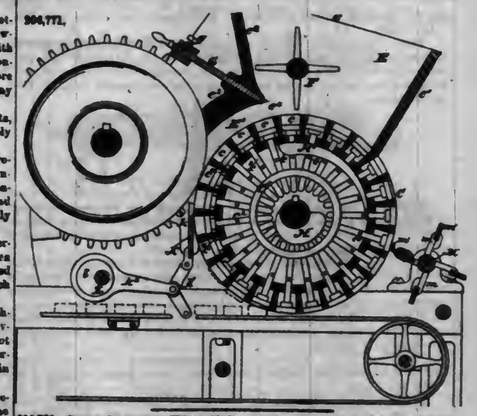
4. In combination with the mold-wheel C, the reciprocating cut-off knife K, arranged and operating substantially as shown and described.

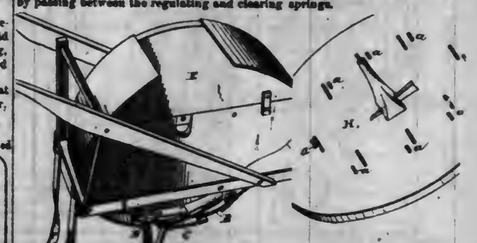
5. The revolving wiper consisting of the shaft M, having blades *m* and flexible strips *m'*, substantially as shown and described.

6. The plungers *d'*, rabbeted at *e'* to form chambers for any clay which may work around their edges or sides, substantially as shown and described.

206,772. Cotton-Planters. William W. Chapman, Washington, D. C. Filed July 2, 1878.

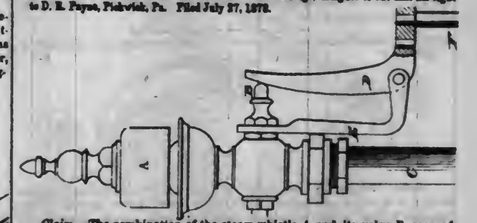
Brief.—On the bearing-wheel, and working within the hopper, are rows of pins, the longer ones serving as agitators, while the short ones feed out the seed by passing between the regulating and clearing springs.





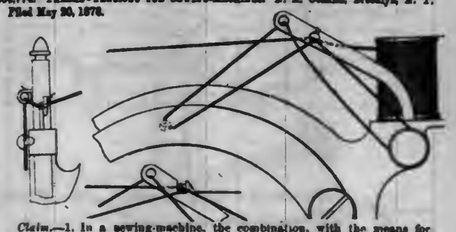
Claim.—The combination of springs B, C, and D in the bottom of hopper E and feeders *a* in wheel H, substantially as set forth.

206,773. Low-Water Indicators. Wm. A. Cole, Westfield, assignee of one-half his right to D. R. Payne, Fishwick, Pa. Filed July 27, 1878.



Claim.—The combination of the steam-whistle A and its valve B, secured to a pipe, C, with the hanger E, bell crank lever D, and expansible pipe F, all constructed and arranged for operation substantially as and for the purposes herein set forth.

206,774. Thread-Tensions for Sewing-Machines. H. A. Conklin, Brooklyn, N. Y. Filed May 20, 1878.



Claim.—1. In a sewing-machine, the combination, with the means for operating the needle, of a tension device, whereby at certain times during the operation of the needle one portion of the thread used in sewing is caused, directly or indirectly, to bind or act as a brake on another portion, substantially as and for the purpose specified.

2. In a sewing-machine, the combination, with a vibrating needle-arm, provided with an eye for the reception of the thread used in sewing, of a fixed arm extending from the frame of the machine and provided with two eyes for the reception of the said thread, whereby during the operation of the machine one portion of the thread is caused to directly bind or act as a brake on another portion, substantially as and for the purpose specified.

206,775. MACHINES FOR SAWING SHINGLES. M. F. Cessnet, Terrell's Bluff, Ark. Filed Apr. 9, 1878.

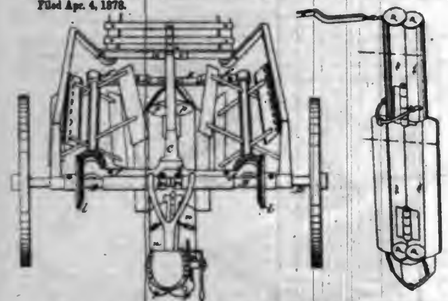
Brief.—The saws are mounted on the upper ends of vertical arbors, having the bearings for said ends in slides which are laterally adjustable upon the edges of the bed or table, in slots in said table, through which the saws project, for setting saws at any desired angle, so as to cut shingles with butts of varying thickness.



Claim.—1. The combination of the frame A, having bed-piece B, slides H H, adjustable vertical shafts K K, having saws N N, and rotating disk or table C, having slots D D, all arranged and operating substantially as described, for the purpose herein set forth.

2. The combination, in a rotary shingle-machine, of two or more saws, arranged alternately slanting toward and from the center of the bed-piece, with a rotating disk or table having slots forming feed-boxes, in which the bolts are held by spring-clamps, and mechanism for releasing the latter after the feed-boxes have passed the saws, so as to cause the bolts to be fed automatically by their own weight, substantially as herein described, for the purpose shown and specified.

206,776. APPARATUS FOR GATHERING POTATO-BUGS. Albert Denison, Stillwater, N. Y. Filed Apr. 4, 1878.



Claim.—1. In a machine for gathering bugs from plants or vines, the combination of the revolving sweeps having laterally-adjustable bearings *f f'*, and the laterally-adjustable gears *l*, the axles D, and a frame composed of bars C *g g*, connecting said axles and having the sweep-bearings attached thereto, all as shown and described.

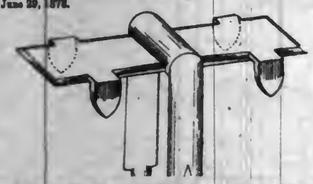
2. In a machine for gathering bugs from plants or vines, the tubular receptacle E, formed of two semi-cylindrical parts, a a, each provided with a lateral wing and circular end, *p*, as specified.

206,777. JEWELRY-FASTENING. Wellington P. Dolloff, Providence, R. I. Filed Apr. 27, 1878.



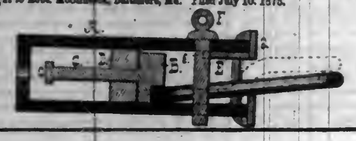
Claim.—The jewelry-clasp formed of a piece of wire double at its center to form a shank, *a*, and having its free ends *g* formed into reverted spring branches inclined toward the shank portion, the double shank being rigidly connected to the portion A, and the spring branches *f* being adapted to engage, by the reversed ends, with a slot or opening in the receiving end B, substantially as specified.

206,778. SPRING-SADDLE CLIPS. James G. English and Edwin F. Mauick, New Haven, Conn. Filed June 29, 1878.



Claim.—A spring-saddle clip consisting of a clip and saddle-plate having depending side brackets.

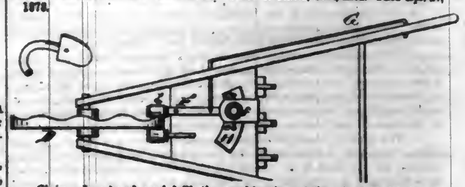
206,779. CAR-COUPLINGS. James D. Ferguson, Wilmington, Del., assignor of one-half his right to Robt. McClintock, Baltimore, Md. Filed July 10, 1878.



Claim.—1. The draw-head A, having lug E, in combination with the block B and pin F, substantially as described.

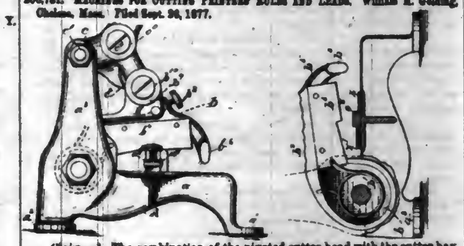
2. In combination with the draw-head A, having lug E and stationary block D, the buffer *a* and sliding block B, having recess *b*, substantially as set forth.

206,780. SEED-DRILLS AND CULTIVATORS. David L. Garver, Hart, Mich. Filed Apr. 27, 1878.



Claim.—In a hand seed-drill, the combination of the wheel D, having its rim *a* scalloped on one side, the pivoted lever F, with roller *b*, and a rigid guide-roller, *d*, on the opposite side, the shuttle H, and spring-lever G, all constructed substantially as and for the purposes set forth.

206,781. MACHINE FOR CUTTING PRINTERS' RULES AND LEADS. William H. Golding, Chelsea, Mass. Filed Sept. 26, 1877.

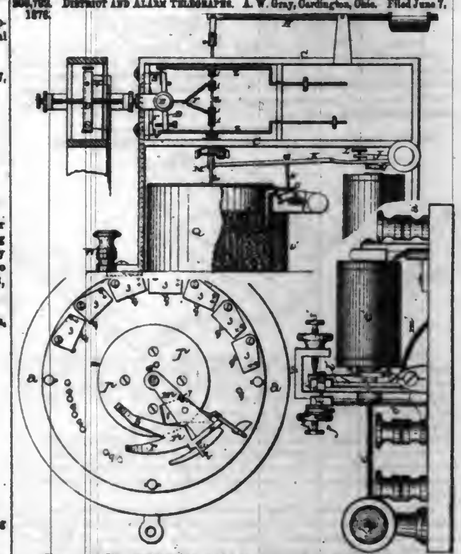


Claim.—1. The combination of the pivoted cutter-head with the cutter having the straight and inclined cutting-edges, both located on the same side of, and the inclined edges next to the pivotal point of, the head, as and for the purpose set forth.

2. In combination with the supporting-bed having the central gage-plate, the reversible gage *c'*, having the central slot a^{11} and heads a^{10}, as described.

3. In combination with a fixed cutter and a cutter pivoted at one end, the guiding block b^2 and arm a^5, for holding the free end of the cutter against lateral movement, as described.

206,782. DISTRICT AND ALARM TELEGRAPHS. A. W. Gray, Cardington, Ohio. Filed June 7, 1876.



Claim.—1. The combination of the arm m with a contact-breaker movably attached thereto, and the disk *p* and outer supporting plate provided with the pins *q*, substantially as specified.

2. In a signal-box, a contact-breaker loosely connected at one corner only to its support, so as to have a vertical and a limited horizontal movement, whereby contact may be broken with the disk *p* and the breaker moved inward, so as to clear the pins *q* as the breaker is moved forward, substantially as described.

3. A contact-breaker provided with catch *r*, in combination with arm m, to which it is attached, having shoulder *u* for the catch to catch behind, substantially as set forth.

4. The combination of the arm m, a contact-breaker, a catch, *r*, shoulder *u*, spring *w*, and arm *y*, substantially as specified.

5. In a signal-box, the pins *q*, arranged upon one of the plates to which the wires are secured for the purpose of breaking the circuit, substantially as shown.

6. In a fire-alarm-telegraph box, the combination of the arm m and a stop-pin, 6, with one or more stops having an endwise motion, the pin 6 serving both to stop the forward motion of the arm and to trip the stop, substantially as shown.

7. The combination of the arm m, contact-breaker having the two prongs *r s*, pins *q*, signals, dish *p*, and outer supporting-plate, substantially as specified.

8. The combination of the rods 1, springs 2, plates 3, and notched rods 4, substantially as shown.

9. The combination of the arm m, having pin 6, with the stop provided with the plates 3, and springs 2 and notched rods 4, substantially as described.

10. The arm m, provided with a lever, 8, or other devices for raising the contact-breaker upward and holding it in a raised condition, as the arm moves backward, until tripped by the pin 10 or other device, substantially as set forth.

11. The combination of the arm m, having the pivoted lever 8, contact-breaker *a*, and pins 7 10, substantially as specified.

12. The stop-rods 1, having an endwise movement, and provided with springs 2 and a catch for holding them pressed inward until tripped, substantially as shown.

13. In a relay, the combination of the magnets *s'*, armature *b'*, bars *h' k'*, contact-breakers or armatures *t' j' r' v*, and the three corresponding circuits *a' a' a'*, substantially as shown.

14. In a switch, the reservoir Q, filled with glycerine or other equivalent material, in combination with a plunger that is operated therein by the power of the magnets, substantially as described.

15. The reservoir Q, plunger 2, and valve 4', in combination with the rod G, lever K, and magnets B, substantially as set forth.

16. The combination of the reservoir Q, chamber 9', and the openings between them, with the valve P, that is made to open as the plunger descends, substantially as specified.

17. The combination of the reservoir Q, chamber 9', valve P, lever O, spring R, rod or screw N, lever K, and the magnets B, substantially as shown.

18. The combination of the lever J, having the armature I secured to it, lever K, set-screw L, and the magnets B, substantially as described.

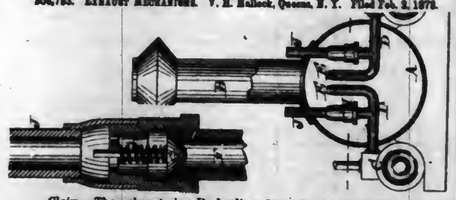
19. The combination of the plunger 2', rod G, weighted rod H, springs F, and pivoted armature D, substantially as set forth.

20. The combination of the pivoted armature D, rod G, and springs F with the points S U, spring T, and suitable connecting-wires, substantially as specified.

21. The combination of the rod G, springs F, pivoted armature D, and catches Z, substantially as shown.

22. The combination of the plunger 2', valve 4', rod 5', and regulating screw and nut, substantially as described.

206,783. EXHAUST MECHANISMS. V. H. Halleck, Queens, N. Y. Filed Feb. 2, 1878.



Claim.—The exhaust-pipe D, leading from the steam-cylinder into the smoke-box, and having a branch pipe, E, within smoke-box, provided with a valve, G, and a nozzle, J, terminating outside of the smoke-box, constructed substantially as shown and described, for the purpose set forth.

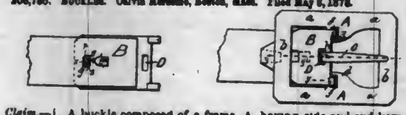
206,784. BUCK-SAW FRAMES. William Hankin, Sr., Scalyville, Pa. Filed July 13, 1878.

Brief.—The brace is formed of a straight and a diagonal bar, both tapered at their meeting ends, and held by a bolt carrying a wedge-shaped washer interposed between the bars.



Claim.—In a saw-frame, the combination of the horizontal bar D and diagonal bar E, tapered at their converging ends *d e*, with the bolt F, carrying the wedge-shaped washer G, interposed between said bars, substantially as and for the purpose set forth.

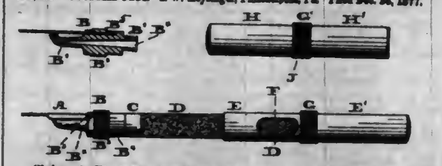
206,785. BUCKLES. Calvin Harsens, Boston, Mass. Filed May 8, 1878.



Claim.—1. A buckle composed of a frame, A, having side and end bars *a b b*, and eyes *f f* on its side bars, an attaching-plate, B, hinged to the eyes *f* of the frame A, and adapted by prongs to be fastened to the standing-strap, and a tongue, C, hinged to the attaching-plate B, all substantially as described.

2. The attaching-plate B, constructed or provided with three prongs, *g g' g'*, for passing through slits in the standing-strap, and two of which prongs, *g g'*, are adapted to be clinched in position in a direction transverse or at right angles to the remaining prong, *g'*, when clinched, substantially as and for the purpose described.

206,786. FOUNTAIN-PENS. L. W. Haynaye, Philadelphia, Pa. Filed Dec. 26, 1877.



Claim.—1. The hollow handle divided by the raised knurl G into two portions, E and E', one plain and the other slotted, together with the detachable metallic pen-sheath B and its reservoir, in combination with the light metal cap or cover H H', arranged to close from either end against the said knurl or stop G, substantially as and for the purpose described.

2. The combination of the pen-sheath B, the internal elastic reservoir D, and the hollow cylindrical handle E E', provided with the knurl G and open thumb-slot F, together with the cap or cover H H', having an air-vent, J, substantially as and for the purpose described.

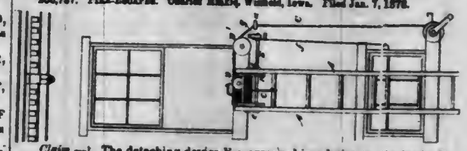
3. In a fountain-pen, the combination of the pen with the ink-discharge tube B', composed of soft metal, whereby the latter may be bent or adjusted to various sized pens, to regulate the flow of ink, substantially as described.

4. In a fountain-pen, the sheath portion B, having a feed-tube, B', and pen-sheath B'', the whole formed or molded in a single piece, substantially as described.

5. A pocket-case for fountain-pen holders, consisting of the twin parts E and H, the former provided with the stop G and open thumb-slot F, and the latter with the air-vent J, substantially as herein described.

6. The pocket fountain-pen consisting of the pen-sheath portion B, provided with the neck B', the reservoir D, ferruled at its open end, the case E, provided with thumb-slot F, and cover H, substantially as described.

206,787. FIRE-ESCAPES. Charles Hinkle, Winfield, Iowa. Filed Jan. 7, 1878.

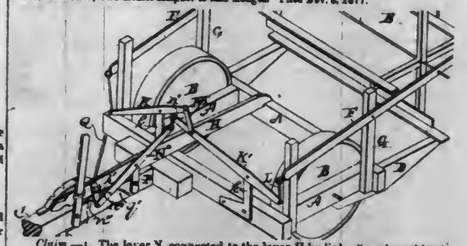


Claim.—1. The detaching device E *e*, arranged in relation to the hooks B so as to detach a ladder lifted sufficiently to clear the same, substantially as described.

2. In a fire-escape, the hooks B B and detaching device E *e e*, in combination with the ladder A, hoisting rope or wire C, and pulley or pulleys D D', substantially as and for the purpose set forth.

3. The combination of the hooks B, detaching device E *e*, lever *g*, cord *f*, and stop *h*, substantially as shown and described.

206,788. HARVESTER-REEL ADJUSTMENTS. Andrew J. Hodgen, Peoria, and James B. Mohler, Pekin, Ill., said Mohler assignor to said Hodgen. Filed Nov. 8, 1877.

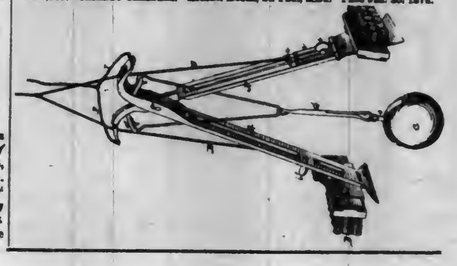


Claim.—1. The lever N, connected to the lever H by link *n''*, and combined with the levers H K K', reel-carriers F, reel E, frame A, and thrust-bar C, in such manner that raising and lowering the cutter-platform D by the lever H will automatically adjust the reel to the cutter, for the purpose specified.

2. The hand-lever Q, combined with the lever H, link *n''*, lever N, levers K K', reel-carriers F, reel E, and frame A, substantially as and for the purpose specified.

3. The pivoted standard P, in combination with levers N K K', reel-carriers F, reel E, frame A, thrust-bar C, and lever H, substantially as and for the purpose specified.

206,789. CHIMNEY-CLEANERS. Michael Hoban, St. Paul, Minn. Filed Jan. 26, 1878.



Claim.—1. The pivoted arms A A', in combination with cords E F and weight C, substantially as set forth.

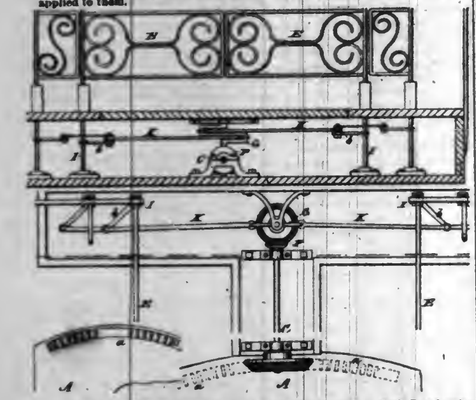
2. In combination with the arms A A', a chimney-cleaning device, the pivoted plates l n m, brushes B B', and set-screw F, substantially as described.

3. In combination with the arms A A', the flexible V-shaped bar D and weight C, substantially as described, for the purpose set forth.

4. In a chimney-cleaning device, a doubly-swiveled spherical suspended weight, substantially as described.

206,790. Draw-Bridge Gates. Henry Hounshell, Streator, Ill. Filed Apr. 9, 1878.

Brief.—The gates are opened or closed by levers connected therewith, and with a double-crank shaft, which is located in a plane out of line with the gates and nearer the pivot of the bridge, said ports receiving motion from suitable gear actuated by a mutilated gear upon the bridge. The double-crank shaft and the connecting-rods, which are secured to the short radial arms of the gate, being in line with each other when the gates are open or shut, causes a dead-center, thereby preventing the gates being opened or closed by pressure applied to them.



Claim.—1. The combination, with the bridge-operating shaft C and gate-shafts I I, having arms b b set at an angle to the gates E, of the shaft G, located in a plane of a right line drawn between the wrists of arms b b when the gates are open or closed, and having cranks or arms projecting in opposite directions, and the connecting-rods K, all as shown and described, whereby the gates are locked open or closed, as specified.

2. The combination, with the gate-operating shaft C, of the swinging pivot-bridge A, having the interrupted or mutilated rack a, as shown and described.

206,791. Shaving-Brushes. Anton Hoydon, New York, N. Y. Filed May 30, 1878.

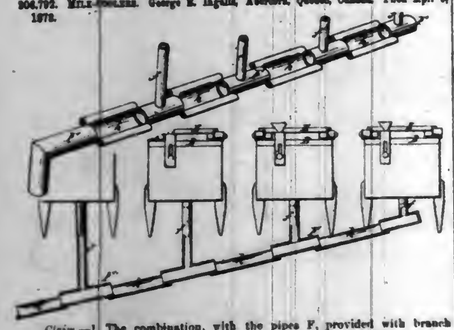


Claim.—1. A shaving-brush provided with a hollow handle, forming a receptacle for the shaving-soap or other toilet article, as herein set forth.

2. A hollow handle provided at one end with a shaving-brush, and also provided with a sliding carrier having suitable devices connected thereto for holding a bar or stick of shaving-soap or other toilet article, as herein set forth.

3. The combination of a hollow handle, a carrier for holding a sliding brush, and a carrier for holding a sliding stick or bar of soap or other toilet article, substantially as herein set forth.

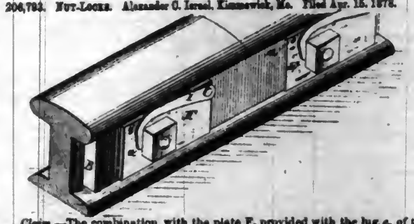
206,792. Milk-Coolers. George R. Ingalls, Abercorn, Quebec, Canada. Filed Apr. 6, 1878.



Claim.—1 The combination, with the pipes F, provided with branch pipes f, of the open sections h, substantially as shown and described.

2. The pipes F, provided with branch pipes f of increasing lengths, with the open sections h and a series of milk-vats, B, substantially as shown and described.

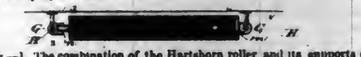
206,793. Nut-Locks. Alexander C. Israel, Kingswick, Me. Filed Apr. 15, 1878.



Claim.—The combination, with the plate F, provided with the lug a, of the hook I, pivoted to the plate, as shown, and the bolt and nut, whereby the nut is held from unscrewing, but can be tightened on the bolt without raising the hook by hand, as set forth.

206,794. Curtain-Fixtures. Charles P. Judwin, Scranton, Pa. Filed July 8, 1878.

Brief.—A "Hartshorn" spring-roller holding the curtain is raised or lowered by straps winding around a lock-lever roller at the top of the window. The brackets of the "Hartshorn" roller have vertical sleeves fitting around rods at either side of the window. The rods are not circular in cross-section, and the brackets are thereby prevented from turning or moving in any direction except vertically up and down.

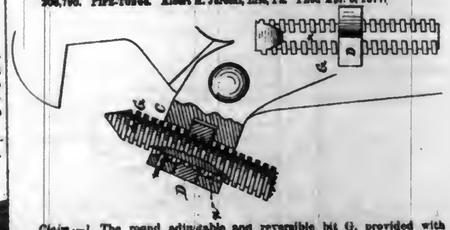


Claim.—1. The combination of the Hartshorn roller and its supports a a with the blocks G G', having the sockets s c, and having the elongated bearing for the guide-rods H H, the latter being of such cross-section as to prevent the turning of the blocks therein, substantially as described.

2. The combination of an adjustable lower spring-roller, guided by rods H H, with the straps E E and the upper adjusting-roller and means for operating the same, substantially as described.

3. The socket-blocks G G', constructed with the elongated bearing for the guide-rods, with holes of such form as to prevent lateral turning thereon, and having the projections on their inner faces, with sockets s s, to receive and hold the supports of the spring-roller, substantially as described.

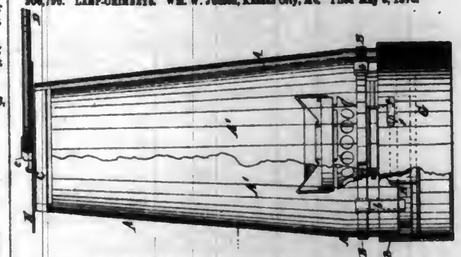
206,795. Pipe-Tongs. Albert E. Jarosh, Erie, Pa. Filed Apr. 6, 1877.



Claim.—1. The round adjustable and reversible bit G, provided with exterior screw-threads, in combination with the slotted head C and a device for preventing the bit from turning, the operating-nut being placed in the slot in the head and surrounding the bit, substantially as set forth.

2. The combination of the pin m, stationary in the head C, the detachable and reversible bit G, with longitudinal groove n, and the nut D in the slotted head C, and surrounding the bit, all substantially as set forth.

206,796. Lamp-Chimneys. Wm. W. Judson, Kansas City, Mo. Filed May 6, 1878.



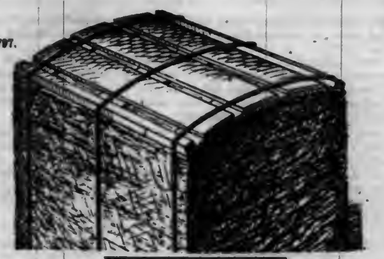
Claim.—The lamp-chimney described, consisting of the standards A, having double acute slots a a, the mica sheets sprung therein and held by force of each spring, the base-rings B B, secured together by vertical ties b, the cap C, having central lug c, the shield E, with lugs e, and the handle D, operating through said lugs, all constructed, arranged, and operating as and for the purpose set forth.

206,797. Baling Cut Hay. Jacob O. Kamp and Chas. Brown, New York, N. Y. Filed Mar. 2, 1878.

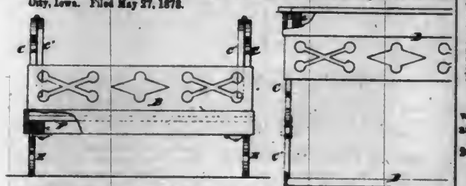
Brief.—Improvement consists in moistening short-cut hay previous to baling with a saturated solution of common salt, and baling while so moist.

Claim.—The process herein described of treating short-cut hay, the same consisting in moistening the same with hot saturated brine, and then tamping and compressing the hay before cooling, and while subjected to the softening action of heat and moisture, whereby it is compressed into a compact bale, substantially as specified.

206,797.

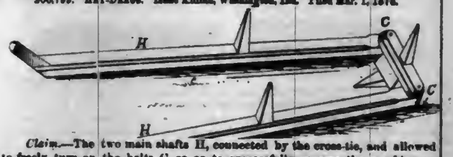


206,798. Combined Cradle and Table. Dallas M. Killian and Le Roy Humbert, Sioux City, Iowa. Filed May 27, 1878.



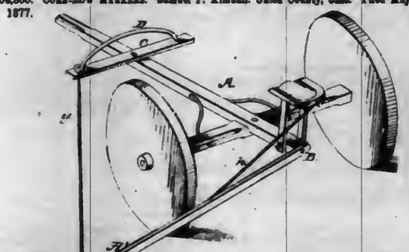
Claim.—The combination of the detachable rockers E and fastening devices with the table-frame composed of the sides B B, ends C C, slats F, and cross-bars c, the latter being so located as to leave a space between them and the ends C, all as shown.

206,799. Hat-Drags. Isaac Killian, Washington, Ind. Filed Mar. 1, 1878.



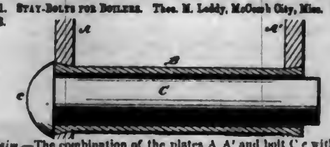
Claim.—The two main shafts H, connected by the cross-tie, and allowed to freely turn on the bolts C, so as to successfully reverse the machine, as described.

206,800. Corn-Row Markers. Samuel P. Kimball, Union County, Ohio. Filed May 21, 1877.



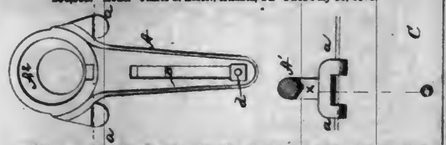
Claim.—The combination of the reversible lever A' with marker O, chains or cords h and y, and curved arched bar D, for the purpose explained.

206,801. Stay-Bolts for Boilers. Theo. M. Leddy, McComb City, Miss. Filed June 22, 1878.



Claim.—The combination of the plates A A' and bolt C c with the copper tube B, as and for the purposes specified.

206,802. Hoes. James S. Lester, Atlanta, Ga. Filed July 10, 1878.



Claim.—1. The slot B in the clasp for the passage of the bolt to secure any size of hoe-blade, substantially as set forth.

2. The combination of the clasp A, provided with elongated slot B and lips a a, the adjustable bolt d, and the detachable hoe-blade, all substantially as set forth.

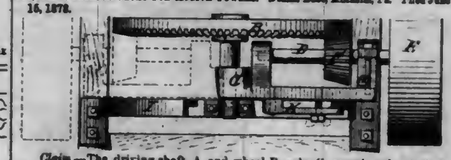
206,803. Garment-Supporters. John P. Lindsay, New York, N. Y. Filed June 24, 1878.



Claim.—1. The button loop or stud consisting of a base struck up from solid metal, and provided with the slots for affixing it to the webbing, and a solid or hollow stud, substantially as and for the purpose set forth.

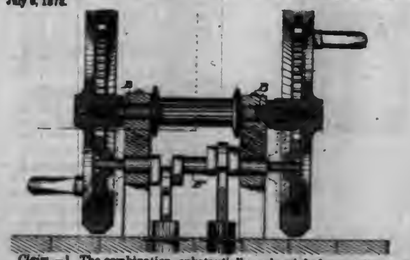
2. In an improved garment-supporter, the combination of the button loop or stud, consisting of a base struck up from solid metal, and provided with the slots for affixing it to the webbing, and a solid or hollow stud, with a loop for receiving the stud, all arranged and operating substantially as shown and described.

206,804. Portable Jacks for Motive Powers. Dennis Lees, Millheim, Pa. Filed June 15, 1878.



Claim.—The driving-shaft A and wheel B, yoke C, carrying the shaft D, wheel F, and wheel E, in combination with the segmental rim I and clamp K, as and for the purpose set forth.

206,805. Combined Ship's Pump and Windlass. L. H. Lyon, Bridgeport, Conn. Filed July 6, 1878.

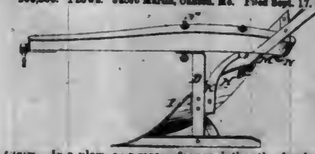


Claim.—1. The combination, substantially as hereinbefore set forth, of the horizontal windlass-shaft B, the geared driving-wheels thereon, and the cranked pump-shaft F, gearing with and driven directly from the driving-wheels.

2. The combination, substantially as hereinbefore set forth, of the windlass-shaft, the internally-toothed driving-wheels, the cranked pump-driving shaft, and the shifting pinions on the ends of this shaft inside the driving-wheels, for the purpose specified.

3. The combination of the supporting frame or standards, the windlass-shaft, the toothed driving-wheels outside the frame, the doubly-cranked pump-shaft inside the frame and beneath and parallel with the windlass-shaft, the shifting pinions between the frame and driving-wheels, the pump-barrels, and their pistons, connected with the cranks of the pump-shaft, these members being constructed and operating substantially as hereinbefore set forth.

206,806. Plows. Jacob Martin, Canton, Mo. Filed Sept. 17, 1877.



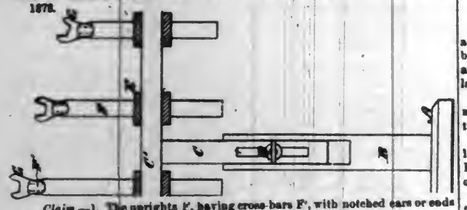
Claim.—In a plow, as a means for regulating the depth of the furrow and laterally adjusting the plowshare to suit the team employed, the standard D, having a convex lug upon its upper end, and provided with the angle-plate F, having slot I, which engages a bolt secured upon the lower end of the brace-bar K, in combination with the mold-board H, rod M, and slotted plate N, substantially as set forth.

206,807. Grinding-Mills for Feed. George Masterman, Mishawaka, Ind., assignor of one-half his right to Martin Barnhart, same place. Filed Mar. 13, 1878.



Claim.—The two segmental plates C and C', one being stationary and the other pivoted thereto, and capable of being partially rotated, the lower inner faces of both plates being each provided with two sets of corrugations at opposite inclinations, and forming a chamber, I, between the two plates, above said corrugations, and the plates connected to a frame having a side hopper, with an aperture, a, to convey the grain to the chamber I, all substantially as and for the purposes herein set forth.

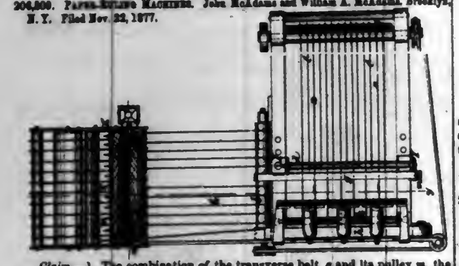
206,808. CARRIAGE-BOW SETTERS. William B. Maxwell, Philadelphia, Pa. Filed Apr. 24, 1878.



Claim.—1. The uprights F, having cross-bars F', with notched ears or ends G, substantially as shown and described.

2. The former for tops of buggies, &c., herein shown and described, consisting of pedestal A, column B, adjustable upright C, horizontal bar C', mortised blocks E, and adjustable uprights F, having cross-bars F' and forked or notched ears G, substantially as set forth.

206,809. PAPER-RULING MACHINES. John McAdams and William A. McAdams, Brooklyn, N. Y. Filed Nov. 22, 1877.



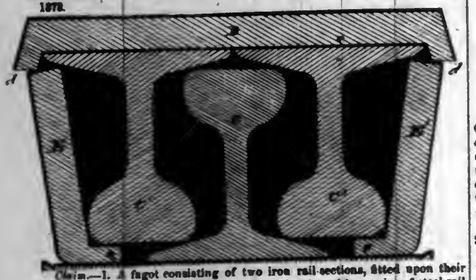
Claim.—1. The combination of the transverse belt *g* and its pulley *m*, the roller *d* of the conveyer C, which conducts the sheet to said belt, and the adjustable carriage *i*, supporting said pulley and said roller, whereby provision is made for adjusting said belt and said roller without changing their relations, to adapt the machine to different widths of sheets, substantially as specified.

2. The combination, with the adjustable pulley *m* of the belt *g*, and the adjustable roller *b* of the conveyer C, of the adjustable roller *f* and the upper roller, *e*, whereby provision is made, by letting out or taking up the strings, tapes, or aprons of which the conveyer C is composed, to compensate for the adjustment of the pulley *m* and roller *d*, essentially as described.

3. The combination, with the upper conveyer, C, of the under conveyer, D, arranged to extend beyond the delivering end of the conveyer C, and the transverse belts *g h*, substantially as specified.

4. A feed board or table for feeding sheets of paper, composed of a solid or close base and a perforated or reticulated upper covering or top surface, having the perforations in it closed at their bottoms by said base, essentially as and for the purpose or purposes described.

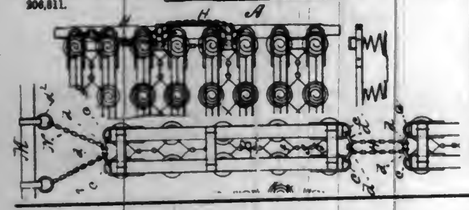
206,810. FAGOTS FOR RAILROAD-RAILS. Sidney McCord, Columbus, Ohio. Filed June 15, 1878.



Claim.—1. A fagot consisting of two iron rail-sections, fitted upon their upper and lower sides by iron plates, in combination with a series of steel-rail sections, part of which are placed in upright and part in inverted position upon said upper plate, together with a plate-covering composed of iron or mixed iron and steel, which is placed about and protects the sides and top of said steel-rail sections, substantially as shown.

2. In a fagot, the combination, with a series of steel-rail sections, C C' C², of the top plate, D, formed with end projections *d d'*, and the two side plates, E E', formed respectively with the end projection *e*, substantially as set forth.

206,811.



206,811. COMBINED FIRE-ESCAPE AND SPRING-BED. Robert H. McGinnis and Charles T. Mann, Goshen, Ind., assignors of one-third their right to Frank H. Grow, same place. Filed Nov. 10, 1877.

Brief.—Ladder-sections linked together by their ends are arranged upon a bedstead with spiral springs adapted to support the mattress. The same may be removed from the bedstead and suspended outside a window by chains and a cross-bar within the room, in which case the springs serve to keep the ladders off from the wall of the building.

Claim.—1. A bed-bottom composed of ladders having helical springs adapted to support the bedding, and serve as fenders to hold the ladder from the wall, substantially as specified.

2. In a combined fire-escape and bed-bottom, the combination, with the ladder-sections B, having loops *c* and carrying-rings *d*, of the connecting-chain H, passing through said rings, and bringing the line of strain in the central line of the ladder, substantially as specified.

3. The combination, with the ladder-sections B and their flexible connections H, of the fender-springs S, the connecting-rods *j*, the angular couplings *f*, and the links *g*, substantially as specified.

4. The bed-bottom and fire-escape consisting of the ladder-sections A, the fender-springs S, the loops *c*, the rings *d*, the chains H N, and the holding-bar M, all combined, arranged, and operating substantially as set forth.

206,812. PAVEMENTS. John H. McMurray and Samuel E. Gross, Chicago, Ill. Filed Jan. 10, 1878.



Claim.—1. A pavement in which a top layer of wooden blocks is placed upon a foundation consisting of two layers, the lower one of small broken stone and the upper one of pulverized stone or fine stone screenings, substantially as described, and for the purpose set forth.

2. The combination of the layers A and B with the wooden block C, the whole constructed substantially as described, and for the purposes set forth.

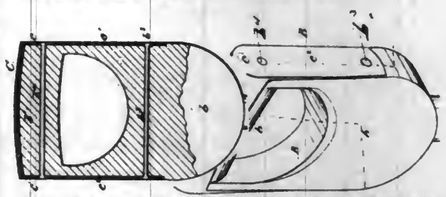
206,813. PACKING FOR CONDENSER-TUBES. John W. Mead, New York, N. Y., assignor of one-half his right to John H. Mead, same place. Filed July 23, 1878.



Claim.—1. Packing for condenser-tubes and like purposes, consisting of a ferrule or cylinder formed of layers of wood and paper secured to each other in any desired manner, substantially as set forth.

2. A packing for condenser-tubes and equivalent purposes, consisting of thin strips of wood and paper united by glue or equivalent material, and the compound strips then formed into a tube or cylinder of the desired size, the several coils being secured to each other by an interposed coating of glue or equivalent material, substantially as set forth.

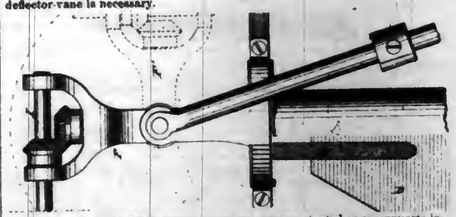
206,814. TAMPING-CAPS FOR TOOL-HANDLES. John F. Milligan, St. Louis, Mo., assignor of one-half his right to Ezra H. Linley, same place. Filed Mar. 27, 1878.



Claim.—The tamping-cap for shovel-handles, consisting of the metal plate C, whose concavo-convex portion fits the outer face of the hand-bar b^1, the ends c^1 of said cap being extended to form the plate c^2, for protecting the two narrow sides of the head, said plate and extensions being secured to the handle by rivets b^2, passing, respectively, through the hand-bar and through the flat part of the handle, the wooden inner face of the hand-bar remaining uncovered, to permit of its being grasped without injury or discomfort to the fingers, substantially as set forth.

206,815. WIND-ENGINES. Frank A. Mitchell, Norwich, Conn. Filed Feb. 27, 1878.

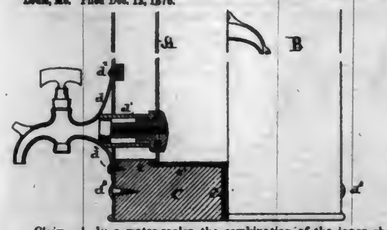
Brief.—When the force of the wind exceeds the resistance of the weight, the wheel turns upon the trunnions, presenting less surface to the wind. No deflector-vane is necessary.



Claim.—1. A windmill having a swinging frame pivoted upon supports in a different horizontal plane from the wheel-shaft, as and for the purpose described.

2. A windmill having a swinging frame, F, and an attached pendent and weighted rod, and a wheel-shaft, I, located at right angles to and in a different horizontal plane from the pivots of the swinging frame, substantially as and for the purpose described.

206,816. WATER-COOLERS. Frederick G. Hedringhaus and William F. Hedringhaus, St. Louis, Mo. Filed Dec. 12, 1876.

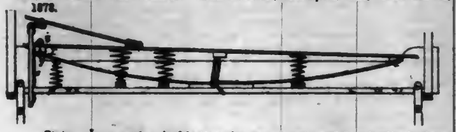


Claim.—1. In a water-cooler, the combination of the inner chamber, A, and the solid base C, the latter having the flat-bottomed recess *c*, the grooves c^1 c^1, and outlet c^2, and the bottom of the chamber bearing directly and continuously upon the bottom of the recess, substantially as described and shown.

2. The combination, in a water-cooler, of the casings A and B and the base C, the outer casing at the top resting loosely upon the top of the inner casing and at the bottom extending down and around the base, which, in turn, supports the inner casing and holds it and the outer casing together, substantially as described.

3. The combination of the casings A and B with the base C and screws d^1 d^2, the several parts being detachable from and relatively united to one another, substantially as described.

206,817. SPRING BED-BOTTOM. Josiah Osthoudt, Minneapolis, Minn. Filed Jan. 22, 1878.



Claim.—In a spring bed-bottom having a series of longitudinal slats, crank-shafts, and connecting-arms, arranged substantially as herein set forth, for connecting the slats in pairs successively from the two sides of the bed-bottom, for the purpose described.

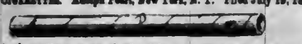
206,818. PLOW-COLTERS. James Crawford, Kalamazoo, Mich. Filed June 29, 1878.

Brief.—The jointer-arm adjustable upon the plow standard and also upon the jointer.



Claim.—The combination of the adjustable colter-beam B, having roughened surfaces on opposite sides, as shown, and slots to secure adjustment, with the slotted braces D E, curved colter-arm *c*, beaded bolt c^1, and standard A a a^1, as and for the purpose set forth.

206,819. CIGARETTES. Adolph Pearl, New York, N. Y. Filed July 19, 1878.



Claim.—A cigarette composed of a filler, A, surrounded by a tobacco-leaf binder, B, inserted in mouth-piece C, and the whole surrounded by the outer tobacco-leaf wrapper, substantially as described.

206,820. COW-MILKERS. David F. Fortineee, New York, N. Y., assignor to Wm. F. George, same place. Filed June 20, 1878.



Claim.—1. The teat-tube having the exterior channel or channels E communicating with the holes in the said tube, substantially as and for the purpose specified.

2. A club-shaped teat-tube, or teat-tube swelling toward the extremity D of the same, and having in its exterior a channel or channels, E, substantially as and for the purpose specified.

206,821. TELEPHONIC CONDUCTORS. E. F. Phillips, Providence, R. I. Filed July 6, 1878.



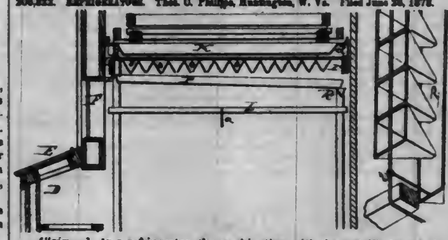
Claim.—1. A branched telephone-conductor provided with an exterior braided or woven jacket, which is a continuous fabric, at the junction of the branches, and extends continuously from or to the end of one of said branches, substantially as described, whereby a strong, neat, and desirable exterior finish is attained at said junctions, as set forth.

2. An electric telephonic conductor or switch-cord containing two or more insulated electric conductors, which are branched from the main body of the cord, and have an exterior braided or woven jacket which is composed of strands extending continuously from the end of one branch throughout the length of the cord and terminating at the end of another branch, substantially as described.

3. A branched telephone-conductor or switch-cord provided with a strengthening-cord which extends down one branch to the junction of the branches, and thence upward on another branch, substantially as described.

4. A telephonic conductor containing two main electric conductors insulated and united in one jacket, branched midway, and containing in each branch one of the main conductors, and a cross-cut conductor, which extends from the end of one branch to its junction with the main cord, and thence to the end of the other branch, substantially as described, whereby the cord may be used with a pair of telephones, and the several conductors be united and convenient for use, as set forth.

206,822. REFRIGERATORS. Thos. C. Phillips, Huntington, W. Va. Filed June 26, 1878.



Claim.—1. In a refrigerator, the combination, with the metallic ice-pan M, of the series of rows of removable and connected funnels O, arranged closely together under the ice-pan, to receive and discharge the water of condensation of the latter, substantially as described.

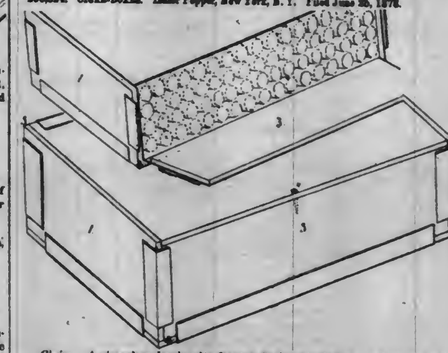
2. In a refrigerator, the combination, with the metallic pan M and the series of rows of funnels O, each row suspended by means of a rod, *e*, of the troughs P and main trough R, having waste-pipe S, substantially as described, and for the purpose set forth.

206,823. BROOM-BINDING DEVICES. George Pirtzog, Ravenswood, Ill. Filed Dec. 17, 1877.



Claim.—The broom-binding bands A A', made in one or more parts, and arranged parallel to each other about the upper part or shoulder of the broom-corn, the lower band being the loosest, and the said bands being connected to each other by vertical hooks or clasps, and by horizontal links passing through the broom-corn, one or more of the said links, hooks, or clasps passing through or into the handle, substantially as and for the purposes specified.

206,824. CIGAR-BOXES. Isidor Popper, New York, N. Y. Filed June 25, 1878.



Claim.—A cigar-box having its front united to the bottom and to the end pieces by strips of tough fabric only, which strips cover the joints of the box and are glued to the wood, so that when the strips which unite the front and end pieces are cut and the fastening-nail removed from the cover or lid and front, said front may be turned down, the strip which unites it to the bottom serving as a hinge.

206,825. FIRE-PUMP VALVES. John A. Prindle, Cleveland, Ohio. Filed Jan. 14, 1878.

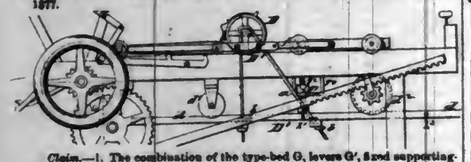
Brief.—To prevent the gas from rushing back into the pump.



Claim.—1. The combination, with a bung constructed with a screw-threaded opening on its side, and provided with a stop-pin secured in close proximity to said opening, of a detachable nozzle having an independent valve located therein, the head and stem of said valve being formed of elastic material, substantially as specified.

2. A conical or conoidal valve, B', constructed from elastic material, in combination with a sharp or acutely-impinging valve-seat, substantially as shown and specified.

206,826. Cylinder Printing-Machine. Enoch Prouty, Rosebud, Wis. Filed Sept. 28, 1877.

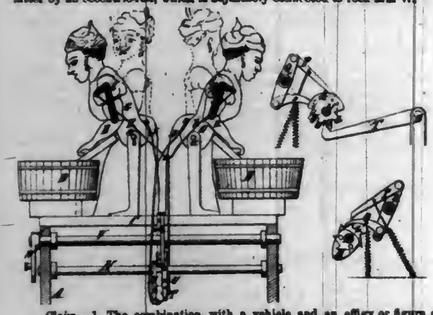


Claim.—1. The combination of the type-bed G, levers G', fixed supporting-screws g, rocking bar g', screws g², pins h', and the reciprocating frame having pins h h², with the reciprocating roller D, as and for the purpose set forth.

2. In a printing-press, the oscillating type-bed G, having levers G', with fixed screw-posts g at one end, and the movable screw-posts g² and rocking bar g' at the other end, in combination with a mechanism, substantially as described, for raising and lowering the type-bed, and a reciprocating cylinder located above the latter, as and for the purpose set forth.

206,827. Automatic Devices for Advertising. Henry V. Raymond and George H. Chimock, Brooklyn, N. Y. Filed Feb. 16, 1876.

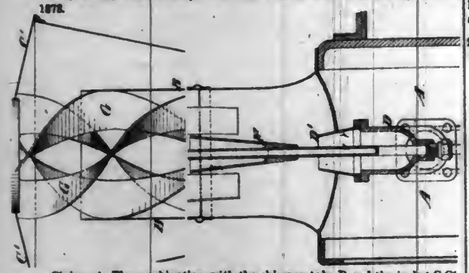
Brief.—The body or box A, mechanism, and effigies are mounted on a running-gear, and motion imparted to the figures or effigies from the wheels of the latter by an eccentric-rod, which is adjustably connected to rock-arm W.



Claim.—1. The combination, with a vehicle and an effigy or figure of a washer-woman operated from the wheels or a wheel thereof, of a receptacle for liquid resembling a wash-tub, substantially as specified.

2. The combination, with an effigy or movable figure, of levers K T, cords J, cords R, shaft N, cams M U, pawls O P, and ratchet Z, substantially as and for the purpose specified.

206,828. Spark-Extinguishers. Carl Reimann, Wittenberge, assignor to Conrad L. Strube, Duchau, North Germany. Filed June 6, 1878. Patented in Germany, Feb. 20, 1878.

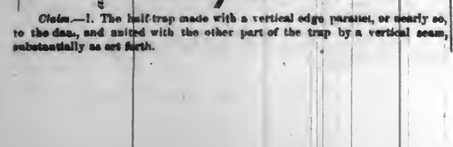


Claim.—1. The combination, with the chimney-tube B and the jacket C C', of the spiral blades G G, having a diminishing pitch in an upward direction, and arranged around the interior of the chimney-tube, but stopping short of the center of said tube, whereby a clear passage is left up through the center of the latter, substantially as specified.

2. The combination, with the blast-pipe D D', of the inverted cone F, the chimney-tube B, having spiral blades arranged up through it around its interior, and the jacket inclosing said chimney-tube, essentially as described.

3. The combination of the inverted cone F with the auxiliary steam-pipe E, the blast-pipe D D', the smoke-box A, the chimney-tube B, the conical jacket C C', and the spiral blades G G, arranged around the exterior of the chimney-tube, and extending above it up to or toward the centrally-open top or cover of the jacket, substantially as specified.

206,829. Manufacture of Plumbers' Traps. John Robertson, Montreal, Quebec, Canada, assignor to Frederick Ailes and James Foley, Brooklyn, N. Y. Filed May 2, 1878.



Claim.—1. The half-trap made with a vertical edge parallel, or nearly so, to the dam, and united with the other part of the trap by a vertical seam, substantially as set forth.

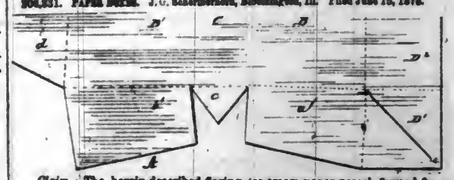
2. The combination of the sections a and b to form a P-trap, such sections being united by a vertical joint, as set forth.

206,830. Plow-Standard. John F. Lyon, Maysville, Ky. Filed July 6, 1878.



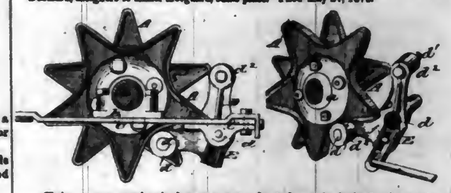
Claim.—The plow-shin described, consisting of the curved part A, having beveled outer surface a and bolt-holes a', the part B, having oval-surface b and bolt-holes b', the beam-bar C c, and the plow-foot D, with shoulder d, and having land-side E, as shown, adapted to serve relatively to the plow F f f' f'' f''' or cultivators G, H, or I at will, and to be reversed upon the plow-beam when desired, as herein specified, for the purpose set forth.

206,831. Paper Dishes. J. C. Schermerhorn, Bloomington, Ill. Filed June 15, 1878.



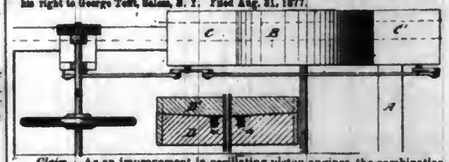
Claim.—The herein-described flaring ice-cream paper vessel, formed from the blank A, consisting of the portions B B', angular portions a a' b b', bottom portions C, with V-shaped lappets c c, portion D', with outside portions, D D', slitted or scored on the diagonal lines a a, and the lappet d, the several portions folded and secured together in the manner specified.

206,832. Converting Motion. Carl W. Schröder and Friedrich J. Jörgensen, Copenhagen, Denmark, assignors to Anker Heegaard, same place. Filed May 27, 1878.



Claim.—In a mechanical movement adapted particularly for harvesters, the combination, with the bell-crank D, operating in connection with the pointed cams A A, and having the slotted socketed arm E, of the sickle-bar pitman g, having the extensible arm e, and the latter provided with an adjusting or set screw, d, substantially as shown and described, for the purpose set forth.

206,833. Oscillating-Piston Engines. Thomas F. Sears, Batonville, assignee of one-half his right to George Tefft, Salem, N. Y. Filed Aug. 31, 1877.



Claim.—As an improvement in oscillating-piston engines, the combination of the cylinder B, having steam-chests C C', divided shell B', having partitions E K, provided with the packing f f, and oscillating piston D F D, provided with spring-packing D' F' D', substantially as and for the purpose hereinbefore set forth.

206,834. Grain-Benders. John F. Seiberling, Akron, Ohio. Filed May 25, 1878.

Claim.—1. The circular fender to the hinged platform extended forward inside of the divider-board to a point at or near the finger-beam, to which the divider-board is fixed, whereby the fork, as it sweeps the grain from the inside to the outside of the platform, will gather the grain against the fender instead of the divider, substantially as described.

2. The hinged guard-rod on the inside of the platform, arranged to rise up to permit the fork to pass and to descend after the fork has passed, substantially as described.

3. The angular latch e, in combination with the sliding bolt or rod f and spring e', arranged and operating substantially as and for the purpose described.

4. The combination, with the divider-board, of the shield or guard covering the forward end of the vibrating fender, for preventing the straw from catching thereon, substantially as described.

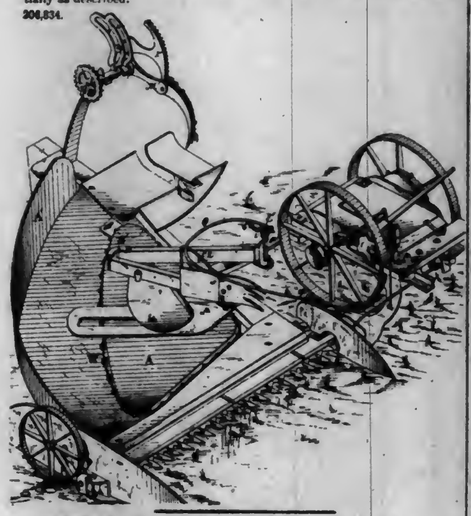
5. The spring or yielding connection between the fork and its driving arm or mechanism, for the purpose set forth.

6. The combination of the binder-arm, the twister on the end thereof, the flexible shaft to revolve the twister, the small pinion, and the circular rack to give motion to the flexible shaft and twister, substantially as described.

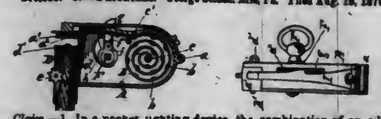
7. The combination of the circular rack, the slotted arm to guide the same, and the revolving lever or cam, substantially as described.

8. In combination with a quadrant-platform and a fork or rake that moves the grain to the point of delivery by pressing the gavel against the fender of the platform, and a supplemental platform to receive the gavel, a hinged tail extension-board or its equivalent on the fork, arranged with mechanism to move the grain away from the fork after the delivery of the gavel, so that the binding can be done without obstruction from the fork or fork-arm, substantially as described.

206,834.



206,835. Chair-Lighters. George Seiden, Erie, Pa. Filed Aug. 19, 1876.



Claim.—1. In a pocket igniting device, the combination of an adjustable tinder and an adjustable percussion-tape, ignited by any suitable mechanism.

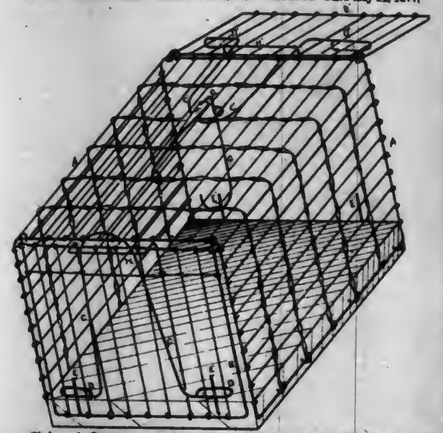
2. In a pocket lighting device, a box or case having a hammer capable of operation from the exterior, a wick duct or tube, means for feeding and exploding a pellet by the action of the hammer, and a wick-feeder.

3. The combination, with the lighter-case A, of the pivoted or hinged wick-tube D and tape B, provided with the pellets of fulminate, substantially as and for the purpose set forth.

4. The case A, provided with a perforated anvil, a', and the spring and hammer I, operating substantially as and for the purpose set forth.

5. The shaft F, provided with the arms f, f', and g, in combination with the tape having pellets of fulminate, and the hammer for exploding the same, substantially as described.

206,836. Animal-Traps. Samuel Sewall, Jr., Lowell, Mass. Filed May 14, 1877.



Claim.—1. In an animal-trap, a door provided with a sliding handle, substantially as described, and for the purpose set forth.

2. The combination of the door B, the loop D, and catch E, substantially as and for the purpose set forth.

3. The combination of the door B, the loops D D, handle C, catches E E, and lever F, substantially as described, and for the purpose set forth.

4. The combination of the sliding handle C, door B, loops D D, catches E E, lever F, and bait-hook G, substantially as described, and for the purpose set forth.

206,837. Stump-Extractors. John C. Sharp, Evansville, Wis. Filed July 30, 1878.

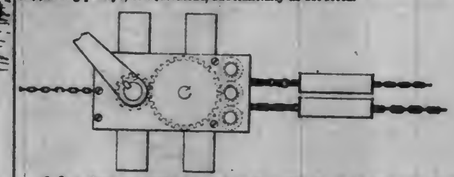
Claim.—1. In a stump-extractor, the combination, with a main frame and its anchor-chain and driving-gears, of a sprocket-wheel, an endless chain, a separate pulley-block, and its anchor-chain provided with a spring, substantially as described.

2. In a stump-extractor, the combination, with a main frame and its anchor-chain and driving-gears, of a sprocket-wheel, an endless chain composed one part of a sprocket-chain and the other of a rope, cable, or light chain, with or without one or more interposed springs, and with or without one or more swivels in the light part, and a separate pulley-block provided with a spring in its anchor-chain, substantially as described.

3. In a stump-extractor, the combination of a main frame and its anchor-chain and driving-gears, a sprocket-wheel, an endless chain, a separate pulley-block and its anchor-chain, a side-hitch chain, and a lifting-roller under it, substantially as described.

4. In a stump-extractor, the combination of a main frame with its anchor-chain and gears, the sprocket-wheel, the endless chain, and the separate pulley-block, with its anchor-chain in two parts, and the windlass, roller, or capstan for taking up slack, substantially as described.

5. In a stump-extractor, the combination, with a main frame, of the main chain and vertically-rotating sprocket-wheel, the guide-pulleys, and the chain-supporting pulleys, or equivalent, substantially as set forth.



6. In a stump-extractor, the combination, with the main frame provided with a sweep, anchor-chain, and driving-gears, of a sprocket-wheel and guide-pulleys, an endless chain, a separate pulley-block and anchor-chain, a separate anchor or guy-chain, and a hitching-chain provided with a pulley and hook, substantially as described.

7. In a stump-extractor, the combination, with the main frame and its anchor-chain and sprocket-wheel, of a sprocket-chain, with or without its side-hitch chain or chains, and a sprocket-chain guide block or blocks, substantially as described.

8. An endless-chain belt for a stump-extractor, composed one part of a strong sprocket-chain and the other of a cable, rope, or light chain, with or without one or more swivels in the light part, substantially as described.

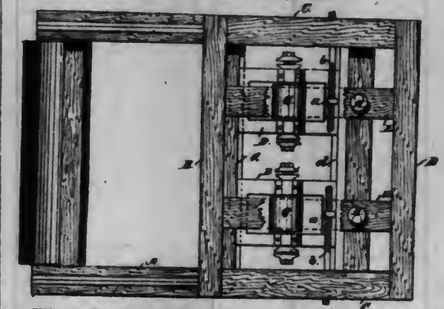
9. An endless-chain belt for a stump-extractor, composed one part of a strong sprocket-chain and the other part of a cable, rope, or light chain, with or without one or more swivels in the light part, and with one or more interposed springs, substantially as described.

10. In a stump-extractor, the combination, with the main frame, of a pull-chain and a hollow shield pivoted by means of a rigid bar to the frame, so that the shield may move in all directions laterally with the chain, substantially as described.

11. The portable lifting-roller, supported on standards, and stump-straddling base, substantially as described.

206,838. Circular Sawing Machines. Charles W. Silliday and Ezra P. Wright, Springfield, Ohio. Filed May 27, 1878.

Brief.—Two laterally-adjustable shelves clamped in position by spring-clips, and provided with cam-bearing guides for supporting and guiding the work, are attached to a sliding rectangular carriage-frame.



Claim.—1. The sliding rectangular carriage-frame B C, with laterally-adjustable shelves E, clamped in position by spring-clips c, and provided with cam-bearing guides H, substantially as and for the purpose specified.

2. The combination, with the sliding rectangular carriage B C, with laterally-adjustable shelves E and cam-bearing guides H, of the sliding arbor-blocks D, constructed and operated as described, whereby the relative adjustments of the parts can be effected, in the manner and for the purpose specified.

206,839. Sawing-Machines. Eugene Smith, Philadelphia, Pa. Filed June 7, 1878.

Brief.—A saw-frame operated by a portable engine is adjustable in such a manner as to be moved either horizontally or vertically, so as to produce either a horizontal or a vertical cut, as may be desired.

Claim.—1. The combination, with a boiler and engine or equivalent motor, a reciprocating saw adjustable to a vertical and horizontal position, and intermediate mechanism, substantially as described, for communicating motion to the saw from the motor, of a frame, C, supporting said motor and saw, with the intermediate mechanism, and having vertically-adjustable legs c', as and for the purpose set forth.

2. In combination with the engine B, the balance-wheel F, rock-shaft E, having double cranks *e e'*, bar L, joint *m*, and pitman N, having boxes or bearings *a a'*, substantially as shown and described.

3. In combination with the pivoted lever H, the lateral arm K, attached thereto, sustaining the sheaves or anti-friction rollers k^2 k^3, and serving to support the bar L and saw-frame P, substantially as shown and described.

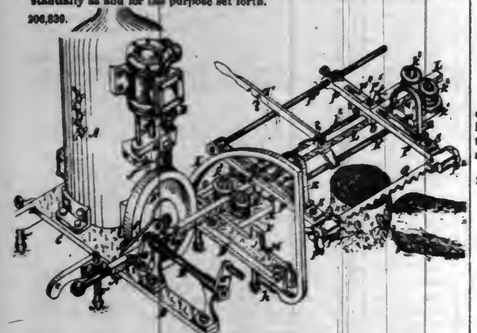
4. In combination with the longitudinally-reciprocating bar L, the saw-frame P, attached thereto and arranged to move transversely thereon, substantially as and for the purpose set forth.

5. In combination with the slotted saw-frame P, bar L, blocks O, and saw Q, of the springs R, substantially as shown and described.

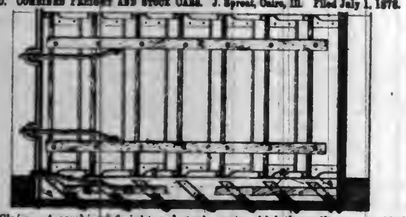
6. The holdback-lever T, pivoted at *t* and notched at *t'*, in combination with bar L and saw-frame P, substantially as shown and described.

7. The combination of a motor, B, a double-crank shaft, E, rocked therefrom, lever H, lateral arm K, bar L, joint *m*, pitman N, and saw-frame P, substantially as and for the purpose set forth.

206,839.



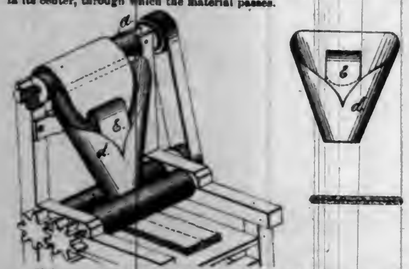
206,840. Combined Freight and Stock Cars. J. Sprout, Cairo, Ill. Filed July 1, 1878.



Claim.—A combined freight and stock car, in which the walls are provided with horizontal openings, which are closed, when desired, by means of slats that are capable of being moved into or out of said openings, substantially as and for the purpose specified.

206,841. Cotton Batting or Wadding and Machines for Folding the Same. Henry A. Stearns, Pawtucket, R. I. Filed May 20, 1876.

Brief.—As an article of manufacture, the batting or wadding is folded longitudinally, the edges of the sheet being turned toward the center, but not so as to come in contact. The machine for folding consists of delivery and compression rollers, suitably connected, and a funnel-shaped chute, with a guide in its center, through which the material passes.



Claim.—1. As a new article of manufacture, rolls or packages of cotton batting or wadding, the outer edges of which are folded toward the center of the sheet, the sheet being folded in such a manner that the extreme edges thereof will not overlap each other, substantially as and for the purpose set forth.

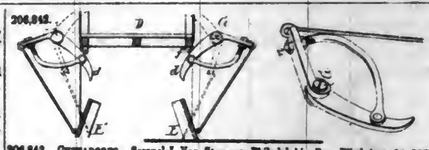
2. A machine for folding cotton batting or wadding, consisting essentially in the combination, with delivery and pressure rolls, of the chute *d* and guide E, substantially as and for the purpose set forth.

206,842. Hatchway-Door Mechanism. William Stevens, Philadelphia, Pa., assignor of one-half his right to Isaac Richards, same place. Filed Apr. 26, 1878.

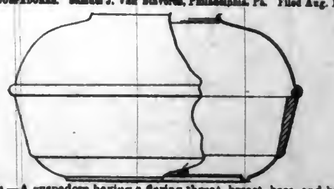
Brief.—Bell-crank levers rocked by the car, and by connecting-rods operating the hatchway doors, are made in two parts, adjustable.

Claim.—The combination of a cage, D, a door, E, and a bell crank lever, G, the arms of which are adjustable in respect to each other, all substantially as specified.

206,842.

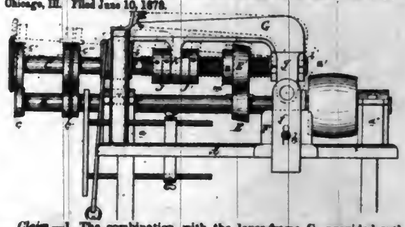


206,843. Cuspadores. Samuel J. Van Stavoren, Philadelphia, Pa. Filed Aug. 14, 1877.



Claim.—A cuspadore having a flaring throat, breast, base, and bottom of even thickness throughout, and a heavy ring or collar secured thereto at the intersection or joint of said breast and base, serving to brace and strengthen the vessel at said joint, and to self-right it when upset, substantially as shown and described.

206,844. Machines for Orimping and Beading Sheet-Metal Cans. Francis A. Walsh, Chicago, Ill. Filed June 10, 1878.

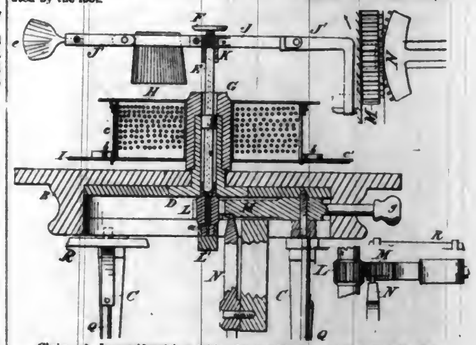


Claim.—1. The combination, with the lever-frame G, provided with the journal-boxes *i i* and pendent lug K, jam-nuts J J', and screw-threaded shaft C, of the boxes F F', sliding support *f f'*, and cap-screw *h*, substantially as and for the purpose specified.

2. The combination, with the pivoted lever-frame G, provided with the journal-boxes *i i* and pendent lug K, of the screw-threaded shaft C, carrying the rollers *c' c''*, jam-nuts J J' and *m*, and friction-roller E, and shaft H, carrying the rollers *c c*, and friction-roller E', substantially as and for the purpose specified.

206,845. Self-Waiting Tables. Osborn Wells, Newberry, S. C. Filed June 24, 1878.

Brief.—The lower end of the central shaft is provided with a vertical pinion, which engages a horizontal geared segment operated by means of a handle attached thereto. This segment has teeth on its under side, which engage with a vertical geared segment, provided with a depending stirrup, to be operated by the foot.



Claim.—1. In a self-waiting table, the combination of the shaft E, carrying arms J and their attachments, pinion L, and segment M, provided with the operating-handle *g*, substantially as described.

2. In a self-waiting table, the vertical shaft E and pinion L, in combination with the toothed horizontal segment M and vertically-swinging segment N, provided with stirrup P, as and for the purpose described.

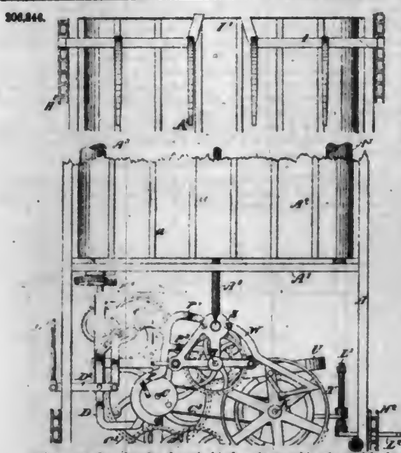
3. The rotating safe composed of the circular top H and enlarged bottom I, provided with stands *b*, connected to the top by the perforated sides, having folding doors *c* and vertical partitions, substantially as shown and described.

4. In a self-waiting table, the combination of the support D, rotating shaft E, spindle *d*, support L', and stationary stand F, as and for the purpose specified.

5. The cranes Q, provided with waiters R and suspended pans S, in combination with the table-legs and bed, as and for the purpose set forth.

206,846. Grain-Binders. Edwin R. Whitney, Magog, Quebec, assignor of one-half his right to Angus McKay and Charles Lucien Beaud, Montreal, Canada. Filed Feb. 16, 1878.

206,846.



Claim.—1. In a low level grain-binder, the combination, with the binding operatus proper, of an endless belt or apron, operated automatically by positive lever motion, to be moved intermittingly in a direction parallel or coinciding with the length of the gavel as it lies upon the belt, and taking the grain from the delivery-platform, substantially as set forth.

2. In combination with a lever acted upon positively and automatically to give, through a pivoted pawl and ratchet gear-wheel, motion to the gears and rollers working the apron A^6, a lever controlled by the driver and operating to vary the throw of the actuating-lever, and thus diminish or increase the distance traveled by the apron, all substantially as herein set forth.

3. In an automatic grain-binder, the combination, with the traveling belt or apron, of a grain-carrier traversing it at right angles back and forth, and operated in either direction by a positive lever motion, substantially as and for the purposes set forth.

4. The grain-carrier I, with set I^1 formed on its lower bar, and toes I^2 projecting from the prongs, as and for the purposes set forth.

5. The combination of the cam-wheel K^2, constructed as shown, lever L^2, operated by the same, link L^3, arm L^4, and rock-shaft M, substantially as and for the purposes herein set forth.

6. In a low level automatic grain-binder, the forked lever P, operated positively in either direction by the lug O^2, mounted on the revolving disk C^4, and working against and through the grooved lug P on the lever, in combination with the twister and the jaws or holders below it, substantially as and for the purposes set forth.

7. The combination of the twister, the pinion B^2, the gear-wheel B^3, having radial projection T^5 on its under side, the wheel T, with lug T^6 and the toothed segment T^4, all substantially as and for the purposes herein set forth.

8. The combination, with the grooved gear-wheel B^3, through which motion is imparted to the twister, of spring V, holding the latter stationary, provided with lug V^1, fitting into wheel B^3, and lug V^2, acted upon by cam T^5, mounted on and revolving with shaft K, all constructed substantially in the manner set forth, and for the purposes described.

9. The combination of the wheel T, having toothed portion T^4, cam T^5, and lug T^6, the loose gear-wheel B^3, grooved, as described, and provided with projection T^5, the gear-wheel B^3, twister B, and bow-spring U, having lugs or projections U^1 T^6, all constructed substantially as and for the purposes herein set forth.

206,847. Cotton-Gin Ribs. Cornelius B. Williams, Prankliston, N. C. Filed Jan. 6, 1878.



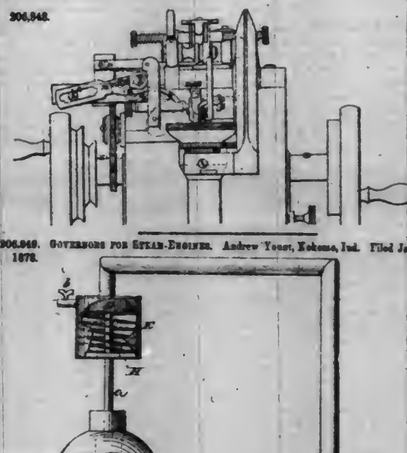
Claim.—The combination, with the gin-rib face recess *b*, having at one end the inclined or wedge-form shoulder *i*, and at the other the angular undercut shoulder *i'*, of the wear-plate B, having the beveled end *c*, the notched end *d*, and the fastening-screw *s*, serving to hold the wear-plate flush with and wedged tightly against the contiguous surfaces of the gin-rib at either end, substantially as specified.

206,848. Fur-Guides for Glove-Sewing Machines. Hermann Wellenberg and Josef Friesner, Berlin, Prussia, Germany. Filed Apr. 13, 1878. Patented in England, May 30, 1877.

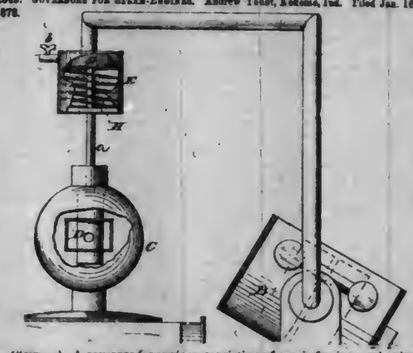
Brief.—A blunt blade attached to a lever works in a slotted guide in advance of the sewing mechanism, to draw the hair of fur-skins away from the line of stitching. This lever is actuated by gearing from the main shaft, and is capable of being detached from same by a clutch, or by the operative devices being turned back upon the machine, to which it is attached by a hinge-joint.

Claim.—The combination, with the stitch-forming and feeding mechanism of a glove-sewing machine, of the blunt blade a and mechanism, substantially as described, for operating the same, whereby the hair of fur-skins is drawn away from the line of stitching, substantially as and for the purpose described.

206,848.



206,849. Governors for Steam-Engines. Andrew Yeast, Kokomo, Ind. Filed Jan. 16, 1878.



Claim.—1. A governor for engines, consisting of an air-forcing mechanism, one or more springs in a closed chamber, a steam-inlet valve, and air-discharge cock, substantially as herein set forth.

2. In combination with an engine, the chamber C, with inlet-valve D, valve-rod *a*, piston G, chamber F, spring H, air-discharge cock *b*, and air-forcing mechanism B, operated by the motion of the engine, all substantially as and for the purposes herein set forth.

REISSUES.

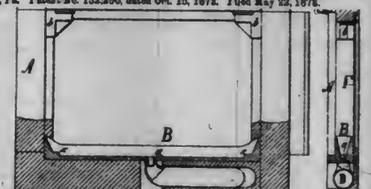
8,358. Horse-Collars. Amos Beckwith, St. Louis, Mo., assignor to E. W. Davenport and J. A. Churchill, same place. Patent No. 97,502, dated Dec. 7, 1869. Filed July 10, 1878.



Claim.—1. A horse-collar having a rope foundation for the rim, substantially as set forth.

2. In a horse-collar, a rope foundation for the rim, and pads of moss, straw, or similar material, the whole being inclosed in a covering, substantially as set forth.

8,359. Photographic-Plate Holders. Ralph F. Channell and Adolphus Bonsano, Phœnixville, Pa. Patent No. 132,950, dated Oct. 15, 1872. Filed May 22, 1878.



Claim.—1. The combination, with the frame A, of the trough B, made detachable and removable from said frame, substantially as and for the purpose described.

2. The combination, with the frame and reservoir, of the trough B, arranged to serve as a rest for the plate, and communicating with the reservoir, substantially as and for the purpose described.

3. The trough B, adapted to the frame and having ledges *x* at the ends, for the purpose set forth.

8,360. TOOL-HOLDERS. John A. B. Williams, Philadelphia, Pa., assignor to Samuel S. White, same place. Patent No. 170,694, dated Dec. 7, 1875. Filed July 10, 1878.

Brief.—A tool having a round shank, a beveled or tapering driving end, and a cross-groove, or one parallel with the face of the driving-surface, formed between said surface and the round portion of the shank, is secured in a slotted and socketed holder by means of a locking-latch provided with a projection corresponding to the cross-groove in the tool-shank, and pivoted in a slot in the socketed shank, a sleeve sliding endwise in the chuck, and a spring which keeps the sleeve in its forward position, to prevent rocking of the latch and withdrawal of the tool.



Claim.—1. The combination, substantially as hereinbefore set forth, of the casing, the rotary chuck, the locking-latch pivoted in the chuck, so as to lock the operating-tools against withdrawal while in operation, and the thimble sliding endwise on the chuck, and adapted to hold the pivoted latch in its locking position until retracted.

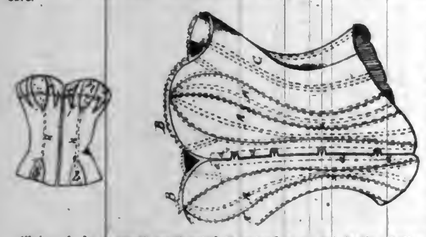
2. The combination, substantially as hereinbefore set forth, of the rotary chuck, the locking-latch pivoted in a slot therein, the thimble or sleeve sliding endwise on the chuck, and the spring, which normally keeps the thimble in its forward position, to prevent rocking of the latch and withdrawal of the tool.

3. The combination, substantially as hereinbefore set forth, of the casing provided with a slot, through which access is had to the tool-lock, the slotted socketed chuck revolving in bearings therein, the locking-latch pivoted in the chuck, the thimble sliding on the chuck, and the spring acting on the thimble.

4. The improved operating-tool, constructed substantially as hereinbefore set forth, with the round shank, the beveled or tapering driving end or surface, and the cross-groove, or one parallel with the face of the driving-surface, and between the said surface and the round portion of the shank.

5. The combination, substantially as hereinbefore set forth, of a beveled-end tool provided with a cross-groove, or one parallel with the bevel portion of the tool, with a socketed holder provided with a locking latch or device acted upon by a spring, and adapted to be operated for the release of the tool from said holder.

8,361. CORSETS. Frances W. Perrott, McGrawville, N. Y., assignor, by mesne assignments, to P. H. McGraw, same place. Patent No. 196,043, dated Jan. 9, 1877. Filed May 15, 1878.



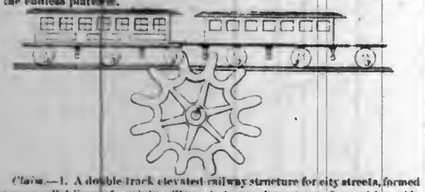
Claim.—1. In a corset constructed to extend over and having hollow receptacles for the breasts, the continuous central front sections, A A', extending each to the upper edge, united at a central seam, and with the sections on each side aiding in imparting the desired rounded form to the hollow receptacles, all as described.

2. The bosom-pad corset, having two central darts at each side, united on a central seam, *x*, and extending through the breast-receptacle, and each tapering from each side to a point at the upper end, as specified.

3. A bosom-pad corset, with front sections B B, having central darts A A' and under-arm sections C, all constructed and combined substantially as and for the purpose described.

8,362. ELEVATED RAILWAYS. Daniel Fitzgerald, New York, N. Y. Patent No. 191,800, dated Dec. 5, 1871. Filed June 15, 1878.

Brief.—A double-track elevated structure supported upon two parallel lines of pillars, one track upon each side of the street over each row of pillars, which pillars are connected and braced by cross-ties extending across the whole width of street from building to building. A continuous line of traveling trucks propelled by driving wheels, which engage projections upon the under sides of the trucks, is employed in combination with a faster line of cars, which are propelled by their contact with the peripheries of the wheels of the endless platform.



Claim.—1. A double-track elevated railway structure for city streets, formed of two parallel lines of upright pillars, A A, one line rising from either side of the street, and having the tracks 1 2 3 laid directly over the lines of the pillars and centrally thereof, one track over each line of pillars, in combination with the cross ties or braces B B, extending from one line of pillars to the other, and serving to laterally connect and brace the said lines of pillars at the top, substantially as herein shown and described.

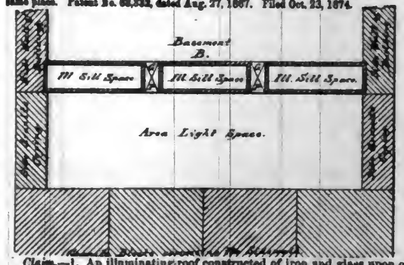
2. The combination, with the wheels of the continuous line of car trucks, of the rapid movement or transit cars propelled by frictional contact with the peripheries of said wheels, substantially as described.

3. The main line of cars, and therefore the continuous line of trucks, constructed and arranged as described, in combination with the transit-cars propelled by the peripheries of the wheels of such trucks, as aforesaid, whereby the same trucks are employed for separate lines of cars traveling at different rates of speed, substantially as described and represented.

4. In combination with the rapid or transit cars, propelled as aforesaid, the traveling platforms or platform cars forming part of the continuous line of trucks, to enable passengers to reach the cars of either line while the main line is under way, as herein described.

5. The mode of propelling the main line of cars or trucks, which consists in causing the driving wheels F to engage with fixed projections on the cars, substantially as herein set forth.

8,363. ILLUMINATED BASEMENTS, BASEMENT-EXTENSIONS, SIDEWALKS, ROOFS, &c. Thaddeus Hyatt, New York, N. Y., assignor to Elizabeth A. L. Hyatt, (late Elizabeth A. Lake,) same place. Patent No. 66,232, dated Aug. 27, 1867. Filed Oct. 23, 1874.



Claim.—1. An illuminating-roof constructed of iron and glass upon or according to the principle of an illuminating-grating, substantially as herein set forth.

2. Illuminating-roofs constructed by forming illuminating-gratings into panels or plates of suitable shapes, sizes, and proportions to be mechanically fitted for combination with each other, and combining the same by means of supports or framing, in connection with vertical and horizontal or bed packing and bolting, substantially in the manner and for the purposes as herein set forth, and illustrated by the drawings.

3. Illuminating risers and treads, and illuminating-steps composed of illuminating risers and treads, constructed of iron and glass according to the principle of an illuminating-grating, substantially as herein set forth.

4. Illuminating step-roofs constructed of illuminating risers and treads, formed, shaped, and proportioned to be mechanically fitted for combination with each other, and combining the same by means of supports or framing, in connection with vertical and horizontal or bed-packing and bolting, substantially in the manner and for the purposes as herein set forth, and illustrated by the drawings.

5. Illuminating-stoops constructed of illuminating-platforms or flat surfaces, in connection with illuminating-steps constructed of iron and glass, substantially as herein set forth.

6. Illuminated basements and basements extended underneath the footway of a street by means of a flat roof or sidewalk, in connection with and by means of illuminating-gratings constructed and combined substantially in the manner and for the purposes as herein set forth, and illustrated by the drawings.

8,364. SQUIBS FOR BLASTING. Esther A. Daddow, St. Clair, Pa., executrix of Samuel H. Daddow, deceased. Patent No. 143,396, dated Sept. 30, 1873. Filed July 26, 1878.

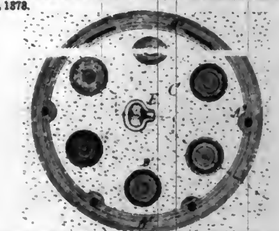
Brief.—The explosion of the charge in the upper section of the tube ignites the charge in the lower section, and at the same time shoots the lower section into the needle-hole toward or in contact with the blasting-charge, to give greater certainty of igniting the latter.



Claim.—1. As a new article of manufacture, the squib with a match permanently attached thereto, substantially as shown and described.

2. A miner's squib having a detachable section adapted to be thrown by the explosion of the squib to fire the charge in the drill hole, substantially as set forth.

8,365. COVERS FOR OPENINGS IN SIDEWALKS. Wm. Dale, New York, N. Y., assignor to the Dale Tile Manufacturing Company, (limited,) same place. Patent No. 112,422, dated Mar. 7, 1871; Reissue No. 5,884, dated Dec. 16, 1873; Reissue No. 6,295, dated June 25, 1878. Filed July 30, 1878.



Claim.—1. A cover for openings in pavements, consisting of a metallic plate, A, with vertical rim A', illuminating-holes B, covered by glass bull's-eyes B', and having the intermediate space within the rim and between the bull's-eyes filled with a material or composition suitable for a foot-pavement, applied in a plastic state, the same being so constructed that the glass bull's eyes, the surrounding metal rim, and intermediate filling will form substantially the upper surface of the cover.

2. A cover for openings in pavements, consisting of a metallic plate, A, having a vertical rim, A', with vent-holes A², therein, illuminating-holes B, covered by glass bull's-eyes B', and the intermediate filling C, substantially as described.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 6th DAY OF AUGUST, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adee, F., *et al.* (See Robertson, J., assignor.)						
Alford, W. D., Cincinnati, Ohio. Portable-engine truck	206,759	Aug. 6	103	33	14	219
Andrews, E., Williamsport, Pa. Saw-frame	206,760	Aug. 6	104	33	14	220
Anthony, J. J., Sharon Springs, N. Y. Locomotive	206,697	Aug. 6	42	12, 13	14	211
Atwater, R. M., Millville, N. J., assignor to J. Whitall, R. P. Smith, J. Mickle, Jr., C. Roberts, W. H. Nicholson, and C. A. Tatum, Philadelphia, Pa., and New York, N. Y. Glory-hole furnace for finishing glassware	206,761	Aug. 6	104	33	14	220
Baird, S. J., Richmond, Va., assignor to G. Trull, New York, N. Y. Button-hole attachment for sewing-machines	206,762	Aug. 6	111	35, 36	14	220
Baker, W., Ilion, N. Y. Manufacture of gun-bands	206,698	Aug. 6	105	34	14	220
Barber, H. A. and T., Watertown, N. Y. Rotary pump	206,763	Aug. 6	43	13	14	212
Barber, T. (See Barber, H. A. and T.)						
Barnes, W. G., Freeport, Ill. Riding cultivator	206,764	Aug. 6	107	34	14	220
Barnhart, M. (See Masterman, G., assignor.)						
Bartlett, E. O. (See Lewis and Bartlett.)						
Barton, R. T., New Haven, Conn. Holdback for carriages	206,699	Aug. 6	108	34	14	220
Baum, J. M., assignor to himself and H. U. Kistner, Selin's Grove, Pa. Tobacco-pipe	8,358	Aug. 6	44	14	14	212
Beckwith, A., assignor to E. W. Davenport and J. A. Churchill, St. Louis, Mo. Horse-collar. (Reissue)	206,765	Aug. 6	201	65	14	231
Bender, S., Buchanan, Mich., assignor of one-half interest to S. Scrawner. Folding bedstead	206,657	Aug. 6	109	35	14	220
Blakeslee, C. W., assignor of one-half interest to J. H. Hopkins and L. S. Wooster, Northfield, Conn. Snap-hook	206,700	Aug. 6	1	1	14	207
Blatchly, A., Kernville, Cal. Wire-rope way	206,701	Aug. 6	45	14	14	212
Bligh, J. P., St. Paul, Minn. Envelope	206,658	Aug. 6	47	14	14	212
Blossom, J. R., Brooklyn, N. Y. Baling-press	206,766	Aug. 6	1	1	14	207
Bonzano, A. (See Channell and Bonzano.) (Reissue.)						
Boone, P., Mayaville, Ga. Plow-stock	206,660	Aug. 6	110	35	14	220
Bossé, C. L., *et al.* (See Whitney, E. R., assignor.)						
Breon, G. (See Nixon, F. M., assignor.)						
Brigham, W. E., Boston, Mass. Ice-tongs	206,659	Aug. 6	2	1	14	207
Brown, A., Springfield, Vt. Cloth-finishing machine	206,767	Aug. 6	110	35	14	220
Brown, A., Rochester, N. Y. Bosom-board	206,770	Aug. 6	116	36	14	221
Brown, B. D., and J. K. Paden, Shamrock, Mo. Car-coupling	206,769	Aug. 6	115	36	14	221
Brown, C. (See Kamp and Brown.)						
Bullock, D., Fort Atkinson, Wis. Machine for planing chair-backs	206,660	Aug. 6	3	1, 2	14	207
Burgess, W. S., assignor to J. H. Dager and G. W. Grady, Norristown, Pa. Sheep-shearing machine	206,661	Aug. 6	4	2	14	207
Burr, R. D., Kingsborough, N. Y. Gauntlet-fastener	206,662	Aug. 6	5	2	14	207
Caldwell, J. K., Philadelphia, Pa. Brick-machine	206,771	Aug. 6	117	37	14	221
Castle, S. D. (See Dimond and Castle.)						
Chambers, Bering & Quinlan. (See Chambers, W. B., assignor.)						
Chambers, W. B., assignor to Chambers, Bering & Quinlan, Decatur, Ill. Check-row-wire stop for corn-planters	206,702	Aug. 6	47	15	14	212
Chandler, S. (See Kirkham, Hulett, and Chandler.)						
Channell, R. F., and A. Bonzano, Phœnixville, Pa. Photographic-plate holder. (Reissue)	8,359	Aug. 6	202	65	14	231
Chapin, F. M., and J. Gersbacher, Cuffey's Cove, Cal. Vehicle torsion-spring	206,703	Aug. 6	48	15	14	212
Chapman, W. W., Washington, D. C. Cotton-planter	206,772	Aug. 6	119	37	14	221
Chinnock, G. H. (See Raymond and Chinnock.)						
Churchill, J. A., *et al.* (See Beckwith, A., assignor.) (Reissue.)						
Clark, E. R., and R. Hamilton, La Fayette, Ind. Feathering paddle-wheel	206,704	Aug. 6	49	15	14	213
Clough, A. S., Meredith, N. H. Grain-screen	206,663	Aug. 6	6	2	14	207
Coffman, W. H., and N. Havens, Carroll, Ohio. Sash-fastener	206,664	Aug. 6	7	3	14	207
Cole, W. A., Wentlings, assignor of one-half interest to D. R. Payne, Pickwick, Pa. Low-water indicator	206,773	Aug. 6	119	37	14	221
Conklin, N. A., Brooklyn, N. Y. Thread-tension for sewing-machines	206,774	Aug. 6	120	38	14	221
Connett, M., Devall's Bluff, Ark. Machine for sawing shingles	206,775	Aug. 6	121	38	14	222
Corr, C. W., Carlinville, Ill. Power-hammer	206,665	Aug. 6	7	3	14	208
Currier, R., Boston, Mass. Carpet-fastener	206,666	Aug. 6	9	3	14	208
Daddow, E. A., executrix. (See Daddow, S. H.) (Reissue.)						
Daddow, S. H., deceased, E. A. Daddow, executrix, St. Clair, Pa. Squib for blasting. (Reissue)	8,364	Aug. 6	210	67	14	232
Dager, J. H., *et al.* (See Burgess, W. S., assignor.)						
Dale Tile Manufacturing Company, (limited.) (See Dale, W., assignor.) (Reissue.)						
Dale, W., assignor to Dale Tile Manufacturing Company, (limited,) New York, N. Y. Cover for openings in sidewalks. (Reissue)	8,365	Aug. 6	210	67	14	232
Daniell, J. (See Roberts, W., Jr., assignor.)						
Dand, O. A. (See Winston, A., assignor.)						
Davenport, E. W., *et al.* (See Beckwith, A., assignor.) (Reissue.)						
Dawson, D. R. (See Martin, Dawson, and Orchar.)						
Deeley, R., and J. Turl, assignors to L. Pascual, New York, N. Y. Portable railway	206,705	Aug. 6	50	15	14	213
Denison, A., Stillwater, N. Y. Apparatus for gathering potato-bugs	206,776	Aug. 6	122	38	14	222

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dewey, C. A., *et al.* (See Underwood, H. M., assignor.)						
Dilsaver, J. E., Brazil, Ind. Steak-mangle	206,706	Aug. 6	50	16	14	213
Dimond, G. H., and S. D. Castle, Bridgeport, Conn. Fur-controlling guide for sewing-machines	206,667	Aug. 6	9	3	14	208
Doane, T. P., New York, N. Y. Orange-peeler	206,707	Aug. 6	51	16	14	213
Dolloff, W. P., Providence, R. I. Jewelry-fastening	206,777	Aug. 6	123	39	14	222
Dow, G. E., San Francisco, Cal. Steam-engine	206,708	Aug. 6	52	16	14	213
Elliot, J. W., Toronto, Ontario, Canada. Fire pot and grate	206,709	Aug. 6	53	17	14	213
Emery, C. G., Brooklyn, N. Y. Cigarette-package	206,668	Aug. 6	10	4	14	208
Emery, T. D., Harrison, assignor of one-half interest to W. S. Nash, Windham, Me. Sewing-machine attachment	206,669	Aug. 6	11	4	14	208
English, J. G., and E. F. Mersick, New Haven, Conn. Spring-saddle clip	206,778	Aug. 6	124	39	14	222
Ewan, J. T., Bethalto, Ill. Grain-separator	206,711	Aug. 6	55	17	14	213
Eyman, J., Orrville, Ohio. Wagon-bolster	206,710	Aug. 6	54	17	14	213
Fackler, J. W., Lumpkin, Ga. Lock	206,712	Aug. 6	56	17	14	214
Ferguson, J. D., Wilmington, Del., assignor of one-half interest to R. McClintock, Baltimore, Md. Car-coupling	206,779	Aug. 6	124	39	14	222
Fernandez, P. F., San Juan, Porto Rico, West Indies. Shutter-fastening	206,713	Aug. 6	57	18	14	214
Fife, J. T., Corning, Iowa. Bee-hive	206,714	Aug. 6	58	18	14	214
Fisher, D., Cairo, Pa. Fishway	206,715	Aug. 6	59	19	14	214
Fisher, L. G., Jr., *et al.* (See Gibson, A. P., assignor.)						
Fitzgerald, D., New York, N. Y. Elevated railway. (Reissue)	8,362	Aug. 6	205	66	14	232
Fletcher, H. P., San Francisco, Cal. Ball-target	206,716	Aug. 6	60	19	14	214
Fletcher, T. H., Hollis, Me. Pegging-machine	206,717	Aug. 6	60	19, 20	14	214
Foley, J., *et al.* (See Robertson, J., assignor.)						
Garver, D. L., Hart, Mich. Seed drill and cultivator	206,780	Aug. 6	125	39	14	222
George, W. F. (See Perkinson, D. F., assignor.)						
Gerabacher, J. (See Chapin and Gerabacher.)						
Gessner, E., Aue, Saxony. Machine for pressing cloth	206,718	Aug. 6	62	20	14	214
Gibson, A. P., assignor to L. G. Fisher, Jr., and F. T. Wheeler, Chicago, Ill. Fruit-box	206,719	Aug. 6	63	21	14	214
Giddings, A., Cleveland, Ohio. Triturating and reducing cylinder	206,720	Aug. 6	64	21	14	215
Gifford, J. S., Fairfield, Me. Axle-nut wrench	206,721	Aug. 6	65	21	14	215
Gilliland, J. H., Peck's Hill, Ala. Plow	206,723	Aug. 6	66	22	14	215
Gilman, N. F., Rochester, Minn. Railway-car truck	206,722	Aug. 6	66	21	14	215
Golding, W. H., Chelsea, Mass. Machine for cutting printer's rules and leads	206,781	Aug. 6	126	40	14	222
Grady, G. W., *et al.* (See Burgess, W. S., assignor.)						
Gray, A. W., Cardington, Ohio. District and alarm telegraph	206,782	Aug. 6	128	40, 41	14	222
Griffin, H. H., Gardner, assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Nursery-chair	206,670	Aug. 6	12	4	14	208
Gross, M., New York, N. Y. Apparatus and process for making illuminating-gas	206,724	Aug. 6	67	22	14	215
Gross, S. E. (See McMurray and Gross.)						
Grow, F. H. (See McGinnis and Maus, assignors.)						
Hale, G., *et al.* (See Underwood, H. M., assignor.)						
Hall, J. L. (See Kook and Hall.)						
Hallock, V. H., Queens, N. Y. Exhaust mechanism	206,783	Aug. 6	132	41	14	223
Hamilton, M. R. (See Vivarttas, A., assignor.)						
Hamilton, R. (See Clark and Hamilton.)						
Hankin, W., Sr., Seelyville, Pa. Buck-saw frame	206,784	Aug. 6	133	42	14	223
Harris, M., C. E. and N. W. Mead, Jamestown, N. Y. Blotter-tablet	206,725	Aug. 6	69	22	14	215
Hatch, E. D. W., Rolla, Mo. Canceling-stamp	206,727	Aug. 6	72	23	14	215
Hatlee, D. H., Clifton Park, N. Y. Machine for making horseshoes	206,726	Aug. 6	70	22, 23	14	215
Havens, N. (See Coffman and Havens.)						
Hawkes, E., San Diego, Cal. Pump	206,728	Aug. 6	72	23	14	215
Hayden, H. W., assignor to Holmes, Booth & Haydens, Waterbury, Conn. Lantern	206,729	Aug. 6	73	24	14	216
Heatwole, M. (See Weaver and Heatwole.)						
Heegaard, A. (See Schröder and Jörgenson, assignors.)						
Helms, C. H., Poughkeepsie, assignor to New York Edge Trimmer Company, New York, N. Y. Sole-edge-trimming machine for boots and shoes	206,671	Aug. 6	13	4, 5	14	208
Henry, J. W., Jamestown, Ind. Trunk	206,730	Aug. 6	74	24	14	216
Hermann, J., Campbellsport, Wis. Spring bed-bottom	206,731	Aug. 6	75	24	14	216
Hersome, C., Boston, Mass. Buckle	206,785	Aug. 6	134	42	14	223
Heysinger, I. W., Philadelphia, Pa. Fountain-pen	206,786	Aug. 6	135	42	14	223
Higgins, R. S., Neoga, Ill. Riding-plow	206,732	Aug. 6	76	24	14	216
Hill, H. H., Moline, Ill. Wrench	206,733	Aug. 6	76	25	14	216
Hinkle, C., Winfield, Iowa. Fire-escape	206,787	Aug. 6	137	42	14	223
Hoban, M., St. Paul, Minn. Chimney-cleaner	206,789	Aug. 6	139	43	14	223
Hodges, A. J., Peoria, and J. B. Mohler, Pekin, Ill.; said Mohler assignor to said Hodges. Harvester-reel adjustment	206,788	Aug. 6	138	43	14	223
Hoenshell, H., Streator, Ill. Draw-bridge gate	206,790	Aug. 6	140	43	14	224
Holland, T., Troy, N. Y. Oil-cup	206,672	Aug. 6	16	5	14	209
Holmes, Booth & Haydens. (See Hayden, H. W., assignor.)						
Hopfen, A., New York, N. Y. Shaving-brush	206,791	Aug. 6	141	43	14	224
Hopkins, J. H., *et al.* (See Blakeslee, C. W., assignor.)						
Hornor, C. W., Philadelphia, Pa. Track-raiser	206,673	Aug. 6	17	5	14	209
Hoyt, O., assignor to Illinois Springfield Watch Company, Springfield, Ill. Stem winding and setting watch	206,674	Aug. 6	18	6	14	209
Hulett, D. (See Kirkham, Hulett, and Chandler.)						
Humbert, L. (See Killian and Humbert.)						
Hyatt, E. A. L. (See Hyatt, T., assignor.) (Reissue.)						
Hyatt, T., assignor to E. A. L. Hyatt, New York, N. Y. Illuminated basement, basement-extension, sidewalk, &c. (Reissue)	8,363	Aug. 6	207	66, 67	14	232
Illinois Springfield Watch Company. (See Hoyt, O., assignor.)						
Ingalls, G. R., Abercorn, Quebec, Canada. Milk-cooler	206,792	Aug. 6	142	44	14	224
Iodoin & Co. (See Paradis, J., assignor.)						
Israel, A. C., Kimmswick, Mo. Nut-lock	206,793	Aug. 6	142	44	14	224
Jacker, M., assignor to himself and D. H. Merritt, Marquette, Mich. Hoisting-machine	206,734	Aug. 6	77	25	14	216
Jadwin, C. P., Scranton, Pa. Curtain-fixture	206,794	Aug. 6	143	44	14	224
Jarecke, A. H., Erie, Pa. Pipe-tongs	206,795	Aug. 6	144	45	14	224
Jeffery, T. B. (See Moody, W. F., assignor.)						
Johnson, E. J., and M. E. Mills, Twinsburg, Ohio. Spring bed-bottom	206,735	Aug. 6	79	25	14	217
Jörgensen, F. J. (See Schröder and Jörgensen.)						
Judson, W. W., Kansas City, Mo. Lamp-chimney	206,796	Aug. 6	145	45	14	224
Kamp, J. C., and C. Brown, New York, N. Y. Baling cut hay	206,797	Aug. 6	146	45	14	224
Kay, W. E., Brooklyn, N. Y. Sash-balance	206,675	Aug. 8	19	6	14	209
Killian, D. M., and L. Humbert, Sioux City, Iowa. Combined cradle and table	206,798	Aug. 6	146	45	14	225
Killian, L., Washington, Ind. Hay-drag	206,799	Aug. 6	147	46	14	225
Kimball, S. P., Union county, Ohio. Corn-row marker	206,800	Aug. 6	148	46	14	225

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kirkham, T. N., Westminster, D. Hulett, London, S. Chandler, Sr., and S. Chandler, Jr., Southwark, England. Apparatus for condensing washing, and purifying gas, &c.	206,736	Aug. 6	80	25	14	217
Kistner, H. U. (See Baum, J. M., assignor.)						
Klapp, W. J., Osage Mission, Kan. Medical compound	206,676	Aug. 6	20		14	209
Kook, W., and J. L. Hall, Cincinnati, Ohio; said Kook assignor to said Hall. Time-lock	206,677	Aug. 6	20	6	14	209
Kook, W., and J. L. Hall, Cincinnati, Ohio; said Kook assignor to said Hall. Time-lock for safes	206,678	Aug. 6	22	7	14	209
Lawrence, F. M., Portland, Me. Grate	206,679	Aug. 6	24	7	14	210
Leddy, T. M., McComb City, Miss. Stay-bolt for boilers	206,801	Aug. 6	148	46	14	225
Lester, J. S., Atlanta, Ga. Hoe	206,802	Aug. 6	149	46	14	225
Lewis, G. T., Philadelphia, Pa., and E. O. Bartlett, Joplin, Mo. Making lead pigments	206,680	Aug. 6	25	7	14	210
Lewis, M., Utica, Ill. Draft-equalizer	206,737	Aug. 6	81	26	14	217
Lewis, U. J., *et al.* (See Underwood, H. M., assignor.)						
Leypoldt, L., New York, N. Y. Railway-rail	206,738	Aug. 6	82	26	14	217
Lindsay, J. F., New York, N. Y. Garment-supporter	206,803	Aug. 6	149	47	14	225
Linley, E. H. (See Milligan, J. F., assignor.)						
Lusse, D., Millheim, Pa. Portable jack for motive powers	206,804	Aug. 6	150	47	14	225
Lyman, A. B., Cleveland, Ohio. Annunciator	206,681	Aug. 6	26	7	14	210
Lyon, L. H., Bridgeport, Conn. Combined ship's pump and windlass	206,805	Aug. 6	150	47	14	225
Macdonald, W. R., Allegheny, Pa. Combined heater and ventilator	206,739	Aug. 6	83	26	14	217
MacEwan, E., Manchline, North Britain. Combined spool-holder and game device	206,740	Aug. 6	84	26, 27	14	217
Madison, P. T., assignor of one-half interest to G. W. Tyer, Indianapolis, Ind. Rail-joint	206,741	Aug. 6	85	27	14	217
Mann, H. C., Philadelphia, Pa. Egg-beater	206,742	Aug. 6	86	27	14	217
Martin, J., Canton, Mo. Plow	206,806	Aug. 6	151	48	14	225
Martin, W., Jr., D. R. Dawson, and R. Orchar, Dundee, North Britain. Sewing-machine	206,743	Aug. 6	87	27, 28	14	217
Maschmeyer, C. (See Winter, J., assignor.)						
Massey, J. E., Clerkenwell, England. Ship's log	206,682	Aug. 6	28	8	14	210
Masterman, G., assignor of one-half interest to M. Barnhart, Mishawaka, Ind. Grinding-mill for feed	206,807	Aug. 6	152	48	14	225
Mathews, M., and A. L. L. Scoville, Seneca, Kan. Agricultural boiler	206,744	Aug. 6	89	28	14	218
Maus, C. T. (See McGinnis and Maus.)						
Maxwell, W. B., Philadelphia, Pa. Carriage-bow setter	206,808	Aug. 6	153	48	14	226
McAdams, J. and W. A., Brooklyn, N. Y. Paper-ruling machine	206,809	Aug. 6	154	49	14	226
McAdams, W. A. (See McAdams, J. and W. A.)						
McClintock, R. (See Ferguson, J. D., assignor.)						
McClond, S., Columbus, Ohio. Fagot for railway-rails	206,810	Aug. 6	155	49	14	226
McGinnis, R. H., and C. T. Maus, assignors of one-third interest to F. H. Grow, Goshen, Ind. Combined fire-escape and spring-bed	206,811	Aug. 6	156	49	14	226
McGraw, P. H. (See Perrott, F. W., assignor.) (Reissue.)						
McKay, A., *et al.* (See Whitney, E. R., assignor.)						
McMurray, J. H., and S. E. Gross, Chicago, Ill. Pavement	206,812	Aug. 6	157	50	14	226
Mead, C. E. (See Harris and Mead.)						
Mead, J. H. (See Mead, J. W., assignor.)						
Mead, J. W., assignor of one-half interest to J. H. Mead, New York, N. Y. Packing for condenser-tubes	206,813	Aug. 6	158	50	14	226
Mead, N. W. (See Harris and Mead.)						
Merritt, D. H. (See Jacker, M., assignor.)						
Mersick, E. F. (See English and Mersick.)						
Mickle, J., Jr., *et al.* (See Atwater, R. M., assignor.)						
Milligan, J. F., assignor of one-half interest to E. H. Linley, St. Louis, Mo. Tamping-cap for tool-handles	206,814	Aug. 6	159	50	14	226
Mills, M. E. (See Johnson and Mills.)						
Mitchell, F. A., Norwich, Conn. Wind-engine	206,815	Aug. 6	160	50, 51	14	226
Mohler, J. B. (See Hodges and Mohler.)						
Moody, W. F., assignor of one-half interest to T. B. Jeffery, Chicago, Ill. Wire-coiling machine	206,683	Aug. 6	31	8, 9	14	210
Morgan, F. M., Elizabeth City, N. C. Rail-joint	206,684	Aug. 6	31	9	14	210
Moriarty, M., Bangor, Me. Meat and pickle weight	206,745	Aug. 6	90	29	14	218
Nash, W. S. (See Emery, T. D., assignor.)						
New York Edge Trimmer Company. (See Helms, C. H., assignor.)						
Newland, J. B., Sacramento, Cal. Wagon-jack	206,746	Aug. 6	90	29	14	218
Nicholson, W. H., *et al.* (See Atwater, R. M., assignor.)						
Niedringhaus, F. G. and W. F., St. Louis, Mo. Water-cooler	206,816	Aug. 6	160	51	14	227
Niedringhaus, W. F. (See Niedringhaus, F. G. and W. F.)						
Nixon, F. M., assignor to himself and G. Brem, Lena, Ill. Fluting-machine	206,685	Aug. 6	32	9	14	210
Oothoudt, J., Minneapolis, Minn. Spring bed-bottom	206,817	Aug. 6	161	51	14	227
Orchar, R. (See Martin, Dawson, and Orchar.)						
Oxenford, J., Kalamazoo, Mich. Plow-colter	206,818	Aug. 6	162	51, 52	14	227
Paden, J. F. (See Brown and Paden.)						
Paradis, J., Longueil, Quebec, assignor to himself and Iodoin & Co., Montreal, Canada. Manufacture of shovels and spades	206,747	Aug. 6	91	29	14	218
Pascall, R. T., New York, N. Y. Steam-trap	206,748	Aug. 6	91	29	14	218
Pascual, L. (See Deeley and Turl, assignors.)						
Payne, D. R. (See Cole, W. A., assignor.)						
Pearl, A., New York, N. Y. Cigarette	206,819	Aug. 6	163	52	14	227
Perkinson, D. F., assignor to W. F. George, New York, N. Y. Cow-milker	206,820	Aug. 6	164	52	14	227
Perrott, F. W., assignor, by mesne assignments, to P. H. McGraw, McGrawville, N. Y. Corset. (Reissue)	8,361	Aug. 6	204	65	14	232
Phillips, E. F., Providence, R. I. Telephonic conductor	206,821	Aug. 6	165	52	14	227
Phillips, T. C., Huntington, W. Va. Refrigerator	206,822	Aug. 6	167	53	14	227
Phippen, J., Dundas, Minn. Exhaust apparatus for millstones	206,686	Aug. 6	33	9	14	210
Pirrung, G., Ravenswood, Ill. Broom-binding device	206,823	Aug. 6	168	53	14	227
Popper, I., New York, N. Y. Cigar-box	206,824	Aug. 6	169	53	14	227
Priesner, J. (See Wollenberg and Priesner.)						
Prindle, J. A., Cleveland, Ohio. Beer-pump valve	206,825	Aug. 6	170	54	14	227
Pronty, E., Boscobel, Wis. Cylinder printing-press	206,826	Aug. 6	171	54	14	228
Ransom, M., Chicago, Ill. Button and stud	206,687	Aug. 6	34	10	14	211
Raymond, H. V., and G. H. Chinnock, Brooklyn, N. Y. Automatic device for advertising	206,827	Aug. 6	172	54	14	228
Reimann, C., Wittenberge, assignor to C. L. Strube, Buchan, North Germany. Spark-extinguisher	206,828	Aug. 6	173	55	14	228
Richards, I. (See Stevens, W., assignor.)						
Richardson, E. F., Reading, Mass. Machine for cutting threads on wires	206,688	Aug. 6	35	10	14	211
Roberts, C., *et al.* (See Atwater, R. M., assignor.)						
Roberts, W., Jr., assignor to himself and J. Daniell, Calumet, Mich. Signaling apparatus	206,749	Aug. 6	92	30	14	218
Robertson, J., Montreal, Quebec, Canada, assignor to F. Adee and J. Foley, Brooklyn, N. Y. Manufacture of plumber's traps	206,829	Aug. 6	174	55	14	228
Ross, G. W., Newton, W. Va. Harrow	206,750	Aug. 6	93	30	14	218
Ryan, J. F., Maysville, Ky. Plow-standard	206,830	Aug. 6	175	55	14	228

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Schermerhorn, J. G., Bloomington, Ill. Paper box	206,831	Aug. 6	176	56	14	228
Scrawner, S. (See Bender, S., assignor.)						
Schröder, C. W., and F. J. Jörgensen, assignors to A. Heegaard, Copenhagen, Denmark. Converting motion	206,832	Aug. 6	176	56	14	228
Scoville, A. L. L. (See Mathews and Scoville.)						
Sears, T. F., Battenville, assignor of one-half interest to G. Tefft, Salem, N. Y. Oscillating-piston engine	206,833	Aug. 6	177	56	14	228
Selberling, J. F., Akron, Ohio. Grain-binder	206,834	Aug. 6	178	57	14	228
Selden, G., Erie, Pa. Cigar-lighter	206,835	Aug. 6	181	57	14	229
Sewall, S., Jr., Lowell, Mass. Animal-trap	206,836	Aug. 6	183	58	14	229
Shannon, W. P., Chicago, Ill. Shuttlecock	206,689	Aug. 6	36	10	14	211
Sharp, J. C., Evansville, Wis. Stump-extractor	206,837	Aug. 6	183	58, 59	14	229
Shibeley, C. W., and E. P. Wright, Springfield, Ohio. Circular sawing machine	206,838	Aug. 6	186	59	14	229
Simcox, A., Jackson, Mich. Peg-float	206,690	Aug. 6	37	10	14	211
Small, J., Bridgewater, Rochester P. O., Pa. Temper-screw and cable-clamp for drilling oil-wells	206,751	Aug. 6	94	30	14	218
Smith, A. M., Brooklyn, N. Y. Safety-pin	206,691	Aug. 6	37	11	14	211
Smith, C. B., Newark, N. J. Governor	206,692	Aug. 6	38	11	14	211
Smith, E., Philadelphia, Pa. Sawing-machine	206,839	Aug. 6	187	59	14	229
Smith, M. G., McGrawville, N. Y. Corset	206,693	Aug. 6	38	11	14	211
Smith, R. P., *et al.* (See Atwater, R. M., assignor.)						
Soderlund, P., Swede Point, Iowa. Corn-plow	206,752	Aug. 6	95	30	14	218
Sproat, J., Cairo, Ill. Combined freight and stock car	206,840	Aug. 6	189	60	14	230
Stearns, H. A., Pawtucket, R. I. Cotton batting or wadding and machine for folding the same	206,841	Aug. 6	189	60	14	230
Stevens, W., assignor of one-half interest to I. Richards, Philadelphia, Pa. Hatchway-door mechanism	206,842	Aug. 6	190	60	14	230
Strube, C. L. (See Reimann, C., assignor.)						
Tatum, C. A., *et al.* (See Atwater, R. M., assignor.)						
Taylor, W., Portland, Me. Harpoon	206,694	Aug. 6	39	11, 12	14	211
Tefft, G. (See Sears, T. F., assignor.)						
Thompson, Perley & Waite. (See Griffin, H. H., assignor.)						
Toland, J. M., Jonesborough, Ga. Baling-press	206,753	Aug. 6	96	31	14	219
Trull, G. (See Baird, S. J., assignor.)						
Turl, J. (See Deeley and Turl.)						
Tyer, G. W. (See Madison, P. T., assignor.)						
Underwood, H. M., Kenosha, Wis., assignor to himself, U. J. Lewis, C. A. Dewey, and G. Hale. Barbed fence	206,754	Aug. 6	97	31	14	219
Van Stavoren, S. J., Philadelphia, Pa. Cuspadore	206,843	Aug. 6	191	61	14	230
Vivarttas, A., assignor to himself and M. R. Hamilton, New York, N. Y. Packing for steam-engines	206,695	Aug. 6	40	12	14	211
Walsh, F. A., Chicago, Ill. Machine for crimping and beading sheet-metal cans	206,844	Aug. 6	192	61	14	230
Wattles, J. W., Canton, Mass. Spinning-frame ring	206,755	Aug. 6	97	31	14	219
Weaver, D. H., and M. Heatwole, Spring Creek, Va. Rein-holder	206,756	Aug. 6	98	31	14	219
Wells, O., Newberry, S. C. Self-waiting table	206,845	Aug. 6	193	61	14	230
Wheeler, F. T., *et al.* (See Gibson, A. P., assignor.)						
Wheeler, J. M., Fish's Eddy, N. Y. Rowlock	206,757	Aug. 6	99	32	14	219
Whitall, J., *et al.* (See Atwater, R. M., assignor.)						
White, S. S. (See Williams, J. A. B., assignor.) (Reissue.)						
Whitney, E. R., Magog, Quebec, assignor of one-half interest to A. McKay and C. L. Bessé, Montreal, Canada. Grain-binder	206,846	Aug. 6	195	62, 63	14	230
Williams, C. S., Franklinton, N. C. Cotton-gin rib	206,847	Aug. 6	199	63	14	231
Williams, J. A. B., assignor to S. S. White, Philadelphia, Pa. Tool-holder. (Reissue)	8,360	Aug. 6	203	65	14	232
Winston, A., assignor of two-thirds interest to O. A. Dand, Fayette, Iowa. Draft-equalizer	206,696	Aug. 6	41	12	14	211
Winter, J., assignor of one-half interest to C. Maschmeyer, St. Louis, Mo. Punching, knotting, and stringing machine for tags, pamphlets, &c.	206,758	Aug. 6	100	32	14	219
Wollenberg, H., and J. Priesner, Berlin, Prussia, Germany. Fur-guide for glove-sewing machines	206,848	Aug. 6	200	63, 64	14	231
Wooster, L. S., *et al.* (See Blakeslee, C. W., assignor.)						
Wright, E. P. (See Shibeley and Wright.)						
Yount, A., Kokomo, Ind. Governor for steam-engines	206,849	Aug. 6	201	64	14	231

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 6th DAY OF AUGUST, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Advertising. Automatic device for	H. V. Raymond and G. H. Chiuock	206,827	Aug. 6	172	54	14	228
Animal-trap	S. Sewall, Jr.	206,836	Aug. 6	183	58	14	229
Annunciator	A. B. Lyman	206,681	Aug. 6	26	7	14	210
Baling cut hay	J. C. Kamp and C. Brown	206,797	Aug. 6	146	45	14	224
Basement, basement-extensions, sidewalks, roofs, &c. Illuminated	T. Hyatt. (Reissue)	8,363	Aug. 6	207	66, 67	14	232
Batting or wadding, and machine for folding the same. Cotton	H. A. Stearns	206,841	Aug. 6	189	60	14	230
Bed-bottom. Spring	J. Hermann	206,731	Aug. 6	75	24	14	216
Bed-bottom. Spring	E. J. Johnson and M. E. Mills	206,735	Aug. 6	79	25	14	217
Bed-bottom. Spring	J. Oothoudt	206,817	Aug. 6	161	51	14	227
Bedstead. Folding	S. Bender	206,765	Aug. 6	109	35	14	220
Bee-hive	J. T. Fife	206,714	Aug. 6	58	18	14	214
Blasting. Squib for	S. H. Daddow. (Reissue)	8,364	Aug. 6	210	67	14	232
Boiler. Agricultural	M. Mathews and A. L. L. Scoville	206,744	Aug. 6	89	28	14	218
Boilers. Stay-bolt for	T. M. Leddy	206,801	Aug. 6	148	46	14	225
Boot and shoe sole edge trimming machine	C. H. Helms	206,671	Aug. 6	13	4, 5	14	208
Bosom-board	A. Brown	206,770	Aug. 6	116	36	14	221
Brick-machine	J. K. Caldwell	206,771	Aug. 6	117	37	14	221
Broom-binding device	G. Pirrung	206,823	Aug. 6	168	53	14	227
Brush. Shaving	A. Hopfen	206,791	Aug. 6	141	43	14	224
Buckle	C. Hersome	206,785	Aug. 6	134	42	14	223
Button and stud	M. Ransom	206,687	Aug. 6	34	10	14	211
Cans. Machine for crimping and beading sheet-metal	F. A. Walsh	206,844	Aug. 6	192	61	14	230
Car. Combined freight and stock	J. Sproat	206,840	Aug. 6	189	60	14	230
Car-coupling	B. D. Brown and J. F. Paden	206,769	Aug. 6	115	36	14	221
Car-coupling	J. D. Ferguson	206,779	Aug. 6	124	39	14	222
Carpet-fastener	R. Currier	206,666	Aug. 6	9	3	14	208
Carriage-bow setter	W. B. Maxwell	206,808	Aug. 6	153	48	14	226
Chair. Nursery	H. H. Griffin	206,670	Aug. 6	12	4	14	208
Chimney-cleaner	M. Hoban	206,789	Aug. 6	139	43	14	223
Cigar-box	I. Popper	206,824	Aug. 6	169	53	14	227
Cigar-lighter	G. Selden	206,835	Aug. 6	181	57	14	229
Cigarette	A. Pearl	206,819	Aug. 6	163	52	14	227
Cigarette-package	C. G. Emery	206,668	Aug. 6	10	4	14	208
Cloth-finishing machine	A. Brown	206,767	Aug. 6	110	35	14	220
Cloth-pressing machine	E. Gessner	206,718	Aug. 6	62	20	14	214
Cooler. Milk	G. R. Ingalls	206,792	Aug. 6	142	44	14	224
Cooler. Water	F. G. and W. F. Neidringhaus	206,816	Aug. 6	160	51	14	227
Corn row marker	S. P. Kimball	206,800	Aug. 6	148	46	14	225
Corset	F. W. Perrott. (Reissue)	8,361	Aug. 6	204	65	14	232
Corset	M. G. Smith	206,693	Aug. 6	38	11	14	211
Cotton-gin rib	C. S. Williams	206,847	Aug. 6	199	63	14	231
Cradle and table. Combined	D. M. Killian and L. Humbert	206,798	Aug. 6	146	45	14	225
Cultivator. Riding	W. G. Barnes	206,763	Aug. 6	107	34	14	220
Curtain-fixture	C. P. Jadwin	206,794	Aug. 6	143	44	14	224
Cuspadore	S. J. Van Stavoren	206,843	Aug. 6	191	61	14	230
Cylinder. Triturating and reducing	A. Giddings	206,720	Aug. 6	64	21	14	215
Draft-equalizer	M. Lewis	206,737	Aug. 6	81	26	14	217
Draft-equalizer	A. Winston	206,696	Aug. 6	41	12	14	211
Drag. Hay	I. Killian	206,799	Aug. 6	147	46	14	225
Drill and cultivator. Seed	D. L. Garver	206,780	Aug. 6	125	39	14	222
Egg-beater	H. C. Mann	206,742	Aug. 6	86	27	14	217
Engine. Oscillating-piston	T. F. Sears	206,833	Aug. 6	177	56	14	228
Engine. Steam	G. E. Dow	206,708	Aug. 6	52	16	14	213
Engine. Wind	F. A. Mitchell	206,815	Aug. 6	160	50, 51	14	226
Envelope	J. P. Bligh	206,701	Aug. 6	47	14	14	212
Exhaust mechanism	V. H. Hallock	206,783	Aug. 6	132	41	14	223
Fence. Barbed	H. M. Underwood	206,754	Aug. 6	97	31	14	219
Fire-escape	C. Hinkle	206,787	Aug. 6	137	42	14	223
Fire-escape and spring-bed. Combined	R. H. McGinnis and C. T. Maus	206,811	Aug. 6	156	49	14	226
Fire pot and grate	J. W. Elliot	206,709	Aug. 6	53	17	14	213
Fishway	D. Fisher	206,715	Aug. 6	59	19	14	214
Fluting-machine	F. M. Nixon	206,685	Aug. 6	32	9	14	210
Fruit-box	A. P. Gibson	206,719	Aug. 6	63	21	14	214
Furnace for finishing glassware. Glory-hole	R. M. Atwater	206,761	Aug. 6	104	33	14	220
Garment-supporter	J. P. Lindsay	206,803	Aug. 6	149	47	14	225
Gas and other vapors. Apparatus for condensing, washing, and purifying	T. N. Kirkham, D. Hulett, and S., Sr., and S. Chandler, Jr.	206,736	Aug. 6	80	25	14	217
Gas. Apparatus and process for making illuminating	M. Gross	206,724	Aug. 6	67	22	14	215

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Gate. Draw-bridge	H. Hoenshell	206,790	Aug. 6	140	43	14	224
Gauntlet-fastener	R. D. Burt	206,662	Aug. 6	5	2	14	207
Governor	C. B. Smith	206,692	Aug. 6	38	11	14	211
Governor. Steam-engine	A. Yount	206,849	Aug. 6	201	64	14	231
Grain-binder	J. F. Seiberling	206,834	Aug. 6	178	57	14	228
Grain-binder	E. R. Whitney	206,846	Aug. 6	195	62, 63	14	230
Grain-separator	J. T. Ewan	206,711	Aug. 6	55	17	14	213
Grate	F. M. Lawrence	206,679	Aug. 6	24	7	14	210
Gun-bands. Manufacture of	W. Baker	206,762	Aug. 6	105	34	14	220
Hammer. Power	C. W. Corr	206,665	Aug. 6	7	3	14	208
Harpoon	W. Taylor	206,694	Aug. 6	39	11, 12	14	211
Harrow	G. W. Ross	206,750	Aug. 6	93	30	14	218
Harvester-reel adjustment	A. J. Hodges and J. B. Mohler	206,788	Aug. 6	138	43	14	223
Hatchway-door mechanism	W. Stevens	206,842	Aug. 6	190	60	14	230
Heater and ventilator. Combined	W. R. Macdonald	206,739	Aug. 6	83	26	14	217
Hoe	J. S. Lester	206,802	Aug. 6	149	46	14	225
Hoisting-machine	M. Jacker	206,734	Aug. 6	77	25	14	216
Holdback for carriages	R. T. Barton	206,764	Aug. 6	108	34	14	220
Horse-collar	A. Beckwith. (Reissue)	8,358	Aug. 6	201	65	14	231
Horseshoe-making machine	D. H. Hatlee	206,726	Aug. 6	70	22, 23	14	215
Indicator. Low-water	W. A. Cole	206,773	Aug. 6	119	37	14	221
Jewelry-fastening	W. P. Dolloff	206,777	Aug. 6	123	39	14	222
Lamp-chimney	W. W. Judson	206,796	Aug. 6	145	45	14	224
Lantern	H. W. Hayden	206,729	Aug. 6	73	24	14	216
Lead pigment. Making	G. T. Lewis and E. O. Bartlett	206,680	Aug. 6	25	7	14	210
Lock	J. W. Fackler	206,712	Aug. 6	56	17	14	214
Lock for safes. Time	W. Kook and J. L. Hall	206,678	Aug. 6	22	7	14	209
Lock. Time	W. Kook and J. L. Hall	206,677	Aug. 6	20	6	14	209
Locomotive	J. J. Anthony	206,697	Aug. 6	42	12, 13	14	211
Mangle. Steak	J. E. Dilsaver	206,706	Aug. 6	50	16	14	213
Medical compound	W. J. Klapp	206,676	Aug. 6	20	.....	14	209
Milker. Cow	D. F. Perkinson	206,820	Aug. 6	164	52	14	227
Mill for feed. Grinding	G. Masterman	206,807	Aug. 6	152	48	14	225
Millstones. Exhaust apparatus for	J. Phippen	206,686	Aug. 6	33	9	14	210
Motion. Converting	C. W. Schröder and F. J. Jörgensen	206,832	Aug. 6	176	57	14	228
Motive powers. Portable jack for	D. Luse	206,804	Aug. 6	150	47	14	225
Nut-lock	A. O. Israel	206,793	Aug. 6	142	44	14	224
Oil-cup	T. Holland	206,672	Aug. 6	16	5	14	209
Orange-peeler	T. P. Doane	206,707	Aug. 6	51	16	14	213
Packing for condenser-tubes	J. W. Mead	206,813	Aug. 6	158	50	14	226
Packing for steam-engines	A. Vivarttas	206,695	Aug. 6	40	12	14	211
Paddle-wheel. Feathering	E. R. Clark and R. Hamilton	206,704	Aug. 6	49	15	14	213
Paper box	J. G. Schernerhorn	206,831	Aug. 6	176	56	14	228
Pavement	J. H. McMurray and S. E. Gross	206,812	Aug. 6	157	50	14	226
Peg-float	A. Simcox	206,690	Aug. 6	37	10	14	211
Pegging-machine	T. H. Fletcher	206,717	Aug. 6	60	19, 20	14	214
Pen. Fountain	I. W. Heysinger	206,786	Aug. 6	135	42	14	223
Photographic-plate holder	R. F. Channell and A. Bonzano. (Reissue.)	8,359	Aug. 6	202	65	14	231
Pin. Safety	A. M. Smith	206,691	Aug. 6	37	11	14	211
Planing chair-backs. Machine for	D. Bullock	206,660	Aug. 6	3	1, 2	14	207
Planter. Cotton	W. W. Chapman	206,772	Aug. 6	119	37	14	221
Planters. Check-row wire stop for corn	W. B. Chambers	206,702	Aug. 6	47	15	14	212
Plow	J. H. Gilliland	206,723	Aug. 6	66	22	14	215
Plow	J. Martin	206,806	Aug. 6	151	48	14	225
Plow-colter	J. Oxenford	206,818	Aug. 6	162	51, 52	14	227
Plow. Corn	P. Soderlund	206,752	Aug. 6	95	30	14	218
Plow. Riding	R. S. Higgins	206,732	Aug. 6	76	24	14	216
Plow-standard	J. F. Ryan	206,830	Aug. 6	175	55	14	228
Plow-stock	P. Boone	206,766	Aug. 6	110	35	14	220
Plumbers' traps. Manufacture of	J. Robertson	206,829	Aug. 6	174	55	14	228
Potato bugs. Apparatus for gathering	A. Denison	206,776	Aug. 6	122	38	14	222
Press. Baling	J. R. Blossom	206,658	Aug. 6	1	1	14	207
Press. Baling	J. M. Toland	206,753	Aug. 6	96	31	14	219
Printers' rules and leads. Machine for cutting	W. H. Golding	206,781	Aug. 6	126	40	14	222
Printing-machine. Cylinder	E. Prouty	206,826	Aug. 6	171	54	14	228
Pump	E. Hawkes	206,728	Aug. 6	72	23	14	215
Pump and windlass. Combined ship's	L. H. Lyon	206,805	Aug. 6	150	47	14	225
Pump. Rotary	H. A. and T. Barber	206,698	Aug. 6	43	13	14	212
Pump valve. Beer	J. A. Prindle	206,825	Aug. 6	170	54	14	227
Punching, knotting, and stringing machine for tags, pamphlets, &c.	J. Winter	206,758	Aug. 6	100	32	14	219
Rail-joint	P. T. Madison	206,741	Aug. 6	85	27	14	217
Rail-joint	F. M. Morgan	206,684	Aug. 6	31	9	14	210
Railway. Elevated	D. Fitzgerald. (Reissue)	8,362	Aug. 6	205	66	14	232
Railway. Portable	R. Deeley and J. Turl	206,705	Aug. 6	50	15	14	213
Railway-rail	L. Leypoldt	206,738	Aug. 6	82	26	14	217
Railway-rails. Fagot for	S. McLoud	206,810	Aug. 6	155	49	14	226
Refrigerator	T. C. Phillips	206,822	Aug. 6	167	53	14	227
Rein-holder	D. H. Weaver and M. Heatwole	206,756	Aug. 6	98	31	14	219
Rope way. Wire	A. Blatchly	206,700	Aug. 6	45	14	14	212
Rowlock	J. M. Wheeler	206,757	Aug. 6	99	32	14	219
Ruling machine. Paper	J. and W. A. McAdams	206,809	Aug. 6	154	49	14	226
Saddle-clip. Spring	J. G. English and E. F. Mersick	206,778	Aug. 6	124	39	14	222
Sash-balance	W. E. Kay	206,675	Aug. 6	19	6	14	209
Sash-fastener	W. H. Coffman and N. Havens	206,664	Aug. 6	7	3	14	207
Saw-frame	E. Andrews	206,760	Aug. 6	104	33	14	220
Saw frame. Buck	W. Hankin, Sr.	206,784	Aug. 6	133	42	14	223
Sawing-machine	E. Smith	206,839	Aug. 6	187	59	14	229
Sawing machine. Circular	C. W. Shibeley and E. P. Wright	206,838	Aug. 6	186	59	14	229
Screen. Grain	A. S. Clough	206,663	Aug. 6	6	2	14	207
Sewing-machine	W. Martin, Jr., D. R. Dawson, and R. Orchar.	206,743	Aug. 6	87	27, 28	14	217
Sewing-machine attachment	T. D. Emery	206,669	Aug. 6	11	4	14	208
Sewing-machine button-hole attachment	S. J. Baird	206,768	Aug. 6	111	35, 36	14	220
Sewing-machine thread-tension	N. A. Conklin	206,774	Aug. 6	120	38	14	221
Sewing-machines. Fur-controlling guide for	G. H. Dimond and S. D. Castle	206,667	Aug. 6	9	3	14	208
Sewing machines. Fur-guide for glove	H. Wallenberg and J. Priesner	206,848	Aug. 6	200	63, 64	14	231

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Sheep-shearing machine	W. S. Burgess	206,661	Aug. 6	4	2	14	207
Shingle-sawing machine	M. F. Connett	206,775	Aug. 6	121	38	14	222
Ship's log	J. E. Massey	206,682	Aug. 6	28	8	14	210
Shovels and spades. Manufacture of	J. Paradis	206,747	Aug. 6	91	29	14	218
Shutter-fastening	P. F. Fernandes	206,713	Aug. 6	57	18	14	214
Shuttlecock	W. P. Shannon	206,689	Aug. 6	36	10	14	211
Sidewalks. Cover for openings in	W. Dale. (Reissue)	8,365	Aug. 6	210	67	14	232
Signaling apparatus	W. Roberts, Jr.	206,749	Aug. 6	92	30	14	218
Snap-hook	C. W. Blakeslee	206,657	Aug. 6	1	1	14	207
Spark-extinguisher	C. Reimann	206,828	Aug. 6	173	55	14	228
Spinning-frame ring	J. W. Wattles	206,755	Aug. 6	97	31	14	219
Spool-holder and game device. Combined	E. MacEwan	206,740	Aug. 6	84	26, 27	14	217
Spring. Vehicle torsion	F. M. Chapin and J. Gersbacher	206,703	Aug. 6	48	15	14	212
Stamp. Canceling	E. D. W. Hatch	206,727	Aug. 6	72	23	14	215
Steam-trap	R. T. Pascall	206,748	Aug. 6	91	29	14	218
Stump-extractor	J. C. Sharp	206,837	Aug. 6	183	58, 59	14	229
Table. Self-waiting	O. Wells	206,845	Aug. 6	193	61	14	230
Tablet. Blotter	M. Harris, C. E. and N. W. Mead	206,725	Aug. 6	69	22	14	215
Tamping-cap for tool-handles	J. F. Milligan	206,814	Aug. 6	159	50	14	226
Target. Ball	H. P. Fletcher	206,716	Aug. 6	60	19	14	214
Telegraph. District and alarm	A. W. Gray	206,782	Aug. 6	128	40, 41	14	222
Telephonic conductor	E. F. Phillips	206,821	Aug. 6	165	52	14	227
Tobacco-pipe	J. M. Baum	206,699	Aug. 6	44	14	14	212
Tongs. Ice	W. E. Brigham	206,659	Aug. 6	2	1	14	207
Tongs. Pipe	A. H. Jarecki	206,795	Aug. 6	144	45	14	224
Tool-holder	J. A. B. Williams. (Reissue)	8,360	Aug. 6	203	65	14	232
Track-raiser	C. W. Hornor	206,673	Aug. 6	17	5	14	209
Truck. Portable-engine	W. D. Alford	206,759	Aug. 6	103	33	14	219
Truck. Railway-car	N. F. Gilman	206,722	Aug. 6	66	21	14	215
Trunk	J. W. Henry	206,730	Aug. 6	74	24	14	216
Wagon-bolster	J. Eyman	206,710	Aug. 6	54	17	14	213
Wagon-jack	J. B. Newland	206,746	Aug. 6	90	29	14	218
Watch. Stem winding and setting	O. Hoyt	206,674	Aug. 6	18	6	14	209
Weight. Meat and pickle	M. Moriarty	206,745	Aug. 6	90	29	14	218
Wells. Temper-screw and cable-clamp for drilling oil	J. Small	206,751	Aug. 6	94	30	14	218
Wire-coiling machine	W. F. Moody	206,683	Aug. 6	31	8, 9	14	210
Wires. Machine for cutting threads on	E. F. Richardson	206,688	Aug. 6	35	10	14	211
Wrench	H. H. Hill	206,733	Aug. 6	76	25	14	216
Wrench. Axle-nut	J. S. Gifford	206,721	Aug. 6	65	21	14	215

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TRADE-MARKS.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 30, 1878.

In pursuance of the following declaration, applications of British subjects for registration of Trade-Marks will hereafter be received by the Office on the same terms as those filed by citizens of the United States.

W. H. DOOLITTLE,
Acting Commissioner of Patents.

Declaration between the United States and Great Britain, concluded October 24, 1877; ratification advised by Senate May 22, 1878; ratified by President May 25, 1878; proclaimed July 17, 1878.

A PROCLAMATION.

By the President of the United States of America:

Whereas a declaration between the United States and Great Britain, for the reciprocal protection of marks of manufacture and trade in the two countries, was concluded and signed by their plenipotentiaries, at London, on the 24th day of October, 1877, the original of which declaration is, word for word, as follows:

The Government of the United States of America and the Government of Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, with a view to the reciprocal protection of the marks of manufacture and trade in the two countries, have agreed as follows:

The subjects or citizens of each of the contracting parties shall have, in the dominions and possessions of the other, the same rights as belong to the native subjects or citizens, or as are now granted or may hereafter be granted to the subjects and citizens of the most favored nation, in everything relating to property in trade-marks and trade-labels.

It is understood that any person who desires to obtain the aforesaid protection must fulfill the formalities required by the laws of the respective countries.

In witness whereof the undersigned have signed the present declaration, and have affixed thereto the seal of their arms.

Done at London the 24th day of October, 1877.

EDWARDS PIERREPONT. [SEAL.]
DERBY. [SEAL.]

And whereas the said declaration has been duly ratified: Now, therefore, I, Rutherford B. Hayes, President of the United States, have caused the said declaration to be made public, to the end that the same, and every clause and part thereof, may be observed and fulfilled with good faith by the United States and the citizens thereof.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this seventeenth day of July, in the year of our Lord one thousand
[SEAL.] eight hundred and seventy-eight, and of the Independence of the United States the one hundred and third.

R. B. HAYES.

By the President:
F. W. SEWARD,
Acting Secretary of State.

OPINION OF THE ATTORNEY-GENERAL.

Patents Void for Misjoinder.

A patent issued to joint applicants for an invention actually made by but one of them is absolutely void.

Once issued it cannot be rendered valid by any act of the parties or of the Patent Office.

DEPARTMENT OF JUSTICE,
Washington, August 7, 1878.

Hon. CARL SCHURZ,
Secretary of the Interior.

By a letter dated January 12, 1877, your predecessor in office submitted the following case and questions for the opinion of the Attorney-General:

During the year 1871 Joseph Barsaloux invented a new and useful device called a metallic stiffener for boot and shoe heels.

In the early part of 1872, and before application was made for a patent of said device, Barsaloux sold an undivided two-thirds thereof to Jeremiah S. James and Nelson Lyon.

On the 11th of May, 1872, Barsaloux, James, and Lyon filed a joint application, as inventors, for letters patent for an improvement in metallic stiffeners for boot and shoe heels.

On the 25th of June, 1872, Barsaloux, for a valuable consideration, sold and, by an instrument in writing, assigned to James and Lyon his entire interest in his said invention and requested patent to issue to them. This assignment was filed in the Patent Office June 28, 1872.

On the 9th day of July, 1872, Patent No. 128,843 was granted to applicants for said device in accordance with their application.

This patent is considered invalid for the reason that James and Lyon are described in it as inventors and not as assignees.

Messrs. James and Lyon now ask that the patent may be corrected so as to show that Joseph Barsaloux was the inventor of said device and that they are the assignees thereof.

I am satisfied from the papers filed in the case that James and Lyon were described as inventors in the original application by the misadvice of their attorney and their own ignorance of the law.

November 23, 1875, they filed an amended drawing, specification, claims, petition, and oath, and surrendered the old patent and asked a reissue of patent to Barsaloux as inventor and James and Lyon as assignees. This was rejected by the Commissioner of Patents on account of the prior joint patent.

Subsequently, under the direction of the Commissioner of Patents, Barsaloux applied for a patent to issue to himself as inventor. This was rejected by the Commissioner for the reason that the invention had been in public use for more than two years prior to filing the application.

The petitioners now are believed to be remediless unless the correction prayed for may be made.

I have the honor, therefore, to request your opinion upon the following questions, viz:

First. Have I the authority to permit and approve the correction prayed for?

Second. If made, will the patent, as corrected, be valid?

To the first of these inquiries I return a negative answer. The patent having been issued to Barsaloux, James, and Lyon, jointly, in conformity to their application as joint inventors, it seems to me that in thus issuing the patent no clerical error or mistake can be attributed to the Department, notwithstanding it has since turned out that, in point of fact, the subject-matter of the patent was not the joint invention of all of the applicants, but the sole invention of one of them.

I entertain no doubt of the authority of the Department to correct its own clerical errors made in issuing a patent; as where, on a reissue, it has been granted to the original patentee when it should have been granted to his assignee, or where the date is incorrectly given, or the term of the patent wrongly stated, &c. But the case under consideration does not *present* an error of that sort. The error here presented consists of a false suggestion in the original application that the invention was joint. This, whether done through ignorance or by mistake, does not, in my opinion, afford any ground for the action prayed for. The patent issued upon that application must be deemed to be void, as a joint patent cannot be sustained upon a sole invention of one of the patentees, (see 1 Mason's C. C. Rep., 473,) and the Department cannot, by means of alterations or corrections, confirm or impart validity to a patent which was originally void.

After a joint patent has once been issued upon an application of two or more persons as joint inventors, if the application erroneously described the invention as joint instead of sole, it is not, as I have just intimated, within the power of the Department to remedy the matter by changing the terms of the patent already issued. The parties interested may file a new application, which, if seasonably done, can be made the basis for the issue of a new patent; but such new patent will not retroact by way of confirmation of the original.

The answer to the second inquiry is involved in my reply to the first.

I return herewith the patent which accompanied the letter of your predecessor.

I have the honor to be, very respectfully,

[Signed] CHAS. DEVENS,
Attorney-General.

COMMISSIONER'S DECISIONS.

T. L. BIRD AND W. BOGGS AND M. P. WALSH.—*Interference.*

[*Appeal from the decision of the Board of Examiners of Interferences in the matter of the interference between the applications for letters patent of T. L. Bird and W. Boggs, filed May* 19, 1877, *and M. P. Walsh, filed April* 4, 1877, *for* "IMPROVEMENTS IN DUMPING-SCOWS.—*Decided September* 3, 1878.]

Devices equivalent in principle or mode of operation, and produced by the inventor previous to the one in interference, may serve to fix the date of invention. But the equivalency must clearly appear, failing which, priority was awarded in disregard of the pre-existing forms.

SPEAR, *Commissioner:*

The decision of both tribunals below have been in favor of Walsh.

There is no question that Walsh was the first to invent the dumping-scow in the precise form in which it is shown in both applications and defined in the issue.

A point was raised in the argument on appeal that Bird and Boggs should be entitled to an earlier equivalent construction, and that this earlier equivalent construction should be sufficient basis upon which to award them priority of invention. Undoubtedly an earlier construction which was substantially the same in form, and differed only in colorable variations, would be sufficient to establish their right, no other question arising in the premises. It is hardly necessary to say that an unessential variation between the form of invention as first made and that subsequently adopted would not be regarded. But the question in this case which deserves attention is whether or not the structure which Bird and Boggs rely upon to carry back the date of their invention anterior to that of Walsh was really in point; and further, whether, if it contained any of the elements of the invention or approximates to it in principle, it ever passed beyond the region of experiment before Walsh had perfected and placed the invention on exhibition. Bird and Boggs were experimenting in self-dumping scows in the spring of 1875. They then made a model, which is introduced in evidence. Upon examination this exhibit appears plainly not to meet the terms of the claim. It has a partition which divides the interior of the scow into an upper and lower compartment, whereas the applications of both parties show and claim a scow with compartments separated by vertical partitions and upon each side of the scow. Whether or not this exhibit shows a construction which in practice would be the equivalent of the construction shown and claimed and the subject of this controversy is a matter of evidence, and should be satisfactorily proved. It does not appear to me to have been certainly established. On the contrary, it clearly appears that Bird and Boggs, after experimenting with this model, abandoned the construction which it embodied, and modified it into another construction, for which they subsequently took out letters patent. It is not regarded as material whether in their experiments with this model it turned completely over or not. The shape which was given it indicates very strongly that it was not intended to be used indifferently with either side uppermost as a deck. The exhibit was made like ordinary scows with bottom and a deck and ends sloped in opposite directions from bottom to deck.

This construction, as before said, was modified materially into a side-dumping scow, which did not turn completely over, and which could not be used with either surface upward. Nor does it appear that Bird and Boggs returned to what they now claim to have been their original idea until after they had obtained information of the result achieved by their competitor. Even if Bird and Boggs had originally the idea of a scow which should turn completely over, a comparison of the model with which they experimented, (even when stripped of the floats which they afterward added,) with the present perfected invention now in controversy, shows plainly that the invention must have been in an exceedingly imperfect and incomplete state, if it could be said to exist at all; for when the water was admitted into the lower compartment of the scow it must fill all the space uniformly from side to side and tend to sink the scow without any change in the trim. Only after the water flowing in had reached the lower part of the inclined partition, which separates the hold into upper and lower compartments, would the volume of water begin to accumulate unequally upon the sides and the scow begin to heel over. Whether or not the scow would sink before it turned over would depend upon the load, and evidently the arrangement of the partition was adopted with singular infelicity for the purpose now asserted, since that contemplates that the weight of water shall be unevenly distributed from the very outset, but the old construction made it necessary to bring in a great weight of water at first on both sides alike, and it was only after this great weight of water had been introduced that the balance became in the least unequal. The scow, as represented in the exhibit, after it had dumped its load and turned over, was really bottom upward, for it had but one bottom, and was not in a condition to be towed about until it had been righted. The construction then is in perfect accord with the subsequent acts of Bird and Boggs, in relation to the alleged invention, on the theory that they did not intend to make, or did not succeed in making, a scow which should be self-dumping and reversible in use. As before remarked, they added floats, and converted the scow into a side-dumping scow.

Walsh saw their experiments, and set himself to the task of making a scow which should be capable of use whichever side should be uppermost. In the scow which he produced the upper and lower surfaces were made alike, and each was capable of serving equally well as deck or bottom. Such shape was given to the ends that it would float and move upon the water precisely the same whichever side should be upward. What was of more importance, he made the compartment into which the water was to be admitted on one side, so that the entrance of the water immediately tended to destroy the balance of the boat and cause it to careen. The fact that Bird saw the invention of Walsh before the efforts of himself and Boggs were renewed in this direction, and that it was not until after this knowledge, derived from Walsh, that they produced the invention in controversy, or even resumed the imperfect and abandoned idea, (giving them the best possible theory of their case,) destroys all title on their part to a claim for priority of invention.

I find no error in the decision of the Board, and must, therefore, affirm it, and hold that Walsh is the prior inventor.

ELIAS BLOCK & CO.—*Application.*

[*In the matter of the application of Elias Block & Co. for refunder of money paid by mistake.—Decided November* 22, 1877.]

An application for the registration of a trade-mark cannot be amended by substituting therefor an essentially different mark not contained in the application as originally filed.

SPEAR, *Commissioner:*

It appears from the record that these applicants filed an application for registration of trade-mark, which registration was refused. They subsequently filed an amended application, in which they submitted what amounted to a new trade-mark, which appears to have been considered a lawful trade-mark, and essentially different from that filed in the original application. They made application to have this considered as an amendment of the original application, which request was refused. The Commissioner then held that "the amendment of a proposed trade-mark in a matter material to its identity changes its character, and renders the sworn statement required by section 4938 inapplicable. The effect is to create a new trade-mark." This is manifestly the case, for the new mark was considered a lawful trade-mark, whereas the old was admitted not to be such lawful trade-mark. The Commissioner held substantially that, being a new trade-mark, an application must be made for the registration of it, and a fee paid "in the same manner, and for the same purpose, as the fee required for patents." (*Sec.* 4939.)

The manner and the purpose of the payment of the fee required for patents is well understood. It is not in the nature of a tax levied upon inventors, but is for the purpose of defraying the expenses of the examination. The fees in such cases are never refunded on account of any lack of patentability in the subject-matter of the application. A fee paid upon the filing of an application for a patent can be returned only when it is found that there was no requirement of law for such fee, as if the applicant had already paid the fee or should pay in excess of what is required by law. The practice of the Office is distinctly stated in Rule 111:

Money paid by actual mistake, such as a payment in excess, or when not required by law, will be refunded; but a mere change of purpose after the payment of money, as when a party desiring to withdraw his application for a patent or for the registration of a trade-mark, will not entitle a party to demand such return.

Fees in trade-mark cases being paid in the same manner and for the same purpose as the fee required for patents, it follows that they should be refunded only under the same circumstances. The fact that the Office refuses registration, or that the applicant changes his purpose and does not desire registration of the mark for which he made application, or desires the registration of another mark, is not enough to justify the Office under the law in returning a fee. Permission to amend the application so as to introduce into it a new trade-mark is of precisely the same nature.

I concur in the opinion of my predecessor, expressed in this case when it was before him on a former occasion, that such a practice would not be in strict accordance with the law, and would lead to confusion in the transaction of business. The amendment upon an application for trade-mark by the substitution of a new and lawful trade-mark for that which was found not to be a lawful trade-mark in the original application would amount, as I have said, to a return of the fee.

The question which applicants bring before me at this time is essentially the same question which they brought before the Commissioner on the former appeal. He refused to allow a new trade-mark to be injected into the old application. Applicants filed a new application, and now they ask that the fee paid upon the filing of the old application shall be refunded. It would have been precisely the same if they had asked to have it transferred to the new application, and that was precisely the same in substance as asking that the new application might be injected into the old.

I am, therefore, of opinion that there is no law for returning such fees in trade-mark cases. That the labor of examining such an application and determining that the mark which it presents is not a lawful trade-mark is comparatively small, and that the fee is disproportionate to the labor involved in the examination is another matter. That complaint is against the law, which prescribes the amount of the fee, and with that I have nothing to do. It is my duty to require the fees when applications are made, and to pay such moneys into the Treasury. I have no authority to return them.

The request of applicant is denied.

TRADE-MARKS.

[Each certificate bearing date August 13, 1878.]

6,453.—PRINTING-PLATES.—*Louis Brown & Co.*, Philadelphia, Pa. Application filed July 17, 1878.
"The arbitrarily-selected word 'AUTO.'"

6,454.—FLOUR.—*Henry F. Harrington*, Versailles, Conn. Application filed July 29, 1878.
"The words 'PRIDE OF THE WEST.'"

6,455.—FLOUR.—*Kenly, Jenkins & Young*, Chicago, Ill. Application filed July 17, 1878.
"The word-symbol 'SUNBEAM.'"

6,456.—SALVE.—*Schloss & Frech*, Baltimore, Md. Application filed July 27, 1878.
"The word-symbol 'ARMONEAN.'"

6,457.—PRINTS.—*The Eddystone Manufacturing Company, (limited,)* Philadelphia, Pa. Application filed July 27, 1878.
"The bar or panel arranged as shown and described."

6,458.—PRINTS.—*The Eddystone Manufacturing Company, (limited,)* Philadelphia, Pa. Application filed July 26, 1878.
"The symbol inclosing the cross-lined or gray background for the reception of the words, as shown."

6,459.—FRUIT-PRESERVING SUBSTANCES.—*Lewis P. Worrall*, New York, N. Y. Application filed August 1, 1878.
'The arbitrary title 'AMERICAN.'"

6,460.—DRY-GOODS.—*Charles M. Williams*, Greenville, Miss. Application filed July 18, 1878.
"A hog standing erect on hind feet, holding in his mouth one end of a scroll, on which is printed, in large letters, 'HOG AND HOMINY STORE.'"

6,461.—BAKING-POWDER.—*C. E. Andrews & Co.*, Milwaukee, Wis. Application filed July 17, 1878.
"The arbitrarily selected word 'MONARCH' and the figure of a tiger's head."

6,462.—SOAP.—*Charles F. Bates*, Quincy, Mass. Application filed May 21, 1877.
"A triangle inclosing an index-hand."

6,463.—SOAP.—*Day & Frick*, Philadelphia, Pa. Application filed August 2, 1878.
"The word 'CHAIN.'"

6,464.—CONDIMENTS, SUCH AS PICKLES, SAUCES, &c.—*F. & J. Heinz*, Pittsburg, Pa. Application filed July 19, 1878.
"The representation of the key-stone."

6,465.—DRY HOP-YEAST.—*Judd Brothers Yeast Company*, Detroit, Mich. Application filed July 20, 1878.
"The fanciful or arbitrarily-selected words 'TWO BROTHERS.'"

6,466.—WOOD HEATING-STOVES.—*Sherman S. Jewett & Co.*, Buffalo, N. Y. Application filed July 29, 1878.
"The arbitrarily selected words 'CROWN OF INDIA.'"

6,467.—MEDICINES.—*Benjamin F. Rackley*, Dover, N. H. Application filed March 21, 1877.
"A monogram composed of the letters 'B. F. R.'"

6,468.—WINES AND BRANDIES.—*Renauld, François & Co.*, New York, N. Y. Application filed July 18, 1877.
"A white band or strip of paper encircling the neck of a bottle."

6,469.—BRUSHES.—*John L. Whiting*, Boston, Mass. Application filed July 19, 1878.
"The word-symbol 'DICTATOR.'"

6,470.—BRUSHES.—*John L. Whiting*, Boston, Mass. Application filed July 19, 1878.
"The word-symbol 'STERLING.'"

6,471.—WATER-CLOSETS.—*Zane & Roach*, Boston, Mass. Application filed May 3, 1878.
"The plumber's pot, and plumbers' irons crossed above the bail of said pot."

6,472.—PHOTOGRAPHIC MATERIAL.—*E. & H. T. Anthony & Co.*, New York, N. Y. Application filed July 25, 1878.
"The fanciful or arbitrarily-selected word 'MOSSULO.'"

6,473.—BOOT AND SHOE BLACKING.—*Boyer & Co.*, Philadelphia, Pa. Application filed August 1, 1878.
"A pictorial representation of two boot-blacks apparently engaged in a discussion as to the merits of Boyer's blacking."

6,474.—SEWING AND KNITTING NEEDLES.—*Henry Baylis*, New York, N. Y. Application filed June 1, 1878.
"My name, 'H. BAYLIS.'"

6,475.—COOKING-STOVES.—*Sherman S. Jewett & Co.*, Buffalo, N. Y. Application filed July 26, 1878.
"The arbitrarily-selected word 'GOLDEMAR.'"

6,476.—WOOD HEATING-STOVES.—*Sherman S. Jewett & Co.*, Buffalo, N. Y. Application filed August 2, 1878.
"The arbitrarily-selected word 'GRISELDA.'"

6,477.—SMOKING AND CHEWING TOBACCO.—*Maclin & Barkley*, Petersburg, Va. Application filed July 23, 1878.
"The arbitrarily-selected words 'BLACK HAWK.'"

6,478.—FANCY FURS, SUCH AS CLOAKS, HATS, &c.—*Jacob E. Bergtold*, Buffalo, N. Y. Application filed June 13, 1878.
"The figures of two lions' heads, representing the lioness licking the lion's face, which I designate as the 'KISS OF PEACE.'"

6,479.—SALT.—*Richard Evans*, Liverpool, England. Application filed December 13, 1877.
"The word-symbol 'EVANS.'"

6,480.—MEDICINE FOR HORSES, CATTLE, &c.—*Joseph Saunders*, Brooklyn, N. Y. Application filed August 6, 1878.
"The figure of a horse and rider."

6,481.—THRASHING-MACHINES.—*Seymour, Sabin & Co.*, Stillwater, Minn. Application filed August 2, 1878.
"The word-symbol 'MINNESOTA CHIEF.'"

LABELS.

[Each certificate bearing date August 13, 1878.]

1,646.—Title: "H. M. MYERS PATENT SOCKET STRAP SCOOP."—*Henry M. Myers*, Beaver Falls, Pa. Application filed July 30, 1878.

1,647.—Title: "PROF. A. J. RAINEY'S HOG CHOLERA COMPOUND."—*Andrew J. Rainey*, Nebraska City, Nebr. Application filed July 31, 1878.

1,648.—Title: "MOHAWK VALLEY MF'G CO. CAMBRICS."—*Smith, Sanford & Co.*, New York, N. Y. Application filed July 30, 1878.

1,649.—Title: "THE DRUGGIST BRAND OF PURE REFINED OIL OF PEPPERMINT."—*Menzo H. Dillenbeck*, Lyons, N. Y. Application filed May 24, 1878.

1,650.—Title: "HOWARD'S GREAT SOUTH AMERICAN REMEDY."—*Austin Howard*, Milford, Mass. Application filed August 5, 1878.

1,651.—Title: "THE CELEBRATED CHAMPAGNE BEER."—*George Hummel & Co.*, Milwaukee, Wis. Application filed June 27, 1878.

1,652.—Title: "JAQUES' TRIPLE EXTRACT."—*John A. Lansing*, Brookline, Mass. Application filed August 5, 1878.

1,653.—Title: "HOLLAND SHADES."—*Tuft & Co.*, Providence, R. I. Application filed August 5, 1878.

1,654.—Title: "WOODWARD VEGETABLE LIVER RENOVATOR."—*George V. Woodward*, Louisville, Miss. Application filed May 27, 1878.

DESIGNS.

[Each design bearing date August 13, 1878.]

10,776.—BURIAL-CASKETS.—*Albert H. Nirdlinger*, Rochester, N. Y., assignor to the *Stein Manufacturing Company*, same place. Application filed July 26, 1878. Term of patent 7 years.

10,777.—FONT OF ORNAMENTAL PRINTING-TYPES.—*David Wolfe Bruce*, New York, N. Y. Application filed July 15, 1878. Term of patent 14 years.

10,778.—CARPET.—*Hugh Christie*, New York, N. Y., assignor to the *Bigelow Carpet Company*, Clinton, Mass. Application filed July 24, 1878. Term of patent 3½ years.

10,779 and 10,780.—CARPET.—*Charles Magee*, Brooklyn, N. Y., assignor to the *Bigelow Carpet Company*, Clinton, Mass. Applications filed July 23, 1878. Term of patents 3½ years.

10,781.—CARPET.—*John Neil*, New York, N. Y., assignor to the *Bigelow Carpet Company*, Clinton, Mass. Application filed July 23, 1878. Term of patent 3½ years.

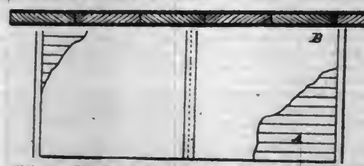
10,782.—ROCKING-CHAIRS.—*Siegfried Willershausen*, New York, N. Y. Application filed July 25, 1878. Term of patent 7 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

AUGUST 13, 1878.

206,850. MATERIALS FOR ROOFING AND BUILDING PURPOSES. Daniel S. Armstrong, Hampden, Md. Filed Jan. 30, 1878.

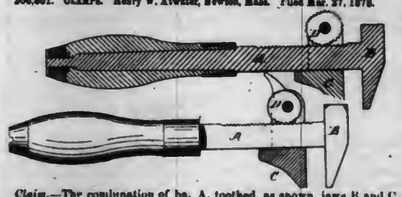
Brief.—Laths or slats of wood are impregnated with hot bitumen, and while the bitumen is still hot felt paper or other suitable material is caused to adhere to one or both sides of the laths.



Claim.—1. The slats or laths A, of wood saturated with bitumen, as described, in combination with the felt paper or other suitable material, B, secured to one or both sides of said laths, substantially in the manner set forth, and for the purpose specified.

2. As a new article of manufacture, the material for roofs and the construction of buildings, as set forth.

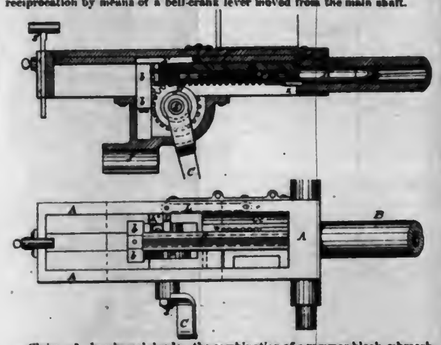
206,851. CLAMPS. Henry W. Atwater, Newton, Mass. Filed Mar. 27, 1878.



Claim.—The combination of ba. A, toothed, as shown, jaws B and C, and the eccentric D, provided with teeth upon its periphery, the eccentric being so arranged that its teeth will mesh with the teeth on bar A, as and for the purposes specified.

206,852. MACHINE-GUNS. Fortune L. Bailey, Indianapolis, Ind., assignor to the Bailey Gun Company, same place. Filed Apr. 8, 1878.

Brief.—The breech-bolt is reciprocated by the partial rotation of the mutilated gear. When closed, the bolt is held against recoil by a vertically-reciprocating gate or block, also operated by the gear. The carrier has a sidewise reciprocation by means of a bell-crank lever moved from the main shaft.



Claim.—1. In a breech-loader, the combination of a rammer-block, a breech-block, and a pinion having a portion of its cogs removed, the two blocks being made to move alternately and at right angles to each other, substantially as shown.

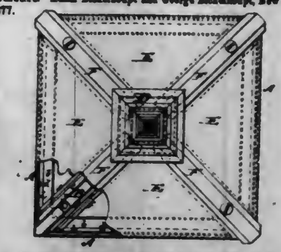
2. In a breech-loader, the combination of the rammer-block R, having cogs on its under side, breech-block b, and pinion P on the operating-shaft, the breech-block having a vertical movement, so as to rise behind the rear end of the rammer-block after it has forced the cartridge home, the two blocks being operated by the same device, substantially as shown.

3. The latch L', having a shoulder to catch behind the flange on the end of the firing-pin, in combination with the breech-block b, that trips the latch as it rises into position and frees the gun, substantially as specified.

4. The combination of the lever L, pivoted at its corner upon the frame A, and connected at its front end to the carrier-block C c, with the lug or cam L' on the pinion P, to strike against the short end of the lever L, substantially as described.

5. The cogged pinion P, in combination with the breech-block *b b*, the rammer-block R, the shaft S, and the cocking-latch L', substantially as and for the purposes above set forth.

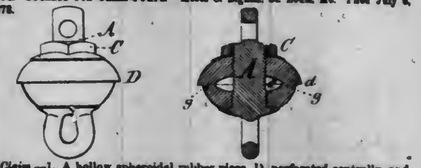
206,853. SKYLIGHTS. Adam Bickelhaupt and George Bickelhaupt, New York, N. Y. Filed Dec. 22, 1877.



Claim.—1. In a skylight, the combination of the ribs B B, which have the troughs *e e*, with the frame A, having the trough *b* and inwardly-projecting lip *h*, all arranged so that the glass E is directly supported on the edges *f g* of the troughs *e* and on the lip *h*, and bears against the face *i* of the frame A, substantially as specified.

2. The combination, in a skylight, of the supporting-frame A, converging ribs B, covering-plate F, ventilating-funnel C, and damper G, all arranged substantially as herein shown and described.

206,854. BUCKETS FOR CHAIN-PUMPS. Moses C. Bignall, St. Louis, Mo. Filed July 6, 1878.



Claim.—1. A hollow spheroidal rubber piece, D, perforated centrally, and having a chamber lateral to its central perforation, and formed with a lip, *d*, for a packing for a pump valve or bucket, substantially as described.

2. The hollow rubber piece D, thinned at *g g* and provided with a lip, *d*, in combination with the stem A and compression-nut C, substantially as and for the purpose described.

206,855. COMBINED TRUCK AND BAG-HOLDER. Lorenzo Bissell and Richard Van Buren, Wadsworth, Ohio. Filed Feb. 26, 1878.



Claim.—1. The combination of a truck and bag-holder, the whole being convertible at pleasure into a bag-holder by placing the same in erect position, or a truck by tilting it over, for transporting the bag when filled, substantially in the manner set forth.

2. The above-described truck and bag-holder combined, having the side rails A, provided with wheels D and foot-board L, and cross-brace B, and hooks or brads I, in combination with the arms E, also having brads or hooks I, and connected to rails A by means of pivot-bolts F, and made adjustable by hooks or rods G, substantially as and for the purposes set forth.

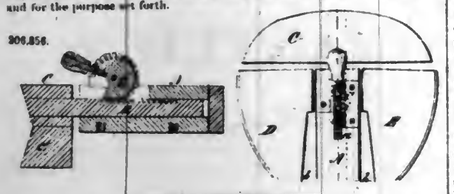
206,856. SHEET-IRON SHAPERS. Albert Borchardt, Weehawken, N. J. Filed May 8, 1878.

Claim.—1. A neck-shaper composed of segments adapted to be expanded to conform to neck-bands of variable dimensions, substantially as described.

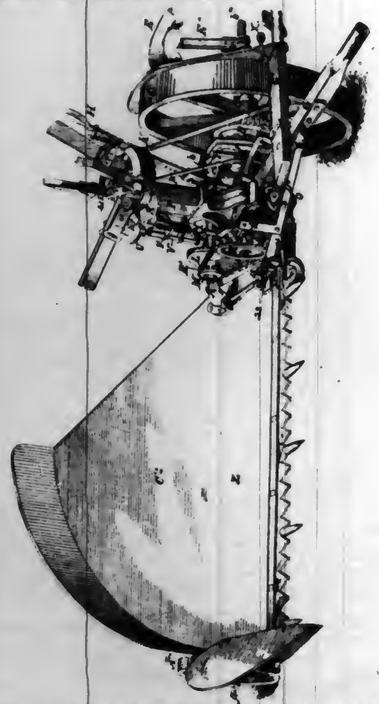
2. In a shirt-neck shaper, substantially such as described, the segment C, affixed to the outer end of the sliding steel H, provided with the sliding arms *b b*, in combination with the side wings D and E, having inclined inner faces adapted to be engaged by the arms *b b*, substantially as and for the purpose set forth.

3. The central bar A, provided with a sliding steel, having the side arms *b b*, in combination with the detachable side wings D and E, substantially as and for the purpose set forth.

206,856.



206,857. HARVESTER. Thomas S. Brown, Poughkeepsie, N. Y., assignor of one-half his right to John P. Adriance, same place. Filed Jan. 16, 1878.



Claim.—1. A mechanism intermediate between the foot of the driver and the latch which controls the rake-cam gate, consisting of a lever and link or other equivalent mechanism—viz., double pedal X, pedal-shaft *x*, pedal-crank *x'*, link *x''*, double lever *x'''*, spring-controlled shifter-rod Y, lug *y*, and sliding latch-stem V, the whole organized, as described, in such manner that at rest the latch is held in equilibrium, but can be raised into or lowered out of the path of any or all the rake arms by pressure in one or the other direction upon the pedal, substantially as shown and described.

2. The lever H, hinged to the crank-frame B, upon the sleeve *b* thereof, in combination, by means of a link, 10, with the inner end of the pole G, which latter is hinged to the front cross-piece of the main frame A, substantially as shown and described, and for the purposes set forth.

3. As a means of connecting the arm *b'* or free forward part of the crank-frame B rigidly to the main frame A when the platform is adjusted to a desired height of cut, a gag-piece, F, hinged to the main frame, and consisting of two internal parallel ratchet-bars, the teeth of each bar pointing toward the teeth of the other, and a double pawl, F', pivoted to the arm *b'* of the crank-frame, and adapted to engage the ratchet-teeth on each side, so as to lock with the gag-piece and prevent either an upward or downward movement of the platform, substantially as shown and described.

4. In combination, the driving-wheel C, the driving-gear wheel D, mounted loosely upon the hub of the driving-wheel and provided with a ratchet, *d*, upon its side, and a pawl, *c*, lying parallel with the axis, and contained within bearings in the drive-wheel, so that said pawl engages with said ratchet to operate the driving-gear wheel, and hence the train, in the forward movement of the drive-wheel, and is adapted to slide back over said ratchet in the backward movement of the drive-wheel, substantially as shown and described.

5. The combination of the pawl *c*, mounted in a bearing in the drive-wheel, the ratchet *d* in the main gear wheel D, the pawl-handle *c'*, and projections *c''* on the drive-wheel C, the arrangement being such that the handle can be pulled out, turned half around, and rested on the projections to hold the pawl out of gear, the spring drawing the handle into the recesses *c''* and the pawl into bite when the handle is turned off the projections, substantially as shown and described.

6. In a one-wheel harvester, the combination, by means of a sprocket-chain, R', a sprocket-pinion, I. M, upon the end next the platform of the bevel-wheel or driving shaft I, which shaft is located within the sleeve which forms the axis of connection between the main and crank frames, and a driving sprocket wheel, R, on the platform end of a shaft in the rake-standard lying parallel with the bevel-wheel shaft, said shaft in the standard being provided at its inner end with a pinion, Q', meshing with a crown-wheel, Q, connected with the vertical shaft which drives the rakes, the whole forming a device for driving the rakes from the bevel-wheel shaft I, substantially as described.

7. In a one-wheel harvester, platform z, hinged directly to the main frame by hinges 11 and 12, located on top of the platform at front and back of the main frame, and as wide apart as possible, said platform being provided with an extension which folds beneath the main frame, so as to be rigidly secured thereto, and when up permits a portion of the platform and of the finger-bar to hang below the axis of the hinge and the center of the carrying-wheel A'', substantially as and for the purposes set forth.

8. The combination of the platform hinged to the main frame and provided with the extension Z*, the socket Z'' beneath the main frame, and the connecting-bolt *a**, the whole forming a rigid splice for the platform when down, substantially as described.

9. In combination with the platform Z, the carrying-wheel A'', placed against its under side, outside or above the line of its hinged connection to the main frame by means of the axle-bolt A*, substantially as described.

10. In a harvester, the lever H, loosely set in its socket, in combination with the main frame and the tongue, and with devices for connecting the lever therewith, substantially as shown, and for the purpose set forth.

11. The shifting angle-prop D', attached to the tongue-brace of a harvester, substantially as shown and described, and for the purpose specified.

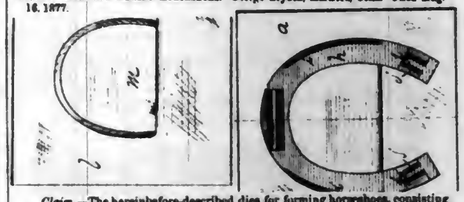
12. In a harvester, the combination of the latch of the rake-cam gate, the double foot-pedal, and mechanism, substantially as described, whereby the said latch, when at rest, being held in equilibrium, can be raised into or lowered out of the path of any or all the rake-arms by pressure in one or the other direction upon the pedal, substantially as shown and described.

206,858. MANUFACTURE OF HORSESHOES. George Bryden, Hartford, Conn. Filed Aug. 16, 1877.



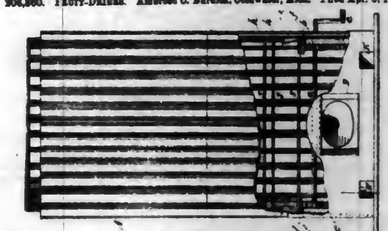
Claim.—The manufacture of horseshoes in dies, consisting in placing heated calks in the rough within holding-recesses, then placing the heated shoe body or stock in the matrix above such calks, and then welding the said calks and shoe-stock together, and at the same operation finishing the calks, substantially as specified.

206,859. DIES FOR MAKING HORSESHOES. George Bryden, Hartford, Conn. Filed Aug. 16, 1877.



Claim.—The hereinbefore-described dies for forming horseshoes, consisting of the lower die, *a*, having the body-shaping matrix *h*, the crease-formers *i i*, and the bridges *k* and depressions *j*, for forming the heel and toe calk sockets, and the upper die, *l*, having the beveled projection *m*, ending in an abrupt shoulder, *m'*, all substantially as and for the purpose specified.

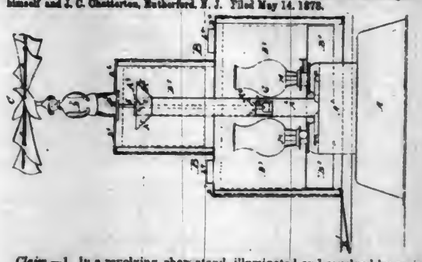
206,860. FRUIT-DRIER. Ambrose O. Bardick, Coldwater, Mich. Filed Apr. 5, 1877.



Claim.—1. In a fruit-drier, the chamber A, constructed of corrugated sheet metal, and its interior ridges acting as guides for the trays, as described, in combination with trays arranged with a space between them, for permitting the free circulation of the air around the trays and through the fruit, substantially as set forth.

2. In a fruit-drier, the shaft *a* and pinions *b*, in combination with the springs *i*, racks *c*, slides *d*, and arms *f*, for receiving and elevating the trays, substantially as described.

206,861. ILLUMINATED ADVERTISING DEVICES. G. H. Chatterton, Newark, assignor to himself and J. C. Chatterton, Rutherford, N. J. Filed May 14, 1878.



Claim.—1. In a revolving show-stand, illuminated and revolved by an inclosed flame or flames, the combination of the shelf B' and reflecting-surface B', arranged and adapted to serve as and for the purposes herein specified.

2. The revolving frame B, carrying a shelf, B', and provided with openings or transparent surfaces B², and inclosing one or more burners, M, adapted to throw a strong light upon the articles on the shelf, in combination with an illuminated surface above adapted to serve for advertising, as herein specified.

3. In a show-stand, illuminated and revolved by one or more inclosed burners, the hollow tube A², having the flaring top A³, with cones A² A', in combination with the axial wire *b* and horizontal screw-wheel C', as herein specified.

4. The revolving frame B, operated as shown, having the axial wire or pivot *b*, in combination with the guiding-tube A², having an aperture, *a*², and the supporting-cup G, as herein specified.

206,862. VEHICLE-SPRINGS. William Ubegwin, Fond du Lac, Wis. Filed Jan. 5, 1878.

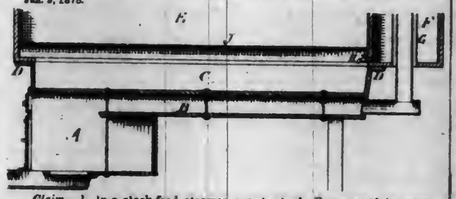


Claim.—The combination, in a vehicle, of the spars C, forming side pieces of the frame, inverted springs D, connected to the spars and extending beyond the ends of the body, rods *h h*, supported in bearings beyond the ends of the body, and having cranks suspended from the ends of the springs, all as set forth.

206,863. HOG-CHOLERA COMPOUNDS. Jonathan P. Cole, Hartford. (English P. O.) Ind. Filed July 1, 1878.

Claim.—The herein-described compound for the treatment of hog cholera, composed of bicarbonate of soda, lime, wood-ashes, concentrated lye, asafetida, soap, and sulphur, in about the proportions specified.

206,864. FEED-STEAMERS. William S. Orkiss and U. D. Gaylord, Cleveland, Ohio. Filed Jan. 9, 1878.



Claim.—1. In a stock-feed steamer, a water-tank, F, arranged in connection with a steam-generating chamber, C, and provided with a pipe, G, through which passes the smoke-pipe of the heater, so that the heat from said smoke-pipe may be communicated to the water in the tank, and to that extent preheat the water for the generating-chamber.

2. In a stock-feed steamer, the heater A, combustion-chamber B, generating-chamber C, flange D, arched perforated removable false bottom J, and steaming-box E, substantially as shown, in combination with the reservoir F and its pipe G, substantially as and for the purpose described.

206,865. BALING-PRESSES. Peter K. Dedrick, Albany, N. Y. Filed June 6, 1878.



Claim.—1. The method herein described of forming and completing bales in a bale-chamber—namely, by pressing and tying off the first bale, inserting a small charge of loose material as a partition, passing one end of the ties for the next succeeding bale, forming said next bale against said ends, and finally passing through the opposite end of the ties and securing the same to the previously pressed ends, substantially as described.

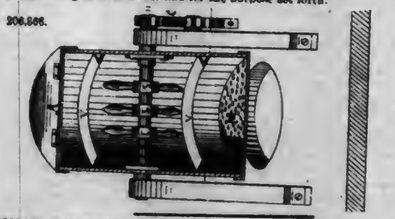
2. The combination of the baling-needle G with the extended slots B in the press-case, substantially as described, for the purpose specified.

3. The baling-needle G, in combination with the extended slots B, the press-case, and the slotted transverse A, substantially as described, for the purpose specified.

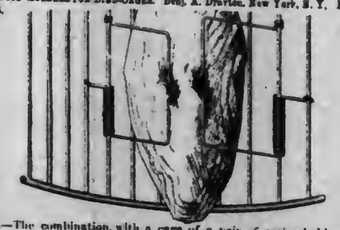
206,866. APPARATUS FOR CLEANING AND POLISHING COFFEE, &c. Michael Doyle, Brooklyn, N. Y. Filed Apr. 5, 1878.

Claim.—An apparatus for cleaning, polishing, and sifting coffee or other grain, consisting of an oscillating cylinder, A, in combination with the arms 1 2 3, bevel flange V, screen M, and gearing C C', all constructed, arranged, and operating in the manner and for the purpose set forth.

206,866.



206,867. HOOP-HOLDERS FOR BIRD-CAGES. Benj. A. Dravton, New York, N. Y. Filed May 10, 1878.



Claim.—The combination, with a cage, of a pair of spring-holders, each holder made of a single piece of wire, provided with a spiral spring, and terminating at one end in a holdfast and at the other end in a coil, and being attached to the cage by coiling the free ends around the filling wires, substantially as shown and described.

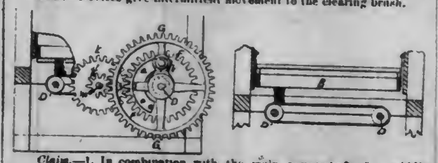
206,868. STOVE-POLISHES. Hiram J. Dreher, Philadelphia, Pa., assignor of three-fourths his right to Phœnix Plumbago Mining Company, same place. Filed June 12, 1878.

Brief.—One hundred pounds of saponified fat, sixty-five pounds of crude plumbago, two pounds of silicate of soda, and two pounds of glycerine.

Claim.—The composition of matter or stove-polish consisting of saponified fat, crude plumbago, and glycerine, in combination with silicate of soda, substantially as and for the purpose set forth.

206,869. MIDDLINGS-SEPARATORS. Wm. H. Frues, Minneapolis Township, Hennepin County, Minn. Filed Apr. 3, 1878.

Brief.—Devices give intermittent movement to the clearing brush.



Claim.—1. In combination with the main power-shaft of a middlings purifier and the brush for cleansing the meshes of the screen, intermediate means, substantially as described, for automatically and intermittently moving the brush.

2. The combination and arrangement of the gear F, cam *a*, gear G, yoke and bolt *g h*, clutch H, and shaft D, substantially as hereinbefore set forth.

3. The combination, with the shaft D D, provided with means for carrying the brush E, clutch H, gears F G, of different sizes, cam *a*, and yoke and bolt *g h*, of the pinions *h h'* on the same shaft, the whole arranged to operate in the manner and for the purpose described.

206,870. BRANDING-STAMPS. Walter L. Gamage, Mount Pleasant, Iowa. Filed June 14, 1878.



Claim.—1. The follower B, provided with face *b*, upon which to set up the type, and also provided with projection C, to hold the letters in place, as specified.

2. The follower B, with face *b*, and longitudinal projection C, to hold the type in place, in combination with the shell A A', attaching means D, and handle F, constructed and operating as and for the purposes set forth.

206,871. COMBINED COTTON SCRAPER AND CHOPPER. Richard F. Gibson and Richard P. McDaniel, Tuscaloosa County, Ala. Filed July 15, 1878.

Brief.—A chopper flexibly attached to a cultivator. The wheels adjust upon the shaft or axle, and the geared ring has a corresponding adjustment by stepped blocks, so as to follow and gear with the pinion. Drive-wheels follow in the path of the scrapers and levelers. Adaptability to various changes and uses in cultivation.

Claim.—1. In a combined cotton chopper and scraper, the combination of the laterally-adjustable plow-beams carrying the scrapers, the vertically-adjustable drags, a horizontally, vertically, and laterally adjustable rotary chopper and its driving-pinion, the laterally-adjustable drive-wheels, and a correspondingly-adjustable toothed ring, all constructed and operating as and for the purposes set forth.

2. In a cotton chopper, an adjustable toothed ring adapted for adjustment upon and to and from the spokes of one of the drive wheels, substantially as described, for the purpose specified.

3. The toothed ring C', provided upon its inner periphery with ears c^1, having segmental slots c^2, and upon its rear face with stepped projections c^3, substantially as described, for the purpose specified.

4. In a cotton-chopper, the combination of a pair of drive-wheels laterally adjustable upon their axle, an arched frame carrying a rotating chopper-shaft, also adjustable laterally upon the drive-wheel axle and carrying a bevel-pinion, and a toothed ring adapted to mesh with said beveled pinion, said toothed ring being also adjustable upon the spokes or arms of one of the drive-wheels, so as to maintain said pinion and gear-wheel or ring in gear when the drive-wheels are moved toward or from each other, as described, for the purpose specified.

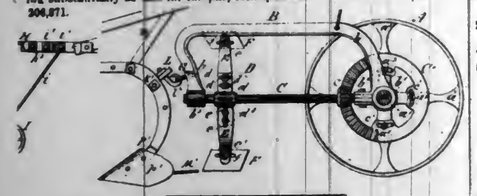
5. In a combined cotton chopper and scraper, the combination, with the drive-wheels of the former, of a pair of scrapers followed by a pair of drags upon a line with that of said drive or ground wheels of the chopper, substantially as described, for the purpose specified.

6. The combination, with the chopper D, of the drags M M' and the scrapers p p', all constructed, arranged, and operating substantially as described, for the purpose specified.

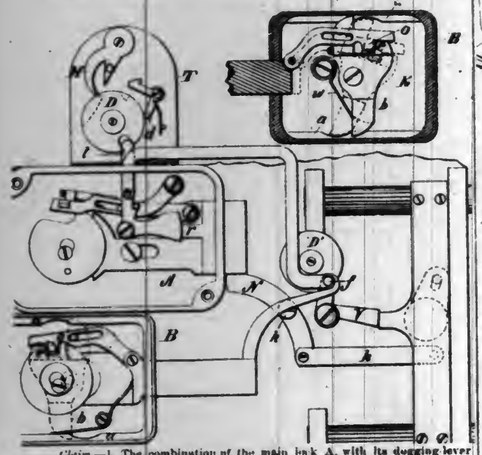
7. The combination, with the plow-beams H H' and the chopper-frame B, of the brace-shaft K, the nuts k k', the slotted bar L, coupling-hook l', and eyebolt l3, all constructed and operating as and for the purposes specified.

8. The combination of the plow-beams H H', the brace-shaft K, and nuts k k' with the drive-wheels A A', axle a, washers a^1 a^1, adjustable toothed ring C', chopper-frame B, shaft t', pinion c, and chopper D, all arranged and operating substantially as and for the purposes specified.

206,871.



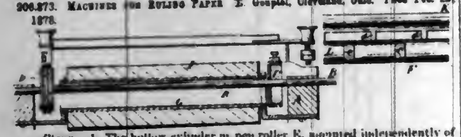
206,872. TIME-LOCKS. Jos. L. Hall, Cincinnati, Ohio. Filed Apr. 24, 1878.



Claim.—1. The combination of the main lock A, with its dogging-lever L, the bolt-work, with its dogging-levers N V, the guard-lock B, and time attachment T, all arranged to operate substantially as shown and described.

2. In combination with the tumblers and draw-bar of a permutation lock, the detachable face-plate K, having the bar *b* pivoted thereto, and arranged to engage behind the flanges *a*, substantially as described, whereby the face-plate is prevented from being detached except by means of the combination on which the lock is set, as herein set forth.

206,873. MACHINES FOR RULING PAPER. E. Goepfel, Cleveland, Ohio. Filed Feb. 25, 1878.



Claim.—1. The hollow cylinder *n* pen roller E, mounted independently of and eccentrically to the shaft B, in combination with the shaft B and the cams t^1 t^2, substantially as and for the purpose described.

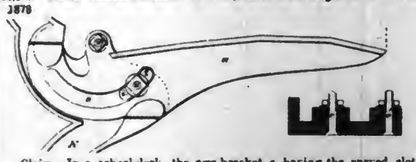
2. The roller E, provided with bands *e*, in combination with the apron F and gate K, substantially in the manner as described, and for the purpose specified.

206,874. ODORLESS CLOSETS. Wilcox Glover, Charleston, S. C., assignor of one-half his right to John L. Sheppard, same place. Filed Feb. 4, 1878.



Claim.—A closet-vault, A, formed of earthenware or similar material rendered non-absorbent by glazing, and having a close top provided with one or more leader-pipe connections, B, made of the same material, substantially as set forth.

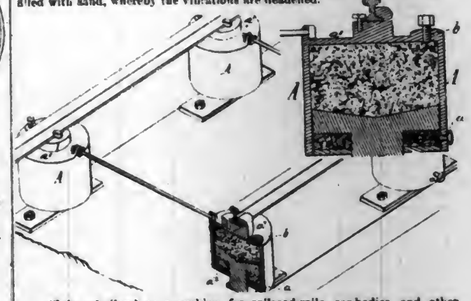
206,875. HINGES FOR FOLDING SEATS. Richard T. Hambrook, Chicago, Ill. Filed Feb. 28, 1878.



Claim.—In a school-desk, the arm-bracket *a*, having the curved slot *c*, adapted to engage in the bolt V, said bolt having the ordinary nut and washer, and being provided with the oblong and slightly-curved piece *i*, loosely fitting in slot *c*, all combined as and for the purpose set forth.

206,876. RAILROAD-TRACKS. Anaxamander Herring, Cohoes, N. Y. Filed July 13, 1878.

Brief.—The rails are secured upon the upper portion of hollow cylinders, within which are pistons, the space above and below the heads of which is filled with sand, whereby the vibrations are deadened.



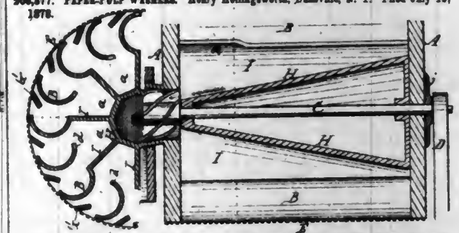
Claim.—1. Sand as a cushion for railroad-rails, car-bodies, and other analogous uses, applied between the upper head of a drum or chamber, A, and a piston, substantially as and for the purpose described.

2. Sand as a cushion for rails and other objects, applied between the heads of a drum or chamber, A, and the upper and lower ends of a piston, substantially as and for the purpose described.

3. The drum or chamber A, packed with sand and provided with a piston, the stem or rod of which is fastened to a foundation, and having a railroad-rail shoe or chair formed on its upper head, substantially as and for the purpose described.

4. The drum or chamber A, packed with sand and provided with a piston, and having the sand-supply holes *a b*, substantially as and for the purpose described.

206,877. PAPER-PULP WASHERS. Henry Mollingsworth, Danville, N. Y. Filed July 18, 1878.



Claim.—1. In a paper pulp washer, the combination of the inclined buckets B B, provided with the notches or depressions *d d* at the discharge end, the angular slats i^1 G, the central conical core H, revolving with the cylinder, the partitions I I, connecting the core with the buckets and forming separate water-ways, and the flaring collar K at the end of the cylinder, provided with the spiral or twisted wings *b b*, for producing an exhaust, the whole covered with wire-cloth E, resting upon the edges of the buckets and slats, as shown and described, and for the purpose specified.

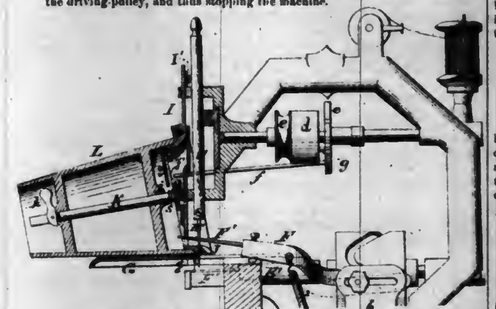
2. In a paper-pulp washer, the cylinder A A, provided with buckets B B, made inclined or deepest at the discharge end, and provided at the discharge end with notches or depressions *d d* on the inner edge, for the purpose of facilitating rapid discharge of water, as herein shown and described.

3. In a paper-pulp washer, the combination, with a central core or body, H, revolving with the cylinder and with the buckets B B, of the partitions I I, connecting said core with the inner edges of the buckets, and forming thereby separate and independent water-ways *a a a*, down which the water runs to the discharge-opening at the end of the cylinder, as shown and described, and for the purpose specified.

4. In a paper-pulp washer such as described, the combination, with the central core H, provided with a series of separate water-ways, *a a a*, of the flaring collar K at the end of the cylinder, provided with a series of spiral or twisted wings, *b b*, the diameter of the discharge-opening in said collar being greater than that of the end of the core, and the whole so arranged that the water passing down the inclined water-ways *a a* will be received into the discharge-opening and drawn or forced through by the spiral or twisted wings, as shown and described, and for the purpose specified.

206,878. MACHINES FOR CROCHETING FABRICS. H. A. Rose, Bridgeport, Conn. Filed Feb. 11, 1878.

Brief.—A conical work holder, free to revolve on its axis, is attached by a loose flange to the presser-foot. It is adjustable lengthwise by a lever and spring on the rod which forms its axis. A barbed needle, working alternately above and below the cloth-plate, forms the loops over a holder, from which they slip off as the work is moved along. A disk on the driving-shaft is engaged by a pin with a loose driving-pulley. A long wire projecting from the side of the disk engages with a knife-plate on the head of the machine. A radial rod on the inside of the work-holder strikes and releases the wire from the plate at each complete revolution of the holder, releasing the disk from the driving-pulley, and thus stopping the machine.



Claim.—1. The combination, with the looper-bar F, of the cams E E' and spring E^2, arranged below the plane of the cloth-plate G, substantially as described.

2. An endwise-adjustable work-holder, I, which is allowed to rotate freely, in combination with the pressure-bar I and a cloth-feeder, q, substantially as described.

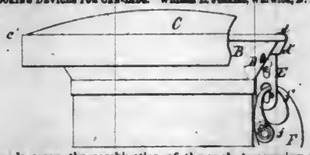
3. A tapered holder, I, adapted for tubular work, in combination with the bar I and a flanged guard, J, substantially as described.

4. A holder, I, for tubular work, in combination with the pressure-bar I, a flanged guard, J, serrated feeder q, and a cloth-plate, G, substantially as described.

5. In combination with a holder, I, arm *y*, and spring-rod *f*, the disk *c*, pin *g*, hub *d*, and pulley *e*, substantially as described.

6. In combination with a holder, I, which is longitudinally adjustable, and with the spring *s*, the lever *k* and shaft K', substantially as described.

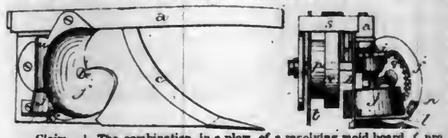
206,879. LOCKING DEVICES FOR CAN-LIDS. William S. Jenkins, Warwick, N. Y. Filed Apr. 24, 1878.



Claim.—In a can, the combination of the neck A, carrying the bowl B, with re-enforcing plate D and slot d^2, the cover C, with its flange *c*, carrying downwardly-turned hasp E, having apertures *e*, together with the locking device F, of thin flexible metal, and having the body *f*, arm *f'*, and eyelet f^2, arranged to operate as and for the purpose specified.

206,880. PLOWS. Felix Johasse, Paris, Tex. Filed July 6, 1878.

Brief.—The revolving mold-board has cogs upon its inner side, which gear with a pinion upon a vertical shaft carrying a horizontal land-side roller. The pressure of the latter against the land imparts motion to the mold-board. A frame upon the land-side of beam carries a toothed cutter upon a roller, which is also geared to and assists to revolve the mold-board.

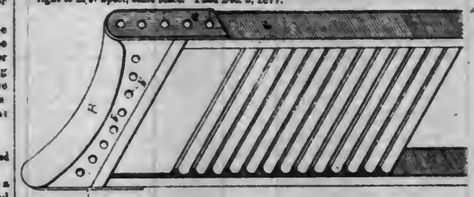


Claim.—1. The combination, in a plow, of a revolving mold-board, *f*, provided with cogs *g*, the vertical shaft *h*, having pinion *i*, the gear-wheel *n*, toothed cylinder *p*, and cutter-wheel *t*, substantially as described.

2. The combination of the roller *j*, vertical shaft *h*, having pinion *i*, and the revolving mold-board *f*, having the teeth *g* upon its inner side, substantially as set forth.

3. The combination of vertically-adjustable cutter *t*, toothed cylinder *p*, long pinion *o*, shaft *r*, and frame *s*, substantially as shown.

206,881. WASH-BOARDS. Bertha Kaufmann, Philadelphia, Pa., assignee of one-third of her right to L. J. Speer, same place. Filed Dec. 6, 1877.



Claim.—The cushion B, having straps or strips *a a* on its ends, for connecting it with an ordinary wash board, substantially as set forth.

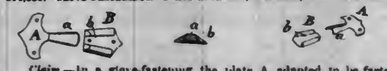
206,882. MACHINES FOR MAKING WOODEN PINS. A. M. Kendall, Davenport, Iowa. Filed Nov. 24, 1877.

Brief.—Perfectly-round pieces of wood for plugs for screw-holes are cut from square strips at right angles with the grain, and to any desired length, by means of a revolving cutting-shaft, a square hollow tube, in which the blank is placed to prevent splitting, (the end of the cutter-shaft being inserted so as to perform its work in said tube,) and suitable operating mechanism.



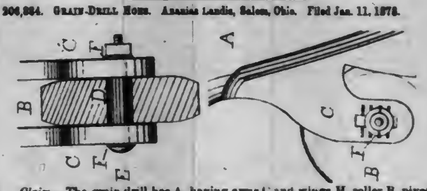
Claim.—The combination of a hole-cutting revolving shaft, made of the best cast-steel, sharpened at the cutting end to a thin smooth edge, mounted on iron bearings, and a square hollow tube, the cutting end of the revolving shaft to be inserted into the end of the square tube, as shown at D, Fig. 1, so that the cutting is done inside the square tube B, as herein set forth and described.

206,883. GLOVE-FASTENINGS. Alfred B. Kitson, Johnstown, N. Y. Filed Jan. 8, 1878.



Claim.—In a glove-fastening, the plate A, adapted to be fastened to a glove, and provided with a flaring or wedge-shaped stem, *a*, with beveled edges, in combination with plate B, having a groove or recess, *b*, conforming to the stem *a*, substantially as and for the purposes described.

206,884. GRAIN-DRILL HOES. Aranias Landis, Salem, Ohio. Filed Jan. 11, 1878.



Claim.—The grain-drill hoe A, having arms C and wings H, roller B, pivot D, washers F, and bolt E, constructed and arranged substantially as set forth.

206,885. MANUFACTURE OF ARTISTS' CANVAS. Wm. Lovin, New York, N. Y. Filed Jan. 26, 1878.

Claim.—1. The process herein described for the manufacture of painters' canvas, consisting in first coating the surface with size while the fabric is stretched on a strainer, then removing the sized sheet therefrom when dry, and coating the surface with the surfacing preparations while the sheet is placed flatwise on a table or other horizontal support, substantially as herein set forth.

2. The process described for the manufacture of painters' canvas, consisting in treating the painting-surface with a mixture of water-dissolved glue, whiting, and linseed-oil, substantially as herein set forth.

3. The process for the manufacture of painters' canvas, consisting in first coating the surface with size; secondly, with a mixture of glue, whiting, and linseed-oil; and, thirdly, with a mixture of white lead, whiting, and linseed-oil, substantially as set forth.

4. In the manufacture of painters' canvas, the employment of a surfacing-paint composed of white lead, whiting, linseed-oil, borate manganese, and spirits turpentine, in substantially the proportions named, as herein set forth.

206,886. PAINTERS' CANVAS. Wm. Lovin, New York, N. Y. Filed Mar. 20, 1878.

Claim.—An improved canvas for oil-paintings, formed of a glazed and colored fabric, having its glazed surface sized and painted, substantially as herein set forth.

206,887. TIME-LOCKS. S. Morris Lillie, Philadelphia, Pa. Filed May 25, 1878.

Brief.—By means of the movable lugs on the arms the lock is adapted to allow the safe to be opened during a few minutes at any stated period on any day, or may be set to open the lock for an indefinite period.

Claim.—1. In a time-lock, a plate or partition, P, dividing the case of the lock into two distinct compartments having no inclosed passages between them, one of which, containing the clogging or locking devices and the mechanism by which they are worked, is accessible after opening the door of the time-lock, and the other of which, containing the time-movements, is accessible only after opening the door and removing the plate P, substantially as and for the purpose specified.

2. In a time-lock, a wheel arranged to be revolved by the time-movements, having a number of radiating arms, each bearing a lug movable and adjustable in a radial and curved slot, which lug the revolution of the wheel causes to

engage and unlock the locking or clogging device of the lock at stated periods, determined by the time-movements and the position of the lug in the slot, substantially as and for the purpose specified.

3. In a time-lock, a clogging device consisting of the lever L, bearing the movable arm F and cleat *c*, and limited in its motion by the stop-pin *s*, in connection with the bolt B and wheel W, having either fixed or movable lugs, so that if the bolt B is not pressed back before a certain time to set the clogging device for locking, the wheel W will be stopped and will remain so, keeping the lock unlocked until such time as the bolt B is pressed back, and the dogging device thereby set for locking, substantially as and for the purpose specified.

4. In a time-lock, a clogging device consisting of the lever L, having upon it the movable arm F, bearing the cleat *c*, in connection with the wheel W, having either fixed or movable lugs, and with the bolt B, which, when pressed back into the lock, disengages the cleat *c* from the lug with which it may be in contact, so that it will lock instantaneously on the withdrawal of the bolt B, substantially as and for the purpose described.

5. In a time-lock, a clogging device consisting of the lever L and fixed cleat, in connection with a wheel, W, bearing lugs movable and adjustable in radial and curved slots, by which the clogging device is unlocked and allowed to lock again at stated times, determined by the time-movements and the positions of the lugs in the slots, substantially as and for the purpose specified.

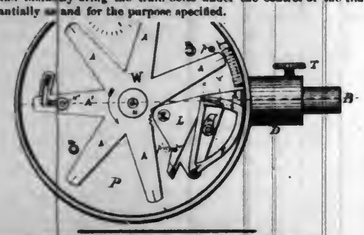
6. The thumb-screw T, in connection with the bolt B and clogging device, having the movable arm F and cleat *c*, substantially as and for the purpose specified.

7. In a time-lock, a clogging device arranged to be unlocked periodically by a mechanism operated by the time-movements, and so constructed and arranged, in connection with the said mechanism and the bolt of the time-lock, that, having been unlocked by the said mechanism, it cannot lock again until set to do so, this setting being accomplished by the passage of the time-lock bolt back into the case of the lock, which is effected by the unlocking of train-bolts or locking mechanism of the door on which the lock is, substantially as and for the purpose specified.

8. In a time-lock having its locking and unlocking mechanism so constructed that it may be set to remain locked over Sundays and holidays, an arrangement, substantially as herein described, of the said locking and unlocking mechanism, in virtue of which the lock will unlock and remain so during a few minutes, to allow for contingencies, each Sunday and each holiday over which the lock may have been set to remain locked, and in virtue of which it will lock again at the expiration of those few minutes, providing the locking mechanism of the door on which the lock is is not at that time unlocked.

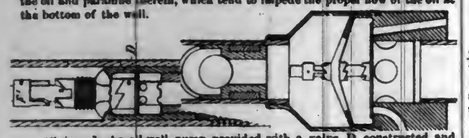
9. The connection between the bolt B of the time-lock and the train-bolts of a safe-door by means of the hinged bar or tongue *t*, whose movable end bears against the end of the bolt of the time-lock, and which, after the throwing back of the train-bolts and the opening of the safe-door, may be raised so as to no longer have such a bearing, whereby the lock-bolt, which was pressed into the lock by the throwing back of the train-bolts, may be allowed to spring out again, after which the said movable end of the tongue may be allowed to rest upon the upper surface of the lock-bolt, so that when the safe-door is closed and the train-bolts again thrown, the tongue will fall back into its original position, with its movable end bearing against the end of the time-lock bolt, and instantly bring the train-bolts under the control of the time-lock, substantially as and for the purpose specified.

206,887.



206,888. OIL-WELL PUMPS. Murdick Lytle, Oil City, Pa. Filed July 15, 1878.

Brief.—The major portion of the oil lifted is discharged into a receiver, and at intervals a portion of the oil, after being lifted, forcibly returned in a vertical, or in both a vertical and lateral, direction back into the well, agitating the oil and paraffine therein, which tend to impede the proper flow of the oil at the bottom of the well.



Claim.—1. An oil-well pump provided with a valve, D, constructed and operating substantially as described, whereby the major portion of the oil or other fluid is lifted and discharged at the top of the well, and at intervals a portion of the oil lifted is forcibly returned in a vertical direction, or both in a vertical and lateral direction, into the oil-well, and the horizontal or lateral discharges effected from time to time independently of the vertical ones, as and for the purposes set forth.

2. The combination of a spindle-valve, a hollow or vertically-perforated foot-valve, and the double-ratchet mechanism, whereby a portion of the oil which has been raised above the valve can be forcibly discharged down through the foot-valve into the well, substantially as and for the purpose described.

3. The combination of a lateral discharge passage or passages leading from the seat of the valve through the case, or to the periphery of the same, and a spindle-valve provided with the double-ratchet mechanism, whereby a portion of the lifted oil is returned forcibly down through the valve-case and discharged against the sides of the well, while another portion is discharged vertically through the valve-case into the well-bottom, substantially as and for the purposes set forth.

4. The combination of a valve having an opening or openings, and provided with the double-ratchet mechanism and a vertically and laterally perforated valve-case, whereby when the valve is not lifted, but fully down upon its seat, a communication through the valve with the lateral passage or passages is secured once (or oftener) during the revolution of the valve, substantially as described, and for the purpose set forth.

206,889. COMPOUNDS FOR MARKING CATTLE AND SHEEP. Thomas Madden, Philadelphia, Pa. Filed Nov. 30, 1877.

Claim.—A compound for marking cattle and sheep, composed of terra-alba, china-clay, lard, soap, with pure red oxide of iron, or other coloring ingredient, in or about the proportions specified.

206,890. HOT-AIR REGISTERS AND EVAPORATORS. William L. McDowell, Philadelphia, Pa. Filed Mar. 14, 1878.



Claim.—1. In a register, the combination, with the box A and door *a*, having wide slots and narrow divisions between the same, of the sliding plate *b*, having recess *d*, and sliding plate *b'*, having lug *c*, whereby, by the movement of one of the sliding plates, the other will be operated to close, or partly close, the slots, or both sliding plates may be brought under the divisions in the door to leave the slots entirely open, as described.

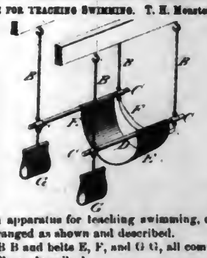
2. In a register, the combination, with the box A and door *a*, constructed as set forth, of the sliding plates *b b'*, respectively formed with a lug, *c*, and recess *d*, and an inclosed evaporator, substantially as described, and for the purpose set forth.

206,891. COMPOSITIONS FOR COATING ALKALI BALLS. A. Mendleson, Albany, N. Y. Filed June 10, 1878.

Brief.—The balls or blocks of caustic alkali are held by a forceps and dipped into the resinous composition in a molten state; then taken out and let cool and dry.

Claim.—The compound of Burgundy pitch, plaster-of-paris, and oil, for coating blocks of caustic alkali, the ingredients of the said compound being of the proportions herein set forth.

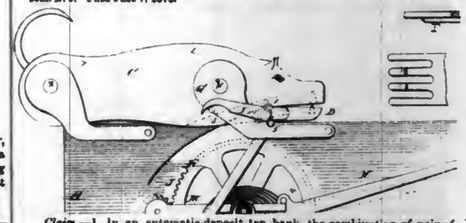
206,892. APPARATUS FOR TEACHING SWIMMING. T. H. Monstery, New York, N. Y. Filed May 21, 1878.



Claim.—1. An apparatus for teaching swimming, consisting of the belts E, F, and G G, arranged as shown and described.

2. The cords B B and belts E, F, and G G, all combined and arranged to operate substantially as described.

206,893. TOY BANKS. Enoch R. Morrison, New York, assignor of one-half his right to Stephen Curtis and Edwin H. Bewley, New York, N. Y., and one-half to J. E. Walter, Elizabeth, N. J. Filed June 7, 1878.



Claim.—1. In an automatic-deposit toy bank, the combination of pair of jaws, a clock-work mechanism, and a connecting link or pitman from the clock-work to the said jaws.

2. The holder F, consisting of tines or fingers, in combination with teeth applied to the seizing-jaws C D, and said teeth arranged for passing between the tines or fingers, substantially as described.

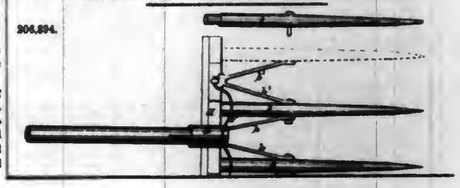
3. The downward passage for the coin from behind the teeth through the jaws or one of them.

4. The combination of the arm 1, stud 3, and a spring for opening and closing the body of the figure.

5. The combination of the arm M and connection L with the main jaw C or body of the animal.

6. The combination of the arm M and lever N.

206,894.



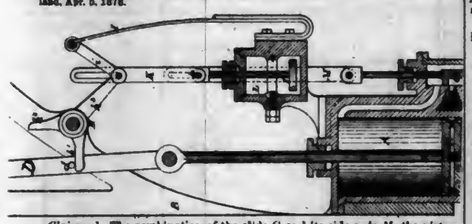
206,894. FORKS. Mathias Naumier, Port Byron, New York, assignor of one-half his right to Charles Clow, same place. Filed July 6, 1878.

Claim.—1. In combination with a wooden fork-head, the socket *s*, attached to the head *a*, and having extended from its forward end the diverging braces *b' b'*, attached at their ends to the tines *t t*, substantially as described and shown, and for the purpose set forth.

2. In combination with the wooden head *a* and tines *t t*, the V-shaped or crotch braces *b' b'*, substantially in the manner shown and specified.

3. In combination with the wooden head *a*, braces *b' b'*, and bow *v*, the eyebolt *e*, substantially as and for the purpose specified.

206,895. APPARATUS FOR WORKING PUMPS. R. C. Parsons, Connaught Place, and Edward Palliser, Charleville Road, Kensington, England. Filed June 11, 1878. Patented in England, Apr. 5, 1878.

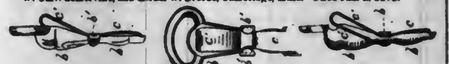


Claim.—1. The combination of the slide G and its side rods M, the piston *l*, working in the narrowed cylinder L, charged with liquid, and its connecting-rod K, with the tumbling-lever H, the stud *d* on connecting-rod D, and the spring I and its radius-rod *i*, constructed and operating substantially as herein described.

2. The combination of the cylinder L, narrowed in the middle, with the piston *l*, working in liquid as means of effecting retardation or pause in the movement of the said piston, with the piston E and its piston-rod *e* and their connections, substantially as shown.

3. The combination of the slide-valve G and piston *l* with the cylinder L, provided with the projection N and adjusting-screw *n* as a means of regulating the retardation or pause in the movement of the piston *l*, substantially as herein described.

206,896. CLASPS FOR SUPPORTING GARMENTS. Stephen Porter, Boston, assignor to Martin W. Carr, Somerville, and Hiram W. Brooks, Cambridge, Mass. Filed Jan. 2, 1878.

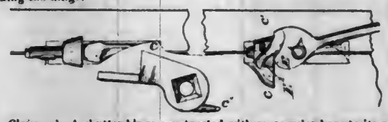


Claim.—1. The combination of the jaws *b c*, the latter turned inward from the top, forming the spring *c'*, the end of which rests against the inner portion of the jaw *b*, all substantially as and for the purpose stated.

2. The combination of the jaws *b* and *c*, the former provided with clamps or ears, which encircle or hold the latter, all substantially as and for the purpose set forth.

206,897. LOCK-HINGES. Harper M. Ralston, Fairview, W. Va. Filed Jan. 18, 1878.

Brief.—An angular base is formed on the base of the plutle, and a correspondingly-squared recess within and part way through the sleeve or knuckle of the hinge. There is also a cam-lever of peculiar construction, having a finger-piece, pivoted or journaled on the stationary strap, below the angular base, and coacting with a cam-shaped surface on the strap, for locking and unlocking the hinge.

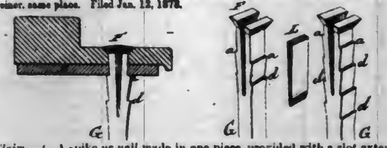


Claim.—1. A shutter-hinge constructed with an angular base to its pin or axis, and with an angular socket part way through its sleeve, adapted to fit down over the angular base of the pin or axis, substantially as and for the purpose set forth.

2. The combination, with a shutter-hinge having an angular base to its pin and angular socket in its sleeve, of a cam pivoted to the stationary strap of the hinge, and arranged and adapted for the purpose set forth.

3. The combination, with the shutter-hinge, having its swinging strap constructed with a cam-surface, *e*, of a cam or lever, E, having a finger, E', and pivoted or journaled on the stationary strap, substantially as and for the purpose set forth.

206,898. RAILROAD-SPIKES. Eugene J. Remillon, Philadelphia, Pa., assignor to John H. Schreiner, same place. Filed Jan. 12, 1878.



Claim.—1. A spike or nail made in one piece, provided with a slot extending longitudinally from the surface of the head through a portion of its length, and capable of being expanded by means of a wedge, as herein set forth.

2. The spike or nail G P, provided with slot *b*, shoulders *a a*, and with or without the auxiliary shoulders *d d*, in combination with the wedge I, substantially as and for the purposes set forth.

206,899. DOOR-ALARMS. Francis C. Renner, New Midway, Md. Filed July 18, 1878.



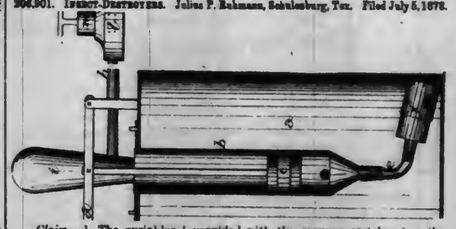
Claim.—1. The yoke K, shank screw *k'*, shank D, parallel links G G', bow H, provided with eyes *a a b b*, and pivoted bar *f*, in combination with the lever *i*, provided with spring *k* and pin *l*, and hammer-lever *n*, provided with head *p* and spring *r*, and gong Q, all constructed, arranged, and operated as described.

2. The sliding rod P, provided with a bent end, *s*, and U-shaped bend *t'*, in combination with the hammer-lever *n* and pin *q*, as described.

206,900. CORSETS. John K. Ross, Newark, N. J. Filed June 21, 1878.

Claim.—The laced corset-joint constructed with the eyelet-strip *b* on the edge of the part B, and the eyelet-strip *a*, set back from the edge of the part A, as and for the purpose set forth, the edge *i* being stiffened by ribs *c'*, in the manner described.

206,901. INSECT-DESTROYERS. Julius P. Rahmann, Schulenburg, Tex. Filed July 5, 1878.



Claim.—1. The sprinkler *l*, provided with the cover *m* and brush *n*, the brush being vertically adjustable in the sprinkler, substantially as shown.

2. The combination of the reservoir *a*, pump *b c d*, connection *e*, strainer *f*, pipe *h*, and nozzle *l*, having an adjustable brush, *n*, substantially as described.

206,902. SPIKE-EXTRACTORS. James F. Scribner, Philadelphia, Pa., assignor of one-third his right to Daniel R. Kelly, same place. Filed July 8, 1878.

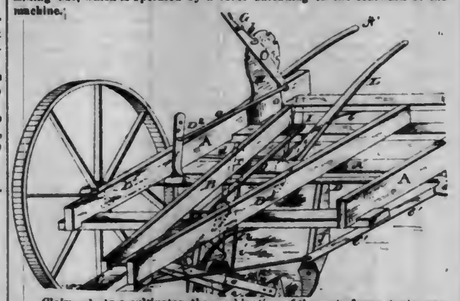
Brief.—Spikes can be drawn in a vertical or nearly vertical position by means of a claw-bar pivoted it a recess in an egg-shaped metal block, the under surface of which is armed with projecting pins, which serve as pivots.



Claim.—A spike-extractor in which a claw-bar, A, is combined with a pivoted block, B, having a curved under surface armed with a projecting pin or pins, *c*, as set forth.

206,903. CULTIVATORS. Spencer R. Stanton, Oxford, Mich. Filed Nov. 9, 1877.

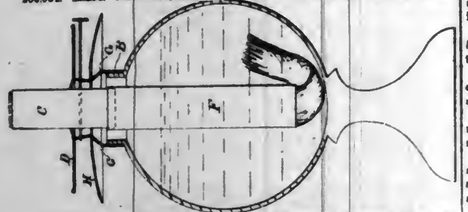
Brief.—The machine is mounted upon two wheels by means of a double-crank axle-tree, by the partial rotation of which the cultivator-teeth are elevated and depressed. A part of the cultivators are mounted upon a transversely-sliding bar, which is operated by a lever extending to the rearward of the machine.



Claim.—1. In a cultivator, the combination of the main frame A, the movable cross-bar K, held in guides attached to the main frame, the plow-feet or standards J, rigidly attached to the cross-bar, and the lever L, attached to the bar K and pivoted on the main frame, whereby the bar K, with the plow-standards, can be moved laterally in either direction across the frame, for the purposes herein set forth.

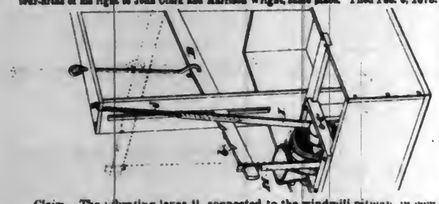
2. The combination of the frame A, crank-axle D, with arm D', rod *a*, and lever G, the laterally-sliding bar K, with plow-feet J J, and lever L, all constructed and arranged to operate substantially as and for the purposes herein set forth.

206,904. LAMPS. John A. Stephens and Jules Lamoreux, Kanomie, La. Filed July 1, 1878.



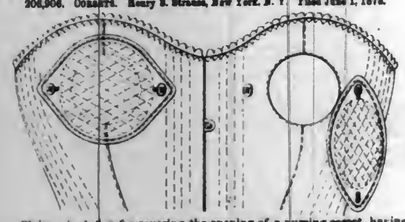
Claim.—The work-tube F C, extending to nearly the bottom of the oil-chamber, and the cap B, provided with the air-vents f G, in combination with the flange H, the whole constructed and operating substantially as described.

206,905. GRINDING-MILL ATTACHMENTS. Charles V. Stevens, Somonauk, Ill., assignor of four-fifths of his right to John Clark and Harrison Wright, same place. Filed Feb. 6, 1878.



Claim.—The vibrating lever H, connected to the windmill pitman, in combination with the loose clutch-pulley E, driving-band H, retracting-band I, ratchet-wheel G, and grinding-disks D, all arranged and operating substantially as described.

206,906. CORSETS. Henry S. Strauss, New York, N. Y. Filed June 1, 1878.

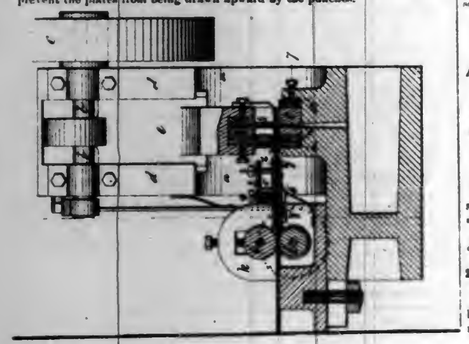


Claim.—1. A flap for covering the opening of a nursing-corset, having its inner surface covered with oiled silk or other smooth water-proof material, attached to and detachable from the corset, substantially as described and shown, and for the purposes set forth.

2. A nursing-corset having the parts covering the breasts made without bones or stiffening-ribs, as shown, provided with a round opening in that part of the corset, in combination with the flap for covering the opening, having its inner surface covered with oiled silk or other smooth water-proof material, attached to and detachable from the corset, substantially as described and shown, and for the purposes set forth.

206,907. HORSESHOE-NAIL MACHINES. James D. Sumner, Lexington, assignor to Joseph M. Laughlin, Boston, Mass. Filed June 14, 1877. Patented in England, Aug. 21, 1877.

Brief.—Intermittingly-revolving feed-rollers advance the nail-plate through an oscillatory tunnel to the stamping, smoothing, and punching dies. Indentures to form the points and bevels of the nails are made in the under side of the plate by the stamping-dies, and the burrs or projecting edges around said indentures are hammered down by the smoothing-dies. A spring automatically elevates the feed-funnel and plate above the projections of the indenting-dies, so that the said plate may be freely fed to the punching-dies. Lips on the adjustable guide-pieces at the sides of the punching-dies act as strippers to prevent the plates from being drawn upward by the punches.



Claim.—1. In a nail-machine, the combination, with a feeding mechanism and a punching mechanism, as herein set forth, of an oscillating tunnel, *y r*, interposed between them, substantially as and for the purpose set forth.

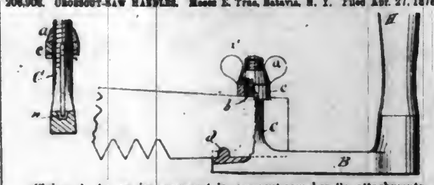
2. In a nail-machine, the combination of pointing-dies *m' m'*, stamper *l*, nail-dies *t' t'*, and punches *f f*, with a smoothing-die or dies, *s*, located between them, substantially as and for the purpose set forth.

3. In combination with the pointing-dies *m' m'*, stamper *l*, and smoothing-die or dies *s*, the adjustable guide-pieces *q q*, with their regulating-screws *p p s s*, substantially as and for the purpose set forth.

4. In combination with the movable punch or punches *f*, the stationary nail-die *t*, guide-pieces *u u*, with their lips or projections *r r*, and holding and regulating screws *w x w x*, as and for the purpose set forth and described.

5. In combination, the movable stamper *l* and dies *m s*, with the intermittent feeding mechanism and the oscillating tunnel *y z*, with its adjusting-screws 3 4 4, movable cover *z*, and springs 5 5 6, as herein set forth and described.

206,908. CROSSCUT-SAW HANDLES. Moses E. True, Batavia, N. Y. Filed Apr. 27, 1878.

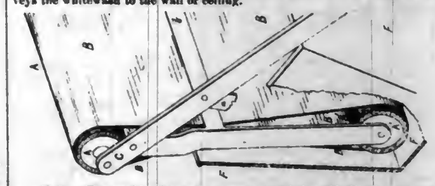


Claim.—1. As an improvement in crosscut-saw handle attachments, a single-bar metallic extension-shank, B, its upper side having a groove, *a*, its outer end being socketed to receive the lower end of the handle H, and having formed upon its inner end a slotted coupling bolt, C, projecting upward, and threaded externally at the upper end to receive the clamping-nut *a*, and provided with a locking-lug, *d*, the parts all being arranged, relatively, as shown and described, for the purposes set forth.

2. In combination with the extension-shank, clamping-bolt C, and nut *a*, the collar *c*, having a series of notches of different lengths, whereby the handle-clasp is adapted to saw-blades of different widths, as set forth.

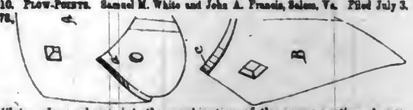
206,909. WHITEWASHING-MACHINES. J. P. Wesser, St. Paul, Minn. Filed Feb. 16, 1878.

Brief.—A self-adjusting reservoir for whitewash is hung upon a frame attached to a suitable handle. An endless belt passing over two rollers, (likewise adjustable,) one of which is at or near the bottom of the receiver, conveys the whitewash to the wall or ceiling.



Claim.—The combination and arrangement of the self-adjusting reservoir F, drums A A', and endless belt B, arranged and operating substantially as hereinbefore specified.

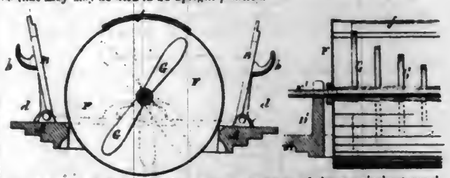
206,910. PLOW-POINTS. Samuel M. White and John A. Francis, Salem, Va. Filed July 3, 1878.



Claim.—In a plow-point, the combination of the upper portion, A, provided with the arrow-shaped undercut recess *a*, with the lower portion, B, having the arrow-shaped bevel *e* and the bolt C, constructed and operating substantially as described.

206,911. COFFEE-ROASTERS. John B. Wiggerman and William H. Wiggerman, Millhousen, Ind. Filed Nov. 30, 1877.

Brief.—The folding doors of the open stove-top are provided with stops, so that they may be held in an upright position.



Claim.—1. A coffee or other roaster consisting of the annularly-stepped stove-top A, doors B *b d*, shaft F E', stirrers G, and receptacle F, having a sliding transparent door, *f*, substantially as shown and described.

2. The open stove-top A, provided with the doors B B, having the stops *d d*, substantially as and for the purpose set forth.

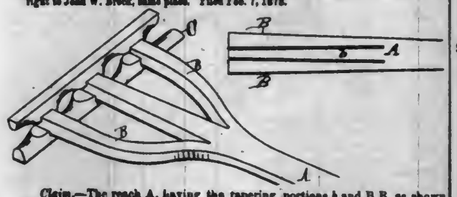
206,912. DRIVING-REINS FOR TWO HORSES. Gilbert R. Woolsey, Bernal, Ill. Filed Feb. 20, 1878.

Claim.—The combination, with the common reins *a a*, for driving two horses abreast, of the auxiliary reins *c c*, adjustably connected with the cross-reins *b b*, substantially as and for the purpose specified.

206,912.

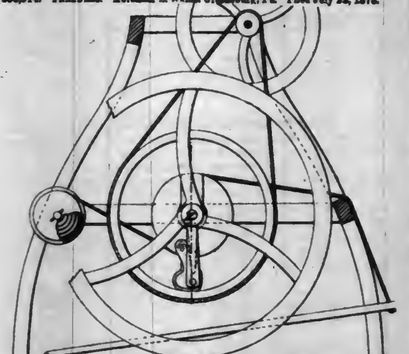


206,913. WAGON-HOUNDS. John Q. Adams, Royal Oak, Mich., assignor of one-fourth his right to John W. Brock, same place. Filed Feb. 7, 1878.



Claim.—The reach A, having the tapering portions *b* and B B, as shown and described, in combination with the pieces E and C, notched as shown, for the purposes specified.

206,914. TREADLES. Abraham L. Akins, Greensburg, Pa. Filed July 26, 1878.



Claim.—The combination, in a treadle-motion, of a rotary reciprocating double-cord pulley, operated by a treadle and spiral spring, and having a fixed arm with an oscillating arm carrying a pivoted eccentric cam or jaw, and with a continuously-rotating transmitting-wheel and fly-wheel, substantially as and for the purpose set forth.

206,915. BAG-HOLDERS. William B. Allen, Orleans, N. Y. Filed Oct. 3, 1877.



Claim.—In a bag-holder, the combination, with the hopper provided with the swinging section E, which forms part of its end frame, of the inverted vertical studs D, which are fastened to the bottom of its sides and the bottom of said swinging section, substantially as set forth.

206,916. FIRE-ESCAPES. Charles H. Ames, Union City, Pa. Filed July 20, 1878.

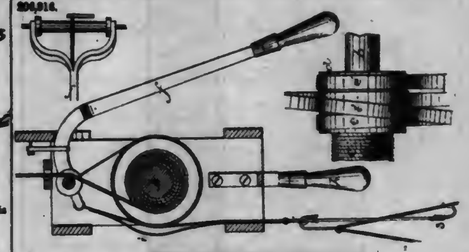
Brief.—The rope is wound upon a windlass having enlarged drums at each end, upon which are two sets of brake-straps, one set having one end attached to arm of the operating-lever, and thence passing around the under side of the drums, and its other end connected to the rod upon which the forked lever is pivoted, while the other set of brake-straps have one of their ends connected to the above-named rod, then pass a complete turn about the drums, and have at their other ends rings, to which is secured the harness. When employed to lower one's self, or from which to suspend the device when using it to lower others, the ends of the brake-strap just above the rings are united to the first-named ends of the first-described set of straps, whereby the friction can be transferred from one set to the other by the forked lever, the weight of the descending party always locking the windlass, through the brake-straps carrying the rings, until relieved by the forked lever.

Claim.—1. The combination of the windlass having the drums on its ends, an operating-lever, and two sets of brakes that are connected together by bands *i i*, substantially as shown.

2. The combination of the two sets of brakes, connected together by the bands *i*, whereby either set may be brought into action, substantially as described.

3. The combination of the rope, windlass, two sets of brakes, lever *f*, handle *h*, and hook *s*, substantially as described and set forth.

206,916.

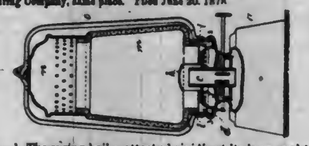


206,917. LANTERNS. Lewis J. Atwood, Waterbury, Conn., assignor to the Plume & Atwood Manufacturing Company, same place. Filed June 20, 1878.



Claim.—The swinging spring-strap m, hinged at its lower end to the guard of the lantern, in combination with the glass *c*, the removable cap *d*, the fixed guard *f h*, and the swinging bail or ring *l*, that is hinged directly to the guard and independent of the spring-strap m, substantially as set forth.

206,918. LANTERNS. Lewis J. Atwood, Waterbury, Conn., assignor to the Plume & Atwood Manufacturing Company, same place. Filed June 20, 1878.

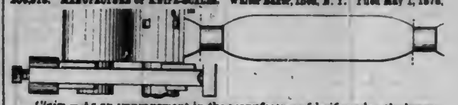


Claim.—1. The spring-bail *o*, attached rigidly at its lower end to the ring *l*, upon which the glass *m* rests, in combination with said glass *m* and cap *n*, in which cap is a recess for the spring-bail *o*, as and for the purposes set forth.

2. The recessed flange 3 around the edge of the air-distributer, notched, in combination with the ring *l* and the projecting ribs thereon, substantially as set forth.

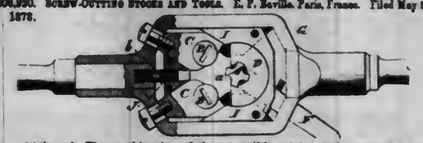
3. In a lantern-burner, the combination of the air-distributer *d*, the removable supplemental air-distributer *f*, deflecting-plates *h*, ring *l*, and glass *m*, substantially as set forth.

206,919. MANUFACTURE OF KNIFE-SCALES. Walter Baker, Ilion, N. Y. Filed May 1, 1878.



Claim.—As an improvement in the manufacture of knife-scales, the herein-described method of making the same by rolling them from bars or rods of cold metal from which the scale has been previously removed, with rolls, one of which is provided with suitably-shaped dies, for forming the bolstere at the same operation, substantially as described and shown.

206,920. SCREW-CUTTING STOCKS AND TOOLS. E. F. Beville, Paris, France. Filed May 8, 1878.

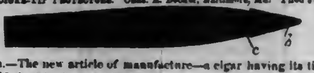


Claim.—1. The combination of the reversible cutting-tool A with the supporting-guides B B, both having on their surfaces reversed threads of corresponding pitch, substantially as set forth.

2. In combination with the cutter A and guides B B, the parts D, I, and C, and screw J, by means of which the cutting and supporting parts are held and simultaneously adjusted, substantially as set forth.

3. In combination with the screw-cutting tool A and holder D, the lever E, or its equivalent, for reversing the position of the cutter, substantially as set forth.

206,921. CIGAR-TIP PROTECTORS. Chas. R. Beckw, Baltimore, Md. Filed July 17, 1878.

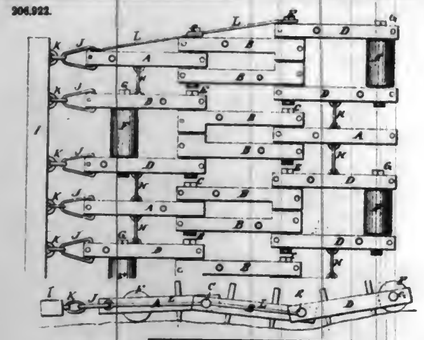


Claim.—The new article of manufacture—a cigar having its tip or mouth end provided with the combined protecting-cap *b* and piercing-pin *c*, as set forth.

206,922. HARROWS. Samuel Beckner, Argos, Ind. Filed July 6, 1878.

Claim.—The combination, in a harrow, of the long bar I and the connections J K L with the pivoted bars A B D, connected by rollers F and rods H, as shown and described.

206,922.



206,923. BUNGS. William Sender, New York, N. Y. Filed July 13, 1878.

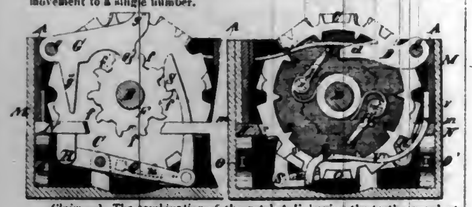


Claim.—1. A bung for casks having a central perforation extending entirely through the bung, and a plug with hermetically-sealing bottom facing or covering of pitch or other resinous or bituminous material, substantially as and for the purpose specified.

2. A bung for casks having a central hole extending entirely through the same, and a hermetically-sealing plug of pitch or other resinous or bituminous material, substantially as specified.

206,924. NUMBERING-MACHINES. Thomas S. Bowman, St. Louis, Mo. Filed May 15, 1877.

Brief.—Improvement on Patent No. 166,681. A pawl, engaging the unit-wheel ratchet, prints a period after the unit and lifts the paper from the wheels, preventing their movement till the paper is free. Spring detents, acting on teeth projecting inwardly from the rims of the wheels, limit each movement to a single number.



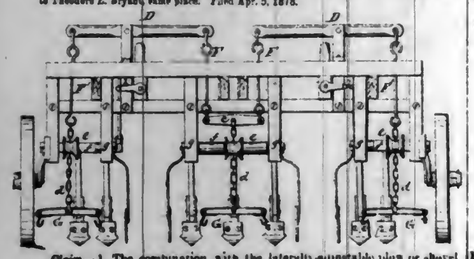
Claim.—1. The combination of the ratchet F, having the teeth curved at *f f* and the recesses *f' f'*, and the pawl G, having the projection *g'* and extension *g''*, substantially as described.

2. In a numbering-machine, a pawl, G, having an extension, *g''*, that moves outwardly from the periphery of the number-wheel, causing a separation of the paper and the wheel in advance of the rotation of the latter after the impression is printed, substantially as described.

3. The combination of the cases A and M, the spring-arm V, having the projection *v'*, and the wheel C, having the stops *c c c*, substantially as described.

4. The combination of the cases A and M, number-wheel C C', the springs O O', and the spring V, substantially as described.

206,925. CULTIVATORS. Carlos D. Bradley, Macedonia, Iowa, assignor of one-half his right to Theodore E. Bryant, same place. Filed Apr. 5, 1878.

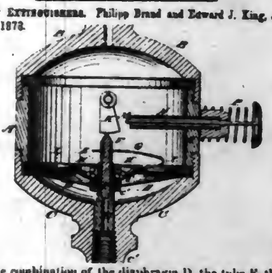


Claim.—1. The combination, with the laterally-adjustable plow or shovel beam O, of the shaft P, provided with arm Q', having a slotted plate or lateral extension, R, and threaded and notched rod *r*, connecting by swivel-joint the said beam to the lateral slotted extension R of the shaft-arm Q', substantially as shown and described, for the purpose set forth.

2. The combination, with the laterally and vertically adjustable handle I, of the extensible yoke consisting of the rods *k k* and the collars *l l*, provided with adjusting or holding screws *m m*, and correspondingly adjustable or movable shovel-beams K K, to which the yoke *k k* is swiveled, substantially as shown and described, for the purpose specified.

3. The combination, with the shovel-beam-securing castings *f f*, bifurcated at their forward ends, and having their fastening-bolts provided with rollers on pulleys *e e*, of the draft-equalizer, consisting of the levers H D, rods F F and F' F', the rods F F connected together by a cross-tree, *c*, chains *d d*, and whiffletrees G G, substantially as shown and described, for the purpose specified.

206,926. GAS-LIGHT EXTINGUISHERS. Philipp Brand and Edward J. King, Jacksonville, Ill. Filed July 15, 1878.



Claim.—1. The combination of the diaphragm D, the tube E, the valve F, the spring G, and the swinging locking-piece K with each other and with the case A B C, substantially as herein shown and described.

2. The combination of the pin M and the spring P with the case A B C for pushing back the locking-piece K to admit gas to the burner, substantially as herein shown and described.

3. The combination of the weight-cup H with the tube E, the valve F, and the diaphragm D, substantially as herein shown and described.

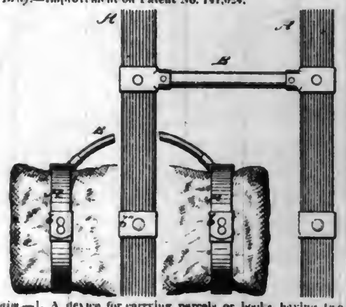
206,927. BLASTING-WEDGES. Otto F. Brockhausen, Reno, Nev. Filed June 8, 1878.



Claim.—The wedge A, having the recess or chamber B, the fuse-hole D, and the cover C, to fit the said recess, to adapt it to be charged with explosives for blasting purposes, substantially as set forth.

206,928. SHAWL-STRAPS. William T. Butler, Boston, Mass. Filed Jan. 26, 1878.

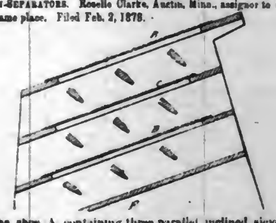
Brief.—Improvement on Patent No. 141,024.



Claim.—1. A device for carrying parcels or books, having two or more elastic rubber straps provided with fastening devices, substantially as described.

2. A device for carrying parcels or books, consisting of two or more elastic straps, A A, handle B, and the fastening devices, substantially as described.

206,929. GRAIN-SEPARATORS. Roselle Clarke, Austin, Minn., assignor to himself and John O. Bardsley, same place. Filed Feb. 2, 1878.



Claim.—The shoe A, containing three parallel inclined sieves and board, B C D E, and the intermediate inclined vanes, G, arranged as shown and described.

206,930. BAKING-POWDERS. William P. Clotworthy, Baltimore, Md. Filed July 19, 1878.

Brief.—Calcined ammoniated alum, one part; soda bicarbonate, or other alkaline carbonate, one part; powdered corn-starch, two parts. This compound will not act until the dough is placed in a heated oven, dampness not affecting it. Disclaims the use of crude alum or normal sulphate of alumina and alkaline carbonates.

Claim.—As a baking-powder, a compound composed of exsiccated ammonia, alum, bicarbonate of soda, and corn-starch, substantially in the proportions and for the purposes specified.

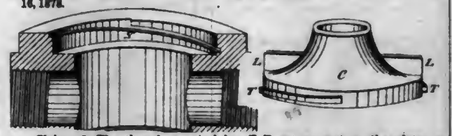
206,931. BUTTONS. Frank E. Comey, Pawtucket, R. I., assignor of one-half his right to John A. Rupert. Filed July 23, 1878.



Claim.—1. In a button, the flat post *c*, divided into four parts, the two outer ones of which are rigid, and the two inner ones elastic and provided with notches, substantially as shown.

2. The combination of the two parts *a b*, the part *a* being provided with the post *c*, that is divided into four parts, the two outer ones being rigid, and the inner ones elastic and provided with notches, and the part *b* provided with the socket *h*, having the pin *o* passing through it, substantially as described.

206,932. CASING-HEADS FOR OIL-WELLS. Francis A. Conkle, Philadelphia, Pa. Filed May 16, 1878.



Claim.—1. The thread or spiral leg T T, cut or cast on the plates or covers, fitted to the corresponding thread or seat S S in the casing-head.

2. The handles or projections L L, for tightening or loosening the plates.

3. The general combination and arrangement of parts securing the oil-saver O, sand-pump cap C, and tubing-plate P to the casing-head.

206,933. SIGNAL-LANTERNS. Saml. Cozzo, Toronto, Ontario, Canada. Filed Apr. 4, 1877.

Brief.—The construction specified prevents snow from lodging in front of the lens and obstructing the light.

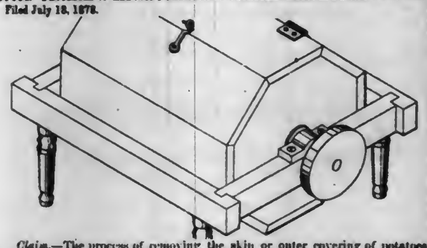


Claim.—1. A signal-lamp consisting of the body A, provided with two or more independent lights or glasses, *a*, located above the lower part of said body, in combination with the vertical blinds C, arranged between and upon each side of the lights or glasses, and extending the entire length, or nearly the entire length, of the body A, substantially as and for the purpose set forth.

2. The body A of a signal-lamp, provided with two or more lights or glasses, *a*, in combination with the hood or roof B, plate D, and vertical blinds C, secured to said hood or roof and plate, substantially as and for the purpose specified.

3. The body A, with lights or glasses *a*, inclined or slanting hood or roof B, vertical blinds C, and plate D, said plate being formed narrower than the blinds and slightly inclined downward from the body, substantially as and for the purposes set forth.

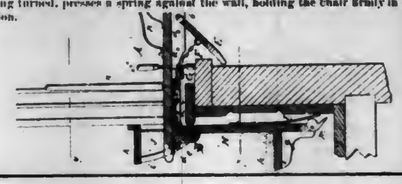
206,934. PROCESSES OF REMOVING THE SKIN OR POTATOES. Abbot R. Davis, Boston, Mass. Filed July 18, 1878.



Claim.—The process of removing the skin or outer covering of potatoes by agitating them in a suitable receptacle with ground quartz or other suitable gritty substance having sharp angular faces, substantially as set forth.

206,935. WINDOW-CLEANING STEP-CHAIRS. Anna Dormitzer, New York, N. Y. Filed May 27, 1878.

Brief.—The chair has an auxiliary step pivoted to two arms at either end, so that it can be swung upward to enable the operator to reach the upper part of the window. On the lower edge of the chair is an eccentric-cam, which, being turned, presses a spring against the wall, holding the chair firmly in position.

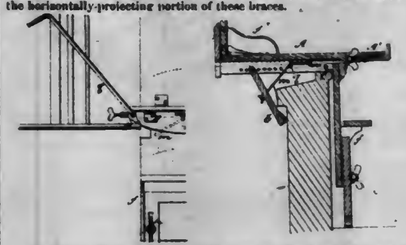


Claim.—1. The combination of the auxiliary step *h*, straps *i*, and legs *j* with the support H and platform A, as herein shown and described.

2. The combination of the springs *l* and eccentrics *m* with the support H, as herein shown and described.

206,936. WINDOW-CLEANING STEP-CHAIRS. Anna Dormitzer, New York, N. Y. Filed Apr. 16, 1878.

Brief.—A brace is hinged at its upper end to the two parallel cross-beams of the chair, and the lower end is drawn against the building below the window by chains, which are tightened by a screw operated by a thumb-nut on the inner edge of the chair. Carved wires on the sides of the chair engage with staples on the back, holding and bracing it. Right-angled braces press against the inner side of the window, being secured and adjusted by thumb-screws in the side edges of the chair. A folding step may be supported by the horizontally-projecting portion of these braces.



Claim.—1. In a window-cleaning chair, the combination of the hooked screw *n*, chains *m*, and brace *b*, substantially as shown and described.

2. As a new article of manufacture, the herein-described window-chair, provided with curved wires *f' f'*, attached to seat, to serve as braces to the back and a support to vessels used in cleaning windows.

3. The right-angled braces *q*, in combination with the platform A, having grooved sides, and the metal covers *o*, having thumb-screws *p*, substantially as herein shown and described.

4. The combination, in a window-cleaning chair, of the folding step A' with the platform A, substantially as shown and described.

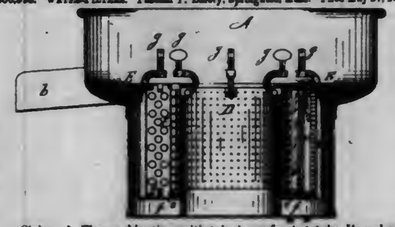
206,937. STEAM-COCKS. John Dowling, Plymouth, Pa., assignor of one-half his right to James Lee, Jr., same place. Filed July 12, 1878.



Claim.—1. A steam-cock having a wooden valve arranged with the grain of the wood vertical or at right angles with the plane of the valve-seat, as set forth.

2. In a steam-cock, a thimble, G, constructed with a stem, H, having a groove, J, substantially as described, in combination with the wooden plug K, arranged with its grain extending vertically up into the thimble, as set forth.

206,938. WATER-FILTERS. Paschal P. Emery, Springfield, Mass. Filed May 27, 1878.



Claim.—1. The combination, with tub A, perforated tube D, and plate *a*, of the removable sponge-case, Fig. 3, substantially as and for the purpose set forth.

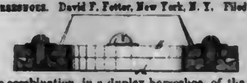
2. The sponge-case, Fig 3, constructed with the removable perforated band K, substantially as and for the purpose set forth.

3. The combination, in the sponge-case, Fig. 3, of wire-cloth tube F, perforated divisions *e*, and the flexible perforated removable band K, substantially as and for the purpose set forth.

4. The combination of the case E, perforated tube D, hinged screw-clamps *g*, and plate *a*, substantially as and for the purpose set forth.

5. In a water-filter, the sponge-case, Fig. 3, constructed and arranged substantially as set forth, whereby the filtering medium packed in sponge-case, Fig. 3, may be, with said sponge-case, inserted in and removed bodily from case or tub A, substantially as set forth.

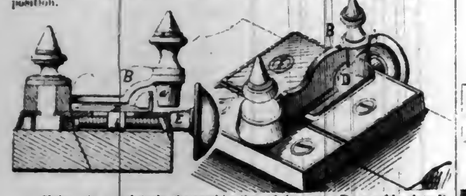
206,939. HORSESHOES. David F. Potter, New York, N. Y. Filed Feb. 4, 1878.



Claim.—The combination, in a duplex horseshoe, of the two plates A and B, the hollow female screw-studs *a' a'*, and the headed male screws *c' c'*, all constructed to operate as and for the purpose described.

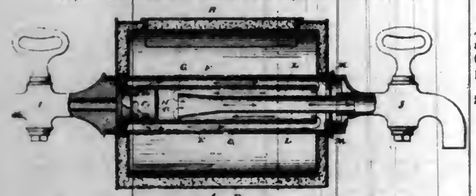
206,940. FASTENERS FOR THE MEETING-RAILS OF SASHES. Otis T. Fogelstrand and Wm. E. Sparks, New Britain, Conn. Filed Dec. 29, 1877.

Brief.—A movable plate, recessed on its front edge, has a downward projecting lug extending through a slot in the front plate, and through this lug a threaded screw rotates, forcing the movable plate either forward or backward, and holding the same when the sweep is brought to the front in either position.



Claim.—In a sash-lock, the combination of the sweep B, movable plate D, and suitable mechanical means for operating said plate both forward and backward, and holding the same in either position, substantially as described, and for the purpose specified.

206,941. BEER-COOLERS. William B. Frantz, Joplin, Mo. Filed Apr. 9, 1878.

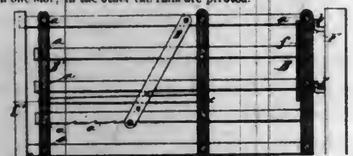


Claim.—1. The combination of the tube G, having one end provided with a diaphragm, H, and perforated, as shown, with the tubes L E and cylinder A, substantially as described.

2. The combination of the cylinder A, provided with a door, B, tube E, shoulder M, tube G, having one end provided with a strainer or filter, substantially as described, with the stop-cock I, spigot J, and tube L, as shown and described.

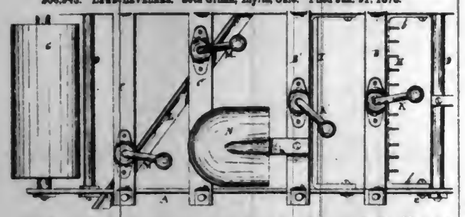
206,942. FARM-GATES. Niland W. Goodwin, Lenia, assignor of one-half his right to William H. Hood, Ronald, Mich. Filed Dec. 15, 1877.

Brief.—The rear post is double-slotted. The eyes of the hinges project through one slot; in the other the rails are pivoted.



Claim.—The bar G, arranged upon the inner face of the slotted and perforated post H, in combination with the hinges *b b'* and the pin F, for the purpose of permitting an independent adjustment of the inner end of the gate, substantially as shown and described.

206,943. LAND-LEVELERS. Seth Griffin, Elyria, Ohio. Filed Jan. 21, 1878.



Claim.—1. The rake H and scraper I, pivoted or hinged to the sides A of the machine, and attached to the beams B and B', respectively, by nuts J and adjusting-screws K and K', substantially as described.

2. The combination of the roller G, diagonal scraper I, transverse scraper I, rake H, wheels D', sides or runners A, and beams, constructed and arranged substantially as herein set forth, and for the purposes specified.

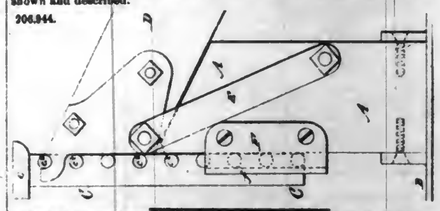
3. An improvement in land levelers, consisting of the diagonal scraper I, attached to and suspended from the beams C C', between the sides, by means of adjusting-screws M, respectively depending from each beam, in combination with one or more rollers preceding and following the said scraper, constructed and arranged substantially as and for the purpose set forth.

206,944. WAGON-JACKS. Henry Hiestand, Jr., Vincent, Pa. Filed July 9, 1878.

Brief.—The upper end of the main standard is beveled at such an angle that the hand-lever will rest thereon when the sliding bar is locked to sustain the raised load.

Claim.—The combination, with the standard A, having its upper end beveled, of the sliding bar C, placed on the front side of said standard and provided with pins *c'*, the flanged holding-plates F *f'*, embracing two or more of said pins, the lever D, having hooks *d'*, and the pivoted fulcrum-bar E, all as shown and described.

206,944.

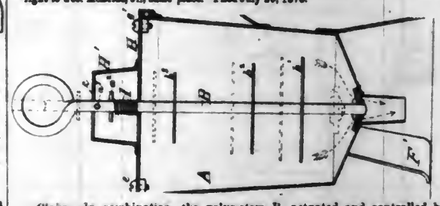


206,945. WHIP-SOCKETS. Frank Higgins, Wellsville, N. Y. Filed June 24, 1878.



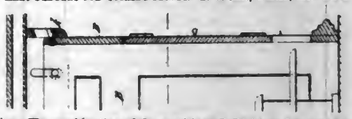
Claim.—The improved whip-socket herein described, consisting of the ring A, having the downwardly-projecting and inwardly-curved side pieces B B, and the spring D, provided with the plate *d*, said spring extending downwardly to the longitudinal center of the side pieces B B, the whole being cast in one piece, substantially as and for the purpose set forth.

206,946. MEASURING-FUNNELS. Dwight Hitchcock, Syracuse, N. Y., assignor of one-half his right to Geo. McBride, Jr., same place. Filed July 26, 1878.



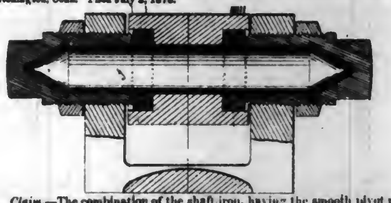
Claim.—In combination, the valve-stem B, actuated and controlled by spring I, pins *a' a²*, guides H H', the measuring-disks *b'*, *b²*, and *b³*, and the cylindrical measuring-vessel A, having a funnel, *c*, as herein set forth and specified.

206,947. HEAT-FENDERS FOR COOKING-STOVES. B. S. Hite, Fulton, Mo. Filed June 1, 1878.



Claim.—The combination of the partitions B B', hinged together and provided with doors, the grooved strips *c*, and the sliding pieces *b*, as and for the purpose specified.

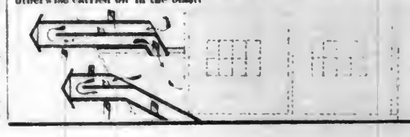
206,948. THILL-COUPLINGS. Charles H. Holdredge, Westerly, R. I., and Charles H. Gowan, Stonington, Conn. Filed July 2, 1878.



Claim.—The combination of the shaft iron, having the smooth pivot-pin or bolt *f* secured thereto, with the adjustable screw-threaded thimbles having sockets for the pivot-pin, and the clip having screw-threaded side ears, as and for the purpose set forth.

206,949. VENTILATORS FOR BLOW AND DUST ROOMS. John B. Holmes, Graysville, Ill., assignor to himself and Ross McC. Lanterman, same place. Filed Mar. 22, 1878.

Brief.—Arrangement, in connection with the blow and dust rooms of a mill, of a close cupola having a divider and downwardly directed guide-spout, for the purposes of saving room, preventing the dust from falling upon the roof and causing it to decay, and of grading and saving the valuable particles otherwise carried off in the blast.



Claim.—The combination, with two of more blow and dust rooms in a flour mill, of one or more cupolas, B, extending above the roof, tightly closed at top and sides, and provided with partitions C, extending nearly to the top, one part of the double spout thus formed being connected with blow-room, and the other with a spout, D, leading downward to the dust-room, as and for the purpose specified.

206,950. PEN-HOLDERS. Thomas B. Jeffery, Chicago, Ill. Filed Oct. 29, 1877.



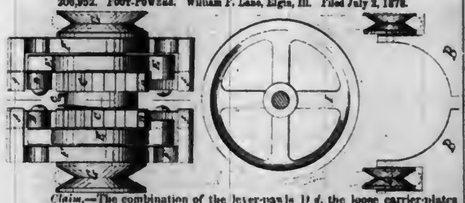
Claim.—As a new article of manufacture, a pen holder constructed with a three-sided grasping-surface terminating in spring-clamps *d d' d²*, as shown, a central plug or core extending as far as the ends of the latter, and a pen receiving socket between the clamp and core, substantially as set forth.

206,951. PLIERS FOR WIRING BOTTLES. Barron P. Kincaid, Bridgeton, N. J. Filed June 19, 1878.



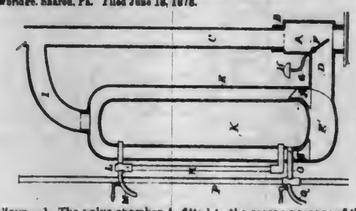
Claim.—The improved pliers herein described, having blades B B, provided with perforations *c c* and grooves *b b a a*, substantially as and for the purpose herein set forth.

206,952. FOOT-POWERS. William F. Lane, Elgin, Ill. Filed July 2, 1878.



Claim.—The combination of the lever-pawls D *d*, the loose carrier-plates E, provided with the shoulders *e*, the loose clutch-plates F, provided with the shoulders *f f*, the loose pulleys G, the guide-pulley I, and the small pulleys *h*, with each other, with the ratchet-wheels C, attached to the shaft to be driven, and with the treadles B, substantially as herein shown and described.

206,953. STOVE ATTACHMENTS. Lorenzo R. Lawrence, Monticello, Cal., and Alfred O. Strawbridge, Sharon, Pa. Filed June 18, 1878.

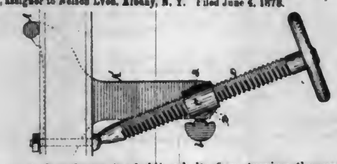


Claim.—1. The valve-chamber A, fitted to the escape-passage of the stove, and having the collar B for the pipe C, together with the flue D, opening into the base E', in combination with the valve F, whereby the heat is turned into the chamber E or diverted to the pipe C, substantially as herein described.

2. The chamber A, with its flues C and D, valve F, and the exterior air-cylinder E, with its air-valve R, and the pipe I, in combination with the interior tank K, with its pipes O P, substantially as and for the purpose herein described.

3. The chamber A, with its flue D, valve F, and the base E', said base being provided with the lugs or flanges J, to support the interior cylinder or tank K, and fitted to receive the air-cylinder E, substantially as herein described.

206,954. CLAMPS FOR HOLDING BOLTS FROM TURNING. John W. Leete, South Meriden, Conn., assignor to Nelson Lyon, Albany, N. Y. Filed June 4, 1878.



Claim.—1. In a device for holding bolts from turning, the combination, with the claw A A A' and screw-threaded shaft D, working in socket C', of the adjustable bar B, adapted to be raised or lowered to carry the said screw-shaft nigher to or farther from the portion A' of said claw, substantially as and for the purpose set forth.

2. In a device for holding bolts from turning, the combination, with the claw A A A' and screw-shaft D, working in socket C, of the bar B, adapted to be turned in either direction to carry the said screw-shaft at any angle with said claw, substantially as and for the purpose set forth.

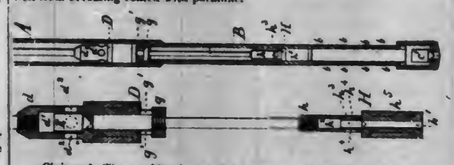
206,955. WHEELBARROWS. John Lennon, San Francisco, Cal. Filed June 27, 1878.



Claim.—A metal-bound wooden frame for wheelbarrows and hand trucks, consisting of U-shaped metal side bars A and cross-bars F, filled with wood, the side bars at their ends being bent around, as described, to form handles, and around the wooden filling, substantially as and for the purpose set forth.

206,956. OIL-WELL PUMPS. Murdock Lytle, Oil City, Pa. Filed July 16, 1878.

Brief.—The pump-barrels are of different diameters, whereby the major portion of the oil lifted is discharged into a receiver, and the minor portion during the downstroke of the piston discharged violently into the well in a lateral direction, preventing the openings in the well-tube and the walls of the well from becoming coated with paraffine.



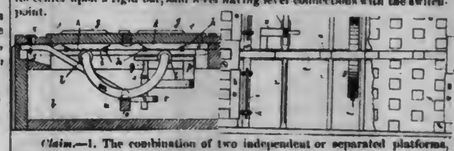
Claim.—1. The combination of the barrels A B, of different diameters, and the pistons D H, substantially as and for the purpose set forth.

2. The hollow piston D, having open extensions *d g*, and a valve, E, in combination with the hollow piston H, having an open extension, *h*, and valve *h³*, substantially as and for the purpose set forth.

3. The combination of the pistons D H, barrels A B, of different diameters, foot-valve *e*, and side openings, *b*, whereby at the downstroke of the pistons oil is forced radially from the barrel B, substantially as and for the purpose set forth.

206,957. STREET-RAILWAY SWITCHES. John V. McIlroy, Boston, Mass. Filed June 22, 1878.

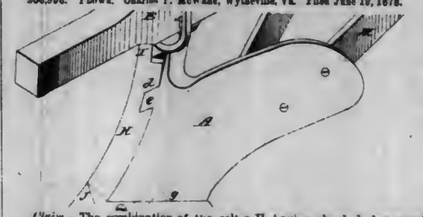
Brief.—Alternately rising and falling centrally-hinged platforms bear upon the ends of, and vibrate or oscillate, a curved lever, which is supported at its center upon a rigid bar, said lever having lever connections with the switch-point.



Claim.—1. The combination of two independent or separated platforms, *e f*, the semicircular lever *m*, arranged to rock upon the rigid fulcrum bar *n*, and devices (as levers) for connecting said platforms and the switch-point, substantially as shown and described.

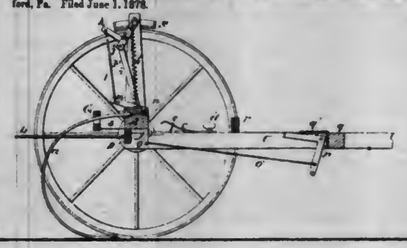
2. The combination of the two separated platforms *e f*, bar *t*, rigid bar *n*, roller lever *m*, and switch-point connecting-levers, substantially as described.

206,958. PLOWS. Charles P. McWane, Wytheville, Va. Filed June 19, 1878.



Claim.—The colter H, having shank I, downwardly-tapering recess *d*, and groove or recess *f*, with the beam E, having perforation *c*, mold-board A, having groove *b* and projecting lug *c*, and share J, the latter arranged, as herein described, to be secured to the mold-board by a single screw or bolt, which also serves to secure the colter in position, substantially as and for the purpose herein set forth.

206,959. HORSE HAY-RAKES. Thos. S. Miller, Pomeroy, Ohio, assignor to Adam Miller, Harford, Pa. Filed June 1, 1878.



Claim.—1. The brake-actuating mechanism consisting of the toggle F, having the arm h, and an arrangement of levers for operating the same, substantially as herein shown and described.

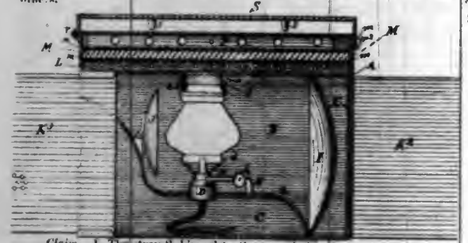
2. The combination, with the rake-wheels, of two brake-shoes actuated by independent mechanism and adapted to be operated singly or together, as shown and described.

3. The bar *e*, secured to the shaft C, for releasing the arms E, as herein shown and described.

4. The pedal *g*, in combination with the levers *p*, for simultaneously operating both of the brake-shoes, substantially as herein shown and described.

206,960. COMBINED LAMP AND STOVE. R. R. Moore, Lewisville, Ark. Filed May 11, 1878.

Brief.—A combined lantern and foot-warmer, for use of equestrians and others.



Claim.—1. The straps S, hinged to the case A, having studs *s s*, and provided with the catch *s'*, to make the case applicable to the foot-piece of a stirrup, as described.

2. The arrangement of the lamp-chamber B, oil-reservoir C, diaphragm *a*, reflector J, and lens I, with relation to each other, substantially as herein described.

3. The combination, with the lamp and case, of the perforated smoke-chamber L, the heat-distributing tile M, having protecting-sheets *m*, and the perforated ventilating-chamber P, as and for the purpose specified.

206,961. WHEEL-CULTIVATORS. James E. Mustard, Glen Hall, Ind. Filed Mar. 4, 1878.

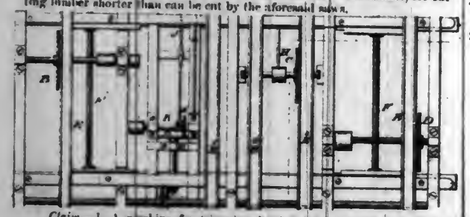
Brief.—An arched yoke is swiveled under the arched axle. The plow-beams are attached to the horizontal ends of the yoke and have free forward and back motion. The draft-chains from the evener connect to the ends of the yoke.



Claim.—The combination of the arched draw-bar E and fifth-wheel C D with the arched axle B, the plow-beams G, and the independent draft-connection I J K L, substantially as shown and described.

206,962. MACHINES FOR TRIMMING LUMBER. George W. Hobbs, Clinton, Iowa. Filed July 25, 1877.

Brief.—Lumber can be cut to a uniform length, square at the ends, and one end at a time, and held while being cut, so that it will not tremble, swing around, or pinch the saw, by means of circular saws connected to guide-rests provided with chain-carriers at each end of the machine, both laterally adjustable for logs of different lengths, in connection with fixed guide-rests having chain-carriers and arranged between the adjustable rests. A circular saw is mounted in a vertically-sliding frame between the other saw-frames, for cutting lumber shorter than can be cut by the aforesaid saws.



Claim.—1. A machine for trimming lumber having guide-rests E, with their carrying-chains, in combination with saws B D, connected to the guide-rests and adjustable laterally with the saws, substantially as and for the purposes described.

2. The accommodation-saw C, mounted on a vertically-sliding frame, in combination with the saws B D, substantially as and for the purpose described.

3. The feed devices J K K' L, in combination with the adjustable saws B D, arranged on separate arbors, one ahead of the other, substantially as and for the purposes described.

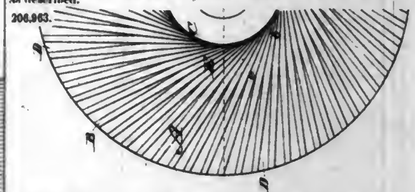
206,963. MILLSTONE-DRESSER. Wm. D. Odendahl, St. Louis, Mo., assignor of two-thirds of his right to John B. Griffith and William A. Adams, same place. Filed Apr. 22, 1878.

Claim.—1. The millstone A, having the furrows B B B and the land portions D D D, the former beginning at the draft-circle C, (which lies without the eye, as shown,) and extending thence tangentially to the skirt of the stone, and being of uniform depth throughout their length, and narrowing to a point at their inner ends, and thence widening gradually to the inner ends of the lands, and thence of uniform width to the skirt of the stone, and the land portions having their inner ends pointed and terminating between the draft-circle and the skirt, and thence widening gradually to the skirt, substantially as shown.

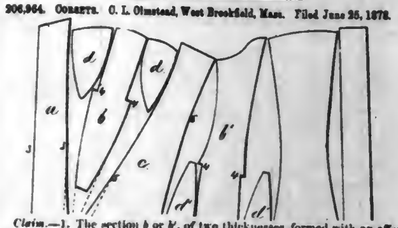
2. A millstone, A, having furrows B B B, abutting upon each other at and near their inner ends, and extending from a draft-circle, C, (that is larger than and concentric with the eye of the stone,) tangentially to the skirt of the stone, and being pointed at their inner ends, and thence widening gradually to the inner ends of the lands, and thence of uniform width to the skirt, substantially as described.

3. A millstone, A, having furrows B B B, abutting upon each other at and near their inner ends, and extending from a draft-circle, C, (that is larger than and concentric with the eye of the stone,) tangentially to the skirt of the stone, and being pointed at their inner ends, and thence widening gradually to the inner ends of the lands, and thence of uniform width to the skirt, and the lands having their inner ends pointed and terminating between the draft-circle and the skirt, and thence widening gradually to the skirt, substantially as described.

206,963.



206,964. CORSETS. C. L. Olmstead, West Brookfield, Mass. Filed June 25, 1878.



Claim.—1. The section *b* or *b'*, of two thicknesses, formed with an offset at *i*, and folded from the offset to the edge of the corset, and receiving between the folded edges the gores *d* or *d'*, in combination with the adjacent sections of the corset, between the folded edges of which the edge of the gore and of the section are inserted and stitched, substantially as set forth.

2. The corset having a busom-tongue between the two busom-gores, and secured between the first section, *a*, and third section, *c*, said sections *a* and *c* being united directly to each other in the lower portions below the lower end of the tongue *b*, substantially as set forth.

206,965. THILL-COUPLINGS. Winfield S. Palmer, Glenburn, Pa. Filed July 10, 1878.



Claim.—The combination, in a thill-coupling, with the ears *b b*, of the pin *f*, beveled at each end, and the spring-shackle *g*, having the inside countersinks *h*, as shown and described, for the purpose specified.

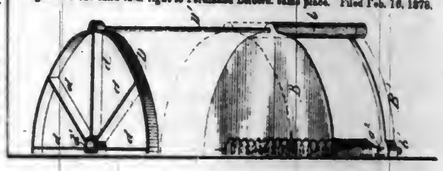
206,966. END-GATES FOR WAGONS. William H. Partin, Good Hope, Ill. Filed Apr. 16, 1878.



Claim.—1. A wagon end-gate provided with cranks F, combined with sides, tail-board, and segments, as shown and described, so as to serve the double purpose of preventing the former from spreading and holding the tail-board to the segments.

2. The flanges H, formed upon the curved edges and the beveled part of the forward straight edges of the segments C, to prevent grain, &c., from getting between the said segments C and the side-boards B, substantially as herein shown and described.

206,967. APPLE CORER AND SLICER. Joseph Pfeifer and Adam Ulrich, Pittsburg, Pa., assignors of one-third their right to Ferdinand Leibold, same place. Filed Feb. 16, 1878.



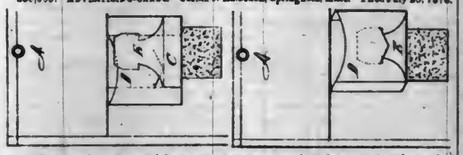
Claim.—1. In an apple corer and slicer, the combination of the wheel D, having the knives *d* and corer *d'*, plate B, and spring A, substantially as described and shown.

2. The combination, in an apple slicer and corer, of the wheel D, spring A, plate B, rods D', and bar B', substantially as described and shown.

206,968. PROCESSES OF COLORING PHOTOGRAPHS. William V. Price and John G. Klingman, Laporte City, Iowa. Filed May 27, 1878.

Claim.—The hereinbefore described method of rendering photographs previously mounted upon canvas transparent for coloring, by treating the same on both sides with a composition consisting of equal parts of castor-oil, alcohol, turpentine, and balsam fir, as set forth.

206,969. ADVERTISING-CARDS. Osmun J. Ransdell, Springfield, Mass. Filed July 25, 1878.



Claim.—As a new article of manufacture, an advertising card and match-box consisting of the knock-down box D, with its bottom C, having upon its front edge the gummed or locking flap E, secured to the face of the advertising-card A, substantially as shown and described.

206,970. PUMPS. Clark F. Rigby and Seth Rigby, 2d, Summit City, Pa. Filed June 21, 1878.



Claim.—1. In a pump having the cylinder *a* and two water passages, *c d*, the perforated chamber *a*, located at the bottom of one of the water passages, substantially as shown.

2. The combination of the removable valve-seat, passed over the piston-rod, and provided with catches for catching under the shoulders *s*, with the collars *t e*, substantially as set forth.

206,971. MACHINES FOR SEPARATING THE FIBERS OF WOOD FOR PAPER-PULP. Peleg Rose and George C. Rose, Norwich, Conn. Filed July 27, 1878.



Claim.—In a machine for separating the fibers of wood, the rotary disk B, provided on its face or faces with the scrapers E, in connection with suitable means for holding the wood in contact therewith, substantially as and for the purpose set forth.

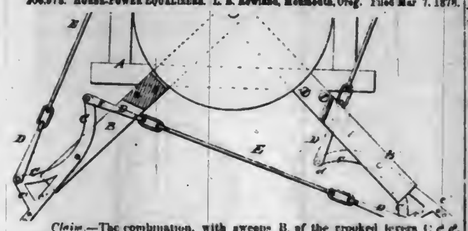
206,972. PRINTING-PRESSES. Wm. F. Rosser and J. L. Briggs, Marshfield, Mo. Filed June 1, 1878.



Claim.—1. The guide-rod A, adjustable in position upon the frame of a printing-press, and provided with the hook *a*, for holding up the frisket, substantially as specified.

2. The combination, with the frame B of a printing-press, and with the rod A, provided with the hook *a*, for holding up the frisket, of the clamp C, attachable to the frame B, and having the set-screw *b*, for holding the rod A in position, substantially as specified.

206,973. HORSE-POWER EQUALIZERS. L. B. Rowland, Monmouth, Oreg. Filed Mar 7, 1878.



Claim.—The combination, with sweeps B, of the crooked levers C *c d*, connected by rods D E, substantially as shown and described.

206,974 CULTIVATOR. Charles E. Sechrist, Matilda Furnace, Wayne Township, Mifflin County, Pa. Filed June 22, 1878.

Claim.—1. In a tilling implement, the combination of a revolving cutter, a revolving spade, and a sifting-grate, substantially as described.

2. In a tilling implement, the combination of a revolving cutter, a revolving spade, a sifting-grate, and a hilling attachment, substantially as described.

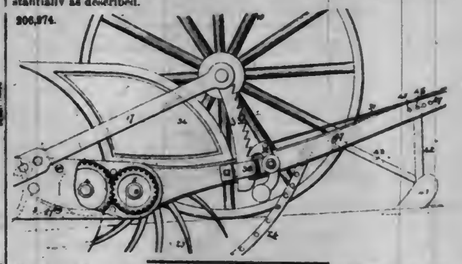
3. In a rotary tilling implement, the combination, with the revolving cutter and revolving spade, of the side frames 27 28, forming bearings for their journals, and boxes which inclose the driving-train of gear-wheels connecting the two shafts, and forming, with the handles 29 30, levers for controlling the depth of the spade and cutter, and for lifting them from the earth either separately or jointly, substantially as shown and described.

4. In a tilling implement, a revolving cutter, revolving spade, wheels 10 11, side frames 27 28 and handles 29 30, the connecting bars 17 18, and ratchet-segment 33, combined and arranged substantially as shown and described, whereby said frames and handles may act as levers of the first and second orders alternately in controlling the movements of the implement.

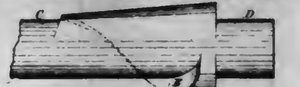
5. In a tilling implement, substantially as shown and described, the combination, with the revolving cutter and revolving spade, wheels 10 11, side levers, and handles, of the draft bars 17 18, which move independently of the side frames or levers, and to which the draft shall be applied at one of the adjustable attaching-holes, whereby the thrust of the revolving cutter into the earth is regulated and the fulcrum of the wheels 10 11 may be varied along said bars to raise the revolving cutter, substantially as described.

6. In a tilling implement, a revolving cutter and a revolving spade combined together for conjoint operation, the said parts being constructed and hung with relation to each other so that the spades shall play within the spaces afforded between the cutters, and the cutters shall run close to the axis of said spade, whereby the earth lifted by the spades shall be confined thereon, substantially as described.

206,974.



206,975. CUT-OFF VALVES FOR STEAM-ENGINES. R. Sanderson, Cleveland, Ohio. Filed July 17, 1878.



Claim.—In a cut off valve, the spiral shaped and tapering elongated cam E, having at the ends the safety-cylinders C and D, formed above the surface of the shaft, constructed and arranged substantially as and for the purpose described.

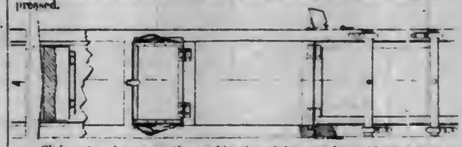
206,976. SACKS FOR BALING HOPS. Chas. A. Sands, Burlington, Kans. Filed July 1, 1878.



Claim.—A bale for hops, &c., consisting of a sack being open at the ends, and provided with hemmed edges, in connection with heads secured by straps passed through the hems, tied over the heads, substantially as and for the purpose set forth.

206,977. HOP-PRESSES. Charles A. Sands, Burlington, Kans. Filed July 2, 1878.

Brief.—The hooks on the doors and blocks near the hinged parts support the sack around the entire upper edge while it is being filled and the contents pressed.



Claim.—In a hop press, the combination of the press-box with hinged side doors and hinged blocks or sections, said doors and blocks having at their upper edges hooks for suspending the sack, substantially as specified.

206,978. CHIMNEY OR VENTILATOR CAPS OR COWLS. Daniel Scott, Brooklyn, N. Y. Filed July 17, 1878.

Claim.—1. In a ventilator or chimney cap or cowl, the combination of an internally upwardly-contracted deflector, C, and a surmounting internally upwardly-flaring deflector, D, whereby provision is afforded for the passage of currents of wind obliquely across the top of the flue to which the cap or cowl may be applied, substantially as specified.

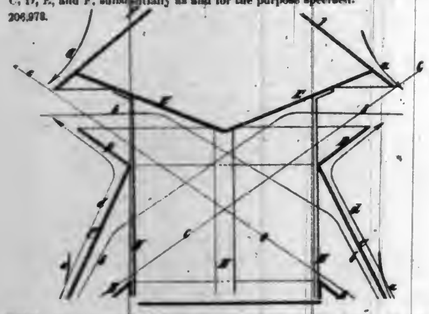
2. In a ventilator or chimney cap or cowl, the combination of an internally upwardly-contracted deflector, C, a surmounting internally upwardly-flaring

deflector, D, and an inverted conical deflector, E, above the latter, substantially as and for the purpose specified.

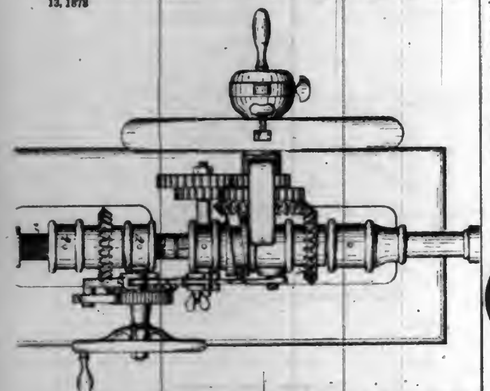
3. In a ventilator or chimney cap or cowl, the combination of an internally and externally upwardly-contracted deflector, C, and a surmounting internally and externally flaring deflector, D, substantially as and for the purpose specified.

4. The combination, with a ventilator or chimney flue, of the deflectors B, C, D, E, and F, substantially as and for the purpose specified.

206,978.



206,979. MACHINES FOR DRILLING METAL. Albert J. Smart, Greenfield, Mass. Filed Mar. 13, 1878



Claim.—1. The combination, in a drilling-machine, of the drill-spindle, cam-wheel, reciprocating bar, vibrating lever, adjustable connecting-rod, and bell crank, whereby the motion of the continuous self-feed mechanism is caused to bear a varying proportion to the rotation of the cam.

2. The combination of the first-motion bevel-gear, the bevel-gear keyed by a feather to the drill-spindle, the drill-spindle, the cam wheel keyed by a feather to the drill spindle, the reciprocating bar, the vibrating lever, the bell crank and pawl, the ratchet wheel, and gears for operating the feed-screw, as and for the purposes described.

3. In a drilling-machine, the combination of the bevel-gear keyed by a feather to the drill-spindle, the drill spindle, the cam-wheel keyed by a feather to the drill-spindle, the bevel-gear actuating the feed-screw, and a feed-operating mechanism interposed between the cam-wheel and the bevel-gear actuating the feed screw, as and for the purposes described.

206,980. SOFA-BED. Sidney Squires, Boston, Mass. Filed Apr. 22, 1878.



Claim.—1. In a sofa-bed, the combination of the frame A with the removable rails *a a'*, substantially as described.

2. In a sofa-bed, the combination of a mattress, B, provided with rope loops *d*, formed by passing a rope in and out the side of the mattress, as shown, at or near the center of its thickness, the buttons or hooks *e* projecting inwardly from the inner side of the removable rails *a a'* and the hinged frame A, substantially as and for the purpose set forth.

206,981. TIME-LOCKS. Edward Stewart, Fort Madison, Iowa, assignee of one-half his right to Samuel Adee and Jesse C. Blackburn. Filed May 30, 1878.

Claim.—1. In a time-lock for safe or vault doors, the combination, with suitable clock mechanism and a traveling pin actuated thereby, of a lock-bolt and a setting mechanism for each day of the week, permanently attached to and forming a part of the time-lock, and arranged and adapted to be adjusted to actuate the lock-bolt each successive day, or any particular day, or on alternate days of the week, substantially as set forth.

2. In a time-lock, the combination, with clock mechanism, of an endless chain provided with a device for imparting motion to the lock-bolt of the time-lock, substantially as set forth.

3. In a time-lock, the combination, with two clock-movements, of two chain or sprocket wheels and an endless chain, the parts being constructed and arranged in such a manner that the chain will be moved by one or both the clocks, and may be freely moved in a direction opposite to the movement of the clock-arbors without disturbing the clock mechanism, substantially as set forth.

4. The combination, with the center arbor of the time-movement of a time-lock, of a sleeve having a toothed wheel and ratchet-wheel rigidly secured thereto, of a chain or sprocket wheel provided with a pawl, and secured upon the sleeve by means of a yielding disk which engages a groove formed in the end of said sleeve, substantially as set forth.

5. The combination, with two clock-movements provided with chain or sprocket wheels and an endless chain, of a pointer attached to the chain, and an indicating plate or dial having the hours of the day marked thereon, substantially as set forth.

6. The combination, with a traveling pin or projection, movement being imparted thereto by suitable clock-work, of a lock-bolt provided with a revolving toothed wheel, a device for imparting an intermittent movement to said toothed wheel, one or more adjustable abutments for regulating the movement of the lock-bolt, and a lift-bar which is actuated by the traveling pin, substantially as set forth.

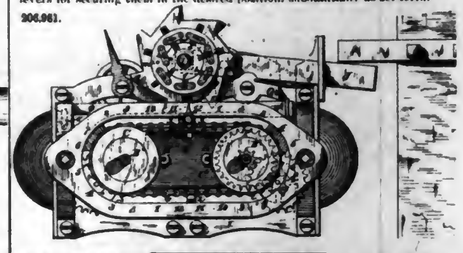
7. In a time-lock, the combination, with two clock-movements, a lock-bolt, and one or more adjustable abutments engaging therewith, and a movable plate for changing the relative position of said abutments, of a traveling projection for moving the lock-bolt through the medium of said abutments, and a flange or equivalent device for moving the plate to which the abutments are secured, substantially as set forth.

8. The combination, with the lock-bolt of a time-lock provided with adjustable abutments, of a traveling chain provided with a projection, and a lift-bar adapted to be raised by said projection at any desired time, and cause said bar to strike one of the abutments connected with the bolt-lock and actuate the latter, substantially as set forth.

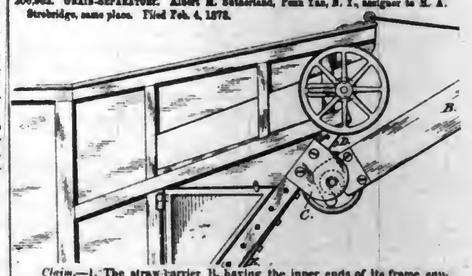
9. In a time-lock, the combination, with suitable clock mechanism, of a lock-bolt provided with a revolving toothed wheel having a series of radially-arranged adjustable abutments attached to a plate secured to said wheel, substantially as set forth.

10. In a time-lock, the combination, with suitable clock mechanism, of a lock bolt provided with one or more adjustable abutments and slotted spring-levers for securing them in the desired position, substantially as set forth.

206,982.



206,982. GRAIN-SEPARATORS. Albert M. Sutherland, Penn Yan, N. Y., assignor to H. A. Strobridge, same place. Filed Feb. 4, 1878.



Claim.—1. The straw-carrier B, having the inner ends of its frame supported in bearings C, adjustable up and down upon the braces D, so that it may be used to carry the straw only, when the chaff-carrier is removed, for the purpose of keeping the straw and chaff separate.

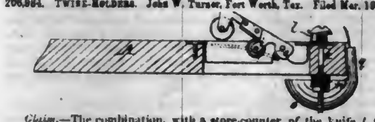
2. In combination with the straw-carrier B, having the inner end of its frame adjustable up and down, the chaff-carrier E, made as specified, and used conjointly to convey the chaff and straw together, as herein set forth.

206,983. BALL-TARGETS. Charles A. Tatem, New York, N. Y. Filed July 3, 1878.



Claim.—The herein-described method of constructing frangible target balls, consisting in blowing or molding a hollow opaque sphere, coating it with adhesive substance, and superposing a coating of abrasive material, substantially as specified.

206,984. TWINE-HOLDERS. John W. Turner, Fort Worth, Tex. Filed Mar. 19, 1878.



Claim.—The combination, with a store-counter, of the knife *l*, the twine-holder *o*, and the guide *q*, arranged as and for the purpose specified.

206,985. BOOTS AND SHOES. Albert Van Wagenen, Boston, Mass., assignor to the Hatch Flexible Sewed Shoe Company, same place. Filed June 24, 1878.



Claim.—1. In a boot or shoe, a supplemental inner sole extended across the upper face of the main inner sole and connected with the outer sole and upper by the same stitches which unite the outer sole and upper, the supplemental inner sole covering and acting to retain the inner sole in place, substantially as described.

2. A boot or shoe composed of an outer sole, an upper, supplemental inner sole, and main inner sole, stitched together by stitches which pass through the outer sole, upper, and supplemental inner sole, but which, at the front or toe part of the shoe, pass outside the edge of the main inner sole, substantially as and for the purpose described.

3. In a boot or shoe, a fibrous inner sole, sewed to the upper and outsole, combined with a sock-sole connected or pasted thereto, substantially as described.

206,986. TOBACCO-HOISTERS. John M. Wellington, Upton Station, Ky. Filed June 26, 1878.



Claim.—A tobacco-hoister formed by the combination, with each other, of the staff, made in three parts, A B E, connected together by the swivel C D and the hinge N, the top cap, F, provided with the pivot-pin G and the stop-pins I, the top bar, H, secured to the pivot-pin G by a washer and key, the pulley J, the cord K, and the sliding block or plate L, provided with the keepers *l'*, and the arms or brackets M, substantially as herein shown and described.

206,987. HAT-CARRIERS. Eugene A. Walters, Walworth, Wis. Filed Apr. 20, 1878.

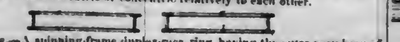


Claim.—1. The combination, with the frame A, provided with the stop *a'* and grappling-hook D, having the central arm, *b'*, and the hook *b²* on its upper end, of the lever E, pivoted near its center to the frame A, its outer end provided with the claw E^1, and its inner end extended and turned down over the grappling hook D, and provided with the head *c*, having projections c^1 c^2, arranged to operate substantially as and for the purpose set forth.

2. The combination, with the bail C^1, having the head C^2, frame A, provided with the stops *a a'*, and lever E, having the head *c*, of the grappling-hook D, having the hook *b*, central arm, *b'*, and hook *b'*, for the purposes set forth.

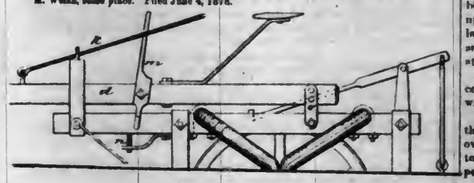
206,988. SPINNING-RINGS. Joseph W. Wattier, Canton, Mass. Filed Feb. 15, 1878.

Brief.—The outer peripheries of each race of a duplex ring is made eccentric to the inner periphery of the other race, said races having their inner peripheries either concentric or concentric relatively to each other.



Claim.—A spinning-frame duplex-race ring having the outer periphery of each race arranged eccentrically with respect to the inner periphery of the other race, the said races having their inner peripheries either concentric or eccentric relatively to each other, as represented.

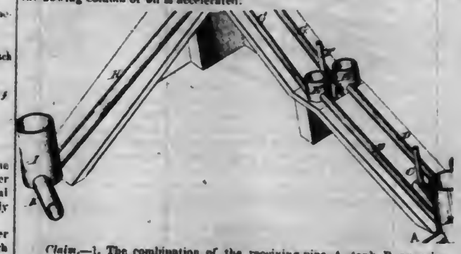
206,989. SULKY-PLOWS. John C. Welsh, Bladen Station, Ill., assignor to himself and Wilson M. Welsh, same place. Filed June 4, 1878.



Claim.—The lever-plate *m*, swinging and provided with foot-piece below its fulcrum, in combination with the tongue *d* and lever *k*, having pin *l*, as and for the purpose specified.

206,990. MEANS FOR TRANSPORTING PETROLEUM-OIL. Rufus A. Wilder, Cresson, Pa. Filed June 19, 1878.

Brief.—Two ascending pipes are used to reduce the chances of interruption of the traffic. Small pipes are used on steep grades, where the velocity of the flowing column of oil is accelerated.



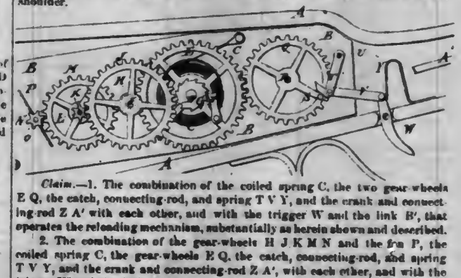
Claim.—1. The combination of the receiving-pipe A, tank B, pumping-engine C, ascending pipe D, tank E, pumping-engine F, ascending pipe G, and main descending pipe H, when operated in sections, and connected together, substantially as described.

2. Two or more ascending parallel pipes, connected with one descending main gravity-pipe, for the purposes substantially as described.

3. The pipes H and K, of varying sizes, in combination with the tanks I, for the purposes substantially as described.

206,991. LOCKS FOR FIRE-ARMS. John M. Witman, St. Mary's, Pa. Filed June 27, 1878.

Brief.—The device is to be applied to magazine guns. A pull upon the trigger sets the clock-work in motion, and the arm is then automatically loaded from the magazine. A pull upon another trigger fires it, and the operations of loading and firing may thus be continued without taking the arm from the shoulder.

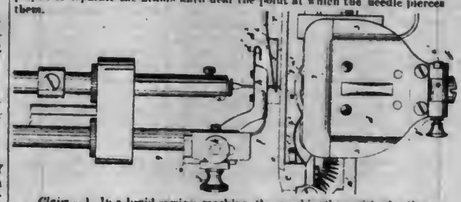


Claim.—1. The combination of the coiled spring C, the two gear-wheels E Q, the catch, connecting-rod, and spring T V Y, and the crank and connecting-rod Z A' with each other, and with the trigger W and the link B', that operates the reloading mechanism, substantially as herein shown and described.

2. The combination of the gear-wheels H J K M N and the fan P, the coiled spring C, the gear-wheels E Q, the catch, connecting-rod, and spring T V Y, and the crank and connecting-rod Z A', with each other, and with the trigger W and the link B', that operates the reloading mechanism, substantially as herein shown and described.

206,992. SEWING-MACHINES. Edward S. Young, Westborough, Mass., and George H. Dimond, Bridgeport, Conn. Filed May 20, 1878.

Brief.—The invention consists in adapting a Wheeler & Wilson sewing-machine to the manufacture of hats from straw braid. The presser-foot is made adjustable vertically upon its bar, and is provided with a guide or gage for the upper braid, which is adjustable laterally in respect to the needle. The under braid is controlled by a gage upon the bed-plate of the machine, such gage being also adjustable in reference to the needle. Devices are employed to separate the braids until near the point at which the needle pierces them.



Claim.—1. In a braid-sewing machine, the combination, with the throat-plate and a guide to embrace both edges of the braid being delivered to be stitched, and means to adjust such guide laterally with relation to the needle-hole, of a guide connected with the presser shank, and made laterally adjustable with reference to the presser-foot and needle-hole, the adjustment of the upper and lower guide with relation to the needle-hole and each other regulating the amount of lap of the braid being delivered under the edge of the superimposed braid already stitched to form a part of the head-covering, substantially as described.

2. The presser-bar and its laterally-attached guide *h* for the upper braid, combined with the presser-foot *i*, made vertically adjustable upon said bar and with reference to the guide, substantially as and for the purpose described.

3. The presser-bar, presser-foot *i*, and the guide *h*, to govern the edge of the upper piece of braid, and the independently-adjustable guides *r s*, movable over the bed-plate *a* to control the under braid, combined with a separator, *m*, to keep the two braids apart just in advance of the point where the needle penetrates through them, substantially as described.

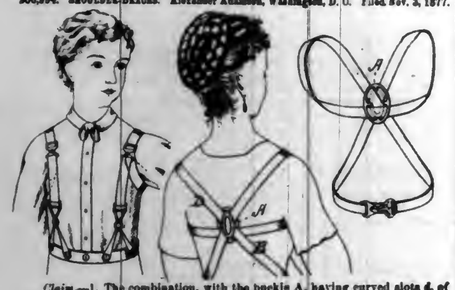
4. The pressure-foot bar and its attached guide for the edge of the upper braid, combined with the separator and holding-down finger, substantially as and for the purpose described.

206,993. FENCES. Eugene D. Yonage, Orangeville Mills, Mich. Filed July 3, 1878.



Claim.—The improved fence herein described, consisting of the stakes A A, driven into the ground and crossing each other near the top, the blocks a b, &c., placed between the stakes to form supports for the rails, the rails placed diagonally between the several pairs of stakes, and the binding-pole, all arranged and combined substantially as herein described, for the purpose set forth.

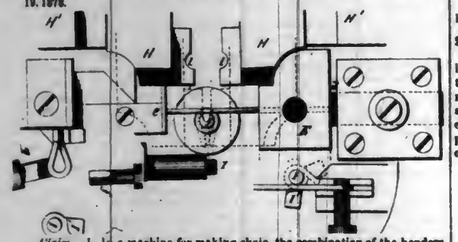
206,994. SHOULDER-BRACES. Alexander Adamson, Washington, D. C. Filed Nov. 3, 1877.



Claim.—1. The combination, with the buckle A, having curved slots d, of a single band looped for the shoulders and provided with end-fastenings, substantially as specified.

2. A brace consisting of a back buckle and a single band provided with shoulder-loops, and having its ends adapted to pass around the waist and fasten in front, substantially as specified.

206,995. MACHINERY FOR MAKING PUMP-CHAINS. John Ash, New Haven, Conn. Filed Apr. 19, 1878.



Claim.—1. In a machine for making chain, the combination of the benders with the stop e, the said stop hinged to the slide which carries the benders, and in connection with an incline or cam-shaped stationary groove, so as to fall and rise respectively by the forward and rear movement of the slide which carries the benders, and substantially as described.

2. The two benders H H, hinged to the slide, and so as to move forward and back with it, combined with their respective levers, pivoted directly to the frame, and operating to close and permit the opening of the benders, and without longitudinal movement of the said levers, substantially as described.

3. The combination of the benders H H and former f with the former I and the bender L, the latter hung upon the slide, and so as to move forward and back with it, and a stationary cam to depress the bender L near the rear movement of the slide, substantially as and for the purpose described.

206,996. GRINDING-MILLS. Mahlon B. Atkinson, Sharpsburg, Md., assignor of two-thirds of his right to William Cammack and Geo. W. Decker, Washington, D. C. Filed July 31, 1878.

Brief.—Concave circumferentially adjustable or reversible with reference to the grinding cylinder. With the dress shown this double adjustment adapts the mill to the double purpose of granulating and flouring.



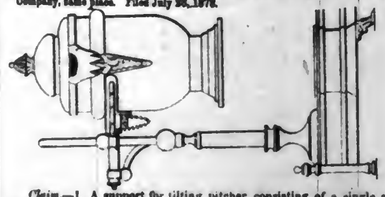
Claim.—1. The combination of a vertically-rotating cylindrical stone having on its periphery the millstone-dress, consisting of transverse furrows with abrupt shoulders, lands, and feather-edges, substantially as described, and a concave stone provided with a similar dress and adjustable circumferentially to reverse positions with respect to the dress of the cylindrical stone, for the purpose of adapting the mill to either granulating or flouring purposes, substantially as set forth.

2. The combination of the cylindrical stone A and the concave C, mounted in a swinging frame composed of the arms E E' and arm F, pivoted on the axle of said cylindrical stone, and adapted to be shifted to opposite sides of said stone, and the stone-supporting frame provided with the bars a a', for supporting and limiting the curvilinear movement of the concave, substantially as and for the purpose set forth.

3. The combination of the stone C, arms E E', carrying the eccentrically-mounted worm-wheels g, and the operating-worms, substantially as described.

4. The vertically-rotating stone having on its periphery the transverse shoulders b, having extensions inclined outward at their ends toward the edges of the stone, and provided with the short shoulders s, cut in the lands, and inclined oppositely to the inclined extensions of the main shoulders, substantially as and for the purpose set forth.

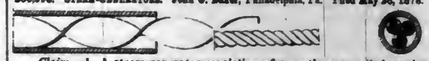
206,997. PITCHERS. S. W. Babbitt, West Meriden, Conn., assignor to Wilcox Silver Plate Company, same place. Filed July 26, 1878.



Claim.—1. A support for tilting pitcher, consisting of a single socket or pivot, and a yoke or rest arranged to turn in the said socket, combined with a pitcher supported in said yoke or rest, substantially as described.

2. A support for tilting pitcher, consisting of a single socket or pivot, and a yoke or rest arranged to turn in the said socket, combined with a pitcher supported in said yoke or rest, and a device, substantially such as described, to secure the pitcher in the said rest, substantially as specified.

206,998. STEAM-GENERATORS. John G. Baker, Philadelphia, Pa. Filed May 28, 1878.

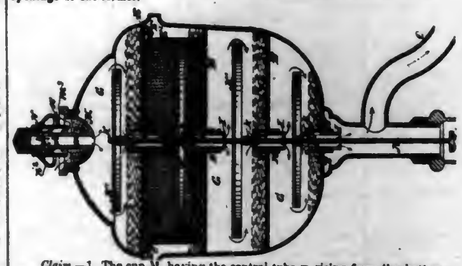


Claim.—1. A steam-generator consisting of a continuous coiled or zigzag tube combined with an internal retarding device or devices, substantially as described.

2. A steam-generator in which a coiled or zigzag tube is combined with an internal twisted ribbon of thin metal, as set forth.

206,999. CARBURETING-LAMPS. Charles E. Ball, Philadelphia, Pa. Filed Nov. 30, 1877.

Brief.—Air to be carbureted enters the top of the lamp, and, by reason of its increased gravity as it unites with the hydrocarbon vapors, passes down through the lamp to the burner. The induction air-tube at the top of vessel may be closed air-tight by a screw-cap having a flange projecting down into an annular cup of water or glycerine. The fluid may be drawn off from all the chambers of the lamp by the central tubes, having openings next to the diaphragms, by turning the internal tubes with their openings to register with the openings of the former.



Claim.—1. The cup M, having the central tube m rising from the bottom thereof, and air-passages m^1, in combination with lamp globe or reservoir A and a suitable nut or cap attached to the top of said tube, substantially as shown and described.

2. In combination with the cup M, having central tube m, the nut N, having flanges n^1 n^2, substantially as shown and described.

3. In combination with the tubes H, the rod K and tubes or valves I, substantially as shown and described.

4. In combination with the diaphragms E E and central rod K, the disks K^1, secured within the compartments G above the ends of the tubes H, substantially as described, for the purpose set forth.

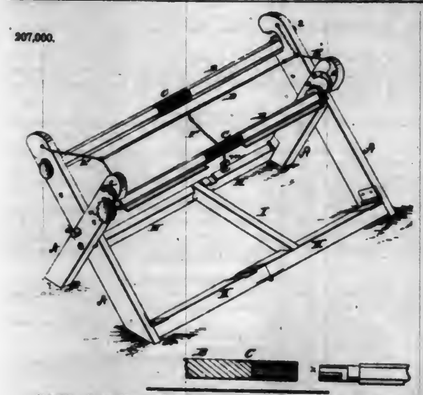
207,000. QUILTING-FRAMES. Wesley E. Burbee, Union, Ky. Filed June 26, 1878.

Claim.—1. The shafts or rollers B B, provided with ratchet-wheels at each end, in combination with the pawls c c and cords E D, and weighted cord F, as and for the purpose set forth.

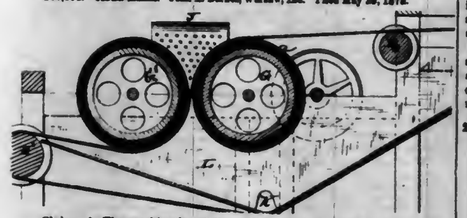
2. The shafts or rollers B B, jointed at their inner ends, and constructed as described, in combination with the sleeves C C, as and for the purpose specified.

3. The combination of the legs A A, the rollers B B, the braces H H, and the brace I, constructed as and for the purpose set forth.

207,000.



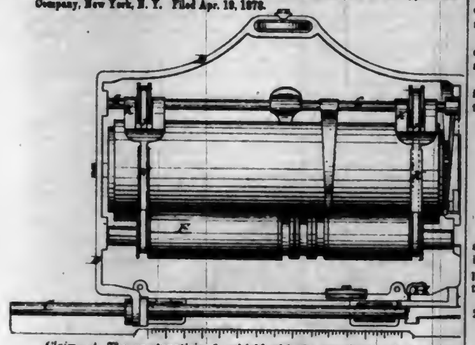
207,001. CIDER-MILLS. John L. Borton, Warsaw, Ind. Filed May 29, 1878.



Claim.—1. The combination of the endless apron F, passing around suitable rollers, the rubber-covered pressure-rollers G G', screens J J, and stationary gathering-apron L, substantially as and for the purposes herein set forth.

2. The within-described cider-mill, consisting essentially of a grinding device, an endless carrying-apron, two geared rubber-covered pressure-rollers with screens between their ends, and a stationary gathering-apron, substantially as and for the purposes herein set forth.

207,002. TYPE-WRITING MACHINES. Ernest R. Barron, Ilion, assignor to the Type Writer Company, New York, N. Y. Filed Apr. 19, 1878.



Claim.—1. The combination of a shield with the carrying-band of a type-writing machine, substantially as described.

2. The combination of a guide-shield with the band-pulley and carrying-band of a type-writing machine, substantially as described.

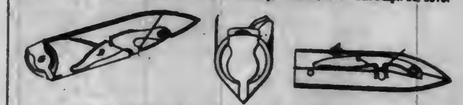
3. The combination of the reversed scale with and attached to the carrying-band shields of a type-writing machine, substantially as described.

207,003. INSERTIBLE SAW-TEETH. James L. Berry, Saginaw, Mich. Filed July 23, 1878.

Brief.—The insertible tooth may be readily removed and replaced in such a manner as to prevent all injurious strain upon the blade by means of a locking-plate for holding the tooth, having an abutment for supporting the tooth against the thrust of the cut, a curved recess in its V-shaped edge to receive a corresponding leg formed in its front edge, and a grooved cam or circular key for holding the locking-plate in place, said key operating in a circular recess formed partly in the locking and partly in the saw plate.



207,004. REVIVED-MAGNETIC SKUTTLES. Eli Bromley, Norwalk, Ohio. Filed Apr. 11, 1878.



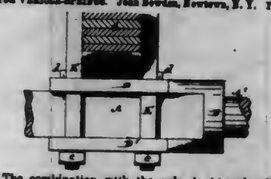
Claim.—1. The combination, with a shuttle, of a tension-spring formed with the angular-arm projection, adapted to permit the thread to be passed beneath the same without displacement of the main body of the spring, substantially as set forth.

2. The combination, with a shuttle formed with the transverse recess in its outer side body, of a tension-spring provided with the angular-arm projection fitting into said recess, and which is adapted to have the thread passed under the same, and thereby secured in proper tension without passage endwise through an eye thereof, or by being passed beneath the main body of the spring, substantially as set forth.

3. The combination, with a shuttle formed with the diagonal open-end slot and the connecting longitudinal slot, of the tension-spring, which is made with the open-slotted eye and the angular-arm projection, beneath which latter the thread is passed, the same being adapted to have the thread held in proper tension without passage endwise through eyes formed either in the shuttle or spring, and without being passed beneath the main body of the spring, substantially as set forth.

4. The combination, with a shuttle provided both with a notch in its heel and with the slot which leads therefrom, of a lid, whose free end is held in said notch by the spring-pressure of the slotted shuttle, said lid being hinged directly to the body of the shuttle, which latter is formed of increased thickness at this point, substantially as set forth.

207,005. CLIPS FOR VEHICLE-SPRINGS. John Bowden, Nouvoo, N. Y. Filed May 9, 1878.

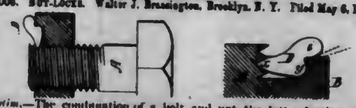


Claim.—1. The combination, with the axle A A' and collar B, shrunk thereon, of one or more plates applied to the axle and attached to or forged in one piece with said collar, and constructed to receive through it or them the clips which hold the spring that supports the body of the vehicle, substantially as specified.

2. The combination of the spring-supporting block G with the plate D and collar B, formed in one piece with said plate and shrunk on the axle, essentially as described.

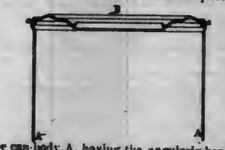
3. The wedges d d, in combination with the slotted plate D, the collar B, formed in one piece with said plate and shrunk on the axle, the clips E E, and the block G, on which the vehicle-spring rests, substantially as specified.

207,006. NUT-LOCKS. Walter J. Brassington, Brooklyn, N. Y. Filed May 6, 1878.



Claim.—The combination of a bolt and nut, the latter having a radial slot or recess, c, formed in its face, with a pointed bit, D, arranged to fit snugly in the recess, and retained in position therein partly by the penetration of its pointed end into the bolt, and partly by the close contact of its rear end with that portion of the nut which forms the outer end of the slot, all as set forth.

207,007. SHEET-METAL CANS. George D. Brooks, Baltimore, Md., assignor, by mesne assignment, to Robert T. Smith and William A. Wicks, same place. Filed Feb. 1, 1878.



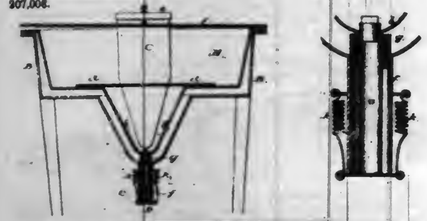
Claim.—The can-body A, having the angularly-beaded ends a, combined with the heads B, having their edges bent downward at an obtuse angle, each of said heads being placed in an angular bead of the body, and secured therein by the overlapping of that portion of the bead beyond the vertex of the angle forming the bead, substantially as herein specified.

207,008. MILK-COOLERS. Samuel R. Bryant, Waterford, Pa. Filed Apr. 23, 1877.

Claim.—1. The combination, with the water and milk pans or receptacles A and B, having the corresponding wells or central depressions, of the removable water-tank C, having the form specified, and provided with gutters f and cross-bars d, the latter being attached at such a point that the lower portion of the tank enters the well when the cross-bars rest on the bottom of the pan A.

2. The combination of the flat valve D and springs E with the tubes e f and pan A and vat B, one, e, of said tubes extending through the other, f, and terminating in the same plane, so that both discharge separately and are closed by the same valve seating against them, as set forth.

207,008.



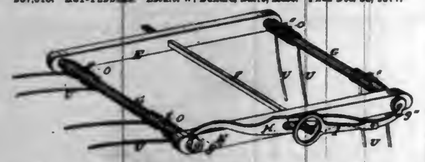
207,009. FERRULES FOR SPADING-FORKS. William H. Buckley, Philadelphia, Pa., assignor to William O. Lawson, same place. Filed June 1, 1878.

Brief.—The tool-shank is of angular form, has an offset at its end to engage under the ledge of a ferrule having an angular throat terminating in an inside ledge, and is secured in the ferrule by a key fitting the lateral space beside said shank in the throat of the ferrule.



Claim.—The combination, with a spade or fork ferrule having an angular throat, *a*, terminating in an inside ledge, *a'*, of an angular spade-shank of less width than said throat, having an offset, *b*, adapted by a sidewise movement of said shank to engage the inside ledge *b'* and the lateral fastening-key *b''*, substantially as specified.

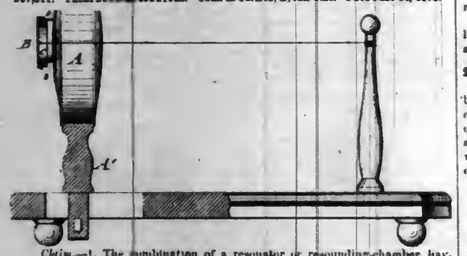
207,010. HAY-TEDDERS. Ezekiel W. Bullard, Barre, Mass. Filed Dec. 26, 1877.



Claim.—1. The combination of eccentric strap I, tine-shafts G G, and a bar, H, intermediate of said strap and tine-shafts, as set forth.

2. The combination, with the eccentric-strap, intermediate bar, and tine-shafts, of the eccentric J, having curved slot *j*, and beam A, having slot *a*, as and for the purpose set forth.

207,011. TELEPHONE-RESONATORS. Chas. E. Carmen, Lyons, Ohio. Filed June 14, 1878.



Claim.—1. The combination of a resonator or resounding-chamber, having central openings in the sides for the passage of the wire or cord through the said chamber, with a vibrating diaphragm, or disk, substantially as set forth.

2. The combination of a vibrating diaphragm or disk, attached to a transmitting wire and supported by a metallic band having feet, with a resonator, substantially as set forth.

3. The combination of a vibrating disk or diaphragm, attached to the transmitting wire, with a resonator that is made adjustable on its base-support, so as to give the required tension to the wire, substantially as specified.

207,012. VEHICLE-WHEELS. Charles S. Carpenter, Philadelphia, Pa. Filed May 11, 1878.



Claim.—1. The combination, with a wheel, of a series of projections, D, each projection having an abrupt rear end, *n*, and a beveled outer edge, *f*, as set forth.

2. The combination of the wheel with projections D, each cut off at the corner *g*, as specified.

207,013. COATED COMPRESSED MEDICAMENTS. Chas. Carter, Philadelphia, Pa. Filed Apr. 2, 1878.

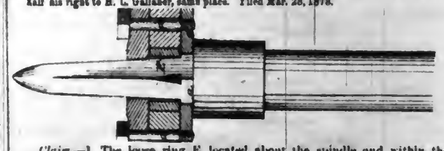
Brief.—The medicament or dietetic compound is placed upon a basis of dry powdered sugar and laid in the mold. An upper covering of same sweet material is then introduced, and the whole subjected to pressure, so as to produce perfect cohesion.



Claim.—1. The herein-described improvement in the manufacture of coated compressed medicaments, the same consisting in partially enveloping the medicaments in coverings of a saccharine nature in the form of powder, and then applying a top or finishing covering of powder, and compressing the whole, so that the powder covering holds by cohesion, thus producing a seamless coated compressed medicament, substantially as described.

2. As a new article of manufacture, a compressed pill having a compressed seamless coating of powdered sugar or like substance, substantially as herein specified.

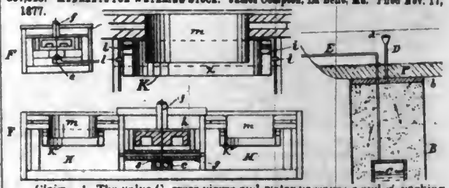
207,014. MILLSTONE-DRIVERS. Patrick H. Childress, Waynesborough, Va., assignor of one-half his right to H. L. Gallaher, same place. Filed Mar. 28, 1878.



Claim.—1. The loose ring E, located about the spindle and within the forks of the pivoted driver-sections, and combined with the same, substantially as shown and described.

2. The bolts *d*, combined with the case, the cover for the same, and the driver-sections, as shown and described, so as to secure the said cover, and at the same time form pivots for said driver-sections.

207,015. HYDRANTS FOR WATERING STOCK. James Compton, La Belle, Mo. Filed Nov. 17, 1877.



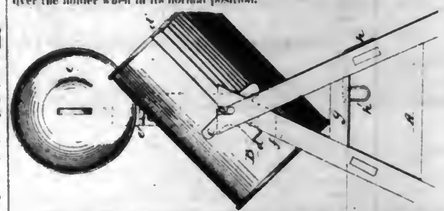
Claim.—1. The valve C, cross-pieces and water-passages *g* and *g'*, packing *s*, rod *f*, and weight *h*, substantially as shown, and for the purpose described.

2. The air-tight annular chamber K, with apertures *i* and eyes *l*, vertical rods K', and apron *m*, substantially as shown and described.

3. The filtering-well B, with pipe D and strainer *d*, pipe E, air-tight annular chamber K, with apertures *i*, apron *m*, and trough F, substantially as shown and specified.

207,016. GARBAGE-HOLDERS. Rufus Cook, West Newton, Mass. Filed July 6, 1878.

Brief.—The cylindrical garbage-holder is supported in a saw-horse frame by trunnions projecting from either side. In its normal position a projection on the holder rests against a projection on the frame, and is held fast on the other side by a spring, over which it slides when the holder is being turned to a normal position. Similar projections on holder and frame stop the holder when tilted far enough for emptying. The cover is hinged to the frame, fitting over the holder when in its normal position.



Claim.—1. The combination, with the supports or frame A, having the stop *g* and lever *h h'*, of the receptacle B, hung or trunnioned upon said frame and provided with the projection *d'*, substantially as and for the purpose specified.

2. The frame or support A, to an upright extension, *e'*, of which is hinged or pivoted the cover or lid *e*, in combination with the receptacle or holder B, hung upon said frame or support, substantially as shown and described, for the purpose described.

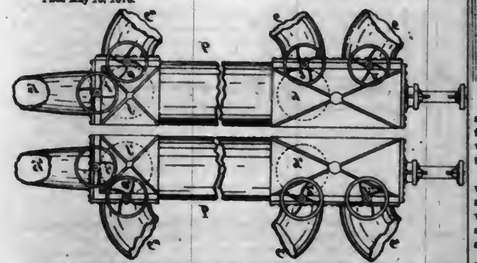
207,017. TABLET-BLOTTERS. Charles M. Cott, Columbus, Ohio. Filed July 6, 1878.



Claim.—1. The combination, with a plate, A, having a dovetail groove upon its outer edge, of a slide-rod working endwise in said groove and a blotting-pad vibrating on said slide, substantially as specified.

2. The combination, with a plate, A, an endwise-movable slide, C, arranged thereon, and a hinge-rod, *c*, having end catches *b*, and journaled on said slide, of the blotting-pad B, composed of two sheets flexibly connected, substantially as specified.

207,018. PROPELLING VESSELS. Samuel H. Cowles and Benj. B. Brewer, Sacramento, Cal. Filed May 16, 1878.

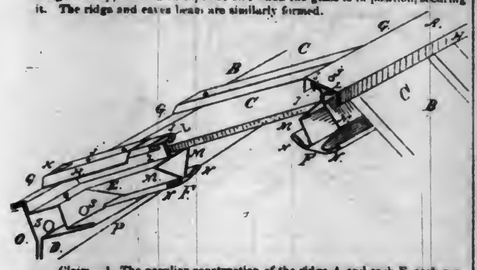


Claim.—1. The combination of the two double-acting pumps P P', propelling-ways *a a'* and *c c'*, with their respective gates, and the inlets *b d*, with check-valves *m n*, substantially as and for the purposes herein set forth.

2. The water passages *c''* and *c' d'*, with their respective gates, the inlets *b d*, with valves *m n*, and the double-acting pumps P P', all combined and used substantially as set forth.

207,019. SKYLIGHT BARS AND FRAME. Jos. L. Ooz, Milwaukee, Wis. Filed June 1, 1878.

Brief.—The sash-bars of a skylight-frame are struck up in one piece from sheet metal, so that two lower curved flanges are formed for water gutters, a shoulder on either side for support of the glass, and two outwardly-projecting flanges on top, over which caps are slid when the glass is in position, securing it. The ridge and eaves bars are similarly formed.



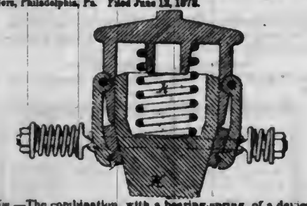
Claim.—1. The peculiar construction of the ridge A and sash E, each consisting of base-bar F, provided with flanges N, shoulders M, flanges L, clasp I, and cap H, all substantially as and for the purpose specified.

2. The combination of the sliding bar G, consisting of cap H and clasp I, with the base-bar F, substantially as and for the purpose specified.

3. The eaves-bar D, constructed, as shown in the sectional end view at O, from one piece of metal, provided with shoulder Q, flange P, and openings S, substantially as and for the purpose specified.

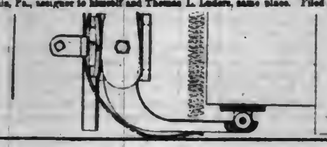
4. The combination of the base-bar D, sash E, and ridge A, the said several parts being formed as described, for the purpose specified.

207,020. DEVICES FOR RETARDING THE RECOIL OF SPRINGS. Charles J. A. Dick and Thos. L. Leders, Philadelphia, Pa. Filed June 12, 1878.



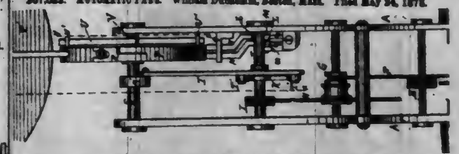
Claim.—The combination, with a bearing-spring, of a device for retarding its recoil, the said device consisting of two main elements—namely, inclined surfaces, and plates or jaws caused to bear against the said surfaces, substantially in the manner described.

207,021. DEVICES FOR RETARDING THE RECOIL OF SPRINGS. Charles J. A. Dick, Philadelphia, Pa., assignor to himself and Thomas L. Leders, same place. Filed July 24, 1878.



Claim.—The combination of a bearing-spring with a device for retarding the recoil, the said device consisting of two main elements—namely, parallel surfaces and levers or jaws caused to bear against the said surfaces, substantially in the manner described.

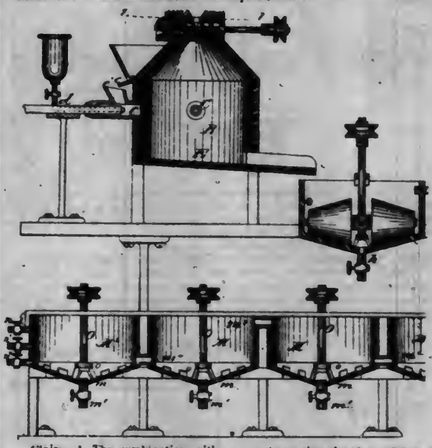
207,022. AUTOMATIC FANS. William Duchemin, Boston, Mass. Filed May 24, 1878.



Claim.—1. In an automatic fan, the combination of the shaft S, means, substantially as described, for imparting a rocking motion thereto, and the fly-wheel P, loose on said shaft and carrying a fan, V', and the spring U, whereby the rocking motion of the shaft is imparted in an increased form to the fly-wheel, as set forth.

2. The combination of the shaft J, rotated by suitable power and provided with pins L L, the shaft S, arranged to receive a rocking motion from the shaft J, the fly-wheel P, connected to the shaft S by spring U and provided with the wedges or cams E E, and the intermediate stops M M, adapted to arrest the rotation of the shaft J and to be depressed by the wedges E E, as set forth.

207,023. APPARATUS FOR AMALGAMATING AND WASHING ORES. George J. Fiznn and Thomas A. D. Fowler, Morristown, Pa. Filed Apr. 19, 1878.

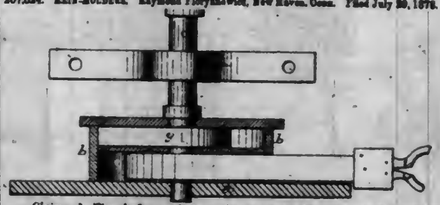


Claim.—1. The combination, with an amalgamating-chamber, of two or more blast-tubes, C C', arranged relatively to each other, substantially as described, whereby the blasts which they discharge will impinge upon or come in contact with each other in said chamber, for the purpose set forth.

2. The settlers M M', provided with vertical shafts holding radial beaters, and having connecting-passage *m'* at or near their bottoms, the settler M' having an outlet at or near its top, substantially as shown and described.

3. The series of settlers M M' M' M', having connecting-passages alternately at or near their tops and bottoms to successively introduce the water, ore, &c., at the top and take it out at the bottom of said vessels, and then vice versa, said settlers being provided with vertical shafts having radial beaters, substantially as shown and described.

207,024. REIN-HOLDERS. Raymond Florymowicz, New Haven, Conn. Filed July 20, 1878.



Claim.—1. The shaft *c*, made to project up to or above the top of the dash-board, and having its upper end recessed to receive the driving-reins, in combination with a spring to receive the shaft and a strap or cord to catch hold of the wheel, substantially as shown.

2. The combination of the base *a*, case *b*, shaft *c*, having a forked end, a strap, and a spring, substantially as set forth.

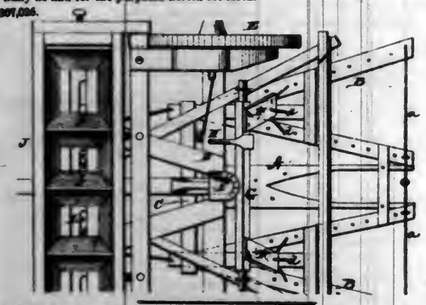
207,025. WHEELED HARROW AND SEEDING-MACHINE COMBINED. John S. Foster, Hudson, Mich. Filed July 10, 1878.

Claim.—1. The combination of the stationary center harrow-section A, cross-bar C, the triangular side sections B B, flexibly connected to the cross-bar C, and connected together by the hinged rods *a a*, the suspending-chains *d d*, and the rock-shaft G, with arms F and lever H, all constructed substan-

tially as and for the purposes herein set forth.

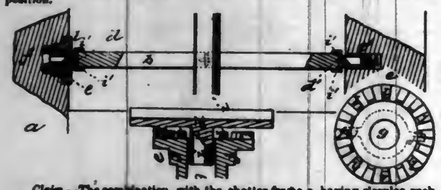
3. The combination of the need-slide L, rods *b*, rocking bar M, with arms N N, the arm O, with cam-groove *n*, and the pins *m* in the wheel E, substantially as and for the purposes herein set forth.

207,026.



207,026. BLIND-STOP. Albert F. Fuller, Providence, R. I. Filed July 30, 1878.

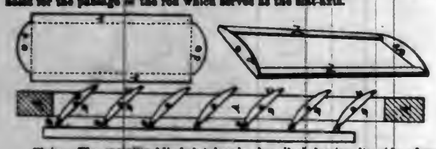
Brief.—A movable slat is provided at each end with journal-plates, one operated upon by a spring, and the other provided with a tooth adapted to engage with a ratchet-plate upon the frame and hold the slats in any desired position.



Claim.—The combination, with the shutter-frame *a*, having circular rack-plate *c* and opposite recess *c'*, of an endwise-movable slat, having end plates, *d d'*, provided, respectively, with journal *i* and tooth *i'*, and the rabbeted journal *b* and spring *e*, substantially as specified.

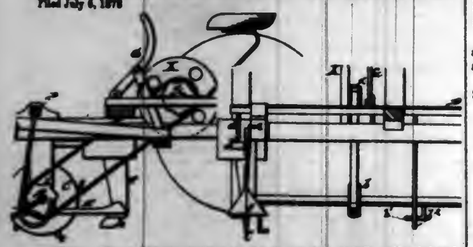
207,027. WINDOW-BLINDS. John E. Goodrich, Syracuse, Ohio. Filed June 20, 1878.

Brief.—The blind-slat is struck out of one piece of sheet metal, having rectangular projections at the sides, which are turned down on the body, and curved projections at the ends, which are turned up at right angles, and have holes for the passage of the rod which serves as the slat-axis.



Claim.—The metallic blind-slat herein described, having its side edges doubled by bending down the side extensions *b* and its curved ends bent at right angles with its plane, its double inside edge being perforated for the passage of the hinge-staple, and its curved ends being made with center holes for the passage of the fulcrum-wire, substantially as shown and described.

207,028. CORN-PLANTER. William W. Goodwin and Samuel W. Herbert, Oxford, Iowa. Filed July 6, 1878.



Claim.—The cutter-wheels C *c*, combined with the shaft B, pulley *b*, bevel-wheel X, elbow-arm *V*, rock-shaft D *b'*, and feed-bar *d'*, as herein specified.

207,029. KNITTING-MACHINE CYLINDERS. Adam Grain, Philadelphia, Pa. Filed Nov. 6, 1877.

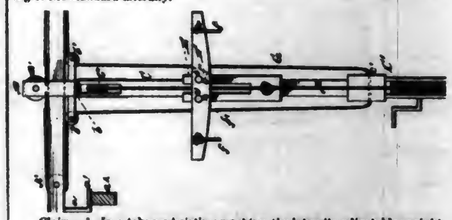
Brief.—The perforations in which the needle-shanks are held communicate with an undercut groove, so that when any of the shanks become broken they may be driven inwardly into said groove and thus make their escape.



Claim.—The needle-cylinder A, having on its under face an under-cut or groove, B, communicating with the openings *a* in the wall of the cylinder, and with the space between the cylinder and head below it, substantially as and for the purpose set forth.

207,030. TOBACCO-HOISTING APPARATUS. Warren A. Guy and Wm. S. Guy, Rotherly Court-House, Va. Filed July 6, 1878.

Brief.—The hooks attached to the elevating cross-bar carry the tobacco placed thereon. The roller, pulleys, and an adjusting-rope facilitate the swaying of the standard laterally.



Claim.—1. In a tobacco-hoisting machine, the laterally-adjustable upright, pendent from and operating relatively to the cross-bar, as herein specified.

2. The cross-bar A, having legs *a* and feet *a'*, made in one and at right angles with each other, and adapted to serve in relation to the beams *a''*, as and for the purpose set forth.

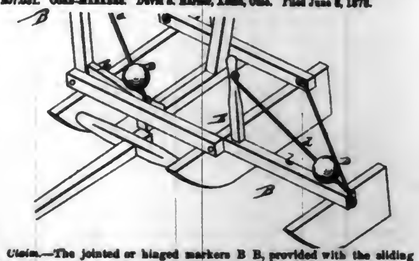
3. The cross-piece F, having slots *f'*, combined with the carriage E and pins *e'*, adapted to allow the cross-piece F to tilt in either direction, as specified.

4. The hinged double hooks *f f''*, in combination with the cross-piece F, as and for the purpose set forth.

5. The combination of the frame B, having friction-roller B', the swiveled upright C, and cross-bar A, with means for traversing the roller B' along the upper surface of the cross-bar, as herein set forth.

6. The cross-bar A, pulleys A' A', frame B, roller B', pulleys *b' b'*, and the swiveled upright C, in combination with the adjusting-rope G, as specified.

207,031. GOAD-MARKERS. David S. Harner, Xenia, Ohio. Filed June 8, 1878.



Claim.—The jointed or hinged markers B B, provided with the sliding weights D D and levers E, substantially as and for the purpose set forth.

207,032. GATES. Isaac N. Mastings and William S. Cook, Floris, Iowa. Filed Jan. 26, 1878.



Claim.—The combination, with a gate having the anti-friction roller C' and a pivoted diagonal raising-bar, D, of a stirrup, *g*, engaging the said bar, substantially as specified.

207,033. GUARD FOR SLIDE-VALVES OF LOCOMOTIVES. O. A. Haynes, St. Louis, Mo. Filed June 14, 1878.



Claim.—1. The valve M, having chambers N, provided with orifices *n n'* at two sides, to communicate with similar orifices, *i i'*, in the valve-case I, central air-passage Z, with branches *z z*, and screw-plugs O O', substantially as and for the purpose set forth.

2. The combination, with the reservoir D and valve-case I, secured to the bottom of said reservoir and containing the chambered measuring-valve M, provided with chambers N, having orifices *n n'*, for communicating through orifices *i i'* with pipes J K, leading to the slide-valves, of the rock-shaft U, connected at one end by arms R and T and rod S with the valve, and at the other end by arms W to rod Y, through which the valve is operated, as and for the purpose set forth.

207,034. COLLARS. Max Hermann, Troy, assignor of one-half his right to James K. P. Finn, Lansingburg, N. Y. Filed Apr. 20, 1878.

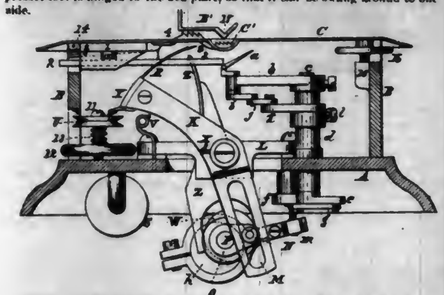


Claim.—1. The collar having the band B and the inner ply or plies, A, made of one continuous piece, substantially as and for the purpose set forth.

2. The collar having the band B, composed of a single thickness and formed of a continuation of one of the outer plies or faces of the collar, substantially as and for the purpose set forth.

207,035. BLIND-STITCH SEWING-MACHINES. Clara P. Hoffman and Nicholas Meyers, Buffalo, N. Y.; said Meyers assignor to said Hoffman. Filed Apr. 12, 1878.

Brief.—The needle-plate has a depression or shallow V-shaped groove running at right angles to the line of feed, the presser-foot being provided with a projection fitting therein, both being slotted to admit of the passage of the needle. The cloth is folded into this depression, and is stitched from the under side by a curved eye-pointed needle, making a seam which shows only on one side. The table or needle-plate can be raised or lowered to enable the needle to greater or less action upon the cloth, and the arm supporting the presser-foot is hinged to the bed-plate, so that it can be swung around to one side.



Claim.—1. The combination, with the shaft P, of the crank O, pivoted needle-carrier K, having the slotted aperture M, and the clamping-plate R', needle R, cloth-plate C, having the slotted depression C', and the presser-foot E', having the V-shaped projection 17, as and for the purpose specified.

2. The combination, with the eccentric and strap *b*, of the lever *f*, rod *g*, crank *e*, stationary arm *k*, vibrating arm *b*, rod *j*, crank *i*, and loop-taker *a*, as and for the object specified.

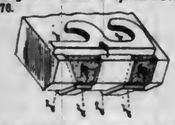
3. The combination, with the vibrating needle-bar K, of the hollow standard *d*, shaft *c*, with the crank *e*, arm *b*, arm *k*, connected with the crank *i* of the loop taker *a* by the rod *j*, as and for the purpose described.

4. The combination, with the vibrating arm Z, provided with the spring Z', of the slide 2, having the incline 5, with the stops 6 and the feed-bar 4, provided with the projection 7, as stated.

5. The combination, with the casing 1, of the notched slide 2, having the incline 5, with the projections 6, the slotted feed-bar 4, sliding upon the pin 8, and provided with the projection 7 and the spiral spring 10, the whole constructed and arranged to operate as and for the purpose specified.

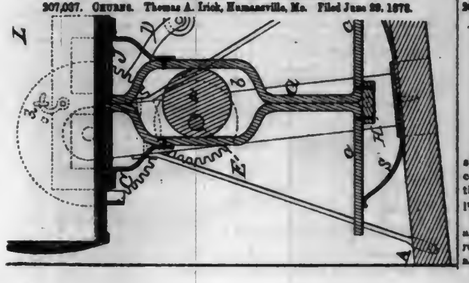
6. The combination, with the arm D, carrying the presser-bar F on its forward end, of the stop-pin I, as stated, said arm being pivoted to the bed-plate A by the screw-bolt J, as specified.

207,036. GRATE-HOLDERS. Robert J. Howden, Cincinnati, Ohio, and Jonathan E. Wood, Huntington, W. Va., assignors to Eureka Co-operative Foundry Association, Cincinnati, Ohio. Filed Oct. 2, 1876.



Claim.—The grate-holder D, constructed, as described, with projection *d*, extension *d'*, and lateral lips *d''*, in combination with the jamb B, non-conductor E, and basket A, all substantially as and for the purposes herein set forth.

207,037. CHURNS. Thomas A. Irish, Hamersville, Mo. Filed June 20, 1878.



Claim.—1. The combination, with the vertically-vibrating arm G, having a cradle, J, cream-vessel L, and a slot, *b*, below said cradle, of a rock-shaft, E, having an eccentric, *c*, and a mechanism rotating said shaft, substantially as specified.

2. The combination, with a base, A, and the spaced uprights erected thereon, of the rock-shaft H, arm G, having slot *b* and cradle J at its upper end, the vessel L, secured to said cradle, the shaft E, having eccentric *c* working in said slot *b*, and a mechanism actuating shaft E, substantially as set forth.

3. The combination, with the cruciform base A, having concave spring S, the rock-shaft H, having arms *c* resting on the ends of said spring, and the arm G, carrying a cradle, J, and provided with slot *b*, of the shaft E, having an eccentric, *c*, engaging said slot *b*, and a mechanism actuating the said shaft, substantially as specified.

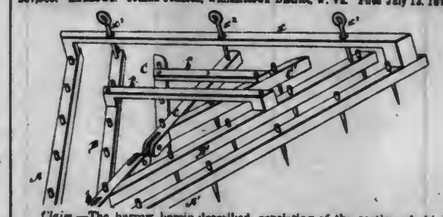
207,038. BELT-FASTENERS. Andrew J. Johnson, Cleveland, assignor to Harlow S. Johnson, Emily B. Johnson, and William M. Chapman, Ravenna, Ohio. Filed May 20, 1878.



Claim.—1. The link *c*, provided with slots *c*, having inclined upper sides, to operate as cams in forcing the cross-rods *x* into the belts, substantially as described.

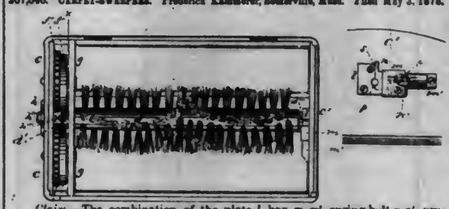
2. The rod *x*, having its ends bent in opposite or nearly opposite directions, in combination with links for connecting the ends of belts, substantially as described.

207,039. HARROWS. Joshua Johnson, Williamstown District, W. Va. Filed July 12, 1878.



Claim.—The harrow herein described, consisting of the sections A A', B B', and C C', of triangular form and different sizes, loosely linked together at the forward extremity, as shown, with their rear extremities on the same plane, and loosely secured at such rear extremity to the bar *x*, the whole adapted to be readily detached at will, and to allow free limited vertical motion, as specified.

207,040. CARPET-SWEEPERS. Frederick Kammerer, Somerville, Mass. Filed May 3, 1878.



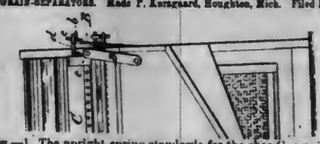
Claim.—The combination of the plate *l*, box *n n'*, spring-bolt *n n'*, provided with the spring *o*, and end board, *c'*, said plate *l* and bolt *n* being provided with the hole *p* as a bearing for the spindle *d'''*, all substantially as and for the purposes above described.

207,041. CONSTRUCTING OSAGE-ORANGE HEDGES. John Kline, Dayton, Ohio. Filed June 6, 1878.



Claim.—An improved hedge or fence, consisting of a series of the osage-orange plants, with their stems *a b c d* trimmed to switches and interwoven or intertwined with each other, substantially as shown and described, for the purpose set forth.

207,042. GRAIN-SEPARATORS. Mads P. Kongsgard, Houghton, Mich. Filed Mar. 13, 1878.

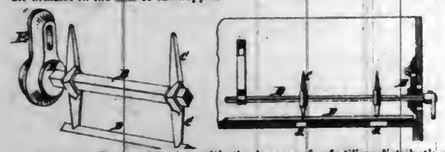


Claim.—1. The upright spring standards for the shoe C, consisting of the sheet-metal straps B, rigidly secured at their lower ends, and adapted to receive and form rests for the eyebolts *d* of the sieve, by being bent back at their upper ends and provided with pins *c*, substantially as and for the purpose set forth.

2. The combination, with the shoe C, of the upright spring-metal standards B, rigidly fastened at their lower ends, and adapted to receive and form rests for the eyebolts *d* of the sieve, by being bent back at their upper ends and provided with pins *c*, substantially as and for the purpose specified.

207,043. FERTILIZER-DISTRIBUTERS. Benj. Kuhns, Dayton, Ohio. Filed Jan. 24, 1878.

Brief.—On a longitudinal shaft are secured radial fingers, to the lower ends of which is attached a longitudinal bar, that sweeps the curved bottom in its oscillatory movement. One end of the shaft is journaled in an adjustable bracket in the side of the hopper.

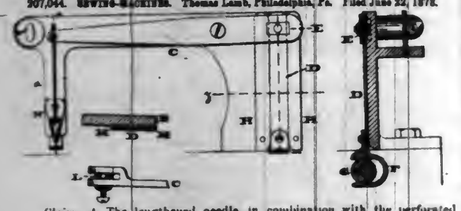


Claim.—1. The combination, with the hopper of a fertilizer-distributing machine, of a shaft, B, radial fingers C C, and longitudinal scraper-bar D, connecting the ends of one series of the radial fingers, substantially as set forth.

2. In combination with the hopper, shaft, and fingers and scraper, the bracket E, adjustably attached over an opening in the hopper, and having the collar H, constructed to revolve in the bracket and serve as a hub for the shaft, substantially as described.

3. The combination, with the stirring-finger, of a scraper-bar, triangular in cross-section, and attached to the finger, substantially as set forth.

207,044. SEWING-MACHINES. Thomas Lamb, Philadelphia, Pa. Filed June 22, 1878.



Claim.—1. The lengthened needle, in combination with the perforated needle-block L and the needle-arm C, bifurcated at its outer end, and provided with bearings to receive the needle-block, with suitable clamping device, substantially as described, and for the purpose set forth.

2. The combination, with the needle-arm C, bifurcated at its outer end, and provided with a slot near its rear end, of the block L, with clamping device for the needle, guides H H, oscillating block E, and slide D, having a stud at its upper end and a yoke at its lower end, operated by an eccentric, substantially as described, and for the purpose set forth.

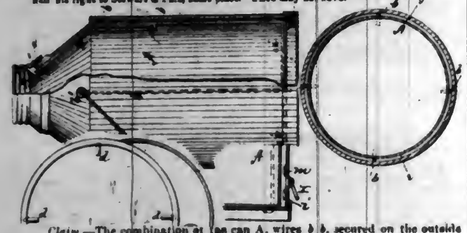
207,045. PACKAGES FOR TAR. Clinton H. Leggett, New York, N. Y. Filed Dec. 5, 1877.

Brief.—The invention consists in a paper box lined with a composition which is impervious to tar. (For composition, see claim.)



Claim.—A paper box having an interior lining or coating composed of a compound impervious to tar, and consisting of rosin, paraffine, and linseed-oil, substantially as and for the purpose set forth.

207,046. JACKETED CAN AND VENT FOR OIL. James S. Lester, Atlanta, Ga., assignor of one-half his right to Stewart & Fain, same place. Filed May 15, 1878.



Claim.—The combination of the can A, wires *b b*, secured on the outside thereof, and the open-top jacket, with air-inlets *i* near its bottom, forming an open air-chamber entirely around the can from top to bottom.

207,047. NUT-LOCKS. John C. Lewis, Charlottesville, Va. Filed July 30, 1878.



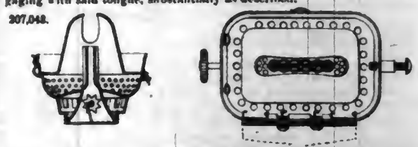
Claim.—The combination, with the right and left nuts B B', having adjacent ratchet-faces, and the bolt having right and left thread, of the soft or elastic washer C, compressed between the ratchet-faces of the nut, substantially as and for the purpose described.

207,048. LAMP-BURNERS. Wm. S. Lincoln, Bridgeport, Conn., assignor to the Bridgeport Brass Company, same place. Filed June 20, 1878.

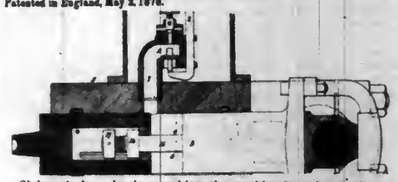
Claim.—1. The combination, with an oblong air-distributing base and an oblong chimney-supporting cone-base, of a hinge connecting the said bases on one of the longer sides of each, whereby is secured a hinge having a greater length and less liability to be twisted or to wabble on its pintle, and consequent increased accuracy in the closing of the cone-base upon the air-distributer, substantially as set forth.

2. The air-distributer having the locking-tongue formed in one piece therewith, in combination with the cone-base having a rest or projection for engaging with said tongue, substantially as described.

207,048.



207,049. RIVETING-MACHINES. Hector MacColl, Glasgow, Scotland. Filed Jan. 26, 1878. Patented in England, May 2, 1876.



Claim.—1. In a riveting-machine, the combination of operating mechanism with a ram made in two parts, between which is interposed a body of liquid having access to a loaded escape-valve, the two parts of the ram being so connected by a bolt that the part carrying the die may be moved backward by the other portion of the ram, all substantially as described.

2. The combination of the two-part ram, the connecting-bolt 15 and adjusting-nut, and the loaded escape-valve with the valve 11, opening inward, and the toe-rod 2, adapted to be operated by some working part of the machine, as and for the purpose set forth.

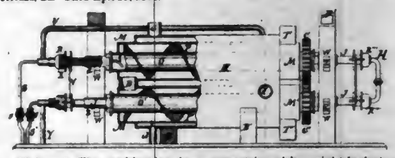
207,050. FENCES. James D. Mandeville and Wm. E. Mandeville, Caroline, N.Y. Filed June 1, 1878.



Claim.—1. The combination shown, for use in a fence, consisting of the posts *a*, the boards or rails *b*, and transverse bands or ties *c*, surrounding the boards or rails, and held to the posts by the staples *d*, substantially as shown and set forth.

2. The posts, boards, and bands or ties, and staples, constructed and used as shown and described, when a series of such boards and fastenings are used on the posts, one above the other, and make the fence, as set forth.

207,051. APPARATUS FOR DRYING MEAL, FLOUR, GRAIN, &c. Joseph T. Mayhury, New Orleans, La. Filed Apr. 29, 1878.



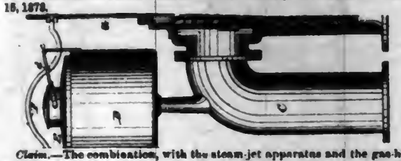
Claim.—1. The combination, in a grain-drier with a tight inclosing-case, of a hollow shaft for containing steam, having a spiral flight of elastic spring-fingers adapted to operate as a conveyer, a brush, and a distributer for the materials, substantially as described.

2. The reduced hollow cast-iron journals J J J J, screwed to the ends of the hollow shafts O O', and having a collar, X, at the opposite extremity, secured by screws N and working in stuffing-boxes R R, said stuffing-boxes being prevented from turning by the links V V, substantially as and for the purpose described.

3. The combination, with a tight inclosing-case, of a shaft having spiral flights of spring-fingers, and made eccentrically adjustable, as described, to cause the flights to bear more or less upon one side and be free upon the other, for the purpose described.

4. The combination of an inclosing steam-jacket, K, two or more cylinders, M M', hollow shafts O O', provided with spiral brush-conveyers P, hollow journals J J, connecting-pipe H, and siphon-pipes S S', substantially as and for the purpose described.

207,052. GAS-REGULATORS FOR RETORTS. Levi G. McCauley, West Chester, Pa. Filed July 15, 1878.



Claim.—The combination, with the steam-jet apparatus and the gas-holder F, of the spindle G and valve *b* and lever F, the latter having a flexible or hinge connection with said gas-holder, as specified.

207,053. SKIRTS. George A. McFaddon, Jordan Station, Ky. Filed June 20, 1878.



Claim.—1. In a shirt, the combination of the body *a*, bosom *c*, connected thereto upon only one side and across the bottom, pockets *d*, to receive the lining *e*, flap A, and the material *i*, made to project from both sides and to meet under the center of the bosom, substantially as shown.

2. The bosom *c*, having the extension or flap *h*, which extends over and around the shoulder, substantially as set forth.

207,054. IRONING-TABLES. Wm. C. McGill, Washington, D. C. Filed Jan. 7, 1878.

Brief.—One side of the table-top is adapted for use as a skirt-board by raising a hinged central section of the top, said board being supported by a longitudinal brace. The leg at the outer end of the skirt-board is cut away at the top and attached to the end rail, to allow the passage of skirts, &c., over the end of the board, the clothes being clamped by means of a pendent button, which also forms a support for the top of the shortened leg.

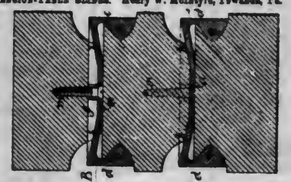


Claim.—1. The board *c*, having the slot *a'* and side board *a²*, and supported on legs, so as to provide an open space below and between the outer end of the side board *a²* and the upper end of the leg *d'*, substantially as and for the purposes set forth.

2. In an ironing-table, the combination, with the board *c*, constructed with a slot, *a'*, and side board *a²*, and having the leg *d'* detached and held by the brace-board *c'*, of the pivoted support or leg *f*, arranged under the outer end of the side board *a²* and over the top of the leg *d'*, substantially as and for the purpose set forth.

3. In combination with the ironing-board *a²*, the gravitating automatic support *f*, pivoted at its upper end to the board, and vibrating in the direction of the length of said board *a²*, as and for the purpose set forth.

207,055. EXTENSION-TABLE SLIDES. Henry W. McIntyre, Towanda, Pa. Filed June 10, 1877.



Claim.—1. The within-described guide for extension-table slides, said guide consisting of a plate, B, with flat portion *a*, inclined portions *b*, and vertical ends *d*, carrying beads *c*, as specified.

2. The plate B, having inclined portions *b*, and transverse rib *f*, all substantially as specified.

207,056. BREECH-LOADING FIRE-ARMS. Franz J. Mais, Brooklyn, N. Y. Filed Apr. 30, 1877.



Claim.—1. The breech-piece or shoe formed with bores of different diameters, constituting the receiving-bed for the cartridge and the retaining-shoe for the rear of the bolt, in combination with a bolt consisting of a forward and rear portion, corresponding in their diameters respectively with the bores of the breech-piece in which they slide, constructed and operating substantially in the manner described and specified.

2. The combination, with the sliding piece F, provided with an incline, *f'*, the flat spring H, secured at *f* and provided with a projection, *h'*, and the trigger C', consisting of a right-angled lever, the horizontal limb of which is formed, as shown, with two projections or undulations, *i i'*, for becoming successively the fulcra of the trigger, constructed and operating substantially in the manner described and specified.

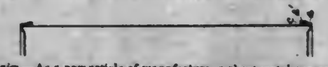
207,057. FOUNDATIONS FOR HONEY-COMBS. Martin Metcalf, Battle Creek, Mich. Filed Oct. 30, 1877.



Claim.—A comb-foundation for bee-hives, made of cloth saturated with starch, stamped with hexagonal indentations, and coated with wax, substantially as and for the purposes herein set forth.

207,058. SHEET-METAL CANS. Joseph W. Miller and Bernard Coll, Baltimore, Md. Filed July 16, 1878.

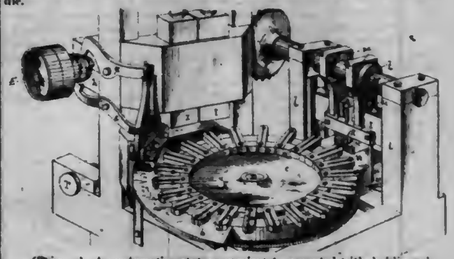
Brief.—The heads may be made without dishing, if desired.



Claim.—As a new article of manufacture, a sheet-metal can constructed of a body portion straight from end to end, combined with heads flanged as described—i. e., with the portion *a* of the flange of less diameter than the marginal portion, and binding closely against the straight side of the can, and the portion *a'* of greater diameter than *a*, and setting off from the body of the can, in parallel position therewith, as shown and described.

207,059. HORSE-NAIL MACHINES. Jas. Mills, Keeseville, N. Y. Filed May 14, 1878.

Brief.—An improvement of his former patent, and consists of devices for straightening the soft nail before it is hammered; also of detached independently actuated hammers to deliver blows of uniform force, whether the nail be thick or thin; and, finally, of devices for centering the nail upon the shearing-die.



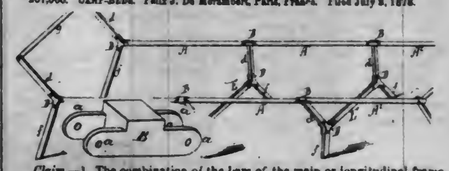
Claim.—1. An automatic rotating carrier, A, provided with holding-nippers arranged radially around its periphery, combined with the forceps F, suspended on the end of the pivoted arm *e*, and a wedge, G, at the end of the pivoted arm *g*, combined with cams *f* and h, whereby said forceps have imparted to them a movement in a vertical plane, to permit the nail to pass under them into and out of position, and an independent motion in a horizontal plane to close upon and squeeze the nail, substantially as set forth.

2. The automatic rotating carrier A and stationary anvil H, combined with independent hammers I I, moving vertically in guides, and separately actuated by cams on the shaft E, for the purpose of delivering to each nail blows of the same force without regard to thickness.

3. The automatic rotary carrier A, provided with radial nippers to hold the heads of the nails, and the punch and die for shearing the points of the nails, combined with a reciprocating plate Q, provided with a V-shaped guide-notch and having a rectilinear reciprocation from below, a spring to actuate the same independently, and a rock-shaft, *e*, rod *n*, and cam *t*, to forcibly depress said guide between times of action.

4. The automatic rotary carrier A, provided with radial nippers to hold the nail-heads, and the punch and die for shearing the points of the nails, combined with a guide-plate, Q, provided with a V-shaped guide-notch and having a rectilinear reciprocation from below, and a reciprocating presser, R, having a rectilinear reciprocation from above, whereby the nail is clamped at two points and held firmly and truly centered over the shearing-die.

207,060. CLOTH-BEDS. Felix J. Du Merambert, Paris, France. Filed July 9, 1878.



Claim.—1. The combination of the lugs of the main or longitudinal frame and the bars *d* of the transverse supporting-frame with the blocks B, each having ears *e*, to which are pivoted the main-frame bars, and a socket, to which is adapted one of the bars *d* of the transverse frame, as set forth.

2. The combination of the strips E or rods A, the pivoted arms *d* and *f*, and the three-armed plates D, as specified.

3. The combination of the strips E or rods A and the three-armed plates D with the pivoted arm *f* and the pivoted arm *d*, having a double-inclined end, as set forth.

207,061. HOLDBACKS FOR VEHICLES. S. E. Morse, South Bethel, Me. Filed July 30, 1878.



Claim.—1. The improved holdback consisting of an annulus, G, provided with a set-screw, *s*, by means of which it may be secured to the shaft, and having a flange at its edge, except on the side to be placed next to the horse, substantially as shown and specified.

2. The improved holdback-iron consisting of the partly-flanged annulus G, having a perforation in its side, adapted to be secured to the thill B' by means of a set-screw, *s*, passing through said perforation and engaging the said thill, substantially as specified.

207,062. FERTILIZER AND GRAIN-DISTRIBUTER. S. S. Morton, York, Pa., assignor of one-half his right to H. W. McColl, same place. Filed July 23, 1878.



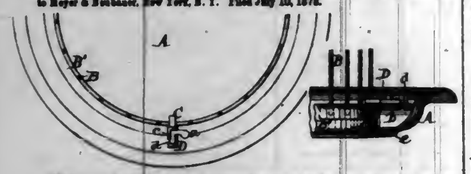
Claim.—1. The combination of the roller D, having diagonal or spiral tapering grooves *a* and the inclined shear-guide E, for the purposes herein set forth.

2. In combination with the roller D, having grooves *a*, as described, the slide F, rocking lever H, with clearer G^1 and weighted arm G^2, and the twist-chain H, substantially as and for the purposes herein set forth.

3. In combination with the distributing roller D, the intermittently-rotating shaft C, having straight teeth *b*, operating close to the side of the roller, and inclined curved wings I, arranged to draw the seed or fertilizer from both ends toward the roller, substantially as and for the purposes herein set forth.

4. The combination of the shaft B, with crank *i*, the shaft C, with toothed wheel L, the pitman I^1, and pawl R, substantially as and for the purposes herein set forth.

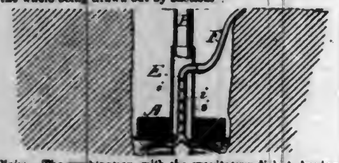
207,063. FASTENING DEVICE FOR BIRD-CAGES. C. H. Neubauer, Hoboken, N. J., assignor to Meyer & Neubauer, New York, N. Y. Filed July 10, 1878.



Claim.—A bird-cage body having a bottom rail, B', in combination with a detachable concave base, A, provided with the metallic webs *b*, each folded to meet below the bolt, in order to form tubular bolt-bearings D, and inclosing a reciprocating bolt, C, and having the outwardly-projecting flanges or feet *c*, substantially as described.

207,064. EXCAVATORS. Charles Foster, Omaha, Nebr. Filed Nov. 17, 1877.

Brief.—Water forced beneath a gravitating disk disintegrates the soil, which, entering the cylinder, is further reduced by radial jets from a central pipe, the whole being drawn out by suction.



Claim.—The combination, with the gravitating disk A, having orifice *a*, of the excavating-cylinder B, having an interior branched perforated pipe, E, a force-pump connected with said pipe, and a suction-pump connected with said cylinder, substantially as specified.

207,065. ORE ROASTING AND DESULPHURIZING FURNACES. Alexander Manage, Denver, Colo., assignor of three-fourths of his right to William Brown, H. T. Eagle, and Robert Reeburn, same place. Filed Apr. 4, 1878.

Brief.—The products of combustion pass around into the top and down through the ore-tube to the ore-hearth. The action of the gases is aided by the steam entering through the pipe in the hopper-tube.



Claim.—1. In a furnace for roasting and desulphurizing ores, the combination of the vertical tube B, having its upper end open to admit the flame and gases of combustion, and tube *e*, leading from the hopper, and its lower end communicating with the ore-chamber C, as shown and described.

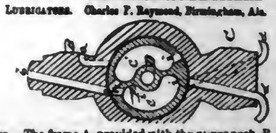
2. In a furnace for roasting and desulphurizing ores, the combination of the several parts described—namely, the furnace A, flue A^1, entirely surrounding the roasting tube B and connecting with its open upper end, tube *e*, leading from the hopper, and pipe *f* and ore-chamber C, all substantially as specified.

207,066. LAWN-MOWERS. Adolph M. Ess, San Francisco, Cal., assignor of one-third his right to D. Schilling, same place. Filed Apr. 15, 1878.



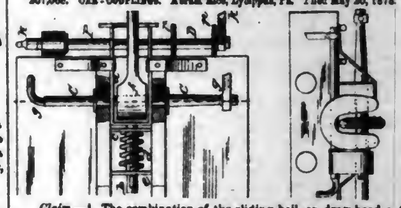
Claim.—A lawn-mower wherein are combined a sound platform, A, having fingers B, an axle, I, journaled in bearings on the under side of such platform and provided with supporting-rollers at its ends, the gear-wheels situated entirely beneath such platform and connected to the said axle, and the revolving knife C, operated by such gear and moving over the top of the platform and fingers, whereby the gear is prevented from becoming choked or clogged, substantially as and for the purpose set forth.

207,067. LUBRICATORS. Charles F. Raymond, Birmingham, Ala. Filed June 7, 1878.



Claim.—The frame A, provided with the upper neck, B, having the passages *a b*, and lower neck, C, having the passages *d d*, in combination with the valve D, having the partition F and branch inlet-passages *h*, leading into both chambers, and outlets *i i*, whereby both chambers are simultaneously filled with oil, and both simultaneously discharged, to oil both cylinders at the same operation with one air-duct, substantially as described.

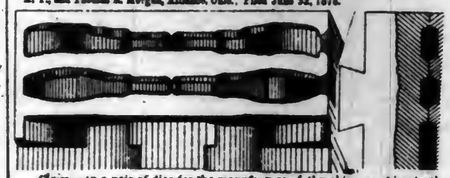
207,068. CAR-COUPLINGS. Abram Rice, *Lycippus*, Pa. Filed May 20, 1878.



Claim.—1. The combination of the sliding bell or draw-head *a*, the shaft C, carrying the link *f*, and having arms or cranks *g g*, the fixed plate *c*, bolt *b*, attached to bell *a*, spring *d*, shaft D, having swinging arm F, coupling pin P, attached to the latter, and pins *p p*, all arranged and operating substantially as and for the purpose herein set forth.

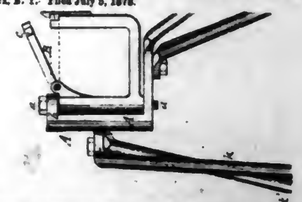
2. In a car-coupling, the coupling-pin P, secured to the swinging arm of a horizontal bar sliding laterally in bearings in the draw-head, substantially as and for the purpose herein shown and specified.

207,069. DIES FOR MAKING THRASHING-MACHINE TEETH. Julius G. Richardson, Manlius, N. Y., and Thomas B. Morgan, Alliance, Ohio. Filed June 22, 1878.



Claim.—As a pair of dies for the manufacture of thrashing-machine teeth, roughing-molds and finishing-molds, substantially as described, the latter having die-surfaces of the desired configuration to be imparted to the sides and edges of the teeth, and with walls outwardly flaring from said die-surfaces, substantially as set forth.

207,070. OUTRIGGERS AND ROWLOCKS FOR BOATS. Robert Roberts and John L. Knight, New York, N. Y. Filed July 5, 1878.



Claim.—1. An outrigger for racing-shells having its projecting end formed with the upright extension A, which braces the rowlock, and having its arms *b b'* extended laterally from the said upright at or about the vertical center thereof, substantially as and for the purpose set forth.

2. An outrigger having its rowlock end constructed with an upright extension, A, formed solid and integral with the outrigger, rising parallel, or nearly so, with the rowlock-plate, and arranged to rigidly support the said plate at the top, in addition to a further rigid support at the lower end in the plate of the outrigger, at the base of the upright, substantially as herein shown and described.

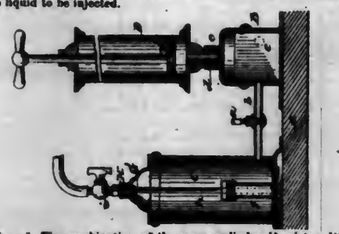
207,071. BALE-TIES. Alexander Reeber, Weimar, Tex. Filed July 30, 1878.



Claim.—A bale-tie made in one or more pieces, A A, with side flanges, *a a*, catches *b b*, and a pivoted latch, *d*, substantially as and for the purpose herein set forth.

207,072. STORAGE AND EXTRA PUMPS. Enrico Rennat, Cincinnati, Ohio. Filed June 20, 1878.

Brief.—The pump is shown connected to a receiver, which may be filled with the liquid to be injected.



Claim.—1. The combination of the pump-cylinder D, piston D^1 and its rod, chamber B, having the inlet tube or pipe E, and cock e^1, with the pipe *b*, having a cock, *c*, cylinder C, provided with an internal tube surmounted by a valve, *g*, and the discharging-tube G, having a cock, g^1, substantially as and for the purpose set forth—*i. e.*, to provide a clyster or enema apparatus.

2. The cylinder C, having the valve *g* and central tube or pipe *h*, and its cover G^1, provided with a tube and cock, *i*, in combination with the pipe *b* and its valve *c*, chamber B, pipe *d*, pump-cylinder D, its piston D^1, and rod, substantially as and for the purpose specified.

207,073. DOOR-SHUTTERS. Wm. D. Ramsey, Muncie, Ind. Filed July 13, 1878.

Brief.—Two rods are pivoted at one end and secured to the door at the pivotal point, a thumb-screw acting to tighten them. The other ends of the rods are provided with hooks, which engage with sockets on the door and frame.

Claim.—A door and sash fastener consisting of two hooked rods, D D, united together by a pivot, *b*, a thumb-screw, F, passing through one end of the pivot, and eyes or sockets *a a*, for receiving the hooked ends of the rods, substantially as and for the purpose herein set forth.

207,074. HAY-TEDDERS. Wm. M. Saunders, Alfred Centre, N. Y. Filed May 6, 1877.

Claim.—1. The combination of the reel D D^1, tine-shafts D^2, with spiral springs *a*, and curved levers *b*, the adjustable rollers *d*, placed in rear of and below the reel-axle, and the stationary cams G, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. In a hay-tedder, an apron, H, arranged above and in rear of the reel, for the purposes herein set forth.

3. The combination, with the idle-pinions E^2, pivoted plates J, and rods K, of the crank-shaft L, with lever L^1, pivoted rack P, with foot-plate P^1, and the spring P^2, substantially as and for the purposes herein set forth.

207,075. HARDING CARRIAGES. Christian Schmitt, New Haven, Conn. Filed July 18, 1878.

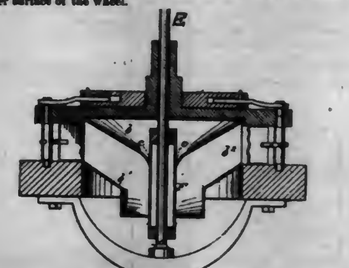
Claim.—1. The rear axle of a carriage constructed with a downwardly projecting stud, *a*, and upwardly-projecting posts *d d*, combined with the socket *b* below and sockets *c c* above, and springs around the posts *d d*, between the upper sockets and the axle, substantially as described.

2. The rear axle of a carriage constructed with a downwardly-projecting stud, *a*, and upwardly-projecting posts *d d*, combined with the socket *b* below and sockets *c c* above, and springs around the posts *d d*, between the upper sockets and the axle, and a forward axle, having a central stud, *e*, below and post *f* above, with central sockets *n n*, and springs *o* around the said post, and with the body of the carriage, substantially as described.

3. In combination with the axle of a carriage constructed with a downwardly-projecting stud and upwardly-projecting posts, corresponding sockets and springs, the said sockets provided with an elastic bushing, substantially as described.

207,076. TURBINE WHEELS AND GATE-OPERATING MECHANISM. Uriah S. Sheffer and Wm. H. Sheffer, York, Pa. Filed June 26, 1878.

Brief.—The tubular case surrounding the shaft is perforated at top and bottom, to provide for the escape of any water that may collect upon the disk-ing upper surface of the wheel.

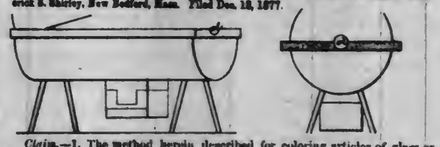


Claim.—1. The wheel consisting of the upper conical plate, *b*, the lower conical plate, b^1, terminating in a ring, and radial partitions b^2, curved in the ring portion, as shown, and arranged to form converging buckets with a curved downward discharge, as shown and described.

2. The combination, with the wheel consisting of conical plates *b* b^1 and partition b^2, of the shaft E and the interposed tubular case F, having openings above and below the wheel, as and for the purpose described.

3. The combination, with the vertically-pivoted gates, of the vertical rock-shafts, having a loose forked connection with said gates, and rigid arms above loosely connected with a circularly-adjustable disk, substantially as described.

207,077. PRODUCING COLORS OR GLAZE, &c., BY FUMING WITH VAPORS OR GASES. Frederick S. Shirley, New Bedford, Mass. Filed Dec. 18, 1877.

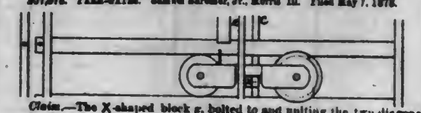


Claim.—1. The method herein described for coloring articles of glass or other material, consisting in subjecting the pieces to the action of fumes or gases in a closed chamber, for the purpose of tinting or giving them a corrugated or iridescent appearance, substantially as described.

2. The combination of the closed chamber for holding the vapors and a chamber attached thereto, in which the vapors or fumes are to be generated, said chamber for holding the fumes having one or more openings through which the articles of glassware to be subjected to the action of the gas or vapor may be inserted, substantially as specified.

3. As a new article of manufacture, an article of glassware having a tinted or iridescent appearance, substantially as specified.

207,078. FARM-GATES. Samuel Skreller, Jr., Morris Ill. Filed May 7, 1878.



Claim.—The X-shaped block *x*, bolted to and uniting the two diagonally arranged posts, as shown, to support the swivel and grooved rollers and allow the gate to roll and swing between the posts *c*, in the manner and for the purpose set forth.

207,079. ABRADING-TOOLS FOR DENTAL PURPOSES. Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place. Filed July 10, 1878.



Claim.—1. A dental cutting and polishing disk or wheel formed of celluloid, with grinding, cutting, or abrading material forced or rolled into its surface.

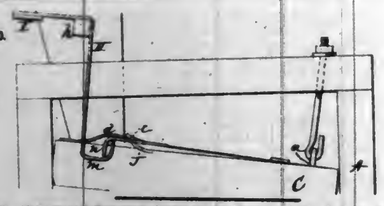
2. A dental cutting and polishing disk formed of celluloid, with grinding or cutting material forced or rolled into its surface, in combination with a mandrel or spindle, by which it is adapted to be rotated.

207,080. RICE-HULLING MACHINES. Wm. G. Stevenson, Meridian, Miss. Filed June 26, 1878.

Claim.—1. The valve G, arranged in the hopper and operated by means of the weighted lever H, and the arm J on the rubber D, substantially as and for the purposes herein set forth.

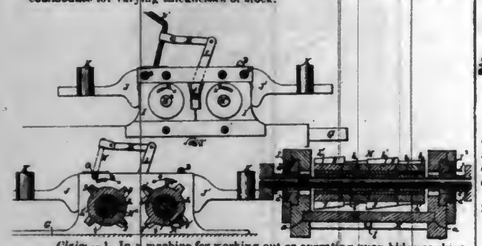
2. The risers *d d* on the bed C, in combination with the rubber D, for the purposes set forth.

207,080.



207,081. MACHINES FOR UNHAIRING, SCOURING, AND CURRYING HIDES. Joseph A. Talpey, Somerville, Mass. Filed Feb. 1, 1878.

Brief.—A series of metallic cylinders are arranged upon a shaft over a sleeve of rubber, thus providing each cylinder with an elastic bearing to accommodate for varying thicknesses of stock.



Claim.—1. In a machine for working out or operating upon hides or skins, a cylinder provided upon its outer periphery with one or more knives or scraping-blades, and having interposed between it and its shaft a cylinder of rubber, substantially as and for the purposes described.

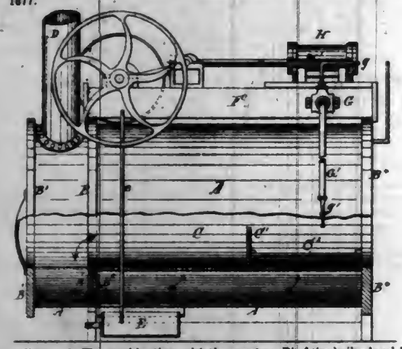
2. A knife or scraping cylinder made up of an inner metallic tube or bushing, a cylinder of rubber surrounding said inner tube, and an outer tube or sleeve surrounding said rubber cylinder, and provided with one or more knives or scraping-blades upon its outer periphery, all arranged and adapted to operate substantially as and for the purposes described.

3. In combination with a knife or scraping cylinder, the boxes *c c* or *c' c'*, screw pivots *d d* or *d' d'*, and the slides I I or I' I', all arranged and adapted to operate substantially as described.

4. The combination of the cylinders H and H', pivoted boxes *c c* and *c' c'*, slides I I and I' I', levers J J and J' J', weights K, levers L L, links M, levers N and N', and rock-shaft O, all arranged and adapted to operate substantially as and for the purposes described.

5. The combination, in a machine for unhairing, scouring, or currying hides or skins, of the table G, provided with the slot *b*, and adapted to be moved endwise in a horizontal direction, the carrier-plate P, adapted to be moved upward through the slot *b* of said table, and two knife or scraping cylinders arranged parallel, or nearly so, to each other, and with their axes in the same horizontal plane, substantially as described.

207,082. PORTABLE STEAM-ENGINES. William H. Tappey, Petersburg, Va. Filed Nov. 23, 1877.



Claim.—1. The combination, with the aperture B' of the boiler-head B and the furnace C and jacket A, of a perforated screen, B², substantially as described, for the purpose specified.

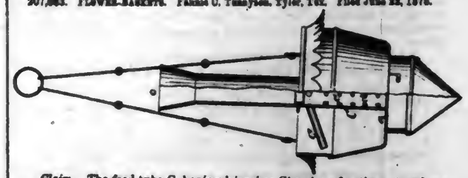
2. The combination, with the aperture B' of the boiler-head B, the furnace C, and the jacket A, of a weighted yielding perforated screen, B², substantially as described, for the purpose specified.

3. The combination, with the furnace C, the aperture B' of the boiler-head B, and the jacket A, of a removable water-box, E, connected with said jacket immediately in rear of the aperture B', substantially as described, for the purpose specified.

4. The combination, with the jacket A, furnace C, aperture B', and perforated plate B², of a removable water-box connected with said jacket immediately in rear of the aperture B', substantially as described, for the purpose specified.

5. The combination, with the water-box and the exhaust or condensing chamber, or the feed-water heater, of the pipe *e*, substantially as described, for the purpose specified.

207,083. FLOWER-BASKETS. Francis O. Tennyson, Tyler, Tex. Filed June 22, 1878.



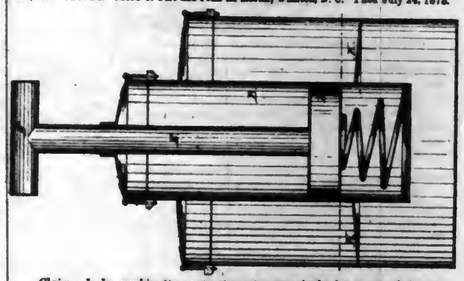
Claim.—The feed-tube C, having branches C' and perforations *c'*, and provided with flaring top *c*, to receive bouquets and the like, combined with a flower-basket, as specified.

207,084. MACHINES FOR TERRADING BOLTS. Thos. Thomas, Pittsburg, Pa. Filed June 11, 1878.



Claim.—The combination, with the box B, hollow spindle A, and spring-controlled jaws D, of the sliding tube *b*, rod *a*, passing through said tube and adjustable in relation thereto, collar *c*, clamp-screw *d*, cross-head *g*, and bevel parallel bars *h h*, with or without the block E, substantially as shown and described.

207,085. CHURNS. Jacob C. Tice and John M. Kester, Winston, N. C. Filed July 24, 1878.



Claim.—1. In combination with the outer vessel, the inner vessel, its perforated bottom, piston, and piston-rod, the annular perforated flange secured to the inner vessel, substantially as and for the purpose specified.

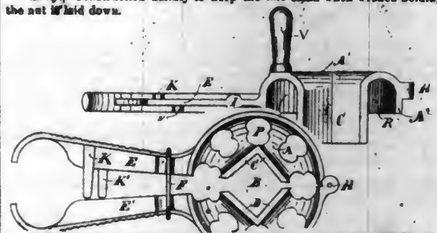
2. In combination with the inner cylinder and its piston, the spiral spring located in said cylinder, as and for the purposes specified.

207,086. PROCESSES FOR THE CONTINUOUS PREPARATION OF NITROGEN GAS. Gustav A. Tuettler, Blasewitz, near Dresden, Saxony. Filed Oct. 24, 1877.

Claim.—The continuous preparation of nitrogen gas for inhaling and other purposes, the same consisting in, first, the action of ferrous sulphate upon atmospheric air, whereby the latter loses a portion of its oxygen and the iron salt is converted into a ferric sulphate; and, second, the deoxidation of said ferric sulphate and its reduction to ferrous sulphate by the action of metallic iron, substantially as and for the purpose specified.

207,087. AXLE-NUT WRENCHES. Avery Van Wie, Indianapolis, Ind. Filed Jan. 26, 1878.

Brief.—Construction mainly to keep the nut clean when wrench holding the nut is laid down.



Claim.—1. A wrench composed of two sections, A A', hinge-joint H, handles E E, clamp-band F, and crank-handle V, in the manner and for the purpose substantially as shown and described.

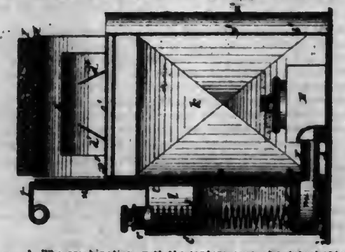
2. The handles E E, notched on the edges G, in combination with the clamp-band F and a wrench composed of two sections, hinged at H, in the manner and for the purpose substantially as shown and described.

3. In combination with a wrench consisting of two parts, hinged at H, the handles E E and guide-supporting lugs K K', or their equivalents, in the manner substantially as shown and described.

4. A wrench composed of two semicircular crowning sections, hinged at H, and each section or half provided with jaws C D, in the manner and for the purpose substantially as shown and described.

5. A wrench composed of two sections, hinged at H, having handles E E, and provided with a crank-handle, V, in the manner and for the purpose substantially as shown and described.

207,088. LANTERNS. Carl H. Viereck, Schleswig, Prussia. Filed June 19, 1878.



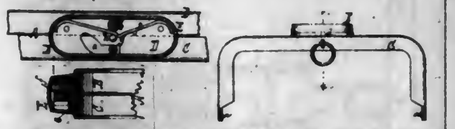
Claim.—1. The combination, with the lantern-case, of a detachable outside oil-reservoir, with its attached wick-box and tube, and supports and fastenings for maintaining its connection with the case, essentially as described.

2. The combination, with the outside reservoir, C, composed of an upper main chamber, *l*, a lower chamber, *m*, the valve *n*, controlling communication from the upper to the lower chamber, the spring *o*, for closing said valve, the rod *t*, extending through the tube *u*, for opening the said valve, the wick-box E, and duct or tube connecting the wick-box with the lower chamber, all constructed and arranged substantially as and for the purpose specified.

3. In combination with a lantern having a glazed front and reflector in rear of the light, the plate *a'*, secured to one side of said lantern, forming an upright through-flue, communicating with the interior of the lantern through an aperture, *b'*, as and for the purpose specified.

4. The combination of the outer open-ended hood, H, having a covering, I, of non-conducting material, applied to its outer surface, in combination with the inner open-ended hood, G, over the aperture *c'* in the top of the case, essentially as described.

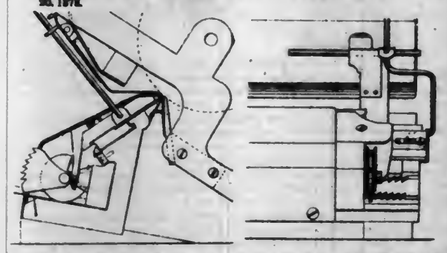
207,089. CLASPS FOR POCKET-BOOKS, &c. Leopold Wolf and Marcus Losh, New York, N. Y. Filed July 25, 1878.



Claim.—1. The combination, in a lock for pocket-books and other articles, of a swivel-button secured to one part of the article to be locked, a lip projecting from the edge of said swivel-button, a supporting plate provided with a recess to admit said lip, and a locking-pin secured to and projecting from the other part to be locked and adapted to enter the recess of the supporting plate, all constructed and adapted to operate substantially as and for the purpose shown and described.

2. The combination, with the swivel-button E, its lip *e*, and locking-pin *c*, of a spring, *f*, acting against a stud, *b*, substantially as and for the purpose set forth.

207,090. RESTS FOR CLOTH-SHEARING MACHINES. A. Woolson, Springfield, Vt. Filed Mar. 20, 1878.



Claim.—1. In a cloth-shearing machine, the rest provided with extensions constructed to slide to and from the ends of the rest, the edge of the extensions being at all times parallel and continuous with the edge of the rest, and a smooth and uninterrupted bearing-edge preserved without break or joint between the middle or fixed edge of the rest and the edges of the extensions.

2. In a cloth shearing machine, the stationary rest combined with extension ends, the edge thereof having a space parallel with the rest, which space has within it one or more plates constructed to slide within said space simultaneously with the sliding of the extension, the edges of the sliding plates within said space substantially filling it, and making the edge of the rest and its extension practically a solid bearing-surface for supporting the cloth to the action of the shearing-blades.

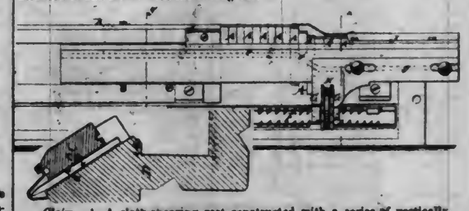
3. In a cloth-shearing machine, the cloth rest formed of a series of plates with sharpened edges, the said edges converging and being coincident and parallel with each other.

4. In a cloth shearing machine, the combination, with revolving shearing-blades, of an extension-rest, the bearing-edge of which is placed at an angle with the ledger-blade, whereby the entire width of the edge of the rest and its extension supports the cloth against the action of the shearing-blades.

5. In a cloth shearing machine, the extension ends of the rest thereof, in combination with adjustable lint-shields, which are attached to the blade-frame, and devices for automatically adjusting the same parallel and simultaneously with said rest or the sliding parts thereof, substantially as described.

207,091. RESTS FOR CLOTH-SHEARING MACHINES. A. Woolson, Springfield, Vt. Filed Mar. 20, 1878.

Brief.—The rest is rendered extensible by means of square-edged vertically-adjustable sections provided with pins, which project into a cam-slot in a sliding bar. The upper edges of the sections are covered by a hood, which is attached to and moves with the sliding bar.

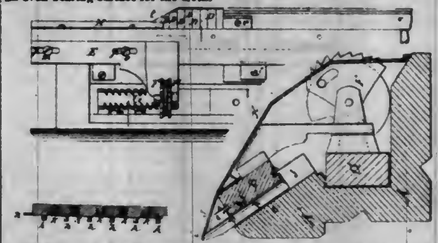


Claim.—1. A cloth-shearing rest constructed with a series of vertically adjustable sections, each section constructed with square edges, and with their ends also square and at right angles to said edges, in combination with a hood, whereby the cloth is protected from said angular ends, substantially as described and shown.

2. In a cloth-shearing rest, a series of vertically-adjustable sections, provided with pins affixed thereto or slots formed therein, in combination with a sliding bar having a cam formed therein or thereon, and mechanism, such as described, for operating the same, whereby the said sections are automatically raised and lowered by the action of the cloth, essentially as specified.

207,092. RESTS FOR CLOTH-SHEARING MACHINES. A. Woolson, Springfield, Vt. Filed Mar. 20, 1878.

Brief.—The sections of the extensible rest, being constructed with lips and corresponding recesses, are arranged to overlap each other. They are raised and lowered by means of pins which run in a cam-slot in the sliding bar. A plate attached to the sliding bar covers the adjustable sections, thus affording an even bearing-surface for the cloth.



Claim.—1. A rest for a cloth-shearing machine, with extension ends, consisting of a series of vertically-adjustable sections made with lips, the lip of one section being received in a recess formed in the next adjacent section, and the upper outer corner of the lip of each section rounded off, substantially as and for the purpose described.

2. In a rest for a cloth-shearing machine, a series of vertically adjustable sections combined with one or more covering-plates, which form, with the upper ends of the sections, the edge for supporting the cloth to the action of the cutting-blades, substantially as described.

3. In a rest for a cloth-shearing machine, a series of vertically-adjustable sections, each section having fitted to it a pin, in combination with a sliding bar provided with a cam-slot, whereby the sections are elevated and depressed positively, substantially as and for the purpose described.

4. In a rest for a cloth-shearing machine, a series of vertically-adjustable sections, in combination with a sliding bar provided with a cam-slot and double ratchet-bar, feelers, cam, and devices for reciprocating the ratchet-bar, whereby the sections may be automatically and successively elevated and depressed, substantially as and for the purpose described.

5. In a rest for a cloth-shearing machine, a series of vertically-adjustable sections, in combination with a plate, J, with one of its ends bent, substantially as and for the purpose shown and described.

6. In a rest for a cloth-shearing machine, a series of vertically-adjustable sections, in combination with cams adjustably secured to the bar B by set-screws *m* and *n* and slots *p*, whereby the extent of the elevation or depression of the sections in their relation to the bent end *s* of the covering plate J may be regulated, substantially as described.

207,093. MANUFACTURE OF RED ULTRAMARINE. J. Zeltner, Nuremberg, Bavaria. Filed Oct. 12, 1877. Patented in Germany, July 2, 1877.

Brief.—The steps of this manufacture start from blue or green ultramarine, which is first converted into violet ultramarine, and thence by oxidation into red ultramarine.

Claim.—The herein described process of making red ultramarine by the action of nitric acid upon violet ultramarine or ultramarine hydrate, substantially as specified.

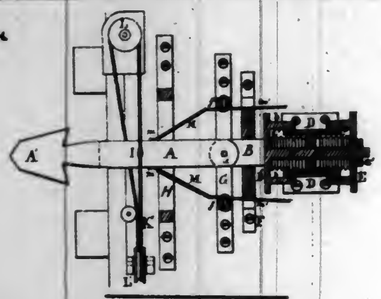
207,094. CAR-COUPLINGS. John Ballard, Cohoes, N. Y. Filed June 24, 1878.

Claim.—1. The arrow-headed spring-acted draw-bar A, swiveled to the stock B, having cross-head B', in combination with the cross-head E and the box D, inclosing the springs C and C', which encircle the bolt B², substantially as and for the purpose described.

2. The combination of the windlass L, the two cords K K', pulley L', and draw-bar A, substantially as and for the purpose described.

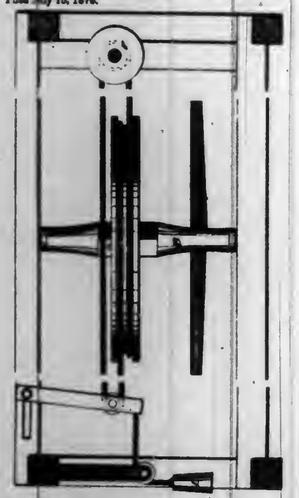
3. The combination of the draw-bar A, springs M M, springs C C', inclosed in the box B, the cross-heads B' and E, the windlass L, cords K K', and pulley L', all substantially as and for the purpose described.

207,804.



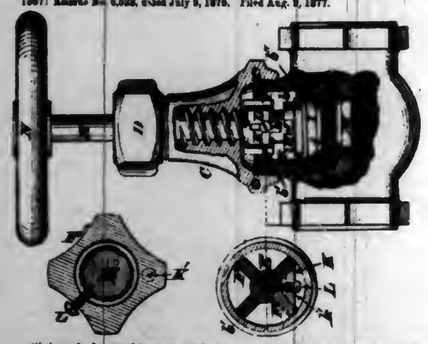
REISSUES.

8,366. HORSE-POWERS. Charles E. Mccarthy, Forsyth, Ga. Patent No. 201,807, dated Mar. 26, 1878. Filed July 15, 1878.



Claim.—The improved horse-power, consisting of the combination of an endless rope belt, a tension-pulley, a speed-pulley, and a horizontal pulley or band-wheel on the king-post, having a continuous periphery and flange, two of said pulleys being in the same plane and distending the belt, while the third is arranged between the end pulleys, at right angles to the plane of the same, and has the rope wrapped once around its periphery, and then extended tangentially in a straight line to the other two pulleys, substantially as shown and described.

8,367. GLOBE-VALVES. James Powell, Cincinnati, Ohio. Patent No. 61,758, dated Feb 5, 1867; Reissue No. 6,522, dated July 6, 1875. Filed Aug. 9, 1877.



Claim.—1. In combination with a screw-stem of a globe-valve, a loose disk-valve, constructed substantially as described, so as to be capable of being locked for the purpose of grinding.

2. In the described combination with a valve-stem, provided with a self-adjusting valve, the locking-piece K, or its equivalent, adapted to operate as set forth.

3. In combination with the lock-pin K, or its equivalent, the ping or hub H of a loose disk-valve, having an opening or cavity, J, for the purpose of locking the disk in the act of grinding.

4. In the described combination the following elements, to wit: a valve-stem having guides for preserving its axial position when released from the screw-cap, a self-adjusting valve, and the tongued and adjustable piece K, adapted to enter the cavity J in the valve and to be secured either in or out of lock, substantially as and for the purpose set forth.

5. In combination with a screw-stem adapted to maintain an axial position in the neck of a globe-cock, a loose disk-valve, so constructed as to be guided at its lower end, substantially as and for the purposes designated.

6. The described downward prolongation b^{w} of the interior wall of the neck B of a globe-valve, in combination with a screw-stem adapted to be guided within the same, as and for the purpose explained.

7. The described cylindrical prolongation or extension *l* of valve-disk I, in combination with the vertical sides of the valve-opening M, for the purpose of guiding said valve, so as to control the escape of fluids and prevent undue wear of the parts, substantially as herein described and set forth.

8. The spring-collar G, in combination with screw-stem E, having annular groove *e*, valve I, and plug H of a globe-cock, for the purpose described.

9. The combination, in a globe-cock, of a lockable loose valve, I, valve-seat M, screw-stem E, and handle N, for the purpose set forth.

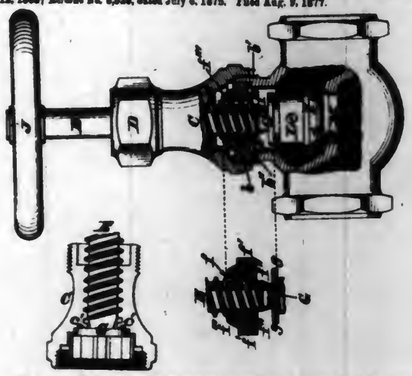
10. The described loose collar or guide-plate F', located within the neck of a globe-valve, and adapted to maintain the stem E in an axial position within said neck, both during the rotary and reciprocating movements of said stem E, substantially as herein described and set forth.

11. The combination, in a globe-valve, of the valve-disk I, prolongation *l*, opening M, and screw-stem E, substantially as herein described, and for the purpose set forth.

12. The screw-threaded nut H, retained on valve-stem E by a ring or collar, G, which ring is inserted in an annular groove formed in said stem, substantially as herein described.

13. The combination of grooved valve-stem E *e*, wings F, ring-collar D, rotatable nut H, and valve-disk I, substantially as herein described, and for the purpose set forth.

8,368. GLOBE-VALVES. James Powell, Cincinnati Ohio. Patent No. 77,913, dated May 12, 1868; Reissue No. 6,536, dated July 6, 1875. Filed Aug. 9, 1877.



Claim.—1. The loose collar or guiding-plate F, supported by the globe-valve neck B, said plate or collar F being traversed by valve-stem E without engaging with the screw of the latter, substantially as and for the purpose described.

2. The packing-collar ti, cast with valve-stem E, in combination with the loose disk-valve and the hub C, as described and set forth.

3. The valve I and valve-stem E, in combination with the supported and unthreaded guide-plate F, for the purpose described.

4. The described loose disk-valve I, with the screw L passing through the body of said valve, in combination with the screw-stem E, as and for the purpose set forth.

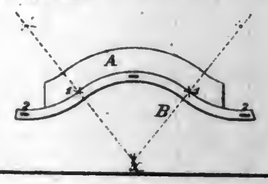
5. The described loose disk-valve I, screw L, stem E, fast collar G, and loose collar F, combined and arranged as set forth.

6. The valve I, loose unthreaded guide-plate F, body-neck b' b'', screw-stem E, and handle J, combined and arranged substantially as described.

7. The described loose disk-valve I, perforated for the reception of a retaining device, whose inner end enters a countersink or cavity in the valve-stem E when said valve is to be ground, substantially as herein described.

8. The described perforated loose disk-valve I, guide-extension *l*, and seat-opening M, in combination with a valve-stem, E, which stem is constructed to receive a retaining device for the purpose of locking said valve I while the latter is being ground, substantially as herein explained.

8,369. COLLARS. James K. P. Pine, Lansingburg, N. Y. Patent No. 189,134, dated Apr. 3, 1877. Filed July 13, 1876.



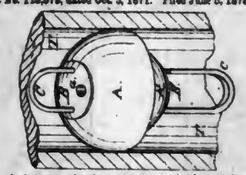
Claim.—1. A standing-collar having its lower edge, where it is joined to the neck-band, cut in a reverse curve, substantially as and for the purpose set forth.

2. The collar A, having its lower edge cut in a reverse curve, as described, in combination with the band B, curved to correspond with the collar, substantially as and for the purposes set forth.

3. A standing-collar having the meeting edges of the top and band cut on a curve that is reversed at both ends, and at points between the center and ends of the collar, substantially as set forth.

4. A standing-collar having the lower edge of its band cut on a curve that is reversed at both ends, and at points between the center and ends of the collar, substantially as described.

8,370. CHAIN-PUMP BUCKETS. Lewis M. Ramsey and Moses Ramsey, St. Louis, Mo., assignees, by mesne assignments, of Daniel B. Greene, administrator of Joseph S. Wilson, deceased. Patent No. 110,670, dated Oct. 3, 1871. Filed June 5, 1878.



Claim.—1. A chain-pump bucket constructed of two elastic hemispheres, having their flat sides in contact, substantially in the manner and for the purpose specified.

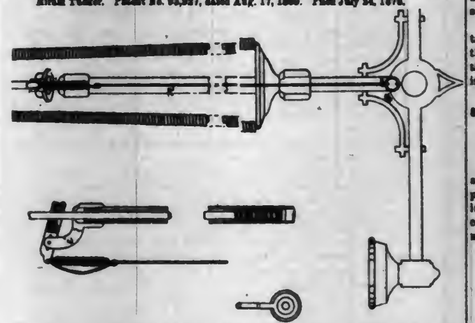
2. A chain-pump bucket composed of an elastic member, A, and member A', expanding the former by pressure beneath it.

3. In chain-pumps, a bucket composed of two elastic segments of spheres, A and A', the former, A, being larger than the other, A', and constructed substantially in the manner and for the purpose specified.

4. In combination with a rubber bucket, an incompressible tube, for the purpose set forth.

5. The combination of the plates B B', tube *a*, and link C with an elastic bucket, for the purpose set forth.

8,371. EXTENSION-CHANDELIERS. The Bradley & Hubbard Manufacturing Company and the Meriden Malleable Iron Company, Meriden, Conn., assignees, by mesne assignments, of Hiram Tucker. Patent No. 93,927, dated Aug. 17, 1869. Filed July 24, 1878.



Claim.—1. The combination, substantially as before set forth, of the body of the chandelier, the telescopic guides, and helical springs.

2. The combination, substantially as before set forth, of the body of the chandelier, the telescopic guides, the helical springs, and a securing device.

3. The combination, substantially as before set forth, of the body of the chandelier, the telescopic guides, the top piece, and the helical metallic springs, arranged externally of the covering-tube of the telescopic guides, and between the projecting top piece and the body of the chandelier.

4. The combination, substantially as before set forth, of the body of the chandelier, the telescopic guides, the top piece, the locking device, and the helical metallic springs, arranged externally of the covering-tube of the telescopic guides, and between the projecting top piece and the body of the chandelier.

5. The combination, substantially as before set forth, of the body of the chandelier, the telescopic guides, the top piece, the helical metallic springs, arranged as described, the locking device, and the handle for operating the same, arranged at the level of the body of the chandelier.

8,372. BOTTLES AND BOTTLE-STOPPERS. Hiram Codd, Camberwell, England, assignor to himself and Richard Barrett. Patent No. 129,052, dated July 23, 1872. Filed July 8, 1878. Patented in England, Nov. 24, 1870, and Aug. 22, 1871.



Claim.—1. The hereinbefore-described method of providing the bottle having the open end or mouth with a loose tumbling internal stopper adapted to move outward and up to the mouth to tightly close it, which consists in limiting the movement of the stopper (in moving away from and up to the mouth) to the neck of the bottle inside or below its mouth or point of discharge, the contents of such bottles, when emptying them, being caused to flow past the stoppers on the way to the mouths of the bottles, which are left wholly unobstructed.

2. The combination, with the bottle having the open end or mouth, of an internal unpacked stopper below the mouth, composed wholly of glass, and adapted to move outward to close the mouth when subjected to pressure from within, and to drop downward below and away from the mouth in opening the bottle, substantially as and for the purpose set forth.

3. The combination, substantially as hereinbefore set forth, of a bottle having an internal elastic packing at its mouth, and an internal gravitating rigid stopper practically incompressible and incapable of wear or change in shape.

4. A bottle having an internal loose stopper and provided with a recess to prevent the movement of the stopper toward its mouth, substantially as hereinbefore set forth, whereby the bottle may be tilted to empty it without closing its mouth.

5. A bottle having the open end or mouth, and an internal loose stopper below the mouth, adapted to move outward by pressure from within to close the mouth, and provided with a contraction at the lower part of its neck, to prevent the stopper, when forced inward, from dropping into the body of the bottle, substantially as hereinbefore set forth, whereby the bottle may be emptied by the flow of the liquid past the stopper in the neck and thence to the mouth.

6. The bottle having the open end or mouth, and a loose internal stopper in its neck below the mouth, said stopper being confined in its movements, in opening and closing the bottle, to the neck or space between the mouth and body of the bottle, and adapted to be forced outward or upward to close the mouth, and to drop downward below and away from the mouth to allow the liquid to flow past it in emptying the bottle, substantially as hereinbefore set forth.

7. The combination, substantially as hereinbefore set forth, of a bottle having an internally-packed mouth and chambered neck and an internal loose stopper in said chamber, and limited in its range of movement to the neck of the bottle, whereby the stopper may readily and quickly be brought to its seat and injury to the bottle is avoided.

8. The combination, substantially as hereinbefore set forth, of a bottle having an internally-packed mouth and an internal glass ball-stopper of greater diameter than the mouth of the bottle.

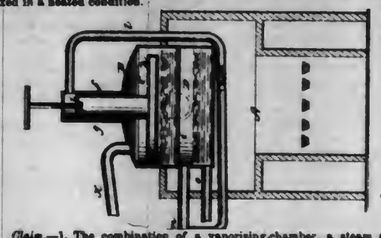
9. The hereinbefore-described method of securing stoppers in bottles and confining them below the mouths or discharge-openings thereof, which consists in placing the stopper in the bottle during its formation, and then reducing the size of the mouth to a diameter less than that of the stopper, to prevent the stopper being forced by internal pressure out of the mouth or beyond the point at which the liquid escapes from the bottle, in emptying which the contents flow past the stopper.

10. A bottle having a contraction at the base of the neck, a packing in its mouth, and an internal loose stopper between said packing and contraction, substantially as and for the purpose hereinbefore set forth.

11. A bottle having a recess in its neck, an internal stopper, and a contraction at the base of its neck, substantially as hereinbefore set forth, whereby the bottle may be tightly closed, the stopper is prevented from dropping to the bottom of the bottle when it is opened, and may be prevented from moving back to the mouth by the recess.

8,373. APPARATUS FOR EVAPORATING LIQUIDS. Jas. J. Johnston, Columbiana, Ohio, assignor, by mesne assignments, to the American Hydrocarbon Gas Company, Pittsburg, Pa. Patent No. 50,935, dated Nov. 14, 1865; antedated Nov. 2, 1865; Reissue No. 5,570, dated Sept. 9, 1873. Filed Jan. 25, 1873.

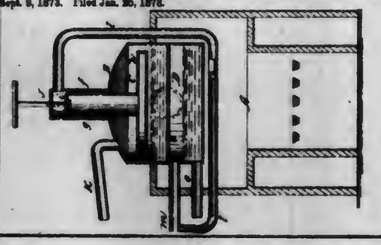
Brief.—Steam is generated in the lower chamber of the still or evaporator, and such steam, mingled with air under pressure, is passed through a coil of pipe below the generator, where the two are superheated, and thence are passed in jets down upon the surface or into the hydrocarbon liquid in the upper chamber of the still or evaporator, where the steam, air, and oil vapors are mixed in a heated condition.



Claim.—1. The combination of a vaporizing-chamber, a steam and air superheater communicating therewith, and means for commingling the vapor, steam, and air in a highly-heated condition, substantially as described.

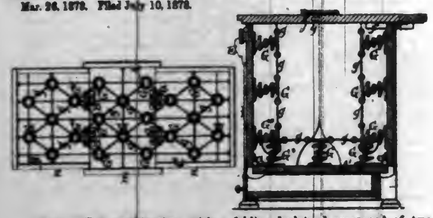
2. The combination of the furnace A, still B, adjustable disk h, and pipes *k*, *l*, and *m*, substantially as herein described, and for the purpose set forth.

8,374. PROCESSES FOR EVAPORATING LIQUIDS. Jas. J. Johnston, Columbiana, Ohio, assignor, by mesne assignments, to the American Hydrocarbon Gas Company, Pittsburg, Pa. Patent No. 50,935, dated Nov. 14, 1865; antedated Nov. 2, 1865; Reissue No. 5,570, dated Sept. 9, 1873. Filed Jan. 25, 1873.



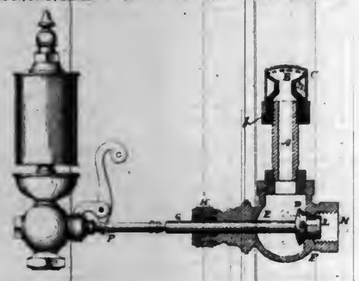
Claim.—The herein-described process of obtaining a useful product from air, steam, and the vapor of hydrocarbon liquids—namely, by uniting them in a highly-heated condition.

8,375. TABLE-EXTENSION. Emerick Kiss, New York, N. Y. Patent No. 201,795, dated Mar. 26, 1878. Filed July 10, 1878.



Claim.—The combination, with a folding bedstead composed of two or more sections connected together by hinge-joists, of spiral springs attached to the inner sides of said sections, so as to be in alternate positions, and connected together and to the sides of the sections by cords or bands, all substantially as shown and described, whereby a continuous unbroken spring-support for a mattress is provided when the sections are unfolded to a horizontal plane, and when folded the said sections fit snugly and nicely together, and the position of the springs avoids their entanglement, as set forth.

8,376. FIRE-EXTINGUISHER. Henry S. Parmelee, New Haven, Conn. Patent No. 156,374, dated Oct. 27, 1874; Reissue No. 6,257, dated Jan. 26, 1876. Filed June 21, 1878.



Claim.—1. The combination, with a distributer arranged to spread the water or other fluid over a large area, of the metal cap C, arranged to cover and protect the distributer, substantially as and for the purpose set forth.

2. In an automatic fire-extinguisher, the combination, with a distributer provided with an extended base, of a metal cap arranged to fit the distributer above the base and secured to the same by a low fusible material, substantially as and for the purpose set forth.

3. The combination, with the fluid supply channel or conduit of the branch pipe A, smaller than the conduit to which it is secured, a distributer arranged to spread the fluid and provided with an extended base, of a metal cap arranged to cover the distributer, substantially as and for the purpose set forth.

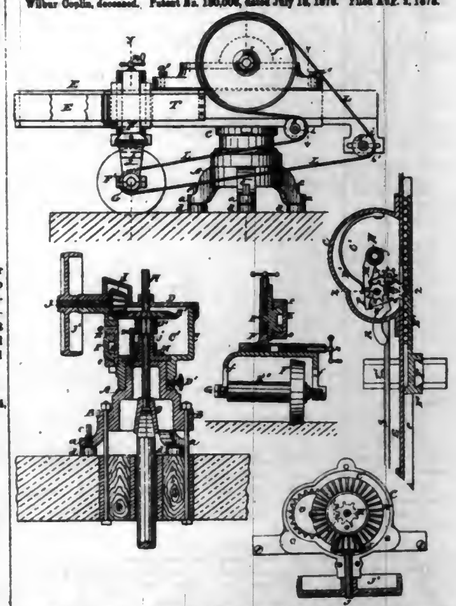
4. In a fire-extinguisher, the combination, with the fluid-supply pipe or conduit, of a distributer arranged to spread the fluid, a cap to fit over and protect the distributer, and a valve arranged to shut off or let on the fluid-supply, substantially as and for the purpose set forth.

5. In combination with the distributer B, provided with a contracted neck and extended base *b*, the cap C, secured to the said base by a fusible material, substantially as and for the purpose set forth.

6. In combination with an alarm, an elongated valve, I, extending through the valve-opening, whereby the passage closed by said valve is not opened until the valve shall have been moved its length and the alarm sounded.

7. The combination, with the valve D, provided with the opening *a*, of a cylindrical extension nearly filling the valve-opening, arranged to move through a fixed distance before the free discharge is opened, substantially as and for the purpose set forth.

8,377. MILLSTONE-DRESSING MACHINE. Norman Coplin, Cannon Falls, Minn., assignee of Wilbur Coplin, deceased. Patent No. 160,006, dated July 13, 1876. Filed Aug. 2, 1878.



Claim.—1. The combination of the gear-wheels I and H with the system of feeding-gears N N′, P, O, and O′, carrier E″, and double cross-head F, whereby a reciprocating movement is imparted to the cutter-wheel simultaneously with a rotary movement of the same, substantially as and for the purpose specified.

2. The arm E, constructed with projecting flanges, and provided with a carrier, E″, and rack E′, supported by said projecting flanges or guides, and made adjustable on the turn-table by means of set-screws, substantially as and for the purpose specified.

3. In combination with wheel J′, pulley K′, drum K″, and carrier E′, the take-up pulley K, substantially as and for the purpose specified.

4. In combination with rack E′, the pinions N N′, pinion P, wheel O, and pinion O′, acting in conjunction to impart a reciprocating movement to each by a rotary movement of the center shaft, H, as and for the purpose specified.

5. In combination with pinions N N′ and plate *m*, the shipping-lever R, substantially as and for the purpose specified.

6. In combination with pinions N N′, plate *m*, and shipping-lever R, the shifting-rod S, provided with the stop-blocks *s s′*, adapted to be operated by upright *r* of the cross-head, substantially as and for the purpose specified.

7. In combination with plate *m*, carrying the pinions N N′, the adjusting-spring P″, substantially as and for the purpose specified.

8. The combination of the reciprocating carrier E″ on the arm E, the vertically-adjustable cross-head F, and the laterally-adjustable frame and pendants *f f*, carrying the long pulley and cutter-wheel, to admit of both vertical and lateral adjustment of the cutter to the furrow, substantially as specified.

9. In combination with the turn-table C, carrying the gear-wheel, the cover D, arranged to tightly close the chamber containing gear, and providing a top journal for the shaft H, substantially as specified.

10. The apron T, in combination with arm E, substantially as and for the purpose specified.

11. The hollow extension of the turn-table, incasing its gears and working parts from dust and grit, substantially in the manner shown and specified.

12. The driving-drum or long pulley K″, fastened to the shaft G, in combination with pendants *f f* and double cross-head F, substantially as and for the purpose specified.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 13th DAY OF AUGUST, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adams, J. Q., assignor of one-fourth interest to J. W. Brock, Royal Oak, Mich. Wagon-hound	206,913	Aug. 13	282	86	14	245
Adams, W. A., *et al.* (See Odendahl, W. D., assignor.)						
Adamson, A., Washington, D. C. Shoulder-brace	206,994	Aug. 13	355	109	14	254
Adriance, J. P. (See Brown, T. S., assignor.)						
Adt, J., New Haven, Conn. Machine for making pump-chains	206,995	Aug. 13	356	109	14	254
Akins, A. L., Greensburg, Pa. Treadle	206,914	Aug. 13	282	86	14	245
Allen, W. B., Orleans, N. Y. Bag-holder	206,915	Aug. 13	283	86	14	245
American Hydrocarbon Gas Company. (See Johnston, J. J., assignor.) (Reissue.)						
Ames, C. H., Union City, Pa. Fire-escape	206,916	Aug. 13	284	86	14	245
Armstrong, D. S., Hampden, Md. Material for roofing and building purposes	206,850	Aug. 13	213	69	14	237
Atkinson, M. B., Sharpsburg, Md., assignor of two-thirds interest to W. Cammack and G. W. Decker, Washington, D. C. Grinding-mill	206,996	Aug. 13	358	110	14	254
Atlee, S., *et al.* (See Stewart, E., assignor.)						
Atwater, H. W., Newton, Mass. Clamp	206,851	Aug. 13	214	69	14	237
Atwood, L. J., assignor to Plume & Atwood Manufacturing Company, Waterbury, Conn. Lantern	206,917	Aug. 13	285	87	14	245
Atwood, L. J., assignor to Plume & Atwood Manufacturing Company, Waterbury, Conn. Lantern	206,918	Aug. 13	286	87	14	245
Babbitt, S. W., assignor to Wilcox Silver Plate Company, West Meriden, Conn. Pitcher	206,997	Aug. 13	360	110	14	254
Bailey, F. L., assignor to Bailey Gun Company, Indianapolis, Ind. Machine-gun	206,852	Aug. 13	215	69	14	237
Bailey Gun Company. (See Bailey, F. L., assignor.)						
Baker, J. G., Philadelphia, Pa. Steam-generator	206,998	Aug. 13	360	110	14	254
Baker, W., Ilion, N. Y. Manufacture of knife-scales	206,919	Aug. 13	287	87	14	245
Ball, C. E., Philadelphia, Pa. Carbureting-lamp	206,999	Aug. 13	362	111	14	254
Ballard, J., Cohoes, N. Y. Car-coupling	207,094	Aug. 13	454	138	14	265
Bardsley, J. C. (See Clarke, R., assignor.)						
Barker, W. E., Utica, Ky. Quilting-frame	207,000	Aug. 13	363	111	14	254
Barnes, J. L., Warsaw, Ind. Cider-mill	207,001	Aug. 13	364	111	14	255
Barrett, R. (See Codd, H., assignor.) (Reissue.)						
Barron, E. R., Ilion, assignor to Type Writer Company, New York, N. Y. Type-writing machine	207,002	Aug. 13	365	112	14	255
Baville, E. P., Paris, France. Screw-cutting stock and tool	206,920	Aug. 13	288	87	14	245
Becker, C. R., Baltimore, Md. Cigar-tip protector	206,921	Aug. 13	289	88	14	245
Beckner, S., Argos, Ind. Harrow	206,922	Aug. 13	289	88	14	245
Bender, W., New York, N. Y. Bung	206,923	Aug. 13	290	88	14	246
Berry, J. L., Saginaw, Mich. Insertible saw-tooth	207,003	Aug. 13	366	112	14	255
Bickelhoupt, A. and G., New York, N. Y. Skylight	206,853	Aug. 13	216	69	14	237
Bickelhoupt, G. (See Bickelhoupt, A. and G.)						
Bignall, M. C., St. Louis, Mo. Bucket for chain-pumps	206,854	Aug. 13	217	70	14	237
Bissell, L. and R., Van Buren, Wadsworth, Ohio. Combined truck and bag-holder	206,855	Aug. 13	217	70	14	237
Blackburn, J. C., *et al.* (See Stewart, E., assignor.)						
Borchardt, A., Weehawken, N. J. Shirt-neck shaper	206,856	Aug. 13	218	70	14	237
Bonscay, E., Norwalk, Ohio. Sewing-machine shuttle	207,004	Aug. 13	367	112	14	255
Bowden, J., Newtown, N. Y. Clip for vehicle-springs	207,005	Aug. 13	368	113	14	255
Bowman, T. S., St. Louis, Mo. Numbering-machine	206,924	Aug. 13	290	88, 89	14	246
Bradley, C. D., assignor of one-half interest to T. E. Bryant, Macedonia, Iowa. Cultivator	206,925	Aug. 13	292	89	14	246
Bradley & Hubbard Manufacturing Company *et al.* (See Tucker, H., assignor.) (Reissue.)						
Brand, P., and E. J. King, Jacksonville, Ill. Gas-light extinguisher	206,926	Aug. 13	294	90	14	246
Brassington, W. J., Brooklyn, N. Y. Nut-lock	207,006	Aug. 13	369	113	14	255
Brewer, B. B. (See Cowles and Brewer.)						
Bridgeport Brass Company. (See Lincoln, W. O., assignor.)						
Briggs, J. L. (See Rosser and Briggs.)						
Brock, J. W. (See Adams, J. Q., assignor.)						
Brockhausen, O. F., Reno, Nev. Blasting-wedge	206,927	Aug. 13	295	90	14	246
Brooks, G. D., assignor, by mesne assignments, to R. T. Smith and W. A. Wicks, Baltimore, Md. Sheet-metal can	207,007	Aug. 13	369	113	14	255
Brooks, H. W., *et al.* (See Porter, S., assignor.)						
Brown, T. S., assignor of one-half interest to J. P. Adriance, Poughkeepsie, N. Y. Harvester	206,857	Aug. 13	219	70, 71	14	238
Brown, W., *et al.* (See Ramage, A., assignor.)						
Bryant, S. R., Waterford, Pa. Milk-cooler	207,008	Aug. 13	370	113	14	255
Bryant, T. E. (See Bradley, C. D., assignor.)						
Bryden, G., Hartford, Conn. Manufacture of horseshoes	206,858	Aug. 13	221	71	14	238
Bryden, G. Hartford, Conn. Die for making horseshoes	206,859	Aug. 13	223	72	14	238
Buckley, W. H., assignor to W. C. Lawson, Philadelphia, Pa. Ferrule for spading-forks	207,009	Aug. 13	371	114	14	256
Bullard, E. W., Barre, Mass. Hay-tedder	207,010	Aug. 13	372	114	14	256
Burdick, A. C., Coldwater, Mich. Fruit-drier	206,860	Aug. 13	224	72	14	238
Butler, W. T., Boston, Mass. Shawl-strap	206,928	Aug. 13	295	90	14	246
Cammack, W., *et al.* (See Atkinson, M. B., assignor.)						
Carmon, C. E., Lyons, Ohio. Telephone-resonator	207,011	Aug. 13	372	114	14	256

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Carpenter, C. S., Philadelphia, Pa. Vehicle-wheel	207,012	Aug. 13	373	115	14	256
Carr, M. W., *et al.* (See Porter, S., assignor.)						
Carter, C., Philadelphia, Pa. Coated compressed medicament	207,013	Aug. 13	374	115	14	256
Chapman, W. M., *et al.* (See Johnson, A. J., assignor.)						
Chatterton, G. H., Newark, assignor to himself and J. C. Chatterton, Rutherford, N. J. Illuminated advertising device	206,861	Aug. 13	225	72	14	239
Chatterton, J. C. (See Chatterton, G. H., assignor.)						
Chegwin, W., Fond du Lac, Wis. Vehicle-spring	206,862	Aug. 13	227	72	14	239
Childress, P. H., assignor of one-half interest to H. L. Gallaher, Waynesborough, Va. Millstone-driver	207,014	Aug. 13	375	115	14	256
Clark, J., *et al.* (See Stevens, C. V., assignor.)						
Clarke, R., assignor to himself and J. C. Bardsley, Austin, Minn. Grain-separator	206,929	Aug. 13	296	90	14	246
Clotworthy, W. P., Baltimore, Md. Baking-powder	206,930	Aug. 13	296	.....	14	246
Clow, C. (See Naumer, M., assignor.)						
Cock, W. S. (See Hastings and Cock.)						
Codd, H., Camberwell, England, assignor to himself and R. Barrett. Bottle and bottle-stopper. (Reissue)	8,372	Aug. 13	464	140	14	267
Cole, J. P., Hartford, (English P. O.,) Ind. Hog-cholera compound	206,863	Aug. 13	228	.....	14	239
Coll, B. (See Miller and Coll.)						
Comey, F. E., Pawtucket, R. I., assignor of one-half interest to J. A. Rupert. Button	206,931	Aug. 13	297	91	14	247
Compton, J., La Belle, Mo. Hydrant for watering stock	207,015	Aug. 13	376	115	14	256
Conkle, F. A., Philadelphia, Pa. Casing-head for oil-wells	206,932	Aug. 13	298	91	14	247
Cook, R., West Newton, Mass. Garbage-holder	207,016	Aug. 13	377	116	14	256
Coplin, N. (See Coplin, W., assignor.) (Reissue.)						
Coplin, W., deceased, assignor to N. Coplin, Cannon Falls, Minn. Millstone-dressing machine. (Reissue)	8,377	Aug. 13	471	142	14	268
Cott, C. M., Columbus, Ohio. Tablet-blotter	207,017	Aug. 13	378	116	14	256
Cowan, C. H. (See Holdredge and Cowan.)						
Cowles, S. H., and B. B. Brewer, Sacramento, Cal. Propelling vessels	207,018	Aug. 13	379	116	14	257
Cox, J. L., Milwaukee, Wis. Skylight sash and frame	207,019	Aug. 13	380	117	14	257
Coxon, S., Toronto, Ontario, Canada. Signal-lantern	206,933	Aug. 13	298	91	14	247
Craine, W. S., and C. D. Gaylord, Cleveland, Ohio. Feed-steamer	206,864	Aug. 13	228	73	14	239
Curtis, S., *et al.* (See Morrison, E. R., assignor.)						
Davis, A. R., Boston, Mass. Removing the skin of potatoes	206,934	Aug. 13	300	91	14	247
Decker, G. W., *et al.* (See Atkinson, M. B., assignor.)						
Dederick, P. K., Albany, N. Y. Bailing-press	206,865	Aug. 13	229	73	14	239
De Morambert, F. J., Paris, France. Camp-bed	207,020	Aug. 13	418	129	14	261
Dick, C. J. A., assignor to himself and T. L. Luders, Philadelphia, Pa. Device for retarding the recoil of springs	207,021	Aug. 13	382	117	14	257
Dick, C. J. A., and T. L. Luders, Philadelphia, Pa. Device for retarding the recoil of springs	207,020	Aug. 13	381	117	14	257
Dimond, G. H. (See Young and Dimond.)						
Dormitzer, A., New York, N. Y. Window-cleaning step-chair	206,935	Aug. 13	300	92	14	247
Dormitzer, A., New York, N. Y. Window-cleaning step-chair	206,936	Aug. 13	301	92	14	247
Dowling, J., assignor of one-half interest to J. Lee, Jr., Plymouth, Pa. Steam-cock	206,937	Aug. 13	302	92	14	247
Doyle, M., Brooklyn, N. Y. Apparatus for cleaning and polishing coffee, &c	206,866	Aug. 13	229	73	14	239
Drayton, B. A., New York, N. Y. Food-holder for bird-cages	206,867	Aug. 13	230	73	14	239
Dreher, H. J., assignor of three-fourths interest to Phœnix Plumbago Mining Company, Philadelphia, Pa. Stove-polish	206,868	Aug. 13	231	.....	14	239
Duchemin, W., Boston, Mass. Automatic fan	207,022	Aug. 13	383	118	14	257
Emery, P. P., Springfield, Mass. Water-filter	206,938	Aug. 13	303	92 93	14	247
Engle, H. T., *et al.* (See Ramage, A., assignor.)						
Eureka Co-operative Foundry Association. (See Howdon and Wood, assignors.)						
Fetter, D. F., New York, N. Y. Horseshoe	206,939	Aug. 13	305	93	14	24
Firmin, G. J., and T. A. D. Forster, Morristown, Pa. Apparatus for amalgamating and washing ores	207,023	Aug. 13	384	118	14	25
Floryanowicz, R., New Haven, Conn. Rein-holder	207,024	Aug. 13	385	118	14	257
Fogelstrand, O. F., and W. E. Sparks, New Britain, Conn. Sash-fastener	206,940	Aug. 13	306	93	14	248
Forster, T. A. D. (See Firmin and Forster.)						
Foster, J. S., Hudson, Mich. Wheeled harrow and seeding-machine combined	207,025	Aug. 13	386	119	14	257
Francis, J. A. (See White and Francis.)						
Frantz, W. B., Joplin, Mo. Beer-cooler	206,941	Aug. 13	307	93	14	248
Fruen, W. H., Minneapolis township, Hennepin county, Minn. Middlings-separator	206,869	Aug. 13	231	74	14	239
Fuller, A. F., Providence, R. I. Blind-stop	207,026	Aug. 13	387	119	14	258
Gallaher, H. L. (See Childress, P. H., assignor.)						
Gamage, W. L., Mount Pleasant, Iowa. Branding-stamp	206,870	Aug. 13	232	74	14	239
Gaylord, C. D. (See Craine and Gaylord.)						
Gipson, R. F., and R. P. McDaniel, Tuscaloosa county, Ala. Combined cotton scraper and chopper	206,871	Aug. 13	233	74	14	239
Glover, W., assignor of one-half interest to J. L. Sheppard, Charleston, S. C. Odorless closet	206,874	Aug. 13	239	75, 76	14	240
Goodrich, J. E., Sycamore, Ohio. Window-blind	207,027	Aug. 13	388	119	14	258
Goodwin, H. W., Ionia, assignor of one-half interest to W. H. Hood, Ronald, Mich. Farm-gate	206,942	Aug. 13	307	94	14	248
Goodwin, W. W., and S. W. Hurlburt, Creston, Iowa. Corn-planter	207,028	Aug. 13	388	120	14	258
Gouptel, E., Cleveland, Ohio. Machine for ruling paper	206,873	Aug. 13	237	75	14	240
Greene, D. B., administrator. (See Wilcox, J. S.) (Reissue.)						
Greiss, A., Philadelphia, Pa. Knitting-machine cylinder	207,029	Aug. 13	389	120	14	258
Griffin, S., Elyria, Ohio. Land-leveler	206,943	Aug. 13	308	94	14	248
Griffith, J. R., *et al.* (See Odendahl, W. D., assignor.)						
Guy, W. A. and W. S. Nottaway C. H., Va. Tobacco-hoisting apparatus	207,030	Aug. 13	390	120	14	258
Guy, W. S. (See Guy, W. A. and W. S.)						
Hall, J. L., Cincinnati, Ohio. Time-lock	206,872	Aug. 13	235	75	14	240
Hambrook, R. T., Chicago, Ill. Hinge for folding seats	206,875	Aug. 13	239	76	14	240
Harner, D. S., Xenia, Ohio. Corn-marker	207,031	Aug. 13	391	120	14	258
Hastings, I. S., and W. S. Cock, Floris, Iowa. Gate	207,032	Aug. 13	391	121	14	258
Hatch Flexible Sewed Shoe Company. (See Van Wagenen, A., assignor.)						
Haynes, O. A., St. Louis, Mo. Oiler for slide-valves of locomotives	207,033	Aug. 13	392	121	14	258
Hermann, M., Troy, assignor of one-half interest to J. K. P. Pine, Lansingburg, N. Y. Collar	207,034	Aug. 13	393	121	14	259
Herring, A., Cohoes, N. Y. Railway-track	206,876	Aug. 13	240	76	14	240
Hiestand, H., Jr., Vincent, Pa. Wagon-jack	206,944	Aug. 13	309	94	14	248
Higgins, F., Wellsville, N. Y. Whip-socket	206,945	Aug. 13	310	94	14	248
Hitchcock, D., assignor of one-half interest to G. McBride, Jr., Syracuse, N. Y. Measuring-funnel	206,946	Aug. 13	311	95	14	248
Hite, B. S., Fulton, Mo. Heat-fender for cooking-stoves	206,947	Aug. 13	312	95	14	248
Hoffman, C. P., and N. Meyers, Buffalo, N. Y.; said Meyers assignor to said Hoffman. Blind-stitch sewing-machine	207,035	Aug. 13	394	122	14	259

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Holdredge, C. H., Westerly, R. I., and C. H. Cowan, Stonington, Conn. Thill-coupling	206,948	Aug. 13	312	95	14	248
Hollingsworth, H., Dansville, N. Y. Paper-pulp washer	206,877	Aug. 13	241	76	14	240
Holmes, J. B., assignor to himself and R. M. Lanternan, Grayville, Ill. Ventilator for blow and dust rooms	206,949	Aug. 13	313	95	14	248
Hood, W. H. (See Goodwin, H. W., assignor.)						
House, H. A., Bridgeport, Conn. Machine for crocheting fabrics	206,878	Aug. 13	243	77	14	241
Howdon, R. J., Cincinnati, Ohio, and J. E. Wood, Huntington, W. Va., assignors to Eureka Co-operative Foundry Association, Cincinnati, Ohio. Grate-holder	207,036	Aug. 13	396	122	14	259
Hurlburt, S. W. (See Goodwin and Hurlburt.)						
Irick, T. A., Humansville, Mo. Churn	207,037	Aug. 13	396	123	14	259
Jeffery, T. B., Chicago, Ill. Pen-holder	206,950	Aug. 13	314	96	14	249
Jenkins, W. E., Warwick, N. Y. Locking device for can-lids	206,879	Aug. 13	244	77	14	241
Johnson, A. J., Cleveland, assignor to H. S. and E. B. Johnson and W. M. Chapman, Ravenna, Ohio. Belt-fastener	207,038	Aug. 13	397	123	14	259
Johnson, E. B., *et al.* (See Johnson, A. J., assignor.)						
Johnson, F., Paris, Tex. Plow	206,880	Aug. 13	245	77	14	241
Johnson, H. S., *et al.* (See Johnson, A. J., assignor.)						
Johnson, J., Williamstown District, W. Va. Harrow	207,039	Aug. 13	398	123	14	259
Johnston, J. J., Columbiana, Ohio, assignor, by mesne assignments, to American Hydro-carbon Gas Company, Pittsburg, Pa. Apparatus for evaporating liquids. (Reissue)	8,373	Aug. 13	467	140 141	14	267
Johnston, J. J., Columbiana, Ohio, assignor, by mesne assignments, to American Hydro-carbon Gas Company, Pittsburg, Pa. Process for evaporating liquids. (Reissue)	8,374	Aug. 13	468	141	14	267
Kammerer, F., Somerville, Mass. Carpet-sweeper	207,040	Aug. 13	398	124	14	259
Kaufmann, B., assignor of one-third interest to L. J. Speer, Philadelphia, Pa. Wash-board	206,881	Aug. 13	246	78	14	241
Kelly, D. R. (See Scribner, J. F., assignor.)						
Kendall, A. M., Davenport, Iowa. Machine for making wooden pins	206,882	Aug. 13	246	78	14	241
Kester, J. H. (See Tise and Kester.)						
Kincaid, B. P., Bridgeton, N. J. Plier for wiring bottles	206,951	Aug. 13	314	96	14	249
King, E. J. (See Brand and King.)						
Kiss, E., New York, N. Y. Table-bedstead. (Reissue)	8,375	Aug. 13	469	141	14	268
Kittson, A. B., Johnstown, N. Y. Glove-fastening	206,883	Aug. 13	247	78	14	241
Kline, J., Dayton, Ohio. Constructing osage-orange hedges	207,041	Aug. 13	399	124	14	259
Klingaman, J. G. (See Price and Klingaman.)						
Knight, J. L. (See Roberts and Knight.)						
Korsgaard, M. P., Houghton, Mich. Grain-separator	207,042	Aug. 13	400	124	14	259
Kuhns, B., Dayton, Ohio. Fertilizer-distributer	207,043	Aug. 13	401	125	14	260
Lamb, T., Philadelphia, Pa. Sewing-machine	207,044	Aug. 13	401	125	14	260
Lameraux, J. (See Stephens and Lameraux.)						
Landis, A., Salem, Ohio. Grain-drill hoe	206,884	Aug. 13	248	78	14	241
Lane, W. F., Elgin, Ill. Foot-power	206,952	Aug. 13	315	96	14	249
Lanterman, R. M. (See Holmes, J. B., assignor.)						
Laughlin, J. M. (See Sumner, J. D., assignor.)						
Lawrence, L. B., Monticello, Cal., and A. G. Strawbridge, Sharon, Pa. Stove attachment	206,953	Aug. 13	316	96	14	249
Lawson, W. C. (See Buckley, W. H., assignor.)						
Lee, J., Jr. (See Dowling, J., assignor.)						
Leete, J. W., South Meriden, Conn., assignor to N. Lyon, Albany, N. Y. Clamp for holding bolts from turning	206,954	Aug. 13	317	97	14	249
Leggett, C. H., New York, N. Y. Package for tar	207,045	Aug. 13	402	125	14	260
Leibold, F. (See Pfeifer and Ulrich, assignors.)						
Lennon, J., San Francisco, Cal. Wheelbarrow	206,955	Aug. 13	318	97	14	249
Lester, J. S., assignor of one-half interest to Stewart & Fain, Atlanta, Ga. Jacketed can and vent for oil	207,046	Aug. 13	403	125	14	260
Levin, W., New York, N. Y. Manufacture of artists' canvas	206,885	Aug. 13	248	.....	14	241
Levin, W., New York, N. Y. Painters' canvas	206,886	Aug. 13	250	.....	14	241
Lewis, J. C., Charlottesville, Va. Nut-lock	207,047	Aug. 13	404	126	14	260
Lillie, S. M., Philadelphia, Pa. Time-lock	206,887	Aug. 13	251	79	14	241
Lincoln, W. O., assignor to Bridgeport Brass Company, Bridgeport, Conn. Lamp-burner	207,048	Aug. 13	405	126	14	260
Loeb, M. (See Wolf and Loeb.)						
Luders, T. L. (See Dick, C. J. A., assignor.)						
Luders, T. L. (See Dick and Luders.)						
Lyon, N. (See Leete, J. W., assignor.)						
Lytle, M., Oil City, Pa. Oil-well pump	206,888	Aug. 13	258	79	14	242
Lytle, M., Oil City, Pa. Oil-well pump	206,956	Aug. 13	319	97	14	249
Macarthy, C. E., Forsyth, Ga. Horse-power. (Reissue)	8,366	Aug. 13	454	139	14	266
MacColl, H., Glasgow, Scotland. Riveting-machine	207,049	Aug. 13	406	126	14	260
Madden, T., Philadelphia, Pa. Compound for marking cattle and sheep	206,889	Aug. 13	261	.....	14	242
Mandeville, J. D. and W. E., Caroline, N. Y. Fence	207,050	Aug. 13	407	126	14	260
Mandeville, W. E. (See Mandeville, J. D. and W. E.)						
Maybury, J. T., New Orleans, La. Apparatus for drying meal, flour, grain, &c	207,051	Aug. 13	408	127	14	260
McBride, G., Jr. (See Hitchcock, D., assignor.)						
McCall, H. W. (See Morton, S. S., assignor.)						
McCauley, L. G., West Chester, Pa. Gas-regulator for retorts	207,052	Aug. 13	410	127	14	260
McDaniel, R. P. (See Gibson and McDaniel.)						
McDowell, W. L., Philadelphia, Pa. Hot-air register and evaporator	206,890	Aug. 13	261	80	14	242
McFadden, G. A., Jordan Station, Ky. Shirt	207,053	Aug. 13	410	127	14	261
McGill, W. C., Washington, D. C. Ironing-table	207,054	Aug. 13	411	127	14	261
McIlroy, J. V., Boston, Mass. Street-railway switch	206,957	Aug. 13	320	97	14	249
McIntyre, H. W., Towanda, Pa. Extension-table slide	207,055	Aug. 13	412	128	14	261
McWane, C. P., Wytheville, Va. Plow	206,958	Aug. 13	321	98	14	249
Mendleson, A., Albany, N. Y. Composition for coating alkali balls	206,891	Aug. 13	262	.....	14	242
Meriden Malleable Iron Company *et al.* (See Tucker, H., assignor.) (Reissue.)						
Meale, F. J., Brooklyn, N. Y. Breech-loading fire-arm	207,056	Aug. 13	413	128	14	261
Metcalf, M., Battle Creek, Mich. Foundation for honey-combs	207,057	Aug. 13	415	128	14	261
Meyer & Neubauer. (See Neubauer, C. M., assignor.)						
Meyers, N. (See Hoffman and Meyers.)						
Miller, A. (See Miller, T. S., assignor.)						
Miller, J. W., and B. Coll, Baltimore, Md. Sheet-metal can	207,058	Aug. 13	416	128	14	261
Miller, T. S., Pomeroy, Ohio, assignor to A. Miller, Harford, Pa. Horse hay-rake	206,959	Aug. 13	322	98	14	249
Mills, J., Keeseville, N. Y. Horse-nail machine	207,059	Aug. 13	417	129	14	261
Monstery, T. H., New York, N. Y. Apparatus for teaching swimming	206,892	Aug. 13	263	80	14	242
Moore, R. R., Lewisville, Ark. Combined lamp and stove	206,960	Aug. 13	323	98	14	250
Morgan, T. R. (See Richardson and Morgan.)						
Morrison, E. R., assignor of one-half interest to S. Curtis and E. H. Rowley, New York, N. Y., and one-half to J. E. Walter, Elizabeth, N. J. Toy bank	206,893	Aug. 13	264	80	14	242
Morse, E. E., South Bethel, Me. Holdback for vehicles	207,061	Aug. 13	419	130	14	261
Morton, S. S., assignor of one-half interest to H. W. McCall, York, Pa. Fertilizer and grain distributer	207,062	Aug. 13	420	130	14	262
Mustard, J. E., Glen Hall, Ind. Wheel-cultivator	206,961	Aug. 13	324	99	14	250

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Naumler, M., assignor of one-half interest to C. Clow, Port Byron, N. Y. Fork	206,894	Aug. 13	265	80	14	243
Neubauer, C. M., Hoboken, N. J., assignor to Meyer & Neubauer, New York, N. Y. Fastening device for bird-cages	207,063	Aug. 13	421	130	14	262
Nichols, G. W., Clinton, Iowa. Machine for trimming lumber	206,962	Aug. 13	325	99	14	250
Odendahl, W. D., assignor of two-thirds interest to J. R. Griffith and W. A. Adams, St. Louis, Mo. Millstone-dress	206,963	Aug. 13	326	99	14	250
Olmstead, C. L., West Brookfield, Mass. Corset	206,964	Aug. 13	327	100	14	250
Palliser, E. (See Parsons and Palliser.)						
Palmer, W. S., Glenburn, Pa. Thill-coupling	206,965	Aug. 13	328	100	14	250
Parkin, W. H., Good Hope, Ill. End-gate for wagons	206,966	Aug. 13	328	100	14	250
Parmelee, H. S., New Haven, Conn. Fire-extinguisher. (Reissue)	8,376	Aug. 13	470	142	14	268
Parsons, R. C., Connaught Place, and E. Palliser, Charleville Road, Kensington, England. Apparatus for working punkas	206,895	Aug. 13	265	81	14	243
Pfeifer, J., and A. Ulrich, assignors of one-third interest to F. Leibold, Pittsburg, Pa. Apple corer and slicer	206,967	Aug. 13	329	100, 101	14	250
Phœnix Plumbago Mining Company. (See Dreher, H. J., assignor.)						
Pine, J. K. P. (See Hermann, M., assignor.)						
Pine, J. K. P., Lansingburg, N. Y. Collar. (Reissue)	8,369	Aug. 13	459	139	14	266
Plume & Atwood Manufacturing Company. (See Atwood, L. J., assignor.)						
Pontez, C., Omaha, Nebr. Excavator	207,064	Aug. 13	422	130	14	262
Porter, S., Boston, assignor to M. W. Carr, Somerville, and H. W. Brooks, Cambridge, Mass. Clasp for supporting garments	206,896	Aug. 13	267	81	14	243
Powell, J., Cincinnati, Ohio. Globe-valve. (Reissue)	8,367	Aug. 13	455	139	14	266
Powell, J., Cincinnati, Ohio. Globe-valve. (Reissue)	8,368	Aug. 13	458	139	14	266
Price, W. V., and J. G. Klingaman, La Porte City, Iowa. Coloring photographs	206,968	Aug. 13	330	.....	14	251
Raeburn, R., *et al.* (See Ramage, A., assignor.)						
Ralston, H. M., Fairview, W. Va. Lock-hinge	206,897	Aug. 13	267	81	14	243
Ramage, A., assignor of three-fourths interest to W. Brown, H. T. Engle, and R. Raeburn, Denver, Colo. Ore roasting and desulphurizing furnace	207,065	Aug. 13	423	131	14	262
Ramsdell, O. J., Springfield, Mass. Advertising-card	206,969	Aug. 13	330	101	14	251
Ran, A. H., assignor of one-third interest to D. Schilling, San Francisco, Cal. Lawn-mower	207,066	Aug. 13	423	131	14	262
Raymond, C. F., Birmingham, Ala. Lubricator	207,067	Aug. 13	424	131	14	262
Remillon, E. J., assignor to J. H. Schreiner, Philadelphia, Pa. Railway-spike	206,898	Aug. 13	268	81	14	243
Renner, F. C., New Midway, Md. Door-alarm	206,899	Aug. 13	269	82	14	243
Rice, A., Lycippus, Pa. Car-coupling	207,068	Aug. 13	425	132	14	262
Richardson, J. C., Madlus, N. Y., and T. R. Morgan, Alliance, Ohio. Die for making thrashing-machine teeth	207,069	Aug. 13	426	132	14	262
Rigby, C. F., and S. Rigby, 3d, Summit City, Pa. Pump	206,970	Aug. 13	331	101	14	251
Rigby, S., 3d. (See Rigby, C. F. and S., 3d.)						
Roberts, R., and J. L. Knight, New York, N. Y. Outrigger and rowlock for boats	207,070	Aug. 13	427	132	14	262
Roeber, A., Weimar, Tex. Bale-tie	207,071	Aug. 13	428	133	14	263
Rose, G. C. (See Rose, P. and G. C.)						
Rose, P. and G. C., Norwich, Conn. Machine for separating the fibers of wood for paper-pulp	206,971	Aug. 13	332	101	14	251
Rosenzi, E., Cincinnati, Ohio. Stomach and enema pump	207,072	Aug. 13	429	133	14	263
Ross, J. K., Newark, N. J. Corset	206,900	Aug. 13	270	82	14	243
Rosser, W. F., and J. L. Briggs, Marshfield, Mo. Printing-press	206,972	Aug. 13	333	102	14	251
Rowland, L. B., Monmouth, Oreg. Horse-power equalizer	206,973	Aug. 13	333	102	14	251
Rowley, E. H., *et al.* (See Morrison, E. R., assignor.)						
Ruhmann, J. P., Schadenburg, Tex. Insect-destroyer	206,901	Aug. 13	271	82	14	243
Rumsey, L. M., *et al.* (See Wilcox, J. S., assignor.) (Reissue.)						
Rumsey, M., *et al.* (See Wilcox, J. S., assignor.) (Reissue.)						
Rumsey, W. D., Muncie, Ind. Door-securer	207,073	Aug. 13	430	133	14	263
Rupert, J. A. (See Comey, F. E., assignor.)						
Sackett, C. E., Matilda Furnace, Wayne township, Mifflin county, Pa. Cultivator	206,974	Aug. 13	334	102, 103	14	251
Sanderson, R., Cleveland, Ohio. Cut-off valve for steam-engines	206,975	Aug. 13	336	103	14	251
Sands, C. A., Burlington, Kans. Sack for baling hops	206,976	Aug. 13	337	103	14	251
Sands, C. A., Burlington, Kans. Hop-press	206,977	Aug. 13	337	103	14	251
Saunders, W. M., Alfred Centre, N. Y. Hay-tedder	207,074	Aug. 13	431	133	14	263
Schilling, D. (See Ran, A. H., assignor.)						
Schmitt, C., New Haven, Conn. Hanging carriages	207,075	Aug. 13	432	134	14	263
Schreiner, J. H. (See Remillon, E. J., assignor.)						
Scott, D., Brooklyn, N. Y. Chimney or ventilator cap or cowl	206,978	Aug. 13	338	104	14	251
Scribner, J. F., assignor of one-third interest to D. R. Kelly, Philadelphia, Pa. Spike-extractor	206,902	Aug. 13	272	82	14	243
Sheffer, U. S. and W. H., York, Pa. Turbine wheel and gate-operating mechanism	207,076	Aug. 13	433	134	14	263
Sheffer, W. H. (See Sheffer, U. S. and W. H.)						
Sheppard, J. L. (See Glover, W., assignor.)						
Shirley, F. S., New Bedford, Mass. Producing colors on glass, &c., by fuming with vapors or gases	207,077	Aug. 13	434	134	14	263
Shreffler, S., Jr., Morris, Ill. Farm-gate	207,078	Aug. 13	435	134	14	263
Smart, A. J., Greenfield, Mass. Machine for drilling metal	206,979	Aug. 13	339	104, 105	14	252
Smith, R. T., *et al.* (See Brooks, G. D., assignor.)						
Sparks, W. E. (See Fogelstrand and Sparks.)						
Speer, L. J. (See Kaufmann, B., assignor.)						
Squires, S., Boston, Mass. Sofa-bed	206,980	Aug. 13	341	105	14	252
Stanton, S. R., Oxford, Mich. Cultivator	206,903	Aug. 13	272	83	14	243
Starr, E. T., assignor to S. S. White, Philadelphia, Pa. Abrading-tool for dental purposes	207,079	Aug. 13	435	135	14	263
Stephens, J. A., and J. Lameraux, Kanomie, La. Lamp	206,904	Aug. 13	273	83	14	244
Stevens, C. V., assignor of four-fifths interest to J. Clark and H. Wright, Somonauk, Ill. Grinding-mill attachment	206,905	Aug. 13	274	83	14	244
Stevenson, W. G., Meriden, Miss. Rice-hulling machine	207,080	Aug. 13	436	135	14	263
Stewart, E., Fort Madison, Iowa, assignor of one-half interest to S. Atlee and J. C. Blackburn. Time-lock	206,981	Aug. 13	341	105	14	252
Stewart & Fain. (See Lester, J. S., assignor.)						
Strauss, H. S., New York, N. Y. Corset	206,906	Aug. 13	275	83	14	244
Strawbridge, A. G. (See Lawrence and Strawbridge.)						
Strobridge, H. A. (See Sutherland, A. M., assignor.)						
Sumner, J. D., Lexington, assignor to J. M. Laughlin, Boston, Mass. Horseshoe-nail machine	206,907	Aug. 13	276	84	14	244
Sutherland, A. M., assignor to H. A. Strobridge, Penn Yan, N. Y. Grain-separator	206,982	Aug. 13	344	106	14	252
Talpey, J. A., Somerville, Mass. Machine for unhairing, scouring, and currying hides	207,081	Aug. 13	437	135	14	264
Tappey, W. H., Petersburg, Va. Portable steam-engine	207,082	Aug. 13	439	136	14	264
Tatum, C. A., New York, N. Y. Ball-target	206,983	Aug. 13	345	106	14	252
Tennyson, F. C., Tyler, Tex. Flower-basket	207,083	Aug. 13	440	136	14	264
Thomas, T., Pittsburg, Pa. Machine for threading bolts	207,084	Aug. 13	440	136	14	264
Tise, J. C., and J. H. Kester, Winston, N. C. Churn	207,085	Aug. 13	441	136	14	264

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Trentler, G. A., Blasewitz, near Dresden, Saxony. Process for the continuous preparation of nitrogen gas	207,086	Aug. 13	442	.....	14	264
True, M. E., Batavia, N. Y. Crossent-saw handle	206,908	Aug. 13	278	84	14	244
Tucker, H., assignor, by mesne assignments, to Bradley & Hubbard Manufacturing Company and Meriden Malleable Iron Company, Meriden, Conn. Extension-chandelier. (Reissue)	8,371	Aug. 13	462	140	14	267
Turner, J. W., Fort Worth, Tex. Twine-holder	206,984	Aug. 13	346	106	14	253
Type Writer Company. (See Barron, E. R., assignor.)						
Ulrich, A. (See Pfeifer and Ulrich.)						
Van Buren, R. (See Bissell and Van Buren.)						
Van Wagenen, A., assignor to Hatch Flexible Sewed Shoe Company, Boston, Mass. Boot and shoe	206,985	Aug. 13	346	106	14	253
Van Wie, A., Indianapolis, Ind. Axle-nut wrench	207,087	Aug. 13	443	137	14	264
Viereck, C. H., Schleswig, Prussia. Lantern	207,088	Aug. 13	444	137	14	265
Wadlington, J. M., Upton Station, Ky. Tobacco-hoister	206,986	Aug. 13	347	107	14	253
Walter, J. E., *et al.* (See Morrison, E. R., assignor.)						
Walters, E. A., Walworth, Wis. Hay-carrier	206,987	Aug. 13	348	107	14	253
Wattles, J. W., Canton, Mass. Spinning-ring	206,988	Aug. 13	349	107	14	253
Weber, J. P., St. Paul, Minn. Whitewashing-machine	206,909	Aug. 13	279	85	14	244
Welsh, J. C., assignor to himself and W. M. Welsh, Stokes Station, Ill. Sulky-plow	206,989	Aug. 13	350	107	14	253
Welsh, W. M. (See Welsh, J. C., assignor.)						
White, S. M., and J. A. Francis, Salem, Va. Plow-point	206,910	Aug. 13	280	85	14	244
White, S. S. (See Starr, E. T., assignor.)						
Wicks, W. A., *et al.* (See Brooks, G. D., assignor.)						
Wiggerman, J. B. and W. H., Millhausen, Ind. Coffee-roaster	206,911	Aug. 13	280	85	14	244
Wiggerman, W. H. (See Wiggerman, J. B. and W. H.)						
Wilcox, J. S., deceased, D. B. Greene, administrator, and assignor, by mesne assignments, to L. M. and M. Rumsey, St. Louis, Mo. Chain-pump bucket. (Reissue)	8,370	Aug. 13	461	140	14	267
Wilcox Silver Plate Company. (See Babbitt, S. W., assignor.)						
Wilder, R. A., Cressona, Pa. Transporting petroleum-oil	206,990	Aug. 13	350	108	14	253
Wittman, J. M., St. Mary's, Pa. Lock for fire-arms	206,991	Aug. 13	351	108	14	253
Wolf, L., and M. Laeb, New York, N. Y. Clasp for pocket-books, &c	207,089	Aug. 13	445	137	14	265
Wood, J. E. (See Howdon and Wood.)						
Woolsey, G. R., Normal, Ill. Driving-rein for two horses	206,912	Aug. 13	281	85	14	244
Woolsen, A., Springfield, Vt. Rest for cloth-shearing machines	207,090	Aug. 13	446	137, 138	14	265
Woolsen, A., Springfield, Vt. Rest for cloth-shearing machines	207,091	Aug. 13	449	138	14	265
Woolsen, A., Springfield, Vt. Rest for cloth-shearing machines	207,092	Aug. 13	450	138	14	265
Wright, H., *et al.* (See Stevens, C. V., assignor.)						
Young, E. S., Westborough, Mass., and G. H. Dimond, Bridgeport, Conn. Sewing-machine	206,992	Aug. 13	353	108	14	253
Youngs, E. D., Orangeville Mills, Mich. Fence	206,993	Aug. 13	354	108	14	254
Zeltner, J., Nuremberg, Bavaria. Manufacture of red ultramarine	207,093	Aug. 13	453	.....	14	265

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 13th DAY OF AUGUST, 1878.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Advertising card	O. J. Ramsdell	206,969	Aug. 13	330	101	14	251
Advertising device. Illuminated	G. H. Chatterton	206,861	Aug. 13	325	72	14	239
Alkali balls. Composition for coating	A. Mendleson	206,891	Aug. 13	262	.....	14	242
Amalgamating and washing ores. Apparatus for	G. J. Firmin and T. A. D. Forster	207,023	Aug. 13	384	118	14	257
Apple corer and slicer	J. Pfeifer and A. Ulrich	206,967	Aug. 13	329	100 and 101	14	250
Bag-holder	W. B. Allen	206,915	Aug. 13	253	86	14	245
Baking-powder	W. P. Clotworthy	206,930	Aug. 13	286	.....	14	246
Bale-tie	A. Roeber	207,071	Aug. 13	422	133	14	263
Basket. Flower	F. C. Tennyson	207,083	Aug. 13	440	136	14	264
Bed. Camp	F. J. De Morambert	207,060	Aug. 13	418	129	14	261
Bed. Sofa	S. Squires	206,980	Aug. 13	341	105	14	252
Bedstead. Table	E. Klos. (Reissue)	8,375	Aug. 13	469	141	14	268
Belt-fastener	A. J. Johnson	207,038	Aug. 13	397	121	14	259
Bird-cages. Fastening device for	C. M. Neuhaner	207,063	Aug. 13	421	130	14	262
Bird-cages. Food holder for	B. A. Drayton	206,867	Aug. 13	230	73	14	239
Blasting-wedge	O. F. Brockhausen	206,927	Aug. 13	295	90	14	246
Blind-stop	A. F. Fuller	207,026	Aug. 13	387	119	14	258
Blind. Window	J. E. Goodrich	207,027	Aug. 13	388	119	14	258
Blotter. Tablet	C. M. Cott	207,017	Aug. 13	378	116	14	256
Boats. Outrigger and row-lock for	R. Roberts and J. L. Knight	207,070	Aug. 13	427	132	14	262
Bolt-threading machine	T. Thomas	207,084	Aug. 13	440	136	14	264
Boot and shoe	A. Van Wagenen	206,985	Aug. 13	346	106	14	253
Bottle and bottle-stopper	H. Codd. (Reissue)	8,372	Aug. 13	464	140	14	267
Bottles. Pliers for wiring	B. P. Kincaid	206,951	Aug. 13	314	96	14	249
Bung	W. Bender	206,923	Aug. 13	290	88	14	246
Button	F. E. Coney	206,934	Aug. 13	297	91	14	247
Can and vent for oil. Jacketed	J. S. Lester	207,046	Aug. 13	403	125	14	260
Can-lids. Locking device for	W. E. Jenkins	206,879	Aug. 13	244	77	14	241
Can. Sheet-metal	G. D. Brooks	207,007	Aug. 13	369	113	14	255
Can. Sheet-metal	J. W. Miller and B. Coll	207,058	Aug. 13	416	128	14	261
Canvas. Manufacture of artists'	W. Levin	206,895	Aug. 13	248	.....	14	241
Canvas. Painters'	W. Levin	206,896	Aug. 13	250	.....	14	241
Car-coupling	J. Ballard	207,094	Aug. 13	454	138	14	265
Car-coupling	A. Rice	207,068	Aug. 13	425	132	14	262
Carpet-sweeper	F. Kammerer	207,040	Aug. 13	398	124	14	259
Carriages. Hanging	C. Schmitt	207,075	Aug. 13	432	134	14	263
Cattle and sheep. Compound for marking	T. Madden	206,889	Aug. 13	261	.....	14	242
Chair. Window-cleaning step	A. Dormitzer	206,935	Aug. 13	300	92	14	247
Chair. Window-cleaning step	A. Dormitzer	206,936	Aug. 13	301	92	14	247
Chandelier. Extension	H. Tucker. (Reissue)	8,371	Aug. 13	462	140	14	267
Chimney or ventilator cap or cowl	B. Scott	206,978	Aug. 13	338	104	14	251
Churn	T. A. Irick	207,037	Aug. 13	396	123	14	259
Churn	J. C. Tise and J. H. Kester	207,085	Aug. 13	441	136	14	264
Cigar-tip protector	C. R. Becker	206,921	Aug. 13	289	88	14	245
Clamp	H. W. Atwater	206,851	Aug. 13	214	69	14	237
Clamp for holding bolts from turning	J. W. Leete	206,954	Aug. 13	317	97	14	249
Clasp for supporting garments	S. Porter	206,896	Aug. 13	267	81	14	243
Cloth-shearing machines. Rest for	A. Woolson	207,090	Aug. 13	446	137 and 138	14	265
Cloth-shearing machines. Rest for	A. Woolson	207,091	Aug. 13	449	138	14	265
Cloth-shearing machines. Rest for	A. Woolson	207,092	Aug. 13	450	138	14	265
Cock. Steam	J. Dowling	206,937	Aug. 13	302	92	14	247
Coffee, &c. Apparatus for cleaning and polishing	M. Doyle	206,866	Aug. 13	229	73	14	239
Coffee-roaster	J. B. and W. H. Wiggerman	206,911	Aug. 13	280	85	14	244
Collar	M. Hermann	207,034	Aug. 13	393	121	14	259
Collar	J. K. P. Pine. (Reissue)	8,369	Aug. 13	459	139	14	266
Colors on glass, &c., by fuming with vapors or gases. Producing	F. S. Shirley	207,077	Aug. 13	434	134	14	263
Cooler. Beer	W. B. Frantz	206,941	Aug. 13	307	93	14	248
Cooler. Milk	S. R. Bryant	207,008	Aug. 13	370	113	14	255
Corn-marker	D. S. Harner	207,031	Aug. 13	391	120	14	259
Corset	C. L. Olmstead	206,964	Aug. 13	327	100	14	250
Corset	J. K. Ross	206,900	Aug. 13	270	82	14	243
Corset	H. S. Strauss	206,906	Aug. 13	275	83	14	244
Cotton scraper and chopper. Combined	R. F. Gibson and R. P. McDaniel	206,871	Aug. 13	233	74	14	239
Crocheting fabrics. Machine for	H. A. House	206,878	Aug. 13	243	77	14	241
Cultivator	C. D. Bradley	206,925	Aug. 13	292	89	14	246
Cultivator	C. E. Sackett	206,974	Aug. 13	334	102 and 103	14	251
Cultivator	S. R. Stanton	206,903	Aug. 13	272	83	14	243

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Cultivator-wheel	J. E. Mustard	206,961	Aug. 13	324	99	14	250
Cut-off valve for steam-engines	R. Sanderson	206,975	Aug. 13	336	103	14	251
Dental purposes. Abrading-tool for	E. T. Starr	207,079	Aug. 13	435	135	14	263
Door-alarm	F. C. Renner	206,899	Aug. 13	269	82	14	243
Door-securer	W. D. Rumsey	207,073	Aug. 13	430	133	14	263
Drill hoe. Grain	A. Landis	206,884	Aug. 13	248	78	14	241
Drilling metal. Machine for	A. J. Smart	206,979	Aug. 13	339	104 and 105	14	252
End-gate for wagons	W. H. Parkin	206,966	Aug. 13	328	100	14	250
Engine. Portable steam	W. H. Tappey	207,082	Aug. 13	439	136	14	264
Evaporating liquids. Apparatus for	J. J. Johnston. (Reissue)	8,373	Aug. 13	467	140 and 141	14	267
Evaporating liquids. Process for	J. J. Johnston. (Reissue)	8,374	Aug. 13	468	141	14	267
Excavator	C. Pontez	207,064	Aug. 13	422	130	14	262
Fan. Automatic	W. Duchemin	207,022	Aug. 13	383	118	14	257
Fence	J. D. and W. E. Mandeville	207,050	Aug. 13	407	126	14	260
Fence	E. D. Youngs	206,993	Aug. 13	354	108	14	254
Fence	S. S. Morton	207,062	Aug. 13	420	130	14	262
Fertilizer and grain distributer	B. Kuhns	207,043	Aug. 13	401	125	14	260
Fertilizer-distributer	P. P. Emory	206,938	Aug. 13	303	92, 93	14	247
Filter. Water	F. J. Mesle	207,056	Aug. 13	413	128	14	261
Fire-arm. Breech-loading	J. M. Wittman	206,991	Aug. 13	351	108	14	253
Fire-arms. Lock for	C. H. Ames	206,916	Aug. 13	284	86	14	245
Fire-escape	H. S. Parmelee. (Reissue)	8,376	Aug. 13	470	142	14	268
Fire-extinguisher	W. F. Lane	206,952	Aug. 13	315	96	14	249
Foot-power	M. Nanmier	206,894	Aug. 13	265	80	14	243
Fork	W. H. Buckley	207,009	Aug. 13	371	114	14	256
Forks. Ferrule for spading	A. C. Burdick	206,860	Aug. 13	224	72	14	238
Fruit-drier	D. Hitchcock	206,946	Aug. 13	311	95	14	248
Funnel. Measuring	A. Ramage	207,065	Aug. 13	423	131	14	262
Furnace. Ore roasting and desulphurizing	R. Cook	207,016	Aug. 13	377	116	14	256
Garbage-holder	P. Brand and E. J. King	206,926	Aug. 13	294	90	14	246
Gas-light extinguisher	G. A. Trentler	207,086	Aug. 13	442	.....	14	264
Gas. Process for the continuous preparation of nitrogen	L. G. McCauley	207,052	Aug. 13	410	127	14	260
Gas-regulator for retorts	I. S. Hastings and W. S. Cock	207,032	Aug. 13	391	121	14	258
Gate	H. W. Goodwin	206,942	Aug. 13	307	94	14	248
Gate. Farm	S. Schreffler, Jr.	207,078	Aug. 13	435	134	14	263
Gate. Farm	A. B. Kittson	206,883	Aug. 13	247	78	14	241
Glove-fastening	R. Clarke	206,929	Aug. 13	296	90	14	246
Grain-separator	M. P. Korsgaard	207,042	Aug. 13	400	124	14	259
Grain-separator	A. M. Sutherland	206,982	Aug. 13	344	106	14	252
Grain-separator	R. J. Howdon and J. E. Wood	207,036	Aug. 13	396	122	14	259
Grate-holder	F. L. Bailey	206,852	Aug. 13	215	69	14	237
Gun. Machine	S. Beckner	206,922	Aug. 13	289	88	14	245
Harrow	J. Johnson	207,039	Aug. 13	398	123	14	259
Harrow	J. S. Foster	207,025	Aug. 13	386	119	14	257
Harrow and seeding-machine. Combined wheeled	T. S. Brown	206,857	Aug. 13	219	70, 71	14	238
Harvester	E. A. Walters	206,987	Aug. 13	348	107	14	253
Hay-carrier	E. W. Bullard	207,010	Aug. 13	372	114	14	256
Hay-tedder	W. M. Saunders	207,074	Aug. 13	431	133	14	263
Hay-tedder	J. Kline	207,041	Aug. 13	399	124	14	259
Hedges. Construction of osage-orange	J. A. Talpey	207,081	Aug. 13	437	135	14	264
Hides. Machine for unhairing, scouring, and currying	R. T. Hunbrook	206,875	Aug. 13	239	76	14	240
Hinge for folding seats	H. M. Ralston	206,897	Aug. 13	267	81	14	243
Hinge. Lock	J. P. Cole	206,863	Aug. 13	228	.....	14	239
Hog-cholera compound	J. M. Wudlington	206,986	Aug. 13	347	107	14	253
Hoister. Tobacco	W. A. and W. S. Guy	207,030	Aug. 13	390	120	14	258
Hoisting apparatus. Tobacco	E. E. Morse	207,061	Aug. 13	419	130	14	261
Holdback for vehicles	M. Metcalf	207,057	Aug. 13	415	128	14	261
Honey-combs. Foundation for	C. A. Sands	206,976	Aug. 13	337	103	14	251
Hops. Sack for baling	J. Mills	207,059	Aug. 13	417	129	14	261
Horse-nail machine	C. E. Macarthy. (Reissue)	8,366	Aug. 13	454	139	14	266
Horse-power equalizer	L. B. Rowland	206,973	Aug. 13	333	102	14	251
Horseshoe	D. F. Fetter	206,939	Aug. 13	305	93	14	247
Horseshoe-nail machine	J. D. Sumner	206,907	Aug. 13	276	84	14	244
Horseshoes. Die for making	G. Bryden	206,859	Aug. 13	223	72	14	238
Horseshoes. Manufacture of	G. Bryden	206,858	Aug. 13	223	71	14	238
Hot-air register and evaporator	W. L. McDowell	206,890	Aug. 13	261	80	14	242
Hydrant for watering stock	J. Compton	207,015	Aug. 13	376	115	14	256
Insect-destroyer	J. P. Ruhmann	206,901	Aug. 13	271	82	14	243
Ironing-table	W. C. McGill	207,054	Aug. 13	411	127	14	261
Knife-scales. Manufacture of	W. Baker	206,919	Aug. 13	287	87	14	245
Knitting-machine cylinder	A. Greiss	207,029	Aug. 13	389	120	14	258
Lamp	J. A. Stephens, and J. Lameraux	206,904	Aug. 13	273	83	14	244
Lamp and stove. Combined	R. R. Moore	206,960	Aug. 13	323	98	14	250
Lamp-burner	W. O. Lincoln	207,048	Aug. 13	405	126	14	260
Lamp. Carbureting	C. E. Ball	206,999	Aug. 13	362	111	14	254
Land-leveler	S. Griffin	206,943	Aug. 13	308	94	14	248
Lantern	L. J. Atwood	206,917	Aug. 13	285	87	14	245
Lantern	L. J. Atwood	206,918	Aug. 13	286	87	14	245
Lantern	C. H. Viereck	207,088	Aug. 13	444	137	14	265
Lantern. Signal	S. Coxon	206,933	Aug. 13	298	91	14	247
Lock. Time	J. L. Hall	206,872	Aug. 13	235	75	14	240
Lock. Time	S. M. Lillie	206,887	Aug. 13	251	79	14	241
Lock. Time	E. Stewart	206,981	Aug. 13	341	105	14	252
Lubricator	C. F. Raymond	207,067	Aug. 13	424	131	14	262
Lumber-trimming machine	G. W. Nichols	206,962	Aug. 13	325	99	14	250
Meal, flour, grain, &c. Apparatus for drying	J. T. Maybury	207,051	Aug. 13	408	127	14	260
Medicament. Coated compressed	C. Carter	207,013	Aug. 13	374	115	14	256
Middlings-separator	W. H. Fruen	206,869	Aug. 13	231	74	14	239
Mill attachment. Grinding	C. V. Stevens	206,905	Aug. 13	274	83	14	244
Mill. Cider	J. L. Barnes	207,001	Aug. 13	364	111	14	255
Mill. Grinding	M. B. Atkinson	206,996	Aug. 13	358	110	14	254
Millstone-dress	W. D. Odendahl	206,963	Aug. 13	326	99	14	250
Millstone-dressing machine	W. Coplin. (Reissue)	8,377	Aug. 13	471	142	14	268
Millstone-driver	P. H. Childress	207,014	Aug. 13	375	115	14	256
Mower. Lawn	A. H. Rau	207,066	Aug. 13	423	131	14	262

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Numbering-machine	T. S. Bowman	206,924	Aug. 13	290	88, 89	14	246
Nut-lock	W. J. Brassington	207,006	Aug. 13	369	113	14	255
Nut-lock	J. C. Lewis	207,047	Aug. 13	404	126	14	260
Odorless closet	W. Glover	206,874	Aug. 13	239	75, 76	14	240
Oil. Transporting petroleum	R. A. Wilder	206,990	Aug. 13	350	108	14	253
Oiler for slide-valves of locomotives	O. A. Haynes	207,033	Aug. 13	392	121	14	258
Paper-pulp. Machine for separating the fibers of wood for	P. and G. C. Rose	206,971	Aug. 13	332	101	14	251
Paper-pulp washer	H. Hollingsworth	206,877	Aug. 13	241	76	14	240
Pen-holder	T. B. Jeffery	206,950	Aug. 13	314	96	14	249
Photographs. Coloring	W. V. Price and J. G. Klingaman	206,968	Aug. 13	330	.....	14	251
Pins. Machine for making wooden	A. M. Kendall	206,882	Aug. 13	246	78	14	241
Pitcher	S. W. Babbitt	206,997	Aug. 13	360	110	14	254
Planter. Corn	W. W. Goodwin and S. W. Hurlburt	207,028	Aug. 13	388	120	14	258
Plow	E. Johnson	206,880	Aug. 13	245	77	14	241
Plow	C. P. McWane	206,958	Aug. 13	321	98	14	249
Plow-point	S. M. White and J. A. Francis	206,910	Aug. 13	280	85	14	244
Plow. Sulky	J. C. Welsh	206,969	Aug. 13	350	107	14	253
Pocket-books, &c. Clasp for	L. Wolf and M. Loeb	207,089	Aug. 13	445	137	14	265
Potatoes. Removing the skin of	A. R. Davis	206,934	Aug. 13	300	91	14	247
Press. Baling	P. K. Dederick	206,865	Aug. 13	239	73	14	239
Press. Hop	C. A. Sands	206,977	Aug. 13	337	103	14	251
Printing-press	W. F. Rosser and J. L. Briggs	206,972	Aug. 13	333	102	14	251
Propelling vessels	S. H. Cowles and B. B. Brewer	207,018	Aug. 13	379	116	14	257
Pump	C. F. and S. Rigby, 3d	206,970	Aug. 13	331	101	14	251
Pump bucket. Chain	M. C. Bignall	206,854	Aug. 13	217	70	14	237
Pump bucket. Chain	J. S. Wilcox. (Reissue)	8,370	Aug. 13	461	140	14	267
Pump-chains. Machine for making	J. Adt	206,995	Aug. 13	356	109	14	254
Pump. Oil-well	M. Lytle	206,888	Aug. 13	258	79	14	242
Pump. Oil-well	M. Lytle	206,956	Aug. 13	310	97	14	249
Punkas. Apparatus for working	R. C. Parsons and E. Palliser	206,895	Aug. 13	265	81	14	243
Quilting-frame	W. E. Barker	207,000	Aug. 13	363	111	14	254
Railway-spike	E. J. Remillon	206,898	Aug. 13	268	81	14	243
Railway switch. Street	J. V. McIlroy	206,957	Aug. 13	320	97	14	249
Railway-track	A. Herring	206,876	Aug. 13	240	76	14	240
Rake. Horse hay	T. S. Miller	206,959	Aug. 13	322	98	14	249
Rein for two horses. Driving	G. R. Woolsey	206,942	Aug. 13	284	85	14	244
Rein-holder	R. Floryanowiez	207,024	Aug. 13	385	118	14	257
Rice-hulling machine	W. G. Stevenson	207,080	Aug. 13	436	135	14	263
Riveting-machine	H. MacColl	207,049	Aug. 13	406	126	14	260
Roofing and building purposes. Material for	D. S. Armstrong	206,850	Aug. 13	213	69	14	237
Ruling paper. Machine for	E. Gomptel	206,873	Aug. 13	237	75	14	240
Sash and frame. Skylight	J. L. Cox	207,019	Aug. 13	380	117	14	257
Sash-fastener	O. F. Fogelstrand and W. E. Sparks	206,940	Aug. 13	306	93	14	248
Saw handle. Crescent	M. E. True	206,908	Aug. 13	278	84	14	244
Saw-tooth. Insertible	J. L. Berry	207,003	Aug. 13	366	112	14	255
Screw-cutting stock and tool	E. P. Baville	206,920	Aug. 13	288	87	14	245
Sewing-machine	T. Lamb	207,044	Aug. 13	401	125	14	260
Sewing-machine	E. S. Young and G. H. Dimond	206,992	Aug. 13	353	108	14	253
Sewing-machine. Blind-stitch	C. P. Hoffman and N. Meyers	207,035	Aug. 13	394	122	14	259
Sewing-machine shuttle	E. Bouscay	207,004	Aug. 13	367	112	14	255
Shawl-strap	W. T. Butler	206,928	Aug. 13	295	90	14	246
Shirt	G. A. McFadden	207,053	Aug. 13	410	127	14	261
Shirt-neck shaper	A. Borchardt	206,856	Aug. 13	218	70	14	237
Shoulder-brace	A. Adamson	206,904	Aug. 13	355	109	14	254
Skylight	A. and G. Bickelhoupt	206,853	Aug. 13	216	69	14	237
Spike-extractor	J. F. Scribner	206,902	Aug. 13	272	82	14	243
Spinning-ring	J. W. Wattles	206,988	Aug. 13	349	107	14	253
Spring. Vehicle	W. Chegwin	206,862	Aug. 13	227	72	14	239
Springs. Clip for vehicle	J. Bowden	207,005	Aug. 13	368	113	14	255
Springs. Device for retarding the recoil of	C. J. A. Dick and T. L. Luders	207,020	Aug. 13	381	117	14	257
Springs. Device for retarding the recoil of	C. J. A. Dick	207,021	Aug. 13	382	117	14	257
Stamp. Branding	W. L. Gamage	206,870	Aug. 13	232	74	14	239
Steam-generator	J. G. Esker	206,998	Aug. 13	360	110	14	254
Steamer. Feed	W. S. Craine and C. D. Gaylord	206,864	Aug. 13	228	73	14	239
Stomach and enema pump	E. Rosenzi	207,072	Aug. 13	429	133	14	263
Stove attachment	L. B. Lawrence and A. G. Strawbridge	206,953	Aug. 13	316	96	14	249
Stove-polish	H. J. Decher	206,868	Aug. 13	231	.....	14	239
Stoves. Heat-fender for cooking	B. S. Hite	206,947	Aug. 13	312	95	14	248
Swimming. Apparatus for teaching	T. H. Monaghery	206,892	Aug. 13	263	80	14	242
Table slide. Extension	H. W. McIntyre	207,055	Aug. 13	412	128	14	261
Tar. Package for	C. H. Leggett	207,045	Aug. 13	402	125	14	260
Target. Ball	C. A. Tatum	206,993	Aug. 13	345	106	14	252
Telephone-resonator	C. E. Cannon	207,011	Aug. 13	372	114	14	256
Thill-coupling	C. H. Holdredge and C. H. Cowan	206,948	Aug. 13	312	95	14	248
Thill-coupling	W. S. Palmer	206,965	Aug. 13	328	100	14	250
Thrashing-machine teeth. Die for making	J. C. Richardson and T. R. Morgan	207,069	Aug. 13	426	132	14	262
Toy bank	E. R. Morrison	206,893	Aug. 13	264	80	14	242
Treadle	A. L. Akins	206,914	Aug. 13	282	86	14	245
Truck and bag-holder. Combined	L. Bissell and R. Van Buren	206,855	Aug. 13	217	70	14	237
Turbine wheel and gate-operating mechanism	U. S. and W. H. Sheffer	207,076	Aug. 13	433	134	14	263
Twine-holder	J. W. Turner	206,984	Aug. 13	346	106	14	253
Type-writing machine	E. R. Barron	207,002	Aug. 13	365	112	14	255
Ultramarine. Manufacture of red	J. Zeltner	207,093	Aug. 13	453	.....	14	265
Valve. Globe	J. Powell. (Reissue)	8,367	Aug. 13	455	139	14	266
Valve. Globe	J. Powell. (Reissue)	8,368	Aug. 13	458	139	14	266
Ventilator for blow and dust rooms	J. B. Holmes	206,949	Aug. 13	313	95	14	248
Wagon-hound	J. Q. Adams	206,913	Aug. 13	282	86	14	245
Wagon-jack	H. Hiestand, Jr	206,944	Aug. 13	309	94	14	248
Wash-board	B. Kaufmann	206,881	Aug. 13	246	78	14	241
Wells. Casing-head for oil	F. A. Conkle	206,936	Aug. 13	298	91	14	247
Wheel. Vehicle	C. S. Carpenter	207,012	Aug. 13	373	115	14	256
Wheelbarrow	J. Lennon	206,955	Aug. 13	318	97	14	249
Whip-socket	F. Higgins	206,945	Aug. 13	310	94	14	248
Whitewashing-machine	J. P. Weber	206,909	Aug. 13	279	85	14	244
Wrench. Axle-nut	A. Van Wie	207,087	Aug. 13	443	137	14	264

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COMMISSIONER'S DECISIONS.

THE CONSOLIDATED FRUIT JAR COMPANY.—*Appeal.*

[*Appeal from the decision of the Examiner of Trade-Marks in the matter of the application of The Consolidated Fruit Jar Company for registration of trade-mark filed April* 12, 1877.—*Decided September* 20, 1878.]

The Commissioner of Patents is prohibited from registering as a trade-mark the name of a person merely, by section 4939 Rev. Stats. Nor was such a name a lawful trade-mark under the common law prior to the act of July 8, 1870, when, by long usage in designating a certain class of manufactures, it had become generic in its character.

The owners of a patent have the right by virtue thereof to stamp goods manufactured thereunder with the name of the patentee. Such right succeeds to the public on the expiration of the patent, and the exclusive monopoly, therefore, of such name as a trade-mark, cannot lawfully be vested in the present or former owners of the patent.

[*Frost & Coe*, for applicants.]

DOOLITTLE, *Acting Commissioner:*

The Consolidated Fruit Jar Company of New York seek to register as a trade-mark the name "Mason," applied to fruit-jars. By purchase they are the owners of patents granted in November, 1858, and extended in 1872 for seven years, to John L. Mason for improvements in screw-neck bottles and jars, and molds for making the same.

The applicants allege that they have used this name as a distinguishing mark for the past seventeen years on fruit-jars made by them, by impressing the name on the central portion of the body of the jar, in connection with other words and figures, and also on their cards, circulars, &c.

Other patents have been granted to Mason, which are still in force, for improvements in fruit-jars, and I am informed that he also has applied for the registration of his name as a trade-mark.

The Commissioner of Patents is prohibited by section 4939 from recording as a trade-mark the name merely of a person, firm, or corporation, unaccompanied by a mark sufficient to distinguish it from the same name when used by other persons, or which is identical with a trade-mark appropriate to the same class of merchandise and belonging to a different owner, and already registered or received for registration, or which so nearly resembles such last-mentioned trade-mark as to be likely to deceive the public.

Applicants adopt the name "Mason" as the essential mark, and do not accompany it by any particular mark sufficient to distinguish it from the same name when used by other persons. If there were an accompanying mark, *that* should be the one recorded and known as the particular trade-mark of applicants.

They rest the right to use the name merely, as their trade-mark, on the ground of long-continued use prior to the trade-mark act of 1870, by virtue of the last clause of section 4939 Rev. Stats., which excepts from the operation of the prohibition above cited the registry of any lawful trade-mark rightfully in use on the 8th day of July, 1870.

"The office of a trade-mark," say the United States Supreme Court, "is to point out distinctively the origin or ownership of the article to which it is affixed, or, in other words, to give notice who was the producer. This may in many cases be done by a name, a mark, or a device well known but not previously applied to the same article." (*Canal Co.* vs. *Clark*, 13 Wallace, 311.)

That names of persons in many instances under the common law have been held as proper trade-marks there can be no question. A person may have a right in his own name as a trade-mark against a person of a different name, or as against a person with the same surname but a different christian name. (*Millington* vs. *Fox*, 3 Myl. & Cr., 338; *Dent* vs. *Turpin*, 2 Johns. & Hem., 139; *Morrison* vs. *Salmon*, 2 Man. & Gr., 385; *Daw* vs. *Binning*, 1 Cooper's Chan. R., 489; *Howe* vs. *Howe Sewing Machine Co.*, 50 Barb. 236.) And as against a person of the same name where the name is used in connection with a particular form of stamp or label. (*Sykes* vs. *Sykes*, 3 B. & C., 541; *Croft* vs. *Day*, 7 Beav., 84; *Holloway* vs. *Holloway*, 13 Beav., 209; *Meneely* vs. *Meneely*, 62 N. Y., 427; *Rogers* vs. *Taintor*, 97

Mass., 291, 296; *Gilman* vs. *Hunnewill*, 122 Mass., 139.) Where, however, the name has come by long usage to denote the kind, class, or quality of an article—in other words, a generic term, as "Thomsonian medicines"—no one can acquire its exclusive use. (*Thomson* vs. *Winchester*, 19 Pickering, 214; *Singleton* vs. *Bolton*, 3 Doug., 393.)

The rule and its exceptions in this matter are thus stated in Upton's Treatise on Trade-Marks, p. 113:

> Certainly no name, or mark, or symbol, that can be devised, more faithfully fulfils the condition of designating the origin and ownership of the manufactured article than the name and address of the manufacturer. But where this precise name has been previously adopted, and has become known as the brand or trade-mark, for his productions, of the particular person whose name it is, if it be used by another person, who happens to have the same name, as a designation for his productions of a similar character, it is obvious that, by reason of its previous adoption and notoriety, it altogether fails to distinguish and identify the manufacture of the second party; and, on the contrary, that such use must necessarily operate (as in such cases no doubt was the design) to produce the belief on the part of the public that they are the productions of the first manufacturer, with whose goods it has become identified.
>
> So, too, when the name of the manufacturer, by long use and the force of circumstances, becomes the real name of the article, not only its proper and generic, but its exclusive, appellation, it ceases to possess that designating quality which is the fundamental condition of property in the name as a trade-mark.

It is a universal custom to refer to patented articles by the name of the inventor, as the *Howe* sewing-machine, the *Bell* telephone, &c.; and such names soon become generic in their character, designating a particular kind or class of articles. So it is in the present case. During twelve years preceding the year 1870 the particular form of fruit-jar made by applicants had become widely known as "Mason's Fruit Jar," and it no doubt will continue to be so known as long as the demand for it exists.

It is also clear that applicants were enabled to stamp on their goods the label "Mason's Fruit Jar," and to protect themselves in the exclusive manufacture and sale of the article by virtue of the patents owned by them. Their rightful use of this name prior to 1870 was based upon this fact.

If ownership or right to manufacture under the patents had been vested in others, there can be no doubt that they too would have been entitled to use this stamp. When all such rights cease by the expiration of the patents, the public will succeed thereto, and no one can be prevented from manufacturing and selling Mason's fruit-jars, and stamping them as such.

Now that the extended patents under which applicants manufacture are about to expire, to give to them a monopoly for thirty years longer in the use of the name by which such patented articles are known would be a fraud upon the public.

The Office has hitherto refused to record such names as trade-marks, and the courts, both in England and in this country, have declined to extend protection to their use. In the case of *Edleston* vs. *Vick*, (23 Eng. Law & Eq. Reps.,) the vice-chancellor held that in the matter of "Taylor's Patent Pins," the patent having expired, everybody had a right to use that term. If that alone constituted the whole of the label, it was public property. But there was other matter in connection with the above term which together made up the plaintiff's label, such as particular form of engraving, &c., and this label, as an entirety, the defendants were enjoined from using. There is no expression in that decision which can be quoted as authorizing the name "Taylor" alone to be used as a trade-mark.

The same ground was taken in a late case in this country. One Tucker had received a patent for a spring-bed. The company who owned the patent during its life subsequently registered in this Office the words "Tucker Spring-Bed," combined with other matter. The court held that so far as the words "Tucker Spring-Bed" were concerned, the same were certainly public property from the date of the expiration of the patent. (*Tucker Manufacturing Co.* vs. *Boyington*, 9 OFFICIAL GAZETTE, 455.) So in the case of *C. E. Richardson et al.*, (3 OFFICIAL GAZETTE, 120,) the Commissioner refused registration of the words "A. Richardson's Union Leather Splitting Machine," on the ground that the words presented had become the generic name of the machines by which the public knew them.

By the sale of his patents to this company Mason by no means parted with his right to attach his name to jars which are the subjects of his subsequent patents. Yet by the practical effect of the monopoly they now seek, not only Mason, but all other purchasers of the right from him to manufacture his jars under the subsequent patents, would be deprived of the power to attach the proper designation to their wares.

The two rules which the Supreme Court said should not be overlooked would be violated if the registration of the present mark were allowed:

> No one can claim protection for the exclusive use of a trade-mark or trade-name which would practically give him a monopoly in the sale of any goods other than those produced or made by himself. If he could, the public would be injured rather than protected, for competition would be destroyed. Nor can a generic name, or a name merely descriptive of an article of trade, its qualities, ingredients, or characteristics, be employed as a trade-mark, and the exclusive use of it be entitled to legal protection. (*Canal Company* vs. *Clark*.)

The decision of the Examiner of Trade-Marks denying registration is affirmed.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of Ohio.

CHARLES DUWEL *vs.* H. BOHMER.

[*April Term*, 1878.]

The Circuit Court of the United States has jurisdiction of a suit in equity instituted in said Court, to restrain the infringement of a trade-mark registered in accordance with the provisions of Act of Congress of July 8, 1870, (16 Stat. at Large, chap. 230,) irrespective of the residence of the parties to the suit.

The fact that both complainant and respondent are citizens of the same State, does not deprive this court of jurisdiction.

The Act of July 8, 1870, (16 U. S. Stat. at Large, chap. 230,) and of March 3, 1875, (18 Stat. at Large, part 3, chap. 137, sec. 1,) construed with reference to said jurisdiction.

[*Wm. Hubbell Fisher*, for complainant; *Wm. S. Bates*, for respondent.]

SWING, *J.*:

The demurrer is that this court has no jurisdiction of the case.

The ground of the demurrer is that the parties are both residents of the State of Ohio, and that there is no act which confers upon the United States courts jurisdiction of the subject-matter in such a case.

The act of 1870, Rev. Stat., §629, p. 111, gives the Circuit Court jurisdiction of all suits under the copyright and patent laws.

If the trade-mark law is in any fair sense a copyright law, the act gives jurisdiction.

The only provision of the Constitution which in any

wise bears on the power of Congress to pass laws respecting trade-marks or to protect them, is the following, viz., section 8 of article 1 of the Constitution of the United States:

> The Congress shall have power to promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.
>
> Also to make all laws which shall be necessary and proper for carrying into execution the foregoing powers.

There is no other clause of the Constitution which vests in Congress the power to grant to authors an exclusive right to their writings, and Congress in legislating on this question undoubtedly drew their power from this section.

The copyright and trade-mark laws all come from the same source. So if the trade-mark act of 1870 be a copyright law, then the Court has jurisdiction without reference to residence or the amount in controversy.

The clause or words in section 4942 of the copyright and trade-mark law, viz:

> shall be liable to an action on the case for damages for such wrongful use of such trade-mark, at the suit of the owner thereof; and the party aggrieved shall also have his remedy according to the course of equity to enjoin the wrongful use of his trade-mark and to recover compensation therefor in any court having jurisdiction over the person guilty of such wrongful use—

does not limit this jurisdiction.

But there may be a general extending of the right to sue—that is, where there is a general jurisdiction in the Courts of the United States you may go into any State court. This section 4942 may be an enlargement, but is not a limitation of the jurisdiction.

But aside from this act, section 1, chapter 137, of the Act of March 3, 1875, provides—

> That the Circuit Courts of the United States shall have original cognizance, concurrent with the courts of the several States, of all suits of a civil nature at common law or in equity, where the matter in dispute exceeds, exclusive of costs, the sum or value of five hundred dollars, and arising under the Constitution or laws of the United States.

The clause granting jurisdiction is without limitation as to residence. It only limits the amount in controversy. The remaining clauses are wholly disjunctive.

The first three clauses are without qualification as to citizenship. Then follows the clause when there shall be controversies of citizens of different States.

In the present case the right is derived exclusively from a law of the United States. In this statute no citizenship was requisite, and if, in this case, it was a suit of a civil nature at common law or in equity, the jurisdiction vests in the Circuit Court whenever the amount in controversy was over $500. If the suit arises under the Constitution or a law of the United States, the jurisdiction is then vested without respect to the amount.

The authorities upon the question at issue are very limited, and not a single case in which the question has been raised has been cited by counsel.

The point at issue is argued for the first time *de novo*. It has been ably argued.

I have looked into every book and in all reported decisions, and have been unable to find anything in which the question has been determined.

In Bump's Treatise, law of patents, trade-marks, and copyrights, it seems to be taken for granted that the Circuit Court has jurisdiction.

I find that in the index under the head of Circuit Courts is "original jurisdiction in patent cases, page 13;" "in copyright cases, 13;" "in trade-mark cases, 13;" "without regard to citizenship, page 13." And he has classed it there without regard to citizenship. Turn to the pages referred to in the index and we find a copy of the trade-mark act. Turn to page 349, where he speaks of the jurisdiction, he simply copies section 4942 of the act.

When we go back to his index and look under the head of "trade-marks" we find "remedy in State courts preserved," see page 250, on which page he quotes section 4945, of the statute of 1870, Rev. Stat., chap 2. Now, if we examine that section we find that it provides again:

> Nothing in this chapter shall prevent, lessen, impeach, or avoid any remedy at law or in equity, which any party aggrieved by any wrongful use of any trade-mark might have had if the provisions of this chapter had not been enacted.

So it is clear that he regards the jurisdiction which the Circuit Court has additional to that possessed by the State courts, that the Circuit Court has jurisdiction without reference to the residence of the parties or the amount in controversy.

When we come to look at the trade-mark law (Rev. Stat., title 60, page 953) we find that the title thereof is "Patents, Trade-Marks, and Copyrights." And then follows, "Chapter One. Patents." "Chapter Two. Trade-Marks." "Chapter Three. Copyrights," and the sections are numbered continuously from the beginning of chapter one, through chapters two and three.

The demurrer is overruled.

WHEN an applicant for a patent makes oath that he believes himself to be the original inventor of a machine or improvement, the oath is conclusive with the Office, in the absence of proof that some one else made the invention. A patent or a printed description is held to be such proof, and an application will be rejected whenever such publication has been made. Public use in this country is such proof; although, if the public use has been less than two years, the applicant may establish the fact that he made the invention prior thereto. Use in a foreign country is no bar to the grant of a patent in the United States, where the applicant in this country is able to take the oath prescribed by law.

ANY person, whether citizen or alien, (other than an officer or employee of the Patent Office,) may procure a patent for an invention original with himself by paying the fees and adopting the course of procedure prescribed by law and the rules. Only citizens of the United States, or aliens who have resided in the country one year and made oath of intention to become citizens, can file caveats in the confidential archives of the Patent Office.

TO SUBSCRIBERS.—Great care will hereafter be taken in mailing THE OFFICIAL GAZETTE to subscribers, and in case of its non-receipt the fault will not be in the Patent Office. When each issue shall have been mailed, the Office will assume that it has done its duty by the subscribers, and will not send extra numbers except upon receipt of 10 cents for each copy ordered.

TRADE-MARKS.

[Each certificate bearing date August 20, 1878.]

6,482.—COLOGNE-WATER.—*Johann Maria Farina*, Cologne, Germany. Application filed June 22, 1878.

"The medals and coats of arms, arranged as shown in the annexed fac-simile, and the name or designation 'JEAN MARIA FARINA, PLACE JULIERS No. 4, COLOGNE.'"

6,483.—WOVEN COTTON AND WOOLEN FABRICS.—*H. Fogg & Co.*, New York, N. Y. Application filed August 1, 1878.

"The eagle, sun, mountain, dragon, and scroll with the Chinese characters thereon, arranged, respectively, substantially as shown."

6,484.—SHOVELS AND SCOOPS.—*Ezra H. Linley*, St. Louis, Mo. Application filed August 7, 1878.

"The word 'DEADWOOD.'"

6,485.—CHEMICALS.—*Anthony Pirz*, Long Island City, N. Y. Application filed July 24, 1878.

"The fanciful or arbitrarily-selected word 'CARNIOLA.'"

6,486.—GRAPHITE FOR STOVE-POLISH, &c.—*The Joseph Dixon Crucible Company*, Jersey City, N. J. Application filed July 8, 1878.

"The phrase 'CARBURET OF IRON.'"

6,487.—SMOKED, DRIED, OR CURED BEEF, PORK, HAMS, &c.—*Calvin J. Comstock*, Cleveland, Ohio. Application filed July 27, 1878.

"The statue, as described and shown in the fac-simile, and the arbitrarily-selected words 'FOREST CITY BRAND.'"

6,488.—STOVE-POLISH.—*J. C. Jacoby & Co.*, New York, N. Y. Application filed July 24, 1878.

"The symbol of a double head and the firm-name of 'J. C. JACOBY & CO.'"

6,489.—SMOKING-TOBACCO, CIGARS, AND CIGARETTES.—*The American News Company*, New York, N. Y. Application filed July 22, 1878.

"The fanciful or arbitrarily-selected words 'BELLE DU LAC.'"

6,490.—CIGARS.—*California Cigar Box Company*, San Francisco, Cal. Application filed July 30, 1878.

"The word-symbol 'FOREST KING.'"

6,491.—SOAP.—*Day & Frick*, Philadelphia, Pa. Application filed August 2, 1878.

"The pictorial representation of chain-links, substantially as shown."

6,492.—SALT.—*Richard Evans*, Liverpool, England. Application filed December 13, 1877.

"The pictorial representation of a crown."

6,493.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Kerbs & Spiess*, New York, N. Y. Application filed July 31, 1878.

"The fanciful words 'ABOVE ALL.'"

6,494.—MEDICINAL PREPARATION.—*James C. Kerr*, Cincinnati, Ohio. Application filed February 18, 1878.

"A fac-simile of my signature."

6,495.—MEDICINAL PREPARATION.—*Mrs. Joe Person*, Franklinton, N. C. Application filed January 22, 1878.

"A pictorial illustration representing an Indian warrior in a kneeling posture on a bank or cliff overlooking a water-fall as shown."

6,496.—MEDICINAL PREPARATION.—*The Franklin Company*, New York, N. Y. Application filed May 8, 1878.

"The word-symbol 'MIASMINE,' arranged as shown."

6,497.—ACCORDIONS AND OTHER REED, PIPE, AND FLUTE INSTRUMENTS.—*The National Musical Instrument Manufacturing Company*, New York, N. Y. Application filed May 13, 1878.

"A shield and the letters and words 'THE N. M. I. M'F'G CO.,' substantially as shown."

6,498.—MARKING-INK.—*Blackwood & Co.*, London, England. Application filed August 13, 1878.

"The word 'JETOLINE.'"

6,499.—MUSTARD.—*Burns & Byram*, Philadelphia, Pa. Application filed August 8, 1878.

"The word-symbol 'RADOLIO.'"

6,500.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Edward Hilson*, New York, N. Y. Application filed August 10, 1878.

"The representation of a letter-box, as is shown."

6,501.—PRINTED PUBLICATIONS.—*Keppler & Schwarzmann*, New York, N. Y. Application filed August 6, 1878.

"The word-symbol 'PUCK.'"

6,502.—COLOGNE.—*John A. Lansing*, Brookline, Mass. Application filed August 14, 1878.

"The word-symbol 'REX.'"

6,503.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Levy Brothers*, New York, N. Y. Application filed June 22, 1878.

"The representation of three negroes, as shown."

6,504.—SMOKING-TOBACCO.—*B. Leidersdorf & Co.*, Milwaukee, Wis. Application filed July 27, 1878.

"The title 'B. LEIDERSDORF & CO.' and the word-symbol 'ROB ROY.'"

6,505.—SMOKING-TOBACCO.—*B. Leidersdorf & Co.*, Milwaukee, Wis. Application filed July 27, 1878.

"The title 'B. LEIDERSDORF & CO.' and the word-symbol 'OLD BOY.'"

6,506.—PAPER COLLARS AND CUFFS.—*Henry A. Mann, Jr.*, Ballston Spa, N. Y. Application filed August 6, 1878.

"The words 'PUSS IN BOOTS.'"

6,507.—MARBLE.—*Pleasantville Land Company*, New York, N. Y. Application filed July 31, 1878.

"The word-symbol 'SNOWFLAKE.'"

6,508.—SMOKING-TOBACCO, CIGARS, AND CIGARETTES.—*The American News Company*, New York, N. Y. Application filed July 17, 1878.

"The vignette landscape representing Indians and wigwams on the shore of a river, other vignette pictures being arranged on each side of the principal vignette picture, illustrating an Indian, with a squaw and a wigwam in the background, substantially as illustrated."

6,509.—PLASTIC COMPOSITION.—*The Bonsilate Company*, (limited.) Albany, N. Y., and Newark, N. J. Application filed May 6, 1878.

"The arbitrarily-selected word 'BONSILATE.'"

LABELS.

[Each certificate bearing date August 20, 1878.]

1,655.—Title: "SACCHARATED CHLORO-PEPSINE."—*Benjamin W. Dyer*, New York, N. Y. Application filed August 9, 1878.

1,656.—Title: "BUFF'S COUGH CURE."—*Darby & Williams*, New York, N. Y. Application filed August 2, 1878.

1,657.—Title: "DEXTRO QUININE."—*Henry G. Kearsley*, Philadelphia, Pa. Application filed August 9, 1878.

1,658.—Title: "ABOVE ALL."—*Kerbs & Spiess*, New York, N. Y. Application filed July 31, 1878.

1,659.—Title: "SPANISH CHOLERA REMEDY."—*Roger S. Spaulding*, Woburn, Mass. Application filed August 7, 1878.

1,660.—Title: "GUARDIAS' OINTMENT."—*Soler & Guardias*, New York, N. Y. Application filed August 9, 1878.

1,661.—Title: "THOMSON'S UNBREAKABLE."—*Thomson, Langdon & Co.*, New York, N. Y. Application filed August 3, 1878.

1,662.—Title: "THOMSON'S TORSO CORSET."—*Thomson, Langdon & Co.*, New York, N. Y. Application filed August 9, 1878.

DESIGNS.

[Each design bearing date August 20, 1878.]

10,783.—UMBRELLA-HANDLE.—*Amasa Lyon*, New York, N. Y. Application filed July 3, 1878. Term of patent 3½ years.

10,784.—FUNERAL ORNAMENTS.—*Charles E. McFarlan*, Cincinnati, Ohio, assignor to *Crane, Breed & Co.*, same place. Application filed August 5, 1878. Term of patent 7 years.

10,785.—TOILET-COVER, COUNTERPANE, &c.—*John Crossley*, Heywood, Great Britain. Application filed April 25, 1878. Term of patent 3½ years.

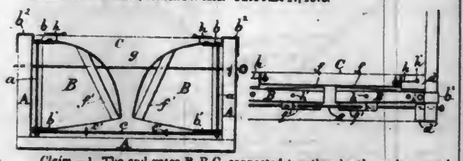
10,786.—COUNTERPANE OR QUILT.—*William O'Hanlon*, Manchester, Great Britain. Application filed April 25, 1878. Term of patent 3½ years.

DATE OF THE GAZETTE.—THE OFFICIAL GAZETTE bears the same date as the patents to which the claims, briefs, and drawings published therein relate; but it is not mailed to subscribers until about two weeks later, owing to the delays incident to the preparation of the copy and the reproduction of the illustrations.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

AUGUST 20, 1878.

207,096. END-GATES FOR WAGONS. Dinsmore Austin, Murray, Iowa, assignor to Jedediah Knotts and D. O. Dufur, one-third to each. Filed June 17, 1878.



Claim.—1. The end-gates B B C, connected together by the rods *a a* and *c* and the plates *b b'*, and adjusted in the wagon-box, to be operated substantially as and for the purposes described.

2. The end-gates B B C, as constructed and arranged, in combination with the wagon-box A, provided with the standards *d* and the cleats *d'*, substantially as and for the purposes described.

3. The gates B B, adjusted to swing outward and provided with the clasps *b'*, in combination with the gates C, attached to the rod *c* to fold outward and downward, substantially as and for the purposes described.

4. The gate C, having the hooks *h*, in combination with the standards *d*, having holes *h'*, the gates B, having the holes *h'*, and the cleats *f*, substantially as and for the purposes described.

207,098. PAINTS. Michael B. Bailey, Chicago, Ill., assignor, by mesne assignments, of one-half his right to Henry P. Taylor, same place. Filed Mar. 23, 1878.

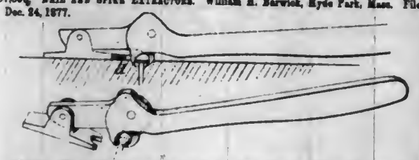
Claim.—A paint composed of the following ingredients, to wit: candle-tar or sperm-gum, petroleum, benzine, turpentine, or other suitable liquid hydrocarbon, gum-shellac, gutta-percha, india-rubber, and litharge, substantially as described.

207,097. WIRE BALE-TIES. Richard H. Bartlett, Schenectady, N. Y. Filed June 4, 1878.



Claim.—In a wire bale-band, a connecting device combining the loop C, made wholly to one side of the bale-band, and a holding device, D, made continuous with said loop, and formed by the portions *c c'*, in the manner above described, and all adapted to operate with the opposite end loop B, for connection with the same, in the manner set forth and shown.

207,099. NAIL AND SPIKE EXTRACTORS. William H. Barwick, Hyde Park, Mass. Filed Dec. 24, 1877.



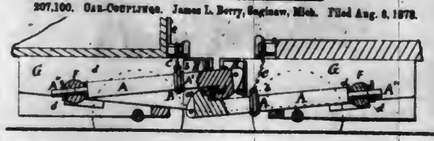
Claim.—The within-described nail-extractor, consisting of the fulcrum-block, its claws *d*, the connecting jaw-lever, and the handle jaw-lever, constructed and arranged as set forth, the said levers moving upon the fulcrum-block as from a fixed center, and with an invariable radius, as shown, substantially as and for the purpose specified.

207,099. BARBERS' CHAIRS. Eugene Berninghaus, Cincinnati, Ohio. Filed Mar. 18, 1878.



Claim.—The combination of the chair-base, the tilting body or seat, the levers H and A, notched as described, and the spring cross-lever E, centrally pivoted to the lever A, as and for the purpose set forth.

207,100. CAR-COUPLINGS. James L. Berry, Saginaw, Mich. Filed Aug. 6, 1878.



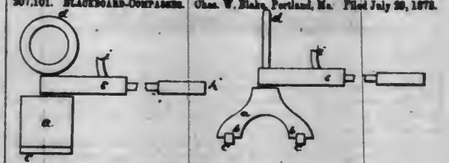
Claim.—1. The reversible draw-bar A, provided with neck *A'*, in combination with the collar B, having eye *b*, chain C, pulley *c*, windlass D, ratchet-wheel E, and pawl *e*, substantially as and for the purpose specified.

2. The reversible draw-bar A, provided at its outer end with hooks *a a'*, grooved or serrated vertically to hold it parallel with its fellow, in combination with buffer-heads G, thwart or roller F, and washers *d*, substantially as specified.

3. The reversible draw-bar A, constructed as herein described, in combination with buffers G, thwart F, hinged guide-plates H H, rods *f'*, and coiled springs *g g*, all arranged and operating in the manner and for the purpose shown and described.

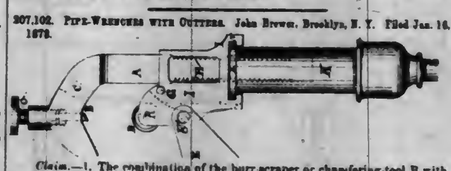
4. The reversible draw-bars A A, having serrated or grooved hooks *a'*, in combination with each other and with the buffer-heads G, hinged guide-plates H, plates H', rods *f'*, and springs *g*, substantially as and for the purpose shown and described.

207,101. BLACKBOARD-COMPASSES. Chas. W. Blake, Portland, Me. Filed July 29, 1878.



Claim.—The combination of the base *a* with the legs *b*, rubber projections *c*, thumb-piece *d*, swivel *e*, with its two arms, *f g*, having the holes as described, and the cord *i* and elastic clamps, all as set forth.

207,102. PIPE-WRENCHES WITH CUTTERS. John Brown, Brooklyn, N. Y. Filed Jan. 16, 1878.



Claim.—1. The combination of the burr-scraper or chamfering-tool B with the adjusting-screw O, they being connected together by the swivel-joint, and operated in connection with a pipe-cutter, substantially as and for the purpose set forth.

2. The combination and arrangement of the burr-scraper or chamfering-tool B, the screw O, and the body of the implement, having the opening C for the clearance of chips, with the frame I, carrying the cutter D and dog E, substantially as and for the purpose set forth.

3. The opening for the passage of the chamfering-tool, so made that the cutting-edge of said chamfering-tool shall pass through the opening in the V part of the hook on a line, or about on a line, with the center of the cutter D, thereby adapting it with equal facility to all sizes of pipes.

207,103. DENTAL RUBBER-DAM CLAMPS. Charles E. Busey, Baltimore, Md. Filed Jan. 28, 1878.

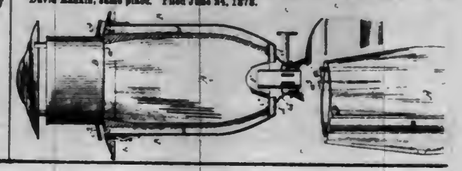
Brief.—Two independent clamping-jaws are separately adjustable vertically in the spring-clamp.



Claim.—1. In a clamp for dental rubber dams, the bent spring A, having on the ends the vertical eyes *c*, which are provided with the set-screws *d*, whereby the shanks of the clamping-jaws may be vertically and independently adjusted.

2. In combination with a spring-clamp for dental rubber dams, having an adjusting and securing device, the separately-formed clamping-jaws *e*, of any size or shape, provided with shanks *f*, as shown and described, and for the purpose specified.

207,104. LANTERNS. Evan F. Cash, Bellaire, Ohio, assignor to himself, Alfred L. Berry, and David Rankin, same place. Filed June 24, 1878.



Claim.—1. In a single-globe lantern, the passage or passages for feeding air to the flame, situated between the outside of the globe, and a vertical plate or plates placed against the same, substantially as and for the purpose set forth.

2. The lantern-globe A, having one or more exterior grooves, a a', which are constructed to form air-passages when the globe is mounted in the lantern, substantially as and for the purpose set forth.

3. In a lantern, the combination of the grooved globe with vertical plates covering such grooves, substantially as and for the purpose set forth.

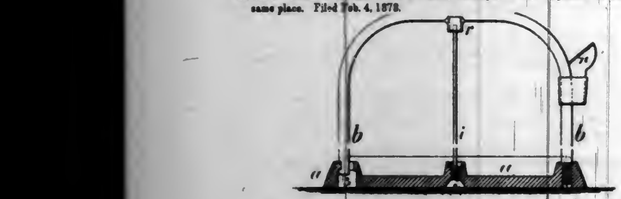
4. In a lantern, the plates B B', forming part of the air-passage and supporting the top D, substantially as described and shown.

5. In a lantern, the combination of the grooved globe A, supporting-plate C, plates B B', and top D, substantially as and for the purpose set forth.

6. In a lantern, the combination, with the plates B B', forming part of the air-passages, of the top D, hinged to one plate and secured by a spring-catch to the other, substantially as described and shown.

7. In a lantern, the combination of the grooved globe A and plates B B', supported on the plate C, carrying the cone and hinged to the shell of the burner, substantially as described and shown.

207,106. TWINE-HOLDERS. Seth C. Catlin, Brooklyn, N. Y., assignor to Emma F. Catlin, same place. Filed Feb. 4, 1878.



Claim.—1. The twine-holder having a base, *a*, yoke *b*, eye *r*, and central rod, *i*, the end of which rod passes into the eye, and there is also space in such eye for the passage of the cord, as and for the purposes set forth.

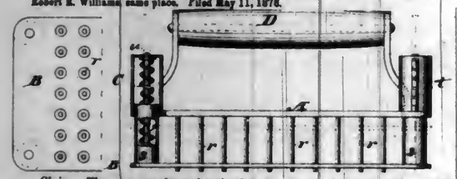
2. The combination, with the base *a*, of the yoke *b*, having a screw, 2, at one end, and a notch, 3, near the other end, to connect with the base *a*, substantially as set forth.

3. The twine-cutter *n*, having a wedge-shaped tang, in combination with the wire yoke and the sheet-metal loop soldered upon such wire yoke, substantially as set forth.

207,106. TOBACCO-FLAVORING. Maris Chambers, Bentivoglio, Va. Filed June 7, 1878.

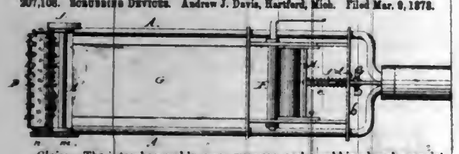
Claim.—A dry flavoring for chewing-tobacco, formed by roasting dried fruits and reducing them to a powder by grinding, in the manner described.

207,107. MEAT-TENDERERS. John F. Davies, Chicago, Ill., assignor of one-half his right to Robert R. Williams, same place. Filed May 11, 1878.



Claim.—The meat-tenderer herein described, consisting of plates A B, teeth *r*, sleeves *s*, caps *t*, rods *u*, springs C, and handle D.

207,108. SCRUBBING DEVICES. Andrew J. Davis, Hartford, Mich. Filed Mar. 9, 1878.



Claim.—The interchangeable mop, wringer, and scrubbing-brush, consisting, essentially, of the wringer composed of windlass F and roller H, in combination with mop G and scrubbing-brush D, operated by wheel *f* and gear-wheels *m n*, when said parts are applied to frame A, as and for the purpose set forth.

207,109. HAND-WASHERS. Henry C. De Witt, Chicago, Ill. Filed June 10, 1878.



Claim.—A fountain-washer composed of fountain A, handle C, corrugated board B, having holes *c*, and metallic plate *b*, having holes *b'*, all arranged, constructed, and operating substantially as shown and described.

207,110. BRUSHES. Thomas Dillon, Malden, assignor to J. P. Bowditch, Revere, Mass. Filed July 1, 1878.



Claim.—As an improvement in the manufacture of brushes, the method of increasing the bite of the band upon the bunch of bristles—viz., by crimping or indenting the ends of the band or collar upon the bristles, as described.

207,111. BLACKBOARDS. Edward G. Durant, Racine, Wis. Filed Jan. 3, 1878.



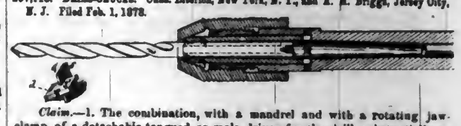
Claim.—A blackboard consisting of two or more thin layers of wood united crosswise of the grain, cemented together, rendered impervious to water, and coated with a silicate or other slating solution, substantially as and for the purpose described.

207,112. WHEELBARROWS. Fayette Dyer, Sterling, Ill. Filed Jan. 2, 1878.



Claim.—In a wheelbarrow, the combination of the sides C C, legs *e e*, and the box A, lowered into the sides and bolted directly thereto, so as to form the lateral braces of the frame, substantially as described.

207,113. DRILL-CHUCKS. Chas. Elterich, New York, N. Y., and A. H. Briggs, Jersey City, N. J. Filed Feb. 1, 1878.

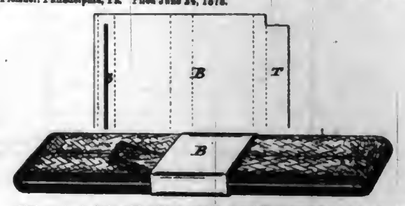


Claim.—1. The combination, with a mandrel and with a rotating jaw-clamp, of a detachable tongued or male driver for the drill, substantially as specified.

2. A combined male and female driver of the drill, constructed with one or more tongues, having a slot or recess in their forward ends, for operation in relation with drills of male and female construction at their rear ends, essentially as described.

3. The reversible and detachable male driver or tongued extension-piece G, constructed of plates, wings, or leaves of different thicknesses, arranged to interlock with or cross one another for a portion of their depth on opposite ends of the driver, for use in connection with a drill and with a slotted drill-chuck, substantially as specified.

207,114. DEVICES FOR HOLDING BRAID AND SIMILAR ARTICLES IN PACKAGES. Simon B. Fleisher, Philadelphia, Pa. Filed June 24, 1878.



Claim.—1. A bolt of braid or similar articles, consisting of continuous layers, folded lengthwise over an interior core-slat, confined with a transverse surrounding sliding strap, having one of its ends folded interiorly under or between the layers, forming an impinging stop-joint, the whole adapted to hold the material in place on the interior core, substantially as described.

2. The surrounding strap B, for binding bolts of braid, having tongue T and slot S, substantially as described.

207,115. TRIPLE-COUPLINGS. Cyrus E. Gillespie, Henry J. Springer, and Frederick J. Springer, Edwardsville, Ill. Filed June 7, 1878.



Claim.—The shaft-socket C, having the follower I bearing against the outer end of the part *b* of the hook, the screw K, and pin E, in combination with the hook B, substantially as described.

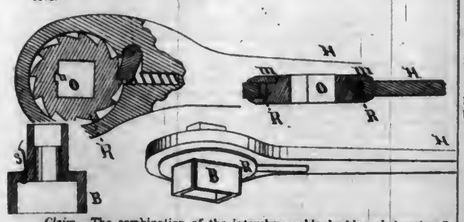
207,116. EYEGLASSES. Pierre E. Godefroy, Mobile, Ala. Filed July 8, 1878.



Claim.—1. The combination, with the bow-spring *m*, having the holes *m'*, of the open heads *e* and *f*, the pin *i*, and the central support, *c*, the whole arranged substantially as described, and for the purpose set forth.

2. The combination, with the bow-spring *m* and rubber plate *n*, provided with the holes *m'* and *n'*, respectively, of the open heads *e* and *f*, the pin *i*, and the central support, *c*, the whole arranged substantially as described, and for the purpose set forth.

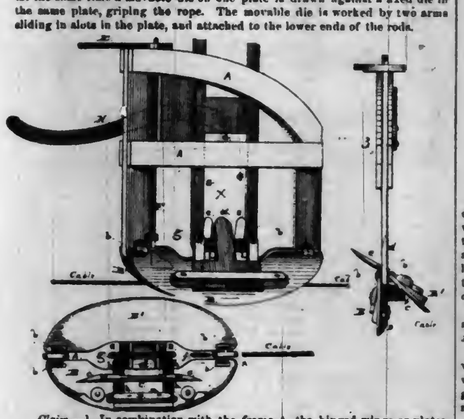
207,117. RATCHET-WRENCHES. Thomas C. Hammond, Sacramento, Cal. Filed Mar. 23, 1878.



Claim.—The combination of the interchangeable double-ended socket B, provided with spring-catch S, with the ratchet-wrench composed of handle H and ratchet R, provided with a square hole, O, spring-notch *n*, and plate *m*, substantially as above set forth.

207,118. GRIPERS FOR WIRE-ROPE RAILWAYS. Johan Hansen, San Francisco, Cal. Filed Apr. 29, 1878.

Brief.—The griper consists of two plates hinged at their upper corners to either side of two downwardly-projecting posts. The plates are rounded on their lower sides and inner edges, for sliding over other ropes or obstructions. The plates have cam-shaped fingers projecting from their inner edges. A lever attached to two rods, which hold a wedge at their lower ends, being pressed down, forces the wedge between the fingers, thereby closing the plates. At the same time a movable die on one plate is drawn against a fixed die in the same plate, griping the rope. The movable die is worked by two arms sliding in slots in the plate, and attached to the lower ends of the rods.



Claim.—1. In combination with the frame A, the hinged wings or plates B B', with rounded and beveled ends and edges, one of which carries a fixed die, C, and a movable die, D, and both of which are operated substantially as herein described, for the purpose set forth.

2. In combination with the hinged wings or plates B B', one of which carries the fixed die C and the movable die D, the herein-described means of closing them together and operating the griping-die from the same lever H, consisting of the bar G, having the wedge *g* at its lower end, the cam-fingers *d e s*, projecting from the top of the plates, and the arms A A of the die-plate, moving in slots in one of the wings and connected with the sliding bar G, constructed and arranged to operate substantially as described and set forth.

3. In combination with the hinged wings B B', one of which carries the fixed and movable dies C D, operated substantially as herein described, the means for opening the said wings, consisting of the rod F, its foot *f*, and the lever E, constructed and arranged to operate substantially as described and set forth.

207,119.



207,119. RAILROAD-RAIL JOINTS. Dennis R. Harder, Chicago, Ill. Filed Feb. 15, 1878.

Claim.—1. A railroad-rail, A, constructed with oblong bevel-shaped slots *b* through its web at its joint end, substantially in the manner and for the purpose set forth.

2. The beveled headed bolts D, having oblong flattened necks *e*, in combination with the rail A and fish-bar B, substantially as described.

3. A railroad-rail constructed with oblong bevel-shaped slots *b*, which slots receive countersunk bolt-heads D *e*, so as to leave a smooth uninterrupted plane along one of its sides, in combination with a fish-plate, B, on its opposite side, substantially in the manner and for the purpose described.

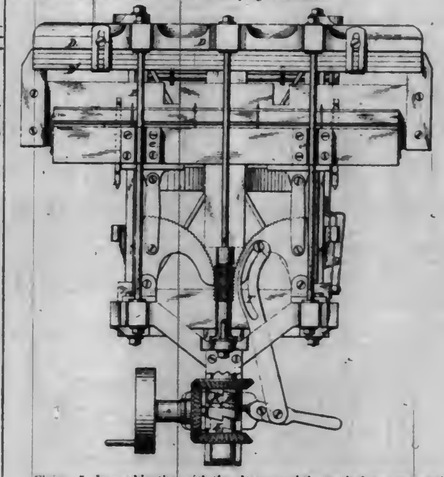
207,120. FASTENINGS FOR GATES AND DOORS. E. S. Hunt, Elizabeth, N. J. Filed May 15, 1878.



Claim.—In a fastening for gates, doors, &c., the combination, substantially as specified, of the bolt, the roller on one end of it, the encircling spring, the adjusting nut, and the two-part case or barrel.

207,121. PLUG-TOBACCO MACHINES. Ezekiel P. Jones, Greensborough, N. C., James D. Macomber, Auburn, N. Y., and Joshua P. McOoet, Richmond, Va. Filed Apr. 29, 1878.

Brief.—The pressure and cutting take place simultaneously. The molds have removable partitions to facilitate the removal of the plugs, and removable gages determine the thickness of the plug to be made.



Claim.—1. In combination with the plunger and the toothed segments and endless screw by which it is operated, the two reversely-set beveled gear-wheels, mounted loosely on the screw-shaft, and provided with ratchets on their inner faces, with a longitudinally-moving sleeve mounted on the screw-shaft, and provided with corresponding reversely-set ratchets, the bifurcated lever for shifting said sleeve, and the link secured to said lever and to one of the segments, whereby the sleeve is automatically shifted to arrest the motion of the plunger, substantially as specified.

2. In combination with the follower and its cutting-knives and the molds, a series of interchangeable knife-gages, D', for regulating the cut of the knives, substantially as specified.

3. In combination with the follower, the reciprocating bars passing transversely through said follower, and the abutments upon the frame, against which the ends of said bars are brought to bear at the back-stroke of the plunger, whereby the plunger and its knives are automatically separated from the mold, substantially as specified.

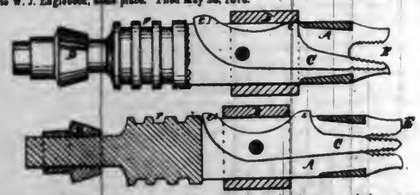
4. The combination, with the rectangular mold, adapted to receive the plunger-knives, substantially as described, of the longitudinal removable partition lying parallel to the path of the plunger, and provided with a projecting handle or handles, whereby the said partition may be removed from the mold, and all the pressed and cut plugs therein relieved of pressure simultaneously, as and for the purpose set forth.

207,122. EXPANDING DRILLS FOR BORING BLAST-HOLES. John Julien, Dubuque, Iowa. Filed May 15, 1878.



Claim.—The combination of the tube A, having slot *a* and slotted guide-piece I, the cap C', rod D, with thumb-nut F, and the curved bit or cutter G, all constructed substantially as and for the purposes herein set forth.

207,123. GRAIN-BINDERS. Moses A. Keller, Fremont, Ohio, assignor of one-half his right to W. J. Englebeck, same place. Filed May 28, 1878.



Claim.—1. An intermittently-rotating shaft, A, having an endwise movement, and having its end formed into two or more prongs, E, and having a pivoted latch, C, or jaw working between said prongs, substantially as shown.

2. The combination of the intermittently-rotating shaft A, having an endwise movement, and pivoted latch C, with the sliding sleeve B and pinion D, to operate the shaft and latch, substantially as described.

3. The latch C, pivoted in the rotating shaft A, and provided with the two horns *c c'*, in combination with the sliding sleeve B, whereby the front end is made to play back and forth, substantially as set forth.

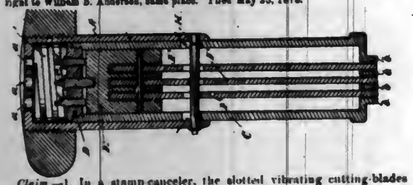
4. The combination of the shaft A, having the prongs E, transverse cogs F, and pinion D, with the pivoted latch C, having the serrated end and horns *c c'*, and the sliding collar B, to operate the latch, all arranged to operate substantially as shown.

207,124. PUZZLE-BLOCKS. Ernest U. Kinsey, Passaic, assignor to himself and Preston Little, Trenton, N. J. Filed Nov. 22, 1877.



Claim.—A block puzzle consisting of a group of blocks, each of which is provided with ribs and grooves at its edges for interlocking with the adjacent blocks, as set forth, and with letters or pictures or portions of designs upon one or both surfaces, in combination with a surrounding frame having ribs and grooves adapted to receive the said blocks and hold them together, substantially as specified.

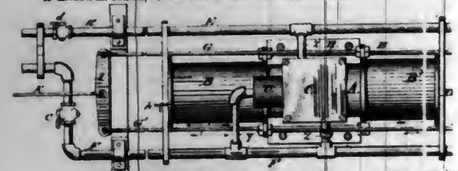
207,125. CANCELING-STAMPS. William Krutsch, Dayton, Ohio, assignor of one-half his right to William B. Anderson, same place. Filed May 23, 1878.



Claim.—1. In a stamp-canceler, the slotted vibrating cutting-blades F, contained and pivoted within the tube C, so as not to project beyond the guide-flanges *b*, whereby a smooth cut is effected, in the manner and for the purpose specified.

2. In combination with the telescopic tubes A and C, the cylinder E, adjusted by the screws *e* and *f*, and the pivoted slotted vibrating cutter-blades arranged within the tube C, and having their cutting edges confined between guide-flanges *b*, which project beyond them, substantially as and for the purpose specified.

207,126. AIR-BRAKES FOR CARS. Jno. M. Maxwell, Webster, assignor of one-half his right to Michael M. Comerford, Fairmont, W. Va. Filed June 18, 1878.



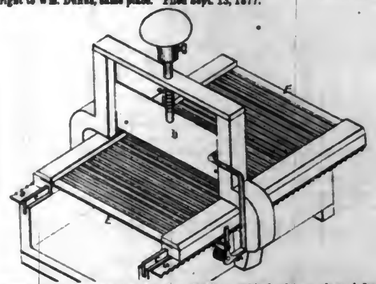
Claim.—1. The combination, with the condensed air reservoir A, supplied and operating as described, of the sliding heads B B' and their connections with the car brakes, all as specified.

2. The combination, with the pipe F, leading from the main reservoir, of the pipe Z, provided with the check-valve *l*, the reservoir A, air-cheat C, valves T and X, pipe Y, and cylinder U, all constructed and operating substantially as set forth.

3. The combination of the reservoir A, pipes P Q, port *s*, valve T, and chest C, all constructed and arranged in the manner and for the purpose described.

4. The combination of the reservoir A, pipes P Q, ports *l s*, valve T, pipe Z, and pipe E, supplied with compressed air from any suitable reservoir, all as and for the purpose set forth.

207,127. PLAITING-MACHINES. M. Addie Mayhew, Syracuse, N. Y., assignor of one half her right to Wm. Duffus, same place. Filed Sept. 13, 1877.

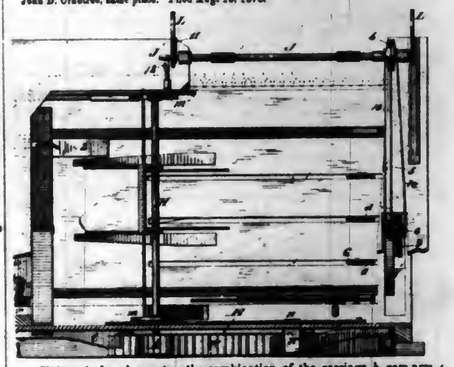


Claim.—1. The movable bed-piece E E, provided with a slotted frame or grate, and the knife D, having a bent rod, *b*, its foot resting upon and operating the cam-lever *m*, in combination with each other and the cam-lever *m*, substantially as shown, and for the purposes specified.

2. In a plaiting-machine, the movable carriage E E, provided with permanently-fixed needles or a grate, and having ratchets upon its sides, and the plaiting-knife D, in combination with each other and the ironer K, substantially as shown and specified.

3. In a plaiting-machine, a grated frame or carriage, E E, provided with a ratchet on its sides, and constructed and arranged to move under the plaiting-knife, operated by a cam lever and bent rod attached to the knife D, as shown and specified.

207,128. HARVESTERS. Crawford McGregory, Dixon, Ill., assignor of one-half his right to John D. Crabtree, same place. Filed Aug. 10, 1878.

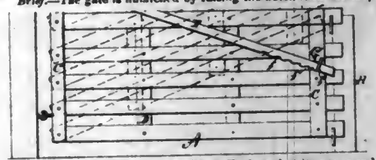


Claim.—1. In a harvester, the combination of the carriage *b*, cam-arm *c*, projection *c'*, notched lever I, elevated obstruction *p*, plate *o h*, arm *g*, connected to a belt driven by suitable mechanism, slide E, rack-bar F, pinion L, pawls *t t*, shafts H *l*, cams *m m'*, pawl-releasing projection *n*, and pawl *o*, for raising and lowering the rake-teeth simultaneously with opening and closing the gavel arms, substantially as specified.

2. The reel-shaft J and eccentrics L L', having a common axis, J', the said axis engaging and in combination with slotted guides K K, a rack, 12, and operating-lever 11, substantially as shown and described.

207,129. GATES. Joseph Medhurst, Galesburg, Ill. Filed Dec. 10, 1877.

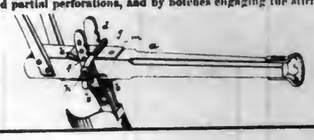
Brief.—The gate is unlatched by raising the notch from the loop.



Claim.—The gate A, having the brace F pivoted at its upper end to the upper part of the hinged side of the gate, and having notches *f*, for holding the gate in an elevated position, and notch *f'*, constructed as described, for locking the gate against elevation, in combination with the loop G and notched post H, substantially as and for the purpose specified.

207,130. PLOWS. John O. Farrell, Athens, Ga. Filed May 4, 1878.

Brief.—The various adjustments of the standard are held both by a set-screw and partial perforations, and by notches engaging the stirrup.



Claim.—The plow-standards *b*, provided with the countersinks *f* and notches *d*, in combination with the stirrup *g*, set-screw *h*, and the plow beam, substantially as described, and for the purpose set forth.

207,131. ATTACHMENTS FOR SECURING CAPS OR COVERS TO CANS. Daniel Parks, Trumbull, Conn. Filed Aug. 2, 1878.



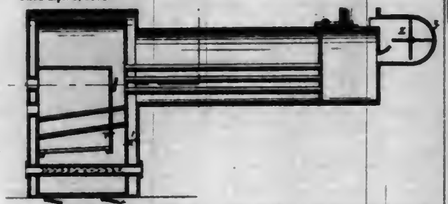
Claim.—The combination, with the screw neck or body of an oil can or other vessel and a screw cap or cover therefor, of the swiveled or pivoted plate and chain, for securing said cap or cover to said oil-can or other vessel, substantially as and for the purpose herein shown and described.

207,132. CLOTHES-RACKS. Samuel Reed, Cincinnati, Ohio. Filed June 27, 1878.



Claim.—A series of pivoted hooks, B B, each one provided with the right and left hand threads *b b'*, uniting the bars A A', forming a clothes-rack, substantially as herein specified.

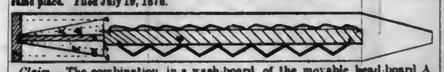
207,133. STEAM-BOILERS. George P. Salisbury and Henry C. Smith, New Haven, Conn. Filed Apr. 5, 1878.



Claim.—1. The combination of a smoke-stack, smoke box, and device for regulating the draft with an exhaust-fan operating in connection with the independent passage leading from the smoke-box to the smoke-stack, to produce a draft through the furnace-flues, smoke-box, and up the stack, as shown and set forth.

2. The exhaust-fan Z, operating in connection with the independent passage leading from the smoke-box to the smoke-stack, to produce a draft through the furnace-flues, smoke box, and up the stack, as shown and set forth.

207,134. WASH-BOARDS. James T. Sargent, Cleveland, Ohio, assignor to Jos. H. Lapham, same place. Filed July 19, 1878.



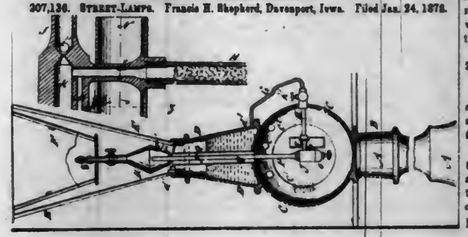
Claim.—The combination, in a wash-board, of the movable head-board A and the side pieces provided with angular recesses to receive the ends of said head-board, respectively, constructed and arranged substantially as and for the purpose set forth.

207,135. ROCKING-CHAIRS. Wendelin Berg, Chicago, assignor to Franz Baer, town of Lake View, Ill. Filed Oct. 8, 1877.



Claim.—The roller C, notched at its end, as shown, and provided with the latch-spring M, placed within said notch, combined with the catch E and rocker B, as set forth.

207,136. STREET-LAMPS. Francis H. Shepherd, Davenport, Iowa. Filed Jan. 24, 1878.

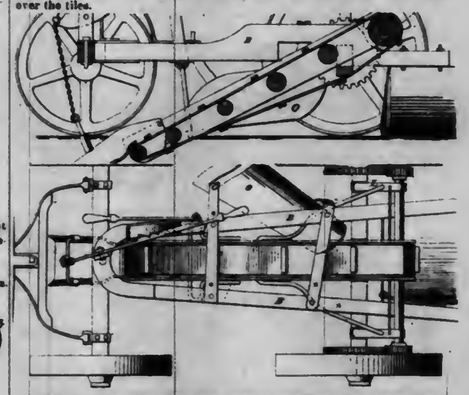


Claim.—1. The combination of the post A, the globe C, provided with the socket B, the door *c'*, and the air-holes *c²*, the tank D, provided with the pipe Q, and the lantern-frame and lantern E F, substantially as herein shown and described.

2. The generator J, formed of the hollow arm I, the three chambers K L M, the air-holes *l*, the burner *m'*, the slotted shell N, the inlet-pipes G H, the outlet-pipe P, and the guard-plate *p'*, in combination with the globe C and the tank D, substantially as herein shown and described.

207,137. DITCHING-MACHINES. Benj. F. Sherrick, Elida, Ohio. Filed Apr. 26, 1878.

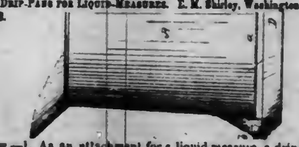
Brief.—An adjustable scoop and endless carrier elevating trough, detachably connected with an ordinary truck-frame, to which is also adjustably and detachably connected a side shovel or scraper. After the ditch has been made and the tiles placed therein, the excavating and elevating mechanism can be detached, and the side scraper used to scrape the earth back into the ditch over the tiles.



Claim.—1. The convertible ditch excavating and filling machine, combining in its construction the detachable scoop and elevator, and a detachable side shovel, O, substantially as and for the purpose set forth.

2. In combination with the frame B and shovel O, the adjustable hangers for regulating the position of the side shovel, substantially as set forth.

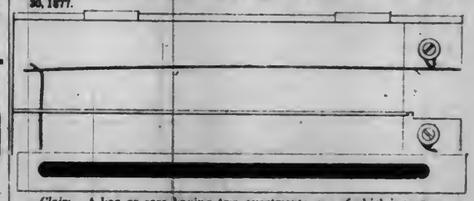
207,138. DRIP-PANS FOR LIQUID-MEASURES. E. M. Shirley, Washington, D. C. Filed July 31, 1878.



Claim.—1. As an attachment for a liquid-measure, a drip-pan secured below the bottom of the measure, and held in position as to its front edge by a flange and as to its rear by a standard, or equivalent devices, substantially as shown and described.

2. The measure A, in combination with the pan D, having the flange *b* and standard *c*, substantially as specified.

207,139. THERMOSTATS FOR FIRE-ALARMS. George S. Shute, Boston, Mass. Filed July 30, 1877.



Claim.—A box or case having two apartments, one of which is more exposed or opened to the atmosphere than the other, and two parallel springs or bars of different degrees of expansibility, one inclosed in each of the apartments, in combination with a circuit-closing finger, connected directly with, and supported and carried by, one of the springs or bars, whereby, when the more exposed bar is moved by heat more rapidly than the other, the finger will connect the two bars in close an electric circuit to give an alarm, substantially as set forth.

207,140. MACHINES FOR GRANULATING TOBACCO. O. Wright Simpson and George C. Howard, Philadelphia, Pa. Filed July 23, 1877.

Brief.—A cylinder having a roughened surface and metallic spring beaters or rubbers side by side in an inclined shaft, and rotating in a concave screen, beneath which is an agitated sieve, on which the granulated material falls, while the stems pass out at the end of the machine.

Claim.—1. In a tobacco stemming and granulating machine, the combination of an inclined concave screen, K, and a roughened inclined cylinder, E, arranged for joint operation, substantially as shown and described, whereby the leafy portion is removed from the stems and reduced to a uniform degree of granulation, and the two portions separated and discharged at different points.

2. In a tobacco stemming and granulating machine, the combination of the inclined screen K and the inclined shaft C, provided with a roughened cylinder, E, and curved arms or blades F.

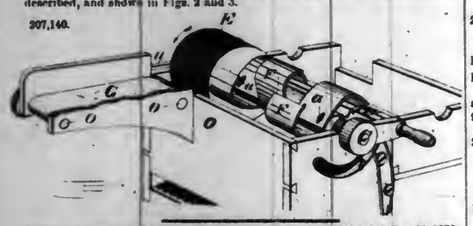
3. The combination of the feed apron, the roughened cylinder, the curved rotary blades, and the inclined screen.

4. In a tobacco stemming and granulating machine, the combination, within an inclosing body, of the inclined concave screen, the roughened cylinder, and rotary blades with a conducting-board and a vibratory inclined screen, both located below the concave screen.

5. In a machine for stemming and granulating tobacco, the combination of the concave screen and the series of curved rotating radially-adjustable blades.

6. In a machine for stemming and granulating tobacco, the combination of the screen K, the curved or rounded yielding presser arms or blades F, arranged to act above and in conjunction with the screen, substantially as described, and shown in Figs. 2 and 3.

207,140.



207,141. EMBROIDERY PATTERNS. Roswell T. Smith, Nashua, N. H. Filed June 26, 1878.



Claim.—1. The method described of embroidering upon textile or other fabrics, by laying the said fabric upon card-board having an ornamental design indicated thereon by perforations, or by lines placed within the perforated spaces, or by an independent pattern placed thereon, and embroidering through said card-board from the under side, so that the design will appear in proper position upon the cloth, as set forth.

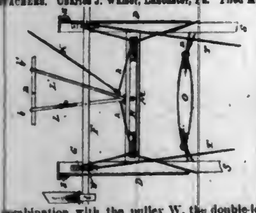
2. As a new article of manufacture, an embroidery-pattern consisting of a sheet of card-board having a piece of textile or other fabric laid on and suitably connected to one of its surfaces, said card-board having an ornamental figure or design indicated thereon, in the manner and for the purpose set forth.

207,142. COOKING-STOVES. Thomas B. Tufts, Le Roy, N. Y. Filed Feb. 26, 1878.



Claim.—The combination, with the front chamber of a cooking-stove, of the longitudinal inclined back and transverse end plates, *b c*, and curved front plate, *d*, the whole forming a fire-pot approximately rectangular in horizontal section, each of the said back and end plates projecting below the front plate, and the end plates having bearing below the front plate to support a dumping-grate, all substantially as and for the purpose described.

207,143. HORSE-DETACHERS. Charles J. Walsh, Lancaster, Pa. Filed May 22, 1878.



Claim.—1. In combination with the pulley W, the double-looped pulley holder X, the covering plate *t*, and the sliding slotted detaching-plate, when said plate is provided at one end with the perforated double head-piece U, and at the other with a vertical loop, V, having rollers, the whole applied and operated substantially as and for the purpose mentioned.

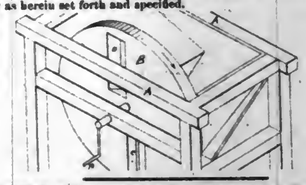
2. In combination with the disengaging device on the single-tree Q, U, X, and V, the extended trace T and strap D, connected with the brake-bar F, substantially as and for the purpose specified.

3. In combination with the device for disengaging the horse from the shafts, as aforesaid, the straps L L', attached to the foot-lever B, brake-bar F, and cross-piece M, which unites the shafts S, the whole arranged and operating as and for the purpose specified.

207,144. BOOT-CUTTERS. William F. Waller, Liverpool, N. Y. Filed Mar. 2, 1878.

Claim.—The hopper H, constructed in two sections, with inclined sides slanting at right angles to each other, provided at their intersection with a vertical bearing or breast, in combination with the cutter-carrying disk B, provided with a discharging throat, *c*, attached on a slant to a crank-shaft, and the driver *a*, the devices being adapted to be applied to a root-cutter, substantially as herein set forth and specified.

207,144.

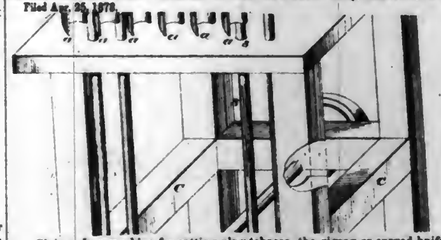


207,145. PROCESSES OF WELDING COPPER. R. P. Williams and Lewis Wernham, Alameda, Cal. Filed Mar. 18, 1878.

Claim.—1. The herein-described process of welding copper, consisting in heating and treating the joint to be welded in the manner and with the compound substantially as herein described and specified.

2. The herein-described compound, composed of borax, salt, sulphur, or any equivalents thereof, and oxalic acid, in about the proportions herein specified, for the purpose set forth.

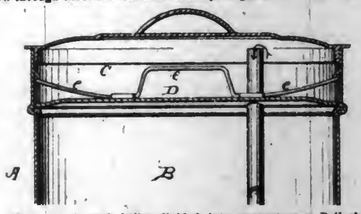
207,146. TOBACCO-CUTTING MACHINES. R. Wilson and Daniel McCallay, Middletown, Ohio. Filed Apr. 25, 1878.



Claim.—In a machine for cutting plug-tobacco, the zigzag or curved knife or knives *a*, substantially as and for the purpose described.

207,147. WASH-BOILERS. Elon G. Woodworth, Pittsburg, Pa. Filed Jan. 10, 1878.

Brief.—The clothing and water are placed in the lower compartment of the wash-boiler, and the steam, which assists in washing the clothing, escapes through the yielding lid or partition into the upper compartment, and thence down through tubes into the flues or fire-passages of the stove or range.



Claim.—1. A wash-boiler divided into compartments B C through the medium of a lid, D, having tubes leading from the compartment C through the compartment B, and communicating with the fire-flues of a stove or range, substantially as herein described, and for the purpose set forth.

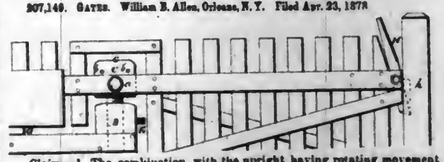
2. The lid D, arranged to divide the above-described wash-boiler into its two compartments, B and C, and maintained in position therein by the spring-wire *e*, whereby the said lid is adapted to operate as a valve, substantially as herein shown and described.

207,148. CORN-PLANTERS. Jacob Wright and George McNary, Delafield, Wis. Filed Feb. 26, 1878.



Claim.—The plunger C, as provided with a concave surface, E, in combination with the feed-slide G, in such a manner that the vertical motion of the plunger will transmit a horizontal motion to the feed-slide, substantially as and for the purpose specified.

207,149. GATES. William B. Allen, Orleans, N. Y. Filed Apr. 23, 1878.



Claim.—1. The combination, with the upright having rotating movement in the tubular supporting-post, of the counterpoised beam and the horizontal pivot which connects the two together, substantially as set forth.

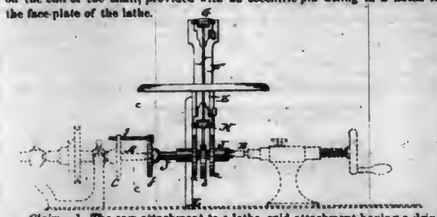
2. The combination, with the upright to which the counterpoised beam is pivoted and the tubular post in which the upright has axial rotation, of the adjusting pin or pins, which have end bearing against said upright, and are adapted to take up all lost wear thereof as the same rotates in the tubular post, substantially as set forth.

3. The combination, with the upright, which has rotation within the tubular supporting-post, and is formed with the enlarged head, having one or more studs or pins adapted to limit the vertically-inclined movement of the gate when swung open, of the counterpoised beam and the horizontal pivot which connects the same with said rotating upright, substantially as set forth.

4. In a counterpoised gate, the latch H, pivoted thereto so as to have vertical end bearing in the mortise *h* of the gate-post, said mortise having its bottom formed with an inert bevel, which engages with a counterpart bevel on the lower end of said latch, substantially as set forth.

207,150. SCROLL-SAW ATTACHMENTS TO LATHES. Thomas B. Almond, Brooklyn, N. Y. Filed Dec. 10, 1877.

Brief.—The scroll-sawing machine can be attached to a lathe by means of two pendent arms projecting from the point of the frame, and carrying a driving-shaft, the ends of which are provided with cavities to receive the live and dead spindles of the lathe. Motion is imparted to the saw by a face-plate on the end of the shaft, provided with an eccentric-pin fitting in a notch in the face-plate of the lathe.



Claim.—1. The saw attachment to a lathe, said attachment having a driving-shaft, J, constructed to fit between the live and dead spindles of a lathe, and provided with the eccentric-pin *g*, for connecting with the face-plate of the lathe, substantially as herein shown and described.

2. In a saw attachment to a lathe, the combination of the supporting-foot I, with the shaft J, which has its ends shaped to fit the live and dead spindles of the lathe, substantially as herein shown and described.

3. The combination of the driving-shaft J with the eccentric *b*, rod *d*, elbow-lever *s*, beam E, and saw-lever H, substantially as herein shown and described.

4. The combination of the beam E with the pendent arms a and driving-shaft J, levers G H, and saw I, substantially as specified.

207,151. PORTABLE RAILWAYS. Francisco Amat, Havana, Cuba. Filed Aug. 1, 1878.

Brief.—The rails at one end of each section project beyond their tie sufficiently to rest upon the wider tie of the adjoining section, said wider tie having stationary locking-plates with slightly-upturned ends, which are curved on their sides next the rails, which plates rest upon the ties of the first-named section and bear against the sides of the flange of the rails of said section, thereby giving vertical and lateral support.

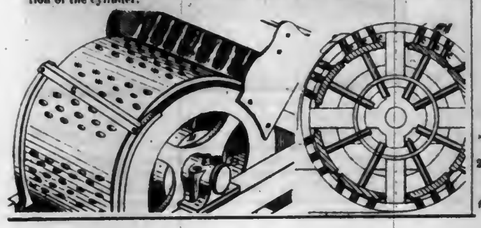


Claim.—1. As an improvement in portable railroad-tracks, the combination of a track-section having the rails arranged to project beyond the end cross-tie with a second track-section having a wider end tie extended beyond the rail ends and locking-plates, attached to the wider cross-tie close to the rails, substantially as described, and for the purpose specified.

2. In portable railroad-tracks, a track-section having an end cross-tie with locking-plates that are slightly curved up at the ends, and carved or rounded off at the sides adjoining the rails, substantially as shown and described.

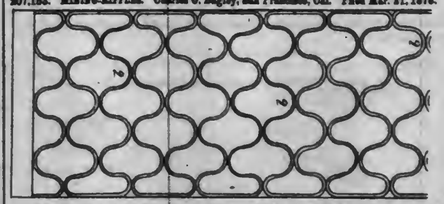
207,152. OATMEAL-MACHINES. Geo. Aylliffe, Akron, Ohio, assignor of one-half his right to Joseph Hogill, same place. Filed July 6, 1878.

Brief.—Revolving hollow cylinder, having perforations into which the hopper-fed grains drop, and are carried up under the brush and presented to the knife, set shear-cut, close to the outer periphery of the cylinder. The inner periphery of the feeding-cylinder is provided with segmental guard-plates, having automatic radial adjustment by means of fixed guide-rods projecting from the ends of the segments, and working in eccentric slots in fixed flanged rings or heads secured to the frame. The segmental plates are provided on their convex faces with series of pins registering with the perforations that receive and carry the grains to the cutters. The points of greatest and least radial distance from the axis of the cylinder of the eccentric slots in the rings or heads being at the top and bottom, respectively, of the cylinder, the slicing of the grains and their final discharge are automatically regulated by the revolution of the cylinder.



Claim.—An oatmeal-machine consisting of a cylinder perforated with holes, in which the grain stands, a fixed knife lying close to the surface of the cylinder, and pins to force outward the grain to be cut, substantially as herein described.

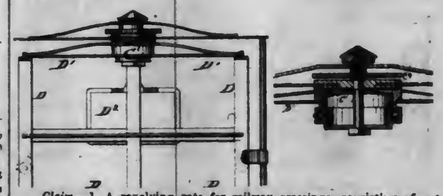
207,153. MINING-RIFFLES. Charles G. Bagley, San Francisco, Cal. Filed Mar. 21, 1878.



Claim.—The sluice-section consisting of the plates *b*, bent in a zigzag or serpentine form, as shown, and placed in relation to each other upon the bottom of the section, whereby a net-work of cavities is formed, substantially as and for the purpose specified.

207,154. RAILWAY-GATES. Stephen Barnes, New Haven, Conn. Filed Mar. 30, 1878.

Brief.—Two parallel gates secured to a top frame revolve upon a central pivot, so as to swing from a position at right angles to the track to one parallel thereto, and vice versa.



Claim.—1. A revolving gate for railway-crossings, consisting of a top frame having two parallel gates and a stationary frame having a center bearing for supporting said top frame and gates, substantially as and for the purpose set forth.

2. The combination of the signal-lanterns D^2 with the revolving gates D and supporting-frame D^1, substantially as and for the purpose set forth.

3. The combination of the revolving gates, having pivot-latches, with the supporting-posts, having stopping and locking devices for securing the gates in position across the track or road, substantially as set forth.

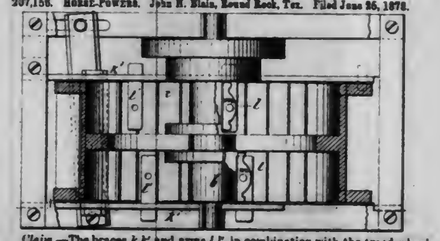
207,155. COPINGS AND COVERINGS FOR GRAVES. C. H. Bassett, Derby, Conn. Filed June 10, 1878.



Claim.—1. A grave-protector consisting of a continuous wall, A, adapted in size and form to surround the earthy mound, and having at its top a walled channel, *c*, adapted to hold water and afford level support for flower-pots, substantially as described.

2. The grave-protector described, as made with the boundary-wall A, partial partition *b*, openings in said partition, and a walled channel, *c*, all as set forth.

207,156. HORSE-POWERS. John H. Blain, Round Rock, Tex. Filed June 26, 1878.



Claim.—The braces *k k'* and arms *l l'*, in combination with the tread wheel, substantially as and for purposes set forth.

207,157. MACHINES FOR ATTACHING PAPER-FASTENERS. Charles W. Blake, Lyndon, Kans. Filed Jan. 16, 1878.

Claim.—1. A machine for attaching paper-fasteners, consisting of a spring-frame having a top part, with a hammer-plate, fixed slitting-blade, a spreader,

anul a base part, with a bed-plate, a wire gage-guard, and groove or seat for the fastener, all arranged substantially in the manner described, and for the purpose specified.

2. The combination of the bed plate B', having rear recess, C', and of the wire safeguard D, with the slitting knife or blade C of spring-acted top part, A, substantially as specified.

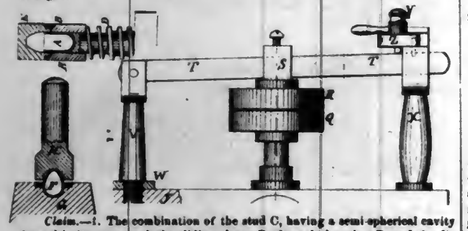
3. The combination of the bed-plate B', having groove or seat F for the fastener, with the hammer-plate B, spreader E, and front guard, B', substantially as specified.

207,157.



207,158. APPARATUS FOR THE MANUFACTURE OF SEAMLESS BALLS. John Brust, Providence, R. I., assignor to Sylvanus M. Lewis, same place. Filed July 3, 1878.

Brief.—A blank of sheet metal is struck up into the form of a cylindrical cup, as shown in Figure 5, in the died, in which it is brought to the shape shown in Fig. 7, which latter figure also shows the dies by which the complete spherical shape is given. The ball is finished and polished by the machine shown in Fig. 1.

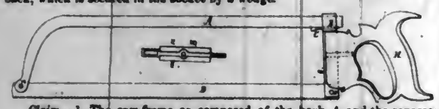


Claim.—1. The combination of the stud C, having a semi-spherical cavity formed in its upper end, the sliding sleeve B, the spiral spring D, and the die E, having a tapered or conical concavity formed in its face, with each other, for drawing in the edge of the cylindrical cup-blank A, substantially as herein shown and described.

2. The combination of the wheels Q R, having graduated concentric semi-cylindrical ring-grooves formed in their adjacent faces, the lever T, the adjustable standard and nuts V W W, the stationary standard X, the set-screw Y, and the button Z, with each other, with the table A, and with the driving mechanism M N O P, substantially as herein shown and described.

207,159. HANDSAWS. Wm. Berney, Somerville, Mass. Filed Aug. 5, 1878.

Brief.—The saw is attached to the handle by means of a metallic plate fitting in the handle, and having flanges extending over the front edge of the handle, and provided at its lower end with a slot to receive the rear end of the saw-blade, and at its upper end with a socket to receive the rear end of the back, which is secured in the socket by a wedge.

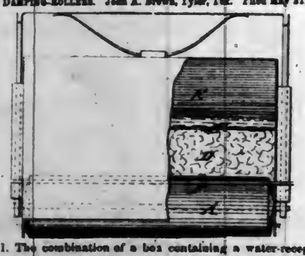


Claim.—1. The saw-frame as composed of the back A and the separate mortised connection-piece B, applied to each other and to the handle H, and provided with the holding-wedge C, all being arranged with and to support the blade and to operate therewith, substantially as set forth.

2. The back, blade, and handle connection-piece B, as provided with the flanges *m m*, extended from it so as to lap on the opposed parts of the inner end of the handle H, such being as and for the purpose or purposes specified.

3. The connection-piece B, as provided with the flanges *m m*, and having its fastening-screw E extending through it into the handle lengthwise of the latter, as shown and described.

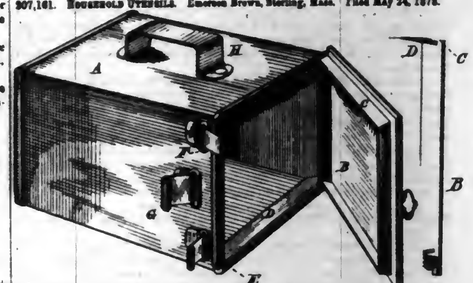
207,160. DAMPING-ROLLERS. John A. Brown, Tyler, Tex. Filed May 31, 1878.



Claim.—1. The combination of a box containing a water-receptacle and sponge, separated from the receptacle by a perforated partition, with a revolving roller applied to a sliding and spring-acted frame, substantially as set forth.

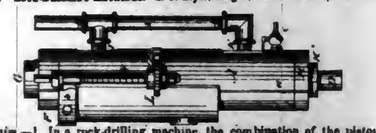
2. The combination of a box having a water-receptacle and sponge and a revolving moistening roller with guard-wires placed in front of the sponge, to prevent the sponge from impeding the free working of the roller, substantially as described.

207,161. HOUSEHOLD UTENSILS. Emerson Brown, Sterling, Mass. Filed May 24, 1878.



Claim.—As a new article of manufacture, the herein-described receptacle for chamber-vessels, consisting of the case A, provided with the handle H and fastening-catches G E F, and having hinged door B, provided with inwardly-projecting lip C, adapted to close upon the rubber packing held in the flange or lip D of the case A, so as to render the receptacle odor-tight, substantially as and for the purpose specified.

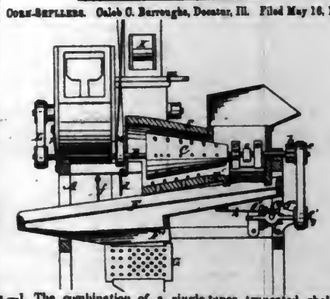
207,162. ROCK-DRILLING MACHINES. S. G. Bryar, Saugus, Mass. Filed Apr. 18, 1878.



Claim.—1. In a rock-drilling machine, the combination of the piston C, which has a broad annular groove about its central part, the upper side of which is beveled, and annular grooves *c c c c*, which are placed midway, respectively, between the upper and lower ends of the piston and the said broad groove, and the cylinder A, which is provided with the inlet-ports S, *e* and *f*, *g* and *h*, and the exhaust-ports J and K, and the channels Q and R, substantially in the manner and for the purpose shown and described.

2. The combination of the piston C, the rotary bar E, having a spiral groove, E^1, in which is received a pin fastened to the piston, the ratchet E^2, and the pawl E^3, the head of the cylinder F, and the nut G, substantially as shown, and for the purpose described.

207,163. CORN-SHELLERS. Caleb C. Burroughs, Decatur, Ill. Filed May 16, 1878.

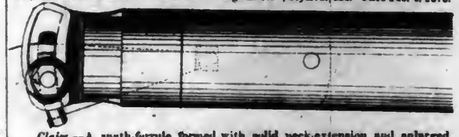


Claim.—1. The combination of a single-taper truncated shelling-cone, extending partly under the feeding-hopper, with rotary beaters or feeders, also located under the hopper on the horizontal axis of the shelling-cone, and a conical casing enlarged at the throat, substantially as described.

2. The combination of the hopper, the truncated shelling-cone, the oscillating screen beneath and parallel with the cone and its casing, the inclined stationary screen or perforated plate fed from the bottom board of the oscillating screen, and the suction-fan, with its down-leg immediately over the stationary screen and its spout directed to the opposite side from the final delivery of the corn, substantially as set forth.

3. In combination with a shelling mechanism and an oscillating screen mounted on the same frame, the stationary screen G, suction-fan having a down-leg over said screen, and grain-elevator connected to said down-leg and screen, substantially as shown and described.

207,164. SCYTHE-SNATH FASTENINGS. George E. Clow, Seymour, Ind. Filed Feb. 4, 1878.

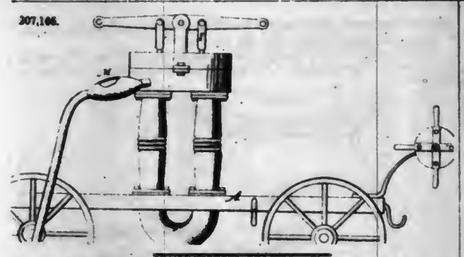


Claim.—A snath-ferrule formed with solid neck-extension and enlarged head slotted to receive and adjust the clamping-loop, as shown and described.

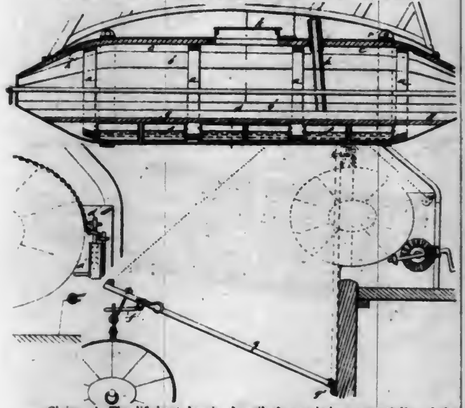
207,165. FIRE-ENGINES. Daniel M. Cooper, Dublin, Ind. Filed Feb. 27, 1878.

Claim.—In combination with a force-pump and its delivery-pipe, an elastic bulb, M, in the delivery-pipe, the expansion and contraction of which are designed to maintain a uniformity of outflow, substantially as set forth.

207,166.



207,166. LIFE-BOATS. Frank Dunn, Gloucester, Mass. Filed July 2, 1878.



Claim.—1. The life-boat herein described, consisting, essentially, of the elliptical frames *a*, the longitudinal wooden ribs *b*, the deck-plank *c*, and the metallic sheathing or covering, as and for the purpose set forth.

2. The hinged guard-planks *m* and outriggers *n*, in combination with the cylindrical life-boat, substantially as and for the purpose set forth.

3. The combination of the swinging davits *q*, having pins or hooks *f'*, and the boat having the rings *r*, as and for the purpose set forth.

4. The device for securing the griping-chains *w*, consisting of the pivoted tube *a'*, with a slot, *b'*, and the pin *d'*, combined and arranged substantially as set forth.

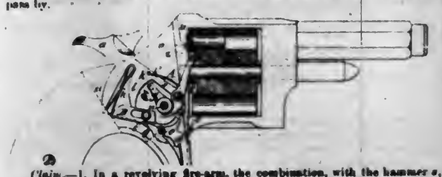
207,167. WIRE-STRETCHERS. Isaac O. Ericson, Colorado Springs, Colo. Filed July 11, 1878.



Claim.—The griping-levers *a*, bar *c*, and screw-rod *f*, combined and arranged substantially as and for the purposes described.

207,168. REVOLVING FIRE-ARMS. Henry M. Erskine, Ilion, N. Y. Filed Mar. 23, 1878.

Brief.—The shell is started by positive force, and when sufficiently loosened is entirely ejected by a blow imparted to the extracting-lever by a spring-bolt, which is released by the movement of the hammer. By allowing the hammer to rest in the half-cock notch (as in the operation of loading) the extracting mechanism is thrown out of operation, so as to allow the first cartridge to pass by.



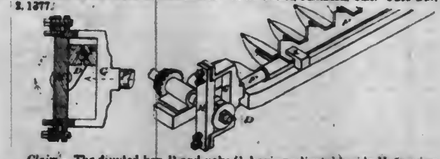
Claim.—1. In a revolving fire-arm, the combination, with the hammer *a*, of the shell-extracting prying-lever A, pivoted to and moving with the hammer, and so arranged and connected with the hammer that the first movement of the hammer in cocking forces the prying end of the lever gradually and positively against the cartridge-shell to loosen the same, while the terminating movement of the hammer in cocking imparts a final quick movement to the extractor to eject the shell by the blow of a spring-bolt or its equivalent applied to the opposite end of the lever, substantially as herein shown and described.

2. The combination, with the extractor A, which is actuated positively by the first movement of the hammer, of the spring-bolt B, depressed by the first movement of the hammer, and released at the terminating movement to impart a final quick motion to the extractor, substantially as shown and described.

3. The combination, with the hammer *a* and extractor A, of the locking-detent C, which is actuated by the movement of the hammer in one direction by contact with the nose of the trigger or other definite fixed point, and in the other direction by contact with the fixed pin *l*, or other definite point in the casing, to effect the locking or unlocking of the extractor, to restrain or restore its extractive function, substantially as shown and described.

4. In a revolving fire-arm provided with a shell-extractor, the receding bevels *a* and *c* on the cylinder-casing, either or both, substantially as and for the purpose set forth.

207,169. HARVESTER CUTTING APPARATUS. T. H. Eulass, Cincinnati, Ohio. Filed Nov. 2, 1877.



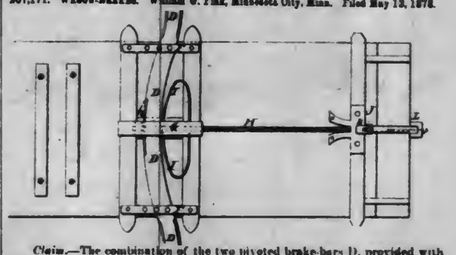
Claim.—The divided box P and yoke G, having adjustable side H, forming dual adjustments, for taking up wear of the box on the wrist-pin and yoke-bearings, in combination with a cutter-bar, F, and crank wrist-pin P, substantially as shown and described.

207,170. GRAIN-SEPARATORS. Arthur B. Farquhar, York, Pa. Filed May 6, 1878.



Claim.—A tailing-shoe made step form, having the steps a^2 inclined downward and toward the front or inner part of the separator, and the rise or elevations a^1, perforated with blast-openings a^2, substantially as and for the purposes set forth.

207,171. WAGON-BRAKES. William G. Fink, Minnesota City, Minn. Filed May 13, 1878.



Claim.—The combination of the two pivoted brake-bars D, provided with the shoes E, and having their inner ends grooved to fit upon the rod H, the three keepers F F G, the sliding rod H, the spring I, a hanger, K, and the lever J, with each other and with the body A of a wagon, substantially as herein shown and described.

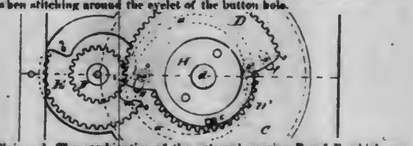
207,172. TAP-WRENCHES. Charles H. Fowler, Boston, Mass., assignor of one-half his right to Daniel Goodnow, Jr., same place. Filed Apr. 11, 1878.



Claim.—In a tap-wrench, the arm *a*, provided with the central portion *b*, square opening *c*, and longitudinal hole leading to said square opening, in combination with the round die *e*, groove *e'*, and pin *f*, and the arm *a'*, provided with the screw *d*, the same hole providing for the screwing on of the arm *a'* and the entrance and guidance of the round die *e*, all substantially as and for the purpose herein set forth.

207,173. FEEDING DEVICES FOR BUTTON-HOLE SEWING-MACHINES. James W. Furbush and John Farley, Lynn, Mass. Filed Mar. 26, 1878.

Brief.—Segmental gearing is employed to give the increase of feed desired when stitching around the eyelet of the button hole.



Claim.—1. The combination of the external gearing E and F, which are secured to the shaft J, with the segmental gearing D, which has abutments *f* and *g*, the segmental gearing D^1, and the hub H, all combined together substantially in the manner and for the purpose shown and described.

2. In a button-hole stitching-machine, the driving gear-wheel F, secured to the shaft J, the segmental gear E, secured to said gear-wheel F, the segmental gear D, provided with abutments *f* and *g*, and the semicircular gear D^1, revolving about the hub H, in combination with the cam C, substantially in the manner and for the purpose shown and described.

207,174. PLOWS. Lewis Gibbs, Canton, Ohio. Filed July 17, 1878.



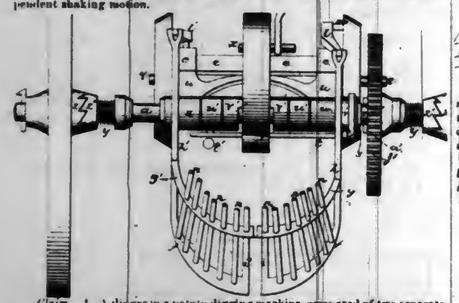
Claim.—1. The combination, with a toothed segment secured to a plow-beam end, of a clevis, which adjustably engages therewith, the arms of said clevis being respectively formed with horizontal L-shaped slots adapted to provide bearing for the draft-bolt in the upper or vertical portion of said slots, and to allow the clevis to be longitudinally adjusted when said bolt is loosened by moving the arms so as to cause said bolt to work in the horizontal or lower portion of said slot, substantially as set forth.

2. The clip G, having a front and rear bearing beneath the beam, and connecting lips or flanges clasping the sides of the beam, provided with holes for the clamping-bolts G', and the dovetailed socket to receive the standard and allow its lateral adjustment, substantially as shown and described.

3. The combination, with a plow-beam, of a colter device consisting of a clip embracing the beam without bolts passing through the latter, and capable of adjustment longitudinally on the beam, a flanged or dovetailed bearing beneath the beam for reception and lateral adjustment of the colter-standard, and a standard and colter adapted to be adjusted vertically along said standard, substantially as and for the purposes described.

207,175. POTATO-DIGGERS. Cyrel W. Green and M. T. Rowland, Rutland, Vt. Filed Oct. 19, 1877.

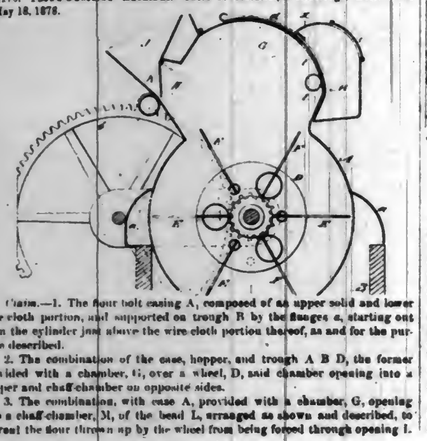
Brief.—The digger is formed of two separate parts, each part being composed of a knife having rods loosely attached thereto, and connected at their rear ends with devices for imparting to the rear end of each part an independent shaking motion.



Claim.—1. A digger in a potato-digging machine, composed of two separate parts, said parts being composed of the knives *f* and *f'*, having the arms *i* and *i'*, to which are loosely attached the pieces *g* and *g'*, said pieces *g* and *g'* being provided with a mechanism for imparting thereto an alternate up-and-down shaking motion, and the rods *n*, loosely attached to the knives *f* and *f'*, and to the pieces *g* and *g'*, substantially as described, and for the purposes specified.

2. The combination, in a potato-digging machine, of the knives *f* and *f'*, having arms *i* and *i'*, the pieces *g* and *g'*, loosely connected to the arms *i* and *i'*, having the rods *n*, which are attached to the knives, the rods *h* and *h'*, the arms *l* and *l'*, the frame *r* of the machine, the cam wheels P and P', the shaft *q*, the cogged wheels *j* and *j'*, the slide *r'*, and the axle-tree *s*, all combined and working substantially as and for the purposes specified.

207,176. FLOUR-DRESSING MACHINES. Thore F. Groseloef, Westborough, Mass. Filed May 18, 1878.



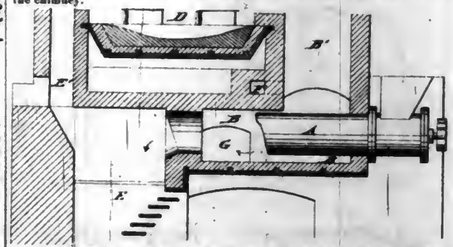
Claim.—1. The flour-bolt casing A, composed of an upper solid and lower wire-cloth portion, and supported on trough B by the flanges *a*, starting out from the cylinder just above the wire-cloth portion thereof, as and for the purpose described.

2. The combination of the case, hopper, and trough A B D, the former provided with a chamber, *i*, over a wheel, D, said chamber opening into a hopper and chaff-chamber on opposite sides.

3. The combination, with case A, provided with a chamber, G, opening into a chaff-chamber, M, of the head L, arranged as shown and described, to prevent the flour thrown up by the wheel from being forced through opening I.

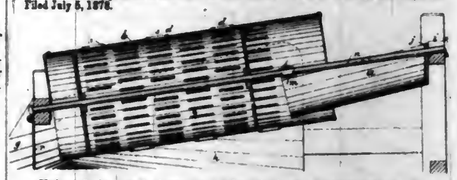
207,177. METALLURGIC GAS-FURNACES. Carl Grobe, Berlin, Prussia, assignor to Friedrich Lürmann, Osnabrück, Germany. Filed May 22, 1878.

Brief.—The coal is coked before being fed to the producer. The retorts are heated by the waste heat of the products of combustion on their way to the chimney.



Claim.—The combination of the retorts A and, the feed-screw C, tightly fitted therein, the retort-inclosing chamber B and flues B', the fire-place E, and the passage or channel E', and the smelting or puddling chamber D, located above the fire-place and communicating with the flues B', all as shown and described, for the purpose specified.

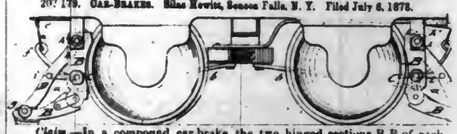
207,178. MACHINES FOR CLEANING AND SIFTING TACKS. Hiram H. Heald, Sandwich, Mass. Filed July 5, 1878.



Claim.—1. In a tack cleaner and sifter, the inclined rotary cylinder *b*, constructed of solid sheet metal and of uniform diameter throughout, open at its receiving end, and combined with a gate, guard, or fender, and a chute at its discharging end, and provided with slots punched from its inside outwardly, substantially as shown and described.

2. The combination of the inclined, rotary, slotted sheet-metal cylinder *b*, vibrating feeding-chute *a*, discharge-chutes *g h*, and gate, guard, or fender *r*, substantially as described.

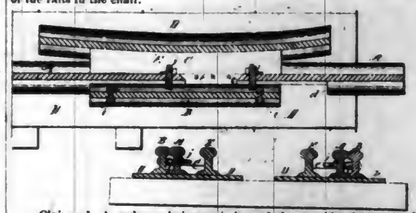
207,179. CAR-BRAKES. Silas Howitt, Seneca Falls, N. Y. Filed July 6, 1878.



Claim.—In a compound car-brake, the two hinged sections B B of each shoe, connected rigidly with those of the other by a crank-rod, C, in combination with a bar, D, hinged to a brace-rod, *g*, of the lower sections, and guided by a slot on a fixed pin of upper section, as shown and described.

207,180. RAILWAY-RAIL JOINTS. Samuel E. Hilliard, Reno, Nev. Filed June 10, 1878.

Brief.—A railway-chair and joint consisting of a base-plate, an outside short rail, an inner inverted half-rail, and a guard-rail. The ends of the track-rails, in expanding and contracting, slide between the outside short rail and the inverted half-rail. Shoulders and stops are formed to limit the movement of the rails in the chair.



Claim.—1. A railway-chair consisting of the outside short rails B and inside split rail C, arranged, as described, in combination with the sliding track-rails A A, substantially as and for the purpose described.

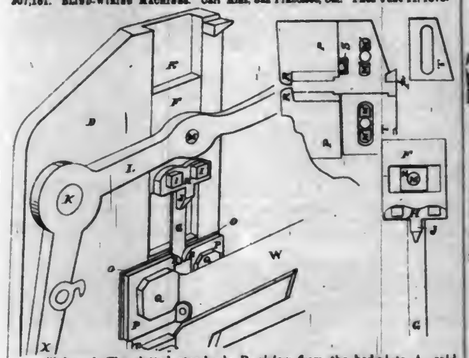
2. An expansion-joint for railway-tracks, consisting of the rails A A, secured as slides between an outside short rail, B, and inside clamps or guards, C, which embrace the inside flanges of the rails, substantially as and for the purpose above described.

3. A railway-chair consisting of the base-plate D, with its short chair-rail B, half or split rail C, inverted and secured, as described, and the guard-rail E, all combined and arranged, in connection with the track-rails A A, substantially as above specified.

4. The track-rails A A, arranged as slides in a chair, B C' E, and having their inside corners rounded or beveled, substantially as and for the purpose above described.

5. The short chair-rail B, with its stops *i*, and the inside slide C', in combination with the sliding track-rails A A, with their stops *j*, substantially as and for the purpose described.

207,181. BLIND-WIRING MACHINES. Carl Hinz, San Francisco, Cal. Filed June 11, 1878.

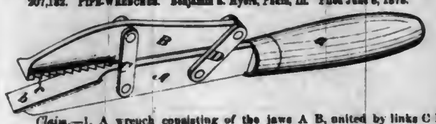


Claim.—1. The slotted standards B, rising from the bed-plate A, said standards having the foot cut back at G', so as to admit the guide H' and allow it to present an unbroken front, substantially as and for the purpose herein described.

2. The slotted carrier F, moving in the groove E, as shown, and provided with an adjustable, independent driver, G, in combination with the clamp H, with its downwardly-projecting spreader J, substantially as and for the purpose herein described.

3. The driver G and laterally-sliding plates P, in combination with the guide-plates T, the inclined staple-holder W, and the casing D, with its gage-shoulder F', to hold the slats in position, the whole operating substantially as shown, and for the purpose herein described.

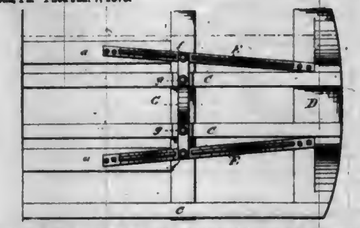
207,182. PIPE-WRENCHES. Benjamin S. Hyers, Pekin, Ill. Filed June 6, 1878.



Claim.—1. A wrench consisting of the jaws A B, united by links C D, arranged at an angle or inclination to each other, substantially as described and shown.

2. The combination of the toothed jaw B, the main jaw or body A, having a smooth inclined face, *b*, and connecting-links C D, having the points of attachment to the jaw B a greater distance apart than the points of their attachment to the jaw A, as and for the purpose described.

207,183. CAR-PLATFORMS. Eli H. Janney, Alexandria, Va., and Lawrence B. Mathews, Altoona, Pa. Filed Jan. 7, 1878.



Claim.—1. In combination with a car-platform having the usual check-pieces C C, the brace-bars E E, the bolts *f f*, and buffer-beam D, as described.

2. The combination of the brace-bars and bolts with the connecting transverse bar, as described.

207,184. WASH-BOARDS. John F. Jaques, Monne, Ill., assignor to Dimock, Gould & Co., same place. Filed June 22, 1878.

Brief.—Improvement on the construction shown in the patent to Joseph Keech, No. 27,811, granted April 10, 1860.

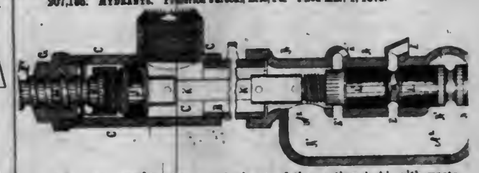


Claim.—1. A wash-board provided with transverse zigzag corrugations *a*, each broken from crest to base by secondary transverse corrugations or crimps *b*.

2. The wash-board having transverse zigzag corrugations *a* and two or more transverse breaks or crimps therein between each bend or angle and the next.

3. The wash-board having the zigzag corrugations *a* and the pockets or cup-like indentations formed at the angles of the corrugations in one side of the same, so as to offer an increased resistance to the fabric, as described and shown.

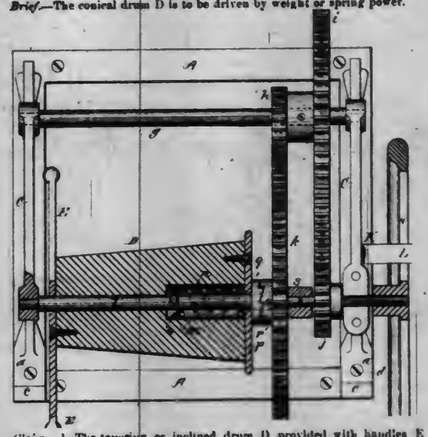
207,185. HYDRANTS. Frederick Jaroch, Erie, Pa. Filed Mar. 1, 1878.



Claim.—The combination, in a hydrant, of the casting A A', with waste E, casting C, with spout-opening and valve or piston-barrel above it, and the intermediate pipe B, with a valve-stem, K F, bearing at its lower end a valve, N, and waste-opening valve L, and at its upper end a valve or piston, J, said parts being arranged and operating together as and for the purposes set forth.

207,186. MOTORS. Leicester P. King and Arthur M. White, Cincinnati, Ohio. Filed Aug. 2, 1878.

Brief.—The conical drum D is to be driven by weight or spring power.



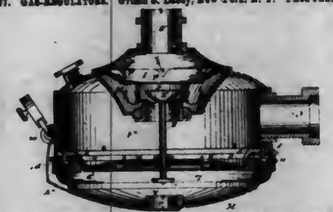
Claim.—1. The tapering or inclined drum D, provided with handles E, said drum formed with a chamber for the reception of a coil-spring, *s*, for keeping the ratchet-teeth *q* engaged with the ratchet *r* of the wheel *j*, substantially as and for the purpose described.

2. The drum D, spring *s*, and ratchet-teeth *q*, in combination with the wheel *k*, with ratchet-teeth *r*, and the wheels *k i j*, for driving the crank-wheel G, substantially as and for the purpose specified.

3. The bed-plate A and frames C, constructed as described, in combination with the shafts *g l*, tapering drum D, spring *s*, ratchet-teeth *q r*, and wheels *k k i j*, substantially as and for the purpose set forth.

4. The bed-plate A and frames C, connected together as described, in combination with the adjustable bracket F, formed with journal-box *s*, substantially as and for the purpose specified.

207,187. GAS-REGULATORS. Griffin S. Lacey, New York, N. Y. Filed June 17, 1878.



Claim.—1. The combination, in a gas-regulator, of an adjustable valve, E, a flexible diaphragm, D, and the clamping-rings F F', the said ring F being provided with an upwardly and inwardly extending flange, *c*, to form a recess around the inner edge of the ring F', as and for the purpose set forth.

2. The combination of the valve-chamber H, bonnet I, tube *c*, valve-seat E', and adjustable valve E, as herein shown and described.

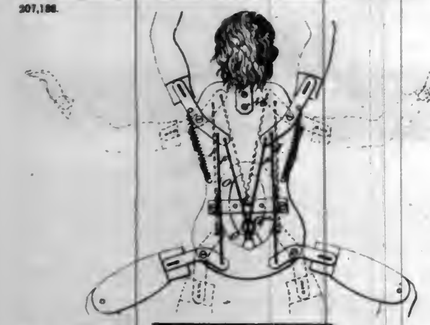
3. The strap or plate N, provided with screw-threads at one end thereof, and with an opening at its outer end to fit over the ring or catch *m*, in combination with the lid K, provided with the opening *h* and vent-hole *i*, as and for the purposes set forth.

207,188. AUTOMATIC SWIMMING-TOYS. Elie Martin, Paris, France. Filed Apr. 4, 1878. Patented in France, Dec. 7, 1876.

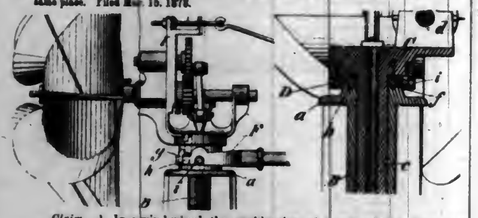
Claim.—1. The combination, in an automaton swimming toy or figure, of a suitable prime motor, the cranked arbor, the pair of rods connected with said arbor and the arms of the figure, the pair of rods connected with the arms and legs of the figure, and the spiral springs connected with the arms and body, all constructed and arranged to operate in the manner set forth.

2. The combination of an elastic bracelet or sleeve with the casing of a spring-motor and the body of an automaton swimming-toy, as and for the purpose set forth.

207,188.



207,189. WIND-WHEEL. Samuel W. Martin, Springfield, Ohio, assignor to Phineas P. Mast, same place. Filed Mar. 16, 1878.



Claim.—1. In a wind-wheel, the combination of a turn-table carrying the wheel and provided with an upright standard or crank-arm, an independently-rotating turn-table, a tail-vane connected to the latter in such manner as to have a vertical movement, and a suspending device connecting the vane with the crank-arm, substantially as described and shown.

2. In a wind-wheel, the combination of a wheel-supporting head or turn-table, an independently-rotating head or turn-table, having a vertically-moving tail-vane attached thereto, and a suspending connection between the tail-vane and the wheel-supporting head, substantially as shown and described.

3. The rotating mill head or table provided with the standard and its adjustable eyebolt or arm, in combination with the vertically moving tail-vane and its sustaining-rod.

4. In combination with the sleeve or bearing B and the mill-head C, having an elongated neck to enter the same, the independently-rotating sleeve or collar to support the vane mounted around the neck of the head between the latter and the sleeve B, as shown.

5. In combination with the sleeve B, having the annular groove in its top, and the head or table provided with annular flange and neck C, the intermediate collar provided with annular groove and flange.

6. In a windmill, the combination of a rotary collar or support, D, having trunnions thereon, the notched tail-support F, mounted on said trunnions, and the mill-head arranged to hold said parts together, substantially as shown.

7. A windmill having a turn-table provided with trunnions, in combination with tail-vane having forked arm F, mounted upon said trunnions, substantially as shown.

207,190. CASE OR PACKAGE FOR PAINTS. John W. Masury, New York, N. Y. Filed Aug. 1, 1878.

Brief.—The top may be of any sheet-metal stock with requisite characteristics for opening. In opening can, the knife is forced through the top near its flange, and turned over so blade will rest on upper edge of the body, when the top may be severed.

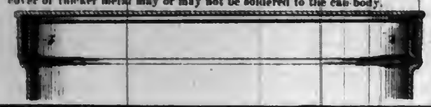


Claim.—1. A can or package for paints or other substances, consisting, essentially, in the combination, with a can-body provided with a bead near its open end, of a soft-metal top having a plain depending flange, the lower edge of which is soldered to the upper shoulder of the bead on the body of the can, substantially as set forth.

2. The combination, with a can-body provided with a bead near its open end, of a soft-metal top having a plain depending flange, the lower edge of which is soldered to the upper shoulder of the bead on the can, and a slip-cover, which snugly fits over the plain depending flange of the soft-metal top, substantially as set forth.

207,191. CANS. John W. Masury, New York, N. Y. Filed July 5, 1878.

Brief.—A tin or lead foil cap (penetrable, it may be, by the thumb) is secured to the can, and protected by a metal ring enveloping the flange of the cap, and soldered at its lower edge to the body of the can, and (it may be) projecting upward beyond the foil cap. Soldering the ring may melt the lower portion of the rim of the foil cap, and thus secure a closer joint. An exterior cover of thicker metal may or may not be soldered to the can-body.



Claim.—1. A can or package for paints or other substances, provided with a thin soft-metal top, which is attached to one end of the can or package by means of a separate hoop or ring, which embraces the edge of the soft-metal top, and is soldered to the outer surface of the can or package, substantially as set forth.

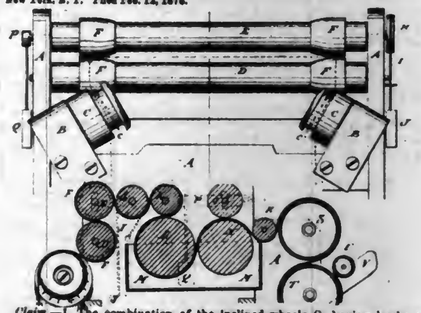
2. A can or package having a bead formed near one of its ends, in combination with a soft-metal top and a separate ring or hoop, which embraces the edge of the soft-metal top and rests against the bead on the can, and is soldered to the outer surface of the can or package, substantially as set forth.

3. A can or package for paints or other substances, having a soft-metal top secured to one of its ends by a separate metallic ring or hoop, which is soldered to the outer surface of the can, in combination with a slip-cover, the flange of which extends over the fastening ring or hoop, and serves to protect the soft-metal top and impart additional strength to the can, substantially as set forth.

4. A can or package provided with a bead near its open end, and a soft-metal top secured to said end by a separate ring or hoop, which is soldered to the outer surface of the can of a slip-cover, the flange of which extends downward over the soldered joint between the fastening-ring and can, substantially as set forth.

5. A can or package having a soft-metal top secured to one of its ends by a separate ring or hoop soldered to the can, and which extends slightly above or beyond the edge of the can, in combination with a slip-cover, which serves to protect the soft-metal top, and is prevented from severing or rupturing the same by the projecting edge of the fastening-ring, substantially as set forth.

207,192. MACHINES FOR STRETCHING, DIPPING, AND DRYING FABRICS. John D. McLean, New York, N. Y. Filed Feb. 12, 1878.



Claim.—1. The combination of the inclined wheels C, having hooks or pins *c'*, and the rolls D E, having raised inclined collars F, as and for the purpose specified.

2. The combination of the tentering-wheels C and the compensating-rollers D E, one or more, provided with the collars F, with each other, and with the stretching and squeezing rollers and the drying-cylinders of a machine for spreading, stretching, squaring, dipping, and drying knit or woven goods, substantially as herein shown and described.

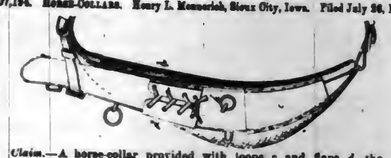
3. The rollers E D, with collars F, in combination with the stretching-roller G, drag-wheel H, and weight J, as and for the purpose specified.

207,193. SEATS FOR VEHICLES. Thomas K. Meech, Buffalo, N. Y. Filed July 1, 1878.



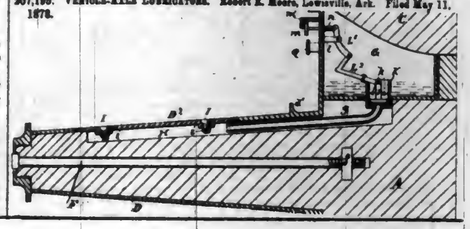
Claim.—The combination, in a wagon, of the seat B, secured immovably near the front, the ways J, extending past the front seat to the rear, and the seat C, open at the front, sliding on the ways, adapted to cover the front seat, and provided with arms D and screws H, for securing it after adjustment, as set forth.

207,194. HORSE-COLLARS. Henry L. Memerich, Sioux City, Iowa. Filed July 26, 1878.



Claim.—A horse-collar provided with loops c and flaps *d*, the latter adapted to be laced together for the attachment of the hames, substantially as described.

207,195. VEHICLE-AXLE LUBRICATORS. Robert R. Moore, Lewisville, Ark. Filed May 11, 1878.



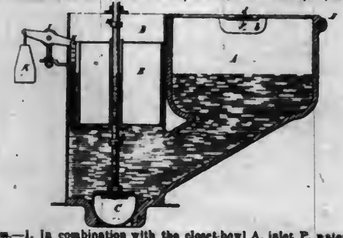
Claim.—1. The recess or oil-chamber H, formed in the upper surface of the axle-journal, in combination with the skein D, cap or cover D^1, and valves I I, substantially as and for the purpose shown and described.

2. The tube *g* and cylinder K, in combination with the oil-reservoir G and oil-chamber H, substantially as and for the purpose shown and described.

3. The combination of the cylinder K, having the perforations *k*, the piston or valve J, working in said perforated cylinder or valve-seat, the connecting-tube *g*, the oil-chamber H, and the valves I I, substantially as and for the purpose shown and described.

4. The combination of the rod or pin *n* and its spring *n*, the levers L^1 L^2, piston or valve J, cylinder K, tube *g*, oil-chamber H, and valves I I and their springs *i i*, substantially as and for the purpose herein shown and described.

207,196. WATER-CLOSETS. Charles H. Moore, Yonkers, N. Y. Filed Apr. 4, 1878.



Claim.—1. In combination with the closet-bowl A, inlet P, water-spread *b*, and chamber B, the float E, fitted loosely upon the spindle F, provided with cheek M, as and for the purpose set forth.

2. A water-closet having a float, E, with passage through the center, operating in the chamber B upon spindle F, having cheeks L and M, substantially as shown, and for the purpose specified.

3. In combination with the closet-bowl A, inlet P, water-spread *b*, chamber B, float E, and spindle F, the valve C, the supply-valve I, secured to the chamber B, and having lever H and weight K, as and for the purpose set forth.

4. A water-closet bowl, A, with water-spreads *b b*, having water-course N and a ventilating attachment, *d*, at the extreme upper portion, as shown and described.

207,197. OVERFLOW AND TRAP FOR BASINS. Chas. H. Moore, Yonkers, N. Y. Filed June 27, 1878.

Brief.—When water in the basin reaches a certain point the float lifts the valve and permits it to escape. A retainer on the valve-spindle supplies water to the trap and keeps the water-seal at a standard. An auxiliary chamber to resupply the trap in case of accidental siphonage is located on the vertical pipe, forming the water-seal.

Claim.—1. The combination and arrangement, as herein shown and described, of the solid plug-valve C, valve-chamber M, having conical or flat seat, chamber A, and basin A', as set forth.

2. The combination, with the plug-valve C, spindle L, and float B in chamber A, of the spindle N, provided with means of opening, *b*, to permit said float to have a certain amount of play without raising the handle.

3. In combination with the basin A', chamber A, valve-chamber M, plug-valve C, and spindle L, the float B, as and for the purpose described.

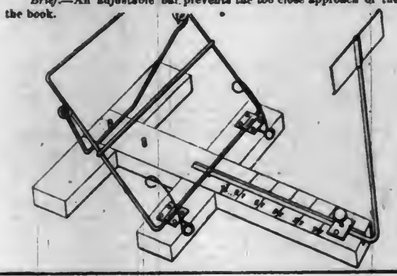
4. In combination with the chamber A, valve-chamber M, plug-valve C, and float B, the vessel E, secured upon the spindle L of the float, and provided with small outlets at or near the bottom, as and for the purpose set forth.

5. A combination of the retainer E, the trap F, and the chamber P.

6. The trap F, provided with water-receiver P, constructed substantially as shown and described, located below the level of the water-line on the pipe, forming the first bend or water-seal, and provided with small apertures *l l* for the ingress and egress of water, as and for the purpose set forth.

207,198. DEVICES FOR PREVENTING MYOPIA. David Morse, Lancaster, N. Y. Filed May 10, 1878.

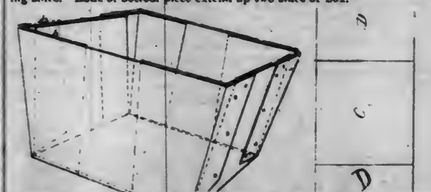
Brief.—An adjustable bar prevents the too close approach of the eye to the book.



Claim.—The combination of the support and the bar, arranged adjustably to limit the approach of the head to the book or paper without preventing between the latter and the eye any other object, as set forth.

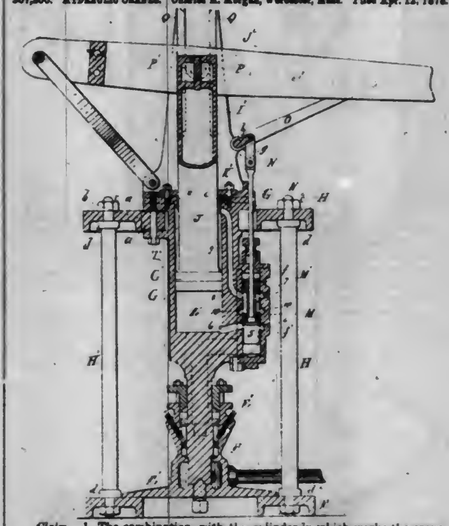
207,199. BERRY-BOXES. S. E. Morey and T. H. McDonald, San Francisco, Cal. Filed May 31, 1878.

Brief.—Each side is formed of a single piece, the ends overlapping adjoining sides. Ends of bottom piece extend up two sides of box.



Claim.—A berry-box each side of which is made of a separate piece of veneer, the ends of which are overlapped upon the adjoining sides, so as to form a double thickness of veneers at and on each side of each corner, and provided with the bottom C D, combined and arranged substantially as specified.

207,200. HYDRAULIC CRANES. Charles H. Morgan, Worcester, Mass. Filed Apr. 13, 1878.



Claim.—1. The combination, with the cylinder in which works the crane-arm-elevating piston, of a top plate provided with an opening, Q', and supported by upright standards H' H' from a base, E, substantially as and for the purposes set forth.

2. The combination, with the cylinder G, of base piece E' E'', top plate H, friction-rolls *a*, and upright standards I', substantially as and for the purposes set forth.

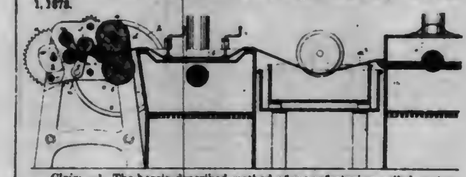
3. The combination, with elevating-piston J', of crane-arm J and hinged brace-pieces K, or either, substantially as and for the purposes set forth.

4. The combination, with crane-arm J, valve M', sliding-rod N, link *g*, and rocking-shaft N', of lever O' and slotted piece *j* and stud 2, substantially as and for the purposes set forth.

5. The combination, with piston J' and crane-arm J, of upright standards I', ribs or flanges Q Q, journals or gudgeons P, and friction-rolls I'', substantially as and for the purposes set forth.

6. In a hydraulic crane, the combination, with the crane-arm, of a piston and a hinged brace or link-support for connecting the crane-arm to the rotating cylinder G, substantially as described.

207,201. FORMING AND TEMPERING WIRE. Chas. H. Morgan, Worcester, Mass. Filed Feb. 1, 1878.



Claim.—1. The herein-described method of manufacturing coiled springs from wire, consisting in successively and continuously heating, hardening, and tempering, and then coiling the wire into spring form while it yet retains its tempering heat, substantially as described.

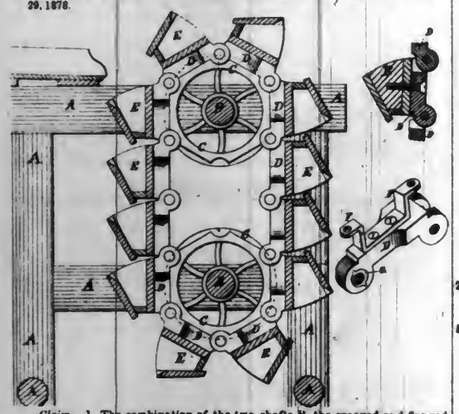
2. In a machine to form springs, the following instrumentalities, viz: feed-

ing mechanism *e e*, positively-rotated grooved bending-rollers, and a coiling-roller arranged between their peripheries, as shown and described, the bending and coiling rollers co-operating to coil the wire, all substantially as described.

3. A pair of grooved bending-rollers and wire-feeding mechanism, in combination with a coiling-roller arranged between the peripheries of the bending-rollers and a pattern surface to vary the position of the coiling-roller with reference to the bending-rollers, substantially as described.

4. The feeding mechanism and a conductor, *i*, to direct the wire, in combination with grooved bending-rollers and a coiling-roller, to operate all substantially as described.

207,202. ENDLESS-CHAIN WATER-WHEELS. Wm. L. Orton, Morris Gap, Tenn. Filed Jan. 29, 1878.

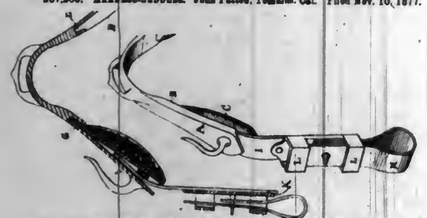


Claim.—1. The combination of the two shafts B, the grooved and flanged chain-wheels C, the links D, having a single lug at one end and a double lug at the other end for jointing them to each other, and the buckets E, with each other and the frame A, substantially as herein shown and described.

2. The combination of the bar F, having its ends bent outward, with the links D of the endless chains to receive the buckets E, substantially as herein shown and described.

3. The combination of the adjustable box or bush G with the single lugs of the link D of the endless chains, substantially as herein shown and described.

207,203. HARNESS-SADDLES. John Patton, Tomales, Cal. Filed Nov. 10, 1877.



Claim.—The harness saddle frame A, provided with the flanges B and recess D, in combination with a pad, C, which is arranged to fit between the flanges and be secured in place by the projecting end G and screw J, substantially as and for the purpose described.

207,204. ICE-TONGS. Calvin B. Payson, Boston, Mass., assignor to himself and William E. Brigham, same place. Filed Aug. 2, 1878.



Claim.—1. In combination with a pair of tongs for grasping ice or other substance, a spring weighing device, C, pivoted to one of the levers A or B above the pivot *b*, or at the point where they are pivoted together, in order that it may hang vertically when in use, substantially as and for the purpose set forth.

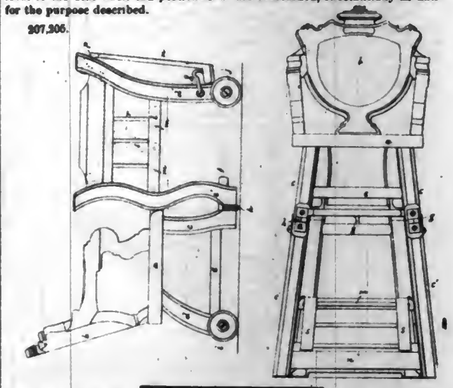
2. The clamping ring *i*, or its equivalent, in combination with the pivoted weighing device C and lever B, substantially as and for the purpose described.

207,205. NURSERY-CHAIRS. Charles A. Perley, Templeton, assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Filed Sept. 1, 1877.

Claim.—1. As an improved article of manufacture, a high chair provided with separable movable leg portions *c' d'*, having connected with such movable leg portions a portion, *l m*, and folding piece *s*, to assist in the formation of a crib-bottom, and a table or shelf, to enable the high chair to be converted into a crib or table and low chair, at will, substantially as set forth.

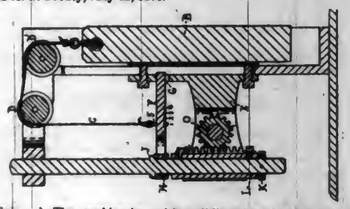
2. The lower portions, *c' d'*, of the legs of a high chair hinged to the front-leg portions *c*, which are fixed to the seat, and the seat *s*, in combination with a crib-forming portion, *l m s*, placed between the legs *c' d'* at a point distant from the hinge *h*, such as to place the crib-forming portion substantially on the level of the seat when the portions *c' d'* are overturned, substantially as and for the purpose described.

207,206.



207,206. UPRIGHT METAL-DRILLS. Osgood Plummer, Worcester, Mass. Filed June 21, 1878.

Brief.—Improvement on machine described in Letters Patent No. 150,890, granted A. B. Prouty, May 12, 1874.

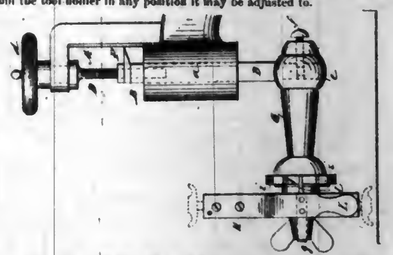


Claim.—1. The combination, with a sliding drill head and spindle, of a balancing device or mechanism, which, in addition to balancing the drill head and spindle when being raised and lowered, is so arranged as to prevent back-lash of spindle when the drill is passing through work.

2. The combination, with a sliding drill head and spindle, of the balance-weight B, cord or chain C, lever F, and collar H, substantially as above described, and for the purpose set forth.

207,207. CARVING-MACHINES. Mathew Rice, Augusta, Ga. Filed July 10, 1878.

Brief.—A standard adapted to be attached to the bed of a lathe has a curved upper portion terminating in a sleeve, in which works a vertically adjustable shaft, having a cylindrical and grooved lower end, to which is attached a horizontal arm, one end of which is provided with a socket fitting over said cylindrical front, and a set-screw for engagement with the groove in the same, and the other end with a notched disk and a tool-holder, having suitable cutters, and a spring-pawl for engagement with the disk, so as to support and hold the tool-holder in any position it may be adjusted to.



Claim.—The swinging arm G, provided with a socket, *e*, and set-screw *f* at one end, and a spindle or pivot, *g*, and notched flange or disk J at the other end, in combination with the shaft B and a tool-holder or tool-carrying frame, substantially as and for the purpose herein described.

207,208. MACHINES FOR UPSETTING COLLARS OR VEHICLE-AXLES. Julius O. Richardson, Manlius, N. Y. Filed July 10, 1878.

Brief.—By turning the cam-faced abutment the length of the groove in which the axle-blank is placed can be increased or diminished, as desired, and the machine readily adapted to upset blanks of different lengths.

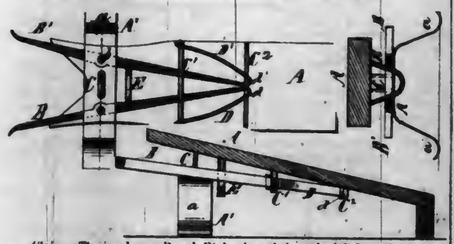
Claim.—1. The holding and compressing dies *d d'*, with the hinged die-holders C C', catch F, sliding hammer *a*, and cam-faced abutment H, constructed to operate substantially as and for the purpose set forth.

2. In combination with the holding and compressing dies *d d'*, the cam-faced abutment H, substantially as and for the purpose set forth.

207,208.



207,209. BOOT-JACKS. Jesse Roberts, Leon, Iowa. Filed Jan. 25, 1878.



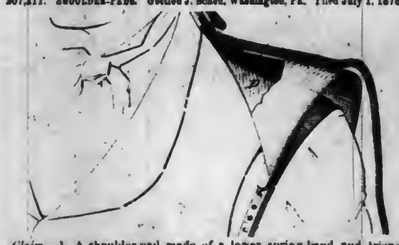
Claim.—The jaw-levers B and B', having their ends *d d'* formed into the springs D and D', in combination with the spreader E, rest A, with straps C, C', and C², and foot-piece A', with pivot-pin *b*, substantially as and for the purpose set forth.

207,210. VEHICLE-HUBS. G. L. Rouse and M. W. Stoddard, Cincinnati, Ohio. Filed Oct. 18, 1877.



Claim.—The combination, with the wooden hub G, of flaring bands B F and the bands C C', having flanges contracted at the outer edges, and extending over and clamping the bands B F to the hub, the whole constituting a complete metallic covering for the hub, as set forth.

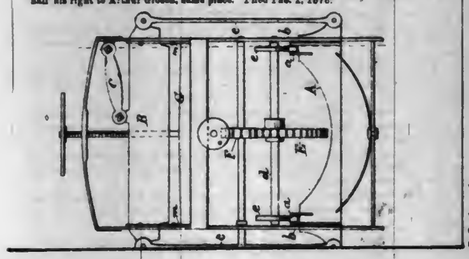
207,211. SHOULDER-PADS. Gottlob J. Schen, Washington, Pa. Filed July 1, 1878.



Claim.—1. A shoulder-pad made of a lower spring-band and triangular layer, and of an upper adjustable spring-band with center-brace at right angles thereto, and with a re-enforced upper layer connected to lower layer, substantially as and for the purpose set forth.

2. The combination of the lower spring-band, having socket-holes at both ends, with the adjustable upper spring-band, having ends fitting into the holes for setting the upper spring higher or lower on the lower spring, substantially as and for the purpose described.

207,212. PAPER-CUTTING MACHINES. William T. Shaffer, Fremont, Nebr., assignor of one-half his right to Arthur Gibson, same place. Filed Feb. 1, 1878.



Claim.—The spring-beam A and knife-holder B, connected by rods *c c*, and suspended by the swinging arm C from the top of the machine, in combination with a shaft, *d*, provided with cams *e e*, and having a large gear-wheel, E, arranged to gear with a smaller gear-wheel, F, substantially as and for the purposes set forth.

207,213. FIFTY-WHEELS. Loring G. Shaw, Corry, Pa., assignor of one-half his right to S. B. Brooks, same place. Filed Apr. 30, 1878.



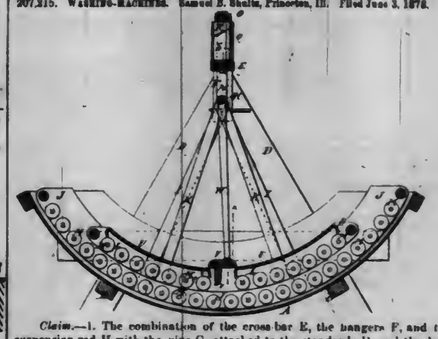
Claim.—In combination with the hub D, recessed as described, and the screw-threaded hub E *e'*, the bolt G G' G², substantially as set forth.

207,214. BARREL-COVERS. Sylvester W. Sheldon, New York, N. Y. Filed July 6, 1878.



Claim.—The combination of the guide *f*, slide-piece *g*, plate *h*, and cam-lever *i* with the section *a*, as and for the purpose specified.

207,215. WASHING-MACHINES. Samuel E. Shultz, Princeton, Ill. Filed June 3, 1878.



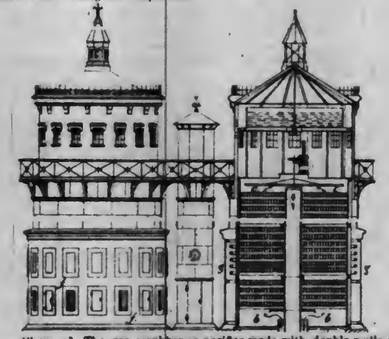
Claim.—1. The combination of the cross-bar E, the hangers F, and the suspension-rod H with the pins G, attached to the standards D, and the bars I K, attached to the side bars of the two rubbers J J, substantially as herein shown and described.

2. The combination of the sliding bars N, the cross-bar O, the guide-pin P, the movable cylinder Q, the two spirally-edged tubes R S, and the lever T with the cross-bar E, the hangers F, and the rod H, that supports the upper rubber, I, substantially as herein shown and described.

3. The combination of the clamping-plate V, provided with the rib *v'*, and the locking-bar W, with the slotted covering-plates U of the upper rubber, I, and with the suspension-rod H, substantially as herein shown and described.

207,216. GAS-SCRUBBERS. Charles V. Smith and Wm. Farmer, New York, N. Y. Filed Dec. 12, 1877.

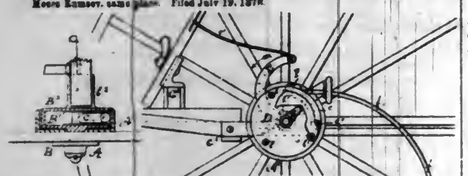
Brief.—The water to be distributed through the scrubber is first discharged upon an overshot water-wheel, which, by suitable connecting gearing, is thus made to turn the perforated water-distributing arms. The water, after acting on the wheel, is carried down by a pipe having a seal-trap, and discharged into the distributing-arms. The scrubber is constructed with double walls, between which is placed a steam-coil for maintaining the proper temperature. Ventilating-passages open into the air-space at the top and bottom, also for controlling the temperature.



Claim.—1. The gas scrubber or purifier made with double walls and provided with the ventilators *f* and the heating-coils *g*, substantially as described.

2. In a gas-scrubber, the water-distributer composed of the arms *m*, provided with graduated openings and the lip to deliver the water in the manner described, in combination with the water wheel *k*, by which it is operated, substantially as described

207,217. HORSE HAY-RAKES. John J. Squire, St. Louis, Mo., assignor to L. M. Ramsey and Moses Ramsey, same place. Filed July 19, 1878.

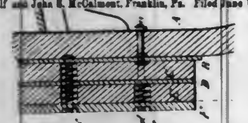


Claim.—1. In combination with the wheel-hub and its annular rim, the friction-brake having cam-surface, the rock-shaft and its crank, and the oscillating axle or rake-head, substantially as described.

2. The friction-brake grooved to receive a roller on the upper or contact surface, and having a cam-outline on the lower surface, in combination with mechanism for actuating it through said cam, and with the rake-head and wheel-hubs of a horse hay-rake.

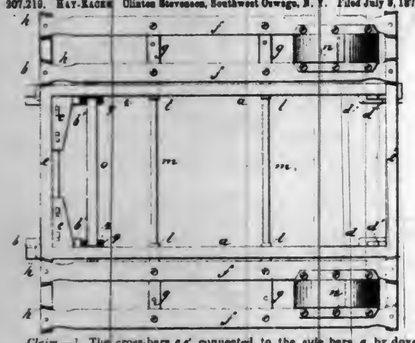
3. In combination with the oscillating axle B, wheel-hub A, and annular rim A', the cylinder box B' B², friction-brake, with cam-surface, rock-shaft E, with its crank, and suitable lever attachment.

207,218. ELASTIC ARMOR FOR SHIPS. William M. Stebley, King William Court-House, Va., assignor to himself and John S. McCalmont, Franklin, Pa. Filed June 10, 1878.



Claim.—The combination, with plates B, rigidly fastened to hull A, alternate rubber sheets, and metallic plates, of the spiral springs *f e*, connecting an outer plate, F, with the inner plates, B D, as shown and described.

207,219. HAY-RACKS. Clinton Stevenson, Southwest Oswego, N. Y. Filed July 9, 1878.



Claim.—1. The cross-bars *e e'*, connected to the side bars, *a*, by dovetail joints and wedges, substantially as and for the purpose set forth.

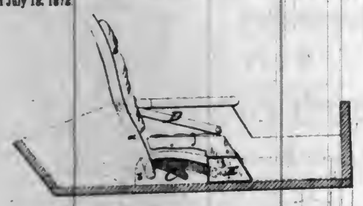
2. The slats *f*, united to the cross-bars *e e'*, substantially as described, and for operation as set forth.

3. The braces *i*, substantially as and for the purposes described.

4. The ladder *c* and stakes *d*, having wedge-shaped ends, in combination with the bars *a* and cross-bars *e e'*, provided with dovetail connections, substantially as and for the purposes set forth.

5. The combination of the transverse bar *a*, having mortised ends and pins *r*, with the bars *a*, having hooks *q*, as and for the purpose set forth.

207,220. CHILDREN'S CARRIAGES. Julius Sass and Sylvester W. Rapier, Louisville, Ky. Filed July 18, 1878.

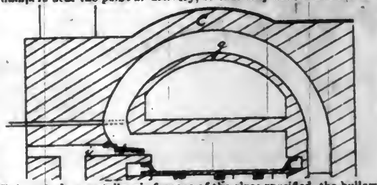


Claim.—1. As an improvement in children's carriages, the combination, with the body of the carriage, having toothed castings in the sides, of an adjustable back that is secured by bottom lugs and pivoted side straps or arms in upright, reclining, or lying-down position, substantially as and for the purpose set forth.

2. The combination, with the body of a child's carriage, having toothed castings in the sides, of an adjustable back that is connected to the castings by downwardly extending side pieces and bottom lugs, and to the sides of the body above the castings by pivoted straps or arms, substantially as specified.

207,221. METALLURGIC GAS-FURNACES. William Swindell, Allegheny, Pa. Filed Mar. 23, 1878.

Brief.—Air to support combustion passes under the hearth, and through the hollow bosbes and back walls before entering the air-flues in the arch. These latter flues deliver air around the nozzles of the gas-flues, and have their dampers near the point of delivery, so that they are always full of air.



Claim.—1. In a metallurgic furnace of the class specified, the hollow back walls and beds communicating with the regenerator-flues, substantially as and for the purpose specified.

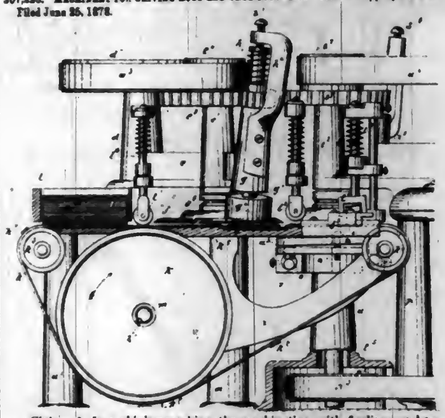
2. The combination, with the hearth or combustion-chamber of a metallurgic furnace, of the air-delivery ports, inclosing the contracted gas-delivery ports, and the dampers *m n*, located with relation to said ports as specified, and adapted to regulate the admission of air and gas to the hearth, the whole constructed and arranged substantially as specified.

207,222. WHEELBARROWS. Gilbert B. Tennent, Asheville, N. C. Filed Jan. 22, 1878.



Claim.—In a wheelbarrow, the continuous wooden frame A A, constructed as described, in combination with the braces B C, wheel D, legs *b b*, extensions *c c* and braces *e f g*, and bed E, as and for the purpose described.

207,223. MACHINERY FOR SKIVING BOOT AND SHOE COUNTERS. Seth D. Tripp, Lynn, Mass. Filed June 25, 1878.



Claim.—1. In a skiving machine, the combination, with feeding mechanism, substantially as described, of two rotary knives, beveled on the upper edge, and arranged to skive the edges successively, as shown and described.

2. The combination and arrangement of the belt k^1, pulley k, bed k^4, friction-pulleys k^2 k^3, pressure-roller l^1, hopper l, and knife f, substantially as and for the purposes set forth.

3. The swinging frame i, supporting the feeding mechanism, in combination with the knife f, substantially as and for the purposes described.

4. The knife f, in combination with the arbor e^1, adjustable vertically in its bearing, substantially as and for the purposes set forth.

5. The combination and arrangement of the plate c, arm c, and gudgeon or support c^2 for the knife-arbor, with the table b, substantially as described, and for the purposes set forth.

6. The ball-and-socket connection of the shaft m^1 with the driving-pulley k of the feeding-belt, in combination with the swinging frame i, carrying the feeding device, substantially as and for the purposes described.

7. The emery-wheel having a chamber filled with felt or similar material, and with a passage from the chamber through the arbor of the wheel, substantially as and for the purposes set forth.

8. The combination of the feeding-belt k^1, knife f, pressure-rollers l^1 l^2, guide l^3, pressure-roller l^3, bed l^4, and knife e, substantially as set forth, and for the purposes mentioned.

9. The revolving bed l^4, adjustable vertically and so as to vary its inclination to the knife, in combination with the secondary knife s, substantially as set forth.

10. The means for adjusting the bed l^4, consisting of the ring w^1, table w^1, pins r, and eccentric-rollers v^1, substantially as described.

207,224. CLOTHES-LINE HOLDERS. John W. Turner, Baltimore, Md. Filed July 23, 1878.



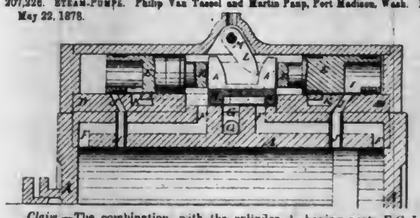
Claim.—In combination with the holder A, having head *a*, neck *a'*, and perforated legs B, the pin *b*, substantially as set forth.

207,225. METALLIC WHEELBARROWS. John Upstone, San Francisco, Cal. Filed May 7, 1878.



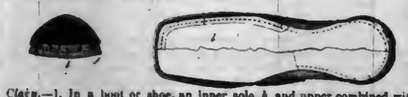
Claim.—A metallic wheelbarrow having the T-iron side bars, A, connected by T-iron cross-braces B, the upper flat part of which is cut off at each end, so as to fit inside the edges of the flat part of the side bars, while the rib extensions at each end are bent to fit against the rib portions of the side bars to which they are riveted or bolted, substantially as and for the purpose above described.

207,226. STEAM-PUMPS. Philip Van Tassel and Martin Fasp, Port Madison, Wash. Filed May 22, 1878.



Claim.—The combination, with the cylinder A, having ports F G J, arranged as described, of the piston-valve E, having ports I, and slide-valve H, the latter connected by flange and slot with the former, as and for the purpose specified.

207,227. BOOTS AND SHOES. Albert Van Wagenen, Boston, Mass., assignor to the Hatch Flexible Sewed Shoe Company, same place. Filed June 24, 1878.



Claim.—1. In a boot or shoe, an inner sole, *b*, and upper combined with an independent inner-sole welt stitched to the upper and outer sole outside the toe or ball and toe of the inner sole, substantially as described.

2. A boot or shoe composed of an outer sole, upper, inner sole, inner-sole welt, and supplemental inner sole, the upper, outer sole, inner sole welt, and supplemental inner sole being united by the same fastening devices extending through all of them, substantially as described.

207,228. PILES. Edward Wassell, Digby, Nova Scotia, Canada. Filed Sept. 28, 1877. Patented in Canada, July 16, 1877.

Brief.—The clusters of rails are held in castings united by a center-bolt, for purposes of adjustment. Castings formed thereto unite the columns and girders.

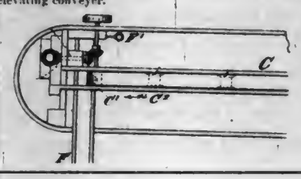


Claim.—1. The combination of the casting B, made in halves, circular at points in contact, and joined together by a center or pivot pin or bolt, S S, and the clusters of rails or bars forming posts and piles H and H', substantially as set forth.

2. The combination of the casting C, the clusters of rails or bars forming a post, H, and the cap D, substantially as set forth.

207,229. APPARATUS FOR UNLOADING SAND, GRAIN &c., FROM VESSELS. Chandler J. Wells, Buffalo, N. Y. Filed July 12, 1878.

Brief.—The openings in the deck of the vessel admit the sand carried on the deck to be shoveled through onto the horizontal conveyer, which delivers it onto the elevating conveyer.



Claim.—In a sailing vessel or boat, a deck, B, provided with openings B', in combination with a horizontal longitudinal conveyer, C, removable conveyer F, arranged at an angle thereto, as specified, and a suitable gearing for operating them, substantially as and for the purposes described.

207,230. SEWING-MACHINES. James Wensley, Philadelphia, Pa. Filed Sept. 10, 1877.

Brief.—A needle guide and guard for rotary-hook sewing-machines.



Claim.—1. The needle-guard C, carrier H, guide D, and cam F, all operating together substantially as shown and described.

2. In combination with a rotary hook and an eye-pointed needle, a needle-guard, C, and mechanism, substantially as specified, for imparting to said needle-guard a reciprocating motion.

3. In combination with the rotary hook of a sewing-machine and an eye-pointed needle, a needle-guide and a needle-guard, with mechanism, substantially as described, for reciprocating said guard, whereby the needle is maintained in a vertical path after its passage through the throat-plate, to permit of the hook entering at all times the loop of the needle-thread without injuring the needle, substantially as described.

207,231. MEANS FOR TRANSPORTING PETROLEUM-OIL. Rufus A. Wilder, Crosscen, Pa. Filed June 19, 1878.



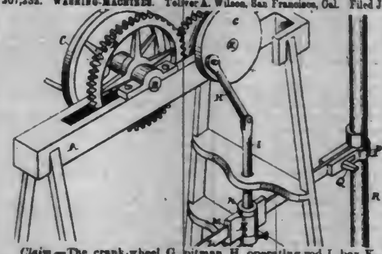
Claim.—1. The main pipe B and receiving-tank A, in combination with the inclined plane I, openings 1 and 2, summit-tank G, and gravity-pipe H, for the purposes substantially as described.

2. The channel-tracks C C, in combination with the tank A, the inclined plane I, summit-tank G, and gravity-pipe H, for the purposes substantially as described.

3. The hoisting-tanks D D, in combination with the main pipe B, the receiving-tank A, inclined plane I, hoisting-ropes E E, winding-wheel F, openings 1 and 2, summit-tank G, and gravity-pipe H, for the purposes substantially as described.

4. The improved means of transporting petroleum-oil, consisting of the combination of the main pipe B, the receiving tank A, the tracks C C, the inclined plane I, the tanks D D, the driving-rope E E, the winding wheel F, the receiving-tank G, and the main gravity-pipe H, operating substantially as described.

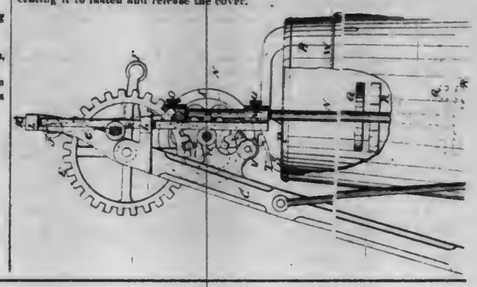
207,232. WASHING-MACHINES. Tolliver A. Wilson, San Francisco, Cal. Filed June 7, 1878.



Claim.—The crank-wheel G, pitman H, operating-rod I, box K, provided with collars N, and adjusting-bar L, in combination with collar P, key Q, and washing-pounder R, as and for the purpose set forth.

207,233. CHURNING APPARATUS. Simon S. Zahn, Huntington, Ind. Filed June 6, 1878.

Brief.—The locking-cam is provided with a handle for convenience in operating it to fasten and release the cover.

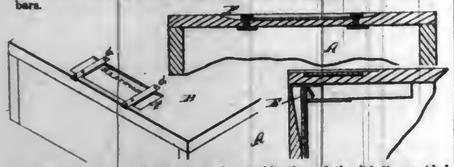


Claim.—1. The combination, with dashers Q R and rods N, of the bars K K, connected by sockets to the dasher-rods, the post C, having arms L, the connecting-rods J, the crank-wheels I I, and the wheels G E, as shown and described, for the purpose specified.

2. The combination of the locking-cam U with the post C and the cover P of the churn B, as substantially as herein shown and described.

207,234. SEAL-LOCKS FOR PACKING-BOXES. Benj. S. Atwood, South Abington, Mass. Filed Jan. 16, 1878.

Brief.—The hole through which the spring-catch is operated is covered by seal or tag, which is placed under cross-bars, and held firmly against them by pins. These pins are placed upon the ends of springs located beneath the lid of the box, and work through small openings directly underneath the cross-bars.



Claim.—1. In a shipping-box, the combination of the lid B, provided with recess F and cross-bars G G, and the springs H H, with spurs *b b*, substantially as and for the purposes herein set forth.

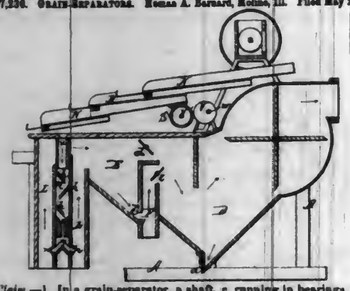
2. The combination of the box A, hinged lid B, having aperture *a*, recess F, and cross-bars G G, the spring-lock D E, and the springs H, with the spurs *b b*, all constructed substantially as and for the purposes herein set forth.

207,235. INSECTICIDE. John Barth, Jr., Evansville, Ill. Filed July 3, 1878.

Brief.—To cassia, one ounce, add carbonate of ammonia, two ounces; gum-camphor, two ounces; and bicarbonate of soda, three ounces. This is powdered and mixed with one hundred bushels of grain. If the grain is still in bundles, twice the amount for an estimated hundred bushels is necessary.

Claim.—The compound for the purpose specified, composed of cassia, carbonate of ammonia, camphor, and bicarbonate of soda, in about the proportions stated.

207,236. GRAIN-SEPARATOR. Homan A. Barnard, Moline, Ill. Filed May 20, 1878.



Claim.—1. In a grain-separator, a shaft, *c*, running in bearings connected to the shaker-frame O, and provided with friction-pulleys S S, in combination with the eccentrics V and the springs *s*, substantially as and for the purposes herein set forth.

2. The two open-bottomed air-trunks L L, in combination with the central seed-chamber M, substantially as and for the purposes set forth.

3. The combination of the two air-trunks L L, with upward draft through the same, and the central seed-chamber, M, having a single outlet near the bottom, on each side, into the air-trunks, as set forth.

4. A series of feed-tubes, *x x*, in combination with the seed-chamber M and the two separating-trunks L L, substantially as and for the purposes herein set forth.

5. The seed-chamber M, provided at or near its lower end with the narrow vertical elongated passage *i*, in combination with the peak *n* below said passage, and the outlets *n n*, substantially as and for the purposes herein set forth.

6. The combination of the two open-bottomed air or separating trunks L L with a central seed-chamber, M, and the screenings-chamber E, substantially as herein set forth.

7. The screenings-chamber E, in combination with the open-bottomed trunk F, for the purpose of recleaning the screenings, as set forth.

8. The trunk F, located between and in combination with the screenings-chambers E and D, substantially as and for the purposes herein set forth.

9. The combination of the passage M, double open-bottomed trunks L L, chamber E, separating-trunk F, and screenings-chamber D, substantially as and for the purposes herein set forth.

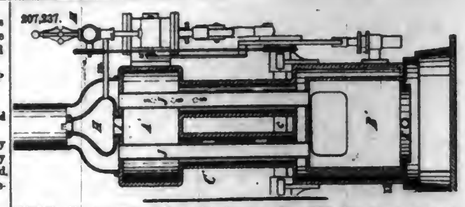
207,237. PORTABLE STEAM-ENGINES. Wm. Baxter, Newark, N. J., assignor of one-half his right to A. Van Winkle, same place. Filed Nov. 22, 1877.

Claim.—1. The cast-iron boiler for portable steam-engines, constructed with sections A and B and two or more columns, C C, all in one piece, combined with the cylinder and crank-bearings of the engines, in the manner herein described.

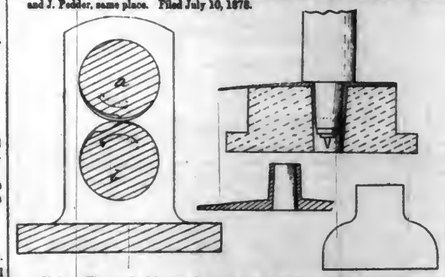
2. The combination and arrangement, in an inverted-cylinder portable steam-engine, of the boiler, constructed with sections A and B and columns C C, secured thereto, and flues J J, passing through the columns, with the cylinder O and crank-bearings of the engine, secured thereto in the manner described.

3. The combination and arrangement, in an inverted-cylinder portable steam-engine, of the cylinder O, crank-shaft *c*, and upright boiler, with opening across its middle for the passage of the crank-shaft *c*, substantially in the manner and for the purpose set forth.

207,237.

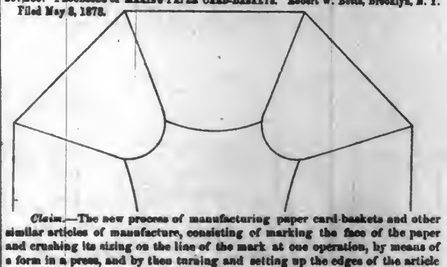


207,238. MANUFACTURE OF HOES. John Bergmann, Beaver Falls, Pa., assignor to himself and J. Podder, same place. Filed July 10, 1878.



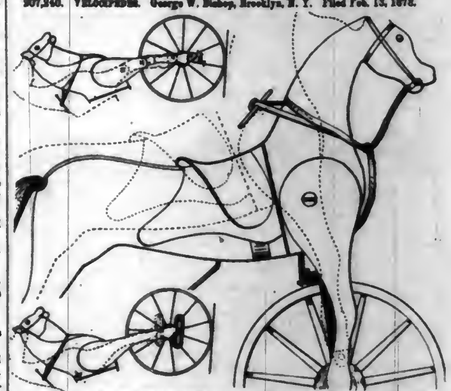
Claim.—The method herein described of forming solid-eye hoes, consisting in the following steps: first, cutting the form alternately from a suitable bar; secondly, tapering the blank each way from the portion intended for the eye; and, finally, setting up the eye by suitable dies, the whole substantially as specified, whereby a large amount of stock is saved and labor avoided.

207,239. PROCESSES OF MAKING PAPER CARD-BASKETS. Robert W. Betts, Brooklyn, N. Y. Filed May 8, 1878.



Claim.—The new process of manufacturing paper card-baskets and other similar articles of manufacture, consisting of marking the face of the paper and crushing its sizing on the line of the mark at one operation, by means of a form in a press, and by then turning and setting up the edges of the article by applying the sections to a hot iron of the desired form after taking the blank out of the press.

207,240. VELOCIPEDE. George W. Bishop, Brooklyn, N. Y. Filed Feb. 13, 1878.



Claim.—1. In an auto-propelling vehicle, a seat-supporting rocking lever connecting the front and rear axles as a sole reach, provided with swinging links connecting the forward end of the rocking lever to the crank-arms of the driving-wheels.

2. In an auto-propelling vehicle, an imitation horse-body used as a rocking lever, a seat-support, and the reach between the front and rear axles, and provided with pivoted fore legs, connecting the rocking lever and propelling crank-arms, for the purpose of giving motion to the vehicle, as shown and described.

3. In an auto-propelling vehicle, a jointed or hinged and rocking lever seat-support, with the joint or hinge located so that the rider sitting in the seat can turn the front end of the rocking lever to right or left, for the purpose of steering.

4. In an auto-propelling vehicle, a jointed or hinged and rocking lever seat-support, a forward propelling-wheel, with fixed axle provided with crank-arms projecting radially in one direction from the axle on each side of the wheel, and links or legs connecting these cranks with one member of the rocking-lever seat-support, substantially as described.

5. The slides R and R', connecting a rocking-lever seat and a driving-wheel, as shown and described.

6. A horse-body rocking lever in an auto-propelling vehicle, connected and guided in its movements with and in relation to the driving-wheel by slides R R', or their equivalents.

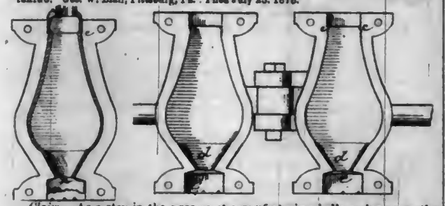
7. The slides R R', one attached to the rocking-lever seat-support, and the other to the axle of the driving-wheel, the two slides connecting together a seat-support and the driving-wheel, and controlling their united movements.

8. The horse-body rocking lever in an auto-propelling vehicle divided into two parts, hinged together, and the driving-wheel provided with cranks for turning the same, connected and guided in their relative and united movements by slides R R', or their equivalents.

9. The horse-body, or its equivalent, made in two parts, hinged together and provided with pivoted fore legs, each secured to the most forward of the two parts, and to the crank-pins of the driving-wheel cranks.

10. In a vehicle arranged for propulsion by a passenger, a seat-support connecting front and rear wheels, made in form of a horse, composed of two parts hinged together, the hind quarters and part of the body secured to or over the hind wheel or wheels, and the fore quarters and body provided with a guide-bar secured to a front steering and driving wheel, so as to be turned therewith, substantially as shown and described.

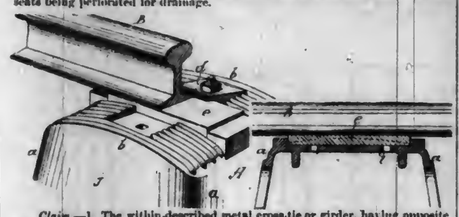
207,241. PREPARING ARTICLES OF GLASSWARE FOR THE PURPOSE OF SHAPING AND FINISHING. Geo. W. Blair, Pittsburg, Pa. Filed July 23, 1878.



Claim.—As a step in the process of manufacturing hollow glassware, the mode hereinbefore described of opening the article for the insertion of the expanding-tool, which consists in blowing the article in a mold having a circumscribed cavity or orifice, into or through which the glass to be removed in forming said opening is forced, substantially as described.

207,242. IRON CROSS-TIES. James A. Bennell, Philadelphia, Pa., assignor of one-half his right to Frank C. Goodwin, same place. Filed July 1, 1878.

Brief.—Iron ties having transversely-grooved and gently-rounded top surfaces, which merge with abrupt curves into the side flanges, the rail-cushion seats being perforated for drainage.

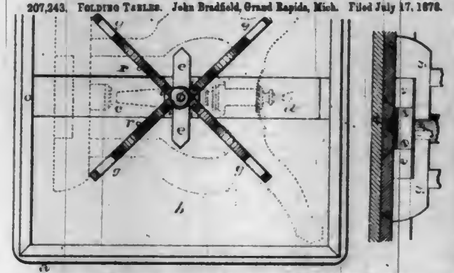


Claim.—1. The within-described metal cross-tie or girder, having opposite side flanges or ribs, *a a*, and a top rounded gently transversely, and merging with abrupt curves into the said sides, all as set forth.

2. A rail-supporting girder or tie having a transversely-ribbed top, as and for the purpose set forth.

3. The combination of the recessed girder A, having openings *i*, with the rails B, the interposed elastic blocks *c*, and clamping-blocks *d*, as set forth.

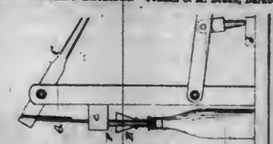
207,243. FOLDING TABLES. John Bradfield, Grand Rapids, Mich. Filed July 17, 1878.



Claim.—1. The combination of the top *a*, having a flange or strip, *e*, and the strips *b*, secured to its under side, the slide *d*, moving back and forth between the strips, hinged piece *c*, and folding legs *g*, substantially as shown.

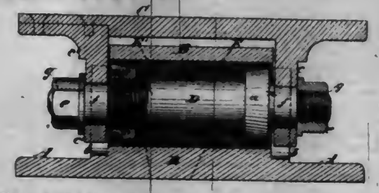
2. The combination, in a folding table, of the top *a*, having stop *e*, slide *d*, moving back and forth between the strips *b*, hinged piece *c*, folding legs *g*, center-rod *f*, and connecting-plates *i*, substantially as set forth.

207,244. BOTTLE-CORKING MACHINES. Johann C. M. Braun, Baraboo, Wis. Filed Mar. 4, 1878.



Claim.—In a bottle-corking machine, the funnel-tube E, the loop G, lever C, and fixed plunger F, for forcing a cork out of the tube, as specified.

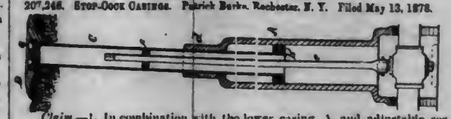
207,245. BEARINGS AND SUPPORTS FOR ELEVATED RAILWAYS, &c. Benjamin F. Britton, New York, N. Y. Filed July 27, 1878.



Claim.—1. The combination, with a bolt and surrounding elastic cushion or cushions, of two connecting-pieces, A C, one of said pieces having attached legs *c c'* for the reception of the bolt, and the other having an attached box for the reception of the cushions, and being also provided with cheeks *b b* at the end of said box, for the reception between them of the said legs *c c'*, all substantially as herein described.

2. The combination, with the connecting-pieces A C and the elastic cushion or cushions fitted to a box in or on one of said connecting-pieces, of the connecting-bolt D, provided with a collar, *s*, at a distance from one end and a screw-thread and nut at a distance from the other end, and having reduced portions *f f* outside of the said collar and nut, and provided at its ends with screw-threads fitted with nuts *e e*, the said collar *s* and nut F being received within cavities in the said elastic cushion or cushions, all substantially as herein specified.

207,246. STOP-COCK CASINGS. Patrick Barbe, Rochester, N. Y. Filed May 13, 1878.

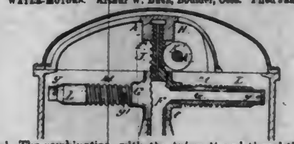


Claim.—1. In combination with the lower casing, A, and adjustable section C, the permanent flange D and detachable cover *s*, substantially as and for the purposes set forth.

2. The block *b*, rigidly secured to the adjustable section C, in combination with a lower casing, A, of non-circular cross-section, operating substantially as described.

3. The casing A, provided with the neck *d*, in combination with the block *b* and adjustable section C, whereby the latter is retained in a vertical position, substantially as set forth.

207,247. WATER-MOTORS. Arthur W. Bush, Boulder, Colo. Filed Jan. 8, 1878.



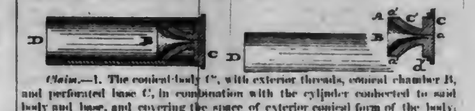
Claim.—1. The combination, with the tubes F and G and the screw-gear J K, of the water-pressure chamber *h* in communication with the water-supply, for the purpose set forth.

2. The combination, with radial revolving pipe or tubular arm G, of the spring-governor, consisting of cut-off sleeve L and a retracting-spring, M, for the purpose set forth.

3. The combination, with the arm G, sleeve L, and spiral spring M, of the pin *g'*, for the described adjustment of the governor.

207,248. CARTRIDGES FOR FIRE-ARMS. David P. Bush and Julius A. Krauspe, Wilmington, Del. Filed May 31, 1878.

Brief.—The base of form shown screws into external tube, which extends back over conical base nearly to the flange.



Claim.—1. The conical-body C", with exterior threads, conical chamber B, and perforated base C', in combination with the cylinder connected to said body and base, and covering the space of exterior conical form of the body, substantially as and for the purpose set forth.

2. The breech-block consisting of the base C', with under-cut or groove *d*, and conical body C', with threaded portion *a'*, substantially as and for the purpose set forth.

3. The base C, with under cut or groove *d*, conical body C', with threaded portion *a'*, and tapering chamber B and the cylinder D, combined and operating substantially as and for the purpose set forth, and forming an improvement in cartridge-shells.

207,249. VAPOR-BATH APPARATUS. G. W. Carpender, South Bend, Ind. Filed Mar. 22, 1878.

Brief.—The valve is provided with four "ways," by which the vapor may be directed to any part of the apparatus, as desired.

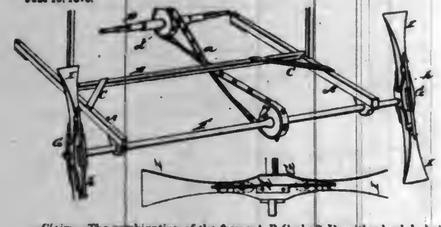


Claim.—1. The case or cabinet A, having one end, *a*, made higher than the rest of the case, and having a side door, B, and a double-hinged cover, C, one section of which is made horizontal and closes in the top of the lower portion of the cabinet, and the other forms a side wall of the higher portion, substantially as shown and described.

2. The combination, with the case A and the heating-case F, having boiler and gasoline-pipe *d*, of the four-way chamber K, communicating with the boiler, and provided with a stop-cock or valve, I, extending through the outer case, to direct the steam to the several parts of the case, as described.

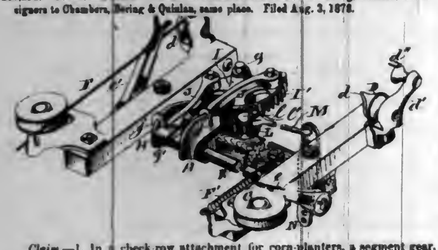
3. The chamber K, having several ways therein, controlled by a stop-cock, combined with the foot-tub M, the perforated platform N, and the outer case by means of pins *g g'*, &c., as and for the purpose described.

207,250. CORN-PLANTER AND CHECK-ROW MARKER. Wm. M. Carriker, Irving, Ill. Filed June 10, 1878.



Claim.—The combination of the frame A B C, shaft D, with wheel *d*, chain *e*, shaft F, with wheel *h* and slotted heads G, and pivoted markers I, with springs *k*, substantially as herein set forth.

207,251. CORN-PLANTERS. William B. Chambers and James E. Bering, Decatur, Ill., assignors to Chambers, Bering & Quinlan, same place. Filed Aug. 3, 1878.



Claim.—1. In a check-row attachment for corn-planters, a segment gear, I', constructed with its ends adapted to act as stops for the pinion L, in combination with said pinion and rod M, whereby said pinion is revolved half a revolution at each throw, substantially as described, and for the purpose specified.

2. The rock-shaft E, tappet K, and pawls J J, in combination with the segment-gear I', pinion L, and connecting-rod M, substantially as described, and for the purpose set forth.

3. In a check-row attachment to corn-planters, an oscillating pinion, L, and rod M, for actuating the planter seed-slides, relatively arranged with each other and with the slides, as that the rod M is brought in line or near in line with the center of the pinion at each end of the throw of the seed-slides, so as to act as a stop to prevent movement of the slides until moved by the pinion, substantially as and for the purpose specified.

4. In a check-row attachment to corn-planters, an oscillating pinion, L, and rod M, for actuating the seed-slides, relatively arranged as described, in combination with a segment-gear, I', substantially as and for the purpose specified.

207,252. BOLT-CLIPPING MACHINES. Cyrus Chambers, Jr., and William Measham, Philadelphia, Pa.; said Measham assignor to said Chambers. Filed Mar. 13, 1876.

Brief.—An improvement on Johnson, dated June 4, 1867, and Measham, dated April 4, 1876. The upper or outer end of the tongue is made thicker than the other end.

Claim.—1. In combination with the stationary cutter C, having a wide flange, *f*, beveled at *p p*, as described, the recess in the head A, having a corresponding beveled form and connecting with the V-shaped guideways of the movable cutter, in the manner and for the purpose set forth.

2. The movable cutter K, formed of steel and having a double bevel on each side, as shown, in combination with the V-shaped guideways in the head A, having the form and location indicated, the whole so arranged that when the beveled edges of the movable cutter are in their guideways its cutting edge shall be in the same plane as that of the stationary cutter and flush with the face of the implement, all as specified.

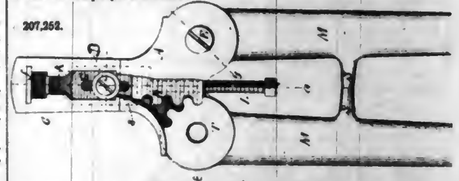
3. The tongue G of rack R, having the narrow projecting face, as stated, in combination with the movable cutter K, having a double bevel on each edge, and the guides V V, all constructed in the manner and for the purpose pointed out.

4. The combination of the tongue G, having its upper end made thicker than the lower end, with the cutter K and set-screw D, in the manner shown, and for the purpose stated.

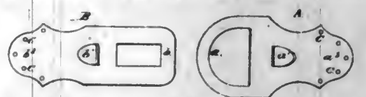
5. The stationary cutter C, having its cutting-edge made wider than the diameter of the largest bolt the instrument is capable of cutting, in combination with a movable cutter, K, working in a slot narrower than the blade of the stationary cutter, and limiting the diameter of the bolts to be cut, all as described, and for the purpose referred to.

6. The screw-pivots E, constructed as described, in combination with the counterbored and tapped jaws of the head A and the toothed segments T, all as and for the purpose indicated.

207,252.



207,253. CORSET-CLASPS. Lucien M. Chinlay, St. Louis, Mo. Filed June 24, 1878.

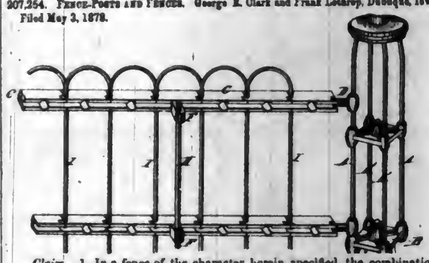


Claim.—1. The clasp composed of the members A and B, each provided with a hook and loop for mutual engagement, substantially as set forth.

2. The clasp A B, composed of two plates of metal, with the hook, loop, and clip of each piece formed of one piece with the frame, substantially as set forth.

3. The clasp having interlocking loops *a* and *b* and engaging-hooks *b'* and *a'*, substantially as set forth.

207,254. FENCE-POSTS AND FENCES. George R. Clark and Frank Lothrop, Dubuque, Iowa. Filed May 3, 1878.



Claim.—1. In a fence of the character herein specified, the combination, with the removable bars forming the corner-post, of the sectional clamp provided with corner-sockets, which receive and hold said bars at bottom, the sections being maintained in proper position by a suitable cap-piece, K, secured by a central bolt, substantially in the manner and for the purposes set forth.

2. The sliding clamp C, adapted to be mounted upon the longitudinal rail, said clamp being notched to receive and hold the pickets, and provided with a wedge-shaped projection, E, adapted to enter a corresponding socket in the next adjacent clamp, substantially as shown and described.

3. In combination with the sliding clamp C, mounted upon the horizontal rail, and provided with the wedge E and notches for the pickets, the arm F and wedges W W, adapted to bear against the upright line post or brace, in the manner shown and described.

4. In combination with the sectional base-plate B, made with sockets at the corners and projecting rim or ridges upon its upper face, the cap-piece K, fitting over said ridges, and held in place by the central bolt, substantially as and for the purposes set forth.

5. The herein-described fence, composed of the corner posts or bars, united by the sectional plate B, the sliding clamps C, rails L, and pickets I I, the whole being arranged substantially as shown and described.

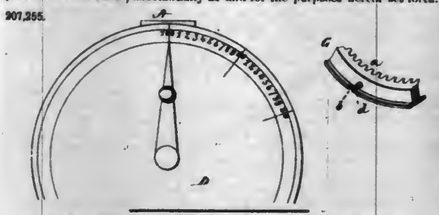
6. The combination of bars A A', united at bottom, the plate N, and cap-piece M, made to clamp the curved ends of said bars by means of the central bolt, O, substantially as shown and described.

207,255. ADDING-MACHINES. Mary W. Clay, Orozoco, Miss. Filed Jan. 16, 1876.

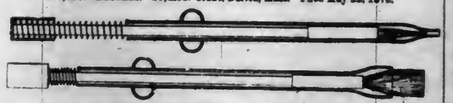
Claim.—1. In an adding-machine, the combination of the wheel G, provided with the notch *b* and rim *d*, the pinion H, with pins *c*, the pinions I J, and the wheel G', substantially as and for the purposes herein set forth.

2. The combination of the frame K, rod *h*, pinion J, and spring *i* with the pinion I and wheel G', substantially as and for the purposes herein set forth.

207,255.

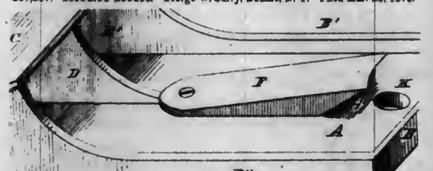


207,256. BRUSHES. Seymour Crane, Dalton, Mass. Filed May 22, 1878.



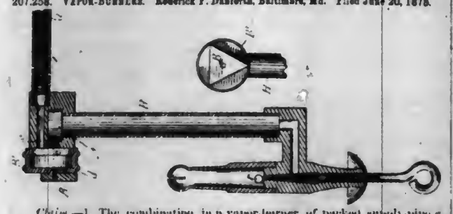
Claim.—A brush composed of a stem with attached tuft, a sheath loosely inclosing the stem, and receiving the tuft when not in use within it, and a spring applied to the stem, and sheath, essentially as and for the purpose or purposes described.

207,257. SCOURING BOARDS. George W. Curry, Buffalo, N. Y. Filed Mar. 23, 1878.



Claim.—The herein-described polishing and scouring board, consisting of the bottom A, provided with the projecting slat B, sides B' B'', and end board, B, the covering C, partition D, and bed F, with its forward end beveled at G, substantially as and for the use and purpose specified.

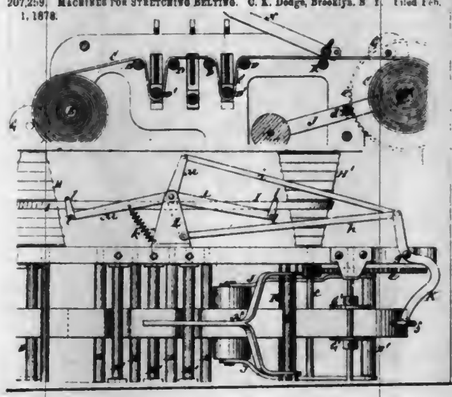
207,258. VAPOR-BURNERS. Roderick F. Danforth, Baltimore, Md. Filed June 20, 1878.



Claim.—1. The combination, in a vapor-burner, of parlor supply-pipe *a*, generator E, having in the upper part the horizontal oil conduit closed in the end the vapor-chamber *d*, formed by the hollow heater-cap B', the two horizontal vapor-openings *e*, placed below and on each side of the oil-conduit, and connecting with enlarged chamber *f*, and the pipe H, leading from said chamber to the burner, as shown and described.

2. In combination with the vapor-burner, the triangular shaped heater B, pivoted to the detachable heater-cap, as and for the purpose specified.

207,259. MACHINES FOR STRETCHING BELTING. C. K. Dodge, Brooklyn, N. Y. Filed Feb. 1, 1878.



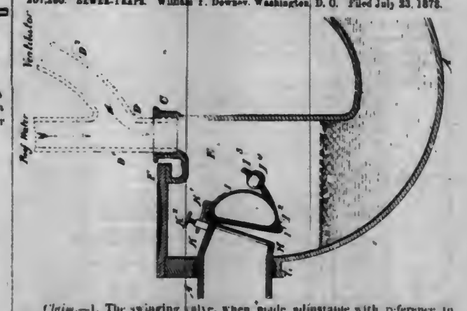
Claim.—1. The combination, with a delivery-roll and a receiving-roll for the belting, flexion and reflexion rollers or devices interposed between said rolls, and one or more brakes for producing longitudinal tension on the belting, of automatic means for varying the velocity of the receiving-roll to substantially equalize the speed of the belting as it is unwound from the delivery-roll and wound upon the receiving roll, essentially as described.

2. The combination, with a delivery-roll, B, receiving-roll B', and a tension-brake, E, of the cone pulleys H H', connected by a band, I, the lever K, arranged to bear on the coil of belting on one of said rolls, and the band or belt shifters L M, substantially as specified.

3. The combination, with delivery and receiving rolls for the belting, and flexion and reflexion rollers or devices interposed between said rolls, of adjustable means or devices between the flexion and reflexion rollers and the receiving-roll, for putting an intermittent tension on the belting as it passes to the receiving-roll, essentially as and for the purpose herein set forth.

4. The combination of the adjustable pressure-roller O, the roller R, the delivery-roll B, the receiving-roll B', adjustable in relation with the rollers C and R, as described, and the flexion and reflexion rollers or devices D D', substantially as specified.

207,260. SEWER-TRAPS. William F. Downey, Washington, D. C. Filed July 23, 1878.



Claim.—1. The swinging valve, when made adjustable with reference to its seat by means of a sliding hinge, constructed substantially as described.

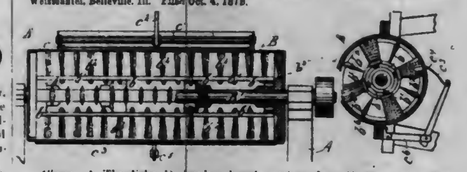
2. The combination of the swinging semi-spherical valve having a projecting flange for holding its facing, an elastic face, and a ring for securing said facing to the valve, substantially as set forth.

3. In combination with the induction-pipe of a water or stench trap, having upon it a valve-seat which recedes from its upper to its lower surface, an adjustable swinging valve, substantially as and for the purpose set forth.

4. The combination of the case A, the induction-pipe H, and the adjustable swinging valve I, the parts being arranged to operate substantially as set forth.

5. A case for a stench-trap, provided with an aperture for the escape of gas outside of the water-seal, and with apertures for the reception of inlet and outlet pipes, and an air-pipe for ventilating said case, substantially as set forth.

207,261. HOMINY-MILLS. John Engelke and Frank Feiner, St. Louis, Mo., and Valentin Weinmastel, Belleville, Ill. Filed Oct. 4, 1878.



Claim.—1. The disks *b'*, having bevel cutting-edges *b''*, in combination with spokers *b*, as and for the purposes set forth.

2. The cup-bullers *b²*, bars *b'*, spiders *b*, disks *b'*, shaft B', casing B, and frame A, all constructed and arranged to operate as and for the purpose set forth.

207,262. WINDOW-BEAD FASTENERS. C. M. Evans, Pittsburg, Pa. Filed Feb. 11, 1878.

Brief.—A staple is journaled in the window-frame, and turns down into slots prepared for its reception after the bead is removed. When it is passed through a slot in the bead it is secured by a hook.



Claim.—1. In combination with recessed or slotted bead B, a pivoted staple, from which said bead may be detached, said staple being afterward turned down to allow the insertion of the sash, substantially as set forth.

2. In combination with stile A, having a cruciform groove, a staple, or its equivalent, adapted to fold into said groove, substantially as set forth.

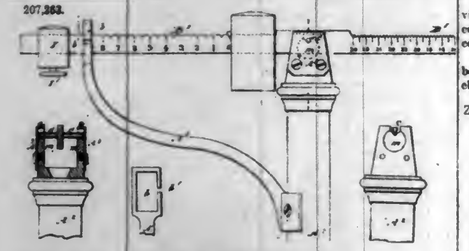
3. The combination of staple C, bead B, and hook E, or its equivalent, substantially as set forth.

4. A staple permanently secured to the stile of a window-frame and detachably secured to the bead thereof, substantially as set forth.

207,263. WEIGHING-SCALES. Thaddeus Fairbanks, St. Johnsbury, Vt. Filed May 15, 1878.

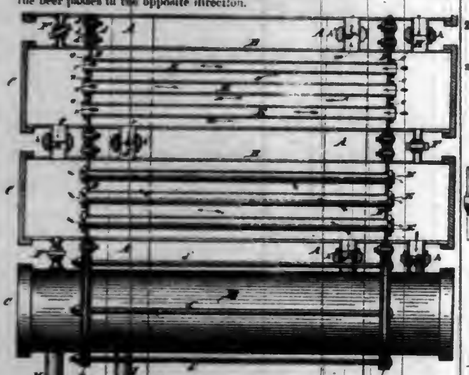
Claim.—The inclined removable arm A', having the slot *b* at its upper end, with an opening, *b'*, in its side for the reception and removal of the weighing-beam B' B², without displacing the poise I, in combination with the weighing-beam and poise I, the vertical post A², in the upper end of which the beam is poised, and the removable sheet metal plates A³, to retain the beam against displacement, as herein specified.

207,363.



207,364. BEER-COOLER. William F. Fey, Cincinnati, Ohio. Filed Apr. 5, 1878.

Brief.—The inner pipes and heads are separately removable from each other and from the cylinder for the purpose of cleaning. The beer to be cooled passes through the pipes in one direction, while the water for cooling the beer passes in the opposite direction.



Claim.—The combination of the series of horizontal cylinders B B, having heads C at their ends, and interior heads D D, connected by the tubes E E, the inlet-pipe G, cocks F, pipes H, and water-inlet I, all constructed and arranged substantially as and for the purposes herein set forth.

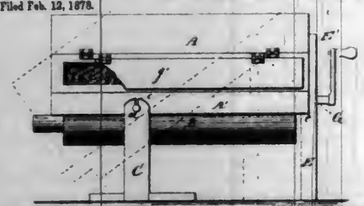
207,365. METHODS OF RIVETING BROKEN ARTICLES OF CHINA, GLASSWARE, &c. Peter Forrester, Washington, D. C. Filed July 2, 1878.



Claim.—1. The wire clasp B, consisting of the straight portion *i* and the arms *i'*, one at each end of the said straight part, forming therewith an angle of sixty degrees, or thereabout, adapted for use substantially as specified.

2. The combination of a broken china, porcelain, or glass object, A, having holes *a* at each side of the fracture directly opposite and inclining toward each other, with the clasp B, having arms *i*, having a less inclination than the holes, and adapted to be forced into said holes, as and for the purpose specified.

207,366. FEATHER-RENOVATORS. Robert E. Gibbons and David H. Ashmore, Bethany, Ill. Filed Feb. 12, 1878.



Claim.—As an improvement in feather-renovators, the tilting frame A', having trunnions *a a*, and supporting the box-cover A and trough B B', in combination with the standards C C and movable stepped prop E, substantially as and for the purpose hereinbefore set forth.

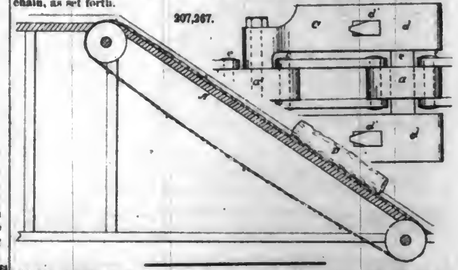
207,367. SAW-MILL APPLIANCES. Robert E. Gleason, Muskegon, Mich., assignor of one-half his right to A. Rodgers, same place. Filed July 15, 1878.

Brief.—For the purpose of obviating the necessity of driving dogs into the logs, and thereby injuring them, the jack-chain is provided with a log-carrier formed of two spurred side pieces, connected at their rear ends by curved cross-pieces, and connected at their forward ends to the chain by a centrally-perforated link.

Claim.—1. The log-carrier or shoe consisting of the two side pieces, provided with upwardly-projecting dogs, and connected at their rear ends by the curved cross-piece, and at their forward ends to the jack-chain by a pivotal connection, substantially as and for the purpose described.

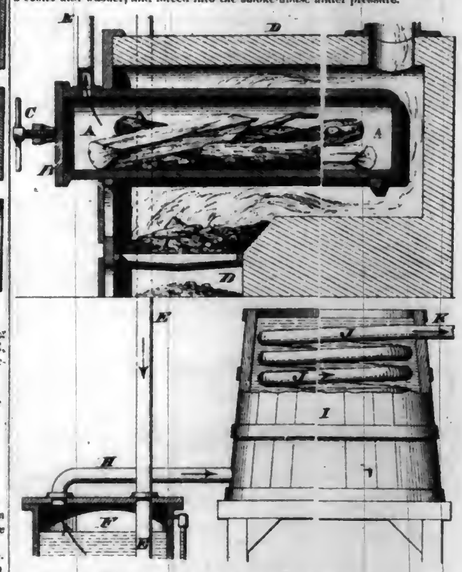
2. The shoe C, in combination with a centrally-perforated link, *e'*, and bolt *e*, arranged so as to give freedom of movement to the shoe upon the jack-chain, as set forth.

207,367.



207,368. APPARATUS FOR PRESERVING MEATS. W. L. Goodin, Cincinnati, Ohio. Filed Feb. 7, 1878.

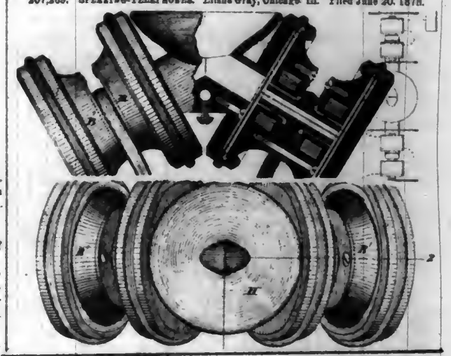
Brief.—By means of a closed retort wood-gas is generated, passed through a cooler and washer, and forced into the smoke-house under pressure.



Claim.—1. The combination, in a meat-preserving apparatus, of the closed retort A B C D, discharge-pipe E, cooler I J, exit K, and smoke-house L, as herein described, and for the purpose set forth.

2. In combination with the closed retort A B C D, discharge-pipe E, cooler I J, exit K, and smoke-house L, the washer F, as herein described, and for the purpose set forth.

207,369. SPEAKING-TELEPHONES. Elisha Gray, Chicago Ill. Filed June 20, 1878.



Claim.—1. A secondary magnet, in combination with a secondary diaphragm, actuated by a primary diaphragm through the intervention of a connecting-rod, substantially as hereinbefore set forth, to increase the electromotive force of the vibrations.

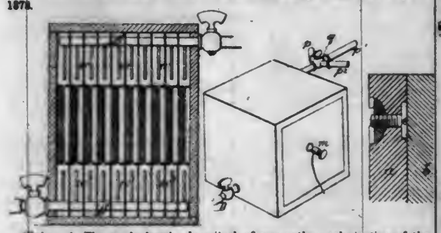
2. In combination, a permanent magnet, diaphragms mounted thereon, and electro-magnets interposed between the diaphragms, so that the diaphragms are actuated by two magnets of similar polarity.

3. In combination, a permanent magnet, a tubular soft-iron core mounted on each of its poles, a wire coil or helix on each side of each pole, and a diaphragm for each helix.

4. The combination, substantially as hereinbefore set forth, of a mouth-piece, a primary diaphragm, a secondary diaphragm actuated thereby, and a solid cap or cover inclosing the secondary diaphragm.

5. The duplex bipolar telephone hereinbefore set forth, consisting of the combination of a permanent horseshoe-magnet, electro-magnets mounted in pairs on each pole thereof, diaphragms similarly mounted, and a bifurcated mouth-piece, with one branch terminating opposite the center of one diaphragm of each set, whereby two diaphragms are operated from each branch of the mouth-piece.

207,370. GALVANIC BATTERIES. William W. Griscom, Philadelphia, Pa. Filed July 13, 1878.



Claim.—1. The mode herein described of preventing polarization of the plates and diminishing the internal resistance of a battery—that is to say, arranging the positive and negative plates of one or more cells in a tube, box, or case, with an intervening space between the plates of each cell, through which space or spaces the excitant liquid is caused to flow continuously and under pressure, all substantially as and for the purpose set forth.

2. The combination of a battery with two or more reservoirs containing different liquids, with communicating pipes, having a cock or cocks for opening the communication of any one of the reservoirs with the battery while the other communications are closed, as set forth, for the purpose specified.

3. The combination, in a battery, of two or more cells arranged in a box or case, as described, with partitions *e* and *e'*, all substantially as specified.

4. The combination of a box or case provided with partitions *e e'*, and containing two or more pairs of plates, as described, with inlet and outlet pipes, having branches with nozzles or tubes, as and for the purpose set forth.

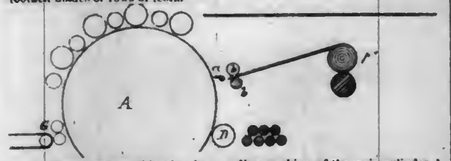
5. The combination of the zinc plate of one cell of a battery and the carbon plate of an adjoining cell with a bolt, I, soldered to or forming a part of plate *a*, all substantially as described.

207,371. PROCESSES OF TREATING BEET-ROOTS FOR THE MANUFACTURE OF SUGAR. Francesco Nicolas Fresen and Louis R. D'Oliveira, Paris, France. Filed Jan. 21, 1878. Patented in France, Sept. 12, 1872.

Claim.—The process of preparing beet-roots for the manufacture of sugar, by treating them in a whole state to the action of boiling water and a bleaching agent, such as oxychloride of calcium, substantially as and for the purposes specified.

207,373. CARDING-MACHINES. Benjamin F. Haigh, Philadelphia, Pa., assignor to Thomas Dolan and R. Williams, Jr., same place. Filed July 16, 1877.

Brief.—For making spotted or tufted yarn. Above the doffer-cylinders, and between them and the top rolls, are arranged a pair of feed-rolls, through which passes the tufting-sliver, it being transferred and laid directly upon the lap on the main cylinder by a revolving "licker-in" provided with one or more toothed blades or rows of teeth.



Claim.—1. The combination, in a carding-machine, of the main cylinder A with the rolls *b b*, for feeding the spotting-slivers, and a rotating licker-in, *s*, provided with one or more rows of teeth, by which tufts are torn from said slivers and laid directly on the lap of the main cylinder, substantially as set forth.

2. The combination of the main cylinder of a carding-engine with a revolving licker-in, *s*, provided with one or more rows of teeth, feed-rolls *b b*, and a drum adapted to deliver the spotting-slivers from a roll, F, substantially as specified.

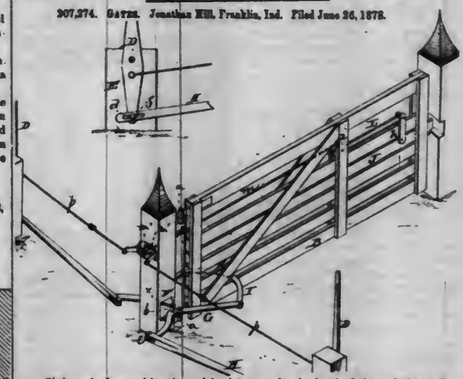
207,373. BALE-TIES. Jos C. Harper, Pittsburg, Pa. Filed July 10, 1878.



Claim.—1. A bale tie or fastening consisting of the staple-shaped clevis having square edges and sides, riveted to the band on one side, and having its rear end passed through the band and its front end extending beyond the end of the band, substantially as and for the purpose specified.

2. The clevis riveted to the band on one side and having overlapping heel and toe projecting, the heel projecting through the band and the toe extending over and beyond the band, in combination with the slotted band fastened thereby, and having a double bearing thereon, substantially as described.

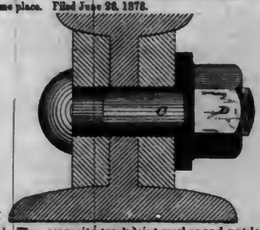
207,374. GATES. Jonathan Hill, Franklin, Ind. Filed June 26, 1878.



Claim.—1. In combination with the gate B, the latch J, bars *h*, lever L, with arm *l*, wires *m*, *m'*, and *p*, elbow-lever O, and operating-lever D, all constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the operating-levers D, wires *p*, arms H, elbow-levers G G and O O, and devices, substantially as described, for connecting said levers, respectively, with the gate and gate-latch, as herein set forth.

207,375. NUT-LOCKS. John S. Hoffecker, Wilmington, Del., assignor to the Vulcanized Fiber Company, same place. Filed June 26, 1878.



Claim.—1. The composite track-joint washer and nut-lock hereinbefore set forth, consisting of the combination of the metal washer and its enveloping vulcanized fiber washer.

2. The combination of the through-bolt, the fish-plate, the nut, the metal washer in contact therewith, and the vulcanized-fiber washer interposed between the fish-plate and the metal washer enveloped by it, for the purposes specified.

3. The improved combined compensating-cushion and nut-lock for railway-track joints hereinbefore set forth, consisting of the combination of the rails, the fish-plates, the through-bolts, the nuts, the metal washers, and their enveloping vulcanized fiber washers, all constructed, arranged, and operating as and for the purpose described.

207,376. CHURNS. Hugh F. Hogan, Albion, Ind. Filed July 6, 1878.

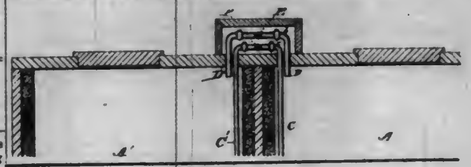
Brief.—Two horizontal and rotating dasher-shafts meeting in a cross-bar of the churn-body, and held in gear, one with the other, in virtue of the journal-bearings in said bar and the latches.



Claim.—The combination of the cross-bar F, having hole *x* and slot *y*, the shafts C C', pinions *c c'*, and dashers D D', with the side latch, *k*, having slot, as shown, and with top latch, *k'*, as and for the purpose set forth.

207,377. APPARATUS FOR CURING MEAT. Daniel L. Holden, Philadelphia, Pa. Filed May 13, 1878.

Brief.—Modified apparatus to be used in the process for curing meat by a circulating current of refrigerated pickle.



Claim.—The combination of the tanks A A', the pipe E, having branch pipes D D', opening into the tops of the two tanks by means of cocks or valves, and the pipe F, having branch pipes C C', opening by means of through valves or cocks into the bottoms of said tanks, substantially as and for the purpose described.

207,278. APPARATUS FOR MAKING ICE. Daniel L. Holden, Philadelphia, Pa. Filed May 13, 1878.

Brief.—Freezes the upper portions of the water contained in the tank by means of the circulating currents of non-congealable fluid reduced below the freezing-point contained in receptacles placed in the tank. The impurities in the water settle to the bottom of the tank, and are drawn off by suitable pipe.



Claim.—1. The method of subdividing large blocks of ice without loss, which consists in freezing rigid blades in said blocks, and then dividing the block by a blow upon the blade, as set forth.

2. The receptacles B for the non-congealable fluid, pivoted at their bottom, and having flexible inlet and outlet connections at the top, and immersed in and combined with the tank A for the fresh water, as and for the purpose described.

3. As a new article of manufacture, a block of ice having a piece of cord frozen into the same to constitute a permanent hand-hold, substantially as described.

207,279. BOTTLE-STOPPER AND SPRINKLER. Thomas J. Helmed, Boston, Mass. Filed May 23, 1878.

Brief.—The shank may be enlarged and be provided with a female thread, so as to screw upon the outside of the bottle-neck. The wall may be omitted and the sleeve prolonged downward, so as to cover the spring, which in this case rests on shoulders on sleeve and tube. The sleeve may also extend above discharge-tube and valve-stem, connected with it at *top*.



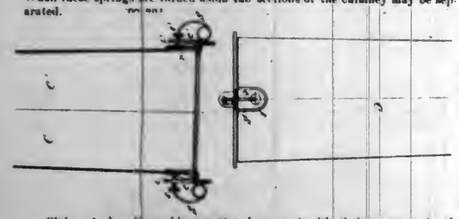
Claim.—1. A bottle-stopper having a valved discharge-tube fixed with relation to the bottle, in combination with a flanged sleeve and spiral spring, surrounding the discharge-tube and serving to operate the valve, substantially as and for the purpose set forth.

2. A tubular stopper having a screw-shank, discharge-tube, and annular surrounding wall, formed integral with each other, in combination with a spiral spring placed between said tube and wall, a flanged sleeve surrounding the tube, and a valve operated by said spring and sleeve, substantially as set forth.

3. A valvular stopper having a screw-shank, whereby the discharge-tube is fixed with relation to the bottle, in combination with a flanged sleeve and spiral spring, surrounding the discharge-tube and serving to operate the valve, and a stop to hold the valve open when desired, substantially as set forth.

207,280. LAMP-CHIMNEY. Samuel B. Inglis, Pittsburg, Pa., assignor of one-half his right to E. T. Jamieson, same place. Filed Mar. 8, 1878.

Brief.—The springs S S' serve to hold the sections in a vertical position. When these springs are turned aside the sections of the chimney may be separated.



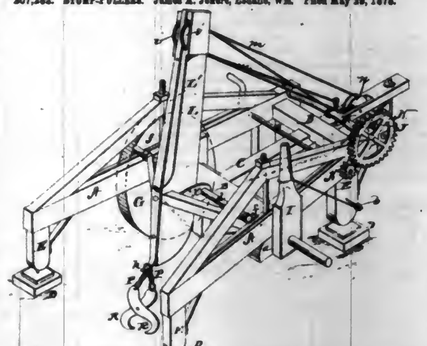
Claim.—1. In a lamp chimney, the clamps *c c'*, with their screws *s s'* and springs *t t'*, and hinged to the frame of the lamp, and the springs S S', maintaining the edges of the half-chimneys together, in combination with the parts C C', as described and set forth.

2. The half-chimney C', provided with a recess, *r*, in combination with the clamp *c'*, as described and for the purpose set forth.

207,281. WATER-PACKERS FOR OIL-WELLS. W. W. Jamieson, Fayburg, Pa., assignor of one-half his right to J. A. Schall, same place. Filed June 8, 1878.



207,282. STUMP-PULLERS. James A. Jeffrs, Eedalia, Wis. Filed May 29, 1878.

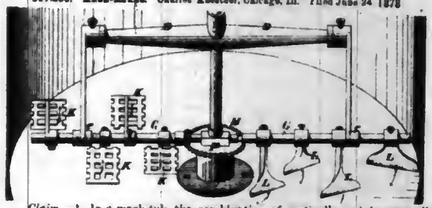


Claim.—1. In a stump-puller, the frame consisting of the side beams A A, with upper truss-work, and the cross-bars B B and center beam C, having lower truss-work, for the purposes herein set forth.

2. In combination with the frame of a stump-puller, the legs E, with feet D, axle F, with wheels G G, the cams *a a* on the axle, and the lever I, substantially as and for the purpose herein set forth.

3. The combination, with the frame of a stump-puller, of the lever L, with straps *c*, rod *d*, bar L', forming hook *h*, the hooks R, with chains P, rope or chain *m*, pulleys *i i* and *n*, and the windlass M, all constructed substantially as and for the purposes herein set forth.

207,283. MASH-RAKER. Charles Kesstner, Chicago, Ill. Filed June 24, 1878.

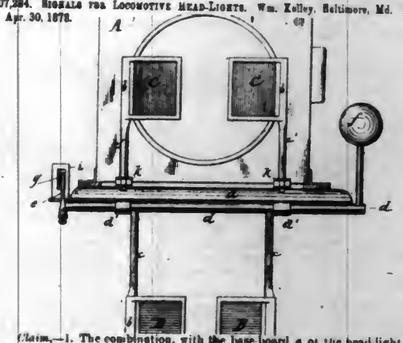


Claim.—1. In a mash-tub, the combination of vertically and horizontally revolving rakes or agitators K and horizontally rotating scrapers L, substantially as and for the purpose specified.

2. In combination with a mash-tub, scrapers L, which are secured upon a fixed arm that revolves around the axis of said tub, and have their faces inclined rearward and toward the circle upon which is located the discharge-opening *b*, whereby the solid contents of said mash-tub may be moved to and caused to pass through said opening, substantially as and for the purpose shown.

3. In combination with a mash-tub, a series of horizontally-rotating scrapers, L, which are alternately set forward and in rear of their support, with their lower ends near the bottom of said tub, substantially as and for the purpose set forth.

207,284. SIGNALS FOR LOCOMOTIVE HEAD-LIGHTS. Wm. Kelley, Baltimore, Md. Filed Apr. 30, 1878.



Claim.—1. The combination, with the base-board *a* of the head-light lantern A, of the swinging colored-glass plates B, mounted upon standards projecting from a shaft supported by said base-board, and operated by mechanism, substantially as described, whereby the said glass plates may be moved under said board and from the face of the lantern, as and for the purpose specified.

2. The combination, with the base-board *a* of the head light lantern A, of

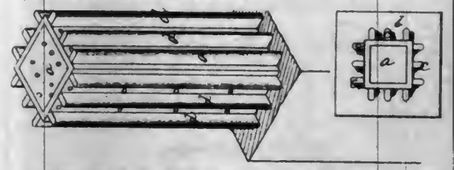
the signal-supporting shaft *d*, bearings *d'*, crank *e*, notched rod *g*, and locking-plate *i*, substantially as described.

3. A glass signal-plate having the frame-work *b*, the upper portion of which is hinged as described, combined with the standard *c*, substantially as specified.

4. The combination of a standard having its upper portion flattened with the frame-work of the signal-plate, provided with a socket and a securing-rivet, substantially as specified.

207,285. CORES FOR CASTING INGOT-MOLDS. E. J. Kelly, Allegheny, Pa., assignor to himself and Wilson Miller, same place. Filed May 24, 1878.

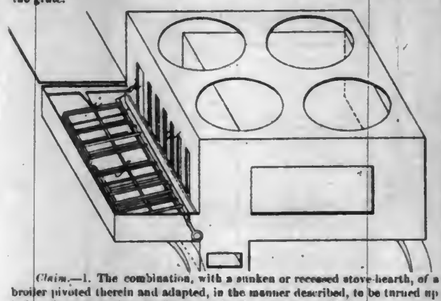
Brief.—Core composed of two parts—sand and metal. On the inner side of the sand part of the core are longitudinal grooves, registering with perforations in the metal portion, to facilitate escape of steam, &c. Grooves made by placing bars on the metal center, and then packing on the mold material, and then withdrawing the bars.



Claim.—The compound core composed of the hollow perforated metallic core-center and the outer covering of core material channeled, substantially as and for the purpose specified.

207,286. BROILER ATTACHMENTS FOR STOVES. John M. Killin, Pittsburg, Pa., assignor to Frank S. Bissell, same place. Filed July 25, 1878.

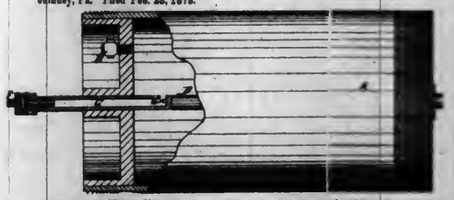
Brief.—This device is kept stored within the sunken stove-hearth and concealed by the cover thereof, and when in use is simply turned up before the grate.



Claim.—1. The combination, with a sunken or recessed stove-hearth, of a broiler pivoted therein and adapted, in the manner described, to be turned up before the grate, substantially as and for the purpose specified.

2. The combination, with a range or stove, of the depressed hearth, a detachable drip-pan, and pivoted broiler, and the movable cover pivoted to the stove and adapted to inclose the broiler within the hearth for storage thereof, substantially as and for the purpose specified.

207,287. ROLLERS FOR PAPER-MAKING AND OTHER MACHINES. Frank A. B. Keens, Shickshinny, Pa. Filed Feb. 23, 1878.



Claim.—1. The roller for paper-making machines and other purposes provided with a hollow flexible body unsupported by rigid material, as and for the purpose set forth.

2. The roller having a hollow flexible body and containing fluid confined or under pressure, as and for the purpose specified.

3. The combination of the shaft D, heads C, channel G, and flexible hollow body A, secured to the heads, all substantially as set forth.

207,288. NECK-TIE FOLDERS. William A. Laverty, Philadelphia, Pa., assignor to Thomas D. Laverty, Camden, N. J. Filed June 1, 1878.



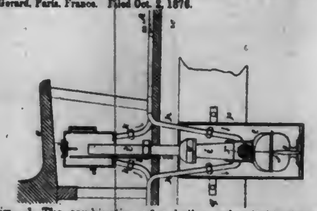
Claim.—1. A device for folding or molding tycoon neck-ties, consisting, essentially, of rigid plates C and D and a hinge-piece or textile strip, B, substantially as shown and described.

2. In combination with rigid plates C D and a textile strip or hinge-piece, B, the gage E, substantially as shown and described.

3. In combination with the textile strip B and plate C', the base-board A, substantially as shown and described.

4. The combination of base-board A, textile strip or hinge-piece B, plates C D, and pins *a a' a'*, substantially as shown and described.

207,289. APPARATUS FOR HEATING RAILWAY-CARRIAGES, &c. L. F. J. Lemeunier and Emile Gerard, Paris, France. Filed Oct. 2, 1876.



Claim.—1. The combination of a boiler and suitable furnace arranged under a car or chamber floor, a pipe extending upward and into a distributing-reservoir arranged above said floor, and a pipe or pipes leading from said reservoir to a circulating-radiator, constructed substantially as described, inclosing an air-chamber, and arranged upon the floor, substantially as set forth.

2. The combination of boiler *i*, having central flue, *g*, lamp *f*, pipe *i'*, distributing-reservoir *d*, pipes *k*, circulating-radiator A, and pipes *h*, substantially as set forth.

3. The hot-water-circulating compartments *a b*, arranged side by side upon a floor, and having between their inner sides, and beneath their connected inward projections, the air-heating passage *c*, substantially as set forth.

4. The lamp *f*, hung in a suitable case beneath a car-floor, in combination with water-jacket boiler *i*, having an enlargement, *e*, and flue *g* thereunder, substantially as and for the purpose set forth.

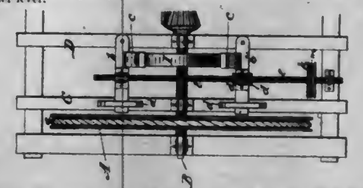
207,290. APPARATUS FOR MAKING ICE. Ernest P. Lorch, New Berne, N. C. Filed May 17, 1878.



Claim.—The combination of a tank filled with non-congealable fluid with a series of pipes, *c*, arranged in the bottom thereof, a second series, *c'*, arranged in the top, and the connecting pipes *d*, arranged so as to form racks for the water-pans *e*, which are surrounded on all sides by the said pipes, the volatile fluid being forced into the lower series of pipes, *c*, and drawn off in the form of vapor from the upper series, *c'*, substantially as set forth.

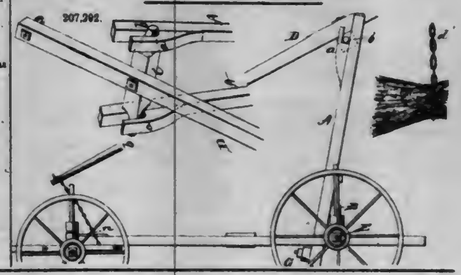
207,291. ELEVATOR-BRAKES. Robert Marshall, Pittsburg, Pa. Filed June 26, 1878.

Brief.—The draw-rod operating the levers carrying the brake-shoes is threaded into one of the levers, and provided with collars by which to move the other lever.



Claim.—The combination of main pulley A, shaft B, and brake-pulley I with the shoes *c*, pivoted levers *b b'*, shaft *e*, wheel *k*, and rope *m*, said shaft *e* being threaded into lever *b* and connected with lever *b'* by collars *d' d*, substantially as described, whereby the rotation of the shaft *e* gives a direct pull on levers *b b'*.

207,292.



207,292. PORTABLE DERRICKS. Robert McCord, Jr., and George W. Alexander, Vincennes, Ind. Filed July 25, 1878.

Claim.—The combination of the inclined uprights A A, connected by the cross-bars B C and formed with the open hooks or bearings *a a*, the rock-shaft C, with journals *b b*, and lever D, with chains *d s*, all arranged upon a wagon, substantially as and for the purposes herein set forth.

207,293. BRICK-MAKING MACHINERY. Wm. Mendham, Philadelphia, Pa., assignor to Cyrus Chambers, Jr., same place. Filed May 13, 1878.



Claim.—1. The screw-case lining B, made in a separate casting from the shell of the case, and inserted in it, so as to be removable for renewal when worn, as described.

2. The sand-box T, provided with the elastic scrapers *a b c*, arranged and operating as set forth.

3. In combination with the sand-box T, the roller U, for applying sand to the surface of the clay bar, as specified.

207,294. GRAIN-SCOURERS. George Moench, Rushville, Ill. Filed July 16, 1878.

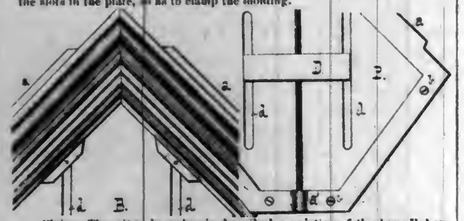


Claim.—1. In a grain-scourer, the rotary drum A, having its periphery shingled or wholly covered with inclined, overlying, or overlapping independent strips, substantially as specified.

2. The combination, in a grain-scourer, of the leather-lined casing B and the leather-shingled drum A, rotating therein, substantially as specified.

207,295. MITER-CLAMPS. Felix P. Moser, Salem, Ill. Filed Mar. 6, 1878.

Brief.—Picture frame mouldings can be securely held, while being nailed, by means of a frame or plate having flanges at right angles thereto and inclined at any desired angle to each other, and having threaded bosses upon its under side, and slots parallel to a line bisecting the angle of the flanges, a cross-piece carrying swiveling serrated jaws and a threaded socket, and a threaded rod working in said bosses and socket, for the purpose of adjusting the jaws in the slots in the plate, so as to clamp the molding.



Claim.—The miter-clamp herein described, consisting of the base B, having slots *d d* and flanges *a a*, and the bar D, having swiveling serrated pieces E and mechanism for producing pressure therefrom upon the molding in a direction parallel to the line bisecting the angle of the flanges, substantially as described.

207,296. STOVES. John B. Oldershaw, Baltimore, Md. Filed July 26, 1878.



Claim.—1. A magazine-stove having an unobstructed flue leading from the upper part of the magazine to a smoke-flue, and extending into it in a line parallel, or nearly so, therewith, substantially as described.

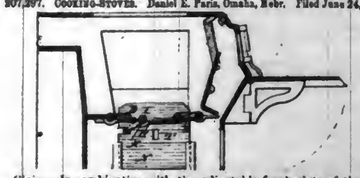
2. An open-grate stove having a magazine opening to the front and a gas flue contiguous therewith, and leading therefrom to a point in the interior of the smoke-flue, substantially as described.

3. The combination, with the grate and open front of the stove, of the plate D, adapted, as described, to shoot the falling ashes and cinders into the ash-pit, substantially as set forth.

4. A stove having a swiveled grate-plate, D, arranged in the manner described, so as either to partially obstruct the draft or to subserve the functions of an ash-chute, substantially as set forth.

5. A magazine-stove having a gas-flue leading from the magazine to the smoke-flue, and opening into the latter in a line parallel to its axis and in the direction of the natural draft therethrough, as described.

207,297. COOKING-STOVES. Daniel E. Faris, Omaha, Nebr. Filed June 24, 1878.



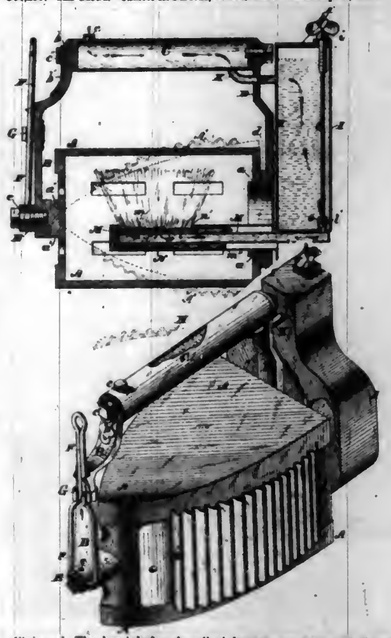
Claim.—In combination with the adjustable front plate of the fire-box, a door pivoted to the upper edge of the fuel-aperture, and provided with lugs connected to downwardly-extending links, secured at their lower ends to lugs on the adjustable front plate, whereby said front plate may be thrown forward when said door is opened, and form a guide for the introduction of fuel, and to increase the area of the top of the fire-pot for broiling purposes.

207,298. HEATING ATTACHMENTS FOR STEAM-BOILERS. Horace Park, Keaton, Ohio. Filed May 15, 1878.



Claim.—The feed-water heater or mud-drum A B C, provided with central water-inlet *d*, top outlet *f*, and bottom blow-off *e*, all constructed and arranged substantially as shown, and for the purposes described.

207,299. SAD-IRONS. Charles H. Parsons, Boston, Mass. Filed July 19, 1878.



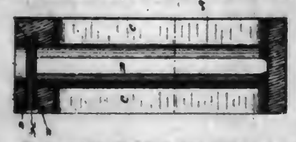
Claim.—1. The hereinbefore-described burner, consisting of the slotted pipe *L l*, the pipe *M*, having a wire-gauze-covered opening, *m*, the absorbent packing *m''*, interposed between said pipes, and the cover N, provided with the opening *n'* and operating arm *n*, all combined to operate in the manner and for the purpose substantially as shown.

2. As a means for connecting the burner and reservoir with the sad-iron, the square stud *c'*, provided with the groove *c''*, and fitted into the opening *b* in the arm B, and the locking-plate *b'*, pivoted upon said arm and capable of engagement with said groove, all combined substantially as and for the purpose shown and described.

3. As a means for rotating the sad-iron to and securing the same in position, the block E, having radial openings *e* and secured upon the trunnion *a'*, the spring-handle F, provided with hooked ends *f*, which are capable of engagement with said openings *e*, and the spring-catch G, attached to the arm B and arranged to engage with said handle, all combined substantially as specified.

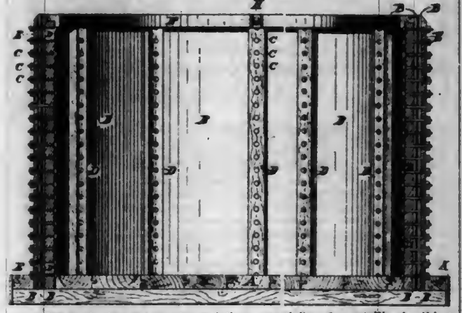
4. The hereinbefore-described reversible sad-iron and fluter, consisting of the sad-iron A, having the opening *a* and trunnion *a'*, the arms B and D, the handle C, the block E, having radial openings *e*, the spring-handle F *f*, the catch G, the corrugated sides A', the corrugated base H, the reservoir I, the pipes K and L, and the burner, all constructed and combined to operate in the manner and for the purpose substantially as set forth.

207,300. COIN-HOLDERS. Henry G. Pearson, New York, N. Y. Filed Aug. 6, 1878.



Claim.—The hereinbefore-described holder A, formed with slots B and C and countersinks D, and provided with a locking-pin, H, as shown and described.

207,301. STORING-TANKS. Frederic E. Plumbly, Buffalo, N. Y. Filed June 8, 1878.



Claim.—1. A storing-tank consisting, essentially, of a metallic sheathing composed of sections, an interior wooden framing constructed of pillars and an upper rim, and a suitable bottom, the sections in the sheathing being arranged to overlap each other, and being secured together individually and to the framing by means of bolts passing through the pillars, the sheathing, and slats placed on the exterior of the sheathing, all as hereinbefore set forth and described, for the purpose stated.

2. In storing-tanks, an overlapping seam in the sheathing, having slats D E, arranged as described, and the bolts passed through the sheathing and slats, a strip of elastic material being interposed between the overlapping ends of said sheathing, as and for the object stated.

3. A storing-tank having a bottom, A, provided with a segmental rim, A', placed in the interior of the shell B, and the clamping-band K on the exterior thereof, said parts being united by bolts C', passing through the rim A', shell B, and a band, J, around the lower exterior extremity of said sheathing B, as and for the object specified.

4. In storing-tanks, the bottom A, secured together by the band K, and having the segmental rim A' secured to its face, in combination with the sheathing B, fastened to said rim by screws passing through the rim, the sheathing, and a band, J, on the exterior of said sheathing, the segmental rim A' being rendered expansible, substantially in the manner as and for the purpose stated.

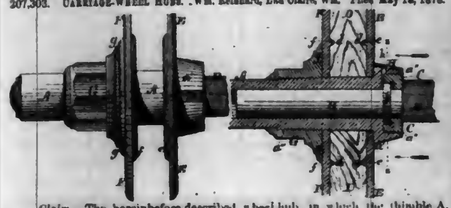
5. The storing-tank hereinbefore described, consisting of the bottom A, the sheathing B, pillars D, rim F, and exterior slats E, said sheathing B being secured to the posts, as described, and the rim F provided with an expanding device, consisting of the right-and-left hand screw-bolt, engaging suitable nut-plates on the abutting ends of said rim, as and for the use and purpose specified.

207,302. EPITHEMS. Benj. A. Prophet, Center Township, Greene County, Mo. Filed May 14, 1878.

Brief.—One part, by weight, of copperas and calomel are mixed in a mortar with two parts of recent *Lycopus*, or bugle-weed, and applied as a poultice to the wound.

Claim.—The medical compound composed of calomel, copperas, and *Lycopus*, or bugle-weed, as herein described, and for the purpose set forth.

207,303. CARRIAGE-WHEEL HUBS. Wm. Reichard, Eau Claire, Wis. Filed May 13, 1878.



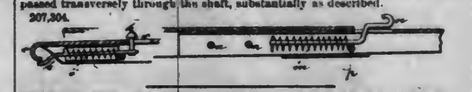
Claim.—The hereinbefore-described wheel-hub, in which the thimble A, having the central opening *a*, enlarged inner end *a'*, threaded recess *a''*, and threaded periphery *a'''*, the sectional nut C, provided with the recess *c*, the collars E and F, having concentric ribs *e* and *f*, respectively, upon their contiguous faces, and the nut G, provided with a flanged inner end, are constructed and combined with each other and with the axle-arm B *b* and spokes D *d*, in the manner and for the purpose substantially as shown.

207,304. WAGON POLES AND SHAFTS. Francis Rice, Craigville, N. Y. Filed Feb. 23, 1878.

Claim.—1. The U-shaped metallic shafts, the rear ends of which are formed with eyes *c*, in combination with the bolt *b*, slide *b'*, and spring *i*, substantially as described.

2. The U-shaped metallic shafts having a yielding draft, consisting of a draft-hook, *n*, shank *m*, extending rearwardly through the spring, and bolt *p*, passed transversely through the shaft, substantially as described.

207,304.



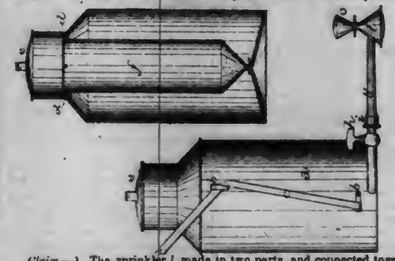
207,305. WINDOW-SASHES. Alexander Rudolph, New York, N. Y. Filed July 12, 1878.

Brief.—Sashes are pivoted on vertically-sliding guide-pieces, and have rounded projections fitting into recesses in the guide-pieces to secure them. The guide-pieces yield transversely in the guideways in the stiles on the pivot-pins, and are held against the sash by springs.



Claim.—The combination of the sash B, which has the projections *g g'*, with the guide-pieces *a a*, having the countersunk recesses A *h'*, and with the springs *e*, substantially as and for the purpose herein shown and described.

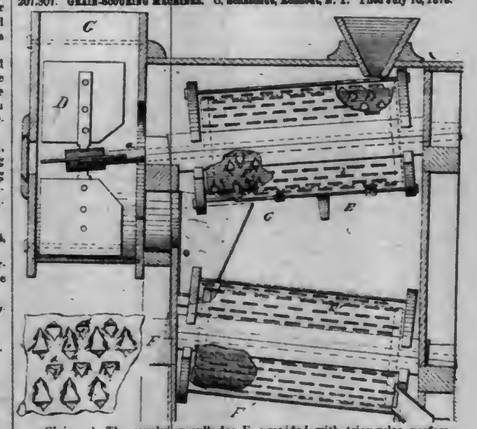
207,306. INSECT-DESTROYERS. Patrick S. Ryan, Rutland, Vt. Filed July 16, 1878.



Claim.—1. The sprinkler *l*, made in two parts, and connected together by an air-tight joint, the upper part, *o*, forming an air-chamber, substantially as shown.

2. The combination of the can *a*, strainer *f*, supported by the flange *d*, pipes *g*, cocks *h*, and sprinklers *l o*, substantially as described.

207,307. GRAIN-SCOURING MACHINES. C. Schaschke, Rondout, N. Y. Filed July 10, 1878.



Claim.—1. The revolving cylinder F, provided with triangular perforations *c* and lips *d*, having their rough edges outward, in combination with the stationary cylinder E, having elongated perforations *b*, with their rough edges *e* inward, substantially as and for the purposes herein set forth.

2. The combination of the revolving cylinder F, having triangular perforations *c* and lips *d*, the exterior stationary cylinder E, having elongated perforations *b*, the cylinders F' F'', fan D, slide G, and the frame with hoppers and spout, all constructed substantially as and for the purposes herein set forth.

207,308. CALIPERS. Anton Schmitter, Paterson, N. J. Filed July 23, 1878.



Claim.—A caliper provided with the removable fingers F G, the outer faces of which are adapted to rest against and stand in line with the inner faces of fingers B C, whereby an outer dimension and corresponding inner dimension may be taken or tested without moving the slide, substantially as described.

207,308. SNAP-HOOKS. John C. Schneider, Chicago, Ill. Filed July 29, 1878.



Claim.—In a snap-hook, the combination, with the shank *a*, having the slot *c* and lugs *d* cast therewith, of the latch E, with bifurcated end *g*, pivoted at one end between said lugs *d*, and having the guide *e* and the spring F secured in recessed shoulder *f* on said latch E, substantially as described and shown

207,310. PADLOCKS. Herman Schroeder, St. Louis, Mo., assignor to Ernst H. Verdriede, same place. Filed July 3, 1878.

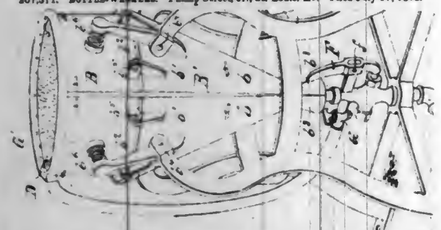


Claim.—1. In a padlock, the combination of a vertically acting tumbler having the angular slot, as specified, the bolt device carrying a pin by means of which the said bolt can be operated to produce the unlocking action, substantially in the manner and for the purpose set forth.

2. In a padlock, the combination of the bolt device, consisting of a pivoted catch and arm, the latter carrying a pin that projects through the angular slots in the tumblers, the vertical acting tumblers having angular slots, and the additional slot d^3, whereby the unlocking action of the bolt is prevented, in the manner and for the purpose set forth.

3. The improved padlock consisting of the casing A, the bolt C, having catch *c*, arm c^1, and carrying-pins c^2, the tumblers *d* d^1, having the slots d^2 d^3, that of *d* having the additional slot d^3, and the springs E E', all said parts being combined to operate by means of a key, in the manner and for the purposes set forth.

207,311. BOTTLE-WASHERS. Phillip Seibel, Jr., St. Louis, Mo. Filed July 17, 1878.

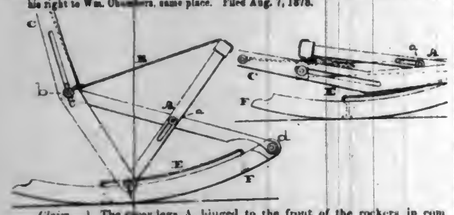


Claim.—1. A bottle-washer consisting, essentially, of the stationary cylinder and funnel chamber parts, the latter operating a lever to open and close a valve arranged below, and by means whereof the supply of water can be let on or shut off, in the manner and for the purposes set forth.

2. The funnel shaped chamber B', consisting of separate sections *b*, having the arms b^1, the lugs b^2, the cylindrical chamber B, and springs b^3, said parts being combined to operate in the manner and for the purposes set forth.

3. A bottle-washer consisting of the cylinder B and funnel parts B', having the sponges D, said parts being hinged together, as described, the perforated pipe G', hose *g*, cock G, and valve-gearing consisting of the valve e^2, with stem, the passages e^1 e^2, the spring *f*, the pivoted lever F, and nozzle pipe, all said parts being combined and constructed to operate in the manner and for the purpose set forth.

207,312. FOLDING ROCKING-CHAIRS. H. B. Smith, Philadelphia, Pa., assignor of one-half his right to Wm. Chambers, same place. Filed Aug. 7, 1878.



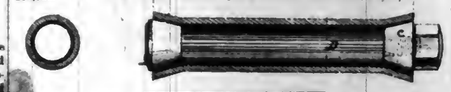
Claim.—1. The cross-legs A, hinged to the front of the rockers, in combination with the back C, extended downwardly, pivoted to the cross-legs, and connected to the rockers by sliding joints, whereby the cross-legs and back fold toward the front end of the rockers, substantially as and for the purpose set forth.

2. The folding rocking chair consisting of the cross-legs A, seat B, rockers F, guides K, and the back C, extending downwardly to and connected to the rockers and cross-legs, substantially as and for the purpose set forth.

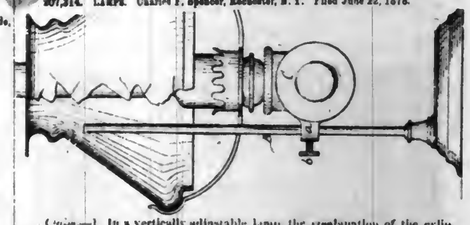
207,313. SHAFTS AND JOURNALS. Alfred E. Smith, Bronxville, N. Y. Filed Feb. 21, 1878.

Claim.—The combination of a shaft or journal, its bearing, and an elastic bearing surface with a dry lubricating-powder, such as plumbago or graphite, incorporated with or applied to the elastic bearing-surface, substantially as and for the purpose described.

207,313.



207,314. LAMPS. Charles F. Spencer, Rochester, N. Y. Filed June 22, 1878.



Claim.—1. In a vertically adjustable lamp, the combination of the cylindrical lamp-body C, provided with the bearing *a* on its back side, and the standard B set on one side of its supporting base, the bearing sliding on the standard and being secured by a set-screw, the whole arranged as described, so that the lamp body rests over the center of the supporting-base to properly balance the lamp, as herein shown and described.

2. In a vertically adjustable lamp, the standard B, set on one side of its supporting base, in combination with a cylindrical lamp body sliding thereon, arranged with a central burner and shade, the said standard passing up through the shade, as herein shown and described.

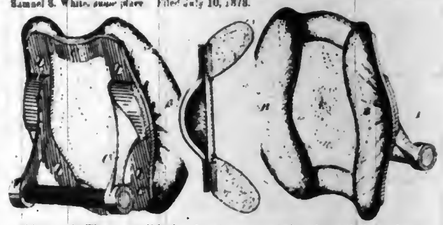
207,315. DEVICE FOR DRIVING NAILS UNDER WATER. William Stack, Oakland, Cal. Filed July 6, 1878.

Brief.—A tube with a serrated lower edge is fastened to the board to be nailed. A nail is then dropped into the tube, and a rod reaching above water is placed on the nail head and the nail driven by blows on the upper end of the rod.



Claim.—An apparatus for driving nails or screws beneath the water, consisting of the guiding-tube A, having the notched or serrated holding-foot B, in combination with the rod or driver C, the whole constructed to operate substantially as herein described.

207,316. HEAD-RESTS FOR DENTAL CHAIRS. Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place. Filed July 10, 1878.



Claim.—1. The reversible head-rest constructed, substantially as herein before set forth, with a depressed central portion, curved, padded, or cushioned sides, the space between which diminishes gradually from the center toward each end, and depressed ends to support the neck of the patient.

2. The combination of a reversible head rest frame, provided with curved, padded, or cushioned sides to afford an easy rest for the head, which sides taper off toward each end, and terminate in depressions to receive and afford a rest for the neck, with a skeleton metallic backing secured to and supporting the head-rest frame, substantially as described.

3. The improved head rest herein before described, consisting of the inside frame, provided with upholstered, curved, padded, or cushioned sides, a metallic backing corresponding in shape to the upholstered frame, bracket-arms projecting from said metallic backing, and a supporting-bar which has its bearings in the bracket-arms on one side of a central line drawn transversely through the frame.

207,317. AUTOMATIC LAMP-LIGHTING DEVICES. F. G. Stephenson, Plainville, Conn. Filed Mar. 23, 1878.

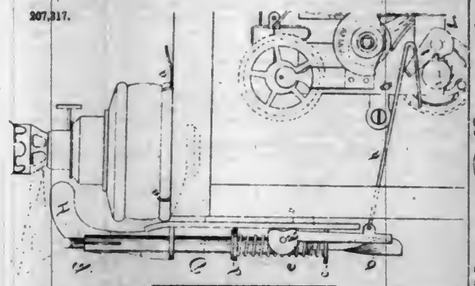
Claim.—1. In combination with the mechanism of a lamp-lighter, the connecting-rod *h*, rotating stop *i* on the main shaft of the alarm, and the lever *j*, operated by said stop to pull the rod *h* when the alarm starts, substantially as described.

2. In a lamp-lighter, the rod D, carrying the match-holder, said rod being flattened and twisted, whereby it makes a quarter turn simultaneously with its rising movement, substantially as described, and for the purpose specified.

3. In a lamp-lighter, the match-holder F, formed of two thin plates, and pivoted in the split end of the rod D, substantially as described, and for the purpose specified.

4. The combination of the spring-actuated friction-pad H, holder F, rod D, spring *c*, lever E, and mechanism operated by the alarm-spring to trip said lever at the proper time, substantially as described, and for the purpose specified.

207,317.



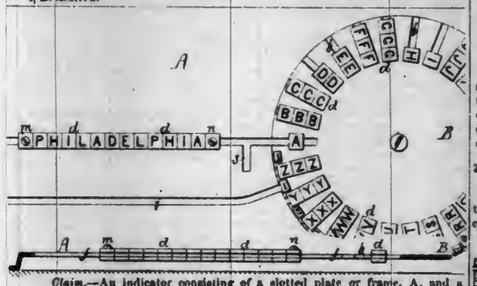
207,318. FOUNTAIN-PENS. Wm. W. Stewart, Brooklyn, N. Y. Filed July 16, 1878.



Claim.—A reservoir or fountain pen holder the barrel whereof is provided with short slots or perforations, arranged in rows longitudinally, substantially as and for the purpose set forth.

207,319. INDICATORS. James Tatham, Philadelphia, Pa. Filed July 24, 1878.

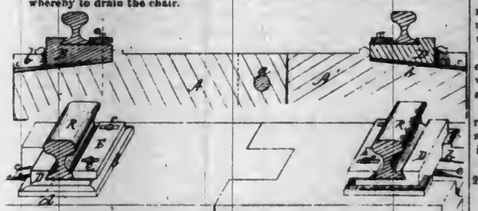
Brief.—The type-disk B may be turned in either direction, to bring the required "letters" or "numbers" in line with the word-slot *f* or number-slot *i*, as desired.



Claim.—An indicator consisting of a slotted plate or frame, A, and a rotating slotted disk, B, carrying type-blocks, which can be moved from the slots of the disk into the slot or slots of the plate, all substantially as set forth.

207,320. RAILWAY CROSS-TIES. John H. Thompson, Grand Junction, Iowa, assignor to himself and Wm. H. Hager. Filed June 22, 1878.

Brief.—Metallic cross-ties having grooved and inclined chair-seats, whereby to drain the chair.



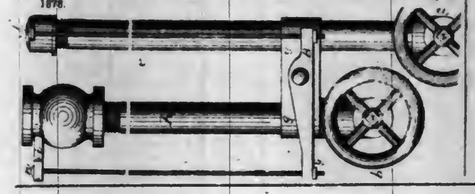
Claim.—1. The metallic cross-tie provided with the sloping chair seat adapted to drain the chair, substantially as and for the purpose specified.

2. The metallic cross-tie provided with the grooved or guttered and sloping chair-seat, substantially as and for the purpose specified.

207,321. FOUNDERS' FACINGS. Abel Wainwright, Spring City, Pa. Filed June 8, 1878.

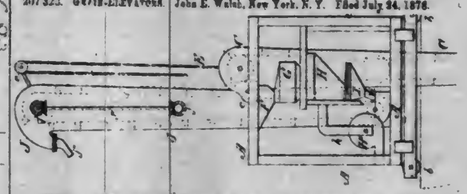
Claim.—The combination of graphite or plumbago and anthracite, forming founders' facings, substantially as and for the purpose set forth.

207,322. LOW-WATER INDICATORS. James L. Walker, Tarentum City, Pa. Filed July 13, 1878.



Claim.—The combination of the two sacks *a b*, tubes *c A*, rods *e k*, knobs *f*, lever B, and an alarm or whistle, substantially as described.

207,323. GRAIN-ELEVATORS. John E. Welsh, New York, N. Y. Filed July 24, 1878.

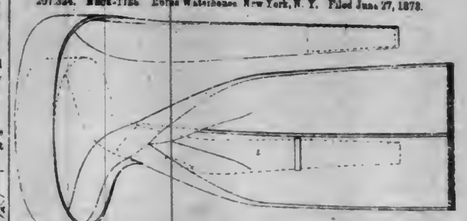


Claim.—1. The portable frame A, bracing the elevating devices C and J, and the intermediate weighing hopper H and cooling-chamber H, substantially as and for the purposes described

2. The sliding elevator J', in combination with the high fixed elevator J, substantially as and for the purposes described.

3. The fan-blower H' and chamber H, in combination with the sliding elevator C, substantially as and for the purposes described.

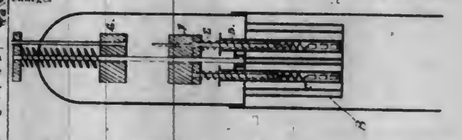
207,324. HOSE-TIES. Enos Waterhouse, New York, N. Y. Filed June 27, 1878.



Claim.—A neck scarf having a wide breast portion or front composed of two parts, of equal, or nearly equal, width, and a neck band and fastening end formed in continuation of one of the parts of said front, with a pin, keeper, and end-stiffener, or equivalent fastening devices, said parts being constructed and combined to represent an unknotted loose scarf, for use in connection with an ordinary scarf-ring, substantially as herein specified.

207,325. TORPEDOES FOR OIL-WELLS. Prosper E. Wollman, St. Petersburg, Pa. Filed May 21, 1878.

Brief.—The torpedo is provided with firing-tubes of different lengths, and these may be brought into use successively upon failure of the first to fire the charge.

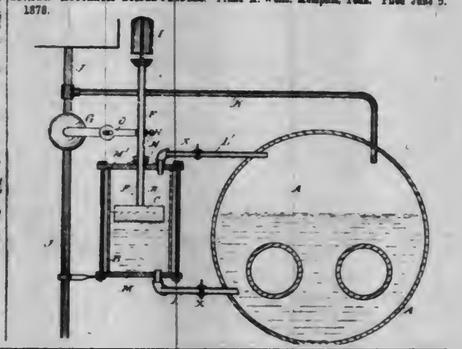


Claim.—1. The combination, in a torpedo, of the double series of perforated tubes, their plungers or hammer-rods, provided with springs on their upper portion, and upon their lower portion between the caps and the ends of said plungers, for the purpose set forth and described.

2. The combination, in a torpedo, of the short tubes, with their plungers or hammer-rods, the long tubes and their hammer-rods, with their co-operating weights, springs, and cap, constructed and arranged to operate in the manner set forth and described.

3. In a torpedo for oil-wells, the combination of the outer cylinder B, series of perforated cylinders C, inner perforated cylinders D, having caps *c*, and their plungers or hammer-rods, provided with springs, arranged to operate in the manner set forth and described.

207,326. AUTOMATIC BOILER-FEEDERS. Frank A. Wells, Memphis, Tenn. Filed June 5, 1878.



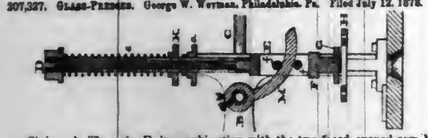
Claim.—1. The combination, with a steam-boiler, of a float-chamber, formed of glass, in order to expose the float fully to view, and communicating with the boiler by separate pipes L L', below and above the proper water-line.

2. The balanced valve G, formed with a number of ports, and surrounded by a chamber through which water flows into and through it, so as to balance the pressure, in combination with the float-rod F and jointed connecting-arm O, as and for the purpose stated.

3. The tubular float-rod F, carrying the whistle I, and perforated at H, so as to pass steam to the whistle when the perforation descends into the float-chamber, as shown.

4. The combination, with a boiler, A, of a float-chamber, B, connecting-pipes L L', float C, rod F, arm O, and balanced supply-valve G, substantially as and for the purposes set forth.

207,327. GLASS-PRESSER. George W. Wetman, Philadelphia, Pa. Filed July 12, 1878.

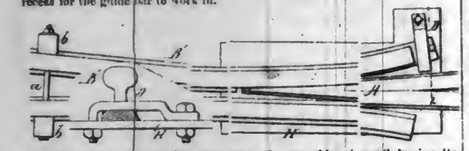


Claim.—1. The yoke E, in combination with the two-faced curved arm M and rollers *f* on opposite faces of said arm, substantially as and for the purpose set forth

2. The yoke E, with rollers *f* and the two faced curved arm M, in combination with presser or head G, spring *e*, follower H, and rods J, substantially as and for the purpose set forth.

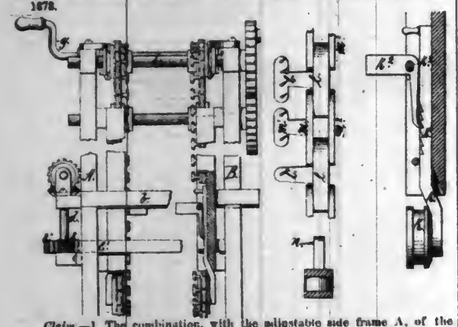
207,328. RAILWAY-FROGS. William Wharton, Jr., Philadelphia, Pa., assignor to the Wharton Railroad Switch Company, same place. Filed June 12, 1878.

Brief.—To prevent the vertical displacement and lateral tilting of the movable wing-rail, its tread and web are removed at or near the end to form a recess for the guide bar to work in.



Claim.—The combination, in a frog, of a movable wing-rail, having its tread and web portion removed at or near its end to form a recess, *x*, with the guide D, adapted to the said recess, as set forth.

207,329. CLOTH-DRYING MACHINES. Jos. S. Winsor, Providence, R. I. Filed Feb. 18, 1878.

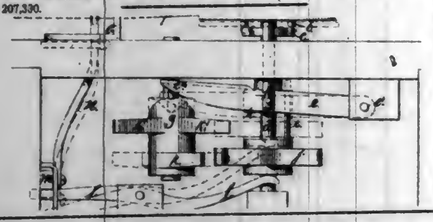


Claim.—1. The combination, with the adjustable side frame A, of the racks E', pinions F, shafts *d d* and C, the shafts being connected by bevel-gears arranged to adjust the width of the drying-chamber, substantially as described.

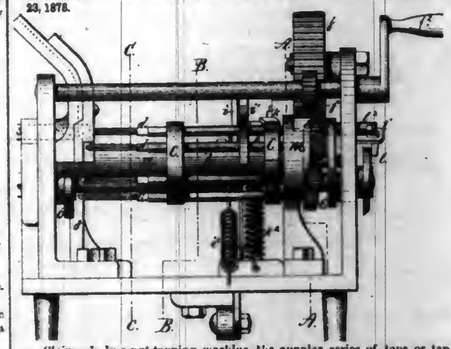
2. In combination with the frame A, hinged chain-guides *f f*, and chain-pulleys *h h*, the shaft *g*, carrying the screws g^1 g^1, one of which is rigidly secured to the shaft, the other being free to slide thereon, and the nuts g^2 g^2, whereby the stretch of the cloth is regulated and provision is made for adjusting the frame, as and for the purpose set forth.

3. The combination, with the slide k^1, provided with a chain-wheel, *k*, and a ratchet, of the weighted and hinged pawl k^2, arranged to support said slide, substantially as and for the purpose described.

207,330.



207,331. MACHINES FOR TAPPING NUTS. Joseph S. Winsor, Providence, R. I. Filed Jan. 23, 1878.



Claim.—1. In a nut-tapping machine, the annular series of taps or tap-spindles, each of which latter is loosely supported in intermittingly-revolving heads or disks, and is adapted by connecting mechanism to tap a nut and then automatically withdraw the tap from said nut, substantially as set forth.

2. The combination, with an annular battery of taps or tap-spindles, which latter are loosely supported in intermittingly-revolving heads or disks, and respectively adapted to tap a nut and automatically withdraw the tap from each tapped nut, of mechanism for adjusting said taps in line to re-enter the nut-holding groove, substantially as set forth.

3. The combination, with an annular battery of taps or tap-spindles, which latter are loosely supported in intermittingly-revolving heads or disks, the same being adapted to tap a nut and automatically withdraw the tap from such tapped nut, of mechanism whereby each cutting-tap is respectively pressed against the nut, substantially as set forth.

4. The combination, with an annular battery of taps or tap-spindles, which latter are loosely supported in intermittingly-revolving heads or disks, and adapted by connecting means to simultaneously tap a nut with one tap and automatically withdraw another one of its taps from a tapped nut, of respective mechanism, as described, for pressing the cutting-tap against its nut, and for adjusting each tap, after it is withdrawn from the nut, so that it may be in line to re-enter the nut-holding groove, substantially as set forth.

5. The combination, with the intermittingly-revolving annular battery of taps or tap-spindles, which latter are loosely supported in suitable bearing-heads, of the spring-retracted follower, which bears against each cutting-tap as the same comes in line therewith, substantially as set forth.

6. In a nut-tapping machine, the combination, with the intermittingly-revolving annular battery of taps or tap-spindles, each of which latter is adapted by the described connecting mechanism to have rotation in opposite directions, as required, to thread into and unthread from the nut, of the stationary cam, which, by engagement with the gears respectively formed on the driven ends of said taps or tap-spindles, adjusts the taps in line to enter the nut-holding groove, substantially as set forth.

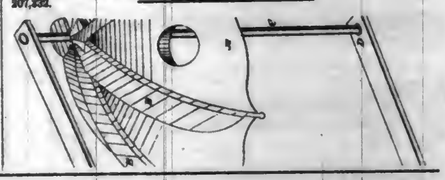
7. In a nut-tapping machine, the combination, with the intermittingly-revolving annular battery of taps or tap-spindles, each of which is loosely supported in suitable bearing-heads and formed with gear-pinions on their driven ends, of the system of gear-wheels, which revolve in opposite directions and respectively engage with said pinion-gears as the battery has intermittent revolution about its longitudinal axis, substantially as set forth.

8. The combination, with the intermittingly-revolving battery of taps, of the nut-feeding device, provided with channel *n*, which connects with a suitable receptacle, and the circular groove *n'*, both said channel and groove being adapted by their sectional area to prevent the nuts from turning during their passage through the same, substantially as set forth.

9. In a nut-tapping machine, the combination, with the automatic feeding device, of the nut-holding device, the latter consisting of the reciprocating follower, the horizontal spring-bar connecting therewith, and the cam, which latter is formed, as shown, to give the required movement to said follower by engagement of the spring-bar therewith, substantially as set forth.

10. In a nut-tapping machine, an annular series of taps, adapted by automatic mechanism to have intermittent axial revolution to tap a nut and to withdraw the tap therefrom, in combination with an automatic nut-feeding device, which latter is provided with a nut-holding groove, in which all the cutting-taps respectively work, substantially as set forth.

207,332.



207,332. UMBRELLA-SIGNS. Wm. B. Wertman, Louisville, Ky. Filed June 10, 1878.

Claim.—A metallic umbrella-sign having the projecting blades B B B, with supports allowing the same to revolve, substantially as shown and described.

207,333. APPARATUS FOR HATCHING FISH-EGGS. I. H. Wright, Baltimore, Md. Filed June 22, 1878.



Claim.—1. A weighted fish-egg hatching box dependent from a float, and having a lower inlet-passage and an upper outlet-passage, each protected by wire-gauze, and a series of inwardly-opening valves placed below said inlet-passage, whereby, upon the rising and falling of the box, consequent upon surface agitation, a current is produced through the same, substantially as and for the purpose specified.

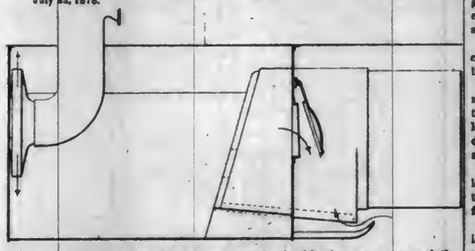
2. The box A, having the hinged lid *a* and the wire-gauze top and bottom, respectively represented by *b* and *c*, in combination with the hinged plate B, having the openings *d* and valves *e*, substantially as herein specified.

207,334. PROCESSES FOR BLEACHING OR DYEING FABRICS IN BULK. Lemuel W. Wright, Brooklyn, N. Y. Filed July 26, 1878.

Brief.—In processes of bleaching or dyeing where the goods are dipped in the bleach or color vat, the fluids are injected through the goods stretched on a perforated cylinder; generally this produces an uneven disposition of color or bleach liquid. The object herein is to remedy this.

Claim.—The process of bleaching or dyeing woven fabrics in bulk herein described, which consists in laterally stretching and tightly winding the fabric while wet upon a perforated pipe or drum in the form of a compact roll, and in closely confining the ends of the roll to prevent the escape of the treating-fluid therefrom, and in then injecting the treating-fluid radially from the perforated pipe into the roll, whereby such fluid is forced to pass transversely through every fold of which the roll is composed in parallel planes at substantially right angles to the axis of the roll.

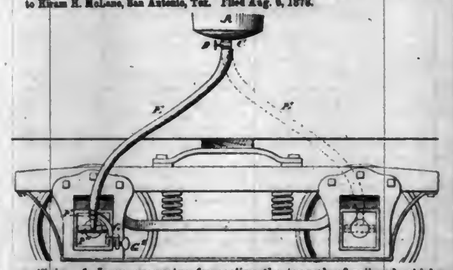
207,335. VENTILATING SHIPS. Alfred F. Yarrow, Isle of Dogs, Poplar, England. Filed July 22, 1878.



Claim.—1. The combination, in a vessel, of a blowing apparatus and the fire-space with an intermediate bulk-head, having a valve or valves opening from said blowing apparatus, substantially as described.

2. The combination of the rudder and propeller-shaft of a vessel with a collar, *c*, secured to the outer end of the shaft or to the propeller-hub, and provided with bearings for the rudder-pintles, substantially as described.

207,336. CAR-JOURNAL COOLERS. Robert C. Morris, Olney, Ill., assignor of one-half his right to Hiram H. McLane, San Antonio, Tex. Filed Aug. 6, 1878.



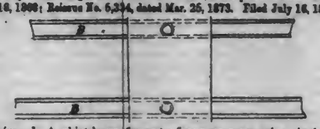
Claim.—1. In an apparatus for cooling the journals of railroad-vehicles, the combination of an attachable and detachable reservoir for containing water, a regulating-cock or equivalent device for controlling the flow of water therefrom, a pipe for conducting the water to the housing, and a pipe for directing it upon the journal, substantially in the manner and for the purpose set forth.

2. In an apparatus for cooling the journals of railroad-vehicles, the combination of an attachable and detachable reservoir, a hose or pipe for conducting the water to the housing, and an adjustable clamp for attaching said hose to the housing, the parts being arranged to operate substantially as set forth.

3. In an apparatus for cooling the journals of railroad-vehicles, the combination of the T-shaped pipe F F', the conducting-pipe E, regulating cock or valve D, and the attachable and detachable reservoir A, the parts being constructed and arranged for operation substantially as set forth.

REISSUES.

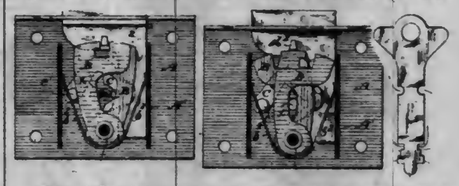
8,378. SKIRT-HOOPS. Thos. R. De Forest and Thos. S. Gilbert, Birmingham, Conn., assignors, by mesne assignments, to R. H. Bennett, same place. Patent No. 74,072, dated Feb. 18, 1868; Reissue No. 6,234, dated Mar. 26, 1873. Filed July 16, 1878.



Claim.—1. A skirt-hoop formed of one or more wires inclosed within a covering, which not only envelops and protects the wire, but forms an edge, A, or connection B, substantially as and for the purpose specified.

2. A skirt-hoop formed of one wire inclosed within a covering, which not only envelops and protects the wire, but forms an edge, A, substantially as and for the purpose specified.

8,379. LOCKS. Warren H. Taylor, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Patent No. 172,800, dated Feb. 1, 1876. Filed July 16, 1878.



Claim.—1. In a lock, a keyway having at one end a rotary guide and at the other end a fixed bearing in line therewith, whereby a flat or plate key may be adjusted in place and turned without the aid of a circular spindle of its own, and without the aid of a solid cylindrical key-hub to turn with it, substantially as described.

2. In a lock constructed for a flat or plate key, the combination of a rotary guide at one end of the keyway of said lock, a stationary bearing at the other end, and between the said guide and bearing a fixed longitudinal key-guide, substantially as described.

3. In a lock constructed for a flat or plate key, a vibrating talon, its inner curved edge being the talon for the key-bit, and its outer or free end fitted into the bolt-talon and actuating the bolt, substantially as described.

4. In the keyway of a lock constructed for a flat or plate key, the combination of a rotating guide and a fixed key-end bearing, both of which support the key during its rotation to operate the lock, and back of the rotary guide a ledge, slotted at two opposite points, which prevents the insertion or withdrawal of the key except when the lock is either in the locked or unlocked position, substantially as described.

5. In a lock, the combination of a rotary key-guide with a mortise, a ledge, notched or slotted at two opposite points for retaining the key in position while operating the lock, and vibrating tumblers adapted to be set by a flat key bitted alike on its two edges, substantially as described.

6. In a lock, the combination of a flat or sheet-metal key bitted alike on its two edges, a ledge within a keyway slotted at two opposite points, for preventing the insertion or withdrawal of the key except when the lock is in the locked or unlocked position, and vibrating tumblers adapted to be set by either side of said key.

7. In a lock, the combination of a flat or sheet-metal key, a longitudinal guide to direct the key during its insertion in the lock, a rotary guide to support the key during its rotation to operate the lock, a ledge slotted at two opposite points to prevent the insertion and withdrawal of the key except at the locked and unlocked positions, a key-end bearing, and vibrating tumblers adapted to be set by either side of the key, substantially as described.

8. The combination of a hollow longitudinal key guide or barrel and a flat or sheet-metal key, rotating centrally on the axial line of the barrel, and bitted upon its two edges, with vibrating tumblers, the whole being so arranged that when the key is inserted in the barrel and turned each of its bitted edges may set different tumblers, substantially as described.

9. In a lock, the combination of a bolt and a flat or sheet-metal key either side of which is adapted to engage with the talon for throwing the bolt, but only one side of which can act upon the talon at once, substantially as described.

10. A centrally-rotating flat or sheet-metal key without a circular spindle, but having a bearing to limit its thrust, and bitted upon its two edges, and also provided with notches or slots on its two edges for retaining it in position while operating the lock, substantially as described.

8,380. DENTISTS' CHAIRS. Otis C. White, Hopkinton, Mass., and Austin T. Ashmead, Hartford, Conn., assignors to Saml. S. White, Philadelphia, Pa. Patent No. 82,776, dated Oct. 6, 1868. Filed May 31, 1878.

Claim.—1. The combination of the stand or base, the feet which support it above the floor, the non-rotating supporting-spindle fitting snugly in, supported laterally by, and movable endwise through, said base, the turning hub, the cross-bar or yoke, and the chair-body connected with the cross-bar by pivots near each side of the chair, these members being constructed to operate in combination, substantially as hereinbefore set forth.

2. The combination of the chair-body, the cross-bar pivoted thereto at each end, the non-rotating supporting-column, and the base or stand mounted upon feet, through which stand the spindle or column moves freely endwise and is firmly supported laterally therein, these members being constructed to operate in combination, substantially as hereinbefore set forth.

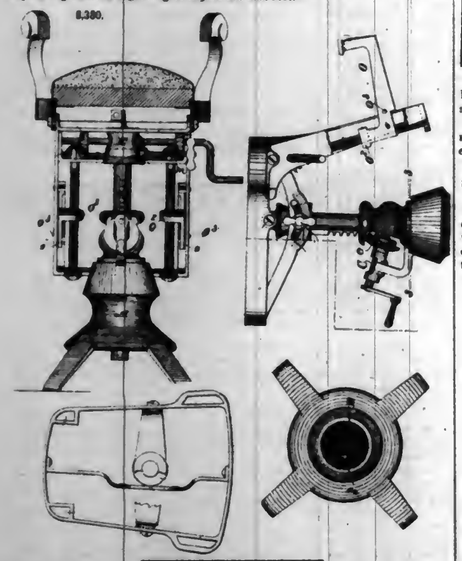
3. The combination of the chair-body, the cross-bar pivoted thereto at each side, the non-rotating supporting spindle or column fitting snugly in, supported laterally by, and movable endwise through, the base, the stand or base, and its supporting-feet, these members being constructed to operate in combination, substantially as hereinbefore set forth.

4. The chair body adapted to tilt or oscillate upon the single cross-bar or yoke, in which it is pivoted near both sides, the said bar being mounted upon a vertically-moving non-rotating column, and provided with means for securing the said chair-body in its various positions.

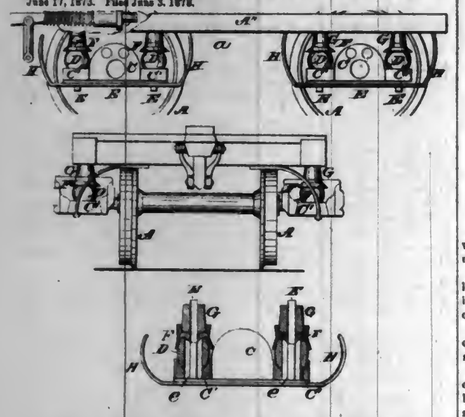
5. The combination, substantially as hereinbefore set forth, of the base, the non-rotating seat-supporting column or spindle, the turning hub, the cross-bar or yoke turning relatively to the base, the chair-body pivoted on the bar near each side, and a clamp which locks the chair against rotation.

6. The combination, substantially as hereinbefore set forth, of the chair-body, the foot-rest supporting frame or platform, the elevating-screws, and the operating shaft and gearing to adjust the foot-rest.

8,380.



8,381. CAR-TRUCKS. Aaron Higley, Cleveland, Ohio, assignor to the Higley Car Journal Company, same place. Patent No. 99,774, dated Feb. 15, 1870; Reissue No. 5,452, dated June 17, 1873. Filed June 3, 1878.



Claim.—1. In railway-car trucks, the posts E E, rigidly attached to the car frame at top, and at the bottom to the brace H, surrounded by and in combination with one or more springs, D G, placed between the car-frame and journal box, substantially as and for the purpose described.

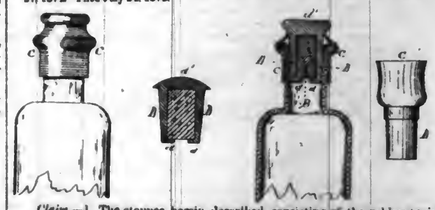
2. The combination of the springs D G and collar F with the arms C', stay-braces H, and post E, connected and arranged to operate in the manner and for the purpose substantially as specified.

3. The cap or collar F, in combination with the springs D and G, as and for the purpose substantially as set forth.

4. The combination of the post E, cap F, and spring D, the post being connected rigidly with the brace and frame A'', substantially as and for the purpose set forth.

5. In journal-boxes for railway-car trucks, projections C', with one or more springs stepped thereon, extending to and supporting the car-body, and posts E, passing through said projections, and springs rigidly attached to the frame at their upper ends, and connected with the stay-braces at their lower ends, constructed and arranged substantially as and for the purpose described.

8,382. BOTTLE-STOPPERS. Elbridge Harris, Boston, Mass. Patent No. 156,219, dated Oct. 27, 1874. Filed July 24, 1878.

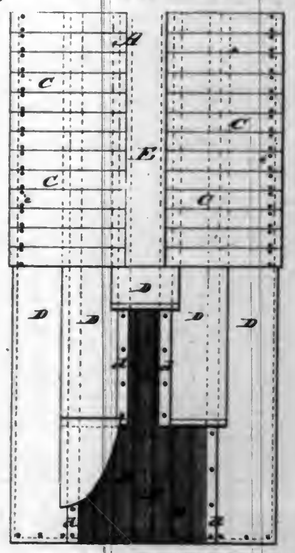


Claim.—1. The stopper herein described, consisting of the rubber casing D, the solid head *d'*, and flanges *d*, for the purpose of containing a core, B, all substantially as set forth.

2. As an improved article of manufacture, a stopper composed of the rubber casing D, having a solid head, *d'*, and flanges *d*, and provided with the cap C and inserted cork core B, as set forth.

8,383. CAR-ROOFS. J. L. Burnham, Nashville, Tenn., assignor to John C. Wands, same place. Patent No. 156,206, dated Apr. 2, 1872. Filed June 24, 1878.

Brief.—A roof composed of a support consisting of a layer of boards fastened at their ends and extending longitudinally; upon these, placed lengthwise, metallic strips, fastened at their inner side edges and lapping one another sidewise; these, in turn, covered by boards crosswise and fastened at their ends.



Claim.—1. A car roof formed of longitudinal under-sheathing B and transverse outer pieces C, combined with the intermediate longitudinal sheets of metal D, arranged and applied as described.

2. The combination, in a car-roof, of an under bearing or support, an upper layer of sheathing, and an intermediate layer of metallic sheets, the latter resting upon the under bearing or support, and the upper layer of boards resting continuously upon the metallic sheets, for the purpose described.

3. In a car roof, a layer of metallic sheets resting upon an under bearing or support, and a layer of sheathing resting continuously upon the metallic sheets, for the purpose described.

4. In a car-roof, the combination of a layer of metallic sheets lapping each other, and so as to move upon each other at their lapping edges, and an upper layer of boards, the latter resting continuously upon the former, substantially as described.

5. The sheets D D D, arranged longitudinally upon the support beneath, and fastened at one side edge only thereto, substantially as described.

6. A car-roof having a layer of metallic sheets in part unfastened to the support beneath, and an upper continuous layer of boards that are fastened or confined at their ends to said support, and that bear continuously upon the metallic sheet, serving or aiding to hold the latter down upon said support.

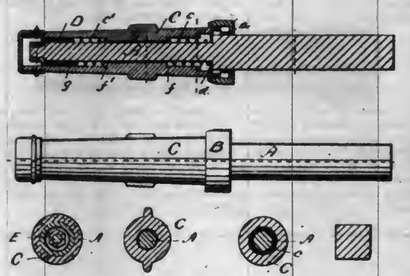
7. In a car-roof, the elastic strips *d*, substantially as described.

8. A car-roof having a continuous layer of metallic sheets supported beneath and confined above by supports that bear against and are in contact with the intermediate sheets, the supports above being applied continuously to the metallic sheets.

9. In a car-roof composed of a layer of metallic sheets and wooden sheathing, an under sheet arranged centrally upon the ridge of the roof, and its sides lapping upon sheets lower down, and respectively upon the two slopes of the roof.

10. The combination, in a car-roof, of the boards B, the sheets D, and the continuous layer of boards C, said boards B and C being in contact with the sheets D, for the purpose of forming a strong, compact roof.

8,384. AXLES FOR VEHICLES. Wheeler Beers, Bridgeport, Conn., assignee, by mesne assignments, to Benj. S. Fray, trustee, Boston, Mass. Patent No. 64,895, dated July 25, 1866. Filed May 6, 1878.



Claim.—1. In combination with the axle and the axle-box of a carriage-wheel, two resisting springs, confined respectively at their outer and inner ends, substantially in the manner herein described, and operating in opposite directions against the thrusts of the intervening axle-box and of the axle, substantially as set forth.

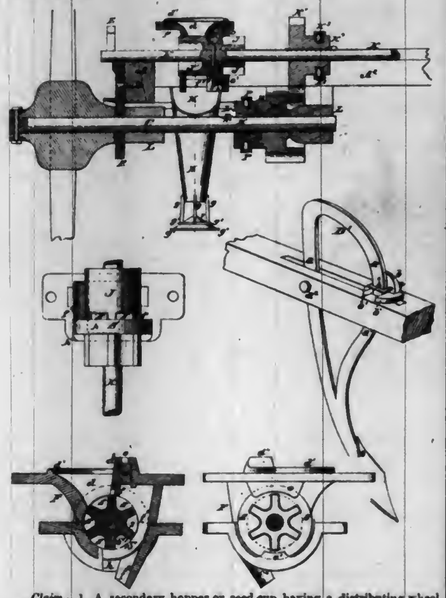
2. Two springs, *c c'*, confined on a wheel-axle at opposite ends of the axle-box or hub, between shoulders *f f'* of the box and shoulders *d* and *g* on the axle, in combination with the intervening circumferential projection *b* of the axle-box bearing on the axle, substantially as described, and for the purpose specified.

3. The axle-box C, carrying springs *c c'*, in combination with the axle A, relatively constructed with shoulder-bearings for the ends of the springs and bearings for the axle-box on the axle, one of which is between the springs and the other at the outer part of the axle, substantially as described.

4. An axle, A, provided with inner and outer shoulders, *d g*, in combination with an axle-box, C, having springs *c c'* and shoulders *f f'*, all arranged and operating substantially as described, for the purposes specified.

5. The combination of a thimble, D, nut E, and spring *c'*, all applied upon the outer end of an axle, A, substantially as and for the purpose set forth.

8,385. BROADCAST-SEEDER AND CULTIVATOR. Geo. Esterly, Whitewater, Wis., assignor of one-half interest to Benjamin Kuhns. Patent No. 79,332, dated June 30, 1868. Filed June 20, 1878.



Claim.—1. A secondary hopper or seed-cup having a distributing-wheel supported by bearings within the seed-cup, in combination with devices for shifting said wheel laterally for regulating the sowing capacity of the said seed-cup, substantially as set forth.

2. A secondary hopper or seed-cup supporting a seed-wheel turning on bearings in said hopper, and having a laterally-moving cut-off to widen or narrow the carrying-surfaces of the distributing-wheel, substantially as set forth.

3. A secondary hopper or seed-cup, in combination with a rotating laterally-adjustable distributing-wheel arranged within said hopper or cup, and a rotary shaft connected with and passing through the center of said wheel, substantially as set forth.

4. The combination, with a seed-cup, of a loose ring having a rim-bearing therein, and provided with centrally and laterally projecting teeth, and a distributing-wheel having its bearing within said ring, and provided with radial projections adapted to slide between the teeth of said ring, substantially as set forth.

5. In combination with a laterally-moving distributing-wheel and cylindrical cut-off, a circular flange having lateral segmental projections and slots formed in it, which fit the teeth and cells of the distributing-wheel, forming a revolving bearing for the wheel in the seed-cup.

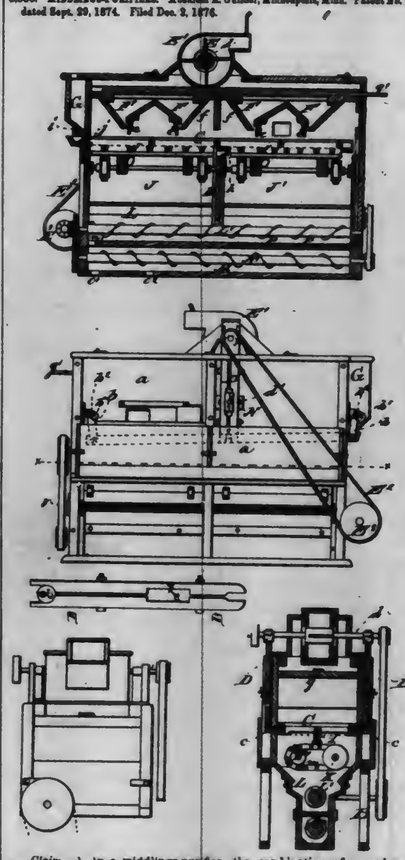
6. The combination, with a seed-cup or hopper, of a distributing-wheel and a rotary cut-off, each having a bearing within said cup or hopper, and both adapted for lateral adjustment therein, substantially as and for the purpose set forth.

7. The combination, with the seed-cup, having throat *d*, and rotary annular bearing *s*, having the inward and lateral projections *s'*, of the cylindrical cut-off J' and the toothed distributer J, substantially as described.

8. While not claiming conical scatterers, I do claim constructing conical scatterers I for seed-discharging tubes, with circular ribs or corrugations upon their surfaces, substantially as described.

9. The shaft K, having the seed-wheels mounted thereon, and supported by bearing in seed-cup F, in combination with the lever K^3, for adjusting the seed-wheels laterally in their cups, substantially as set forth.

8,386. MIDDLINGS-PURIFIERS. Absalom R. Gulder, Minneapolis, Minn. Patent No. 156,374, dated Sept. 29, 1874. Filed Dec. 9, 1876.



Claim.—1. In a middlings-purifier, the combination of a reciprocating shaker or riddle with a dusting-brush traveling continuously at right angles to the flow of material, substantially as set forth.

2. In combination with a suction-fan, a reciprocating riddle and an independent continuously and transversely traveling brush, substantially as set forth.

3. In a middlings-purifier, the combination of brushes carried by endless chains with a brush-holder or brush-guide, substantially as described.

4. The combination, with a reciprocating riddle or shaker, of a brush moving transversely across the entire under surface of the riddle and independently of the movement of said riddle, substantially as and for the purpose set forth.

5. The combination, with a reciprocating riddle, of a rotating brush moving transversely across the under surface of the riddle and independently of the movement of the riddle, whereby the different grades of middlings are not mixed together and the brush cleans itself in its revolutions, substantially as described.

6. In a middlings-purifier, detachable brush-guides or brush-holders O, recessed underneath near their ends to saddle the sprocket-wheel shaft K, substantially as and for the purpose set forth.

7. The combination, in a middlings-purifier, of eccentrics *c' c'*, levers D D, with their adjustable fulcrums, and a reciprocating riddle, whereby a positive motion is given to the riddle on both sides thereof.

8. In a middlings-purifier, levers D D, longitudinally divided, and provided with clamping bolts and nuts for the purpose of taking up wear, substantially as set forth.

9. The combination of fulcrum-blocks *d'* with lever D, slotted at *d'*, substantially as and for the purpose set forth.

10. In a middlings-purifier, the vertical levers D D, adjustable relatively to their fulcrums, so as to lengthen or shorten the stroke given to the riddle, substantially as set forth.

11. The fingers *f* on brush-heads I, combined with eyes *b'* of chains *m'*, substantially as set forth.

12. In a middlings-purifier, a fan-shaft provided at each end with an eccentric, substantially as set forth.

13. In a middlings-purifier, flexible apron *k* and partition H, in combination with compartments J and J', substantially as set forth.

8,367. WATER-PROOF CELLARS. Tobias New, Brooklyn, N. Y. Patent No. 113,326, dated Apr. 4, 1871; Reissue No. 7,920, dated Oct. 23, 1877. Filed Aug. 12, 1878.

Brief.—Alternate layers of asphaltic cement and roofing-felt are applied to the bottom and walls of the cellar. Then a layer of hydraulic concrete or cement is applied, of sufficient weight to resist upward pressure of water, the whole being lined with a facing of brick, stone, or the like.



Claim.—In sanitary water-proof cellars, cisterns, vaults, reservoirs, and similar underground receptacles formed with a solid or suitable foundation, the combination of layers of roofing-felt and of asphaltic or roofing cement, substantially as I have above described, with a layer of concrete, cement, stone, or other suitable material for the protection of the roofing-felt and asphaltic or roofing cement, and to aid in resisting water-pressure or noxious gases, where the same exist, substantially as and for the purpose above set forth.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 20th DAY OF AUGUST, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Alexander, G. W. (See McCord and Alexander.)						
Allen, W. B., Orleans, N. Y. Gate	207,149	Aug. 20	522	157	14	278
Almond, T. R., Brooklyn, N. Y. Scroll-saw attachment to lathes	207,150	Aug. 20	524	157	14	279
Amat, F., Havana, Cuba. Portable railway	207,151	Aug. 20	525	158	14	279
Anderson, W. B. (See Krutzsch, W., assignor.)						
Ashmead, A. T. (See White and Ashmead.) (Reisane.)						
Ashmore, D. N. (See Gibbons and Ashmore.)						
Atwood, B. S., South Abington, Mass. Seal-lock for packing-boxes	207,234	Aug. 20	611	183	14	290
Austin, D., Murray, Iowa, assignor of two-thirds interest to J. Knotts and D. O. Dufur. End-gate for wagons	207,095	Aug. 20	475	143	14	273
Aylliffe, G., assignor of one-half interest to J. Hugill, Akron, Ohio. Oatmeal-machine	207,152	Aug. 20	525	158	14	279
Baer, F. (See Seng, W., assignor.)						
Bagley, C. O., San Francisco, Cal. Mining-rifle	207,153	Aug. 20	526	158	14	279
Bailey, M. B., assignor, by mesne assignments, of one-half interest to H. P. Taylor, Chicago, Ill. Paint	207,096	Aug. 20	476	.....	14	273
Barnard, H. A., Moline, Ill. Grain-separator	207,236	Aug. 20	612	184	14	290
Barnes, S., New Haven, Conn. Railway-gate	207,154	Aug. 20	527	158	14	279
Baron, A. L., *et al.* (See Cash, E. F., assignor.)						
Barth, J., Jr., Evansville, Ill. Insecticide	207,235	Aug. 20	612	.....	14	290
Bartlett, R. H., Schenectady, N. Y. Wire bale-tie	207,097	Aug. 20	477	143	14	273
Barwick, W. H., Hyde Park, Mass. Nail and spike extractor	207,098	Aug. 20	477	143	14	273
Bassett, C. H., Derby, Conn. Coping and covering for graves	207,155	Aug. 20	528	159	14	279
Bassett, R. N. (See De Forest and Gilbert, assignors.) (Reisane.)						
Baxter, W., assignor of one-half interest to A. Van Winkle, Newark, N. J. Portable steam-engine	207,237	Aug. 20	614	184	14	290
Beers, W., Bridgeport, Conn., assignor, by mesne assignments, to B. S. Pray, trustee, Boston, Mass. Axle for vehicles. (Reisane)	8,384	Aug. 20	721	215	14	305
Bergmann, J., assignor to himself and J. Pedder, Beaver Falls, Pa. Manufacture of hoes	207,238	Aug. 20	616	184	14	290
Bering, J. E. (See Chambers and Bering.)						
Berney, W., Somerville, Mass. Handsaw	207,159	Aug. 20	531	160	14	280
Berninghaus, E., Cincinnati, Ohio. Barbers' chair	207,099	Aug. 20	478	143	14	273
Berry, J. L., Saginaw, Mich. Car-coupling	207,100	Aug. 20	478	144	14	273
Betts, R. W., Brooklyn, N. Y. Making paper card-baskets	207,239	Aug. 20	616	185	14	290
Bishop, G. W., Brooklyn, N. Y. Velocipede	207,240	Aug. 20	617	185	14	290
Bissell, F. S. (See Killin, J. M., assignor.)						
Blain, J. H., Round Rock, Tex. Horse-power	207,156	Aug. 20	529	159	14	279
Blair, G. W., Pittsburg, Pa. Preparing articles of glassware for the purpose of shaping and finishing	207,241	Aug. 20	620	185	14	291
Blake, C. W., Portland, Me. Blackboard-compasses	207,101	Aug. 20	479	144	14	273
Blake, C. W., Lyndon, Kan. Machine for attaching paper fasteners	207,157	Aug. 20	529	159	14	279
Bonnell, J. A., assignor of one-half interest to F. C. Goodwin, Philadelphia, Pa. Iron cross-tie	207,242	Aug. 20	621	186	14	291
Bowditch, J. F. (See Dillon, T., assignor.)						
Bradfield, J., Grand Rapids, Mich. Folding table	207,243	Aug. 20	622	186	14	291
Brant, J., assignor to S. M. Lewis, Providence, R. I. Apparatus for the manufacture of seamless-balls	207,158	Aug. 20	530	159	14	280
Braun, J. C. M., Baraboo, Wis. Bottle-corking machine	207,244	Aug. 20	623	186	14	291
Brewer, J., Brooklyn, N. Y. Pipe-wrench with cutter	207,102	Aug. 20	480	144	14	273
Briggs, A. H. (See Elterich and Briggs.)						
Brigham, W. E. (See Payson, C. B., assignor.)						
Britton, B. F., New York, N. Y. Bearing and support for elevated railways, &c	207,245	Aug. 20	624	187	14	291
Brooks, S. B. (See Share, L. G., assignor.)						
Brown, E., Sterling, Mass. Household utensil	207,161	Aug. 20	533	160	14	280
Brown, J. A., Tyler, Tex. Damping-roller	207,160	Aug. 20	532	160	14	280
Bryer, S. G., Saugus, Mass. Rock-drilling machine	207,162	Aug. 20	534	160	14	280
Burke, P., Rochester, N. Y. Stop-cock casing	207,246	Aug. 20	626	187	14	291
Burnham, J. L., assignor to J. C. Wands, Nashville, Tenn. Car-roof. (Reissue)	8,383	Aug. 20	720	215	14	304
Burroughs, C. C., Decatur, Ill. Corn-sheller	207,163	Aug. 20	536	161	14	280
Busey, C. E., Baltimore, Md. Dental rubber-dam clamp	207,103	Aug. 20	481	144	14	273
Bush, A. W., Boulder, Col. Water-motor	207,247	Aug. 20	627	187	14	291
Bush, D. P., and J. A. Krauspe, Wilmington, Del. Cartridge for fire-arms	207,248	Aug. 20	628	188	14	291
Carpender, G. W., South Bend, Ind. Vapor-bath apparatus	207,249	Aug. 20	629	188	14	292
Carriker, W. M., Irving, Ill. Corn-planter and check-row marker	207,250	Aug. 20	630	188	14	292
Cash, E. F., assignor to himself, A. L. Baron, and D. Rankin, Bellaire, Ohio. Lantern	207,104	Aug. 20	481	145	14	273
Catlin, E. F. (See Catlin, S. C., assignor.)						
Catlin, S. C., assignor to E. F. Catlin, Brooklyn, N. Y. Twine-holder	207,105	Aug. 20	483	145	14	274
Chambers, Bering & Quinlan. (See Chambers and Bering, assignors.)						
Chambers, C., Jr. (See Mendham, W., assignor.)						
Chambers, C. Jr., and W. Mendham, Philadelphia, Pa.; said Mendham assignor to said Chambers. Bolt-clipping machine	207,252	Aug. 20	631	189	14	292

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Chambers, M., Bontivoglio, Va. Tobacco-flavoring	207,106	Aug. 20	483	.....	14	274
Chambers, W. (See Smith, H. B., assignor.)						
Chambers, W. B., and J. E. Bering, assignors to Chambers, Bering & Quinlan, Decatur, Ill. Corn-planter	207,251	Aug. 20	630	188	14	292
Chipley, L. M., St. Louis, Mo. Corset-clasp	207,253	Aug. 20	633	189	14	292
Clark, G. R., and F. Lothrop, Dubuque, Iowa. Fence-post and fence	207,254	Aug. 20	633	189	14	292
Clay, M. W., Owatonna, Minn. Adding-machine	207,255	Aug. 20	635	189	14	292
Clow, G. E., Seymour, Ind. Scythe-snath fastening	207,164	Aug. 20	537	161	14	280
Comerford, M. M. (See Maxwell, J. M., assignor.)						
Cooper, D. M., Dublin, Ind. Fire-engine	207,165	Aug. 20	537	161	14	280
Crabtree, J. D. (See McGregory, C., assignor.)						
Crane, S., Dalton, Mass. Brush	207,256	Aug. 20	636	190	14	293
Curry, G. W., Buffalo, N. Y. Scouring-board	207,257	Aug. 20	637	190	14	293
Danforth, R. F., Baltimore, Md. Vapor-burner	207,258	Aug. 20	637	190	14	293
Davies, J. P., assignor of one-half interest to R. R. Williams, Chicago, Ill. Meat-tenderer	207,107	Aug. 20	484	145	14	274
Davis, A. J., Hartford, Mich. Scrubbing device	207,108	Aug. 20	485	145	14	274
De Forest, T. B., and T. S. Gilbert, assignors, by mesne assignments, to R. N. Basset, Birmingham, Conn. Skirt-hoop. (Reissue)	8,378	Aug. 20	714	213	14	303
De Witt, H. C., Chicago, Ill. Hand-washer	207,109	Aug. 20	486	146	14	274
Dillon, T., Malden, assignor to J. F., Bowditch, Revere, Mass. Brush	207,110	Aug. 20	486	146	14	274
Dimock, Gould & Co. (See Jaques, J. F., assignor.)						
Dodge, C. K., Brooklyn, N. Y. Machine for stretching belting	207,259	Aug. 20	638	190	14	293
Dolan, T., *et al.* (See Haigh, B. F., assignor.)						
D'Oliveira, L. R. (See Frezon and D'Oliveira.)						
Downey, W. F., Washington, D. C. Sewer-trap	207,260	Aug. 20	640	191	14	293
Duffus, W. (See Maybee, M. A., assignor.)						
Dufur, D. O., *et al.* (See Austin, D., assignor.)						
Dunn, F., Gloucester, Mass. Life-boat	207,166	Aug. 20	538	162	14	281
Durant, E. G., Racine, Wis. Blackboard	207,111	Aug. 20	487	146	14	274
Dyer, F., Sterling, Ill. Wheelbarrow	207,112	Aug. 20	488	146	14	274
Elterich, C., New York, N. Y., and A. H. Briggs, Jersey City, N. J. Drill-chuck	207,113	Aug. 20	488	147	14	274
Engelke, J., and F. Feiner, St. Louis, Mo., and V. Weismantel, Belleville, Ill. Hominy-mill	207,261	Aug. 20	642	191	14	293
Englebeck, W. J. (See Keller, M. A., assignor.)						
Ericson, I. G., Colorado Springs, Col. Wire-stretcher	207,167	Aug. 20	540	162	14	281
Erskine, H. M., Ilion, N. Y. Revolving fire-arm	207,168	Aug. 20	541	163	14	281
Esterly, G., Whitewater, Wis., assignor of one-half interest to B. Kuhns. Broadcast seeder and cultivator. (Reissue)	8,385	Aug. 20	722	216	14	305
Eulass, T. H., Cincinnati, Ohio. Harvester cutting apparatus	207,169	Aug. 20	543	163	14	281
Evans, G. M., Pittsburg, Pa. Window-bead fastener	207,262	Aug. 20	643	191	14	293
Fairbanks, T., St. Johnsbury, Vt. Weighing-scales	207,263	Aug. 20	644	191	14	293
Farmer, W. (See Smith and Farmer.)						
Farquhar, A. B., York, Pa. Grain-separator	207,170	Aug. 20	544	163	14	281
Farrell, J. O., Athens, Ga. Plow	207,130	Aug. 20	506	153	14	276
Feiner, F. (See Engelke, Feiner, and Weismantel.)						
Fey, W. F., Cincinnati, Ohio. Beer-cooler	207,264	Aug. 20	645	192	14	294
Fink, W. G., Minnesota City, Minn. Wagon-brake	207,171	Aug. 20	545	163	14	281
Fleisher, S. B., Philadelphia, Pa. Device for holding braid and similar articles in packages	207,114	Aug. 20	490	147	14	274
Forrester, P., Washington, D. C. Riveting broken articles of china, glassware, &c.	207,265	Aug. 20	646	192	14	294
Fowler, C. H., assignor of one-half interest to D. Goodnow, Jr., Boston, Mass. Tap-wrench	207,172	Aug. 20	546	164	14	281
Frezon, F. M., and L. R. D'Oliveira, Paris, France. Treating beet-root for the manufacture of sugar	207,271	Aug. 20	652	.....	14	295
Furbush, J. W., and J. Perley, Lynn, Mass. Feeding device for button-hole sewing-machines	207,173	Aug. 20	546	164	14	281
Gerard, E. (See Lemeunier and Gerard.)						
Gibbons, R. E., and D. N. Ashmore, Bethany, Ill. Feather-renovator	207,266	Aug. 20	646	192	14	294
Gibbs, L., Canton, Ohio. Plow	207,174	Aug. 20	548	164	14	282
Gibson, A. (See Shaffer, W. T., assignor.)						
Gilbert, T. S. (See De Forest and Gilbert.) (Reissue.)						
Gillespie, C. E., H. J. and F. J. Springer, Edwardsville, Ill. Thill-coupling	207,115	Aug. 20	491	147	14	274
Gleason, R. E., assignor of one-half interest to A. Rodgers, Muskegon, Mich. Saw-mill appliance	207,267	Aug. 20	647	192	14	294
Godefroy, P. E., Mobile, Ala. Eyeglass	207,116	Aug. 20	492	147	14	275
Goodlin, W. L., Cincinnati, Ohio. Apparatus for preserving meats	207,268	Aug. 20	648	193	14	294
Goodnow, D., Jr. (See Fowler, C. H., assignor.)						
Goodwin, F. C. (See Bonnell, J. A., assignor.)						
Gray, E., Chicago, Ill. Speaking-telephone	207,269	Aug. 20	649	193	14	294
Green, C. W., and M. T. Howland, Rutland, Vt. Potato-digger	207,175	Aug. 20	549	{164 / 165}	{14}	282
Greenleaf, T. F., Westborough, Mass. Flour-dressing machine	207,176	Aug. 20	551	165	14	282
Griscom, W. W., Philadelphia, Pa. Galvanic battery	207,270	Aug. 20	650	193	14	295
Gröbe, C., Berlin, Prussia, assignor to F. Lürmann, Osnabruck, Germany. Metallurgic gas-furnace	207,177	Aug. 20	552	{165 / 166}	{14}	282
Guilder, A. R., Minneapolis, Minn. Middlings-purifier. (Reissue)	8,386	Aug. 20	725	216	14	305
Hager, W. H. (See Thompson, J. H., assignor.)						
Haigh, B. F., assignor to T. Dolan and R. Williams, Jr., Philadelphia, Pa. Carding-machine	207,272	Aug, 20	653	194	14	295
Hammond, T. C., Sacramento, Cal. Ratchet-wrench	207,117	Aug. 20	492	{147 / 148}	{14}	275
Hansen, J., San Francisco, Cal. Griper for wire-rope railways	207,118	Aug. 20	493	148	14	275
Harder, D. R., Chicago, Ill. Railway-rail joint	207,119	Aug. 20	494	148	14	275
Harper, J. C., Pittsburg, Pa. Bale-tie	207,273	Aug. 20	654	194	14	295
Harris, E., Boston, Mass. Bottle-stopper. (Reissue)	8,382	Aug. 20	720	215	14	304
Hatch Flexible Sewed Shoe Company. (See Van Wagenen, A., assignor.)						
Heald, H. H., Sandwich, Mass. Machine for cleaning and sitting tacks	207,178	Aug. 20	553	166	14	282
Hewitt, S., Seneca Falls, N. Y. Car-brake	207,179	Aug. 20	554	166	14	282
Higley, A., assignor to Higley Car Journal Company, Cleveland, Ohio. Car-truck. (Reissue)	8,381	Aug. 20	718	215	14	304
Higley Car Journal Company. (See Higley, A., assignor.) (Reissue.)						
Hill, J., Franklin, Ind. Gate	207,274	Aug. 20	655	194	14	295
Hilliard, S. E., Reno, Nev. Railway-rail joint	207,180	Aug. 20	555	166	14	282
Hinz, C., San Francisco, Cal. Blind-wiring machine	207,181	Aug. 20	556	167	14	283
Hoffecker, J. S., assignor to Vulcanized Fiber Company, Wilmington, Del. Nut-lock	207,275	Aug. 20	656	194	14	295
Hogan, H. F., Albion, Ind. Churn	207,276	Aug. 20	657	195	14	295
Holden, D. L., Philadelphia, Pa. Apparatus for curing meat	207,277	Aug. 20	657	195	14	295
Holden, D. L., Philadelphia, Pa. Apparatus for making ice	207,278	Aug. 20	658	195	14	296
Holmes, T. J., Boston, Mass. Bottle stopper and sprinkler	207,279	Aug. 20	660	195	14	296
Howard, G. C. (See Simpson and Howard.)						
Howland, M. T. (See Green and Howland.)						
Hugill, J. (See Aylliffe, G., assignor.)						
Hunt, E. S., Elizabeth, N. J. Fastening for gates and doors	207,120	Aug. 20	495	148	14	275
Hyers, B. S., Pekin, Ill. Pipe-wrench	207,182	Aug. 20	558	167	14	283

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Inglis, S. B., assignor of one-half interest to E. T. Jameson, Pittsburg, Pa. Lamp-chimney	207,280	Aug. 20	661	196	14	296
Jameson, E. T. (See Inglis, S. B., assignor.)						
Jamieson, W. W., assignor of one-half interest to J. A. Schell, Foxburg, Pa. Water-packer for oil-wells	207,281	Aug. 20	661	196	14	296
Janney, E. H., Alexandria, Va., and L. R. Mathews, Altoona, Pa. Car-platform	207,183	Aug. 20	559	167	14	283
Jaques, J. F., assignor to Dimock, Gould & Co., Moline, Ill. Wash-board	207,184	Aug. 20	560	168	14	283
Jarecki, F., Erie, Pa. Hydrant	207,185	Aug. 20	560	168	14	283
Jeffers, J. A., Esdaile, Wis. Stump-puller	207,282	Aug. 20	662	196	14	296
Jones, E. P., Greensborough, N. C., J. D. Macomber, Auburn, N. Y., and J. P. McCook, Richmond, Va. Plug-tobacco machine	207,121	Aug. 20	496	149	14	275
Julien, J., Dubuque, Iowa. Expanding-drill for boring blast-holes	207,122	Aug. 20	498	150	14	275
Kaestner, C., Chicago, Ill. Mash-rake	207,283	Aug. 20	663	196	14	296
Keller, M. A., assignor of one-half interest to W. J. Englebeck, Fremont, Ohio. Grain-binder	207,123	Aug. 20	499	150	14	276
Kelley, W., Baltimore, Md. Signal for locomotive head-lights	207,284	Aug. 20	664	197	14	296
Kelly, E. J., assignor to himself and W. Miller, Allegheny, Pa. Core for casting ingot-molds	207,285	Aug. 20	665	197	14	297
Killin, J. M., assignor to F. S. Bissell, Pittsburg, Pa. Broiler attachment for stoves	207,286	Aug. 20	666	197	14	297
King, L. P., and A. M. White, Cincinnati, Ohio. Motor	207,186	Aug. 20	561	{168 / 169}	{14}	283
Kinsey, E. U., Passaic, assignor to himself and P. Little, Trenton, N. J. Puzzle-block	207,124	Aug. 20	500	150	14	276
Knotts, J., *et al.* (See Austin, D., assignor.)						
Koons, F. A. B., Shickshinney, Pa. Roller for paper-making and other machines	207,287	Aug. 20	667	198	14	297
Krauspe, J. A. (See Bush and Kranspe.)						
Krutzsch, W., assignor of one-half interest to W. B. Anderson, Dayton, Ohio. Canceling stamp	207,125	Aug. 20	501	151	14	276
Kuhns, B. (See Esterly, G., assignor. (Reissue.)						
Lacey, G. S., New York, N. Y. Gas-regulator	207,187	Aug. 20	562	169	14	283
Lapham, J. H. (See Sargent, J. T., assignor.)						
Laverty, T. D. (See Laverty, W. A., assignor.)						
Laverty, W. A., Philadelphia, Pa., assignor to T. D. Laverty, Camden, N. J. Neck-tie folder	207,288	Aug. 20	668	198	14	297
Lemeunier, L. F. J., and E. Gerard, Paris, France. Apparatus for heating railway-carriages, &c.	207,289	Aug. 20	668	198	14	297
Lewis, S. M. (See Brant, J., assignor.)						
Little, P. (See Kinsey, E. U., assignor.)						
Lorch, E. P., New Berne, N. C. Apparatus for making ice	207,290	Aug. 20	670	199	14	297
Lothrop, F. (See Clark and Lothrop.)						
Lürmann, F. (See Gröbe, C., assignor.)						
Macomber, J. D. (See Jones, Macomber, and McCook.)						
Marshall, R., Pittsburg, Pa. Elevator-brake	207,291	Aug. 20	671	199	14	297
Martin, E., Paris, France. Automatic swimming-toy	207,188	Aug. 20	563	169	14	283
Martin, S. W., assignor to P. P. Mast, Springfield, Ohio. Wind-wheel	207,189	Aug. 20	564	{169 / 170}	{14}	284
Mast, P. P. (See Martin, S. W., assignor.)						
Masury, J. W., New York, N. Y. Can or package for paints	207,190	Aug. 20	566	170	14	284
Masury, J. W., New York, N. Y. Can	207,191	Aug. 20	567	170	14	284
Mathews, L. R. (See Janney and Mathews.)						
Maxwell, J. M., Webster, assignor of one-half interest to M. M. Comerford, Fairmount, W. Va. Air-brake for cars	207,126	Aug. 20	502	151	14	276
Maybee, M. A., assignor of one-half interest to W. Duffus, Syracuse, N. Y. Plaiting-machine	207,127	Aug. 20	503	151	14	276
McCallay, D. (See Wilson and McCallay.)						
McCalmont, J. S. (See Stehley, W. M., assignor.)						
McCook, J. P. (See Jones, Macomber, and McCook.)						
McCord, R., Jr., and G. W. Alexander, Vincennes, Ind. Portable derrick	207,292	Aug. 20	671	199	14	298
McDonald, T. H. (See Morey and McDonald.)						
McGregory, C., assignor of one-half interest to J. D. Crabtree, Dixon, Ill. Harvester	207,128	Aug. 20	504	152	14	276
McLane, H. H. (See Morris, R. C., assignor.)						
McLean, J. D., New York, N. Y. Machine for stretching, dipping, and drying fabrics	207,192	Aug. 20	569	171	14	284
McNary, G. (See Wright and McNary.)						
Medhurst, J., Galesburg, Ill. Gate	207,129	Aug. 20	505	152	14	276
Meech, T. K., Buffalo, N. Y. Vehicle-seat	207,193	Aug. 20	570	171	14	284
Mennerich, H. L., Sioux City, Iowa. Horse-collar	207,194	Aug. 20	571	171	14	284
Mendham, W. (See Chambers and Mendham.)						
Mendham, W., assignor to C. Chambers, Jr., Philadelphia, Pa. Brick-making machinery	207,293	Aug. 20	672	200	14	298
Miller, W. (See Kelly, E. J., assignor.)						
Moench, G., Rushville, Ill. Grain-scourer	207,294	Aug. 20	673	200	14	298
Moore, C. H., Yonkers, N. Y. Water-closet	207,196	Aug. 20	573	172	14	285
Moore, C. H., Yonkers, N. Y. Overflow and trap for basins	207,197	Aug. 20	574	172	14	285
Moore, R. R., Lewisville, Ark. Vehicle-axle lubricator	207,195	Aug. 20	571	171	14	284
Morey, R. E., and T. H. McDonald, San Francisco, Cal. Berry-box	207,199	Aug. 20	575	172	14	585
Morgan, C. H., Worcester, Mass. Hydraulic crane	207,200	Aug. 20	576	173	14	285
Morgan, C. H., Worcester, Mass. Forming and tempering wire	207,201	Aug. 20	578	173	14	285
Morris, R. C., Olney, Ill., assignor of one-half interest to H. H. McLane, San Antonio, Tex. Car-journal cooler	207,336	Aug. 20	713	213	14	303
Morse, D., Lancaster, N. Y. Device for preventing myopia	207,198	Aug. 20	575	172	14	285
Moser, F. P., Salem, Ill. Miter-clamp	207,295	Aug. 20	674	200	14	298
New, T., Brooklyn, N. Y. Water-proof cellar. (Reissue)	8,387	Aug. 20	727	217	14	306
Oldershaw, J. B., Baltimore, Md. Stove	207,296	Aug. 20	674	200	14	298
Orran, W. L., Morris Gap, Tenn. Endless-chain water-wheel	207,202	Aug. 20	579	174	14	286
Paris, D. E., Omaha, Nebr. Cooking-stove	207,297	Aug. 20	675	201	14	298
Park, H., Kenton, Ohio. Heating attachment for steam-boilers	207,298	Aug. 20	676	201	14	298
Parks, D., Trumbull, Conn. Attachment for securing caps or covers to cans	207,131	Aug. 20	507	153	14	277
Parsons, C. H., Boston, Mass. Sad-iron	207,299	Aug. 20	677	{201 / 202}	{14}	298
Patten, J., Tomales, Cal. Harness-saddle	207,203	Aug. 20	580	174	14	286
Paup, M. (See Van Tassel and Paup.)						
Payson, C. B., assignor to himself and W. E. Brigham, Boston, Mass. Ice-tongs	207,204	Aug. 20	581	174	14	286
Pearson, H. G., New York, N. Y. Coin-holder	207,300	Aug. 20	679	202	14	299
Pedder, J. (See Bergmann, J., assignor.)						
Perley, C. A., Templeton, assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Nursery-chair	207,205	Aug. 20	582	174	14	286
Perley, J. (See Furbush and Perley.)						
Plumbly, F. K., Buffalo, N. Y. Storing-tank	207,301	Aug. 20	679	202	14	299
Plummer, O., Worcester, Mass. Upright metal-drill	207,206	Aug. 20	583	175	14	286
Pray, B. S., trustee. (See Beers, W., assignor.) (Reissue.)						
Prophet, B. A., Center township, Greene county, Mo. Epithem	207,302	Aug. 20	681	.....	14	299
Rankin, D., *et al.* (See Cash, E. F., assignor.)						
Raplee, S. W. (See Snes and Raplee.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Reed, S., Cincinnati, Ohio. Clothes-rack	207,132	Aug. 20	507	153	14	277
Reinhard, W., Eau Claire, Wis. Carriage-wheel hub	207,303	Aug. 20	682	203	14	299
Rice, F., Greigsville, N. Y. Wagon pole and shaft	207,304	Aug. 20	683	203	14	299
Rice, M., Augusta, Ga. Carving-machine	207,207	Aug. 20	584	175	14	286
Richardson, J. C., Manlius, N. Y. Machine for upsetting collars in vehicle-axles	207,208	Aug. 20	585	175	14	286
Roberts, J., Leon, Iowa. Boot-jack	207,209	Aug. 20	586	176	14	287
Rodgers, A. (See Gleason, R. E., assignor.)						
Rouse, G. L., and M. W. Stoddard, Cincinnati, Ohio. Vehicle-hub	207,210	Aug. 20	586	176	14	287
Rudolph, A., New York, N. Y. Window-sash	207,305	Aug. 20	683	203	14	299
Rumsey, L. M., *et al.* (See Squire, J. J., assignor.)						
Rumsey, M., *et al.* (See Squire, J. J., assignor.)						
Ryan, P. S., Rutland, Vt. Insect-destroyer	207,306	Aug. 20	684	203	14	299
Salisbury, G. P., and H. C. Smith, New Haven, Conn. Steam-boiler	207,133	Aug. 20	508	153	14	277
Sargent, J. T., assignor to J. H. Lapham, Cleveland, Ohio. Wash-board	207,134	Aug. 20	509	154	14	277
Schaschne, C., Rondout, N. Y. Grain-scouring machine	207,307	Aug. 20	685	204	14	299
Schell, J. A. (See Jamieson, W. W., assignor.)						
Schen, G. J., Washington, Pa. Shoulder-pad	207,211	Aug. 20	587	176	14	287
Schmitter, A., Paterson, N. J. Calipers	207,308	Aug. 20	686	204	14	299
Schneider, J. C., Chicago, Ill. Snap-hook	207,309	Aug. 20	686	204	14	300
Schroeder, H., assignor to E. H. Vordtriede, St. Louis, Mo. Padlock	207,310	Aug. 20	687	205	14	300
Seibel, P., Jr., St. Louis, Mo. Bottle-washer	207,311	Aug. 20	688	205	14	300
Seng, W., Chicago, assignor to F. Baer, Lake View, Ill. Rocking-chair	207,135	Aug. 20	510	154	14	277
Shaffer, W. T., assignor of one-half interest to A. Gibson, Fremont, Neb. Paper-cutting machine	207,212	Aug. 20	588	176	14	287
Share, L. G., assignor of one-half interest to S. B. Brooks, Corry, Pa. Fifth-wheel	207,213	Aug. 20	589	177	14	287
Sheldon, S. W., New York, N. Y. Barrel-cover	207,214	Aug. 20	590	177	14	287
Shepherd, F. H., Davenport, Iowa. Street-lamp	207,136	Aug. 20	510	154	14	277
Sherrick, B. F., Elida, Ohio. Ditching-machine	207,137	Aug. 20	511	154	14	277
Shirley, E. M., Washington, D. C. Drip-pan for liquid-measures	207,138	Aug. 20	512	155	14	277
Shultz, S. B., Princeton, Ill. Washing-machine	207,215	Aug. 20	590	177	14	287
Shute, G. S., Boston, Mass. Thermostat for fire-alarms	207,139	Aug. 20	513	155	14	277
Simpson, C. W., and G. C. Howard, Philadelphia, Pa. Machine for granulating tobacco	207,140	Aug. 20	514	155	14	277
Smith, A. E., Bronxville, N. Y. Shaft and journal	207,313	Aug. 20	690	206	14	300
Smith, C. V., and W. Farmer, New York, N. Y. Gas-scrubber	207,216	Aug. 20	592	177, 178	14	287
Smith, H. B., assignor of one-half interest to W. Chambers, Philadelphia, Pa. Folding rocking-chair	207,312	Aug. 20	690	205	14	300
Smith, H. C. (See Salisbury and Smith.)						
Smith, R. T., Nashua, N. H. Embroidery-pattern	207,141	Aug. 20	515	155	14	278
Spencer, C. F., Rochester, N. Y. Lamp	207,314	Aug. 20	692	206	14	300
Springer, F. J. (See Gillespie and Springer.)						
Springer, H. J. (See Gillespie and Springer.)						
Squire, J. J., assignor to L. M. and M. Rumsey, St. Louis, Mo. Horse hay-rake	207,217	Aug. 20	593	178	14	288
Stack, W., Oakland, Cal. Device for driving nails under water	207,315	Aug. 20	692	206	14	300
Starr, E. T., assignor to S. S. White, Philadelphia, Pa. Head-rest for dental chairs	207,316	Aug. 20	693	207	14	300
Stehley, W. M., King William C. H., Va., assignor to himself and J. S. McCalmont, Franklin, Pa. Elastic armor for ships	207,218	Aug. 20	594	179	14	288
Stephenson, F. G., Plainville, Conn. Automatic lamp-lighting device	207,317	Aug. 20	694	207	14	300
Stevenson, C., Southwest Oswego, N. Y. Hay-rack	207,219	Aug. 20	594	179	14	288
Stewart, W. W., Brooklyn, N. Y. Fountain-pen	207,318	Aug. 20	695	207	14	301
Stoddard, M. W. (See Rouse and Stoddard.)						
Sues, J., and S. W. Raplee, Louisville, Ky. Child's carriage	207,220	Aug. 20	596	179	14	288
Swindell, W., Allegheny, Pa. Metallurgic gas-furnace	207,221	Aug. 20	596	179, 180	14	288
Tatham, J., Philadelphia, Pa. Indicator	207,319	Aug. 20	696	208	14	301
Taylor, H. P. (See Bailey, M. B., assignor.)						
Taylor, W. H., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Lock. (Reissue)	8,379	Aug. 20	715	214	14	303
Tennent, G. B., Asheville, N. C. Wheelbarrow	207,222	Aug. 20	598	180	14	288
Thompson, J. H., Grand Junction, Iowa, assignor to himself and W. H. Hager. Railway cross-tie	207,320	Aug. 20	697	208	14	301
Thompson, Perley & Waite. (See Perley, C. A., assignor.)						
Tripp, S. D., Lynn, Mass. Machinery for skiving boot and shoe counters	207,223	Aug. 20	598	180, 181	14	288
Tufts, T. B., Le Roy, N. Y. Cooking-stove	207,142	Aug. 20	516	156	14	278
Turner, J. W., Baltimore, Md. Clothes-line holder	207,224	Aug. 20	602	181	14	289
Upstone, J., San Francisco, Cal. Metallic wheelbarrow	207,225	Aug. 20	603	181	14	289
Van Tassel, P., and M. Paup, Port Madison, Wash. Ter. Steam-pump	207,226	Aug. 20	603	181	14	289
Van Wagenen, A., assignor to Hatch Flexible Sewed Shoe Company, Boston, Mass. Boot and shoe	207,227	Aug. 20	604	182	14	289
Van Winkle, A. (See Baxter, W., assignor.)						
Vordtriede, E. H. (See Schroeder, H., assignor.)						
Vulcanized Fibre Company. (See Hoffecker, J. S., assignor.)						
Wainwright, A., Spring City, Pa. Founders' facings	207,321	Aug. 20	698	.....	14	301
Walker, J. L., Turkey City, Pa. Low-water indicator	207,322	Aug. 20	698	208	14	301
Walser, C. J., Lancaster, Pa. Horse-detacher	207,143	Aug. 20	517	156	14	278
Walsh, J. E., New York, N. Y. Grain-elevator	207,323	Aug. 20	698	208	14	301
Wands, J. C. (See Burnham, J. L., assignor.) (Reissue.)						
Wasell, E., Digby, Nova Scotia, Canada. Pier	207,228	Aug. 20	605	182	14	289
Waterhouse, E., New York, N. Y. Neck-tie	207,324	Aug. 20	699	209	14	301
Weismantel, V. (See Engelke, Feiner, and Weismantel.)						
Weller, W. F., Liverpool, N. Y. Root-cutter	207,144	Aug. 20	519	156	14	278
Wellman, P. E., St. Petersburg, Pa. Torpedo for oil-wells	207,325	Aug. 20	700	209	14	301
Wells, C. J., Buffalo, N. Y. Apparatus for unloading sand, grain, &c., from vessels	207,229	Aug. 20	606	182	14	289
Wells, F. A., Memphis, Tenn. Automatic boiler-feeder	207,326	Aug. 20	702	209	14	301
Wensley, J., Philadelphia, Pa. Sewing-machine	207,230	Aug. 20	607	182	14	289
Weyman, G. W., Philadelphia, Pa. Glass-press	207,327	Aug. 20	703	209	14	302
Wharton Railroad Switch Company. (See Wharton, W., Jr., assignor.)						
Wharton, W., Jr., assignor to Wharton Railroad Switch Company, Philadelphia, Pa. Railway-frog	207,328	Aug. 20	704	210	14	302
White, A. M. (See King and White.)						
White, O. C., Hopkinton, Mass., and A. T. Ashmead, Hartford, Conn., assignors to S. S. White, Philadelphia, Pa. Dentist's chair. (Reissue)	8,380	Aug. 20	717	214	14	303
White, S. S. (See Starr, E. T., assignor.)						
White, S. S. (See White and Ashmead, assignors.) (Reissue.)						
Wilder, R. A., Cressona, Pa. Transporting petroleum-oil	207,231	Aug. 20	608	183	14	289
Williams, R., Jr., *et al.* (See Haigh, B. F., assignor.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Williams, R. P., and L. Worsham, Alameda, Cal. Welding copper	207,145	Aug. 20	520	.....	14	278
Williams, R. R. (See Davies, J. P., assignor.)						
Wilson, R., and D. McCallay, Middletown, Ohio. Tobacco-cutting machine	207,146	Aug. 20	520	156	14	278
Wilson, T. A., San Francisco, Cal. Washing-machine	207,232	Aug. 20	609	183	14	289
Winsor, J. S., Providence, R. I. Cloth-drying machine	207,329	Aug. 20	704	210	14	302
Winsor, J. S., Providence, R. I. Wire-drawing machine	207,330	Aug. 20	706	211	14	302
Winsor, J. S., Providence, R. I. Machine for tapping nuts	207,331	Aug. 20	707	211, 212	14	302
Woodworth, E. G., Pittsburg, Pa. Wash-boiler	207,147	Aug. 20	521	157	14	278
Worsham, L. (See Williams and Worsham.)						
Wortman, W. B., Louisville, Ky. Umbrella-sign	207,332	Aug. 20	709	212	14	303
Wright, I. H., Baltimore, Md. Apparatus for hatching fish-eggs	207,333	Aug. 20	709	212	14	303
Wright, J., and G. McNary, Delafield, Wis. Corn-planter	207,148	Aug. 20	522	157	14	278
Wright, L. W., Brooklyn, N. Y. Bleaching or dyeing fabrics in bulk	207,334	Aug. 20	710	.....	14	303
Yale Lock Manufacturing Company. (See Taylor, W. H., assignor.) (Reissue.)						
Yarrow, A. F., Isle of Dogs, Poplar, England. Ventilating ships	207,335	Aug. 20	711	212, 213	14	303
Zahn, S. S., Huntington, Ind. Churning apparatus	207,233	Aug. 20	610	183	14	289

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 20th DAY OF AUGUST, 1878.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Adding-machine	M. W. Clay	207,255	Aug. 20	635	189	14	292
Axle. Vehicle	W. Beers. (Reissue)	8,384	Aug. 20	721	215	14	305
Axles. Machine for upsetting collars on vehicle	J. C. Richardson	207,208	Aug. 20	585	175	14	286
Bale-tie	J. C. Harper	207,273	Aug. 20	654	194	14	295
Bale-tie. Wire	R. H. Bartlett	207,097	Aug. 20	477	143	14	273
Balls. Apparatus for the manufacture of seamless	J. Brant	207,158	Aug. 20	530	159	14	280
Barrel-cover	S. W. Sheldon	207,214	Aug. 20	590	177	14	287
Basins. Overflow and trap for	C. H. Moore	207,197	Aug. 20	574	172	14	285
Bath apparatus. Vapor	G. W. Carpender	207,249	Aug. 20	629	188	14	292
Battery. Galvanic	W. W. Griscom	207,270	Aug. 20	650	193	14	295
Belting. Machine for stretching	C. K. Dodge	207,259	Aug. 20	638	190	14	293
Blackboard	E. G. Durant	207,111	Aug. 20	487	146	14	274
Bleaching or dyeing fabrics in bulk	L. W. Wright	207,334	Aug. 20	710	.....	14	303
Blind-wiring machine	C. Hinz	207,181	Aug. 20	556	167	14	283
Boiler-feeder. Automatic	F. A. Wells	207,326	Aug. 20	702	209	14	301
Boiler. Steam	G. P. Salisbury and H. C. Smith	207,133	Aug. 20	508	153	14	277
Boilers. Heating attachment for steam	H. Park	207,298	Aug. 20	676	201	14	298
Bolt-clipping machine	C. Chambers, Jr., and W. Mendham	207,252	Aug. 20	631	189	14	292
Boot and shoe	A. Van Wagenen	207,227	Aug. 20	604	182	14	289
Boot and shoe counters. Machinery for skiving	S. D. Tripp	207,223	Aug. 20	598	180 181	14	288
Boot-jack	J. Roberts	207,209	Aug. 20	586	176	14	287
Bottle-corking machine	J. C. M. Braun	207,244	Aug. 20	623	186	14	291
Bottle-stopper	E. Harris. (Reissue)	8,382	Aug. 20	720	215	14	304
Bottle stopper and sprinkler	T. J. Holmes	207,279	Aug. 20	660	195	14	296
Bottle-washer	P. Seibel, Jr	207,311	Aug. 20	688	205	14	300
Box. Berry	R. E. Morey and T. H. McDonald	207,199	Aug. 20	575	172	14	285
Braid, &c., in packages. Device for holding	S. B. Fleisher	207,114	Aug. 20	490	147	14	274
Brake. Car	S. Hewitt	207,179	Aug. 20	554	166	14	282
Brake for cars. Air	J. M. Maxwell	207,126	Aug. 20	502	151	14	276
Brake. Elevator	R. Marshall	207,201	Aug. 20	671	199	14	297
Brake. Wagon	W. G. Fink	207,171	Aug. 20	545	163	14	281
Brick-making machinery	W. Mendham	207,293	Aug. 20	672	200	14	298
Brush	S. Crane	207,256	Aug. 20	636	190	14	293
Brush	T. Dillon	207,110	Aug. 20	486	146	14	274
Calipers	A. Schmitter	207,302	Aug. 20	686	204	14	299
Can	J. W. Masury	207,191	Aug. 20	567	170	14	284
Can or package for paints	J. W. Masury	207,190	Aug. 20	566	170	14	284
Cans. Attachment for securing caps or covers to	D. Parks	207,131	Aug. 20	507	153	14	277
Car-coupling	J. L. Berry	207,100	Aug. 20	478	144	14	273
Car-journal cooler	R. C. Morris	207,336	Aug. 20	713	213	14	303
Car-platform	E. H. Janney and L. R. Mathews	207,183	Aug. 20	559	167	14	283
Car-roof	J. L. Burnham. (Reissue)	8,383	Aug. 20	720	215	14	304
Carding-machine	B. F. Haigh	207,272	Aug. 20	653	194	14	295
Carriage. Child's	J. Sues and S. W. Raplee	207,220	Aug. 20	596	179	14	288
Carriages, &c. Apparatus for heating railway	L. F. J. Lemeunier and E. Gerard	207,289	Aug. 20	668	198	14	297
Cartridge for fire-arms	D. P. Bush and J. A. Krauspe	207,248	Aug. 20	628	188	14	291
Carving-machine	M. Rice	207,207	Aug. 20	584	175	14	286
Casting ingot-molds. Core for	E. J. Kelly	207,285	Aug. 20	665	197	14	297
Cellar. Water-proof	T. New. (Reissue)	8,387	Aug. 20	727	217	14	306
Chair. Barber's	E. Berninghans	207,099	Aug. 20	478	143	14	273
Chair. Dentist's	O. C. White and A. T. Ashmead. (Reissue.)	8,380	Aug. 20	717	214	14	303
Chair. Folding rocking	H. B. Smith	207,312	Aug. 20	690	205	14	300
Chair. Nursery	C. A. Perley	207,205	Aug. 20	582	174	14	286
Chair. Rocking	W. Seng	207,135	Aug. 20	510	154	14	277
Chairs. Head-rest for dental	E. T. Starr	207,316	Aug. 20	693	207	14	300
China, glassware, &c. Riveting broken articles of	P. Forrester	207,265	Aug. 20	646	192	14	294
Churn	H. F. Hogan	207,276	Aug. 20	657	195	14	295
Churning apparatus	S. S. Zahm	207,333	Aug. 20	610	183	14	299
Clamp. Miter	F. P. Moser	207,295	Aug. 20	674	200	14	298
Cloth-drying machine	J. S. Winsor	207,329	Aug. 20	704	210	14	302
Clothes-line holder	J. W. Turner	207,224	Aug. 20	602	181	14	289
Clothes-rack	S. Reed	207,132	Aug. 20	507	153	14	277
Cock casing. Stop	P. Burke	207,246	Aug. 20	626	187	14	291
Coin-holder	H. G. Pearson	207,300	Aug. 20	679	202	14	299
Compasses. Blackboard	C. W. Blake	207,101	Aug. 20	479	144	14	273
Cooler. Beer	W. F. Fey	207,264	Aug. 20	645	192	14	294
Corn-sheller	C. C. Burroughs	207,163	Aug. 20	536	161	14	280
Corset-clasp	L. M. Chipley	207,253	Aug. 20	633	189	14	292
Crane. Hydraulic	C. H. Morgan	207,200	Aug. 20	576	173	14	285
Cross-tie. Iron	J. A. Bonnell	207,242	Aug. 20	621	186	14	291
Damping-roller	J. A. Brown	207,160	Aug. 20	532	160	14	280
Dental rubber-dam clamp	C. E. Busey	207,103	Aug. 20	481	144	14	273
Derrick. Portable	R. McCord, Jr., and G. W. Alexander	207,292	Aug. 20	671	199	14	298
Ditching-machine	B. F. Sherrick	207,137	Aug 20	511	154	14	277
Drill-chuck	C. Elterich and A. H. Briggs	207,113	Aug. 20	488	147	14	274
Drill for boring blast-holes. Expanding	J. Julien	207,122	Aug 2	498	150	14	275

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Drill. Upright metal	O. Plummer	207,206	Aug. 20	583	175	14	286
Drilling machine. Rock	S. G. Bryer	207,162	Aug. 20	534	160	14	280
Elevator. Grain	J. E. Walsh	207,323	Aug. 20	698	208	14	301
Embroidery-pattern	R. T. Smith	207,141	Aug. 20	515	155	14	278
End-gate. Wagon	D. Austin	207,095	Aug. 20	475	143	14	273
Engine. Fire	H. M. Cooper	207,165	Aug. 20	537	161	14	280
Engines. Portable steam	W. Baxter	207,237	Aug. 20	614	184	14	290
Epithem	B. A. Prophet	207,302	Aug. 20	681	.....	14	299
Eyeglass	P. E. Godefroy	207,116	Aug. 20	492	147	14	275
Fabrics. Machine for stretching, dipping, and drying	J. D. McLean	207,192	Aug. 20	569	171	14	284
Feather-renovator	R. E. Gibbons and D. N. Ashmore	207,266	Aug. 20	646	192	14	294
Fence-post and fence	G. R. Clark and F. Lothrop	207,254	Aug. 20	633	189	14	292
Fifth-wheel	L. G. Share	207,213	Aug. 20	589	177	14	287
Fire-alarms. Thermostat for	G. S. Shute	207,139	Aug. 20	513	155	14	277
Fire-arm. Revolving	H. M. Erskine	207,168	Aug. 20	541	163	14	281
Fish-eggs. Apparatus for hatching	I. H. Wright	207,333	Aug. 20	709	212	14	303
Flour-dressing machine	T. F. Greenleaf	207,176	Aug. 20	551	165	14	282
Founder's facings	A. Wainwright	207,321	Aug. 20	698	.....	14	301
Furnace. Metallurgic gas	C. Gröbe	207,177	Aug. 20	552	165 166	14	282
Furnace. Metallurgic gas	W. Swindell	207,221	Aug. 20	596	179 180	14	286
Gas-regulator	G. S. Lacey	207,187	Aug. 20	562	169	14	283
Gas-scrubber	C. V. Smith and W. Farmer	207,216	Aug. 20	592	177 178	14	287
Gate	W. B. Allen	207,149	Aug. 20	522	157	14	278
Gate	J. Hill	207,274	Aug. 20	655	194	14	295
Gate	J. Medhurst	207,129	Aug. 20	505	152	14	276
Gate and door fastening	E. S. Hunt	207,120	Aug. 20	495	148	14	275
Glassware for the purpose of shaping and finishing. Preparing articles of	G. W. Blair	207,241	Aug. 20	620	185	14	291
Grain-binder	M. A. Keller	207,123	Aug. 20	499	150	14	276
Grain-scourer	G. Meench	207,294	Aug. 20	673	200	14	298
Grain-scouring machine	C. Schaschue	207,307	Aug. 20	685	204	14	299
Grain-separator	H. A. Barnard	207,236	Aug. 20	612	184	14	290
Grain-separator	A. B. Farquhar	207,170	Aug. 20	544	163	14	281
Graves. Coping and covering for	C. H. Bassett	207,155	Aug. 20	528	159	14	279
Harvester	C. McGregory	207,128	Aug. 20	504	152	14	276
Harvester-cutting apparatus	T. H. Eulass	207,169	Aug. 20	543	163	14	281
Hay-rack	C. Stevenson	207,219	Aug. 20	594	179	14	288
Head-lights. Signal for locomotive	W. Kelley	207,284	Aug. 20	664	197	14	296
Hoes. Manufacture of	J. Bergmann	207,238	Aug. 20	616	184	14	290
Horse-collar	H. L. Mennerich	207,194	Aug. 20	571	171	14	284
Horse-detacher	C. J. Walser	207,143	Aug. 20	517	156	14	278
Horse-power	J. H. Blain	207,156	Aug. 20	529	159	14	279
Household utensil	E. Brown	207,161	Aug. 20	533	161	14	280
Hub. Carriage-wheel	W. Reinhard	207,303	Aug. 20	682	203	14	299
Hub. Vehicle	G. L. Rouse and M. W. Stoddard	207,210	Aug. 20	586	176	14	287
Hydraut	F. Jarecki	207,185	Aug. 20	560	168	14	283
Ice. Apparatus for making	D. L. Holden	207,278	Aug. 20	658	195	14	296
Ice. Apparatus for making	E. P. Lorch	207,290	Aug. 20	670	199	14	297
Ice-tongs	C. B. Payson	207,204	Aug. 20	580	174	14	286
Indicator	J. Tatham	207,319	Aug. 20	696	208	14	301
Indicator. Low-water	J. L. Walker	207,322	Aug. 20	698	208	14	301
Insect-destroyer	P. S. Ryan	207,306	Aug. 20	684	203	14	299
Insecticide	J. Barth, Jr	207,235	Aug. 20	612	.....	14	290
Lamp	C. F. Spencer	207,314	Aug. 20	692	206	14	300
Lamp-chimney	S. B. Inglis	207,280	Aug. 20	661	196	14	286
Lamp-lighting device. Automatic	F. G. Stephenson	207,317	Aug. 20	694	207	14	300
Lamp. Street	F. H. Shepherd	207,136	Aug. 20	510	154	14	277
Lantern	E. F. Cash	207,104	Aug. 20	481	145	14	273
Lathes. Scroll-saw attachment to	T. R. Almond	207,150	Aug. 20	524	157	14	279
Life-boat	F. Dunn	207,166	Aug. 20	538	162	14	281
Liquid-measures. Drip-pan for	E. M. Shirley	207,138	Aug. 20	512	155	14	277
Lock	W. H. Taylor. (Reissue)	8,379	Aug. 20	715	214	14	303
Lock for packing-boxes. Seal	B. S. Atwood	207,234	Aug. 20	611	183	14	290
Lubricator. Vehicle-axle	R. R. Moore	207,195	Aug. 20	571	171	14	284
Mash-rake	C. Kaestner	207,283	Aug. 20	663	196	14	296
Meat-tenderer	J. P. Davies	207,107	Aug. 20	484	145	14	274
Meats. Apparatus for curing	D. L. Holden	207,277	Aug. 20	657	195	14	295
Meats. Apparatus for preserving	W. I. Goodlin	207,268	Aug. 20	648	193	14	294
Middlings-purifier	A. R. Gulfder. (Reissue)	8,386	Aug. 20	725	216	14	305
Mill. Hominy	J. Engelke, F. Feiner, and V. Weismantel.	207,261	Aug. 20	642	191	14	293
Mining-riffle	C. O. Bagley	207,153	Aug. 20	526	158	14	279
Motor	L. P. King and A. M. White	207,186	Aug. 20	561	168 169	14	283
Motor. Water	A. W. Bush	207,247	Aug. 20	627	187	14	291
Myopia. Device for preventing	D. Morse	207,198	Aug. 20	575	172	14	285
Nail and spike extractor	W. H. Barwick	207,098	Aug. 20	477	143	14	273
Nails under water. Device for driving	W. Stack	207,315	Aug. 20	692	206	14	300
Neck-tie	R. Waterhouse	207,324	Aug. 20	699	209	14	301
Neck-tie folder	W. A. Laverty	207,288	Aug. 20	668	198	14	297
Nut-lock	J. S. Hoffecker	207,275	Aug. 20	656	194	14	295
Nut-tapping machine	J. S. Winsor	207,331	Aug. 20	707	211 212	14	302
Oatmeal-machine	G. Aylliffe	207,152	Aug. 20	525	158	14	279
Oil. Transporting petroleum	R. A. Wilder	207,231	Aug. 20	608	183	14	289
Padlock	H. Schroeder	207,310	Aug. 20	687	205	14	300
Paint	M. B. Bailey	207,096	Aug. 20	476	.....	14	273
Paper card-baskets. Making	R. W. Betts	207,239	Aug. 20	616	185	14	290
Paper-cutting machine	W. T. Shaffer	207,212	Aug. 20	588	176	14	287
Paper-fasteners. Machine for attaching	C. W. Blake	207,157	Aug. 20	529	159	14	279
Paper-making and other machines. Roller for	F. A. B. Koons	207,287	Aug. 20	667	198	14	297
Pen. Fountain	W. W. Stewart	207,318	Aug. 20	695	207	14	301
Pier	E. Wasell	207,228	Aug. 20	605	182	14	289
Planing-machine	M. A. Maybee	207,127	Aug. 20	503	151	14	276
Planter and check-row marker. Corn	W. M. Carriker	207,250	Aug. 20	630	188	14	292

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Planter. Corn-	W. B. Chambers and J. E. Bering	207,251	Aug. 20	630	188	14	292
Planter. Corn-	J. Wright and G. McNary	207,148	Aug. 20	522	157	14	278
Plow	J. O. Farrell	207,130	Aug. 20	506	153	14	276
Plow	L. Gibbs	207,174	Aug. 20	548	164	14	282
Pole and shafts. Wagon	F. Rice	207,304	Aug. 20	683	203	14	299
Potato-digger	C. W. Green and M. T. Howland	207,175	Aug. 20	549	164 / 165	14	282
Press. Glass-	G. W. Weyman	207,327	Aug. 20	703	209	14	302
Pump. Steam-	P. Van Tassel and M. Paup	207,226	Aug. 20	603	181	14	289
Puzzle-block	E. U. Kinsey	207,124	Aug. 20	500	150	14	276
Railway cross-tie	J. H. Thompson	207,320	Aug. 20	697	208	14	301
Railway-frog	W. Wharton, Jr	207,328	Aug. 20	704	210	14	302
Railway-gate	S. Barnes	207,154	Aug. 20	527	158	14	279
Railway. Portable	F. Amat	207,151	Aug. 20	525	158	14	279
Railway-rail joint	D. R. Harder	207,119	Aug. 20	494	148	14	275
Railway-rail joint	S. E. Hilliard	207,180	Aug. 20	555	166	14	282
Railways, &c. Bearing and support for elevated	B. F. Britton	207,245	Aug. 20	624	187	14	291
Railways. Griper for wire-rope	J. Hansen	207,118	Aug. 20	493	148	14	275
Rake. Horse hay-	J. J. Squire	207,217	Aug. 20	593	178	14	288
Root-cutter	W. F. Weller	207,144	Aug. 20	519	156	14	278
Sad-iron	C. H. Parsons	207,299	Aug. 20	677	201 / 202	14	298
Saddle. Harness-	J. Patten	207,203	Aug. 20	580	174	14	286
Sash. Window-	A. Radolph	207,305	Aug. 20	683	203	14	299
Saw. Hand-	W. Berney	207,159	Aug. 20	531	160	14	280
Saw-mill appliance	R. E. Gleason	207,207	Aug. 20	647	192	14	294
Scales. Weighing-	T. Fairbanks	207,263	Aug. 20	644	191	14	293
Scouring-board	G. W. Curry	207,257	Aug. 20	637	190	14	293
Scrubbing device	A. J. Davis	207,108	Aug. 20	485	145	14	274
Scythe-snath fastening	G. E. Clow	207,164	Aug. 20	537	161	14	280
Seeder and cultivator. Broadcast	G. Esterly. (Reissue)	8,385	Aug. 20	722	216	14	305
Sewer-trap	W. F. Downey	207,260	Aug. 20	640	191	14	293
Sewing-machine	J. Wensley	207,230	Aug. 20	607	182	14	289
Sewing-machines. Feeding device for button-hole	J. W. Furbush and J. Perley	207,173	Aug. 20	546	164	14	281
Shaft and journal	A. E. Smith	207,313	Aug. 20	690	206	14	300
Ships. Elastic armor for	W. M. Stebley	207,218	Aug. 20	594	179	14	288
Shoulder-pad	G. J. Schen	207,311	Aug. 20	587	176	14	287
Sign-umbrella	W. B. Wortman	207,332	Aug. 20	709	212	14	303
Skirt-hoop	T. R. De Forest and T. S. Gilbert. (Reissue.)	8,378	Aug. 20	714	213	14	303
Snap-hook	J. C. Schneider	207,309	Aug. 20	686	204	14	300
Stamp. Canceling-	W. Krutzsch	207,125	Aug. 20	501	151	14	276
Stove	J. B. Oldershaw	207,206	Aug. 20	674	200	14	298
Stove. Cooking-	D. E. Paris	207,297	Aug. 20	675	201	14	298
Stove. Cooking-	T. H. Tufts	207,142	Aug. 20	516	156	14	278
Stoves. Broiler attachment for	J. M. Killin	207,286	Aug. 20	666	197	14	297
Stump-puller	J. A. Jeffers	207,282	Aug. 20	662	196	14	296
Sugar. Treating beet-root for the manufacture of	F. N. Frezon and L. R. D'Oliveira	207,271	Aug. 20	652	.....	14	295
Table. Folding	J. Bradfield	207,243	Aug. 20	622	186	14	291
Tacks. Machine for cleaning and sifting	H. H. Heald	207,178	Aug. 20	553	166	14	282
Tank. Storing-	F. K. Plumbley	207,301	Aug. 20	679	202	14	299
Telephone. Speaking-	E. Gray	207,269	Aug. 20	649	193	14	294
Thill-coupling	C. E. Gillespie, and H. J. and F. J. Springer.	207,115	Aug. 20	491	147	14	274
Tobacco-cutting machine	R. Wilson and D. McCallay	207,146	Aug. 20	520	156	14	278
Tobacco-flavoring	M. Chambers	207,106	Aug. 20	483	.....	14	274
Tobacco. Machine for granulating	C. W. Simpson and G. C. Howard	207,140	Aug. 20	514	155	14	277
Tobacco machine. Plug-	E. P. Jones, J. D. Macomber, and J. P. McCook.	207,121	Aug. 20	496	149	14	275
Torpedo for oil-wells	P. E. Wellman	207,325	Aug. 20	700	209	14	301
Toy. Automatic swimming	E. Martin	207,188	Aug. 20	563	169	14	283
Truck. Car-	A. Rigley. (Reissue)	8,381	Aug. 20	718	215	14	304
Twine-holder	S. C. Catlin	207,105	Aug. 20	483	145	14	274
Vapor-burner	R. F. Danforth	207,258	Aug. 20	637	190	14	293
Vehicle-seat	T. K. Meech	207,193	Aug. 20	570	171	14	284
Velocipede	G. W. Bishop	207,240	Aug. 20	617	185	14	290
Ventilating ships	A. F. Yarrow	207,335	Aug. 20	711	212 / 213	14	303
Vessels. Apparatus for unloading sand, grain, &c., from	C. J. Wells	207,229	Aug. 20	606	182	14	289
Wash-board	J. F. Jaques	207,184	Aug. 20	560	168	14	283
Wash-board	J. T. Sargent	207,134	Aug. 20	509	154	14	277
Wash-boiler	E. G. Woodworth	207,147	Aug. 20	521	157	14	278
Washer. Hand-	H. C. De Witt	207,109	Aug. 20	486	146	14	274
Washing-machine	S. B. Shultz	207,215	Aug. 20	590	177	14	287
Washing-machine	T. A. Wilson	207,232	Aug. 20	609	183	14	289
Water-closet	C. H. Moore	207,196	Aug. 20	573	172	14	285
Water-wheel. Endless-chain	W. L. Orran	207,302	Aug. 20	679	174	14	286
Welding copper	R. P. Williams and L. Worsham	207,145	Aug. 20	520	.....	14	278
Wells. Water-packer for oil-	W. W. Jamieson	207,281	Aug. 20	661	196	14	296
Wheelbarrow	F. Dyer	207,112	Aug. 20	488	146	14	274
Wheelbarrow	G. B. Tennent	207,322	Aug. 20	598	180	14	288
Wheelbarrow. Metallic	J. Upstone	207,325	Aug. 20	603	181	14	289
Wind-wheel	S. W. Martin	207,189	Aug. 20	564	169 / 170	14	284
Window-head fastener	G. M. Evans	207,262	Aug. 20	643	191	14	293
Wire-drawing machine	J. S. Winsor	207,330	Aug. 20	706	211	14	302
Wire. Forming and tempering	C. H. Morgan	207,201	Aug. 20	578	173	14	285
Wire-stretcher	I. G. Ericson	207,167	Aug. 20	540	162	14	281
Wrench. Pipe-	B. S. Hyers	207,182	Aug. 20	558	167	14	283
Wrench. Ratchet	T. C. Hammond	207,117	Aug. 20	492	148	14	275
Wrench. Tap-	C. H. Fowler	207,172	Aug. 20	546	164	14	281
Wrench with cutter. Pipe-	J. Brewer	207,102	Aug. 20	480	144	14	273

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SPECIAL ORDER.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 19, 1878.

By direction of the Secretary of the Interior, HENRY GERNER, of New York city, is disbarred from practice before this Bureau because of "gross misconduct," (section 487 Revised Statutes,) and will not be recognized, from and after this date, as an attorney in the prosecution of cases before this Office.

ELLIS SPEAR,
Commissioner of Patents.

The public are specially cautioned in respect to the party named in the above order. Although disbarred from practice before the Office, he continues to solicit business under the firm-name of Henry Gerner & Son. The attention of the Office has recently been called to circulars published by this person, containing gross misstatements, calculated to deceive the public.

So many complaints have been recently made of ignorance or neglect or fraud on the part of those professing to act as attorneys, that a repetition of the cautions heretofore given by the Office seems now necessary. The preparation of specifications in simple cases even requires technical knowledge, familiarity with the useful arts and with the patent law, and resources in the form of books of reference and records of inventions.

Commissioner Burke (see Report for 1852, p. 451) said:

> No great aid is to be expected in drawing up the substance of the specification from any forms. The character of the devices described varies so widely, and the details to be embodied demand such a different consideration and expression in different cases, that the language adopted on one occasion can rarely be employed on another without great modification.

There is hardly any class of documents in preparing which so little aid is to be derived from precedents; none where more depends upon skill, experience, and ingenuity, or where these are more indispensable.

Yet a large percentage of the cases filed in the Office are prepared by men who have none of the requisites named, and little knowledge beyond mere forms. These are often subordinates dismissed from the Office or from private firms for incompetency or fault, or draftsmen or model-makers. The specifications filed by these attorneys are frequently so imperfect and obscure as to be unintelligible and utterly unfit for publication, and the preparation and conduct of these cases increase the labor of Examiners, and are a fraud upon the inventors.

The Examiners of the Patent Office cannot undertake to do the work of attorneys by rewriting and correcting specifications. Their first duty is to see that the papers are in proper form, to notify the attorney when and where corrections are needed, and, of course, the more ignorant the attorney the more corrections are required, and the greater are the annoyance and trouble to which the Examiner is subjected. It is an Examiner's duty to reject an application if the thing claimed is old, or if the applicant has claimed too much, but it is no part of his duty to notify the attorney when he has claimed too little for his client. It is sometimes done, but it is oftener omitted, and the inventor of a valuable invention gets a worthless patent. Inventors are, therefore, urgently advised to avoid illiterate attorneys who advertise to work at the cheapest rates, but whose services are dear at any price, and to seek the aid of those whose experience and technical and legal knowledge are based on a liberal education, and who are in good standing at the Patent Office and before the country.

In all of our larger cities, where there is a demand for patent practitioners, there are men to be found who are willing and able to give inventors salutary advice, and inventors in any part of the country may find responsible parties able to give them advice as to the selection of attorneys of long and well-known standing.

Inventors are particularly cautioned against men who claim to have special facility in the Office, or who intimate that money may be used to hasten or assure the allowance of their cases.

Inventors who are tempted by circulars or letters containing intimations of the possession by those who issue them of secret influences in the Patent Office will do well to note the following remarks of Commissioner Fisher:

Inventors ought to know that if they are foolish enough to pay their money upon such pretenses, it will never reach the pockets of the Government officials for whom they suppose it to be designed. It goes no further than the unscrupulous attorney or agent, who, assuming to trade upon the supposed corruption of sworn officers, is willing to slander honest men, and destroy public confidence in the administration of public affairs, in order that he may enrich himself at the expense of his credulous client. Instances have come to my knowledge where money has been extorted from clients by agents after patents had been actually allowed, but not yet issued, upon the pretense that it was necessary to bribe the Examiner. I know of no case where the money went beyond the solicitor. No practitioner can assert with truth that he possesses any facilities by which he is enabled to procure patents in advance of any of his competitors beyond his knowledge of the forms and routine of the Office and his skill and care in the preparation of his cases. To take money from his clients under the pretense that it is to be used to procure such facilities is to add theft to falsehood. * * *

It will be a safe rule to distrust those who boast of the possession of special facilities in the Office for procuring patents in a shorter time or with more extended claims than others.

Inventors, when attorneys or others demand exorbitant fees for supposed secret or improper influences in the Patent Office, will do themselves and the Office a service by bringing such communication to the personal attention of the Commissioner.

The caution of Commissioner Fisher, quoted above, has been embodied in pamphlets of attorneys; among others, in those of the very men against whom it was directed; and if the present caution meets with the same fate, inventors may understand that its appearance in a circular or pamphlet is by no means a guarantee of the ability or honesty of those from whom the circular or pamphlet emanates.

The remedy for the evils arising from ignorant and dishonest attorneys is in the hands of the inventors themselves. Let them exercise the same caution and judgment in selecting a patent solicitor which a prudent man considers necessary in selecting any other professional man—a physician or conveyancer, for instance—for performing duties which demand experience and exactitude, and the Patent Office would soon be relieved from the time-consuming annoyances caused by unskilled pretenders, fewer worthless patents would be issued, and less vexation and cost would arise to applicants from the rejection of cases, meritorious in themselves, but unfit to issue merely by reason of the bad preparation of the papers.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of New York.

WILLIAM SPRAGUE AND J. RUSSELL PARSONS, *vs.* JOHN P. ADRIANCE, SAMUEL R. PLATT, AND ISAAC S. PLATT.

[*In Equity.—October term*, 1877.]

After invention perfected long delay in applying for patent will not defeat the inventor's rights, it being clear from the attendant circumstances that there was no intention to abandon and no abandonment in fact of the invention.

Nor is it material to the right of protection that in the interval of delay other inventors have devised and patented the same thing, this being wholly without the knowledge or acquiescence of the first inventor.

Even if it were otherwise, and his conduct operated as an estoppel, whether his assignees, without notice, could be likewise concluded, *Quere?*

The case distinguished from *Fruit Jar Company* vs. *Wright*, (4 Otto, 96,) wherein the inventor was silent, although cognizant of the use of the invention by others, the further distinction being that in the former case there was public use and sale for more than two years prior to the filing of the application to affect the validity of the patent.

It is what was known at the date of completed invention, and not when the application was filed, which fixes the scope of a patent.

Reissue Letters Patent No. 3,372, granted Frederick Nishwitz, April 13, 1869, (original patent February 10, 1858,) for improvement in harvesters, are valid.

It is an infringement even though other devices may be employed in conjunction to supplement the functions of the plaintiff's mechanism, aside from these the mechanism of the two parties being substantially the same.

[*George Gifford* and *Benjamin F. Thurston*, for complainants; *George Harding*, for defendants.]

WHEELER, *J.*:

This suit is brought for relief against an alleged infringement of reissued Letters Patent No. 3,372, Division B, granted to Frederick Nishwitz, and now owned by the orators, for an improvement in mowing-machines, and has been heard on pleadings, proofs, and argument.

It is found as matter of fact that the invention was made in 1853. The application for the original patent was filed January 12, 1858.

The defenses set up are that Nishwitz is not the first inventor; that he abandoned his invention to the public before applying for his patent, or so conducted himself with reference to it that he was estopped from claiming a patent for it, or any rights under the patent; that the reissue is not for the same invention set forth in the original, and that the defendants do not infringe.

Abandonment itself is a fact, and not a conclusion of positive law, statutory or common, arising from any prescribed state of facts. The lapse of time between the invention and the application was about four years and a half, and large, but there was no fixed limit within which the application must be made; it was not so great as in many cases where patents have been upheld; and the straitened and other circumstances of the inventor were such that, although it was some and quite strong evidence in itself of an abandonment, it is explained away, and, taken all together, the evidence not only fails to show any abandonment in fact, but, on the contrary, shows satisfactorily that he cherished and carefully kept his invention to himself, away from the public, for himself.

During that time other inventors entered the same field, and some of them occupied some of nearly, if not exactly, the same ground, and obtained patents for some of nearly, or quite, the same things now claimed under his, and it is with much plausibility urged that after what occurred he and those claiming under him should in equity be estopped from maintaining the claims now made, and the language of the court in *Consolidated Fruit Jar Company* vs. *Wright*, (4 Otto, 96,) is especially relied upon in support of that position. With great justice, to the apprehension of all, it is there well and authoritatively said with reference to this subject, as had been many times by many courts before said with reference to others, that he who is silent when he should speak must be silent when he would speak, if he cannot do so without a violation of law and injustice to others. It is to be observed, however, that the case was made to turn upon the defense of purchase, sale, or prior use of the invention for more than two years prior to the application, with the consent and allowance of the inventor, provided for by section 15 of the act of 1836, and 7 of the act of 1839, and that of an abandonment in fact; and what was said was apparently said with reference to the justice of those defenses rather than with reference to an independent defense founded upon an equitable estoppel. But if such independent defense was alluded to, the proposition was carefully made to include, as always before, that he who is required to be silent on account of not having before spoken must have before remained silent when called upon to speak. In that case the inventor appears to have seen others making use of his invention without claiming it himself, when he must have known that if he did not make known his claim then, and should successfully do so afterward, they would be dannified. He was directly called upon by the circumstances to speak, and, not having spoken, was situated like those witnessing transfers of their property by others without making known their ownership, who have always been estopped from setting it up afterward.

But in this case it is not shown that Nishwitz knew others were making any advancements or investments of either capital or skill on faith that the ground he had begun to occupy was open to all, or that they would not have made if they had known all he could have told them. He was never called upon to speak, and so was never silent when he should have spoken. Therefore this rule, just as it is in itself, does not apply to him.

There might perhaps be question whether, if the inventor himself would be estopped by conduct of his own, his assigns would be, unless shown to have been cognizant of it, as innocent purchasers of other property must be, in order to be estopped, but that question does not arise here, as the inventor himself is not affected.

The statutes allowed a reissue of the patent on certain grounds for the same invention set forth in the original. The grounds of the application and the identity of the invention were so made to appear to the Patent Office that the reissue was granted, and it is valid against the objection made in this respect, unless the difference in the inventions is shown. The original specification and model are shown by copies. The language in which the object of the invention is set forth has been somewhat changed; more full descriptions of some parts of the invention shown by the model have been inserted in place of others, and some so shown have been described in the specification that were not there described before; but in fact nothing has been added to the specification that did not appear before somewhere. The claims have been changed, as the statute warrants, when the invention is in reality the same.

From these considerations it results that the patent is valid for something. It was said in argument in behalf of the defendants that the production patented must be compared with things as they were at the time of the application, and in behalf of the orators that the comparison must be made as of the time of the invention, in order to determine the scope of the patent. The statute authorized granting patents for new and useful inventions, without other limit. It seems to be quite obvious that the extent of an invention must be ascertained by comparing what the inventor produces with what was before that time known. If he is entitled to a patent at all, he is by the statute entitled to one for that invention so ascertained, and there is no provision for cutting it down to less on account of subsequent inventions, and it cannot be so cut down without engrafting an addition onto the statute by a judicial construction never before given to it.

At the time Nishwitz made this invention there was, as far as shown by this record, as has been pointed out by counsel or observed, no mowing-machine, except Manny's, under his patent of 1851, that had its cutting apparatus attached to the forward part of a frame extending forward toward the ground from and swinging by an axle supported by two wheels, and none at all that had this apparatus attached to any frame swinging with or upon an axle so supported separately from the draft-pole, and none that had a lever to raise or lower the cutting apparatus resting on the draft frame or pole. Manny's had a cutting apparatus hung to a frame so extending forward and swinging, but the draft-pole was hinged to the corner furthest from the grass to be cut and next to the ground, and carried forward to another pair of wheels, to which the team was attached, and the main wheels ran directly behind the cutters. Sylla and Adams, if they had made the invention patented to them September 20, 1853, as is probable, had a mower arranged in a manner somewhat similar. Ketchum had a one-wheeled mower, with the cutting apparatus resting on the ground at the side of the wheel. N. T. Allen had a harvester and thrasher, not a mower, with a frame mounted on two wheels and cutting apparatus suspended by rods from it at the front end. Haines had a mower, and there was an English patent for one, with frames so mounted and cutting apparatus suspended by rods from the rear end. Allen's, Haines's, and the English patent each had the cutting apparatus extending laterally toward the grass or grain to be cut. Manny's mower had an arm projecting forward from the frame, and adjustable on the forward carriage, and Sylla and Adams's contrivances for straightening up or bending down the line of the frame and draft to raise or lower the cutting apparatus. The English patent had a windlass and Allen's reaper a lever for the same purpose. Haines's mower afterward had a lever resting on the main frame back of the axle, and not on the draft, also for the same purpose. It is claimed for the defendants that the evidence shows this lever was in use on the Haines machines at that time. But the proofs are very conflicting, and it does not fully appear that it was, as is required to establish the defense of priority of invention or use provided by section 15 of the act of 1836, and the decisions in reference to it.

Nishwitz arranged a mower having two wheels with an axle and a frame extending forward from and swinging with it to support the cutting apparatus, and a draft-pole hinged to and vibrating on the axle over and separately from the frame, and provided for raising, lowering, and adjusting the height of the cutting apparatus by a lever of the second order pivoted on the draft-pole to draw up or let down a rope or chain passing over a pulley to the frame, adjustable by a pawl. Hinging the draft pole and frame in that manner upon and so as to pivot about the main axle separately, allowing the frame and cutting apparatus to rise and fall without the pole doing so, and arranging

the lever, chain, and pawl, with which to raise and lower them when desired, were wholly new features in such machines, and would have been so even if Haines had then had in use such a lever as he employed afterward. His cutting apparatus was not carried by any frame vibrating separately upon the axle, and if it was carried by an equivalent his lever was not pivoted upon nor did it rest on the draft-pole nor anything supported by the team to sustain it. By his arrangement the team might to some extent support the lever in raising the cutting apparatus, but it would only be after the pole had been thrown up as far as the tackling would let it go, and then by holding it with their weight from going higher, not by sustaining it with their strength, as in Nishwitz's arrangement. These improvements all appeared in Nishwitz's original specification and model. His original patent did not cover them, but his reissued one, now owned by the orators, does in its first and second claims.

The defendants have the draft pole and frame supporting the cutting apparatus, each pivoted on and vibrating separately about the axle supported by two wheels, and the lever of the second order pivoted on and supported by the draft-pole, and a part of a circle about the pivot end of the lever for the chain to pass over, equivalent for that purpose to a pulley, and the chain passing over the circle to the frame carrying the cutting apparatus, and a ratchet, equivalent to the pawl, for adjusting the place of the lever, all for the purpose of raising, lowering, and adjusting the height of the cutting apparatus.

Thus the defendants appear to have taken the whole of Nishwitz's invention.

It is said that the object of his invention was to adjust the height of cut, and that the defendants use other means, and not these contrivances, for that purpose. But another object of his invention was to adjust the height of the cutting apparatus in passing obstacles and moving the machine from place to place. The defendants use them for these purposes, and the evidence tends to show that they are used to some extent in their machines for adjusting the height of cut also. To what extent they are used in either respect, either to the profit of the defendants or damage of the orators, is not now to be determined. Either use, as these matters are now viewed, appears to be an infringement. The extent of the use is a proper matter to be determined on an accounting.

Let a decree be entered establishing the validity of the first and second claims of the patent, that the defendants have infringed the same, and for an injunction and account accordingly.

TRADE-MARKS.

[Each certificate bearing date August 27, 1878.]

6,510.—CAPSULES FOR BOTTLES.—*Betts & Co.*, London, England. Application filed April 13, 1877.

"A representation of a padlock."

6,511.—REFINED PETROLEUM.—*Bowering & Archibald*, New York, N. Y. Application filed May 10, 1878.

"The arbitrarily-selected words 'ELECTRIC LIGHT.'"

6,512.—LUMBER.—*George Bell & Sons*, Liverpool, England. Application filed August 8, 1878.

"The figure of a bell."

6,513.—PREPARATIONS OF COCOA.—*James Epps & Co.*, New York, N. Y., and London, England. Application filed October 26, 1877.

"A representation of the sun with the fac-simile of the signature 'JAMES EPPS & CO.' passing through it."

6,514.—FILES.—*New American File Company*, Lincoln, R. I. Application filed June 20, 1878.

"The figures of the American eagle, flag, and shield, and the word 'AMERICAN.'"

6,515.—FLOUR.—*J. Olney Norris*, Baltimore, Md. Application filed August 7, 1878.

"The fanciful name 'SILVER SPRING.'"

6,516.—CLOTHES-WRINGERS.—*Peerless Wringer Company*, Cincinnati, Ohio. Application filed July 18, 1878.

"The word 'FAVORITE.'"

6,517.—BAKING-POWDER.—*William D. McLaren*, Montreal, Quebec, Canada. Application filed July 8, 1878.

"The words 'COOK'S FRIEND.'"

6,518.—SPOOL-COTTON.—*William Warren*, New York, N. Y. Application filed August 8, 1878.

"The arbitrarily-selected words 'OLD DOMINION.'"

6,519.—COLOGNE-WATER AND OTHER TOILET-WATERS.—*David S. Brown & Co.*, New York, N. Y. Application filed July 26, 1878.

"The word-symbol 'BONANZA.'"

6,520.—BAKING AND YEAST POWDER.—*Jewett & Sherman Company*, Milwaukee, Wis. Application filed August 19, 1878.

"The word-symbol 'PERFECTION' and a cluster of pinks, as in fac-simile."

6,521.—PAINTS AND COLORS.—*Adolphus Levesque*, Brooklyn, N. Y. Application filed July 24, 1878.

"A swan, represented as resting or swimming on the water, having the letter 'S' on the right and 'W' on the opposite or left side, as shown."

6,522.—LADIES' AND CHILDREN'S WEARING-APPAREL.—*Siegel Brothers & Co.*, New York, N. Y. Application filed August 13, 1878.

"The symbol-figure of an eagle."

6,523.—LIQUORS.—*Rosskam, Gerstley & Co.*, Philadelphia, Pa. Application filed July 27, 1878.

"The figure of a star and circle. A portion of the circle is darkened. The center of the star is occupied by a flower, heads of grain, and a scroll with the word 'Verus.' In the points of the star are the letters 'R., G. & Co.,' the abbreviations 'Phila.,' 'Estd.,' and the year '1854.'"

6,524.—WAGONS, CARRIAGES, AND SLEIGHS.—*R. M. Stivers*, New York, N. Y. Application filed March 1, 1878.

"The word 'STIVERS' composed of letters of the style shown in the accompanying fac-simile, inclosed in a border of an elliptical shape, upon either side of which border, and forming a part thereof, is a small circle inclosing a small cross, as shown."

LABELS.

[Each certificate bearing date August 27, 1878.]

1,663.—Title: "PEPTO-QUININE."—*Nathaniel R. Bradner*, Philadelphia, Pa. Application filed August 16, 1878.

1,664.—Title: "PRENTISS' EXTRACT OF JAMAICA GINGER."—*Tibbals, Abbott & Co.*, Philadelphia, Pa. Application filed August 17, 1878.

1,665.—Title: "PERFECTION BLACKING."—*Tibbals, Abbott & Co.*, Philadelphia, Pa. Application filed August 17, 1878.

1,666.—Title: "MISSOURI CIDER."—*Green & Clark*, St. Louis, Mo. Application filed May 3, 1878.

1,667.—Title: "BLACK DIAMONDS."—*Levy Brothers*, New York, N. Y. Application filed June 26, 1878.

1,668.—Title: "HOP TONIC."—*Charles R. Stuart*, Cleveland, Ohio. Application filed August 5, 1878.

1,669.—Title: "MADAM LE BEAUTILLER'S ELIXIR OF YOUTH LOTION."—*Lizzie Strong*, Louisville, Ky. Application filed August 19, 1878.

DESIGNS.

[Each design bearing date August 27, 1878.]

10,787.—PLUG-TOBACCO.—*Peyton B. Gravely* and *Robert W. Lawson*, Danville, Va. Application filed July 5, 1878. Term of patent 7 years.

10,788.—SPOONS.—*Henry W. Hirschfeld*, West Meriden, Conn., assignor to *Meriden Britannia Company*, same place. Application filed May 25, 1878. Term of patent 14 years.

10,789.—PLAYING-CARDS.—*John W. Nunen*, Charleston, S. C. Application filed July 13, 1878. Term of patent 14 years.

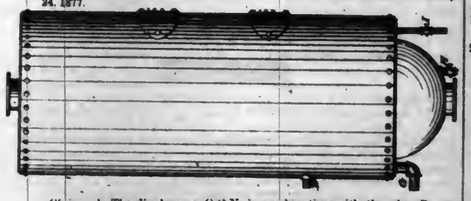
10,790.—CARPETING.—*Eugène Petit*, Paris, France, assignor to *Alexander Smith & Sons Carpet Company*, Yonkers, N. Y. Application filed July 26, 1878. Term of patent 3½ years.

10,791.—COFFIN-HANDLES.—*William R. McComas*, Oakley, assignor to *Crane, Breed & Co.*, Cincinnati, Ohio. Application filed August 10, 1878. Term of patent 3½ years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

AUGUST 27, 1878.

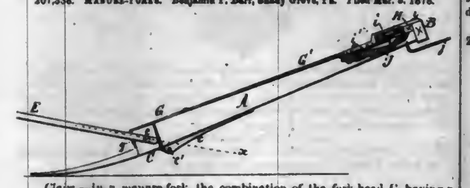
207,337. FEED-WATER HEATERS AND FILTERS. Wm. J. Austin, Chicago, Ill. Filed Apr. 24, 1877.



Claim.—1. The diaphragms C C K, in combination with the pipe D, perforations S, chambers W, X, and T, disks B E E, and the exhaust-pipe F, in the manner shown and described, and for the purpose set forth.

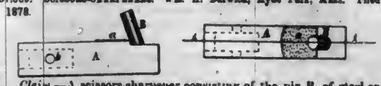
2. In combination with diaphragms formed of filtering material inclosed between perforated plates or grates, the vertical steam-passage m and deflector B, each having in its center the vertical cold-water pipe D, with spraying-perforations S at its upper extremity, substantially as shown and described.

207,338. MANURE-FORKS. Benjamin F. Barr, Shady Grove, Pa. Filed Mar. 9, 1878.



Claim.—In a manure fork, the combination of the fork-head C, having a strap or chain, E, the fulcrum c', straps G G', side pieces A, having slots i, handle B, spring-catches J, and bar H, substantially as and for the purpose set forth.

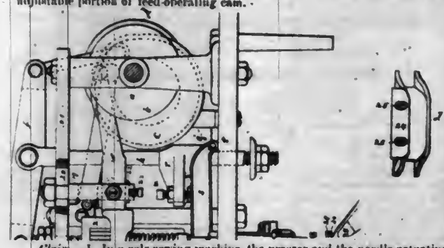
207,339. SCISSORS-SHARPENERS. Wm. H. Barwick, Hyde Park, Mass. Filed Jan. 22, 1878.



Claim.—A scissors-sharpener consisting of the pin B, of steel or suitable material, set into the block A at an angle of twenty degrees, more or less, and the emery pad a, all for the purposes set forth.

207,340. BOOT AND SHOE SEWING MACHINES. I. R. Blake, Boston, Mass. Filed June 6, 1877.

Brief.—The needle-actuating lever is provided with a movable fulcrum-bar, by means of which and suitable connections additional pressure is placed upon the material while the needle is rising through the same and tightening the stitch. The stitch is increased or decreased in length by moving an adjustable portion of feed-operating cam.



Claim.—1. In a sole-sewing machine, the presser and the needle-actuating lever and its movable fulcrum-post, in combination with connecting mechanism, whereby the resistance which the needle and thread meet with in being drawn up through the stock is transferred to the presser-foot resting thereon to increase its pressure at each stitch, substantially as described.

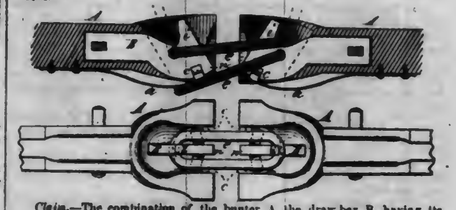
2. The combination, with the needle, the presser-foot, its spring, ratchet, and ratchet-holding pawl, of mechanism to lock the ratchet and permit the presser-foot to be lifted from pressure on the stock just as the needle completes the stitch, as and for the purpose described.

3. The combination, with the needle-lever, fulcrum-post, and its arm, of the screw s, to adjust the length of loop, substantially as described.

4. The presser-foot-lifting lever, in combination with the pivoted horizontally adjustable fulcrum-block, to operate substantially as described.

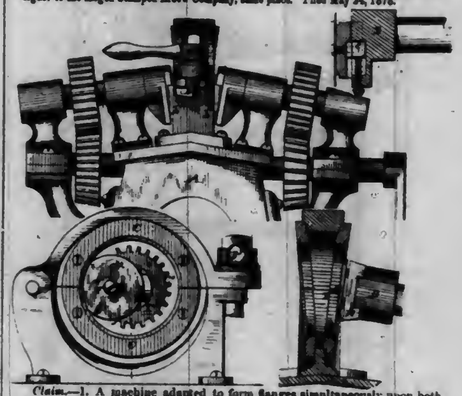
5. The combination, with the feeding mechanism, its connected shaft 26, and arm g', of the cam d and its adjustable throwing part 24, to vary the length of feed, substantially as described.

207,341. CAR-COUPLINGS. Alphonso E. Bradbury, West Springfield, and Vinal B. Barstow, Westfield, Mass., assignors to themselves and H. M. Smith, one-third to each. Filed Apr. 4, 1878.



Claim.—The combination of the bunter A, the draw-bar B, having its front end inclined upward and inward, and provided with the catch i, and the spring s, provided with side projections c, all constructed substantially as described, and forming, in duplicate, an improved car-coupling, as set forth.

207,342. MACHINES FOR FORMING JOINT-FLANGES. Frank P. Cady, Cleveland, Ohio, assignor to the Kegan Stamped Elbow Company, same place. Filed May 24, 1878.



Claim.—1. A machine adapted to form flanges simultaneously upon both ends of a curved pipe-section, the same consisting in the combination, with two annular stationary dies located in planes inclined toward each other, of the two revolving dies, secured on inclined shafts and respectively working within said stationary dies, substantially as set forth.

2. In a machine adapted to form flanges upon both ends of a curved pipe-section, the combination, with the two annular stationary dies, located in planes inclined toward each other, of the two revolving dies, respectively adapted to be adjusted nearer to or farther from the stationary dies, within which they work, substantially as set forth.

3. The combination, with an annular stationary die, secured in an inclined position, of a revolving die, mounted upon an inclined shaft, and adapted to sustain the same angular relation to the said stationary die during its entire revolution about the same, substantially as set forth.

4. In a machine adapted to form flanges upon both ends of a curved pipe-section, the combination, with the two inclined shafts which bear the rotating dies, of a single actuating-shaft and intermediate gearing mechanism, substantially as set forth.

207,343. BRICK-MACHINES. Cyrus Chambers, Jr., Philadelphia, Pa. Filed May 9, 1878.

Claim.—1. In combination with the pugging-shaft P, an enlarged throat-plate, T, placed on the rear end of said shaft, running true with it, and in contact with a loose plano-convex plate, U, in the cavity of the cross-head, all as and for the purpose set forth.

2. The conoidal hopper H, provided with a flange, *a*, and annulus *b*, and arranged with its larger opening downward, in the manner and for the purposes stated.

3. In combination with the shell of the tempering-case, the inlet-pipe I, inserted tangentially into said case on the side on which the tempering-knives are on the ascending part of their revolution, as and for the purpose specified.

4. The shaft P, provided with tempering-knives K, arranged in a spiral line opposite in direction to that of the threads of the expressing-screw, in the manner described, and for the purpose set forth.

5. The spirally-arranged knives K, supported at the back by projections *d* on the pegging-shaft, set in a spiral, and having their faces set to impel the clay toward the delivery end of the machine, as described.

6. The expressing-screw S, having its mouth set a little back from and opposite to the first tempering-knife, in the manner and for the purpose specified.

7. The expressing-screw having a diameter at its delivering-point not more than double the greatest diameter of the forming-die.

8. The former and die-lining made in one piece, as described, for the purpose stated.

9. The former provided on one side with the enlarged hinge *j*, and on the other with the swinging locking-bolt *k*, attached by the wooden pin *m*, in the manner described, for the purposes set forth.

10. The sand-box provided with flexible scrapers *e e' f*, arranged in different planes, so that no corners shall be formed to become clogged by weak and soft clay, as described.

11. The cut-off mechanism consisting of the endless slitted belt N, in combination with the spiral blade Q, constructed as described, and running in the slits of the belt, in the manner and for the purpose stated.

12. The spiral blades Q, having enlarging diameters, as described, held between the adjusting-clamps, and united by through-bolts to the circular heads attached to the shaft X, as shown and described.

13. The blade-shaft X, running in journal-boxes supported by universal joints upon oscillating levers, and connected by pulleys with the clutch and fly-wheel which control the speed of the cut-off mechanism, in the manner described.

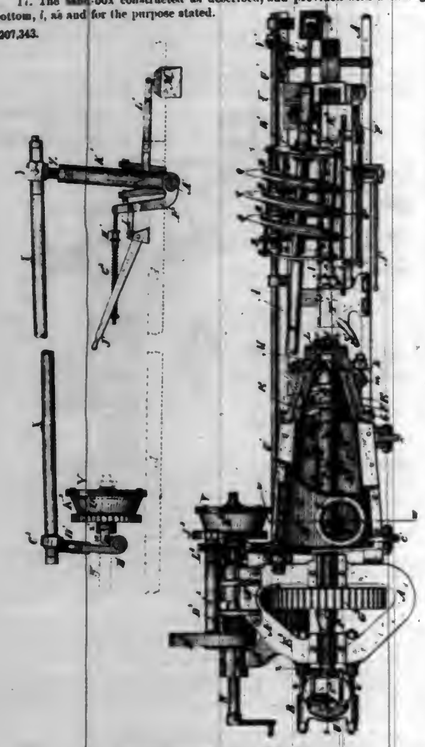
14. The combination of the weighted lever I^1, hollow arm K^1, and rod Z with the journal-box of the blade-shaft X, in the manner described, for the purpose of balancing the blade and enabling it to clear obstructions, as specified.

15. The combination of the main shaft W, clutch V, gear K^2, fly-wheel shaft P, pulleys P^1 M^2, and shaft X of blade Q, in the manner and for the purposes described.

16. The combination, with the hinged former, constructed as described, of the hinged table T^1, provided with the slide S^1, in the manner and for the purpose specified.

17. The sand-box constructed as described, and provided with a sliding bottom, *i*, as and for the purpose stated.

207,343.



207,344. SLEDS. William Chegwin, Fond du Lac, Wis. Filed Jan. 9, 1878.



Claim.—1. The combination, with the runner A, cross-bar *a*, and knee B, of the bolt *c*, brace *d*, connected to the bolt, and brace *f*, as and for the purpose specified.

2. The combination of the runner, beam D, bolster E, blocks F, brace I, bolt J, and nut *m*, as and for the purpose set forth.

3. The plate *t*, interposed between the beam D and knee B, as and for the purpose specified.

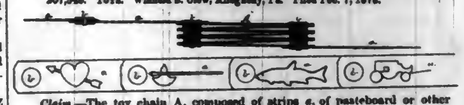
4. The plate *t'*, interposed between the rave and the beam, as set forth.

207,345. HOG-CHOLERA COMPOUND. William Utter, Jr., Clayton, Ind. Filed June 7, 1878.

Brief.—Forms a compound of powdered charcoal, five pounds; powdered allspice, one pound; flaxseed-meal, nine pounds; Jamaica ginger, one pound; Glauber's salts, five pounds; carbonate of soda, three pounds; and common salt, three pounds.

Claim.—The within-described compound, consisting of pulverized charcoal, allspice, flaxseed-meal, Jamaica ginger, Glauber's salts, carbonate of soda, and common salt, in about the proportions named, for the purposes set forth.

207,346. TOYS. Winfield S. Clow, Allegheny, Pa. Filed Feb. 7, 1878.



Claim.—The toy chain A, composed of strips *a*, of pasteboard or other suitable material, pivoted together, when provided with views or designs marked thereon, illustrating the different shapes into which the chain may be formed, substantially as and for the purposes set forth.

207,347. FRUIT-BOXES. George O. Cole, Hillsdale, N. J. Filed June 18, 1878.



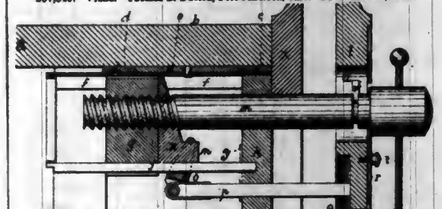
Claim.—As a new article of manufacture, the dish herein described, consisting of the body F, having the wings X X at each of its opposite ends, said wings being provided with openings A A, registering with each other, through which the pointed ends C of the end tongues B B pass from the inside of the dish, respectively, as herein set forth.

207,348. BLACKSMITHS' BUTTERISES. H. B. Crandall, Homer, N. Y., assignor of one-half his right to Watson Holmes, same place. Filed July 8, 1878.



Claim.—The combination, in a blacksmith's butteris, of the blade A, provided with a shank, *a*, beveled on opposite sides at its front edge, and the socket *b* on the arm B, for the reception of the shank *a*, provided with a slot in front, whereby a certain amount of elasticity is imparted to the socket, the walls of said socket, on each side of the slot, being beveled on the inside to correspond with the beveled edges of the shank, to serve as a guide for the insertion of said shank, substantially as specified.

207,349. VISES. Thomas E. Dutton, Port Jefferson, Ohio. Filed June 24, 1878.



Claim.—1. The combination of a table having its corners rounded away, a slide moving across the end, and a vise pivoted to the slide, whereby the vise can be moved back and forth across the end of the table and swung around to the sides, substantially as shown.

2. The combination of the slide *c*, pivoted upon a vise, and the plates *c d*, secured to the under side of the table, substantially as set forth.

3. The combination of the sliding nut *g*, screw *m*, frame *f*, rod *j*, projection *n*, clutch *o*, rod *p*, and outer jaw *l*, substantially as described.

4. The jaw *l*, having slot *u*, in combination with the screw *m*, plate *r*, and set-screw *t*, substantially as described.

5. The jaw *l*, made vertically adjustable, and having a dovetail or other suitably shaped groove, *q*, made in its lower end for the outer end of the rod *p* to move in, whereby the jaw is permitted to be adjusted up and down without moving the rod, substantially as set forth.

6. The jaw *s*, provided with the catches *y*, and having the slot or recess *w* in its lower end, in combination with the piece *h*, having recesses *z*, upon which piece the jaw moves vertically, substantially as specified

207,350. MAGAZINE FIRE-ARMS. George F. Evans, Poland, Me. Filed May 13, 1878.

Brief.—A pin projecting laterally from the bolt works in a curved or angular slot of a pivoted lever at the side of the frame. Said lever is raised and lowered by the movement of the bolt, and an arm or projection on its free end engages with the flutes or ribs of the magazine-cylinder, whereby the latter is intermittingly rotated to feed the cartridges to the chambers.



Claim.—1. The combination, in a breech-loading gun, of the magazine described, the barrel, and the sliding breech-bolt, the fluted cylinder F being located with its axis below the axis of the barrel, so that the said bolt in sliding forward toward the breech of the barrel passes through the upper groove or flute of the said cylinder, thereby carrying a cartridge from such upper groove or flute into the barrel in the act of loading.

2. In a breech-loading gun, the combination of a longitudinally-sliding breech-bolt, a cartridge-magazine, and a lever, *e*, whereby the fluted cylinder F is rotated, as described.

3. In a breech-loading gun, a longitudinally-sliding breech-bolt containing the firing-pin, the face of its forward end being formed with beveled or inclined face *e'* and plane face *e*, eccentric to the axis of the bolt, combined with the barrel, as and for the purpose described.

4. The combination, in a breech-loading magazine-gun, of the breech-bolt D, the cylinder F, the lever *e*, and the shaft or pin *h*, as and for the purpose described.

207,351. CORSET-EXTENDERS. Sherwood B. Ferris, Brooklyn, N. Y. Filed Jan. 21, 1878.

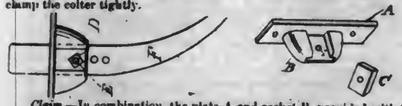


Claim.—1. The corset-stand composed of the central stem, B, and of the boards C D, shaped to conform to the corset, substantially as herein shown and described.

2. The combination of the boards C D and central stem, B, with the inner distending tapes or frame, substantially as herein shown and described.

207,352. COLTERS. Samuel Hathaway, Collins, Ark. Filed June 13, 1878.

Brief.—A section of the colter-socket removable, allowing the bolt to clamp the colter tightly.



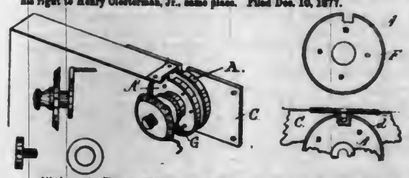
Claim.—In combination, the plate A and socket B, provided with the key C and the vertically-adjustable colter F, having bolt E and nut D, substantially as and for the purpose set forth.

207,353. FOLDING HATS. Jeremiah A. Harrington, Melrose, Mass. Filed Jan. 26, 1878.



Claim.—The improved expansible hat-frame described, consisting of the hoops *x* Z, jointed arms A D, and spring C, constructed and arranged to operate substantially as and for the purpose described.

207,354. PERMUTATION-LOCKS. Alexander Hallburn, Cincinnati, Ohio, assignor of one-half his right to Henry Closterman, Jr., same place. Filed Dec. 10, 1877.



Claim.—1. The combination of the two flanged disks A A' with the pin G of the arbor, the disk A being furnished with a pin on its inner face, and the disk A' being provided with a hole or series of holes through it, and through which the pin G passes, said pin serving at the proper period to actuate the disk A by coming in contact with its pin or projection F, substantially as shown and described.

2. In combination with the flanged disks A A' and their respective holes and pin F and the pin G of the arbor and dial, the double hooked hasp, as described, and shown in Fig. 4.

207,355. LUBRICATORS. Philip Hoffman, Hoboken, N. J. Filed July 12, 1878.

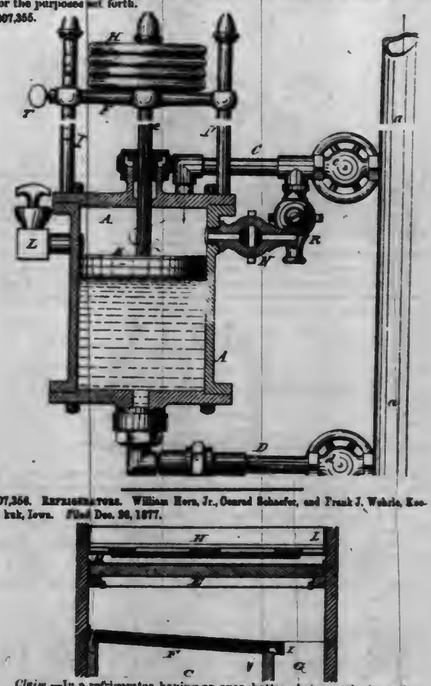
Claim.—1. A steam-lubricator formed of the combination of the oil cylinder A, arranged with its axis vertical, pipes C D, connecting the cylinder at top and bottom with the steam-pipe *a*, piston E, which acts to expel the oil from beneath while it receives a steam-vent from above, and a weighted piston-rod, H *e*, which depresses the piston at a positive and uniform pressure to effect the feed of the oil, substantially as herein shown and described.

2. In a steam-engine lubricator, the combination, with a cylinder, A, connected at top and bottom with the steam space, of the piston E *e*, cross-head F, and graduated guides I I', substantially as shown and described.

3. In a lubricator, the combination, with the cylinder A and piston E, of the filling and vent nozzles L N, arranged on the oil-cylinder on a level with each other and below the point of the piston's highest travel, substantially as and for the purpose set forth.

4. The combination, in a steam-lubricator, of a vertical cylinder, A, steam and oil feed pipes C D, piston E *e*, guides I I', and weighted cross-head F H, provided with a clamp, T, to bear against the said guides, substantially as and for the purposes set forth.

207,356. REFRIGERATORS. William Horn, Jr., Conrad Schaefer, and Frank J. Wehrle, Keokuk, Iowa. Filed Dec. 26, 1877.



Claim.—In a refrigerator having an open bottom between the ice and refrigerating chamber, the caps E and troughs F, formed of wood and lined with sheet metal above and down the sides, the ice-chamber having lining I, with inward-turned edges I', the caps E, having upward projections M at the ends, and the troughs F, having the lining projecting beyond the wood at the spout end, with a dependent lip, l, between spout and wood, substantially as set forth.

207,357. UMBRELLAS. Albert G. Kaball, Cincinnati, Ohio, assignor of one-half his right to Charles F. Dittman, same place. Filed June 21, 1878.



Claim.—1. The combination of slotted tubular handle A *a a'*, inclosed spring B, plug *c*, pin E, and runner F of an umbrella, parasol, or sun-shade, substantially as herein described.

2. The combination of slotted tubular handle A *a a'*, inclosed spring B, plug *c*, pin E, runner F, detents G *g* H *k*, and collars M N, substantially as herein described and set forth.

3. In combination with the slotted tubular handle A *a a'*, inclosed spring B, and runner F of an umbrella or parasol, the pin E, having a nut, *e*, wherewith the velocity of said runner may be regulated, substantially as herein described.

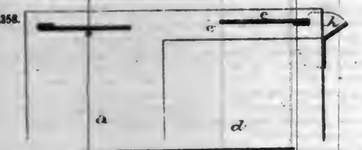
4. The hook I, applied to the runner F and serving the twofold purpose of a pull for said runner, and a device for suspending the umbrella, parasol, or sun-shade, substantially as herein described.

207,358. PHOTOGRAPHIC-PRINTING FRAMES. Wm. H. Baird, Meadon, Mich. Filed May 13, 1878.

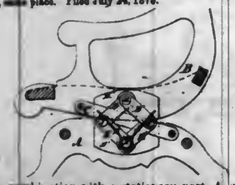
Claim.—1. The frame composed of the board *a*, having the projection *c*, in combination with the board *d* and a suitable holding device, substantially as shown.

2. The combination of the spring *e*, projection *c*, and catch *h*, the spring serving as the pivot upon which the catch turns, substantially as described.

207,358.



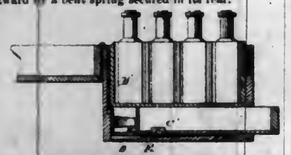
207,359. ROCKING-CHAIRS. Hugo Lamprecht, Jr., New York, N. Y., assignor to Hugo Lamprecht, Sr., same place. Filed July 24, 1878.



Claim.—In combination with a stationary part, A, and the movable part B of a chair, connected by a diagonal bar, C, the parallelogram D E D' E', placed on studs N and M, firmly attached to the two parts A and B, forming the frame of the chair, and the spring S, arranged to operate in the manner and for the purpose substantially as described.

207,360. MEDICINE-CASES. John C. Litsella, Rockford, Ill. Filed Mar. 19, 1877.

Brief.—A spring, furnished with lugs which take into recesses in the bottom of the drawer, serves to secure the drawer in a locked position. A push-pin operated from above releases this spring fastener, and the drawer is then thrown outward by a bent spring secured in its rear.

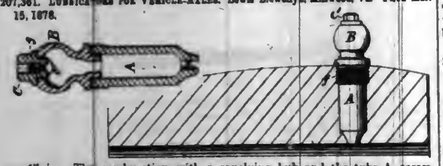


Claim.—1. In combination with a sliding drawer, the locking-spring E, the spur *e*, and the recess *e'*, arranged and operating substantially as described.

2. In combination with the spring E, having the spur *e*, the tripping-rod D', arranged and operating substantially as described.

3. The combination of the drawer, the spring E, tripping-rod D', and the spring D, all arranged and operating substantially as described.

207,361. LUBRICATORS FOR VEHICLE-AXLES. Lewis Llewellyn, Millwood, Va. Filed Mar. 15, 1878.



Claim.—The combination, with a revolving hub and the tube A, screw-threaded exteriorly and interiorly at its upper end and narrowed at its lower end at *a*, of the supply-chamber B, screw-threaded at its upper and lower ends, removable screw-cap C, having a central orifice, valve *c*, and spring *g*, substantially as described, and for the purpose set forth.

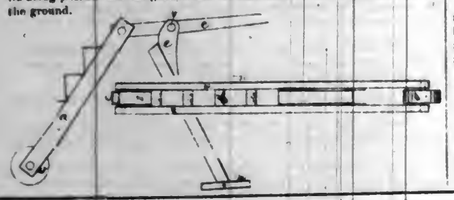
207,362. FENDERS. James S. Lester, Atlanta, Ga., assignor to J. M. Ellis, same place. Filed June 26, 1878.



Claim.—A fender or hearth-plate for fire-places provided with an air-chamber, having a series of outlets for the air and one or more inlets communicating with the air outside the room, substantially as and for the purposes herein set forth.

207,363. WAGON-JACKS. Ralph W. Marshall, Joliet, Ill. Filed July 16, 1878.

Brief.—The roller permits the lower end of the leg or standard to which it is attached to move while the hand-lever is being pushed down, so that the weight will not be shoved forward, but be lifted in a perpendicular direction. To the lower end of the other leg is pivoted an adjustable foot-piece, to prevent its being pushed into the ground and to accommodate it to the unevenness of the ground.



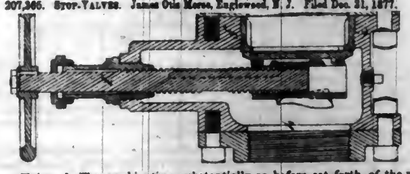
Claim.—The combination and arrangement of the parts *a* and *e*, lever *c*, slotted coupling-crotch *c*, roller *a*, and foot *a*, when arranged to operate in the manner and for the purposes set forth.

207,364. MANUFACTURE OF WHITE LEAD. John O. Martin, Richmond, Great Britain. Filed Nov. 16, 1877. Patented in England, Apr. 4, 1877.

Claim.—1. In the manufacture of white lead, the combination of white lead which is deficient in density with suboxide of lead, substantially in the proportions specified.

2. In the manufacture of white lead, the combination of white lead that is deficient in density with the herein described suboxide of lead, substantially in the proportions specified.

207,365. STOP-VALVES. James Otis Morse, Englewood, N. J. Filed Dec. 31, 1877.



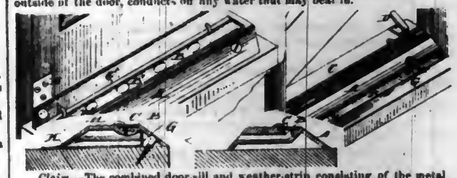
Claim.—1. The combination, substantially as before set forth, of the undivided valve-case, the valve, and the valve-seat, the last two of less diameter than the interior of one of the nozzles of the valve-case.

2. The combination, substantially as before set forth, of the undivided valve-case, the valve-seat inserted into one of the nozzles thereof, and the removable flange, which forms a bearing which sustains said valve-seat.

3. The combination, substantially as before set forth, of the disk-carrier and disk, or valve face, both constructed with ring-bearings, which abut against one another.

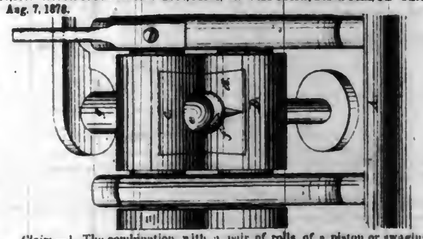
207,366. WEATHER-STRIPS FOR DOOR-SILLS. Geo. B. Horton, Effingham, Ill. Filed July 24, 1878.

Brief.—The weather-strip is located upon the inside of the door, its casting forming a part of the door-sill. As the door is closed a plate attached to the lower corner of the door strikes a curved arm attached to the weather-strip, and turns it up against the door, and as the door is opened it throws the strip down again. A trough in the casting, connecting with outlets extending outside of the door, conducts off any water that may beat in.



Claim.—The combined door-sill and weather-strip consisting of the metal casting A H, provided with the trough B, having outlets B', in combination with the pan G and the lid C, provided with the curved arm D, constructed to be operated by opening and closing the door, substantially as set forth.

207,367. MACHINES FOR ROLLING HOOPS, PICKETS, &c. John Fedder, Beaver Falls, Pa. Filed Aug. 7, 1878.



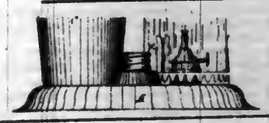
Claim.—1. The combination, with a pair of rolls, of a piston or swaging die and a fixed die located in the same roll, and whose combined faces constitute the form to be produced, the piston or swaging die working transversely through the roll, and having part or parts of the form substantially as specified, said piston die also adapted to be partially or entirely retracted during the operation of the rolls, substantially as and for the purpose specified.

2. The combination, with a pair of rolls, of a piston or swaging die or dies working transversely through the roll, and adapted by mechanism, substantially as described, to be entirely or partially projected and retracted, substantially as and for the purpose specified.

207,368. MEDICAL COMPOUNDS. Jennie Powers, Brooklyn, N. Y. Filed July 25, 1878.

Claim.—The medical compound herein described for the treatment of consumption and kindred complaints, composed of flaxseed, wild-cherry bark, licorice, hoarhound, sunflower-seed, sassafras bark, Irish moss, lungwort, slippery-elm bark, sugar, and whisky, prepared in substantially the manner and proportions herein specified.

207,369.



207,369. LAMPS. Chas. H. Schelle, Cincinnati, Ohio. Filed July 19, 1878.

Claim.—The lamp having the glass and the cap C and a flat-top oil receptacle, A, substantially as herein described and set forth.

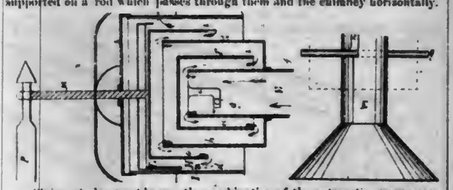
207,370. HEELS FOR BOOTS AND SHOES. James K. Tillotson, Elmira, N. Y. Filed May 25, 1878.



Claim.—The heel-piece C of a boot or shoe, one side of which extends forward, as at *c'*, beyond the line of the edge of the other side, as at *c*, so that the breast of the heel is diagonal, as described, and for the purpose specified.

207,371. STREET-LAMPS. William R. Underhill, Van Wert, Ohio. Filed Apr. 19, 1878.

Brief.—A cap for a lamp-chimney composed of several concentric shells supported on a rod which passes through them and the chimney horizontally.



Claim.—1. In street-lamps, the combination of the automatic governor or damper I, spindle M, hood O, case I, and openings J, substantially as herein set forth.

2. The suspension-rod Q, in combination with the adjustable chimney E, pivoted to and suspended from said rod, and having right-angled slots *e*, in the manner as and for the purpose specified.

3. The adjustable and vibrating stack or chimney E, having right-angled slots *e*, and suspension-rod Q, in combination with the shells F G H and case I, substantially as described.

4. The case or cylinder I, suspension-rod Q, for hanging and supporting the shells F, G, and H and chimney within said case, substantially in the manner as described, and for the purpose set forth.

207,372. LAMP-BURNERS. William S. Underhill, Van Wert, Ohio. Filed Apr. 19, 1878.



Claim.—1. The foraminated band A, external to and in combination with the foraminated case B, inclosing the burner C *c*, and perforated disks or diaphragms *d d*, substantially as and for the purpose set forth.

2. The combination of the perforated burner C *c*, having the encircling flange or disk F, with the foraminated case B, having apertures *b b g g*, between which the said disk is arranged, substantially as described, and for the purpose set forth.

207,373. VENTILATORS. Abraham Unger, New York, N. Y. Filed Nov. 14, 1877.



Claim.—1. A revolving ventilating-wheel, substantially as described, with oblique vanes of mica or other transparent or translucent material, held in position between clamps and fastened by rivets or clips, substantially as described.

2. A cover to a ventilator, constructed of mica or other transparent or translucent material, secured in a suitable frame, substantially as described.

3. In combination with a revolving ventilator-wheel, the hub *f*, constructed as a hollow screw-bolt and nut, substantially as described.

4. In a ventilator, the combination of the lubricating-cups *o o* with the hub *f*, the shaft or pin, and revolving vane, substantially as described.

5. A ventilating-wheel constructed and arranged substantially as described, so that the vanes may be held between diagonal clamps to facilitate their separate attachment and detachment.

207,374. ROCK-CHANNELING MACHINES. Albert G. Webster, Brandon, assignor of one-half his right to John M. Goodenough, Pittsford, Vt. Filed Jan. 30, 1878.

Brief.—The cutter-shaft is hung to an arm, so as to have a rapid rotary and reciprocating motion imparted to it, and capable of being turned in the arc of a circle.

Claim.—1. A rock-channeling machine provided with a shaft, *c*, furnished with cutters *s*, in combination with mechanism for giving such shaft or spindle a continuous rapid rotary and at the same time a gradual endwise-reciprocating motion, substantially as shown and described.

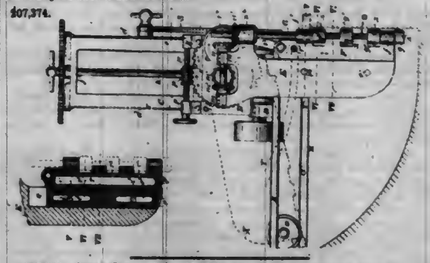
2. A rock-channeling machine provided with a radially projecting arm for supporting a device for cutting a continuous channel, in combination with mechanism for turning such arm about an axis in the arc of a circle, substantially as shown and set forth.

3. A rock-channeling machine having a frame provided with ways *c* and mechanism for raising or lowering therein the mechanism for cutting a continuous channel, so as to regulate the depth of such channel, substantially as set forth.

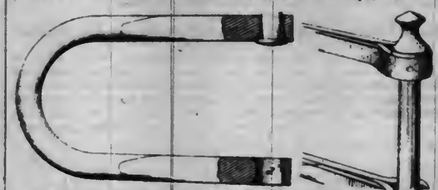
4. A rock-channeling machine provided with a frame, *c*, for supporting the mechanism for cutting a continuous channel, so constructed and arranged, in combination with the platform of the truck A, as to permit such frame being radially inclined and secured at various angles from an axis at or near its lower end, substantially as shown and described.

5. The combination of the revolving cutter-spindle G and carrier F, provided with the water chamber *r*, having inlet and outlet orifices *r¹* and *r²*, substantially as shown and set forth.

207,374.



207,375. CLEVIS-BOLTS. Henry M. Willis, Muscala, N. Y. Filed July 2, 1878.



Claim.—A clevis having eyes of unequal size, in combination with a bolt moving therein having a head on each end, the head on one end too large to pass through either eye, and the head on the other end passing through but one eye, thereby making the clevis and bolt inseparable, substantially as described.

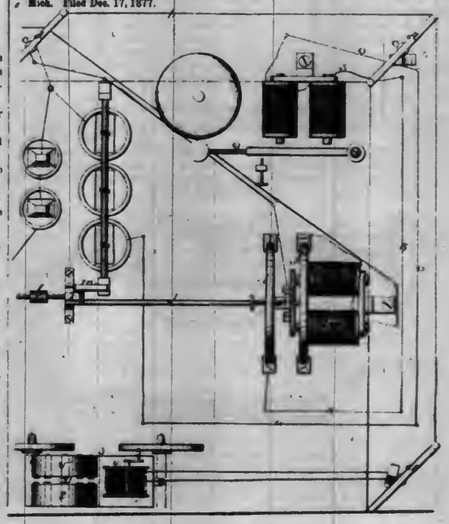
207,376. DITCHING-MACHINES. John H. Wilcox, Rome Township, Putnam County, Ind. Filed Apr. 29, 1878.

Brief.—Box to retain the earth, and made without projection beyond the side beams, for clearing old ditches or preparing them for tile.



Claim.—In a ditching machine, the sills A A, having at one end a lever, J, and at the other end an elevated dirt-receiving box, C E D, the sides of which extend upward and do not project beyond the outer edges of the sills, by means of which the sills and dirt-box are permitted to be drawn along in a ditch that is irregular in depth, regardless of the surface of the ground above, substantially as set forth and described.

207,377. ELECTRO-MAGNETIC FIRE ENGINE AND ALARM. Leonidas G. Woolley, Meaden, Mich. Filed Dec. 17, 1877.



Claim.—1. The combination of an electro-magnetic engine, suitable conducting-wires connecting it with the source of power, a small battery for keeping up a closed circuit, and a large battery for generating power, the large battery being brought into action only after the small one has been cut out, substantially as described.

2. The combination of a small battery for bringing the large battery into action and a large battery, which is brought into action only before an alarm of fire has been sounded and after the small battery has been cut out, substantially as described.

3. The combination of a small battery for bringing the large battery into action, a large battery that is brought into action before an alarm is sounded, and an electro-magnetic alarm, substantially as set forth.

4. The combination of a small battery for keeping up a closed circuit, a large battery for generating power to operate the engine, and a mechanism for bringing the large battery into action when an alarm is turned in, substantially as specified.

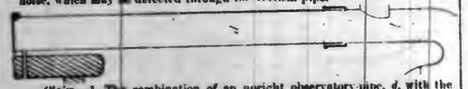
5. The combination of a small battery for keeping up a closed circuit, a large battery for generating power, a wire or wires for transmitting the power, alarm-boxes, and an engine, whereby the engine can be worked at a distance from the battery, substantially as set forth.

6. The combination of a large battery, a small battery, a windlass for keeping the plates out of the cups, and an automatically-operating mechanism for lowering the plates into the cups, substantially as shown.

7. The combination of the small battery, conducting-wires, armature, weighted supporting-post, and the windlass for keeping the plates out of the cups until an alarm is turned in, substantially as described.

207,378. WASTE-WATER DETECTORS. William E. Worthen, New York, N. Y. Filed May 6, 1878.

Brief.—A vertical pipe projects from the sewer-trap, through which the flow of water from the waste-pipe may be observed. The latter projects into the former and discharges waste-water above the water in the trap, whereby flowing water will make a ripple on the water in the trap, or will fall with a noise, which may be detected through the vertical pipe.

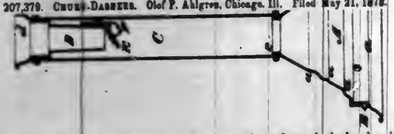


Claim.—1. The combination of an upright observatory-pipe, *d*, with the waste-pipe from a building and its connecting-sewer, the outlet or discharge of the said waste-pipe being arranged to open into the base of the observatory-pipe at a point above the level of its outflow to the sewer, substantially as and for the purpose set forth.

2. The combination of an upright pipe, *d*, rising from the sewer-pipe, with a waste-pipe from a building, having its discharge-aperture provided with a projecting lip, *l*, extending into the upright pipe at a point above the level of its outflow, substantially as and for the purpose set forth.

3. The combination of an upright observatory-pipe, *d*, rising from the trap of a sewer-pipe, with the waste-pipe from a building, arranged to discharge into the upright pipe above the water-level of the trap, substantially as herein shown and described.

207,379. CHURN-DASHERS. Olof P. Ahlgren, Chicago, Ill. Filed May 21, 1878.



Claim.—1. The combination of the conical perforated dasher-head A, having annular ridges *a a a*, and corresponding depressions on the inner surface thereof, with the perforated ring B, substantially as set forth, and for the purpose specified.

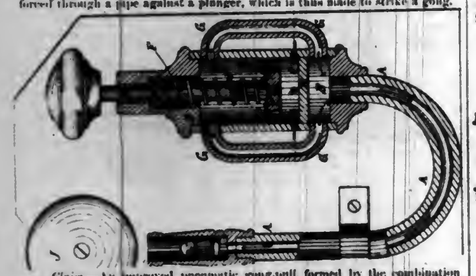
2. The combination, with the hollow handle C, of the removable valve-tube D, having the enlarged end *d*, for the purpose set forth and specified.

3. The combination, with the valve-tube D, of the cleat *f* and the adjustable bifurcated wire guard and valve-regulator F, for the purpose specified.

4. The combination of the flat valve E with the removable valve-tube D, for the purpose specified.

207,380. PNEUMATIC GONG-PULLS. Henry V. Aikes, Fishkill Landing, N. Y. Filed July 16, 1878.

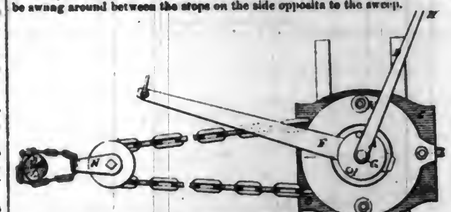
Brief.—By the action of a piston the air in a cylinder is compressed and forced through a pipe against a plunger, which is thus made to strike a gong.



Claim.—An improved pneumatic gong-pull, formed by the combination of the tube A, the cylinder B, provided with a false bottom, H, in its lower part, and with perforations just above the said false bottom, the piston C, provided with the valves D, the piston-rod E, the spiral spring F, the heat pipes G, the ball or plunger I, and the gong J, with each other, substantially as herein shown and described.

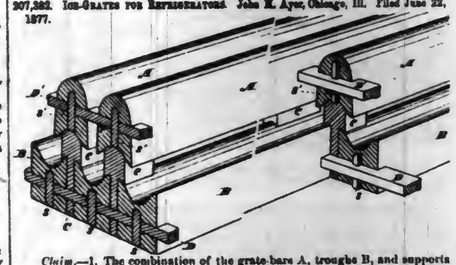
207,381. STUMP-EXTRACTORS. Albert J. Alley, Fond du Lac, Wis. Filed June 14, 1878.

Brief.—The lead-bar is pivoted to the upper end of the capstan, and may be swung around between the stops on the side opposite to the sweep.



Claim.—The combination, with the capstan, connecting with stump-holding mechanism by chain, of the sweep F, lead-bar H, and stops I, arranged as and for the purpose specified.

207,382. ICE-GRATES FOR REFRIGERATORS. John M. Ayer, Chicago, Ill. Filed June 22, 1877.



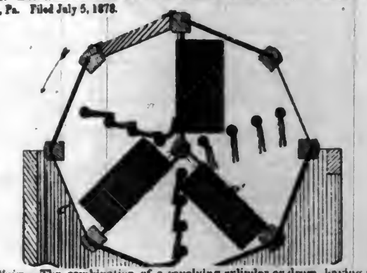
Claim.—1. The combination of the grate-bars A, troughs B, and supports C, the latter having their upper parts broad, as shown, so as to rest upon the edges of the troughs, and cut away underneath to conform to the bevel of the same, and their lower parts narrow, so that they may pass down between the troughs and separate them to the required degree, substantially as described.

2. The mortised troughs B, mortised supports C, tie-bars D, and pins *s*, constructed and combined substantially as described.

3. The mortised grate-bars A, tie-bars D', and pins *s'*, constructed and combined substantially as described.

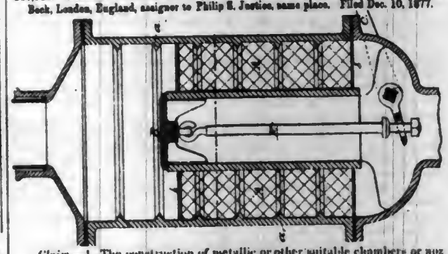
4. The combination of the grate-bars A, tie-bars D', pins *s'*, supports C, troughs B, tie-bars D, and pins *s*, substantially as described, for the purposes set forth.

207,383. MACHINES FOR CLEANING AND POLISHING COFFEE. Henry Bamberger, Philadelphia, Pa. Filed July 5, 1878.



Claim.—The combination of a revolving cylinder or drum, having panels of wire-gauze and canvas or similar frictional covering, with interior longitudinal rods and radial arms, of which some or all are provided with canvas or other flaps or wipers, substantially as and for the purpose specified.

207,384. NOZZLES FOR THE ESCAPE OF STEAM OR GASES UNDER PRESSURE. George Beck, London, England, assignor to Philip H. Justice, same place. Filed Dec. 10, 1877.

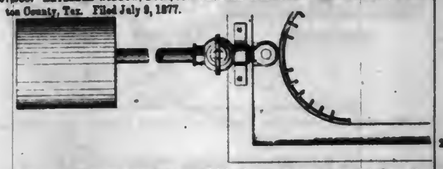


Claim.—1. The construction of metallic or other suitable chambers or nozzles, as hereinbefore described, of any suitable form, filled or partially filled with loose particles of glass, stone, metal, or other similar materials that are not readily perishable by the action of steam upon them, to be used in quieting or suppressing the noisy roar of steam or gases when the same are forced

to pass through such chambers or nozzles of contained material, substantially as described.

3. In an exhaust-nozzle or quieting-chamber, the combination of the chamber A A, having the central valve B, the annular ribs *a*, and the gratings or screens, and filled with glass, metal, or other equivalent material, substantially as shown and described.

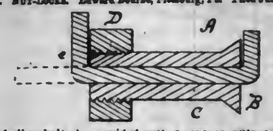
207,385. EXTERNAL WINDOW, DOOR, AND SHUTTER SPRINKLERS. John Bennison, Galveston County, Tex. Filed July 9, 1877.



Claim.—1. The combination by which the water is conducted from the tank, and the sprinkler by which the water is thrown on the window or door, and the mode in which it is done.

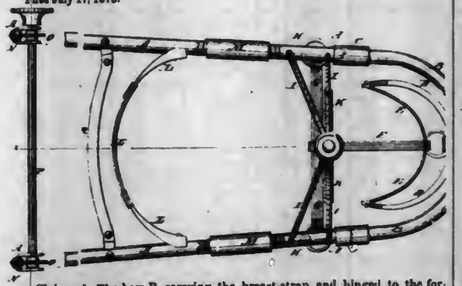
2. The combination of the supply-tank, connecting-pipe provided with the stop-cock, and the sprinklers arranged to spray the outside wood-work of doors, sashes, windows, &c., and thereby prevent burning from fire in an adjoining building.

207,386. NUT-LOCKS. Edward Bourse, Pittsburg, Pa. Filed June 18, 1878.



Claim.—A hollow-bolt, A, provided with a nut or nuts, and rod *e*, bent at right angle to the axis of the bore of the bolt, substantially as herein described, and for the purpose set forth.

207,387. COMBINED TRILLS AND HARROWS. Royal B. Boynton, West Townsend, Mass. Filed July 17, 1878.



Claim.—1. The bow B, carrying the breast-strap and hinged to the forward end of one of the thills, and its free end detachably secured to the end of the other thill, substantially as described.

2. The combination of the yoke D and the breast-strap E with the hinged bow B and the thills A, substantially as herein shown and described.

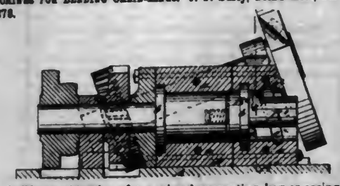
3. The combination of the martingale F and the belly-band G with the hinged bow B and the thills A, substantially as herein shown and described.

4. The combination of the arched bars I and the neck-strap K with the thills A, substantially as herein shown and described.

5. The combination of the steel bar L with the thills A, to rest against the horse's hips and serve as a holdback, substantially as herein shown and described.

6. The combination of the gear-wheels O and the sliding toothed thill-irons N with the slotted hollow rear ends of the thills A, substantially as herein shown and described.

207,388. MACHINES FOR BENDING CHAIN-LINKS. J. F. Busey, Beck's Mills, Pa. Filed Mar. 23, 1878.



Claim.—1. The combination of a sectional supporting box or casing, having front chamber with side opening, exterior treadle-actuated clamp, and interior spiral groove, with recessed revolving shaft and bender, substantially as described.

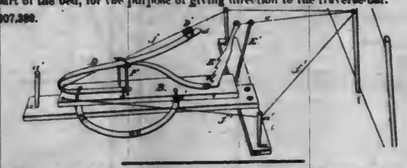
2. The combination of a sectional box or casing, having front chamber with side opening and interior spiral connecting groove, with a revolving shaft and elliptical bender, and with an inclined adjustable cutting-knife and revolving wheel, substantially as and for the purpose specified.

207,389. BALL-TARGET THROWERS. Ambrose A. Call, Algona, Iowa. Filed Sept. 7, 1877.

Claim.—1. The combination of the tripping-cord a, guide F', catch F, revolving traverse-bar B, and spring D, substantially as and for the purpose described.

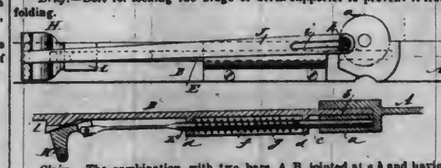
2. The combination of the traverse-bar, the fixed bed, and the cords leading from the outer end of the traverse-bar through the holding-stakes or other part of the bed, for the purpose of giving direction to the traverse-bar.

207,389.



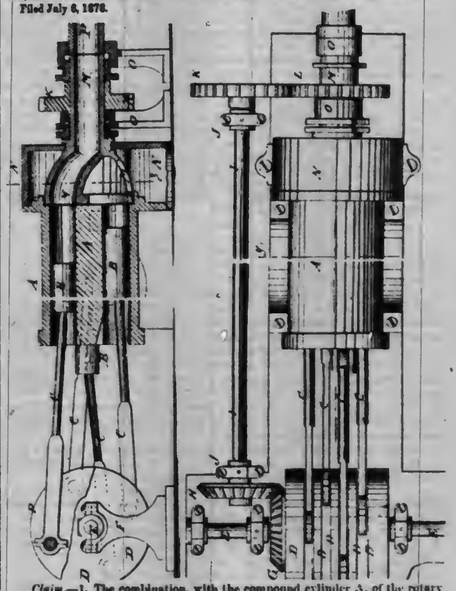
207,390. LOCKING-HINGES FOR SLEEPING-CAR BERTHS. George L. Carlton and George M. Crague, Omaha, Nebr. Filed June 10, 1878.

Brief.—Bolt for locking the hinge of berth-supporter to prevent it from folding.



Claim.—The combination, with two bars, A B, jointed at a b and having bolt-socket *e*, of the bolt E, having elastic flat end, and rod J, having slot *f*, said bolt and rod being both pivoted to block H, as shown and described, for the purpose specified.

207,391. HYDRAULIC ENGINES. Loelus S. Chandler and Samuel M. Silver, Auburn, Me. Filed July 6, 1878.



Claim.—1. The combination, with the compound cylinder A, of the rotary valve M, the exhaust-chamber N, and the pipe P, as and for the purpose specified.

2. The combination of the four, more or less, cylinders A, the followers B, the connecting-rods C, the cranks, crank-wheels, or eccentric-wheels D, the shaft E, the two bevel-gear wheels G H, the shaft I, the two gear-wheels K L, the rotating valve M, the chamber N, and the pipe P, with each other, substantially as herein shown and described.

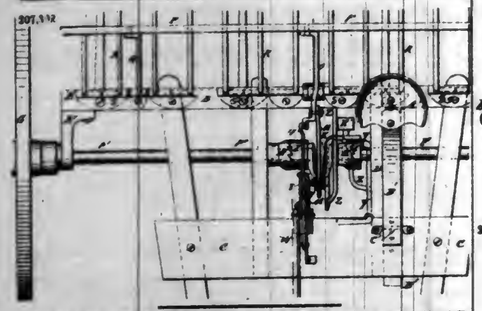
207,392. HORSE HAY-RAKES. William P. Clark and Chas. E. Clark, Belmont, N. Y. Filed June 17, 1878.

Claim.—1. The combination of the stationary half-clutches H, the movable half-clutches I, the crank-arms K, connected at their outer ends by the bolt and friction-wheel L N, the curved slotted arm M, the lever O, and the weight E', with each other and with the inner ends of the axles F, the rake-head B, the slotted cross-bar P, the rake-teeth R, and the drive-wheels G, substantially as herein shown and described.

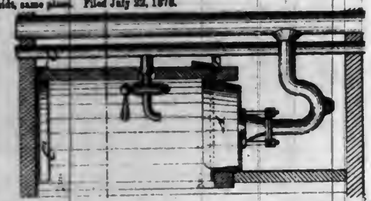
2. The combination of the pivoted connecting-bar T, the pivoted foot-lever U, the pivoted connecting-bars Y, and the pivoted fulcrum-bar W with the pivoted lever O, the rake-head B, the cross-bar P, the rake-teeth R, and the thill cross-bar C, substantially as herein shown and described.

3. The combination of the springs J, the foot-lever Y, and the guard Z with the movable half-clutches I and their crank-arms K, substantially as herein shown and described.

207,392.



207,393. SET-BACK SINKS. Charles Copman, New York, N. Y., assignor to himself and H. Schmidt, same place. Filed July 22, 1878.

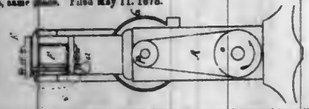


Claim.—1. The combination of a set-back sink, having a groove extending along its sides and rear, with partition-boards supported therein, and with retaining angle-irons, forming a groove corresponding to lower groove, and being attached to top or ceiling of recess of sink, substantially as and for the purpose set forth.

2. In a set-back sink, the combination of the removable wood-work or partition with guiding and supporting devices of the sink and of the top or ceiling of recess, so that the wood-work may be readily put up, or removed for repairing the water and waste pipes, substantially as and for the purpose set forth.

3. A set-back sink whose step is provided with two flanges, that both guide and hold the wood-work, as shown and described.

207,394. HEEL-SCOURING MACHINES. S. N. Corthell, Quincy, Mass., assignor to David Whittemore, same place. Filed May 11, 1878.



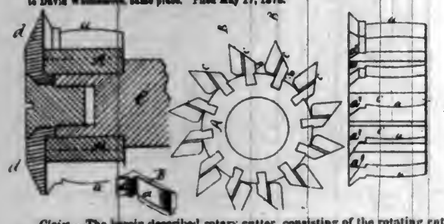
Claim.—1. In a heel-scouring machine, a vertical scouring-roll, F, an exhaust mechanism, and a hinged adjustable guide, J, arranged to operate with and relatively to such roll, substantially as and for the purpose specified.

2. The combination of the scouring-roll F, the adjustable guide J, and slide K, arranged to operate together substantially as and for the purposes specified.

3. The combination of the roll F, guide J, slide K, hollow body A, and exhaust-blower G, constructed and arranged to operate together substantially as and for the purposes specified.

4. The combination, with roll F, of the adjustable guide J, provided with a rest, *w*, and an adjusting-screw, *v*, all arranged to operate, relatively to each other, substantially as and for the purposes specified.

207,395. ROTARY CUTTERS FOR HOOTS AND SHOES. S. N. Corthell, Quincy, Mass., assignor to David Whittemore, same place. Filed May 17, 1878.

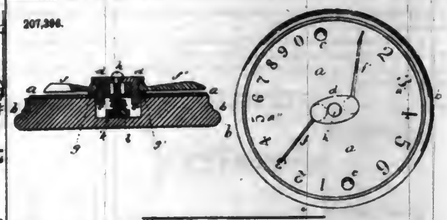


Claim.—The herein-described rotary cutter, consisting of the rotating cutter-head A, having a series of insertible cutting-blades, B, with irregular notched cutting-edges *a a'* on the face thereof, outer beveled edges *c*, and straight sides *b*, said blades being inserted and interlocked in the body of the cutter-head, as described, in combination with the rand-guide *d*, the several parts constructed and relatively arranged to operate as specified.

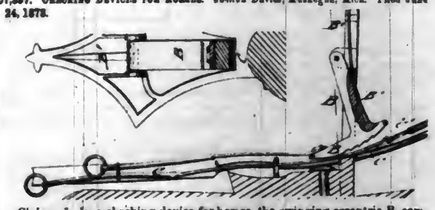
207,396. GAME-COUNTERS. John H. Dacey, Somerville, Mass. Filed Jan. 22, 1878.

Claim.—In combination with the plate *a*, screw *b*, nut *b'*, and spring *l*, the straddling bar *d*, provided with two spindles, *c c'*, of a piece with said bar, and extending through the plate, for the purpose of holding the fingers *f f'* and washers *g g'*, all constructed and arranged substantially as and for the purpose herein set forth.

207,396.



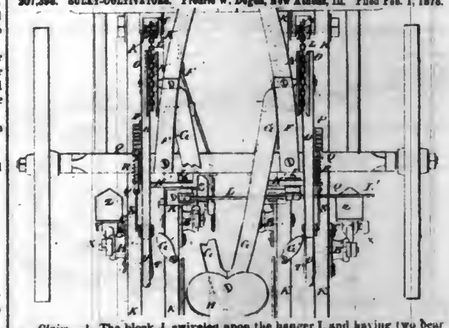
207,397. CHECKING DEVICES FOR HORSES. Joshua Davis, Muskegon, Mich. Filed June 24, 1878.



Claim.—1. In a checking device for horses, the swinging eccentric B, combined with the auxiliary check-rein C, to hold it at any point of adjustment, as shown and described.

2. In a check device for horses, the swinging and spring-acted eccentric clamp or stop, having side projecting stops at the front end, in combination with the supporting bracket or frame, to prevent the stop from being drawn back too far, so as to injure its spring, substantially as set forth.

207,398. SULKY-CULTIVATORS. Fredric W. Degen, New Athens, Ill. Filed Feb. 1, 1878.



Claim.—1. The block J, swiveled upon the hanger I, and having two bearing-faces, in combination with the two plow-beams K K, and with the arm U, having a vertical notched cross-head, and the angular plate or keeper V, whereby two separate plow-beams are attached to one hanger, and allowed independent movement or vertical adjustment with respect to each other, as shown and described.

2. The combination of the swinging curved arms J' J', the connecting-bar L', the pivot-bolts I', and the slotted plates H' with the pairs of laterally-movable plow-beams having guide-plates K', and the supporting frame, as and for the purpose set forth.

207,399. FOUNTAIN-PENS. Diedrich L. Dieckmann and Friedrich Bargen, New York, N. Y. Filed Jan. 21, 1878.



Claim.—1. The cap D, with hole *o*, slot *p*, conical tube E, with hole *s*, and sleeve F, in combination with the end *n* of tube A, with hole *g*, set-screw *r*, and float K, substantially as and for the purpose set forth.

2. The cap B, with hole *d* and slot *b*, in combination with the end *n* of hollow tube A, with hole *s*, the set-screw *c*, and float K, substantially as and for the purpose set forth.

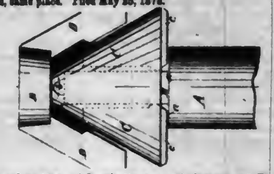
207,400. BOBBIN-HOLDERS. Geo. H. Dimond, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, same place. Filed Apr. 29, 1878.

Brief.—The bracket part of the holder is pivoted to the base, which latter is provided with a spring having a hook to engage the lower end of the bracket and hold it in an upright position. The base is also provided with a device to disengage the spring, consisting of a rod extending transversely through said base.



Claim.—The combination, in a bobbin-holder, of an adjustable or sliding base, *a*, the bracket *g* pivoted thereto, a spring-hook to engage the lower end of the bracket and to lock it to the base, and a bolt, *k*, for disengaging the two, all to operate substantially as shown and described.

207,401. MILLSTONE-DRIVERS. John W. Deneal, Muscatine, Iowa, assignor to himself and Garrett W. Schroers, same place. Filed May 28, 1878.



Claim.—The combination, with spindle A and balance-rynd D, the former having side-tapered square B *b'*, shoulder *c*, and cock-head *b*, of the conical drive-block C, having points *c* and lugs E, as and for the purpose specified.

207,402. PENCIL-SHARPENERS. Herman G. Downs, New York, N. Y., assignor of one-half his right to C. W. Rhodes, same place. Filed July 25, 1878.



Claim.—1. The herein-described blank for a pencil-sharpener, the same being formed substantially as shown—that is to say, with the upper and lower concentric curves joined by inclined sides, and having curved arms *a a* connected therewith by the narrow neck *d*, as and for the purpose set forth.

2. The herein-described pencil-sharpener, consisting of the conical body *b*, open at both ends, and provided with a cutting-edge, *c*, and curved spring-arms *a a*, united with the body by a narrow neck, *d*, which arms confine the sharpener upon the pencil, as and for the purposes set forth.

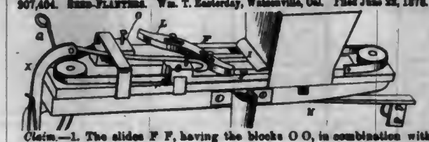
207,403. MOTORS. John F. Driver, James T. Luna, William H. Sanders, and Addison P. Hill, Lewisburg, Tenn. Filed June 15, 1878.



Claim.—1. A motor having a series of winding wheels and spools, any one of which may be engaged with a sliding winding-pinion, substantially as described.

2. In a motor, the combination of a driving-shaft with a series of winding spools and wheels and a series of sliding winding-pinions, substantially as described.

207,404. SEED-PLANTERS. Wm. T. Easterday, Watsonville, Cal. Filed June 22, 1878.



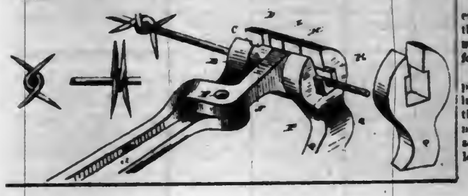
Claim.—1. The slides F F, having the blocks O O, in combination with the concave or bow-shaped switch-bar L and the reciprocating operating or draw hook W, when constructed to operate substantially as and for the purpose herein described.

2. The seed-slides F F, having the grooves M cut in their lower sides forward of the receiving-pockets, in combination with the grooves N in the frame or bed-piece, opening outward, so as to receive dirt or dust from the slides and discharge it, substantially as herein described.

3. The trip-lever X, operated by the pins upon the wheel B, said pins being provided with friction-rollers P, in combination with the lever Q, for holding back the trip-lever and stopping the operation of the machine, substantially as herein described.

207,405. WIRE-BARBING INSTRUMENTS. Lloyd Eberhart, Joliet, Ill. Filed July 17, 1878.

Brief.—First drop in a U-shaped barb, points upward; then lay in fence-wire; then drop the other U-shaped barb, points downward, and rotate the crank.



Claim.—1. In a barb-twister, the combination of the jaw B, having a recess, D, and a vertical passage, E, with the jaw I, having a recess, N, and passage O, as set forth.

2. In a barb-twister, the stop *b* of the disk H, in combination with the crank Q, as and for the purpose set forth.

207,406. ANIMAL-TRAPS. Frederick Eggs, Bridgeport, Conn., assignor to the Smith & Eggs Manufacturing Company, same place. Filed Jan. 18, 1878.

Brief.—The trapping-chamber is provided with an angular trough-shaped platform, pivoted at its center. The entrance between the trapping-chamber and cage is closed by a gate provided with a rigid heel-extension, which engages with the angular trough-shaped platform to hold the same down, closing the entrance to the trapping-chamber. The gate, when raised by the animal passing into the cage, releases the platform, resetting the trap.



Claim.—1. The combination, with the trapping-chamber, of the tilting angular platform, pivoted at or near its middle close to the floor of said chamber, and serving, when tilted, to close the entrance thereto, as set forth.

2. The swinging gate constructed, as set forth, with a rigid heel-extension, and hinged across the opening between the two chambers, for the purpose specified.

3. The combination, with the trapping-chamber, of the tilting platform, extending lengthwise thereof and pivoted therein, and having raised edges or flanges *f f'*, as and for the purpose set forth.

4. The hereinbefore-described animal-trap, consisting of the two parallel chambers B C, the partition having the opening E between the chambers at the back of the trap, the tilting platform in the trapping-chamber, extending at its front end through the doorway D of said chamber, and the swinging gate K, hinged across the opening E between the chambers, and formed with the heel L, these parts being respectively constructed and relatively arranged as hereinbefore set forth.

207,407. PADLOCKS. Frederick Eggs, Bridgeport, Conn., assignor to the Smith & Eggs Manufacturing Company, same place. Filed Jan. 18, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, of a hooked or shouldered shackle, a rocking dog provided with a hook to engage the shackle-hook when locked, and having a tail end or heel moving toward tumblers in unlocking, and a pivot upon which the dog is fulcrumed, the vertical central plane of which pivot passes slightly to that side of the point of contact between the shackle-nose and dog-hook opposite the side on which the dog-heel is located, whereby the dog-heel cannot be moved in the direction of the tumblers by strain upon the shackle, as set forth.

2. The combination of the shackle, the hooked rocking dog, having a tail-piece, the dog-pivot arranged relatively to the dog-hook and shackle, as described, and the oscillating slotted tumblers, these members being constructed and operating substantially as hereinbefore set forth, whereby the shackle is locked by the dog, the dog held out of contact with the tumblers and prevented from being moved toward them by strain on the shackle, and in unlocking the dog simultaneously engages the tumblers and releases the shackle.

3. The combination, substantially as hereinbefore set forth, of the dog having a hook engaging the shackle when locked, and a heel moved toward the tumblers in unlocking, but held away from them in the locked position, the lever adapted to be operated directly by the key, and its spring acting on the dog to cause the release of the shackle and rock the dog-heel toward the tumblers when they are brought into the unlocking position.

4. The combination of the shackle, the single pivoted dog provided with a tail-piece isolated from the tumblers, the tumbler-springs, and a spring acting with a variable pressure upon the dog in opposition to the tumbler-springs, and controlled by the key in unlocking, substantially as hereinbefore set forth.

5. The combination, substantially as hereinbefore set forth, of the dog, the tumbler-springs, and the lever adapted to be operated directly by the key and its spring, whereby the shackle is released by the action of the lever-spring upon the dog, and the dog held in the locked position by the direct action of the tumbler-springs.

6. The combination, substantially as hereinbefore set forth, of the dog, the tumblers, and the lever adapted to be operated independently of and simultaneously with the tumblers by the direct action of the key to release the shackle.

7. The combination of the pivoted shackle, the single rocking hooked dog engaging the shackle-nose and provided with a tail-piece, the slotted tumblers, their springs, the lever mounted on the tumbler-pivot, and its spring, these members being constructed and operating substantially as hereinbefore set forth.

8. The combination of the oscillating slotted tumblers, the pivoted shackle provided with a notched or hooked nose and a heel-extension, a spring bearing upon said heel, and the hooked dog provided with a tail-piece to engage the tumbler-slots, and located above the tumblers and between the heel and nose of the shackle, whereby the single dog, when in the locked position, serves to hold the shackle-nose and guard the heel-extension, and when unlocked the dog is held with its tail-piece in the tumbler-slots, as set forth.

9. The pivoted dog made in a single piece, with a hook, D, to engage the

shackle-nose, a tail-piece, C, to engage the tumblers, and an arm, D', serving to pivot it, and as a lever to which to apply force to rock the dog to release the shackle, substantially as hereinbefore set forth.

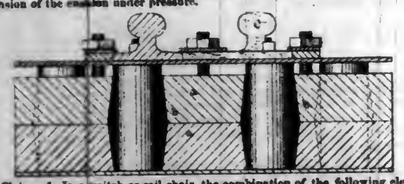
10. The relative arrangement of the dog provided with the tail-piece, the oscillating tumblers, and the central rivet passing through the lock-shell, as hereinbefore set forth, whereby the tumblers and tail-piece are protected from injury by indenting the shell.

11. The combination, substantially as hereinbefore set forth, of the cut-away dog, the tumblers, their springs, and the finger to hold down said springs and aid in keeping the tumblers in place.

12. The combination of the lock-shell, the oscillating tumblers, and the lever H, mounted upon the pivot of the tumblers, and serving both as a washer to hold the tumblers down to their place, and as a means of actuating the dog by the key independently of the tumblers, substantially as herein-before set forth.

207,408. SWITCH-CHAIRS. John C. Eggleston, Waterbury, Conn. Filed Apr. 16, 1878.

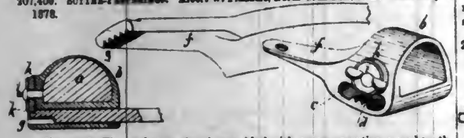
Brief.—A switch-head chair resting upon rubber cushions which are inclosed in chambers in the chair-block, said chambers being larger in their interior than at their top and bottom, thereby allowing space for the lateral expansion of the cushion under pressure.



Claim.—1. In a switch or rail chair, the combination of the following elements, viz: first, the head-block having cushion-chambers formed therein larger in their interior than at their top and bottom; second, rubber piers or cushions of the same form in horizontal section as said chambers in the head-block, and supported laterally by the walls of said chamber, within which they rest and above which they project; and, third, the switch chair resting upon the ends of said rubber piers, all substantially as described, and for the purpose specified.

2. In a switch or rail chair, the divided head-block, having tapering holes in each half, with their largest ends facing each other and forming enlarged chambers, in combination with the elastic cushion filling only the ends of said chambers when relieved from pressure, substantially as described, and for the purpose specified.

207,409. SCYTHE-FASTENINGS. Albert W. Flanders, North Grantham, N. H. Filed July 5, 1878.



Claim.—1. The socket or ring *b*, provided with a cross-mortise, *c*, and teeth or corrugations *d*, substantially as described, and for the purposes set forth.

2. The combination of the cam-button *h* with the socket or ring *b*, having teeth or corrugations *d*, and adapted to receive the toothed or corrugated shank of the scythe, substantially as and for the purpose set forth.

3. The scythe formed with a straight shank, provided at its end with teeth or corrugations *g*, substantially as set forth.

207,410. STEAM-COOKERS. Bazzel H. Foote, Kansas City, Mo. Filed Apr. 18, 1878.



Claim.—1. In a cooking apparatus, the steam-generator A, provided with the orifice *a* and the spout H, in combination with the valve V, hinged upon the inside of the generator, for automatically preventing the escape of steam, substantially as set forth.

2. In combination with the vertical steam-tubes L L, the horizontal perforated tube P, substantially as set forth.

3. In combination with the vertical steam-tubes L L, the curved perforated tubes Q Q, substantially as set forth.

4. The above-described steaming-vessel, adapted to the simultaneous holding, heating, and withdrawal of tea and coffee independently of each other, consisting of the air-tight vessel E, having, in combination with the tight partition *m* and the separate steam-tubes L L, the orifices R R at the top, and the withdrawing-orifices S S at the bottom, substantially as set forth.

5. In combination with an upper steam-chamber having openings in the bottom, a lower steam-chamber, provided with steam-tubes shorter than the chamber, which throw steam into both chambers, substantially as set forth.

6. In combination with the steam-generator A, having attached to it the sockets *x x*, the foot-holder J, provided with hooks *w w*, substantially as set forth.

207,411. MACHINES FOR CUTTING AND WINDING PAPER. Ignatz Frank, New York, N. Y. Filed Feb. 25, 1878.

Brief.—Paper, as reeled from a web, passes over and under guide-rolls in an oscillating frame to combined feed-rolls and cutters adjustably mounted in the latter, where it is severed longitudinally into two or more strips, and compactly wound upon a roll at the front of the machine.

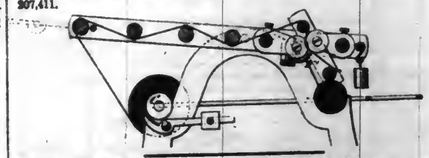
Claim.—1. As an improvement in roll-paper-cutting machines, the combination of the oscillating frame, having web-guide rolls and sets of adjustable cutting-knives, with an unwinding shaft at one side and a winding-up shaft at the other side of the fulcrum of the oscillating frame, substantially as and for the purpose described.

2. The combination of the oscillating frame, having sets of cutting-knives and a fixed supplementary frame, with guide and pressure rolls, with an unwinding-shaft at one end and a winding-up shaft at the opposite end of the machine, substantially as specified.

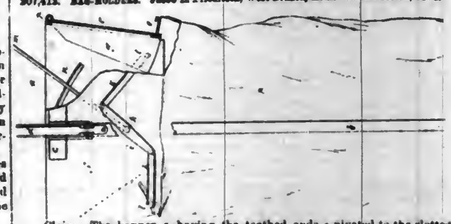
3. In a roll-paper-cutting machine, the combination of the oscillating frame, having cross-bars, with laterally adjustable supports or arms, having fixed shafts, with revolving friction-pulleys and cutting-knives, substantially as and for the purpose set forth.

4. The combination of the oscillating frame, having adjustable cutting knives and friction-pulleys, and a supplementary frame with contiguous guide and pressure rolls, with an unwinding-shaft, having suitable tension devices, and with a winding-up shaft, substantially as described.

207,411.

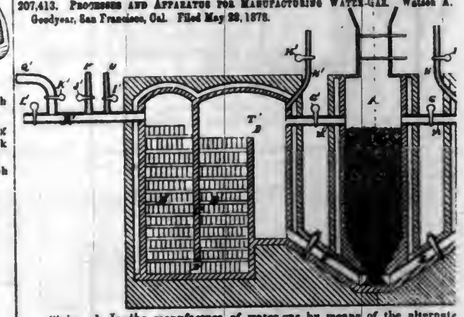


207,412. RAG-HOLDERS. Jacob L. Friedrich, West Branch, Mich. Filed June 14, 1878.



Claim.—The hopper *c*, having the toothed ends *e* pivoted to the slotted sides *f*, and provided with wings *g*, in combination with the loose projecting rod *h*, having arms *i*, the links *k k*, having the pins *l l*, and the lever *m*, as and for the purpose specified.

207,413. PROCESSES AND APPARATUS FOR MANUFACTURING WATER-GAS. Watson A. Goodyear, San Francisco, Cal. Filed May 29, 1878.



Claim.—1. In the manufacture of water-gas by means of the alternate passing of blasts or drafts of air and steam through ignited carbonaceous material, the process of utilizing the heat of the decomposed steam and of a succeeding blast of air for superheating a subsequent blast of steam, which consists in passing the decomposed steam or water-gas through a regenerative chamber and storing up its heat in heat-absorbent material, and then passing the waste gases resulting from the admission of air to the generator into the same regenerative chamber, and thereby causing their complete combustion, and storing the heat produced in the same absorbent material, from which it is afterward taken by the counter-blast of steam to superheat it before reaching the generator.

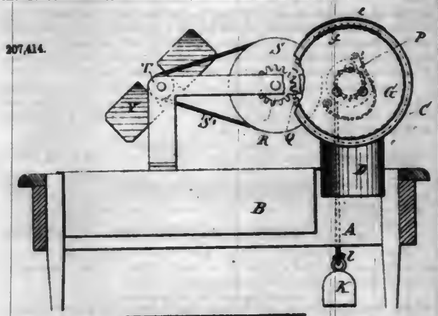
2. The apparatus consisting of the generator A, with its regenerative chambers B and B', connecting-flues E E' and M M', with their valves, and the passages O P Q R and O' P' Q' R', with their valves, and the passages N N', with their valves, whereby blasts of air follow blasts of steam through the apparatus from right to left and from left to right alternately, and the heat generated by the combustion of the products of the decomposition of the air is taken up by the subsequent counter-blast of steam, and by it returned to the generator, where it is utilized in the production of the water-gas, substantially as shown, and for the purpose herein described.

207,414. PEA-NUT ROASTERS. George B. Hall, Fort Plain, assignor to Charles Whyland, St. Johnsville, N. Y. Filed July 17, 1878.

Claim.—1. The combination, with stand A and pan B, of the horizontal outer cylinder, C *e*, having adjacent vertical fins D, and the revolving inner cylinder, G *f*, arranged as shown and described.

2. The combination, in a roaster with crank-shaft *h i*, of the drum J, having weighted cord I K, the ratchet-wheel M, the loose gear-wheel Q, having spring-pawl P, pinion R, pulleys S T, belt S', and fan-fly V, all arranged as and for the purpose specified.

207,414.

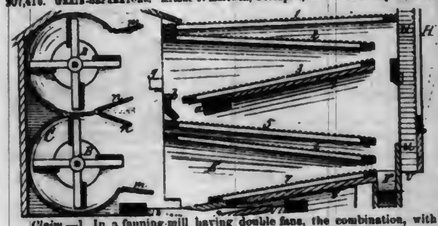


207,415. THILL-COUPLINGS. James T. Hards, Geneva, Ill. Filed Mar. 8, 1878.



Claim.—In a thill-coupling, the laterally-projecting jaw C, having the open semicircular bearing D, in combination with the thill-iron E, constructed with pin F integral therewith, and a rectangular opening to encompass the jaw C, and to receive and sustain the rubber cushion G under said thill-iron, the whole constructed and operating in the manner set forth, and for the purposes specified.

207,416. GRAIN-SEPARATORS. Arthur J. Hartwell, Brockport, N. Y. Filed May 11, 1878.

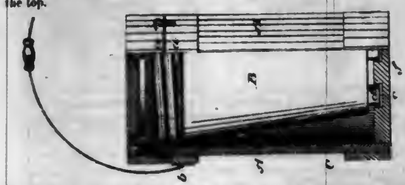


Claim.—1. In a fanning-mill having double fans, the combination, with the fans B B and their cases C C, of the hinged valves *m m* at the upper and lower edges of said fan-cases, and the double-hinged valves *n n* at the center, next the screens, and arranged to be adjusted to different positions to modify and regulate the blasts, as herein shown and described.

2. In a fanning-mill such as described, the hinged screen-door H, covering the discharge-end of the mill, having the dead-spaces *w* and throat *v* between it and the end of the shoe for the discharge of the chaff into a receptacle below, as herein shown and described.

207,417. BUTTER-PACKAGES. Daniel C. Hill, Red Wing, Minn. Filed June 19, 1878.

Brief.—The inner vessel may be of metal, glass, or pottery-ware. Rubber springs may be put in the cavities of outer vessel under the projections on the bottom of the inner vessel. The spiral groove and bead grow smaller toward the top.



Claim.—1. The inside vessel, B, having in its rim the spiral groove *e*, slightly diminishing in size toward the top, and having the projections *d* at the bottom.

2. The outside case, A, having spiral bead *b*, slightly diminishing toward the top, and having the cavities C in the bottom.

3. The combination of the case A, having spiral bead *b*, and cavities C, with the interior vessel, B, having spiral groove *a* and projections *d*, and cover E, having rim *e*, inclosing the spring-mounted lid *g*, rabbeted at *i*, as and for the purposes set forth.

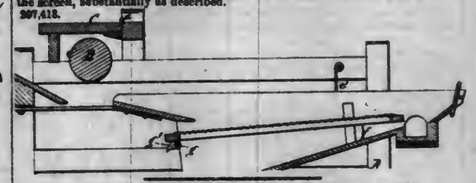
207,418. GRAIN THRASHER AND SEPARATOR. A. J. Hoag, Battle Creek, Mich. Filed June 22, 1878.

Claim.—1. The combination, with the thrashing-cylinder, of the adjustable hood or cover for giving access to the cylinder, and permitting its adjustment for regulating the feed-opening and the space between the cylinder and cover, substantially as described.

2. The hinged cover C, in combination with the standards *b b'*, having the open slots, and means for holding the cover at any desired adjustment, whereby the cover can be folded over for giving access to the cylinder, or set at any desired adjustment, without removing the fastening devices, substantially as described.

3. In a grain thrasher and separator, the vertically-vibrating riddle or screen, supported at its forward or receiving end on a shaft, *g*, in combination with the angular cams *g'* on said shaft, for imparting the vertical vibration to the screen, substantially as described.

207,418.



207,419. FIRE-ESCAPES. David F. Hunt, Burlington, Vt. Filed Nov. 23, 1877.

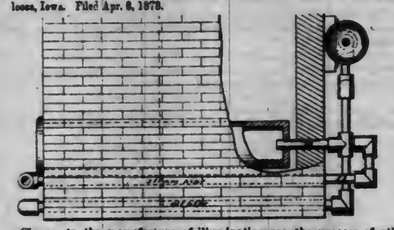


Claim.—1. The belt formed of a flexible tube for increasing the friction of a cord passing through it, substantially as and for the purpose set forth.

2. The rope or cord, in combination with a tubular flexible belt, substantially as described.

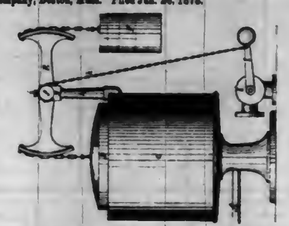
3. The combination of a rope or cord, having a hand-guard, with a flexible tubular belt, substantially as set forth.

207,420. PROCESSES FOR THE MANUFACTURE OF ILLUMINATING-GAS. D. W. Hunt, Oskaloosa, Iowa. Filed Apr. 6, 1878.



Claim.—In the manufacture of illuminating-gas, the process of utilizing coal-tar, which consists in distilling it, together with petroleum and steam, and converting the mixture into a fixed gas in a separate hot retort, and mixing this gas while hot with ordinary coal-gas, substantially as described.

207,421. GAS-EXHAUST REGULATORS. Reuben K. Hunton, Wakefield, assignor to Allen Governor Company, Boston, Mass. Filed Jan. 26, 1878.



Claim.—1. In a gas-exhaust regulator, the tank-bell provided with a perforated bottom, and a valve or gate thereto, substantially as set forth.

2. In a gas-exhaust regulator, the combination of the tank C and the induct-pipe B therein with the bell D, its pipe F', and perforated bottom *a*, all being substantially as specified.

3. The combination of the gate G and its arm or arms *b* with the bell D and its pipe E and perforated bottom *a*, all being arranged and applied essentially as set forth.

4. In combination with the throttle-valve arm *l*, chain *k*, and pulley *f*, and with the counterbalance-lever E, the bell D, and tank C, the set-screw *i* and the rotary fulcrum *e*, or equivalent means, for adjusting and fixing the pulley with reference to the lever, as set forth.

207,422. APPARATUS FOR HEATING BUILDINGS. J. Johnson, Lowell, Mass. Filed June 13, 1878.

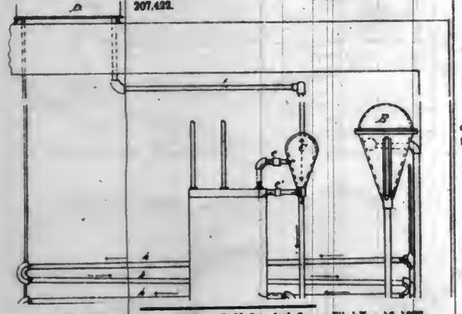
Brief.—Steam and water are directed from the separating-chamber each to its own circuit. Condensed steam flows from the steam-coil to the hot-water coil. An open tube communicating with the latter affords a vent in case of undue expansion in either coil.

Claim.—1. The combination of the steam-radiator D and hot-water radiator, K, provided with the open-ended tube *l*, with the connecting-pipe *g*, substantially as shown and described.

2. The combination, as described, of the separating tank or chamber with a regulating-tank and their connections with each other, and with the steam and water radiators, substantially as and for the purpose specified.

3. In a heating apparatus, the combination of the water-heating furnace with the regulating-tank B, separating tank or chamber C, steam-coils D, water-coil E, and their several connections, substantially as set forth.

207,422.



207,423. VEHICLE-SPRINGS. Grant Judd, Stamford, Conn. Filed Nov. 16, 1877.

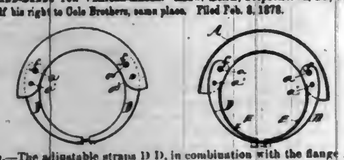


Claim.—1. In combination with two half-springs hung in crank-hangers each side of a wagon axle, a fifth-wheel supported upon both springs and provided with safety legs, substantially as described.

2. The boxes C, forming bearings for the double-crank hangers D D', in combination with the elastic cushion *z* and protecting-casings *z'*, substantially as described.

3. Two half-elliptic springs of a wagon, hung in crank-hangers D D' each side of the axle of the wagon, in combination with yielding boxes secured upon said axles near the hub, substantially as described.

207,424. GARD-BANDS FOR VEHICLE-AXLES. Andw. Keiser, Prophetstown, Ill., assignor of one-half his right to Cole Brothers, same place. Filed Feb. 8, 1878.



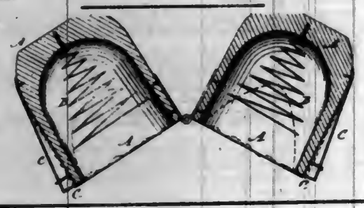
Claim.—The adjustable straps D D, in combination with the flange A and shield B, substantially as described, and for the purpose set forth.

207,425. MECHANICAL MOVEMENTS. John H. Kersey, Columbus Junction, Iowa, assignor to himself and A. W. Hefton, same place. Filed July 29, 1878.



Claim.—An improved lever-power consisting of two or more actuating hand-levers, centrally-fulcrumed intermediate levers, and symmetrically-pivoted transmitting-levers, in connection with a compound crank-shaft, whose crank-arms for each set of transmitting-levers are arranged diametrically to each other, while the crank-arms of one set of transmitting-levers are at right angles to those of the other set of levers, substantially as and for the purpose set forth.

207,426.



207,426. EGG-OPENERS. George W. H. Kray, Brooklyn, E. D., N. Y. Filed June 14, 1878.

Brief.—The egg placed within the hinged cups is penetrated by the edges of the springs being pressed inward, and by opening the said hinged cups and keeping the springs' edges still pressed in, they divide the egg-shell and retain it, permitting its contents to flow out into the receiving-vessel.

Claim.—The combination of the two cup-shaped parts A, hinged to each other, the two conical spiral springs B, and the two springs C, having their forward ends made sharp and bent inward at right angles with each other, substantially as herein shown and described.

207,427. BROOM-HANDLES. Philip Lamboy, Schenectady, N. Y. Filed May 28, 1878.



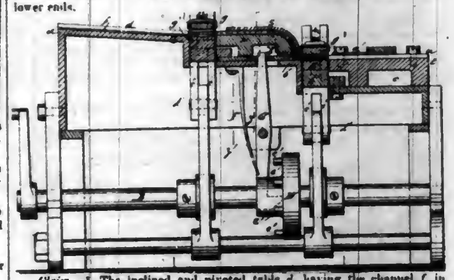
Claim.—The combination, with the handle *a*, of the tube *b*, fitted loosely on a turned-down portion and against a shoulder of handle, being secured at top by a button, *c*, and screw *d*, as shown and described.

207,428. TREATING WOOD TO IMITATE MANILA-PAPER PULP. Geo. E. Marshall, Turner's Falls, Mass. Filed July 12, 1878.

Claim.—Preparing wood for an imitation Manila-paper pulp by the process above described, substantially in using water at a degree of heat between 212° and 280°, and under a very heavy hydraulic pressure, by which the wood is brought to a proper condition to work and the desired color obtained for the pulp.

207,429. MACHINES FOR DRESSING PRINTING-TYPES. Thomas Mason, 14 Cross Street, Islington, Great Britain. Filed Apr. 2, 1878. Patented in England, Aug. 4, 1877.

Brief.—From a pivoted and channeled table the types are passed between reciprocating files; thence through a curved guide, which turns them, and between a second set of files, and thence past a fixed cutter, which nicks their lower ends.

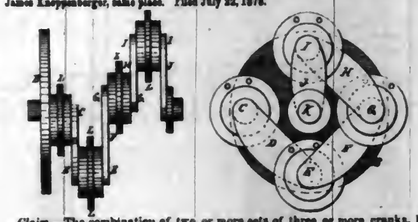


Claim.—1. The inclined and pivoted table *d*, having the channel *f*, in combination with the type-filing mechanism, substantially as shown and described.

2. The combination of the curved guide *r*, having the curved cover *s*, with the two pairs of reciprocating files, substantially as shown and described.

3. The cutter *v* and spring *s'*, in combination with the table *t*, substantially as shown and described.

207,430. GRAINING. William J. McDougall, Kendall Creek, Pa., assignor to himself and James Knoppenberger, same place. Filed July 22, 1878.



Claim.—The combination of two or more sets of three or more cranks, B C D D E F F G H, &c., the loose wheels L, and the flexible connecting-wires or wire cords M with each other, for transmitting motion from the driving-power to the machinery to be driven, substantially as herein shown and described.

207,431. BOOTEES. Clemente McKiernan, Cincinnati, Ohio. Filed July 30, 1878.

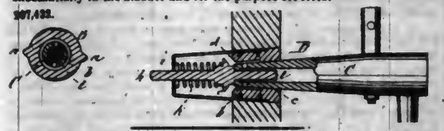


Claim.—As a new article of manufacture, a bootee having slits *a* cut in the vamp A, into which fly-pieces C C' are inserted and stitched to the quarters and vamp, and a webbing re-enforce, D, secured to the vamp-lining at each side, all substantially as herein represented and described.

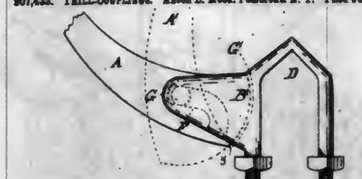
207,432. SELF-CLOSING VALVES FOR BARRELS, &c. John A. McGill, Boston, Mass. assignor to himself and Thos. Gurney, same place. Filed July 12, 1878.

Claim.—The hollow tapering bung or plug B, provided with one or more ribs or projections, *g*, on its outside, and with its central aperture *s* enlarged at *b*, in combination with the valve *e*, spindle *b*, spring *k*, guide-piece *i*, guide-pin *l*, and tapering faucet C, the whole constructed, arranged, and operating substantially in the manner and for the purpose set forth.

207,432.



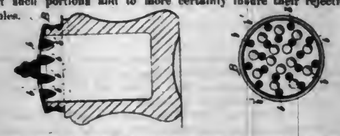
207,433. THILL-COUPLINGS. Aaron E. Mook, Pembroke, N. Y. Filed June 24, 1878.



Claim.—The clip D, having jaws B B' formed in one piece with it, and provided with a curved face, *x*, and with grooves F, opening downward, as specified, in combination with the thill-iron A, provided with the curved rear end, *y*, and side plus or projections, all substantially as and for the purposes described.

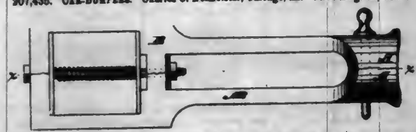
207,434. DREDGERS FOR SALT, PEPPER, &c. Lewis Morgan, New York, N. Y. Filed Mar. 1, 1878.

Brief.—The projections stand between the holes in the cover, and serve not only to chip off small portions of the mass of salt thrown against them, but also to deflect such portions and to more certainly insure their rejection through the holes.



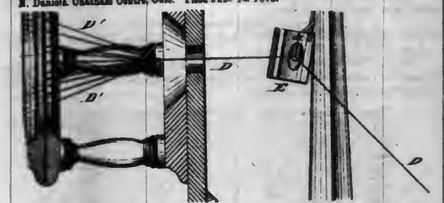
Claim.—In a dredger, the cap B, having perforations *b*, provided with tapering pointed projections *b'*, coinciding with the edges of the holes, as herein specified.

207,435. CAR-BUMPERS. Charles C. Heinsohn, Chicago, Ill. Filed Aug. 22, 1877.



Claim.—A wrought-metal rail-car bumper and draw-head forged in two parts, as described, the part A extended and curved laterally, and the edges welded along the lines *x x* lengthwise of the bumper to form a coupler-socket, and the parts B extended longitudinally to form the shank or draw-bar, as and to the effect set forth.

207,436. MECHANICAL TELEPHONES. Schuyler S. Parsons, Francis R. Shaw, and George M. Daniels, Chatham Centre, Ohio. Filed June 10, 1878.



Claim.—1. The combination, with the transmitting-wire D, of the radially-slitted insulator E, re-enforcing strap *h*, and the two bore-slitted blocks, as and for the purpose specified.

2. In acoustic telephones, the combination, with a vibrating diaphragm of a textile fabric, of a transmitting main wire, connected by a number of branch wires to the diaphragm, substantially as specified.

207,437. DEVICES FOR CATCHING AND HOLDING HOGS. Robert Pomble, Sr., and Robert Pomble, Jr., Cerro Gordo, Ill. Filed July 30, 1878.

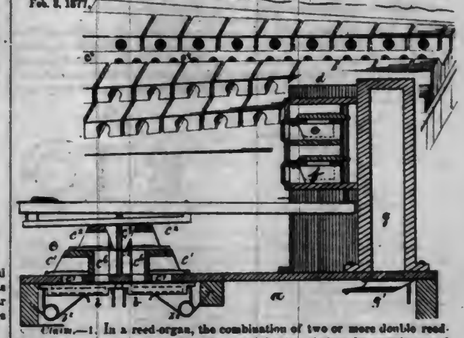


Claim.—1. An implement for catching and holding hogs, consisting, essentially, of a handle, a sliding stop-bar, and a loop of wire, cord, or other suitable material, to catch over the nose of the hog and be contracted thereon by the operation of the stop-bar, substantially as described, for the purpose specified.

2. The ferrule *m*, combined with the wooden handle A, the sliding stop-bar C, and the wire loop I, substantially as described, for the purpose specified.

3. The ferrule E on the end of the wooden handle, constructed with a concave end to fit against the nose of the hog, and with an internal shoulder and side walls to arrest the forward throw of the stop-bar and prevent its lateral displacement, substantially as described.

207,438. REED-ORGANS. Joseph R. Perry and Samuel R. Perry, Wilkesbarre, Pa. Filed Feb. 8, 1877.



Claim.—1. In a reed-organ, the combination of two or more double reed-boards, one arranged above the other, and having their valve-openings and valves placed in alternating positions front and back of the intermediate pitman board or holes, substantially as set forth.

2. A reed-board having one or more series of cells, each cell being separated laterally from the adjoining cells by an air-space, substantially as and for the purposes described.

3. The hollow valves *b*, constructed and operated in the manner and for the purpose specified.

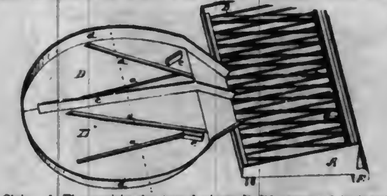
4. In the combination of a wind-chest, *a*, and an air-chamber, *g*, having a series of alternating channels, *i i' i'*, the valve *g'*, arranged to be operated substantially as set forth.

5. In a reed-organ, in combination with the reed-board, constructed with alternated valve-openings and valves, as described, of the chamber *f* and the tubes *r*, provided with reeds *t*, substantially as set forth.

6. The combination, with a valve, *l*, of the pitman-hole and coupler-bar within the chamber *f*, substantially as described.

7. The resonating-chamber *y* and tube *r*, constructed as described, and arranged in relation to the reed and reed-cells *w* in the manner substantially as shown in Fig. 10, and for the purpose set forth.

207,439. DRIP-BANDS FOR BARRELS. Ernest F. Pflueger, Akron, Ohio. Filed July 8, 1878.

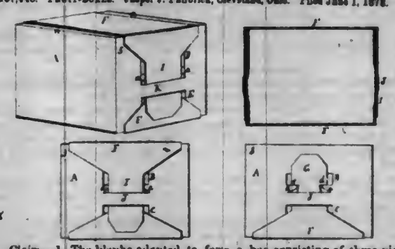


Claim.—1. The semicircular trough-pieces D D', connected by interlocking flanges, substantially as and for the purpose hereinbefore set forth.

2. The basin A, having the rack B, screen C, and tank E, substantially as and for the purpose hereinbefore set forth.

3. The combination of the trough D D' and basin A, having the screen C and tank E, substantially as and for the purpose hereinbefore set forth.

207,440. FRUIT-BOXES. Jasper J. Philbrick, Cleveland, Ohio. Filed June 1, 1878.



Claim.—1. The blanks adapted to form a box consisting of three pieces, one of which being an oblong strip, having parallel sides and scored at right angles to said sides to admit of the piece being bent to form the four sides of the box, and having tack-openings B C, B' C', and D E, and tongues *a*, to receive and hold the tags of the top and bottom of the box, said bottom consisting of a piece or blank having parallel sides and scored to form the tags, and provided with shoulders *c d*, and the piece or blank for the cover also having parallel sides and scored to form the tags G and H substantially as described.

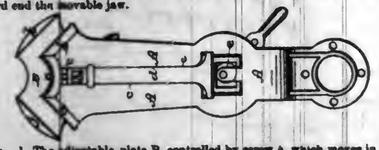
2. In blanks for boxes, the arrangement of the openings D E and B C,

with tongues a upon one side of the box, and openings B' C' and tongues a on the opposite side thereof, with loop between said openings, in combination with the shouldered tags G H of the bottom piece, extending respectively through the openings and under the loops on each side for holding the lapped ends of the side pieces together and the bottom in place, in the manner substantially as described.

3. An improved fruit-box consisting of the blank A, provided with tuck-openings B C, B' C' and D E, having tongues and loops J J', bottom F, provided with shouldered tags, and cover F', having tags I, constructed in the manner substantially as described, and for the purpose specified.

207,441. PICTURE-FRAME CLAMPS. Edward H. Porter, Hardwick, Vt. Filed June 12, 1878.

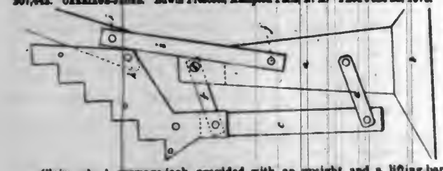
Brief.—Picture-frames are held, while being jointed and nailed, by means of a clamp, the jaws of which can be instantly and perfectly adjusted to moldings of different sizes by a cam-lever pivoted to the stationary jaw, and actuating a sliding bar working in a longitudinal slot in said jaw, and carrying at its forward end the movable jaw.



Claim.—1. The adjustable plate B, controlled by screw A, which moves in slot *i*, in combination with cam *c* and sliding bar *d*, substantially as set forth.

2. The combination of the cam *c*, sliding bar *d*, and nut *i* with stationary plate A and adjustable plate B, the several parts being constructed and arranged to operate substantially as and for the purposes specified.

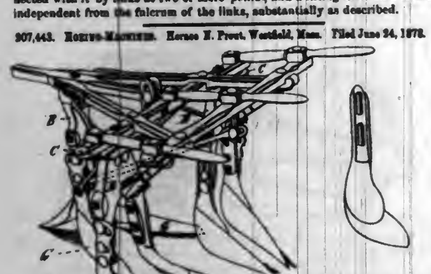
207,442. CARRIAGE-JACK. Edwin Prescott, Hampton Falls, N. H. Filed June 22, 1878.



Claim.—1. A carriage-jack provided with an upright and a lifting-bar connected together by links, which are independent of the handle or lifting-lever, the said links working in parallel planes in all positions of the lifting-bar, so as to direct the lifting-bar in substantially a straight line and keep it free of the upright, substantially as specified.

2. The improved carriage-jack consisting of an upright, a lifting-bar connected with it by links at two or more points, and a lifting-lever on a fulcrum independent from the fulcrum of the links, substantially as described.

207,443. HOEING-MACHINE. Horace H. Frost, Westfield, Mass. Filed June 24, 1878.



Claim.—1. The improved wing-springs or hoes G, with inner and outer surfaces straight, vertically or crosswise, and of uniform thickness and elasticity, with the lower and front edge beveled to a cutting-edge, said hoe being wider in front than in rear, substantially as and for the purposes set forth.

2. The adjustable plate C, having the flanged socket and the lateral and longitudinal slots, substantially as shown and described.

3. The adjustable flanged plate C, constructed as described, in combination with standard B and main supporting-frame *a*, as and for the purpose set forth.

207,444. MACHINES FOR FORGING HORSESHOE-NAILS. Silas G. Putnam, Boston, Mass., assignor to the Putnam Nail Company, same place. Filed June 4, 1877.

Claim.—1. The stop-lever q^1, operated by the spring-arm 23 on the shaft Q, in combination with the side hammers, provided with the projecting portions 25 and 26, the said stop-lever locking the side hammers while open, and holding them apart while the nail is being cut off, substantially as herein described.

2. The guide-lever n^1, with its pin o^1, slotted lever l^1, pin r^1, and crank r^1, operated by the shaft Q, in combination with the hammers and the cutters, substantially as described.

3. The mechanism for varying the number of blows of the hammers, consisting, essentially, of the toothed wheel T, levers t^2 p^2 f^2, pin c^3, with its spring 30, arm a^2, connected shafts N Q, cam-wheel S, and arm k^1, operating substantially as set forth.

4. The wheel T, having two or more series of teeth, r^2 s^2, for setting in operation the mechanism for varying the number of blows of the hammers, in combination with said operated by a wheel, p^3, the number of the teeth of which is a common multiple of the numbers of the different series of teeth on the wheel T, substantially as described.

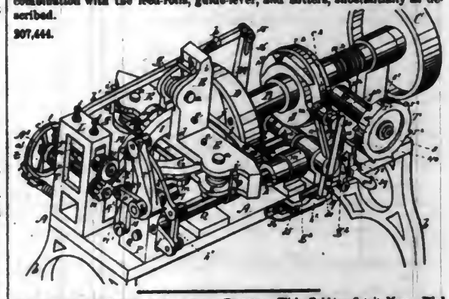
5. The combination of the hammers with the mechanism for varying the numbers of their blows, the guide-lever n^1 and its operative mechanism, and the cutters, substantially as described.

6. The shafts N Q, connected by a joint, R, composed of the rods 32 and 33, pivoted together, and sliding within hollow arms d^2 c^1, substantially as described.

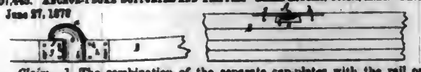
7. The lever p^2, in combination with the lever k^1, with its pin 75, projection 37, and spring 36, and the shaft N, with its arm 31, all constructed to operate substantially in the manner and for the purpose set forth.

8. The hammers G H I K, having their faces so formed as to allow the nail being made on one side of and below a line passing centrally between the four hammers, the hammers G H being so constructed and arranged as to meet on a line on one side of a vertical plane passing through the center of the upper and lower hammers, and the hammers I K meeting on a line below a horizontal plane passing through the centers of the side hammers, in order to reduce to a minimum the amount which the nail-rod is bent in the operations of bringing it into line with the cutters and severing the nail therefrom, in combination with the feed-rolls, guide-lever, and cutters, substantially as described.

207,444.



207,445. ANCHOR-FLUKE SUPPORTER AND TRIPPER. Elisha Robbins, Cotuit, Mass. Filed June 27, 1878.



Claim.—1. The combination of the separate cap-plates with the rail or bulwark and with the tripper composed of the head and tenon, arranged and channeled in their upper surfaces or parts and applied to and within the rail or bulwark, substantially as explained.

2. The tripper composed of the head and tenon, arranged and channeled in their upper parts, and provided with grooves in the opposite edges of the tenon, such grooves being to receive fastening devices or keys, as explained.

3. The tripper, the cap-plates, and the keys, arranged with each other and with respect to the rail or bulwark as specified.

207,446. SCREW-CUTTING DIE-STOCKS. Truman H. Rose, Miller's Falls, Mass., assignor to himself and Jas. W. Antheine, same place. Filed July 19, 1878.



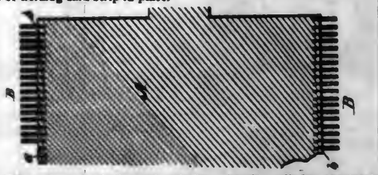
Claim.—1. The screw die-stock consisting of the two die-carriers C C', provided with handles D D', and pivoted or hinged together, and a screw, *b*, and socketed nut E, applied to the shank of one and to operate with the other of such carriers, all being substantially as set forth.

2. The combination of the separate screw-cutting dies A A' and the separate guides B B' therefor with the two die-carriers C C', hinged together, and provided with the screw *b*, socketed nut E, and the handles D D', all being substantially as set forth.

3. The screw F and the recess *c*, in combination with the two hinged die-carriers C C', the screw *b*, and the socketed nut E, all being arranged and applied substantially as set forth.

207,447. BURRING-CYLINDERS. Frederick G. Sargent and Allan C. Sargent, Grantsville, Mass. Filed June 8, 1878.

Brief.—The toothed strip is provided with a longitudinal groove or indentation, into which the metal of the cylinder is depressed or upset, for the purpose of holding said strip in place.



Claim.—1. A toothed metal strip for a burring-cylinder, constructed, as shown, with the grooves or indentations *b* in its side.

2. The flat toothed strip B, having on one side a flat or substantially flat side face, with a longitudinal groove or indentations, *b*, therein, substantially as shown and described.

3. In combination with the grooved cylinder A, the toothed strip B, having the groove or indentations *b* in one side and the corresponding protuberance on the opposite side.

207,448. FLOUR-DOLTING MACHINES. A. W. Schoenleben, Bitterfeld, Prussia. Filed Apr. 30, 1878.

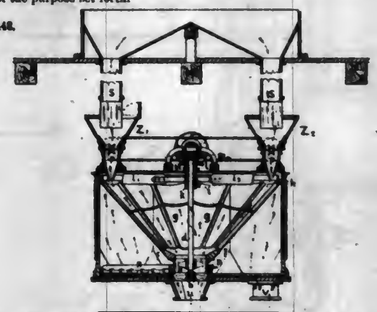
Claim.—1. In a sifting-machine, the combination, with the conical or pyramidal sifter *g g*, fixed on a vertical rotating shaft, *d*, of a feeding device delivering the material at or near the circumference of said sifter, as and for the purpose described.

2. The fan consisting of the blades *i*, i_1, &c., and boss *i*, loosely rotating on the shaft *d*, in combination with the conical or pyramidal sifter *g g*, as described, and for the purpose specified.

3. The feeding apparatus z, or z_1, having the grooved roller *p*, and arranged with the conical or pyramidal sifter *g g*, so as to deliver the material at or near the circumference thereof, substantially as specified, and for the purpose described.

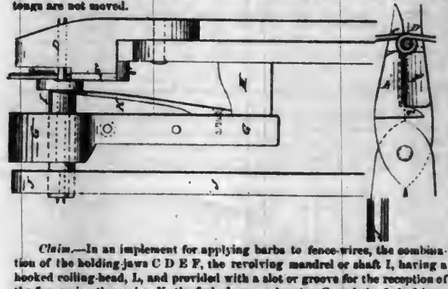
4. The rakes *n n*, in combination with the inverted conical sifter *g g*, as and for the purpose set forth.

207,448.



207,449. BARB-WINDERS. Benj. F. Sellers, Garden Prairie, Ill. Filed June 15, 1878.

Brief.—Adjust the slots of the tool in line. The jaws being open, place it astride the fence-wire; close the jaws; place barb-blank in its groove at right angles to fence-wire. To coil barb about fence-wire, operate crank while the tongs are not moved.



Claim.—In an implement for applying barbs to fence-wires, the combination of the holding-jaws C D E F, the revolving mandrel or shaft I, having a hooked coiling-head, L, and provided with a slot or groove for the reception of the fence-wire, the spring K, the forked arm or bearing G, and the forked handle or crank J, all constructed and relatively arranged substantially as herein shown, for the purpose set forth.

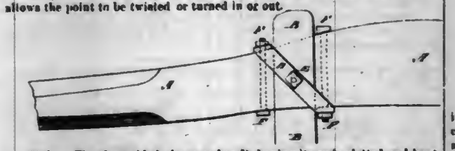
207,450. CIRCULAR SAWS. Geo. F. Simonds, Daniel Simonds, and Alfred A. Marshall, Fitchburg, Mass. Filed Aug. 2, 1878.



Claim.—The improved circular saw herein described, made firm with reference to its radii, but loose with reference to its diameter.

207,451. JOINTER-CLAMPS. Manfred D. Slocum, Union City, Mich. Filed May 7, 1878.

Brief.—The three-sided clamp adjusts the jointer to or from land, and also allows the point to be twisted or turned in or out.



Claim.—The three-sided clamp or bar D, having its ends slotted and bent angularly to fit upon the top and bottom of the beam A, in combination with the jointer-standard B, bolted to said clamp, and the bolts E F, as and for the purpose specified.

207,452. MACHINE-BELTING. Jerry Small, Watkins, N. Y. Filed July 31, 1878.



Claim.—1. A cable-belt consisting of the bars A, in combination with the cables B B and springs E, the whole being put together substantially as specified.

2. The combination of the bars A and two or more pairs of cables, B B, twisted together between the bars, as and for the purposes specified.

207,453. CAR-TRUCKS. Geo. Scutton, Boston, Mass. Filed June 10, 1878.



Claim.—1. In combination, the wheels *b b*, shafts *c c*, bearings *d e*, and the coupler-bar *i*, with its swivel-boxes k k' k'', as and for the purpose set forth.

2. In combination, the central grooved block *f f'* and its sliding bearings *e e*, with one or more springs, *h h*, as and for the purpose set forth.

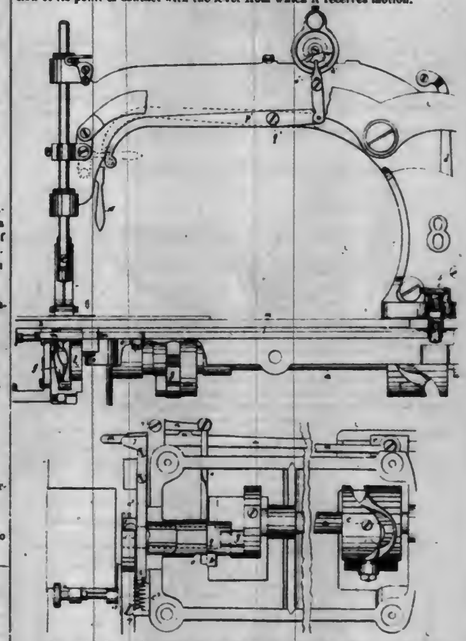
3. In combination, the wheels *b b*, shafts *c c*, sliding bearings *e e*, draw-bar *l l' l''*, and the universally-jointed links *m* m' m'', all arranged substantially as and for the purpose set forth.

4. In combination, the wheels *b b*, shafts *c c*, sliding bearings *e e*, links *m m*, draw-bar *l l' l''*, the guide *n*, and latches *o* o'' o''', as and for the purpose set forth.

5. In combination with the draw-bar *l* and its connections to the sliding bearings *e e*, the hand-lever *p* p' p'', as and for the purpose set forth and described.

207,454. SEWING-MACHINES. Aurelius Steward, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, same place. Filed May 6, 1878.

Brief.—A lever pivoted to the goose-neck is operated by raising the presser-foot-lifting lever to withdraw a stud from a notched plate attached to the tension device, whereby the tension is released. The feed-bar is composed of two plates, each provided at one end with a projection on the same side as the overhanging serrated portion. Between these projections is placed the bar, which serves to actuate the feed-bar and sustain it, and which is capable of being moved endwise, to adjust the length of the stitch, by changing the position of its point of contact with the lever from which it receives motion.



Claim.—1. In combination, the feed-bar, the adjustable lever *m* to support it at its rear end, the bar *n* to act upon the feed-lever to move it laterally, the connected link *o*, the swivel-block *p* thereon, and a cam to vibrate the bar and a cam to raise the feed, substantially as described.

2. The feed-bar provided with the tail-piece d^1, combined with the bar a^2, provided with the tail-piece 7, substantially as and for the purpose described.

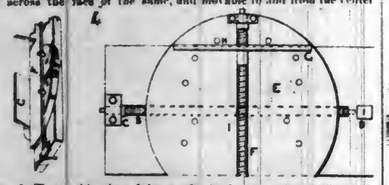
3. The feed-bar provided with the overhanging portion 3 and the feed-lever *m*, to support it at its rear end, combined with a cam to lift the feed-bar, and a spring, *e*, located with reference to the feed-bar, as described, to press it downward, backward, and laterally, substantially as and for the purpose described.

4. A tension device for the needle-thread and a lever, *p'*, adapted to hold and release it, as described, combined with the presser foot-lifting lever, located to actuate the said lever *p'* and release the tension device, substantially as and for the purpose described.

5. The stud m^1, notched plate n^1, and a tension-pulley thereon, combined with a lever adapted to hold or release the notched plate and stud, as desired, substantially as described.

207,456. Barrel-Head Machines. Charles Stout, Liverpool, England, assignor of one-half his right to Wm. F. Thompson, same place. Filed May 8, 1878.

Brief.—Barrel-heads of different sizes may be cut by a hand-saw without marking them out and guiding them by hand by means of a flat pivoted table adjustable to or from the saw, and provided with pin-holes in opposite sides of the center for the reception of adjustable pins, and carrying a horizontal fence extending across the face of the same, and movable to and from the center thereof.



Claim.—1. The combination of the saw D, the flat pivoted table E, adjustable to and from the saw, and the horizontal fence or support G, extending across the face of the table and movable to and from the center thereof, as shown, whereby sections or segments of barrel-heads may be sawed of different sizes and forms, as set forth.

2. In combination with the saw, the rotary and laterally-adjustable table E, provided with the adjustable fence, and the adjustable pins located on opposite sides of the center, whereby the table is adapted to hold the central sections of barrel-heads.

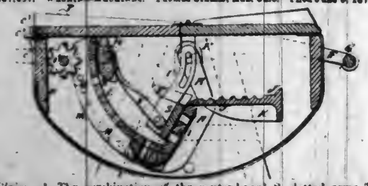
207,458. Saw-Gummers. Henry C. Streng, Manston, Wis., assignor to Himself and Oscar F. Temple, same place. Filed May 4, 1878.



Claim.—1. The cam-lever C c', fulcrumed upon the lugs a' on the bed-plate A of a saw-gumming machine, and provided with the projection c', in combination with the punch-lever B, having a step, b', on the under side of the tail end, substantially as and for the purpose set forth.

2. The combination of the flanged gage J, bent wire K, and hobber L, constructed and arranged as and for the purpose specified.

207,457. Washing-Machines. Thomas Stumm, Ada, Ohio. Filed June 6, 1878.

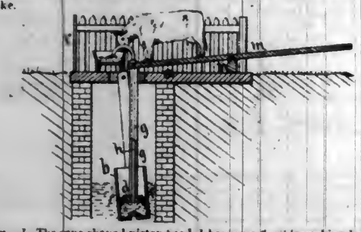


Claim.—1. The combination of the center-board S, slotted arms T, pivoted arms V, and cross-bar X with the shafts E, oscillating apron L, pressure-board I, and the suds-box having the transverse bar W, as and for the purpose set forth.

2. The combination of the transverse shaft O, spur-wheels N, and the rack-bars M m with the oscillating apron L, pressure-board I, movable center-board S, and the cross-bar W of the suds-box, as and for the purpose set forth.

207,458. Cattle-Pumps. Edward Taylor, New Providence, Iowa. Filed Feb. 14, 1878.

Brief.—When the animal passes the fulcrum *a* the water is forced up, and when the animal leaves the platform the piston is raised in position for the next stroke.



Claim.—1. The cone-shaped piston-head *d*, having a flexible packing-band, *f f*, flaring outward and extending below the piston-head, in combination with the swinging cylinder *b*, substantially as and for the purposes shown and described.

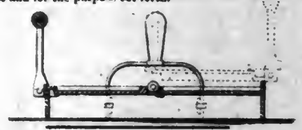
2. The combination of the base *a*, the suspended vibrating cylinder *b e*, the suspended vibrating piston *d f f*, carrying the well-tube *h*, and the oscillating platform *m*, mounted upon the fulcrum *n*, fixed outside of the well, substantially as shown and described, to operate in the manner and for the purposes specified.

207,459. Cake-Griddles. J. V. Taylor, Lansingburg, N. Y. Filed July 26, 1878.

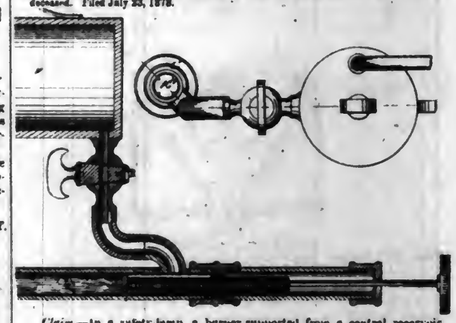
Claim.—1. In a cake-griddle, the combination of a fixed plate having raised lugs with a hinged plate that dumps the cakes and rests on the lugs, so as to admit air to the cakes between the plates, substantially as specified.

2. In a cake-griddle, the combination of a fixed plate with a swinging plate having a hinged handle, with a projecting shoulder bearing on the plate, substantially as and for the purpose set forth.

207,459.



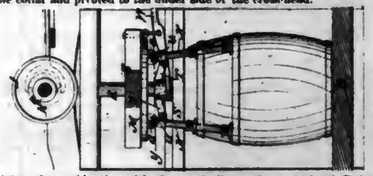
207,460. Lamps. Sarah Thomas, Youngstown, Ohio, administratrix of John J. Thomas, deceased. Filed July 23, 1878.



Claim.—In a safety-lamp, a burner supported from a central reservoir, and constructed of an upper wick-tube and of a lower guide-tube, separated by a tightly-packed partition, in connection with a notched wick-adjusting pinion, adjusted by a screw-spindle, substantially as and for the purpose set forth.

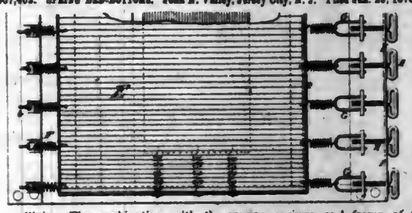
207,461. Machines for Trussing Barrels. H. B. Tyson, Minneapolis, Minn. Filed May 2, 1878.

Brief.—The trussing or hoop-driving arms are pivoted to a cross-head vertically adjustable upon a central shaft, and connected by links to a sliding collar upon said shaft, which is adjustable upon the shaft by a lever connected with the collar and pivoted to the under side of the cross-head.



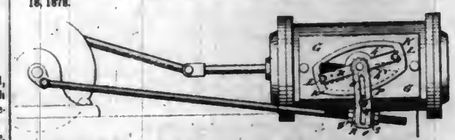
Claim.—In combination with the vertically-moving cross-head E, having the trussing-arms N pivoted thereto, the central guide R, sleeve S, links T, and hand-lever W.

207,462. Spring Bed-Bottoms. John H. Valley, Jersey City, N. J. Filed Jan. 29, 1878.



Claim.—The combination, with the canvas, springs, and frame, of the stirrups G and swiveled thumb-screws H, arranged substantially as and for the purpose specified.

207,463. Oscillating Steam-Valves. Charles J. Van Depoele, Detroit, Mich. Filed July 16, 1878.

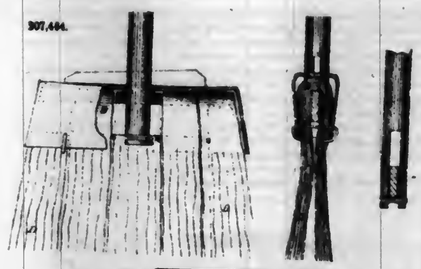


Claim.—The combination of the valve K, provided with ports F^1 F^2 and exhaust-port I, the valve-seat G, the hollow ring J, and the spindle N, all constructed and arranged as shown and described, for the purpose specified.

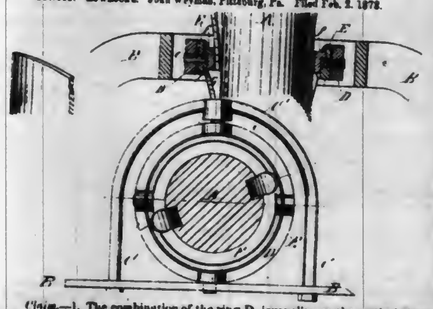
207,464. Brooms. William Walter, Arcadia, Wash. Filed June 11, 1878.

Claim.—The combination of the sheet-metal head A, made with a slightly-concaved top and flaring ends, the slotted handle B, the cross-strip C, and the key E, with each other, to form a head to receive and hold the brush of the broom, substantially as herein shown and described.

207,464.



207,465. Rowlocks. John Weyman, Pittsburg, Pa. Filed Feb. 2, 1878.



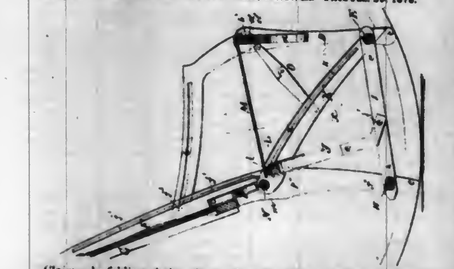
Claim.—1. The combination of the ring D, journaling on the vertical pivots *b c* of the outrigger and arch, and the ring E, journaling on the horizontal pivots *e e* of the ring D, all operating as described, and for the purpose of allowing the oar to move horizontally and vertically.

2. An outrigger, arched standards C C, a series of pivoted rings, and one or more latch-springs, all combined and operating as and for the object set forth.

3. The combination, in a rowlock, of one or more latch-springs and a ring or button, for the purpose of locking the oar in the rowlock against longitudinal movement of the same, as described.

4. The vertical pivots *b c*, horizontal pivots *e e*, rings D and E, the arch C of the standards C C, and the outrigger B, all combined, constructed, and operating in manner as described.

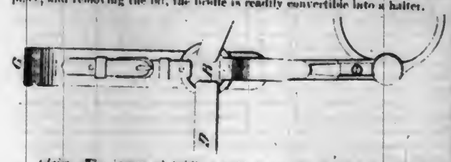
207,466. Folding Chairs. David S. White, Toledo, Ill. Filed Jan. 29, 1878.



Claim.—In folding chairs, the combination of the front legs, D, brace *d*, rear posts, F, having the grooves *f*' and spring-stops P, back H, horizontal braces and rounds I F H, uprights J, and cross-bar L, provided with pins or rollers *l*, seat M, diagonal braces K, provided with the grooves *k*, cross-bar N, and the hinged braces O, and the several pivoted connections, substantially as specified.

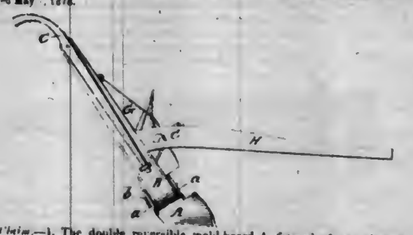
207,467. Combined Bridle and Halter. Royal E. Whitman, Springfield, Mass. Filed July 24, 1878.

Brief.—By removing the head-band, adjusting the brow-band to take its place, and removing the bit, the bridle is readily convertible into a halter.



Claim.—The improved bridle provided with the rings B, the adjustable brow-band D, and the removable supporting-band G, to adapt it for use as a halter, as set forth.

207,468. Ride-Hill Plows. L. Erwin Wilson and James E. McCauley, Barnesville, S. C. Filed May 7, 1878.



Claim.—1. The double reversible mold-board A, formed of one piece of metal, provided with the central lugs *a a*, arranged to clasp the standard and allow the mold-board to swing under it upon the bolt *b*, substantially as shown and described.

2. The combination of the mold-board A, having lugs *a*, standard B, hook G, beam H, and stops C, as shown and described.

207,469. Hose-Clamps. Fredrick W. Wolf, Chicago, Ill. Filed July 13, 1878.



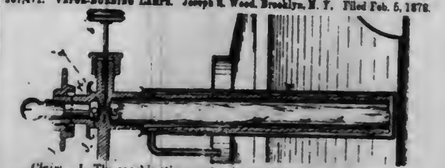
Claim.—A hose-clamp consisting of two straight pivoted stiff clamping-jaws, A E, in combination with a cam-locking device, substantially as set forth.

207,470. Hose-Couplings. Fredrick W. Wolf, Chicago, Ill. Filed July 13, 1878.



Claim.—The flexible metallic band A, in combination with a cam-lever plate, C, operating in a line with said band for a hose-coupling, substantially as described.

207,471. Vapor-Burning Lamps. Joseph S. Wood, Brooklyn, N. Y. Filed Feb. 5, 1878.

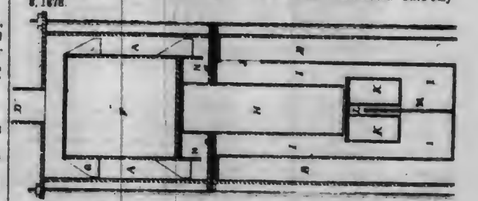


Claim.—1. The combination, with a lamp-bowl having a central oil-supply tube and an exterior burner, of a packing or wick that encircles the supply-tube and extends up to or above the top of the lamp-bowl, substantially as specified.

2. The combination, with a lamp-bowl having a central oil-supply tube and an exterior vapor-burner, of a packing or wick that encircles the supply-tube at the inside of the bowl, and of a second tube around the packing having communicating top and bottom holes, substantially as described.

3. As an improvement in vapor-burners, the combination of the solid portion G, arranged at the upper end of the oil-supply tube, and having a central supply-orifice, *a*', air-hole J, and jet-holes H, with a screw valve, *b*', and with a vertically-adjustable heating-plate, I, to regulate size of flame and gas-pressure in the bowl, substantially as and for the purpose specified.

207,472. Stench or Basin Trap Valves. Wm. E. Worth, San Francisco, Cal. Filed July 8, 1878.



Claim.—1. The exterior double case A D, with its inlet-pipe D and exit-pipe E, in combination with the float-valve F, pipe H, and inclosing chamber I, with its overflow-opening J, substantially as and for the purpose herein described.

2. The double-compartment chamber A B, with its connecting-pipe H extending into the upper chamber, and the chamber I, in combination with the float-valve F, and valve having an exterior annular flange, N, which acts with the pipe H as a trap, substantially as herein described.

3. The double-compartment chamber A B, with its connecting-pipe H extending into both chambers, in combination with the float and trap-valve F and the lower float-valve, K, substantially as and for the purpose herein described.

4. In combination with the double-compartment chamber A B, with its inlet and outlet passages, as shown, the connecting-pipe H, and the float-valves F and K, the chamber I within the lower compartment, having the discharge-slot J at the top, substantially as and for the purpose herein described.

207,473. HAND-TRUCK. William B. Allen, Orleans, N. Y. Filed July 13, 1878.



Claim.—1. A hand-truck provided with a nose formed thereon at a point in the rear of its forward end, whereby the truck is adapted, when in upright position, to take its load from the side of the latter, and without engagement with the bottom of the same, substantially as set forth.

2. A hand-truck constructed with a nose formed thereon at a point in rear of its forward extremity, and a second nose formed in rear of the same, said two noses being adapted to cause the truck to deposit its load so as to leave the latter in an upright position without manual interference, substantially as set forth.

3. A hand-truck constructed with a secondary nose, formed above the lower nose thereof, substantially as set forth.

4. A hand-truck provided with a secondary nose, placed above the lower nose, and adapted to be folded against the truck-bed when not in use, substantially as set forth.

5. In a hand-truck, the combination, with the hinged nose, of suitable supports formed on the truck sides, and adapted to provide bearing for the said nose when in operative position, substantially as set forth.

6. In a hand-truck, the combination, with the hinged nose, of a fastening device adapted to secure the same in operative position, substantially as set forth.

7. A hand-truck constructed with an upper or secondary nose and a lower nose, the latter being adapted to project forwardly beyond the truck's sides in a horizontal plane above the floor or ground when the truck is in an upright position, while at the same time the said upper nose projects forwardly beyond the lower nose, substantially as set forth.

207,474. HOG-CHOLERA COMPOUND. Elijah Anderson, Mount Pleasant, Iowa. Filed Mar. 6, 1878.

Claim.—A new and useful medical compound, consisting of fenugreek, black antimony, saltpeter, resin, sulphur, ginger, cream-tartar, rattle-weed root, charcoal, cayenne pepper, and pulverized poke root, in the proportions and for the purposes specified.

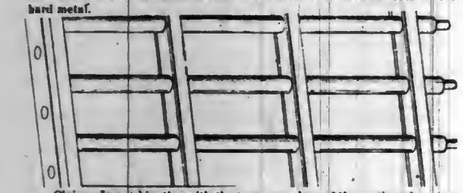
207,475. WAITERS. S. William Babbitt, West Meriden, Conn., assignor to Wilcox Silver Plate Company, same place. Filed July 26, 1878.



Claim.—The herein-described waiter, consisting of a principal tray and an auxiliary tray, elevated above the principal tray and set back from one edge of the principal tray, substantially as described.

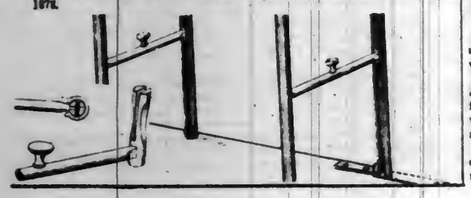
207,476. GRATINGS. Thomas F. Baker, Cincinnati, Ohio. Filed June 8, 1878.

Brief.—Bars formed in two parts. An exterior tube or shell of wrought-iron fixed to horizontal bars inclosing a rotatable rod or core of steel or other hard metal.



Claim.—In combination with the transverse bars of the grating, the rotatable saw-proof rods and wrought-metal tubes inclosing the rotatable rods and riveted in the said transverse bars, so as to retain them in their proper position in the grating, substantially as set forth.

207,477. BILL AND PAPER FILES. Hannan Baldwin, West Chester, Pa. Filed July 11, 1878.



Claim.—1. In a paper-file, the combination, with slotted tubular standards and a transverse or arcon bar, of friction-springs fitted in the standards and attached to the ends of the said bar, and adapted to hold the same in any adjusted position by frictional contact, as set forth.

2. The combination of the stationary standards with transverse clamping-bar, and the pivoted standards and transverse clamping-bar, whereby the ends of the papers may be left free in order to examine the papers separately, substantially as specified.

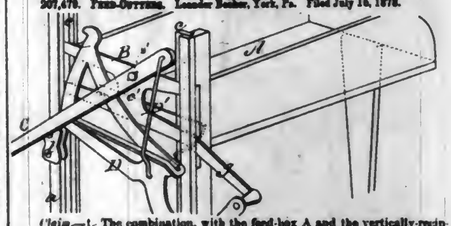
3. The combination of the pivoted standards and their clamping-bar, the springs bearing against said standards for holding the same in a vertical or horizontal position, substantially as specified.

207,478. HARness-BUCKLE. Valentine H. Bonner, Xenia, Ind. Filed Jan. 11, 1878.



Claim.—The buckle herein described, having the bars A, B, C, and D, recess E, shoulders *d d*, and tongue G, constructed substantially as specified.

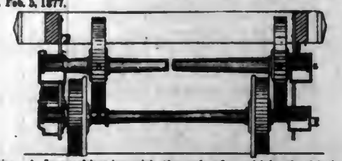
207,479. FEED-CUTTERS. Leander Bolton, York, Pa. Filed July 16, 1878.



Claim.—1. The combination, with the feed-box A and the vertically-reciprocating sash B, having the presser-plate C, of the lever O, fulcrumed on sash B, the vibrating curved knife *f*, pivoted to said sash, and a connecting-rod uniting said knife and lever, substantially as specified.

2. The combination, with a feed-box, A, sash B, and presser-plate C, having slot *e* upon its front edge, of a curved vibrating cutter pivoted to said sash and vibrating vertically through said slot, a lever pivoted to the sash, and a rod connecting the lever and knife, substantially as set forth.

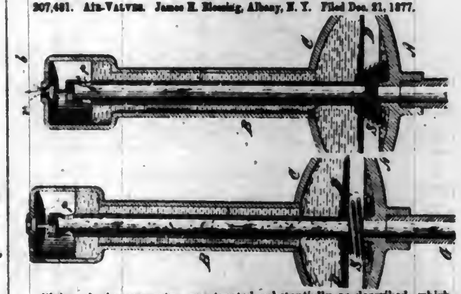
207,480. CAR-TRUCKS. Jacques Belen, Paris, France. Filed Apr. 10, 1878. Patented in France, Feb. 5, 1877.



Claim.—1. In combination with the axle of a vehicle, the friction-pulleys mounted upon a divided shaft, the ends of which are secured together by means of a collar or sleeve, in such manner that the rollers may be rotated independently of each other, substantially as and for the purposes set forth.

2. In combination with the friction-rollers and their supports, the horizontal arms, riding on downwardly-projecting rods secured to the truck-frame, and the spiral springs located between said arms and the truck, substantially as and for the purposes specified.

207,481. AIR-VALVES. James H. Blessing, Albany, N. Y. Filed Dec. 21, 1877.



Claim.—1. An apparatus, constructed substantially as described, which allows air to pass freely through it, but closes a valve whether either steam or water enters.

2. An automatic air-valve which consists of an escape-valve controlled by apparatus which consists of a float or diaphragm adapted to be operated by flotation when water enters, and an apparatus connected to the automatic air valve, operated by expansion, and closing said valve on the entrance of steam, substantially as described.

3. An automatic air-valve provided with an escape-valve attached to a diaphragm, the elevation of which diaphragm closes the escape-valve, substantially as described.

4. An automatic air-valve provided with an escape-valve attached to an expansible diaphragm, whereby the presence of steam expands said diaphragm and closes the valve, substantially as described.

5. An automatic air-valve which consists of an escape-valve attached to a diaphragm, which is elevated by the presence of either water or steam in the valve, substantially as described.

6. The combination of the vessel A C, containing a diaphragm, D, supported by the spring S, and containing the pipe E and valve e, substantially as described.

7. An automatic air-valve provided with a diaphragm which operates an escape-valve and has both its surfaces exposed to the action of water, substantially as and for the purposes described.

207,482. DRAIN-TRAPS. James H. Blessing, Albany, N. Y. Filed Dec. 29, 1877.



Claim.—1. A drain-trap constructed substantially as described, operated by means of a rising and falling floating diaphragm, adapted to close a valve when water comes to flow into the trap, and open it on the access of more, substantially as described.

2. A drain-trap provided with a float or diaphragm operating an escape-valve, and constructed substantially as described, which allows the escape of water and air, but prevents the escape of steam.

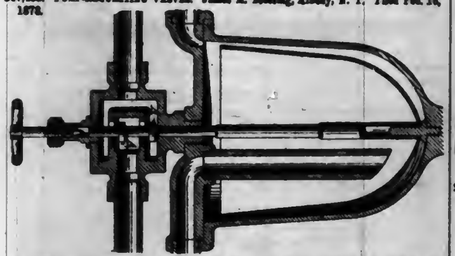
3. A drain-trap provided with a rising and falling diaphragm, D, to which a drain-valve, V, is attached, which diaphragm is counterbalanced by means of a spring, S, substantially as described.

4. A drain-trap provided with a rising and falling diaphragm, D, operating the valve V, and having the equalizing-perforation h, substantially as described.

5. A drain-trap provided with a rising and falling diaphragm, D, having the perforation h, through which perforation the cleaning apparatus W operates, substantially as described.

6. A drain-trap provided with a rising and falling diaphragm, D, and the two water-chambers, one above and one below such diaphragm, whereby the entering water elevates the diaphragm D, while the following steam allows the water within the upper vessel to close the drain-valve V, substantially as described.

207,483. PUMP-REGULATING VALVES. James H. Blessing, Albany, N. Y. Filed Feb. 16, 1878.



Claim.—1. An apparatus for controlling the steam-supply of a pump by means of the water supplied to the same, which consists of a rising and falling float connected to a regulating steam-valve, constructed and arranged for operation substantially as described.

2. An apparatus for regulating the steam-supply of a pump by means of the water supplied to the same, which consists of a rising and falling open-top float, into which the return-water enters, and from which it is drawn by means of a siphon, constructed and arranged for operation substantially as described.

3. In an apparatus for regulating the steam-supply of a pump by the water supplied to the same, a float controlling the steam-valve of the pump, substantially as described.

207,484. STEAM-TRAPS. James H. Blessing, Albany, N. Y. Filed Nov. 6, 1877.

Claim.—1. An automatic steam-trap for the purpose of returning water to the boiler, having an open-top float, into which water enters and whence it is delivered to the boiler, thereby causing said open-top float to rise and fall, when the said open-top float is connected to an equalizing steam-valve by a connecting apparatus which does not connect a steam-space and the atmosphere, nor two steam-spaces of different pressures, and when the opening and closing of the steam-valves is not affected gradually, but suddenly and surely, by reason of the fact that there is a certain amount of lost motion between the movement of the open-top float and its action on the valve.

2. An automatic steam-trap consisting of a containing-vessel and a rising and falling open-top float, when the water which enters said trap first fills the space between the open-top float and the containing-vessel, and when the equalizing steam-valve is not immediately actuated by the movement of the open-top float, but the open-top float is connected to said steam-valve by means of apparatus allowing a certain amount of lost motion, substantially as described.

3. An automatic steam-trap which consists of an inclosing-vessel, A, and a rising and falling open-top float, B, when the inclosing-vessel is provided with a tank communicating with its upper portion, substantially as described.

4. An automatic steam-trap having a vessel, A, provided with a tank, T, connecting with its upper portion, which tank communicates with the vessel by means of two or more small openings, thereby delaying the escape of the water in the tank into the inclosed vessel, substantially as described.

5. An automatic steam-trap for returning water to the boiler, provided with a rising and falling vessel, and with apparatus, substantially as described, independent of the mere inflow of water from the supply, whereby the water-level between the rising and falling vessel and the containing-casing is maintained and raised after the vessel begins to ascend.

6. The combination of the vessel A, open-top float B, and rod *p*, provided with collars *g* and *f*, operating the steam-valve *t*, when the collars *g* and *f* are separated for the purpose of allowing a certain amount of lost motion before opening or closing the valve, substantially as described.

7. In an automatic steam-trap for returning water to the boiler, the combination of a shell, A, with a siphon, C and C', provided with the air-cock *x*, for the purpose of filling said siphon, substantially as described.

8. An automatic steam-trap provided with the tank T, connecting with the upper part of said trap by means of apertures m n, and operating the steam-valve by means of apparatus substantially as described, whereby a certain amount of lost motion is allowed between the rising and falling open-top float and the equalizing steam-valve, substantially as described.

207,484.



207,485. PUMP-REGULATING VALVES. James H. Blessing, Albany, N. Y. Filed Jan. 15, 1878.



Claim.—1. An apparatus, constructed substantially as described, whereby the amount of water supplied to a pump regulates the operation of said pump.

2. A pump-regulating apparatus constructed substantially as described, and placed intermediate between the water and the pump, whereby the water passing to such regulating apparatus opens the steam-valve of the pump, which valve is closed on the cessation of the water-supply.

3. A pump-regulating apparatus constructed substantially as described, and provided with two chambers and an intermediate diaphragm, which diaphragm controls the steam valve of the pump, and is elevated or depressed by means of the presence of water in one of the chambers, the upper surface of the diaphragm being acted on by a pressure of water of constant height, the lower surface by the water which is being fed to the pump, whereby the varying amount of the water-supply determines and regulates the action of the steam-pump.

4. The combination, in an apparatus constructed substantially as described, of a steam-valve and a diaphragm controlling it, which valve is elevated or depressed by the presence of water, thereby regulating the steam-supply of the pump.

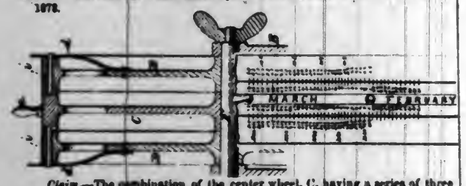
5. In a pump-regulating apparatus whereby the steam-supply of such pump can be increased or diminished by means of the supply of water to such pump, a means, substantially as specified, for keeping the steam-valve of the pump constantly open, whereby said pump is prevented from stopping.

207,486. BALE-TIES. Joel Y. Bloomingdale, New Salem, N. Y., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Filed Dec. 5, 1878.



Claim.—The combination, in a wire bale-tie provided with a loop at each end, of the spring-hook *c d*, supported from the twisted neck of one of said loops, substantially as and for the purpose set forth.

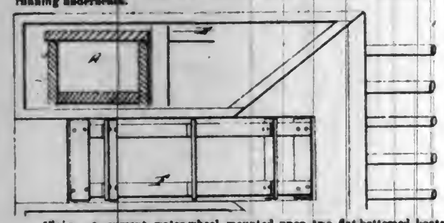
207,487. CALCULATORS. James Isaac Bogue, Montreal, Quebec, Canada. Filed Mar. 15, 1878.



Claim.—The combination of the center wheel, C, having a series of three hundred and sixty-five recesses, *b*, on each side, and the side wheels, D D, each having a pin or bolt, *d*, with spring *d'*, all the wheels being mounted on a common center, F, in a suitable frame, and provided on their peripheries with figures, &c., substantially as herein described, and for the purposes set forth.

207,488. CURRENT-WHEELS. Thomas J. Bottome, Thomasville, Ga. Filed Aug. 14, 1878.

Brief.—The sides extending below the bottom prevent the current from running underneath.



Claim.—A current water-wheel mounted upon two flat-bottomed boats, constructed to form a V-shaped mouth leading into a narrow channel between the boats, and having the sides of the boats projecting below the bottoms, substantially as and for the purposes herein set forth.

207,489. FLEXIBLE GAS-TUBING. Wendel Bourguignon, Providence, R. I., assignor to Robert Gunn, Boston, Mass. Filed May 14, 1878.



Claim.—A flexible tubing consisting of a spiral wire coil, a covering of fibrous material, and a covering of lead between said fibrous covering and a covering of elastic material, substantially as and for the purpose specified.

207,490. BLOCK-PRINTING MACHINES. Alexander F. Buchanan, Montreal, N. Y. Filed Apr. 10, 1878.



Claim.—1. The combination of the polygonal platen B, mounted in fixed bearings and adapted to be rotated and fixed in different positions, the polygonal printing-block C, and polygonal color-cushion D, said printing-block and color-cushion being capable of reciprocating motion and step-by-step rotation, and means, substantially as described, for preventing rotation of said platen, printing-block, and cushion when desired.

2. The combination of the polygonal printing-block C, mounted in reciprocated bearings, the polygonal head G, secured to the shaft of said printing-block, and the pivoted bar A, substantially as and for the purpose set forth.

207,491. APPARATUS FOR THE MANUFACTURE OF OIL-CLOTH. Alexander F. Buchanan, Montreal, N. Y. Filed Mar. 26, 1878.

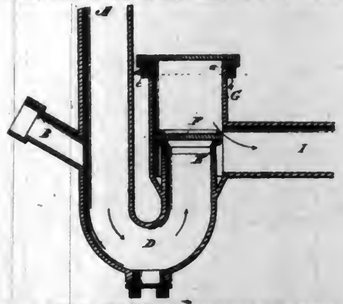
Brief.—Apparatus consists of the usual devices for filling and rubbing the fabric and removing it from the drying-compartments, and a series of chambers in which the coated fabric may be dried. By means of suitable rails the mechanical devices for filling, &c., which are mounted on wheels, may be brought in front of each of the drying-chambers, as required.



Claim.—1. The combination, in an apparatus for manufacturing oil-cloth, of a series of compartments, B B' B² B³, &c., tracks *c d*, and a mill, C, rubber D, and cloth-roller E, all adapted to operate substantially as described.

2. The combination, in an apparatus for manufacturing oil-cloth, of a series of compartments B B' B² B³, &c., and a rubber, D, adapted to be moved from one compartment to the other, and to take the material directly from either of said compartments, substantially as described.

207,492. STENCH-TRAPS. Bernard J. Downey, Washington, D. C. Filed July 22, 1878.



Claim.—1. In a trap, the disk-valve F, composed of the main part K, the thickened rim *g g*, having the undercut grooves *e e* and the flexible pads *f f*, substantially as shown and described.

2. In a trap, the disk-valve F, constructed as shown and described, in combination with the knife-edged metallic valve-seat E, for the purpose set forth.

3. In a trap, the bend D, terminating in the metallic valve-seat E, combined with the valve F, the chamber G, and the outlet I, substantially as shown and described.

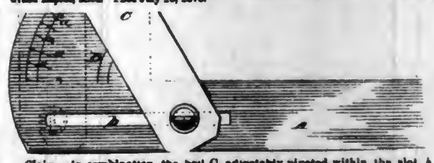
4. The combination of the limb A, the projection B, and the bend D, having a metallic valve-seat, E, with the chamber G, valve F, and outlet I, substantially as set forth.

207,493. VEHICLE-AXLE LUBRICATORS. W. J. Drew, Grand Rapids, Mich., assignor of one-half his right to Wm. H. Robinson, same place. Filed June 26, 1878.



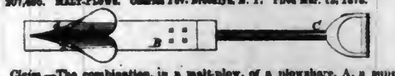
Claim.—The oil-receptacle C, formed with the conduit-tube D, having loose rod *d*, in combination with a revolving hub, substantially as and for the purposes herein set forth.

207,494. CARPENTERS' GAGE-TOOLS. Emmet R. Dunlap, South Lyon, and Geo. W. Dunlap, Grand Rapids, Mich. Filed July 13, 1878.



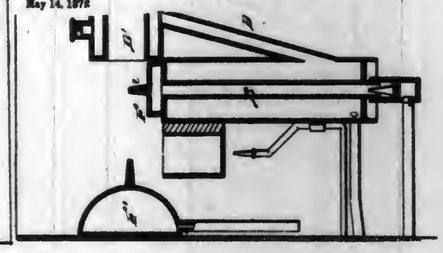
Claim.—In combination, the bent C, adjustably pivoted within the slot *b* of the rule A, substantially as and for the purpose set forth.

207,495. MALT-PLOWS. Charles Fox, Brooklyn, N. Y. Filed Mar. 13, 1878.



Claim.—The combination, in a malt-plow, of a plowshare, A, a supporting-plate, B, and a handle, C, substantially as shown and described.

207,496. APPARATUS FOR PRODUCING OZONE. John Buchanan, Philadelphia, Pa. Filed May 14, 1878.

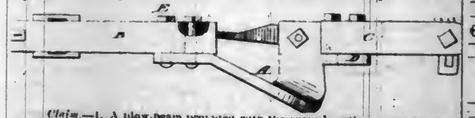


Claim.—1. The ozone generator herein described, consisting of the jacketed tube B, having a burner at its lower end, a chest provided with nozzles and communicating with said pipe, the pipe D, connecting the jackets of the pipes B and D', a chamber, F', having horizontal jets *e* on or about a level with the jets *f* and the opening of the said pipe D', and a cup containing permanganate of potash and a gas pipe and burner, combined and arranged substantially as specified.

2. In an ozone apparatus, a cup to contain the permanganate of potash and a gas pipe and burner, situated between and combined with a chamber having air-jets and an exit-tube, D', and about in line with said jets, and provided with a jacket containing a freezing-mixture, substantially as specified.

207,497. PLOW-BEAMS. Frank E. Boup and Joel W. Gear, New Cassel, Wis. Filed July 3, 1878.

Brief.—A sectional plow beam, the center composed of a plate sharply curved upward and landward, allowing free passage of stubble, &c., from the plow.



Claim.—1. A plow-beam provided with the curved casting A, constructed and operating substantially as shown and described, and for the purposes set forth.

2. A plow-beam consisting of the fixed section C and vertically-adjustable section B, united by the landward-curved casting A, and provided with the adjustable wheel M, substantially as and for the purpose set forth.

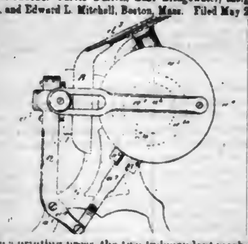
207,498. TOBACCO-CUTTERS. Augustus H. Bunker, Lawrence, Mass. Filed July 1, 1878.



Claim.—1. The combination, with a cutting-blade of a tobacco-cutting instrument, of one or more scrapers arranged to bear against the side or sides of the blade, substantially as and for the purpose set forth.

2. The combination, with a cutting-blade of a tobacco-cutting instrument, of one or more scrapers, bearing against one or both sides of the blade, and constructed or arranged to have a yielding motion, and disposed at an incline to the sides of the blade, substantially as and for the purpose described.

207,499. PRINTING-PRESSES. Jarvis Burrell, East Bridgewater, assignor to Edward A. Curtis, Somerville, and Edward L. Mitchell, Boston, Mass. Filed May 27, 1878.



Claim.—1. In a printing-press, the two independent mechanisms for actuating the platen above described, one consisting of the connecting-rods *a² a³*, arranged substantially as described with reference to the platen-frame *a* and driving-shaft *a⁴*, and the other consisting of the cam rod *a'*, arranged substantially as described with reference to the lever platen-frame *a* and the cam *a⁵*, the whole combined and operating substantially as described.

2. In combination with the ink-disk *d⁵*, pawl *d⁶*, pawl-lever *d*, and cam *d⁷*, the adjusting-screw *d⁸*, arranged and operating to vary the distance between the cam *d⁷* and pawl-lever *d*, and thereby vary the motion of the ink-disk *d⁵*, as described.

207,500. COMBINED TOOLS. Peter Campbell, Carrollton, Pa. Filed Jan. 23, 1878.

Brief.—The nut being turned home, the tool is placed in line with the bolt, gripping the screw-threads with cutting-edge and opposite shoulder. A twist of the tool breaks the continuity of the threads, preventing the removal of the nut.



Claim.—A combined tool for cutting the thread of the bolt and a wrench having one end formed into an adjustable wrench for tightening the nuts, and the other end made in the form of a pair of tweezers and provided with a cutting or bending blade, *d*, whereby the nut can be locked securely to the bolt, substantially as shown and described.

207,501. AUTOMATIC CAR-BRAKES. Wm. L. Card, Moberly, Mo. Filed July 24, 1878.

Claim.—1. The combination, with the automatic brake-lever R, of the slotted bar O, having at the side of the slot a shoulder or catch, *o²*, to engage the lever in certain position of the bar O, for the purpose set forth.

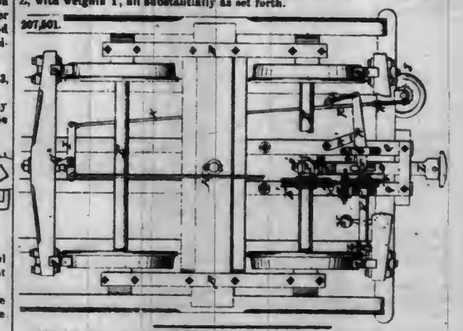
2. The combination, with the lever R and bar O, of the spring T, substantially as set forth.

3. The combination, with the draw-head L, slotted bar O, and lever R, of the spring-rod W X and revolving shaft U, for the purpose set forth.

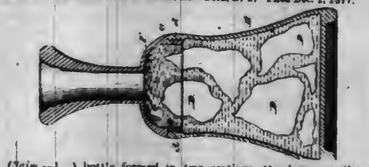
4. The combination of axle E, chain or other gear E' Y V', shaft U, centrifugal automatic device Y Z, spring push-rod W X, bar O, and brake-lever R, substantially as and for the purpose set forth.

5. The combination, with an ordinary hand-brake mechanism of a railway-car, of the described automatic brake mechanism, consisting of lever R, slotted bar O, spring T, spring-rod W X, and shaft U, carrying pivoted bar or lever Z, with weights Y, all substantially as set forth.

207,501.



207,502. BOTTLES. Geo. W. Clark, New York, N. Y. Filed Dec. 1, 1877.

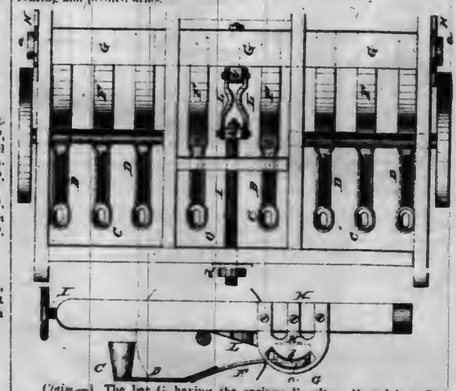


Claim.—1. A bottle formed in two sections, the lower section or body being of glass, and the upper section, forming the shoulders, neck, and mouth, made of metal, in ornamental form, the two sections being united by a screw-thread or other suitable means, all substantially as herein shown and described.

2. A bottle, substantially as herein described, consisting of the glass body A, having screw-thread *a* at its open, and a detachable shoulder, neck, and mouth formed from metal in one piece and provided with screw-thread *e*.

207,503. GRAIN-DRILLS. Thomas C. Clark, Russellville, Ky. Filed Aug. 7, 1878.

Brief.—The spring-bars, carrying colters and hoes, are firmly secured to a transverse beam, the concavo-convex metal ends of which move in circular slotted hangers depending from the side of the frame. The transverse beam is oscillated by a screw-shaft, which is connected to said beam by a swiveled bearing and pivoted arms.



Claim.—1. The bar G, having the springs F, colters D, and hoes C attached thereto, and provided with the projecting concavo-convex bars *a* at its ends, in combination with the hangers H, having curved slots *b*, and a mechanism for adjusting the bar G, as set forth.

2. In combination with the bar G, supported in the hangers H, and having the hoes C connected thereto, the nut *d*, screw-shaft I, swiveled bearing *h*, arms L, and stud *i*, all substantially as and for the purposes herein set forth.

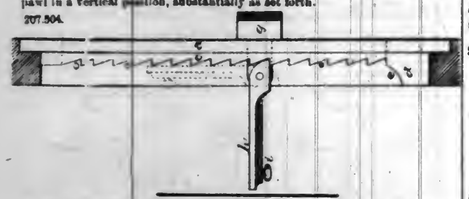
207,504. WORK-BENCH ATTACHMENTS. J. M. Combs, La Cueva, N. Mex. Filed Aug. 1, 1878.

Brief.—The rack-bar is in a recess, so that the pawl may be turned back out of the way.

Claim.—1. The combination of the frame *a*, having the slot *b* and ratcheted flanges *c*, with the block *g* and pawl *h*, the pawl being adapted to be opened and closed, substantially as shown.

2. The combination of the frame *a*, having slot *b*, ratchets flanges *c*, and projection *d*, with the block *g* and pawl *h*, the projection serving to hold the pawl in a vertical position, substantially as set forth.

207,504.

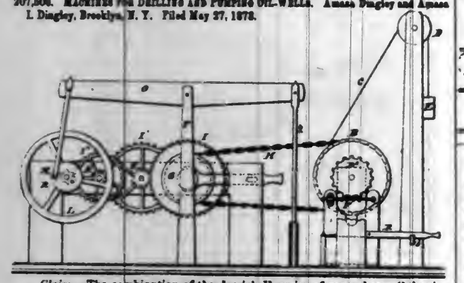


207,505. CONSTRUCTION OF VESSELS. Benjamin F. Delano, Boston, Mass. Filed July 18, 1878.



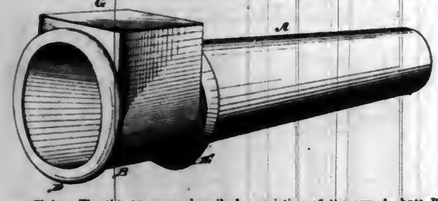
Claim.—The batten or strip D, lying alongside of and in combination with the keel B, and arranged to cover the garboard seam *i*, substantially as set forth.

207,506. MACHINES FOR DRILLING AND PUMPING OIL-WELLS. Amasa Dingley and Agnes L. Dingley, Brooklyn, N. Y. Filed May 27, 1878.



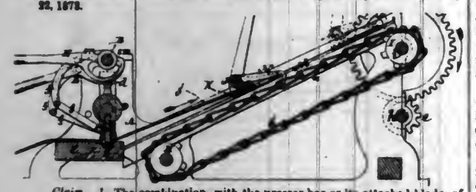
Claim.—The combination of the derrick E, series of gears, beam O, having its pitman operated from said gears, drum-shaft carrying the drum B^1, pulley B, and pinion B^2, rope C, passing from the drum over a sheave, D, said provided with a weight, E, and worm F, adjustable by the lever R to and from the pinion B^2, as specified.

207,507. THIMBLE-SKEINS. Andrew M. Disbrow, Grafton, Ill. Filed July 13, 1878.



Claim.—The thimble-skein described, consisting of the arm A, butt B, flanges D and E, and having the rectangular block G, constructed and adapted to operate, relatively to and in combination with the spring H, spring-block I, and connecting clips, as herein specified, for the purpose set forth.

207,508. LEATHER-STRETCHING MACHINES. Horace H. Dodge, Brooklyn, N. Y. Filed May 22, 1878.

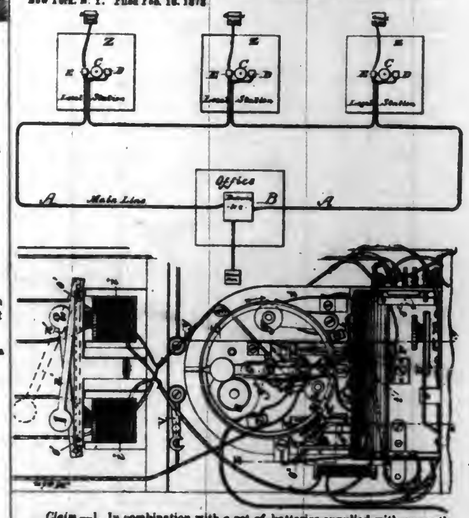


Claim.—1. The combination, with the presser-bar or its attached blade, of one or more conveyers or carriers, arranged to have a longitudinal motion away from said bar or its blade in rear of the latter when drawing the leather through the machine, and a traveling clamp, constructed to engage with and to be disengaged from said carrier, substantially as and for the purpose or purposes herein set forth.

2. The combination, with an endless traveling chain or flexible carrier, of a sliding or traveling clamp, J K, provided with an engaging and disengaging hook or anchor, N, and the ways M M, on which said clamp is fitted to travel, essentially as and for the purpose or purposes described.

3. The ways M M, arranged to incline upwardly in a rear direction relatively to the devices against, through, or over which the leather is drawn, in combination with the similarly-inclined conveyor or carrier and the traveling clamp J K, constructed to admit of its ready engagement with or disengagement from the carrier, substantially as specified.

207,509. FIRE, BURGLAR, AND DISTRICT ALARM TELEGRAPH. Jonathan O. Fowler, Jr., New York, N. Y. Filed Feb. 16, 1878.



Claim.—1. In combination with a set of batteries supplied with an earth-plate and office-telegraph receiving-instruments connected constantly with a main telegraph-line, A, on a closed circuit, an automatic heat or burglar detecter, E^3, a closed branch or local circuit, F, and an open branch or local earth-circuit, J, each local circuit having an annunciator-magnet to indicate a number, and each provided with a magnet controlling one alarm and transmitting mechanism, L, to sound an alarm at the house or branch station, and to turn in at the central office the determinate signal, either over the metallic line or through the earth-wire, or both, whenever the main line has been severed by the heat or burglar detecters, substantially as and for the purpose set forth.

2. In combination with a battery having an earth-connection, and connected constantly with a main telegraph-line on a closed circuit, A, a signaling-instrument, C, one or more automatic heat or burglar detecters, E^3, an earth-wire with an equivalent number of open branch or local earth-circuits, J, and a secondary additional branch open circuit, F_2, to effect the automatic closing of one of the open earth-wire circuits J, and the subsequent automatic breaking of the circuit, and closing of the secondary additional branch open earth-wire circuit K, through which a signal is automatically sent whenever the main line is severed by any of the heat or burglar detecters, substantially as and for the purpose set forth.

3. In combination with a main telegraph-line, A, on a closed electric circuit, a signaling-instrument, C, one or more automatic heat or burglar detecters, E^3, an equivalent number of closed branch or local circuits, F, and one open local or branch circuit, G, communicating therewith, to effect the automatic breaking of the closed branch circuits F, and completing of the open local circuits G, through which a signal is automatically sent immediately after the main line has been broken by any of the heat or burglar detecters E^3, substantially as and for the purpose set forth.

4. The combination, with an electric-telegraph circuit, of a closed branch circuit, F, controlled by automatic heat or burglar detecters E^3, and an open earth-circuit, J, controlled by automatic heat or burglar detecters, and a circuit-breaker, L, to give determinate signals, controlled either automatically by the heat or burglar detecters or manually by a district-alarm crank.

5. The combination, in a single signaling apparatus, of a single automatic circuit-breaker, driven by a train of wheels, released by heat or burglar detecters, with manual devices arranged to move said circuit-breaker directly and positively to give special signals, the automatic and the manual devices being each capable of action without regard to the other, so that the apparatus may be operated by either at any time, as and for the purposes described and shown.

6. In a telegraph-signal box, an electric signaling mechanism to give a determinate signal, driven by a train of wheels and released by heat or burglar detecters, in combination with manual operating devices independently operated, by which the signal box may be caused to give two or more special or call signals without disarranging the automatic signaling apparatus.

7. The combination, in a signal-box, C, of an automatic signaling mechanism, L, a manual telegraph key, U, a door, Y, covering the key, and a detent, e^3, and circuit-switching devices arranged and connected with the door, substantially as shown, whereby the opening of the door is caused to apply the detent to the automatic mechanism and switch, said mechanism out of and the key into the circuits.

8. In an alarm-telegraph system, an annunciator consisting of two magnets, F, and armature n', and two pivoted arms, n^2, actuated by the armature, as shown and described.

9. In an alarm-telegraph, the combination, with the main or circuit wire of one or more extra or dummy wires carried into and out of the building therewith for the purpose of misleading burglars and incendiaries.

10. In an automatic signaling-instrument, the combination of a clock-train, a rubber or equivalent friction-wheel, *e*, driven thereby, signal-circuit-breaking ring L, magnet and mechanism connected therewith, substantially as shown, so that whenever the magnet is charged with electricity the clock-train is released and the signal-ring is caused to revolve, substantially as and for the purpose set forth.

11. In an electric signaling-instrument, the combination, with a circuit-breaker, L_2, capable of making continuously two or more revolutions, a clock-train to actuate the same, means for releasing the same, and the automatic stop device M, arranged to limit the circuit-breaker ordinarily to one revolution, and to stop it in the position from which it started.

12. In an automatic signaling-instrument, C, the combination, with a revolving circuit-breaker, L, clock-train, and means for automatically releasing the same, of the rotating device a' b', by which the signal-ring is allowed to revolve a definite number of times, substantially as and for the purpose set forth.

13. In combination with the circuit-breaker L and its detent provided with the pivoted dog *r*, the armature *s*, provided with the pivoted dog or nose *p*, as and for the purpose described.

14. In combination with the local earth-circuits J K, the automatic transmitter L, and its detent, the earth-line magnet E, having its armature arranged to break the circuit J, complete circuit K, and release the detent, as described.

15. In a signaling-instrument adapted to be manually or automatically operated at will, the combination, with a district-alarm crank, O, and mechanism f f' c' d' e' connected thereto, of a clock-train and an automatic circuit so arranged that the district-alarm-crank mechanism is not disturbed when the automatic signaling apparatus is operated, or the automatic signaling mechanism disarranged by the use of the district-alarm-crank mechanism, substantially as described and shown.

16. A signal-box, C, upon a closed metallic circuit, and also upon an earth-circuit, closed by the action of a heat or burglar detecter, provided with an automatic signaling device, L, and with a switch, S, to break the earth-circuit, so arranged that the action of the automatic signaling device opens said switch, and thereby breaks the earth-circuit, leaving the metallic circuit complete.

17. In a signaling-instrument adapted to be either manually or automatically operated at will, the combination, with a revolving circuit-breaker, L, and means for automatically operating the same, of a district-alarm crank, O, and a switch, R, arranged with the different lines, as described, for the purpose of diverting the circuit of the main line by turning the switch by means of the district-alarm crank, as described, and by this means automatically releasing the clock-train, so as to sound a peculiar signal, as described, to indicate a fire in a building not connected with the fire detecter lines.

18. In a signaling-instrument, the combination of a circuit-breaker, L, a magnet for causing the automatic action of the same, a crank, O, for operating the circuit-breaker by hand, and a ground-switch, R, arranged, as described, so that it is not moved by the automatic action of the circuit-breaker, but may be moved by the manual action of the same to render the automatic and the manual signals different from each other.

19. In a signaling-instrument to be automatically or manually operated, the combination, with a switch mechanism, S, which is moved by the automatic signaling apparatus, and a switching mechanism, R, operated by means of a manual arm or crank, as described, of a sliding spring-bar, T, by pressing which either or both of the displaced switches are returned to their normal positions.

20. In an automatic signaling-instrument located on a closed metallic and also on an open earth-circuit, both controlled by heat or burglar detecters, a circuit-breaker, L, controlled by magnets on both circuits, in combination with two springs, *i*, of the closed circuit and two insulated springs, *k*, of the open circuit, all arranged to rest against the circuit-breaker, and as for the purpose described.

21. A thermostat or heat-detecter, E^3, to be used where three electric circuits meet, two closed and one open, constructed, substantially as shown, to automatically close the open circuit and break one of the closed circuits by the action of the heated air, leaving the other closed circuit undisturbed.

22. A burglar-detecter constructed, as shown and described, to be used where three electric circuits, two closed and one open, meet, arranged to close the open circuit and break one of the closed circuits by the movement of the door or window, leaving the other closed circuit undisturbed.

207,510. THERMOSTATIC AND ELECTRICAL FIRE-ALARMS. Jonathan O. Fowler, Jr., New York, N. Y. Filed Oct. 4, 1877.



Claim.—1. In a fire-alarm, the combination of a closed electric circuit, connected with an alarm, a circuit-breaking device located in the circuit and held shut by a combustible cord or its equivalent, and a hot-air match arranged to ignite said material and permit the opening of the circuit.

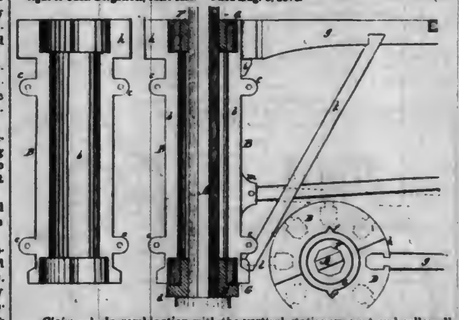
2. The automatic circuit-breaker consisting of the conducting-post, the weighted conducting-lever, the combustible cord, and the hot-air match.

207,511. VEHICLE-SPRINGS. Benjamin F. Fuller, Russell, Iowa. Filed July 3, 1878.



Claim.—The detachable wagon-spring consisting of the block of rubber, C, provided at each end with a recessed plate, D E, substantially as and for the purpose set forth.

207,512. HORSE-POWERS. Edward Celesta Crawfordville, Ga., assignor of one-half his right to Chas. Bergstrom, same place. Filed Aug. 1, 1878.

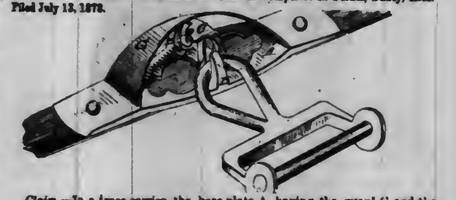


Claim.—1. In combination with the vertical stationary post and collars E and F, the former having the flange *d*, the revolving post or cylinder B, made in two longitudinal parts, and having the ribbed bushings G G, the master-wheel, and suitable draft-levers, all as shown and described.

2. The combination of arms *g* with the master-wheel rim and the hollow cylinder having hub *h*, provided with vertical dovetailed mortises or slots, and the shoulders *i*, located below said mortises, as shown and described.

3. The combination, with the draft-levers, a revolving post having sockets *m*, and a master-wheel attached to said post, of the vertical adjusting-rods supporting the free ends of said levers, as shown and described, for the purpose specified.

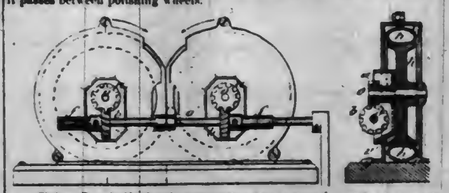
207,513. TRACE-CARRIERS. Ransom R. Goodrich and Jasper J. A. Parker, Dalley, Mich. Filed July 13, 1878.



Claim.—In a trace carrier, the base-plate A, having the guard G and the studs B B, in combination with the hinged T-shaped tongue t and the spring E, constructed and operating substantially as and for the purpose set forth.

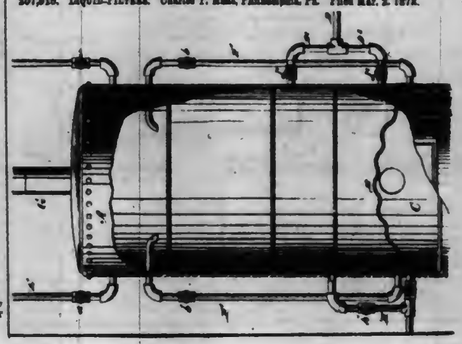
207,514. KNIFE-CLEANING APPARATUS. Louis Guez, Paris, France. Filed Apr. 10, 1878.

Brief.—Friction-rollers are on each side of apparatus to support knife as it passes between polishing wheels.



Claim.—In a knife-cleaning apparatus, the combination of the two revolving disks A, arranged with their axes parallel to each other, an elastic edge, K, on said disks, toothed pinion *a* on each of said disks, the axle D' at right angles to the axis of said disks, and pinions *b* on said axle, corresponding to and working in said pinions *a*, all substantially as shown and described.

207,515. LIQUID-FILTERS. Charles T. Hass, Philadelphia, Pa. Filed Mar. 2, 1878.

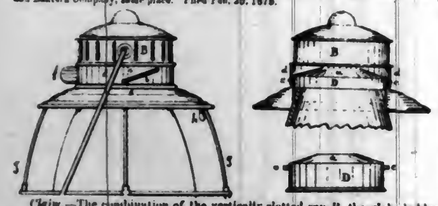


Claim.—1. A filter provided with a water back and a fire-box and a system of pipes, substantially as herein described, for cleansing the filter by a reverse current of hot water when required, as set forth.

2. A filter provided within the same case with means for heating water for cleansing the same, substantially as herein set forth.

3. The combination of the filter A, water-back B, fire-box C, with smoke-pipe H, inlet pipe D, with branches D' D², outlet pipes E E, connecting-pipes F F, and waste-pipe H, the various pipes being provided with stop-cocks, all substantially as and for the purposes herein set forth.

207,516. LANTERNS. Charles T. Ham, Rochester, N. Y., assignor to Buffalo Steam Gauge and Lantern Company, same place. Filed Feb. 26, 1878.



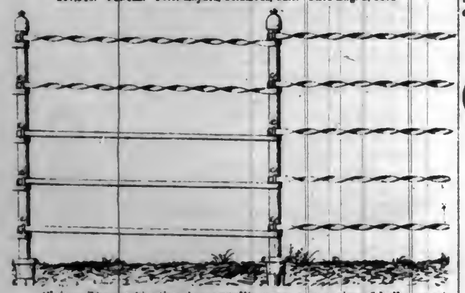
Claim.—The combination of the vertically-slotted cap B, the globe holder D, pouncé c, and the rotating slotted ring *d*, substantially as and for the purposes set forth.

207,517. BARREL-COVERS. William B. Hartley and Peter P. Little, Washington, D. C. Filed Aug. 14, 1878.



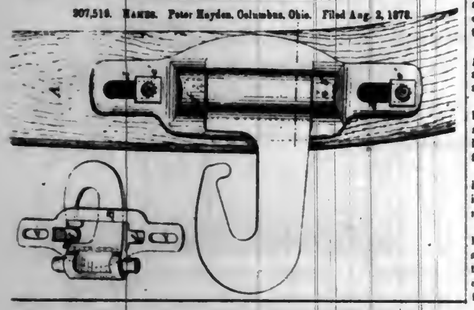
Claim.—The combination and arrangement of the cover A B, rings or hoops *a b*, rods *c c' c²*, barrel C, screw-bolt E, lugs D D, and hook F, substantially as described.

207,518. FENCES. Peter Hayden, Columbus, Ohio. Filed Aug. 2, 1878.



Claim.—The combination, in a metallic fence, of a series of hollow semi-cylindrical posts, each composed of two cylindrical parts, one of which is provided with a longitudinal series of tongues punched outward from its wall, and series of flexible metallic strips or rails connecting said posts, and each of which is bent once around each post and supported by one of the tongues thereof, thereby holding the intermediate portions of the two parts of the posts firmly together, substantially as described.

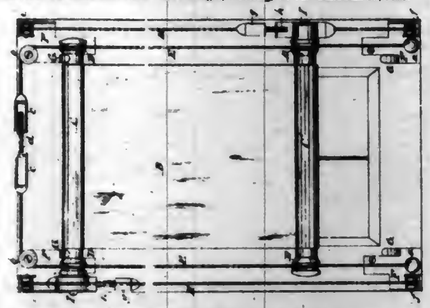
207,519. HAMES. Peter Hayden, Columbus, Ohio. Filed Aug. 2, 1878.



Claim.—1. A base having on its outer surface a base-plate provided at each end with a longitudinally-slotted ear, and having projecting cap-bearing, between which is journaled a shaft or roller provided with a hook or eye, said plate and hook or eye being adjustable vertically by means of the slots in the end ears of the base plate and screw-threaded studs projecting from the frame through said slots, and provided with suitable clamping-nuts, substantially as and for the purpose set forth.

2. The combination, with a hame trace hook or eye having its shank provided with laterally projecting journals, of a base-plate which is vertically adjustable by means of longitudinal slots in its ends, said plate having through its main portion a longitudinal central slot, at the end of which are caps overhanging said slot, and adapted to fit over the journals of the hook or eye shank when the said hook or eye is passed outwardly through said central slot, substantially as described.

207,520. CURTAIN-FIXTURES. Saml. Hodges, Wheeling, W. Va. Filed Jan. 16, 1878.



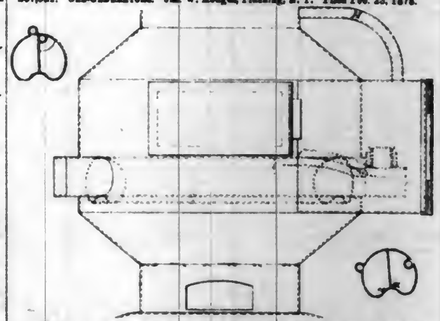
Claim.—1. The tension-adjusting devices consisting of the screw-stem *d* and the links *e*, having hollow conical perforated ends, in combination with the shade B, rollers C C', and stationary cord E, substantially as and for the purpose described.

2. The stops G, arranged upon both sides of the window, combined with the shade B and the vertically-adjustable rollers C C', substantially as and for the purpose described.

3. The combination, with the shade B and rollers C C', of the cord H, arranged about pulleys, as described, and having in its circuit the link *g*, screw-stem *h*, and socket-plate I, arranged about the extremity of the roller, substantially as and for the purpose described.

4. The combination of the longitudinally grooved or slitted roller C, the shade B, and the strip *j* of sheet metal, arranged with one edge in the slit of the roller, and the other tacked down upon the shade, as and for the purpose described.

207,521. GAS-GENERATORS. Jas. W. Hodges, Flushing, N. Y. Filed Feb. 23, 1878.



Claim.—1. An apparatus for the generation of illuminating or other gas, consisting of an external case or shell, as described, inclosing therein a furnace, in combination with one or more internally-curved and one or more straight retorts, the said retorts being set with either or both ends thereof outside of said furnace, all combined and operating substantially as and for the purpose set forth.

2. In a gas-generating apparatus, a cellular retort for the generation of gas from liquid material, consisting of a single casting divided interiorly into a series of non-communicating cells, each cell being both an oil-receiver and a gas-generator, and operating substantially as and for the purpose set forth.

3. In a gas-generating apparatus, a retort for the generation of gas from liquid material, having a bottom of arched or convex interior form of section, and provided with a scattering plate in the interior of the retort, whereby the liquid is first sprayed and then spread into a thin sheet, substantially as and for the purpose set forth.

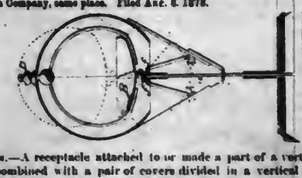
4. In a gas-generating apparatus, a retort for the generation of gas from liquid material, provided with internal transverse ribs or barriers at or near its lines for its furnace-settings, for the purpose of confining the liquid to the said section of the retort, substantially as and for the purpose set forth.

5. In a gas-generating apparatus, a retort for the generation of gas from liquid material, having a bottom of arched or convex interior form of section, and provided with internal transverse ribs or barriers, as described, whereby the entering liquid is both spread over and concentrated upon the most efficient decomposing or vaporizing surface of the retort, substantially as set forth.

6. In a gas-generating apparatus, secured to the walls thereof, an external chamber, in combination with one or more retorts having each a safety escape seal or valve opening into said chamber, whereby all gas discharged through said valve or valves is delivered into said chamber, substantially as and for the purpose set forth.

7. In a gas-generating apparatus, secured to the walls thereof, an external chamber provided with a conduit connecting said chamber with the smoke-pipe of the apparatus, in combination with one or more retorts, having each an end projected into said chamber, and provided with a safety escape seal or valve, substantially as and for the purpose set forth.

207,522. COVERED DISHES. William G. Homan, West Meriden, Conn., assignor to Meriden Britannia Company, same place. Filed Aug. 6, 1878.



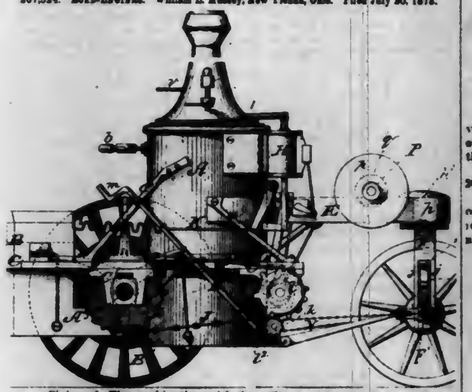
Claim.—A receptacle attached to or made a part of a vertically-movable spindle, combined with a pair of covers divided in a vertical central plane, hinged below to the movable spindle, which supports the receptacle, combined with a rod from each of the said covers, hinged to the stationary support for the spindle above the hinging-point of the covers, and also hinged, respectively, to the covers between the hinging-point of the covers and the stationary hinging-point of the said rods, substantially as described.

207,523. MEASURING-CANS. Sylvester E. Humphreys, Leavenworth, Kans. Filed July 8, 1878.



Claim.—The faucet-ring G, having ports, as described, in combination with the lever L, guard O, and notches *x y z*, arranged to operate in connection with the vessel A, having graduated compartments, substantially as described.

207,524. ROAD-ENGINES. William L. Massey, New Vienna, Ohio. Filed July 20, 1878.



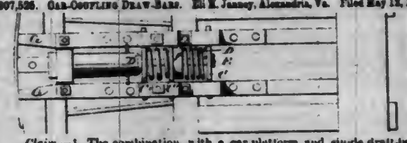
Claim.—1. The combination, with the boiler A, of the rear frame C, bolted thereto and supported by the diverging braces *c c'*, the cab B, supported by said frame, and the reach E, bolted at one end to the boiler-front, and supported by the fore axle at the other, substantially as specified.

2. The combination, with a boiler having an engine upon its front, of a horizontal frame, C, bolted thereto, extending in rear, and supporting a cab, B, and a reach, E, secured to the front of the boiler above said frame and supported by the fore axle, as set forth.

3. The combination, with the boiler A, rear frame C, pedestals C', axle A', and driving-wheels B', of the reach E, having front bearing h, the support F, journaled therein, and having spaced legs *j* straddling the fore axle, and a spring, G, between said axle and the support, substantially as specified.

4. The combination, with the tubular-ended axle A', of rods *f* in said axle and movable endwise, the cross-head, and key-pawl *e'* at each end of said rod, the driving-wheels B', having interior chamber *a*, with opposite ratcheted walls *i i'*, rings *g'*, embracing the axle and secured to the cross-heads, the forked levers D, engaging said rings, and a spring, D', connecting the ends of said levers, substantially as specified.

207,525. CAR-COUPLING DRAW-BARS. Eli H. Janney, Alexandria, Va. Filed May 13, 1878.



Claim.—1. The combination, with a car-platform and single draft-bar, of two independent springs, both of which are adapted to yield when strain is exerted in a forward direction, and one only when strain is exerted in a rearward direction, substantially as described.

2. The combination, with a car-platform and single draft-bar, of two independent springs of unequal power, the stronger of which is adapted to take all the buffing strain and a portion also of the draft-strain, and the weaker the draft-strain only, substantially as described.

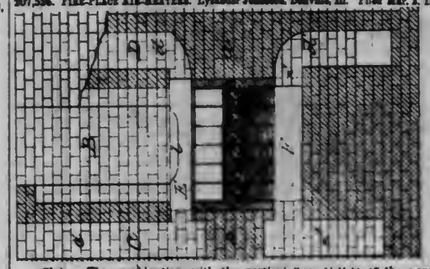
3. In combination with a platform overhanging the coupling, the strengthening-plates G G, as described.

4. In combination with a draw-head draft-bolt, the compressed spring D and the following-plate C, the construction being such that the lost motion of the draw-head in buffing is taken up by the expansion of the spring, as described.

5. In combination with a single draw-bar and two independent springs, and the following-plates C' C² at the ends of the draw-bar, the intermediate plate, C', adapted to yield when strain is exerted in a forward direction, but to resist strain in a rearward direction, substantially as described.

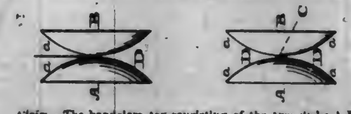
6. The combination of the springs D D' with the following-plates C C' C² and draw-bolt, substantially as described.

207,526. FIRE-PLACE AIR-HEATERS. Lysander Johnston, Danville, Ill. Filed Mar. 2, 1878.



Claim.—The combination, with the vertical flues C B D, of the parallel horizontal flues E F, extending across the flue B, and connecting the flues C D above and below the partitions *a*, and the angular flues G, connecting the flues E and F, and forming the fire-back, substantially as specified.

207,527. BANDELORE TOYS. William Katz, Philadelphia, Pa. Filed Oct. 13, 1877.



Claim.—The bandelore toy consisting of the two disks A B, having convex inner faces *a a*, forming the flaring spaces D, and the connecting-pin C, on which the cord directly coils or winds, all as shown and described, and for the purpose set forth.

207,528. ANIMAL-TRAPS. Jacob H. King, New Paris, Ohio. Filed June 7, 1878.

Brief.—The front platform is held firm by the peculiar construction of the catch G, and the animal is precipitated when its weight is brought upon the rear platform. The two platforms, being weighted at their outer ends, automatically set the trap.



Claim.—1. The pivoted latch or trigger G, recessed at *n*, and having projecting lugs or teeth *n' o p* on its under side, substantially as and for the purpose herein shown and described.

2. The combination, with the pivoted latch or trigger G, recessed as at *n*, and having projecting lugs or teeth *n' o p* on its under side, of the tilting trap-door F, having adjustable catch-plate *k*, substantially as and for the purpose set forth.

3. The improved animal-trap herein shown and described, consisting, essentially, of a frame, A A *a a*, bait-board D, having hooks *d d*, pivoted weighted double doors E F, adjustable catch-plate *k*, and pivoted latch or trigger G, all substantially as and for the purpose set forth.

207,529. COAL AND ASH SIFTERS. Theodore F. King, Geneva, N. Y. Filed Feb. 7, 1878.

Claim.—1. An ash and coal sifting box made with the forward end projection and the discharge-opening below the same, said opening being provided with the tilting door, which latter may be with or without the handle, which

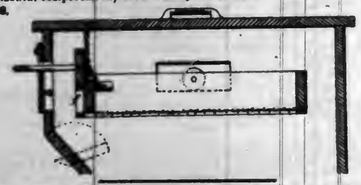
works in a curved slot in the side of the box, substantially as set forth.

2. The combination, with the sieve provided with hangers or rollers, of the sifter-box, whose forward end projection is made with a vertical slot, in which the sieve-handle works, and whose body below said projection is provided with the discharge-opening and door, substantially as set forth.

3. The combination, with the sifting-box formed with the forward projection in its upper end body and the discharge-opening in its lower portion, of the tilting sieve, whose discharge end is provided with a gate adapted to have vertical movement within a guideway, and which is connected to the sifting-box by suitable means, substantially as set forth.

4. In an ash and coal sifter, the combination of the sieve, whose handle works in a vertical slot formed in the forward end projection of the box, and the adjustable plate adapted to cover said slot and to support the sieve-handle in horizontal reciprocation, substantially as set forth.

207,529.



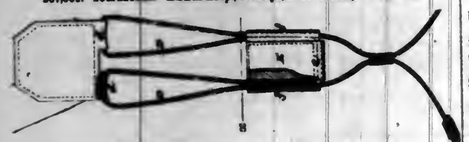
207,530. ADJUSTABLE PLOW-STOCKS. J. E. Kinney, Pickens County, S. C. Filed Aug. 3, 1878.



Claim.—1. The combination, with the plow-beam and the curved arms D', of the plow-stock of the shaft *d*, rod C, nut *c*, bearing-plate B, and wedge or shoe E, substantially as and for the purpose specified.

2. The combination of the bearing-plate B, having its upper face serrated, and the wedge or shoe E, having its under face serrated and its sides provided with a series of recesses, of the shaft *d*, brace-rod C, nut *c*, the curved arms D' of the pivoted plow-stock D, and the plow-beam A, all constructed and operating substantially as shown and described.

207,531. SUSPENDERS. Herman Knopf, Brooklyn, N. Y. Filed June 27, 1878.



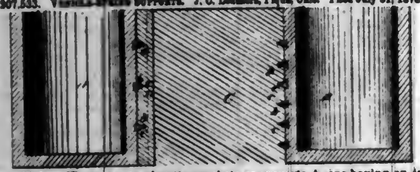
Claim.—The suspenders provided with the slide E, having side eyes or tubes *f f*, in combination with the back cord or cords, D D, attached to said slide and fitted to render through its side eyes or tubes, and the tubular extremities or eyes *d d* at the back ends of the main straps or yoke uniting said ends, substantially as specified.

207,532. PICTURE-FRAMES. Albert Kemp, New York, N. Y. Filed Dec. 5, 1877.



Claim.—As a new article of manufacture, the picture-frame A, having the ornamental molded exterior surfaces wholly covered and concealed by a shell, B, stamped up from paper or other suitable flexible material to the same configuration as the ornamental molded exterior surface of the wooden frame, as and for the purpose described.

207,533. VESSEL-RIGGING SUPPORTS. J. C. Leathers, Piqua, Ohio. Filed July 31, 1878.



Claim.—The connected-together sockets or supports A, one having an inclined surface, *d*, and each provided with tapering ribs *b*, in combination with the bolster C, having recesses or slots *c c*, and key D, having recesses or slots *c c*, substantially as and for the purpose set forth.

207,534. HOP-PICKING MACHINES. Herbert G. Locke, Waterville, N. Y. Filed Mar. 23, 1878.

Claim.—1. The combination, with the drawing-rollers and strippers in a hop-picking machine, of a reciprocating feeder, H, for assisting the said rollers in seizing the hop-vine, substantially as and for the purpose specified.

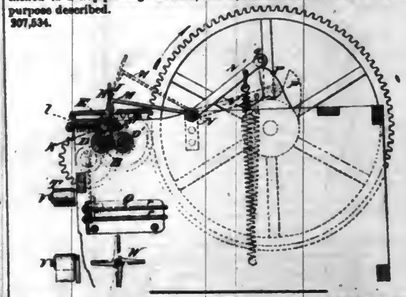
2. The combination, with the drawing-rollers and strippers in a hop-picking machine, of the reciprocating feeder H and inclined planes or wedges I, attached to said feeder, for separating the strippers when the said feeder approaches the said drawing-rollers, substantially as and for the purpose set forth.

3. The combination of the feeder H, rock-bar M, rock-shaft N, rock-lever N', and cam P, driven by suitable gearing from the main shaft D, to actuate said feeder, substantially as and for the purpose specified.

4. The combination, with the drawing-rollers and strippers of a hop-picking machine, of the reciprocating separator, constructed substantially as herein described, and the fan-wheel W, arranged and operating substantially as and for the purposes herein set forth.

5. The endless apron or carrier T, in combination with rollers V, when attached to a hop-picking machine, and operated substantially as and for the purpose described.

207,534.



207,536. SHEAVES OR PULLEYS. Herbert Loud, Boston, Mass. Filed July 11, 1878.



Claim.—1. A sheave made of metal and having blocks or cheeks of wood inlaid in recesses in its sides, substantially as and for the purpose set forth.

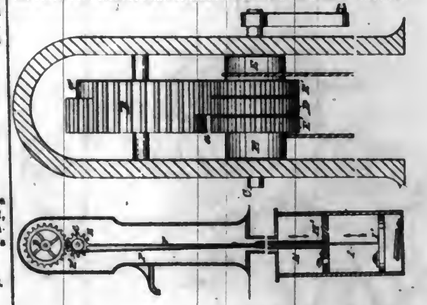
2. A sheave made of metal and of wood, with the wood projecting at the sides of the metal, substantially as described, for the purpose specified.

3. A sheave made of metal, with an attached metal rim, H, and wooden blocks E, substantially as described, for the purposes set forth.

4. A sheave made of metal, with an attached metal rim, H, and wooden blocks E projecting at each side of the sheave, substantially as described, for the purpose specified.

207,538. LIFT-PUMPS. William Loudon, Superior, Sebr. Filed June 18, 1878.

Brief.—A continuous discharge of water is produced by causing the pistons to descend more rapidly than they ascend, which is effected by mutilated gear and loose drums, upon which the rope or chain connecting with the piston-rods is wound. Before one piston has reached the end of its upstroke the other has descended and commenced to move in the same direction.



Claim.—1. A pump-piston combined with a rope or chain and a drum, arranged to be alternately rotated by its gears to raise the said piston, and released from the same to permit its rapid descent by gravity, substantially as and for the purpose described.

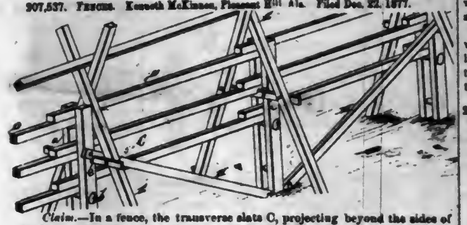
2. A double-acting pump having its pistons connected, through ropes or chains, with two loose drums provided with gears, substantially as described, to permit the pistons to descend in a less time than is required for their elevation, as set forth.

3. A double-acting pump having two pistons, each of which alternately moves in one direction more rapidly than in the reverse, by means substantially as described.

4. The wheel B, having its cogs cut away at *a a'*, upon the opposite edges of its periphery, in combination with the loose drums E E, having ropes or chains attached to the pistons, and gear-teeth E' E', arranged within the plane of the wheel B, to be alternately geared with and detached from the same, substantially as described.

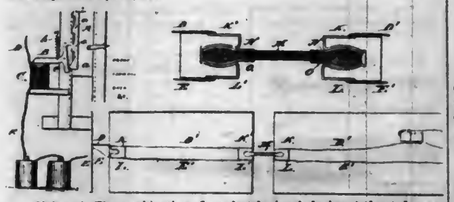
5. The rigid pinion D, arranged on the crank-shaft, combined with the wheel B, constructed as described, and the loose drums E E, having gears F' F', and ropes or chains connecting with the pistons, substantially as described.

207,537. FENCES. Kenneth McKinnon, Pleasant Hill, Ala. Filed Dec. 22, 1877.



Claim.—In a fence, the transverse slats C, projecting beyond the sides of the fence, to which is secured the crossing-stakes E and the brace-bars H, as shown and described.

207,538. ELECTRIC RAILWAY-CAR SIGNALS. Carl L. Moss and Israel A. Sherman, Louisville, Ky. Filed Apr. 24, 1878.

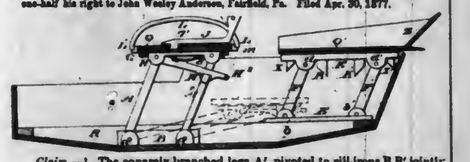


Claim.—1. The combination of an electric-signal device, A, located upon the forward part of the train, with two conducting-wires extending the full length of each car, and terminating at each end of the same in adjacent contact-plates K L K' L', forming seats, together with a flexible cable having two insulated wires terminating in metal plates N O, separated by a soft-rubber block, to continue the circuit, but permit it to be broken when the cars separate, substantially as and for the purpose described.

2. The wires D' E', arranged upon the cars and having terminal contact-plates K L K' L', forming seats, in combination with a flexible cable having two insulated wires with terminal metallic plates N O, separated by a soft-rubber block, to form an elastic ping adapted to fit in the said seats, as and for the purpose set forth.

3. The combination, with a signal device, A, located upon the forward part of the train, of the frame-piece O', a metallic latch, *f*, connected with one end of the circuit-wire and provided with a spring, *g*, a contact-plate, *h*, connected with the other end of the circuit-wire, and a spring-retracted slide, P, having a bent spring-pawl, Q, arranged to deflect the latch *f* and allow it to be immediately restored to its first position, substantially as described.

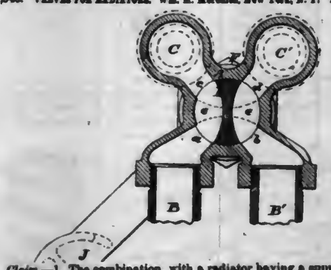
207,539. JUMP-SEATS FOR CARRIAGES. Christian K. Mellinger, Philadelphia, assignor of one-half his right to John Wesley Anderson, Fairfield, Pa. Filed Apr. 30, 1877.



Claim.—1. The squarely-branched legs A', pivoted to sill-irons B B' jointly with legs A, in combination with the pivoted spring-latch H, when these parts are adapted to operate and hold the jump-seat Q, substantially as and for the purpose set forth.

2. The seat-fenders I, pivoted to stay-plates m, and provided with horizontal parts to rest on stops n on said stay-plates, in combination with front seat, Q, and operating to clear the legs F of the rear seat, in the manner as and for the purpose set forth.

207,540. VALVES FOR RADIATORS. Wm. H. Meredith, New York, N. Y. Filed July 3, 1878.

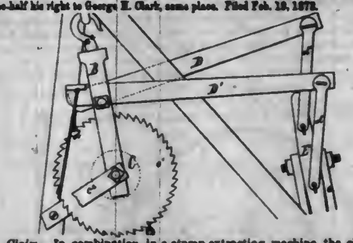


Claim.—1. The combination, with a radiator having a supply or inlet pipe and a return-pipe, of a valve or cock arranged to cut off at once all communication between the radiator and the source of heat, and to open, simultaneously with the isolation of the radiator, communication through the generator, pipes, and valve, substantially as set forth.

2. The combination of the pipes B B' C C', the casing A, provided with ports *a b c d*, the valve D, cut away at *c c*, and a radiator adapted to connect with the valve through the pipes C C', when all are arranged substantially as and for the purposes set forth.

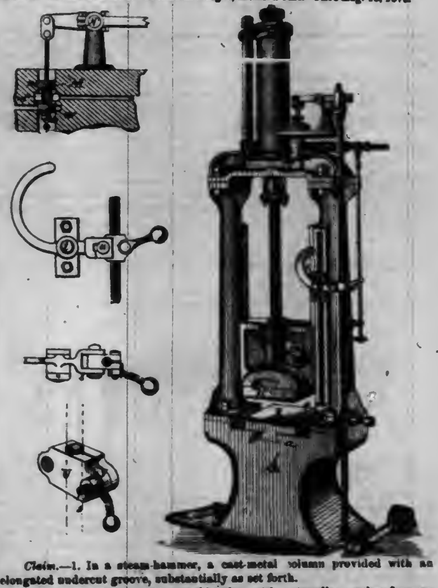
3. The combination of the conoid or ping valve D, arranged to be oscillated, with a cross-treadle, J, fixed to said valve, arranged to operate the valve by being depressed at the ends, and arranged also with reference to the floor or the base of the radiator so that its stroke will be properly limited, substantially as set forth.

207,541. STUMP-EXTRACTING MACHINES. Archibald M. Michael, Lapeer, Mich., assignor of one-half his right to George E. Clark, same place. Filed Feb. 19, 1878.



Claim.—In combination, in a stump-extracting machine, the chain-pulley C, having ratchet-wheels *c* and *c'*, and levers D D', with links or pawls *d d*, suspended in frame B, together with lever E in frame *e*, with connecting-rods *d' d'*, arranged to operate as and for the purpose specified.

207,542. STEAM-HAMMERS. Thomas R. Morgan, Alliance, Ohio. Filed Aug. 12, 1878.



Claim.—1. In a steam-hammer, a cast-metal column provided with an elongated undercut groove, substantially as set forth.

2. In a steam-hammer, the combination, with a treadle, a valve for governing the passage of steam to and from the steam-cylinder, and a rod connecting the treadle and valve-lever, of a rocker adapted to be adjustably secured to one of the columns of the hammer, substantially as set forth.

3. In a steam-hammer, the combination, with a treadle, a valve for governing the passage of steam to and from the steam-cylinder, and a rod connecting the treadle and valve-lever, of a rocker pivoted to a bearing adapted to be adjustably secured within an elongated slot formed in one of the columns of the hammer-frame, substantially as set forth.

4. In a steam-hammer, the combination, with a rod connecting the treadle and valve-lever, of a rocker pivoted to a vertically-adjustable slide, and provided with a friction-clamp constructed to be adjustably secured to the connecting-rod, substantially as set forth.

5. In a steam-hammer, the combination, with a rod connecting the valve-lever and treadle, of a rocker pivoted to a vertically-adjustable slide, the outer end of said rocker having oblong slots formed therein, through which extends a pivot that secures the friction-clamp to the rocker, substantially as set forth.

6. In a single-acting steam-hammer, the combination, with a valve-chamber closed at its upper end and a piston-valve having a central annular recess formed thereon, of a steam-inlet passage leading to the valve-chamber, a steam-passage leading from the valve-chamber to the steam-cylinder, said passage being located below the inlet-passage, and an exhaust-passage leading from the lower end of the valve-chamber to an exhaust-pipe, said piston-valve being connected with the treadle of the hammer by a connecting-rod, to which a rocker is adjustably secured, substantially as set forth.

7. The combination, with the weighted treadle, piston-valve, and connecting-rod, of a rock-shaft journaled in a bracket attached to the steam-cylinder base, and arms rigidly secured to the rock-shaft and connected with the valve-

stem and connecting-rod, whereby the weighted treadle serves to open the steam-port to the cylinder, and pressure on the treadle closes said port, substantially as set forth.

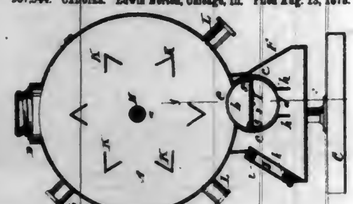
3. The valve-chamber having an exhaust-passage leading from its lower end around the cylinder and connecting with an upright exhaust-pipe, and a waste-water passage leading from the exhaust-steam passage to convey the water of condensation from the steam-cylinder, substantially as set forth.

207,543. METHOD OF MARKING AND ORNAMENTING GLAZED WARE. William F. Fiedringhaus, St. Louis, Mo. Filed June 1, 1878.

Claim.—1. The herein-described mode of marking or ornamenting glazed ware, which consists in absorbing the mark or ornament in the moist unfused glaze upon the ware, and then drying the mark or ornament in the glaze, and afterward fusing it in and with the enamel, substantially as described.

2. Glazed ware having a mark or ornament absorbed, dried, and fused in the enamel of the ware, in the manner described.

207,544. CADDIES. Edwin Horton, Chicago, Ill. Filed Aug. 13, 1878.

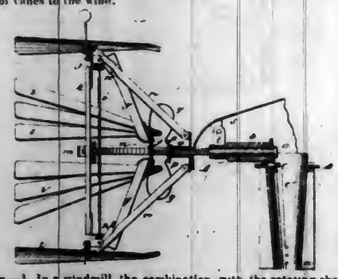


Claim.—1. A caddy consisting of a main mixing-chamber, A, a secondary chamber, F, from which to retail, and a suitable valve to open and close a passage between the two chambers, substantially as and for the purposes specified.

2. A caddy consisting of two chambers, A and F, mounted on suitable standards, so that the caddy can be rotated, in combination with a rotating valve, I, and passage *e e* between the chambers, substantially as and for the purposes set forth.

207,545. WIND-ENGINES. Isaac H. Palmer, Lodi, Wis. Filed Mar. 20, 1878.

Brief.—To the outer end of the rotating shaft is rigidly attached a head to support the arms of the wheel, while between said head and the inner end of the shaft is a sliding sleeve, to which are attached the sail vane-governing arms, and between the head and the shaft are removable bow-springs to hold the sets of vanes to the wind.



Claim.—1. In a windmill, the combination, with the rotating shaft D and its attached spider or head *f*, to which tilting sail frames are connected, the sleeve *e*, sliding on said shaft D, and the operating arms extending from said sleeve to the tilting frames, of the bow springs *q*, connecting said sleeve and spider, substantially as specified.

2. In a wind-wheel, the bow-springs *q*, bent radially outward between the frame-head *f* on the end of the rotating shaft D, and the sleeve *e*, sliding on said shaft, the ends of said springs being attached to said head *f* and said sleeve *e*, substantially as specified.

207,546. CARRIAGE-CURTAIN FASTENERS. George R. Fairpoint, North Haven, Conn. Filed July 23, 1878.

Brief.—The knob or button is cylindrical, and has a projecting rim on one side of its head. On the other side is a dog, fitted in a vertical slot, having a projection on its head corresponding to the rim on the button, and pressed outward by a helical spring. It is pivoted on an axis near the bottom of the slot, and its outward movement is limited by a toe pressing against the bottom of the slot.

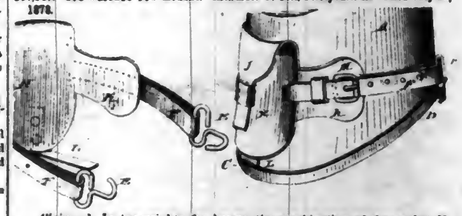


Claim.—1. The combination, with a button provided with a head or flange, and with a cavity in one side, of a dog consisting of a pivoted lever, provided with a spur or flange, and impelled outward by a spring.

2. The combination, with a button and an adjustable dog consisting of a pivoted lever, of a toe extending from the lever to impinge against the button, substantially as and for the purpose specified.

3. The combination of the button A, with its head or flange *a* and shank *b*, the lever B, pivoted in the cavity *c*, provided with a spur or flange, *f*, and toe *e*, spring C, and the curtain D, with its ring D, substantially as and for the purpose specified.

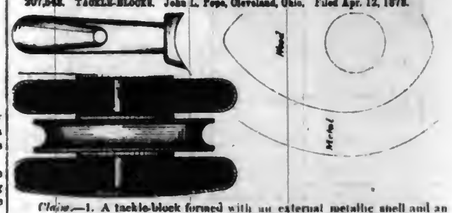
207,547. TOE-WEIGHTS FOR HORSES. Alexander P. Pitt, Jeffersonville, Ill. Filed July 13, 1878.



Claim.—1. In toe-weights for horses, the combination of the pocket H, provided with the bent metal strap or hook L, and the straps F F, provided with the hooks E E, with the shoe B, provided with the notch C and the recesses D D, constructed and operating substantially as and for the purpose set forth.

2. In combination with a toe-weight, the straps F F, provided with the hooks E E, and the horseshoe B, having the recesses D D in the heel thereof, substantially as and for the purpose set forth.

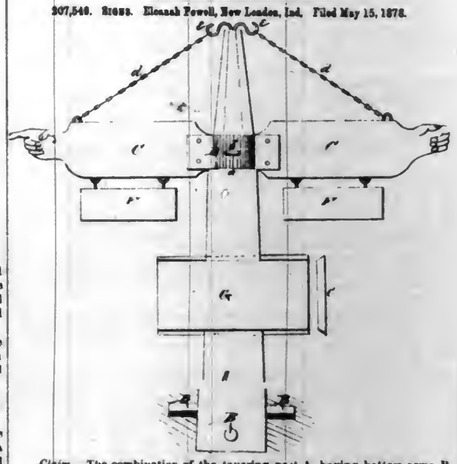
207,548. TACKLE-BLOCKS. John L. Pope, Cleveland, Ohio. Filed Apr. 12, 1878.



Claim.—1. A tackle-block formed with an external metallic shell and an internal filling of wood, vulcanized fiber, or similar light substance, said shell being adapted to protect the exposed portions both of the peripheral face and end body of the respective cheeks, substantially as set forth.

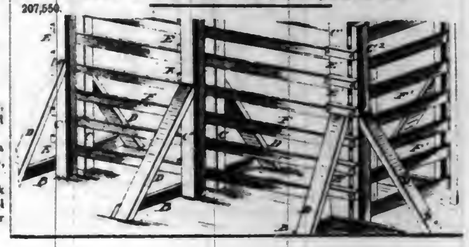
2. A tackle-block having an external shell of metal and an internal filling of wood, vulcanized fiber, or similar light substance, said shell formed to embrace the exposed portion of the end body of each cheek, substantially as set forth.

207,549. STOVES. Eleazah Powell, New London, Ind. Filed May 15, 1878.



Claim.—The combination of the tapering post A, having bottom arms B and circumferential shoulder *a* a suitable distance below the upper end, the finger-boards C C, with suspended sign-boards F F, clamps D, chains *d*, hooks *e*, and dovetailed board G, all as and for the purposes herein set forth.

207,550.



207,550. FENCES. Jonathan B. Robertson, Martin, Tenn. Filed Apr. 27, 1878.

Brief.—A third upright is connected to the corner-post by cross-pieces, for forming the courses of the fence when turned at right angles. The fence-rails are beveled at their ends.

Claim.—The combination, with the upright bars C C', connected together by cross-pieces E, sill B, and braces D D, of the upright bar C², connected to upright bar C' by cross-pieces E', sill B', brace D', and the beveled rails F F', the several parts constructed and relatively arranged as herein shown and described.

207,551. TUBULAR NEEDLES FOR EMBALMING. Samuel Rodgers, Los Angeles, Cal. Filed Jan. 8, 1878.

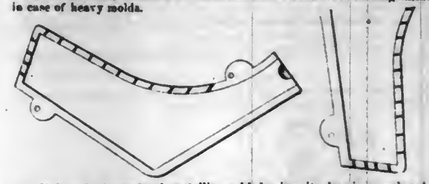


Claim.—1. A tubular needle having a perforated wall and a solid point from which a rigid bar extends longitudinally through and beyond the end of said needle, and is braced by transverse pins extending diametrically through the wall of said needle and the bar at intervals, substantially as and for the purpose set forth.

2. The combination, with a tubular needle having the central solid bar and rigid point, of the coupling E E', for the attachment of the flexible tube, substantially as and for the purpose set forth.

207,552. CHILL-MOLDS. Seymour Rogers, Allegheny, Pa. Filed Mar. 14, 1878.

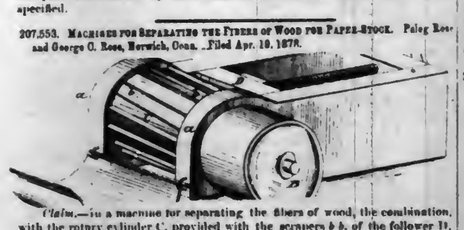
Brief.—The abutting edges of a two-part chill-mold are reduced to from one thirty-second to one-fourth or three-eighths of an inch in thickness, so that the natural serrations produced by dressing the metal may serve as vents for the mold. May cross-file or mill serrations in one or both bearing surfaces, in case of heavy molds.



Claim.—1. A sectional metallic mold having its bearings reduced or thinned at the part where the venting of the mold is effected, substantially as and for the purpose specified.

2. A sectional metallic mold having its bearings reduced or thinned at the part and serrated by cross-filing, substantially as and for the purpose specified.

207,553. MACHINES FOR SEPARATING THE FIBERS OF WOOD FOR PAPER-STOCK. Paleg Rose and George C. Rose, Norwich, Conn. Filed Apr. 19, 1878.



Claim.—In a machine for separating the fibers of wood, the combination, with the rotary cylinder C, provided with the scrapers *b b*, of the follower D, having the hand-screw, constructed and operating substantially as and for the purposes set forth.

207,554. HARVESTERS. Daniel Sager, Omaha, Nebr. Filed Aug. 24, 1877.

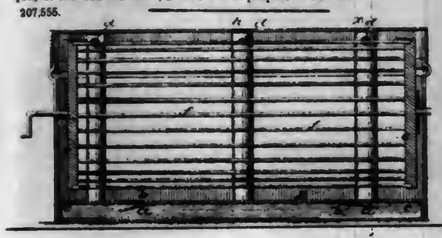


Claim.—1. In a harvester, the rake made in two parts, C C', operated by two crank-shafts, and the two parts of the rake connected together by a hinge, *d*, substantially as and for the purposes herein set forth.

2. The combination, in a harvester, of the rake C C', made in two parts, hinged together, as described, and shafts *a b*, with a series of cranks, to which the rakes are connected, the connecting-shaft *h*, and the bevel-gears *i i* and *f f*, all substantially as and for the purposes herein set forth.

3. The cross-bar K, provided with a series of inclined guide-bars, *t*, which project between the rakes, as and for the purposes set forth.

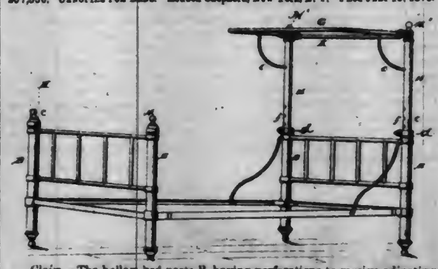
207,555.



207,556. WASHING-MACHINES. Martin L. Beverley Winchester, Tenn. Filed May 3, 1878.

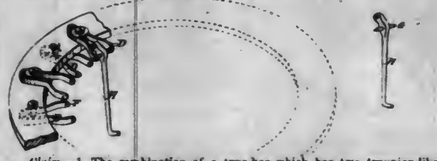
Claim.—The combination, with the wash-boiler A, having the false bottom B, provided with the perforations *b b* and slanting plates *a a*, of the pipes or tubes C C, having perforations *d d* arranged upon opposite sides of the cylinder D, constructed and operating substantially as and for the purposes set forth.

207,556. CANOPIES FOR BEDS. Reuben Shepherd, New York, N. Y. Filed June 15, 1878.



Claim.—The hollow bed-posts B, having perforations to receive adjusting-pins *y y* therein, combined with the removable adjustable canopy-standards H, provided with perforations *f*, fitting in hollow posts B, the frame G at right angles thereto, braces O, cross-bar K, and holder M', as specified, for the purpose set forth.

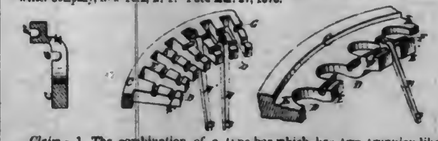
207,557. TYPE-WRITING MACHINES. C. L. Sholes, Milwaukee, Wis., assignor to the Type Writer Company, New York, N. Y. Filed Apr. 10, 1878.



Claim.—1. The combination of a type-bar which has two trunnion-like journals with a bifurcated adjustable hanger in one piece, which has a journal-bearing in each fork, substantially as described.

2. The combination of a type-bar which has two trunnion-like journals, which have cone-like points on their ends, with a bifurcated adjustable hanger in one piece, which has a journal-bearing in each fork adapted to receive and fit a cone-like pointed journal, and which forks are elastic, substantially as described.

207,558. TYPE-WRITING MACHINES. C. L. Sholes, Milwaukee, Wis., assignor to the Type Writer Company, New York, N. Y. Filed Mar. 27, 1878.



Claim.—1. The combination of a type-bar which has two trunnion-like journals with a circular annular disk which has a radial slot through its inner periphery, and a straight journal-bearing groove in its upper surface, on each side of said slot, and in line parallel with the chord of an arc of said disk, in a type-writing machine, substantially as described.

2. The combination of two series of type-bars, those of one series longer than those of the other, and of which each has two trunnion-like journals, with a circular annular disk which has a series of radial slots through its inner periphery, and two concentric series of pairs of straight journal-bearing grooves in its upper surface, one series around the other, and each pair in line parallel with the chord of an arc of said disk, and one of each pair of each series on each side of every alternate slot, in a type-writing machine, substantially as described.

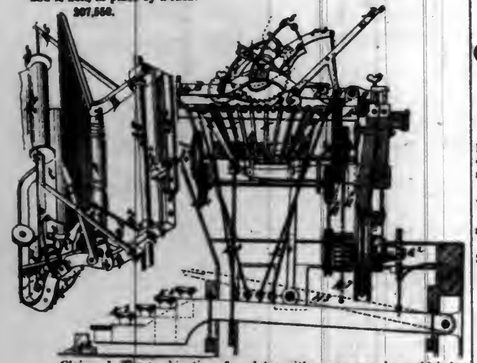
3. The combination of two series of type-bars, those of one series longer than those of the other, and of which each has two trunnion-like journals, with a circular annular disk which has a series of radial slots through its inner periphery, and two concentric series of pairs of straight journal-bearing grooves in its upper surface, one series around the other, and in a higher or lower plane, and each pair in line parallel with the chord of an arc of said disk, and one of each pair of each series on each side of every alternate slot, in a type-writing machine, substantially as described.

207,559. TYPE-WRITING MACHINES. C. L. Sholes, Milwaukee, Wis., assignor to the Type Writer Company, New York, N. Y. Filed Mar. 8, 1875.

Brief.—The paper-carriage, which carries the cylindrical platen, is loosely mounted on one side on a shaft or rail, while the opposite or front side is provided with a wheel, which travels on the front guide-plate, so that the carriage can be turned up to inspect the writing, and so that it can slide along on the said rail. To the rear of the carriage is hinged the letter-space ratchet-bar, which carries an adjustable stop, which operates on the short arm of a lever to strike the ball, and shortly after abuts against the pawls or ratchets to stop the further movement of the carriage. The double pawls are, by suitable mechanism, connected with a bar which extends under the whole key-board, so that the depression of any key will vibrate the pawls and allow the carriage to advance. The carriage is connected by a cord with a spring-wheel, which draws the carriage forward when the pawls release it. The spring-wheel is loosely mounted on a shaft, to which the other end of the spring is attached, and car-

ries on its side a pawl, which engages with a ratchet-wheel, also loosely mounted on the same shaft. Said ratchet-wheel is attached to the side of a small pulley, from which motion is imparted to the shaft carrying the ribbon-spools, so that the inking-ribbon is moved forward after each impression. The small pulley is prevented from moving in an opposite direction by a pawl fixed to the frame of the machine, which engages its ratchet-wheel. To one end of the above-mentioned shaft is secured a ratchet-wheel, which is held and holds the shaft in place by means of a pawl fixed to the side frame. By turning this ratchet-wheel the tension of the spring can be increased or diminished. To the opposite end of the carriage is attached a cord operated by a lever to retract it. Said cord is attached to a lever, which operates to revolve the platen a line-space, and to lift the ratchet-bar from the double pawls, so that the carriage can be drawn back. The short arm of the pawl-lever, which operates in connection with the ratchet-wheel on the end of the platen to move it a line-space, abuts against an adjustable rack, whereby the line-space distance can be regulated. The paper is held to the platen by means of a yielding pressure-roller and tapes, which pass over pulleys. The ribbon can be moved sidewise by means of a lever or arm that engages a groove in one of the ribbon-spools, and is held in place by a rack.

207,560.



Claim.—1. The combination of a platen with a paper-carriage which has a hinge and guide rail, whereby the platen is adapted to move horizontally over the types of a type-writing machine, and to move up and off from over the same, substantially as described.

2. The combination of a platen which has axle-journals and bearings with a paper-carriage which has a hinge and guide rail, whereby the platen is adapted both to turn on and move along the line of its axis horizontally over the types of a type-writing machine, and to move up and off from over the same, substantially as described.

3. The combination of a ratchet-bar which has a hinge and guide rail with the paper-carriage and letter-space ratchets of a type-writing machine, substantially as described.

4. The combination of an adjustable stop with the paper-carriage of a type-writing machine, substantially as described.

5. The combination of an adjustable trip with the paper-carriage and bell of a type-writing machine, substantially as described.

6. The combination of an adjustable trip-stop with the bell and paper-carriage of a type-writing machine, substantially as described.

7. The combination of a vibratory lever with the platen-driving ratchet and ratchet-wheel, paper-carriage, and vibratory ratchet-bar of a type-writing machine, substantially as described.

8. The combination of a guide-rack with the ratchet-lever and platen-driving ratchet and ratchet-wheel of a type-writing machine, substantially as described.

9. The combination of springy or elastic carrying-bands with a yielding pressure-roller and the band-pulleys and revolving platen of a type-writing machine, substantially as described.

10. The combination of a band-lever with the cone-pulley and paper-carriage of a type-writing machine, substantially as described.

11. The combination of a driving-wheel and transmitting mechanism with the spring-wheel and inking-ribbon of a type-writing machine, substantially as described.

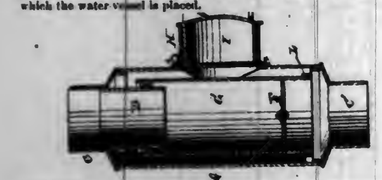
12. The combination of a driving-ratchet attached to the spring-wheel and a holding-ratchet attached to the frame with a ratchet-wheel, transmitting mechanism, and the inking-ribbon of a type-writing machine, substantially as described.

13. The combination of an adjustable regulator with the ribbon-spools of a type-writing machine, substantially as described.

14. The combination of a rocking frame and guide-rack with the ribbon-spools of a type-writing machine, substantially as described.

207,560. STOVE-PIPE DRUMS. Gottlieb H. Simon, Kiel, Wis. Filed Jan. 8, 1878.

Brief.—The damper-rod supports the interior or cylinder. The deflecting-plate directs the ascending currents to the opposite side of the drum, against which the water vessel is placed.



Claim.—1. The combination of the loose interior cylinder G, damper F, shouldered journals *a a*, and damper-rod E, passing through the outside drum, A, whereby the weight of the cylinder holds the damper in place, as herein set forth.

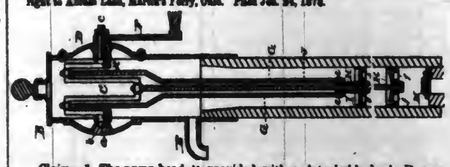
2. The collar or cylinder H, provided with the rim *d*, having holes *s s*, in combination with the drum A and pins *e*, for the purposes set forth.

3. The combination of the drum A, the removable collar H, boiler I, and the sliding damper J, all constructed substantially as and for the purposes herein set forth.

4. The deflecting-plate K and band L, in combination with the cylinder G and drum A, for the purposes set forth.

5. In a stove-pipe drum, the combination of the exterior drum, A, inside cylinders, D G, damper J, deflector K, removable collar H, with damper J, and boiler I, all constructed substantially as and for the purposes herein set forth.

207,561. DOUBLE-ACTING PUMPS. James A. Sinclair, Bridgeport, assignor of one-half his right to Abram Lash, Martin's Ferry, Ohio. Filed Jan. 24, 1878.

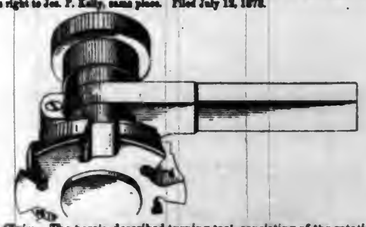


Claim.—1. The pump-head B, provided with a detachable back, D, compound crank-shaft C, rods G, piston I, provided with a sleeve, H, flexible rod J, and piston K, all combined and operating substantially in the manner shown and described.

2. The combination of a crank-shaft and flexible rod with a piston provided with a sleeve, substantially as described.

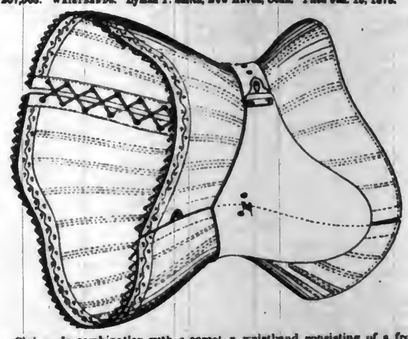
3. The combination of a flexible rod and piston, substantially as shown and described.

207,562. METAL-TURNING TOOLS. Henry Smith, West Meriden, Conn., assignor of one-half his right to Jos. P. Kelly, same place. Filed July 12, 1878.



Claim.—The herein-described turning-tool, consisting of the rotating head, having its periphery divided into a series of cutters, the first cutter taking but a portion of the surface longitudinally, and each successive cutter adding a portion to the preceding cutter, substantially as described.

207,563. WAISTBANDS. Lyman T. Smith, New Haven, Conn. Filed Jan. 15, 1878.



Claim.—In combination with a corset, a waistband consisting of a front and a rear part, hinged or otherwise coupled at each side, and having its front part formed with a downward extension, shaped as described, and adapted to conform to the abdomen, substantially as set forth.

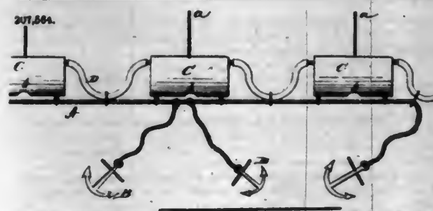
207,564. RAISING AND LOWERING TORPEDOES. W. D. Smith, Prophetstown, Ill., assignor of one-half his right to A. J. Warner, same place. Filed July 10, 1878.

Brief.—The torpedoes are attached to air-chambers, open at the bottom, and connected to each other by a flexible tube, through which air is introduced. The escape of air allows the chambers to fill with water when they are drawn down by the chain or weight to which they are attached. Anchors are used to prevent them from rising above a given point when filled with air.

Claim.—1. The combination of one or more cylinders or other receptacles with torpedoes connected to them, an anchoring device, and suitable tubes connecting with said cylinders, whereby compressed air may be supplied to and withdrawn from the same, as and for the purposes herein set forth.

2. The combination of a series of air-cylinders, C, with openings *b* in their bottoms, and connected by pipes D, the cable A, anchors B, torpedoes F, and air-supply pipe E, substantially as and for the purposes herein set forth.

207,564.

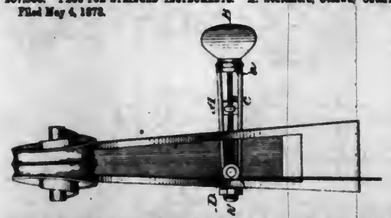


207,565. POUNDER WASHING-MACHINES. Thomas Seay, Social Circle, Ga. Filed July 20, 1878.



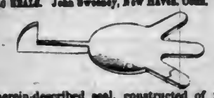
Claim.—In combination with the reservoir, the breast-board G, the shaft H, provided with a crank, A, the extensible pitman L, the rubber M, and the fulcrum N, said parts being arranged in the manner and for the purpose specified.

207,566. PEGS FOR STRINGED INSTRUMENTS. A. Stetteford, Ottawa, Ontario, Canada. Filed May 6, 1878.



Claim.—A tuning-peg for violins and similar instruments, consisting, essentially, of the barrel A, screw-head B, traveler C, block D, with friction-roller, and nut E, combined and arranged substantially as and for the purpose set forth.

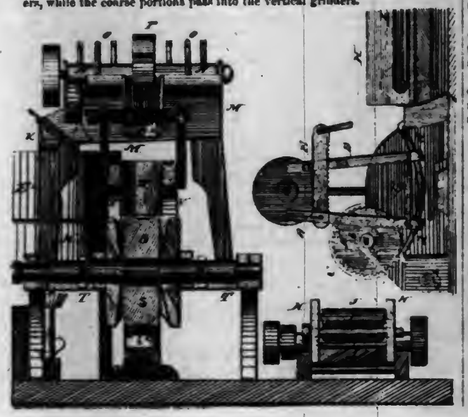
207,567. METALLIC SEALS. John Sweeney, New Haven, Conn. Filed July 12, 1878.



Claim.—The herein-described seal, constructed of frangible metal, and provided with means, substantially as described, for attachment, and having one or more portions to be broken therefrom, substantially as described, and so as, by its fracture, to serve as a detecter.

207,568. MANUFACTURE OF PAPER-PULP FROM WOOD. James Taylor, Lanesville, N. Y. Filed Feb. 18, 1878.

Brief.—The long fibers cut by the saws are crushed between rollers, and then cut into short lengths by knives, and the mass is then carried to the agitator. The fine fibers pass through a screen and into the horizontal grinders, while the coarse portions pass into the vertical grinders.



Claim.—1. The combination of one or more rotating saws, a swinging carriage with platform, and a toothed lever, whereby the wood is held on the platform, and a long fiber cut by the saws endwise of the grain of the wood, as herein set forth.

2. The combination of the endless apron I, rollers J J', the guard K, having shear-edge, and the knives *c c*, secured upon the rotating roller L, all substantially as and for the purposes herein set forth.

3. The agitator M, with sleeve *f*, rotating shaft N, arms O O, notched elevator P, and spout Q, substantially as and for the purposes herein set forth.

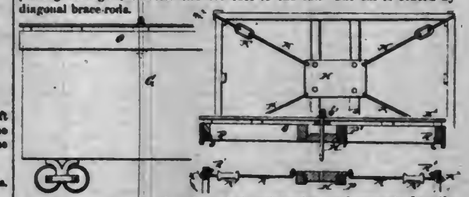
4. The combination of the rotating stone S, the box R, adjustable stones W X Y, and angle-bar A', substantially as and for the purposes herein set forth.

5. The plunger B', with screw-shaft C' and worm-gear D', in combination with the box A' and rotating stone S, for the purposes herein set forth.

6. The stationary tube m, made fast in the curb E', in combination with the burrs G' H', for the purposes set forth.

207,569. CAR-ROOFS. Charles H. Thompson, Newburyport, Mass., assignor of one-half his right to J. P. Conking, Saratoga Springs, N. Y. Filed July 26, 1878.

Brief.—The roof, made separate from the car, is supported by central transverse beams and plates in both the car-body and the roof. A king-bolt passing through the latter ties the roof to the car. The car is braced by diagonal brace-rods.



Claim.—1. A car-roof made entirely independent and separate from the body of the car, and connected thereto at a single point only, substantially as and for the purposes herein set forth.

2. The combination of a car-body, G, having beams I' P and plate H, the roof O, made separate from the car, and provided with the beams I'' and plate H', and the central connecting-bolt, O', substantially as and for the purposes herein set forth.

3. The combination of the car-body G, angle-irons *m'*, beams I', with plate H, rods M, with swivels M', the roof O, with beams I'' and plate H', and the central connecting-bolt, all constructed substantially as and for the purposes herein set forth.

207,570. BURIAL-SAFES. Andrew Van Bibber, Cincinnati, Ohio. Filed Aug. 5, 1878.



Claim.—1. A case or burial-safe for protecting coffins containing dead bodies, composed of metal with perforations or interstices, and a cover of like construction, adapted to be firmly fastened in place, said case being of a size much larger than the coffin, whereby, when the latter is deposited within it and the whole lowered into the grave, the case may be filled with earth through its openings for the purpose of weighting it, so that it cannot be removed by body-stealers, substantially as described.

2. The case or burial-safe, of larger size than the coffin it is to receive, and composed of wrought-iron or steel bars or rods riveted or otherwise secured together, so as to leave interstices between the bars, substantially as described, for the purpose specified.

3. The metallic open-work case or burial-safe, of larger size than the coffin it is to receive, provided with a metal cover of the same construction, adapted to be locked or otherwise fastened to the case on the inside thereof, substantially as described, for the purpose specified.

4. The combination of the long metal hasps F F and their locks or fastening devices with the cover D and case A, the locking-point of each hasp being near the bottom of the case, substantially as described, for the purpose specified.

207,571. HATCHWAYS. John M. Van Osdel, Chicago, Ill. Filed July 27, 1878.

Brief.—The car is provided with a vertical bearing-way, curved at top and bottom of the car, and extending in horizontal planes. This bearing-way acts upon primary levers above and below the doors. The doors are made in two hinged sections each, having upon the edge of inner flaps guide-rollers upon pivoted arms, traveling upon guideways, and when the doors are about closing entering a socket, while contiguous fixed rollers on the edge of the flaps relieve friction. Arms projecting below from the outer sections of the doors are joined by connecting-rods to arms of a tri-armed lever pivoted to a bracket in the hatchway. This tri-armed lever is balanced by a counter-weight moving in the arc of a circle, and is joined by a rod to an arm pivoted to the axis of the upper primary lever. The latter is connected between its axis and bearing end with the lower primary lever by a vertical rod pivoted to an arm extending from the axis of the lower primary lever. The latter is pivoted to a bracket outside of the hatchway. The rod which connects the tri-armed lever with the upper primary lever is made weak at one point, so as to break by the shock of any sudden fall of the elevator-car, and thus prevent opening of the doors, which will stop the elevator. The upper primary lever is also pivoted to a bracket outside of the hatchways.

Claim.—1. The combination, with elevator-hatchway doors of two leaves, hinged as described, adapted to fold open into a vertical position and to close free of contact with the elevator-car, of one or more leading rolls or runners, arranged on the flap-leaf in advance of its closing edge, to start and lead out the flap-leaf in the closing movement of the doors.

2. In self-closing hatchway-doors of two leaves, hinged as described, the flap leaf, having one or more leading rolls or runners, K, in combination with flap-supporting rails *d*, said leading-rolls being adapted to pass out of the way idly when the flap-supporting roll becomes active.

3. In self-closing hatchway-doors, a leading roll or runner, combined with the flap-leaf of a door of two hinged leaves, for the purpose stated, by a pivoted carrying-arm, whereby to adapt said leading-roll to pass out of the way into pockets as the doors close.

4. A hatchway-door for elevators, made in two sections of two hinged leaves each, adapted to close by their gravity, opened with variable movements, and balanced by a single counterpoise by positive connections with the outer hinged leaves of each section of the door, the several parts being connected for co-operative action, substantially as herein set forth.

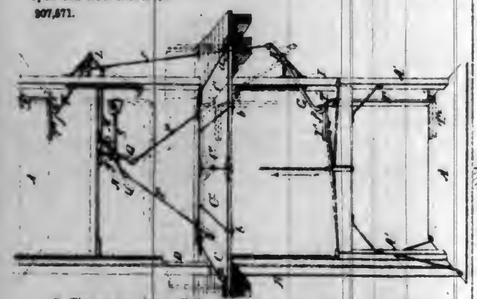
5. The combination, with hinged doors, of two folding leaves each, of an elevator hatchway, and the lifting-rods connected to the inner sides of the outer leaves, substantially as described, of a single counterpoise upon the axis-pin of the lifting-lever connections, operating to balance all the doors in opening by positive connections, substantially as herein set forth.

6. In self-closing doors for elevator-hatchways, the means herein described for opening the doors with a variable movement to prevent slamming, consisting of the curves T', joining the horizontal and vertical planes of the elevator bearing-way, said curves operating by their shortest curvature to slow the doors as they fold into the guide-post recesses.

7. The curves T T' of the elevator bearing-way, adapted to gradually transfer the primary lever from the vertical plane T to the horizontal plane T², to secure the slow commencement of the closing movement of the doors.

8. In self-closing doors for elevator-hatchways, a bearing-way upon the elevator-car, consisting of a vertical plane, T, horizontal planes T² T², overlying the top and bottom of the elevator-car, and intermediate curves T² T', joining said planes at the angles of the elevator car, in combination with primary levers adapted to receive the impact of the elevator-car upon said horizontal planes, and to move in a long sweep in contact therewith, to both open and close the doors.

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9. The primary levers F G, arranged above and below the hatchway, connected by suitable mechanism, to operate toward and from each other in opposite directions, and connected to the inner sides of the outer doors, substantially as described, in combination with an elevator-car bearing-way having horizontal and vertical planes joined by intermediate curves, adapted to operate said levers simultaneously to effect the opening and closing movements of the doors, substantially as described.

10. The combination, with the primary levers, arranged to operate substantially as described, of the secondary tri-armed lever N, connected by the rod M, the lifting-rods F P, and the doors connected therewith, for operation substantially as herein set forth.

11. The lower primary lever connected by the secondary lever K to the lower end of the rod M, and the upper primary lever connected to the upper end of said rod at a point between the axis and the acting end of said lever, whereby to cause the weight of one lever to balance that of the other, and thus relieve the elevator-motor from lifting the lower primary lever in the operation of opening the doors by the descent of the elevator.

12. As a means of preventing the accidental passage of the elevator-car through the hatchway, the rod M, having one of its points of connection weaker than the other, but sufficiently strong for the safe working of the elevator, whereby said weak point will give way upon a sudden descent of the elevator-car upon the inward-projecting end of the upper primary lever, F, to prevent the opening of the doors.

207,572. HATCHWAYS. John M. Van Oedel, Chicago, Ill. Filed July 27, 1878.

Brief.—The mechanism employed is chiefly located below the doors, and the doors are raised and folded back by push-bars, jointed at the hinge, between the sections.



Claim.—1. The mechanism for opening the doors, consisting of the push-bars Z Z, connected with the primary levers by intermediate devices and a counterpoise, arranged for operation below the hatchway.

2. In self-closing hatchways for elevators, the push-bars Z Z, hinged centrally to the doors C C', and operated by rock-shafts *y y*, connecting with the counterpoise and the operating-levers, substantially in the manner and for the purpose stated.

3. The separate push-bars Z Z, having the bends *d*, connected to the joint of the folding leaves C C' and to the ends of separate elbow-levers *e e*, in combination with separate side shafts, *y y*, the arms *a a*, the connecting-rods P P, the intermediate arms, *b c*, and the rod M, making the connection of these several parts with the primary operating-levers, all constructed and adapted to allow the elbow-levers and the push-bars to fold against and over the hatchway-sills.

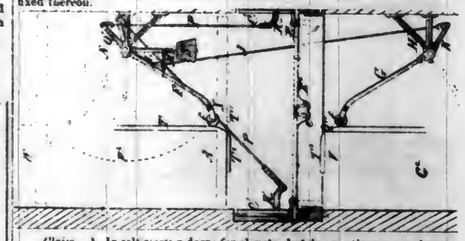
4. The rock-shafts *y*, arranged below the doors and outside of a vertical line drawn through their outside hinges, *d*, in combination with the elbow-levers *e* on said rock-shafts and the push-bars connected with said doors, as stated.

5. The combination, with the primary levers connected by the rod J, as stated, of the rod M, the central two-armed lever, N, the counterpoise S, the rock-shafts *y y* and their connections with said lever N, and the doors, of two hinged leaves each, all constructed and adapted for operation substantially as described.

6. The push-bars Z Z, connected, arranged, and operated to stand between the doors C C' when folded vertically.

207,573. HATCHWAYS. John M. Van Oedel, Chicago, Ill. Filed July 27, 1878.

Brief.—Employs two brackets instead of three for the operating parts, all mounted within the hatchway, and has a two-armed secondary lever, instead of a three-armed lever. The upper primary lever is mounted upon the axis of the two-armed lever, and has an extension or arm connecting it by a rod to the lower primary lever. The rod with weak point, to break by the fall of the elevator, and thus sever connection of the primary levers with the doors, is placed between the primary lever and the arm of the counter-weight, the primary lever being loose upon its axis, and the arm of the counter-weight fixed thereon.



Claim.—1. In self-closing doors for elevator-hatchways, the upper primary lever, F, the secondary lever N, connecting with the door-lifting rods P P, the arm L, jointed to rod J, and the counterpoise connected with said primary lever by the rod M, all arranged for co-operative action upon one and the same axis-bearing within the shaftway above the door, substantially as described.

2. The counterpoise fixed upon its axis-pin and connected with the upper primary lever, F, mounted loosely upon said axis-pin, by the rod M, having a safety-connection direct with said lever, substantially as and for the purpose described.

207,574. HORSE-DETACHERS. Joseph H. Voss, Cincinnati, Ohio. Filed Aug. 3, 1878.



Claim.—1. In a horse-detaching device, the combination, with the axle of a vehicle and the tongue or shaft provided with a spring-bar, of a coupling-pin adapted to engage said spring-bar, a locking-lever or shoe arranged to lock the tongue and spring-bar to the coupling-pin within a coupling-box, and suitable mechanism adapted for releasing said shoe from the tongue by the driver in his seat, substantially as described, for the purpose specified.

2. In a horse-detaching device, the combination, with the tongue or shaft provided with a notched spring-bar, and the axle of a vehicle, of a coupling-bolt within a coupling-box, adapted for engagement with said tongue and spring-bar, a locking-lever or shoe arranged to hold the tongue and spring-bar in engagement with the coupling-bolt, a pivoted tilting lever connected with said locking-shoe, a locking-link connected with the tilting lever and engaging with the coupling-box, and means for disengaging said link and tilting the tilting lever to release the locking-shoe, substantially as described, for the purpose specified.

3. The combination, with the axle of a vehicle, and a coupling-box provided with a coupling-bolt, C, a forked bearing-plate, *a'*, forming a slot having its rear face inclined, and means to connect said coupling-box with the axle, of a locking-shoe, E, lever D, link F, and connection G, all arranged to operate substantially as described, for the purpose specified.

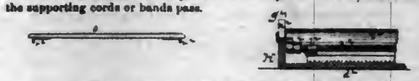
4. The combination, with the bearing-plate *a'*, the inclined abutment *a''*, and the link F, of the bail *f'*, substantially as described, for the purpose specified.

5. The combination, with the shaft or tongue, of the hinged blocks B', provided with the notched spring-levers *b*, substantially as described, for the purpose specified.

6. The combination, with the axle of a vehicle, a pair of shafts and the hinged blocks B', and spring-bars *b*, of the coupling-boxes A, coupling-bolts C, shoes E, levers D, links F, and suitable means to disengage said shoes simultaneously from the shafts, substantially as described, for the purpose specified.

207,575. TAILORS' TABLES. Albin Warth, Stapleton, N. Y. Filed June 27, 1878.

Brief.—To provide room for the folding-gages, one of the rails on which the package-carrier moves is placed below the level of the table-top; and to compensate for the increasing thickness of the pile of cloth on the table and secure an unvarying length in the pieces cut off, the pivoted clamping-jaw of the cloth-gage carries a grooved rod to guide the workman's knife, the rod being formed at one end with a crank-arm, that moves in a forwardly-inclined slot in a side lug of the bottom plate of the clamp. The package-carrier is adapted for receiving differently-shaped bundles, by being provided with more than one set of notches for the journals of the top set of rollers, around which the supporting cords or bands pass.



Claim.—1. The combination, with the table A and package-carrier C, of two rails, *c d*, secured to the table A on opposite sides thereof, one being on a level with the surface of the table and the other beneath said level, a bracket, F, supporting the package-carrier, wheels *a a*, connected to said bracket and running on the rail *c*, a transverse platform, E, supported at one end by the bracket F and at the opposite end by rods *s*, and wheels *b b*, running on a rail, *d*, and supporting the rods *e*, all combined and adapted to operate substantially in the manner herein shown and described.

2. The combination, with the table A, package-carrier C, its wheels *a a b b*, rails *c d* on opposite sides of the table, bracket F, supporting the package-carrier, and transverse platform E, supported by the wheels *b b*, of a car, D, running on a rail, *t*, the transverse platform forming the connection between the car and the package-carrier, substantially as set forth.

3. The combination, with the table A, package-carrier C, car D, and mechanism for imparting motion to said car and package-carrier, of a brake-mechanism adapted to be operated from the workman's seat H², and acting on the wheels of the car, substantially as and for the purpose described.

4. The combination, with the table A, package-carrier C, car D, and mechanism for imparting motion to said car and package-carrier, of movable stops adapted to be operated from the workman's seat, and the wheels *a a* of the package-carrier, adapted to be brought into gear with said stops, substantially as and for the purpose set forth.

5. The combination, with the table A, package-carrier C, and car D, of an endless chain, I, loose chain-wheels L L², running in gear with the chain I, and mechanism for stopping and releasing said chain-wheels, substantially as and for the purpose described.

6. The combination, with the table A, package-carrier C, car D, endless chain I, and loose chain-wheels L L², of a clutch-lever, M, and mechanism for adjusting the position of said clutch-lever from the workman's seat, substantially as set forth.

7. The combination, with the table A, package-carrier C, car D, endless chain I, loose chain-wheels L L², and clutch-lever M, of mechanism for throwing the clutch-lever automatically out of gear when the package-carrier reaches either end of its stroke, substantially as described.

8. The combination, with the table A, package-carrier C, car D, endless chain I, and loose chain-wheels L L², of a hand-crank, *m'*, and cog-wheels *s' t'*, for moving the package-carrier by hand, substantially as set forth.

9. The combination, with the table A, package-carrier C, transverse platform E, and car D, of a tubular shaft, *i'*, extending beneath the transverse platform, a pinion, *h'*, mounted on one, and a disk, *k'*, mounted on the opposite, end of this tubular shaft, a hand-crank, *m'*, connected to the disk *k'*, a tongue, *p'*, for stopping the motion of the disk, a rack, *g'*, geared together with the pinion *h'*, and a lever, M, for throwing the package-carrier in or out of gear with the driving mechanism, substantially as described.

10. The combination, with the table A, package-carrier C, rack *g'*, pinion *h'*, and lever M, for throwing the package-carrier in or out of gear with the driving mechanism, of stops connected to the rack *g*, and adapted to act on the wheels *a a* of the package-carrier, substantially as set forth.

11. The combination, with the package-carrier C, its supporting-bracket F, pivot *f*, and transverse platform E, of guide-rollers *s*, adapted to be raised above or dropped below the transverse platform, substantially as and for the purpose described.

12. The combination, with the clamping-jaw *o* of the folding-gages and with their grooved rocking bars *k'*, of a crank, *n'*, and lugs *g'*, provided with oblique slots *n²*, substantially as and for the purpose shown and described.

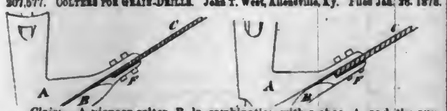
13. The combination, with the piling-table A and with the marking-tables A*, of a bridge, O, provided with lips *n'*, to fit between the edges of the tables, substantially as set forth.

207,576. LAMP-BURNERS. William H. Weeden, Waterbury, Conn., assignor to the Benedict & Burnham Manufacturing Company, same place. Filed Nov. 9, 1877.



Claim.—In a burner constructed to receive a doubled flat wick to be gradually worked into tubular form, an outer shell forming the lower portion of the wick-tube, and an inner tube extending from the base of the flame downward, and turning outward to form the air-inlet, with a tubular tip attached to the said outer shell, substantially as described.

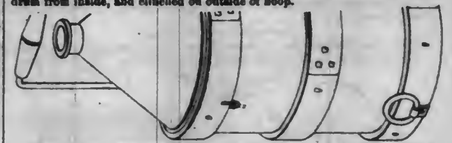
207,577. COLTERS FOR GRAIN-DRILLS. John T. West, Allensville, Ky. Filed Jan. 28, 1878.



Claim.—A pioneer colter, B, in combination with a shoe, A, and the support C, the said colter arranged upon the bottom of the shoe, and fastened to the shoe-support C by the same bolts, F, used to secure the shoe, and serving to re-enforce the joint, substantially as shown and described.

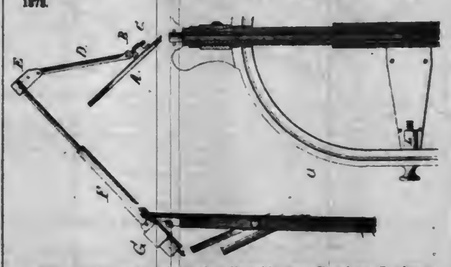
207,578. CANS FOR OILS, &c. Frederick Westerbeck, St. Louis, Mo. Filed July 17, 1878.

Brief.—The hoops are fastened to the metal by nails passing through the drum from inside, and clinched on outside of hoop.



Claim.—The combination of a can having the wire *c*, the exterior sheet-metal jacket, consisting of a cylinder having the hole for the wire and to pass through, and further having an open top, but closed bottom, and provided with wooden hoops encircling its cylinder-body, substantially as specified.

207,579. MIRROR ATTACHMENTS. Gurden H. Wilcox, Washington, D. C. Filed Aug. 17, 1878.



Claim.—1. In a toilet-mirror, the adjustable screw B and nut C, when attached to the back of the circular mirror A, substantially as described, and for the purposes set forth.

2. In combination with a mirror pivoted in a vertical frame and having a vertical socket upon its back, an extensible tube having a supplemental mirror connected to its outer end by a swinging arm and pivoted at its inner end to the mirror-frame, so as to render the tubing and supplemental mirror capable of being compactly folded on opposite sides of the main mirror, substantially as shown and described.

3. The combination of a telescopic rod, F, hinge-socket G, plate or arm E, and pivoted rod D with screw B and nut C, when attached to the back of circular mirror A, as shown and described, and for the purposes set forth.

207,580. ROCKING-CHAIRS. Siegfried Wilhelmsmeyer, New York, N. Y. Filed June 27, 1878.

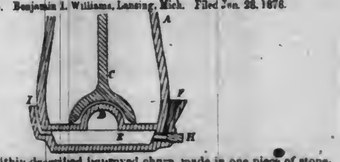


Claim.—1. The combination, in a rocking-chair, of a base-frame having fixed center plates, which are each provided with a stop-pin, and a spring-connected rocking frame having fixed center plates, which are each provided with two shoulders on the front edge thereof, to engage with the stop-pin and check the forward and back motions of the rocking frame, substantially as described.

2. The combination, in a rocking-chair, of a base-frame having fixed center plates, which are each provided with a stop-pin and with a guide-pin, and a spring-connected rocking frame having fixed center plates, which are each provided with two shoulders on the front edge thereof to engage with the stop-pin, and with a curved recess to receive the guide-pin and hold the parts in proper relation to each other, substantially as described.

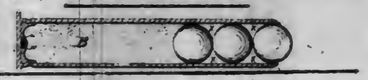
3. The combination, in a rocking-chair, of a base-frame having fixed center plates, which are each provided with a guide-pin, and a spring-connected rocking frame having fixed center plates, which are each provided with a curved recess to receive the guide-pin, and with a web on one side of the recess to form a bearing for the free end of the guide-pin and hold the plates parallel to each other, substantially as described.

207,581. CHURNS. Benjamin L. Williams, Lansing, Mich. Filed Jan. 28, 1878.



Claim.—The within-described improved churn, made in one piece of stoneware, and consisting of the body A, having the dome D in the bottom of the churning-chamber, and the reservoir E located beneath said chamber, and provided with funnel F, outlet H, and vent I, as set forth.

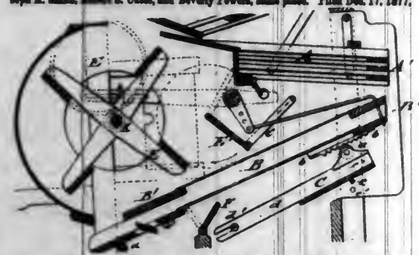
207,582.



207,582. CARTRIDGES. Edward M. Wright, Washington, D. C. Filed June 18, 1878.

Claim.—A metallic cartridge having two or more bullets of the caliber of the gun, the front bullet being secured by turning in the metallic shell upon it, and the space between the bullets being filled with a lubricant, substantially as described.

207,583. GRAIN-SEPARATORS. Frederick W. Young, Union, Oreg., assignor to himself, Joseph R. Shinn, Robert S. Coten, and Beverly Powers, same place. Filed Dec. 17, 1877.



Claim.—1. The combination of shoes A' B', rocking bar H, and deflector E', relatively arranged as and for the purpose described.

2. The combination of the fan E, shoes A' B', deflector E', rocking bar H, connecting with shoes A' B', the bottom screen, B, provided with the corrugated plates *b*, and the adjustable end-slotted frame C, provided with rollers, substantially as and for the purpose specified.

REISSUES.

8,388. TRACK-CLEARERS. Augustus Day, Detroit, Mich. Patent No. 126,547, dated Apr. 9, 1872. Filed Mar. 4, 1878.

Brief.—Independently-adjustable scrapers rest diagonally across the rails, in front of the fore wheels, each being secured to a casting or block, to which are attached two draw-bars, which are secured to under side of the car, one of said bars being arranged in line with the draft, and the other being diagonally placed, whereby it also acts as a brace. Through chains and a vertical revolving shaft the scrapers are simultaneously raised from and lowered to the track, where they rest by their own weight and independently of each other. The revolving shaft is operated by a slotted crank-handle, having a sliding spring thumb-piece, which takes behind a cam projection on a bracket upon the railing, whereby when the crank-handle is swung around the thumb-piece takes behind the cam and secures the shaft, which is locked by an anchor-shaped tumbler resting against the back of the upturned portion of the spring thumb-piece.



Claim.—1. In a railway-car, a pair of independently-acting scrapers, pivotally secured to the floor of the same, and resting upon the track, when in operation, wholly by their own weight, in combination with means for raising and lowering such scrapers simultaneously, substantially as and for the purpose set forth.

2. In a track-cleaning device, the combination, with an independently-acting scraper, resting, when in operation, wholly by its own weight upon the track, of a draw-bar in the direct line of draft and a supplementary and diagonal draw-bar, which at the same time acts as a brace, the forward ends of both of said draw-bars being secured on the same axial line, substantially as and for the purpose set forth.

3. The construction and arrangement of the shank B, as described, with relation to scraper A, draw-bar C, and diagonal brace E, as and for the purposes set forth.

4. The combination, with the draw-bar C and scraper A, of the diagonal brace E, as and for the purpose set forth.

5. The combination, with the track-cleaning scraper A, of the guard F, as and for the purpose set forth.

6. In combination with the track-scraper A, the pendent scraper G, substantially as and for the purposes set forth.

7. The combination, with the pivoted track-cleaning scrapers, of chain J, pulley K, and cranked shaft P, for raising and lowering the scrapers, substantially as described.

8. The recessed and slotted crank L, bar M, thumb-piece *d*, latch *c*, and spring N, in combination with the cam-notch *f* of the bracket I, as and for the purpose set forth.

9. The construction and arrangement of the tumbler O with relation to the crank L and its latch-bar M, for locking the latter, substantially as described.

8,389. DENTAL OPERATING-CHAIRS. Saml. S. White, Philadelphia, Pa., assignee of James O. Whitcomb. Patent No. 50,201, dated Oct. 3, 1865. Filed Mar. 28, 1878.

Claim.—1. The combination, substantially as hereinbefore set forth, of the base, a series of elevating screws mounted therein, a series of nut-wheels controlling the movements of the elevating-screws, and the chair-body, rocking upon its supports, carried by the screws.

2. The combination, substantially as hereinbefore set forth, of the seat and back, the vertical relation of which to each other may be varied, with mechanism by which the seat may be rocked or oscillated relatively to the back, to conform to the position of the occupant.

3. The combination, substantially as hereinbefore set forth, of the seat and back, with mechanism by which the seat may be rocked or oscillated relatively to the back and locked at any desired angle.

4. The combination, substantially as hereinbefore set forth, of the seat-support, movable vertically relatively to the base and to the chair-body, with the seat pivoted thereon, whereby the seat is rendered adjustable independently relatively to the base and chair-body, both vertically and as to inclination.

5. The combination, substantially as hereinbefore set forth, of the chair-body mounted on a tubular support capable of rocking and turning relatively to its base, and the vertically-adjustable rocking seat also mounted on said support.

6. The combination, substantially as hereinbefore set forth, of the seat rocking on its pivots relatively to the chair-back, locking devices for securing the chair-body at varying angles, as required, and the tubular support upon which the chair is mounted, turning relatively to the base without raising or lowering the chair.

7. The combination, substantially as hereinbefore set forth, of the back, the head-rest, and the seat, the relation of which to each other vertically may be varied to accommodate the differences in size of various persons occupying the chair, with mechanism by which the inclination or angle of the seat and back may be varied relatively to each other, to insure the ease and comfort of the occupant.

8. The combination, substantially as hereinbefore set forth, of the back and seat, the relation of which to each other vertically as well as to inclination or angle may be varied, with a head-rest carried by the back, adjustable vertically, horizontally, (or backward and forward,) and laterally relatively to the back, whereby all necessary adjustments are provided for insuring the ease and comfort of the patient and for the convenience of the operator.

9. The combination, substantially as hereinbefore set forth, of the back and seat, capable of varying inclination relatively to each other, with a head-rest adjustable vertically, laterally, and horizontally backward and forward relatively to the back, whereby the ease and comfort of the patient is insured.

10. The combination, substantially as hereinbefore set forth, of the back and seat, capable of varying inclination relatively to each other, with the head-rest adjustable laterally independently of the back.

11. The combination, substantially as hereinbefore set forth, of the back and seat, capable of varying inclination relatively to each other, with the head-rest adjustable horizontally or backward and forward.

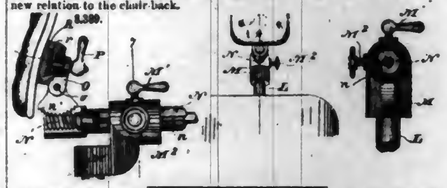
12. The combination, substantially as hereinbefore set forth, of the back and seat, capable of varying inclination relatively to each other, with the head-rest adjustable vertically and laterally in reference to the back.

13. The combination, substantially as hereinbefore set forth, of the back and seat, capable of varying inclination relatively to each other, with the head-rest adjustable vertically and horizontally, or backward and forward, relatively to the back.

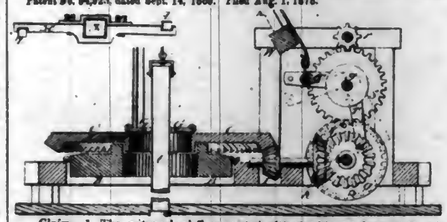
14. The combination of the vertically-adjustable supporting-bar, its clamp, the head-rest pad-support N, mounted and turning upon the supporting-bar, and the clamp acting upon the turning support, these members being constructed to operate in combination, substantially as hereinbefore set forth, whereby the head-rest support is capable of being turned around upon the vertical supporting-bar to reverse the pad without turning or disturbing the position of the vertical support.

15. The head-rest mounted upon a turning support, acted upon by a clamp, and adjustable backward and forward relatively to the back of the chair, substantially as described, whereby the head-rest is rendered adjustable backward and forward, and is also capable of being turned so as to present the pad in a new relation to the chair-back.

8,389.



8,390. ROCK-DRILLS FOR BORING AND DRILLING WELLS. John P. Sumners, Tiffin, Ohio. Patent No. 94,923, dated Sept. 14, 1869. Filed Aug. 1, 1878.



Claim.—1. The miter wheel C, provided with the hinged doors *ti ti*, substantially as and for the purpose specified.

2. The miter wheel C, uprights Z Z, and cross-arm H, substantially as and for the purpose set forth.

3. The auger Y, provided with a movable bit or bottom, *d*, secured to the cylinder *y* by means of a hinge on one side and a hook or pin on the other.

4. The auger Y_1, shaft X', cross-arm H, wheel C, and uprights Z Z.

5. The auger Y, with movable bottom *d*, bits *m m*, and valves *b b*, substantially as and for the purpose set forth.

6. The combination of the lever P and shaft with wheels L and M and the wheel K, all operating substantially as and for the purposes set forth.

7. The arrangement of the wheels L, M, I, K, C, and E, substantially as and for the purposes set forth.

8. The arrangement of the wheels O, 8, and *r*, reel *g*, and derrick X, when combined for the purpose set forth.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 27th DAY OF AUGUST, 1878.

Name, residence, and invention	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Ahlgren, O. P., Chicago, Ill. Churn-dasher	207,379	Aug. 27	773	230	14	316
Aiken, H. V., Fishkill Landing, N. Y. Pneumatic gong-pull	207,380	Aug. 27	774	230	14	316
Allen Governor Company. (See Huntoon, R. K., assignor.)						
Allen, W. B., Orleans, N. Y. Hand-truck	207,473	Aug. 27	872	257	14	328
Alley, A. J., Fond du Lac, Wis. Stump-extractor	207,381	Aug. 27	775	231	14	316
Anderson, E., Mount Pleasant, Iowa. Hog-cholera compound	207,474	Aug. 27	873	.....	14	328
Anderson, J. W. (See Millinger, C. K., assignor.)						
Anthoine, J. W. (See Rose, T. H., assignor.)						
Austin, W. J., Chicago, Ill. Feed-water heater and filter	207,337	Aug. 27	729	219	14	311
Ayer, J. M., Chicago, Ill. Ice-grate for refrigerators	207,382	Aug. 27	775	231	14	316
Babbitt, S. W., assignor to Wilcox Silver Plate Company, West Meriden, Conn. Waiter	207,475	Aug. 27	874	257	14	328
Baker, T. F., Cincinnati, Ohio. Grating	207,476	Aug. 27	874	258	14	328
Baldwin, H., West Chester, Pa. Bill and paper file	207,477	Aug. 27	875	258	14	328
Bamberger, H., Philadelphia, Pa. Machine for cleaning and polishing coffee	207,383	Aug. 27	777	231	14	316
Barr, B. F., Shady Grove, Pa. Manure-fork	207,338	Aug. 27	730	219	14	311
Barstow, V. B. (See Bradbury and Barstow.)						
Barwick, W. H., Hyde Park, Mass. Scissors-sharpener	207,339	Aug. 27	731	219	14	311
Beamer, V. M., Xenia, Ind. Harness-buckle	207,478	Aug. 27	876	258	14	328
Beck, G., assignor to P. S. Justice, London, England. Nozzle for the escape of steam or gases under pressure	207,384	Aug. 27	777	231	14	316
Becker, L., York, Pa. Feed-cutter	207,479	Aug. 27	877	258	14	328
Belon, J., Paris, France. Car-truck	207,480	Aug. 27	878	259	14	328
Benedict & Burnham Manufacturing Company. (See Weeden, W. N., assignor.)						
Bennison, J., Galveston county, Tex. External window, door, and shutter sprinkler	207,385	Aug. 27	778	232	14	317
Bergstrom, C. (See Golucke, E., assignor.)						
Blake, L. R., Boston, Mass. Boot and shoe sewing machine	207,340	Aug. 27	731	219	14	311
Blessing, J. H., Albany, N. Y. Air-valve	207,481	Aug. 27	878	259	14	328
Blessing, J. H., Albany, N. Y. Drain-trap	207,482	Aug. 27	880	259, 260	14	329
Blessing, J. H., Albany, N. Y. Pump-regulating valve	207,483	Aug. 27	881	260	14	329
Blessing, J. H., Albany, N. Y. Steam-trap	207,484	Aug. 27	883	260, 261	14	329
Blessing, J. H., Albany, N. Y. Pump-regulating valve	207,485	Aug. 27	886	261	14	329
Bloomingdale, J. Y., New Salem, N. Y., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Bale-tie	207,486	Aug. 27	888	261, 262	14	330
Bogue, J. I., Montreal, Canada. Calculator	207,487	Aug. 27	889	262	14	330
Bottoms, T. J., Thomasville, Ga. Current-wheel	207,488	Aug. 27	890	262	14	330
Bourguignon, W., Providence, R. I., assignor to B. Gems, Boston, Mass. Flexible gas-tubing	207,489	Aug. 27	891	262	14	330
Bourne, E., Pittsburg, Pa. Nut-lock	207,386	Aug. 27	779	232	14	317
Boynton, R. B., West Townsend, Mass. Combined thill and harness	207,387	Aug. 27	780	232	14	317
Bradbury, A. E., West Springfield, and V. B. Barstow, Westfield, Mass., assignors to themselves and H. M. Smith. Car-coupling	207,341	Aug. 27	734	220	14	311
Buchanan, A. F., Montrose, N. Y. Block-printing machine	207,490	Aug. 27	892	263	14	330
Buchanan, A. F., Montrose, N. Y. Apparatus for the manufacture of oil-cloths	207,491	Aug. 27	893	263	14	330
Buchanan, J., Philadelphia, Pa. Apparatus for producing ozone	207,496	Aug. 27	897	264	14	330
Buffalo Steam Gauge and Lantern Company. (See Ham, C. T., assignor.)						
Bump, F. E., and J. W. Gear, New Cassel, Wis. Plow-beam	207,497	Aug. 27	898	264	14	331
Bunker, A. S., Lawrence, Mass. Tobacco-cutter	207,498	Aug. 27	899	265	14	331
Burgan, F. (See Dieckmann and Burgan.)						
Burrell, J., East Bridgewater, assignor to E. A. Curtis, Somerville, and E. L. Mitchell, Boston, Mass. Printing-press	207,499	Aug. 27	900	265	14	331
Busey, J. F., Beck's Mills, Pa. Machine for bending chain-links	207,388	Aug. 27	781	232	14	317
Cady, F. P., assignor to Hogan Stamped Elbow Company, Cleveland, Ohio. Machine for forming joint-flanges	207,342	Aug. 27	735	220	14	311
Call, A. A., Algona, Iowa. Ball-target thrower	207,389	Aug. 27	782	233	14	317
Campbell, P., Carrollton, Pa. Combined tool	207,500	Aug. 27	901	265	14	331
Card, W. L., Moberly, Mo. Automatic car-brake	207,501	Aug. 27	901	266	14	331
Carlton, G. L., and G. H. Crager, Omaha, Nebr. Locking-hinge for sleeping-car berths	207,390	Aug. 27	783	233	14	317
Cates, R. S., *et al.* (See Young, F. W., assignor.)						
Chambers, C., Jr., Philadelphia, Pa. Brick-machine	207,343	Aug. 27	736	220, 221	14	311
Chandler, L. S., and S. N. Silver, Auburn, Me. Hydraulic engine	207,391	Aug. 27	784	233	14	317
Chegwin, W., Fond du Lac, Wis. Sled	207,344	Aug. 27	741	221	14	312
Clark, C. E. (See Clark, W. P. and C. E.)						
Clark, G. H. (See Michael, A. M., assignor.)						
Clark, G. W., New York, N. Y. Bottle	207,502	Aug. 27	903	266	14	331
Clark, T. C., Russellville, Ky. Grain-drill	207,503	Aug. 27	904	266	14	331
Clark, W. P. and C. E., Belmont, N. Y. Horse hay-rake	207,392	Aug. 27	785	233, 234	14	317
Cline, W., Jr., Clayton, Ind. Hog-cholera compound	207,345	Aug. 27	742	.....	14	312
Closterman, H., Jr. (See Heilbrun, A., assignor.)						
Clow, W. S., Allegheny, Pa. Toy	207,346	Aug. 27	743	221	14	312
Cole Brothers. (See Keiser, A., assignor.)						
Cole, G. O., Hillsdale, N. J. Fruit-box	207,347	Aug. 27	743	222	14	312
Combs, J. M., La Cueva, N. Mex. Ter. Work-bench attachment	207,504	Aug. 27	905	267	14	331
Conkling, J. P. (See Thompson, C. H., assignor.)						
Copman, C., assignor to himself and H. Schmidt, New York, N. Y. Set-back sink	207,393	Aug. 27	787	234	14	318
Corthell, S. N., assignor to D. Whittemore, Quincy, Mass. Heel-scouring machine	207,394	Aug. 27	788	234	14	318

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Corthell, S. N., assignor to D. Whittemore, Quincy, Mass. Rotary cutter for boots and shoes	207,395	Aug. 27	789	234	14	318
Crager, G. H. (See Carlton and Crager.)						
Crandall, H. B., assignor of one-half interest to W. Holmes, Homer, N. Y. Blacksmith's butteris	207,348	Aug. 27	744	222	14	312
Curtis, E. A., *et al.* (See Burrell, J., assignor.)						
Daniels, G. N. (See Parsons, Shaw, and Daniels.)						
Dasey, J. H., Somerville, Mass. Game-counter	207,396	Aug. 27	790	235	14	318
Davies, J., Muskegon, Mich. Checking device for horses	207,397	Aug. 27	790	235	14	318
Day, A., Detroit, Mich. Track-clearer. (Reissue)	8,388	Aug. 27	1003	293	14	344
Degen, F. W., New Athens, Ill. Sulky-cultivator	207,398	Aug. 27	791	235	14	318
Delano, B. F., Boston, Mass. Construction of vessels	207,505	Aug. 27	905	267	14	332
Dieckmann, D. L., and F. Burgau, New York, N. Y. Fountain-pen	207,399	Aug. 27	793	236	14	318
Dimond, G. H., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Bobbin-holder	207,400	Aug. 27	794	236	14	318
Dingley, A. and A. L., Brooklyn, N. Y. Machine for drilling and pumping oil-wells	207,506	Aug. 27	906	267	14	332
Dingley, A. L. (See Dingley, A. and A. L.)	207,507	Aug. 27	907	267	14	332
Disbrow, A. M., Grafton, Ill. Thimble-skein						
Dittman, C. P. (See Kuball, A. G., assignor.)						
Dodge, H. N., Brooklyn, N. Y. Leather-stretching machine	207,508	Aug. 27	907	268	14	332
Donnel, J. W., assignor to himself and G. W. Schreurs, Muscatine, Iowa. Millstone-driver	207,401	Aug. 27	794	236	14	319
Downey, B. J., Washington, D. C. Stench-trap	207,492	Aug. 27	894	263	14	330
Downs, H. G., assignor of one-half interest to C. W. Rhodes, New York, N. Y. Pencil-sharpener	207,402	Aug. 27	795	236	14	319
Drew, W. J., assignor of one-half interest to W. M. Robinson, Grand Rapids, Mich. Vehicle-axle lubricator	207,493	Aug. 27	895	263	14	330
Driver, J. F., J. T. Luna, W. H. Sanders, and A. P. Hill, Lewisburg, Tenn. Motor	207,403	Aug. 27	796	237	14	319
Dunlap, E. R., South Lyon, and G. W. Dunlap, Grand Rapids, Mich. Carpenter's gage-tool	207,494	Aug. 27	896	264	14	330
Dunlap, G. W. (See Dunlap, E. R. and G. W.)						
Dutton, T. E., Port Jefferson, Ohio. Vise	207,349	Aug. 27	745	222	14	312
Easterday, W. T., Watsonville, Cal. Seed-planter	207,404	Aug. 27	797	237	14	319
Eberhart, L., Joliet, Ill. Wire-barbing instrument	207,405	Aug. 27	798	237	14	319
Egge, F., assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Animal-trap	207,406	Aug. 27	799	237	14	319
Egge, F., assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Padlock	207,407	Aug. 27	801	238	14	319
Eggleston, J. C., Waterbury, Conn. Switch-chair	207,408	Aug. 27	804	238	14	320
Ellis, J. M. (See Lester, J. S., assignor.)						
Evans, G. F., Poland, Me. Magazine fire-arm	207,350	Aug. 27	746	223	14	313
Ferris, S. B., Brooklyn, N. Y. Corset-exhibitor	207,351	Aug. 27	747	223	14	313
Fey, C., Brooklyn, N. Y. Malt-plow	207,495	Aug. 27	897	264	14	330
Flanders, A. W., North Grantham, N. H. Scythe-fastening	207,409	Aug. 27	805	238	14	320
Foote, R. N., Kansas City, Mo. Steam-cooker	207,410	Aug. 27	806	239	14	320
Fowler, J. O., Jr., New York, N. Y. Fire, burglar, and district-alarm telegraph	207,509	Aug. 27	909	{268 / 269}	14	332
Fowler, J. O., Jr., New York, N. Y. Thermostatic and electrical fire-alarm	207,510	Aug. 27	916	269	14	333
Frank, I., New York, N. Y. Machine for cutting and winding paper	207,411	Aug. 27	807	239	14	320
Friedriech, J. L., West Branch, Mich. Bag-holder	207,412	Aug. 27	809	239	14	320
Fuller, B. F., Russell, Iowa. Vehicle-spring	207,511	Aug. 27	917	269	14	333
Gear, J. W. (See Camp and Gear.)						
Gems, R. (See Bourguignon, W., assignor.)						
Golucke, E., assignor of one-half interest to C. Bergstrom, Crawfordville, Ga. Horse-power	207,512	Aug. 27	917	270	14	333
Goodnough, J. M. (See Webster, A. G., assignor.)						
Goodrich, R. R., and J. J. A. Parker, Dailey, Mich. Trace-carrier	207,513	Aug. 27	918	270	14	333
Goodyear, W. A., San Francisco, Cal. Process and apparatus for manufacturing water-gas	207,413	Aug. 27	809	240	14	320
Guex, L., Paris, France. Knife-cleaning apparatus	207,514	Aug. 27	919	270	14	333
Gurney, T. (See Moffitt, J. A., assignor.)						
Haas, C. T., Philadelphia, Pa. Liquid-filter	207,515	Aug. 27	920	270	14	333
Hall, G. B., Fort Plain, assignor to C. Whyland, St. Johnsville, N. Y. Peanut-roaster	207,414	Aug. 27	812	240	14	320
Ham, C. T., assignor to Buffalo Steam Gauge and Lantern Company, Rochester, N. Y. Lantern	207,516	Aug. 27	921	271	14	334
Harris, J. T., Geneva, Ill. Thill-coupling	207,415	Aug. 27	812	240	14	321
Harrington, J. A., Melrose, Mass. Folding hat	207,353	Aug. 27	749	223	14	313
Hartley, W. B., and P. P. Little, Washington, D. C. Barrel-cover	207,517	Aug. 27	921	271	14	334
Hartwell, A. J., Brockport, N. Y. Grain-separator	207,416	Aug. 27	813	{240 / 241}	14	321
Hathaway, S., Collins, Ark. Colter	207,352	Aug. 27	748	223	14	313
Hayden, P., Columbus, Ohio. Fence	207,518	Aug. 27	922	271	14	334
Hayden, P., Columbus, Ohio. Hame	207,519	Aug. 27	923	272	14	334
Hedges, S., Wheeling, W. Va. Curtain-fixture	207,520	Aug. 27	924	272	14	334
Hefton, A. W. (See Kersey, J. H., assignor.)						
Heilbrun, A., assignor of one-half interest to H. Closterman, Jr., Cincinnati, Ohio. Permutation-lock	207,354	Aug. 27	749	224	14	313
Hill, A. P. (See Driver, Luna, Sanders, and Hill.)						
Hill, D. C., Red Wing, Minn. Butter-package	207,417	Aug. 27	815	241	14	321
Hoag, A. J., Battle Creek, Mich. Grain thrasher and separator	207,418	Aug. 27	815	241	14	321
Hodges, J. W., Flushing, N. Y. Gas-generator	207,521	Aug. 27	925	272	14	334
Hoffman, P., Hoboken, N. J. Lubricator	207,355	Aug. 27	750	224	14	313
Hogan Stamped Elbow Company. (See Cady, F. P., assignor.)						
Holmes, W. (See Crandall, H. B., assignor.)						
Homan, W. C., assignor to Meriden Britannia Company, West Meriden, Conn. Covered dish	207,522	Aug. 27	928	272	14	335
Horn, W., Jr., C. Schaefer, and F. J. Wehrle, Keokuk, Iowa. Refrigerator	207,356	Aug. 27	752	224	14	313
Humphreys, S. E., Leavenworth, Kans. Measuring-can	207,523	Aug. 27	929	273	14	335
Hunt, D. F., Burlington, Vt. Fire-escape	207,419	Aug. 27	817	241	14	321
Hunt, D. W., Oskaloosa, Iowa. Manufacture of illuminating-gas	207,420	Aug. 27	817	242	14	321
Huntoon, R. K., Wakefield, assignor to Allen Governor Company, Boston, Mass. Gas-exhaust regulator	207,421	Aug. 27	818	242	14	321
Hussey, W. L., New Vienna, Ohio. Road-engine	207,524	Aug. 27	930	273	14	335
Janney, E. H., Alexandria, Va. Car-coupling draw-bar	207,525	Aug. 27	931	{273 / 274}	14	335
Johnson, J., Lowell, Mass. Apparatus for heating buildings	207,422	Aug. 27	819	242	14	321
Johnston, L., Danville, Ill. Fire-place air-heater	207,526	Aug. 27	933	274	14	335
Judd, G., Stamford, Conn. Vehicle-spring	207,423	Aug. 27	821	243	14	322
Justice, P. S. (See Beck, G., assignor.)						
Katz, W., Philadelphia, Pa. Bandelore toy	207,527	Aug. 27	934	274	14	335
Keiser, A., assignor of one-half interest to Cole Brothers, Prophetstown, Ill. Sand-band for vehicle-axles	207,424	Aug. 27	821	243	14	322
Kelly, J. F. (See Smith, H., assignor.)						
Kersey, J. H., assignor to himself and A. W. Hefton, Columbus Junction, Iowa. Mechanical movement	207,425	Aug. 27	822	243	14	322

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King, J. H., New Paris, Ohio. Animal-trap	207,528	Aug. 27	934	275	14	335
King, T. F., Geneva, N. Y. Coal and ash sifter	207,529	Aug. 27	936	275	14	335
Kirksey, J. K., Pickens county, S. C. Adjustable plow-stock	207,530	Aug. 27	937	275	14	336
Knopf, H., Brooklyn, N. Y. Suspenders	207,531	Aug. 27	938	276	14	336
Knoppenberger, J. (See McDougall, W. J., assignor.)						
Koup, A., New York, N. Y. Picture-frame	207,532	Aug. 27	939	276	14	336
Krey, G. W. H., Brooklyn, N. Y. Egg-opener	207,426	Aug. 27	823	243	14	322
Kuball, A. G., assignor of one-half interest to C. P. Dittman, Cincinnati, Ohio. Umbrella	207,357	Aug. 27	752	224	14	313
Laird, W. H., Mendon, Mich. Photographic-printing frame	207,358	Aug. 27	754	225	14	313
Lamboy, P., Schenectady, N. Y. Broom-handle	207,427	Aug. 27	823	244	14	322
Lamprecht, H., Jr., assignor to H. Lamprecht, Sr., New York, N. Y. Rocking-chair	207,359	Aug. 27	754	225	14	314
Lash, A. (See Sinclair, J. A., assignor.)						
Leathers, J. C., Piqua, Ohio. Vehicle-spring support	207,533	Aug. 27	939	276	14	336
Lester, J. S., assignor to J. M. Ellis, Atlanta, Ga. Fender	207,302	Aug. 27	756	226	14	314
Little, P. P. (See Hartley and Little.)						
Litzelle, J. C., Rockford, Ill. Medicine-case	207,360	Aug. 27	755	225	14	314
Llewellyn, L., Millwood, Va. Lubricator for vehicle-axles	207,361	Aug. 27	756	225	14	314
Locke, H. G., Waterville, N. Y. Hop-picking machine	207,534	Aug. 27	940	276	14	336
Lond, H., Boston, Mass. Sheave or pulley	207,535	Aug. 27	942	277	14	336
London, W., Superior, Nebr. Lift-pump	207,536	Aug. 27	943	277	14	336
Luna, J. T. (See Driver, Luna, Sanders, and Hill.)						
Marshall, A. A. (See Sinonds and Marshall.)						
Marshall, G. E., Turner's Falls, Mass. Treating wood to imitate Manila paper pulp	207,428	Aug. 27	824	.....	14	322
Marshall, R. W., Joliet, Ill. Wagon-jack	207,363	Aug. 27	757	226	14	314
Martin, J. C., Richmond, Great Britain. Manufacture of white lead	207,364	Aug. 27	758	.....	14	314
Mason, T., 14 Cross street, Islington, Great Britain. Machine for dressing printing-types	207,429	Aug. 27	825	244	14	322
McCanles, J. E. (See Wilson and McCanles.)						
McDougall, W. J., assignor to himself and J. Knoppenberger, Kendall Creek, Pa. Gearing	207,430	Aug. 27	826	244	14	322
McKiernan, C., Cincinnati, Ohio. Bootee	207,431	Aug. 27	827	245	14	322
McKinnon, K., Pleasant Hill, Ala. Fence	207,537	Aug. 27	944	277	14	337
Mees, C. L., and I. A. Sherman, Louisville, Ky. Electric railway-car signal	207,538	Aug. 27	945	277	14	337
Mellinger, C. K., Philadelphia, Pa., assignor of one-half interest to J. W. Anderson, Fairfield, Pa. Jump-seat for carriages	207,539	Aug. 27	947	278	14	337
Meredith, W. H., New York, N. Y. Valve for radiators	207,540	Aug. 27	948	278	14	337
Meriden Britannia Company. (See Homan, W. C., assignor.)						
Michael, A. M., assignor of one-half interest to G. H. Clark, Lapeer, Mich. Stump-extracting machine	207,541	Aug. 27	949	278	14	337
Mitchell, E. L., *et al.* (See Burrell, J., assignor.)						
Moffitt, J. A., assignor to himself and T. Gurney, Boston, Mass. Self-closing valve for barrels, &c	207,432	Aug. 27	828	245	14	322
Mook, A. E., Pembroke, N. Y. Thill-coupling	207,433	Aug. 27	828	245	14	323
Morgan, L., New York, N. Y. Dredger for salt, pepper, &c	207,434	Aug. 27	829	245	14	323
Morgan, T. R., Alliance, Ohio. Steam-hammer	207,542	Aug. 27	952	{278 / 279}	14	337
Morse, J. O., Englewood, N. J. Stop-valve	207,365	Aug. 27	758	226	14	314
Nelmeister, C. C., Chicago, Ill. Car-bumper	207,435	Aug. 27	830	246	14	323
Niedringhaus, W. F., St. Louis, Mo. Marking and ornamenting glazed ware	207,543	Aug. 27	953	.....	14	338
Norton, E., Chicago, Ill. Caddy	207,544	Aug. 27	954	279	14	338
Norton, G. B., Effingham, Ill. Weather-strip for door-sills	207,366	Aug. 27	760	226	14	314
Palmer, I. B., Lodi, Wis. Wind-engine	207,545	Aug. 27	955	279	14	338
Parker, J. J. A. (See Goodrich and Parker.)						
Parsons, S. S., F. R. Shaw, and G. N. Daniels, Chatham Centre, Ohio. Mechanical telephone	207,436	Aug. 27	831	246	14	323
Pedder, J., Beaver Falls, Pa. Machine for rolling hoes, picks, &c	207,367	Aug. 27	760	227	14	314
Pemble, R., Sr., and R., Jr., Cerro Gordo, Ill. Device for catching and holding hogs	207,437	Aug. 27	831	246	14	323
Perry, J. R., and S. R., Wilkesbarre, Pa. Reed-organ	207,438	Aug. 27	832	{246 / 247}	14	323
Perry, S. R. (See Perry, J. R. and S. R.)						
Pfluger, E. F., Akron, Ohio. Drip-basin for barrels	207,439	Aug. 27	835	247	14	323
Philbrick, J. J., Cleveland, Ohio. Fruit-box	207,440	Aug. 27	836	247	14	323
Pierpont, G. R., North Haven, Conn. Carriage-curtain fastener	207,546	Aug. 27	956	280	14	338
Pitt, A. F., Jerseyville, Ill. Toe-weight for horses	207,547	Aug. 27	957	280	14	338
Pope, J. L., Cleveland, Ohio. Tackle-block	207,548	Aug. 27	957	280	14	338
Porter, E. N., Hardwick, Vt. Picture-frame clamp	207,441	Aug. 27	837	248	14	324
Powell, E., New London, Ind. Sign	207,549	Aug. 27	958	281	14	338
Powers, B., *et al.* (See Young, F. W., assignor.)						
Powers, J., Brooklyn, N. Y. Medical compound	207,368	Aug. 27	762	.....	14	314
Prescott, E., Hampton Falls, N. H. Carriage-jack	207,442	Aug. 27	838	248	14	324
Pront, H. N., Westfield, Mass. Hoeing-machine	207,443	Aug. 27	839	248	14	324
Putnam Nail Company. (See Putnam, S. S., assignor.)						
Putnam, S. S., assignor to Putnam Nail Company, Boston, Mass. Machine for forging horseshoe-nails	207,444	Aug. 27	840	{248 / 249}	14	324
Rhodes, C. W. (See Downs, H. G., assignor.)						
Robbins, E., Cotuit, Mass. Anchor-fluke supporter and tripper	207,445	Aug. 27	845	250	14	324
Robertson, J. B., Martin, Tenn. Fence	207,550	Aug. 27	959	281	14	339
Robinson, W. M. (See Drew, W. J., assignor.)						
Rodgers, S., Los Angeles, Cal. Tubular needle for embalming	207,551	Aug. 27	959	281	14	339
Rodgers, S., Allegheny, Pa. Chill-mold	207,552	Aug. 27	960	281	14	339
Rose, G. C. (See Rose, P. and G. C.)						
Rose, P., and G. C., Norwich, Conn. Machine for separating the fibers of wood for paper-stock	207,553	Aug. 27	961	282	14	339
Rose, T. H., assignor to himself and J. W. Anthoine, Miller's Falls, Mass. Screw-cutting die-stock	207,446	Aug. 27	847	250	14	324
Sager, D., Omaha, Neb. Harvester	207,554	Aug. 27	962	282	14	339
Sanders, W. H. (See Driver, Luna, Sanders, and Hill.)						
Sargent, A. C. (See Sargent, F. G. and A. C.)						
Sargent, F. G. and A. C., Graniteville, Mass. Barring-cylinder	207,447	Aug. 27	847	250	14	324
Schaefer, C. (See Horn, Schaefer, and Wehrle.)						
Schmidt, H. (See Copman, C., assignor.)						
Schoenleben, A. W., Bitterfeld, Prussia. Flour-bolting machine	207,448	Aug. 27	848	250	14	324
Scholle, C. H., Cincinnati, Ohio. Lamp	207,369	Aug. 27	762	227	14	315
Schreurs, G. W. (See Donnel, J. W., assignor.)						
Scivalley, M. L., Winchester, Tenn. Washing-machine	207,555	Aug. 27	963	282	14	339
Sellers, B. F., Garden Prairie, Ill. Barb-winder	207,449	Aug. 27	849	251	14	325
Shaw, F. R. (See Parsons, Shaw, and Daniels.)						
Shepherd, R., New York, N. Y. Canopy for beds	207,556	Aug. 27	964	283	14	339
Sherman, I. A. (See Mees and Sherman.)						
Shinn, J. H., *et al.* (See Young, F. W., assignor.)						

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Sholes, C. L., Milwaukee, Wis., assignor to Type-Writer Company, New York, N. Y. Type-writing machine	207,557	Aug. 27	965	283	14	339
Sholes, C. L., Milwaukee, Wis., assignor to Type-Writer Company, New York, N. Y. Type-writing machine	207,558	Aug. 27	966	283	14	339
Sholes, C. L., Milwaukee, Wis., assignor to Type-Writer Company, New York, N. Y. Type-writing machine	207,559	Aug. 27	967	283, 284	14	339
Silver, S. N. (See Chandler and Silver.)	207,560	Aug. 27	970	284	14	340
Simon, G. H., Kiel, Wis. Stove-pipe drum	207,450	Aug. 27	850	251	14	325
Simonds, D. (See Simonds and Marshall.)						
Simonds, G. F. and D., and A. A. Marshall, Fitchburg, Mass. Circular saw	207,561	Aug. 27	972	285	14	340
Sinclair, J. A., Bridgeport, assignor of one-half interest to A. Lash, Martin's Ferry, Ohio. Double-acting pump	207,451	Aug. 27	851	251	14	325
Slocum, M. D., Union City, Mich. Jointer clamp	207,452	Aug. 27	851	251	14	325
Small, J., Watkins, N. Y. Machine-belting	207,562	Aug. 27	972	285	14	340
Smith & Egge Manufacturing Company. (See Egge, F., assignor.)						
Smith, H., assignor of one-half interest to J. F. Kelly, West Meriden, Conn. Metal-turning tool	207,563	Aug. 27	973	285	14	340
Smith, H. M. (See Bradbury and Barstow, assignors.)						
Smith, L. T., New Haven, Conn. Waistband	207,564	Aug. 27	974	285, 286	14	340
Smith, W. D., assigner of one-half interest to A. J. Warner, Prophetstown, Ill. Raising and lowering torpedoes	207,565	Aug. 27	975	286	14	341
Snow, T., Social Circle, Ga. Pounder washing-machine	207,453	Aug. 27	852	252	14	325
Souther, G., Boston, Mass. Car-truck	207,454	Aug. 27	853	252	14	325
Steward, A., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Sewing-machine	207,455	Aug. 27	855	252	14	326
Stout, C., assignor of one-half interest to W. P. Thompson, Liverpool, England. Barrel-head machine	207,456	Aug. 27	856	253	14	326
Strong, H. C., assignor to himself and O. F. Temple, Mauston, Wis. Saw-gummer	207,457	Aug. 27	857	253	14	326
Stumn, T., Ada, Ohio. Washing-machine	207,566	Aug. 27	976	286	14	341
Stuttaford, A., Ottawa, Ontario, Canada. Peg for stringed instruments	8,390	Aug. 27	1008	294	14	344
Summers, J. P., Tiffin, Ohio. Rock-drill for boring and drilling wells. (Reissue)	207,567	Aug. 27	977	287	14	341
Sweeney, J., New Haven, Conn. Metallic seal	207,458	Aug. 27	858	253	14	326
Taylor, E., New Providence, Iowa. Cattle-pump	207,568	Aug. 27	977	287	14	341
Taylor, J., Luzerne, N. Y. Manufacture of paper-pulp from wood	207,459	Aug. 27	860	254	14	326
Taylor, J. V., Lansingburg, N. Y. Cake-griddle	207,460	Aug. 27	860	254	14	326
Temple, O. F. (See Strong, H. C., assignor.)						
Thomas, J. J., deceased, (S. Thomas, administratrix,) Youngstown, Ohio. Lamp	207,569	Aug. 27	978	288	14	341
Thomas, S., administratrix. (See Thomas, J. J.)						
Thompson, C. H., Newburyport, Mass., assignor of one-half interest to J. P. Conkling, Saratoga Springs, N. Y. Car-roof	207,570	Aug. 27	763	227	14	315
Thompson, W. P. (See Stout, C., assignor.)	207,461	Aug. 27	861	254	14	326
Tillotson, J. K., Elmira, N. Y. Heel for boots and shoes	207,571	Aug. 27	763	228	14	315
Type Writer Company. (See Sholes, C. L., assignor.)	207,572	Aug. 27	764	228	14	315
Tyson, H. R., Minneapolis, Minn. Machine for trussing barrels	207,573	Aug. 27	765	228	14	315
Underhill, W. R., Van Wert, Ohio. Street-lamp	207,462	Aug. 27	862	254	14	326
Underhill, W. R., Van Wert, Ohio. Lamp-burner	207,572	Aug. 27	979	288	14	341
Unger, A., New York, N. Y. Ventilator	207,463	Aug. 27	863	255	14	326
Valley, J. N., Jersey City, N. J. Spring bed-bottom	207,571	Aug. 27	980	288	14	341
Van Bibber, A., Cincinnati, Ohio. Burial-safe	207,573	Aug. 27	985	289	14	342
Van Depoele, C. J., Detroit, Mich. Oscillating steam-valve	207,574	Aug. 27	986	289	14	342
Van Osdel, J. M., Chicago, Ill. Hatchway	207,574	Aug. 27	990	290	14	342
Van Osdel, J. M., Chicago, Ill. Hatchway	207,464	Aug. 27	864	255	14	326
Van Osdel, J. M., Chicago, Ill. Hatchway	207,575	Aug. 27	992	290, 291	14	343
Voss, J. H., Cincinnati, Ohio. Horse-detacher						
Walter, W., Arcadia, Wash. Ter. Broom						
Warner, A. J. (See Smith, W. D., assignor.)						
Warth, A., Stapleton, N. Y. Tailor's table						
Washburn & Moen Manufacturing Company. (See Bloomingdale, J. Y., assignor.)						
Webster, A. G., Brandon, assignor of one-half interest to J. M. Goodnough, Pittsford, Vt. Rock-channeling machine	207,574	Aug. 27	766	228	14	315
Weeden, W. N., assignor to Benedict & Burnham Manufacturing Company, Waterbury, Conn. Lamp-burner	207,576	Aug. 27	996	291	14	343
Wehrle, F. J. (See Horn, Schaefer, and Wehrle.)						
West, J. T., Allensville, Ky. Colter for grain-drills	207,577	Aug. 27	997	291	14	343
Westerbeck, F., St. Louis, Mo. Can for oils, &c	207,578	Aug. 27	998	291	14	343
Weyman, J., Pittsburg, Pa. Rowlock	207,465	Aug. 27	864	255	14	327
Wheeler & Wilson Manufactnring Company. (See Dimond, G. H., assignor.)						
Wheeler & Wilson Manufacturing Company. (See Steward, A., assignor.)						
Whitcomb, J. O., assignor to S. S. White, Philadelphia, Pa. Dental operating-chair. (Reissue)	8,389	Aug. 27	1005	293, 294	14	344
White, D. S., Tolono, Ill. Folding chair	207,466	Aug. 27	865	255	14	327
White, S. S. (See Whitcomb, J. O., assignor. (Reissue.)						
Whitman, R. E., Springfield, Mass. Combined bridle and halter	207,467	Aug. 27	866	256	14	327
Whittemore, D. (See Corthell, S. N., assignor.)						
Whyland, C. (See Hall, G. B., assignor.)						
Wilcox, G. H., Washington, D. C. Mirror attachment	207,579	Aug. 27	998	292	14	343
Wilcox Silver Plate Company. (See Babbitt, S. W., assignor.)						
Willershausen, S., New York, N. Y. Rocking-chair	207,580	Aug. 27	999	292	14	343
Williams, B. I., Lansing, Mich. Churn	207,581	Aug. 27	1000	292	14	343
Willis, H. M., Mineola, N. Y. Clevis-bolt	207,375	Aug. 27	768	229	14	315
Wilson, J. H., Russel township, Putnam county, Ind. Ditching-machine	207,376	Aug. 27	768	229	14	315
Wilson, L. E., and J. E. McCanles, Burnsville, N. C. Side-hill plow	207,468	Aug. 27	867	256	14	327
Wolf, F. W., Chicago, Ill. Hose-clamp	207,469	Aug. 27	868	256	14	327
Wolf, F. W., Chicago, Ill. Hose-coupling	207,470	Aug. 27	868	256	14	327
Wood, J. S., Brooklyn, N. Y. Vapor-burning lamp	207,471	Aug. 27	869	257	14	327
Woolley, L. G., Meudon, Mich. Electro-magnetic fire engine and alarm	207,377	Aug. 27	769	229, 230	14	315
Worth, W. E., San Francisco, Cal. Stench or basin trap valve	207,472	Aug. 27	870	257	14	327
Worthen, W. E., New York, N. Y. Waste-water detecter	207,378	Aug. 27	772	230	14	316
Wright, E. M., Washington, D. C. Cartridge	207,582	Aug. 27	1001	293	14	344
Young, F. W., assignor to himself, J. H. Shinn, R. S. Cates, and D. Powers, Union, Oreg. Grain-separator	207,583	Aug. 27	1002	293	14	344

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 27th DAY OF AUGUST, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Drawing.	Official Gazette. Volume.	Page.
Anchor-fluke supporter and tripper	E. Robbins	207,445	Aug. 27	845	250	14	324
Animal-trap	F. Egge	207,406	Aug. 27	799	237	14	319
Animal-trap	J. H. King	207,528	Aug. 27	934	275	14	335
Axles. Sand-band for vehicle	A. Keiser	207,424	Aug. 27	821	243	14	322
Bag-holder	J. L. Friedriech	207,412	Aug. 27	809	239	14	320
Bale-tie	J. Y. Bloomingdale	207,486	Aug. 27	888	261, 262	14	330
Barb-winder	B. F. Sellers	207,449	Aug. 27	849	251	14	325
Barrel-cover	W. B. Hartley and P. P. Little	207,517	Aug. 27	921	271	14	334
Barrel-head machine	C. Stout	207,455	Aug. 27	855	252	14	326
Barrel-trussing machine	H. R. Tyson	207,461	Aug. 27	861	254	14	326
Barrels. Drip-basin for	E. F. Pflenger	207,439	Aug. 27	835	247	14	323
Bed-bottom. Spring	J. N. Valley	207,402	Aug. 27	802	254	14	326
Bed-canopy	R. Shepherd	207,536	Aug. 27	964	283	14	339
Belting. Machine	J. Small	207,452	Aug. 27	851	251	14	325
Bench attachment. Work	J. M. Combs	207,504	Aug. 27	905	267	14	331
Bobbin-holder	G. H. Dimond	207,400	Aug. 27	794	236	14	318
Boot and shoe heel	J. K. Tillotson	207,370	Aug. 27	763	227	14	315
Bootee	C. McKiernan	207,431	Aug. 27	827	245	14	322
Boots and shoes. Rotary cutter for	S. N. Corthell	207,395	Aug. 27	789	234	14	318
Bottle	G. W. Clark	207,502	Aug. 27	903	266	14	331
Brake. Automatic car	W. L. Card	207,501	Aug. 27	901	266	14	331
Brick-machine	C. Chambers, Jr.	207,343	Aug. 27	736	220, 221	14	311
Bridle and halter. Combined	R. E. Whitman	207,467	Aug. 27	866	256	14	327
Broom	W. Walter	207,464	Aug. 27	864	255	14	326
Broom-handle	P. Lamboy	207,427	Aug. 27	823	244	14	322
Buckle. Harness	V. M. Beamer	207,478	Aug. 27	876	258	14	328
Burial-safe	A. Van Bibber	207,570	Aug. 27	979	288	14	341
Burring-cylinder	F. G. and A. C. Sargent	207,447	Aug. 27	847	250	14	324
Butter-package	D. C. Hill	207,417	Aug. 27	815	241	14	321
Butteris. Blacksmith's	H. B. Crandall	207,348	Aug. 27	744	222	14	312
Caddy	E. Norton	207,544	Aug. 27	954	279	14	338
Calculator	J. L. Bogue	207,487	Aug. 27	889	262	14	330
Can for oils, &c	F. Westerbeck	207,578	Aug. 27	998	291	14	343
Can. Measuring	S. H. Humphreys	207,523	Aug. 27	929	273	14	335
Car-bumper	C. C. Neimeister	207,435	Aug. 27	830	246	14	323
Car-coupling	A. E. Bradbury and V. B. Barstow	207,341	Aug. 27	734	220	14	311
Car-coupling draw-bar	E. H. Janney	207,525	Aug. 27	931	273, 274	14	335
Car-roof	C. H. Thompson	207,569	Aug. 27	978	288	14	341
Carpenter's gage-tool	E. R. and G. W. Dunlap	207,494	Aug. 27	896	264	14	330
Carriage-curtain fastener	G. R. Pierpont	207,546	Aug. 27	956	280	14	338
Carriage-jack	E. Prescott	207,442	Aug. 27	838	248	14	324
Carriage jump-seat	C. K. Mellinger	207,539	Aug. 27	947	278	14	337
Cartridge	E. M. Wright	207,582	Aug. 27	1001	293	14	344
Chain-links. Machine for bending	J. F. Busey	207,388	Aug. 27	381	232	14	317
Chair. Dental operating	J. O. Whitcomb. (Reissue)	8,389	Aug. 27	1005	293, 294	14	344
Chair. Folding	D. S. White	207,466	Aug. 27	865	255	14	327
Chair. Rocking	H. Lamprecht, Jr.	207,359	Aug. 27	754	225	14	314
Chair. Rocking	S. Willershausen	207,580	Aug. 27	999	292	14	343
Chill-mold	S. Rogers	207,552	Aug. 27	960	281	14	339
Churn	B. I. Williams	207,581	Aug. 27	1000	292	14	343
Churn-dasher	O. P. Ahlgren	207,379	Aug. 27	773	230	14	316
Clevis-bolt	H. M. Willis	207,375	Aug. 27	768	229	14	315
Coffee cleaning and polishing machine	H. Bamberger	207,383	Aug. 27	777	231	14	316
Colter	S. Hathaway	207,352	Aug. 27	748	223	14	313
Cooker. Steam	R. N. Foote	207,410	Aug. 27	806	239	14	320
Corset-exhibitor	S. B. Ferris	207,351	Aug. 27	747	223	14	313
Cultivator. Sulky	F. W. Degen	207,398	Aug. 27	791	235	14	318
Current-wheel	T. J. Bottoms	207,488	Aug. 27	891	262	14	330
Curtain-fixture	S. Hodges	207,520	Aug. 27	924	272	14	334
Detecter. Waste-water	W. E. Worthen	207,378	Aug. 27	772	230	14	316
Dish. Covered	W. C. Homan	207,522	Aug. 27	928	272	14	335
Ditching-machine	J. H. Wilson	207,376	Aug. 27	768	229	14	315

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Drain-trap	J. H. Blessing	207,482	Aug. 27	880	259, 260	14	329
Dredger for salt, pepper, &c	L. Morgan	207,434	Aug. 27	829	245	14	323
Drills. Colter for grain	T. C. Clark	207,503	Aug. 27	904	266	14	331
Egg-opener	J. T. West	207,577	Aug. 27	997	291	14	343
Embalming. Tubular needle for	G. W. H. Krey	207,426	Aug. 27	823	243	14	322
Engine and alarm. Electro-magnetic fire	S. Rodgers	207,551	Aug. 27	959	281	14	339
Engine. Hydraulic	L. G. Woolley	207,377	Aug. 27	760	229, 230	14	315
Engine. Road	L. S. Chandler and S. N. Silver	207,391	Aug. 27	784	233	14	317
Engine. Wind	W. L. Hussey	207,524	Aug. 27	930	273	14	335
Feed-cutter	I. H. Palmer	207,545	Aug. 27	955	279	14	338
Feed-water heater and filter	L. Becker	207,479	Aug. 27	877	258	14	328
Fence	W. J. Austin	207,337	Aug. 27	729	219	14	311
Fence	P. Haydon	207,518	Aug. 27	922	271	14	334
Fence	K. McKinnon	207,537	Aug. 27	944	277	14	337
Fence	J. B. Robertson	207,550	Aug. 27	959	281	14	339
Fender	J. S. Lester	207,362	Aug. 27	756	226	14	314
File. Bill and paper	H. Baldwin	207,477	Aug. 27	875	258	14	328
Filter. Liquid	C. T. Haas	207,515	Aug. 27	920	270	14	333
Fire-alarm. Thermostatic and electrical	J. O. Fowler, Jr.	207,510	Aug. 27	916	269	14	333
Fire-arm. Magazine	G. F. Evans	207,350	Aug. 27	746	223	14	313
Fire-escape	D. F. Hunt	207,419	Aug. 27	817	241	14	321
Flour-bolting machine	A. W. Schoenleben	207,448	Aug. 27	848	250	14	324
Fork. Manure	B. F. Barr	207,338	Aug. 27	730	219	14	311
Fruit-box	G. O. Cole	207,347	Aug. 27	743	222	14	312
Fruit-box	J. J. Philbrick	207,440	Aug. 27	836	247	14	323
Game-counter	J. H. Dasey	207,396	Aug. 27	790	235	14	318
Gas-exhaust regulator	R. K. Huntoon	207,421	Aug. 27	818	242	14	321
Gas-generator	J. W. Hodges	207,521	Aug. 27	925	272	14	334
Gas. Manufacture of illuminating	D. W. Hunt	207,420	Aug. 27	817	242	14	321
Gas. Process and apparatus for manufacturing water	W. A. Goodyear	207,413	Aug. 27	809	240	14	320
Gas-tubing. Flexible	W. Bourguignon	207,489	Aug. 27	891	262	14	330
Gearing	W. J. McDougall	207,430	Aug. 27	826	244	14	322
Glazed ware. Marking and ornamenting	W. F. Niedringhaus	207,543	Aug. 27	953	.....	14	338
Gong-pull. Pneumatic	H. V. Aiken	207,380	Aug. 27	774	230	14	316
Grain-separator	A. J. Hartwell	207,416	Aug. 27	813	240, 241	14	321
Grain-separator	F. W. Young	207,583	Aug. 27	1002	293	14	344
Grating	T. F. Baker	207,476	Aug. 27	874	258	14	328
Griddle. Cake	J. V. Taylor	207,459	Aug. 27	860	254	14	326
Hame	P. Hayden	207,519	Aug. 27	923	272	14	334
Hammer. Steam	T. R. Morgan	207,542	Aug. 27	950	278, 279	14	337
Harvester	D. Sager	207,554	Aug. 27	962	282	14	339
Hat. Folding	J. A. Harrington	207,353	Aug. 27	749	223	14	313
Hatchway	J. M. Van Osdel	207,571	Aug. 27	980	288	14	341
Hatchway	J. M. Van Osdel	207,572	Aug. 27	985	289	14	342
Hatchway	J. M. Van Osdel	207,573	Aug. 27	988	289	14	342
Heater. Fire-place air	L. Johnston	207,526	Aug. 27	933	274	14	335
Heating buildings. Apparatus for	J. Johnson	207,422	Aug. 27	819	242	14	321
Heel-scouring machine	S. N. Corthell	207,390	Aug. 27	783	233	14	317
Hinge for sleeping-car berths. Locking	G. L. Carlton and G. H. Crager	207,443	Aug. 27	839	248	14	324
Hoeing-machine	H. N. Prout	207,437	Aug. 27	831	246	14	323
Hog catching and holding device	R., Sr., and R. Pemble, Jr.	207,474	Aug. 27	873	.....	14	328
Hog-cholera compound	E. Anderson	207,345	Aug. 27	742	.....	14	312
Hog-cholera compound	W. Cline, Jr.	207,534	Aug. 27	940	276	14	336
Hop-picking machine	H. G. Locke	207,397	Aug. 27	790	235	14	318
Horse-checking device	J. Davies	207,574	Aug. 27	990	290	14	342
Horse-detacher	J. H. Voss	207,512	Aug. 27	917	270	14	333
Horse-power	E. Golnecke	207,547	Aug. 27	957	280	14	338
Horses. Toe-weight for	A. F. Pitt	207,444	Aug. 27	840	248, 249	14	324
Horseshoe-nails. Machine for forging	S. S. Putnam	207,469	Aug. 27	868	256	14	327
Hose-clamp	F. W. Wolf	204,470	Aug. 27	868	256	14	327
Hose-coupling	F. W. Wolf	207,342	Aug. 27	735	220	14	311
Joint-flanges. Machine for forming	F. P. Cady	207,451	Aug. 27	851	251	14	325
Jointer-clamp	M. D. Slocum	207,514	Aug. 27	919	270	14	333
Knife-cleaning apparatus	L. Grex	207,369	Aug. 27	762	227	14	315
Lamp	C. H. Scholle	207,460	Aug. 27	860	254	14	326
Lamp	J. J. Thomas	207,372	Aug. 27	764	228	14	315
Lamp-burner	W. R. Underhill	207,576	Aug. 27	996	291	14	343
Lamp-burner	W. N. Weeden	207,371	Aug. 27	763	228	14	315
Lamp. Street	W. R. Underhill	207,471	Aug. 27	869	257	14	327
Lamp. Vapor-burning	J. S. Wood	207,516	Aug. 27	921	271	14	334
Lantern	C. T. Haas	207,364	Aug. 27	758	.....	14	314
Lead. Manufacture of white	J. C. Martin	207,508	Aug. 27	907	268	14	332
Leather-stretching machine	H. N. Dodge	207,354	Aug. 27	749	224	14	313
Lock. Permutation	A. Heilbrun	207,355	Aug. 27	750	224	14	313
Lubricator	P. Hoffman	207,493	Aug. 27	895	263	14	330
Lubricator. Vehicle-axle	W. J. Drew	207,361	Aug. 27	756	225	14	314
Lubricator. Vehicle-axle	L. Llewellyn	207,495	Aug. 27	897	264	14	330
Malt-plow	C. Fox	207,425	Aug. 27	822	243	14	322
Mechanical movement	J. H. Kersey	207,368	Aug. 27	762	.....	14	314
Medical compound	J. Powers	207,360	Aug. 27	755	225	14	314
Medicine-case	J. C. Litzelle	207,401	Aug. 27	794	236	14	319
Millstone-driver	J. W. Donnel	207,579	Aug. 27	998	292	14	343
Mirror attachment	G. H. Wilcox	207,403	Aug. 27	796	237	14	319
Motor	J. F. Driver, J. T. Luna, W. H Sanders, and A. P. Hill.	207,386	Aug. 27	779	232	14	317
Nut-lock	E. Bourne	207,491	Aug. 27	893	263	14	330
Oil-cloth. Apparatus for the manufacture of	A. F. Buchanan	207,438	Aug. 27	832	246, 247	14	323
Organ. Reed	J. R. and S. R. Perry	207,496	Aug. 27	897	264	14	330
Ozone. Apparatus for producing	J. Buchanan	207,407	Aug. 27	801	238	14	319
Padlock	F. Egge	207,411	Aug. 27	807	239	14	320
Paper cutting and winding machine	I. Frank	207,568	Aug. 27	977	287	14	341
Paper-pulp from wood. Manufacture of	J. Taylor						

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Paper-pulp. Treating wood to imitate Manila	G. E. Marshall	207,428	Aug. 27	824	.....	14	322
Paper-stock. Machine for separating the fibers of wood for	P. and G. C. Rose	207,553	Aug. 27	961	282	14	339
Pea-nut roaster	G. B. Hall	207,414	Aug. 27	812	240	14	320
Pen. Fountain	D. L. Dieckman and F. Burgau	207,399	Aug. 27	793	236	14	318
Pencil-sharpener	H. G. Downs	207,402	Aug. 27	795	236	14	319
Photographic-printing frame	W. H. Laird	207,358	Aug. 27	754	225	14	313
Picture-frame	A. Komp	207,532	Aug. 27	939	276	14	336
Picture-frame clamp	E. N. Porter	207,441	Aug. 27	837	248	14	324
Planter. Seed	W. T. Easterday	207,404	Aug. 27	797	237	14	319
Plow-beam	F. E. Bump and J. W. Gear	207,497	Aug. 27	898	264	14	331
Plow. Side-hill	L. E. Wilson and J. E. McCanles	207,468	Aug. 27	867	256	14	327
Plow-stock. Adjustable	J. K. Kirksey	207,530	Aug. 27	937	275	14	336
Pump. Cattle	E. Taylor	207,458	Aug. 27	858	253	14	326
Pump. Double-acting	J. A. Sinclair	207,561	Aug. 27	972	285	14	340
Pump. Lift	W. London	207,536	Aug. 27	943	277	14	336
Pump-regulating valve	J. H. Blessing	207,483	Aug. 27	881	260	14	329
Pump-regulating valve	J. H. Blessing	207,485	Aug. 27	886	261	14	329
Printing machine. Block	A. F. Buchanan	207,490	Aug. 27	892	263	14	330
Printing-press	J. Burrell	207,499	Aug. 27	900	265	14	331
Radiator-valve	W. H. Meredith	207,540	Aug. 27	948	278	14	337
Railway-car signal. Electric	C. L. Mees and I. A. Sherman	207,538	Aug. 27	945	277	14	337
Rake. Horse hay	W. P. and C. E. Clark	207,382	Aug. 27	785	233, 234	14	317
Refrigerator	W. Horn, Jr., C. Schafer, and F. J. Wehrle.	207,356	Aug. 27	752	224	14	313
Refrigerators. Ice-grate for	J. M. Ayer	207,382	Aug. 27	775	231	14	316
Rock-channeling machine	A. G. Webster	207,374	Aug. 27	766	228	14	315
Rolling hoes, picks, &c. Machine for	J. Pedder	207,367	Aug. 27	760	227	14	314
Rowlock	J. Weyman	207,465	Aug. 27	864	255	14	327
Saw. Circular	G. F. and D. Simonds and A. A. Marshall.	207,450	Aug. 27	850	251	14	325
Saw-gummer	H. C. Strong	207,456	Aug. 27	856	253	14	326
Scissors-sharpener	W. H. Barwick	207,339	Aug. 27	731	219	14	311
Screw-cutting die-stock	T. H. Rose	207,446	Aug. 27	846	250	14	324
Scythe-fastening	A. W. Flanders	207,409	Aug. 27	805	238	14	320
Seal. Metallic	J. Sweeney	207,567	Aug. 27	977	287	14	341
Sewing-machine	A. Steward	207,454	Aug. 27	853	252	14	325
Sewing-machine. Boot and shoe	L. R. Blake	207,340	Aug. 27	731	219	14	311
Sheave or pulley	H. Lond	207,535	Aug. 27	942	277	14	336
Sifter. Coal and ash	T. F. King	207,529	Aug. 27	936	275	14	335
Sign	E. Powell	207,549	Aug. 27	958	281	14	339
Sink. Set-back	C. Copman	207,393	Aug. 27	787	234	14	318
Sled	W. Chegwin	207,344	Aug. 27	741	221	14	312
Spring support. Vehicle	J. C. Leathers	207,533	Aug. 27	939	276	14	336
Spring. Vehicle	B. F. Fuller	207,511	Aug. 27	917	269	14	333
Spring. Vehicle	G. Judd	207,423	Aug. 27	821	243	14	322
Sprinkler. External window, door, and shutter	J. Bennison	207,385	Aug. 27	778	232	14	317
Steam or gases under pressure. Nozzle for the escape of	G. Beck	207,384	Aug. 27	777	231	14	316
Steam-trap	J. H. Blessing	207,484	Aug. 27	883	260, 261	14	329
Stench or basin trap-valve	W. E. Worth	207,472	Aug. 27	870	257	14	327
Stench-trap	B. J. Downey	207,492	Aug. 27	894	263	14	330
Stove-pipe drum	G. H. Simon	207,560	Aug. 27	970	284	14	340
Stringed instruments. Peg for	A. Stuttaford	207,566	Aug. 27	976	286	14	341
Stump-extracting machine	A. M. Michael	207,541	Aug. 27	949	278	14	337
Stump-extractor	A. J. Alley	207,381	Aug. 27	775	231	14	316
Suspenders	H. Knopf	207,531	Aug. 27	938	276	14	336
Switch-chair	J. C. Eggleston	207,408	Aug. 27	804	238	14	320
Table. Tailor's	A. Warth	207,575	Aug. 27	992	290, 291	14	343
Tackle-block	J. L. Pope	207,548	Aug. 27	957	280	14	338
Target thrower. Ball	A. A. Call	207,389	Aug. 27	382	233	14	317
Telegraph. Fire, burglar, and district alarm	J. O. Fowler, Jr.	207,509	Aug. 27	909	268, 269	14	332
Telephone. Mechanical	S. S. Parsons, F. R. Shaw, and G. N. Daniels.	207,436	Aug. 27	831	246	14	323
Thill and harness. Combined	R. B. Boynton	207,387	Aug. 27	380	232	14	317
Thill-coupling	J. T. Harda	207,415	Aug. 27	812	240	14	321
Thill-coupling	A. E. Mook	207,433	Aug. 27	828	245	14	323
Thimble-skein	A. M. Disbrow	207,507	Aug. 27	907	267	14	332
Thrasher and separator. Grain	A. J. Hoag	207,418	Aug. 27	815	241	14	321
Tobacco-cutter	A. S. Bunker	207,498	Aug. 27	899	265	14	331
Tool. Combined	P. Campbell	207,500	Aug. 27	901	265	14	331
Torpedoes. Raising and lowering	W. D. Smith	207,564	Aug. 27	974	285, 286	14	340
Toy	W. S. Clow	207,346	Aug. 27	743	221	14	312
Toy. Bandeloro	W. Katz	207,527	Aug. 27	934	274	14	335
Trace-carrier	R. R. Goodrich and J. J. A. Parker	207,513	Aug. 27	918	270	14	333
Track-clearer	A. Day. (Reissue)	8,388	Aug. 27	1003	293	14	344
Truck. Car	J. Belou	207,480	Aug. 27	878	259	14	328
Truck. Car	G. Souther	207,453	Aug. 27	852	252	14	325
Truck. Hand	W. B. Allen	207,473	Aug. 27	872	257	14	328
Turning tool. Metal	H. Smith	202,562	Aug. 27	972	285	14	340
Type-writing machine	C. L. Sholes	207,557	Aug. 27	965	283	14	339
Type-writing machine	C. L. Sholes	207,558	Aug. 27	966	283	14	339
Type-writing machine	C. L. Sholes	207,559	Aug. 27	967	283, 284	14	339
Types. Machine for dressing printing	T. Mason	207,429	Aug. 27	825	244	14	322
Umbrella	A. G. Kuball	207,357	Aug. 27	752	224	14	313
Valve. Air	J. H. Blessing	207,481	Aug. 27	478	259	14	328
Valve for barrels, &c. Self-closing	J. A. Moffitt	207,432	Aug. 27	828	245	14	322
Valve. Oscillating steam	C. J. Van Depoele	207,463	Aug. 27	863	255	14	326
Valve. Stop	J. O. Morse	207,365	Aug. 27	758	226	14	314
Ventilator	A. Unger	207,373	Aug. 27	765	228	14	315
Vessels. Construction of	B. F. Delano	207,505	Aug. 27	905	267	14	332

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Vise	T. E. Dutton	207,349	Aug. 27	745	122	14	312
Wagon-jack	R. W. Marshall	207,363	Aug. 27	757	126	14	314
Waistband	L. T. Smith	207,563	Aug. 27	973	285	14	340
Walter	S. W. Babbitt	207,475	Aug. 27	874	257	14	328
Washing-machine	M. L. Scivalley	207,555	Aug. 27	963	282	14	339
Washing-machine	T. Stumm	207,457	Aug. 27	857	253	14	326
Washing-machine	T. Snow	207,565	Aug. 27	975	286	14	341
Washing-machine. Rounder	G. B. Norton	207,366	Aug. 27	760	226	14	314
Weather-strip for door-sills	A. and A. I. Dingley	207,506	Aug. 27	906	267	14	332
Wells. Machine for drilling and pumping oil	J. P. Summers	8,800	Aug. 27	1008	294	14	344
Wells. Rock-drill for boring and drilling	L. Eberhart	207,405	Aug. 27	798	237	14	319
Wire-barbing instrument							

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COMMISSIONER'S DECISIONS.

DAVIS vs. SCHARFFE.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of Job A. Davis, filed July 1, 1873, for the reissue of Letters Patent No. 93,063, granted July 27, 1869, and reissued Letters Patent No. 4,923, granted Carl Scharfe, May 28, 1872, for* "IMPROVEMENT IN RUFFLING ATTACHMENT FOR SEWING-MACHINES."—*Decided April 3, 1878.*]

Since the reissue applicant had been an applicant for original patent at the same time with the contesting patentee, the latter is without benefit in relation to the character of the proof offered, contrary to the Office rule which ordinarily prevails when an applicant is in interference with a prior patent.

Questions as to patentability of issue, non-interference, and alleged new matter in the claims of the reissue applicant, raised for the first time at final hearing, and then without special motion respecting them, are regarded with little favor.

SPEAR, *Commissioner:*

The application of Davis upon which original letters patent were granted July 27, 1869, and which it is now sought to reissue, was filed in the Patent Office October 29, 1868. The corresponding application of Scharffe was filed August 21, 1868, Letters Patent No. 89,085 being granted thereon April 20, 1869, which are the original of his present reissue patent No. 4,923.

From an examination of the record dates it will be seen that both parties to the interference were before the Office in the capacity of applicants for letters patent embodying the invention of the present controversy at the same time. The accidental advantage of a few months in priority of date of Scharffe's original patent over that of Davis will not be permitted to work a hardship to the latter, or make it necessary for him to establish the perfection and completion of the invention before his adversary, Scharffe. Ordinarily a person seeking to overthrow a patent would be required to establish such a state of facts, but since this would not have been exacted had the present interference been instituted, as was quite possible, while both original applications were pending, there does not seem to be any good reason for establishing a more stringent rule between the parties at any subsequent stage. Authorities cited by counsel for Scharffe as to the insufficiency of an experimental or incomplete reduction to practice of an invention in overthrowing the patent of a subsequent inventor are, therefore, not in point, and the question reduces itself to the simple one of priority of conception and diligence in perfecting the invention and applying for letters patent.

The subject-matter in interference may be stated in a general way to be a ruffling attachment for sewing-machines consisting of a base-plate, a reciprocating gathering-blade, and an elbow or bell-crank lever, all arranged in combination, suitable means being provided for regulating the thrust of the gathering-blade and for insuring its effective reciprocation.

The claims in the reissue application of Davis seem to be needlessly multiplied and the actual invention refined upon, which has correspondingly lengthened the statement of issue; but there is little difficulty in understanding the scope of the contest, nor is it believed that the invention is any different from what has already been indicated. That there is an actual interference between the claims of the applicant, Davis, and the device shown in the patent of Scharffe cannot be very seriously questioned, nor am I disposed to inquire very closely into the matter, since the action of the Primary Examiner in holding that the claims of Davis were within the invention covered by his original letters patent, and that such claims interfered with the patent of Scharffe, unexcepted to in any regular way by Scharffe or his counsel, must be held *prima facie* conclusive, and to relieve me from a consideration of these objections.

Referring now to the testimony, it appears on behalf of Scharffe that his first successful embodiment of the invention was some time during the summer of 1868, and that its conception cannot be satisfactorily traced back farther than the winter previous, 1867. What he did before coming to this country, aside from being inadmissible, does not show that the plan or organization of a ruffler he had in mind at that time was anything like in principle or mode of operation the one

which was finally reduced to practice, and which constitutes the subject of the present controversy.

Davis establishes by very satisfactory evidence that he completed and practically used a ruffling attachment, having substantially the same elements as the present invention and co-operating in substantially the same way, in the year 1865. This complete embodiment antedates Scharffe's earliest efforts some two or three years, and since the time intervening between such reduction and the filing of the application for patent by Davis, in 1868, was used by him with due diligence and advantage in experimenting and perfecting the minor details of construction, no charge of laches can be made against him; and, being the first to conceive and the first to reduce the invention to practice, priority of invention must be awarded in his favor.

The decision of the Board of Examiners-in-Chief is affirmed.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of New York.

GOODYEAR DENTAL VULCANITE COMPANY AND JOSIAH BACON *vs.* ADOLPHE P. PRETERRE.

[*In Equity.—October term*, 1877.]

To repair a dental plate made according to the Cummings patent (Reissue No. 1,904) by the substitution of a new for an old portion, with teeth embedded, is an infringement of the patent.

Such repairs, which in fact practice the entire invention, (the patent not being confined to any size or shape of plate) distinguished from those cases wherein defective machine parts are corrected or changed without damage.

So, too, it is an infringement of the patent if the teeth be embedded in rubber according to its terms, although the remaining portion of the base-plate be made entirely of gold.

Celluloid and rose pearl held to be the substantial equivalent of the hard rubber or vulcanite in all essentials necessary to the successful practice of the invention, and their use a violation of the rights under the Cummings patent.

The facts established by the evidence in relation to such equivalency being different from those appearing in *Goodyear Dental Company* vs. *Davis et al.*, (12 OFFICIAL GAZETTE, 561,) that case not deemed to be in point, although it declared the non-equivalent character of celluloid.

WHEELER, *J.*:

This bill is brought for relief against alleged infringements of reissued patent No. 1,904, originally issued to one John A. Cummings, and now owned by the orators, for an "improvement in artificial gums and palates."

The cause has been heard upon the bill, answer, replication, proofs, and argument of counsel. The validity of the patent has been settled as against another party in *Goodyear Dental Vulcanite Company* vs. *Smith*, (93 U. S. Sup. Court Rep., 486,) and on this argument it is not denied by the defendant's counsel but that it is valid here.

It appears that the defendant operated under a license from the patentees up to January 1, 1871. The only questions made are as to whether he is shown to have infringed since that date. It is claimed by the orators that he is shown to have done so, by making hard-rubber plates of teeth of the materials and according to the mode described in the patent; by replacing parts of such plates of teeth in like manner; by making such plates mounted upon gold plates, and by making plates according to that mode of celluloid and rose pearl. The defendant denies making any new sets of hard rubber, and claims that the other matters charged are not infringements.

I. Upon the evidence it sufficiently appears that he has made a few plates of hard rubber within the time in dispute, but not many—perhaps four, five, or six. The exact number must be settled by the master. All the testimony may be true, if he has; if he has not, some of it must be corruptly false. His conduct about directing the employés to call the material composition, when it is not known by that name, and in not appearing to testify himself in explanation, is more consistent with a use by him of the material known to be unlawful than the contrary. On the whole, this finding, after placing the burden of proof of infringement upon the orators, is the most satisfactory.

II. The patent seems to be for a plate or set of teeth formed in a particularly specified mode of material having certain qualities. The extent of the plate in the mouth of the wearer, either as to surface of the mouth covered or the number of teeth in the plate, is not made important. It covers one tooth, with plate sufficient for it, or more teeth with plate enough for them, according to the requirements of each particular case. It is for so much plate as is needed to hold as many teeth as are wanted. If any plate, formed and holding any teeth according to the patent, is made, the patent is infringed. The defendant's witness Fish, at cross-questions 62 and 63, describes the mode of making the repairs complained of. By his description, which is not disputed or varied, it appears that a part of the plate to be repaired is cut away and replaced by new holding teeth embedded in it, made exactly as the patented plate is. So much of the plate as is formed in that way is an infringement. It is said that the presumption is that the wearer of the plate has a right to have it repaired, and that it is no infringement to repair it. But, whether that is so or not, this replacing is not strictly a repair, like replacing a part of a machine, expected to be worn out and intended to be replaced, in the same machine. It is a new manufacture of itself, of the kind patented, embracing in itself all parts of the patented combination. The part added includes the patented product as much as if it were used alone to the same extent, and as much as the part added to would if unauthorized. It would be as correct to say that a new plate is made out of the old and new materials as to say that the old plate is repaired with the new materials. More new may be added than remains of the old, or less; the proportion is not important. To the extent of the new, when new plate holding teeth is made, it is new manufacture, covered by the patent, and an infringement.

III. The object of the invention seems to be to fit and attach artificial teeth to the mouth. The defendant's gold plate, mounted with the rubber one holding teeth, is for the same purpose. It appears from the unqualified testimony of the defendant's witness, Fish, at folio 402, as well as from the appearance of the exhibit, that, so far as the rubber plate and the teeth are concerned, it is made precisely as rubber plates not to be so used in mounting gold plates are—that is, exactly according to the patent, except that the rubber may not be made to extend so far into the mouth as it would be if there was to be no gold plate. But, as before mentioned, the extent of the plate is not material to the patent. It is the plate formed and holding teeth in the prescribed manner that is its distinctive feature, extending so far as necessary in each particular case. With the gold plate is the same rubber plate, formed and holding teeth in the same prescribed manner, extending so far as is necessary under those circumstances. The rubber plate is used to attach the teeth to the mouth and hold them in place, by being attached to the gold plate which goes between it and the month, instead of touching the surface of the mouth itself. It attaches the teeth to the mouth in the same manner, although not so directly, as without the gold. The patented product is used for the purposes of the patent so far as it is used at all. In that use the defendant employs the whole of the patented invention by taking it to add his gold plate to. He may have improved it, or may not, by that addition. But, whether he has or not, when he so uses it he infringes the orators' rights.

IV. The defendant is shown to use celluloid and rose pearl in the manner described by the witness in making dental plates. He relies largely upon the decision in *Goodyear Dental Vulcanite Company* vs. *Davis*, and sixty-seven other like cases, by the late learned circuit judge, Shepley, in the district of Massachusetts, in support of the position that the use shown in this case is not an infringement. If that case was exactly like this, it should and would have great and controlling weight in the decision of this, both on account of

the eminent learning and ability of the court making the decision, and because the same rule ought to prevail throughout the country in respect to the infringements of the same patent by the same means, as well as upon other questions in respect to other subjects, as was so well expressed by the late learned circuit judge, Emmons, in *Goodyear Dental Vulcanite Company* vs. *Hillis*, (7 PATENT OFFICE GAZETTE, 44.)

But this case, upon the evidence here, is not like those before Judge Shepley, as the facts are stated in his opinion to have appeared there. The patent may well be considered to be established as valid everywhere, but whether parties have infringed it in particular cases must depend upon the proof in each case. The owners of the patent may be able to prove infringement in one case and not in others, but proving it infringed in one case will not show that all others charged to be infringers are so, nor will failure show that none others charged are so. It is only when the facts of the cases are alike that one ought to control another.

In those cases the question was whether the patent for a plate of teeth made of rubber, compounded with sulphur and subjected to heat to harden it, would be infringed by plates of teeth made of celluloid, shown to be "a new material discovered and patented since the date of Cummings's invention," in the manipulation of which "the process of making a set of teeth composed of the plate, the teeth, and gums is an entirely different process from that described in the Cummings patent, when compared with that part of the Cummings process which was new in the state of the art, and the novelty of which part gave to the Cummings process, when considered as a whole, the ingredient of novelty and patentability." When it was "not placed in the mold in a soft, plastic condition, a little at a time pressed in with the finger or in any other convenient way, but in a hard, rigid condition, like horn or bone or ivory," and "then subjected to heat, not to vulcanize or harden, but to soften it." And which, "afterward, on being cooled or restored to its original temperature returns to its original condition as a hard substance as when first placed in the mold," from which it appeared "evident to the court that the use of" the celluloid in the manufacture of sets of artificial teeth, as practiced by those defendants, and the manufacture itself, differed "as much, both as to process and product, from the process and product described and claimed in the Cummings patent as that process and that product differed from the previous manufacture which existed before the Cummings invention, and were successfully relied upon as anticipating it." In this case it appears from the evidence that the celluloid and rose pearl in use by the defendant, whether actually the same as that material in that case or not, were well known at the date of that invention, (folio 392,) and from the testimony of defendant's witness, Fish, that in use it is softened in boiling water and made plastic before it is put into the molds, (folio 313,) and from the defendant's witness, Parmelee, that vulcanized rubber is soft when hot and becomes hard by cooling, (folios 389, 390,) and also from the witness Fish that the means employed for fastening the teeth to the plate are the same in respect to each substance, and that when the celluloid plate is completed its structure is precisely the same as that of a vulcanite dental plate, except that the base of one is made of celluloid and the other of vulcanite, and that they are so much alike that any one might mistake one for the other, and patients seldom notice the difference, (folios 308, 309.)

It is obvious from this statement that this case, upon its facts, is radically different from those, and should not be controlled by the decision there further than the same principles are applicable to both. That decision does not seem to proceed exactly upon the ground that there could be no equivalent for vulcanite, but rather upon the ground that what was claimed to be an equivalent was not, in fact, so.

The invention seems to be of a combination in a dental plate of the plate proper, holding the teeth embedded into it and made fast in the mode described, with the teeth themselves. The material of the plate is of chemical formation, but the operation of the plate when formed is mechanical. The teeth are the main object. The plate is for the purpose of holding them in the right position in respect to the mouth. It is held in place itself principally by atmospheric pressure, and holds the teeth in place by its mechanical strength. The rubber plate is very useful for this purpose on account of its lightness, slightly yielding rigidity, and capability of the material for being fitted into the molds when soft and becoming hard in exactly the shape of the molds without shrinking. The celluloid shown here appears to have the same qualities and capability in these respects. The mode of taking the impression of the mouth and making molds for the plate and teeth of plaster by using wax, was old. Rubber, the mode of vulcanizing it, and vulcanite itself, were old. Molding vulcanite into shapes wanted was old. Cummings invented combining it when hot and plastic with artificial teeth, by molding it about them in their proper position, so that the whole would be in the required shape and relative position in one solid piece, when the rubber should become hard. Celluloid was old. The defendant, with molds made by the same method as Cummings's, combines that with artificial teeth by molding it about them when hot and plastic, so that the whole will be in one piece in the required shape with the teeth in their proper position when it becomes hard. And when the products of these processes are done they are so near alike that persons using them do not distinguish one from the other. The celluloid is for this purpose clearly the mechanical equivalent of the vulcanite. Chemically they are in some respects different, but in all that are of any importance, for the purposes they are here wanted for, they are the same. They burn differently, but they are not wanted for burning. They come to the plastic state in which they can be put into the molds by chemical and widely-different processes. The process by which they are converted from masses in that state into finished dental plates so inheres in the product that it is said to give distinctive character to it. That process begins with the molding. The point is not whether the substances were ever equivalents for these or any other purposes before, but whether they are equivalents for this purpose then, and it seems that they are.

It is said by Mr. Justice Clifford in *Gould* vs. *Rees*, 15 Wall., 194, and 22 Wall., 15, in *Gill* vs. *Wells*, that inventors of a combination are as much entitled to equivalents as the inventors of other patentable improvements, if the equivalents were known to be such at the date of the patent. Judge Shepley in *Goodyear Dental Vulcanite Company* vs. *Davis*, before mentioned, either intentionally or inadvertently, said in respect to the same thing, the date of the invention. Some question has been made about which date controls, if either does absolutely. Perhaps it is the date of the patent, because the patent is a grant, and as such must speak from its date. But whichever date should control, or whether either should, is not material in this case, for the evidence is full that celluloid and rose pearl, with their molding and other qualities useful to this manufacture, were well known at both dates.

Under the reasoning of the court in *Goodyear Dental Vulcanite Company* vs. *Smith*, (93 U. S., 486,) in which the validity of the patent was held, if Hawes there mentioned had been shown to have used celluloid or rose pearl as the defendant now uses them, instead of tin, as he was shown to have used that in making dental plates, the patent could not have been maintained. He would have been entitled to the patent instead of Cummings. Celluloid itself may be patentable and patented, but the use of it in this manner in the formation of dental plates could not be in the light of Cummings's invention. And whether the invention of this use of them would be patentable in view of the other patent is one accurate test of whether it is an infringement of that patent. (Curtis on Patents, §§ 321, 332, 333; *Walton* vs. *Potter*, 4 Scott, N. S. 91.)

Let a decree be entered for an injunction and an account in respect to these infringements, with costs, according to the prayer of the bill.

TRADE-MARKS.

[Each certificate bearing date September 3, 1878.]

6,525.—COLOGNE-WATER.—*William J. Austen*, Oswego, N. Y. Application filed August 22, 1878.

"The word-symbol 'FOREST FLOWER.'"

6,526.—LAMP-BURNERS.—*Bridgeport Brass Company*, Bridgeport, Conn. Application filed August 14, 1878.

"The arbitrarily-selected word 'LEADER.'"

6,527.—WOOLEN AND WORSTED YARNS.—*Rudolph Blankenburg*, Philadelphia, Pa. Application filed March 18, 1878.

"The fanciful title 'GOLDEN FLEECE.'"

6,528.—CIGARS AND CIGARETTES.—*A. Lichtenstein & Brother*, New York, N. Y. Application filed August 22, 1878.

"The arbitrarily-selected words 'AMERICAN SPORTS.'"

6,529.—CIGARS.—*S. Lowenthal & Co.*, Cincinnati, Ohio. Application filed August 13, 1878.

"The word-symbol 'DAUNTLESS' and the representation of a youth in armor."

6,530.—SMOKING-TOBACCO.—*Charles R. Messinger*, Toledo, Ohio. Application filed August 21, 1878.

"The letters or arbitrary symbol 'F. S.'"

6,531.—MEDICINAL PREPARATIONS.—*Victor E. Mauger*, New York, N. Y. Application filed August 7, 1878.

"The arbitrarily-selected word 'CHINKALYPTUS.'"

6,532.—CARRIAGE AND SADDLERY HARDWARE AND TRIMMINGS.—*O. B. North & Co.*, New Haven, Conn. Application filed July 1, 1878.

"The representation of a lion."

6,533.—SMOKING AND CHEWING TOBACCO, CIGARS, AND CIGARETTES.—*Simmons & Staiger*, Leavenworth, Kans. Application filed August 8, 1878.

"The word-symbol 'EL PRINCE' and a pictorial representation of a prince's crown with three plumes, upheld by cupids."

6,534.—PILLS OR TROCHES.—*Henry A. Tilden*, New Lebanon, N. Y. Application filed August 10, 1878.

"The fanciful or arbitrarily-selected word 'CONVEXULES.'"

6,535.—METALLIC ALLOY FOR THE MANUFACTURE OF PLATED WARE.—*Brown & Brothers*, Waterbury, Conn. Application filed July 26, 1878.

"The fanciful or arbitrarily-selected word 'SILVEROID.'"

6,536.—CIGARS.—*Emery Bemis, Jr.*, Boston, Mass. Application filed May 31, 1878.

"Three six-pointed stars, arranged one within the other, surrounded by rays, with the letters 'O M A,' and a monogram composed of the letters 'E. B., Jr.'"

6,537.—HARNESS-SOAP.—*William Greene*, New York, N. Y. Application filed July 20, 1878.

"The figure or device of a black diamond, with the monogram formed from the letters 'W. G.,' as shown."

6,538.—CANNED MEATS.—*Kimberly Brothers*, Baltimore, Md. Application filed August 24, 1878.

"A pictorial group of three bullocks' heads, of which the center projects in full front view from a disk, while the other two project on either side in profile from behind said disk, the whole being within a circle."

6,539.—SALVE.—*Redding & Co.*, Boston, Mass. Application filed July 22, 1878.

"The arbitrarily-selected word 'RUSSIA,' the autograph signature 'REDDING & CO.,' and the pictorial illustration, substantially as shown."

6,540.—PINS.—*The Judson & Fontaine Pin Works*, Rochester, N. Y. Application filed August 24, 1878.

"The words 'FLOWER CITY' and the fac-simile of the seal of the city of Rochester, New York."

6,541.—PINS.—*The Judson & Fontaine Pin Works*, Rochester, N. Y. Application filed August 24, 1878.

"The word 'GENESEE' and the picture of the fall of water, with buildings in the background, inclosed in a border-line surrounding it."

6,542.—PINS.—*The Judson & Fontaine Pin Works*, Rochester, N. Y. Application filed August 24, 1878.

"The pictorial representation of the coat of arms of Brazil, having in the center thereof a globe with four projections from the quarters, said globe having a series of pins stuck therein, as shown."

6,543.—SMOKING-TOBACCO, CIGARS, AND CIGARETTES.—*The American News Company*, New York, N. Y. Application filed August 23, 1878.

"The fanciful or arbitrarily-selected words 'THE BRIGHTON.'"

6,544.—SMOKING-TOBACCO, CIGARS, AND CIGARETTES.—*The American News Company*, New York, N. Y. Application filed August 23, 1878.

"The fanciful or arbitrarily-selected words 'MARQUIS OF LORNE.'"

6,545.—CORSETS.—*Worcester Corset Company*, Worcester, Mass. Application filed July 29, 1878.

"The fanciful or arbitrarily-selected compound word 'ALL-RIGHT.'"

6,546.—HAMS, TONGUES, SHOULDERS, BREAKFAST-BACON, AND LARD.—*Daniel C. List, Jr.*, Wheeling, W. Va. Application filed August 16, 1878.

"The word-symbol 'CHESTER' and the pictorial representation of a hog."

6,547.—FLOUR.—*Graham & Barbour*, Carbondale, Ill. Application filed August 16, 1878.

"The letters and words 'CHECK MATE, N. W. GRAHAM, CARBONDALE, ILLS.'"

6,548.—FLOUR.—*Graham & Barbour*, Carbondale, Ill. Application filed August 16, 1878.

"The letters and words 'TOP GALLANT, N. W. GRAHAM, CARBONDALE, ILLS.'"

6,549.—SOAP.—*David S. Brown*, New York, N. Y. Application filed July 26, 1878.

"The fanciful words 'SILVER PRIZE.'"

6,550.—SOAP.—*D. S. Brown & Co.*, New York, N. Y. Application filed July 3, 1878.

"The fanciful words 'GOLDEN LOTUS.'"

6,551.—JEWELERS' TOOLS AND FILES.—*Frederick W. Gesswein*, Jersey City Heights, N. J. Application filed August 9, 1878.

"The representation of a hand holding a dagger, as shown."

6,552.—CIGAR-BOXES.—*Frederick Hauschildt*, New York, N. Y. Application filed June 15, 1878.

"The noun 'EVERLASTING.'"

6,553.—CIGARS.—*Geo. A. Kent & Co.*, Binghamton, N. Y. Application filed August 5, 1878.

"The fanciful words 'JIM CROW.'"

6,554.—BONED COD-FISH.—*Henry Mayo & Co.*, Boston, Mass. Application filed August 8, 1878.

"The symbol-word 'SNOWFLAKE.'"

DESIGNS.

[Each design bearing date September 3, 1878.]

10,792.—ORGAN-CASE.—*Rufus W. Blake*, Derby, Conn., assignor to *The Charles A. Sterling Organ Company*, same place. Application filed July 12, 1878. Term of patent 7 years.

10,793.—INKSTANDS.—*Otto F. Fogelstrand*, New York, N. Y., assignor to *Hart, Bliven & Mead Manufacturing Company*, Kensington, Conn. Application filed July 22, 1878. Term of patent 7 years.

10,794 and 10,795.—OIL-CLOTHS.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed August 21, 1878. Term of patents 3½ years.

10,796.—HEATING-STOVES.—*Jafew S. Van Buren*, West Troy, N. Y. Application filed May 21, 1878. Term of patent 3½ years.

LABELS.

[Each certificate bearing date September 3, 1878.]

1,670.—Title: "BEST QUALITY HAND LAID LINEN FISH LINES."—*J. & S. Allen*, Walpole, Mass. Application filed August 22, 1878.

1,671.—Title: "THE SELF-WASHER."—*Thomas M. Adams*, Burlingame, Kan. Application filed August 14, 1878.

1,672.—Title: "AUSTEN'S FOREST FLOWER COLOGNE."—*William J. Austen*, Oswego, N. Y. Application filed August 22, 1878.

1,673.—Title: "FRAGRANT CARMINATIVE SWEET AROMA FOR THE BREATH."—*Fleming & Co.*, New York, N. Y. Application filed August 27, 1878.

1,674.—Title: "ANTI-LEAN. THE GREATEST MEDICAL DISCOVERY OF THE AGE."—*James D. Judge*, Boston, Mass. Application filed August 12, 1878.

1,675.—Title: "AMERICAN SPORTS."—*A. Lichtenstein & Bro.*, New York, N. Y. Application filed August 22, 1878.

1,676.—Title: "CHINKALYPTUS."—*Victor E. Mauger*, New York, N. Y. Application filed August 7, 1878.

1,677.—Title: "EL PRINCE."—*Simmons & Staiger*, Leavenworth, Kan. Application filed August 8, 1878.

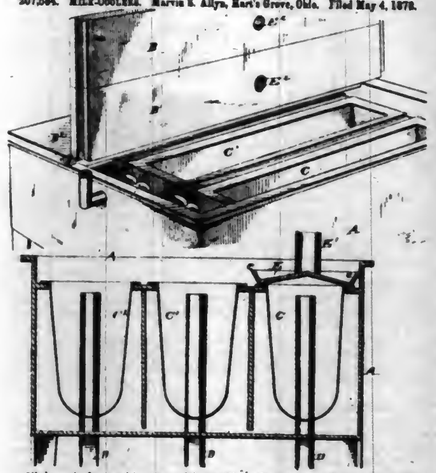
1,678.—Title: "BROWN'S MACERARE MF'G. CO.," &c.—*John D. Brown, John E. Brown*, and *William T. Brown*, New York, N. Y. Application filed June 29, 1878.

1,679.—Title: "BUFFALO NOISELESS BLIND HINGES."—*Clark & Co.*, Buffalo, N. Y. Application filed August 29, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

SEPTEMBER 3, 1878.

207,584. MILK-COOLERS. Marvin B. Allyn, Hart's Grove, Ohio. Filed May 4, 1878.

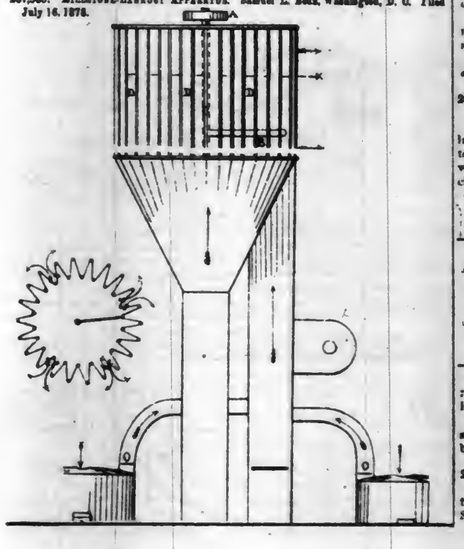


Claim.—1. In combination with a milk-cooler, the ventilating-pipes D and E', the former entering the bottom of the cooler and extending above the level of the milk, the latter entering the top of the cooler, substantially as set forth.

2. In a milk-cooler, the combination of the pan C with the ventilating-pipe D, metallic cover E, provided with the ventilating-pipe E', outlet-pipe G, case A, and folding cover B, substantially as set forth.

3. In a milk-cooler, the combination, with the three pans, arranged side by side together, and provided with metallic lids having ventilating-tubes, of the loose cover which fits over the same and has openings corresponding to said ventilating-tubes, said loose cover being made with divisions hinged together and adapted to simultaneously uncover any two of the said pans, substantially as set forth.

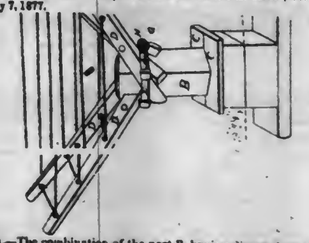
207,585. MILLSTONE-EXHAUST APPARATUS. Samuel L. Boss, Washington, D. C. Filed July 16, 1878.



Claim.—1. In combination with an exhaust-fan, one or more millstone-curbs, having top and bottom air-conducting spouts, provided with valves, substantially as set forth, whereby the air-currents are regulated, controlled, and reversed at will, to produce a partial vacuum at the grinding-surfaces of the stones.

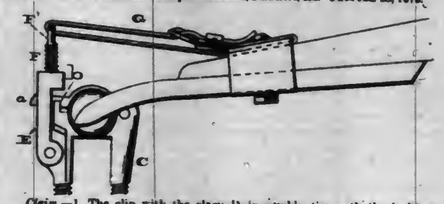
2. In combination with a fan for producing air-currents, a cylindrical balloon or dust-chamber, provided with a knocker, and having a corrugated screen-surface, whereby the dust is retained, and an outside wall of partially-heated air is produced to prevent condensation, substantially in the manner as described.

207,586. CLOTHES-DRIERS. Joseph Benstine and Charles H. Osborn, Oconomowoc, Wis. Filed July 7, 1877.



Claim.—The combination of the post B, having diagonal grooves, with the arms D, held in place by the clasps E G, bolts *f*, and nuts H, as and for the purposes specified.

207,587. THILL-COUPLINGS. Henry E. Brownfield, Baltimore, Md. Filed Jan. 25, 1878.



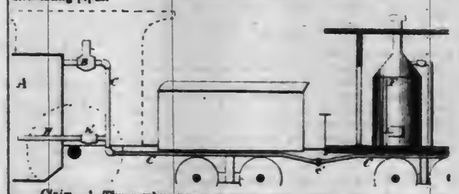
Claim.—1. The clip with the clasp D, in combination with the locking-cleats E, substantially as and for the purpose set forth.

2. The clip C and clasp D, in combination with the locking-cleats E, carrying the screw F and the safety-strap G, substantially as and for the purpose set forth.

3. The clasp D, with tongue *c*, in combination with the clip C, with notch *d*, substantially as and for the purpose set forth.

207,588. APPARATUS FOR HEATING RAILROAD-CARS. Andrew S. Brownell, Watertown, Mass. Filed Aug. 15, 1877.

Brief.—The steam-pipe is provided with a "pressure-regulator" for reducing the pressure of steam in the heating apparatus from the "boiler-pressure to any desired pressure." The reservoir has a valve (not shown) for escape of water of condensation, which runs into said reservoir from the inclined steam-circulating pipes.



Claim.—1. The combination and arrangement of the pipes C C, pipe H, reservoir D, and pipes E E with the pressure-regulator H, for the purpose herein described.

2. In combination with the pipes C C, reservoir D, and pipes E E, the steam-generator F, for the purpose of supplying steam when the locomotive boiler is disconnected therefrom.

207,589. ROLLING COLTERS. Albert H. Barlingame, Sparta, Ill. Filed June 14, 1878.

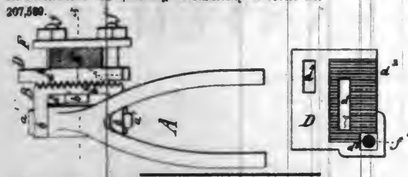
Brief.—A slotted and serrated plate clamped to a plow-beam, and bolted to a second plate having hinges for the colter-arms and adjustable vertically. Stops limit the horizontal swing of the colter-arms.

Claim.—1. In a rotary colter, the combination of the plates B D, having horizontal serrations b^2 d^2, and the bolt C, constructed substantially as shown and described.

2. The combination of the swinging frame A for a rotary colter, the serrated plates B D, clamp-plate F, and bolts C *f f'*, substantially as and for the purpose set forth.

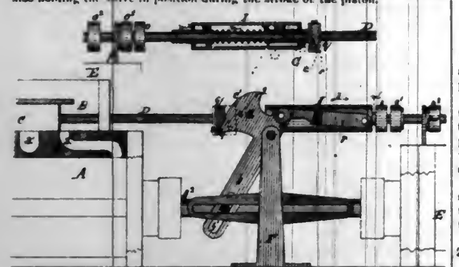
3. The combination of the colter-frame A and its check a^3, the serrated plate B and its check b^1, the serrated plate D, clamp-plate F, and bolts C *f f'*, all constructed and operating substantially as described.

207,589.



207,590. STEAM-PUMPS. John A. Burnap, Albany, N. Y. Filed Feb. 18, 1878.

Brief.—The steam-valve is operated by a spring arranged upon the valve-stem, and alternately compressed and released by a duplex cam-detent, provided with a concave and convex face, and reciprocated by the piston, the cam also holding the valve in position during the stroke of the piston.



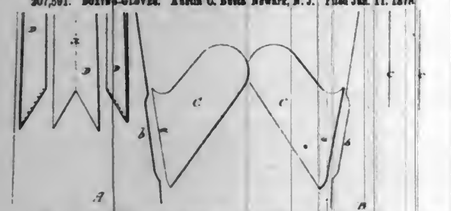
Claim.—1. The pin *x*, carried by the piston-rod of the steam-cylinder, lever *f*, provided with slot *f'*, and pivoted to the standard F and carrying the duplex cam-detent G, in combination with the adjustable carrier *g*, attached to the reciprocating valve-stem H, substantially as and for the purpose set forth.

2. The piston-rod A', pin *x*, way H, standard F, and lever *f*, worked by pin *x*, when combined with a cut-off mechanism of a reciprocating engine, substantially as and for the purpose set forth.

3. The duplex cam-detent G, provided with the faces *c* and *c'*, and oscillated by means of lever *f*, operated by pin *x* upon the piston-rod A', in combination with the pin *s*, connected with the valve-stem D, sleeves *m* and *m'*, cylinder I, spring *n*, and lever *r*, connected to cylinder I and operated by lever *f*, substantially as and for the purpose set forth.

4. The combination of the steps *s*, *s'*, and s^2, standard *p*, pin *s*, and oscillating duplex cam G, operated by the piston-rod A', with the valve-stem D, movable cylinder I, sleeves *m* and *m'*, working with said cylinder, and spring *n*, substantially as and for the purpose set forth.

207,591. BOXING-GLOVES. Austin C. Botts, Newark, N. J. Filed Jan. 11, 1878.

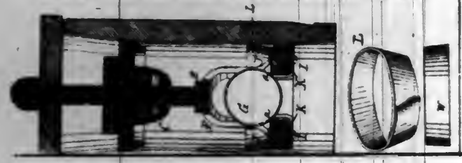


Claim.—1. In a boxing-glove, the combination of the pieces A B and thumb-piece C C, constructed as shown, and having straight edges *a* united to corresponding edges *b* of the pieces A B, as set forth.

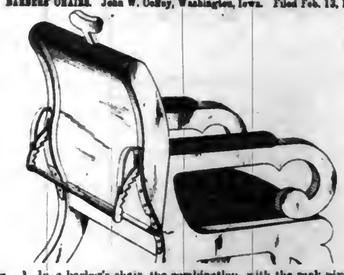
2. The combination, in a boxing-glove, of a single piece, A, forming the palm, a single piece, B, with slits *c*, constituting the back, and pieces D, stitched to the palm-piece, and extending through the slits in the back and stitched thereto, as described.

3. The pieces D, sewed to the piece A, doubled to conceal the stitching, and sewed between the turned-up edges of the piece B, as set forth.

207,592. PUMPS. Howard Cadwalader, Richmond, Ind. Filed Feb. 21, 1878.



207,593. BARBERS' CHAIRS. John W. Coffey, Washington, Iowa. Filed Feb. 12, 1878.



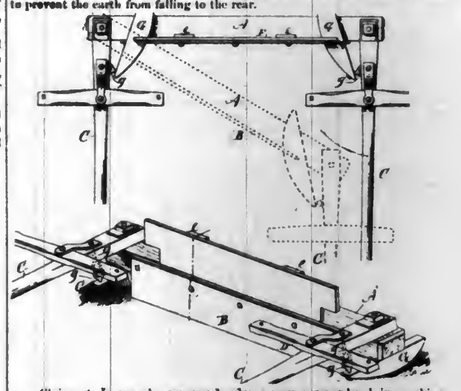
Claim.—1. In a barber's chair, the combination, with the rack pivoted to the stationary back-support, of the curved pawl, which is secured to the adjustable back-support, and whose free extremity is adapted to have free spring-pressed bearing on the said rack, substantially as set forth.

2. In the barber's chair, the combination, with the segmental racks pivoted to the stationary back-supports, and having their outer ends connected by a transverse hand-rod or bar, of the pawls secured to the adjustable back supports, the free extremities of said pawls being curved rearward and downward, and having free sliding bearing upon their respectively engaging racks, substantially as set forth.

3. The combination, with the segment-rack pivoted to the stationary back-support and passing through the slotted adjustable support, of the curved metallic spring-pawl, formed with a central slotted body and a notched free extremity, substantially as set forth.

207,594. ROAD-GRADERS. Alexander Donason, Magnet, Ill. Filed July 5, 1878.

Brief.—The draft-poles are connected with the bar to which the scraper is attached by pivot-joints, so that one pole may be advanced beyond the other to throw the scraper obliquely to the line of draft. Runners are attached to the draft-poles in such manner that they may be turned under the scraper-bar to form supports for local transportation, or be turned up and rest upon the bar when it is in use as a scraper. A shield is attached to the top of the bar to prevent the earth from falling to the rear.

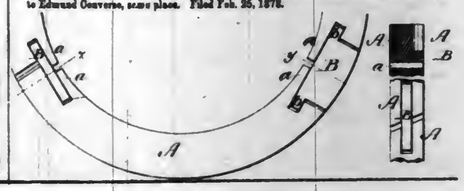


Claim.—1. In a road-scraper or leveler, a main scraper-head, in combination with draft-poles, attached by hinge or pivot joints, one to each end of the scraper-head, substantially as described, and for the purpose specified.

2. The runners U, attached to the poles C by base connections, and arranged to operate with the head A, scraper B, and poles C, substantially as described, and for the purpose specified.

3. The shield F, having arms *e*, and removably attached to the head A, substantially as described, and for the purpose specified.

207,595. PISTON-PACKING. George Dryden, Worcester, Mass., assignor of one-half his right to Edward Converse, same place. Filed Feb. 26, 1878.

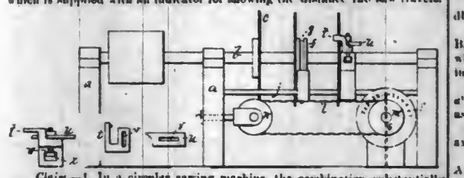


Claim.—1. In a piston-packing, the combination of the abutting sections A, having transverse slots *c* in their ends, and the coupling-blocks B, arranged to cover the joints between the sections and seated in the slots *c*, as shown and described.

2. The coupling-blocks provided with the extended ends or lips *b b*, in combination with the packing-sections A, provided with the inside lip, *a*, and slots *c*, as shown.

207,596. MACHINES FOR EDGING LUMBER. Marshal J. Egery, Bangor, Me. Filed Feb. 4, 1878.

Brief.—Two or more of a series of circular saws are secured to loose collars provided with annular grooves, to receive the ends of shippers, by which the saws are adjusted lengthwise of their arbors for regulating the width of the board sawed. The shippers are mounted loosely upon rods parallel with the arbor, and are actuated by endless chains connected to the shippers. The lower pair of sprocket-wheels, over which the chains pass, are mounted on telescoping shafts, so that each may be moved independently of the other, for increasing or diminishing the distance between the saws and the width of the lumber cut. Each of the shafts has a hand-wheel, by which it is turned, and which is supplied with an indicator for showing the distance the saw travels.

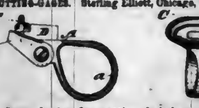


Claim.—1. In a circular sawing machine, the combination, substantially as shown, of the movable saws and shippers with the endless chains and sprocket-wheels, operating substantially as specified, for the purposes set forth.

2. The combination of a series of movable saws and actuating mechanism—to wit, sprocket-wheels *m m' n n'*, chains *k l*, and shippers *h i*—with hand-wheels *r*, mounted on telescoping shafts *p q*, substantially as described and shown.

3. In combination with a movable saw, as described, an adjustable guide or gage, consisting of a clasp, *t*, and slide *u*, adjustable by slots *v*, groove *x*, and bolt *w*, secured to and moving with the saw-shipper, substantially as and for the purposes described.

207,597. CUTTING-GAGES. Sterling Elliott, Chicago, Ill. Filed May 11, 1878.

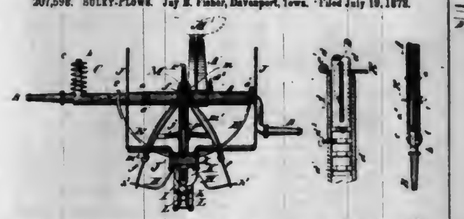


Claim.—1. In a device for cutting belt-laces, the combination, with the knife fixed to the body in an inclined position, as described, of a rigid guide in fixed contact with the edge of the said knife and forming an angle with it, substantially as described, whereby the leather in its passage is held down upon the knife-edge and necessarily cut completely through, as set forth.

2. The combination, with the knife B, fixed to the body in an inclined position, and the guide C, in fixed contact with the edge of said knife, of the gage D, substantially as described, and for the purpose set forth.

3. The device consisting of the combination of the following elements, viz: the body A, having the ring *a*, knife B, guide C, and gage D, constructed and arranged to operate substantially as described, for the purpose set forth.

207,598. SULKY-PLOWS. Jay M. Fisher, Davenport, Iowa. Filed July 19, 1878.



Claim.—1. A tubular axle having a slot, a^2, constructed substantially as and for the purpose specified.

2. The crank-spindle D, having the grooves *d* and *d'*, to operate substantially as and for the purpose specified.

3. The combination of the crank-spindle D, having the grooves *d* and d^2, with the tubular axle A, having slot a^2, screw d^3, and wheel to adjust the spindle D, substantially as and for the purposes specified.

4. In combination, the crank-spindle D, having the grooves *d* and *d'*, with the tubular axle A, screw d^3, wheel, and semicircular rim E, for the purpose of leveling the sulky-frame, substantially as and for the purpose specified.

5. In a sulky-plow, the combination of the lever F with the tubular axle A, having the slot a^2, and semicircular rim E, to operate substantially as and for the purpose specified.

6. The bifurcated lock-lever M, having the neck *m*, arms m^1, and ends m^2, substantially as and for the purpose specified.

7. In combination, the bifurcated lock-lever M, having the neck *m*, arms m^1, and ends m^2, with the lever F, semicircular rim E, and the bifurcated arms *f*, to operate substantially as and for the purpose specified.

8. In combination, the bifurcated lock-lever M, having the neck *m*, arms m^1, and ends m^2, with the lever F, semicircular rim E, bifurcated arms *f*, and spring-lever N, for the purpose of locking, substantially as and for the purpose specified.

9. The combination of the bifurcated arms *f* with the lever F, semicircular rim E, bifurcated lock-lever M, and yoke O, substantially as and for the purpose specified.

10. In combination, the spring-lever N with the lever F and bifurcated lock-lever M, substantially as and for the purpose specified.

11. The yoke O, having a swivel-bearing neck, *o*, projecting rearward, for the purpose of freeing the plow from obstacles by throwing the sulky-frame forward, substantially as and for the purpose specified.

12. The combination of the yoke O, having a swivel-bearing neck, *o*, with the bifurcated arms *f* and bifurcated arms P, having a swivel-neck, *p*, and knee-jams p^2, substantially as and for the purpose specified.

13. In combination with the tubular axle A, having slot a^2, and plow-beam, the operating device consisting of levers F and N, bifurcated arms *f*, bifurcated lock-lever M, semicircular rim E, yoke O, bifurcated arms P, and knee-jams p^2, which also constitute the means for hinging the tubular axle to the plow-beam, substantially as and for the purpose specified.

14. The combination of the bifurcated arms P with the knee-jams p^2, plow-beam, and yoke O, having the neck *o*, to operate substantially as and for the purpose specified.

15. The combination of the tubular axle A, having slot a^2, with the spindle B, pin a^1, and wheel, substantially as and for the purpose specified.

16. In combination, the tubular axle A, having slot a^2, with the spindle B, pin a^1, wheel, and staple *c*, having slot *b*, which permits of the rising of the wheel up, in the manner substantially as described, without affecting the working position of the plow, substantially as and for the purpose specified.

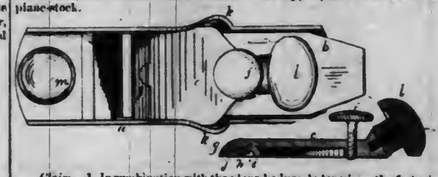
17. In combination with the tubular axle A, having slot a^2, spindle B, pin a^1, wheel, and staple *c*, having slot *b*, the coil spring C, operating substantially as and for the purpose specified.

18. The combination of the staple *c*, having the slot *b*, with the tubular axle A, substantially as and for the purpose specified.

19. In combination, the staple *c*, having the slot *b*, with the tubular axle A, spindle B, pin *b'*, and coil spring C, substantially as and for the purpose specified.

207,599. BENCH-PLANES. H. A. Foss, Pine Meadow, Conn., assignor to P. E. Chapin, same place. Filed Apr. 15, 1878.

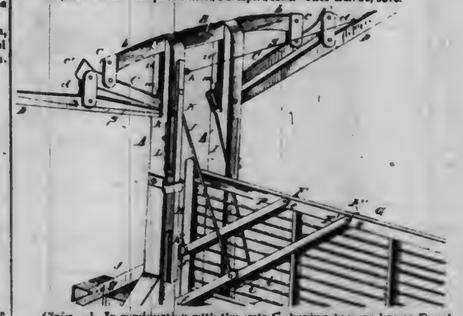
Brief.—The plane-iron is held in place by means of a fastening-lever provided at its forward extremity with a rocking foot, and at its rear end with a knob or handle, and having in its fulcrum ears, which rest in fulcrum-mortises immediately underneath swells formed in the upper part of the sides of the plane-stock.



Claim.—1. In combination with the plane-body and plane-iron, the fastening lever *c*, provided with the rocking end *g*, substantially as described, and for the purpose set forth.

2. The fastening lever *c*, provided with the screw *f*, and combined with the knob *l*.

207,600. GATES. Joseph E. Garrett, Davenport, Iowa. Filed Mar. 26, 1878.



Claim.—1. In combination with the gate G, having legs or braces F and frame A A' B, the pivoted notched latch-bar K and operating-spring L, substantially as and for the purpose herein shown and described.

2. The improved device for operating gates herein shown and described, consisting, essentially, of frame A A' B, supporting the pivoted compound levers C *d* D C *d* D, pivoted latch K, having notch *k'* and operating-spring L, and pull-cords *s s*, in combination with the gate G, having tilting legs or braces F F' and rods I I, all constructed and combined to operate substantially in the manner and for the purpose herein set forth.

207,601. LEAF-HOLDERS FOR BOOKS. Frank C. Gerard, Seymour, Conn., assignor of one-half his right to Frank H. Beecher. Filed June 19, 1878.



Claim.—A leaf-holder for books, consisting of the horizontal arms H and the prongs or pins *j* and *j'*, provided with the handle D, substantially as shown and described.

207,602. BOOT AND SHOE SOLES. Harry C. Goodrich, Chicago, Ill. Filed June 15, 1878.



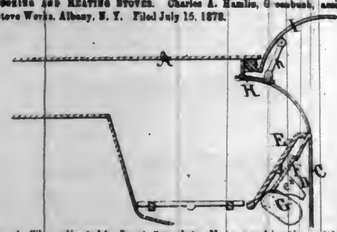
Claim.—A boot or shoe sole filled with plugs shorter than the sole is thick, inserted from the inside thereof, and retained in place by the closing of the material over and around the heads of the plugs, substantially as specified.

207,603. HORSE-SHOES. J. C. Hamilton, Fort Wayne, Ind. Filed July 1, 1878.



Claim.—A horse-shoe provided with a round steel bar bent to the shape of the shoe, and welded thereto at the sides, as described, and for the purpose set forth.

207,604. COOKING AND HEATING STOVES. Charles A. Hamlin, Greenbush, assignor to Ransom Stove Works, Albany, N. Y. Filed July 15, 1878.



Claim.—1. The adjustable front fire plate, F, in combination with a barrier formed in the chamber D by means of a hinged plate, F', or its equivalents, herein described, and for the purpose specified.

2. The chamber D, formed within the body of the stove by the front plate, C, front fire-plate, E, and plate F, as and for the purpose herein set forth.

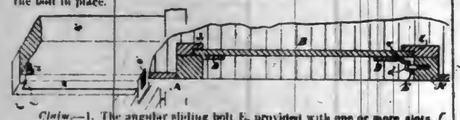
3. The combination of the adjustable front fire-plate, E, and the cam G, as and for the purpose specified.

4. The combination of the cam G with the adjustable front fire plate, F, and hinged plate F', as and for the purpose herein described.

5. The combination of the guard H and door I, connected and arranged to operate as and for the purpose set forth.

207,605. CAR-DOOR FASTENINGS. Benjamin F. Jackson, Indianapolis, assignor to himself and John J. Shields, Muncie, Ind., one-half to each. Filed Dec. 4, 1877.

Brief.—An angular bolt has vertical guide-slots on one side, engaging pins on the door. Another slot near its top, across the angle and up a short way, receives a pin on the door-frame. Its lower end slides into a socket in the floor. Notches or pins are provided for a force bar. A button or pin holds the bolt in place.



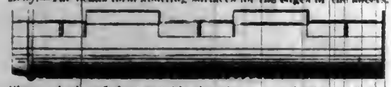
Claim.—1. The angular sliding bolt E, provided with one or more slots, *f*, the opening *r*, and slot *w*, in combination with the pin *d*, in the manner and for the purposes substantially as shown and described.

2. The angular sliding bolt E, provided with one or more slots, *f*, the opening *r*, and slot *w*, in combination with the car-door H, stud-bolt *d*, and socket *o*, in the manner substantially as shown and described.

3. The angular sliding bolt E, attached to a car-door, and adapted to be raised by a pinch-bar or board applied to the pins F or F', or to notches *n n'*, in the manner substantially as shown and described.

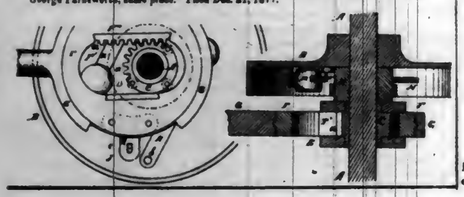
207,606. SHEET-METAL PIPES. George W. Ketcham, Newark, N. J. Filed May 15, 1878.

Brief.—The bends form abutting surfaces for the edges of the sheets.



Claim.—A pipe of sheet metal having alternate projections and recesses, said projections being bent at their junction with the body of the pipe, substantially as shown.

207,607. VALVE-GEARS. Dennis O'B. Ladd, Chicago, Ill., assignor of one-half his right to George Farnsworth, same place. Filed Dec. 21, 1877.

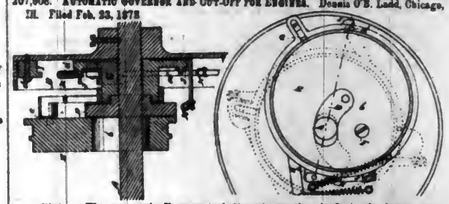


Claim.—1. A governor and cut-off wherein an eccentric is adapted for adjustment automatically on its shaft by means of a pinion on the latter and a rack in the eccentric, in connection with springs and weighted levers, substantially as and for the purposes specified.

2. A governor and cut-off wherein the eccentric is adapted for adjustment automatically on its shaft by means of a pinion on the latter and a rack in the eccentric, in connection with a sleeve mounted on the same shaft and controlled by weighted levers and springs, substantially as and for the purposes specified.

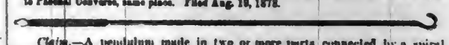
3. The combination of the shaft A, disk B, pinion C, racked eccentric F, sleeve H, two or more levers, M N, connected to the said sleeve, and springs for producing centripetal movement of the said levers, substantially as and for the purposes specified.

207,608. AUTOMATIC GOVERNOR AND CUT-OFF FOR ENGINES. Dennis O'B. Ladd, Chicago, Ill. Filed Feb. 23, 1878.



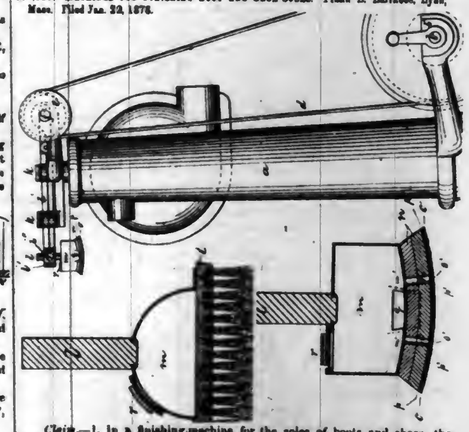
Claim.—The eccentric E, mounted directly on the shaft A, the latter passing freely through the curved slot *b* in the said eccentric, and the eccentric hung pivotally on the pin F, set in the center on which the slot *b* is described, and carried by a hub or collar fixed on the shaft A, the said eccentric also connected pivotally to a non-eccentric sleeve controlled by centrifugal and centripetal forces, substantially as and for the purposes specified.

207,609. PENDULUMS. Frederic A. Lane, New Haven, Conn., assignor of one-half his right to Paschal Converse, same place. Filed Aug. 19, 1878.



Claim.—A pendulum made in two or more parts, connected by a spiral spring, substantially as shown and described.

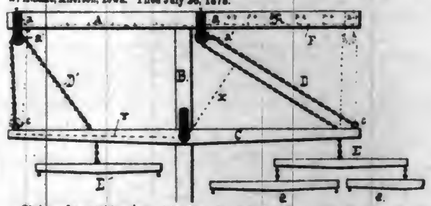
207,610. MACHINES FOR FINISHING BOOT AND SHOE SOLES. Frank E. Larrabee, Lynn, Mass. Filed Jan. 30, 1878.



Claim.—1. In a finishing-machine for the soles of boots and shoes, the combination of the reciprocating tool-holder *i* with the finishing tool, consisting of the box *n* with its perforated bottom, perforated elastic cushion *o*, and gritty finishing-surface *o*, as and for the purpose set forth.

2. The herein-described finishing-tool, consisting of the box or receptacle *n*, with its perforated bottom, one or more side orifices, *q*, perforated elastic cushion *o*, and gritty finishing-surface *o*, or their equivalents, as and for the purpose set forth.

207,611. DRAFT-EQUALIZERS. Charles Leach, Warsaw, assignor of one-half his right to Geo W. Adams, Allerton, Iowa. Filed July 26, 1878.



Claim.—In combination with the cross tree C and single and double trees E' E, the chains D D', bar A, and adjustable pulley straps *a*, substantially as described.

207,612. SPOOL AND TAKE-UP FOR GRAIN-BINDERS. Sylvanus D. Locke, Rocsick Falls, N. Y. Filed Apr. 19, 1878.



Claim.—1. A spool-stand provided with friction-plates to form a tension, and one of said plates adapted to receive a spool, whereby the weight of the spool, its contents, and attachments is superimposed upon said stand, and frictional resistance is variable in proportion to the discharge of the contents of the spool.

2. A spool-tension with plates B D, having serrated opposing surfaces to engage and hold to the facings, combined with one or more leather facing-disks, as set forth.

3. A spool-stand having a rotating plate, D, to which the tension is applied, provided with a conical seat, *b*, within which the end of the spool may be wedged fast, to hold the spool and prevent the wire from getting beneath it, as set forth.

4. A spool-stand, B, with frictional upper surface faced with leather or otherwise, combined with a spool-seat plate, D, the outer edge of which is overhanging, to cover and prevent the access of wet and dirt to the tension friction surface.

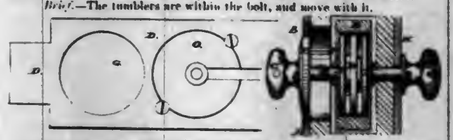
5. An intermediate slack take-up having a supplemental spring capable of resisting the ordinary pulling strain, but yielding to sudden and extra strains incident to stopping and starting of the mechanism, sudden changes of speed, &c.

6. An intermediate slack take-up arm actuated by a spring at its pivoted end, and provided with a supplemental cushioning-spring, to yield only to sudden or extraordinary strains, as set forth.

7. An intermediate slack take-up arm, H, pivoted at one end, with an actuating spring, and provided with a guide pulley at its free end, combined with the supplemental spring K, which is so adjusted that it comes into action only as a re-enforce after the limit assigned the actuating spring has been reached.

207,613. PERMUTATION-LOCKS. Stephen A. Mann, Rome, Nov. Filed Dec. 4 1877.

Brief.—The tumblers are within the bolt, and move with it.



Claim.—1. In combination with the sliding bolt, the permutation tumblers arranged within and moving within it, all as and for the purposes described.

2. The combination, with the spindle, of the series of tumblers, the center one of which sets the other tumblers, avoiding the necessity of turning the dial-plate more than once to any given letter.

3. The combination of the permutation tumblers, the case slotted at J, and the reversible spring stop-key K, for permanently locking both the tumblers and the bolt, or for allowing the bolt to be unlocked from one side only by the combinations, all as and for the purposes set forth.

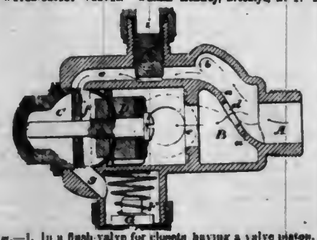
4. In combination, with the permutation tumblers and disk, the jointed and slotted guide or indicator-figure T, for setting combination in the dark, all as and for the purposes set forth.

207,614. WICK-TUBES. Hugh McConnell, Cleveland, Ohio. Filed July 9, 1877.



Claim.—A wick-tube formed of two pieces of sheet metal, folded one around the other at the edges, and one of said pieces provided with the fend wheel housing struck out upon its side from the solid, so as to form the housing without joint, substantially as and for the purposes described.

207,615. WATER-CLOSET VALVES. William McElroy, Brooklyn, N. Y. Filed June 27, 1878.



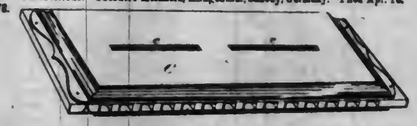
Claim.—1. In a flush-valve for closets having a valve piston, B, arranged to move to and fro in its chamber in response to the excess of pressure exerted by the water on either side of it, a relief-valve, G, and passage *g*, to relieve the pressure back of the valve, a passage, *c*, connecting the valve-chamber C with the chamber B below the valve-seat, and a stop or ping, *i*, arranged to obstruct the passage *c*, all combined and arranged substantially as set forth.

2. In a flush-valve for closets, the arrangement of an oblique diaphragm, *e*, across the chamber B, perforated at *d*, and arranged to deflect the current entering at A toward the mouth of the passage *c*, substantially as set forth.

3. In a flush-valve for closets, the combination of the diaphragm *e*, arranged as shown, with the cavity or chamber *b* and passage *c*, substantially as set forth.

4. In a flush-valve for closets, the piston-valve D, provided with a cup packing, *j*, of leather or other suitable material, so arranged that when the valve is driven from its seat it may move freely, but when driven to its seat the packing will retard its progress, substantially as and for the purposes set forth.

207,616. HARMONICAS. Theodore Meinhold, Klingenthal, Saxony, Germany. Filed Apr. 18, 1878.



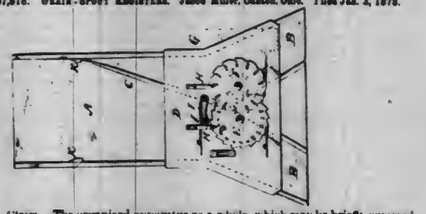
Claim.—A double harmonica consisting of the board A, slotted from both sides to form blow-holes *a*, the reed plates B, attached to each board, and the shields C, of wood or hard rubber, having sound-openings *c*, and secured to the board A, so as to form the mouth-piece on each side of the instrument, constructed and arranged substantially as described and shown.

207,617. IMITATIONS OF TORTOISE-SHELL. Anthony Miller, Brooklyn, N. Y. Filed Aug. 8, 1878.

Brief.—The object is to make buttons, brush-handles, combs, and the like. Takes a base of shell, horn, or similar material, and places on it paper or foil which has been given a mottled color. Over this is placed a thin coating or veneer of the amber shell of the tortoise, or of other shell or horn. The piece thus made up is then formed in dies or molds.

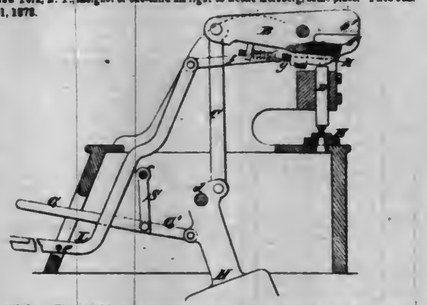
Claim.—As a new article of manufacture, an imitation of tortoise-shell composed of the materials and in the manner above set forth, substantially as described, and for the uses and purposes therein mentioned.

207,618. GRAIN-SPOUT REGISTERS. Jacob Miller, Canton, Ohio. Filed Jan. 3, 1878.



Claim.—The organized apparatus as a whole, which may be briefly summed up as follows: the grain spout and register herein described, consisting of the main spout A, provided with the beveled cleats K K, the branches B B, formed with the main spout, the slotted plate carrying the registering mechanism, and the valve C, pivoted at the junction of the two branches, and provided with the pawl I, for operating the initial wheel of the registering mechanism through the slotted plate, all arranged and adapted for operation in the manner set forth.

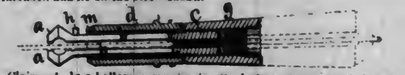
207,619. MACHINES FOR SHEARING, PUNCHING, AND STAMPING METALS. Henry O'Neill, New York, N. Y., assignor of one-third his right to Hettie Herzberg, same place. Filed Jan. 31, 1878.



Claim.—The combination of the treadle L, the engaging and disengaging device or wedge K, the mandrel D, the working beam B, and the pendent vibrating weight H, with its attached hand lever G S, substantially as specified.

207,620. HOLLOW-SCREW PIN-VISES. Julius Parmelee, Des Moines, Iowa. Filed Aug. 31, 1875.

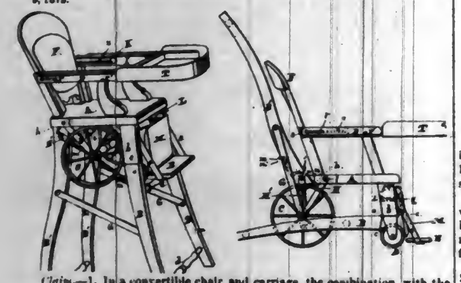
Brief.—Operator, with one hand holding the tool, turns forward the tubular threaded handle on the screw-shank.



Claim.—1. In a hollow screw pin vise, the locking device consisting of the stud *b* on the spring jaw *a b* and the slot *n* in the adjustable sleeve *d*, substantially as shown and described.

2. As an improved article of manufacture, a screw pin vise composed of the cone headed spring jaws *a b*, having a tubular screw-shank, *c*, the adjustable sleeve *d*, and the operating tubular threaded handle *g*, substantially as and for the purposes shown and described.

207,621. CHILDREN'S CONVERTIBLE CHAIRS. Geo. M. Patten, Yonkers, N. Y. Filed Feb. 9, 1878.



Claim.—1. In a convertible chair and carriage, the combination, with the hinged portions B, of the front legs, hinged rear legs, B', and pivoted braces G G', whereby the legs are simultaneously operated in converting the chair into a carriage, or vice versa, as herein specified.

2. In a convertible chair and carriage, the rear legs, B', of the chair hinged at their upper ends directly to the seat A, so that they may be reversed when the chair is changed to a carriage, the lower ends of the legs being turned up and the legs fastened in a nearly vertical position to form handles, substantially as and for the purposes as described.

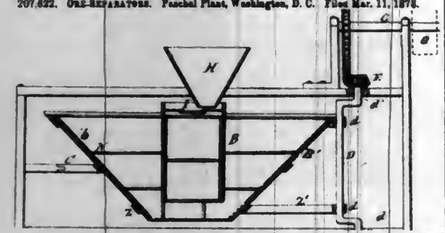
3. In combination with the chair-body, the hinged rear legs, B', and braces H H', connected respectively to the chair body and legs, serving as a support for the rear wheel, C', substantially as set forth.

4. In combination with the chair body, the front legs, *b* B, braces G G', rear legs, B', braces H H', and wheels C, substantially as described.

5. In a convertible chair, the combination of the hinged portions B of the front legs, pivoted braces, G G', and hinged rear legs, B', said rear legs being provided with suitable device for retaining the said legs in their elevated position, substantially as set forth.

6. The combination of the chair-seat A, front legs, *b* B, wheels D, braces G G', hinged rear legs, B', pivoted braces H H', and wheels C', substantially as described.

207,622. ORE-SEPARATORS. Paschal Plant, Washington, D. C. Filed Mar. 11, 1878.



Claim.—1. The cylinder provided with the annular chambers or pockets, in combination with mechanism for imparting to the cylinder a circular swinging motion, substantially as and for the purpose specified.

2. The cylinder provided with the shelves, in combination with the bent shaft and the arm or stay to prevent the rotation of the cylinder upon the shaft, substantially as described.

3. The circular swinging cylinder provided with the shelves or projections, in combination with the distributer I, substantially as shown and described.

4. The circular swinging cylinder, in combination with removable shelves, having the lip *n* and the projection *n'*, substantially as shown.

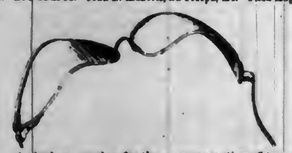
5. The cylinder B, supported in basin B', in combination with the bent crank, as and for the purpose set forth.

6. The basin B', provided with the annular depressions or pockets, in combination with the bent crank D and arm or stay C', as and for the purpose set forth.

207,623. PROCESSES AND COMPOUNDS FOR PRESERVING EGGS. Peter Rodes and Bernard Thole, St. Louis, Mo. Filed July 17, 1878.

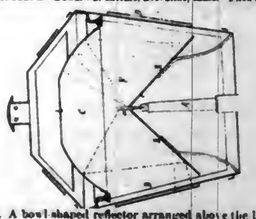
Claim.—The method above described for preserving eggs, by dipping the same in alum water, and, when dry, further immersing the eggs in the chemical compound consisting of silicated soda, china clay, borax, and water, mixed in the proportions and manner substantially as specified.

207,624. EYE-SHADES. John B. Richetts, St. Joseph, Mo. Filed Aug. 1, 1878.



Claim.—A shade or awning for the eyes, consisting of two concave to convex surfaces of suitable material, connected by a nose piece or bridge, and forming an awning for the eyes, substantially as and for the purpose set forth.

207,626. LANTERNS. Edward S. Ritchie, Brookline, Mass. Filed July 24, 1878.



Claim.—1. A bowl-shaped reflector arranged above the burner and having its larger end downward, in combination with the two auxiliary plane reflectors B B, arranged below or beneath said bowl-shaped reflector, substantially as specified.

2. The auxiliary reflectors B B, arranged so as to range with, or almost with, the middle of the burner-flame and to incline downward from the burner, in combination with the bowl-shaped reflector arranged over such auxiliary reflectors B B, so as to reflect downward those rays from the flame, as specified.

207,626. BELTING FOR WOOL-WASHERS. Frederick G. Bargent, Graniteville, Mass. Filed June 22, 1878.



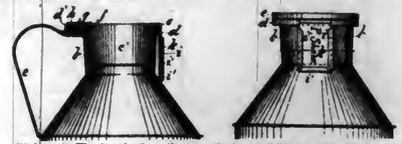
Claim.—1. A flat endless apron or belt provided with a narrow longitudinal guiding rib or groove, substantially as shown and described.

2. An endless belt or apron having flat inner and outer faces, with a narrow guiding rib or groove on the inside, in combination with a roll having a corresponding groove.

3. A belt having a wide flat inner face, with a narrow rib, *a*, thereon, in combination with a roll, B, having a groove, *b*.

207,627. LOCKING, SEALING, AND LABELING MILK-CANS. Philander Shaw, Boston, Mass. Filed Dec. 31, 1877.

Brief.—May form a cup at the junction of sealing-ledge and projection of cover to receive wax seal.



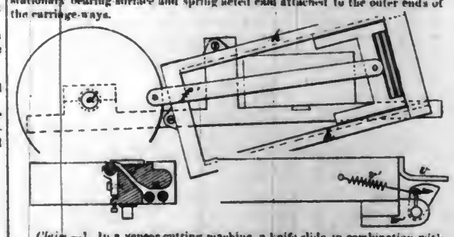
Claim.—1. The herein-described can lock, consisting of the cover or stopple *c c'*, with its projection *f*, in combination with the recess *g* on the neck of the can, as set forth.

2. In combination, the cover or stopple *c c'*, with its projection *f*, the sealing ledge *d'* at the neck of the can, with its recess *g*, and seal *h*, as and for the purpose set forth.

3. The milk-can having attached to its neck or upper portion the label-holder, consisting of the plate *i*, having the three lips or bent-over edges *i' i' i'* at its bottom and sides, and the lid having the rim *s* projecting over said label-holder and label, for the purpose of securing a label in place when the lid is closed upon the can, substantially as described.

207,628. MACHINES FOR CUTTING VENEERS. Homan S. Smith, Brooklyn, N. Y. Filed Feb. 25, 1878.

Brief.—Sound veneers, free from checks, are cut from a log or block fed upon a horizontally-adjustable stay-log to a vertical knife mounted in a reciprocating carriage arranged to run either in the direction of the grain of the wood or diagonal thereto; a vertically-adjustable pressure roller; one or more rollers arranged in the rear of the knife-head, for straightening the veneer as it comes from the log. The veneer is extricated from the knife by means of a stationary bearing surface and spring-acted cam attached to the outer ends of the carriage-ways.



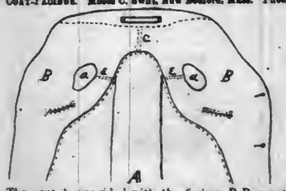
Claim.—1. In a veneer cutting machine, a knife-slide, in combination with the knife and press-roller.

2. In a veneer-machine, a knife-slide having attached to it two or more rollers, for the purpose of straightening the veneer as it comes from the knife.

3. In a veneer-cutting machine, the automatic mechanism for extricating the veneer from the knife-slide, consisting in a combination of the cam *w* and the stationary surface *v*, operated substantially as and for the purpose specified.

4. In a veneer-cutting machine, the knife-slide provided with the cutting-knife and pressure roller, and two or more rollers for straightening the veneer as it comes from the knife, in combination with the cam *w* and surface *v*, for, extricating the veneer from the knife-slide, substantially as specified.

207,629. COAT-FACINGS. Moses C. Swift, New Bedford, Mass. Filed Jan. 26, 1878.



Claim.—The coat A, provided with the facings B B, constructed and arranged substantially as described, and for the purpose set forth.

207,630. PROCESSES FOR STAINING WOOD. Archibald B. Tripler, New York, N. Y. Filed May 10, 1878.

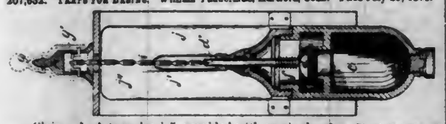
Claim.—The herein-described process of staining wood, the same consisting in inclosing it within a chamber, applying steam heat thereto, producing a vacuum, in which the wood is allowed to remain until the pores are thoroughly opened, then surrounding the wood with the coloring-liquor, and forcing this liquor into and through the pores by means of compressed air or hydraulic pressure, removing the coloring liquor, and finally drying the stained wood by heating it while in a vacuum, for the purposes specified.

207,631. CORK-EXTRACTORS. William W. Tucker, Hartford, Conn. Filed Apr. 8, 1878.



Claim.—The ring *a*, the bifurcated or broadened foot *b*, standard *c*, pivoted bearing-arm *d*, rotary shaft *e*, pivoted screw *f*, and spring *g*, all combined and arranged substantially as described, for the purpose set forth.

207,632. TRAPS FOR BASINS. William Vanderman, Hartford, Conn. Filed July 29, 1878.



Claim.—1. A trap, *b c j j'*, provided with an air-chamber, *j''*, at the top of pipe *j*, of larger capacity than the pipe *j*, all substantially as described, and for the purpose set forth.

2. In a basin-overflow, the combination of the basin *a*, the trap *b c j j'*, provided with an air-chamber, *j''*, at the top of the pipe *j*, of larger capacity than the pipe *j*, all substantially as described, and for the purpose set forth.

3. In combination, the basin *a*, pipe *b*, chamber *c*, provided with valve *d*, and return stand-pipe *j j'*, provided with air-chamber *j''*, all substantially as described, and for the purposes set forth.

4. In combination, the valve *d*, including valve-rod and chain, the hollow standard *h*, and the lever *g*, carrying the crank *g'* within the standard, all substantially as described.

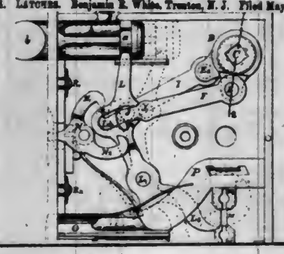
207,633. SIEVES. Horace H. Waters, Chicago, Ill. Filed Feb. 21, 1878.

Brief.—Ends of inner hoop are chamfered and left unfastened until inserted, or may be fastened before insertion. In setting up hoop the sieve bottom is placed in position in outer band and glue applied to internal surface. The inner band is then covered with glue externally and inserted, and the two bands pressed together. Edge of sieve bottom may be turned down and band of paper glued on inside of outer band below sieve-cloth.



Claim.—A sieve-hoop composed of the two paper-board bands A and B, arranged one within the other, in combination with the bottom C, the bent edge of which is inserted between the edges of the hoop-bands and fastened thereto with glue, substantially as described.

207,634. LATCHES. Benjamin R. White, Trenton, N. J. Filed May 31, 1878.



Claim.—1. The latch-bolt A, cylindrical in shape, and provided with grooves *c* and *d* upon opposite sides, to receive the reverse stop B, and with the annular groove *e*, to receive the end of the throwing-lever L, substantially as shown and described.

2. In a lock or latch, a cylindrical-shaped latch-bolt, in combination with grooves and reverse stop, substantially as shown and described.

3. The spindle C, the crank D^1, with its rounded projection E^1, and the crank D^2, with its rounded projection E^2, the dividing-piece of metal or other substance H, the connecting-arms F and I, all in combination with the spindles C^1 and C^2 and the throwing-lever L, substantially as and for the purpose shown and described.

4. In a lock or latch, the employment of a spindle, separated into two parts by a dividing-piece of metal or other substance, and furnishing each spindle with a crank and connecting arm acting upon the same throwing-lever, leaving each spindle independent in its action, substantially as and for the purpose shown and described.

5. In a lock or latch, a crank-motion operating directly from the spindle by means of a connecting arm upon the throwing-lever, substantially as specified.

6. In a lock or latch, the employment of two separate crank-motions acting by means of connecting-arms direct upon the same throwing-lever, substantially as and for the purpose specified.

7. The combination of the spindles C^1 C^2, the dividing-plate H, the cranks D^1 and D^2, the connecting-arms F and I, provided with the projections J' and J, playing in the same slot L^2 in the same throwing-lever L, all constructed, arranged, and operating substantially as described, for the purposes specified.

8. In a door lock or latch, a throwing-lever passing the whole height of the case, operated at its lower end by a night-key, and furnished with a slot to receive one or two arms, operated from the spindle or spindles, said throwing-lever operated at will by the night-key, or by either or both of the arms, substantially as shown and described.

9. The throwing-lever L, moving freely upon the pivot L^1, provided with a curved arm, L^2, and slot L^3, in combination with the arms F and I and the annular groove *a* in the latch-bolt, constructed, arranged, and operated substantially as shown and described.

10. In a door-lock, a catch provided with notches or their equivalent, and a spring operating upon them, so as to hold the stop firmly in its lower and upper positions, and also in its center position, by means of which I am enabled to stop off either knob or neither knob.

11. In a lock, a key-hole fitted with two receivers, one at the top to receive the bolt-key, and the other at the bottom to receive the latch key, all arranged and operating substantially as shown and specified.

12. In a lock, a key-receiver fitted with flat sides, which, when pressed against by a spring or springs, holds the key firmly in position, either in a quarter, half, or three-quarter turn, and holding the receiver in proper position for receiving the key.

13. An adjustable lock face or front, plain or rabbeted, provided with the loose fitting pins R R, with or without washers, with the openings for the bolts and stop or catch, all arranged and constructed substantially as shown and described.

14. The combination of the cylindrical bolt A, with its grooves *c* and *d*, the reverse stop B, the throwing-lever L, with its slot L^2, its pivot L^1, and curved arm L^2, the arms I and F, with their rounded projections J and J' and hooked ends K and K', the cranks D^1 and D^2, with their rounded projections E^1 and E^2, the spindles C^1 and C^2, the piece H, all arranged, constructed, and operating substantially as shown and described.

207,635. BENDING WOOD. Rowley C. White, North Bennington, Vt. Filed Nov. 26, 1877.



Claim.—1. The hereinbefore-described process for manufacturing the rims of boxes and analogous structures, consisting in the employment for the body or foundation piece of a thick layer of wood having its grain disposed parallel with the axis of the proposed curvature at such points of curvature, and scored at the points where such proposed curvature is to occur, in connection with a thin inside and outside layer or veneer having the grain of each at the points of curvature disposed transversely with the grain of the foundation-piece, the said veneers being each cut to such a length as will extend or reach around the proposed circumference of said rim and form a lapped joint, and having the overlapping ends of such veneers scarfed and arranged as described, all laid up in glue or other adhesive material, as described, the whole being then bent and molded into the desired curved form by being pressed and confined by means of a strap and clamps or other suitable mechanism between male and female cauls heated to that degree of temperature best suited to the working of the glue and the bending of the material, in the manner substantially as described and set forth.

2. The hereinbefore-described process of forming round or curved corners or angles of wooden structures by the use of a single thick and two thin layers of wood, the intermediate and thicker one of which is scored opposite to and parallel with its axis of curvature, and has its grain disposed with reference to the grain of the inner and outer layers and the axis of curvature transversely, as described, the whole arranged and laid up with glue or other adhesive material, as described, and bending or molding the same into the desired form by pressing and confining the same between heated male and female cauls until the adhesive material has set or dried, substantially as described and set forth.

3. As a new article of manufacture, a box made from wood, having its sides and corners or walls constructed of a thick central or body piece, scored at the corners, said walls being covered internally and externally with a thin veneer, having the grain of such veneers disposed transversely with that of the body-piece at the curved or bent portions or corners, and having the joint where the ends of the veneers meet finished by scarfing, lapping, gluing, and leveling, substantially as described and set forth.

4. Curved formations in structures or fabrics made from wood or other similar flexible material, the component parts of which formation consist of a thick central foundation-piece, scored to adapt it to be bent, and an inside and outside veneer of thin material, the grain of which is disposed transversely with that of said foundation-piece, the whole being laid up in glue or other adhesive material, as described, and molded into form by bending between rigid male and female cauls compressed by a tightening strap, substantially as described and set forth.

5. The apparatus described and shown for shaping or molding curved formations in the described compound structures of wood, consisting of the male caul G, sectional female cauls H H H H, and clamping-strap I I, provided with any suitable tightening device, all arranged, combined, and operated substantially as described and set forth.

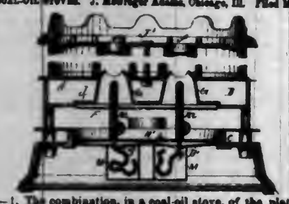
207,636. IMPLEMENTS FOR WAPPING THE FIBERS OF SHOE-SOLES. Freeman Winslow, Salem, Mass. Filed July 1, 1878.



Claim.—1. As a new implement of manufacture, for use as described, the napper, substantially as set forth, consisting of the rotary shank and the elastic or circular cushioned head, studded on its outer surface or surfaces with points or tacks, as specified.

2. The sole-napper having the face and periphery of its elastic head studded with nails or metallic points, and also having those of the face and those of the periphery insulated or separated from each other by a narrow circular space, *d*, arranged and intervening with respect to them, as represented.

207,637. COAL-OIL STOVES. J. McGregor Adams, Chicago, Ill. Filed Mar. 27, 1878.

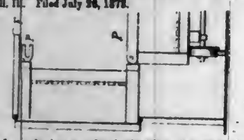


Claim.—1. The combination, in a coal-oil stove, of the plate D', provided with the openings *g g*, arranged to allow the respective wicks to pass loosely through them, with the receptacles M M, substantially as and for the purpose specified.

2. The combination, with the receptacles M M and plate D', provided with the openings *g g*, of the removable deflecting-plate H', supporting the wick-tubes, and arranged to cover said openings, substantially as and for the purpose specified.

3. The combination, with the receptacles M M and removable deflecting-plate H', supporting the wick-tubes, of the plate D', provided with the openings *g g*, and inclined from the center outward and from its periphery inward toward said openings, substantially as and for the purpose specified.

207,638. DRYING-CARS FOR DRAIN-TILES, BRICKS, &c. Wm. W. Arnold and John T. McGuire, Whitehall, Ill. Filed July 26, 1878.



Claim.—1. In a drying-car for drain-tiles, the upper deck supported upon the sides of the lower one by means of bifurcated studs P P, adapted to straddle the top bars of the sides of the lower deck, so as to admit of the upper deck being turned to a vertical position on either side of the car, substantially in the manner and for the purpose herein set forth.

2. In combination with the upper movable deck, the side props, F, substantially as and for the purpose described.

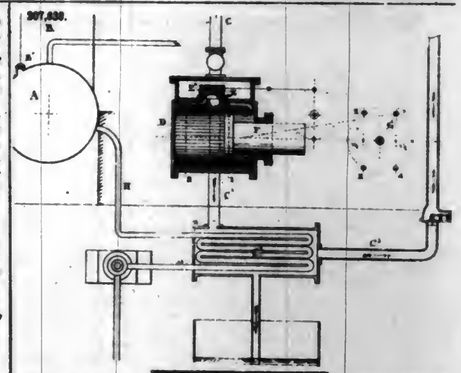
207,639. RECIPROCATING ENGINES. Edward Baines, Toronto, Ontario, Canada. Filed June 7, 1877.

Claim.—1. The combination, with an engine-cylinder having a valve in the exhaust-passages thereof, of a condensing and heating chamber and a hot-well connecting with said chamber and with a feed-water pump, arranged substantially as specified.

2. The steam-cylinder D, provided with the valve E, the condensing and heating chamber C', and the valve J, situated in the exhaust-passage of the cylinder, combined and arranged substantially as set forth.

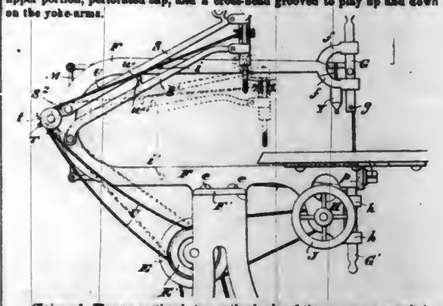
3. The combination of the following elements, to wit: the steam-generator A, having the expansion-chamber S and variable pressure-valve B', the steam-cylinder D, provided with the valve E, the condensing and heating chamber C', and the valve J, situated in the exhaust-passage, all arranged substantially as set forth.

207,639.



207,640. SCROLL-SAWING MACHINES. William P. Barnes and John Barnes, Rockford, Ill. Filed Feb. 26, 1878.

Brief.—The borer is mounted in a frame formed of two separately-pivoted parallel arms, the heel-extension of the upper arm supporting the pulleys for the belt by which the borer is driven, and each of said arms is provided with an interlocking lug for locking said arms when elevated. The heels of the saw-arms are connected by a spring-encircled rod, a yoke having a shouldered upper portion, perforated cap, and a cross-head grooved to play up and down on the yoke-arms.



Claim.—1. The connection between the heels of the saw-arms, consisting of the rod M, the yoke having a shouldered upper portion, N, perforated cap *n*, and arms N', the cross-head on the rod M, and the coiled spring encircling said rod and bearing at its opposite ends against said cap and cross-head, substantially as and for the purposes set forth.

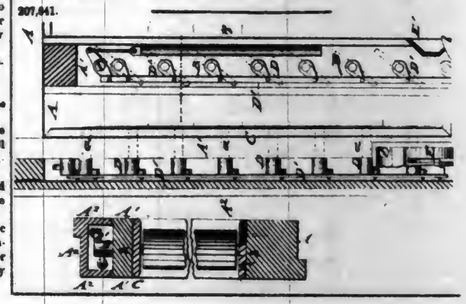
2. The combination, substantially as hereinbefore set forth, of the saw-frame F, the saw-arms pivoted thereto, the rod connected with the heel of the upper saw-arm, the yoke connected with the heel of the lower saw-arm and having a shouldered upper portion, the cross-head on the lower end of the connecting rod, and the spring between the top of the casing or upper portion of the yoke and said cross-head.

3. The swinging borer support or frame, consisting of the combination of the separately-pivoted parallel arms, the heel-extension of one of said arms to support the pulleys, the chuck-frame to which the outer ends of said arms are pivoted, and the interlocking lugs on the arms, substantially as and for the purpose set forth.

4. The combination, substantially as hereinbefore set forth, of the driven shaft, the pulley E' thereon, the saw-frame F, the swinging parallel arms S S' of the borer-supporting frame, the heel-extension of said frame, the pulleys f f', the chuck-frame, and the pulley thereon.

5. The combination of the main frame, the driven shaft, its pulleys E', the saw-frame F, the swinging borer-frame, pivoted to the saw-frame, and the borer operated from the pulley E' by the belt U, these members being constructed and operating substantially as hereinbefore set forth, whereby the rotation of the borer may be stopped by throwing up the frame to slacken the belt, as described.

207,641.



207,641. SHUTTERS. Asher Bijur, New York, N. Y. Filed July 26, 1878.

Brief.—One side of the shutter-frame, inclosing the operative mechanism is made of a removable and a fixed part, with perforations for the slat-journals. On the other side the interior slat-frame is in two parts, dividing vertically the perforations for the slat-journals. The frame is provided with a slotted arc-plate, guiding a swinging thumb-lever.

Claim.—1. The combination, with a shutter-frame, A, of slats B, that swing by their ends or journals at one end in recesses of the inner slat-frame, C, and by the opposite ends in perforations of a fixed section, A', of the shutter-stile, the ends of the latter slats being provided with short crank-arms D, connected by a pivot-rod, D', counterbalanced by a weight, and inclosed by an outer removable and recessed stile-section, A', substantially as described, and for the purpose specified.

2. The combination of a swinging thumb-lever, a connecting pivot-rod, and a slotted arc-plate flush with shutter, as and for the purpose specified.

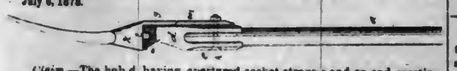
207,642. BOX AND FASTENING. Gilbert W. Bradley, Sunderland, Vt. Filed July 26, 1878.

Brief.—Twists the loop sidewise to tighten the loose bend or bends onto the body of the box. Heads may be rabbeted to partly enter the body. Boxes are graded in size to hold stated weights—*e. g.*, one, two, or three pounds.



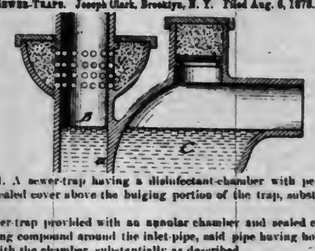
Claim.—The combination, with a box having one or both heads loose, of the rods C, having end hooks, *c'*, and coil *c²*, the coil being turned aside, as and for the purpose specified.

207,643. FARMERS' TOOLS AND HANDLES. Archibald T. Clark, Manchester, N. C. Filed July 6, 1878.



Claim.—The hub *d*, having apertured socket-straps *e* and an end mortise, *e*, in combination with a base, *b*, having stud *l* and strap *m*, all constructed and arranged as shown and described, for the purpose specified.

207,644. SEWER-TRAPS. Joseph Clark, Brooklyn, N. Y. Filed Aug. 6, 1878.



Claim.—1. A sewer-trap having a disinfectant-chamber with perforated bottom and sealed cover above the bulging portion of the trap, substantially as described.

2. A sewer-trap provided with an annular chamber and sealed cover for a disintegrating compound around the inlet-pipe, said pipe having holes communicating with the chamber, substantially as described.

3. A sewer-trap provided with a chamber for disinfecting material above the bulging portion of the trap, and with an annular chamber for a disintegrating compound around the inlet-pipe, the latter chamber being somewhat below the former chamber, substantially as described.

207,645. PANS FOR BACKING ELECTROTYPE-SHELLS. Michael Crane, New York, N. Y. Filed Nov. 30, 1877.



Claim.—1. A backing-pan provided with the bed A and the cover C, and having openings or mouths *g g*, one at each end of said pan, whereby the molten metal of which the backing is to be formed may be poured into the pan from opposite ends, as and for the purpose specified.

2. The combination, with the body A and the standards provided with grooves *a a*, of the clamping-bars B B, substantially as and for the purpose herein specified.

3. The combination of the nose-pieces D D with the cover C, clamping-bars B B, and body A, substantially as herein specified, whereby the said pieces D D are adapted to guide the molten metal into the pan and to hold the clamping-bars securely in place.

4. The combination, with the body A and cover C, of the side strips or gages, *c c*, which are adapted to hold the electrotype shell in place, and to confine the molten backing-metal in the proper place on the back of the shell, and also to regulate the thickness of the backing, substantially as herein described.

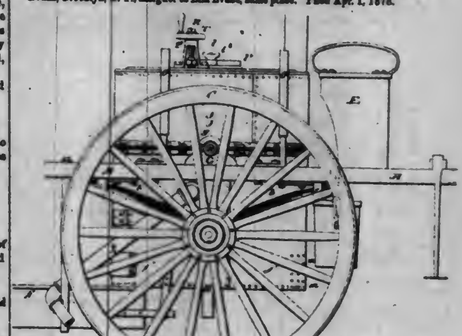
5. The combination of the following elements: the curved body A, the curved cover C, and the curved gages or strips *c c*, substantially as herein specified, whereby a double-mouthed backing-pan is produced for backing electrotype shells in curved form, as herein set forth.

207,646. FAUCETS. Eugene Duchamp, St. Martinville, La. Filed July 24, 1878.



Claim.—The pipe A, provided with the valve-seat *a*, nozzle C, and inclined slot E, sided by the stop-flanges *e*, in combination with the cylindrical slide-valve B, having the handle F projecting through the said slot E, said handle being surrounded by the oval sliding and turning sleeve G, to lock it against the stop *f*, substantially as shown and described.

207,647. PORTABLE PITCH-KETTLES FOR ROOFING AND PAVING PURPOSES. George W. Evans, Brooklyn, N. Y., assignor to Ella Evans, same place. Filed Apr. 1, 1878.



Claim.—1. The kettle I, suspended by its trunnions H H in a vertical position in the journals *g* of the pillow-block G upon the truck side frames, A A, and inclosed within the case or shell J, substantially as shown and described.

2. The yokes O O, bolted in an upright position upon the side frames, A A, in combination with the kettle I, suspended and inclosed substantially as shown and described, for the purpose specified.

3. The gate S, castings U and W, forming the outlet, the rod R, and hand-wheel T, in combination with the kettle I, substantially as shown and described, for the purpose specified.

207,648. THREAD-CUTTERS FOR SEWING-MACHINES. Edward Flather, Bridgeport, Conn. Filed Apr. 16, 1878.

Brief.—A small plate containing a guide-eye for the needle-thread, and provided with a thread-cutting edge, is attached to the lower end of the needle-bar.



Claim.—The needle-bar, in combination with the needle-guide B, provided with the cutter or cutting-edge *c*.

207,649. WHIRLIGIGS. Henry D. Forbes, Cambridge, Mass. Filed June 22, 1878.



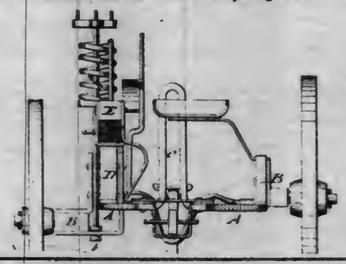
Claim.—1. In a whirligig, the combination of the pieces D D' and the doubled and looped strings *h h'* and *h² h²*, whereby the said pieces and strings form a self-clamping device, substantially as described, and for the purpose set forth.

2. The combination of the clamping-block D' and the disks A B C, &c., having each a single opening, with the clamping-block D, arranged to readily pass through the opening in the disks, substantially as described.

3. In a whirligig, the combination of several colored disks, each disk having a central opening and a radial cut extending from center to circumference, whereby one of said disks may be overlapped more or less upon another, thus producing an endless variety of combinations, substantially as described, and for the purpose set forth.

207,650. SULKY-PLOWS. Daniel O. Feagain, Red Wing, Minn. Filed Nov. 26, 1877.

Brief.—The frame is bent upward at the rear to form a guide for the plow-beam. A worm-screw and other devices for adjusting wheel.

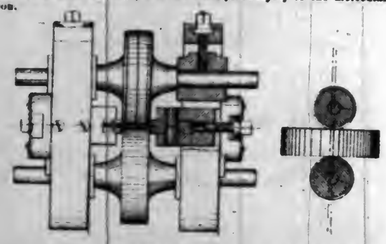


Claim.—1. The combination of frame A, axles B, standard D, tongue-support D', and tongue E in a sulky plow, as shown and described.

2. The frame A, having the central bend, *e*, in combination with the plow-beam passing through said bend and supported at the front of frame, substantially as shown and described.

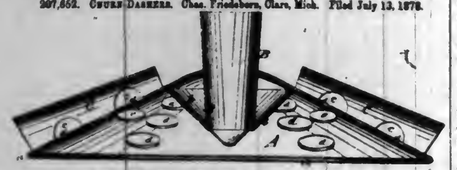
207,651. MACHINES FOR ROLLING HORSESHOE-NAIL PLATES OR BARS. Daniel Fraser, Jr., Boston, Mass. Filed Dec. 19, 1877.

Brief.—To prevent the bed and shaping rollers drawing the center of the iron faster than the edge, and the consequent injury to the molecular formation.



Claim.—The combination, in a rolling-machine, of a bed and a shaping roller with grooved upsetting-rollers having their axes located just in advance of the axes of the bed and shaping roller, to operate substantially as and for the purpose described.

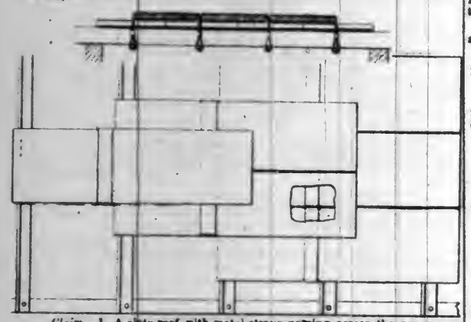
207,652. CHURN-DASHERS. Chas. Friedeburg, Clare, Mich. Filed July 13, 1878.



Claim.—A churn-dasher formed of the obtusely conical plate A, having the axial tube or socket B, and the inverted central inner cone, *b*, and covered at intervals with the radial semicircular tubes C, tapering toward the central socket, and provided with the side apertures, *c*, the said cone A being provided under and between the tubes C with the holes *d c*, substantially as shown and described, and for the purpose set forth.

207,653. SECURING ROOFING-SLATES. Lawrence E. Granger, Washington, D. C., assignor to John W. Heyt and Caroline M. Dwight, Springfield, Mass. Filed Feb. 11, 1878.

Brief.—A metal bond passes alternately over the tops of the slates, and (through recesses in their sides) under anchoring devices which are fastened to the purlins.



Claim.—1. A slate roof with metal straps passing across the upper surface of the slates and through recesses formed in the edges thereof, and secured to fastening or anchoring devices fixed to the rafters, whereby the slates are held in position, substantially as described.

2. In a slate roof, a series of fastening or anchoring devices fixed to the rafters, in combination with a metal strap which passes alternately across the slates and around said fastening or anchoring devices, substantially as and for the purpose described.

3. In a slate roof, metal straps with a tongue formed thereon and folded over against the side of the strap, whereby the two sides of the strap are united and the same more firmly secured to fastening or anchoring devices fixed to the rafters, substantially as described.

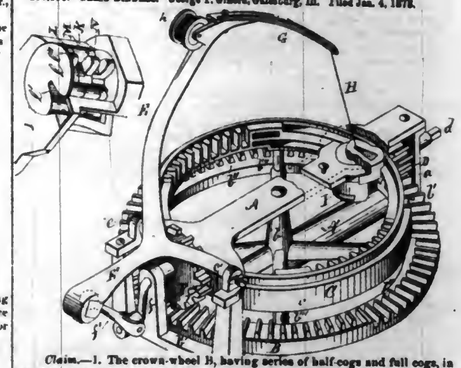
207,654. LATHES. Don Carlos Goss, Warren, Vt. Filed Aug. 1, 1878.



Claim.—1. The spindle E, carrying the fixed operating-lever F, in combination with the lever B, pivoted to the case, and lever D, as and for the purpose specified.

2. The sliding bolt C, provided with the projections *d* and *d'*, in combination with the levers B D and their operating devices, as set forth.

207,656. GRAIN-BINDERS. George T. Gifford, Galesburg, Ill. Filed Jan. 4, 1878.



Claim.—1. The crown-wheel B, having series of half-cogs and full cogs, in combination with the pinion F, crank *f*, connecting-rod *f'*, and binder-arm E, substantially as and for the purpose specified.

2. The crown-wheel B, having series of half-cogs and full cogs, in combination with the pinion F, having lugs *f''*, and the wheel C, having cam-surfaces *c*, substantially as described, and for the purpose specified.

3. The wheels B C, in combination with pinion F, binder-arm E, and a wire-twister device, substantially as and for the purpose specified.

4. The wheel C, having exterior detent cam-surfaces for stopping and holding the pinion F, and internal gear for actuating the twister, combined to operate with the binder-arm of a grain-binder, substantially as and for the purpose specified.

5. The wheel C, having internal gear for actuating the twister, in combination with the wheel B, connected to the wheel C, and having gear for actuating the binder arm, substantially as and for the purpose specified.

6. The pinion M, seated by a screw-connection on the shaft O, and combined with the pinion L, so as to approach and recede therefrom, substantially as and for the purpose specified.

7. The wheel C, having internal gear, constructed as described, in combination with pinions L M N, having whole and half leaves, substantially as described, and for the purpose specified.

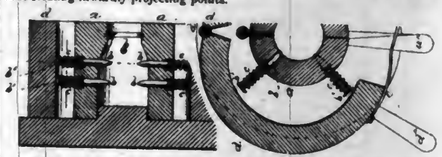
8. The wheels B and C, pinion F, and binder-arm E, in combination with the wire-twister, formed of a series of pinions, substantially as described, and for the purpose specified.

9. The needle-arm G, having a space, *g*, in combination with wire-twister pinions, through which the needle passes, the space *g* permitting the pinions to rotate, substantially as described, and for the purpose specified.

10. The pinion D, in combination with the wheels B and C and binder-arm, substantially as and for the purpose specified.

207,658. MOLDS FOR BLOWING GLASS VESSELS. J. W. Haines, Cambridge, Mass. Filed Aug. 17, 1878.

Brief.—Pins acted upon by springs are forced into the mold by an external clamp. The glass article is then blown in the mold and around the pins, thus forming inwardly-projecting points.

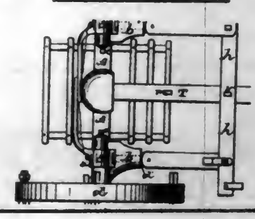


Claim.—1. In combination with a mold for use in blowing glass vessels, one or more movable pins, *b*, arranged to be forced into the interior of the mold, for the purpose herein set forth.

2. The combination, with the mold *a*, of the spring-pins *b b'* and springs *c*, substantially as and for the purpose above described.

3. The combination of the mold *a*, provided with the pins *b b'* and springs *c*, and the hinged clamps *d*, arranged and constructed substantially as and for the purpose specified.

207,667.



207,657. ROTARY HARROWS. Samuel Hartman, Pittsburg, Pa. Filed July 30, 1878.

Brief.—The harrow may be converted into a wheeled vehicle, or back again from a wheeled vehicle to a harrow, by the driver without leaving his seat. The frame is made rigid with the tongue by inserting a pin through the tongue and frame centrally between the two cross-bars.

Claim.—1. The swiveled bars *b'*, in combination with the cross-bar A, tongue T, and pins *p e m*, substantially as described.

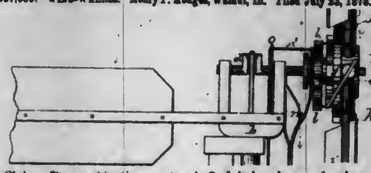
2. On a rotary harrow convertible into a two-wheeled vehicle, the levers L, hooks *l*, and cords or chains *l*, substantially as set forth and described.

207,658. FEED-BAGS. Timothy Rowbee, Jersey City, and John Rowbee, New Brunswick, N. J. Filed June 20, 1878.



Claim.—A feed-bag, B A C, provided with a spiral spring, D, placed within it, and having its upper edge attached to the top coil of the said spring D, and having the ends of the supporting-straps E attached to the lowest coil of the said spring, substantially as herein shown and described.

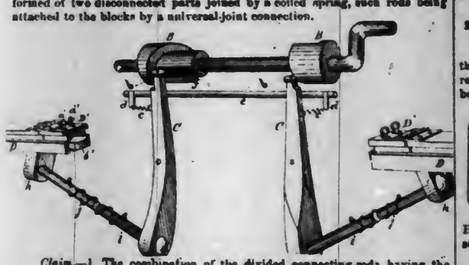
207,659. WIND-WHEELS. Henry F. Hodges, Walnut, Ill. Filed July 23, 1878.



Claim.—The combination of the shaft *d*, hub *e*, braces *f*, rods *g*, fans A, connecting-rods *n*, arms *i*, spider *l*, and a spring, *m*, and rope *o'*, the spring being secured at one end to the turn-table, and having its other end forked, so as to catch over the rear end of the spider, substantially as shown.

207,660. PICKING-MOTIONS FOR LOOMS. Lyman B. Howland, Lakeville, Mass. Filed May 6, 1878.

Brief.—The pickers employed are two blocks with guiding-grooves in their sides, which slide in ways in the shuttle-boxes. These blocks are moved by levers, operated by springs when relieved from the cams, which give them their counter-movement. The levers are connected to the picker-blocks by rods formed of two disconnected parts joined by a coiled spring, such rods being attached to the blocks by a universal-joint connection.



Claim.—1. The combination of the divided connecting-rods, having the connecting-spring *j*, with the shuttle-driving blocks D and mechanism for operating the same, substantially as herein shown and described.

2. The combination of the cams B, levers C, yielding connecting-rods *i*, the rod *c*, provided with arms *d*, and the actuating-springs *e*, for driving the shuttle, as herein shown and described.

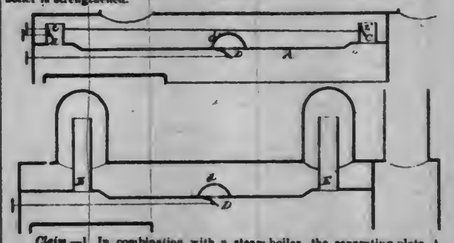
207,661. HOISTING-JACKS. Richard O. Keefe, Omaha, Nebr. Filed July 1, 1878.



Claim.—An improved hoisting-jack formed by the combination of the standard A, having a base, H, attached to its lower end, having a longitudinal groove formed in its forward side, and having the upper part of the said groove covered with a plate, D, the hoisting-bar C, having a foot, E, attached to its lower end, and having teeth formed in its inner edge, the lever F, having a rounded projection formed upon its lower edge, the notched shaft G, the arm H, the hook I, and the pin J, substantially as herein shown and described.

207,662. STEAM-BOILERS. Wm. M. Kilgore, Uniontown, Ohio. Filed May 16, 1878.

Brief.—A plate longitudinally and horizontally located near the water-line in the boiler, and provided with pipes and valves, prevents the crown sheet and the tubes from being uncovered by the water while ascending or descending inclines. This plate also serves as a steam and water separator, by which dry steam is supplied to the engine, and also a stay whereby the boiler is strengthened.



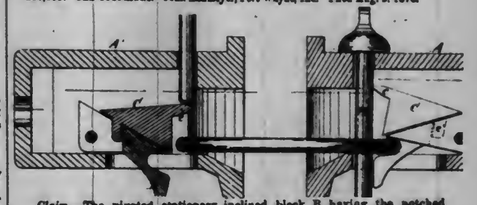
Claim.—1. In combination with a steam-boiler, the separating-plate A, with its pipes C E and valve D, adapted to prevent the body of water flowing from one end of the boiler to the other, substantially as herein described.

2. The combination, in a steam-boiler, of the separating-plate A, steam-inlet pipes C E, valves *c* and *c'*, and outlet-valve D, constructed and arranged to operate in the manner set forth and described.

3. The combination, in a steam-boiler, of the separating-plate A, raised at both ends and inclining from the middle, and provided with the pipes and valves, constructed and operating as herein described.

4. The combination, with a steam-boiler, of the separating or safety plate A, provided with inlets for steam and outlets for water, the latter being provided with a guard or cage, *d*, for the purpose set forth.

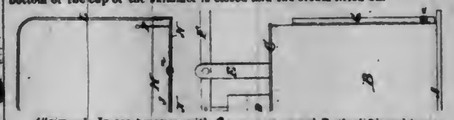
207,663. CAR-COUPLINGS. John Lahmlyer, Fort Wayne, Ind. Filed Aug. 6, 1878.



Claim.—The pivoted stationary inclined block B, having the notched handle D, and the superjacent sliding block C, provided with the flange *e* and step *e'*, in combination with each other and with the draw-head A, substantially as and for the purpose set forth.

207,664. DEVICES FOR SETTING AND SKIMMING MILK. Safus Lapham, New York, N. Y. Filed Dec. 6, 1877.

Brief.—The skimmer is allowed to remain in the milk during the rising of the cream. It is then raised by its handle till the bottom of the cup-shaped receptacle reaches the bottom of the stratum of cream, when the valve in the bottom of the cup of the skimmer is closed and the cream lifted off.



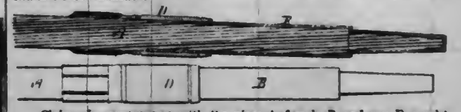
Claim.—1. In combination with the vacuum vessel B, the lifting-skimmer H, provided with the cut-off J, and rods or arms L, or their equivalents, substantially as described, and for the purpose set forth.

2. The air-tube G, in combination with the vacuum vessel B, through which tube the air is drawn in by suction over the surface of the milk, substantially as described, and for the purpose set forth.

3. The lifting-skimmer H, provided with a cut-off, J, for the purpose set forth.

207,665. JOINTS FOR FISHING-RODS. Hiram L. Leonard, Bangor, Me. Filed Apr. 17, 1878.

Brief.—To protect the split extension of the cap the same is wound with silk and then varnished.



Claim.—In combination with the piece A, ferrule B, and cap D, a split extension or series of stay strips, essentially as and for the purposes stated.

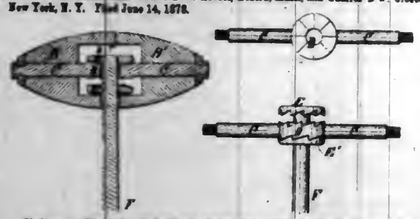
207,666. STOCKING-SUPPORTING CLASPS. Leon Lowenstein, New York, N. Y. Filed May 13, 1878.



Claim.—1. The clasp made of two sheet-metal levers, united by a removable spring pin, *c*, and provided with the recesses or domes *i*, in combination with the helical wire spring, the ends of which pass into such domes, as set forth.

2. The lever *a* and wings *l*, in combination with the lever *b*, domes *i*, and helical spring *c*, as set forth.

207,667. AUGER-HANDLES. James D'W. Lovett, Boston, Mass., and Charles D'W. Gibson, New York, N. Y. Filed June 14, 1878.



Claim.—1. The combination, for operating a cutting-shaft of augers, &c., of two ratchet-wheels, E E', fixed on the axis, with a double-faced detent or detent-wheel, D, fixed on the arm C between the two said wheels, which wheel D engages with either the upper or lower ratchet-wheel, as desired for either driving or removing the cutting-shaft, substantially as shown, and for the purpose specified.

2. The combination, in a handle for operating the cutting-shaft or axis of augers, &c., of the upper and lower ratchet-wheels, E E', the double-faced detent or detent-wheel D, with the arm C, and cutting-shaft F, all inclosed by the parts B B', substantially as described.

207,668. PACKING VALVE-STEMS. Edgar M. Lockett and Nelson Belanger, Terrace, Utah. Filed July 31, 1878.



Claim.—The combination of the valve-stem C, provided with the nut F, collar *c'*, and shoulder *c²*, the packing-rings G H I, the outer rings, G H, being arranged and held by pins *i* in position upon the inner ring, I, and the open packing-cylinder D, substantially as and for the purpose set forth.

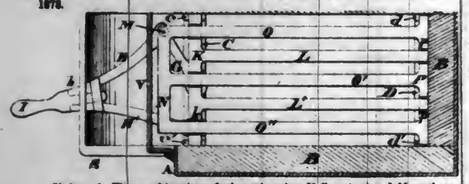
207,669. PUDDLING-FURNACES. William L. McNair, Allegheny, Pa. Filed Jan. 21, 1878.

Brief.—The chamber surrounding the hopper is supplied with heated air from the flue connecting with the chamber in the bottom of the stack, for the purpose of drying the fuel before it is dropped into the fire-box. Air to support combustion is heated in the flues in the stack and supplied to the chamber in the top of the furnace.



Claim.—The hopper I, surrounded by the hot-air chamber, in combination with the flue a and chamber Q, whereby the fuel is dried and heated before it is fed upon the hearth D, substantially as specified.

207,670. SHAKING-GRATES FOR STOVES. William Miller, Cincinnati, Ohio. Filed July 22, 1878.

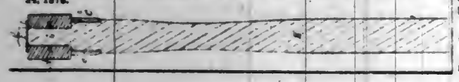


Claim.—1. The combination of pivoted rocker F G *g g'*, pins J M, and oppositely-reciprocating grate-sections K *k* L L' N O O' O² P *p*, substantially as herein described.

2. An improved shaking-grate consisting of bearing-bars C *c c'* D *d d'*, pivoted rocker F G *g g'* H H' *h*, and oppositely-reciprocating sections J K *k* L L' M N O O' O² P *p*, substantially as herein described.

3. In combination with the oppositely-reciprocating grate-sections K *k* L L' N O O' O² P *p*, the rearwardly curved and fixed fingers *e*, situated in line with the bars L L' O O' O², substantially as herein described.

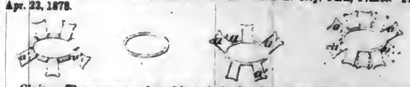
207,671. TOOL-HANDLE ATTACHMENTS. George P. Morrill, Canterbury, N. H. Filed July 24, 1878.



Claim.—1. In combination with the tool-head provided with the eye or mortise and the handle having the tenon therefor, the screw-collar and its screws and nuts, arranged with such tenon and mortise, as set forth.

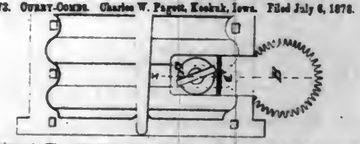
2. In combination with the tool-head provided with the eye or mortise and the handle having the tenon therefor, the screw-collar and its screws and nuts and the cap-plate, arranged with such head and with the tenon and mortise, as specified.

207,672. MANUFACTURE OF ORNAMENTAL CHAINS. Jules E. Orry, Paris, France. Filed Apr. 23, 1878.



Claim.—The process of making chain by first stamping out a series of rings of sheet metal provided with spurs, next arranging a series of rings successively one upon another in a line or row with intervening rings of a material which may be removed by dissolving them after the chain is completed, and bending the spurs of each ring over its adjacent ring to fasten them together, and finally dissolving the said intervening rings.

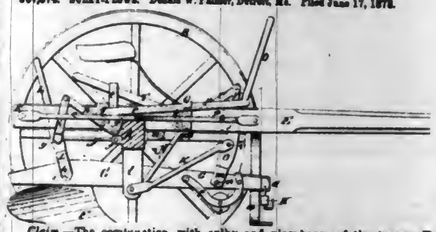
207,673. CURRY-COMBS. Charles W. Pagett, Keokuk, Iowa. Filed July 6, 1878.



Claim.—1. The concavo-convex disk-plate B, notched on its circumference and arranged at one side of a curry-comb, as and for the purpose specified.

2. The disk-plate B, attached to curry-comb by extension C and clamp-screw D, as shown and described.

207,674. SULEY-PLOWS. Dennis W. Palmer, Detroit, Mo. Filed June 17, 1878.



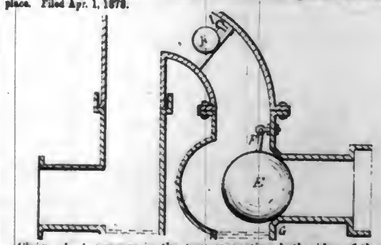
Claim.—The combination, with sulky and plow-beam, of the tongue E, having central slots, *k u*, the braces J K M N, the pivoted bars L O, having jaws A *m*, and the link-connected levers, substantially as shown and described.

207,675. CONDUCTORS' FARE-CONTROLLERS. Charles F. Peak, Georgetown, D. C. Filed June 4, 1878.



Claim.—A conductor's fare-controller consisting of a receptacle inclosing one or more rolls of consecutively-numbered coupons, as described, the same being combined with a strip holder and a means of attachment to belt or wearing-apparel, substantially as shown and set forth, so that a portion of the strip is, of necessity, exposed to view upon the person of the conductor as the same is drawn out or moved forward for the detachment of coupons, as specified.

207,676. SEWER-TRAPS. William A. Pitt, New York, N. Y., assignor to Emma Tracy, same place. Filed Apr. 1, 1878.



Claim.—1. A passage in the trap connecting both sides of the trap, in combination with the ball-valve E, suspended by the connections F upon the bevel-seat G, substantially as described.

2. A passage in the trap connecting both sides of the trap, in combination with the ball-valve H, substantially as described.

3. The ball-valve H, suspended in the passage of the trap at I, in combination with the ball-valve E, substantially as described.

207,677. VEHICLE-AXLE SKEINS. Charles A. Poland, Columbus, Ohio. Filed Aug. 17, 1878.



Claim.—In combination with skein A, ending at *a*, hollow externally screw-threaded ferrule B, welded within the end of said skein to act as a reinforce, and permitting the access of the outer air to the end of the wagon-axle journal, substantially as set forth.

207,678. TORPEDOES FOR OIL-WELLS. Horatio L. Porter, Elk City, Pa. Filed Jan. 31, 1878.



Claim.—1. The shell S, provided with central tube, T, primers P, and suspending-cord C, in combination with rod R, carrying the anvil A, and provided with the looped head H, all constructed and arranged to operate as and for the purpose set forth.

2. In combination with the nipple-tubes *a*, the primer-tubes P and guards *g*, arranged and operating as specified.

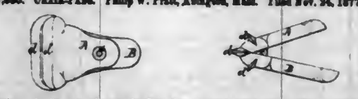
207,679. MANUFACTURE OF FLOOR OIL-CLOTHS. Thomas Potter, Philadelphia, Pa. Filed Dec. 6, 1877.

Brief.—After the foundation-web is sized, filled, rubbed in, and dried, it is then coated with an impervious varnish, (as linseed-oil and Chinese blue,) on which latter the pattern is printed, and which, when dry, is covered with copal or other clear varnish.



Claim.—As a new article of manufacture, a floor oil-cloth having an intermediate layer of impervious varnish between the pattern and filled web.

207,680. CHAIR-PADS. Philip W. Pratt, Abington, Mass. Filed Nov. 24, 1877.

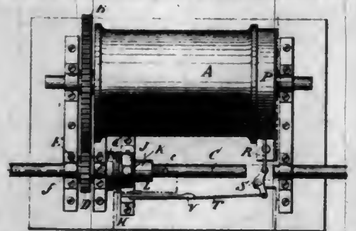


Claim.—1. In an elastic buffer for chair-rocker ends, the combination, with the arms A and B, of the side guards, *c*, one or both, extending from one arm to the other at the edges thereof, and from the point of the juncture thereof forward, as and for the purpose specified.

2. In an elastic buffer for chair-rocker ends, the rib or ribs *d*, projecting from the exterior of the extremity of the buffer, as described, and for the purpose specified.

207,681. HOISTING APPARATUS. Oliver S. Prudney, Port Huron, N. Y. Filed July 16, 1878.

Brief.—The driving-shaft may operate one or more drums. The small gear-wheel is made fast to the sleeve therein, which rests in bearings on the frame. Against the inner end of the sleeve another sleeve revolving with the shaft is brought in frictional contact when the hoisting-drum is to be rotated.



Claim.—1. The combination, with wheels B D and shaft C, of the sleeves E J, the latter sliding, and provided with an end enlargement carrying the convex surface H, as and for the purpose specified.

2. The combination, with the drum A, of the brake mechanism, consisting of the strap or flat bar P, rod R, bell-crank lever S, rod T, and hand-lever V, when arranged as shown and described.

207,682. RATCHET-WHEEL AND PAWL MECHANISMS FOR ROTATING SHAFTS BY TREADLE-POWER. P. J. Ribble, Campbellsport, Wis. Filed June 26, 1878.

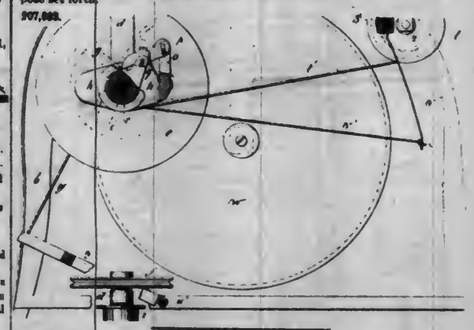
Brief.—The pawl is pivoted to arms of the pawl-carrier, and also to arms which are hung loosely upon the shaft of the ratchet-wheel, the pawl being held in contact by springs bearing upon the lever-arms. A cord is unwound from a spool to move the pawl and ratchet-wheel by winding the other end of the cord upon a wheel propelled by the treadle, and the ratchet is returned by the reaction of a spring unwinding a cord from a second spool.

Claim.—1. The ratchet-wheel *g*, pawl-carrier *h*, pawl *m*, spools *i* and K, wheel or crank *f*, and fly-wheel *o*, arranged substantially as described upon the main shaft *e*, in combination with the grooved wheels *t* and *u*, spring-arm *v*, wheel *w*, treadle *y*, and cords *t' v' y'*, substantially as and for the purpose set forth.

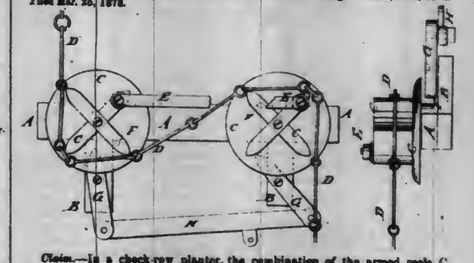
2. The pawl-carrier *h*, spools *i* K, and pawl *m*, in combination with the ratchet-wheel, substantially as described, and for the purpose set forth.

3. The combination of the pivoted pawl *m*, the pawl-carrier *h*, the pivoted arms *l*, and the springs *q* with the shaft and ratchet-wheel, as and for the purpose set forth.

207,683.



207,683. CHECK-ROW ATTACHMENTS FOR CORN-PLANTERS. George L. Rider, Kent, Iowa. Filed Mar. 25, 1878.



Claim.—In a check-row planter, the combination of the armed reels C, connecting-bar E, pins or blocks F, levers G, and cross-bar H with the frame-work A B and the chain D, as and for the purpose set forth.

207,684. CUT-SHOETS. Harvey Rowell, Columbus, Wis. Filed Jan. 22, 1878.



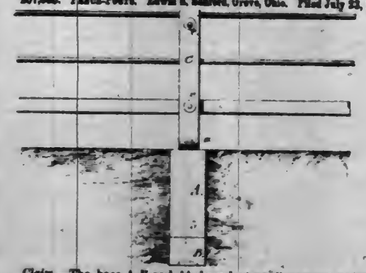
Claim.—1. The combination, with the upright bars A B, of the cross-bars C D, for forming the peep-hole, substantially as and for the purposes herein specified.

2. The combination, with the parallel bars, of the screws, whereby the aperture is expanded or contracted, substantially as specified.

3. The combination, with the upright bar having diagonal lines, of the cross-bars having scales, whereby the hole may be enlarged and the correct elevation indicated, substantially as specified.

4. The combination, with the cross-bars C D and vertical bars A B, of the spring I, substantially as and for the purposes herein specified.

207,685. FENCE-POSTS. Edwin S. Sanford, Orwell, Ohio. Filed July 23, 1878.



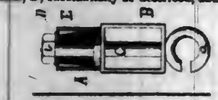
Claim.—The bars A B and U-shaped strap C, secured together by bolt and nut *a b*, in combination with bolts *c* and the rails or wires of a fence, as and for the purpose set forth.

207,686. WHIFFLETREES. Adam E. Schatz, New York, N. Y. Filed May 3, 1878.

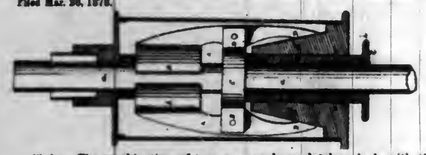
Claim.—In an easy starter, the combination, with the whiffletree F, of the rubber spring E, the receptacle or cylinder A, provided with the band B, the

pull-rod C, provided at one end with an eye or hook, *a*, and at the other with a nut, *b*, and a washer, D, substantially as described, and for the purpose set forth.

207,866.

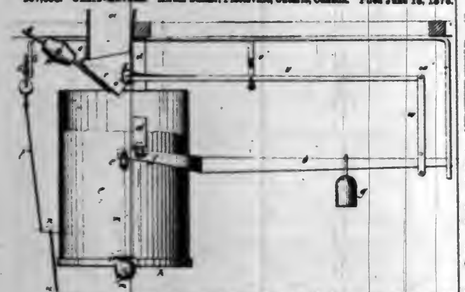


207,867. EXTENSION-SLIDES FOR GAS-FIXTURES. William H. Sheppard, New York, N. Y. Filed Mar. 26, 1878.



Claim.—The combination of two or more lever-clutches, A A, with the cone S and regulator R, as and for the purpose described.

207,868. GRAIN-METERS. Hiram Seider, Flatterville, Ontario, Canada. Filed June 18, 1878.



Claim.—1. An automatic weighing apparatus for flour-mills adapted for connection with the discharge-spout, and whereby the flour or other product from the spout is automatically weighed and discharged, substantially as set forth.

2. The spout *a*, weighted valve *r*, lever *s*, and rod *t*, in combination with the crank *u*, latch *m*, and hinged doors or gates A A of the receiver *c*, substantially as and for the purpose described.

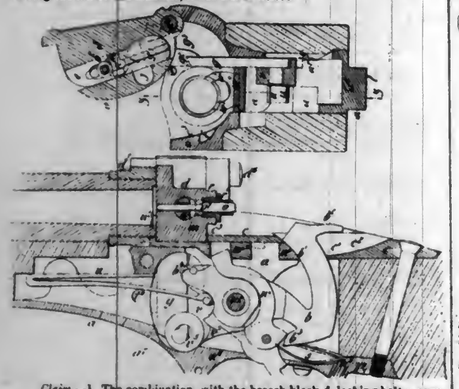
3. The receiver *c*, having the hinged and weighted doors or gates, in combination with the latch *m*, substantially as and for the purposes set forth.

4. The weighted valve *r*, pin *o'*, lever *o*, spring *y*, and link *w*, in combination with the scale-beam *b*, substantially as and for the purpose described.

5. The receiver *c*, scale-beam *b*, lever *c*, spring *y*, weighted valve *r*, pin *o'*, lever *s*, rod *t*, and crank *u*, in combination with the register or counter *v'*, substantially as and for the purpose described.

207,869. BREECH-LOADING FIRE-ARMS. William Soper, Reading, England. Filed Dec. 19, 1877.

Brief.—The parts are so constructed and combined that through the operation of a side lever the breech-block is unlocked, the breech is opened, the hammer is cocked, and the shell or cartridge extracted. The breech is closed during the fall of the hammer, if not closed before.



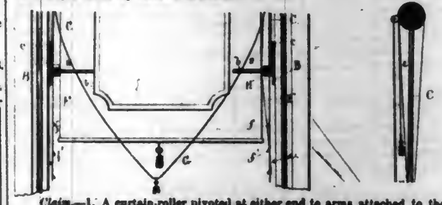
Claim.—1. The combination, with the breech-block *d*, locking-bolt *e*, capable of adjustment transversely therein, and the hole or socket *f* in the side of the shoe *c* for the reception of said bolt, of the connecting-rod *g*, with its stud *g'* and projections *g''* and *g'''*, tumbler *r*, side lever *o'*, and pin or axle *o''*, substantially as specified, whereby the said locking-bolt may be operated and the said breech-block opened or closed in one operation.

2. The combination, with the breech-piece *d* and its transversely-adjustable bolt *e*, of the rod *g*, provided with the stud *g'*, for engaging with the oblique slot in the said bolt *e*, and provided with the projection *g''*, for operating on the inclined portions of the breech-piece to raise the latter, and with the projection *g'''*, for operating, in connection with the shoulder *i* of the breech-piece, to close the latter, substantially as specified.

3. The combination, with the breech-piece *d*, of the adjustable non-rotating bolt *e*, provided with the slot *n* and cavity *m*, the firing-pin or striker *c*, provided with a flat portion, *c'*, passing through said slot *n*, and provided with a flange or shoulder, *c''*, for projecting against the beveled sides *p* of the said cavity *m*, substantially as specified, whereby the said firing-pin is precluded from turning, is prevented from operating until after the breech-piece is properly fastened, and is forced back on the unfastening of the bolt *e*.

207,870. CURTAIN-FIXTURES. Otto Steinhofer, Baltimore, Md. Filed July 10, 1878.

Brief.—The roller is pivoted to arms attached to the window-frame, so that it can be swung inward for ventilation and admission of light. The arms are thrown back by a coiled spring, and are prevented from lateral vibration by a lip overlapping the arc of a quadrant, which is fastened to the window-frame at the same point as the arms. Short horizontal rods project from this point far enough to hold the lower part of the curtain against the window, but admitting of its ready removal therefrom.



Claim.—1. A curtain-roller pivoted at either end to arms attached to the window-frame, and adapted to be swung inward, as described, the said arms being provided with springs for normally holding them in a vertical position, and cords for securing them when swung inward, substantially as set forth.

2. The rods *b*, extending partially across the window-frame, and adapted to retain the curtain close to the sash and admit of its ready removal therefrom, substantially as described.

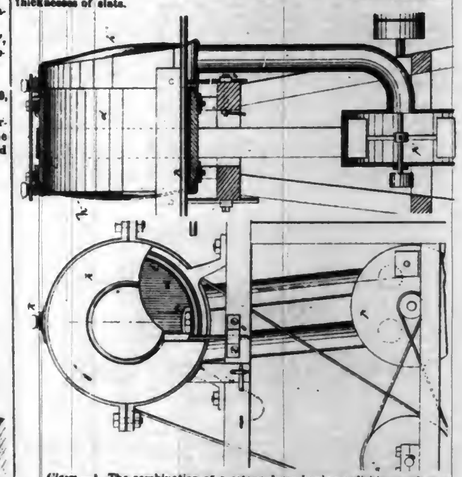
3. A curtain-roller mounted upon arms hinged or pivoted to the window-frame, and provided with one or more arcs, B, for preventing lateral motion of the arms, substantially as described.

4. In combination with the arms C, the springs H and arcs B, substantially as set forth.

5. In combination with the curtain and roller, mounted upon pivoted arms, as described, the springs H, cords G and F, and button *e*, substantially as set forth.

207,871. SANDPAPERING-MACHINES. Joseph Taylor, New Orleans, La. Filed June 27, 1878.

Brief.—Slat while being polished is slid back and forth and rocked from side to side by hand. The rest is vertically adjustable to accommodate different thicknesses of slats.



Claim.—1. The combination of a rotary drum having polishing-surface on inside, a movable rest, and an exhaust-blower, as shown and described, for the purpose specified.

2. The blower *p*, in combination with the polishing-drum *d* and heads A A', substantially as and for the purposes set forth.

207,872. BRAID-GUIDES FOR SEWING-MACHINES. Eddy T. Thomas, New York, N. Y., assignor to Gold Medal Sewing Machine Company, Orange, Mass. Filed July 30, 1878.

Brief.—Improvement on Letters Patent No. 150,059. The device is adapted to guide braids of various widths, and for this purpose the needle and braid hole is made V shaped, and is so arranged that the smaller end of said hole points in the direction of the feed of the machine, whereby the braid, no matter what may be its width, will be brought into proper relative position to the needle to receive the row of stitching in its center.

Claim.—1. The improved braiding-guide or throat-plate provided with a V-shaped passage, *d*, for the braid and the needle, the smaller contracted end of the V-shaped passage being made to point in the direction of the forward movement of the feed, to guide and centralize braids of different widths, substantially as described.

2. The throat-plate provided with the feed-opening and the V-shaped braid and needle-passage *d*, combined with the connected and laterally-extended arm *f*, to operate substantially as described.

207,902.



207,903. ADJUSTING DEVICES FOR SPINNING-RINGS AND THEIR HOLDERS. Chas. E. Trowbridge, Whitinsville, Mass. Filed June 22, 1878.

Brief.—A cramping device is located on the under side of the rail, and extends over the flanges on the shanks of two rings or holders. A screw extending from the top side of the rail presses upon the cramp to any desired degree, and thus permits the adjustment of the rings or holders in their sockets.



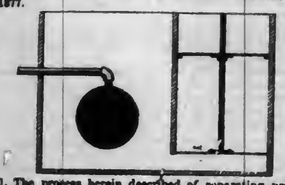
Claim.—The combination, with the ring-rail and shanks of two rings or holders, provided each with holding-down projections located below the under surface of the ring-rail, of a cramping device shaped at its ends to operate upon the projections of two shanks, and a screw to press the cramping device to hold the said shanks in adjusted position, substantially as described.

207,904. CLASPS. Patrick F. Tracy, Greenbush, N. Y. Filed Jan. 31, 1878.



Claim.—The combination, with hook B, of the clasp A', made in one piece with the ring a^1 and provided with inner teeth or projections *a*, tongue a^2, and the hole a^3, for attaching it to pantaloons or other garments, substantially as shown and described.

207,905. SEPARATING METALS FROM WASTE SOLUTIONS. John Tenbridge, Newark, N. J. Filed Dec. 7, 1877.

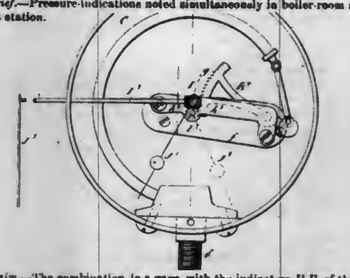


Claim.—1. The process herein described of separating precious metals from watery solutions, in which said metals are suspended by passing the watery solutions or suds through a bath of oil or hydrocarbon liquid, substantially as specified.

2. The process herein described of separating precious metals from watery solutions, in which said metals are suspended by passing said solutions through fat or hydrocarbon liquid and through a filter, substantially as specified.

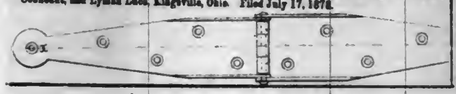
207,906. STEAM-GAGES. Charles B. Vaillant, Mobile, Ala. Filed May 15, 1878.

Brief.—Pressure-indications noted simultaneously in boiler-room and at a distant station.



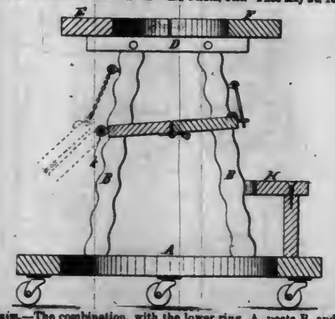
Claim.—The combination, in a gage, with the indicators J^2 J^3, of the steam-pipe *b*, expansible curved arm C, link *d*, lever E, curved rack *g*, pinions h^1 h^2, and shafts I^1 I^2, as and for the purpose specified.

207,907. HINGE. Sedgwick M. Wade, Andover, assignor to himself, George J. Record, Concord, and Lyman Lees, Kingsville, Ohio. Filed July 17, 1878.



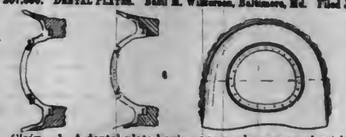
Claim.—A strap-hinge having both leaves swaged up at the sides at right angles, and adapted to close one within the other, the rear portion of the flanges forming bearings for the pivot of the hinge, substantially as described.

207,908. BABY-WALKERS. Lewis West, Goldsm, Colo. Filed May 24, 1878.



Claim.—The combination, with the lower ring, A, posts B, and braces D, of the upper ring, consisting of the part E, rigidly secured, and the part F, hinged thereto, so as to swing open, and provided with means for fastening it when closed, substantially as and for the purpose shown and described.

207,909. DENTAL PLATES. Basil M. Wilkerson, Baltimore, Md. Filed Jan. 18, 1878.



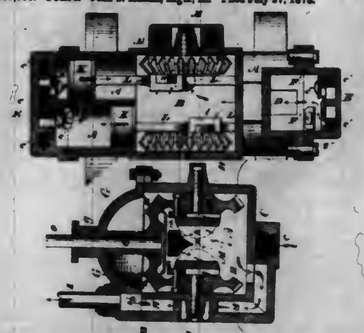
Claim.—1. A dental plate having an annular groove about its central portion, the said groove containing a soft-rubber vacuum-lip, as set forth.

2. A dental plate having one or more perforations communicating with the under side of a soft-rubber vacuum-lip, as and for the purpose described.

3. A dental plate having a soft-rubber vacuum disk or annulus and a series of perforations communicating with the under surface of the latter, substantially as described.

4. A dental plate having an annular undercut vacuum-groove, substantially as described.

207,700. PUMPS. John S. Adams, Elgin, Ill. Filed July 27, 1878.



Claim.—1. The hereinbefore-described pump-body, in which the cylinders A, central chamber B, supply-pipe C, passages D, and exit-passage H are combined and relatively arranged substantially as and for the purpose specified.

2. The combined cylinder-head and valve-box E, provided with the recesses *e'* and *e'''*, water-passages *e* and *e''*, and valves F and F', in combination with the body of the pump, substantially as and for the purpose shown.

3. In combination with the plungers K, the rods L, having the vertical grooves *l'* at their longitudinal centers, the gear-wheels M, provided with the studs *m*, the gear-wheel N, and the operating-shaft O, substantially as and for the purpose set forth.

4. The hereinbefore-described pump, in which the cylinders A, chamber B, supply-pipe C, passages D, valve-boxes E, provided with the passages *e* and *e''* and valves F and F', the cover G, the discharge-pipe H and I, the pistons K, the rods L, having vertical central grooves *l'*, the gear-wheels M, provided with crank-studs *m*, the gear-wheel N, and the shaft O, are constructed and combined to operate in the manner and for the purpose shown.

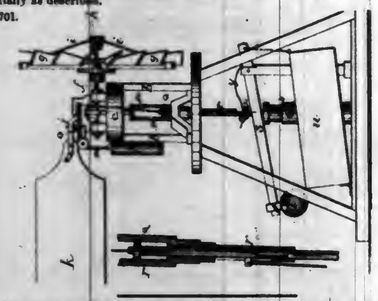
207,701. WIND-ENGINES. William A. Aldrich, Ingersoll, Mich. Filed Apr. 17, 1878.

Claim.—1. The combination of the pivoted vane *k*, having a weight, *p*, fastened to it on one side, and a rope or chain, *s*, rod *q*, weighted lever *s*, and hinged trough *u* on the other, substantially as shown.

2. The piston-rod *r*, made hollow, so as to receive the rod *q*, which rod is connected to the vane at its upper end, and the weighted lever at its lower end, substantially as set forth.

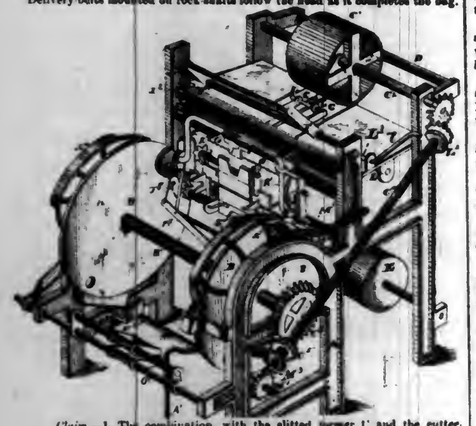
3. The collar *b*, projecting beyond the end of the shaft *f*, and having the rearwardly-inclined braces *i* passed outwardly through it, and through the outer end of the radial arms of the wheel, and held and made adjustable by means of nuts on their outer ends, whereby the wheel is kept straight, substantially as described.

207,701.



207,702. PAPER-BAG MACHINES. Oscar W. Allison, Cleveland, Ohio. Filed Apr. 9, 1878.

Brief.—A web of paper is fed to the former, where, after being formed into a tube, intermittently-operating slitters form slits, which determine the shape of the closing flaps of the bag-bottom. The slitted tube is passed by the feed-rolls F F¹ between the clamping-bars of a suspended head, which revolves with the wheels B B, and during such revolution bars B and B', carrying nippers, open the tube, and sliding fingers fold and final folding-wings form the bottom of the bag. One or more heads may be suspended between the wheels B B. Conical rubber rings are used on the feed-rollers to draw the web around the former. The rod C², passing from drum C¹, guides the tube to the nippers *r*¹, &c. Intermittent motions of head and of pasting devices are produced by locks and segmental gearing. An arch, A', serves to hold the nipper-bars R R' extended, to present the opened tube to the pasting devices. Delivery belts mounted on rock-shafts follow the head as it completes the bag.



Claim.—1. The combination, with the slitted former C and the cutter-wheels L¹, located below the same, of the blank wheels L, located above the former C, and adapted, substantially as shown, to be intermittently brought in contact with said cutter-wheels, substantially as set forth.

2. The combination, with rock-shaft L², provided with a spring tension device and crank-arm, together with cam L³, formed in rotating shaft C⁴, of the blank wheels L, indirectly supported on said rock-shaft, slitted former C, and cutter wheels L¹, located below the latter, substantially as set forth.

3. The combination, with the former C, of the stationary drum C⁵ and the bar *c*³, which latter is adapted, substantially as shown, to have longitudinal reciprocating movement in and out of said drum, substantially as set forth.

4. The combination, with the former C and the stationary drum C⁵, having an opening therein, of the flexible spring-bar *c*³, which passes through said drum-opening, substantially as set forth.

5. The combination, with the former C, having loop-guides on its upper surface, and the stationary drum C⁵, having an opening therein, of the flexible spring-bar *c*³, which passes through said drum-opening, and is adapted, substantially as shown, to have movement in the said loop-guides of the former, substantially as set forth.

6. The combination, with rotating shaft C⁴, having arm *c*⁴, rigidly secured thereto, and provided with pivoted arm *c*⁵, having pin *c*⁶, of the arm *c*, loosely secured on the shaft, flexible spring-bar *c*³, stop *c*⁷, and spring *c*⁸, substantially as set forth.

7. The combination, with guide *r*³, having movement through nipper *r*², of lever *r*⁵, connecting-bar *r*⁶, and link *s*, substantially as set forth.

8. The combination, with nippers *r*² and *r*³, of guide *r*⁴, adapted, substantially as shown, to guide the tube to the nippers, substantially as and for the purpose described.

9. The combination, with bar R, provided with the upper nippers, *r* and *r*¹, of bar R', provided with the lower nippers, *r*² and *r*³, substantially as set forth.

10. The combination, with bar *b*¹, formed with a rack on its central body, tubular bar K', and cam *b*, formed on frame A, of gear-wheel *f*⁵ and connecting mechanism, substantially as shown, adapted to close the fingers *a a*, substantially as and for the purpose described.

11. The combination, with sliding rack-bar *b*², tubular bar K', and cam *b*', formed on frame A, of gear-wheel *f*⁵ and connecting mechanism, substantially as shown, adapted to open the fingers *a a*, substantially as and for the purpose described.

12. The combination, with sliding bar *b*², gear-wheels *f*¹ *f*⁵, shafts *f f*, and cranks *e e'*, of connecting-rods *d d'* and sliding sleeves *a*¹ *a*¹, which latter have movement upon bar K', and are, respectively, provided with folding fingers *a a*, substantially as set forth.

13. The combination, with sleeves *a*¹ *a*¹, having sliding movement on bar K', and provided with folding-fingers *a a*, respectively connected therewith by hinges *a*² *a*², of connecting-rods *d d'*, cranks *e e'*, shafts *f f*, and mechanism, substantially as shown, connecting with said shafts for alternately operating the same in different lines of rotation, substantially as set forth.

14. The combination, with sleeves *a*¹ *a*¹, having sliding movement on tubular bar K', and provided with folding-fingers *a a*, of bar *b*², which slides within said tubular bar, and is adapted, in connection with the engaging mechanism, substantially as shown, to alternately close and open said fingers, substantially as set forth.

15. The combination, with folding-fingers *a a*, sliding sleeves *a*¹ *a*¹, connecting-rods *d d*, cranks *e e'*, and rotating shafts *f f*, of gear-wheels *f*⁵ *f*⁵, bar *b*², provided with rack *f*⁵, and suitable cams formed on the frame of the machine, adapted to alternately operate said bar *b*² in a reciprocating sliding movement within the tubular bar K', substantially as set forth.

16. The combination, with fingers *a a*, adapted to have reciprocating movement, as described, and respectively provided with levers *b b*¹, of the casting or center-piece *g*, provided with stops *b*² *b*², substantially as set forth.

17. The combination, with bar R, provided with nippers *r r*¹, and bar R', provided with nippers *r*² *r*³, the same being carried on the revolving head or rose I, of the curved wire arch A', formed as shown, and adapted to separate said bars by engagement therewith, substantially as set forth.

18. The combination, with fingers *a a*, adapted to have reciprocating movement, as described, and respectively provided with levers *b b*¹, of the casting or center-piece *g*, having stops *b*² *b*², and formed with the apron *b*³, substantially as set forth.

19. The combination, with the casting or center-piece *g*, of the apron *b*³, formed or securely attached thereto, said apron being adapted, substantially as shown, to serve the double purposes of strengthening the head and guiding the paper, substantially as set forth.

20. The combination, with bar *b*², rack *f*⁵, gears *f*¹ *f*⁵, shafts *f f*, cranks *e e'*, and connecting-rods *d d'*, of sleeves *a*¹ *a*¹, fingers *a a*, respectively provided with levers *b b*¹, and casting or center-piece *g*, provided with stops *b*² *b*² and *b*³ *b*³, substantially as set forth.

21. The combination, with shaft M, carrying paste-wheels M¹, which are adapted to pass through paste-box M², and provided with lock M³, and gear M⁴, of wheel B, provided with notch M⁵ and gear M⁶, substantially as and for the purpose described.

22. The combination, with folder *j*, hinged at *k*, and connected by crank *k*² with shaft *k*¹, of coarse gear *k*³, secured on end of said shaft, and stationary rack *k*⁴, substantially as set forth.

23. The combination, with folder *j*, hinged at *k*, and connected by crank *k*² with shaft *k*¹, of gear *k*⁵, secured on said shaft, and coarse gears *k*⁴ *k*⁴, both the latter mounted loosely on bar K', substantially as set forth.

24. The combination, with bar K, adapted, substantially as shown, to be moved in a parallel position to and from bar K', of the serrated cutting-knife G and spring tension-rod F², adapted to be tripped, substantially as set forth.

25. The combination, with feed-rolls F F¹, spring tension-rod F², adapted, substantially as shown, to be tripped, and the serrated cutting-knife G, of the bars K and K', said bar K being adapted to be moved in parallel position to and from bar K', substantially as set forth.

26. The combination, with gear *u*, attached to sleeve *v*, which latter is attached to link *u*¹, of arm *u*², rigidly connected with the gear, said arm formed with two lugs, *u*³ *u*³, which embrace the nipper-bar R and hub *u*⁴, which latter is adapted to engage with cam *u*⁵, substantially as set forth.

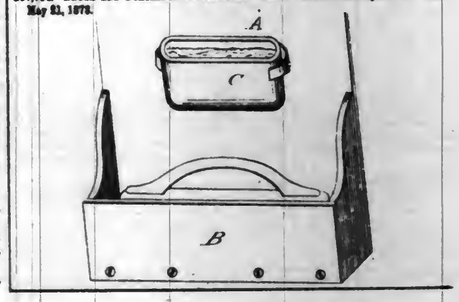
27. The combination, with feed-rolls F F¹ and cutting-knife G, of spring tension-rod F², lever *e*², and bar *b*², substantially as set forth.

207,703. BALE-TIES. William G. Anderson, Mexia, Tex. Filed June 22, 1878.



Claim.—The bale-tie described, formed of one piece of metal, provided at one end with the eye C, having rounded corner *c*, the portion of metal at the other end being bent upon itself, forming the lock B, having the incline *b*' and hook *b*, constructed and adapted to serve as and for the purposes specified.

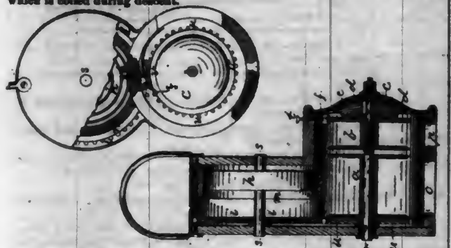
207,704. BRUSH AND BLACKING-BOX HOLDERS. Wm. H. Andrus, Brooklyn, N. Y. Filed May 31, 1878.



Claim.—A stove-blacking utensil composed of a base-plate, A, provided with a brush-pocket, B, and a pivoted self-righting blacking-cup, C, adapted to be hung in a vertical or placed in a horizontal position, substantially as herein shown and described.

207,705. FIRE-ESCAPES. Edward M. Bell, Stanstead, Quebec, Canada, assignor of one-half his right to Daniel F. Gallaher and William G. Bell, same place. Filed July 23, 1878.

Brief.—Two rope-spools rotate with the main shaft, one carrying the lowering-rope and the other the brake-rope, the last being threaded upon the shaft, so as to be capable of traversing thereon, and thus apply or release the brake-disk, while the other spool is rigidly secured to the shaft. Both ropes being unwound at the same speed, by pulling upon the brake-rope the threaded spool recedes from the brake-disk, (which revolves with the shaft, but is capable of lateral movement also,) and thereby the descent is regulated, a spring-brake acting upon the periphery of the brake-spool to cause it to travel toward the brake-disk and apply the same, when the pressure is relieved from the brake-rope. After a descent the device is returned to its position by a spring, which is coiled during descent.



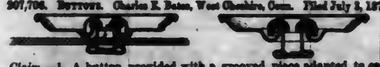
Claim.—1. The threaded spool *b*, in combination with the sliding disk *c*, and mechanism for operating them upon their shaft, and frictional bearing-surface *d*, substantially as described.

2. The threaded spool *b*, having flange *v*, in combination with the spring *f*, lenticular disk *c*, and frictional bearing-surface *d*, substantially as described.

3. The spool *a*, in combination with the threaded spool *b*, lenticular sliding disk *c*, and mechanism for operating them upon their shaft, and frictional bearing-surface *d*, substantially as shown and described.

4. The combination of the spring *h*, gearing *t u*, pulleys *a b*, lenticular sliding disk *c*, frictional bearing-surface *d*, and spring *f*, substantially as shown and described.

207,706. BUTTONS. Charles E. Bates, West Cheshire, Conn. Filed July 3, 1878.



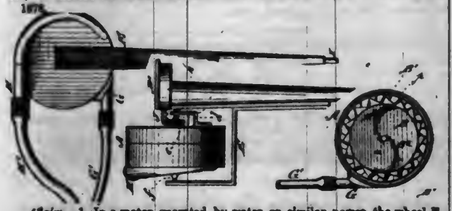
Claim.—1. A button provided with a grooved piece adapted to cause the entering portion of a button-fastening to be coiled or hooked in engagement with the button-back, said grooved piece being formed either independent of or as part of the button-shell, substantially as set forth.

2. A button provided with a ring-plate or disk having an inner and an outer edge flange, both said flanges projecting toward the button-back, and adapted to engage with the entering portion of a button-fastening, substantially as set forth.

3. The combination, with a button provided with an independent ring-plate or disk formed with a continuous annular groove, of a button-fastening whose entering-body is adapted to be bent into a coil or hook form by engagement with said groove, substantially as set forth.

4. The combination, with a button provided with a ring-piece having an inner edge flange of less depth than its outer edge flange, and both said flanges projecting toward the button-back, of a fastening provided with two or more prongs, which latter are adapted to engage with both said flanges in securing the button to the fabric, substantially as set forth.

207,707. MOTORS FOR DENTAL ENGINES. Alexis H. Best, Savannah, Ga. Filed Jan. 26, 1878.



Claim.—1. In a motor operated by water or similar power, the wheel B, provided on its periphery with a series of paddles or buckets, B', and on its under side with one or more paddles, B², whereby the water is forced out by the centrifugal force of the wheel, as set forth.

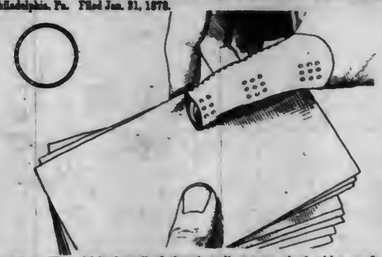
2. The combination, substantially as described, of the case A, wheel B, tool-stock frame E, the said wheel and frame having distinctly separate pivots, the tool-shaft I, and gearing J *e*, all as herein set forth.

3. In combination with the case A and wheel B, the inlet G and outlet H, with the flexible tubes G' H', braided together, substantially as herein set forth.

4. In a water-motor, the buckets B', tapering from the upper to the lower face of the wheel, in combination with the disk *p* above the buckets, for the purpose set forth.

5. In a motor for dental or other engines, the flexible inlet and outlet pipes, braided together, for the purpose set forth.

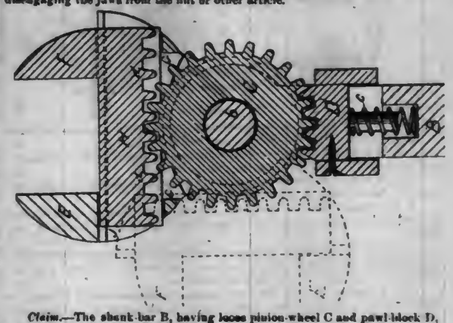
207,708. THUMB-STALLS FOR FACILITATING THE SORTING OF LETTERS. John S. Boyer, Philadelphia, Pa. Filed Jan. 31, 1878.



Claim.—The within-described thumb-stall, composed of rubber perforated, ribbed, or roughened, as set forth.

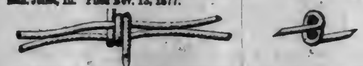
207,709. WRENCHES. Henry W. Brett, Boston, Mass. Filed Feb. 15, 1878.

Brief.—By disengaging the pawl-block the handle may be turned to take a fresh hold, for further turning of the nut or other article clamped, without disengaging the jaws from the nut or other article.



Claim.—The shank-bar B, having loose pinion-wheel C and pawl-block D, in combination with jaw E, swinging upon the pivot *b* of the pinion C, and jaw F, sliding through jaw E and gearing with pinion-wheel C, all substantially as described, for the purpose specified.

207,710. BARBED WIRE FOR FENCES. Jacob Brotherton, Ames, Iowa, assignor to A. Dillman, Joliet, Ill. Filed Nov. 13, 1877.



Claim.—The barb made of a piece of wire, pointed at both ends, and fastened to double fence-wire by inserting one end between the same, and wrapping a portion of the remainder around both, substantially in the manner and for the purpose set forth.

207,711. SULKIES. Dennis Bashor, Effingham, Ill. Filed Jan. 11, 1878.



Claim.—1. A sulky-seat adapted for adjustment to an inclined position, front or rear, upon the running-gear or frame of the sulky, by means substantially as described, for the purpose specified.

2. A sulky-seat having its corners adapted for independent adjustment upon the running-gear or frame of the sulky, by means substantially as described, for the purpose specified.

3. A sulky-seat adapted for vertical and lateral adjustment, a forward and backward adjustment, an inclined adjustment, and an adjustment at the corners upon the running-gear or frame of the sulky, by means substantially as described, for the purposes specified.

4. The combination, with the seat and running-gear of a sulky, of the slotted plate B, pivoted adjusting-screws E E, pivoted rods H, and links F F, substantially as described, for the purposes specified.

5. The combination of the metal sockets D D with the seat, the adjusting-screws E E, and the rods H H, substantially as described, for the purpose specified.

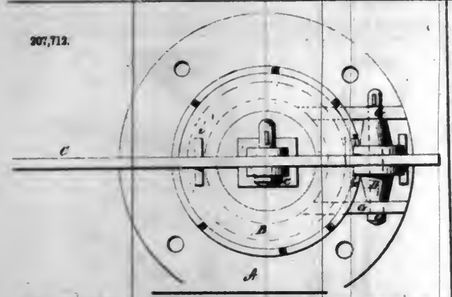
207,712. WATER-VALVES. James Gentele, Cedar Rapids, Iowa. Filed July 15, 1878.

Claim.—1. The valve B, provided with an annular cavity or chamber, in combination with gasket F and ring *m* and washer E, or their equivalents, substantially in the manner and for the purpose set forth.

2. The combination of valve B, as described, having gasket F, ring *m*, and washer E, with the seat A and lever C, substantially as and for the purposes set forth.

3. The lever C, pivoted at *c*, in combination with hinged piece D and pin *c* and valve B, substantially as and for the purposes set forth

207,712.



207,713. LANTERNS. Evan F. Cook and Alfred L. Baron, Bellaire, Ohio, assignors to David Rankin, same place. Filed Jan. 31, 1878.



Claim.—1. In a lantern, the combination of two globes, supporting-plate G, and the ducts C', substantially as described and shown.

2. In a lantern, the combination of the supporting-plate G, the cone F, and the ducts C', substantially as described and shown.

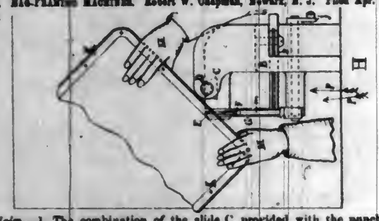
3. In a lantern, the combination of the supporting-plate G and the base-plate B', substantially as described and shown.

4. In a lantern, the combination of the supporting-plate G, the base-plate B', the air-ducts C', and the air-space C², substantially as described and shown.

5. In a lantern or lamp, the base-plate B', made in a single piece of metal, and provided with the openings E E and walls *b b b b*, *b' b'*, and *a a*, constructed and arranged substantially as described.

6. In a lantern or lamp, the combination of the openings E E with the supporting-plate G, the several parts constructed and arranged substantially as described.

207,714. HAT-FRAMING MACHINES. Robert W. Chapman, Newark, N. J. Filed Apr. 13, 1878.



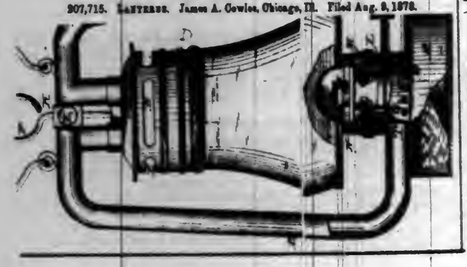
Claim.—1. The combination of the slide C, provided with the punch *a*, and adapted to be operated in the lower part of the stand B, and the neck Y, provided with stationary die *b* on the upper part of the stand B, for piercing the rivet-holes in the frame K from the under side, as herein set forth.

2. The combination, in a hat-framing machine, of the punch *a* and punch-slide C with the riveting-hammer F, arranged to operate on the anvil E on the corner of seat I, as herein set forth.

3. In combination with the anvil E, the hammer F, helve *m*, shaft *o*, crank *j*, link *i*, slide *g*, bar U, lever *e*, disk P, shaft O, and connections to treadle X, for regulating the movements of the hammer, as herein set forth.

4. The hat-framing machine constructed with anvil E and punch *a*, supported by seat I in front of and at one side of the machine, die *b*, supported above the punch in front of and at one side of the machine, cam L and punch-slide C to operate the punch, and shaft O and its connections to hammer F, substantially as herein set forth.

207,715. LANTERNS. James A. Cowles, Chicago, Ill. Filed Aug. 9, 1878.

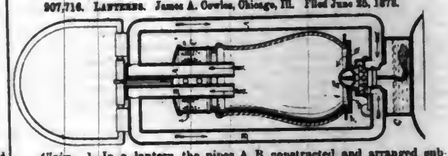


Claim.—1. The combination of the outer and inner walls, L and M, forming thereby an outer and an inner air-chamber, with the cap N, fitting over said outer wall, L, substantially as and for the purpose shown.

2. The combination of the two air-chambers formed by the outer and inner walls, L and M, with the pipes B B and openings O O, whereby air is supplied to the burner from two sources, substantially as and for the purpose shown.

3. The combination of the rod F, bearing K, set-screw I, and cap D, substantially as and for the purpose specified.

207,716. LANTERNS. James A. Cowles, Chicago, Ill. Filed June 25, 1878.



Claim.—1. In a lantern, the pipes A B, constructed and arranged substantially as shown and described.

2. The combination of the pipes A B, burner, and globe, substantially as shown and described.

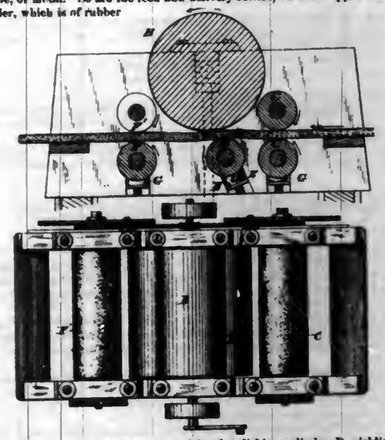
3. The combination of the pipes A B, globe, and perforated diaphragm F, substantially as shown and described.

4. The combination of the pipes A B, burner, diaphragm F, and globe, substantially as shown and described.

5. The combination and arrangement of the key *a* with the bail or pipes and cap C, substantially as and for the purpose shown and described.

207,717. WOOD-POLISHING MACHINES. Jonathan Granger, Cincinnati, Ohio. Filed July 26, 1878.

Brief.—The compressing and slicking cylinder is of hard wood, ivory, bone, or metal. So are the feed and delivery rollers, save the upper delivery-roller, which is of rubber



Claim.—1. The combination of hard polishing-cylinder B, yielding supporting-roller D, and suit of feed and delivery rollers C F F', arranged and adapted to operate substantially as and for the purpose set forth.

2. In combination with polishing or slicking cylinder B, the supporting roller D, whose bearings rest on adjustable springs contained in oblique housings E, located to one side of the vertical plane of the slicker-axis, substantially as and for the purpose designated.

207,718. HORSE-DETACHERS. William G. Cummins, Cookville, Tenn. Filed July 27, 1878.



Claim.—1. The combination, with the single-tree A, having ferrules *a*, provided with bearing-arms *b* and eyebolts *d*, of the independent rotating trace-hook rods B, the bail C, uniting said rods, the draw-cord *g*, and returning-springs S, secured at one end to the bail and at the other to the tree, and coiled around said rods, substantially as specified.

2. The combination, with the single-tree A, independent rotating trace-hook rods B, journaled thereon, bail C, uniting said rods, a draw-cord, *g*, and returning-springs S, of the angular metallic guards J, rotating independently on said rods, and forming a closed loop with the trace-hooks *f*, and the spring *s* substantially as specified.

3. The combination, with the single-tree A, independent rotating rods B, having hooks *f*, bail C, uniting said rods, and the returning-springs S, of the angular guards J, having grooved hub *h*, a pin, F, projecting from the ferrule *a*, and springs *s*, secured at one end to the guard and at the other to the tree, substantially as specified.

207,719. RAILWAY-TIES. Winthrop E. Curtiss, Roppenville, Pa. Filed May 16, 1878.

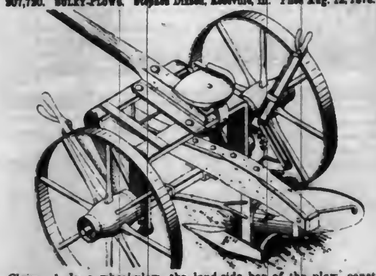
Brief.—The improvement on the V-shaped metallic tie, with elongated bolt-holes for the bolts which tighten the rail-clamps, consists in a brace riveted to the lower side of the tie to strengthen it and make up for loss of metal in the bolt-holes.



Claim.—1. The wrought-metal tie A, having the flaring sides *b* and a brace of the same contour as the tie, and riveted to its under side, under the seat of the rail on said tie, substantially as specified.

2. The angular metallic tie A, having the angular transverse re-enforce B below the rail-seat portion, and on each side of the same the oblong slots *c c* through the tie for the passage of the clamp-bolts, substantially as specified.

207,720. SULKY-PLOWS. Stephen Dixon, Roseville, Ill. Filed Aug. 12, 1878.



Claim.—1. In a wheel-plow, the land-side bar of the plow, constructed substantially as described, and with a lower sharpened edge to facilitate its entrance into the soil when raised and lowered by slight elevations under the land-side wheel, as and for the purpose specified.

2. The land-side bar F'' of a plow constructed with a lower sharpened edge, substantially as described, and for the purpose specified.

3. In a wheel-plow, the brace G, attached at one end to the plow and at the other end to the wheel-frame, in combination with the plow, having the rear lower portion of its land-side inclined upward and its lower edge sharpened, substantially as described, and for the purpose set forth.

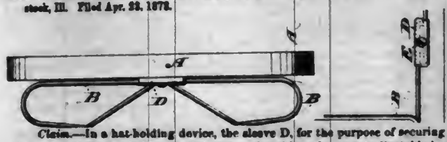
207,721. HOOPS. John B. Dougherty, Rochester, N. Y. Filed July 3, 1878.

Brief.—A veneer cut from a rotating log is slitted into hoop-blanks, which are formed into finished hoops by compression—*e. g.*, by rolls or dies.



Claim.—A wooden hoop having compacted fibers and finished compressed form, substantially as and for the purpose specified.

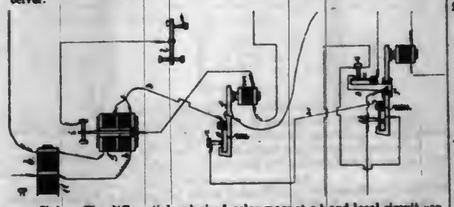
207,722. HAT-HOLDERS. Russel O. Dunning, Jefferson, assignor to Oliver F. Field, Woodstock, Ill. Filed Apr. 23, 1878.



Claim.—In a hat-holding device, the sleeve D, for the purpose of securing the ends of the hat-holder to the seat, and making the same adjustable by means of the screw E, and the ends *d d* of the holder B, in combination with the seat A, substantially as set forth, and for the purpose specified.

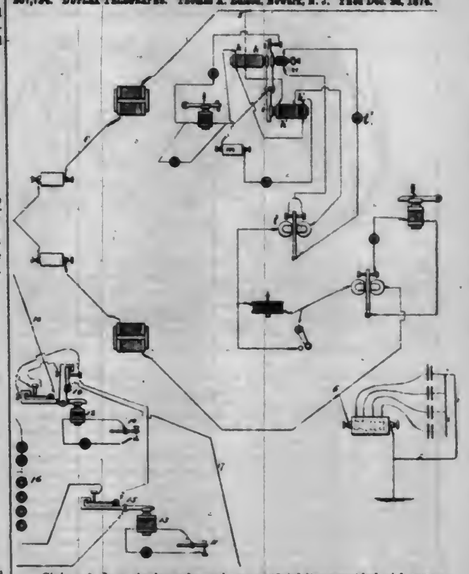
207,723. DUPLEX TELEGRAPHS. Thomas A. Edison, Newark, N. J., assignor of one-half his right to George B. Prescott, New York city. Filed Sept. 1, 1874.

Brief.—In duplex working, allows either party that is receiving to interrupt the person sending without interfering with the other sender and receiver.



Claim.—The differential polarized relay magnet *g* A and local circuit containing the key *l*, armature-lever *i*, and magnet *m*, in combination with the reversing-key *r* and circuit-connections, substantially as set forth.

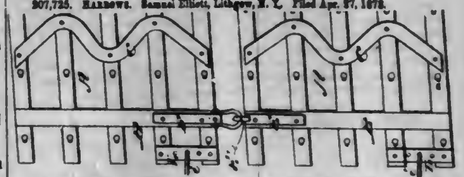
207,724. DUPLEX TELEGRAPHS. Thomas A. Edison, Newark, N. J. Filed Dec. 26, 1874.



Claim.—1. In a duplex telegraph, an artificial line provided with two or more condensers of varying capacity, and a like number of rheostats of varying resistance, for regulating the charge and discharge of the same to correspond with that of the main line, substantially as and for the purpose specified.

2. The retractile magnet *u*, combined with the magnet A and polarized magnet *t*, that acts to momentarily break the circuit of *u* when the reversal of polarity takes place, substantially as set forth.

207,725. HARROWS. Samuel Elliott, Lithgow, N. Y. Filed Apr. 27, 1878.



Claim.—A harrow having the parallel bars A, cross bars B, and the serpentine brace C, extending centrally across the harrow-frame, and at equal distances from the cross bars B, substantially as shown and described.

207,726. STREET-CARS. Wm. L. Erwin, New Haven, Conn. Filed May 25, 1878.



Claim.—1. The herein described floor for street-railway cars, consisting of the principal floor combined with a series of strips running longitudinally from end to end, with spaces between the strips, and spaces *b* at one or both ends, substantially as described.

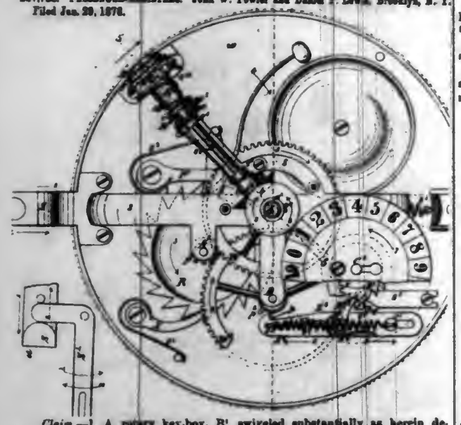
2. The herein-described platform for street-railway cars, consisting of the principal floor with strips running transversely from side to side, and with spaces between them, substantially as described.

207,727. DRAW-BARS FOR RAILWAY-CARS. John R. Fish, Grand Rapids, Mich. Filed Dec. 13, 1875.



Claim.—The combination of the draw-bar B D, provided with head C, having longitudinal slots *c c*, the surrounding longitudinally movable frame G, provided with bumper E, the two springs J J', loose slides I I', and guides or ways K K, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

207,728. PASSENGER-REGISTERS. John W. Fowler and Daniel T. Lewis, Brooklyn, N. Y. Filed Jan. 29, 1878.



Claim.—1. A rotary key-box, B^1, swiveled substantially as herein described, and provided with a ratchet device, r^1 s^{10}, in combination with a zero-guard, c s^9, for the purpose set forth.

2. A short series of ratchet-teeth, r^1, and a spring-click, s^{10}, in combination with a rotary key-box, B^1, for regulating its motion and giving warning of the approach of the trip-hand to zero.

3. A key-clutch, E^3 m, splined to the setting-shaft D, and projected by spring s^8, and having a single socket, h, in combination with a key, K, having a matching projection, k^3, parallel to its shank, for the purpose specified.

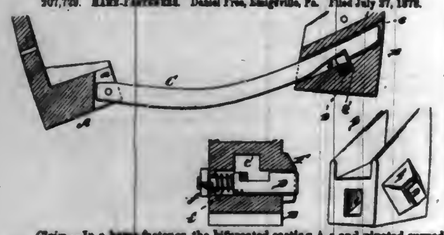
4. The combination of a setting-shaft, D, geared to the trip-hand of a passenger register, a key-clutch, E^1, carried by said shaft, and having a positive connection, k^3 h, with the key, and a rotary key-box, B^1, having a ratchet device, r^1 s^{10}, the latter arranged and operating substantially as herein described, for preventing the rotation of the trip-hand by registrations while the key is in its box.

5. The combination, in a passenger-register, of a setting-shaft, D, gearing b b^3, driven by said shaft, a zero-guard, c s^9, controlling the motion of said shaft, and a trip-hand, H, attached to said gearing by a frictional hub, e, said trip-hand being thus adapted to be adjusted independently with relation to said zero-guard, substantially as herein set forth.

6. The combination of a grooved main shaft, A, a bevel-gear, b, attached to said shaft A by frictional hub a^1 and set-screw a^2, a matching gear, b^2, in a radial setting-shaft, D, and a trip-hand, H, attached to said hub a^1 of the first gear by a frictional hub, e, substantially as herein described.

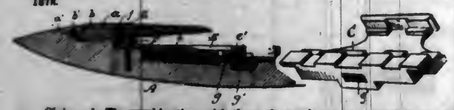
7. A single plate-spring, s^7, carrying a detent-rib, r, and an incline, f, in combination with an actuating-slide, B^2, a feed-pawl, F^2, carried thereby, a ratchet-wheel, R^2, and a notched crown-flange, n, on said ratchet-wheel, for locking and unlocking the latter, in the manner herein specified.

207,729. HAME-FASTENERS. Daniel Free, Emigsville, Pa. Filed July 27, 1878.



Claim.—In a hame-fastener, the bifurcated casting A a and pivoted curved arm C b, in combination with the casting B F, having the slots e e' at right angles to each other, and the latch D d h, spring l, and nut f, constructed and operating substantially as and for the purposes set forth.

207,730. HARVESTER GUARD-FINGERS. Harvey B. Fuller, Princeton, Mo. Filed Aug. 22, 1878.



Claim.—1. The combination, with the main portion A of a guard-finger, of an adjustable instep, B, substantially as and for the purpose set forth.

2. The combination of the main portion A of a guard-finger, provided with the slots a a', and the removable instep B, provided with the tenon b and curved or hook-shaped portion b', substantially as and for the purpose set forth.

3. The combination, with the main portion A and instep B, of the reversible spacing-block F, substantially as and for the purpose specified.

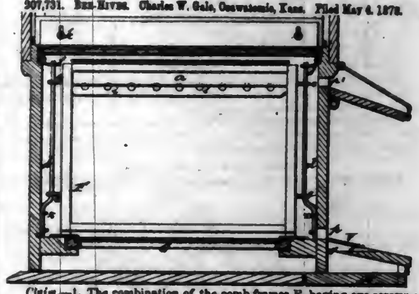
4. The combination, with the main portion A of the guard-finger, provided with the slot g, of the cross-plate C, provided with the slot g', and the removable ledger-plate E, provided with the extension e', substantially as and for the purpose set forth.

5. The combination of the removable instep B, spacing-block F, ledger-plate E, and cross-plate C with the main portion A of a guard-finger, substantially as and for the purpose specified.

6. The cross-plate C, provided with the series of recesses c, substantially as and for the purpose specified.

7. The removable instep B, provided with the recesses f' f', and the spacing-block F, provided with the projections f f, in combination with the main portion of a guard-finger, substantially as and for the purpose specified.

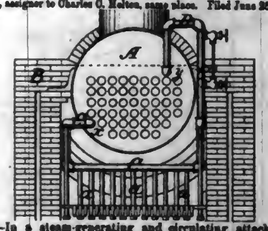
207,731. BEE-HIVES. Charles W. Gale, Osawatomie, Kans. Filed May 6, 1878.



Claim.—1. The combination of the comb-frames F, having eye-screws e in their side pieces, the vertical rods d, staples s, and the hinged plates f, substantially as and for the purposes herein set forth.

2. The adjustable plate R, arranged on one end frame of the honey-box, for the purposes herein set forth.

207,732. STEAM-GENERATING AND HEATING DEVICES FOR BOILERS. Edward G. Good, Chicago, Ill., assignor to Charles G. Holton, same place. Filed June 25, 1878.



Claim.—In a steam-generating and circulating attachment for steam-boilers, the combination, with the boiler A, of the main circulating-pipe C, provided with the siphon end D and the series of vertical pipes a a, said pipe C receiving the water from the boiler at a point near the bottom, and returning the same to the boiler again in the form of steam through the siphon end of the pipe C, inserted below the water-line, constructed and arranged substantially as herein described, and for the purpose specified.

207,733. ROWLOCKS. Fayette Gould, Huntington, N. Y. Filed Aug. 20, 1878.

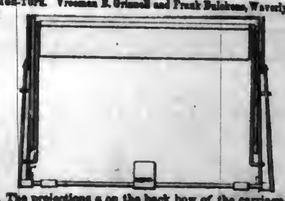


Claim.—1. In a rowlock, the combination of the plate or casting having a mortise through its center for the posts b to be closed down into a recess in the gunwale with the door a, substantially as shown.

2. The posts b, having the flanges c, which always project above and transversely across the top of the plate, and which serve both as stops and handles to raise them out of the recess, as described.

3. The plate b, having the mortise g and flanges i d, in combination with the door a and posts b, having the transverse flanges c, substantially as set forth.

207,734. CARRIAGE-TOPS. Freeman B. Grinnell and Frank Bulsham, Waverly, Iowa. Filed July 27, 1878.



Claim.—1. The projections s on the back bow of the carriage-top, in combination with the braces, for the purpose set forth.

2. In combination with a carriage-top, an inside movable or shifting bow, with curtain depending from the same, for the purpose set forth.

207,736. SCALE-BEAMS. Hiram L. Grindl, Pennville, Ind., assignor to himself and Lewis Grindl. Filed Mar. 26, 1878.

Claim.—As an improvement on Letters Patent No. 178,690, dated June 13, 1876, the rotating cylinder D, provided with calculating-tables on its surface, and hung by pivots d d in arms B B, which are detachably secured to an ordinary scale-beam, A, by means of set-screws a a, substantially as and for the purposes herein set forth.

207,735.



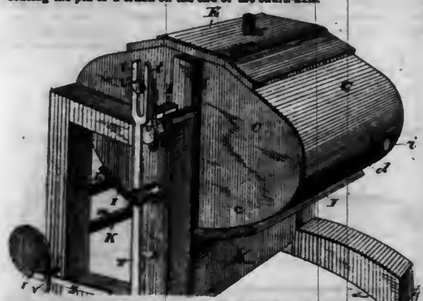
207,736. FRAMES FOR CAR-PLATFORMS. Archibald Manee, New York, N. Y. Filed Aug. 1, 1878.



Claim.—In combination with the platform A of a street-car and the supporting-timbers B of the same, the bracket-arms C, attached at their rear ends to said timbers, and having their front ends bent up vertically and secured to the under side of the platform, the slat or slats D, and the brace-rods E, all constructed and arranged substantially as and for the purposes specified.

207,737. CHURNS. Harry R. Haight, Lebanon, Tenn. Filed July 9, 1878.

Brief.—The churn is oscillated by power derived from a coiled spring through the medium of a crank and a forked lever, the fork of the latter embracing the pin of a crank on the end of the churn-axle.



Claim.—1. A churn-body provided with a removable cover, E, and the sides of the churn-body provided with grooves c on opposite sides of the cover, in combination with the slides F, having perforated flanges f projecting downward at right angles therefrom, substantially as set forth.

2. The combination, with the body of a churn having a crank rigidly secured to one of its journals, of a lever constructed with a bifurcated end, which embraces a wrist-pin secured to the crank, and suitable mechanism for vibrating the lever, substantially as set forth.

3. The driving-shaft consisting of sections l and m, section l being provided with a spring and a ratchet keyed or otherwise rigidly secured thereto and a cog-wheel loosely journaled thereon, said cog-wheel having a pawl pivoted thereto, which engages with the ratchet-wheel, while section m is provided with a pinion which is driven by a cog-wheel on the counter-shaft, to which motion is communicated by gearing from section l of the main shaft, all combined and operating substantially as set forth.

207,738. MILK-COOLERS. Samuel Hill and Benj. B. Prentice, Greensborough, Vt. Filed July 13, 1878.



Claim.—The cylindrical can B, having ventilated orifice b b^1 and cone C, in combination with and partially surrounded by the ice or water tank A A', as and for the purpose set forth.

207,739. LOOM-PICKERS. Albert Holbrook, Providence, R. I. Filed July 18, 1878.

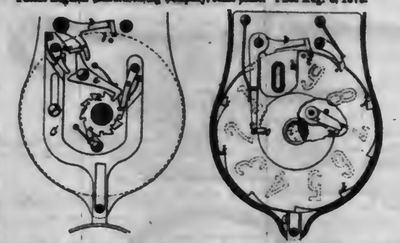
Brief.—The picker is composed of two pieces of rawhide laid flatwise upon one another, and folded at their middle to form the guide hole and neck, and then bent outward, and the ends folded inward to form the head, the whole being secured by rivets, in the usual manner.



Claim.—1. As an improved manufacture, the picker made substantially as described—viz., of two rawhide sheets A B, arranged flatwise one upon the other, and folded at their middles so as to form the guide C and the neck D, and subsequently bent outward and folded in and together near their ends, essentially in manner as shown, to form the head E, the parts folded together being connected by rivets, as set forth.

2. The picker provided with a head, E, constructed substantially as set forth—viz., of two pairs of layers of rawhide laid together and each bent outward from the other, and thence upward and inward, and folded downward upon itself and lapped on the other, essentially as represented.

207,740. FARE-REGISTERS. Wm. H. Hannan, New York, N. Y., assignor to the Hannan Patent Register Manufacturing Company, same place. Filed Aug. 3, 1878.



Claim.—1. The combination, in a fare-register, of a trip-registering disk operated step by step by a prime mover, an independently-rotating disk concentric therewith and adapted to be turned forward by hand mechanism for engaging the two disks when given points thereon coincide, a safety-pawl for preventing the registering-disk from moving forward more than one step at a time, and mechanism for disengaging said safety-pawl from said wheel and simultaneously locking the prime mover of said wheel, substantially as described.

2. The combination, in a fare-register, of a trip-registering wheel operated step by step by a prime mover, a rotating disk adapted to be turned forward by hand mechanism for locking said rotating disk at a given point and simultaneously releasing the registering-disk from a zero-guard, substantially as described.

3. The combination, in a fare-register, of a step-by-step registering-wheel operated by a prime mover, a safety-pawl which prevents said wheel from turning, and a rotating plate pivoted concentrically with said registering-wheel and adapted for engagement therewith at a single point, said registering-disk being adapted to be turned forward by hand mechanism for locking said rotating disk and for unlocking the same and simultaneously and automatically locking the prime mover, and operating a zero-guard to prevent the movement of the registering-wheel beyond a certain point, substantially as described.

4. The combination, with the registering-wheel having pin t and its ratchet-disk a, of the safety-pawl c, prime mover C, trip-pawl g, stop-lever n, latch r, and zero-guard p, substantially as described.

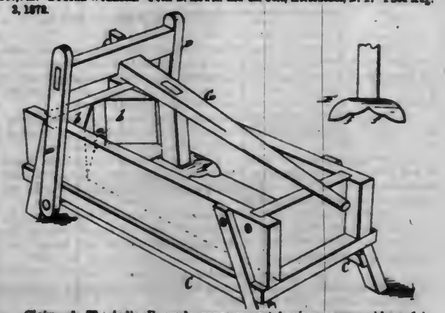
207,741. DENTAL CHAIRS. Woodbury Stowe How, Cincinnati, Ohio. Filed Apr. 1, 1878.



Claim.—1. In combination with a chair or like seat, capable of being elevated or depressed by rack and pinion, or by equivalent means, and of being stopped or fixed at various points of its reciprocating range, a spring-counterpoise, substantially as and for the purposes set forth.

2. In a dental chair, the back B, secured to the shaft H by an elastic connection, and combined therewith and with the shaft G, having set-screw g and spring g', substantially as and for the purposes set forth.

207,742. BUTTER-WORKERS. Peter R. Hovell and Eli Cole, Horseheads, N. Y. Filed Aug. 3, 1878.



Claim.—1. The ladle F, made concave and having convex ridges f, in combination with the handle G and movable frame D, as and for the purpose set forth.

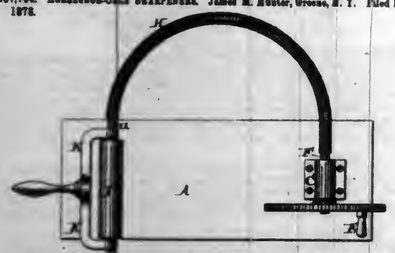
2. The inclined box A, provided with the corner-pieces b b, drain a, and bars C C, in combination with the round d, frame D, handle G, and ladle F, all constructed substantially as and for the purpose set forth.

207,743. BITS FOR CARVING-MACHINES. Chauncey P. H. Huff, Covington, Ky., assignor to J. A. Fay & Co., Cincinnati, Ohio. Filed July 26, 1878.



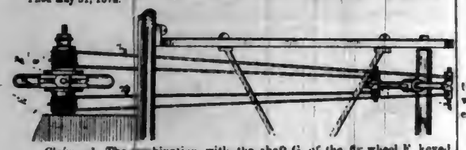
Claim.—The carving-bit, substantially as hereinbefore set forth, composed of a shank, and a stirrup-shaped cutter-head, having side cutters as well as base cutters, for cutting a flat surface.

207,744. HORSESHOE-CALK SHARPENERS. James M. Hunter, Greene, N. Y. Filed May 10, 1878.



Claim.—In combination with the base or support A and the standard B, carrying the toothed driving wheel E and pinion F, intermeshing with the same, the flexible shaft H, secured at one end to the shaft of the pinion F, and at the other to the shaft of a grinding-cylinder, I, journaled at each end in the branches of a forked handle, K, the whole constructed to operate substantially as set forth.

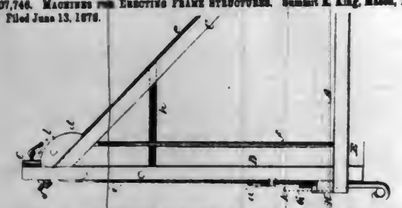
207,745. TREADLE-MOVEMENTS FOR SEWING-MACHINES. Pierre F. Jeste, Cincinnati, Ohio. Filed May 31, 1878.



Claim.—1. The combination, with the shaft G, of the fly-wheel F, keyed thereon, the single eccentric-clutch H, mounted on a stud, *f*, projecting from the hub of the said fly wheel, and the loose pulleys E E', mounted on the shaft on each side of the fly wheel, and engaging alternately with opposite sides of the single eccentric-clutch, substantially as described and shown.

2. The adjustable clamps *d d'*, to vary the speed or power of said device, as herein specified.

207,746. MACHINES FOR ERECTING FRAME STRUCTURES. Summit B. King, Macon, Mich. Filed June 13, 1878.



Claim.—1. The machine for raising the bents of frame structures herein described, consisting of the crane-frame A A, B B, C C, having brace-rods *e e f f*, cross-bence *b b*, and cap-piece *c*, in combination with the hoisting-drum D, rope *r*, and pulleys *a a' a²*, the two last of which are united by the chain-rest *k*, substantially as and for the purpose herein shown and described.

2. The combination of the swinging upright I, having cross-piece K, carrying the pulleys *a a'*, with the wedge-block L, having keeper M and pivoting-pin *g*, substantially as and for the purpose herein shown and described.

3. The wedge-shaped clamp-block L, provided on one side with the keeper M and pivot *g*, and on the other with the stationary clamping-hooks *s s* and adjustable sliding bolt *t*, having clamping hook *t'*, substantially as and for the purpose herein shown and described.

4. The combination of the hoisting frame A A, B B, C C, having drum D, with the adjustable tilting frame, consisting of parts I K L, and hoisting-rope *r*, all constructed and combined to operate substantially as and for the purpose hereinbefore set forth.

207,747. MACHINE-GUNS. Harvey B. Leonard, San Francisco, Cal., assignor to Abraham Rosenberg, same place. Filed May 7, 1878.

Brief.—The trunnions are sustained against recoil by springs in the bearing. The breech is moved by rear cams, and held closed by hooks extending back from trunnions.

Claim.—1. The gun-carriage A, with its trunnion-frame B, guides C, boxes D, supporting the trunnion of the gun, and the recoil-springs E, the whole combined to operate substantially as and for the purpose herein described.

2. The breech-block I, moving to and from the gun upon the guides H to close and open the breech, and provided with the rear extensions, M, in combination with the flanged rotating cams O, by which the breech is operated, substantially as herein described.

3. The latches G, having the projecting arms U, in combination with the cams or eccentrics O, with their lugs or projections S, by which the latches are disengaged from the breech-block, substantially as herein described.

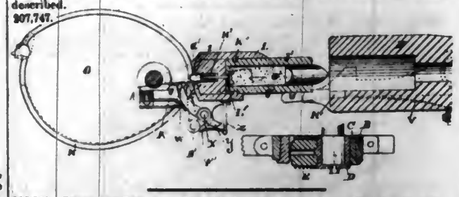
4. The latches G, operating as shown, in combination with the disengaging-lugs S upon the cams and returning-springs V, substantially as and for the purpose described.

5. The combination of the gun F, with its extension H, the cams O, with their shaft P, and the breech-block I, with its shoulders T and hooked extension L, mounted upon the trunnions, having elastic supports, as shown, and the latches G, the whole united so as to receive and distribute the recoil, substantially as herein described.

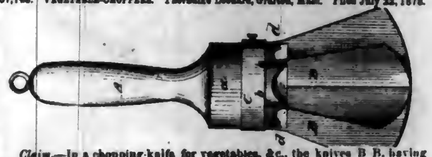
6. The hammer W, tumbler D', and cam Y, mounted upon the shaft X, in combination with the trigger C' and sear D', mounted upon the shaft B', and the leg Z, operating as shown, and the discharging-leg P upon the cam O, substantially as herein described.

7. The gun F, with its extension breech-block and operating mechanism, all mounted upon yielding trunnions, so as to be allowed to recoil in unison and independent of the carriage and elevating-screw, substantially as herein described.

207,747.



207,748. VEGETABLE-CHOPPERS. Theradike Leonard, Grafton, Mass. Filed July 22, 1878.



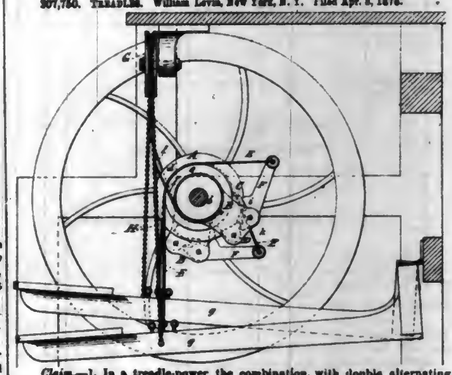
Claim.—In a chopping-knife for vegetables, &c., the knives B B, having the shanks *d d* daring downwardly or toward their blades, in combination with the slotted handle A and ring or band C, having a set or adjusting screw, *e*, substantially as shown and described, and for the purpose specified.

207,749. BALE-TIES. Charles Lester, New Orleans, La. Filed Jan. 31, 1878.



Claim.—A band doubled on itself, forming a bend or bight for the insertion of the ends, substantially as described.

207,750. TREADLES. William Levin, New York, N. Y. Filed Apr. 8, 1878.



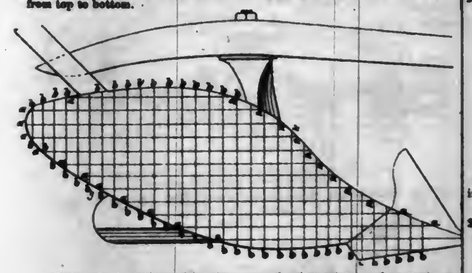
Claim.—1. In a treadle-power, the combination, with double alternating treadles and friction-clutches, of an independent and positively-reciprocating treadle cord or chain, H, and separate clutch-returning cords E, substantially as herein shown and described.

2. In a treadle or manual power, an intermittingly-acting friction-clutch, connecting the treadle with the fly-wheel shaft, and formed of the combination, with a pulley, A, revolving with the shaft, of a radial arm, B, hung loosely on the shaft and carrying a wedging-shoe, C, which is fitted to the rim of the wheel, bears against a wedging-stop, D, and receives the pressure of a lever, F, also carried by the arm B, the end of which connects with the treadle, substantially as herein shown and described.

3. In a treadle or manual power, in combination with an intermittent clutch or ratchet, connecting with the treadle by means of a flexible cord, or equivalent, the pulley *A d e*, formed with a series of varying diameters, *d e*, over either of which the clutch-cord may be passed, substantially as and for the purpose set forth.

207,751. PLOWS. John Long, Massillon, Ohio. Filed Aug. 24, 1878.

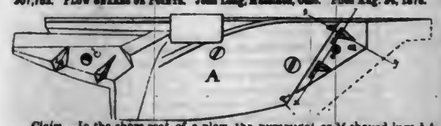
Brief.—A straight-edge will touch the mold-board its entire length from heel to point on any horizontal line parallel to the base of the plow, and on any vertical line between the heel and point a straight-edge will touch the mold-board from top to bottom.



Claim.—1. A mold-board for plows curved, substantially as described, vertically and longitudinally, so that all horizontal sections shall preserve a straight line, and also the vertical sections be in straight lines, substantially as and for the purpose set forth.

2. The combination of the mold-board and share herein described to constitute but one continued warped surface, having the straight horizontal lines continued from heel to point, and the system of vertical lines also continued over the share, substantially as and for the purpose described.

207,752. PLOW-SHARES OR POINTS. John Long, Massillon, Ohio. Filed Aug. 24, 1878.



Claim.—In the share-seat of a plow, the pyramidal or V-shaped lugs *b b*, in combination with the corresponding recesses *b' b'* in the point, the latter being fastened to the seat by a screw-bolt, substantially as and for the purpose described.

207,753. ELECTRODES FOR ELECTRIC LIGHTS. Orazio Luce, Flushing, N. Y. Filed Aug. 26, 1878.

Brief.—A tube passes through the hollow carbon longitudinally, for the purpose of furnishing air to the electric arc.



Claim.—1. In apparatus for producing the electric light, longitudinally-tubular electrodes, relatively so arranged that air or other fluids may be discharged from the opposed ends of the electrodes into the electric arc, substantially as and for the purpose set forth.

2. A tubular electrode of any suitable material, having inserted in it a pipe for supplying a combustible fluid, which is capable of being evaporated and ignited in the electric arc, substantially as described.

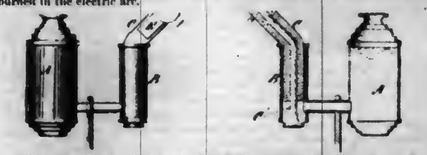
3. An electrode of suitable material, having a hole extending longitudinally through it, and having near its base one or more lateral openings extending from the longitudinal hole to the surface of the electrode, substantially as and for the purpose set forth.

4. A tubular electrode of any suitable material, provided near its base with one or more lateral openings extending from the longitudinal hole to the surface of the electrode, in combination with a Bunsen burner affixed to a pipe inserted in the base of the electrode, the pipe being for the purpose of discharging gas into the tube of the electrode, and the lateral opening or openings for the purpose of supplying a current or currents of air to assist the combustion of such gas in the electric arc, substantially as described.

5. An electrode of any suitable material, in combination with a tube applied longitudinally thereto, and wholly or partially surrounded by the material of which the electrode is composed, substantially as shown and described.

207,754. ELECTRODES FOR ELECTRIC LIGHTS. Orazio Luce, Flushing, N. Y. Filed Aug. 26, 1878.

Brief.—The carbons contain ordinary wicks, whereby hydrocarbons are burned in the electric arc.



Claim.—1. The herein described mode of retarding the destruction of electrodes employed in the production of electric light, which consists in making such electrodes of a porous material and supplying them by capillary action with a combustible fluid capable of being evaporated from their points or surfaces and ignited in the electric arc.

2. Electrodes of any porous material suitable for employment in the production of electric light, in combination with a reservoir or reservoirs containing a hydrocarbon oil, substantially as and for the purposes set forth.

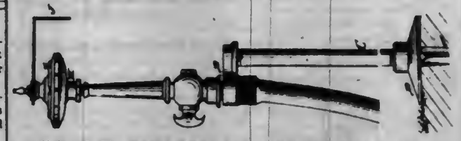
3. The tubular electrodes C, containing the fibrous wicks *b*, in combination with the distributing-chambers B, substantially as and for the purpose set forth.

207,755. KILNS FOR BAKING LIME, PLASTER, &c. Paul F. Mahlie, Paris, France. Filed Apr. 10, 1878.



Claim.—The combination of the furnace A, the chamber B, and the grating X, covering the dome of the chamber B, substantially as described.

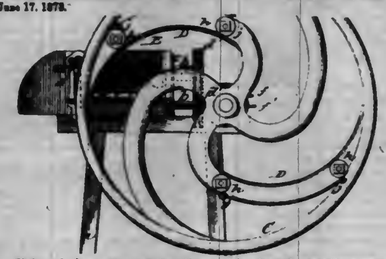
207,756. LAWN-SPRINKLERS. Thomas Maguire, Port Jervis, N. Y. Filed July 27, 1878.



Claim.—1. The stand consisting of the rod or tube C, flange D, and point F, in combination with a hose and double coupling, B, for the purpose set forth.

2. The head J, in combination with the sprinkler, for the purpose set forth.

207,757. STRAW-CUTTERS. Jacob S. Matthews and Jos. Matthews, Athens, Tenn. Filed June 17, 1878.



Claim.—1. In a straw-cutter, the combination of an oblique cutter-box, A, a curved knife, D, and operating mechanism to secure an oblique uniform draw-cut from point to heel, substantially as and for the purpose set forth.

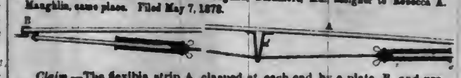
2. The combination of an oblique cutter-box, A, a tapering ribbed plate, *g*, a curved knife, D, and operating mechanism to secure an oblique uniform draw-cut from point to heel, substantially as and for the purpose set forth.

3. The combination, with the feed-roller gearing of a straw-cutter, of the disk *f*, having a number of isolated teeth, *f'*, arranged to strike and operate the said gearing at intervals, substantially as and for the purpose described.

4. The wheel C, having hubs *h*, provided with set-screw J, in combination with bolt *k* and knife D, substantially as and for the purpose set forth.

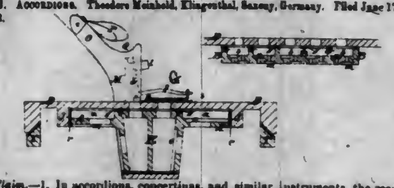
5. The wheel C, having hubs *h*, provided with set-screw J, in combination with sleeve *i*, bolt or screw *k*, nut *l*, and knife D, substantially as and for the purpose indicated.

207,758. BED-BOTTOMS. William W. Maughlin, Baltimore, Md., assignor to Rebecca A. Maughlin, same place. Filed May 7, 1878.



Claim.—The flexible strip A, clasped at each end by a plate, B, and provided with the standard *d*, combined with rods secured at *a*, intermediate rods, and adjustable springs, substantially as specified.

207,759. ACCORDIONS. Theodore Meinhold, Klingenthal, Saxony, Germany. Filed June 17, 1878.

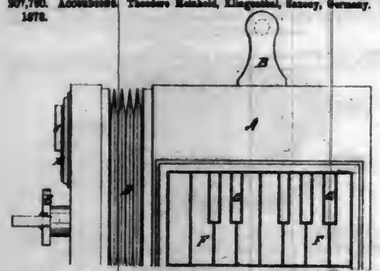


Claim.—1. In accordions, concertinas, and similar instruments, the reed-boards A and B, having cavities *a* and *b*, forming the cells, and cavities *a* and *a* for the sliding reeds, and constructed to fit between projecting pieces J, provided with suitable packing *r*, fast to the body or top plate, D, substantially in the manner and for the purpose described.

2. A fixed holder or hand-plate, M, provided with a raised part, O, and cavity Q on its upper part, substantially as and for the purpose set forth.

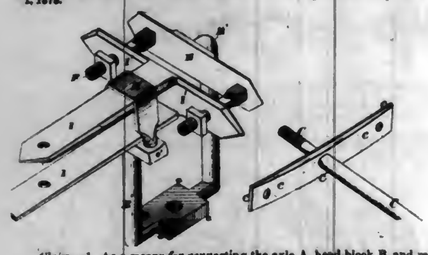
3. The hinged valve G, in combination with the spring-rod *g* and key L, arranged to operate in the manner specified.

207,760. ACCORDEONS. Theodore Mahlstedt, Klingenthal, Saxony, Germany. Filed June 5, 1878.



Claim.—The wind-chest A of an organina, with jaws B as the back and suitable keys F G, in combination with bellows D on its left-hand side, arranged to operate substantially in the manner and for the purpose described.

207,761. REVERSE-GEARS FOR CARRIAGES. Robert B. Miller, Plainville, Conn. Filed May 1, 1878.



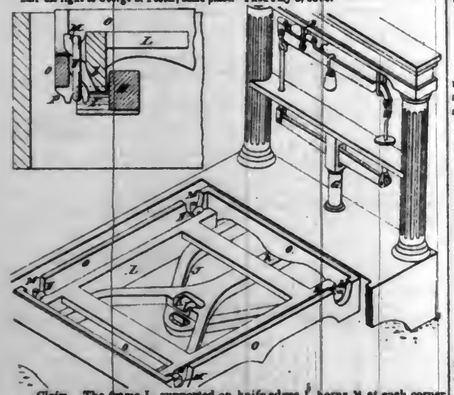
Claim.—1. As a means for connecting the axle A, head-block B, and reach G, the yoke E', provided at its front upper end with the laterally-extended plate E, bolted to the head-block at two points, and at its lower central portion with the lateral enlargement e, and at its rear end with the plate e', and combined with said parts in the manner substantially as specified.

2. As a means for connecting together the head-block B and reach G, the reach-iron I, arranged to embrace the upper and lower sides of said reach, and provided at its front end with a flange, I', which bears against and is secured to said head-block, said parts being combined in the manner and for the purpose substantially as shown.

3. The king-bolt C, provided near its upper end with a laterally-projecting flange, c, forming a spring-bed, above which is a threaded portion that passes through the spring D and receives a nut, c', and having its lower threaded end, which projects below the axle A, provided with a nut, c'', substantially as and for the purpose set forth.

4. The king-bolt C, provided with the flange c and nuts c' and c'', the yoke E E', constructed as shown, and the reach-iron I I', having the form described, in combination with each other, the axle A, the head-block B, the spring D, and the reach G, substantially as and for the purpose specified.

207,762. PLATFORM WEIGHING-SCALES. John F. Milligan, St. Louis, Mo., assignor of one-half his right to George S. Foster, same place. Filed July 3, 1878.



Claim.—The frame L, supported on knife-edges l, horns M at each corner of said frame, supporting-links N, and hooked frame O, supported on frame L by said links, substantially as set forth.

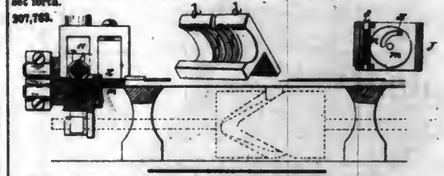
207,763. STRAW-BRAID-SEWING MACHINES. William Muehlhoff, Philadelphia, Pa., assignor to Henry Friedberger, same place. Filed July 15, 1878.

Claim.—1. The combination of the feed-roll a', having toothed rings, as described, with the grooved crimping-plate E, adapted to said roll, all substantially as set forth.

2. The combination of the feeding devices, the needle, and an adjustable disk or plate, m, having a cam-slot, n, as specified.

3. The combination of the feeding devices, the needle, the pivoted disk m, having a cam-slot, n, and toothed periphery, and the operating-screw s, as set forth.

207,763.

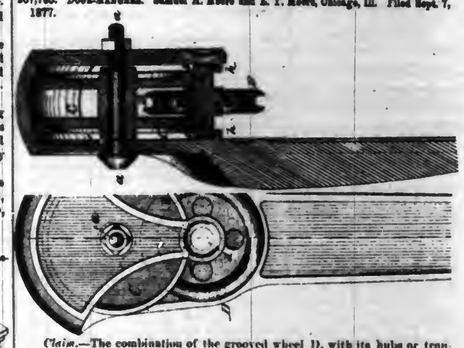


207,764. OPERA-CHAIRS. Robert Mitchell, Cincinnati, Ohio. Filed Mar. 26, 1878.



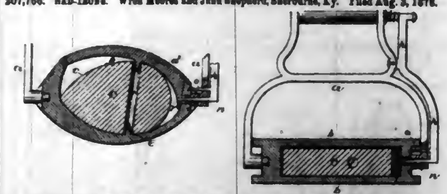
Claim.—As a new article of manufacture, an opera-chair constructed substantially as before set forth—namely, with two pairs of diverging legs, rigidly jointed and braced together beneath the seat, and a foldable seat pivoted at or near its rear edge, the upper ends of the short legs of said pairs of legs terminating on a line about midway between the front and rear edges of the foldable seat when turned down, so that while they project far enough to act as props for the support of a seat, they yet do not project so far as to interfere with the contraction of the depth of the chair effected by folding the seat upward.

207,765. DOOR-HANGERS. Samuel H. Moore and E. Y. Moore, Chicago, Ill. Filed Sept. 7, 1877.



Claim.—The combination of the grooved wheel D, with its hubs or trunnions d d, the double wheel C C, turning upon an axis, e, and the flanges or sockets h h, on the inside of the cap or frame which holds the parts together, substantially as and for the purposes herein set forth.

207,766. SAD-IRONS. Wren Moores and John Shepherd, Sherburne, Ky. Filed Aug. 3, 1878.



Claim.—1. The iron b, provided with the door d, and having the studs c g, in combination with the core c, having suitable recesses to receive the studs, substantially as shown.

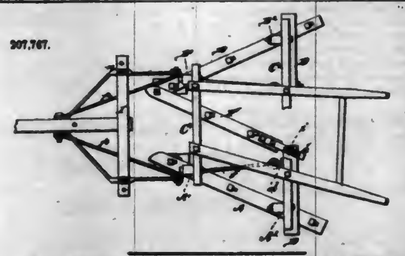
2. The combination of the handle a, iron b, having the door e, with the lever h, having the two locking projections n o, substantially as described.

207,767. CULTIVATORS. Reuben K. Nice, Frenchtown, N. J. Filed July 27, 1878.

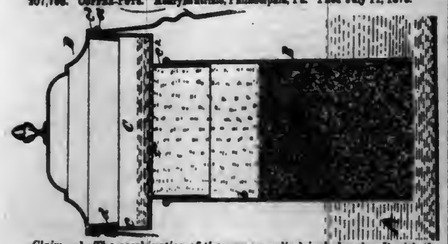
Claim.—1. A cultivator-frame consisting of the side beams, A B, with posts A^1 A^2 and B^1 B^2, adjustable bars C^1 C^2, adjustable rear beams, D D, and adjustable cross-beam F, substantially as set forth.

2. The combination of the beam A or B, beam D, eyebolt d, brace f, and rod h with adjustable bolt e in the bar C^1, for the purpose set forth.

207,767.



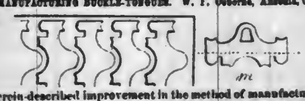
207,768. COFFEE-POTS. Henry Mutrisio, Philadelphia, Pa. Filed July 11, 1878.



Claim.—1. The combination of the narrow cylindrical chamber B with the water-compartment C, said water-compartment being of considerably greater diameter than the berry-chamber, and having the vertical annular flange, c', for the attachment of the berry-chamber, and the horizontal annular flange, c², for suspension on the rim of the coffee-pot, both the water and berry chambers being suspended within the body of the coffee-pot, substantially as shown and set forth.

2. The combination, with coffee-pot A, of water-compartment C, the exterior diameter of said compartment being equal to the interior diameter of the open upper end of the pot, so as to form a tight joint therewith, the berry-chamber B, of considerably less diameter than said water-compartment, and the lid D, having an annular flange, d, fitting snugly into said compartment, both the water and berry chambers being suspended within the body of the coffee-pot, the whole being constructed and arranged for operation substantially as shown, and for the purposes set forth.

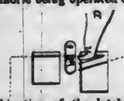
207,769. MODES OF MANUFACTURING BUCKLE-TONGUES. W. F. Osborne, Ansonia, Conn. Filed Aug. 8, 1878.



Claim.—The herein-described improvement in the method of manufacturing buckle-levers, consisting in cutting the lever from the blank, with a recess, m, on its holding-edge, corresponding substantially to the handle or clasp on the opposite edge, and so that, in cutting, the handle of one extends into the recess of the other, substantially as described.

207,770. CROCHET-MACHINES. Samuel L. Otis, Birmingham, Conn., assignor to A. H. and C. B. Alling, same place. Filed Jan. 14, 1878.

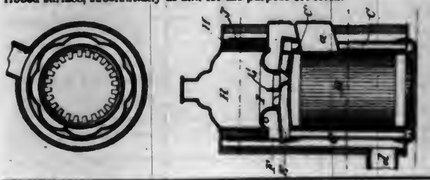
Brief.—An improvement on patent issued to applicant June 15, 1875, No. 164,586. A finger is employed to retain, upon the latched needle, the loop of thread taken outside of the material until it shall have taken through the material. The second loop, taken outside of the fabric, is then drawn through the two former ones, making an embroidery or crochet stitch, which is laid upon the edge of the fabric being operated on.



Claim.—The combination of the latched needle a and mechanism, as described, whereby the same is given an intermittent vertical and transverse movement, the thread-carrier having a corresponding transverse motion, work-plate, feed, and presser-foot, with the lever D, provided with the finger n', and mechanism, substantially as described, to actuate the same to locate a chain of stitches upon the edge of the work, for the purpose set forth.

207,771. SECTIONAL STEAM-BOILERS. William H. Page, Norwich, Conn. Filed May 8, 1878.

Claim.—1. In a steam-boiler, the furnace D, consisting of a series of segmental chambers C C, communicating with each other, with a serrated inner ribbed surface, substantially as and for the purpose set forth.



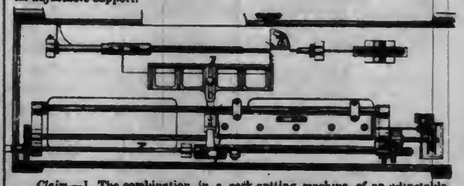
2. In a steam-boiler, the crown-sheet C', having its chamber F provided with a division plate or diaphragm, G, substantially as and for the purpose set forth.

3. The furnace consisting of the series of cylindrically, compactly arranged tubes or segmental chambers C C, in combination with the crown-sheet, having the radial pipes or tubes E E, and provided with the partition or diaphragm G and boiler H, substantially as and for the purpose set forth.

4. The combination, with the boiler H, having V-shaped scalloped sides, of the sliding case or shell J, substantially as and for the purpose set forth.

207,772. CORK-CUTTING MACHINES. Joseph Pisano, New York, N. Y. Filed Aug. 15, 1878.

Brief.—The sliding knife actuates the gage through intermediate mechanism, so that the blank will feed forward for next cut. The turning knife has an adjustable support.



Claim.—1. The combination, in a cork-cutting machine, of an adjustable gage, D, for regulating the size of the cork-blank, with a bed-plate, a knife-receiving socket in said bed-plate, a knife-guide located above the bed-plate, a blank-cutting knife moving on said guide and projecting into the receiving-socket, and mechanism which is acted on by said knife in its backward movement, causing the gage to move slightly outward, while during the forward motion of the knife the gage is allowed to return to its original position, substantially in the manner and for the purpose set forth.

2. The combination, in a cork-cutting machine, of an adjustable gage, D, with a bed-plate, a knife-receiving socket in said bed-plate, a knife-guide located above the bed-plate, a blank-cutting knife moving on said guide and projecting into the receiving-socket, and an adjustable side gage, Q, placed at or near the end of the knife-receiving socket, all combined and adapted to operate substantially as set forth.

3. The combination, in a cork-cutting machine, of an adjustable clutch-shaft, a hinged finishing-knife, and an adjustable knife-rest, on which said finishing-knife reciprocates, so that the clutch-shaft and knife-rest can be adjusted with relation to each other, substantially as and for the purpose set forth.

207,773. PIGMENTS. William Prescott, Albany, N. Y. Filed May 11, 1878.

Brief.—The manufacture of a dry color-basis for producing imitation of Vandyke brown and umber colors.

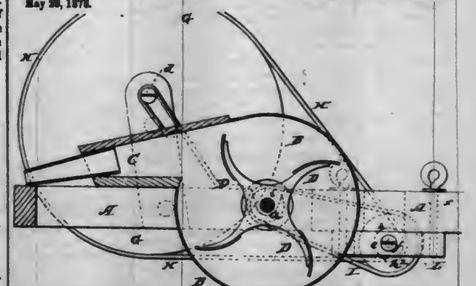
Claim.—As a new article of manufacture, the pigmentary compound herein described, consisting of a pulverulent mixture of the Genesee slate-rock, herein named, and sienna, either raw or burned, substantially in the proportions specified.

207,774. PREPARING AND CLEANSING WOOL ON THE PELT. Pierre Pasch, Paris, France. Filed May 16, 1878.

Brief.—The cleansing of the wool by the process described takes place before the wool is removed from the pelt.

Claim.—The process herein described of preparing wool, the same consisting in scouring the skins with the wool on in a hot alkaline solution, for the purpose of scouring, afterward pressing them to extract grease and impurities, then simultaneously beating and washing them, afterward bleaching them, and finally removing the wool and drying it, substantially as specified.

207,775. BLOWERS FOR BLACKSMITHS' FORGES. Wm. H. Rankin, Monticello, Ark. Filed May 20, 1878.



Claim.—1. The adjustable frame L, connected to the main frame A, as described, and carrying the shaft f, having pulleys b b', and the shaft hung upon centering-screws, substantially as herein set forth.

2. The combination of the main frame A, having slots x x, the adjustable standard B, and adjustable frame L, the pulley-wheel G, belts H I, shaft f, with pulleys b b', the fan-case E, and shaft a, with fan D and pulley i, all constructed substantially as and for the purposes herein set forth.

207,776. BED-SLAT COUPLERS. Lorus J. A. Boswell, Clarence, Mo. Filed July 13, 1878.



Claim.—The combination with the side rails of a bedstead and the slat, of the hooked latch D, pivoted in a plate or frame, F, secured to the slat, and the frame F, secured to the rail and provided with the pivoted bottom I, substantially as and for the purpose set forth.

207,777. CotTON-CLEANING MACHINES. Reuben H. Shotwell, West Point, Miss. Filed July 20, 1878.



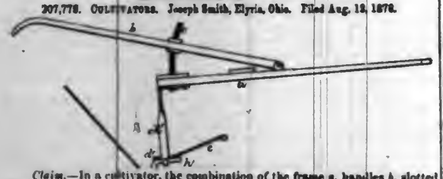
Claim.—1. In a cotton-cleaning machine, the spiral-blade beater, having its ends bent forward respectively, the outer end to clear the feed-opening and the inner end to effect a forcible discharge, substantially as specified.

2. In a cotton-cleaning machine, the combination of the casing having end openings, h, the spiral beater-blades H, having their ends bent forward, as described, and the fan-blades R, substantially as specified.

3. In a cotton-cleaning machine, the combination, with the open-ended case, the spiral beaters having forwardly-bent ends, suction-fan, and screen dividing the cleaning-chamber from the dust-space, of the intermediate dust-flue leading from said dust-space into the case of said suction-fan, substantially as specified.

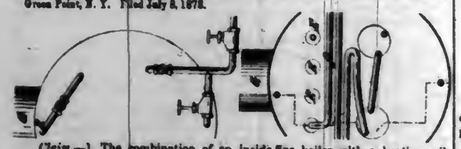
4. A cotton-cleaning machine having the open-ended case, the suction-fan, and spiral beater having forwardly-bent ends in opposite ends of the case, the dividing-screen e, dust-flue C, air-entrance h, and discharging-apertures K and S, substantially as specified.

207,778. CULTIVATORS. Joseph Smith, Elyria, Ohio. Filed Aug. 13, 1878.



Claim.—In a cultivator, the combination of the frame a, handles b, slotted plate or frame d d', clamping screw-rods or bolts i, and the bent arms h, for the attachment of different implements, substantially as shown and described.

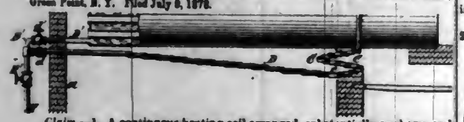
207,779. FEED-WATER HEATERS AND CIRCULATORS FOR STEAM-BOILERS. James C. Stead, Green Point, N. Y. Filed July 8, 1878.



Claim.—1. The combination of an inside fire boiler with a heating-coil traversing the flue or flues of such boiler, and having convolutions in the end connections of the boiler, and being connected at one end with the service-pipe and with the water-body in the bottom of the boiler, and at the other end with the steam-space of the boiler, the connections being provided with the usual valves, whereby the feed-water may be introduced into the coil or directly into the boiler, and whereby, when feeding is intermitted, the coil acts as an auxiliary steam-generator, and causes a vigorous circulation of water from the bottom of the boiler into and through the coil, and thence into the steam-space in the upper part of the boiler, substantially as described.

2. In combination with the feed-water-heating coil, having a connection with the steam-space in the upper part of the boiler, the draw-off pipe I, provided with the perforations i, and extending through the lower part of the water-body along nearly the whole length of the boiler, substantially as described.

207,780. FEED-WATER HEATERS AND CIRCULATORS FOR STEAM-BOILERS. James C. Stead, Green Point, N. Y. Filed July 8, 1878.



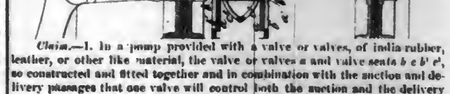
Claim.—1. A continuous heating-coil arranged, substantially as shown and described, upon the top of the bridge-wall, and having one connection with the water-body in the lower part of the boiler, and another with the steam-space in the upper part of the boiler, substantially as and for the purposes set forth.

2. The heating-coil C C C, arranged upon the bridge-wall of the furnace, connected at one extremity with the steam-space in the top of the boiler, and at the other extremity with a pipe leading into the lower part of the boiler farthest from the furnace, substantially as described.

3. The heating-coil C C C, arranged upon the bridge-wall of the furnace, in combination with the system of return-bend pipes D, the service-pipe E, and the pipe D', connected with the lower part of the boiler, substantially as shown and described.

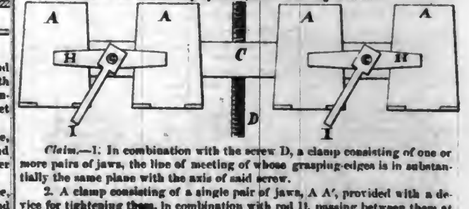
4. The heating-coil C C C, arranged upon the bridge-wall of the furnace, connected at its lower extremity with a pipe for supplying it with water either from the service-pipe or from the bottom of the boiler, in combination with the system of return-bend pipes C', arranged upon one side of the furnace, and connected at its lower extremity with the upper tier, c', of the coil on the bridge-wall, and at its upper extremity connected with the vertical pipe C'', for discharging water and steam into the steam-space in the upper part of the boiler, substantially as set forth.

207,781. TOOL-HANDLES. David Steele, New Britain, assignor to Sargent & Co., New Haven Conn. Filed Mar. 20, 1878.



Claim.—In implements provided with tangs by which to attach wood handles to said implements, the tang constructed with an inclined edge, the handle bored to a less depth than the length of the tang, forming an obstruction, whereby the tip of the tang will be turned out of line with the wood of the handle, substantially as described.

207,782. MAGAZINE FIRE-ARMS. William Trubee, Louisville, Ky. Filed June 29, 1878.



Claim.—1. The shoe C, arranged below the bolt, and formed with front and rear inclines and rear check or shoulder, in combination with the bolt E, provided with the downward projection G', substantially as and for the purposes set forth.

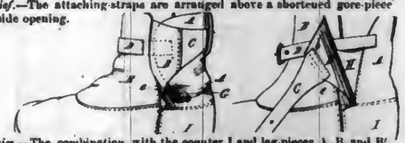
2. The bolt E, provided with the head G, having longitudinal movement, and formed with a vertical beveled projection, as described, substantially as and for the purposes set forth.

3. In combination with the bolt, extractor-hook, and mainspring, the independent head G, formed with a recess, d, substantially as and for the purposes set forth.

4. The shoe C, bolt F, head G, and magazine D, combined and arranged in the manner and for the purposes set forth.

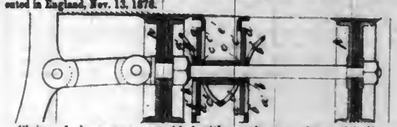
207,783. PLOWMEN'S BOOTS. Joseph H. Walker, Worcester, Mass. Filed Dec. 26, 1877.

Brief.—The attaching-straps are arranged above a shortened gore-piece in the side opening.



Claim.—The combination, with the counter I and leg-pieces A, B, and B', of straps C and D and gore-piece H, the strap D arranged above said gore-piece, substantially as shown and described.

207,784. PUMP-VALVES. James Watson, Greenwich, England. Filed July 9, 1878. Patented in England, Nov. 13, 1876.



Claim.—1. In a pump provided with a valve or valves, of india-rubber, leather, or other like material, the valve or valves a and valve-seats b c b' c', so constructed and fitted together and in combination with the suction and delivery passages that one valve will control both the suction and the delivery of the said pump, substantially as above set forth.

2. The combination of the two valves a and plates or faces b c with the inlet-chamber c' between them, substantially as and for the purpose specified.

207,785. APPARATUS FOR MANUFACTURE OF DASHES. John E. White, Columbus, Ohio, assignor to Peters Leather Dash Company, same place. Filed Aug. 3, 1877.

Claim.—1. In combination with the screw D, a clamp consisting of one or more pairs of jaws, the line of meeting of whose grasping-edges is in substantially the same plane with the axis of said screw.

2. A clamp consisting of a single pair of jaws, A A', provided with a device for tightening them, in combination with rod H, passing between them at and in the line of their connection and the line of the meeting of their grasping-edges.

3. The clamping device consisting of a central screw, D, brace C, and the two pairs of jaws A A', screw G, clamp-brace H, and lever I, substantially as and for the purposes set forth.

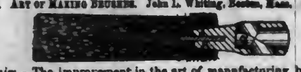
4. A device for tightening the clamps, consisting of brace C, screw G, clamp-brace H, and lever I, substantially as and for the purposes set forth.

5. The clamping device consisting of the central screw, D, and brace C, provided on either side with a clamp consisting of two pairs of jaws, A A', screw G, clamp-brace H, and lever I, substantially as and for the purposes set forth.

6. The combination of lever I, screw G, and clamp-brace H, substantially as and for the purposes specified.

7. The lever I, provided with bosses J, substantially as and for the purposes specified.

207,786. ART OF MAKING BRUSHES. John L. Whiting, Boston, Mass. Filed May 22, 1878.



Claim.—The improvement in the art of manufacturing brushes, the same consisting in forming the head of the brush with a recess, in which a metallic plate may be temporarily inserted, whereby the tacks or nails are clinched or riveted in the head, substantially as and for the purposes specified.

207,787. BUCKLES. Levi Wilson, Nevada, Ohio. Filed July 20, 1878.



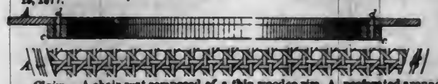
Claim.—A buckle consisting of the frame A and the base-plate G, having the shoulders i i, stud l, and tongue M, constructed and operating substantially as set forth.

207,788. WOOD-BURNING FURNACES. H. A. Wood, Bangor, Me. Filed Jan. 26, 1878.



Claim.—In a wood-burning furnace, the combination, with the body a, of a central dome, d, open at the bottom across its whole extent, and having the exit-pipe e of the furnace at its side near the top, said dome being secured to said body by a flange, e, and forming a reservoir for the products of combustion on their passage to the annular radiator f, surrounding said dome, and communicating through the exit-pipe thereof with the chimney, substantially as and for the purposes set forth.

207,789. CHAIR-BOTTOMS. Seth K. Woodbury and Wm. T. Gray, Lynn, Mass. Filed Nov. 18, 1877.



Claim.—A chair-seat composed of a thin wooden rim, A, perforated around its inner edge, strengthening-piece e, formed of a piece of thick wood bent around and secured to the inner under edge of the rim A, and interlaced strips a, secured in place through perforations d d in the rim and strengthening-piece, said seat being made separate from the chair and adapted to be secured in place to the ordinary seat-frame by means of the rim A, as described.

207,790. BARBERS' CHAIRS. James M. Walridge, Atlantic, Iowa. Filed Mar. 12, 1878.



Claim.—A barber's chair constructed as described, and consisting of the center block, A, legs B, and intervening blocks, e, the seat C, provided with the ears c, crank-lever D, rails d and d', and spring E, all arranged to operate substantially as and for the purposes set forth.

207,791. HARNESS-TRIMMINGS. Melancthon E. Zeller, Bluffton, Ohio. Filed Jan. 16, 1878.



Claim.—1. A harness-trimming consisting of the plate A, eye B, and hook C, cast separately, substantially as and for the purpose set forth.

2. The plate A, having apertures a^1 a^1, in combination with the eye B, having the posts b b, substantially as and for the purpose set forth.

3. The plate A, having apertures a^1 a^1, in combination with the eye B, having the posts b b, and hook C, substantially as and for the purpose set forth.

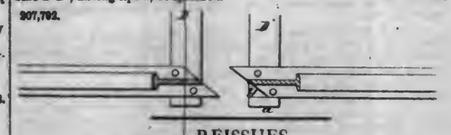
207,792. PORTABLE RAILWAY-TRACKS. Frederick B. Miles and Robert M. Miles, Philadelphia, Pa., assignors to Robert M. Miles, same place. Filed Aug. 10, 1878.

Brief.—The meeting rail ends are beveled, so that the ends of each rail will rest upon the end cross-tie of the adjacent section, said ties having their ends turned up outside of the rail-flanges to prevent lateral displacement of the rails.

Claim.—1. The combination of the end cross-bar D and beveled rails of one section of a railroad-track and the end cross-bar D' and beveled ends of the rails of an adjoining section, the projecting ends of the rails of one section being arranged to bear on the end cross-bar of the adjoining section, all substantially as set forth.

2. The combination of the two sections having beveled rails with cross-bars D D', having lips a, as specified.

207,793.



REISSUES.

8,391. BURRS FOR KNITTING-MACHINES. William H. Carr, Troy, N. Y., assignor to George Campbell and John Gluts. Patent No. 43,636, dated July 26, 1864. Filed July 12, 1878.

Brief.—The wings or blades are removable. A dovetail on the inner edge of each fits in an outwardly-narrowed space in the hub, thus permitting of their being clamped and held in proper position. The hub has oblique slots and a central hollow screw-bush.



Claim.—1. A knitting-burr blade, A, having on its inner edge a dovetail or flaring projection, b, and shoulders c e, substantially as herein described.

2. A series of knitting-burr blades or wings having a dovetail or flaring projection on the inner edge of each, in combination with a hub having oblique slots and an outwardly-narrowed annular space wherein the dovetails or flaring projections of the blades are secured.

3. The combination of a series of wings or blades having a dovetail or flaring projection on the inner edge of each, a hub having oblique slots and an outwardly-narrowed annular space, and a central hollow screw-bush or its equivalent, all operating together as described, so as to clamp within the outwardly-narrowed annular space the edges of the dovetails or flaring projections, substantially as described.

8,392. CAR-COUPLINGS. Charles Clifford, Gardiner, Me. Patent No. 204,212, dated May 28, 1878. Filed June 27, 1878.



Claim.—1. A recessed draw-head provided with a hook or catch, c', and link arcal or semicircular heel and toe bearings g h, and having a projection, l, separate from the link, to extend over its heel or through the link, substantially as and for the purpose or purposes set forth.

2. In combination with a coupling-link, B, curved at its ends, as shown, and a draw-head provided with a coupling-hook or catch, as set forth, devices for guiding the link in its movements, as explained, such devices being the projection i and groove k, arranged with the link and draw-head in manner as represented.

8,393. WINDOW-CLEANERS. William C. Gayton, Chicago, Ill. Patent No. 196,006, dated Oct. 9, 1877. Filed Aug. 5, 1878.



Claim.—1. An improved window-cleaner consisting of a handle or holder, an elastic rubbing-strip attached by one edge to said holder, and a bearing or support for said strip near its outer edge, said parts being combined substantially as described.

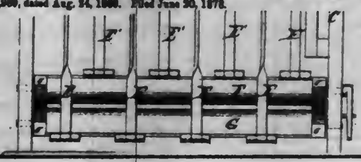
2. The holder having its back extended and lying underneath the projecting strip, jointly with the bearing or support located thereon, and the rubbing-strip, substantially as described.

3. The combination, with the holder, of the elastic rubbing-strip and a yielding bearing or cushion, substantially as and for the purpose set forth.

4. In combination with the elastic strip B, attached to a suitable holder, the bearing or cushion C, of india-rubber, made tubular in form, substantially as described, and for the purpose set forth.

5. The combination, with the holder having an extended back, and with the rubber strip and the bearing or support, of the end pieces D, as and for the purpose specified.

8,394. REEDING-MACHINES. Farmers Friend Manufacturing Company, Dayton, Ohio, assignee of Barbara Harrison, widow of John D. Harrison, deceased, and William S. Marshall and Simon Golden, guardians of minor children of said John D. Harrison. Patent No. 93,980, dated Aug. 24, 1869. Filed June 20, 1878.



Claim.—1. In a grain-drill, the bar G, pivoted to the main frame, having only the alternate drag-bars E attached to it, whereby the alternate drag-bars E are adjusted forward and backward by the oscillation of the pivoted bar G, substantially as herein set forth.

2. In a grain-drill, the bar F, pivoted to the main frame, and having only alternate drag-bars hinged to it, so that the oscillations of bar F on its pivot adjusts the alternate series of bars E backward or forward, substantially as herein set forth.

3. In a grain-drill, two oscillating bars, separately pivoted to the main frame, with a series of drag-bars alternately hinged to each bar, which are adjusted to occupy either a single or a double rank by the oscillation of the bars on their axes, substantially as herein set forth.

4. In a grain-drill, the series of drag-bars, hinged alternately to two bars separately pivoted to the main frame, and so connected that the oscillation of one of the adjusting-bars will move the other and set the two series of drag-bars in either single or double rank, substantially as herein set forth.

5. The combination of the gearing-sockets *o* with the bars F G and drag-bars E, constructed, arranged, and operated substantially as and for the purpose described.

8,396. STRAW-CUTTERS. Thomas E. Marable, Petersburg, Va., assignor to James C. Blake and Peter T. Young. Patent No. 191,008, dated May 22, 1877. Filed June 13, 1878.



Claim.—1. As a new article of manufacture, the knife A, adapted for hay and straw cutting machinery, having a thin blade with straight serrated cutting-edge, said blade being beveled on one side of the cutting-edge and provided on the other side with a series of notches or grooves, parallel to each other but inclined to the cutting-edge, extending from *a*¹ to *a*², and decreasing in depth from the edge back to the line where they run out, substantially as herein shown, and for the purposes set forth.

2. The combination of the knife and operating-arm *b* with the stiff rod or bar *d*, arranged outside of the knife-blade, substantially as described.

3. The combination, with the levers *b* and *c*, of the knife A and gage *g*, supported and operated by said levers, substantially as described.

4. The combination of the knife, levers *b* and *c*, and stiff bar *d*, substantially as described.

5. The combination of the levers *b* and *c*, the knife, the bar *d*, and the gage *g*, arranged between the bar *d* and the knife, substantially as described.

8,398. CENTER RIMS FOR WATCH-CASES. David H. Pierce and Absalom W. Taft, Providence, R. I., assignors of one-half interest to Samuel W. Bennett and Alfred G. Pierce. Patent No. 208,458, dated Apr. 16, 1878. Filed Aug. 6, 1878.



Claim.—1. The method herein described for constructing the center rim for watch-cases, consisting in rolling or drawing the two side bands in one piece of plate, the center bead in a separate piece of plate, forming the side bands and the center bead into rings, and securing the ring forming the two side bands within the ring forming the center bead.

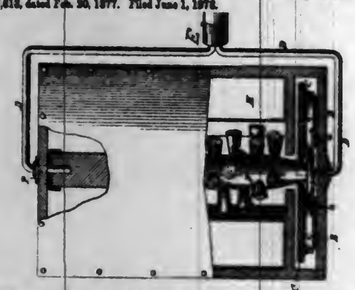
2. A center rim for watch-cases, in which the two side bands are drawn or rolled in one piece and secured within the center bead, substantially as described, as a new article of manufacture.

3. The two side bands of a center rim for watch-cases, when made in one piece separate from the center bead, and arranged to fit within the center bead, substantially as and for the purpose set forth.

4. In a center rim for watch-cases, the combination, with the two side bands, *b* and *b*¹, made in one piece of drawn or rolled metal, of the center bead *a*, substantially as and for the purpose set forth.

5. A center rim for watch-cases, consisting of two rings, the outer forming the center bead and the inner both of the side bands.

8,397. CARPET-SWEEPERS. Henry A. Gore, Goshen and George W. Edgcomb, Lima, assignors, by mesne assignments, to the Goshen Sweeper Company, Goshen, Ind. Patent No. 197,813, dated Feb. 30, 1877. Filed June 1, 1878.



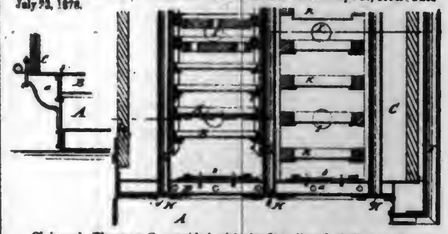
Claim.—1. The combination of the spring *e* with the levers B and wheels C C, substantially as shown and described.

2. The handle E and bail D entering the end of the brush, in combination with the adjustable slotted ears P and revolving brush F, all combined substantially as and for the purpose set forth.

3. In a carpet-sweeper, a removable end having the gearing attached thereto, substantially as and for the purpose set forth.

4. The bail D, provided with its extended bent ends, forming pivots for the brush-shaft, in combination with the revolving brush F, substantially as and for the purpose set forth.

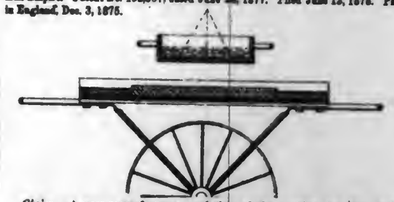
8,398. FRUIT-DRYING OVENS. David Lippy, Mansfield, Ohio, for himself and Adam Linn, administrator of Samuel Linn, deceased. Patent No. 44,324, dated Sept. 20, 1864. Filed July 23, 1878.



Claim.—1. The oven C, provided with the flues G and shelves or drawers K, when used in connection with the chamber B, fire-box A, pipe F, and drum D, arranged substantially as and for the purpose herein set forth.

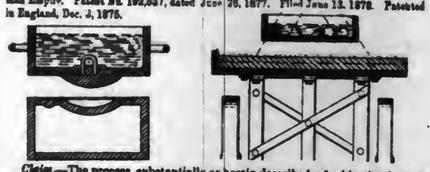
2. The registers *a*, *b*, H, and I, when applied respectively to the chamber B, flues G, and oven C, substantially as and for the purpose set forth.

8,399. HARDENING, TEMPERING, AND PRESSING GLASS. Frederick Siemens, Dresden, German Empire. Patent No. 192,537, dated June 26, 1877. Filed June 13, 1878. Patented in England, Dec. 3, 1875.



Claim.—A new manufacture consisting of glass which has been subjected while in a heated condition to pressure in or between molds, for the purpose of rendering it capable of resisting fracture on impact or fracture caused by sudden variations of temperature, as herein described.

8,400. HARDENING, TEMPERING, AND PRESSING GLASS. Frederick Siemens, Dresden, German Empire. Patent No. 192,537, dated June 26, 1877. Filed June 13, 1878. Patented in England, Dec. 3, 1875.



Claim.—The process, substantially as herein described, of subjecting heated glass articles to pressure in molds, whereby the glass is simultaneously compressed and rendered less frangible.

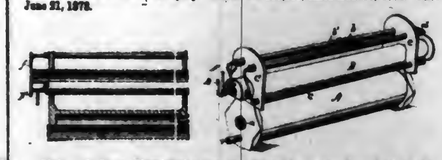
8,401. ELASTIC-FACED PRINTING-TYPES. Arthur H. Rogers, Springfield, Mass., assignor to H. H. Smith & Co., same place. Patent No. 201,632, dated Mar. 26, 1878. Filed June 29, 1878.



Claim.—1. The process of making interchangeable elastic-faced printing-types, consisting of molding, substantially as described, a sheet of rubber type-faces onto a series of metal bodies locked together and secured to the mold, vulcanizing the sheet while in the mold, and then, by cutting the faces apart, separating the types, as set forth.

2. An improved printing-type consisting of the metal body A, having a recess, *c*, made in one end, and the elastic or rubber face *x* pressed into said recess and secured, substantially as herein described.

8,402. GAS APPARATUS. John Hanlon, New York, N. Y., assignor, by mesne assignments, to National Petroleum Gas Company. Patent No. 197,813, dated Dec. 15, 1874. Filed June 21, 1878.



Claim.—1. In an illuminating-gas apparatus, the retort B and steam-pipe *f*, entering within the retort immediately below the oil-pipe F, in combination with the oil-pipe F, also entering within the retort at a point immediately above the steam-pipe, whereby a jet of steam is caused to impinge upon the falling hydrocarbon within the body of the retort, substantially as and for the purpose herein described.

2. The cylindrical retort A, provided with the central heat-flue *a*, in combination with the retort B and pipes *b b*¹, *c c*¹, *d*, *h*, and *e*, and the pipes F and *f*, constructed, arranged, and operated substantially as and for the purpose specified.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3d DAY OF SEPTEMBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adams, G. W. (See Leach, C., assignor.)						
Adams, J. M., Chicago, Ill. Coal-oil stove	207,637	Sept. 3	55	16	14	356
Adams, J. S., Elgin, Ill. Pump	207,700	Sept. 3	114	34, 35	14	363
Aldrich, W. A., Ingersoll, Mich. Wind-engine	207,701	Sept. 3	115	35	14	363
Alling, A. H., *et al.* (See Otis, S. L., assignor.)						
Alling, C. B., *et al.* (See Otis, S. L., assignor.)						
Allison, O. W., Cleveland, Ohio. Paper-bag machine	207,702	Sept. 3	116	36, 37	14	364
Allyn, M. S., Hart's Grove, Ohio. Milk-cooler	207,584	Sept. 3	1	1	14	349
Anderson, W. G., Mexia, Tex. Bale-tie	207,703	Sept. 3	121	37	14	364
Andruss, W. H., Brooklyn, N. Y. Brush and blacking-box holder	207,704	Sept. 3	122	38	14	364
Arnold, W. W., and J. T. McGuire, Whitehall, Ill. Drying-car for drain-tiles, bricks, &c.	207,638	Sept. 3	57	17	14	356
Baines, E., Toronto, Ontario, Canada. Reciprocating engine	207,639	Sept. 3	58	17	14	356
Ball, E. M., assignor of one-half interest to D. F. Gallaher and W. O. Neil, Stansted, Quebec, Canada. Fire-escape	207,705	Sept. 3	122	38	14	365
Barnes, J. (See Barnes, W. F. and J.)						
Barnes, W. F. and J., Rockford, Ill. Scroll-sawing machine	207,640	Sept. 3	59	17, 18	14	356
Baron, A. L. (See Cash and Baron.)						
Bates, C. E., West Cheshire, Conn. Button	207,706	Sept. 3	123	38	14	365
Bean, S. L., Washington, D. C. Millstone-exhaust apparatus	207,585	Sept. 3	2	1	14	349
Beecher, F. H. (See Gerard, F. C., assignor.)						
Belanger, N. (See Luckett and Belanger.)						
Bennett, S. W., *et al.* (See Pearce and Taft, assignors.) (Reissue.)						
Benstine, J., and C. H. Osborn, Ocomomowoc, Wis. Clothes-drier	207,586	Sept. 3	3	1, 2	14	349
Best, A. H., Savannah, Ga. Motor for dental engines	207,707	Sept. 3	125	38	14	365
Bijur, A., New York, N. Y. Shutter	207,641	Sept. 3	62	18	14	357
Blake, J. C., *et al.* (See Marable, T. E., assignor.) (Reissue.)						
Boyer, J. S., Philadelphia, Pa. Thumb-stall for facilitating the sorting of letters	207,708	Sept. 3	126	39	14	365
Bradley, G. W., Sunderland, Vt. Box and fastening	207,642	Sept. 3	63	18	14	357
Braunfeld, H. E., Baltimore, Md. Thill-coupling	207,587	Sept. 3	3	2	14	349
Breit, H. W., Boston, Mass. Wrench	207,709	Sept. 3	126	39	14	365
Brotherton, J., Ames, Iowa, assignor to A. Dillman, Joliet, Ill. Barbed wire for fences	207,710	Sept. 3	127	39	14	365
Brownell, A. S., Watertown, Mass. Apparatus for heating railway-cars	207,588	Sept. 3	4	2	14	349
Bulekens, F. (See Grimmell and Bulekens.)						
Burlingame, A. H., Sparta, Ill. Rolling colter	207,589	Sept. 3	5	2	14	349
Burnap, J. A., Albany, N. Y. Steam-pump	207,590	Sept. 3	6	3	14	350
Bushor, D., Effingham, Ill. Sulky	207,711	Sept. 3	127	39	14	365
Butts, A. C., Newark, N. J. Boxing-glove	207,591	Sept. 3	8	3	14	350
Cadwalader, H., Richmond, Ind. Pump	207,592	Sept. 3	9	3	14	350
Campbell, G., *et al.* (See Carr, W. H., assignor.) (Reissue.)						
Cantelo, J., Cedar Rapids, Iowa. Water-valve	207,712	Sept. 3	128	40	14	365
Carr, W. H., Troy, N. Y., assignor to G. Campbell and J. Clute. Burr for knitting-machines. (Reissue)	8,391	Sept. 3	211	65	14	375
Cash, E. F., and A. L. Baron, assignors to D. Rankin, Bellaire, Ohio. Lantern	207,713	Sept. 3	129	40	14	366
Clark, A. T., Manchester, N. C. Farmer's tool and handle	207,643	Sept. 3	63	19	14	357
Clark, J., Brooklyn, N. Y. Sewer-trap	207,644	Sept. 3	64	19	14	357
Clute, J., *et al.* (See Carr, W. H., assignor.) (Reissue.)						
Chapin, P. E. (See Foss, H. A., assignor.)						
Chapman, R. W., Newark, N. J. Bag-framing machine	207,714	Sept. 3	131	40	14	366
Coffey, J. W., Washington, Iowa. Barber's chair	207,593	Sept. 3	9	4	14	350
Cole, E. (See Howell and Cole.)						
Converse, E. (See Dryden, G., assignor.)						
Converse, P. (See Lane, F. A., assignor.)						
Cowles, J. A., Chicago, Ill. Lantern	207,715	Sept. 3	135	41	14	366
Cowles, J. A., Chicago, Ill. Lantern	207,716	Sept. 3	135	41	14	366
Crane, M., New York, N. Y. Pan for backing electrotype-shells	207,645	Sept. 3	65	19	14	357
Creager, J., Cincinnati, Ohio. Wood-polishing machine	207,717	Sept. 3	137	41	14	366
Cummins, W. G., Cookville, Tenn. Horse-detacher	207,718	Sept. 3	138	42	14	366
Curtiss, W. E., Hoppinville, Pa. Railway-tie	207,719	Sept. 3	139		14	367
Dillman, A. (See Brotherton, J., assignor.)						
Dixson, S., Roseville, Ill. Sulky-plow	207,720	Sept. 3	139	42	14	367
Donason, A., Marquon, Ill. Road-grader	207,594	Sept. 3	10	4	14	350
Dougherty, J. B., Rochester, N. Y. Hoop	207,721	Sept. 3	140	42	14	367
Dryden, G., assignor of one-half interest to E. Converse, Worcester, Mass. Piston-packing	207,595	Sept. 3	11	4	14	350
Duchamp, E., St. Martinville, La. Faucet	207,646	Sept. 3	66	19	14	357
Dunning, R. O., Jefferson, assignor to O. F. Field, Woodstock, Ill. Hat-holder	207,722	Sept. 3	141	42	14	367
Dwight, C. M., *et al.* (See Gannon, L. E., assignor.)						
Edgcomb, G. W. (See Gore and Edgcomb.) (Reissue.)						
Edison, T. A., Newark, N. J., assignor of one-half interest to G. B. Prescott, New York, N. Y. Duplex telegraph	207,723	Sept. 3	142	43	14	367
Edison, T. A., Newark, N. J. Duplex telegraph	207,724	Sept. 3	142	43	14	367
Egery, M. J., Bangor, Me. Machine for edging lumber	207,596	Sept. 3	12	5	14	351

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Elliott, S., Chicago, Ill. Cutting-gage	207,597	Sept. 3	12	5	14	351
Elliott, S., Lithgow, N. Y. Harrow	207,725	Sept. 3	144	43	14	367
Evans, E. (See Evans, G. W., assignor.)						
Evans, G. W., assignor to E. Evans, Brooklyn, N. Y. Portable pitch-kettle for roofing and paving purposes	207,647	Sept. 3	67	20	14	357
	207,726	Sept. 3	144	43	14	367
Everit, W. L., New Haven, Conn. Street-car						
Farmer's Friend Manufacturing Company. (See Harrison, J. D., assignor.) (Reissue.)						
Farnsworth, G. (See Ladd, D. O., assignor.)						
Fay & Co., J. A. (See Huff, C. F. H., assignor.)						
Field, O. F. (See Dunning, R. O., assignor.)						
Fish, J. R., Grand Rapids, Mich. Draw-bar for railway-cars	207,727	Sept. 3	145	44	14	367
Fisher, J. B., Davenport, Iowa. Sulky-plow	207,598	Sept. 3	13	5	14	351
Flather, E., Bridgeport, Conn. Thread-cutter for sewing-machines	207,648	Sept. 3	68	20	14	357
Forbes, H. D., Cambridge, Mass. Whirligig	207,649	Sept. 3	68	20	14	357
Fosgate, D. O., Red Wing, Minn. Sulky-plow	207,650	Sept. 3	69	21	14	357
Foss, H. A., assignor to P. E. Chapin, Pine Meadow, Conn. Bench-plane	207,599	Sept. 3	16	5	14	351
Foster, G. S. (See Milligan, J. F., assignor.)						
Fowler, J. W., and D. V. Lewis, Brooklyn, N. Y. Passenger-register	207,728	Sept. 3	146	44	14	368
Fraser, D., Jr., Boston Mass. Machine for rolling horseshoe-nail plates or bars	207,651	Sept. 3	70	21	14	358
Free, D., Emigsville, Pa. Hame-fastener	207,729	Sept. 3	149	44	14	368
Friedberger, H. (See Menkhoff, W., assignor.)						
Friedeborn, C., Clare, Mich. Churn-dasher	207,652	Sept. 3	71	21	14	358
Fuller, H. R., Princeton, Mo. Harvester guard-finger	207,730	Sept. 3	150	45	14	368
Gale, C. W., Osawatomie, Kans. Bee-hive	207,731	Sept. 3	150	45	14	368
Gallaher, D. F., *et al.* (See Ball, E. M., assignor.)						
Gannon, L. E., Washington, D. C., assignor to J. W. Hoyt and C. M. Dwight, Springfield, Mass. Securing roofing-slates	207,653	Sept. 3	71	21	14	358
Garrett, J. E., Davenport, Iowa. Gate	207,600	Sept. 3	16	6	14	351
Gayton, W. C., Chicago, Ill. Window-cleaner. (Reissue)	8,393	Sept. 3	213	65	14	375
Geer, D. C., Warren, Vt. Latch	207,654	Sept. 3	73	22	14	358
Gerard, F. C., Seymour, Conn., assignor of one-half interest to F. H. Beecher. Leaf-holder for books	207,601	Sept. 3	17	6	14	351
Gibson, C. D. (See Lovett and Gibson.)						
Gifford, C., Gardiner, Me. Car-coupling. (Reissue)	8,392	Sept. 3	212	65	14	375
Gifford, G. T., Galesburg, Ill. Grain-binder	207,655	Sept. 3	73	22	14	358
Gold Medal Sewing Machine Company. (See Thomas, E. T., assignor.)						
Golden, S. (See Harrison, J. D.) (Reissue.)						
Good, E. G., assignor to C. C. Holton, Chicago, Ill. Steam generating and heating device for boilers	207,732	Sept. 3	152	46	14	368
Goodrich, H. C., Chicago, Ill. Boot and shoe sole	207,602	Sept. 3	18	6	14	352
Gore, H. A., Goshen, and G. W. Edgcomb, Lima, assignors, by mesne assignments, to Goshen Sweeper Company, Goshen, Ind. Carpet-sweeper. (Reissue)	8,397	Sept. 3	217	66, 67	14	376
Goshen Sweeper Company. (See Gore and Edgcomb, assignors.) (Reissue.)						
Gould, F., Huntington, N. Y. Rowlock	207,733	Sept. 3	153	46	14	368
Gray, W. T. (See Woodbury and Gray.)						
Grinnell, V. B., and F. Bulckens, Waverly, Iowa. Carriage-top	207,734	Sept. 3	154	46	14	368
Grisell, H. L., Pennville, Ind., assignor to himself and L. Grisell. Scale-beam	207,735	Sept. 3	154	46	14	368
Grisell, L. (See Grisell, H. L., assignor.)						
Haines, J. W., Cambridge, Mass. Mold for blowing glass vessels	207,656	Sept. 3	75	22	14	358
Hamilton, J. C., Fort Wayne, Ind. Horseshoe	207,603	Sept. 3	19	7	14	352
Hamlin, C. A., Greenbush, assignor to Ransom Stove Works, Albany, N. Y. Cooking and heating stove	207,604	Sept. 3	19	7, 8	14	352
	207,736	Sept. 3	155	47	14	369
Hance, A., New York, N. Y. Fender for car-platforms						
Hanlon, J., New York, N. Y., assignor, by mesne assignments, to National Petroleum Gas Company. Gas apparatus. (Reissue)	8,402	Sept. 3	223	69	14	376
Harrison, B. (See Harrison, J. D.) (Reissue.)						
Harrison, J. D., deceased, by Farmers Friend Manufacturing Company, Dayton, Ohio, assignee of B. Harrison, W. S. Marshall, and S. Golden. Seeding-machine. (Reissue)	8,394	Sept. 3	214	66	14	375
	207,657	Sept. 3	76	23	14	359
Hartman, S., Pittsburg, Pa. Rotary harrow						
Hawkes, J. (See Hawkes, T. and J.)						
Hawkes, T., Jersey City, and J. Hawkes, New Brunswick, N. J. Feed-bag	207,658	Sept. 3	77	23	14	359
Height, H. R., Lebanon, Tenn. Churn	207,737	Sept. 3	155	47, 48	14	369
Herzberg, N. (See O'Neill, H., assignor.)						
Hill, S., and B. B. Prentice, Greensborough, Vt. Milk-cooler	207,738	Sept. 3	157	48	14	369
Hodges, H. F., Walnut, Ill. Wind-wheel	207,659	Sept. 3	78	23	14	359
Holbrook, A., Providence, R. I. Loom-picker	207,739	Sept. 3	158	48	14	369
Holton, C. C. (See Good, E. G., assignor.)						
Hornum Patent Register Manufacturing Company. (See Hornum, W. H., assignor.)						
Hornum, W. H., assignor to Hornum Patent Register Manufacturing Company, New York, N. Y. Fare-register	207,740	Sept. 3	158	48	14	369
How, W. S., Cincinnati, Ohio. Dental chair	207,741	Sept. 3	160	49	14	369
Howell, P. B., and E. Cole, Horseheads, N. Y. Butter-worker	207,742	Sept. 3	161	49	14	369
Howland, L. B., Lakeville, Mass. Picking-motion for looms	207,660	Sept. 3	78	24	14	359
Hoyt, J. W., *et al.* (See Gannon, L. E., assignor.)						
Huff, C. F. H., assignor to J. A. Fay & Co. Cincinnati, Ohio. Bit for carving-machines	207,743	Sept. 3	161	49	14	370
Hunter, J. M., Greene, N. Y. Horseshoe-calk sharpener	207,744	Sept. 3	162	49	14	370
Jackson, B. F., Indianapolis, assignor to himself and J. J. Shields, Muncie, Ind. Car-door fastening	207,605	Sept. 3	20	8	14	352
	207,745	Sept. 3	163	50	14	370
Jonte, P. F., Cincinnati, Ohio. Treadle-movement for sewing-machines	207,661	Sept. 3	79	24	14	359
Keeffe, R. O., Omaha, Neb. Hoisting-jack	207,606	Sept. 3	22	8	14	352
Ketcham, G. W., Newark, N. J. Sheet-metal pipe	207,662	Sept. 3	80	24	14	359
Kilgore, W. M., Uniontown, Ohio. Steam-boiler	207,746	Sept. 3	164	50	14	370
King, S. R., Mason, Mich. Machine for erecting frame-structures	207,607	Sept. 3	23	8	14	352
Ladd, D. O., assignor of one-half interest to G. Farnsworth, Chicago, Ill. Valve-gear	207,608	Sept. 3	24	9	14	352
Ladd, D. O., Chicago, Ill. Automatic governor and cut-off for engines	207,663	Sept. 3	81	25	14	359
Lahmeyer, J., Fort Wayne, Ind. Car-coupling	207,609	Sept. 3	25	9	14	352
Lane, F. A., assignor of one-half interest to P. Converse, New Haven, Conn. Pendulum	207,664	Sept. 3	82	25	14	359
Lapham, R., New York, N. Y. Device for setting and skimming milk	207,610	Sept. 3	25	9	14	352
Larrabee, F. E., Lynn, Mass. Machine for finishing boot and shoe soles	207,611	Sept. 3	26	10	14	352
Leach, C., Warsaw, assignor of one-half interest to G. W. Adams, Allerton, Iowa. Draft-equalizer	207,665	Sept. 3	83	25	14	359
Leonard, H. L., Bangor, Me. Joint for fishing-rods	207,747	Sept. 3	165	50, 51	14	370
Leonard, H. R., assignor to A. Rosenberg, San Francisco, Cal. Machine-gun	207,748	Sept. 3	168	51	14	370
Leonard, T., Grafton, Mass. Vegetable-chopper	207,749	Sept. 3	169	51	14	370
Lester, C., New Orleans, La. Bale-tie	207,750	Sept. 3	169	51, 52	14	370
Levin, W., New York, N. Y. Treadle						
Lewis, D. F. (See Fowler and Lewis.)						
Linn, A., administrator. (See Lippy and Linn.) (Reissue.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Linn, S., deceased. (See Lippy and Linn.) (Reissue.)						
Lippy, D., Mansfield, Ohio, and A. Linn, administrator of S. Linn, deceased. Fruit-drying oven. (Reissue)	8,398	Sept. 3	218	67	14	376
Locke, S. D., Hoosick Falls, N. Y. Spool and take-up for grain-binders	207,612	Sept. 3	27	10	14	353
Loebenstein, L., New York, N. Y. Stocking-supporting clasp	207,666	Sept. 3	84	25	14	359
Long, J., Massillon, Ohio. Plow	207,751	Sept. 3	171	52	14	371
Long, J., Massillon, Ohio. Plowshare or point	207,752	Sept. 3	172	52	14	371
Lovett, J. D., Boston, Mass., and C. D. Gibson, New York, N. Y. Auger-handle	207,667	Sept. 3	84	26	14	360
Luce, L., *et al.* (See Wade, S. M., assignor.)						
Luckett, E. M., and N. Belanger, Terrace, Utah Ter. Packing valve-stems	207,668	Sept. 3	86	27	14	360
Lugo, O., Flushing, N. Y. Electrode for electric lights	207,753	Sept. 3	172	52	14	371
Lugo, O., Flushing, N. Y. Electrode for electric lights	207,754	Sept. 3	174	53	14	371
Mabille, P. F., Paris, France. Kiln for baking lime, plaster, &c.	207,755	Sept. 3	175	53	14	371
Maguire, T., Port Jervis, N. Y. Lawn-sprinkler	207,756	Sept. 3	176	53	14	371
Mann, S. A., Reno, Nev. Permutation-lock	207,613	Sept. 3	29	10	14	353
Marable, T. E., Petersburg, Va., assignor to J. C. Blake, and P. T. Young. Straw-cutter. (Reissue)	8,395	Sept. 3	215	66	14	376
Marshall, W. S. (See Harrison, J. D.) (Reissue.)						
Matthews, J. (See Matthews, J. S. and J.)						
Matthews, J. S. and J., Athens, Tenn. Straw-cutter	207,757	Sept. 3	177	54	14	371
Maughlin, R. A. (See Maughlin, W. W., assignor.)						
Maughlin, W. W., assignor to R. A. Maughlin, Baltimore, Md. Bed-bottom	207,758	Sept. 3	178	54	14	371
McConnell, H., Cleveland, Ohio. Wick-tube	207,614	Sept. 3	30	10, 11	14	353
McElroy, W., Brooklyn, N. Y. Water-closet valve	207,615	Sept. 3	31	11	14	353
McGuire, J. T. (See Arnold and McGuire.)						
McNair, W. L., Allegheny, Pa. Puddling-furnace	207,669	Sept. 3	86	26	14	360
Meinhold, T., Klingenthal, Saxony, Germany. Harmonica	207,616	Sept. 3	32	11	14	353
Meinhold, T., Klingenthal, Saxony, Germany. Accordion	207,759	Sept. 3	179	54	14	371
Meinhold, T., Klingenthal, Saxony, Germany. Accordion	207,760	Sept. 3	180	55	14	372
Menkhoff, W., assignor to H. Friedberger, Philadelphia, Pa. Straw-braid sewing-machine	207,763	Sept. 3	182	56	14	372
Miles, P. B. and R. M., assignor to R. M. Miles, Philadelphia, Pa. Portable railway-track	207,792	Sept. 3	210	64	14	375
Miles, R. M. (See Miles, P. B. and R. M.)						
Miller, A., Brooklyn, N. Y. Imitation of tortoise-shell	207,617	Sept. 3	33		14	353
Miller, J., Canton, Ohio. Grain-spout register	207,618	Sept. 3	33	11	14	353
Miller, R. R., Plantsville, Conn. Running-gear for carriages	207,761	Sept. 3	181	55	14	372
Miller, W., Cincinnati, Ohio. Shaking-grate for stoves	207,670	Sept. 3	87	26	14	360
Milligan, J. F., assignor of one-half interest to G. S. Foster, St. Louis, Mo. Platform weighing-scales	207,762	Sept. 3	182	55	14	372
Mitchell, R., Cincinnati, Ohio. Opera-chair	207,764	Sept. 3	184	56	14	372
Moore, E. Y. (See Moore, S. H. and E. Y.)						
Moore, S. H. and E. Y., Chicago, Ill. Door-hanger	207,765	Sept. 3	185	56	14	372
Moores, W., and J. Shepherd, Sherburne, Ky. Sad-iron	207,766	Sept. 3	185	56	14	372
Morrill, G. P., Canterbury, N. H. Tool-handle attachment	207,671	Sept. 3	88	27	14	360
National Petroleum Gas Company. (See Hanlon J., assignor.) (Reissue.)						
Nell, W. O., *et al.* (See Ball, E. M., assignor.)						
Niece, R. K., Frenchtown, N. J. Cultivator	207,767	Sept. 3	186	57	14	372
Nutrizio, H., Philadelphia, Pa. Coffee-pot	207,768	Sept. 3	187	57	14	373
O'Neill, H., assignor of one-third interest to N. Herzberg, New York, N. Y. Machine for shearing, punching, and stamping metals	207,619	Sept. 3	34	12	14	353
Orry, J. E., Paris, France. Manufacture of ornamental chains	207,672	Sept. 3	89	27	14	360
Osborn, C. H. (See Benstine and Osborn.)						
Osborne, W. F., Ansonia, Conn. Manufacturing buckle-tongues	207,769	Sept. 3	188	57	14	373
Otis, S. L., assignor to A. H. and C. B. Alling, Birmingham, Conn. Crochet machine	207,770	Sept. 3	189	57, 58	14	373
Page, W. H., Norwich, Conn. Sectional steam-boiler	207,771	Sept. 3	190	58	14	373
Pagett, C. W., Keokuk, Iowa. Curry-comb	207,673	Sept. 3	90	27	14	360
Palmer, D. W., Detroit, Me. Sulky-plow	207,674	Sept. 3	91	27	14	360
Parmelee, J., Des Moines, Iowa. Hollow-screw pin-vise	207,620	Sept. 3	35	12	14	353
Patten, G. M., Yonkers, N. Y. Child's convertible chair	207,621	Sept. 3	36	12	14	354
Pearce, D. H., and A. W. Taft, Providence, R. I., assignors of one-half interest to S. W. Bennett and A. G. Pierce. Center rim for watch-cases. (Reissue)	8,396	Sept. 3	216	66	14	376
Peck, C. F., Georgetown, D. C. Conductor's fare-controller	207,675	Sept. 3	92	28	14	360
Peters Leather Dash Company. (See White, J. E., assignor.)						
Picaso, J., New York, N. Y. Cork-cutting machine	207,772	Sept. 3	191	58, 59	14	373
Pierce, A. G., *et al.* (See Pearce and Taft, assignors.) (Reissue)						
Pitt, W. A., assignor to E. Tracy, New York, N. Y. Sewer-trap	207,676	Sept. 3	93	28	14	360
Plant, P., Washington, D. C. Ore-separator	207,622	Sept. 3	38	12, 13	14	354
Poland, C. A., Columbus, Ohio. Vehicle-axle skein	207,677	Sept. 3	94	28	14	361
Porter, H. L., Elk City, Pa. Torpedo for oil-wells	207,678	Sept. 3	95	28	14	361
Potter, T., Philadelphia, Pa. Manufacture of floor oil-cloth	207,679	Sept. 3	95	29	14	361
Pratt, P. W., Abington, Mass. Chair-pad	207,680	Sept. 3	96	29	14	361
Prentice, B. B. (See Hill and Prentice.)						
Presbrey, O. S., Port Henry, N. Y. Hoisting apparatus	207,681	Sept. 3	97	29	14	361
Prescott, G. B. (See Edison, T. A., assignor.)						
Prescott, W., Albany, N. Y. Pigment	207,773	Sept. 3	192		14	373
Puech, P., Paris, France. Preparing and cleansing wool on the pelt	207,774	Sept. 3	193		14	373
Rankin, D. (See Cash and Baron, assignors.)						
Rankin, W. H., Monticello, Ark. Blower for blacksmiths' forges	207,775	Sept. 3	194	59	14	373
Ransom Stove Works. (See Hamlin, C. A., assignor.)						
Record, G. J., *et al.* (See Wade, S. M., assignor.)						
Reden, P., and B. Thole, St. Louis, Mo. Process and compound for preserving eggs	207,623	Sept. 3	39		14	354
Ribble, F. J., Campbellsport, Wis. Ratchet-wheel and pawl mechanism for rotating shafts by treadle-power	207,682	Sept. 3	98	29	14	361
Ricketts, J. B., St. Joseph, Mo. Eye-shade	207,624	Sept. 3	40	13	14	354
Rider, G. L., Kent, Iowa. Check-row attachment for corn-planters	207,683	Sept. 3	99	30	14	361
Ritchie, E. S., Brookline, Mass. Lantern	207,625	Sept. 3	41	13	14	354
Rogers, A. H., assignor to R. H. Smith & Co., Springfield, Mass. Elastic-faced printing-type. (Reissue)	8,401	Sept. 3	222	69	14	376
Rosenberg, A. (See Leonard, H. R., assignor.)						
Roswall, L. J. A., Clarence, Mo. Bed-slat coupler	207,776	Sept. 3	195	59	14	373
Rowell, H., Columbus, Wis. Gun-sight	207,684	Sept. 3	100	30	14	361
Sanford, E. S., Grove, Ohio. Fence-post	207,685	Sept. 3	100	30	14	361
Sargent & Co. (See Steele, D., assignor.)						
Sargent, F. G., Graniteville, Mass. Belting for wool-washers	207,626	Sept. 3	42	13	14	354
Schatz, A. E., New York, N. Y. Whiffletree	207,686	Sept. 3	101	30	14	361
Shaw, P., Boston, Mass. Locking, sealing, and labeling milk-cans	207,627	Sept. 3	42	14	14	354
Shepherd, J. (See Moores and Shepherd.)						
Sheppard, W. H., New York, N. Y. Extension-slide for gas-fixtures	207,687	Sept. 3	102	31	14	362
Shields, J. J. (See Jackson, B. F., assignor.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Shotwell, R. H., West Point, Miss. Cotton-cleaning machine	207,777	Sept. 3	195	59	14	374
Siemens, F., Dresden, Germany. Hardening, tempering, and pressing glass. (Reissue)	8,399	Sept. 3	219	67, 68	14	376
Siemens, F., Dresden, Germany. Hardening, tempering, and pressing glass. (Reissue)	8,400	Sept. 3	220	68, 69	14	376
Smith, H. S., Brooklyn, N. Y. Machine for cutting veneers	207,628	Sept. 3	44	14	14	354
Smith, J., Elyria, Ohio. Cultivator	207,778	Sept. 3	197	60	14	374
Smith & Co., R. H. (See Rogers, A. H., assignor.) (Reissue.)	8,398	Sept. 3	103	31	14	362
Snider, H., Plattsville, Ontario, Canada. Grain-meter	207,689	Sept. 3	104	31, 32	14	362
Soper, W., Reading, England. Breech-loading fire-arm	207,779	Sept. 3	197	60	14	374
Stead, J. C., Green Point, N. Y. Feed-water heater and circulator for steam-boilers	207,780	Sept. 3	198	60, 61	14	374
Stead, J. C., Green Point, N. Y. Feed-water heater and circulator for steam-boilers	207,781	Sept. 3	200	61	14	374
Steele, D., New Britain, assignor to Sargent & Co., New Haven, Conn. Tool-handle	207,690	Sept. 3	106	32	14	362
Steinhofer, O., Baltimore, Md. Curtain-fixture	207,629	Sept. 3	45	14	14	355
Swift, M. C., New Bedford, Mass. Coat-facing	207,691	Sept. 3	107	32	14	362
Taft, A. W. (See Pearce and Taft.) (Reissue.)	8,397	Sept. 3	217	66	14	376
Taylor, J., New Orleans, La. Sand-papering machine	207,761	Sept. 3	181	55	14	372
Thole, B. (See Reden and Thole.)	207,734	Sept. 3	154	46	14	368
Thomas, E. T., New York, N. Y., assignor to Gold Medal Sewing Machine Company, Orange, Mass. Braid-guide for sewing-machines	207,743	Sept. 3	161	49	14	370
Trabue, W., Louisville, Ky. Magazine fire-arm	207,672	Sept. 3	89	27	14	360
Tracy, E. (See Pitt, W. A., assignor.)	207,593	Sept. 3	9	4	14	350
Tripler, A. B., New York, N. Y. Staining wood	207,690	Sept. 3	200	64	14	375
Trowbridge, C. E., Whitinsville, Mass. Adjusting device for spinning-rings and their holders	207,789	Sept. 3	208	64	14	375
Tucker, W. W., Hartford, Conn. Cork-extractor	207,621	Sept. 3	36	12	14	354
Tunbridge, J., Newark, N. J. Separating metals from waste solutions	207,741	Sept. 3	160	49	14	369
Tunny, P. F., Greenbush, N. Y. Clasp	207,764	Sept. 3	184	56	14	372
Vaillant, C. R., Mobile, Ala. Steam-gage	207,690	Sept. 3	96	29	14	361
Vanderman, W., Hartford, Conn. Trap for basins	207,737	Sept. 3	155	47, 48	14	369
Wade, S. M., Andover, assignor to himself, G. J. Record, Conneaut, and L. Luce, Kingsville, Ohio. Hinge	207,632	Sept. 3	71	21	14	358
Walker, J. H., Worcester, Mass. Plowman's boot	207,694	Sept. 3	109	33	14	363
Want, L., Golden, Colo. Baby-walker	207,586	Sept. 3	3	1, 2	14	349
Waters, H. H., Chicago, Ill. Sieve	207,629	Sept. 3	45	14	14	355
Watson, J., Greenwich, England. Pump-valve	207,768	Sept. 3	187	57	14	373
White, B. R., Trenton, N. J. Latch	207,589	Sept. 3	5	2	14	349
White, H. C., North Bennington, Vt. Bending wood	207,584	Sept. 3	1	1	14	349
White, J. E., assignor to Peters Leather Dash Company, Columbus, Ohio. Apparatus for manufacture of dashes	207,738	Sept. 3	157	48	14	369
Whiting, J. L., Boston, Mass. Making brushes	207,772	Sept. 3	191	58, 59	14	373
Wilkerson, B. M., Baltimore, Md. Dental plate	207,631	Sept. 3	47	15	14	355
Wilson, L., Nevada, Ohio. Buckle	207,777	Sept. 3	195	59	14	374
Winslow, F., Salem, Mass. Implement for napping the fibers of shoe-soles	207,770	Sept. 3	189	57, 58	14	373
Wolridge, J. M., Atlantic, Iowa. Barber's chair	207,767	Sept. 3	186	57	14	372
Wood, H. A., Bangor, Me. Wood-burning furnace	207,778	Sept. 3	197	60	14	374
Woodbury, S. H., and W. T. Gray, Lynn, Mass. Chair-bottom	207,673	Sept. 3	90	27	14	360
Young, P. T., *et al.* (See Marable, T. E., assignor.) (Reissue.)	207,690	Sept. 3	106	32	14	362
Zeller, M. E., Bluffton, Ohio. Harness-trimming	207,597	Sept. 3	12	5	14	351
	207,785	Sept. 3	204	62, 63	14	374
	207,707	Sept. 3	125	38	14	365
	207,699	Sept. 3	113	34	14	363

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 3d DAY OF SEPTEMBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Accordion	T. Meinhold	207,759	Sept. 3	179	54	14	371
Accordion	T. Meinhold	207,760	Sept. 3	180	55	14	372
Auger-handle	J. D. Lovett and C. D. Gibson	207,667	Sept. 3	84	26	14	360
Axle skein. Vehicle	C. A. Poland	207,677	Sept. 3	94	28	14	361
Baby-walker	L. Want	207,698	Sept. 3	112	34	14	363
Bag-framing machine	R. W. Chapman	207,714	Sept. 3	131	40	14	366
Bale-tie	W. G. Anderson	207,703	Sept. 3	121	37	14	364
Bale-tie	C. Lester	207,749	Sept. 3	169	51	14	370
Basin-trap	W. Vanderman	207,632	Sept. 3	47	15	14	355
Bed-bottom	W. W. Manghlin	207,758	Sept. 3	178	54	14	371
Bed-slat coupler	L. J. A. Roswall	207,776	Sept. 3	195	59	14	373
Bee-hive	C. W. Gale	207,731	Sept. 3	150	45	14	368
Belting for wool-washers	F. G. Sargent	207,626	Sept. 3	42	13	14	354
Bending wood	H. C. White	207,635	Sept. 3	51	16	14	355
Blower for blacksmiths' forges	W. H. Ranklu	207,775	Sept. 3	194	59	14	373
Boiler. Sectional steam	W. H. Page	207,771	Sept. 3	190	58	14	373
Boiler. Steam	W. M. Kligore	207,662	Sept. 3	80	24	14	359
Boilers. Steam-generating and heating device for	E. G. Good	207,732	Sept. 3	152	45	14	368
Books. Leaf-holder for	F. C. Gerard	207,601	Sept. 3	17	6	14	351
Boot and shoe sole	H. C. Goodrich	207,602	Sept. 3	18	6	14	352
Boot and shoe sole finishing machine	F. E. Larrabee	207,610	Sept. 3	25	9	14	352
Boot. Plowman's	J. H. Walker	207,783	Sept. 3	202	61	14	374
Box and fastening	G. W. Bradley	207,642	Sept. 3	63	18	14	357
Brush and blacking-box holder	W. H. Andruss	207,704	Sept. 3	122	38	14	364
Brushes. Making	J. L. Whiting	207,786	Sept. 3	206	63	14	375
Buckle	L. Wilson	207,787	Sept. 3	207	63	14	375
Buckle-tongues. Manufacturing	W. F. Osborne	207,769	Sept. 3	188	57	14	373
Butter-worker	P. B. Howell and E. Cole	207,742	Sept. 3	161	49	14	369
Button	C. E. Bates	207,706	Sept. 3	123	38	14	365
Cans. Locking, sealing, and labeling milk	P. Shaw	207,627	Sept. 3	42	14	14	354
Car-coupling	C. Gifford. (Reissue)	8,392	Sept. 3	212	65	14	375
Car-coupling	J. Lahmeyer	207,663	Sept. 3	81	25	14	359
Car-door fastening	B. F. Jackson	207,605	Sept. 3	20	8	14	352
Car-platforms. Fender for	A. Hance	207,736	Sept. 3	155	47	14	369
Car. Street	W. L. Everit	207,726	Sept. 3	144	43	14	367
Cars. Apparatus for heating railway	A. S. Brownell	207,588	Sept. 3	4	2	14	349
Cars. Drawbar for railway	J. R. Fish	207,727	Sept. 3	145	44	14	367
Carpet-sweeper	H. A. Gore and G. W. Edgecomb. (Reissue.)	8,397	Sept. 3	217	66	14	376
Carriage running-gear	R. R. Miller	207,761	Sept. 3	181	55	14	372
Carriage-top	V. B. Grinnell and F. Bulckens	207,734	Sept. 3	154	46	14	368
Carving-machines. Bit for	C. F. H. Huff	207,743	Sept. 3	161	49	14	370
Chains. Manufacture of ornamental	J. E. Orry	207,672	Sept. 3	89	27	14	360
Chair. Barber's	J. W. Coffey	207,593	Sept. 3	9	4	14	350
Chair. Barber's	J. M. Wolridge	207,790	Sept. 3	209	64	14	375
Chair-bottom	S. H. Woodbury and W. T. Gray	207,789	Sept. 3	208	64	14	375
Chair. Child's convertible	G. M. Patten	207,621	Sept. 3	36	12	14	354
Chair. Dental	W. S. How	207,741	Sept. 3	160	49	14	369
Chair. Opera	R. Mitchell	207,764	Sept. 3	184	56	14	372
Chair-pad	P. W. Pratt	207,690	Sept. 3	96	29	14	361
Churn	H. R. Height	207,737	Sept. 3	155	47, 48	14	369
Churn-dasher	C. Friedeborn	207,632	Sept. 3	71	21	14	358
Clasp	P. F. Tunny	207,694	Sept. 3	109	33	14	363
Clothes-drier	J. Benstine and C. H. Osborn	207,586	Sept. 3	3	1, 2	14	349
Coat-facing	M. C. Swift	207,629	Sept. 3	45	14	14	355
Coffee-pot	H. Nutrizlo	207,768	Sept. 3	187	57	14	373
Colter. Rolling	A. H. Burlingame	207,589	Sept. 3	5	2	14	349
Cooler. Milk	M. S. Allyn	207,584	Sept. 3	1	1	14	349
Cooler. Milk	S. Hill and B. B. Prentice	207,738	Sept. 3	157	48	14	369
Cork-cutting machine	J. Picaso	207,772	Sept. 3	191	58, 59	14	373
Cork-extractor	W. W. Tucker	207,631	Sept. 3	47	15	14	355
Cotton-cleaning machine	R. H. Shotwell	207,777	Sept. 3	195	59	14	374
Crochet-machine	S. L. Otis	207,770	Sept. 3	189	57, 58	14	373
Cultivator	R. K. Niece	207,767	Sept. 3	186	57	14	372
Cultivator	J. Smith	207,778	Sept. 3	197	60	14	374
Curry-comb	C. W. Pagett	207,673	Sept. 3	90	27	14	360
Curtain-fixture	O. Steinhofer	207,690	Sept. 3	106	32	14	362
Cutting-gage	S. Elliott	207,597	Sept. 3	12	5	14	351
Dashes. Apparatus for manufacture of	J. E. White	207,785	Sept. 3	204	62, 63	14	374
Dental engines. Motor for	A. H. Best	207,707	Sept. 3	125	38	14	365
Dental plate	B. M. Wilkerson	207,699	Sept. 3	113	34	14	363

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Door-hanger	S. H. and E. Y. Moore	207,765	Sept. 3	185	56	14	372
Draft-equalizer	C. Leach	207,611	Sept. 3	26	10	14	352
Eggs. Process and compound for preserving	P. Redeu and B. Thole	207,623	Sept. 3	39	.....	14	354
Electrode for electric lights	O. Lugo	207,753	Sept. 3	172	52	14	371
Electrode for electric lights	O. Lugo	207,754	Sept. 3	174	53	14	371
Electrotype-shells. Pan for backing	M. Crane	207,645	Sept. 3	65	19	14	357
Engine. Reciprocating	E. Baines	207,639	Sept. 3	58	17	14	356
Engine. Wind	W. A. Aldrich	207,701	Sept. 3	115	35	14	363
Eye-shade	J. B. Ricketts	207,624	Sept. 3	40	13	14	354
Fare-controller. Conductor's	C. F. Peck	207,675	Sept. 3	92	28	14	360
Fare-register	W. H. Hornum	207,740	Sept. 3	158	48	14	369
Faucet	E. Duchamp	207,646	Sept. 3	66	19	14	357
Feed-bag	T. and J. Hawkes	207,658	Sept. 3	77	23	14	359
Feed-water heater and circulator for steam-boilers	J. C. Stead	207,779	Sept. 3	197	60	14	374
Feed-water heater and circulator for steam-boilers	J. C. Stead	207,780	Sept. 3	198	60, 61	14	374
Fence-post	E. S. Sanford	207,685	Sept. 3	100	30	14	361
Fences. Barbed wire for	J. Brotherton	207,710	Sept. 3	127	39	14	365
Fire-arm. Breech-loading	W. Soper	207,689	Sept. 3	104	31, 32	14	362
Fire-arm. Magazine	W. Trabue	207,782	Sept. 3	200	61	14	374
Fire-escape	E. M. Ball	207,705	Sept. 3	122	38	14	365
Fishing-rod joint	H. L. Leonard	207,665	Sept. 3	83	25	14	359
Frame structures. Machine for erecting	S. R. King	207,746	Sept. 3	164	50	14	370
Fruit-drying oven	D. Lippy and S. Linn. (Reissue)	8,398	Sept. 3	218	67	14	376
Furnace. Puddling	W. L. McNair	207,669	Sept. 3	86	26	14	360
Furnace. Wood-burning	H. A. Wood	207,788	Sept. 3	207	63	14	375
Gas apparatus	J. Hanlon. (Reissue)	8,402	Sept. 3	223	70	14	376
Gas-fixtures. Extension-slide for	W. H. Sheppard	207,687	Sept. 3	102	31	14	362
Gate	J. E. Garrett	207,600	Sept. 3	16	6	14	351
Glass. Hardening, tempering, and pressing	F. Siemens. (Reissue)	8,399	Sept. 3	219	67, 68	14	376
Glass. Hardening, tempering, and pressing	F. Siemens. (Reissue)	8,400	Sept. 3	220	68, 69	14	376
Glass-vessels. Mold for blowing	J. W. Haines	207,656	Sept. 3	75	22	14	358
Glove. Boxing	A. C. Butts	207,591	Sept. 3	8	3	14	350
Governor and cut-off for engines. Automatic	D. O. Ladd	207,608	Sept. 3	24	9	14	352
Grader. Road	A. Donason	207,594	Sept. 3	10	4	14	350
Grain-binder	G. T. Gifford	207,655	Sept. 3	73	22	14	358
Grain-binders. Spool and take-up for	S. D. Locke	207,612	Sept. 3	27	10	14	353
Grain-meter	H. Snider	207,688	Sept. 3	103	31	14	362
Grain-spout register	J. Miller	207,618	Sept. 3	33	11	14	353
Gun. Machine	H. R. Leonard	207,747	Sept. 3	165	50, 51	14	370
Gun-sight	H. Rowell	207,684	Sept. 3	100	30	14	361
Hame-fastener	D. Free	207,729	Sept. 3	149	44	14	368
Harmonica	T. Meinhold	207,616	Sept. 3	32	11	14	353
Harness-trimming	M. E. Zeller	207,791	Sept. 3	209	64	14	375
Harrow	S. Elliott	207,725	Sept. 3	144	43	14	367
Harrow. Rotary	S. Hartman	207,657	Sept. 3	76	23	14	359
Harvester guard-finger	H. R. Fuller	207,730	Sept. 3	150	45	14	368
Hat-holder	R. O. Dunning	207,722	Sept. 3	141	42	14	367
Hinge	S. M. Wade	207,697	Sept. 3	112	34	14	363
Hoisting apparatus	O. S. Presbrey	207,681	Sept. 3	97	29	14	361
Hoisting-jack	R. O. Keeffe	207,661	Sept. 3	79	24	14	359
Hoop	J. B. Dougherty	207,721	Sept. 3	140	42	14	367
Horse-detacher	W. G. Cummins	207,718	Sept. 3	138	42	14	366
Horseshoe	J. C. Hamilton	207,603	Sept. 3	19	7	14	352
Horseshoe-calk sharpener	J. M. Hunter	207,744	Sept. 3	162	49	14	370
Horseshoe-nail plates or bars. Machine for rolling	D. Fraser, Jr.	207,651	Sept. 3	70	21	14	358
Kiln for baking lime, plaster, &c.	P. F. Mabille	207,755	Sept. 3	175	53	14	371
Knitting-machine burr	W. H. Carr. (Reissue)	8,391	Sept. 3	211	65	14	375
Lantern	E. F. Cash and A. L. Barom	207,713	Sept. 3	129	40	14	366
Lantern	J. A. Cowles	207,715	Sept. 3	135	41	14	366
Lantern	J. A. Cowles	207,716	Sept. 3	135	41	14	366
Lantern	E. S. Ritchie	207,625	Sept. 3	41	13	14	354
Latch	D. C. Geer	207,654	Sept. 3	73	22	14	358
Latch	B. R. White	207,634	Sept. 3	49	15	14	355
Letters. Thumb-stall for facilitating the sorting of	J. S. Boyer	207,708	Sept. 3	126	39	14	365
Lock. Permutation	S. A. Munn	207,613	Sept. 3	29	10	14	353
Loom-picker	A. Holbrook	207,739	Sept. 3	158	48	14	369
Loom-picking motion	L. B. Howland	207,660	Sept. 3	78	24	14	359
Lumber-edging machine	M. J. Egery	207,596	Sept. 3	12	5	14	351
Metals from waste solutions. Separating	J. Tunbridge	207,695	Sept. 3	109	33	14	363
Milk. Device for setting and skimming	R. Lapham	207,664	Sept. 3	82	25	14	359
Millstone-exhaust apparatus	S. L. Bean	207,585	Sept. 3	2	1	14	349
Oil-cloth. Manufacture of floor	T. Potter	207,679	Sept. 3	95	29	14	361
Ore-separator	P. Plant	207,622	Sept. 3	38	12, 13	14	354
Packing. Piston	G. Dryden	207,595	Sept. 3	11	4	14	350
Packing valve-stems	E. M. Luckett and N. Belanger	207,668	Sept. 3	86	26	14	360
Paper-bag machine	O. W. Allison	207,702	Sept. 3	116	36, 37	14	364
Passenger-register	J. W. Fowler and D. F. Lewis	207,728	Sept. 3	146	44	14	368
Pendulum	F. A. Lane	207,609	Sept. 3	25	9	14	352
Pigment	W. Prescott	207,773	Sept. 3	193	.....	14	373
Pipe. Sheet-metal	G. W. Ketcham	207,606	Sept. 3	22	8	14	352
Plane. Bench	H. A. Foss	207,599	Sept. 3	16	5	14	351
Planters. Check-row attachment for corn	G. L. Rider	207,683	Sept. 3	99	30	14	361
Plow	J. Long	207,751	Sept. 3	171	52	14	371
Plow share or point	J. Long	207,752	Sept. 3	172	52	14	371
Plow. Sulky	S. Dixson	207,720	Sept. 3	139	42	14	367
Plow. Sulky	J. B. Fisher	207,598	Sept. 3	13	5	14	351
Plow. Sulky	D. O. Fosgate	207,650	Sept. 3	69	21	14	357
Plow. Sulky	D. W. Palmer	207,674	Sept. 3	91	27	14	360
Pump	J. S. Adams	207,700	Sept. 3	114	34, 35	14	363
Pump	H. Cadwalader	207,592	Sept. 3	9	3	14	350
Pump. Steam	J. A. Burnap	207,590	Sept. 3	6	3	14	350
Pump-valve	J. Watson	207,784	Sept. 3	203	62	14	374
Railway-tie	W. E. Curtiss	207,719	Sept. 3	139	.....	14	367
Railway-track. Portable	F. B. and R. M. Miles	207,792	Sept. 3	210	64	14	375
Ratchet-wheel and pawl mechanism for rotating shafts by treadle-power	F. J. Ribble	207,682	Sept. 3	98	29	14	361
Roofing and paving purposes. Portable pitch-kettle for	G. W. Evans	207,647	Sept. 3	67	20	14	357

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Roofing-slates. Securing	L. E. Gannon	207,653	Sept. 3	71	21	14	358
Rowlock	F. Gould	207,733	Sept. 3	153	46	14	368
Sad-iron	W. Moores and J. Shepherd	207,766	Sept. 3	185	56	14	372
Sand-papering machine	J. Taylor	207,691	Sept. 3	107	32	14	362
Sawing machine. Scroll	W. F. and J. Barnes	207,640	Sept. 3	59	17, 18	14	356
Scale-beam	H. L. Grisell	207,735	Sept. 3	154	46	14	368
Scales. Platform weighing	J. F. Milligan	207,762	Sept. 3	182	55	14	372
Seeding-machine	J. D. Harrison. (Reissue)	8,394	Sept. 3	214	65	14	375
Sewer-trap	J. Clark	207,644	Sept. 3	64	19	14	357
Sewer-trap	W. A. Pitt	207,676	Sept. 3	93	28	14	360
Sewing-machine braid-guide	E. T. Thomas	207,692	Sept. 3	108	32	14	362
Sewing-machine. Straw-braid	W. Menkhoff	207,763	Sept. 3	182	56	14	372
Sewing-machine thread-cutter	E. Flather	207,648	Sept. 3	68	20	14	357
Sewing-machine treadle-movement	P. F. Jonte	207,745	Sept. 3	163	50	14	370
Shearing, punching, and stamping metals. Machine for	H. O'Neill	207,619	Sept. 3	34	12	14	353
Shoe-soles. Implement for napping the fibers of	F. Winslow	207,636	Sept. 3	55	16	14	356
Shutter	A. Bijur	207,641	Sept. 3	62	18	14	357
Sieve	H. H. Waters	207,633	Sept. 3	48	15	14	355
Spinning-rings and their holders. Adjusting device for	C. E. Trowbridge	207,693	Sept. 3	108	33	14	363
Sprinkler. Lawn	T. Maguire	207,756	Sept. 3	176	53	14	371
Steam-gage	C. R. Vaillant	207,696	Sept. 3	111	33	14	363
Stocking-supporting clasp	L. Loebenstein	207,666	Sept. 3	84	25	14	359
Stove. Coal-oil	J. M. Adams	207,637	Sept. 3	55	16	14	356
Stove. Cooking and heating	C. A. Hamlin	207,604	Sept. 3	19	7, 8	14	352
Stoves. Shaking-grate for	W. Miller	207,670	Sept. 3	87	26	14	360
Straw-cutter	T. E. Marable. (Reissue)	8,395	Sept. 3	215	66	14	376
Straw-cutter	J. S. and J. Matthews	207,757	Sept. 3	177	54	14	371
Sulky	D. Bushor	207,711	Sept. 3	127	39	14	365
Telegraph. Duplex	T. A. Edison	207,723	Sept. 3	142	43	14	367
Telegraph. Duplex	T. A. Edison	207,724	Sept. 3	142	43	14	367
Thill-coupling	H. E. Braunfeld	207,587	Sept. 3	3	2	14	349
Tiles, bricks, &c. Draying-car for drain	W. W. Arnold and J. T. McGuire	207,638	Sept. 3	57	17	14	356
Tool and handle. Farmers'	A. T. Clark	207,643	Sept. 3	63	19	14	357
Tool-handle	D. Steele	207,781	Sept. 3	200	61	14	374
Tool-handle attachment	G. P. Morrill	207,671	Sept. 3	88	27	14	360
Torpedo for oil-wells	H. L. Porter	207,678	Sept. 3	95	28	14	361
Tortoise-shell. Imitation of	A. Miller	207,617	Sept. 3	33	.....	14	353
Treadle	W. Levin	207,750	Sept. 3	169	51, 2	14	370
Type. Elastic-faced printing	A. H. Rogers. (Reissue)	8,401	Sept. 3	222	69	14	376
Valve-gear	D. O. Ladd	207,607	Sept. 3	23	8	14	352
Valve. Water	J. Cantelo	207,712	Sept. 3	128	40	14	365
Vegetable-chopper	T. Leonard	207,748	Sept. 3	168	51	14	370
Veneer-cutting machine	H. S. Smith	207,628	Sept. 3	44	14	14	354
Vise. Hollow-screw pin	J. Parmelee	207,620	Sept. 3	35	12	14	353
Watch-cases. Center rim for	D. H. Pearce and A. W. Taft. (Reissue.)	8,396	Sept. 3	216	66	14	376
Water-closet valve	W. McElroy	207,615	Sept. 3	31	11	14	353
Whiffletree	A. E. Schatz	207,686	Sept. 3	101	30	14	361
Whirligig	H. D. Forbes	207,649	Sept. 3	68	20	14	357
Wick-tube	H. McConnell	207,614	Sept. 3	30	10, 11	14	353
Wind-wheel	H. F. Hodges	207,659	Sept. 3	78	23	14	359
Window-cleaner	W. C. Gayton. (Reissue)	8,393	Sept. 3	213	65	14	375
Wood-polishing machine	J. Creager	207,717	Sept. 3	137	41	14	366
Wood. Staining	A. B. Tripler	207,630	Sept. 3	46	.....	14	355
Wool on the pelt. Preparing and cleansing	P. Pusch	207,774	Sept. 3	193	.....	14	373
Wrench	H. W. Brett	207,709	Sept. 3	126	39	14	365

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DECISIONS OF THE COURTS.

U. S. Circuit Court—District of New Jersey.

GEORGE B. TUSSELL *vs.* EDWARD SPAETH.

In Equity.—Opinion September 24, 1878.

That the original invention has been supplanted in the trade by the improved device of the defendant is no test of non-infringement. In so far as he may use the invention, even though it be in connection with his own additions, which have rendered it of such increased value, he is liable.

Reissue Letters Patent No. 7,151, granted G. B. Tussell, assignee, May 30, 1876, for "Improvement in Skates," are valid. That the general combination claim of the original patent (No. 28,495, John Lovatt, May 29, 1860) has been replaced by others containing subdivisions of the combination is no objection, the characteristic features of invention being retained.

Gill vs. *Wells* (22 Wall.) contains nothing at variance with nor any imputation upon the validity of reissue patents when of this nature.

It is an equivalent means and an infringement of the Lovatt patent to use a lever and an eccentrically-pivoted cam in lieu of the longitudinal adjusting-screw in effecting the simultaneous movement of the sole and heel clamps of the skate.

NIXON, *J:*

The fastening of skates to the feet by the use of clamps is an old device, known in the art long before the date of the Lovatt invention. Hence Lovatt, in his original patent, disclaimed, broadly, the moving of clamps in skates by adjusting-screws, but confined himself in his single claim to a combination of movable V-slotted blocks, with clamps and a screw-rod, arranged substantially in the manner and for the purposes set forth in the specifications.

The instrumentalities were old, but the arrangements and results were new.

The complainant insists that Lovatt was the first to fasten skates to the feet with adjustable mechanism. Movable clamps had been used to hold the skate to the sole and to the heel of the boot, and were retained in position by bolts and nuts, the mechanism for the toe and heel being separate and acting independently one of the other. But here, by the use of a single adjustable screw operating upon the lateral clamps, these clamps are caused to grasp the sole and heel of the boot with all the force necessary and requisite for firmly holding the skate to the foot.

After a careful consideration of the case, as shown in the testimony, exhibits, and arguments of counsel, I am of the opinion that Lovatt is entitled to the credit of the invention claimed by him. He took an important step in the right direction. He brought out the true principle of clamp-fastening in skates, although he did not employ the most efficient instrumentalities for embodying and exhibiting the principle.

The defendant's skate is superior to the Lovatt skate. The popular demand for an article is, in the long run, the best test of utility, and it is not surprising that the skates manufactured and sold by the defendant have substantially driven from the market all those made under the Lovatt patent.

But it does not follow because the defendant's skate is an improvement upon the complainant's that he has the right to manufacture and sell it without the complainant's assent. One cannot thus build upon another man's foundation. It may be that the invention of Lovatt, without the improvement of Day added to it, is of little practical value to the owner of the patent or to the world. Nevertheless, if there be anything new in it, the owner is entitled to damages for and protection against its unauthorized use.

These general observations bring me to consider two questions:

1. Whether the mechanism of the defendant's skate infringes the complainant's patent.

2. Whether the claims of the reissue, on which the suit is brought, can be supported by what is contained in the specifications, drawings, or model of the original patent.

(1) The complainant's patent, in its latest reissue, contains four distinct claims, each for a combination. The first is for laterally-sliding clamps for grasping the sole, a plate or rest for the foot, and mechanism for

moving and holding the clamps. The second is for sole and heel clamps, so combined with mechanism for moving and holding the same that one set of clamps acts as a resistance in closing the other set. The third is for certain devices, as laterally-moving clamps, pins, and inclined slats, actuated by mechanism for operating and holding the clamps. The fourth is for a foot-rest, laterally-moving clamps, mechanism for moving and holding the same, by converting a direct forward movement into a lateral movement, and clamps for the heel.

In the reissue each of these combinations is limited by reference to the mechanical devices, as substantially set forth in the schedule to the patent. The claims, therefore, must not be construed broadly, as for every possible mechanical means which may be used for moving and holding skate-clamps, but as for the means specified and every equivalent means for effecting the object.

The defendant's skate—complainant's Exhibit A—is similar to the Lovatt skate in this respect, that the sole and heel clamps are moved by one operation. Are the devices in the defendant's skate producing this result the equivalents of the devices set forth in the Lovatt patent?

The experts of the parties, as usual, are as wide as the poles asunder. Mr. Serrell says that they are precisely alike in principle, and Mr. Faber Du Faur thinks they are diametrically different. Assuming that such difference of view arises from the different mediums through which they look at the question, and turning from their testimony, let us look at the skate manufactured by the defendant (Exhibit A) and see what conclusions are reached from what we find there.

We have a clamp-skate in which are combined the clamp and certain moving and holding mechanism, the essential constituents of the Lovatt invention, and it seems to me that the principle of operation is the same in both structures.

There are differences, but they are differences of form—the substitution of known equivalents for those used in the complainant's patent. The backward and forward movement which impart to the clamps the lateral grasping of the heel and toe produced by the longitudinal motion of the screw in the one case, is produced by the lever and the eccentrically-pivoted cam in the other.

Any respectable mechanic, without invention, could make such a substitution, and, if allowable, all patents for combinations would be practically useless.

(2) The only remaining question is whether the invention disclosed in the original patent of the complainant will sustain the four claims of the last reissue.

The single claim of the original was for a combination of instrumentalities. These instrumentalities were movable V-slotted blocks, sole and heel clamps, and a screw-rod, arranged in the manner set forth in the specifications and drawings. All of the subdivisions of the combination in the several claims of the reissue are found in the schedule and drawings of the original patent. It does not appear that anything new has been added, or that any matter essential to or characteristic of the invention has been omitted. So far from such a reissue being condemned by *Gill* vs. *Wells*, (22 Wall., 24,) as was maintained by the counsel of the defendant, it would seem that the learned judge, who delivered the opinion of the majority of the court in that case, meant to allow it. He says:

> Cases arise where a patentee having invented a new and useful combination consisting of several ingredients, which in combination compose an organized machine, also claims to have invented new and useful combinations of fewer numbers of the ingredients; and in such cases the law is well settled that if the several combinations are new and useful, and will severally produce new and useful results, the inventor is entitled to a patent for the several combinations, provided that he complies with the requirements of the patent act, and files in the Patent Office a written description of each of the alleged new and useful combinations, and of the manner of making, constructing, and using the same.
>
> He may give the description of the several combinations in one specification, and in that event he can secure the full benefit of the exclusive right to each of the several inventions by separate claims, referring back to the description in the specification; and if, by inadvertence, accident, or mistake, he should fail to claim any one of the described combinations, he may surrender the original patent and have a reissue, not only for the combination or combinations claimed in the original, but for any which were so omitted in the claims of the original patent.

A decree will, therefore, be entered in favor of the complainant for an injunction and an account.

As the case of *Turrell* vs. *Washington I. Snyder* involves the same questions, and was submitted and argued upon the same testimony, a like decree is ordered in that case.

ELIHU HALL & CO. *vs.* PHINEAS JONES, WILLIAM H. BALDWIN, AND ELI I. WHITTEMORE.

[In Equity.]

Reissued Letters Patent No. 5,366, granted April 22, 1873, for hub for vehicles are for the same invention as the original letters, (No. 61,900, granted Alma Warner, February 5, 1867,) notwithstanding other and different things are described and claimed, and the invention is a patentable improvement over that of Sarven, which it has been heretofore declared to infringe. (9 Blatch., 524.)

OPINION.—*September* 24, 1878.

NIXON, *District Judge:*

This suit is brought by the complainant, a joint-stock company, against the defendants, who are partners in business, for an injunction, account, profits, and damages for infringement of certain reissued Letters Patent No. 5,366, granted to the complainant company April 22, 1873, for improvement in hubs for vehicles; the original letters patent, numbered 61,900, being granted to Alma Warner, February 5, 1867.

The answer of the defendants allege:

1. That the reissue is void because it contains and claims other and different things than were described and claimed in the original patent.

2. That Warner was not the original and first inventor, and

3. That the defendants have not infringed any of the legal or equitable rights of the complainant.

The matter in controversy concerns the construction of wagon-wheels. The Warner invention is claimed by the complainant to be a patentable improvement upon the Sarven wheel, which may be briefly described to consist of a wooden hub, mortised to receive each alternate tenoned spoke, and the other alternate spokes being shaped at the base in the form of a wedge to fit between the alternate spokes first mentioned, the end of the wedge being cut off and a shallow corresponding notch being cut in the hub to receive it.

Circular angle-irons are then driven upon the hub, on each side of the plane of the spokes, and are fastened together with small bolts through the spokes. There is thus formed around the outside of the hub, by the arrangement of the spokes, a continuous belt of solid wood. Strength is given to the structure by the two radial bands arranged on each side of the spokes, flanged so as to rest upon the surface of the hub, and to bear against the face of the spokes, and firmly united together by the bolts through the spokes, as aforesaid.

It is claimed that the complainant's patent, the Warner invention, differs from this in important particulars: It has the mortised central hub; it has the metallic ring surrounding it—not two rings held together by bolts, but a single ring with its flanges united by means of webs that form the tapering sockets, into which the shoulders of the spokes are driven.

The complainant insists that the annulus thus constructed produces a result which the rings of the Sarven patent are not capable of producing. The spokes that enter these tapering sockets do not rest upon the hub. The end support which they receive is not derived from the hub, but from the sockets, arising from their cuneiform shape, and hence the strain caused by the use of the wheel is not transmitted to the hub, as it is in the Sarven invention. An equally strong wheel is thus obtained from a much smaller hub by the use of the Warner patent.

The Warner wheel is further claimed to be an improvement upon the Sarven patent, inasmuch as the web cast between the flanges of the ring separates the spokes and gives to each a firm metallic support, and, dispensing with the bolts, imparts to every spoke the capacity of self-tightening in case of the shrinkage of the wood.

I am not to decide whether the Warner patent in any respect infringes the Sarven. If that were the question I should not hesitate to follow the late Judge Woodruff, of the Second Circuit, who held that the second claim of the Sarven reissue was for a combination of three old devices, to wit: a wooden hub, tenoned spokes, and flanges on each side of the spokes bolted together to assist in resisting lateral strain, and that the combination was infringed by the Warner wheel. But the question is, whether there is any peculiar patentable quality in the invention of the complainant, outside of the Sarven combination, which the defendants have infringed, and from the continued use of which they should be enjoined.

The case is not clear from difficulty, but the difficulty arises more in ascertaining the extent than the fact of the infringement.

In other words, it is not easy to decide in a controversy between other parties how much of the merits and value of the Warner wheel is due to the invention of Sarven and how much is due to the invention of Warner. That matter, however, may be inquired into on the reference.

It would serve no useful purpose to exhibit in detail the reason for the conclusions to which I have arrived. Let it suffice, that I have given the testimony, the exhibits, and the very able arguments of the respective counsel an earnest consideration, and that I am of the opinion—

1. That there is a distinct though, perhaps, narrow ground that the Warner patent may occupy, which is not covered by the Sarven invention.

2. That there is enough disclosed in the specifications, drawings, and model of the original Warner patent to authorize and justify the claims of the second reissue.

3. That the structures manufactured and sold by the defendants infringe the first, second, and third claims of the said reissue.

4. That there should be a decree for the complainant for an injunction and an account, and it is ordered accordingly.

U. S. Circuit Court—Eastern District of Missouri.

In re JAMES M. O'DONNELL.

[In Equity.—Before TREAT, *Judge.—Decided September* 19, 1878.]

[This was an application for search-warrant made under Section 7 of the penal act of August 14, 1876, in relation to trade-marks, upon affidavit of the alleged agent of the owners of the registered mark. The single affidavit specified several distinct parties, having different places of business, against whom process was desired.]

In the absence of any proper proof of the right or title of the applicants, and because the affidavit was lacking in that definiteness and particularity necessary to justify a search-warrant, relief by such process, under Sec. 7, Trade-Mark Act of August 14, 1876, denied.

It is dangerous practice to issue search-warrants against several individuals not associated together, or against their premises, because a general sweeping affidavit is made.

TREAT, *J.:*

An application has been made to me, based on an affidavit, for the issue of a search-warrant under the provisions of the United States statutes concerning "trade-marks." Such application, by the terms of the statutes, may be made to any United States circuit court, or district judge, or United States commissioner. I have no time under the press of business to enter upon an extended examination of the questions necessarily arising in this *ex parte* matter; nor should many of the grave propositions involved be ignored or decided without full hearing. It is supposed by the applicant that a simple presentation of an affidavit, together with the certificate of the Commissioner of Patents as to the registered trade-mark, entitles him to the writ. The act of Congress says said officers "may, within their respective jurisdiction, proceed under the law relating to search-warrants." To what law is reference made? As there is no general law by United States statutes on that subject, and constitutional provisions exist founded on known controversies in England on the subject-matter, it must be held that the general laws to which the Constitution refers were intended.

Without passing upon the grave question as to the validity of the act of 1876, or discussing the points involved in the act of 1870, reproduced in the United States Revised Statutes so far as trade-marks are concerned, I refuse the application made, on the ground that the known requirements as to search-warrants, with respect to definiteness and particularity, have not been observed; and also that there is no proper proof that assignment of any supposed or alleged right to such trade-marks have been made to the applicants.

It is a dangerous doctrine that "searches and seizures" which, if unreasonable, are forbidden by the United States Constitution should be issued against several persons not associated together, or their premises, in one warrant, because a general and sweeping affidavit is made. Such practice would soon bring about the very evils involved in the English controversies concerning general warrants, and provided against by the United States Constitution.

Writ refused.

TRADE-MARKS.

[Each certificate bearing date September 10, 1878.]

6,555.—MEDICINE FOR THE CURE OF AGUE AND FEVER.—*Alvin W. Beach* and *Ellen C. Beach*, Syracuse, N. Y. Application filed August 15, 1878.

"The word-symbol 'GERMAN DROPS' and the figure of Hope, substantially as shown."

6,556.—OILERS FOR LUBRICATING MACHINERY.—*Consolidated Fruit Jar Company*, New Brunswick, N. J., and New York, N. Y. Application filed July 8, 1878.

"The designation 'CHACE.'"

6,557.—COVERS OR CAPS FOR FRUIT-JARS.—*Consolidated Fruit Jar Company*, of New York, N. Y. Application filed July 8, 1878.

"The designation 'BOYD.'"

6,558.—SALERATUS AND BICARBONATE OF SODA.—*Church & Co.*, New York, N. Y. Application filed August 9, 1878.

"The words and letters 'CHURCH & Co.'s,' and the representation of the standard or banner supported by a pole and surmounted by a scale-beam, from which depend, upon the right-hand and left-hand side of the standard or banner, the chains and portions of the scale intended to receive the goods to be weighed, and the weights, and in the portion of the scale upon the left hand of the standard or banner is represented a package, and in the portion of the scale upon the right hand of the standard or banner is represented a weight, the scales being equally balanced."

6,559.—PAINT.—*A. M. Fletcher* and *James McCoy*, San Francisco, Cal. Application filed June 22, 1878.

"The word-symbol 'IMPERISHABLE.'"

6,560.—MEDICAL PREPARATION.—*Household Medicine Company*, Florence, N. J. Application filed June 22, 1878.

"The word-symbol 'ASPARAGIN' and the representation of a bunch of asparagus, as shown."

6,561.—SMOKING AND CHEWING TOBACCO.—*B. Leidersdorf & Co.*, Milwaukee, Wis. Application filed July 5, 1878.

"The word-symbol 'OLD ABE.'"

6,562.—CIGARS.—*Benjamin Spinoza*, Boston, Mass. Application filed August 14, 1878.

"The words 'BOSTON CADETS,' in a curved scroll, near the top of the paper, and below the same, in a central position, a representation of three soldiers in uniform."

6,563.—COLOGNE-WATER.—*Johann Maria Farina*, Cologne, Germany. Application filed June 22, 1878.

"The fac-simile autograph signature 'JOHANN MARIA FARINA, JÜLICHS PLATZ, No. 4,' when used in connection with the coat of arms of the city of Cologne."

6,564.—COLOGNE-WATER.—*Johann Maria Farina*, Cologne, Germany. Application filed June 22, 1878.

"A circle, within which is represented a small vase, surmounted by a diamond, and two crescents, with their convex surfaces in contact with the two side angles of the diamond. The letter 'J' is placed above the diamond and the letters 'M' and 'F' occupy each one of the spaces formed at the sides of the crescent. Around the circle is a larger circle, having an extension at one side, with a black line through the center of the straight portion, all as shown."

6,565.—CLEANING AND POLISHING POWDERS.—*Henry S. Ziegler*, Philadelphia, Pa. Application filed August 16, 1878.

"The word-symbol 'GOLD GLOSS.'"

6,566.—MINERAL WATER.—*The Apollinaris Company*, (limited,) London, England. Application filed February 27, 1878.

"A pictorial representation of a spring or fountain surrounded by plants, as shown."

6,567.—CAST-STEEL BARS, PLATES, RODS, AND WIRE.—*Francis Hobson & Son*, Sheffield, England. Application filed January 12, 1877.

"The arbitrarily-selected combination of word and letters 'CHOICK XX,' and the letters 'F. H.,' surrounded by an oval figure."

6,568.—LAGER-BEER.—*Jacob Hofman*, New York, N. Y. Application filed July 19, 1878.

"The five-pointed star and crescent symbol, and the words 'ORIENTAL BREWERY MONOPOL.'"

6,569.—OPEN FIRE-PLACES AND STOVES.—*Oscar F. Mehurin* and *Oscar C. Mehurin*, Zanesville, Ohio. Application filed August 23, 1878.

"The word-symbol 'TORRID.'"

6,570.—RIBBONS, TRIMMINGS, &c.—*Jacob Silbermann & Co.*, New York, N. Y. Application filed July 19, 1878.

"The letters 'J. S.' in monogram, arranged upon an oblong background."

6,571.—WHITE LEAD.—*Western White Lead Company*, Philadelphia, Pa., and Chicago, Ill. Application filed June 20, 1878.

"The representation of a silvered disk, in connection with the words 'SILVER COIN,' essentially as shown."

DESIGNS.

[Each design bearing date September 10, 1878.]

10,797.—STOCKING.—*Robert M. Appleton*, Lake Village, N. H. Application filed August 2, 1878. Term of patent 14 years.

10,798 to 10,804, inclusive.—CARPETS.—*James L. Folsom*, Brooklyn, N. Y., assignor to *Hartford Carpet Company*, Hartford, Conn. Applications filed August 22, 1878. Term of patents 3½ years.

10,805.—SKIRT.—*Henry Galashan*, Philadelphia, Pa. Application filed August 1, 1878. Term of patent 7 years.

10,806 to 10,812, inclusive.—CARPETS.—*Otto Heinigke*, New Utrecht, N. Y., assignor to *Hartford Carpet Company*, Hartford, Conn. Applications filed August 22, 1878. Term of patents 3½ years.

10,813 to 10,818, inclusive.—CARPETS.—*Henry Horan*, East Orange, N. J., assignor to *Hartford Carpet Company*, Hartford, Conn. Applications filed August 22, 1878. Term of patents 3½ years.

10,819.—CARPET.—*Henry Nordmann*, Brooklyn, N. Y., assignor to *Hartford Carpet Company*, Hartford, Conn. Application filed August 22, 1878. Term of patent 3½ years.

10,820 to 10,822, inclusive.—CARPETS.—*George W. Piggott*, New York, N. Y., assignor to *Hartford Carpet Company*, Hartford, Conn. Applications filed August 22, 1878. Term of patents 3½ years.

10,823.—CARPET.—*John E. Rollings*, New York, N. Y., assignor to *Hartford Carpet Company*, Hartford, Conn. Application filed August 22, 1878. Term of patent 3½ years.

10,824.—GAS-MAKING STOVES.—*Charles R. Vaillant*, Mobile, Ala., assignor to *Gulf City Foundry Company*, same place. Application filed August 10, 1878. Term of patent 7 years.

10,825.—VEST.—*Arnold Bardoe*, New York, N. Y. Application filed August 8, 1878. Term of patent 3½ years.

10,826.—PATTERN FOR ORNAMENTING FABRICS.—*John Cochrane, Jr.*, Malden, Mass. Application filed August 9, 1878. Term of patent 14 years.

10,827.—FONT OF PRINTING-TYPES.—*Conrad Reuter*, Cincinnati, Ohio, assignor to *Cincinnati Type Foundry Company*, same place. Application filed September 2, 1878. Term of patent 14 years.

10,828.—CIGAR-BOX.—*Gustav Jacoby*, New York, N. Y. Application filed August 17, 1878. Term of patent 7 years.

LABELS.

[Each certificate bearing date September 10, 1878.]

1,680.—Title: "GODSAY'S EAST INDIA FEVER TREE EXTRACT."—*Charles D. Chase*, St. Louis, Mo. Application filed August 29, 1878.

1,681.—Title: "COCA BEEF TONIC WITH SHERRY WINE AND IRON."—*Madeline Hoffman*, New York, N. Y. Application filed August 29, 1878.

1,682.—Title: "COCA BEEF TONIC."—*Madeline Hoffman*, New York, N. Y. Application filed August 29, 1878.

1,683.—Title: "THE EVERLASTING."—*Frederick Hauschildt*, New York, N. Y. Application filed June 15, 1878.

1,684.—Title: "THE EVERLASTING."—*Frederick Hauschildt*, New York, N. Y. Application filed June 15, 1878.

1,685.—(Print.) Title: "UNRIVALLED."—*H. Pennington & Co.*, Philadelphia, Pa. Application filed August 16, 1878.

1,686.—(Print.) Title: "ROYAL."—*H. Pennington & Co.*, Philadelphia, Pa. Application filed August 16, 1878.

1,687.—Title: "CARBOLATED IRON."—*Wm. R. Warner & Co.*, Philadelphia, Pa. Application filed August 24, 1878.

1,688.—Title: "MUSHROOM POWDER."—*J. B. Anthony & Co.*, Troy, N. Y. Application filed August 31, 1878.

1,689.—Title: "DEATH TO CORNS, BUNIONS, AND CHILBLAINS."—*John Bath*, Boston, Mass. Application filed September 3, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

SEPTEMBER 10, 1878.

207,793. MANUFACTURE OF BRUSHES. Charles L. W. Baker, Cambridge, Mass. Filed May 13, 1878.

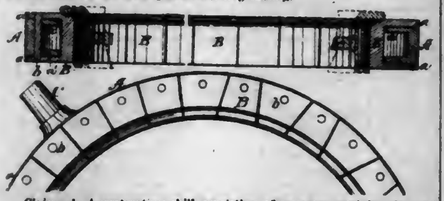


Claim.—1. In the manufacture of brushes, the herein described method of introducing the head, it consisting in applying to such head a wedge-shaped directing-shoe to separate the bristles, and lead the head through the bristles and head-band, substantially as described.

2. The wedge-shaped directing-shoe, adapted to receive within it the head or head and handle, substantially as described.

207,794. CHILLS FOR CAR-WHEELS. Jacob H. Barr, Altoona, Pa. Filed May 1, 1878.

Brief.—The blocks have circumferential expansion independently of the outer rim, and hence do not warp that rim. It results that the whole chill more closely hugs the cooling and shrinking casting.

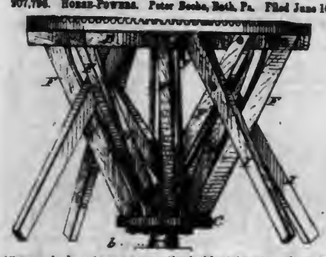


Claim.—1. A contracting chill consisting of an outer retaining-ring and inner blocks, B, separate therefrom, and having spaces between them to permit of lateral expansion, substantially as and for the purpose specified.

2. A chill constructed with an outer rim and inner radial blocks, said blocks being rigidly secured to the rim and having spaces between them, substantially as and for the purpose herein set forth.

3. The rim A, having flanges *a a'*, in combination with the U-shaped blocks B and bolts *b*, substantially as and for the purpose specified.

207,795. HORSE-POWERS. Peter Boobe, Bath, Pa. Filed June 10, 1878.



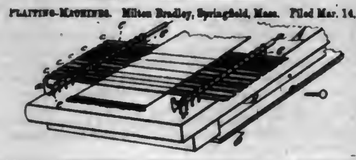
Claim.—1. In a horse-power, the hubbed bearing-plates B C, in combination with the supporting-studs F F', the cross brace-rods H, and the central fixed shaft, all constructed and arranged as herein specified.

2. The oblique studs F', arranged to lap the inner side of the driving-wheel rim, and bound against ribs *d* on the lower bearing-plate, C, as and for the purpose stated.

3. The upper wheel-bearing plate and the fixed supporting-shaft, in combination with the shaft-collar *g*, for supporting the center of the wheel, as specified.

4. The draft-levers applied to the top bearing-plate, B, fixed in oblique positions therewith and with the wheel, in combination with the oblique studs F', to which they are secured, all constructed and arranged as specified.

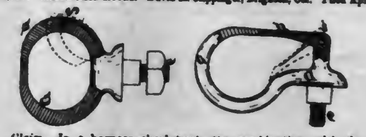
207,796. PLAITING-MACHINES. Milton Bradley, Springfield, Mass. Filed Mar. 14, 1878.



Claim.—1. In a plaiting-machine consisting of the board A, series of staples *c*, arranged in two rows thereon, and needles *e*, the wires *c e*, adapted to operate substantially as and for the purpose set forth.

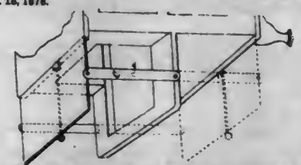
2. The board A, provided with the two rows of staples *c*, the wires *e*, the receptacle E, and its cover *b*, substantially as and for the purpose specified.

207,797. CHECK-REIN HOOKS. David H. Clippinger, Brighton, Col. Filed Apr. 10, 1878.



Claim.—In a harness check-hook, the combination, with the tongue n, pivoted to the hook at *p* and provided with the shoulder *o*, of the spring *q*, whereby the tongue n is held firmly in either opened or closed position, substantially as and for the purposes stated.

207,798. SHELVES FOR COOKING-STOVES. William J. Copp, Hamilton, Ontario, Canada. Filed Mar. 13, 1878.



Claim.—The combination, with a cook-stove of any kind, of a reversible or duplex shelf, D, attached thereto in front, as shown, by bars C or brackets C', substantially as and for the purpose specified.

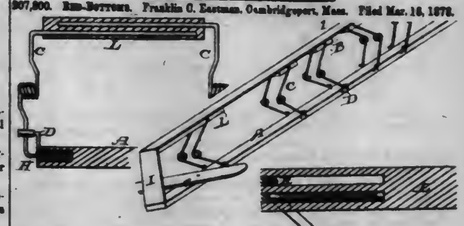
207,799. WATER-ELEVATORS. Ansel B. Davis, Mayfield, Mich. Filed Dec. 20, 1877.

Brief.—The friction of the pulleys on the rope elevates the full bucket.



Claim.—The arrangement, in a water-elevator, of the three grooved wheels or pulleys B C D, connected together and revolving simultaneously by means of gearing upon their periphery, and operating in connection with the rope F, substantially as and for the purpose set forth.

207,800. RED-BOTTOMS. Franklin C. Eastman, Cambridgeport, Mass. Filed Mar. 16, 1878.



Claim.—1. In a bed-bottom, the combination of a continuous slat, A, the independent springs C, the blocks B L, and continuous webbing-strip, the slats being provided with tubes H, having a hinge which receives the wire of the spring, as and for the purpose set forth.

2. In combination with slats A and springs C, the check-wires D, as described.

3. In combination with the block L, the spring C, having its upper end bent to enter the edge of the block, and again bent in the same plane therewith and parallel with its length, whereby the outer end of said block is supported as desired.

207,801. WINDOW-SASHES. Stephen B. Easton, Charleston, Ill. Filed Aug. 16, 1878.

Brief.—The sash is grooved to receive the panes; the bottom rail is fixed, the middle one pivoted, while the upper rail is made in two parts, one half fixed and the other pivoted, so that the edges of the top panes are retained between them.

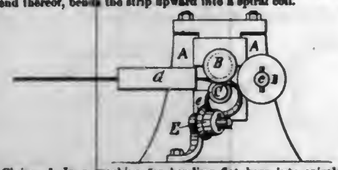
Claim.—The combination, in a sash, of the grooved uprights, stationary cross-piece *d'*, movable piece *f'*, and stationary cross-piece *f*, and intermediate grooved cross-pieces *e*, turning on pins *g*, substantially as set forth.

207,801.



207,802. MACHINES FOR COILING METAL BARS. G. F. EVANS, Poland, Me. Filed June 15, 1878.

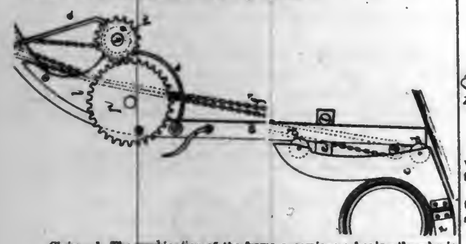
Brief.—The metal strip is passed between the first pair of rolls, by which one edge of said strip is elongated, then passed to the third roll, by which it is deflected and bent downward so as to strike the fourth roll, which, by reason of the angularity of its axis to the axes of the other rolls and the flange on one end thereof, bends the strip upward into a spiral coil.



Claim.—1. In a machine for bending flat bars into spirals, the rollers B, C, D, and E, constructed and combined to operate as and for the purpose described.

2. In a machine for bending flat bars into spirals, the rollers B and C, tapered reversely, as shown, the taper of the upper roller being somewhat less than that of the lower roller, and said rollers having the ends *a* and *b*, together with the roller D, constructed and arranged to operate as and for the purpose specified.

207,803. APPARATUS FOR LOADING AND UNLOADING VESSELS, &c. William Fields and Daniel Kerbaugh, Wilmington, Del. Filed Aug. 15, 1878.



Claim.—1. The combination of the frame *a*, carriage *c*, having the wheels or rollers *d* and *f*, the rope or chain *f'*, rollers *g h*, shaft *i*, and operating wheels or gears, substantially as described.

2. The carriage *c*, having the horns *t* hinged thereto so as to be closed back out of the way, substantially as specified.

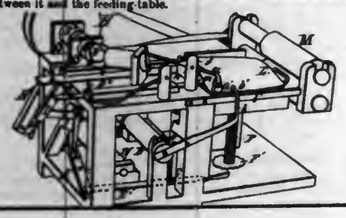
207,804. SHELF-SUPPORTS. John L. Gunther, Newark, N. J. Filed Apr. 13, 1878.



Claim.—In combination with the shelves A and vertical rods B, the slides C, provided with the springs D, substantially as and for the purpose specified.

207,805. MACHINES FOR FEEDING PAPER. Louisa Harlow, Holyoke, Mass. Filed Mar. 22, 1878.

Brief.—The rubber starting-pad *a'* buckles up the inner end of the top sheet of the book or pile, to allow the combined separator and pusher m n to carry said sheet into the bite of feed-rolls M. As each sheet is carried to the feed-rolls, the guide L' falls toward the lowermost one, and thus bridges the space between it and the feeding-table.



Claim.—1. In a paper-feeding machine, the friction rubber pad or starter *a'*, arranged to move into contact with the uppermost sheet in a pile of paper, in combination with the separator m and pusher n, substantially as and for the purpose described.

2. In a machine for feeding sheets of paper, the guide *b b'*, having a vertical movement, combined with the elbow or pivoted bent lever *c*, pawl E, nut F', and screw F, whereby the elevation of the platform carrying the paper is regulated and the paper raised into the proper position to be carried out of the machine, substantially as described.

3. In a machine for feeding sheets of paper, the combination of the vibrating guide *L'*, the friction rubber pad *a'*, the pusher n, the separator m, and rolls M, substantially as and for the purpose set forth.

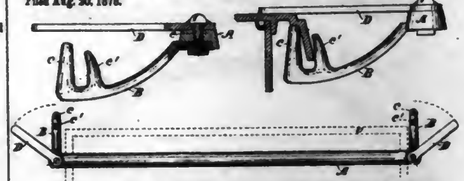
207,806. BOOK-BINDING. Frederick G. Hasbrouck, West Brighton, N. Y. Filed June 18, 1878.



Claim.—1. In a book, the combination, with a series of leaves or folios, of needles arranged within the same, and elastic binding cords or straps passed transversely through notches or mortises in the leaves or folios over the said needles and permanently attached to the covers, substantially as specified.

2. In a book, the combination of a series of leaves or folios, needles arranged within the same, elastic binding cords or straps passed transversely through notches or mortises in the leaves or folios over said needles and permanently attached to the cover, and a back independent of and detached from said leaves or folios, forming part of a cover, and made of or comprising elastic material, substantially as specified.

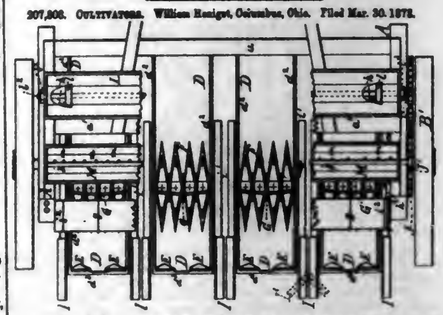
207,807. SHELF ATTACHMENTS FOR COOKING-STOVES. George Hayner, Lansingburg, N. Y. Filed Aug. 30, 1878.



Claim.—1. The rod, rack, or shelf A, having the lower arms, B B, formed with the upwardly-projecting lugs *c c'*, and the upper arms, D D, pivoted to turn laterally upon the said rod, rack, or shelf, substantially as described.

2. The rod, rack, or shelf A, having the arms D D pivoted thereto, and the arms B B, formed with lugs *c c'* and separate from the said rod, rack, or shelf, and secured to the latter by fastening devices, substantially as described.

207,808. CULTIVATORS. William Hanigot, Columbus, Ohio. Filed Mar. 30, 1878.



Claim.—1. In a grain-plant cultivator, the combination of the wheeled frame A and a series of vertically-swinging independent frames, D, each frame D having a series of loosely-turning pointed cutter-wheels, F, and cultivator-blades E, substantially as and for the purpose set forth.

2. The combination, with the wheeled frame A, of the independent frames D, having the wheels F and blades E, and the vertically-swinging arms *f'*, carrying either shields or rakes, substantially as and for the purpose described.

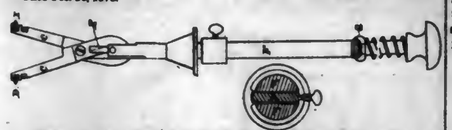
3. The combination of the cultivator-blades E, revolving pointed cutter-wheels F, and the pendulous frame D, carrying the blades E and wheels F, substantially as described.

4. The combination of the seed-hopper M, frame A, and frames D, having blades E and wheels F, substantially as and for the purpose described.

5. The combination of the seed-hopper M and fertilizer-hopper L, provided with the cone-wheels *l*, inclined spouts *l'*, and adjustable shaft *k*, the revolving pointed cutter-wheels F, cultivator-blades E, and frames D, substantially as and for the purpose described.

6. The vertically-swinging shields I, applied in pairs, in combination with the vertically-swinging frames D, having the blades E and wheels F, substantially as and for the purpose described.

207,809. STRAIGHTING-GAGE AND GLASS-TUBE CUTTER. William Hoyt, San Francisco, Cal. Filed Feb. 26, 1878.



Claim.—1. The arms C, carrying the cutters D and pivoted to the stem A, said arms being opened and closed by a pin on the sliding rod F, operating in diagonal slots or grooves E in the arms C, substantially as herein described.

2. The stem A, flattened as shown, and having the semi-cylindrical halves F secured upon opposite sides, so as to form a complete rod, the parts being movable longitudinally, substantially as and for the purpose herein described.

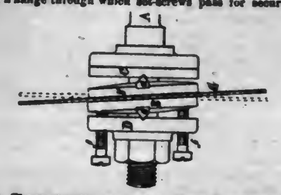
3. The cutters D, mounted so as to stand at an angle when closed and at right angles with the tube when opened to make a cut, substantially as herein described.

4. The conical centering-guide I, constructed to fit the tube and steady the apparatus while cutting, substantially as herein described.

5. The gage-sleeve J, having the rib K and set-screw, constructed to clasp opposite sides of the stem A, substantially as and for the purpose herein described.

207,810. HANGING CIRCULAR SAWS. Henry Kean, Kinnickinnic, Wis., and James G. Alexander, Boston, Mass. Filed Mar. 2, 1878.

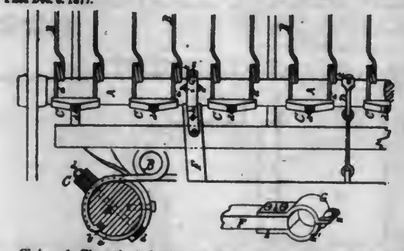
Brief.—A circular saw can be clamped in position at any desired angle to the arbor by means of two disks provided with radial strips having V-shaped edges, which fit into corresponding recesses in a disk placed against the inner flange, and in a flange through which set-screws pass for securing the whole in position.



Claim.—1. The combination of the disks E and F, flange D, disk C, strips *d*, saw G, and arbor A, substantially as and for the purpose hereinbefore set forth.

2. The combination of the disks E and F, flange D, disk C, strips *d*, screws *f*, saw G, and arbor A, substantially as hereinbefore described.

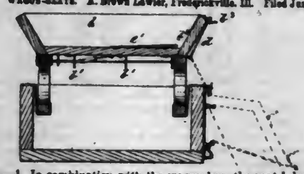
207,811. HORSE HAY-RAKES. Orin M. Laraway and George S. King, Minneapolis, Minn. Filed Dec. 6, 1877.



Claim.—1. The axle A, having the circular grooves *a a* and longitudinal slot *b*, in combination with the rake-teeth B, provided with the bent ends *c*, adapted to fit into the slot *b*, and clamps C C, to hold the teeth in the grooves *a a*, arranged and operating in the manner and for the purpose substantially as hereinbefore set forth.

2. The combination, with the circular axle A, provided with the pins *n n*, of the clamp G G', locked together by the slot and spur *m*, and secured to the thills F, substantially as hereinbefore set forth.

207,812. WAGON-SEATS. A. Brown Lawler, Fredericksville, Ill. Filed June 24, 1878.



Claim.—1. In combination with the wagon-box, the seat *b*, having a series of steps, *b'*, on its under side, and hinged to said wagon-box, so that it may be turned over and down to the ground, substantially as and for the purposes set forth.

2. The combination, with the seat *b*, hinged to the wagon-box as described, of the bolt *a* and crank-lever *a'*, as and for the purposes set forth.

207,813. PAPER BOXES. Henry A. Mann, Jr., Ballston Spa, N. Y. Filed Aug. 8, 1878.

Brief.—The body B is an unattached coil of paper, and is adapted to form sections of a lamp-shade.

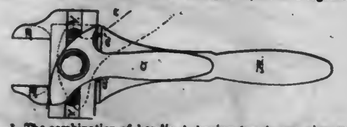
Claim.—A new article of manufacture consisting of the collar-box with movable cover at each end, the unfastened body B, laid out in uniform trapezoidal sections, which, when separated and reunited by means hereinbefore set forth, constitute a lamp-shade, all substantially as described.

207,813.



207,814. WRENCHES. John M. Marty, Faribault, Minn. Filed Jan. 9, 1878.

Brief.—The three pieces (two jaws and locking-lever) are held together by one bolt.

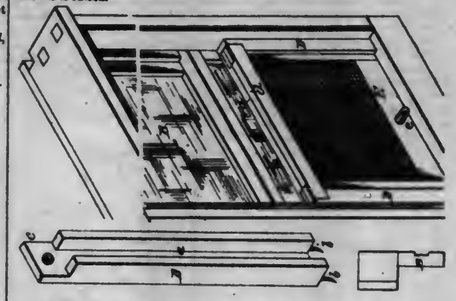


Claim.—1. The combination of handle A, having jaw in one piece therewith, with movable jaw B, having the slotted and grooved arm, and lever C, having projections *c' c''* and a pivotal fastening-bolt passing through arm B, for the purposes and uses as set forth.

2. The combination of the handle and jaw A, having flange *a* and stops *a' a''*, and a rigid projecting jaw, W, with sliding jaw B, having a slotted arm and a projecting rigid jaw, W', and a pivoted locking-lever, all connected and operating as and for the purposes set forth.

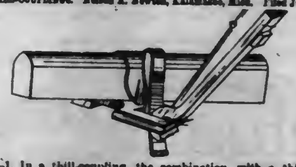
207,815. WINDOW-SCREENS. Edward Neary, Nashua, N. J. Filed Aug. 10, 1878.

Brief.—The screen slides into grooved rails removably secured to the sides of the window-casing. Cleats at the top of the screen rest upon shoulders at the top of the rails, the inner cleat abutting closely against the lower sash-rail when it is raised.



Claim.—The removable grooved rails D, formed with flange *c*, in combination with the screen E and cleats *d d*, substantially as and for the purpose set forth.

207,816. THILL-COUPLINGS. Nelson A. Newton, Kalamazoo, Mich. Filed July 30, 1878.



Claim.—1. In a thill-coupling, the combination, with a thill-hook and suitable attachment to a wagon, of a pressure-spring operating against said hook, and provided with an extension for conveniently releasing the same, substantially as described.

2. In a thill-coupling, the combination of a thill-hook and suitable attachment to a wagon with a pressure-spring operating against said hook, and provided with an extension for releasing the same, said spring being bent into the shape of a bow, substantially as described.

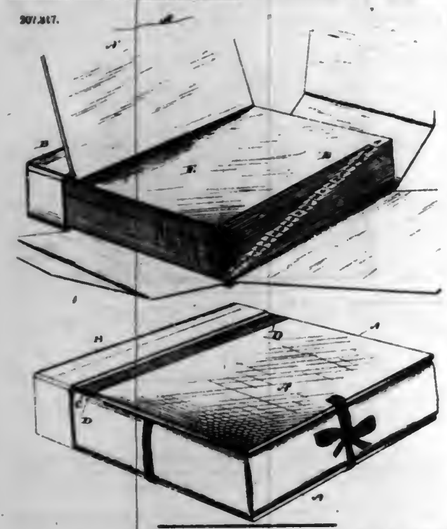
207,817. BILL AND LETTER FILES. Thomas Orton, Chicago, Ill. Filed May 18, 1878.

Claim.—1. The folio A, formed in one piece and provided with a flexible side, as set forth, having its back inclosed by a strip, G, as shown and described.

2. The folio A, formed in one piece, having its back inclosed by a strip, G, and provided with binding F, in combination with a series of index-leaves, E, as set forth.

3. The folio A, having its back inclosed by a strip, G, having a flexible side, and provided with flaps H I, as set forth.

207,817.

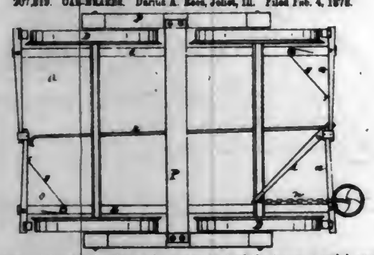


207,818. BUTTON-FASTENER. George W. Prentice, Providence, R. I. Filed May 18, 1878.



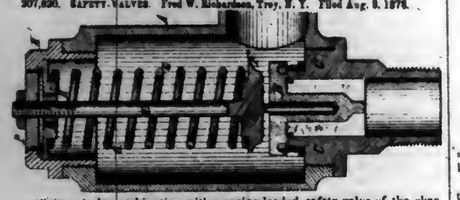
Claim.—As an improved article of manufacture, the herein-described button-fastener, consisting of the staple-shaped connection A, having two penetrating-prongs, B B, one of which forms a loop, C, for the reception of the shank E of the button D, and both being thinned to an edge at the points, to enable the same to be readily turned back in the material to which the button is attached, said fastener being formed of round or half-round wire, substantially as and for the purpose specified.

207,819. OAR-BRAKES. Darius A. Bees, Joliet, Ill. Filed Feb. 4, 1878.



Claim.—The combination and arrangement of the levers *a* and *i*, connecting rod *r*, springs *s*, chains *u* and *x*, beams *v*, and main frame P, as and for the purpose set forth.

207,820. SAFETY-VALVES. Fred W. Richardson, Troy, N. Y. Filed Aug. 9, 1878.



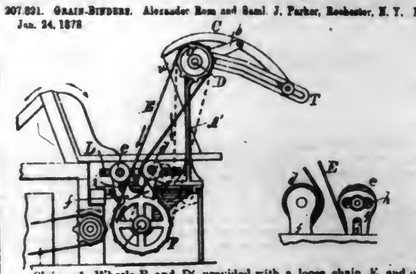
Claim.—1. In combination with a spring-loaded safety-valve of the character herein specified, a piston or disk adapted to relieve the valve of a pressure about equal in amount to the pressure of the steam upon said disk, substantially as and for the purpose set forth.

2. In combination with an incased safety-valve, a spring bearing thereon, a movable piston or disk adapted to receive the pressure of steam, and a spindle connected with said disk and with the spring, the whole being arranged to operate substantially as explained.

3. The piston P, in combination with a reactionary spring-loaded and incased safety-valve, substantially as set forth.

4. The combination of piston P, spindle E, screw-cap H', collar H, spring G, case A, and a reactionary safety-valve, substantially as shown and described.

207,821. GRAIN-BINDERS. Alexander Ross and Saml. J. Parker, Rochester, N. Y. Filed Jan. 24, 1878.



Claim.—1. Wheels P and D', provided with a loose chain, E, and oppositely-acting shifting tighteners *c d* for the chain, in combination with shaft and crank D and *b* and grain-binding arm C, substantially as shown and described.

2. The combination, with the binding mechanism of a grain-binder, of shaft D, wheels P and D', chain or cord E, shifting tightener *f*, provided with rollers *c* and *d*, and suitable automatic operating mechanism for said tightener, substantially as set forth.

3. In combination with a binding-arm, C, crank *b*, shaft D, and chain E, a cam, L, lever H, and shifting device *f*, substantially as shown.

4. In combination with the arm C, crank and shaft *b* and D, sprockets D' and F, and chain E, a shifting tightener, *f*, provided with an adjustable roller, *c*, by which to regulate the tension of the chain E.

5. In an automatic grain-binding attachment to a harvester, the combination of a rotating wire-twister, N, and tucking-wheel K with suitable driving mechanism for each, substantially as shown and described.

6. A wire-twister, N, of a grain-binder, having a threaded stem, E', provided with a slit clamp-nut, S, for adjusting the twister to position, in combination with the rotating tucking-wheel K, substantially as described and shown.

7. The cutting-blade *n*, projecting from the rotating tucking-wheel K, acting in concert with the wire-twister head N to sever the wire, substantially as described and shown.

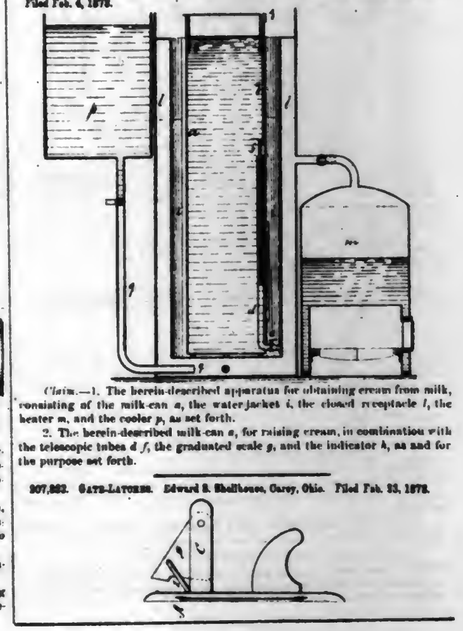
8. In combination with the twisting-spindle E' of a grain-binder, a yielding plate, *d'*, rods *e'*, and piece *f'*, substantially as set forth.

9. A hollow wire-twister head, N, provided with a ledge or blade, *s'*, having a notch or hook, *x*, for the purpose of catching and holding the spool end of the wire after the same has been severed, constructed substantially as shown and set forth.

10. In combination with a rotating twister, N, of a grain-binder, a rotating wheel or piece, K, provided with groups *r n t* of projecting blades, caused to enter successively the cavity of the head, the blades forming the groups increasing in length from first to last, substantially as described.

11. A sliding rack, *m*, rotating a pinion, *p*, of the wire-twister of a grain-binder, in combination with said pinion and twister, gear J, and tucker-wheel K, substantially as described.

207,822. APPARATUS FOR SEPARATING CREAM FROM MILK. Philander Shaw, Boston, Mass. Filed Feb. 4, 1878.



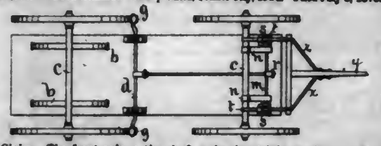
Claim.—1. The herein-described apparatus for obtaining cream from milk, consisting of the milk-can *a*, the water-jacket *i*, the closed receptacle *l*, the heater *m*, and the cooler *p*, as set forth.

2. The herein-described milk-can *a*, for raising cream, in combination with the telescopic tubes *d f*, the graduated scale *g*, and the indicator *h*, as and for the purpose set forth.

207,823. GATE-LATCHES. Edward S. Shellhouse, Carey, Ohio. Filed Feb. 23, 1878.

Claim.—In combination with the drop-latch D, arranged with the slotted arm C and plate A, the ring I, for raising the latch and for holding it in an elevated position, as herein set forth.

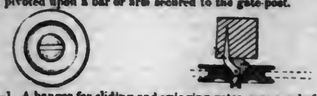
207,824. WAGON-BRAKES. Phillip Smith, Prairie City, Iowa. Filed July 6, 1878.



Claim.—The front axle, *c*, the shaft *m*, having triple cranks *r r r*, the shaft *d*, having a central crank, *h*, and carrying brake-shoes *g g*, the rigid rod *w*, connecting the cranks *h* and *r*, and the pole *g x x*, when arranged and combined in a vehicle, substantially as shown and described, to be operated in the manner set forth.

207,825. GATE-MANGERS. John S. Smith, Jackson, Mich. Filed Apr. 6, 1878.

Brief.—A flanged wheel is mounted upon a cone-shaped hub, which is secured and pivoted upon a bar or arm secured to the gate-post.



Claim.—1. A hanger for sliding and swinging gates, composed of a flanged wheel mounted upon a cone-shaped hub, which is pivoted upon a bar or arm, substantially as described.

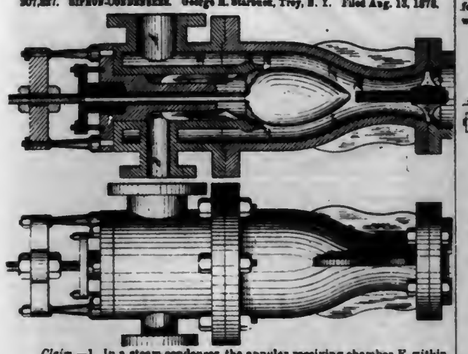
2. The cone-shaped hub having a flanged wheel mounted thereon and recessed, substantially as shown, in combination with an arm or bar adapted to be secured to a gate-post, and having one end pivoted in the recess of the hub, the whole forming a hanger for sliding and swinging gates, substantially as shown and described.

207,826. NECK-TIE FASTENERS. Albert M. Smith, Brooklyn, N. Y. Filed Jan. 15, 1877.



Claim.—The neck-tie retainer B, consisting of the book *f*, loop *e*, coils *d d*, and arms *a a*, the latter provided with hooks at their extremities, and adapted to engage with the neck-tie shield, the whole constructed and operating as and for the purpose specified.

207,827. SIPHON-CONDENSERS. George H. Starbuck, Troy, N. Y. Filed Aug. 13, 1878.



Claim.—1. In a steam-condenser, the annular receiving-chamber F, within which is located the adjustable valve, said chamber being gradually contracted toward its lower end, substantially as shown.

2. In a steam-condenser, the combination, with the outer casing, of an interior valve and interior cylinder, the three parts being arranged substantially as shown, so that annular passages are afforded for the water, for the steam, and for the mingled current of water and steam, for the purposes and objects named.

3. In a steam-condenser, the combination, with the outlet, of an open pipe, M, having a water-passage around it exceeding up into the chamber above, substantially as shown.

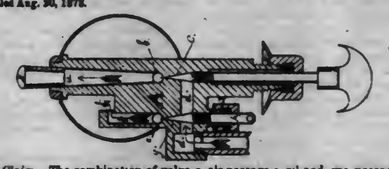
4. In a steam-condenser, the combination, with the outlet, of the vertical strips *F'*, (one or more,) serving to operate substantially as and for the purposes set forth.

5. The combination, with the chamber of a steam-condenser, of a conical valve mounted therein, and adapted to permit the washing of said chamber, as well as to regulate the quantity of water admitted, said valve being provided with a stuffing-box and with means for setting it, substantially as shown and described.

6. In a steam-condenser, the combination, with the water-conducting cylinder, of an adjustable valve mounted below the mouth of said cylinder, and serving to force the current of water into an annular discharge, the volume of water being diminished by elevating and increased by depressing the valve, substantially as shown and described.

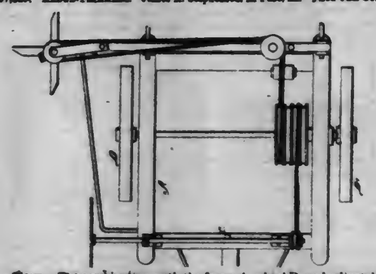
7. In a steam-condenser, the combination, with the water-cylinder, of one or more vertical division-plates, J, mounted within the cylinder and above the conical valve, which regulates the size of the opening at the mouth, said plates being designed to maintain the water-current in a rectilinear direction before being deflected by the valve, substantially as shown and described.

207,828. GAS-GENERATING BURNERS. Isaac Stead and Samuel H. Bayley, Philadelphia, Pa. Filed Aug. 30, 1878.



Claim.—The combination of valve *g*, air-passage *c*, oil and gas passage *d*, and the continuous vaporizing-burner *f* with the main valve *e*, air-passage *b*, and the illuminating-burner S, as shown and described, and for the purpose specified.

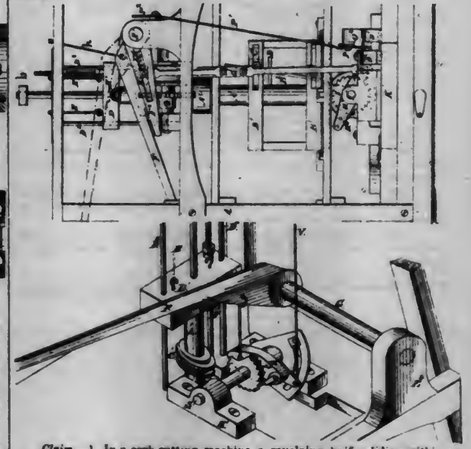
207,829. HINGE-TRIMMERS. James A. Stephenson, El Paso, Ill. Filed Jan. 26, 1878.



Claim.—The combination, with the frame A, wheel D, and adjustable wheel D', of the perforated clips A A and the bar I, carrying the cutting-wheel H', and adjustable in the clips independently at either end, for the purposes set forth.

207,830. CORK-CUTTING MACHINES. John O. Tennent, Philadelphia, Pa. Filed Jan. 30, 1878.

Brief.—The corks are cut by a revolving knife which is adjustable to any desired taper, and is automatically fed into and withdrawn from the material, which can also be done by the operator at will. The cork is automatically fed forward, and the feeding apparatus can be adjusted to cork-slabs of various widths.



Claim.—1. In a cork-cutting machine, a revolving knife sliding within a frame secured to the tubular shaft A^1, capable of being moved downward toward and into the material to be cut by means of the cross-head D^1 (or its described equivalent) and adjusted by means of set-screws, whereby the cork or other material may be cut straight or at any desired angle, substantially as described.

2. The combination of the hand-lever F, cross-head D^1, (or its described equivalent,) tubular shaft C^2, and arm D with the knife and knife-bar B^2, all arranged substantially as described, and for the purpose set forth.

3. The combination of the hand-lever F, cross-head D^1, (or its described equivalent,) tubular shaft C^2, arm D, knife-bar B^2, and guide-rods D^2 with the springs E E, substantially as shown and described.

4. The tubular shaft A^1 and knife-carrying frame B^1, provided with the vertical and longitudinal slots C, in combination with the knife and knife-bar B^2, substantially as described.

5. The combination of the tubular shafts A^1 C^2, slotted frame B^1, arm D,

knife-bar B^2, central rod *a*, and cross-head D^1 (or its described equivalent) with the hand-lever F, all arranged substantially as described, and for the purpose set forth.

6. The combination of the cross-head D^1, (or its described equivalent,) lever V^2, clutch Y, spring h, ratchet-wheel I, bevel-wheels P and *k*, and disk k^2 (or their described equivalents) with the frame L^2, whereby the material is fed forward as the knife is raised, all constructed and arranged substantially as described, and for the purpose set forth.

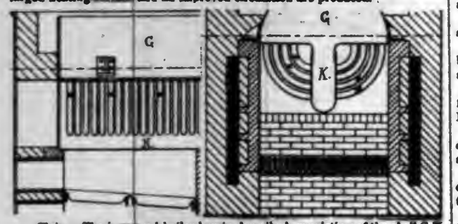
7. The combination of the worm-gear C^1, double lever E^2, pawl T, and adjustable pins T^1 and T^2 with the hand-lever F, whereby the knife is moved automatically to and from the material to be acted upon, as also the cord V, by which this automatic feeding is disengaged and knife released, all arranged to operate substantially in the manner and for the purpose set forth.

8. The combination of the arm F^3, spring E^1, and bell-crank levers F^2 and P with the screw-shaft M^1, whereby the movable table is adjusted to suit various-sized pieces of cork and the slotted lever F^2 is moved on the feathered shaft, substantially as described.

9. The cork-carrying frame L^1, made adjustable to suit cork-slabs of varying widths, in combination with the spring M^3 and the driving-disk F^1, all constructed and operating substantially as set forth.

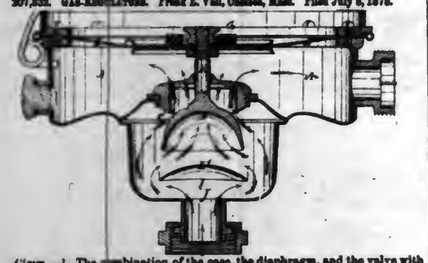
207,831. STEAM-GENERATOR. George B. N. Towne, Cambridge, assignor of one-half his right to Lydia F. Bonsor, Oshawa, Mass. Filed Mar. 2, 1878.

Brief.—A semi-cylindrical body of a boiler is provided with a narrow downward extension, and both connected with curved tubes, by which an enlarged heating-surface and an improved circulation are produced.



Claim.—The improved boiler herein described, consisting of the shell G K, recessed as described, in combination with the series of pipes M, arranged across that recess, connecting the parts G K, as described.

207,832. GAS-REGULATORS. Frank E. Vell, Chelsea, Mass. Filed July 8, 1878.

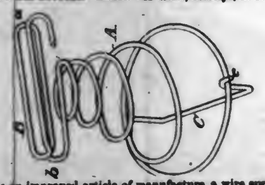


Claim.—1. The combination of the case, the diaphragm, and the valve with a guide, L, for the valve-stem, secured to the valve-seat, and a deflecting-plate, substantially as set forth.

2. The combination of the case and diaphragm with a valve having an open or concave under surface and a deflecting-plate to receive the flow of gas, substantially as and for the purpose set forth.

3. The deflecting-plate K, having its edges turned downwardly, in combination with the valve and diaphragm of a gas-regulator, substantially as set forth.

207,833. SPRINGS FOR BED-BOTTOMS. Michael Van Sickle, Brooklyn, N. Y. Filed Apr. 9, 1878.



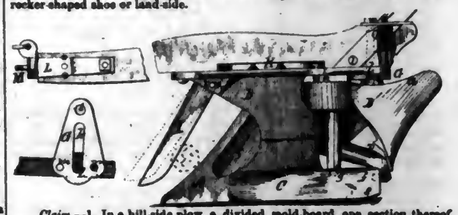
Claim.—1. As an improved article of manufacture, a wire spring for a bed or bed-bottom, having a conical elastic portion, A, and a clasp to embrace the slat at each end, formed in one piece with the wire of the portion A, substantially as and for the purposes set forth.

2. A wire bed-spring having an elastic clasp, B, constructed in one piece with the spring by forming an elongated loop and bending it at *a* to form two flattened jaws with curved nibs at *b*, to elastically grasp and hold the slat, substantially as herein shown and specified.

3. A wire bed-spring having an elastic clasp on its lesser end, formed from one end of the spring-wire and arranged to embrace and hold the slat elastically, and a clasp, C, on its broader end, also formed from the wire of the spring and in one piece therewith by bending a loop in the same to snugly embrace the slat, and forming a hook, *c*, on the end to catch over the wire of the spring, substantially as set forth.

207,834. PLOWS. Simeon F. Walleigh, Oren M. Roberts, and George S. Roberts, Meredith N. H. Filed Feb. 1, 1878.

Brief.—The rear section of the mold-board swings behind the plow and interlocks with the front section, and is held by a spring-catch. The turning of the rear section of the mold-board moves a balanced lever, which shifts the colter. The latter has also forward and back play. A swiveled clevis-hook, with a right-angled arm, affords couter-draft or automatic right and left. The rocker-shaped shoe or land-side.



Claim.—1. In a hill-side plow, a divided mold-board, one section thereof comprising the point and share, or furrow-lifting part, to swing under the plow, and the other section forming a double furrow-inverter, to swing around horizontally at the rear of the plow, the two sections locking together on each side of the plow, substantially as and for the purpose herein specified.

2. A shoe, C, removably attached to the land-side D, and having a wide sole, of rocker form, substantially as and for the purpose herein specified.

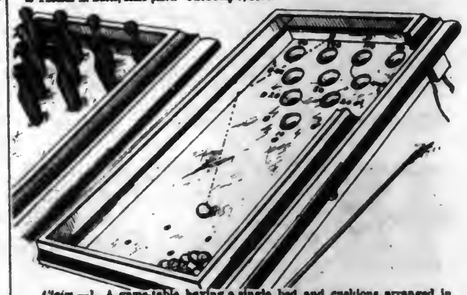
3. A plow-colter, I, mounted in a socket, *t*, of the land-side D, and having both a lateral and up-and-down swinging movement therein, substantially as and for the purpose herein specified.

4. The combination of the laterally-swinging colter I, pivoted lever K, forked at its two ends, the crank-shaped pivot A, and the mold-board section B, substantially as and for the purpose herein specified.

5. The slotted link G, constructed as described, and the fastening bolt or catch H, in combination with the stud *i* and rear mold-board section, B, substantially as and for the purpose herein specified.

6. A plow-clevis provided with a swivel-link, M, in combination with the clevis-strap L, constructed, arranged, and operating substantially as and for the purpose herein specified.

207,835. GAME-TABLES. George L. Wisel, Philadelphia, Pa., assignor of one-half his right to Thomas L. Bates, same place. Filed July 8, 1878.



Claim.—1. A game-table having a single bed and cushions arranged in rectangular form around the bed, the table provided with ten spots on one end, arranged in the form of a triangle, for the game of ten-pins, and ten pockets opposite at the other end for the game of bagatelle, substantially as set forth.

2. A rectangular game-table, provided with ten spots on one end and ten pockets on the other end, said pockets having a number of spots in front of the same, substantially as set forth.

3. A game-table having a single bed and cushions arranged in rectangular form around the bed, the table provided with ten spots on one end, arranged in the form of a triangle, for the game of ten-pins, and ten pockets opposite at the other end for the game of bagatelle, and an adjustable end cushion for converting the table into a billiard-table, substantially as set forth.

207,836. MANUFACTURE OF VIOLET ULTRAMARINE. Johann Zeltner, Nuremberg, Bavaria. Filed Oct. 13, 1877.

Brief.—Blue or green ultramarine, heated to 300° Celsius, is treated with chlorine or other suitable oxidising agent, and then with water, whereby violet ultramarine is produced.

Claim.—The herein-described process for the manufacture of violet ultramarine by the reaction, upon blue or green ultramarine, or mixture thereof, of an oxidising reagent and water, substantially as and for the purpose set forth.

207,837. BROOMS. Joseph Arbuckle, Hartford, Conn. Filed Feb. 23, 1878.



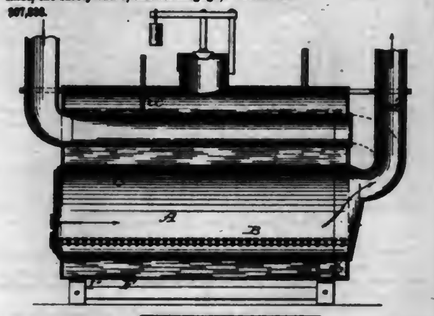
Claim.—In combination with the head or case A, the expansible tube B and plug D, constructed and arranged to operate substantially as described.

207,838. STEAM COOKING APPARATUS. Lathem E. Ayer, Keokuk, Iowa. Filed Apr. 22, 1878.

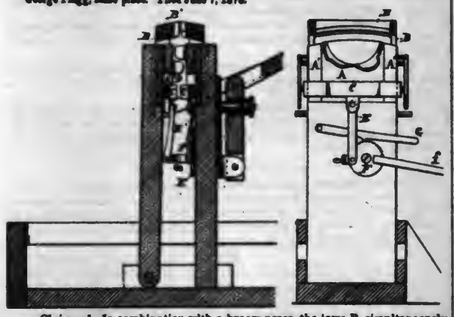
Claim.—1. The cylinder-boiler having the internal horizontal furnace A extending through the boiler, of uniform size, with internal grate B, door with air-register, the return-flue, and removable chimney, in combination with an external construction from furnace and a removable connection therefrom to the flue, arranged so that it may alternately be used and removed, and the chimney substituted for it, substantially as set forth.

2. The cylinder-boiler constructed with internal furnace extending through it, of uniform size, the separate external construction piece from furnace, the removable chimney with holder at top of boiler, the separate holding-rack, having legs connected by bent cross-straps at each end and lengthwise bars, the door having air-register, the steam-outlet pipe, the water and cleaning inlet, the safety-valve, and steam-gage, as set forth.

207,839.



207,840. BROOM-PRESSES. David Bard, Cincinnati, Ohio, assignor of one-half his right to George Flagg, same place. Filed June 7, 1878.



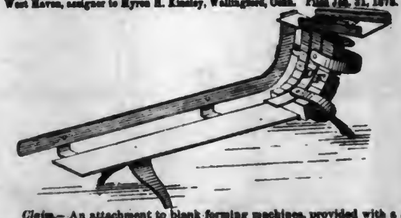
Claim.—1. In combination with a broom-press, the jaws B, simultaneously adjustable in vertical guides A' by suitable means, substantially as described.

2. In a broom-press having vertically-adjustable jaws, as shown, the combination, substantially as specified, of yokes C and *c*, links E and E', and eccentric F, for operating the same by means of lever *f*.

3. In a broom-press having vertically-adjustable jaws, as shown, the combination, substantially as specified, of yokes C and *c*, links B and E', eccentric F, for operating the same by means of lever *f*, and the lever-pawl G, for locking the adjustable jaws and releasing them.

4. In combination with the described broom-press, the removable jaws B, for the purpose specified.

207,840. ATTACHMENTS TO METAL-BLANK-FORMING MACHINES. Marshall L. Bennett, West Haven, assignor to Myron H. Kinsley, Wallingford, Conn. Filed Jan. 21, 1878.



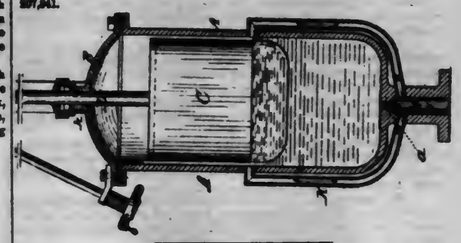
Claim.—An attachment to blank-forming machines, provided with a guiding-plate arranged at some distance from the edge of the delivery-plate or platform, substantially as and for the purposes set forth.

207,841. VITRIOL-HOLDERS FOR BEVERAGE-CARBONIZING APPARATUS. Benjamin Bates, Baltimore, Md. Filed Mar. 27, 1878.

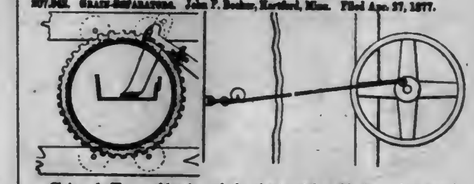
Claim.—1. In a vitriol chamber, cup, or holder, the combination of the displacer C, the closed or imperforate bottom of said chamber *c*, and the pipes K K, whereby the vitriol is displaced and conducted through said pipes to its exit, while the gas from the generator rises in said pipes to balance the pressure, substantially as described.

2. In a vitriol chamber, cup, or holder having the combination of displacer C, egress-balance pipes K K, and closed bottom, the index and scale, in combination with the displacer-rod and operating-gearing, whereby the quantity of vitriol to be let down into the generator is preascertained, substantially as described.

207,842.



207,843. GRAIN-SEPARATORS. John P. Beahm, Hartford, Minn. Filed Apr. 27, 1877.



Claim.—1. The combination of the sheet-metal cockle-drum A, covered with wire sieve-cloth, and the clearing-brush H, revolving on the outside of said drum and in contact with the sieve-cloth, substantially as herein set forth.

2. The combination of the sheet-metal cockle-drum A, covered with wire sieve-cloth, and the adjustable clearing-brush H, revolving in contact with the outside of said drum, substantially as herein set forth.

3. The combination of the sheet-metal cockle-drum A, covered with wire sieve-cloth, and the clearing-brush H, revolving in contact with the outside of said drum, said clearing-brush being supported at both ends in independently-adjustable bearings I, substantially as herein set forth.

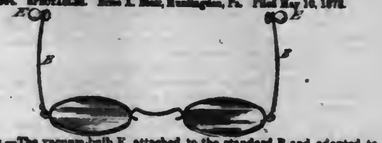
207,843. DOCKS. James C. Ball, Albany, and Patrick Costello, West Troy, N. Y. Filed July 26, 1878.

Brief.—The ties which unite the back binders with the dock-front are headed into upright metallic plates countersunk in the horizontal timbers of the dock-front.



Claim.—A dock for water-fronts, consisting of a breast-wall, A, composed of horizontal timbers, combined with transverse countersunk plates G G, arranged on the outer face of said wall, and tied to the longitudinal back binders D D by the tie-rods E E F, and with the lateral bracing and supporting timbers B B between the front wall and back binders, substantially as described.

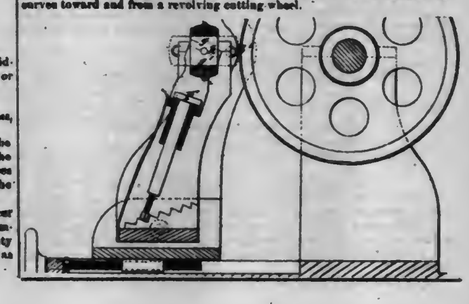
207,844. STRETCHERS. Reino K. Blair, Huntingdon, Pa. Filed May 10, 1878.



Claim.—The vacuum-bulb E, attached to the standard B and adapted to adhere to the face by exhausting the air from said bulb, substantially in the manner and for the purpose set forth.

207,845. MACHINES FOR ROUNDING OFF THE ENDS OF COMBS. William Booth, Newark, N. J. Filed Aug. 9, 1878.

Brief.—A number of blanks are secured in a rotating comb-box, which is journaled in a swinging frame, and is guided by a pair of stationary guiding-curves toward and from a revolving cutting-wheel.



Claim.—1. The combination of the rotating comb-box, having inner guide recesses, with interchangeable side plates of different thickness, and with an interchangeable clamping-follower, substantially as specified.

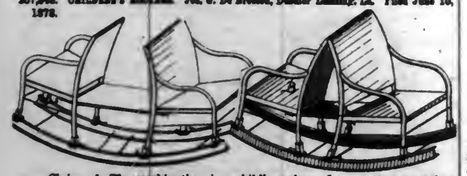
2. The combination of a revolving cutting-wheel, a rotating comb-box, oscillating standards, and an adjustable base-frame with guiding and adjusting mechanism of the bed-plate, to set the comb-box nearer to or further from the cutting-wheel, substantially as specified.

3. The combination of the rotating comb-box with a guide centering-plate and with a step-shaped base-support, to center the blanks of different length in the comb-box, substantially as described.

4. The combination of the rotating comb-box supported on oscillating arms, and provided with guide arms and rollers, with a fixed arc-shaped pattern arm or standard of the base-frame, for guiding the blanks to the cutting-wheel, substantially as described.

5. The combination of the rotating comb-box with a centering-plate that is guided in a pendent and spring-acted frame, and adjusted to the length of combs by a set-screw and a step-shaped support of the oscillating frame, substantially as set forth.

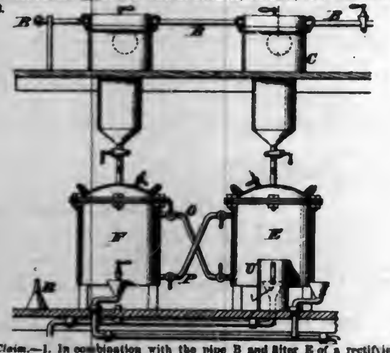
207,846. CHILDREN'S ROCKERS. Jos. G. De Bruten, Dudley Landing, La. Filed June 10, 1878.



Claim.—1. The combination, in a child's rocker, of two seats mounted on the rockers and arranged back to back, so that the children occupying the same may be faced outward, and thus enabled to operate the rocker with their feet, substantially as set forth.

2. The combination, in a child's rocker, of two independent seats adjustably mounted on the rockers and arranged back to back, for the purpose explained.

207,847. RECTIFYING APPARATUS. John H. Brockman, Cincinnati, Ohio. Filed Feb. 6, 1878.



Claim.—1. In combination with the pipe B and filter E of a rectifying-machine, the expansion-column C, for the purpose of accumulating pressure in the filter, substantially as described.

2. The combination, in a rectifying apparatus, of two or more filters and connecting-pipes, arranged substantially as shown and described, so that either filter may be used alone or the spirits passed from the base of either one to the top of the next.

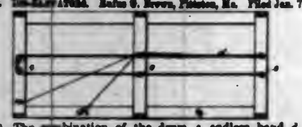
3. The combination, in a rectifying-machine, of the filters E F, two or more, with the pipes G F, in such a manner as to enable the order in which the spirits pass through the same to be reversed as the conditions of the filter may require, substantially as described.

4. In a rectifying apparatus, the combination of one or more filters, two or more pipes leading from each filter to different receptacles, and a movable funnel or funnels, for the purpose of directing the fluid into one or another of the pipes, as required, substantially as described and shown.

5. In combination with the faucet and discharge-pipes of a rectifying-machine, the shield U, substantially as and for the purposes described.

6. The combination, in a rectifying apparatus, of the means, substantially as shown, for automatically checking the flow of the spirits, and for rendering the filtration single, double, or reversible, at will.

207,848. [illegible]. Rufus G. Brown, Pittston, Me. Filed Jan. 7, 1878.



Claim.—1. The combination of the drum *c*, cadleen band *d*, pulleys *e*, with supplemental cords *g* and *f*, and weights *h*, to operate as herein set forth.

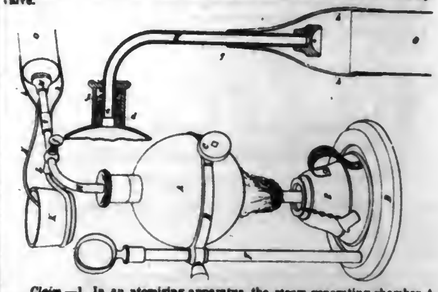
2. The stand *l p*, capable of elevation and depression by means of the slide *m* and the gears *n*, and with the tipping top *q*, as herein set forth.

3. The stand *l p*, with its tipping top *q* and rotary part *r*, as herein described.

4. The stand or table shown in Figs. 4, 5, and 6, having the surface *k*, top *l*, slide *m*, guard *n*, shaft *o*, side pieces *p*, tipping table *q*, and with or without the rotating stand *r*, as herein set forth.

207,849. ATOMIZERS. George A. Brag, Providence, R. I. Filed Mar. 26, 1878.

Brief.—The spherical boiler is adjustably-secured in its frame in a plane at right angles to its standard, the frame itself being adjustable upon a vertical standard. One end of the swiveled connecting-tube operates as a safety-valve.



Claim.—1. In an atomizing apparatus, the steam-generating chamber A, pivoted in the frame B so as to be adjusted at various angles to a plane at right angles to the standard F by means of the thumb-nut C, or other suitable clamping device, substantially as described.

2. The combination of the base D, the standard F, the set-screw G, either with or without the projecting handle, and the steam-generator A, adjustably pivoted in the sliding frame B, and provided with the thumb-nut C, or other suitable clamping device, substantially as shown.

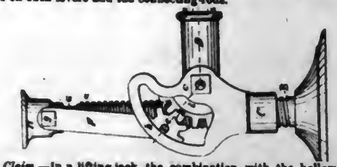
3. The combination of the steam-generator A and the swiveled connecting-tube H, one end of which is arranged to operate as a safety-valve, substantially as shown.

4. The combination, in an atomizer, of the inhaling-tube O, the sliding sleeve *g*, and the connecting-rods A A, or their equivalent, substantially as shown.

5. The combination of the adjustably-pivoted steam-generator A, the connecting-tube H, and the inhaling-tube O attached thereto, the atomizer M, with suction-pipe N, the cup K, and holder L, all arranged to operate substantially as described.

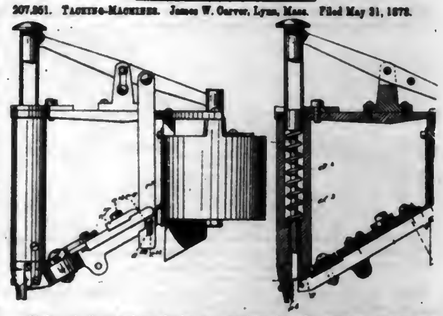
207,850. LIFTING-JACKS. James Beal, Woburn, Mass. Filed Aug. 26, 1878.

Brief.—The screw-nut is turned up to such point on the standard as will bring the lifting-rod head sufficiently near the object to be raised; then, by depressing the hand-lever, the object will be raised through the action of the gears on such levers and the connecting-rods.



Claim.—In a lifting-jack, the combination, with the hollow standard B, having screw *c*, of the nut C, having the cams *b b*, bifurcated socket or lever D, having gears *d d*, rods F F, having gears *e e* and pins *f f*, and the sliding rod G, moving within standard B, and provided with a suitable head, H, all substantially as described and shown.

207,851. TACKING-MACHINES. James W. Carver, Lynn, Mass. Filed May 31, 1878.



Claim.—1. In a tacking device, the combination of a stationary hopper or cylinder, for receiving the tacks in bulk, with a movable diaphragm adapted to be intermittingly reciprocated vertically, for the purpose of depositing tacks in the feed-chute leading from said hopper or cylinder, substantially as shown and described.

2. In a machine for feeding tacks to a raceway or inclined chute, the intermittent reciprocating diaphragm described, provided with a device for removing from that portion of the inclined chute or raceway inclosed by the hopper or chamber all tacks which do not fall point downward into the chute, substantially as described.

3. In a machine for feeding and driving tacks, the combination of a revolving feed, for receiving tacks one by one from an inclined chute or raceway and for delivering them successively into the inclined guide *c*, with said inclined guide opening into a chamber, *c*¹, whereby tacks are automatically presented to the driving mechanism, substantially as described.

4. In a machine for feeding and driving loose tacks, the combination of a hopper or cylinder provided with a vertically-reciprocating diaphragm, for depositing tacks uniformly in a raceway or chute, an inclined raceway or chute leading from near the center of said cylinder or hopper to a revolving feeding device, a revolving feeding device for receiving said tacks from the raceway one by one and for successively delivering said tacks to a short inclined chute or guide opening into a chamber below the driver, provided with means for supporting each tack until the driver is operated, and suitable driving mechanism, all arranged, combined, and operated substantially as described.

5. In a tacking-machine, the combination of the forked support *c*, converging side springs, *c*², and the lower support, *c*³, whereby a tack is centered as it is driven, substantially as described.

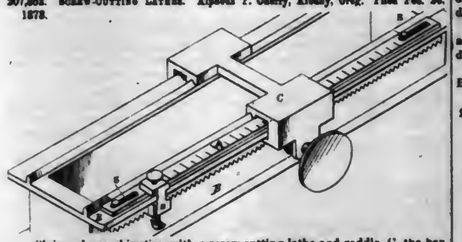
6. In a machine for receiving and driving tacks, a clearing device, *f*¹, intermittingly reciprocated in the upper part of an inclined chute or raceway, in freeing the same from tacks which have become lodged, substantially as and for the purpose described.

7. In a machine for feeding and driving loose tacks, the combination of the ratchet *c*⁴, pawl *c*⁵, sliding bar *c*⁶, spring *c*⁷, and operating-bar *c*⁸, all arranged to operate substantially as described.

8. The combination of the sliding bar *c*⁶, provided with the adjustable block *c*¹⁰, with the actuating-rod *c*⁹, provided with an incline, *c*¹¹, whereby the throw of the pawl is regulated, substantially as described.

9. In a machine for driving loose tacks, an index provided with the groove *c* and the notches *c*¹, substantially as and for the purposes described.

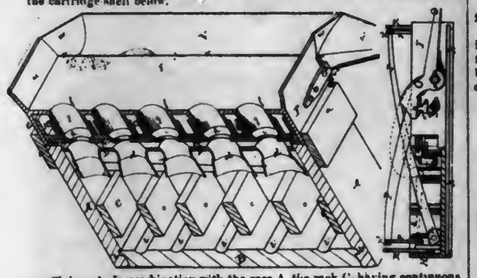
207,852. SCREW-CUTTING LATHES. Alpheus P. Cherry, Albany, Oreg. Filed Feb. 26, 1878.



Claim.—In combination with a screw-cutting lathe and saddle, C, the bar A, secured to the bed B by means of bolts passing through slots S, said bar being graduated, substantially as shown, and for the purpose herein described.

207,853. CARTRIDGE-LOADING MECHANISMS. Robert H. Dalzell, Elliott Township, Allegheny County, Pa. Filed Oct. 3, 1877.

Brief.—The telescopic measuring-tubes are adjusted to regulate the charge by means of a system of levers operated by a handle at the outside of the case. The hopper has a sliding movement, so as to open and close communication with the feed-openings through the plate on which the hopper rests, in order to allow the charge to be first measured, and then dropped into the cartridge-shell below.



Claim.—1. In combination with the case A, the rack C, having continuous guide-passages *c c*, of the length of a series of filling-tubes, as and for the purposes set forth.

2. In a cartridge-loading machine, the combination of the case A, wad-plate D, guide-rack C, and removable bottom plate, B, substantially as and for the purposes set forth.

3. The series of tubes *f*, arranged in the tube-case F, and having their bases tapered, as at *i*, substantially as and for the purposes set forth.

4. In a cartridge-loading machine, the combination of the power-levers P, cross-bar Q, lifting-levers R, and means for operating the same, substantially as and for the purposes set forth.

5. In cartridge-loading machines, the combination of the yoke M, provided with the arm *n*, power-levers P, cross-bar Q, and lifting-levers R, substantially as and for the purposes set forth.

6. In a cartridge-loading machine, the combination of the hand-lever O and yoke M with lever mechanism, substantially such as described, for raising or lowering the upper half, G, of the tube-case, as and for the purposes set forth.

7. The hand-lever O, pivoted to the case F, and provided with the leg *o*², and adjustably connected with the arm *n* thereby, substantially as and for the purpose set forth.

8. The combination of lever O, dog *o*², and cam S, substantially as and for the purpose set forth.

9. The combination of the tube-case F, raised walls *u u*', and returning-trough V, substantially as and for the purposes set forth.

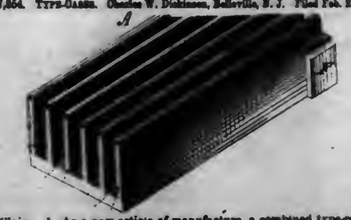
10. The combination of the tube-case F with a detachable returning-trough V, substantially as and for the purposes set forth.

11. The combination of the open slot *s* and closed slot *s*' upon the case F with the lugs *v*² *v*³ upon the trough, substantially as and for the purposes set forth.

12. In combination with the case F, the trough V, provided at one end with the funnel *v*¹ and with the lips *w w*, substantially as and for the purposes set forth.

13. In combination with the rack C, having continuous guide-passages *c c*, the continuous grooves *b*' *b*' in the part which supports the heads of the cartridges, substantially as set forth.

207,854. TYPE-CASES. Charles W. Dickinson, Belleville, N. J. Filed Feb. 2, 1878.

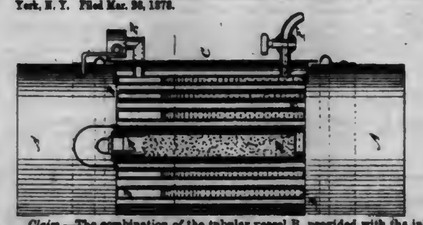


Claim.—1. As a new article of manufacture, a combined type-case formed of a sheet of bent or folded tin or equivalent material, substantially as described.

2. A combined type-case formed of bent or folded tin, and provided with supporting-tongues entering the folds of the tin from beneath, substantially as described.

3. A combined type-case formed of folded tin, A, having supporting-racks B and the perforated plate F, substantially as described.

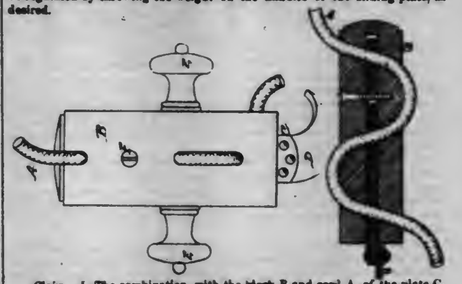
207,855. WATER-HEATERS FOR STOVE-PIPES. James Dunsmith and Samuel Crawford, New York, N. Y. Filed Mar. 26, 1878.



Claim.—The combination of the tubular vessel B, provided with the inlet-pipe E and a discharge-faucet, F, with the hinged section C of the notched length of stove-pipe A, substantially as herein shown and described.

207,856. FIRE-ESCAPES. Wright Dwyer, Brooklyn, N. Y. Filed June 5, 1878.

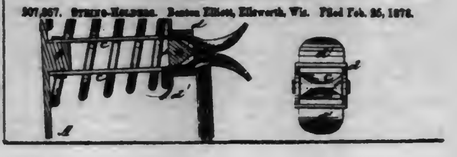
Brief.—A slotted block provided with handles, and having a plate sliding in the slot and a rope reeve through the block and plate. The strap or band for the person is attached to the lower end of the plate, and the friction can be regulated by throwing the weight on the handles or the sliding plate, as desired.



Claim.—1. The combination, with the block B and cord A, of the plate C, having the attaching-strap D or other device connected with it, and being movable in the block, with the cord reeve through it and the block, substantially as described.

2. The cord A, block B, handles E, plate C, and strap D, combined substantially as described.

207,857. STIRRUP-HANGERS. Benton Elliott, Elkworth, Wis. Filed Feb. 26, 1878.



Claim.—A string-holder consisting of a base-plate, A, the springs *c*, having convex ends, and a spring-acted sleeve, *d*, combined substantially as herein shown and described.

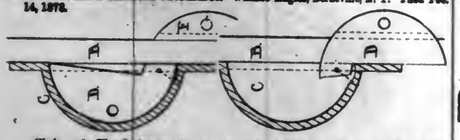
207,858. CAPS FOR CIGARS. Jacob T. Emerick, Chicago, Ill. Filed Apr. 23, 1878.



Claim.—1. A metallic cap or cover for the ends of cigars, provided with arms *a a*, having pointed hook ends *b b*, to penetrate the sides of the cigar and retain said cap in place, to prevent unwinding of the wrapper, &c.

2. A metallic cap or cover for the ends of cigars, formed of thin sheet metal, and provided with pointed barbs or hooks to penetrate and hold to the wrapper of the cigar, as set forth.

207,859. PERMUT-CAR-PORT FASTENINGS. Wallace Eagles, Barnesville, N. Y. Filed Feb. 14, 1878.



Claim.—1. The fastening device herein described, consisting of the casing C and semicircular drop-piece D, pivoted to the casing so as to either close flush within it or to project therefrom and bear upon the face of said casing, in combination with a sliding door, B, as and for the purpose herein specified.

2. The combination of the casing C, provided with the pivoted drop-piece D, with a sliding door, B, provided with a lug, F, when arranged to operate in the manner and for the purpose herein set forth.

207,860. COMPOUNDS FOR COATING TELEGRAPH-WIRE. Frederick Field, Upper Marsh, Lambeth, and Richard Talling, Lowtwhitiel, England. Filed Aug. 3, 1878.

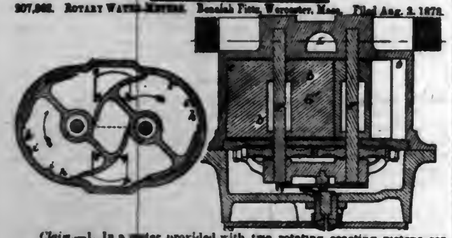
Claim.—The permanently flexible mechanical compound of india-rubber and ceocerite, or the residuum thereof, substantially as specified.

207,861. SUSPENSION-ARMS FOR SLEEPING-CAR BERTHS. John B. Fish, Grand Rapids, Mich. Filed July 10, 1878.



Claim.—The sliding sleeve or shield of the jointed arm of a sleeping-berth, provided with the springs *c*, as shown and described, for the purpose specified.

207,862. ROTARY WATER-METER. Beulah Fiske, Worcester, Mass. Filed Aug. 2, 1878.



Claim.—1. In a meter provided with two rotating coacting pistons connected by round gears, a cylinder or measuring-chamber provided with an eduction-opening, arranged at right angles to the plane of motion of the pistons, and so constructed as to project at one side for some distance on the inside of the path of their segmental rims, in the manner and for the purpose substantially as set forth.

2. In a meter provided with two rotating coacting pistons connected by round gears, a cylinder or measuring-chamber provided with an induction-opening, arranged at right angles to the plane of motion of the pistons, and so constructed as to project at one side for some distance on the inside of the path of their segmental rims, in the manner and for the purpose substantially as set forth.

3. In a meter provided with two rotating coacting pistons connected by round gears, a cylinder or measuring-chamber provided with an eduction and induction opening, arranged at right angles to the plane of motion of the pistons, and so constructed as to project at one side for some distance on the inside of the path of their segmental rims, in the manner and for the purpose substantially as set forth.

4. The combination, in a water-meter, with two coacting rotary pistons connected with round gears, of a cylinder or measuring-chamber provided with ribs *i* and recesses *h* at both ends, and with an induction and eduction opening arranged at right angles to the plane of motion of the pistons, said openings being so constructed as to extend at one side for some distance on the inside of the path of the segmental rims of said pistons, in the manner and for the purposes set forth.

5. The combination of the recesses P and Q with induction and eduction openings arranged at right angles to the plane of motion of the pistons of a rotary water-meter, substantially as and for the purposes set forth.

207,863. HORSE HAY-FORKS. Armenden Frank, Howell, Mich. Filed June 5, 1878.

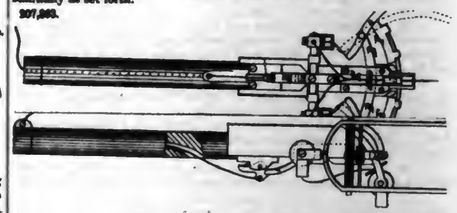
Claim.—1. The combination, in a hay-fork, of a handle having a spring-acted catch-piece and wedge-shaped quadrantal guide portion at the end with swinging and tilting fork-sections, having laterally connecting and guided sections for opening the fork, substantially as and for the purpose set forth.

2. In a hay-fork, the combination of the handle having a locking catch-piece, and of the laterally-connected and tilting fork-sections, with guide-pulleys and closing-ropes passing from the fork-sections over the pulleys and being connected to the main rope of the hay-fork, substantially as and for the purpose set forth.

3. The combination of the fulcrumed and tilting fork-sections, having a center-piece extending from the lateral cross-piece, with a spring catch-piece and operating-rope passing through the perforated handle for tilting the fork, substantially as set forth.

4. The combination of the swinging and tilting fork-sections, that are locked in closed position to the handle, with guide-pulleys for the branch and main ropes, and with a sliding cross-piece placed on main rope back of front pulley to take up heft of fork in forward motion to point of discharge, substantially as set forth.

207,863.

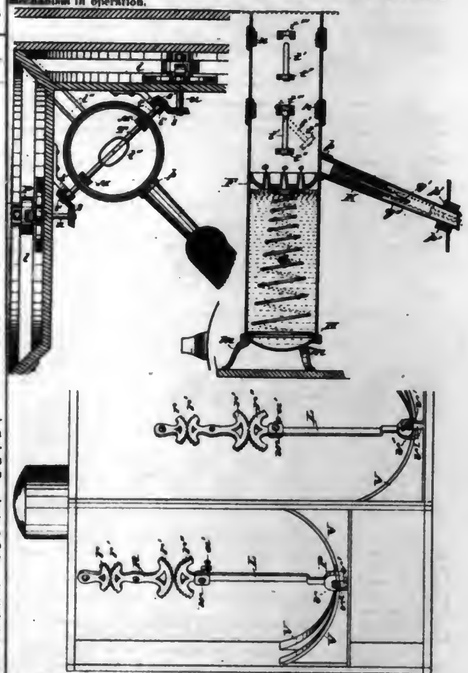


207,864. MEDICAL COMPOUNDS. William M. Green, Wartrace, Tenn. Filed July 24, 1878.

Claim.—A medical compound consisting of calycanthus-root, poke-root, silk-weed root, and whisky or gin; in about the proportions specified.

207,865. CAR-STOVES AND APPARATUS FOR EXTINGUISHING FIRE THEREIN. James P. Gyles, Chicago, Ill. Filed June 26, 1877.

Brief.—When the car is tipped over, a pendulum sets the gas-generating mechanism in operation.



Claim.—1. In a fire-extinguisher for railway-cars, the method herein described of causing the required emptying of an acid-receptacle at the proper moment when an accident occurs, which consists in having a pendulum arranged to act through suitable gearing upon said acid-receptacle in such manner as to disconnect the parts thereof when the car tips beyond a given degree in a certain direction, as set forth.

2. The method herein described for producing the above effects when the car tips beyond a given degree in any direction, which consists in having two pendulums swinging at right angles with each other, and arranged, as described, to act each upon a separate acid-receptacle, as set forth.

3. The extension-tube K within the connecting-tube, adapted to be extended into the fire-box beyond the terminus of the said connecting-tube by the pressure of the gas, as specified.

4. The whistle *q''*, attached to the extension-tube at its end, and so arranged as to be sounded by the action of the gas and drop off when the said tube is extended to its full limit, as set forth.

5. The acid-holder J, made in two parts, and held together by the rubber band *n*, substantially as and for the purpose specified.

6. The shaft T, with aperture *t'''* and crank-shaft *t' t''*, one holding the upper and the other the lower part of the acid-receptacle, and so arranged, by means of suitable gearing, as to be turned in opposite directions by the swinging of the pendulum, whereby the said parts of the acid-receptacle may be forced asunder at the proper time, as described.

7. The combination of the shafts T and *t*, crank *t'*, oval aperture *t'''*, spur-gearing M, bevel-gearing *s s'*, intermediate toothed gearing *r r' r''*, and pendulum-bar L, constructed and arranged to operate substantially as and for the purposes set forth.

8. The aperture *t'''* at the center of the shaft T, and the hinged band *t''* upon the crank *t'*, for holding the acid-receptacle, as set forth.

9. A pendulum for operating a fire-extinguisher in a railway-car, so constructed and arranged that it may, as a precautionary measure against the possible premature extinguishment of the fire, hang out of gear under ordinary conditions, and be thrown into gear by the tipping of the car beyond a given angle, as specified.

10. The combination of the curved planes V V, transverse recesses *v'*, having rounded upper edges *v''*, rollers *v*, with flange on one side, slot *a*, and spring-catch *a' a''*, by means of which the pendulum may hang out of gear under ordinary conditions, but be forced into gear and so retained when the car tips beyond a given degree, substantially as described.

11. The circular concave soda-receptacle F, provided on its inner surface with hollow upright cones *o o*, open at their tops, and also, through the receptacle, at their bottoms, substantially as described.

12. The combination of the soda-receptacle F, constructed substantially as described, and the spiral spring G, attached at its base to the disk H, as set forth.

13. The skeleton core Q in the hose-coupling, having its end adapted to fit for a short distance into the metallic core of the plug, whereby the said plug is forced into the interior of the cylinder as the coupling is screwed into place upon the bushing, thus permitting the escape of the gas and liquid, substantially as specified.

14. An automatic apparatus for generating carbonic-acid gas, coupled to a railway-stove in such manner as to be readily uncoupled and used as an ordinary fire-extinguisher with hose coupling, substantially as and for the purpose specified.

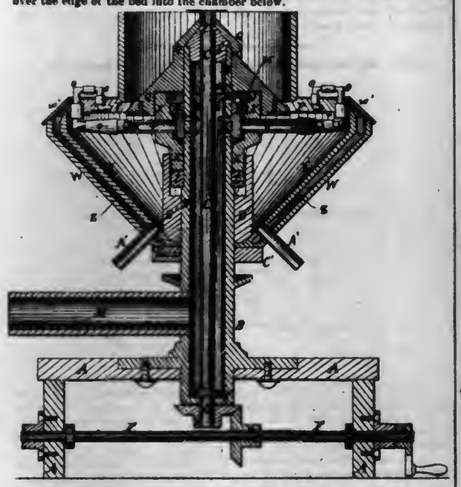
207,866. TOOLS FOR CUTTING OUT PATTERNS. David F. Hartford, Boston, Mass., assignor of one-half his right to Thomas T. Hartford, same place. Filed May 22, 1878.



Claim.—The tool above described, consisting of the stock *a*, knife-blade *b*, and swivel-pin *c*, the knife-blade being arranged, with relation to the swivel-pin, as shown, with its cutting-edge receding at an obtuse angle from the axis of the swivel-pin, for the purpose set forth.

207,867. ORE-SEPARATOR. Emory B. Hastings, Palmer, Mass. Filed July 18, 1878.

Brief.—Discharges a blast of air through a series of revolving pipes above and below the stationary perforated ore-bed. The blast is supplied through the hollow perforated shaft. The light worthless material is blown into the space between the two cones, while the heavy material passes through and over the edge of the bed into the chamber below.



Claim.—1. The combination of the hollow post B, provided with a pipe, M, and perforated in its upper part, the vertical shaft C, the gear wheels G H J, the collars I I$_1$, and the hollow cylinder K, provided with radial blast-pipes, substantially as herein shown and described.

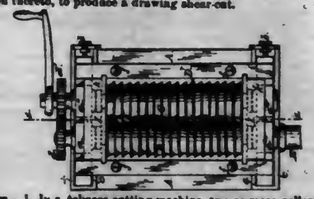
2. The combination of the feed-cone Q, the adjustable feed-cylinder V, and the ore-bed P with the hollow post B, provided with perforations, the bearing *b*^{1}, and the hollow cylinder K, substantially as herein shown and described.

3. The combination of the obtuse-angled or radially-projecting elbow-pipes N, provided with top slits, and the straight radial pipes O, having their outer parts bent upward, inward, downward, and inclined outward, with the hollow cylinder K and the ore-bed P, substantially as herein shown and described.

4. The combination of the outer inverted cone, W, provided with the inclined flange *w'*, the discharge-pipes Y, and the chutes Z, and the inner inverted cone, X, provided with the discharge-pipes A' and the chutes B', with the hollow post B, to receive the separated ore as it is blown from the ore-bed P, substantially as herein shown and described.

207,868. TOBACCO-CUTTING MACHINES. Charles Hemje, New York, N. Y. Filed Mar. 15, 1878.

Brief.—One of the rolls is set a little higher than the other, and at an inclination thereto, to produce a drawing shear-cut.



Claim.—1. In a tobacco-cutting machine, two or more rollers grooved so as to form cutting-edges, and having the journal-boxes arranged at different heights of bearings, in combination with scrapers F, constructed substantially as shown, and for the purpose described.

2. In a tobacco-cutting machine, the combination of spring-case E, spring *e*, disks *e' e*^{2}, and set-screw *e*^{3} with the grooved rollers B C and the scrapers F, arranged substantially as and for the purpose herein set forth.

3. The combination of the grooved rollers, geared together, with the scrapers F, spring-case E, and the journal-boxes, arranged at different heights of bearings, and their respective set-screws, substantially as shown and described.

4. In a tobacco-cutting machine, the combination of the grooved rollers B C, with collars *h* at each end, and the partition I, with flange *h*, for keeping the dust and sand from the journal-boxes, arranged substantially as and for the purpose specified.

5. A tobacco-cutting machine consisting of the frame A, rollers B C, scrapers F, spring-case E, journal-boxes *a a'*, and the feed-box G, all constructed and arranged as shown and herein described.

207,869. EAR-RING COVERS. Anthony Hamsin, New York, N. Y. Filed Aug. 5, 1878.

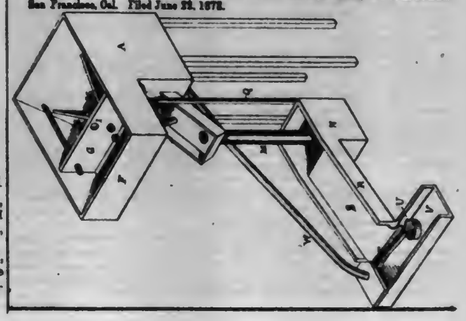


Claim.—1. A cover or shell for ear-rings having a bottom opening and slit extending therefrom, substantially as described, and for the purpose set forth.

2. A cover or shell for ear-rings having a bottom opening adapted to admit the diamond or other stone of the ear-ring, and a side slit extending therefrom and being enlarged at the upper end, substantially as specified.

3. A cover or shell for ear-rings having a bottom opening and extension-slit for inserting the diamond or other stone of the ring, in combination with an interior gravity drop-plate for closing the bottom opening, substantially as shown and described.

207,870. ORE WASHER AND AMALGAMATOR. John H. Hobart, Oakland, and John T. Boot San Francisco, Cal. Filed June 22, 1878.



Claim.—1. The receiving-tank A, with its inclined diaphragm or bottom B, having the discharge-openings E, in combination with the inclined perforated partitions H, substantially as and for the purpose herein described.

2. The receiving-tank A, with its inclined bottom and diaphragms H, and the discharge-opening E, in combination with the water-supply pipe X, arranged to discharge water at the bottom of the tank and near the gate, substantially as and for the purpose herein described.

3. The receiving and distributing tank A, to receive a body of sand with an excess of water, in combination with the tanks F and C and the overflow-passages I and J, by which said excess of water is withdrawn from the upper part of the receiving-tank and separated from the sand, substantially as and for the purpose herein described.

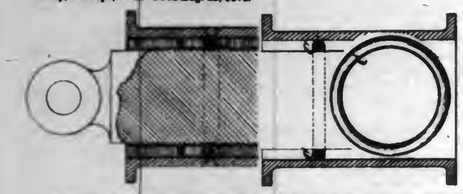
4. The vertical feed-pipe M, having its bottom serrated and immersed in a tank, N, of mercury, as shown, in combination with the screens P and the water-supply pipe Q, to discharge an excess of water into the material above the mercury, substantially as and for the purpose herein described.

5. The mercury-tank N, with its screens P and feed-pipe M from the spout L, as shown, in combination with the sluice R, with its plates S, and the water-supply pipe Q, the whole constructed to operate substantially as and for the purpose herein described.

6. The mercury-tank N, with its feed-pipe M, screens P, and water-supply pipe Q, in combination with the sluice R, with its amalgamated plates S, said plates being formed into a gutter or trough, T, substantially as and for the purpose herein described.

7. The tailings-sluice V, in combination with the sluice R, with its plates S and trough T, and the water-supply pipe W from the tank, substantially as and for the purpose herein described.

207,871. ELASTIC PACKINGS FOR PISTONS, &c. Jacob C. Horton, New York, and James Brady, Brooklyn, N. Y. Filed Aug. 22, 1878.



Claim.—The combination, with a cylinder, barrel, or box and a contained plunger, piston, or rod, of a rolling elastic packing-ring composed of a core of metal or fibrous material covered with india-rubber, and applied and operating substantially as specified.

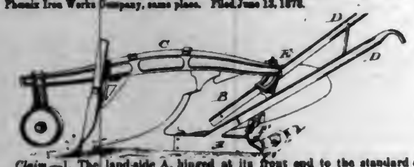
207,872. SHIRTS. Edward E. Inglis, Newtown, N. Y. Filed May 28, 1878.



Claim.—1. A shirt having bosoms *c* attached to a continuous overlapping neck-band and unattached at bottom, as shown and described, for the purpose specified.

2. A shirt having two overlapping bosoms attached to a continuous neck-band, but unattached at bottom, the bosoms being each provided with a front flap, *d*, as and for the purpose specified.

207,873. PLOWS. Frank X. Jennings, Ashtabula, Ohio, assignor of one-half his right to Phœnix Iron Works Company, same place. Filed June 13, 1878.



Claim.—1. The land-side A, hinged at its front end to the standard or short land-side, and having its rear end adjustable in or out, substantially as shown and described.

2. The combination of the hinged land-side A, bolt or spreader F, with oppositely-cut screw ends, and mold-board B, substantially as shown and described.

3. The sectional or double arc E, having the slots *a* and the arc-shaped slot *a'*, and a lug or ear upon each arc, whereby the parts are made laterally adjustable upon each other for spreading the plow-handles, substantially as shown and described.

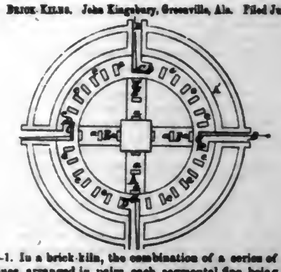
4. The combination of the hinged land-side A, mold-board B, handles D, double arc E, spreader F, and beam C, substantially as shown and described.

207,874. ANTI-ATTRITION COMPOUNDS. John Kimball, Boston, Mass. Filed July 30, 1878.

Brief.—The compound to be placed between the layers of sole-leather to prevent the creaking sound being produced.

Claim.—The described compound for preventing the squeaking of boot and shoe soles or other leather articles, consisting of finely-pulverized French chalk, soap-stone, or any other suitable base mixed with water alone or with a suitable paste to a consistence which will enable it to be deposited upon a level surface in a uniform manner, substantially as described.

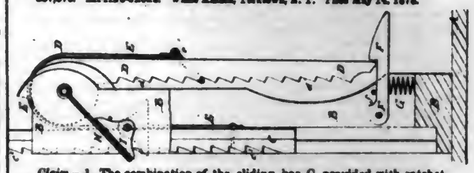
207,875. BRICK-KILNS. John Kingsbury, Greenville, Ala. Filed June 14, 1878.



Claim.—1. In a brick-kiln, the combination of a series of segmental flues and radial flues, arranged in pairs, each segmental flue being adapted to be thrown into connection with its radial flue by operating a damper, C, to close the radial flue beyond its junction with said segmental flue, substantially as and for the purpose set forth.

2. A circular brick-kiln having walls A A', provided with an intervening space filled with earth, as set forth.

207,876. LIFTING-JACKS. Willis Knifin, Yorktown, N. Y. Filed May 14, 1878.



Claim.—1. The combination of the sliding bar C, provided with ratchet-teeth upon its forward side, the pivoted lever D, provided with ratchet-teeth upon its lower side, the strap or chain E, provided with a loop or ring, *e'*, and the spring-catch F G with the slotted standard or frame B, provided with a base, A, substantially as herein shown and described.

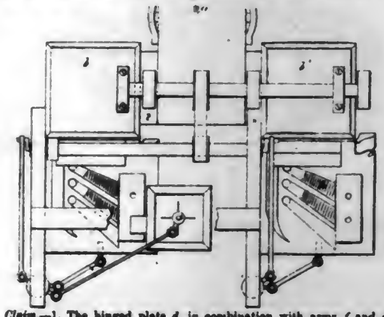
2. The combination of the pivoted loop H and the pivoted button I with the slotted standard or frame B, the toothed sliding bar C, the toothed lever D, and the strap or chain E, provided with the loop or ring *e'*, substantially as herein shown and described.

207,877. HOOKS. Frank Kortick, San Francisco, Cal. Filed July 30, 1878.



Claim.—The connecting-bar A, having the circular disk-head B, slotted or notched at B, in combination with the hook C, provided with a slotted or bifurcated shank, and pivoted to the center of the head, so that it may be moved past the notch to allow the link F to be introduced or removed, substantially as herein described.

207,878. ORE-SEPARATORS. Tristram S. Lewis, Saco, Me. Filed Mar. 30, 1878.



Claim.—1. The hinged plate *d*, in combination with arms *f* and *g* and screw-clamp, substantially as described.

2. A table or platform for the separation of ores, provided with a channel or groove, having at the bottom of its upper portion the slotted plate, substantially as described, for the purposes set forth.

3. In combination with a table for the separation of ores and device for oscillating the same, the loosely-suspended rapper *p*, substantially as shown.

207,879. ORE-SEPARATORS. Tristram S. Lewis, Saco, Me. Filed Feb. 2, 1878.

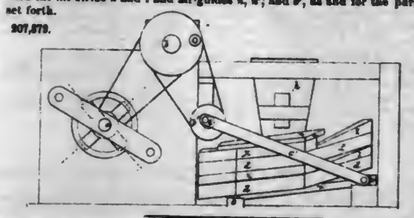
Claim.—1. In an inclined platform or table for the separation of ores, the grooves *g g'*, which are circular in shape at the upper end and gradually diminish in width and depth, substantially as shown, and for the purpose set forth.

2. In combination with a suitable air-blowing device, a table or platform having the grooves *g g'*, inclined and oscillated, as and for the purposes set forth.

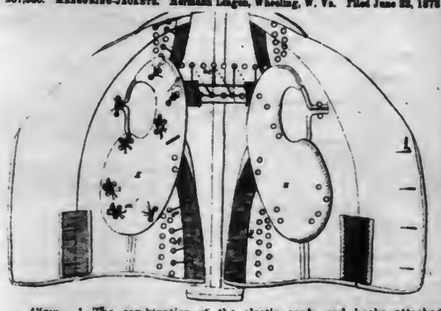
3. In combination with an air-blowing device, the inclined table having grooves *g g'*, air-stripe *k* and *l*, air-guides *o'*, *n*, and *n'*, substantially as and for the purposes set forth.

4. An inclined table having the grooves *g g'*, as described, in combination with the air-stripe *k* and *l* and air-guides *n*, *n'*, and *o'*, as and for the purposes set forth.

207,879.



207,880. MEASURING-JACKETS. Hermann Lingen, Wheeling, W. Va. Filed June 22, 1878.

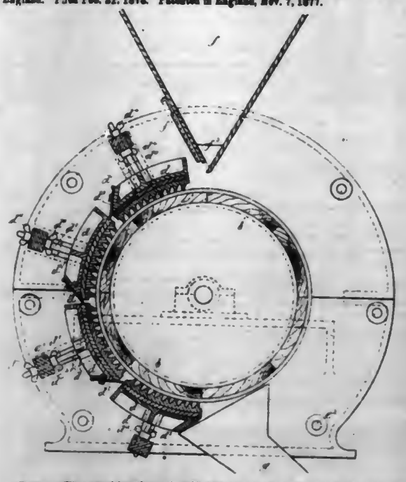


Claim.—1. The combination of the elastic cords and hooks attached thereto with the seamed measuring-jacket, having eyelets located adjacent to the seams, as shown and described.

2. The facings and flaps attached to the jacket at the elastic seams, substantially as and for the purposes set forth.

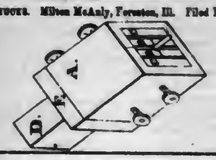
3. The pads *r*, connected to the measuring-garment, substantially as and for the purposes set forth.

207,881. ROCK-GLEANING APPARATUS. James M. C. Martin, Thornleigh, Upper Clapton, England. Filed Feb. 21, 1878. Patented in England, Nov. 7, 1877.



Claim.—The combination of cylinder or drum *b*, segment or segments *d*, and hopper *f*, provided with doors *f'* and inclined guides *f²*, and spout or chute *g*, in manner and for the purpose substantially as herein shown and described.

207,882. OUTCUTS. Milton McAnly, Forston, Ill. Filed Feb. 8, 1878.

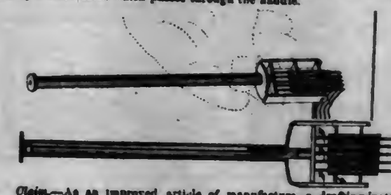


Claim.—1. In a chuck, the combination, with the collar A and grooved parallelograms B B, of the base-plate E, provided with the arms C C and cube D, substantially as and for the purposes herein shown and described.

2. The herein-described chuck, consisting of the collar A, base-plate E, provided with the fixed arms C C, and the adjustable grooved parallelograms B B, substantially as and for the purpose specified.

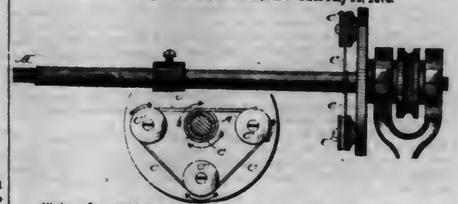
207,883. DRAFTING-PENCILS. Frederick W. McGee, Rutherford, N. J. Filed July 26, 1878.

Brief.—The leads are "fed out," as required, by pistons or push-rods operated by a screw-shaft which passes through the handle.



Claim.—As an improved article of manufacture, a drafting-instrument having a number of lead-carrying tubes and pistons arranged to engage therewith, and provided with means, substantially as described, for operating them simultaneously, substantially as herein described.

207,884. MACHINERY FOR THE MANUFACTURE OF PIPES AND TUBES FROM RUBBER, PAPER, CLOTH, &c. Henry J. Morrow, Cleveland, Ohio. Filed July 11, 1878.



Claim.—In combination with a mandrel or any form, A, upon which a tube, pipe, or cylinder of flexible material is to be shaped, an endless belt, C, and one or more pulleys, C', arranged to revolve around said mandrel or form A, substantially as shown.

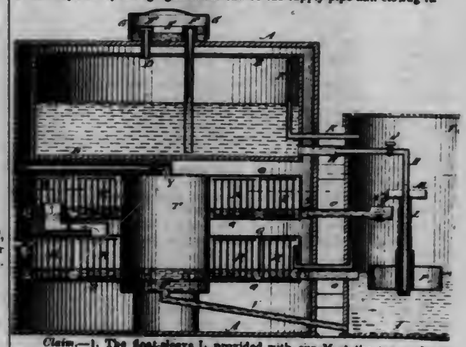
207,885. ROCK-DRILLING MACHINES. Aaron J. Marshon, Warsaw, Ind. Filed July 22, 1878.



Claim.—The combination, with the disk-wheel C and lifting-arm B, of the guide-plate E, substantially as shown and described, for the purpose specified.

207,886. CARBURETERS. Theodore Miner, Brooklyn, assignor to Alvin Walker, New York, N. Y. Filed May 28, 1878.

Brief.—Naphtha flows from the reservoir above through the supply-pipe and its sliding sleeve to the cup at the top of the latter, which discharges it into the trough communicating with the annular pipe in the upper carbureting-chamber. On reaching the level of the top of the cup N the naphtha overflows and fills the lower part of the supply-tank until the lower carbureting-chamber is supplied. The adjustable float on the sleeve regulates the height of the naphtha by rising against the end of the supply-pipe and closing it.



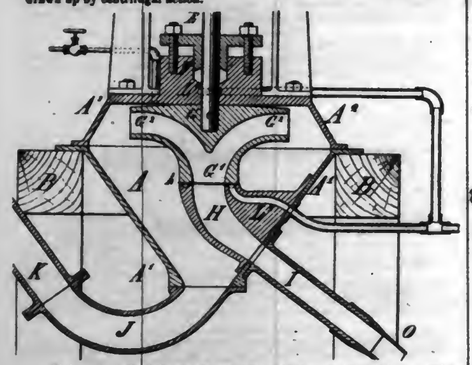
Claim.—1. The float-sleeve I, provided with cup M at the top, and combined with the feed-pipe H, as and for the purpose described.

2. The drum T, provided with a discharge-pipe, Y, extending between the chamber Q and reservoir B, as and for the purpose specified.

3. The combination of the ring-pipe S, provided with discharge-holes in its inner side, with the feed-pipe O and the outer circle of compartments of the carbureting chamber or chambers Q, substantially as herein shown and described.

207,887. DREDGING-PUMPS. Eugene Moran, San Francisco, Cal., assignor to American Mining and Dredging Company. Filed Mar. 7, 1878.

Brief.—To start the pump the suction-pipe and wheel G are filled with water. The wheel is then rapidly turned by the pulley P, and the water is drawn up by centrifugal action.

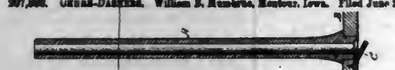


Claim.—1. A dredging-pump consisting of the rotating disk G, with its radiating passages G^1, and the suction-pipe H I O, said disk and suction-pipe being connected by a joint, in combination with a device for forcing clear water between the two faces of the joint, with the groove *h*, substantially as and for the purpose herein described.

2. The method of protecting moving joints which are exposed to wear from sand and foreign matter, consisting in forcing clear water between the faces of said joints at a higher pressure than that of the surrounding material, substantially as herein described.

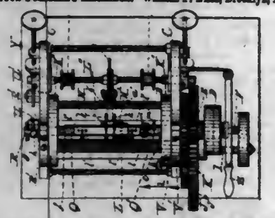
3. The combination of a centrifugal pump, G, with a suction-pipe, H I O, water-packed joint *h*, and hopper-shaped vessel A, the upper part of which has diverging sides A^2, said chamber having a discharge-pipe J K, the whole combined and arranged to operate substantially as and for the purpose herein described.

207,888. CHURN-DASHERS. William B. Mumbrue, Mentor, Iowa. Filed June 20, 1878.



Claim.—A churn-dasher constructed as described, and consisting of the hollow handle A, the dasher B, having the plane of its face at right angles to the handle, and the valve C, set flush with the face of the dasher, substantially as and for the purpose set forth.

207,889. BUTTON-POLISHING MACHINES. William F. Wise, Brooklyn, N. Y. Filed June 24, 1878.



Claim.—1. The button support or holder O, provided with a recess, *c*, and a concavity to receive the back of the button, substantially as shown and described.

2. The combination, with the button support or holder O, provided with flanges *d*, of pins *e*, substantially as shown and described.

3. The combination, with button support or holder O, of button-holding fingers *k k*, substantially as and for the purposes set forth.

4. The combination, with shaft Q, of the adjustable cross or horizontal bar S, substantially as and for the purposes set forth.

5. The combination, with shaft Q and guide-plate V, of springs *m* and *o*, substantially as and for the purposes set forth.

6. The combination, with shaft Q and hub L', of pipe-bearing R' and hub R, substantially as and for the purposes set forth.

7. The combination, with shaft Q, of button-holding finger or fingers *k*, dog U, and tooth or projection *h*, substantially as and for the purposes set forth.

8. The combination, in a button-polishing machine, of button-holding fingers *k*, secured to shaft Q and dogs U U', and tooth or projection *h*, substantially as and for the purposes set forth.

9. The combination, in a button-polishing machine, of the following elements, viz: first, a concave button-holder; second, button-holding fingers; and, third, mechanism for automatically operating the button-holding fingers to hold the button while it is passing to and from the polishing or buffing-wheels, and then discharging the same into the button-receptacle, substantially as shown and described.

207,890. FURNACES FOR ROASTING ORES. David J. O'Harra, Reno, Nev., assignor of one-half his right to J. F. Ferguson. Filed Apr. 10, 1878.

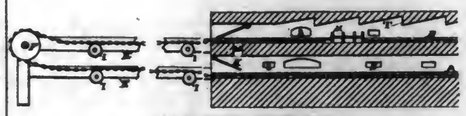
Claim.—1. The horizontal furnace with two hearths, A B, one above the other, and the connecting-opening M, in combination with the endless chain carrying the stirrers G, moving longitudinally, whereby the ore on the lower hearth is conducted in a direction opposite to the ore on the upper hearth after passing through opening M, substantially as set forth.

2. The furnace having the hearths A and B, situated one above the other, and provided with the single endless chain and stirrers operating in both chambers, in combination with the extension-frame E and pulley F, substantially as shown, and for the purpose herein described.

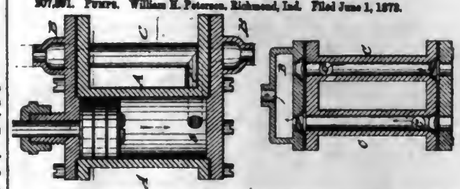
3. The peculiarly-constructed scrapers and stirrers, consisting of the triangular frames G, with plates H secured to their angularly meeting sides, substantially as herein described.

4. The hearths A B, provided with the longitudinal grooves N N', for containing the chain when its motion is stopped, as set forth.

207,890.

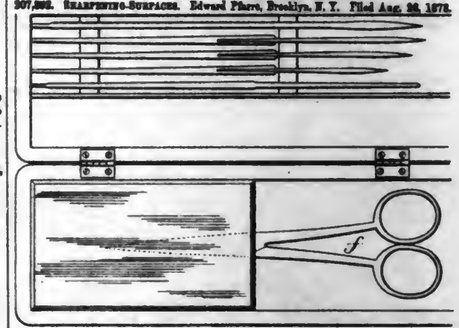


207,891. PUMPS. William H. Peterson, Richmond, Ind. Filed June 1, 1878.



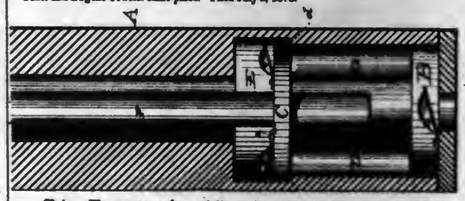
Claim.—A pump having chambers B B, connected by vertical pipes C to one another, the lower centrally with suction and the upper with force pipe, one of the pipes C being connected by channel C^1 with opening *b* of barrel A, and the other by a channel, C^2, with an opening, *b'*, below top valve, as shown and described.

207,892. SHARPENING-SURFACES. Edward Pfarr, Brooklyn, N. Y. Filed Aug. 26, 1878.



Claim.—The strop for cutlery and surgical instruments, composed of a surface of ground cork and linseed-oil, substantially as and for the purposes set forth.

207,893. PUMPS. John S. Putnam, Cherokee, Iowa, assignor of two-thirds his right to S. M. Pratt and Eugene Cowles, same place. Filed July 2, 1878.



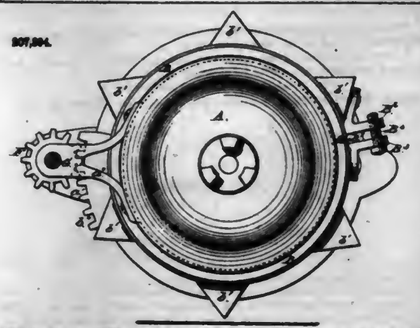
Claim.—The means, substantially as described, for raising water, consisting of a cylinder, A, with valve *b* and chamber B, partition C, with valves *c*, pendent pipes D, and the headless piston-rod F, operated in the manner as described.

207,894. WATER-WHEELS. Willis Read, Danbury, Conn. Filed Mar. 4, 1878.

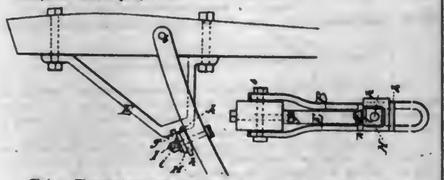
Claim.—1. The combination of the wheel D, having buckets *d*, with the case A, having openings *a*, annular gate B, cut at one side, with openings *b* and projecting chutes *b'*, all constructed and arranged as shown, and for the purpose described.

2. In a water-wheel, the annular adjustable gate B, cut at one side and provided with packing B^1, brackets B^2 B^3, and bolt or screw B^4, and teeth *b''*, in combination with the case A, wheel D, and pinion F, all constructed and arranged as shown, and for the purpose specified.

207,895.



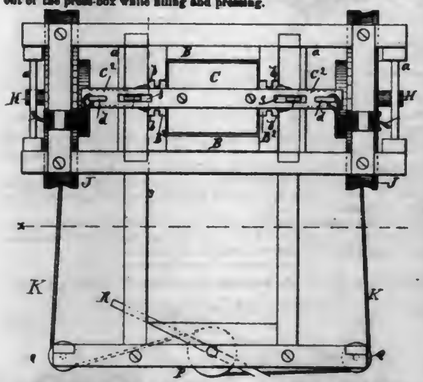
207,896. PLOWS. William G. Reid, Rock Hill, S. C., assignor to himself and James M. Ivy, same place. Filed July 23, 1878.



Claim.—The combination, with a plow-beam and a standard constructed as described, of the brace or stay provided with notches *g*, the block H, provided with the ribs or tongues *h*, and a fastening-bolt and nut, substantially as and for the purpose herein shown and set forth.

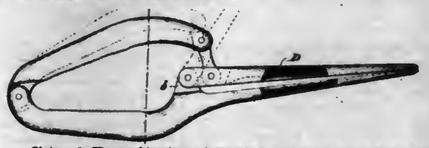
207,896. BALING-PRESSES. Willis D. Biddick, Belvidere, N. C. Filed July 15, 1878.

Brief.—Ropes unwind from the large wheels by winding on the capstan. The follower is secured, when sufficiently depressed, by links and catches. The slides covering the slots in the press-box prevent the hay from projecting out of the press-box while filling and pressing.



Claim.—In a press, the combination, with slotted box B *b* and slides B^3, of the follower C, having arms C^3, the ropes G K, vertical windlass P, shafts H, and wheels J, as shown and described, for the purpose specified.

207,897. NUT-CRACKERS. Charles F. Bitzel, Derry, Pa., assignor to C. B. Curtiss and J. B. Comer, Bridgeport, Conn. Filed Mar. 12, 1878.

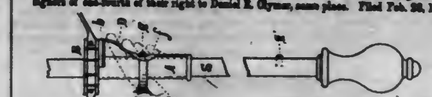


Claim.—1. The combination, substantially as hereinbefore set forth, of the fixed and movable jaws, jointed together at their outer ends, the rigid handle, and the jointed handle linked to the movable jaw.

2. The combination of the fixed curved jaw, its rigid handle provided with a lug, *b*, the inclined and curved movable jaw jointed at its outer end to the corresponding end of the fixed jaw, the pivoted handle fulcrumed to the lug on the rigid handle, and the link connecting the pivoted handle near its fulcrum with the inner end of the movable jaw, substantially as hereinbefore set forth.

3. The inclined nut-cracker jaws, pivoted together at their outer ends and diverging toward their inner ends, substantially as and for the purposes specified.

207,898. UMBRELLA-RUNNERS. Augustus Relland and John Rendel, Reading, Pa., assignors of one-fourth of their right to Daniel R. Clymer, same place. Filed Feb. 20, 1878.



Claim.—1. A runner, A, with a permanent rib-joint ring, B, re-enforced at *b* for a seating for the spring D, when provided with slots C C' for a short distance from each end, the termination of the slots forming abutments against which to lock the stop *g* or *g'* on the umbrella or parasol stick S, the rib-ring B being notched, so as to pass over the stop *g*.

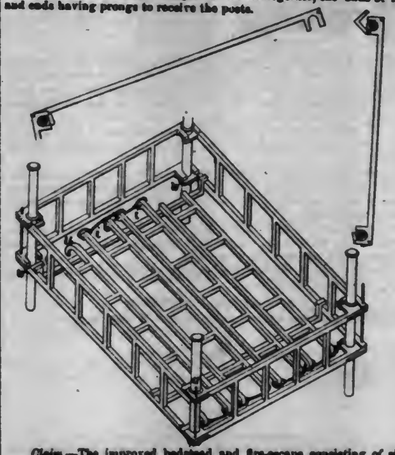
2. The spring D, with the bent bifurcated end *d*, the enlarged convex and corrugated portion *f*, and the holes *f' f''*, substantially as and for the purpose described.

3. The annular ring E, with its enlarged surface *e*, when attached to the spring D, for the purpose of raising the same clear of the stops *g* or *g'* by the pressure of the thumb or finger on the ring at *e*, as shown and described.

4. The combination of runner A, spring D, and ring E, when constructed and arranged as shown, and for the purpose described.

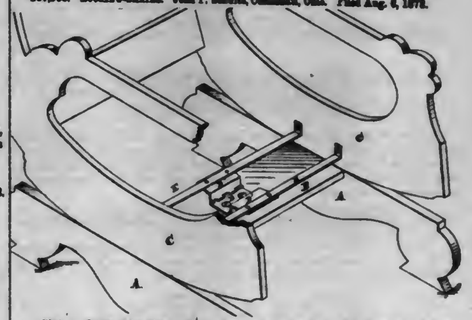
207,899. COMBINED BEDSTEAD AND FIRE-ESCAPE. Henry B. Schulze, Brooklyn, N. Y. Filed Feb. 21, 1878.

Brief.—A combined bedstead and fire-escape, in which the sides, ends, and bottom are ladder-sections hinged or linked together, the ends of the sides and ends having prongs to receive the posts.



Claim.—The improved bedstead and fire-escape consisting of sides and ends and bottom made of ladder-sections hinged or linked together, substantially as shown and described, said ends and sides being provided with prongs or recesses to receive the posts, as and for the purpose set forth.

207,900. BOOKING-GRAINS. John F. Schultz, Cincinnati, Ohio. Filed Aug. 6, 1878.



Claim.—In combination with a chair composed of feet A A, stretcher E, and rockers C C, the double hinge, composed of plate D and wings D' D', secured centrally upon brace B, and the springs E E, secured at their ends to rockers C C, and at their centers to the hinge-wings D' D', substantially as shown and described.

207,901. BALE-TIE BUCKLES. John L. Sheppard, Charleston, S. C. Filed June 8, 1878.

Claim.—1. A hinged bale-tie buckle the parts of which are permanently secured to each other, one of said parts consisting of a loop for the insertion of one end of the band, and the other part provided with a narrow slot between the end cross-bar and a depending lip formed on the knuckle of the buckle, substantially as set forth.

2. A hinged bale-tie buckle the parts of which are permanently secured to each other, the longer portion consisting of a loop, while the shorter portion

is provided with a narrow clamping-slot, substantially as set forth.

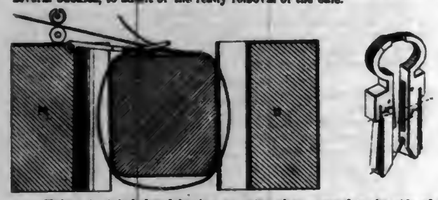
3. A hinged bale-tie buckle consisting of a loop having a swinging section hinged thereto by a knuckle receiving the cross-bar of the loop, said swinging section provided with a depending lip, the ends of which are formed solid with the sides of said section, substantially as set forth.

207,901.



207,902. BALE-BAND TIGHTENERS AND HANDS. John L. Sheppard, Charleston, S. C. Filed July 11, 1878.

Brief.—The band has an extra piece attached to one end, whereby strain may be exerted on one of said ends by a band-tightener, and the other end be secured to the buckle or tie without releasing the strain on the band. The buckle-stops are hinged, and may be swung outwardly from contact with the several buckles, to admit of the ready removal of the bale.



Claim.—1. A bale-band having an extra piece secured to the side of the band near one of its ends, whereby the band is provided with three ends, each of which is equal in width to any part of the band, substantially as set forth.

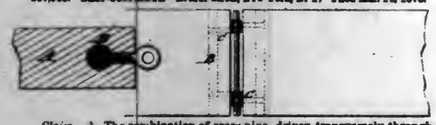
2. In a band-tightener, the bands, each having its free end provided with an extra piece or end, whereby strain may be exerted on one of said ends and the other end locked to the buckle without the employment of slack band or relaxing the strain on the band until the locking is accomplished, substantially as set forth.

3. The combination, with the plates of a cotton or other press, of buckle-stops hinged to the plates, said stops provided with open slots leading from their lower ends to the grooves between the rails on the face of the plates, substantially as set forth.

4. The combination, with the plates of a cotton or other press, of buckle-stops hinged to the front of the plates, said stops provided with jaws and spring-pressed hooks, substantially as set forth.

5. In a band-tightener, the combination, with hinged stops, of triple-ended bale-bands, substantially as set forth.

207,903. BELT-COUPLINGS. Arthur Sirois, New York, N. Y. Filed Mar. 14, 1878.



Claim.—1. The combination of cross-pins, driven transversely through the driving belt or cord near the meeting ends of the same, with coupling devices secured to socket-holes of the cross-pins, substantially as described.

2. The combination of cross-pins, driven transversely through the ends of driving belt or cord, with coupling-eyes screwed through the ends of the belt or cord into diametrical socket-holes of the pins, and being connected by a cross-pin or pintle, substantially as and for the purpose described.

207,904. DRAFT-TUG LEVER. Edan W. Smalley, Salem, Mass. Filed Mar. 18, 1878.



Claim.—The combination of the rod *d*, provided with the clamp *e*, and having a spiral spring, *f*, and the hook or ring *l*, attached to the cross-bolt *h*, having nuts *k*, with the tube *a*, provided with the caps *b* and *c*, the several parts being adapted for operation in connection with each other, substantially as and for the purpose specified.

207,905. HORSESHOES. Aaron W. Smith, Manchester, N. H., assignor of one-fourth of his right to Warren McFarland, Worcester, Mass. Filed May 7, 1877.

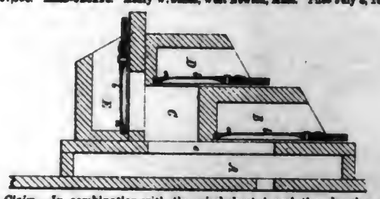
Brief.—The shoe is made in independent sections, and separately applied to the hoof, the toe-section being longer than the rest, and constructed with an outward slope or bevel to spread the gait in traveling.



Claim.—1. The independent shoe-sections B B', constructed and applied substantially as and for the purpose set forth.

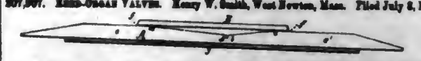
2. The construction of the toe-section B with a bevel, *b*, extending from the center outwardly, as and for the purpose set forth.

207,906. REED-ORGANS. Henry W. Smith, West Newton, Mass. Filed July 8, 1878.



Claim.—In combination with the wind-chest A and the chamber C, and the reed-ducts B and D, arranged therewith as shown, the reed-duct E, arranged horizontally below the said chamber C and the duct D, and to open upward into the former, all being substantially as represented.

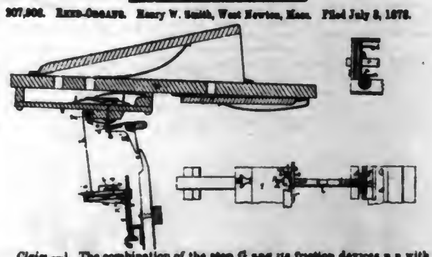
207,907. REED-ORGAN VALVES. Henry W. Smith, West Newton, Mass. Filed July 8, 1878.



Claim.—1. The improved reed-organ valve, substantially as described, as having its body A provided with the concavity *a b c*, arranged in it as described, and with the bridge B extending across the concavity and joined to the body by flexile or yielding abutments or connections *f f*, as set forth.

2. The valve-body A, provided with the concavity *a b c* and cross-slit *d*, and also with the bridge B extending across the concavity and united to the body by yielding abutments *f f*, as explained.

207,908. REED-ORGANS. Henry W. Smith, West Newton, Mass. Filed July 8, 1878.

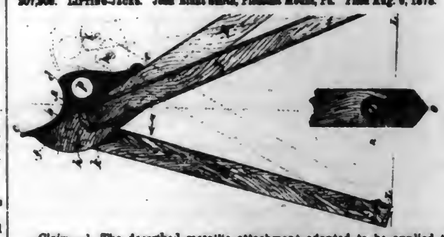


Claim.—1. The combination of the stop G and its friction devices *n p* with the vertical shaft *k*, its arms *i m*, and the cord *h*, connected with the stop-valve, all being arranged and applied substantially as set forth.

2. The combination of the slide-bar *r* and stud *s* with the shaft *k*, its arms *i m*, and the cord *h*, connected with the stop-valve, all being essentially as shown and described.

3. The combination of the slide-bar *r*, provided with the stud *s*, with the shaft *k*, its arms *i m*, and cord *h*, and with the stop G and its friction devices *n p*, all being arranged to operate essentially as explained.

207,909. LIFTING-JACKS. John Hunt Smith, Pleasant Mount, Pa. Filed Aug. 6, 1878.



Claim.—1. The described metallic attachment adapted to be applied to the lifting-lever of a lifting-jack, consisting in the cam-piece A, as made with a projecting upturned tip, *c*, to project beyond the lever, the curved bearing-surface *b*, the fixed screw *f* at one end, and a screw-hole at its other end.

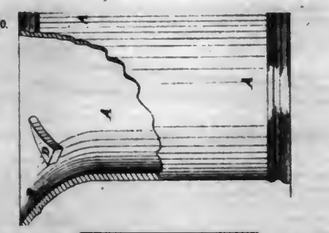
2. In combination with the legs G and J, of unequal length and pivoted to the lifting-lever B, as described, and jointly serving to support the lifted body, the cam-piece A, made and applied as set forth, the combination permitting the leverage to be shifted and the supported weight to be raised vertically, and also to be transferred from one side of the two fulcra to their other side, thus making the lever self-sustaining.

3. In combination with the legs of a lifting-jack, the shoes L, as made with the spur *s*, and also provided with a projection, *m*, entering the end of the leg, and fastened by a screw, *n*, entering the edge of the leg at right angles to such projection, as shown and described.

207,910. ICE-PITCHERS. Thomas C. Smith, Green Point, N. Y. Filed Aug. 8, 1878.

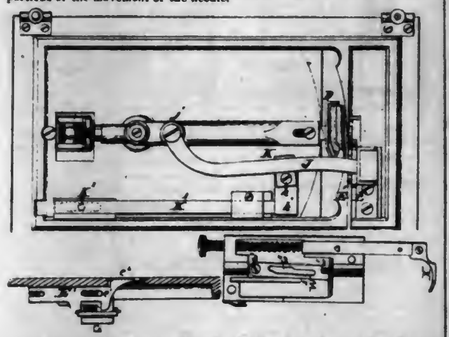
Claim.—An ice-pitcher made with a cylindrical body, A, and provided with two lugs or flanges, D, upon the inner surface of the lower part of its spout B, substantially as herein shown and described.

207,910.



207,911. SEWING-MACHINES. Roswell H. St. John, Springfield, Ohio. Filed Jan. 29, 1877.

Brief.—The feed-dog is composed of two parts or slides, pivoted at one end, one part being slotted to admit of an independent lateral movement, the parts having a vertical movement in common. They are operated by a lever attached to the shuttle-operating arm. This lever works through a sliding fulcrum, by means of which the length of the stitch is regulated. The head of the machine is provided with a spring operated to gripe the thread at certain portions of the movement of the needle.

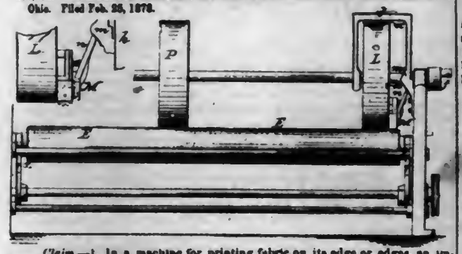


Claim.—1. The combination, with a feed-lever, J, of the feed mechanism consisting of two plates, E E', having a common pivot, *e*, the plate E being constructed with a shoulder, *s*', and the plate E', having independent horizontal movement, as and for the purpose set forth.

2. The combination, with the feed-plates E E', having a common pivot, and feed-lever J, fulcrumed to the shuttle-lever, of the feed-regulator, consisting of the fulcrum-plate K, having pivot *k* on one side of the lower recess, and the adjustable bar K', constructed with plate *k'*, as and for the purpose set forth.

3. The thread-check consisting of two clamp-plates, W W', adapted to compress the thread between them, in combination with an oscillating plate or arm, W', and a pin, *w'*, as and for the purpose set forth.

207,912. MACHINES FOR MEASURING AND MARKING FABRICS. Saml. C. Talcott, Ashtabula, Ohio. Filed Feb. 26, 1878.



Claim.—1. In a machine for printing fabric on its edge or edges, an impression-roller, in combination with two or more feed-wheels of like diameter, arranged parallel to each other on the same shaft, one wheel being provided on its outer edge with a variable stamping device, substantially as specified.

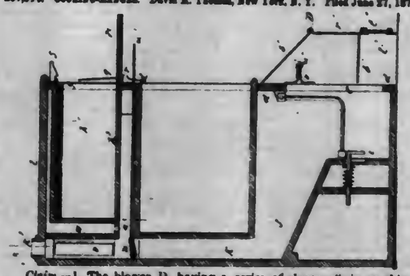
2. The wheel L, provided on its edge with a stamp, M, having the tripping-lever *s*, in combination with the stud *m*, adjustable wheel P, and roller E, substantially as specified.

207,913. FIRE-DRIERS. David H. Tate, South Point, Quebec, Canada. Filed June 17, 1878.



Claim.—A horizontally-revolving drier composed of a revolving wheel having two outer rings, which are divided into compartments, said compartments having reticulated bottom and top, the top portion being hinged or otherwise adapted to fold over in sections, and the whole wheel being supported from the bottom of a vertical spindle by radiating props, and from the side of the vertical spindle by radiating arms, substantially as set forth.

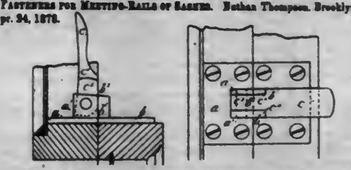
207,914. COOKING-RANGES. David H. Thomas, New York, N. Y. Filed June 27, 1878.



Claim.—1. The blower D, having a series of doors, *a''*, in combination with the open front *e* of the frame *d* and the broiler-supporting rod, as and for the purpose specified.

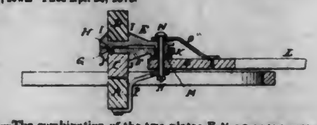
2. In a cooking-range, the flues *f h h' h'' i' i'' i'''*, dampers *a c*, and ovens *b b' b''*, combined and arranged substantially as herein shown and described.

207,915. FASTENERS FOR MEETING-RAILS OF SASHES. Nathan Thompson, Brooklyn, N. Y. Filed Apr. 24, 1878.



Claim.—The sash-fastener herein described, consisting of the plates *a b*, secured to the meeting-rails, said plates being provided with fixed rectangular studs or projections *a' b'*, impinging on each other throughout their length, and a locking-lever, *c*, pivoted at one end to the stud or studs on one meeting-rail, and adapted to draw said studs together and bind them in locking position, substantially as set forth.

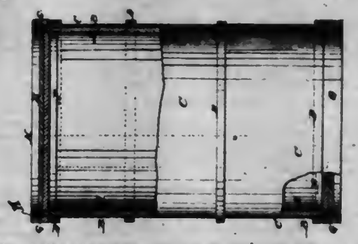
207,916. FRONT-GEAR COUPLINGS FOR WAGONS. Jos. W. Trudell and Louis S. Trudell, Bloor City, Iowa. Filed Apr. 26, 1878.



Claim.—The combination of the two plates E F, provided with the tongue and groove H G, the flanges I J, which form seats for the bolster D and the sand-board C, the tapering hub M and the straight socket K, the axle-brace P, the reach-brace O, and the king-bolt N, with each other, and with the bolster D, the sand-board C, the axle A, and the reach L, substantially as herein shown and described.

207,917. COMBINATION-BARRELS. Thomas C. Veale, New York, N. Y., assignor to Mary E. Veale, Jersey City, N. J. Filed Dec. 20, 1877.

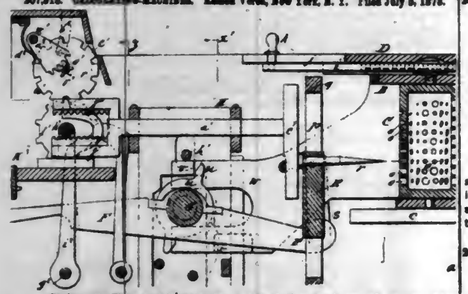
Brief.—The seams in the veneer are vertical, and are covered on the outside with strips of muslin cemented to the veneer. The veneer barrel is covered with glue, cement, &c., and then wrapped with paper which has been previously saturated or coated with cement, lacquer, or varnish. The heads are removable, and are secured to the barrel by clamps, nails, or other suitable fastenings.



Claim.—1. The rabbeted hoops D, in combination with the barrel A B C, to cover and protect the edges of the paper C, substantially as herein shown and described.

2. The cover or head formed of the two thicknesses E, of wood, of unequal diameter, the band G, and the chine band or hoop H, in combination with the end of the barrel A, the inner hoop, F, and the outer hoop, D, substantially as herein and shown described.

207,918. CALCULATING-MACHINES. Ramon Verea, New York, N. Y. Filed July 5, 1878.



Claim.—1. The combination, in a calculating-machine, of one or more perforated prisms or cylinders, C, and tapered pins *r*, substantially as and for the purpose herein shown and described.

2. The sliding bars *a'*, carrying racks *f'*, the wheels *u l*, tapering pins *r*, and perforated prisms C, in combination, substantially as herein shown and described.

3. The combination of the scales J, lever K, levers F, slide E, and tapering pins *r*, substantially as herein shown and described.

4. The combination of the lever i^3, the arm k^2, fork k^3, and mechanism for operating the same, the wheels r^1, having the pins f^1, and the wheels F, substantially as herein shown and described.

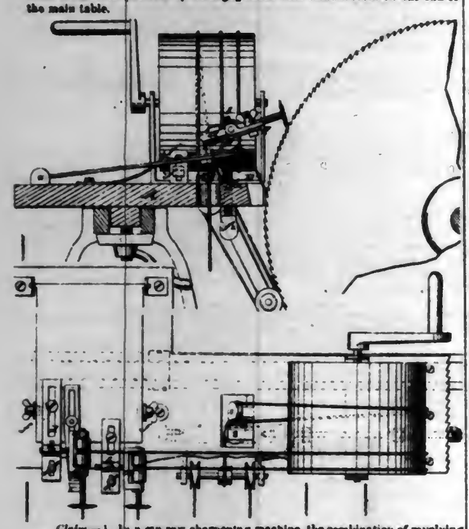
5. The bars *a'*, frame H, having the plate f'', and the cams d^1 e^1, in combination, substantially as herein shown and described.

6. The graduated plates *i*, carrying racks *h* and indexes *i*, the graduated table D, and the prisms C C', having pinions *f f'*, in combination, substantially as herein shown and described.

7. The combination of the toothed sectors a^2 and the mutilated pinions r' with the wheels r^1, substantially as herein shown and described.

207,919. GIN-SAW SHARPENERS. William H. Walsh, Fort Worth, Tex. Filed July 10, 1878.

Brief.—Rotary file operates between teeth. Grooved grinder operates on outer edges. Grinder is swung to and from the saw by a crank-shaft mounted in bearings, the bent end of which shaft enters a slot in the grinder-frame, and to the other end is rigidly attached a spring-pawl lever to rotate shaft, and to lock it in position by its engagement with ratchet-teeth on the end of the main table.



Claim.—1. In a gin-saw-sharpening machine, the combination of revolving adjustable file-disks and of a gin-saw adjusting spring, both applied to a swinging and spring-cushioned platform, with grooved revolving emery-wheels, that sharpen the outer edge of the teeth simultaneously with the cutting of the inside of the teeth by the file-disks, substantially as shown, and for the purpose specified.

2. In a gin-saw-sharpening machine, the combination of one or more revolving adjustable file-disks with a hinged spring-cushioned and treadle-acted platform, having a forward-extending spring to engage a tooth of one of the saws and turn the saw-cylinder, substantially as and for the purpose set forth.

3. The combination of the slotted side posts *f* and adjustable stops f^1 with the hinged spring-supported file-frame and the saw-feeding spring, as and for the purpose set forth.

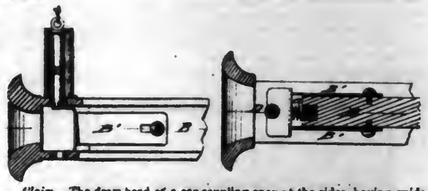
4. In a gin-saw-sharpening machine, the combination, with the supporting-table of a swinging frame, carrying grooved revolving emery-wheels, with a crank-shaft lever and locking mechanism, to throw the emery-wheels up to the work or down away from the same, substantially as set forth.

207,920. VEHICLE-AXLE LUBRICATORS. Eli Wayland and Lorbin M. Berry, Salisbury, Mo. Filed July 2, 1878.



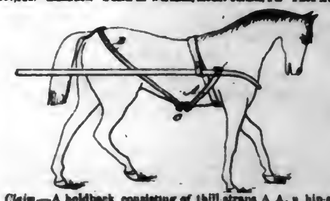
Claim.—The oil-box C, supplying lubricant to the thimble-skein B on axle-arm A, having the internal stude *d*, in combination with the cover D, provided in its sides or inclosed portion with opposite grooves *c*, having vertical passages *c'*, adapted as to size for the reception of the internal stud *d*, substantially as shown, and for the purpose specified.

207,921. CAR-COUPLINGS. Loren M. Webb and Edwin Tinker, Tascarora, N. Y. Filed July 8, 1878.



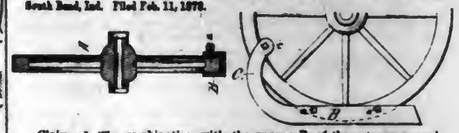
Claim.—The draw-head of a car-coupling open at the sides, having guide-block B, and provided with slotted slide-plates B', the latter connected in front by a plate, H, as shown and described, for the purpose specified.

207,922. HARness. Daniel E. Wertman, Mount Carmel, Pa. Filed Aug. 9, 1878.



Claim.—A boldback consisting of thill straps A A, a hip-strap, B, and a pad, C, arranged and connected with each other substantially in the manner and for the purpose herein described.

207,923. ADJUSTABLE SLEIGH-SHOE FOR WHEELED VEHICLES. William J. Westwood, South Bend, Ind. Filed Feb. 11, 1878.

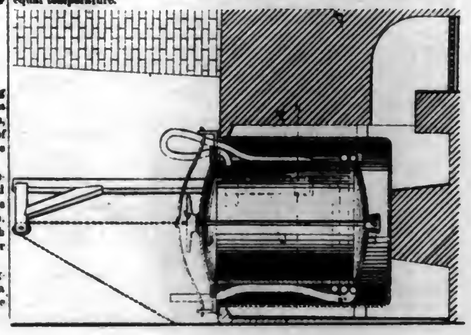


Claim.—1. The combination, with the runner B, of the set-screws *a a'*, constructed and arranged substantially as and for the purposes set forth.

2. The adjustable sleigh-shoe described, consisting of runner B, set-screws *a a'*, bifurcated end C, and bolt *b*, all constructed and arranged substantially as and for the purposes set forth.

207,924. APPARATUS AND PROCESSES FOR ANNEALING GLASS. Augustus Wayne, New York, N. Y. Filed Apr. 10, 1878.

Brief.—The process of annealing glass, consisting of first exposing the glass in a closed vessel to a certain temperature, then to the action of an annealing-liquid of nitrate of soda and nitrate of potash, (which will attain a high temperature,) and cooling it slowly under admission of heated air of equal temperature.

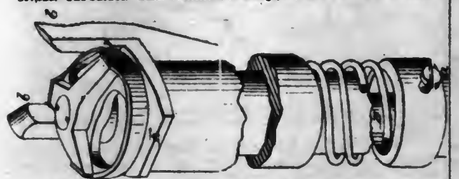


Claim.—1. An apparatus for annealing glass, consisting of an exterior heating-kettle and of an interior removable vessel with hermetically-sealing lid, bottom aperture, and closing devices, and with an exterior serpentine air-pipe, that communicates with the interior of the vessel and with the atmospheric air, substantially as and for the purpose described.

2. The combination, with an annealing-vessel having a hermetically-sealing lid and a hollow bottom aperture and closing device for the entrance and exit of the annealing-liquid, of an air-conducting pipe, that communicates with the interior of the vessel at the upper part and with the atmospheric air, and which is coiled around the lower part of the vessel, substantially as set forth.

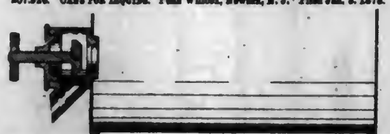
3. The process herein described of annealing glass, consisting, first, in exposing the glass in a closed vessel to a certain temperature, then exposing it to the action of an annealing-liquid of considerably higher temperature, and finally cooling it slowly under admission of heated air of equal temperature, substantially as and for the purpose set forth.

207,925. PEG-FLOATS. Amos Whittemore, Cambridgeport, Mass. Filed June 17, 1878.



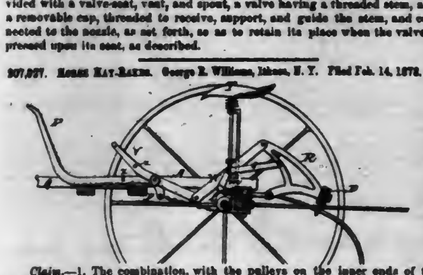
Claim.—In a peg-float, the horns *b b*, in combination with a yielding sleeve and peg-cutters, substantially as described, and for the purpose specified.

207,926. CANS FOR LIQUIDS. Penn Wilcox, Newark, N. J. Filed Jan. 3, 1878.



Claim.—In combination with a can, a permanently-attached nozzle provided with a valve-seat, vent, and spout, a valve having a threaded stem, and a removable cap, threaded to receive, support, and guide the stem, and connected to the nozzle, as set forth, so as to retain its place when the valve is pressed upon its seat, as described.

207,927. HORSE HAY-RAKES. George R. Williams, Ithaca, N. Y. Filed Feb. 14, 1878.



Claim.—1. The combination, with the pulleys on the inner ends of the divided axle, of the arms *m*, suitably connected with the rake-teeth, the friction-straps *l l*, the pivoted U-shaped levers *n*, connected to each other by a chain arranged to play freely through the hand-lever P, substantially as described, for the purpose specified.

2. In a horse hay-rake, the combination of a divided axle, friction-pulleys, friction-straps, adjusting-chain O, and lever P with the frame R, the pivoted connection *a m*, extending therefrom to each part of the axle, and the connecting-bar W, extending from said frame, between the two connections *a m*, to the rear end of the lever V, substantially as described.

3. The combination of the arms *m* with the friction-straps, the U-shaped levers, and the teeth of the rake, substantially as described, for the purpose specified.

4. The frame R on the rake-teeth and pressure bar, connected with the foot lever V by the rod W, and with the friction-straps *l* by the rod *s* and arms *m*, substantially as described.

207,928. SEWING-MACHINES. Richard G. Wood, Cincinnati, Ohio. Filed May 14, 1878.

Brief.—The frame is made of two ⊃-shaped castings united by ties, so as to form a wedge-shaped structure. The head containing the operative parts is located at the junction of the two upper limbs, and the work-supporting pedestal at the junction of the two lower. The machine is provided with a treadle whereby to raise the presser or feed foot for the introduction of the work. The work-supporting pedestal has a lifting-bar, which raises the work from the pedestal against the feed-foot as that descends to effect the feed, and both move together laterally the required distance for a single stitch.

Claim.—1. The combination of the two ⊃-shaped castings A A' B B', united by ties, as described, the head D, located at the junction of the upper limbs, A B, and the work-supporting pedestal, located at the junction of the lower limbs, A' B', substantially as and for the purposes set forth.

2. The combination of the lifting-bar V and mechanism, substantially as described, for actuating the same, and the feed-lever L and mechanism, substantially as described, for operating it, whereby as the feed-lever is lowered to move the material the said lifting-bar is operated to raise said material from the needle-plate against the feed-foot, and move therewith the required distance for a single stitch, as set forth.

3. The vertically-reciprocating and laterally-vibrating feed-bar I, provided with tag *l* and projecting lip *m*, in combination with rod N, spring *n*, lifter *q'*, and mechanism, substantially as herein described, for actuating said rod N and lifter *q'*, for the purposes described and set forth.

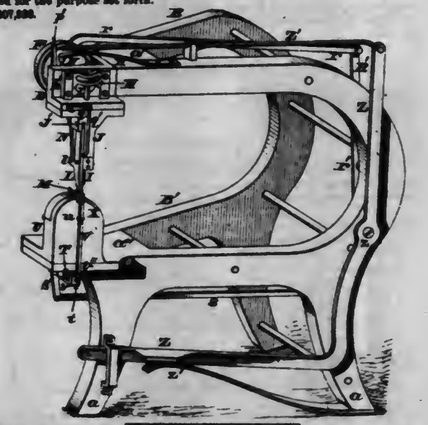
4. The vertically-reciprocating and laterally-vibrating feed-bar I, provided with tag *l*, in combination with rod N, spring *n*, finger O, rock-shaft *o*, arm O', driving-shaft E, cam *e*, tappet *e'*, arm F, spur *p*, rock-shaft Q, lever *q*, and lifter *q'*, substantially as herein described, and for the purpose set forth.

5. The combination of head D, provided with the neck J, grooved cheeks *f f'*, reciprocating fulcrum-block K, pivot *k*, feed-bar I, and mechanism, substantially as described, for actuating said feed-bar, for the purposes set forth.

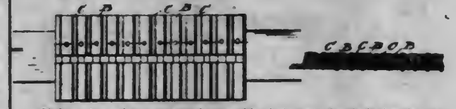
6. The combination of driving-shaft E, eccentric B, rod *r*, pivoted rocker R' *r'*, connection *o*, arm S, rock-shaft T, wrist *t*, and raising-bar V, substantially as herein described, and for the purpose set forth.

7. The combination of treadle Z, pivoted at *o*, rod R', spring *s'*, arm P *p'*, rock-shaft Q, lever *q*, lifter *q'*, and feed-bar I, substantially as herein described, and for the purpose set forth.

207,929. [illegible]

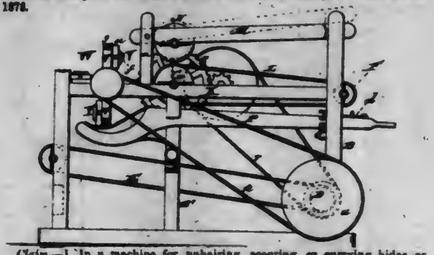


207,930. KNIVES FOR CLOTH-SHEARING MACHINES. Egbert Wesson, Springfield, Mass. Filed Feb. 12, 1878.



Claim.—As an improvement in movable chain-rests for cloth shearing machines, the combination of the wide teeth B, having concave grooves *b*, with the alternating cylindrical teeth C, substantially as and for the purpose herein shown and described.

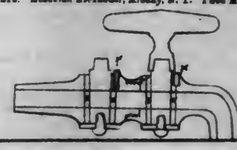
207,930. LEATHER-DRESSING MACHINES. Andrew J. Alexander, Gallipolis, Ohio, assignor of one-half his right to John Alexander and John W. Cubbage, same place. Filed June 22, 1878.



Claim.—1. In a machine for unhairing, scouring, or currying hides or skins, the combination of the working-wheel W, having radial arms V and attachable bars Y, with the rollers F and G and endless apron L and the pivoted levers M, carrying the roller N, constructed and operating substantially as and for the purposes set forth.

2. In a machine for unhairing, scouring, or currying hides, the combination of the pressure-frame P, pivoted to the uprights B' by wire springs, as shown, and having the latches *d*, adapted to engage with the pins *c*, with the working-wheel W, substantially as and for the purpose set forth.

207,931. FAUCETS. Hezekiah Alexander, Albany, N. Y. Filed Mar. 29, 1878.

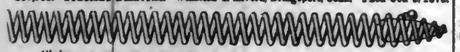


Claim.—1. A faucet consisting of two or more sections detachably fastened together, each being provided with a plug, substantially as and for the purposes set forth.

2. In a faucet, the combination of detachable sections, each having a plug, with detachable thimbles for said plugs, substantially as and for the purpose set forth.

3. In a faucet, the combination of detachable sections and plugs with thimble *c* and locking-pin *x*, applied to one or more of said plugs, substantially as set forth.

207,932. SURGICAL DILATORS. William I. Alvord, Bridgeport, Conn. Filed Oct. 4, 1878.



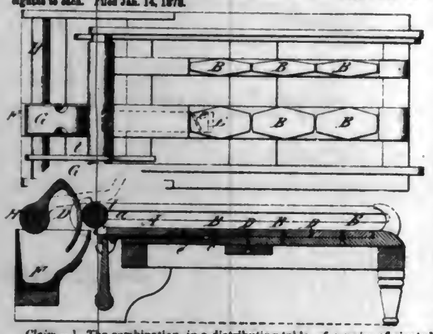
Claim.—A dilator consisting of a metal spiral having a tapering or rounded end, within which is arranged a solid filling-piece having a shape corresponding to the inner area of said rounded end, substantially as herein set forth.

207,933. BAGS AND SACKS. James Arkell, Canajoharie, N. Y. Filed July 2, 1878.



Claim.—A satchel-bottom bag having self-adhesive surfaces adapted to effect the sealing up of its mouth end, so as to form a top end corresponding in contour with such bottom, substantially as described and set forth.

207,934. INKING APPARATUS FOR PRINTING-MACHINES. Charles H. Bacon, Boston, assignor to Charles Brigham, Watertown, and C. C. Livermore, Cambridge, Mass., three-eighths to each. Filed Jan. 14, 1878.

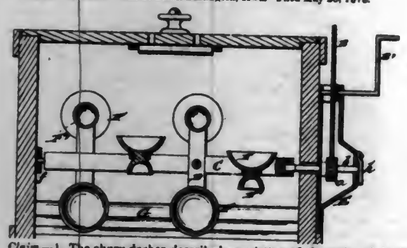


Claim.—1. The combination, in a distributing table, of a series of pivoted plates arranged on the same line, and mechanism, substantially as described, for vibrating the adjacent plates in contrary directions, as specified.

2. The series of pivoted plates B, arranged and constructed, as described, with edges which, when the plates are at the limit of their movement, coincide with the same straight line, as set forth.

3. The combination of the rock-shaft H, curved ink-feeder G, and fountain F, arranged and operating in respect to the distributing roller I as set forth.

207,935. CHURNS. Wm. F. Baird, Burlington, Iowa. Filed May 25, 1878.



Claim.—1. The churn-dasher described, consisting of the series of double cups, with mouths in opposite directions, secured by radial arms to a horizontal revolving shaft, adapted to enter the cream with one mouth down and one mouth up, as specified.

2. In a churn-dasher, the combination of two series of cups attached to arms upon a horizontal rotating shaft, and arranged so that one series of cups enter the cream with their mouths down and the other up, for the purposes set forth.

3. The combination, with the horizontally-rotating shaft C, of the arms D, arranged spirally thereon, and the double cups F F', all substantially as and for the purposes set forth.

4. The combination, with the operating cog-wheel B, of the frame E, shaft b, with pinion *a*, and latch *h*, substantially as and for the purposes set forth.

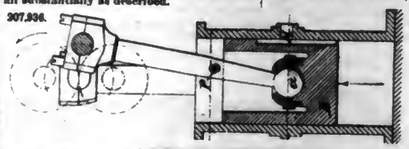
207,936. STEAM ENGINES AND PUMPS. John G. Baker, Philadelphia, Pa., assignor to the Enterprise Manufacturing Company, same place. Filed Aug. 13, 1878.

Claim.—1. A single-acting steam-engine in which are combined the following elements, namely: a cylinder closed at one end and open at the other, a hollow piston adapted to the cylinder, a crank-shaft and a frame for the same, a connecting-rod hinged to the piston at one end and connected to the crank at the other end, and a valve and ports for directing the steam to and exhausting it from the cylinder on one side only of the piston, all constructed and operating substantially as set forth.

2. The combination, in a single-acting engine or single-acting pump, of a cylinder having inlet and outlet passages, a connecting-rod embracing the crank at one end and at the other and attached to the interior of the hollow piston by a ball-and-socket joint, and devices whereby the said piston may be vibrated during its reciprocating movement, all substantially as described.

3. The combination of the piston and the connecting-rod attached to the piston by a ball-and-socket joint with the rod P, one arm, *m*, of which is arranged to slide and turn in a transverse opening in the said connecting-rod, the other arm, *m'*, being arranged to slide and turn in an orifice in the piston, all substantially as described.

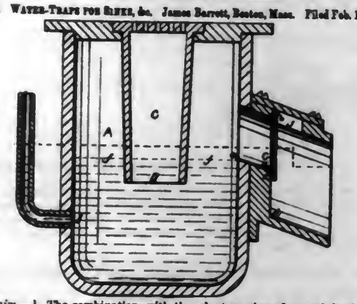
207,936.



207,937. REFINING BASE BULLION. Leopold Balbach, San Francisco, Cal. Filed Aug. 9 1878.

Claim.—The process herein described for refining gold and silver bullion, consisting in adding to the melted bullion galena, (or sulphuret of lead,) substantially as and for the purpose herein described.

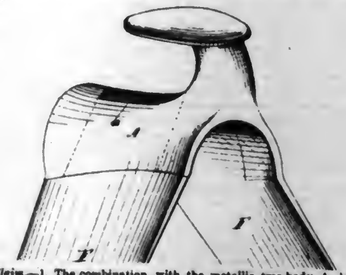
207,938. WATER-TRAPS FOR SEWER, &c. James Barrett, Boston, Mass. Filed Feb. 13, 1878.



Claim.—1. The combination, with the eduction-pipe of a wash-basin, sink, water-closet, or similar article, of an enlarged chamber, having an outlet-pipe leading from a point above the level of the connection of the chamber and said eduction-pipe, and a gravity flood-gate arranged in said outlet-pipe, and adapted to open outward only, substantially as and for the purpose set forth.

2. The combination, with the basin or chamber A, its outlet and inlet pipes, of the tube C, extending downward from the top of said chamber, and terminating below the water-line thereof, substantially as and for the purpose set forth.

207,939. TREES FOR RIDING-SADDLES. Benjamin F. Barrow, Jewett, Tex. Filed Aug. 7, 1878.



Claim.—1. The combination, with the metallic tree-body A, having the dovetailed sockets E, meeting and terminating in a slot, *a*, of the wooden side pieces, F, having the grain of the wood running longitudinally thereof, and provided with the dovetailed shanks to fit in said sockets, substantially as described.

2. The combination, with the metallic tree-body A, having in its top the slot *a*, of the side pieces, F, the upper ends of which meet in and extend through said slot, substantially as described.

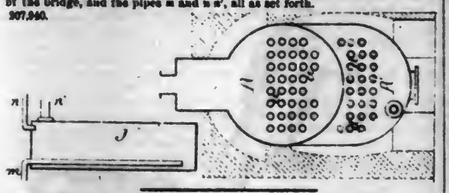
3. The combination, with the metallic tree-body A, having the dovetailed sockets E, meeting and terminating in a slot, *a*, of the side pieces, F, having the dovetailed shanks G fitting in said sockets and meeting in said slot, substantially as set forth.

207,940. STEAM-GENERATORS. William T. Bate, Conshohocken, Pa. Filed Nov. 7, 1877.

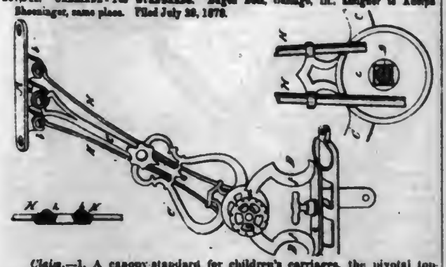
Claim.—1. The within-described steam-boiler, consisting of a cylindrical body, A, having a series of horizontal tubes, *a*, and a leg, A', communicating with the said body, and containing a series of horizontal tubes, in combination with a grate arranged below and independently of the body, and in front of the leg, all as set forth.

2. The combination of the leg A' of the boiler, the heater J, forming part of the bridge, and the pipes *m* and *n m'*, all as set forth.

207,940.



207,941. CARRIAGE-TOP STANDARDS. Eagen Bate, Chicago, Ill., assignor to Adolph Shoeninger, same place. Filed July 30, 1878.

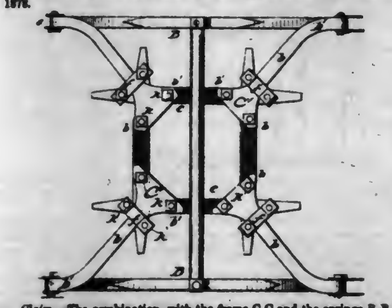


Claim.—1. A canopy-standard for children's carriages, the pivotal top-plate A in which being adjustably braced by rods H, coupled thereto, and held by the same clamping device, adjustably secured by the lower pivot, substantially in the manner set forth, for the purpose specified.

2. In combination with the standard C and foot-piece D, having pivot-plates *c* and *d*, and being adjustably secured together by bolt G and nut *g*, the plate A, pivoted to standard C, and adjustably braced therewith by rods H H, connected with said plate A, and held between the plates *c* and *b* by clamping said plates together, substantially in the manner and for the purpose set forth.

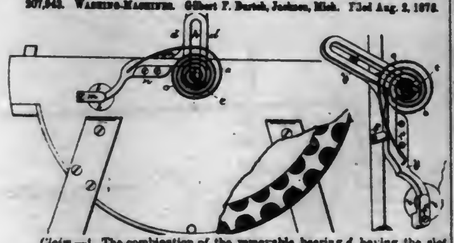
3. The herein-described top-standard for children's carriages, consisting of plate A, having rods H H, and being pivoted to standard C, having guide-loops *b* and plate *c*, of foot-piece D, having plate *d*, and of bolt G, having nut *g*, the same to be constructed, arranged, and operating substantially in the manner and for the purpose specified.

207,942. PLATFORM-GEARS FOR VEHICLES. James Bryant, Towanda, Pa. Filed June 13, 1878.



Claim.—The combination, with the frame C C and the springs B B, of the oblique springs *b b*, having the T-shaped ends C', and embraced by the strips *f f*, by which and fastenings *h h'* the springs *b* are fastened to the frame C, substantially as and for the purpose set forth.

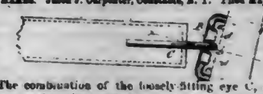
207,943. WASHING-MACHINES. Gilbert F. Burtch, Jackson, Mich. Filed Aug. 2, 1878.



Claim.—1. The combination of the removable bearing *d*, having the slot *b*, for the journal *a* of the washer to move in, support *a* and catches *m*, to hold the bearing in place, and the spring *o*, to keep the journal pressed downward, substantially as shown.

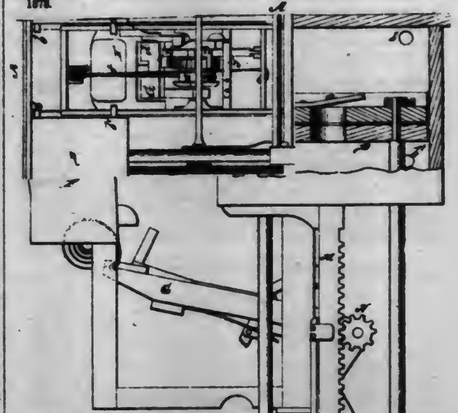
2. The combination of the slotted removable bearings *d*, catches *m*, plate *l*, having a stud for the bearing to catch upon, and the support *n*, substantially as described.

207,944. HAMES. Jason J. Carpenter, Constable, N. Y. Filed May 17, 1878.



Claim.—The combination of the loosely-fitting eye C, constructed with reduced sections, as described, with the staple B, provided with notches *a b c* and projections *d*, the latter being set diagonally and in such proximity to the side of the hame as to hold the eye securely at the desired height without the aid of detachable pieces, and yet allow it to slip from one notch to the other when held in proper position, substantially as described.

207,945. HYDRAULIC MOTORS. Wm. Baldwin Cass, Manchester, Ohio. Filed Aug. 24, 1878.



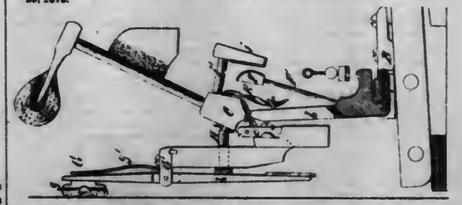
Claim.—1. In a motor for sewing-machines, one or more water-chambers attached to the machine-table and working over stationary plungers, in combination with the operator's seat and an engine, whereby the weight of the operator is caused to force the water to the engine to run the machine, as set forth.

2. The combination of the table A, water-chambers B B, with pipes *b b'*, rods *c c*, with followers D D, having valves *a a*, and seat F, substantially as and for the purpose set forth.

3. The combination, with the table chambers, followers, and seat, of the main lever G, pulley H, with cord or chain *f*, and the catches *d J*, substantially as and for the purpose specified.

4. The lever I, in combination with the dog I and catches *d J*, for the purpose herein set forth.

207,946. UPRIGHT PIANO-FORTE ACTIONS. Charles F. Chew, Bridgeport, Conn. Filed Mar. 20, 1878.



Claim.—1. A jack suitably mounted upon a key and provided with the stem F', carrying the padded head F and a hammer, the butt of which is provided with the laterally-projecting stem *f'*, carrying the padded arm *f*, in combination with the spring-damper G, arranged to operate substantially as described.

2. The hammer-butt C, centered in a butt-flange affixed to the lower portion of the front side of the butt-rail, and the pin H, loosely contained in a transverse hole in the butt-rail immediately opposite the hammer-butt, in combination with a damper, G, provided with the spring *g'*, and centered in a damper-flange affixed to the upper portion of the butt-rail, and projecting backwardly therefrom, arranged to operate substantially as described.

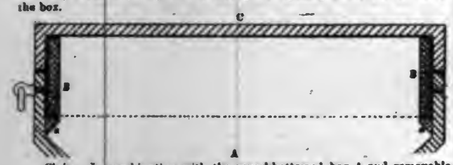
207,947. UPRIGHT PIANO-FORTE FRAMES. Charles F. Chew, Bridgeport, Conn. Filed Apr. 4, 1878.



Claim.—A cast-iron frame for upright pianos, provided with the flange *a*, projecting backwardly from the cross-bar A, in combination with the wrest-plank C, having the shoulders *c c' c'*, and secured to the iron frame by screws inserted through the frame from its front side, constructed and arranged to operate substantially as shown and described.

207,948. ASH-SIFTERS. Frank S. Clarkson, Baltimore County, assignor to Frank B. Sloan, Baltimore, Md. Filed Aug. 13, 1878.

Brief.—The tray may be slid through an opening in the end or side of the box.



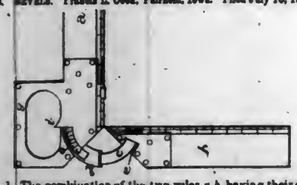
Claim.—In combination with the round-bottomed box A and removable lid C, the removable sifting-tray B, supported within said box upon strips *s*, and extending above the upper edges of the box, thus forming a guide for the lid, substantially as set forth.

207,949. REMOVABLE FASTENINGS. Frank S. Clarkson, Baltimore County, assignor to Richard Cromwell and Frank B. Sloan, Baltimore, Md. Filed Feb. 4, 1878.



Claim.—The socket-iron A, constructed as shown and described, and having plain parallel sides *a*, and the rounded end *c* at a right angle to the faces, and the rounded end *d* at an obtuse angle to the face *b*, as specified.

207,950. BEVELS. Francis L. Cook, Fairfield, Iowa. Filed July 10, 1878.



Claim.—1. The combination of the two rules *a b*, having their ends beveled in the same direction, curved guide *c*, forming half a circle, extension *d*, and recess *e'*, there being an opening, *e*, through the end of the rule *a*, so that the number of degrees on the guide *c* may be seen, substantially as shown.

2. The combination of the two rules *a b*, slide *c*, extension *g*, and point *i*, substantially as set forth.

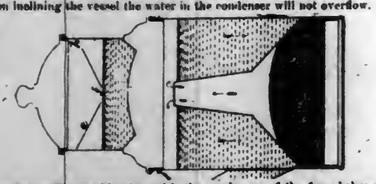
207,951. HORSE-DETACHERS. William G. Cummins, Cookville, Tenn. Filed Aug. 16, 1877.



Claim.—The combination, with the single tree A, having eyebolts *d d* and end bolts *f f*, constructed as described, of the rod *b*, having trace hooks *b' b''* and spiral springs *c c*, all constructed and combined to operate substantially as and for the purpose herein shown and set forth.

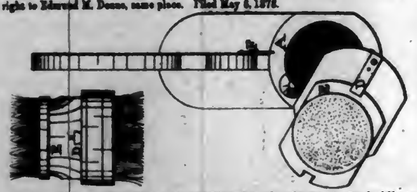
207,952. COFFEE-POTS. John M. Davis, Raleigh, N. C. Filed Feb. 13, 1878.

Brief.—A condenser for coffee-pots constructed, as described, so that upon inclining the vessel the water in the condenser will not overflow.



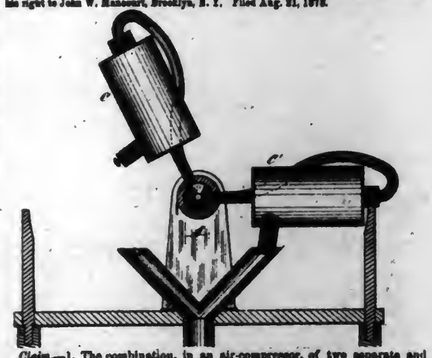
Claim.—The combination, with the condenser, of the funnel-shaped plate *c*, having central opening, *f*, and side opening, *b*, as shown and described.

207,953. BLACKING-BRUSHES. Ellis O. Dunn, Rochester, N. Y., assignor of one-half his right to Edward M. Dunn, same place. Filed May 6, 1878.



Claim.—The construction and combination of a frame, A, for holding a box of blacking, covered by a swinging cover, with strip D, fitting groove in tip B, all held in place by catch F, substantially as described.

207,954. AIR-COMPRESSORS. Willard D. Dunscomb, Washington, D. C., assignor of one-half his right to John W. Mancourt, Brooklyn, N. Y. Filed Aug. 21, 1878.



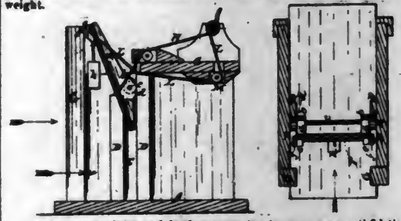
Claim.—1. The combination, in an air-compressor, of two separate and independent receivers, connected by air and water pipes with a hollow sleeve, and a hollow axle, having suitable inlet-ports, and upon which the sleeve turns, whereby, when water is admitted under pressure, the receivers will alternately receive water and discharge air, substantially as set forth.

2. In an air-compressor, the combination, with the rocking receivers, of the stationary water-pipes, provided with the bar for opening the valves, substantially as shown and described.

3. The combination of receivers C C', hollow sleeve B, hollow axle E, provided with inlet *e* and outlet *e'*, the valves, and the air-pipes, the whole being arranged to operate substantially as shown and described.

207,955. SLUICE AND FLOOD GATES. B. B. Downs, Eau Claire, Wis. Filed July 27, 1878.

Brief.—The gate has ears on its rear side, through which passes a shaft just below the center, having journaled at its end friction-wheels, which run up and down between two perpendicular pieces on the sides of the sluice. On the front upper edge of the gate is another shaft bearing rollers, which press against posts placed a little farther up the sluice than the first posts, to allow the gate to tilt through a small angle. A rope for lifting is fastened below the center of the gate, whence it passes over a pulley to a winch, thence under a pulley and through the top center of the gate, where it is attached to a heavy weight.

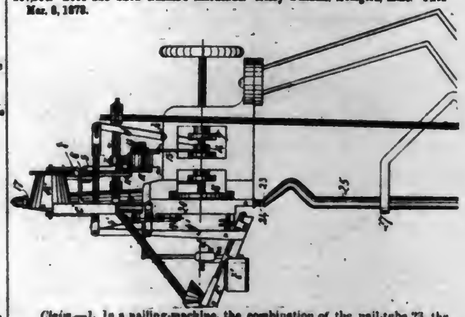


Claim.—1. A sluice and flood gate moving in ways upon anti-friction rolls, and adapted to swing on a line below its center, substantially as and for the purposes described.

2. The gate F, having rolls *d d* at its pivotal point, and rolls *f f* at its top, in combination with the guideways E and posts or guides D D, substantially as described, whereby said gate assumes an angular position when rising and when opened, as set forth.

3. In a sluice or flood way, the gate F, provided with cheek-beams *a a*, pivot-rolls *d d* below its center and near its base, and rolls *f f* on its opposite side at the top, in combination with guideways E, posts G G, and a raising and a lowering cord or chain, H and I, substantially as and for the purpose described.

207,956. BOOT AND SHOE NAILING MACHINES. Henry Denham, Abington, Mass. Filed Mar. 6, 1878.



Claim.—1. In a nailing-machine, the combination of the nail-tube 23, the driver 17, and the inclined ways *c c'*, capable of a forward and back as well as a lateral motion, as and for the purpose set forth.

2. In combination with the inclined railways *c c'*, as described, the nail catchers *f f'*, for the purpose specified.

3. In combination with the inclined railways *c c'* in a nailing-machine, the lever 1, for the purpose of moving said railways laterally in one direction, and the spring 4, for moving them automatically back, and intermediate connecting mechanism, for the purpose herein stated.

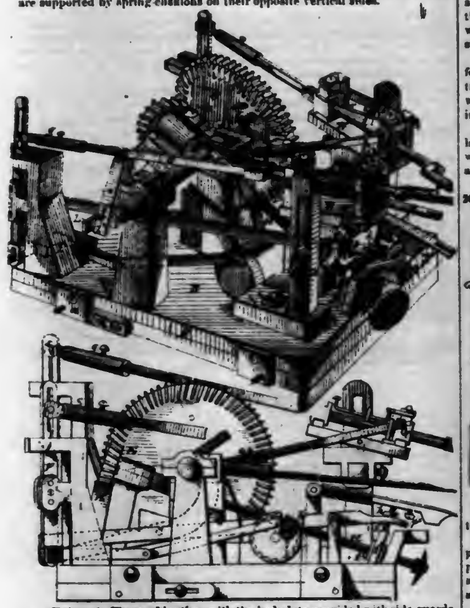
4. In combination with the inclined railways *c c'*, the rest 22 22, as and for the purpose set forth.

5. The combination of the driver 17, nail-tube 23, and the horn 25, having in its upper end a cup-shaped concavity, 26, as and for the purpose set forth.

6. In a nailing-machine, a horn, 25, having in its upper end a cup-shaped concavity, 26, as and for the purpose set forth.

207,957. GUM-SAW-FILING MACHINES. Albert S. Eastham, Navasota, Tex. Filed Feb. 6, 1878.

Brief.—The circular file has a jointed arbor, and automatically lowered out of contact with the saw, to permit the feed and successive filing of the teeth. The reciprocating files are moved sidewise from contact with the saw by reciprocating wedges, which move the file-carriage against the tension of springs, which press the files against the saw-teeth while filing. The file-rods are supported by spring-cushions on their opposite vertical sides.



Claim.—1. The combination, with the bed-plate provided with side-guards, of the way-plank formed with the front downwardly-projecting cross-piece, said way-plank being provided with the stop-piece, which is adapted to adjustably determine the forward movement of the bed-plate thereon, substantially as set forth.

2. The combination, with the lever-wedges, which act to laterally withdraw the forward file-rod boxes, of the eccentric-head, which is intermittently actuated in a forward and return movement by cams formed on the main driving-shaft, substantially as set forth.

3. The combination, with the file-rod boxes, urged laterally outward by suitable spring-pressure, of the lever-wedges, formed with oblique or beveled ends, and the intermittently-acting eccentric-head which actuates said lever-wedges, substantially as set forth.

4. The combination, with the cam-shaft and eccentric-head, of the saw-feeding device and the lever-wedges, the same being adapted so that the latter shall operate to laterally withdraw the reciprocating files from the saw prior to the forward movement of the saw feeding device, substantially as set forth.

5. The combination, with the lever-wedges and the saw-feeding device, of the intermediate connections with the actuating eccentric-head, said connections being adapted to admit of longitudinal adjustment of the lever-wedges and saw-feeder, substantially as set forth.

6. The combination, with the lower supporting-block, of the centrally-pivoted frame which supports the file-rod boxes, said frame provided with a through vertical slot in its main longitudinal body, in which the segmental pivotal formation of said block works, said supporting-block and pivoted frame being provided with the adjusting-plates and clamping mechanism on both sides of their pivotal connection, substantially as set forth.

7. The combination, with the main driving-shaft having cams formed thereon, of the head-block, which partially embraces the shaft and carries the two lever-wedges, which latter operate to move the file-rod boxes inward, said head-block being intermittently actuated forward by the engagement of the shaft-cams with counter-cams formed on its sides, substantially as set forth.

8. The combination, with the front file-rod boxes, of the lever-wedges, which engage therewith and operate to throw the said boxes inwardly, substantially as set forth.

9. The combination, with the front file-rod boxes, which are urged outwardly by spring mechanism, of the lever-wedges, which are adapted to intermittently engage with and force the spring-pressed boxes inwardly, substantially as set forth.

10. The combination, with the intermittently-reciprocating lever-wedges, of the guides secured to the frames of the file-rod boxes and suitable mechanism for engagement with said boxes, substantially as set forth.

11. The combination, with the intermittently-reciprocating lever-wedges and the bifurcated guides in which the same work, of the engaging devices secured to the respective inner sides of the front file-rod boxes, substantially as set forth.

12. The combination, with the saw-feeding hand and lever-wedges, of the head-block which carries the same, and is adapted by suitable means to be intermittently reciprocated forward and back, substantially as set forth.

13. The combination, with the head-block, which carries the saw-feeding hand and lever-wedges, of the shaft adapted by cam-engagement therewith to actuate the same forward, and a spring which returns the head-block to its former position, substantially as set forth.

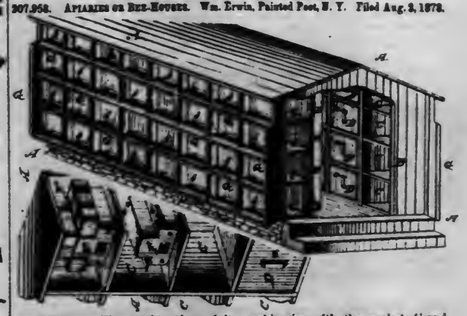
14. The combination, with the head-block, which partially embraces the cam-driving shaft and carries both the saw-feeding hand and lever-wedges, of the spring-bar, which has free bearing against its front side, and is adapted to return the said block to its former position upon release from the forward cam section, substantially as set forth.

15. The combination, with the head-block, which has sliding bearing upon a suitable support, and carries both the saw-feeding hand and lever-wedges, of the driving-shaft, provided with forwardly-actuating cams, which latter engage with counter cams formed on said head-block, and the spring return-bar, substantially as set forth.

16. The combination, with the recessed head-block, which carries the saw-feeding hand and is formed with a vertical slot in its lower longitudinal central body, of the shaft formed with a cam adapted to engage with the rear wall of said slot in case the spring return-bar fails to operate the head-block in its intermittent rear reciprocating movement, substantially as set forth.

17. The combination, with the head-block, which carries the saw-feeding hand and lever-wedges, and is made as described, of the driving-shaft formed with both the forwardly-actuating cams and the rear return-cam, substantially as set forth.

207,958. APIARIES OR BEE-HOUSES. Wm. Erwin, Painted Post, N. Y. Filed Aug. 2, 1878.



Claim.—1. The wooden pieces *d*, in combination with the pockets C and the hives placed therein, substantially as and for the purposes herein set forth.

2. The bee-house A, constructed as described, with tiers of disconnected pockets C, having separate doors and bee-entrances, hives F, placed in the pockets, exterior pockets G, corresponding with the interior pockets C, and notched pieces *d*, placed opposite the bee-entrance in each interior pocket, all substantially as and for the purposes herein set forth.

207,959. SPRING BED-BOTTOMS. Allen R. Folch, Columbus, Ohio, assignor of one-half his right to Andrew Gruner, same place. Filed Aug. 1, 1878.



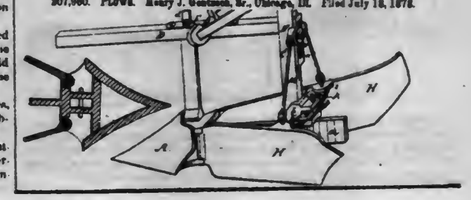
Claim.—1. The combination, with a bed-bottom composed of spring-slats, of the spring formed of riveted leaves, curved and staggered, substantially as and for the purpose stated.

2. The combination, with the spring-slat of a bed-bottom and its spring of riveted leaves, of the socket secured to the slat, for receiving and holding the riveted ends of said spring.

3. The combination, with the spring-slats of a bed and the riveted leaf-spring, of the brace-rods connecting the slats and crossing each other at their spring-connecting end, whereby they resist the straightening of the slats by the closing of the spring-leaves and form a positive truss, as stated.

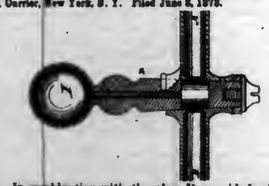
4. As a new manufacture, a slat for bed-bottoms provided with means for attachment to the cross-bar, and having the following springing device, to wit: riveted staggered spring-leaves in a socket at the truss-point, in combination with connecting brace-rods or strut-pieces crossing each other at the spring-connecting point.

207,960. PLOWS. Henry J. Gentsch, Sr., Chicago, Ill. Filed July 18, 1878.



Claim.—The double share A and the standard C, supported on a rearward extension of such share, in combination with the mold-boards H, pivoted to the share and adjustably connected to the said standard by the lapping perforated bars K, secured in the casting L, and the brace-rods M, attached at their upper ends to the slotted plate N, vertically adjustable on the standard, constructed and arranged substantially as described and shown.

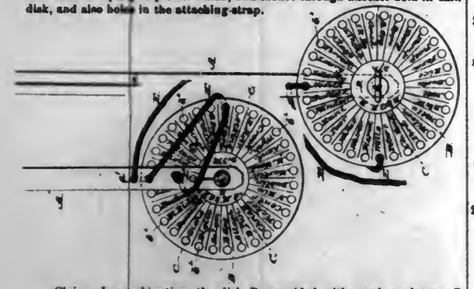
207,961. FAUCETS AND COCKS. Robert F. Gillis, Brooklyn, assignor of one-half his right to Wm. D. Currier, New York, N. Y. Filed June 5, 1878.



Claim.—In combination with the plug D, provided with the port *c*, constructed substantially as described, the pipes A and B and the air-chamber I, as and for the purpose set forth.

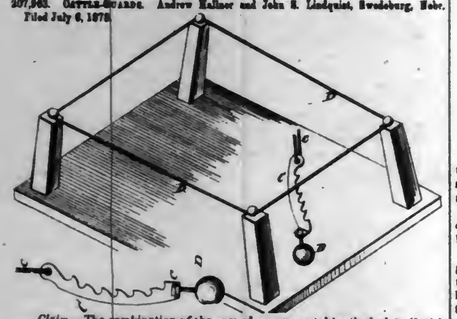
207,962. BAGGAGE-CHECKS. William S. Guy, Holloway Court-House, Va. Filed June 18, 1878.

Brief.—The station at which the baggage was received, and also that at which it is to be delivered, are denoted by first passing the cord E through a hole near the periphery of the disk, and thence through another hole in said disk, and also holes in the attaching-strap.



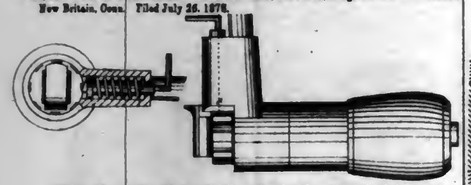
Claim.—In combination, the disk B, provided with words or letters C, perforations b^2, and stud b^1, the strap A, having the attaching-slot, slot *a*, and perforations *a'*, and the cord E, secured to the strap, all constructed and operating substantially as and for the purposes set forth.

207,963. CATTLE-GUARDS. Andrew Hallner and John S. Lindquist, Swedesburg, Nebr. Filed July 6, 1878.



Claim.—The combination of the curved or segmental toothed plate C with weight or anchor D, and rope, strap, or chain *c*, substantially as and for the purpose specified.

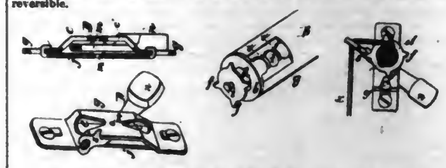
207,964. RATCHET BIT-STOCKS. Hubert C. Hart, Unionville, assignor to P. & F. Corbin, New Britain, Conn. Filed July 26, 1878.



Claim.—In a ratchet-brace, the brace-head and ratchet-wheel, in combination with a single reversible and spring-actuated pawl, adapted to reciprocate longitudinally, and also to rotate one-half of a revolution, and present its bevel and holding face to the ratchet-wheel, either as a right-hand or a left-hand pawl, substantially as described, and for the purpose specified.

207,965. CURTAIN-ROLLER AND BRACKET. Isaac T. Higham, Philadelphia, Pa., assignor of one-half his right to Howard H. Higham, same place. Filed Mar. 21, 1878.

Brief.—The journal of the curtain-roller is let down into a socket of the bracket. Hung below this socket in the bracket, and moving eccentrically with respect to the roller, is a lever, weighted at the lower end, and provided at the other end with a lug for engaging with prongs on the hub of the roller, and a loop for the passage of the cord. By pulling on the cord the lug is disengaged, and the curtain raised or lowered. The hub is fastened to the roller by two arms fitting in ledges, and held in place by staples. The bracket is reversible.



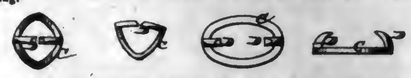
Claim.—1. The combination of the roller B, the hub *d*, and the prongs *f*, the lever D hung eccentrically in respect to the roller, and having the weighted end *a*, eye *w*, and lug *e*, and the plate *g*, forming a bearing for the lever, and having two openings, *e e'*, one above and the other below the pivot of the lever, all substantially as set forth.

2. The combination of the lever D and its spindle *m* with the plate *g* and the rear plate, *j*, secured to said plate *g*, all substantially as set forth.

3. The combination of the roller B, having ledges *g*, with the plate *h*, its arms *i*, having recessed edges, and the tacks or staples *v*, as specified.

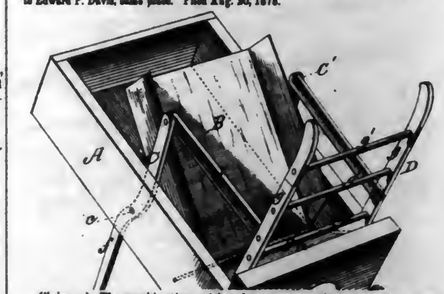
207,966. SNOUT-RINGS. Andrew L. Hill, Decatur, Ill., assignor of one-half his right to Felix B. Tait and George B. Brott, same place. Filed Aug. 30, 1878.

Brief.—The device, when applied to the animal's snout, forms a double ring.



Claim.—The snout-ring C, formed with an oval base, and having the two tangs D D curved inwardly from the periphery of the base-ring, substantially as and for the purpose set forth.

207,967. FILE-HOLDERS. Richard Hudson, Washington, D. C., assignor of one-half his right to Edward P. Davis, same place. Filed Aug. 30, 1878.

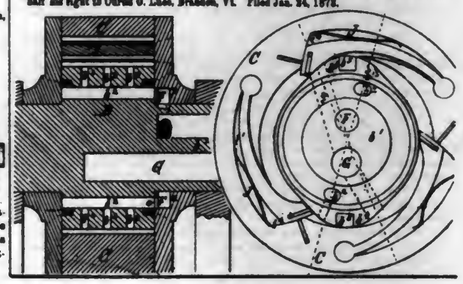


Claim.—1. The combination, with a drawer, A, having a vibrating receptacle, B, arranged therein, of a vibrating frame at the bottom of the drawer supporting said receptacle, a handle-frame, D, vibrating in the said drawer, and the pivotal rods *r*, substantially as specified.

2. The combination, with the drawer A and the connected frames C, C', *d*, and D, the latter pivoted to its front end, of a receptacle, B, arranged between said frames and hinged to the drawer, substantially as specified.

3. The combination, with the drawer A, having slots *b* and longitudinal grooves *c c*, of the levers C C', having bend *d'*, extending through said slots and connected by a brace, *d*, the receptacle B, supported by said brace and hinged to the front portion of the drawer, a frame, D, hinged to the front of the drawer aforesaid, and pivotal rods connecting said frames, substantially as specified.

207,968. ROTARY ENGINES. John Jardine, Glasgow, Scotland, Great Britain, assignor of one-half his right to Curtis O. Lees, Brandon, Vt. Filed Jan. 24, 1878.

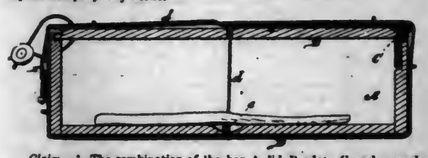


Claim.—1. In a rotary engine, a stationary piston having two abutments, and supply and exhaust ports b^1 b^2 *g* on opposite sides of each abutment, and exhaust and supply passages F G *f* in one of its trunnions, in combination with a revolving cylinder having three swinging abutments and a rotary steam cut-off with three steam-ports, *e*, in range with the supply-passages b^2 and ports b^3, substantially as herinbefore set forth.

2. In a rotary engine, the combination of the piston B, having ports b^1 b^2 and passages F F^1 *f*, and the revolving steam-chamber, having ports *e*, substantially as set forth.

207,969. EXPRESS-BOXES. Hiram H. Kingsbury, Olney, Ill. Filed Aug. 10, 1878.

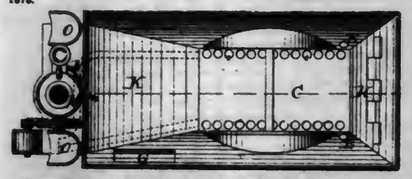
Brief.—The band may be made of paper, leather, cloth, or any other suitable material, and is intended to have such notices, &c., printed thereon as the express company may desire.



Claim.—1. The combination of the box A, lid B, plate C, and a cord or wire, *d*, having one end fastened inside the box, then passing through the lid and through the plate C and front edge of the lid, and the other end fastened by a seal on the outside of the box, substantially as set forth.

2. The combination of the box A, lid B, plate C, band D, cord or wire *d*, perforated pin *s*, and seal F, all constructed and arranged substantially as and for the purpose herein set forth.

207,970. SNOW-MELTING MACHINES. Samuel M. Lederer, New York, N. Y. Filed Aug. 8, 1878.



Claim.—1. The combination, in a snow-melting machine, of a receptacle for receiving snow and ice, a furnace arranged in or under the bottom of the apparatus, the sides of the furnace being lined with water-jackets D D, kept full by the melting snow and ice in the receiver, and blast-fan for causing a draft in the furnace, substantially in the manner and for the purpose set forth.

2. The combination, in a machine for melting snow and ice, of a receiver having an inclined bottom and provided with discharge-nozzles E, furnace for heating the receiver, blast-fan for supplying air to the furnace, and an engine for working the blast-fan, said engine being actuated by steam produced by the heat of the furnace which heats the receiver, substantially as described.

207,971. WASHING-MACHINES. Webster Lynch, Union Mills, Ind. Filed June 24, 1878.



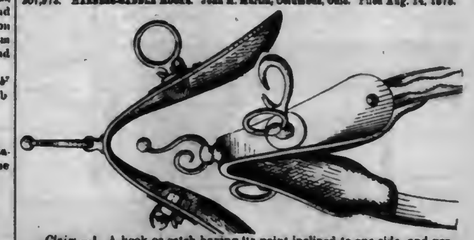
Claim.—The combination, with the receptacle A, having a serrated bottom of less width than said receptacle, of the ways D D' for the roller-carrying arms, and forming a water passage or channel, E, substantially as and for the purpose set forth.

207,972. REVERBERATING FURNACES. Wm. Mann, Hewcastle, Pa., assignor of one-half his right to Wm. Plant, Isaac Hill, and James Matthews, same place. Filed July 5, 1878.



Claim.—The combination, with a furnace having hot air spaces in the double side walls, of the heating-chamber F, placed forward of and somewhat elevated above the fire-grate, having the arched top *f*, projecting partly over the fire-chamber and forming the bed of the coking oven E, and the transverse flue *t*, placed just above the outer edge of the bed, as herein shown and described.

207,973. HARNESS-SADDLE HOOKS. John H. Martin, Columbus, Ohio. Filed Aug. 14, 1878.



Claim.—1. A hook or catch having its point inclined to one side, and provided with a flat perforated shank at right angles to the hook, from which projects a tongue lapping the point of the hook or catch and inclined in an opposite direction therefrom, the portion of the hook or catch between the point and shank being gradually broadened from the shank to and including a part of the bend of the hook, and then gradually contracted to said point, said hook or catch thus being adapted to be secured to a harness-pad by a turret or other screw, that connects the parts of the pad together, substantially as herein shown and described.

2. A harness-pad provided with a trace-carrying hook or catch for supporting the traces when not in use, secured to said pad by having its shank clamped under the shoulder of a turret or other screw or bolt, that unites the parts of the pad together, substantially as described.

207,974. CULINARY UTENSILS. Adam F. McConnell, Lewisburg, Tenn. Filed Aug. 24, 1878.



Claim.—1. A steamer adapted in the manner described to be used as a vegetable or fruit crusher, provided with means whereby the lever for applying power to the follower is readily adjusted thereto and removed therefrom, substantially as described.

2. A culinary utensil readily convertible from a steamer to a fruit and vegetable crusher, and vice versa, consisting of a cylindrical vessel having a perforated bottom made to fit over a kettle and an open top adapted to receive a closely-fitting cover, said vessel being provided with a removable plunger adapted to fit the interior thereof and to move vertically therein, and with a lever detachably fulcrumed to said vessel and connected to said plunger for operating the same, substantially as described.

3. A culinary utensil readily convertible from a steamer to a fruit and vegetable crusher, and vice versa, consisting of a cylindrical vessel having a perforated bottom made to fit over a kettle, and an open top adapted to receive a closely-fitting cover, said vessel being provided with a removable plunger adapted to fit the interior thereof and to move vertically therein, a lever detachably fulcrumed to said vessel and connected to said plunger, and a permanent handle operating in conjunction with said lever when the latter is adjusted to said vessel, substantially as described.

4. A culinary utensil readily convertible from a steamer to a fruit and vegetable crusher, and vice versa, consisting of a cylindrical vessel having a perforated bottom made to fit over a kettle and an open top adapted to receive a closely-fitting cover, said vessel being provided with a strengthening strap or band passing under the bottom to prevent injurious distention thereof when the utensil is used as a crusher or presser, substantially as described.

5. A culinary utensil readily convertible from a steamer to a fruit and vegetable crusher, and vice versa, consisting of a cylindrical vessel having a perforated bottom made to fit over a kettle, and an open top adapted to receive a closely-fitting cover, said vessel being provided with a removable plunger adapted to fit the interior thereof and to move vertically therein, a lever detachably fulcrumed to said vessel and connected to said plunger, a permanent handle operating in conjunction with said lever when the latter is adjusted to said vessel, and a strengthening strap or band passing under the perforated bottom, having one end attached to said handle and the other end provided with an eye to receive the fulcrum end of said lever, substantially as described.

6. A culinary utensil interconvertible into a steamer, fruit and vegetable crusher, lard presser, or colander, consisting of a cylindrical vessel having a perforated bottom made to fit over a kettle and an open top adapted to receive a closely-fitting cover, said vessel being provided with one or more loose removable diaphragms adapted to fit the interior, and of finer perforations than the said perforated bottom, combined with the removable plunger and detachable lever, substantially as described.

207,975. WARDROBE-BEDSTEADS. James M. Montgomery, Jr., Columbus, Ohio. Filed July 10, 1878.

Claim.—1. In a folding bedstead, the frame A, hinged or pivoted to a supporting board or legs, *c*, in turn hinged or pivoted to the head-board *c*, in combination with the head-board hook B and hooked lever C, substantially as and for the purpose set forth.

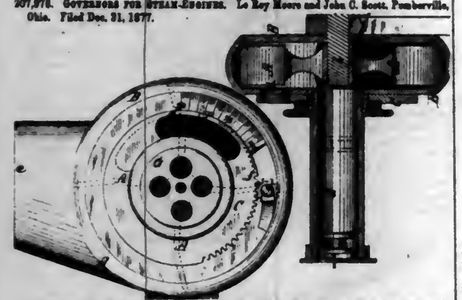
2. In a folding bedstead, the combination, with the frame A, of the hinged

legs or frame *d* and lever *e*, pivoted to said legs and engaging with a spring-catch, *f*, in the frame A, substantially as and for the purpose specified.

207,976.



207,976. GOVERNORS FOR STEAM-ENGINES. Le Roy Moore and John C. Scott, Pumberville, Ohio. Filed Dec. 21, 1877.



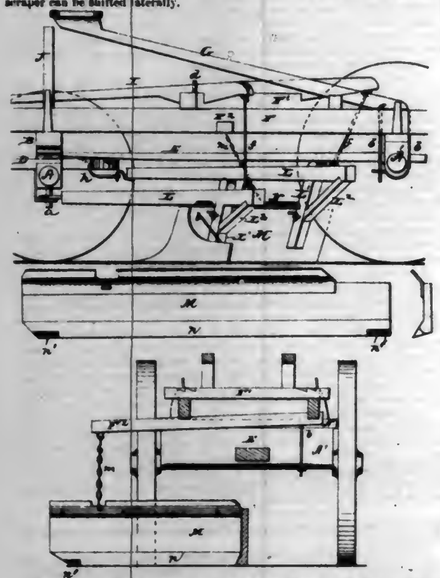
Claim —1. A governor-fan having an adjustable air-inlet in its case, substantially as and for the purpose herein specified.

2. The combination of a governor-fan, A, fan-case B, having a variable air-inlet, and a counterpressed suction-plate, H, having an operative connection with the induction-valve of an engine, substantially as and for the purpose herein specified.

3. In combination with the covering-plate C, for varying the area of the fan air-inlet, an index, *p*, and pressure-indicating scale *r*, substantially as and for the purpose herein specified.

207,977. ROAD-SCRAPERS. Henry C. Moore, Tama City, Iowa. Filed Mar. 27, 1878.

Brief.—The scraper is flexibly connected by hooks and eyes to inclined braced bars depending from horizontal beams, which extend forward and are connected to the front axle. The scraper is provided with a cutting-edge at its bottom, and at each end a shoulder is formed to prevent it entering too far into the earth. The rear end of the scraper is connected by a chain with an inclined beam transversely secured to the truck-frame, whereby the draft is applied to this end of the scraper as nearly as possible in a horizontal line. The scraper is adjusted vertically by levers connected by rods to the horizontal beams, and the fulcrums of the levers are adjustable laterally, whereby the horizontal angle of the scraper can also be adjusted or the entire scraper can be shifted laterally.



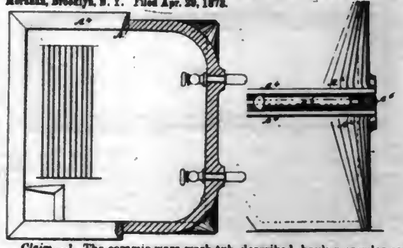
Claim.—1. The brace F', connected to the under part of the carriage and inclined downward at one end, and provided with guy-chain *m*, which connects with the scraper, as set forth.

2. The combination, with a carriage supported upon four wheels, of the scraper M, two beams, L L, each having an inclined bar, L', and brace L², the scraper being flexibly connected to the bars L', and the beams L connected to the king-bolt a and strap *h*, all substantially as and for the purposes herein set forth.

3. The combination of the adjustable levers I, having lugs *x*, the oblique bar F', with notches *e* and pins *d*, the rods *f*, and scraper-beams L, all substantially as and for the purposes herein set forth.

4. The scraper M, provided along its lower edge with the cutter *n*, having a flat part, *n'*, at each end, substantially as and for the purposes herein set forth.

207,978. MANUFACTURE OF STATIONARY WASH-TUBS OF CLAY OR PORCELAIN. Bernard Meehan, Brooklyn, N. Y. Filed Apr. 20, 1878.



Claim.—1. The ceramic-ware wash-tub described, having angular corners at the bottom and rounded corners at the top, adapted to serve as and for the purposes herein specified.

2. The ceramic-ware wash-tub described, having the upper face or edge highest on the inside, and widened by a flange, A', and unglazed, as and for the purposes herein specified.

3. The method described of placing and supporting the ceramic-ware tub in the kiln—that is to say, by placing two tubs mouth to mouth, with a layer, A², of clay placed between the broadened rims A' as the back portion, leaving the front or slanting portion free from pressure, as herein specified.

207,979. MAILING-PACKAGES. Henry G. Pearson, New York, N. Y. Filed July 30, 1878.



Claim.—1. An envelope, A, having the top C formed with a securing-finger, D, and the bottom H provided with a countersink or recess, I, as set forth.

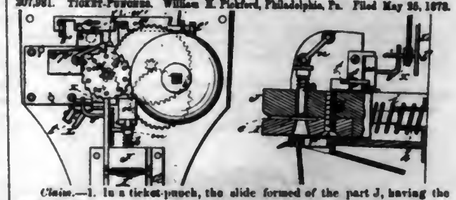
2. The envelope A, provided with a finger, D, recess I, grooves K, and lugs F, as set forth.

207,980. METHODS OF PACKING HERRINGS. George T. Peters, Jersey City Heights, N. J. Filed July 26, 1878.



Claim.—The new commercial package consisting of salted, smoked, skinned, and boned herring tied together in bunches, which are packed in a suitable box, substantially as described.

207,981. TICKET-PUNCHES. William H. Pickford, Philadelphia, Pa. Filed May 26, 1878.



Claim.—1. In a ticket-punch, the slide formed of the part J, having the pintle *f* and the removable piece I *d*, the two parts adapted to be secured together with screw *b*, so as to leave the slot *e* with an abutting shoulder, in combination with the spring *i*, as specified.

2. The slide composed of the parts J I, having the pintle *f*, combined with the guide-socket *h*, the actuating-spring *i*, the said slide adapted to be held out of connection with the aperture *r* in the chamber unless forced back by the ticket, as shown and specified.

3. The combination of the slide J I, formed in two parts, with pin *s* on part J, and the rocking shaft *u*, with slotted arm *t* and bent arm *v*, for operating the alarm and register directly from the slide, as shown and described.

4. In combination with the arm *v*, operated from the slide J, the slide *o'*, with pin *b'*, the lever L, with spring-pawl *o'*, and the shaft *d'*, with ratchet-wheel *f'*, pinion *h'*, and wheel M, as herein specified.

207,982. BOTTLE-STOPPERS AND STOPPER-FASTENERS. Henry W. Pegram, Bennington, Vt. Filed Mar. 30, 1877.

Brief.—The metallic stopper-body is of two pieces—the perforated cap and button-headed projection. The button-headed attachment may be used as a core in the mold, and the rubber member may be vulcanized directly upon it.

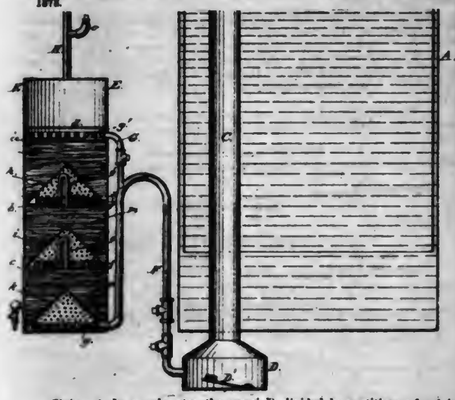


Claim.—1. The combination, substantially as before set forth, of the stopper-body with the bottle by means of the lever pivoted to socket-fulcrums, constructed in one piece with the bottle, and the yoke inserted through a solid eye formed in the stopper-body and connected pivotally with the lever.

2. The bottle-stopper composed of the cap-piece, the button-headed attachment, made separately from such cap-piece, but secured to it for use, and the rubber member which incloses the rim and bottom of the button-head of said attachment, substantially as before set forth.

3. The rubber stopping device, constructed, substantially as before set forth, with both the cylindrical flange at its lower side and the circular flange arranged above the said cylindrical flange and below the top of the rubber stopping device, of which it forms part.

207,983. CARBURETING APPARATUS. Louis H. Reid, Washington, D. C. Filed July 9, 1878.

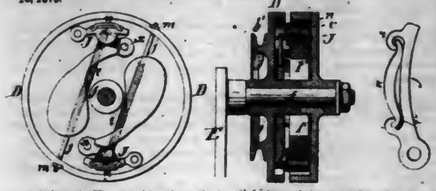


Claim.—1. In a carbureter, the vessel K, divided by partitions *a b c d*, in combination with perforated coils of pipe *g g' f f'*, for supplying air, and cones *h i k*, for supporting the packing material and distributing the air, substantially as shown, and for the purpose set forth.

2. The combination of the branch pipe G, having cock *e*, and provided at one end with a perforated coil, *g'*, in the carbureter, with the curved pipe F, connecting with the air-tank A, substantially as shown, and for the purpose set forth.

3. The carbureter herein described, consisting of a vessel provided with partitions and successive coils of perforated pipe and cones, in combination with an air-tank provided with a pipe, C, having enlarged chest D, containing valve D', and the pipe F, all constructed and arranged substantially as and for the purpose described.

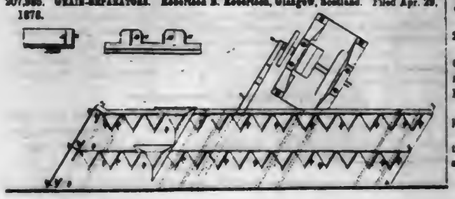
207,984. GOVERNORS FOR HORSE-POWERS. Jacob D. Reif, Shippenville, Pa. Filed Aug. 10, 1878.



Claim.—1. The combination of the disk D and its centrifugal friction-clutch mechanism with springs *i* and threaded rods *j*, capable of adjustment from the outside of the disk D, as set forth.

2. The shoes J, each having a retaining lip or lips, *c*, a friction-pad, *s*, and a wedge-block, *z*, as specified.

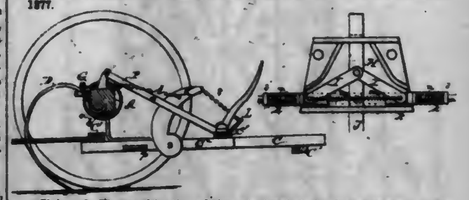
207,985. GRAIN-SEPARATORS. Robertson B. Robertson, Glasgow, Scotland. Filed Apr. 29, 1878.



Claim.—1. A grain-separator tray having one or more compartments, provided with a series of triangles along one side, a grain-inlet, and the outlets at opposite ends, three or more of said triangles being interposed between the said inlet and the outlet for the light particles of grain, all substantially as and for the purpose set forth.

2. In a grain-separator, the combination of a tray-compartment having a series of triangles, one of which has an opening at the bottom, with a removable hopper, substantially as described.

207,986. HORSE HAY-RAKES. William M. Saunders, Alfred Centre, N. Y. Filed Mar. 19, 1877.



Claim.—1. The combination of the rake-head A, having grooves *a a*, as described, the rake-teeth D D, strips *b*, and centrally-slotted T-shaped guides G, substantially as and for the purposes herein set forth.

2. The combination, in a horse hay-rake, of the locking-rods A A, the springs *u u*, for giving the same a yielding pressure outward, the bars *k k*, with ears *i i*, the connecting-spring *m*, the toggle-arms I I, connecting the bars *k k* with the slide J, the levers K L, and stop *p*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

207,987. COVERS FOR PITCHERS, &c. Louis Selling, Detroit, Mich., assignor to Jacob B. Bien, same place. Filed Aug. 22, 1878.



Claim.—1. A cover or lid for pitchers, glasses, and table vessels connected thereto by means of levers or arms having a pivoted connection with the vessel and with the cover in a manner to adapt the latter to be lifted and carried back in a horizontal position to uncover the vessel.

2. A cover or lid for pitchers, glasses, and table vessels connected thereto by means of arms or levers having a pivoted connection with the vessel and with the cover, in combination with a rest or support for the cover or lid when moved back to uncover the vessel.

3. A cover or lid for pitchers, glasses, and other like vessels connected to the latter by side arms or levers pivoted to the vessel and to the cover or lid in such manner as to allow the back end of said cover to be raised in moving it back to uncover the vessel.

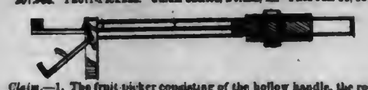
4. A sliding cover or lid having a downward-projecting lip, in combination with a vessel having a raised lip, whereby the cover-lip is adapted to cut off or separate any matters, such as syrup, gravy, or any other like liquid, from the mouth of the vessel, to prevent dripping.

5. The scroll arms or levers detachably connected to the vessel and the cover.

6. A sliding cover carried by pivoted arms or levers, and provided with a stop to limit its forward movement in being closed.

7. A sliding cover carried by pivoted arms or levers, provided with a bottom shoulder or recess, in combination with the projection of the handle or rest, to prevent the cover from closing when not required.

207,988. FRUIT-PICKERS. Gilbun Shelton, Normal, Ill. Filed Jan. 31, 1878.



Claim.—1. The fruit-picker consisting of the hollow handle, the rod sliding therein, the receptacle attached to rim B, the stationary jaw, and the movable jaw pivoted in the rim, and having its lever-arm attached to the rod directly over the opening of the hollow handle, inside of the rim, substantially as described.

2. The combination of the movable and stationary jaws, the hollow handle, the rod, the sleeve, and the pin passing through the sleeve, rod, and handle, and playing in a slot of the latter.

207,989. METALLIC SHINGLES. Henry W. Shepard, Brooklyn, N. Y. Filed May 16, 1878.

Brief.—The diamond-pointed shingle has a slit in its obtuse angle, and the slitted metal raised to cover and hold down the point of the adjacent shingle of the next upper row. Struck-up ribs on the inclined edges stiffen the plate, and receive corresponding ribs of the plate under it.

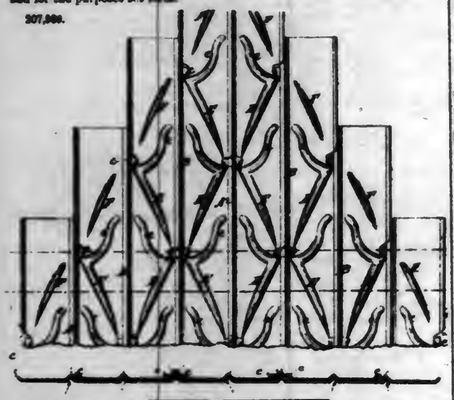
Claim.—1. A metallic roofing-shingle, substantially such as described, provided with the tongues *a a*, substantially as and for the purposes set forth.

2. A metallic shingle having the hollow ribs E along the inclined edges of the lower end of the shingle, and the curved hollow rim *c c*, substantially as shown and described.

3. Metallic shingles, substantially such as described, provided with the

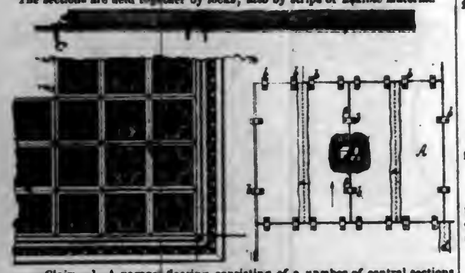
ribs E E along their inclined edges, and the rib F extending inward and upward from a point near the obtuse corners of the shingles, substantially as and for the purposes set forth.

207,889.



207,890. PORTABLE PARQUETRY FLOORING. Albin Sieworth, Rehlen, Reichstadt, Germany. Filed Aug. 24, 1878.

Brief.—The flooring consists of a number of sections provided with tongues and grooves, and secured to the main floor by metal strips held by screws. The sections are held together by locks; also by strips of flexible material.

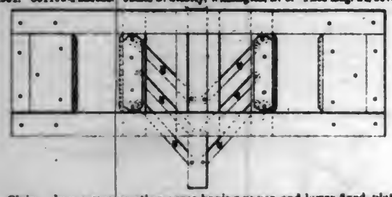


Claim.—1. A parquet-flooring consisting of a number of central sections and border sections provided with tongues and grooves, and with strips of metal, *b*, or other suitable material, for allowing the sections to be fastened to the floor, substantially as described.

2. A parquet-flooring consisting of a number of central sections and border sections provided with tongues and grooves, and locks C, for holding said sections adjacent to each other, substantially in the manner set forth.

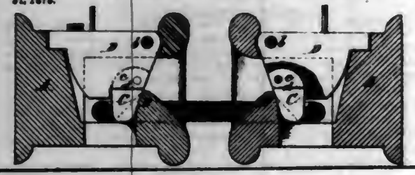
3. A parquet-flooring consisting of a series of sections provided with tongues and grooves, and with strips *b*, of metal or other suitable material, for fastening the sections to the floor, and locks for holding said sections adjacent to each other, substantially as described.

207,891. COTTON-PRESSES. Jamie D. Stanley, Wilmington, N. C. Filed Aug. 24, 1878.



Claim.—In a cotton or other press having upper and lower fixed platens, a central horizontally-moving draft-rod having shoulders for checking its movement, combined with a series of toggle-bars pivoted lengthwise thereto, and to vertically-reciprocating followers and platens guided by sleeves, substantially as herein specified.

207,892. CAR-COUPLINGS. John C. Stratton and Wm. H. Stratton, Millville, N. J. Filed July 31, 1878.



Claim.—In a car-coupling, the combination, with the draw-head, having a double inclined abutment, B, slotted on the back incline, as described, of the weighted tumbler D and its jointed coupling part C *a*, said tumbler being pivoted at its upper front end, *b*, and said coupling part C jointed eccentrically to the lower front corner of said tumbler, all constructed and adapted for use substantially in the manner and for the purpose described.

207,893. DITCHING-PLOWS. Ithamer W. Stuart and James G. Allen, Holliday Station, Ill., assignors to said James G. Allen. Filed July 30, 1878.



Claim.—1. The cutting-edges *b b*, formed on the side beams A A, in combination with the curved cutters G G, substantially as and for the purpose set forth.

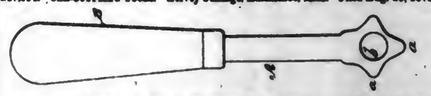
2. The crank *a* and pitman I, provided at its rear end with shovel H and cross-bar *d*, in combination with the vertical grooves *h h* and horizontal grooves *h*¹ *h*¹, the shovel being arranged to operate substantially as and for the purpose herein set forth.

3. In a ditching-plow, the combination of side beams A A, constructed to form cutting-edges *b b*, curved cutters G G, wheels C C, crank *a*, pitman I, and shovel H, all constructed and arranged to operate substantially as described.

4. The combination of the side beams A A, having grooves *h h*¹ *h*², the plow F, wheels C C, with crank *a*, shovel H, with handle I and pins *c c*, and the springs *i i*, all constructed substantially as and for the purposes herein set forth.

5. The swinging valve L, in combination with the plow F, shovel H, and frame, with side chutes K K, substantially as and for the purposes herein set forth.

207,894. CAR-COUPLING TOOLS. Harvey Bullage, Kalamazoo, Mich. Filed Aug. 10, 1878.



Claim.—The shaft or bar A, formed with the points *a* and hole *b*, and provided with a handle, B, for the purpose herein set forth.

207,895. DEVICES FOR LIGHTING AND EXTINGUISHING LAMPS, &c. Sullivan G. Sweet, Washington, D. C., assignor to himself, Samuel R. Stratton, and John T. Stratton, Stattsville, Pa. Filed May 3, 1878.

Brief.—By means of the rod C the wheel is partly turned to carry the match past and against the inner face of the friction-disk D, and then into contact with the lamp-wick to ignite it. A reverse movement of the rod operates the extinguisher.



Claim.—1. The combination, with the revolving match-carrying wheel provided with ratchet-teeth on its periphery, of a sliding rod having a pawl engaging with the said ratchet-teeth, substantially as and for the purpose set forth.

2. The combination, with the wheel *B*, having ratchet-teeth *b* and match-sockets *c*, of the rod C, provided with pawl *d* and the detent *g*, substantially as described and shown.

3. The combination, with the sliding rod operating the lighting devices, of the pivoted lever having extinguishing-hood, and connected to the said sliding rod, so that the hood is raised from the wick, and the wick is ignited by the same movement of the said sliding rod, substantially as and for the purpose set forth.

4. The combination, with the match-carrying wheel provided with ratchet teeth on its periphery, of the sliding rod having pawl and the lever carrying extinguishing-hood, connected to such sliding rod, substantially as described and shown.

5. In lighting devices, the friction-disk mounted on the end of a spindle, and adapted to be revolved so that it will present a new surface to each match, substantially as described.

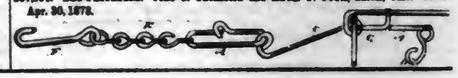
6. The revolving friction-disk mounted on a spindle, and adapted to be partially revolved by the rubbing of each match on its friction-surface, the said disk being inclined on the spindle, and provided with a spring to allow it to yield when a match is pressed against it, substantially as described and shown.

7. The combination of the revolving friction-disk with the revolving match carrying wheel, substantially as and for the purpose set forth.

8. The combination, in lighting and extinguishing devices, of a revolving match-carrying wheel, a sliding rod operating such wheel and the extinguishing-hood, and a revolving friction-disk, substantially as described and shown.

9. The match carrying wheel B, having ratchet-teeth *b* and match-sockets *c*, all made from a single blank of sheet metal, substantially in the manner described and shown.

207,896. RAG-FASTENERS. John C. Thornton and Hiram C. Foote, Salem, Ohio. Filed Apr. 30, 1878.



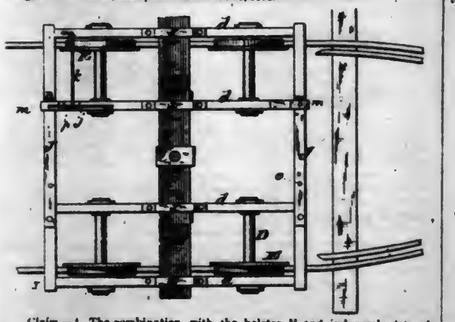
Claim.—The bag fastener consisting of the link A, having one end bent laterally and bridged to form a catch, the lever C, attached to said link, the link F, and intermediate flexible connection between links A and F, substantially as described.

207,897. SHEATHING VESSELS. Benj. L. Thomson, London, and Thomas Connelly, Kingsland, England. Filed Mar. 7, 1878.



Claim.—The within-described vessel-sheathing, consisting of two layers of adhesive insulating compounds interposed between the outer metal sheathing and the side of the vessel, the outer layer being composed of caoutchouc and sulphide of antimony, while the inner layer consists of caoutchouc, litharge, oxide of zinc, and silica, substantially in the proportions described.

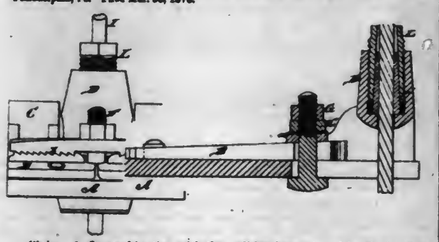
207,898. ORNAMENTABLE-SAND TRUCKS. James Timms, Malta, Ohio, assignor of one-half his right to A. J. Morris, same place. Filed June 22, 1878.



Claim.—1. The combination, with the bolster F and independent truck-sections sliding thereon to or from each other, of the lock-bars J, having the stop *n*, engaging loops m on one of said sections, whereby said stop *n* prevents the lock-bar from being disengaged from the loops, substantially as specified.

2. The combination, with the bolster F, of independent truck-sections *d*, having guide-loops *x*, sliding on said bolster, the perforated lock-bars J, secured to one of the sections and engaging the loops *m* on the other, in connection with the rock-shaft *k*, having the cam *p*, operating the spring-catch *j*, all constructed and arranged to operate substantially as shown and described.

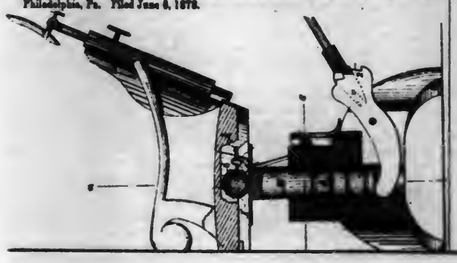
207,899. ROD-CLAMPING DEVICES FOR WALKING-BEAMS OF OIL-PUMPS. Wayne B. Tracy, Philadelphia, Pa. Filed Mar. 30, 1878.



Claim.—1. In combination with the walking-beam A and head, the plates B B, with jaws C C and teeth *e*, the toothed bar B, T-bolt F, and nut G, all constructed substantially as and for the purposes set forth.

2. The combination of the head D, having interior screw-threads, the rod I, tapering bisected clamp J, and hollow screw-plug L, all substantially as and for the purposes set forth.

208,000. DENTAL CHAIRS. Henry C. Tripp, Auburn, N. Y., assignor to Saml. S. White, Philadelphia, Pa. Filed June 6, 1878.



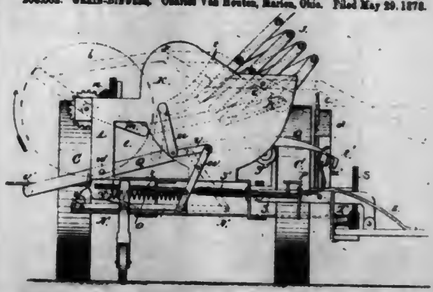
Claim.—The combination, substantially as hereinbefore set forth, of the base, the endwise-moving turning column or plunger mounted in the base, the chair-body mounted on the plunger, the lever pivoted on the base acting on the plunger to adjust it vertically, and the detent automatically engaging with the column to lock it in its elevated position, whatever may be the horizontal position of the chair.

208,001. BARBED FENCE-WIRE. Knud Tyrdal, Lee, Ill., assignor of four-fifths of his right to Theodore G. Berg, Lewis Tyrdal, John Tyrdal, and Osmund Tyrdal, two-fifth to each, all of same place. Filed July 31, 1878.



Claim.—In a wire barbed fence, the wires or metallic strands A, provided with loops or eyes *a a*, and bent at right angles to the line of the wire, and this portion of each wire inserted in the loop of the other wire, as set forth.

208,002. GRAIN-BINDERS. Charles Van Houten, Marion, Ohio. Filed May 29, 1878.



Claim.—1. The rake constructed, as herein described, of a set of lazy-tongs pivoted upon a horizontal fulcrum and controlled at one end, to impart to it a combined longitudinal and vibratory motion, as set forth.

2. The rake consisting, essentially, of a set of lazy-tongs pivoted upon a horizontal fulcrum and having a rod, *k*, in combination with vertical plates K K, provided with cam-grooves, substantially as described.

3. The combination, with the fulcrumed lazy-tongs carrying the rake and having rod *k*, of the plates K, having cam-grooves, the connecting-rods *l*, and the double crank *m*, geared with the main drive-shaft, substantially as described.

4. The plates K, having cam-grooves *j*, with a free space or great width of groove at the point where the rod *k* rests when the rake is upon the platform, in combination with the extensible and vibrating lazy-tongs rake having rod *k*, as and for the purpose set forth.

5. The combination of the cam-plates K and the rod *k* of the lazy-tongs, the arms t u, the sliding table N, and the connecting mechanism u *r w x*, substantially as described.

6. The combination of the spring-retracted table N, the detent *g*, and the double crank *m*, substantially as described.

7. The spring-seated pusher P, having upwardly-curved finger, and supported upon horizontal rods arranged in guides in the frame-work, in combination with the extensible table, substantially as and for the purpose described.

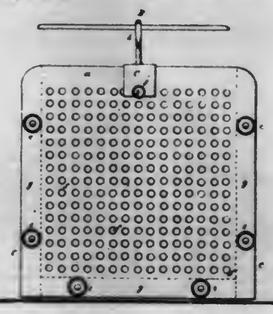
8. The reel-frame Q, pivoted between the plates K and held up by a spring, in combination with the rod *k* of the lazy-tongs, as set forth.

9. The rotary twisting-spool having elongated shank, and slotted at one end in the plane of its axis, substantially as described.

10. The twisting-spool with elongated shank, slotted at one end in the plane of its axis, and combined with the reel-frame Q, having a pulley, *v*, and a bridged or forked hook, *t*, substantially as described.

11. The spool T, having a slotted end and an inwardly-projecting knife, as and for the purpose set forth.

208,003. APPARATUS FOR HOLDING GRAIN-HOOKS. Adolph C. Wensel, Brooklyn, N. Y. Filed July 13, 1878.



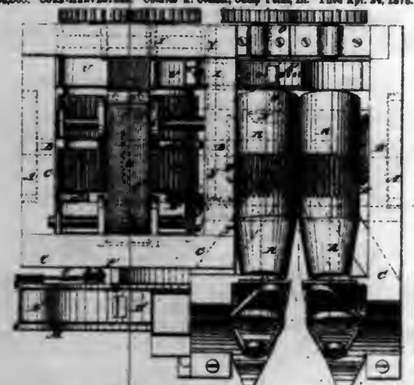
Claim.—In grain-binder aprons, the construction of the perforated carbon-conducting sides *a* and *b* and the strips *g*, secured between by the non-conducting or rubber screw-bolts *c*, with the conducting-staple U, having lips *i* and *j*, the binding-screw *k*, and hook B, substantially as and for the purpose herein specified and shown.

206,004. TELEGRAPH-POLES. Edwin D. Withers, Bently Springs, Md. Filed Apr. 13, 1878.



Claim.—The improved telegraph-pole herein described, consisting of the pole A, having at its lower end the shoulder *a* and beveled groove *b*, with shoe B, and at its upper end the cap C, the adjustable ring or band F, having clip *b*, bolt *d*, with cross-bar D, and nut *e*, said band being fastened to the pole by means of wedges.

206,005. CORN-HARVESTERS. Charles K. Coates, Camp Point, Ill. Filed Apr. 24, 1878.



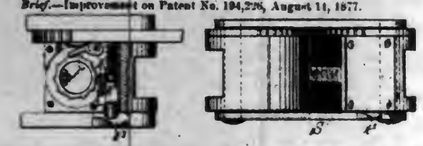
Claim.—1. The combination, with the rollers R, of the concave plates S', as and for the purpose described.

2. The combination of the gear-wheels F G', the pulleys I', and the endless belt J', provided with the plates K', with the rollers U, for moving the ears along the said rollers U, substantially as herein shown and described.

3. The combination of the springs E', provided with points or spurs, with the grooved rollers U', substantially as herein shown and described.

206,006. MACHINES FOR IMPRESSING AND STAMPING LEAD SEALS. Willard D. Deroma, Washington, D. C., assignor of three-fourths of his right to J. W. Mancourt, Brooklyn, N. Y. Filed July 27, 1878.

Brief.—Improvement on Patent No. 194,276, August 14, 1877.

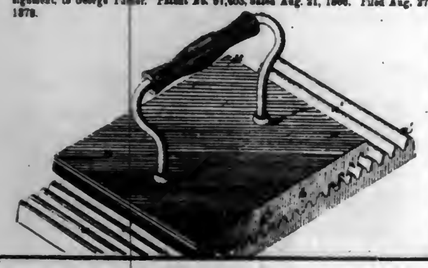


Claim.—1. The combination, with the jaws or carriers, provided with dies or stamps, of the levers a', one of which is extended to form the stirrup which unites said dies on one side, substantially as shown and described.

2. In combination with the serial numbering-wheels, the spring-pawl *f*, the spring-bolt h^2, and the stirrup S, carrying the inclined wearing-plate h^2, for the purpose specified.

REISSUES.

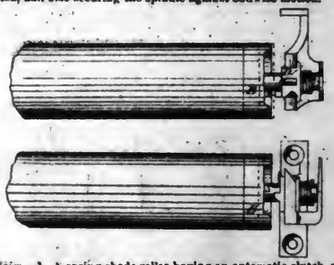
8,403. FLUTING-MACHINES. Charles A. Sterling, New York, N. Y., assignor, by mesne assignment, to George Turner. Patent No. 67,403, dated Aug. 31, 1866. Filed Aug. 27, 1878.



Claim.—A fluting device composed of a corrugated bed and a correspondingly-corrugated presser block or plate.

8,404. CURTAIN-ROLLERS AND BRACKETS. Phineas W. Phillips, Salem, Mass., assignor, by mesne assignments, to Daniel Low, James F. Almy, and Albert B. Russell. Patent No. 114,036, dated Apr. 25, 1871; Reissue No. 5,056, dated Apr. 26, 1874. Filed May 24, 1878.

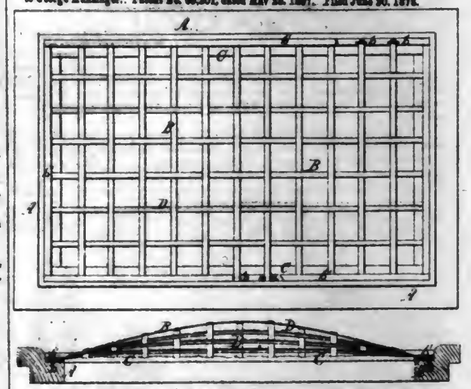
Brief.—The spindle has a collar capable of endwise motion thereon, but prevented from rotation by a pin in the spindle moving in a slot in the collar. A coiled spring between the collar and a pin in the end of the spindle presses the collar against the end of the roller, which is prevented from rotation by projections on the collar and roller engaging with each other. When placed in the bracket, the end of the spindle is pressed against an upright, and the collar slid into a slot in the bracket, pressing the collar to the right, releasing the clutch, and also securing the spindle against endwise motion.



Claim.—1. A spring shade-roller having an automatic clutch arranged to lock the shaft with the roller in all conditions of the latter when removed from the bracket, substantially as described.

2. In a spring shade-roller, the combination of the bracket, the collar, the shaft, and means for retaining the collar upon the shaft, whereby endwise motion of the shaft in the bracket is prevented, substantially as described.

8,405. SPRING-SEATS. Chester D. Flynt, Brooklyn, N. Y., assignor, by mesne assignments, to George Hunnings. Patent No. 66,201, dated May 28, 1867. Filed June 20, 1878.



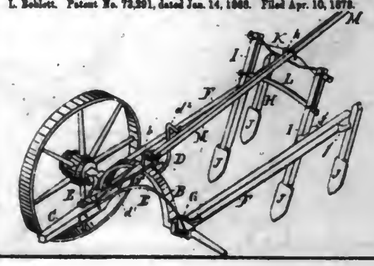
Claim.—1. A seat composed of metallic bands or wires, the ends of which are fixed to a frame, and a yielding cushion interposed between the said steel wires or bands and frame, substantially as and for the purpose set forth.

2. A seat or support composed of interlaced metallic bands or wires firmly fixed to a permanent frame, and having a yielding cushion interposed between the said metallic bands or wires and the said permanent frame, substantially as described.

3. The spring-cushion C, in combination with the frame A and the bands B, substantially as described.

4. A seat or support consisting of a wooden frame and metallic wires or bands, having their ends notched and secured to the said frame by staples resting in said notches, substantially as set forth.

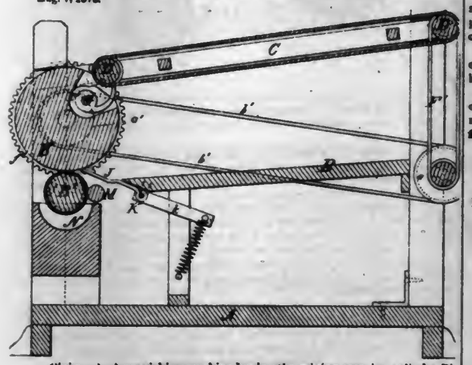
8,406. CULTIVATORS. Jesse O. Boyd, Milroy, Ind., assignor to himself, O. P. Wilson, and L. L. Boblett. Patent No. 73,291, dated Jan. 14, 1868. Filed Apr. 10, 1878.



Claim.—1. In a cultivator, the combination of the handle M, the cross-bar K, and the rest *d* with the plows, beams, and standards, for the purpose of holding them up from their ordinary positions, substantially as herein shown and specified.

2. In a cultivator, the combination of the pole C, axle B, plow-beams F F, adjustable attachments G G, standards I I, cross-bars K L, and handle M, substantially as herein shown and described, and for the purposes specified.

8,407. MACHINES FOR SIZING AND VARNISHING PAPER. Richard McNamee, Philadelphia, Pa., assignor to Allen, Lane & Scott. Patent No. 194,653, dated Aug. 21, 1877. Filed Aug. 7, 1878.



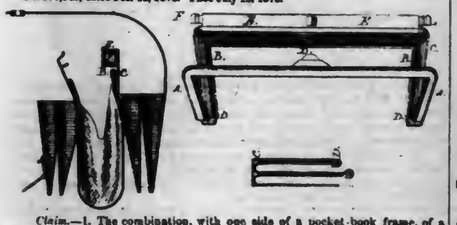
Claim.—1. A varnishing-machine having the griping carrying-cylinder B^1, and below the same the varnishing-roller and varnish-trough and the feed-table, and above the feed-table, on a level with the upper surface of the cylinder, the discharging-tapes, whereby the work is discharged with the varnish side up, substantially as specified.

2. The combination, in a varnishing-machine, with the upward-carrying cylinder B^1 and its feeding and discharging devices, delivering the sheets from the top of the cylinder face upward, of the varnishing-roller, varnish-trough, and cut-off roller, substantially as specified.

3. The combination, in a varnishing-machine, with the carrying-cylinder B^1 and its gripers, of the feed-table B, discharging-belt C, varnishing-roller B^2, varnish-trough N, and cut-off M, substantially as specified.

4. The combination, in a varnishing-machine, with the varnish roll and feed-table, of an upholding projection at the end of the feed-table, substantially as specified.

8,408. POCKET-BOOK FRAMES. Daniel M. Read and Lewis Prahar, New York, N. Y. Patent No. 200,340, dated Feb. 12, 1878. Filed July 12, 1878.



Claim.—1. The combination, with one side of a pocket-book frame, of a detachable cap-plate, C, secured in place thereon by hooks D, formed upon one of said parts and bent over the edge of the other part, substantially as shown and described.

2. The combination, with one side of a pocket-book frame, B, of a cap-plate, C, attached thereto by a rivet or equivalent fixed fastening, substantially as shown and described.

3. The combination, with the cap-plate C, of the catch-socket E, formed in one piece with the cap and attached to one side of the frame A B, substantially as shown and described.

4. The cap-plate C, having the point 1, and the catch-bolt F, having a bottom slot or groove adapted to receive said point, in combination with the socket E and frames A B, as and for the purposes set forth.

8,409. DENTAL DRILLS. William M. Reynolds, New York, N. Y., assignor to Samuel S. White, Philadelphia, Pa. Patent No. 137,300, dated May 29, 1873. Filed Aug. 14, 1878.

Brief.—Motion is communicated from the treadle and fly-wheel to the upright rotating shaft by a rubber wheel at the base of the shaft. The casing to the flexible interior rotating shaft is sectional and the parts telescopic, one upon the other. The hand-piece is triangular in cross-section, so as to be easily retained in the hand.

Claim.—1. The combination, substantially as hereinbefore set forth, of the base or stand, the treadle or motor, the fly-wheel, and the upright or vertical shaft driven by the fly-wheel through the medium of gearing.

2. The combination, substantially as hereinbefore set forth, of the base or stand, the treadle, the fly-wheel, the upright or vertical shaft driven by the fly-wheel through the medium of gearing, and the flexible extension or shaft driven by the upright shaft.

3. The combination, substantially as hereinbefore set forth, of the base or stand, the treadle, the fly-wheel, the upright or vertical shaft driven by the fly-wheel through the medium of gearing, the flexible extension or shaft driven by the upright shaft, and the rotary instrument holder or chuck adapted for the reception of operating-tools.

4. The combination, substantially as hereinbefore set forth, of the base, the treadle, the fly-wheel, the tubular arm or standard rising from the base, the upright shaft turning in the tubular standard, the driving-connections between the fly-wheel and upright shaft, the flexible extension or shaft, and the hand-piece or tool-carrier.

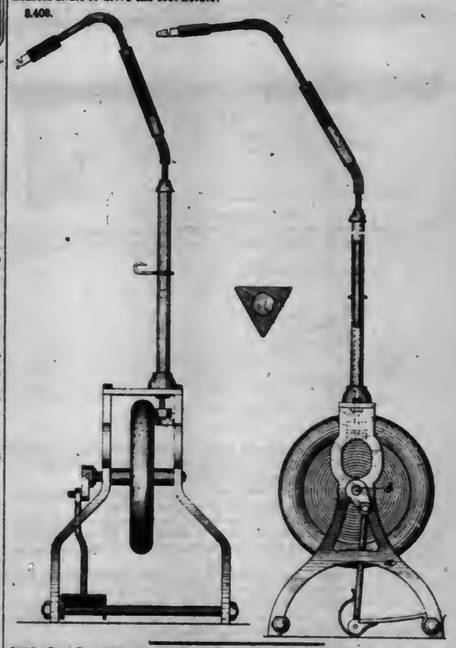
5. The flexible rotating power-driven shaft constructed, substantially as hereinbefore set forth, in sections, one of which is extensible on the other, whereby a greater or less length of shaft and a greater or less range of movement of the operating-tool driven thereby are obtained.

6. The combination of the upright arm or standard with a securing or attaching device mounted thereon, and adapted for the reception of the hand-piece or handle carried by the flexible shaft or portion of the engine, to keep it out of the way when the machine is at rest.

7. The combination, substantially as hereinbefore set forth, of the handle or hand-piece casing, provided with flat sides or surfaces, with a rotary tool-holder mounted therein and adapted for the reception of operating-tools.

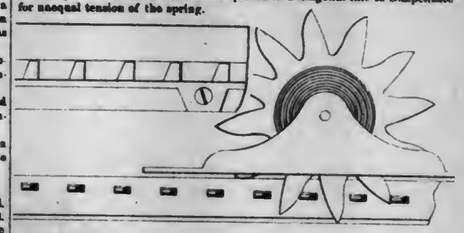
8. The combination, substantially as hereinbefore set forth, of the handle or hand-piece casing provided with flat sides or surfaces, a rotary tool-holder mounted therein and adapted for the reception of operating-tools, and the flexible shaft to drive the tool-holder.

8,409.



8,410. SASH-BALANCES. Henry P. Read, Northborough, Mass. Patent No. 206,944, dated July 16, 1878. Filed Aug. 23, 1878.

Brief.—The teeth of the rack are placed in a diagonal line to compensate for unequal tension of the spring.



Claim.—In a sash-balance, a cog-wheel with long teeth, operating, by means of a spring, upon a rack whose teeth or lugs are set obliquely, substantially as described above, and so that the varying tension of the spring shall be offset by the varying leverage of the cog-wheel, as and for the purpose hereinbefore set forth.

8,411. PISTON-ROD PACKINGS. Edward T. Priadle, Aurora, Ill., assignor, by mesne assignments, to E. P. Munro, Newark, N. J. Patent No. 83,542, dated Mar. 27, 1866. Filed Aug. 8, 1878.

Claim.—1. The combination of the piston-rod, a gland having the opening for the rod enlarged conically next to the steam side, a packing fitting therein, and means for admitting steam thereto, substantially as set forth.

2. The combination of the gland *b*, having a central nut-opening, conically enlarged toward the steam side, a conically-formed packing, *d*, fitting therein, and means for admitting steam thereto, substantially as set forth.

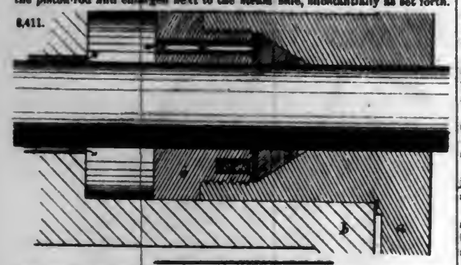
3. The combination, with the piston-rod, of a packing fitting into a conical or tapering opening about the rod, and held therein from the steam side by a spring bearing against the packing or a follower next thereto, substantially as set forth.

4. The combination of a piston-rod, a packing enlarged next to the steam side, and fitting into a conical or tapering opening around the rod, and means for admitting steam or other elastic agent thereto, substantially as set forth.

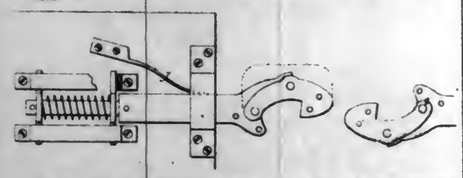
5. The combination of the perforated cap or head *c*, for the admission of steam or other elastic agent, with the packing fitting into a conical or tapering opening around the rod and enlarged next to the steam side, substantially as set forth.

6. The combination of the perforated cap or head *c*, spring *e*, bearing-ring *i*, and the sectional packing *d*, fitting into a conical or tapering opening around the piston-rod and enlarged next to the steam side, substantially as set forth.

8,411.



8,412. CAR-COUPLINGS. Eugene M. Van Hoesen and N. H. Brown, Syracuse, N. Y. Patent No. 119,431, dated Sept. 26, 1871; Reissue No. 7,902, dated Oct. 23, 1877. Filed June 18, 1878.



Claim.—1. A twin coupling each part of which has a draw-head combined with a hook loosely pivoted to a projection on the said draw-head, so as to swing freely thereon, substantially as described.

2. The combination of a pivoted hook with a draw-head having the guard-finger *d*, substantially as described, for the purpose specified.

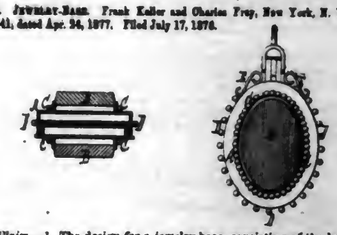
3. The combination, in a twin coupling, of a pivoted hook or lever carried by one draw-head, and having an arm to be operated by the nose of the pivoted hook of the other draw-head in effecting a coupling, substantially as described.

4. In a twin coupling, the combination of a draw-head and pivoted hook with a device for locking the arm *a* of the said hook to the draw-head.

5. The combination, in a twin coupling, of a draw-head having a pivoted hook and a device for locking the same, with a cavity, *o*, in the other draw-head for receiving the nose of the said pivoted hook.

6. The combination of a pivoted hook with a draw-head capable of moving laterally under the control of a spring, substantially as described.

8,413. JEWELRY-BASE. Frank Keller and Charles Frey, New York, N. Y. Design No. 9,041, dated Apr. 24, 1877. Filed July 17, 1876.



Claim.—1. The design for a jewelry-base, consisting of the base or border A and row of beads D, surrounding and projecting from its outer edge and beyond the same, substantially as described, and shown in the accompanying drawing.

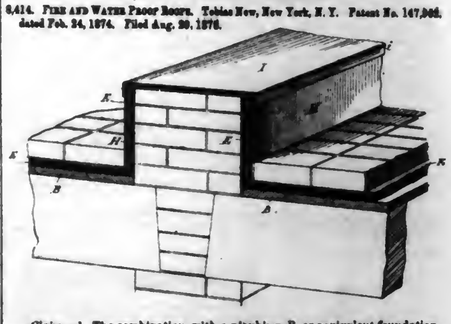
2. The design for a jewelry-base, consisting of the base or border A and row of beads D, surrounding and projecting from its outer edge and beyond the same, and separated by clear intervening spaces, substantially as described, and shown in the accompanying drawing.

3. The design for jewelry-base, consisting of the base or border A, central shield or face B, the beaded rim C, surrounding said central shield, and beads D, projecting from the outer edge of the said base or border and beyond the same, substantially as described, and shown in the accompanying drawing.

4. The design for a jewelry-base, consisting of the base or border A, projecting beads D, and scrolls E, substantially as described, and shown in the accompanying drawing.

5. The design for jewelry-base, consisting of the base or border A, central shield or face B, the beaded rim C, surrounding said central shield, and the beads D and scrolls E, projecting from the outer edge of the base or border, substantially as described, and shown in the accompanying drawing.

8,414. FIRE AND WATER PROOF ROOFS. Tobias Now, New York, N. Y. Patent No. 147,966, dated Feb. 24, 1874. Filed Aug. 20, 1878.



Claim.—1. The combination, with a planking, B, or equivalent foundation, provided with a water-repellent composed of saturated felt and asphaltic cement, or equivalent water-proof material, of a layer of hydraulic-cement mortar, or equivalent material, and a superimposed layer of brick, tile, slate, stone, or metal, all constructed substantially as above set forth.

2. The flashing H, set in the cement mortar E, to hold the water-repellent against the battlement, substantially as specified.

3. The combination, with the flashing H, of the coping I, having the lips, as and for the purpose above described.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10th DAY OF SEPTEMBER, 1878.

Name, residence, and invention	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Alexander, A. J., assignor of one-half interest to J. Alexander and J. W. Cubbage, Gallipolis, Ohio. Leather-dressing machine	207,930	Sept. 10	375	114	14	399
Alexander, H., Albany, N. Y. Faucet	207,931	Sept. 10	376	114	14	399
Alexander, J., *et al.* (See Alexander, A. J., assignor.)						
Alexander, J. G. (See Kean and Alexander.)						
Allen, J. G. (See Stuart and Allen.)						
Allen, Lane & Scott. (See McNamee, R., assignor.) (Reissue.)						
Almy, J. F., *et al.* (See Phillips, P. W., assignor.) (Reissue.)						
Alvord, W. I., Bridgeport, Conn. Surgical dilator	207,932	Sept. 10	377	114	14	400
American Mining and Dredging Company. (See Moreau, E., assignor.)						
Arbeiter, J., Hartford, Conn. Broom	207,837	Sept. 10	271	84	14	386
Arkell, J., Canajoharie, N. Y. Bag and sack	207,933	Sept. 10	378	114, 115	14	400
Ayer, L. H., Keokuk, Iowa. Steam cooking apparatus	207,838	Sept. 10	271	84	14	386
Bacon, C. H., Boston, assignor of three-fourths interest to C. Brigham, Watertown, and C. C. Livermore, Cambridge, Mass. Inking apparatus for printing-machines	207,934	Sept. 10	379	.....	14	400
Baird, W. F., Burlington, Iowa. Churn	207,935	Sept. 10	380	115	14	400
Baker, C. L. W., Cambridge, Mass. Manufacture of brushes	207,793	Sept. 10	225	71	14	381
Baker, J. G., assignor to Enterprise Manufacturing Company, Philadelphia, Pa. Steam engine and pump	207,936	Sept. 10	381	115	14	400
Balbach, L., San Francisco, Cal. Refining base bullion	207,937	Sept. 10	383	.....	14	400
Baradel, J. (See Rolland and Baradel.)						
Bard, D., assignor of one-half interest to G. Flagg, Cincinnati, Ohio. Broom-press	207,839	Sept. 10	272	84	14	387
Barr, J. N., Altoona, Pa. Chill for car-wheels	207,794	Sept. 10	226	71	14	381
Barrett, J., Boston, Mass. Water-trap for sinks, &c.	207,938	Sept. 10	384	115	14	400
Barrow, B. F., Jewett, Tex. Tree for riding-saddles	207,939	Sept. 10	385	116	14	400
Bassett, M. L., West Haven, assignor to M. H. Kinsley, Wallingford, Conn. Attachment to metal-blank-forming machines	207,840	Sept. 10	273	84	14	387
Bate, W. T., Consholocken, Pa. Steam-generator	207,940	Sept. 10	386	116	14	400
Bates, B., Baltimore, Md. Vitriol-holder for beverage-carbonizing apparatus	207,841	Sept. 10	274	85	14	387
Bates, T. L. (See Witsil, G. L., assignor.)						
Bayley, S. H. (See Stead and Bayley.)						
Beche, P., Bath, Pa. Horse-power	207,795	Sept. 10	227	71	14	381
Becker, J. F., Hartford, Minn. Grain-separator	207,842	Sept. 10	275	85	14	387
Bell, J. C., Albany, and P. Costello, West Troy, N. Y. Dock	207,843	Sept. 10	276	85	14	387
Berg, T. O., *et al.* (See Tysdal, K., assignor.)						
Berry, L. M. (See Wayland and Berry.)						
Best, J. T. (See Hobard and Best.)						
Betz, E., assignor to A. Shoemaker, Chicago, Ill. Carriage-top standard	207,941	Sept. 10	387	116	14	401
Blair, B. X., Huntingdon, Pa. Spectacles	207,844	Sept. 10	277	85	14	387
Boblett, L. L., *et al.* (See Boyd, J. C., assignor.) (Reissue.)						
Bond, H. F., Northborough, Mass. Sash-balance. (Reissue)	8,410	Sept. 10	463	139	14	411
Booth, W., Newark, N. J. Machine for rounding off the ends of combs	207,845	Sept. 10	278	86	14	387
Boyd, J. C., Milroy, Ind., assignor to himself, C. P. Wilson, and L. L. Boblett. Cultivator. (Reissue)	8,406	Sept. 10	450	138	14	410
Bradley, M., Springfield, Mass. Plaiting-machine	207,796	Sept. 10	228	71	14	381
Brady, J. (See Horton and Brady.)						
Brett, G. R., *et al.* (See Hill, A. L., assignor.)						
Brigham, C., *et al.* (See Bacon, C. H., assignor.)						
Brockman, J. H., Cincinnati, Ohio. Rectifying apparatus	207,847	Sept. 10	280	86	14	388
Brown, N. H. (See Van Hoesen and Brown.) (Reissue.)						
Brown, R. G., Pittston, Me. Ice-elevator	207,848	Sept. 10	281	87	14	388
Brug, G. A., Providence, R. I. Atomizer	207,849	Sept. 10	283	87	14	388
Bryant, J., Towanda, Pa. Platform-gear for vehicles	207,942	Sept. 10	388	116	14	401
Buel, J., Woburn, Mass. Lifting-jack	207,850	Sept. 10	284	87	14	388
Burtch, G. F., Jackson, Mich. Washing-machine	207,943	Sept. 10	389	117	14	401
Carpenter, J. J., Constable, N. Y. Hame	207,944	Sept. 10	389	117	14	401
Carver, J. W., Lynn, Mass. Tacking-machine	207,851	Sept. 10	285	87, 88	14	388
Cass, W. B., Blanchester, Ohio. Hydraulic motor	207,945	Sept. 10	390	117	14	401
Cherry, A. F., Albany, Oreg. Screw-cutting lathe	207,852	Sept. 10	287	88	14	389
Chew, C. F., Bridgeport, Conn. Upright piano-forte action	207,946	Sept. 10	391	118	14	401
Chew, C. F., Bridgeport, Conn. Upright piano-forte frame	207,947	Sept. 10	392	118	14	401
Clarkson, F. S., Baltimore county, assignor to F. B. Sloan, Baltimore, Md. Ash-sifter	207,948	Sept. 10	393	118	14	402
Clarkson, F. S., Baltimore county, assignor to R. Cromwell and F. B. Sloan, Baltimore, Md. Bedstead-fastening	207,949	Sept. 10	393	118	14	402
Clippinger, D. H., Brighton, Cal. Check-rein hook	207,797	Sept. 10	229	72	14	381
Clymer, D. R. (See Rolland and Baradel, assignors.)						
Couner, C. K., Camp Point, Ill. Corn-harvester	208,005	Sept. 10	453	136	14	410
Connolly, T. (See Thomson and Connolly.)						
Cook, F. L., Fairfield, Iowa. Bevel	207,950	Sept. 10	394	119	14	402
Copp, W. J., Hamilton, Ontario, Canada. Shelf for cooking-stoves	207,798	Sept. 10	230	72	14	381

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Corbin, P., *et al.* (See Hart, H. C., assignor.)						
Corbin, P., *et al.* (See Hart, H. C., assignor.)						
Costello, P. (See Bell and Costello.)						
Cowles, E., *et al.* (See Putnam, J. S., assignor.)						
Crawford, S. (See Dunseith and Crawford.)						
Cromwell, R., *et al.* (See Clarkson, F. S., assignor.)						
Cubbage, J. W., *et al.* (See Alexander, A. J., assignor.)						
Cummins, W. G., Cookville, Tenn. Horse-detacher	207,951	Sept. 10	395	119	14	402
Currier, W. D. (See Gillin, R. F., assignor.)						
Curtiss, C. B., *et al.* (See Ritchel, C. F., assignor.)						
Cuzner, J. B., *et al.* (See Ritchel, C. F., assignor.)						
Dalzell, R. H., Kilbuck township, Allegheny county, Pa. Cartridge-loading mechanism	207,853	Sept. 10	288	88, 89	14	389
Davis, A. B., Mayfield, Mich. Water-elevator	207,799	Sept. 10	230	72	14	381
Davis, E. P. (See Hudson, R., assignor.)						
Davis, J. M., Raleigh, N. C. Coffee-pot	207,952	Sept. 10	395	119	14	402
De Bretton, J. G., Deadler Landing, La. Child's rocker	207,846	Sept. 10	279	86	14	388
Dickinson, C. W., Belleville, N. J. Type-case	207,854	Sept. 10	291	89	14	389
Doane, E. M. (See Doane, R. C., assignor.)						
Doane, R. C., assignor of one-half interest to E. M. Doane, Rochester, N. Y. Blacking-brush	207,953	Sept. 10	396	119	14	402
Doremus, W. D., Washington, D. C., assignor of one-half interest to J. W. Mancourt, Brooklyn, N. Y. Air-compressor	207,954	Sept. 10	396	120	14	402
Doremus, W. D., Washington, D. C., assignor of three-fourths interest to J. W. Mancourt, Brooklyn, N. Y. Machine for compressing and stamping lead seals	208,006	Sept. 10	455	137	14	410
Downs, B. B., Eau Claire, Wis. Sluice and flood gate	207,935	Sept. 10	397	120	14	402
Dunham, H., Abington, Mass. Boot and shoe nailing machine	207,956	Sept. 10	398	120 121	14	402
Dunseith, J., and S. Crawford, New York, N. Y. Water-heater for stove-pipes	207,855	Sept. 10	291	89	14	389
Duryea, W., Brooklyn, N. Y. Fire-escape	207,856	Sept. 10	292	89	14	389
Eastham, A. S., Navasota, Tex. Gin-saw-filing machine	207,957	Sept. 10	401	121	14	403
Eastman, P. C., Cambridgeport, Mass. Bed-bottom	207,800	Sept. 10	231	72, 73	14	381
Easton, S. R., Charleston, Ill. Window-sash	207,801	Sept. 10	232	73	14	381
Elliott, B., Ellsworth, Wis. String-holder	207,857	Sept. 10	293	90	14	389
Emerick, J. T., Chicago, Ill. Cap for cigars	207,858	Sept. 10	293	90	14	390
Engles, W., Berneville, N. Y. Freight-car-door fastening	207,859	Sept. 10	294	90	14	390
Enterprise Manufacturing Company. (See Baker, J. G., assignor.)						
Erwin, W., Painted Post, N. Y. Apiary or bee-house	207,958	Sept. 10	404	122	14	403
Evans, G. F., Poland, Me. Machine for coiling metal bars	207,802	Sept. 10	233	73	14	382
Felch, A. S., assignor of one-half interest to A. Greener, Columbus, Ohio. Spring bed-bottom	207,959	Sept. 10	405	122	14	403
Ferguson, J. F. (See O'Harra, D. J., assignor.)						
Field, P., Upper Marsh, Lambeth, and R. Talling, Lostwithiel, England. Compound for coating telegraph-wire	207,860	Sept. 10	294	.....	14	390
Fields, W., and D. Kerbaugh, Wilmington, Del. Apparatus for loading and unloading vessels, &c.	207,803	Sept. 10	233	73	14	382
Fish, J. R., Grand Rapids, Mich. Suspension-arm for sleeping-car berths	207,861	Sept. 10	295	90	14	390
Fitts, B., Worcester, Mass. Rotary water-meter	207,862	Sept. 10	296	91	14	390
Flagg, G. (See Bard, D., assignor.)						
Flynt, C. D., Brooklyn, N. Y., assignor, by mesne assignments, to G. Hunzinger. Spring-seat. (Reissue)	8,405	Sept. 10	458	137	14	410
Fouts, H. G. (See Theakston and Fouts.)						
Frank, A., Howell, Mich. Horse hay-fork	207,865	Sept. 10	299	91	14	390
Frey, C. (See Keller and Frey.) (Reissue.)						
Gentzsch, H. J., Sr., Chicago, Ill. Plow	207,960	Sept. 10	406	122	14	403
Gillin, R. F., Brooklyn, assignor of one-half interest to W. D. Currier, New York, N. Y. Faucet and cock	207,961	Sept. 10	407	122	14	404
Green, W. M., Wartrace, Tenn. Medical compound	207,864	Sept. 10	300	.....	14	390
Greener, A. (See Felch, A. S., assignor.)						
Gunther, J. L., Newark, N. J. Shelf-support	207,804	Sept. 10	234	74	14	382
Guy, W. S., Nottoway Court-House, Va. Baggage-check	207,962	Sept. 10	408	123	14	404
Gyles, J. F., Chicago, Ill. Car-stove and apparatus for extinguishing fire therein	207,865	Sept. 10	300	91, 92	14	390
Hallner, A., and J. S. Lindquist, Swedeburg, Neb. Cattle-guard	207,963	Sept. 10	408	123	14	404
Harlow, L., Holyoke, Mass. Machine for feeding paper	207,805	Sept. 10	235	74	14	382
Hart, H. C., Unionville, assignor to P. and F. Corbin, New Britain, Conn. Ratchet-bit stock	207,964	Sept. 10	409	123	14	404
Hartford, D. F., assignor of one-half interest to T. T. Hartford, Boston, Mass. Tool for cutting out patterns	207,866	Sept. 10	305	93	14	391
Hartford, T. T. (See Hartford, D. F., assignor.)						
Hasbrouck, F. S., West Brighton, N. Y. Book-binding	207,806	Sept. 10	236	74	14	382
Hastings, E. B., Palmer, Mass. Ore-separator	207,867	Sept. 10	305	93	14	391
Hayner, G., Lansingburg, N. Y. Shelf-attachment for cooking-stoves	207,807	Sept. 10	237	75	14	382
Hemje, C., New York, N. Y. Tobacco-cutting machine	207,868	Sept. 10	307	93, 94	14	391
Henigst, W., Columbus, Ohio. Cultivator	207,808	Sept. 10	238	75	14	382
Hessels, A., New York, N. Y. Ear-ring cover	207,869	Sept. 10	308	94	14	391
Hoyn, W., San Francisco, Cal. Steadying-gage and glass tube cutter	207,809	Sept. 10	241	75	14	383
Higham, E. T., assignor of one-half interest to H. H. Higham, Philadelphia, Pa. Curtain roller and bracket	207,965	Sept. 10	410	123	14	404
Higham, H. H. (See Higham, E. T., assignor.)						
Hill, A. L., assignor of one-half interest to F. B. Tait and G. R. Brett, Decatur, Ill. Snout-ring	207,966	Sept. 10	411	124	14	404
Hill, I., *et al.* (See Mann, W., assignor.)						
Hobart, J. H., Oakland, and J. T. Best, San Francisco, Cal. Ore-washer and amalgamator	207,870	Sept. 10	309	94	14	391
Horton, J. C., New York, and J. Brady, Brooklyn, N. Y. Elastic packing for pistons, &c.	207,871	Sept. 10	312	94	14	392
Hudson, R., assignor of one-half interest to E. P. Davis, Washington, D. C. File-holder	207,967	Sept. 10	412	124	14	404
Hunzinger, G. (See Flynt, C. D., assignor.)						
Inglis, E. H., Newtown, N. Y. Shirt	207,872	Sept. 10	313	95	14	392
Ivy, J. M. (See Reid, W. G., assignor.)						
Jardine, J., Glasgow, Scotland, assignor of one-half interest to C. O. Luce, Brandon, Vt. Rotary engine	207,968	Sept. 10	413	124	14	404
Jennings, F. K., assignor of one-half interest to Phœnix Iron Works Company, Ashtabula, Ohio. Plow	207,873	Sept. 10	313	95	14	392
Kean, H., Kinnickinnic, Wis., and J. G. Alexander, Boston, Mass. Hanging circular saws	207,810	Sept. 10	242	75	14	383
Keller, F., and C. Frey, New York, N. Y. Design for a jewelry base. (Reissue)	8,413	Sept. 10	466	140	14	412
Kerbaugh, D. (See Fields and Kerbaugh.)						
Kimball, J., Boston, Mass. Anti-attrition compound	207,874	Sept. 10	314	.....	14	392
King, G. S. (See Larsway and King.)						
Kingsbury, H. H., Olney, Ill. Express-box	207,969	Sept. 10	414	124	14	405
Kingsbury, J., Greenville, Ala. Brick-kiln	207,875	Sept. 10	314	95	14	392
Kinsley, M. H. (See Bassett, M. L., assignor.)						
Knittin, W., Yorktown, N. Y. Lifting-jack	207,876	Sept. 10	315	95	14	392

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Kortick, F., San Francisco, Cal. Hook	207,877	Sept. 10	316	96	14	392
Laraway, O. M., and G. S. King, Minneapolis, Minn. Horse hay-rake	207,811	Sept. 10	242	76	14	383
Lawler, A. B., Fredericksville, Ill. Wagon-seat	207,812	Sept. 10	243	76	14	383
Lederer, S. M., New York, N. Y. Snow-melting machine	207,970	Sept. 10	415	125	14	405
Lewis, T. S., Saco, Me. Ore-separator	207,876	Sept. 10	317	96	14	392
Lewis, T. S., Saco, Me. Ore-separator	207,879	Sept. 10	318	96, 97	14	392
Lindquist, J. S. (See Hallner and Lindquist.)						
Lingen, H., Wheeling, W. Va. Measuring-jacket	207,880	Sept. 10	319	97	14	393
Livermore, C. C., *et al.* (See Bacon, C. H., assignor.)						
Low, D., *et al.* (See Phillips, P. W., assignor.) (Reissue.)						
Luce, C. O. (See Jardine, J., assignor.)						
Lynch, W., Union Mills, Ind. Washing-machine	207,971	Sept. 10	416	125	14	405
Mancourt, J. W. (See Doremus, W. D., assignor.)						
Mann, H. A., Jr., Ballston Spa, N. Y. Paper box	207,813	Sept. 10	244	76	14	383
Mann, W., assignor of one-half interest to W. Plant, I. Hill, and J. Matthews, New Castle, Pa. Reverberating furnace	207,972	Sept. 10	416	125	14	405
Martin, J. H., Columbus, Ohio. Harness-saddle hook	207,973	Sept. 10	417	126	14	405
Martin, J. H. C., Thornley, Upper Clapton, England. Rice-cleaning apparatus	207,821	Sept. 10	320	97, 98	14	383
Marty, J. M., Faribault, Minn. Wrench	207,814	Sept. 10	245	77	14	383
Matthews, J., *et al.* (See Mann, W., assignor.)						
McAnly, M., Foreston, Ill. Chuck	207,882	Sept. 10	321	98	14	393
McConnell, A. F., Lewisburg, Tenn. Culinary utensil	207,974	Sept. 10	418	126	14	405
McFarland, W. (See Smith, A. W., assignor.)						
McGee, F. W., Rutherford, N. J. Drafting-pencil	207,883	Sept. 10	322	98	14	393
McNamee, R., Philadelphia, Pa., assignor to Allen, Lane & Scott. Machine for sizing and varnishing paper. (Reissue)	8,407	Sept. 10	459	138	14	411
Merreus, H. J., Cleveland, Ohio. Mechanism for the manufacture of pipes and tubes from rubber, paper, cloth, &c.	207,884	Sept. 10	323	98	14	393
Mershon, A. J., Warsaw, Ind. Rock-drilling machine	207,885	Sept. 10	323	99	14	393
Miner, T., Brooklyn, assignor to A. Walker, New York, N. Y. Carbureter	207,886	Sept. 10	325	99	14	393
Monroe, E. P. (See Prindle, E. T., assignor.) (Reissue.)						
Montgomery, J. M., Jr., Columbus, Ohio. Wardrobe-bedstead	207,975	Sept. 10	420	126	14	405
Moore, H. C., Tama City, Iowa. Road-scraper	207,977	Sept. 10	422	127	14	406
Moore, L., and J. C. Scott, Pemberville, Ohio. Governor for steam-engines	207,976	Sept. 10	421	126 127	14	406
Morahan, B., Brooklyn, N. Y. Manufacture of stationary wash-tubs of clay or porcelain	207,978	Sept. 10	423	128	14	406
Moreau, E., San Francisco, Cal., assignor to American Mining and Dredging Company. Detritus-pump	207,887	Sept. 10	326	99	14	394
Morris, A. J. (See Timms, J., assignor.)						
Mumbrue, W. B., Montour, Iowa. Churn-dasher	207,888	Sept. 10	328	99	14	394
Neary, E., Neshanic, N. J. Window-screen	207,815	Sept. 10	245	77	14	383
New, T., New York, N. Y. Fire and water proof roof. (Reissue)	8,414	Sept. 10	467	140	14	412
Newton, N. A., Kalamazoo, Mich. Thill-coupling	207,816	Sept. 10	246	77	14	383
Niles, W. F., Brooklyn, N. Y. Button-polishing machine	207,889	Sept. 10	329	100	14	394
O'Harra, D. J., Reno, Nev., assignor of one-half interest to J. F. Ferguson. Furnace for roasting ores	207,890	Sept. 10	332	100	14	394
Orton, T., Chicago, Ill. Bill and letter file	207,817	Sept. 10	247	77, 78	14	383
Parker, S. J. (See Ross and Parker.)						
Pearson, H. G., New York, N. Y. Mailing-package	207,979	Sept. 10	425	128	14	406
Peters, G. T., Jersey City Heights, N. J. Packing herrings	207,980	Sept. 10	425	128	14	406
Peterson, W. H., Richmond, Ind. Pump	207,891	Sept. 10	335	100	14	394
Pfarre, E., Brooklyn, N. Y. Sharpening-surface	207,892	Sept. 10	335	101	14	394
Phœnix Iron Works Company. (See Jennings, F. K., assignor.)						
Phillips, P. W., Salem, Mass., assignor, by mesne assignments, to D. Low, J. F. Almy, and A. B. Russell. Curtain roller and bracket. (Reissue)	8,404	Sept. 10	457	137	14	410
Pickford, W. H., Philadelphia, Pa. Ticket-punch	207,981	Sept. 10	426	129	14	406
Plant, W., *et al.* (See Mann, W., assignor.)						
Prahar, L. (See Read and Prahar.) (Reissue.)						
Pratt, S. M., *et al.* (See Putnam, J. S., assignor.)						
Prentice, G. W., Providence, R. I. Button-fastener	207,818	Sept. 10	248	78	14	384
Prindle, E. T., Aurora, Ill., assignor, by mesne assignments, to E. P. Monroe, Newark, N. J. Piston-rod packing. (Reissue)	8,411	Sept. 10	464	139	14	411
Putnam, H. W., Bennington, Vt. Bottle-stopper and stopper-fastener	207,982	Sept. 10	428	129	14	407
Putnam, J. S., assignor of two-thirds interest to S. M. Pratt and E. Cowles, Cherokee, Iowa. Pump	207,893	Sept. 10	336	101	14	394
Read, D. M., and L. Prahar, New York, N. Y. Pocket-book frame. (Reissue)	8,408	Sept. 10	461	138	14	411
Read, W., Danbury, Conn. Water-wheel	207,894	Sept. 10	337	101	14	394
Rees, D. A., Joliet, Ill. Car-brake	207,819	Sept. 10	249	78	14	384
Reid, L. H., Washington, N. C. Carbureting apparatus	207,983	Sept. 10	429	129	14	407
Reid, W. G., assignor to himself and J. M. Ivy, Rock Hill, S. C. Plow	207,895	Sept. 10	338	102	14	395
Reiff, J. D., Skippackville, Pa. Governor for horse-powers	207,984	Sept. 10	430	129	14	407
Renshaw, L. F. (See Tower, G. B. N., assignor.)						
Reynolds, W. M., New York, N. Y., assignor to S. S. White, Philadelphia, Pa. Dental drill. (Reissue)	8,409	Sept. 10	461	139	14	411
Richardson, F. W., Troy, N. Y. Safety-valve	207,820	Sept. 10	249	78	14	384
Riddick, W. D., Belvidere, N. C. Baling-press	207,896	Sept. 10	338	102	14	395
Ritchel, C. F., Corry, Pa., assignor to C. B. Curtiss and J. B. Cuzner, Bridgeport, Conn. Nut-cracker	207,897	Sept. 10	339	102	14	395
Roberts, G. S. (See Wadleigh and Roberts.)						
Roberts, O. N. (See Wadleigh and Roberts.)						
Robertson, R. B., Glasgow, Scotland. Grain-separator	207,985	Sept. 10	431	130	14	407
Rolland, A., and J. Baradel, assignors of one-fourth interest to D. R. Clymer, Reading, Pa. Umbrella-runner	207,898	Sept. 10	340	103	14	395
Ross, A., and S. J. Parker, Rochester, N. Y. Grain-binder	207,821	Sept. 10	250	79	14	384
Russell, A. B., *et al.* (See Phillips, P. W., assignor.) (Reissue.)						
Saunders, W. M., Alfred Centre, N. Y. Horse hay-rake	207,986	Sept. 10	432	130	14	407
Scholes, H. B., Brooklyn, N. Y. Combined bedstead and fire-escape	207,899	Sept. 10	341	103	14	395
Schulte, J. F., Cincinnati, Ohio. Rocking-chair	207,900	Sept. 10	342	103	14	395
Scott, J. C. (See Moore and Scott.)						
Selling, L., assignor to J. B. Sinn, Detroit, Mich. Cover for pitchers, &c.	207,987	Sept. 10	433	130	14	407
Shaw, P., Boston, Mass. Apparatus for separating cream from milk	207,822	Sept. 10	253	79	14	384
Shellhouse, E. S., Carey, Ohio. Gate-latch	207,823	Sept. 10	254	79	14	384
Shelton, G., Normal, Ill. Fruit-picker	207,988	Sept. 10	435	130	14	407
Shepard, H. W., Brooklyn, N. Y. Metallic shingle	207,989	Sept. 10	435	131	14	407
Sheppard, J. L., Charleston, S. C. Bale-tie buckle	207,901	Sept. 10	343	104	14	395
Sheppard, J. L., Charleston, S. C. Bale-band tightener and band	207,902	Sept. 10	344	104 105	14	396
Shoeninger, A. (See Betz, E., assignor.)						

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Siemroth, A., Böhlen, Rudolstadt, Germany. Portable parquetry flooring	207,990	Sept. 10	436	131	14	408
Sinn, J. B. (See Selling, L., assignor.)						
Sirois, A., New York, N. Y. Belt-coupling	207,903	Sept. 10	347	105	14	396
Sloan, F. B. (See Clarkson, F. S., assignor.)						
Smalley, R. W., Salem, Mass. Draft-tug link	207,904	Sept. 10	347	105	14	396
Smith, A. M., Brooklyn, N. Y. Neck-tie fastener	207,826	Sept. 10	256	80	14	385
Smith, A. W., Manchester, N. H., assignor of one-fourth interest to W. McFarland, Worcester, Mass. Horseshoe	207,905	Sept. 10	348	105	14	396
Smith, H. W., West Newton, Mass. Reed-organ	207,906	Sept. 10	348	106	14	396
Smith, H. W., West Newton, Mass. Reed-organ valve	207,907	Sept. 10	349	106	14	396
Smith, H. W., West Newton, Mass. Reed-organ	207,908	Sept. 10	350	106	14	396
Smith, J. B., Pleasant Mount, Pa. Lifting-jack	207,909	Sept. 10	350	106	14	396
Smith, J. S., Jackson, Mich. Gate-hanger	207,825	Sept. 10	255	80	14	385
Smith, P., Prairie City, Iowa. Wagon-brake	207,824	Sept. 10	255	80	14	385
Smith, T. C., Green Point, N. Y. Ice-pitcher	207,910	Sept. 10	352	107	14	396
Stanley, J. D., Wilmington, N. C. Cotton-press	207,991	Sept. 10	437	131	14	408
Starbuck, G. H., Troy, N. Y. Siphon-condenser	207,827	Sept. 10	257	80	14	385
Stead, I., and S. H. Barley, Philadelphia, Pa. Gas-generating burner	207,828	Sept. 10	259	81	14	385
Stephenson, J. A., El Paso, Ill. Hedge-trimmer	207,829	Sept. 10	260	81	14	385
Sterling, C. A., New York, N. Y., assignor, by mesne assignments, to G. Turner. Flinting-machine. (Reissue)	8,403	Sept. 10	456	137	14	410
St. John, R. H., Springfield, Ohio. Sewing-machine	207,911	Sept. 10	352	107	14	397
Strattan, J. T., *et al.* (See Swett, S. C., assignor.)						
Strattan, S. R., *et al.* (See Swett, S. C., assignor.)						
Stratton, J. C. and W. H., Millville, N. J. Car-coupling	207,992	Sept. 10	438	131	14	408
Stratton, W. H. (See Stratton, J. C. and W. H.)						
Stuart, I. W., and J. G. Allen, Holliday Station, Ill., assignors to said J. G. Allen. Ditching-plow	207,993	Sept. 10	439	132	14	408
Sullings, H., Kalamazoo, Mich. Car-coupling tool	207,994	Sept. 10	440	132	14	408
Swett, S. C., Washington, D. C., assignor to himself, S. R. and J. T. Strattan, Strattanville, Pa. Device for lighting and extinguishing lamps, &c.	207,995	Sept. 10	441	132	14	408
Tait, F. B., *et al.* (See Hill, A. L., assignor.)						
Talcott, S. C., Ashtabula, Ohio. Machine for measuring and marking fabrics	207,912	Sept. 10	353	107	14	397
Talling, R. (See Field and Talling.)						
Tennent, J. C., Philadelphia, Pa. Cork-cutting machine	207,830	Sept. 10	260	81, 82	14	385
Tetu, D. H., South Point, Quebec, Canada. Fish-drier	207,913	Sept. 10	355	108	14	397
Theakston, J. C., and H. G. Fonts, Salem, Ohio. Bag-fastener	207,996	Sept. 10	443	132	14	408
Thomas, D. H., New York, N. Y. Cooking-range	207,914	Sept. 10	256	108	14	397
Thompson, N., Brooklyn, N. Y. Sash-fastener	207,915	Sept. 10	357	108	14	397
Thomson, B. L., London, and T. Connolly, Kingsland, England. Sheathing vessels	207,997	Sept. 10	444	133	14	409
Timms, J., assignor of one-half interest to A. J. Morris, Malta, Ohio. Changeable gage-truck	207,998	Sept. 10	445	133	14	409
Tinker, E. (See Webb and Tinker.)						
Tower, G. B. N., Cambridge, assignor of one-half interest to L. F. Renshaw, Cohasset, Mass. Steam-generator	207,831	Sept. 10	263	82	14	386
Tracy, W. B., Philadelphia, Pa. Rod-clamping device for walking-beams of oil-pumps	207,999	Sept. 10	446	133	14	409
Tripp, H. C., Auburn, N. Y., assignor to S. S. White, Philadelphia, Pa. Dental chair	208,000	Sept. 10	447	134	14	409
Trudell, J. W. and L. S., Sioux City, Iowa. Front-gear coupling for wagons	207,916	Sept. 10	358	109	14	397
Trudell, L. S. (See Trudell, J. W. and L. S.)						
Turner, G. (See Sterling, C. A., assignor.) (Reissue.)						
Tysdal, J., *et al.* (See Tysdal, K., assignor.)						
Tysdal, K., assignor of four-fifths interest to T. O. Berg, and L., J., and O. Tysdal, Lee, Ill. Barbed fence-wire	208,001	Sept. 10	448	134	14	409
Tysdal, L., *et al.* (See Tysdal, K., assignor.)						
Tysdal, O., *et al.* (See Tysdal, K., assignor.)						
Vail, F. E., Chelsea, Mass. Gas-regulator	207,832	Sept. 10	264	82	14	386
Van Hoesen, E. M., and N. H. Brown, Syracuse, N. Y. Car-coupling. (Reissue)	8,412	Sept. 10	465	139	14	412
Van Houten, C., Marion, Ohio. Grain-binder	208,002	Sept. 10	449	135	14	409
Van Sickle, M., Brooklyn, N. Y. Spring for bed-bottoms	207,833	Sept. 10	265	82	14	386
Veale, M. K. (See Veale, T. C., assignor.)						
Veale, T. C., New York, N. Y., assignor to M. K. Veale, Jersey City, N. J. Combination-barrel	207,917	Sept. 10	359	109	14	397
Verea, R., New York, N. Y. Calculating-machine	207,918	Sept. 10	359	109, 110	14	398
Wadleigh, S. F., O. N. and G. S. Roberts, Meredith, N. H. Plow	207,834	Sept. 10	266	83	14	386
Walker, A. (See Miller, T., assignor.)						
Walsh, W. H., Fort Worth, Tex. Gin-saw sharpener	207,919	Sept. 10	362	110	14	398
Wayland, E., and L. M. Berry, Salisbury, Mo. Vehicle-axle lubricator	207,920	Sept. 10	364	111	14	398
Webb, L. M., and E. Tinker, Tuscarora, N. Y. Car-coupling	207,921	Sept. 10	364	111	14	398
Wenzel, A. G., Brooklyn, N. Y. Apparatus for holding grain-nickel anodes	208,003	Sept. 10	452	136	14	409
Wertman, D. K., Mount Carmel, Pa. Harness	207,922	Sept. 10	365	111	14	398
Westwood, W. J., South Bend, Ind. Adjustable sleigh-shoe for wheeled vehicles	207,923	Sept. 10	366	111	14	398
Weyer, A., New York, N. Y. Apparatus and process for annealing glass	207,924	Sept. 10	367	112	14	398
White, S. S. (See Reynolds, W. M., assignor.) (Reissue.)						
White, S. S. (See Tripp, H. C., assignor.)						
Whittemore, A., Cambridgeport, Mass. Pog-float	207,925	Sept. 10	368	112	14	399
Willcox, F., Newark, N. J. Can for liquids	207,926	Sept. 10	369	112	14	399
Williams, G. R., Ithaca, N. Y. Horse hay-rake	207,927	Sept. 10	369	112, 113	14	399
Wilson, C. P., *et al.* (See Boyd, J. C., assignor.) (Reissue.)						
Withers, E. D., Bently Springs, Md. Telegraph-pole	208,004	Sept. 10	453	136	14	410
Witsil, G. L., assignor of one-half interest to T. L. Bates, Philadelphia, Pa. Game-table	207,835	Sept. 10	268	83	14	386
Wood, R. G., Cincinnati, Ohio. Sewing-machine	207,928	Sept. 10	371	113	14	399
Woolson, E., Springfield, Mass. Rest for cloth-shearing machines	207,929	Sept. 10	374	113	14	399
Zeltner, J., Nuremberg, Bavaria. Manufacture of violet ultramarine	207,836	Sept. 10	269	.....	14	386

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 10th DAY OF SEPTEMBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Air-compressor	W. D. Doremus	207,954	Sept. 10	396	120	14	402
Anodes. Apparatus for holding grain-nickel	A. C. Wenzel	208,003	Sept. 10	452	136	14	409
Anti-attrition compound	J. Kimball	207,874	Sept. 10	314	.....	14	392
Apiary or bee-house	W. Erwin	207,958	Sept. 10	404	122	14	403
Atomizer	G. A. Brug	207,849	Sept. 10	283	87	14	388
Bag and sack	J. Arkell	207,933	Sept. 10	378	114, 115	14	400
Bag-fastener	J. C. Theakston and H. G. Fonts	207,996	Sept. 10	443	132	14	408
Baggage-check	W. S. Guy	207,962	Sept. 10	408	123	14	404
Bale-band tightener and band	J. L. Sheppard	207,902	Sept. 10	344	104, 105	14	396
Barrel. Combination	T. C. Veale	207,917	Sept. 10	359	109	14	397
Bars. Machine for coiling metal	G. F. Evans	207,892	Sept. 10	233	73	14	382
Bed-bottom	F. C. Eastman	207,890	Sept. 10	231	72, 73	14	381
Bed-bottom. Spring	A. S. Felch	207,959	Sept. 10	405	122	14	403
Bed-bottom spring	M. Van Sickle	207,833	Sept. 10	265	82	14	386
Bedstead and fire-escape. Combined	H. B. Scholes	207,899	Sept. 10	341	103	14	395
Bedstead-fastening	F. S. Clarkson	207,949	Sept. 10	393	118	14	402
Bedstead. Wardrobe	J. M. Montgomery, Jr	207,975	Sept. 10	420	126	14	405
Belt-coupling	A. Sirois	207,903	Sept. 10	347	105	14	396
Bevel	F. L. Cook	207,950	Sept. 10	394	119	14	402
Bit-stock. Ratchet	H. C. Hart	207,964	Sept. 10	409	123	14	404
Blank-forming machines. Attachment to metal-	M. L. Bassett	207,840	Sept. 10	273	84	14	387
Book-binding	F. S. Hasbrouck	207,806	Sept. 10	236	74	14	382
Boot and shoe nailing machine	H. Dunham	207,956	Sept. 10	398	120, 121	14	402
Bottle-stopper and stopper-fastener	H. W. Putnam	207,982	Sept. 10	428	129	14	407
Box. Express	H. H. Kingsbury	207,969	Sept. 10	414	124	14	405
Brake. Car	D. A. Rees	207,819	Sept. 10	249	78	14	384
Brake. Wagon	P. Smith	207,824	Sept. 10	255	80	14	385
Brick-kiln	J. Kingsbury	207,875	Sept. 10	314	95	14	392
Broom	J. Arbeiter	207,837	Sept. 10	271	84	14	386
Brush. Blacking	R. C. Doane	207,953	Sept. 10	396	119	14	402
Brushes. Manufacture of	C. L. W. Baker	207,793	Sept. 10	227	71	14	381
Buckle. Bale-tie	J. L. Sheppard	207,901	Sept. 10	343	104	14	395
Bullion. Refining base	L. Balbach	207,937	Sept. 10	383	.....	14	400
Button-fastener	G. W. Prentice	207,818	Sept. 10	248	78	14	384
Button-polishing machine	W. F. Niles	207,889	Sept. 10	329	100	14	394
Calculating-machine	R. Verea	207,918	Sept. 10	359	109, 110	14	398
Can. Liquid	F. Willcox	207,926	Sept. 10	369	112	14	399
Car berths. Suspension-arm for sleeping	J. R. Fish	207,861	Sept. 10	295	90	14	390
Car-coupling	J. C. and W. H. Stratton	207,992	Sept. 10	438	131	14	408
Car-coupling	E. M. Van Hoesen and N. H. Brown. (Reissue.)	8,412	Sept. 10	465	139	14	412
Car-coupling	L. M. Webb and E. Tinker	207,921	Sept. 10	364	111	14	398
Car-coupling tool	A. Sullings	207,994	Sept. 10	440	132	14	408
Car-door fastening. Freight	W. Engles	207,859	Sept. 10	294	90	14	390
Carbonizing apparatus. Vitriol-holder for beverage	B. Bates	207,841	Sept. 10	274	85	14	387
Carbureter	T. Miner	207,886	Sept. 10	325	99	14	393
Carbureting apparatus	L. H. Reid	207,983	Sept. 10	429	129	14	407
Carriage-top standard	E. Betz	207,941	Sept. 10	387	116	14	401
Cartridge-loading mechanism	R. H. Dalzell	207,853	Sept. 10	288	88, 89	14	389
Cattle-guard	A. Hallner and J. S. Lindquist	207,963	Sept. 10	408	123	14	404
Chair. Dental	H. C. Tripp	208,000	Sept. 10	447	134	14	409
Chair. Rocking	J. F. Schulte	207,900	Sept. 10	342	103	14	395
Chill for car-wheels	J. A. Barr	207,794	Sept. 10	226	71	14	381
Chuck	M. McAnly	207,882	Sept. 10	321	98	14	393
Churn	W. F. Baird	207,935	Sept. 10	380	115	14	400
Churn-dasher	W. B. Mumbrue	207,888	Sept. 10	328	99	14	394
Cigar-cap	J. T. Emerick	207,858	Sept. 10	293	90	14	390
Cloth-shearing machine. Rest for	E. Woolson	207,929	Sept. 10	374	113	14	399
Coffee-pot	J. M. Davis	207,952	Sept. 10	395	119	14	402
Combs. Machine for rounding off the ends of	W. Booth	207,845	Sept. 10	278	86	14	387
Condenser. Siphon	G. H. Starbuck	207,827	Sept. 10	257	80	14	385
Cooking apparatus. Steam	L. H. Ayer	207,838	Sept. 10	271	84	14	386
Cork-cutting machine	J. C. Tennent	207,830	Sept. 10	260	81, 82	14	385
Culinary utensil	A. F. McConnell	207,974	Sept. 10	418	126	14	405
Cultivator	J. C. Boyd. (Reissue)	8,406	Sept. 10	459	138	14	410
Cultivator	W. Henigst	207,808	Sept. 10	238	75	14	382
Curtain roller and bracket	E. T. Hingham	207,965	Sept. 10	410	123	14	404

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Curtain roller and bracket	P. W. Phillips. (Reissue)	8,404	Sept. 10	457	137	14	410
Dental drill	W. M. Reynolds. (Reissue)	8,409	Sept. 10	461	139	14	411
Dock	J. C. Bell and P. Costello	207,843	Sept. 10	276	85	14	387
Drilling machine. Rock	A. J. Morshon	207,885	Sept. 10	323	99	14	393
Ear-ring cover	A. Hessela	207,869	Sept. 10	308	94	14	391
Elevator. Ice	R. G. Brown	207,848	Sept. 10	281	87	14	388
Elevator. Water	A. B. Davis	207,799	Sept. 10	230	72	14	381
Engine and pump. Steam	J. G. Baker	207,936	Sept. 10	381	115	14	400
Engine. Rotary	J. Jardine	207,968	Sept. 10	413	124	14	404
Fabrics. Machine for measuring and marking	S. C. Talcott	207,912	Sept. 10	353	107	14	397
Faucet	H. Alexander	207,931	Sept. 10	376	114	14	399
Faucet and cock	R. F. Gillin	207,961	Sept. 10	407	122	14	404
Fence-wire. Barbed	K. Tysdal	208,001	Sept. 10	448	134	14	409
File. Bill and letter	T. Orton	207,817	Sept. 10	247	77, 78	14	383
File-holder	R. Hudson	207,967	Sept. 10	412	124	14	404
Fire-escape	W. Duryea	207,856	Sept. 10	292	89	14	389
Fish-drier	D. H. Tetu	207,913	Sept. 10	355	108	14	397
Flooring. Portable parquetry	A. Siemroth	207,990	Sept. 10	436	131	14	408
Fluting-machine	C. A. Sterling. (Reissue)	8,403	Sept. 10	456	137	14	410
Fork. Horse hay	A. Frank	207,863	Sept. 10	299	91	14	390
Fruit-picker	G. Shelton	207,988	Sept. 10	435	130	14	407
Furnace. Ore-roasting	D. J. O'Harra	207,890	Sept. 10	332	100	14	394
Furnace. Reverberating	W. Mann	207,972	Sept. 10	416	125	14	405
Gage and glass-tube cutter. Steadying	W. Heyn	207,809	Sept. 10	241	75	14	383
Gang-table	G. L. Witsil	207,835	Sept. 10	268	83	14	386
Gas-generating burner	I. Stead and S. H. Bayley	207,828	Sept. 10	259	81	14	385
Gas-regulator	F. E. Vail	207,832	Sept. 10	264	82	14	386
Gate-hanger	J. S. Smith	207,825	Sept. 10	255	80	14	385
Gate. Sluice and flood	B. B. Downs	207,955	Sept. 10	397	120	14	402
Glass. Apparatus and process for annealing	A. Weyer	207,924	Sept. 10	367	112	14	398
Governor for horse-powers	J. D. Reiff	207,984	Sept. 10	430	129	14	407
Governor. Steam-engine	L. Moore and J. C. Scott	207,976	Sept. 10	421	126 and 127	14	406
Grain-binder	A. Ross and S. J. Parker	207,821	Sept. 10	250	79	14	384
Grain-binder	C. Van Houten	208,002	Sept. 10	449	135	14	409
Grain-separator	J. F. Becker	207,842	Sept. 10	275	85	14	387
Grain-separator	R. B. Robertson	207,985	Sept. 10	431	130	14	407
Hame	J. J. Carpenter	207,944	Sept. 10	389	117	14	401
Harness	D. K. Wertman	207,922	Sept. 10	365	111	14	398
Harvester. Corn	C. K. Conner	208,005	Sept. 10	453	136	14	410
Hedge-trimmer	J. A. Stephenson	207,829	Sept. 10	260	81	14	385
Herrings. Packing	G. T. Peters	207,980	Sept. 10	425	128	14	406
Hook	F. Kortick	207,877	Sept. 10	316	96	14	392
Horse-detacher	W. G. Cummins	207,951	Sept. 10	395	119	14	402
Horse-power	P. Beche	207,795	Sept. 10	227	71	14	381
Horseshoe	A. W. Smith	207,905	Sept. 10	348	105	14	396
Jacket. Measuring	H. Lingen	207,880	Sept. 10	319	97	14	393
Jewelry-base. Design for a	F. Keller and C. Frey. (Reissue)	8,413	Sept. 10	466	140	14	412
Lamps, &c. Device for lighting and extinguishing	S. C. Swett	207,995	Sept. 10	441	132	14	408
Latch. Gate	E. S. Shellhouse	207,823	Sept. 10	254	79	14	384
Lathe. Screw-cutting	A. F. Cherry	207,852	Sept. 10	287	88	14	389
Leather-dressing machine	A. J. Alexander	207,930	Sept. 10	375	114	14	399
Lifting-jack	J. Buel	207,850	Sept. 10	284	87	14	388
Lifting-jack	W. Knillin	207,876	Sept. 10	315	95	14	392
Lifting-jack	J. B. Smith	207,909	Sept. 10	350	106	14	396
Lubricator. Vehicle-axle	E. Wayland and L. M. Berry	207,920	Sept. 10	364	114	14	398
Mailing-package	H. G. Pearson	207,979	Sept. 10	425	128	14	406
Medical compound	W. M. Green	207,864	Sept. 10	300	------	14	390
Milk. Apparatus for separating cream from	P. Shaw	207,822	Sept. 10	253	79	14	384
Motor. Hydraulic	W. B. Cass	207,945	Sept. 10	390	117	14	401
Neck-tie fastener	A. M. Smith	207,826	Sept. 10	256	80	14	385
Nut-cracker	C. F. Ritchel	207,897	Sept. 10	339	102	14	395
Ore-separator	E. B. Hastings	207,867	Sept. 10	305	93	14	391
Ore-separator	T. S. Lewis	207,878	Sept. 10	317	96	14	392
Ore-separator	T. S. Lewis	207,879	Sept. 10	318	96, 97	14	392
Ore washer and amalgamator	J. H. Hobart and J. T. Best	207,870	Sept. 10	309	94	14	391
Organ. Reed	H. W. Smith	207,906	Sept. 10	348	106	14	396
Organ. Reed	H. W. Smith	207,908	Sept. 10	350	106	14	396
Organ valve. Reed	H. W. Smith	207,907	Sept. 10	349	106	14	396
Packing for pistons, &c. Elastic	J. C. Horton and J. Brady	207,871	Sept. 10	312	94	14	392
Packing. Piston-rod	E. T. Prindle. (Reissue)	8,411	Sept. 10	464	139	14	411
Paper box	H. A. Maun, Jr	207,813	Sept. 10	244	76	14	383
Paper-feeding machine	S. Harlow	207,805	Sept. 10	235	74	14	382
Paper sizing and varnishing machine	R. McNamee. (Reissue)	8,407	Sept. 10	459	138	14	411
Patterns. Tool for cutting out	D. F. Hartford	207,866	Sept. 10	305	93	14	391
Peg-float	A. Whittemore	207,925	Sept. 10	368	112	14	399
Pencil. Drafting	F. W. McGee	207,883	Sept. 10	322	98	14	393
Piano-forte action. Upright	C. F. Chew	207,946	Sept. 10	391	118	14	401
Piano-forte frame. Upright	C. F. Chew	207,947	Sept. 10	392	118	14	401
Pipes and tubes from rubber, paper, cloth, &c. Mechanism for the manufacture of	H. J. Merrens	207,884	Sept. 10	323	98	14	393
Pitcher. Ice	T. C. Smith	207,910	Sept. 10	352	107	14	396
Pitchers, &c. Cover for	L. Selling	207,987	Sept. 10	433	130	14	407
Plaiting-machine	M. Bradley	207,796	Sept. 10	228	71	14	381
Plow	H. J. Gentzsch, Sr	207,960	Sept. 10	406	122	14	403
Plow	F. K. Jennings	207,873	Sept. 10	313	95	14	392
Plow	W. G. Reid	207,895	Sept. 10	338	102	14	395
Plow	S. F. Wadleigh, O. N. and G. S. Roberts.	207,834	Sept. 10	266	83	14	386
Plow. Ditching	I. W. Stuart and J. G. Allen	207,993	Sept. 10	439	132	14	408
Pocket-book frame	D. M. Read and L. Prahar. (Reissue)	8,408	Sept. 10	461	138	14	411
Press. Baling	W. D. Riddick	207,896	Sept. 10	338	102	14	395
Press. Broom	D. Bard	207,839	Sept. 10	272	84	14	387
Press. Cotton	J. D. Stanley	207,991	Sept. 10	437	131	14	408
Printing-machine inking apparatus	C. H. Bacon	207,934	Sept. 10	379	------	14	400
Pump	W. H. Peterson	207,891	Sept. 10	335	100	14	394
Pump	J. S. Putnam	207,893	Sept. 10	336	101	14	394
Pump. Detritus	E. Moreau	207,887	Sept. 10	326	99	14	394

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Pumps. Rod-clamping device for walking-beams of oil-	W. B. Tracy	207,909	Sept. 10	446	133	14	409
Punch. Ticket	W. H. Pickford	207,981	Sept. 10	426	129	14	406
Rake. Horse hay	O. M. Laraway and G. S. King	207,811	Sept. 10	242	76	14	383
Rake. Horse hay	W. M. Saunders	207,986	Sept. 10	432	130	14	407
Rake. Horse hay	G. R. Williams	207,927	Sept. 10	369	112 and 113	14	399
Range. Cooking	D. H. Thomas	207,914	Sept. 10	356	108	14	397
Rectifying apparatus	J. C. Brockman	207,847	Sept. 10	280	86	14	388
Rein hook. Check	D. H. Clippinger	207,797	Sept. 10	229	72	14	381
Rice-cleaning apparatus	J. H. C. Martin	207,881	Sept. 10	320	97, 98	14	393
Rocker. Child's	J. G. De Bretton	207,846	Sept. 10	279	86	14	388
Roof. Fire and water proof	T. New. (Reissue)	8,414	Sept. 10	467	140	14	412
Saddle hook. Harness	J. H. Martin	207,973	Sept. 10	417	126	14	405
Saddle tree. Riding	B. F. Barrow	207,939	Sept. 10	385	116	14	400
Sash-balance	H. F. Bond. (Reissue)	8,410	Sept. 10	463	139	14	411
Sash-fastener	N. Thompson	207,915	Sept. 10	357	108	14	397
Sash. Window	S. R. Easton	207,801	Sept. 10	232	73	14	381
Saw-filing machine. Gin	A. S. Eastham	207,957	Sept. 10	401	121	14	403
Saw sharpener. Gin	W. H. Walsh	207,919	Sept. 10	362	110	14	398
Saws. Hanging circular	H. Kean and J. G. Alexander	207,810	Sept. 10	242	75	14	383
Scraper. Road	H. C. Moore	207,977	Sept. 10	422	127	14	406
Screen. Window	E. Neary	207,815	Sept. 10	245	77	14	383
Seals. Machine for compressing and stamping lead	W. D. Doremus	208,006	Sept. 10	455	137	14	410
Seat. Spring	C. D. Flynt. (Reissue)	8,405	Sept. 10	458	137	14	410
Sewing-machine	R. H. St. John	207,911	Sept. 10	352	107	14	397
Sewing-machine	R. G. Wood	207,928	Sept. 10	371	113	14	399
Sharpening-surface	E. Pfarre	207,892	Sept. 10	335	101	14	394
Shelf-support	J. L. Gunther	207,804	Sept. 10	234	74	14	382
Shingle. Metallic	H. W. Shepard	207,989	Sept. 10	435	131	14	407
Shirt	E. H. Inglis	207,872	Sept. 10	313	95	14	392
Sifter. Ash	F. S. Clarkson	207,948	Sept. 10	393	118	14	402
Sleigh-shoe for wheeled vehicles. Adjustable	W. J. Westwood	207,923	Sept. 10	366	111	14	398
Snout-ring	A. L. Hill	207,966	Sept. 10	411	124	14	404
Snow-melting machine	S. M. Lederer	207,970	Sept. 10	415	125	14	405
Spectacles	B. X. Blair	207,844	Sept. 10	277	85	14	387
Steam-generator	W. T. Bate	207,940	Sept. 10	386	116	14	400
Steam-generator	G. B. N. Tower	207,831	Sept. 10	263	82	14	386
Stove and apparatus for extinguishing fire therein. Car-	J. F. Gyles	207,865	Sept. 10	300	91, 92	14	390
Stove-pipes. Water-heater for	J. Dunseith and S. Crawford	207,855	Sept. 10	291	89	14	389
Stove shelf. Cooking	W. J. Copp	207,798	Sept. 10	230	72	14	381
Stoves. Shelf attachment for cooking	G. Hayner	207,807	Sept. 10	237	75	14	382
String-holder	B. Elliott	207,857	Sept. 10	293	90	14	389
Surgical dilator	W. I. Alvord	207,932	Sept. 10	377	114	14	400
Tacking-machine	J. W. Carver	207,851	Sept. 10	285	87, 88	14	388
Telegraph-pole	E. D. Withers	208,004	Sept. 10	453	136	14	410
Telegraph-wire. Compound for coating	F. Field and R. Taling	207,860	Sept. 10	294	------	14	390
Thill-coupling	N. A. Newton	207,816	Sept. 10	246	77	14	383
Tobacco-cutting machine	C. Hemje	207,868	Sept. 10	301	93, 94	14	391
Truck. Changeable gage	J. Timms	207,998	Sept. 10	445	133	14	409
Tug link. Draft	R. W. Smalley	207,904	Sept. 10	347	105	14	396
Type-case	C. W. Dickinson	207,854	Sept. 10	291	89	14	389
Ultramarine. Manufacture of violet	J. Zeltner	207,836	Sept. 10	269	------	14	386
Umbrella-runner	A. Rolland and J. Baradel	207,898	Sept. 10	340	103	14	395
Valve. Safety	F. W. Richardson	207,820	Sept. 10	249	78	14	384
Vehicles. Platform-gear for	J. Bryant	207,942	Sept. 10	388	116	14	401
Vessels, &c. Apparatus for loading and unloading	W. Fields and D. Kerbaugh	207,803	Sept. 10	233	73	14	382
Vessels. Sheathing	B. L. Thomson and T. Connolly	207,997	Sept. 10	444	133	14	409
Wagon-seat	A. B. Lawler	207,812	Sept. 10	243	76	14	383
Wagons. Front-gear coupling for	J. W. and L. S. Trudell	207,916	Sept. 10	358	109	14	397
Wash-tubs of clay or porcelain. Manufacture of stationary	B. Morahan	207,978	Sept. 10	423	128	14	406
Washing-machine	G. F. Burtch	207,943	Sept. 10	389	117	14	401
Washing-machine	W. Lynch	207,971	Sept. 10	416	125	14	405
Water-meter. Rotary	B. Fitts	207,862	Sept. 10	296	91	14	390
Water-trap for sinks, &c	J. Barrett	207,938	Sept. 10	384	115	14	400
Water-wheel	W. Read	207,894	Sept. 10	337	101	14	394
Wrench	J. M. Marty	207,814	Sept. 10	245	77	14	383

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COMMISSIONER'S DECISIONS.

SCOTT *vs.* FORD *et al.*—*Interference.*

[*Motion in the matter of the interference between the application of Walter Scott, filed February* 9, 1878; *the application of Edward L. Ford, filed July* 27, 1877; *Letters Patent No.* 191,494, *granted to S. D. Tucker May* 29, 1877, *and Letters Patent No.* 181,250, *granted to L. C. Crowell August* 22, 1876, *for* "IMPROVEMENT IN PERFECTING PRINTING-PRESSES," *&c.—Decided September* 30, 1878.]

Distinct mechanisms producing by their co-operation, in a single organized machine, new and highly useful results, constitute a patentable combination and not a mere aggregation.

A claim which exceeded in its terms the invention actually made, and anticipated possible future improvements, yet undevised, was disallowed.

SPEAR, *Commissioner:*

Counsel for Scott move to dissolve the interference for the reasons:

First. That the claims which form the subject-matter of the interference are so broad and indefinite that they ought not to be allowed.

Second. That the invention, as broadly claimed, is substantially anticipated in prior patents, a list of which is hereto attached.

Third. If the parties, in view of the prior state of the art, are restricted to what is patentable in their several improvements, no interference will exist.

The claims in contest, referred to in the motion-paper, read:

1. The combination, with a printing-machine, of pasting and folding mechanisms, whereby sheets are printed, pasted upon the desired lines of ultimate folding, and folded, so as to form a folded sheet or signature, all substantially as described.

2. The combination of printing, cutting, pasting, and folding mechanisms, whereby a web of paper is printed, severed into sheets, said sheets pasted on their folding lines, and folded or doubled two or more times to form complete folded packs or signatures, all substantially as described.

The patents introduced by counsel in support of the motion show various kinds of folding and of pasting and folding machines existing in the art at the time of the present invention, but in no one of them, or nowhere, does it appear that prior to these contestants any printing-machine had been made having pasting and folding mechanisms combined and capable of operating therewith in such manner that a paper blank could be printed, pasted, and folded into a finished sheet or signature by the action of a single organized machine. In the particular apparatus shown by the various parties to the interference, the pasting and folding devices are united with what is known to the trade as a web-printing press.

There is no difficulty in identifying the elements of combination specified in the claims with certain well-defined parts of the machine-structure, nor is it questioned that highly important results are attained by their co-operative action. With this certainty in the combining parts, in the nature of their functions, and of the effects produced, the charge of indefiniteness urged against the claims cannot be sustained.

Whether a claim is too broad or not must depend upon the state of the art.

If the thing claimed be, in its nature, patentable, then it can be defeated only by showing that other inventions are included in its terms which are already within the knowledge of the public.

The claims in contest, as before indicated, are for certain definite mechanisms not shown before in combination, and producing by their co-operation, results of a very useful and important character. Of these claims, the second is for an apparatus shown in all the applications, and is evidently broad enough to include all existing kinds of pasting and folding mechanisms combined with any form of printing machine and cutter to operate in the manner and to accomplish the results specified. This, however, is not a claim to a principle in nature, as in *O'Reilly* vs. *Morse*, nor is it an endeavor to monopolize a result irrespective of the means by which it is accomplished. The invention is a broad one, and of acknowledged value, and should be protected by claims of adequate scope. For the first time in the art it has been possible to produce from a continuous web, newspapers cut, pasted, and folded into a complete pack, without any manipulation of the paper blank from its entry into the machine to its exit, and to do this more rapidly and cheaply than ever before. In fact, a revolution in the entire art of

rapid newspaper printing is effected by the invention, so that viewed from this stand-point alone, the quality of it cannot be seriously underrated.

The present is strikingly like the case of *Birdsell* vs. *McDonald*, (6 OFFICIAL GAZETTE, 682,) wherein, as here, the merit of the broad idea was assailed upon the ground that it involved nothing but the convenient assemblage of machine parts possessed of no co-operative function, such as would entitle to protection. Distinct claim was made to the combination of thrashing and hulling cylinders which should effect the complete separation of the hulled seed from the bolls and stalks before exit from the machine. The claim was unqualifiedly sustained, although the two cylinders were clearly distinct in their operations, and either could have been omitted without in the least affecting the function and results accomplished by the other. The two, however, had never been combined before in one machine, and the advantages arising from such combination were so marked and radical that the court had no doubt respecting the invention involved and its right to proper protection.

Precisely the same state of facts is met with here, and as the second claim is an accurate summary of the organic parts which secure the new and beneficial results, it may stand for contest.

Claim 1, however, is not limited in its terms to web-printing presses, which is the case with claim 2, by reason of the language employed, nor is there any mention of the cutting device, which is an essential only when it is a web that is being operated with. Clearly, then, the claim contemplates including in its terms all printing-presses, whether they be such as use the continuous web or those that use the cut paper blanks. But obviously this is seeking to anticipate possible future discoveries, for in no one of the contesting cases is anything shown but a web-printing press, nor has it been demonstrated how any other press than that style can be successfully operated in obtaining the desired ends.

To exceed the actual invention in the statement of claim is, of course, a vital defect, and since this criticism can be truthfully urged against claim 1 in dispute, it must be disallowed.

The interference is dissolved as to claim 1, but will be proceeded with upon claim 2 as an issue.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of New York.

BADISCHE ANILIN AND SODA FABRIK *vs.* JAMES HIGGIN, ABRAHAM LLOYD, JOHN O'ROURKE, AND JOHN SIMPSON.

[*In Equity.—October Term*, 1877.]

Although the original patent may contain a satisfactory specification of invention, yet if the specification of claim be inadequate to proper protection, the defect is within the language of the reissue section (4916 Rev. Stats.) and may be remedied.

So far as the claim is wanting in rightful scope, the patent is inoperative. To reissue the patent, that a claim to fully cover the invention may be entered, is warranted by the statute.

The patent being for a new dye product, the article is protected without regard to any one method of manufacture; *hence* the claim which included not only the particular processes practiced by the inventors, but "any other method which will produce a like result," is no broader than the actual invention.

Nor does it in effect monopolize a result. The term "result" as used in the claim, taken in connection with the other words, simply means to include any other method than that of the patent, which will obtain a like product resulting. It is something tangible, and not a mere idea.

Artificial alizarine differs essentially from the chemically pure alizarine of the laboratory and from the alizarine of the madder plant. Additional coloring principles of distinctive character are contained which render the composite product a novel one.

Reissued Letters Patent No. 4,321, (Div. B.) granted Graebe and Liebermann for improvement in dyes or coloring matters from anthracene, April 4, 1871, are for the same invention as the original patent, and are valid.

[*George Gifford* and *J. Van Santvoord*, for complainants; *G. M. Plympton*, for defendants.]

OPINION.—*September* 25, 1878.

WHEELER, *J.:*

This suit is brought for relief against an alleged infringement of Division B of reissued Letters Patent No. 4,321, to Charles Graebe and Charles Liebermann, for an improvement in dyes and coloring matters from anthracene, dated April 4, 1871, and now owned by the plaintiff.

The defenses set up are that the reissue of the patent was unauthorized by law, and void because the original patent was not inoperative nor invalid, by reason of a defective or insufficient specification, nor by reason of the patentees claiming therein, as their own invention or discovery, more than they had a right to claim, and because the reissue covers alleged inventions not shown at all in the original; that the patent is void for want of novelty of the invention, and because it is not for any invention that by law is patentable; and that the defendants do not infringe.

The original patent describes two processes by which a substance is produced, and some other processes by which one of the substances from which it may be derived is produced, and claims:

The within-described process for the production of alizarine by first preparing bibromanthrakinon or bichloranthrakinon, and then converting those substances into alizarine, substantially as above set forth.

The reissued patent, Division B, describes precisely the same process producing the same substance and claims:

Artificial alizarine produced from anthracene, or its derivatives, by either of the methods herein described, or by any other method which will produce a like result.

The difference between the original and the whole reissue is that the reissue, in this division, claims the product which the original did not claim. Whether the circumstances *dehors* the patent required by the statute to authorize a reissue existed or not was a matter to be determined by the Patent Office, and, having been determined there, is not open here. Whether the reissue is for the same invention that the original was, and is such as was warranted upon that original, is open. (*Russell* vs. *Dodge*, 93 U. S., 460.) Nothing is seen to show that the original was not valid for what it claimed. There was nothing defective or insufficient about the specification of the invention. If the statute, by specification, meant that and no more, then, on the patents themselves, it would appear that there was no ground for the reissue. But the word seems to be used in a broader sense, and to be intended to cover the specification of the claim as well. In that sense, there was a defective specification of the invention as patented, and the patent was inoperative and invalid for that part of the invention not covered by the claim. The invention specified in each is precisely the same. The original did not cover the whole of it, and so was in operative as to part. The reissues do cover the whole. They seem to fall exactly within the intention of the statute in this particular. (*Seymour* vs. *Osborne*, 11 Wall., 516.)

It is said that the reissue attempts to cover more, and is, therefore, void, because it not only claims the substance produced by those processes, but proceeds to claim it if produced by any other method which will produce a like result. If these words enlarge the scope of the claim at all, it does seem that they claim as much as there is of the enlargement that was not in the original, and which, in fact, neither those nor any other inventors had then invented.

That product, however, is a substance, a composition of matter. If it was new and useful, they were entitled to a patent for it. If entitled to a patent for it at all, they were entitled to one for it however made. So, if the claim covered it without those words, it covered it as fully for the purposes of a patent as with them, and they did not enlarge nor vary the meaning of the claim, nor have any effect upon the patent at all.

It is further said that the patent professes to be, and is in fact, a patent for a result, which is not patentable at all. It is true the claim does not make use of the word "result." If it was used to signify an abstraction, it seems true enough that it would not be for anything patentable. But it is to be read with the rest of the words with which it is connected; and, when so read, its meaning is plain. The claim is for the product that will be produced by those processes. It so says. Then, when it says "or by any other method which will produce a like result," it means any other method which will produce a like product resulting. So the claim is all the way for a thing tangible, and not for a mere idea.

It is also suggested that the substance is not so described in the patent as to make what it is determinable with sufficient exactness. It is called artificial alizarine. That may not be the most exact nor a very exact name. But the patent law does not prescribe how patented articles shall be named. It is described by an exact mode of production that will not produce anything else. Those who are able to produce it and those who use it, have no difficulty in knowing or using it. Its character is so complex and intricate that everything to be found in it could not be told then, and, perhaps, cannot be now. But there is nothing in the law that requires all its constituent parts to be described, set forth, or known. The law required the inventors to file such written description of it, and of the manner and process of making, compounding, and using it, "in such full, clear, concise, and exact terms, as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same." (Act of 1836, § 6; 1870, § 26; Rev. Stats., Sec. 4888.) This is all the law required in this behalf, and it is shown by the testimony, both of those skilled in the art and science to which this subject appertains and with which it is most nearly connected, and those dealing in and making practical use of it, has been done. Those wishing to use it know what to apply for to obtain it, and how to make use of it when obtained. It is not a mere scientific abstraction, but is an article of commerce, useful in the art of coloring, that can be bought, sold, handled, and consumed. The inventors appear to have done all that could be done, and all that was required or would be useful, in describing it.

It is insisted that, at the time of this invention, this product was old, and as well known as it was afterward, and that what was invented was in reality merely a new process of producing it. Whether the product was new with the invention, or was known before, is a question of fact to be determined upon the evidence. Chemically pure alizarine was unquestionably well-known among chemists. Madder alizarine was well-known among chemists and artists in dyes. If this is the same as either, it could not be a new invention. If not the same as either, it is not claimed that it is the same as any other known thing. The chemists examined as witnesses on each side are of such eminent learning and undoubted character, that the solution of this question is not involved with such difficulties as are sometimes to be encountered in settling questions of fact.

A careful examination of the testimony of Prof. Chandler, a witness for the defendants, and that of President Morton and Profs. Hedrick and Ordway, witnesses for the plaintiff, shows that he differs from them more about names of things, the construction of terms, and inferences to be drawn, than about the actual existence of material facts. Madder alizarine contains chemically pure alizarine, expressed by the chemical notation $C_{14}H_8O_4$. So does this product. So far the witnesses agree; and, so far as that particular ingredient is concerned, the two substances are identical. He regards that as the important thing, and the presence of the other things which each contains as unimportant and useless, if not injurious accidents. That other things do exist in each, as they testify, he does not deny. They say that this product contains isopurpurine, anthrapurpurine, monoxanthrakinon, and some other less important ingredients not named, which were not only not ingredients of either pure alizarine or madder alizarine, but were not known at all until they were brought out by this invention. He says that purpurine was discovered by Colin 1828, and anthrakinon by Dumas and Laurent in 1832. Purpurine is chemically different from isopurpurine or anthrapurpurine, and anthrakinon from monoxanthrakinon, as here understood. He does not say that any dye-stuff before that of Graebe and Liebermann ever contained isopurpurine, anthrapurpurine, and monoxanthrakinon with pure alizarine, as theirs did and does. So, upon the testimony that is not really contradictory, their product was a new composition of matter. He says these things are mere impurities, whose presence is not wanted, and which are tolerated because it is better to endure them than removing them, and he produces exhibits to show what colors may be made upon fabrics with them and without them. The others say that they are useful coloring agents, and exhibits are produced to show that fact. From all, it appears that they are influential as coloring agents in producing results different from those that can be produced without them. So that the product of these inventors containing them was not only a new composition, but a new dye-stuff. That it is useful, as other coloring materials are useful, is beyond any question. From these considerations, it appears that Graebe and Leibermann invented a new and useful composition of matter, for which they properly obtained their original patent, and, so far as is open to inquiry here, their reissued patent.

The claim that the defendants do not infringe rests, apparently, upon the idea that they only use the product of a different process, and not that they do not use or vend dye-stuff substantially the same as this.

The case of *Badische Anilin and Soda Fabrik* vs. *Hamilton Manufacturing Company*, (13 OFFICIAL GAZETTE, 273,) in the District of Massachusetts, before the late and eminent circuit judge, Shepley, covers most of the questions made in this case, but not all of them, for there is evidence in this case that does not appear to have been in that, and some questions are made here that do not appear to have been made there.

So far as that case goes it is an ample authority for the decision here reached. And, upon the facts found here, it goes nearly, if not quite, as far as this case does.

Let a decree be entered for the plaintiff, establishing the validity of the patent, and for an injunction and an account of profits and damages occasioned by the infringement, according to the prayer of the bill, with costs.

Issue of September 17, 1878.

Patents	211—	No. 208,007 to No.	208,217, inclusive.
Reissues	9—	No. 8,415 to No.	8,423, inclusive.
Designs	12—	No. 10,829 to No.	10,840, inclusive.
Trade-Marks	29—	No. 6,572 to No.	6,600, inclusive.
Labels	3—	No. 1,690 to No.	1,692, inclusive.
Total issue	264		

TRADE-MARKS.

[Each certificate bearing date September 17, 1878.]

6,572.—CIGARS.—*Krohn, Feiss & Co.*, Cincinnati, Ohio. Application filed August 22, 1878.

"The word-symbol 'BULL'S EYE' and the pictorial representation of a bull's head, as shown."

6,573.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *S. Jacoby & Co.*, New York, N. Y. Application filed August 12, 1878.

"The arbitrary word 'DIRECT.'"

6,574.—PLUG CHEWING-TOBACCO.—*P. H. Mayo & Brother*, Richmond, Va. Application filed August 31, 1878.

"A series of ellipses, as shown."

6,575.—MEDICINE FOR THE CURE OF DROPSY AND LIKE DISEASES.—*William E. Clarke*, Providence, R. I. Application filed July 19, 1878.

"The design shown, said design representing a double-ended banner on which the words 'HUNT'S REMEDY' are displayed, a 'glory,' or representation of rays of light, being arranged above the banner, as shown."

6,576.—TOYS AND TOY VEHICLES.—*Charles W. F. Dare*, Brooklyn, N. Y. Application filed September 5, 1878.

"The word-symbol 'TALLY-HO.'"

6,577.—CIGARS.—*Isaac Teichman*, New York, N. Y. Application filed August 21, 1878.

"The letters 'E. B.' and the word-symbol 'EVER BETTER,' as shown."

6,578.—PREPARATION FOR REMOVING GREASE AND OTHER SPOTS.—*J. W. Cole & Co.*, Black River Falls, Wis. Application filed September 6, 1878.

"The arbitrarily-selected words 'TAKE OUT.'"

6,579.—MEDICINAL PREPARATION.—*Alexander E. Mintie*, San Francisco, Cal. Application filed May 7, 1878.

"The arbitrarily-selected word 'NEPHRETICUM.'"

6,580.—MEDICINAL PREPARATION FOR THE CURE OF LIVER-COMPLAINT, &c.—*William Condell*, St. Louis, Mo. Application filed June 26, 1878.

"The word-symbol 'HERBINE.'"

6,581.—CARTRIDGES AND PERCUSSION-CAPS.—*Eley Brothers*, (limited,) London, England. Application filed August 28, 1878.

"The arbitrarily-selected letters and words 'E. B., LONDON.'"

6,582.—ALCOHOL.—*Chester H. Graves*, Boston, Mass. Application filed April 23, 1873.

"The word-symbol 'BOSTON.'"

6,583.—CANNED EDIBLES.—*The Hannibal Meat Company*, (limited,) Philadelphia, Pa., and Hannibal, Mo. Application filed June 26, 1878.

"The fanciful and arbitrarily-selected term 'PEERLESS.'"

6,584.—CANNED EDIBLES.—*The Hannibal Meat Company*, (limited,) Philadelphia, Pa., and Hannibal, Mo. Application filed June 26, 1878.

"The head of an eagle inclosed within a star."

6,585.—HAIR-TONIC.—*William E. Jervey*, New York, N. Y. Application filed August 9, 1878.

"The arbitrarily-selected words 'FLOWERS OF PETROLEUM.'"

6,586.—CAR-SPRINGS.—*Miller, Metcalf & Parkin*, Pittsburg, Pa. Application filed August 13, 1878.

"The arbitrary word 'CRESCENT.'"

6,587.—MEDICINAL PREPARATION.—*Alexander E. Mintie*, San Francisco, Cal. Application filed May 7, 1878.

"The arbitrarily-selected words or title 'THE SIR ASTLEY COOPER.'"

6,588.—PLUG CHEWING-TOBACCO.—*Musselman & Co.*, Louisville, Ky. Application filed August 23, 1878.

"The words 'CAPT. JACK' and the representation of the bust of an American Indian painted and otherwise ornamented, substantially as shown."

6,589.—PROPRIETARY MEDICINES.—*Henry C. Stewart*, Jacksonville, Ill. Application filed June 29, 1878.

"The two monograms composed of the letters 'H C S,' as shown."

6,590.—ELASTIC IRON PAINT.—*Augustus O. Brummel*, Washington, D. C. Application filed August 27, 1878.

"The word-symbol 'VIRGINIA.'"

6,591.—CARTRIDGES AND PERCUSSION-CAPS.—*Eley Brothers*, (limited,) London, England. Application filed September 10, 1878.

"A triangular shield containing the letter 'E,' as shown."

6,592.—COD-LIVER OIL.—*Ansar, Harford & Co.*, London, England. Application filed December 16, 1876.

"The figure of a cod-fish upon a representation of a shield, and the fac-simile autograph-signatures of 'A., H. & Co.' and 'Dr. de Johngh.'"

6,593.—COD-LIVER OIL.—*Ansar, Harford & Co.*, London, England. Application filed December 16, 1876.

"A relief figure representing the head of His Majesty William II., King of the Netherlands, and a wreath or circle of leaves and flowers, as shown."

6,594.—CORSETS AND BUSTLES.—*Lewis Schiele & Co.*, New York, N. Y. Application filed August 31, 1878.

"The arbitrarily-selected letters and words 'E. P. A LA SARAZÈNE.'"

6,595.—MUSTARD.—*Sherman Brothers & Co.*, Chicago, Ill. Application filed September 9, 1878.

"A banner or flag."

6,596.—SPICES.—*Sherman Brothers & Co.*, Chicago, Ill. Application filed September 9, 1878.

"A banner or flag."

6,597.—BAKING-POWDERS.—*Sherman Brothers & Co.*, Chicago, Ill. Application filed September 9, 1878.

"A banner or flag."

6,598.—BAKING-POWDERS.—*Sherman Brothers & Co.*, Chicago, Ill. Application filed September 9, 1878.

"The arbitrarily-selected word 'EMPRESS.'"

6,599.—PIANO-FORTES.—*Albert Weber*, New York, N. Y. Application filed September 11, 1878.

"The word-symbol or arbitrarily-selected word 'ARTIST.'"

6,600.—CIGARS, CIGARETTES, SMOKING AND CHEWING TOBACCO, AND SNUFF.—*Philip Whitlock*, Richmond, Va. Application filed September 9, 1878.

"The word-symbol 'PIC-NIC.'"

DESIGNS.

[Each design bearing date September 17, 1878.]

10,829.—LEG-FRAMES OF SEWING-MACHINES.—*Edson S. Jones*, Providence, R. I., assignor to *The Providence Tool Company*, same place. Application filed August 25, 1876. Term of patent 14 years.

10,830 to 10,833, inclusive.—BUTTONS, &c.—*James W. Miller*, Newark, and *Isaac M. Miller*, Orange, N. J. Applications filed June 15, 1878. Term of patents 14 years.

10,834.—COFFIN-SCREWS.—*J. Wilbur Rogers*, West Meriden, Conn., assignor to *C. Rogers & Brothers*, same place. Application filed August 22, 1878. Term of patent 7 years.

10,835 to 10,838, inclusive.—CARPETS.—*Charles W. Swapp*, Lowell, Mass., assignor to *Lowell Manufacturing Company*, same place. Applications filed August 31, 1878. Term of patents 3½ years.

10,839.—CARPET.—*Thomas J. Stearns*, Boston, Mass., assignor to *Roxbury Carpet Company*, same place. Application filed September 2, 1878. Term of patent 3½ years.

10,840.—STEAM-ENGINE FRAMES.—*Charles Tyson*, Philadelphia, Pa. Application filed August 19, 1878. Term of patent 14 years.

LABELS.

[Each certificate bearing date September 17, 1878.]

1,690.—Title: "THE WONDERFUL LEFEVRE DIAMONDS."—*American Jewelry Company*, Cincinnati, Ohio. Application filed September 2, 1878.

1,691.—Title: "DRUSNER'S MERCHANDISE TOKEN."—*Philip Drusner, Jr.*, Kokomo, Ind. Application filed September 11, 1878.

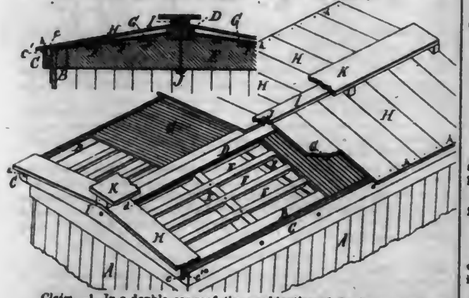
1,692.—Title: "FLOWERS OF PETROLEUM."—*William E. Jervey*, New York, N. Y. Application filed September 10, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

SEPTEMBER 17, 1878.

208,007. CAR-ROOFS. Hiram Aldridge, St. Louis, Mo., assignor to Frank G. Aldridge, Rateburg, S. C., R. B. Orcutt, Chicago, Ill., and F. A. Dilworth, Pittsburg, Pa. Filed June 20, 1878.

Brief.—The ridge-beam has a groove on each side flush with the purlins and inner eaves-beam. Into this are inserted the corrugated metal sheets of the inner roof, the lower ends of which reach the inner edge of a gutter cut in the outer eaves-beam. The outer edge of this gutter projects upward so far that when the outer roof-boards are laid on they will press on the lower ends of the metal sheets, keeping them in place without other fastening.



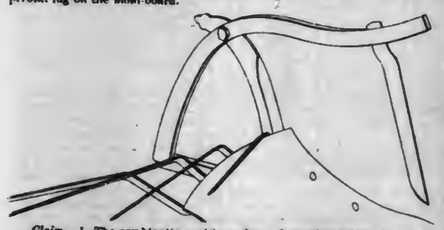
Claim.—1. In a double car-roof, the combination of the inner metal roof, as described, and the eaves-beam C, having a gutter, *a*, leading to the ends of the car, substantially as and for the purpose set forth.

2. In a car-roof, the combination of the ridge-beam D, having grooves *d*, the ridge-clamp I J, the boards H, the eaves-beam C, having the gutter *a*, with the elevated outer portion, *c'*, and the sheets G, substantially as and for the purpose set forth.

3. The eaves-beam of a car, with a covered water-gutter at the eaves and of an inner roof, G, and inclined in opposite directions, and extending through or past the ends of the car, substantially as described.

208,008. POTATO-DIGGERS. Samuel L. Allen, Philadelphia, Pa. Filed Feb. 4, 1878.

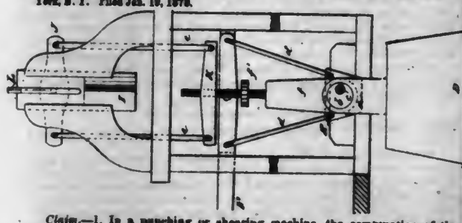
Brief.—The plate is laterally adjustable, and raised or lowered over the pivotal lug on the mold-board.



Claim.—1. The combination, with a plow, of a series of laterally-projecting bars, arranged apart from each other at the rear of the plow, and at different altitudes from the base of the same, the foremost bar being highest and the rear bar lowest, all substantially as set forth, for the purpose specified.

2. The combination of the plow, its lug *m*, and bolts *d* with the fingers or bars carried by a slotted plate, *b*, all substantially as set forth.

208,009. METAL STAMPING, SHEARING, AND PUNCHING MACHINES. Jas. T. Bedford, New York, N. Y. Filed Jan. 19, 1878.



Claim.—1. In a punching or shearing machine, the combination of the weighted pendulous lever C D, eccentric cross-head *b*, lever E, links *d*, hand-lever F, and eccentric-rod *f* with the base-frame, having bearings for the eccentric cross-head, and a vertically-reciprocating punch or other tool, substantially as and for the purpose set forth.

2. The slide or tool-carrier I, having a vertical slot and a latch, L, and the bars J K and connecting-rods *e*, in combination with mechanism, substantially as described, for operating said tool-carrier or slide, as and for the purpose set forth.

208,010. SCREW-CAP AND STOPPER-FASTENER. John K. Chase, New York, N. Y. Filed Aug. 29, 1878.

Brief.—The stopper is made of wood or cork. While the stopper remains seated the stopper-plate slides freely by reason of the slot in it.



Claim.—The combination, with the screw-cap B, having lip *c*, stopper D, and gasket-ring E, of stopper-supporting plate C, with its slot *e*, loop *a*, and hook *b*, all substantially as arranged, and for the purpose set forth.

208,011. COMPOUNDS FOR TREATING COAL PREPARATORY TO BURNING. Morris B. Eaton, Le Roy, assignor of one-half his right to Lewis H. Rogers, Avon, N. Y. Filed Feb. 23, 1877.

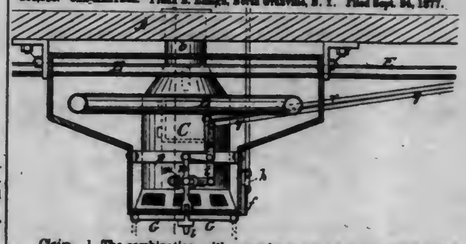
Claim.—The compound herein described, consisting of sulphate of soda, chloride of sodium, muriate of ammonia, and water, for the purpose of treating coal preparatory to burning by sprinkling thereon, as specified.

208,012. HOSE-PIPE COUPLINGS. Charles Eckes, West Sand Lake, N. Y. Filed Apr. 13 1878.



Claim.—The combination, with thimbles B B, having eyes C C made solid with the same, and the draft-bolt D, of the leather-covered draw-link E, provided with the draft-eye *e*, working between eyes C C and around said draft-bolt, substantially as and for the purpose set forth.

208,013. CAR-HEATERS. Frank E. Enslen, North Granville, N. Y. Filed Sept. 24, 1877.



Claim.—1. The combination, with a car-heater, of a pipe provided with flexible connections and couplings for connecting it to the boiler or water-tank of a locomotive or its tender, directly or through intermediate cars, whereby the fire in said heater may be extinguished by water from the locomotive or tender, constructed and operated substantially in the manner described and specified.

2. The combination, with the furnace C, having a dumping-grate, F, of a mechanism, substantially as described, for operating it, and a connecter, *q r*, for connecting said operating mechanism with the adjoining car, whereby the grate may be dumped by the breaking asunder of the cars, substantially in the manner described and specified.

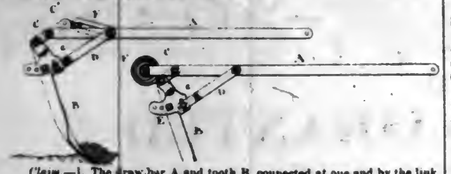
3. The combination, with the furnace C, dumping-grate F, bell-crank lever *o*, rod *n*, and rod *q*, provided with chain *r* or other flexible connection, constructed and operating substantially in the manner described and specified.

4. The combination of the doors G G, latch *l*, rod *n*, and rod *q*, constructed and operating substantially in the manner described and specified.

5. The combination of the furnace C, dumping-grate F, ash-pit doors G G, crank-arm *o*, rod *n*, and rod *q*, constructed and operating substantially in the manner described and specified.

6. The combination of the grate F, link *u*, lever *t*, and rod *v*, constructed and operating substantially in the manner described and specified.

208,014. LOCKING DEVICES FOR THE TEETH OF REAPERS. Thomas Galloway and John Larsen, Oshawa, Ontario, Canada. Filed June 5, 1878.

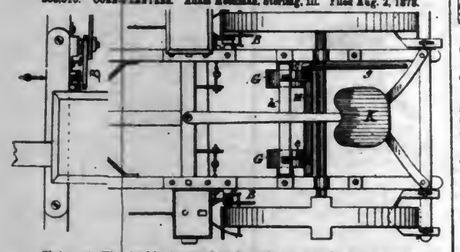


Claim.—1. The draw-bar A and tooth B, connected at one end by the link C, and at an intermediate point by the link D, whereby the draw-bar and tooth are divided into levers of about equal proportions, which, when the draft is applied, oppose each other, and, in connection with the links C D, form a lock, the rigidity of which may be utilized and varied in strength for the purpose of retaining the tooth B in working position, substantially in the manner and for the purpose set forth.

2. The link C, with cheek block C', in combination with the tooth B, drag-bar A, and link D, substantially as shown.

3. The tooth-retaining spring F, in combination with the bars A, links D and C, and tooth B, substantially as described.

208,015. CORN-PLANTERS. Adam Heckman, Sterling, Ill. Filed Aug. 2, 1878.



Claim.—1. The double levers B, adjustable vertically, for operating the dropping devices, substantially as described.

2. The combination of the lever g, rocking shaft H, arms e, bar A, and wheels G, provided with standards and guides for raising and lowering the machine, substantially as described.

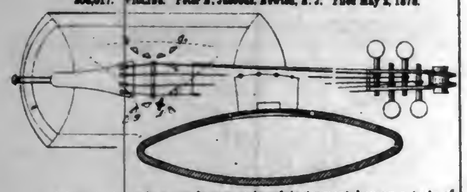
208,016. SPRING AIR-GUNS. Carl Hornfeldt, Jr., Chicago, Ill., assignor of one-half his right to Carl Hornfeldt, Sr., same place. Filed Aug. 22, 1878.



Claim.—1. A gun and air-gun contained, and composed of the barrel A, the handle-stock D, with snap d, and an intermediate cylinder, C, with spring E, and plunger F f, having snap or trigger g, the same to be constructed and arranged to operate substantially in the manner set forth.

2. In combination with the cylinder C of an air-gun, having slots e and h, the stock D and plunger F f, with a coil-spring, E, interposed, and each arranged with a snap, d and g, to be alternately used as triggers for loading and shooting, substantially in the manner set forth.

208,017. VIOLINS. Peter B. Jacobus, Newton, N. J. Filed May 2, 1878.

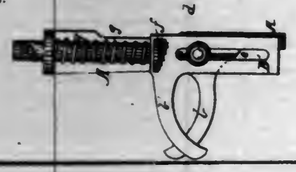


Claim.—1. A violin or analogous stringed instrument having a body of oval form in cross-section, substantially as herein set forth.

2. A violin or similar stringed instrument having its body constructed in the form of a flattened cylinder with rounded ends, substantially as herein shown and described.

3. A violin or similar instrument having its belly reduced in thickness in the form of a triangle, disposed with its base on the bass side of the instrument and its apex on the treble side, substantially as set forth.

208,017.

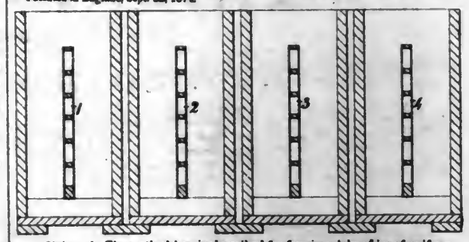


208,018. CLASPS FOR EXHIBITING SHOE-LACES. H. H. Koch and Daniel Lynahan, Buffalo, N. Y. Filed Mar. 19, 1878.

Brief.—The shoe-laces are held between the clamping-jaws, which are pressed together by the spring.

Claim.—The clasp constituted, essentially, of the piece A, having the jaw b and guide-leg c thereon, the rod B B', with the jaw b', the slot e, and spiral spring g', and the guide-pin d and leg f, all constructed and arranged substantially as and for the purpose specified.

208,019. PROCESSES AND APPARATUS FOR MAKING ICE. John Kyle, Glasgow, North Britain, assignor to Joshua Sidderley and John Siddeley, Liverpool England. Filed May 30, 1878. Patented in England, Sept. 23, 1874.



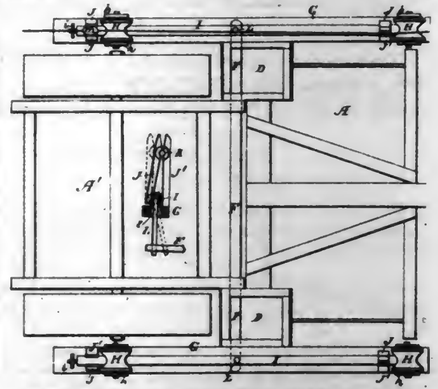
Claim.—1. The method herein described for forming slabs of ice of uniform thickness, which consists in causing the refrigerant to pass through a box or series of boxes, and alternately reversing the current in said box or each box of the series, substantially as specified.

2. The method herein described for forming slabs of ice of uniform thickness, which consists in making each cell of a series the first or receiving cell successively, and reversing the current in each cell of the series alternately, substantially as specified.

3. The combination, with a series of ice-boxes, of a series of cells, each cell connected at top and bottom to a series of pipes and provided with a three-way stop-cock, and the two series of pipes connected by a cross-branch provided with a stop-cock, whereby the refrigerant may be passed alternately from cell to cell and its direction alternately reversed in each cell, substantially as described.

208,020. CHECK-ROW ATTACHMENTS FOR CORN-PLANTERS. Abram H. Law, Aledo, Ill., assignor of one-half his right to James A. Sherriff, same place. Filed Aug. 14, 1878.

Brief.—Upon either end, and at opposite sides of a longitudinally-journaled shaft, are secured uprights corresponding to fixed uprights on a rigid beam, between which a rope passes, having knots that force the arms alternately apart, thereby actuating the feed-slide through the medium of a connecting-arm.



Claim.—1. A check row attachment for corn-planters, consisting of the laterally-oscillating bar I, connected with the sliding bar, and operating to impart a reciprocating motion thereto by means of a knotted wire or rope, in manner and for the purpose substantially as specified.

2. The fixed bar G, having uprights J', in combination with the oscillating bar I, having the corresponding uprights J, for imparting a reciprocating motion to the sliding bar F, substantially as and for the purpose specified.

3. The combination of the fixed bar G, oscillating bar I, uprights J J', and guide-pulleys H, operating substantially as and for the purpose specified.

4. The combination of a sliding bar, F, rod L, oscillating bar I, fixed bar G, uprights J J', and pulleys H, all operating substantially as and for the purpose specified.

208,021. SHUTTLES FOR SEWING-MACHINES. Rufus Leavitt, Boston, Mass. Filed June 3, 1878.

Brief.—The body of the shuttle is provided with a countersink, in which is placed a button provided with a shank, which extends through the shell of the shuttle. This shank is connected with a spring-lever having a fulcrum-point which bears against the shell of the shuttle, and is operated upon by a screw to increase or lessen the strain upon the shank of the button. The thread is passed between the button and the shell of the shuttle, the pressure of the one upon the other forming the tension.

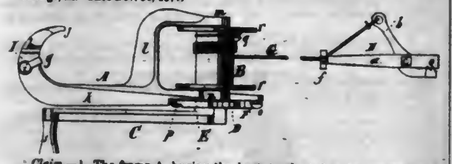
Claim.—1. The combination, with the shuttle-body, of the countersunk latch, button f, lever g, and adjusting device to operate the lever and button to press the under side of its head down upon the thread below it, substantially as described.

2. In a shuttle, the latch, button f, lever g, provided with a fulcrum, i, and adjusting device to operate the lever, in combination with the removable washer, supported by the latch, substantially as described.

208,021.



208,022. WIRE-TIGHTENERS. William W. Marsh and Chas. Bergquest, Sycamore, assignors to said Marsh, Charles W. Marsh, and Arthur M. Stark, same place, and Charles W. Mosher, Chicago, Ill. Filed Nov. 20, 1877.



Claim.—1. The frame A, having the hook l, adapted to be attached to a post or to a wire, and windlass B, in combination with the tongs a b, all constructed and operating substantially as specified.

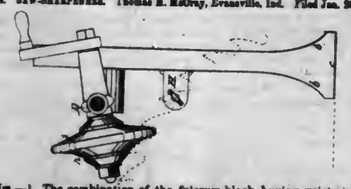
2. The pawls E F, in combination with the ratchet-wheel D, windlass B, and frame A, arranged for operating the device either side up, substantially as set forth.

208,023. BURIAL-CASKETS. John Maxwell, Rochester, N. Y. Filed Mar. 7, 1878.



Claim.—In a burial-casket, the combined glass-frame B and covering-plate D, resting in an inclosed seat of the casket-lid, the frame being provided with the molding c, resting upon the seat and inclosing the covering-plate, and said covering-plate being attached to the frame by screws, the whole arranged, as described, so that a single set of locking devices, consisting of the bevel g, or equivalent dowels, and the turning-key C, serve to secure the frame to the lid, as shown and described, and for the purpose specified.

208,024. SAW-SHARPENERS. Thomas H. McCray, Evansville, Ind. Filed Jan. 30, 1878.

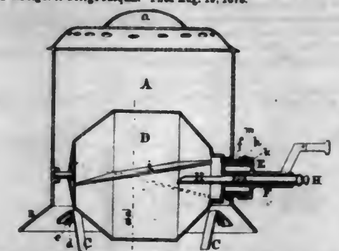


Claim.—1. The combination of the fulcrum-block having wrist-pin h, the joint-pieces f f', the lever, and the emery-wheel having its bearings therein, the flanged and slotted standard, and screw for securing said block in the desired adjustment, as shown and described.

2. In combination with the flanged and slotted standard, the flanged lever for holding the edge of the saw, having ribs H', and the clamp-screw, as shown and described.

3. The combination of the emery-wheel and crank-arbor, the hand-lever, the joint-piece, and the fulcrum-block, provided with a wrist-pin, around which the lever is adjustable in a vertical plane, as shown and described.

208,025. COFFEE-ROASTING APPARATUS. Alvin MacDonald, Washington, Ill., assignor of one-half his right to George Jacquin. Filed Aug. 10, 1878.



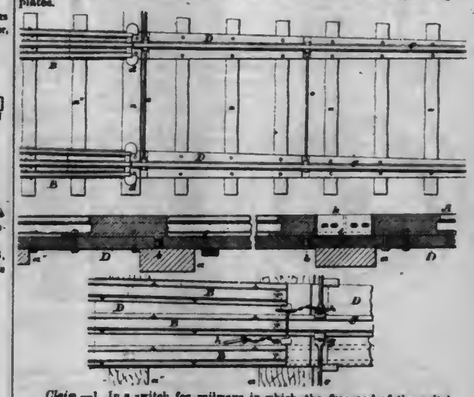
Claim.—1. The cylindroidal coffee-roaster D, combined with the cap or flange h of the hollow axle-plug E, having a slot in its cylindrical lip or flange for engagement with a leg, m, on said hollow axle f, and in combination therewith, as described.

2. In a coffee-roaster, D, of cylindroid form, and hollow axle f and axle box or plug E, the returned flange or lip h, slotted to admit the leg m of the axle f, in connection with a hood, A, having slotted legs C C C, set by means of bolts and nuts d e, and sliding upon said bolts, as described.

3. The combination and arrangement, with the axle-plug E, of returned lip h over the edge of the hollow axle f of the cylindroid roaster D, the hood A, having perforated upper anti-thermal chamber beneath the handle, and the slotted interior legs C, set on the face of an inclined base, B, as described.

208,026. RAILWAY-SWITCHES. Alex. E. McDonald, Hartford, Conn. Filed June 6, 1878.

Brief.—The switch-rails rest and move upon wide supporting-plates, to which they are secured at their rear ends, the fixed rails of the main line and sidings also being secured to said plates. The switch-rails are secured in position by pins which enter holes in the shifting-bar, and in the supporting-plates.



Claim.—1. In a switch for railways in which the free end of the switch-rail is arranged to be brought into coincidence with the ends of two or more fixed rails adjacent thereto, the arrangement beneath the entire length of the switch-rails of a metallic plate or plates, upon which the switch-rails and the fixed rails adjacent to the joint rest directly, and to which they are attached, said plate or plates being wide enough to form a bed for the switch-rails to play upon, substantially as set forth.

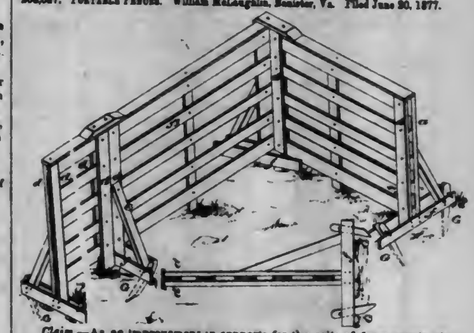
2. The combination of the plate or plates D D, the switch-rails C C, resting upon said plates and connected therewith at their pivoted ends, their free ends being arranged to coincide with two or more fixed rails adjacent thereto, the rails A A, jointed to said switch-rails, and the rails B B, secured to the plates D D, substantially as set forth.

3. The combination of the plate or plates D D, arranged to extend under the fixed rails at each end, the fixed rails A B, secured rigidly to the said plates, and the switch-rails C C, arranged to rest upon the plates D D, with their free ends adjacent to the ends of the rails B B, substantially as set forth.

4. The plate or plates D D, provided with holes g g, in combination with the perforated bar or tie, the pin or pins h h, and the rails B C, substantially as and for the purpose set forth.

5. The combination of the rails B C, provided with lugs b c, with the plates D D, provided with apertures or sockets to receive said lugs, substantially as set forth.

208,027. PORTABLE FENCES. William McLaughlin, Bonister, Va. Filed June 20, 1877.



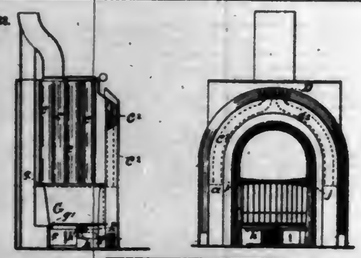
Claim.—As an improvement in supports for the rails of fence-panels, the combination, with the post-battens d, of the transverse bars f, nailed to said battens, the brace e, nailed to the battens and to the transverse bars, and stakes G, driven into the ground between said transverse bars, and confining them to the earth by means of cross-pins that pass through the stakes and rest in notches in the upper surface of the transverse bars, as described and shown.

208,028. FIRE-PLACE STOVES. Michael McNamara, Buffalo, N. Y. Filed Dec. 14, 1877.

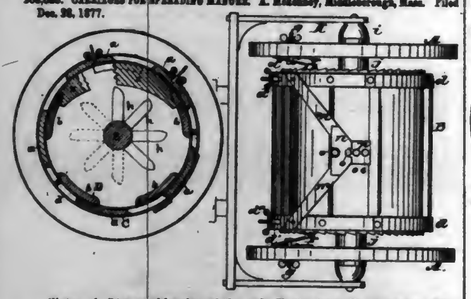
Claim.—1. The suspended fire-pot consisting of sections having inwardly and outwardly projecting flanges g g' and vertical flanges w, as and for the purpose set forth.

2. The bent tubes e', extending from above the fire-pot at the rear of but apart from the frame and communicating with the register D, as set forth.

208,082.



208,089. CARRIAGES FOR SPREADING MANURE. A. Mahaney, Middleborough, Mass. Filed Dec. 26, 1877.



Claim.—1. The combination of the axle E, the drum D, on which slides the drum C, having slotted tires *d d* and fastenings *d'' d''*, substantially in the manner and for the purpose shown and described.

2. The combination of the axle E, the drum C, and the drum D, having toothed tires *e e*, the ratchets *f f*, fastened to the wheels A A, and the wheels A A, substantially as and for the purposes shown and described.

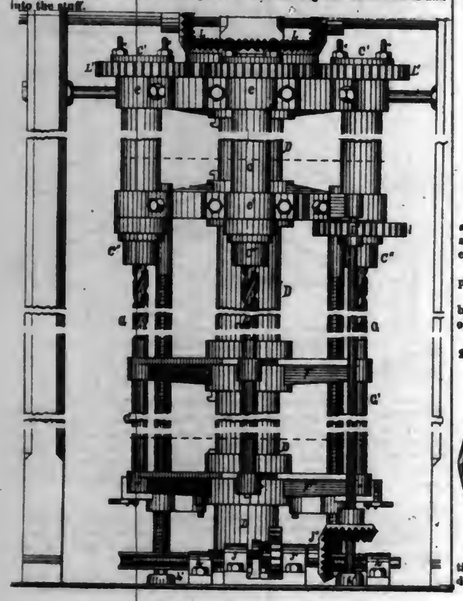
3. The combination of the axle E, provided with knives within the receptacle B, and the receptacle B, the ratchets *f f*, fastened to the wheels A A, and the wheels A A, substantially as shown, and for the purposes described.

4. The combination of the drum D and the drum C, having cross-pieces *m* fastened to its tires and staves, the cap *n*, provided with semicircular slots, and the plate *p*, fastened to a stave in the drum D, having holes therein, for the purpose shown and described.

5. The combination of the hinged staves *s o*, the drum D, and the circular brace *x*, substantially as and for the purpose shown and described.

208,090. DOUBLE-MACHINES. Thomas G. Morse, Erie, Pa., assignor to the Jarecki Manufacturing Company, (limited,) same place. Filed Feb. 23, 1878.

Brief.—Pump-barrels or other cylindrical objects are bored by inserting them into the cylindrical revolving chucks and feeding the borers toward and into the stuff.



Claim.—1. In a boring-machine for making working cylinders or barrels, a receiving-cylinder, C, provided with chucks for concentrically retaining said object in said cylinder, substantially as set forth.

2. In a boring-machine for making working cylinders or barrels, a receiving-cylinder, C, provided with chucks to concentrically retain the object to be bored in said cylinder, in combination with mechanism for revolving said cylinder, substantially as and for the purposes described.

3. In a boring-machine which has a receiving-cylinder provided with chucks for concentrically retaining the object to be bored, the combination therewith of a drill and mechanism for advancing the same concentrically into said cylinder, substantially as set forth.

4. In a boring-machine in which there is a series of chucks adapted for concentrically retaining the objects to be bored, the combination therewith of the arm-plates F', which bear, and F, which concentrically guide, a series of drills, substantially as set forth.

5. The combination, in a boring-machine for making working cylinders or barrels, of a stationary central pillar, D, with radiating arm-plates, central pinion, L, revolving chucks C', and upward-feeding drills G, substantially as set forth.

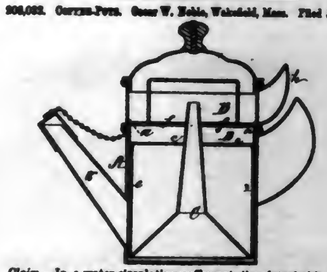
6. The combination, with the cylinder C, of the chucks C' and C'' and mechanism for clamping the blanks therewith, substantially as herein set forth.

208,091. BLACKING-BOXES. Charles H. Morse, Rochester, and Marion Shales, Brockport, N. Y. Filed Feb. 26, 1878.



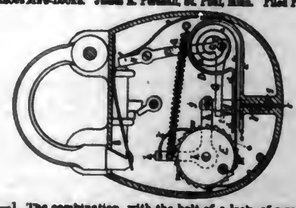
Claim.—The box A, constructed with the hole or holes *a* in its side, and the handle C, having its end passing through said hole or holes, and soldered or otherwise fastened on the inside.

208,092. COFFEE-POTS. Oscar W. Noble, Wakefield, Mass. Filed July 12, 1878.



Claim.—In a water-circulating coffee-pot, the detachable cup-shaped projection B of the main body of the pot, provided with a handle, *h*, a perforated bottom, *c*, funnel C, and loose perforated plate *f*, the whole being removable at one and the same time by said handle *h*, in combination with the main body of the pot A, as set forth.

208,093. RECORDING-LOCKS. James R. Marshall, St. Paul, Minn. Filed Feb. 16, 1878.

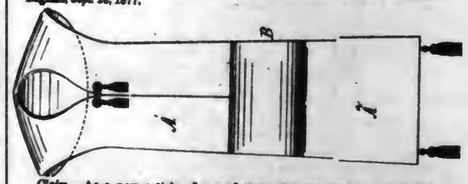


Claim.—1. The combination, with the bolt of a lock, of a recording mechanism so arranged as to automatically mark or print or otherwise record upon a strip of paper or similar article every time the bolt is sprung in opening or closing the lock, substantially as hereinbefore specified.

2. The combination and arrangement of the bolt B, levers H G, with punch *i*, and paper strip or ribbon *c*, substantially as hereinbefore described.

3. The combination of the drum E, magazine D, paper or other strip *c*, bolt *g*, levers and ratchet *m h*, and key or similar instrument F, arranged and operated substantially as hereinbefore set forth.

208,094. VICTORINES. Ignaz Fink, London, England. Filed June 10, 1878. Patented in England, Sept. 26, 1877.



Claim.—As a new article of manufacture, the victorine composed of the tippet A, bands A' A', solid extension A², and the muff B, all arranged as described and shown.

208,095. SAD-IRON HOLDERS. Mary E. Roberts, Indianapolis, Ind. Filed Nov. 16, 1877.



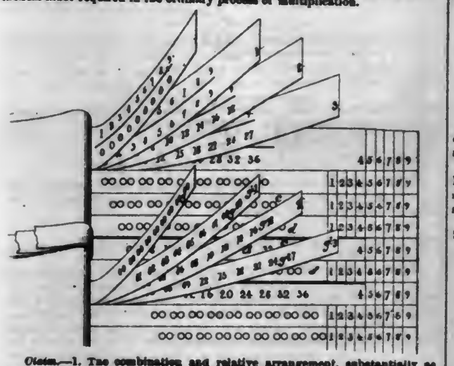
Claim.—A holder for sad-irons, consisting of a single metallic plate, bent to form the curved portion F, sides G' G, and lateral wings D, and carrying the inner non-conducting lining, H, and outer non-conducting coating, C, all as set forth.

208,096. MANUFACTURE OF FLOOR-CLOTH. Joseph Bobley, Brooklyn, N. Y. Filed June 27, 1878.

Claim.—As a new article of manufacture, a covering for floors, consisting of sawdust, ground wood, or other vegetable fiber combined with copal or other hard varnish, with which is incorporated mineral coloring or dry paint, so as to form a thick paste or coating, and spread upon a canvas, textile, or fibrous base, either with or without ornamentation, substantially as described, and for the purpose set forth.

208,097. MEANS OF OBTAINING ARITHMETICAL RESULTS. John Sawyer, 2 Adelaide Place, London Bridge, England. Filed Nov. 20, 1877. Patented in England, July 20, 1877.

Brief.—By means of the method and apparatus employed results derived from the multiplication of numbers are obtained without the usual amount of mental labor required in the ordinary process of multiplication.

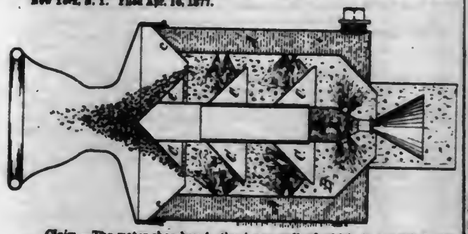


Claim.—1. The combination and relative arrangement, substantially as hereinbefore set forth, of the corresponding series of figured rows or stripe, said stripe of each series severally starting with their lowest numbers, and followed in a line by their respective multiples, and the starting numbers of the several stripe being successively higher than the starting numbers of their respectively preceding or overlying stripe, as described.

2. The combination, in a book like or equivalent form, such as set forth, of a series of rows of figured strips, arranged essentially as described, with a multiplicand-index and a multiplier-index, substantially as hereinbefore set forth.

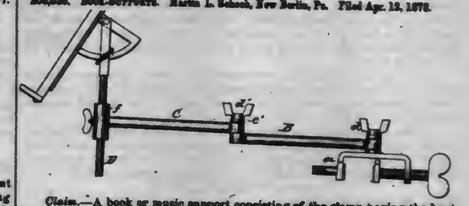
3. The combination of a series of rows of figured stripe, arranged parallel with each other, or side by side, one below another, and each row made up of ten stripe, one upon or preceding another, the top or initiatory strip being marked with ciphers, the next strip being marked with a group or line of figures from 1 to 9, inclusive, and the remaining or underlying stripe successively starting with higher and regularly-increasing numbers, as 2, 3, 4, &c., than the starting numbers of their respectively preceding or overlying stripe, and severally followed in a line by successively and regularly increasing multiples of said starting or left-hand figures, substantially as hereinbefore set forth.

208,098. APPARATUS FOR WETTING MALT PREPARATORY TO MASHING. Martin Schmehl, New York, N. Y. Filed Apr. 16, 1877.



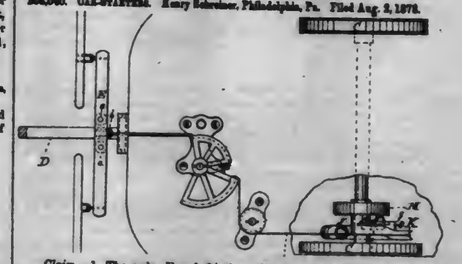
Claim.—The water-chamber A, the inner wall of which is provided with the circumferential systems of orifices *a'*, each of said systems being coincident with one of the cones C, placed one above another within the chamber B, the parts all combined in relation with each other and with the reservoir F, placed below the cones and connected with the water-chamber A by the branch pipes G, as described, for the purpose specified.

208,099. BOOK-SUPPORTS. Martin L. Schoch, New Berlin, Pa. Filed Apr. 13, 1878.



Claim.—A book or music support consisting of the clamp having the bent arms 5 7 and bolts *a b*, arranged as described, the connecting-arms B and C, pivotally connected with the clamp-bolt and with each other by means of the threaded bolt *a'*, washer, and thumb-nut, the arm C, having a sleeve, *f*, adapted to receive the vertical rod D, passing through the sleeve, and carrying at its upper end the book or music rest, substantially as shown and described.

208,040. CAR-STARTERS. Henry Schreiner, Philadelphia, Pa. Filed Aug. 2, 1878.



Claim.—1. The yoke F and friction-rollers *a a*, in combination with the double-tree E and tongue D, substantially in the manner and for the purposes set forth.

2. The ratchet-wheel M, notched on the flat face of its rim, the quadrant K, having projection *g* thereon and recess *g'*, segmental clutch N, pivoted in said recess, and cord O, all combined and operating substantially as described.

208,041. LEATHER-SKIVING MACHINES. Charles W. Schwamangel, Dayton, Ohio. Filed July 20, 1878.



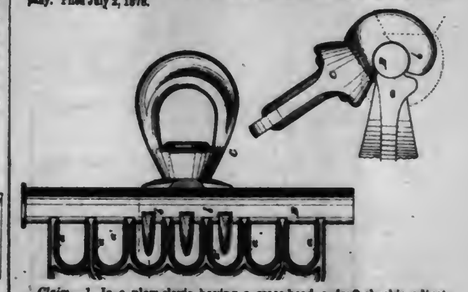
Claim.—1. In a leather-skiving machine, a double-edged knife having a transverse reciprocating motion, and adapted to cut at a right angle to its line of motion in either direction, as set forth.

2. In a leather-skiving machine, the combination, with the double-edged transversely-reciprocating knife, of the roller I, as and for the purpose set forth.

3. In a leather-skiving machine, the combination, with the double-edged transversely-reciprocating knife, of the roller I and guide *h*, as and for the purpose specified.

4. The combination, with the double-edged transversely-reciprocating knife, of the roller I, supported in an adjustable frame, whereby it can be shifted to either side of the knife, as specified.

208,042. CLEVISES. Cooper P. Search, Chicago, Ill., assignor to Chicago Malleable Iron Company. Filed July 2, 1878.



Claim.—1. In a plow-clevis having a cross-head, a draft-shackle adjustably coupled to said cross-head by one or more hooks or claws, and adapted to be turned in one direction and adjusted from side to side, and then turned in the reverse direction and locked in working position, substantially as shown and described.

2. The combination, in a clevis, of the coupling-bar B, the claws *b b*, and the claw-receiving openings *a' a'*, all arranged substantially as specified with relation to each other and to the cross-head and the shackle, for the purpose of thereby rendering the shackle adjustable between the forward ends or corners of the cross-head.

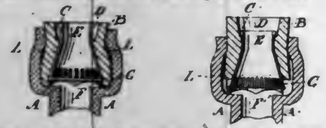
3. The combination, in a clevis, of the cross-head A, having in its forward end the openings *a' a'*, and a draft-shackle having on its rear end one or more claws, *b b*, the latter being sufficiently long to more than half inclose the bar extending in front of the said openings, and short enough to admit of the shackle being adjusted laterally on the said bar, substantially as and for the purposes specified.

4. The combination of the swivel-jointed draft-shackle B, having on its rear end the claws *b b*, with the cross-head A of a clevis, the said cross-head having therein the openings *a' a'*, substantially as and for the purposes specified.

5. The combination of the fixed beam-plate E, spurred on its forward end, and the pivoted, grooved, and slotted cross-head, carrying in its grooves the forked locking device F, the latter having thereon the arm or handle *h*, entering the locking-slot *l*, substantially as and for the purposes specified.

208,043. BOTTLE-STOPPER. Frederick J. Seybold, St. Louis, Mo. Filed Feb. 6, 1878.

Brief.—Drive metal tube onto seat in neck of bottle; then drive rubber tube down around it. Pressure from within lifts both tubes somewhat, whereupon bottle may be unstoppered by driving down metal tube.



Claim.—1. The tube B, constructed with its bottom portion elastic and with the bore K, having the recess D, as and for the purpose set forth.

2. The cylindrical body T, constructed with the head C and conical base G, with one or more points, S, attached to or formed thereon, as and for the purpose set forth.

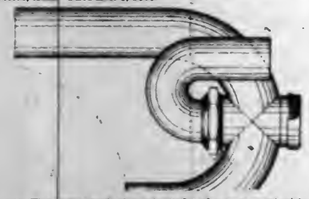
3. The tube B, constructed with the recess D in bore K, in combination with the cylindrical body T, constructed with head C and conical base G, as and for the purpose set forth.

4. The tube B, constructed with a recess, D, and the cylindrical body T, constructed with head C and conical base G, in combination with receptacle-neck A, constructed with recess L, as and for the purpose set forth.

5. The headed cylindrical conical-based body C T G, constructed with the perforation E, one or more perforations, P, and one or more points, S, as and for the purpose set forth.

6. The headed cylindrical conical-based body C T G, in combination with a seat, F, as and for the purpose set forth.

208,044. COMBINED OVERFLOW AND OUTLET CONNECTIONS FOR BOWLS, &c. William E. Sherrith, Boston, Mass. Filed Mar. 8, 1878.

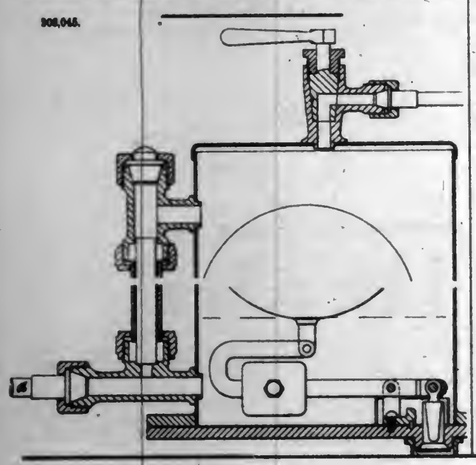


Claim.—1. The compound pipe adapted to be connected with the outlet at the bottom of a bowl or sink and the overflow-opening, as described.

2. The compound pipe adapted to be connected with the outlet at the bottom of a bowl or sink and the overflow-opening, as described, in combination with a return-bend to maintain the water in the compound pipe at the proper level to form a trap, substantially as described.

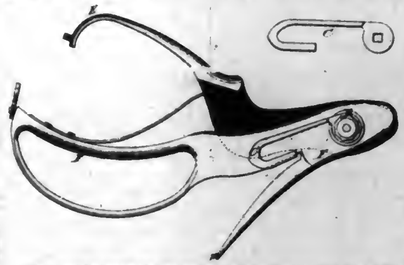
3. The compound pipe, bent as described, and the threaded sleeves *b c*, combined with a waste-pipe and a cap, to operate substantially as described.

208,045.



208,046. WIRE-BAND CUTTERS. William E. Sandiver, Trenton, N. J. Filed Aug. 2, 1878.

Brief.—An improvement on Charles H. Chadbourn's band-cutter, No. 190,467, May 8, 1877.



Claim.—The improvement consisting of the projection A on the outside of the blade or shear F, provided with the circular grooved slot B, and the yielding pressure-spring C, attached to the bolt D, operated by the motion of the lever E, arranged substantially as and for the purposes herein set forth.

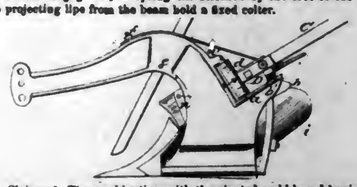
208,047. TOY BUILDING-BLOCKS. Daniel E. Stone, Indianapolis, Ind. Filed Oct. 12, 1877.



Claim.—As a new article of manufacture, an ornamented or lettered building-block having a level face coated with varnish, in which is embedded the ornamented figure or letter, as specified.

208,048. PLOWS. William Strait, Oneonta, N. Y., assignor to Celestia L. Strait, same place. Filed Feb. 21, 1878.

Brief.—Handles vibrate laterally to be in the furrow-line. The handles, in moving, shift the colter by means of a spring-lever attachment, and also carry the double hook by which the handles and mold-board are rigidly locked together after the plow is turned. A ratchet-disk holds the hook in position, and is held engaged by a spring till released by the foot of the plowman. Two projecting lips from the beam hold a fixed colter.



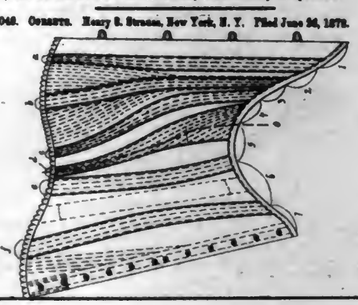
Claim.—1. The combination, with the pivoted mold-board having the lugs *f f* and the pivoted handles, of a vibrating double hook or latch for securing the mold-board and handles in position, said hook moving with the handles and arranged relatively therewith to be operated by the foot of the operator, substantially as specified.

2. The combination, with the double hook or latch, of the notched plate G *g* and bolt and spring *h h'*, substantially as and for the purpose specified.

3. The combination, with the pivoted shifting-lever, of the pivoted handles C, having the plate G, provided with the lugs or pins *e e*, substantially as and for the purpose specified.

4. The herein-described colter-shank, consisting of the parallel projecting lips *n n*, cast on the front of the standard, substantially as specified.

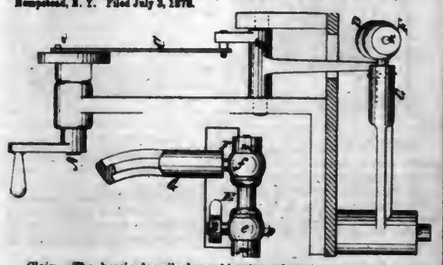
208,049. CORSETS. Henry S. Strauss, New York, N. Y. Filed June 26, 1878.



Claim.—1. A corset the base of each half of which is constructed of seven pieces or patterns of the shape described and shown, numbered 1 2 3 4 5 6 7, having bones arranged and disposed in such several patterns as herein described, in combination with auxiliary pieces described and shown, (marked *a*, *b*, *c*, *d*, *e*, and *f*,) disposed upon such bases, and forming auxiliary pockets for the bones shown, all substantially as described, and for the purposes set forth.

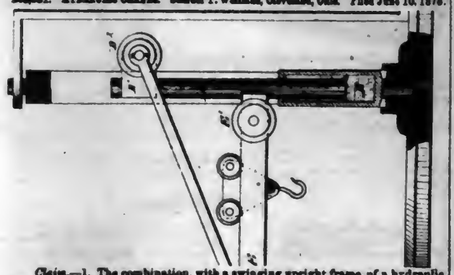
2. A corset provided with an auxiliary gore-shaped hip-supporting piece, *d*, arranged upon the base of the body of the corset, substantially as described and shown, and for the purposes set forth.

208,050. APPARATUS FOR TRANSMITTING AND CONVERTING MOTION. John Tiess, North Hempstead, N. Y. Filed July 3, 1878.



Claim.—The herein-described combination of the crank-wrist *a* of the shaft A, the connecting-rod C, bell-crank lever B, connecting-bar E, having universal joints D F, and pivoted or vibratory arm or lever G, all substantially as and for the purpose set forth.

208,051. HYDRAULIC CRANES. Samuel T. Wellman, Cleveland, Ohio. Filed June 10, 1878.

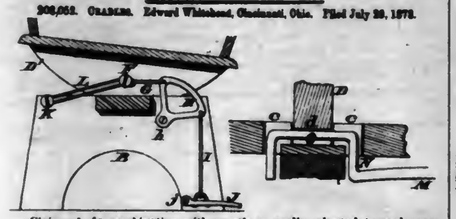


Claim.—1. The combination, with a swinging upright frame, of a hydraulic cylinder supported above the pivotal bearing of the upright frame, the axes of said cylinder and pivotal bearing being located and arranged in the same vertical line, substantially as and for the purpose set forth.

2. The combination, with a swinging upright frame and a hydraulic cylinder supported above the pivotal bearing of the upright frame, the axes of said cylinder and pivotal bearing being located in the same vertical line, of a movable plunger having the lifting-arm of the crane attached thereto, substantially as and for the purpose set forth.

3. The combination of the cylinder B, plunger D, anti-friction rollers D' E', and horizontal arm E, substantially as described and shown.

208,052. CRADLES. Edward Whitehead, Cincinnati, Ohio. Filed July 20, 1878.



Claim.—1. In combination with a crib or cradle adapted to rock on a supporting base or stand, the pins F K, link G, bell-crank H *h*, connecting-rod I, treadle J *j*, and elastic band L, substantially as herein described, and for the purpose set forth.

2. In combination with a crib or cradle adapted to rock on a supporting stand or base, the notched rockers D D' *d* and spring-bars M M', which latter are bent at N O, in order that said rockers may be supported upon the horizontal portions O of said bars, substantially as herein described, and for the purpose set forth.

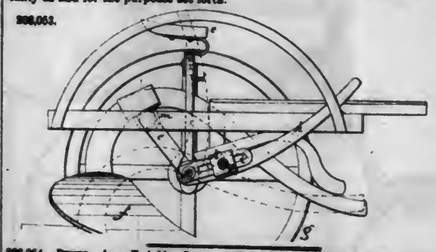
3. The notched rockers D D' *d* of a crib or cradle, in combination with elastic or yielding supports O, applied to the stand or base of said cradle in such a manner as to permit the ready removal of cradle B by simply lifting said rockers out of their respective grooves *c b*, and unhooking the rubber band and link from the screw or pin to which they are normally attached, substantially as herein described, and for the purpose set forth.

208,053. SULKY-PLOWS. James E. Alexander, Hooke, Ga. Filed June 7, 1878.

Brief.—One end of the crank-axle is journaled in a slotted plate or bar. The wheel-spindle is secured in the slot at any desired point, thus increasing or diminishing the length of the crank.

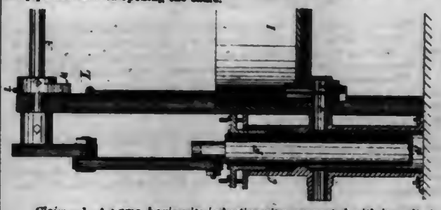
Claim.—In a sulky-plow, the slotted arm *i*, hung loosely upon the axle *c*, in combination with the plate *k*, carrying the journal for the wheel *g*, substantially as and for the purposes set forth.

208,054.



208,054. PUMPS. Amos H. Ashley, Stuyvesant Falls, N. Y. Filed July 18, 1878.

Brief.—Designed for pumping hot water. The induction-pipe is connected with the cylinder near the top, to permit any steam forming in the latter to escape through the former. The induction-valve is so arranged that the weight of the valve and its attachments will unite with the pressure of the water in the pipe and tank in opening the same.



Claim.—1. A pump having its induction-pipe connected with its cylinder at or near the top, and so arranged as to have a direct passage for the escape of the steam from the cylinder through the induction-pipe, substantially as described.

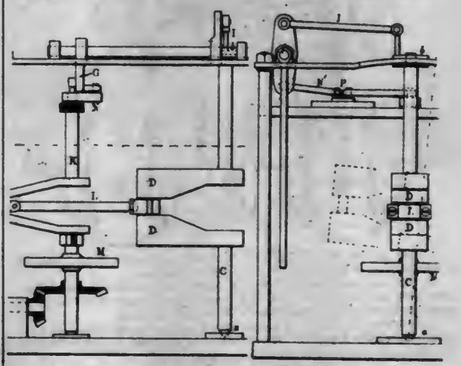
2. A pump having its induction-valve so arranged with respect to the pipe leading to the supply-tank that the force due to the weight of the valve and its attachments will unite with the pressure of the water in the pipe and tank in opening the valve, substantially as specified.

3. The combination of the cylinder H and hot-water tank I by an induction-pipe that enters the cylinder at or near its top, so as to create a direct passage for the escape of the steam from said cylinder, substantially as and for the purpose set forth.

4. The combination of the cam M and lever L with a valve arranged to be closed by the cam and opened by its own weight and that of the water above it, substantially as described.

5. A pump having its induction-valve opened by its own weight and the pressure of the water in the induction-pipe, and closed by a revolving cam operated by the shaft that imparts motion to the plunger, substantially as described.

208,055. DEVICES FOR TRANSMITTING POWER. William G. Baker, Baltimore, Md., assignor of a part of his right to William B. Duvall and Charles B. Culver, same place. Filed Sept. 2, 1878.

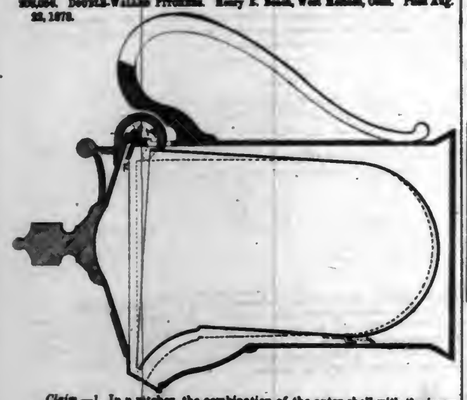


Claim.—1. A revolving shaft provided with weighted cranks and adapted to be oscillated in its bearings, as specified, combined with mechanism attached to one of said bearings, for the purpose of giving to the said shaft the said oscillating movement, substantially as and for the purposes set forth.

2. A revolving shaft provided with weighted cranks and adapted to be oscillated, as specified, combined with a secondary shaft and cranks in fixed bearings and a universally-jointed connecting-rod, substantially as set forth.

3. The oscillative and revolving shaft C, having the weighted cranks D, combined with the shaft K and cranks, universally-jointed connecting-rod L, and mechanism for imparting simultaneously an oscillating motion to the shaft C and a rotary movement to the shaft K, through the medium of the crank N thereon, substantially as and for the purposes specified.

208,056. DOUBLE-WALLED PITCHERS. Henry E. Beach, West Meriden, Conn. Filed Aug. 22, 1878.



Claim.—1. In a pitcher, the combination of the outer shell with the inner vessel, the said inner vessel hung therein at a point forward of its center of gravity, and so as to turn forward on the said hanging-point when the pitcher is tilted and return when the pitcher is set upright, substantially as described.

2. The combination of the outer shell, the inner vessel hung therein forward of its center of gravity, the cover hinged to the outer shell, and with an arm operating upon said inner vessel to throw it forward when the cover opens, substantially as described.

3. The combination of the outer shell, the inner vessel hung therein forward of its center of gravity, the cover hinged to the outer shell, and with an arm operating upon said inner vessel to throw it forward when the cover opens, and with a lip on the cover to close the spout-opening, substantially as described.

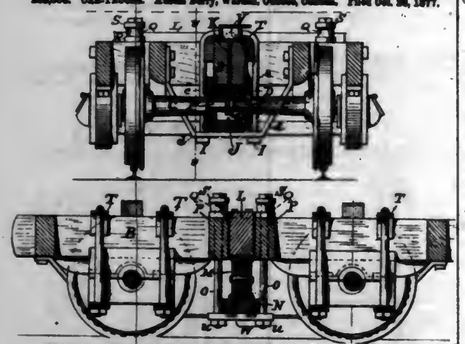
208,057. WRENCHES. August Bosk, New York, N. Y. Filed Aug. 6, 1878.

Brief.—The elasticity of the ring retracts the handle and loosens the grips.



Claim.—The combination, with the recessed handle C, having double arm *b* and cross-pin *c*, of the pivoted spring-pressed arm B, provided with spring-ring A, and with a wedge on one of the open ends of ring opposite to the arm B, as shown and described.

208,058. CAR-TRUCKS. Austin Berry, Weston, Ontario, Canada. Filed Oct. 26, 1877.



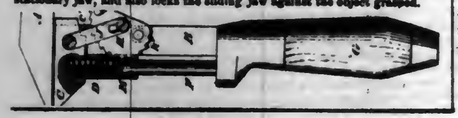
Claim.—1. The combination of the saddles T, central bar B, and stirrups C, substantially as shown, and for the purpose described.

2. The combination of the swinging bolster I, elliptic springs M, suspension-bar N, hangers O, with heads S, springs Q, with washers R, and bearing-plates W, with nuts *v*, substantially as shown and described.

3. The boxes D, secured to central bars B of the truck by stirrups C, provided with saddles T, and by braces *d* bolted to the frame A, and secured to the stirrups by nuts *f*, all in combination, as set forth.

208,059. WRENCHES. John S. Birch, Orange, N. J. Filed Mar. 12, 1878.

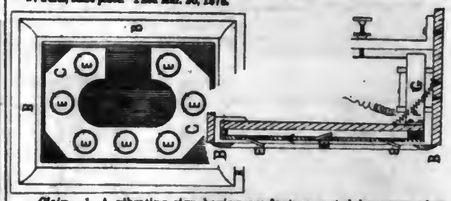
Brief.—A spring-actuated cam both draws the sliding jaw away from the stationary jaw, and also locks the sliding jaw against the object grasped.



Claim.—1. In a wrench, the shank B, movable jaw C, and spring K, combined with a cam, H, having shoulders or notches in its curved edge, as and for the purpose described.

2. The combination of the cam H, provided with shoulders or notches in its curved edge, with the shoulders *c'* of the movable jaw C, and with the shank B of the wrench, substantially as herein shown and described.

208,060. BRAKE. James L. Blackmer, Boston, Mass., assignor of one-half his right to James W. Tufts, same place. Filed Mar. 20, 1878.



Claim.—1. A vibrating sign having pendants operated by means of an electro-magnet, combined with the frame and support, for the sign to vibrate within, substantially as described.

2. In combination with a sign-body, A, pivoted to its frame B, and provided with the pendants E, the curved, bent, or rectangular armature G and spiral spring P, all being constructed and arranged so as to permit of being vibrated substantially in the manner described, as and for the purpose set forth.

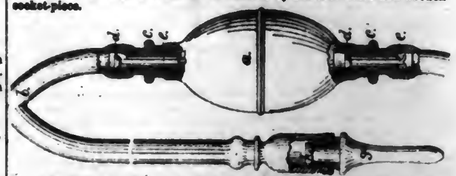
208,061. ROTATORS FOR SHIPS' LOGS. John Bliss and Geo. H. Bliss, Brooklyn, N. Y. Filed Jan. 17, 1878.



Claim.—The rotator for ships' logs having a body with a tapering forward end, to which the line is connected, and spiral wings or blades that continue as a gradual taper from the tapering forward end of the body to the place of greatest diameter, substantially as set forth.

208,062. STRETCHER. Edward H. Bliss and Joseph Duval, Providence, R. I.; said Bliss assignor to said Duval. Filed July 10, 1878.

Brief.—The valve is secured against accidental displacement, and the injection-tube is coupled to the rubber conduit by a rubber band and wooden socket-piece.



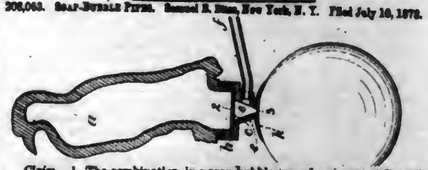
Claim.—1. In a syringe, the combination, with the valve *d*, of the coupling *c*, provided with the cups *d'*, arranged to protect the valve and form projections or bulbs to retain the elastic tube, substantially as described.

2. The combination, in a rubber syringe, with the flexible tube *b*, of the socket-piece *f*, the injection-tube *g*, and the elastic band *i*, secured by the flange *h*, substantially as and for the purpose set forth.

3. The combination, with the elastic tube, of the coupling *c*, provided with one or two cups, *d'*, a central disk against which the tubes abut, and the valve *d*, provided with the stem *e*, forked at its end and arranged to retain the valve, substantially as and for the purpose described.

4. The combination, with the injection or spraying tubes of a syringe, of the rubber ring *i* and the flange *h*, substantially as and for the purpose set forth.

208,063. SOAP-BUBBLE PIPES. Samuel S. Bunn, New York, N. Y. Filed July 16, 1878.



Claim.—1. The combination, in a soap-bubble toy, of an inverted fountain, *a*, having a hole, 2, at the bottom, the cup *c* beneath the same, into which the soap-suds pass, the concave disk *h*, with the central hole, 3, entering the bottom of the cup *c*, and the tube *f*, substantially as set forth.

2. The washer or diaphragm *e*, perforated at 2, in combination with the cup *c*, disk *h*, and hole 3 below said washer, and the removable fountain *a* above the washer, and the air-pipe *f*, substantially as specified.

3. The screw-cap *b*, diaphragm *e*, air-tube *f*, cup *c*, and disk *h*, in combination with the removable inverted fountain *a* for soap-suds, substantially as set forth.

208,064. MEDICAMENTS FOR CATARRH. Joseph W. Hosmer, Sarcoxie, Mo., assignor to himself and Jacob Hosmer, same place. Filed Apr. 3, 1878.

Claim.—A medical compound consisting, essentially, of camomile, cubebs, and stramonium-leaves, in about the proportions specified.

208,065. TIN CANS. S. Hinchen Bradford, New York, N. Y. Filed Jan. 30, 1878.

Brief.—The top of the can is made of light tin-foil, to which a stationary and grooved ring is soldered near its edge, so that the top may be opened by inserting a knife between the ring and the top, to cut the top apart below joint of top and ring, leaving the ring as a part of the cover. A hinge is so affixed to the body of the can, and to the ring or cover, either inside or outside of the can, that the cut-away part of the cover remains hinged to the body of the can.



Claim.—1. A sealed tin can for condensed milk, paints, &c., having the top and can-body connected by a hinge device, substantially as and for the purpose described.

2. A sealed tin can having a top with stationary ring, connected to the body by a hinge device, and provided with a finger-rest, attached to the top and folded back over the same or down along-side the can-body, so that by cutting the top and raising the finger-rest a hinged lid with thumb-piece is obtained, substantially as specified.

208,066. CORSETS. M. P. Bray, Birmingham, Conn., assignor of one-half his right to Leopold Kraus, same place. Filed July 1, 1878.



Claim.—In a corset, the combination of pockets *d* on the edge, alternating with pockets *c* in rear of the clasp, and a stay to interlace the said pockets when folded over the main clasp, substantially as described.

208,067. GOVERNORS FOR FLUID-PRESSURE ENGINES. Benj. Brassie, St. Louis, Mo., assignor to the Brassie Engine Company, same place. Filed Mar. 7, 1878.



Claim.—1. The combination, in an engine-governor, of an inclosing-case, a piston rotating in a liquid medium therein, and a movable abutment in said case, connected with the governor-valve, and operated in one direction by pressure induced by the rotation of the piston and in the other by the tension of a spring, substantially as set forth.

2. The combination of the inclosing-case, the cam-piston revolving in a central chamber therein, the annular surrounding channel, and the vibrating wiper, substantially as set forth.

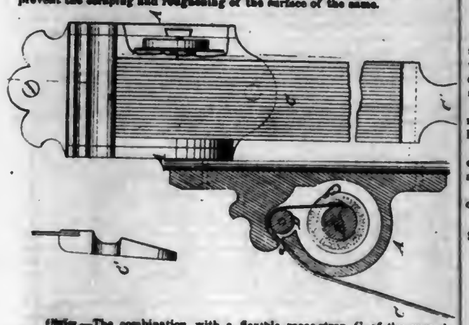
3. The combination of the inclosing-case, the cam-piston revolving in a central chamber therein, the annular surrounding channel, and the movable disk and its abutment, substantially as set forth.

4. The combination of the inclosing-case, the cam-piston revolving in a central chamber therein, the vibrating wiper, the movable abutment, and the adjustable valve or gate, substantially as set forth.

5. The combination of the inclosing-case, the movable disk and its abutment, the pinion on the shaft of the movable disk, the segment-gear on the rock-shaft arm, the rock-shaft and its arms, the spring, and the governor-valve stem, substantially as set forth.

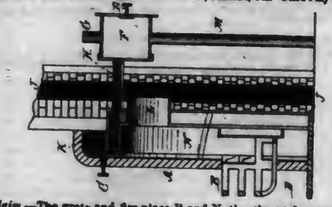
208,068. RAZOR-STROPS. George W. Brown, Cumberland Mills, (Westbrook,) Me. Filed June 3, 1878.

Brief.—A second friction-roller may be placed above the strop, so as to prevent the scraping and roughening of the surface of the same.



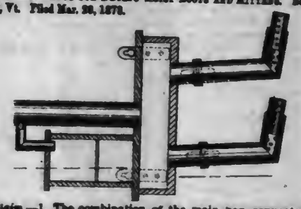
Claim.—The combination, with a flexible razor-strop, C, of the case A, having front slot, *a*, the spring-roll B below said slot, and the anti-friction roll D, the latter in a cavity of said case opposite the slot, the non-working face of the strop being applied to both the spring and the anti-friction roll, as and for the purpose specified.

208,069. HOT-AIR GRATES. Alex H. Buckbee, Oakland, Cal. Filed July 27, 1878.



Claim.—The grate and fire-place B and N, the throat L, hot-air chamber K, hot-air pipes H and H, drum F, the slides C, D D, and E, the cold-air pipe M, and hot-air pipe G, the whole being constructed and operated as and for the purposes set forth.

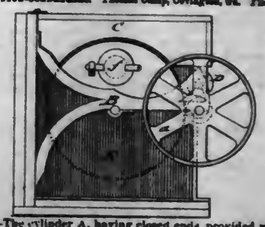
208,070. APPARATUS FOR DRYING MOIST ROOTS AND MITTENS. Benj. F. Burton, Brookfield, Vt. Filed Mar. 26, 1878.



Claim.—1. The combination of the main box, connected by draft-tube to the chimney, with bottom elbow-tubes, that are perforated at the lower parts, and provided with adjustable perforated extensions and adjustable suspension devices, substantially as and for the purpose described.

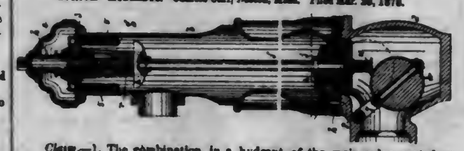
2. The combination of the main box, connected by the draft-tube to the chimney, with the bottom tubes, having lower perforated elbows and adjustable suspension devices, as and for the purpose specified.

208,071. COTTON-CONDENSERS. Thomas Camp, Covington, Ga. Filed Dec. 6, 1877.



Claim.—The cylinder A, having closed ends, provided with openings having hinged covers *f*, and the casing E C, having elliptical-shaped openings in the ends, and also side and bottom openings, in combination with the fan, as and for the purpose specified

208,072. HYDRANTS. Charles Carr, Boston, Mass. Filed Mar. 30, 1878.



Claim.—1. The combination, in a hydrant, of the main valve seated at the base of the stock, a waste-valve operated thereby, and a supplemental valve of less specific gravity than water located below the main valve and coacting therewith, and the chamber *d*, in which said supplemental valve is arranged, substantially as described.

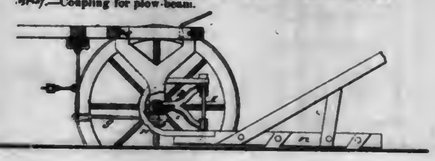
2. In a hydrant, the combination, with the base, of a pivoted supplemental valve of less specific gravity than water, to close the main-valve opening when the main valve is raised, substantially as described.

3. The combination, with the valve-rod and guide, of a cross-bar having ends 3 4 of different thicknesses, substantially as and for the purposes described.

4. The valve-rod and cross-bar, in combination with the screws 5 5, to operate substantially as described.

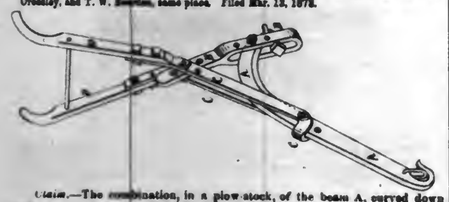
208,073. CULTIVATORS. Francis M. Cropp, Platte County, Mo. Filed Feb. 16, 1878.

Brief.—Coupling for plow-beam.



Claim.—The coupling consisting of the sleeve *h*, having the perforated rib *i*, the forked arm *k*, U-shaped yoke *m*, and bolt *l*, combined and arranged substantially as specified.

206,074. PLOW-STOCKS. Columbus M. Crossley, Rutledge, Ga., assignor to himself, A. S. Crossley, and T. W. Bowden, same place. Filed Mar. 13, 1878.



Claim.—The combination, in a plow-stock, of the beam A, curved down at the rear and sharpened on the front of the curve, the slotted adjustable standard B, the brace C, bent and embracing the beam, as shown, and the handles D, all constructed and arranged as shown and described.

206,075. FLAT-IRON HEATERS. Nicholas Grotenburg, Janesville, Wis. Filed Mar. 19, 1878.



Claim.—A flat-iron heater provided with a receptacle for the body of the iron, a lamp or burner below said receptacle, and side flues, *b b*, forming communications between the receptacle and the place below, substantially as set forth.

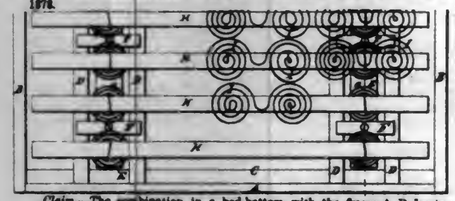
206,076. TURN-TABLES FOR STOVE-OVENS. Thomas V. Curtis, Le Mars, Iowa. Filed Aug. 16, 1878.



Claim.—1. In a platform for stove-ovens, the turn-table B, provided with openings *c*, to conform to the size and shape of the pans or other receptacles containing the articles to be cooked, so that the pans or receptacles will set down in the openings, substantially as and for the purpose set forth.

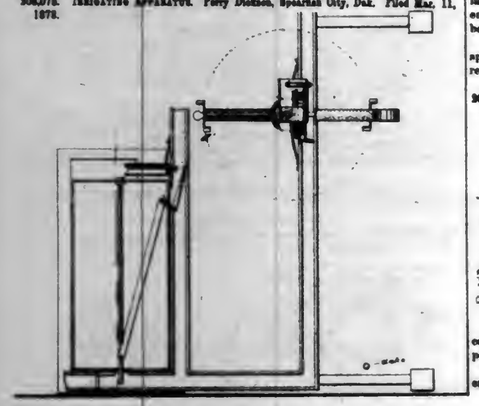
2. The turn-table B, provided with openings *c*, said table being detachably connected to a portable stand, A, provided with rollers *b* and spindle *a*, substantially as and for the purpose specified.

206,077. SPRING BED-BOTTOMS. Montgomery R. Davis, Jackson, Mich. Filed June 20, 1878.



Claim.—The combination, in a bed-bottom, with the frame A B, having cleats C, of the transverse slats D D, the crossed slats E F, and the springs G I, the latter connected with the intermediate slats H, as shown and described.

206,078. IRRIGATING APPARATUS. Perry Dickson, Spearfish City, Dak. Filed Mar. 11, 1878.



Claim.—1. The combination of the system of irrigating troughs, conducting the water supplied from a heating-tank, with traversing and revolving sprinklers suspended from the troughs, substantially as and for the purpose described.

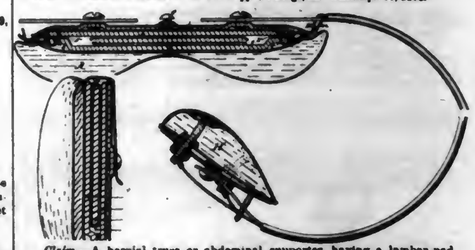
2. In an irrigating apparatus, the combination, with a balanced and traversing carriage running along the trough, of perforated sprinkler-arms, revolved by the water received by a siphon from the trough and transmitting motion to the carriage, substantially as specified.

3. The combination, in an irrigating apparatus, of revolving sprinkler-arms, having semicircular covers hung thereto, and curved end arms with fixed posts in the ends of the field, to produce a reversing of sprinkler, substantially as described.

4. The combination, in an irrigating apparatus, of the induction-trough, having swinging gate, with an expansion-rod and transmitting pivot-rod of the heating-tank, to prevent scalding of the crops by supplying cold water to the troughs, substantially as and for the purpose set forth.

5. The combination, in an irrigating apparatus, of the expansion-rod and connecting pivot-rod of the heating-tank with a swinging gate of the induction-trough and with a valve of the same, and supplementary trough leading to fire-place, to extinguish fire when temperature of water gets too high, substantially as specified.

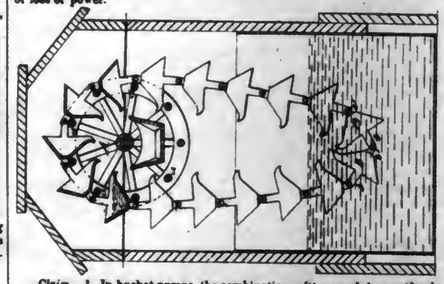
206,079. ABDOMINAL TRUSSES. Julius V. Eppie, Chicago, Ill. Filed Apr. 15, 1878.



Claim.—A hernial truss or abdominal supporter, having a lumbar pad and a supporting pad or pads, and provided with a galvanic battery, said battery being located in the lumbar pad, the poles thereof in the bearing-face of the supporting pad or pads, and the electric connection between each pole and the battery complete in the truss, or otherwise, exterior to the body of the wearer, substantially as shown and described.

206,080. BUCKET-PUMPS. James M. Pate, Webster City, Iowa. Filed May 30, 1878.

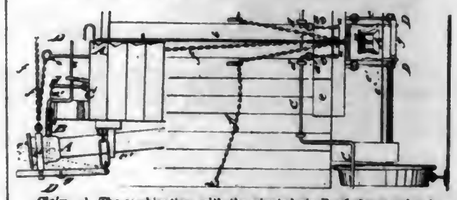
Brief.—The object of this invention is to furnish a bucket-pump which is made with longer side arms and shorter bottom arms, and with a spout-shaped end toward the inside of the reel, which end slightly contracts in width, and extends in an upward direction, so as to discharge the water with little leakage or loss of power.



Claim.—1. In bucket-pumps, the combination, with a revolving reel having lateral and equidistant cross-rods and a center trough below the shaft, of an endless chain of buckets connected by pivoted longer side arms and shorter bottom arms, substantially as and for the purpose specified.

2. For bucket-pumps, a bucket made of triangular shape, with contracted spout at the side toward the reel, the spout being slightly raised above the remaining parts, substantially as and for the purpose set forth.

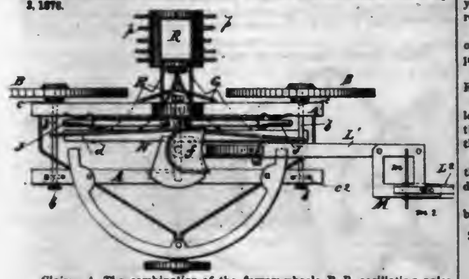
206,081. CAR-COUPLINGS. Joseph Forman, Ramon, Ky., assignor to himself and John H. Wood, same place. Filed July 23, 1878.



Claim.—1. The combination, with the pivoted pin B, of the cross-head *a*, central rod, *b*, chains *c'*, and levers C, having crank-arms, as and for the purpose described.

2. The combination of the lifter D, pivoted bail *e*, chains *c' f*, and weighted cross-piece *g*, as and for the purpose specified.

206,082. PLOW, HARROW, AND SEED-PLANTER. Nelson M. Fowler, Beloit, Kans. Filed Aug. 3, 1878.



Claim.—1. The combination of the furrow-wheels B B, oscillating axles *b b*, rods *d d*, and lever E, substantially as and for the purpose shown and described.

2. The combination of the double plow G, plow beam H, rods *h h*, levers J J, pawls *i i*, and toothed or notched bar K, substantially as and for the purpose herein described.

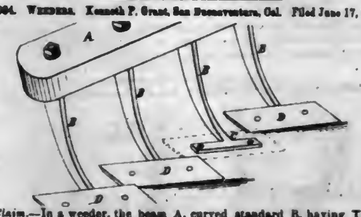
3. The combination, with the double plow and its carrying-frame and wheels, of the jointed tongue L' L², metal frame M, tongue or strip m^1, and notched or recessed rod or bar *m*, as shown and described, for the purpose specified.

206,083. SPRING-SEATS FOR WAGONS. John B. Gerrell, La Otto, Ind. Filed Aug. 17, 1878.



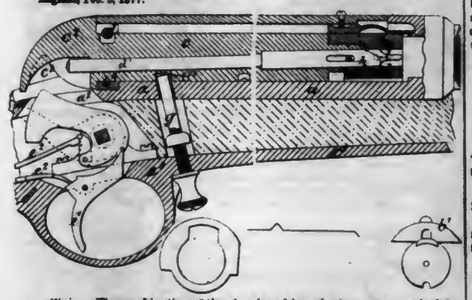
Claim.—The levers B, bifurcated at both ends, pivoted to the central lugs C, on the bottom board A, and provided with the eyes *c*, in combination with the crank-rods D, the spiral springs E, secured to the boards *e*, which are fastened to the ends of the levers B and the wagon-seat F, substantially as shown and described.

206,084. WEEDERS. Kenneth P. Grant, San Buenaventura, Cal. Filed June 17, 1878.



Claim.—In a weeder, the beam A, curved standard B, having T-feet C, and the inclined overlapping reversible blades D, constructed and arranged substantially as shown and described.

206,085. BREECH-LOADING FIRE-ARMS. Charles E. Green, 13 Blandford Street, and Robert Green, Ledbrooke Terrace, Notting Hill, England. Filed May 20, 1878. Patented in England, Feb. 2, 1877.



Claim.—The combination of the chambered breech-piece or rear end of the barrel, the two-part bolt, consisting of the non-rotating plug at its front end and the cylindrical turning part, the striking-pin working endwise in and turning with the cylindrical part of the bolt, and having the incline, or its equivalent, as specified, near its forward end, and the pin carried by the non-turning plug and acting on the striking-pin as it is turned, these members being constructed and operating substantially as hereinbefore set forth, for the purpose specified.

206,086. STEERS FOR RAILWAY-CARS. Willard R. Green, Muscatine, Iowa. Filed June 20, 1878.

Claim.—1. A draw-head formed with a rounded stem or shank, and attached to a square rod extending longitudinally toward the center of the car, in combination with a similar draw-head and attached rod and a connecting yoke or frame, J, whereby provision is made for rotating said draw-heads and rods simultaneously, substantially as herein described.

2. The combination, with brake mechanism, substantially as described, of a rotary draw-head, B, rod H, chain Q^2, and spring *i*, as and for the purpose described.

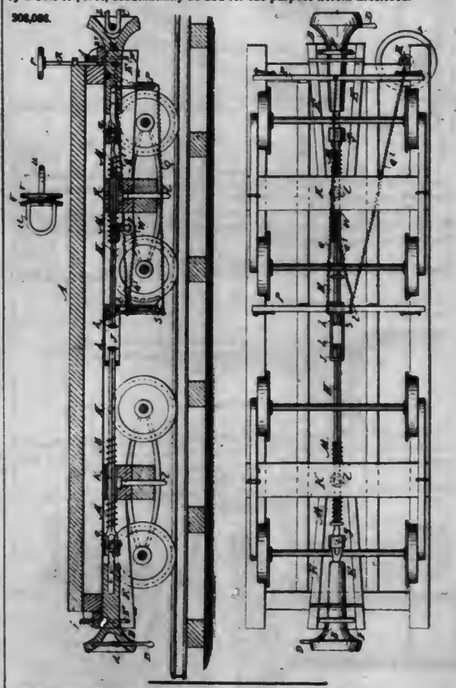
3. The combination, with the draw-head B, of the diverging guideways E E, arranged as shown and described, for the purpose specified.

4. The combination, with the draw-head B, of the rod F, formed into a loop or bow passed under said draw-head, and having its ends passed upward through the platform, and provided with springs *f*, substantially as and for the purpose shown and described.

5. The combination, with the draw-head B, of the pin D, held in place by the spring *d*, and having its end projecting, to serve as a lever for turning the draw-head, substantially as herein described.

6. The swivel-link composed of the two parts, *s r u v*, connected together by a bolt or pivot, substantially as and for the purpose herein described.

206,086.



206,087. AUGERS. Wm. Haney, East Haven, Conn. Filed Mar. 30, 1878.

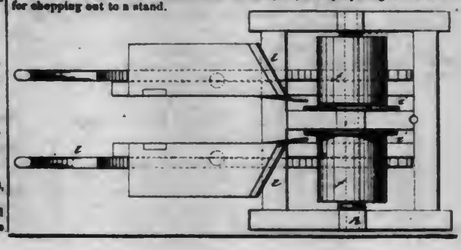
Brief.—The body of the auger is provided with a rib across the head, in a horizontal plane, and a shoulder on the outside of the rib of dovetail form, by means of which a head having a groove corresponding to the rib and a plane surface corresponding to the shoulder, and a cutting-lip, which forms the continuation of the twist, is detachably connected to the head.



Claim.—A ship-auger having the head end constructed with a rib and with a removable head, with a corresponding groove for attaching the head to the auger, substantially as described.

206,088. COTTON-CULTIVATORS. Wm. W. Harvey, Clarksville, Tex. Filed July 30, 1878.

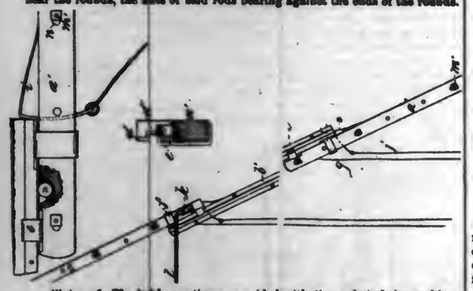
Brief.—The rollers have flanges, which act as colters and cut the earth near the plants, while the plows serve as scrapers, thus preparing the cotton for chopping out to a stand.



Claim.—A cotton-cultivator in which the rollers *f*, cutters *i*, and scrapers *l* are combined and relatively arranged as and for the purpose specified.

208,089. EXTENSION-LADDERS. Ludwig Hanewus, Hartford, Conn. Filed July 20, 1878.

Brief.—The ladder is braced from the wall by detachable flaring arms resting in sockets on the ladder-rails. The rails are secured in position, and the rounds prevented from moving endwise, by rods passing through the rails, near the rounds, the nuts of said rods bearing against the ends of the rounds.



Claim.—1. The ladder-section *c*, provided with the sockets *k*, in combination with the laterally-extended and removable supports *l*, all substantially as described, and for the purpose set forth.

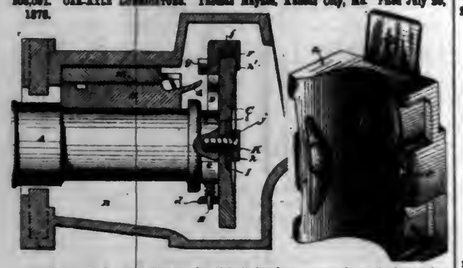
2. The ladder-rails *a*, the round *n*, the rod *m*, and the nuts *m'*, abutting on the ends of the round, and also against the rails, all combined substantially as described, for the purpose set forth.

208,090. PIGTE-PASTERS. George G. Hawkins, Stewartstown, W. Va. Filed July 24, 1878.



Claim.—The rod A, with rigid hoop D, and parallel rod A', with hoop D', provided with lever-extension *a*', in combination with the stiff pivoted connecting-links *b* and agent C, all constructed and arranged as set forth.

208,091. CAR-AXLE LUBRICATORS. Thomas Haynes, Kansas City, Mo. Filed July 26, 1878.



Claim.—1. In a lubricator, the disk C, having a central notched opening with or without a projection or stud, *i*, in combination with the axle or shaft A, central toothed disk I, having a recessed shoulder on its face, tap-bolt K, and a pin passing through it, substantially as and for the purpose set forth.

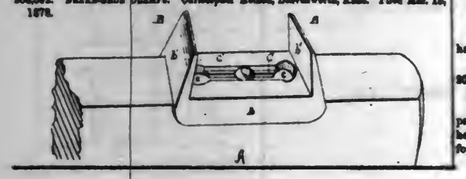
2. The combination of the yoke D, having an extension, *g*, and the scraper or block F, arranged on the inner side of the disk C, with the disk C, substantially as and for the purpose set forth.

3. The combination of the yoke D, having the stud *d* and extensions *f g*, spring-holding device E *e*, bifurcated conical block F *h*, axle A, and disk C, substantially as and for the purpose set forth.

4. The brass H, provided with openings *l l*, and dished, as at *m m*, on its lower side around the openings *F F*, substantially as and for the purpose set forth.

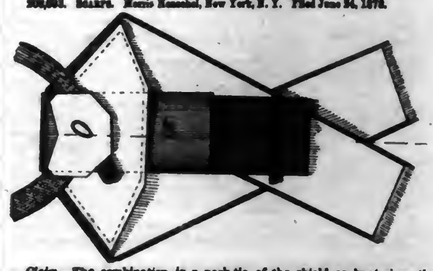
5. An axle or shaft lubricator consisting of the reservoir B, disk C, with a securing disk and bolt, yoke D, having the extensions *f g*, bifurcated block F, having lip *h'*, perforated and dished brass H, having tongue G, substantially as and for the purpose set forth.

208,092. BRAKE-SHOE CLAMPS. Christopher Heinen, Leavenworth, Kans. Filed Mar. 16, 1878.



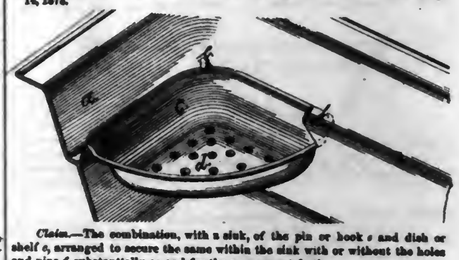
Claim.—The brake-shoe clamp B, provided with the longitudinal slot C, and upon each side of said slot with a recess, *c'*, in combination with a headed and notted bolt, D, and bar A, substantially as and for the purpose set forth.

208,093. SCARFS. Morris Hanshel, New York, N. Y. Filed June 24, 1878.



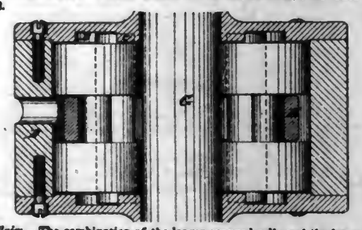
Claim.—The combination, in a neck-tie, of the shield or knot-piece, the rigid cross-piece, the attached neck-band, the elastic rear loop, the body-pieces of the scarf, permanently attached to the shield, and the movable center-piece, doubled around the rigid cross-piece, all constructed and arranged to operate for the purpose set forth.

208,094. SOAP-DISHES FOR IRON SINKS. Wester G. Higgins, Norwich, Conn. Filed June 14, 1878.



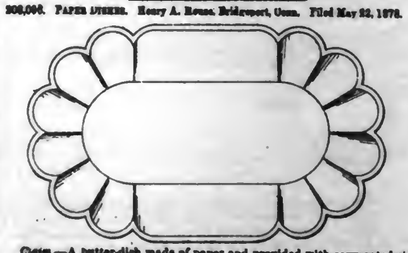
Claim.—The combination, with a sink, of the pin or hook *e* and dish or shelf *c*, arranged to secure the same within the sink with or without the holes and pins *f*, substantially as and for the purpose set forth.

208,095. ANTI-FRICTION JOURNAL-BEARINGS. Seth Hill, Trumbull, Conn. Filed Jan. 30, 1878.



Claim.—The combination of the larger grooved rolls and the longer small rolls, of equal diameters throughout, bearing on a shoulder in the end of the cap-box, with the ring and shaft, constructed and operating together in a journal-box, substantially as and for the purpose described.

208,096. PAPER DISHES. Henry A. House, Bridgeport, Conn. Filed May 22, 1878.



Claim.—A butter-dish made of paper and provided with corrugated sides, having a continuous flange following the edge of the corrugations, as set forth.

208,097. APPARATUS FOR MOLDING DISHES FROM PAPER. Henry A. House, Bridgeport, Conn. Filed May 22, 1878.

Claim.—1. The improvement in the manufacture of grocers' dishes from paper, consisting in subjecting a sheet of moistened paper to pressure and heat simultaneously between dies, which impart the required shape, as set forth.

2. The combination, in a machine for molding paper dishes, of dies A B,

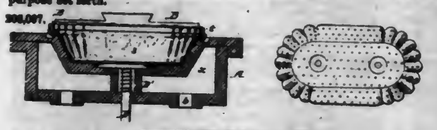
one of which is heated and the other perforated, substantially as and for the purpose set forth.

3. The covering *c*, combined with heated paper-molding dies, substantially as and for the purpose set forth.

4. The flanged follower *f*, having a movement independent of the section *f'*, in combination with the die A and its lip *i*, substantially as set forth.

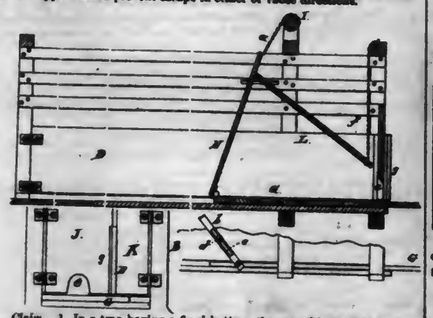
5. The follower C, combined with the die A, substantially as and for the purpose set forth.

208,097.



208,098. HOG-TRAPS. William Hunter, Victor, Ill. Filed Sept. 24, 1877.

Brief.—A supplemental floor, having an elevated hinged portion, is adapted to slide and confine the animal from moving forward or back, while hinged side and upper boards prevent escape in either of these directions.



Claim.—1. In a trap having a fixed bottom, the movable bottom, consisting of two sections, G H, hinged together, and operating substantially as specified.

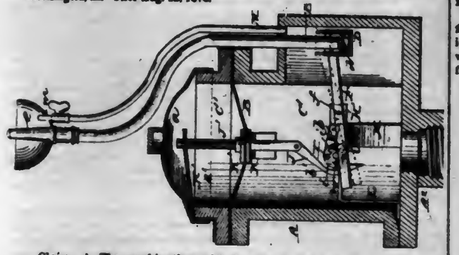
2. The side piece, D, hinged to one side at the entrance end of the trap, and provided at the exit end with cleats or other equivalent devices to engage with and hold the door J, in combination with the door K, substantially as and for the purposes specified.

3. In a trap, the movable bottom G H, windlass I, and chains *a a*, substantially as and for the purpose specified.

4. In a trap, the movable bottom G H and holding-board L, in combination with a door or end piece, J, having a hole, *e*, substantially as described.

5. The slotted lever *h*, in combination with the movable bottom G H, substantially as and for the purpose specified.

208,099. AUTOMATIC LIGHTING DEVICES. Daniel H. Ironsinger and Matthew Faloon, Bloomington, Ill. Filed Aug. 12, 1878.



Claim.—1. The combination, with the case A and tube E, provided with burner *c*, of the vertically-adjustable mercury-cup D, arranged within said case, substantially as and for the purpose herein shown and described.

2. The combination, with the case A and tube E, provided with burner *c*, of the adjustable mercury-cup, flexible diaphragm, and intermediate mechanism, all arranged within said case, substantially as and for the purpose herein shown and described.

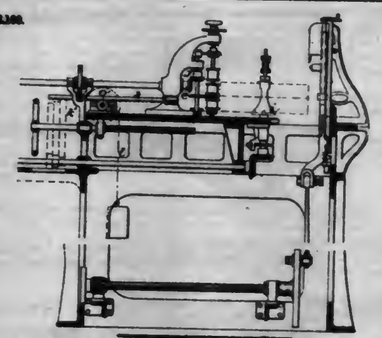
3. The combination, with case A and stationary tube E, provided with burner *c*, of the mercury-cup E, vibrating arm F, wheel I, provided with rods *i* and pins *h h*, pivoted pawls or catches *b b'*, rod K, and weighted diaphragm B, substantially as and for the purpose herein shown and described.

208,100. MACHINES FOR CUTTING AND STAMPING MATCHES. Gabriel Perret-Jeoffroy, Chalon-Sur-Saone, France. Filed Feb. 25, 1878.

Brief.—The block from which the matches are cut is intermittingly rotated, and during the interval between one partial rotation and another the sides of the polygonal block are stamped or printed, and the match sticks cut from the block.

Claim.—The combination, in a machine for cutting match or other sticks, of a device for holding and rotating the block from which the splints are to be cut, an intermittent stamping or printing device, with cutters operating to cut the printed or stamped sticks from the said intermittently-rotated block, substantially as described.

208,100.

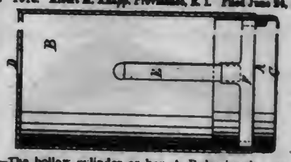


208,101. LUMBER-MEASURE. Seth Ketteridge, Centre Point, Iowa. Filed June 11, 1878.



Claim.—The combination, with the slotted board A, rotated as described, of the shafts C G, having wheels D D E F, the slotted plates H, and the grooved indicator-slide I, as and for the purpose specified.

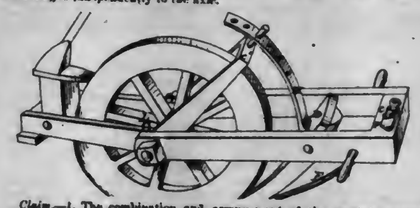
208,102. TOYS. Albert M. Knapp, Providence, R. I. Filed June 24, 1878.



Claim.—The hollow cylinder or box A B, having in side or end one or more perforations, D, in combination with a flexible or an elastic rubber end or side C and support F G for the smoke or vapor producing material E, as herein described, and for the purpose set forth.

208,103. DITCHING-PLOWS. Levin M. Koehler, Burlington, Iowa. Filed Jan. 16, 1878.

Brief.—A single wheel for a bearing and cutter wheel. It has side cutting flanges and a deep central groove. A rear scraper fits the groove, and causes it to take up the furrow between the cutting-flanges and carry it over the wheel till removed by a scraper at the front of the wheel. A front and rear frame hinged independently to the axle.



Claim.—1. The combination and arrangement of the revolving cutter-wheel, the angular draft-frame and the rear frame, both secured independently to the axle of the revolving cutter-wheel, and the segment-plate for adjustably connecting the frames, substantially as and for the purpose described.

2. The combination of the frame, the revolving grooved cutter-wheel, the scraper, hinged to the frame and entering the groove of the cutter-wheel, and the hand-lever, secured to and operating the scraper, substantially as and for the purpose described.

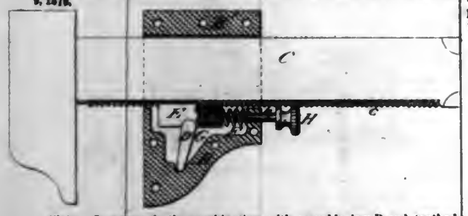
208,104. GLAZIERS' SQUARE AND RULE. Joseph H. Kurtz, Weston, Mo. Filed Aug. 3, 1878.



Claim.—1. The herein-described glazier's rule, provided with an adjustable notched slide and a guide, *h h l m*, secured on head *c*, against projecting ends of plate *f*, said guide having a stop, *n*, as and for the purpose specified.

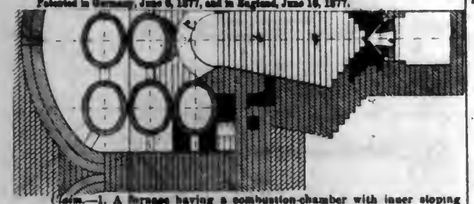
2. The combination, with slide *c*, of the serrated plate *g*, and serrated spring *k*, and the cam-lever *i*, as and for the purpose set forth.

208,105. GRATERS OR WRENCHES. William B. Lemon, Bridgewater, England. Filed July 9, 1878.



Claim.—In a wrench, the combination, with movable jaw B and toothed handle C *c*, of the toggle D, serrated bolster E *e*, spring F, and handle H *h*, as and for the purpose specified.

208,106. GAS-RETORT FURNACES. Georg Liegel, Steinsad, Prussia. Patented in Germany, June 6, 1877, and in England, June 16, 1877.



Claim.—1. A furnace having a combustion-chamber with inner sloping walls, and a bottom fuel-chamber with oppositely-sloping walls, and provided with a longitudinal bottom slit, as and for the purpose set forth.

2. The grate *b* and lateral converging air-channels *a*, in combination with a furnace-chamber having a bottom slit, as and for the purpose set forth.

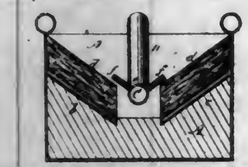
3. The bearer or *c*, having carved sides, and the arches *p*, in combination with a furnace and a central retort, as and for the purpose set forth.

208,107. HORSE-COLLARS. Andrew D. Martin, Abbeville, La. Filed July 11, 1878.



Claim.—The herein described horse-collar, consisting of the body portion *f*, formed of a flexible core and a fibrous covering wound thereon, and the rim portion *g*, consisting of a flexible core and a fibrous covering similar to the body portion, and secured to the latter, and provided with suitable fastening device, as and for the purpose set forth.

208,108. OIL-STOVES. Pearl Martin, Medford, assignor of one-fourth his right to Selwyn Z. Bowman, Somerville, Mass. Filed July 8, 1878.



Claim.—1. In an oil stove or furnace, the combination, with a fire-pot, A, having one or more inclined sides provided with one or more wicks of asbestine or other fibrous material, of a perforated tube or conductor, C, located within the interior of the fire pot, and adapted to discharge into the flame therein steam or air, or both intermixed, to promote combustion, substantially as set forth.

2. The tubes *f*, communicating with and projecting out from the tube C, and so arranged opposite to the wicks as to introduce air or steam, or both combined, into the center of the flame along the length of each wick, substantially as described.

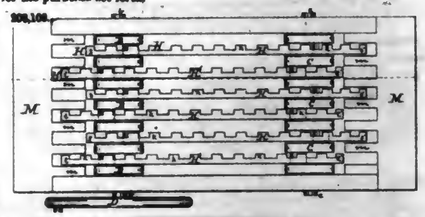
208,109. SHAKING-GRATES. Alfred McDonald, Allegheny, Pa. Filed July 23, 1878.

Claim.—1. The combination of the revolving crank B, the oscillating crank C, and a series of grate-bars pivoted or hung upon said cranks, substantially as and for the purposes set forth.

2. The oscillating grate-bar H, provided with the bearings *i*, formed in the inclined slots *h*, extending up from the base of the bar, substantially as and for the purposes set forth.

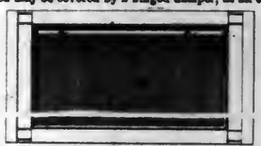
3. The guard-plate M, attached to the grate-frame, and having the projections *m*, extending under the guard-plate and gradually increasing in thickness to their outer ends, substantially as and for the purposes set forth.

4. The combination of the revolving crank B, oscillating crank C, a series of grate-bars hung on said cranks, and the guard-plates *M*, attached at the end of the grate-frame on the same plane with the bars, and provided with projections *m*, between and through which the bars work, substantially as and for the purposes set forth.



208,110. WINDOW-SCREENS. David H. Metcalf, Battle Creek, Mich. Filed Nov. 24, 1877.

Brief.—Between the upper margin of the netting and the frame an opening is left, which may be covered by a hinged damper, as an outlet for insects

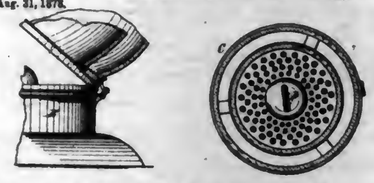


Claim.—A window-screen with one or more outlets for the passage of flies, said outlets being provided with dampers, for the purpose of opening or closing, as may be desired, as and for the purpose herein set forth.

208,111. FRUIT-JELLIES. James Miller, Stapleton, N. Y. Filed May 17, 1878.

Claim.—The jelly herein specified, composed of the pulp of dried currants and the juice of other fruits, substantially as set forth.

208,112. LANTERNS AND LAMPS. John Morgan and Thomas Walton, Wheeling, W. Va. Filed Aug. 31, 1878.



Claim.—1. In a double-globe lantern, the combination, with the exterior globe and the base, of a ring or cylinder located between the two, and adapted to direct all the air from the space between the globes to the flame-chamber, and to exclude air not passing through said space, substantially as and for the purposes set forth.

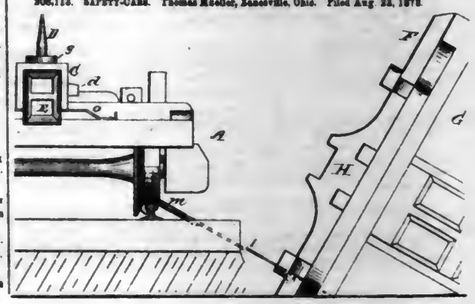
2. In a lantern wherein the currents within the flame-chamber are counterbalanced, substantially as explained, the combination of the three concentric rings or tubes, the double globe, and the burner-cone, the several parts being arranged as set forth, and adapted to convey heated air to the flame-chamber outside of the cone and to a point beneath the cone, for the purposes and objects mentioned.

3. The combination, with the exterior ring or tube, of the two interior tubes having air-passages beneath them, substantially as shown and described.

4. In a double-globe lantern, the exterior imperforate ring E, serving as a support for the hinged upper section of the lantern, forming an air-conduit, and adapted to exclude cold air from the flame-chamber, as and for the purposes set forth.

5. In a double-globe lantern wherein air from the space between the two globes is conducted through a series of channels formed in the base-section of the lantern, the combination of the exterior imperforate ring E and the ring C, hinged thereto and supporting the two globes, said ring C being located substantially as explained, so as to cause the two globes to swing over their corresponding annular air-channels, substantially as shown and described.

208,113. SAFETY-CAGES. Thomas Moeller, Zanesville, Ohio. Filed Aug. 24, 1878.



Claim.—1. A freight, cattle, or passenger car connected to the car truck or trucks, substantially as described, whereby said car is automatically detached therefrom by the tipping of the truck, in combination with a grappling device connected to the car and adapted to engage with the track or other object, substantially as and for the purpose set forth.

2. The car-truck provided with suitable hooks or latches n, in combination with the hinged arms I, secured to the bottom of the car and formed at their free ends with claws m, substantially as and for the purpose described.

3. The draw-bars C, formed with plates *a b*, in combination with the bolts D and recessed plates *d e f*, substantially as and for the purpose set forth.

4. The draw-bars C, formed with plates *b c*, and connected to the truck by bolt D, in combination with draw-heads E, bolts *h*, springs *i*, and guide-plates *j*, substantially as and for the purpose set forth.

5. The draw-bars C, formed with plates *a b*, and connected to the trucks by the bolt D, in combination with the central bar, B, securing the draw-bars together, substantially as specified.

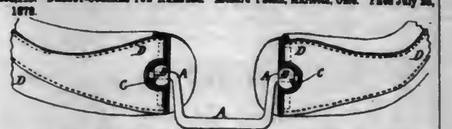
6. The trucks A, provided with pins or bolts D, formed with flanges *g*, and bar B, with hooks or latches n, in combination with the car G, guide-plates H, recessed plates *l*, and arms I, with claws m, substantially as and for the purpose set forth.

208,114. PHOTO-MECHANICAL PRINTING. Johann B. Obernetter, Munich, Bavaria, Germany, assignor to B. F. Powelson and Adolph Mueller, Detroit, Mich., and W. A. Cooper and W. E. Lindop, St. Thomas, Canada. Filed July 17, 1878.

Claim.—1. The process of preparing photographic plates for printing from by mechanical means, which consists in forming first on a transparent or non-transparent plate a coating or film of albumen and soluble glass, and then applying thereto a second or sensitive film for receiving the photographic image, substantially as herein set forth.

2. As a new article of manufacture, a photographic printing-plate provided with a ground coating of albumen and soluble glass, and a superposed sensitive coating or film, substantially as and for the purpose set forth.

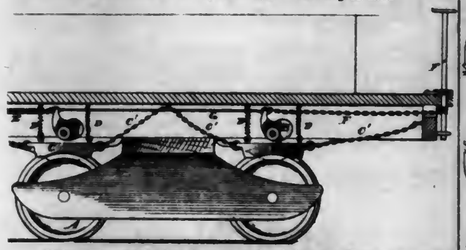
208,115. BREAST-COLLARS FOR HARNESS. Richard Pettis, Marietta, Ohio. Filed July 26, 1878.



Claim.—1. The combination of the pivoted connecting-rod A, the hinging rods B, and the fastening-pins C, with the ends of the parts of an open front breast-collar, D, substantially as herein shown and described.

2. In a breast-collar, the double inclines formed upon the outer sides of the hinging-rods B to receive the pins C of the connecting-rods A, to limit the upward movement of the said connecting-rod, substantially as herein shown and described.

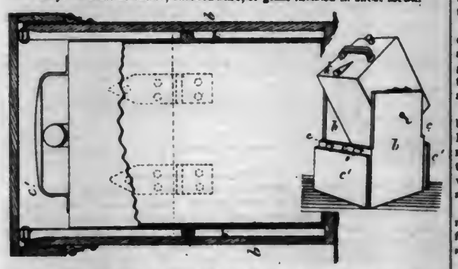
208,116. CAR-BRAKES. William W. Patterson, Corning, Iowa, assignor of one-half his right to John B. Harris and Walter J. Davenport, same place. Filed Aug. 22, 1878.



Claim.—The combination, in a car-truck, of the cams B, securely pivoted to the bed-timber of the car, brake-shoes C, springs D and E, chains C' F, and rod G, all operating and used for the purposes set forth.

208,117. CANS FOR OILS AND OTHER LIQUIDS. Geo. W. Peck, Revello, N. J. Filed July 10, 1878.

Brief.—Vessel of metal, earthenware, or glass incased in sheet metal.



Claim.—1. A vessel mounted on trunnions in a case, and adapted to be tilted to one side for pouring, the lower section of that side of the case being stationary, and the upper section hinged, so as to be turned down to admit the filling of the vessel, substantially as set forth.

2. A wooden case for inclosing a can or other vessel for liquids, provided with vertical grooves in the sides *b b*, and a movable support for the trunnions of the can at the upper ends of the grooves, substantially as set forth.

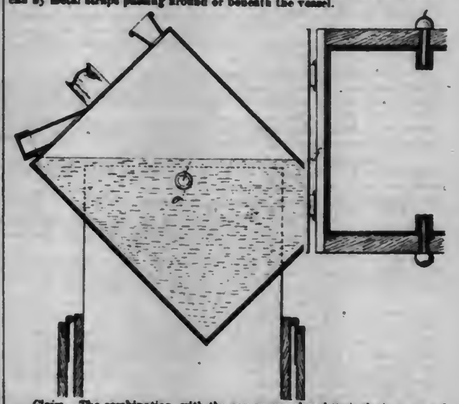
3. The combination, with the can having trunnions and the inclosing-case, of hinged trunnion-bearings at the upper ends of the sides of the case, substantially as set forth.

4. The combination, with the can for liquids, of the trunnions, grooved sides *b b*, hinged side sections, *c'*, stationary side sections, *c*, and movable cover to the case, substantially as set forth.

5. A case for inclosing a can or vessel, provided with a movable cover, and having the lower sections of two opposite sides stationary, and the upper sections of such sides movable and hinged, so as to be turned down, substantially as set forth.

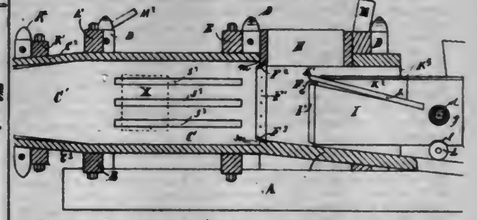
208,118. CASE FOR LIQUIDS. Geo. W. Peck, Revello, N. J. Filed July 10, 1878.

Brief.—The tubular sockets may pass in at each side of, or extend across, the can, being soldered at the ends. When vessel is of glass or earthenware, the sockets may be in conical blocks or hubs, sustained at opposite sides of can by metal straps passing around or beneath the vessel.



Claim.—The combination, with the can or vessel and its inclosing-case, of removable pivot-pins passing through holes in the case and into sockets in or upon the vessel for receiving the ends of the pivot-pins, all for supporting the vessel while being tipped, or for allowing the vessel to be inclosed within the case, substantially as set forth.

208,119. BALING-PRESSES. Zelora Phillips, Little Rock, Ark. Filed Feb. 15, 1878.



Claim.—1. In a baling-press, the press-box F, having its exit contracted or reduced in size by rigid unyielding inclined plates F^1, F^2, F^3, and F^4, projecting inward from the inner walls of said press-box, whereby the material that is forced through said reduced exit shall be crushed vertically and laterally and its elasticity subdued, in the manner and for the purpose substantially as shown and described.

2. In a baling-press, the unyielding inclined metallic plates F^1 F^2 F^3 and the sectional plates F^4, attached to the exit of a press-box, whereby said exit is reduced to a fixed size smaller than the press-box and baling-chamber, in the manner and for the purpose substantially as shown and described.

3. In a baling-press, the metallic sectional plates F^4, attached to the inner side of the press-box, between the side opening, F^5, and end of said press-box, and projecting inward with an unyielding and rigid incline, and provided with grooves a^2 between them, whereby the tie-bands r r^1 r^2 are permitted to enter the bale-chamber without contact with said sectional plates, in the manner and for the purpose substantially as shown and described.

4. In a baling-press, the exit F^1 F^2 F^3 F^4, reduced in size from the press-box F to bale-chamber C, when reduced by means of the inclined rigid plates F^1 F^2 F^3 F^4, with grooves a^2 between the sectional plates F^4, whereby the material is crushed laterally and vertically in its passage through, and at the same time the bale-ties r r^1 r^2 are conducted into the bale-chamber free from contact with the plates F^4, in the manner and for the purpose substantially as shown and described.

5. In a baling-press, the press-box F, with an exit to the bale-chamber, reduced in size, and provided with the side opening, F^5, adapted to admit the follower-block J, and bale-ties r r^1 r^2, in the manner and for the purpose substantially as shown and described.

6. In a baling-press, the tie-guide plate G, adapted to receive and guide the ties r r^1 r^2 into the side opening, F^5, of a press-box, in the manner and for the purpose substantially as shown and described.

7. In a baling-press, the press-box F, provided with the guide-plate G, when said guide-plate is constructed to receive and guide the ties r r^1 r^2 as

that the follower-block J, in entering the side opening, F⁵, of the press-box, shall carry said ties across the press-box, in the manner and for the purpose substantially as shown and described.

8. In a baling-press, the press-box F, provided with the side opening, F⁵, and grooves a^6 on one side of the contracted exit, and the guide-plate G, to support and guide the bale-ties r r^1 r^2 into said opening, combined with the follower-block J, whereby the ties are guided and carried across the press-box and allowed to pass said contracted exit uninterrupted, in the manner and for the purpose substantially as shown and described.

9. In a baling-press, the follower-block J, in combination with the bale-ties r r^1 r^2, whereby the said ties are carried into the press-box through the opening F⁵ in the form of loops, in the manner and for the purpose substantially as shown and described.

10. In a baling-press, the traverser I, provided with a rib, I¹, on its front end, whereby the material that is being compressed is drawn laterally toward the vertical center as the traverser compresses it and allowed a lateral expansion when the traverser recedes therefrom, in the manner and for the purpose substantially as shown and described.

11. In a baling-press, the traverser I, provided with an inclined vibrating tucker, K K¹, and a vertical rib, I¹, in front, whereby the material is tucked upward as it passes the contracted exit of the press-box with the advanced movement of the traverser, in the manner and for the purpose substantially as shown and described.

12. In a baling-press, the traverser I, having the supporting-trucks L at its rear end, when said trucks are adapted to level the traverser on the inclined bottom P P¹, whereby the front end of said traverser is permitted to travel up said inclined bottom with its face perpendicular, and while compressing the charge longitudinally produces an upward crowding of material, in the manner and for the purpose substantially as shown and described.

13. In a baling-press, the traverser I, having its lower sides, near the rear end, provided with recesses l to receive the leveling-trucks L, when said traverser is adapted to operate on the inclined bottom P P¹, in the manner and for the purpose substantially as shown and described.

14. In a baling-press, the traverser I, having the rib I¹ at its front end, the vibrating tucker-board K K¹, and the spring-board K² above, in the manner and for the purpose substantially as shown and described.

15. In a baling-press, the press-box F, furnished with an inclined bottom, P, in combination with the traverser I, mounted on leveling-trucks L, in the manner and for the purpose substantially as shown and described.

16. In a baling-press, the press-box F, formed wider at its rear end than at its front end, and provided with an exit that is rigid and reduced in size below the size of the mouth of the press-box, whereby the charge of material that is being pressed by the traverser is crowded inward laterally before it is crushed laterally and vertically, and its elasticity subdued in passing through the reduced exit into the bale-chamber, in the manner and for the purpose substantially as shown and described.

17. In a baling-press, the press-box F, formed with a lateral and vertical increase in size rearward, and provided with an exit to the bale-expanding chamber C, that is reduced in size, in combination with the traverser J, whereby the charge of material is squeezed laterally and vertically inward as the material is being compressed longitudinally, and then crushed laterally and vertically inward as it is forced through said contracted exit, in the manner and for the purpose substantially as shown and described.

18. In a baling-press, the press-box F, furnished with the feed-opening H above, and the side opening, F⁵, to receive the follower-block J, in combination with the follower-block J and traverser I, in the manner and for the purpose substantially as shown and described.

19. In a baling-press, the press-box F, provided with inward-projecting metallic plates F² F³ F⁴ F⁵, whereby the exit of the press-box F is reduced to a size of fixed dimensions, combined with the enlarged bale-expanding chamber C, whereby the charges of material that have been crushed vertically and laterally in passing said contracted exit are permitted to expand in the bale-chamber and prevented from following the traverser as it recedes, in the manner and for the purpose substantially as shown and described.

20. In a baling-press, the bale-expanding chamber C, constructed with one side, top, and bottom closed tightly, and the other side provided with slots f^5, and the tight side provided with tie-carrying grooves a^7, in the manner and for the purpose substantially as shown and described.

21. In a baling-press, the subduing compress-chamber C′, having its walls tapered on all four sides, combined with an enlarged bale-expanding chamber, C, and a press-box, F, with an exit, F¹ F² F³ F⁴, reduced in size to fixed dimensions, whereby the material that has been crushed vertically and laterally and compressed longitudinally and baled after passing the said reduced exit is further crushed, subdued, and the bale reduced in size as it is forced out between the four tapering walls of the subduing-chamber C′, in the manner and for the purpose substantially as shown and described.

22. In a baling-press, the combination of the subduing compress-chamber C′, having its four walls tapered, and the bale-expanding chamber C, whereby the size of the bale is reduced by recrushing its four sides, in the manner and for the purpose substantially as shown and described.

23. In a baling-press, the press-box F, furnished with an opening, F⁵, and a guide-plate, G, to support the ties, in combination with the follower-block J and ties r r^1 r^2, in the manner and for the purpose substantially as shown and described.

24. In the baling-press, the follower J, adapted to carry the bale-ties in the bale-expanding chamber between the finished and unfinished bales, in the manner and for the purpose substantially as shown and described.

25. The traverser having the space i between the top of the rib I¹ and the bottom of the protruding end K¹ of the vibrating tucker K, in the manner and for the purposes substantially as shown and described.

26. In a baling-press, the combination of the clamps B B¹ B² B³, the binding-bolts b^1 b^2, and the tapering positive resistant walls, consisting of the top, bottom, and sides of the subduing compress-chamber C′, in the manner and for the purpose substantially as shown and described.

27. In a baling-press, the follower-block J, having bale-tie receptacles or grooves a^1 a^2 a^3 on one side and holes or slots a^4 in one edge, in the manner and for the purposes substantially as shown and described.

28. In combination with the follower-block J, the handle a^1, in the manner and for the purposes substantially as shown and described.

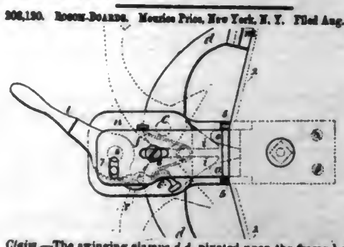
29. The follower-block J, having a vertical groove, o, in one edge, in the manner and for the purposes substantially as shown and described.

30. In combination with the grooves a^6, formed in the unyielding metallic sectional plates F⁴, the longitudinal grooves a^3, formed in the inner side of the bale-expanding chamber, in the manner and for the purpose substantially as shown and described.

31. In combination with the lever O and pitman W, the universal joint, composed of the knuckle parts Q and S and the bolt U, said bolt operating in an elongated slot, t, in the manner and for the purpose substantially as shown and described.

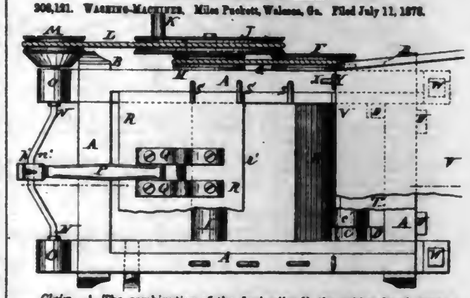
32. The universal joint Q S, constructed with a ball-and-socket pressure-joint between the knuckles of the pitman part S and the end of the knuckle Y of the lever part Q, and further constructed with an elongated slot, t, in the knuckle part S, and provided with a bolt, U, in combination with a baling-press and power mechanism, in the manner and for the purpose substantially as shown and described.

206,120. BOOM-BOARDS. Maurice Price, New York, N. Y. Filed Aug. 17, 1878.



Claim.—The swinging clamps d d, pivoted upon the frame b at the end of the boom-board, in combination with the toes i, sliding plate f, lugs a, actuating-lever l, and pawl r, substantially as and for the purposes set forth.

206,121. WASHING-MACHINES. Miles Puckett, Walnut, Ga. Filed July 11, 1878.



Claim.—1. The combination of the feed-roller E, the rubber-faced pressure-roller C and its springs D, the sliding rubber-faced beater R, the sliding rubber-faced head-block T and its springs U, and the feed-table V with each other and with the suds-box A, substantially as herein shown and described.

2. The combination of the two pairs of pulleys F H and J M and their bands G I, the crank-shaft N, and the connecting-bar P with the feed-roller E, the sliding beater R, and the suds-box A, for giving motion to the said roller and beater, substantially as herein shown and described.

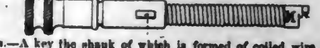
206,122. HOSE-NOZZLES. George H. Raymond and George B. Perkins, Bridgeport, Conn. Filed Mar. 4, 1878.



Claim.—1. The combination, in a hose-nozzle, of the slit a and transverse adjustable plug D, substantially as described.

2. The combination, in a hose-nozzle, of the slit a, solid discharge F, and transverse plug D, substantially as described.

206,123. FLEXIBLE KEYS FOR LOCKS. Legrand J. Roberts, Meadville, assignor of one-half his right to Reason G. Wright, Philadelphia, Pa. Filed Jan. 24, 1878.



Claim.—A key the shank of which is formed of coiled wire, making it flexible for insertion through a curved passage in the lock, substantially as described.

206,124. SASH-FASTENERS. Sylvester Root, Kentland, Ind. Filed Jan. 24, 1878.

Brief.—A spring-pressed bolt of peculiar construction, mortised into the window-frame, is provided with a notched or serrated locking-face, which bites into and coacts with a corrugated locking-strip attached lengthwise to the inside of the sash, thus automatically holding the window at any desired height in locked position.



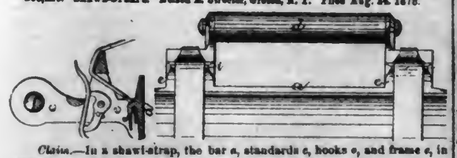
Claim.—The combination, with a corrugated locking-strip secured within a vertical central recess in the sash, of a sash-fastener which consists of bolt D, having a serrated working-face, inner plate, E, thumb-piece F, and fixed slotted plate G, said thumb-piece provided with spiral spring H and inclosing-sleeve h, all constructed and adapted to operate substantially as set forth.

206,125. DRIED-BOTTLES. William Sellers, Haverhill, Mass. Filed May 18, 1878.



Claim.—The combination, with the perforated cap B, of a rod, C, a sliding weight, D, and the prongs or rods E, substantially as and for the purpose set forth.

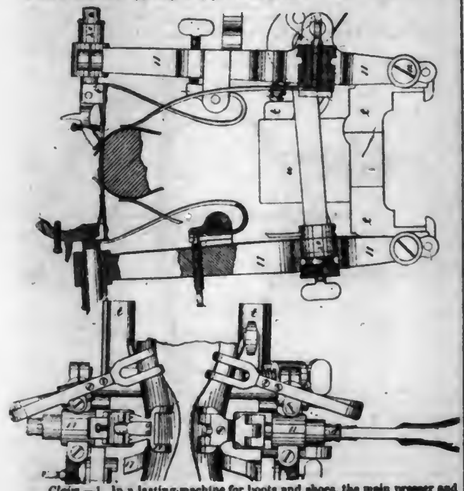
206,126. SHAWL-STRAPS. Nelson B. Streeter, Groton, N. Y. Filed Aug. 24, 1878.



Claim.—In a shawl-strap, the bar a, standards c, hooks c, and frame e, in combination with the clamps g, substantially as shown.

206,127. LASTING MECHANISMS FOR BOOTS AND SHOES. Henry G. Thompson, Milford, Conn., assignor to himself, as trustee for the Magnetic Lasting Machine Association. Filed Apr. 15, 1878.

Brief.—Toothed shank-pullers are pivoted to vibrating arms, which are moved by suitable levers to and from the last. Pressers, also moving with them, crowd the upper over upon the edge of the inner sole before the toothed pullers are thrown down, so that their teeth will engage the upper, and as the supporting-arms are closed farther, the pullers and pressers exert a combined action to draw the upper up snugly about the last.



Claim.—1. In a lasting-machine for boots and shoes, the main presser and toothed puller to engage the upper, combined with an arm to move the puller toward the center of the last, substantially as described.

2. The puller-carrying arm and toothed puller to engage the upper, combined with a spring to press the puller forward, in order that the puller may yield backward as the arm moves the puller toward the center of the last, substantially as described.

3. The toothed puller, its carrying-arm, and spring to hold the puller forward with a yielding pressure, combined with mechanism to adjust the force of the spring to regulate the amount of strain upon the upper, substantially as described.

4. In a lasting-machine, the toothed upper engaging device, its rod, and carrying-arm, combined with the adjustable sleeve to govern the forward position of the puller, substantially as described.

5. The main presser and toothed puller pivoted thereon to engage the upper, combined with a spring to hold the puller in elevated position until thrown down by hand to engage the upper, substantially as described.

6. The carrying-arm and main presser, combined with the pivoted puller and its adjusting-screw, to regulate the distance to which the teeth of the puller may descend below the presser, substantially as described.

7. The movable arms I I and the main pressers and pullers, combined with the auxiliary pressers having spring-shanks.

8. The side-pressing spring, combined with the arm by means of the holder and bolt, to permit the vertical and horizontal adjustment of the acting end of the spring.

9. The frame t, provided with a guideway for the slide w, and the adjusting device pivoted thereon, combined with the slide w, arms and toothed pullers, and main pressers, the adjusting device being adapted to place the pressers at the desired level with reference to the last, and to permit the arms, pressers, and slide to rise as the pressers pass upon the last, substantially as described.

10. In a lasting-machine, the arms, main pressers rounded at their forward ends, and toothed pullers located at each side the last opposite the shank of the shoe, combined with mechanism to support the pressers at the proper level with reference to the edge of the stationary last and inner sole, as described, and devices to move the main pressers and toothed pullers toward the center of the last, whereby the pulleys and arms during such movement are also moved vertically with reference to the last, to stretch and fit the upper about the last, substantially as described.

11. In a lasting-machine having adjustable toe and heel crimping jaws to press the edges of the upper horizontally over upon the last-bottom, shank-lasting mechanism, composed of arms provided with main pressers, toothed pullers, and springs to hold the pressers and pullers forward, such pressers, pullers, and arms being constructed and operated to engage the upper, and while engaged therewith move upward and horizontally with reference to the bottom of the last, substantially as described.

12. The frame t and slide w, carrying the shank-lasting devices, combined with an adjusting device to regulate the level of the main pressers as they commence to move forward, the connection between the adjusting device, frame, and slide being adapted to permit free vertical movement of the slide and pressers as the latter are closed over the last-bottom, substantially as described.

13. The toothed puller, hinged at the rear end, and provided with a thumb-piece to lift it and a screw to regulate its descent, combined with the presser provided at its front end with an open space for the puller-teeth to enter the upper, substantially as described.

206,128. MAGAZINE FIRE-ARMS. Frank W. Tiesing, New Haven, Conn. Filed Feb. 13, 1878.



Claim.—1. In a magazine fire-arm, the movable part b, arranged in the mouth of the magazine, and so as to yield for the insertion of the cartridge, substantially as described.

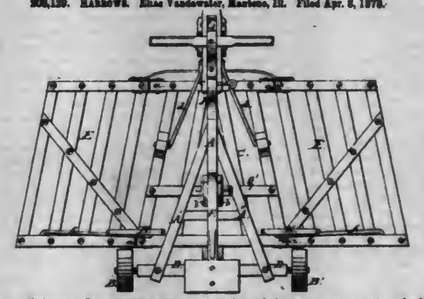
2. In a magazine fire-arm, the combination of a longitudinally-sliding breech-piece, a carrier hinged at the rear to swing up and down, and fingers on said carrier projecting forward above the rear end of the cartridge when on the carrier, substantially as described.

3. In a magazine fire-arm, the combination of a longitudinally-sliding breech-piece, a carrier hinged at the rear to swing up and down, and fingers on said carrier projecting forward above the rear end of the cartridge when on the carrier, and an automatic clamp in the carrier beneath the cartridge, substantially as and for the purpose described.

4. The combination, in a magazine fire-arm, of a longitudinally-sliding breech-piece, the carrier hinged at the rear so as to swing up and down, a cam arranged to act upon said carrier forward of its hinge, a lever extending from said cam upward to the breech-piece, and a notch or shoulder near the forward end of the breech-piece to operate said cam at or near the completion of the rear movement of said breech-piece, substantially as described.

5. The combination, in a magazine fire-arm, of a longitudinally-sliding breech-piece, the carrier hinged at the rear so as to swing up and down, a cam arranged to act upon said carrier forward of its hinge, a lever extending from said cam upward to the breech-piece, and a notch or shoulder near the forward end of the breech-piece to operate said cam at or near the completion of the rear movement of said breech-piece, and a device, substantially such as described, to hold the said cam and prevent the operation of the carrier, substantially as and for the purpose described.

206,129. HARROWS. Elias Vandewater, Marlena, Ill. Filed Apr. 6, 1878.



Claim.—1. In a harrow, the combination of the beams A A′ A″, axle D, having wheels B′ B″, and pivoted wheel B, forming the carrying-frame, with the central section, C, having standards b b and c c, provided with cam-levers F F′ and rods d d, and having the outer wings or sections, E E, pivoted thereto, and operated by the levers H H and rods f f, substantially as and for the purpose specified.

2. In a harrow, the combination of the outer wings, F E, and central section, C, constructed as described, with the central beam, A, of the carrying-frame, substantially as and for the purpose specified.

206,130. CURTAIN-ROLLERS AND BRACKETS. Henry L. Worne, Louisville, Ky. Filed Aug. 2, 1878.

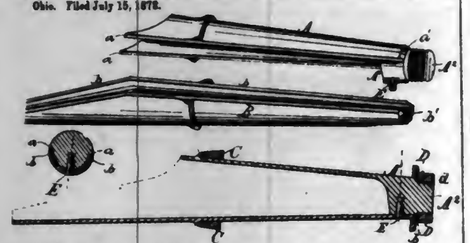
Brief.—The roller has a friction-pin, which bears against a circular track on the bracket, having inclines and depressions or stops. The pin projects loosely through the cord-pulley, is pressed outward by a spring in a recess in the roller, and is limited by a collar.



Claim.—1. The disk D, having the raised and undulating track B, provided with gradual elevations, whereby friction of the pin *f* thereupon may be increased and diminished at different points in its circuit around the face of the disk, and act as notches, but without noise or jarring or jumping action, substantially as and for the purpose described.

2. The combination of the pin A, having collar *e*, and the spring C, seated within the roller R, substantially as and for the purpose described and set forth.

206,131. VEHICLE-AXLE SKEINS. Freeman R. Willson, Jr., and W. W. Willson, Columbus, Ohio. Filed July 15, 1878.



Claim.—1. An axle-skein consisting of an upper section of cast-iron and a lower section of cast-steel clamped firmly together, substantially as described.

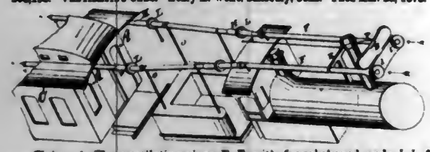
2. The combination of lower section, B, and upper section, A, with collar C and nut D, which serve both as stops for the axle-box and as clamping devices to hold said sections together.

3. The combination of upper section, A, having screw-threaded extension A^1 and shoulder *a'*, with lower section, B, having bevel *b'* and nut D, having bevel *d*, substantially as and for the purpose set forth.

4. The combination of upper cast-iron section, A, and lower perforated cast-steel section, B, with malleable stud E, cast into said section A, and adapted to pass through the hole in section B, for the purpose of riveting said sections together.

5. The combination of upper section, A, and lower section, B, having a tongue and-groove connection along the corresponding edges, with clamping devices, substantially as set forth.

206,132. VENTILATING CARS. Henry H. Wolfe, Salisbury, Conn. Filed Mar. 23, 1878.



Claim.—1. The ventilating pipes F F, with funnel-shaped ends I I, for taking pure air from in front of locomotive D and conducting it to passenger-car C, or cars, free from cinders, smoke, and dust, ventilating each passenger-car as desired, fender B, attached to funnel ends I I of ventilating pipes F F, having rod P connected to fender B by joint movement, couplings L L, and vibrating rubber pipes H H and standards E and O O, substantially as shown and described.

2. The combination of the ventilating-pipes F F, with funnel ends I I, for taking pure air, free from cinders, smoke, and dust, from in front of locomotive D and conducting it over top of locomotive into car C, ventilating each passenger-car as desired, fender B, attached to funnel ends I I of ventilating-pipes F F, having rod P connected to tender B therewith by joint movement, couplings L L, rubber pipes H H, the standard E, fastened on top of locomotive boiler, supporting ventilating pipes F F over top of locomotive, and the standards O O, for supporting ventilating-pipes F F over tender of locomotive to car C, the ventilating pipes F F entering car C at A A, all substantially as shown and described.

206,133. PUNCHING AND FEEDING DEVICES FOR EYELETING-MACHINES. Erastus Woodward and Edward D. Goodson, Boston, Mass. Filed Aug. 30, 1877.

Claim.—1. The combination, in a punching and feeding device for eyeleting machines, of the hollow punch C, automatic feeding device E, and the table or work-support with the reciprocating under cutter, J, whereby the stock to be cut is first held in position on the table by the hollow punch C, then the under cutter comes up through the table and cuts against the upper cutter, so that the article is cut from both sides simultaneously, all arranged substantially as described, and for the purpose set forth.

2. The combination of the feeding-foot E, provided with spur *e*, having a vertical as well as a lateral motion, with the auxiliary presser D and its operating device D^1 D^2 C, substantially as described, and for the purpose set forth.

3. The combination of the feeding-foot E, rocker-shaft E^1, and arm E^2 with the bent lever E^3 E^4, link E^5, and starting-lever L, all operating together substantially as described, and for the purpose set forth.

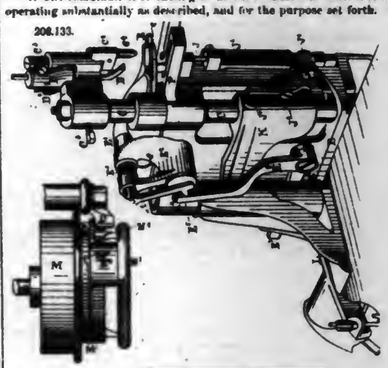
4. In a feeding and punching machine, the combination of the lever L, arm L^1 L^2, with the brake-segment N^3, having an eccentric surface on the wheel N N^1, all operating together substantially as described, and for the purpose set forth.

5. The combination of the coupling-dog N^2 N^4, the wheel N N^1, and the loose pulley M with the inclined arm L^3, the notch N^5, and the lever L L^1 L^2, all the parts operating together substantially as described, and for the purpose set forth.

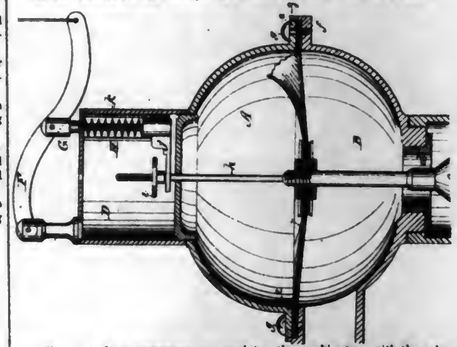
6. The combination of the wedge-shaped projection L^5 of the arm L^3 L^4 with the coupling-dog N^2 N^4 of the wheel N N^1 and the loose pulley M, all operating together substantially as described, and for the purpose set forth.

7. The combination of the lug N^7 and the wheel N N^1 with the arm L^3 L^4, operating substantially as described, and for the purpose set forth.

206,133.



206,134. GAS-REGULATORS. Joseph Adams, Washington, D. C. Filed Feb. 5, 1878.



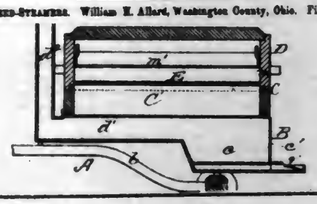
Claim.—1. In an automatic gas-regulator, the combination, with the valve poised and sustained in sensitive equilibrium, of a device constructed substantially as described, adapted to connect with said valve and be operated by a wire to move said valve at will and with a positive and defined action, as and for the purpose described.

2. The combination, with the diaphragm having an upwardly-projecting stem, *h*, and tappet or projection *i*, of a slide-rod carrying a forked foot arranged to embrace the stem, and a spiral spring for holding said foot normally down, for the purpose described.

3. The combination, with the diaphragm having the stem *h* and projection *i*, of the slide-rod G, having foot *j*, the slotted tube H, the spiral spring *k*, and the lever-arm F, substantially as and for the purpose described.

4. The combination, with the diaphragm and the hemisphere A, having plain flange *e*, provided with screw-holes extending through the same, screws *g* fitting therein, of the lower hemisphere, B, having a flange with an upwardly-projecting rim, *g'*, and screw-holes extending only partially through, as described.

206,135. FEED-STRAINERS. William H. Allard, Washington County, Ohio. Filed Feb. 16, 1878.



Claim.—1. The sectional feed-steamer consisting of the fire-box *c* and flue-body c^5, the water-box C', resting thereon and having the rabbeted and internally-projecting margin *n*, the steam-section wall *m*, resting in the rabbet of the water-box, and the detachable grate-sections E, resting on the inner margin of the same, substantially as specified.

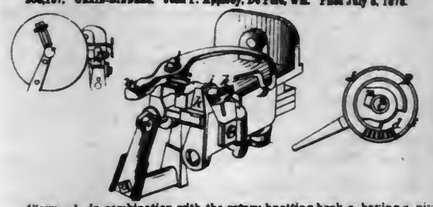
2. A feed-steamer consisting of a furnace, B, provided with a steaming-boiler, C, having grating E and steam-compartment D, and having its smoke-stack d^6 provided with a water-trough, *c'*, at its upper end, and its hearth provided with spark and fire guard *q*, substantially as specified.

206,136. SEAT-LOCKS FOR VEHICLES. Wm. B. Allen, Orleans, N. Y. Filed July 23, 1878.



Claim.—A seat-lock consisting in the combination, with a seat-support, of a forwardly-inclined brace, which engages with the under side of the seat-supporting rail, said support being also provided with vertical studs or projections depending from its bearing-surface, and adapted to engage with the upper side of said supporting-rail, substantially as set forth.

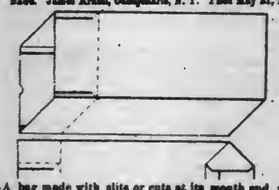
206,137. GRAIN-BINDERS. John F. Appleby, De Pere, Wis. Filed July 8, 1878.



Claim.—1. In combination with the rotary knotting-hook *e*, having a pivoted finger, *h*, the stationary cam *j*, and spring-cam *k*, for operating the said finger, substantially as and for the purpose herein specified.

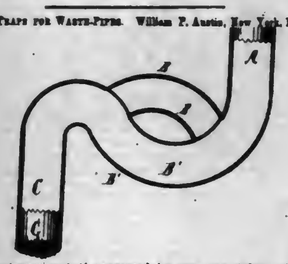
2. In combination with the rotary knotting-hook *e*, operating as described, the vibratory cord-guide D, substantially as and for the purpose herein specified.

206,138. BAGS. James Arkell, Canajoharie, N. Y. Filed May 31, 1878.



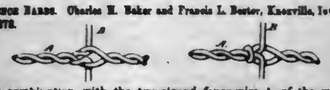
Claim.—A bag made with slits or cuts at its mouth end, substantially as and for the purpose set forth.

206,139. WATER-TRAPS FOR WASTE-PIPES. William P. Austin, New York, N. Y. Filed Mar. 4, 1878.



Claim.—The trap-pipe A C, connected by two trap-siphons, B and B', arranged one above the other, and connected at their extremities, as and for the purpose set forth and described.

206,140. WIRE-FENCE BARBS. Charles H. Baker and Francis L. Bester, Knoxville, Iowa. Filed June 18, 1878.



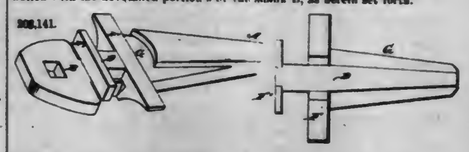
Claim.—The combination, with the two-strand fence-wire A, of the wire barb B, bent at or near its center around both strands of the wire, then having both ends passed through in the same direction between said strands, and bent outwardly in opposite directions on line with each other, substantially as described and shown.

206,141. HARVESTER GUARD-FINGERS. Thomas W. Ballow and Charles A. Fuller, Princeton, Mo. Filed Aug. 10, 1878.

Claim.—1. The bar D, with cross-bars F F' and the ledger-plate G attached thereto, in combination with the guard A, having the groove or recess *a*, substantially as and for the purpose herein set forth.

2. The dovetail *d*, formed on the under side of the cross-bar F, in combination with the dovetailed portion *b* of the shank B, as herein set forth.

206,141.



206,142. LANTERNS. Alfred L. Boren, Bellaire, Ohio, assignor to himself, Evan F. Cook, and David Rankin, same place. Filed Aug. 19, 1878.



Claim.—1. In a square or other flat-sided lantern having double glass plates, the combination of one or more air-chambers between such plates conducting air to the interior of the cone, and openings to admit air to the flame outside of the cone, the two currents being kept separate and apart till they reach the flame, substantially as described and shown.

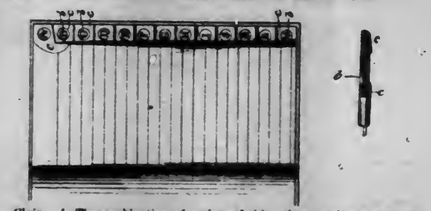
2. In a square or other flat-sided lantern, the combination of the double plates F F', forming air-chambers G, the air-chamber G' on top of the oil-reservoir, and the openings *g* in the supporting-plate, substantially as described and shown.

3. In a square or other flat sided lantern, the combination of the plate *b*, forming the walls of the air-chamber on top of the oil-reservoir, with the hinged supporting-plate resting on such plate and completing the air-chamber, substantially as described and shown.

4. In a square or other flat-sided lantern, the combination, with the top D, having air-openings *a*, of the outer glass-plates, F, terminating below such openings, and the inner plates, F', extended upwardly behind such openings, substantially as described and shown.

5. The combination, with the oil-reservoir, of the burner B, set into an opening in the same, and the hinged supporting-plate holding such burner in position, substantially as described and shown.

206,143. INDEXES. Horace Beach, Prairie du Chien, Wis. Filed Dec. 8, 1877.

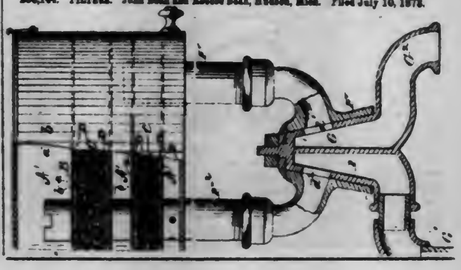


Claim.—1. The combination of a plate of thin mica or other transparent substance with the initial or indexial mark on the edge of the book or record leaf in such a manner as to show said initial or indexial mark, but at the same time to cover and protect the same, substantially as and for the purposes set forth.

2. In a record or like book, or volume, or document, the mica or like transparent plates *b*, combined with the edges of the leaves, and with the letters or indexial mark, and with a suitable protecting-cover, *c*, substantially as and for the purposes set forth.

3. In a record or like book or document, and in combination with the leaves, corners, or edges and the indexial mark, the transparent cover *b* and protection *c*, folded over the leaf-edges, substantially as and for the purposes set forth.

206,144. FILTERS. John Bean and Roscoe Bean, Hudson, Mich. Filed July 10, 1878.



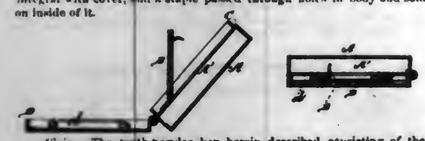
Claim.—1. A filter-case provided with interior alternate water-chambers and filtering-chambers, as described, in combination with double pipes connecting the same with the shell or plug of a faucet and moving therewith, substantially as and for the purposes herein set forth.

2. In a filter, the combination, with the case, of the diaphragms B, having perforations *a* and teeth *b*, the felt layers D D, and intermediate filtering material, C, substantially as and for the purposes set forth.

3. The combination, with the filter-case A and its alternate water and filtering chambers, of the pipes F^1 F^2, faucet-shell F, and plug G, with central partition, I, inlet G^1 and outlet G^2, substantially as and for the purposes herein set forth.

208,145. TOOTH-POWDER BOXES. Henry Bell, St. Louis, Mo. Filed June 22, 1878.

Brief.—Outside cover fits around inside cover. Hinge consists of flap integral with cover, and a staple passed through holes in body and soldered on inside of it.



Claim.—The tooth-powder box herein described, consisting of the box-body forming the reservoir A, provided with orifice A^1, the screened hinged lid B, covering said orifice, the rabbet C, extending above the top of the reservoir, and the hinged cover D, having flange *d*, adapted to inclose the raised screened lid B, as herein specified.

208,146. BOTTLE-STOPPERS. Henry Bell, St. Louis, Mo. Filed July 20, 1878.



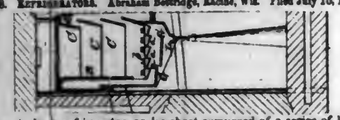
Claim.—The head A^1, having aperture a^1, combined with nozzle C and valve C^1, operated by the said nozzle, as and for the purpose specified.

208,147. ELEVATOR-BUCKETS. William J. Bennett, Fox Lake, Wis., assignor of one-half his right to J. L. Brown, same place. Filed May 8, 1878.



Claim.—An elevator bucket formed of a single piece, having the parts A, B, C, and D, the parts A and B being turned inward upon the back, and the whole held in place by the part D turned downward upon the back, thus dispensing with rivets, as and for the purpose set forth.

208,148. REFRIGERATORS. Abraham Bottridge, Racine, Wis. Filed July 10, 1878.



Claim.—1. In a refrigerator, an ice-chest composed of a series of bottomless tapering pans C C, arranged above each other, and one within the other, as shown, and connected by the single vertical front B and the inclined bottom strips, c G, whereby descending flues are formed to facilitate the cooling of the warm air, condense and retain the moisture, and give free passage for the descending flow of cold air, substantially as herein set forth.

2. The waste-pipe, made tapering, so as to be wider at the bottom than at the top, for the purposes set forth.

208,149. GOVERNORS FOR STEAM-ENGINES. Benj. Brazelle, St. Louis, Mo., assignor to the Brazelle Engine Company, same place. Filed Aug. 23, 1878.

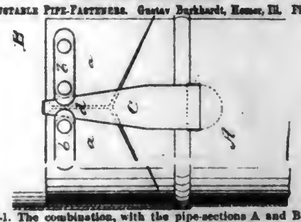


Claim.—1. The combination, in an engine-governor, of an inclosing-case, divided vertically into two chambers or compartments connected by a lower channel-way or passage, and an opening above said channel-way, a cam-piston rotating in one of the chambers of the case, a movable abutment located in the other chamber, and a vibrating wiper and adjustable gate governing the passage of a liquid medium from one to the other chamber, the combination being and operating substantially as and for the purpose set forth.

2. The combination, in an engine-governor, of the inclosing-case, the movable abutment, the adjustable valve or gate governing the pressure on said abutment, and the weighted rod or pendulum connected to the pin or stem of said adjustable valve, substantially as set forth.

3. The combination, in an engine-governor, of a cylindrical inclosing-case and a movable abutment formed upon the periphery of a cylinder secured on a shaft concentric with said case, so as to enable the area receiving pressure to be changed, when required, without alteration of any other member of the governor, substantially as set forth.

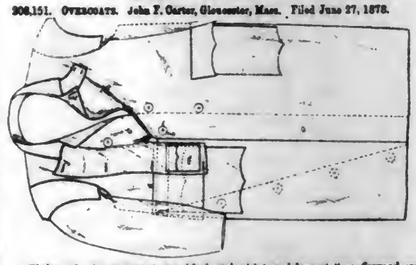
208,150. ADJUSTABLE PIPE-FASTENERS. Gustav Burkhardt, Homer, Ill. Filed Aug. 17, 1878.



Claim.—1. The combination, with the pipe-sections A and B, of the expanding tongues *a*, their jaws *b*, and the sliding wedge or key C, substantially as specified.

2. A pipe-section having pressure-tongues *a* cut in its edge, substantially as specified.

208,151. OVERCOATS. John F. Carter, Gloucester, Mass. Filed June 27, 1878.



Claim.—1. An overcoat provided with skirt and breast flies, formed essentially as represented, and arranged to operate with it and each other, substantially as set forth.

2. An overcoat provided with skirt and breast flies, as and arranged with it as described, and having in the upper part of the skirt-fly a pocket so arranged that its mouth may be covered by the lower part of the breast-fly, or that part which laps on the skirt-fly when the garment is buttoned.

3. An overcoat provided with skirt and breast flies, as and arranged with it as described, and having in the lower part of the breast-fly a pocket arranged to open in the inner side of such fly, as set forth.

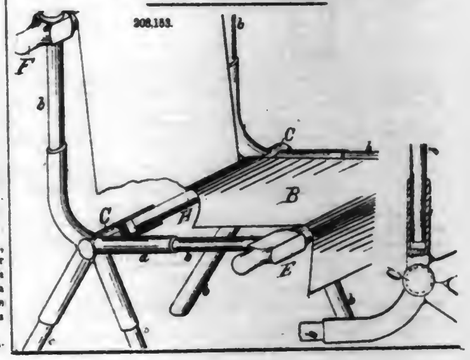
208,152. LOCK-HINGE. Charles B. Clark, Buffalo, N. Y. Filed Sept. 2, 1878.

Brief.—The usual back incline is supplemented by an additional one at an obtuse angle to the first to relieve the pintle of undue strain.



Claim.—In combination with the inclined back-stops G of a hinge, the supplementary inclines H, at an obtuse angle thereto, forming a continuation of said back-stops, extending outwardly from the joint, whereby an enlarged bearing-surface is obtained and the parts of the hinge securely interlocked when the blinds are opened, substantially as and for the purpose specified.

208,153.

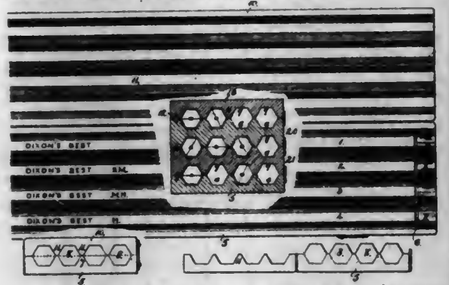


208,153. CHAIRS. Hiram Clark, Syracuse, N. Y. Filed Aug. 5, 1878.

Claim.—A chair or settee composed of the central socket-frames, C, in combination with the parts *b*, E *b*, H, and F *b*, when the metallic center is cast in one piece and the frame provided with suitable covering, substantially as and for the purpose specified.

208,154. HOLDERS FOR LEAD-PENCILS. Orestes Cleveland, Jersey City, N. J. Filed Mar. 1, 1878.

Brief.—The two or more parts of the box may be hinged together, and may have handles at their ends for lifting them. Instead of pin-hole connection, may be mortised and tenoned. When box is made of cedar, the stop should not quite fill the recesses in the end, that the air may enter to destroy the oil of cedar, which would injure the finish of the pencils.



Claim.—1. A holder for pencils having a number of parallel longitudinal grooves, as 6, and stops, as 8, secured in said grooves, substantially as described.

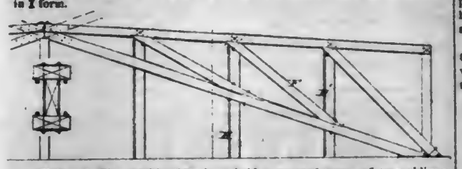
2. A box composed of the grooved holder 5 and cover 10, said members being counterparts of each other, and the former provided with the stops 8, substantially as described.

3. The combination of the pin or pins 12 with the grooved holder and cover and stops 8, substantially as described.

4. The combination of the grooved holder 5 and cover 10 with one or more intervening members, as 20 21, said parts being provided with stops 8, and with hinges or means for lifting them, substantially as described.

208,155. TRUSSES FOR BRIDGES. George W. Cooley, Minneapolis, Minn. Filed Dec. 31, 1877.

Brief.—Between the top chord and the main braces are arranged supplementary shoreward-thrust braces. The king post is composed of three arranged in X form.



Claim.—1. The combination, in a bridge or roof truss, of two oblique shoreward-thrust rafters, having their upper ends notched to rest level upon a center post, a bottom chord, upon the ends of which the feet of said rafters and center post rest, a top chord, between and resting against which and the upper sides of said rafters are arranged only shoreward-thrust braces, suspension-rods connecting said top and bottom chords, and upright braces arranged between said chords, whereby the entire downward strain upon said truss will be directed toward its abutments.

3. The truss center post composed of three parts of approximately equal dimensions, and the outer parts forming flanges connected by bolts for securing the center part in place, substantially as described.

208,156. MACHINES FOR LASTING BOOTS AND SHOES. George W. Copeland, Malden, and Erastus Woodward and Matthias Brock, Boston, Mass., assignors to the Copeland Lasting Machine Company, Hartford, Conn. Filed May 15, 1878.

Claim.—1. In a machine for lasting the uppers of boots and shoes, the improved jack described, consisting of a vertically adjustable toe-rest, a, and the main rest a^1, adapted to support the heel end of a last and to project under the fore-block of a last, to prevent the same from slipping downwardly in the lasting process, substantially as described.

2. In a machine for lasting the uppers of boots and shoes, a support or rest for receiving the last, adapted to furnish a support for the heel of a last and for the fore-block, but not entering the same, whereby the fore-block is prevented from slipping while the lasting is in progress, and the last easily adjusted on the said rest or support, provided with a longitudinal rocking motion, substantially as and for the purposes described.

3. In a machine for lasting the uppers of boots and shoes, a rest for supporting both the fore-block and heel of a last, consisting of a flat table or plate, a^1, not entering the last, and provided with means for vertical adjustment in relation to a heel-downhold, substantially as described.

4. In a machine for lasting the uppers of boots and shoes, a longitudinally-rocking table or plate, a^1, adapted to act as a support for the fore-block of a last, as well as for the heel portion thereof, as described, provided with means for automatic vertical adjustment, substantially as described.

5. In a machine for lasting the uppers of boots, the combination of a toe-rest and main rest or table adapted to support the heel portion and fore-block of a last, substantially as described, each provided with means for automatic vertical adjustment in relation to the toe and heel downholds of a lasting-machine with said toe and heel downholds, substantially as and for the purposes set forth.

6. In a machine for lasting the uppers of boots and shoes, the combination of a main rest adapted to act as a support for the fore-block of a last and for the heel portion thereof, whereby the former is prevented from slipping in the lasting process, suitable connecting mechanism, and the lever A^1, substantially as described.

7. In a machine for lasting the uppers of boots and shoes, the combination of a toe-rest, the connecting mechanism described, and the operating-lever A^1, substantially as set forth.

8. In a machine for lasting the uppers of boots and shoes, the combination of toe and heel downholds, a toe-rest, and a main rest adapted to support both the heel portion and fore-block of a last, whereby the latter is prevented from slipping in the lasting process, suitable connecting mechanism, and the actuating-lever A^1, whereby the said rests are simultaneously operated and the last firmly clamped under the downholds, substantially as described.

9. In a machine for lasting the uppers of boots and shoes, the adjustable cam a^{11}, with the sector a^{12}, for adjusting the lift of the toe-rest *a*, substantially as and for the purposes described.

10. In a machine for lasting the uppers of boots and shoes, the combination of a downhold and abutment with the mechanism for simultaneously operating said downhold and abutment, whereby the downhold is moved downward and backward upon the surface of the last, but not entirely removed therefrom, and the abutment is moved backward sufficiently to allow of the upward movement of the toe stretching and smoothing pad between it and the said downhold, substantially as described.

11. In a machine for lasting the uppers of boots and shoes, the combination of a downhold provided with substantially a horizontal movement upon the surface of the last, an abutment provided with a movement to and from the end of a last, and a toe stretching and smoothing pad provided with an upward movement substantially parallel with the side of a last, successively or simultaneously actuated, substantially as described.

12. In a machine for lasting the uppers of boots and shoes, the combination of a reciprocating abutment with a toe stretching and smoothing pad, having means for vertical adjustment, and arranged to be operated upon the withdrawal of the abutment, substantially as described.

13. In a machine for lasting the uppers of boots and shoes, the duplex system of folding-plates for breaking down and turning over the upper upon the last's bottom, one set arranged above the other, substantially as and for the purposes described.

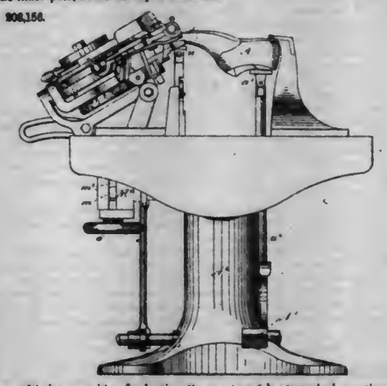
14. In a machine for lasting the uppers of boots and shoes, the combination of one set of folding-plates adapted to partially turn over the margin of an upper upon the last's bottom with a lower set of folding-plates adapted by their closing to completely finish the turning over and plaiting of the upper upon the insole, substantially as and for the purposes set forth.

15. In a machine for lasting the uppers of boots and shoes, the combination of one pair of converging plates with two pairs of converging folding-plates arranged immediately below said first pair, in such a way that the first pair shall operate over the joints occurring between each of the second pairs, substantially as shown and described.

16. In a machine for lasting the uppers of boots and shoes, the combination of three pairs of converging folding-plates, the upper pairs closing first to partially turn over the margin of an upper upon the insole, the lower pairs having differential movements in relation to each other, substantially as described.

17. In a machine for lasting the uppers of boots and shoes, the combination of a suitable jack for firmly supporting the last with two pairs of converging folding-plates, the outer pair provided with a quicker movement than the inner pair, substantially as described.

208,156.



18. In a machine for lasting the uppers of boots and shoes, the combination of a suitable jack and devices for holding a last upon said jack with the duplex system of folding-plates, one set arranged over the other to partially turn over the margin of an upper upon the insole, and the lower set to complete the folding and operate after said upper set, substantially as and for the purposes described.

19. In a machine for lasting the uppers of boots and shoes, the combination of one set of folding-plates for partially turning over and folding the edge of an upper upon the insole, and, second, an under set of folding-plates to complete said folding and plaiting, with the means for operating said plates in the order named, and for withdrawing said upper plates while said lower plates are closing, substantially as described.

20. In a machine for lasting the uppers of boots and shoes, the combination of two pairs of converging folding-plates, the outer plates being provided with a longitudinal tipping movement in relation to the inner plates, substantially as and for the purposes set forth.

21. In a machine for lasting the uppers of boots and shoes, a folding plate, in combination with the gear *p* and worm-gear p^1 for tipping the same

as described, whereby said folding-plate is provided with a longitudinal tipping movement for the purpose of adjustment to a plane parallel, or substantially parallel, with that portion of the surface of a last's bottom upon which it is designed to close, substantially as described.

22. In a machine for lasting the uppers of boots and shoes, the combination of the duplex folding-plates, provided with means for vertical adjustment upon an elliptic curve having the extreme point of the abutment as a center, substantially as described.

23. In a machine for lasting the uppers of boots and shoes, the combination of two pairs of converging folding-plates, F, provided with means for vertical adjustment on an elliptic curve, of which the extreme point of the abutment is the center, substantially as described.

24. In a machine for lasting the uppers of boots and shoes, the combination of two converging folding-plates for closing upon the end of a last upon either side of the converging end plates, as shown, provided with means for vertical tipping adjustment, as set forth, to conform to the plane of that portion of the last's surface upon which they are designed to close, with means for further vertical adjustment upon the arc of an ellipse, substantially as described.

25. In a machine for lasting the uppers of boots and shoes, the combination of a suitable lasting-jack with an abutment, the extreme end of which forms a center in determining the relation of the folding-plates to that portion of the surface of a last upon which they are designed to close, substantially as described.

26. In a machine for lasting the uppers of boots and shoes, the combination of a suitable jack for supporting the last with a toe stretching and smoothing pad having an upward movement in relation to the sides of the last, a toe-downhold, and a movable abutment, when said toe stretching and smoothing pad is provided with vertical adjustment upon the elliptic curve of which the extreme end of the abutment is a moving center, substantially as described.

27. In a machine for lasting the uppers of boots and shoes, the combination of a suitable jack for supporting a last, a toe stretching and smoothing pad provided with an upward vertical movement, a movable abutment, and two or more converging folding-plates, when said plates, abutment, and toe stretching and smoothing pad are provided with vertical adjustment upon the arc of an ellipse having the extreme end of the abutment as a moving center, substantially as shown and described.

28. In a machine for lasting the uppers of boots and shoes, the combination of an oscillating plate for supporting the mechanism which operates the converging folding-plates, the downhold, the abutment, and the toe stretching and smoothing pad with a carriage for lifting said plate upon an arc of ellipse, of which the extreme end of the abutment is the center, substantially as described.

29. In a machine for lasting the uppers of boots and shoes, the combination of a carriage, I, for supporting the oscillating plate G, with the lever N and the slotted lever M, each pivoted, as shown, and operated by the screw O, substantially as and for the purposes described.

30. In a machine for lasting the uppers of boots and shoes, the combination of the lever M, pivoted as shown, and operating the lever N, provided with the guides *m* and the nut M', with the operating-screw O, substantially as and for the purposes described.

31. In a machine for lasting the uppers of boots and shoes, the combination of the edge-cam groove *d*, suitable connecting mechanism, and the toe stretching and smoothing pad D, substantially as described.

32. In a machine for lasting the uppers of boots and shoes, the combination of the cam-groove *e'*, levers *e'*, pivoted to the oscillating plate G, as shown, and operating movable bars on the sleeve *e*, with the converging folding-plates E and connecting-rods *e*, having suitable bearings in plates F', substantially as shown and described.

33. In a machine for lasting the uppers of boots and shoes, the combination of the cam-groove *f'*, levers *f'*, pivoted upon the oscillating plate G, as shown, and operating the collars *f'*, with the plates F and sliding rods F', having bearings in the brackets *g* and in the sleeve *e*, and guides *f''* in the slotted projection *f'*, substantially as and for the purposes described.

34. In a machine for lasting the uppers of boots and shoes, the combination of the cam-groove *f'*, levers F', pivoted to plate G, as shown, and operating, through collar *f'*, the converging lasting-plates F, with the hinges or connecting-plates F', which operate the levers *f'*, laying hold of and pivoted to the caps or barrels *f'* at the end of rods F', with the outer converging folding-plates F, and said rods F' provided with bearings in the brackets *f*, substantially as shown and described.

35. In a machine for lasting the uppers of boots and shoes, the combination of the rod F' and set-screws *f''* *f'''*, and supporting-brackets *f*, substantially as and for the purposes described.

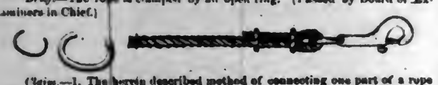
36. In a machine for lasting the uppers of boots and shoes, the combination of the rod F', provided with the guiding-carriage *p'*, with means for partially revolving the said rods in either direction, substantially as described.

37. In a machine for lasting the uppers of boots and shoes, the combination of a duplex series of converging folding-plates, one set for breaking down and partially folding the edge of the upper upon the insole, and the other set for finishing said folding, with the cams described, and suitable connecting mechanism for operating said converging folding-plates, substantially as set forth.

38. In a machine for lasting the uppers of boots and shoes, the combination of the duplex series of folding-plates, the upper set of which partially breaks over and folds the edge of the upper upon the last, and the lower set of which completes said folding when the upper plates are withdrawn, after the said lower plates are closed, and when said lower plates are perforated, substantially as shown, and for the purposes described.

208,157. SKIN-CLAMP. James O. Covert, Troy, N. Y. Filed July 26, 1878.

Brief.—The rope is clamped by an open ring. (Passed by Board of Examiners in Chief.)



Claim.—1. The herein described method of connecting one part of a rope adjacent to another part, or the ends of two ropes, by clamping the same with one or more open rings, of metal, under extreme pressure, as set forth.

2. One or more open rings clamped around a braided or twisted rope under pressure, to prevent unbraiding or untwisting, as set forth.

208,158. TENT-POLES. Harry C. Cushing, San Francisco, Cal., assignor to Edington Detrick, same place. Filed Apr. 29, 1878.



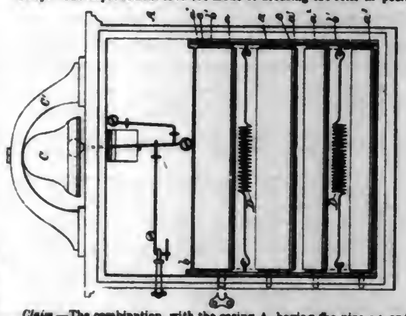
Claim.—The adjustable tent-pole constructed of two semi-cylindrical pieces, E E', held together by ferrules *e e'*, and adjusted by means of the strap and buckle F, substantially as described and shown.

208,159. COMPOUND FOR PRESERVING FOOD. R. S. Dashiell, Greensborough, N. C. Filed Dec. 15, 1877.

Claim.—A composition containing sulphur, alum, ground coffee, and brown sugar, in proportions substantially as described, which is heated for use in preserving fruits, &c., as set forth.

208,160. STATION-INDICATORS. William H. H. Day, Angola, Ind., assignor of one-fourth his right to Augustus A. Mussie, same place. Filed July 31, 1878.

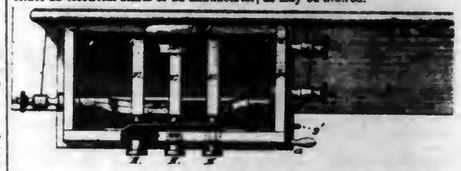
Brief.—The improvement is in the mode of securing the rolls in position.



Claim.—The combination, with the casing A, having the pins *c c*, and the rollers *a a'*, arranged in pairs above and below the exhibit-openings, and journaled in the plates *b b'*, of the plate *b'*, sliding laterally on the pins *c*, and single coiled spring D, extended across the casing, and having its ends secured centrally between the pairs of rollers to the plate *b'* and plate *b*, substantially as and for the purpose set forth.

208,161. SWITCHES FOR COMBINED ELECTRIC ALARM AND ANNUNCIATOR. Peter Erwein, Louisville, Ky., assignor to James P. Calloway, same place. Filed June 6, 1878.

Brief.—The invention consists of a switch for connecting a battery with either an electrical alarm or an annunciator, as may be desired.



Claim.—1. The combination, with an electric alarm and annunciator and the circuit-wires common to both, of the insulated eccentric-shaft S, provided with the metallic plate *z*, electrically connected to post *d*, the switch *h*, and plate *c'*, the latter being in electric connection with the post *d'*, and the springs E E E F F F, and posts *a a a* and *b b b*, whereby the circuit may be thrown simultaneously through all of the alarms or through the annunciator, substantially as specified.

2. The combination, with an electric alarm and annunciator common to both, of the eccentric-shaft S, provided with the plate *c*, secured thereto, the horizontal springs E, and the lifting push-button having barbed inner ends that are in contact with said springs and plate, whereby the circuit may be thrown through any desired alarm, substantially as specified.

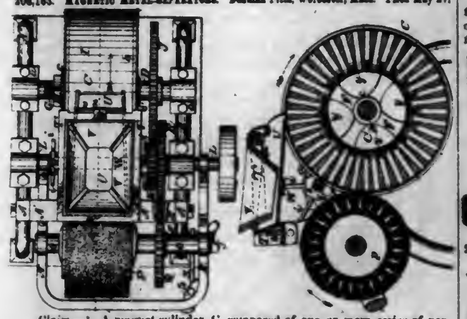
3. In combination with the eccentric-shaft, its plate *c*, and springs E E E F F F and buttons H H H, the crank G and stops *g'* and *g''*, for regulating the rotation of said shaft, substantially as specified.

208,162. MANUFACTURE OF CORSETS. August Fellheimer, New York, N. Y., assignor to S. Werner & Co., same place. Filed June 19, 1878.



Claim.—The improvement in the manufacture of corsets, consisting in securing along their upper portion or margin the stripe which form the pockets along the upper portion of the bosom by the same sewing which is used in binding the upper border of the corset, substantially as herein described.

208,163. MAGNETIC METAL-SEPARATORS. Benaiah Fitts, Worcester, Mass. Filed May 27.



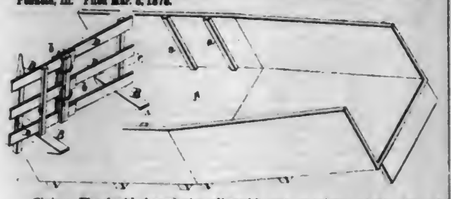
Claim.—1. A magnet-cylinder, C, composed of one or more series of permanent magnets, Y, held together by cement, in the manner substantially as set forth.

2. The mode of securing the magnets together to form a cylinder by means of a cement composition, as set forth.

3. The adjustable stripping-brush P, as arranged and operated, for the purposes set forth.

4. The combination of the reciprocating feed-chute U, bar W, double series of actuating-arms *i*, and driving-shaft L with a rotating magnet-cylinder, C, substantially as and for the purpose set forth.

208,164. GANGWAYS FOR TRANSFERRING CATTLE. Edwin L. Foreman and Edward Foreman, Penfield, Ill. Filed Mar. 8, 1878.



Claim.—The double lengthwise-adjustable gate, consisting of the shoes B B, each having a standard, C, and boards D, with cleats *b*, in combination with a chute, A, substantially as herein set forth.

208,165. MOPS. Henry L. Franklin, Brattleborough, Vt., assignor to Elnathan Whitaker and Addison W. Bartlett, same place. Filed Aug. 3, 1878.



Claim.—1. In a mop-head, the sliding bail or clamp, impelled by a spring toward a fixed clamp or cross-head, combined with a catch or stop adapted to engage automatically with the sliding bail or clamp and hold the latter away from the fixed clamp, as set forth.

2. The combination of the elastic bent wire *f*, secured to the mop-handle, and provided with the shoulder or stop *f'*, with the spring-impelled sliding bail or clamp *c*, provided with the cross-bar *c'*, adapted to engage with the stop *f'*, as set forth.

208,166. OFFICE-INDICATORS. Edward H. Glidden, Somerville, Mass. Filed July 31, 1878.

Brief.—The open end of the holder, being next or opposite to the door-jamb, the indicator is thereby locked within its holder when the door is shut. The indicator, when not in use upon the door, may be removed from its holder and used in the office as a calendar.



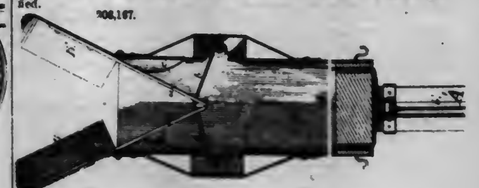
Claim.—In combination with a door, D, and jamb J, or its specified equivalent, the holder A, attached to the outside of the door close to its edge, and provided in its outer side with an indicator-displaying opening, O', and in its end with an indicator-receiving opening, O, which is arranged to be covered or obstructed by the jamb, or its specified equivalent, when the door is closed, as set forth.

208,167. FRUIT-PICKERS. Ira Gothard, Bainbridge, Ky. Filed May 14, 1878.

Claim.—1. As an improved article of manufacture, the herein-described fruit-picker, consisting of the jaws B B', hinged or pivoted in the upper part of the receptacle A, and having downwardly-projecting legs *a*, operated by springs *c* and cords *b b* and *b'*, said receptacle A, having door D at its base, being attached to the top of sliding rod A^2, which moves in rod A^1 of the handle E, and operated by cord *h*, substantially in the manner and for the purpose specified.

2. In a fruit-picker, the extension-shaft formed of the handle E, having fixed sleeve *e*, and rods A^1 A^2, said rod A^2 being operated by the cord *h*, in combination with the receptacle A, substantially as and for the purpose specified.

208,167.

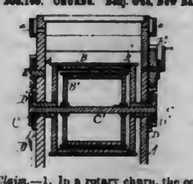


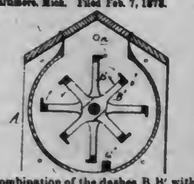
208,168. BIT-STOCKS. Charles L. Griswold, Chester, Conn., assignor of one-half his right to Henry McTighe, New York, N. Y. Filed Feb. 18, 1878.



Claim.—The combination, with the socket portion of a bit-stock or tool-holder having formed thereon the male thread *a*, of a thimble, ferrule, or cap having a continuous outer curved surface, an interior screw-thread, *b*, fitted to said male thread, and having also the internal shoulder *d* for grasping, and the recess *e f* for permitting the lateral movement of, the tool, substantially as described.

208,169. CHURNS. Benj. Gue, New Baltimore, Mich. Filed Feb. 7, 1878.

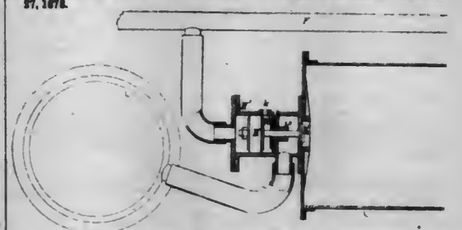




Claim.—1. In a rotary churn, the combination of the dashes B B' with the hollow shafts C, each having a cog-wheel, D, on its outer end, the shaft C', provided with a cog-wheel, D', on each end outside of the cog-wheel D, the cog-wheels F, one on each side of the churn, meshing with the outer cogs, D', and the cog-wheels E on each end of the machine meshing with the cogs D F, one of which wheels, E, is provided with a hand-crank, constructed and arranged substantially as described and shown.

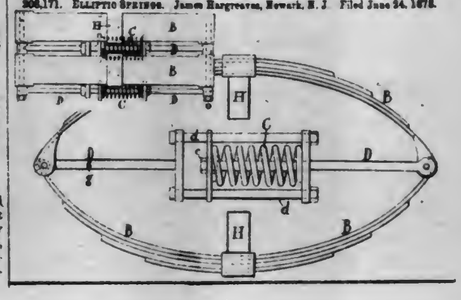
2. The gates G G' and their slides *c c'*, in combination with the body of a churn, as and for the purpose set forth.

208,170. RAILWAY-BRAKES. John Hardy and John G. Hardy, Vienna, Austria. Filed June 27, 1878.



Claim.—The combination of a vacuum-brake and the vacuum pipe F with a vacuum-reservoir, communicating at one point through a valved passage with the said pipe, and at another point with the brake-cylinder and with the said pipe through passages provided with a compound valve, H *h'*, all substantially as described.

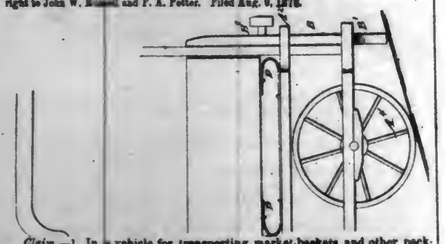
208,171. ELLIPTIC SPRINGS. James Hargreaves, Newark, N. J. Filed June 24, 1878.



Claim.—1. The combination described, consisting of the two coiled springs C, with the rods D, arranged and secured upon the outside of the elliptic spring B, and the separate buffers H H, arranged and secured inside of the spring B, as and for the purpose herein set forth.

2. The double or triple car-spring herein described, consisting of the elliptic springs B, coiled springs C C, washers or sockets for compressing the same, rods D, formed with hooks *f*, and secured to the joints of the springs B by a through-bolt, *a*, at each end, and buffers H H, secured to the inside of each elliptic spring, as and for the purpose set forth.

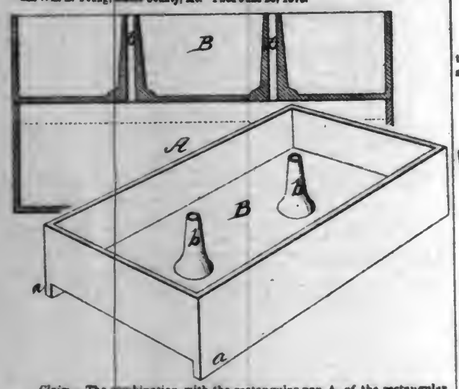
208,172. HAND-TRUCK. Charles A. Harper, Jersey City, N. J., assignor of two-thirds his right to John W. Russell and F. A. Potter. Filed Aug. 6, 1878.



Claim.—1. In a vehicle for transporting market-baskets and other packages by hand, the combination of one or more wheels, a vertical frame-work having handles attached thereto, a receptacle for containing packages to be moved, and adjustable feet for retaining the structure in a proper position when not in use, all substantially as and for the purpose set forth.

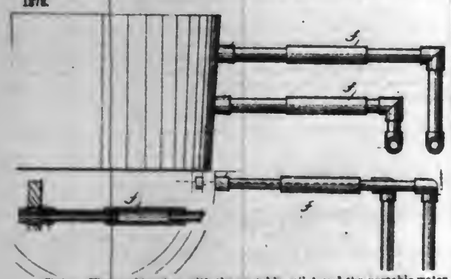
2. The combination of the adjustable bar B, having feet B¹ B¹, and the frame-work of a package-carrier, substantially as and for the purpose set forth.

208,173. BAKING-PANS AND OVENS. Benjamin F. Henry, near Miami, assignor to himself and Wm. E. Young, Saline County, Mo. Filed June 20, 1878.



Claim.—The combination, with the rectangular pan A, of the rectangular sliding hollow cover B, provided with guide-flanges *a*, and having the vapor-escape tubes *b* opening through and flush with its bottom, substantially as specified.

208,174. PORTABLE WATER-HEATERS. Edmund Hersey, Hingham, Mass. Filed July 27, 1878.



Claim.—The combination, with the portable coil A and the portable water-vessel, of the pipes connecting the opposite ends of said coil with said vessel at different levels, and the flexible sections *f f*, forming portions of said connecting-pipes, and adapting said vessel and coil to be located in different positions with respect to each other, substantially as and for the purpose set forth.

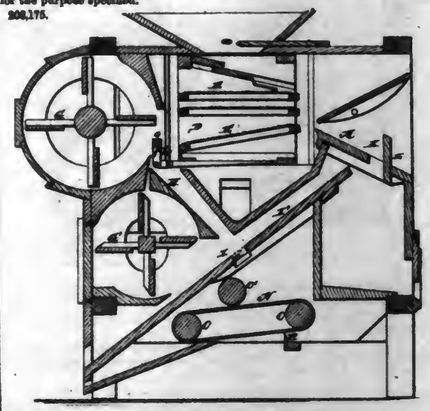
208,175. GRAIN-SEPARATORS. A. J. Humphreys, Gap Mills, W. Va. Filed July 6, 1878.

Claim.—1. The combination of the two fans G G', riddle-box D, incline H, and main spout I, as and for the purpose specified.

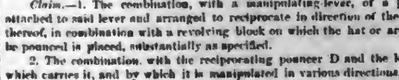
2. The combination of the endless apron N, passing around the rollers O O, the pressure-roller O', and scraper R, all substantially as and for the purpose specified.

3. In a grain-separator, the combination of the main spout I, having slide I' and opening *i*, with the endless apron N and roller O', substantially as and for the purpose specified.

208,175.

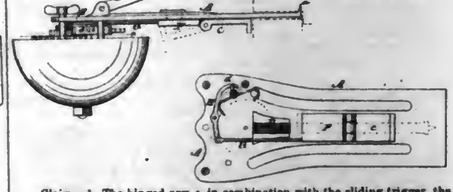


208,176. DOOR-SHOURERS. William A. Ingalls, Providence, assignor of one-half his right to Henry Whitman, Cranston, R. I. Filed July 15, 1878.



Claim.—The button *f*, made in one piece, having the orifice *g*, and adapted to assume its operative position by gravitation, in combination with the flanged and threaded shank *a*, having the nut *e*, as set forth.

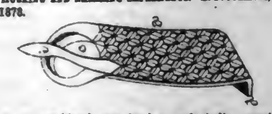
208,177. BURGLAR-ALARMS. James K. Johnston, St. Louis, Mo. Filed July 20, 1878.



Claim.—1. The hinged arm *c*, in combination with the sliding trigger, the slotted toothed plate A, the rod G, and trip device, and the alarm mechanism, as shown and described.

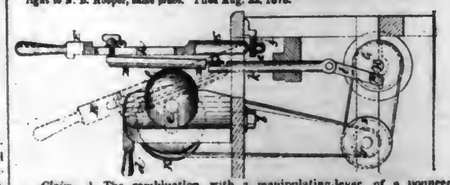
2. The combination, with the alarm mechanism and the plate A, having teeth *a*, of the pivoted trip-lever or dog H, having its free end bent as described, the pallet-arbor provided with the lug *d*, the sliding trigger, and the rod G, attached to the trigger and trip-lever, all as shown and described.

208,178. HUSKING AND SHELLING IMPLEMENTS. L. F. Johnston, Pocahontas, Ark. Filed Feb. 9, 1878.



Claim.—A combined corn husker and sheller consisting of the body *a*, having a roughened surface, and the hole *c* for the passage of the thumb, and provided with the flange *d* and hooking-pin *i*, substantially as shown.

208,179. HAT-POUNCING MACHINES. Wm. Keenan, Brooklyn, N. Y., assignor of one-half his right to H. B. Hooper, same place. Filed Aug. 22, 1878.

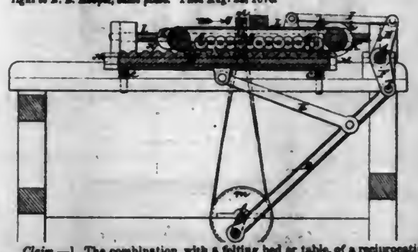


Claim.—1. The combination, with a manipulating-lever, of a pouncer attached to said lever and arranged to reciprocate in direction of the length thereof, in combination with a revolving block on which the hat or article to be pounced is placed, substantially as specified.

2. The combination, with the reciprocating pouncer D and the lever E, which carries it, and by which it is manipulated in various directions, of the rotating block C, made capable of adjustment about a pivot, *b*, at right angles, or thereabout, to the axis of the block, substantially as specified.

3. The combination, with the revolving block C, the manipulating slotted lever E, and the pouncer D, arranged to reciprocate in direction of the length of said lever, of the pin or guide *g*, by which the pouncer is connected with said lever, the rods *k l*, and the crank or revolving wrist-pin *m*, essentially as described.

208,180. PRINTING-MACHINES. William Keenan, Brooklyn, N. Y., assignor of one-half his right to H. B. Hooper, same place. Filed Aug. 22, 1878.



Claim.—1. The combination, with a felting bed or table, of a reciprocating felting rubber or device carrying a felting-apron having a continuous motion in one direction, whereby a compound movement is given to said felting-apron, substantially as specified.

2. The combination of a reciprocating felting bed or table with a reversely-reciprocating felting rubber or device carrying a felting-apron having a continuous motion in one direction, whereby a compound movement is given to the apron, substantially as specified.

3. The combination of the crank-shaft C, the lever D, the rock-shaft G, with its reversely-arranged arms F and H, the rods E and I, and the reciprocating felting-bed B, and contiguous reversely-reciprocating rubber or felting device K L, substantially as specified.

4. The combination, with the frame K, of the reciprocating felting rubber or device and its felting apron L, arranged to run continuously in one and the same direction, of the rollers *f f'*, the continuously rotating shaft *l*, the bevel-wheel *k* on one of said rollers, and the bevel-wheel *k*, supported by the reciprocating frame K, and in key or feather connection with the shaft *l*, essentially as described.

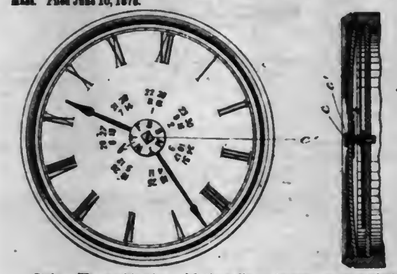
5. The combination, with the felting bed or table B and the contiguous reciprocating felting rubber or device having a traveling felting-apron, L, of the backing or supporting rollers *g* within said apron, substantially as specified.

208,181. MEANS FOR HOLDING STEREOTYPE-PLATES. Ansel H. Kellogg, Chicago, Ill. Filed May 4, 1878.



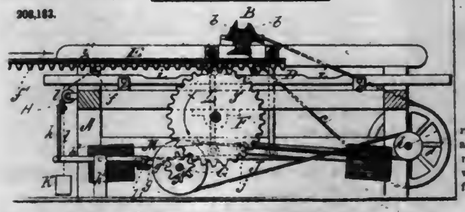
Claim.—The combination of the ordinary straight vertical sided column-rules, side-sticks, or chase, a type block or plate, and an abutment-block upon which to rest said plate, said plate coming in contact and being held in the form by friction with said column-rules, side-sticks, or chase, substantially as set forth.

208,182. COMBINED CALENDAR-DIAL AND WATCH-CRYSTAL. Dyer T. Kendrick, Boston, Mass. Filed June 10, 1878.



Claim.—The combination, with the ordinary transparent crystal of a watch or locket provided with grooves of numerals, from 1 to 31, of a central pin or bolt, *c*, and a disk attached thereto beneath the said crystal, said disk being provided on its face, next to said crystal, with characters indicating the days of the week, and adapted to be adjusted by said pin or bolt, substantially as and for the purpose set forth.

208,183.



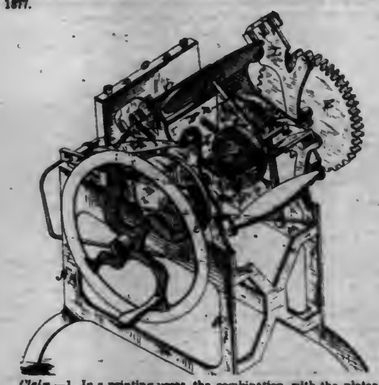
208,183. STREET-PLANING MACHINES. Willis W. Kretsch, Delphos, Ohio. Filed Mar. 2, 1878.

Brief.—The blanks are placed upon a table having a rack and two pairs of wheels upon its under side. The wheels travel upon tracks which have depressions corresponding to the intended form of the blanks. By the movement of the table the blanks are fed to the cutters, by the action of which they are shaped.

Claim.—1. In a machine for cutting wood stirrup-blanks, the combination, with a rotary cutter and a table moving under the same and provided with transporting-wheels, of a track, D B, having the depressions *i*, as and for the purpose specified.

2. The combination, with a rotary cutter, B, and endwise movable table E, having a rack, *f'*, upon its under side and a suspended weight, K, and a gear-wheel, F, engaging said rack, of a gear, *g'*, adapted to be disengaged from the said gear F by means of a lever, H, substantially as specified.

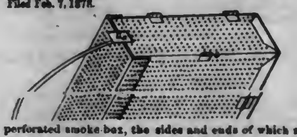
208,184. PRINTING-PRESSES. William A. Lavalette, Washington, D. C. Filed Dec. 10, 1877.



Claim.—1. In a printing-press, the combination, with the platen and pit-men D D for rocking the same, of a sliding shaft, to which the platen is pivoted, a draw rod, and a cam, whereby the platen is brought up square against the bed, substantially as herein set forth.

2. In a printing-press, the combination of the movable bed C with arms C', toggles *k*, connecting-arms J, and lever H, for retracting the bed when desired, as set forth.

208,185. APPARATUS FOR SMOKING MEAT. Russell B. Lewis and Joseph H. Crumb, De Ruyter, N. Y. Filed Feb. 7, 1878.



Claim.—A perforated smoke-box, the sides and ends of which are hinged together and provided with removable top and bottom and suspending-bail, constructed to operate as and for the purposes described.

208,186. DOVETAIL-GROOVED BRICKS FOR PLASTERERS' PURPOSES. William J. Mastrall, Clinton, Mass. Filed Aug. 21, 1878.



Claim.—A brick having a central longitudinal dovetail groove extending from one corner and along the front face to the rear corner diagonally from the starting-point, as and for the purpose set forth.

208,187. TOBACCO-PACKAGE RECEPTACLES. Henry F. Mann, Chicago, Ill. Filed Mar. 26, 1878.



Claim.—As an improved article of manufacture, the herein-described tin receptacle A for tobacco-packages, provided with elastic strips E, bent at right angles and held in place by the projecting flanges D, secured to the sides and near the mouth of said receptacle, to enable the door B, which is provided with locking-knob C, to close tightly against the same, substantially as and for the purpose specified.

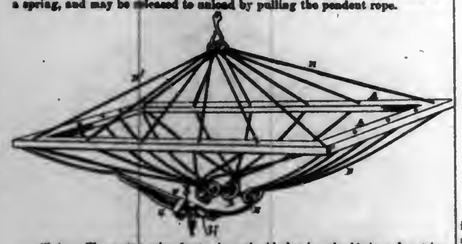
. 208,188. CAR-COUPLING. Joseph G. Main, Wyandotte, Kans. Filed Feb. 18, 1878.



Claim.—In a car coupling, the combination, with the coupling-hook *b*, of the frog S, for holding the forward end of said hook in an elevated position in uncoupling the cars, substantially as and for the purpose set forth.

208,189. UNLOADING-NETS. Cesar Marshall, Stockton, Cal. Filed July 5, 1878.

Brief.—The perforated catch is secured in the latch by a leg actuated by a spring, and may be released to unload by pulling the pendent rope.



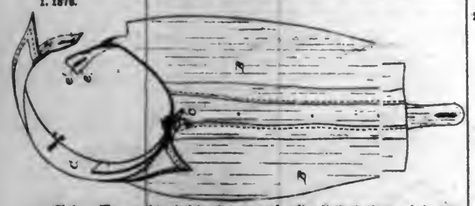
Claim.—The rectangular frame A, each side having the V-shaped notting B depending from it and provided with the rings D, the draw-cord E, provided with the catch H, and fitted to pass through the rings consecutively, the spring-locking device, and the V-shaped sections H' H' of netting on opposite sides of the frame, having rings at their ends, the several parts constructed and relatively arranged to operate substantially as herein shown and described.

208,190. INSOLES FOR BOOTS AND SHOES. Moritz Mayer, New York, N. Y., assignor, by mesne assignment, to Sophie Mayer, same place. Filed July 26, 1878.



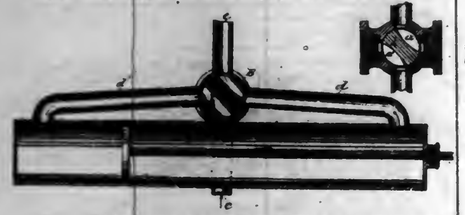
Claim.—An improved insole composed of outer coverings of leather-board or other suitable material and an intermediate layer of absorbent material, the whole sewed together, as shown and described, and provided with the enlarged stitch-holes, for the purpose set forth.

208,191. COMBINED SHIRT BOSOM AND COLLAR. D. McFarland, Boonville, Mo. Filed June 1, 1878.



Claim.—The combined false bosom and collar B C, the bosom being extended on one side only by a button-hole tab, *c*, to the back of the neck, and the whole constructed and arranged substantially as and for the purpose herein described.

208,192. FORCE-PUMPS. Oliver K. McIntire, Springfield, Ohio. Filed Dec. 7, 1877.



Claim.—The combination of the cylinder A, tubes *d d*, valve-chamber *h*, provided with supply *e*, discharge-pipe *e*, and curved double-faced valve *a a'*, operated by crank, connecting-link, vibrating arm, and pitman-rod, as shown, whereby the force of the water is utilized in opening and closing the valve, substantially as described.

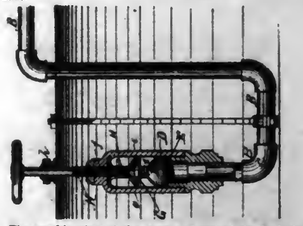
208,193. DEVICES FOR SECURING CORKS IN BOTTLES. Chas. Michel, La Crosse, Wis. Filed Aug. 12, 1878.

Claim.—The device for securing corks in bottles, consisting of the tapering halves *a*, hinged to each other and provided with the beveled flange *b*, and of the securing band or ring B, as shown and described.

208,193.



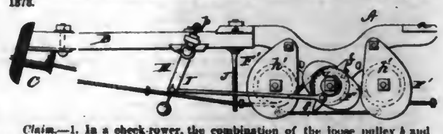
208,194. HEATERS AND FEEDERS FOR STEAM-BOILERS. George W. Moore, Pittsburg, Pa. Filed Jan. 23, 1878.



Claim.—1. The combination of the upturned end of the feed-pipe B, passing through the steam-space of a boiler, with a check-valve, F, arranged as shown, and for the purpose described.

2. The combination of the upturned end of the feed-pipe B and check-valve F with the concave disk G and adjusting-rod H, all constructed and arranged as shown, and for the purpose set forth.

208,196. CHECK-ROWERS FOR CORN-PLANTERS. John P. Moss, Lincoln, Ill. Filed July 10, 1878.

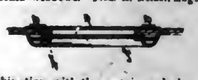


Claim.—1. In a check-rower, the combination of the loose pulley *h* and the wings F with forks *f*, as and for the purposes herein set forth.

2. The swinging wings F', with pulleys *h'* between them, arranged on opposite sides of the fork-wheel F *h*, and connected by a rod, *i*, substantially as and for the purposes herein set forth.

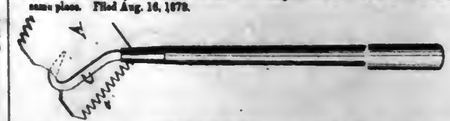
3. The combination of the bars B, center casting, A, with elongated tubes D and D' D' projecting therefrom, the shafts *d d'*, wings F F', and pulleys *h h'*, substantially as and for the purposes herein set forth.

208,196. CARRIAGE-CURTAIN WINDOWS. Fred. A. Nolder, Augusta, Ky. Filed Aug. 24, 1878.



Claim.—The combination, with the curtain and glass, of the outside frame, A, having the clips B stamped or struck up from the same piece of metal, the inside clinching-frame, D, and the intermediate frame, F, the frames D and F extending beyond the inner edge of the main frame, substantially as and for the purpose herein set forth.

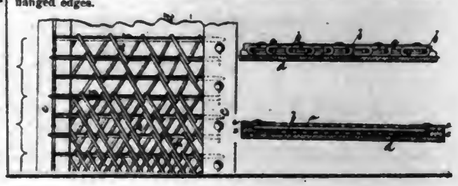
208,197. HOES. Joseph N. Parker, Vineland, N. J., assignor to himself and Solon S. Gould, same place. Filed Aug. 16, 1878.



Claim.—As a new article of manufacture, a combined hoe and rake, consisting of the blade A, having a straight lower cutting-edge and toothed sides *a*, substantially as and for the purpose described.

208,198. WIRE BELTING. Gustav A. Pickhardt, Barmen, Prussia, Germany. Filed Aug. 26, 1878.

Brief.—The invention consists in providing an interlaced wire belt, having transverse stiffening-pieces, with a flexible leather backing with raised or flanged edges.



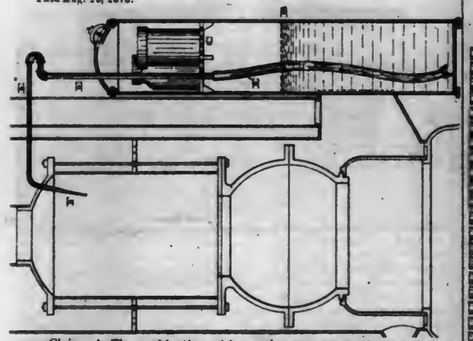
Claim.—The combination of the backing *d*, stripe *e e*, riveted together at each edge of the backing, the interlaced wire strands *a*, and the transverse rods *b*, passing through the strands, and each having at one end a head, said heads being embedded alternately between the stripe *e e* at the edges of the backing, substantially as shown and described.

208,199. SCOOPS. Isaac Pierce, Alma, Mich. Filed May 9, 1878.



Claim.—As a new article of manufacture, a scoop shovel made of wood veneer, bent from one piece so as to form the blade, with upturned sides extending around the upturned head, substantially as described.

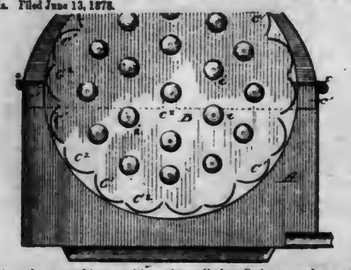
208,200. FIRE-EXTINGUISHERS FOR CAR-STOVES. Philip P. Quackenbos, Philadelphia, Pa. Filed Aug. 16, 1878.



Claim.—1. The combination, with a railway-car stove, of an automatic fire-extinguisher, the same consisting of an upright cylinder containing a loosely-fitted diaphragm and a pipe, one end of which projects into the said cylinder, and the other end is inserted into the fire-chamber of the stove, substantially as and for the purpose set forth.

2. The combination, with a railway-car stove, of the cylinder B, provided with the loosely-fitted diaphragm C, and the pipe E, having the flexible tube E' and jet or nozzle F, substantially as and for the purpose set forth.

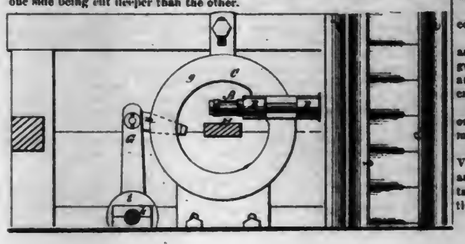
208,201. WASHING-MACHINES. Albert H. Randall and Edward Foster, Leamington, Ontario, Canada. Filed June 13, 1878.



Claim.—In a washing-machine, the cylinder B, hung and rotated in a suitable receptacle, A, and having the inner sides of its heads provided with conical projections *i i*, for turning or reversing the articles being washed, and its periphery provided with concaved buckets or rubbers C' C', arranged to dip up the water either from the right or from the left and to rub the said articles, substantially as shown and described, for the purpose set forth.

208,202. MOLDING-MACHINES AND WOOD MOLDINGS. George S. Roberts, Meredith, N. H. Filed July 31, 1877.

Brief.—The cutter is carried in a ring which oscillates around its center while the cutter rotates. The molding thus operated on is fluted transversely, one side being cut deeper than the other.



Claim.—1. A wave wood molding having its undulations deeper at one edge than at the other, substantially as and for the purpose herein specified.

2. In a wood molding, the combination of a waved frieze with a straight architrave and cornice completing the order, substantially as and for the purpose herein specified.

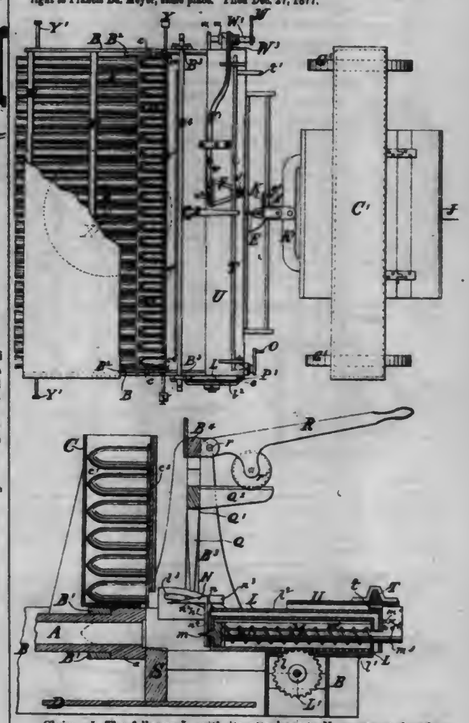
3. In a machine for cutting moldings, the combination of a vibratory ring, C, bearing a rotating cutter, and constructed in parts *f g*, as described, with a stationary ring, E, substantially as and for the purpose herein specified.

4. In a machine for cutting moldings, a rotating cutter, A, mounted on a ring, C, which has a vibratory motion around its axis or center, substantially as and for the purpose herein specified.

5. In a machine for cutting moldings, the combination of a vibratory ring, C, bearing a cutter, A, with a crank, D, and connecting-rod G, substantially as and for the purpose herein specified.

6. In a machine for cutting moldings, the combination of a vibratory cutter, A, driving-belt K, and adjustable binder-pulleys L M, substantially as and for the purpose herein specified.

208,203. MACHINE-GUNS. Frederick E. Schelton, New York, N. Y., assignor of one-half his right to Francis Ed. Meyer, same place. Filed Dec. 27, 1877.



Claim.—1. The follower L, with its attachments N, constructed and arranged as described, so as to draw the cartridges from the magazine, place them in position in the breech of the gun, and then, after the discharge of the cartridges, to withdraw their spent cases from the guns and throw them away, substantially as and for the purpose set forth.

2. The spring-hammers M, seated in sliding ways within the follower-frame L, and provided with heel-pieces m^3, in combination with the cocking-studs *t* of the shooting-bar T, so as to fire the guns A successively, one at a time, substantially as described and set forth.

3. The L-shaped fingers N, each having a vertical leg, n^1, and a tapering or wedge-shaped horizontal arm, n^2, with a rabbet, n, in the back corners of the vertical leg, arranged so as to form, in connection with the follower-frame L, vertical grooves for catching and holding the cartridges while they are drawn out of the magazine and placed in the gun-barrels and the spent cases withdrawn therefrom, substantially as described and set forth.

4. The follower L, the holding-fingers N, and the retaining-springs n^4, combined and arranged as and for the purpose set forth.

5. The guns A and their carriages B B', mounted on a central pivot, X, and the firing mechanism T and V', connected with the crank W and with the gun-carriage by means of the rod W^1 and the post W^2, the whole combined and arranged so as to vibrate the guns laterally by the turning of the said crank, substantially as and for the purpose set forth.

6. The shooting-bar T, provided with cocking-studs *t* of unequal widths, or placed at unequal distances apart, so as to hold the hammers M in such a manner as to disengage them in succession, as and for the purpose set forth.

7. The lever V, with its graduated rack, the pawl *v*, the connecting-bar V^1, the eccentric-plate W^1, and the crank W, combined and arranged together and with shooting-bar T, so as to move the said shooting-bar the required distance to fire one gun at a time and the whole battery in succession by the continuous revolutions of the crank, as and for the purpose set forth.

8. The eccentric-plate W^1, pivoted to the frame B by the lug w^1, and ad-

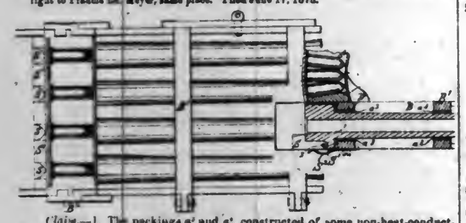
justably attached to the relatively fixed post W^2 by the rod W^3, the said eccentric-plate W^2 being actuated by the eccentric-shaft W^1, which is supported in bearings *x*, fixed to the frame B, so as to move only the bar V^1, which is attached to the plate W^2 when the rod W^4 is left loose in the said post W^3, or arranged to move both the bar V^1 and the frame B when the rod W^4 is fixed to the post W^3, substantially as described and set forth.

9. The crank W, its eccentric-shaft W^1, the eccentric-plate W^2, with its fixing-rod W^4, and the post W^3, combined and arranged as and for the purpose set forth.

10. The follower-frame L, with its plate *f*, provided with trunnions arranged to move in sloping slots in guide b^2, as and for the purpose set forth.

11. The magazine C, divided into vertical compartments by means of the partitions *c*, and having its rear side, c^2, arranged to slide vertically in its ways c^3 and on the guide c^4, as and for the purpose set forth.

208,204. MACHINE-GUNS. Frederick E. Schultze, New York, N. Y., assignor of one-half his right to Francis Ed. Meyer, same place. Filed June 17, 1878.



Claim.—1. The packings a^2 and a^3, constructed of some non-heat-conducting material, in combination with the guns A and the hinged beams B^1 and their fastening devices, for the purpose of securing the guns in their frame B B^1 in such a manner as to prevent one gun from heating another or the said hinged fixing-frame B B^1, as and for the purpose set forth.

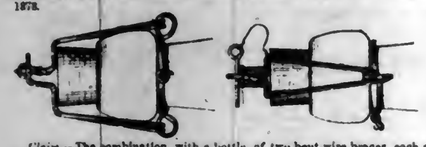
2. The stop-blocks S, hinged or pivoted at *s* to the breech-block S^1, and supported yieldingly on the springs S^2, for the purpose of allowing unspent cartridges being forced down by displacing or lowering the said stop-block S, as and for the purpose set forth.

208,205. BOTTLE-STOPPER FASTENERS. Thomas H. Shahan, Boston, Mass. Filed Aug. 27, 1878.



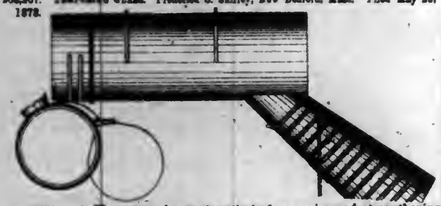
Claim.—The combination, with the stopper of a bottle, of a band, C, encircling the stopper and constructed with lugs *c c*, a bail, D, jointed to said lugs and adapted to swing over the top of the stopper for retaining it in place, and depending links connected with the encircling band of the stopper, and constructed to engage a device on the neck of the bottle, all substantially as and for the purpose described.

208,206. BOTTLE-STOPPER FASTENERS. Thomas H. Shahan, Boston, Mass. Filed Aug. 27, 1878.



Claim.—The combination, with a bottle, of two bent-wire braces, each secured by loops at their lower ends to loops formed on opposite sides of a band encircling the neck of the bottle, said braces being bent at their upper ends, so as to set over and hold the stopper when brought together, and provided with fastening devices by which they may be locked together, substantially as specified.

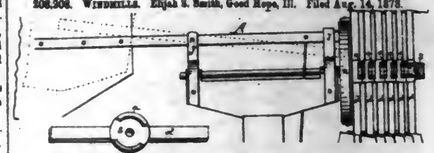
208,207. TEMPERING GLASS. Frederick S. Shirley, New Bedford, Mass. Filed May 29, 1878.



Claim.—1. The process herein described of tempering and strengthening glassware, consisting in packing the articles, while hot, in a suitable material for retaining their heat and protecting them from the air, substantially as described.

2. The combination of a spout or hopper containing the tempering compound or material into which the article of glassware is placed and suitable valves, the parts being arranged to operate substantially as shown.

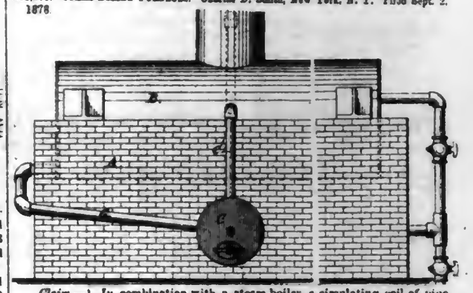
208,208. WINDMILLS. Elijah S. Smith, Good Hope, Ill. Filed Aug. 14, 1878.



Claim.—1. The arms *d*, provided with hubs *s* and projections or hooks *o*, substantially as shown and described, for the purpose specified.

2. The combination of the pivoted tail-board A and the brake-wheel *n*, substantially as and for the purpose set forth.

208,209. STEAM-BOILER FURNACES. Charles D. Smith, New York, N. Y. Filed Sept. 2, 1878.

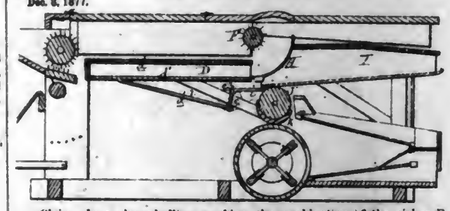


Claim.—1. In combination with a steam-boiler, a circulating coil of pipe located at the rear of the bridge-wall, extending back and forth transversely in the combustion-chamber at the rear of said bridge-wall, and connected with the drum at one end and with the boiler at the other, substantially as specified.

2. In combination with the drum and transversely-circulating coil, the pipes connecting said drum and circulating coil with the boiler, arranged substantially as specified.

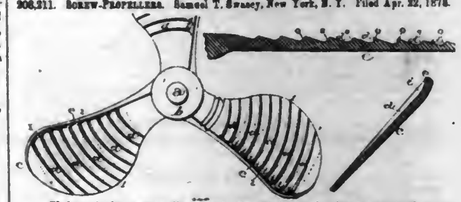
3. In combination with a steam-boiler, a circulating coil of pipe located at the rear of the bridge-wall, traversing back and forth transversely in lines parallel with the bridge-wall, whereby the respective bends of the coil are carried directly across the path of the escaping gases and caused to effectually absorb the heat of the same, for the purposes specified.

208,210. CLOVER THRASHER AND HULLER. Lyman V. Southworth, Newport, Mich. Filed Dec. 6, 1877.



Claim.—In a clover-hulling machine, the combination of the picker F, situated near the center of the same, the independently-shaking frames D and I, arranged one on each side of and below the picker, and provided with solid bottoms, and the concave H, all constructed and arranged substantially as described and shown.

208,211. SCREW-PROPELLERS. Samuel T. Swasey, New York, N. Y. Filed Apr. 22, 1878.



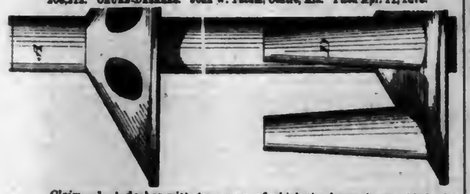
Claim.—1. In a propeller-wheel, the blades *c*, having grooves *d* across their faces, the said grooves being shallowest at the ends where they enter the water when the wheel is moving forward, and increasing gradually in depth toward their rear ends, so that the deepest parts shall be at or near the rear edges of the blades, substantially as shown.

2. In a propeller-wheel, the grooves *d*, having a recess or depression, *i*, formed in their rear ends, at or near the rear edges of the blades, so as to give the blades an increased hold upon the water, substantially as described.

3. The blades *c*, having the grooves *d* made across their faces, and having the flanges *e* on their rear edges, so as to close the rear ends of the grooves, and thus prevent the water from escaping too readily from the blades, substantially as set forth.

4. In a propeller-wheel, the blades *c*, having the grooves *d*, gradually increasing in depth from their front to their rear ends, and inclined inward, so as to force the water toward the hub of the wheel, substantially as specified.

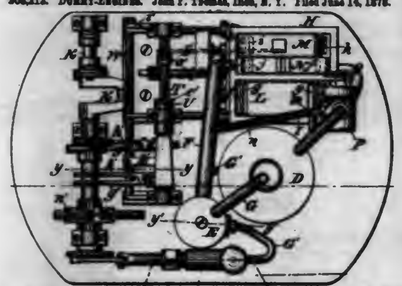
208,212. CHURN-DASHERS. John W. Tatum, Centre, Ala. Filed Apr. 11, 1878.



Claim.—1. A dasher with two caps, of which the lower is provided with cone-shaped tubes.

2. The combination of a dasher-disk, with cone-shaped tubes, with a cone-shaped upper disk or cap, having perforations therein, substantially as and for the purpose described.

208,213. DUMMY-ENGINES. John F. Thomas, Ilion, N. Y. Filed June 14, 1878.



Claim.—1. The herein-described frame for a dummy-engine, consisting of the bed or platform and strengthening ribs or flanges thereon, the whole cast complete in one piece, in substantially the form shown and described.

2. The herein-described dummy-engine frame, consisting of the bed or platform, the strengthening ribs or flanges, and the hangers, the whole cast in one piece, as shown.

3. The combination, in a dummy-engine, of the cast-metal frame, constructed substantially as described, having a flanged opening therein, and a vertical steam-boiler applied to said opening and secured by rivets or bolts, substantially as shown.

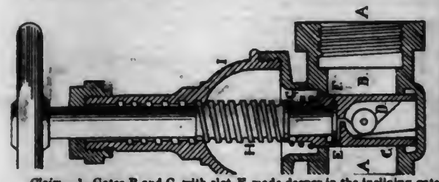
4. In a compound engine, the combination of two cylinders, H I, provided with ports and slide-valves of ordinary construction, in combination with a port extending through the steam-chest of one cylinder to that of the other, and a movable valve, N, substantially such as shown, whereby live or dead steam may be delivered to the second cylinder at will.

5. The cylinder I, having the ports *g* and valve L, and the cylinder H, having ports *h* and valve M, in combination with the ports *j j'*, *k*, and *l* and the valve N, as shown.

6. In a dummy-engine, the combination of the engine-cylinders, the brake-cylinder, the pipes for conveying the steam to both the engine and brake cylinders, and the throttle-valve P, constructed substantially as shown, adapted to control the admission of steam to the engine-cylinders, and also to discharge the steam into and from the brake-cylinder.

7. In a compound engine, the combination of a valve-operating shaft, T, for one cylinder with a second valve-operating shaft, U, for the other cylinder, the latter made tubular and mounted around the former, as shown.

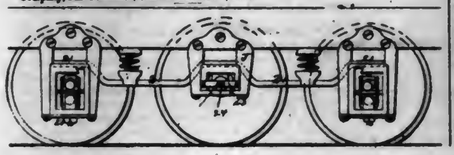
208,214. STOP-VALVES. Richard J. Thomas, Milwaukee, Wis. Filed Feb. 21, 1878.



Claim.—1. Gates B and C, with slot E made deeper in the inclining gate than slot F in the straight gate, roller D, spring G, and valve-seats A A, in combination with stem H, substantially as described.

2. Spring G, in combination with gates B and C, with slot E in the inclining gate made deeper than slot F in the straight gate, and roller D, substantially as specified.

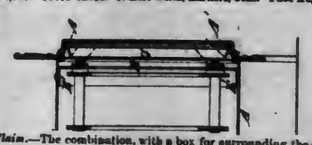
208,215. CAR-TRUCKS. George Vincent, Stockton, assignor to the Vincent Flexible Truck Company, San Francisco, Cal. Filed Mar. 7, 1878.



Claim.—1. The combination, in a flexible railroad-truck, of the cane 5, stirrups 16 and 17, ball 18, lugs 14, and journal 19, substantially as and for the purposes specified.

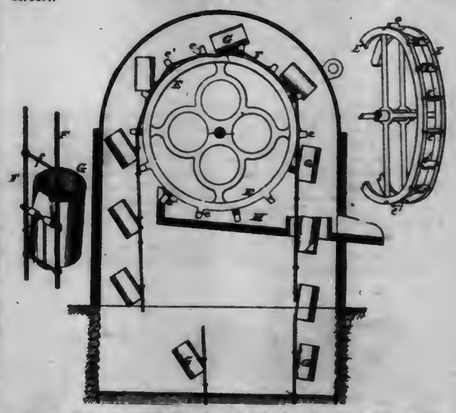
2. The combination, with the middle axle of a flexible car-truck, of the outer cane, 5, bar 23 across the end of the axle, and bolt 24 through the bar and against the end of the axle, for the purposes herein set forth.

208,216. CLOCK-CASES. J. Hart Welch, Hartford, Conn. Filed Aug. 22, 1878.



Claim.—The combination, with a box for surrounding the clock-movement, which box has at the front a projecting part, A', and a shoulder at the junction of the said part with the part of greater diameter, of a frame fitted to the part of less diameter, and abutting against the said shoulder, substantially as and for the purpose described.

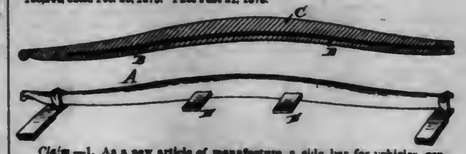
208,217. WATER-ELEVATORS. Martin Van Buren Wright, Fort Worth, Tex. Filed Aug. 18, 1877.



Claim.—The elevator-wheel constructed with disks E, connected by chain cogs *e* and tilting cogs *e'*, in combination with endless carrier F and buckets G.

REISSUES.

8,415. SPRING SIDE BARS FOR VEHICLES. Joseph Tilton, New York, N. Y. Patent No. 160,344, dated Feb. 23, 1875. Filed June 21, 1878.

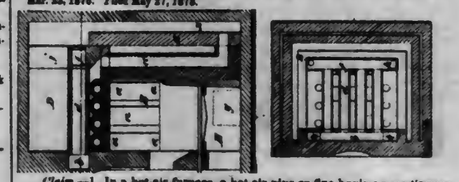


Claim.—1. As a new article of manufacture, a side bar for vehicles, consisting of a steel spring incased in a non-metallic bar, substantially as described.

2. The combination, with the metallic spring B, of the continuous non-metallic casing C, surrounding said spring and extending somewhat beyond its sides and ends, as and for the purposes set forth.

3. In combination with the metallic spring and its covering or casing, the plates E, secured to the spring and projecting through the casing, substantially as and for the purpose specified.

8,416. HOT-AIR FURNACES. John W. Oxary, Philadelphia, Pa. Patent No. 161,906, dated Mar. 23, 1876. Filed May 27, 1878.



Claim.—1. In a hot-air furnace, a hot-air pipe or flue having a continuous body of dried unburned clay, substantially as specified.

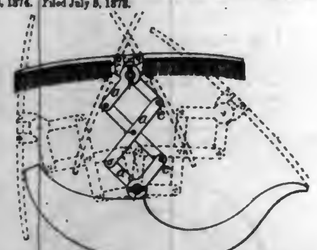
2. In a hot-air furnace, a hot-air pipe or flue having a shell or exterior portion of any suitable material and a lining of dried unburned clay, as specified.

3. In a heating-furnace, the combustion-chamber B and air-heating pipes *a* of clay, arranged at the sides, back, and top of said combustion-chamber, and combined with the surrounding air-space *x* and hot-air chamber D, all substantially as and for the purpose set forth.

4. The combination, in a heating-furnace, of a combustion-chamber, B, flues or passages communicating with the chimney, and openings *i*, forming communications between said flues and the combustion-chamber near the lower corners of the latter, as and for the purpose set forth.

5. The combination of the passages *b* and *f*, the connecting-pipes *d*, vertical flues *h*, having openings *i*, and exit-flue *j*, communicating with said passage *f*, all as and for the purpose set forth.

8,417. CHILDREN'S CARRIAGES. Francis L. Hughes, Rochester, N. Y. Patent No. 154,757, dated Sept. 8, 1874. Filed July 8, 1878.



Claim.—1. In combination with the body and top of a child's carriage, the lazy-tongs adjustable braces, as and for the purpose set forth.

2. The systems of jointed lattice-bars *a*, forming canopy-supports, in combination with a jointed or tilting canopy, substantially as described.

3. Canopy side supports for a child's carriage, pivoted at one end to the sides of the body and at the other end to the sides of the canopy, and capable of being elongated or shortened at pleasure in the direction of their lengths, by means substantially as described, whereby the canopy may be brought nearer to or caused to recede from the body.

8,418. HARNESS-PAD. Miron V. Longworth, Dolphus, Ohio. Patent No. 176,930, dated July 18, 1876. Filed Apr. 6, 1878.



Claim.—1. The combination, with terrets G and screws H, of the upwardly-flanged plates, having end loops forming a part thereof, substantially as specified.

2. The harness-pad having independent metallic side plates, D, and leather back plate, B, under and connecting the same, the parts being secured together and to the cushion by the terrets and screws, substantially as specified.

3. In a harness-pad having independent metallic side plates and leather connecting-plate below the same, the short bridge-strap K, re-enforcing the saddle-strap, and placed beneath the base of the water-hook and over the upper ends of said side plates, substantially as specified.

8,419. TEMPORARY FENDERS. Newton S. Otis, New York, N. Y., assignor, by mesne assignments, to Wm. S. Gray and H. Mott Gray, trustee. Patent No. 176,123, dated Apr. 11, 1876. Filed Feb. 20, 1878.



Claim.—1. A binder provided with strips or wings extending from near the back edges of the covers, and having one cover narrower than the other to the extent of about the width of a needle binding-bar to be used in such binder, substantially as specified.

2. In a binder, the combination, with flexibly-connected strips or wings, of a bar provided with a series of needles extending from one strip or wing, adapted to pass through and remain in papers, pamphlets, &c., so as to secure them in the binder, and to be fastened to the other strip or wing of the binder, substantially as specified.

3. In a binder, the combination, with strips or wings, of a bar adapted to fit against one of the strips or wings, and furnished with a series of needles adapted to be bent for the purpose of securing them to the other strip or wing, substantially as specified.

4. In a binder, the combination, with strips or wings and a bar adapted to fit against one of the strips or wings, and furnished with a series of needles adapted to be bent, of a channeled binding-bar attached to the other strip or wing, and adapted to receive the ends of the needles when bent, substantially as specified.

5. In a binder, the strips or wings D D', projecting from the base inside the covers A A', and operating as a binding device, in combination with a bar armed with a series of needles or wires tapering to a point, or provided with openings near their points, and an auxiliary binding-bar, constructed and operating substantially as and for the purpose as herein shown and set forth.

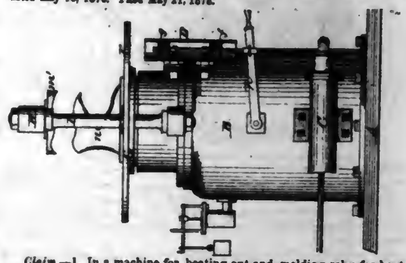
8,420. BEER-COOLER. August Roos, New York, N. Y. Patent No. 164,040, dated June 1, 1875. Filed July 17, 1878.



Claim.—1. The beer-cooler distributing-trough herein described, consisting of a V-shaped trough having its lower extremity perforated, and said trough being provided with a partition projecting directly from one of its inclined walls above its lower extremity and standing approximately parallel with the other wall, the upper portion of said partition being foraminous, in combination with a vertical series of cooling-pipes having their axes in the same vertical plane with the perforated lower extremity of said trough.

2. A sectional beer-cooler consisting of the horizontal tubes A and sectional columns B, having flanges, for the purpose of connecting together a number of said sections, substantially as and for the purpose herein set forth.

8,421. MACHINES FOR BEATING OUT AND MOLDING THE SOLES OF BOOTS AND SHOES. Simon Ross, Cincinnati, Ohio, assignor to Ross, Davis & Co., same place. Patent No. 177,365, dated May 16, 1876. Filed May 21, 1878.



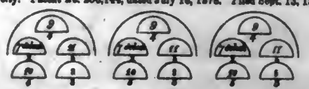
Claim.—1. In a machine for beating out and molding soles for boots and shoes, the combination of two formers, one stationary and attached to a suitable beam for receiving the stroke, and the other attached to the end of a piston-rod, the other end of which is attached to a piston arranged in a suitable cylinder and driven by elastic-fluid pressure, and a suitable mechanism for controlling the elastic fluid, and connected with the said cylinder for that purpose, substantially as described.

2. In a shoe-sole-shaping machine, the combination of the stationary former and a reciprocating former attached to a piston-rod, arranged directly under and adapted to be driven upward toward said stationary former by elastic-fluid pressure, and when the pressure employed to drive said piston-rod is removed it will return by gravity to its normal position, ready for another stroke.

3. A beating out and molding machine having its frame or structural part composed of a hollow column, the exterior of which supports the operative parts of the machine, and the interior of which forms a chamber or reservoir for storing an elastic fluid, which is compressed therein by suitable mechanism, and held under pressure to operate the piston by which the beating and molding are effected.

4. The combination of an air-chamber, B, valve-chamber D, fitted with valves *f* and *g*, cylinder and piston F and G, on the cylinder G of which is fixed a mold, *m*, operating against an upper fixed mold, *m'*, by means of an air-pump, C, substantially as and for the purpose specified.

8,422. MODE OF PREVENTING LOSS OF HEAT IN CHARGING GAS-RETORTS. James Slade, Yonkers, N. Y., assignor, by mesne assignments, to the International Gas Light Company, New York city. Patent No. 206,144, dated July 16, 1878. Filed Sept. 13, 1878.



Claim.—In the manufacture of illuminating-gas, using the ordinary bench of retorts, the mode of preventing loss of heat at the time when the coal is throwing off gas the fastest, which consists in charging the retorts in each bench successively at stated intervals, the retort undergoing the operation of charging being the one farthest removed from the retort or retorts last charged.

8,423. TRIMMINGS. Gustave Simon, New York, N. Y. Patent No. 204,636, dated June 4, 1878. Filed Aug. 23, 1878.



Claim.—1. The process of treating trimmings made with rectilinear longitudinal and transverse threads to produce a trimming having scalloped edges, serpentine parallel longitudinal threads, and rectilinear parallel transverse threads, and which consists in passing straight-edged trimming between rollers combined with a reciprocating gage or carriage, arranged to cause said trimming to travel lengthwise in an undulating line, substantially as set forth.

2. As a new article of manufacture, a trimming having scalloped edges, its longitudinal threads being arranged in serpentine form and parallel to each other, while its transverse threads are rectilinear and parallel, as set forth.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17th DAY OF SEPTEMBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adams, J., Washington, D. C. Gas-regulator	208,134	Sept. 17	509	178	14	434
Aldridge, F. C., *et al.* (See Aldridge, H., assignor.)						
Aldridge, H., St. Louis, Mo., assignor to F. C. Aldridge, Batesburg, S. C., R. B. Crouch, Chicago, Ill., and F. A. Dilworth, Pittsburg, Pa. Car-roof	208,007	Sept. 17	469	141	14	417
Alexander, J. E., Neosho, Mo. Sulky-plow	208,053	Sept. 17	517	154	14	423
Allard, W. H., Washington county, Ohio. Feed-steamer	208,135	Sept. 17	601	178	14	434
Allen, S. L., Philadelphia, Pa. Potato-digger	208,008	Sept. 17	470	141	14	417
Allen, W. B., Orleans, N. Y. Seat-lock for vehicles	208,136	Sept. 17	602	179	14	435
Appleby, J. F., De Pere, Wis. Grain-binder	208,137	Sept. 17	603	179	14	435
Arkell, J., Canajoharie, N. Y. Bag	208,138	Sept. 17	604	179	14	435
Ashley, A. H., Stuyvesant Falls, N. Y. Pump	208,054	Sept. 17	518	155	14	423
Austin, W. P., New York, N. Y. Water-trap for waste-pipes	208,139	Sept. 17	606	179	14	435
Baker, C. H., and F. L. Bestor, Knoxville, Iowa. Wire-fence barb	208,140	Sept. 17	607	180	14	435
Baker, W. C., assignor of part interest to W. V. Duvall and C. B. Culver, Baltimore, Md. Device for transmitting power	208,055	Sept. 17	519	155	14	423
Ballew, T. W., and C. A. Fuller, Princeton, Mo. Harvester guard-finger	208,141	Sept. 17	607	180	14	435
Baron, A. L., assignor to himself, E. P. Cash, and D. Rankin, Bellaire, Ohio. Lantern	208,142	Sept. 17	608	180	14	435
Bartlett, A. W., *et al.* (See Franklin, H. L., assignor.)						
Beach, H., Prairie du Chien, Wis. Index	208,143	Sept. 17	610	180	14	435
Beach, H. B., West Meriden, Conn. Double-walled pitcher	208,056	Sept. 17	520	155	14	424
Bean, J., and R. Hudson, Mich. Filter	208,144	Sept. 17	610	181	14	435
Bean, R. (See Bean, J., and R.)						
Bearden, T. W., *et al.* (See Crossley, C. M., assignor.)						
Beck, A., New York, N. Y. Wrench	208,057	Sept. 17	521	156	14	424
Bedford, J. T., New York, N. Y. Metal stamping, shearing, and punching machine	208,009	Sept. 17	471	141	14	417
Bell, H., St. Louis, Mo. Tooth-powder box	208,145	Sept. 17	611	181	14	436
Bell, H., St. Louis, Mo. Bottle-stopper	208,146	Sept. 17	612	181	14	436
Bennett, W. J., assignor of one-half interest to J. L. Brown, Fox Lake, Wis. Elevator-bucket	208,147	Sept. 17	612	181	14	436
Bergqvest, C. (See Marsh and Bergqvest.)						
Berry, A., Warden, Quebec, Canada. Car-truck	208,058	Sept. 17	521	156	14	424
Bestor, F. L. (See Baker and Bestor.)						
Bettridge, A., Racine, Wis. Refrigerator	208,148	Sept. 17	613	182	14	436
Birch, J. S., Orange, N. J. Wrench	208,059	Sept. 17	522	156	14	424
Blackmer, J. L., assignor of one-half interest to J. W. Tufts, Boston, Mass. Sign	208,060	Sept. 17	523	157	14	424
Bliss, E. N., and J. Davol, Providence, R. I.; said Bliss assignor to said Davol. Syringe	208,062	Sept. 17	524	157	14	424
Bliss, G. H. (See Bliss J., and G. H.)						
Bliss, J., and G. H., Brooklyn, N. Y. Rotator for ships' logs	208,061	Sept. 17	524	157	14	424
Bliss, S. B., New York, N. Y. Soap-bubble pipe	208,063	Sept. 17	526	157	14	424
Blosser, J. (See Blosser, J. W., assignor.)						
Blosser, J. W., assignor to himself and J. Blosser, Sarcoxie, Mo. Medicament for catarrh	208,064	Sept. 17	526	.....	14	424
Bowman, S. Z. (See Martin, P., assignor.)						
Bradford, S. H., New York, N. Y. Tin can	208,065	Sept. 17	527	158	14	425
Bray, M. P., assignor of one-half interest to L. Kraus, Birmingham, Conn. Corset	208,066	Sept. 17	527	158	14	425
Brazelle, B., assignor to Brazelle Engine Company, St. Louis, Mo. Governor for fluid-pressure engines	208,067	Sept. 17	528	158	14	425
Brazelle, B., assignor to Brazelle Engine Company, St. Louis, Mo. Governor for steam-engines	208,149	Sept. 17	614	182	14	436
Brazelle Engine Company. (See Brazelle, B., assignor.)						
Brock, M. (See Copeland, Woodward, and Brock.)						
Brown, G. W., Cumberland Mills, Westbrook, Me. Razor-strop	208,068	Sept. 17	530	158	14	425
Brown, J. L. (See Bennett, W. J., assignor.)						
Buckhout, A. H., Oakland, Cal. Hot-air grate	208,069	Sept. 17	530	159	14	425
Buckhardt, G., Homer, Ill. Adjustable pipe-fastener	208,150	Sept. 17	616	182	14	436
Buxton, B. F., Brookfield, Vt. Apparatus for drying moist boots and mittens	208,070	Sept. 17	531	159	14	425
Callaway, J. F. (See Ernwein, P., assignor.)						
Camp, T., Covington, Ga. Cotton-condenser	208,071	Sept. 17	532	159	14	425
Carr, C., Boston, Mass. Hydrant	208,072	Sept. 17	532	159	14	425
Carter, J. F., Gloucester, Mass. Overcoat	208,151	Sept. 17	616	182, 183	14	436
Cash, E. F., *et al.* (See Baron, A. L., assignor.)						
Chase, J. K., New York, N. Y. Screw-cap and stopper-fastener	208,010	Sept. 17	472	142	14	417
Chicago Malleable Iron Company. (See Search, C. F., assignor.)						
Clark, C. B., Buffalo, N. Y. Lock-hinge	208,152	Sept. 17	617	183	14	436
Clark, H., Syracuse, N. Y. Chair	208,153	Sept. 17	618	183	14	437
Cleveland, O., Jersey City, N. J. Holder for lead-pencils	208,154	Sept. 17	619	183	14	437
Cooley, G. W., Minneapolis, Minn. Truss for bridges	208,155	Sept. 17	620	184	14	437
Cooper, W. A., *et al.* (See Obernetter, J. B., assignor.)						
Copeland, G. W., Malden, E. Woodward, and M. Brock, Boston, Mass., assignors to Copeland Lasting Machine Company, Hartford, Conn. Machine for lasting boots and shoes	208,156	Sept. 17	622	184, 185	14	437
Copeland Lasting Machine Company. (See Copeland, Woodward, and Brock, assignors.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Covert, J. C., Troy, N. Y. Rope-clamps	208,157	Sept. 17	628	185	14	438
Crary, J. W., Philadelphia, Pa. Hot-air furnace. (Reissue)	8,416	Sept. 17	691	203	14	445
Cropp, F. M., Platte county, Mo. Cultivator	208,073	Sept. 17	534	160	14	425
Crossley, A. S., *et al.* (See Crossley, C. M., assignor.)						
Crossley, C. M., assignor to himself, A. S. Crossley, and T. W. Bearden, Rutledge, Ga. Plow-stock	208,074	Sept. 17	534	160	14	426
Crotsenburg, N., Janesville, Wis. Flat-iron heater	208,075	Sept. 17	535	160	14	426
Crouch, R. B., *et al.* (See Aldridge, H., assignor.)						
Crumb, J. H. (See Lewis and Crumb.)						
Culver, C. B., *et al.* (See Baker, W. C., assignor.)						
Curtis, T. V., Le Mars, Iowa. Turn-table for stove-ovens	208,076	Sept. 17	536	160	14	426
Cushing, H. C., assignor to E. Detrick, San Francisco, Cal. Tent-pole	208,158	Sept. 17	628	185	14	438
Dashiell, R. S., Greensborough, N. C. Compound for preserving food	208,159	Sept. 17	629	.....	14	438
Davenport, W. J., *et al.* (See Patterson, W. W., assignor.)						
Davis, M. R., Jackson, Mich. Spring bed-bottom	208,077	Sept. 17	537	161	14	426
Davol, J. (See Bliss and Davol.)						
Day, W. H. H., assignor of one-fourth interest to A. A. Menzie, Angola, Ind. Station-indicator	208,160	Sept. 17	629	185	14	438
Detrick, E. (See Cushing, H. C., assignor.)						
Dickson, P., Spearfish City, Dak. Ter. Irrigating apparatus	208,078	Sept. 17	537	161	14	426
Dilworth, F. A., *et al.* (See Aldridge, H., assignor.)						
Duvall, W. B., *et al.* (See Baker, W. C., assignor.)						
Eaton, M. B., Le Roy, assignor of one-half interest to L. H. Rogers, Avon, N. Y. Compound for treating coal preparatory to burning	208,011	Sept. 17	472	.....	14	417
Eckes, C., West Sand Lake, N. Y. Neck-yoke coupling	208,012	Sept. 17	473	142	14	417
Ensign, F. E., North Granville, N. Y. Car-heater	208,013	Sept. 17	473	142	14	417
Epple, J. V., Chicago, Ill. Abdominal truss	208,079	Sept. 17	539	161	14	426
Ernwein, P., assignor to J. F. Callaway, Louisville, Ky. Switch for combined electric alarm and annunciator	208,161	Sept. 17	630	186	14	438
Faloon, M. (See Iseminger and Faloon.)						
Fate, J. M., Webster City, Iowa. Bucket-pump	208,080	Sept. 17	540	161	14	426
Fellheimer, A., assignor to S. Wormser & Co., New York, N. Y. Manufacturer of corsets	208,162	Sept. 17	632	186	14	438
Fitts, B., Worcester, Mass. Magnetic metal-separator	208,163	Sept. 17	633	186	14	439
Foreman, E. (See Foreman, E. L. and E.)						
Foreman, E. L. and E., Penfield, Ill. Gangway for transferring cattle	208,164	Sept. 17	635	187	14	439
Forman, J., assignor to himself and J. H. Wood, Helena, Ky. Car-coupling	208,081	Sept. 17	540	162	14	426
Foster, E. (See Randall and Foster.)						
Fowler, N. M., Beloit, Kans. Plow, harrow, and seed-planter	208,082	Sept. 17	541	162	14	427
Franklin, H. L., assignor to E. Whitaker and A. W. Bartlett, Brattleborough, Vt. Mop	208,165	Sept. 17	635	187	14	439
Fuller, C. A. (See Fallew and Fuller.)						
Galloway, T., and J. Larsen, Oshawa, Ontario, Canada. Locking device for the teeth of seeders	208,014	Sept. 17	475	143	14	418
Glidden, E. H., Somerville, Mass. Office-indicator	208,166	Sept. 17	636	187	14	439
Goodson, E. D. (See Woodward and Goodson.)						
Gorrell, J. B., La Otto, Ind. Spring-seat for wagons	208,083	Sept. 17	542	162	14	427
Gothard, I., Bainbridge, Ky. Fruit-picker	208,167	Sept. 17	637	187	14	439
Grant, K. P., San Buenaventura, Cal. Weeder	208,084	Sept. 17	543	162	14	427
Gray, H. M., *et al.*, trustee. (See Otis, N. S., assignor.) (Reissue.)						
Gray, W. S., *et al.* (See Otis, N. S., assignor.) (Reissue.)						
Green, C. E., 13 Blanford street, and R. Green, Ladbrooke Terrace, Notting Hill, England. Breech-loading fire-arm	208,085	Sept. 17	544	163	14	427
Green, R. (See Green, C. E. and R.)						
Green, W. R., Muscatine, Iowa. Brake for railway-cars	208,086	Sept. 17	545	163	14	427
Griswold, C. L., Chester, Conn., assignor of one-half interest to H. McTighe, New York, N. Y. Bit-stock	208,168	Sept. 17	638	188	14	439
Gue, B., New Baltimore, Mich. Churn	208,169	Sept. 17	639	188	14	439
Haney, W., East Haven, Conn. Auger	208,087	Sept. 17	546	163	14	427
Hardy, J. and J. G., Vienna, Austria. Railway-brake	208,170	Sept. 17	640	188	14	439
Hardy, J. G. (See Hardy, J. and J. G.)						
Hargreaves, J., Newark, N. J. Elliptic spring	208,171	Sept. 17	642	189	14	439
Harper, C. A., Jersey City, N. J., assignor of two-thirds interest to J. W. Russell and F. A. Potter. Hand-truck	208,172	Sept. 17	644	189	14	440
Harris, J. B., *et al.* (See Patterson, W. W., assignor.)						
Harvey, W. W., Clarksville, Tex. Cotton-cultivator	208,088	Sept. 17	547	164	14	427
Hauerwas, L., Hartford, Conn. Extension-ladder	208,089	Sept. 17	548	164	14	428
Hawkins, G. C., Stewartstown, W. Va. Fruit-picker	208,090	Sept. 17	548	164	14	428
Haynes, T., Kansas City, Mo. Car-axle lubricator	208,091	Sept. 17	549	{164 {165	{14	428
Heckman, A., Sterling, Ill. Corn-planter	208,015	Sept. 17	476	143	14	418
Heinen, C., Leavenworth, Kans. Brake-shoe clamp	208,092	Sept. 17	551	165	14	428
Henry, B. F., Miami, assignor to himself and W. E. Young, Saline county, Mo. Baking-pan and cover	208,173	Sept. 17	645	189	14	440
Henschel, M., New York, N. Y. Scarf	208,093	Sept. 17	551	165	14	428
Hersey, E., Hingham, Mass. Portable water-heater	208,174	Sept. 17	645	190	14	440
Herzfeldt, C., Jr., assignor of one-half interest to C. Herzfeldt, Sr., Chicago, Ill. Spring air-gun	208,016	Sept. 17	477	143	14	418
Higgins, W. C., Norwich, Conn. Soap-dish for iron sinks	208,094	Sept. 17	552	165	14	428
Hill, S., Trumbull, Conn. Anti-friction journal-bearing	208,095	Sept. 17	552	166	14	428
Hooper, N. B. (See Keenan, W., assignor.)						
House, H. A., Bridgeport, Conn. Paper dish	208,096	Sept. 17	553	166	14	428
House, H. A., Bridgeport, Conn. Apparatus for molding dishes from paper	208,097	Sept. 17	553	166	14	428
Hughes, F. L., Rochester, N. Y. Child's carriage. (Reissue)	8,417	Sept. 17	692	203	14	446
Humphreys, A. J., Gap Mills, W. Va. Grain-separator	208,175	Sept. 17	646	190	14	440
Huston W., Victor, Ill. Hog-trap	208,098	Sept. 17	555	{166 {167	{14	429
Ingalls, W. A., Providence, assignor of one-half interest to H. Whitman, Cranston, R. I. Door-securer	208,176	Sept. 17	647	190	14	440
International Gas Light Company. (See Slade, J., assignor.) (Reissue.)	8,418	Sept. 17	693	204	14	446
Iseminger, D. H., and M. Faloon, Bloomington, Ill. Automatic lighting device	208,099	Sept. 17	556	167	14	429
Jacobus, P. M., Newton, N. J. Violin	208,017	Sept. 17	498	143	14	418
Jacquin, G. (See McDonald, A., assignor.)						
Jarecki Manufacturing Company, (limited.) (See Morse, T. G., assignor.)						
Johnston, J. K., St. Louis, Mo. Burglar-alarm	208,177	Sept. 17	648	191	14	440
Johnston, L. F., Pocahontas, Ark. Husking and shelling implement	208,178	Sept. 17	649	191	14	440
Keenan, W., assignor of one-half interest to N. B. Hooper, Brooklyn, N. Y. Hat-pouncing machine	208,179	Sept. 17	650	191	14	440
Keenan, W., assignor of one-half interest to N. H. Hooper, Brooklyn, N. Y. Felting-machine	208,180	Sept. 17	651	191	14	441

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kellogg, A. N., Chicago, Ill. Means for holding stereotype-plates	208,181	Sept. 17	652	192	14	441
Kendrick, D. T., Boston, Mass. Combined calendar-dial and watch-crystal	208,182	Sept. 17	653	192	14	441
Kethledge, S., Center Point, Iowa. Lumber-measure	208,101	Sept. 17	559	168	14	429
Knapp, A. M., Providence, R. I. Toy	208,102	Sept. 17	561	168	14	429
Koch, H. H., and D. Lynahan, Buffalo, N. Y. Clasp for exhibiting shoe-laces	208,018	Sept. 17	479	144	14	418
Koehler, L. M., Burlington, Iowa. Ditching-plow	208,103	Sept. 17	562	168	14	429
Kraus, L. (See Bray, M. P., assignor.)						
Krutsch, W. W., Delphos, Ohio. Stirrup-planing machine	208,183	Sept. 17	654	192	14	441
Kurtz, J. M., Weston, Mo. Glazier's square and rule	208,104	Sept. 17	563	168	14	429
Kyle, J., Glasgow, North Britain, assignor to J. and J. Siddeley, Liverpool, England. Process and apparatus for making ice	208,019	Sept. 17	480	144	14	418
Larsen, J. (See Galloway and Larsen.)						
Lavalette, W. A., Washington, D. C. Printing-press	208,184	Sept. 17	655	192	14	441
Law, A. H., assignor of one-half interest to J. A. Sherriff, Aledo, Ill. Check-row attachment for corn-planters	208,020	Sept. 17	482	144	14	418
Leavitt, R., Boston, Mass. Shuttle for sewing-machines	208,021	Sept. 17	483	144	14	418
Leeson, W. R., Bridgewater, England. Spanner or wrench	208,105	Sept. 17	564	169	14	430
Lewis, R. R., and J. H. Crumb, De Ruyter, N. Y. Apparatus for smoking meat	208,185	Sept. 17	656	193	14	441
Liegel, G., Stralsund, Prussia. Gas-retort furnace	208,106	Sept. 17	566	{169 {170	{14	430
Lindop, W. E., *et al.* (See Obernetter, J. B., assignor.)						
Longsworth, M. V., Delphos, Ohio. Harness-pad. (Reissue)	8,418	Sept. 17	693	204	14	446
Lynahan, D. (See Koch and Lynahan.)						
Mackay, F. N. (See Sidderley and Mackay.)						
Mackrell, W. J., Clinton, Mass. Dovetail-grooved brick for plastering purposes	208,186	Sept. 17	657	.....	14	441
Mann, H. N., Chicago, Ill. Tobacco-package receptacle	208,187	Sept. 17	657	193	14	441
Marie, J. G., Wyandotte, Kan. Car-coupling	208,188	Sept. 17	658	193	14	442
Marsh, C. W., *et al.* (See Marsh and Bergqvest, assignors.)						
Marsh, W. W., and C. Bergqvest, assignors to said Marsh, C. W. Marsh, and A. M. Stark, Sycamore, and C. W. Mosher, Chicago, Ill. Wire-tightener	208,022	Sept. 17	484	145	14	419
Marshall, O., Stockton, Cal. Unloading-net	208,189	Sept. 17	658	193	14	442
Martin, A. D., Abbeville, La. Horse-collar	208,107	Sept. 17	567	170	14	430
Martin, P., Medford, assignor of one-fourth interest to S. Z. Bowman, Somerville, Mass. Oil-stove	208,108	Sept. 17	567	170	14	430
Mayer, M., assignor, by mesne assignments, to S. Mayer, New York, N. Y. Insole for boots and shoes	208,190	Sept. 17	659	194	14	442
Mayer, S. (See Mayer, M., assignor.)						
Maxwell, J., Rochester, N. Y. Burial-casket	208,023	Sept. 17	486	145	14	419
McCray, T. H., Evansville, Ind. Saw-sharpener	208,024	Sept. 17	487	145	14	419
McDonald, A., Washington, Ill., assignor of one-half interest to G. Jacquin. Coffee-roasting apparatus	208,025	Sept. 17	488	145	14	419
McDonald, A., Allegheny, Pa. Shaking-grate	208,109	Sept. 17	569	170	14	430
McDonald, A. E., Hartford, Conn. Railway-switch	208,026	Sept. 17	489	146	14	419
McFarland, D., Boonville, Mo. Combined shirt-bosom and collar	208,191	Sept. 17	660	194	14	442
McIntire, O. K., Springfield, Ohio. Force-pump	208,192	Sept. 17	660	194	14	442
McLaughlin, W., Banister, Va. Portable fence	208,027	Sept. 17	490	146	14	419
McNamara, M., Buffalo, N. Y. Fire-place stove	208,028	Sept. 17	491	146	14	419
McTighe, H. (See Griswold, C. L., assignor.)						
Mckenney, A., Middleborough, Mass. Carriage for spreading manure	208,029	Sept. 17	492	146	14	420
Menzie, A. A. (See Day, W. H. H., assignor.)						
Metcalf, D. H., Battle Creek, Mich. Window-screen	208,110	Sept. 17	570	171	14	430
Meyer, F. E. (See Schultze, F. E., assignor.)						
Michel, C., La Crosse, Wis. Device for securing corks in bottles	208,193	Sept. 17	661	194	14	442
Millen, J., Stapleton, N. Y. Fruit-jelly	208,111	Sept. 17	571	.....	14	430
Moore, G. W., Pittsburg, Pa. Heater and feeder for steam-boilers	208,194	Sept. 17	662	195	14	442
Moos, J. P., Lincoln, Ill. Check-rower for corn-planters	208,195	Sept. 17	663	195	14	442
Morgan, J., and T. Walton, Wheeling, W. Va. Lantern and lamp	208,112	Sept. 17	571	171	14	430
Morse, C. H., Rochester, and M. Sholes, Brockport, N. Y. Blacking-box	208,031	Sept. 17	495	147	14	420
Morse, T. G., assignor to Jarecki Manufacturing Company, (limited,) Erie, Pa. Boring-machine	208,030	Sept. 17	494	147	14	420
Mosher, C. W., *et al.* (See Marsh and Bergqvest, assignors.)						
Mueller, A., *et al.* (See Obernetter, J. B., assignor.)						
Mueller, T., Zanesville, Ohio. Safety-car	208,113	Sept. 17	574	{171 {172	{14	430
Neider, F. A., Augusta, Ky. Carriage-curtain window	208,196	Sept. 17	663	195	14	442
Noble, O. W., Wakefield, Mass. Coffee-pot	208,032	Sept. 17	496	148	14	420
Obernetter, J. B., Munich, Bavaria, Germany, assignor to B. F. Powelson and A. Mueller, Detroit, Mich., and W. A. Cooper and W. E. Lindop, St. Thomas, Canada. Photo-mechanical printing	208,114	Sept. 17	575	.....	14	431
Otis, N. S., New York, N. Y., assignor, by mesne assignments, to W. S. Gray and H. M. Gray, trustee. Temporary binder. (Reissue)	8,419	Sept. 17	694	204	14	446
Parker, J. N., assignor to himself and S. S. Gould, Vineland, N. J. Shoe	208,197	Sept. 17	664	195	14	442
Patterson, W. W., assignor of one-half interest to J. B. Harris and W. J. Davenport, Corning, Iowa. Car-brake	208,116	Sept. 17	577	172	14	431
Pattin, R., Marietta, Ohio. Breast-collar for harness	208,115	Sept. 17	576	172	14	431
Peck, G. W., Roselle, N. J. Can for oils and other liquids	208,117	Sept. 17	577	172	14	431
Peck, G. W., Roselle, N. J. Can for liquids	208,118	Sept. 17	578	173	14	431
Perkins, G. B. (See Raymond and Perkins.)						
Pernet-Jouffroy, G., Chalon-Sur-Saone, France. Machine for cutting and stamping matches	208,100	Sept. 17	557	167	14	429
Pershall, J. R., St. Paul, Minn. Recording-lock	208,033	Sept. 17	497	148	14	420
Phillips, Z., Little Rock, Ark. Baling-press	208,119	Sept. 17	579	173	14	431
Pick, I., London, England. Victorine	208,034	Sept. 17	498	148	14	420
Pickhardt, G. A., Barmen, Prussia, Germany. Wire-belting	208,198	Sept. 17	665	196	14	442
Pierce, I., Alma, Mich. Scoop	208,199	Sept. 17	665	196	14	443
Potter, F. A., *et al.* (See Harper, C. A., assignor.)						
Powelson, B. F., *et al.* (See Obernetter, J. B., assignor.)						
Price, M., New York, N. Y. Bosom-board	208,120	Sept. 17	584	173	14	432
Puckett, M., Walesca, Ga. Washing-machine	208,121	Sept. 17	585	174	14	432
Quackenbush, P. P., Philadelphia, Pa. Fire-extinguisher for car-stoves	208,200	Sept. 17	666	196	14	443
Randall, A. H., and E. Foster, Leamington, Ontario, Canada. Washing-machine	208,201	Sept. 17	666	196	14	443
Rankin, D., *et al.* (See Baron, A. L., assignor.)						
Raymond, G. N., and G. B. Perkins, Bridgeport, Conn. Hose-nozzle	208,122	Sept. 17	586	174	14	432
Roberts, G. S., Meredith, N. H. Molding-machine and wood molding	208,202	Sept. 17	667	197	14	443
Roberts, L. J., Meadville, assignor of one-half interest to R. C. Wright, Philadelphia, Pa. Flexible key for locks	208,123	Sept. 17	587	174	14	432
Roberts, M. N., Indianapolis, Ind. Sad-iron holder	208,035	Sept. 17	499	148	14	421
Robley, J., Brooklyn, N. Y. Manufacture of floor-cloth	208,036	Sept. 17	500	.....	14	421
Rogers, L. H. (See Eaton, M. B., assignor.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Roos, A., New York, N. Y. Beer-cooler. (Reissue)	8,420	Sept. 17	695	204	14	446
Root, S., Kentland, Ind. Sash-fastener	208,124	Sept. 17	587	174	14	432
Ross, Davis & Co. (See Ross, S., assignor.) (Reissue.)						
Ross, S., assignor to Ross, Davis & Co., Cincinnati, Ohio. Machine for beating out and molding the soles of boots and shoes. (Reissue)	8,421	Sept. 17	696	204	14	446
Russell, J. W., *et al.* (See Harper, C. A., assignor.)						
Sawyer, J., Adelaide Place, London Bridge, England. Obtaining arithmetical results	208,037	Sept. 17	501	149	14	421
Schmahl, M., New York, N. Y. Apparatus for wetting malt preparatory to mashing	208,038	Sept. 17	502	149	14	421
Schoch, M. L., New Berlin, Pa. Book-support	208,039	Sept. 17	503	150	14	421
Schreiner, H., Philadelphia, Pa. Car-starter	208,040	Sept. 17	504	150	14	421
Schultze, F. E., assignor of one-half interest to F. E. Meyer, New York, N. Y. Machine-gun	208,203	Sept. 17	669	197	14	443
Schultze, F. E., assignor of one-half interest to F. E. Meyer, New York, N. Y. Machine-gun	208,204	Sept. 17	674	198	14	444
Schwanengel, C. W., Dayton, Ohio. Leather-skiving machine	208,041	Sept. 17	505	150	14	421
Search, C. F., Chicago Ill., assignor to Chicago Malleable Iron Company. Clevis	208,042	Sept. 17	506	150, 151	14	421
Sellers, W., Haverhill, Mass. Dredge-bottle	208,125	Sept. 17	588	175	14	433
Seybold, F. J., St. Louis, Mo. Bottle-stopper	208,043	Sept. 17	508	151	14	422
Shahan, T. H., Boston, Mass. Bottle-stopper fastener	208,205	Sept. 17	675	198	14	444
Shahan, T. H., Boston, Mass. Bottle-stopper fastener	208,206	Sept. 17	676	198	14	444
Sherriff, J. A. (See Law, A. H., assignor.)						
Sherriffs, W. E., Boston, Mass. Combined overflow and outlet connection for bowls &c.	208,044	Sept. 17	509	151	14	422
Shirly, F. S., New Bedford, Mass. Tempering glass	208,207	Sept. 17	677	198, 199	14	444
Sholes, M. (See Morse and Sholes.)						
Siddeley, J., *et al.* (See Kyle, J., assignor.)						
Siddeley, J., and F. N. Mackay, Liverpool, England. Ether-meter for refrigerating-machines	208,045	Sept. 17	510	152	14	422
Simon, G., New York, N. Y. Trimming. (Reissue)	8,421	Sept. 17	699	205	14	446
Slade, J., Yonkers, assignor, by mesne assignments, to International Gas Light Company, New York, N. Y. Preventing loss of heat in charging gas-retorts. (Reissue)	8,422	Sept. 17	698	205	14	446
Smith, C. D., New York, N. Y. Steam-boiler furnace	208,209	Sept. 17	679	199	14	444
Smith, E. S., Good Hope, Ill. Windmill	208,208	Sept. 17	678	199	14	444
Snediker, W. E., Trenton, N. J. Wire-band cutter	208,046	Sept. 17	511	152	14	422
Southworth, L. V., Newport, Mich. Clover thrasher and huller	208,210	Sept. 17	680	200	14	444
Stark, A. M., *et al.* (See March and Bergqvest, assignors.)						
Stone, D. E., Indianapolis, Ind. Toy building-blocks	208,047	Sept. 17	511	152	14	422
Strait, C. L. (See Strait, W., assignor.)						
Strait, W., assignor to C. L. Strait, Oneonta, N. Y. Plow	208,048	Sept. 17	512	152	14	422
Strauss, H. S., New York, N. Y. Corset	208,049	Sept. 17	513	153	14	422
Streeter, N. R., Groton, N. Y. Shawl-strap	208,126	Sept. 17	589	175	14	433
Swasey, S. T., New York, N. Y. Screw-propeller	208,211	Sept. 17	681	200	14	444
Tatum, J. W., Centre, Ala. Churn-dasher	208,212	Sept. 17	682	201	14	445
Thomas, J. F., Ilion, N. Y. Dummy-engine	208,213	Sept. 17	682	201	14	445
Thomas, R. J., Milwaukee, Wis. Stop-valve	208,214	Sept. 17	686	202	14	445
Thompson, H. G., Milford, Conn., assignor to himself as trustee for The Magnetic Lasting Machine Association. Lasting mechanism for boots and shoes	208,127	Sept. 17	589	175	14	433
Tiesing, F. W., New Haven, Conn. Magazine fire-arm	208,128	Sept. 17	592	176	14	433
Tilton, J., New York, N. Y. Spring shoe bar for vehicles. (Reissue)	8,415	Sept. 17	690	203	14	445
Titus, J., North Hempstead, N. Y. Apparatus for transmitting and converting motion	208,050	Sept. 17	514	153	11	423
Vandawater, E., Manteno, Ill. Harrow	208,129	Sept. 17	594	177	14	433
Vincent Flexible Truck Company. (See Vincent, G., assignor.)						
Vincent, G., Stockton, assignor to Vincent Flexible Truck Company, San Francisco, Cal. Car-truck	208,215	Sept. 17	686	202	14	445
Walton, T. (See Morgan and Walton.)						
Welch, J. H., Hartford, Conn. Clock-case	208,216	Sept. 17	688	202	14	445
Wellman, S. T., Cleveland, Ohio. Hydraulic crane	208,051	Sept. 17	515	153, 154	14	423
Werne, H. L., Louisville, Ky. Curtain roller and bracket	208,130	Sept. 17	595	177	14	434
Whitaker, E., *et al.* (See Franklin, H. L., assignor.)						
Whitehead, E., Cincinnati, Ohio. Cradle	208,052	Sept. 17	516	154	14	423
Whitman, H. (See Ingalls, W. A., assignor.)						
Willson, F. R., Jr., and W. W., Columbus, Ohio. Vehicle-axle skein	208,131	Sept. 17	596	177	14	434
Willson, W. W. (See Willson, F. R., Jr., and W. W.)						
Wolfe, H. H., Salisbury, Conn. Ventilating cars	208,132	Sept. 17	597	177	14	434
Wood, J. H. (See Forman, J., assignor.)						
Woodward, E. (See Copeland, Woodward, and Brock.)						
Woodward, E., and E. D. Goodson, Boston, Mass. Punching and feeding device for eyeleting-machines	208,133	Sept. 17	598	178	14	434
Wormser & Co., S. (See Fellheimer, A., assignor.)						
Wright, M. V. B., Fort Worth, Tex. Water-elevator	208,217	Sept. 17	689	203	14	445
Wright, R. C. (See Roberts, L. J., assignor.)						
Young, W. E. (See Henry, B. F., assignor.)						

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 17th DAY OF SEPTEMBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Arithmetical results. Obtaining	J. Sawyer	208,037	Sept. 17	501	149	14	421
Auger	W. Haney	208,087	Sept. 17	546	163	14	427
Axle skein. Vehicle	F. R., Jr., and W. W. Willson	208,131	Sept. 17	596	177	14	434
Bag	J. Arkell	208,138	Sept. 17	604	179	14	435
Band cutter. Wire	W. E. Snediker	208,046	Sept. 17	511	152	14	422
Bed-bottom. Spring	M. R. Davis	208,077	Sept. 17	537	161	14	426
Belting. Wire	G. A. Pickhardt	208,198	Sept. 17	665	196	14	442
Binder. Temporary	N. S. Otis. (Reissue)	8,419	Sept. 17	694	204	14	446
Bit-stock	C. L. Griswold	208,168	Sept. 17	638	188	14	439
Blacking-box	C. H. Morse and M. Sholes	208,031	Sept. 17	495	147	14	420
Boilers. Heater and feeder for steam	G. W. Moore	208,194	Sept. 17	662	195	14	442
Book-support	M. L. Schoch	208,039	Sept. 17	503	150	14	421
Boot and shoe insole	M. Mayer	208,190	Sept. 17	659	194	14	442
Boot and shoe lasting machine	G. W. Copeland, E. Woodward, and M. Brock.	208,156	Sept. 17	622	184, 185	14	437
Boot and shoe lasting mechanism	H. G. Thompson	208,127	Sept. 17	589	175	14	433
Boot and shoe soles. Machine for beating out and molding	S. Ross. (Reissue)	8,421	Sept. 17	696	204	14	446
Boots and mittens. Apparatus for drying moist	B. F. Buxton	208,070	Sept. 17	531	159	14	425
Boring-machine	T. G. Morse	208,030	Sept. 17	494	147	14	420
Bosom-boards	M. Price	208,120	Sept. 17	584	173	14	432
Bottle-stopper	H. Bell	208,146	Sept. 17	612	181	14	436
Bottle-stopper	F. J. Seybold	208,043	Sept. 17	508	151	14	422
Bottle-stopper fastener	T. H. Shahan	208,205	Sept. 17	675	198	14	444
Bottle-stopper fastener	T. H. Shahan	208,206	Sept. 17	676	198	14	444
Bottles. Device for securing corks in	C. Michel	208,193	Sept. 17	661	194	14	442
Bowls, &c. Combined overflow and outlet connection for	W. E. Sherriffs	208,044	Sept. 17	509	151	14	422
Brake. Car	W. W. Patterson	208,116	Sept. 17	577	172	14	431
Brake. Railway	J. and J. G. Hardy	208,170	Sept. 17	640	188	14	439
Brake. Railway-car	W. R. Green	208,086	Sept. 17	545	163	14	427
Brake-shoe clamp	C. Helnen	208,092	Sept. 17	551	165	14	428
Brick for plastering purposes. Dovetailed grooved	W. J. Mackrell	208,186	Sept. 17	657	.....	14	441
Bridge-truss	G. W. Cooley	208,155	Sept. 17	620	184	14	437
Burglar-alarm	J. K. Johnston	208,177	Sept. 17	648	191	14	440
Burial-casket	J. Maxwell	208,023	Sept. 17	486	145	14	419
Calendar-dial and watch-crystal. Combined	D. T. Kendrick	208,182	Sept. 17	653	192	14	441
Can for liquids	G. W. Peck	208,118	Sept. 17	578	173	14	431
Can for oils and other liquids	G. W. Peck	208,117	Sept. 17	577	172	14	431
Can. Tin	S. H. Bradford	208,065	Sept. 17	527	158	14	425
Cap and stopper fastener. Screw	J. K. Chase	208,010	Sept. 17	472	142	14	417
Car-coupling	J. Forman	208,081	Sept. 17	540	162	14	426
Car-coupling	J. G. Maris	208,188	Sept. 17	658	193	14	442
Car-heater	F. E. Ensign	208,013	Sept. 17	473	142	14	417
Car-roof	H. Aldridge	208,007	Sept. 17	469	141	14	417
Car-safety	T. Müeller	208,113	Sept. 17	574	171, 172	14	430
Car-starter	H. Schreiner	208,040	Sept. 17	504	150	14	421
Carriage. Child's	F. L. Hughes. (Reissue)	8,417	Sept. 17	692	203	14	446
Carriage-curtain window	F. A. Neider	208,196	Sept. 17	663	195	14	442
Cattle. Gangway for transferring	E. L. and E. Forman	208,164	Sept. 17	635	187	14	439
Chair	H. Clark	208,153	Sept. 17	618	183	14	437
Churn	B. Gue	208,169	Sept. 17	639	188	14	439
Churn-dasher	J. W. Tatum	208,212	Sept. 17	682	201	14	445
Clevis	C. F. Search	208,042	Sept. 17	506	150, 151	14	421
Clock-case	J. H. Welch	208,216	Sept. 17	688	202	14	445
Coal preparatory to burning. Compound for treating	M. B. Eaton	208,011	Sept. 17	472	.....	14	417
Coffee-pot	O. W. Noble	208,032	Sept. 17	496	148	14	420
Coffee-roasting apparatus	A. McDonald	208,025	Sept. 17	488	145	14	419
Cooler. Beer	A. Roos. (Reissue)	8,420	Sept. 17	695	204	14	446
Corset	M. P. Bray	208,066	Sept. 17	527	158	14	425
Corset	H. S. Strauss	208,049	Sept. 17	513	153	14	422
Corsets. Manufacture of	A. Fellheimer	208,162	Sept. 17	632	186	14	438
Cotton-condenser	T. Camp	208,071	Sept. 17	532	159	14	425
Cradle	E. Whitehead	208,052	Sept. 17	516	154	14	423
Crane. Hydraulic	S. T. Wellman	208,051	Sept. 17	515	153, 154	14	423
Cultivator	F. M. Cropp	208,073	Sept. 17	534	160	14	425
Cultivator. Cotton	W. W. Harvey	208,088	Sept. 17	547	164	14	427
Curtain roller and bracket	H. L. Werne	208,130	Sept. 17	595	177	14	434

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Door-securer	W. A. Ingalls	208,176	Sept. 17	647	190	14	440
Dredge-bottle	W. Sellers	208,125	Sept. 17	588	175	14	433
Electric alarms and annunciators. Switch for	P. Ernwein	208,161	Sept. 17	630	186	14	438
Elevator-bucket	W. J. Bennett	208,147	Sept. 17	612	181	14	436
Elevator. Water-	M. V. B. Wright	208,217	Sept. 17	689	203	14	445
Engine. Dummy	J. F. Thomas	208,213	Sept. 17	682	201	14	445
Eyeleting-machines. Punching and feeding device for	E. Woodward and E. D. Goodson	208,133	Sept. 17	598	178	14	434
Felting-machine	W. Keenan	208,180	Sept. 17	651	191	14	441
Fence barb. Wire-	C. H. Baker and F. L. Bestor	208,140	Sept. 17	607	180	14	435
Fence. Portable	W. McLaughlin	208,027	Sept. 17	490	146	14	419
Filter	J. and R. Bean	208,144	Sept. 17	610	181	14	435
Fire-arm. Breech-loading	C. E. and R. Green	208,085	Sept. 17	544	163	14	427
Fire-arm. Magazine	F. W. Tiesing	208,128	Sept. 17	592	176	14	433
Fire-extinguisher for car-stoves	P. P. Quackenboss	208,200	Sept. 17	666	196	14	443
Flat-iron heater	N. Crotsenberg	208,075	Sept. 17	535	160	14	426
Floor-cloth. Manufacture of	J. Robley	208,036	Sept. 17	500	.....	14	421
Food-preserving compound	R. S. Dashiell	208,159	Sept. 17	629	.....	14	438
Fruit-picker	I. Gothard	208,167	Sept. 17	637	187	14	439
Fruit-picker	G. C. Hawkins	208,090	Sept. 17	548	164	14	428
Furnace. Gas-retort	G. Siegel	208,106	Sept. 17	566	169 170	14	430
Furnace. Hot-air	J. W. Crary. (Reissue)	8,416	Sept. 17	691	203	14	445
Furnace. Steam-boiler	C. D. Smith	208,209	Sept. 17	679	199	14	444
Gas-regulator	J. Adams	208,134	Sept. 17	599	178	14	434
Gas-retorts. Preventing loss of heat in charging	J. Slade. (Reissue)	8,422	Sept. 17	698	205	14	446
Glass tempering	F. S. Shirley	208,207	Sept. 17	677	198 199	14	444
Governor for fluid-pressure engines	B. Brazello	208,067	Sept. 17	528	158	14	425
Governor. Steam-engine	B. Brazello	208,149	Sept. 17	614	182	14	436
Grain-binder	J. F. Appleby	208,137	Sept. 17	603	179	14	435
Grain-separator	A. J. Humphreys	208,175	Sept. 17	646	190	14	440
Grate. Hot-air	A. H. Buckhout	208,069	Sept. 17	530	159	14	425
Grate. Shaking	A. McDonald	208,109	Sept. 17	569	170	14	430
Gun. Machine-	F. E. Schultze	208,203	Sept. 17	669	197	14	443
Gun. Machine-	F. E. Schultze	208,204	Sept. 17	674	197	14	444
Gun. Spring air-	C. Herzfeldt, Jr	208,016	Sept. 17	477	143	14	418
Harness breast-collar	R. Pattin	208,115	Sept. 17	576	172	14	431
Harness-pad	M. V. Longsworth. (Reissue)	8,418	Sept. 17	693	204	14	446
Harrow	E. Vandawater	208,129	Sept. 17	594	177	14	434
Harvester guard-finger	T. W. Ballew and C. A. Fuller	208,141	Sept. 17	607	180	14	435
Hat-pouncing machine	W. Keenan	208,179	Sept. 17	650	191	14	440
Heater. Portable water-	E. Hersey	208,174	Sept. 17	645	190	14	440
Hinge. Lock-	C. B. Clark	208,152	Sept. 17	617	184	14	436
Hoe	J. N. Parker	208,097	Sept. 17	664	195	14	442
Hog-trap	W. Huston	208,098	Sept. 17	555	166 167	14	429
Horse-collar	A. D. Martin	208,107	Sept. 17	567	170	14	430
Hose-nozzle	G. N. Raymond and G. B. Perkins	208,122	Sept. 17	586	174	14	432
Husking and shelling implement	L. F. Johnston	208,178	Sept. 17	649	191	14	440
Hydrant	C. Carr	208,072	Sept. 17	532	159	14	425
Ice. Process and apparatus for making	J. Kyle	208,019	Sept. 17	480	144	14	418
Index	H. Beach	208,143	Sept. 17	610	180	14	435
Indicator. Office-	E. H. Glidden	208,166	Sept. 17	636	187	14	439
Indicator. Station-	W. H. H. Day	208,160	Sept. 17	629	185	14	438
Irrigating apparatus	P. Dickson	208,078	Sept. 17	537	161	14	426
Jelly. Fruit-	J. Millen	208,111	Sept. 17	571	.....	14	430
Journal-bearing. Anti-friction	S. Hill	208,095	Sept. 17	552	166	14	428
Ladder. Extension-	L. Hauerwas	208,089	Sept. 17	548	164	14	428
Lantern	A. L. Baron	208,142	Sept. 17	608	180	14	435
Lantern and lamp	J. Morgan and T. Walton	208,112	Sept. 17	571	171	14	430
Leather-skiving machine	C. W. Schwanengel	208,041	Sept. 17	505	150	14	421
Lighting device. Automatic	D. H. Iseminger and M. Faloon	208,099	Sept. 17	556	167	14	429
Lock. Recording-	J. R. Pershall	208,033	Sept. 17	497	148	14	420
Lock. Vehicle seat-	W. B. Allen	208,136	Sept. 17	602	179	14	435
Locks. Flexible key for	L. J. Roberts	208,123	Sept. 17	587	174	14	432
Lubricator. Car-axle	T. Haynes	208,091	Sept. 17	549	164 165	14	428
Lumber-measure	S. Kethledge	208,101	Sept. 17	559	168	14	429
Magnetic metal-separator	B. Fitts	208,163	Sept. 17	633	186	14	439
Malt preparatory to mashing. Apparatus for wetting	M. Schmahl	208,038	Sept. 17	502	149	14	421
Manure. Carriage for spreading	A. Mckenney	208,029	Sept. 17	492	146	14	420
Match cutting and stamping machine	G. Pernet-Jouffroy	208,100	Sept. 17	557	167	14	429
Meat-smoking apparatus	R. R. Lewis and J. H. Crumb	208,185	Sept. 17	656	193	14	441
Medicament for catarrh	J. W. Blosser	208,064	Sept. 17	526	.....	14	424
Molding-machine and wood moldings	G. S. Roberts	208,202	Sept. 17	667	197	14	443
Mop	H. L. Franklin	208,165	Sept. 17	635	187	14	439
Motion. Apparatus for transmitting and converting	J. Titus	208,050	Sept. 17	514	153	14	423
Net. Unloading-	O. Marshall	208,189	Sept. 17	658	193	14	442
Overcoat	J. F. Carter	208,151	Sept. 17	616	182 183	14	436
Pan and cover. Baking	B. F. Henry	208,173	Sept. 17	645	189	14	440
Paper dish	H. A. House	208,096	Sept. 17	553	166	14	428
Paper dishes. Apparatus for molding	H. A. House	208,097	Sept. 17	553	166	14	428
Pencils. Holder for lead-	O. Cleveland	208,154	Sept. 17	619	183	14	437
Pipe-fastener. Adjustable	G. Burkhardt	208,150	Sept. 17	616	182	14	436
Pipe. Soap-bubble	S. B. Bliss	208,063	Sept. 17	526	157	14	424
Pitcher. Double-walled	H. B. Beach	208,056	Sept. 17	520	155	14	424
Planter. Corn-	A. Heckman	208,015	Sept. 17	476	143	14	418
Planters. Check-row attachment for corn-	A. H. Law	208,020	Sept. 17	482	144	14	418
Planters. Check-rower for corn-	J. P. Moos	208,195	Sept. 17	663	195	14	442
Plow	W. Stralt	208,048	Sept. 17	512	152	14	422
Plow. Ditching-	L. M. Koehler	208,103	Sept. 17	562	168	14	429
Plow, harrow, and seed-planter	N. M. Fowler	208,082	Sept. 17	541	162	14	427
Plow-stock	C. M. Crossley	208,074	Sept. 17	534	160	14	426
Plow-sulky	J. E. Alexander	208,053	Sept. 17	517	154	14	423
Potato-digger	S. L. Allen	208,008	Sept. 17	470	141	14	417
Power. Device for transmitting	W. C. Baker	208,055	Sept. 17	519	155	14	423
Press. Baling-	Z. Phillips	208,119	Sept. 17	579	173	14	431

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Printing. Photo-mechanical	J. B. Obernetter	208,114	Sept. 17	575	.....	14	431
Printing-press	W. A. Lavalette	208,184	Sept. 17	655	192	14	441
Propeller. Screw-	S. T. Swasey	208,211	Sept. 17	681	200	14	444
Pump	A. H. Ashley	208,054	Sept. 17	518	155	14	423
Pump. Bucket-	J. M. Fute	208,080	Sept. 17	540	161	14	426
Pump. Force-	O. K. McIntire	208,192	Sept. 17	660	194	14	442
Railway-switch	A. E. McDonald	208,026	Sept. 17	489	146	14	419
Razor-strop	G. W. Brown	208,068	Sept. 17	530	158	14	425
Refrigerating-machines. Ether-meter for	J. Siddeley and F. M. Mackay	208,045	Sept. 17	510	152	14	422
Refrigerator	A. Bettridge	208,148	Sept. 17	613	182	14	436
Rope-clamp	J. C. Covert	208,157	Sept. 17	628	185	14	438
Sad-iron holder	M. N. Roberts	208,035	Sept. 17	499	148	14	421
Sash-fastener	S. Root	208,124	Sept. 17	587	174	14	432
Saw-sharpener	T. H. McCray	208,024	Sept. 17	487	145	14	419
Scarf	M. Henschel	208,093	Sept. 17	551	165	14	428
Scoop	I. Pierce	208,199	Sept. 17	665	196	14	443
Screen. Window-	D. H. Metcalf	208,110	Sept. 17	570	171	14	430
Seeders. Locking device for the teeth of	T. Galloway and J. Larsen	208,014	Sept. 17	475	143	14	418
Sewing-machine shuttle	R. Leavitt	208,021	Sept. 17	483	144	14	418
Shawl-strap	N. R. Streeter	208,126	Sept. 17	589	175	14	433
Ships' logs. Rotator for	J. and G. H. Bliss	208,061	Sept. 17	524	157	14	424
Shirt bosom and collar. Combined	D. McFarland	208,191	Sept. 17	660	194	14	442
Shoe-laces. Clasp for exhibiting	H. H. Koch and D. Lynahan	208,018	Sept. 17	479	144	14	418
Sign	J. L. Blackmer	208,060	Sept. 17	523	157	14	424
Soap-dish for iron sinks	W. C. Higgins	208,094	Sept. 17	552	165	14	428
Spanner or wrench	W. R. Lecson	208,105	Sept. 17	564	169	14	430
Spring. Elliptic	J. Hargreaves	208,171	Sept. 17	642	189	14	439
Square and rule. Glaziers'	J. M. Kurtz	208,104	Sept. 17	563	168	14	429
Stamping, shearing, and punching machine. Metal	J. T. Bedford	208,009	Sept. 17	471	141	14	417
Steamer. Feed-	W. H. Allard	208,135	Sept. 17	601	178	14	434
Stereotype-plates. Means for holding	A. N. Kellogg	208,181	Sept. 17	652	192	14	441
Stirrup-planing machine	W. W. Krutsch	208,183	Sept. 17	654	192	14	441
Stove. Fire-place	N. McNamara	208,028	Sept. 17	491	146	14	419
Stove. Oil-	P. Martin	208,108	Sept. 17	567	170	14	430
Stove-ovens. Turn-table for	T. V. Curtis	208,076	Sept. 17	536	160	14	426
Syringe	E. N. Bliss and J. DaCol	208,062	Sept. 17	524	157	14	424
Tent-pole	H. C. Cushing	208,158	Sept. 17	628	185	14	438
Thrasher and huller. Clover	L. V. Southworth	208,210	Sept. 17	680	200	14	444
Tobacco-package receptacle	H. N. Mann	208,187	Sept. 17	657	193	14	441
Tooth-powder box	H. Bell	208,145	Sept. 17	611	181	14	436
Toy	A. M. Knapp	208,102	Sept. 17	561	168	14	429
Toy building-block	D. E. Stone	208,047	Sept. 17	511	152	14	422
Trimming	G. Simon. (Reissue)	8,423	Sept. 17	699	205	14	446
Truck. Car-	A. Berry	208,058	Sept. 17	521	156	14	424
Truck. Car-	G. Vincent	208,215	Sept. 17	686	202	14	445
Truck. Hand-	C. A. Harper	208,172	Sept. 17	644	189	14	440
Truss. Abdominal	J. V. Epple	208,079	Sept. 17	539	161	14	426
Valve. Stop-	R. J. Thomas	208,214	Sept. 17	686	202	14	445
Vehicles. Spring side bar for	J. Tilton. (Reissue)	8,415	Sept. 17	690	203	14	445
Ventilating cars	H. H. Wolfe	208,132	Sept. 17	597	177	14	434
Victorine	I. Pick	208,034	Sept. 17	498	148	14	420
Violin	P. M. Jacobus	208,017	Sept. 17	478	143	14	418
Wagons. Spring-seat for	J. B. Gorrell	208,083	Sept. 17	542	162	14	427
Washing-machine	M. Puckett	208,121	Sept. 17	585	174	14	432
Washing-machine	A. H. Randall and E. Foster	208,201	Sept. 17	666	196	14	443
Water-trap for waste-pipes	W. P. Austin	208,139	Sept. 17	606	179	14	435
Weeder	K. P. Grant	208,084	Sept. 17	543	162	14	427
Windmill	E. S. Smith	208,208	Sept. 17	678	199	14	444
Wire-tightener	W. W. Marsh and C. Bergqvest	208,022	Sept. 17	484	145	14	419
Wrench	A. Beck	208,057	Sept. 17	521	156	14	424
Wrench	J. S. Birch	208,059	Sept. 17	522	156	14	424
Yoke coupling. Neck-	C. Eckes	208,012	Sept. 17	473	142	14	417

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COMMISSIONER'S DECISIONS.

HOE *et al. vs.* SCOTT.—*Interference.*

[*Motion to dissolve in the matter of the interference between the applications of Richard M. Hoe, William Mendham, S. D. Tucker, (Case A,) and Walter Scott for* "IMPROVEMENT IN PAPER-FOLDING MACHINES."—*Case* "*L.*"—*Decided October* 2, 1878.]

Old elements newly combined to produce distinctive effects are not anticipated by prior organizations of the same elements accomplishing substantially different results, even though the language of the claim may construe with equal facility to cover each particular combination.

None the less is an interference proper which includes several parties having substantially the same combination of parts, although these parts may be differently designated or named by the contestants.

DOOLITTLE, *Acting Commissioner:*

Motion is made on behalf of Scott, one of the above-named applicants, to dissolve this interference on three grounds:

1st. The claims involved are so general and indefinite that they are not patentable, and ought not to be allowed.

2d. The subject-matter of the interference is substantially anticipated in the following patents: W. Bullock, April 14, 1863, No. 38,200; W. Bullock, February 12, 1867, No. 61,996.

3d. If restricted to what is new and patentable in their several improvements, no interference will exist between the applicants.

These objections are particularly urged against claims 12 and 13 of Scott's application, 4, 5, and 6 of Tucker's, and 1, 2, and 3 of Hoe's.

The claims of Scott in interference are as follows:

12. The combination of the fingers *i* and *i'*, substantially as and for the purpose set forth.

13. The combination of the fingers *i i'*, rock-shaft K, provided with an arm, *k*, and cam, N³, substantially as described.

The first of these claims is for the combination of the fingers *i* and *i'*, irrespective of the mechanism by which such fingers are operated. They perform the function of arresting momentarily the printed sheet on its advance to the folding mechanism. They operate in grasping the sheet simultaneously, and therefore differ from the fingers of Bullock's patent of April 14, 1863, No. 38,200, which operate successively and in connection with a delivery-roller to stop the sheet altogether. The combinations and results accomplished are both different.

In the last-named patent of Bullock of 1867, an entirely different combination is claimed from that set up by the parties to this proceeding. The claim in that patent is for the endless belt, carrying nippers, in combination with a vibrating fly-frame for throwing down the sheet and arresting its motion. The object of that improvement is the removing of sheets of paper from rotary presses and piling them rapidly. The nippers described therein are attached to belts or bands which are actuated to receive the sheet from the printing-cylinder to carry it under a vibrating fly-frame preparatory to the throwing down of the same upon the fly board or table, upon which the sheets are received in a pile. Neither in construction nor in operation are the nippers in that case the equivalents of the checking devices involved in this interference. These references, therefore, must be regarded as not pertinent.

The claims of Tucker placed in interference are as follows:

4. The brake-arms in combination with a gage-bar for controlling the movement of the sheet, substantially as described.

5. The combination of brake arms, rest-blocks, and supporting carrying tapes, substantially as described.

6. The combination of brake-arms, rest-blocks, carrying-tapes, and gage-bars, substantially as described.

The above claims of the respective parties set forth different features and different combinations, but as they all relate to the accomplishment of the same result, they were properly put in interference, as the function of the subject-matter of each claim relates to the controlling and checking mechanism, and it matters little by what names the mechanisms or combinations

of mechanisms are known so long as their equivalent results are attained.

The above claims of Tucker are clear in terms, referring specifically to features that are clearly described in the specification. They also constitute proper combinations, being novel assemblages of co-operative parts producing new and useful results. Each of the elements named has its action adjusted to correspond with the operation of the others, and to simultaneously or successively co-operate to accomplish the desired result.

The motion to dissolve is denied.

DECISIONS OF THE COURTS.

Circuit Court of the United States—Northern District of New York.

SUSAN HAMILTON *vs.* GILBERT J. KINGSBURY AND GEORGE T. DAVIS.

The grant of the full and exclusive right to use and sell the invention within a limited territory, the grantor reserving a right (not the exclusive right) to make: *Held*, under all the circumstances, to vest a right to make in the grantees.

If the invention could not be made except at the will or after further arrangement with the grantor, then the right to use and sell is valueless, and the consideration paid is without return.

So, too, if the exclusive right to make never left the grantor, the words of reservation retaining in himself a right to make are useless, and their presence in the deed of conveyance without significance.

To give effect to every part of the instrument, it was ruled that the exclusive right to make within the territory was enjoyed in common by grantor and grantees.

"Legal representatives" includes assignees as well as executors and administrators in its terms, under the particular circumstances.

[*W. H. Bright*, for the plaintiff; *H. R. Selden*, for the defendants.]

OPINION.—*July* 12, 1778.

BLATCHFORD, *J.*:

This suit is founded on letters patent of the United States granted to Palmer Hamilton, December 5, 1865, for "improvements in saw-mills," of which the plaintiff claims to be the owner. The defendants interpose a plea to the bill. The matters set up in the plea are as follows: Palmer Hamilton on the 1st of August, 1866, assigned to Milton A. Hamilton all the right, title, and interest of Palmer Hamilton in the invention covered by the patent, "as it is or may be applied to muley or single upright mill-saws" for the whole of the United States. Milton A. Hamilton on the 27th of August, 1866, assigned to Clinton A. Lombard and John Thompson, "and to their legal representatives," for the consideration of $3,000, "the full and exclusive right to use and to sell to be used the said saw-hangings," (the invention being previously in the assignment stated to be known as Hamilton's oscillating and reciprocating saw-hangings,) "as they are or may be applied to muley or single upright mill-saws, as secured by the said letters patent, for and in the State of New York, I excepting and reserving the right to manufacture the said invention for myself and legal representatives." Lombard & Thompson on the 29th of April, 1868, for the consideration of $10,000, assigned to Robert P. Russell, Montgomery Reese, and the firm of Strong & Woodbury, in equal shares of one-third each, all the right, title, and interest of Lombard and Thompson in the invention patented, for, to, and in the State of New York. Reese on the 15th of July, 1868, in consideration of $1,200, assigned to Russell and the firm of Strong & Woodbury, in equal shares of one-half to each, all the right, title, and interest of Reese in the invention patented, for, to, and in the State of New York. Strong & Woodbury on the 10th of December, 1869, in consideration of $1,000, assigned to the defendants all the right, title, and interest of Strong & Woodbury in the invention patented, for the State of New York, except the counties of Cayuga and Franklin. "The defendants did not make or sell any machines containing the patented invention" prior to the assignment from Strong & Woodbury to them, except that within a year prior to that time they made for Strong & Woodbury, and at their request, a small number of said machines, and since said assignment they have not made, used, or sold any machine containing said invention, except that they have made and sold muley and single upright mill-saws containing said invention within the State of New York other than in the counties of Cayuga and Franklin in that State.

The bill sets up an assignment by Palmer Hamilton to Milton A. Hamilton on the 1st of August, 1866, of the entire patent, and an assignment by Milton A. Hamilton to Palmer Hamilton on the 12th of March, 1867, of the entire patent, and an assignment by Palmer Hamilton to the plaintiff on the 18th of April, 1873, of the entire patent. The plea alleges that the assignment set up in the bill from Milton A. Hamilton to Palmer Hamilton was not recorded in the Patent Office until after the time when the defendants made the purchase from Strong & Woodbury, and received from them the said assignment; that the defendants had no notice of such assignment from Milton A. Hamilton to Palmer Hamilton until after this suit was brought; and that they made the purchase from Strong & Woodbury and received from them said assignment, and paid them therefor in good faith the consideration of $1,000, therein expressed, without any knowledge or notice that any such assignment as that from Milton A. Hamilton above mentioned there or ever existed, and in the full belief that the said assignment from Strong & Woodbury gave to them a perfect title to such interest in the patent as it purported to convey. The bill alleges that the defendants, in violation of the rights conferred by the patent, and in infringement thereof, have made and sold, without the license of Palmer Hamilton, or Milton A. Hamilton, or the plaintiff, large numbers of machines containing the patented inventions, and have cut large amounts of lumber with such machines and have realized large profits from such infringement. It also alleges that the plaintiff is the owner, by assignment, of all the rights of action for infringement of the patent which occurred to either Palmer Hamilton or Milton A. Hamilton. The plea alleges that the assignment from Milton A. Hamilton to Lombard & Thompson was recorded in the Patent Office on the 22d of October, 1866, that the assignment from Lombard & Thompson was recorded in the Patent Office on the 7th of August, 1868, and that the assignment from Reese was recorded in the Patent Office on 7th of August, 1868.

It is contended for the defendants on the hearing in the bill and plea that the assignment from Milton A. Hamilton to Lombard & Thompson gave to the latter the exclusive right to use and sell to be used, the said hangings as applied to muley or single upright mill-saws within the State of New York, and the right to manufacture the same for such use or sale, in common with a right to manufacture the same, reserved to said Milton A. Hamilton. For the plaintiff it is contended that by the assignment to Lombard & Thompson the privilege granted to them is limited to the right to use and sell, and that Milton A. Hamilton expressly reserved to himself the right to manufacture.

The language of the assignment to Lombard & Thompson is inartificial and awkward, but the meaning of it is, I think, clear. The grantor, having the right to the patent for the whole of the United States, for its application to muley or single upright mill-saws—that is, the exclusive right for the whole of the United States to make, use, and sell saw-hangings according to the patent as applied to muley or single upright mill-saws—conveys to Lombard & Thompson, for $3,000, the exclusive right to use and sell saw-hangings according to the patent as applied to muley or single upright mill-saws for and in the State of New York, and excepts and reserves to himself the right to manufacture the patented invention. He conveys the exclusive right to use and sell in the State of New York. He does not convey the exclusive right to make in that State, because he reserves the privilege of making himself in that State. He retains the exclusive right to use and sell in other States, and the privilege of making in the State of New York for use and sale in other States, if desirable to him. He does not except and reserve the exclusive right to make in the State of New York, but merely a right to make. On all proper rules of construction the exception and reservation must be held to be an exception and reservation of something which, but for such exception and reservation, would pass by the granting part to the grantee. A right to use and sell, and especially an exclusive right to use and sell, for which $3,000 is paid, would be practically valueless if no machines to use or sell could be obtained except by some further agreement with the grantor, who retained the exclusive right to make. The construction contended for by the plaintiff requires that the exception and reservation should be read as if it excepted and reserved the "exclusive" right to manufacture. It does not. In view of the fact that there can be no use or sale of a machine unless it can be made, it is a violent wresting of language to construe the exception as one of an exclusive right to make, as compared with a construction which makes the grant one of an exclusive right to make, use, and sell, reserving to the grantor a right to make. The effect of such a grant, coupled with the reservation, is to grant an exclusive right to use and sell and a right to make and to reserve a right to make in common with the right of the grantee to make, the grantor not retaining any right to use or sell in the State of New York and the grantee not acquiring any right to use or sell out of the State of New York any machines made by him in that State. If the granting clause be held to cover nothing but the right to use and sell, the reservation clause is of no force. The instrument, on such view, would have the same effect without the reservation clause as with it. It is plain that the grantor regarded the granting clause as bearing the interpretation that it would carry the right to make, and that, because of the use of the word "exclusive," it might be held to be an exclusive right to make as well as an exclusive right to use and sell, and that, desiring to reserve a right to make and to grant a right to make, the language used was used, the effect being to leave the right to make in the State of New York exclusive in the grantee and the grantor in common, and the right to use and sell exclusive in the grantee. This interpretation is the only one which gives effect to all the words found in the instrument. (*Woodworth* vs. *Curtiss*, 2 Woodf. & U., 524.)

The assignment is to Lombard and Thompson "and to their legal representatives," to be held and enjoyed by them for their own use and behoof "and for the use and behoof of their legal representatives." It is contended for the plaintiff that the instrument conveyed a mere personal license to Lombard & Thompson, and that it did not authorize them to assign their right. I think otherwise. The words "legal representatives" must be held to mean "assigns" as well as "executors and administrators." It certainly means something. If it means "executors and administrators" and not "assigns," the instrument ceases to be a personal license. But it is fair to suppose that both grantor and grantees understood that for $3,000 the grant was to be assignable, and that the parties understood by "legal representatives" those who would legally represent the grantees by a legal and valid voluntary transfer from them equally with those who would represent them by a legal and valid voluntary transfer. Especially is this so when we find that the grantor, in the reservation clause, excepts and reserves the right to manufacture "for himself and legal representatives." He not only could not have intended to cut himself off from the right to assign the reserved right to make, but he must have contemplated that in there using the words "legal representatives" he included assignees.

The plea does not admit the doing by the defendants of anything which it can, on the bill and the plea, be held it was unlawful for them to do, and the plea must be allowed, with costs to the defendants, with liberty to the plaintiff to move, on notice within thirty days after service of a copy of the order to be entered herein, for leave to amend his bill, under Rule 35 in equity, and in default thereof the bill must be dismissed with costs.

Erratum.

In OFFICIAL GAZETTE of September 10, 1878, read *G. B. Turrell* for "G. B. Tussell," in reported opinion of Nixon, J., page 377.

Issue of September 24, 1878.

Patents	237—No.	208,218 to No.	208,454, inclusive.
Reissues	14—No.	8,424 to No.	8,437, inclusive.
Designs	5—No.	10,841 to No.	10,845, inclusive.
Trade-Marks	33—No.	6,601 to No.	6,633, inclusive.
Labels	6—No.	1,693 to No.	1,698, inclusive.
Total issue	295		

TRADE-MARKS.

[Each certificate bearing date September 24, 1878.]

6,601.—CHAMPAGNE.—*Adams & Co.*, New York, N. Y. Application filed June 22, 1878.

"The representation of the red crescent and the monogram composed of the letters and character 'A & Co.' in connection with which we shall use the name 'California,' as shown."

6,602.—BILLIARD-TABLE CUSHIONS.—*The J. M. Brunswick & Balke Company*, Cincinnati, Ohio, and Chicago, Ill. Application filed July 9, 1878.

"The word-symbol 'UNRIVALED MONARCH.'"

6,603.—CIGARETTES.—*Gorfine Brothers*, New York, N. Y. Application filed September 4, 1878.

"The representation of a laughing human face, used in connection with the words 'OLD JOKER.'"

6,604.—TOILET-SOAP.—*Solon Palmer*, Newark, N. J. Application filed August 14, 1878.

"The arbitrarily-selected word 'INDIA.'"

6,605.—STEAM-PUMPS.—*Pulsometer Steam Pump Company*, New York, N. Y. Application filed September 6, 1878.

"The word-symbol 'PULSOMETER.'"

6,606.—COTTON-BATTING.—*Putnam, Hooker & Co.*, Cincinnati, Ohio. Application filed August 29, 1878.

"The word-symbol 'PEARL.'"

6,607.—SALT.—*H. K. & F. B. Thurber & Co.*, New York, N. Y. Application filed September 10, 1878.

"The word-symbol 'EUREKA,' in combination with the likeness or picture of a griffin's head."

6,608.—PRINTING-PRESSES.—*Francis M. Weiler*, New York, N. Y. Application filed September 12, 1878.

"The word-symbol 'LIBERTY.'"

6,609.—CIGARS, CIGARETTES, SMOKING AND CHEWING TOBACCO, AND SNUFF.—*Whitlock & Northen*, Richmond, Va. Application filed September 9, 1878.

"The word-symbol 'MODEL.'"

6,610.—PRINTED PUBLICATIONS.—*Donaldson Brothers*, New York, N. Y. Application filed September 13, 1878.

"The representation of a star and the word-symbol 'STAR.'"

6,611.—PERFUMES.—*Charles Lubrecht*, Brooklyn, N. Y. Application filed September 13, 1878.

"The arbitrary word 'CIRCASSIAN.'"

6,612.—REMEDIES FOR RHEUMATISM AND GOUT.—*Julien Verliac*, Paris, France. Application filed September 11, 1878.

"The representation of a circle formed by two serpents, said circle containing a plant, and the word-symbol 'UGEIA' in Greek letters, and the fac-simile signature, 'LAVILLE, D. M. P.'"

6,613.—CARAMELS.—*A. D. Curran & Co.*, Philadelphia, Pa. Application filed September 7, 1878.

"The monogram of the initial-letters ('C. L. C.') of the members of the firm."

6,614.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *S. Jacoby & Co.*, New York, N. Y. Application filed September 13, 1878.

"The arbitrary words 'BEACON LIGHT.'"

6,615.—SMOKING AND CHEWING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*Francis Jones*, Utica, N. Y. Application filed August 31, 1878.

"The word 'CHAMPION' and of the figure of a pugilist in ring-costume."

6,616.—PAPER-CUTTING MACHINES.—*The Standard Machinery Company*, Mystic River, Conn. Application filed June 27, 1878.

"The arbitrarily-selected word 'PRINTERS.'"

6,617.—SMOKING AND CHEWING TOBACCO AND CIGARS.—*Allen & Co.*, New York, N. Y. Application filed September 11, 1878.

"The word-symbol 'JURY.'"

6,618.—FLOUR.—*Belknap & Boynton*, Boston, Mass. Application filed July 26, 1878.

"The words 'AGE OF PROGRESS.'"

6,619.—BUCKSKIN, JEANS, AND DOESKIN CLOTHS.—*John Brown & Sons*, Philadelphia, Pa. Application filed September 10, 1878.

"A pictorial representation of the great seal of the State of California, in connection with the word 'CALIFORNIA.'"

6,620.—TOBACCO-BAGS.—*William J. Cussen*, Richmond, Va. Application filed August 23, 1878.

"The fanciful word 'KEYSTONE.'"

6,621.—PEA-NUTS.—*Kemp B. Elliott*, Norfolk, Va. Application filed September 7, 1878.

"The figure of a hand."

6,622.—FLOUR.—*Charles N. Harrington*, Cleveland, Ohio. Application filed June 21, 1878.

"The representation of the shield and the name 'C. N. HARRINGTON,' substantially as shown."

6,623.—CHEWING-TOBACCO.—*R. A. Patterson & Co.*, Richmond, Va. Application filed September 13, 1878.

"The fancifully-selected words 'JUNE ROSE.'"

6,624.—CIGARS, CIGARETTES, AND CHEWING AND SMOKING TOBACCO. *Byron A. Shotwell*, New York, N. Y. Application filed September 7, 1878.

"The warrior, chariot, and lions, and the word-symbol 'HERO.'"

6,625.—CIGARS.—*B. Frank Weyman*, Pittsburg, Pa. Application filed September 12, 1878.

"The word-symbol 'TRIUMPH.'"

6,626.—CIGARS.—*B. Frank Weyman*, Pittsburg, Pa. Application filed September 12, 1878.

"The word-symbol 'EXPERIMENT.'"

6,627.—OVERALLS, JUMPERS, AND READY-MADE GOODS FOR OUTSIDE WEAR.—*William G. Badger*, San Francisco, Cal. Application filed September 16, 1878.

"The word-symbol 'HERCULES.'"

6,628.—FRUITS.—*Argus Dean*, Otto, Ind. Application filed August 15, 1878.

"The letter and word 'A. DEAN.'"

6,629.—SMOKING-TOBACCO.—*B. Leidersdorf & Co.*, Milwaukee, Wis. Application filed September 2, 1878.

"The figure of a running horse with a rider smoking a pipe."

6,630.—FERTILIZING COMPOSITION.—*R. W. L. Rasin & Co.*, Baltimore, Md. Application filed September 10, 1878.

"The word-symbol 'HOPE.'"

6,631.—SODA-WATER AND TEMPERANCE BEER.—*Robert Robinson*, Brooklyn, N. Y. Application filed August 13, 1878.

"The fanciful word 'QUEER.'"

6,632.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Byron A. Shotwell*, New York, N. Y. Application filed September 7, 1878.

"The sphinx, the pyramids, and the word-symbol 'PYRAMIDS.'"

6,633.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Byron A. Shotwell*, New York, N. Y. Application filed September 7, 1878.

"The moon partially hidden in the clouds, the forked lightning, the allegorical female figures, and the word-symbol 'CLOUDS.'"

LABELS.

[Each certificate bearing date September 24, 1878.]

1,693.—Title: "CARBOLIZED COSMOLINE."—*E. F. Houghton & Co.*, Philadelphia, Pa. Application filed September 9, 1878.

1,694.—(Print,) Title: "U. S. MAIL."—*Heppenheimer & Maurer*, New York, N. Y. Application filed September 18, 1878.

1,695.—(Print,) Title: "FLOWERS OF PETROLEUM."—*William E. Jervey*, New York, N. Y. Application filed September 14, 1878.

1,696.—Title: "MRS. KENDALL'S OINTMENT."—*Elizabeth Kendall*, Dunstable, Mass. Application filed September 4, 1878.

1,697.—Title: "PERSIAN KABABA."—*Gilbert L. Stevens*, Meadville, Pa. Application filed July 30, 1878.

1,698.—(Print,) Title: "PURE SUBLIMED WHITE LEAD."—*Samuel P. Wetherill*, Philadelphia, Pa. Application filed September 18, 1878.

DESIGNS.

[Each design bearing date September 24, 1878.]

10,841.—ORNAMENTAL CHAIN.—*Daniel A. Beam*, Newark, N. J. Application filed September 10, 1878. Term of patent 3½ years.

10,842.—BROOCH.—*Hiram Howard*, New York, N. Y. Application filed August 23, 1878. Term of patent 3½ years.

10,843.—PADLOCKS.—*Henry R. Towne* and *Warren H. Taylor*, Stamford, Conn., assignors to *The Yale Lock Manufacturing Company*, same place. Application filed July 26, 1878. Term of patent 14 years.

10,844.—SADDLES.—*Royal E. Whitman*, Springfield, Mass. Application filed September 2, 1878. Term of patent 14 years.

10,845.—BUTTONS.—*James H. Wilson*, Philadelphia, Pa. Application filed September 6, 1878. Term of patent 3½ years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

SEPTEMBER 24, 1878.

206,218. FELLY-JOINT HOLDERS. Clinton Adams, Washington, D. C. Filed Sept. 5, 1878.



Claim.—The lock A, provided with the bifurcations *a a*, in combination with the fellies B, plate D, and the bolt C, all constructed to operate substantially as and for the purpose set forth.

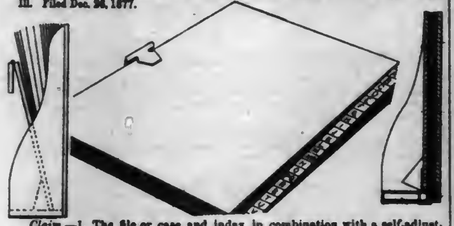
206,219. FOUNTAIN-PENS. George B. Adams, Newark, N. J. Filed Mar. 15, 1878.

Brief.—Cap *c''* is connected to rod *r* by a pin, P, passing through the eye of the latter and diametrically-disposed slots in the inner case, *c*. By raising cap *c''*, rod *r* is withdrawn into the reservoir to allow a flow of ink to the pen, and upon releasing said cap the rod is immediately seated by the tubular rubber spring *e*, and further flow of ink temporarily arrested.



Claim.—The tubular rubber spring *e*, ring *r'*, and actuating-cap *c''*, in combination with the rod *r* and tapering tubular point P', substantially as shown and described.

206,220. TEMPORARY BINDERS FOR LETTERS AND PAPERS. William A. Amberg, Chicago, Ill. Filed Dec. 26, 1877.



Claim.—1. The file or case and index, in combination with a self-adjusting cover hinged at its back edge, and stops to prevent the cover from opening beyond a certain angle, substantially as specified.

2. The index made with hinging-tags, substantially as shown, projecting backward from the rear edges of the leaves.

3. The combination, in a letter-file, of the adjustably-hinged index and adjustably-hinged cover, substantially as specified.

4. The combination, in a letter-file, of the case, the removable self-adjusting hinged index, and cover, substantially as specified.

5. The combination of the case, the centrally-hinged removable self-adjusting index, and cover, substantially as specified.

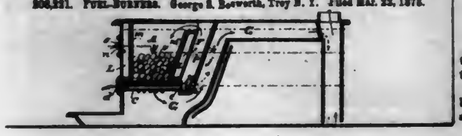
6. The combination, with the case, having a slotted recess in the back, of the index and cover, both provided with hinging-tags projecting backward from the rear edge, substantially as specified.

7. The self-adjusting cover, hinged centrally to the back of the case, and provided with two stops, one at each side of the hinge, substantially as specified.

8. The file-case cut with a recess at the back, and provided with the slotted metal slide, substantially as specified.

9. The file-case provided with a removable metal label-holder or name-plate, hollowed to receive the label, and secured to the back of the case by means of the slotted metal slide, which forms a part of the hinging device, substantially as specified.

206,221. FUEL-BURNERS. George S. Bosworth, Troy N. Y. Filed Mar. 22, 1878.



Claim.—1. In a lifting-machine, the combination, with a truck-axle provided with a band or chain wheel and mechanism for actuating the same in rotary movement, of a lifting-frame suitably connected with the axle and adapted to be vertically adjusted by said rotary movement of the same, substantially as set forth.

2. A lifting apparatus consisting in the combination, with a lifting-frame, of an axle upon which the same has eccentric bearing, together with mechanism adapted to rotate said axle, and thereby operate to raise said frame, substantially as set forth.

3. A lifting apparatus consisting of the frame A, with projecting prongs A', for seizing the object to be lifted, truck-wheels and axle for supporting the said frame near the article to be lifted, eccentric bearings for the said frame, and mechanism for turning the said eccentric bearings and causing them to lift the weight, substantially as and for the purpose described.

4. The lifting apparatus consisting of the frame A, with prongs A', truck-wheels C, shaft B, with eccentric B', and supporting-stirrups B', in combination with band-wheel D and F, chain or belt E, and crank F', substantially as and for the purposes described.

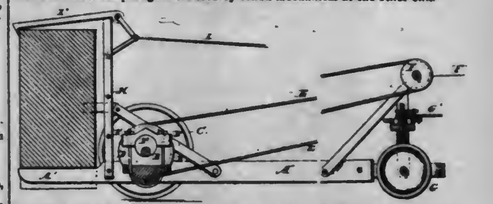
5. The combination, with the lifting apparatus, substantially as described, of pilot mechanism G G', substantially as and for the purposes described.

6. The combination, with the frame A, prongs A', and bracket H, of the rope or chain I and grapple I', substantially as and for the purposes described.

7. A lifting-machine consisting in the combination, with a truck, of a lifting-frame supported by eccentric connection with the axle of the same, together with mechanism which extends rearward, and is adapted to operate said axle in rotary movement at any suitable distance therefrom, substantially as set forth.

206,222. TRUCK APPARATUS FOR LIFTING AND CONVEYING INGOTS, POTS, &c. Alexander E. Brown, Cleveland, Ohio. Filed July 22, 1878.

Brief.—The device is particularly adapted for lifting pots or vessels, ingots, &c., from hot furnaces, but may be used for lifting and conveying weights generally. It is pushed so as to seize the article and carry it on the prongs, and the frame and prongs are raised by crank mechanism at the other end.



Claim.—1. In a lifting-machine, the combination, with a truck-axle provided with a band or chain wheel and mechanism for actuating the same in rotary movement, of a lifting-frame suitably connected with the axle and adapted to be vertically adjusted by said rotary movement of the same, substantially as set forth.

2. A lifting apparatus consisting in the combination, with a lifting-frame, of an axle upon which the same has eccentric bearing, together with mechanism adapted to rotate said axle, and thereby operate to raise said frame, substantially as set forth.

3. A lifting apparatus consisting of the frame A, with prongs A', for seizing the object to be lifted, truck-wheels and axle for supporting the said frame near the article to be lifted, eccentric bearings for the said frame, and mechanism for turning the said eccentric bearings and causing them to lift the weight, substantially as and for the purpose described.

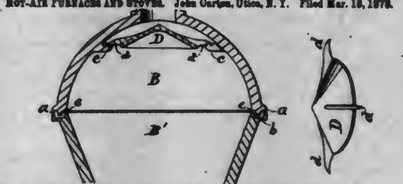
4. The lifting apparatus consisting of the frame A, with prongs A', truck-wheels C, shaft B, with eccentric B', and supporting-stirrups B', in combination with band-wheel D and F, chain or belt E, and crank F', substantially as and for the purposes described.

5. The combination, with the lifting apparatus, substantially as described, of pilot mechanism G G', substantially as and for the purposes described.

6. The combination, with the frame A, prongs A', and bracket H, of the rope or chain I and grapple I', substantially as and for the purposes described.

7. A lifting-machine consisting in the combination, with a truck, of a lifting-frame supported by eccentric connection with the axle of the same, together with mechanism which extends rearward, and is adapted to operate said axle in rotary movement at any suitable distance therefrom, substantially as set forth.

206,223. HOT-AIR FURNACES AND STOVES. John Carter, Utica, N. Y. Filed Mar. 18, 1878.



Claim.—1. In combination with the dome B, having the sockets *a* cast on the inner surface thereof, the conical plate D, provided with arms *d*, substantially as and for the purposes described.

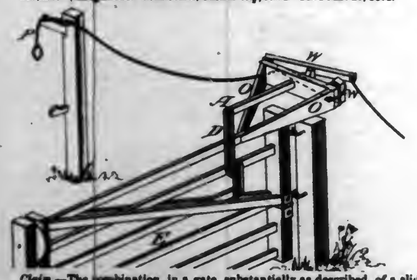
2. The conical plate D, having the arms *d* made solid therewith, in combination with the sockets *a*, formed on the inner side of the dome B, as herein specified.

206,224. FERTILIZER. Amariah F. Orswell, Wood's Hall, Mass. Filed July 26, 1878.

Claim.—1. The product or fertilizing compound resulting from the process as herein described, such product consisting of the combination of the above-named pisciual fluid and the soluble portions of a superphosphate.

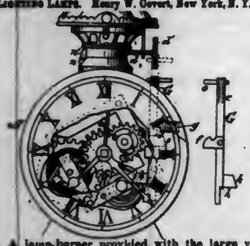
2. The process, substantially as described, of producing the aforesaid new fertilizer, such consisting in mixing a superphosphate with the described non-oleaginous piscinal fluid and removing the insoluble matter, and subsequently evaporating the solution to dryness, or to such degree as may be required.

206,225. FARM-GATES. John Gellis, Central City, Iowa. Filed June 27, 1878.



Claim.—The combination, in a gate, substantially as described, of a slide-bar, A, pivoted lever D, latch E, arms O, with wings W and ropes F for opening and closing, and also notch-block n and wheel B, with which to fasten the gate.

206,226. SELF-LIGHTING LAMPS. Henry W. Covert, New York, N. Y. Filed Jan. 31, 1878.



Claim.—1. A lamp-burner provided with the large vertically adjustable wick and a small auxiliary wick, in combination with the means heretofore described for automatically raising and lowering the adjustable wick, as and for the purpose set forth.

2. A lamp-burner provided with a vertically adjustable wick moved by a toothed wheel, *d'*, upon the shaft *d*, in combination with a vertically-sliding toothed bar, G, or its equivalent, substantially as and for the purpose specified.

3. The sliding toothed bar G, or its equivalent, provided with catch k and tripping-block *l*, in combination with a tripping-arm, *m*, attached to a clock-train, substantially as and for the purpose shown and described.

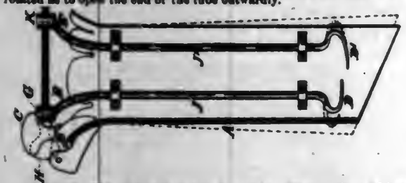
4. The case A, provided with the chamber B, for the reception of a train of clock-work, and the oil-receptacle C, placed between the clock-train and its dial, as shown and described.

5. The stops *n* and *n'*, attached to the stationary and revoluble parts of a lamp-burner, for the purpose of preventing the rotation of the latter beyond a specified point, as set forth.

6. A lamp-burner provided with a large vertically-adjustable wick and a small auxiliary wick or its equivalent, when used in combination with a train of clock-work, as and for the purpose set forth.

206,227. VAGINAL SPECULUM. Samuel G. Dorr, Buffalo, N. Y. Filed Mar. 9, 1878.

Brief.—The body of the speculum is made by coiling a sheet of hard rubber into a tube with free overlapping edges. Inside shafts, with arms, are so rotated as to open the end of the tube outwardly.



Claim.—1. The vaginal speculum formed by coiling a sheet of hard rubber, or other equivalent rigid and elastic material, into a scroll or tube, with free overlapping edges, substantially as described.

2. The combination of the scroll or tube A with the clamp B, or its equivalent, substantially as described.

3. The combination of the scroll or tube A with the shafts J J', the arms D D' E E', and the thumb-screw H, or their equivalents, substantially as described.

206,228. ROCK-DRILLING ENGINE. Wm. H. Elliot, New York, N. Y. Filed July 6, 1878.

Claim.—1. In a rock-drilling machine, the packing *x* and *x'*, in combination with a piston-rod and drill-tool having the passages *v'* and *v''*, substantially as specified.

2. In a rock-drilling engine, the combination of the several joints herein described for obtaining the double parallel and double lateral movements of the rock-drill, said double movements being independent of each other, substantially as and for the purpose specified.

3. In a rock-drilling engine, the oscillating and sliding carriage *f*, in combination with the carriage *c''*, jacket *h*, and vertical shaft *j*, substantially as and for the purpose described.

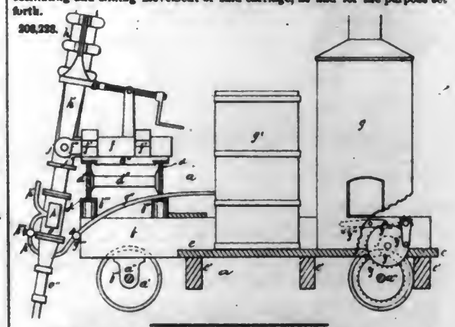
4. The train of gears *y*, crank *y'*, and locking-lever *y''*, in combination with a rock-drilling engine, substantially as and for the purpose set forth.

5. In a rock-drilling engine, a car composed of two wheel-frames supported at each end upon independent wheels, a platform bolted to the under side of the wheel-frames, and a drill-frame secured upon the top of said wheel-frames, substantially as and for the purpose specified.

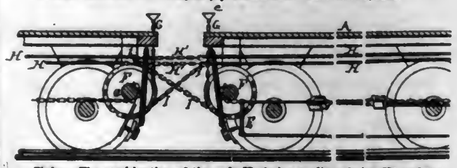
6. In a rock-drilling engine, the arms *n* and screws *m'*, in combination with the sliding and oscillating carriage *f* and carriage *c''*, whereby the carriage *f* is adjusted and rigidly held in its oscillating movement, while it is left free in its sliding movement, as set forth.

7. In a rock-drilling engine, the combination of the adjusting-screw *k''* with the oscillating and sliding carriage *f* and the jacket *h*, pivoted together at *f'''*, whereby a parallel lift is given to the rock-drill independently of the oscillating and sliding movement of said carriage, as and for the purpose set forth.

206,229.



206,230. CAR-BRAKES. Henry Empey, Detroit, Mich. Filed Feb. 15, 1878.



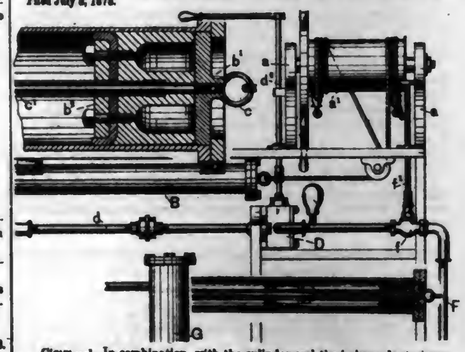
Claim.—The combination of the rods H, their coupling-chains H', and the chains I, for connecting the same with the drums F of the described brake system, whereby the latter can be operated by a motor at the end of the train, substantially as set forth.

206,230. MANUFACTURE OF JEWELERS' FEDERS. George H. Fuller, Pawtucket, R. I. Filed June 24, 1878.



Claim.—The combination of the socket *d* with the indented disk *a* and wire *c*, in the manner and for the purposes substantially as shown and described.

206,231. STEAM OR HYDRAULIC STEERING APPARATUS. John Oxen, Portland, Oreg. Filed July 5, 1878.



Claim.—1. In combination, with the cylinder and the independent piston, the tiller ropes or rods, rendering through the cylinder, provided with an eye, substantially as described.

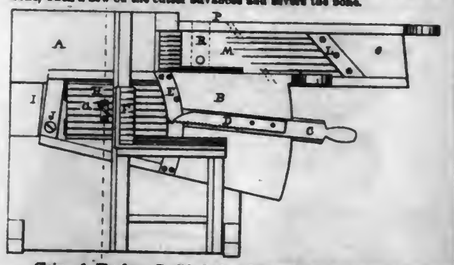
2. In combination with a steam-boiler and feed-pump, the reservoir G, the system of pipes F *d*, the valve-chest D, and the cylinder B, as described.

3. In combination with the cylinder and the tiller ropes or rods, rendering through the cylinder, the independent piston, the construction being such that the ropes may be used, if desired, without moving the piston.

4. The valve-rest described, having inlet-ports with D-shaped openings.

206,232. MEAT-CUTTERS. Lewis L. Gilliland, Dayton, Ohio. Filed Dec. 6, 1877.

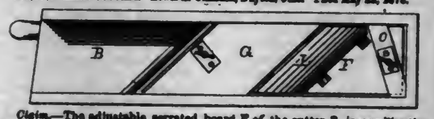
Brief.—Two cutters are arranged on the frame—one for cutting or slicing meat and the other for cutting a ham, by cutting down to and around the bone, when a saw on the cutter advances and severs the bone.



Claim.—1. The frame B, slide I, pivot J, hinged adjustable serrated board H, and knife E, in combination with the platform F and frame A, substantially as shown and described.

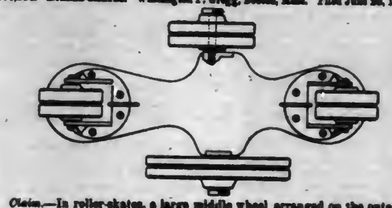
2. The frame B, slide I, pivot J, hinged adjustable serrated board H, knife E, saw D, with handle C, in combination with the platform F and frame A, the whole constructed and operated substantially as specified.

206,233. MEAT-CUTTERS. Lewis L. Gilliland, Dayton, Ohio. Filed May 22, 1878.



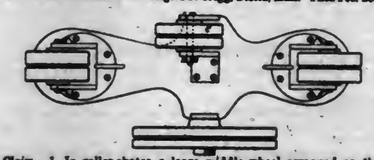
Claim.—The adjustable serrated board F of the cutter B, in combination with the braces G and C, the hinged board L, constructed, arranged, and operated substantially as described.

206,234. ROLLER-SKATES. Washington P. Gregg, Boston, Mass. Filed June 20, 1878.



Claim.—In roller-skates, a large middle wheel arranged on the outer side of the stock, in combination with a smaller middle wheel arranged at the inner side of the stock, substantially as and for the purposes described.

206,235. ROLLER-SKATES. Washington P. Gregg, Boston, Mass. Filed Feb. 20, 1878.



Claim.—1. In roller-skates, a large middle wheel arranged on the outer side of the stock, in combination with a smaller middle wheel arranged under the inner side of the stock, substantially as set forth.

2. A middle wheel arranged under the outer side of the skate, having wheels or rollers at each end, substantially as and for the purposes described.

3. A large middle wheel arranged on the outer side of the skate, in combination with smaller wheels or rollers at each end, substantially as and for the purposes described.

4. Detachable middle wheels and their fixtures arranged with the stock, substantially as and for the purposes set forth.

206,236. HARVESTER CUTTERS AND GUARD-FINGERS. Duncan L. Grove and Arad S. Beach, Groton, N. Y., assignors of one-half their right to Elland E. Clark and Dexter H. Marsh, same place. Filed May 6, 1878.

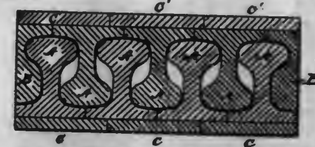


Claim.—1. In combination with the cutter-bar *c*, having the headed rivets *e* projecting from its top, the cutter-sections *d*, having the T-shaped slots through their rear ends, all of which slots extend in the same direction toward the points of said sections, so that by moving any one of the sections longitudinally it can be removed and replaced independently of all the others, substantially as set forth.

2. In a mower and reaper, a guard or finger having a longitudinal slot, *f*, and lever *i*, substantially as described.

3. The combination of the plates *f*, provided with devices for holding their ends so that they cannot move laterally, with the pivoted locking-latches, whereby, when the locking-latch appertaining to a guard-plate is removed, the plate can be slid backward out of position, substantially as described.

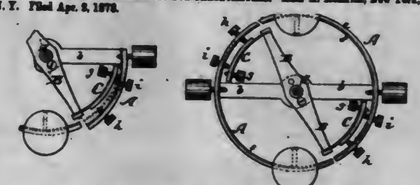
206,237. PILES FOR MANUFACTURING NAIL-PLATES. Frank J. Hearne, Wheeling, W. Va. Filed June 26, 1878.



Claim.—1. The improved pile for manufacturing nail-plates, constructed of a series of interlocking rails or rail-pieces, the flanges of the upper and lower series being in contact, respectively, and resting upon the heads of the rails of the opposite series, leaving spaces in the interior of the pile for the free circulation of the heat, and with side pieces made to fit the end rails of the pile, to square it up and diminish the waste by burning, substantially as and for the purpose set forth.

2. The improved pile for the manufacture of nail-plates, composed of top and bottom plates, C C', a series of interlocking rails, A, the flanges of the upper rails being in contact and resting upon the tops of the lower series, and vice versa, and end pieces, B B, fitted to the sides of the rails, in the manner and for the purpose set forth.

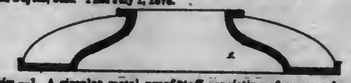
206,238. SELF-ADJUSTING BALANCES FOR CHRONOMETERS. Max H. Helmich, New York, N. Y. Filed Apr. 2, 1878.



Claim.—1. The auxiliary balance composed of the cut rim A, having pins or screws *h i*, in combination with the spring C, having the weight *g*, substantially as herein shown and described.

2. The movable arm B, carrying springs C C, and weights *g g*, in combination with the slit rim A, which is constructed of two thicknesses of metal and carries the pins or screws *h i*, substantially as and for the purpose specified.

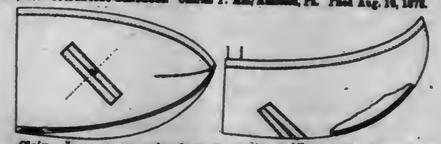
206,239. CIRCULAR METAL PROOF-STAFFS FOR TESTING MILLSTONES. John W. Herchenroder, Dayton, Ohio. Filed July 1, 1878.



Claim.—1. A circular metal proof-staff consisting of an annular testing-plate supported and held rigid by ribs proceeding from an elevated hub or ring whose bottom edges are elevated and inclined to form a dome-shaped or concave recess beneath them, as set forth.

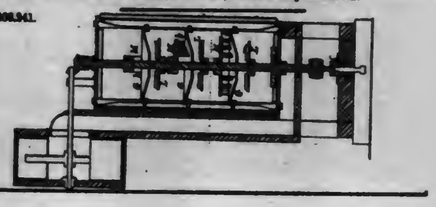
2. A circular metal proof-staff consisting of an annular testing-plate supported and held rigid by a central dome and radial ribs, substantially as set forth.

206,240. SUSPENSORY-BANDAGE. Charles F. Hill, Easton, Pa. Filed Aug. 10, 1878.



Claim.—In a suspensory bandage, the combination of two slots running at an angle to each other, each slit being made in a separate thickness of the material out of which the bandage is made, substantially as shown.

206,241.

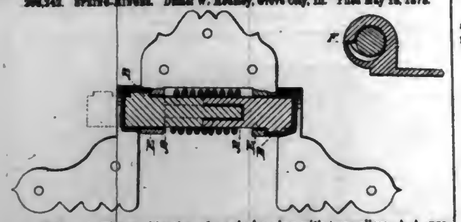


206,341. BRUT-MACHINES. Winfield S. Hills, Boone, Iowa. Filed Apr. 17, 1878.

Claim.—1. The combination of the concave plates G G, having openings in the center for the discharge of the grain, and the beaters M, having teeth b b converging on their inner faces toward the main shaft, substantially as herein before set forth.

2. The combination of the concave plates G, beaters M, with converging teeth, and disks or plates L, attached to the main shaft, substantially as herein before set forth.

206,342. SPRING-HINGES. Daniel W. Hensley, Grove City, Ill. Filed May 18, 1878.

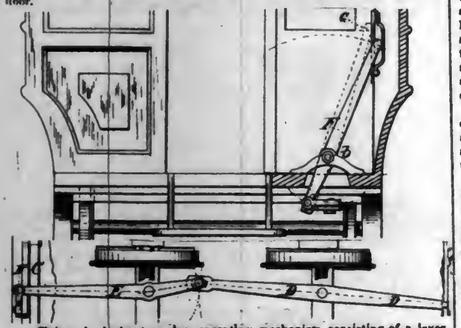


Claim.—1. The combination of a spiral spring with two rollers, A A, provided with lugs B B and slots K K, substantially as described, and for the purpose set forth.

2. The combination of a spiral spring and rollers, A A, lugs B B, and slots K K with four eyes, E E and G G, provided with internal notches F F F F, substantially as herein set forth.

206,343. STREET-CAR-DOOR OPENERS. John Hutton, Jr., Brooklyn, N. Y. Filed Apr. 30, 1878.

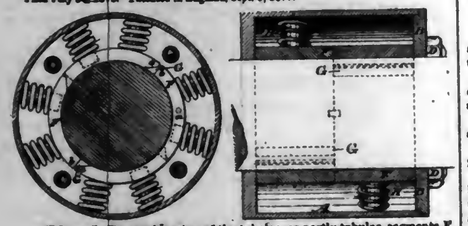
Brief.—One or more levers, pivoted to oscillate in a horizontal plane beneath the body of the car, directly connect two vertically-swinging levers, one operated by the driver and the other loosely secured to and operating the door.



Claim.—1. A street-car door-operating mechanism consisting of a lever, F, pivoted so as to oscillate in a vertical plane, a lever, G, similarly pivoted at the driver's platform, and one or more levers connecting the two directly, pivoted underneath the body of the car, so as to oscillate in a horizontal plane, substantially as described and specified.

2. The combination of the levers F, E, D, and G, pivoted as described, constituting a street-car-door opening and closing mechanism, substantially as described.

206,344. PACKING FOR STUFFING-BOXES. William Jagger, Horsforth, near Leeds, England. Filed July 30, 1878. Patented in England, Sept. 5, 1877.

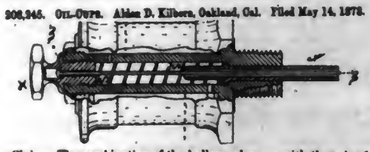


Claim.—1. The combination of the tubular, or partly-tubular, segments F, having one radially-cut and one undercut edge or face, with the wedge-pieces G, having correspondingly-cut faces, and arranged to alternate with the segments, substantially as and for the purposes set forth.

2. The combination of the tubular, or partly-tubular, segments F, each having one undercut and one radially-cut face or edge, the triangular wedge-pieces G, having curved bases to fit the rod or moving part, and faces to fit and correspond-ing with the faces of the segments, as shown, and suitable springs arranged to keep the parts of the packing normally pressed against the moving part, substantially as set forth.

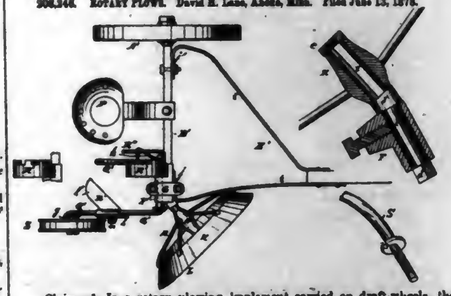
3. Metallic packing for piston-rods and similar parts, consisting of alternately-arranged segments F and intermediate wedge-pieces G, the joints between the parts being alternately radial and beveled, the segments overlapping upon the smaller pieces, substantially as set forth.

206,345. OIL-CUPS. Alden D. Kilbern, Oakland, Cal. Filed May 14, 1878.



Claim.—The combination of the hollow column a with the tube f, spring S, and wire w, attached to the cap x, substantially as and for the purposes set forth.

206,346. ROTARY PLOWS. David H. Lane, Anoka, Minn. Filed June 13, 1878.



Claim.—1. In a rotary plowing implement carried on draft-wheels, the combination of a rotary plowing-wheel, K, having a concavo-convex cutting-edge arranged next to the soil, and without the interposition between it and said wheel of other parts, and for traveling on the bottom of the furrow, and having its flaring concavity turned partly forward, the rotatively-adjustable and obtusely-bent axle I, carrying the said plowing-wheel, and having thereon the tapering collar J, and adapted at one end to receive a wrench, and the axle-box F, vertically adjustable with relation to the said draft-wheels, the said box being provided with a clamp for rendering the said axle either loose or rigid therein, substantially as and for the purposes specified.

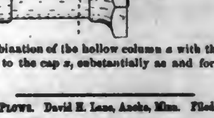
2. In combination, the caster-wheel S, mounted on the rotary stock or carrier S', having thereon the rigid notched collar h, the pivoted lever Q, applied to the frame carrying the plow-disks, the bolt or slide f, carried by the said lever, the fixed serrated plate R, the lever U, pivoted to the lever Q, and the fixed loop V, substantially as and for the purposes specified.

3. In combination, the supplemental frame E', provided with an axle-box, F', and carrying a vibrating lever, Q', having on its lower end the caster S, the removable half-axle B and its draft-wheel, the removable dish shaped plowing-wheel K, the removable axle-box F and its clamps, the removable obtusely-bent axle J, and a locking device for engaging the lever Q', substantially as and for the purposes specified.

4. The share K', arranged behind a rotary concavo-convex or dish-shaped plow-disk, and placed for cutting through and under the sod or land next to the furrow turned therefrom by the disk, substantially as and for the purposes specified.

5. A cutting blade or share mounted on a vertically-vibrating caster-stock or carrier, in combination with a rotary concavo-convex or dish-shaped plow-disk, the said share being arranged to cut under the sod or land before the sod or land so cut is turned by the said disk, substantially as and for the purposes specified.

206,347. METALLIC CARTRIDGES. Charles D. Lent and Henry A. Chapin, Springfield, Mass. Filed Jan. 6, 1877.



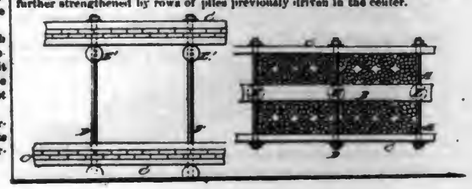
Claim.—1. A metallic cartridge-shell having an exterior body of rolled and drawn brass and an interior lining of rolled and drawn copper, substantially as described.

2. A metallic cartridge-shell consisting of a brass exterior case and a drawn copper lining, the two being united together, substantially as set forth and described.

3. A brass cartridge-shell with a copper lining, the shell and lining being soldered or brazed together, substantially as described.

206,348. DAMS AND PIERS. Roger S. Littlefield, Chicago, Ill. Filed Apr. 11, 1878.

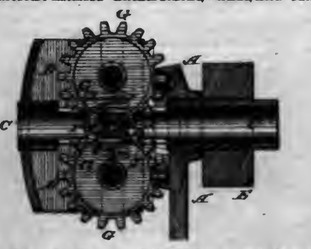
Brief.—A hole is excavated in the bottom of a river or harbor by a forcible jet of water. Into this is perpendicularly placed a fascine. The hole for the next fascine is then washed out, the dirt thereby removed being driven in among the rods of the first-placed fascine. The rows of fascines may be bound together by horizontal plank on the outsides and iron tie-rods. They may be further strengthened by rows of piles previously driven in the center.



Claim.—1. A shore-protection or dam composed of fascines A, set vertically in the earth beneath the water, and combined with binders C and tie-rods D, as and for the purpose set forth.

2. The method of setting fascines or piling, which consists in excavating the sand by a forcible jet of water, placing the pile or fascines therein, and then depositing the sand about the same by making the next excavation, substantially as set forth.

206,349. WHIP-ROUNDING MACHINES. Hezekiah Lombard, Westfield, Mass. Filed Aug. 6, 1878.

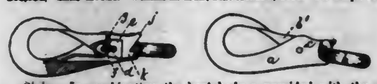


Claim.—1. The combination of a rotating hollow mandrel and two toothed wheels rotating with the mandrel, and also around their axis, for the purposes herein set forth.

2. The combination of the scroll-cam A, hollow mandrel C, sheath D, and toothed wheels G G, substantially as and for the purposes herein set forth.

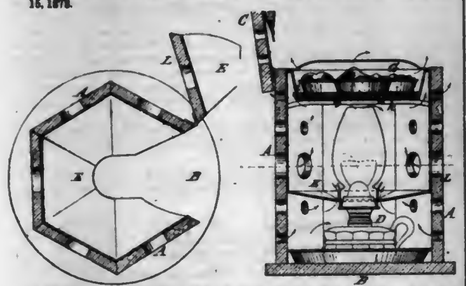
3. The toggle-levers I and spiral springs J, in combination with the toothed wheels G G, sheath D, hollow mandrel C, and scroll-cam A, substantially as and for the purposes herein set forth.

206,350. SNAP-HOOKS. William H. Main, Pine Meadow, Conn. Filed Apr. 15, 1878.



Claim.—In combination, the hook-body a, provided with the shoulder i, rearward of the pivot-pin, the spring f, with one end bearing upon the bottom of the mortise in the hook-body, and the other end bearing upward and backward on the tongue, the pivot-pin c, and the tongue b, provided with the pivot-slot d, the recess e, the shoulder h, rearward of the pivot-pin, and the thumb-piece j.

206,351. HEATING AND COOKING FURNITURE. B. G. Haines, New York, N. Y. Filed Mar. 16, 1878.



Claim.—1. A lamp-stove formed of an outer casing, A, provided with a fixed base, B, a movable cover, C, and a lateral swinging door, L, and having a transverse diaphragm, E, fixed to the inner sides of the casing, with a movable segment thereof secured to the swinging door L, in combination with an inclosed movable lamp, D, rising through the diaphragm E, substantially as herein shown and described.

2. A lamp-stove casing, A, provided with a transverse diaphragm, E, having a laterally-movable segment, the withdrawal of which permits the insertion of the lamp, and the replacement of which prevents the displacement of the lamp, substantially as set forth.

3. A lamp-stove casing, A, provided with a transverse diaphragm, E, fixed to the inner sides of the casing, and having a movable segment thereof carried on a swinging door, L, on the side of the casing, substantially as and for the purpose set forth.

206,352. ELECTRIC LAMPS. Hiram S. Maxim, Brooklyn, N. Y. Filed Aug. 9, 1878.

Claim.—1. The combination of the lever D, arm E, pivot c, and spindle b, when constructed as and operating in the manner and for the purpose herein shown and set forth.

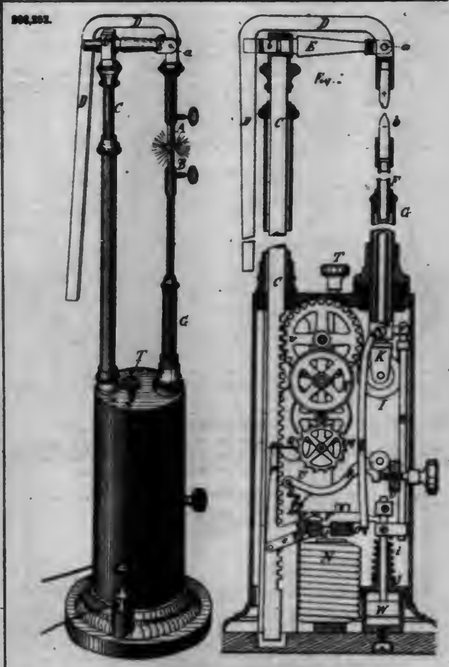
2. The combination of the electro-magnet N, dash-pot W, armatures d and O, spring f, and nut j, as shown, in connection with a drum, cord, and pulley, substantially as and for the purpose herein shown and specified.

3. The combination of drum H, cord k, movable arm J, and pulley I, when said pulley is attached to and moves with the anode-holder, in the manner and for the purpose herein shown and specified.

4. The combination of rod T, spring x, step u, and arm t, when constructed substantially as and operated in the manner and for the purpose herein shown and specified.

5. The combination of electro-magnet N, armature O, arm J, cord k, drum H, and pulley I, when said pulley is attached to and moves with the anode-holder, as herein shown and specified.

206,353. ELECTRIC LAMPS. Hiram S. Maxim, Brooklyn, N. Y. Filed Aug. 12, 1878.



206,354. WINDMILLS. Harvey L. May, Galesburg, Ill. Filed Mar. 30, 1878.

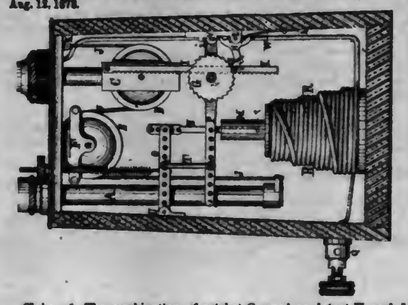
Claim.—1. In a windmill, a conical tubular shaft, G, stepped in an annular groove in a transverse bearing-block, d, at its lower end, and against the wheels f' at its upper end, substantially as described, and for the purpose specified.

2. In a windmill, a suspended vibrating pulley, S, arranged to operate with a weighted cord, T, arm R, vane Q, and wheel K, so as to offer an increasing resistance as the wheel is deflected by the wind, substantially as and for the purpose specified.

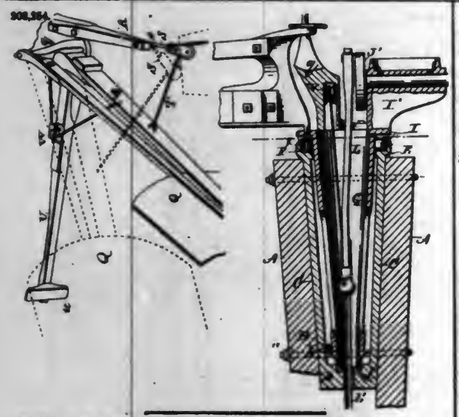
3. The yielding spring-arm U, arranged to operate with the vane Q and wheel K, as and for the purpose specified.

4. The plates P P, removably attached to the rod l'' by means of the sliding loop or bridle-bar p''', arranged to operate with the bifurcated ends of the rod l'', and the plates P, substantially as and for the purpose specified.

5. The sliding slotted box M and bolt m''', arranged to operate with the forked rod L, box M, and crank-wheel pin, substantially as and for the purpose specified.

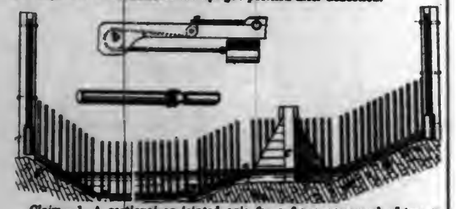


208,864.



208,865. FLOOD-FENCE. Henry D. Merrill, Shelbina, Mo. Filed Apr. 16, 1878.

Brief.—Two main section is adapted to be forced under water when the water rises. The beak-sections are hinged independently of the main section, and adapted to be returned to the upright position after deflection.

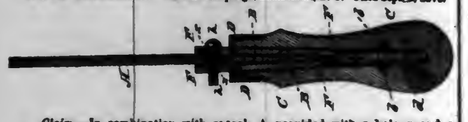


Claim.—1. A sectional or jointed axis for a fence, composed of two or more parts coupled together, the same being adapted to conform to the contour of the bottom of the stream, and to compel the attached sections of fence to rise and fall simultaneously under the action of a buoy, substantially as shown and described.

2. In combination with a fence hinged at bottom, a buoy or float adapted to drag the fence under water when the water rises, and to control the upward movement of the fence when the water falls, substantially as and for the purposes set forth.

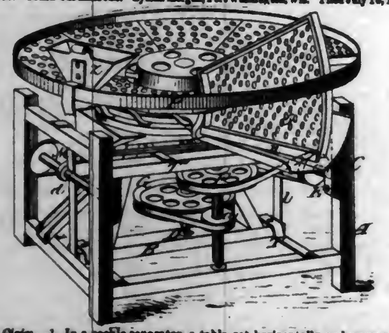
3. In combination with a fence hinged at bottom, a buoy or float hinged to the ice-break, and provided with a rack which engages with a pinion upon the fence-shaft, the whole being adapted to operate substantially in the manner explained.

208,866. TOOL-HANDLE. William Millspaugh, Middletown, N. Y. Filed Sept. 3, 1878.



Claim.—In combination with a tool, A, provided with a hole, *a*, and a tang, B, forming shoulders *a a*, the handle C, with ferrule D and nut *b*, the pronged holder F, with screw *d*, and the pin *h*, all substantially as and for the purposes herein set forth.

208,867. GRAIN-SEPARATORS. Lyman Morgan, Fort Washington, Wis. Filed July 16, 1878.



Claim.—1. In a reckle-separator, a table set horizontally and arranged to be shaken and horizontally revolved at the same time, substantially as and for the purposes set forth.

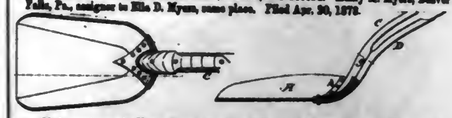
2. A horizontally-placed concave or conical table, constructed in sections, each formed with cavities, and arranged to tilt separately for emptying the impurities, substantially as and for the purposes set forth.

3. The combination of the table formed in sections, as described, shaft D, and cam E, substantially as and for the purposes set forth.

4. A segment, S, with nine covering, provided with pivoted rod *c*, spring *n*, and weight *o*, substantially as and for the purposes described.

5. The combination of frame A, vibrating frame B, and revolving table, substantially as and for the purposes set forth.

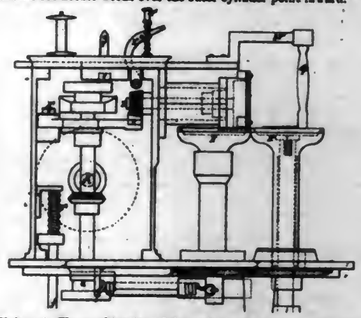
208,868. RAIL-SOCKETS FOR SPIKES, STAPLES, AND SCREWS. Henry M. Myers, Beaver Falls, Pa., assignor to Ella D. Myers, same place. Filed Apr. 30, 1878.



Claim.—As an improved means of securing handles to shovels, the herein-described combined socket and straps, the same being composed of the two straps C D, forming a union at *g*, and terminating in the socket *e*, as shown and described.

208,869. SEWING-MACHINES. Carl Reuben, Berlin, Prussia. Filed May 7, 1878. Patented in England, Feb. 26, 1877.

Brief.—A glove-sewing machine, having feeding-cylinders of usual construction, is provided with an oscillating shuttle working in a vertical shuttle-race over the inner feed-cylinder, near the point touched by the outer one. The needle is carried by an arm extending over the feed-cylinders, and so formed that the needle works over the outer cylinder point inward.



Claim.—1. The combination of the reciprocating arm carrying the straight needle, the feeding-cylinders H H', and the shuttle O', or its described equivalent, the said needle being carried above the cylinder H' farthest from the cam-axis, and moving toward this axis in its forward movement, as hereinbefore described.

2. The combination, with the feeding-cylinders H and H', of a shuttle-race arranged over one of said feeding-cylinders and near their point of meeting, substantially as described.

208,870. UMBRELLA-FRAME. William H. Ogilvie, Brooklyn, N. Y. Filed Mar. 20, 1878.



Claim.—1. The combination of the plates F and G and the independent nut H, the said parts being constructed, combined, and adapted to operate as hereinbefore described, whereby the said nut is adapted to bring the said plates together to secure the ends of the ribs or stretchers, or, by its withdrawal, to allow said plates to be eloigned from or started back from each other, to allow one or more ends of ribs or stretchers to be withdrawn, substantially as hereinbefore set forth.

2. The combination of the plates F and G and the elastic ring I in the manner hereinbefore described, whereby the said ring is secured between the said plates by their approach to each other, as set forth.

3. The combination, with each other, of the plates F and G, the former being formed with notches in the outer rim or flange thereof to admit the ends of the ribs or stretchers, and the latter being formed with a continuous rim or flange to inclose and support notched flange of the former, substantially as hereinbefore set forth.

208,871. SIEVES. Ebenezer Oliver, New York, N. Y. Filed Aug. 10, 1878.



Claim.—1. In a sieve for adjustable sieve-disks, the conical band A, provided with groove *a* and indented studs *b*, as and for the purpose set forth.

2. The band A, provided with groove *a* and studs *b*, in combination with sieve-disk provided with grooved edging *a*, as and for the purpose set forth.

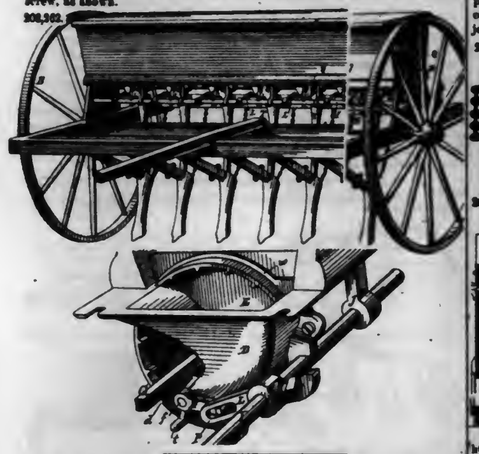
208,872. SEED-PLANTERS. Charles B. Patrie, Springfield, Ohio. Filed Oct. 15, 1877.

Claim.—1. The vertical force-feed wheel E, having a lateral peripheral flange, and the regulator-valve F, located within said seed-channel, for the purpose set forth, and provided with an arm, H, attached to the outer end of the valve-spindle *f*, combined with the arm L, adjustably fixed upon the rock-shaft I, said arms H and L being coupled directly by means of the pin *s* and slot *p*, as described.

2. The distributer-wheel E, having a lateral peripheral flange, and made with its web concave or dishing within, combined with the case D, made concave in an opposite direction at the point of discharge *d*, and the pivoted valve F, substantially for the purpose set forth.

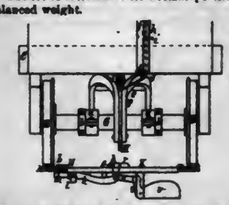
3. Combined with the rock-shaft I, provided with adjustable arms for actuating the separately-pivoted gages F, the open bearings *k*, cast with and a part of the seed-cup plate D, and the removable caps *n*, pivoted to said plate above the bearings *k*, and secured in position by tightening the pivot-screw, as shown.

208,873.



208,873. STREET-RAILWAY SWITCHES. Calvin B. Payson and Charles H. Fowler, Boston, Mass. Filed June 20, 1878.

Brief.—A small wheel for operating the switch is pivoted by two arched arms to the axle or lower part of car, and kept normally suspended above the track by a spiral spring. A rope from the arms extends under one pulley and up over another, thence down to a step, by pressing on which with the foot the wheel is forced down and between a fixed cleat and movable rib on the switch-plate, forcing them apart. The moving of the rib causes simultaneous movement of the tapering switch-plate, the two being connected by a rod below the plate. The rib is restored to its normal position by a rod connecting with an unbalanced weight.



Claim.—1. The combination of the lever F, wheel H, rope or chain J, and step *i*, substantially as hereinbefore set forth.

2. The wheel H, situated and operated substantially as described, in combination with the slide *k*, having the rib *p*, and pivoted to the switch-rail L, substantially as and for the purpose hereinbefore set forth.

3. The combination of the plate K, slide *k*, rib *p*, and cleat *r*, substantially as hereinbefore set forth.

4. The combination of the slide *k*, plate K, lever *i*, and weight *r*, substantially as hereinbefore set forth.

208,874. NON-CONDUCTING COVERINGS FOR STEAM-BOILERS. Isaac Newton Peirce, Philadelphia, Pa. Filed July 18, 1878.



Claim.—A steam pipe and boiler covering consisting of metal bands so perforated and punched as to form points *a e f f*, projecting inward, and serving to support and separate the covering from the steam-pipe, as and for the purpose shown.

208,875. CARTRIDGE-BELTS. Valentine Plate, Indianapolis, Ind., and Wm. W. Rogers, U. S. Army. Filed May 20, 1878.

Brief.—Improvement on Patent No. 197,466.

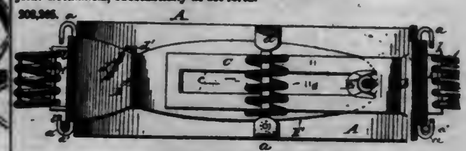
Claim.—1. The combination, with the metallic cartridge-carrier, having suitable cartridge-holders, and made in three transverse sections, each of which latter is formed without longitudinal division, of the belt A, having the vertical metallic guide *a* secured thereto, said guide being provided with anti-friction rollers *a'*, journaled in their lower body portions, substantially as set forth.

2. The combination, with a leather supporting-belt, of a metallic cartridge-carrier consisting of a main band-piece and two adjusting-sections, one of which latter is longitudinally slotted, and the other is provided with a bolt or threaded stud and nut, whereby the slotted section may be longitudinally adjusted over the other section, substantially as and for the purpose described.

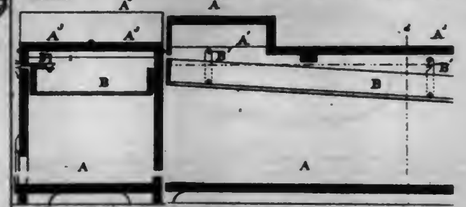
3. In a metallic cartridge-carrier, the adjusting-piece of the main band-piece, connected thereto by the detachable hinge-joint mechanism, substantially as set forth.

4. In a metallic cartridge-carrier, the combination, with the main band piece, of the two adjusting-pieces, the latter being respectively connected to opposite ends of the main band-piece by a permanent and a detachable hinge-joint mechanism, substantially as set forth.

208,876.

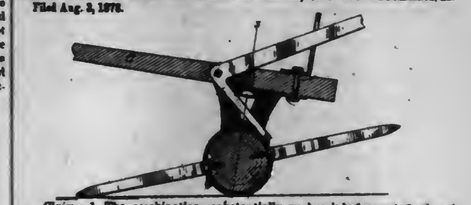


208,876. CORNERED ASH BOX AND SIFTER. Charles K. Ramsey, St. Louis, Mo. Filed Mar. 30, 1878.



Claim.—The box A, having the opening A^1, cover A^2, and lids A^3 A^3, hinged toward each other, and secured in place by the cover A^2, which is hinged to the end of the box A, in combination with the inclined oscillating sieve B, substantially as described.

208,877. REVOLVING HORSE HAY-RAKE. John H. Randolph, Jr., Woodstock Plantation, La. Filed Aug. 3, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, of the rake-head and the bracket, in which it is centrally supported and by which it is wholly connected with and supported from the tongue in the line of draft.

2. The combination of the tongue, the sectional bracket secured to its heel and and provided with bearings, the rake-head mounted centrally in said bearings, and the collar or cam-ring secured to the head between the bracket-sections and their bearings, and serving to protect the head from wear, as described.

3. The combination of the tongue, the sectional bracket, the rake mounted at its middle in bearings in said bracket, the collar or cam-ring between the bracket-sections, and the lever acting upon the steps on said ring, the combination being and operating substantially as hereinbefore set forth.

4. The combination of the rake-head, the sectional bracket by which it is supported wholly at its middle, the cam-ring between the sections of the supporting-bracket, and the band upon the rake-head to protect it from wear in the bracket-bearings, substantially as hereinbefore set forth.

208,878. FLOUR-BOLTS. Benjamin D. Sanders, Wellsburg, W. Va. Filed July 31, 1878.



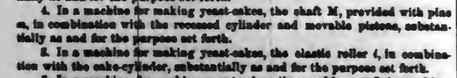
Claim.—1. A bolt for bolting meal, flour, &c., having a bolting-cloth made of strips of different grades of fineness, arranged lengthwise of the bolt, both grades of cloth being on the same panel, substantially as set forth.

2. A belt for bolting meal, &c., having a cloth made of strips of different grades of fineness, arranged lengthwise of the belt, the finer grade or grades increasing in width and the coarser grade or grades correspondingly decreasing in width toward the tail of the belt, substantially as and for the purposes set forth.

206,269. DRESSING MILLSTONES. Benjamin D. Sanders, Wellsburg, W. Va. Filed July 31, 1878.

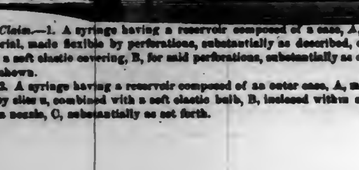
Claim.—The process herein described of automatically dressing millstone or burr-stones—namely subjecting them while running to the action of pumice-stone, granulated or powdered, substantially as described.

206,270. CLASPS. John E. Sabin, Boston, assignor to Martin W. Carr, Somerville, and Hiram W. Brooks, Cambridge, Mass. Filed Feb. 2, 1878.



Claim.—The clasp above described, consisting of a piece of metal of the shape shown in the drawing, having spring sides *a* and *a'*, the side *a'* provided with the catch *d*, of a piece with said side, or securely and immovably fixed thereto, said catch being bent inward and arranged to catch over the edge of the slot *c* in the spring side *a*, for the purpose of holding the teeth at the lower ends of the jaws together, substantially as set forth.

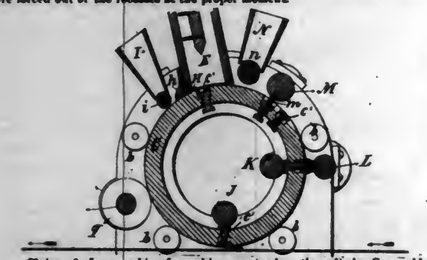
206,271. GAS-TEST KEYES. Dexter M. Small, New York, N. Y. Filed Apr. 18, 1877.



Claim.—The combination, with an apparatus for measuring a gas-flame, of a graduated scale, made substantially as described, to show by the size of the flame the rate of passage of the gas through the said apparatus.

206,272. MACHINES FOR MAKING YEAST-CAKES. Archelaus E. Spencer, Chicago, Ill., assignor of two-thirds his right to Charles B. Steele and V. Clarence Price, same place. Filed Aug. 20, 1877.

Brief.—A recessed cylinder having movable pistons revolves beneath a hopper containing the dough, the recesses being filled by revolving pressure-blades. An endless apron or belt under the cylinder receives the cakes, which are forced out of the recesses at the proper moment.



Claim.—1. In a machine for making yeast-cakes, the cylinder C, provided with cells and pistons *c*, for the purpose set forth, in combination with the first mealing-hopper, N, and roller *n*, the dough-hopper E, and the final mealing-hopper, I, and the elastic roller, for joint operation to produce yeast-cakes, as set forth.

2. In a machine for making yeast-cakes, the combination of the cylinder C, provided with cells and pistons *c*, with revolving brush L and roller K, to throw said pistons forward at the proper moment to encounter said brush, as set forth.

3. In a machine for making yeast-cakes, the roller K, in combination with the cake-cylinder provided with sliding pistons and the brush L, substantially as and for the purpose set forth.

4. In a machine for making yeast-cakes, the shaft M, provided with pins *m*, in combination with the recessed cylinder and movable pistons, substantially as and for the purpose set forth.

5. In a machine for making yeast-cakes, the elastic roller *i*, in combination with the cake-cylinder, substantially as and for the purpose set forth.

6. In a machine for making yeast-cakes, the meal-hopper I, in combination with the elastic roller *i* and cake-cylinder C, substantially as and for the purpose set forth.

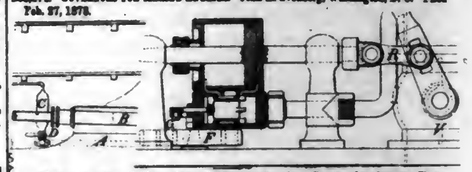
206,273. SYRINGES OR LIQUID-DISCHARGERS. Wm. W. Stewart, Brooklyn, N. Y. Filed Aug. 10, 1878.



Claim.—1. A syringe having a reservoir composed of a case, A, of rigid material, made flexible by perforations, substantially as described, combined with a soft elastic covering, B, for said perforations, substantially as described and shown.

2. A syringe having a reservoir composed of an outer case, A, made flexible by slits *a*, combined with a soft elastic bulb, B, inclosed within said case, and a nozzle, C, substantially as set forth.

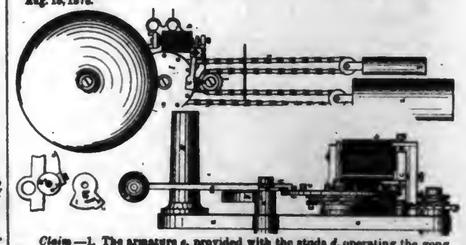
206,274. GOVERNORS FOR MARINE ENGINES. John A. Svedberg, Washington, D. C. Filed Feb. 27, 1878.



Claim.—1. The combination of the air-chamber C, the diaphragm F, or its equivalent, and the valve of the intermediate steam-cylinder, the said valve being opened and closed, and thereby admitting or shutting off steam to the cylinder as the pressure in said air-chamber is increased or lessened by the greater or less immersion of the vessel in the water, arranged substantially as described.

2. In a governor for marine engines, the combination of the throttle-valve of said engines, controlled by an intermediate steam-cylinder, with the valve of said cylinder, operated by the varying pressure of the external water as the stern of the vessel is more or less immersed by rising and falling on the waves, arranged substantially as described and shown.

206,275. ELECTRICAL ALARM-STRIKING DEVICES. James A. Swift, Washington, D. C. Filed Aug. 16, 1878.



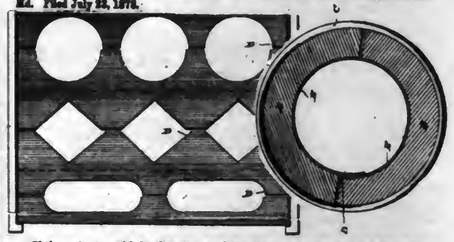
Claim.—1. The armature *e*, provided with the studs *d*, operating the gong by means of the electro-magnet *b*, plates *n* and *t*, the lever *m*, and the endless chain 1 and weight 2, substantially as shown and described.

2. The lever *m*, having its lower end formed into the plate *n*, provided with the projection *o*, indentation *p*, and stud *s*, substantially as described.

3. The plate *t*, provided with the projection *u*, and having two concentric slots, *r* and *w*, cut in it, substantially as specified.

4. In an electrical gong, the combination of the disk *f*, armature *e*, plates *n* and *o*, spring *s*, and lever *m*, the whole being operated by means of the endless chain 1 and weight 2 and electro-magnet *b*, substantially as and for the purpose set forth.

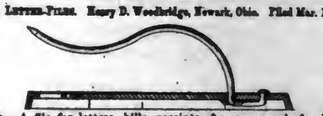
206,276. MOLDS FOR FORMING BOXES FROM VENEERS. Nathaniel Waterbury, Baltimore, Md. Filed July 23, 1878.



Claim.—1. A mold for forming packing rings or boxes constructed in sections, and having an offset in its inner wall for the overlapping ends of said rings or boxes, substantially as shown and described.

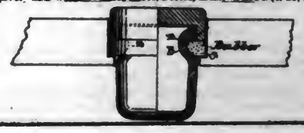
2. The combination of the sections B, having an offset, D, with the hoops C and the rings or boxes E, substantially as shown and described.

206,277. LETTER-FILES. Henry D. Woolbridge, Newark, Ohio. Filed Mar. 15, 1878.



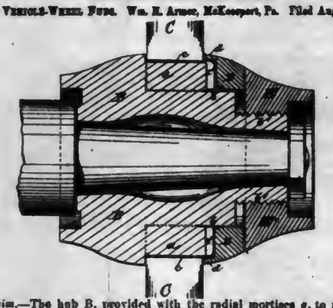
Claim.—A file for letters, bills, receipts, &c., composed of a back plate and a wire prong secured thereto with one end, by passing it through the plate and then returning it through another hole for fastening it, substantially as and for the purpose specified.

206,278. ICE-WELLS. Amos Albee, Boston, Mass. Filed Dec. 13, 1877.



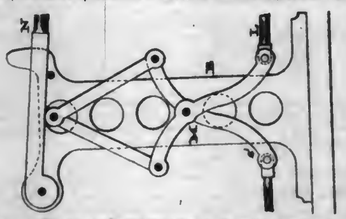
Claim.—The herein-described ink-well for school-desks, the same being provided with the exterior groove D, the interior projection, B, and the elastic ring F, projecting outwardly beyond the walls of the well, and affording a seat for the removable cover below the top of the well, and between the upper portion thereof and the adjacent parts of the desk, substantially as shown and described.

206,279. VEHICLE-WHEEL HUBS. Wm. H. Arnot, McKeesport, Pa. Filed Aug. 23, 1878.



Claim.—The hub B, provided with the radial mortises *a*, to receive the end tenons, *c*, of the spokes C, rabbeted at *b* to the bottom of the mortises, and reduced in diameter and threaded at *b'* from its outer end to the said rabbet *b*, in combination with the end nut, E, the flanged washer or collar D, and the spokes C, having the lateral extension *c'* upon the outer edge of the said tenons *c*, substantially as and for the purpose set forth.

206,280. BOAT-DETACHING APPARATUS. Henry Ashford, Philadelphia, Pa. Filed Mar. 6, 1878.



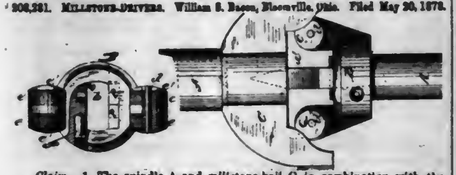
Claim.—1. The hooks E, with cam-heads F, and locking-levers C, with arms G, in combination with the latches D, whereby the latter are doubly held by the heads F and arms G, substantially as and for the purpose set forth.

2. The hooks E, with heads F, the latches D, with arms J and feet H, and the levers C, with arms G, combined and operating substantially as and for the purpose set forth.

3. The hooks E, with shoulders *e* and cam-faces *f*, in combination with the levers C, substantially as and for the purpose set forth.

4. The cross-levers M and lever N, in combination with the rods L, elbow-levers K, connections *d*, lever C, and hooks E, substantially as and for the purpose set forth.

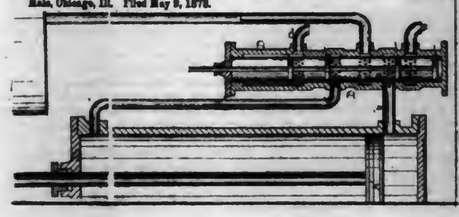
206,281. MILLSTONE-DRIVERS. William S. Bacon, Bloomville, Ohio. Filed May 30, 1878.



Claim.—1. The spindle A and millstone-bail C, in combination with the driver B, provided with elastic cushions *g* and anti-friction rolls *f*, let into the longitudinal walls of the spindle-slot, as described, and having driving-arms *e e*, provided with cushions *s e*, in the manner substantially as shown, and for the purpose set forth.

2. The driver B, provided with slot *h*, in combination with anti-friction rolls *f*, cushions *g*, let into the longitudinal walls of the spindle-slot, and spindle A, having flattened driving-head, substantially as shown, and for the purpose described.

206,282. HYDRAULIC ELEVATORS. George H. Bailey, Newark, N. J., assignor to William E. Hale, Chicago, Ill. Filed May 9, 1878.

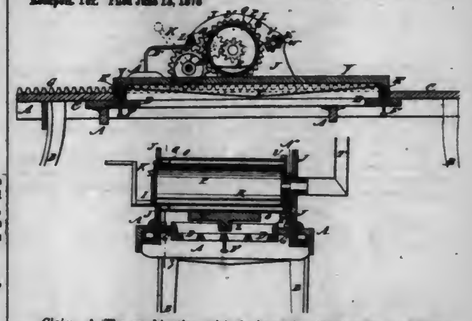


Claim.—1. In a hydraulic elevator, the combination of a main cylinder, a high-pressure pipe from the street-main or other head communicating with one end of the main cylinder, a low-pressure tank or receiver, and a pipe-communication from such low-pressure tank or receiver to the opposite end of the main cylinder, for the purpose of charging the low-pressure or auxiliary reservoir while the elevator is being operated from the high-pressure supply, substantially as set forth.

2. The valve-case D, having two water-supply ports, two ports connected with the elevator-cylinder, and a waste-port, all brought into or cut off from proper communication for the raising or lowering of the car by a simultaneous motion of a single series of valves, substantially as set forth.

3. The valve-case D, having two water-supply ports, two ports leading to the main cylinder, and an exhaust-port, substantially as set forth.

206,283. INKING AND PLAITING MACHINES. Charles F. Bailey and George F. Parrent, Rockport, Tex. Filed June 13, 1878.



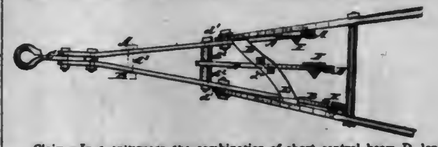
Claim.—1. The combination, with the board Y, ribbed on the under side, of tray D, having rounded notches at bottom, and the adjustable rubber blocks E, as and for the purpose described.

2. The fluted wheel Y, pivoted to a block, W, adjustable with respect to the cylinder-teeth U, as and for the purpose specified.

3. The combination of the outer rotating cylinder, O, the stationary inner cylinder, P, provided with the grate R, the door S, and the hollow journals, the gear-wheels N M H, and the toothed racks G, with the reciprocating carriage J L and stationary table A B C, substantially as herein shown and described.

4. The combination of the rubber bearings E and the hand-screws F with the tray D, the rounded ends of the rib Z of the ironing-board Y, the rotating cylinder O, and the stationary table A B C, substantially as herein shown and described.

206,284. CULTIVATORS. Clark T. Barton, Tuscumbia, Ala. Filed Mar. 19, 1878.



Claim.—In a cultivator, the combination of short central beam D, long side beam B, short side beam A, bolt *d'*, washers *d''*, inclined cross-bar E, and U-bolt *d'''*, substantially as shown and described.

206,285. PUMPS. Geraldo A. Beeman and John T. Mann, Comanche, Tex. Filed July 19, 1878.



Claim.—A pump having two barrels, B C, of different diameters, the larger, B, being subjacent to the smaller, C, and both provided with their respective valved pistons E F, secured upon the same piston-rod D, in combination with the weight I, arranged to counterbalance the added weights of the water-columns above the piston F and below the piston E, to obviate the necessity of lifting them, substantially as shown and described.

206,286. MANUFACTURE OF ROPE AND CORDAGE. E. S. Bloomfield, Elizabeth, N. J. Filed Dec. 14, 1877.

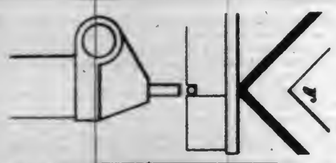
Brief.—Before the hemp is combed out it is saturated with saponaceous liquid containing steatite diffused through it, so that the fibers may be more easily separated by the comb, and a smooth surface or gloss communicated to the rope or twine.

Claim.—An improvement in the art of manufacturing rope, twine, or cordage from Manila, Sisal, or New Zealand hemp, consisting of the application of soap-stone, combined with oil, an alkali, and water, in the process of manufacturing rope, twine, or cordage, substantially in the manner and for the purpose herein set forth.

206,287. BOOK-STITCHING MACHINES. Roland L. Brewer, Milford, Conn., assignor to Henry C. Thompson, same place. Filed July 11, 1876.

Claim.—In a book-stitching machine, the table A, made of triangular form, to receive the work, and cause the same to center itself and form a base or anvil upon which to clinch the staple, substantially as herein set forth.

206,387.



206,388. HAMER-CONSTRUCTION. Chester B. Bristol, New Haven, Conn., assignor to W. and E. T. Fitch, same place. Filed Sept. 6, 1878.

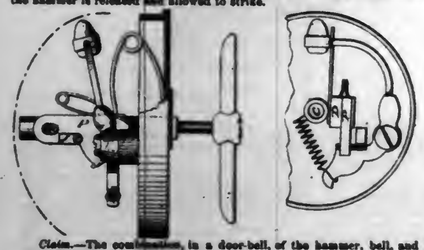
Brief.—Improvement on Patent No. 201,968.



Claim.—The combination of the loop *a*, projections *b b*, and stud *c* with a plate, A, having a perforation, *d*, corresponding to the said stud *c*, with a strap, substantially as described.

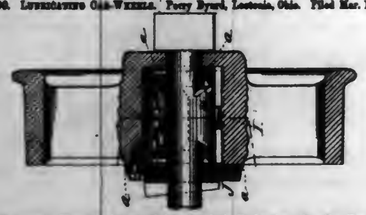
206,389. DOOR-BELLS. Fredrick W. Brookmyer, New Haven, Conn., assignor to Sargent & Co., same place. Filed Apr. 3, 1878.

Brief.—The operating-lever, which is pivoted to the pull-spindle, has longitudinal movement on said spindle, so as to allow it to unhook from its retaining-stud after the first incline has passed over the hammer-arm, whereby the hammer is released and allowed to strike.



Claim.—The combination, in a door-bell, of the hammer, bell, and pull-spindle with the lever F, hung on the pull-spindle, substantially as described, and so as to allow an independent longitudinal movement of either the spindle or lever, and means, substantially such as described, to positively engage the said lever with the spindle during its striking operation, and so as to be forced therefrom after striking, substantially as described.

206,390. LUBRICATING CAR-WHEELS. Percy Byrnd, Lectonia, Ohio. Filed Mar. 11, 1878.



Claim.—1. The supplemental bearing-hub D, having the ribs E, and the wheel-hub chamber, having the groove-forming rib C, the ribs of both the bearing-hub and the wheel-hub chamber having coincident interruptions or spaces I, to form a cross annular way or passage around said hub-bearing communicating with the cotton-waste chambers, as specified.

2. The supplemental bearing-hub D, having the end grooves or channels, H', the openings G, the chambers H, and rib-spaces I, as described, in combination with the cotton-waste chambers F in the wheel-hub, as specified.

3. The combination, with the supplemental bearing-hub having end grooves or channels H' and the wheel-hub having the cotton-waste spaces F, of the confining-cap J and the sealing-gaskets *a*, as and for the purpose specified.

4. The supplemental bearing-hub having locking-ribs E, flaring side openings, G, and end grooves or channels, H', in combination with the wheel-hub chamber having the annular space I, the groove-forming rib C, the annular crossway around said hub-bearing, and the sealing-gaskets *a*, all constructed and adapted for lubricating car-wheel axles, as set forth.

206,391. DIRECT-ACTING ENGINES AND PUMPS. Adam Carr, Paterson, and Jas. Arthur, Jersey City, assignors to said Carr, and said Carr assignor to Wm. S. Carr, Jersey City, N. J. Filed Jan. 2, 1878.

Claim.—1. The combination, with the valve and its eccentric in an engine, of the gear-wheels *a b*, pinion *i*, intermediate *c*, pawls *o* and *r*, standing in opposite directions, and swinging arm *n*, receiving motion from the piston-rod, substantially as set forth.

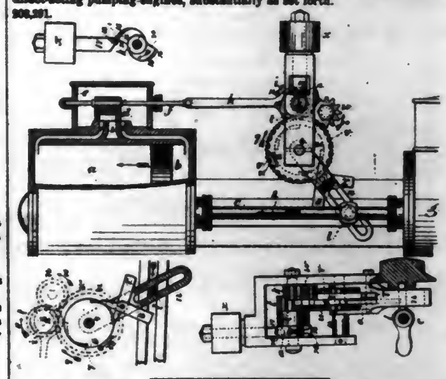
2. In combination with the valve-eccentric and its gearing, substantially as shown, moved by a connection to the piston-rod, the cams 15 16, and weight *s*, acting in the manner and for the purposes set forth.

3. In combination with the direct-acting engine and the eccentric and valve thereof, the double-acting pawls receiving motion from the piston-rod, and acting in opposite directions upon the gearing that intervenes between the pawls and eccentric, substantially as set forth.

4. The combination, with the valve and the eccentric and rod for moving the same, of a lever and pawl receiving motion from the piston-rod and actuating the eccentric, substantially as set forth.

5. The arrangement of the double cams *w y*, weights *s s'*, latches 30 31, and projections 34 35, for insuring the proper relative movements between two direct-acting pumping-engines, substantially as set forth.

206,392.



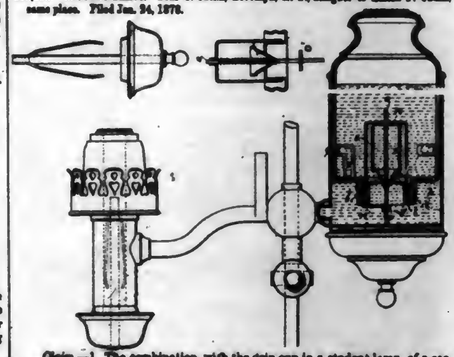
206,393. EMPTYING-VALVES FOR PAPER-PULP ENGINES. Joseph Carroll, Lawrence, Mass., assignor to George W. Russell, same place. Filed Aug. 29, 1878.

Brief.—A valve with a suitable locking device to prevent the pressure of the pulp from the under side from raising it off its seat.



Claim.—An emptying-valve and seat for paper-pulp engines provided with a suitable locking device, to prevent raising of such valve by pressure from below, substantially as and for purposes stated.

206,393. STUDENT-LAMPS. Seth C. Catlin, Brooklyn, N. Y., assignor to Emma F. Catlin, same place. Filed Jan. 24, 1878.



Claim.—1. The combination, with the drip-cup in a student-lamp, of a central standard and springs, substantially as set forth.

2. In the student-lamp, a glass fountain the lower portion of which, within the reservoir, is of transparent glass, and the upper portion of which, outside said reservoir, is of opaque glass, substantially as set forth.

3. The combination, with the fountain, valve, and stem in a student-lamp, of a cross-piece, *o'*, upon the valve-stem, forming a rest for the spout of the filling-can, substantially as set forth.

4. The combination, with the fountain of a student-lamp and the valve thereof, of a diving-bell float acting to close the valve when the fountain is filled, substantially as set forth.

5. The combination, with the Argand air-tube and the drip-cup, of springs connecting the drip-cup removably to the Argand burner, substantially as specified.

6. In a student-lamp, a fingerpost-groove in the material of the fountain, around the cylindrical portion thereof, and a pin projecting inwardly from the reservoir or holder, substantially as set forth.

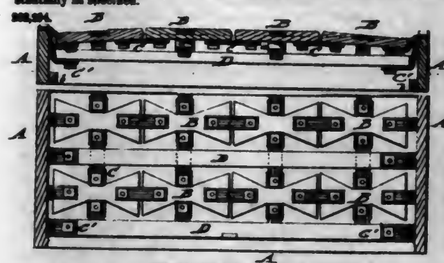
206,394. BED-BOTTOMS. Henry S. Cate, Millerstown, Pa. Filed Aug. 20, 1878.

Claim.—1. The combination, with frame A, of intermediate cross pieces or links B, which are connected longitudinally and transversely by elastic strips C with each other and to each end of the frame, and with interposed longitudinal slats or rods D, hung by elastic strips C' to the frame, substantially as and for the purpose set forth.

2. The combination, with the outer frame, A, of intermediate cross pieces or links B, that are connected by elastic strips with each other and with the ends of the frame, and with intermediate longitudinal spring-slats D, and raised above the slats D by interposed pieces or blocks, substantially as described, and for the purpose specified.

3. The combination of frame A, having end stops, with longitudinal slats, suspended by elastic strips, and with cross pieces or links, that are connected with each other to the ends of the frame and the slats by elastic strips, substantially as specified.

206,395.



206,395. HORSESHOE-BLANK. Louis G. Glazie, New York, N. Y., assignor to Christian E. Keller, Hoboken, and George K. Russell, Newark, N. J. Filed Aug. 7, 1878.



Claim.—1. A horseshoe-blank with three solid calks upon it, and reduced to a flat web between the calks and inside of the toe-calk, and with recesses between the calks and elevated ridges opposite to the recesses, substantially as herein shown and described.

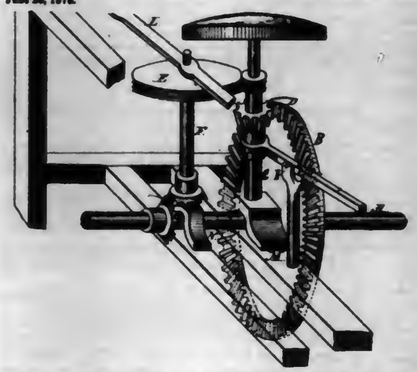
2. A horseshoe blank or bar provided with elevated ridges or edges *a a*, to be utilized in bending the same to form a shoe, substantially as and for the purpose herein specified.

206,396. METALLIC BUTTON-HOLE STAYS FOR BOOTS AND SHOES. Daniel Gunn, Saxon Falls, N. Y. Filed Aug. 31, 1878.



Claim.—The metallic button-hole stay for boots and shoes, constructed in the form of a segment of a ring, with upper and lower flanges, the upper flange provided with downwardly-projecting points, adapted to pass through the stock and hold the stay in place, all substantially as and for the purpose set forth.

206,397. MILLSTONE-DRESSING APPARATUS. John B. Cromwell, Milwaukee, Wis. Filed June 28, 1878.



Claim.—1. Shaft A, cog-wheel B, spindle C, and pinion D, in combination with shaft F and friction-pulley E, substantially as and for the purpose specified.

2. The mode of running a millstone by the shaft F and friction-pulley E, in combination with spindle C and shaft A, substantially as described.

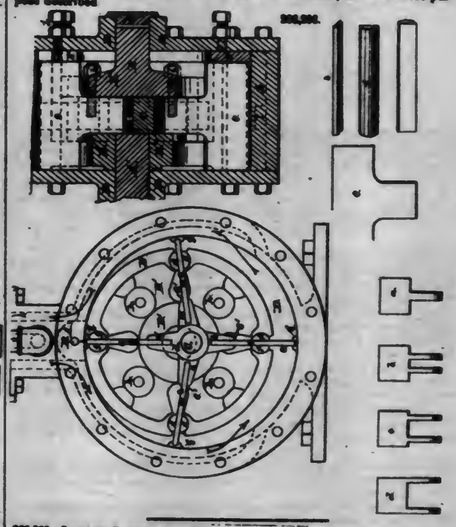
206,398. ROTARY ENGINES. Jeremiah Darling, Cincinnati, Ohio. Filed Aug. 24, 1878.

Claim.—1. In a rotary engine of the kind described, in which the line of contact between the inner revolving and outer stationary cylinder is above the horizontal diameter of the latter, the longitudinal oil-reservoir E, located in the shell of the stationary cylinder above such line of contact, and communicating with the interior at such line of contact by a slot extending the full width of the inner cylinder, substantially as and for the purpose specified.

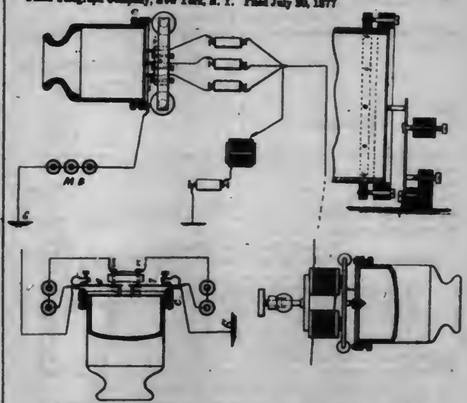
2. In a rotary engine such as described, the independent central hinge, composed of the parts *a b c d* and pivot C, in combination with the inner revolving cylinder, E, having a central chamber inclosing said hinge, and the radial wings *e*, as and for the purpose specified.

3. The combination of the slotted packing-ring F and cam-shaped point K of the screw *j* with a rotary steam-engine, substantially as and for the purpose described.

206,399.



206,399. SPEAKING-TELEPHONE. Thomas A. Edison, Menlo Park, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Filed July 30, 1877.

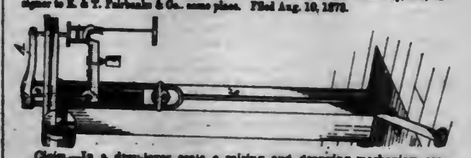


Claim.—1. The combination, with the tympan arranged to respond to the human voice, of two or more contact-points operated by such tympan and the electric circuits, substantially as specified, whereby the current passing upon the line is pulsated in unison with the vibrations of the tympan and its volume proportionately increased or decreased, substantially as set forth.

2. The combination, with the resonant cone and tympan, of two or more contact-points and rheostats, adjusted substantially as specified, to regulate the strength of the electric pulsations passing upon the line, as set forth.

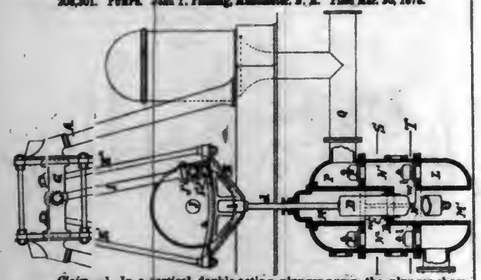
3. The combination, with the diaphragm and resonant tube, of an electro-magnet and a spring-armature that is supported at both ends, substantially as set forth.

206,400. DEAD-LEVER WEIGHTS-SCALES. Franklin Fairbanks, St. Johnsbury, Vt., assignor to E. & T. Fairbanks & Co., same place. Filed Aug. 10, 1878.



Claim.—In a drop-lever scale, a raising and dropping mechanism constructed with a horizontal arm, A, capable of a rising and falling movement, and actuated by a suitable operating-lever, the said arm being disposed parallel with the scale-beam, and having the fulcrum-loop and cap-loop of the beam, which form its points of support, suspended from the opposite ends of the said arm, by which the beam, with its points of support, is raised or dropped bodily, and injurious movement or wear of the bearing-point thus prevented, substantially as herein set forth.

208,301. PUMPS. John T. Fanning, Manchester, N. H. Filed Mar. 30, 1878.



Claim.—1. In a vertical double-acting plunger-pump, the plunger-chambers M^1 M^2, passages m^1 m^2, and connected semi-annular chambers N^1 N^2 with suitable induction-valves and connected passages, combined and arranged to operate as herein specified.

2. In a vertical double-acting plunger-pump, the annular inlet-chamber L and annular delivery-chamber P, in combination with the connected chambers M^1 N^1 M^2 N^2 and suitable controlling-valves, as and for the purposes herein specified.

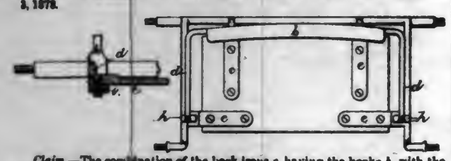
3. The combination of the plunger D, plunger-rod *d*, yoke E E^1 E^2, cross-head G, and connecting-rod I, communicating power from the crank J', as and for the purposes herein specified.

4. The extension F' of the connecting-rod I, vibrating in the groove *s* in the cross-frame E, in combination with the plunger-rod *d* and plunger D, as and for the purposes herein specified.

208,302. PREPARING FIRE-CLAY FOR FURNACES, CRUCIBLES, FIRE-BRICKS, &c. Thomas Fletcher, Warrington, England, assignor to George B. Snow, Theo. G. Lewis, and John E. Rebis. Filed May 10, 1878.

Claim.—The above-described process for producing a non-conducting fire-clay, to wit: by mixing with the clay a large proportion of sawdust, or its equivalent, and rendering the mass coherent by a glutinous liquid, substantially as described.

208,303. SHIFTING-RAILS FOR CARRIAGES. Plimmon B. Fuller, Union City, Pa. Filed Sept. 3, 1878.



Claim.—The combination of the back-irons *c*, having the hooks *h*, with the seat-irons *e* and rail *d*, the rail being clamped in position by the nuts *i* between the seat-irons and hooks, substantially as shown.

208,304. ICE-MACHINES. John Gamgee, Chelsea, England. Filed Oct. 18, 1877.



Claim.—1. The process of producing pure and clear ice in ice-machines, which consists in passing the water to be frozen continuously over and between the refrigerating-surfaces and through a filter, substantially as hereinbefore described.

2. The process of inducing upward currents of water and deserating the same, which consists in producing a partial vacuum above the water to be frozen, thus preventing the accumulation of air-bubbles in the ice blocks, substantially as described.

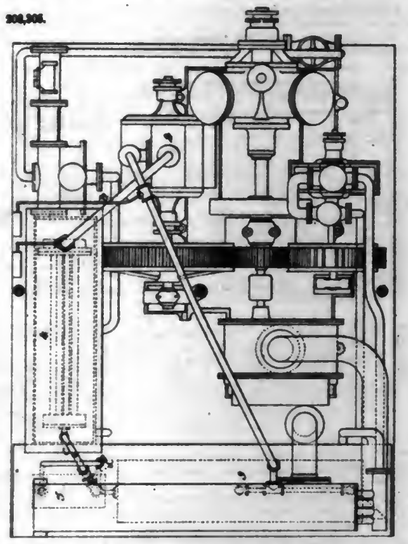
3. The combination, in an ice-making machine, of a bell-shaped mold, the water-induction pipe at the bottom, having air-inlet *d*, the water-outlet pipe *a* at the top, leading to a filter, and from thence to a force-pump, which supplies the water-induction pipe, said water-outlet *a* having connected with it at its highest point a pipe leading to a vacuum-pump, all substantially as hereinbefore described and set forth.

208,305. ICE-MACHINES. John Gamgee, Chelsea, England. Filed Oct. 18, 1877.

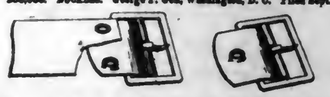
Claim.—1. A refrigerating apparatus in which gases are condensed at very low temperature and by pressure, which consists of a compressing-pump, a main condenser to receive the gas therefrom, and a supplementary condenser, into which the condensed vapor passes in a condition approaching liquefaction, said supplementary condenser being maintained at a low temperature, so as to cause liquefaction at moderate pressure, substantially as shown and described.

2. The process of fractional condensation, utilizing each refrigerant for the condensation of the succeeding one, having a lower point of condensation, which consists in passing the refrigerant gas from a main condenser in a state approaching liquefaction into a supplementary condenser cooled by a gas or gases condensable at low pressure, substantially as set forth and described.

208,306.



208,306. BUCKLES. George F. Goff, Washington, D. C. Filed Sept. 10, 1878.



Claim.—1. An attaching-plate for buckles provided at one end with suitable lugs or ears to adapt it to be pivoted to the cross-bar of a buckle, and having at the other end an eyelet or eyelets struck from and integral with the said plate, substantially as specified.

2. A buckle having its tongue and an attaching-plate pivoted to one of its cross-bars, the said plate being provided with an eyelet or eyelets struck from said plate, and adapted to be applied to a shoe or other article, substantially in the manner and for the purposes specified.

208,307. CAR-COUPLINGS. Miller T. Greenleaf and George Q. Adams, Quincy, Ill. Filed Feb. 1, 1878.



Claim.—1. The combination of the spring-buffer and the draw-bar, the former being attached to the latter, so as to form one structure for attachment to a car, substantially as described.

2. The draw-bar cast with two yokes, D E, for the two springs, and provided with sockets to hold and guide the buffer-bar, substantially as described.

3. The combination of the springs S S' and plates *r t o v* with the draw-bar and buffer-bar, substantially as described.

4. A draw-bar cast in two pieces, adapted to be bolted together in the form of a girder-beam, having strengthening longitudinal and vertical ribs, substantially as described.

5. A buffer-bar cast in the form of a girder-beam, with strengthening longitudinal and vertical ribs, substantially as described.

6. A coupling-bar constructed in two parts, the lower one adapted to receive the link and pin, or other coupling device, and the upper one projecting beyond the lower one to act as a buffer, each having their appropriate springs, substantially as described.

7. A draw-bar constructed with the automatic ball-coupling and with a spring buffer-bar supported and sliding upon it, substantially as described.

208,308. HORSE-COLLAR AND HAMES. William B. Guernsey, Berwick, N. Y., assignor to Jane M. Guernsey, same place. Filed Nov. 2, 1877.

Claim.—1. The combination of a connecting-bar, pad, and hame, hinged substantially as shown, so as to permit said hame, connecting-bar, and pad to turn on each other on vertical axes, as set forth.

2. The combination of a connecting-bar constructed with trace or tug loop, and a pad and hame, hinged substantially as shown, and for the purpose specified.

3. A bar for connecting a pad and hame, constructed with trace or tug loop, pole-strap loop, and neck-saddle loop, as set forth.

4. A pad and connecting-bar, hinged together, and provided with a stop or stops to limit their relative motion, substantially as set forth.

5. The combination, with the bar and a hame, of the hinges and a stop or stops to limit the opening of said hinges, as and for the purposes set forth.

6. The combination, with a connecting-bar, of the neck, saddle, and straps, as and for the purpose set forth.

7. The combination of pads, connecting-bars, and hames, secured together, the pads having universal movement, substantially as shown and described.

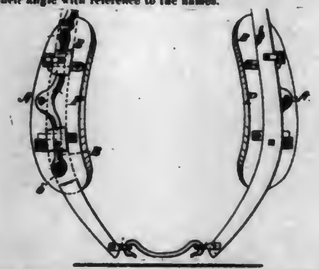
8. The combination of pads, connecting-bars, hames, and neck-saddle, the pads and hames being hinged to the bars, so as to have but a limited motion thereon, the neck-saddle being connected thereto by flexible connections, the line of support of pole and of effort through the trace passing through the bars, and the hames being flexibly connected at top and bottom, substantially as shown and described, and for the purposes set forth.

9. A rigid neck-saddle coupled to the connecting-bar by flexible straps, as and for the purpose shown and described.

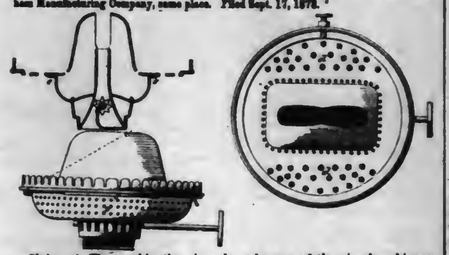
10. A neck-saddle constructed with a metallic arch and supporting-web, substantially as set forth.

11. The compound joints between the trace-tug arms A', their pivotal sleeves S, and the pressure-bars B, having axes at right angles to those of the sleeves, and constructed and arranged substantially as described, the same serving to render the trace-tug arms and shoulder-pads independently adjustable as to their angle with reference to the hames.

208,309.



208,309. LAMP-BURNERS. James G. Hollis, Waterbury, Conn., assignor to Benedict & Burnham Manufacturing Company, same place. Filed Sept. 17, 1878.



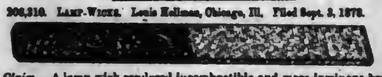
Claim.—1. The combination, in a lamp-burner, of the circular chimney-rest, provided with means for attaching the chimney thereto, an oblong deflector, and a corresponding oblong air-distributer, substantially as described.

2. The combination, in a lamp-burner, of the circular chimney-rest, provided with means for attaching the chimney thereto, an oblong deflector, and a corresponding oblong air-distributer, the said chimney-rest perforated at the long sides of the deflector, so as to make increased air-inlet at the said sides, substantially as described.

3. The combination, in a lamp-burner, of the circular chimney-rest, provided with means for attaching the chimney thereto, an oblong deflector, and a corresponding oblong air-distributer, the said chimney-rest hinged to the said air-distributer at one end and provided with fastening device at the opposite end, substantially as described.

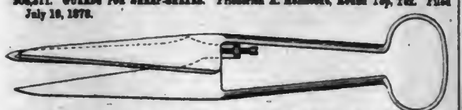
4. The combination, in a lamp-burner, of the circular chimney-rest, provided with means for attaching the chimney thereto, an oblong deflector, and a corresponding oblong air-distributer, the said chimney-rest hinged to the said air-distributer at one end, and provided with fastening device and shoulder on the said chimney-rest, to engage with the sides of the air-distributer, substantially as described.

208,310. LAMP-WICKS. Louis Hellman, Chicago, Ill. Filed Sept. 3, 1878.



Claim.—A lamp-wick rendered incombustible and more luminous by being impregnated with a compound consisting of Glauber's salts, chalk, coal-dust, and sand, substantially in the manner as herein described.

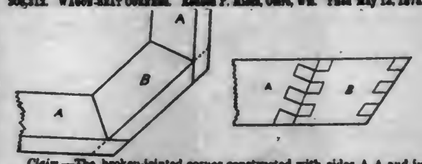
208,311. GUARDS FOR SHEEP-SHEARS. Frederick A. Holmesly, Round Top, Tex. Filed July 16, 1878.



Claim.—1. A guard for sheep-shears made of a plate with a curved front edge, a socket at the point, and a clamping device at the rear end, substantially as set forth.

2. A guard for sheep-shears, consisting of a plate having a flat upper side and a curved edge projecting beyond the edge of the blade, a socket at the point, and a screw at the rear end, as and for the purpose set forth.

208,312. WAGON-SEAT CORNERS. Reuben P. Hicks, Omro, Wis. Filed May 13, 1878.



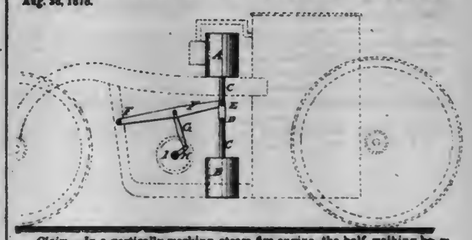
Claim.—The broken-jointed corner constructed with sides A A and intermediate piece or pieces B, locked together by fingers, the extremities of which in the respective pieces reach beyond the recesses between the fingers of the adjacent piece, substantially as shown and described.

208,313. STOP-COCKS. Jacob Hills, Haydenville, Mass. Filed July 24, 1878.



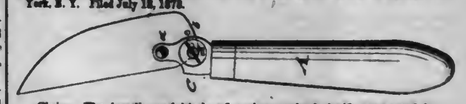
Claim.—A faucet or stop-cock having its valve-chamber provided with a piston-valve, and with auxiliary eduets *m* and *n*, arranged therewith and with the main educt *k* and induct *l* of said chamber, substantially as described, and to operate as set forth, whereby the upper end of the educt *m* may be closed by the piston-valve when the latter is raised off its seat.

208,314. STEAM FIRE-ENGINES. Hiram H. Hill and Frank Meeten, Augusta, Me. Filed Aug. 26, 1878.



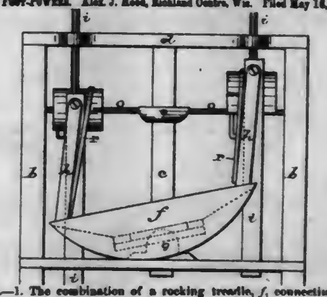
Claim.—In a vertically-working steam fire-engine, the half walking-beam F, the links E, the piston-rod C, and cross-head D, in combination with pistons of the steam-cylinder A and the water-cylinder B, and with the connecting-rod G and the crank H of the eccentric-shaft I, substantially as and for the purpose described.

208,315. CIGAR-MAKERS' KNIVES. Friedrich W. Hoffmann and Conrad Hoffmann, New York, N. Y. Filed July 18, 1878.



Claim.—The handle and blade of a cigar-maker's knife connected by a holder, C, secured by its shank to the former, and receiving the latter in a slot thereof, the blade being pivoted at *d*, and adjustable by a screw in holes *b*, as shown and described.

208,316. FOOT-POWERS. Alex. J. Hood, Richland Centre, Wis. Filed May 16, 1878.



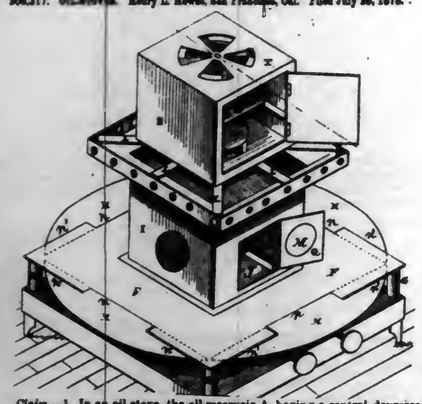
Claim.—1. The combination of a rocking treadle, *f*, connecting-rods *h*, pitman-rods *i*, and operating-belts connected thereto, the rods *i* having their ends moving in guides, substantially as shown.

2. The guards or levers *m*, loosely connected to the shaft *o*, and carrying the pawls *x*, substantially as described.

3. The combination of the guards *m*, pawls *x*, rods *i*, and operating-belts, substantially as set forth.

4. The rocking treadle *f*, having an aperture in its under side, in combination with the block *g*, substantially as specified.

208,317. OIL-STOVE. Henry L. Howes, San Francisco, Cal. Filed July 20, 1878.



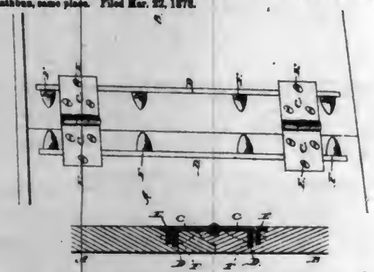
Claim.—1. In an oil-stove, the oil-reservoir A, having a central depressed bottom, B, said bottom having the longitudinal sunken grooves or wick-receivers C, in combination with the interior pan, E, having the wick-tubes D opening through its bottom, so as to allow the wick to enter the receivers, which are filled with oil from their ends, substantially as and for the purpose herein described.

2. The combination, with the stove-body I, having bottom J, of the plate F, having the removable extension or extensions N, substantially as and for the purpose specified.

3. The combination, with the square oil-reservoir, having the plate F mounted upon it, and the square stove-body I, of the square grate or rack L, whereby the heating-surface is extended, and the corners of the rack or grate adapted to receive sauce-pans, substantially as specified.

4. The oven S, with its double top T U, radiator V, and the central openings, W X, substantially as and for the purpose herein described.

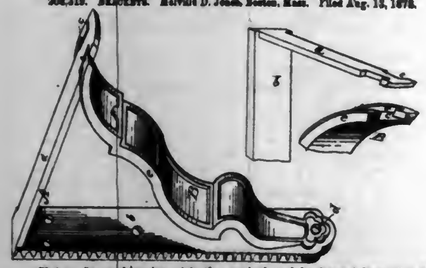
208,318. TABLES. Nicholas A. Hull, Peru, Ind., assignor of one-half his right to Charles S. Rathbun, same place. Filed Mar. 22, 1878.



Claim.—1. The combination of the table A, leaf B, hinge C, plate D, and screws E, substantially as and for the purposes set forth.

2. The table A, having hinged leaf B, each part being provided with a plate, D, inserted in grooves in the wood at right angles to the plane of the table and leaf, and attached thereto by screws F, substantially as shown and described.

208,319. BRACKETS. Melville D. Jones, Boston, Mass. Filed Aug. 13, 1878.



Claim.—In combination with the vertical and horizontal bars of a shelf-bracket, the front bar, B, connected at its top with the bar a by an interlocking joint, such as herein shown, and at its bottom with the bar b by a screw, d, or its equivalent, as set forth.

208,320. PLOWS. Daniel Kershner, Thos. S. Monger, and Francis M. Monger, Connersville, Ind. Filed Mar. 11, 1878.

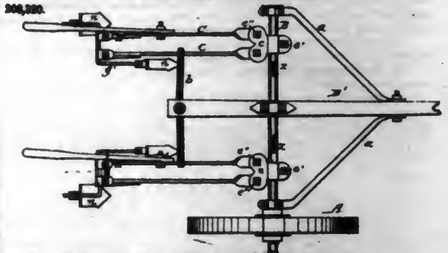
Brief.—Beams adjustable on axle, and arranged in pairs.

Claim.—1. The arched axle B and its pins c, combined with the clamping-plates c c, having recesses f f, and pivoted to the adjustable beam C of the plows, and arranged to form an intervening space for the passage of the pins c, all substantially as set forth.

2. The combination, with the parallel beams C C, of the plate D, ears i i, and bar I, bolted to the plate between the ears, and extended backward and forward to form the standards g g, substantially as set forth.

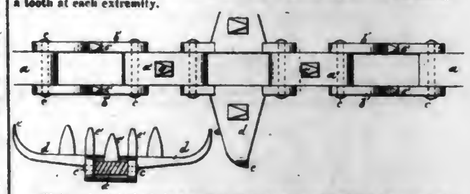
3. The combination of the plate D, ears i, and pivoted arms d, having enlargements d' and bolted to the beams C C, as set forth.

208,320.



208,321. JACK-CHAINS FOR SAW-MILLS. John B. Lonieux, Muskegon, Mich., assignor of one-half his right to Alex. Rodgers, same place. Filed July 11, 1878.

Brief.—A jack-chain, the body of which is formed of solid straight links coupled together by plain side links and suitable rivets, is provided at suitable intervals in the length of the chain with toothed side links, followed by a solid toothed center link, and a link carrying a curved toothed saddle having a tooth at each extremity.



Claim.—1. A jack-chain provided with the curved saddle d, having teeth e at its extremities, and teeth e' between the teeth e, as described, for the purpose of retaining the log in position, as specified.

2. In a jack-chain, the combination of the curved and toothed saddles with the toothed links a' and b', constructed and arranged substantially as shown and described.

3. In a jack-chain, the solid toothed center links, a', made of sufficient width to occupy the space between the toothed side links, b', in combination therewith and with the links a and b, in the manner shown and described.

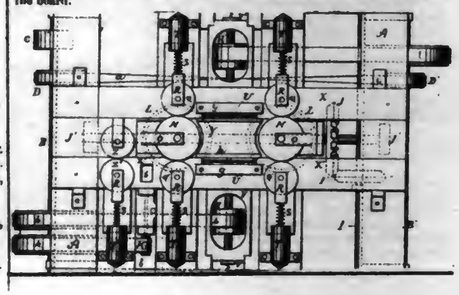
208,322. SAD-IRONS. Albert Lohmann, Iserlohn, Prussia, Germany. Filed Feb. 14, 1878.



Claim.—The combination of the hollow sad-iron, having lid, perforated sides, pointed front, and upwardly-projecting pins G G on its bottom with the solid combustible heater C, made in one piece, with straight sides and back and pointed front, to correspond to the interior cavity of the sad-iron, substantially as and for the purpose herein shown and described.

208,323. TONGUING AND GROOVING MACHINES. W. S. Mayo, Ottawa, Ontario, Canada. Filed Aug. 20, 1878.

Brief.—The lumber is fed over an inclined table by two sets of fixed and spring-acted friction rollers to the tonguing or grooving cutters, and is fed backward by the same feed-rollers, and another series of friction-rollers to another grooving or tonguing cutter, which operates upon the other edge of the board.



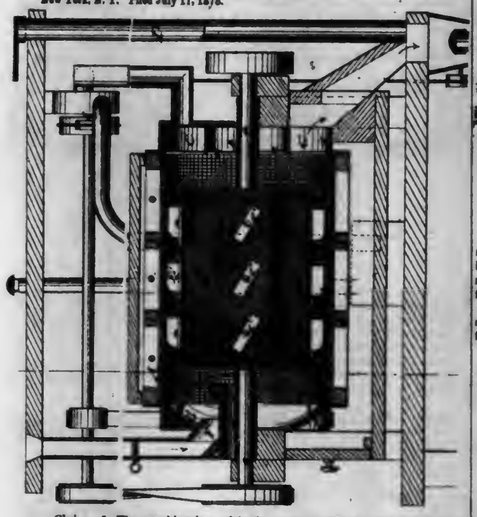
Claim.—1. The saws or cutters U U', revolving in opposite directions on independent arbors, in combination with the upright feed-rollers N and automatically-adjustable friction-rollers Q Q', arranged substantially as described, and for the purpose set forth.

2. The combination of the single feed-rollers N with duplicate sets of adjustable frictional rollers Q Q', operated by suitable gearing, the said rollers being placed vertically upon the top of the frame and in lines with each other, substantially as described.

3. In a grooving-and-tonguing machine, the combination of the adjustable bed-pieces X X' with the cutters U U' and feed and friction rollers N Q Q' Z Z', substantially as and for the purpose described.

4. In a machine for grooving and tonguing lumber, the combination of the rotating cutters U U', rollers N, friction-rollers, knives n, gear-wheels, and shafting, substantially as described, and for the purposes set forth.

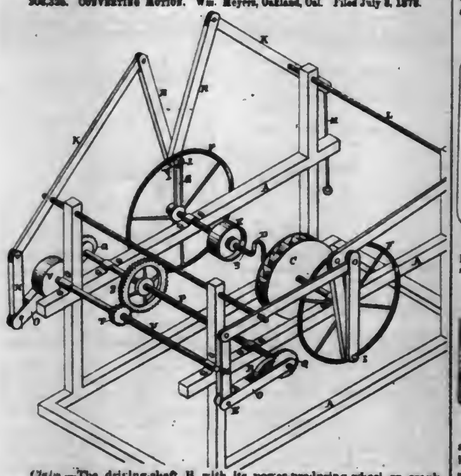
208,324. MACHINES FOR HULLING, SCOURING, AND CLEANING COFFEE. Patrick McAuliff, New York, N. Y. Filed July 11, 1878.



Claim.—1. The combination, with the outer revolving cylinder, having flanged head and annular convex portion, of a delivery-spout having convex and flanged bottom to shed coffee at both sides of shaft, substantially as specified.

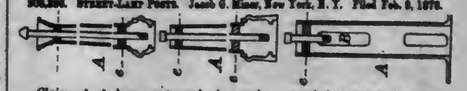
2. The combination of the outer revolving cylinder, having discharge-head with circumferential flange, with a fixed and flanged end wall, and with a pipe and suction-fan for drawing off the lighter impurities, substantially as specified.

208,325. CONVERTING MOTION. Wm. Meyers, Oakland, Cal. Filed July 8, 1878.



Claim.—The driving-shaft B, with its power-producing wheel or crank, and the exterior wheels F, with their connecting-arms H, and levers K, in combination with the pawl-bars O, pawls and ratchets R Q, shafts P U, gear S, and pinions S T, all arranged to operate substantially as herein described.

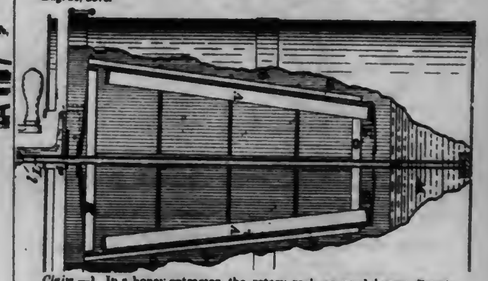
208,326. STREET-LAMP POSTS. Jacob G. Miner, New York, N. Y. Filed Feb. 9, 1878.



Claim.—1. A lamp-post made in sections coupled together by screw-threaded gas-pipe connections, as herein specified.

2. The combination, with the sections A A of a lamp-post, of the sections B B of the gas-pipe, arranged therein, and provided with the screw-couplings C at their ends, as herein specified.

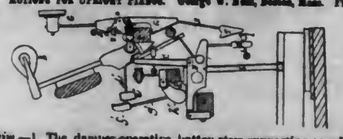
208,327. CENTRIFUGAL HONEY-EXTRACTORS. Charles F. Muth, Cincinnati, Ohio. Filed Aug. 15, 1878.



Claim.—1. In a honey-extractor, the rotary rack or comb-bearer B, substantially as represented, having one or more flat upwardly and outwardly inclined wire-cloth sides, R, united to a shaft, I, journaled vertically within a receiver, the whole being formed, arranged, and operating in the manner set forth.

2. The open revolving cage or basket B, having two opposed upwardly and outwardly inclined sides of woven wire, R, and the foot-curbs S, as and for the purposes explained.

208,328. ACTIONS FOR UPRIGHT PIANOS. George W. Hall, Boston, Mass. Filed July 1, 1878.

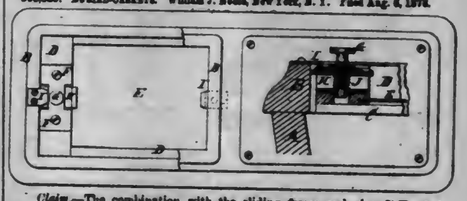


Claim.—1. The damper-operative button-stem-supporting arm K, as supported by and extending down from the pivotal arm D of the jack or fly, and arranged with the damper rod or arm S, as set forth.

2. The damper lever or arm S, provided with the wedge-shaped bearing or inclined piece T, in combination with the damper-operative button-stem-supporting arm K, extended from the fly-sustaining pivotal arm D, the button-stem being screwed into and through the arm K, and all being in other respects substantially as shown and described.

3. In a piano forte action, the hammer-fly-elevating arm D, provided with the separate back-stop lifter b', arranged over it, as set forth, and also with the damper-operative button-stem-supporting arm K, extending down from it, (the said arm D,) all being arranged and to operate substantially as set forth.

208,329. BURIAL-CASKETS. William J. Noble, New York, N. Y. Filed Aug. 6, 1878.



Claim.—The combination, with the sliding frame and glass D E, of the pin G, the latch H, the catches I I, and the spiral spring J, all arranged substantially as and for the purpose specified.

208,330. HOSE-NOZZLES. George F. Palmer, Rochester, N. H. Filed June 26, 1878.

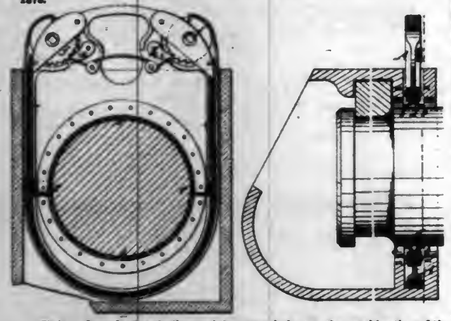


Claim.—1. The combination, with a hose-nozzle, of an elastic bushing attached thereto, of an adjustable screw-cap, and of a washer interposed between front shoulder of cap and outer end of bushing to take up friction, substantially as set forth.

2. In a hose-nozzle, an elastic bushing having one or more exterior annular grooves, for the purpose set forth.

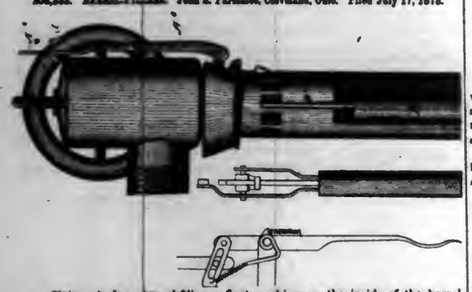
3. In a hose-nozzle, an elastic bushing having one or more exterior annular grooves and an encircling wire or cord in the groove or grooves, to prevent outward bulging of bushing, substantially as described.

208,331. GUARDS FOR CAR-AXLE BOXES. James Porter, Detroit, Mich. Filed Aug. 17, 1878.



Claim.—In a dust and oil guard for car-axle boxes, the combination of the upper guard-section, having semicircular recess with elastic washers or flanges, intermediate packing, and cushioning end blocks, with the lower guard-section, having washers and packing, and with an encircling strap and mechanism for tightly stretching the strap and pressing the guard-sections around the axles, substantially as specified.

208,332. BARREL-FILLERS. John S. Parmalee, Cleveland, Ohio. Filed July 17, 1878.



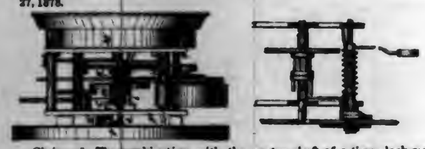
Claim.—1. In a barrel-filler, a float working on the inside of the barrel and on the outside of the filler-tube, substantially as described and shown.

2. The combination, with air-passage within a barrel-filler, of a drip-pan, provided at its upper end with deflectors to prevent the escape of liquid, substantially as set forth.

3. In a barrel-filler, the spring-latch A', substantially as and for the purposes shown.

4. The combination, with an oscillating float of a barrel-filler, of a lever, F, provided with an adjustable catch, d^2, an arm, F', and a crank or hand wheel attached to the valve-operating shaft, and provided with a catch, d, substantially as set forth.

208,333. CLOCK-STRIKING MECHANISM. Henry W. Porter, Forestville, Conn. Filed Aug. 27, 1878.



Claim.—1. The combination, with the center shaft of a time clock-movement having a lift-pin combined therewith, of a lift attached to a longitudinally-adjustable strike-shaft, substantially as set forth.

2. The combination, with the center shaft of a time-movement having one or more lift-pins combined therewith, of a lift attached to a sliding strike-shaft, and a cam for regulating the longitudinal adjustment of the latter, substantially as set forth.

3. The combination, with the center shaft of a time-movement, of a collet attached to the shaft, said collet having one or more lift-pins secured thereto, and a lift attached to longitudinally adjustable strike-shaft, substantially as set forth.

4. The combination, with the center shaft of a time-movement provided with a collet having two lift-pins attached thereto diametrically opposite each other, of a lift attached to a longitudinally-adjustable strike-shaft, substantially as set forth.

5. The combination, with the center shaft of a time-movement having a collet attached thereto which is provided with four lift-pins located equidistant from each other, of a lift attached to a longitudinally-adjustable strike-shaft, substantially as set forth.

6. The combination, with a strike-shaft provided with elongated pivots, of a face-cam and a spring for retaining one of the strike-shaft pivots on said cam, substantially as set forth.

7. The combination, with a strike-shaft provided with elongated pivots, of a face-cam and a spiral spring surrounding the strike-shaft, and adapted to impart both longitudinal and rotary motion to the strike-shaft, substantially as set forth.

8. The combination, with a strike-shaft constructed with elongated pivots, and a spring for imparting both rotary and longitudinal movement to the same, of a face-cam adapted to serve as an end bearing for one of the pivots of the shaft, said cam having a pointer connected therewith, and an indicating-dial formed on the back of the clock-case, substantially as set forth.

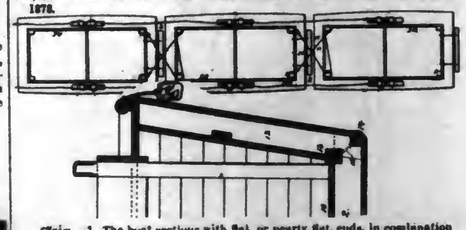
9. The combination, with a cam for imparting longitudinal movement to a strike-shaft, of a pointer and indicating-dial, substantially as set forth.

10. The combination, with one or more lift-pins connected with the time mechanism of a clock-movement, of a striking-shaft, the parts adapted to be relatively adjusted so that the strike mechanism can be thrown either in or out of engagement with the time mechanism, substantially as set forth.

11. The combination, with the center shaft of a time clock-movement and lift-pins connected therewith, of a striking-shaft adapted to be adjusted relatively to said lift-pins to cause the strike mechanism to operate at any desired intervals of time, substantially as set forth.

12. The combination, with two or more lift-pins of varying lengths connected with and moved by the time mechanism of a clock-movement, of a striking-shaft, said parts adapted to be relatively adjusted so that the strike mechanism may be operated at different intervals of time, substantially as set forth.

208,334. CANAL BOATS OR BARGES. Julius A. Preston, New Haven, Conn. Filed Mar. 4, 1878.



Claim.—1. The boat-sections with flat, or nearly flat, ends, in combination with flexible connections from the middle part of one section to the next, to allow the separate sections to move independently without the risk of one section colliding with the next, the intervening water acting as a cushion, substantially as set forth.

2. The boat or barge made with the thwart 13 or 14 across the ends of the boat at the junction of the bottom timbers 2 and inclined end timbers 12, secured by bolts, substantially as specified.

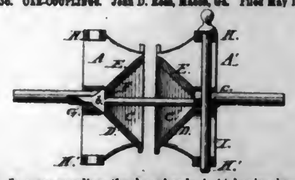
208,335. COOLING-FAUCETS FOR BEER-BARRELS. C. G. Redmond, San José, Cal., assignor of one-half of his right to Archibald W. White, and one-fourth of his right to Richard D. Berry, both of same place. Filed June 6, 1878.

Brief.—By the depending pipe the cooler is kept full, even when the beer is low in the barrel.



Claim.—In combination with the beer-cooler D E and the faucet B, the depending pipe A, to throw the cooler below the rim of the beer-barrel, as and for the purpose set forth.

208,336. CAR-COUPLINGS. John D. Rees, Macon, Ga. Filed May 15, 1878.



Claim.—In a car-coupling, the draw-heads A A', having inwardly-inclined sides C C' and bottom D and upper pivoted gravitating-plate E, forming opening F, cross-frames H H', and coupling-pin I, in combination with the coupling-link G, having arrow-shaped end or head *b* and open end *c*, substantially as and for the purpose specified.

208,337. SCAFFOLDS. John A. Russell, Elizabeth, assignor of one-half his right to Harvey Wilcox, Union Township, N. J. Filed Aug. 12, 1877.

Brief.—The parts are detachable for transportation. May be either suspended by hooks vertically adjustable in brackets, or rest on the ground in sockets adjustable on a cross-bar, and supported by braces. The hooks are provided with adjustable lengthening-bars, having adjustable bearing-screws.

Claim.—1. In a portable scaffold, the combination of the uprights A A, the adjustable platform E, and the adjustable suspension-hooks H H.

2. The combination of the uprights A A, the adjustable platform E, the horizontal foot-bar J, provided with adjustable sockets, the braces N N, and the tie-bar M.

3. The combination of the suspension-hooks H with the vertically-adjustable lengthening-bar I.

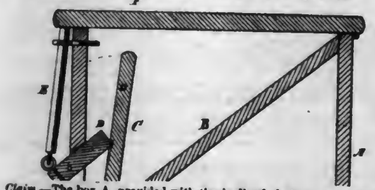
4. The combination of the suspension-hook H with the adjustable lengthening-bar I and the adjusting-screw K.

208,337.



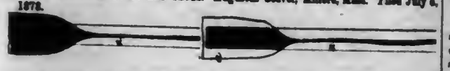
208,338. RECEPTACLES FOR ARTICLES TO BE SCREENED. John C. Scales, Chicago, Ill. Filed Aug. 6, 1878.

Brief.—The chute may be of wire fabric. The stop may come against upper face of chute, and not at its end. The stop may be in sections, the upper rigidly secured to the sides of the box and the lower hinged thereto; or the stop may slide vertically in grooves, and the lever raise and lower it. The lower compartment of box has closed openings and sifting device.



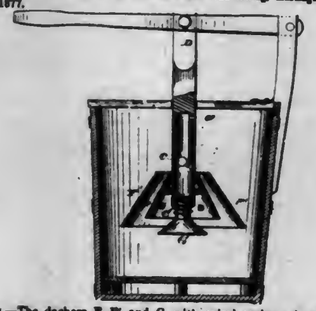
Claim.—The box A, provided with the inclined chute or partition B, flap or stop C, and retaining-catch D, in combination with the rod E and cover F, substantially as and for the purposes specified.

208,339. STAYS FOR BOOTS AND SHOES. Augustus Soaver, Milford, Mass. Filed July 6, 1878.



Claim.—As an improved article of manufacture, a leather stay having a lining of cloth cemented thereto and the leather edges folded, as set forth.

208,340. WASHING-MACHINES. W. W. Selliek and John Young, Hastings, Nebr. Filed Nov. 3, 1877.



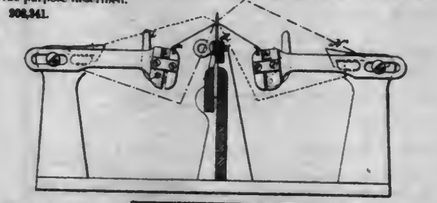
Claim.—The dashers F, F', and G, with spiral springs *e*, in combination with tubular staff D, provided with ball-valve *s* and aperture *a*, substantially as shown, and for the purpose described.

208,341. MACHINES FOR POLISHING THE EYES OF NEEDLES. Andrew H. Smith, Mount Carmel, Conn. Filed Apr. 18, 1878.

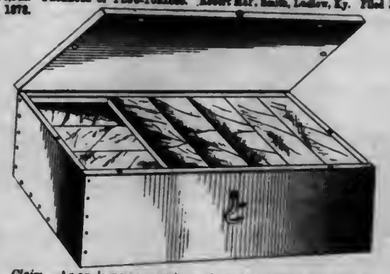
Claim.—1. The combination of the stationary clamp for holding stationary a series of needles, a pair of cross-heads, one on each side of the said clamp, each independent of the other, and so as to be operated independently by the respective hands of the operator, whereby the relative positions may be changed at the pleasure of the said operator, with a series of threads passed one through the eye of each needle, and the ends of the said threads secured in the said cross-heads, so that the movement of the said cross-heads to and from the needles or up and down will correspondingly move the threads through the eyes of the needles, substantially as described.

2. In combination with the cross-heads carrying the threads for polishing the eyes of needles, the elastic tension *n* for each independent thread, arranged on the said cross-heads beneath the threads, substantially as and for the purpose described.

208,341.

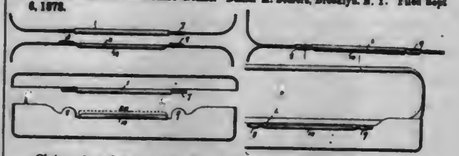


208,342. PACKAGES OF PLUG-TOBACCO. Robert McF. Smith, Ludlow, Ky. Filed Jan. 29, 1878.



Claim.—As an improvement in packages of plugs of tobacco pressed together and compacted in a rectangular box in the usual manner, the hinged or removable closing and opening lid or wall of the box, located on the side (not the end) of the box, and at that side at which, when enclosed, the flat sides of the plugs are exposed to view.

208,343. HINGES FOR METALLIC BOXES. Daniel M. Somers, Brooklyn, N. Y. Filed Sept 6, 1878.

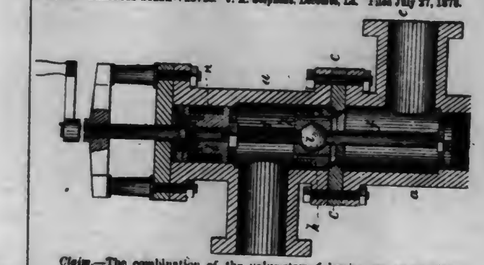


Claim.—1. A box having a hinge one knuckle of which is provided by swaging a projecting lip of the cover to form the same, and the other knuckle of which is provided by cutting the back plate of the box-body into such shape as to form ears 8 9, which are bent to embrace the pintle 7, substantially as described.

2. The combination, with the cover and body of a metal box, of the knuckle 1, pintle 7, ears 8 9, and guard 10, substantially as described.

3. The combination, with the cover and body of a metal box, of the knuckle 1, pintle 7, ears 8 9, and guards 10 15 16, substantially as described.

208,344. BALANCED STEAM-VALVES. J. A. Stephens, Lecompte, La. Filed July 27, 1878.



Claim.—The combination of the valve-stem *f*, having an upper piston-head, *l*, a central valve, *k*, and a lower piston-head, *m*, with the valve-casing *a*, having an inlet-pipe, *d*, above the valve-seat *c*, and an exit-pipe, *e*, below the said valve-seat, substantially as and for the purpose described.

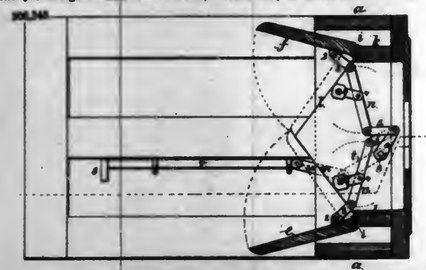
208,345. PHOTOGRAPHIC CAMERAS. Isaac H. Stoddard, Auburn, Conn., assignor to E. and H. T. Anthony & Co., New York, N. Y. Filed June 15, 1878.

Claim.—1. The combination, with the camera-box, of two swinging shut-

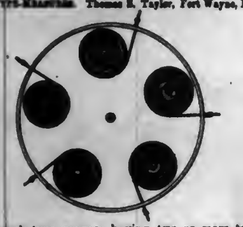
ters within the box, and the slide-rod *o* and connecting mechanism, substantially as set forth, whereby the said shutters are simultaneously opened or closed, as set forth.

2. The combination, with the camera-box, of two swinging shutters, *e f*, levers *n*, links 3 5, crank *o*, shaft *s*, and actuating slide-rod *o*, substantially as set forth.

3. The swinging shutters *e f*, lapping at their edges, in combination with the V-bearings *l m* and camera-box *n*, substantially as set forth.

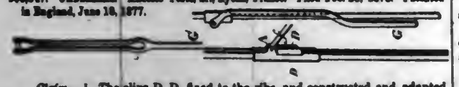


208,345. PRINTERS' TYPE-MEASURES. Thomas S. Taylor, Fort Wayne, Ind. Filed Aug. 24, 1878.



Claim.—A printer's type-measure having two or more tapes, each tape provided on each side with a different type-scale, in combination with a casing, within which all of said tapes are attached and concealed, substantially as and for the purposes set forth.

208,347. UMBRELLAS. Anatole Testu, fils, Lyons, France. Filed Feb. 21, 1878. Patented in England, June 16, 1877.



Claim.—1. The clips D D, fixed to the ribs, and constructed and adapted to clip the parts *f* of the stretchers, in manner and for the purpose substantially as herein shown and described in respect to Figs. 1 and 2.

2. The clips D D, fixed to the stretchers, and constructed and adapted to clip the ribs, in manner and for the purpose substantially as herein described.

3. The clips D D, constructed and adapted to clip onto the heads of nails or studs, substantially as described and shown.

4. The stretcher G, having the elongated forked part to adapt it to clip the rib, in manner and for the purpose substantially as herein shown and described.

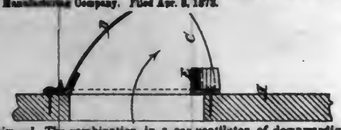
5. The runner composed of an inner tube, R', and outer ornamental tube or cover, S, united together by a ferrule, T, screwing onto the tube R', in combination with the ribs, stretchers, and clips, substantially as herein shown and described.

208,348. PRINTERS' GALLEYS. William T. Tillinghast, Boston, Mass. Filed July 30, 1878.



Claim.—A printer's galley provided with quoins *g*, having shoulders *f*, which project into and permit the movement of the quoins in longitudinal slots in the side rail, *c*, and combined with screws *h*, all constructed and arranged to operate substantially as described.

208,349. CAR-VENTILATORS. Edward A. Tuttle, New York, N. Y., assignor to the Tuttle & Bailey Manufacturing Company. Filed Apr. 8, 1878.



Claim.—1. The combination, in a car-ventilator, of downwardly-converging sides C and a downwardly-inclined cover, D, on a base, F, adapted to be attached to the side of a car, substantially as described.

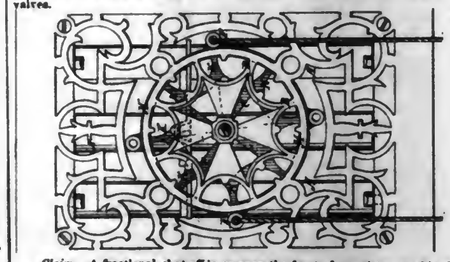
2. The combination, with the downwardly-converging sides C and downwardly-inclined cover D, of marginal projections G of said cover, projecting beyond the sides parallel with or in the direction of the sides of the car, substantially as described.

3. The combination, with the downwardly-inclined cover D, of the downwardly-converging sides C, having the lower ends inclined upward from the side of the car to their junction with the cover, substantially as described.

4. The combination, with the sides C and cover D, of a ventilator adapted to apply to the side of a car, of the horizontally-projecting guard-deflector E, located at the bottom of the opening for the escape of the air and between the sides C, substantially as described.

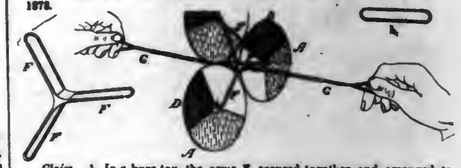
208,350. AIR-REGISTERS. Edward A. Tuttle, New York, N. Y., assignor to the Tuttle & Bailey Manufacturing Company. Filed Apr. 8, 1878.

Brief.—Adapted to indicate at the face-plate the position of the register-valves.



Claim.—A fractional shut-off in or upon the front of a register, combined with the valves of the latter, and opening and closing in unison therewith, substantially as described.

208,351. CHROMATROPE BUSH-TOYS. Henry Van Altena, Milwaukee, Wis. Filed May 8, 1878.

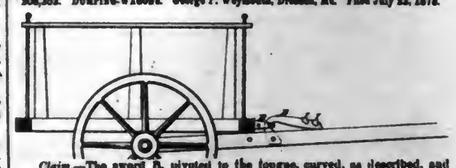


Claim.—1. In a buzz-toy, the arms F, secured together and arranged to radiate from a common center, around which they revolve, substantially as and for the purpose specified.

2. The combination of the disks A with the arms F, constructed and arranged to operate substantially as and for the purpose specified.

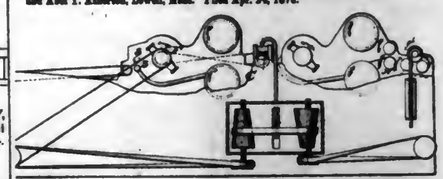
3. The combination of the arms F, arranged to radiate from a common center, with the disk A and cords G, all substantially as and for the purpose specified.

208,352. DUMPING-WAGONS. George F. Weymouth, Dresden, Me. Filed July 23, 1878.



Claim.—The sword B, pivoted to the tongue, curved, as described, and having the notches I I, in combination with the staple D, having bolt H, substantially as and for the purpose described.

208,353. COTTON OPENERS AND LAPPERS. William E. Whitehead, Miles Plastis, England, and Abel T. Atherton, Lowell, Mass. Filed Apr. 24, 1878.



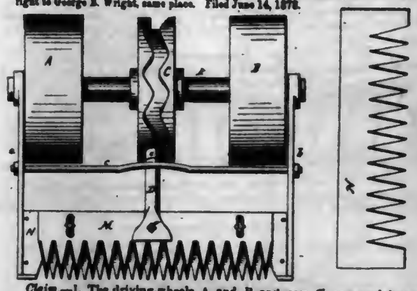
Claim.—In a machine for beating or opening cotton or other fibrous material, the combination of a feed mechanism, a beater, a set of collecting-cages, an evening mechanism, a second beater, and a second set of collecting-cages, the evening mechanism being arranged in rear of the first and in front of the second beater, substantially as and for the purposes herein set forth.

208,354. CARVING-FORKS. Daniel Williams, West Philadelphia, Pa. Filed Aug. 7, 1878.



Claim.—A fork provided with a guard-lever, D, fulcrumed between its arms *b s* in a slot of shank, the arm *b* being pressed by a spring, and the arm *c* connected by rod F with slide-block G, as shown and described.

208,355. LAWN-MOWERS. Charles A. Wright, New Haven, Conn., assignor of one-half his right to George B. Wright, same place. Filed June 14, 1878.



Claim.—1. The driving-wheels A and B and cam C, arranged between them on the same shaft, E, in combination with the knife-plates M and N, the plate M being pivoted near its center to the plate N by the bolt *o*, and rod D, provided with the roller *x*, all the said parts constructed and combined as shown and set forth.

2. The plate M, provided with knives, as described, pivoted to the plate N by the bolt *o*, and arranged to vibrate in a small arc of a circle, as shown and set forth.

208,356. SQUARE REVOLVING GRATE-BARS. John Ashcroft, Brooklyn, N. Y. Filed Sept. 20, 1878.

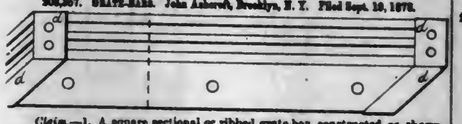


Claim.—1. A hollow grate-bar made of square cross-section and provided with air-apertures on all its sides, and adapted to revolve in journals or bearings, substantially as shown.

2. A square hollow grate-bar provided with air-apertures on all of its sides, as an article of manufacture, substantially as shown.

3. A hollow square perforated grate-bar, in combination with grooved bearings, operating as described, and adapted to revolve in said bearings, substantially as set forth.

208,357. GRATE-BARS. John Ashcroft, Brooklyn, N. Y. Filed Sept. 20, 1878.



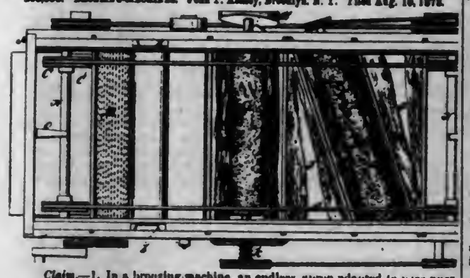
Claim.—1. A square sectional or ribbed grate-bar, constructed as shown, and adapted to revolve, substantially as set forth and described.

2. The combination of a square or sectional ribbed grate-bar with a grooved bearing-bar, the grate-bars being adapted to revolve, whereby they are cleared of ashes and cinders, in the manner substantially set forth and described.

3. The combination of the square sectional grate-bar, the tie or stay bolts, and the spacing or separating pieces with a grooved bearing-bar, the grate-bars adapted to revolve in said grooves, as set forth.

4. The combination, with a sectional revolving grate-bar of square cross-section, of the tie or stay bolts, the spacing-pieces, and the binding-bands *d*, constructed and arranged to revolve in suitable bearings, substantially as set forth and described.

208,358. BRONZING-MACHINES. John T. Ashley, Brooklyn, N. Y. Filed Aug. 10, 1878.



Claim.—1. In a bronzing-machine, an endless apron adapted to pass over a curved surface between the carrying-rollers, to present the surface of said carrying-apron to the action of the pads or brushes, substantially as and for the purposes set forth.

2. The bands C and band-wheels C', arranged so as to project over the tops of the apron-rollers, for the purpose of obtaining a continual strain upon the tapes, as herein set forth.

3. In a bronzing-machine, the revolving perforated cylinder D, placed within the frame of the machine and over the endless carrying-apron, substantially as and for the purposes set forth.

4. In a bronzing-machine, a pad or brush having an up-and-down motion, for dabbing or pressing the bronze into the work, as described.

5. In a bronzing-machine, the stationary pad composed of fur, down, or other soft material, for spreading the bronze, as shown and described.

6. In a bronzing-machine, a combined revolving and reciprocating roller covered with fur or other suitable material, for spreading the bronze or cleaning the surplus bronze from the face of the work, as shown and described.

7. In a bronzing-machine, the combined revolving and reciprocating roller, operated by the cam G' and the spring *k*, as shown, for the purposes specified.

8. A roller placed diagonally to cause it to bear upon the sheets of paper gradually, beginning at one corner, as described.

9. A bronzing-roller provided with a cushion between the stock and the outer surface, for the purposes described.

10. In a bronzing-machine, a brush of fur or equivalent material, made in the form of an endless apron, as and for the purposes set forth.

11. In a bronzing-machine, the combination of the cleaning-roller with the wiping devices I, kept in contact therewith, substantially as and for the purpose set forth.

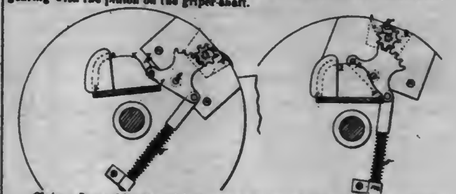
12. In a bronzing-machine, the pad for cleaning the face of the endless apron, adapted to be inserted and removed through the side of the frame of the machine, as shown and described.

13. In a bronzing-machine, the stationary wiping-pads, in combination with the endless apron, for the purpose of cleaning the face of the work, as set forth.

14. A bronzing-machine having its interior coated with material refractory to bronze, for the purpose specified.

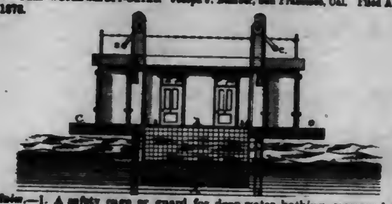
208,359. GRIPER-MOTIONS FOR PRINTING-MACHINES. Nathan Babcock, Westerly, R. I. Filed May 17, 1878.

Brief.—That portion of the double cam which governs the closing of the gripers is grooved to give positive action to the spring-pressed sector-lever, gearing with the pinion on the griper-shaft.



Claim.—In combination with the griper-shaft of the cylinder and its pinion, a sector-plate, an actuating spring, and the double cam, the whole constructed to operate substantially as and for the purpose described.

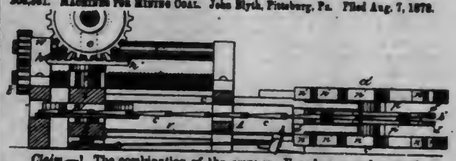
208,360. DEEP-WATER SAFETY-BATHS. Joseph J. Bember, San Francisco, Cal. Filed Apr. 12, 1878.



Claim.—1. A safety cage or guard for deep-water bathing, composed of wire-netting A on the bottom and sides, and with a frame or rim, *a*, around the top, combined with a suitable supporting-platform for holding it in the water, with its bottom at any required depth below the surface, substantially as described and shown.

2. A bathing apparatus consisting of the cage A, platform C, and means for adjusting the position of such cage in the water, substantially as described and shown.

208,361. MACHINES FOR MINING COAL. John Blyth, Pittsburg, Pa. Filed Aug. 7, 1878.



Claim.—1. The combination of the scrapers F, rods *p r*, and a crank, Q, and driving-shaft *r*, substantially as shown.

2. The teeth *a'*, having the pins 7 and projections *a*, substantially as set forth.

3. The combination of the plates *a' b' c'*, provided with the cutter-teeth *n'* and the clearer-teeth *d'*, the clearer-teeth being placed in the center, and serving for the operating belts or chains to catch over, substantially as specified.

4. The cutters B, each composed of three polygonal plates of the same dimensions, and secured to one shaft, substantially as shown and described.

206,362. CHURN. James Bowes, Newark, N. J. Filed June 22, 1878.



Claim.—The combination, with stays A and B, arranged as described, of adjustable stays C, for the purposes set forth.

206,363. MACHINES FOR MAKING PLATES OF CLAY AND OTHER PLASTIC MATERIAL. Ludwig Brandeis, Brooklyn, E. Y. Filed Sept. 7, 1878.



Claim.—1. As an improvement in the art of producing sheets of clay or other material, the mode described of forcing the material through a die having an opening conforming to a spiral or other bent line, producing a coiled or bent sheet, and then flattening the latter, as set forth.

2. A die for the production of sheets of clay or other material provided with a spiral opening, *a*, equal in length to the width of the sheet to be produced.

206,364. PAVING-STONE. Charles Brunner, Quincy, Ill. Filed May 22, 1878.

Brief.—One part hard blue soap-stone, pulverized; one part fire-clay, pulverized; one part light-burning soap-stone, pulverized; one part extract of cinders from iron-furnaces, crushed and sifted. The light-burning soap-stone and the fire-clay are melted together and mixed with the hard blue soap-stone and the cinders, and subjected to pressure in molds of the desired form, and afterward baked.

Claim.—As an improved manufacture, a paving-tile or analogous structure formed of blue hard soap-stone, genuine fire-proof clay, light-burning soap-stone, and extract of cinders or analogous materials, in suitable proportions, substantially as specified.

206,365. RAZOR-STROP. Alfred V. Brokhahn, New York, N. Y. Filed Aug. 15, 1878.

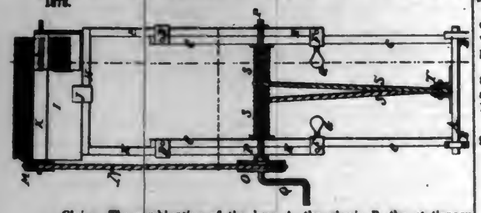


Claim.—1. A razor-strop having its sustaining-frame provided with a longitudinal receptacle adapted as a case for the razor, and having a lateral aperture, *h*, opening between the stropping-bands, with a sliding lid or cover, *m*, moving upon the same between the stropping-bands, substantially as herein shown and described.

2. In a razor-strop having a hollow body adapted as a case for the razor, and opening on the side thereof, the curved rest *k*, terminating the receptacle of the case at the aperture or mouth end thereof, which is adapted to support the end of the razor and direct it from the aperture with ease and precision when removed, substantially as herein shown and described.

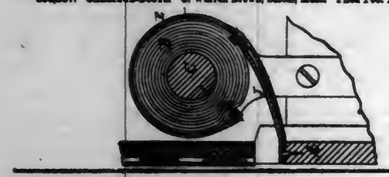
3. In a razor-strop having its body or frame provided with a receptacle on its side adapted as a case for the razor, the case *e f*, provided with a lateral aperture, *h*, formed with deep lateral recesses *i i*, exposing the end of the razor, and permitting the effective grasp thereof, with a cover, *m*, adapted to embrace and close the same, substantially as herein shown and described.

206,366. MACHINE FOR CALKING. Asa Brooks, Hamilton, E. Y. Filed July 24, 1878.



Claim.—The combination of the base A, the wheels B, the stationary standards C, the sliding standards E, the keepers and set-screws D F G, the top board, H, the pan I, the guard-brush K, the rotating brush L, the pulleys and cord M O N, the crank-shaft, crank, and drum P Q R, the two cords S, and the two pulleys T, with each other, substantially as herein shown and described.

206,367. GARMENT-BOOTS. G. Warren Brown, Salem, Mass. Filed Feb. 13, 1878.



Claim.—1. In a thill-coupling, the spring D, secured to the under side of the axle, extending to the rear, and then curved forward and bent upwardly, terminating in a head, *c*, with concave inner face, which presses against the head of the coupling-bolt, constructed and arranged substantially as described and shown.

Claim.—1. In combination with a carriage having its boot or covering wound around a rod or cylinder, the spring-cover E, substantially as and for the purpose described.

2. In a carriage having its boot or covering wound around a rod or cylinder, the water-shed J, or its equivalent, substantially as and for the purpose herein shown and described.

3. In combination with a carriage having its boot or covering D wound about a rod or cylinder, the spring-cover E and water-shed J, substantially as shown and described.

206,368. METALLIC PACKING FOR STUFFING-BOXES. William Brown, Jersey City, N. J., assignor of one-half his right to Frederick Roberts, New York, N. Y. Filed Aug. 22, 1878.



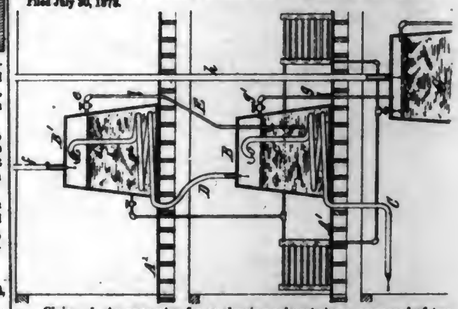
Claim.—The metallic tubular packing herein described, composed of independent and interposed continuous spiral strips of reverse wedge shape in their cross-section, arranged substantially as shown and described.

206,369. ASH-SIFTERS. William E. Brush, New York, N. Y. Filed Dec. 27, 1877.



Claim.—In combination with the rocker C, the sieve B, fitted therein so as to have no independent movement, and having its sides extended at *a* beyond the end *b*, whereby a space or passage is left between said end and the adjacent end of the rocker, as and for the purpose described.

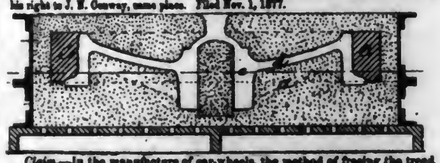
206,370. APPARATUS FOR UTILIZING EXHAUST-STEAM. Richard Bullymore, Buffalo, N. Y. Filed July 30, 1878.



Claim.—1. An apparatus for condensing exhaust-steam, composed of two or more tubs, B B', arranged one above the other, exhaust-pipes C D, provided, respectively, with coils *c d* and ascending open portions *c' d'*, overflow-pipe E, and safety-escape *f*, substantially as shown and described.

2. An apparatus for condensing exhaust-steam, composed of two or more tubs, B B', arranged one above the other, exhaust-pipes C D, provided, respectively, with coils *c d* and ascending open portions *c' d'*, overflow-pipe E *g*, receiving-tub G, and vents *f h*, substantially as shown and described.

206,371. CASTING CAR-WHEELS. Benjamin Burgun, Baltimore, Md., assignor of one-half his right to J. H. Conway, same place. Filed Nov. 1, 1877.



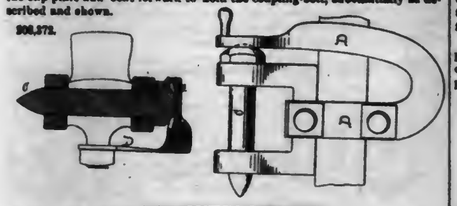
Claim.—In the manufacture of car-wheels, the method of freeing the tread and other portions of the wheel in contact with the rail from slag, dross, scoria, &c., by pouring the metal at the hub and running the metal to the rim, first through the arm-channels, and subsequently up a plain concave-convex plate-channel to the highest point of the mold, substantially as herein described, for the purpose set forth.

206,372. THILL-COUPLINGS. Silas K. Collins, Wayne, Mich. Filed July 23, 1878.

Claim.—1. In a thill-coupling, the spring D, secured to the under side of the axle, extending to the rear, and then curved forward and bent upwardly, terminating in a head, *c*, with concave inner face, which presses against the head of the coupling-bolt, constructed and arranged substantially as described and shown.

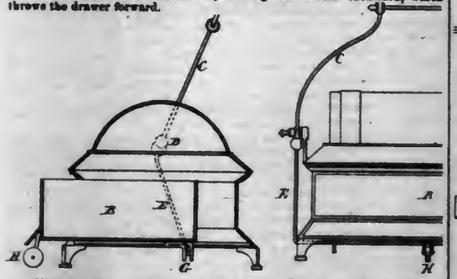
2. The combination, with the axle A and clip B, of the spring D, forming the clip plate and bent forward to hold the coupling-bolt, substantially as described and shown.

206,373.



206,373. JEWEL-CASKETS. Augustus Conrads, Middletown, Conn., assignor to the Middletown Plate Company, same place. Filed July 17, 1878.

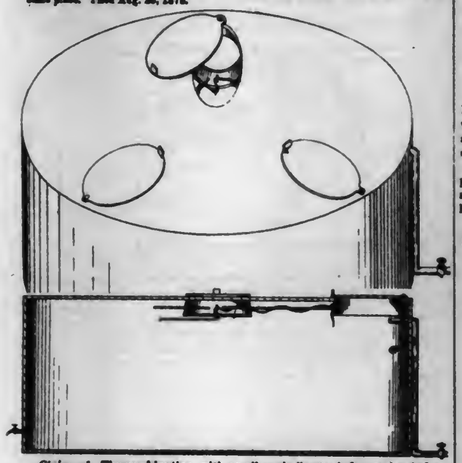
Brief.—The casket is opened by moving the handle backward, which throws the drawer forward.



Claim.—1. The combination of the lever E with the handle C and the drawer B, substantially as and for the purpose herein described.

2. The wheel H, in combination with the drawer B, lever E, and handle C, substantially as and for the purpose set forth.

206,374. AUTOMATIC CHEMICAL FIRE-EXTINGUISHERS FOR OIL-TANKS. Jas. H. Connelly and Thomas E. Connelly, Pittsburg, Pa., assignors to themselves and Charles Lockhart, same place. Filed Aug. 20, 1878.



Claim.—1. The combination, with an oil or similar tank for storing inflammable liquids, of a receptacle or receptacles for fire-extinguishing compounds, said receptacle or receptacles having drop-bottoms, and adapted to automatically discharge the extinguishing compound into the tank, substantially as and for the purpose specified.

2. The combination, with an oil-tank having one or more elongated openings provided with covers, of one or more tapering receptacles provided with drop-bottoms, substantially as and for the purpose specified.

3. The combination, with the drop-bottom receptacles, of the supporting-wires and a cord or cords for securing the bottoms of the receptacles, substantially as specified.

206,375. CHEMICAL APPARATUS FOR FIRE-EXTINCTION. J. H. Connelly and Thomas E. Connelly, Pittsburg, Pa., assignors to themselves and Charles Lockhart, same place. Filed Aug. 20, 1878.

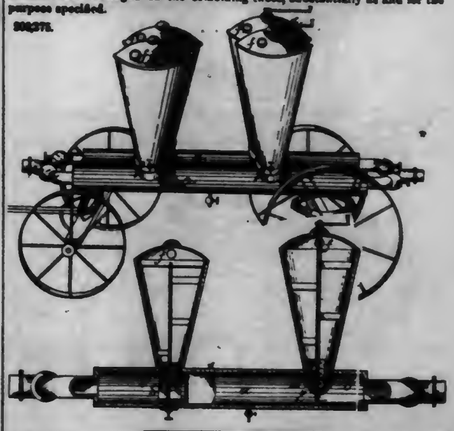
Claim.—1. In an apparatus of the class specified, the combination, with a combining-tube, of a dome or receptacle and an adjustable cage or valve, substantially as and for the purpose specified.

2. In an apparatus of the class specified, the combination of a combining-tube, a receptacle or dome, an adjustable cage or valve, and a device for agitating and feeding down the contents of the receptacle, substantially as specified.

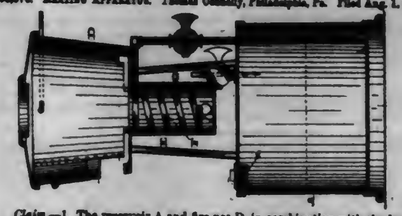
3. In an apparatus of the class specified, the combination of a combining-tube, a receptacle or dome, a cage, and stirrers or feed mechanism, and a flutter-wheel or buckets for operating the feed mechanism, substantially as specified.

4. The combination of two or more combining-tubes, connected by valved pipes with two or more domes or receptacles, provided with adjustable cages or valves and arranged on the combining-tubes, substantially as and for the purpose specified.

206,376.



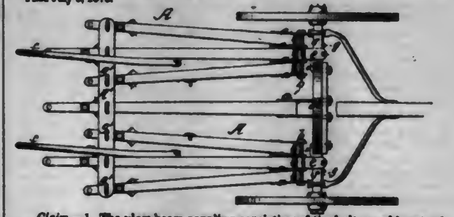
206,376. HEATING APPARATUS. Thomas Connolly, Philadelphia, Pa. Filed Aug. 1, 1878.



Claim.—1. The reservoir A and fire-pot D, in combination with the burner E, consisting of the jacket G, depending from said pot and inclosing a coil, F, whose inlet is at top and communicates with a pipe leading to the reservoir, and whose outlet or jet is at bottom under the central space of the coil, all substantially as described.

2. The fire-pot D, supported on and connected to the reservoir A and supporting the depending burner E, which communicates with the reservoir in the manner described, all combined and forming together an improved portable heating apparatus.

206,377. COMBINED CULTIVATOR AND CORN-PLOW. Theodore T. Daniels, Morrison, Ill. Filed July 6, 1878.



Claim.—1. The plow-beam coupling consisting of the bolt or rod *b*, extending through the ears of the beams, and the clip *c* around said bolt, crimped in front of the same and extending forward, in combination with the axle-plate *g* and its bolt, substantially as specified.

2. A cultivator having an arched axle, side-beam sections, and detachable center beam, connected to the arch of said axle by means of a transverse bar, the perforated guide-bar A', extending transversely across the rear ends of the beams, and the vertical hanger-rods *g'*, extending through the perforations of said bar into the beam ends, substantially as specified.

3. A cultivator having a squared and centrally-arched axle and a section of several beams, connected to each end of said axle by a single clip engaging a lateral pivot on the axle and a vertical pivot on said clip, a horizontal rod passing through the ears of said clip and connecting the forward ends of said beams, in combination with the cross-bar A', screw-bolts *g'*, and handle *f'*, substantially as specified.

206,378. LIBRARY-TABLES. William R. Davis, Jr., New York, N. Y. Filed Aug. 1, 1878.

Claim.—1. The table having the box-top, provided with drawers and pigeon-holes, substantially as described, the oppositely-sliding leaves E E', arranged in different planes and adapted to be slid one above the other within the said top, and the hinged ledges D D, essentially as set forth.

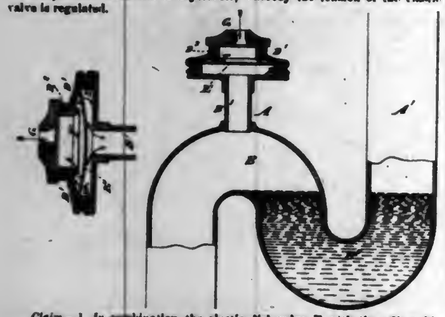
2. The table having the box-top, provided with the drawers H H' and the leaves E E', adapted to slide one above the other within the desk-top under said drawers, and open in opposite directions, substantially as set forth.

206,378.



206,379. VACUUM-VALVE FOR STENCH-TRAPS. B. J. Downey, Washington, D. C. Filed Aug. 24, 1878.

Brief.—The valve-seat is adjustable, whereby the tension of the elastic valve is regulated.

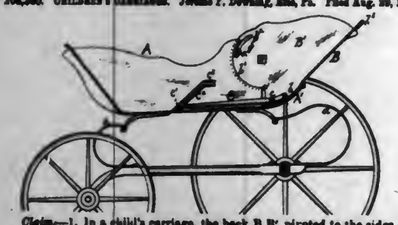


Claim.—1. In combination, the elastic disk-valve E with the adjustable projecting valve-seat F, as and for the purposes substantially as described.

3. In combination, the projection D, the elastic disk-valve E, the adjustable projecting valve-seat F, and the valve-cap D', as and for the purposes substantially as described.

3. The tubular stem B', the valve-seat D, the disk-valve E, the valve-seat F, and the orifice G, in combination with a common stench or water-seal trap, as and for the purposes set forth, substantially as described.

206,380. CHILDREN'S CARRIAGES. Jerome F. Downing, Erie, Pa. Filed Aug. 20, 1878.



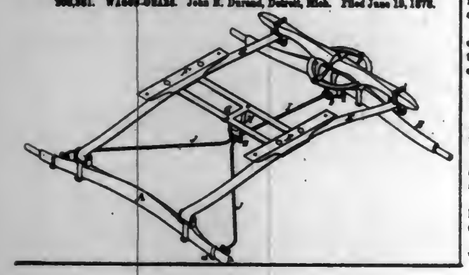
Claim.—1. In a child's carriage, the back B B', pivoted to the sides of the body, combined with seat C, having its rear pivoted to the back and its front provided with projections c', guided in grooves, substantially as specified, whereby the turning outward of the back lowers the seat into the bottom of the carriage.

2. In a child's carriage, the back B, having a curved section, b, circular section b', and slots b^2, in combination with the body A, having a curved section, A', grooves a', and set-screws a^2, when the same are pivoted together and operated substantially as described.

3. In a child's carriage, the seat C, having pins or projections c', and body A, having a curved section, A', and inclined grooves a^3, combined with the pivoted back, all arranged to operate substantially as described.

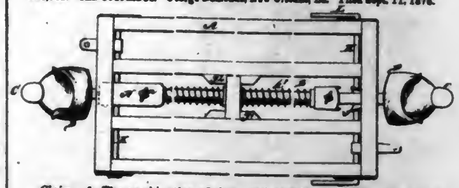
4. In a child's carriage, the body A, having a curved section, A', inclined grooves a^3, and set-screws a^2, back B, having curved sections b, circular section b', and curved slots b^2, and seat C, having pins c', when the whole is combined, arranged, and operated substantially as described.

206,381. WAGON-GEARS. John H. Durand, Detroit, Mich. Filed June 19, 1878.



Claim.—In combination with the central girder or platform, G, the hanger H, terminating in the bifurcated bracket e, the rod I, pivoted at its forward end, and the rods J, pivoted at their rear ends, as described, and each of said rods centrally pivoted below the girder or platform, constructed and arranged substantially as and for the purposes set forth.

206,382. CAR-COUPLINGS. George Edmonds, New Orleans, La. Filed Sept. 11, 1878.



Claim.—1. The combination of draw and coupling head C with the coupling-recess E, which recess is open at its rear, and has vertical walls that terminate in front in the under bevel, G, substantially as specified.

2. The combination of the draw and coupling head C, coupling-recess E, bumper D, and connecting-bar H, substantially as shown and described.

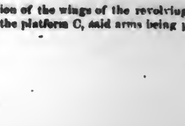
3. The V-shaped guide and lifter J, in combination with the bar H and lifting-levers L, substantially as set forth.

4. The adjustable spring N, in combination with the bar H and pivot-bolt s, substantially as and for the purpose set forth.

5. The draw-bar B, provided with collar g, in combination with cork spring F, arranged on either side of the collar and confined in the casing f, said casing being arranged centrally of the car-frame and held in position by lugs g' and g^2, substantially as specified.

206,383. APPARATUS FOR CASTING SHAFT-COUPLINGS. William H. Elmer, Berlin, Wis., assignor of one-half his right to Justus P. Luther. Filed July 26, 1878.

Brief.—Coats core with asphaltum-varnish, and the split with oil and facings. Places nil, as shown, in a sand mold. Produces a split ring adapted to be keyed to shaft by the key used in casting it.



Claim.—The combination of the core B, key C, and split D, constructed and arranged substantially as and for the purposes herein set forth.

206,384. SHOWER-BATH. Cyrus B. Furey, Logansport, Ind. Filed Aug. 10, 1878.

Claim.—In a shower-bath, the combination of the reservoir C, suspended by the centrally-depending cord b, and provided with the guides a a, working in the slotted uprights B B, to permit said reservoir C to sway from side to side and always occupy a horizontal position, substantially as set forth.

206,385. ASBESTUS PACKING. Albert D. Fenn, Rome, Italy. Filed Aug. 20, 1878.

Claim.—1. The packing for pistons, &c., consisting of a series of asbestus rings, cut conically and transversely, and arranged reversely, one within the other, substantially as specified.

2. The packing for pistons, consisting of a series of asbestus rings cut conically, or obliquely and transversely, and arranged reversely, one within the other, in combination with a series of interposed flat rings or washers cut obliquely, the whole substantially as and for the purpose specified.

206,386. ANIMAL-TRAPS. Timothy J. Guyer, Indianapolis, Ind. Filed June 10, 1878.

Brief.—The weight of the animal upon the platform D releases the lever Q from the ratchet-wheel O, when the door is caused to make a quarter-revolution, pushing the animal within the trap.

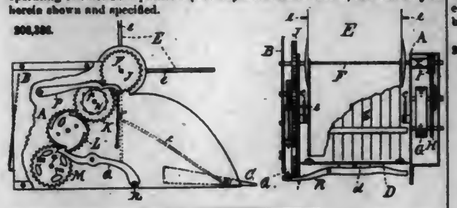
Claim.—1. In an animal-trap, the combination of the revolving door E, shaft F, gear-wheels J K L, ratchet-wheel O, and pawl-lever Q, substantially as herein shown and specified.

2. The combination of the centrally-pivoted bait-plate D, small lever d, lever R, lever Q, and ratchet-wheel O, substantially as herein shown and specified.

3. The combination of the wings of the revolving door, having studs e e, with the arms o o of the platform C, said arms being provided with upwardly-

projecting ends, against which said studs strike as the door revolves, thus operating to raise said platform part way and then release it, substantially as herein shown and specified.

206,386.

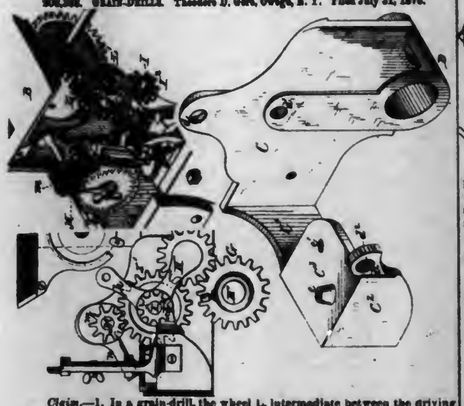


206,387. STOCKING-SUPPORTERS. Wm. P. Gouge, New York, N. Y. Filed July 11, 1878.



Claim.—As a new article of manufacture, a stocking-supporter consisting of a waistband divided at the front and rear to form two parts, A A', and such divided portions provided with adjusting devices, the waistband being constructed with hip-pieces B, composed of inelastic border-strips b and elastic triangular insertion-pieces C.

206,388. GRAIN-DRILLS. Theodore D. Gere, Owego, N. Y. Filed July 31, 1878.



Claim.—1. In a grain-drill, the wheel L, intermediate between the driving and the distributer wheel shafts, provided with the flange for holding the interchangeable pinions in place, substantially as and for the purpose set forth.

2. The flanged wheel L, in combination with the adjusting-yoke K, or its equivalent, and the removable shaft k, substantially as and for the purpose set forth.

3. In a grain-drill, the combination of the adjustable flanged wheel L, intermediate between the driving and distributer wheel shafts, and the removable pinion P, substantially as and for the purpose set forth.

4. The angular casting C, forming a stiffening-brace for the frame, and provided with the axle-sleeve D and bearings d d^2 and e e' for the shafts actuating the grain and grass seeding and registering devices, substantially as described.

5. The pinion m, provided with the eccentric boss or hub, as described, in combination with the reversible rod or pitman n, for actuating the grass-seeding devices, as described.

206,389. INSULATED CONNECTIONS FOR GAS-LIGHTING APPARATUS. Charles D. P. Gibson, New York, N. Y. Filed Jan. 8, 1878.

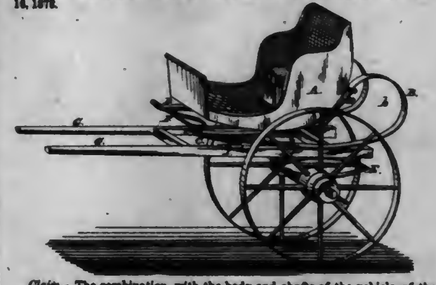


Claim.—1. In combination with the pipes A and B, jointed so as to turn relatively to each other, the insulated rings or partial rings M N and their connecting-wires a b, adapted to maintain an electrical communication and to allow the parts to be turned, as herein specified.

2. In combination with the tubes A B, hinged together, as specified, the insulated wires a b and spring M', in electrical connection with the wire on the one part, rubbing against a surface, N, in electrical connection with the wire on the other part, maintaining an electrical connection in different positions of the pipes, as herein specified.

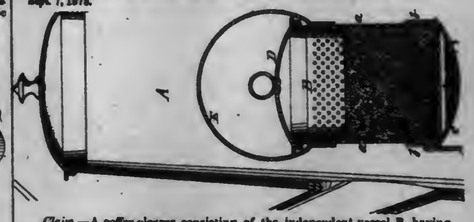
3. In combination with a jointed gas-tube, the electrical conductors embedded in the sections of the tube and universally connected, whereby the electrical connection is maintained in whatever position the jointed parts may be, as herein specified.

206,390. CARRIAGE-SPRINGS. George D. Griffin, Hamilton, Ontario, Canada. Filed Mar. 16, 1878.



Claim.—The combination, with the body and shafts of the vehicle, of the metallic loops, formed of the two parts D and B, hinged together, the auxiliary springs arranged between the front end of said loops and the shafts, and the elliptical springs E, arranged between the shafts and axle.

206,391. CLEARERS FOR COFFEE AND TEA POTS. W. W. Hinkle, Hood's Mills, Md. Filed Sept. 7, 1878.



Claim.—A coffee-clearer consisting of the independent vessel B, having perforated side wall, a, imperforate guard b at the lower portion of said side wall, recessed bottom or drag chamber, c, perforated false bottom d, lid D, and bail E, said clearer being adapted to be placed in or lifted out of any ordinary coffee-pot or boiling-vessel, substantially as specified.

206,392. POCKET-STILETTOES. Magdalene Kahler, Philadelphia, Pa. Filed Dec. 29, 1877.

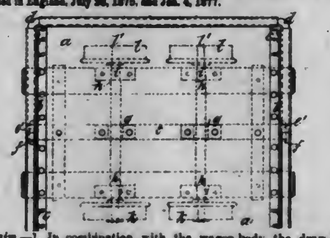


Claim.—1. The concave cap C, provided with the slide F and spindle G, substantially as and for the purpose described.

2. The combination of the concave cap C and the cover D, substantially as and for the purpose described.

3. The body A, in combination with the cap C and cover D, substantially as and for the purpose described.

206,393. FARRIERS'-CLAMS. Robert Hudson, Gildersome, Great Britain. Filed June 4, 1878. Patented in England, July 30, 1878, and Jan. 4, 1877.



Claim.—1. In combination with the wagon-body, the draw-bar c, constructed to pass under said body and up both ends, and formed with recesses or bends c' c', as described and shown, for the purpose specified.

2. The wagon-body provided with the draw-bar c, passing under said body and up both ends, in combination with the central cap g, attached to the draw-bar and bearings, as herein specified.

3. The combination of the sheet-metal wagon-body, draw-bar c, bearings i, axles, loose wheels k, fast wheels l, and central cap g, the whole constructed, arranged, and operating as described and shown, for the purposes specified.

206,394. STEAM-BOILER FURNACES, &c. William S. Hutchinson, Chicago, Ill. Filed June 10, 1878.

Claim.—1. In combination with a furnace or with the furnace and fire-box

of a steam-boiler, a series of conduit-pipes, D, arranged in a line a little above the level of the burning fuel, each being provided with a downwardly-projecting elbow having an enlarged mouth, substantially as described, and a steam-pipe, F, provided with a series of nozzles, E, for the purposes set forth.

2. In combination with a furnace or fire-box of a steam-boiler, a series of conduit-pipes, D, arranged in a line a little above the level of the burning fuel, and each provided with a downwardly-projecting elbow for the ingress of steam through a steam-pipe, F, and with a short air-supply pipe, H, having an enlarged mouth, substantially as and for the purpose set forth.



208,396. CAPS AND ANCHORS FOR METALLIC ROOFING. William G. Hyndman, Cincinnati, Ohio. Filed July 23, 1878.

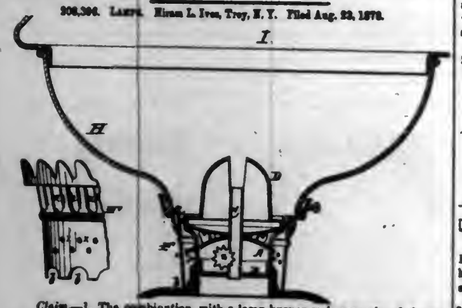
Brief.—An anchor-strip that has two free outer ends has those ends riveted to each side of the cap. It is secured to the roof by the usual method. Said cap and anchors may be made complete at the shop, and applied to the roof first, and the sheathing-plates be slid thereunder afterward.



Claim.—1. The combination, with the cap, of an anchor presenting two free ends to be secured thereto, one of said ends being riveted to the cap on one side thereof and the other end upon the opposite side, substantially as and for the purpose set forth.

2. A cap and anchor for securing sheet-metal plates to structures, the anchor being constructed of a double thickness of metal, the ends thereof being turned downward or outward and riveted to both sides of the metal cap, substantially as and for the purpose set forth.

208,398. LAMP. Hiram L. Ives, Troy, N. Y. Filed Aug. 22, 1878.

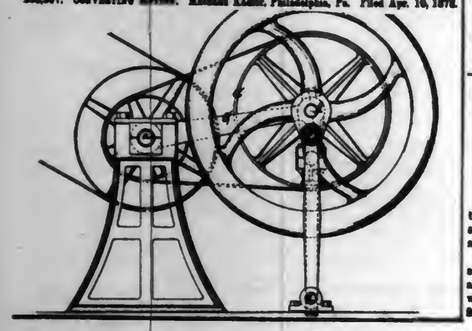


Claim.—1. The combination, with a lamp burner and reservoir, of the exterior auxiliary shell, F, having scallops *b* at the bottom, perforations *x* in the sides, and corrugations *a* at the top, substantially as and for the purposes herein set forth.

2. The combination of the burner, the auxiliary shell F, and the glass base H, for the purposes specified.

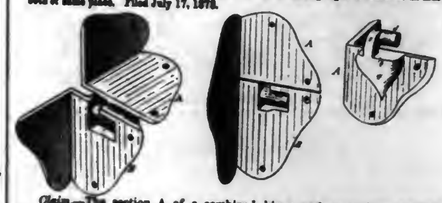
3. The combination of the burner, the auxiliary shell F, glass base H, and shade I, substantially as set forth.

208,397. CONVERTIBLE REPOSE. Nathan Kaufer, Philadelphia, Pa. Filed Apr. 10, 1878.



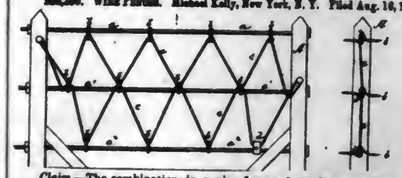
Claim.—In a device for transmitting motion, the combination, with a fly-wheel shaft, which has its bearings in oscillating arms, and is connected to swinging rods or standards by means of eccentric wrist-pins, of a crank which is mounted on the fly-wheel shaft, and has a larger radius than the wrist-pins, while it extends in a parallel direction to the wrist-pins relatively to the axis of the fly-wheel shaft, the whole being adapted to operate substantially as described.

208,399. THILL-HINGE AND CORNER-IRON. Gasterus Kast, Detroit, Mich., assignor of one-half his right to U. Klinck, and assignee of his remaining right to Caroline E. Kast, both of same place. Filed July 17, 1878.



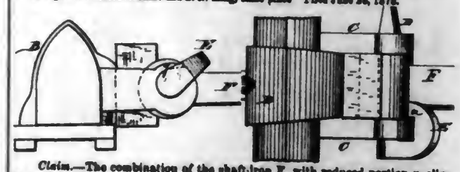
Claim.—The section A of a combined hinge and corner-iron, provided with a projection, *a*, shoulder *b*, curved arm *c*, and stud *d*, in combination with the section B, provided with projection *e*, rounded shoulder *f*, slot *m*, and socket *n*, constructed and arranged to operate substantially as and for the purposes set forth.

208,400. WIRE FENCE. Michael Kelly, New York, N. Y. Filed Aug. 16, 1878.



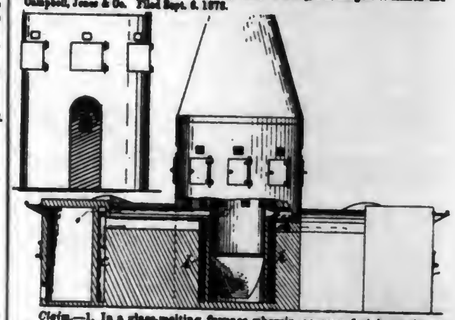
Claim.—The combination, in a wire fence, of the horizontal wires *a a' a²* with the barbs *b*, which are hung bodily on the horizontal wires in alternate vertical rows, and with the zigzag wires *c c*, each of which connects alternately the barbs on two horizontal wires, all being arranged in such a way that each of the barbs on the central wire, *a'*, is connected to both wires *c c* above and below the same, while the barbs on the uppermost and lowermost wires, *a a²*, are connected, respectively, to only one of each zigzag wires *c*, substantially as and for the purpose herein shown and described.

208,402. THILL-COUPLING. Amos E. Kimberly, West Liberty, Iowa, assignor of two-thirds his right to Gustave Burkart and S. H. King, same place. Filed June 26, 1878.



Claim.—The combination of the shaft-iron F, with reduced portion *x*, clip E, and arms C C, having the reduced portions *y*, and the bolt D, with hooked head E, having the shoulder *c*, all substantially as and for the purpose herein set forth.

208,401. GLASS-MELTING FURNACE. Henry Kirk, Pittsburg, Pa., assignor to himself and Campbell, Jones & Co. Filed Sept. 6, 1878.

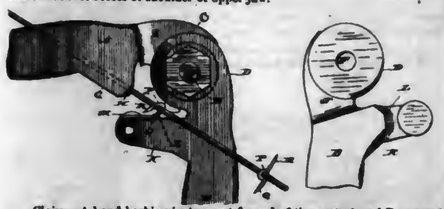


Claim.—1. In a glass-melting furnace wherein gaseous fuel is employed, the combination, with the producer and combining or combustion chamber, of an air and gas flue, the air-flue arranged within the gas-flue, substantially as and for the purpose specified.

2. The combination, in a glass-melting furnace, of the producer or gas-supply, the air-flue inclosed by the gas-flue and delivering into a perforated annular chamber surrounding the combining or combustion chamber, the whole constructed and operating substantially as and for the purpose specified.

208,402. WIRE-BARBING TOOLS. Millis Knickerbocker, New Lenox, Ill. Filed June 25, 1878.

Brief.—The barb is dropped over wire, its lower end resting on the shoulder of lower jaw. The upper jaw, coming down, catches the point of the upper end of the barb, and bends it under the fence-wire into recess of shoulder of lower jaw. Lower jaw at the same time carries lower end of barb up over fence-wire into recess of shoulder of upper jaw.



Claim.—A hand barbing-instrument formed of the parts A and B, secured together by a bolt, E, as shown and described, the part A being constructed with an arm, G, and a recessed shoulder, I, and the part B constructed with an arm, K, shoulder L, guide M, and a recessed shoulder, N, as set forth.

208,403. BOTTLE-STOPPER. Franz Keller, Neulengbach, Austria. Filed July 12, 1878.

Brief.—The stopper is formed of a shaving wound upon itself or upon a core. The end of the shaving may be glued to the core; may also be inserted into a groove in core. The outer end is trimmed down and glued or cemented. The outer end of finished stopper is dipped in pure melted paraffine. The stoppered bottle is laid on its side, when fluid will enter the inner end and make complete closure.



Claim.—1. The method of manufacturing wooden stoppers, which consists in winding a shaving or thin strip of wood upon itself or upon a wooden core, substantially as described, and fastening the ends to the core and outer coil, respectively, as set forth.

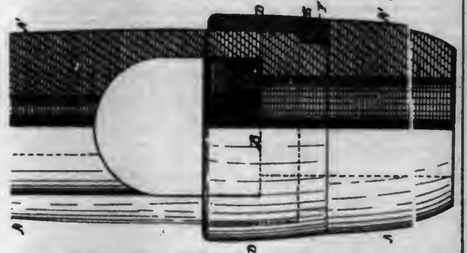
2. A stopper composed of a shaving or thin strip of wood, substantially as specified.

3. A stopper composed of a shaving or thin strip of wood, in combination with a solid core, substantially as described.

4. The combination, with the shaving or thin strip of wood A, of the solid wooden core B, having a groove, *b*, substantially as described, for the purpose specified.

208,404. PUMP-PLUNGERS. Amos A. Lamb, Boston, Mass., assignor to Frederic M. Sherman, New London, Conn. Filed Feb. 25, 1878.

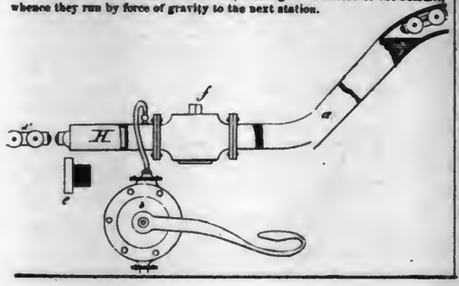
Brief.—The packing-ring is sprung into the recess in the plunger.



Claim.—The packing-ring D, constructed with the flaring upper end, rounded off, as explained, and the square inwardly-projecting portion E at the lower end, the outer surface of which is tapering, and its lowermost edge located in line with the enlarged portion A', in combination with the plunger A A', provided with the corresponding recess F, all constructed and operating as and for the purpose set forth.

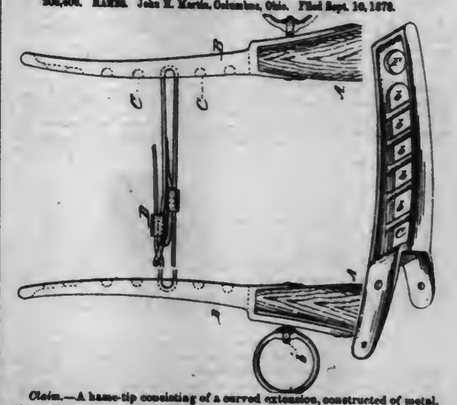
208,405. APPARATUS FOR CONVEYING SMALL PARCELS. Albert Lizars, London, England. Filed Aug. 9, 1878. Patented in France, Sept. 6, 1876.

Brief.—The tube gradually rises to a summit-level half-way between stations. The carriers are water-tight, light enough to float on water, and provided with wheels. Water is forced in, sending the carriers to the summit, whence they run by force of gravity to the next station.



Claim.—The combination of a tube, *a*, force-pump *b*, plug *c*, and tap *f*, for propelling the train of carriers *d d*, in the manner shown, and for the purpose described.

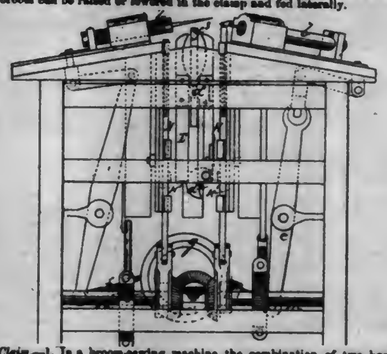
208,406. HAMES. John H. Martin, Columbus, Ohio. Filed Sept. 10, 1878.



Claim.—A hame-tip consisting of a curved extension, constructed of metal, and provided between its extremities with a series of rectangular apertures extending from front to back of the hame, and intervening cross-bars, around any one of which the hame-strap may be looped, whereby the size of the hame may be varied, as specified.

208,407. BROOM-SEWING MACHINES. George P. McCombs, Washington, Pa., assignor to Annie McCombs, same place. Filed May 13, 1878.

Brief.—The needles operate alternately, and have tensional thread-holders, that carry the thread across the path of the needles to make the stitch. The broom can be raised or lowered in the clamp and fed laterally.



Claim.—1. In a broom-sewing machine, the combination of two hooked needles geared to act alternately upon a single thread, in combination with mechanism, substantially as described, adapted to advance after the passage of the needle and take its thread, move it laterally, and hold it taut across the path of the other needle, substantially as specified.

2. The hooked needles geared to act alternately upon a single thread, in combination with mechanism, substantially as described, adapted to advance after the passage of the needle and take its thread, move it laterally, and hold it taut across the path of the other needle, and slack-carriers adapted to advance and retire across the path of the needle to control the free end of the thread, substantially as specified.

3. The hooked needles adapted to operate alternately upon a single thread, in combination with mechanism, substantially as described, adapted to advance after the passage of the needle, take its thread and hold it taut across the path of the other needle, the slack-carriers adapted to advance and retire across the paths of the needles to control the free end or slack of the thread, and a movable or traveling vise provided with an adjustable rest adapted to present the broom to the sewing mechanism, substantially as and for the purpose specified.

4. A needle for sewing brooms and like articles, said needle having the double-tapered or swelled and curved barb and the guard-swell, substantially as and for the purpose specified.

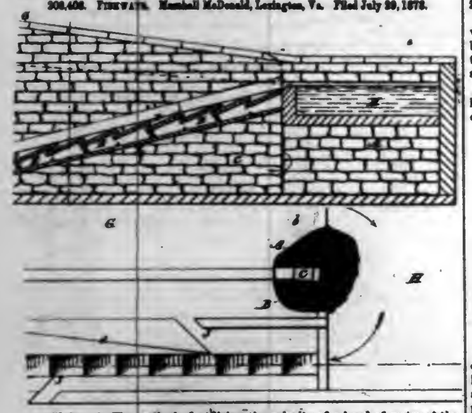
5. The needle for sewing brooms and like articles, having the double-tapered or swelled and curved barb, the groove on the side of the barb, and the guard-swell, substantially as and for the purpose specified.

6. In a machine of the class specified, the combination, with a broom-holding vise, of two hooked needles set sloping, so as to pass under and over the binder when in operation, substantially as specified.

7. In a machine of the class specified, the independent binder support or clamp arranged above the vise and adapted to sustain the binder, in combination with the movable or traveling vise, substantially as specified.

8. In a machine of the class specified, the tension devices composed of the reciprocating bar, the spring-jaws, and mechanism, substantially as described, to deflect the pivoted jaws or cause them to vibrate, substantially as and for the purpose specified.

208,408. FISHWAYS. Marshall McDonald, Lexington, Va. Filed July 30, 1878.



Claim.—1. The method of utilizing the velocity of a head of water at the dam for the ascent of the fish, which consists in directing said head of water through a series of openings upon an inclined discharging upwardly, substantially as and for the purpose described.

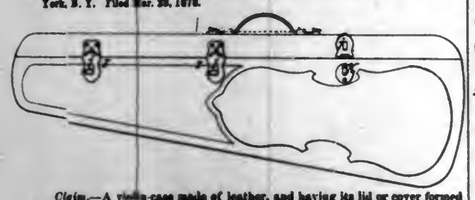
2. A fishway consisting, essentially, of an inclined bed or sluiceway having a subjacent chamber, B, adapted to receive water from the upper level of the dam, and discharge-openings upon its surface directed up the incline, substantially as and for the purpose described.

3. The combination, with the incline D, having upwardly-discharging openings, of the side chutes or traps, J, as and for the purpose described.

4. The combination, with the incline D, having upwardly-discharging openings, of the bottom K, provided with partitions forming chambers, and having inlets for rendering the discharge uniform through all the openings, as described.

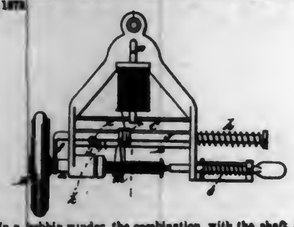
5. The combination of the sluice G, the landing-pool H, and the incline D, having openings directed upwardly and communicating through a subjacent chamber with the upper end of the dam.

208,409. VIOLIN-CASES. Louis Munger, Brooklyn, assignor to Martin Pollmann & Co., New York, N. Y. Filed Mar. 20, 1878.

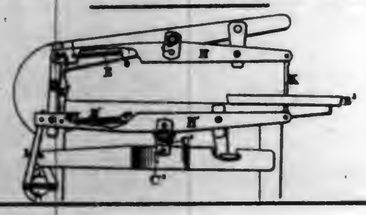


Claim.—A violin-case made of leather, and having its lid or cover formed from one of its narrower sides and hinged to one of its broad sides, substantially as described.

208,410. BOBBIN-WINDERS FOR SEWING-MACHINES. Preston A. Meredith, Hagerstown, Md. Filed July 30, 1878.



Claim.—In a bobbin-winder, the combination, with the shaft J, provided with arm *f* and notch *x* and spring *h*, of the shaft L, provided with pin *i* and arm *u*, the spring *k*, wheel H, and shaft *a*, as and for the purpose set forth.

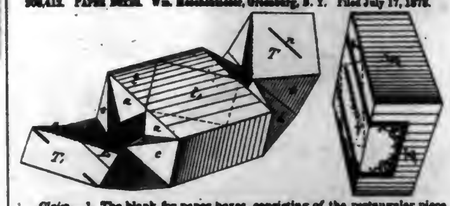


208,411. SCROLL-SAWING MACHINES. Benj. Merritt, Newton, Mass. Filed Mar. 11, 1878.

Brief.—The saw-blade is hung upon the outer ends of two parallel levers, which are hung upon independent swinging joints, each lever being connected by a short link to the main frame, so that as the levers vibrate up and down the short links will so govern their motions that the saw itself will move in a straight line.

Claim.—The combination of the saw K, the levers H H', and the swinging links C C' with the governing-links E E', all operating substantially as described, and for the purpose set forth.

208,412. PAPER BOXES. Wm. Mackenzie, Greenburg, N. Y. Filed July 17, 1878.



Claim.—1. The blank for paper boxes, consisting of the rectangular piece of paper or card-board, having creases or partial cuts, as indicated by the lines separating the divisions T T', E E', B, S S', and *t t'* from each other, and from the triangles formed by the divisions *a*, *b*, *c*, *d*, and *e*, and creases or partial cuts defining said triangles, substantially as set forth.

2. As a new article of manufacture, a rectangular box having the rectangular divisions T T', E E', B, S S', and *t t'*, and the triangular divisions *a*, *b*, *c*, *d*, and *e*, substantially as set forth.

208,413. HORSE-POWERS. Jacob Miller, Canton, Ohio. Filed Jan. 16, 1878.

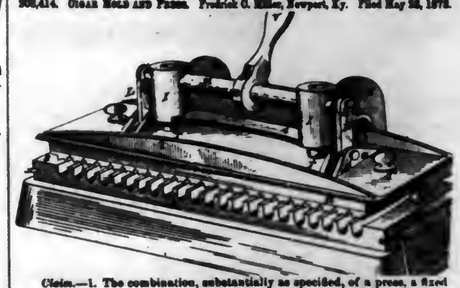


Claim.—1. In a horse-power, the bridge constructed in three parts—to wit, the central part, K, bearing the master-wheel, and the two adjustable box-pieces L L, for the reception of the journals of the pinion-shafts—substantially as described, for the purpose specified.

2. The combination, with the adjustable bridge K L L, of adjustable bearings Q *q*, for the upper journals of the pinions which mesh into the master-wheel, substantially as described, for the purpose specified.

3. The combination of the adjustable cross-pieces W, containing the lower journal-boxes, with the journal-boxes of the adjustable bridge, substantially as described.

208,414. CIGAR MOLD AND PRESS. Fredrick G. Miller, Newport, Ky. Filed May 28, 1878.

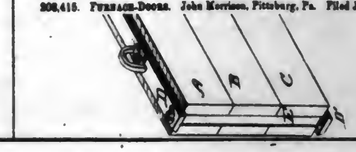


Claim.—1. The combination, substantially as specified, of a press, a fixed member of a multicavous mold, and interchangeable corresponding movable members having matrices for receiving the bunches to be shaped, whereby the act of making cigar-bunches that become set sufficiently for wrapping by sustained pressure in the press itself may be practiced in a continuous manner.

2. The combination, substantially as specified, with the bed and plates of a press, of a cigar-mold, one member of which is permanently secured in the press, while the other member can be slid in and out, and means which stop the movable member on inserting it in the press in exact juxtaposition to the fixed member.

3. A cigar-mold press the plates of which is operated by means of crank-shaft M, pitman L, guide-rods *r*, sleeves I, and handle V, substantially as set forth.

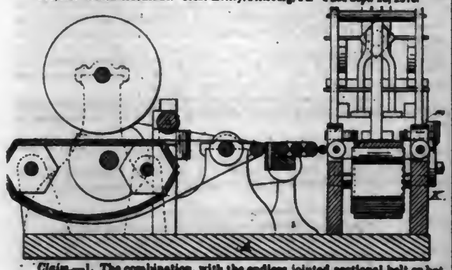
208,415. FURNACE-DOORS. John Morrison, Pittsburg, Pa. Filed Jan. 29, 1878.



Claim.—1. A furnace-door having both inner and outer faces of fire-clay, whereby either face of the door, or each face in succession, may be used next the fire, as described.

2. The combination of the blocks A B C, having their faces forming the faces of the door, with the side bars, E, and top and bottom bars, D D', of the frame, substantially as set forth.

208,416. BRICK-MACHINES. Isaac Morley, Pittsburg, Pa. Filed Sept. 13, 1878.



Claim.—1. The combination, with the endless jointed sectional belt or bottom boards of a brick-molding machine, of a supplemental belt of continuous fabric, such as leather, rubber, or its equivalent, substantially as and for the purpose specified.

2. In a machine for forming bricks, tiles, &c., the combination, with mechanism for forming a continuous molded strip of clay, of a series of molding-rollers provided with suitable supply-boxes, said rollers arranged around and partly within the path of the feed and with relation to the supply-boxes, so that they may be operated by the molded strip, and will take the sand in limited quantity and apply it to the molded strip, substantially as specified.

3. The combination, in a brick-molding machine, of the press-rolls, the endless sectional belt of bottom boards, the continuous belt of leather or equivalent material, and the reciprocating cutting-carriage, substantially as and for the purpose specified.

4. The combination of the cutting-carriage, the transfer rolls and belt, a shipping-belt, such as *m*, and a transverse sectional belt, such as K', arranged and adapted to operate substantially as and for the purpose specified.

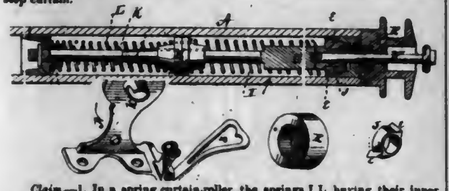
5. The combination of mechanism for molding a continuous strip of clay, mechanism for cutting the strip into sections, a sectional belt for receiving and separating the sections, and a series of sanding-rollers for sanding the cut ends of the sections, substantially as specified.

6. The combination of a shifting device, endless belt or bottom boards, and a mold and plunger adapted to traverse, with mechanism for molding a continuous strip of clay, severing the same into sections, and delivering it to the shifting device, substantially as and for the purpose specified.

7. The combination, with the sectional traveling bottom board, of the mold-carriage and mold-plunger and the shifting device, the whole constructed substantially as described, and the plunger-mold and shifting device adapted to be operated simultaneously by one mechanism, substantially as and for the purpose specified.

208,417. CURTAIN-ROLLERS AND BRACKET. Walter B. Noyes, Boston, Mass. Filed July 25, 1878.

Brief.—Spindle is loosely mounted at one end, so as to turn and have endwise movement in a fixed block in the hollow roller, and at the other end is held from turning by frictional contact of a tapering collar with wings, which enters a recessed pin. This collar is adjustably held in the pin by a spring connected to the spindle and head. A loose collar, having frictional contact with the interior of the roller, is mounted midway on the spindle, and a spiral spring is connected to it at one end, and at the other to the spindle. A secondary spring is secured to this collar and to the fixed block. Removable bands on the ends of the roller permit its being changed from a balanced to a stop curtain.



Claim.—1. In a spring curtain-roller, the springs I I, having their inner ends coupled together by the loose collar H, in combination with the shaft G and roller A, substantially as and for the purposes herein set forth.

2. The combination, with the roller A, shaft G, and springs I I, of the tapering recessed pins D, tapering collar J, having wings *c* arranged in frictional contact with the pins D, and the spring K, for preventing the recoil of the springs I I, while inserting the roller in its brackets, substantially as herein set forth.

208,418. APPLYING COLORS TO EARTHENWARE, &c. Auguste A. X. Otlet-wier, Molenbeek-lez-Bruxelles, Belgium. Filed June 3, 1878.

Claim.—The process of applying vegetable and mineral colors to earthenware and porcelain by slightly baking the articles, then treating them with mordants, and then applying the colors to such articles, and finally rebaking them, substantially in the manner as hereinbefore described.

208,419. PACKINGS. Jeremiah O'Meara, New York, N. Y. Filed Sept. 9, 1878.

Claim.—1. As a new article of manufacture, a tube of homogeneous or solid packing material, composed, preferably, of india-rubber, asbestus, and plumbago, and made of a size to fit in a stuffing-box, and adapted to be cut into rings of any desired thickness, substantially as specified.

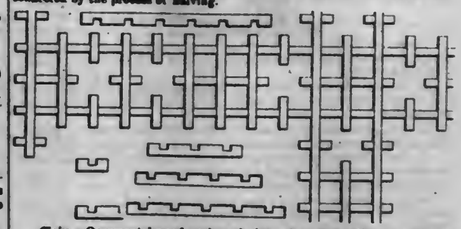
2. A new article of manufacture, consisting of a tube of solid packing material, provided with a spiral cut, *a*, whereby it may be cut into packing-rings having lap ends, substantially as specified.

208,420.



208,420. ORNAMENTAL WOOD-WORK. H. P. Osborn, New Haven, Conn. Filed Mar. 5, 1878.

Brief.—Ornamental wood-work is made of rectangular pieces of wood of equal size and form in cross-section and of different lengths. The pieces are connected by the process of halving.



Claim.—Ornamental wood-work made from the rectangular pieces herein described, of equal size in cross-section and various lengths, provided with transverse slots, cut to the center of the pieces and equidistant from each other, in the longer pieces the width of the slots equaling the width of the pieces on the sides in which they are cut, each of the shortest pieces equaling in length the distance from the center of one slot to the center of another slot in the longer pieces, and having a slot in the middle, the ends of all the pieces being equidistant from a slot, as shown and set forth.

208,421. LANTERNS. Archibald W. Paull and Joseph P. Paull, Wheeling, W. Va. Filed Aug. 30, 1878.



Claim.—1. In combination with the air-conducting tubes receiving air at a point beneath the region of the flame, the vertical division-strips, located and arranged substantially as shown and described.

2. In a lantern having air-conducting tubes which receive air at or near the base of the globe, the combination, with the bottom plate, of an upright perforated ring adapted to admit air to the flame-chamber, substantially as shown and described.

3. The combination of the air-conducting tubes, the air-chamber, the division-strips, and the annular channel or gutter with the burner-cone, the several parts being located beneath the region of the flame, substantially as shown and described.

4. In a lantern, the combination, with the dome, of a vertically-adjustable top plate adapted to vary the size of the draft-opening between said plate and the dome, substantially as explained.

5. In a lantern, the combination, with the dome, of a vertically-adjustable top plate mounted upon a screw-threaded shaft, and adapted to be screwed up or down, substantially as shown and described.

6. In a lantern, the combination, with the vertically-adjustable top plate mounted upon the dome, of an air-deflecting guard, located beneath said adjustable plate, for the purposes and objects named.

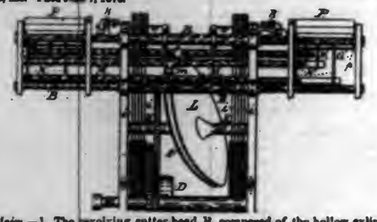
7. In a lantern wherein the ascending and descending currents are counterbalanced, substantially as explained, the combination, with the globe, of a dome having a draft-aperture capable of regulation as to size, substantially as and for the purpose set forth.

208,422. LANTERNS. Archibald W. Paull, Wheeling, W. Va. Filed Aug. 12, 1878.



Claim.—In combination with a globe or chimney for a lantern, an air chamber or conduit located entirely beneath the base thereof, having openings or communications with the flame-chamber through the base of the globe or chimney, and also having communications with the under side of the burner-cone, said conduits being adapted to convey air from the base of the flame chamber to the space under the burner-cone, substantially as shown and described.

208,423. MACHINES FOR CUTTING GREEN CORN FROM THE COB. Thomas Powell, Martinsville, Ind. Filed June 7, 1878.



Claim.—1. The revolving cutter-head R, composed of the hollow cylinder or shaft r, and carrying the self-adjustable cutters R', substantially as herein shown and specified.

2. The cutter R' of the cutter-head, composed of the pivoted stem r^2, the gage knife or bit r^1, and the cutting-knife r^3, substantially as herein shown and specified.

3. In a green-corn-cutting machine, the guide-head T, having holding spurs or knives t t therein, substantially as herein shown and specified.

4. In a green-corn-cutting machine, the receptacle F, formed of two sides, so constructed as to hold the corn and to open and close automatically, substantially as herein shown and specified.

5. In combination with the arms p p of the receptacle F, the cone or wedge shaped device n', for the purpose of forcing said arms apart and the said receptacle open, substantially as shown and specified.

6. The reciprocating piston-rod M, bearing the upwardly-projecting arm N, provided with the head n, for the purpose of forcing the ears of corn forward against the cutter-heads, substantially as shown and specified.

7. In a green-corn cutting machine, the gage knife or bit r^1, constructed and operating substantially as herein shown and described, and for the purpose herein specified.

8. In a green-corn cutting machine, the combination of the cam L, piston-rod M, arm N, and guide-rod O, substantially as herein shown and specified.

208,424. BUTTER-CUTTERS. Isaac M. Rhoden, Hancock, Mich. Filed Aug. 31, 1878.

Brief.—The cutters are thrown back and the device forced into the butter, lard, or other material until it strikes the plunger, when the cutters are turned and the whole device raised to lift the butter, which the plunger readily removes.



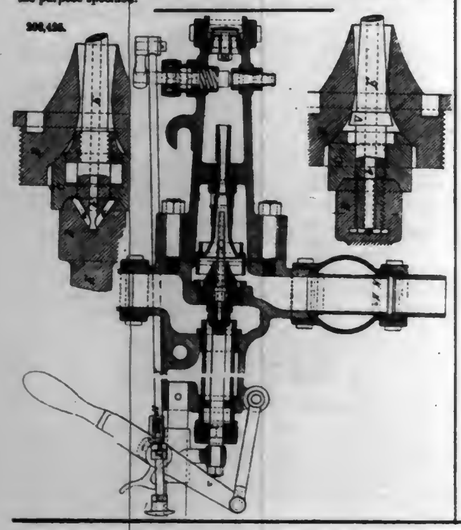
Claim.—1. The combination of the cylinder A and semicircular pivoted knives I I, the latter being adapted both for cutting and lifting the butter or lard, substantially as specified.

2. A cylinder provided with circular knives movable upon pivots and an interior adjustable follower for cutting and taking out butter and lard in rolls, and at the same time measuring the same, as herein set forth.

3. The combination of the cylinder A, head B, tube C, with slot a and notches b, and the follower D, with hollow stem F, having lug i and knob E, all constructed substantially as and for the purpose set forth.

4. The combination of the cylinder A, knives I I, and handles G G, for the purpose specified.

208,425.



208,435. INJECTORS. William Sellers and J. Edgar Bancroft, Philadelphia, Pa.; said Bancroft assignor to said Sellers. Filed Aug. 7, 1877.

Claim.—1. In an injector, the combination of a water-supply pipe, an air-chamber, and a contracted conduit between the air-chamber and the water-supply pipe, substantially as and for the purposes set forth.

2. In an injector, the combination of a water-supply pipe, an air-chamber, and two contracted conduits, the one above the other, substantially as and for the purpose set forth.

3. In an injector, the combination of a water-supply pipe with an air-chamber which surrounds the water-supply, substantially as and for the purpose set forth.

4. In a self-adjusting injector, the method of modifying the rigid confinement of the column of water flowing to the injector by means of an elastic medium, substantially as and for the purposes set forth.

5. In an injector, the combination, with a central discharge steam-plug, of a valve, substantially as described, sliding thereon, for the purposes set forth.

6. In an injector, the combination of a regulating steam-plug, a fixed guide-bar, and a cross-head, substantially as described.

7. In an injector, the combination of a regulating steam-plug, a fixed guide-bar, a guiding cross-head, and a regulating-lever, substantially as described.

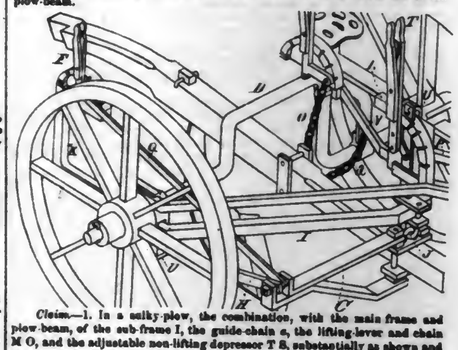
8. In an injector, the combination of a regulating steam-plug, a fixed guide-bar, a cross-head, and a retaining-pawl, substantially as described.

9. In an injector, the combination of a regulating steam-plug, a fixed guide-bar, a cross-head, a regulating-lever, and an automatic retaining-pawl, substantially as described.

10. In an injector, the combination of a guiding cross-head, a screw waste-valve, and a sliding-stop connecting-rod, substantially as described.

208,436. PLOW-SULKIES. Conrad Siegfriedus, Butler County, Ohio. Filed July 2, 1878.

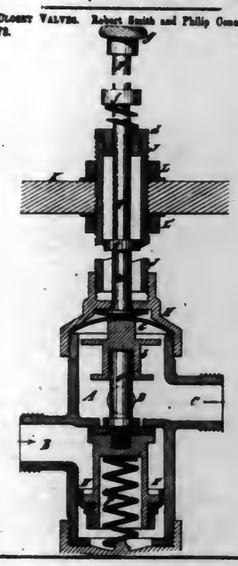
Brief.—The sub-frame and devices for lifting and leveling the plow. A vertical slide worked by a lever, to hold down but not lift the front end of the plow-beam.



Claim.—1. In a sulky-plow, the combination, with the main frame and plow-beam, of the sub-frame I, the guide-chain a, the lifting-lever and chain M O, and the adjustable non-lifting depressor T S, substantially as shown and specified.

2. The axle D, sub-frame I, articulating joint J, twisting-lever C, radius bar H, connecting-rod G, and adjusting-lever F, all combined substantially as specified.

208,437. WATER-CLOSET VALVES. Robert Smith and Philip Connolly, Brooklyn, N. Y. Filed June 6, 1878.

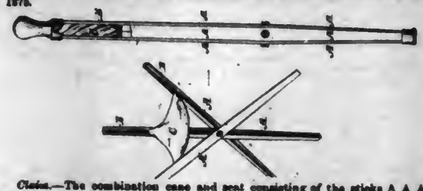


Claim.—1. A water-closet valve comprising the combination of a detachable top bonnet or cap, a pipe secured to said bonnet for suspending said valve from its support, and clamping devices arranged adjustably on said pipe for adjusting and securing the valve in any desirable vertical position, substantially as specified.

2. The combination, with a water-closet valve provided with a detachable top bonnet or cap, of an externally screw-threaded pipe, connected to the same, serving as a guide for the valve-rod, and provided with two or more adjustable clamping screw-nuts for adjusting and securing the valve in different vertical positions, substantially as and for the purpose specified.

3. The combination, with a water-closet valve, of a detached or unconnected valve-rod, having a shoulder or flange and a spring interposed between said shoulder or flange and the support of said valve, substantially as and for the purpose set forth.

208,438. CORNERED CANE AND SEAT. Joseph William Smith, Boston, Mass. Filed June 20, 1878.



Claim.—The combination cane and seat consisting of the sticks A A A and seat C, the sticks being constructed and arranged to form a receptacle, B, for the seat C, substantially as described and shown.

208,439. LAMP-BURNERS. Joseph P. Smithers, Brooklyn, N. Y. Filed Aug. 19, 1878.

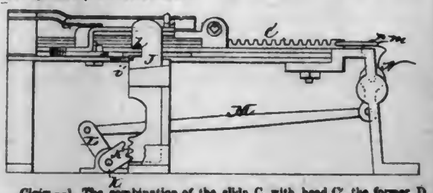


Claim.—1. A flat-wick lamp-burner having its flat wick-tube formed with an upper loose end to permit the free passage of the wick, and a lower end of reduced size, adapted to closely embrace the wick and prevent the passage of flame along the same, substantially as herein set forth.

2. A flat-wick lamp-burner having its flat wick-tube formed with an upper loose-fitting end, adapted to permit the free movement of the wick, and a lower tight-fitting end, adapted to closely embrace the wick, to prevent the passage of flame, together with an intermediate lateral enlargement or chamber, adapted to allow of the bending of the wick therein when lowered through the loose end of the tube, substantially as herein shown and described.

208,430. MACHINES FOR BENDING HORSESHOE-BLANKS. John H. Snyder, Richmond, Va. Filed Feb. 12, 1878.

Brief.—The former is carried in the head of a reciprocating slide, and is provided with a T-rod, which moves over an inclined forked bar, and withdraws the former after the completion of the bending operation, for the purpose of discharging the bent blank. Lateral movement of the former is prevented by lugs on the T-rod, which bear against the sides of a stationary guide-bar. The vertically-reciprocating shear-blade is operated by the mechanism specified in the second claim.



Claim.—1. The combination of the slide C, with head C', the former D, with T-rod d, and the pivoted benders H, with slotted arms I, passing over the rod d, substantially as and for the purposes set forth.

2. The combination of the slide C, with pin p and link m, lever N, with hook n, rod M, shaft k, with arm L and segment K, and the cogged bar J, with cutter h, all constructed substantially as and for the purposes set forth.

208,431. BELTING. Amedee Spadone, Jersey City, N. J. Filed Mar. 26, 1878.



Claim.—An endless belt composed of pliable material and provided with an intermediate strip of metal, (preferably of tempered steel,) arranged spirally, as shown.

208,432. BELTING. Amedee Spadone, Jersey City, N. J. Filed Dec. 22, 1877.

Brief.—The longitudinal metallic strips are wound with textile fabric preparatory to receiving the cement when placed between the plies of material which form the outer surfaces of the belt.

Claim.—A belt composed of a rubber-coated fabric, folded or constructed with two or more plies, and provided with metallic strips, (preferably of tempered steel,) covered with a wrapped or braided fabric, and caused to adhere to the inner rubber coating of the adjacent surfaces, substantially as described.

208,433.



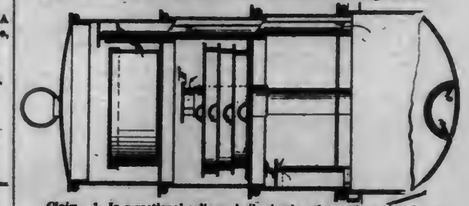
208,433. POSTAGE AND REVENUE STAMPS. Charles F. Spencer, Rochester, N. Y. Filed Aug. 2, 1878.

Brief.—The blow of a rubber-faced hammer causes the granular material on the gummed side of the stamp to cut through and deface it.



Claim.—A postal or revenue stamp having a portion or the whole of its gummed surface covered with hard granular material incorporated with the gum, as shown and described, and for the purpose specified.

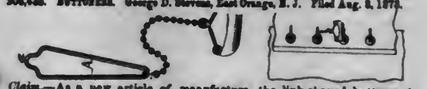
208,434. STEAM-COOKERS. Charles W. Stanick, Decatur, Ga. Filed Aug. 15, 1878.



Claim.—1. In a sectional culinary boiler having the sections placed on top of each other, and a separate tube passing from the lower section or water-boiler to each of the other sections, a sliding tube or gage arranged in the outlet portion of each steam-tube, for the purposes herein set forth.

2. In a sectional culinary boiler, the combination of the steam-tubes, provided with the interior side flanges, a a, and the sliding tubular gages F, substantially as and for the purposes herein set forth.

208,435. BUTTONERS. George D. Stevens, East Orange, N. J. Filed Aug. 8, 1878.



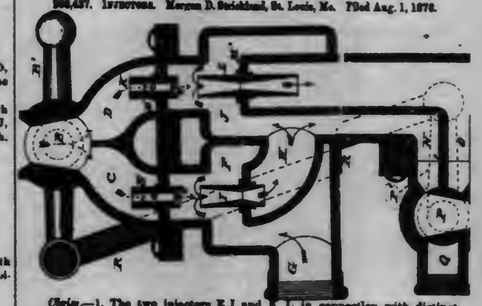
Claim.—As a new article of manufacture, the link-shaped buttoner A, made wider at one end than the other, to adapt it for a shoe or glove buttoner, the wide end being constructed with a narrow extension, a, and provided with a slip-ring, chain, and suitable ornament, for the purpose of securing it in the button-hole of a vest or other garment, substantially as and for the purposes set forth.

208,436. WOOD PAVEMENTS. William H. Stow, Chicago, Ill. Filed July 25, 1878.



Claim.—The elastic wood pavement described, consisting of the yielding foundation, a board flooring, and a top course of long and thin blocks sawed from green lumber, dipped in tar or cement, and laid without spaces between the rows, the blocks being covered with tar or cement and fine gravel, substantially as set forth.

208,437. INJECTORS. Morgan D. Strickland, St. Louis, Mo. Filed Aug. 1, 1878.

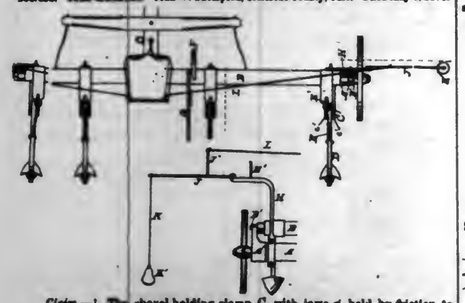


Claim.—1. The two injectors E I and K L, in connection with distinct overflows N O, substantially as set forth.

2. In combination with the injectors E I and K L and overflows N O, the single three-way cock P, governing both overflows, substantially as and for the purpose set forth.

3. The two steam-injectors E I and K L, in combination with the pipes C and H, as arranged as to allow the two injectors to be placed far apart vertically, substantially as and for the purpose set forth.

208,438. OVEN-HARDENER. John W. Thompson, Clermont County, Ohio. Filed May 3, 1878.



Claim.—1. The shovel-holding clamp C, with jaws *c'*, held by friction to the axle A, the bended chain-carrier E', loosely sliding upon the shaft B, arranged and combined with the shovel-arm D and the said axle and shaft, so as to be adjusted at will, as specified.

2. The marking device described, consisting of the arm J J', pivoted to the arm H, the pendent drag K K', and the operating-cord L, leading to the driver's seat, as and for the purpose specified.

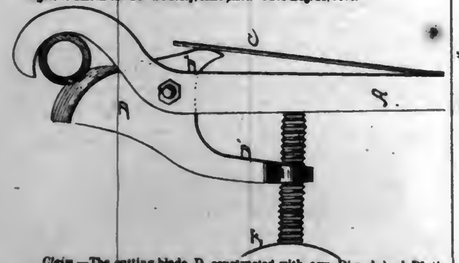
3. The combined upright H' on the arm H, adapted to receive the arm J' when the marker is not in use, and hold the same by the weight of the flexible swiveled drag, which is turned inward, as herein specified.

208,439. DIVIDED WHEELS. Vincent Thorpe, Fall River, Mass. Filed Feb. 16, 1878.



Claim.—The combination of the two lateral sections A and B, each having the same circumference as the completed wheel, and each having a radial slot and a radially-projecting part, C', in combination with the bolts *a*, the radial slots and the parts C' being constructed to permit the two sections to be brought together by moving them radially inward upon each other, substantially as and for the purpose herein set forth.

208,440. PIPE-WRENCHES WITH CUTTERS. William L. Truland, Lexingburg, N. Y., assignor to himself and Edward Tracy, same place. Filed Aug. 21, 1878.



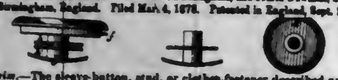
Claim.—The cutting-blade D, constructed with arm D' and heel D², the arm being provided with screw F on one side of lever A, and the heel having the pressure-spring C on its opposite side, substantially as and for the purpose herein set forth.

208,441. PROCESSES OF CLEANSING MILLSTONES. Harvey B. Verne, Washington, assignor to Edward P. Welch, James H. Welch, Rufus W. Welch, Charles Reed, James F. Willett, and Edmund F. Hann, Georgetown, D. C., one-seventh to each. Filed Sept. 14, 1878.

Claim.—1. The within-described mode of cleansing millstones with hydrofluoric acid, substantially as set forth.

2. For cleansing millstones, hydrofluoric acid in any of its compounds, for the purpose as set forth.

208,442. BUTTONS AND STUDS. John Wall, Birmingham, and James Bowman, Small Heath, near Birmingham, England. Filed Mar. 4, 1878. Patented in England, Sept. 22, 1877.



Claim.—The elevate-button, stud, or clothes fastener described and shown, consisting of the two independent shanks, each provided with a bead at one end and a flange or disk at its other end, and having the spring-catch and pusher *f*, whereby the shanks may be locked together, bringing the flanges face to face, all as and for the purpose set forth.

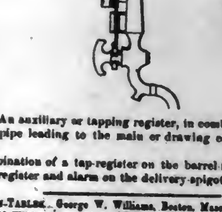
208,443. ELASTIC BUCKLES. E. Schuyler Wardwell, Bucksport, Me., assignor to W. G. Collins, same place. Filed July 27, 1878.

Claim.—1. The elastic loop having the eyes *c d* at the ends of each of arms *b*, and formed substantially as described and shown.

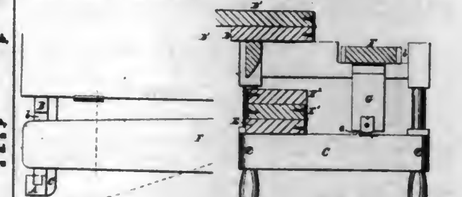
2. In combination with the elastic buckle, formed as described, the cords *e f*, arranged in connection with the buckle, substantially as described and shown.

3. In an elastic buckle, the combination of the metallic loop, the cords *e f*, arranged thereon, and the tongue pivoted centrally in the loop, all substantially as described and shown.

208,444.



208,444. WEIGHING-SCALES. Thomas H. Ward, Smethwick, near Birmingham, England. Filed May 27, 1878.



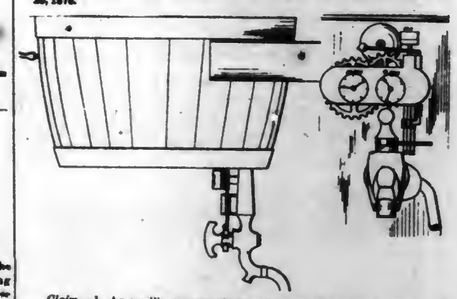
Claim.—1. In a weighing-machine, the combination of the suspension device and the device which carries the load with an intermediate knife-edge rocker, the points of contact of which are on a line slightly inclined, but as nearly vertical as practicable, the movement of said rocker being resisted by a weight or spring, substantially as described.

2. In a weighing-machine, the combination of the suspension device and the frame carrying the load with an intermediate knife-edge rocker, the points of contact of which are on a line slightly inclined, but as nearly vertical as practicable, the said rocker being attached to a weighted or spring lever, through which the weight may be indicated, all substantially as set forth.

3. The combination of the suspension device, a hook, B, connecting-frame, and rocker D with a weighted or spring lever arm, F, and devices, substantially as described, for indicating the weight of the load.

4. The combination of the suspension device and the frame carrying the load with a rocker, D, lever F, spring G, lever I, provided with a toothed segment, the pinion *h*, and dial-pointer, as described.

208,445. REGISTERING LIQUOR-FAUCETS. William Williams, Huntingdon, Pa. Filed May 28, 1878.



Claim.—1. An auxiliary or tapping register, in combination with the keg and connecting-pipe leading to the main or drawing cock, for the purposes herein set forth.

3. The combination of a tap-register on the barrel-faucet, and a connecting-tube with a register and alarm on the delivery-spigot, as specified.

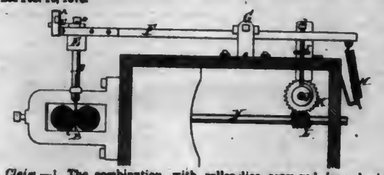
208,446. KITCHEN-TABLES. George W. Williams, Boston, Mass., assignor to Herbert B. Gage and Ellen M. Williams, same place. Filed Dec. 3, 1877.

Claim.—1. A table having the front portion of its top hinged to and adapted to be folded over onto the rear portion of said top, secured to the table-frame in a fixed position, in combination with a platform located below and parallel with the table-top, and adapted to support one or more wash-tubs, substantially as and for the purposes described.

2. A table provided with the fixed top D, hinged leaf D', adapted to be folded over onto D to uncover a portion of the top of the table-frame, and a jointed platform made up of two or more leaves, E, E', and E², adapted to be folded together at the back side of the table, or to be extended to the front of the frame to form a support for one or more tubs, substantially as and for the purposes described.

3. In combination with a table having a portion of its top hinged and adapted to be folded over onto another and fixed portion, the ironing-board F, provided with the pivotal hook *a*, adapted to engage with an eye in the plate *d*, the brace G, hinged at one end to the under side of the board F, and provided at its other end with pivot-pin *e* and the socket *e'* to receive said pin, all arranged and adapted to operate substantially as and for the purposes described.

208,447. MACHINES FOR ROLLING TAPER SHAFTS. Henry A. Williams, Taunton, Mass. Filed Feb. 16, 1878.



Claim.—1. The combination, with roller-dies arranged in a horizontal plane, of a work-holding stock which feeds the work into the dies by gravitation, and is raised preparatory thereto by the rolls, substantially as described.

2. The combination, with roller-dies arranged in a horizontal plane, of a work-holding stock which feeds the work into the dies by gravitation, and progressively advances it therein, substantially as described.

3. The combination of the adjusting-arm F, work-holding stock D, and mechanism for adjusting the arm with roller-dies, substantially as described.

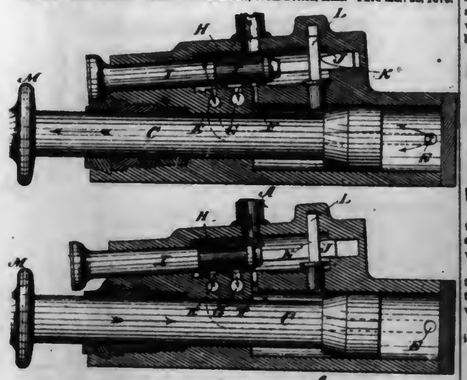
4. The graduating-cam J and plate L, in combination with the adjusting-arm F, stock D, and roller-dies A, substantially as described.

5. The combination, with the roller-dies, of stock D, arm F, graduating-plate I, cam J, and a stop mechanism to the latter, substantially as described.

6. The combination, with the roller-dies, of spring H, adjusting-screw *d*, graduating-plate I, adjusting-holder F, and stock D, substantially as described.

7. The combination of vertically-sliding stock D, pivoted head E, and adjusting-arm F with roller-dies, substantially as described.

208,448. ROCK-DRILLS. Edward S. Winchester, South Boston, Mass. Filed Mar. 22, 1878.



Claim.—1. In a rock-drill, the combination of the piston C, the sliding valve having its stem extended at one end to be acted upon by the piston, and provided at the inner end with a shoulder, K, in combination with the bolt or detent L, said parts being constructed and arranged to operate substantially as described.

2. The combination of the cylinder A, provided with ports E F G, piston C, having shoulder M, valve H, spindle I, having shoulder K, and detent L, substantially as described.

3. In a rock-drill, a sliding valve arranged to be moved in one direction by the positive action of the piston, and in the other by the pressure of the steam, in combination with a detent arranged to hold the valve when forced back against the pressure of the steam, and to be released by the action of the piston head, substantially as shown and described.

4. In combination with the cylinder and valve, the port F, opening directly into the lower end of the cylinder, and the port E, extending from the top of the cylinder downward to a point below the mouth of port F, as and for the purpose described.

208,449. ROCK-DRILLS. Edward S. Winchester, Boston, Mass. Filed June 21, 1878.

Brief.—Steam is admitted to the interior of the valve by a small port in said valve. The pressure exerted by the steam within said valve against the interior piston allows its free movement in both directions, but prevents the rebound of the valve after it has reached the limit of its stroke.

Claim.—1. A sliding valve mounted in a piston, provided with a small piston or plunger at one end, and with a port for admitting steam constantly under said small piston, substantially as shown.

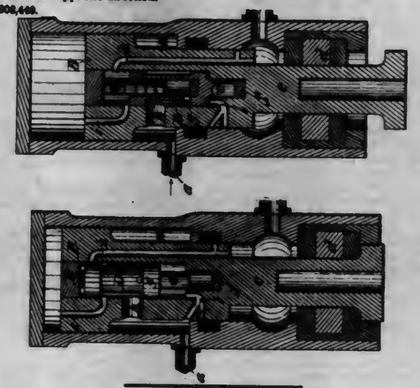
2. In combination with the main piston B, having the sliding valve D therein, the secondary piston E, mounted in the valve, and the port *e*, to admit steam behind said secondary piston.

3. In combination with the main piston and parts, substantially as shown, a piston-valve mounted in said main piston, and subjected at one end to an intermittent pressure of steam, and at the opposite end provided with a small piston, urged outward by a constant pressure of steam.

4. A direct-acting steam-valve provided in one end with a small piston, urged outward by a constant pressure of steam, and subjected at the opposite end to an intermittent and greater pressure of steam, substantially as shown, whereby the valve is caused to move in one direction by the direct pressure of the steam, and in the opposite direction by the pressure upon or against the secondary piston.

5. A reciprocating steam-valve mounted in the piston of a drill or engine, and provided at one end with a small area, subjected to a constant pressure of steam to cause a movement in one direction, and at the other end with a greater area, subjected to an intermittent pressure of steam to cause the movement in the opposite direction.

208,449.



208,450. BORING-MACHINES. Edward S. Winchester, Boston, Mass. Filed July 12, 1878.

Brief.—The fastening-bolts of wooden vessels can be rapidly removed by means of a hollow spiral twisted auger having a cutting-edge at its end, and adapted to bore into the side of the vessel around the bolt, which will meanwhile pass lengthwise within the center of the auger, combined with a movable and flexible connection attached to a power-driven shaft.

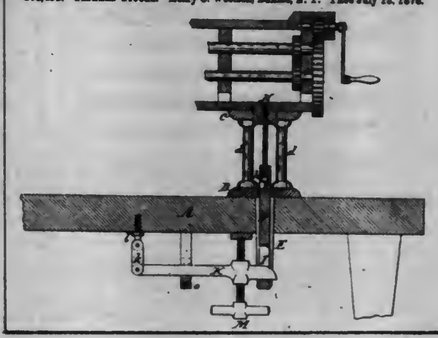


Claim.—1. The cross head or bar having its ends adapted to be held by two or more men, in combination with the hollow auger, the gear-wheel attached to the auger, and the pinion mounted on the frame and connected with a power-driven shaft.

2. In an apparatus for removing bolts from wooden vessels, the combination of a tubular auger, a head-frame or stock having the auger journaled therein, and a flexible or jointed shaft connecting the auger or its driving-pinion with a power-driven shaft.

3. In combination with a power-driven shaft, I, and a hollow auger, an intermediate flexible or jointed shaft having a sliding connection with shaft I.

208,451. TINNERS' STOVES. Henry O. Weston, Buffalo, N. Y. Filed July 13, 1878.



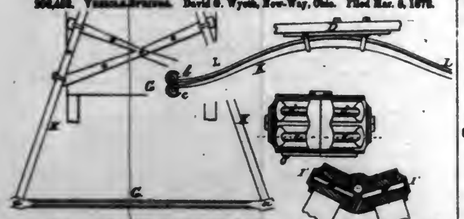
Claim.—1. The combination, with the stock C *d* D E F, of the locking-lever K, pivoted to the under side of the bench, and provided with a fastening-screw, M, substantially as set forth.

2. A tinner's stock composed of the plates C D, connecting-pieces *d*, tapering jaw E, and sliding bar F, adapted to have its upper end connected with the machine and to receive a locking device in its lower end, substantially as set forth.

3. The combination, with the stock C *d* D E, of the sliding bar F, provided with openings *g h*, screw-bolt H, locking-lever K, and fastening-screw M, substantially as set forth.

4. The combination, with the stock C *d* D, of the tapering jaw E, provided with recesses *n'*, and the sliding bar F, constructed with corresponding lugs *n*, substantially as set forth.

206,482. VEHICLE-SPRING. David C. Wyeth, New-Way, Ohio. Filed Mar. 6, 1878.



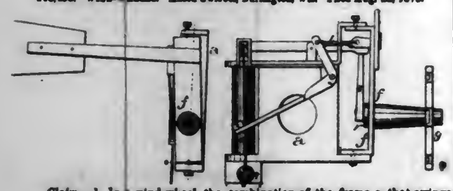
Claim.—1. The rear axle, having the enlarged portions *a a* formed solid therewith, and provided with entries or sockets for reception of the ends of the springs, half of each socket being below and half above the axis of the axle, as and for the purpose specified.

2. The combination of the springs and the pivoted fifth-wheel having double sockets, and the front axle having a central opening to receive said fifth-wheel, as specified.

3. The combination of the springs formed of parts K I, connected as described, the rear axle, G, having double sockets, the front axle having a central opening, and the pivoted fifth-wheel provided with sockets to receive the springs, all as shown and described, to operate as specified.

4. The combination of the plates I with the bolts for coupling the springs and the axles, as shown and described.

206,483. WIND-WHEEL. Anton Swisbel, Burlington, Wis. Filed Aug. 12, 1878.

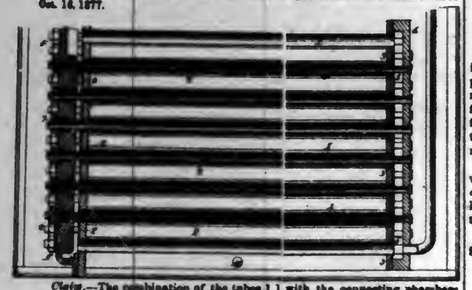


Claim.—1. In a wind-wheel, the combination of the frame *e*, that swings on the rear of the mast, a frame, *f*, pivoted thereto between suitable bearings, and a rigid side vane secured to the frame *f*, so as to swing the frame carrying the wind-wheel *g* upward to one side, substantially as shown.

2. In a windmill, the frame *f*, carrying the wind-wheel, having its ends pivoted out of line with each other, and having a rigid vane secured to it, substantially as described.

3. The combination of the frame *e*, having the frame *f* pivoted to it, wind-wheel vane, lever, and a weight, all arranged to operate substantially as described.

206,484. CONDENSER FOR ICE-MACHINES. John Gamgee, Chelsea, Great Britain. Filed Oct. 16, 1877.



Claim.—The combination of the tubes 1 1 with the connecting chambers *b b'* and the tubes 2 2, extending at each end into the open tank, substantially as hereinbefore described, and for the purposes set forth.

REISSUES.

8,424. TREATING ANIMAL FATS. Hippolyte Mège, Paris, France, assignor, by mesne assignments, to the United States Dairy Company. Patent No. 144,013, dated Dec. 30, 1873; Reissue No. 5,202, dated May 13, 1874. Filed Aug. 13, 1872.

Brief.—Reissue of Letters Patent for improvement in treating animal fats, dated May 13, 1874, No. 5,202. Originally granted December 13, 1873, No. 144,013.

Claim.—1. The rendering of animal fat at a low temperature, substantially as above set forth, for the production of a fatty matter devoid of disagreeable taste.

2. As a new product of manufacture, fat rendered at the low temperature, substantially as above described, devoid of disagreeable taste.

3. The combined process of rendering animal fat at a low temperature and then separating the oleomargarine, for the purpose of producing a material adapted to be used as ordinary butter for culinary purposes, or to be further treated for making more perfect butter, substantially as above described.

4. As a new product of manufacture, oleomargarine obtained from fat rendered at a low temperature and separated from the stearine, substantially as above described.

5. The agitating of oleomargarine with water or milk for the purpose of making a more perfect imitation of butter, substantially as above described.

6. The butter-like product produced by the agitation of oleomargarine with water or milk, substantially as above described.

7. The treatment with artificial gastric juice for facilitating the process of rendering the fat at a low temperature, substantially as above described.

8. The treatment of the oleomargarine with the mammary tissue of the cow, or mammary pepsin, substantially as above described.

9. The addition of ordinary butter to oleomargarine, substantially as above described.

8,425. UMBRELLA-HANDLES. George W. Tucker, Waterbury, Conn., assignor to the American Ring Company, same place. Patent No. 160,827, dated Mar. 9, 1875. Filed July 27, 1878.



Claim.—1. A handle for umbrellas or parasols, consisting of a core or body of wood, and a case of sheet metal inclosing the core and strengthened by the same, substantially as set forth.

2. A handle for umbrellas or parasols, consisting of a core or body of wood, and a case or covering of sheet metal inclosing said core and bent to lap at the edges, and a band and cap-piece binding the casing, substantially as set forth.

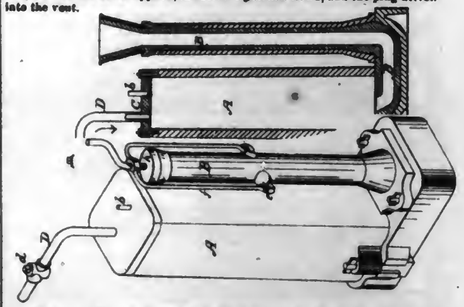
8,426. UMBRELLA-HANDLES. George W. Tucker, Waterbury, Conn., assignor to the American Ring Company, same place. Patent No. 160,827, dated Mar. 9, 1875. Filed Sept. 12, 1878.



Claim.—As a new article of manufacture, the handle for umbrellas, parasols, or whips, made of crystallized tin-plate varnished in imitation of pearl, substantially as and for the purpose set forth.

8,427. PROCESSES AND APPARATUS FOR COMPRESSING INGOTS WHILE CASTING. William B. Jones, Braddock, Pa. Patent No. 186,576, dated Jan. 23, 1877. Filed May 13, 1878.

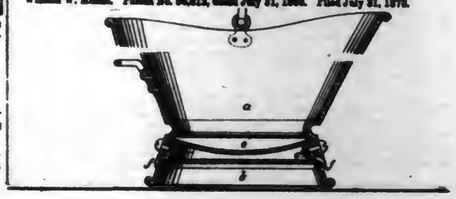
Brief.—When the mold is nearly filled, sand or loam is placed in the top of sprue and the cover applied, the screw tightened down, and the plug driven into the vent.



Claim.—1. The herein-described improvement in the process of casting ingots under the direct pressure of an expansive aeriform fluid, the said improvement consisting in leaving an open space between the surface of the metal and the closed top of the mold, and admitting the said expansive aeriform fluid directly into such space, substantially as described, whereby the full expansive force of the fluid is at once and directly exerted upon the contents of the mold, operations are facilitated, and the necessity of extra apparatus obviated.

2. In apparatus for compressing ingots while casting, the sprue B, provided with an adjustable cover, and the steam-supply pipe D, having a sock, *d*, in combination with the flask A, or group of flasks, having an outlet or outlets for the escape of air, and constructed substantially as described, so that the same may be opened and closed at will, as and for the purpose specified.

8,428. COAL-SCUTTLE. George Smith, Brooklyn, N. Y., assignor, by mesne assignments, to William W. Kenna. Patent No. 56,813, dated July 31, 1866. Filed July 31, 1878.

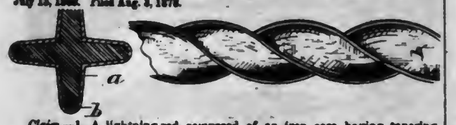


Claim.—1. A coal-scuttle composed of three removable sections, a body, flanged bottom, and base, constructed and arranged as specified.

2. In a coal-scuttle, the combination of the base *b*, provided with a shoulder, *f*, and the flanged body *a* and bottom *c*, substantially as specified.

3. A coal-scuttle consisting of the metallic body, flanged bottom, and base, detachably secured together by means of the screw-bolts and nuts, connecting all of said parts, substantially as specified.

8,429. LIGHTNING-ROD. Leland D. Vermilye Dayton, Ohio, and William S. Reyburn and Edmund A. W. Hunter, Philadelphia; said Vermilye assignor, by mesne assignments, to said Reyburn and Hunter and Byron P. Meaker, Philadelphia, Pa. Patent No. 96,561, dated July 13, 1869. Filed Aug. 3, 1878.



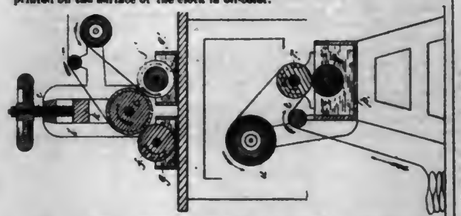
Claim.—1. A lightning-rod composed of an iron core having tapering edges or flanges and a sheathing of sheet-copper, which surrounds the core and is fitted to the edges or flanges thereof, substantially as described.

2. In a lightning-rod, the combination of an iron core and a covering or casing of sheet-copper bent to form a series of exterior ribs or flanges, substantially as described.

3. In a lightning-rod, the core *a* of angle-iron, in combination with the copper sheathing *b*, closely fitted to the surface of the core, and closed at its contiguous edges by a tight joint, substantially as described.

8,430. PROCESSES AND APPARATUS FOR PAINTING STRIPED AWNINGS IN OIL-COLORS. Charles E. Wheeler, Boston, Mass., assignor to John Boyle, New York, N. Y. Patent No. 138,773, dated May 13, 1873. Filed Aug. 24, 1878.

Brief.—In producing a colored stripe on tent-cloth or cloth for forming awnings, instead of said stripe being woven in the cloth, as heretofore, it is printed on the surface of the cloth in oil-color.



Claim.—1. The combination, with the pressure-roller *c*, screw *h i*, and bar *k*, or their equivalents, of one or more pattern-rollers, *f f'*, partially immersed in the oil-paint contained in the box or boxes *g g'*, for the purpose of striping cloth for awnings, &c., as herein shown and described.

2. In combination with the oil-striping apparatus herein described, the sizing-machine consisting of the trough *p*, immersed roller *q*, and rollers *t*, *r*, and *u*, as and for the purpose set forth.

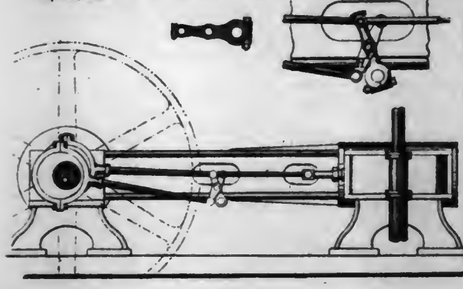
3. The process of painting stripes in oil-color on duck or other suitable fabric for awnings or tents by passing the same between a pressure-roller and a painting-roller, the latter of which is partially immersed in the color, substantially as set forth.

8,431. STRIPED AWNING OR TENT CLOTH. Charles E. Wheeler, Boston, Mass., assignor to John Boyle, New York, N. Y. Patent No. 138,773, dated May 13, 1873. Filed Aug. 24, 1878.



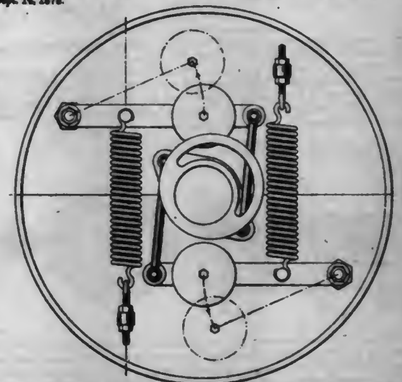
Claim.—As a new manufacture, an awning or tent cloth striped in oil-color, which permeates the body of the fabric, substantially as set forth.

8,432. VALVE-GEARS FOR STEAM-ENGINES. Joseph W. Thompson, Salem, Ohio, assignor to himself and Buckeye Engine Company. Patent No. 169,715, dated Apr. 27, 1875. Filed Sept. 14, 1878.



Claim.—The combination, in a steam-engine, of a main valve, substantially as described, operated by a fixed eccentric; a separate cut-off valve, having its seat in said main valve, and operated by an adjustable eccentric, which is varied in position upon its shaft by a governor thereon; a rocker-arm, which is pivoted at one end to a bearing, and connected at the other to the valve and eccentric rods of the main valve; and a double armed rock-shaft, journaled in said rocker-arm, and having its arms connected, respectively, to the valve and eccentric rods of the cut-off valve, substantially as set forth.

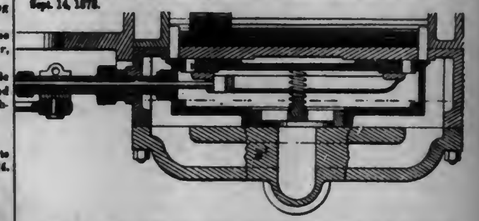
8,433. VALVE-GEARS FOR STEAM-ENGINES. Joseph W. Thompson, Salem, Ohio, assignor to himself and Buckeye Engine Company. Patent No. 169,715, dated Apr. 27, 1875. Filed Sept. 14, 1878.



Claim.—1. The combination, in a steam-engine governor, of a supporting-case, arms pivoted thereto and carrying weights upon their outer ends, and springs whose tension acts in reverse direction to the centrifugal force of the weights throughout the traverse of their arms, said springs being connected to the weight-arms between their pivots and weights, substantially as set forth.

2. The combination, in a steam-engine governor, of a supporting-case, weight-arms pivoted to said case, and centripetally-acting springs, each of which has its ends connected respectively to one of the weight-arms between its pivot and weight and to a device connected to the case, by which the tension of the spring can be varied and adjusted, all constructed and arranged substantially as set forth.

8,434. BALANCED AND CUT-OFF VALVES. Joseph W. Thompson, Salem, Ohio, assignor to himself and Buckeye Engine Company. Patent No. 169,714, dated Apr. 27, 1875. Filed Sept. 14, 1878.



Claim.—1. The combination, with a steam-cylinder and an inclosing-chest connected thereto, of a main valve consisting of a case or chest working on a face on the cylinder, and having in its side adjacent thereto two induction-ports, to respectively communicate with corresponding ports therein, and upon a cover secured on its opposite side a supply opening or openings communicating through a packing ring or rings, which constitute the bearing of the valve on the cover of the inclosing-chest, with a steam-induction passage therein, substantially as set forth.

2. The combination of a box or chambered main distribution-valve, balanced in the manner described, said valve having two induction ports for the admission of steam to the cylinder through the inside of the valve, and effecting exhaust release by uncovering corresponding cylinder-ports, and a separate cut-off valve, seated upon the inside of said main valve, and working over the induction-ports thereof, substantially as set forth.

3. The combination of a box or chambered main valve, balanced as described, a tubular stem secured to said main valve, and a separate cut-off valve, seated within the main valve, and operated by a stem passing through the tubular stem of said main valve, all constructed and arranged substantially as set forth.

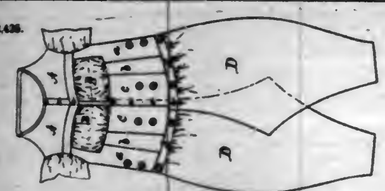
4. The combination of a box or chambered main valve, an inclosing-chest, and a chest-cover having an induction passage communicating with the interior of the main valve and an exhaust-passage communicating with the interior of the chest, substantially as set forth.

8,435. UNDER-CLOTHING. Susan Taylor Converse, Woburn, Mass. Patent No. 166,190, dated Aug. 3, 1875. Filed July 13, 1878.

Claim.—1. The body composed of the waist-pieces *a b b*, breast-pieces B, and back-pieces *c c*, made high or low necked and long or short sleeved, the pieces *b* and *c* being below the breast-pieces B, and the pieces *a* partly below the breast-pieces B and partly between them and the arm-holes, as described.

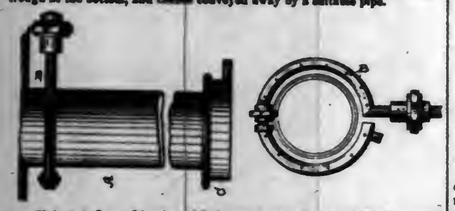
2. The garment above described, consisting of the body A, the breast-pieces B B, and leg-pieces D D, constructed and arranged together as described.

8,426.



8,426. COOLING APPARATUS FOR STAND-PIPES OR GAS-RETORTS. David R. Sikes, Sharon, Pa. Patent No. 202,944, dated July 16, 1877. Filed Dec. 10, 1877.

Brief.—Jets of water are projected upon the outer surface of the stand-pipe of a gas-retort from curved perforated pipe at the top for keeping it cool, and thus preventing it becoming clogged upon its inner surface with partially-dried tar. The water flowing down the stand-pipe is caught by an annular trough at the bottom, and thence conveyed away by a suitable pipe.

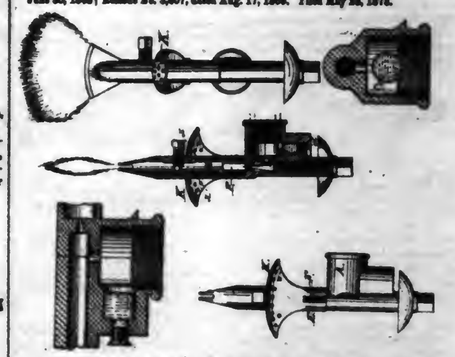


Claim.—1. In combination with the stand-pipe of a gas-retort, the curved perforated pipe B, constructed, as described, with a series of perforations, by means of which jets of water are projected against the outside of the stand-pipe, and caused to flow downward around and in contact therewith, substantially as and for the purpose specified.

2. In combination with the stand-pipe of a gas-retort, a trough or conduit, C, constructed, as described, of two parts united together and attached to the stand-pipe, for the purpose of receiving and carrying off the water, substantially as specified.

3. In combination with the stand-pipe of a gas-retort, a perforated water-discharging device, B, and water-receiver C, constructed, as described, of two parts united together and attached to the stand-pipe, substantially as and for the purpose specified.

8,427. VAPOR-BURNERS. Willard H. Smith, New York, N. Y. Patent No. 79,694, dated June 30, 1868; Reissue No. 3,607, dated Aug. 17, 1869. Filed May 28, 1878.



Claim.—1. In a vapor-burner, a receptacle for sediment located immediately below the oil-supply tube and back of and below the gas-passage, said receptacle having direct communication with the oil-tube and indirect communication with the gas-passage, the whole constructed substantially as shown, as that the sediment may not be liable to be moved by the flow of either the oil or gas.

2. The air-tube B, provided between the air-passages F F and the base of the flame with perforated heaters, consisting of the passages *s s* and a perforated heat-conducting flange or flanges, K K, substantially as and for the purpose herein stated.

3. The perforated heater K, having the sides thereof brought downwardly upon the tube A, substantially as and for the purposes set forth.

THE GRAPHIC CO.

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24th DAY OF SEPTEMBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adams, C., Washington, D. C. Felly-joint holder	208,218	Sept. 24	701	207	14	451
Adams, G. B., Newark, N. J. Fountain-pen	208,219	Sept. 24	701	207	14	451
Adams, G. Q. (See Greenleaf and Adams.)						
Albee, A., Boston, Mass. Ink-well	208,278	Sept. 24	770	225	14	458
Amberg, W. A., Chicago, Ill. Temporary binder for letters and papers	208,220	Sept. 24	702	207	14	451
American Ring Company. (See Tucker, G. W., assignor.) (Reissue.)						
Anthony & Co., E. and H. T. (See Stoddard, I. H., assignor.)						
Armor, W H., McKeesport, Pa. Vehicle-wheel hub	208,279	Sept. 24	771	225	14	459
Arthur, J. (See Carr and Arthur.)						
Ashcroft, J., Brooklyn, N. Y. Square revolving grate-bar	208,356	Sept. 24	847	247	14	469
Ashcroft, J., Brooklyn, N. Y. Grate-bar	208,357	Sept. 24	848	248	14	469
Ashford, H., Philadelphia, Pa. Boat-detaching apparatus	208,280	Sept. 24	772	226	14	459
Ashley, J. T., Brooklyn, N. Y. Bronzing-machine	208,358	Sept. 24	849	248	14	469
Atherton, A. T. (See Whitehead and Atherton.)						
Babcock, N., Westerly, R. I. Griper motion for printing-machines	208,359	Sept. 24	853	248	14	469
Bacon, W. S., Bloomville, Ohio. Millstone-driver	208,281	Sept. 24	773	226	14	459
Bailey, C. F., and G. F. Perrenot, Rockport, Tex. Ironing and fluting machine	208,283	Sept. 24	775	226	14	459
Bailey, G. H., Newark, N. J., assignor to W. E. Hale, Chicago, Ill. Hydraulic elevator	208,282	Sept. 24	774	226	14	459
Bamber, J. J., San Francisco, Cal. Deep-water safety-bath	208,360	Sept. 24	854	249	14	469
Bancroft, J. S. (See Sellers and Bancroft.)						
Barton, C. T., Tuscumbia, Ala. Cultivator	208,284	Sept. 24	777	227	14	459
Beach, A. S. (See Grover and Beach.)						
Beeman, G. A., and J. T. Mason, Comanche, Tex. Pump	208,285	Sept. 24	778	227	14	459
Benedict & Barnham Manufacturing Company. (See Hallas, J. G., assignor.)						
Berry, R. D., *et al.* (See Redmond, C. C., assignor.)						
Bloomfield, E. S., Elizabeth, N. J. Manufacture of rope and cordage	208,286	Sept. 24	779	.....	14	459
Blythe, J., Pittsburg, Pa. Machine for mining coal	208,361	Sept. 24	855	249	14	469
Bosworth, G. S., Troy, N. Y. Fuel-burner	208,221	Sept. 24	704	207	14	451
Bowers, J., Newark, N. J. Corset	208,362	Sept. 24	856	249	14	470
Boyle, J. (See Wheeler, C. E., assignor.) (Reissue.)						
Brandeis, L., Brooklyn, N. Y. Machine for making plates of clay and other plastic material	208,363	Sept. 24	857	249	14	470
Brenner, C., Quincy, Ill. Paving-stone	208,364	Sept. 24	857	.....	14	470
Brewer, R. L., assignor to H. G. Thompson, Milford, Conn. Book-stitching machine	208,287	Sept. 24	779	227	14	459
Bristol, C. B., assignor to W. and E. T. Fitch, New Haven, Conn. Hames-connection	208,288	Sept. 24	780	227	14	460
Brocksieper, F. W., assignor to Sargent & Co., New Haven, Conn. Door-bell	208,289	Sept. 24	780	228	14	460
Brokhahne, A. V., New York, N. Y. Razor-strop	208,365	Sept. 24	858	250	14	470
Brooks, A., Hawleyton, N. Y. Machine for calcimining	208,366	Sept. 24	859	250	14	470
Brooks, H. W., *et al.* (See Schoals, J. R., assignor.)						
Brown, A. E., Cleveland, Ohio. Truck apparatus for lifting and conveying ingots, pots, &c.	208,222	Sept. 24	705	208	14	451
Brown, C. W., Salem, Mass. Carriage-boot	208,367	Sept. 24	860	250	14	470
Brown, W., Jersey City, N. J., assignor of one-half interest to F. Roberts, New York, N. Y. Metallic packing for stuffing-boxes	208,368	Sept. 24	861	250	14	470
Brush, W. E., New York, N. Y. Ash-sifter	208,369	Sept. 24	861	251	14	470
Buckeye Engine Company. (See Thompson, J. W., assignor.) (Reissue.)						
Bullymore, R., Buffalo, New York. Apparatus for utilizing exhaust-steam	208,370	Sept. 24	862	251	14	470
Burgess, B., assignor of one-half interest to J. N. Conway, Baltimore, Md. Casting car-wheels	208,371	Sept. 24	863	251	14	470
Burkart, G., *et al.* (See Kimberly, A. E., assignor.)						
Byard, P., Leetonia, Ohio. Lubricating car-wheels	208,290	Sept. 24	781	228	14	460
Campbell, Jones & Co. (See Kirk, H., assignor.)						
Carr, A., Paterson, and J. Arthur, assignors, by mesne assignments, to W. S. Carr, Jersey City, N. J. Direct-acting engine and pump	208,291	Sept. 24	782	228	14	460
Carr, M. W., *et al.* (See Schoals, J. R., assignor.)						
Carr, W. S. (See Carr and Arthur, assignors.)						
Carroll, J., assignor to G. W. Russell, Lawrence, Mass. Emptying-valve for paper-pulp engines	208,292	Sept. 24	784	229	14	460
Carton, J., Utica, N. Y. Hot-air furnace and stove	208,223	Sept. 24	707	208	14	451
Cate, H. S., Millerstown, Pa. Bed-bottom	208,294	Sept. 24	786	229	14	460
Catlin, E. F. (See Catlin, S. C., assignor.)						
Catlin, S. C., assignor to E. F. Catlin, Brooklyn, N. Y. Student-lamp	208,293	Sept. 24	785	229	14	460
Chapin, H. A. (See Lect and Chapin.)						
Clark, H. K., *et al.* (See Grover and Beach, assignors.)						
Claude, L. G., New York, N. Y., assignor to C. E. Moller, Hoboken, and G. H. Russell, Newark, N. J. Horseshoe-bar	208,295	Sept. 24	787	229	14	461
Coffits, J., Central City, Iowa. Farm-gate	208,225	Sept. 24	708	208	14	452
Collins, G. H., Wayne, Mich. Thill-coupling	208,372	Sept. 24	864	251	14	470
Collins, W. C. (See Wardwell, E. S., assignor.)						
Connelly, J. H. and T. E., assignors to themselves and C. Lockhart, Pittsburg, Pa. Automatic chemical fire-extinguisher for oil-tanks	208,374	Sept. 24	865	252	14	471
Connelly, J. H. and T. E., assignors to themselves and C. Lockhart, Pittsburg, Pa. Chemical annex for fire-engines	208,375	Sept. 24	866	252	14	471

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Connelly, T., Philadelphia, Pa. Heating apparatus	208,376	Sept. 24	868	253	14	471
Connelly, T. E. (See Connelly, J. H. and T. E.)						
Connolly, P. (See Smith and Connolly.)						
Conradt, A., assignor to Middletown Plate Company, Middletown, Conn. Jewel-casket	208,373	Sept. 24	864	252	14	471
Converse, S. T., Woburn, Mass. Underclothing. (Reissue)	8,435	Sept. 24	965	282	14	483
Conway, J. N. (See Burgess, B., assignor.)						
Covert, H. W., New York, N. Y. Self-lighting lamp	208,226	Sept. 24	709	209	14	452
Crane, D., Seneca Falls, N. Y. Metallic button-hole stay for boots and shoes	208,296	Sept. 24	788	230	14	461
Cromwell, J. B., Milwaukee, Wis. Millstone-displacing apparatus	208,297	Sept. 24	789	230	14	461
Crowell, A. F., Wood's Holl, Mass. Fertilizer	208,224	Sept. 24	708	.....	14	452
Daniels, T. T., Morrison, Ill. Combined cultivator and corn-plow	208,377	Sept. 24	869	253	14	471
Darling, J., Cincinnati, Ohio. Rotary engine	208,298	Sept. 24	790	230	14	461
Davis, W. R., Jr., New York, N. Y. Library table	208,378	Sept. 24	870	253	14	471
Dorr, S. G., Buffalo, N. Y. Vaginal speculum	208,227	Sept. 24	710	209	14	452
Downey, B. J., Washington, D. C. Vacuum-valve for stench-traps	208,379	Sept. 24	871	253	14	472
Downing, J. F., Erie, Pa. Child's carriage	208,380	Sept. 24	872	254	14	472
Durand, J. H., Detroit, Mich. Wagon-gear	208,381	Sept. 24	873	254	14	472
Edison, T. A., Menlo Park, N. J., assignor to Western Union Telegraph Company New York, N. Y. Speaking-telephone	208,209	Sept. 24	791	231	14	461
Edmonds, G., New Orleans, La. Car-coupling	208,382	Sept. 24	874	254	14	472
Elliot, W. H., New York, N. Y. Rock-drilling engine	208,228	Sept. 24	711	209	14	452
Elmer, W. H., Berlin, Wis., assignor of one-half interest to J. P. Luther. Apparatus for casting shaft-couplings	208,383	Sept. 24	875	254	14	472
Empey, H., Detroit, Mich. Car-brake	208,229	Sept. 24	715	210	14	452
Fairbanks & Co., E. and T. (See Fairbanks, F., assignor.)						
Fairbanks, F., assignor to E. and T. Fairbanks & Co., St. Johnsbury, Vt. Drop-lever weighing-scales	208,300	Sept. 24	793	231	14	461
Fanning, J. T., Manchester, N. H. Pump	208,301	Sept. 24	793	231	14	462
Fitch, E. T., *et al.* (See Bristol, C. B., assignor.)						
Fitch, W., *et al.* (See Bristol, C. B., assignor.)						
Fletcher, T., Warrington, England, assignor to G. B. Snow, T. G. Lewis, and J. E. Robie. Preparing fire-clay for furnaces, crucibles, fire-bricks, &c	208,302	Sept. 24	795	.....	14	462
Fowler, C. H. (See Payson and Fowler.)						
Fuller, G. H., Pawtucket, R. I. Manufacture of jewelers' findings	208,230	Sept. 24	715	210	14	452
Fuller, P. B., Union City, Pa. Shifting-rail for carriages	208,303	Sept. 24	796	231	14	462
Furey, C. R., Logansport, Ind. Shower-bath	208,384	Sept. 24	876	255	14	472
Furse, A. D., Rome, Italy. Asbestus packing	208,385	Sept. 24	876	255	14	472
Gage, H. R., *et al.* (See Williams, G. W., assignor.)						
Gamgee, J., Chelsea, England. Ice-machine	208,304	Sept. 24	796	232	14	462
Gamgee, J., Chelsea, England. Ice-machine	208,305	Sept. 24	797	232	14	462
Gamgee, J., Chelsea, Great Britain. Condenser for ice-machines	208,454	Sept. 24	953	279	14	482
Gates, J., Portland, Oreg. Steam or hydraulic steering apparatus	208,231	Sept. 24	716	{210 {211	14	452
Gaynor, T. J., Indianapolis, Ind. Animal-trap	208,386	Sept. 24	877	255	14	472
George, W. F., New York, N. Y. Stocking-supporter	208,387	Sept. 24	878	255	14	473
Gere, T. D., Owego, N. Y. Grain-drill	208,388	Sept. 24	880	256	14	473
Gibson, C. D. P., New York, N. Y. Insulated connection for gas-lighting apparatus	208,389	Sept. 24	881	256	14	473
Gilliland, L. L., Dayton, Ohio. Meat-cutter	208,232	Sept. 24	718	211	14	453
Gilliland, L. L., Dayton, Ohio. Meat-cutter	208,233	Sept. 24	719	211	14	453
Goff, G. P., Washington, D. C. Buckle	208,306	Sept. 24	798	233	14	462
Greenleaf, M. T., and O. Q. Adams, Quincy, Ill. Car-coupling	208,307	Sept. 24	799	233	14	462
Gregg, W. P., Boston, Mass. Roller-skate	208,234	Sept. 24	720	212	14	453
Gregg, W. P., Boston, Mass. Roller-skate	208,235	Sept. 24	721	212	14	453
Griffin, G. D., Hamilton, Ontario, Canada. Carriage-spring	208,390	Sept. 24	882	257	14	473
Grover, D. L., and A. S. Beach, assignor of one-half interest to H. K. Clark and D. H. Marsh, Groton, N. Y. Harvester cutter and guard-finger	208,236	Sept. 24	722	212	14	453
Guernsey, J. M. (See Guernsey, W. B., assignor.)						
Guernsey, W. B., assignor to J. M. Guernsey, Norwich, N. Y. Horse-collar and hames	208,308	Sept. 24	801	{233 {234	14	462
Hale, W. E. (See Bailey, G. H., assignor.)						
Hallas, J. G., assignor to Benedict and Burnham Manufacturing Company, Waterbury, Conn. Lamp-burner	208,309	Sept. 24	802	234	14	463
Hann, E. P., *et al.* (See Varns, H. B., assignor.)						
Hanna, W. W. (See Smith, G., assignor. (Reissue.)						
Hearne, F. J., Wheeling, West Va. Piles for manufacturing nail-plates	208,237	Sept. 24	723	212	14	453
Heinrich, H. H., New York, N. Y. Self-adjusting balance for chronometers	208,238	Sept. 24	724	213	14	453
Hellman, L., Chicago, Ill. Lamp-wick	208,310	Sept. 24	804	234	14	463
Helmecke, F. A., Round Top, Tex. Guard for sheep-shears	208,311	Sept. 24	804	234	14	463
Herchelrode, J. W., Dayton, Ohio. Circular metal proof-staff for testing millstones	208,239	Sept. 24	726	213	14	453
Hicks, R. P., Omro, Wis. Wagon-seat corner	208,312	Sept. 24	805	235	14	463
Hill, C. F., Hazleton, Pa. Suspensory-bandage	208,240	Sept. 24	726	213	14	453
Hill, H. H., and F. Moorlen, Augusta, Me. Steam fire-engine	208,314	Sept. 24	806	235	14	463
Hills, J., Haydensville, Mass. Stop-cock	208,313	Sept. 24	805	235	14	463
Hills, W. S., Boone, Iowa. Smut-machine	208,241	Sept. 24	727	213	14	454
Hinkle, W. W., Hoss's Mills, Md. Clearer for coffee and tea pots	208,391	Sept. 24	883	257	14	473
Hoffmann, C. (See Hoffman, F. W. and C.)						
Hoffmann, F. W. & C., New York, N. Y. Cigar-maker's knife	208,315	Sept. 24	807	235	14	463
Holden, M., Philadelphia, Pa. Pocket-spittoon	208,392	Sept. 24	884	257	14	473
Hood, A. J., Richland Centre, Wis. Foot-power	208,316	Sept. 24	808	236	14	463
Housley, D. W., Grove City, Ill. Spring-hinge	208,242	Sept. 24	729	214	14	454
Howse, H. L., San Francisco, Cal. Oil-stove	208,317	Sept. 24	809	236	14	464
Hudson, R., Gildersome, Great Britain. Freight-car	208,393	Sept. 24	885	258	14	473
Hull, N. A., assignor of one-half interest to C. B. Rathbun, Peru, Ind. Table	208,318	Sept. 24	810	236	14	464
Hunter, E. A. W. (See Vermilya, Reyburn, and Hunter.) (Reissue.)						
Hutchinson, W. S., Chicago, Ill. Steam-boiler furnace, &c	208,394	Sept. 24	886	258	14	473
Hutton, J., Jr., Brooklyn, N. Y. Street-car-door opener	208,243	Sept. 24	730	214	14	454
Hyndman, W. G., Cincinnati, Ohio. Cap and anchor for metallic roofing	208,395	Sept. 24	887	258	14	474
Ives, H. L., Troy, N. Y. Lamp	208,396	Sept. 24	888	259	14	474
Jagger, W., Horsforth, near Leeds, England. Packing for stuffing-boxes	208,244	Sept. 24	731	214	14	454
Jones, M. D., Boston Mass. Bracket	208,319	Sept. 24	811	237	14	464
Jones, W. R., Braddock, Pa. Process and apparatus for compressing ingots while casting. (Reissue)	8,427	Sept. 24	956	280	14	482
Kaefer, M., Philadelphia, Pa. Converting motion	208,397	Sept. 24	889	259	14	474
Kast, C. R., *et al.* (See Kast, G., assignor.)						
Kast, G., assignor to U. Klinch and C. R. Kast, Detroit, Mich. Trunk-hinge and corner-iron	208,398	Sept. 24	890	259	14	474
Kelly, M., New York, N. Y. Wire fence	208,399	Sept. 24	891	260	14	474
Kerschner, D., T. S. and F. M. Monger, Connersville, Ind. Plow	208,320	Sept. 24	812	237	14	464
Kilborn, A. D., Oakland, Cal. Oil-cup	208,245	Sept. 24	732	214	14	454

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kimberly, A. E., assignor of two-thirds interest to G. Burkart and Z. N. King, West Liberty, Iowa. Thill-coupling	208,400	Sept. 24	891	260	14	474
King, Z. N., *et al.* (See Kimberly, A. E., assignor.)						
Kirk, H., Pittsburg, Pa., assignor to himself and Campbell, Jones & Co. Glass-melting furnace	208,401	Sept. 24	892	260	14	474
Klinch, U., *et al.* (See Kast, G., assignor.)						
Knickerbocker, M., New Lenox, Ill. Wire-barbing tool	208,402	Sept. 24	893	261	14	475
Koeller, F., Neulenbach, Austria. Bottle-stopper	208,403	Sept. 24	894	261	14	475
Lamb, A. A., Boston, Mass., assignor to F. M. Sherman, New London, Conn. Pump-plunger	208,404	Sept. 24	894	261	14	475
Lane, D. H., Anoka, Minn. Rotary plow	208,246	Sept. 24	733	215	14	454
Leet, C. D., and H. A. Chapin, Springfield, Mass. Metallic cartridge	208,247	Sept. 24	736	215	14	454
Lemieux, J. B., assignor of one-half interest to A. Rodgers, Muskegon, Mich. Jack-chain for saw-mills	208,321	Sept. 24	813	237	14	464
Lewis, T. G., *et al.* (See Fletcher, T., assignor.)						
Liasse, A., London, England. Apparatus for conveying small parcels	208,405	Sept. 24	895	262	14	475
Littlefield, R. S., Chicago, Ill. Dam and pier	208,248	Sept. 24	737	215	14	454
Lockhart, C. (See Connelly, J. H., and T. E., assignors.)						
Lohmann, A., Iserlohn, Prussia, Germany. Sad-iron	208,322	Sept. 24	814	237	14	464
Lombard, H., Westfield, Mass. Whip-rounding machine	208,249	Sept. 24	738	216	14	455
Luther, J. P. (See Elmer, W. H., assignor.)						
Main, W. H., Pine Meadow, Conn. Snap-hook	208,250	Sept. 24	738	216	14	455
Mains, R. S., New York, N. Y. Heating and cooking furniture	208,251	Sept. 24	739	216	14	455
Marsh, D. H., *et al.* (See Grover and Beach, assignors.)						
Martin, J. H., Columbus, Ohio. Hame	208,406	Sept. 24	896	262	14	475
Mason, J. T. (See Beeman and Mason.)						
Maxim, H. S., Brooklyn, N. Y. Electric lamp	208,252	Sept. 24	740	{216 {217	14	455
Maxim, H. S., Brooklyn, N. Y. Regulator for electrical lamps	208,253	Sept. 24	742	217	14	455
May, H. L., Galesburg, Ill. Windmill	208,254	Sept. 24	743	{217 {218	14	455
Mayo, W. S., Ottawa, Ontario, Canada. Tonguing and grooving machine	208,323	Sept. 24	814	238	14	464
McAuliffe, P., New York, N. Y. Machine for hulling, scouring, and cleaning coffee	208,324	Sept. 24	816	{238 {239	14	465
McCombs, A. (See McCombs, G. F., assignor.)						
McCombs, G. F., assignor to A. McCombs, Washington, Pa. Broom-sewing machine	208,407	Sept. 24	896	{262 {263	14	475
McDonald, M., Lexington, Va. Fishway	208,408	Sept. 24	900	{263 {264	14	476
Mége, H., Paris, France, assignor, by mesne assignments, to United States Dairy Company. Treating animal fat. (Reissue)	8,424	Sept. 24	954	.....	14	482
Menger, L., Brooklyn, assignor to M. Pollmann & Co., New York, N. Y. Violin-case	208,409	Sept. 24	901	264	14	476
Meredith, F. A., Hagerstown, Md. Bobbin-winder for sewing-machines	208,410	Sept. 24	902	264	14	476
Merrill, H. D., Shelbina, Mo. Flood-fence	208,255	Sept. 24	745	218	14	456
Merritt, B., Newton, Mass. Scroll-sawing machine	208,411	Sept. 24	903	264	14	476
Meschenmoser, W., Greenburg, N. Y. Paper box	208,412	Sept. 24	904	265	14	476
Meyers, W., Oakland, Cal. Converting motion	208,325	Sept. 24	817	239	14	465
Middletown Plate Company. (See Conradt, A., assignor.)						
Miller, F. C., Newport, Ky. Cigar mold and press	208,414	Sept. 24	906	265	14	476
Miller, J., Canton, Ohio. Horse-power	208,413	Sept. 24	904	265	14	476
Millspaugh, W., Middletown, N. Y. Tool-handle	208,256	Sept. 24	746	219	14	456
Miner, J. G., New York, N. Y. Street lamp-post	208,326	Sept. 24	818	239	14	465
Moller, C. E., *et al.* (See Claude, L. G., assignor.)						
Monger, F. M. (See Kerschner and Monger.)						
Monger, T. S. (See Kerschner and Monger.)						
Moorlen, F. (See Hill and Moorlen.)						
Morgan, L., Port Washington, Wis. Grain-separator	208,257	Sept. 24	747	219	14	456
Morley, I., Pittsburg, Pa. Brick-machine	208,416	Sept. 24	908	266	14	477
Morrison, J., Pittsburg, Pa. Furnace-door	208,415	Sept. 24	908	266	14	476
Moulton, B. P., *et al.* (See Vermilya, Reyburn, and Hunter, assignors.) (Reissue.)						
Muth, C. F., Cincinnati, Ohio. Centrifugal honey-extractor	208,327	Sept. 24	819	{239 {240	14	465
Myers, E. D. (See Myers, H. M., assignor.)						
Myers, H. M., assignor to E. D. Myers, Beaver Falls, Pa. Handle-socket for shovels, spades, and scoops	208,258	Sept. 24	748	219	14	456
Necker, C., Berlin, Prussia. Sewing-machine	208,259	Sept. 24	749	220	14	456
Neill, G. W., Boston, Mass. Action for upright pianos	208,328	Sept. 24	820	240	14	465
Newman, J. (See Wall and Newman.)						
Noble, W. J., New York, N. Y. Burial-casket	208,329	Sept. 24	821	240	14	465
Noyes, W. B., Boston, Mass. Curtain roller and bracket	208,417	Sept. 24	912	267	14	477
Ogilvie, W. H., Brooklyn, N. Y. Umbrella-frame	208,260	Sept. 24	751	220	14	456
Okolowicz, A. A. X., Molenbeck-lez-Bruxelles, Belgium. Applying colors to earthenware, &c	208,418	Sept. 24	913	.....	14	477
Oliver, E., New York, N. Y. Sieve	208,261	Sept. 24	753	220	14	456
O'Meara, J., New York, N. Y. Packing	208,419	Sept. 24	913	267	14	477
Ostrum, H. P., New Haven, Conn. Ornamental wood-work	208,420	Sept. 24	914	267	14	477
Palmer, G. F., Rochester, N. H. Hose-nozzle	208,330	Sept. 24	822	240	14	465
Parker, J., Detroit, Mich. Guard for car-axle boxes	208,331	Sept. 24	822	241	14	466
Parmalee, J. S., Cleveland, Ohio. Barrel-filler	208,332	Sept. 24	823	241	14	466
Patric, C. E., Springfield, Ohio. Seed-planter	208,262	Sept. 24	754	221	14	456
Paull, A. W., Wheeling, W. Va. Lantern	208,422	Sept. 24	918	268	14	477
Paull, A. W., and J. F., Wheeling, W. Va. Lantern	208,421	Sept. 24	915	{267 {268	14	477
Paull, J. F. (See Paull, A. W., and J. F.)						
Payson, C. B., and C. H. Fowler, Boston, Mass. Street-railway switch	208,263	Sept. 24	755	221	14	457
Peirce, I. N., Philadelphia, Pa. Non-conducting covering for steam-boilers	208,264	Sept. 24	756	221	14	457
Perrenot, G. F. (See Bailey and Perrenot.)						
Platz, V., Indianapolis, Ind., and W. W. Rogers, U. S. Army. Cartridge-belt	208,265	Sept. 24	757	222	14	457
Pollmann & Co., M. (See Menger, L., assignor.)						
Porter, H. W., Forestville, Conn. Clock-striking mechanism	208,333	Sept. 24	824	241	14	466
Powell, T., Martinsville, Ind. Machine for cutting green corn from the cob	208,423	Sept. 24	919	269	14	478
Preston, J. A., New Haven, Conn. Canal boat or barge	208,334	Sept. 24	827	242	14	466
Price, V. C., *et al.* (See Spencer, A. E., assignor.)						
Ramsey, C. K., St. Louis, Mo. Combined ash-box and sifter	208,266	Sept. 24	758	222	14	457
Randolph, J. H., Jr., Woodstock Plantation, La. Revolving horse hay-rake	208,267	Sept. 24	759	222	14	457
Rathbun, C. B. (See Hull, N. A., assignor.)						
Redmond, C. C., assignor of three-fourths interest to A. W. White and R. D. Berry, San José, Cal. Cooling-faucet for beer-barrels	208,335	Sept. 24	828	242	14	466
Reed, C., *et al.* (See Varns, H. B., assignor.)						
Reyburn, W. S. (See Vermilya, Reyburn, and Hunter.) (Reissue.)						

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Rhodes, I. M., Hancock, Mich. Butter-cutter	208,424	Sept. 24	921	270	14	478
Roberts, F. (See Brown, W., assignor.)						
Robie, J. E., *et al.* (See Fletcher, T., assignor.)						
Rodgers, A. (See Lemieux, J. B., assignor.)						
Rogers, W. W. (See Platz and Rogers.)						
Ross, J. D., Macon, Ga. Car-coupling	208,336	Sept. 24	828	242	14	466
Russell, G. H., *et al.* (See Claude, L. G., assignor.)						
Russell, G. W. (See Carroll, J., assignor.)						
Russell, J. A., Elizabeth, assignor of one-half interest to H. Wilcox, Union township, N. J. Scaffold	208,337	Sept. 24	829	242	14	466
Sanders, B. D., Wellsburg, W. Va. Flour-bolt	208,268	Sept. 24	760	223	14	457
Sanders, B. D., Wellsburg, W. Va. Dressing millstones	208,269	Sept. 24	762	.....	14	458
Sargent & Co. (See Brooksieper, F. W., assignor.)						
Scales, J. C., Chicago, Ill. Receptacle for articles to be screened	208,338	Sept. 24	831	243	14	467
Schoals, J. R., Boston, assignor to M. W. Carr, Somerville, and H. W. Brooks, Cambridge, Mass. Clasp	208,270	Sept. 24	763	223	14	458
Seaver, A., Milford, Mass. Stay for boots and shoes	208,339	Sept. 24	832	243	14	467
Sellers, W., and J. S. Bancroft, Philadelphia, Pa.; said Bancroft assignor to said Sellers. Injector	208,425	Sept. 24	921	270	14	478
Sellick, W. W., and J. Young, Hastings, Neb. Washing-machine	208,340	Sept. 24	833	243	14	467
Sherman, F. M. (See Lamb, A. A., assignor.)						
Shiras, D. R., Sharon, Pa. Cooling apparatus for stand-pipes of gas-retorts. (Reissue)	8,436	Sept. 24	967	282	14	484
Siegördner, C., Butler county, Ohio. Plow-sulky	208,426	Sept. 24	924	270 271	14	478
Small, D. M., New York, N. Y. Gas-test meter	208,271	Sept. 24	763	223	14	458
Smith, A. H., Mount Carmel, Conn. Machine for polishing the eyes of needles	208,341	Sept. 24	834	243	14	467
Smith, G., Brooklyn, N. Y., assignor, by mesne assignments, to W. W. Hanna. Coal-scuttle. (Reissue)	8,428	Sept. 24	958	280	14	482
Smith, J. W., Boston, Mass. Combined cane and seat	208,428	Sept. 24	927	271	14	479
Smith, R., and P. Connolly, Brooklyn, N. Y. Water-closet valve	208,427	Sept. 24	926	271	14	478
Smith, R. M., Ludlow, Ky. Package of plug-tobacco	208,342	Sept. 24	835	244	14	467
Smith, W. H., New York, N. Y. Vapor-burner. (Reissue)	8,437	Sept. 24	968	283	14	484
Smithers, J. P., Brooklyn, N. Y. Lamp-burner	208,429	Sept. 24	927	271	14	479
Snow, G. B., *et al.* (See Fletcher, T., assignor.)						
Snyder, J. H., Richmond, Va. Machine for bending horseshoe-blanks	208,430	Sept. 24	928	272	14	479
Somers, D. M., Brooklyn, N. Y. Hinge for metallic boxes	208,343	Sept. 24	837	244	14	467
Spadone, A., Jersey City, N. J. Belting	208,431	Sept. 24	929	272	14	479
Spadone, A., Jersey City, N. J. Belting	208,432	Sept. 24	930	272	14	479
Spencer, A. E., assignor of two-thirds interest to C. R. Steele and V. C. Price, Chicago, Ill. Machine for making yeast-cakes	208,272	Sept. 24	764	223 224	14	458
Spencer, C. F., Rochester, N. Y. Postage and revenue stamp	208,433	Sept. 24	930	273	14	479
Steele, C. R., *et al.* (See Spencer, A. E., assignor.)						
Stephens, J. A., Lecompte, La. Balanced steam-valve	208,344	Sept. 24	838	244	14	467
Sterick, C. W., Decatur, Ga. Steam-cooker	208,434	Sept. 24	931	273	14	479
Stevens, G. D., East Orange, N. J. Buttoner	208,435	Sept. 24	932	273	14	479
Stewart, W. W., Brooklyn, N. Y. Syringe or liquid-dropper	208,273	Sept. 24	766	224	14	458
Stoddard, I. H., Ansonia, Conn., assignor to E. and H. T. Anthony & Co., New York, N. Y. Photographic camera	208,345	Sept. 24	839	244	14	467
Stow, W. H., Chicago, Ill. Wood pavement	208,436	Sept. 24	933	273	14	479
Strickland, M. D., St. Louis, Mo. Injector	208,437	Sept. 24	933	274	14	479
Svedberg, J. A., Washington, D. C. Governor for marine engines	208,274	Sept. 24	767	224	14	458
Swift, J. A., Washington, D. C. Electrical alarm-striking device	208,275	Sept. 24	768	224	14	458
Taylor, T. S., Fort Wayne, Ind. Printers' type-measure	208,346	Sept. 24	840	245	14	468
Teste, A., Sr., Lyons, France. Umbrella	208,347	Sept. 24	841	245	14	468
Thompson, H. G. (See Brewer, R. L., assignor.)						
Thompson, J. W., Salem, Ohio, assignor to himself and Buckeye Engine Company. Valve-gear for steam-engines. (Reissue)	8,432	Sept. 24	961	281	14	483
Thompson, J. W., Salem, Ohio, assignor to himself and Buckeye Engine Company. Valve-gear for steam-engines. (Reissue)	8,433	Sept. 24	963	282	14	483
Thompson, J. W., Salem, Ohio, assignor to himself and Buckeye Engine Company. Balanced and cut-off valve. (Reissue)	8,434	Sept. 24	964	282	14	483
Thompson, J. W., Clermont county, Ohio. Corn-marker	208,438	Sept. 24	934	274	14	480
Thorpe, V., Fall River, Mass. Divided wheel	208,439	Sept. 24	935	274	14	480
Tillinghast, W. T., Boston, Mass. Printers' galley	208,348	Sept. 24	842	245	14	468
Tracy, E. (See Truland, W. L., assignor.)						
Truland, W. L., assignor to himself and E. Tracy, Lansingburg, N. Y. Pipe-wrench with cutter	208,440	Sept. 24	936	275	14	480
Tucker, G. W., assignor to American Ring Company, Waterbury, Conn. Umbrella-handle. (Reissue)	8,425	Sept. 24	955	280	14	482
Tucker, G. W., assignor to American Ring Company, Waterbury, Conn. Umbrella-handle. (Reissue)	8,426	Sept. 24	956	280	14	482
Tuttle and Bailey Manufacturing Company. (See Tuttle, E. A., assignor.)						
Tuttle, E. A., New York, N. Y., assignor to Tuttle and Bailey Manufacturing Company. Car-ventilator	208,349	Sept. 24	842	245	14	468
Tuttle, E. A., New York, N. Y., assignor to Tuttle and Bailey Manufacturing Company. Air-register	208,350	Sept. 24	843	246	14	468
United States Dairy Company. (See Mége, H., assignor. (Reissue.)						
Van Altena, H., Milwaukee, Wis. Chromatrope buzz-toy	208,351	Sept. 24	844	246	14	468
Varns, H. B., Washington, assignor of six-sevenths interest to E. P., J. H., and R. W. Welch, C. Reed, J. P. Willett, and E. P. Hanu, Georgetown, D. C. Cleansing millstones	208,441	Sept. 24	937	.....	14	480
Vermilya, L. D., Dayton, Ohio, W. S. Reyburn, and E. A. W. Hunter, Philadelphia; said Vermilya assignor, by mesne assignments, to said Reyburn and Hunter and B. P. Moulton, Philadelphia, Pa. Lightning-rod. (Reissue)	8,429	Sept. 24	959	281	14	483
Wall, J., Birmingham, and J. Newman, Small Heath, near Birmingham, England. Button and stud	208,442	Sept. 24	937	275	14	480
Ward, T. H., Smethwick, near Birmingham, England. Weighing-scales	208,444	Sept. 24	939	275 276	14	480
Wardwell, E. S., assignor to W. C. Collins, Buckport, Me. Elastic buckle	208,443	Sept. 24	938	275	15	480
Waterbury, N., Baltimore, Md. Mold for forming boxes from veneers	208,276	Sept. 24	769	225	14	458
Welch, E. P., *et al.* (See Varns, H. B., assignor.)						
Welch, J. H., *et al.* (See Varns, H. B., assignor.)						
Welch, R. W., *et al.* (See Varns, H. B., assignor.)						
Western Union Telegraph Company. (See Edison, T. A., assignor.)						
Weymouth, G. F., Dresden, Me. Dumping-wagon	208,352	Sept. 24	844	246	14	468
Wheeler, C. E., Boston, Mass., assignor to J. Boyle, New York, N. Y. Process and apparatus for painting striped awnings in oil-colors. (Reissue)	8,430	Sept. 24	960	281	14	483
Wheeler, C. E., Boston, Mass., assignor to J. Boyle, New York, N. Y. Striped awning or tent-cloth. (Reissue)	8,431	Sept. 24	961	281	14	483

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White, A. W., *et al.* (See Redmond, C. C., assignor.)						
Whitehead, W. E., Miles Plattin, England, and A. T. Atherton, Lowell, Mass. Cotton opener and lapper	208,353	Sept. 24	845	246	14	468
Wilcox, H. (See Russell, J. A., assignor.)						
Willett, J. P., *et al.* (See Varns, H. B., assignor.)						
Williams, D., West Philadelphia, Pa. Carving-fork	208,354	Sept. 24	846	247	14	468
Williams, E. M., *et al.* (See Williams, G. W., assignor.)						
Williams, H. A., Taunton, Mass. Machine for rolling taper shapes	208,447	Sept. 24	944	277 278	14	481
Williams, G. W., assignor to H. R. Gage and E. M. Williams, Boston, Mass. Kitchen-table	208,446	Sept. 24	943	277	14	480
Williams, W., Huntingdon, Pa. Registering liquor-faucet	208,445	Sept. 24	942	276 277	14	480
Winchester, E. S., South Boston, Mass. Rock-drill	208,448	Sept. 24	946	278	14	481
Winchester, E. S., Boston, Mass. Rock-drill	208,449	Sept. 24	947	278	14	481
Winchester, E. S., Boston, Mass. Boring-machine	208,450	Sept. 24	949	278	14	481
Woodbridge, H. D., Newark, Ohio. Letter-file	208,277	Sept. 24	770	225	14	458
Woolson, H. C., Buffalo, N. Y. Tinners' stock	208,451	Sept. 24	950	279	14	481
Wright, C. A., assignor of one-half interest to G. B. Wright, New Haven, Conn. Lawn-mower	208,355	Sept. 24	847	247	14	469
Wright, G. B. (See Wright, C. A., assignor.)						
Wyeth, D. G., New Way, Ohio. Vehicle-spring	208,452	Sept. 24	951	279	14	482
Young, J. (See Sellick and Young.)						
Zwiebel, A., Burlington, Wis. Wind-wheel	208,453	Sept. 24	952	279	14	482

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 24th DAY OF SEPTEMBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Air-register	E. A. Tuttle	208,350	Sept. 24	843	246	14	468
Animal-trap	T. J. Gaynor	208,386	Sept. 24	877	255	14	472
Awning or tent cloth. Striped	C. E. Wheeler. (Reissue)	8,431	Sept. 24	961	281	14	483
Axle boxes. Guard for car	J. Parker	208,331	Sept. 24	822	241	14	466
Barrel-filler	J. S. Parmalee	208,332	Sept. 24	823	241	14	466
Bath. Deep-water safety	J. J. Bamber	208,360	Sept. 24	854	249	14	469
Bath. Shower	C. R. Furey	208,384	Sept. 24	876	255	14	472
Bed-bottom	H. S. Cate	208,294	Sept. 24	786	229	14	460
Bell. Door	F. W. Brocksieper	208,289	Sept. 24	780	228	14	460
Belting	A. Spadone	208,431	Sept. 24	929	272	14	479
Belting	A. Spadone	208,432	Sept. 24	930	272	14	479
Binder for letters and papers. Temporary	W. A. Amberg	208,220	Sept. 24	702	207	14	451
Boat-detaching apparatus	H. Ashford	208,280	Sept. 24	772	226	14	459
Boat or barge. Canal	J. A. Preston	208,334	Sept. 24	827	242	14	466
Boilers. Non-conducting cover for steam	I. N. Peirce	208,264	Sept. 24	756	221	14	457
Book-stitching machine	R. L. Brewer	208,287	Sept. 24	779	227	14	459
Boot and shoe stay	A. Seaver	208,339	Sept. 24	832	243	14	467
Boots and shoes. Metallic button-hole stay for	D. Crane	208,296	Sept. 24	788	230	14	461
Boring-machine	E. S. Winchester	208,450	Sept. 24	949	278	14	481
Bottle-stopper	F. Koeller	208,403	Sept. 24	894	261	14	475
Box and sifter. Combined ash	C. K. Ramsey	208,266	Sept. 24	758	222	14	457
Boxes from veneers. Mold for forming	N. Waterbury	208,276	Sept. 24	769	225	14	458
Bracket	M. D. Jones	208,319	Sept. 24	811	237	14	464
Brake. Car	H. Empey	208,229	Sept. 24	715	210	14	452
Brick-machine	I. Morley	208,416	Sept. 24	908	266	14	477
Bronzing-machine	J. T. Ashley	208,358	Sept. 24	849	248	14	469
Buckle	G. P. Goff	208,306	Sept. 24	798	233	14	462
Buckle. Elastic	E. S. Wardwell	208,443	Sept. 24	938	275	14	480
Burial-casket	W. J. Noble	208,329	Sept. 24	821	240	14	465
Butter-cutter	I. M. Rhodes	208,424	Sept. 24	921	270	14	478
Button and stud	J. Wall and J. Newman	208,442	Sept. 24	937	275	14	480
Buttoner	G. D. Stevens	208,435	Sept. 24	932	273	14	479
Calcimining-machine	A. Brooks	208,366	Sept. 24	859	250	14	470
Cane and seat. Combined	J. W. Smith	208,428	Sept. 24	927	271	14	479
Car-coupling	G. Edmonds	208,382	Sept. 24	874	254	14	472
Car-coupling	M. T. Greenleaf and G. Q. Adams	208,307	Sept. 24	799	233	14	462
Car-coupling	J. D. Ross	208,336	Sept. 24	828	242	14	466
Car-door opener. Street	J. Hutton, Jr.	208,243	Sept. 24	730	214	14	454
Car. Freight	R. Hudson	208,393	Sept. 24	885	258	14	473
Carriage-boot	C. W. Brown	208,367	Sept. 24	860	250	14	470
Carriage. Child's	J. F. Downing	208,380	Sept. 24	872	254	14	472
Carriages. Shifting-rail for	P. B. Fuller	208,303	Sept. 24	796	231	14	462
Cartridge-belt	V. Platz and W. W. Rogers	208,265	Sept. 24	757	222	14	457
Cartridge. Metallic	C. D. Leet and H. A. Chapin	208,247	Sept. 24	736	215	14	454
Casting car-wheels	B. Burgess	208,371	Sept. 24	863	251	14	470
Casting. Process and apparatus for compressing ingots while	W. R. Jones. (Reissue)	8,427	Sept. 24	956	280	14	482
Casting shaft-couplings. Apparatus for	W. H. Elmer	208,383	Sept. 24	875	254	14	472
Chronometers. Self-adjusting balance for	H. H. Heinrich	208,238	Sept. 24	724	213	14	453
Cigar mold and press	F. C. Miller	208,414	Sept. 24	906	265	14	476
Clasp	J. R. Schoals	208,270	Sept. 24	763	223	14	458
Clay and other plastic material. Machine for making plates of	L. Brandeis	208,363	Sept. 24	857	249	14	470
Clay for furnaces, crucibles, fire-bricks, &c. Preparing fire-	T. Fletcher	208,302	Sept. 24	795	.....	14	462
Clock-striking mechanism	H. W. Porter	208,333	Sept. 24	824	241	14	466
Coal-scuttle	G. Smith. (Reissue)	8,428	Sept. 24	958	280	14	482
Cock. Stop	J. Hills	208,313	Sept. 24	805	235	14	463
Coffee and tea pots. Cleaner for	W. W. Hinkle	208,391	Sept. 24	883	257	14	473
Coffee hulling, scouring, and cleaning machine	P. McAuliffe	208,324	Sept. 24	816	238 239	14	465
Cooker. Steam	C. W. Sterick	208,434	Sept. 24	931	273	14	479
Corn from the cob. Machine for cutting green	T. Powell	208,423	Sept. 24	919	269	14	478
Corn-marker	J. W. Thompson	208,438	Sept. 24	934	274	14	480
Corset	J. Bowers	208,362	Sept. 24	856	249	14	470
Cotton opener and lapper	W. E. Whitehead and A. T. Atherton	208,353	Sept. 24	845	246	14	468
Cultivator	C. T. Barton	208,224	Sept. 24	777	227	14	459
Cultivator and corn-plow. Combined	T. T. Daniels	208,377	Sept. 24	869	253	14	471
Curtain roller and bracket	W. B. Noyes	208,417	Sept. 24	912	267	14	477
Dam and pier	R. S. Littlefield	208,248	Sept. 24	737	215	14	454
Drill. Grain	T. D. Gere	208,388	Sept. 24	880	256	14	473
Drill. Rock	E. S. Winchester	208,448	Sept. 24	946	278	14	481
Drill. Rock	E. S. Winchester	208,449	Sept. 24	947	278	14	481
Earthenware, &c. Applying colors to	A. A. X. Okolowicz	208,418	Sept. 24	913	.....	14	477
Electrical alarm-striking device	J. A. Swift	208,275	Sept. 24	768	224	14	458
Elevator. Hydraulic	G. H. Bailey	208,282	Sept. 24	774	226	14	459
Engine and pump. Direct-acting	A. Carr and J. Arthur	208,291	Sept. 24	782	228	14	460
Engine. Rock-drilling	W. H. Elliot	208,228	Sept. 24	711	209	14	452

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Engine. Rotary	J. Darling	208,298	Sept. 24	790	230	14	461
Engine. Steam fire	H. H. Hill and F. Moorlen	208,314	Sept. 24	806	235	14	463
Engines. Chemical annex for fire	J. H. and T. E. Connelly	208,375	Sept. 24	866	252	14	471
Engines. Emptying-valve for paper-pulp	J. Carroll	208,292	Sept. 24	784	229	14	460
Fats. Treating animal	H. Mége. (Reissue)	8,424	Sept. 24	954	.....	14	482
Faucet for beer-barrels. Cooling	C. C. Redmond	208,335	Sept. 24	828	242	14	466
Faucet. Registering liquor	W. Williams	208,445	Sept. 24	942	276 277	14	480
Felly-joint holder	C. Adams	208,218	Sept. 24	701	207	14	451
Fence. Flood	H. D. Merrill	208,255	Sept. 24	745	218	14	456
Fence. Wire	M. Kelly	208,399	Sept. 24	891	260	14	474
Fertilizer	A. F. Crowell	208,224	Sept. 24	708	.....	14	452
File. Letter	H. D Woodbridge	208,277	Sept. 24	770	225	14	458
Fire-extinguisher for oil-tanks. Automatic chemical	J. H. and T. E. Connelly	208,374	Sept. 24	865	252	14	471
Fishway	M. McDonald	208,408	Sept. 24	900	263 264	14	476
Flour-bolt	B. D. Sanders	208,268	Sept. 24	760	223	14	457
Foot-power	A. J. Hood	208,316	Sept. 24	808	236	14	463
Fork. Carving	D. Williams	208,354	Sept. 24	846	247	14	468
Fuel-burner	G. S. Bosworth	208,221	Sept. 24	704	207	14	451
Furnace and stove. Hot-air	J. Carton	208,223	Sept. 24	707	208	14	451
Furnace-door	J. Morrison	208,415	Sept. 24	908	266	14	476
Furnace. Glass-melting	H. Kirk	208,401	Sept. 24	892	260	14	474
Furnace, &c. Steam-boiler	W. S. Hutchinson	208,394	Sept. 24	886	258	14	473
Gas-lighting apparatus. Insulated connection for	C. D. P. Gibson	208,389	Sept. 24	881	256	14	473
Gas-retorts. Cooling apparatus for stand-pipes of	D. R. Shiras. (Reissue)	8,436	Sept. 24	967	282	14	484
Gas-test meter	D. M. Small	208,271	Sept. 24	763	223	14	458
Gate. Farm	J. Coffits	208,225	Sept. 24	708	208	14	452
Governor. Marine-engine	J. A. Svedberg	208,274	Sept. 24	767	224	14	458
Grain-separator	L. Morgan	208,257	Sept. 24	747	219	14	456
Grate-bar	J. Ashcroft	208,357	Sept. 24	848	248	14	469
Grate-bar. Square revolving	J. Ashcroft	208,356	Sept. 24	847	247	14	469
Hame	J. H. Martin	208,406	Sept. 24	896	262	14	475
Hames-connection	C. B. Bristol	208,288	Sept. 24	780	227	14	460
Harvester-cutter and guard-finger	D. L. Grover and A. S. Beach	208,236	Sept. 24	722	212	14	453
Heating and cooking furniture	R. S. Mains	208,251	Sept. 24	739	216	14	455
Heating apparatus	T. Connelly	208,376	Sept. 24	868	253	14	471
Hinge and corner-iron. Trunk	G. Kast	208,398	Sept. 24	890	259	14	474
Hinge for metallic boxes	D. M. Somers	208,343	Sept. 24	837	244	14	467
Hinge. Spring	D. W. Housley	208,242	Sept. 24	729	214	14	454
Honey-extractor. Centrifugal	C. F. Muth	208,327	Sept. 24	819	239 240	14	465
Horse-collar and hame	W. B. Guernsey	208,308	Sept. 24	801	233 234	14	462
Horse-power	J. Miller	208,413	Sept. 24	904	265	14	476
Horseshoe-bar	L. G. Claude	208,295	Sept. 24	787	229	14	461
Horseshoe-blanks. Machine for bending	J. H. Snyder	208,430	Sept. 24	928	272	14	479
Hose-nozzle	G. F. Palmer	208,330	Sept. 24	822	240	14	465
Hub. Vehicle-wheel	W. H. Armer	208,279	Sept. 24	771	225	14	459
Ice-machine	J. Gamgee	208,304	Sept. 24	796	232	14	462
Ice-machine	J. Gamgee	208,305	Sept. 24	797	232	14	462
Ice-machines. Condenser for	J. Gamgee	208,454	Sept. 24	953	279	14	482
Injector	W. Sellers and J. S. Bancroft	208,425	Sept. 24	921	270	14	478
Injector	M. D. Strickland	208,437	Sept. 24	933	274	14	479
Ink-well	A. Albo	208,278	Sept. 24	770	225	14	458
Ironing and fluting machine	C. F. Bailey and G. F. Perrenot	208,283	Sept. 24	775	226	14	459
Jewel-casket	A. Conradt	208,373	Sept. 24	864	252	14	471
Jewelers' findings. Manufacture of	G. H. Fuller	208,230	Sept. 24	715	210	14	452
Knife. Cigar-maker's	F. W. and C. Hoffmann	208,315	Sept. 24	807	235	14	463
Lamp	H. L. Ives	208,396	Sept. 24	888	259	14	474
Lamp-burner	J. G. Hallas	208,309	Sept. 24	802	234	14	463
Lamp-burner	J. P. Smithers	208,429	Sept. 24	927	271	14	479
Lamp. Electric	H. S. Maxim	208,252	Sept. 24	740	216 217	14	455
Lamp post. Street	J. G. Miner	208,326	Sept. 24	818	239	14	465
Lamp-regulator. Electrical	H. S. Maxim	208,253	Sept. 24	742	217	14	455
Lamp. Self-lighting	H. W. Covert	208,226	Sept. 24	709	209	14	452
Lamp. Student	S. C. Catlin	208,293	Sept. 24	785	229	14	460
Lamp-wick	L. Hellman	208,310	Sept. 24	804	234	14	463
Lantern	A. W. Paull	208,422	Sept. 24	918	268	14	477
Lantern	A. W. and J. F. Paull	208,421	Sept. 24	915	267 268	14	477
Lightning-rod	L. D. Vermilya, W. S. Reyburn, and E. A. W. Hunter. (Reissue.)	8,429	Sept. 24	950	281	14	483
Lubricating car-wheels	P. Byard	208,290	Sept. 24	781	228	14	460
Meat-cutter	L. L. Gilliland	208,232	Sept. 24	718	211	14	453
Meat-cutter	L. L. Gilliland	208,233	Sept. 24	719	211	14	453
Millstone displacing apparatus	J. B. Cromwell	208,227	Sept. 24	789	230	14	461
Millstone-driver	W. S. Bacon	208,281	Sept. 24	773	226	14	459
Millstones. Circular metal-proof staff for testing	J. W. Herchelrode	208,239	Sept. 24	726	213	14	453
Millstones. Cleansing	H. B. Varns	208,441	Sept. 24	937	.....	14	480
Millstones. Dressing	B. D. Sanders	208,269	Sept. 24	762	.....	14	458
Mining coal. Machine for	J. Blyth	208,361	Sept. 24	855	249	14	469
Motion. Converting	M. Kaefer	208,397	Sept. 24	889	259	14	474
Motion. Converting	W. Meyers	208,325	Sept. 24	817	239	14	465
Mower. Lawn	C. A. Wright	208,455	Sept. 24	847	247	14	469
Nail-plates. Pile for manufacturing	F. J. Hearne	208,237	Sept. 24	723	212	14	453
Needle-eyes. Machine for polishing	A. H. Smith	208,341	Sept. 24	834	243	14	467
Oil-cup	A. D. Kilborn	208,245	Sept. 24	732	214	14	454
Packing	J. O'Meara	208,419	Sept. 24	913	267	14	477
Packing. Asbestus	A. D. Furse	208,385	Sept. 24	876	255	14	472
Packing for stuffing-boxes	W. Jagger	208,244	Sept. 24	731	214	14	454
Packing for stuffing-boxes. Metallic	W. Brown	208,368	Sept. 24	861	250	14	470
Painting striped awnings in oil colors. Process and apparatus for	C. E. Wheeler. (Reissue)	8,430	Sept. 24	960	281	14	483
Paper-box	W. Meschenmoser	208,412	Sept. 24	904	265	14	476
Parcels. Apparatus for conveying small	A. Lasse	208,405	Sept. 24	895	262	14	475
Pavement. Wood	W. H. Stow	208,436	Sept. 24	933	273	14	479

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pen. Fountain	G. B. Adams	208,219	Sept. 24	701	207	14	451
Photographic camera	I. H. Stoddard	208,345	Sept. 24	839	244	14	467
Piano action. Upright	G. W. Neill	208,328	Sept. 24	820	240	14	465
Planter. Seed	C. E. Patrie	208,262	Sept. 24	754	221	14	456
Plow	D. Kerschner, T. S. and F. M. Monger.	208,320	Sept. 24	812	237	14	464
Plow. Rotary	D. H. Lane	208,246	Sept. 24	733	215	14	454
Plow-sulky	C. Siegördner	208,426	Sept. 24	924	270, 271	14	478
Printer's galley	W. T. Tillinghast	208,348	Sept. 24	842	245	14	468
Printing-machines. Gripper-motion for	N. Babcock	208,359	Sept. 24	853	248	14	469
Pump	G. A. Beeman and J. T. Mason	208,285	Sept. 24	778	227	14	459
Pump	J. T. Fanning	208,301	Sept. 24	793	231	14	462
Pump-plunger	A. A. Lamb	208,404	Sept. 24	894	261	14	475
Railway switch. Street	C. B. Payson and C. H. Fowler	208,263	Sept. 24	755	221	14	457
Rake. Revolving horse-hay	J. H. Randolph, Jr.	208,267	Sept. 24	759	222	14	457
Razor-strop	A. V. Brokhahne	208,365	Sept. 24	858	250	14	470
Receptacle for articles to be screened	J. C. Scales	208,338	Sept. 24	831	243	14	467
Rolling taper shapes. Machine for	H. A. Williams	208,447	Sept. 24	944	277, 278	14	481
Roofing. Cap and anchor for metallic	W. G. Hyndman	208,395	Sept. 24	887	258	14	474
Rope and cordage. Manufacture of	E. S. Bloomfield	208,286	Sept. 24	779	.....	14	459
Sad-iron	A. Lohmann	208,322	Sept. 24	814	237	14	464
Saw-mills. Jack-chain for	J. B. Lemieux	208,321	Sept. 24	813	237	14	464
Sawing machine. Scroll	B. Merritt	208,411	Sept. 24	903	264	14	476
Scaffold	J. A. Russell	208,337	Sept. 24	829	242	14	466
Scales. Drop-lever weighing	F. Fairbanks	208,300	Sept. 24	793	231	14	461
Scales. Weighing	T. H. Ward	208,444	Sept. 24	939	275, 276	14	480
Sewing-machine	C. Necker	208,259	Sept. 24	749	220	14	456
Sewing-machine bobbin-winder	F. A. Meredith	208,410	Sept. 24	902	264	14	476
Sewing machine. Broom	G. F. McCombs	208,407	Sept. 24	896	262, 263	14	475
Sheep-shears. Guard for	F. A. Helmecke	208,311	Sept. 24	804	234	14	463
Shovels, spades, and scoops. Handle-socket for	H. M. Myers	208,258	Sept. 24	748	219	14	456
Sieve	E. Oliver	208,261	Sept. 24	753	220	14	456
Sifter. Ash	W. E. Brush	208,369	Sept. 24	861	251	14	470
Skate. Roller	W. P. Gregg	208,234	Sept. 24	720	212	14	453
Skate. Roller	W. P. Gregg	208,235	Sept. 24	721	212	14	453
Snuff-machine	W. S. Hills	208,241	Sept. 24	727	213	14	454
Snap-hook	W. H. Main	208,250	Sept. 24	738	216	14	455
Speculum. Vaginal	S. G. Door	208,227	Sept. 24	710	209	14	452
Spittoon. Pocket	M. Holden	208,392	Sept. 24	884	257	14	473
Spring. Carriage	G. D. Griffin	208,390	Sept. 24	882	257	14	473
Spring. Vehicle	D. G. Wyeth	208,452	Sept. 24	951	279	14	482
Stamp. Postage and revenue	C. F. Spencer	208,433	Sept. 24	930	273	14	479
Steam. Apparatus for utilizing exhaust	R. Bullymore	208,370	Sept. 24	862	251	14	470
Steering apparatus. Steam or hydraulic	J. Gates	208,231	Sept. 24	716	210, 211	14	452
Stench-traps. Vacuum valve for	B. J. Downey	208,379	Sept. 24	871	253	14	472
Stocking-supporter	W. F. George	208,387	Sept. 24	878	255	14	473
Stone. Paving	C. Brenner	208,364	Sept. 24	857	.....	14	470
Stove. Oil	H. L. Howse	208,317	Sept. 24	809	236	14	464
Suspensory-bandage	C. F. Hill	208,240	Sept. 24	726	213	14	453
Syringe or liquid-dropper	W. W. Stewart	208,273	Sept. 24	766	224	14	458
Table	N. A. Hull	208,318	Sept. 24	810	236	14	464
Table. Kitchen	G. W. Williams	208,446	Sept. 24	943	277	14	480
Table. Library	W. R. Davis, Jr.	208,378	Sept. 24	870	253	14	471
Telephone. Speaking	T. A. Edison	208,299	Sept. 24	791	231	14	461
Thill-coupling	G. H. Collins	208,372	Sept. 24	864	251	14	470
Thill-coupling	A. E. Kimberly	208,400	Sept. 24	891	260	14	474
Tinners' stock	H. C. Woolson	208,451	Sept. 24	950	279	14	481
Tobacco. Package of plug	R. M. Smith	208,342	Sept. 24	835	244	14	467
Tonguing and grooving machine	W. S. Mayo	208,323	Sept. 24	814	238	14	464
Tool-handle	W. Millspaugh	208,256	Sept. 24	746	219	14	456
Toy. Chromatrope buzz	H. Van Altena	208,351	Sept. 24	844	246	14	468
Truck apparatus for lifting and conveying ingots, pots, &c.	A. E. Brown	208,222	Sept. 24	705	208	14	451
Type-measure. Printers'	T. S. Taylor	208,346	Sept. 24	840	245	14	468
Umbrella	A. Teste, Sr.	208,347	Sept. 24	841	245	14	468
Umbrella-frame	W. H. Ogilvie	208,260	Sept. 24	751	220	14	456
Umbrella-handle	G. W. Tucker. (Reissue)	8,425	Sept. 24	955	280	14	482
Umbrella-handle	G. W. Tucker. (Reissue)	8,426	Sept. 24	956	280	14	482
Under-clothing	S. T. Converse. (Reissue)	8,435	Sept. 24	966	282	14	483
Valve. Balanced and cut-off	J. W. Thompson. (Reissue)	8,434	Sept. 24	964	282	14	483
Valve. Balanced steam	J. A. Stephens	208,344	Sept. 24	838	244	14	467
Valve-gear. Steam-engine	J. W. Thompson. (Reissue)	8,432	Sept. 24	961	281	14	483
Valve-gear. Steam-engine	J. W. Thompson. (Reissue)	8,433	Sept. 24	963	282	14	483
Vapor-burner	W. H. Smith. (Reissue)	8,437	Sept. 24	968	283	14	484
Ventilator. Car	E. A. Tuttle	208,349	Sept. 24	842	245	14	468
Violin-case	L. Menger	208,409	Sept. 24	901	264	14	476
Wagon. Dumping	G. F. Weymouth	208,352	Sept. 24	844	246	14	468
Wagon-gear	J. H. Durand	208,381	Sept. 24	873	254	14	472
Wagon-seat corner	R. P. Hicks	208,312	Sept. 24	805	235	14	463
Washing-machine	W. W. Sellick and J. Young	208,340	Sept. 24	833	243	14	467
Water-closet valve	R. Smith and P. Connolly	208,427	Sept. 24	926	271	14	478
Wheel. Divided	V. Thorpe	208,439	Sept. 24	935	274	14	480
Whip-rounding machine	H. Lombard	208,249	Sept. 24	738	216	14	455
Wind-wheel	A. Zwiebel	208,453	Sept. 24	952	279	14	482
Windmill	H. L. May	208,254	Sept. 24	743	217, 218	14	455
Wire-barbing tool	M. Knickerbocker	208,402	Sept. 24	893	261	14	475
Wood-work. Ornamental	H. P. Ostrum	208,420	Sept. 24	914	267	14	477
Wrench with cutter. Pipe	W. L. Truland	208,440	Sept. 24	936	275	14	480
Yeast-cakes. Machine for making	A. E. Spencer	208,272	Sept. 24	764	223, 224	14	458

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DECISIONS OF THE COURTS.

U. S. Circuit Court—Northern District of New York.

OLIVER S. GARRETSON *vs.* CHARLES B. CLARK *et al.*

Where an invention is confined to improvements in machine details it is necessary in accounting to distinguish between profits arising from the sale of the completed machine and those which are justly due to the use of the patented details.

Other features than those infringed, equally essential and beneficial, may contribute to the value of the organized machine; hence, in any just estimate, these should be eliminated and the inquiry directed to the benefit of the infringed elements considered alone.

Nor is it any true measure that the machine, as improved, commands a virtual monopoly of the market. Other circumstances quite aside from the value of the added improvements may tend to give to them a fictitious importance.

Accordingly, where the plaintiff proved nothing but the profits of the finished machine, and it was not shown that these were due entirely to the presence of the patented details, nominal damages alone were awarded.

In every case reliable and tangible evidence must be given tending either to apportion the profits and damages between the patented and unpatented parts, or else, if these be calculated upon the entire machine, then it must clearly appear that the value of the machine as a marketable article is properly and legally attributable to the patented feature.

The plaintiff having failed to give adequate evidence as to damages and profits, objections to the admissibility of defendant's proofs become unimportant. They are not called upon to report until the plaintiffs have made out a case. (*Black* vs. *Munson*, Hunt, J., North. Circ., N. Y., June 19, 1877.)

There being no inadvertence in taking the testimony, it appearing from the record that the inadequacy of the proofs had been excepted to, and no other or further evidence to be offered, a new reference to the master refused.

[*James A. Allen*, for plaintiff; *F. A. Macomber*, for defendants.]

OPINION.—*July* 5, 1878.

BLATCHFORD, *J.*:

The bill in this case is founded on two patents. One of them was granted to Charles B. Clark and Oliver S. Garretson, May 22, 1866, for an improved mop-head. The specification states that the invention consists (1) "in the combination of a collar provided with wings, or their equivalent, which carry the movable jaw, and an adjusting-nut, with which it is connected by means of a flange and lugs with a threaded shank and fixed cross-head," and (2) "in the manner of connecting the wire frame which constitutes the movable jaw with the arms of the collar." The patent has two claims:

1. Connecting the nut with the collar which carries the movable jaw by means of the lugs, or their equivalents, in combination with the threaded shank of the fixed jaw, arranged and operating substantially as set forth.
2. Connecting the movable jaw with the collar by means of the bows, constructed and operating substantially in the manner and for the purposes specified.

The other patent was granted to Oliver S. Garretson, August 13, 1867, for an "improved mop-head." The specification states that the invention consists "in constructing that part of the loose jaw that forms the collar in two parts or halves, with the inner surfaces properly grooved to receive and retain the flange or wings of the nut and to allow it to have a free rotatory motion, by which means the parts with the recesses and rivet-holes may be cast complete, requiring no drilling or seaming in putting together." The claim is:

Making the collar of the loose jaw in two parts, so that the nut may be placed between them, and, when connected together, the collar surrounds the nut and retains it in position, for the purpose above set forth.

In April, 1875, on final hearing on pleadings and proofs, an interlocutory decree was entered, finding that the defendants had infringed the first claim of the patent of 1866 and the whole claim of the patent of 1867, and decreeing that the plaintiff "recover of the defendants the profits made and received by the defendants, and the damages, if any, over and beyond the amount of such gains and profits suffered by the complainant by reason of the infringement and violation of the rights of the complainant, which it is adjudged have been so committed by the defendants," and referring it to a master, George J. Sicard, Esq., to take proofs of and to compute the amount of the said profits and damages, and report the same to the court, and awarding a perpetual injunction against the defendants. The master has filed his report, by which he finds that the plaintiff has not offered before him evidence of the damage suffered by the plaintiff or of

profits realized by the defendants by reason of the infringement and violation by the defendants of the rights of the plaintiff in the inventions and improvements referred to in the decree, and that the plaintiff is entitled under said decree to nominal damages only against the defendants. The master has stated at length his reasons for his finding. He proceeds upon the view that it is settled law that when a patent is for an improvement of a machine the plaintiff can recover only such damages as are occasioned by the use of the improvement, and the inquiry is as to what profit the defendant acquired by reason of his use of the improvement alone, and not by the manufacture of the whole machine. The master states and the record shows that all the evidence offered by the plaintiff has been with the view of showing the damages to him and the profits of the defendants in the manufacture of the infringing mop as a whole. At the close of the evidence given before the master on the part of the plaintiff the defendants moved to dismiss the proceedings on the ground that no basis had been laid for the master to compute or estimate the plaintiff's damages, and that consequently the plaintiff was entitled to only nominal damages. The point was reserved, and the defendants put in evidence on the basis assumed by the plaintiff. The master says:

There has been no evidence before me that would warrant a finding that the whole success of the mops in question, either of the defendants' or of the complainant's manufacture, was due to the peculiar construction described in the claims of the patents above referred to. Nor could I find from the evidence that that peculiar construction constituted the sole feature that made the mops a success in the market. Such finding would be required to sustain the complainant's theory of damages. The evidence showed that Garretson had invented and patented an improvement in mops; that the mops made by him and embodying the improvement were successfully introduced into the market; that after the manufacture and introduction by the defendants of the infringing article the trade of the complainant had decreased; and there was much documentary and other evidence produced to show the amount of the cost and of the sales by both parties. All this testimony was given on the theory, which is the complainant's position in this case, as I understand it, that the claims infringed are indispensable to the success of the mop, and form the only vital part and principle of its operation. In other words, it is claimed that this mode of construction, connection, and operation of the collar and loose jaw is all there is, practically speaking, of the mop. By the patents themselves and the claims thereof it is clear that the complainant's invention is not of a machine, but of an improvement. He has taken the mop, an instrument in use from time immemorial, and claims that by the introduction of a new mode of constructing and operating it in one of its parts he has added to it all that is valuable in it. The complainant has given before me no evidence aimed at the separation of the damages, or the apportionment of a certain percentage or proportion of the defendants' profits in manufacturing mops, as belonging to the peculiar features which are the complainant's invention, and which the defendants have wrongfully adopted and incorporated into the instrument made and sold by them. He rests all his evidence on the proposition that his invention covers the whole ground and lends to the article manufactured by the defendants all its value. I cannot agree to that view upon the evidence submitted. The complainant's invention has peculiar and distinctive features in the form of construction and operation referred to, but these features alone do not constitute a mop, and there were many valuable mops in the market before these features were at all introduced. The evidence shows many such mops as made in the past, and even as made in the present, for the defendants appear to be now selling with success a mop not claimed to infringe the complainant's invention. The complainant has given no testimony before me to satisfy my mind that the sole salability of the mops in question arose from their possessing the features I have referred to as embodied in the complainant's invention. These features are the form of the construction of the collar in two pieces, the mode of connecting the collar and the nut, the presence of flanges on the latter, and its inclosure within the circuit of the former. The nut, the collar, the wire-binder, the cross-head fixed and riveted to the handle, the grooving of such cross-head, the notching of its ends to steady and guide the wire-binder, the threaded shank, the connection and securing of the wire-binder to the collar, all these are independent of the plaintiff's improvement, and most of them are old in the history of the invention. Yet they contribute to the successful operation of the mop, and are found in the mops of the complainant as well as those made by the defendants. Combinations of these various elements of invention in different forms are found in most, if not all, of the exhibits in the case. Some of these elements are common to all the successful mops spoken of by the witnesses, and may be considered as quite indispensable to the construction and practical operation and salability of the instrument. I cannot believe that none of them contributes any value to the mops in question. As these elements and combinations exist in the mop made and sold by the defendants and adjudged to be an infringement, the finding of more than nominal damages for the complainant would, on the complainant's theory, involve the proposition that there is not among all these elements or combinations any one that involves a principle of sufficient practical use to add to the salability or actual value of the machine. I believe, on the contrary, that all of these elements have combined to make the mops in question successful, and it is too much to say that no proportion of the trade diverted from the complainant by the defendants, or of the profits they realized from the sale of their mop, was due to the presence of some one or more of them. At least, while so many elements of success are present in the instrument, I would not be warranted in finding that its entire success was due to its embodiment of the complainant's invention, unless direct evidence on that subject were furnished. As no evidence has been given before me of damages resulting to the complainant, or of profits accruing to the defendants, from the manufacture and sale of the improvement of the complainant, as distinguished from the machine itself, I find for the complainant nominal damages only.

The plaintiff has excepted to the master's report. The exceptions insist that the actual damages to the plaintiff for the mops made and sold by the defendants in infringement, which the plaintiff would have made and sold but for the infringing manufacture and sale by the defendants, are the difference between what the manufacture and sale of such mops would have cost the plaintiff and the amount for which the plaintiff would have sold such mops, and that the amount of the profits made and received by the defendants by reason of the infringement adjudged is the difference between what the manufacture and sale of the infringing mops made and sold by the defendants cost the defendants and the amount for which the defendants sold said infringing mops. There is thus a pointed antagonism between the views of the master and those contended for by the plaintiff. I have cited thus fully the text of the master's views, because it would be difficult to express in more apt words the considerations properly applicable to the determination of the questions involved in this case. They may be amplified and illustrated, but the master has expressed with clearness and force the true principles which on the evidence before him apply to this case.

The argument on the part of the plaintiff is that at the time the defendants began to infringe, the plaintiff's mop and the mop of one Taylor held a monopoly of the market, and were not competed with seriously by other mops, or to an extent which interfered with an arrangement which had been made between the proprietors of the patents covering the plaintiff's mop and the proprietors of the patent covering the Taylor mop whereby the price of these two mops was maintained at $2 a dozen, affording a profit of at least $1 a dozen; that the defendants sold the infringing mop at $1.75 a dozen; that the plaintiff had an establishment at which he could have made mops enough to fill all ordinary orders for mops; that his mop was known and his trade was established; that the effect of the infringement was to cause a large falling off in the plaintiff's sales; that it was the taking without right of the plaintiff's patented improvements which enabled the defendants to enter the mop market, because the plaintiff's mop and the Taylor mop had substantially driven out of the market all other mops by making it impossible to sell such other mops at a profit; that while it is generally true that the patentee of an improvement in an article is not entitled to the profits on the sale of the whole article, the use is otherwise when as a matter of fact the improvement so dominates and controls the article in the market held as an exclusive monopoly by the patentee that the only way in which the article can be sold at all at a profit is through the sale of it with the patented improvement; that the advantage which the defendants gained was a market for mops at a large profit, when there was no other form of mop open to the public by which they could have obtained any considerable sale at a profit, and that the only way to reach a result consonant with the substantial justice of this case is to regard the mop as an article of commerce under the operation of laws whereby an improved article will supersede and displace an unimproved one, destroying the possibility of producing it at a profit, and thus driving it out of existence, so that the superior article, by virtue of its superiority, dominates the market until it in turn gives way in progress of new improvements in its kind.

It is a weak point in the argument for the plaintiff

that it assumes, without sufficient evidence, that the market for the plaintiff's mop was made solely by the fact that the mop contained the improvements patented by the plaintiff's patents. This would not follow even from the fact that the mop with such improvements had driven other mops out of the market. Energy, diligence, business tact, superior facilities and skill, and fortuitous circumstances contribute largely to the success in the market even of an article which has all the superiority in its line that is claimed for the plaintiff's mop. In the present case there was an especial element, entirely outside of the plaintiff's patents, which made the manufacture and sale of the plaintiff's mop profitable, and that was the combination with the owners of the Taylor patent, under which the price of both mops was fixed at $2 a dozen.

The argument on the part of the plaintiff leads to the conclusion that when an article or a machine with a given patented improvement embodied in it has a controlling preference in the market over the article or machine which does not embody such improvement, it must be conclusively inferred that such preference is due to the improvement, and that the patentee, in case of infringement, is entitled to the profits made by the infringer from the manufacture and sale of the whole article or machine, and is entitled, as damages, to the profits he would have made on the manufacture and sale of an equal number of entire articles or machines with the number of entire articles or machines made and sold by the infringer. This would often cause a small improvement on a costly machine to draw to itself very large profits, entirely out of proportion to the relation existing between the improvement and the rest of the machine, and in cases where the unpatented parts of the machine were quite as indispensable to the machine as the patented improvement, and even more indispensable. The profit on the entire machine would virtually become the license fee for the use of the patented improvement. In the case of a machine embodying several patented improvements, an infringement of several patents belonging to several different persons, each patentee would claim that it was his particular patented improvement which caused the machine to dominate the market, and each would claim the profits of the manufacture and sale of the entire machine and damages based on the same principle. The patentee must in every case give evidence tending to separate or apportion the defendant's profits and the patentee's damages between the patented feature and the unpatented features, and such evidence must be reliable and tangible and not conjectural or speculative; or he must show by equally reliable and satisfactory evidence that the profits and damages are to be calculated on the whole machine, for the reason that the entire value of the whole machine as a marketable article is properly and legally attributable to the patented feature. In the present case the master reports that the plaintiff has failed to give such evidence, and I concur with the master in his conclusions.

The plaintiff's exceptions to the master's report are all of them overruled.

Those which relate to the admission of testimony objected to by the plaintiff (conceding that such objections can be availed of by exceptions to the master's report) become immaterial in view of the fact that because the plaintiff failed to give adequate evidence as to profits and damages the defendants were not put upon their defense in that respect, and it is unimportant whether they give competent evidence or no evidence. If the evidence objected to is all stricken out the defendants are protected by the plaintiff's failure; they are not called upon to report until the plaintiff has made out a case. (*Black* vs. *Munson*, in this court, per Hunt, J., June 19, 1877.)

The eighteenth exception, that the master excluded material evidence offered by the plaintiff and sustained the defendants' objection thereto, is too general. The nineteenth exception, that the master received in evidence testimony offered by the defendants, and overruled the plaintiff's several objections thereto, is too general.

The exceptions being overruled, the plaintiff asks that the case be referred back to the master with instructions setting forth the principles on which the proper estimates of damages and profits should be made, and directing the master to receive such further evidence pertinent thereto as the parties may offer. This application is not made on any showing that the plaintiff failed through inadvertence to give other or further evidence, or that there exists any other or further evidence which he can give. The idea of inadvertence is negatived by the entry on the record before referred to at the close of the plaintiff's testimony, when the defendants moved to dismiss the proceedings on the ground assigned. No proper foundation is laid for granting the application.

There must be a decree in accordance with the master's report, and awarding to the plaintiff the cost of the suit except the cost of the reference before the master and of his report, and ot the exceptions and of the hearing thereon, and awarding to the defendants the costs of such reference and report and exceptions and hearing.

Issue of October 1, 1878.

Patents	211—	No. 208,455	to No.	208,665, inclusive.
Reissues	5—	No. 8,438	to No.	8,442, inclusive.
Designs	13—	No. 10,846	to No.	10,858, inclusive.
Trade-Marks	34—	No. 6,634	to No.	6,667, inclusive.
Labels	9—	No. 1,699	to No.	1,707, inclusive.
Total issue	272			

TRADE-MARKS.

[Each certificate bearing date October 1, 1878.]

6,634.—CIGARS, CIGARETTES, AND CHEWING AND SMOKING TOBACCO. *Blaskopf & Brown*, New York, N. Y. Application filed September 16, 1878.

"The word-symbol 'TO THE FRONT' and the device of a pocket cigar-case with the monogram 'B. & B.'"

6,635.—MEDICAL COMPOUND.—*Coussens & Tabler*, Nashville, Tenn. Application filed March 16, 1878.

"The word-symbol 'HONEY OF TAR.'"

6,636.—WEIGHING-SCALES.—*E. & T. Fairbanks & Co.*, St. Johnsbury, Vt. Application filed July 17, 1878.

"The representation of a globe or sphere on which meridians and parallels are delineated."

6,637.—CHEWING AND SMOKING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The word-symbol or proper name 'CÆSAR.'"

6,638.—CHEWING AND SMOKING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The symbolic term 'VATER RHEIN.'"

6,639.—CHEWING AND SMOKING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The word-symbol or name 'GULNARE.'"

6,640.—CHEWING AND SMOKING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The word-symbol 'VIRGINITY.'"

6,641.—CHEWING AND SMOKING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The word-symbol 'NEEDLE GUN.'"

6,642.—SNUFF, CHEWING AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The word-symbol 'SUAVITY.'"

6,643.—CHEWING AND SMOKING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The symbolic term 'THE LIFE PRESERVER.'"

6,644.—SMOKING-TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The words 'Feiner Portorico' upon a green ribbon, in connection with and above a central figure composed of a coat of arms surrounded by a sun, and an irregular oblong figure inscribed and ornamented, all printed in green upon white, and constituting a single design of marked effect."

6,645.—SMOKING-TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The symbolic words and figure 'No. 6, DEUTSCHER RAUCHTABAK,' in connection with a pictorial illustration representing Mercury seated upon a platform, with an anchor at his feet, a bale, two hogsheads, and a book in his rear, his right arm extended in front of him, holding a winged rod, and his left arm resting upon a large oval shield, that partly covers his side, upon the front of which is a large human face, while in the background, above the hogsheads, appear two masts of a ship, upon which flags are floating."

6,646.—CHEWING AND SMOKING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The word-symbol 'RICH VEIN.'"

6,647.—CHEWING AND SMOKING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The word-symbol 'GOOD CHEER.'"

6,648.—CHEWING AND SMOKING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The word-symbol 'MILLA FLORA.'"

6,649.—SNUFF, CIGARS, CIGARETTES, AND CHEWING AND SMOKING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1878.

"The word-symbol 'COMPEER.'"

6,650.—LINIMENTS.—*James F. Orebaugh* and *William I. Gardner*, Camden, Ohio. Application filed July 16, 1878.

"The figure of the world centrally arranged, and the initials 'T. W. M. W.' and O. & G.,' surrounding the same."

6,651.—CIGARS, CIGARETTES, AND CHEWING AND SMOKING TOBACCO. *S. Ottenberg & Brothers*, New York, N. Y. Application filed September 16, 1878.

"The device of the pioneer woodsman, substantially as shown."

6,652.—CIGARS, CIGARETTES, AND CHEWING AND SMOKING TOBACCO. *S. Ottenberg & Brothers*, New York, N. Y. Application filed September 16, 1878.

"The word-symbol 'PRETTY PERFUMER' and the device of a pioneer woodsman, with the word-symbol 'Pioneer Cigar Factory' surrounding the device."

6,653.—CIGARS, CIGARETTES, AND CHEWING AND SMOKING TOBACCO. *S. Ottenberg & Brothers*, New York, N. Y. Application filed September 16, 1878.

"The word-symbol 'PICCANINIES' and the device of baby negroes dancing to the music of the tambourine and cymbals."

6,654.—MEDICINAL PREPARATIONS.—*Matthew Palen*, San Bernardino, Cal. Application filed September 16, 1878.

"The two hearts with the dove above them, substantially as shown."

6,655.—CIGARS.—*Joseph Schuewind*, La Porte, Ind. Application filed August 30, 1878.

"The vignette or pictorial representation of a number of men running with and propelling hose-carts."

6,656.—COTTON GOODS.—*Smith, Churchill & Scribner*, New York, N. Y. Application filed September 10, 1878.

"The fanciful word 'MANITAWNY.'"

6,657.—ALL KINDS OF STARCH.—*Frank S. Waters*, New York, N. Y. Application filed August 30, 1878.

"A representation of the whole or a part of the heavens or the earth's surface in the form of a globe or map delineated upon a package, case, or box containing or surrounding the starch, the exterior surface of which package, case, or box is spherical, or of such other form as is adapted to display said representation."

6,658.—ALL KINDS OF STARCH.—*Frank S. Waters*, New York, N. Y. Application filed August 30, 1878.

"The word-symbol 'GLOBE.'"

6,659.—MEDICINAL PREPARATIONS.—*Channing White*, San Francisco, Cal. Application filed May 28, 1878.

"The word-symbol 'PRAIRIE FLOWER' and the pictorial representation of an Indian girl."

6,660.—COUGH-SIRUP.—*Williams & Moore*, Stockton, Cal. Application filed June 19, 1878.

"The words or title 'WILLIAMS & MOORE'S,' the word-symbol 'NATIONAL,' and the cut or figure of the man and flag."

6,661.—BAKING-POWDER.—*C. E. Andrews & Co.*, Milwaukee, Wis. Application filed July 13, 1878.

"The arbitrarily-selected words 'MORNING LILY.'"

6,662.—MEDICINAL PREPARATIONS.—*Ernest D. Pape*, New York, N. Y. Application filed September 21, 1878.

"The figures Hercules and Hebe, with the Latin words 'IN SANGUINE SALUS,' and the word-symbol 'HÆMALINE,' as shown."

6,663.—CONCENTRATED ALIMENTARY PREPARATIONS.—*D. St. Amant & Son*, New York, N. Y. Application filed September 5, 1878.

"The word-symbol 'NUTRITINE.'"

6,664.—ILLUMINATING-OILS.—*Yates & Co.*, San Francisco, Cal. Application filed September 19, 1878.

"The word-symbol 'STARLIGHT,' imprinted on the representation of a case containing oil-cans."

6,665.—ILLUMINATING-OILS.—*Yates & Co.*, San Francisco, Cal. Application filed September 19, 1878.

"The word-symbol 'BANNER.'"

6,666.—HAIR-TONICS.—*William E. Jervey*, New York, N. Y. Application filed September 17, 1878.

"The figure of a human head, (male or female,) presenting a front-face or practically full-face view, and showing the hair on one side of the head as abundant and tastefully arranged, while the other side of the head is nearly or quite devoid of hair."

6,667.—CIGARS.—*Liebes Brothers & Co.*, San Francisco, Cal. Application filed September 16, 1878.

"The representation of a cribbage-board."

DESIGNS.

[Each design bearing date October 1, 1878.]

10,846.—CARPETING.—*Robert Allan*, Yonkers, N. Y., assignor to *Alexander Smith & Sons Carpet Company*, same place. Application filed July 12, 1878. Term of patent 3½ years.

10,847.—CROCHETED HOOD.—*Emma M. Ackerman*, Boston, Mass. Application filed August 12, 1878. Term of patent 3½ years.

10,848.—ORNAMENTAL TRIMMING FOR JEWELRY.—*Arthur E. Codding*, Attleborough, Mass. Application filed August 19, 1878. Term of patent 7 years.

10,849 and 10,850.—CARPETING.—*Eugène Petit*, of Paris, France, assignor to *Alexander Smith & Sons Carpet Company*, Yonkers, N. Y. Applications filed July 26, 1878. Term of patents 3½ years.

10,851.—TOY MONEY-BOX.—*Augustus E. Taylor*, New Britain, Conn. Application filed June 24, 1878. Term of patent 7 years.

10,852.—STOVES.—*Allan T. Bennett*, Chicago, Ill. Application filed August 17, 1878. Term of patent 7 years.

10,853.—CHANDELIERS.—*Theodore R. Davis*, Rahway, N. J., assignor to *Wolcott A. Hull*. Application filed September 19, 1878. Term of patent 14 years.

10,854 and 10,855.—CIGAR-BOXES.—*Sigmund Belmont*, New Orleans, La. Applications filed August 27, 1878. Term of patent 7 years.

10,856.—RUBBER BOOTS.—*Joseph Banigan*, Providence, R. I. Application filed September 21, 1878. Term of patent 7 years.

10,857 and 10,858.—CLOCK-FRONTS.—*Henry R. Frisbie*, Bridgeport, assignor to *E. N. Welch Manufacturing Company*, Forestville, Conn. Applications filed September 24, 1878. Term of patents 7 years.

LABELS.

[Each certificate bearing date October 1, 1878.]

1,699.—Title: "LADIES' FAVORITE YEAST."—*James H. Devens*, Albany, N. Y. Application filed September 23, 1878.

1,700.—Title: "DOCTOR C. A. SIMMONS' HEPATIC COMPOUND OR LIVER CURE."—*Dowie & Morse*, Charleston, S. C. Application filed September 23, 1878.

1,701.—Title: "SUPERIOR SCOTCH SNUFF."—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 20, 1878.

1,702.—(Print,) Title: "DUETT."—*Heppenheimer & Maurer*, New York, N. Y. Application filed September 20, 1878.

1,703.—Title: "PARKER'S GINGER TONIC."—*Hiscox & Co.*, New York, N. Y. Application filed July 10, 1878.

1,704.—Title: "PARKER'S HAIR BALSAM."—*Hiscox & Co.*, New York, N. Y. Application filed July 10, 1878.

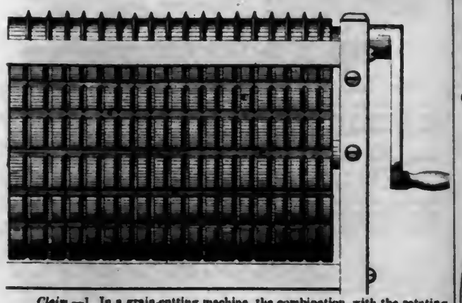
1,705.—Title: "P. C. KENDALL'S BAKING POWDER."—*Prudence C. Kendall*, New Orleans, La. Application filed September 24, 1878.

1,706.—Title: "RED TONIC PILLS."—*Stewart & Barry*, Indianapolis, Ind. Application filed September 12, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

OCTOBER 1, 1878.

208,456. OATMEAL-MACHINES. Cyrus Bailey, Akron, Ohio, assignor to Ferdinand Schumacher, same place. Filed Jan. 7, 1878.



Claim.—1. In a grain-cutting machine, the combination, with the rotating shaft having peripheral knife-edges, of the grain-carrying cylinder, whose body is formed both transversely and annularly grooved, substantially as set forth.

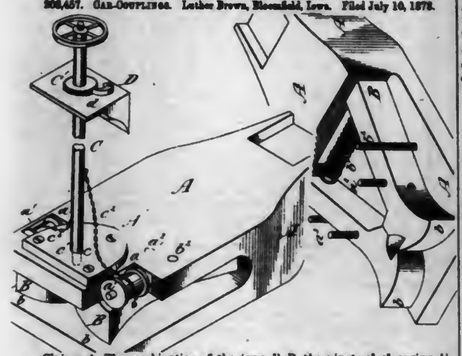
2. The combination, with the rotating cutter-shaft, of the grain-carrying cylinder, whose body is formed grooved both transversely and annularly, the knives of the said cutter-shaft fitting tightly within the annular grooves, as described, whereby the grain-cylinder is revolved exclusive of other actuating means, substantially as set forth.

208,456. CORSETS. Manning D. Birge and George C. Skidmore, Chicago, Ill., assignors to O. C. Haskell, same place. Filed Feb. 16, 1878.



Claim.—The method herein described of lacing corsets in front by means of the eyelet-tape, chain, or cord, in combination with the corset-clasps provided with hooks, studs, or other suitable fastening devices, all constructed and arranged to operate substantially as set forth.

208,457. GAS-COUPLINGS. Luther Brown, Bloomfield, Iowa. Filed July 10, 1878.



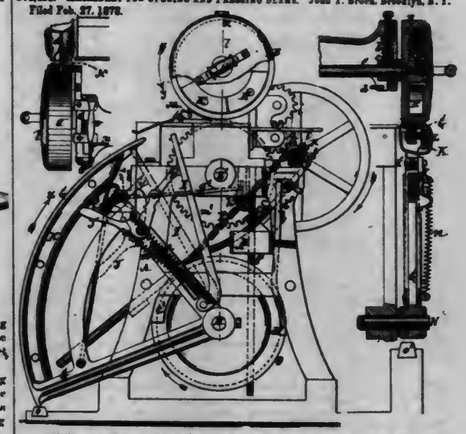
Claim.—1. The combination of the jaws B B, the pivots a^2 a^2, spring b^1, and stops b^2 b^2, substantially as set forth.

2. The combination of the shell A, having slots *a a*, pivoted jaws B B, shaft C, supported at its lower end between pulleys a^1 a^1, chains c^2 c^2, and pawl and ratchet *d* C^1, substantially as set forth.

3. The shell A of the draw-head, recessed to receive the lower end of the shaft C, in combination with the shaft, provided with the collar *c* and the cap A^1, substantially as set forth.

4. The shaft C, supported at its upper end in bracket D, and at its lower end in the shell of the draw-head, in combination with the ratchet-wheel C^1, pawl *d*, jaws B B, pivots a^2 a^2, chains c^2 c^2, and pulleys a^1 a^1, substantially as set forth.

208,458. MACHINERY FOR OPENING AND PRESSING SEAMS. John T. Brown, Brooklyn, N. Y. Filed Feb. 27, 1878.



Claim.—1. The combination, with the rotating ironing-roller B, of a vibrating arc-shaped horn or goods-carrier, G, for operation in relation with each other, substantially as specified.

2. The opening and closing pivoted bar or support I, in combination with the vibrating horn or goods-carrier G, essentially as specified.

3. The combination, with the vibrating or oscillating horn G, of one or more expanding-pieces, K, substantially as and for the purposes specified.

4. The combination, with the ironing or pressure roller B, of a seam opening or spreading shoe, M, having an elastic pressure, essentially as described.

5. The seam-directing spring-finger N, in combination with the seam opening and spreading shoe M, substantially as specified.

6. The combination, with the lever *n*, which raises the shoe M, and spring *s*, for depressing the latter, of the catch or stop-lever *n'*, essentially as and for the purposes described.

7. The combination, with the vibrating arc-shaped horn or goods-carrier G, of the sheave or pulley O, the cord or chain P, the winding-barrel or wind-lass Q, the clutches *a' b'*, the cam *c'*, and the lever *d'*, controlling said clutches, substantially as specified.

8. The combination, with the vibrating horn or goods-carrier G, of the balance-weight A^2, the cord or chain P, the pulley *b'*, and the guide-pulleys *b' b'*, whereby the weight serves to balance the horn during its motion on both sides of its central position, or as it passes to either side of a dead center, essentially as described.

208,459. STITCH-REPPERS. James P. Bodleng, Providence, R. I. Filed Jan. 14, 1878.



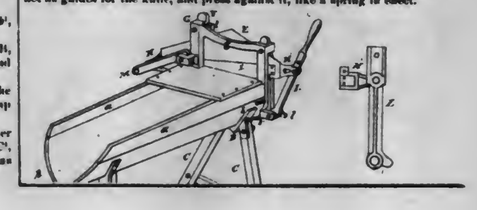
Claim.—1. The combination of the prongs B B and the straight transverse knife A, whereby a sidewise vibratory motion may be imparted across the line of the stitches, substantially as described.

2. The combination of the prongs B B, knife A, and the upward-curved shank C, substantially as described.

3. The combination of the prongs B B, knife A, upward-curved shank C, and handle D, substantially as described.

208,460. STRAW AND FEED CUTTERS. David K. Burkholder, Lancaster, Pa. Filed Aug. 12, 1878.

Brief.—A peculiar construction and combination of metallic frames, which act as guides for the knife, and press against it, like a spring in effect.

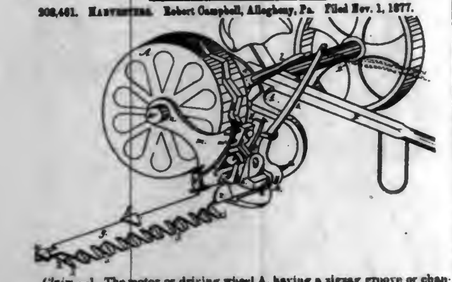


Claim.—1. The metallic frame G, when provided with a side shield, *g*, and fulcrum-flange *r* on the upper vertical portion, and having a perforated lug, N, on the inner side, above or on one side, and a similar lug, R, below on the other side, the sides Y made convergent to a central union under the V-shaped box, where it forms a perforated lug, *k*, the sides Y being also provided with perforated ears *s s'*, by which they are secured to the box, all constructed and arranged as and for the purpose specified.

2. In combination with the aforesaid frame G, the frame or counterpart F, having a fulcrum notch or groove, *t*, on its inner face above in the vertical sides, side lugs, *f*, perforated for bolts, said sides (marked J) made bevel and widened out V-shaped, having a prolonged slotted lug, K, at the apex, attached and operating on the outside of the knife I and shield E, substantially as and for the purpose herein set forth.

3. In combination with the frames G and F and the pivot-lugs N R, the several levers, M L, and knife-holders H H', the whole operating in the manner and for the purpose herein mentioned.

208,461. Harvesters. Robert Campbell, Allegheny, Pa. Filed Nov. 1, 1877.



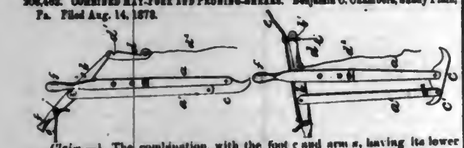
Claim.—1. The motor or driving wheel A, having a zigzag groove or channel, *i*, in combination with the sliding heads *h'* and *l'*, with arms *f'* and *t'*, and cutter-bars *g* and *h*, traveling in opposite directions, substantially as herein described, and having projections *g' h'*, with openings for the arms of the sliding heads, substantially as shown and described, and for the purposes set forth.

2. The sliding head *r'*, provided with scrapers *t*, in combination with the master or driving wheel A, having a zigzag groove or channel, *i*, substantially as herein described, and for the purpose set forth.

3. The combination of the lever *l*, link *w*, curved arm *p*, pivoted frame *m*, with the cutter-bars *g h* and sliding heads *h'* and *l'*, adapted to be disengaged from projections upon the cutter-bars when said bars are elevated by the operation of the lever, as described, all constructed and operating substantially as herein described, and for the purpose set forth.

4. In a harvester, the check-lever *b*, in combination with the cutter-bars *g* and *h*, arranged and operating, with relation to each other, substantially as herein described, and for the purpose set forth.

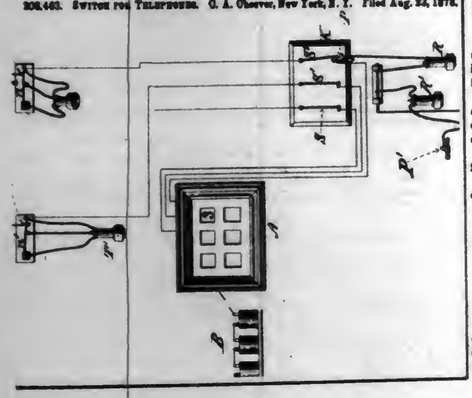
208,462. Combined Hay-Fork and Pruning-Shears. Benjamin C. Chambers, Shady Plain, Pa. Filed Aug. 14, 1878.



Claim.—1. The combination, with the foot *c* and arm *s*, having its lower end pivoted to the center of the winged foot *c*, of the parallel arm *s'*, having its lower end pivoted to one of the wings of the foot *c*, cross-bar *b*, having notch *b'*, tripping-lever *d*, having notch *d'*, and draft-rope *e*, having loop or link *e'*, all arranged to operate substantially as and for the purpose set forth.

2. The combination, with the arm *s* and foot *c*, pivoted at its center to the lower end of the arm *s*, and having the hooked shear-wing *c'*, of the parallel arm *s'*, provided with an edge, *s''*, cross-bar *b*, and handles *f f'*, substantially as and for the purpose set forth.

208,463. Switch for Telephones. C. A. Cheever, New York, N. Y. Filed Aug. 23, 1878.



Claim.—1. In combination with a transmitting-telephone, a receiving-telephone, a battery, and a signaling apparatus, a plug-switch having one side of the plug insulated, substantially as and for the purposes described.

2. The combination of the transmitting-telephones T, switch-board K, annunciator A, battery B, and receiving-telephones R, whereby a less number of receiving-telephones is used to receive messages from a greater number of transmitting-telephones, substantially as described.

3. The combination of a series of telephones connected with the switch board K, which is provided with the spring-switches S, and receiving-telephones R and plugs P, when connected with the annunciator A, battery B, and return-wires, substantially as described, whereby the insertion of the plug P cuts out the annunciator and battery from the line through which the signal is to be received, but leaves the other lines intact, substantially as described.

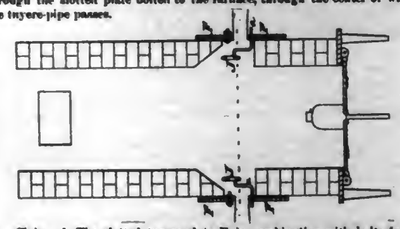
208,464. Pencil-Clasps. Arthur Christey, Buffalo, N. Y. Filed Jan. 10, 1878.



Claim.—As a new article of manufacture, a device for suspending pencils, &c., consisting of the metallic sleeve A, formed with a lip projecting outwardly from its upper edge as, i depending downwardly beside the sleeve, forming a blunt-pointed hook, *a*, as and for the purpose set forth.

208,466. Cupola Tuyere and Blast-Deflector. Chas. T. Clark, Louisville, Ky. Filed Apr. 27, 1878.

Brief.—The deflecting-plate in front of the tuyere diffuses the blast through the stock. The deflector is made adjustable by means of legs which pass through the slotted plate bolted to the furnace, through the center of which the tuyere-pipe passes.

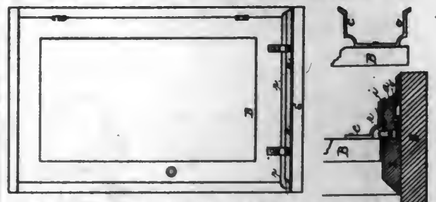


Claim.—1. The slotted tuyere-plate F, in combination with bolts in the furnace shell or wall, so as to be adjustable over the tuyere-openings of the furnace, substantially as described, and for the purpose set forth.

2. The deflecting-plate J in front of the blast-pipe for directing and dividing the blast, in combination with legs *a a* and the adjustable plate F, substantially as described.

208,469. Weather-Strips. Edward Conklin, Channahon, Ill. Filed May 27, 1878.

Brief.—The threshold is formed in two parts—one fixed, the other sliding—connected together by a flexible strip. The sliding part is retained in place by hooks engaging lips on the floor. A spring between the parts retracts the movable part when the door is opened. Catches on the door press the movable part forward, and thereby bulges up the flexible strip. The catches are pivoted, to be released from engagement when desired.



Claim.—1. The combination and arrangement of the fixed threshold *s*, movable threshold *s*, rubber strip *r*, connecting the thresholds *s* and *s*, hook *i*, lip *o*, and catches *c*, for the purpose of closing the opening under the door B, in the manner and for the purpose set forth.

2. The mode of closing the opening under the door B by bulging up a strip of rubber, *r*, or other flexible material, under the inner lower edge of the door by means of a movable or reciprocating threshold, *s*, in the manner substantially as set forth.

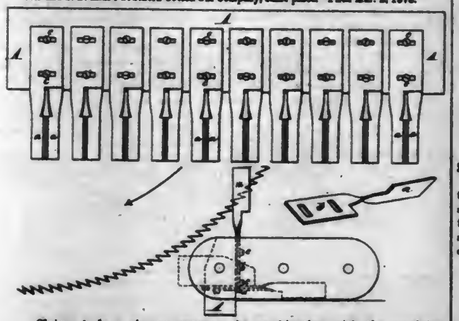
208,467. Scissors. George Conover, New Haven, Conn. Filed Aug. 23, 1878.

Brief.—The spring to crowd the cutting-edges together is located in a recess back of the pivot.



Claim.—The combination of blade A', recessed at D, behind the pivot-pin of a pair of scissors, with blade B' and a spring adapted to set within said recess and to force the said blades together, said spring being independent of the pivot-pin and of any other fastening whatever.

208,468. Cotton-Gin-Saw Cleaners. John C. Drake, Little Rock, Ark., assignor to himself and S. S. Hall's Southern Cotton Gin Company, same place. Filed Mar. 2, 1878.



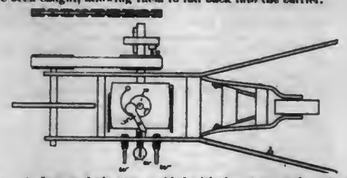
Claim.—1. In a gin-saw gummer, the combination, with the revolving sustaining-bar, of the adjustable spring-blades mounted thereon, and adapted to operate substantially in the manner and for the purposes set forth.

2. The herein-described blade for a gin-saw gummer, the same being made of spring metal, and provided with two slots in its shank for the reception of the adjusting-screws, substantially as shown and described.

3. In a gin-saw gummer, the combination, with the bar A, of a series of blades, *a*, mounted thereon in pairs, and made adjustable by means of the set-screws *c c*, said bar being hinged within the gin-frame, and the whole adapted to operate substantially in the manner specified.

208,469. Seeding-Machines. William K. Evans, Berkeley, Mass. Filed Apr. 27, 1878.

Brief.—The rotary seed-carrier is provided with a circumferential row of semi-elliptical discharge-openings, over which pivoted valves work, and are held by suitable springs. The projecting ends of the valves are acted upon in the revolution of the carrier by adjustable arms at the bottom of the frame to discharge the seed into the ground, and at the top to free any seeds that may have been caught, allowing them to fall back into the carrier.



Claim.—1. In a seed-planter provided with the rotary seed-carrier, having seed-passages in its circumferential wall and valves to close and open such passages, with stops *w* to open such valves when at or near the lowest point described in the circuit of the seed-carrier, the stop *y*, combined and arranged to open such valves when at or near the apex of the circuit of the carrier, to release any substance which might be caught by such valve in the seed-passage, substantially as described and shown.

2. In a seeder provided with a rotary seed-carrier, having the seed-passages and the valves *f*, the stops *w*, constructed and arranged to admit of both an adjustment to insure a greater or less opening of the seed-passages and a greater or less frequency of such opening, substantially as described and shown.

3. In a rotary seed-carrier, the seed-passages *p*, formed at the point where first unmasked by valves *f* as a semi-ellipse, or nearly so, substantially as and for the purposes specified.

208,470. Fire-Escapes. Friedrich B. Pasche, New York, N. Y. Filed Feb. 14, 1878.

Brief.—A flexible tube made of canvas or other suitable material is provided with rings at its ends, the upper ring having a clamp secured thereto for attachment to a building, and the lower ring having a cushion or mattress to receive the persons or goods. Intermediate rings are attached to the tube to keep it properly expanded, and a cord attached to the lower ring passes up over the upper ring, and by it the ends can be drawn together when the tube is to be folded up for storage or transportation.



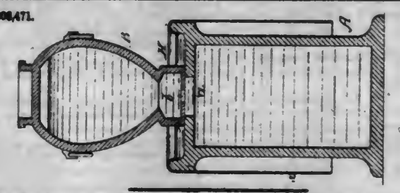
Claim.—The tube A, provided with rings *a* and *b*, the latter having clamp D, and the former handles *e* and cushion F, the rings *g g*, having netting *h h* and cords *k k*, substantially as and for the purpose set forth.

208,471. Fusees Evaporators. William Galloway, Philadelphia, Pa. Filed Feb. 15, 1878.

Claim.—1. The combination of the reservoir B, closed at the top and open at the bottom, the vessel A, open at the top only, and the trough H, communicating with both vessel and reservoir, all substantially as set forth.

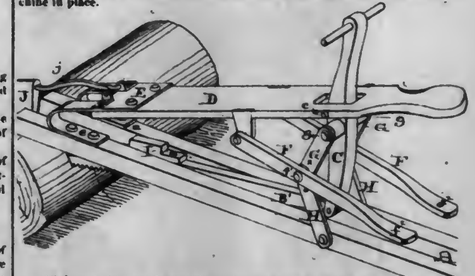
2. The combination of the vessel A, reservoir B, and trough H with a strip, *s*, of textile fabric.

208,471.



208,472. Drag-Saws. William W. Giles, St. Louis, Mo. Filed Aug. 26, 1878.

Brief.—The saw is operated by a system of levers, which are actuated by the weight of the operator, who alternately sits on a seat at the end of a spring-actuated lever, and stands on two pedals suitably connected with the former. A wedge hinged to a part of the machine enters the kerf of the log, and prevents the binding of the saw, and serves to hold the frame of the machine in place.



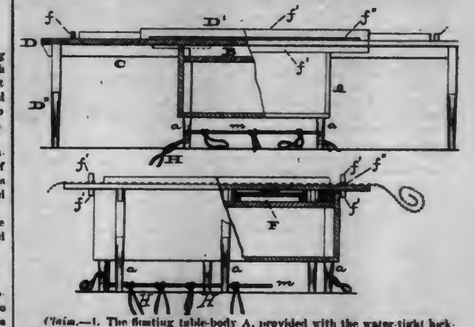
Claim.—1. In a sawing machine, the combination of the frame A, lever C, lever D, pedals F F, links G G, spring E, and braces H H, substantially as described.

2. The combination, in a sawing-machine, of the lever C, lever D, pedals F F, links G G, and braces H H, substantially as described.

3. The combination of the frame A, levers C and D, spring E, pedals F F, links G G, braces H H, and handle *c'*, substantially as described.

4. The combination, in a sawing-machine, of the frame A, lever D, arm *j*, and wedge J, substantially as described.

208,473. Combined Table and Life-Preserver. Henry M. Green, Camden, N. J. Filed Feb. 26, 1878.



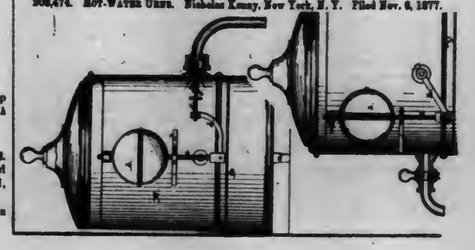
Claim.—1. The floating table-body A, provided with the water-tight bottom F, substantially as and for the purpose set forth.

2. The floating table-body A, with legs *a*, in combination with the guard-rails m and lashings H, substantially as and for the purpose set forth.

3. The table-body A, provided with the removable leaves D, and the extension-leaves D', having embracing-strips *f''*, formed with throats *f'''*, substantially as and for the purpose set forth.

4. The combined table and life-preserver, the same consisting of the floating body A, removable leaves D, lockers F, guard-rounds m, and lashings H, combined and operating substantially as and for the purpose set forth.

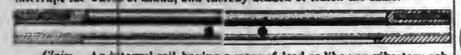
208,474. Hot-Water Urns. Nicholas Kenny, New York, N. Y. Filed Nov. 6, 1877.



Claim.—A hot-water reservoir having below it an open-bottomed chamber adapted to receive a lamp, a cock, C, a float, *h*, rod *i*, crank *k*, spring-valve and plug, and inlet-pipe, all substantially as shown and described.

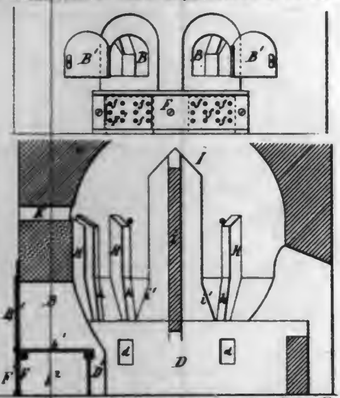
206,475. Means for Lessening Noise on Railways. Nicholas Kenny, New York, N. Y., assignor of one-half his right to Asher N. Locke and Jacob N. Locke. Filed Sept. 13, 1878.

Brief.—A railroad-rail having holes formed in the body thereof at its ends, said holes being filled with lead or equivalent non-vibratory material, to interrupt the waves of sound, and thereby deaden or lessen the same.



Claim.—An integral rail having a mass of lead or like non-vibratory substance inserted in a cavity sunk into the body of the rail from the end faces thereof, as and for the purposes set forth.

206,476. Bagasse-Furnaces. William Littlejohn, Marshall, Tex. Filed Apr. 17, 1878.



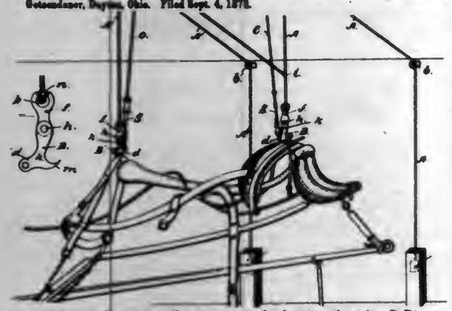
Claim.—1. The combination of the pinnacle I, side columns, H, and perforated walls D, substantially as described.

2. In a bagasse-furnace, the ribbed or winged central pinnacle, I, having a space all around it between its wings and the outer wall, and said pinnacle having a grated or other suitable support, whereby the bagasse which is introduced into the furnace is radially divided and distributed and prevented from packing centrally against the sides of the body of said pinnacle, and whereby a central draft through the bagasse is secured, substantially as set forth.

3. In a bagasse-furnace, the combination of the doors D', the walls D, having openings *d*, and the bridge E, having passages *e*, substantially as and for the purpose set forth.

4. The combination of the grate or grates *b* in a chamber or chambers provided with a draft door or doors, B', the ash-pit or ash-pits *b'*, provided with a draft door or doors, F F', and the combustion-chamber of the furnace provided with the pinnacle, the columns, the longitudinal walls, and draft-doors D', substantially as set forth.

206,477. Apparatus for Suspending Harness. J. Philip Marquardt, Jr., and William H. Ostendaser, Dayton, Ohio. Filed Sept. 4, 1878.



Claim.—1. In a suspending apparatus for harness, the trips B B', composed of the hinged pieces *k f*, the former of which is provided with the hook *w* and projection *d*, and the latter having the apertures *a p*, for the passage of the rope, whereby a swivel connection is formed.

2. In combination with a set of harness and suspending-ropes, the trips B B', constructed and arranged in the manner and for the purpose specified.

3. In combination with a set of harness and trip-hooks, B B', the weighted ropes A A' and cords C *n*, attached to the trips by adjustable straps S, whereby the cords and trips are drawn up out of the way when the harness is released, substantially as and for the purpose specified.

206,478. Illuminated Clocks. Charles Maynard, Boston, Mass. Filed July 13, 1878.

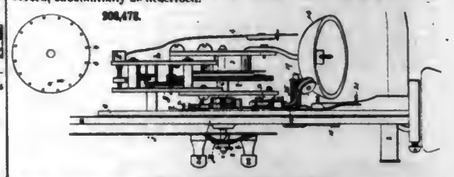
Claim.—1. The main shaft *i* and the fixed arm *o*, combined with the loosely-held winding-wheel, provided with the winding-pin, and the hour-hand and babs, held pressed together, to operate substantially as described.

2. The winding-wheel and its hub, combined with the hour-hand, hub G, and spring-washer, substantially as described.

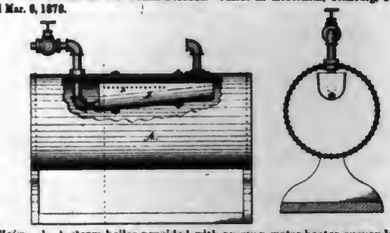
3. In a clock, the combination, with an hour-hand frictionally held upon the main shaft, of a stop to arrest the movement of the hand while the shaft continues to rotate, substantially as described.

4. The combination, with the shaft *i* and its spring, and the arm *o*, fixed to the shaft, of a winding-wheel loose on the shaft, and provided with a pin, *m*, and an hour-hand, by which to wind the spring as the hour-hand is reversed, substantially as described.

206,478.



206,479. Water-Heaters for Steam-Boilers. James A. McCormick, Pittsburg, Pa. Filed Mar. 6, 1878.



Claim.—1. A steam-boiler provided with an open water-heater suspended above the water-line within the boiler, and furnished with a supply-pipe and blow-off-pipe, substantially as herein described.

2. A steam-boiler provided with an open water-heater suspended above the water-line within the boiler, the upper edges of said heater furnished with perforations, substantially as herein described, and for the purpose set forth.

206,480. Watch-Pendants. William D. McGlaghlon, London, Ontario, Canada. Filed Jan. 9, 1878.

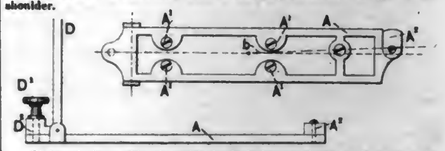
Brief.—A small plate or nut is inserted in the pendant on each side, and screws or pins passing through the lower ends of the bow and through the pendant are secured to the nuts or plates on the inside.



Claim.—As a new device for securing the bows to the pendants of stem-winding watches, the screws E or pins F, passing through the lower ends of said bows, and secured to nut D or head G, contained in the interior of pendant, and retained in position by the winder C, lying between them, substantially as shown and described, and for the purpose set forth.

206,481. Reflectors for Attachment to Fire-Arms. Jas. McGuigan, Melbourne, Victoria. Filed Sept. 2, 1878.

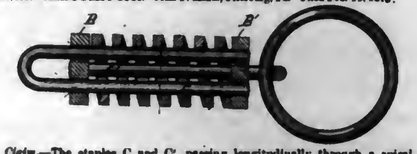
Brief.—An adjustable mirror is attached to stock of gun, so that a soldier retreating need not turn to fire, but can raise the mirror, take aim, and shoot pursuing enemy without facing about or bringing the butt of the gun to the shoulder.



Claim.—1. In combination with the bed-plate A, the frame D, having the right-angled heel D^2, as described.

2. In combination with the bed-plate A, the frame D, having the heel D^2 and set-screw D^3, as described.

206,482. Spring Draft-Tube. John F. Miller, Pittsburg, Pa. Filed Feb. 11, 1878.



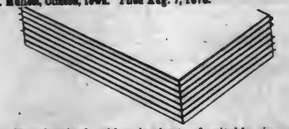
Claim.—The staples C and C', passing longitudinally through a spiral spring, and in combination therewith and with the beads B and B', all constructed and operating as and for the object set forth.

206,483. Fire-Brick for Annealing-Furnaces. Charles H. Morgan, Worcester, Mass. Filed Aug. 1, 1878.



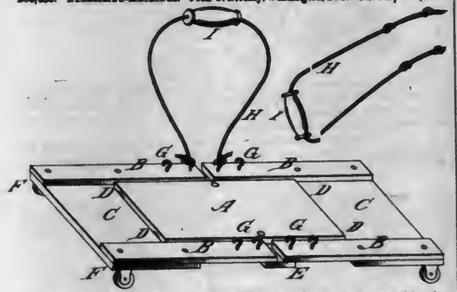
Claim.—A fire-brick for annealing-furnaces, provided with longitudinal holes for the passage of the wire to be annealed, substantially as shown and described.

206,484. Packing and Putting up Rubber in Sheets for Dental and other Uses. Eugene B. Mallett, Clinton, Iowa. Filed Aug. 7, 1878.



Claim.—Unvulcanized rubber, in sheets of suitable size, put up in packages of convenient size and weight for sale, shipment, and storage, having sheets of tin-foil or its equivalent placed between the sheets of rubber to prevent them from adhering together, substantially as and for the purposes described.

206,485. Exercising-Machines. John G. Nicolay, Washington, D. C. Filed Apr. 27, 1878.



Claim.—1. In an exercising-machine, the combination of a movable platform with one or more levers hinged to one of its ends, the fulcrum of said lever or levers acting directly upon the floor, substantially as herein set forth.

2. In an exercising-machine, the combination of a movable platform with one or more levers hinged to each of its ends, the fulcrum of said levers acting directly upon the floor, substantially as herein set forth.

3. In an exercising-machine, the combination of a sliding handle, rope, and the knots in the ends of the rope, as an adjustable attachment for raising the levers, substantially as herein set forth.

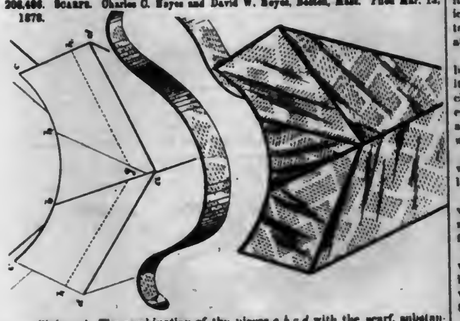
4. In an exercising-machine, the combination of the hook or hooks with the levers and knotted ropes, for the purpose of attachment and adjustment, substantially as shown and described.

5. In an exercising-machine, the combination of the friction-rollers with the fulcrum ends of levers acting directly upon the floor, substantially as herein set forth.

6. In an exercising-machine, the combination of the rest-bar E with the platform, substantially as herein set forth.

7. In an exercising-machine, the combination of the movable platform A, its hinged levers B, their connecting cross-pieces C, the hinges D, the rest-bar E, the friction-rollers F, the hooks G, the knotted ropes H, and the sliding handles I, all constructed as specified, and acting together substantially as and for the purpose herein set forth.

206,486. Scarf. Charles C. Hayes and David W. Hayes, Boston, Mass. Filed Mar. 13, 1878.



Claim.—1. The combination of the pieces *a b c d* with the scarf, substantially as shown and described.

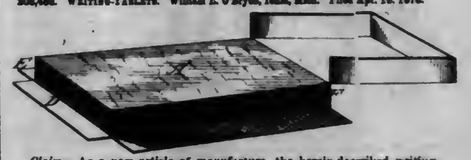
2. The combination of the pieces *a b c d* with the scarf, when the upper ends of the side pieces extend only to the lines *g h*, substantially as shown and described.

206,487. Bottle-Stoppers. Samuel Oakman, Boston, Mass. Filed Jan. 16, 1878.



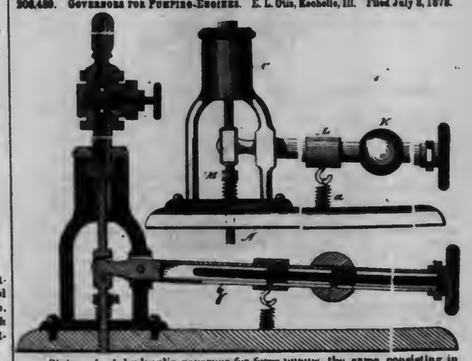
Claim.—In a bottle-stopper, the combination of the mouth-piece B C and the perforated revolving globular valve D, provided with a handle for operating the same, with the elastic seat K and the screw-neck H, whereby the valve D may be brought to any desired degree of pressure upon the elastic seat K, all substantially as and for the purpose set forth.

206,488. Writing-Tablets. William E. O'Bryon, Ionia, Mich. Filed Apr. 16, 1878.



Claim.—As a new article of manufacture, the herein-described writing-tablet, consisting of the pack of detachable sheets A, attached to the flexible strip F, which connects the top and bed, the latter being provided with the hinged sides and ends C E H, as and for the purpose set forth.

206,489. Governors for Pumping-Engines. E. L. Otis, Rochelle, Ill. Filed July 8, 1878.



Claim.—1. A hydraulic governor for force-pumps, the same consisting in the combination, with a steam-supply valve-rod provided with adjustable mechanism tending to force it upward and open the valve, of a piston secured to its upper extremity, and a piston-cylinder, which latter communicates at its top with pipe-connection adapted to permit of the passage of water from the service-main or eduction end of the engine into said cylinder, substantially as set forth.

2. In a hydraulic governor, the combination, with a rod attached to the steam-supply valve of the pumping-engine, and piston attached to one end of said rod, said piston located in a cylinder having communication at its upper end with the main or eduction end of the pump, of a valve for wire-drawing the water, said valve located between the cylinder and water-main, and mechanism for regulating the upward pressure on the valve in opposition to the water-pressure on the piston, which tends to close the valve, substantially as set forth.

3. The combination, with a steam-supply valve-rod, provided with adjustable mechanism tending to force it upward, and formed with a piston on its upper extremity, of an air-chamber having communication with the service-main or eduction end of the engine, and adapted in any suitable manner, to cause the water under elastic pressure to enter the cylinder of said piston above the latter, substantially as set forth.

4. The combination, with a steam-supply valve-rod provided with adjustable mechanism tending to force said rod upward, and formed with a piston on its upper extremity, which works in a suitable cylinder, of an air-pressure chamber having communication with the service-main or eduction end of the engine, and an intermediate upright pipe connecting the same with the top of said cylinder, said pipe being adapted by valve or other suitable means to wire-draw the water into the cylinder, substantially as set forth.

5. The combination, with a steam-supply valve-rod and a lever provided with a movable-weight device, of a shaft adapted by engagement with the latter to adjust the same upon said lever, substantially as set forth.

6. The combination, with a steam-supply valve-rod, of a tubular lever provided with an interior shaft, and a weight-adjusting device adapted to be moved upon the lever by engagement with said shaft, substantially as set forth.

7. The combination, with a tubular lever connected with a steam-supply valve-rod and formed with a longitudinal slot, of a shaft adapted to be rotated in said lever, and a suitable weight device, the latter formed with a fin or web, which projects through said slot and is provided with a tube having screw-thread engagement with said shaft, substantially as set forth.

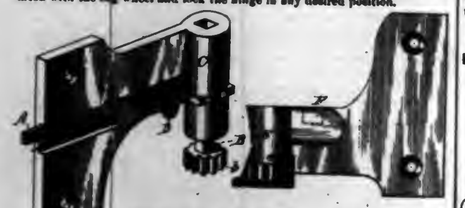
8. The combination, with a steam-supply valve-rod provided with an upwardly spring-pressed collar, which engages therewith, of an adjustably-weighted lever, tending to raise said valve-rod, substantially as set forth.

9. The combination, with a steam-supply valve-rod which is upwardly spring-pressed, of a tubular lever formed with a longitudinal slot, an interior

rotating shaft, and an adjustable-weight device, which latter is adapted to have engagement with said shaft by a projection passing through said slot, substantially as set forth.

208,490. Lock-Hinge. Robert Phipps, Georgetown, D. C. Filed June 26, 1878.

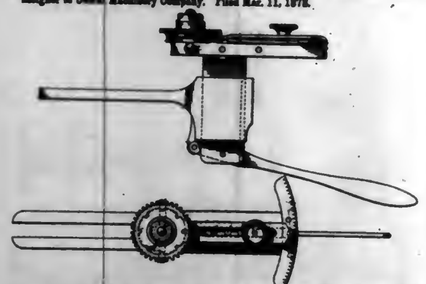
Brief.—A square shaft operated by a lever, and provided at its lower end with a cog-wheel, moves vertically in the upper barrel. Said barrel turns in the lower barrel, which is provided on its inner periphery with teeth adapted to mesh with the cog-wheel and lock the hinge in any desired position.



Claim.—1. In a lock-hinge, the combination of barrel C and square shaft B, provided with cog-wheel *b*, and operated by lever A, with the barrel E, provided with teeth *e*, as and for the purpose set forth.

2. The combination of lever A, provided with lug D and operating-shaft B in the pintle portion, with recess F and teeth *e* in the eye portion, substantially as and for the purpose set forth.

208,491. Gear-Cutting Attachments for Lathes. John W. Post, New York, N. Y., assignor to Useful Machinery Company. Filed Mar. 11, 1878.



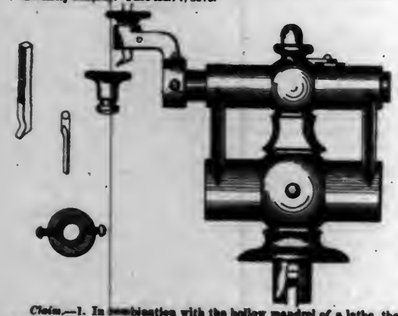
Claim.—1. In combination with the horizontal table, the rotating slotted disk for supporting the work, and the indicator and sliding pawl, for adjusting the position of said disk and the work in respect to the cutting-tool, substantially as specified.

2. The combination of the slotted indicator, sliding pawl, and the set-screw for binding the two together, with the graduated sector and work-holding disk, substantially as and for the purposes specified.

3. In combination with the horizontal table provided with a series of bearings, as described, the slotted indicator and pawl, provided with a series of screw-threaded apertures for the reception of a movable binding-screw, substantially as and for the purposes set forth.

4. In combination with the horizontal table, the supplementary table, adapted to be secured thereto at various angles, and provided with work-carrying devices, for the purpose of cutting beveled and scroll gear, substantially as herein set forth.

208,492. Key-Seat or Pipes Cutters. John W. Post, New York, N. Y., assignor to Useful Machinery Company. Filed Mar. 7, 1878.

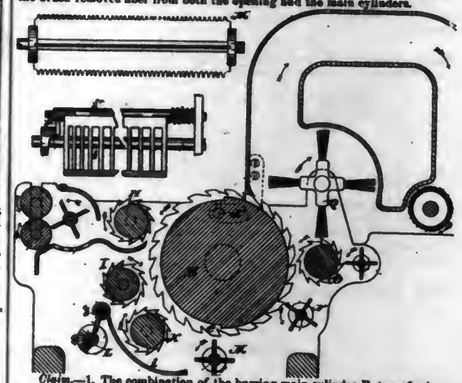


Claim.—1. In combination with the hollow mandrel of a lathe, the elbow-shaped holder carrying a threaded cutter, operated by a lever or other suitable device, substantially as specified.

2. In a key-seat or pinion cutter, the combination of a hollow mandrel of a lathe with an elbow-shaped holder whose lower and upper ends are recessed or bored, the binding-screws for the purpose described, the adjustable threaded cutter, the lever or thumb screw, through which the cutter slides in its upward and downward movement, and the pin, all substantially in the manner and for the purposes specified.

208,493. Wool-Burring Machines. Josiah K. Procter, Philadelphia, Pa., assignor to Philadelphia Burring Machine Works, same place. Filed Oct. 24, 1877.

Brief.—The matters removed from the main cylinder by the first beater fall on the screen, that is caused to vibrate sidewise, and the dust, &c., fall through, while the fibers are caught by the transferring-rolls, and their transferral to the main cylinder is effected by the suction, centripetal, and electrical forces of the latter, due to its high rate of speed. A vibrating grating, together with transferring-rolls, may also be placed below the second beater. The first beater has toothed blades, while those of the second are plain, and the brush removes fiber from both the opening and the main cylinders.

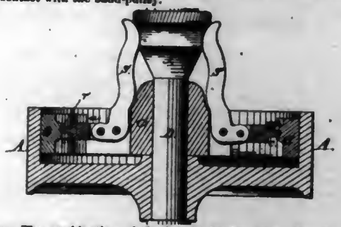


Claim.—1. The combination of the barring main cylinder E, transferring-roll K or rolls I K, arranged and adapted to return the fiber to the former grating or screen *i*, beaters M N, and opening-cylinder O, arranged and operating substantially as shown and described.

2. The combination of main cylinder E with a feed-roller, H, beaters M and N, opening-cylinder O, and brush Q, arranged and operating substantially as shown and described.

208,494. Clutches. Horatio A. Remington, River Point, R. I. Filed July 3, 1878.

Brief.—The sliding collar is made with a wedge and a straight surface, upon which latter the upper ends of the knee-levers rest in holding the friction-plate in contact with the band-pulley.



Claim.—The combination of the hub C, having arms formed thereon, hinged friction-plates O O', knee-levers S S', collar J, provided with a locking-surface, blocks *g g'*, rods *e e'*, and pulley A, substantially as and for the purpose specified.

208,495. Car Ventilator-Windows. Edward Robinson, Wilmington, Del., assignor to the Woodruff Sleeping Car and Parlor Coach Company, Pittsburg, Pa. Filed Aug. 7, 1878.

Brief.—A removable ventilator-window is hinged by open hooks on its lower part to pins in the framing, and is limited in its opening movement by its lower end swinging in a recess in the frame against a beveled stop or shoulder. The upper part is secured by a suitable spring-catch.



Claim.—In combination with a car window or ventilator, open hooks *c*, pins *e*, and stop *d*, arranged substantially as and for the purpose described.

208,496. Lathe-Carriages. James W. Lee, Hamilton, Ohio. Filed Apr. 26, 1878.

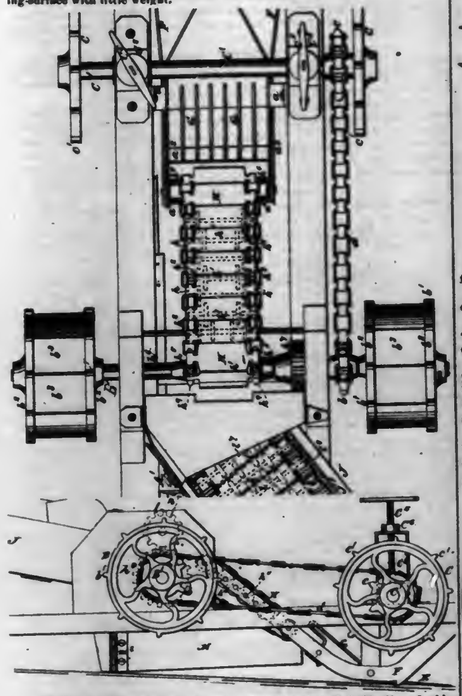
Brief.—To provide for the turning aside of the apron to enable the workman to get at the gearing concealed thereby.



Claim.—The saddle A, apron B, extensible pivot C, and latch-bolt D, all combined substantially as and for the purpose specified.

208,497. Grading and Ditching Machines. Chas. C. Skinner, Eau Claire, Wis., assignor to George W. Williams, Jr., and Robert M. Stocking, same place. Filed Dec. 20, 1877.

Brief.—A ditching-machine in which the space between the cutter and the lower end of the carrier-belt is bridged by a series of fingers or rods, instead of a plane surface, as heretofore. The endless belts of the elevating and lateral carriers consist of overlapping plates, the ends of which are connected by links, and they are supported by wheels or pulleys so arranged as to overlap each other, thus giving a continuous support to the belts. The front and rear axles are geared together by means of an endless chain and sprocket-wheels, whereby the driving mechanism of the carrier-belts is operated when the rear wheels are lifted from the ground, and the entire weight of the machine is thrown on the front wheels, which, it is stated, is sometimes the case. The land-side of the cutter is divided into two portions by a hinge, and in turning a curve or avoiding an obstruction the hinged rear portion is allowed to swing on its hinge to enable the machine to make a short turn. The wheels are made with flanged rims and light connecting-strips, which give a broad bearing-surface with little weight.



Claim.—1. The combination, with the arrow-shaped knife E and side knives, F, of the fingers G, constructed and operating substantially as described.

2. The combination, with an elevator, H, composed of a series of plates, *h*, connected together by links h^3, of a series of overlapping supporting wheels or pulleys, h^{10}, substantially as and for the purposes described.

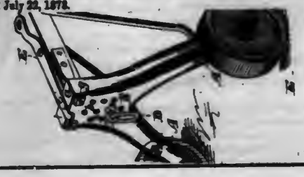
3. A grading or ditching machine supported on axes B^2 C^2, geared together by means of an endless chain, substantially as shown and described.

4. The combination, in a grading or ditching machine with cutters, of the land-side M, placed in rear of the side cutters, F, and divided by a hinge, m^2, into two sections, the rear one being horizontally adjustable in relation to the forward section, substantially as set forth.

5. The combination, with a grading or ditching machine, of the wheels B, constructed with flanged sections b^2 b^3, connected together by strips b^4, substantially as shown and described.

6. The combination, with a grading or ditching machine, of a side carrier, J, pivoted at an angle to the machine, and provided with an endless chain of plates, *l l*, supported at each end on revolving axes, and intermediately by an overlapping series of pulleys, wheels, or rollers, substantially as set forth.

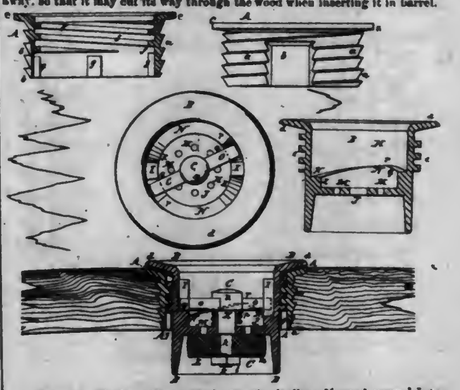
208,498. Fare-Trough. David Smith, Jamestown, N. Y., assignor to Moses B. Smith, same place. Filed July 22, 1878.



Claim.—The combination, with axle A, formed with the central arched body, B, and flat top *a*, made in single piece therewith, of eyebolt C, which is adjustably fastened in the series of holes *b*, passing transversely through said arched body, and is provided with loose link D, together with hammer-strap E, projecting rearwardly over said flat top, and formed with hook extremity *c*, substantially as set forth.

208,499. Bung. William J. Stevens, New York, N. Y. Filed Mar. 22, 1878.

Brief.—To vent the barrel the locking-lever is turned down to the lowest part of the inclines. Portions of the outside thread of the bushing are cut away, so that it may cut its way through the wood when inserting it in barrel.



Claim.—1. The bung B, provided with the inclines N *q* and noses I I, to form a lock for the arms *o o*, substantially as described.

2. The bush A, provided with an internal thread, *f*, the guides *g g*, and external thread *a*, having recessed portions *b*, substantially as described.

3. The bung B, provided with the inclined shoulder N, in combination with the valve C, provided with its stem K, and arms *o o*, to effect the locking of the valve, substantially as and for the purpose herein stated.

4. The combination of the bush A, provided with its interior threaded portion, and guide-ribs *g*, and beveled shoulder C, and portions *b*, and the bung B, its male thread *c*, and beveled flange *d*, and seat J, and cam-shoulder N, and the valve C, with the arms *o o* and spring *p*, the elastic valve-base L, substantially as and for the purpose herein set forth.

5. The combination, for a vent-bung, of the valve-seat J and shoulder N with the valve-base L and spring *p*, the stem K, and arms O O, substantially as and for the purpose herein described and shown.

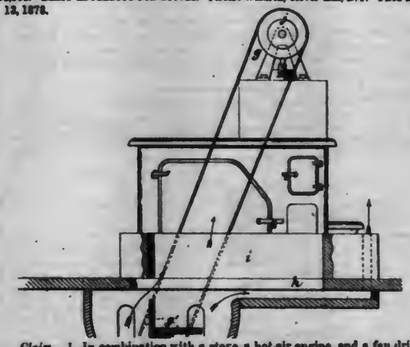
208,500. Fishing-Rod. Henry Van Altena, Milwaukee, Wis., assignor of one-half his right to James B. Erwin, same place. Filed Apr. 24, 1878.

Brief.—The butt of the rod is made hollow to accommodate tackling, &c.



Claim.—In combination with the rod A, having slot B, and elongated reel C, having shaft D and crank E, the sliding tube H, having slot I, substantially as and for the purpose specified.

208,501. Blast Apparatus for Stoves. Jerome Waldron, Clover Hill, N. J. Filed Mar. 13, 1878.



Claim.—1. In combination with a stove, a hot-air engine, and a fan driven by said engine, and generating a blast around the stove, substantially as and for the purpose set forth.

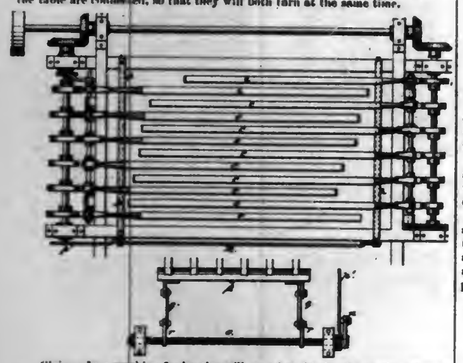
2. In an apparatus for the purpose aforesaid, the combination of a stove, a hot-air engine, having its crank or eccentric shaft provided with two or more

pulleys, or a cone of pulleys, *f g*, a belt or belts, or their equivalents, and a fan, all arranged and operating substantially as and for the purpose set forth.

3. In an apparatus for the purpose aforesaid, the conductors *i i*, arranged over apertures in the floor to prevent the dispersion of the blast or currents of air from the fan below, substantially as and for the purpose set forth.

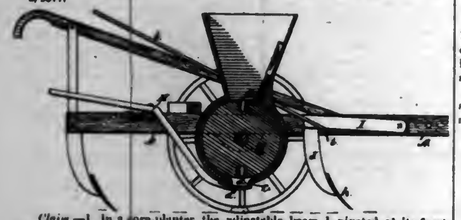
208,502. Machines for Beating Silk. Jacob Weidmann, Paterson, N. J. Filed Apr. 1, 1878.

Brief.—There is arranged beneath the beaters, on each side of the table, a bar, connected by rods to arms on a rock-shaft, by turning which the beaters may be raised from the table when desired. The rock-shafts on both sides of the table are connected, so that they will both turn at the same time.



Claim.—In a machine for beating silk or other fabric, the combination of the lifting-bars *p*, lifting-rods *q*, rocking shafts *o*, having arms *r*, rod *n*, and lever *p'*, substantially as shown and described.

208,503. Corn-Planters. Chas. Wysong and Fredk. Wysong, Fremont, Ohio. Filed Aug. 2, 1877.



Claim.—1. In a corn-planter, the adjustable beam I, pivoted at its front end between the forward ends of the beams A, and provided at its rear end with the standard and shovel J *k*, in combination with the bent lever *i*, pivoted to the side of the hopper, the several parts constructed and relatively arranged with each other substantially as herein shown and described.

2. In a corn-planter, the combination, with the hopper having a cylindrical bottom, with discharge-aperture *e* and recessed feed-wheel G, of the curved and pivoted swinging lever H, provided with gate *d*, substantially as specified.

208,504. Hog-Cholera Ointments. G. S. Williams, Eggleston's Springs, Va. Filed Aug. 23, 1878.

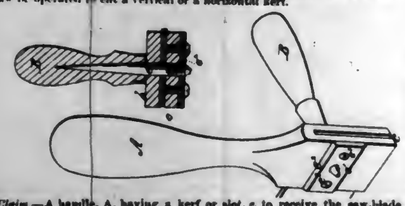
Claim.—The herein-described compound for the treatment of hog-cholera, consisting of a decoction of peach-leaves and smart-weed leaves, soft soap, camphora, sulphur, and spirits of turpentine, in or about the proportions set forth.

208,505. Hog-Cholera Ointments. Thos. Arnold, Versailles, Ill. Filed Apr. 27, 1878.

Claim.—A medicine for the cure of hog-cholera, composed of solution of permitrate of iron, quicklime, peach-tree leaves, tobacco, carbolic acid, and soap-suds, compounded substantially as specified.

208,506. Crosscut-Saw Handles. Horton Barron, Eau Claire, Wis. Filed Apr. 15, 1878.

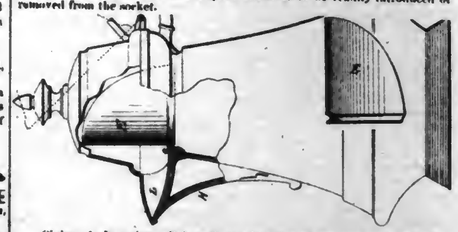
Brief.—The adjustment of the "pitch" of the saw with reference to the handle may be readily effected to suit the operator, according to the circumstances incident to the use of the saw. The handle is adapted for use whether the saw be operated to cut a vertical or a horizontal kerf.



Claim.—A handle, A, having a kerf or slot, *a*, to receive the saw-blade, in combination with a clamping-handle, B, and plate *d*, substantially as and for the purpose described.

208,507. Sirup-Pitchers. Henry B. Beach, West Meriden, Conn. Filed Aug. 22, 1878.

Brief.—The elasticity of the spout allows it to be readily introduced or removed from the socket.

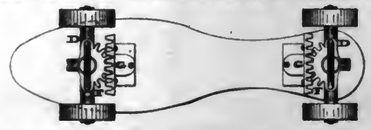


Claim.—1. In a sirup-pitcher, the combination of the removable spout E, constructed of elastic material, and so as to engage with the body of the pitcher within the channel surrounding it by means of such elasticity, and substantially as described.

2. In a sirup-pitcher, the combination of the removable spout E, constructed of elastic material, and so as to engage with the body of the pitcher within the channel surrounding it by means of such elasticity, and shoulders *c c*, for the purpose of locating the spout, substantially as described.

3. In a sirup-pitcher consisting of the body, the upwardly-projecting spout, channel around said spout for the return of the drip, cover hinged to the body so as to inclose the said spout, and a cavity, L, forward of the spout and outside the channel, and a spout, H, on the body of the pitcher, constructed to form the cavity L outside the channel and cover forward of the pouring-spout and opening into the said channel, substantially as described.

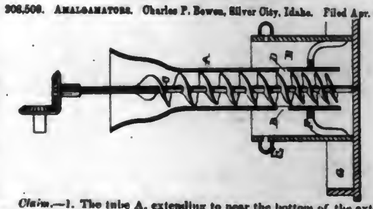
208,508. Roller-Skates. James H. Bowen, Philadelphia, Pa. Filed June 4, 1878.



Claim.—1. The foot-rest having horizontal spindles R and vertical arms H, with toothed segments G, in combination with vertical posts C, mounted on the spindles, the springs H', and axles D, journaled to said posts, and having toothed segments F, which engage with the segments of said arms, constructed and arranged substantially as and for the purpose set forth.

2. The arms and spindles H R, vertical posts C, swinging axles D, and segmental gearing F G, in combination with the stops *b b*, arranged to operate substantially as and for the purpose set forth.

208,509. Amalgamators. Charles P. Bowen, Silver City, Idaho. Filed Apr. 22, 1878.

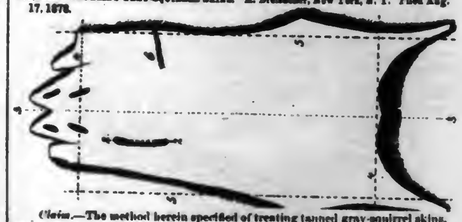


Claim.—1. The tube A, extending to near the bottom of the exterior mercury-containing vessel B, said tube having the perforations D just below the surface of the mercury, in combination with the feeding-screw C, whereby the material is fed downward and a circulation of mercury is kept up, substantially as shown, and for the purpose herein described.

2. The perforated tube A, with its feeding-screw C, and the exterior mercury-containing vessel B, in combination with the surrounding water-pipe E, with its interior perforations, to discharge water into the pulp above the mercury, substantially as shown, and for the purpose herein described.

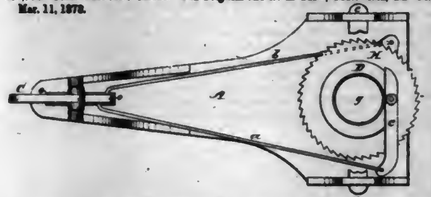
3. The perforated tube A, extending to near the bottom of the mercury-containing vessel B, provided with the water-supply pipe E, in combination with the mercury-trap I, substantially as shown, and for the purpose herein described.

208,510. Preparing Gray-Squirrel Skins. H. Dreinacher, New York, N. Y. Filed Aug. 17, 1878.



Claim.—The method herein specified of treating tanned gray-squirrel skins, consisting in separating the skins longitudinally at the breast or belly transversely through the inner surfaces of the paws and across the breast, wetting, stretching, and trimming, substantially as set forth.

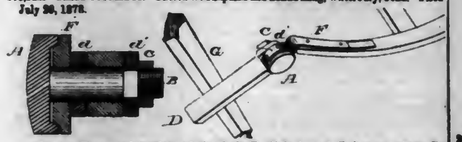
208,511. Feed-Grinding Mills. Don Brigham and D. E. Shaw, Chatsworth, Ill. Filed Mar. 11, 1878.



Claim.—1. The combination, with the right-angle lever C, of the detachable rods *a b*, connected to the plates E H, substantially as described, whereby one of said plates may remain stationary while the other is in operation, or both may be operated, as required, and for the purpose specified.

2. The plates E H and ring D, in combination with the operating-rods *a b* and the pawl *c*, the latter having projection I and shoulder *m*, constructed to operate substantially as and for the purpose described.

208,512. Trill-Couplings. Theron W. Chapman and Elisha King, Waterbury, Conn. Filed July 20, 1878.



Claim.—The combination of the bolt B, disk A, nut C, bar or strap D, with its ears or rings *d d'*, piece F, with its beveled ear, and piece E, with its ear or ring, substantially as described, and for the purposes set forth.

208,513. Lasts. Joseph E. Chenette, Hillsborough, Oreg. Filed July 20, 1878.



Claim.—1. The last consisting of the body A, grooved as shown, and having the bar E across the groove, in combination with the last-block B, having the spring C secured to it so as to enter the groove beneath the bar, said spring having its rear end formed into a curve, I, adapted to serve as a lock to be withdrawn by a hook, K, substantially as herein described.

2. The spring C, having its toe or front end slotted, as shown at H, in combination with the lug G, near the toe of the last, whereby the front B is locked and side movement prevented, substantially as herein described.

3. The device consisting of the plates N, fitted into the opening M, and presenting their edges to the entering nail, which is held by their elasticity, substantially as herein described.

208,514. Thermometers. Edward C. Clark, New Lebanon, N. Y. Filed June 12, 1878.



Claim.—The combination of the hollow glass support, the internal thermometer plate and tube, the cavity shaped at the upper end so as to locate and hold the plate at that end, and a block at the lower end of the cavity, slotted to hold the lower end of the plate, and secured in the support, substantially as described.

208,515. Machines for Bending Grain-Lines. William B. Conway and Wallace A. Heald, Indianapolis, Ind. Filed Dec. 31, 1877.

Brief.—The ends of the blank cut from the heated rod are given a preliminary bend against former-blocks by a pair of levers attached to a rock-shaft. The former is hinged to its reciprocating driver, and is provided with a side-projecting lug, which rides upon the top of a pivoted spring-acted-upon switch-piece, and supports the former so that its end projects above the level of the table, strikes the partially-bent blank as the driver reciprocates forward, and carries it between a pair of bending-rollers depending from the under surface of a transverse bar. After the bending operation is completed, the lug on the former passes off from the pivoted end of the switch, and allows the former to drop below the level of the table and reciprocate backward under the newly-presented blank. A lifting-plate raises the former at the termination of its backward stroke, so that the lug will again be in position to ride upon the switch. The inner beveled end of the blank rests upon an inclined support on one of the former-blocks, which prevents the blank from turning out of its proper position after it has been severed from the rod.

Claim.—1. The table A, with groove W and lifting-plate r, in combination with the hinged head Q' of the driver Q, in the manner and for the purpose substantially as shown and described.

2. The lever V, with a bent wire, *b*, and weight or spring b^2, in combination with the hinged head Q', having pin Y, and lifting-plate r, in the manner and for the purpose substantially as shown and described.

3. The adjustable plate L, with curved former *w*, in combination with the cutter, driver, sheaves, and bending-lever M, as set forth.

4. The adjustable plate L, with cutter K and curved former *w*, and the adjustable plate L', with gage K' and angle-plate rest K', in combination with the adjustable movable cutter J and bending-levers M M', in the manner and for the purpose substantially as shown and described.

5. The adjustable plates L L', with curved formers *w w'*, in combination with the sheaves P P, the bending-levers M M', and the driver Q, with hinged head Q', by means of which the ends of a blank are first bent, and then the blank is forced through the space between the sheaves and the link formed, in the manner and for the purpose substantially as shown and described.

6. The shaft M', with bending-levers M M', in combination with straps S S', the cams T T', and the curved adjustable formers *w w'*, in the manner and for the purpose substantially as shown and described.

7. The driver-head Q' and pin *y*, combined with the lever V and plate r, substantially as and for the purpose set forth.

208,516. Horse-Collars. George A. De Zeng, Chicago, assignor of one-half his right to John D. De Veling, Chebanse, Ill. Filed Apr. 22, 1878.



Claim.—1. The tilting pad B, when arranged between and pivoted laterally to the rigid side sections of a horse-collar, substantially as and for the purposes specified.

2. The vertically-adjustable straps C C, in combination with the tilting pad B, the said pad pivoted laterally to the said strips, all arranged substantially as specified with relation to each other and the body of a horse-collar, for the purposes set forth.

3. The body A of a horse-collar made in sections, the lower ends of the sections being adjustably connected by means of the hooked or bent lever G, pivoted to one of the said ends, and the perforated ferrule F', applied to the other of the said ends, substantially as and for the purposes specified.

4. The combination of the removable bolts K K, the elongated and perforated nuts H' H', and the caps or pockets I I, the latter applied to a horse-collar, and all operating together in connection therewith and with each other, substantially as and for the purposes specified.

5. The combination of the body A, made in sections, the pad B, the adjustable straps C C, carrying the pad B and applied to the upper ends of the sections of the body A, the lever G, applied to the lower end of one of the sections, and the perforated ferrule F', applied to the lower end of the other section, all substantially as and for the purposes specified.

208,517. Corsets. David H. Fanning, Worcester, Mass. Filed Aug. 26, 1878.



Claim.—1. As an improved article of manufacture, a corset composed of front and back pieces, side pieces, *f g*, and gore-pieces *h i j* at the hips, the said gore-pieces intersecting seams *l m n*, extending to the top of the corset, as shown and described.

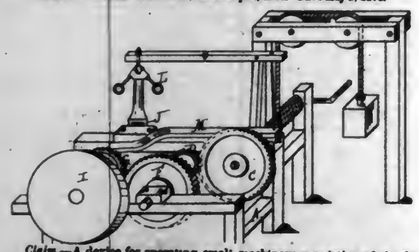
2. In a corset, the pieces *a b*, gores *c d e*, independent pieces *f g k*, and gore-pieces *h i j*, intermediate between pieces *b f g k*, and intersecting the seams uniting the said pieces, substantially as described.

208,518. Manufacture of Paper and Paper-Pulp. William E. Farrell, Philadelphia, Pa. Filed July 15, 1878.

Claim.—1. As a new article of manufacture, paper or paper-pulp composed of the fibers of the salt-water plant *Juncus Gerardi*, substantially as described.

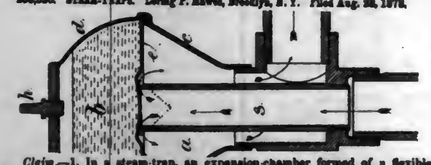
2. As a new article of manufacture, paper or paper-pulp composed of the fibers of the salt-water plant *Juncus Gerardi*, in combination with other fibers, substantially as described.

206,519. Mower. David Ford, Eaton Rapids, Mich. Filed May 9, 1878.



Claim.—A device for operating small machinery, consisting of the frame A, shafts B, E, and H, pinions C, D, F, G, J, and K, pulley I, brake M, and governor L, combined to operate substantially as and for the purposes set forth.

206,520. Steam-Trap. Loring P. Haven, Brooklyn, N. Y. Filed Aug. 26, 1878.

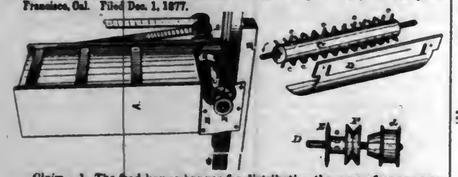


Claim.—1. In a steam-trap, an expansion-chamber formed of a flexible diaphragm and an external case extending from one edge of the diaphragm to the other, in combination with a pipe the end of which is adjacent to the diaphragm, substantially as and for the purposes set forth.

2. The flexible diaphragm *c*, the case *d*, and the case *e*, united together at their edges, substantially as shown, and forming the escape-chamber *a* and expansion-chamber *b*, in combination with the pipe *a*, substantially as set forth.

3. The pipe *a*, for the discharge of the air or water of condensation, secured at one end into a coupling or T, and forming a valve-seat at the other end, in combination with a flexible diaphragm, the inclosing-case *c d*, and the expansible material within the chamber *b*, substantially as set forth.

206,521. Hoppers for Cube-Sugar Machines. William Jasper and Stephen Bonsby, San Francisco, Cal. Filed Dec. 1, 1877.



Claim.—1. The feed box or hopper for distributing the mass of sugar upon the plate or tray and forming it in a slab of uniform density, with even and smooth sides and edges, the same consisting of the box A, the rotating shaft C, with its projecting arms or rods *c c*, the adjustable planer D, and the rotating cutting-disks E E, all constructed, combined, and operating substantially as and for the purposes described.

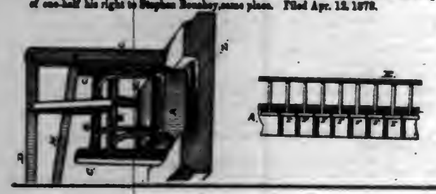
2. The combination, with the vertical feed-box A and horizontally-moving plates G, of the tooth-shaft C, placed in the lower end of the said feed-box, for distributing the sugar equally upon the plates which move below and out of contact with the walls of the box, constructed, arranged, and operating substantially as described and shown.

3. The combination, with the vertical feed-box A and horizontally-moving plates G, of the planer D, adjustably secured to the lower end of the feed-box and above the surface of the said plates, constructed, arranged, and operating substantially as described and shown.

4. The combination, with the vertical feed-box A and horizontally-moving plates G, of the toothed shaft C and adjustable planer D, operating substantially as described and shown.

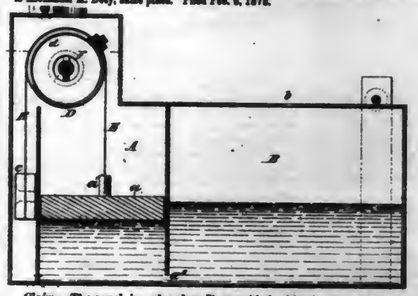
5. The combination, with the feed-box A and horizontally-moving plates G, of the rotating cutting or shaving disks E E, arranged upon a shaft above and at the sides of the moving plates, substantially as and for the purpose set forth.

206,522. Machinery for Making Cube-Sugar. W. Jasper, San Francisco, Cal., assignor of one-half his right to Stephen Bonsby, same place. Filed Apr. 12, 1878.



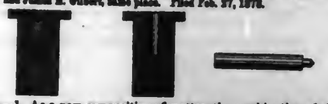
Claim.—A cube-sugar machine wherein are combined a plate, Z, for supporting a slab of sugar, the cutting-frame A, reciprocating vertically above such plate between standards, the plate E, reciprocating vertically above the cutting-frame and having downwardly-projecting spindles, which work through the cutting-frame and are attached to presser-plates F, sliding in the spaces of the said cutting-frame, and the levers D H, for operating the cutting-frame and presser-plate, substantially as described and shown.

206,523. Gas-Governors. Frank O. Johnson, Brooklyn, N. Y., assignor of one-half his right to Alexander H. Doty, same place. Filed Feb. 6, 1878.



Claim.—The revolving chamber D, provided with the longitudinal opening *d*, in combination with the metallic ribbon E E and weight *e* and float *a*, all operated by the liquid in the compartments A and B, substantially in the manner and for the purpose set forth.

206,524. Compositions for Journal-Bearings. John Johnson, Brooklyn, N. Y., assignor to himself and James E. Gilbert, same place. Filed Feb. 27, 1878.



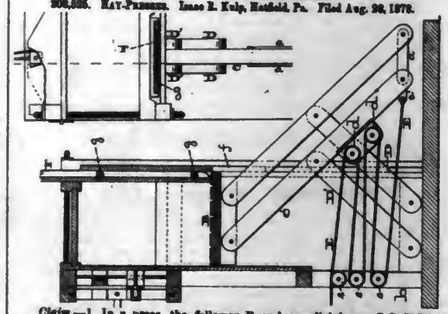
Claim.—1. As a new composition of matter, the combination of plumbago, asbestus, and sulphur, substantially as herein described.

2. As a new composition of matter, the combination of asbestus, sulphur, and plumbago, in three or nearly equal parts by volume, as herein described.

3. The method of combining asbestus, sulphur, and plumbago by reducing them to powder and thoroughly mixing them together, and by then subjecting the pulverulent compound, in a mold, first to pressure and then to heat, as herein set forth.

4. As a new article of manufacture, self-lubricating journal-bearings consisting of a plumbago, asbestus, and sulphur compound united with an iron or other metallic casing, into which it is compressed and molded, substantially as herein set forth.

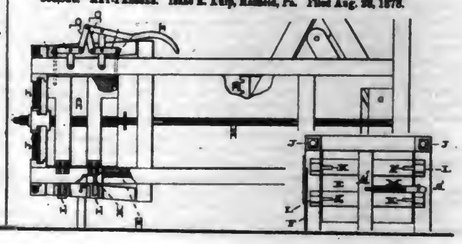
206,525. Hay-Presses. Isaac R. Kulp, Hatfield, Pa. Filed Aug. 26, 1878.



Claim.—1. In a press, the follower B and parallel levers C C' D D', in combination with the pulleys *d* on the lever C', the series of pulleys *e* on the frame *b*, the bottom connection, *a'*, connecting-straps *a*, and rope E, substantially as and for the purpose set forth.

2. The vertically-movable guard F, covering the opening *f* and provided with rollers *g*, substantially as and for the purpose set forth.

206,526. Hay-Presses. Isaac R. Kulp, Hatfield, Pa. Filed Aug. 26, 1878.

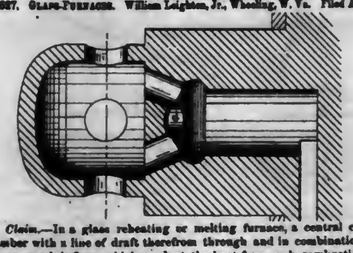


Claim.—1. The combination, with the sliding bolts of the two levers *a*, pivoted to the two levers *b*, and the hand-lever F, having a common connection to the levers *b*, substantially as and for the purpose set forth.

2. The movable sides E, provided with pins or bars K, in combination with the guides L, projecting from the uprights of the box, substantially as and for the purpose set forth.

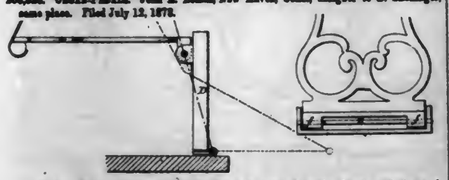
3. The box and frame, in combination with the vertical screw-rods H, formed of detachable parts, and the horizontal screw-rods J, formed of lap-jointed parts, substantially as and for the purpose set forth.

206,527. Glass-Furnaces. William Leighton, Jr., Wheeling, W. Va. Filed Apr. 16, 1878.



Claim.—In a glass reheating or melting furnace, a central combustion-chamber with a line of draft therefrom through and in combination with two or more conduit-flues, which conduct the heat from such combustion-chamber to points at or near the outer edge of the heating or melting chamber, and in immediate proximity to the working or glory holes, substantially as and for the purposes set forth.

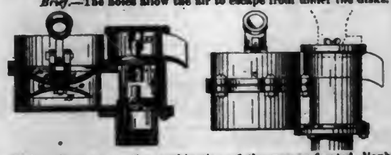
206,528. Organ-Pedals. John B. Lomas, New Haven, Conn., assignor to B. Shoninger, same place. Filed July 12, 1878.



Claim.—The combination of the base D, hinged at the front, and the pedals E, hinged to the said base, inside the vertical line through the hinges of the base, with the bellows of an organ, and connection between said bellows and pedals, substantially as described.

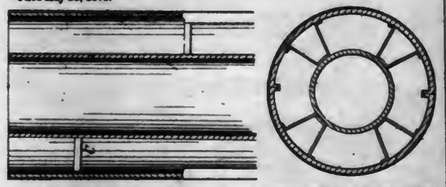
206,529. Skiff Pumps. Samuel C. Lord, Boston, Mass. Filed Apr. 5, 1878.

Brief.—The holes allow the air to escape from under the disks.



Claim.—In a pump, the combination of the non-perforated diaphragm with the perforated concaved disks E E', substantially as described, and for the purpose set forth.

206,530. Coverings for Steam Pipes, Boilers, &c. James A. Maloney, Georgetown, D. C. Filed May 25, 1878.



Claim.—1. A covering for steam-pipes, &c., formed of straw-board or similar material, coated with silicate-paint, and an air-space formed by shoulders or braces attached or fastened thereto, substantially as shown and described.

2. A covering for steam-pipes, &c., formed of paper, having shoulders or braces attachable and detachable, and a binder or wrapper of paper, substantially as shown and described.

3. A covering for steam-pipes, &c., formed of paper, in two or more sections, having attachable or detachable metallic shoulders or braces for forming an air-space, and a coating of silicate-paint, substantially as and for the purpose set forth.

4. A covering for steam-pipes, &c., formed of paper, in two or more sections, having attachable or detachable shoulders or braces for forming an air-space, and an outer covering or binder of paper, and a coating of silicate or other fire-proof paint, substantially as shown and described, and for the purpose set forth.

206,531. Hobby-Horses. Philip Marqua, Cincinnati, Ohio, assignor to P. J. Marqua's Sons. Filed June 20, 1878.

Claim.—1. A hobby or exercising horse pivoted to the lower ends of links or stirrups, whose upper ends vibrate in bearings provided in the upper part of a stationary base or pedestal that extends upward between the legs of the horse in the direction of its length, as and for the purpose set forth, and substantially as described.

2. The combination of the horse-body A, base or pedestal B, stirrups or links C C, and bars D D, as and for the purpose set forth and described.

206,531.

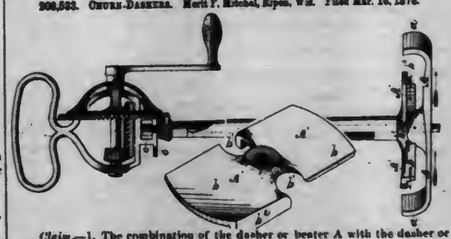


206,532. Preparing, Finishing, and Polishing the Surfaces of Artificial Stone. John A. Mehling, Cleveland, Ohio, assignor of one-third his right to John W. Heisley, same place. Filed July 20, 1878.

Claim.—1. As an improvement in the art of polishing artificial stone, the method or process herein explained for bringing the surface to a condition suitable for receiving the polish, the same consisting in grinding with sandstone, grit, and hone, using water as a lubricator, then filling the pores with a solution of a like material to that of the base, allowing the filling to become hard, and next rubbing the prepared surface with hone, using therewith oil and turpentine, or either, as a lubricator, and permitting the incorporated lubricator to become dry and hard, substantially as and for the purposes set forth.

2. The herein-described method of polishing and finishing artificial stone, the same consisting, essentially, in grinding with sandstone, grit, and hone, using therewith water as a lubricator, filling the pores with a solution of a like material to that of the base, drying the filling, rubbing down with oil and turpentine, or either, and burnishing with blood-stone, agate, petrified wood, steel, or other hard material suitable for a burnisher, again drying and rubbing the dried surface with a cloth, using therewith oil and polishing-powder and finishing with agate, polished steel, &c., all substantially as set forth.

206,533. Churn-Dashers. Merit F. Mitchel, Ripon, Wis. Filed Mar. 16, 1878.



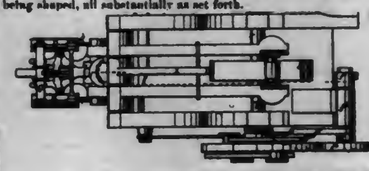
Claim.—1. The combination of the dasher or beater A with the dasher or beater A', provided with downwardly-projecting flanges b^1 b^1, arranged upon concentric shafts driven by suitable mechanism, substantially as and for the purpose set forth.

2. The combination of the dasher or beater A', having the downwardly-projecting flanges b^1 b^1, with the dasher or beater A, provided with the upwardly-projecting flanges *a a*, arranged upon concentric shafts operated by suitable mechanism, substantially as and for the purpose set forth.

3. The combination of the dasher or beater A, having the upwardly-projecting flanges *a a*, with the dasher or beater A', provided with downwardly-projecting flanges b^1 b^1 and openings or apertures b^1 b^1, arranged upon concentric shafts operated by suitable mechanism, substantially as and for the purpose set forth.

206,534. Machines and Processes for Shaping Counter-Stiffeners for Boots and Shoes. J. B. Koffel, Chelsea, Mass. Filed May 15, 1877.

Claim.—1. The improved process of shaping counters above described, consisting in pressing and stretching the blank into form while in a female mold by friction and pressure applied inside the blank successively at different parts of its surface, the entire blank being retained in the female mold while being shaped, all substantially as set forth.



2. In combination with the female counter-mold A, mechanism, substantially as shown and described, adapted to press and retain a blank therein, and so travel or move over the inside of the blank as to press and stretch it into form, all substantially as set forth.

3. The combination of the barbed surfaces on the ends of the levers d^1 d^2 with the mold A and mechanism to actuate these barbed surfaces and force their barbs into the counter-blank, all substantially as described.

206,535. Apparatus for Saving Float-Gold. J. J. Muller, San Francisco, Cal. Filed Aug. 9, 1878.

Brief.—Water containing the float-gold, &c., passes under suitable pressure into the tank, and up through and over the blankets, which retain the gold to be subsequently removed and amalgamated.



Claim.—1. The tank A, combined with its blanket-frame H, having the continuous blanket I passing back and forward within the frame, substantially as herein described.

2. The tank A, with its contained blanket-surfaces, as shown, and discharge-sluice S, in combination with the telescopic supply-pipes C E and elevated sluice T, said supply-pipes being capable of extension to regulate the head, substantially as herein described.

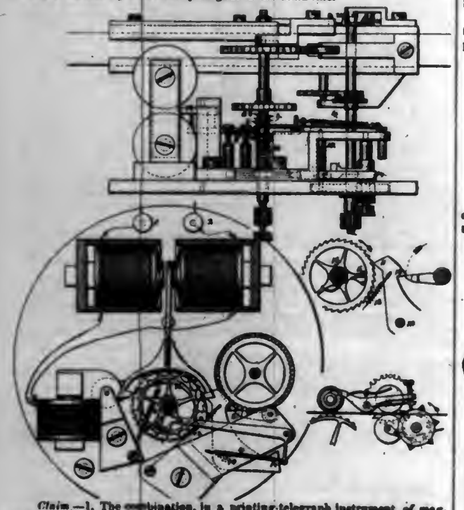
206,536. Photographic-Printing Frames. G. F. E. Pearsall, Brooklyn, assignor to E. and H. T. Anthony & Co., New York, N. Y. Filed Jan. 21, 1878.



Claim.—In combination with a photograph-printing frame, the frames *f* *h*, hinged together, the tissue-paper or similar material in the frame *h*, and the aperture-card *l*, that is placed in position and clamped between the frames *f* *h*, substantially as set forth.

206,537. Printing-Telegraphs. George M. Phelps, Brooklyn, N. Y. Filed May 20, 1878.

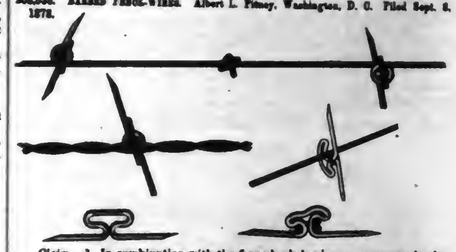
Brief.—Intermittent line-currents release type-wheel. The printing is automatically effected independently of electrical devices when the type-wheel is arrested. The line-currents, during movement of type-wheel, retain the unison-stop, and allow the stop to be released when the currents cease. The whole is effected by a secondary magnet in the main line.



Claim.—1. The combination, in a printing-telegraph instrument, of magnets for setting the type-wheel, automatic mechanism for effecting the printing when the type-wheel is stopped, and an electro-magnet and armature to effect the liberation of the unison-stop when the pulsation of electricity ceases upon the line, substantially as set forth.

2. In a printing-telegraph in which the type-wheel is set or controlled by an electro-magnet in the main line, the unison is automatically brought into action, and the printing is effected mechanically, an electro-magnet, also in the main line, to liberate the unison, substantially as set forth.

206,538. Barbed Fence-Wires. Albert L. Pitney, Washington, D. C. Filed Sept. 6, 1878.

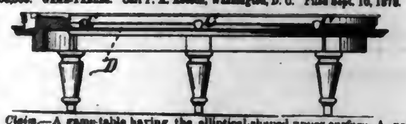


Claim.—1. In combination with the fence-barb having a narrow neck, the wire twisted about said neck and clamped between the points and central portion of the barb, substantially as set forth.

2. In combination with a fence-wire, a barb secured thereon by wrapping or twisting the wire about the neck of the barb, substantially as shown and described.

3. In combination with a barbed wire in which the barbs are secured thereon by twisting the main wire about the narrow neck of the barb and clamping the wire, as described, a secondary or auxiliary wire wound about the first, substantially as shown and described.

206,539. Game-Tables. Carl F. A. Rocsch, Washington, D. C. Filed Sept. 10, 1878.



Claim.—A game-table having the elliptical-shaped upper surface, A, provided with the pockets C of the grooved flanged gutter D, extending entirely around said upper surface on the outside, and adapted to receive the balls passing directly through said pockets, substantially as specified.

206,540. Fertilizers. Charles Richardson, Cheltenham Township, Montgomery County, Pa., assignor to Walton, Wharn & Co., Wilmington, Del. Filed Nov. 19, 1877.

Claim.—As a new article of manufacture, the fertilizer herein described, composed of hair or bristles, in the form of fine powder, as set forth.

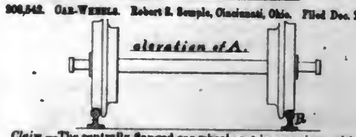
206,541. Locks for Satchels. William Roemer, Newark, N. J., assignor to Roemer Brothers, same place. Filed Mar. 26, 1878.



Claim.—1. In a lock-case, the combination of the body A, having open ends, with the end pieces, B B, that are applied thereto, substantially as herein shown and described.

2. The end pieces, B B, of a lock-case, made with shoulders *d*, for defining their position relative to the body A, substantially as and for the purpose specified.

206,542. Car-Wheels. Robert S. Semple, Cincinnati, Ohio. Filed Dec. 29, 1876.



Claim.—The centrally flanged car-wheel cast in one piece, with two treads, one upon each side thereof, which treads are of different diameters, substantially as and for the purpose described.

206,543. Toys. Edward M. Shirley, Washington, D. C. Filed Sept. 7, 1878.

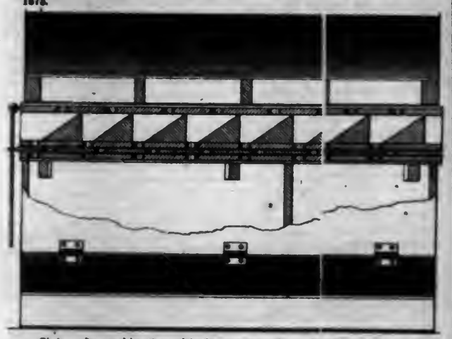


Claim.—1. The combination, with the body C, pivoted to the legs B, of the levers 1 and 3, rods or bars 5 and 6, and rider F, substantially as shown and described.

2. The combination, with the body C, pivoted to the legs B, of the rod 7, levers 1, 2, and 4, and legs D, substantially as and for the purpose set forth.

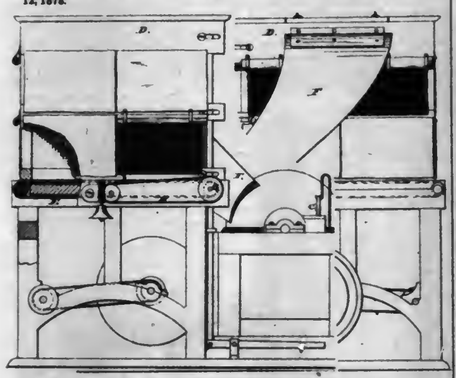
3. The combination, with the body C, pivoted to the legs B, of the levers 1, 2, and 4, rods 7 and 8, and pivoted head E, substantially as and for the purpose set forth.

206,544. Devices for Feeding Stock. Orson J. Smith, Farmer City, Ill. Filed May 16, 1878.



Claim.—In combination with the granary, the series of seed-boxes having sloping bottoms and holes, through which the grain may pass downward to the feed-trough, the arrangement of the series of boxes being such, substantially as described, that the hole in the bottom of each box shall lie in a vertical plane intermediate between the holes in the bottom of the granary, and the sloping bottom of each box shall lie directly under a hole in the bottom of the granary.

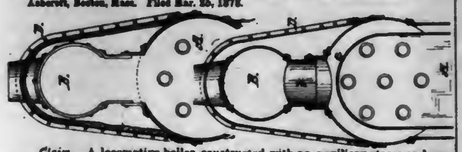
206,545. Feeders for Hat-Forming Machines. Peter Starr, Danbury, Conn. Filed Jan. 12, 1878.



Claim.—1. Gate C, in connection with conductor F, substantially as shown and described.

2. The adjustable chamber D, provided with open-work sides, substantially as shown and described, and for the purposes set forth.

206,546. Locomotive-Boilers. Daniel Sullivan, Bangor, Me., assignor to Edward H. Ashcroft, Boston, Mass. Filed Mar. 25, 1878.



Claim.—A locomotive-boiler constructed with an auxiliary steam and-water dome, H, communicating with the main portion of the boiler A by a series of extended necks, *b b*, and provided with a hood or casing, D, inclosing said auxiliary dome, and forming a surrounding space within which the products of combustion are made to circulate on their way to the uptake, substantially as described.

206,547. Pipe-Couplings or Leak-Stoppers. A. J. Sweetland, Boston, Mass. Filed Sept. 12, 1878.



Claim.—The combination of the tubular segment or cap C with the two clamps B B and the saddle or tubular segment A and its curved or double-inclined flanges *b b'*, arranged on its flanks, all being substantially and to operate as and for the purpose or purposes as set forth.

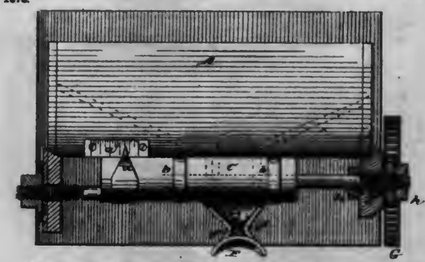
206,548. Producing Leather from Sheep's Stomachs. Edward Tivet, Philadelphia, Pa. Filed Aug. 10, 1878.

Brief.—The stomach of the sheep is treated as the intestines have hitherto been in the manufacture of catgut, with the exception that the peritoneal membrane is only partially removed, whereby sufficient gelatine is present in the integument to permit of its being acted upon by the tawing or tanning process.

Claim.—1. The treatment of the stomach of sheep in a fresh state to produce leather, the same consisting in removing the coarsest or least adhesive layers of the external covering or serous substance and the inner mucous surface, thus leaving the muscular tunic or middle membrane covered on its outside with the remaining serous membrane, the two membranes forming an integument, which is afterward tawed or tanned, substantially as described.

2. As a new article of manufacture, the herein-described leather produced in pouch form from the stomach of sheep, substantially as and for the purpose set forth.

206,549. Grain-Drill Attachments. Byron Town, Fond du Lac, Wis. Filed Sept. 5, 1878.



Claim.—1. The combination, with a feed-case and feed-wheel, of a laterally-adjustable slotted semicircular plate, forming the bottom of the feed-case, substantially as and for the purpose herein shown and described.

2. The combination, with the feed-case and feed-wheel, of the laterally-adjustable slotted semicircular plate or bottom C *c*, the pointer *a*, and registering-plate *a'*, substantially as and for the purpose herein shown and described.

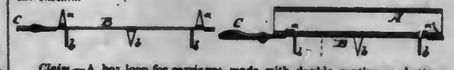
3. The scatterer F, having a narrow neck or point, *f*, convex portion f^3, and side channels, f^1 f^2, as herein shown and described.

4. The combination, with the feed-wheel and shaft, provided with a screw-thread, of the gear G, formed with a hub, *g*, and the screw-nut *h* and stationary nut *h'*, arranged as herein shown and described, whereby said feed-shaft can be thrown in and out of gear, substantially as specified.

5. The combination, with the feed-case, of a conical feed-wheel and a laterally-adjustable bottom, provided with a nearly V-shaped discharge-opening, substantially as and for the purpose herein shown and described.

206,550. Box-Loops. John Watters, New York, N. Y. Filed Aug. 20, 1878.

Brief.—A metallic base-plate has upwardly-projecting prongs for securing it to a leather billet-loop, and downwardly-projecting prongs for fastening it to the curtain.



Claim.—A box-loop for carriages, made with double continuous bottoms above the curtain, to which the loop is applied, the upper bottom being part of the body A, while the lower bottom, B, which carries the buckle C, has prongs *a*, projecting upwardly through the upper bottom, and prongs *b*, that project downwardly, and are adapted to secure the entire loop and both its bottoms to the upper side of the curtain, substantially as herein shown and described.

206,551. Stove-Lids. Samuel F. White, Pocksville, Pa. Filed Mar. 16, 1878.



Claim.—1. A stove-cover composed of but two skeleton-frames with openings for mica, and a central tightening device separate from and passing through both the plates, and adapted to be turned therein, for the purpose of drawing these frames toward each other to clamp them together, and to secure the mica between them, substantially as set forth.

2. The combination of the plates A and B, made as described, and the removable bolt E, provided with the lateral projections *f*, acting upon the inclines *g*, as set forth.

206,552. Ventilating Vault-Lights. James M. Wilbur, New York, N. Y. Filed July 16, 1878.

Brief.—A ventilating vault-light formed of upper and lower immovable plates, the illuminating-lights being in the center and the ventilating-apertures at the outside, communication with the latter being made, when desired, by means of a rotary annular gate, centrally placed and moving on a screw-shaped joint.

Claim.—1. The illuminated vault-light cover having an upper and a lower plate with openings that do not register, whereby the cover can at will be converted into a ventilator that will allow air to pass out up through without allowing water to pass down through, substantially as described.

2. In a vault-light frame or cover, the combination of the upper plate having the central lights with the lower plate having the central opening surrounded by an upturned flange, substantially as described.

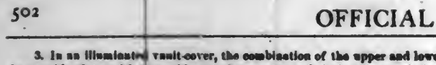
3. In an illuminated vault-cover, the combination of the upper and lower immovable plates with a movable gate for opening and closing the ventilating-passage, substantially as described.

4. In a vault-light frame or cover, the combination of the upper and lower plates and the ring R with the pins *s* and grooves or slots *s'*, substantially as described.

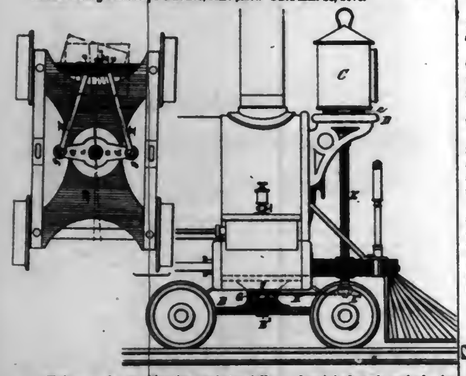
5. In a vault-light frame or cover, the combination of the upper and lower plates, the ring R, and the hook *n* and eye *s*, substantially as described.

6. In a vault-light frame or cover, the combination of the upper and lower plates, the ring, the hooks and eyes, and the lugs *l* and notches *m* in which they engage, substantially as described.

206,562.



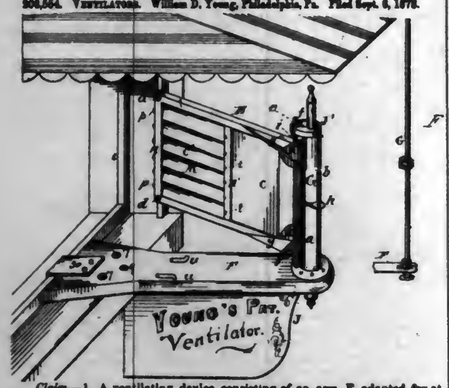
206,563. Head-Lights for Locomotives. Lucius A. Wood, Worcester, Mass., assignor of one-half his right to Joseph Tillotson, same place. Filed Mar. 18, 1878.



Claim.—1. In combination, substantially as hereinbefore described, the head-light or lantern C, the axial spindle-rod E, rigidly connected thereto, and provided with the cross-head E', the pilot-truck B, having cross-arms G, and the connection-rods H, arranged and operating as set forth.

2. In a locomotive head-light apparatus, in combination, substantially as hereinbefore described, the recessed bracket-board D, the lantern C, having bottom boss, *e*, and extension-hub *e'*, the spring *d*, and adjustable clamp piece or nut C', for the purpose set forth.

206,564. Ventilators. William D. Young, Philadelphia, Pa. Filed Sept. 6, 1878.



Claim.—1. A ventilating device consisting of an arm, F, adapted for attachment at the window-sill, the post G, supported centrally by said arm opposite the window, and swinging frame or plate E, supported by the arm and post, substantially as specified.

2. The frame E, provided with journals *f f'*, adapted to bearings in the arm F, and post G, arranged centrally opposite the window, as set forth.

3. The block J', adjustable upon the post G, in combination with the frame E and its journal, as set forth.

4. The frame E, having flanges at *y*, for the purpose set forth.

5. The combination, with the frame E, of the pieces *n n'*, having slots *o t*, and bearings for the journals *s* of the adjustable slats M, as set forth.

206,565. Apparatus for Boring Oil-Wells. B. F. Asper and Robert Magill, Pittsburg, Pa. Filed June 14, 1878.

Brief.—The tubular drill is provided with cutting-points, and is rotated by a splined sleeve, operated upon by suitable machinery. The drill-tube is fed to its work by gravity, and as fast as one section of tube is fed from the splined sleeve another section of tube is added.

Claim.—1. An open-bottom rotary tubular drill-stock having one or more cross-bars at its lower end, armed with diamond cutting-points, the plane of whose cutting-edges is at right angles to the drill's axis, said points being immovably fixed to the stock, substantially as described.

2. The combination, for deep-well boring, of a rotary tubular drill-stock and drill capable of cutting its full area with a rigid tubular drill-rod, consisting of one or more joints of metallic pipe coupled together and to the drill-stock, the same being of uniform bore, and open at the top for the unobstructed introduction of a sand-pump or pump-piston at any time while the drill is operating, substantially as set forth.

3. The combination of a tubular drill-stock, tubular drill-rod, having the driving mechanism wholly exterior and the mouth open and unobstructed, and a sand-pump, operating or capable of operation inside the drill rod and stock while the latter are in motion, substantially as specified.

4. A drilling and test-pumping device for deep wells, consisting of successive sections of rigid pipe of uniform bore, and open at its upper end, attached to a tubular drill-stock, providing a continuous passage-way for and in combination with a pump piston and rod, arranged and operating substantially as described, whereby, when oil is struck, the well may be test-pumped without removing any parts.

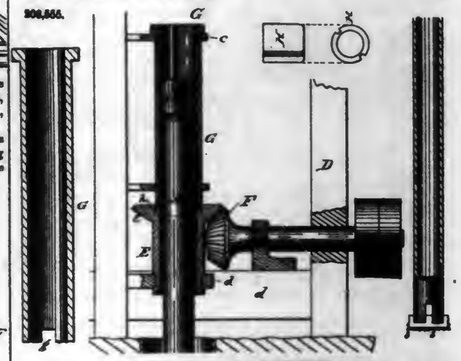
5. In combination with the sand-pump Q and rope *q*, the reel M and wheel L on the same shaft, constituting a combined sand-pump reel and ball-wheel, substantially as shown.

6. The combination of driving-pinion F, driven gear *c*, socketed and having lugs *h*, splined and slotted sleeve G, and grooved collar H, for attachment to the tubular drill-rod, said arrangement of gear *c*, sleeve G, and collar H forming the sole connection between the power and the drill, whereby the mere lifting of the sleeve G from its socket disconnects the power and stops the drill, as specified.

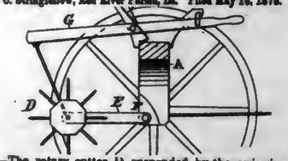
7. The combination of driven gear *c*, having socket and lugs *h*, with a removable splined sleeve, G, having slots to correspond with said lugs, said sleeve G being held to position solely by its own weight, substantially as shown, whereby said sleeve can be readily disconnected for the attachment of a new joint of tubing.

8. The combination of a rotary drill, a tubular connection from it to the surface, and open at its upper end, and of uniform bore throughout, a grooved collar, H, removably attached to the upper end of the tubular connection, and the driven sleeve G, splined to fit collar H, substantially as described, whereby the drill may gravitate to its work while being rotated, and, being of uniform bore throughout and open at top, affords room for the introduction and operation of other tools while so rotating.

206,566.

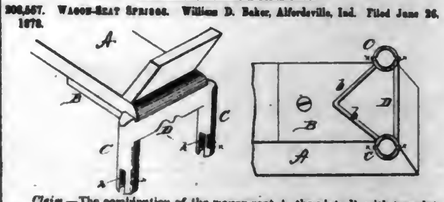


206,566. Stalk-Choppers. James R. Baird, Bayou, La Ghute, assignor of one-half his right to E. C. Springfellow, Red River Parish, La. Filed May 16, 1878.



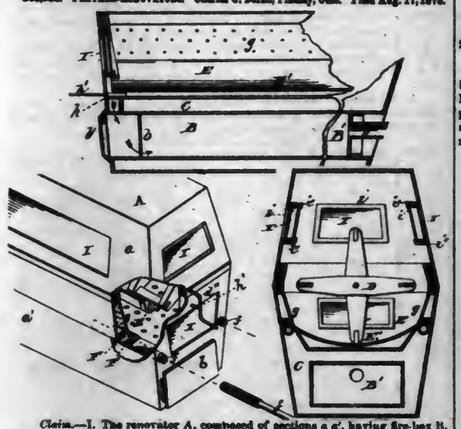
Claim.—The rotary cutter D, suspended by the swinging frame E, provided with the lever G, in combination with the curved axle A, having attached thereto the fixed guard C, the whole constructed and operating substantially as described.

206,567. Wagon-Seat Springs. William D. Baker, Alfordsville, Ind. Filed June 26, 1878.



Claim.—The combination of the wagon-seat A, the plate B, with two slotted tubes or legs, C C, containing springs *h*, connecting-bar D, and plates *i*, with projecting ears *x x* and the strengthening-ribs *b b*, said parts being arranged under each end of the seat, so that one tube is under the front and the other under the rear of the seat, and straddling the side rails of the wagon-body, substantially as and for the purposes herein set forth.

206,568. Feather-Renovators. Charles G. Band, Findlay, Ohio. Filed Aug. 17, 1878.



Claim.—1. The renovator A, composed of sections *a a'*, having fire-box B, with doors *b* and *b'*, rear head, B', boiler C, valves *f*, movable steam-chambers G, and agitator D, the whole constructed and combined in an individual and portable device, substantially as and for the purposes set forth.

2. The separable and detachable agitator D, composed of rectangular sections or frames, each section formed of end pieces, *d*, and beaters *d'*, and the several sections halved together at right angles, substantially as and for the purposes set forth.

3. The renovator A, made in two parts, *a* and *a'*, having double windows I, and provided with agitator D, steam-chambers G, as described, fire-box B, and boiler C, substantially as and for the purposes set forth.

4. In the renovator A, the hinged or removable steam-chambers G, having perforated face *g*, combined with boiler C and valved apertures F, substantially as and for the purposes set forth.

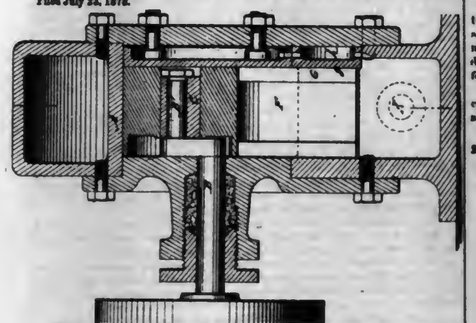
5. In the section *a'*, the combination of fire-box B, having head B' and doors *b b'*, with boilers C, having a top dishing or concave in its general outline, substantially as and for the purposes set forth.

6. In a renovator, substantially as described, the combination of perforated bottom E' of chamber E with the concave top of the boiler B, and with flue or passage-way *h* and damper *h'*, substantially as and for the purposes set forth.

7. In a renovator, A, substantially as described, the rear fire-box head, B', carrying exit-flue *b''*, combined with boiler C, substantially as and for the purposes set forth.

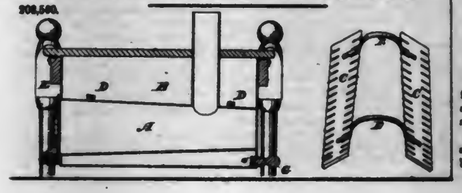
8. The windows I, each composed of double lights set in frame *i*, and combined with brackets *i''* in the wall of the renovator, substantially as and for the purposes set forth.

206,569. Rotary Engines, &c. Walter E. Bertram and Henry C. Powell, London, England. Filed July 23, 1878.



Claim.—The combination of the cylinder A, crank-shaft B, having eccentric C, and the piston D, extending the whole length of the cylinder and having slide-arm F, with port *f* and the joint G, as and for the purpose specified.

206,570.



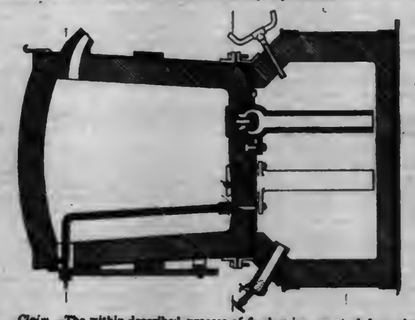
206,571. Food-Cookers. Ivar E. Bendixsen, Cambridge, Wis. Filed June 7, 1878.

Brief.—Plates C are connected by curved arms, which straddle the fire-box and support said plates. The plates are slotted to allow free circulation of water, and at the same time prevent passage of the food.

Claim.—In food-cookers, the body B, fire-box A, pins G, plates C, and bars D, as and for the purpose specified.

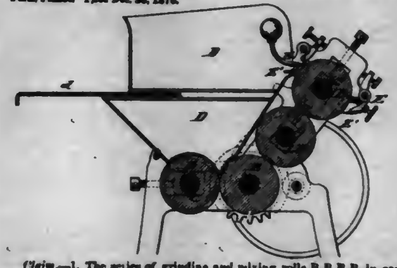
206,572. Freeing Molten Iron from Phosphorus. Hermann Schulze-Berge and Julius Baumert, Osnabrück, Prussia. Filed July 17, 1878.

Brief.—Melts the iron in a closed vessel, into which some hydrocarbons have been introduced, so as to keep up a reducing-atmosphere in the vessel. Fused chloride of calcium is then forced up through the molten iron, forming phosphuret of calcium, which is prevented from oxidizing by the reducing-atmosphere, so that subsequent reduction of the phosphates, &c., by the molten carburized iron and reabsorption thereby is prevented.



Claim.—The within-described process of freeing iron or steel from phosphorus and other impurities by introducing into the iron or steel, while in a fluid state, and while excluded from oxidizing agents, chloride of calcium or other haloid salts of an alkaline earthy nature, substantially as set forth.

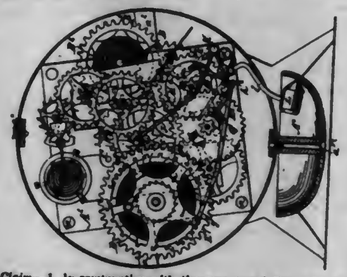
206,573. Machines for Grinding and Mixing Paint Substances. Auguste Boyer, Paris, France. Filed Dec. 22, 1876.



Claim.—1. The series of grinding and mixing rolls B B B B B, in combination with the dividing and clearing knives attached to the upper roll of the series, and the hopper D, provided with the sliding partition *d*, whereby the material under treatment is returned to the action of the series of rolls, or discharged from the same, at the will of the operator, substantially as and for the purpose specified.

2. The combination of the notched or serrated dividing-knife E and the clearing-knife E' with the upper roll B of a grinding and mixing machine substantially as herein set forth, for the purpose specified.

206,574. Clock-Gears. Martin Beck, Hughesville, (Drum's P. O.,) Pa. Filed Aug. 1, 1878.



Claim.—1. In combination with the case A and the upper arm a^2 of the frame, the screw a^*, having its upper part formed into a handle, whereby said screw is made to serve the double purpose of securing the frame to the case and providing for carrying the clock, substantially as herein described.

2. In combination with the case A and the lower arm a^2, the screw a^{*1}, serving the double purpose of securing the frame to the case and securing the ball A^* in position, substantially as herein described.

3. A wheel, C^9, provided with a sleeve or hub carrying a hand or pointer, and adapted to fit over and turn freely on the sleeve of the hour-hand wheel, in combination with an additional dial marked on the clock-face, whereby the indicating of the time for sounding the alarm is facilitated, substantially as herein described.

4. The combination, with the alarm-hand wheel C^8, of the wheel C^9, arbor c^4, and thumb-wheel C^7, arranged as shown, whereby provision is made for moving the alarm-hand from the exterior and rear of the case, substantially as herein described.

5. The combination of the alarm-hand wheel C^8, provided with the tooth or cam c^3, and the hour-hand wheel C^6, provided with the notch or depression c^2, whereby provision is made for the engagement and disengagement of the alarm-movement and the time-movement, substantially as and for the purpose herein described.

6. The spring-lever D^2, having its upper end formed for engagement with the hub of the wheel D^3 and its flange s^5, and its lower end for engagement with the hammer-shank F^2, in combination with the alarm-hand wheel C^8 and alarm-hammer D^1, whereby said hammer is held motionless until the desired time for striking, and is then released and allowed to strike the bell to sound the alarm, substantially as herein described.

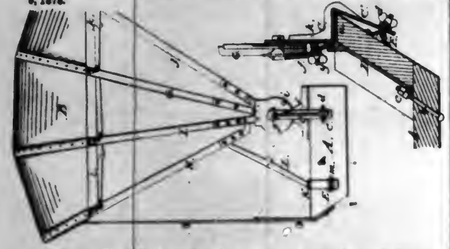
7. A locking-plate made in one piece with the great-wheel of the striking-train by forming the notches on the inner edge of the rim of said wheel, substantially as herein described.

8. In combination with a locking-plate formed on the rim of the striking-wheel, a stop-lever adapted to engage with the sides of said notches, substantially as herein described.

9. The combination of the center-wheel arbor c^2 and its pin F, the arm J and its hook or cam j, the shaft K and its arm J^3, the shaft h and its hooked arm H, the stop-lever G and its bent and flattened front end, g, the disk-wheel I, and the striking-wheel E, provided with the notches e, arranged with relation to and operating in connection with each other, as shown, for operating the striking-train, substantially as herein described.

10. The combination of the center-wheel arbor c^2 and its pin F, the arm J and its hook or cam j, the shaft K, carrying the arms J^3 and K^2, the shaft h, carrying the hooked arm H, stop-lever G, and arm h^3, the striking-wheel E, provided with notches e, the disk-wheel I, and the wheel M, provided with the stops m^1 m^2, arranged with relation to and operating in connection with each other, as shown, for starting and then arresting the striking-train and holding it in readiness for striking at the proper time, substantially as herein described.

208,564. ADJUSTABLE VEHICLE-TOPS. Alexander Bowen, Dubuque, Iowa. Filed May 6, 1878.



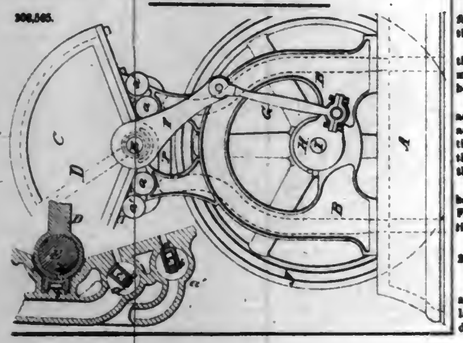
Claim.—1. The top or awning B, consisting of the frames G H I J, attached to the circular plate F, having segment e, and pivoted to standard C, attached to the flanged plate D, in combination with the seat A, the several parts being constructed, arranged, and combined to operate substantially as and for the purpose specified.

2. The flanged circular plate D, having arm or standard C, downwardly-projecting arm C', provided with thumb-screw d and swivel-plate E, hinged segment f, spring A, and thumb-screw g, in combination with the circular plate F, carrying the frames or bows, and provided with segment e and stop-pin i, substantially as and for the purpose specified.

3. The frames or bows H, I, J, and G, attached to the circular plate F, and provided with joint-braces k, l, and L, the latter being pivoted at the lower end to clamp K, having thumb-screw m and swivel-plate E, in combination with the seat A, substantially as and for the purpose specified.

4. The clamp K, provided with thumb-screw m and swivel-plate E, and having joint-brace L, in combination with the frame H of the top B, substantially as and for the purpose specified.

208,565.



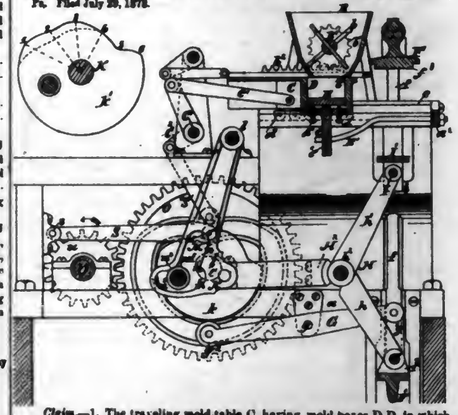
208,566. ROTARY ENGINE. Joseph Batcher, New York, N. Y. Filed Oct. 3, 1877.

Claim.—1. The combination of the sectoral chamber C, mounted on the base A and frame B, the oscillating or vibrating piston D, arranged to travel through less than one-half of a revolution or circle, the swinging crank F, connecting-rod G, and short crank H, when all are arranged in such relative proportions that the crank H makes a complete revolution while the crank F vibrates through less than one-half of a revolution, as set forth.

2. The combination of the sectoral chamber C and its vibrating piston D with the asbestos valve chambers a a, arranged on opposite sides of the shaft E, and at the lowest available point, substantially as and for the purposes set forth.

3. The sectoral chamber C, containing less than a semicircle, and so mounted upon the frame B that its apex may be lowest and the two heads of the chamber may incline at equal angles, as shown.

208,569. MACHINES FOR MAKING AND PRESSING BRICKS. John K. Caldwell, Philadelphia, Pa. Filed July 29, 1878.



Claim.—1. The traveling mold-table C, having mold-boxes D D, in which the bricks are wholly formed and compressed, and arranged to move alternately under the hopper B, to receive a charge of clay in said boxes, and then beneath the plates F, by which such charge of clay is compressed into bricks within said boxes, substantially as set forth.

2. In combination with the traveling mold-table C, the plungers E E, attached thereto and forming the bottoms of the boxes D D, when the latter are beneath the hopper B, whereby said mold-boxes are caused to act as measurers, substantially as set forth.

3. The combination of the traveling mold-table C, provided with boxes D D, in which the bricks are wholly formed and compressed, and hopper B, said table being arranged and operating to form a bottom to said hopper when the mold-boxes are moved from beneath the latter.

4. The combination, with hopper B and sliding mold-table C, provided with boxes D D, in which the bricks are wholly formed and compressed, having racks b^2 thereon, of stirrer or spider B', having pinions, substantially as shown and described.

5. In combination with the horizontally-moving table C, holding the plungers E E and the vertically-moving platen F, the reciprocating wiper, arranged to move horizontally between said table and platen, substantially as shown and described.

6. In combination with the vertically-opening toggles H H and table or cross-bar I', the plungers E E, whose stems e rest upon said table when the mold-boxes, wherein said plungers are located, are beneath the platen F, substantially as shown and described.

7. The combination of horizontally-traveling mold-table C and plungers E E with the vertically-moving platen F and upwardly opening or distending toggles H H, substantially as shown and described.

8. In combination with the toggles H H and pitmen L^1, the swinging arms, having slots M, formed as described, to permit the toggles to collapse by resiliency, so as to permit the plungers to retract slightly within the mold-boxes just after compression has been exerted by said plungers and before the bricks are lifted out of the mold, substantially as set forth.

9. In combination with the cross-bar F', the lever G, arm g', and cam k, for elevating the toggles and platen after the toggles have been distended and the clay in the mold-boxes compressed, substantially as set forth.

10. In combination with the horizontally-reciprocating mold-table, having the plungers E E, the inclined bars or ways, for causing said plungers to be moved down in the boxes D when the mold-table C is traveling to its position beneath the hopper, as set forth.

11. In combination with the platen F, having plungers f' f^3, plungers E, and intermediate mechanism, the cam k, constructed substantially as described, and operating to produce, first, the descent of the platen; second, the continued descent of the platen and simultaneous ascent of the plungers; third, the dwell of the platen and synchronous ascent of the plungers; and, fourth, the contemporaneous ascent of said platen and plungers, as set forth.

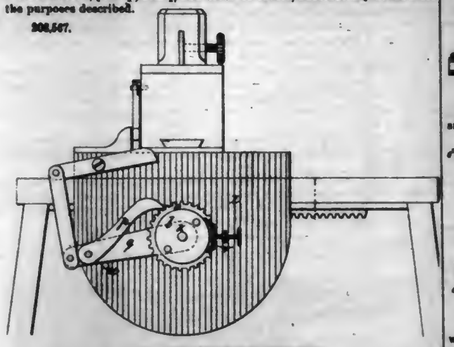
12. In combination with the traveling mold-table C, provided with mold-boxes D D, in which the bricks are wholly formed and compressed, the platen F, having plungers or shoes f^3, and the plungers E, whereby bricks are positively pressed on both sides, substantially as described and shown.

208,567. ATTACHMENTS TO LATHES FOR CUTTING RUBBER AND OTHER RINGS. John B. Candy, Trenton, N. J. Filed Sept. 11, 1878.

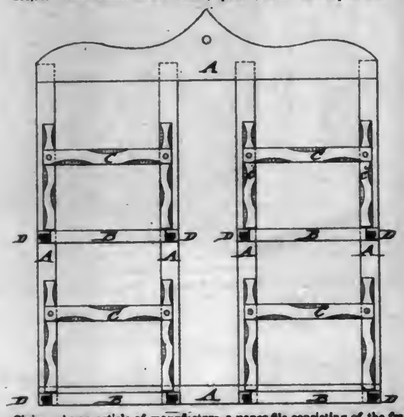
Claim.—1. In a lathe for cutting rubber or other rings, mechanism operated simultaneously with the movement of the tool-holder, to impart a regular and uniform motion to the slide longitudinally of the bed, substantially as described.

2. In combination with a lathe for cutting rubber or other rings, the ratchet-wheel o, pawl p, arm q, and lever or levers, substantially as and for the purposes described.

208,567.

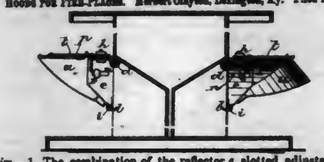


208,568. PAPER-FILES. Addison Childs, Ypsilanti, Mich. Filed May 27, 1878.



Claim.—As an article of manufacture, a paper-file consisting of the frame A, having cross-strips B, and the frames C, having presser-bars C', the hinge-springs D connecting the rear of frames C with the cross-strips B, as and for the purpose specified.

208,569. HOUSE FOR FIRE-PLACES. Herbert Clayton, Lexington, Ky. Filed Mar. 20, 1878.



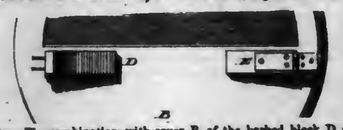
Claim.—1. The combination of the reflector c, slotted adjustable hook d, and a clamping device, whereby the reflector is held in place, substantially as shown.

2. The reflector c, provided with the slotted adjustable hook d and a suitable clamping-screw, h, for securing it at its center, in combination with the loops i and hooks l, substantially as set forth.

3. The combination of the central piece, p, permanently fastened to the part c at its center, and provided with the hooks or buttons r, with the reflector c, having the slots n and hood o, having the hooks v to catch in the slots in the lower ends of the piece, and a catch to move back and forth in the slot t, substantially as specified.

4. The combination of the central piece, p, having a slot, t, across its center and a slot in each end, with the hood n and hooks v, substantially as shown.

208,570. BARREL-COVERS. Eli B. Comly and Wm. C. Brown, Logan, Ohio. Filed Aug. 1, 1878.



Claim.—The combination, with cover B, of the barbed block D and the end serrated knee-joint on block E, as and for the purpose specified.

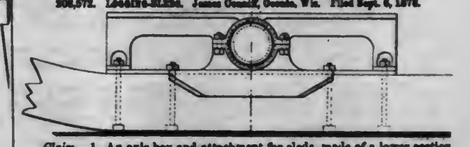
208,571. PITMAN-JOINTS. John Conley, St. Joseph, assignor to himself, Abel W. Wells, and Henry C. Ward, same place, and said Wells and Ward assignees to L. V. Moulton, Grand Rapids, Mich. Filed May 6, 1877.



Claim.—1. In combination with the block E, the channel c^2 and screw c^3, substantially as and for the purpose specified.

2. In combination with the pitman A and journal c, the block E, channel c^2, and screw c^3, substantially as and for the purpose specified.

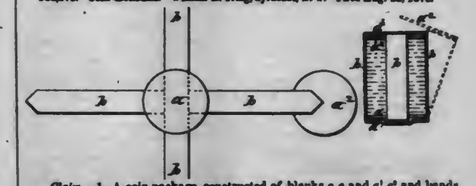
208,572. LOGGING-SLEDS. James Cunliff, Oconto, Wis. Filed Sept. 6, 1878.



Claim.—1. An axle-box and attachment for sleds, made of a lower section with side flanges binding on runner, and of an upper section with top flange, both sections being bolted to runner at the ends and to each other at the box parts, substantially as described.

2. An axle-box for sleds, having an annular rib or thread that projects into a corresponding groove of the axle, substantially as and for the purpose described.

208,573. COIN-HOLDERS. William H. Craig, Syracuse, N. Y. Filed Aug. 12, 1878.

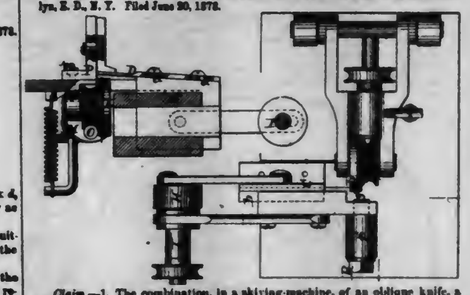


Claim.—1. A coin-package constructed of blanks a a and a^1 a^2 and bands b b, the latter secured at the middle of their length transverse to each other and to the blanks a a, and engaging at their extremities the blanks a^1 and a^2, substantially as described.

2. A coin-package composed of heads or end pieces and longitudinal strips or beads, arranged at intervals around the package, those upon one side thereof being attached at both ends to the respective heads, and the remainder having one end free and adapted to be sealed or attached to the opposite head, substantially as set forth.

3. The combination of the blanks a a, having extended therefrom bands b b b b, a portion of said bands attached at their end to blank a^1, and the remainder of said bands attached at the end to the sealing-blank a^2, substantially as described and shown, for the purpose set forth.

208,574. SKIVING-MACHINES. Christian Duncel, New York, and Edmund C. Smith, Brooklyn, E. D., N. Y. Filed June 20, 1878.



Claim.—1. The combination, in a skiving-machine, of an oblique knife, a reciprocating knife-stock, a feed-wheel arranged transversely to the plane of the knife, an edge-gage situated adjacent to the feed-wheel, for guiding the material against the knife, and a top gage situated above the feed-wheel, to resist the upward pressure thereof on the material as it is fed forward, substantially as described.

2. The combination, in a skiving-machine, of a feed-wheel having a single row of teeth, to permit of turning the material as it is fed forward, with an oblique knife, a reciprocating knife-stock, an edge-gage, and a top-gage, all adapted to operate substantially as described.

3. The combination, in a skiving-machine, of an oblique knife, a reciprocating knife-stock, and a knife-stock support which is pivoted transversely to the knife, to permit of changing the angle of the latter, substantially as described.

4. The combination, in a skiving-machine, of an oblique knife, a reciprocating knife-stock, an edge-gage for guiding the material against the knife, and a knife-stock support which is pivoted in a plane corresponding to the face of the edge-gage relatively to the direction in which the material is fed, so that the plane of the knife remains unchanged at the point of the edge-gage when the knife is set to different angles, substantially as described.

5. The combination, in a skiving-machine, of a feed-wheel, a hinged yoke for supporting the feed-wheel, a spring arranged to force said yoke upward, and an adjustable stop for regulating the upper position of the yoke, substantially as described.

208,575. LIFE-BOATS. Charles Dickerson, Portland, Oreg. Filed Mar. 12, 1878.



Claim.—1. In combination with an open row-boat, the detachable cover or false deck having the raised hoods *a* and longitudinal connecting-pieces *b c*, substantially as shown and described.

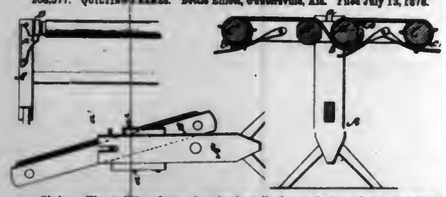
2. In combination with the boat A, the false deck having end portions *a a* and the inclined sides *b b*, the bottom *c* joining the lower edges, and the thwarts *e* connecting the upper edges of the same, all constructed and arranged as shown and described, for the purpose specified.

208,576. CULTIVATORS. William H. Dickey, Jackson, Mich. Filed Aug. 2, 1878.



Claim.—The reversible block B, having the longitudinal recess D, and attached to the standard at two or more points in the same vertical line, and the double-pointed blade C, secured to the block by two or more bolts in the same vertical line, in combination with the standard A, having the recess *a* to receive the block B, and supporting the upper point of the blade, arranged and operating as specified.

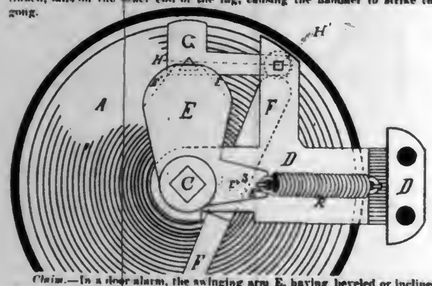
208,577. QUILTING-FRAMES. Bettie Elliott, Centerville, Ala. Filed July 13, 1878.



Claim.—The quilting-frame herein described, consisting of the standards A A', having slots *a a'*, the removable tilting frame B B', the feed-roll E, the rolls C C', one on each side of said feed-roll, and provided with radial pegs *s s'*, the straps, and the pivoted holders *a'*, all combined, arranged, and operating as and for the purpose set forth.

208,578. DOOR-ALARMS. Charles J. Elliott, Pottsville, Pa. Filed Sept. 10, 1878.

Brief.—Upon the spindle is placed an arm on which are two projecting lugs with faces inclined to each other, one of which, as the knob is turned, lifts the hammer by means of a projecting pin, which, as the revolution is continued, falls off the other end of the lug, causing the hammer to strike the gong.



Claim.—In a door alarm, the swinging arm E, having beveled or inclined edged lugs E' E', the hammer G, pivoted to the stand D by the rivet H', and having the flat spring H secured at one end to the rivet H', the other end resting in the slot G', the lever F, with elastic washer S, and the spiral spring B, secured to the arm F', and the stand D, arranged on a door-lock, in connection with the gong A, the knob B, and knob-spindle C, substantially as and for the purpose hereinbefore described and set forth.

208,579. WATER-FILTERS. Henry J. Ennis, Washington, D. C. Filed Sept. 25, 1878.

Claim.—1. In combination with a filter, a tank or hot-water reservoir adapted to be filled or furnished with hot water by having the same poured into it and connected to the filter by a pipe, so that the hot water will force its way by its own gravity from the upper end of the filter through the filtering material, and escape through the escape-pipe to the sink for cleansing the filter, as set forth.

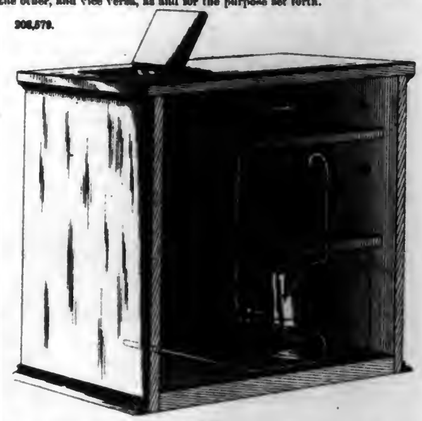
2. In combination with a filter having a hot-water reservoir connected therewith by a pipe, which will usually permit the hot water to flow by its own gravity through the filtering material, a force-pump located in the hot-water reservoir, and connected with the hot-water pipe in such a manner that it may be used to receive the hot water and force it through the filter, substantially as and for the purpose set forth.

3. In a filter, the combination of the inlet and outlet pipes, placed directly opposite, with a valve held against its seat in the inlet-pipe by a spring secured to its stem, and placed in the end of the outlet-pipe, so that automatically opening the inlet pipe will close the outlet-pipe, as and for the purpose set forth.

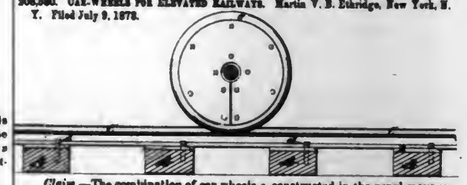
4. A filter inclosed within a cabinet having a filtered-water reservoir and a hot-water reservoir, and connected to both with suitable pipes, substantially as set forth.

5. In a cabinet-filter having a filtered-water reservoir and a hot-water reservoir, the combination of the cold-water-inlet pipe and the hot-water-inlet pipe with the double cock, which, when turned, will open the one and close the other, and vice versa, as and for the purpose set forth.

208,579.

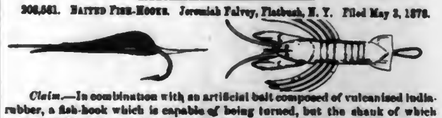


208,580. CAR-WHEELS FOR ELEVATED RAILWAYS. Martin V. B. Ethridge, New York, N. Y. Filed July 9, 1878.



Claim.—The combination of car-wheels *e*, constructed in the usual manner, with plates of lead or its equivalent applied to their sides in the manner herein described, and for the purpose set forth.

208,581. BAITED FISH-HOOKS. Jeremiah Falvey, Flatbush, N. Y. Filed May 3, 1878.



Claim.—In combination with an artificial bait composed of vulcanized india-rubber, a fish-hook which is capable of being turned, but the shank of which is irremovably embedded in the body of the bait and terminates therein, and a suitable loop embedded therein, substantially as described.

208,582. CUTTERS FOR PIPE CUTTERS OR WRENCHES. Charles Foster, New York, N. Y. Filed Apr. 19, 1878.

Brief.—The cutters are furnished in different sizes for different sizes of pipes. A given size of cutter is adapted to operate on a pipe whose radius is less than that of the arc on which the segmental cutter is formed.



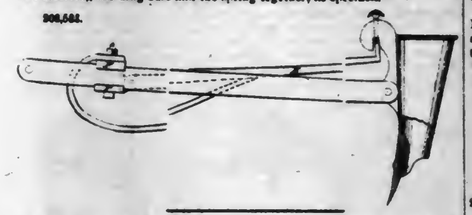
Claim.—A cutter for a pipe cutter or wrench adapted to be secured in the movable or stationary jaw thereof, and constructed with a segmental guide to embrace the pipe or bar, and with an inclined slot forming a chisel or true cutting-point, whereby the pipe is divided by removing the metal, substantially as specified.

208,583. DRILL-TOOTH ATTACHMENTS. Silas Frank, Hagerstown, Md., assignor to William M. McDowell and Charles E. Boechtel, one-third to each. Filed July 27, 1878.

Claim.—1. The combination, substantially as shown and described, of the pivoted boot or cultivating-tooth, having a head provided with the angular notch or recess and the set-screw, as described, and the spring-supported bar E, attached to the drag-bars, and its free end projecting upward, to adapt it for engagement with said recessed head, so as to hold the boot or tooth rigid while in its normal working position, and to suddenly disengage from the same when sufficient resistance is offered to the advance of the tooth, as specified.

2. The combination, with the drag-bars and the spring locking-bar E, of the upper and lower clamps, F F', having grooves to receive the edges of the drag-bars, and the screw-bolt A, all as shown and described, for the purpose of receiving the drag-bars and the spring together, as specified.

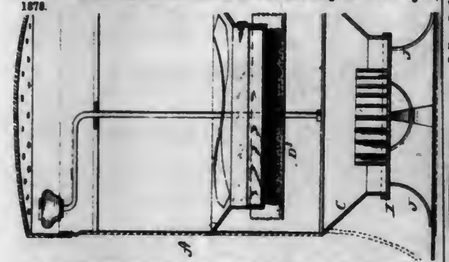
208,583.



208,584. PROCESSES OF ORNAMENTING GLASS, &c. Charles Fontayne, New York, N. Y. Filed Sept. 6, 1878.

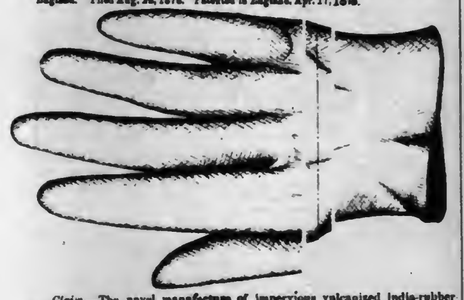
Claim.—The process of ornamenting glass or similar articles by transferring thereon printed pictures or designs by the use of collodion as a transfer-sheet, substantially as set forth.

208,585. FLOUR AND MEAL SIFTERS. Frederic G. Ford, Roxborough, Pa. Filed Aug. 17, 1878.



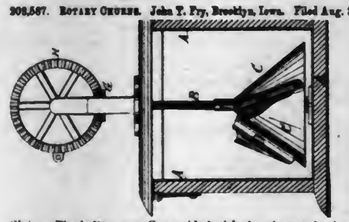
Claim.—A flour or meal sifter consisting of a cylinder, A, having contracted or tapering lower end C, sifting mechanism within the cylinder, and a removable bottom, I, with legs J, substantially as and for the purposes herein set forth.

208,586. MANUFACTURE OF GLOVES FOR SURGICAL OPERATIONS. Thos. Forster, Streatham, England. Filed Aug. 26, 1878. Patented in England, Apr. 17, 1878.



Claim.—The novel manufacture of impervious vulcanized india-rubber film gloves, substantially as described.

208,587. ROTARY ORGANS. John T. Fry, Brooklyn, Iowa. Filed Aug. 21, 1878.



Claim.—The bellows cone C, provided with the wings or buckets D, in combination with the dasher-shaft B, the driving mechanism G H, and a churn-body, A, substantially as herein shown and described.

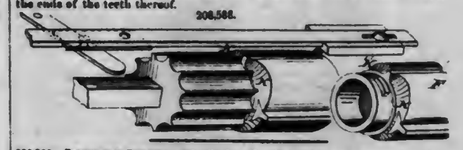
208,588. SEEDING-MACHINES. Jesse P. Fulgham, Richmond, Ind. Filed Feb. 19, 1878.

Claim.—1. In a force-feed for grain-drills, the combination, substantially as specified, of the seed-cup, rotary seed-wheel, the washer thereof, and the separate cut-off sleeve, which is adapted to slide endwise only, but is coupled to the seed-wheel.

2. In a force-feed grain-drill, the combination, substantially as specified, of the sliding but non-rotating sleeves for adjusting the seed-wheels, the bar for simultaneously moving all said sleeves, and adjustable connections between said bar and each of the sleeves.

3. In combination with the wheel C, the sliding but non-rotating sleeve F, constructed of large diameter, so as to form its own cut-off, and having a seed-collecting groove, K, formed between it and the wheel, to deliver seed to the ends of the teeth thereof.

208,588.



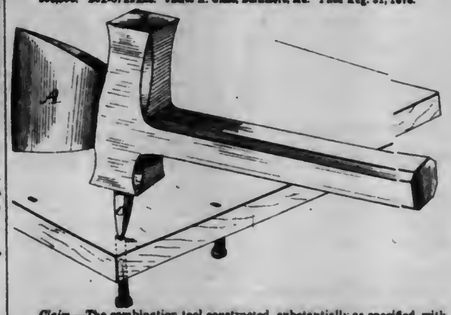
208,589. PERCUSSION-PRIMERS. John Gardner, New Haven, Conn., assignor to Winchester Repeating Arms Company, same place. Filed Sept. 3, 1878.



Claim.—1. An anvil for cartridge-primers, consisting of the sheet-metal blank struck up in a die in such a manner as to produce the anvil B, having the conical apex *a*, the reversed flange or rim *c*, and slots *e*, substantially as shown and described.

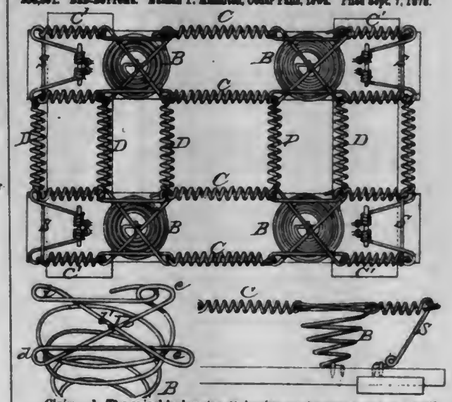
2. A primer consisting of the cup A and the anvil B, the latter being made with the conical body or apex *a*, the reversed flange *c*, and slots *e*, substantially as shown and described.

208,590. BOX-OPENERS. James H. Gass, Baltimore, Md. Filed Aug. 31, 1878.



Claim.—The combination tool constructed, substantially as specified, with a chisel-blade projecting in the line of the handle, a hammer-head, and a square-ended shouldered punch.

208,591. BED-BOTTOMS. Nathan T. Hamilton, Cedar Falls, Iowa. Filed Sept. 7, 1878.



Claim.—1. The spiral bed-spring S, having at its upper end a platform made by bending its upper portion into X shape, and forming eyes *c d s i* at the extremities of the cross-bars *b b'*, the spring and platform being constructed of a single piece of wire, substantially as set forth.

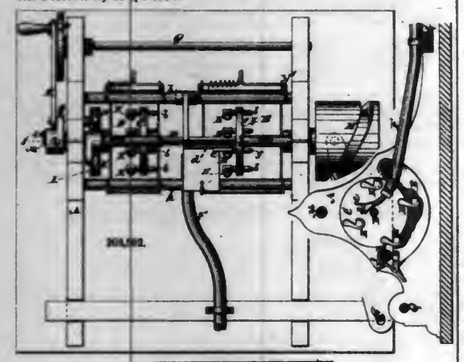
2. In a bed-bottom having the spiral bed-springs B, provided with the X-shaped platform *b b'* and eyes *c d s i* on its upper surface, the longitudinal and transverse connecting-springs D C, engaging the eyes of said springs B with the upper portion of the adjacent springs on the same row, and with those of the springs on the adjacent rows and with the springs S, substantially as specified.

208,592. IRE-FEEDING DEVICES FOR PAPER-RULING MACHINES. William Handy, Brooklyn, N. Y. Filed Apr. 23, 1878.

Claim.—1. In a paper-ruling machine, the combination, with a reservoir or fountain and a duct or tube for conveying the ink from said fountain to the cloth which distributes it to the pen or pens, of a bucket wheel or carrier, driven by or in connection with the machine when in motion, and arranged to operate as an intermediate supplying device of the ink to said duct from the fountain, substantially as and for the purpose or purposes specified.

2. The combination, with either intermittently-rotating bucket-carrier C, having attached pendent buckets E, of the oscillating shaft M, the pawl L, the ratchet-wheel K on the shaft D of the bucket-carriers, the fountain B, the trip *c*, the trough *d*, and the tube F, substantially as and for the purpose specified.

3. The combination, with the intermittently-rotating bucket-carriers C, which supply the ink to the pens, of the vibrating lever O, the rotating crank P, and the connecting-rod R, adjustable in relation with said lever or crank to vary the intermittent movement of the bucket-carriers, the oscillating shaft M, with its attached pawl L, and the ratchet-wheel K on the shaft D of said carriers, essentially as specified.

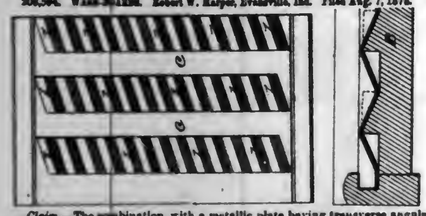


206,592. Cutters' Levers. Thorw Hanson and George E. Waldenbach, Racine, Wis. Filed July 24, 1878.



Claim.—A carver's knife whose jaws A B are held at one end in a transverse handle, C, by screw and nut, and in the longitudinal handle one jaw is held by a screw and nut, while the other is made shorter, beveled at the end to fit in a tapering recess, the said jaws being thus adapted to hold a double-edged blade without set-screws between the handles, as shown and described.

206,594. Ware-Boards. Robert W. Harper, Evansville, Ind. Filed Aug. 7, 1878.



Claim.—The combination, with a metallic plate having transverse angular zigzag corrugations, of a wooden back board having vertical rows of short oblique ribs *b*, separated by vertical spaces *c*, and fitting neatly into the alternate branches of the zigzags and supporting the angles thereof, substantially as specified.

206,595. Artificial Honey-Comb Foundations. John E. Hetherington, Cherry Valley, N. Y. Filed Aug. 29, 1878.

Brief.—The wires are embedded in the comb.



Claim.—1. The combination, with a honey-comb foundation, of wires embedded in and passing through the foundation to increase its strength and durability, substantially as set forth.

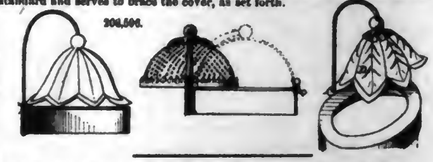
2. The combination, with a honey-comb foundation, of one or more supporting-wires extending across the cake, whereby the sagging of the cake is obviated when in the hive, and the liability to breakage in handling is prevented.

206,596. Tobacco-Pipe Covers. William Heyenga, New York, N. Y. Filed Aug. 22, 1878.

Claim.—1. The combination of the pipe-rim and the cover with the standard, supported to turn in an elongated vertical sleeve or bearing on the rim, and formed with an overhanging end, attached centrally to the top of the cover, as shown and described.

2. The pipe-rim, the vertical sleeve or bearing thereon, and the standard, supported and adapted to turn in said sleeve, in combination with the cover, connected centrally at its top to the overhanging end of the standard, and formed or provided at its lower edge with a strip, which is attached to the standard and serves to brace the cover, as set forth.

206,596.



206,597. Tobacco-Pipes. William Heyenga, New York, N. Y. Filed Aug. 22, 1878.

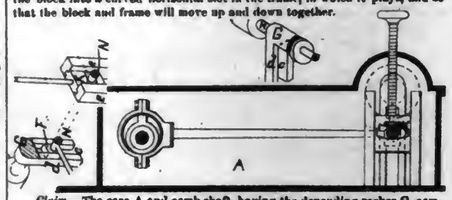


Claim.—1. The combination of the bowl and its perforated neck with the stem formed with a hole or socket to receive the neck, and with a cap to cover the mouth of the bowl, these parts being arranged for joint operation, substantially as set forth.

2. In a pipe in which the bowl part and stem part are combined, as described, a tubular removable perforated neck-piece, forming at once a receptacle or catch-all and the connecting medium between the bowl and the stem, as set forth.

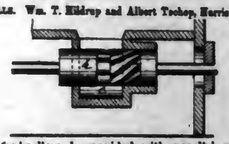
206,598. Dotter-Combs for Carding-Engines. John Ribbert, Camden, N. J., assignor to himself, Joseph Plant, and William H. Berwick. Filed July 23, 1877.

Brief.—The comb is oscillated by means of an arm extended downward from the shaft and a block connected with an eccentric, which block is moved up or down, to vary the extent of throw of the comb, by means of a screw that raises or lowers a frame moving in vertical ways. A pin extends from the block into a curved horizontal slot in the frame, in which it plays, and so that the block and frame will move up and down together.



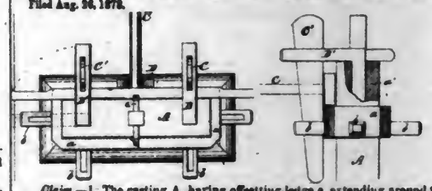
Claim.—The case A and comb-shaft, having the depending rocker G, combined with the ways *e*, vertically-adjustable frame K, block F, and pin N, operated by an eccentric and rod, substantially as specified.

206,599. Seed-Drills. Wm. T. Hildrup and Albert Tschop, Harrisburg, Pa. Filed Aug. 7, 1878.



Claim.—The feed-rollers A, provided with parallel grooves and spiral grooves in relation to each other, substantially as and for the purposes described.

206,600. Apparatus for Forming Valve-Yokes. Joseph A. Hedel, Cumberland, Md. Filed Aug. 26, 1878.

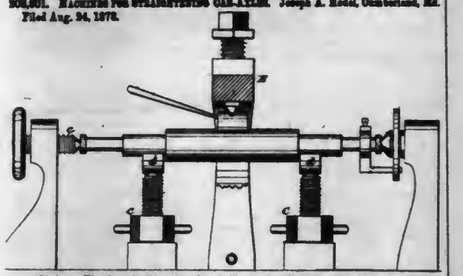


Claim.—1. The casting A, having offsetting-ledge *a*, extending around the same, right-angular and slotted lugs *b*, and sockets *a'*, in combination with one or more removable slotted and right-angular arms, B B', and keys C C', substantially as and for the purpose described.

2. The former herein described, having the fork D, for the purpose of centering the stem upon the yoke, as set forth.

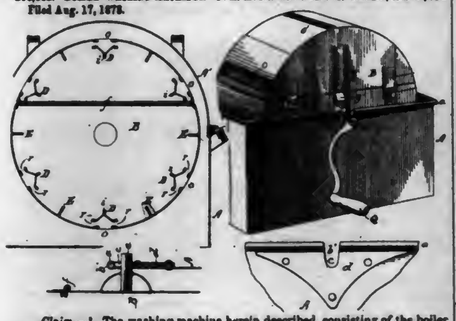
3. The casting A, having a longitudinal hole through the same, in combination with a removable bar, secured by keys, and a suitable support, for the purpose of securing the device in either vertical or horizontal position, as described.

206,601. Machine for Straightening Car-Axles. Joseph A. Hedel, Cumberland, Md. Filed Aug. 24, 1878.



Claim.—The longitudinally-adjustable jacks C C and the longitudinally-adjustable yoke E, carrying coaster-screw, combined with each other and with the frame carrying centering devices, substantially as described.

206,602. Boiler Washing-Machines. P. A. Hosak and James E. Gardner, Holden, Mo. Filed Aug. 17, 1878.



Claim.—1. The washing-machine herein described, consisting of the boiler A, provided with a wire brace around its upper edge, the said brace having a U-shaped depression, *b*, on one side, and ending at the opening *c* on the other side, said opening being surrounded by the re-enforce *d*, and the interior rotary drum B, substantially as described.

2. The cylinder B, provided with V-shaped blades D, and openings *a o* beneath said blades, and the straight blades E, alternating with the V-shaped blades, all constructed and arranged substantially as described.

206,603. Padlocks. Morris Jacobs, Fort Clark, Tex. Filed Aug. 14, 1878.

Brief.—A padlock made in two sections, capable of rotation, so that the bolt and tumbler cannot be operated by the key.



Claim.—1. The combination of the two parts of the padlock, the swivel connecting the same, and the spring, tumbler, and bolt arranged in the upper part, all as shown and described, so that when the upper part of the padlock is turned in one position the tumbler and bolt cannot be operated by the key, as specified.

2. The combination of the spring-catches and their knobs or projections with the parts A B of the padlock, for the purpose of securing them together, as specified.

3. The part B, having the flange, forming a socket, as specified, the part A, adapted to fit therein, and the catches for holding the parts together, combined as shown and described.

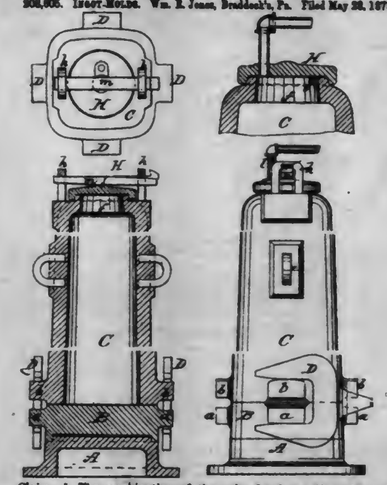
4. The pivot-bolt *c*, the bars *d d*, and parts A B of the padlock, combined as shown and described.

206,604. Cigar-Boxes. Moritz Jonas, New York, N. Y. Filed June 27, 1878.



Claim.—The hexagonal cigar-box A, made in two hinged sections, as shown in Fig. 1 of the drawing, and for the purpose specified.

206,605. Ingot-Molds. Wm. R. Jones, Braddock's, Pa. Filed May 28, 1878.



Claim.—1. The combination of the valve-faced cap H, mold A, having opening in its top, and corresponding valve-seat, balls h, and wedge-bar *w*, said wedge-bar bearing upon the cap at or about its center, substantially as described, and for the purpose specified.

2. The combination, with mold C and balls h, of the removable pouring cap I, having bail guards *i*, as described.

3. The combination of mold C, having lugs *b*, a removable bed having lugs *a*, and the bifurcated clamps D, substantially as described.

206,606. Sash-Cord Fasteners. Samuel J. Joyce, New York, N. Y. Filed June 14, 1878.

Brief.—The cord passes through an oblique channel from the bearing-edge of the sash to a recess in the opposite side, where it is fastened.



Claim.—A sliding window-sash constructed with a channel, *b*, extending from the bearing-edge adjacent to the window-casing inwardly to the opposite side of the sash, terminating in a recess, *d*, in the front edge, in combination with a cord having its knotted end arranged in said recess, said cord passing up over a pulley and provided with a weight, substantially as and for the purpose described.

206,607. Reflectors. Simon P. Kase, Philadelphia, Pa. Filed July 14, 1877.



Claim.—1. As a new article of manufacture, a reflector made of cast-iron or other metal, and enameled or coated with porcelain, substantially as and for the purposes herein set forth.

2. The reflector A B, of cast metal, coated with a porcelain composition having a predominant proportion of ground glass or frit, provided with draft-holes *a* and orifices *x*, and perforated at *a'* to receive the burners, in combination with the pipes C, surrounding the bowl A, and with the series of jets *c*, adapted and arranged to serve as and for the purpose set forth.

206,608. Liner for Chain-Pumps. Stephen W. Kershner, Indianapolis, Ind. Filed July 19, 1878.



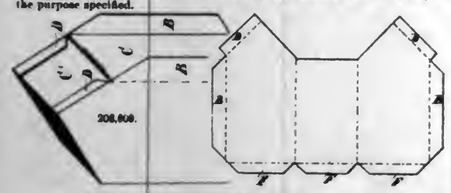
Claim.—A bent-wire link, A, having its ends D D incased in a sheath and soldered fast, substantially as shown and described.

206,609. Metallic Buckets for Chain-Pumps, &c. Stephen W. Kershner, Indianapolis, Ind. Filed July 19, 1878.

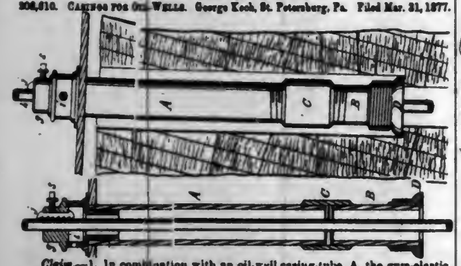
Claim.—1. An elevator-bucket composed of two pieces of sheet metal, one piece forming the front and two sides, with projecting flanges B B at the back,

for fastening the bucket to a belt or chain, and the other piece forming the back and bottom, substantially as set forth and described.

2. In an elevator-bucket composed of two pieces of sheet metal, one piece of which is cut to a pattern, as shown in Fig. 2, forming the front, the two sides, the flanges F at the bottom and D at the top, and the projecting flanges B B at the back, combined with the blank C C' C', cut to a pattern, as shown in Fig. 3, when each is bent and united together, substantially as shown, for the purpose specified.



208,610. Casings for Oil-Wells. George Koch, St. Petersburg, Pa. Filed Mar. 31, 1877.

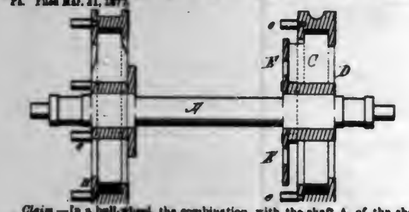


Claim.—1. In combination with an oil-well casing-tube, A, the gum-elastic packing D, so constructed and applied to the bottom thereof that said gum packing shall not only reach for a distance up and around the tube, but shall extend for a short distance below it, so as to seat itself upon the rock somewhat in advance of the descending tube, and thereby make a perfectly water-tight joint, substantially as and for the purposes set forth.

2. The combination, with an oil-well casing and its lower detachable section, B, having an elastic bearing, D, extending beyond its lower edge, of the right and left threaded union C, connecting the casing and its lower section, substantially as specified.

3. The detachable shouldered casing-cap *g*, in combination with the binding-rib *f* and pinch-screw *e*, substantially as specified.

208,611. Wheelbarrow for Oil-Wells. William Koch and George Koch, St. Petersburg, Pa. Filed Mar. 31, 1877.



Claim.—In a ball-wheel, the combination, with the shaft A, of the shouldered inner extended spokes, C, the grooved wheel D, having the pins *s* of the guide-flange E secured to the projecting edges of said spokes and on a line with the pins, whereby the rope on the shaft is prevented from coming in contact with the said pins, substantially as specified.

208,612. Counter-Supports for Boots and Shoes. William H. Koopman, Terre Haute, Ind. Filed Aug. 23, 1878.



Claim.—1. A counter-support for boots and shoes, consisting of a metal shank, A, and a head, B, of vulcanized rubber, for the purposes set forth.

2. The combination of the counter-support A B, having swell C, shoulder *h*, and tang or spur *d*, and the brad D, formed with the spear-point *k* and screw-head *i*, substantially as and for the purposes herein set forth.

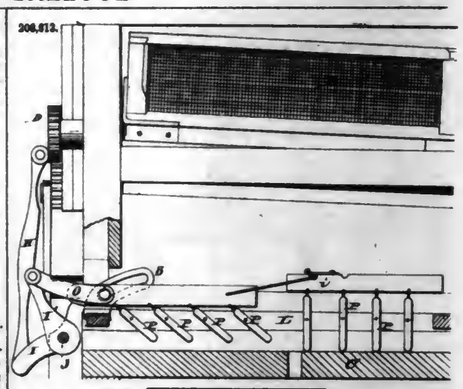
208,613. Floor and Grain Conveyers. Frederick Kraus, Centerburg, Ill. Filed Mar. 12, 1878.

Brief.—Shown in connection with a bolting-machine.

Claim.—1. A grain or flour conveyer consisting of one or more series of paddles pivoted in a sliding frame and arranged to have the four motions, substantially as herein set forth.

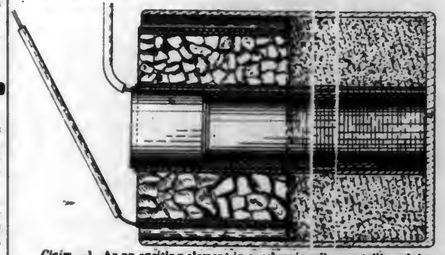
2. The combination of the sliding frame L, one or more series of connected paddles, I', pivoted therein, the rocking shaft J, with arm I', the rod O, with pin *n*, and slotted plate S, all substantially as and for the purposes herein set forth.

208,612.



208,614. Galvanic Batteries. Geo. Leader, Pittsburg, Pa. Filed Dec. 14, 1877.

Brief.—Within the annular space between two similar or dissimilar plates is placed a metallic sulphuret, which is a positive element common to the two negative annular plates.



Claim.—1. As an exciting element in a galvanic cell, a metallic sulphuret oxidizable by air and moisture, substantially as specified.

2. In a galvanic cell whose exciting element is a metallic sulphuret, a perforated plate, substantially as and for the purpose specified.

3. A galvanic cell composed of two or more plates of either similar or dissimilar metals and a metallic sulphuret or similar oxidizable exciting element, substantially as and for the purpose specified.

4. The combination, in a galvanic cell, of two or more plates of metal, an oxidizable exciting element, and a cover or coverings of fibrous material interposed between the plates and the exciting element, substantially as and for the purpose specified.

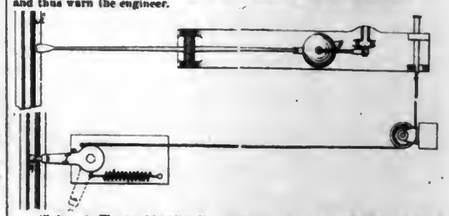
208,615. Manufacture of Sulphate of Alumina. Francis Leaz, Paris, France. Filed Aug. 10, 1878.

Brief.—The improvement consists in the method of removing the oxide of iron—an accompanying constituent of the native minerals from which the commercial salts of alumina are made.

Claim.—As an improvement in the process of manufacturing sulphates of alumina, rendering the acid solution neutral, and then introducing pieces of zinc to precipitate the iron in the said solution prior to concentration, substantially as described.

208,616. Torpedo-Signals for Railways. Paul R. Le Boulenge, Liege, Belgium. Filed Sept. 4, 1878.

Brief.—The apparatus operates as a time-signal to place a torpedo on the track in front of a train and remove it after a given interval. If the train moves too fast it will explode the torpedo before the machine can remove it, and thus warn the engineer.

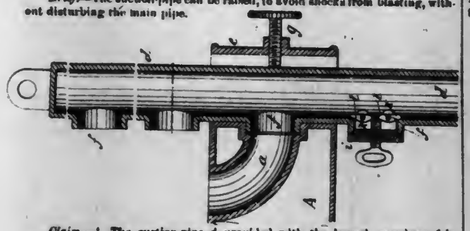


Claim.—1. The combination, in an apparatus for controlling the speed of railroad-trains, of a torpedo, mechanism for holding said torpedo on a rail and automatically removing it therefrom, and a trip-lever adapted to stand in the way of a train or car, and be moved thereby for the purpose of permitting said mechanism to act, substantially as and for the purpose set forth.

2. The combination, in an apparatus for controlling the speed of trains, of a lever acted upon by the locomotive or cars, a pendulum which is caused to oscillate by the action of the cars on the lever, a detent freed by the oscillation of the pendulum, and a torpedo held on the track by said detent, and which is withdrawn by the action of a spring or weight, substantially as described.

208,617. Suction-Pipes for Pumps. Eric O. Loerne, Gold Hill, Nev. Filed Aug. 23, 1878.

Brief.—The suction-pipe can be raised, to avoid shocks from blasting, without disturbing the main pipe.

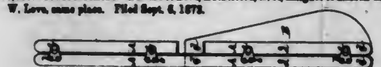


Claim.—1. The suction-pipe *d*, provided with the branch openings *f*, in combination with the supporting socket-head A, substantially as and for the purposes set forth.

2. The socket-head A, formed with the pipe *a* and socket or tube *c*, and having a screw, *g*, or equivalent device, substantially as and for the purposes described.

3. The combination of the socket-head A, the removable cover *i*, and the suction-pipe *d*, substantially as described.

208,618. Corset-Clasps. Edward J. Love, Rutherford, N. J., assignor to himself and Thomas W. Love, same place. Filed Sept. 6, 1878.

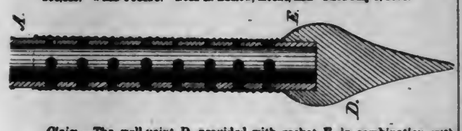


Claim.—1. In corsets or other similar supports for the body, the stiffening-pieces constructed of one or more longitudinal strips or clasp-pieces, A, and one or more spoon or widening pieces, B, made separate from the longitudinal strips or clasp-pieces A, and united with the latter, substantially as specified.

2. The combination of one or more adjustable spoon or widening pieces, B, with one or more longitudinal strips or clasp-pieces, A, essentially as described.

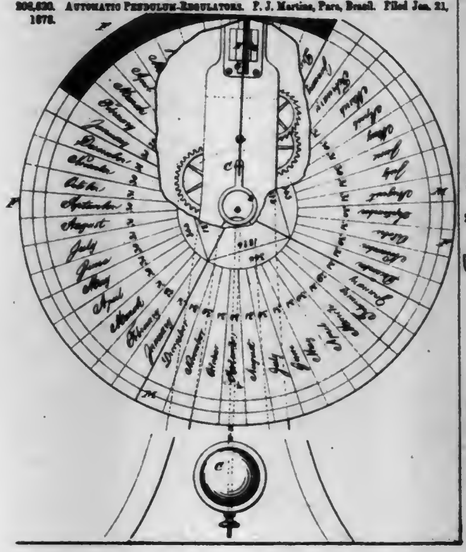
3. The combination, with the clasp-pieces A and the spoon or widening pieces B, made separate from the clasp-pieces, of one or more mountings or fastenings for the clasp-pieces, constructed to also form clamps for uniting the clasp-pieces and widening-pieces together, substantially as specified.

208,619. Well-Tubing. Noah K. Ludlow, Mobile, Ala. Filed July 3, 1878.



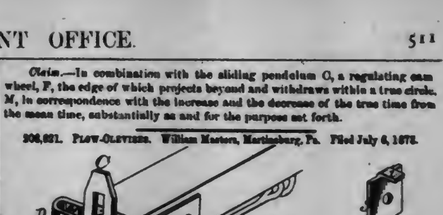
Claim.—The well-point D, provided with socket E, in combination with the perforated brass tube A and unbroken corrugated brass wire gauze, covering the perforated portion of tube A, said tube being detachably connected to the point, in the manner and for the purpose described.

208,620. Automatic Pendulum-Regulators. P. J. Martins, Para, Brazil. Filed Jan. 21, 1878.



Claim.—In combination with the sliding pendulum C, a regulating cam wheel, F, the edge of which projects beyond and withdraws within a true circle, *M*, in correspondence with the increase and the decrease of the true time from the mean time, substantially as and for the purpose set forth.

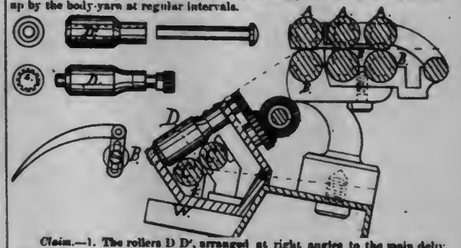
208,621. Plow-Clevises. William Masters, Martinsburg, Pa. Filed July 6, 1878.



Claim.—The combination, with the plow-beam, of the lateral T-loop D, horizontally slotted on its front wall, the vertically-slotted plate C, carrying the forward end of the draft-rod, and the clamp-plate *g*, having lugs *i* extending into the slot of the plate C and embracing the loop D, whereby the vertical plate is prevented from turning on the clamp-plate, substantially as specified.

208,622. Spinning-Machines for Spotting and Covering Yarn. Walter McVille, Manayunk, Philadelphia, Pa. Filed June 10, 1878.

Brief.—The roving is passed through a set of ordinary delivery-rolls, and on its way to the bobbin is met by a spotting or covering sliver, which is fed through a set of delivery-rolls arranged at right angles to each other. The spotting or covering yarn is delivered intermittingly, and its fibers are taken up by the body-yarn at regular intervals.

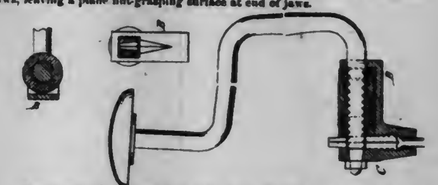


Claim.—1. The rollers D D', arranged at right angles to the main delivery-rollers and transversely above the auxiliary set of delivery-rollers, in combination with the rollers C C', as shown and described, and for the purpose specified.

2. The combination of rollers D D' and C C' with the delivery-rollers A B of a spinning-machine, as shown and described, and for the purpose specified.

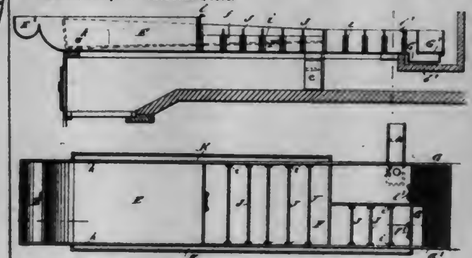
208,623. Bit-Brace. Edward C. Merryman, Monkton, Md. Filed Sept. 20, 1877.

Brief.—The grooves which hold the bit are set back in the faces of the jaws, leaving a plane nut-grasping surface at end of jaws.



Claim.—The jaws B C, having flat faces near their outer ends and V-shaped grooves formed in the inner portion of their faces, in combination with the brace-arm having a perforation therethrough to receive the end of the bit, substantially as shown and described.

208,624. Evaporators. Frederick Michael, Exton, Ohio, assignor to himself and Francis M. Michael, same place. Filed June 4, 1878.



Claim.—1. The troughs or channels K, arranged on the exterior of the sides of the pan, and having their bottoms inclined downward toward the front end thereof, in combination with the chamber E, provided with open-

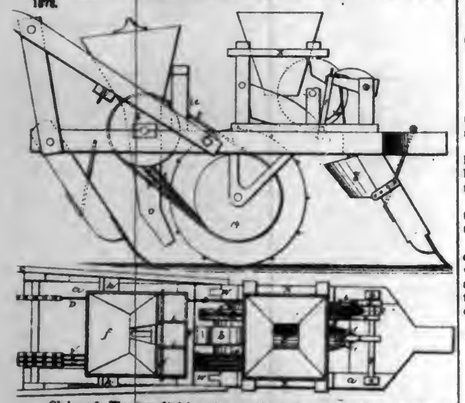
ings *k*, and the chamber F, having its sides cut away, as shown and described, for the purpose specified.

2. The settling-chamber G, extending over the arch *b*', and having its bottom lower than the bottoms of the other chambers, and provided with the perforated strainer G', as shown and described, for the purpose specified.

3. In an evaporating-pan, the combination and arrangement of the chamber E and its extension and trough E', the chamber F and its cut-away sides and vertically-adjustable partitions J, and the troughs or channels K, communicating with said chambers, as shown and described, for the purpose specified.

4. The combination of the chamber F, provided with the adjustable partitions J and gate F, the chamber G, provided with the depressed bottom and the perforated strainer G', and the chamber H, provided with the gate F, arranged with relation to each other as shown and described, for the purposes specified.

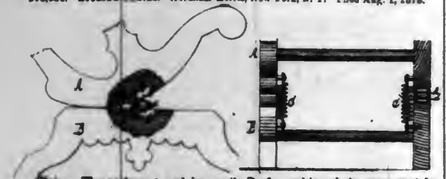
206,625. SEEDER AND PLANTER. Joseph E. Morgan, Columbus, N. C. Filed Aug. 14, 1878.



Claim.—1. The two divisions *i*, secured together and held in position in the hopper by means of the transverse rod *j*, the said divisions forming two sides of a square, so as to be applied to the corners of the hopper, and thus leave the center of the hopper entirely clear, substantially as shown.

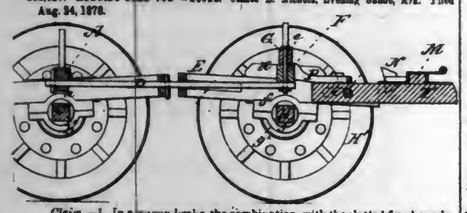
2. The combination, in a seeding-machine, of the feed-cylinder shaft, pulley *s*, having different diameters, belts or chains *t*, pulley 14, tighteners *u*, and rods or chains *v*, substantially as set forth.

206,626. ROCKING-CHAIRS. Abraham Morris, New York, N. Y. Filed Aug. 1, 1878.



Claim.—The rockers A and base-rails B of a rocking-chair, connected by the vertical springs *c*, and each having in their upper and lower surfaces, respectively, about midway of their length and between side margins, coincident recesses *g*, of similar size, in combination with the toggle-joints *d*, having their opposite outer ends hinged within the said recesses, said toggle-joints being constructed to fold snugly and entirely within the recesses, and the stop-plates *i*, projecting partly across the mouth of the recesses and in the path of the toggle-joints, substantially as and for the purpose described.

206,627. RUNNING-GEAR FOR WAGONS. James B. Nichols, Evening Shade, Ark. Filed Aug. 24, 1878.



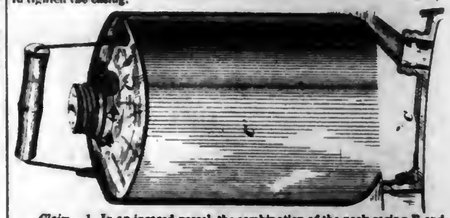
Claim.—1. In a wagon-brake, the combination, with the slotted fore bounds, E, the tongue-bounds K, and tongue T, provided with the stop P, pivoted thereto, and adapted to engage the bolster-support F, of the double-tree M, rigidly secured to the tongue, and having the brake-shoes N and the transporting-wheels H', substantially as specified.

2. The bounds E, having the slots *i* in their front ends and the bearings *f g* upon their under sides for a rotating axle, substantially as specified.

3. The combination, with the bounds E, having bearing-plates *f g* upon their under sides, of an axle, H, seated in said plates, provided with collars *g*, and having squared ends, the transporting-wheels H', applied on said ends, and the caps *g*', holding the axle to its bearings, substantially as set forth.

206,628. INCASED GLASS VESSELS. Daniel W. Norris, Elgin, Ill. Filed Sept. 16, 1878.

Brief.—In making, the top casing can be first united to the side casing, the vessel then introduced from below, and the bottom then inserted and secured to side casing. Draw top casing to place by drawing bottom joint closely; or the bottom and side casing may be first secured, the vessel inserted from above, then the top casing secured. Drawing the top joint tightly in this case secures the bottom casing in place; or the top casing may be first put on, then the sides and bottom, drawing tightly either the top or bottom joint to tighten the casing.



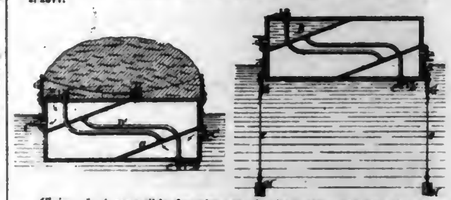
Claim.—1. In an incased vessel, the combination of the neck-casing B and top casing C, locked together by interlocking projections and recesses, substantially as described, for the purposes specified.

2. In an incased vessel, the combination of a neck-casing and top casing locked together, and a side casing jointed to the top casing, said side casing being turned inward over said top casing, and the latter being supported by the incased vessel, substantially as described.

3. In an incased vessel having a pouring-neck near the edge of the top, the neck-casing applied to the vessel, with one edge bent down over the side thereof, substantially as described, for the purpose specified.

4. The herein-described mode of incasing vessels—to wit, locking one edge of the side casing with the edge of the top casing, placing the vessel within the casings thus interlocked, then placing the bottom casing within the side casing and against the incased vessel, and afterward turning the edge of the side casing inward over the edge of the bottom casing, substantially as described.

206,629. REVERSIBLE DUMPING-SCOWS. Charles C. Overton, Brooklyn, N. Y. Filed Mar. 1, 1877.



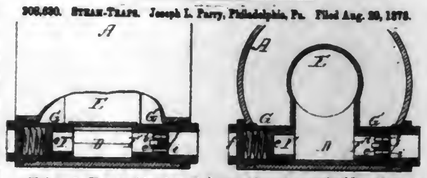
Claim.—1. A reversible dumping-scow having water-weighting chambers on opposite sides, said chambers having inlet-valves, substantially as shown.

2. A dumping-scow provided with two decks, either adapted to carry the load while the other becomes the bottom of the vessel, said scow having a water-chamber at each side, inlet-valves, and an air-escape from each chamber through the opposite deck, substantially as shown.

3. The combination, with a reversible dumping-scow, of movable bulwarks adapted to be secured in position on the scow, whichever side of the scow is turned up, substantially as set forth.

4. The combination, with a reversible dumping-scow and with the movable bulwarks, of anchors and chains or ropes, whereby the bulwarks are retained in position by the action of the load on said anchors, substantially as described.

206,630. STEAM-TRAPS. Joseph L. Parry, Philadelphia, Pa. Filed Aug. 30, 1878.



Claim.—1. The combination of the vessel A, the pivoted float E, having a tubular projection, F', with the ports *i* in the end thereof, and the plug G', having a partition in which are formed ports *i*, for acting in conjunction with the ports in the end of the projection F', all substantially as set forth.

2. The combination of the vessel A, the float E, having projections F F', the plugs G G', the ports *i i*, and the spring *g*, all arranged substantially as described.

206,631. TRIMMERS FOR WAX-THREAD SEWING-MACHINES. Joseph I. Pelletin and Hector Pelletin, Montreal, Quebec, Canada. Filed Dec. 26, 1877.

Brief.—The trimming-blade is placed in the post of the machine, and is adapted to be raised above the throat-plate when it is desired to operate in conjunction with the sewing mechanism, and to be lowered beneath the same when no longer needed. The blade is carried by a lever, which is attached to, and caused to vibrate to effect the cutting of the material by, a reciprocating or sliding plate upon the face of the post, said plate being actuated by suitable connection with the operative parts of the machine. The lever carrying the cutting-blade is so constructed that when the latter is lowered beneath the throat-plate it is not affected by the reciprocation of the sliding plate.

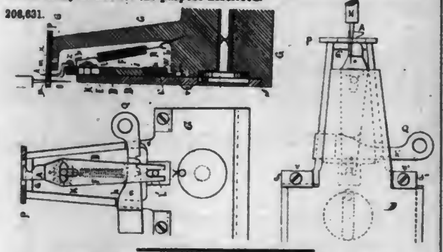
Claim.—1. The combination, with the post of a wax-thread sewing-machine having throat-plate P, of a vibrating lever, B, having a cutter adapted to be projected through the throat-plate, and a reciprocating slide-plate for operating said lever, substantially as described.

2. The combination, with the post G, of the lever B, having T-shaped slot E E' E'', a reciprocating slide having a pin, stud, or bolt, arranged in said slot, together with means, substantially as described, for relatively adjusting the lever and stud so as to cause the latter to occupy a different position in the slot, according to whether the cutter is required to operate or be immovable, substantially as described.

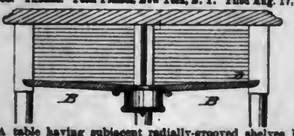
3. The adjusting-slide Q, having notches *h h'* and inclined surface *k*, in combination with the post G and the lever B, for the purpose of adjusting the latter, substantially as described.

4. The combination of the spring F, the lever B, carrying a cutter, and the reciprocating plate D, having bolt K, loosely connected with the lever, substantially as and for the purpose described.

206,631.

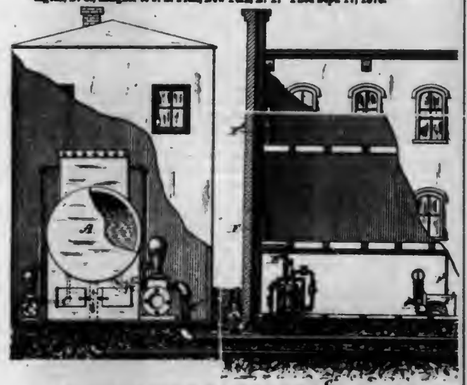


206,632. TABLES. Peter Pleiner, New York, N. Y. Filed Aug. 17, 1878.



Claim.—A table having subjacent radially-grooved shelves B declining toward the center, and provided with a central drip-cup made removable, as and for the purpose specified.

206,633. MEANS FOR HEATING AND VENTILATING BUILDINGS. William E. Prall, Washington, D. C., assignor to J. L. Prall, New York, N. Y. Filed Sept. 17, 1878.



Claim.—1. In an apparatus for heating buildings, the heating-tank A, the hot-water street-main C, C', and C'', connected therewith, the circulating-pump B, and a heat-radiator, F, and a meter, substantially as shown and described.

2. In an apparatus for heating buildings, a hot-water tank, a hot-water street-main, a circulating-pump, a differential or pressure-regulating valve, and a heat-radiator of a building, as set forth.

3. In an apparatus for heating buildings, one or more hot-water reservoirs and one or more hot-water pipes connected therewith, having branch pipes connected with a pressure-reducing valve, and with an evaporating-chamber, and with heat-radiators, and with a meter, substantially as shown and described.

4. In an apparatus for heating buildings, the hot-water-generating tank and a street-main, connected thereto at a point below the water-line, branch pipes connecting said main-pipe with a circulating-chamber arranged in connection with a steam-generating chamber, as specified, and in such manner as to transmit the heat from the circulating-water chamber to the evaporating-chamber, substantially as set forth.

5. In an apparatus for heating buildings, the heating-tanks and the pipe or pipes for conveying hot water connected therewith, branch pipes for conveying hot water to a radiator, an exhaust-opening to convey the water from the radiator, and a meter for measuring the water passed through the radiator, constructed and operating substantially as shown and described.

6. In an apparatus for heating buildings, the heating-tanks and the pipes connected therein, as specified, in such manner as to convey the water therefrom, a force-pump, or its equivalent, for circulating the water therein, and a radiator connected thereto, in combination with an air-heating chamber, provided with inlet and outlet openings for receiving and delivering the air, and with a meter, substantially as set forth.

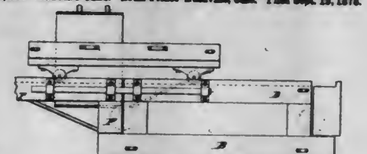
7. In an apparatus for heating buildings, the heating-tanks and the hot-water street-main connected thereto, provided with expansion and contraction joints and with a covering of non-conducting material, a branch-pipe for conveying the hot water to a building, a pressure regulating valve for reducing the pressure, an evaporating-tank for converting the water into steam, and a heat-radiator of a building provided with a condense-water receiver, and with a registering-pump for removing the water, constructed and operating substantially as shown and described.

8. In an apparatus for heating buildings, the heating-tank and the hot water street-main pipe connected therewith, a circulating-pump for forcing the water through the pipe and branch pipes, and the meter for connecting the main street-pipe with a circulating-heater arranged to transmit heat to a steam-generating tank or hot-water tank, substantially as described, said tank being constructed to be supplied with a liquid, and provided with return-pipes for conveying the condensation to the generating-tank for reheating, substantially as shown and described.

9. In an apparatus for heating buildings, a water-evaporating chamber adjacent to a chamber adapted to circulate water of a higher temperature, the radiator arranged to receive steam from the evaporating-chamber, and the whole provided with cocks and valves, substantially as shown and described.

10. The within-described method of conveying, by means of a pump or its equivalent, hot water through underground street-mains, provided with branch pipes and with meters, for the purpose of delivering and measuring said hot water used for heating purposes in buildings having radiators, with connected cocks or valves for controlling the heat in the same, substantially as set forth.

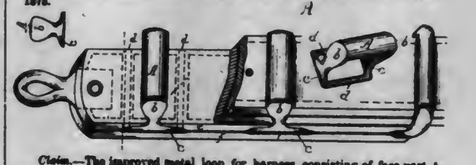
206,634. DUMPING-CARS. Louis Prince Nashville, Ohio. Filed Sept. 19, 1878.



Claim.—1. The movable or shifting platform for gondola-cars, having a series of pivoted tilting floor-sections or traps, and the cranes or lateral supports for the same, combined substantially as shown and described.

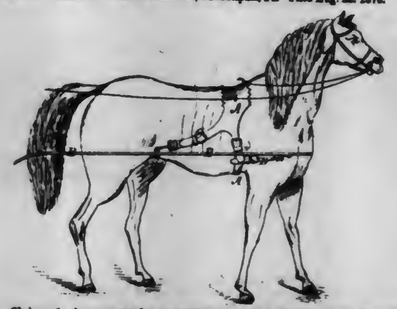
2. The combination of the movable or shifting truck having the tilting floor-sections, the supplementary or intermediate frame B, for supporting the same, and the cranes hinged in the manner described to form a lateral support, as and for the purpose specified.

206,635. METALLIC HARNESS-LOOPS. Levi C. Quinby, Monticello, Iowa. Filed May 23, 1878.



Claim.—The improved metal loop for harness, consisting of face part A, having the end pieces, *b*, connecting with the side bars, *c*, and the two transverse bars *d*, which are wide enough apart to admit of the upper and lower layers of leather to come together between, as set forth.

206,636. HARNESS. Alvah Rittenhouse, Philadelphia, Pa. Filed Aug. 22, 1878.



Claim.—1. As a means for connecting a horse to or with a vehicle, a girth, A, which encircles the body of said horse, and traces C, that are connected with said girth, and extend rearward and downward to and are connected with the shafts B, substantially as specified.

2. The hereinbefore-described harness, consisting of the girth A, which encircles the body of the horse, the traces C, that extend from said girth downward and rearward to the shafts B, and the holdback-straps D, which extend from said girth forward and upward to said shafts, said parts being combined to operate in the manner and for the purpose substantially as set forth.

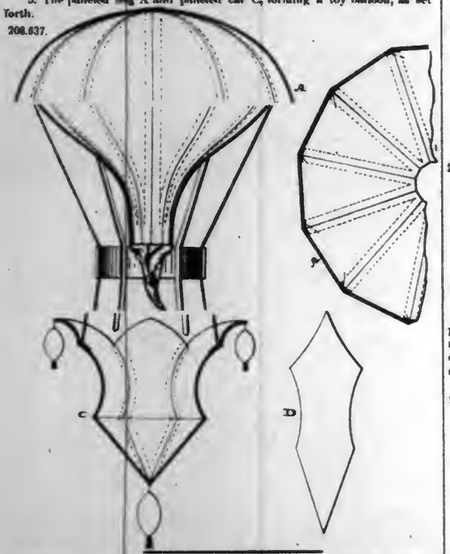
206,637. TOY BALLOONS. Wm. G. Schwartz, Philadelphia, Pa., assignor of one-half his right to Arthur Mallon, same place. Filed Aug. 16, 1878.

Claim.—1. The toy balloon having a bag, A, constructed of paneled sides B, substantially as and for the purpose set forth.

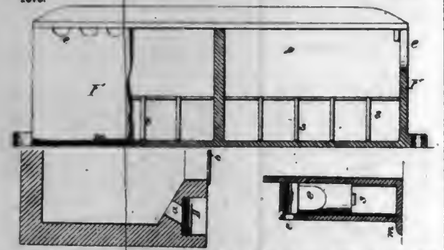
2. The toy balloon having a car or basket, C, constructed of paneled sides D, substantially as and for the purpose set forth.

3. The paneled bag A and paneled car C, forming a toy balloon, as set forth.

208,637.



208,638. Dampers for Bakers' Ovens. Frederick Schwab, Pottstown, Pa. Filed Sept. 6, 1878.



Claim.—1. The within-described damper for bakers' ovens, said damper consisting of a water-tight box, with an opening or openings at the top, through which water can be introduced and steam escape, as specified.

2. A damper consisting of a box or case, with a flange, m, at the base, as set forth.

3. The box F, having an opening or openings *e* at the top, and provided with an internal partition or partitions, *s*, as set forth.

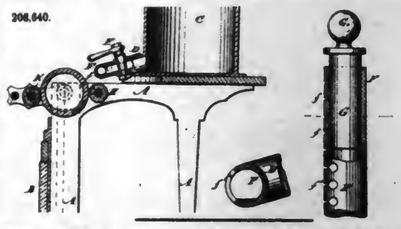
208,639. Pencil-Holder. William A. Scollay, San Francisco, Cal. Filed Aug. 23, 1878.



Claim.—1. A pocket pencil-holder consisting of the slotted tube A *a a* and barbed spring B, substantially as set forth and described.

2. A pocket pencil-holder having slots *a a*, beveled slot *b*, and provided with a sharpener, *c d*, and barbed spring B, substantially as set forth and specified.

208,640.

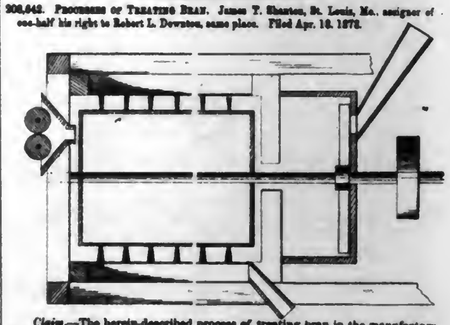


208,641. Processes for Manufacturing Illuminating-Gas. Joseph Shackleton, Rahway, N. J. Filed May 3, 1878.



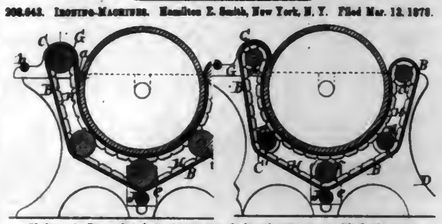
Claim.—The within-described process for producing illuminating-gas by passing a mixture of steam and hydrocarbon vapors over and in contact with a highly-heated layer of bituminous slack mixed with sawdust, and then conducting the mixture of gases obtained by such operation over a red hot layer of fine anthracite coal, substantially as set forth.

208,642. Processes of Treating Bran. James T. Shorter, St. Louis, Mo., assignor of one-half his right to Robert L. Downton, same place. Filed Apr. 16, 1878.



Claim.—The herein-described process of treating bran in the manufacture of flour, consisting in subjecting the bran to the action of rolls by passing it between them for the purpose of breaking the glutinous cells adhering to the bran, and subsequently subjecting it to the action of a bran-duster, substantially as specified.

208,643. Ironing-Machine. Hamilton E. Smith, New York, N. Y. Filed Mar. 12, 1878.



Claim.—1. In an ironing apparatus of the character specified, the combination, with the apron-supporting roller C at the receiving end of the machine, of movable journal-boxes G, which carry such receiving-roller, substantially as and for the purpose described.

2. In an ironing apparatus of the character specified, the combination, with the endless apron B, of a tightening-roller, I, and an auxiliary apron-supporting roller, J, which is located beneath the tightening-roller in superficial contact with the apron, and is arranged to move with the tightening-roller, substantially as and for the purpose described.

3. In an ironing-machine of the character specified, the combination of an endless apron, B, having flexible bands on its opposite edges, a tightening roller, I, having shoulders to form abutments for such bands, and an auxiliary apron-supporting roller, J, which is located beneath the tightening-roller in superficial contact with the apron, and is arranged to move with the tightening-roller, substantially as and for the purpose described.

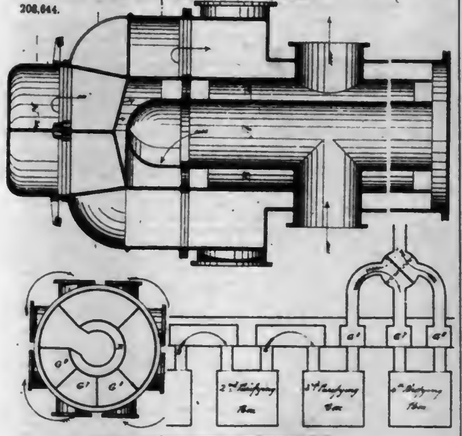
208,644. Center-Seals for Gas-Works. Charles V. Smith and William Farmer, New York, N. Y. Filed May 25, 1878.

Brief.—The center-seal is constructed for throwing out of communication any one of the four connected purifiers for cleaning and refilling, and for again throwing it into communication at will, in the usual manner, and it is further provided with a single valve on top of the cover, whereby the fourth purifier may be thrown into communication with the gas-supply pipe, so that all four of the purifying-boxes are simultaneously in operation, instead of only three of them, as with the ordinary center-seal.

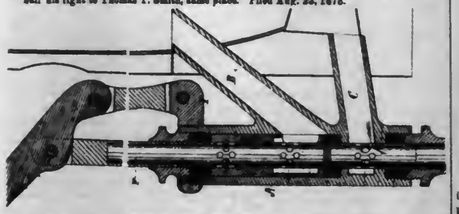
Claim.—1. The combination, with a center-seal of ordinary or suitable construction, of a chambered cover, with means for revolving it, and with a single additional valve and means for adjusting it, whereby the device may at will serve either in the ordinary manner, with one of the purifying-boxes thrown out of action, or in such manner as to keep all the purifying-boxes in the circuit, as and for the purposes herein specified.

2. The combination of the additional valve M on the top of the cover G with the cover having the top chambers, G' G' G', the whole being connected and operated as and for the purposes herein specified.

208,644.



208,645. Self-Measuring Faucets. Elisha L. Spencer, Millville, Mass., assignor of one-half his right to Thomas T. Smith, same place. Filed Aug. 23, 1878.



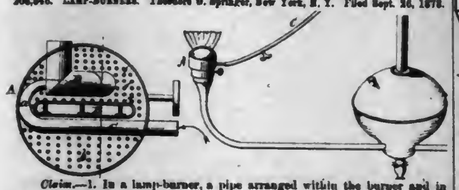
Claim.—1. In a faucet or gage-cock, the combination, with an external shell having two lateral openings only, of a longitudinally-movable tubular valve, perforated in two or more distinct planes, as stated, and plugged to close the passage between the lower perforations and the adjacent series of openings, for the purpose set forth.

2. The double-acting faucet herein described, having the body A, the lateral tubes B C, formed integral therewith, and the doubly-perforated and vertically-movable tubular valve F, constructed and adapted to operate substantially as set forth.

3. The combination, with a tank and a fixed measuring-vessel which has a common inlet and outlet, of a faucet having a body and two lateral pipes, forming a connecting-passage between said tank and measure, and provided with a vertically-movable tubular valve, substantially as set forth.

4. The combination of the improved faucet herein set forth, having a longitudinally-movable tubular valve, with a tank and measuring-vessel, and a vent-tube for the passage of air to and from said measure, substantially as set forth.

208,646. Lamp-Burners. Theodore G. Springer, New York, N. Y. Filed Sept. 16, 1878.



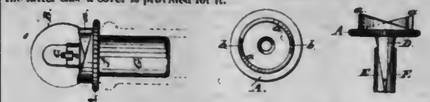
Claim.—1. In a lamp-burner, a pipe arranged within the burner and in close proximity to the wick-tube, for heating air passing through said pipe, and an injector connected therewith, and also arranged within the burner, for the purposes herein set forth.

2. A pipe containing compressed air, adapted, substantially as described, to be heated by the heat from the burner itself, and combined with an injector for transmitting heated air to the flame in a lamp-burner, for the purpose set forth.

3. In combination with a burner, A, and its wick-tube B, the compressed-air pipe C and injector *s*, both arranged within the burner, and the atmospheric-air pipe D, said parts being arranged to cause the compressed air to be heated and expanded before escaping to the injector, substantially as herein set forth.

208,647. Bottle-Stoppers. William G. Steinmetz, Brooklyn, N. Y. Filed Dec. 6, 1877.

Brief.—Shortens and broadens the stopper by rotating a lock-lever attached to a T-headed rod by a bayonet-joint upon cams over the stopper-plate. Handle of locking-cam may be in one piece with it, or applied to it like a key; in the latter case a cover is provided for it.



Claim.—1. In a bottle-stopper, the plate A, provided with cams *a a* on its upper side and wedge-piece D on its lower side, as and for the purpose described.

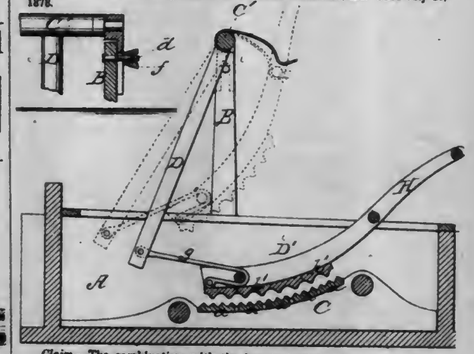
2. In a bottle-stopper, the combination of a plate, A, provided with cams *a a* and wedge-piece D, with the loose wedges E and tube F, arranged substantially as shown and described.

3. The combination of the plate A, constructed as described, with the loose wedges E E, rubber tube F, bolt C, and locking-bar B, arranged substantially as shown, and for the purpose set forth.

4. The plate A, having the cams *a a* and wedge-piece D, in combination with the loose wedges E, bolt C, locking-bar B, and covering-tube G, as shown, and for the purpose described.

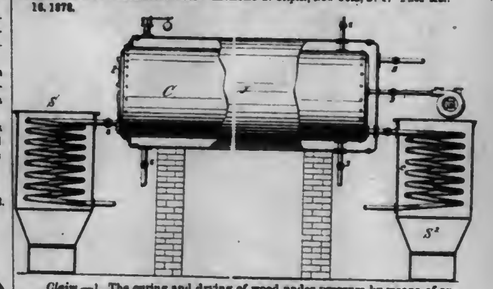
5. The plate A, having the cams *a a* and wedge-piece D, in combination with the loose wedges E, bolt C, locking-bar B, tube F, covering-tube G, and spring *f*, all constructed as shown and set forth.

208,648. Washing-Machines. John F. Tridle, North Manchester, Ind. Filed July 30, 1878.



Claim.—The combination, with the box A, having side uprights, B, and inside concave rubbing-plate, C, of the screw-bolts *d*, shouldered bearing-plates straddling said bolts, clamp-nuts *f*, a rock-shaft, C', journaled in said uprights, and a scrubber, D', swinging from said shaft C', substantially as specified.

208,649. Art of Preserving Wood. Archibald B. Tripler, New York, N. Y. Filed Mar. 16, 1878.



Claim.—1. The curing and drying of wood under pressure by means of an atmosphere of superheated steam introduced into a drying-chamber, and discharged therefrom simultaneously after the required pressure is obtained, substantially as specified, so as to keep up the said pressure a sufficient time, and at the same time cause a current through the body of the wood to carry off moisture and prevent condensation, as herein set forth.

2. The process herein described of curing and drying wood in a cylinder or its equivalent, consisting in heating the cylinder and the wood therein by low-pressure steam in a jacket, then introducing superheated steam into the cylinder until a pressure of about one hundred pounds to the square inch is obtained, then permitting the superheated steam to escape in the same proportion as a fresh supply is admitted, and finally discharging the superheated steam, and blowing air or superheated steam through the body of the wood to carry off the surface humidity from the latter, substantially as specified.

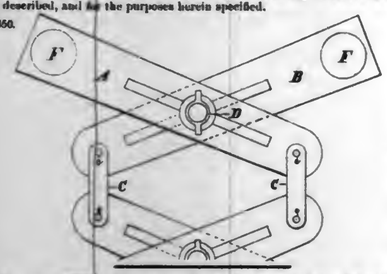
3. The combination of the cylinder C, jacket J, and one or more superheaters, S S', with their appurtenances, substantially as herein shown and described, for curing and drying wood under pressure.

208,650. Stove-Trucks. William R. Tucker, Indianapolis, Ind., assignor of one-half his right to Robert S. Dorsey, same place. Filed Sept. 6, 1878.

Claim.—1. The combination of two pairs of beams, each pair being hinged at one end and slotted, as described, and each beam of one pair being connected by a bolt to a corresponding beam of the other pair, substantially as set forth.

2. The combination of the beams A A B B, hinges C C, bolts D D, and casters E E E E, all arranged and operating substantially as herein shown and described, and for the purposes herein specified.

208,650.

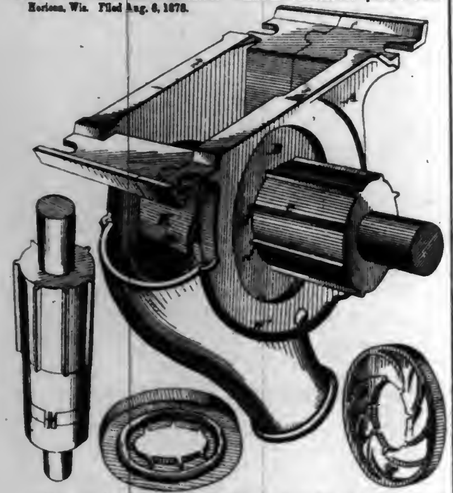


208,651. Manufacture of Augers. Wm. Tucker, East Brookfield, Mass. Filed Mar. 4, 1878.



Claim.—The method of making augers or auger-bits herein specified, consisting in welding together two qualities of steel in large masses, reducing the metal to thin bars or plates of proper proportions in cross-section, with the finer steel at one edge, cutting these bars or plates transversely into blanks of proper width, and subsequently twisting the blanks and forming the cuts by any approved apparatus, the said cuts being formed from the said finer steel.

208,652. Force-Feed Seeding-Machine. Willard A. Van Brunt and Spencer E. Davis, Horicon, Wis. Filed Aug. 6, 1878.



Claim.—1. In a force-feed for seeding-machines, a feed-wheel consisting of a ribbed or flanged portion, which is provided with radial ribs arranged parallel with the shaft, and a smooth portion, the latter of less diameter than the former, substantially as set forth.

2. The combination, with a feed-wheel constructed of ribbed and smooth portions, of a notched disk encircling the ribbed portion of the feed-wheel, said notched disk constructed with a flat face that extends from the feed-wheel to the casing of the seed-chamber, which face is provided with curved or tangential ribs that gradually increase in depth from the inner to the outer portion of the disk, substantially as set forth.

3. The combination, with a feed-wheel constructed of ribbed and smooth portions, of a notched disk encircling the ribbed portion of the feed-wheel, said notched disk provided with pockets open on their inner ends, and bounded on three sides by raised flanges, substantially as set forth.

4. The combination, with a flanged or ribbed feed-wheel, and a notched disk having curved or tangential ribs, and an annular flange formed on its inner surface, of the casing, a portion of which bears against the annular flange on the annular disk or ring, and prevents the lateral displacement of the same, substantially as set forth.

5. The combination, with a feed-wheel constructed with flanged and smooth portions, of a segmental gate attached to the smooth portion at a point within the casing, and above and without the seed-chamber therein, substantially as set forth.

6. The combination, with a feed-wheel constructed with flanged and smooth portions, of a segmental gate attached to the smooth portion at a point within the casing, and above and without the seed-chamber therein, the lower portion of said gate being provided with an outwardly-projecting flange, which is adapted to open and close the discharge-opening, substantially as set forth.

7. The combination, with a feed-wheel composed of smooth and ribbed portions, the former having an annular groove formed therein at a point within the casing, of a segmental gate attached to the smooth portion by a collar located within said annular groove, and retained on the side of the feed-wheel by the casing, substantially as set forth.

8. The combination, with the casing of a force-feed having flanges formed thereon, of a spout made in single piece, and adapted to be removably secured to the case in a self-adjustable manner, by means of flanges or lugs engaging with said flanges or lugs on the casing, substantially as set forth.

9. The combination, with the casing of a force-feed having depending segmental flanges with grooves on their inner surfaces, of a spout provided with segmental ledges or guides, which fit within the segmental grooves in the flanges on the casing, substantially as set forth.

10. The combination, with a feed-wheel constructed with smooth and ribbed portions, and having a segmental gate attached thereto at a point within the casing, of the casing constructed with a gate-opening formed above the seed-chambers, whereby the segmental portion of the gate is retained on the side of the feed-wheel and without the seed-chamber, substantially as set forth.

11. The combination, with a feed-wheel constructed with smooth and ribbed surfaces, and having a segmental gate provided with an outwardly-projecting flange attached thereto, of the casing formed with an opening in one end thereof for the endwise adjustment of the gate, said opening being located above and without the seed-chamber, the flanged portion of the gate being located on a plane with the discharge-opening, substantially as set forth.

12. In a force-feed, the combination, with a sectional seed-chamber, one of whose sections has the front of the casing formed solid therewith, of a segmental gate attached to the smooth portion of the feed-wheel at a point above and without the seed-chamber, said gate having a flange which projects through an opening in the end of the casing, substantially as set forth.

13. In a force-feed, the combination, with an automatically-adjustable spout, of a casing to which it is removably secured, the two being loosely connected together by segmental grooves formed in the opposite sides of one of the same, and suitable groove-engaging mechanism formed on the corresponding sides of the other, substantially as set forth.

14. In a force-feed, the combination, with an automatically-adjustable spout, of a casing to which it is removably secured, the two being connected together by curved grooves and flanges formed, respectively, on adjacent sides of the same, substantially as set forth.

208,653. Machines for Trimming the Heels of Boots and Shoes. Isaac Van Heuhuys and Thos. P. King, Brooklyn, N. Y. Filed Sept. 4, 1878.

Brief.—Claims improvement on No. 168,540, of October 5, 1875.



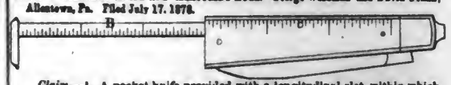
Claim.—1. An automatically-adjustable elastic center-pin, in combination with the oscillating beams of the work carriage or jack, said center-pin working in a seat on one of said oscillating beams, and being provided with a spring for enabling it to adjust itself to the motions of the work and the oscillations of the jack-beams as the distance between their front ends varies, substantially as and for the purpose herein described.

2. An offset-center consisting of a rod, E, or elastic pin M, and a swiveled block or bar, D, provided with a stud or spur, *f*, in combination with the hand-screw G and the last which carries the work, as shown and described, for the purpose specified.

3. A pattern-plate provided with a guard and brads near the breast of the heel, adjustable on said plate, for regulating the length of the heel, substantially as herein described.

4. In a heel-trimming machine in which the axis of rotation of the work is parallel with the axis of the cutter-head, the combination, with said cutter-head and the pattern-plate, of a lift or layer of leather or other suitable material, carried by said pattern-plate and pressed against the top lift of the heel, to prevent the turning up of the grain of the leather and the injuring of the edges of the cutters, substantially as shown and described.

208,654. Combined Knife and Measuring-Rule. George Waldman and David Frank, Allentown, Pa. Filed July 17, 1878.



Claim.—1. A pocket-knife provided with a longitudinal slot, within which is inserted a graduated caliper-rule having a head of a size to fit the butt of the knife, as and for the purposes set forth.

2. The within-described compound implement, consisting of the pocket-knife with flat back and square end, one of the sides being graduated, and the sliding caliper-rule B, having a head of a size to fit the butt of the knife, substantially as herein set forth.

208,655. Station-Indicators. Andrew West, Birmingham, Iowa. Filed Mar. 12, 1878.

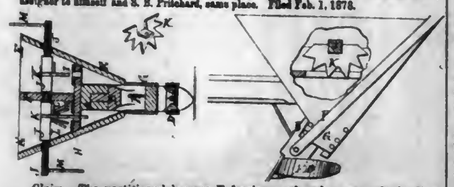


Claim.—In a station-indicator, the interior glass plate, I, in front of a lamp, F, in combination with the indicating-apron and the exterior glass plate, B, for protecting the apron from the effects of the heat from the lamp, substantially as and for the purposes herein set forth.

208,656. Treating Gas-Lime to Produce Caustic Lime. Asa W. Wilkinson, New York, N. Y., assignor to himself and Edward S. T. Kennedy. Filed Apr. 17, 1878.

Claim.—The process of converting the spent lime of gas-works into caustic lime, by first pressing it into lumps of any convenient size and shape, and then subjecting them to sufficient heat in a kiln to drive off the moisture, ammonia, carbonic acid, sulphur, and other impurities with which the lime is combined, reducing it to caustic lime, and rendering it fit for further use, substantially as described.

208,657. Seed-Planter and Guano-Distributer. Julius C. Williams, Thomaston, Ga., assignor to himself and S. B. Pritchard, same place. Filed Feb. 1, 1878.


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or artificial line, with an electric telegraph cable or line, for the purpose of duplex working.

3. The construction of the accumulator, having also power of conduction or artificial line, by combining the following parts: first, the conducting strip or strips of metal foil by which the current passes through the instrument; second, the metal foil, having an earth-connection, through which it charges and discharges itself; third, the separating-sheets of dielectric or insulating material.

REISSUES.

8,438. PLANING-MACHINES. James Goodrich and Henry J. Colburn, Fitchburg, Mass., assignors to W. H. Pease, Cincinnati, Ohio. Patent No. 111,032, dated Feb. 7, 1871. Filed Sept. 10, 1878.

Brief.—The feed-roll is made in sections, independently adjustable.



Claim.—1. The combination of the lugs H H' H², &c., having inclines a a' and a a', with the guide-rail K, having inclines b b' b², as described, and for the purpose set forth.

2. The combination of the adjustable frame C' with the cutter-head D and pressure-bar D', as herein described, and for the purpose set forth.

3. The combination of the lever E² with the arc E³, adjustable weights C' C', and pressure-feet C³, substantially as described, and for the purpose set forth.

4. The combination of the springs E⁴ E⁴ with the yokes E² E², the bearing-frames or boxes E' E' E' E', and the rollers E E, as herein described, and for the purpose set forth.

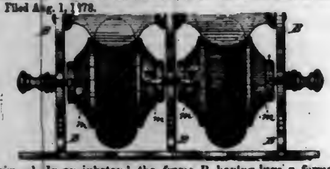
5. In a wood-working machine, the combination, substantially as specified, of a lumber-supporting surface and independent yielding rollers, one of which extends only part way across said surface from one side of the machine, whereby one wide piece or simultaneously two narrow pieces of lumber (whether of equal or unequal thickness) can be worked through the machine.

6. In a wood-working machine, the combination, substantially as specified, of a lumber-supporting surface and a divided or broken roller, consisting of independently-supported yielding sections or short rollers, arranged across the said surface, whereby one wide piece or simultaneously two narrow pieces of lumber (whether of equal or unequal thickness) can be worked through the machine.

7. In a wood-working machine, the combination, substantially as specified, of a lumber-supporting surface, a divided or broken roller, consisting of independent yielding sections or short rollers, and an independent center-bearing support for each of the sections of the divided or broken roller.

8. The combination, substantially as specified, of the cutter-head, extending entirely across the machine, and independent yielding rollers for pressing the lumber against the lumber-supporting surface along different portions or zones of its width.

8,439. INKSTANDS. Wolcott A. Hull, Meriden, Conn. Patent No. 201,940, dated Mar. 12, 1878. Filed Aug. 1, 1878.



Claim.—1. In an inkstand, the frame B, having lugs a formed thereon, said frame supporting the pivoted ink-reservoir, in combination with the ink-reservoir, having the projections m, whereby the reservoir is held in place by the projections and lugs and supported by the frame above the base, substantially as and for the purpose set forth.

2. In combination with an ink-reservoir hung upon pivots, a self-adjusting cover for closing the mouth when the reservoir is turned to bring the mouth against the same, as herein set forth.

8,440. MACHINES FOR CUTTING OFF OBLATINE CAPSULES. Frederick A. Habel, Detroit, Mich. Patent No. 197,279, dated Feb. 13, 1877. Filed Aug. 17, 1878.

Brief.—A circular knife is rotated around a wooden core, upon which the capsule is formed, and cuts it off evenly of proper length. The platform upon which the core or mandrels are placed is adjusted vertically and laterally.

Claim.—1. In a machine for cutting off capsules, the combination of the series of molds e and the rack, pinion, and lever F T H, for the purpose of regulating the length of the capsules, substantially as described.

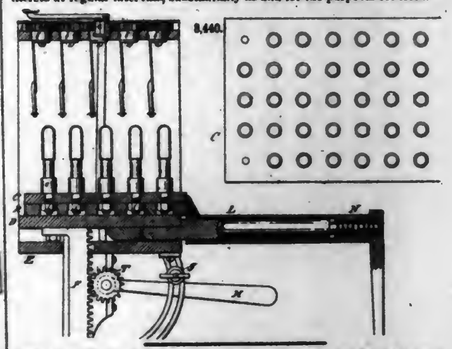
2. In a machine for cutting off capsules, the combination of the sliding plate, adapted to hold the series of molds, and the screw mechanism L K N, for the purpose of forcing the molds against the knives, substantially as described.

3. In a capsule-cutting machine, a series of rotary cutters operated by a crank and pinion acting upon pinions, one of which is attached to each of said cutters, substantially as specified.

4. In a capsule-cutting machine, the rotary cutters, driven by gearing, substantially as described, and supported upon spring-arms, substantially as and for the purposes set forth.

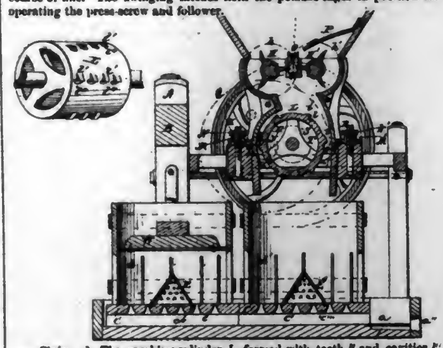
5. In a machine for cutting off capsules, the combination of the sliding plates, adapted to hold the molds of the rack, pinion, and lever F T H, and the screw mechanism K L N, for the purpose of giving both a lateral and vertical motion to the sliding plates, substantially as described.

6. The plate R C, in combination with a series of capsule-molds secured thereto at regular intervals, substantially as and for the purposes set forth.



8,441. CIDER-MILLS. Jesse Bevan, Lancaster, Ohio. Patent No. 106,351, dated Aug. 5, 1875. Filed Aug. 15, 1878.

Brief.—The cavities by the front and side of the teeth afford cleaning-surfaces, as well as assist in the cutting. The cam-washers are used to adjust the rasping-chamber with relation to the cylinder, so as to make the feed coarse or fine. The swinging latches hold the pomace-cages in position for operating the press-screw and follower.



Claim.—1. The crushing-cylinder I, formed with teeth i' and cavities i'', constructed and arranged substantially as and for the purpose specified.

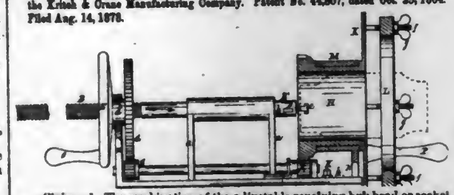
2. In combination with the annular grooves e'' e'', the conical perforated metallic strainers E E', constructed and operating substantially as and for the purpose specified.

3. The swinging latches, in combination with the press-cages, for the purposes set forth.

4. The cam-washers M M', in combination with the hopper, for the purposes herein set forth.

5. The detachable slide O and plate P, in combination with the hopper and feed-rollers, for the purposes set forth.

8,442. MACHINES FOR BORING WAGON-HUBS. Jacob Kritch, Cleveland, Ohio, assignor, by mesne assignments, to the Cleveland Axle Manufacturing Company, formerly known as the Kritch & Orase Manufacturing Company. Patent No. 44,807, dated Oct. 25, 1864. Filed Aug. 14, 1878.



Claim.—1. The combination of the adjustable revolving hub head or socket H, capable of being set at any angle laterally, and the non-revolving feeding cutter-shaft B, the whole arranged substantially as herein described.

2. The arrangement of the adjustable revolving hub head or socket H, disk K, ring L, and centering-screws and nuts f g, for centering and sustaining the hub while being bored, substantially as herein set forth.

3. The threading-cutters D, provided with the angular cutting-points n n', for producing the threads on the inside of the hub, substantially as herein described.

4. In a hub-boring machine, the combination of a bed-frame carrying the boring apparatus, the non-revolving bar supplied with the necessary cutting tools, an adjustable rotary head, and spur and pinion gear for reciprocating the feed screw, substantially as and for the purpose described.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 1st DAY OF OCTOBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Anthony & Co., E. and H. T. (See Pearsall G. F. E., assignor.)						
Arnold, T., Versailles, Ill. Hog-cholera compound	208,505	Oct. 1	49	.....	14	496
Ashcroft, E. H. (See Sullivan, D., assignor.)						
Asper, B. F., and R. Magill, Pittsburg, Pa. Apparatus for boring oil-wells	208,555	Oct. 1	97	29	14	502
Baechtel, C. E., *et al.* (See Frank, S., assignor.)						
Bailey, C., assignor to F. Schumacher, Akron, Ohio. Oatmeal-machine	208,455	Oct. 1	1	1	14	489
Baird, J. B., Bayou La Chute, assignor of one-half interest to H. C. Stringfellow, Red River parish, La. Stalk-chopper	208,556	Oct. 1	99	29	14	502
Baker, W. D., Alfordsville, Ind. Wagon-seat spring	208,557	Oct. 1	100	30	14	502
Barnd, C. G., Findlay, Ohio. Feather-renovator	208,558	Oct. 1	100	30	14	503
Barnstorf, J. (See Schulze-Berge and Barnstorf.)						
Barron, H., Eau Claire, Wis. Crosscut-saw handle	208,506	Oct. 1	50	16	14	496
Bartrum, W. E., and H. C. Powell, London, England. Rotary engine, &c	208,559	Oct. 1	102	31	14	503
Beach, H. B., West Meriden, Conn. Syrup-pitcher	208,507	Oct. 1	51	16	14	496
Bendickson, I. E., Cambridge, Wis. Food-cooker	208,560	Oct. 1	104	31	14	503
Beswick, W. H., *et al.* (See Hibbert, J., assignor.)						
Beyer, A., Paris, France. Machine for grinding and mixing pasty substances	208,562	Oct. 1	107	31	14	503
Birge, M. D., and G. C. Skidmore, assignors to O. C Haskell, Chicago, Ill. Corset	208,456	Oct. 1	2	1	14	489
Bock, M., Hughesville, Drum's P. O., Pa. Clock-case	208,563	Oct. 1	108	32	14	503
Boushey, S. (See Jasper and Boushey.)						
Bowen, C. P., Silver City, Idaho Ter. Amalgamator	208,509	Oct. 1	52	17	14	496
Bowen, J., Lancaster, Ohio. Cider-mill. (Reissue)	8,441	Oct. 1	220	63	14	518
Bowen, J. H., Philadelphia, Pa. Roller-skate	208,508	Oct. 1	51	17	14	496
Bowers, A., Dubuque, Iowa. Adjustable vehicle-top	208,564	Oct. 1	112	32	14	504
Breisacher, H., New York, N. Y. Preparing gray-squirrel skins	208,510	Oct. 1	54	17	14	496
Brigham, D., and D. E. Shaw, Chatsworth, Ill. Feed-grinding mill	208,511	Oct. 1	55	17	14	497
Brown, L., Bloomfield, Iowa. Car-coupling	208,457	Oct. 1	3	1	14	489
Brown, W. C. (See Comly and Brown.)						
Bruen, J. T., Brooklyn, N. Y. Machinery for opening and pressing seams	208,458	Oct. 1	4	1, 2	14	489
Budlong, J. F., Providence, R. I. Stitch-ripper	208,459	Oct. 1	7	2	14	489
Burkholder, D. K., Lancaster, Pa. Straw and feed cutter	208,460	Oct. 1	8	2	14	489
Butcher, J., New York, N. Y. Rotary engine	208,565	Oct. 1	113	32, 33	14	504
Caldwell, J. K., Philadelphia, Pa. Machine for making and pressing bricks	208,566	Oct. 1	114	33	14	504
Campbell, R., Allegheny, Pa. Harvester	208,461	Oct. 1	9	2, 3	14	490
Candy, J. B., Trenton, N. J. Attachment to lathes for cutting rubber and other rings	208,567	Oct. 1	117	34	14	504
Chambers, B. C., Shady Plain, Pa. Combined hay-fork and pruning-shears	208,462	Oct. 1	10	3	14	490
Chapman, T. W., and E. King, Waterbury, Conn. Thill-coupling	208,512	Oct. 1	56	18	14	497
Cheever, C. A., New York, N. Y. Switch for telephones	208,463	Oct. 1	11	3	14	490
Chenette, J. E., Hillsborough, Oreg. Last	208,513	Oct. 1	57	18	14	497
Childs, A., Ypsilanti, Mich. Paper-file	208,568	Oct. 1	118	34	14	505
Christley, A., Buffalo, N. Y. Pencil-clasp	208,464	Oct. 1	12	3	14	490
Clark, C. T., Louisville, Ky. Cupola tuyere and blast-deflector	208,465	Oct. 1	13	4	14	490
Clark, E. C., New Lebanon, N. Y. Thermometer	208,514	Oct. 1	58	18	14	497
Clayton, H., Lexington, Ky. Hood for fire-places	208,569	Oct. 1	119	34	14	505
Cleveland Axle Manufacturing Company. (See Kritch, J., assignor.) (Reissue.)						
Colburn, H. J. (See Goodrich and Colburn.) (Reissue.)						
Comly, E. B., and W. C. Brown, Logan, Ohio. Barrel-cover	208,570	Oct. 1	120	34	14	505
Conklin, E., Channahon, Ill. Weather-strip	208,466	Oct. 1	14	4	14	490
Conley, J., St. Joseph, assignor, by mesne assignments, to L. V. Moulton, Grand Rapids, Mich. Pitman-joint	208,571	Oct. 1	120	35	14	505
Conniff, J., Oconto, Wis. Logging-sled	208,572	Oct. 1	121	35	14	505
Conover, G., New Haven, Conn. Scissors	208,467	Oct. 1	15	4	14	490
Conway, W. B., and W. A. Heald, Indianapolis, Ind. Machine for bending chain-links	208,515	Oct. 1	58	18	14	497
Craig, W. H., Syracuse, N. Y. Coin-holder	208,573	Oct. 1	121	35	14	505
Dancel, C., New York, and E. C. Smith, Brooklyn, N. Y. Skiving-machine	208,574	Oct. 1	122	35	14	505
Davis, S. E. (See Van Brunt and Davis.)						
Davis, V. R., Buchanan, assignor of two thirds interest to A., J. C., and W. A. Westbrooks, Rock Mart, Ga. Plow-stock	208,664	Oct. 1	214	61	14	517
De Veling, J. D. (See De Zeng, G. A., assignor.)						
De Zeng, G. A., Chicago, assignor of one-half interest to J. D. De Veling, Chebanse, Ill. Horse-collar	208,516	Oct. 1	61	19	14	497
Dickenson, C., Portland, Oreg. Life-boat	208,575	Oct. 1	123	36	14	506
Dickey, W. H., Jackson, Mich. Cultivator	208,576	Oct. 1	124	36	14	506
Doane, W. H. (See Goodrich and Colburn, assignors.) (Reissue.)						
Dorsey, R. S. (See Tucker, W. H., assignor.)						
Doty, A. H. (See Johnson, F. G., assignor.)						
Downton, R. L. (See Shanton, J. T., assignor.)						
Drake, J. C., assignor to himself and S. Z. Hall's Southern Cotton Gin Company, Little Rock, Ark. Cotton-gin-saw cleaner	208,468	Oct. 1	16	4	14	491
Elliott, B., Guntersville, Ala. Quilting-frame	208,577	Oct. 1	125	36	14	506
Elliott, C. J., Pottsville, Pa. Door-alarm	208,578	Oct. 1	126	36, 37	14	506

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ennis, H. J., Washington, D. C. Water-filter	208,579	Oct. 1	127	37	14	506
Erwin, J. B. (See Van Altena, H., assignor.)	208,580	Oct. 1	129	37	14	506
Ethridge, M. V. B., New York, N. Y. Car-wheel for elevated railways	208,469	Oct. 1	16	5	14	491
Evans, W. K., Berkeley, Mass. Seeding-machine	208,581	Oct. 1	130	38	14	506
Falvey, J., Flatbush, N. Y. Baited fish-hook	208,517	Oct. 1	62	19	14	497
Fanning, D. H., Worcester, Mass. Corset						
Farmer, W. (See Smith and Farmer.)	208,518	Oct. 1	63	.....	14	497
Farrell, W. E., Philadelphia, Pa. Manufacture of paper and paper-pulp	208,582	Oct. 1	130	38	14	506
Fenton, C., New York, N. Y. Cutter for pipe cutters or wrenches	208,584	Oct. 1	132	.....	14	507
Fontayne, C., New York, N. Y. Ornamenting glass, &c.	208,519	Oct. 1	64	19	14	498
Ford, D., Eaton Rapids, Mich. Motor	208,585	Oct. 1	133	38	14	507
Ford, F. G., Roxborough, Pa. Flour and meal sifter	208,586	Oct. 1	134	39	14	507
Forster, T., Streatham, England. Manufacture of gloves for surgical operations						
Frank, D. (See Waldman and Frank.)						
Frank, S., Hagerstown, Md., assignor of two-thirds interest to W. M. McDowell and C. E. Baechtel. Drill-tooth attachment	208,583	Oct. 1	131	38	14	506
Fry, J. T., Brooklyn, Iowa. Rotary churn	208,587	Oct. 1	135	39	14	507
Fuchs, F. B., New York, N. Y. Fire-escape	208,470	Oct. 1	18	5	14	491
Fulgham, J. P., Richmond, Ind. Seeding-machine	208,588	Oct. 1	135	39	14	507
Galloway, W., Philadelphia, Pa. Porous evaporator	208,471	Oct. 1	18	5	14	491
Gardner, J., assignor to Winchester Repeating Arms Company, New Haven, Conn. Percussion-primer	208,589	Oct. 1	136	39	14	507
Gardner, J. E. (See Houck and Gardner.)						
Getzendaner, W. H. (See Marquardt and Getzendaner.)						
Giese, J. H., Baltimore, Md. Box-opener	208,590	Oct. 1	137	40	14	507
Gilbert, J. H. (See Johnson, J., assignor.)						
Giles, W. W., St. Louis, Mo. Drag-saw	208,472	Oct. 1	19	5	14	491
Goodrich, J., and H. J. Colburn, Fitchburg, Mass., assignors to W. H. Doane, Cincinnati, Ohio. Planing-machine. (Reissue)	8,438	Oct. 1	216	62	14	518
Green, H. M., Camden, N. J. Combined table and life-preserver	208,473	Oct. 1	20	6	14	491
Hall's Southern Cotton Gin Company, S. Z. (See Drake, J. C., assignor.)						
Hamilton, N. T., Cedar Falls, Iowa. Bed-bottom	208,591	Oct. 1	138	40	14	507
Handy, W., Brooklyn, N. Y. Ink-feeding device for paper-ruling machines	208,592	Oct. 1	139	40	14	507
Hausen, T., and G. H. Weiffenbach, Racine, Wis. Currier's knife	208,593	Oct. 1	140	41	14	508
Harper, R. W., Evansville, Ind. Wash-board	208,594	Oct. 1	141	41	14	508
Haskell, O. C. (See Birge and Skidmore, assignors.)						
Häuser, J. W. (See Winchell and Häuser.)						
Hawes, L. P., Brooklyn, N. Y. Steam-trap	208,520	Oct. 1	64	20	14	498
Heald, W. A. (See Conway and Heald.)						
Heisley, J. W. (See Mehling, J. A., assignor.)						
Hetherington, J. E., Cherry Valley, N. Y. Artificial honey-comb foundation	208,595	Oct. 1	142	41	14	508
Heyenga, W., New York, N. Y. Tobacco-pipe	208,597	Oct. 1	143	42	14	508
Heyenga, W., New York, N. Y. Tobacco-pipe cover	208,596	Oct. 1	142	41	14	508
Hibbert, J., Camden, N. J., assignor to himself, J. Plant, and W. H. Beswick. Doffer-comb for carding-engines	208,598	Oct. 1	144	42	14	508
Hibirup, W. T., and A. Tschop, Harrisburg, Pa. Seed-drill	208,599	Oct. 1	145	42	14	508
Hodel, J. A., Cumberland, Md. Apparatus for forming valve-yokes	208,600	Oct. 1	146	42, 43	14	508
Hodel, J. A., Cumberland, Md. Machine for straightening car-axles	208,601	Oct. 1	147	43	14	509
Houck, F. A., and J. E. Gardner, Holden, Mo. Boiler-washing machine	208,602	Oct. 1	148	43	14	509
Hubel, F. A., Detroit, Mich. Machine for cutting off gelatine capsules. (Reissue)	8,440	Oct. 1	218	62, 63	14	518
Hull, W. A., Meriden, Conn. Inkstand. (Reissue)	8,439	Oct. 1	218	62	14	518
Jacobs, M., Fort Clark, Tex. Padlock	208,603	Oct. 1	149	43	14	509
Jasper, W., and S. Bousbey, San Francisco, Cal. Hopper for cube-sugar machines	208,521	Oct. 1	65	20	14	498
Jasper, W., assignor of one-half interest to S. Bousbey, San Francisco, Cal. Machinery for making cube-sugar	208,522	Oct. 1	66	20	14	498
Johnson, F. G., assignor of one-half interest to A. H. Doty, Brooklyn, N. Y. Gas-governor	208,523	Oct. 1	67	20	14	498
Johnson, J., assignor to himself and J. H. Gilbert, Brooklyn, N. Y. Composition for journal-bearings	208,524	Oct. 1	68	21	14	498
Jonas, M., New York, N. Y. Cigar-box	208,604	Oct. 1	150	44	14	509
Jones, W. R., Braddock's, Pa. Ingot-mold	208,605	Oct. 1	151	44	14	509
Joyce, S. J., New York, N. Y. Sash-cord fastener	208,606	Oct. 1	152	44	14	509
Kase, S. P., Philadelphia, Pa. Reflector	208,607	Oct. 1	152	44	14	509
Kennedy, E. S. T. (See Wilkinson, A. W., assignor.)						
Kenny, N., New York, N. Y. Hot-water urn	208,474	Oct. 1	21	6	14	491
Kenny, N., New York, N. Y., assignor of one-half interest to A. N. and J. N. Luchs. Lessening noise on railways	208,475	Oct. 1	22	6	14	492
Kershner, S. W., Indianapolis, Ind. Link for chain-pumps	208,608	Oct. 1	153	45	14	509
Kershner, S. W., Indianapolis, Ind. Metallic bucket for chain-pumps, &c.	208,609	Oct. 1	153	45	14	509
King, E. (See Chapman and King.)						
King, T. P. (See Van Nouhuys and King.)						
Koch, G. (See Koch, W. and G.)						
Koch, G., St. Petersburg, Pa. Casing for oil-wells	208,610	Oct. 1	154	45	14	510
Koch, W. and G., St. Petersburg, Pa. Windlass for oil-wells	208,611	Oct. 1	155	45	14	510
Koopman, W. H., Terre Haute, Ind. Counter-support for boots and shoes	208,612	Oct. 1	156	46	14	510
Kritch, J., Cleveland, Ohio, assignor, by mesne assignments, to Cleveland Axle Manufacturing Company. Machine for boring wagon-hubs. (Reissue)	8,442	Oct. 1	221	63	14	518
Kruse, F., Coatsburg, Ill. Flour and grain conveyer	208,613	Oct. 1	156	46	14	510
Kulp, I. R., Hatfield, Pa. Hay-press	208,525	Oct. 1	71	21	14	498
Kulp, I. R., Hatfield, Pa. Hay-press	208,526	Oct. 1	71	21	14	498
Lauder, G., Pittsburg, Pa. Galvanic battery	208,614	Oct. 1	157	46	14	510
Laur, F., Paris, France. Manufacture of sulphate of alumina	208,615	Oct. 1	158	.....	14	510
Le Boulengé, P. E., Liege, Belgium. Torpedo-signal for railways	208,616	Oct. 1	159	47	14	510
Leermo, E. O., Gold Hill, Nev. Suction-pipe for pumps	208,617	Oct. 1	160	47	14	511
Leighton, W., Jr., Wheeling, W. Va. Glass-furnace	208,527	Oct. 1	72	21	14	499
Littlejohn, W., Marshall, Tex. Bagasse-furnace	208,476	Oct. 1	23	6, 7	14	492
Lomas, J. R., assignor to B. Shoninger, New Haven, Conn. Organ-pedal	208,528	Oct. 1	73	22	14	499
Loud, S. C., Boston, Mass. Ships' pump	208,529	Oct. 1	73	22	14	499
Love, E. J., assignor to himself and T. W. Love, Rutherford, N. J. Corset-clasp	208,618	Oct. 1	161	47	14	511
Love, T. W. (See Love, E. J., assignor.)						
Luchs, A. N., *et al.* (See Kenny, N., assignor.)						
Luchs, J. N., *et al.* (See Kenny, N., assignor.)						
Ludlow, N. K., Mobile, Ala. Well-tubing	208,619	Oct. 1	163	47	14	511
Magill, R. (See Asper and Magill.)						
Mallon, A. (See Schwartz, W. C., assignor.)						
Maloney, J. A., Georgetown, D. C. Covering for steam-pipes, boilers, &c.	208,530	Oct. 1	74	22	14	499
Marqua, P., Cincinnati, Ohio, assignor to P. J. Marqua's Sons. Hobby-horse	208,531	Oct. 1	75	22	14	499
Marqua's Sons, P. J. (See Marqua, P., assignor.)						

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Marquardt, J. P., Jr., and W. H. Getzendaner, Dayton, Ohio. Apparatus for suspending harness	208,477	Oct. 1	24	7	14	492
Martins, F. J., Para, Brazil. Automatic pendulum-regulator	208,620	Oct. 1	163	48	14	511
Masters, W., Martinsburg, Pa. Plow-clevis	208,621	Oct. 1	165	48	14	511
Maynard, C., Boston, Mass. Illuminated clock	208,478	Oct. 1	25	8	14	492
McCormick, J. A., Pittsburg, Pa. Water-heater for steam-boilers	208,479	Oct. 1	27	8	14	492
McDowell, W. M., *et al.* (See Frank, S., assignor.)						
McGloghlon, W. D., London, Ontario, Canada. Watch-pendant	208,480	Oct. 1	27	8	14	492
McGuigan, J., Melbourne, Victoria. Reflector for attachment to fire-arms	208,481	Oct. 1	28	9	14	492
McVilla, W., Manayunk, Pa. Spinning-machine for spotting and covering yarn	208,622	Oct. 1	166	48	14	511
Mehling, J. A., assignor of one-third interest to J. W. Heisley, Cleveland, Ohio. Preparing, finishing, and polishing the surfaces of artificial stone	208,532	Oct. 1	75	.....	14	499
Merryman, E. C., Monkton, Md. Bit-brace	208,623	Oct. 1	166	49	14	511
Michael, F., assignor to himself and F. M. Michael, Eaton, Ohio. Evaporator	208,624	Oct. 1	167	49	14	511
Michael, F. M. (See Michael, F., assignor.)						
Miller, J. F., Pittsburg, Pa. Spring draft-tug	208,482	Oct. 1	29	9	14	492
Mitchel, M. F., Ripon, Wis. Churn-dasher	208,533	Oct. 1	77	23	14	499
Moffitt, J. R., Chelsea, Mass. Machine and process for shaping counter-stiffeners for boots and shoes	208,534	Oct. 1	78	23	14	499
Morgan, C. H., Worcester, Mass. Fire-brick for annealing-furnaces	208,483	Oct. 1	29	9	14	493
Morgan, J. E., Columbus, N. C. Seeder and planter	208,625	Oct. 1	169	49	14	512
Morris, A., New York, N. Y. Rocking-chair	208,626	Oct. 1	170	50	14	512
Moulton, L. V. (See Conley, J., assignor.)						
Muirhead, J., Jr., Westminster, England. Condensing resistance for electric telegraphs	208,665	Oct. 1	215	61	14	517
Müller, J. J., San Francisco, Cal. Apparatus for saving float-gold	208,535	Oct. 1	79	23	14	500
Mullett, E. R., Clinton, Iowa. Packing and putting up rubber in sheets for dental and other uses	208,484	Oct. 1	30	9	14	493
Nichols, J. B., Evening Shade, Ark. Running-gear for wagons	208,627	Oct. 1	171	50	14	512
Nicolay, J. G., Washington, D. C. Exercising-machine	208,485	Oct. 1	31	10	14	493
Norris, D. W., Elgin, Ill. Incased glass vessel	208,628	Oct. 1	172	50, 51	14	512
Noyes, C. C. and D. W., Boston, Mass. Scarf	208,486	Oct. 1	32	10	14	493
Noyes, D. W. (See Noyes, C. C. and D. W.)						
Oakman, S., Boston, Mass. Bottle-stopper	208,487	Oct. 1	32	10	14	493
O'Byron, W. E., Ionia, Mich. Writing-tablet	208,488	Oct. 1	33	10	14	493
Otis, E. L., Rochelle, Ill. Governor for pumping-engines	208,489	Oct. 1	33	11	14	493
Overton, C. C., Brooklyn, N. Y. Reversible dumping-scow	208,629	Oct. 1	175	51	14	512
Parry, J. L., Philadelphia, Pa. Steam-trap	208,630	Oct. 1	176	51	14	512
Pearsall, G. F. E., Brooklyn, assignor to E. and H. T. Anthony & Co., New York, N. Y. Photographic-printing frame	208,536	Oct. 1	81	24	14	500
Pellerin, H. (See Pellerin, J. I. and H.)						
Pellerin, J. I. and H., Montreal, Canada. Trimmer for wax-thread sewing-machines	208,631	Oct. 1	177	51	14	512
Phelps, G. M., Brooklyn, N. Y. Printing-telegraph	208,537	Oct. 1	82	24	14	500
Philadelphia Burring Machine Works. (See Proctor, J. K., assignor.)						
Phipps, R., Georgetown, D. C. Lock-hinge	208,490	Oct. 1	35	11	14	494
Pitney, A. L., Washington, D. C. Barbed fence-wire	208,538	Oct. 1	83	24	14	500
Plant, J., *et al.* (See Hibbert, J., assignor.)						
Pleines, P., New York, N. Y. Table	208,632	Oct. 1	178	52	14	513
Post, J. W., New York, N. Y., assignor to Useful Machinery Company. Gear-cutting attachment for lathes	208,491	Oct. 1	36	11	14	494
Post, J. W., New York, N. Y., assignor to Useful Machinery Company. Key-seat or pinion-cutter	208,492	Oct. 1	37	12	14	494
Powell, H. C. (See Bartrum and Powell.)						
Prall, J. L. (See Prall, W. E., assignor.)						
Prall, W. E., Washington, D. C., assignor to J. L. Prall, New York, N. Y. Heating and ventilating buildings	208,633	Oct. 1	179	52	14	513
Prince, L., Nashville, Ohio. Dumping-car	208,634	Oct. 1	183	52	14	513
Pritchard, S. B. (See Williams, J. C., assignor.)						
Proctor, J. K., assignor to Philadelphia Burring Machine Works, Philadelphia, Pa. Wool-burring machine	208,493	Oct. 1	38	12	14	494
Quinby, L. C., Monticello, Iowa. Metallic harness-loop	208,635	Oct. 1	184	53	14	513
Reesch, C. F. A., Washington, D. C. Game-table	208,539	Oct. 1	83	24	14	500
Remington, H. A., River Point, R. I. Clutch	208,494	Oct. 1	39	12	14	494
Richardson, C., Cheltenham township, Montgomery county, Pa., assignor to Walton, Whann & Co., Wilmington, Del. Fertilizer	208,540	Oct. 1	84	.....	14	500
Rittenhouse, A., Philadelphia, Pa. Harness	208,636	Oct. 1	184	53	14	513
Robinson, E., Wilmington, Del., assignor to Woodruff Sleeping Car and Parlor Coach Company, Pittsburg, Pa. Car ventilator-window	208,495	Oct. 1	40	12	14	494
Roemer Brothers. (See Roemer, W., assignor.)						
Roemer, W., assignor to Roemer Brothers, Newark, N. J. Lock for satchels	208,541	Oct. 1	85	25	14	500
Schulze-Berge, H., and J. Barnstorf, Oberhausen, Prussia. Freeing molten iron from phosphorus	208,561	Oct. 1	104	31	14	503
Schumacher, F. (See Bailey, C., assignor.)						
Schwab, F., Pottstown, Pa. Damper for bakers' ovens	208,638	Oct. 1	186	53	14	514
Schwartz, W. C., assignor of one-half interest to A. Mallon, Philadelphia, Pa. Toy balloon	208,637	Oct. 1	185	53	14	513
Scollay, W. A., San Francisco, Cal. Pencil-clasp	208,639	Oct. 1	187	54	14	514
See, J. W., Hamilton, Ohio. Lathe-carriage	208,496	Oct. 1	41	13	14	494
Semple, R. S., Cincinnati, Ohio. Car-wheel	208,542	Oct. 1	86	25	14	500
Seymour, J. F., New York, N. Y. Stamp-gumming apparatus	208,640	Oct. 1	187	54	14	514
Shackelton, J., Rahway, N. J. Manufacturing illuminating-gas	208,641	Oct. 1	188	54	14	514
Shanton, J. T., assignor of one-half interest to R. L. Downton, St. Louis, Mo. Treating bran	208,642	Oct. 1	189	54	14	514
Shaw, D. E. (See Brigham and Shaw.)						
Shirley, E. M., Washington, D. C. Toy	208,543	Oct. 1	87	25	14	500
Shoninger, B. (See Lomas, J. R., assignor.)						
Skidmore, G. C. (See Birge and Skidmore.)						
Skinner, C. C., assignor to G. W. Williams, Jr., and H. M. Stocking, Eau Claire, Wis. Grading and ditching machine	208,497	Oct. 1	42	13, 14	14	495
Smith, C. V., and W. Farmer, New York, N. Y. Center-seal for gas-works	208,644	Oct. 1	191	55	14	514
Smith, D., assignor to M. B. Smith, Jamestown, N. Y. Farm-truck	208,498	Oct. 1	43	14	14	495
Smith, E. C. (See Dancel and Smith.)						
Smith, H. E., New York, N. Y. Ironing-machine	208,643	Oct. 1	189	55	14	514
Smith, M. B. (See Smith, D., assignor.)						
Smith, O. J., Farmer City, Ill. Device for feeding stock	208,544	Oct. 1	88	25, 26	14	501
Smith, T. T. (See Spencer, E. L., assignor.)						
Spencer, E. L., assignor of one-half interest to T. T. Smith, Millville, Mass. Self-measuring faucet	208,645	Oct. 1	194	56	14	515
Springer, T. G., New York, N. Y. Lamp-burner	208,646	Oct. 1	195	56	14	515
Starr, P., Danbury, Conn. Feeder for hat-forming machines	208,545	Oct. 1	88	26	14	501
Steinmetz, W. G., Brooklyn, N. Y. Bottle-stopper	208,647	Oct. 1	196	56	14	515

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Stevens, W. J., New York, N. Y. Bung	208,499	Oct. 1	45	14	14	495
Stocking, H. M., *et al.* (See Skinner, C. C., assignor.)						
Stringfellow, H. C. (See Baird, J. B., assignor.)						
Sullivan, D., Bangor, Me., assignor to E. H. Ashcroft, Boston, Mass. Locomotive-boiler	208,546	Oct. 1	89	26, 27	14	501
Sweetland, A. J., Boston, Mass. Pipe-coupling or leak-stopper	208,547	Oct. 1	90	27	14	501
Tillotson, J. (See Wood, L. A., assignor.)						
Tivet, E., Philadelphia, Pa. Producing leather from sheep's stomachs	208,548	Oct. 1	90	.....	14	501
Town, B., Fond du Lac, Wis. Grain-drill attachment	208,549	Oct. 1	91	27	14	501
Tridle, J. F., North Manchester, Ind. Washing-machine	208,648	Oct. 1	197	56	14	515
Tripler, A. B., New York, N. Y. Preserving wood	208,649	Oct. 1	198	57	14	515
Tschop, A. (See Hildrup and Tschop.)						
Tucker, W., East Brookfield, Mass. Manufacture of augers	208,651	Oct. 1	201	57	14	516
Tucker, W. H., assignor of one-half interest to R. S. Dorsey, Indianapolis, Ind. Stove-truck	208,650	Oct. 1	200	57	14	515
Useful Machinery Company. (See Post, J. W., assignor.)						
Van Altena, H., assignor of one-half interest to J. B. Erwin, Milwaukee, Wis. Fishing-rod	208,500	Oct. 1	46	15	14	495
Van Brunt, W. A., and S. E. Davis, Horicon, Wis. Force-feed seeding-machine	208,652	Oct. 1	202	57, 58	14	516
Van Nouhuys, I., and T. P. King, Brooklyn, N. Y. Machine for trimming the heels of boots and shoes	208,653	Oct. 1	204	59	14	516
Waldman, G., and D. Frank, Allentown, Pa. Combined knife and measuring rule	208,654	Oct. 1	206	59	14	516
Waldron, J., Clover Hill, N. J. Blast apparatus for stoves	208,501	Oct. 1	47	15	14	495
Walton, Whann & Co. (See Richardson, C., assignor.)						
Watters, J., New York, N. Y. Box-loop	208,550	Oct. 1	92	27	14	501
Weidmann, J., Paterson, N. J. Machine for beating silk	208,502	Oct. 1	47	15, 16	14	496
Weiffenbach, G. H. (See Hansen and Weiffenbach.)						
West, A., Birmingham, Iowa. Station-indicator	208,655	Oct. 1	207	59	14	516
Westbrooks, A., *et al.* (See Davis, V. R., assignor.)						
Westbrooks, J. C., *et al.* (See Davis, V. R., assignor.)						
Westbrooks, W. A., *et al.* (See Davis, V. R., assignor.)						
White, S. F., Peckville, Pa. Stove-lid	208,551	Oct. 1	93	28	14	501
Wilkinson, A. W., New York, N. Y., assignor to himself and E. S. T. Kennedy. Treating gas-lime to produce caustic lime	208,656	Oct. 1	207	.....	14	517
Willbur, J. M., New York, N. Y. Ventilating vault-light	208,552	Oct. 1	94	28	14	501
Williams, G. S., Eggleston's Springs, Va. Hog-cholera compound	208,504	Oct. 1	49	.....	14	496
Williams, G. W., Jr., *et al.* (See Skinner, C. C., assignor.)						
Williams, J. C., assignor to himself and S. B. Pritchard, Thomaston, Ga. Seed-planter and guano-distributer	208,657	Oct. 1	208	59	14	517
Winchell, J. B., and J. W. Hänser, St. Joseph, Mich. Vehicle sand-band	208,658	Oct. 1	209	60	14	517
Winchester Repeating Arms Company. (See Gardner, J., assignor.)						
Wolfe, G. G., assignor to Wolfe Stove Company, Troy, N. Y. Parlor-stove	208,659	Oct. 1	210	60	14	517
Wolfe Stove Company. (See Wolfe, G. G., assignor.)						
Wood, L. A., assignor of one-half interest to J. Tillotson, Worcester, Mass. Head-light for locomotives	208,553	Oct. 1	95	28	14	502
Wood, M., Alderson, W. Va. Steam or air brake	208,660	Oct. 1	210	60	14	517
Woodruff Sleeping Car and Parlor Coach Company. (See Robinson, E., assignor.)						
Wright, H., Pittsburg, Pa. Mold for bottle-stopper cages	208,662	Oct. 1	213	61	14	517
Wright, S. H., Indianapolis, Ind. Machine for manufacturing boxes and trays	208,661	Oct. 1	211	60	14	517
Wysong, C. and F., Pyrmont, Ohio. Corn-planter	208,503	Oct. 1	48	16	14	496
Wysong, F. (See Wysong, C. and F.)						
Young, W. D., Philadelphia, Pa. Ventilator	208,554	Oct. 1	96	28	14	502
Zimmer, G. L., Frankfort-on-the-Main, Germany. Belt-fastener	208,663	Oct. 1	214	61	14	517

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 1st DAY OF OCTOBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Alumina. Manufacture of sulphate of	F. Laur	208,615	Oct. 1	158	.....	14	510
Amalgamator	C. P. Bowen	208,509	Oct. 1	52	17	14	496
Augers. Manufacture of	W. Tucker	208,651	Oct. 1	201	57	14	516
Axles. Machine for straightening car-	J. A. Hodel	208,601	Oct. 1	147	43	14	509
Barrel-cover	E. B. Comly and W. C. Brown	208,570	Oct. 1	120	34	14	505
Battery. Galvanic	G. Lander	208,614	Oct. 1	157	46	14	510
Bed-bottom	N. T. Hamilton	208,591	Oct. 1	138	40	14	507
Belt-fastener	G. L. Zimmer	208,663	Oct. 1	214	61	14	517
Bit-brace	E. C. Merryman	208,623	Oct. 1	166	49	14	511
Boiler. Locomotive-	D. Sullivan	208,546	Oct. 1	89	26, 27	14	501
Boilers. Water-heater for steam-	J. A. McCormick	208,479	Oct. 1	27	8	14	492
Boot and shoe counter support	W. H. Koopman	208,612	Oct. 1	156	46	14	510
Boot and shoe counter stiffeners. Machine and process for shaping	J. R. Moffitt	208,534	Oct. 1	78	23	14	499
Boot and shoe heel trimming machine	I. Van Nouhuys and T. P. King	208,653	Oct. 1	204	59	14	516
Bottle-stopper	S. Oakman	208,487	Oct. 1	32	10	14	493
Bottle-stopper	W. G. Steinmetz	208,647	Oct. 1	196	56	14	515
Bottle-stopper cages. Mold for	H. Wright	208,662	Oct. 1	213	61	14	517
Box-loop	J. Watters	208,550	Oct. 1	92	27	14	501
Box-opener	J. H. Giese	208,590	Oct. 1	137	40	14	507
Boxes and trays. Machine for manufacturing	S. H. Wright	208,661	Oct. 1	211	60	14	517
Brake. Steam or air	M. Wood	208,660	Oct. 1	210	60	14	517
Bran. Treating	J. T. Shanton	208,642	Oct. 1	189	54	14	514
Brick for annealing-furnaces. Fire-	C. H. Morgan	208,483	Oct. 1	29	9	14	493
Brick making and pressing machine	J. K. Caldwell	208,566	Oct. 1	114	33	14	504
Bung	W. J. Stevens	208,499	Oct. 1	45	14	14	495
Capsules. Machine for cutting off gelatine	F. A. Hubel. (Reissue)	8,440	Oct. 1	218	62, 63	14	518
Car-coupling	L. Brown	208,457	Oct. 1	3	1	14	489
Car. Dumping-	L. Prince	208,634	Oct. 1	183	52	14	513
Car ventilator-window	E. Robinson	208,495	Oct. 1	40	12	14	494
Chain-links. Machine for bending	W. B. Conway and W. A. Heald	208,515	Oct. 1	58	18	14	497
Chair. Rocking-	A. Morris	208,626	Oct. 1	170	50	14	512
Churn-dasher	M. F. Mitchel	208,533	Oct. 1	77	22	14	499
Churn. Rotary	J. T. Fry	208,587	Oct. 1	135	39	14	507
Cigar-box	M. Jonas	208,604	Oct. 1	150	44	14	509
Clock-case	M. Bock	208,563	Oct. 1	108	32	14	503
Clock. Illuminated	C. Maynard	208,478	Oct. 1	25	8	14	492
Clutch	H. A. Remington	208,494	Oct. 1	39	12	14	494
Coin-holder	W. H. Craig	208,573	Oct. 1	121	35	14	505
Cooker. Food-	I. E. Bendickson	208,560	Oct. 1	104	31	14	503
Corset	M. D. Birge and G. C. Skidmore	208,456	Oct. 1	2	1	14	489
Corset	D. H. Fanning	208,517	Oct. 1	62	19	14	497
Corset-clasp	E. J. Love	208,618	Oct. 1	161	47	14	511
Cotton-gin-saw cleaner	J. C. Drake	208,468	Oct. 1	16	4	14	491
Cultivator	W. H. Dickey	208,576	Oct. 1	124	36	14	506
Doffer-comb for carding-engines	J. Hibbert	208,598	Oct. 1	144	42	14	508
Door-alarm	C. J. Elliott	208,578	Oct. 1	126	36, 37	14	506
Drill attachment. Grain-	B. Town	208,549	Oct. 1	91	27	14	501
Drill. Seed-	W. T. Hildrup and A. Tschop	208,599	Oct. 1	145	42	14	508
Drill-tooth attachment	S. Frank	208,583	Oct. 1	131	38	14	506
Engine, &c. Rotary	W. E. Bartrum and H. C. Powell	208,559	Oct. 1	102	31	14	503
Engine. Rotary	J. Butcher	208,565	Oct. 1	113	32, 33	14	504
Evaporator	F. Michael	208,624	Oct. 1	167	49	14	511
Evaporator. Porous	W. Galloway	208,471	Oct. 1	18	5	14	491
Exercising-machine	J. G. Nicolay	208,485	Oct. 1	31	10	14	493
Faucet. Self-measuring	E. L. Spencer	208,645	Oct. 1	194	56	14	515
Feather-renovator	C. G. Barnd	208,558	Oct. 1	100	30	14	503
Feeding stock. Device for	O. J. Smith	208,544	Oct. 1	88	25, 26	14	501
Fence-wire. Barbed	A. L. Pitney	208,538	Oct. 1	83	24	14	500
Fertilizer	C. Richardson	208,540	Oct. 1	84	.....	14	500
File. Paper-	A. Childs	208,568	Oct. 1	118	34	14	505
Filter. Water-	H. J. Ennis	208,579	Oct. 1	127	37	14	506
Fire-arms. Reflector for attachment to	J. McGuigan	208,481	Oct. 1	28	9	14	492
Fire-escape	F. B. Fuchs	208,470	Oct. 1	18	5	14	491
Fire-place hood	H. Clayton	208,569	Oct. 1	119	34	14	505
Fish-hook. Baited	J. Falvey	208,581	Oct. 1	130	38	14	506
Fishing-rod	H. Van Altena	208,500	Oct. 1	46	15	14	495
Flour and grain conveyer	F. Kruse	208,613	Oct. 1	156	46	14	510
Fork and pruning-shears. Combined hay-	B. C. Chambers	208,462	Oct. 1	10	3	14	490
Furnace. Bagasse-	W. Littlejohn	208,476	Oct. 1	23	6, 7	14	492

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Furnace. Glass	W. Leighton, Jr	208,527	Oct. 1	72	21	14	499
Game-table	C. F. A. Reesch	208,539	Oct. 1	83	24	14	500
Gas-governor	F. G. Johnson	208,523	Oct. 1	67	20	14	498
Gas. Manufacturing illuminating	J. Shackleton	208,641	Oct. 1	188	54	14	514
Gas-works. Center-seal for	C. V. Smith and W. Farmer	208,644	Oct. 1	191	55	14	514
Glass, &c. Ornamenting	C. Fontayne	208,584	Oct. 1	132	.....	14	507
Glass vessel. Incased	D. W. Norris	208,628	Oct. 1	172	50, 51	14	512
Gloves for surgical operations. Manufacture of	T. Forster	208,586	Oct. 1	134	39	14	507
Gold. Apparatus for saving float	J. J. Müller	208,535	Oct. 1	79	23	14	500
Governor for pumping-engines	E. L. Otis	208,489	Oct. 1	33	11	14	493
Grading and ditching machine	C. C. Skinner	208,497	Oct. 1	42	13, 14	14	495
Grinding and mixing pasty substances. Machine for	A. Beyer	208,502	Oct. 1	107	31	14	503
Harness	A. Rittenhouse	208,636	Oct. 1	184	53	14	513
Harness. Apparatus for suspending	J. P. Marquardt, Jr., and W. H. Getzendaner.	208,477	Oct. 1	24	7	14	492
Harness-loop. Metallic	L. C. Quinby	208,635	Oct. 1	184	53	14	513
Harvester	R. Campbell	208,461	Oct. 1	9	2, 3	14	490
Hat-forming machines. Feeder for	P. Starr	208,545	Oct. 1	88	26	14	501
Head-light. Locomotive	L. A. Wood	208,553	Oct. 1	95	28	14	502
Heating and ventilating buildings	W. E. Prall	208,633	Oct. 1	179	52	14	513
Hinge. Lock	R. Phipps	208,490	Oct. 1	35	11	14	494
Hog-cholera compound	T. Arnold	208,505	Oct. 1	49	.....	14	496
Hog-cholera compound	G. S. Williams	208,504	Oct. 1	49	.....	14	496
Hobby-horse	P. Marqua	208,531	Oct. 1	75	22	14	499
Honey-comb foundation. Artificial	J. E. Hetherington	208,595	Oct. 1	142	41	14	508
Horse-collar	G. A. De Zeng	208,516	Oct. 1	61	19	14	497
Hubs. Machine for boring wagon-	J. Kritch. (Reissue)	8,442	Oct. 1	221	63	14	518
Indicator. Station-	A. West	208,655	Oct. 1	207	59	14	516
Ingot-mold	W. R. Jones	208,605	Oct. 1	151	44	14	509
Inkstand	W. A. Hull. (Reissue)	8,439	Oct. 1	218	62	14	518
Iron from phosphorus. Freeing molten	H. Schulze-Berge and J. Barnstorf	208,561	Oct. 1	104	31	14	503
Ironing-machine	H. E. Smith	208,643	Oct. 1	189	55	14	514
Journal-bearings. Composition for	J. Johnson	208,524	Oct. 1	68	21	14	498
Key-seat or pinion-cutter	J. W. Post	208,492	Oct. 1	37	12	14	494
Knife and measuring-rule. Combined	G. Waldman and D. Frank	208,654	Oct. 1	206	59	14	516
Knife. Currier's	T. Hansen and G. H. Weiffenbach	208,593	Oct. 1	140	41	14	508
Lamp-burner	T. G. Springer	208,646	Oct. 1	195	56	14	515
Last	J. E. Chenette	208,513	Oct. 1	57	18	14	497
Lathe-carriage	J. W. See	208,496	Oct. 1	41	13	14	494
Lathes for cutting rubber and other rings. Attachment to	J. B. Candy	208,567	Oct. 1	117	34	14	504
Lathes. Gear-cutting attachment for	J. W. Post	208,491	Oct. 1	36	11	14	494
Leather from sheep's stomachs. Producing	E. Tivet	208,548	Oct. 1	90	.....	14	501
Life-boat	C. Dickenson	208,575	Oct. 1	123	36	14	506
Lime to produce caustic lime. Treating gas-	A. W. Wilkenson	208,656	Oct. 1	207	.....	14	517
Lock. Satchel-	W. Roemer	208,541	Oct. 1	85	25	14	500
Mill. Cider-	J. Bowen. (Reissue)	8,441	Oct. 1	220	63	14	518
Mill. Feed-grinding	D. Brigham and D. E. Shaw	208,511	Oct. 1	55	17	14	497
Motor	D. Ford	208,519	Oct. 1	64	19	14	498
Oatmeal-machine	C. Bailey	208,455	Oct. 1	1	1	14	489
Organ-pedal	J. R. Lomas	208,528	Oct. 1	73	22	14	499
Ovens. Damper for baker's	F. Schwab	208,638	Oct. 1	186	53	14	514
Padlock	M. Jacobs	208,603	Oct. 1	149	43	14	509
Paper and paper-pulp. Manufacture of	W. E. Farrell	208,518	Oct. 1	63	.....	14	497
Pencil-clasp	A. Christey	208,464	Oct. 1	12	3	14	490
Pencil-clasp	W. A. Scollay	208,639	Oct. 1	187	54	14	514
Pendulum-regulator. Automatic	F. J. Martins	208,620	Oct. 1	163	48	14	511
Percussion-primer	J. Gardner	208,589	Oct. 1	136	39	14	507
Photographic-printing frame	G. F. E. Pearsall	208,536	Oct. 1	81	24	14	500
Pipe-coupling or leak-stopper	A. J. Sweetland	208,547	Oct. 1	90	27	14	501
Pipe cutters or wrenches. Cutter for	C. Fenton	208,582	Oct. 1	130	38	14	506
Pipes, boilers, &c. Covering for steam	J. A. Maloney	208,530	Oct. 1	74	22	14	499
Pitcher. Syrup-	H. B. Beach	208,507	Oct. 1	51	16	14	496
Pitman-joint	J. Conley	208,571	Oct. 1	120	35	14	505
Planing-machine	J. Goodrich and H. J. Colburn. (Reissue.)	8,438	Oct. 1	216	62	14	518
Planter and guano-distributer. Seed-	J. C. Williams	208,657	Oct. 1	208	59	14	517
Planter. Corn-	C. and F. Wysong	208,503	Oct. 1	48	16	14	496
Plow-clevis	W. Masters	208,621	Oct. 1	165	48	14	511
Plow-stock	V. R. Davis	208,664	Oct. 1	214	61	14	517
Press. Hay-	I. R. Kulp	208,525	Oct. 1	71	21	14	498
Press. Hay-	I. R. Kulp	208,526	Oct. 1	71	21	14	498
Pump. Ship's	S. C. Loud	208,529	Oct. 1	73	22	14	499
Pumps. Link for chain-	S. W. Kershner	208,608	Oct. 1	153	45	14	509
Pumps, &c. Metallic bucket for chain-	S. W. Kershner	208,609	Oct. 1	153	45	14	509
Pumps. Suction-pipe for	E. O. Leermo	208,617	Oct. 1	160	47	14	511
Quilting-frame	B. Elliott	208,577	Oct. 1	125	36	14	506
Railways. Means for lessening noise on	N. Kenny	208,475	Oct. 1	22	6	14	492
Railways. Torpedo-signal for	P. E. Le Boulengé	208,616	Oct. 1	159	47	14	510
Reflector	S. P. Kase	208,607	Oct. 1	152	44	14	509
Rubber in sheets for dental and other uses. Packing and putting up	E. R. Mullett	208,484	Oct. 1	30	9	14	493
Ruling-machines. Ink-feeding device for	W. Handy	208,592	Oct. 1	139	40	14	507
Sash-cord fastener	S. J. Joyce	208,606	Oct. 1	152	44	14	509
Saw. Drag-	W. W. Giles	208,472	Oct. 1	19	5	14	491
Saw handle. Crosscut-	H. Barron	208,506	Oct. 1	50	16	14	496
Scarf	C. C. and D. W. Noyes	208,486	Oct. 1	32	10	14	493
Scissors	G. Conover	208,467	Oct. 1	15	4	14	490
Scow. Reversible dumping	C. C. Overton	208,629	Oct. 1	175	51	14	512
Seams. Machinery for opening and pressing	J. T. Bruen	208,458	Oct. 1	4	1, 2	14	489
Seeder and planter	J. E. Morgan	208,625	Oct. 1	169	49	14	512
Seeding-machine	W. K. Evans	208,469	Oct. 1	16	5	14	491
Seeding-machine	J. P. Fulghum	208,588	Oct. 1	135	39	14	507
Seeding-machine. Force-feed	W. A. Van Brunt and S. E. Davis	208,652	Oct. 1	202	57, 58	14	516
Sewing-machines. Trimmer for wax-thread	J. I. and H. Pellerin	208,631	Oct. 1	177	51	14	512
Sifter. Flour and meal	F. G. Ford	208,585	Oct. 1	133	38	14	507
Silk. Machine for beating	J. Weidmann	208,502	Oct. 1	47	15, 16	14	496
Skate. Roller-	J. H. Bowen	208,508	Oct. 1	51	17	14	496

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Skins. Preparing gray-squirrel	H. Breisacher	208,510	Oct. 1	54	17	14	496
Skiving-machine	C. Dancel and E. C. Smith	208,574	Oct. 1	122	35	14	505
Sled. Logging-	J. Conniff	208,572	Oct. 1	121	35	14	505
Spinning-machine for spotting and covering yarn	W. McVilla	208,622	Oct. 1	166	48	14	511
Spring. Wagon-seat	W. D. Baker	208,557	Oct. 1	100	30	14	502
Stalk-chopper	J. B. Baird	208,556	Oct. 1	99	29	14	502
Stamp-gumming apparatus	J. F. Seymour	208,640	Oct. 1	187	54	14	514
Steam-trap	L. P. Hawes	208,590	Oct. 1	64	20	14	498
Steam-trap	J. L. Parry	208,630	Oct. 1	176	51	14	512
Stitch-ripper	J. F. Budlong	208,459	Oct. 1	7	2	14	489
Stone. Preparing, finishing, and polishing the surfaces of artificial	J. A. Mehling	208,532	Oct. 1	75	.....	14	499
Stove blast apparatus	J. Waldron	208,501	Oct. 1	47	15	14	495
Stove-lid	S. F. White	208,551	Oct. 1	93	28	14	501
Stove. Parlor-	G. G. Wolfe	208,659	Oct. 1	210	60	14	517
Straw and feed cutter	D. K. Burkholder	208,460	Oct. 1	8	2	14	489
Sugar machines. Hopper for cube-	W. Jasper and S. Boushey	208,521	Oct. 1	65	20	14	498
Sugar. Machinery for making cube-	W. Jasper	208,522	Oct. 1	66	20	14	498
Table	P. Pleines	208,632	Oct. 1	178	52	14	513
Table and life-preserver. Combined	H. M. Green	208,473	Oct. 1	20	6	14	491
Tablet. Writing-	W. E. O'Bryon	208,488	Oct. 1	33	10	14	493
Telegraph. Printing-	G. M. Phelps	208,537	Oct. 1	82	24	14	500
Telegraphs. Condensing resistance for electric	J. Muirhead, Jr	208,665	Oct. 1	215	61	14	517
Telephone-switch	C. A. Cheever	208,463	Oct. 1	11	3	14	490
Thermometer	E. C. Clark	208,514	Oct. 1	58	18	14	497
Thill-coupling	T. W. Chapman and E. King	208,512	Oct. 1	56	18	14	497
Tobacco-pipe	W. Heyenga	208,597	Oct. 1	143	42	14	508
Tobacco-pipe cover	W. Heyenga	208,596	Oct. 1	142	41	14	508
Toy	E. M. Shirley	208,543	Oct. 1	87	25	14	500
Toy balloon	W. C. Schwartz	208,637	Oct. 1	185	53	14	513
Truck. Farm-	D. Smith	208,498	Oct. 1	43	14	14	495
Truck. Stove-	W. H. Tucker	208,650	Oct. 1	200	57	14	515
Tubing. Well-	N. K. Ludlow	208,619	Oct. 1	163	47	14	511
Tug. Spring draft-	J. F. Miller	208,482	Oct. 1	29	9	14	492
Tuyere and blast-deflector. Cupola	C. T. Clark	208,465	Oct. 1	13	4	14	490
Urn. Hot-water	N. Kenny	208,474	Oct. 1	21	6	14	491
Valve-yokes. Apparatus for forming	J. A. Hodel	208,600	Oct. 1	146	42, 43	14	508
Vehicle sand-band	J. B. Winchell and J. W. Häuser	208,658	Oct. 1	209	60	14	517
Vehicle-top. Adjustable	A. Bowers	208,564	Oct. 1	112	32	14	504
Ventilating vault-light	J. M. Willbur	208,552	Oct. 1	94	28	14	501
Ventilator	W. D. Young	208,554	Oct. 1	96	28	14	502
Wagon running-gear	J. B. Nichols	208,627	Oct. 1	171	50	14	512
Wash-board	R. W. Harper	208,594	Oct. 1	141	41	14	508
Washing-machine	J. F. Tridle	208,648	Oct. 1	197	56	14	515
Washing-machine. Boiler	F. A. Houck and J. E. Gardner	208,602	Oct. 1	148	43	14	509
Watch-pendant	W. D. McGloghlon	208,480	Oct. 1	27	8	14	492
Weather-strip	E. Conklin	208,466	Oct. 1	14	4	14	490
Wells. Apparatus for boring oil-	B. F. Asper and R. Magill	208,555	Oct. 1	97	29	14	502
Wells. Casing for oil-	G. Koch	208,610	Oct. 1	154	45	14	510
Wells. Windlass for oil-	W. and G. Koch	208,611	Oct. 1	155	45	14	510
Wheel. Car-	R. S. Semple	208,542	Oct. 1	86	25	14	500
Wheel for elevated railways. Car-	M. V. B. Ethridge	208,580	Oct. 1	129	37	14	506
Wood. Preserving	A. B. Tripler	208,649	Oct. 1	198	57	14	515
Wool-burring machine	J. K. Proctor	208,493	Oct. 1	38	12	14	494

THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE.

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DECISIONS OF THE COURTS.

Circuit Court of the United States—District of Maine.

THE MANHATTAN MEDICINE COMPANY *vs.* NATHAN WOOD *et al.*

[*In Equity.—No.* 78.—*September* 21, 1878.]

A, the original proprietor of the medicine and its trade-mark, in making assignment to the grantees, through whom mediately the complainants claim, reserved certain territory from the grant, no part of which thereafter vested in the complainants. The respondents, manufacturing in one of the excepted districts, derived title to the medicine and the mark from B, whose independent interest therein, distinct from that of A or his grantees, had been judicially declared in an action brought by the latter to restrain his alleged unlicensed use thereof: *Held*, that the respondents are without liability.

Trade-marks are an entirety and are incapable of exclusive use at different places by more than one independent proprietor, for, in seeking redress, in order to establish an exclusive right to the mark, the party must show an exclusive right to the commodity to which it is attached.

Rights to a trade-mark may be forfeited if the mark is deceptively used to designate a spurious article, and a party thus affected can convey no valid title in the mark to another.

Equity will not decree for an account of past gains and profits where there has been laches in bringing suit and long acquiescence in the adverse use of the mark by others.

Disregard of territorial limits allotted by license of proprietor, and misuse of the trade-mark, are a forfeiture of right and a defeat to any valid conveyance by the wrong-doers.

Voluntary relinquishment of the original mark of the proprietor for another devised by the grantees themselves is a forfeiture of right to the old mark no less than its misuse to designate a spurious article.

[*Moses M. Butler* and *Chase, Bestow & Holt* for complainants; *W. H. Clifford* and *Nathan Webb* for defendants.]

CLIFFORD, *J.*:

Equity gives relief for the infringement of a trade-mark, upon the ground that one man is not allowed to offer his goods for sale representing the goods to be the manufacture of another in the same commodity. (*Seixo* vs. *Provezende*, Law Rep., 1 Chan., 195.) What degree of resemblance is necessary to constitute an infringement is incapable of exact definition, but the rule is that no trader can adopt a trade-mark so resembling that of another as that ordinary purchasers, buying with ordinary caution, are likely to be misled. (*McLean* vs. *Fleming*, 6 Otto.) Two trade-marks are substantially the same in legal contemplation if the resemblance is such as to deceive ordinary purchasers, giving such attention to the same as such purchasers usually give, and to cause them to purchase the one manufacture supposing it to be the other. (*Gorham Company* vs. *White*, 14 Wall., 528.)

Relief is claimed in this case upon the special grounds set forth in the bill of complaint. They are in substance and effect as follows:

1. That the corporation complainants for a long time have been and now are the manufacturers and vendors of an article of medicine called and known as "Atwood's Vegetable Physical Jaundice Bitters," taken internally for the cure of jaundice and other diseases; that during all the time they have been engaged in making and selling the article it has been put up and sold in the same manner and with the same trade-marks, labels, and wrappers affixed thereto, in glass bottles with twelve panel-shaped sides, having on five of the sides the raised words and letters "Atwood's Genuine Physical Jaundice Bitters, Georgetown, Mass.," blown in the glass on each bottle, each bottle containing about a pint of the medicine in liquid form, labeled with a light yellow printed label, pasted on the outside, as fully set forth in the bill of complaint.

2. That the said medicine was first invented and put up for sale about twenty-five years ago by one Dr. Moses Atwood, formerly of Georgetown, Massachusetts, by whom, his assigns and successors, the same has been ever since made and sold by the same name, in the same manner, and with the same trade-marks and description.

3. That the complainants, long prior to the alleged infringement, became the lawful, sole, and exclusive owners of the formula or recipe for making said medicine, and of the sole and exclusive right to use said

name or designation therefor, together with all said trade-marks, labels, and good-will of the business of making and selling said medicine.

4. That the respondents, prior to the filing of the bill of complaint, at Portland, and at divers other places unknown to the complainants, have manufactured and sold and are still manufacturing and selling large quantities of medicine, of an inferior quality, in imitation of the article manufactured and sold by the complainants, and without their consent.

5. That during all that time the respondents have made, put up, and sold, and still make, put up, and sell, their said imitation and counterfeit article as and for the genuine article of the complainants, so put up, marked, and labeled, that it is very difficult to be distinguished from the complainants' genuine article.

6. Based on these allegations, the complainants pray for an account, and for an injunction restraining the respondents from affixing or applying to any article of medicine manufactured, sold, shipped, or supplied by them, or to the bottles or packages in which the same is put up, the complainants' trade-mark words, to wit, "Atwood's Vegetable Physical Jaundice Bitters," or either of said words, or any imitation thereof.

Service was made, and the respondents appeared and filed an answer, setting up several defenses to the following effect:

1. They admit that the complainants purchased all the right which the parties named in the answer owned to prepare the Atwood bitters, but they deny that those parties held or possessed the exclusive right to manufacture the same, or any exclusive right whatever to the same, or any exclusive right to any trade-mark, label, or wrapper, consisting of a glass bottle, with panel-shaped sides, and with the raised words and letters "Atwood's Genuine Physical Jaundice Bitters, Georgetown, Mass.," blown in the glass; nor did they possess any exclusive right to the preparation of the medicine in a liquid form, or to the light yellow printed label pasted to said bottle, upon which were the words "Atwood's Vegetable Physical Jaundice Bitters." Nor did they possess any exclusive right to the residue of what is printed upon the label, and set forth in the bill of complaint.

2. That the twelve-panel bottle, the yellow label, the words "Atwood's Bitters," together with the other words alleged to be printed on said label, were in public and common use by a large number of manufacturers.

3. That the complainants did not purchase and do not now own the exclusive right nor the entire right to said bottle, label, and words, or either of them, as alleged, because their said assignors were not the exclusive proprietors of the same, and therefore could not sell and dispose of what they did not own.

4. They deny that Moses Atwood first invented and put up the said medicine for sale, and allege that it was first put up by Moses F. Atwood, of Georgetown, Massachusetts, in connection with L. H. Bateman, not in a paneled bottle, but in a smooth, round bottle, without panels; that the round bottle used by Bateman had no words blown in the glass, and that the bottles which contained words blown in the glass were rectangular in form and without panels, and that Moses Atwood first used a white label and a round bottle having no panels or blown letters.

5. That Moses F. Atwood, and not Moses Atwood, first obtained the formula for the medicine from some physician to these respondents unknown, and prepared the same according to the formula, and not according to any invention of himself or of said Moses Atwood; and that subsequently thereto the medicine put up by him and Bateman began to be called "Atwood's Bitters."

6. That the respondent first named, in May, 1861, purchased the recipe for the medicine and the right of using the bottle and label; that he has a right to use the same, and that no person has ever pretended to interrupt him in such use prior to the present suit.

7. That L. F. Atwood, the brother of Moses Atwood, also had a right to use the said label and bottle, and that he sold such right to H. H. Hay, of Portland, who uses the same on the bottles containing the medicine.

8. That they have been in the practice of preparing the medicine under the recipe bought of Moses F. Atwood for the period of fourteen years, and that they have spent large sums of money in advertising the medicine and in creating a market for the same.

Proofs were taken on both sides, and the evidence is voluminous and somewhat conflicting. Any discussion of the legal questions arising in the case would not be of much advantage until the facts are ascertained, which will be best accomplished by distinct findings.

Pursuant to that view, the court finds as follows:

1. That Moses Atwood, Georgetown, Massachusetts, commenced preparing the medicine in question nearly forty years ago; that for a time the formula of the ingredients was a secret, and that he soon began to designate the preparation as his medicine more frequently than otherwise, designating it as "Moses Atwood's Bitters," or as "Moses Atwood's Jaundice Bitters," and sometimes as "Atwood's Vegetable Jaundice Bitters." There is no direct proof that he ever adopted any distinct trade-mark, but the evidence of use is such as to warrant the conclusion that he considered the latter designation as representing the article which he manufactured and put up for sale. For a time no other person had any interest in the business, and throughout all that period he put the article up in round smooth bottles without panels or raised words or letters of any kind. Others subsequently acquired an interest in the business with him, among whom were his brother and L. H. Bateman, and the person who subsequently joined with him in the conveyance to Carter & Dodge. His son, Moses F. Atwood, had worked with him and Bateman at Georgetown in preparing the medicine under the recipe and knew the ingredients of which it was compounded. He, the son, went to work with Bateman in 1860, and he states that they used a fluted bottle containing the name of the medicine and that of his father and his place of residence blown into it.

2. That large rights in respect to the business remained in Moses Atwood, notwithstanding the interests in the same acquired by others; that January 1, 1848, he entered into a written contract with Moses Carter, by which he sold to the latter bills against local agents in many places in Massachusetts, Rhode Island, Connecticut, and New York, and the right to sell the medicine in those places, under the terms and conditions following: that he, the manufacturer, should not sell the medicine in those places so long as the other party supplied customers there; that he, the proprietor, agreed to make the bitters during ten years for seventeen dollars per barrel, to be delivered in the State where the same were made, three-quarters of the money to be advanced by the other contracting party.

3. Carter and Benjamin S. Dodge, February 2, 1852, formed a copartnership, which, of course, consisted of two parts, but they subsequently took into the firm C. L. Carter, and by interlineations made the articles consist of three parts. They formed the copartnership for making and vending Atwood's vegetable medicines and essences. Enough appears to afford an inference that a prior agreement between Moses Carter and Dodge of the one part and Moses Atwood of the other had been made, as the record shows that Atwood and Bingham and Carter & Dodge, September 29, 1852, entered into a contract to settle doubts and supply omissions in the supposed antecedent agreement, which was not introduced in evidence.

4. By the contract introduced Moses Atwood and his partner conveyed to Carter & Dodge the right to use said Atwood's name on the labels and circulars, and to manufacture and sell "Atwood's Vegetable Jaundice Bitters," and certain other articles, on the ground hereinafter described, and not to sell by themselves or their agents in any other portion of the world, or sell to others to sell, except on the ground hereinafter described. Massachusetts is named, with numerous excepted towns and parts of towns. Towns and places are also excepted from New York. Seven towns are also excepted from New Hampshire; and all of the State of Maine, except the towns of Kittery, South Berwick, and Lebanon. Other exceptions are made in the same instrument not necessary to be noticed in this investigation. Attempt was made to prove by parol the prior agreement referred to in the contract, and with that view reference was made in argument to the cross-examination of Luther F. Carter, who states that there were papers executed to Carter & Dodge, giving them the right to manufacture the bitters, using Moses Atwood's name, but that he knew nothing about the bottle. When asked if those papers came into his possession, he answered that he didn't know that they ever did. He was then asked, "If they were ever in your hands, to whom did you deliver them?" and his answer was, "If they were ever in my hands, I delivered them to Eli B. Johnson," the record showing that the person named was the agent of the complainants. Taken as a whole, the court is of the opinion that the evidence was not sufficient to admit parol testimony of the contents of the instrument, nor would it benefit the complainants if the rule was otherwise, as the witness states that he does not know that the paper or papers conveyed anything more to Carter & Dodge than the right to put up the medicine and use Atwood's name; nor does the record contain any evidence tending to show that the original proprietor ever gave them the right to sell the medicines in any of the places excepted out of the contract introduced in evidence.

5. That parol evidence was introduced tending to show that Carter & Dodge owned, at the time of their dissolution of copartnership, all the right in Atwood's Bitters, to manufacture and sell the same, except what Atwood had reserved; but there is no evidence that he ever conveyed to them any right to put up or sell the same in the places reserved, nor is there any evidence tending to show how, if ever, he acquired the interest in the same at one time held by his brother and Bateman.

6. Suggestions were made in argument that Moses Atwood, in the year 1855, conveyed to Carter & Dodge, or Carter, Dodge & Co., his entire interest in the business, except his right to sell the medicine beyond Illinois. What a party does not own of course he cannot sell, and that is a sufficient answer to the proposition, so far as respects the interests which had become vested in others; but the supposed sale might apply to some of the excepted places, not to all, as the same witness admits that Carter & Dodge did not own what Mr. Atwood had reserved, but he says that he once saw the agreement last referred to, and, when asked if he had made search for it, stated that he had made diligent search for it among his father's old papers. It was about the time that Carter, Dodge & Co. brought the suit against Bateman that he saw the paper, and he says he has not seen it since that time. According to his statement the paper was from Moses Atwood to Carter, Dodge & Co. Carter & Dodge sued Bateman for putting up and selling the medicine and using the trade-mark, and he prevailed in the suit; and yet no search was made among the papers of Mr. Dodge. For aught that appears to the contrary, it may be among his papers, or in the hands of the attorneys in that suit, or in the files of the clerk's office.

Two objections are taken to the evidence, both of which may be sustained:

First. That sufficient search is not shown to admit it.

Second. That if it is admitted it has no tendency to show that the conveyance included Maine, or any other of the excepted places; nor does it appear that the grantor reacquired the interests previously vested in other persons.

Localities almost without number were excepted out of the general grant, and the uncontradicted proof is that the original proprietor made reservations in favor of his father, Levi Atwood, and his brother, Levi F. Atwood, of Maine and part of New Hampshire.

7. Viewed in the light of these suggestions, the court finds that Carter & Dodge never acquired the right to put up and sell the medicine in Maine, or in any of the places excepted out of the grant from the original proprietor, nor did they ever acquire the right or title to any of the same reservations in favor of other parties. Trade-marks are an entirety, and are incapable of exclusive use at different places by more than one independent proprietor, for the reason that the party seeking redress, in order to establish an exclusive right to the trade-mark, must show that he had an exclusive right in the commodity to which it is attached. (Upton on Trade-Marks, 24; *Canham* vs. *Jones*, 2 Ves. & B., 218.) Throughout the largest portion of the period since 1842 Bateman, or his son, who succeeded him, put up and sold Atwood's bitters in the same town with the original proprietor, and the proofs show that he put the medicine up in half-pint glass bottles with the words "Atwood's Jaundice Bitters, Moses Atwood, Georgetown, Mass.," blown upon the bottles; that when the proprietor removed, in 1855, he left with Bateman his original recipe for the manufacture of Atwood's bitters, with all the medicines which he manufactured and sold. Little or nothing was made in the business during the lifetime of Bateman; and when he died his son succeeded to and continued in the

business until the heirs transferred the same to the complainants. For a few years Carter & Dodge put up and sold the medicine, in accordance with the course pursued by the original proprietor, when they took into the firm the son of the senior partner, C. L. Carter, and continued to transact the business under the name of Carter, Dodge & Co. two or three years longer. When they dissolved, and Dodge went out, the new firm, called Carter & Son, consisting of Moses Carter and C. L. Carter, took control of the business, and they continued the same for about five years. Subsequently another son of the senior partner joined the firm, and they continued the business for two or three years under the firm-name of Carter & Sons. Lastly, the father and the elder son went out, and Luther F. Carter took the firm-name of Carter & Son, and continued the business until he sold to the complainants. After Carter & Dodge dissolved, in 1855, Dodge went to Rowley, and put up and sold the medicine there for five years, using the Atwood labels. On the 4th of September, 1867, he sold and conveyed the right to manufacture and sell Atwood's bitters to William B. Dorman for the term of five years from the date of the agreement, with the right to use the trade-marks he had previously used in the sale of the same. Before that period expired the same party sold the same right to Noyes Manning, now of Mystic, Connecticut, with authority to use the same labels.

8. That Carter & Son had two kinds of labels used on the bottles which they put up for sale. On the top of one of the labels the words "Carter's are the only genuine" were printed, and below the directions the words "Manufactured by M. Carter & Son, successors to Moses Atwood, Georgetown, Mass.," were also printed. At the bottom of the label were also printed the words "Caution.—Observe that our name is blown in the bottle and on the revenue stamp. None others are genuine." The label also bore the words "Atwood's Vegetable Physical Jaundice Bitters." Two kinds of bitters were put up at their place. One kind, under the label described, which was the genuine "Atwood's Vegetable Physical Jaundice Bitters," sold in the market at wholesale for twenty-seven dollars per gross; the other kind was an inferior article, an imitation of the genuine, sold in the market at fifteen dollars per gross, bearing the genuine original label of Atwood's bitters, with the "e" left out in the word "the" preceding the words United States. Carter's traveling agents never sold any but the genuine article, the imitation being disposed of by Carter alone. In most instances the two kinds were retailed at the same price, but when both kinds were known the genuine brought a higher price.

9. That Bateman had the original recipe, and that Moses F. Atwood, the son of the original proprietor, when in the employment of Bateman as a selling agent, sold the recipe for compounding and preparing the Atwood bitters in the State of Maine to Nathan Wood, in 1861. When asked whether the conveyance was in writing, he said it was, and that each party had a copy, and that he sold to the respondent the right to manufacture the bitters and sell the same in the State of Maine and elsewhere. Proof that the grantor had authority from the actual proprietor to execute the conveyance is not shown in the record, but it is shown that the purchaser, with his partner, has continued to prepare, put up, and sell the medicine from the date of the purchase of the recipe to the date of the bill of complaint, without hinderance or interruption, with the exception of the two instances mentioned in the second answer, since the organization of the complainant corporation. None of the grantors of the complainants ever disputed their right to compound, put up, and sell the bitters in question, nor is there any evidence tending to show that the bitters which they sold were not the genuine Atwood bitters. Their grantor possessed the genuine recipe, and the proofs are full to the point that it was the genuine recipe which he sold to the respondent, Nathan Wood. Beyond all doubt the respondent, Nathan Wood, acquired the recipe, which, not being the subject of a patent, might lawfully be used by any one who possessed the secret; and it is equally certain that he supposed that he had acquired the right to use the labels, as he purchased the right to use the same of the son of the original proprietor, and of the selling agent of Bateman, whose title to put up the medicine and use the labels was subsequently established by judicial determination.

10. Unlike what is usual in controversies respecting trade-marks, the complainants in this case, instead of using a trade-mark of their own adoption, allege and attempt to prove that the trade-mark in question was adopted by the original proprietor of the medicine, and that they have acquired the title to the same by certain mesne conveyances set forth in the record, and the court finds upon that subject as follows:

1. That they or their predecessors, January 1, 1875, acquired, by assignment, whatever right in the same belonged to the heirs and representatives of L. H. Bateman.

2. Also, March 18, in the same year, whatever right belonged to the firm of Noyes & Manning.

3. Also, March 30, in the same year, whatever right belonged to Benjamin C. Dodge.

4. Also, March 30, in the same year, whatever right belonged to William B. Dorman.

5. Also, April 12 and 19, in the same year, whatever right belonged to the Carters in the said trade-mark.

None of these instruments of conveyance, however, convey or profess to convey any greater rights to the complainants than those which were previously held by Carter & Dodge; and it is clear that Carter & Dodge never acquired from the original proprietor any right to put up or sell the medicine in Maine, or to use the labels of the original proprietor in that State out of the three towns specified in the written agreement, which constitutes the evidence of their title.

Nothing remains to be done in the case of much importance, except to state the conclusions of law and fact resulting from the findings of the court.

1. Examined in the light of the findings, as the case must be, it is clear to a demonstration that the complainants have no exclusive right to put up and sell the medicine, nor any exclusive right or title to the labels, which belonged to the original proprietor.

2. That all they claim in respect either to the medicine or the labels is the right to the same which was held by Carter & Dodge, who never possessed the right to put up the medicine or to use the labels in any part of Maine, except the three towns named in the said written agreement.

3. That the rights of certain of the assignors of the complainants, if any they ever had, were forfeited long before the supposed transfer under which the complainants claim by the use of the trade-mark as a means of misrepresentation and deception to the public by putting up a spurious article and using the genuine trade-mark to promote the sale of the spurious article. Misrepresentation and deceit of the kind divest the guilty party of all title to the same, and it follows that a party who has forfeited his property in the same cannot convey any title to another. (*Phalon* vs. *Wright*, Cox American Trade-Marks, 311; same case, 5 Phil., 464; *Perry* vs. *Truefitt*, 6 Beavan, 66; *Pedding* vs. *How*, 8 Simon, 47; *Hobbs* vs. *Francais*, 19 How. Pr., 567; *Partridge* vs. *Menck*, 1 How. Cas., 547; *Fetridge* vs. *Wells*, 4 Abb., Prac. R., 144; *Flavell* vs. *Harrison*, 19 Eng. L. & Eq., 15.) Equity will not decree for an account of past gains and profits where there has been laches in bringing the suit and long acquiescence in the use of the trade-mark by others, and especially not where the acquiescence covers a period of fourteen years. (*McLean* vs. *Fleming*, 6 Otto, 1; *Harrison* vs. *Taylor*, 11 Jurist, [N. S.,] 408; *Holt* vs. *Couston*, 3 Beavan, 580; *Edelsten* vs. *Edelsten*, 1 DeGex, Jones and Smith, 185; *Estcourt* vs. *Estcourt*, 1 Law Rep., 10 Chan., 276.)

4. That the assignors of the complainants forfeited all their property, if any, in the trade-mark belonging to the original proprietor by a disregard among themselves of their several allotted districts after the grant or license from the original proprietor, by trespassing upon each other and misuse of the trade-mark.

5. That the grantees or licensees of the original proprietor and their successors forfeited the right to the original trade-mark of their grantor or licensor by the voluntary relinquishment of the bottle, label, and directions which he used before the transfer, and by the adoption of new and different labels, &c., of their own substitution, one or more of whom put up and sold a spurious article of medicine under the genuine label, and used a different label of his own invention on bottles containing the genuine medicine. Cases arise where the title is complete, when a party, though not entitled to a decree for an account, may still be entitled to a decree to prevent future infringements; but the difficulty in the way of the complainants in this case is incurable, as the evidence shows that the respondents have the genuine recipe, which is not protected by any patent, and the complainants have not any exclusive right to the use of the label, and no right at all to the use of it in the State of Maine.

Bill of complaint dismissed, with costs.

U. S. Circuit Court—District of New Jersey.

WILLIAMS & ALBRIGHT *vs.* THE EMPIRE TRANSPORTATION COMPANY AND B. W. HOPPER.

[*In Equity.*]

PRACTICE.

A plea to a bill of complaint alleging facts, which if true may show that one of the defendants has no interest in the suit, not overruled, but saved to the defendant to the hearing, then to be considered in the light of the evidence in the case.

A foreign corporation without charter from a State, but transacting business therein and amenable to the process service of its courts in accordance with local law, is *found* within the State in the sense of the judiciary acts, and may be sued in the United States circuit court.

[*A. Q. Keasbey* and *Joseph C. Clayton*, for complainants; *George Harding*, for B. W. Hopper, defendant.]

NIXON, *D. J.*:

This is a motion to strike out a plea. The bill of complaint was filed for the infringement of certain letters patent against the Empire Transportation Company, a corporation organized under the laws of the State of Pennsylvania, and doing business as such, among other places, at Jersey City and elsewhere within the State of New Jersey, and B. W. Hopper, the agent of the said company in this State.

The service of the subpœna was made upon the defendant Hopper.

No appearance has been entered for the defendant corporation; but Hopper has appeared and pleaded that at the time of the commencement of this suit he was acting merely as station agent, at Newark, New Jersey, for the Empire Transportation Company, a corporation organized and operating under the laws of Pennsylvania; that, as such agent, he had nothing whatever to do with the construction and operation of cars for transporting petroleum, nor with the running of the same within the district of New Jersey, nor in any other place; his duty as agent being merely to keep the books of the company, to collect the amounts due for freights received and shipped, and to make returns for the same to the office of the company at Philadelphia, &c.

By the consent of the parties the motion to strike out the plea has been treated as a demurrer, under the rules. The facts stated are admitted to be true, and the question is whether they constitute a sufficient reason why the said Hopper should not have been included as a defendant in the suit. The plea, although not common, is one well known in equity practice. It is sometimes called a plea in abatement, and sometimes a plea in bar. A defendant is permitted to plead that he does not sustain the character which he is alleged to bear in the bill, or that he has no interest in the subject of the suit. (Story Eq. Pl., §§732–734.)

I am quite sure that the plea ought not to be overruled. The facts stated may be a defense. The only doubt I have is whether I should save to the defendant the benefit of the plea to the hearing, or order it to stand for an answer. But, upon the whole, I think the former course is the true one, because so far as it appears to the court it may prove to be a defense. Matters may be disclosed in the evidence which will establish or avoid it, and no course should be now taken that will preclude the consideration of the question hereafter.

The plea is, therefore, saved to the hearing, and to be then treated as the testimony in the case shall warrant.

But I infer from the argument of the counsel at the hearing that this is not the question which in fact the parties are endeavoring to have decided. They are reaching after a different matter. They wish to ascertain if the proceedings should be discontinued against the defendant Hopper, for the want of interest, whether the suit is still maintainable against the Empire Transportation Company, a foreign corporation, in view of the provisions of the eighty-eighth section of the "act concerning corporations," approved by the Legislature of the State of New Jersey, April 7, 1875, (Rev. Stat., 193,) and also of the first section of an act of the Congress of the United States, entitled "An act to determine the jurisdiction of circuit courts," &c., approved March 3, 1875. (18 Stat.-at-Large, 470.)

The State law referred to enacts that in all personal suits or actions hereafter brought in any court of this

State against any foreign corporation not holding its charter under the laws of this State process may be served upon any officer, director, agent, clerk, or engineer of such corporation, either personally, or by leaving a copy at their dwelling-house or usual place of abode, or by leaving a copy at the office, depot, or usual place of business of such corporation.

The act of Congress provides that no civil suit shall be brought before either of said courts, (circuit or district,) against any person, by any original process or proceeding in any other district than that whereof he is an inhabitant, or in which he shall be found at the time of serving such process or commencing such proceeding, &c. The corporation was not an inhabitant of the State of New Jersey at the time of filing the bill and serving the subpœna.

It has long been settled that the body corporate only lives within the boundaries of the sovereignty by which it is created. (*Bank of Augusta* vs. *Earl*, 13 Pet., 520; *Railroad Company* vs. *Wheeler*, Black, 286.) This results from the fact that it is an artificial being, deriving its life from its charter, and has no capacity to exist and no power to exercise its functions except as they are conferred by the local law.

It would seem to be a legitimate if not a necessary inference from this that a corporation could not be found inside [*outside?*] of the place of its creation to be served with legal process. Such was the opinion of the late learned justice of the second district, (Nelson,) in the case of *Day* vs. *The India Rubber Company*, (1 Blatch., C., 628,) in which he quashed a writ of attachment and summons that had been issued in the circuit court of the southern district of New York against a New Jersey corporation. And in the subsequent case of *Pomeroy* vs. *The New York and New Haven Railroad Company*, (4 Blatch., C., 120,) he went a step further, and held that the defendant corporation, organized in Connecticut, could not be found in New York, in the sense of being amenable to Federal process, although the legislature of the State of New York in authorizing the body corporate to purchase lands, to enter into contracts, and to extend its road into and over the State, had expressly provided that it should be liable to be sued by summons in the same manner as corporations created by the laws of the State, and that the process might be served on an officer or agent of the company. He says, (p. 122:)

> The difficulty here is in giving effect to this law of New York providing for service of process on the defendants. That is regulated, as to this court, by the act of Congress of 1789, already referred to, and cannot be altered or modified by any State law. According to that act the defendant must be an inhabitant of the district, or be served with process within it, in order to give the court jurisdiction.
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> Now, service of process, by the assent of this company, upon an agent within the State cannot be said to be service upon an inhabitant of the district, or upon a person within it. The corporation is still a Connecticut company, resident within the State of Connecticut, but consenting to be sued in New York, by service of process on its agent; and, however effectual this service may be in conferring jurisdiction over the company upon tribunals governed by the laws of New York, it cannot have that effect in respect to Federal tribunals, which are not only not governed by the State laws, but are governed by the act of Congress, which has prescribed a different rule.

But the Supreme Court have given a different construction to the act, and, of course, have come to a different conclusion. Since the recent case of *ex parte Schellenberger*, (not yet reported, but printed in the Albany Law Journal for the current year, p. 427,) it would seem that the court should look to the legislation of the State, and exercise jurisdiction over a foreign corporation when provision has been made for the service of process. That action was one of a large number instituted in the Circuit Court of the United States for the eastern district of Pennsylvania by a citizen of that State against a foreign fire insurance company, which corporation had been allowed to transact its business in Pennsylvania by a law of the State upon certain terms, one of which was that a person should be designated upon whom a service of summons could be made in case of suit against them. The circuit court dismissed the case for want of jurisdiction, and because the law of the State could not confer it. But the Supreme Court, after long argument and careful consideration, issued a mandamus directing the circuit court to reinstate the suits and proceed to trial, holding that a foreign corporation, transacting business in Pennsylvania, in view of the legislation of the State, was *found* there for the purpose of service of the writ.

As the last utterance of the highest tribunal this must now be accepted as the law, and it is instructive to review the steps by which the court reached the result.

In the *Bank of Augusta* vs. *Earl*, *supra*, it was held that a corporation might be deemed to have an existence beyond the place of its creation, to the extent of making contracts which the courts would enforce.

In the *Lafayette Insurance Company* vs. *French* (18 How., 404) the question was whether the Federal tribunal would acknowledge the validity of judgment obtained in the courts of a State against a foreign corporation when the State law authorized the corporation to transact business within the State only on the condition that service of process upon the agent of the corporation should be considered as service upon the corporation itself.

The court held that the State had the right to impose such a condition in regard to suits before its own tribunals, and that when the corporation sent its agent into the State to effect insurances it must be presumed to have assented to the rule.

In the *Railroad Company* vs. *Harris* (12 Wall., 65,) a suit was brought in the Supreme Court of the District of Columbia against the Baltimore and Ohio Railroad Company for injuries received from a collision on the road in the State of Virginia. The company received its charter from the State of Maryland. Authority was given by the legislature of Virginia to extend the road into that commonwealth, clothing the company with all the rights and privileges granted, and subjecting it to all the obligations and penalties imposed by the original Maryland charter. Congress subsequently passed an act authorizing the extension of a lateral road into the District of Columbia, and conferring upon the company the right to exercise the same powers and privileges, and imposing upon them the same restrictions in the construction of the said lateral road within the District as they might exercise or be subject to under and by virtue of the act of incorporation of the State of Maryland.

After argument and reargument the court held that no new corporations were created by this legislation in the State of Virginia or in the District; that the old corporation remained unchanged in its unity, but with the sphere of its operations greatly enlarged; and that although foreign and incapable of migration from Maryland, it might, nevertheless, be *found* in the District of Columbia, exercising its authority upon such conditions as were prescribed by the act of Congress. "One of these conditions may be," says Mr. Justice Swayne, speaking for the whole court, "that it shall consent to be sued there. If it do business there, it will be presumed to have assented, and will be bound accordingly."

This decision was referred to with approbation by the court in the subsequent case of the *Railroad Company* vs. *Whitton*, (3 Wall., 284.)

It will be observed from an inspection of these cases that it is nowhere asserted that jurisdiction can be conferred upon the Federal courts by the legislation of the State. Indeed, such an inference is expressly repudiated in the Pennsylvania insurance cases, (*ex parte Schellenberger*, *supra*,) where the court says:

> States cannot, by their legislation, confer jurisdiction on the courts of the United States; neither can consent of parties give jurisdiction when the facts do not. But both State legislation and consent of parties may bring about a state of facts which will authorize the courts of the United States to take cognizance of a case. (*Ex parte McNeill*, 13 Wall., 243.)

It would, perhaps, more nearly accord with the principle announced in these insurance cases, to say that by the legislation of a State foreign corporations doing business in the State may be estopped from setting up in bar of a suit in the Federal courts that they are not amenable to the jurisdiction.

But whether this may be the meaning of the decision or not I am constrained by the authority of these cases in the Supreme Court to hold that the jurisdiction of the court over the present suit is not to be defeated because the defendant corporation was organized under the laws of a sister State. It was transacting business here, and by the provisions of the local law (Rev. S., 1877, p. 193) it is subject to process by serving the same upon one of its agents, and has waived its right to question the legality of such a mode of service.

Issue of October 8, 1878.

Patents	214	No. 208,666	to No.	208,879, inclusive.
Reissues	5	No. 8,443	to No.	8,447, inclusive.
Designs	7	No. 10,859	to No.	10,865, inclusive.
Trade-Marks	49	No. 6,668	to No.	6,716, inclusive.
Labels	7	No. 1,708	to No.	1,714, inclusive.
Total issue	282			

TRADE-MARKS.

[Each certificate bearing date October 8, 1878.]

6,668.—PREPARATION FOR THE COMPLEXION AND SKIN.—*Paul B. Bradlee*, Brooklyn, N. Y. Application filed September 24, 1878.

"The arbitrarily-selected word-symbol 'ALICIANA.'"

6,669.—MEDICINAL PREPARATION.—*William M. Caterson*, Philadelphia, Pa. Application filed August 16, 1878.

"Two crowned and winged dragons, supporting a shield between them, the whole resting on a sub-platform, while on the shield is a bar crossing its surface diagonally, as shown."

6,670.—SODA WATERS, SELTZER WATERS, GINGER-POP, AND MINERAL WATERS.—*W. H. Hutchinson & Son*, Chicago, Ill. Application filed August 19, 1878.

"The arbitrarily-selected letters 'W. H. H.'"

6,671.—PREPARED CLAMS.—*Charles H. Jackson*, Providence, R. I. Application filed September 2, 1878.

"The pictorial representation of a clam and the initial letters 'R. I.,' as shown."

6,672.—SMOKING TOBACCO.—*S. M. Johnson & Brother*, New York, N. Y. Application filed September 18, 1878.

"The arbitrary words 'GOLDEN LUSTRE.'"

6,673.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Kerbs & Spiess*, New York, N. Y. Application filed September 25, 1878.

"The fanciful words 'RED AND BLACK.'"

6,674.—PLUG CHEWING-TOBACCO.—*Lovell & Gedge*, Covington, Ky. Application filed August 17, 1878.

"The fanciful word 'ZIGZAG' and a figure representing a plug of tobacco cut by transverse, double-angular, or zigzag cuts into a series of smaller pieces, upon which the word 'Zigzag' is printed or otherwise formed."

6,675.—PAPER.—*Samuel B. Massa*, Brooklyn, N. Y. Application filed October 20, 1877.

"The words 'GOLDEN ANCHOR.'"

6,676.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Rath & Ferris*, New York, N. Y., and Boston, Mass. Application filed September 9, 1878.

"The arbitrarily-chosen words 'THE HARVARD MEMORIAL.'"

6,677.—CIGARS, CIGARETTES, AND CHEWING AND SMOKING TOBACCO. *John R. Sutton*, Brooklyn, N. Y. Application filed September 24, 1878.

"The word 'CRIMSON SEAL,' printed upon a belt surrounding a crimson disk, on which is printed the letter S in gold, and used in connection with a stripe of gold passing under the crimson disk at right angles."

6,678.—WASHING-BLUE.—*Henry Sawyer*, Chelsea, Mass. Application filed September 26, 1878.

"A silver or argentine disk, as shown."

6,679.—JEWELRY.—*Sturdy Brothers & Co.*, Attleborough, Mass., and New York, N. Y. Application filed September 18, 1878.

"The symbol of a star."

6,680.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Hall Blair & Co.*, Brooklyn, N. Y. Application filed September 20, 1878.

"The arbitrary words 'YANKEE DOODLE.'"

6,681.—MEDICINAL PREPARATIONS.—*Melville E. Mead*, Darien, Conn. Application filed September 17, 1878.

"The arbitrary words 'MOTHER MARTEN'S.'"

6,682.—PHOSPHORUS AND AMORPHOUS PHOSPHORUS.—*Albright & Wilson*, Oldbury, England. Application filed December 29, 1877.

"The letters 'A. & W.'"

6,683.—PEA-NUTS.—*Kemp B. Elliott*, Norfolk, Va. Application filed September 28, 1878.

"The figure of a star."

6,684.—MOUTH-HARMONICAS.—*German Harmonica Company*, Shelburne Falls, Mass. Application filed April 17, 1878.

"A symbol composed of a straight bar and of upper and lower curved bars, used in connection with the words 'GERMAN HARMONICA CO.'"

6,685.—STEAMED AND DRIED GRAIN.—*William H. Lewis*, Newton, assignor to *National Steamed Grain Company*, Boston, Mass. Application filed August 7, 1878.

"The pictorial representations of a horse and cow feeding from an open bag of grain and the name or title 'NATIONAL STEAMED GRAIN CO.'"

6,686.—BOILER-FELT.—*Squires Radcliffe*, Little Falls, N. J. Application filed September 24, 1878.

"The bunch of cat-tails and the word 'TYPHA.'"

6,687.—PERFUMERY AND OTHER TOILET PREPARATIONS.—*James Touzeau Saunders*, London, England. Application filed September 19, 1878.

"The letters 'J. T. S.,' arranged in the form of a monogram, and also my autograph signature, 'J. TOUZEAU SAUNDERS.'"

6,688.—CIGARS.—*Rafael Vega*, Brooklyn, N. Y. Application filed September 2, 1878.

"The vignette or picture of the Hotel Brighton, grounds in front, and the sea-shore."

6,689.—PLUG-TOBACCO.—*Allen & Ellis*, Cincinnati, Ohio, Chicago, Ill., and New York, N. Y. Application filed September 14, 1878.

"The arbitrary device of the segments of two curves, so nearly tangential as to resemble the figure 8 (eight) in any position, substantially as shown."

6,690.—CIGARS.—*José R. Angulo*, Key West, Florida. Application filed August 19, 1878.

"The letters and words 'LOS TRECE HERMANOS DE J. R. ANGULO,' and are arranged, as shown, below a figure of a shield, with an animal, intended for a goat, in the center, and at the top of the shield the head of an ancient warrior with feathers in his hat."

6,691.—LAGER-BEER.—*Baur & Betz*, New York, N. Y. Application filed July 13, 1878.
"The two circles, the name or title 'BAUR & BETZ,' and the representation of two kegs contained within the inner circle."

6,692.—CIGARS.—*Bondy & Lederer*, New York, N. Y. Application filed September 23, 1878.
"The arbitrary word 'CORNELIA.'"

6,693.—CIGARS.—*Bondy & Lederer*, New York, N. Y. Application filed September 23, 1878.
"The arbitrary word 'RAMITA.'"

6,694.—CIGARS.—*Bondy & Lederer*, New York, N. Y. Application filed September 23, 1878.
"The arbitrary word 'BRILLIANT.'"

6,695.—FERTILIZERS.—*Chemical Company of Canton*, Canton, Md. Application filed August 21, 1878.
"The arbitrarily-selected word 'COLGATE.'"

6,696.—GINGER TONIC.—*Hiscox & Co.*, New York, N. Y. Application filed September 18, 1878.
"The fac-simile signature of our firm-name, 'HISCOX & CO.'"

6,697.—WIRE-CLOTH OF ALL KINDS.—*David R. Morse*, Brooklyn, N. Y. Application filed September 9, 1878.
"The figure of an eagle and the word 'NATIONAL.'"

6,698.—CIGARS AND CIGARETTES.—*Adolph Moonelis*, New York, N. Y. Application filed September 23, 1878.
"The representation of a champagne-basket, as shown."

6,699.—PILE-DROPS.—*William Rockwell & Co.*, Jacksonville Ill. Application filed September 16, 1878.
"The arbitrarily-selected word 'COLUMBIAN.'"

6,700.—SALVE.—*Lusian E. Shipman*, Providence, R. I. Application filed September 9, 1878.
"A symbol of a ship in full sail, in connection with the letters 'man'a,' arranged as shown."

6,701.—LAGER-BEER.—*Julius Winkelmeyer & Co.*, St. Louis, Mo. Application filed August 19, 1878.
"The symbol of two clasped hands upon the representation of one-half of a globe surrounded by clouds, and arranged as shown."

6,702.—PICKLES.—*Yarnall Brothers*, St. Louis, Mo. Application filed September 7, 1878.
"The fanciful title 'MEXICAN HOT.'"

6,703.—CHEWING AND SMOKING TOBACCO.—*Thomas C. Williams & Co.*, Richmond, Va. Application filed February 28, 1878.
"The words 'GOLDEN EAGLE.'"

6,704.—TOOLS AND DEVICES USED FOR RINGING HOGS.—*H. W. Hill & Co.*, Decatur, Ill. Application filed September 30, 1878.
"The representation of a triangular ring, inclosing the head of a hog, with tools and devices to insert a ring in the hog's snout, as shown."

6,705.—WELL-BUCKETS.—*Prewitt, Spurr & Co.*, Nashville, Tenn. Application filed September 30, 1878.
"The words 'THE BOSS.'"

6,706.—CIGARS AND CIGARETTES.—*Straiton & Storm*, New York, N. Y. Application filed September 19, 1878.
"The arbitrary words 'NANCY LEE,' as shown."

6,707.—WHISKY.—*Gregory, Stagg & Co.*, St. Louis, Mo. Application filed September 30, 1878.
"The word-symbol 'HUME.'"

6,708.—CARTRIDGES.—*Union Metallic Cartridge Company*, Bridgeport, Conn. Application filed September 23, 1878.
"The figure of a revolver, arranged as shown."

6,709.—HAT-SWEATS FOR HATS AND CAPS.—*John Bigelow*, Philadelphia, Pa. Application filed September 25, 1878.
"The word-symbol 'THE FRAY,' as shown."

6,710.—WHISKY.—*Ellison & Harvey*, Richmond, Va. Application filed October 4, 1878.
"The arbitrarily-selected word 'DURHAM,' in connection with the figure of the bull."

6,711.—BEER.—*Thomas Grimes*, Providence, R. I. Application filed September 2, 1878.
"The arbitrarily-selected word 'BRUNSWICK.'"

6,712.—MEDICAL COMPOUND.—*Indian Cordial Company*, New Orleans, La. Application filed October 1, 1878.
"A monogram formed of the initial letters 'I. Co. Co.' of our firm-name, which monogram is placed inside of a letter O, of circular shape."

6,713.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Charles H. Klemm*, Baltimore, Md. Application filed September 13, 1878.
"The fanciful word 'SANATIVE' and a monogram composed of the letters 'C. H. K.'"

6,714.—MEDICAL COMPOUND.—*D. D. Perraud*, Lyons, France. Application filed October 1, 1878.
"The symbol-words 'BAUME IRLANDAIS' and the emblem of an Irish harp."

6,715.—WHISKY.—*Edmund H. Taylor, Jr.*, Frankfort, Ky., assignor to *George T. Stagg*, St. Louis, Mo. Application filed September 28, 1872.
"The letters 'O. F. C.,' the same being an arbitrary symbol."

6,716.—LUBRICATING-OILS.—*John W. Bartlett*, Moline, Ill. Application filed September 24, 1878.
"The word-symbol 'ECLIPSE.'"

LABELS.

[Each certificate bearing date October 8, 1878.]

1,708.—Title: "CALMA'S LINIMENT."—*Charles S. Childs*, Arlington, Mass. Application filed September 4, 1878.

1,709.—Title: "CAMEO VALENTINES."—*Alfred J. Fisher*, Brooklyn, N. Y. Application filed March 11, 1878.

1,710.—Title: "MANUFACTURED EXPRESSLY FOR CIGARETTE AND PIPE SMOKING."—*Goodwin & Co.*, New York, N. Y. Application filed September 30, 1878.

1,711.—Title: "RED AND BLACK."—*Kerbs & Spiess*, New York, N. Y. Application filed September 25, 1878.

1,712.—(Print,) Title: "R. A. STUART'S ROCKBRIDGE CO."—*D. O. Davis & Co.*, Richmond, Va. Application filed September 30, 1878.

1,713.—Title: "ANTONIO Y CLEOPATRA."—*Christian G. Petersen*, New York, N. Y. Application filed September 30, 1878.

1,714.—(Print,) Title: "QUINTET."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed September 12, 1878.

DESIGNS.

[Each design bearing date October 8, 1878.]

10,859 and 10,860.—SPOONS.—*John M. Culver*, Wallingford, Conn., assignor to *Hall, Elton & Co.*, same place. Applications filed September 26, 1878. Term of patents 3½ years.

10,861.—SPOONS.—*Herman Vasseur*, Wallingford, Conn., assignor to *Simpson, Hall, Miller & Co.*, same place. Application filed September 26, 1878. Term of patent 7 years.

10,862.—FONT OF PRINTING-TYPES.—*Andrew Little*, New York, N. Y. Application filed September 17, 1878. Term of patent 7 years.

10,863.—CIGAR-BOX.—*Adolph Moonelis*, New York, N. Y. Application filed September 23, 1878. Term of patent 3½ years.

10,864.—HINGES.—*Charles B. Clark*, Buffalo, N. Y. Application filed September 12, 1878. Term of patent 7 years.

10,865.—WATCH-CHAIN BAR.—*Frank S. Draper*, Attleborough, Mass. Application filed September 28, 1878. Term of patent 7 years.

DISCLAIMER.

187,699.—*John D. Billings* and *Marcus A. Decker*, New York, N. Y.; patented February 27, 1877; disclaimer filed October 5, 1878.

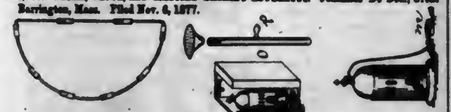
Disclaim by inserting at the commencement of the claim the words "machine-made," and also refer to certain patents, so that the restricted claim reads:

A machine-made horseshoe (as shown and described in John D. Billings' Patent No. 194,628, dated August 14, 1877, and Patent No. 198,488, dated December 25, 1877,) of a convex form, the lower portion of which is a wedge shape, tapering downwardly and outwardly, and having a level top, the outer edge of which is provided with a rib or bead extending upwardly and entirely around the shoe, substantially as herein described.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

OCTOBER 8, 1878.

208,666. STEAM, VAPOR, AND MEDICAL BATHING APPARATUS. Johannes De Boer, Great Barrington, Mass. Filed Nov. 6, 1877.



Claim.—1. The sectional supporting-wire *c*, in combination with cover A, as and for the purposes specified.

2. The combination of tube *c*, having handle F, with steam-generator and conducting-pipe, for the purposes stated.

3. The steam-cup *n*, arranged to hold herbs or medicated preparations, and having the perforated cover, in combination with generator and conducting-pipe, substantially as specified.

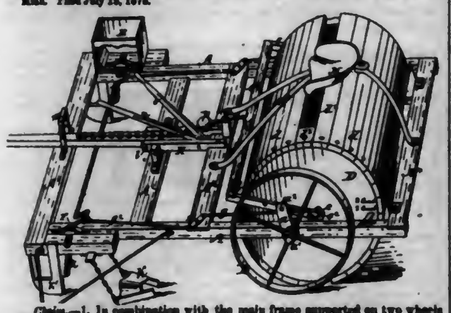
208,667. NUTS FOR VEHICLE-AXLES. Isaac B. Boyce, Lynn, Mass. Filed July 20, 1878.

Brief.—The outer threads in the nut give additional strength and security.



Claim.—In combination with the T-shaped bolt *b b'* upon the spindle *a a'*, the nut *c*, when provided with the screw-thread *h*, in addition to the thread *c* and chamber *g*, arranged and constructed substantially as herein set forth.

208,668. CORN-PLANTERS. Alexander Berghold, New Ulm, and Thomas Fenton, Sigelwee, Minn. Filed July 16, 1878.

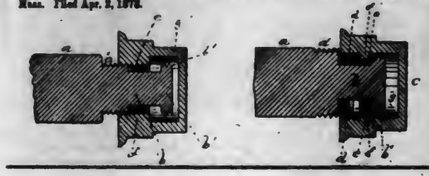


Claim.—1. In combination with the main frame supported on two wheels and carrying the seed-boxes, and a secondary frame pivoted to standards upon the sides of the main frame, the single roller D, extending the whole width of the frame, grooved longitudinally, and provided with adjustable markers *d*, substantially as and for the purpose described.

2. In combination with a corn-planter having a main frame supported on two wheels, a secondary frame pivoted to standards attached to the main frame, and a grooved roller extending the whole length of said frame, the driver's seat M, located over said roller, with lever *n* pivoted to the hounds to raise or depress the front of the machine, and the lever *o* and bar *o'* to raise the roller off the ground, substantially as and for the purpose described.

3. In combination with the main frame of a corn-planter supported on two wheels, and a grooved roller mounted on a secondary frame, the ringing attachment composed of a spring, *r*, attached to the main frame, and two staples, *s*, upon the end of the roller, substantially as and for the purpose described.

208,669. MEANS FOR PREVENTING THE LOSS OF NUTS FROM AXLES. Isaac B. Boyce, Lynn, Mass. Filed Apr. 2, 1878.



Claim.—The combination of the spindle *a a'*, provided with the T-shaped bolt *b b'*, and the nut *c*, provided with the bridge *f*, chamber *g*, and screw-thread *c*, all arranged and constructed substantially as and for the purpose hereinbefore set forth.

208,670. RAZOR-STROPS. Alfred V. Burkhalter, New York, N. Y. Filed Aug. 16, 1878.

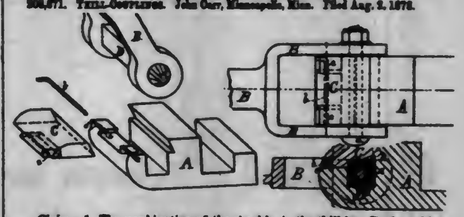


Claim.—1. A razor-strop formed of a flexible band of a permeable fibrous stropping material, provided with an internal or underlying film or layer of pasty lubricating matter, adapted to work through the interstices of the fibrous band by the stropping action, to preserve the stropping-surfaces in a lubricated condition, substantially as herein shown and described.

2. A razor-strop formed of a stropping-band of canvas, sustained on an internal or underlying band of lead, substantially as herein shown and described.

3. A razor-strop formed of an outer or overlying layer of a permeable and fibrous stropping material, an internal strip of flexible metal, and a layer of pasty lubricating material intervening between the metal and the stropping fabric, substantially as herein set forth.

208,671. TRIPLE-COUPLINGS. John Carr, Minneapolis, Minn. Filed Aug. 2, 1878.



Claim.—1. The combination of the shackle A, the thill-iron B, the rubber D, the bolt *c*, the piece C, and the pin *b*, substantially as and for the purpose hereinbefore set forth.

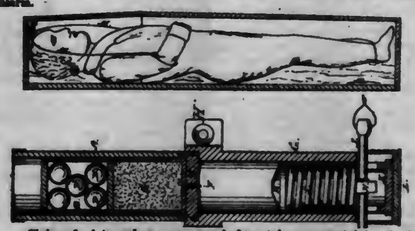
2. The shackle A, having one end dovetailed to receive C, and having also the hole *e* and groove *e'* to receive the pin *b*, substantially as described.

3. The sliding piece C, with its dovetailed bottom and end, and hole *e* for pin *b*, substantially as described.

4. The combination of the shackle A, the sliding piece C, and the pin *b*, substantially as described.

208,672. CARTRIDGE-TRAP-DOORS. Philip K. Glover, Columbus, Ohio. Filed June 20, 1878.

Brief.—The lock and trigger mechanism are permanently attached to the coffin, and the barrel containing the cartridge may be secured in the last thing before closing the coffin-lid, when an attempt to obstruct the body will fire the charge.



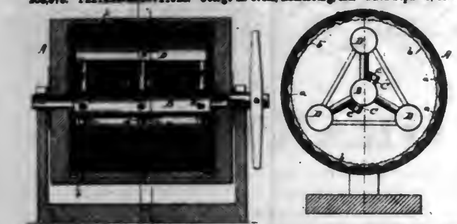
Claim.—1. A torpedo-case composed of two tubes, one containing the firing mechanism and receiving-lugs H', and the other the charge and removable block and firing-pin, the two adapted to be secured in operative position, substantially in the manner set forth.

2. The cylindrical independent and removable block E, provided with a central tapered orifice, in combination with the tapered firing-pin F, the block and pin arranged, as described, within the breech end of the tube A, substantially as and for the purposes described.

3. The tube G, having its lower end slotted to receive the trigger-bar, in combination with the similarly-slotted head-block K and confining-cap L, all arranged as and for the purposes set forth.

4. The hammer-shank formed with the slot shown, in combination with the trigger-bar J, having an enlarged center and thin arms, substantially as shown and described.

208,673. Feather-Renovators. George H. Orum, Lodiesburg, Md. Filed Sept. 23, 1878.



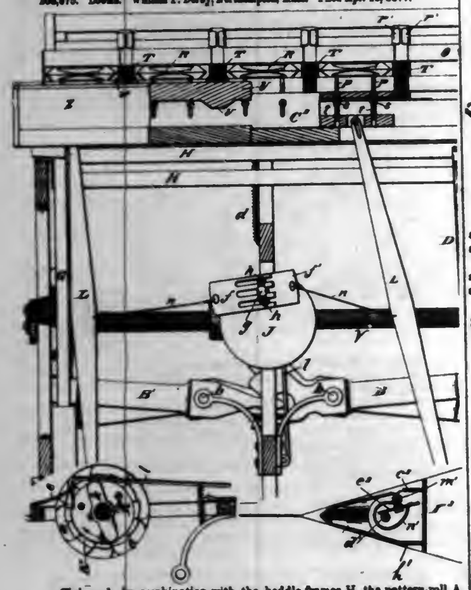
Claim.—1. In combination with the cylinder A, provided with the inner corrugated surface, *a*, the cylinder B, pipes C, provided with the caps *c*, and the drums D, connected with the steam-cylinder by the pipes *d*, all constructed and arranged to operate substantially as and for the purpose set forth.

2. In combination with cylinder A, provided with the inner corrugated surface, *a*, the interior lining, *b*, of wire-netting, substantially as and for the purpose set forth.

208,674. Products and Methods of Coating and Preserving Metals. Albert P. G. Dennestl, Paris, France. Filed May 20, 1878. Patented in France, Mar. 14, 1878.

Claim.—The composition herein described for coating metals, the same consisting of borate of lead, chloride of platina crystals, ammonia, and water, in substantially the proportions specified.

208,675. Looms. William P. Darby, Northampton, Mass. Filed Apr. 10, 1877.



Claim.—1. In combination with the heddle-frames H, the pattern-roll A, arranged centrally beneath the same at right angles thereto, and the levers B B, connected at their outer ends with the heddle-frames by the rigid rods D, and having their inner ends jointed to each other and arranged to be acted upon by the roll, as shown.

2. The combination of the heddle-frames H, the operating-levers B B', the jointed adjustable rods D *p*, and the pattern-roll or equivalent operating device, as shown, for changing the throw of the heddle-frames.

3. The combination and arrangement, substantially as shown and described, of the shaft K, having the cam *h* rigidly attached, the pattern-roll A, provided with the ratchet E, and the spring-pawl *l*, all arranged to operate as set forth.

4. In a loom, the adjustable yoke for operating the shuttle, said yoke being composed of the slotted plates *f* and *f'*, provided with the clamping-bolts and slots for adjusting the same, substantially as described and shown.

5. The combination, in a loom, of the adjustable yoke *f f'* and the adjustable crank-pin *p*, said parts being combined and arranged to operate substantially as shown and described.

6. In combination with the lay having the shuttle-driving pins therein, bridges or supports *w*, arranged upon the lay, substantially as described, for holding the loose threads up out of the way of the pins, as described.

7. The improved shuttle, composed of the V-shaped front and a back consisting of a single thickness of sheet metal, substantially as described and shown, whereby the shuttle is rendered of a narrow width from front to rear.

8. The sheet-metal shuttle having the V-shaped front and the thin back plate, I', extended on the two sides to form supporting-flanges, as set forth.

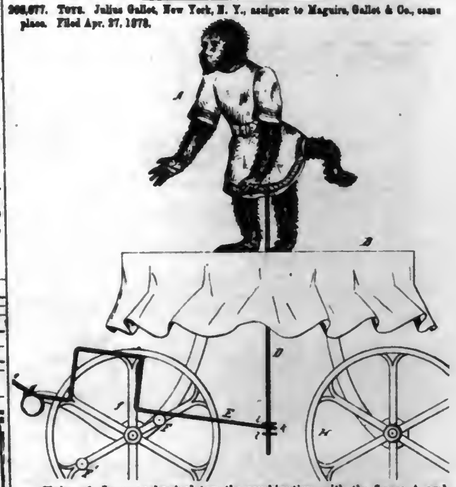
9. In combination with the take-up roll M, the pressure-roll P, mounted in the open slotted brackets *o*, adjustably secured to the rod N, substantially as shown and described.

208,676. Needle-Cases. Thomas Fletcher, Redditch, assignor to Henry Clarke, London, England. Filed Aug. 3, 1878. Patented in England, Feb. 16, 1877.



Claim.—The combination of a needle-case, *a*, provided with the groove *c*, and a cover arranged and operated to close and open the end of the groove, for the purpose set forth.

208,677. Toys. Julius Gallet, New York, N. Y., assignor to Maguire, Gallet & Co., same place. Filed Apr. 27, 1878.



Claim.—1. In a mechanical toy, the combination, with the figure A and operating-rod D, of the vibrating recessed lever E and actuating-cranks F F', substantially as set forth.

2. In a mechanical toy, the combination of a platform, B, operating-rod D, and figure A, pivoted to said rod and having its tail weighted, substantially as set forth.

208,678. Chopping or Grinding Mills. David Gartman, York, Pa. Filed Sept. 19, 1878.

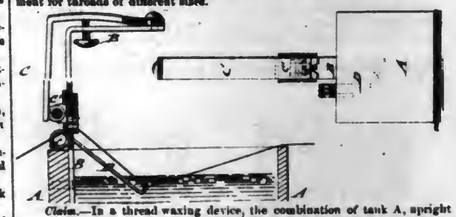


Claim.—1. In a chopping-mill, the shaft B, provided with the reverse screw-threads *b b*, in combination with the hopper and double grinding-surfaces, substantially as and for the purpose set forth.

2. The combination of mechanism feeding the grain positively from the hopper, an intermediate duct or ducts, and mechanism feeding positively to the grinding-surfaces, substantially as set forth.

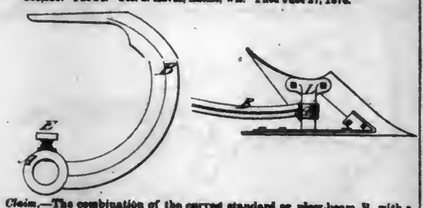
208,679. Waxing Devices for Sewing-Machines. William S. Hadaway, Chiltonville, Mass. Filed Jan. 2, 1878.

Brief.—The thread is kept immersed in the liquid wax by means of a spring-arm. The stripping device consists of two metal plates, each having a V-shaped notch or recess, the inner plate being held rigidly in position, the other being held against it with spring-pressure, the notch therein being in inverse position to that of the inner plate. The device is capable of adjustment for threads of different sizes.



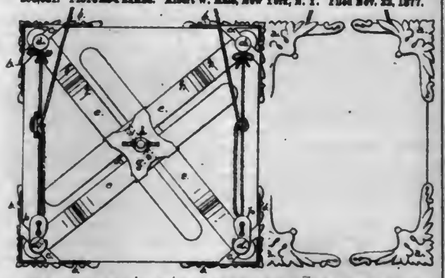
Claim.—In a thread waxing device, the combination of tank A, upright post B, adjustable and spring-acted arm C, having hinged slide-plate C', the post B, and slide-plate C', having V-shaped recesses for passage of thread, substantially as specified.

208,680. Plows. Geo. S. Haven, Racine, Wis. Filed June 27, 1878.



Claim.—The combination of the curved standard or plow-beam B, with a collar, A, formed on its lower end, and set-screws E, with the brace L and the mold-board and land-side, whereby the beam or standard is connected to the lower part of the plow only, and provided with lateral adjustment, substantially as shown and described.

208,681. Picture-Frames. Albert W. Hale, New York, N. Y. Filed Nov. 23, 1877.



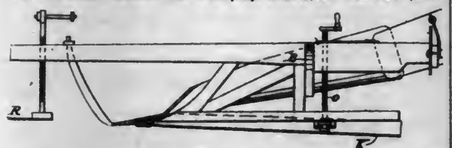
Claim.—1. A picture or map holder consisting of the corner pieces or clamps *a a*, rigid in all their parts, having projections *b b*, to take and hold the corners of the picture, and a cross-bar, *c*, or its equivalent, to take a screw or other device for fastening the corner of the picture in the corner-piece.

2. An adjustable picture or map holder having separate corner pieces or clamps *a a*, for receiving and securing the corners of the picture or map, in combination with the adjustable braces *e e e*, so connected with each other as to be movable upon or in respect to each other for varying the size and form of the holder, and either with or without the holes or rings *r r* for suspending the same, substantially as described.

3. In combination with the corner-clasps *a* and adjustable braces *e*, or their equivalents, the gearing mechanism *o p*, or its equivalent, for the purposes set forth.

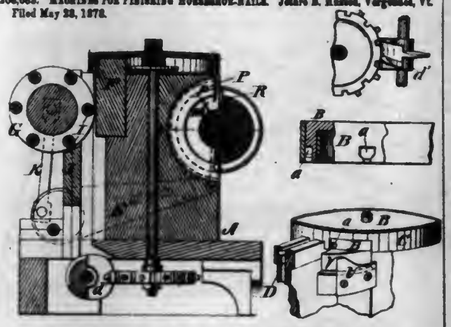
4. The mode of arranging and fastening the suspending-cords by attaching the same at the upper and lower sides of the holder, and then connecting therewith the free end of the cord by means of the slide *n*, or its equivalent, substantially as described, for suspending the holder from the wall at different angles of inclination.

208,682. Ditching-Machines. Jas. W. Humphreys, Otterbein, Ind. Filed June 11, 1878.



Claim.—In a surface-ditching machine, the hinged adjustable sole K, in combination with the adjusting-screw O and the adjustable shoe R, constructed and operating substantially as and for the purposes set forth.

208,683. Machines for Fitting Horseshoe-Nails. Joshua B. Hunkel, Vergennes, Vt. Filed May 23, 1878.



Claim.—1. In a horse-nail machine, the combination of a carrier-wheel provided with peripheral recesses to receive the heads of the nails, a slotted guide adapted to suspend the nails by their heads and arranged to deliver them directly into the recesses of the carrier, and a sliding dog arranged to act upon the last nail and cause the advance of the forward nails into the carrier, as shown.

2. In combination with the slotted guide D, the sliding dog E, consisting of the two parts *e d*.

3. The herein-described method of reducing and tempering horse-nails, consisting in subjecting the same to a rapid succession of blows by small rollers, and shifting the point of impact from the point upward, and thence backward to the point.

4. In a nail-machine, the combination of a series of rollers or hammers, I, mounted in a rapidly-rotating head or stock, in combination with devices, substantially such as shown and described, for presenting the nails to the action of the rollers, and at the same time moving the latter lengthwise of the nail, in order that the rollers may act from the point of the nail upward, and thence backward to the point.

5. In a nail-machine, an anvil or support for the nail, in combination with a rotary head provided with a series of roller-hammers, and arranged to reciprocate over the anvil in such relation thereto as to cause the rollers to act upon each nail during both the forward and backward movements of the head.

6. In a horse-nail machine, a carrier-wheel provided in its periphery with recesses *a*, adapted to receive and fit closely around the heads of upright nails, in combination with the encircling band C, whereby the nails are held from raising or tipping sidewise when subjected to the action of the finishing devices.

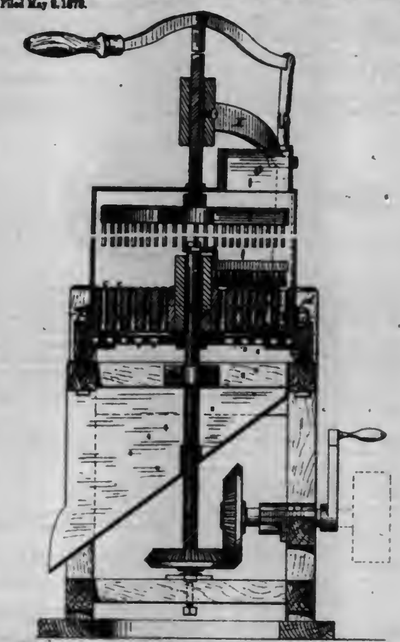
7. In a nail-machine, the combination of a nail-carrier and one or more eccentric or diverging guides or rails, arranged in such relation to the carrier as to act against the points of the long nails and deliver them from the carrier, while permitting short nails to pass.

8. In combination with a carrier, suspending the nails in an upright position, two delivery rails or guides arranged at different distances from the carrier, to separate nails of different lengths and discharge them at different points, substantially as described and shown.

9. In combination with the adjustable die E, the plates or washers S, having their ends beveled and extended forward, as shown and described, whereby they are caused to serve the double purpose of supporting the die and bringing the nail directly opposite the same.

10. In combination with the male die P, curved and adjustable in the arc of a circle, the female die E, curved adjustable and arranged to reciprocate in the arc of a circle concentric with the male die.

208,684. Oatmeal-Machines. Frank W. Kramer and Thomas G. Williams, Akron, Ohio. Filed May 2, 1878.



Claim.—1. A tubular feeder for an oatmeal-machine, the tops of the tubes of which are beveled or cut off at an angle to their vertical axes, substantially as and for the purpose described.

2. The combination, with a tubular feeder in an oatmeal-machine, of a brush rotated over said feeder, substantially as and for the purpose described.

3. In an oatmeal-machine, a tubular feeder, in combination with a cleaner-head, substantially as and for the purpose described.

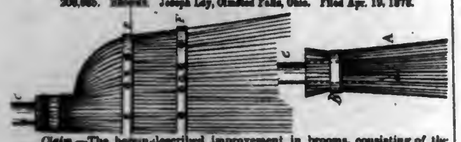
4. The combination of a series of rings, annular walls, or partitions, alternating with a number of series of tubes, substantially as described.

5. In a tubular feeder, a series of tubes, in combination with a series of concentric rings having recessed faces, whereby said rings are adapted to inclose or embrace said series of tubes, so as to fill up all interstices between them and present a solid face upon the feeder, substantially as described.

6. In a tubular feeder, the concentric rings having beveled tops, in combination with the tubes, whereby gutters are formed over said tubes, substantially as and for the purpose described.

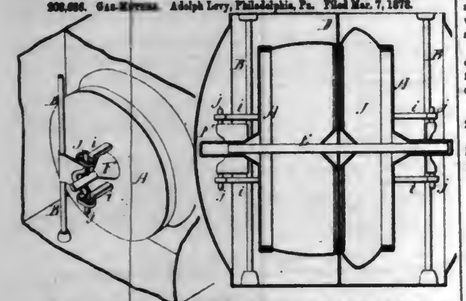
7. A tubular feeder the tops of the openings in which are beveled or cut off at an angle to their vertical axes and surrounded by gutters, substantially as described.

208,685. BROOM. Joseph Loy, Olmsted Falls, Ohio. Filed Apr. 19, 1878.



Claim.—The herein-described improvement in brooms, consisting of the handle C, having its lower end tapered off, as shown, the core-band B, and one or more bands, E F, and nails *e*, securing the bands, splints, or brush to the handle, substantially in the manner as and for the purpose set forth.

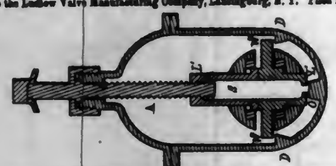
208,686. GAS-BUTNER. Adolph Levy, Philadelphia, Pa. Filed Mar. 7, 1878.



Claim.—1. The combination of the transverse rod E with a bellows having a head with a tubular projection, F, as specified.

2. The combination of the bellows-head A and its slotted lugs *i* with the shaft B and its plate *f*, having pins *j*, as set forth.

208,687. SLIDE-VALVES. Henry G. Ludlow, Troy, and John Ward, Lansingburg, assignors to the Ludlow Valve Manufacturing Company, Lansingburg, N. Y. Filed Apr. 22, 1878.



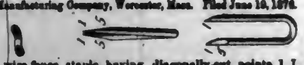
Claim.—1. In a double-gate slide-valve, two vertical wedges, having their inner wedging-surfaces in parallel engaging contact, and their backs in contact with the gate-disks, and both arranged between the latter, with the wedges pierced for the passage of the stem, and each of them provided with a hollow shank, and a slide-bearing formed between the disks, and the upper wedge threaded to the stem, and the lower wedge provided with side arms which project beyond the edges of the disks, and so as to engage by contact stops formed upon the inside of the case-wall, that arrest the descending parts, and cause the wedging-surfaces to force the disks laterally toward their seats, as herein shown and described.

2. In a double-gate slide-valve, two vertical wedges having their inner wedging-surfaces in parallel engaging contact, and their backs in contact with the gate-disks, and both arranged between the latter, with the wedges and attached shanks pierced for the passage of the valve-stem, and having a slide-bearing formed between the disks, and the upper wedge threaded to the stem, with an upwardly-projecting stop arranged in the bottom of the valve-case interior, which, by engaging contact, arrests the descending parts when actuated by the stem to spread the disks laterally toward their seats, as shown and described.

3. In a double-gate slide-valve, to guide the lateral motion of the disks when forced toward their seats, the projecting points P^{iv} P^{iv} P^{iv} P^{iv}, formed upon one of the disks, and the interlocking corners P P P P, formed upon the other, as shown and described.

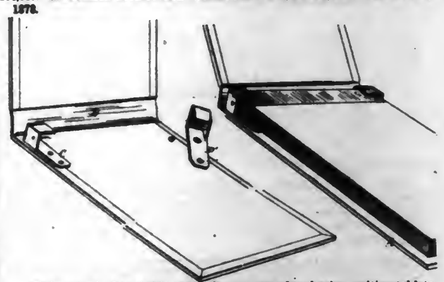
4. In a double-gate slide-valve, the combination of the stem A, the upper wedge, W', and threaded shank L', the lower wedge, W'', and shank L'', the gates R' and R'', and opening S', with the side arms, W^{iv} W^{iv}, attached to the lower wedge, the side stops, D D, formed in the side of the case-wall, and the stop O, formed in the bottom, arranged to operate as herein shown, and as described.

208,688. FENCE NAIL AND STAPLE. Purchas Miles, New York, N. Y., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Filed June 10, 1878.



Claim.—A wire-fence staple having diagonally-cut points 1 1, bent to stand apart or out of line with each other, the beveled portions 5 5 being opposite each other while the straight sides are toward each other, as shown and described, the same forming an improved article of manufacture.

208,689. DETACHABLE BOOK-COVERS. Edward P. Hewbirt, Newark, Ohio. Filed Mar. 15, 1878.



Claim.—1. A detachable cover for memorandum-books, writing-tablets, and the like, one flap of which is provided with a pair of sockets, having inwardly-projecting needle-pointed pins, one of the sockets being laterally shiftable, substantially as and for the purpose specified.

2. The combination, substantially as specified, with one of the flaps of a detachable cover for memorandum-books, writing-tablets, and the like, of a fixed socket having an inwardly-projecting needle-pointed pin, a similarly-constructed pivoted socket, and a stud for locking said pivoted socket.

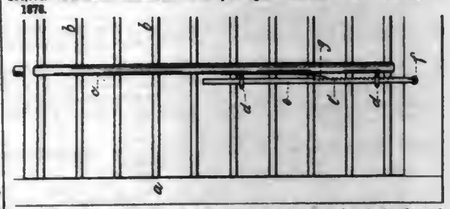
208,690. BOTTLE-STOPPERS. Stephen S. Newton, Binghamton, N. Y. Filed Feb. 15, 1878.

Brief.—When the cap is screwed far enough down on the delivery-tube it holds the stopper in a closed position; otherwise it serves as a finger-rest in pressing down the delivery-tube to open the stopper.



Claim.—In combination with the delivery-tube E and the spring G, the adjustable cap or cover H H', as and for the purposes set forth.

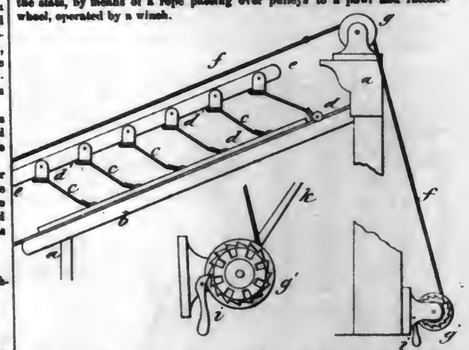
208,691. BLIND-SLAT RETAINERS. Timothy O'Regan, Willimantic, Conn. Filed July 20, 1878.



Claim.—The frame *a*, bearing the orifice *f*, the rotary slats *b*, the slat-rod *c*, bearing on its side the eyes *d* and the spring-pawl *g*, and the ratchet-bar *e*, sliding in the eyes *d*, and its elbowed foot sliding in the orifice *f*, all combined as described, for the purpose set forth.

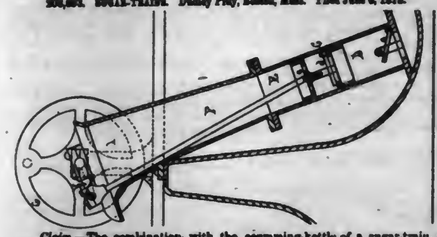
208,692. METALLIC AWNINGS. Ernst Otto Pohl, Philadelphia, Pa. Filed Sept. 6, 1877.

Brief.—A series of metallic slats are hinged at their edges on one side to the rafters of an awning, and on the other to straight bars running in the same direction as the rafters. The bars are raised and lowered, opening and closing the slats, by means of a rope passing over pulleys to a pawl and ratchet-wheel, operated by a winch.



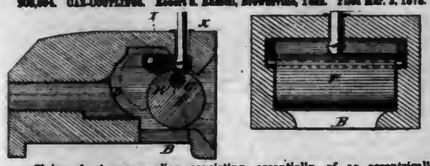
Claim.—The awning herein described, consisting of the frame *a*, rafters *b*, hinged plates *c*, bars *e*, and ropes or chains *f*, pulleys *g g'*, pawl *i*, ratchet-wheel, and lever *k*, all substantially as shown, and for the purpose specified.

208,693. SUGAR-TRAINS. Dudley Pray, Boston, Mass. Filed June 6, 1878.



Claim.—The combination, with the scumming-kettle of a sugar-train, of the lifting mechanism, consisting of the cylinder C, provided with the valve *e*, the bucket D, provided with valve *d*, and the guide E, and operated by the bell-crank H and connecting-rod F, substantially as described.

208,694. CAR-COUPLINGS. Robert S. Russell, Brownsville, Tenn. Filed Mar. 2, 1878.



Claim.—1. A car-coupling consisting, essentially, of an eccentrically-weighted cylinder, combined with the buffer, coupling-pin, and link, substantially as described, for the purpose specified.

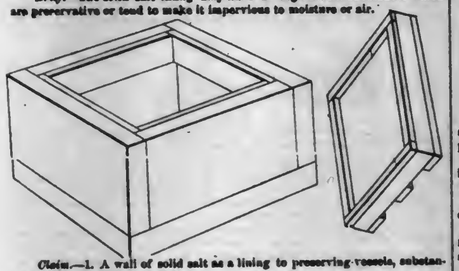
2. The combination of the eccentrically-weighted cylinder and its rod H with the guideways E' of the buffer, substantially as described, for the purpose specified.

3. The combination of set-screws or pins with the lateral rod-holes E in the sides of the buffer, substantially as described, for the purpose specified.

4. The buffer constructed with the convex top, the open bottom B, the interior rear-curved shoulders D D, and the interior guideways E' in the side walls, substantially as described, for the purpose specified.

208,695. BUTTER-PACKAGES. Cyrus L. Sabin, Washington, D. C. Filed Mar. 20, 1878.

Brief.—The solid salt lining may have as ingredients substances which are preservative or tend to make it impervious to moisture or air.

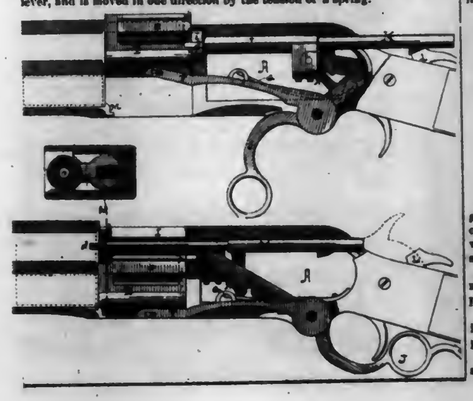


Claim.—1. A wall of solid salt as a lining to preserving-vessels, substantially as set forth.

2. The combination of a vessel-body having an inward projection around its top with a cover adapted to fit inside of the projection on the body, and having a projection, as and for the purpose set forth.

208,696. MAGAZINE FIRE-ARMS. John H. Balter, St. Mary's, Pa. Filed Sept. 4, 1878.

Brief.—The carrier-arm is pivoted on the same shaft as the operating-lever, and is moved in one direction by the tension of a spring.



Claim.—1. The carrier E and its actuating-lever F and spring G, in combination with the traveler H, attached to the reciprocating plunger, and the toggle-lever J, operating upon said lever and spring, depressing or releasing the same, and causing the carrier to be raised or lowered, substantially as shown, and for the purpose set forth.

2. The combination of the carrier E and plunger I with the toggle-lever J, lever F, spring G, and traveler H, as set forth.

208,697. LUBRICANTS. Wm. H. Smith and Matthias C. Osborn, Eighteen, Ala. Filed Sept. 7, 1878.

Claim.—The lubricating compound composed simply of elutriated kaolin, alkali, and oil, in about the proportions herein described, for the purpose set forth.

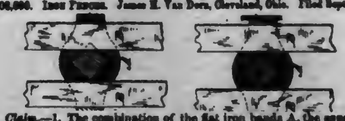
208,698. BOXES FOR DRIED FRUIT. David Sandaker, Jersey City, N. J. Filed May 22, 1878.

Brief.—The bottom is not attached to the sides, but is fastened to the paper lining, so that the bottom and contents of box can be slid out of the sides. The bottom is held in its place by its paper flaps, folded over the sides and clamped by the flange of the cover.



Claim.—The combination of the detachable bottom B, the sheet C, of paper or other flexible material, attached to the bottom B, and having the leaves D', the sides A, and slip-cover E, the whole being constructed and arranged to clamp the outer portion of the leaves D' between the flange of the cover E and the sides A, all substantially as herein set forth, for the purpose specified.

208,699. IRON FENCES. James H. Van Dorn, Cleveland, Ohio. Filed Sept. 25, 1878.



Claim.—1. The combination of the flat iron bands A, the squared parallel stringers B B, and the squared pickets C, substantially as described, for the purpose specified.

2. A fence, railing, or cresting post or brace constructed with a foot having a rounded under surface, substantially as described, for the purpose specified.

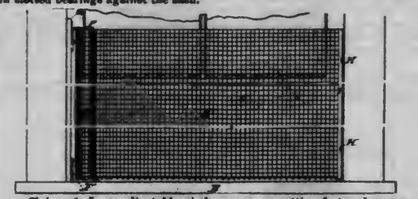
3. The post G and brace H, constructed with the convex feet I, and secured together by the bond K and lateral key L, substantially as described.

4. The posts of a fence, railing, or cresting mounted upon hollow washers filled in the under side with lead, putty, or other water-proof material, substantially as described, for the purpose specified.

5. The combination of the post and brace having convex feet with the hollow washer filled with water-proof material, substantially as described, for the purpose specified.

208,700. WINDOW-SCREENS. Henry E. Weskey, Chicago, Ill. Filed Nov. 21, 1877.

Brief.—The spring-roller, having its spindle-bearings in inclined slots in brackets at side of window-casing, is held automatically against the sash or against a presser-plate. A spring-presser may also hold the roller adjustable in slotted bearings against the sash.



Claim.—1. In an adjustable window-screen, a notting fastened at one margin to an automatically-winding roller, and provided with a rigid bar at the opposite margin, adapted to be secured to the window-casing, in combination with slotted brackets and stop-plate L, substantially as and for the purposes set forth.

2. In a winding window-screen, a bodily-moving winding-roller, in combination with a stop, L, or its equivalent, substantially as described, and for the purposes set forth.

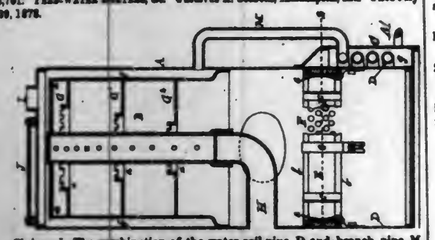
3. The combination of slotted bearings F F' with the shafts of a self-winding roller of a window-screen and the stop L, substantially as and for the purposes specified.

4. In combination with the fabric A, the spring winding-roller B, and the stop L, or its equivalent, the obliquely-slotted bearings F F', supporting the

shaft of the roller, substantially as described, and for the purposes specified.

5. The strip G, supporting the slotted brackets F F', and forming, with its attachments, an intermediate connection of the roller B to the window-frame, and a protecting partial case for the inrolled fabric A when not in use, substantially as described.

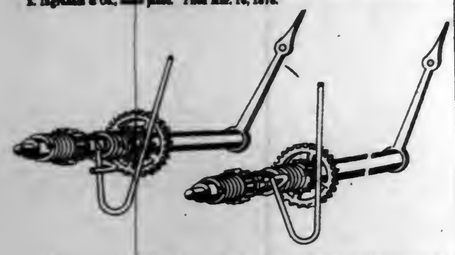
206,701. Feed-Water Heaters, &c. Gustavus H. Seebach, Indianapolis, Ind. Filed July 29, 1878.



Claim.—1. The combination of the water coil-pipe D and branch pipe M with the annular water-space *f f*, pans G G¹ G², perforated pipe H, and case A, arranged substantially as shown and described.

2. The filtering-belt E and springs *e*, in combination with the perforated portion of the cylindrical case A and water-space *g*, arranged substantially as shown, and for the purposes set forth.

206,702. Lock-Work for Clock-Movements. A. L. Atwood, Bristol, Conn., assignor to E. Ingraham & Co., same place. Filed Mar. 16, 1878.



Claim.—1. The combination, with the center arbor of a clock-movement, of a lift provided with a cam-faced sleeve or coil, which is pressed against a stop-pin attached to the arbor or other part moving therewith, whereby the lift is locked to the arbor when the latter is turned in one direction, and released from engagement with the stop-pin when the arbor is turned in the opposite direction, substantially as set forth.

2. The combination, with the center arbor of a clock-movement provided with a stop-piece, of a lift loosely secured upon the arbor, and a spring arranged to force one end of the coil or sleeve of the lift against said stop-pin, substantially as set forth.

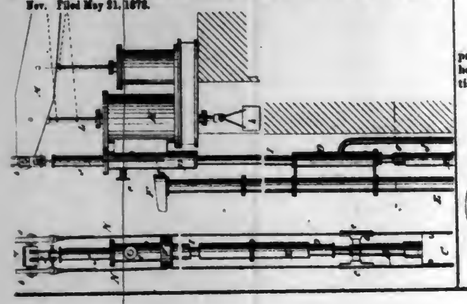
3. The combination, with the center arbor of a clock-movement, of a spring-pressed lift which is adapted to be locked to the arbor by a face-cam when the arbor is turned in one direction, and released from the stop-pin when the arbor is turned in the opposite direction, substantially as set forth.

206,703. Taxidermists. Henry Avery, Burlington, Iowa. Filed Aug. 16, 1878.



Claim.—As a new article of manufacture, a transplanter consisting of handles A A', pivoted at *x*, and blades *b*, of uniform width, curved transversely and connected at right angles below arms or shoulders *a*, extending to or forming part of the handles, and arranged as described, that the blades may be parallel when separated, and the shoulders are horizontal, as and for the purpose set forth.

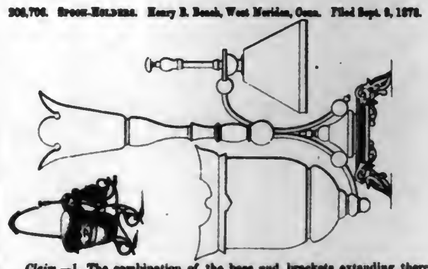
206,704. Hydraulic and Wire-Rope Pumping Systems. Wm. P. Barclay, Virginia City, Nev. Filed May 21, 1878.



Claim.—1. In a churn, the dasher composed of the disk G, in combination with the beveled and curved blades I, secured to the opposite sides thereof, so as to alternate, substantially as and for the purpose set forth.

2. In a churn, the dasher G I upon the shaft C, provided with the crank E and sleeve O, and secured within the sleeve B, combined and operating to impart both a lateral and rotary motion to the dasher, as set forth.

206,705. Spoon-Holders. Henry B. Beach, West Meriden, Conn. Filed Sept. 9, 1878.

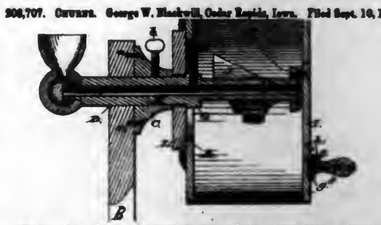


Claim.—1. The combination of the base and brackets extending therefrom, a bell arranged on one of the brackets and a spoon-holder or other article of table service on the other, substantially as described.

2. The combination of the base and brackets extending therefrom, a bell arranged on one of the brackets and a spoon-holder or other article of table service on the other, with a handle extending up from the base above the bell and holder, substantially as described.

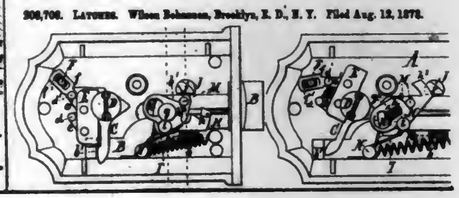
3. The combination of the base, brackets extending therefrom, a bell arranged on one of the brackets, a spoon-holder or other article of table service on the other, and a vase extending upward above the bell and holder, substantially as described.

206,707. Churns. George W. Blackwell, Cedar Rapids, Iowa. Filed Sept. 10, 1878.



Claim.—In a churn, the combination of the churn-body I, having lid L, provided with lugs *i*, fitting recesses N in the top of said churn-body, with the hollow shaft E, having collar G, upright B, sleeve C, and set-screw *h*, substantially as and for the purpose set forth.

206,708. Latches. Wilson Bohannan, Brooklyn, E. D., N. Y. Filed Aug. 12, 1878.

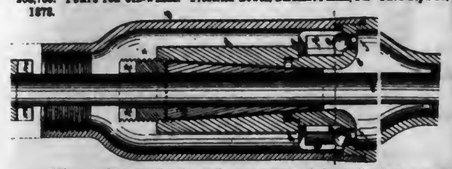


Claim.—1. In a night-latch and lock, the bolt-operating knob G, having a shank, *g*, with an oblong neck or groove, *g*³, in combination with a check-plate, H, having a slot, *h*, and hole *h*¹, whereby the check-plate is connected to the shank of the knob without riveting, pinning, or screwing, and the knob held in place, substantially as described.

2. The combination of the check-plate H, having a bearing, *h*², the stud M, and stud *h*, substantially as and for the purpose described.

3. The check-plate H, provided with the slot *h* and hole *h*¹, shoulder *h*³, and hook *h*², for application directly to the shank of the knob G and use with the studs J and M, substantially as and for the purpose described.

206,709. Pumps for Oil-Wells. Frederick Bowen, Barnhart's Mills, Pa. Filed Sept. 21, 1878.



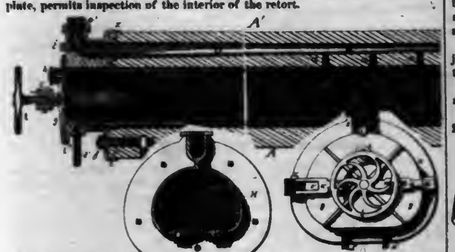
Claim.—1. The combination and arrangement of the stuffing-box *g*, partition *c*, and valve or valves *p* within the coil or chamber *b*, substantially as and for the purposes set forth.

2. The screw-collar *i*, provided with slots or mortises *k*, in combination with the lugs or projections *m* upon the plunger-rod *a*, substantially as and for the purposes set forth.

3. The combination of the ring *q* with the stuffing-box *g*, partition *c*, and valves *o*, substantially as and for the purposes set forth.

206,710. Gas-Retorts. William F. Browne, New York, N. Y., assignor to Hydrocarbon Steam Generating Company. Filed Sept. 23, 1877.

Brief.—Steam is decomposed by being passed in fine currents through a perforated plate, up through finely-divided white-hot carbon, and the products pass off by a separate flue in the top of the retort. The carbon as consumed at the rear end of the retort is periodically pushed back from the front end. An asbestus packing covered with wire-gauze forms a tight joint between the lid and face of the mouth-piece. A sight-hole in the lid, having a mica plate, permits inspection of the interior of the retort.



Claim.—1. The retort A, provided with projections *c'* and perforated plate thereon, and flues *a a'*, cast or molded therein, in combination with steam-pipes *d d*, and for the purpose specified.

2. The sliding swinging bar W, provided with slots *c'* and *a'*, in combination with the retort-head C', having brackets *c* and *u*, with catch *u'*, and the door *g*, supporting-bolts *u*, and screw *k*, substantially as and for the purpose specified.

3. The retort-head C', having the flue *c* therein, in combination with the retort A, having flues *a* and *a'*, for the purpose specified.

4. The retort-head having a removable plug, *i*, leading to flue *z* in said retort-head, in combination with retort A, having flues *a' a*, for the purpose specified.

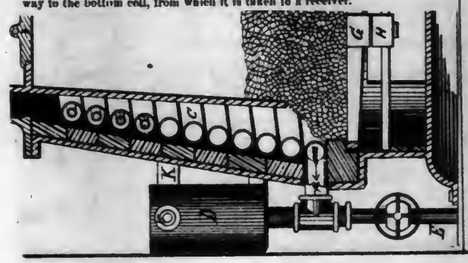
5. The re-enforcement A', molded with retort A, provided with a flue, *a'*, communicating with the interior of the retort by flues *a*, for the purpose specified.

6. An elastic packing covered with wire-gauze, in combination with a retort-head and door thereto, for the purpose specified.

7. The retort-head C', steam-pipe *d' d'*, and flue *z*, in combination with retort A, having a perforated bottom, and flues *a a'*, for the purpose specified.

206,711. Steam-Generators. William F. Browne, New York, N. Y., assignor to Hydrocarbon Steam Generating Company. Filed May 12, 1877.

Brief.—The water enters the top of the coil, and is then sprayed through an inner perforated tube and flashed into steam, which is superheated on its way to the bottom coil, from which it is taken to a receiver.



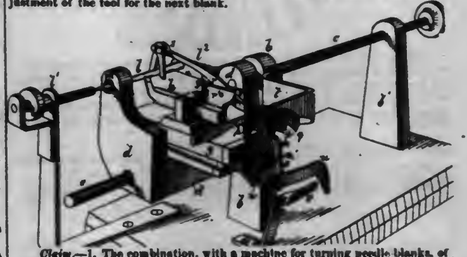
Claim.—1. The internal spray-pipe, *a*, for inducting and spraying fluids out of and into the top coils of boiler C, in combination with the remaining coils of said boiler, which conduct said fluids and expanded products thereof downward through said coils, whence its exit is made.

2. In combination with the spiral boiler C, provided with a spray-pipe, *a*, within its top coils, an exit-pipe, *x*, and the steam-drum D, substantially as described.

3. In combination with the spiral boiler C, provided with an internal spray-pipe, *a*, as specified, exit-pipe *x*, and drum D, the drip-pipe E and reservoir, for the purpose specified.

206,712. Machines for Turning Needle-Blanks. Eben Brown, Milford, Mass. Filed June 8, 1878.

Brief.—When the blank being turned is finished too large or too small, the calipers are held elevated or allowed to fall sufficiently to cause one of the pawls operating upon the screw of the slide-rest to move the cutter toward or from the blank during the traverse of the cutter, and thus effect a proper adjustment of the tool for the next blank.

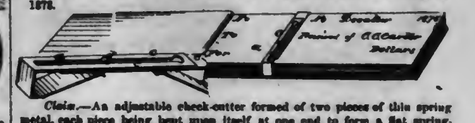


Claim.—1. The combination, with a machine for turning needle-blanks, of means for automatically regulating the size of the blanks produced, consisting of the following elements: a pair of calipers hung upon a lever connected with the tool-carrier in such a position as to bear upon the cut blank, a ratchet-wheel upon the adjusting-screw of the cutting-tool, and a swinging pawl-carrier provided with two pawls and acted upon by a fixed projection from the bed of the machine to move the ratchet-wheel in one direction or the other, according to the position of the lever which carries the calipers, substantially as described.

2. The adjusting-screw *k*, ratchet-wheel *n*, lever *o*, pawls *p p'*, arm *u*, projection *o*, lever *r*, calipers *s*, and springs *i w y*, combined and arranged with the tool-carrier *g*, substantially as and for the purposes set forth.

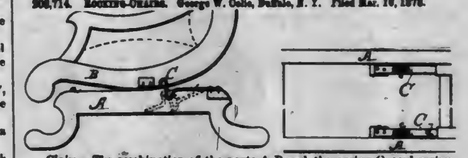
3. The arm *u* and inclined projection *v*, for moving the ratchet-lever and allowing the adjusting-screw to be gradually turned, substantially as set forth.

206,713. Adjustable Check-Cutters. Charles C. Carter, Decatur, Ill. Filed Aug. 10, 1878.



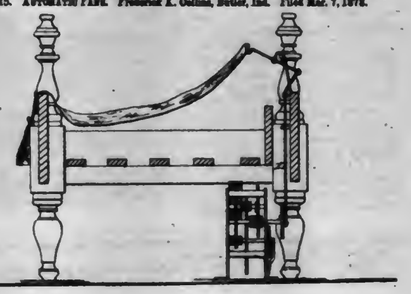
Claim.—An adjustable check-cutter formed of two pieces of thin spring metal, each piece being bent upon itself at one end to form a flat spring-clamp, and connected to the other by flanged projections upon one engaging with the edges or in a groove of the other, permitting a longitudinal sliding motion and adjustment of the device to the width of any-sized check-book, substantially as and for the purpose described.

206,714. Rocking-Chairs. George W. Colle, Buffalo, N. Y. Filed Mar. 19, 1878.



Claim.—The combination of the parts A B and the spring C, said spring being constructed of a single long curved piece, uniting the platform and rocker, and having the bend or waves *a a* therein, and forming a part of the said spring C, substantially as and for the purpose hereinbefore specified.

206,715. Automatic Fans. Frederick K. Collins, Butler, Ind. Filed Mar. 7, 1878.



Claim.—1. The combination, with a bedstead or other support for the body, of a fanning attachment consisting of a cover or spread, secured at one end and raised and lowered at the other end by fulcrumed crank-arms and an actuating clock-train, substantially as and for the purpose set forth.

2. The combination, with a bedstead or other support for the body, of a cover or spread, attached at one end to fixed hooks of the bedstead and at the other end to fulcrumed reciprocating crank-arms, set in motion by a clock-train, so as to produce a fanning action of the spread, substantially as set forth.

206,716. MILLSTONE-DRESSER. Elbert S. Orr, Jonesborough, Tenn. Filed Sept. 10, 1878.



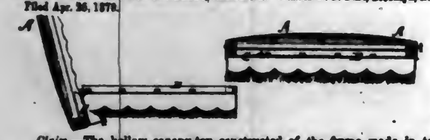
Claim.—The millstone-dress which consists of the peripheral finishing or flouring plane surfaces *a a* and inclined securing and cracking boom-surfaces *b b*, in combination with the tangential straight furrows *c c*, shallow and broad at the skirt, running straight to the eye, with constantly-increasing depth and decreasing width, substantially in the manner described, and for the purpose set forth.

206,717. CHUCKS. Thomas R. Crosby, Philadelphia, Pa., assignor of two-thirds his right to Harry H. Brown and Charles C. Wilson, same place. Filed Sept. 12, 1878.



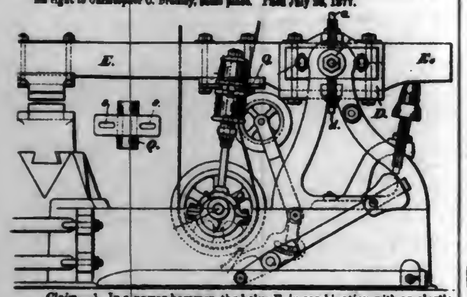
Claim.—The nozzle or nipple B, provided with a rounded head and a diagonal V-shaped slot, so as to introduce a solid sheet of water into the exhaust-pipe of an engine, arranged substantially as shown, and for the purpose specified.

206,718. CASKET-TOPS FOR OUTDOOR'S GARMENTS. Charles W. F. Dorr, Brooklyn, N. Y. Filed Apr. 26, 1878.



Claim.—The hollow canopy-top constructed of the frame made in two separate parts, B and C, that are hinged together, and of the lid or cover A, which is rigidly attached to the part C of the frame, substantially as specified.

206,719. POWER-HAMMERS. Michael Dorring, Syracuse, N. Y., assignor of three-fourths of his right to Christopher C. Bradley, same place. Filed July 26, 1877.



Claim.—1. In a power-hammer, the helve E, in combination with an elastic operating mechanism, which operating mechanism is directly connected and pivoted to the helve by means of the plate Q, which is attached to the helve, and is longitudinally adjustable relative thereto, substantially as shown and described, and for the purpose specified.

2. The cross-head D, provided with set-screws *d d*, in combination with the adjustable side plates, F F, having bearings for the reception of trunnions, the whole forming a device for the support and adjustment of the helve, substantially as shown and described.

3. The journal-bearing plate Q, provided with elongated slots *s s*, for the reciprocation of bolts to secure said plate to the helve, and to allow the adjustment of the same on the helve, to regulate the length of stroke of the hammer, substantially as shown and described.

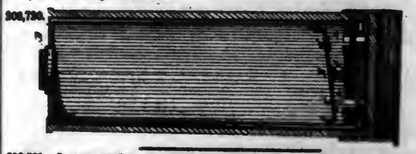
206,720. PORTABLE SHOWER-BATH. Daniel Durkee, Smyrna, Ohio, assignor of one-half his right to F. W. Kidder. Filed Sept. 6, 1878.

Claim.—1. The tilting platform B, provided with pins *d d* and cleats (*f*,

in combination with the water-tank A, pumps *e e'*, pipes *h h'*, and reservoir D, all constructed and operated substantially as set forth.

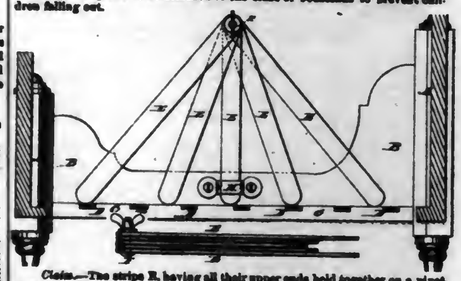
2. The water-tank A, divided into compartments by means of partitions *a b*, provided with openings *c c*, in combination with the tilting platform B, provided with cleats *i i'*, whereby the bather can rouse the water or not, at will, substantially as set forth.

206,720.



206,721. GUARDS FOR BEDSTEADS. Ferdinand Dienther, New York, N. Y. Filed Aug. 30, 1878.

Brief.—A guard to be attached to the sides of bedsteads to prevent children falling out.



Claim.—The strips B, having all their upper ends held together on a pivot-bolt, F, and the lower end of middle one in a keeper, H, in combination with bedstead A B C D, as shown and described.

206,722. DISCHARGE-PIPES FOR PUMP-SPOUTS, FAUCETS, &c. Thos. Dowling, Gloucester, Mass. Filed Jan. 5, 1878.

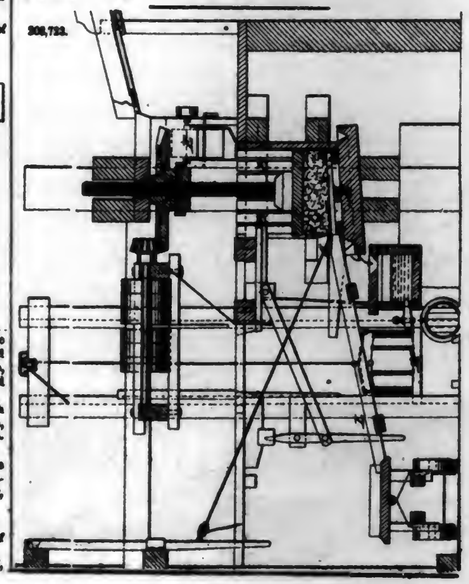


Claim.—1. A discharge-pipe having two exit-ports, in combination with a rotary gate adapted to be closed upon its seat by mechanical pressure acting in the same direction with the flow of the liquid, substantially as set forth.

2. A horizontal discharge-pipe for pump-spouts and faucets, provided with a nozzle adjustable thereon by rotation, and a screw-nut for securing the same in position when adjusted, substantially as set forth.

3. A discharge-pipe having two channels and provided with two nozzles, one of which is adjustable by rotation with relation to the other, substantially as set forth.

206,723.



206,723. CIDER-MILLS. Robert Rosen, Springville, Ohio. Filed Aug. 2, 1878.

Brief.—The chute, in delivering the apples to the grinding-cylinder, is provided with slots in its bottom to allow dirt to pass through. The cribs have removable front sections, to facilitate the removal of the pomace, which are drawn by a rope and sled along a skid onto the platform of a car.

Claim.—1. In a cider-mill, the combination of the grinding apparatus with a tilting chute having bottom screen for conducting the apples to grinding-mill and cleaning them, substantially as specified.

2. In a cider-mill, the combination of a pomace-carrying frame or sled with a draw-rope, winding-up drum, and lever mechanism to start or stop motion of sled, substantially as set forth.

3. In a cider-mill, the combination of the pomace-carrying frame or sled with a draw-rope, winding-up drum, and lever mechanism to move or stop the sled, and with a pivoted lever and a seat or stop for each crib, so that the sled may be worked with either crib, substantially as specified.

4. In a cider-mill, the combination of the crib having removable front section, of a pomace-carrying frame or sled placed between top planks and slat bottom, of mechanism for removing the pomace from the crib, and of a skid to conduct the pomace from the crib to a car, substantially as set forth.

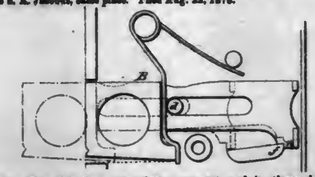
206,724. PROJECTILES FOR THROWING LINES. Selmer Eggers and Ebenezer Pierce, New Bedford, Mass. Filed Mar. 16, 1878.



Claim.—1. A projectile for throwing a line, which projectile is chambered for a line to be disposed and secured within its chamber, and is grooved exteriorly along its length, all substantially as and for the purposes specified.

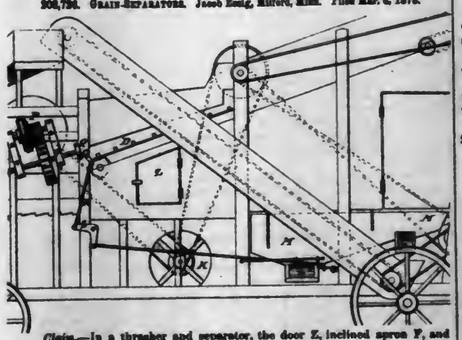
2. The combination, with a projectile for throwing a line, which projectile is chambered for a line to be disposed and secured within its said chamber, and grooved exteriorly along its length, of a wad or plug, H, for closing the end at which the line within the projectile passes out of the same, all substantially as described, for the purposes set forth.

206,725. SLIDING-DOOR PULLS. Arthur H. Elwell, Pittsburg, Pa., assignor of one-half his right to S. K. Jacobus, same place. Filed Aug. 22, 1878.



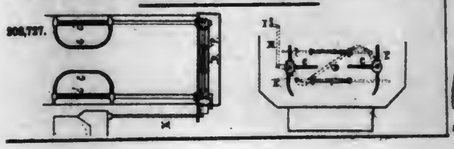
Claim.—The slide B, arranged to move out and in through a mortise in the face-plate, hung so as to both turn and slide upon a pivot stationary in the case, combined with the stop *f* in the case, in rear of pivot *d*, to engage with notch *n* on the slide when fully returned into the case, and a spring to force the slide outward when disengaged from said stop, and substantially as described.

206,726. GRAIN-SEPARATORS. Jacob Essig, Milford, Minn. Filed Mar. 6, 1878.



Claim.—In a thresher and separator, the door Z, inclined apron F, and board H, arranged with respect to the fan K, carrier D, and cleaning-shoe M, as shown and described, so that the sieves can be inspected without encountering the blast, the dust, or the chaff, and the falling grain.

206,727.

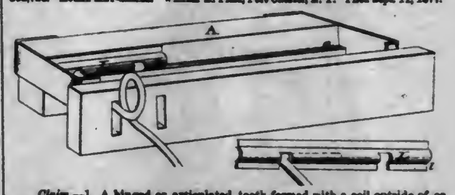


206,727. SWING-STILE RECORDERS. Victor Lédore Fenzy, Brixton, England. Filed Sept. 11, 1877. Patented in England, Dec. 14, 1876.

Claim.—1. In combination with the swing-stiles C C, the rod D, cranks E E, prickers or markers N O, and intermediate actuating mechanism, substantially as set forth.

2. In combination with the stiles C, having follower C', the connecting-rod H, bell-crank I, tappet-rod K, levers L M, prickers N O, and drum R, substantially as described.

206,728. HORSE HAY-RAKES. William H. Field, Port Chester, N. Y. Filed Sept. 11, 1877.



Claim.—1. A hinged or articulated tooth formed with a coil outside of or beyond a tooth-board, or its equivalent, as set forth.

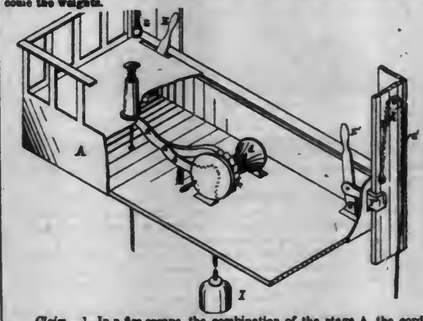
2. The head A, formed with the groove *a*, in combination with the tooth-holder L, having the flange *l*, substantially as set forth.

3. A tooth-holder formed with flanges and with slots extending through one of said flanges, substantially as and for the purposes described.

4. The combination of a rake-head and tooth-board with a tooth formed with its end turned at right angles and in the direction of the length of the head, and having a coil formed outside of said tooth-board, substantially as and for the purpose set forth.

206,729. FIRE-ESCAPES. Mary C. Smith Flanigan, Cleveland, Ohio, assignee of one-third her right to J. W. Easterman, same place. Filed Feb. 11, 1878.

Brief.—A stage or platform moving vertically on guideways secured to the building, counterbalanced by weights, and provided with friction brakes or clutches to regulate the descent. A weighted rope wound on a drum on the stage is released by mechanism operated from the ground by a pull-cord, or on the stage by a spring-plunger, and falls to the ground, and by it the stage can be pulled down when the weight thereon is not sufficient to overcome the weights.

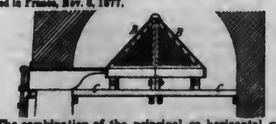


Claim.—1. In a fire-escape, the combination of the stage A, the cords G G', pulleys *h h'*, weights H H', levers E E', and clutches F F' with the lever *a*, arm *b*, ratchet *c*, and drum *d*, as and for the purposes set forth and described.

2. The levers E E' and clutches or brakes F F', as and for the purposes described and shown.

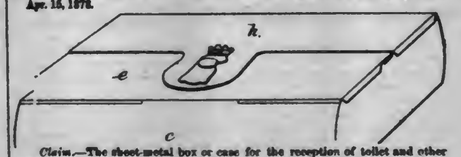
3. The lever *a*, arm *b*, ratchet *c*, and drum *d*, in combination with the wire-rope *g*, weight I, and mechanism for operating the lever, substantially as and for the purpose set forth.

206,730. GRATE-BARS FOR FURNACES. Alexis Godillot, Paris, France. Filed July 13, 1878. Patented in France, Nov. 5, 1877.



Claim.—The combination of the principal or horizontal grate C and the inclined grate B, arranged above said grate C, and so as to leave an open space between the base of the inclined grates and the horizontal grates, substantially as described.

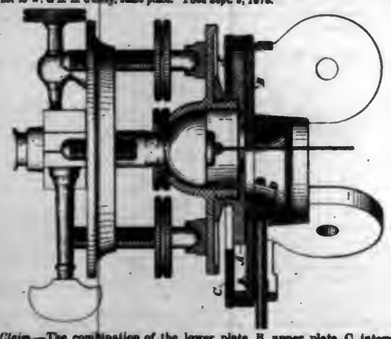
206,731. CASES FOR TOILET ARTICLES, &c. Hermann Gringmuth, Dresden, Saxony. Filed Apr. 15, 1878.



Claim.—The sheet-metal box or case for the reception of toilet and other articles, having its top and the half of its front made in two parts, one part,

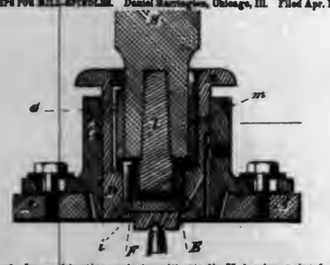
e, being hinged to the top of the back *a*, and the other part, *b*, being hinged to the center of the front, the two parts forming the lid or cover, and adapted to be secured by a suitable clasp, substantially as set forth.

206,733. Tripod-Heads for Surveying-Instruments. William Gurley, Troy, N. Y., assignor to W. & L. E. Gurley, same place. Filed Sept. 9, 1878.



Claim.—The combination of the lower plate, B, upper plate, C, intermediate laterally movable instrument-plate, A, and the clamp D, substantially as described.

206,733. Steps for Mill-Spindles. Daniel Harrington, Chicago, Ill. Filed Apr. 12, 1878.

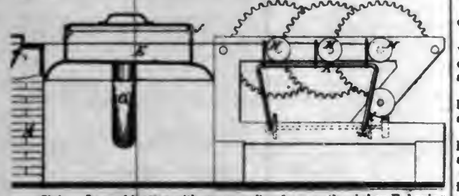


Claim.—1. In combination with the mill-spindle H, having point *l*, a tram-pot having oil-pot D, with tram-plate E, ring F, lining G, and steel button *i*, all constructed and arranged substantially in the manner and for the purpose set forth.

2. A step-bearing for mill-spindles, consisting of the tram-pot C, having oil-pot D, tram-plate E, ring F, lining G, steel button *i*, and lubricating-channels *m n*, all constructed and arranged substantially as described and shown.

206,734. Annealing-Furnace. Edwin E. Hill, Worcester, Mass. Filed Aug. 12, 1878.

Brief.—The wires are subjected to an air-blast in a box of peculiar construction. The annealing-pot may hold charcoal to additionally heat the passing wire.



Claim.—In combination with an annealing-furnace, the air-box E, having movable cover, notches *f*, to separate the wires, and supply-pipe G, as shown and described.

206,735. Utilizing Tin-Scrap and Manufacture of Stannates. John Holliday and John Lambert, Brooklyn, assignors to William Slack, Stapleton, N. Y. Filed Dec. 24, 1877.

Claim.—The reaction-bath for the manufacture of stannic salts, composed of a solution of caustic soda or potash in connection, alone, with one or more of those agents which, acting with the tin and the oxygen of the water, produce stannic salts, such as alkaline arsenites, nitrates, or nitrites, substantially as set forth.

206,736. Grain Elevator and Binder. Moses G. Hubbard, Norristown, Pa. Filed May 13, 1878.

Claim.—1. The combination of a large toothed elevating-cylinder, mounted on the main shaft between the driving and supporting wheels of a gleaning and binding machine, with a smaller toothed gleaning-cylinder, substantially as shown and described.

2. In combination with the elevating and gleaning cylinders, the carrying-scrolls F F, attached to the front sill of the frame G, and the guiding-scrolls I I, attached to the rear sill, J, substantially as shown and described.

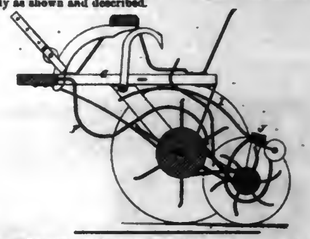
3. The levers L L, in combination with the gleaning-cylinder of a gleaning and binding machine, when said cylinder is hinged to the main shaft and located in the rear thereof, so as to follow the uneven surfaces of the ground, substantially as shown and described.

4. In a machine for gleaning and binding grain, the two toothed cylinders, revolved in opposite directions by a crossed band or chain, in combination with the carrying and guiding scrolls of said machine, and automatic binding mechanism, to which the gathered grain is fed by said cylinders and scrolls, substantially as described, and for the purpose set forth.

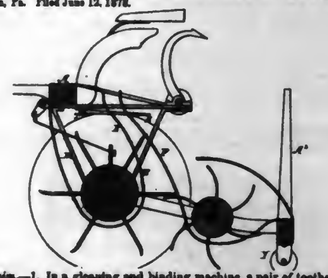
5. The combination, with raking and gleaning mechanism, of a rotating binding-arm, placed above the path of feed of the grain, and rotating reversely to the drive-wheel of the machine, whereby the gavel is bound and delivered up and over the binder-shaft, and onto the ground in the rear of the machine, substantially as shown and described.

6. A pair of toothed cylinders of unequal size revolving in opposite directions at speeds proportioned to their respective sizes, in combination with the gavel-trough and binding mechanism of a gleaning and binding machine, substantially as shown and described.

206,736.



206,737. Grain Gleaner and Binder. Moses G. Hubbard and Josiah D. Hoober, Norristown, Pa. Filed June 12, 1878.



Claim.—1. In a gleaning and binding machine, a pair of toothed cylinders revolving in opposite directions for gleaning and elevating the gavel, in combination with a suitable receptacle for holding the gavel where it can be bound by automatic binding mechanism, substantially as shown and described.

2. In a gleaning and binding machine, a vertical, or nearly vertical, grain-receptacle formed by the carrying-scrolls E E and the elastic grain-compressors F F, in combination with an automatic binding-arm, substantially as shown and described.

3. In a gleaning and binding machine, the single beam A, extending entirely across the machine above the elevating-cylinder, and serving as a means of support and attachment for the several parts, substantially as shown and described.

4. A self-sustaining raising-lever, in combination with the gleaning device of a gleaning and binding machine, substantially as shown and described.

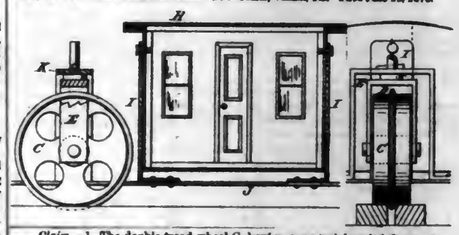
5. In a gleaning and binding machine, the main or front cylinder provided with teeth for elevating the grain, in combination with the binder-arm shaft, connecting-belt, arm S, shaft T, and tightening-pulley U, substantially as shown, and for the purpose specified.

6. In a gleaning and binding machine, the two carrying-rollers Y Y, located under the rear sill and near the center of the machine, substantially as shown, and for the purpose specified.

7. In a gleaning and binding machine, the track-clearer A^3, or its equivalent, for turning the bundles out of the path of the horse, substantially as shown and described.

8. The combination of the reversely-rotating elevating and gleaning cylinders of a gleaning and binding machine provided with teeth which are curved at their ends or points, substantially as shown, and for the purposes specified.

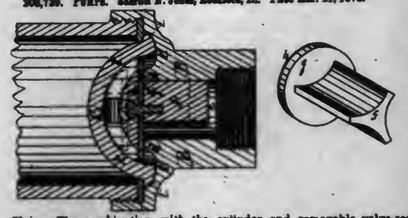
206,738. Ore-Track Railway-Cars. D. B. James, Visalia, Cal. Filed June 11, 1878.



Claim.—1. The double-tread wheel C, having a central beveled flange, D, in combination with the turning-frame E, supporting-frame K, and truck-frame J, all constructed and arranged substantially as and for the purpose set forth.

2. The swinging car H, in combination with the end supports, I, truck-frame J, and double-tread wheels C, substantially as and for the purpose described.

206,739. Pumps. Samuel H. Jones, Rockford, Ill. Filed Mar. 11, 1878.



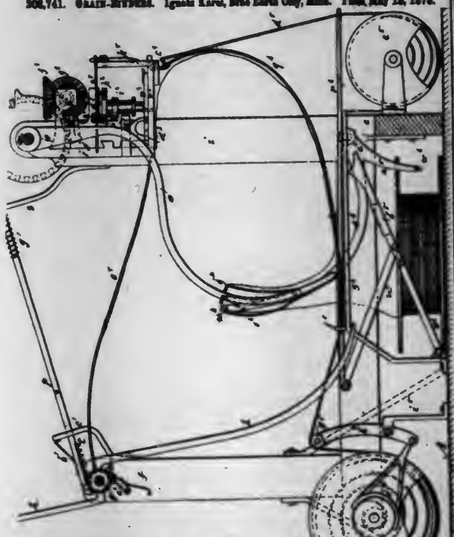
Claim.—The combination, with the cylinder and removable valve-seat portion, constructed with an annular groove surrounding the valve-seat, and a puppet-valve, of the yoke or cage, the lower edge of which rests in the annular groove, said yoke provided with a horizontal flange or seat, and a packing-ring, which is firmly secured between the cylinder and valve-section, and projects over the seat on the yoke, thus retaining the latter in place, substantially as set forth.

206,740. Boots and Shoes. Joseph L. Joyce, New Haven, Conn. Filed July 1, 1878.



Claim.—The combination, in a boot and shoe, of the upper and the outer sole with an insole or intermediate sole, composed of a paper or similar hard material body, having one surface covered with fabric, the other covered with india-rubber, the combination being made substantially as described.

206,741. Grain-Binders. Ignatz Karel, Blue Earth City, Minn. Filed May 18, 1878.



Claim.—1. The knot-former consisting of the slotted and notched tube *f*, secured eccentrically to the shaft d^2, the jaws f^2, spring q^1, and sleeve p^2, in combination, substantially as herein shown and described.

2. The pivoted jaws e^3 d^3, the arm f^1, carrying the spring d^1, spring f^3, the cam h^2, and the rod g^6, having the beveled pin f^5, in combination, substantially as and for the purpose specified.

3. The levers g^5 h^3 and the arm f^4, in combination, for tightening the knot, as herein specified.

4. The combination of the arm *e*, carrying the cam *p*, with the plate *f*, having the inclined plane e^1, for moving the knot-forming apparatus and throwing it into gear, as herein shown and described.

5. The combination, in a grain-binder, of curved arms *e* d^3 and the strap q^6, having a tension device, for forming and compressing the bundle, substantially as herein shown and described.

6. The lever r^1, lever r^2, and arm d^5, in combination with the strap *q*, for carrying the free end of the strap upward to the knot-former, as herein shown and described.

7. The combination of the strap d^6 and spring-acted drum d^4 with the strap q^6, as and for the purpose specified.

8. The combination of the brakes f^6 and lever h^4, carrying the roller g^7, with the drum f^4 and strap q^6, substantially as herein shown and described.

9. The combination of the levers h^2 n^2 with the eye e^5, attached to the straps q^6 d^6, for holding the straps while the bundle is formed and tied, substantially as herein shown and described.

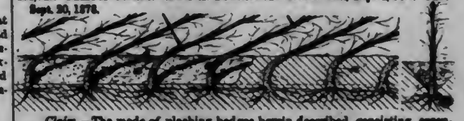
10. The arm *e*, carrying the cam *p* and the lever n^2, in combination with the strap-retaining lever h^4, for releasing the straps, as herein shown and described.

11. The combination of the slotted disk *n* with the shaft *k*, carrying the pin e^7, and the spring-acted arm n^1, for holding the shaft and arm in a working position during one revolution of the shaft, as herein shown and described.

12. The slotted collar g^1, spring-pressed arm n^1, and arm e^7, in combination with the shaft *k*, as and for the purpose specified.

13. The combination of the sliding spring-acted pin h^5, and the arm n^2 with the disk *q* and wheels *l n*, as herein shown and described.

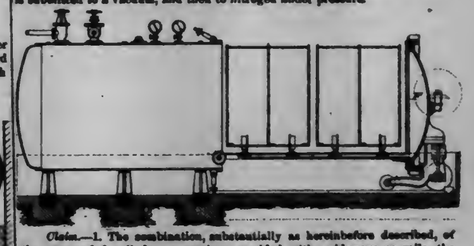
206,742. Plashed Fences. David M. Kitchride and Michael Hall, Dayton, Ohio. Filed Sept. 20, 1878.



Claim.—The mode of plashing hedges herein described, consisting, essentially, in bending the twigs or canes below the surface of the ground and fastening them in position in line of the hedge, as herein set forth.

206,743. Apparatus for Preserving Food. Pierre P. E. M. Koch, Antwerp, Belgium. Filed July 23, 1877. Patented in Canada, Aug. 9, 1877, and in England, No. 2,801 of 1877.

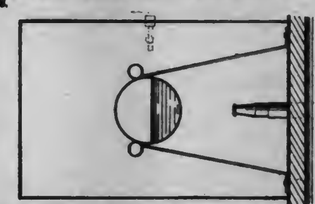
Brief.—A horizontal metal cylinder is provided with rails on its lower inner surface, and upon these is supported an open iron frame carrying the cylinder-cover. Upon this frame rails are laid transversely, to receive and support wagons of a cylindrical form, which carry the food. In this the food is submitted to a vacuum, and then to nitrogen under pressure.



Claim.—1. The combination, substantially as hereinbefore described, of the open-ended cylinder or receiver provided with guideways or rails, the frame or platform supported upon and traversing said rails, and the cylinder-cover carried by said frame and supported on a truck, as described.

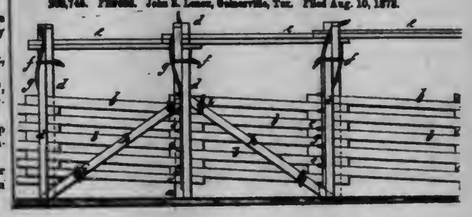
2. The combination, substantially as hereinbefore set forth, of the cylinder or receiver, the frame or platform provided with the transverse wagon-tracks and traversing the cylinder, and the wagons supported by the frame, as described.

206,744. Process for Ripening Fruits. Matthew Lane, New York, N. Y. Filed July 11, 1878.



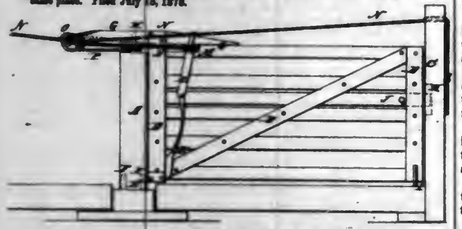
Claim.—The process herein described of ripening fruit, consisting in the following steps: first, placing the unripe fruit in a chamber or receptacle tightly closed; second, subjecting the fruit to the action of steam and maintaining a temperature of 80° to 120° Fahrenheit for a period varying from twenty-four to forty-eight hours, according to the condition of the fruit when placed in the chamber or receptacle, as set forth.

206,745. Press. John S. Lance, Gainesville, Tex. Filed Aug. 10, 1878.



Claim.—The herein-described fence, consisting of the pins *a*, rails *b*, links *c*, stakes *d*, riders *e*, wires *f g*, and braces *h*, all arranged as shown and set forth.

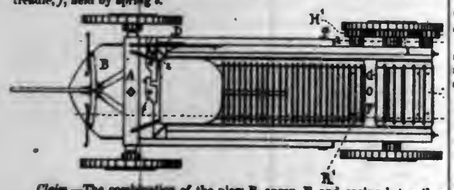
206,746. GATE. Philip Lemmon, Collinsville, Ill., assignor to himself and John W. Davis, same place. Filed July 16, 1878.



Claim.—The combination, with a swinging gate, of the lever G, pivoted on post A and made fast to gate, the latch-spring L, having cross-head M, the cords N, and the V-lever P, as shown and described, for the purpose specified.

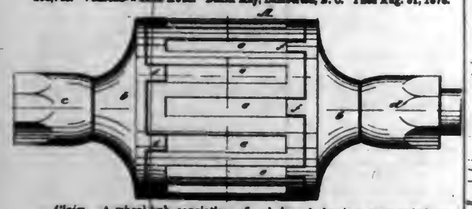
206,747. POTATO-DIGGER. Samuel Love, Indianapolis, Ind. Filed Jan. 8, 1878.

Brief.—A spring supports the middle portion of the endless apron and gives it a vibratory motion. The swinging frame is adjusted by a lever and treadle, *f*, held by spring *e*.



Claim.—The combination of the plow E, apron F, and spring *b*, together with roller E', zog-wheel H', and box P, substantially as and for the purpose hereinbefore set forth.

206,748. VEHICLE-WHEEL HUB. Daniel May, Lambertou, N. C. Filed Aug. 31, 1878.



Claim.—A wheel-hub consisting of axle-box A, having open-ended mortises *c* and end-threaded extensions, squared at *e*, the collars *b b*, having inward projections *f*, and the nuts *c d*, as shown and described.

206,749. COMBINATION HOEING IMPLEMENTS. Jos. P. McCann, Wesson, Miss. Filed Apr. 29, 1878.



Claim.—A tool-handle, A, divided along its center line in two parts, A' C, provided with cross-heads B *c*, one of which, *c*, is hinged between lugs *a* on the other, B, to clamp between them the head H of a tool-blade, the two parts A' C being kept clamped together by the ferrule D, movable upon the handle A, substantially as shown and described, and for the purpose set forth.

206,750. ADJUSTABLE CENTER-BOARDS. Dennis McColgan, San Francisco, Cal. Filed Apr. 22, 1878.

Claim.—1. The center-case E, cast or formed in one piece, and fitting into a slot in the keel, as shown, and having the hollow cylindrical extension or sleeve G, projecting up between the floor-timbers, so that it is fitted without cutting or weakening them, substantially as herein described.

2. The center-case E, with its cylindrical sleeve G, fitted into the keel, as shown, and provided with the flanges F F', by which it is bolted to the keel in two directions, substantially as shown, and for the purpose herein described.

3. The center-case E, cast in one piece, and having the cylindrical sleeve G projecting upward, as shown, said sleeve also extending down upon each side of the interior of the case, so as to guide the center-board without its touching the case, and to give it a sufficient bearing when lowered, substantially as herein described.

4. The cylindrical sleeve G, forming a part of the closed-top center-case E, and extending up between the floor-timbers, in combination with the shoe L and the cone M, fitting over the sleeve and secured to the keelson, as shown, so as to prevent leakage and protect the shaft, substantially as herein described.

5. The shoe L, fitted as shown, in combination with the interior shaft-casing K, extending up to the plate S, beneath the deck, so as to protect the center-board shaft, prevent leakage, and support the deck and unite it with the keel, substantially as herein described.

6. The bed-plate Q, screwed to the deck and having the downwardly-projecting cone R, with its screw-threads, in combination with the plate S, secured beneath the deck, and the shaft-casing K, substantially as shown, and for the purpose herein described.

7. The center-board consisting of the plates I, bolted to the flattened extended flanges at the lower end of the shaft H, said shaft extending up through the sleeve G and cone K to the operating mechanism above, substantially as shown, and for the purpose herein described.

8. The plates I, forming the center-board, and bolted to the lower flattened extension of the shaft H, said plates being slotted at the top, so as to allow the circular part of the shaft to extend below the top of the plates and give a firm bearing, substantially as herein described.

9. The shaft H, for operating the center-board, having the rack W upon its upper end, in combination with the pinion X and the disengaging-lever *j*, to raise or lower the center-board and allow the shaft to turn, substantially as shown, and for the purpose herein described.

10. The center-board shaft H, movable vertically, as shown, and having the enlarged feathered shoulder T, in combination with the pawl U, to hold the shaft and board up, substantially as herein described.

11. The center-board shaft H, with its enlarged feathered shoulder T and pawl U, in combination with the horizontal shaft V, with its disengaging-cam, substantially as herein described.

12. The enlargement T of the shaft H, having feathers, as shown, in combination with the inclosing-clutch *c*, with its projecting arms *d*, the curved racks or ratchets *e*, and the operating-lever *f* for the clutch, substantially as herein described.

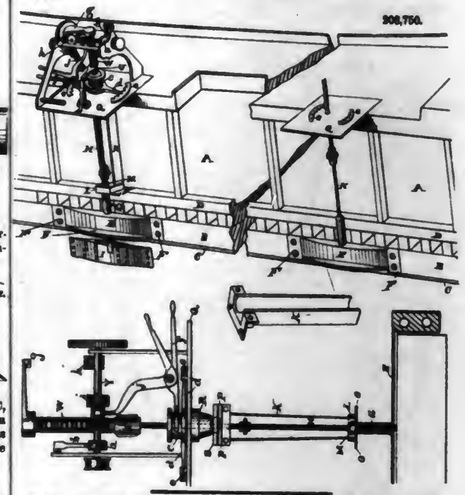
13. The shaft H, having the segment-rack *g* at the top, in combination with the pinion h, whereby the shaft may be rotated and the center-board turned to an angle with the keel when the arms *d* are released from the racks *e*, substantially as herein described.

14. The shoulder or enlargement T upon the shaft H, so placed that it shall rest upon the bed-plate Q when the rack *g* and pinion h are in contact, and relieve these parts from the weight of the board, substantially as herein described.

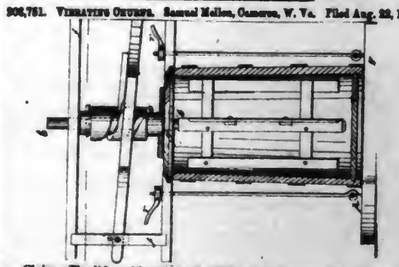
15. The windlass-shaft Y, having the pinions X and *i*, moving on a feather, for alternately rotating the shaft or moving it in a vertical direction, in combination with the pinion *a* and the pawl *b*, whereby the shaft H and center-board are held at any point intermediate between the highest and lowest, substantially as herein described.

16. The windlass-shaft Y, having the pinions X and *i*, for rotating the shaft or moving it vertically, said pinions being united and movable upon a feather by a clutch-lever, *j*, so that one may be engaged to raise or lower the center-board, and the other to turn it when down, substantially as herein described.

206,750.

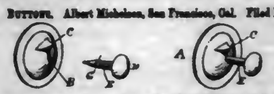


206,751. VIBRATING ORGANS. Samuel Mellen, Cameron, W. Va. Filed Aug. 22, 1878.



Claim.—The lids *g*, hinged to the frame *f*, that supports the damper-rod *b* and its operating-lever, substantially as described.

206,752. BUTTON. Albert Michelsen, San Francisco, Cal. Filed Mar. 26, 1878.



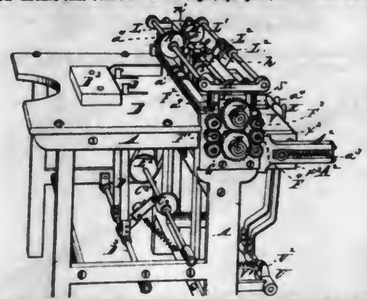
Claim.—The button A, having the slot B, and the opening formed by turning up the lip C, in combination with the head D and shank E, said shank being adapted to fit the slot B, as shown, and to be secured permanently by the lip C, substantially as shown, and for the purpose herein described.

206,753. BUTTON-FASTENERS. Albert Michelsen, San Francisco, Cal. Filed Mar. 18, 1878.



Claim.—In combination with a button, A, having the stem or shank B pointed, as shown, and provided with the angular portion C, the locking device D, with its holding-lugs I and J grooved, as described, and the plate K, substantially as shown, and for the purpose herein set forth.

206,754. ROTARY CARD-CUTTERS. Elisha Morgan, Springfield, Mass. Filed Mar. 20, 1877.



Claim.—1. The combination, in a machine for cutting cards, of the feed-rolls F' and F², the series of cutters *b h*, arranged on the shafts E and E', the rolls F' and F', and the horizontal guide-plates *c* and *c'* with the feed-arms D, all substantially as described.

2. The combination of the feed-rolls F' and F², the series of cutters *b h*, arranged on the rolls E and E', the pivoted lever *e*, pawl *n*, ratchet-wheel *i*, and hammer *n'*, substantially as and for the purpose herein set forth.

3. In a machine for cutting cards, the prismatic shaft V, provided with a series of pockets, S, upon its sides, each having a guard, R, said shaft being arranged to have an intermittent rotary movement, in combination with a series of cutters for cutting the cards, and rolls for delivering them into said pockets after being cut, substantially as described.

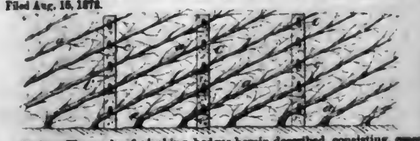
4. A series of pockets, S, arranged on the sides of a prismatic shaft, V, each pocket provided with a guard, R, in combination with a series of holders, K, which are common to each series of pockets on the different sides of the shaft as each series is brought successively into connection with said holders, substantially as set forth.

5. In a card-cutting machine, the combination of the prismatic bearing *s'*, the vertical projection *s²*, having a correspondingly-straight bearing, and the springs *s³*, for holding the said bearings firmly in contact, and the shaft V in its proper position for the pockets arranged thereon to receive the cards from the cutters, substantially as herein set forth.

6. The series of plates S, arranged on the sides of the prismatic shaft V, forming pockets between, each pocket provided with a projection, *m*, or equivalent device, in the bottom of the pocket, in combination with the weights or arms L', as a means of causing the cards to drop into and lie in the pockets in a tilted position, substantially as described.

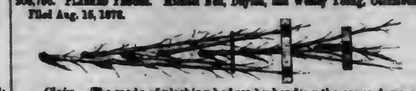
7. A series of plates, S, arranged on the sides of a prismatic shaft, V, forming pockets, each of the latter provided with a projection, *m*, or equivalent device, in combination with the guards R and holders K, substantially as herein set forth.

206,755. PLASHED FENCE. Michael Hall, Dayton, and Wesley Young, Columbus, Ohio. Filed Aug. 15, 1878.



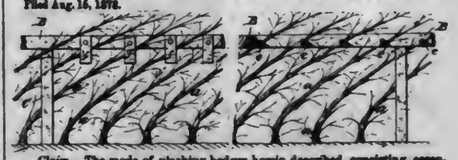
Claim.—The mode of plashing hedges herein described, consisting, essentially, in bending the plants from a point of flexure at or near the ground down in the vertical plane of the fence, with their bodies or main portions separate from and nearly or quite parallel to each other, and then securing them by means of stakes or the equivalent thereof, the body or main portion of each plant being fastened to or by the stakes independently of the bodies or main portions of the other plants, and by separate fastenings, not a part of the growing hedge, substantially as described.

206,756. PLASHED FENCES. Michael Hall, Dayton, and Wesley Young, Columbus, Ohio. Filed Aug. 15, 1878.



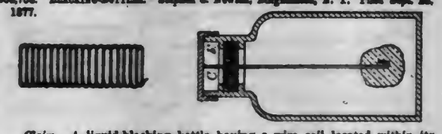
Claim.—The mode of plashing hedges by bending the canes down so as to bring them, in sets of three or more, substantially in the same horizontal plane at the point of fastening, and there securing them in position by transverse yoke-pieces, held in place by the upward and downward pressure of the outside and intermediate canes, substantially as described.

206,757. PLASHED FENCES. Michael Hall, Dayton, and Wesley Young, Columbus, Ohio. Filed Aug. 15, 1878.



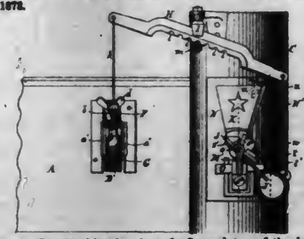
Claim.—The mode of plashing hedges herein described, consisting, essentially, in bending the canes down nearly or quite parallel to each other, in line with the fence, and securing them in that position by a bar or bars, B, to which they are separately fastened or connected by a fastening not a part of the growing hedge, substantially as described.

206,758. BLACKING-BOTTLES. Stephen G. Newton, Binghamton, N. Y. Filed Sept. 20, 1877.



Claim.—A liquid-blacking bottle having a wire coil located within its neck, substantially as and for the purposes set forth.

206,760. DRAFT-REGULATORS FOR FURNACES. E. D. Needham, Cambridge, Mass. Filed June 22, 1878.



Claim.—1. The combination, in a draft-regulator, of the bar D, made of iron, brass bars *f* and h, and levers E and F, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

2. The combination of the iron bar D, provided with the chamber D', the knife-edge pin *f*, and slot *g*, the hook *e*, adjustably attached to bar D, brass bar *f*, provided with hook *e* at one end and a slot at the other end, lever E, brass bar h, provided at one end with the hook *h'*, and with a slot at the other end to receive the end of the lever E, and the lever F, provided with the hook *i*, all arranged and adapted to operate substantially as and for the purposes described.

3. The combination, with the casing of a furnace, of the bar D, provided with ribs *a' a'*, and the two wedges or keys, arranged and operating substantially as and for the purposes described.

4. The combination, in a draft-regulator, of the damper I, rigidly secured upon the shaft *o* within the pipe C, the cold-air damper K, mounted loosely upon the same shaft upon the outside of and adapted to close an aperture in the pipe C, and the lever J, securely clamped upon said shaft *o*, and provided with a crank-pin or coupling-lug, r^2, and adapted to be readily disengaged from the damper K by moving said lever on its shaft, substantially as described.

5. The lever J, made in two parts, secured together and to the shaft *o* by means of slot r^1, hook-lug r', bolt *i*, and nut *i'*, and provided with the crank-pin r^2 and arm s^2, all constructed and adapted to operate substantially as and for the purposes described.

6. In combination with the pipe C, the plate M, having formed thereon or secured thereto the bracket M', projecting outward therefrom through said pipe, the plate N, fitted to the exterior of the pipe, and provided with an opening for the admission of air to the pipe, and secured in position on the pipe C and to the plate M by the key O, driven through a slot in the bracket M', substantially as and for the purposes described.

7. In combination with the plate N, provided with an aperture for the admission of air to the draft-pipe and a projecting ledge or seat, against which the damper closes, the damper K, mounted upon the shaft *o*, and adapted to move about its axis in a plane at an angle to the plane of its inner face and the seat against which it closes, substantially as and for the purposes described.

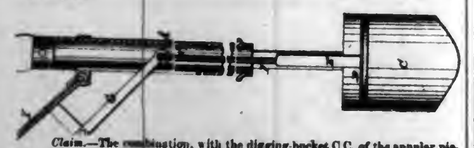
8. In combination with a damper and a rod or rods adapted to be expanded and contracted by the varying temperature within the hot-air chamber of a furnace to impart motion to a lever, the lever or beam H, provided with a series of notches, *l*, and adapted to be supported upon a knife-edge at different distances from its ends, substantially as and for the purposes described.

9. The oscillating beam H, provided with a series of notches, *l*, upon its under side, and adapted to be supported upon the knife-edge *n* at different distances from either end of said lever as a means of regulating the movement of a damper or dampers, substantially as and for the purposes described.

10. The combination, in a draft-regulator, of the iron bar D, provided with the knife-edge *g*, the two brass bars *f* and *h*, each provided with a hook at one end and a knife-edge bearing at the other end, the levers E and F, and the knife-edge *j*, all arranged and adapted to operate substantially as described.

206,760. Post-Hole Diggers. Charlton Patterson, Rock Island, Ill. Filed Aug. 13, 1878.

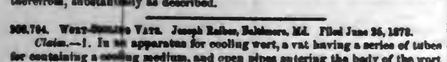
Brief.—A ring fits the inner circumference of the scoop. It is connected by a rod through the center of the hollow handle to a lever at the top, so that it can be worked up and down, loosening the dirt in the scoop when it is to be emptied.



Claim.—The combination, with the digging-bucket C C, of the annular piston D' and central piston rod, F, operated by the connecting-rod G and lever *I*, the latter being fulcrumed in the hollow handle A of the post-hole digger, substantially as and for the purpose set forth.

206,761. Collapsible Pill-Tubes. Edward R. Peet, Newburg, N. Y. Filed Aug. 14, 1878.

Brief.—The usual bulb of a syringe is replaced by the well-known thin-metal artists' color-tube. This tube serves as a receptacle for the ointment after use, the slotted ejection-tube being replaced by a screw-cap.



Claim.—The pile-injector formed of the thin-metal artists' tube, to contain an ointment, combined with the nozzle B, as shown and described.

206,762. Thill-Couplings. Alfred Preuss, Baltimore, Md. Filed Sept. 21, 1878.



Claim.—1. In combination with the ordinary axle-clip, having perforated ears *b*, the bottom plate, D, extended up in front thereof, and embracing the shaft end, as set forth.

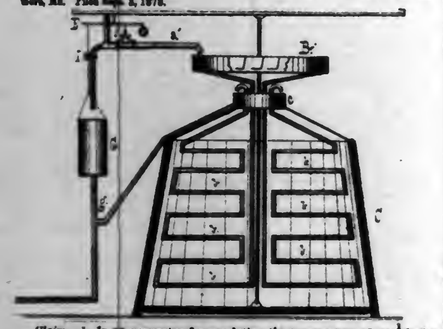
2. In combination with the clip A and springs *e*, the bifurcated plate D and arms E, as set forth.

3. In combination with the clip A, the bifurcated plate D, arms E, having side pieces, A', and the pin F, as described.

4. In combination with the clip A and rubber *c'*, the bifurcated plate D, having arms E arranged to press upon the rubber, as described.

5. In combination with the clip A, the bifurcated plate D, arms E, having side pieces, A', pin F, and rubber *c'*, the combination being and operating as set forth.

206,763. Apparatus for Cooling Wort During Fermentation. Joseph Raiber, Baltimore, Md. Filed Sept. 2, 1878.



Claim.—1. In an apparatus for regulating the temperature of wort during fermentation, a vat containing pipes or chambers for holding a cooling medium, in combination with mechanism for automatically causing an intermittent motion of the said pipes or chambers, substantially as described.

2. In combination with the pipe *c'*, having valve *f*, the lever E, vessel G, perforated pipe *g*, and cock I, substantially as described.

3. In combination with mechanism for intermittently admitting a current of water, the fermenting-vat C, having water-wheel B and pipes *b*, leading therefrom, substantially as described.

206,764. Wort-Cooling Vats. Joseph Raiber, Baltimore, Md. Filed June 26, 1878.

Claim.—1. In an apparatus for cooling wort, a vat having a series of tubes for containing a cooling medium, and open pipes entering the body of the wort for the passage of air, substantially as described.

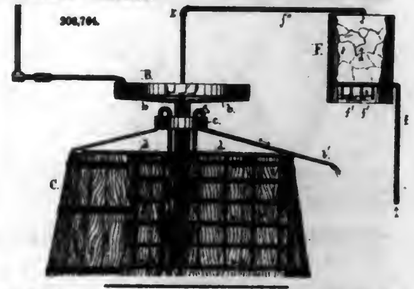
2. In an apparatus for cooling wort, and in combination with its vat, a cooling-pipe receiving motion from the impact of the cooling medium, substantially as described.

3. In an apparatus for cooling wort, and in combination with its vat, a cooling-coil carrying a water-wheel, substantially as described.

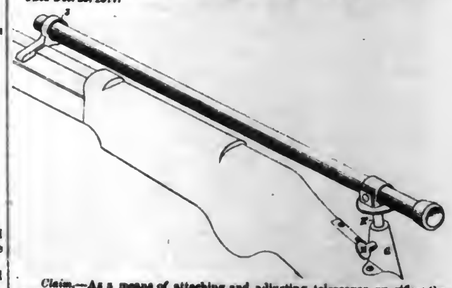
4. In combination with the vat C, the vessel F, pipes *f f' f''*, and the tubes *d*, substantially as described.

5. In combination with the vat C, the coil *b*, wheel B, and trough *c*, substantially as described.

6. In combination with the vat C, having water-pipes *b* and air-inlet pipes, the waste-pipe *b'*, and an intermediate air-forcing device actuated by the waste-water, substantially as described.

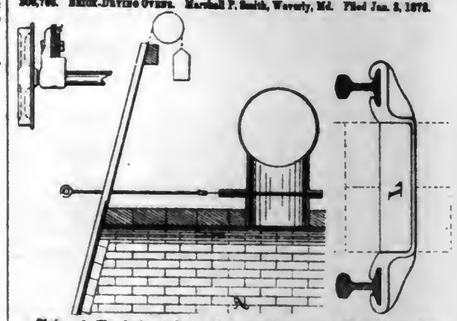


206,765. Telescope Attachments for Fire-Arms. Charles Slotterbak, Lakeport, Cal. Filed Dec. 20, 1877.



Claim.—As a means of attaching and adjusting telescopes on rifles, the socket G, adapted to be attached to the side of the stock, and provided with set-screw H, in combination with the stem or standard E, pivoted to the telescope and supporting-ring J, all as shown and described.

206,766. Brick-Drying Ovens. Marshall P. Smith, Waverly, Md. Filed Jan. 8, 1878.

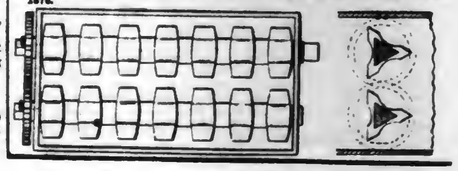


Claim.—1. The drying-tunnel A B, in combination with the inclined doors 2, the ventilator C, the inclined furnace-wall F, and the rail-brackets L, constructed in the manner and for the purposes set forth.

2. The rail-brackets L, constructed and operating as set forth.

3. The ear K, constructed with floor-plates perforated diagonally with continuous series of holes of differing form, as described and set forth.

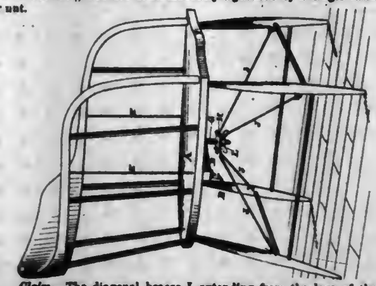
206,767. Grates for Stoves and Furnaces. Saml. Smyth, Pittston, Pa. Filed June 24, 1878.



Claim.—The prismatic grate-bar having surfaces that support the fuel, and composed of cross-pieces projecting above the body of the bar sufficiently to allow the air to enter laterally from either side, and which cross-pieces also project at the angles of the bars, substantially as set forth.

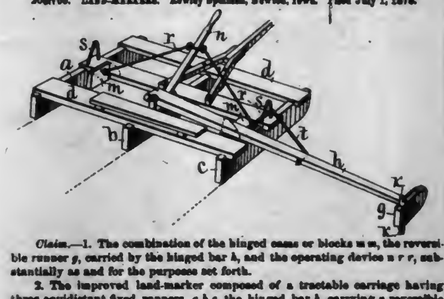
206,768. Chair-Braces. Soren P. Sorensen, Rio Vista, Cal. Filed Sept. 2, 1878.

Brief.—The arm and leg braces are attached to the same cross-brace, (under the seat,) and are simultaneously tightened by a single thumb screw or nut.



Claim.—The diagonal braces J, extending from the legs of the chair to the central plate, H, and having their length made adjustable, as shown, in combination with the bottom brace, D, and the side or arm braces, E, substantially as and for the purpose herein described.

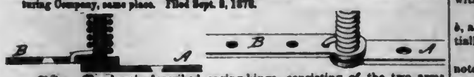
206,769. Land-Markers. Rowley Spalman, Newton, Iowa. Filed July 1, 1878.



Claim.—1. The combination of the hinged cams or blocks m m, the reversible runner *g*, carried by the hinged bar h, and the operating device n r r, substantially as and for the purposes set forth.

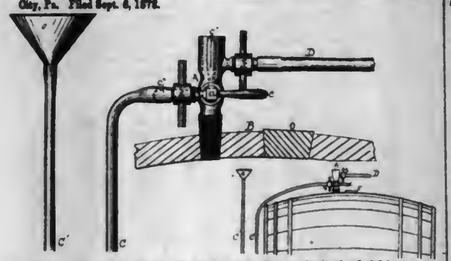
2. The improved land-marker composed of a tractable carriage having three equidistant fixed runners, *a b c*, the hinged bar h, carrying a reversible runner, *g*, the hinged blocks m m, and their operating device n r r, substantially as shown and described, to be operated in the manner set forth.

206,770. Spring-Hinges. James Spruce, Waterbury, Conn., assignor to Scoville Manufacturing Company, same place. Filed Sept. 9, 1878.



Claim.—The herein-described spring-hinge, consisting of the two arms A B, with a stationary spindle, *c*, at right angles to the plane of the one part, and in line of the pivot of the two parts, combined with a spiral spring around said spindle, one end attached to the spindle, the other end to the other arm, substantially as described.

206,771. Vent-Cocks for Beer-Fermenting Casks. Theodore F. Straub, Allegheny City, Pa. Filed Sept. 6, 1878.

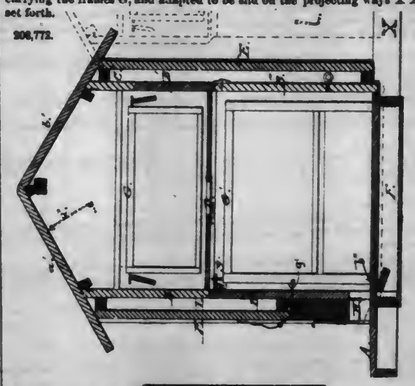


Claim.—1. As an attachment to be applied to casks in the finishing operation, a three-way cock, in combination with compressed-air pipe D and U-shaped water-pipe C C', the latter having the reduced port or ports *r* at one or more points of its length, substantially as set forth.

2. The U-shaped water-pipe C C', having a reduced port or ports, *r*, at one or more points of its length, in combination with a cock for use with a finishing-cask, whereby a water-column in one leg of the pipe will exert a constant and uniform pressure on the surface of the beer, while excess of gas is permitted to escape, substantially as set forth.

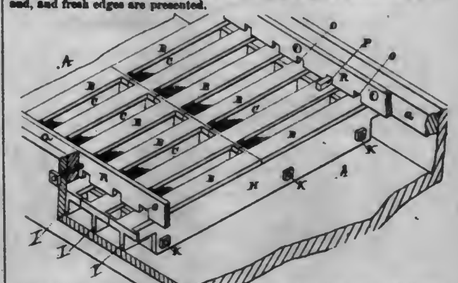
206,772. Bee-Hives. David T. Tripp, Waterloo, Ill. Filed May 30, 1877.

Claim.—The combination of the stationary wall B'' and combs G', secured thereto by a bracket, *i*, pins *g b''*, hooks *g'*, and the movable section of the hive, carrying the frames G, and adapted to be slid on the projecting ways X X, as set forth.



206,773. Washer and Amalgamator for Hydraulic Mining. Bryan Tyson, Washington, D. C. Filed July 2, 1878.

Brief.—The bars are easily reversible by means of the clamps, notches, &c., so that when worn in the center of the sluiceway they can be turned end for end, and fresh edges are presented.



Claim.—1. The sluice and receiving-grate A, provided with longitudinal ribs or webs D, in combination with a series of reversible grate-bars, for the purpose set forth.

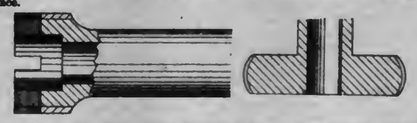
2. In a receiving-grate for sluices, the grate-bars B, having their downwardly-projecting flange *b* provided with notches J at each end, in combination with the webbing D, provided with notches E E, substantially as set forth.

3. In a receiving-grate for sluices, the grate-bars B, having notched ribs *b*, and webs D, having notches E, in combination with the keys G, substantially as herein set forth.

4. In a receiving-grate for sluices, the reversible grate-bars B, with their notched ribs fitting into webs D, in combination with the clamping-bar E and the holding-keys F, substantially as and for the purpose set forth.

206,774. Spools and Bobbins. Oscar E. Wait, Rockport, Mass. Filed Jan. 4, 1878.

Brief.—Wooden bobbins are protected by means of glue or cement and a fibrous material, the glue or cement firmly uniting the fibrous material to the wood, the whole forming an elastic coating having a hard, smooth, and glossy surface.



Claim.—1. The process herein described of coating and protecting wooden spools and bobbins, which consists in applying adhesive cement directly to the wood, embedding fibrous material therein, and finishing with an external coat of cement, substantially as described, and for the purpose set forth.

2. The process herein described of coating and protecting wooden spools and bobbins, which consists in applying glue or cement and fibrous material, the fiber being firmly united to the wood by means of the cement, which also fills the interstices of the fibrous material, substantially as described, and for the purpose specified.

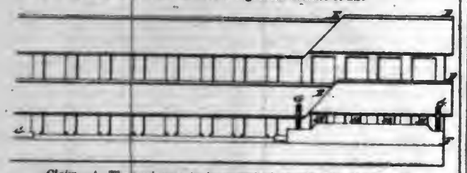
3. The process herein described of coating and protecting wooden bobbins, which consists in applying adhesive cement, a mixture of cattle-hair, cotton, and hemp carded together in about equal parts, and then a finishing-coat of cement, substantially as described, and for the purpose specified.

4. The process herein described for covering or protecting spools and bobbins, which consists in applying adhesive cement and fibrous material in the form of roving to the parts to be protected, substantially as described, and for the purpose specified.

5. A wooden spool or bobbin coated, in whole or in part, with fibrous material and gelatine, the same forming a smooth and elastic coating, firmly united to the wood by means of the gelatine which constitutes a part of said coating, substantially as described, and for the purpose specified.

208,775. Reed-Organs. Joseph A. Warren and Clinton W. Coolidge, Detroit, Mich. Filed Mar. 26, 1878.

Brief.—The stop-valve is made in two sections, so arranged that one will be raised slightly in advance of and higher than the other, thereby admitting to the reeds at each end of the action a greater volume of air.

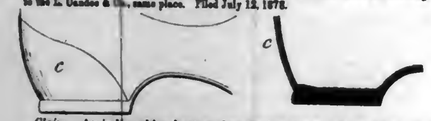


Claim.—1. The spring-mute A, or equivalent, placed in juxtaposition with the reed through the mouth of the socket, substantially as and for the purpose set forth.

2. The stop-valve D, constructed in two or more parts, the parts being connected so as to be operated by the same register or registers, arranged substantially as specified, and for the purpose described.

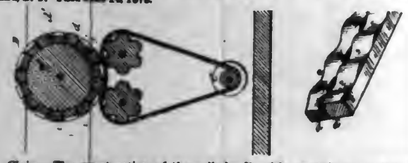
3. In a reed-organ, the combination of spring-mute A, stop-valve D, reeds C, and socket B, all constructed and arranged substantially as and for the purpose set forth.

208,776. India-Rubber Boots and Shoes. George Watkinson, New Haven, Conn., assignor to the L. Candee & Co., same place. Filed July 12, 1878.



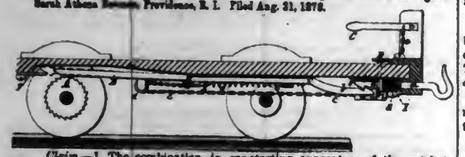
Claim.—An india-rubber boot or shoe having the re-enforcing piece C applied around the heel portion or counter and extended over the sole between the latter and the heel, so as to form an extra thickness or lift, substantially as described.

208,777. Washing-Machines. Joseph Wells, Dunkirk, assignor to Samuel G. Stryker, Elmira, N. Y. Filed June 14, 1878.



Claim.—The construction of the cylinder D, with a periphery consisting of stripes *d d'*, secured side by side, each having a waved face, *e*, and beveled edges *f*, as specified.

208,778. Car-Starters. Edgar A. Whitaker, Pawtucket, assignor of one-half his right to Sarah Athena Bennett, Providence, R. I. Filed Aug. 31, 1878.



Claim.—1. The combination, in car-starting apparatus, of the ratchet-wheel A with the hooked rod B, the toggle-joint levers E E, the spiral spring *e e*, the chain *c c*, passing over the pulleys *d d*, and the lever C, when united and operated as shown and described.

2. The combination, in car-starting apparatus, of the ratchet-wheel A, the hooked rod B, the toggle-joint levers E E, the connecting-rod G, the jaws *b b'*, the levers moved by the step D, the rod *a a*, and the spiral spring I, when united and operated as shown and described.

3. In car-starting apparatus, the toggle-joint lever E E, the plates of which are bolted to the bottom of a car a little past the center of the car, there being slots in these plates, through which the bolts pass, allowing some play to the plates upon the bolts, as shown, for communicating the power of the starting-lever, controlled by the driver, to the arm or rod that moves a ratchet-wheel connected with the car-wheel.

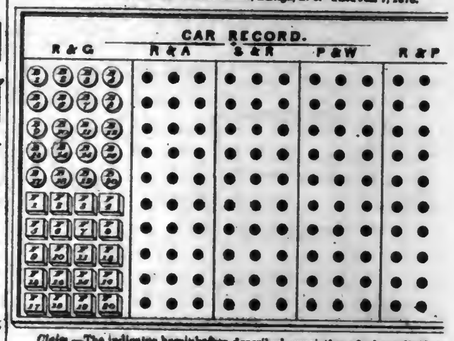
208,779. Liquid-Measures. Edward M. Wyler, Hays City, Kans., assignor to Henry Kruegw, same place. Filed Feb. 27, 1878.

Brief.—The invention consists in affixing to the nozzle of a liquid-measure and funnel pins or lugs, whereby it is prevented from entering the mouth of bottles and choking the same.



Claim.—The combined liquid-measure and funnel, with pins *d* secured to the tube part of funnel, as and for the purpose specified.

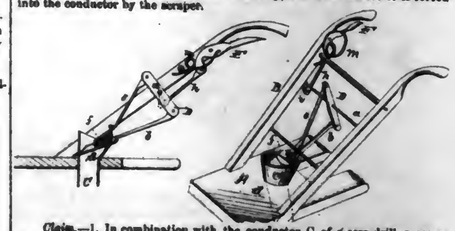
208,780. Car-Indicators. John C. Winder, Raleigh, N. C. Filed Jan. 7, 1878.



Claim.—The indicator herein before described, consisting of a base divided into vertical columns, each of which is distinguished from the other by a contrasting facing, and provided with perforations and indicating-marks, and the sets or series of indicating-pins, substantially as and for the purpose set forth.

208,781. Seed-Drappers. Ira Allen and Hiram Chandler, Alfordsville, Ind.; said Allen assignor to said Chandler. Filed Aug. 23, 1878.

Brief.—The seed is deposited on the scoop, and from thence it is forced into the conductor by the scraper.



Claim.—1. In combination with the conductor C of a corn-drill, a scoop, *d*, and a scraper, *f*, operating simultaneously in opposite directions, for the purposes herein set forth.

2. The combination of the rocking shaft *a* with arms D *i*, the rods *b e*, scoop *d*, scraper *f*, rod *h*, and lever F, with spring *m*, all constructed substantially as and for the purposes herein set forth.

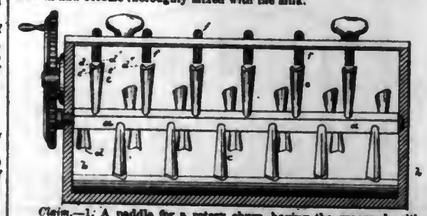
208,782. Preserving Meats. Chas. N. Armstrong, Montreal, Quebec, Canada, assignor of one-half his right to William S. Warden, Philadelphia, Pa. Filed Feb. 5, 1878.

Brief.—The meat is partially cooked, removed from the cooking-tank, and bones taken out; then cooled and placed in brine, or placed in iced brine, corned properly, and then cooked in a broth made from the removed bones. The essence produced by the first boiling may be utilized by evaporating to the desired consistence and packing as an article of commerce.

Claim.—The process of preparing meat for canning, which consists in nearly cooking the same previous to salting in a steam or water bath, treating the meat in brine, and recooking in broth, substantially as described.

208,783. Rotary Churns. William F. Baird, Burlington, Iowa, assignor of one-half his right to John J. Forney, same place. Filed Aug. 13, 1878.

Brief.—Invention relates to a peculiar construction of the paddles, in connection with bent air-tubes, by which the milk is set in one direction by one series of paddles, and in an opposite direction by another series, while a partial vacuum is formed at the inner ends of the tubes, which causes the air to rush in and become thoroughly mixed with the milk.

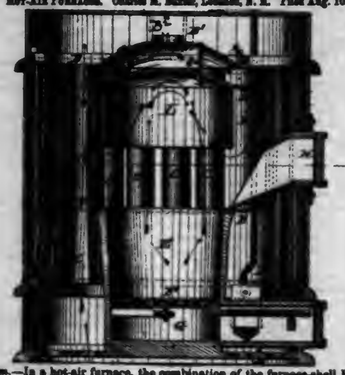


Claim.—1. A paddle for a rotary churn, having the groove *d*, with the broad side *d'* and the narrow side *d''*, and the beveled side *d'* and rounded edge *e''*, the paddle being placed at an angle with the shaft, substantially as described, and for the purpose set forth.

2. The air-tubes *f*, in combination with paddles constructed so that they can carry air down into the cream when placed in the same vertical plane with the paddles, substantially as described, and for the purpose set forth.

3. The air-tubes *f*, distributed uniformly along the length of the churn in close proximity to the ends of the paddles, substantially as described, and for the purpose set forth.

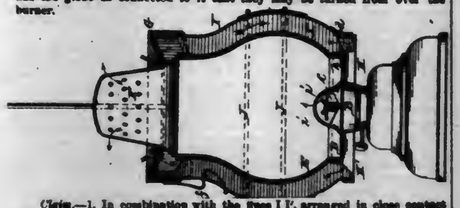
208,784. Hot-Air Furnaces. Charles M. Barton, Lebanon, N. H. Filed Aug. 10, 1878.



Claim.—In a hot-air furnace, the combination of the furnace-shell B, with dome B' and smoke-exit B', the fire-pot E, tubes C C, and interior dome, L, with flange *d* cut to project between the tubes, substantially as and for the purpose herein set forth.

208,785. Lanterns. George A. Beidler, Philadelphia, Pa. Filed Sept. 6, 1878.

Brief.—One of the fines, I', is stationary, while the other, I, is hinged, and has the globe as connected to it that they may be turned from over the burner.



Claim.—1. In combination with the fines I I', arranged in close contact with the globe, the air-gathering chamber G at the upper part of the globe, and having openings *a a* for conveying air down the fines, and the flue-passage H for conveying air to the flame, and the dome F, with perforations to allow the exit of air, all substantially as set forth.

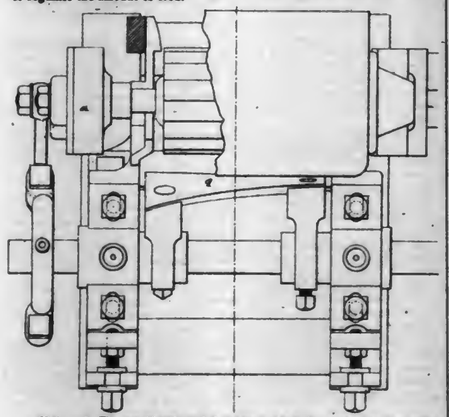
2. The combination of the hinged fine I, top F, with chamber G, stationary fine I', and a spring-latch, *f*, substantially as and for the purposes herein set forth.

3. The spring-arm A, arranged in the lower end of the fine I, in combination with the globe E, for the purposes set forth.

4. The mouth of the wick-tube, provided with a horizontal plate having lips or flanges *i i* on each side of the tube, as set forth.

208,786. Feed-Cutters. August Borneman and Joseph A. Shepherd, Lancaster, Ohio, assignors to Hocking Valley Manufacturing Company, same place. Filed Jan. 26, 1878.

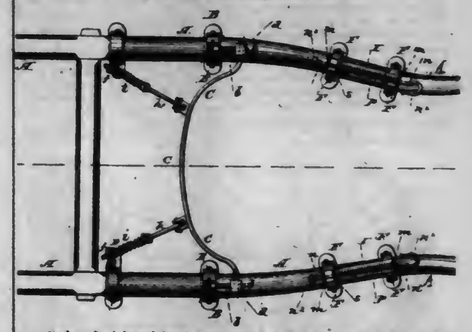
Brief.—On the ends of the cutter-shaft are eccentrics, which are connected to the feed-rolls by clutches having arms, upon which adjustment can be made to regulate the amount of feed.



Claim.—1. The combination of the rotary adjustable cutter, the eccentrics on the cutter-shaft, the rocking arms connected with the eccentrics, the friction-clutches, and the feed-rolls, substantially as and for the purposes specified.

2. The combination of the hollow open pulley, the friction-roller, and the recessed cam, provided with a steel friction-plate and a rocking-arm, substantially as and for the purpose specified.

208,787. Shafts for Vehicles. William S. Boyd, 34, Philadelphia, Pa., assignee of one-half his right to C. S. Boyd, same place. Filed Sept. 17, 1878.

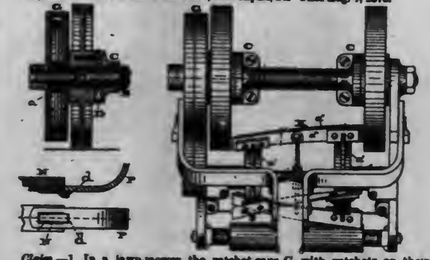


Claim.—1. A breech-band, C, connected by suitable joints to the shafts, and provided with one or more recoil-springs, substantially as herein set forth.

2. The combination, with the shafts A A, of the clips B, pivoted screws *b*, with blocks *d*, breech-band C, rods *h*, and springs *i*, substantially as and for the purposes herein set forth.

3. The combination, with the shafts A A, of the clips F, bar I, with lugs *m*, rod *n*, having hook *n*', head *n*², and shoulder *o*, and the spring *p*, substantially as and for the purposes herein set forth.

208,788. Lawn-Mowers. John Bruce, Philadelphia, Pa. Filed Aug. 7, 1878.



Claim.—1. In a lawn-mower, the ratchet-caps C, with ratchets on their inner faces, formed in sections, fitted to the driving-shaft, and adapted to inclose the pawl mechanism, substantially as and for the purpose set forth.

2. The tubular driving-shaft formed in sections, coupled together or clutched, one of said sections being keyed to the master-wheel of the gearing of the rotary cutter, substantially as and for the purpose set forth.

3. In a lawn-mower, the tubular driving-shaft with an inclosed stay-rod, binding the side plates of the frame, substantially as and for the purpose set forth.

4. The bearings of the cutter-shaft of a lawn-mower, formed with movable portions J, which are jointed to the stationary portions and provided with screws, so as to be adjusted to right lines and axially, substantially as and for the purpose set forth.

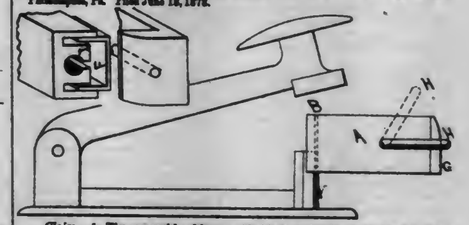
5. The gear-box G of a lawn-mower formed in capped or dished sections of equal or nearly equal parts, substantially as and for the purpose set forth.

6. In a lawn-mower, the stationary knife, mounted on bosses M, through which the holding screws or bolts are passed, substantially as and for the purpose set forth.

7. The handle of a lawn-mower attached to the side plates or frame thereof by means of the arms P and legs N, with overlapping portions *d*, substantially as and for the purpose set forth.

8. The cutter consisting of the blade *a''*, projecting from the enlarged stock *a'''*, substantially as and for the purpose set forth.

208,789. Machines for Inserting and Clinching Wire Staples. Wm. J. Brown, Jr., Philadelphia, Pa. Filed June 12, 1878.



Claim.—1. The separable oblong guide-block A, having at its front end the staple-guiding grooves B B, and at its rear end a cap or closing piece, *i*, and pivoted latch H, for securing said cap in position, substantially as set forth.

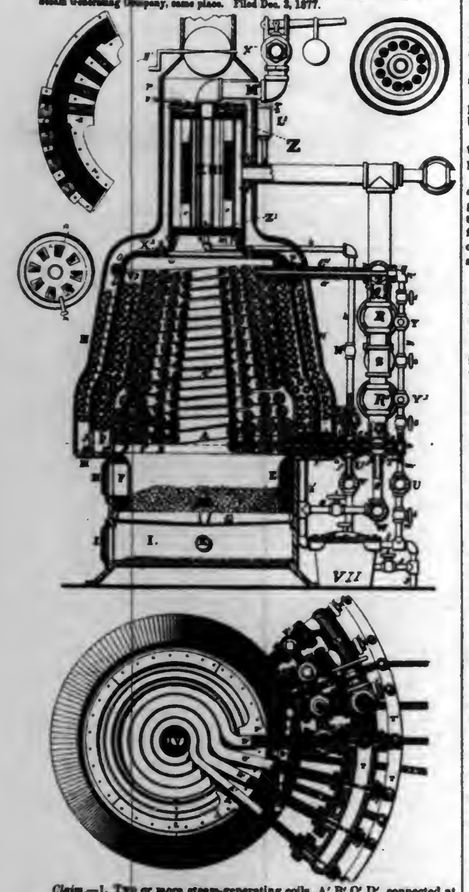
2. The combination, with the separable oblong guide-block A, of the sheath F, for guiding a series of staples, arranged *en train*, and having its walls parallel and adapted to slide within the recesses at each side of the mandrel, as set forth.

3. The mandrel I, loosely fitting the concave part of the staples, and

adapted to hold them down, as explained, said mandrel being recessed on each side of its whole length for the reception of the sheath F, and also recessed in the center for the reception of guide-rod D, spiral spring C, coiled upon said rod, and follower E, said spring and follower operating directly at the rear of the staples, and propelling them forward in advance of the propelling devices, as and for the purpose set forth.

4. The combination, with the separable guide-block A, having staple-guiding grooves B, cap D, and latch H, of the sheath F, mandrel I, adapted to fit and hold the staples in proper position, guide-rod D, and spiral spring C, operating through central recess in said mandrel, and the follower E, arranged to slide upon the guide-rod, all substantially as shown and described.

208,790. Steam-Generators. Wm. F. Browne, New York, N. Y., assignor to Hydrocarbon Steam Generating Company, same place. Filed Dec. 2, 1877.



Claim.—1. Two or more steam-generating coils, A′ B′ C′ D′, connected at their bottom ends, in combination with steam-fittings T′ and steam-conducting pipe leading therefrom to a drum or motor, for the purpose set forth.

2. Two or more steam-generating coils, A′ B′ C′ D′, connected at their top ends with steam-fittings T and conducting steam-pipes leading therefrom to steam-drum or motor, in combination with the bottom ends of said steam-generating coils and their connections leading to said drum, for the purpose set forth.

3. Two or more steam-generating coils, A′ B′ C′ D′, connected at their top ends with and in combination with steam-fittings T and w^1 w^2 w^3 w^4 and steam-pipes leading therefrom to a steam-drum or motor, for the purpose set forth.

4. In combination with the bottom ends of two or more steam-generating coils, A′ B′ C′ D′, and their steam-connections T′ and s^1 s^2 s^3, and steam-pipes leading therefrom to a drum or motor, the internal spray-pipes, *a b c d*, for conducting water into said bottom ends of said steam-generating coils and spraying it out therein, as described, and for the purpose specified.

5. In combination with the top ends of two or more steam-generating coils, A′ B′ C′ D′, and their steam-connections T and w^1 w^2 w^3 w^4 and steam-pipes leading therefrom to a drum or motor, the internal spray-pipes, a^1 b' c' d', for conducting water into said top ends of said steam-generating coils and spraying it out therein, as described, and for the purpose specified.

6. The arrangement of the top ends of two or more steam-generating coils, A′ B′ C′ D′, and their steam-connections T and w^1 w^2 w^3 w^4, and steam-pipes leading therefrom to a drum or motor, and internal spray-pipes, a^1 b' c' d', for conducting water into said top ends of said steam-generating coils and spraying it out within said coils, with and in combination with the bottom ends of two or more steam-generating coils, A′ B′ C′ D′, and their steam-connection T′ and s^1 s^2 s^3 s^4, and steam-pipes leading therefrom to a drum or motor, and internal spray-pipes, *a b c d*, for conducting water into said bottom ends of said steam-generating coils and spraying it out therein, as described, and for the purpose specified.

7. The manifold T′, provided with apertures and flanges, in combination with the fittings o o^1 o^2 o^3 and s s^1 s^2 s^3, and the steam-pipes A′ B′ C′ D′ and spray-pipes *a b c d*, and steam-eduction pipe Q, as described, and for the purpose set forth.

8. The manifold water-reservoir Y and induction-pipe I′ or I, leading from and connecting thereto, eduction-pipes s^1 s^2 s^3 s^4, connected with and leading therefrom, in combination with the internal spray-pipes, a^1 b' c' d' and top ends of the steam-coils A′ B′ C′ D′, as described, and for the purpose set forth.

9. The manifold water-reservoir Y′ and the induction-pipe G′, leading thereto, and eduction-pipes s^1 s^2 s^3 F, connected with and leading therefrom, in combination with the internal spray-pipes, *a b c d* and bottom ends of the steam-coils A′ B′ C′ D′, as described, and for the purposes specified.

10. In combination with the reservoir Y and induction-pipe I′, the drainage-pipe m and valve 2, or pipe I and valve 7, for the purpose specified.

11. In combination with the quadruple blow-off connection U, blow-off pipe *g*, valve 4, and pipes a a^1 a^2 a^3, the internal spray-pipes *a b c d*, and the bottom ends of the steam-coils A′ B′ C′ D′, for the purpose specified.

12. In combination with the quadruple blow-off connection U, the induction-pipe K′, valve 8, and connecting-pipes m^1 m^2 m^3 F, and the internal spray-pipes, *a b c d*, for the purpose specified.

13. The quadruple connection Y, induction-pipe I′, eduction-pipes s^1 s^2 s^3 s^4, and the internal spray-pipes, a^1 b' c' d', leading into the top of the steam-generating coils A′ B′ C′ D′, in combination with quadruple connection Y′, the induction-pipe G′, leading thereto, eduction-pipes s^1 s^2 s^3 F, leading therefrom, and connected with the internal spray-pipes leading into the bottom ends of the steam-generating coils A′ B′ C′ D′, as described, and for the purpose set forth.

14. The water-connections Y, induction-pipe I′, eduction-pipes s^1 s^2 s^3 s^4, internal spray-pipes, a^1 b' c' d', steam-pipe Q, and valve E, closed, in combination with the bottom ends of the steam-generating coils A′ B′ C′ D′, steam-connections T, pipe Q, valve R′, open, and steam-pipe leading to a drum or motor, for the purpose specified.

15. The water-connection Y′ and U, eduction-pipes s^1 s^2 s^3 F, or m^1 m^2 m^3 F, internal spray-pipes, *a b c d*, pipe Q′, and valve E′, closed, in combination with the top ends of the steam-coils A′ B′ C′ D′, steam-connections T, pipe Q, and valve R, open, and steam leading to a drum or motor, for the purpose specified.

16. One or more steam-generating coils of pipe, A′ B′ C′ D′, provided at their bottom ends with an exterior or interior coiled pipe, A B C D, extending upward one or more turns or coils, with an intermediate water-space between said steam-pipe and said exterior or interior pipe, for the purpose specified.

17. The water-coils A B C D, in combination with the crosses U^1 U^2 U^3 U^4, and blow-off pipes f f^1 f^2 f^3, and quadruple connection V, and waste-pipe, for the purpose specified.

18. The steam-generating coils A′ B′ C′ D′ and the water-coils A B C D, in combination with the reservoir V or X, overflow *h′*, or its equivalent, and the trap VII, for the purpose specified.

19. The steam-generating coils A′ B′ C′ D′, and water-coils A B C D, reservoir X, and overflow *h′*, in combination with an equalizing-pressure steam-pipe, L, and steam-drum XIII, for the purpose specified.

20. In combination with the steam-generating coils A′ B′ C′ D′ and water-coils A B C D, and blow-off pipe *f* and valve 6, the internal spray-pipes, *a b c d*, and their water-connections.

21. In combination with the steam-generating coils A′ B′ C′ D′, water-coils A B C D, and internal spray-pipes, *a b c d*, a trap for conducting off surplus water from said steam-generating coils and the overflow from said water-coils into said steam-coils, for the purpose specified.

22. In combination with steam-generating coils A′ B′ C′ D′, provided with water-coils A B C D at their bottom ends and steam-outlet through said water-coils, arranged within the furnace and combustion-chamber, as and for the purpose specified.

23. A furnace provided with a rim, M, with annular partitions Q and L thereon, provided with flue-openings *J* therein, deflector O, and case N, in combination with cold-water pipes or pipe *l*, hot-water pipe or pipes *k k′* within flues formed by said partitions.

24. Two or more separate heating coil or coils within one, two, or more flue-spaces, said separate coils in each said flue-space being connected with said separate coil or coils within the adjacent flues in such manner that water will flow in a number of streams equal to the number of separate pipes within each said flue, for the purpose specified, and in combination with steam-generating coil or coils within a fire or chamber, where the conversion of water to steam is effected.

25. A tubular steam-drum, the lower tube-sheet of which forms a continuation of the combustion-chamber, the upper tube-sheet of said drum being provided with a damper, *p*, in combination with a furnace containing steam-generating-coils, said coils discharging steam into said drum through pipes connecting therewith, substantially as described.

26. The steam-drum head Z′, in combination with the annual deflector O, partition L, flues X and V, and combustion-chamber IV, for the purpose as shown.

27. A section of partition, L, provided with a support, l^w, and binder *t*, in combination with binder P in deflector O and support *t′* in rim M, and steam-coils A′ B′ C′ D′.

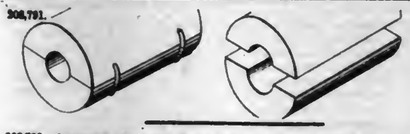
28. In combination with water-coil *l* and coils *k k′*, located within extended flues X^2 V^2, steam-generating coils, as shown, with internal spray-pipes therein, said steam-generating coils being located within a furnace or combustion-chamber of a steam-generating apparatus, in the manner set forth.

29. Induction-pipe J′, leading from an injector or pump to cold-water coil *l*, eduction E′, leading from said coil, branch pipe H′ F′, leading to hot-water coils *k k′*, eduction-pipe I′ G′, leading from said coils to the water-connection, communicating and in combination with the internal spray-pipes and steam-generating coils, for the purpose specified.

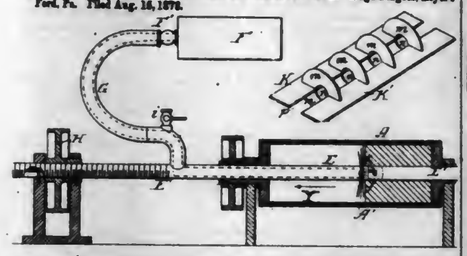
208,791. Coverings for Steam Pipes, Generators, &c. Hugh Burgess, Boyer's Ford, Pa. Filed Aug. 5, 1878.

Claim.—The combination of the within-described segmental blocks, consisting of paper-pulp or like penetrable material, with the staples by which they are secured, as set forth.

208,791.



208,792. Apparatus for Making Tubes of Plastic Material. Hugh Burgess, Boyer's Ford, Pa. Filed Aug. 16, 1878.



Claim.—1. The combination of a two-part screen and appliances for rapidly rotating the same with a central pipe, E, communicating with a supply of the material to be treated, and having lateral openings *n o* within the screen, and with mechanism for moving the pipe longitudinally within the screen as the latter revolves, all substantially as set forth.

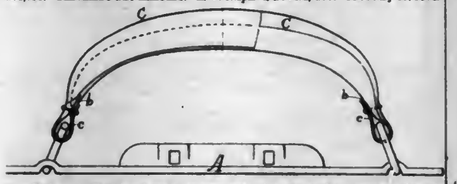
2. The combination, with the screen, of the pipe E and its detachable follower F′, as described.

3. The combination of the screen, the pipe E, reservoir F, and the elastic tube G, forming a communication between the said reservoir and pipe, as specified.

4. The combination of the reservoir F, pipe E, elastic connecting-tube G, and cock *i*, communicating with a supply of water under pressure.

5. The combination of the said screen and its pipe with plates K K′ and partitions *m*.

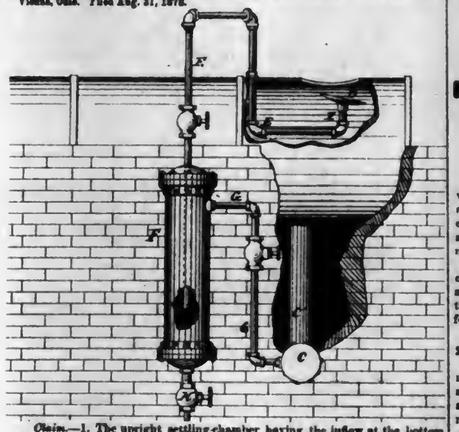
208,793. Traveling-Bag Handles. R. W. Chapman, Newark, N. J. Filed July 10, 1878.



Claim.—1. The bag-handle constructed of two metallic sections, shaped and bent as herein described, the bottom being approximately flat and formed with rounded edges to fit the hand, and the top formed with a central bead, C, and side beads, *d d*, as herein set forth.

2. The bag-handle constructed of upper and lower metallic sections, shaped and bent as herein described, and having their ends *b* and *c* formed into double loops, one overlapping the other, to form re-enforce bearings, substantially as and for the purpose set forth.

208,794. Devices for Removing Dirt, &c., from Steam-Boilers. Ald Collins, New Vienna, Ohio. Filed Aug. 31, 1878.



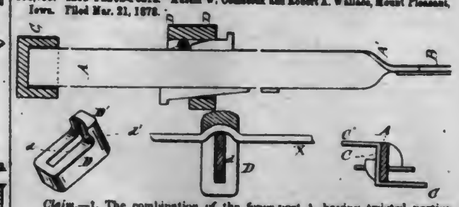
Claim.—1. The upright settling-chamber having the inflow at the bottom and the outflow at the top, all constructed and arranged substantially as specified.

2. The upright settling-chamber having an inflow-pipe leading down through the water from the top to near the bottom, and an outflow-pipe near the top, constructed and arranged substantially as set forth.

3. The combination, with the settling-chamber, of the inflow-pipe leading down to near the bottom, the outflow-pipe near the top, and a blow-off cock at the bottom, constructed and arranged substantially as described and shown.

4. The combination, with the pipe E, of the shallow inclined basin or receptacle D, constructed and arranged substantially as specified.

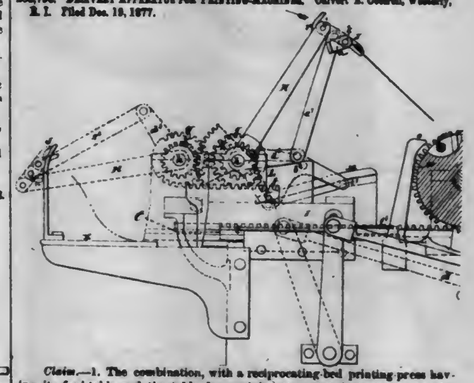
208,795. Iron Fence-Posts. Austin W. Comstock and Robert A. Wallace, Mount Pleasant, Iowa. Filed Mar. 21, 1878.



Claim.—1. The combination of the fence-post A, having twisted portion A′, with the hardened pointed tip B′ and brace C C, as specified.

2. The chair D b' d d', constructed as shown, and wedged above and below to bind the wires and post rigidly at any desired point, in combination with the post A A′ and wire X, as specified.

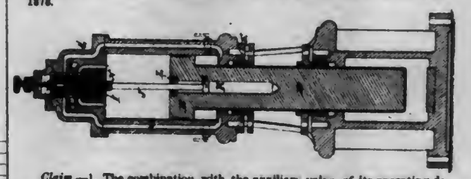
208,796. Delivery Apparatus for Printing-Machines. Calvert B. Cottrell, Westerly, R. I. Filed Dec. 18, 1877.



Claim.—1. The combination, with a reciprocating-bed printing-press having its feed-table and the table for receiving the printed sheets on opposite sides of the impression-cylinder, of a reciprocating carriage arranged between the cylinder and the sheet-receiving table and above the reciprocating type-bed, and a fly-frame with attached gripers carried by said carriage, substantially as herein described, and operating to take the printed sheet from the cylinder and deposit it face upward upon the receiving-table, as herein set forth.

2. The combination of the sliding carriage I, the rocking fly-frame H, having attached gripers J, the sleeve *e′*, connected with the jaws to rock the latter, the pinion K, the toothed lever L, and the guide M, essentially as described.

208,797. Direct-Acting Steam-Pumps. William Craig, New York, N. Y. Filed July 13, 1878.



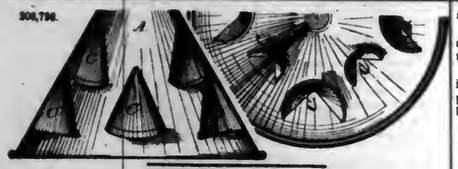
Claim.—1. The combination, with the auxiliary valve, of its operating devices, controlled by the motion of the steam-piston, and arranged within the steam-cylinder and steam-chest of the pump, the same consisting of a rod, J, connected with the auxiliary valve, the piston and pump plunger or rod having a hole or recess, K, in them, the stops M and N on the rod J, and the tappet or catch-piece L, secured to the piston, essentially as shown and described.

2. A direct-acting steam-pump provided with slide-valves arranged for operation in line with the steam-cylinder, and having its auxiliary valve operated by the movement of the steam-piston by means of devices contained within the steam-cylinder and valve-chest, the whole being combined and arranged for operation essentially as specified.

208,798. Clothes-Washers. George A. Crocker, Charlottesville, Va. Filed Apr. 5, 1878.

Claim.—The improved clothes-washer herein described, as an article of manufacture, consisting of the hollow cone A, having the air-compressing wall semi-cones C in the upper part of its air-compressing chamber, arranged to alternate with a base row of air-compressing semi-cones, whereby the upper row of said semi-cones acts in succession with the lower row, and the entire cone-chamber is utilized for upper and lower air-compressors, as shown and described.

208,798.



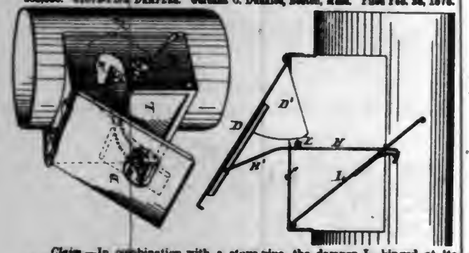
208,799. Hand-Protectors. Henry C. Davis and Charles W. Davis, Philadelphia, Pa. Filed Aug. 5, 1878.



Claim.—1. The within-described hand-protector, consisting of a bag having at one end an opening or openings large enough to admit the hand or hands of a driver or horseman, and having at or near its opposite end an orifice or orifices for admitting the reins, all substantially as set forth.

2. The within-described protector, having openings for receiving the hands and reins, and an orifice, *z*, for admitting the whip, as specified.

208,800. Stove-Pipe Dampers. Calusha C. Dunklee, Boston, Mass. Filed Feb. 26, 1878.



Claim.—In combination with a stove-pipe, the damper L, hinged at its lower end, and the deflector D, provided with the side wings, D', hinged at its upper end, with the operating-rod E and the pieces H H', all operating together substantially as described, and for the purpose set forth.

208,801. Lamp-Burners. William W. Eastman, Brooklyn, N. Y., assignor of one-half his right to E. D. Dumont, same place. Filed Apr. 11, 1878.



Claim.—1. In a burner for lamps, a burner-tube, C, conforming and attached to the burner-shell at its base, and drawn in laterally to a point just above the feed-wheels D D, and drawn in slightly in the other direction at the part of the tube above the feed, in combination with an inner air-tube, E, flattened laterally, and having parallel sides from the feed to the top, and enlarged gradually below, substantially as set forth.

2. In a burner for lamps, a burner-tube conforming to the burner-shell at its base, and joined thereto, and flattened at the top, in combination with a concentric internal air-tube and a side air-inlet tube opening outside of the burner-shell, the latter connected together and arranged to operate substantially as set forth.

3. In a burner for lamps, an annular burner-tube having an inner air-tube arranged to receive air through an adjustable register projecting through the burner-shell, and arranged to be operated from the outside, substantially as set forth.

4. The air-inlet tube F, provided with a register, whereby the amount of air required may be admitted and the admission regulated at will from outside of the burner-shell, substantially as set forth.

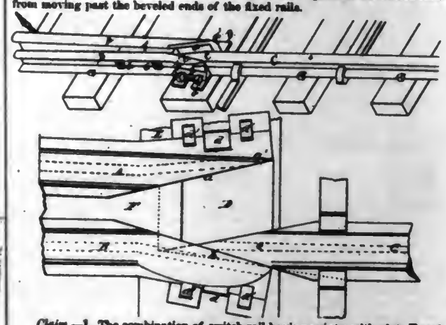
5. The air-tube E and air-inlet tube F, the latter provided with one or more slots or ports, in combination with the tube *c*, also provided with one or more ports, to rotate in or on the tube F, and the milled head or cap *d*, or its equivalent, the whole so constructed and arranged as to be capable of regulating the admission of air into the tube E, substantially as and for the purposes specified.

6. The combination, in a burner for lamps, of an annular burner-tube, C, an inner air-tube, E, slotted inlet-tube F, and slotted tube *c*, to rotate in or on the tube F, all constructed and arranged to operate substantially as set forth.

7. In a burner, the combination of the flattened burner-tube C with the inner air-tube, E, provided with a gas-aperture, *b*, opening into the enlarged part of the tube C below the feed-wheels D D, where it is not liable to be closed by the wick, substantially as and for the purposes set forth.

208,802. Railroad-Switches. Henry Elliot, St. Louis, Mo. Filed June 6, 1878.

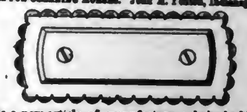
Brief.—The ends of the fixed rails are beveled to correspond to the wedge-shaped ends of the switch-rails, distance-blocks being inserted between the fixed rails, the forward ends of which blocks serve to prevent the switch-rails from moving past the beveled ends of the fixed rails.



Claim.—1. The combination of switch-rail having point *c* with plate D and bent and beveled ends of the fixed rails *a b*, attached to the ends of the plate, substantially as set forth.

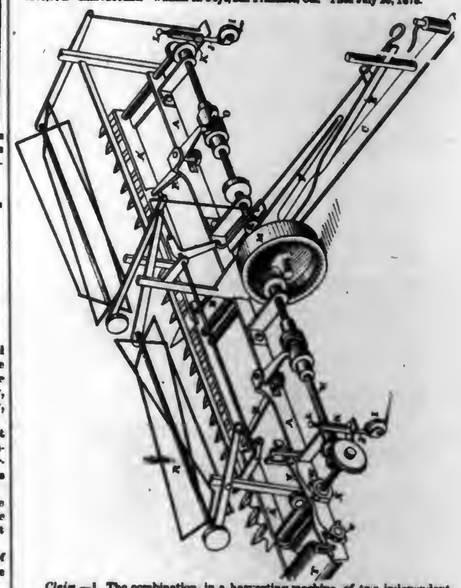
2. The combination, with the fixed rails A B and switch-rail C, of the block F, preventing the end *s* of the switch-rail moving endwise past the inclined ends *a b* of the fixed rails, and destroying the alignment of the rails.

208,803. Devices for Cleaning Horses. John H. Foster, Indianapolis, Ind. Filed Apr. 22, 1878.



Claim.—As a new article of manufacture, a hair-shedder made of india-rubber, having corrugated or uneven edges, substantially as shown and described.

208,804. Harvesters. William H. Foye, San Francisco, Cal. Filed July 20, 1878.



Claim.—1. The combination, in a harvesting-machine, of two independent reaping mechanisms, detachably hinged together, one of said mechanisms being provided with a pole capable of attachment at two or more points along its width, for the purpose of enabling said reaping mechanisms to be used either conjointly or one alone, substantially as described.

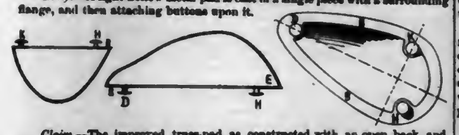
2. The frame A A', with its pole C, jointed or hinged to the frame at D, to allow the height of the cutters to be regulated, in combination with the lever F, to which the driving-wheel is attached, said lever being pivoted to the main frame and held at any point by a suitable catch for permanent adjustment, substantially as herein described.

3. The caster-wheels I, having their stems or standards J fitted to move vertically in the hollow sockets K of the frame A, a vertical adjustment being made by means of the screws L, or equivalent device, substantially as herein described.

4. The receivers T, mounted so as to receive the cut straw from the carrying-belt, as shown, and having the shaft provided with the disk U, with its projections or steps, in combination with the spring-lever catch V, projection W, and cam X, constructed and arranged substantially as herein described and shown.

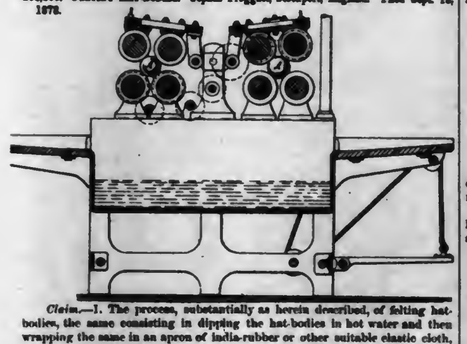
208,805. Trusses. George Fraser, Boston, Mass. Filed Aug. 26, 1878.

Brief.—A light hollow metal pad is cast in a single piece with a surrounding flange, and then attaching buttons upon it.



Claim.—The improved truss-pad as constructed with an open back, and provided with three studs, D, H, and K, arranged upon its flanged perimeter, as described, to connect with the belt G and strap N, substantially as shown, as and for the purposes set forth.

208,806. Felting Hat-Bodies. Cephas Froggatt, Stockport, England. Filed Sept. 16, 1878.



Claim.—1. The process, substantially as herein described, of felting hat-bodies, the same consisting in dipping the hat-bodies in hot water and then wrapping the same in an apron of india-rubber or other suitable elastic cloth, substantially as described.

2. As a new manufacture, an apron of india-rubber cloth made thickest in the middle and with gradually-decreasing thickness toward its ends, substantially as and for the purpose specified.

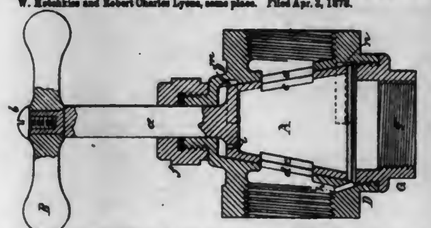
208,807. Child's Table-Tray. Charlotte Gillard, San Francisco, Cal. Filed July 30, 1877.

Brief.—The clamps operate to hold the tray in position on the table, and may be released by taking hold of their knobs.



Claim.—The combination, with tray A and bracket B, having cylindrical socket or casing *b* formed thereon, of sliding rod *a*, expanded at the top to form catch *a*², working through the perforated lower end of said socket, and provided with a knob, *a*', at its lower end, and helical spring *c*, bearing against shoulder *d* of said sliding catch, and inclosed in said socket or casing, so as to be protected thereby.

208,808. Stop-Valves. John S. Olsen, Chicago, Ill., assignor of one-half his right to Geo. W. Hotchkiss and Robert Charles Lyons, same place. Filed Apr. 3, 1878.



Claim.—1. The hollow conical valve A, open at the bottom, having stem *a*, diametrically-opposite ports *e e*, and top-end port *i*, in combination with the casing D, having inlet-port *d*, diametrically-opposite exit-port *e*, and the communicating-port *h*, all constructed and arranged substantially as and for the purpose shown and specified.

2. The hollow conical valve A, open at the bottom, having stem *a*, diametrically-opposite ports *e e*, and top-end port *i*, in combination with the casing D, having inlet-port *d*, diametrically-opposite exit-port *e*, inlet-port *g*, and communicating-port *h*, all constructed and arranged substantially as and for the purpose described and shown.

3. The valve-casing D, having in the discharge-port side of the valve-seat, and vertically in line with said port, the semi-circumferential cavities *n* and *n*, arranged to communicate with the diametrically-opposite entrance-port, in combination with a conical valve having diametrically-opposite ports *e e*, substantially as and for the purpose set forth.

4. The hollow conical valve A, having stem *a*, diametrically-opposite ports *e e*, and communicating-port *i*, in combination with the casing D, having inlet-port *d*, communicating-port *h*, and diametrically-opposite exit-port *e*, and, vertically in line with the latter, the semi-circumferential cavities *n* and *n*, and communicating-channels *o*, all constructed, arranged, and operating substantially as described, for the purpose specified.

5. The hollow conical valve A, open at the bottom, having stem *a*, diametrically-opposite ports *e e*, and communicating-port *i*, in combination with the casing D, having bottom inlet-port *g*, inlet-port *d*, communicating-port *h*, and diametrically-opposite exit-port *e*, and, vertically in line with the latter, the semi-circumferential cavities *n* and *n* and communicating-channels *o*, all of which to be constructed, arranged, and operating substantially as and for the purpose set forth.

208,809. Sewer-Inlet Valves. John J. Gorman, Philadelphia, Pa. Filed Sept. 17, 1878.

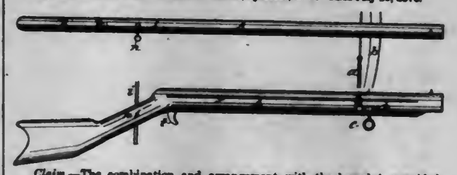
Brief.—The valve is pivoted within the inlet in an inclined position, sufficient metal being put in the rear part to keep the valve closed when there is no water above. The lower side is rounded concentrically with the axis, and fits a concave seat, so that when the water opens the valve the seat-joint is always tight, preventing escape of gas.



Claim.—1. The combination, with an inlet or silt basin, of an inclined self-closing valve, D, pivoted within the said inlet, and arranged in respect to the mouth *n* of the same, all substantially as set forth.

2. The combination of the inlet and its ledge *f* with the pivoted valve D, having on its under side a rounded enlargement, *i*, bearing on the said ledge, all as set forth.

208,810. Sparks-Guns. William H. Groves, Syracuse, N. Y. Filed July 19, 1878.



Claim.—The combination and arrangement, with the barrel A, provided with slot *e*, of the bow or cross-bar *b*, located below the bore of the gun, and having the points of attachment for the propelling-cord in line with the plane of the slot *e*, and sufficiently distant from the forward end thereof to allow for the resilient play of said cord, substantially in the manner specified.

208,811. Shade-Rollers. Benj. Handforth, Hoboken, N. J. Filed Sept. 11, 1878.

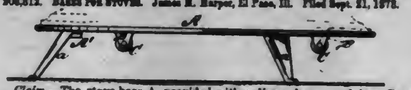
Brief.—The gudgeon at the end of the roller opposite the spindle is provided with tappets, which in rapid ascent of the curtain strike a face or projection on the slot of the bracket, and, rebounding, escape the retaining-catch.



Claim.—1. The combination, in a spring-roller for shades or curtains, of a gudgeon, D, having one or more tappets, *c*, and a supporting-bracket having an abutment, *c*, for engaging one of the tappets when the roller revolves slowly, and a device against which one of the tappets strikes when the roller revolves rapidly, for causing the gudgeon to rebound, and thereby allowing the tappets to pass by the abutment *c*, substantially as and for the purpose described.

2. The combination, with a spring-roller for curtains or shades, of a gudgeon having one or more tappets and a supporting-bracket, which is provided with an elongated slot to receive said gudgeon, one abutment to catch and retain said roller against the action of its spring when the roller revolves slowly, and another abutment to throw off the tappet or tappets when the motion of the roller is rapid, substantially as described.

208,812. Bases for Stoves. James M. Harper, El Paso, Ill. Filed Sept. 21, 1878.



Claim.—The stove-base A, provided with ordinary legs *a* and lugs B and rollers C, as and for the purpose specified.

206,813. Stove-Pipe. John Harrison, Cleveland, Ohio. Filed Jan. 23, 1878.



Claim.—In a stove-pipe riveted at one end only, the combination of the folding lap D, grooves F G, rib or bead H, and spring C, substantially as described.

206,814. Knots for Check-Row Wires. George D. Haworth, Decatur, Ill. Filed Aug. 28, 1878.

Brief.—The stop or hub is fastened to the wire by passing it through a hole in the hub and forming a loop therein. The hubs are connected by hooks and spurs cast therewith.

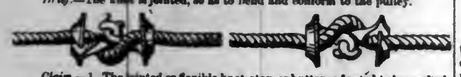


Claim.—1. The jointed or divided stops, knots, or buttons, having the coupling-hooks for uniting them, as described, in combination with the sections of wire, provided with looped ends for uniting them to the coupling-hooks, as described.

2. The jointed or divided knots, stops, or buttons B B', provided with the permanently-formed coupling-hooks C C', for uniting the sections of the check-row cord or wire, in combination with the beveled spurs *d d'*, overlapping the ends of the hooks, substantially as and for the purpose set forth.

206,815. Knots for Check-Row Cords. George D. Haworth, Decatur, Ill. Filed Aug. 28, 1878.

Brief.—The knot is jointed, so as to bend and conform to the pulley.

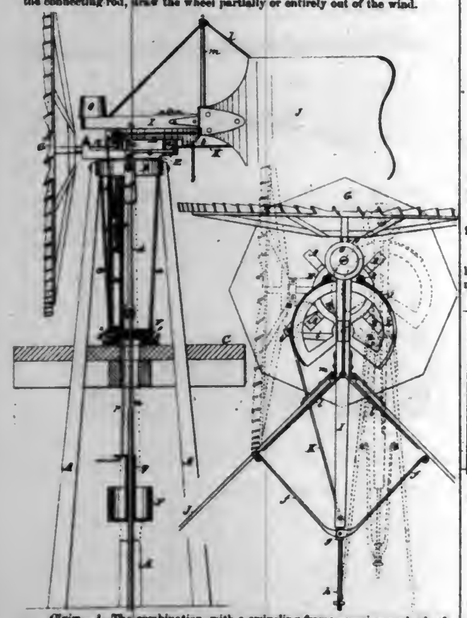


Claim.—1. The jointed or flexible knot, stop, or button, adapted to be applied to and to operate in combination with a continuous check-row cord, substantially as described.

2. The jointed or flexible knot or stop for continuous check-row cords, applied to and adapted to be adjusted upon the cord, substantially as described.

206,816. Wind-Engines. Floyd Hanvner, Laramie City, Wyo. Filed Aug. 16, 1878.

Brief.—When the wind acquires a velocity greater than that at which the full force of the wind is intended to be exerted upon the face of the wheel, the two tails are forced toward each other, and, by means of the toggle-levers and the connecting-rod, draw the wheel partially or entirely out of the wind.



Claim.—1. The combination, with a swiveling frame carrying a wheel, of a horizontal beam pivoted to said frame, a pair of tails hinged upon opposite sides of said beam, and a set of toggle-arms fastened to the hinged tails at one end and connected through a rod with the wheel-frame, for the purpose of throwing the wheel out of wind, substantially as described.

2. The swinging beam I, having an independent pivot upon the wheel-frame, and a segmental pulley, I$_5$, rigidly attached to the same, in combination with the horizontally-swiveling wheel-frame having friction-pulley *h*, the cord or chain *j*, and the weight M, substantially as shown and described.

3. The combination, with the posts A, having a collar, B, at the upper end, and a platform, C, provided with a step-plate, D, of the swiveling wheel-frame, consisting of the lower bearing-plate, F, the rods *e*, and the upper circular frame, E, provided with bearings and carrying the wheel-shaft, substantially as and for the purpose described.

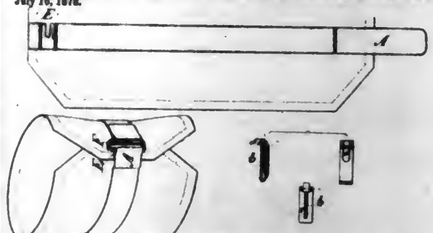
4. The bucket P, having a central tube encompassing the piston-rod, combined with said piston-rod and connected with devices for throwing the wheel out of the wind, substantially as shown and described.

5. The weight O, combined with the beam I, and arranged upon the beam on the opposite side of the pivot from the tails to balance the same, as shown and described.

6. The hinged tails J, combined with the swinging beam I, the standards m, and the guy-rods *l*, as and for the purpose described.

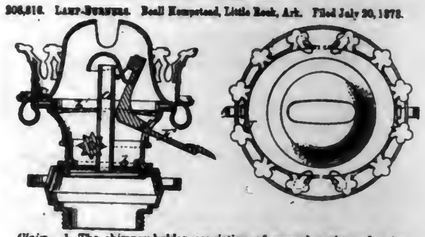
7. The flat rod *p*, attached to the shifting devices, and having a smaller or notched portion, *r*, in combination with the lower bearing-plate, F, having a slot corresponding to said rod, as and for the purpose described.

206,817. Cuffs. Thomas Hedges, Ernst Möller, and Carl Graf, Hamburg, Germany. Filed July 16, 1878.



Claim.—A linen or other woven cuff having a band provided with an extension or lap to form the catch A on one end, and a flap, E, with central elongated opening, *b*, at its other end, in combination with a buckle, F, in the manner and for the purpose substantially as described.

206,818. Lamp-Burners. Beall Hempstead, Little Rock, Ark. Filed July 30, 1878.

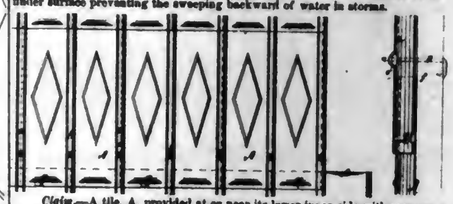


Claim.—1. The chimney-holder consisting of curved springs, forming a ring, secured at their middle portions to the chimney-gallery, and provided with spurs engaged in slots in said gallery, as and for the purposes set forth.

2. The lamp-burner consisting of a tubular base, a wick-tube and cap, a ventilator-plate, carrying an extinguisher-cap, and a chimney-gallery and spreader or cone, made separate and detachable from each other, substantially as and for the purposes specified.

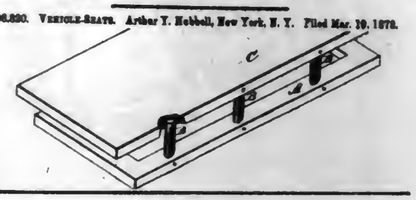
206,819. Metallic Roof-Tiles. Jacob Hilgers, Rheinbrohl, Prussia, Germany. Filed Apr. 10, 1878.

Brief.—The tile is bent upward at its upper end to make a tight joint, and has a transverse rib struck up near its lower end, the cavity thus formed on its under surface preventing the sweeping backward of water in storms.



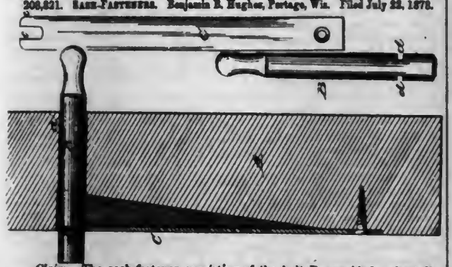
Claim.—A tile, A, provided at or near its lower inner side with recesses *g*, and having its upper edge, *f*, slightly bent upward, as and for the purpose substantially as set forth.

206,820. Vehicle-Seats. Arthur Y. Hobbell, New York, N. Y. Filed Mar. 19, 1878.



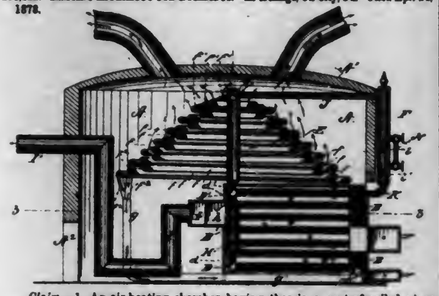
Claim.—The combination of a rigid and stationary supporting-frame, A, a seat, C, and interposed rubber blocks B, substantially as described, whereby the seat obtains a lateral as well as perpendicular movement by the action of the rubber blocks, as set forth.

206,821. Sash-Fasteners. Benjamin B. Hughes, Portage, Wis. Filed July 22, 1878.



Claim.—The sash-fastener consisting of the bolt B, provided a short distance from its inner end, or that end next to the sash, with lateral notches *d d*, to enable the bolt from said notches toward said end of bolt to form a means for supporting the sash, in combination with the flat or plate spring C, bifurcated at its upper end, as at *e e*, to embrace the notched portion of the bolt B, substantially as shown and described, for the purpose set forth.

206,822. Heating Apparatus for Buildings. M. Hulings, Oil City, Pa. Filed Apr. 24, 1878.



Claim.—1. An air-heating chamber having therein a nest of coiled pipes connected to an additionally-inclosed steam or water heater, formed of horizontal water-circulating pipes, constituting a portion of the fire-box, substantially as and for the purpose described.

2. In combination with an air-chamber containing a nest of coiled pipes, a fire-chamber inclosed therein, having horizontal circulating pipes upon its sides, top, and rear, and also serving as grate-bars, and a water box or boxes in front connected thereto, substantially as and for the purpose set forth.

3. In an inclosed chamber, the combination of a tubular fire-box connected at its opposite ends with tubular drums E and F and an equalizing-pipe, J, by which they are connected, substantially as shown and described.

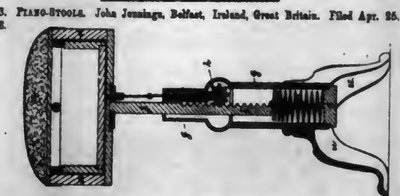
4. A tubular fire-box and water-boxes B B', tubes D, and tubular drums E and F, in combination with a nest of tubes, *f*, and return condensing-pipes *g*, substantially as shown and described.

5. A tubular fire-box, in combination with a sheet-metal inclosure, H, flues *h*, chamber I, and exit-flue I', substantially as shown and described.

6. In combination with the above-described air-heating apparatus, in which water circulates through a series of pipes arranged around the fire-box, and also through a nest of coiled pipes placed in an air-heating chamber, the water-feed regulator, consisting of a tube pivoted at one end to the air-heating chamber and balanced by a weight, and also connected to the induction-cock, substantially as shown and described.

7. In combination with an air-heating apparatus, in which water circulates through a series of inclosed horizontal pipes, and a nest of coiled pipes united by drums E and F and a balanced pipe, L, pivoted at one of its extremities, the connecting-pipes *l* and *l'*, provided with ball or elastic joints *m m*, substantially as and for the purpose described.

206,823. Piano-Stools. John Jennings, Belfast, Ireland, Great Britain. Filed Apr. 25, 1878.



Claim.—The combination, with the base *u* and rotary sleeve *g*, provided with the pinion *h*, of the seat-rack *f*, the elevating-spring *r*, the vertical sliding pawl *k*, engaging the pinion, and the operating cord or wire, all substantially as and for the purpose described.

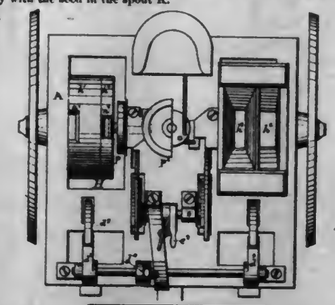
206,824. Planter, Cultivator, and Fertilizer-Distributer. Simon J. Keim, Ostenaqua, Pa., assignor of one-half his right to William Younger, same place. Filed Feb. 26, 1878.

Claim.—1. The disk A', provided with the opening A^3, and having an inner concentric flange or ring, provided with the brake A^4 and an expelling device, combined with the disk A^2, having the opening A^5, and provided with the flange A^6, adapted to fit within the groove A^1 of the disk A', substantially as specified.

2. The seed-dropper H, consisting of the stationary disk A', the rotary disk A^2, and the internal ring, A^6, fitting into the groove A^1, and having an opening, A^5, which forms a seed-pocket to receive a fixed amount of seed through opening A^3, and which seed is carried around within the groove A^1, and is deposited from the opening A^5, as herein described.

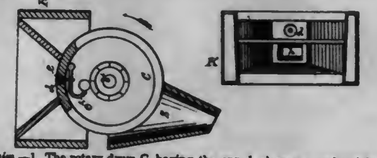
3. The combination of the stationary disk A', the rotary disk A^2, having a seed-pocket, A^5, and a fertilizer-cup, a^2, by which a fertilizer is deposited simultaneously with the seed in the spout K.

206,825.



206,826. Seed-Droppers. Simon J. Keim, Ostenaqua, Pa., assignor of one-half his right to William Younger, same place. Filed Feb. 26, 1878.

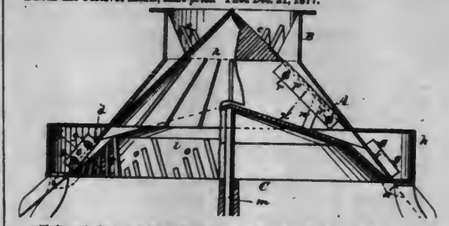
Brief.—Rotary drum having a seed-cup and fertilizer-receptacle, said seed-cup being provided with a plunger connected with a weighted arm, whereby the seed is forced from the cup.



Claim.—1. The rotary drum C, having the cup *d*, plunger *e*, and weighted arm *e'*, combined with the hopper K, substantially as specified.

2. The divided hopper K, combined with the rotary drum C, having the fertilizer-receptacle h and the seed-cup *d*, the latter being provided with the plunger *e* and weighted arm *e'*, substantially as described.

206,826. Machines for Making Hay-Meal. Jos. S. Kirk, New York, N. Y., assignor to himself and Gustavus Bicker, same place. Filed Dec. 21, 1877.



Claim.—1. In a machine for making hay-meal, the cone A B, having the ribs C, and the cone *k*, having knives *p*, the said cones gradually converging until they come nearly together, and the knives *p* being arranged to make a drawing cut across the ribs *c*, as shown and described.

2. The combination, in a machine for making hay-meal, of two cones, A C, the former having hopper B, with ribs *c*, and the latter having knives *p*, as and for the purpose described.

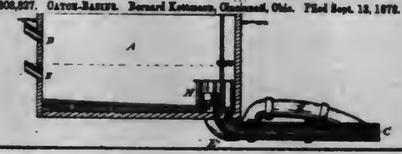
3. The combination of the ribs *c* and knives *f* on the cones C A, as and for the purpose set forth.

4. The combination of the cone A, having ribs *c* and knives *f*, with the cone C, having ribs *c* and knives *p*, as and for the purpose specified.

5. The combination of the annular jacket h with the cone A, for receiving the meal, as described.

6. In a machine for making hay-meal, the double cone C, composed of the part carrying knives *p*, and the part *l*, carrying ribs *c*, the said parts being separated by a short distance and connected by arms, as shown and described.

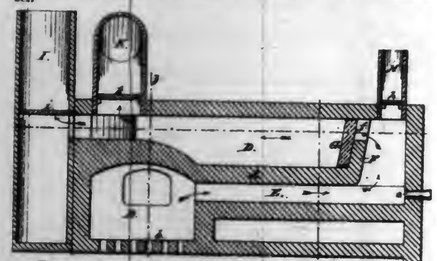
206,827. Catch-Basins. Bernard Kottmann, Cincinnati, Ohio. Filed Sept. 13, 1878.



Claim.—The combination, in a cess-pool, of branched discharge-pipe C D E, of which one branch, D, is flush with the vault-floor, and is provided with a valve or plug, F, and the other branch rises as a stand or overflow pipe, E', and is curved downward to form a stench-trap, E, both branches being inclosed in grating H, in the manner represented.

206,828. PIGMENT-FURNACES. Henry Krum, Cincinnati, Ohio. Filed July 11, 1878.

Brief.—The products of combustion are excluded from the working-chamber.



Claim.—1. The furnace herein described, consisting of the fire-chamber B, flues E, working-chamber D, stacks H and I, flue K, and balloon K', substantially as shown, and for the purpose herein set forth.

2. In the furnace herein described, the combination of a fire-chamber, B, flues E, and working-chamber D with the bridge-wall F, having flues *f*, tile or damper G, and current flue K, as shown, and for the purpose set forth.

206,829. LOW-WATER INDICATORS FOR STEAM-BOILERS. Christoph P. Kurz, Newark, N. J. Filed Apr. 24, 1878.

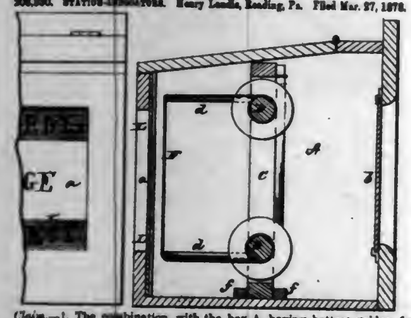


Claim.—1. In combination with a steam-boiler, A, a casing, B, connected with the boiler by the steam and water pipes D D', a whistle, E, on top of said casing, and a valve-box, F, with valve *b*, operated by a float, I, inside of said casing, arms G G, with slots *e e*, lever H, and journals *h h*, substantially as and for the purposes herein set forth.

2. The combination of the valve-box F, arms G G, with slots *e e*, lever H, with knife-edged journals *h h*, and the plates *f f*, as and for the purposes herein set forth.

3. The combination, with the valve-box F and its arms G G, of the lever H, valve *b*, with slotted stem *d*, weight I, arms L L, and float R, all substantially as and for the purposes herein set forth.

206,830. STATION-INDICATORS. Henry Landis, Reading, Pa. Filed Mar. 27, 1878.



Claim.—1. The combination, with the box A, having bottom guides, *f*, of the frame C, with rods *d*, the rollers D D, with projecting journals *e e*, the apron *f*, rib *h*, and sub-screw *k*, substantially as and for the purposes herein set forth.

2. In a station-indicator, the stained-glass strips L L, arranged at top and bottom of the front opening, *a*, of the box or case, for the purposes herein set forth.

206,831. PAPER-FOLDING MACHINES. Geo. Leader, Pittsburg, Pa. Filed Aug. 6, 1878.

Brief.—As the web passes from the perforating-cylinders its front end, just beyond the folding-rollers, is clamped by a reciprocating bar, and held so that the sheet bags before the rollers, and a blade reciprocated by a vibrating lever presses the loose portion into the bite of the rollers while the end is so held, the upper end of the sheet being attached to the web till the rollers, faster moving, tear it off. The sheet may be carried forward by endless toothed tapes bearing clamping arms.

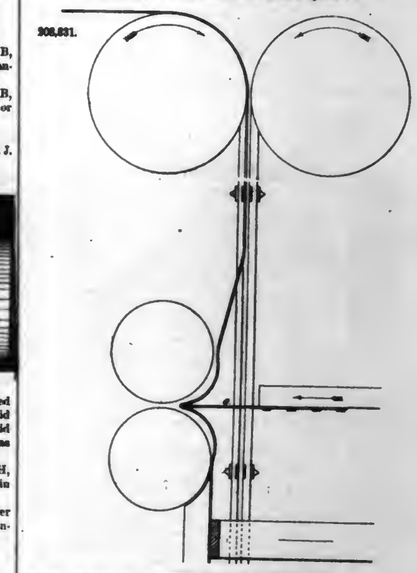
Claim.—1. The method herein described of folding paper, which consists in arresting the motion of the leading end of the sheet, so that the sheet shall swell or bag opposite the bite of the folding-rolls, and causing the folding-blade to act upon the paper during the time of feed and while the end is thus held, substantially as specified.

2. The combination, in a folding-machine, of feeding mechanism for feeding a perforated web, mechanism, substantially as described, adapted to gripe the leading end of a sheet and to cause the sheet to bag opposite the folding devices, folding-rolls, and a device or devices, substantially as specified, to enter the sheet between the folding-rolls, whereby the end of the sheet is held by the griper, substantially as specified.

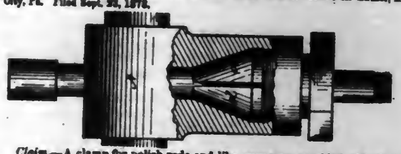
3. The combination, in a folding-machine, of devices for perforating a web or dividing the same into sheets, devices, substantially as described, adapted to arrest the travel of the leading end of a sheet and to cause the sheet to swell or bag opposite the folding-rolls, and mechanism for entering the sheet between the folding-rolls, the whole constructed and adapted to operate substantially as set forth.

4. The combination, in a folding-machine, of feeding mechanism for feeding the sheet, mechanism for controlling the leading end of the sheet, mechanism, substantially as described, for arresting the leading end of the sheet to cause the sheet to swell or bag opposite the folding-rolls, folding-rolls for folding the sheet, and mechanism for carrying the slack or swell of the sheet into the bite of the folding-rolls while the sheet is thus held, the whole constructed and operating substantially in the manner specified.

206,831.

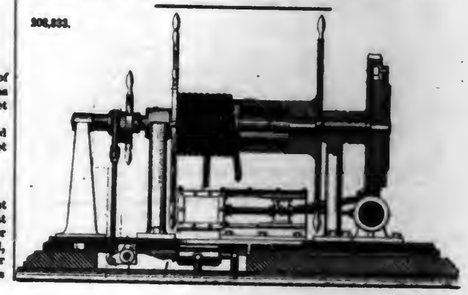


206,832. CLAMPS FOR POLISH-RODS OF OIL AND OTHER WELLS. James H. Luther, Karns City, Pa. Filed Sept. 26, 1878.



Claim.—A clamp for polish-rods and like purposes, provided with the body having a hollow tapered cavity, a series of wedges arranged therein, and a follower to set on the wedges, the whole combined substantially in the manner and for the purpose specified.

206,833.



206,833. STEAM STEERING APPARATUS. Joseph P. Manton, Providence, R. I. Filed Sept. 13, 1878.

Brief.—The valve-gear of the steam-engine is operated by a trick-wheel on the same shaft with the hand steering-gear. The worm-gear may be thrown into action with the steering-wheel by means of a peculiar connecting-clutch.

Claim.—1. The combination, with a hand steering-gear, of a gear-wheel adapted to be locked to the shaft of the hand-gear and a driving-shaft operated by one or more steam-engines, said driving-shaft provided with a worm, which is in constant engagement with said gear-wheel, substantially as set forth.

2. The combination, with the shaft of a hand steering-gear, of a gear-wheel provided with an elongated hub or bearing projecting from one side thereof, and a disk or wheel located on the opposite side of the gear-wheel and rigidly secured to the shaft of the hand-steerer, substantially as set forth.

3. The combination, with a disk attached to the shaft of a hand steering-gear, said disk provided with a catch or locking block, of a gear-wheel loosely secured upon said shaft and constructed with recesses (one or more) for the reception of said locking-block, and means for moving said block into and out of the recesses in the gear-wheel, substantially as set forth.

4. The combination, with the shaft of a hand steering-gear, of a gear-wheel loosely mounted on said shaft, said gear-wheel having a recess formed in one side thereof, and a disk rigidly secured to the shaft, and fitting within said recess in the gear-wheel, substantially as set forth.

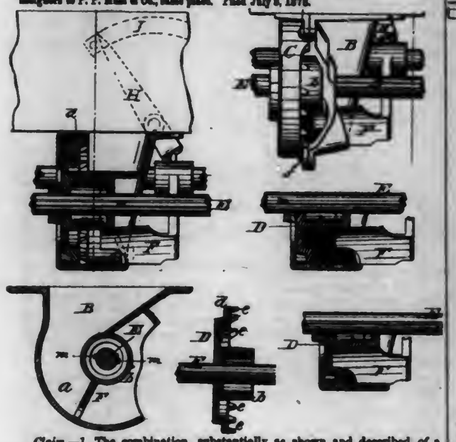
5. The combination, with a gear-wheel loosely mounted upon the shaft of a hand steering-gear, and a disk or wheel rigidly secured thereto, of a revolving ring provided with an inclined slot and a locking-block, a portion of which projects into said inclined slot or opening, substantially as set forth.

6. The combination, with a gear-wheel loosely mounted upon the shaft of a hand-steerer, a wheel or disk rigidly secured thereto, and a revolving ring for actuating the connecting and disconnecting mechanism, of means for securing the ring to the wheel or disk on the shaft, substantially as set forth.

7. The combination, with a valve governing the flow of steam to the steam-engines of a steam steering apparatus, of a trick-wheel constructed with an eccentric-bearing, an eccentric strap or plate fitted to said eccentric-bearing on the trick-wheel, and suitable intervening mechanism connecting the eccentric strap or plate with the steam-valve, whereby the position of the latter may be regulated by turning said trick-wheel, substantially as set forth.

8. The combination, with a valve constructed and arranged to regulate the flow of steam to the engines of a steam steering apparatus, of a trick-wheel constructed with an eccentric-bearing and a rod connected therewith by a suitable strap or plate, the opposite end of the rod being pivoted to a crank on a rock-shaft, which latter in its movement actuates the valve by means of a connecting-rod, substantially as set forth.

206,834. GRAIN-DRILL FEEDS. Phineas P. Mast and Charles C. Gardiner, Springfield, Ohio, assignors to P. P. Mast & Co., same place. Filed July 8, 1878.



Claim.—1. The combination, substantially as shown and described, of a vertical feed-wheel, D, a feed cup or case, B, and a feed-regulating gate, F, arranged to move in a right line into and across the grain-channel from one side, so as to diminish its width and decrease the discharge by holding back a portion of the grain.

2. The combination of the vertical feed-wheel having a grooved or channeled side face, a feed-cup, B, and the flat feed-regulating gate E, arranged to slide into said cup toward and at substantially right angles to the face of the wheel.

3. The combination of the vertical feed-wheel, having the annular shoulder in its side face, with the feed-cup B and the transversely-moving feed-regulating gate F.

4. In a seeding-machine, the combination of a feed wheel and cup containing a grain channel or passage, having in cross-section substantially parallel top and bottom walls, with a laterally-moving slide or gate extending across said channel from top to bottom, and serving, in contradistinction to those gates which merely diminish the outlet-opening without affecting the stream within the cup, to diminish the transverse width of the moving stream of grain within the cup, and thereby lessen the discharge.

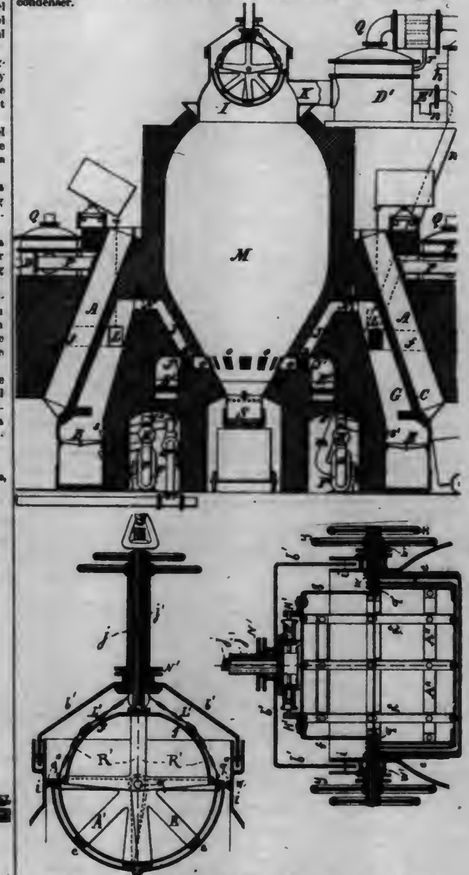
5. In combination with a vertical feed-wheel, a laterally-moving gate, F, provided with a depression or recess, *g*, at its lower end, for the purpose described.

6. In combination with the feed-wheel D, having the annular groove *e*, the transversely-moving gate F, having the recess or depression *g* in its end, the two being arranged for joint operation, substantially as described and shown.

7. In combination with the gate F, having the depression or cavity *g* in its end, the feed-wheel D, provided with the peripheral teeth *e*, to insure the delivery of the grain through the recess *g*.

206,835. FURNACES FOR DISTILLING WOOD AND SEPARATING THE PRODUCTS OF DISTILLATION. Jean A. Mathieu, Bridesburg, Philadelphia, Pa. Filed Mar. 15, 1877.

Brief.—Wood is distilled in the small inclined retorts, and the uncondensed gases are passed through a safety apparatus to the closed fire-boxes and grates under the retorts. The products of combustion from these fire-boxes are passed into the large central distilling-chamber to aid in the distillation of wood therein. The condenser, provided with a central concave diaphragm, is supplied with pyroligneous acid, which is rapidly evaporated by the action of an exhaust-pump and spray-condenser, thus properly cooling the condenser.



Claim.—1. In an apparatus for distilling wood, &c., the combination of a retort and condenser, having a pipe which communicates with the grate-chamber, with a safety apparatus, intermediate between the condenser and grate-chamber, whereby the passage of flame to the condenser is prevented, substantially as described.

2. The combination of the spout *c'* and the exit-pipe of the condenser with the safety apparatus having the induction-pipe T', dipping into a sealing-liquid and a discharge-pipe controlled by a valve, substantially as described.

3. The combination of a retort with a flue and closed grate-chamber whose flue communicates with the interior of the retort, whereby the products of combustion from the grate are forced into the retort under pressure.

4. The combination, with a lesser retort, A, and main retort, M, of flues and closed grate-chambers having flues communicating with the main retort, and condensers D and D', communicating through safety apparatus with the grate-chambers, whereby the non-condensable gases from both retorts are burned and the products of combustion forced into the main retort under pressure.

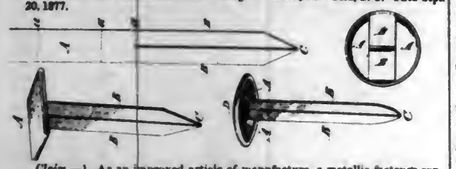
5. The combination of a retort having a concave bottom with an arch or vault of refractory material, constructed independently of the retort, but in close contact throughout with the concave surface thereof, and maintained in position thereby, substantially as described.

6. The condensers D', formed in two separate compartments, *d* and *d'*, the latter communicating with an air-pump or other equivalent exhausting device, whereby condensation is effected in the one compartment by the evaporation of a volatile liquid in the other.

7. The auxiliary lids *e e*, in combination with the rods *w*, sleeves *w'*, and wheels *x* and *y*, or their equivalents, substantially as above described.

8. The combination of the lattice-work quarter-cylinders A'', revolving upon the pivots *q q'*, with the upper half-cylinder, *f*, lid *h*, barrels Q', rod *j*, and sleeve *f'*, substantially as described.

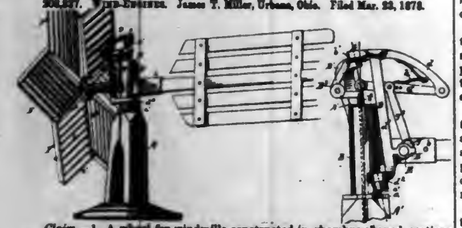
206,826. METALLIC PAPER-FASTENERS. George W. McGill, New York, N. Y. Filed Sept. 20, 1877.



Claim.—1. As an improved article of manufacture, a metallic fastener consisting of the pointed prong split vertically through its center to the head A, so as to form the two prongs B B, arranged edgewise to each other, the head A being folded, as herein shown, and at right angles to the prongs B B, the whole being constructed of a single piece of material, and adapted for use substantially as shown and described.

2. A paper-fastener consisting of a head formed from portions a a a and a pointed shank portion split vertically through its center, forming fastening-prongs B B, all from a single piece of metal, substantially as shown and described.

206,827. WIND-ENGINES. James T. Miller, Urbana, Ohio. Filed Mar. 23, 1878.



Claim.—1. A wheel for windmills constructed in rhombus-shaped sections F^3, secured together and to the hub F^3, substantially as described.

2. In a wheel for windmills, the rhombus-shaped frames, constructed of metal, and having all their sides $a\ a^2\ a^3$ bent to present the same angle to the wind, and carrying blades f, substantially as described and shown.

3. In a wheel for windmills, the wind-blades f, made of sheet metal and secured in the metallic frame by means of the tenons, constructed substantially as described and shown.

4. In a windmill, the combination, with the turn-table, of the frame D, carrying the wind-wheel and swung on one side of the turn-table, the said frame being pivoted to such turn-table with its pivots in the same vertical plane as the tail-vane, and with the lower pivot in the rear of the upper pivot, substantially as described and shown.

5. In a windmill, the combination, with the turn-table, of the wind-wheel, mounted on one side of the center of such turn-table upon a swinging frame having an inclined pivotal connection with the turn-table, and the tail-vane, projecting from the turn-table at right angles to the normal position of the wind-wheel, substantially as described and shown.

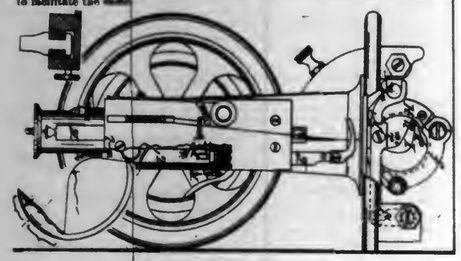
6. In a windmill, the combination, with the turn-table, of the swinging frame D, hung on one side of the turn-table, carrying the wind-wheel and pivoted to such turn-table, so that a line passed through the pivots will intersect a central vertical line at the half-stroke of the joint between the walking-beam and shackle-bar, and the walking-beam G, pivoted in the said swinging frame, with its inner end over the center of the hollow standard, substantially as described and shown.

7. The combination, with the turn-table E, having curved standard B^1, of the frame D, having parts $d\ d^1\ d^2$, and pivoted to the standard B^1 and to the rear of the turn-table below the arm which carries the tail-vane, and the wind-wheel F, supported upon the vertical piece d^1, substantially as described and shown.

8. In a windmill, the shackle-bars H H^1, secured together by means of the sheath H^2, pivoted to the lower bar, and having spring-catch i^2 and the pointed and rounded head i, and the shoulder at the lower end of the upper bar, constructed and arranged substantially as described and shown.

206,838. SEWING-MACHINES. Lebbeus B. Miller and Philip Diehl, Elizabeth, N. J., assignors to the Singer Manufacturing Company, New York, N. Y. Filed June 8, 1877.

Brief.—The shuttle has an oscillatory movement in a vertical plane, and is provided with a beak to seize the loop of needle-thread, the shank whereof decreases in size toward the body of the shuttle, to permit the upper thread to rise with the needle through the cloth. The feed is four-motioned, and is operated positively in all directions by rock-shafts extending each side of the bed-plate beneath the same. These shafts derive their motion from a crank on the main shaft through connecting-links, and they support the feed-bar in position. The presser-foot is automatically raised during the feeding movement to facilitate the same.



Claim.—1. The shuttle for a sewing-machine constructed, substantially as before set forth, with a bobbin-case, with a beak proper to seize the loop of needle-thread, and with a beak-shank, which intervenes between the beak proper and the bobbin-case, and does not increase in cross-section as it extends from the beak proper toward the bobbin-case, whereby the loop of needle-thread, after being seized, may be held without being progressively elongated while the needle-point rises through the cloth.

2. The shuttle for a sewing-machine constructed, substantially as before set forth, with the bobbin-case, with a beak proper to seize the loop of needle-thread, and with a beak-shank which not only does not increase in cross-section as it extends from the beak proper toward the bobbin-case, but is reduced in cross-section as it extends from the former toward the latter, whereby the needle-thread held on the said beak-shank may be permitted to contract and the needle-thread to rise through the cloth while the beak-shank advances in the said loop.

3. The combination, substantially as before set forth, of the circular shuttle-race, the shuttle-driver, and the shuttle constructed with a bobbin-case, with a beak proper, and with a beak-shank which intervenes between the bobbin-case and the beak proper, and which does not increase in cross-section as it extends from the beak proper toward the bobbin-case.

4. The combination, substantially as before set forth, of the shuttle-driver, the rock-shaft to one end of which it is fixed, the rock-shaft connected with the driving-shaft, the arms on the respective rock-shafts, and the pivot connecting said arms, the arrangement of the parts being such as described, so that the shuttle-driver is caused to move a greater angular distance than the intermediate rock-shaft, through which it is driven.

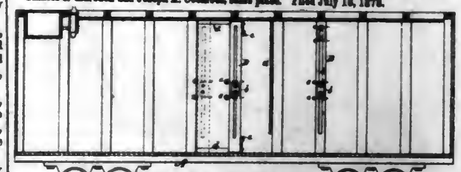
5. The combination, substantially as before set forth, of the circular shuttle-race, the oscillating shuttle-driver, and the shuttle having its delivery-eye at a short distance from the center of the circle of said shuttle-case, and at a point which descends during the latter part of the retrograde movement of the shuttle, so that the shuttle-thread will be pulled home at the finish of the stitch.

6. The combination, substantially as before set forth, of the feed-bar with two rock-shafts, one arranged at each end thereof, and with two rock-shaft arms, positively connected with the feed-bar, the arm of one rock-shaft being arranged lengthwise of the feed-bar and substantially parallel with it, to impart a positive ascending and descending motion thereto, and the arm of the other rock-shaft being arranged crosswise of the feed-bar, to positively reciprocate it endwise.

7. The combination, substantially as before set forth, of the toggle-links, the movable fulcrum-pivot thereof, and the adjustable arm by which said fulcrum-pivot can be adjusted.

8. The combination, substantially as before set forth, of the presser-bar, the cramp-stud, the cam, and the stop-pin.

206,839. STOCK-CARS. Henry S. Mosby, Omaha, Nebr., assignor of one-half his right to Charles I. Karbach and Joseph A. Coombes, same place. Filed July 16, 1878.

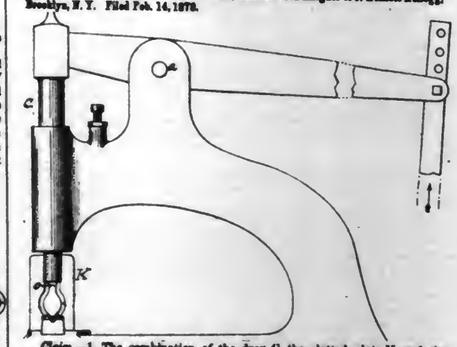


Claim.—1. The railway stock-car having the series of slotted standards or posts and cross-bars extending between and through said standards, and the pins for fastening the cross-bars in any adjustment, all combined as shown and described.

2. The rods provided with shoulders a and heads b, in combination with the slotted standards, as specified.

3. The adjustable standards D, slotted longitudinally and provided with notched ends and sliding bolts e, in combination with the ways or guide-strips d, secured to the floor of the car, whereby provision is made for providing the doorways of the car with standards, substantially as and for the purpose described.

206,840. MACHINES FOR FASTENING TIPS UPON UMBRELLA-RODS. Henry A. Morrison, Brooklyn, and Walter C. Hubbard, New York; said Morrison assignor to J. Kennett Kellogg, Brooklyn, N. Y. Filed Feb. 14, 1878.



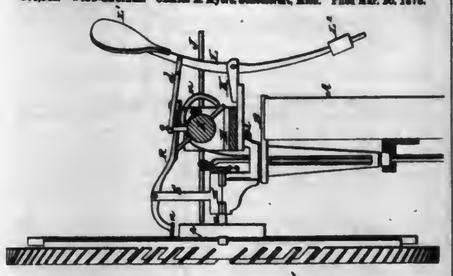
Claim.—1. The combination of the drop C, the slotted plate K, and the nippers or pliers I I^1.

2. The combination of the drop C, the male die o, the female die p, and the nippers or pliers I I^1.

3. The combination of the drop C, the nippers or pliers I I^1, the slotted plate K, male die o, and female die p.

4. The combination of an adjustable rack or frame for holding umbrellas, parasols, or similar articles, with mechanism for fastening the tips or cloth upon the ribs of such articles, substantially as described.

206,841. WIND-ENGINES. Charles R. Myers, Schoolcraft, Mich. Filed Mar. 20, 1878.



Claim.—1. The pivoted lever L, with vane L^1 and weight L^2, connected by a rod, d, with an arm, c, on the shaft I, in combination with the vibrating vane J and wind-wheel F, said vane J being arranged at right angles to the wind-wheel shaft, and all arranged to operate substantially as and for the purposes herein set forth.

2. In a windmill, the combination, with the wind-wheel and the devices for throwing the same in and out of gear by the action of the wind, of an automatic brake applied to the wheel by the said devices for throwing the wheel in and out of gear, as herein set forth.

3. The combination, with the vanes J and L^1 and the shaft I, of the cam m, weighted lever R, with brake n, and the ring p on the wind-wheel F, substantially as and for the purposes herein set forth.

4. The wire f and weight h, suspended from the vane J, for the purposes set forth.

206,842. ORNAMENTAL STOVE-PLATES. Francis P. Nicholson, Philadelphia, Pa., assignor to himself, and to Edward Hopper, Henry Bentley, and Thomas Williams, executors of estate of Charles Noble, deceased. Filed Sept. 23, 1878.



Claim.—A stove-plate composed of an ordinary casting bronzed or copper-plated and a panel polished or nickel-plated, all as set forth.

206,843. CORN-HUSKING IMPLEMENTS. Marcus C. Pearce, Tabor, Iowa. Filed Mar. 7, 1878.



Claim.—The combination of the concavo-convex handle a, formed with the curved guard b and hooks c d, the steel pin g, formed with the bent and twisted point or hook h and secured in the concavity of the handle, and the strap m, all constructed substantially as and for the purposes herein set forth.

206,844. HORSESHOES. Thomas Pearce, Chicago, Ill. Filed May 23, 1878.



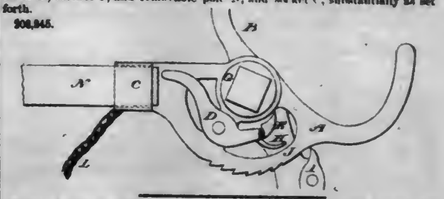
Claim.—The shoe herein described, having upon its under side a series of V-shaped calks c c, each being grooved centrally, presenting two sharp angular edges, a a, and coming together at a point, a', substantially as and for the purpose set forth.

206,845. HOG AND SHEEP CATCHERS. Adam Pitcher, Northville, Ill. Filed June 6, 1878.

Claim.—1. In animal-stocks having jaws A and B, operated by a spring to close them, the combination of the socket C and removable pole N with the holding and releasing catch D, constructed and operating substantially as set forth.

2. In animal-stocks, the combination, with the jaws or limbs A B, the latter having the curved guide H and carrying the spring-detent I, of the spring F, catch D, ratchet J, and removable pole N, and socket C, substantially as set forth.

206,845.



206,846. DEVICES FOR SEPARATING CREAM FROM MILK. Sherman L. Plumb, Portage, Wis., assignor to himself and William Bard. Filed Aug. 28, 1878.

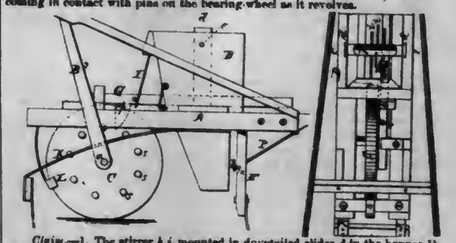


Claim.—1. In a process or mode of liberating cream from milk, the formation of a vacuum in a closed can containing the milk by means of a pump removing a body of water placed in a pan above the milk within the can, substantially as described.

2. The combination of a milk-can, A, having air-tight lid B, the interior water-pan C, tube D, and collar E, connected to the lid, the valve A, and the removable pump F, substantially as and for the purposes herein set forth.

206,847. SEED-PLANTERS. William M. Rapo, Hotsprings, Ala. Filed Aug. 23, 1878.

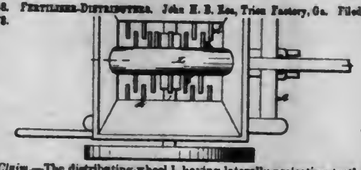
Brief.—The stirrer-shaft is removably journaled in dovetailed pieces mounted in the sides of the hopper. Motion is imparted from a slide to the stirrer-shaft, to which it is attached by an eyebolt, a projection on the slide coming in contact with pins on the bearing-wheel as it revolves.



Claim.—1. The stirrer $h\ i$, mounted in dovetailed slides d in the hopper D, in combination with the slide G, as set forth.

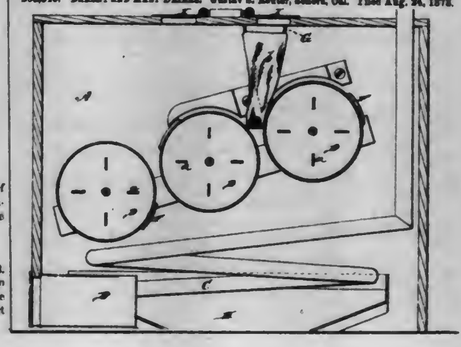
2. The combination of the wheel C, with pins $s\ s$, the slide G, with lug p and pin m, and the stirrer $h\ i$, with eyebolt a, substantially as and for the purposes herein set forth.

206,848. FERTILIZER-DISTRIBUTORS. John H. B. Rea, Trion Factory, Ga. Filed July 27, 1878.



Claim.—The distributing-wheel I, having laterally-projecting teeth b, working between stationary teeth d in the sides of the hopper H, in combination with the concavo-convex box or shield L, as and for the purposes set forth.

206,849. BARLEY AND MALT DRIERS. Gustav S. Reuter, Senora, Cal. Filed Aug. 24, 1878.



Claim.—1. The combination of the chamber A, furnace B, with pipe C, the geared cylinders D, and receiver H, all constructed and arranged substantially as and for the purpose set forth.

2. The chute G, with flexible conductor *b*, in combination with the chamber A and cylinders D, with doors F, for the purpose set forth.

208,850. Supports for Ropes for Transmitting Power. George H. Reynolds, New York, N. Y., assignor to Cornelius H. Delamater and Geo. H. Robinson, same place, one-third to each. Filed Apr. 23, 1878.



Claim.—1. The tubular base A, having one or more slits or openings, *a*, down its upper portion, in combination with the clamping-band E and the column B, having an attached column-head and sheave, substantially as and for the purposes herein set forth.

2. A column-head, H, inclosing the rope-supporting sheave D within it, constructed of divided halves or sections, in combination with the column B, and the bolts for securing said divided halves together and clamping them to the column, essentially as described.

3. The combination, with the arms or jaws of the divided column-head C and the loose sheave D, of the independent stationary axle G, held in position by said jaws when closed, and provided with one or more upper lubricating-inlets, *h*, outside of or beyond the end or ends of the hub of the sheave, and one or more lower distributing-outlets, *i*, essentially as and for the purposes herein set forth.

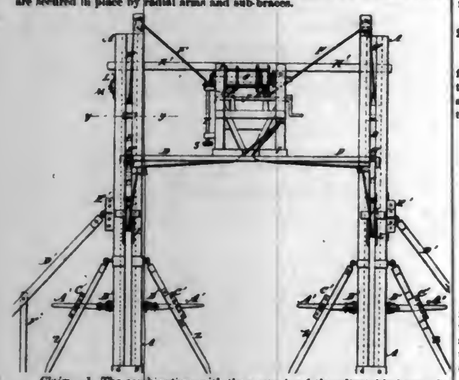
208,851. Bee-Hives. William C. Rife, Morton, Mo., assignor to Serena Temple Rife, same place. Filed Mar. 12, 1878.



Claim.—In a bee-hive, the bottom B, extending beyond the front wall of the hive, and having a beveled or inclined under surface, *b*, with sharp termination *d*, and the inclined front board or strip, C, overhanging said bottom by a sharp termination, *c*, so as to form an entrance-slot for the bees, substantially as and for the purpose set forth.

208,852. Scaffolds. Rev. Y. Randall, Farley, Iowa. Filed Sept. 24, 1878.

Brief.—A system of braces for supporting the scaffold-posts. Radial braces are secured in place by radial arms and sub-braces.



Claim.—1. The combination, with the posts A, of the adjustable braces E, the adjustable bars A', the perforated curved plates B', and the perforated keepers C', as and for the purpose described.

2. The combination, with the posts A, of the long braces D', the perforated flanges E', and the secondary braces F', as and for the purpose specified.

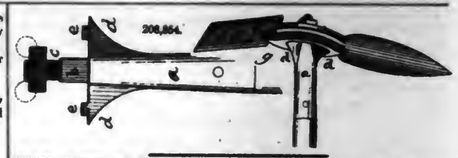
208,853. Preservative Wrapping and Packing Paper. John F. Rodgers, Philadelphia, Pa. Filed Jan. 9, 1878.

Claim.—1. A paper treated with the materials named in substantially the proportions specified

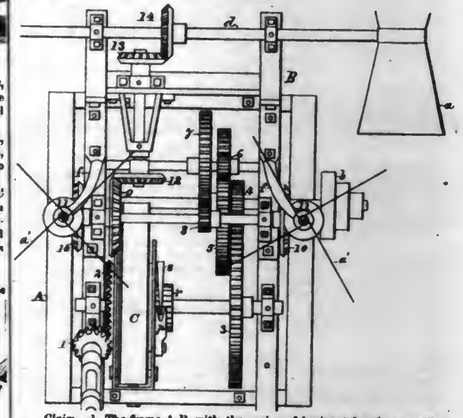
2. The paper treated with a mixture of the oil remaining from the distillation of coal-tar naphtha by live steam, crude carbolic acid, thin coal-tar, and refined petroleum, in the manner and proportions substantially as specified.

208,854. Combination Garden-Tools. James D. Royse, Cane Valley, Ky. Filed Aug. 5, 1878.

Claim.—The combination of the tang or socket *a*, having the tenon *b* and screw *c*, constructed with shoulders *d*, provided with the projections *e e*, with the adjustable tools having bracing-piece *g* and mortises and recesses corresponding to the tenon and projections upon the tang or socket, substantially as described, and for the purposes set forth.



208,855. Machine for Producing Ventilation. Conrad Schleicher, John Mackert, and Jos. Mackert, Springfield, Ohio. Filed July 19, 1878.



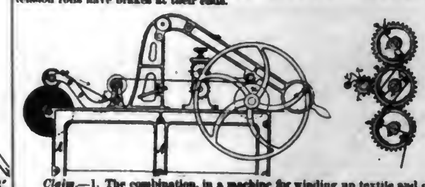
Claim.—1. The frame A B, with the series of horizontal and perpendicular shafts *d e c*, having fans *a* and *a'*, in combination with the train of gears 3 4 5 6 7 8 9 10 11 12 13 14, the spring C, and its winding-gear 1 and 2, as and for the purpose hereinbefore set forth.

2. In combination with a machine for producing ventilation having a series of gears, shafts, fans, &c., substantially as specified, cone-pulley *b*, attached thereto, as described, for the adaptation of the same, by a belt-connection, to a sectional machine, D, as hereinbefore set forth.

3. A sectional machine, D, having an independent fan and driving-gear, with a cone-pulley, *b*, mounted upon its shaft, to adapt it to a belt-connection with the primary machine transmitting the power, as hereinbefore described, for the purpose set forth.

208,856. Machine for Winding and Trimming Textile Fabrics, &c. Wilhelm B. Schürmann, Duesseldorf, Prussia. Filed Aug. 1, 1878.

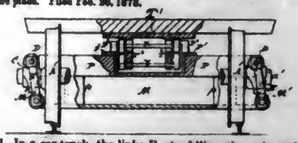
Brief.—A roller mounted in swinging arms presses on the surface of the fabric on the roller from which it is to be unwound. The fabric passes around tension-rollers between trimming-knives, and is wound on a roller mounted in swinging arms, and resting on the surface of a driving-drum. The pressure and tension rolls have brakes at their ends.



Claim.—1. The combination, in a machine for winding up textile and other materials, of a compression-roller mounted in swinging arms, a tension apparatus for smoothing the web, knives for trimming the same, a take-up roller or spool mounted in swinging arms, and a driving-roller for imparting rotary motion to the take-up roller, substantially in the manner and for the purpose set forth.

2. The combination, in a machine as above described, of a compression-roller and a tension-roller, either or both provided with brakes, knives for trimming the web, and a driving-roller for imparting motion to the take-up roller by frictional contact, all combined and operating substantially as described.

208,857. Car-Trucks. William H. H. Sloan, Brooklyn, N. Y., assignor to E. B. Esmond, (trustee,) same place. Filed Feb. 26, 1878.



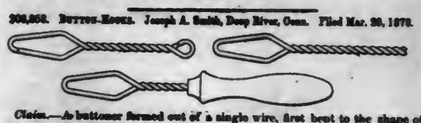
Claim.—1. In a car truck, the links E, straddling the axle and hinged to the axle-box, in combination with the beam M', pivotal to the links E and attached to the cross-beam M, as herein specified.

2. The combination, in the car-truck shown, of the center-plate or bearing-piece T', supported on the truck by means of eyes I'', pendent links W, and axes or transverse pins X Y, or their equivalents, as herein set forth.

3. The construction of car-truck shown, having a plate or bearing-piece, T', supported centrally by means of links W, free both to swing and to swivel, in combination with eyes or supports I'' on the truck and bracket-pieces T' on the car, so that the car is suspended at low points by means of pendent links or bars, with capability of both fore-and-aft and swiveling motions, as herein specified.

4. In a car-truck, the links E, hinged to the axle-box and pivoted to the beam M', in combination with the cross-beam M, bearing-piece T', eyes I'', links W, and transverse pins X Y, as herein specified.

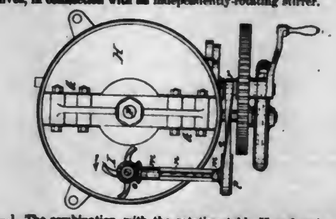
208,858. Button-Hooks. Joseph A. Smith, Deep River, Conn. Filed Mar. 20, 1878.



Claim.—A buttoner formed out of a single wire, first bent to the shape of the loop, and then cut upon itself and twisted, forming a shank either with or without a wooden or other handle, substantially as specified.

208,859. Meat-Cutters. John E. Smith, Buffalo, N. Y. Filed July 30, 1878.

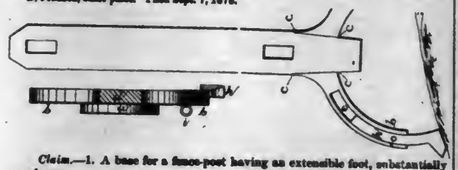
Brief.—The invention relates to meat-cutters which are provided with a rotating circular table, upon which the meat is cut by means of vertically-reciprocating knives, in connection with an independently-rotating stirrer.



Claim.—1. The combination, with the rotating table H and reciprocating cutters G, of the independently-rotating stirrer I, substantially as and for the purpose set forth.

2. The combination, with the main frame A and rotating table H, of the frame I, shafts a J, bevel-wheels *o*, driving-belt *g*, and stirrer I, substantially as set forth.

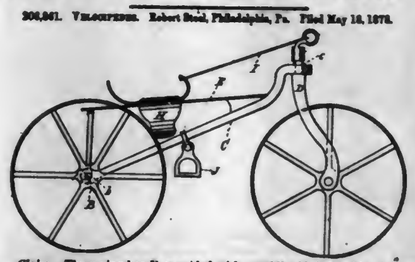
208,860. Fence-Posts. John F. Saylor, Culpeper, Va., assignor of one-half his right to F. D. Johnson, same place. Filed Sept. 7, 1878.



Claim.—1. A base for a fence-post having an extensible foot, substantially as shown.

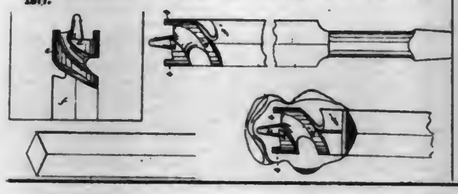
2. The base *a*, having the two prongs *b* and socket *c*, in combination with an extensible foot, *h*, and a clamping device, *i*, substantially as described.

208,861. Velocipedes. Robert Stead, Philadelphia, Pa. Filed May 16, 1878.



Claim.—The spring-bar E, provided with a saddle, H, in combination with the crank-axle B and jointed upright G, or equivalent device, and the supporting-frame C, provided with stirrups or other foot-rests, substantially in the manner and for the purpose set forth.

208,862. Manufacture of Auger-Bits. James Swan, Seymour, Conn. Filed June 27, 1877.



Claim.—That improvement in the art or method of manufacturing bits or augers which consists in subjecting the blank to the action of dies to form the spurs, forwardly-projecting floor-lips *s*, part of the twist *s'*, and a flattened portion, *f'*, back of the twist, then drawing the blank and twisting it to prolong the twist started and defined by the dies, substantially as described.

208,863. Locks. Warren H. Taylor, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed June 26, 1877.

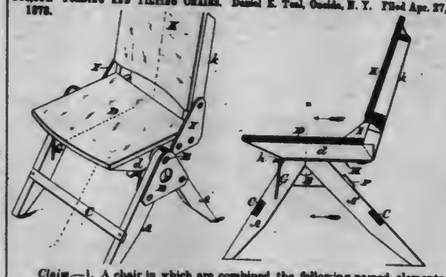


Claim.—1. The combination of a rotary sheet-metal key having longitudinal grooves or corrugations and transverse bittings extending into said corrugations, a key-hub or roll-back which is provided with a sinuous key-slot of a form corresponding to the form of the key and tumblers contained within said cylinder, which are set by the insertion of the key, and then revolve with it and the key-cylinder, substantially as described.

2. A sheet-metal key longitudinally grooved or corrugated, and bitted transversely to said corrugations, the bittings extending into the corrugations, so that the points of the contact of the key with the tumblers are not on the same line, substantially as described.

3. In a key-cylinder or roll-back, the combination of a sinuous key-slot and tumbler-recesses which enter said key-slot in a line which is not parallel to the sides of the key-slot, substantially as described.

208,864. Folding and Tilting Chairs. Daniel E. Teal, Cuzzio, N. Y. Filed Apr. 27, 1878.



Claim.—1. A chair in which are combined the following-named elements, to wit: a jointed stool capable of being folded together, a seat and back hinged or pivoted together and capable of being folded, and a pivotal spring-connection between said seat and stool, whereby the latter is permitted to rock upon the former, substantially as and for the purpose specified.

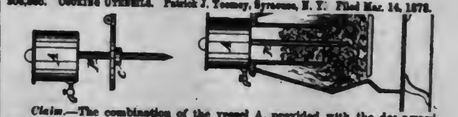
2. The hereinbefore-described stool, in which the legs A and A', having angular abutting upper ends, are connected together by means of the pivotal plates B, in the manner and for the purpose substantially as shown.

3. The seat D, having the rails *d*, with angular rear ends, the back K, provided with rails *k*, which have angular lower ends, and the pivotal plates I, used for connecting said parts together, all combined substantially as and for the purpose set forth.

4. In combination with the stool described and with the seat D, the pivotal bearings E, connecting said seat with the plates B, the stops F and G, and the springs H, substantially as and for the purpose shown and described.

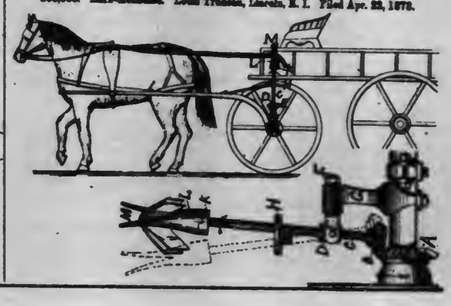
5. The hereinbefore-described chair, in which the legs A and A', pivotal plates B, rungs C, seat D *d*, pivotal bearings E, stops F and G *g*, springs H, pivotal plates I, and back K *k* are combined to operate in the manner and for the purpose substantially as specified.

208,865. Cooking Utensils. Patrick J. Toomey, Syracuse, N. Y. Filed Mar. 14, 1878.



Claim.—The combination of the vessel A, provided with the downward-extended pipe *p*, and the loose collar *c*, provided with devices for supporting the said pipe and vessel at various heights, substantially in the manner and for the purpose specified.

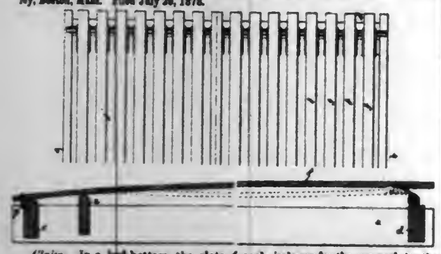
208,866. Reed-Holders. Louis Trudeau, Lincoln, R. I. Filed Apr. 23, 1878.



Claim.—1. The combination of the bevel-gears A and B, attached substantially as above described, with the upright shaft C, secured in place and terminating in two clutch-pieces, K and L, the one fast to shaft and the other revolving loosely on the same, with a holder for reins attached to the loose piece, substantially as above described.

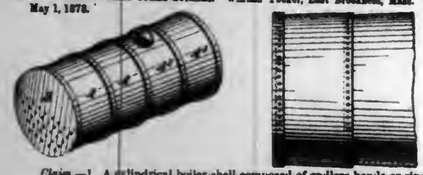
2. The combination, in a hitching apparatus, of the gear-wheels A and B, shaft C, collar D, foot E, swivel F, support G, brace H, slot O, key I, and clutch-pieces K and L with rein receiver or holder M, arranged and operating as and for the purposes described.

206,867. Spring Bed-Bottoms. Hiram Tucker, Newton, assignor to Bartholomew W. Worley, Boston, Mass. Filed July 30, 1878.



Claim.—In a bed-bottom, the slats *f*, each independently secured to the head-piece by a spring, as shown, and rigidly attached to the foot-piece *e*, in combination with a fulcrum-bar, *c*, rigidly and immovably fixed between immovable or unyielding portions *a b* of the frame-work near the foot of the bed, substantially as described.

206,868. Cylindrical Steam-Boilers. William Tucker, East Brookfield, Mass. Filed May 1, 1878.

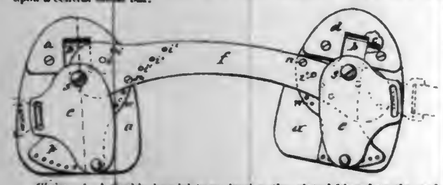


Claim.—1. A cylindrical boiler-shell composed of endless bands or rings of iron or steel, rolled endlessly, and adapted at their ends or edges to form the circumferential seams of the boiler-shell, as herein specified, for the purpose of utilizing the full strength of the metal in resistance to radial strain.

2. A rivetless shell for cylindrical (fire-flue) boilers composed of one or more endless bands or rings of rolled iron or steel and a pair of flue-sheets, united by means of screw-joints of one or more circumferential threads each, substantially as herein shown and described, for the purposes set forth.

206,869. Trusses. William L. Tucker, Syracuse, N. Y. Filed July 30, 1878.

Brief.—The pad is confined by two plates adjusting upon each other and upon a central metal bar.



Claim.—1. A double hernial truss having the plate *b* hinged to the pad, and provided with set-screw *s* and lateral extension *w*, in the form of an arc described from the center of screw *s*, a spring interposed between the free end of said plate and pad, and the connecting-bar *f*, pivoted by one of a series of holes in its end to set-screw *s*, and provided with a clamping device adapted to engage the lateral extension of plate *b*, substantially as described.

2. The combination of the plate *b*, hinged to the pad, and provided at a fixed point with set-screw *s* and the lateral extension *w*, the latter provided with a series of holes arranged in an arc described from the center of screw *s*, the connecting-bar *f*, provided with two obliquely and parallel arranged series of holes, *i i i* and *i' i' i'*, and set-screw *u*, substantially as described and shown.

3. The combination and arrangement of the main plate *a*, pivoted at its upper extremity to a fixed point on the back-plate *b*, the back-plate having wing *w*, provided with a series of holes arranged in an arc described from the center of the pivot of the main plate, the connecting-bar *f*, provided with two obliquely and parallel arranged series of holes, *i i i* and *i' i' i'*, and the set-screws *s* and *u*, substantially as described and shown, for the purpose set forth.

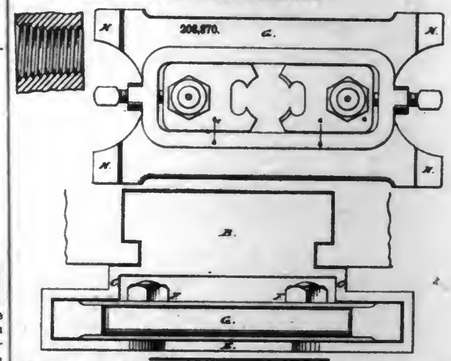
4. In combination with the pad *a*, provided in its rear with a longitudinal recess, the plate *b*, having short pintle *c* projecting from its sides, and embedded in a transverse groove in the rear surface of the pad, and the plate *d*, fitted to cover the entire upper portion of the rear of the pad, and extended partly down the sides of the longitudinal recess, substantially as described and shown, for the purpose set forth.

206,870. Screw-Cutting Dies and Holders. John K. Vinton, Bridgeport, Conn., assignor to Frank Armstrong, same place. Filed Aug. 13, 1878.

Claim.—1. The dies formed with the cutting-thread having a uniform depth and pitch from end to end, and with a double taper, substantially as and for the purposes hereinbefore set forth.

2. The die-plate G, made of a single piece, and having its ends extended at the four corners beyond the plane occupied by the head of the adjusting-screws, to form lugs *H*, which shall serve to maintain the plate against movement when in a die-box, and at the same time guard the adjusting-screws against accidental movement, as hereinbefore set forth.

3. The die-box B, adapted to enter the die-recess in the head of a pipe-cutting machine, and extended forward and laterally to form a receptacle for a die and die-plate, substantially as hereinbefore set forth.

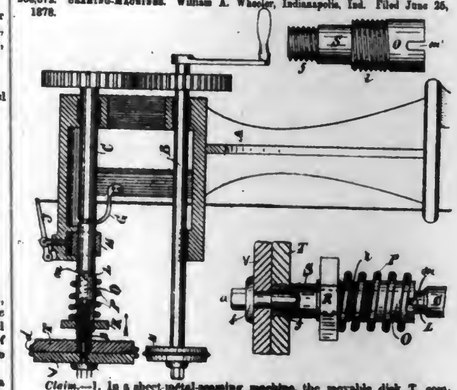


206,871. Devices for Splitting Cigar Ends. Wilhelm Wendes, August Vogt, and Rudolph Richter, Greifenberg, Silesia, Germany. Filed Apr. 12, 1878.



Claim.—In a cigar-splitter consisting of the telescopic tubes *a d*, knife *e*, mouth-piece *c*, and spring *f*, the knife-supporting screw *g*, substantially as and for the purpose set forth.

206,872. Seaming-Machines. William A. Wheeler, Indianapolis, Ind. Filed June 26, 1878.



Claim.—1. In a sheet-metal-seaming machine, the movable disk T, combined with the sleeve O, the mandrel C, the pin *m*, the nut R, the spring P, and the stationary disk V, substantially as shown and described.

2. In a sheet-metal-seaming machine, the sleeve O, having a notch, *m'*, and nut R at one end, and the disk T at the other end, in combination with the spring P, the pin *m*, and mandrel C, substantially as shown and described.

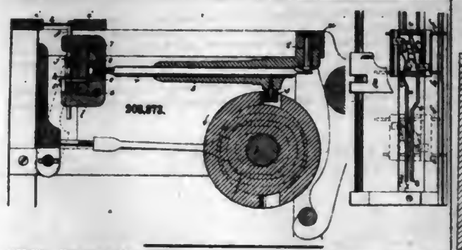
3. In a sheet-metal-seaming machine, the disk-roller composed of the stationary disk V and the movable disk T, combined with the mandrel C and sleeve O, with spring P and adjusting-nut R, substantially as shown and described.

206,873. Shuttle-Motions for Looms. William B. Willard, New York, N. Y. Filed July 30, 1878.

Brief.—The pins which engage with the shuttle are operated by levers, to which they are attached, and which are provided with pins working in cam-grooves. The motion imparted by such grooves is thus increased.

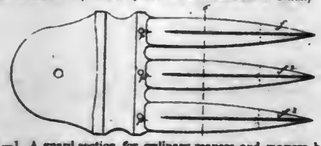
Claim.—1. The shuttle-carrying slide, shuttle-engaging pins *f g*, and the levers *j k*, provided with pins 8, and connected at their ends most remote therefrom with the pins *f g*, in combination with the bar *m*, provided with cam-grooves *n o*, all to operate substantially as described.

2. The shuttle-carrying slide, its shuttle-engaging pins, and levers vibrated by cam-grooves to move the pins, combined with a rod connected with the slide, and a vibrating sleeve through which the rod is extended, substantially as described.



206,874. Harvester Guard-Fingers. William H. Wright, North Tarrytown, N. Y. Filed Oct. 11, 1877.

Brief.—Two or more guard-fingers cast in one piece with a common heel, adapted to be secured to the bar by a single bolt through the hole made for ordinary guard fingers. (Passed by Board of Examiners-in-Chief.)



Claim.—1. A guard-section for ordinary reapers and mowers having two or more fingers in place of a single finger and a broad heel common to all said fingers, with a horizontal flange projecting rearwardly at bottom and a central bolt-hole in said flange, said fingers being adapted to match with one knife-section of an ordinary cutter-bar, and said bolt-hole to match with one of the bolt-holes of an ordinary finger-bar, as herein specified, for the purposes set forth.

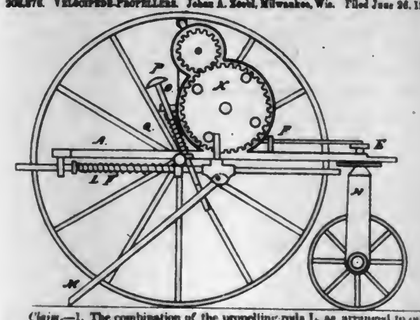
2. A guard-section having two or more fingers for one knife-section, a single broad heel common to all said fingers, and an attached sole-plate constructed with cutting-sections for the respective fingers, and with a single heel portion common to all said cutting-sections, substantially as herein specified, for the purpose of forming a continuous steel surface beneath the blades of the knife-sections of a harvester, in the manner set forth.

206,875. Brooch-Fastenings. Antoni Zierleyn, Grand Rapids, Mich. Filed May 27, 1878.



Claim.—A metallic spring-plate provided with a grooved cross-bar, and attached at one end to the back plate of a brooch at the swivel-joint, and extending across the back plate thereof to the catch-hook, and bearing upward against the brooch pin, substantially as and for the purpose set forth.

206,876. Velocipede-Propellers. Johan A. Enold, Milwaukee, Wis. Filed June 26, 1878.



Claim.—1. The combination of the propelling-rods L, as arranged to operate horizontally parallel to the frame A, with the pushing-arms M, substantially as and for the purpose specified.

2. The device for holding and operating the guiding-wheel in a rigid position, operated by the foot, consisting of the yoke H, lever E, and rods D, provided with foot-rests F, in combination with the springs G, all substantially as and for the purpose specified.

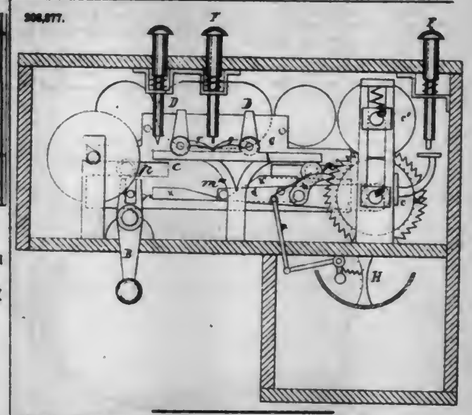
3. The braking device consisting of the rod O, provided with knob P and spiral spring Q, as arranged to operate against the pushing-arms, all substantially as and for the purpose specified.

206,877. Revenue-Recorders. Harvey C. Aldrich, Berwick, Conn. Filed July 8, 1878.

Claim.—1. In revenue-recorders actuated by pulls upon a lever, the sliding piece C, inclines *k k'*, ratchet *d*, alarm H, annunciators D D', tilting or rocking punches *g g'*, rotating feed and revenue punch *c'*, and pressure-roll *c*, so combined as to feed the paper fillet, record the revenue and amount taken for each article sold in separate places, and at the same time attracting the attention of and announcing to the public the same by one or more bells of the lever.

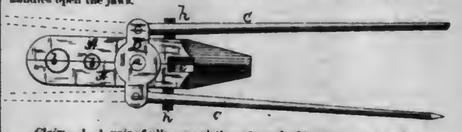
2. The combination of a paper-fillet guide or trough, *l*, stamps or punches F F' F'', and guide *l*, so arranged as to guide the fillet to the rotating feed-punch *c'*, and to support the fillet when receiving the stamps or perforations of the punches F F' F'', substantially as set forth.

206,877.



206,878. Pliers. Freeman S. Allen and Henry C. Lane, Washington, D. C.; said Allen assignor of his right to said Lane. Filed Sept. 27, 1878.

Brief.—The spring is dispensed with in the modification, as the pins of the handles open the jaws.



Claim.—1. A pair of pliers consisting of two double jaws, with handles connected thereto, substantially as herein set forth.

2. In a pair of pliers, the combination of two pivoted double jaws and two reversible handles, for the purposes set forth.

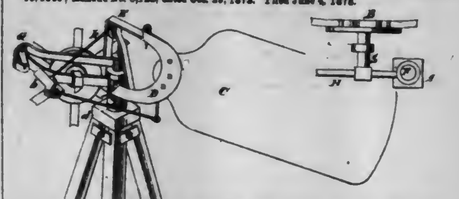
3. The combination of the double jaws A A, pivoted together at *a*, the plates B B, and the reversible handles C C, provided with the projections *h h*, substantially as and for the purposes herein set forth.

206,879. Curry-Combs. Chas. A. Hotchkiss, Bridgeport, Conn. Filed Oct. 8, 1878.

SUSPENDED.

REISSUES.

8,443. Wind-Engines. Palmer C. Perkins, Mishawaka, Ind. Patent No. 93,473, dated Aug. 10, 1869; Reissue No. 5,122, dated Oct. 30, 1873. Filed June 4, 1878.



Claim.—1. A windmill so constructed and arranged that the wind-wheel, when turned upon its vertical axis and its face brought to a plane parallel or approximately parallel with the vane or rudder, will, when released, return to its normal position by the gravity of the vane, substantially as and for the purpose set forth.

2. A wind-wheel mounted upon an arm or frame at one side of the center of its vertical axis, substantially as and for the purpose set forth.

3. The combination of a wind-wheel and a vane or rudder mounted on separate vertical or nearly vertical axes, one or both of which are not in the same vertical plane as the horizontal axis of the wheel.

4. A vane or rudder so connected with the wheel that its outer end will be elevated when the wheel is thrown partly or wholly out of the wind, and will operate to return the wheel into the wind by the force of gravity.

5. The arm G, pivoted at one end to an arm or frame, H, and having a reciprocating movement by means of suitable mechanical connection with the hub or shaft of the wheel.

6. The combination of a hollow rod or shaft, I, for transmitting motion from the wind-wheel, and a rod, cord, or chain, K', passing through the said hollow rod or shaft to control the speed of or stop the mill.

7. The combination and arrangement of the rudder C, rod K', and connecting rope or chain K, the latter passing over one or more pulleys, substantially as and for the purposes specified.

8. The combination of the bolts *s*, pipe I', and frame A, substantially as and for the purpose specified.

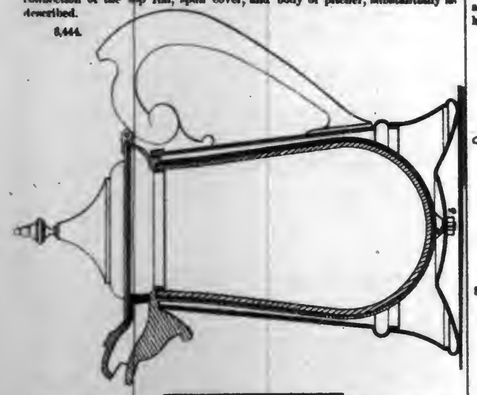
8,444. Ink-Pitchers. Henry B. Beach, West Meriden, Conn. Patent No. 202,980, dated Apr. 30, 1878. Filed Aug. 9, 1878.

Brief.—The inner lining is protected by a spun cover provided with an annular top rim and a valved spout, and is secured in place by a bottom screw bolt and nut.

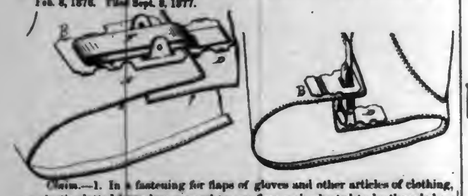
Claim.—1. The combination of the inner lining or bowl, the spun cover, and the body of the pitcher, the two latter connected by screw bolt and nut, substantially as shown and described.

2. The combination of the inner lining and an annular top rim and spun cover with the body of the pitcher, and with mechanism to secure the tight connection of the top rim, spun cover, and body of pitcher, substantially as described.

8,444.



8,445. Glove-Fastenings. Frank G. Farnham, Hawley, Pa. Patent No. 173,218, dated Feb. 8, 1876. Filed Sept. 8, 1877.



Claim.—1. In a fastening for flaps of gloves and other articles of clothing, an elastic slotted lever-key secured to one flap, and adapted to be threaded up through a plate upon the other flap and drawn across upon the outside of the same, and means to hold the slotted lever-key in position after the flaps are secured together by said key, which serves as a toggle, substantially as described.

2. In a fastening for the flaps of gloves and other articles of clothing, and in combination with such flaps, the plate D, having the prongs *c' c'*, and the arch E, with sloping sides, substantially as described.

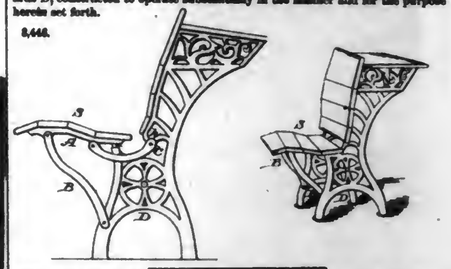
3. A fastener for gloves and other articles of clothing, composed of the plate B, having prongs *c c* and openings *d*, and the plate D, having the arch E and pivoted lever-key F, substantially as described.

8,446. Folding Seats for School-Desks. Uriah Smith, Battle Creek, Mich. Patent No. 163,611, dated May 25, 1875. Filed June 7, 1878.

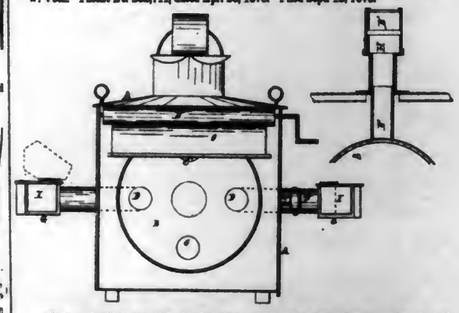
Claim.—1. The combination, with the standard of a desk and the folding seat, of links or arms pivoted, respectively, to the front and rear of said folding seat and to the standard, whereby the seat may be folded into a position substantially parallel with the desk by raising the rear edge of the seat, substantially as shown and described.

2. The combination of the arms C and braces B with the seat S and standards D, constructed to operate substantially in the manner and for the purpose herein set forth.

8,446.



8,447. Head-Lights for Locomotives. Andrew Drussell, Ernst H. Voth, and John G. Voth, Cleveland, Ohio, assignors, by mesne assignments, to Durthea Drussell and Charles W. Voth. Patent No. 203,711, dated Apr. 23, 1878. Filed Sept. 12, 1878.



Claim.—1. The chamber or chambers G G, reflectors H, glass face I, and glass back B, substantially in the manner as described, and for the purpose specified.

2. In locomotive head-lights, the reflector B, provided with side openings, in combination with one or more chambers, G G, each having a reflector and glass face and back, so that the light therein will be transmitted through said side openings into the chambers, and reflected therefrom in the manner substantially as described, and for the purpose specified.

3. In locomotive head-lights, a reflector having side openings therein, for the purpose set forth, in combination with the chambers G G, provided with a reflector and glass face and back, constructed substantially as described, and for the purpose specified.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 8th DAY OF OCTOBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Aldrich, H. C., Norwich, Conn. Revenue-recorder	208,677	Oct. 8	457	132	14	537
Allen, F. S., and H. C. Lane, Washington, D. C.; said Allen assignor to said Lane. Pliers	208,678	Oct. 8	458	132	14	537
Allen, I., and H. Chandler, Alfordsville, Ind.; said Allen assignor to said Chandler. Seed-dropper	208,781	Oct. 8	347	100	14	542
Armstrong, C. N., Montreal, Quebec, Canada, assignor of one-half interest to W. G. Warden, Philadelphia, Pa. Preserving meats	208,782	Oct. 8	347	.....	14	542
Armstrong, F. (See Vinton, J. H., assignor.)						
Atwood, A. L., assignor to E. Ingraham & Co., Bristol, Conn. Lock-works for clock-movements	208,702	Oct. 8	264	75	14	532
	208,703	Oct. 8	265	76	14	532
Avery, H., Burlington, Iowa. Transplanter	208,783	Oct. 8	348	100	14	542
Baird, W. F., assignor of one-half interest to J. J. Forney, Burlington, Iowa. Rotary churn	208,704	Oct. 8	266	76	14	532
Barclay, W. P., Virginia City, Nev. Hydraulic and wire-rope pumping system						
Bard, W. (See Plumb, S. L., assignor.)						
Baxter, C. M., Lebanon, N. H. Hot-air furnace	208,784	Oct. 8	349	100	14	543
Bazemore, M. S., Spring Garden, Ala. Rotary churn	208,705	Oct. 8	267	76	14	532
Beach, H. B., West Meriden, Conn. Ice-pitcher. (Reissue)	8,444	Oct. 8	402	133	14	557
Beach, H. B., West Meriden, Conn. Spoon-holder	208,706	Oct. 8	268	76	14	532
Beaman, S. A. (See Whitaker, E. A., assignor.)						
Beidler, G. A., Philadelphia, Pa. Lantern	208,785	Oct. 8	350	100	14	543
Bentley, H., *et al.* (See Nicholson, F. P., assignor.)						
Bergheld, A., New Ulm, and T. Forstner, Sigeltown, Minn. Corn-planter	208,668	Oct. 8	227	65	14	527
Blackwill, G. W., Cedar Rapids, Iowa. Churn	208,707	Oct. 8	269	77	14	532
Bohannan, W., Brooklyn, N. Y. Latch	208,708	Oct. 8	269	77	14	532
Borneman, A., and J. A. Shephard, assignors to Hocking Valley Manufacturing Company, Lancaster, Ohio. Feed-cutter						
Bowen, F., Barnhart's Mills, Pa. Pump for oil-wells	208,786	Oct. 8	351	101	14	543
Boyce, I. B., Lynn, Mass. Nut for vehicle-axles	208,709	Oct. 8	271	77	14	533
Boyce, I. B., Lynn, Mass. Preventing the loss of nuts from axles	208,667	Oct. 8	226	65	14	527
Boyd, C. S. (See Boyd, W. S., 3d, assignor.)	208,669	Oct. 8	228	65	14	527
Boyd, W. S., 3d, assignor of one-half interest to C. S. Boyd, Philadelphia, Pa. Shaft for vehicles						
Bradley, C. C. (See Deering, M., assignor.)	208,787	Oct. 8	352	101	14	543
Braun, J., Philadelphia, Pa. Lawn-mower	208,788	Oct. 8	352	102	14	543
Brokhahne, A. V., New York, N. Y. Razor-strop	208,670	Oct. 8	229	66	14	527
Brown, E., Milford, Mass. Machine for turning needle-blanks	208,712	Oct. 8	274	78	14	533
Brown, W. J., Jr., Philadelphia, Pa. Machine for inserting and clinching wire staples	208,789	Oct. 8	354	102	14	543
Browne, W. F., New York, N. Y., assignor to Hydrocarbon Steam Generating Company. Gas-retort	208,710	Oct. 8	271	77	14	533
Browne, W. F., New York, N. Y., assignor to Hydrocarbon Steam Generating Company. Steam-generator	208,711	Oct. 8	273	78	14	533
Browne, W. F., assignor to Hydrocarbon Steam Generating Company, New York, N. Y. Steam-generator	208,790	Oct. 8	355	102 / 103	14	544
	208,791	Oct. 8	362	103	14	544
Burgess, H., Royer's Ford, Pa. Covering for steam pipes, generators, &c.	208,792	Oct. 8	363	103	14	545
Burgess, H., Royer's Ford, Pa. Apparatus for making tubes of plastic material						
Candee & Co., L. (See Watkinson, G., assignor.)						
Carr, J., Minneapolis, Minn. Thill-coupling	208,671	Oct. 8	230	66	14	527
Carter, C. C., Decatur, Ill. Adjustable check-cutter	208,713	Oct. 8	276	78	14	533
Chandler, H. (See Allen and Chandler.)						
Chapman, R. W., Newark, N. J. Traveling-bag handle	208,793	Oct. 8	364	104	14	545
Clarke, H. (See Fletcher, T., assignor.)						
Clover, P. K., Columbus, Ohio. Coffin-torpedo	208,672	Oct. 8	231	66	14	527
Colie, G. W., Buffalo, N. Y. Rocking-chair	208,714	Oct. 8	277	78	14	533
Collins, A., New Vienna, Ohio. Device for removing dirt, &c., from steam-boilers	208,794	Oct. 8	365	104	14	545
Collins, F. K., Butler, Ind. Automatic fan	208,715	Oct. 8	278	79	14	533
Comstock, A. W., and R. A. Wallace, Mount Pleasant, Iowa. Iron fence-post	208,795	Oct. 8	366	104	14	545
Coolidge, C. W. (See Warren and Coolidge.)						
Coombes, J. A., *et al.* (See Moody, H. L., assignor.)						
Cottrell, C. B., Westerly, R. I. Delivery apparatus for printing-machines	208,796	Oct. 8	367	104 / 105	14	545
Cox, E. S., Jonesborough, Tenn. Millstone-dress	208,716	Oct. 8	278	79	14	534
Craig, W., New York, N. Y. Direct-acting steam-pump	208,797	Oct. 8	369	105	14	545
Crooker, G. A., Charlottesville, Va. Clothes-washer	208,798	Oct. 8	371	105	14	545
Crooks, T. R., assignor of two-thirds interest to H. N. Evans and C. C. Wilson, Philadelphia, Pa. Condenser	208,717	Oct. 8	279	79	14	534
Crum, G. H., Ladiesburg, Md. Feather-renovator	208,673	Oct. 8	232	66	14	528
Dare, C. W. F., Brooklyn, N. Y. Canopy-top for children's carriages	208,718	Oct. 8	280	80	14	534
Danmesnil, A. P. G., Paris, France. Product and method of coating and preserving metals	208,674	Oct. 8	233	.....	14	528
Davis, C. W. (See Davis, H. C. and C. W.)						
Davis, H. C. and C. W., Philadelphia, Pa. Hand-protector	208,799	Oct. 8	372	106	14	546
Davis, J. W. (See Listeman, P., assignor.)						
De Beer, J., Great Barrington, Mass. Steam, vapor, and medical bathing apparatus	208,666	Oct. 8	225	65	14	527

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Deering, M., assignor of three-fourths interest to C. C. Bradley, Syracuse, N. Y. Power-hammer	208,719	Oct. 8	321	80	14	534
Delamater, C. H., *et al.* (See Reynolds, G. H., assignor.)						
Derby, W. P., Northampton, Mass. Loom	208,675	Oct. 8	234	67	14	528
Deshon, D., Bucyrus, Ohio, assignor of one-half interest to F. W. Mader. Portable shower-bath	208,720	Oct. 8	322	80	14	534
Diehl, P. (See Miller and Diehl.)						
Diescher, F., New York, N. Y. Guard for bedsteads	208,721	Oct. 8	283	81	14	534
Dowling, T., Gloucester, Mass. Discharge-pipe for pump-spouts, faucets, &c.	208,722	Oct. 8	283	81	14	534
Dresoell, A., and E. H. and J. G. Voth, Cleveland, Ohio, assignors, by mesne assignments, to D. Dresoell and C. W. Voth. Head-light for locomotives. (Reissue)	8,447	Oct. 8	465	134	14	558
Dresoell, D., *et al.* (See Dresoell and Voth, assignors.) (Reissue.)						
Dumont, H. D. (See Eastman, W. W., assignor.)						
Dunklee, G. C., Boston, Mass. Stove-pipe damper	208,800	Oct. 8	373	106	14	546
Eason, R., Springville, Ohio. Cider-mill	208,723	Oct. 8	284	81, 82	14	535
Easterman, J. W. (See Flanigan, M. C. S., assignor.)						
Eastman, W. W., assignor of one-half interest to H. D. Dumont, Brooklyn, N. Y. Lamp-burner	208,801	Oct. 8	374	106	14	546
Eggers, S., and E. Pierce, New Bedford, Mass. Projectile for throwing lines	208,724	Oct. 8	286	82	14	535
Elliot, H., St. Louis, Mo. Railway-switch	208,802	Oct. 8	375	106	14	546
Elwell, A. H., assignor of one-half interest to S. H. Jacobus, Pittsburg, Pa. Sliding-door pull	208,725	Oct. 8	286	82	14	535
Esmond, E. R., trustee. (See Sisum, W. H. H., assignor.)						
Essig, J., Milford, Minn. Grain-separator	208,726	Oct. 8	288	82, 83	14	535
Evans, H. N., *et al.* (See Crooks, T. R., assignor.)						
Farnham, F. G., Hawley, Pa. Glove-fastening. (Reissue)	8,445	Oct. 8	462	133	14	558
Feeny, V. I., Brixton, England. Swing-stile recorder	208,727	Oct. 8	289	83	14	535
Fenton, J. H., Indianapolis, Ind. Device for cleaning horses	208,803	Oct. 8	376	107	14	546
Field, W. H., Port Chester, N. Y. Horse hay-rake	208,728	Oct. 8	291	83	14	535
Flanigan, M. C. S., assignor of one-third interest to J. W. Easterman, Cleveland, Ohio. Fire-escape	208,729	Oct. 8	291	83	14	535
Fletcher, T., Redditch, assignor to H. Clarke, London, England. Needle-case	208,676	Oct. 8	237	68	14	528
Forney, J. J. (See Baird, W. F., assignor.)						
Forstner, T. (See Berghold and Forstner.)						
Foye, W. H., San Francisco, Cal. Harvester	208,804	Oct. 8	377	107	14	546
France, G., Boston, Mass. Truss	208,805	Oct. 8	379	107	14	547
Frogatt, C., Stockport, England. Felting hat-bodies	208,806	Oct. 8	380	108	14	547
Gallot, J., assignor to Maguire, Gallot & Co., New York, N. Y. Toy	208,677	Oct. 8	239	68	14	528
Gardiner, C. O. (See Mast and Gardiner.)						
Gartman, D., York, Pa. Chopping or grinding mill	208,678	Oct. 8	239	68	14	528
Gillard, C., San Francisco, Cal. Child's table-tray	208,807	Oct. 8	380	108	14	547
Glenn, J. S., assignor of one-half interest to G. W. Hotchkiss and R. C. Lyons, Chicago, Ill. Stop-valve	208,808	Oct. 8	381	108	14	547
Godillot, A., Paris, France. Grate-bar for furnaces	208,730	Oct. 8	292	84	14	535
Gorman, J. J., Philadelphia, Pa. Sewer-inlet valve	208,809	Oct. 8	382	108	14	547
Graf, C. (See Hedges, Möller, and Graf.)						
Graves, W. H., Syracuse, N. Y. Spring-gun	208,810	Oct. 8	383	109	14	547
Gringmuth, H., Dresden, Saxony. Case for toilet articles, &c.	208,731	Oct. 8	293	84	14	535
Gurley, L. E., *et al.* (See Gurley, W., assignor.)						
Gurley, W., assignor to W. & L. E. Gurley, Troy, N. Y. Tripod-head for surveying-instruments	208,732	Oct. 8	294	85	14	536
Hadaway, W. S., Chiltonville, Mass. Waxing device for sewing-machines	208,679	Oct. 8	240	68	14	528
Hale, A. W., New York, N. Y. Picture-frame	208,681	Oct. 8	241	69	14	529
Handforth, B., Hoboken, N. J. Shade-roller	208,811	Oct. 8	384	109	14	547
Harper, J. M., El Paso, Ill. Base for stoves	208,812	Oct. 8	385	109	14	547
Harrington, D., Chicago, Ill. Step for mill-spindles	208,733	Oct. 8	295	85	14	536
Harrison, J., Cleveland, Ohio. Stove-pipe	208,813	Oct. 8	386	109	14	548
Haven, G. S., Racine, Wis. Plow	208,680	Oct. 8	241	69	14	529
Haworth, G. D., Decatur, Ill. Knot for check-row wires	208,814	Oct. 8	387	110	14	548
Haworth, G. D., Decatur, Ill. Knot for check-row cords	208,815	Oct. 8	387	110	14	548
Heavener, F., Laramie City, Wyo. Ter. Wind-engine	208,816	Oct. 8	388	110	14	548
Hedges, T., E. Möller, and C. Graf, Hamburg, Germany. Cuff	208,817	Oct. 8	390	111	14	548
Heebner, J. D. (See Hubbard and Heebner.)						
Hempstead, B., Little Rock, Ark. Lamp-burner	208,818	Oct. 8	390	111	14	548
Hilgers, J., Rheinbrohl, Prussia, Germany. Metallic roof-tile	208,819	Oct. 8	391	111	14	548
Hill, E. H., Worcester, Mass. Annealing-furnace	208,734	Oct. 8	296	85	14	536
Hocking Valley Manufacturing Company. (See Borneman and Shephard, assignors.)						
Holtiday, J., and J. Lambert, Brooklyn, assignors to W. Slack, Stapleton, N. Y. Utilizing tin-scrap and manufacture of stannates	208,735	Oct. 8	297	.....	14	536
Hopper, E., *et al.* (See Nicholson, F. S., assignor.)						
Hotchkiss, C. A., Bridgeport, Conn. Curry-comb. (Suspended)	208,879	Oct. 8	459	132	14	557
Hotchkiss, G. W., *et al.* (See Glenn, J. S., assignor.)						
Hubbard, M. G., Norristown, Pa. Grain cleaner and binder	208,736	Oct. 8	298	86	14	536
Hubbard, M. G., and J. D. Heebner, Norristown, Pa. Grain cleaner and binder	208,737	Oct. 8	299	86	14	536
Hubbard, W. C. (See Morrison and Hubbard.)						
Hubbell, A. Y., New York, N. Y. Vehicle-seat	208,820	Oct. 8	392	111	14	548
Hughes, B. R., Portage, Wis. Sash-fastener	208,821	Oct. 8	392	112	14	549
Hulings, M., Oil City, Pa. Heating apparatus for buildings	208,822	Oct. 8	393	112	14	549
Humphreys, J. W., Otterbein, Ind. Ditching-machine	208,682	Oct. 8	243	69	14	529
Husted, J. B., Vergennes, Vt. Machine for finishing horseshoe-nails	208,683	Oct. 8	244	70	14	529
Hydrocarbon Steam Generating Company. (See Browne, W. F., assignor.)						
Ingraham & Co., E. (See Atwood, A. L., assignor.)						
Jacobus, S. H. (See Elwell, A. H., assignor.)						
James, D. B., Visalia, Cal. One-track railway-car	208,738	Oct. 8	301	86	14	536
Jennings, J., Belfast, Ireland, Great Britain. Piano-stool	208,823	Oct. 8	395	112	14	549
Johnson, F. D. (See Snyder, J. F., assignor.)						
Jones, S. N., Rockford, Ill. Pump	208,739	Oct. 8	302	86	14	537
Joyce, J. L., New Haven, Conn. Boot and shoe	208,740	Oct. 8	302	87	14	537
Karback, C. L., *et al.* (See Moody, H. S., assignor.)						
Karel, L., Blue Earth City, Minn. Grain-binder	208,741	Oct. 8	303	87, 88	14	537
Keim, S. J., assignor of one-half interest to W. Younger, Catasauqua, Pa. Planter, cultivator, and fertilizer-distributer	208,824	Oct. 8	396	113	14	549
Keim, S. J., assignor of one-half interest to W. Younger, Catasauqua, Pa. Seed-dropper	208,825	Oct. 8	397	113	14	549
Kellogg, J. K. (See Morrison and Hubbard, assignors.)						
Kirk, J. S., assignor to himself and G. Ricker, New York, N. Y. Machine for making hay-meal	208,826	Oct. 8	397	113	14	549
Kirkbride, D. M., and M. Neil, Dayton, Ohio. Plashed fence	208,742	Oct. 8	307	88	14	537
Koch, P. P. E. M., Antwerp, Belgium. Apparatus for preserving food	208,743	Oct. 8	308	88	14	537

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Kottmann, B., Cincinnati, Ohio. Catch-basin	208,827	Oct. 8	398	114	14	549
Kremer, F. W., and T. G. Williams, Akron, Ohio. Oatmeal-machine	208,684	Oct. 8	247	70	14	529
Krueger, H. (See Whyler, E. M., assignor.)						
Krum, H., Cincinnati, Ohio. Pigment-furnace	208,828	Oct. 8	399	114	14	550
Kurz, C. F., Newark, N. J. Low-water indicator for steam-boilers	208,829	Oct. 8	399	114	14	550
Lambert, J. (See Holliday and Lambert.)						
Landis, H., Reading, Pa. Station-indicator	208,830	Oct. 8	400	115	14	550
Lane, H. C. (See Allen and Lane.)						
Lane, M., New York, N. Y. Ripening fruit	208,744	Oct. 8	309	88	14	537
Lauder, G., Pittsburg, Pa. Paper-folding machine	208,831	Oct. 8	401	115, 116	14	550
Lay, J., Olmsted Falls, Ohio. Broom	208,685	Oct. 8	249	71	14	530
Lenox, J. S., Gainesville, Tex. Fence	208,745	Oct. 8	309	89	14	537
Levy, A., Philadelphia, Pa. Gas-meter	208,686	Oct. 8	250	71	14	530
Lasteman, P., assignor to himself and J. W. Davis, Collinsville, Ill. Gate	208,746	Oct. 8	310	89	14	538
Love, S., Indianapolis, Ind. Potato-digger	208,747	Oct. 8	311	89	14	538
Ludlow, H. G., Troy, and J. Ward, assignors to Ludlow Valve Manufacturing Company, Lansingburg, N. Y. Slide-valve	208,687	Oct. 8	250	71	14	530
Ludlow Valve Manufacturing Company. (See Ludlow and Ward, assignors.)						
Luther, J. H., Karns City, Pa. Clamp for polish-rods of oil and other wells	208,832	Oct. 8	403	116	14	550
Lyons, R. C., *et al.* (See Glenn, J. S., assignor.)						
Mackert, J. (See Schleicher and Mackert.)						
Mader, F. W. (See Deshon, D., assignor.)						
Maguire, Gallot & Co. (See Gallot, J., assignor.)						
Manton, J. P., Providence, R. I. Steam steering apparatus	208,833	Oct. 8	404	117	14	551
Mast & Co., P. P. (See Mast and Gardiner, assignors.)						
Mast, P. P., and C. O. Gardiner, assignors to P. P. Mast & Co., Springfield, Ohio. Grain-drill feed	208,834	Oct. 8	407	117, 118	14	551
Mathieu, J. A., Bridesburg, Pa. Furnace for distilling wood and separating the products of distillation	208,835	Oct. 8	408	118, 119	14	551
May, D., Lumberton, N. C. Vehicle-wheel hub	208,748	Oct. 8	312	89	14	538
McCann, J. P., Wesson, Miss. Combination digging implement	208,749	Oct. 8	312	90	14	538
McColgan, D., San Francisco, Cal. Adjustable center-board	208,750	Oct. 8	313	90	14	538
McGill, G. W., New York, N. Y. Metallic paper-fastener	208,836	Oct. 8	413	119	14	552
Mellon, S., Cameron, W. Va. Vibrating churn	208,751	Oct. 8	318	91	14	538
Michelson, A., San Francisco, Cal. Button	208,752	Oct. 8	318	91	14	539
Michelson, A., San Francisco, Cal. Button-fastener	208,753	Oct. 8	319	91	14	539
Miles, P., New York, N. Y., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Fence barb and staple	208,688	Oct. 8	252	72	14	530
Miller, J. T., Urbana, Ohio. Wind-engine	208,837	Oct. 8	413	120	14	552
Miller, L. B., and P. Diehl, Elizabeth, N. J., assignors to Singer Manufacturing Company, New York, N. Y. Sewing-machine	208,838	Oct. 8	416	120, 121	14	552
Möller, E. (See Hedges, Möller, and Graf.)						
Moody, H. S., assignor of one-half interest to C. I. Karback and J. A. Coombes, Omaha, Nebr. Stock-car	208,839	Oct. 8	419	121	14	552
Morgan, E., Springfield, Mass. Rotary card-cutter	208,754	Oct. 8	320	91, 92	14	539
Morrison, H. A., Brooklyn, and W. C. Hubbard, New York; said Morrison assignor to J. K. Kellogg, Brooklyn, N. Y. Machine for fastening tips upon umbrella-ribs	208,840	Oct. 8	421	121, 122	14	552
Myers, C. E., Schoolcraft, Mich. Wind-engine	208,841	Oct. 8	422	122	14	553
Neil, M. (See Kirkbride and Neil.)						
Neil, M., Dayton, and W. Young, Columbus, Ohio. Plashed fence	208,755	Oct. 8	323	92	14	539
Neil, M., Dayton, and W. Young, Columbus, Ohio. Plashed fence	208,756	Oct. 8	324	92	14	539
Neil, M., Dayton, and W. Young, Columbus, Ohio. Plashed fence	208,757	Oct. 8	324	92	14	539
Newklrk, E. F., Newark, Ohio. Detachable book-cover	208,689	Oct. 8	253	72	14	530
Newton, S. S., Binghamton, N. Y. Bottle-stopper	208,690	Oct. 8	254	72	14	530
Newton, S. S., Binghamton, N. Y. Blacking-bottle	208,758	Oct. 8	325	93	14	539
Nicholson, F. P., Philadelphia, Pa., assignor to himself, E. Hopper, H. Bentley, and T. Williams, executors of C. Noble, deceased. Ornamental stove-plate	208,842	Oct. 8	423	122	14	553
Norcross, E. D., Cambridge, Mass. Draft-regulator for furnaces	208,759	Oct. 8	326	93	14	539
O'Regan, T., Willimantic, Conn. Blind-slat retainer	208,691	Oct. 8	255	72	14	530
Osborn, M. C. (See Smith and Osborn.)						
Patterson, C., Rock Island, Ill. Post-hole digger	208,760	Oct. 8	329	93	14	540
Pearse, M. C., Tabor, Iowa. Corn-husking implement	208,843	Oct. 8	423	123	14	553
Penrose, T., Chicago, Ill. Horseshoe	208,844	Oct. 8	424	123	14	553
Perkins, P. C., Mishawaka, Ind. Wind-engine. (Reissue)	8,443	Oct. 8	459	132, 133	14	557
Pierce, E. (See Eggers and Pierce.)						
Pitcher, A., Northville, Ill. Hog and sheep catcher	208,845	Oct. 8	425	123	14	553
Plumb, S. L., Portage, Wis., assignor to himself and W. Bard. Device for separating cream from milk	208,846	Oct. 8	426	123	14	553
Pohl, E. O., Philadelphia, Pa. Metallic awning	208,692	Oct. 8	255	73	14	530
Post, E. R., Newburg, N. Y. Collapsible pile-tube	208,761	Oct. 8	329	94	14	540
Pray, D., Boston, Mass. Sugar-train	208,693	Oct. 8	256	73	14	531
Proseus, A., Baltimore, Md. Thill-coupling	208,762	Oct. 8	330	94	14	540
Raiber, J., Baltimore, Md. Apparatus for cooling wort during fermentation	208,763	Oct. 8	331	94	14	540
Raiber, J., Baltimore, Md. Wort-cooling vat	208,764	Oct. 8	332	94	14	540
Rape, W. M., Notasulga, Ala. Seed-planter	208,847	Oct. 8	426	124	14	553
Rea, J. H. B., Trion Factory, Ga. Fertilizer-distributer	208,848	Oct. 8	427	124	14	553
Reuter, G. S., Sonora, Cal. Barley and malt drier	208,849	Oct. 8	428	124	14	553
Reynolds, G. H., assignor of two-thirds interest to C. H. Delamater and G. H. Robinson, New York, N. Y. Support for ropes for transmitting power	208,850	Oct. 8	428	124	14	554
Richter, R. (See Wendes, Vogt, and Richter.)						
Ricker, G. (See Kirk, J. S., assignor.)						
Riffe, S. T. (See Riffe, W. C., assignor.)						
Riffe, W. C., assignor to S. T. Riffe, Morton, Mo. Bee-hive	208,851	Oct. 8	430	125	14	554
Rosdell, R. T., Farley, Iowa. Scaffold	208,852	Oct. 8	431	125	14	554
Robinson, G. H., *et al.* (See Reynolds, G. H., assignor.)						
Rodgers, J. F., Philadelphia, Pa. Preservative wrapping and packing paper	208,853	Oct. 8	431	.....	14	554
Royse, J. D., Cane Valley, Ky. Combination garden-tool	208,854	Oct. 8	432	125	14	554
Russell, R. S., Brownsville, Tenn. Car-coupling	208,694	Oct. 8	257	73	14	531
Sabin, C. L., Washington, D. C. Butter-package	208,695	Oct. 8	258	74	14	531
Salter, J. H., St. Mary's, Pa. Magazine fire-arm	208,696	Oct. 8	259	74	14	531
Schleicher, C., and J. and J. Mackert, Springfield, Ohio. Machine for producing ventilation	208,855	Oct. 8	432	125, 126	14	554
Schürmann, W. R., Dusseldorf, Prussia. Machine for winding and trimming textile fabrics, &c.	208,856	Oct. 8	433	126	14	554
Scoville Manufacturing Company. (See Spruce, J., assignor.)						
Shephard, J. A. (See Borneman and Shephard.)						

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Singer Manufacturing Company. (See Miller and Diehl, assignors.)						
Sioum, W. H. H., assignor to E. R. Esmond, trustee, Brooklyn, N. Y. Car-truck	208,857	Oct. 8	435	126	14	554
Slack, W. (See Holliday and Lambert, assignors.)						
Slotterbek, C., Lakeport, Cal. Telescope attachment for fire-arms	208,765	Oct. 8	333	95	14	540
Smith, J. A., Deep River, Conn. Button-hook	208,858	Oct. 8	438	126	14	555
Smith, J. E., Buffalo, N. Y. Meat-cutter	208,859	Oct. 8	439	127	14	555
Smith, M. P., Waverly, Md. Brick-drying oven	208,766	Oct. 8	333	95, 96	14	540
Smith, U., Battle Creek, Mich. Folding seat for school-desks. (Reissue)	8,446	Oct. 8	464	133	14	558
Smith, W. H., and M. C. Osborn, Hightown, Ala. Lubricant	208,697	Oct. 8	260	.....	14	531
Smyth, S., Pittston, Pa. Grate for stoves and furnaces	208,767	Oct. 8	335	96	14	540
Snedeker, D., Jersey City, N. J. Box for dried fruit	208,698	Oct. 8	260	74	14	531
Snyder, J. F., assignor of one-half interest to F. D. Johnson, Culpeper, Va. Fence-post	208,860	Oct. 8	439	127	14	555
Sorenson, S. P., Rio Vista, Cal. Chair-brace	208,768	Oct. 8	335	96	14	541
Spelman, R., Newton, Iowa. Land-marker	208,769	Oct. 8	336	96	14	541
Spruce, J., assignor to Scoville Manufacturing Company, Waterbury, Conn. Spring-hinge	208,770	Oct. 8	337	97	14	541
Steel, R., Philadelphia, Pa. Velocipede	208,861	Oct. 8	440	127	14	555
Straub, T. F., Allegheny city, Pa. Vent-cock for beer-fermenting casks	208,771	Oct. 8	338	97	14	541
Stryker, S. G. (See Wells, J., assignor.)						
Swan, J., Seymour, Conn. Manufacture of auger-bits	208,862	Oct. 8	441	128	14	555
Taylor, W. H., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Lock	208,863	Oct. 8	442	128	14	555
Teal, D. E., Oneida, N. Y. Folding and tilting chair	208,864	Oct. 8	443	128	14	555
Toomey, P. J., Syracuse, N. Y. Cooking utensil	208,865	Oct. 8	444	129	14	555
Tripp, D. T., Waterloo, Ill. Bee-hive	208,772	Oct. 8	340	97	14	541
Trudeau, L., Lincoln, R. I. Rein-holder	208,866	Oct. 8	445	129	14	555
Tucker, H., Newton, assignor to B. W. Worley, Boston, Mass. Spring bed-bottom	208,867	Oct. 8	446	129	14	556
Tucker, W., East Brookfield, Mass. Cylindrical steam-boiler	208,868	Oct. 8	447	129	14	556
Tucker, W. L., Syracuse, N. Y. Truss	208,869	Oct. 8	448	130	14	556
Tyson, B., Washington, D. C. Washer and amalgamator for hydraulic mining	208,773	Oct. 8	340	98	14	541
Van Dorn, J. H., Cleveland, Ohio. Iron fence	208,699	Oct. 8	261	74, 75	14	531
Vinton, J. H., assignor to F. Armstrong, Bridgeport, Conn. Screw-cutting die and holder	208,870	Oct. 8	450	130	14	556
Vogt, A. (See Wendes, Vogt, and Richter.)						
Voth, C. W., *et al.* (See Dressell and Voth, assignors.) (Reissue.)						
Voth, E. H. (See Dressell and Voth.) (Reissue.)						
Voth, J. G. (See Dressell and Voth.) (Reissue.)						
Wait, O. E., Rockport, Mass. Spool and bobbin	208,774	Oct. 8	341	98	14	541
Wallace, R. A. (See Comstock and Wallace.)						
Ward, J. (See Ludlow and Ward.)						
Warden, W. G. (See Armstrong, C. N., assignor.)						
Warren, J. A., and C. W. Coolidge, Detroit, Mich. Reed-organ	208,775	Oct. 8	343	98	14	542
Washburn & Moen Manufacturing Company. (See Miles, P., assignor.)						
Watkinson, G., assignor to L. Candee & Co., New Haven, Conn. India-rubber boot and shoe	208,776	Oct. 8	344	98	14	542
Wells, J., Dunkirk, assignor to S. G. Stryker, Elmira, N. Y. Washing-machine	208,777	Oct. 8	344	99	14	542
Wendes, W., A. Vogt, and R. Richter, Greiffenberg, Silesia, Germany. Device for splitting cigar ends	208,871	Oct. 8	451	130	14	556
Wheeler, W. A., Indianapolis, Ind. Seaming-machine	208,872	Oct. 8	452	{130 {131	{14	556
Whitaker, E. A., Pawtucket, assignor of one-half interest to S. A. Beaman, Providence, R. I. Car-starter	208,778	Oct. 8	345	99	14	542
Whyler, E. M., assignor to H. Krueger, Hay's City, Kan. Liquid-measure	208,779	Oct. 8	346	99	14	542
Willard, W. B., New York, N. Y. Shuttle-motion for looms	208,873	Oct. 8	453	131	14	556
Williams, T., *et al.* (See Nicholson, F. P., assignor.)						
Williams, T. G. (See Kremer and Williams.)						
Wilson, C. C., *et al.* (See Crooks, T. R., assignor.)						
Winder, J. C., Raleigh, N. C. Car-indicator	208,780	Oct. 8	346	99	14	542
Wookey, H. E., Chicago, Ill. Window-screen	208,700	Oct. 8	262	75	14	531
Worley, B. W. (See Tucker, H., assignor.)						
Wright, W. H., North Tarrytown, N. Y. Harvester guard-finger	208,874	Oct. 8	454	131	14	557
Yale Lock Manufactoring Company. (See Taylor, W. H., assignor.)						
Young, W. (See Neil and Young.)						
Younger, W. (See Kelm, S. J., assignor.)						
Zierleyn, A., Grand Rapids, Mich. Brooch-fastening	208,875	Oct. 8	455	131	14	557
Zoebl, J. A., Milwaukee, Wis. Velocipede-propeller	208,876	Oct. 8	456	132	14	557
Zschech, G. H., Indianapolis, Ind. Feed-water heater, &c	208,701	Oct. 8	263	75	14	532

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 8th DAY OF OCTOBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Auger-bits. Manufacture of	J. Swan	208,862	Oct. 8	441	128	14	555
Awning. Metallic	E. O. Pohl	208,692	Oct. 8	255	73	14	530
Axle nut. Vehicle-	I. B. Boyce	208,667	Oct. 8	226	65	14	527
Axles. Means for preventing the loss of nuts from	I. B. Boyce	208,669	Oct. 8	228	65	14	527
Barley and malt drier	G. S. Reuter	208,849	Oct. 8	428	124	14	553
Basin. Catch-	B. Kottmann	208,827	Oct. 8	398	114	14	549
Bath. Portable shower-	D. Deshon	208,720	Oct. 8	282	80	14	534
Bathing apparatus. Steam, vapor, and medical	J. De Beer	208,666	Oct. 8	225	65	14	527
Bed-bottom. Spring	H. Tucker	208,867	Oct. 8	446	129	14	556
Bedstead-guard	F. Diescher	208,721	Oct. 8	283	81	14	534
Bee-hive	W. C. Riffe	208,851	Oct. 8	430	125	14	554
Bee-hive	D. T. Tripp	208,772	Oct. 8	340	97	14	541
Blind-slat retainer	T. O'Regan	208,691	Oct. 8	255	72	14	530
Boiler. Cylindrical steam-	W. Tucker	208,868	Oct. 8	447	129	14	556
Boilers. Device for removing dirt, &c., from steam-	A. Collins	208,794	Oct. 8	365	104	14	545
Book-cover. Detachable	E. F. Newkirk	208,689	Oct. 8	253	72	14	530
Boot and shoe	J. L. Joyce	208,740	Oct. 8	302	87	14	537
Boot and shoe. India-rubber	G. Watkinson	208,776	Oct. 8	344	98	14	542
Bottle. Blacking-	S. S. Newton	208,758	Oct. 8	325	93	14	539
Bottle-stopper	S. S. Newton	208,690	Oct. 8	254	72	14	530
Brick-drying oven	M. P. Smith	208,766	Oct. 8	333	95, 96	14	540
Brooch-fastening	A. Zierleyn	208,875	Oct. 8	455	131	14	557
Broom	J. Lay	208,685	Oct. 8	249	71	14	530
Butter-package	C. L. Sabin	208,695	Oct. 8	258	74	14	531
Button	A. Michelson	208,752	Oct. 8	318	91	14	539
Button-fastener	A. Michelson	208,753	Oct. 8	319	91	14	539
Button-hook	J. A. Smith	208,858	Oct. 8	438	126	14	555
Car-coupling	R. S. Russell	208,694	Oct. 8	257	73	14	531
Car. One-track railway-	D. B. James	208,738	Oct. 8	301	86	14	536
Car-starter	E. A. Whitaker	208,778	Oct. 8	345	99	14	542
Car. Stock	H. S. Moody	208,839	Oct. 8	419	121	14	552
Card-cutter. Rotary	E. Morgan	208,754	Oct. 8	320	91, 92	14	539
Carriages. Canopy-top for children's	C. W. F. Dare	208,718	Oct. 8	280	80	14	534
Center-board. Adjustable	D. McColgan	208,750	Oct. 8	313	90	14	538
Chair-brace	S. P. Sorenson	208,768	Oct. 8	335	96	14	541
Chair. Folding and tilting	D. E. Teal	208,864	Oct. 8	443	128	14	555
Chair. Rocking-	G. W. Collie	208,714	Oct. 8	277	78	14	533
Check-cutter. Adjustable	C. C. Carter	208,713	Oct. 8	276	78	14	533
Check-row cords. Knot for	G. D. Haworth	208,815	Oct. 8	387	110	14	548
Check-row wires. Knot for	G. D. Haworth	208,814	Oct. 8	387	110	14	548
Churn	G. W. Blackwill	208,707	Oct. 8	269	77	14	532
Churn. Rotary	W. F. Baird	208,763	Oct. 8	348	100	14	542
Churn. Rotary	M. S. Bazemore	208,705	Oct. 8	267	76	14	532
Churn. Vibrating	S. Mellon	208,751	Oct. 8	318	91	14	538
Cigar-ends. Device for splitting	W. Wendes, A. Vogt, and R. Richter	208,871	Oct. 8	451	130	14	556
Clock-movements. Lock-work for	A. L. Atwood	208,702	Oct. 8	264	75	14	532
Cock for beer-fermenting casks. Vent-	T. F. Straub	208,771	Oct. 8	338	97	14	541
Coffin-torpedo	P. K. Clover	208,672	Oct. 8	231	66	14	527
Condenser	T. R. Crooks	208,717	Oct. 8	279	79	14	534
Cooking utensil	P. J. Toomey	208,865	Oct. 8	444	129	14	555
Corn-husking implement	M. C. Pearse	208,843	Oct. 8	423	123	14	553
Cuff	T. Hedges, E. Möller, and C. Graf	208,817	Oct. 8	390	111	14	548
Curry-comb	C. A. Hotchkiss. (Suspended)	208,879	Oct. 8	459	132	14	557
Desks. Folding seat for school-	U. Smith. (Reissue)	8,446	Oct. 8	464	133	14	557
Digging implement. Combination	J. P. McCann	208,749	Oct. 8	312	90	14	538
Ditching-machine	J. W. Humphreys	208,682	Oct. 8	243	69	14	529
Door pull. Sliding-	A. H. Elwell	208,725	Oct. 8	287	82	14	535
Drill feed. Grain-	P. P. Mast and C. O. Gardiner	208,834	Oct. 8	407	{117 {118	{14	551
Engine. Wind-	F. Heavener	208,816	Oct. 8	388	110	14	548
Engine. Wind-	J. T. Miller	208,837	Oct. 8	413	120	14	552
Engine. Wind-	C. E. Myers	208,841	Oct. 8	422	122	14	553
Engine. Wind-	P. C. Perkins. (Reissue)	8,443	Oct. 8	459	{132 {133	{14	557
Fan. Automatic	F. K. Collins	208,715	Oct. 8	278	79	14	533
Feather-renovator	G. H. Crum	208,673	Oct. 8	232	66	14	528
Feed-cutter	A. Borneman and J. A. Shephard	208,786	Oct. 8	351	101	14	543
Feed-water heater	G. H. Zschech	208,701	Oct. 8	263	75	14	532
Fence	J. S. Lenox	208,745	Oct. 8	309	89	14	537
Fence barb and staple	P. Miles	208,688	Oct. 8	252	72	14	530
Fence. Iron-	J. H. Van Dorn	208,699	Oct. 8	261	74, 75	14	531

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fence. Flashed	D. M. Kirkbride and M. Neil	208,742	Oct. 8	307	88	14	537
Fence. Flashed	M. Neil and W. Young	208,755	Oct. 8	323	92	14	539
Fence. Flashed	M. Neil and W. Young	208,756	Oct. 8	324	92	14	539
Fence. Flashed	M. Neil and W. Young	208,757	Oct. 8	324	92	14	539
Fence-post	J. F. Snyder	208,860	Oct. 8	439	127	14	555
Fence-post. Iron	A. W. Comstock and R. A. Wallace	208,795	Oct. 8	366	104	14	545
Fertilizer-distributer	J. H. B. Rea	208,848	Oct. 8	427	124	14	553
Fire-arm. Magazine	J. H. Salter	208,696	Oct. 8	259	74	14	531
Fire-arms. Telescope attachment for	C. Slotterbek	208,765	Oct. 8	333	95	14	540
Fire-escape	M. C. S. Flanigan	208,729	Oct. 8	291	83	14	535
Food. Apparatus for preserving	P. P. E. M. Koch	208,743	Oct. 8	308	88	14	537
Fruit. Box for dried	D. Snedeker	208,698	Oct. 8	260	74	14	531
Fruit. Process for ripening	M. Lane	208,744	Oct. 8	309	88	14	537
Furnace. Annealing	E. H. Hill	208,734	Oct. 8	296	85	14	536
Furnace draft-regulator	E. D. Norcross	208,759	Oct. 8	326	93	14	539
Furnace for distilling wood and separating the products of distillation	J. A. Mathieu	208,835	Oct. 8	408	118 / 119	14	551
Furnace grate-bar	A. Godillot	208,730	Oct. 8	292	84	14	535
Furnace. Hot-air	C. M. Baxter	208,784	Oct. 8	349	100	14	543
Furnace. Pigment	H. Krum	208,828	Oct. 8	399	114	14	550
Gas-meter	A. Levy	208,686	Oct. 8	250	71	14	530
Gas-retort	W. F. Browne	208,710	Oct. 8	271	77	14	533
Gate	P. Listeman	208,746	Oct. 8	310	89	14	538
Glove-fastening	F. G. Farnham. (Reissue)	8,445	Oct. 8	462	133	14	557
Grain-binder	I. Karel	208,741	Oct. 8	303	87, 88	14	537
Grain gleaner and binder	M. G. Hubbard	208,736	Oct. 8	298	86	14	536
Grain gleaner and binder	M. G. Hubbard and J. D. Heebner	208,737	Oct. 8	299	86	14	536
Grain-separator	J. Essig	208,726	Oct. 8	288	82, 83	14	535
Gun. Spring	W. H. Graves	208,810	Oct. 8	383	109	14	547
Hammer. Power	M. Deering	208,719	Oct. 8	281	80	14	534
Hand-protector	H. C. and C. W. Davis	208,799	Oct. 8	372	106	14	546
Harvester	W. H. Foye	208,804	Oct. 8	377	107	14	546
Harvester guard-finger	W. H. Wright	208,874	Oct. 8	454	131	14	557
Hat-bodies. Felting	C. Froggatt	208,806	Oct. 8	380	108	14	547
Hay-meal. Machine for making	J. S. Kirk	208,826	Oct. 8	397	113	14	549
Head-light. Locomotive	A. Dressel and E. H. and J. G. Voth. (Reissue.)	8,447	Oct. 8	465	134	14	557
Heating apparatus for buildings	M. Hullugs	208,822	Oct. 8	393	112	14	549
Hinge. Spring	J. Spruce	208,770	Oct. 8	337	97	14	541
Hog and sheep catcher	A. Pitcher	208,845	Oct. 8	425	123	14	553
Horses. Device for cleaning	J. H. Fenton	208,803	Oct. 8	376	107	14	546
Horseshoe	T. Penrose	208,844	Oct. 8	424	123	14	553
Horseshoe-nail-finishing machine	J. B. Husted	208,663	Oct. 8	244	70	14	529
Hub. Vehicle-wheel	D. May	208,748	Oct. 8	312	89	14	538
Indicator. Car	J. C. Winder	208,780	Oct. 8	346	99	14	542
Indicator for steam-boilers. Low-water	C. F. Kurz	208,829	Oct. 8	399	114	14	550
Indicator. Station	H. Landis	208,830	Oct. 8	400	115	14	550
Lamp-burner	W. W. Eastman	208,801	Oct. 8	374	106	14	546
Lamp-burner	B. Hempstead	208,818	Oct. 8	390	111	14	548
Land-marker	R. Spelman	208,769	Oct. 8	336	96	14	541
Lantern	G. A. Beidler	208,785	Oct. 8	350	100	14	543
Latch	W. Bohannan	208,708	Oct. 8	269	77	14	532
Liquid-measure	E. M. Whyler	208,779	Oct. 8	346	99	14	542
Lock	W. H. Taylor	208,863	Oct. 8	442	128	14	555
Loom	W. P. Derby	208,675	Oct. 8	234	67	14	528
Loom-shuttle motion	W. B. Willard	208,873	Oct. 8	453	131	14	556
Lubricant	W. H. Smith and M. C. Osborn	208,697	Oct. 8	260	.....	14	531
Meat-cutter	J. E. Smith	208,859	Oct. 8	439	127	14	555
Meats. Preserving	C. N. Armstrong	208,782	Oct. 8	347	.....	14	542
Metals. Product and method of coating and preserving	A. P. G. Daunesuil	208,674	Oct. 8	233	.....	14	528
Milk. Device for separating cream from	S. L. Plumb	208,846	Oct. 8	426	123	14	553
Mill. Chopping and grinding	D. Gartman	208,672	Oct. 8	239	68	14	528
Mill. Cider	R. Eason	208,723	Oct. 8	284	81, 82	14	535
Mill-spindle step	D. Harrington	208,733	Oct. 8	295	85	14	536
Millstone-dress	E. S. Cox	208,716	Oct. 8	278	79	14	534
Mining. Washer and amalgamator for hydraulic	B. Tyson	208,773	Oct. 8	340	98	14	541
Mower. Lawn	J. Braun	208,788	Oct. 8	352	102	14	543
Needle-blanks. Machine for turning	E. Brown	208,712	Oct. 8	274	78	14	533
Needle-case	T. Fletcher	208,676	Oct. 8	237	68	14	528
Oatmeal-machine	F. W. Kremer and T. G. Williams	208,684	Oct. 8	247	70	14	529
Organ. Reed	J. A. Warren and C. W. Coolidge	208,775	Oct. 8	343	98	14	542
Paper-fastener. Metallic	G. W. McGill	208,836	Oct. 8	413	119	14	552
Paper-folding machine	G. Lauder	208,831	Oct. 8	401	115 / 116	14	550
Paper. Preservative wrapping and packing	J. F. Rodgers	208,853	Oct. 8	431	.....	14	554
Piano-stool	J. Jennings	208,823	Oct. 8	395	112	14	549
Picture-frame	A. W. Hale	208,681	Oct. 8	241	69	14	529
Pipes, generators, &c. Covering for steam	H. Burgess	208,791	Oct. 8	362	103	14	544
Pitcher. Ice	H. B. Beach. (Reissue)	8,444	Oct. 8	462	133	14	557
Planter. Corn	A. Berghold and T. Forstner	208,668	Oct. 8	227	65	14	527
Planter, cultivator, and fertilizer-distributer	S. J. Kein	208,824	Oct. 8	396	113	14	549
Planter. Seed	W. M. Rape	208,847	Oct. 8	426	124	14	553
Pliers	F. S. Allen and H. C. Lane	208,678	Oct. 8	458	132	14	557
Plow	G. S. Haven	208,680	Oct. 8	241	69	14	529
Post-hole digger	C. Patterson	208,760	Oct. 8	329	93	14	540
Potato-digger	S. Love	208,747	Oct. 8	311	89	14	538
Power. Support for ropes for transmitting	G. H. Reynolds	208,850	Oct. 8	428	124	14	554
Printing-machines. Delivery apparatus for	C. B. Cottrell	208,796	Oct. 8	367	104 / 105	14	545
Projectile for throwing lines	S. Eggers and E. Pierce	208,724	Oct. 8	286	82	14	535
Pump	S. N. Jones	208,739	Oct. 8	302	86	14	537
Pump. Direct-acting steam	W. Craig	208,797	Oct. 8	369	105	14	545
Pump. Oil-well	F. Bowen	208,709	Oct. 8	271	77	14	533
Pump-spouts, faucets, &c. Discharge-pipe for	T. Dowling	208,722	Oct. 8	283	81	14	534
Pumping system. Hydraulic and wire-rope	W. P. Barclay	208,704	Oct. 8	266	76	14	532
Railway-switch	H. Elliot	208,802	Oct. 8	375	106	14	546
Rake. Horse hay	W. H. Field	208,728	Oct. 8	291	83	14	535

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Razor-strop	A. V. Brokhahne	208,670	Oct. 8	229	66	14	527
Rein-holder	L. Trudeau	208,866	Oct. 8	445	129	14	555
Revenue-recorder	H. C. Aldrich	208,877	Oct. 8	457	132	14	557
Roof-tile. Metallic	J. Hilgers	208,819	Oct. 8	391	111	14	548
Sash-fastener	R. B. Hughes	208,821	Oct. 8	392	112	14	549
Scaffold	R. T. Roadell	208,852	Oct. 8	431	125	14	554
Screen. Window	H. E. Wookey	208,700	Oct. 8	262	75	14	531
Screw-cutting die and holder	J. H. Vinton	208,870	Oct. 8	450	130	14	556
Seaming-machine	W. A. Wheeler	208,872	Oct. 8	452	130 / 131	14	556
Seed-dropper	I. Allen and H. Chandler	208,781	Oct. 8	347	100	14	542
Seed-dropper	S. J. Kelm	208,825	Oct. 8	397	113	14	549
Sewer-inlet valve	J. J. Gorman	208,809	Oct. 8	382	108	14	547
Sewing-machine	L. B. Miller and P. Diehl	208,838	Oct. 8	416	120 / 121	14	552
Sewing-machine waxing device	W. S. Hadaway	208,679	Oct. 8	240	68	14	528
Shade-roller	R. Handforth	208,811	Oct. 8	384	109	14	547
Shafts. Vehicle	W. S. Boyd, 3d	208,787	Oct. 8	352	101	14	543
Spool and bobbin	O. E. Walt	208,774	Oct. 8	341	98	14	541
Spoon-holder	H. B. Beach	208,706	Oct. 8	268	76	14	532
Staples. Machine for inserting and clinching wire	W. J. Brown, Jr.	208,789	Oct. 8	354	102	14	543
Steam-generator	W. F. Browne	208,711	Oct. 8	273	78	14	533
Steam-generator	W. F. Browne	208,790	Oct. 8	355	102 / 103	14	544
Steering apparatus. Steam	J. P. Manton	208,833	Oct. 8	404	117	14	551
Stove and furnace grate	S. Smyth	208,767	Oct. 8	335	96	14	540
Stove-base	J. M. Harper	208,812	Oct. 8	385	109	14	547
Stove-pipe	J. Harrison	208,813	Oct. 8	386	109	14	548
Stove-pipe damper	G. C. Dunklee	208,800	Oct. 8	373	106	14	546
Stove-plate. Ornamental	F. P. Nicholson	208,842	Oct. 8	423	122	14	553
Sugar-train	D. Pray	208,693	Oct. 8	256	73	14	531
Surveying-instruments. Tripod-head for	W. Gurley	208,732	Oct. 8	294	85	14	536
Swingetile-recorder	V. I. Feeny	208,727	Oct. 8	289	83	14	535
Thill-coupling	J. Carr	208,671	Oct. 8	230	66	14	527
Thill-coupling	A. Prosens	208,762	Oct. 8	330	94	14	540
Tin-scrap and manufacture of stannates. Utilizing	J. Holliday and J. Lambert	208,735	Oct. 8	297	.....	14	536
Toilet articles, &c. Case for	H. Gringmuth	208,731	Oct. 8	293	84	14	535
Tool. Combination garden	J. D. Royse	208,854	Oct. 8	432	125	14	554
Toy	J. Gallot	208,677	Oct. 8	239	68	14	528
Transplanter	H. Avery	208,703	Oct. 8	265	76	14	532
Traveling-bag handle	R. W. Chapman	208,793	Oct. 8	364	104	14	545
Tray. Child's table	C. Gillard	208,807	Oct. 8	380	108	14	547
Truck. Car	W. H. H. Sisum	208,857	Oct. 8	435	126	14	554
Truss	G. France	208,805	Oct. 8	379	107	14	547
Truss	W. L. Tucker	208,869	Oct. 8	448	130	14	556
Tube. Collapsible pile	E. R. Post	208,761	Oct. 8	329	94	14	540
Tubes of plastic material. Apparatus for making	H. Burgess	208,792	Oct. 8	363	103	14	545
Umbrella-ribs. Machine for fastening tips upon	H. A. Morrison and W. C. Hubbard	208,840	Oct. 8	421	121 / 122	14	552
Valve. Slide	H. G. Ludlow and J. Ward	208,687	Oct. 8	250	71	14	530
Valve. Stop	J. S. Glenn	208,808	Oct. 8	381	108	14	547
Vehicle-seat	A. Y. Hubbell	208,820	Oct. 8	392	111	14	548
Velocipede	R. Steel	208,861	Oct. 8	440	127	14	555
Velocipede-propeller	J. A. Zoebl	208,876	Oct. 8	456	132	14	557
Ventilation. Machine for producing	C. Schleicher and J. and J. Mackert	208,855	Oct. 8	432	125 / 126	14	554
Washer. Clothes	G. A. Crooker	208,798	Oct. 8	371	105	14	545
Washing-machine	J. Wells	208,777	Oct. 8	344	99	14	542
Wells. Clamp for polish-rods of oil and other	J. H. Luther	208,832	Oct. 8	403	116	14	550
Winding and trimming textile fabrics, &c. Machine for	W. R. Schürmann	208,856	Oct. 8	433	126	14	554
Wort-cooling vat	J. Raiber	208,764	Oct. 8	332	94	14	540
Wort during fermentation. Apparatus for cooling	J. Raiber	208,763	Oct. 8	331	94	14	540

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DECISIONS OF THE COURTS.

Circuit Court of the United States—Northern District of New York.

WILLIAM C. BARKER *vs.* DELARAINE F. STOWE.

A solid rubber chain-pump bucket bearing tightly upon the well-tube bore, with slightly convex (hemispherical) upper surface and with a drip-hole through the bucket length (Reissue No. 6,531, W. C. Barker, July 6, 1875) is infringed by a solid cylindro-conical metal bucket having a like drip-hole and incased in a rubber covering; the cylindrical portion of the bucket fitting the tube-bore, while the cone is superposed. (Patent No. 160,125, D. F. Stowe, February 23, 1875.)

In both, the contour and elasticity of the bucket permit ready adjustment to irregularities in the tube and hold it in place with the pump at rest, whilst the drip-hole allows the retained water to escape below.

It is of no moment that the perforation in defendant's bucket being nearer the bearing-rim insures the more complete discharge of the water. The function is not different in the new position, nor does the change involve more than mechanical skill.

Mere applications for patent cannot be considered on the question of novelty. To make the things described and shown in them available, there must be evidence that such things were actually constructed in working form.

Plaintiff's patent (Reissue 6,531, original No. 116,138, June 20, 1871) declared void by reason of prior knowledge and public use of a bucket possessing the substantial characteristics of that set forth and claimed.

[*George E. Buckley*, for the plaintiff; *Walter L. Dailey*, for the defendant.]

BLATCHFORD, *J.*:

This suit brought on reissued letters patent granted to the plaintiff July 6, 1875, for an "improvement in buckets for chain-pumps," the original letters patent having been issued to the plaintiff June 20, 1871, and having been reissued to him May 19, 1874. The specification says:

Prior to my invention there was not, so far as I am aware, in use an elastic bucket provided with a means whereby the water remaining above the bucket could escape back into the well when the pump was not in use. The great difficulty heretofore experienced in that class of pumps where the water is drawn up by an elastic bucket tightly fitting the bore of the tube, has been the continued freezing, in cold weather, of the water remaining in the pump-tube when the pump was not in operation, which in many cases would split or otherwise injure the wooden tube and the working parts of the pump to an extent that would render the same wholly worthless. To remedy this evil is the principal object of my invention; and it therefore consists in providing the bucket with a suitable outlet or opening through which the water is allowed to escape from the pump-tube down to the source of supply when the pump is not in use. My invention also consists of a solid bucket of india-rubber or other similarly elastic material, convex or contracted upward from that part of its outer periphery which comes in contact with the interior of the pump-tube, by which I am enabled to present an elastic edge or bearing that will readily yield to any irregularity or slight differences in the interior diameter of the pump-tube, and admit of its being easily drawn up, while at the same time it will resist moving downward.

The specification states that the largest circumference of the bucket is somewhat greater than the bore of the pump-tube; that the bucket is convex or contracted upward from that part of its outer periphery which comes in contact with the interior of the pump-tube, thereby forming an elastic edge or bearing-surface that will yield sufficiently to be easily drawn through the tube, while at the same time, if by any accident the operator releases his hold of the crank over which the chain runs, the bucket will not drop in the tube, but will remain where the accident left it, or, in other words, the shape or form described, together with the fact that its largest circumference is at that point where it comes in contact with the interior of the pump-tube, will readily allow it to be drawn upward, and prevent its being drawn downward or forced in the latter direction by the weight of water above it; and that he provides the bucket with an aperture or suitable outlet, so that when the bucket is stationary the water remaining above it is allowed to escape back into the well or source of supply, thereby preventing the possibility of the water freezing in the tube and splitting or otherwise injuring the same.

The specification then sets forth the arrangement of a button or washer and loop-link, to which the bucket is attached, to make it operative with the chain. It then adds:

I am aware that elastic buckets composed of a hollow sphere are not new, and I am also aware that it is not new to provide metal pail-buckets with an opening, so that, when standing, any water remaining in them will be allowed to escape for the purpose of insuring a fresh supply of water from the well when the buckets are raised. I do not, therefore, claim such construction of buckets.

The first two claims of the patent are as follows:

1. An elastic bucket for chain-pumps, adapted to fit and work in the bore of a pump-tube to raise the water by suction, provided with a suitable orifice or outlet through which the water remaining in the pump-tube above the bucket is allowed to escape down to the source of supply, substantially as and for the purpose set forth.

2. A solid elastic bucket, having an elastic bearing-edge and its upper portion convex or contracted from said edge, whereby the bucket will readily yield to any irregularities in the pump-tube and admit of its being easily drawn up, while at the same time it will resist moving downward, substantially as and for the purpose specified.

There are four figures of drawings accompanying and referred to in the specification. Figure 1 is a perspective view of the improved bucket, with its loop and button. Fig. 2 is a plan view of the button. Fig. 3 is a plan of the loop before insertion through the bucket and button. Fig. 4 is a vertical section of the bucket in position for use. The aperture or outlet for the water above the bucket is shown in the drawings as a perpendicular cylindrical passage through the body of the bucket, commencing in the outer curved surface of the bucket, which is shown as a hemisphere, at a point about one-third of the way from the highest point of the curve to its lowest point, the passage being parallel to the upright parts of the link which passes through the bucket. The passage is continued through the button or washer, which is held up against the horizontal face of the bucket by the turned-up lower ends of the loop-link.

The defendant has made and sold buckets for chain-pumps described in letters patent granted to him February 23, 1875, for an "improvement in buckets for chain-pumps." He has an india-rubber shell of a cylindro-conical form—that is, a small portion of the shell extending upward from the outer lower circular edge is cylindrical and fits the bore of the pump-tube, and the portion above the cylindrical portion is conical in form, receding upward from the bore of the pump-tube and has a hole through its apex. The bottom side of the shell is beveled inwardly from a circle concentric with the circle forming the outer lower edge, and a short distance inward from it, the bevel extending to the inner surface of the shell. Thus, provision is made for inserting in the shell a solid conical metal cone, which is closely embraced by the inner surface of the shell above the inner termination of the bevel, while the free part of the shell below the inner termination of the bevel forms a highly-elastic skirting, which accommodates itself closely to the bore of the pump-tube. The skirting is formed substantially of the cylindrical part of the shell. The metal cone has an eye on each end to attach the bucket to the chain-links, and a small up-and-down passage is made through the skirting to allow the water in the pump-barrel to pass down when the pump is not in operation. The patent claims the chain-pump bucket described, having the cylindro-conical elastic shell fitted to the solid cone, substantially as and for the purpose set forth.

It is contended by the defendant that matter is found in the reissue which is not in the original patent of 1871. The drawings are identical, and there is nothing either in the specification or the claims of the reissue which is not justified by what is found in the description or drawings of the original patent. The defendant's bucket infringed claims one and two of the plaintiff's patent. It is an elastic bucket for a chain-pump. It is adapted to fit and work in the bore of a pump-tube to raise water by suction. It is provided with a suitable orifice or outlet through which the water remaining in the pump-tube above the bucket is allowed to escape down to the source of supply. The fact that in the defendant's bucket the passage for the drip of the water is through the skirting outside of the metal cone, or is a notch in the outer edge of the skirting, and thus will drain off more of the water than will be in the construction shown in the plaintiff's drawing, does not relieve the defendant's bucket from being an infringement of the first claim of the plaintiff's patent. Nor does the fact that a narrow ring of water below the upper end of the passage-way in the plaintiff's bucket may remain between the outer surface of the bucket and the inner surface of the pump-tube effect the validity of the plaintiff's patent. His object was to get rid of the column of water above the tightly-fitting bucket, and he accomplishes that result substantially. It is not shown that in fact actual difficulty has resulted from the freezing of the narrow ring of water left in the plaintiff's construction, and if that had been shown, the cutting of the passage-way nearer to the inner surface of the pump-tube is an obvious suggestion not involving invention, and within the scope of the plaintiff's instruction, and to which he is entitled as the result of the practical working of his apparatus. The defendant's bucket is a solid elastic bucket having an elastic bearing-edge in all the practical respects in which the plaintiff's bucket is a solid elastic bucket having an elastic bearing-edge. The defendant's bucket has an elastic bearing-edge in the cylindrical part of the india-rubber shell, and the conical upper part of the shell is contracted from said edge, so that the bucket readily yields to any irregularities in the pump-tube and can be easily drawn up, while it resists downward movement. It does not effect the validity of the plaintiff's patent, or the question of infringement, that in practice the plaintiff's bucket may be used with a ratchet to counteract the downward movement of the bucket induced by the weight of the column of water in the pump-tube, or that in practice the defendant's bucket may be used with such ratchet. In each the tendency and operation of the bearing-edge, when the bucket is left free to descend with the pressure on it of a column of water above it, are to resist and retard the downward movement.

The plaintiff's patent is attacked for want of novelty. The defendant offered in evidence, under objection from the plaintiff that they were incompetent, five several applications for patents filed in the Patent Office: Edwin Gilbert, filed February 10, 1849, rejected May 21, 1849; A. G. Babcock, filed September 20, 1851; J. Powers, filed January 26, 1852; C. F. Baragar, filed June 30, 1859; and Orin O. Witherell, filed November 10, 1866. The defendant also put in evidence letters patent granted to Clark Polley, December 14, 1852; to Edmund Morris, January 23, 1855; to Arcalous Wyckoff, April 3, 1855; to Birdsill Holly, July 14, 1857; to John D. Clark, December 23, 1862; and to Ernest R. Austin, October 2, 1866.

Mere applications for patents cannot be considered on the question of novelty. To make the things described and shown in them available, there must be evidence that such things were actually constructed in working form.

The patent to Polley shows a ball-bucket with no bearing-edge and no provision for drip; the patent to Morris shows a ring with no bearing-edge and no drip-hole; Wyckoff's patent shows no bearing-edge and no drip-hole; while Holly's pump has an escape for the surplus water, his arrangement is different from that of the plaintiff, and he has not an elastic bucket with a bearing-edge, nor has he a water-escape through an elastic bucket; Clark's patent shows no bearing-edge and no water-escape; Austin's patent shows no suction-pump and no pump-tube. I find among the papers a patent granted to Orin O. Witherell, October 13, 1868. It is not mentioned in the answer, nor can I find that it was introduced in evidence. It it is to be considered, it has no bearing-edge and no water-escape.

Orin O. Witherell, the same person mentioned above, has given evidence as to pump-buckets constructed by him prior to the plaintiff's invention. He introduces an exhibit, A, as representing a form of bucket which he made and sold for five months in the year 1866. It has a thin india-rubber disk placed loosely above a metal disk, and the edge of the rubber disk forms a flange which extends downward and embraces part of the depth of the metal disk. The rubber disk has a hole in the center through which a metal eye fastened to the upper part of the metal disk passes. He testifies that the settling down of the chain when the pumping was stopped, allowed the water above to escape through the hole in the center of the rubber disk. His application of November 10, 1866, and his patent of October 13, 1868, showed no device such as is shown in Exhibit A. They showed only a rubber or elastic plate clamped tightly between two metal plates and thus expanded to fit the pump-tube. Witherell testified that he put the buckets like Exhibit A particularly into worn pump-tubes which had had only the metal plate buckets; that between April and August, 1866, he put buckets like Exhibit A into between fifty and one hundred wells, mostly in the southeastern part of New Hampshire; that he saw one of such pumps in successful operation with them as late as 1869; that he never used less than three of such buckets for a well, and seldom more of them; that he never knew any of them to freeze; that the back motion of the chain after pumping was stopped was sufficient, even when a ratchet was used, to open a central space between the rubber and the metal plate, the rubber adhering to the sides of the pump-tube and allowing the water to escape down through the center; that he used the buckets like Exhibit A for the purpose of fitting closely in the tube so as to cause suction; and that he generally succeeded in establishing a suction unless the tube was too much worn or defective. There is no testimony in contradiction of this or throwing doubt upon the truth of the facts testified to by Witherell, or showing that buckets like Exhibit A would not operate as he testifies. Exhibit A shows an elastic bucket for a chain-pump, adapted to fit and work in the bore of a pump-tube to raise water by suction, and provided with a suitable orifice or outlets through which the water remaining in the pump-tube above the bucket can escape down to the source of supply. The fact that Witherell made no mention of a structure like Exhibit A in his subsequent application or patent cannot have the effect in the present case to destroy the force of his affirmative direct testimony. Nor can what he did in respect to buckets like Exhibit A be regarded as an abandoned experiment. It appears to have been a successful practical working apparatus. If it was an elastic suction-bucket with a drip, it is of no consequence whether Witherell devised it primarily with a view to the drip or not. Nor is it of any consequence that the hole for the link served also as a drip-hole. If it allowed the water to escape it would do so as effectually as the extra passage in the plaintiff's bucket. It may be, perhaps, that the plaintiff is entitled to some claim in respect to a drip-orifice in an elastic suction-bucket, but, in view of the Witherell Exhibit A, the first claim of the plaintiff's patent is too broad and is invalid.

The record states that the plaintiff objected to the testimony of Witherell so far as it endeavors to set up prior knowledge, manufacture, or use of the devices claimed by the plaintiff as his invention "as incompetent under the rules of the court." Again, the record states that the plaintiff objected to the reception of the testimony of Witherell, on the ground that the witness is "incompetent under the laws and rules governing practice in the circuit court of the United States." At the hearing the plaintiff took the objection that the evidence of Witherell as to prior knowledge and use could not be admitted, because the name of Witherell and the fact of prior knowledge and use by him were not set up in the answer. The only objection taken in the face of the record is found in what is above referred to. I do not think that is sufficient to direct the attention of the defendant to the point that the objection was based on the omission of the name of Witherell from the answer. An objection of that kind may be waived, and it is waived unless it is distinctly made. The time to make it is when the evidence is taken, and not first at the hearing. Otherwise, the defendant is taken by surprise. The fact that the defendant took the evidence shows that he intended to rely on it, and if he had been distinctly notified on the record that the plaintiff intended to rely on an objection that Witherell was not named in the answer as having prior knowledge, it is to be presumed he would have taken steps to apply for leave to amend his answer.

Witherell also introduced in his evidence another form of bucket made by him, Exhibit B. He testifies that he made and sold buckets like Exhibit B after he made them like Exhibit A, and from the fall of 1866 until the fall of 1873. Exhibit B has a rubber disk compressed between two metal plates by a screw and a nut. By lubricating with oil the iron washer on the lower face of the disk the lower part of the disk was caused to expand more than the upper part, so as to give to the lower part a bearing-edge with the part above it receding from it inward. Exhibit B shows such construction. He says that he never used less than three of Exhibit B for a set, and seldom more; that his practice was to have the bucket fit as closely as possible, and not have the pump work too hard; that the object of the beveled edge was to have the rubber slide easily over any roughness in the tube; that the bucket operated both by lifting and suction; that when the bucket fitted closely it resisted the downward run of the chain; that he set them close enough by expansion to draw the water up readily and yet leave room for the water to pass back on the inside of the tube; that the water in the tube with Exhibit B never froze when the bucket was properly adjusted;

that he made a considerable number with a flaring edge like Exhibit B, and that he used that form in tubes that were too large to be filled by expanding the disk equally from both of its faces. This Exhibit B is a solid elastic bucket having an elastic bearing-edge, and its upper portion convex from said edge, whereby the bucket will readily yield to any irregularities in the pump-tube and admits of its being easily drawn up, while at the same time it will resist moving downward. It answers exactly the second claim of the plaintiff's patent. A provision for the escape of the water is no part of the second claim, and the elastic bearing-edge is no part of the first claim. Although Exhibit A has no elastic bearing-edge it anticipates the first claim, and although Exhibit B has no water-escape it anticipates the second claim.

The bill must be dismissed, with costs, and a like decree must be entered in the suit against Newhall.

Issue of October 15, 1878.

Patents	222—No.	208,880	to No.	209,101, inclusive.
Reissues	10—No.	8,448	to No.	8,457, inclusive.
Designs	6—No.	10,866	to No.	10,871, inclusive.
Trade-Marks	15—No.	6,717	to No.	6,731, inclusive.
Labels	15—No.	1,715	to No.	1,729, inclusive.
Total issue	268			

TRADE-MARKS.

[Each certificate bearing date October 15, 1878.]

6,717.—WASH-BLUE.—*Ferdinand Damcke*, New York, N. Y. Application filed September 23, 1878.
"The arbitrary word 'BLUEDINE.'"

6,718.—DISINFECTING CHEMICAL COMPOUND.—*Hance Brothers & White*, Philadelphia, Pa. Application filed September 16, 1878.
"The fanciful word 'PHENOLINE."

6,719.—PERFUMERY.—*John T. Lanman*, New London, Conn. Application filed August 26, 1878.
"The word-symbol 'REGATTA.'"

6,720.—MUSTARD AND SPICES.—*Henry B. Sherman*, Chicago, Ill. Application filed October 1, 1878.
"The word-symbol 'CEYLON MILLS,' in connection with the representation of an elephant holding a tiger, as shown."

6,721.—MUSTARD AND SPICES.—*Henry B. Sherman*, Chicago, Ill. Application filed October 1, 1878.
"The word-symbol 'ARABIAN MILLS,' in connection with the representation of an Arab on horseback, as shown."

6,722.—MALT EXTRACT.—*Tarrant & Co.*, New York, N. Y. Application filed September 14, 1878.
"The word 'HOFF'S,' accompanied by the representation of a mantle, extended, having its upper corners caught together by ribbons."

6,723.—PLAYING-CARDS.—*The New York Consolidated Card Company*, New York, N. Y. Application filed September 20, 1878.
"The figure of the horseshoe and the arbitrarily-selected words 'THE LUCKY POKER.'"

6,724.—CIGARS AND SMOKING AND CHEWING TOBACCO.—*Engelbrecht, Fox & Co.*, San Francisco, Cal. Application filed October 7, 1878.
"The representation of a cigar-box above a banner, as shown."

6,725.—CIGARS AND SMOKING AND CHEWING TOBACCO.—*Engelbrecht, Fox & Co.*, San Francisco, Cal. Application filed October 7, 1878.
"The arbitrary words 'CLUB HOUSE.'"

6,726.—CIGARS, CIGARETTES, AND CHEWING-TOBACCO.—*Edward Hilson*, New York, N. Y. Application filed October 7, 1878.
"The arbitrary word 'RELIANCE,' as shown."

6,727.—MATCHES.—*James Eaton & Son*, Utica, N. Y. Application filed August 28, 1878.
"The name 'EATON'S' and the pictorial representation of a shield, as shown."

6,728.—SMOKING AND CHEWING TOBACCO.—*Henry W. Meyer*, Brooklyn, N. Y. Application filed September 24, 1878.
"The word 'HUB.'"

6,729.—GIN.—*Hofheimer Brothers*, Cincinnati, Ohio. Application filed October 1, 1878.
"The representation of two cats playing and coquetting together."

6,730.—LAMP-CHIMNEYS.—*Norcross, Mellen & Co.*, Boston, Mass. Application filed September 20, 1878.
"The word-symbol 'BOX.'"

6,731.—LIQUID CEMENTS.—*William H. Sanger*, Mamaroneck, N. Y. Application filed October 7, 1878.
"A star surrounded by rays, containing within it the words 'Economic Chemical Company,' printed over the letters 'N. Y.,' together with the words 'FRANK WRIGHT'S.'"

LABELS.

[Each certificate bearing date October 15, 1878.]

1,715.—Title: "PLASTIC TIN."—*Henry S. Chase*, St. Louis, Mo. Application filed October 7, 1878.

1,716.—Title: "THE CLUB HOUSE."—*Engelbrecht, Fox & Co.*, San Francisco, Cal. Application filed October 7, 1878.

1,717.—(Print,) Title: "AUTUMN."—*Heppenheimer & Maurer*, New York, N. Y. Application filed October 4, 1878.

1,718.—(Print,) Title: "RED CLOUD."—*Heppenheimer & Maurer*, New York, N. Y. Application filed October 3, 1878.

1,719.—Title: "CHAS. LIDDELL AND CO.'S TURKISH BATH SOAP."—*Charles Liddell & Co.*, Cincinnati, Ohio. Application filed October 7, 1878.

1,720.—Title: "FRANK WRIGHT'S LIQUID GLUE."—*William H. Sanger*, New York, N. Y. Application filed October 7, 1878.

1,721.—Title: "WALTER G. WILSON & CO.'S BEEF FIBRINE BISCUIT."—*Walter G. Wilson & Co.*, Philadelphia, Pa. Application filed October 7, 1878.

1,722.—Title: "No. 122."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 5, 1878.

1,723.—Title: "No. 69."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 5, 1878.

1,724.—Title: "No. 83."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 5, 1878.

1,725.—Title: "No. 53."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 5, 1878.

1,726.—Title: "No. 102."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 5, 1878.

1,727.—Title: "U. S. M."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 5, 1878.

1,728.—Title: "CARMEN."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 8, 1878.

1,729.—Title: "JNO. WHITTAKER'S SUMMER SUGAR CURED HAMS." *John Whittaker*, St. Louis, Mo. Application filed October 9, 1878.

DESIGNS.

[Each design bearing date October 15, 1878.]

10,866 and 10,867.—HANDKERCHIEFS.—*John Grimshaw*, Paterson, N. J. Applications filed September 10, 1878. Term of patents 3½ years.

10,868.—FONT OF PRINTING-TYPES.—*James M. Conner*, Greenville, N. J. Application filed September 27, 1878. Term of patent 14 years.

10,869.—GROUP OF STATUARY.—*John Rogers*, New Canaan, Conn. Application filed October 17, 1878. Term of patent 14 years.

10,870.—CARPET.—*Charles Magee*, Brooklyn, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed September 10, 1878. Term of patent 3½ years.

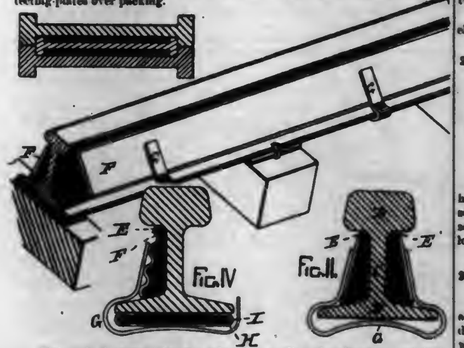
10,871.—CIGAR-BOXES.—*Michael I. Weller* and *George R. Repetti*, Washington, D. C. Application filed October 3, 1878. Term of patent 7 years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

OCTOBER 15, 1878.

206,860. DEVICES FOR MUFFLING RAILWAY-RAILS. Anson Atwood, Dunellen, N. J. Filed Aug. 6, 1878.

Brief.—Rails are muffled their entire length, on sides and base, with a non-conducting fibrous material saturated with vaseline or like non-volatile substance. Said packing is held in position by spring-clamps bearing against protecting-plates over packing.



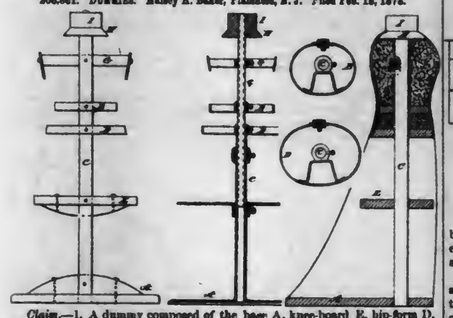
Claim.—1. A composition or product for muffling the vibrations and incident noise on railways, composed of hemp or other fibrous material and vaseline, substantially as described.

2. A railway-rail muffled along its entire length, on its sides and base, with a non-conducting fibrous material treated with a non-volatile substance, for the purpose hereinbefore described.

3. The combination of the spring G, the plate F, and the packing E, as shown in Fig. 2, for the purposes herein set forth.

4. The combination of the spring G, the plate F, the packing E, and the pad H I, as shown in Fig. 4, for the purposes herein set forth.

206,861. DUMMIES. Halsey H. Baker, Plainfield, N. J. Filed Feb. 18, 1878.



Claim.—1. A dummy composed of the base A, knee-board E, hip-form D, waist-form B, shoulder-bar G, collar-form H, neck-piece I, and column or standard C, substantially as shown and described.

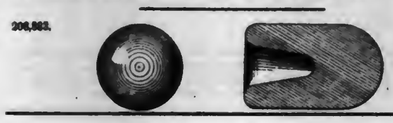
2. In combination with the skeleton-frame consisting of the parts A, B, C, D, E, G, H, and I, as shown and described, a corset or waist, or both, stuffed to the contour of the person, substantially as and for the purpose set forth.

3. A skeleton-dummy having its waist and hip forms made adjustable expansively or contractively, and the collar, shoulder, waist, hip, and knee forms adjustable vertically, as and for the purpose specified.

206,862. FIRE-KINDLERS. Thomas McC. Benner, Allegheny, Pa. Filed Mar. 16, 1878.

Claim.—A fire-kindler composed of shavings and sawdust treated with the oleaginous compound herein described, and subsequently treated with a solution composed of glue and water, as and for the purpose set forth.

206,863.



206,863. MEDICATED PISSARINE. Trevanion H. Berlin, Farmington, Minn. Filed July 25, 1878.

Brief.—The compound is molded to the desired form, and consists of cocoerite, three hundred and ninety grains; powdered bark of slippery elm, three hundred and ninety grains; powdered leaves of witch-hazel, one hundred and twenty grains; bromo-chloralum, two drams.

Claim.—The compound herein described, consisting of cocoerite, slippery elm, witch-hazel, and bromo-chloralum, for the purposes herein set forth.

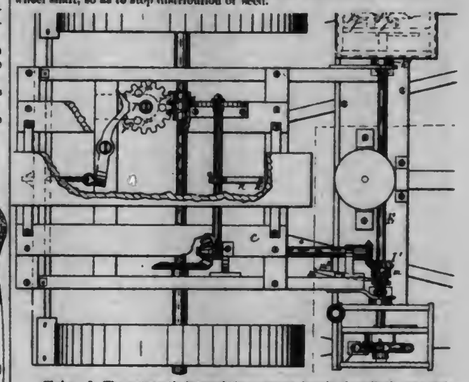
206,864. DEVICES FOR REGAINING PULLETS TO WEEDS. Robt. Blake and Stephen A. Davis, Newark, N. J. Filed June 22, 1878.



Claim.—In combination with a wedge-bar, screw-cap, and pulley, a wheel-hub having a longitudinal groove terminating in an incline, said incline being solid with the hub, and said parts being arranged so that when the cap is screwed home against the wedge-bar the incline forces the bar against the pulley, locking the same, substantially as set forth.

206,865. CORN-PLANTERS. Jonathan W. Brigham and Theodore M. Flanaiken, Rockford, Ill. Filed Jan. 16, 1878.

Brief.—Hinged scraper-beam combined with mechanism for operating the scrapers automatically and intermittently, so as to remove adhering earth from driving-wheels. Devices for automatically disengaging clutch gear of seed-wheel shaft, so as to stop distribution of seed.



Claim.—1. The automatic intermitting scraper herein described, operated by means of the rotating carrying-wheel, for the purpose of removing adhering earth from the periphery of the carrying-wheel, substantially as hereinbefore set forth.

2. The combination, substantially as herein described, of the screw-gear and the spiral toothed gear-wheel, constructed and operating to impart an intermitting movement to the scrapers through the rotary movement of the carrying-wheels, to cause the scrapers to come in contact with the peripheries of the carrying-wheels intermittingly, to remove the adhering earth therefrom automatically, as hereinbefore set forth.

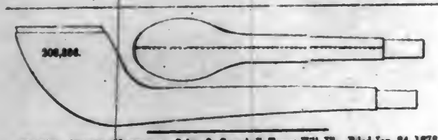
3. The combination, with shaft E, upon which the front frame swings in free connection with the rear frame, said shaft being provided with gear I' and spring-clutch m, of horizontal lever m', which is fulcrumed to the main frame, and the upright wedge-piece m'', which is rigidly secured to the front frame, said lever and wedge piece being adapted to automatically engage with each other as the rear body of the front frame is swung upward in its movement upon said shaft E, substantially as set forth.

4. The combination, with the worm formed on the axle, worm-gear meshing therewith, and provided with the upright studs, of the horizontal oscillating lever, which intermittingly engages with said studs and indirectly operates the scraper-beam, substantially as described.

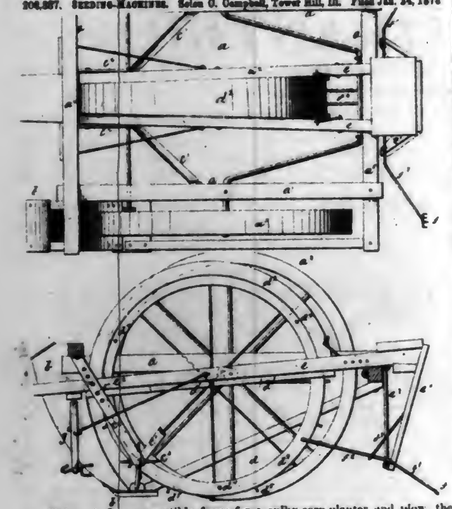
5. The combination, with worm formed on the axle, gear meshing therewith and intermittingly actuating by stud engagement the horizontal oscillating lever, of the link which connects with the scraper-beam, and is provided with a clamp-nut on its outer tapped extremity, substantially as set forth.

206,866. SMOKING-PIPES. William H. Caddy, Brooklyn, N. Y. Filed Sept. 10, 1877.

Claim.—A smoking-pipe covered with leather, or equivalent flexible material, substantially as and for the purpose herein specified.



206,886. SEEDING-MACHINES. Solon O. Campbell, Tower Hill, Ill. Filed Jan. 24, 1878



Claim.—1. In a convertible frame for a sulky corn-planter and plow, the arrangement of the frame *a*, having the front and rear cross-bars, a^1 a^2, and braces a^3 a^3, with pin holes a^4, frame a^5, having its rear end resting on the cross-bar a^2, while its forward end is passed under the front cross-bar, a^1, and is secured between the braces a^3 a^3, with capability of being set higher or lower, as desired, and gage-wheel *d*, journaled in the cross-bar d^1 of the shield d^2, and supported between the side bars, *s s*, of the frame a^5, substantially as and for the purposes set forth.

2. The combination, with the frame a^5, of the curved grain-boxes *b*, constructed with hollow runners b^1 b^1, in which are journaled the revolving dropping-wheels b^2, and secured in front and in line with and bent back and under the wheels a^2 a^2, substantially as set forth.

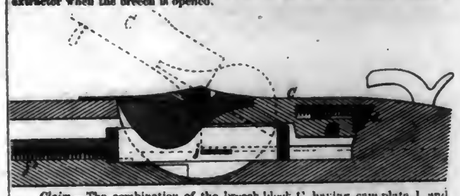
3. The hollow runner or furrow-opener b^1, having the discharge-opening b^3, and secured to the lower end of the curved grain-box *b*, horizontal dropping-wheel b^4, journaled in the runner b^1, and pinion b^6 on shaft *c*, journaled in a bearing, b^5, on said runner, and connected with the driving mechanism of the planter, all arranged with reference to the main frame, and to operate substantially as set forth.

4. The combination, with the dropping-wheels b^2, having holes b^4, and gage-wheel *d*, having pins d^3, of the star-wheels c^2, shafts *c*, supported in the bearings, b^5 and braces c^1 c^2, and pinions b^6, substantially as and for the purposes set forth.

5. The shield d^2, having cross-bar d^5, and held by suitable pins between the bars *s s* of the frame a^5, with capability of easy removal therefrom, gage-wheel *d*, provided with pins d^3, and having its axis journaled in the cross-bar d^5, frame e^2, having brace e^1, and arms f^3, for operating the hoes or markers *f*, arranged to operate substantially as and for the purposes set forth.

206,888. BREECH-LOADING FIRE-ARMS. John D. Coon, Centreville, Colo. Filed Apr. 5, 1878.

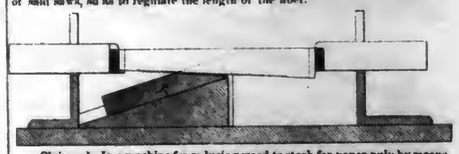
Brief.—A cam lever or projection on the breech-block operates the sliding extractor when the breech is opened.



Claim.—The combination of the breech-block C, having cam-plate I, and the shell-extractor J j^2 j^3, having tension-spring j^3 and spring catch *j*, substantially as set forth.

206,890. MACHINES FOR REDUCING WOOD TO PAPER PULP. William H. Cornell and Charles Tolhor, Pulaski, N. Y., assignors to themselves and J. T. and L. H. Stevens, Washington, D. C. Filed July 10, 1878.

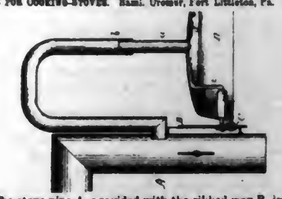
Brief.—The block of wood is presented to the saws at an angle to the plane of said saws, so as to regulate the length of the fiber.



Claim.—1. In a machine for reducing wood to stock for paper-pulp by means of reciprocating saws cutting the wood lengthwise of its grain, presenting the blocks of wood to be cut at an angle to the plane of the reciprocating saws, substantially as described.

2. In a machine for reducing wood to stock for paper-pulp, the combination of the reciprocating saws and frame and slotted standards with the inclined feed-table, substantially as described and shown.

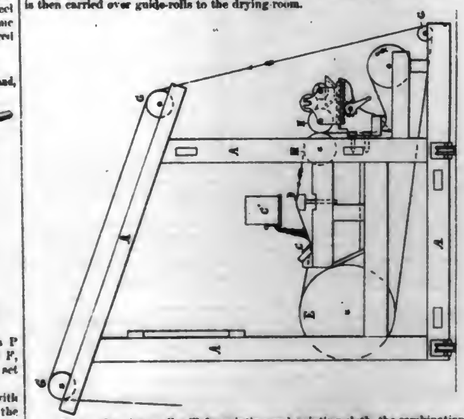
206,891. HOODS FOR COOKING-STOVES. Saml. Cromer, Fort Littleton, Pa. Filed Mar. 27, 1878.



Claim.—The stove-pipe A, provided with the ribbed way B, in combination with hood D, rod *i*, key C, and adjustable telescopic pipe *a b*, all constructed, arranged, and operated as set forth.

206,892. PRINTING AND PAINTING MACHINES. O. Currier, Newark, N. J. Filed Apr. 20, 1878.

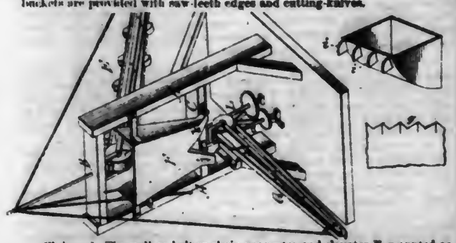
Brief.—The web of cloth passes from between the printing-cylinders over a stretching-bar, and under a vessel discharging a stream of varnish upon it; thence under a knife, which spreads the varnish and removes the surplus, and is then carried over guide-rolls to the drying-room.



Claim.—In a long-roll mill for printing and painting cloth, the combination on a single supporting-frame, A, of the following instrumentalities, to wit: reel F, supporting and guide rolls G, vessel C', printing-roll N, drawing-roll E, impression-roll M, squeezers *i* D, and knife C, substantially as described.

206,893. EXCAVATING-MACHINES. Jas. T. Dougins, San Francisco, Cal. Filed June 4, 1878.

Brief.—An endless chain of buckets is mounted on a swinging boom, and the material excavated is delivered into a hopper, from which it is dropped onto an endless carrying-belt, also mounted on a swinging frame or boom. The buckets are provided with saw-teeth edges and cutting-knives.



Claim.—1. The endless belt or chain excavator and elevator E, mounted as a swinging boom over the hopper F, and the carrier or distributer G, mounted also as a swinging boom underneath the hopper and on opposite sides of the frame A B C, substantially as and for the purpose above described.

2. The endless belt or chain excavator and elevator E, mounted in the frame U on one side of its supporting-shaft S, said shaft having its step or bearing in the upper end of the upright driving-shaft L, so that both will be in the same line, in combination with the bevel-pinion *r* and bevel-gear wheel W, substantially as and for the purpose above described.

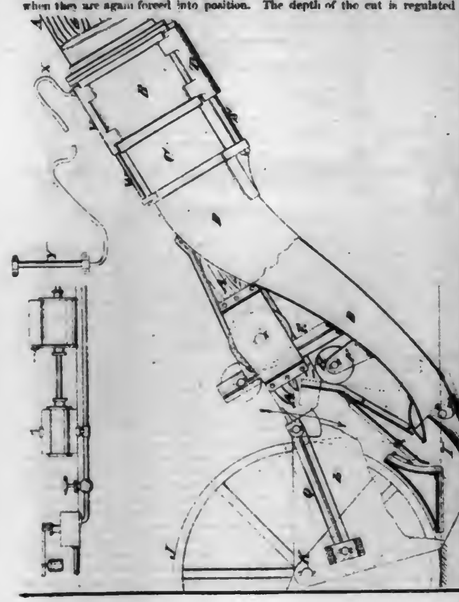
3. The hopper F, provided with two or more discharge-spouts, *j k*, in combination with a sweeping excavator or elevator, E, mounted above it, and a sweeping carrier or draper, G, mounted below it, so that the material is raised and dumped into it by the elevator, while the carrier G receives and conveys it away, substantially as described.

4. An endless belt or chain excavator, E, having one end mounted on gudgeons on one side of an upright shaft, S, while its opposite end is supported by a rope, X, which passes up over a mast, Y, and thence down to a windlass or other controlling mechanism, substantially as and for the purpose above described.

5. The excavator-buckets, each of which is provided with a cutting-edge, *g*, the rim of which is formed into saw-shaped teeth, in combination with the slitting or ripping knives or blades *i i*, which project outward and downward from the edge of the buckets, substantially as and for the purpose described.

206,894. DREDGING-MACHINES. James B. Eads, St. Louis, Mo. Filed Nov. 12, 1877.

Brief.—A hydraulic dredging-machine in which the suction-pipe is composed of two parts, united by a slip-joint, to permit it to yield when an obstruction is encountered, the upper part being attached to the vessel or other support by a universal joint, and the lower part having attached to its lower end the plow or other cutting implement. A ram-cylinder secured to the upper part of the pipe receives a plunger attached to the lower part, and the cylinder is supplied with water from a force-pump, whereby the plunger can be forced out and the lower part and its cutting implement held in proper position for work. The water-supply pipe is provided with a safety or escape valve, similar to that of a steam-generator, which, when an unusual obstacle or pressure is encountered, permits the water to escape from the cylinder, and the lower part of the suction-pipe, with its cutting implement, to yield until the obstacle is passed, when they are again forced into position. The depth of the cut is regulated by a large roller attached to the front end of the frame-work supporting the suction-pipe. A second plunger and cylinder, attached to the two parts of the suction-pipe at the slip-joint, in a manner similar to that already described, is connected by a flexible tube with a glass indicating-tube containing water, and within reach of the operator, whereby the position of the parts can be ascertained, the water being depressed in the tube when the parts are in working position, and the reverse when they are not.



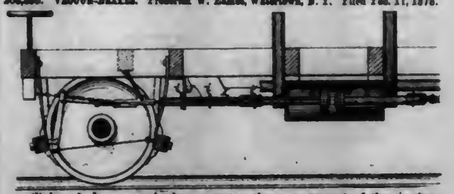
Claim.—1. The inclined suction-pipe consisting of part D, provided with a cutting implement and connected to the part B by a slip-joint, C, whereby the part D is permitted to yield upon encountering any obstacle, substantially as set forth.

2. The combination, with the parts B D of the suction-pipe, of the hydraulic ram S T, substantially as and for the purpose set forth.

3. The combination, with the parts B D, of the indicator V W X Y, substantially as set forth.

4. The combination, with the suction-pipe B D, of the broad wheel or roller J, supporting the end of the suction-pipe, substantially as set forth.

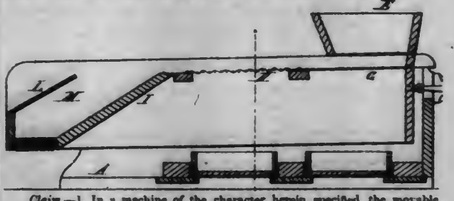
206,895. VACUUM-BRAKES. Frederick W. Eames, Watertown, N. Y. Filed Feb. 11, 1878.



Claim.—1. In vacuum-brake apparatus, the arrangement of the air-pipes connected with the operating cylinders or chambers attached to the cars, so that the supply of air is drawn from the interior of the car, substantially as and for the purpose specified.

2. The combination of the stops *i* on the rods I with the brackets J, the latter also serving as supports and guides for the rods, substantially as and for the purpose specified.

206,896. GRAIN-SEPARATORS. George W. Earhart, Columbus, Ohio. Filed Nov. 6, 1877.

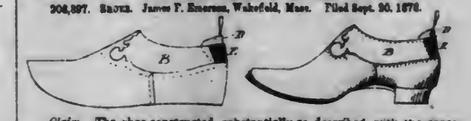


Claim.—1. In a machine of the character herein specified, the movable sieve-carrier mounted upon the base and adapted to be reciprocated in the manner explained, said carrier being provided at one end with a depressed pocket, and at the other with an attached hopper having a foraminated bottom, the several parts being combined and arranged substantially as shown and described.

2. The combination, with stationary base A, of the hopper and sieve carrier supported upon said base by means of the projecting ledges *a a*, and adapted to be reciprocated substantially as shown and described.

3. In combination with the stationary base A, the frame D, carrying the sleeve H G and hopper F, which hopper is provided with a foraminated bottom, and the pocket M, having the inclined top plate, L, substantially as and for the purposes set forth.

206,897. SHOES. James F. Emerson, Wakefield, Mass. Filed Sept. 20, 1878.



Claim.—The shoe constructed, substantially as described, with the space between the rear ends of the front quarters, B B, occupied by the piece D, and also by the elastic gore E, the gore connecting the front quarters, B B, and extending around and over the piece D, as and for the purpose specified.

206,898. BRUSHES. Alanson C. Estabrook, Northampton, Mass., assignor to Florence Manufacturing Company, same place. Filed May 27, 1878.



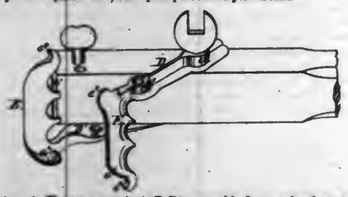
Claim.—1. The combination, with a wooden back and handle, of a composition bristle-holder, the material of which fits closely around and covers the ends of the bristles, in virtue of the application, aided by pressure, of the composition to the bristles while said composition is in a plastic state.

2. As a new article of manufacture, the brush herein described, the same having a wooden back and handle and a composition bristle-holder, the material of which fits closely around and covers the ends of the bristles, in virtue of the application, aided by pressure, of said composition to the bristles while in a plastic state.

3. The attachment of the composition bristle-holder to the recessed wooden back by means of the projecting lip on one end of the holder, a corresponding recess in the wooden back, and a screw passing through the holder into the wood, as set forth.

206,899. PLOW-CLEVISES. Henderson Estes, Bolton's Depot, Miss. Filed Feb. 11, 1878.

Brief.—Two-part clevis, each part pivoted to plow-beam.



Claim.—1. The two-part clevis D D′, separable from each other at the lap-joint at E, and pivoted to the beam by the main bolt B, substantially as set forth.

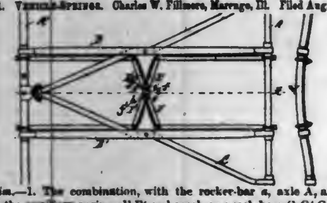
2. The combination, in a clevis, of the two parts D D′, with lap-joint at E and catches *c′ c′*, for the purpose set forth.

206,900. MILK-PAN COVERS. Charles C. Fairlamb, Arena, Wis. Filed Apr. 22, 1878.



Claim.—A milk-pan cover provided with a peripheral band of rubber or like elastic material, secured between the edges of the plates composing the cover, and projecting so as to fit tightly over and around the margin of the pan, as described.

206,901. VEHICLE-SPRINGS. Charles W. Fillmore, Marengo, Ill. Filed Aug. 15, 1878.

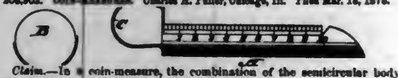


Claim.—1. The combination, with the rocker-bar *a*, axle A, and springs B B′, of the auxiliary springs E E′ and reach or perch bars G G′ G″ G‴, substantially as and for the purpose specified.

2. The combination, with the springs E E′, provided with sockets *e′ e′*, spindle *g*, and nut *h*, of the equalizing-bars F F′, substantially as and for the purpose specified.

3. The combination, with the auxiliary springs E E′, of the equalising-bars F F′, substantially as and for the purpose specified.

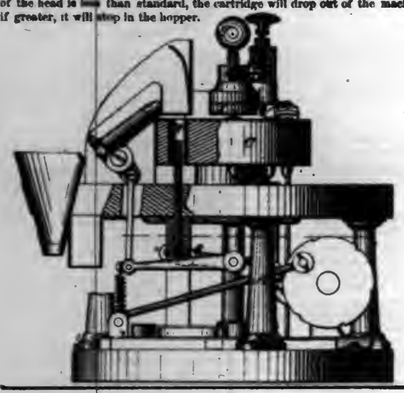
206,902. CUTS-MEASURES. Charles H. Fuller, Chicago, Ill. Filed Mar. 16, 1878.



Claim.—In a coin-measure, the combination of the semicircular body A, having a regular graduated scale, the spaces between the lines being equal to the thickness of coins of the different denominations, with the disk B and the handle C, the whole constructed in the manner set forth, and for the purpose specified.

206,903. MACHINES FOR GAGING CARTRIDGES. Jabez H. Gill, Philadelphia, Pa. Filed Aug. 23, 1878.

Brief.—The cartridges are fed into holes in a revolving disk, with the bullets downward. If the shell is too large or the head too thick, the cartridge will not fully enter its seat in the disk, and will sound an alarm and stop the machine. When passing to the hopper away from the machine, if the diameter of the head is less than standard, the cartridge will drop out of the machine; if greater, it will stop in the hopper.



Claim.—1. In a cartridge-gaging machine, the combination of a carrier containing standard dies or openings and a yielding presser arranged to act upon the heads of the cartridges for the purpose of forcing those of the standard diameter into the dies.

2. In a cartridge-gaging machine, the combination of a carrier having dies or openings to receive the cartridges and a movable device, substantially as described, connected with stopping or alarm mechanism, and arranged above the carrier, so as to be acted upon by the heads of those cartridges which extend for any reason above those of the standard size.

3. In a cartridge-gaging machine, the combination of a carrier having holes or dies to receive the cartridges, an inclined plane or track to act upon the points of and elevate those cartridges which exceed the proper length, and a gaging device connected with stopping or alarm mechanism, and located at such distances above the carrier as to be acted upon by the heads of the elevated cartridges, and not by others.

4. In combination with the cartridge-carrier, the rotary spindle connected with stopping or alarm mechanism, and provided with a shoulder at its lower end, substantially as described and shown.

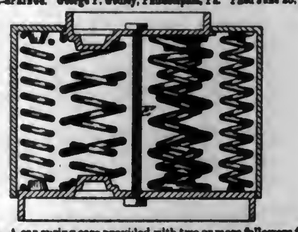
5. In combination with the carrier or table, the spindle I and the bolt or dog G, substantially as described and shown.

6. In a cartridge-gaging machine, the combination of a carrier containing holes or dies, an ejector, and an inclined receiver having its lower end provided with an outlet for cartridges having heads of less than the required diameter.

7. In a cartridge-gaging machine, the combination of a carrier, an ejector, and a receiver with the inclined spring or bearing, to invert the cartridge during its delivery from the carrier into the receiver.

8. In a cartridge-gaging machine, the combination of the tipping receiver and the hopper, having its lower end provided with an opening of such size as to retain those cartridges having heads of excessive diameter.

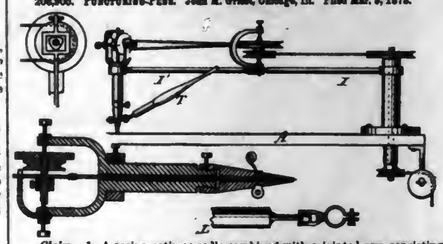
206,904. CAR-SPRINGS. George F. Galley, Philadelphia, Pa. Filed June 26, 1877.



Claim.—1. A car-spring case provided with two or more followers for springs of different bearing capacities, said followers being arranged on opposite sides or ends of the case, and adapted to come into action successively, so as to bring the different series of springs into use, according to the character of the load, substantially as described.

2. A case or box of springs of different bearing capacities, in combination with followers arranged respectively at opposite ends of the case and adapted to operate on the springs according to the increase of the weight of the load, the central springs being formed in nests, one within the other, (and the two coiled in opposite directions,) as and for the purpose set forth.

206,905. PUNCTUATOR-PENS. John M. Grist, Chicago, Ill. Filed Mar. 9, 1878.



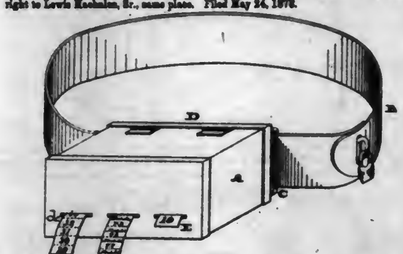
Claim.—1. A reciprocating needle combined with a jointed arm consisting of two or more sections jointed to each other, one of the sections being vertically vibratory and the said section being laterally vibratory on or at the joint connecting it to its fellow, with relation to each other and a fixed or stationary joint, all operating in connection with each other and driving-gearing mounted on the said arm, and connecting the needle with a stationary driver, substantially as and for the purposes specified.

2. The combination of the hand-guide, stock, or handle T, for controlling the movement of the needle holder or shield by the hand of the operator, the said handle being adapted to be held and moved for that purpose by hand, in like manner as a pen or pencil may be used, the shield S, having the handle T jointed thereto by means of a universal joint, the jointed arm I I′, and the driving-gearing mounted thereon, and the reciprocating needle R′, substantially as and for the purposes specified.

3. A reciprocating needle combined with a horizontal arm consisting of two or more rigid parts or sections, I and I′, jointed to each other, the outer end of one section carrying the needle-shield and the outer end of the other being pivoted to a fixed support, both of the said sections being horizontally vibratory with relation to each other and the fixed support, and one of the said sections being vertically vibratory on its joint, all in connection with needle-reciprocating mechanism mounted on the said arm and connecting the needle with a stationary driver, substantially as and for the purposes specified.

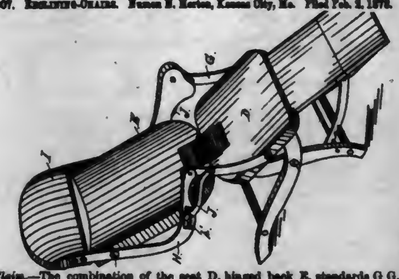
4. The combination of the needle-shield or carrier S, the stock or handle T, and a ball-and-socket joint connecting the said shield and handle, substantially as and for the purposes specified.

206,906. TICKET-HOLDS. Theo. D. Hashuler, Philadelphia, Pa., assignor of one-fifth his right to Lewis Hashuler, Sr., same place. Filed May 24, 1878.



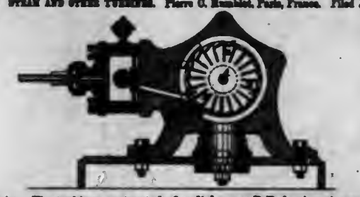
Claim.—The ticket or stamp box A, having the open eyes *b b*, rods F, and springs G, all inclosed therein, and provided with openings *d* and staples C, projecting through slots in the lid D, and the lock-strap E, substantially as and for the purpose set forth.

206,907. RECLINING-CHAIRS. Hanson H. Horton, Kansas City, Mo. Filed Feb. 2, 1878.



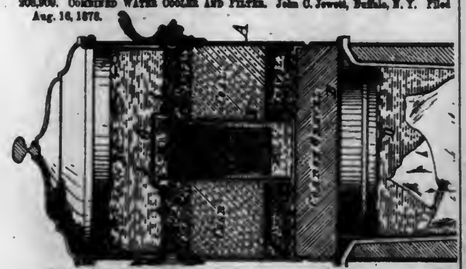
Claim.—The combination of the seat D, hinged back E, standards G G, arms H H, connected by head-rest I, and the gravitating hinged braces J J, catching in teeth or notches *b′*, all as herein described, for the purposes set forth.

206,908. STEAM AND OTHER TURBINES. Pierre C. Humblot, Paris, France. Filed July 8, 1878.



Claim.—The turbine constructed of radial vanes B B, having circumferential wings *a a*, that overlap one another, the vanes extending to a central open space, and of two disks, which cover said open space and said vanes and their wings on two sides, all arranged so that the elastic fluid which drives the wheel is conducted along the vanes into the central space, and thence out again between the vanes, acting against the wings *a* a during its discharge, constructed and arranged substantially as specified.

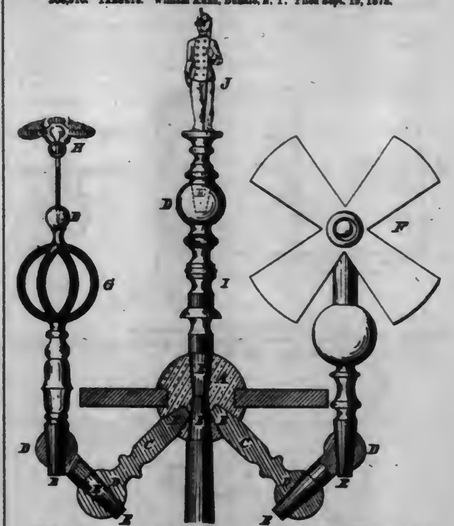
206,909. COMBINED WATER COOLER AND FILTER. John C. Jewett, Buffalo, N. Y. Filed Aug. 16, 1878.



Claim.—1. A filter in which the water is contained in a separate vessel, H, removably attached to the filter A by means of the central tube, E, having the flange F and its upper extremity screw-threaded, and the cap G, with the flange *g*, packing-rings *h* being interposed between the said flanges and the bottom of the reservoir A, substantially as and for the purpose stated.

2. The filter hereinbefore described, consisting, essentially, of the vessel A, having the two perforated diaphragms B C and an interposed layer of gravel, the central tube, E, secured to the diaphragm C and provided with the flange F and screw-threaded end, the filtering-cup J, with the gravel and sponge K, the vessel H, and the cap G, the whole being constructed and arranged for operation substantially as and for the purpose specified.

206,910. TARGETS. William Kuhn, Buffalo, N. Y. Filed Sept. 19, 1878.



Claim.—As an improved article of manufacture, the within-described separable target, consisting of the elevated body A, with the obliquely-arranged legs C, having the tapering sockets D, the windmill F, fixed to said legs C by the tapering tenon E, the crown G, with the elevated bird H, and the staff I, supporting the figure J, the whole being constructed and arranged substantially in the manner as and for the use and purpose specified.

206,911. HEM-STITCHING ATTACHMENTS FOR SEWING-MACHINES. James A. Lakin, Westfield, Mass. Filed Feb. 1, 1878.

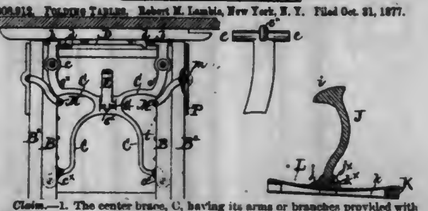
Brief.—The attachment is fastened to the work-plate of a sewing-machine by a slotted bar, to which it is hinged, so that it may be folded back out of operative position. The guide or gage surface is provided with a spring and an adjustable plate. The two fabrics to be sewed are placed above the spring, and one over and one under the adjustable plate, through which the needle operates, the needle-slot having a narrower rearward continuation, through which the stitches uniting the fabrics may pass from the needle.



Claim.—1. The guide C, provided with the adjustable plate B, combined with and hinged to the bar A, substantially as and for the purpose set forth.

2. The combination of the guide C, plate B, and spring A with the bar A, substantially as and for the purpose herein described.

206,912. FOLDING TABLES. Robert M. Lamble, New York, N. Y. Filed Oct. 31, 1877.



Claim.—1. The center brace, C, having its arms or branches provided with the lugs *c* and shoulders *c°*, and having the hinge-pivots *b b* formed on its upper branches, in combination with the leg-sections B B′, the plate or bar D and its sockets *d d*, and the table-top A, as herein shown and described.

2. The fastening device consisting of the plate K and its slot *k* and recesses *k°*, the bar J and its hook *i*, foot *j*, and studs or pivots *j°*, and the spring L, in combination with a folding leg-frame and a table-top, substantially as and for the purpose herein shown and described.

3. The clevis M, provided with the lip or tongue *m*, the carrying-plate B, and the spring S, in combination with the leg-sections and the center brace, substantially as and for the purpose shown and described.

4. The bearing G, consisting of the curved bearing-ribs *g g* and the central web, *g′*, having the curved groove *g°*, adapted to receive and retain the brace E, having the studs or pivots *e e* and the segmental projection *e°*, as and for the purpose set forth.

206,913. WATER-COOLERS. Geo. W. Malpass, Philadelphia, Pa. Filed Jan. 26, 1878.

Brief.—By turning the faucet-handle, two passages are simultaneously opened, the upper one to admit air to the space surrounding the water-chamber, while an opening in the partition between said space and chamber near the top

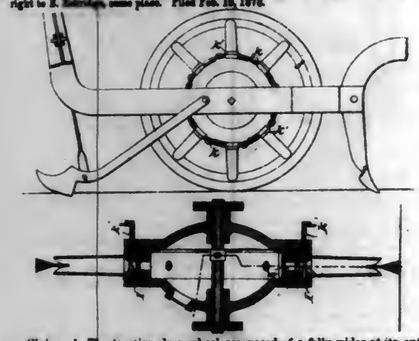
admits the inflow of air to the water-chamber, to take the place of the liquid flowing through the lower passage in the faucet.

Claim.—The combination, in a water-cooler, of a double casing, A B, inclosing a water-chamber, D, and an air-space, *a*, communicating with said chamber, and a faucet, F, having a passage, *i*, communicating with the air-space, and a passage, *u*, communicating with the water-chamber, all substantially as specified.

208,913.



208,914. Grain-Planters. Charles R. McBane, Folly Mills, Va., assignor of one-half his right to R. Estridge, same place. Filed Feb. 16, 1878.



Claim.—1. The traction drop-wheel composed of a felly wider at its outer than its inner face, with an incline between the two faces, a central band or hollow cylinder, and hollow spokes or tubes connecting the cylinder and inner face of the felly, so as to straddle the latter, substantially as described.

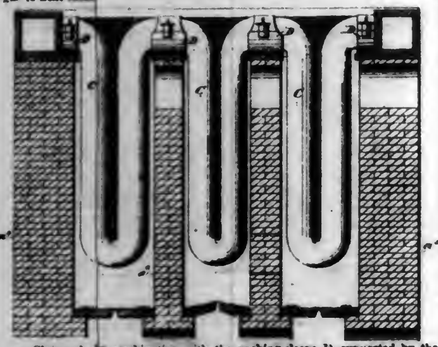
2. The combination, in a traction drop-wheel, of a central band or hollow cylinder and drop-tubes leading from the cylinder and connected with the felly, so as to drop grain on both sides of it, substantially as described.

3. The combination of the band I, provided with its apertures and arms, with the slides *d* and stops *k* of the cylinder, whereby the adjustments for dropping are effected, substantially as described.

4. The combination of the cut-away disk N, the cylinder, and the band I and its adjusting arms, substantially as described.

208,915. Hot-Blast Ovens. Wm. A. Miles, Cupola Iron Works, New York, and John H. Burghardt, Dorchester, Mass. Filed Feb. 20, 1877.

Brief.—The packing-sleeves connect the pipe-sections, which are supported by the partition-walls. The valves below the pipes control the admission of gas to heat them.

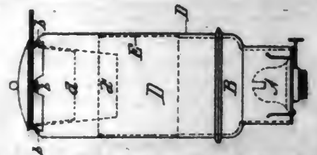


Claim.—1. In combination with the packing-sleeve D, supported by the walls *a*' *a*', the independent sectional pipes C, whereby any member of the series can be removed from the top of the furnace without disturbing the remaining members.

2. In combination with a series of U-shaped oven-pipes having an intermediate web provided with an opening, as described, a packing-sleeve, D, substantially as set forth.

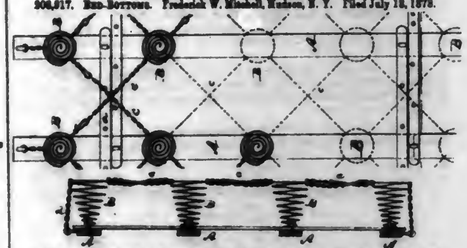
208,916. Burner-Lamp Chimneys. Edward Mercier, Springfield, Mass. Filed Feb. 27, 1878.

208,916.



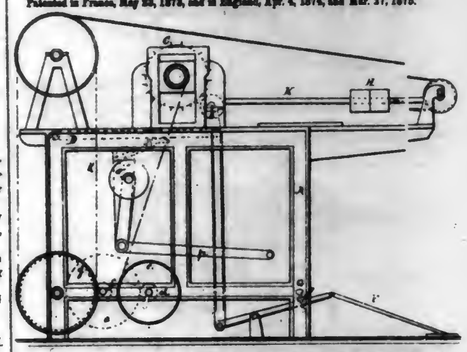
Claim.—In combination with the lamp-burner A, the glass chimney-base B, the tubular metallic chimney D, the inwardly-projecting dish-supporting points *b*, and the inner shield, E, substantially as and for the purpose specified.

208,917. Bed-Bottoms. Frederick W. Mitchell, Hudson, N. Y. Filed July 13, 1878.



Claim.—The combination, in a bed-bottom, of slats A, adjustable to and from each other and supporting the springs B, and connecting cross-chains *c*, adjustable as to length, as and for the purpose set forth.

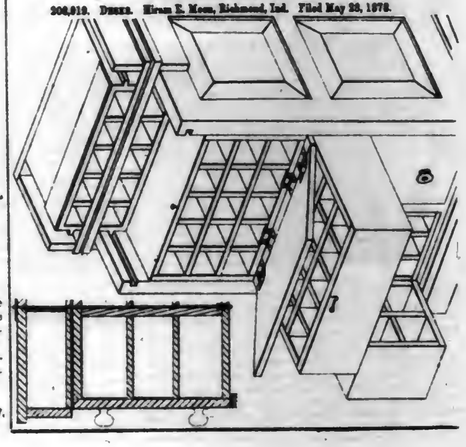
208,918. Machines for Dressing Hides and Skins. Charles Meissier, Bezet, France, assignor to Charles Meissier & Co., (limited,) London, England. Filed Sept. 5, 1877. Patented in France, May 23, 1873, and in England, Apr. 4, 1874, and Mar. 27, 1876.



Claim.—1. The combination, with the hinged table D, feed-roller E, and treadle F, of the draw-bar H, substantially as and for the purposes set forth.

2. The draw-bar H, with its locking-levers I I and anti-friction pulleys, in combination with the guide-rods K K, constructed and adapted to operate substantially in the manner and for the purpose set forth.

208,919. Dikes. Hiram E. Moon, Richmond, Ind. Filed May 23, 1878.

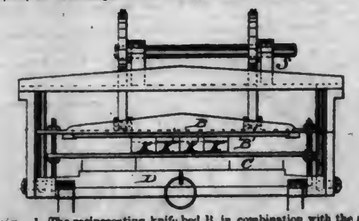


Claim.—1. A drawer or sliding receptacle divided into two sections vertically, which are hinged together at their lower edges, so that the outer section may be lowered to or near a horizontal position when the drawer is withdrawn.

2. A drawer or sliding receptacle divided vertically into two sections, hinged together at their lower edges, and containing between them a hinged leaf, substantially as and for the purpose set forth.

3. The sliding top made in two sections, hinged together, and having chambered receptacles attached to their under sides or to the under side of either, substantially as shown and described.

208,920. Machines for Cutting Fabrics. Alex. Mechling and Richard V. Davis, Philadelphia, Pa.; said Davis assignor to said Mechling. Filed Feb. 25, 1878.

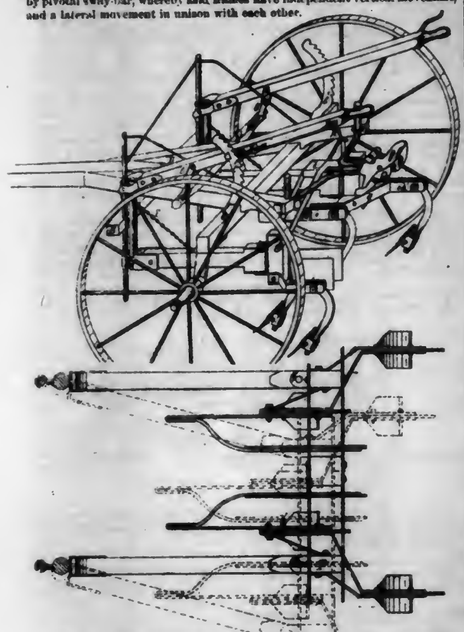


Claim.—1. The reciprocating knife-bed B, in combination with the sliding pin-board D, as shown and described.

2. The combination of knife-bed B, pressure-plate C, and pin-board D, as shown and described, and for the purpose specified.

208,921. Cultivators. Chester Nash, Davis Junction, Ill. Filed Aug. 17, 1878.

Brief.—Slides attached to the forward ends of the drag-bars are provided with sleeves, which surround the upper and lower portions of slideways, which are centrally fixed to the main frame and project above and below the same, said slides having hand-levers secured to their upper ends, whereby the drag-bars are raised and lowered. Flexible connections between the slides and drag-bars. Shovel-frames pivoted to rear ends of drag-bars, and connected by pivotal sway-bar, whereby said frames have independent vertical movement, and a lateral movement in unison with each other.



Claim.—1. The combination, with the main frame of a cultivator and slideways arranged to project above and below the main frame in front of the axle, of drag-bars, each having a slide secured to its forward end, said slides provided with bearings or sleeves, which surround the slideways at points above and below the cultivator-frame, substantially as set forth.

2. The combination, with stationary slideways attached to the main frame of a cultivator, and arranged to project above and below the main frame, of drag-bars, each having a slide secured to its forward end, said slides provided with bearings or sleeves, which surround the upper and lower portions of the slideways, and are adapted to be vertically adjusted thereon, and hand-levers attached to the upper ends of the slides and arranged to raise and lower the same, substantially as set forth.

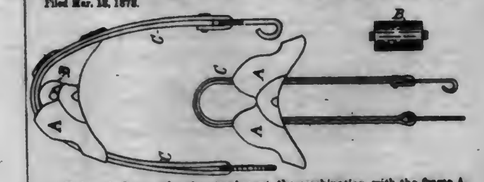
3. The combination, with the main frame of a cultivator provided with slideways located in advance of the axle and arranged to project above and below the main frame, of flexible connections having their opposite ends respectively attached to the slides and drag-bars, substantially as set forth.

4. The combination, with the drag-bars of a cultivator, of shovel-frames pivoted to the rear ends thereof, and connected by a pivotal sway-bar, whereby the shovel-frames are adapted to have independent vertical movement and a lateral movement in unison with each other, substantially as set forth.

5. The combination, with the drag-bars and shovel-frames pivoted thereto, of a sway-bar, to the opposite ends of which the shovel-frames are adapted to be pivoted in a laterally-adjustable manner, substantially as set forth.

6. The combination, with the drag-bars and shovel-frames pivoted thereto, of a sway-bar composed of two transverse bars, between the opposite ends of which are pivoted the upper ends of the shovel-frames, substantially as set forth.

208,922. Neck-Yoke Attachments for Harness. James S. Nelson, Indianapolis, Ind. Filed Mar. 12, 1878.



Claim.—1. In a neck-yoke attachment, the combination, with the frame A, of the removable roller B, held in place in open bearings by the attaching-strap, substantially as shown and specified.

2. The combination of the frame A, breast-strap C, provided with suitable attaching devices, and the removable roller B, held in open bearing by the strap, all substantially as and for the purpose set forth.

208,923. Carriages. Chas. H. Palmer, Jr., Morristown, Mass., assignor of one-half his right to F. Augustus Doscot, same place. Filed Sept. 19, 1878.



Claim.—The combination, in a two-seated carriage having a box which is unprovided with doors or passage-ways between the seats, of a front seat divided into two parts, the movable part being connected at its rear edge with straps pivoted at the lower or bottom portion of the box, in a line near the front of the front seat, whereby the said movable seat may be carried forward to or near the dash-board, and the straps connecting it be brought close to the floor of the carriage, all substantially as described.

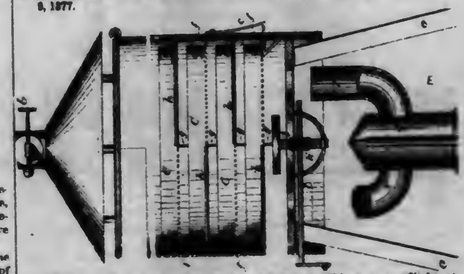
208,924. Door-Knob Attachments. Job F. Peacock, Rose, Nev. Filed Mar. 18, 1878.



Claim.—1. The knob A, having a cam-shaped shank-opening and enlarged recess at the bottom, as shown, in combination with the cam or eccentric shaped shank B, having the inclined head fitting the shank-opening, and the soft-metal filling, substantially as shown, and for the purpose herein described.

2. The shank B, having the eccentric or cam shaped opening, as shown, in combination with the shaft or spindle D, with its eccentric or cam shaped surface, by which the knobs may be instantaneously adjusted and secured to the spindle, substantially as shown, and for the purpose herein described.

208,925. Fruit and Vegetable Evaporators. Jay W. Powers, Chicago, Ill. Filed Feb. 9, 1877.

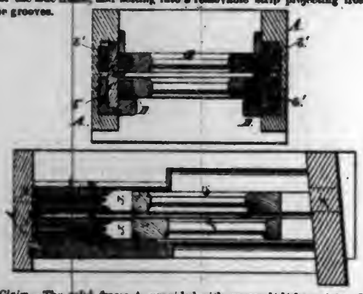


Claim.—1. The combination, with a fruit or vegetable case or cylinder of an evaporator, of an air-discharging hood, E, having curved pipes *e*, said hood being operated by the heated air from a stove or other heat-generating device, substantially as and for the purpose set forth.

2. The trays C of a fruit or vegetable evaporator, provided with cross bars *g* for retaining the trays a sufficient distance apart, and flanges *f* for checking the upward current of air and turning it toward the center of the tray, and through the space between the guards *h* and outer rim of the trays, said trays being arranged in relation to each other within the case, substantially as specified.

208,926. WINDOW-FRAME. Charles Kehrn, Berlin, Pa. Filed Sept. 6, 1878.

Brief.—Grooves are formed on the inside of the frame for the sash-weights. These grooves are inclosed by a removable strip flush with the interior surface of the side frame, and setting into a removable strip projecting from one of the grooves.



Claim.—The solid frame A, provided with spaces *b' b'* for weights J J, in combination with strips C and D, all constructed and arranged as described, for the purpose set forth.

208,927. TOY-WEIGHTS FOR HORSES. Jerome W. Repp, Elyria, Ohio. Filed Aug. 30, 1878.



Claim.—In toy weights for horses, the box *A*, provided with a cover and one or more movable plates for increasing or diminishing said weight, and having suitable means for attaching said box to the foot, substantially as and for the purpose set forth.

208,928. END-GATE FASTENING. Frederick Rook, Skaneateles, assignor of one-half his right to Nelson Moreland, Seneca, N. Y. Filed Mar. 22, 1878.



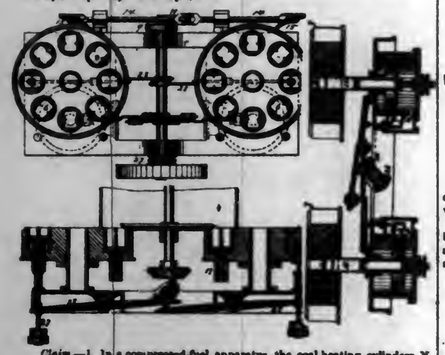
Claim.—1. The combination of rods B C, hooks *c c'*, slot *c*, and lever *D*, substantially as described.

2. The screw or bolt E, provided with a slotted and countersunk head, substantially as described.

3. The screw or bolt E, provided with slotted and countersunk head, in combination with rods B C, provided with the heads *g g'*, substantially as set forth.

4. The combination of the rods B C, lever *D*, and screw E, substantially as and for the purposes described.

208,929. APPARATUS FOR COMPRESSING FUEL. William H. Reeverus, Cincinnati, Ohio, assignor, by mesne assignments, to himself, Daniel Phillips, John Ross, and Margaret J. Phillips, Newport, Ky. Filed May 3, 1878.



Claim.—1. In a compressed-fuel apparatus, the coal-heating cylinders *N*, formed in a conical shape, as and for the purpose set forth.

2. In combination with coke-ovens A A, the cylinders N, heated by the burning gases from said ovens, for the purpose of fusing small coal with suitable agglomerating material preparatory to its being molded into blocks for fuel.

3. The conical coal-heating cylinder *N*, provided externally with flues O O P P Q Q, conveying waste heat from the coke-ovens, and internally with revolving spirally-arranged bars E, as and for the purpose set forth.

4. In combination with the coal-heating cylinder *N*, the screw-feeding device U.

5. In combination with the compound apparatus for compressing fuel, the hoppers V V and distributing angle-plate *v*, for the purpose set forth.

6. In combination with the ovens A A and coal-heating cylinders N N, the superheating steam-pipes H' H', nozzle *p*, and flue H, as and for the purpose set forth.

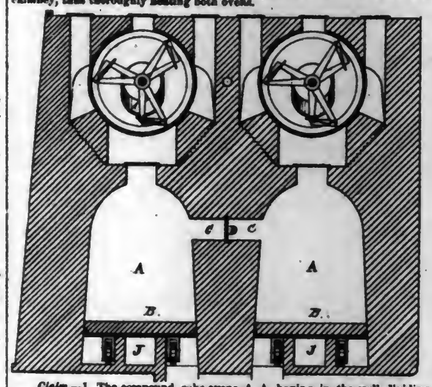
7. In a compound apparatus for compressing fuel, the two mold-tables 7 7, with ratchets 16, pawls 15, rod 14, lever 11, and crank 9, for intermittently rotating the same.

8. In combination with the mold-tables 7 7 and sliding mold-bottoms 18, the weighted rods 27, levers 28, and cams 30, for discharging the molds.

9. In combination with the mold-tables 7 7, the oscillating lever 35, reciprocating rods 27, and cams 33, for removing the blocks of fuel.

208,930. COKE-OVENS. Wm. H. Reeverus, Cincinnati, Ohio, assignor, by mesne assignments, to himself, Daniel Phillips, John Ross, and Margaret J. Phillips, Newport, Ky. Filed June 18, 1878.

Brief.—The hot gases from the coking coal in one oven pass through the ports in the upper part of the dividing-wall into the adjoining oven, lighting the fresh charge there on top, and then, entering the overhead flue, pass down the side flues to the passages beneath the removable hearths, and thence to the chimney, thus thoroughly heating both ovens.

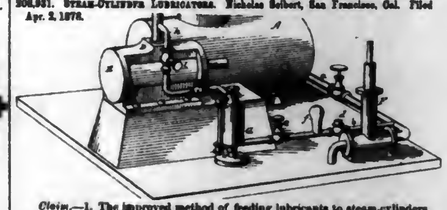


Claim.—1. The compound coke-ovens A A, having in the wall dividing said ovens, at the upper part, the horizontally-arranged single line of connecting-flues C, controlled by damper D, operating in a horizontal direction, whereby the respective ovens may be thrown in or out of communication, as to utilize the burning gases from the coke in one oven for igniting a fresh charge of coal in the other oven, substantially as set forth.

2. In a coke-oven, the portable hearth or hearths B, in combination with the subjacent walled spaces J, constituting sub-hearth flues, substantially as set forth.

3. The combination, with a portable or detachable hearth, B, of the flue H, downtakes I, and sub-hearth flues J, controlled by dampers *e I'*, so that by closing the dampers *I' I'* and opening the damper *e* the burning gases from the oven in full heat shall pass under the hearth of the (for a time being) freshly-charged oven.

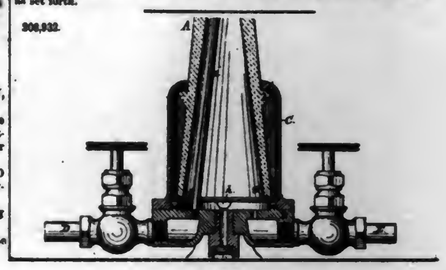
208,931. STEAM-CYLINDER LUBRICATORS. Nicholas Seibert, San Francisco, Cal. Filed Apr. 2, 1878.



Claim.—1. The improved method of feeding lubricants to steam-cylinders, consisting in feeding the lubricant through the means of the pulsation of the water feeding device for the boiler.

2. Boiler A, cylinder E, steam-chest D, pump F, and feed-pipe *a*, in combination with oil-tank G, pipe *b*, provided with valves *c d* and air-chamber *f*, and pipe *h*, provided with valves *i l*, all constructed and operated substantially as set forth.

208,932.

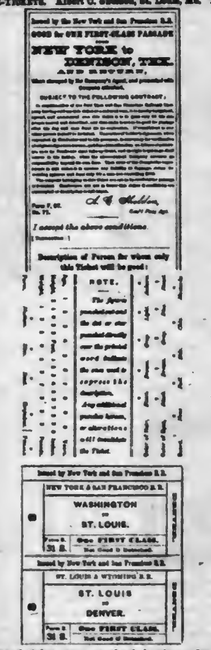


208,932. LUBRICATORS. Nicholas Seibert, San Francisco, Cal. Filed Apr. 12, 1878.

Claim.—1. An independent transparent medium removed from the oil-cup, and interposed between the oil cup or tank and the point to be lubricated, whereby the oil may be observed while being fed out, as described.

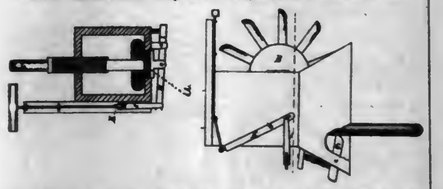
2. The cone A, provided with openings h, base B, housing C, and pipe *i*, in combination with pipes D and E, substantially as described.

208,933. PASSENGER-TICKETS. Albert C. Sheldon, St. Louis, Mo. Filed Feb. 21, 1878.



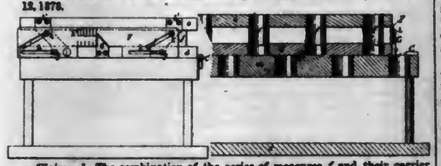
Claim.—A railroad ticket, pass, or check having a descriptive list with all the necessary words and figures for all classes of persons printed in full, said words and figures being so arranged with reference to the edges of the ticket and spaced with reference to each other and the other matter on the ticket that the terms necessary for any individual description can be punched out or indicated by holes or marks, substantially as described.

208,934. CAR-COUPLINGS. Joseph Simmons, Coopersville, Mich. Filed Oct. 2, 1877.



Claim.—A draw-head having the wheel B, provided with coupling-pins, spring-latch *u*, lip G, lever K, bar I, and lever N, all constructed substantially as described.

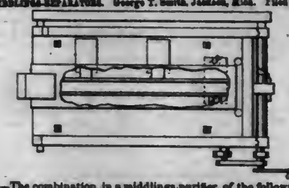
208,935. CARTRIDGE-LOADING MACHINES. George S. Slocum, Newport, R. I. Filed Sept. 12, 1878.



Claim.—1. The combination of the series of measures *f* and their carrier *e* and perforated plate *d* with mechanism—viz., the slotted slide-plate F, studs *h h*, and index G—for adjusting and supporting such carrier *e* at different altitudes above the plate *d*, all being substantially as set forth.

2. The movable charger and the cartridge-shell-carrier, combined by means of stop-hinges C C, as described, or their equivalents, to enable the charger to be operated and stopped, as explained.

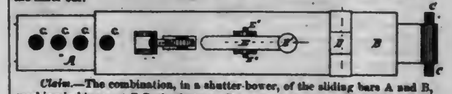
208,936. MIDDLINGS-SEPARATORS. George T. Smith, Jackson, Mich. Filed Aug. 30, 1878.



Claim.—The combination, in a middlings-purifier, of the following elements, namely: a shaking bolter provided with bolting-cloths of different degrees of fineness; a fan to produce air-currents through the bolting-cloth; a bolting-chest which surrounds the bolter and forms part of an inclosed air-trunk, through which air-currents pass after leaving the bolting-cloth; valves for regulating the strength of the air-currents according to the size of mesh of the bolting-cloth, and a chamber in the edduction-passage for collecting light material carried off from the bolter by the air-currents.

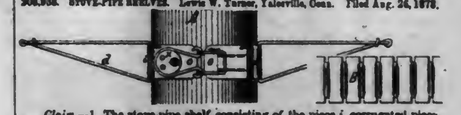
208,937. SHUTTER-BOWERS. Theodore Thorn, St. Clair, Pa. Filed June 20, 1878.

Brief.—An improvement on device covered by Letters Patent No. 196,106, December 11, 1877. Two bars, sliding one within the other, and provided with suitable hinges, may be adjusted to any desired length, and are fastened together in each position by a spring-operated lug, which enters locking-holes in the inner bar.



Claim.—The combination, in a shutter-bower, of the sliding bars A and B, working in hinges at C C, the fastener E, operated by spring H, and having a locking lug or bolt, E^1, which engages in holes G G in bar *A*, and the sliding band D, for holding the fastener E open, substantially as and for the purpose hereinbefore set forth.

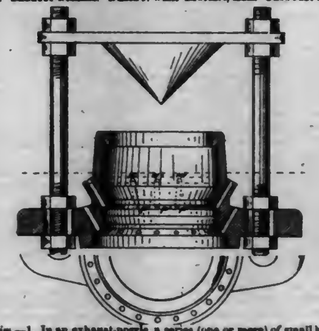
208,938. STOVE-PIPE SHELVES. Lewis W. Turner, Talcville, Conn. Filed Aug. 26, 1878.



Claim.—1. The stove-pipe shelf consisting of the piece *i*, corrugated piece B, and sections of wire bent into triangular form, as described, the ends of the sections being attached to a semicircular ring, *a*, also including the semicircular ring *b*, and a suitable fastening device, as shown and set forth.

2. The detachable strap *m*, made in two parts, hinged together, in combination with the piece *i* and with the pieces *o*, hinged to the piece *i* by the loops *n*, one of the said pieces *o* being provided with a series of notches and the other piece with an eccentric, as shown and set forth.

208,939. EXHAUST-NOZZLES. Nelson J. White Lawrence, Mass. Filed June 22, 1878.



Claim.—1. In an exhaust-nozzle, a series (one or more) of small holes bored in horizontal rows through its walls and inclined upward and outward from its base, to radiate and diffuse as much of the steam as may there find vent, in order to completely fill the base of the petticoat-pipe with steam, all constructed and arranged as shown and described.

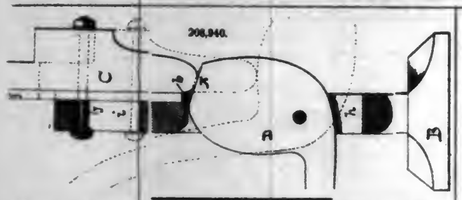
2. In an exhaust-nozzle, a V-shaped hook or flange, constructed at the mouth of the pipe, to loosen the tension of the steam which has not passed out below and deliver it in a steady and uniform current to meet with equal and uniform distribution.

3. In an exhaust-nozzle, a series of holes perforating its walls to diffuse the steam, acting, in combination with a hook or flange at the mouth, to loosen the tension of the steam and increase uniformity of delivery and discharge.

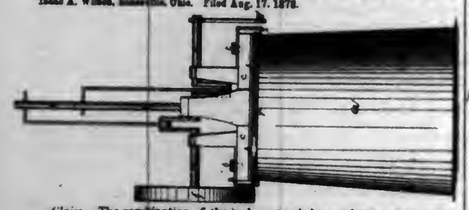
208,940. WAGON-JACKS. Miles D. Williams and W. H. Dodge, Mishawaka, Ind. Filed Apr. 2, 1878.

Claim.—A wagon-jack having a post, A, provided with a foot-piece, B, and slots *h i*, and groove *b*, combined with the slide C, provided with the rib *f*, adapted to the groove *b*, sliding tie-bolt J, and the cam D, pivoted in the slot *h*, and provided with the locking-surface *k*.

208,940.



208,941. Reciprocating Churns. Listen B. Wilson, Caldwell, assignor to himself and Isaac A. Wilson, Rossville, Ohio. Filed Aug. 17, 1878.



Claim.—The combination of the body *a*, top *b*, base *c*, having the mechanism for alternately reciprocating the dashers secured to its top, and slotted catches *s*, the catches being provided with set-screws *t*, and made to catch under the flange *r*, substantially as described.

208,942. Devices for Measuring and Weighing Skins. David T. Winter, Peabody, Mass., assignor of one-half interest to Charles E. Teague, same place. Filed June 24, 1878.



Claim.—1. In combination, the foot-treadle, a stop for limiting its downward movement, and likewise the consequent upward movement of the table, the perforated lifting-table B and its guide-rollers, and the adjustable upper table, D, the table being closely perforated, as and for the purposes described

2. The lower table, B, provided with guide tracks or ways *i*, in combination with the treadle, and with the compound levers or lazy-tongs *s s n n* and weights *s*², substantially as shown and described.

3. The suspended perforated table D, in combination with its supporting-levers d^1 d^2 d^3, suspended rod or axis d^4, and hangers m^1, substantially as shown and described.

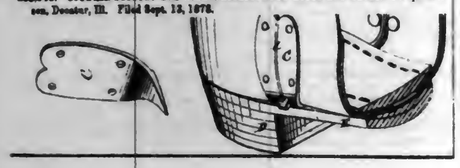
4. The combination of the upper table, D, its described system of supporting levers, the lever M, registering index or pointer, and its down pulling spring m^3, substantially as shown and described.

5. In combination, the system of long thin pins placed closely together, as described, the table B, having the described system of countersunk holes, the countersinks merging nearly or quite into each other, and the suspended table D, adjustably hung and balanced on the compound system of levers d^1 d^2 d^3 G^1, as shown and described.

6. In combination with the table D, hung and balanced horizontally, as described, and with the hangers m^1, a double scale, one for size and one for weight, and a single indicator for both scales, and whereby, without any change or adjustments of the mechanism, the skins, after being singly measured, may be weighed in lots by the same machine, and the weight of such lots indicated by the same pointer or index, substantially as shown and described.

7. The machine described and shown, consisting of the following parts, in combination, namely: the under table, B, its weighted levers, foot-treadle, and stop *y*, the upper suspended table, D, and its hangers m^1, and levers d^1 d^2 d^3, the system of closely-placed long pins, lever M, the single registering index or pointer, and the compound scale, all substantially as set forth.

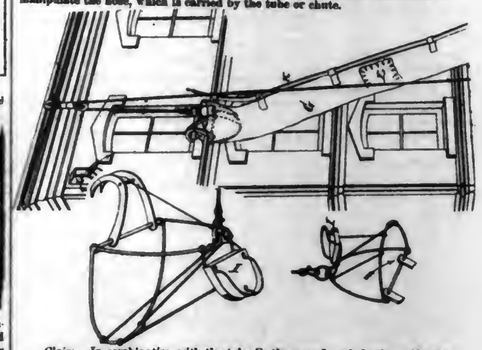
208,943. Counter-Support and Seam-Protector for Boots and Shoes. Joseph Wilson, Decatur, Ill. Filed Sept. 13, 1878.



Claim.—A combined counter-support and seam-protector consisting of a metallic plate, C, having a series of holes upon each side to receive rivets for securing it to both the counter and upper, as shown and described, and provided with a shoulder and prong, all substantially as set forth.

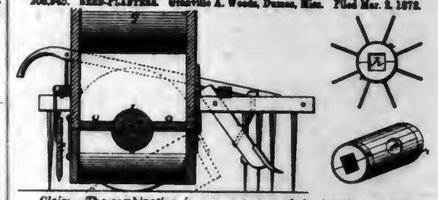
208,944. Fire-Escapes. Valentine Wehlmann, Cincinnati, Ohio. Filed May 14, 1877.

Brief.—To top of chute is secured a seat for a fireman, from which to manipulate the hose, which is carried by the tube or chute.



Claim.—In combination with the tube G, the seat I and fire-hose K, substantially as and for the purposes specified.

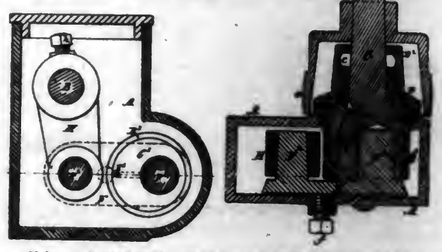
208,945. Seed-Planters. Granville A. Woods, Dumas, Miss. Filed Mar. 2, 1878.



Claim.—The combination, in a seed-planter, of the hopper *g*, made in two parts, as described, the lower part being hinged to the upper part, the boards *o o*, with centrally looped or arched connecting-strips *r r*, the shaft *h*, and the semi-cylindrical seed-cups *l l*, placed around the shaft and connected together by the rings *n n*, all substantially as and for the purposes herein set forth.

208,946. Mechanism for Operating Dotter Combs. Edward Wright, Worcester, Mass. Filed July 29, 1878.

Brief.—Motion is given to the comb-shaft from the driving-pulley through the eccentrically-chambered shaft, connecting-bar, and its driving-pins and vibrating arm, which latter is controlled in its movements by the eccentric opening in the shaft and the crank-pins.



Claim.—1. In combination with the comb-shaft B, having arm H, the revolving shaft C, having eccentrically chambered head C', and the connecting-bar F, provided with pins F^1 F^2, arranged to work within the head C' and arm H, substantially as set forth.

2. In combination, substantially as described, the eccentrically-chambered shaft C, vibrating arm H, connecting-bar F, having tapered pins F^1 F^2, and the set-screw *f*, for the purpose set forth.

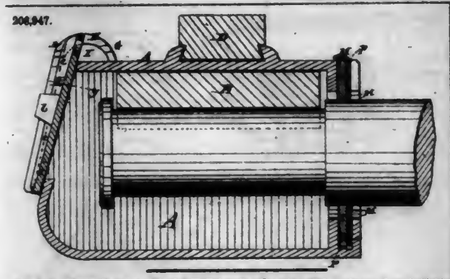
3. The combination, in a dotter-comb head, of the reservoir A, vibrating comb-shaft B, provided with downward-projecting arm H, the chambered driving shaft C C', bearing-sleeve D, having extended ends D^1 and D^2, and connecting-bar F, provided with pins F^1 F^2, said parts being constructed and organized for operation substantially as hereinbefore set forth.

208,947. Car-Journal Boxes. Francis M. Alexander, Marshall, Tex. Filed Aug. 6, 1878.

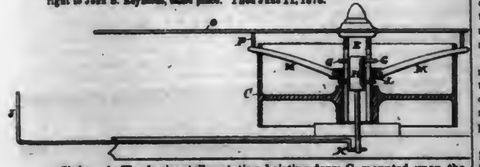
Claim.—1. The lid E, having downwardly-tapering edges *e* and projections *f*, in combination with box A, having wedged-shaped grooves *a'* arranged oppositely in the vertical sides of the front end of box, as and for the purpose specified.

2. The oil stop holder M, fitted in the side grooves, *p*, and bottom recess, P, and provided with the edge notches *n*, in combination with the cleats K, provided with the notches *k*, substantially as and for the purpose set forth.

208,947.



208,948. Horse-Powers. Charles E. Baker, San Francisco, Cal., assignor of one-half his right to John B. Reynolds, same place. Filed June 11, 1878.

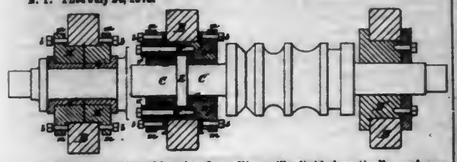


Claim.—1. The horizontally-rotating hoisting-drum C, mounted upon the hollow slotted standard E, said standard having the sliding clutch H inside, in combination with the exterior sliding collar, L, with its radial arms M extending through the sides of the drum, so as to be projected or retracted, substantially as herein described.

2. The horizontally-rotating drum C, with its interior radial arms, M, fitted to be projected or retracted through its periphery, as shown, in combination with the driving-arm O and the lugs P, substantially as herein described.

3. The horizontally-rotating drum C, with its interior adjustable arm, M, and operating-clutch H, as shown, in combination with the horizontally-extended shaft I, with its handle J and crank-arm K, substantially as shown, and for the purposes herein described.

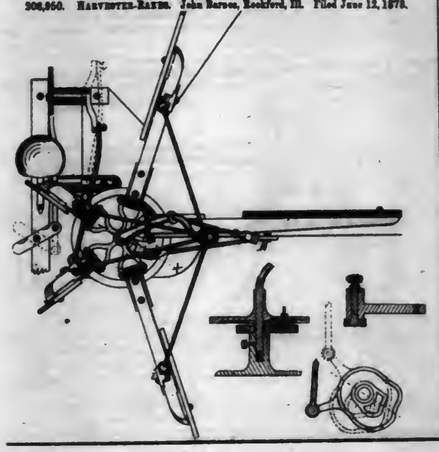
208,949. Journals and Bearings for Rolling-Mills. Stephen W. Baldwin, New York, N. Y. Filed July 24, 1878.



Claim.—1. A journal-bearing for rolling-mills divided vertically, and provided with side flanges or lugs, with set-screws acting against the main frame, or against gibs fitted to the sides of the main frame, for the purpose of adjusting and holding the journal, substantially in the manner described.

2. In combination with the main frame B and the roller-journal C, provided with a central collar, E, a bearing consisting of the four parts F F^1 J J^1, secured together vertically by bolts *n* and longitudinally by tube set-screws *c*, and set-screws *w*, passing through said tube set-screws *c*, as described, and provided with side flanges or lugs, *m*, and set-screws *b*, acting against the sides, or against gibs fitted against the sides of the main frame B, the whole being arranged to operate in the manner and for the purpose substantially as herein specified.

208,950. Harvester-Rakes. John Barnes, Rockford, Ill. Filed June 12, 1878.



Claim.—1. The combination, with a revolving rake adapted to be employed either as a rake or a reel-beater, of a cam provided with a continuous track-way, and means for varying the position of the cam around its support, whereby the rake-head may be caused to serve as a rake to discharge the cut grain from the platform, or as a reel-beater to gather the grain to the cutters and deposit it on the platform, substantially as set forth.

2. The combination, with a revolving rake, a cam provided with a continuous trackway, and means for varying the position of the cam around its support, of a treadle located within reach of the driver and connected with the adjustable cam, so that the driver can control the position of the cam and cause the rake to operate either as a rake or reel-beater, substantially as set forth.

3. A guide-post the lower portion of which projects toward the platform, and provided at its upper end with a forwardly-projecting crank arm, in combination with a series of revolving reel-beaters, and links connecting said beaters with the upper and forwardly-projecting portion of the guide-post, and a rake-head and link connecting the same with the bearing on the overhanging guide-post below the bearing for the reel-beaters, and nearest the platform, substantially as set forth.

4. The combination, with a revolving rake adapted to be employed either as a rake or reel-beater, of an adjustable cam provided with a continuous track-way for controlling the movement of the rake, a slotted crown-wheel, and a connecting-rod, one end being secured to a sway-bar pivoted to the rake, and the other end to a traveler which moves in the continuous trackway of the cam, and a link connecting the opposite end of the sway-bar with the guide-post, substantially as set forth.

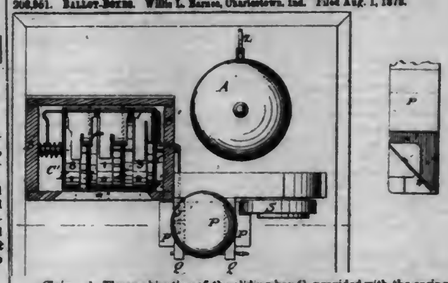
5. The combination, with a revolving rake adapted to be employed either as a reel or rake, of a sway bar, N, pivoted to the rake, and, by link-connection, to a guide-post, and to a traveler adapted to traverse the trackway of a movable cam, capable of movement to direct the course of the rake, to cause it to operate either as a reel or rake once in each revolution, substantially as and for the purpose hereinbefore set forth.

6. The combination, with an inclined guide-post, a revolving rake, a cam provided with a continuous trackway, and means for varying the relative position of the trackway and guide-post, of a sway-bar pivoted to the rake, and links connecting one end of said sway-bar with a traveler moving in the continuous trackway, and the other end with the guide-post, substantially as set forth.

7. The combination, with a cam provided with a continuous trackway, said cam being journaled on a suitable bearing, of a crank-shaft, one end of which connects with the cam, and the other with a sway-bar located within reach of the driver, to change the position of the cam about its axis, substantially as set forth.

8. The combination, with a series of rising and falling reel-arms rotating round a guide-post, and guided in the track of their movements by link-connection with the post, of a rake adapted to be employed either as a reel or rake, revolving round the same post with the reel-arms, and guided in the track of its movements by link-connection with the guide-post, and with a traveler actuated by the trackway of a movable cam, substantially as and for the purpose hereinbefore set forth.

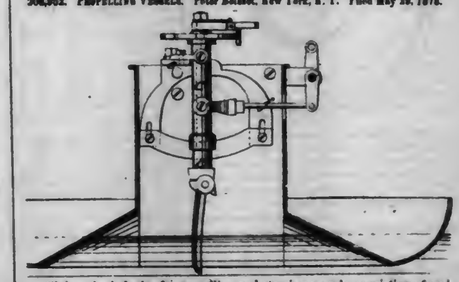
208,951. Ballot-Boxes. Willis L. Barnes, Charlestown, Ind. Filed Aug. 1, 1878.



Claim.—1. The combination of the sliding box G, provided with the spring K, the arm I, and the pin X, the hinged plate L, provided with the spring M, the fingers N, and the shoulders O, and the follower P, provided with the spring S, the strips U, the fingers V, the spring W, and the inclined shoulder s^1, the cross-groove s^2, and the rabbet s^3, with each other and with the cover B of the box A, substantially as herein shown and described.

2. The combination of the gong A', the lever-hammer Z, and the pin Y with the sliding box G, the hinged plate L, provided with the fingers N, and the follower P, carrying strips U, substantially as herein shown and described.

208,952. Propelling Vessels. Peter Boisset, New York, N. Y. Filed May 29, 1878.



Claim.—1. A device for propelling and steering vessels, consisting of paddle-shaft with supporting-sleeve and one or more feathering paddles, hinged to

guided vertically and axially adjustable oscillating paddle-shafts, substantially as and for the purpose described.

2. The combination of the oscillating paddle shaft or spindle and exterior guide-sleeve, having guide-ling, with a vertically-adjustable guide and supporting frame, having arc-shaped guide-piece, substantially as and for the purpose described.

3. The combination, with the notched arc-plate and lever, having spring-pawl, of the oscillating paddle-shaft, with an outer sleeve and with lever and locking mechanism for axially turning the shaft and setting the paddle to any suitable inclination to the longitudinal axis of the vessel, substantially as specified.

208,953. Bagging-Scale. Edward J. Brooks, New York, N. Y. Filed Sept. 4, 1878.



Claim.—1. As a new article of manufacture, a shackle for cording-scale, composed wholly or in part of knitted cord or twine, having a series of hard places or enlargements formed by interlocked loops, as herein specified, for the purposes set forth.

2. A shackle for cording scale, composed of two or more strands of contrasting fibers, one of said strands being of knitted cord or twine, having a series of hard places or enlargements formed by interlocked loops, as herein shown and described, for the purposes specified.

208,954. Exercising-Machine. Wm. J. O. Bryan, Jr., New York, N. Y. Filed June 24, 1878.



Claim.—1. The sides 1 of the frame-work, provided with foot-like projections 41, to prevent said frame-work from tipping in exercising, in combination with the pivoted tongue, substantially as specified.

2. In combination with the frame-work, a folding tongue, which can be extended and secured in position when in use, or folded up out of the way when not in use, substantially as specified.

3. In combination with the frame-work, removable outriggers, and sockets to receive the latter, secured to the side of said frame-work, substantially as specified.

4. Grooved oars, substantially as specified.

5. The combination of grooved oars with outriggers connected to the frame-work and stretchers secured to the rigid bar on the folding tongue and said oars, substantially as specified.

6. The folding tongue provided with a bar, 10, rigidly secured thereto, and a foot that can be secured to the floor, substantially as specified.

7. The foot-rests made in one piece with the socket 49, capable of adjustment on the folding tongue 8, substantially as specified.

8. The combination, with the adjustable foot-rests 9, of the folding tongue 8, provided with a series of holes, 30, substantially as specified.

9. The stretchers provided with hooks and chains, so as to be readily adjusted, substantially as specified.

10. The combination of the stay-rods with the removable outriggers, substantially as specified.

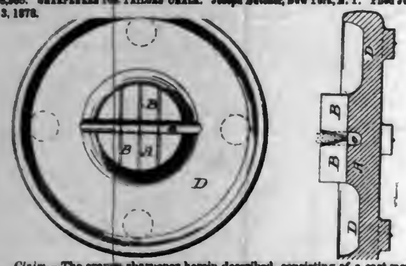
11. The combination of the sliding seat with the frame-work, the outriggers, the oars, the stretchers, and a folding tongue, substantially as specified.

12. The combination of the folding tongue with the rod 23, passing through the sides 1 of the frame-work, and the screw-eye 47, in the bottom of the folding tongue 8, to secure the same in position when unfolded and in use, substantially as specified.

13. The combination of the stay-rods 3 with the eyes 32, substantially as specified.

14. The combination of the oars and outriggers, the bar 10, stretchers 18, chains 20, and hooks 21 and 31, substantially as specified.

208,955. Sharpeners for Tailors' Chalk. Joseph Butcher, New York, N. Y. Filed June 3, 1878.

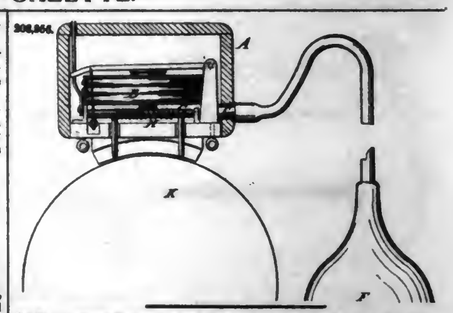


Claim.—The crayon-sharpener herein described, consisting of a cast-metal annular tray, D, to hold the crayons, having a central boss or block, A, with a wide groove, *a*, cut vertically in it deep enough to form a channel, *c*, and two or more vertical grooves cut in it at right angles to the groove *a*, into which blades B B are fitted, entering from opposite sides, so as to nearly meet at their lower corners, as set forth.

208,956. Cameras. James W. T. Cadett, 66 Camberwell Grove, Surrey County, England. Filed July 6, 1878. Patented in England, Mar. 19, 1878.

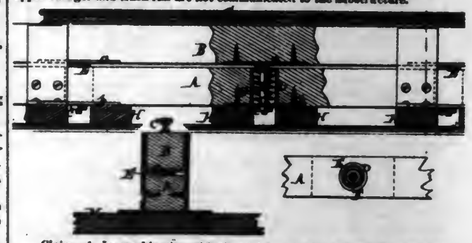
Claim.—In a device for operating the shutter or cap for the lens of a photographic camera, the combination of the elastic bulb F, bellows B, and shield K.

208,956.



208,957. Railway-Tracks. Benjamin F. Card, Brooklyn, N. Y. Filed Sept. 17, 1878.

Brief.—The track-rails rest upon a wooden stringer, which is separated from a subparallel stringer, which rests upon ties, by means of springs incased in suitable housings in said sub-stringer, whereby the vibrations of the upper stringer and track-rail are not communicated to the substructure.



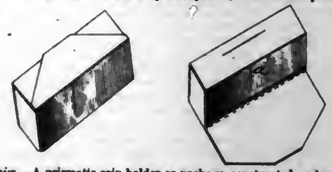
Claim.—1. In combination with the stringer A, the stringer B, separated and supported above the stringer A by springs E, holding the ordinary track-rail C, for the purpose above set forth.

2. In combination with the ties or sleepers H and wooden stringer A, the track-rail C, supported and separated from the wooden stringer A by springs, for the purpose above set forth.

3. In combination with the stringer B, separated and supported above the stringer A by spiral springs E, fitting into the tubes, cylinders, or pedestals D, surrounding the bolt F, said stringer B supporting the track-rail C, for the uses and purposes above set forth.

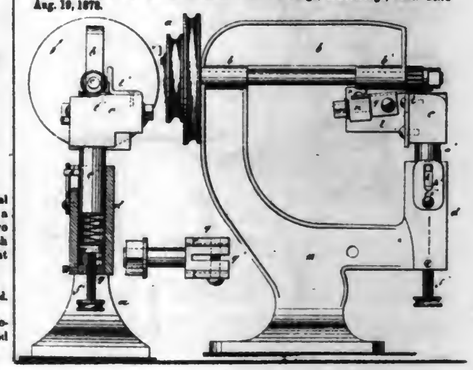
4. In combination with ties or sleepers H and stringer A, the track-rail C, supported and separated from the stringer A by spiral springs E, fitting into tubes, cylinders, or pedestals D, surrounding the bolt F, for the uses and purposes above set forth.

208,958. Coin-Holders. Chas. H. Carpenter, Syracuse, N. Y. Filed July 27, 1878.



Claim.—A prismatic coin holder or package constructed and adapted for use substantially as herein described.

208,959. Machines for Shaving Leather. M. M. Clough, Marlborough, Mass. Filed Aug. 19, 1878.



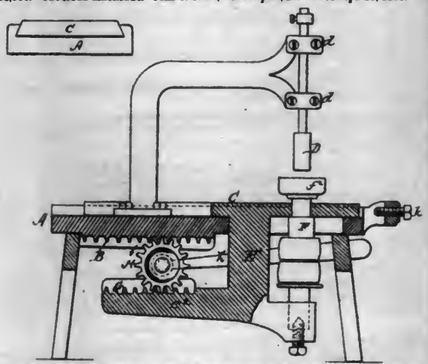
Claim.—1. The combination of the hollow arm *d*, spring *f*, washer *g'*, screw *f'*, and slotted plate *h'* with the pin *h* and the shank *c'* of the bed *c*, substantially as and for the purpose described.

2. The flanged plate P, secured upon the bed *c*, in combination with the arm *b* of the supporting-base *a*, for the purposes set forth, and substantially as described.

3. The clasp *q* and arm *n*, in combination with the arm *l* of the bed *c*, the said parts being connected together for operation substantially as and for the purposes set forth.

4. The guide *t*, having projection *t'*, in combination with the bed *c* and feed-roll *k*, substantially as and for the purposes set forth.

208,960. Crucible-Machines. John C. Cline, Philadelphia, Pa. Filed Sept. 13, 1878.



Claim.—1. In a crucible-machine, the combination of a former having a vertical movement in stationary bearings with a rotating mold-box having a reciprocating motion to and from the said former, as set forth.

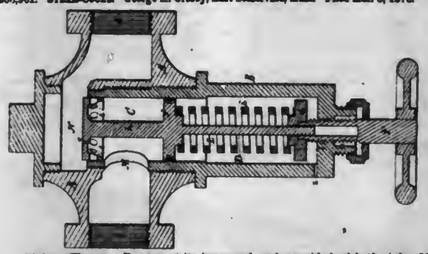
2. In a crucible-machine, a mold-box revolving around and reciprocating to and from a former, substantially as set forth.

3. In combination with a vertically-moving former in fixed bearings attached to the main frame of the machine, the supplementary sliding frame carrying the revolving mold-box, substantially as shown and described.

4. The combination of the former D, fixed bearings *d*, sliding frame C, vertical spindle F, and mold-box *f''*, frame A, and set-screw *k*, substantially as shown and described.

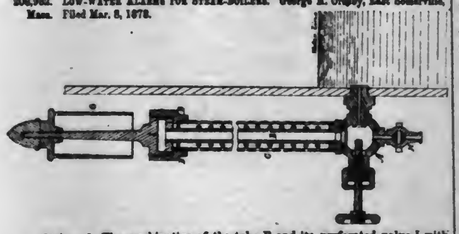
5. In combination with the frame A, the supplementary sliding frame C, the racks B and G, and wheel H, substantially as shown and described.

208,961. Steam-Cocks. George H. Crosby, East Somerville, Mass. Filed Mar. 8, 1878.



Claim.—The case B, open at its inner end and provided with the inlet M and waste-steam escape-outlet *x*, arranged substantially as described, in combination with the chamber N, balanced valve C, spring L, and screw F, applied to such case, as set forth.

208,962. Low-Water Alarms for Steam-Boilers. George H. Crosby, East Somerville, Mass. Filed Mar. 8, 1878.



Claim.—1. The combination of the tube B and its perforated valve I with the encompassing tube C and its valve seat or cup D, the said tubes being connected at their lower ends, and all being arranged substantially as set forth.

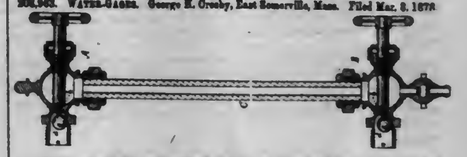
2. The combination of the steam-whistle G with the tube B, its perforated valve I, and the tube C and its valve seat or cup D, all being arranged and applied essentially as shown and described.

3. The combination of the stop-cock A with the tubes B and C and their valve seat or cup D, and perforated valve I, all being arranged and applied substantially as set forth.

4. The combination of the stop-cock A and the alarm-whistle G with the connected tubes B C, their valve seat or cup D, and perforated valve I, all being essentially as represented.

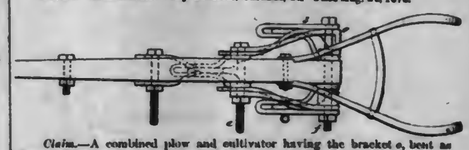
5. The combination of the petcock H, stop-cock A, steam-whistle G, tubes B C and their valve seat or cup D, and perforated valve I, all being arranged and applied essentially as shown and described.

208,963. Water-Gages. George H. Crosby, East Somerville, Mass. Filed Mar. 8, 1878.



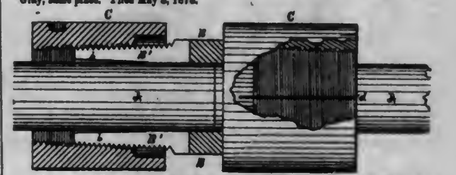
Claim.—In combination with the glass tube C and the two gage-cocks A B, arranged as described, the studs *b b*, the ball-valves *a a*, and their chambers *d d*, provided with stop-bars and inclined bottoms, all being arranged and applied substantially as and to operate as set forth.

208,964. Cultivators. Benj. H. Cross, Cabaniss, Ga. Filed Aug. 24, 1878.



Claim.—A combined plow and cultivator having the bracket *e*, bent as described, and arranged between the two sides of the doubled and offsetted standard 3 upon the bolt *f*, and held at the outer end by a bolt, *c*, as shown and described.

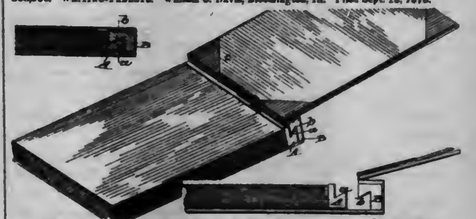
208,965. Shaft and Pulley Couplings. Silas C. Crowell, Erie, Pa., assignor to A. H. Gray, same place. Filed May 8, 1878.



Claim.—1. The sleeve or hub B, with its ends tapered externally and internally and slotted, as described, in combination with jam-nuts C C, which are provided with tapered bores, substantially as and for the purposes mentioned.

2. A taper-sleeve fastening provided with both an external and an internal taper, B' and *b*, and keys *d*, substantially as and for the purposes mentioned.

208,966. Writing-Tablets. William O. Davis, Bloomington, Ill. Filed Sept. 13, 1878.



Claim.—In a writing-tablet, the herein-described wooden block, to which the writing-sheets and a cover or covers are secured, consisting of the parts A and B, the main portions having the same relative thickness, and respectively provided with the dovetailed tenon *a* and groove *b*, substantially as and for the purpose specified.

208,967. Sewing-Machines. Job A. Davis, Boston, Mass. Filed Aug. 29, 1878.

Brief.—The shuttle has a latch to keep the bobbin in, the latch being provided with a thread-delivery eye larger than the thread, placed at the center of rotation of the shuttle, which has a rotary reciprocation by means of a pinion on its perpendicular carrier-shaft, actuated by a horizontal toothed segment, which is vibrated by a rod from an eccentric on the main shaft; also, a peculiar combination tension and take-up devices.

Claim.—1. The shuttle-body provided with an eye, I, at its heel, in combination with the latch provided with a thread-delivery hole in line with the center about which the bobbin turns, and at the side of the center of the bobbin, and made larger than the diameter of the thread, to operate to form slack in the shuttle-thread, as and for the purpose set forth.

2. The lower shaft, *l*, provided with an eccentric to actuate the needle mechanism, and with an eccentric, *j*, in combination with the link *k* and the horizontally-vibrating toothed sector *p*, pinion *q*, vertical shaft *r*, and shuttle-driver, all connected and adapted to operate substantially as described.

3. The feed-dog *w*, provided with finger *c*, in combination with adjustable wedge-piece *z*, cam *i*, spring *b'*, and adjusting-lever *x a'*, projecting beyond the cloth-plate and above the frame on which the machine rests, substantially as described.

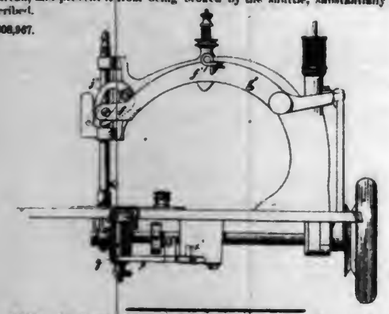
4. The arm *g* and its eye *f'*, adapted to draw off the thread between the spool and tension device, in combination with the needle-bar and needle and take-up *f*, adapted to be operated, as described, by the pin *f* on the needle-bar.

5. The shuttle body and bobbin, in combination with the lever-latch *r''*, adapted to hold the bobbin in place and produce tension thereon, and with spring *s'*, adapted to hold the latch open or closed, substantially as described.

6. The pivoted take-up *f*, slotted as described, and its frictional holding-spring, in combination with the pin *f*, of less diameter than the slot between the arms of the take-up, and adapted to allow the take-up to rest at the beginning of the ascent and descent of the needle-bar, as and for the purpose described.

7. The rotary reciprocating shuttle, provided with an eye, 1, and with a bobbin-holding latch having a thread-delivery eye central with the axis about which the shuttle turns, and with a peripherical groove, 6, in combination with a stationary finger, 8, and an eye-pointed needle to hold the loop of needle-thread, and prevent it from being broken by the shuttle, substantially as described.

208,967.



208,968. Ear-Rings. Wellington P. Dolloff, Providence, R. I. Filed July 31, 1878.



Claim.—The ear ring or knob formed of two plates, A and B, separated by the space E, and joined to each other at one side or edge by means of a hinge-joint, C, so that the opposite sides or edges of the plates may move in opening or closing directly from or toward each other, and combined upon the side opposite the hinge with the ear-wire D, provided with a notch, *d*, to form a catch for holding the plates in proper position to suitably inclose the lobe of the ear, substantially as described.

208,969. Tips for Switch-Cords. Thomas R. Doolittle, Bridgeport, Conn., assignor, by mesne assignment, to Eugene F. Phillips, Providence, R. I. Filed Feb. 9, 1878.



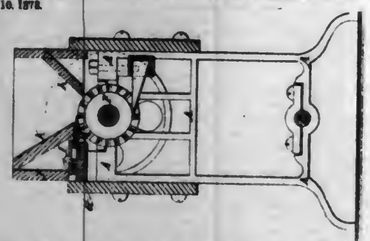
Claim.—1. As a new article of manufacture, a tip for switch cords consisting of a metallic shell and a metallic needle, the latter adapted to carry the core of the cord within the shell, and to be secured in place substantially as hereinbefore described.

2. As an improved article of manufacture, a switch-cord provided with a metallic tip, secured in position to produce conductivity by compression of the shell, substantially as hereinbefore set forth.

3. The method herein described of securing metal tips to switch-cords and producing conductivity by compressing the outer shell and coring the core between the said shell and an interior spear or needle.

4. In combination with an electric switch-cord, a tip-wire or needle of rectangular or triangular form in cross-section, substantially as and for the purposes set forth.

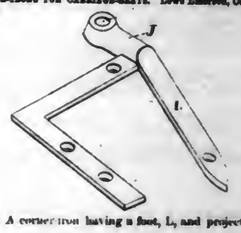
208,970. Oatmeal-Machines. William Eberhard and Robert Turner, Akron, Ohio. Filed Sept. 10, 1878.



Claim.—1. The combination of the roller D F, whether made solid or in sections, having circular rows of holes in its face and ring-grooves through the said holes, and the knife H and its supporting and clamping bars G I, with each other, and with the frame A B C and the hopper J K, substantially as herein shown and described.

2. The combination of the grooved bar L, the clearers M, and the separating-blocks N with the roller D F and the frame A B C, substantially as herein shown and described.

208,971. Corner-Irons for Carriage-Seats. Lowe Emerson, College Hill, Ohio. Filed Mar. 26, 1878.



Claim.—1. A corner-iron having a foot, L, and projection J, substantially as specified.

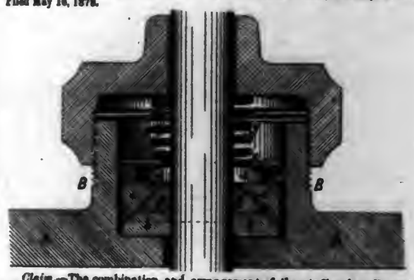
2. A corner-iron having a foot, L, and projection J, the latter being provided with a flange, *d*, substantially as specified.

208,972. Saddle-Stirrups. John M. Freeman, Parkersburg, Ind. Filed Aug. 17, 1878.



Claim.—In a stirrup, the combination of the plate *d*, pivoted at *e*, the eye-bolt *g*, pin *f*, and perforated saddle-strap link *s* with stirrup *a*, having the recess *i* on one side, and the opposite guard, *n*, having projection *p*, as shown and described.

208,973. Metallic Packing for Piston-Rods, &c. Martin H. Gerry, Minneapolis, Minn. Filed May 16, 1878.



Claim.—The combination and arrangement of the stuffing-box B, conical cylinder *a*, conical divided ring or rings *b b'*, plate *c*, spring *g*, and packing-ring *d*, whereby the pressure of the air from the outside regulates the pressure of the packing upon the piston-rod and causes it to adapt itself to the work required of it, substantially as hereinbefore specified.

208,974. Signs. Wolfgang Gulden, Minneapolis Township, Hennepin County, Minn. Filed Mar. 9, 1878.



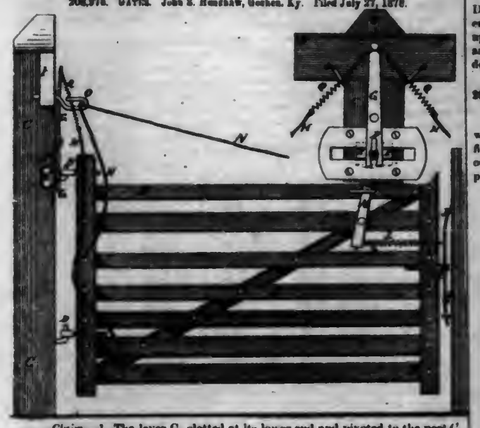
Claim.—1. A sign composed of a loosely suspended bar, *a*, and a series of letters and figures loosely hung to the bar, and independent of and disconnected from each other, substantially as and for the purpose set forth.

2. As a new article of manufacture, a letter or figure with a punctuation-mark connected therewith, the connecting bar being of a different color, substantially as set forth.

208,975. Hog-Cholera Compounds. Mercer Hemingway, Owensborough, Ky. Filed May 23, 1878.

Claim.—A medical compound formed of rattlesnake-root, poke-root, tobacco, turpentine, coal-oil, sulphur, copperas, and lye-soap, in the proportions and manner substantially as herein set forth and described.

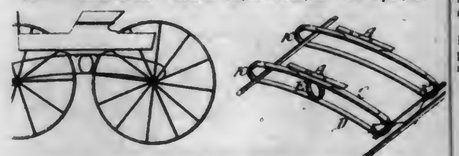
208,976. Gates. John S. Hanshaw, Goshen, Ky. Filed July 27, 1878.



Claim.—1. The lever G, slotted at its lower end and pivoted to the post C, the spiral springs Q, and the cords H, in combination with the sliding block E, the plate F, and the hinge D, substantially as and for the purpose described.

2. The combination of the rod K, the spiral spring L, the lever M, the cords N, and the guides O with the gate B, the spring J, the catch I, and the cords H, substantially as herein shown and described.

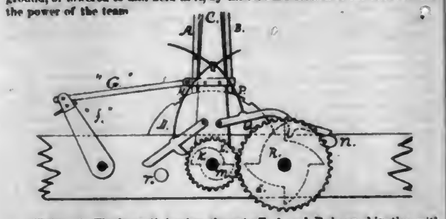
208,977. Vehicle-Springs. Horace R. Huie, San Leandro, Cal. Filed May 27, 1878.



Claim.—The endless steel spring consisting of the upper and lower leaves, C D, and the curved elastic uniting ends K, forming a part of the spring, in combination with the centrally-placed spring-bar A and the brace E, uniting the leaves at that point, substantially as herein described.

208,978. Sulky-Plows. Frederic H. Isaacs, Newark, N. J. Filed Sept. 7, 1877.

Brief.—Plows carried upon shafts. Lever with two cut-offs, and connecting-springs, pawls, and ratchets, by which the plows are lifted from the ground, or lowered to and held in it, by the forward motion of the machine and the power of the team.

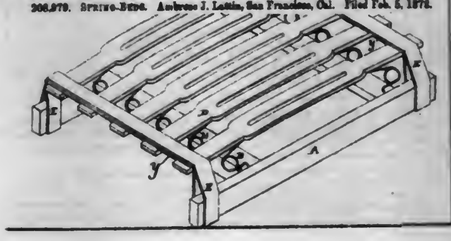


Claim.—1. The lever C, having the cut-offs A and B, in combination with the connecting-rod G, crank *f*, pawls I Q, and notched segment D, whereby the lever is locked to the driving-wheel and the plows raised or lowered by the forward movement of the machine, substantially as shown and described.

2. The combination of the lever C, having the cut-offs A and B and spurs *e*, with the springs H P and pawls I Q, substantially as specified.

3. The combination of the ratchet K and gear-wheel L, rigid upon the driving wheel or axle, with the ratchet R, gear-wheel S, lever C, cut-offs A B, pawls I Q, springs H P, lugs *s r*, and notched segment D, substantially as set forth.

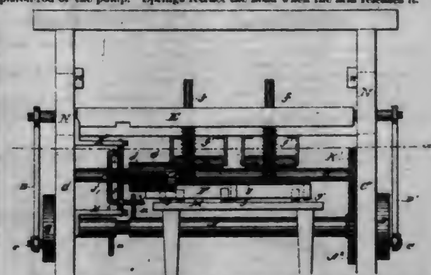
208,979. Spring-Bed. Ambrose J. Lottin, San Francisco, Cal. Filed Feb. 5, 1878.



Claim.—The bed-bottom consisting of the series of independent single slats D D, provided at each of their ends with depressing cross-bars Y Y, extending entirely across the bed and acting upon all the slats, said bars being supported upon intermediate springs B, arranged in a frame near the ends of the slats, and held down by pliable straps or loops E E, substantially as shown and described.

208,980. Paper-Feeding Apparatus. Frank H. Losten, New York, N. Y. Filed June 17, 1878.

Brief.—Above the pile-table is mounted a reciprocating rock-shaft, to which is attached by spring-rods a plate bearing an air-pump connected to finger-pipes extending over its front edge. A vertical shaft, rocked by tappets on the rotating main shaft, has an arm acting on a cross-head attached to the piston-rod of the pump. Springs retract the head when the arm releases it.

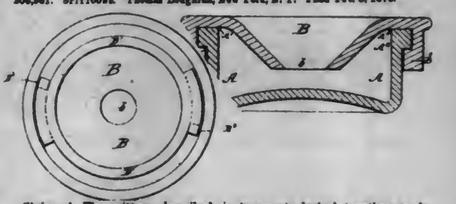


Claim.—1. The combination of the reciprocating rock-shaft E, plate F, carrying pipes *g g'*, air-pump G, fixed cross-head J', movable cross-head J, springs *j j*, vertical rock-shaft I, having arms *i i*, and shaft A, having tappets *a a*, substantially as described.

2. The combination of the shaft A, tappets *a a*, rock-shaft I, arms *i i*, springs *j j*, cross-heads J J', air-pump G, suction-tubes *g g'*, plate F, stems *f f*, springs *f' f'*, and reciprocating rock-shaft E, substantially as specified.

3. The combination of the feed-table M, shaft A, reciprocating rock-shaft E, wheels B B, crank-rods D D', standards C C', provided with slots N N, plate F, air-pump G, pipes *g g' g' g'*, frame H, rock-shaft I, cross-heads J J', and springs *j j*, substantially as specified.

208,981. Spittoons. Thomas Loughran, New York, N. Y. Filed Feb. 6, 1878.

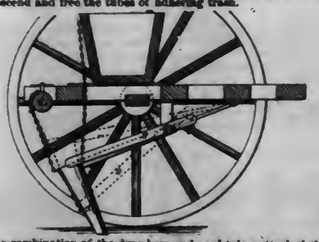


Claim.—1. The spittoon described, in two parts, locked together, as described, and provided with one or both sets of stops, A^1 B^1, as and for the purposes herein specified.

2. The combination of the body A, having projections A^2, with the cover B *b*, having hanging lip B^1, with projections B^2, substantially as described, and for the purposes set forth.

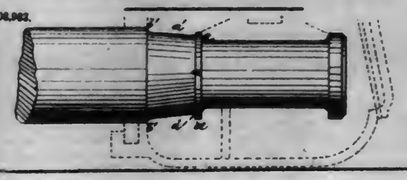
208,982. Grain-Drill Cleaners. Joseph W. Lucas, Leesburg, Ky. Filed Sept. 6, 1878.

Brief.—As the drill tubes are elevated the cleaners, which are pivoted to the drag-bars, descend and free the tubes of adhering trash.



Claim.—The combination of the drag-bars and seed-tubes attached thereto with the levers *g*, the tubes and levers being made to move in opposite directions, substantially as shown.

208,983.



208,962. Journals. Ranald Macdonald, Brooklyn, N. Y. Filed Jan. 9, 1878.

Claim.—In a journaled shaft or axle, the combination of the rib or flange *a* with the gradually tapering portion *a' b'*, the said tapering portion enlarging from the base of the rib or flange *a* to its junction with the cylindric surface of the shaft or axle, all substantially as and for the purpose herein set forth.

208,964. Coin-Holders. Bernard McGovern, Bridgeport, Conn. Filed Apr. 9, 1878.



Claim.—1. The combination, in a coin holder, of the frame or body and an adjustable clamping-bar, substantially as set forth.

2. The combination, substantially as hereinbefore set forth, of the skeleton-frame and the swinging clamping-bar interlocking with the frame.

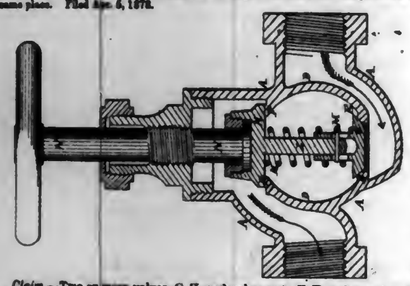
3. The hereinbefore-described coin-holder, consisting of a frame composed of the parallel bars and the posts and the adjustable clamping-bar, jointed to the posts and interlocking therewith.

208,965. Keys for Musical String-Instruments. Ferdinand Z. Nieder, New York, N. Y. Filed Apr. 9, 1878.



Claim.—A key for musical string-instruments, consisting of a fixed cylindrical sleeve and of a recessed spindle with interior friction-springs, substantially as and for the purposes set forth.

208,966. Valves. John Patterson, Salem, Mass., assignor to himself and George P. Martin, same place. Filed Apr. 6, 1878.



Claim.—Two or more valves, G H, and valve-seats E F, and a spring, M, in combination with the stem N, globe D, and shell A, substantially as herein shown and described.

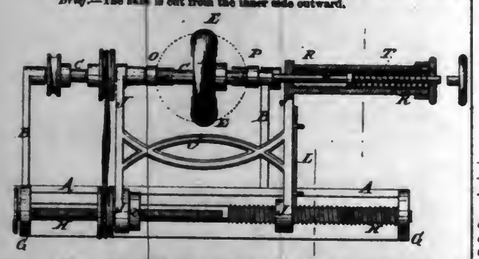
208,967. Spring Bed-Bottoms. Hiram Fitcher, Fond du Lac, Wis. Filed June 3, 1878.



Claim.—The hook F, having a portion of its shank *f* turned back upon itself to form the shoulder or stop *e*, and surrounded by the spiral wire H, held by the said shoulder *e*, in combination with a spiral spring, G, of a spring bed-bottom, for holding and adjusting the tension of said spring, substantially as specified.

208,968. Peach-Parers. William S. Finsmer, East Portland, Oreg. Filed Feb. 26, 1878.

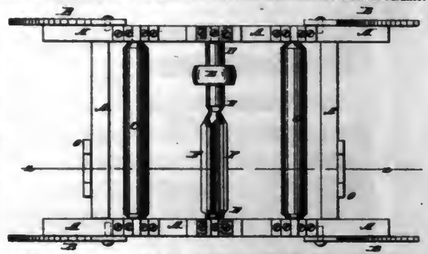
Brief.—The skin is cut from the inner side outward.



Claim.—The combination of the wheel D, provided with the notches *d'*, the cutters E, and the shaft C, the shaft H, provided with its screw-thread and groove, the swinging frame J, provided with its bar and spring L *f*, the forks O and P, the case R, and spring T, and the spring V, with each other and with the bar A and its arms B G U, substantially as herein shown and described.

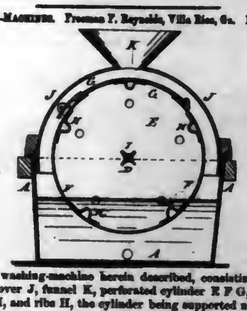
208,969. Machines for Turning Wooden Heels. Louis Prunet and George Marshal, New York, N. Y. Filed Sept. 28, 1878.

Brief.—Wooden heels can be rapidly formed by means of two rollers of such a size as to fit into the concavity of the heel to be formed, and which have their bearings in the upper part of the side bars of the main frame. An intermediate rotating shaft journaled in vertically-adjustable bearings, and provided with suitable cutters and a driving-pulley. A holder upon which the blank is firmly clamped, and which has attached to it in such positions as to rest upon the above-named rollers two patterns of the exact shape of the heel to be formed, and which is provided with cylindrical ends, forming handles, which rest in slotted guide-standards attached to cross-bars on the main frame.



Claim.—The combination of the two rollers C, the intermediate shaft D, provided with the pulley H and the cutters F, and the holder G, provided with the two gages or patterns H, and the clamp J K L M, for holding the blank, with each other and with the frame A B and the slotted guide-standards O, substantially as herein shown and described.

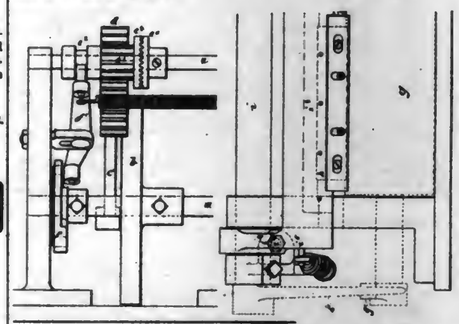
208,970. Washing-Machines. Freeman P. Reynolds, Villa Rica, Ga. Filed May 11, 1878.



Claim.—The washing-machine herein described, consisting of the sheet-metal vessel A, cover J, funnel K, perforated cylinder E F G, longitudinally-grooved shaft D I, and ribs H, the cylinder being supported upon the shaft D in the ends of the vessel A, and adapted to be revolved by means of a crank, L, all arranged and operating as and for the purpose specified.

208,971. Corners-Machines. Thomas E. Rushton and James Macqueen, Bolton, England. Filed Sept. 5, 1878. Patented in England, Sept. 14, 1877.

Brief.—The mechanism for imparting the advancing and retrograde motions to the detaching-rollers consists in the cams on the cam-shaft, the levers, spring, sliding pinion, and half-clutches; that for operating the nipping apparatus consists in the cam on the comb-shaft, the lever, nipper-shaft, lifters, spring, and set-screw. One of the cams is formed of two concentric rings, held together by a set-screw, so as to regulate the advance and retrograde motions of the detaching-rollers.

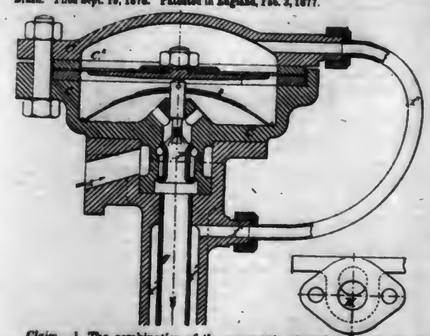


Claim.—1. The cam-shaft *a*, the cams *b f*, levers *c' f'*, the toothed segment *d*, the spring *f'*, the sliding pinion *e'*, provided with the groove *e'* and half-clutch *e'*, and the stationary half-clutch *e'*, in combination with the detaching-roller *c*, substantially as and for the purpose described.

2. The cam *f*, consisting of two concentric rings, held together by a set-screw, substantially as and for the purpose described.

3. The shaft *i*, the nipper-plate *i'*, the lifters *i'*, the spring *i'*, the set-screw *i'*, the lever *i'*, the cam *g'*, and comb-cylinder shaft *g*, in combination with the feed-roller *h*, substantially as and for the purpose described.

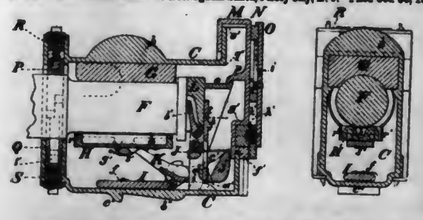
208,972. Feed-Water-Regulating Valves. Eduardo Claudio da Silva, Rio de Janeiro, Brazil. Filed Sept. 19, 1878. Patented in England, Feb. 2, 1877.



Claim.—1. The combination of the concentric pipes *f'* and *g*, for the purpose of admitting the feed-water to the boiler and of intercepting its passage thereto, arranged as shown and described.

2. The combination of the diaphragm O', in connection with the double-beat valve *p* and the spring *s*, for the admission and the interception of the said feed-water, constructed and arranged as shown and described.

208,973. Car-Axle Boxes. J. Nottingham Smith, Jersey City, N. J. Filed Oct. 30, 1876.



Claim.—1. In combination with the pedestal A and housing C, having flat sides, the brackets D D, extending in between the pedestal and housing, and having swells *e e* formed on them, substantially as and for the purpose set forth.

2. In combination with the pedestal A, brackets D D, and bolts *e e*, the lock-washers *q q*, substantially as and for the purpose set forth.

3. In combination with the pedestal A and brackets D D, the strap E, cut away between the jaws of the pedestal, substantially as and for the purpose set forth.

4. The combination and arrangement of the housing C, having half-socket bearings formed in its sides for the trunnions *h h* of the rocking frame K and the legs *i i* of the stopping-bar, which hold said trunnions in said half-sockets, substantially as and for the purpose set forth.

5. In combination with the rocking counterbalanced frame K, the pad H, having a cup or cavity formed in its upper surface, substantially as and for the purpose set forth.

6. In combination with the pad H, hung on the bearing *g* in the frame K, the spring *s'*, substantially as and for the purpose set forth.

7. In combination with the frame K and pad H, the clack or jumper I, having a spur, *f*, on one side of it for propelling the wick, substantially as and for the purpose set forth.

8. In a car-axle box or housing, in combination with the stopping-bar L, the clack or jumper *i*, having a spur, *a'*, for propelling the wick, substantially as and for the purpose set forth.

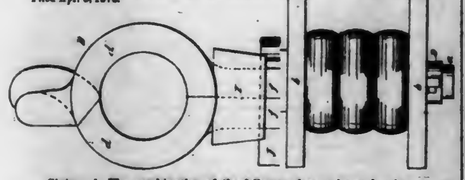
9. In a car-axle box or housing, the stopping-bar L, having a hooked bracket, *o*, in combination with the vertically-sliding door M, having a hooked bracket, *p*, substantially as and for the purpose set forth.

10. In a car-axle box or housing, in combination with the sliding door M and plate N, the cover O, provided with a spring-catch, *o'*, substantially as and for the purpose set forth.

11. In a car-axle box or housing, the dust-excluder consisting of two plates, P and Q, halved together at the center, and the plate Q having a dust-collecting cavity, *s'*, in it, substantially as and for the purpose set forth.

12. In a car-axle box connected to the pedestal by a ball-and-socket joint, the incline *b''* and rib *c''*, substantially as and for the purpose set forth.

208,974. Draw-Bar Attachments for Railway-Cars. Jared H. Smith, Norwich, Conn. Filed Apr. 3, 1878.

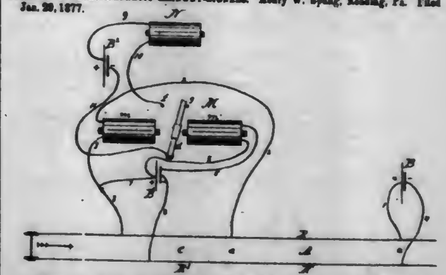


Claim.—1. The combination of the follower-plate or beam *b*, a bar, A, extending through the same, and having an enlargement, *a*, at the end, and a divided sleeve or clamp, D, applied to the bar between the enlargement and the beam, as and for the purpose set forth.

2. A draw-bar provided with an enlargement at the end, and with a detachable clamp secured between the enlargement and the plate or beam *b*, as set forth.

3. The attachment consisting of sections *d d'*, provided with slotted tongues *f f'*, the ring I, and key J, as specified.

208,975. Electro-Magnetic Railway-Signals. Henry W. Spang, Reading, Pa. Filed Jan. 20, 1877.



Claim.—1. The combination of relay M, having electro-magnets *m* and *m'* in separate circuits, and the armature-lever *d* of which is moved in opposite directions by electro-magnetism, and controls a secondary circuit and a visual or audible signal, or both, and devices for controlling said circuits at one end of an insulated section of railway-track, A, with the rails of said section of track and battery B, which is connected with said rails at the opposite end of said section of track, as and for the purpose set forth.

2. Relay M, battery B^3, wires 9 10 11, signal-operating magnet N, wires 5 6, battery B^1, wires 2 3 7 8, circuit-closer C, in combination with rails R R^1 of insulated section of track A, wires 1 4, and battery B, as set forth.

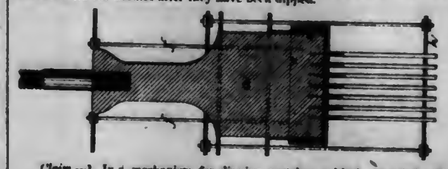
3. The combination of rails R R^1 of insulated section of railroad-track A, having a galvanic battery, B, and relay M', with magnets m^2 and m^3 in separate circuits, and whose armature-lever d^2 controls a visual or audible signal, or both, connected therewith at one end, *a'*, of said section of track and galvanic battery B^1, and relay M, with magnets *m* and m^1, in separate circuits, and whose armature-lever *d* controls a visual or audible signal, or both, connected therewith at the opposite end, *a*, of said insulated section of track, in combination with a circuit closer and breaker, or devices for closing and breaking circuit at each end *a* and *a'* of said insulated section of track, substantially as described, and for the purpose set forth.

4. Rails R R^1 of insulated section of track A, galvanic battery B^1, relay M, wires 6 7 8 15 16 17, battery B^2, wires 12 13 14, signal-operating magnet N, battery B, relay M', wires 4 5 9 10 11 18, battery B^3, wires 22 23 24, signal-operating magnet N', with relay H, battery B^4, wires 1 2 3, circuit-closer C, and relay H', battery B^5, wires 19 20 21, circuit-closer C', substantially as described.

5. Rheostat U, in combination with battery B^1 and magnet m^2, substantially as described, and for the purpose set forth.

208,976. Machines for Dipping Matches. A. B. Sprout, Picture Rocks, Pa. Filed Sept. 21, 1878.

Brief.—The dipping-block is provided with needles to pick up and hold the sticks, and two perforated plates, movable back and forth in relation to the block—one to clear out the loose, unstuck sticks, and the other to push the matches from the needles after they have been dipped.



Claim.—1. In a mechanism for dipping matches, a block provided with needles for picking up and holding the sticks, substantially as shown.

2. The combination of a block provided with needles for picking up and holding the sticks with the perforated disk *h*, substantially as described.

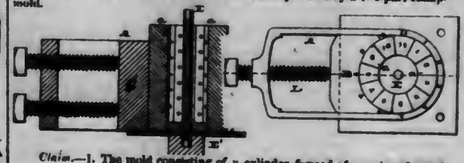
3. The combination of the block provided with needles, a disk to hold the sticks separate while being dipped, and a disk or plate to push the matches from the needles, substantially as set forth.

4. In a match-dipping mechanism, a perforated disk, *h*, movable back and forth in relation to the block, substantially as specified.

5. The block provided with metallic points, in combination with a perforated plate, for detaching the matches from the points, substantially as shown.

208,977. Molds for Casting Thills-Rollers. John B. Stimson, Philadelphia, Pa., assignor of one-half his right to James Smith & Co., same place. Filed Aug. 3, 1878.

Brief.—Metal mold divided radially into sections. Holes in the inner surfaces to receive points of teeth to hold them in proper position to receive the molten metal onto their heads. Sections held in position by a two-part clamp-mold.

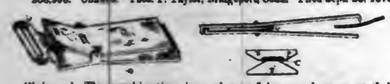


Claim.—1. The mold consisting of a cylinder formed of a series of metallic sections with perforations on their inner faces, substantially as and for the purpose set forth.

2. The series of sections *a*, forming a cylindrical mold, H, and clamped to the flask, substantially as and for the purpose set forth.

3. The flask A, sectional mold H, clamp C, and core-pin E, combined and operating substantially as and for the purpose set forth.

208,998. Clasp. Thos. P. Taylor, Bridgeport, Conn. Filed Sept. 23, 1878.

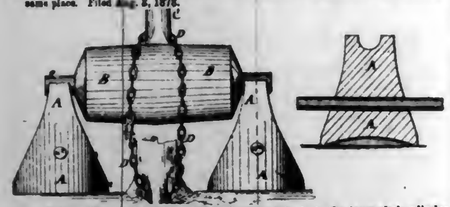


Claim.—1. The combination, in a clasp, of jaws *a b*, connected between their ends, and a wedge, *c*, upon the turning of which, between the ends of the jaws, the opposite ends are brought together or separated, substantially as set forth.

2. The combination of the plates or jaws *a b*, connected as specified, and provided with beveled flanges, and the plate *c*, adjustable, as described.

3. The combination of the jaws, flange *f*, recessed at *t*, and plate *c*, connected and adjustable between the jaws, as set forth.

208,999. Stump-Pullers. William A. Webb, Wadley, Ga., assignor to George P. Jewett, same place. Filed Aug. 2, 1878.



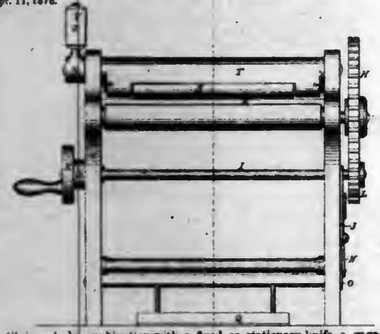
Claim.—The combination of the fulcrum-posts A A, the journaled cylinder B, having the lever-arm C, and the chain D, as and for the purpose specified.

209,000. Hoes. Thomas Weiss, Bethlehem, Pa. Filed Feb. 5, 1878.



Claim.—The combination, with the eye A, having the groove or socket C, rim or flange D on the inner or face side, and lug or tang B, of the hoe-blade E, having a socket or recess, *c*, to receive said lug or tang, the blade being secured to the tang, with its outer surface flush or even therewith, as shown and set forth.

209,001. Leather-Splitting Machines. Arthur E. Whitney, Winchester, Mass. Filed Apr. 11, 1878.

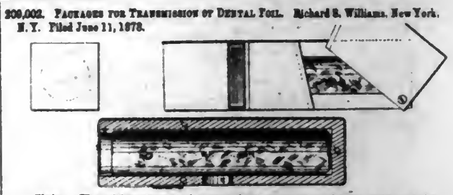


Claim.—1. In combination with a fixed or stationary knife, a gage-roll, a draft beam adapted to be rotated and draw the leather through the machine by winding the leather thereon, and provided with a spur-gear wheel, secured thereon, and a driving shaft provided with a pinion adapted to engage with or be disengaged from said spur-wheel, the radius-arm J, toggle M, connecting-rod N, lever O, rock-shaft P, and treadle Q, all arranged and adapted to operate as set forth, so that the weight of the parts shall tend to throw the pinion out of gear and raise the treadle, substantially as described.

2. The combination, in a leather-splitting machine, of the beam G, gear-wheel H, the driving-shaft I, provided with the pinion L, and adapted to be moved to cause said pinion to engage with or be disengaged from the wheel H, the radius-arm J, forming at one end the bearing for the movable end of said driving-shaft, and pivoted at its other end to the frame or some other fixed part of the machine, in such a position that a movement of its movable end shall cause the pinion to move in a line radial to the axis of the gear H, the toggle M, connecting-rod N, lever O, rocker-shaft P, treadle Q, and counterbalance-weight R R', all arranged relative to each other, and adapted to operate substantially as and for the purposes described.

3. The combination of the beam T, gage-roll S, handle U, and counterbalance-weight V, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

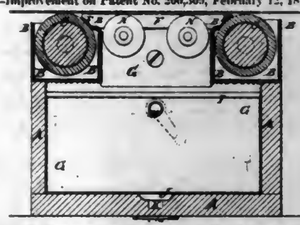
209,002. Packages for Transmission of Dental Foil. Richard S. Williams, New York, N. Y. Filed June 11, 1878.



Claim.—The within-described means for transmitting dental gold, consisting of a tightly covered or sealed transparent receptacle complete in itself and containing the gold, an independently-sealed rigid protecting-case, in which said receptacle is placed, having an inspection-opening and a sealing and stamped wrapper inclosing the said protecting-case, so as to prevent fraudulent access to its contents, and serving to retain the gold-receptacle within said case, substantially as specified.

209,003. Roll Suction-Boxes for Paper-Making Machines. Cornelius Young, Sandy Hill, N. Y. Filed July 10, 1878.

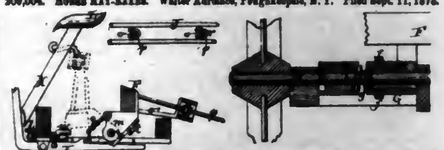
Brief.—Improvement on Patent No. 200,369, February 12, 1878.



Claim.—1. The combination of the troughs B with the rubber rollers C and the sides of the suction-box A, to form water-seals for the said rollers C, substantially as herein shown and described.

2. The combination of the hard-rubber pulleys or wheels N with the adjustable partitions G of the suction-box A, and with the strips F and rubber rollers C, to assist in carrying the wire-cloth, substantially as herein shown and described.

209,004. Horse Hay-Rakes. Walter Adriance, Poughkeepsie, N. Y. Filed Sept. 11, 1878.

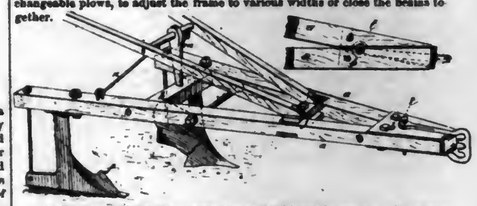


Claim.—1. The combination, with a vibrating rake-head, F, attached to a bracket, *m*, on a shaft, *n*, and having a downwardly-projecting adjustable stop, *t*, of a hand-lever, I, pivoted at right angles to and beneath the shaft *n*, and connected with the bracket *m* at a point between its pivot and rear free end, said end of the lever being constructed to receive and support the end of the stop *t*, substantially as described, whereby the rake-head may be partially elevated by the hand-lever and supported firmly in such position, as set forth.

2. In a horse hay-rake, the combination, with a vibrating rake-head and its teeth, of a frame which is attached to the rake-head, and provided with guide-bars for each tooth, and of slides which are fitted on said bars and carry the shanks of the rake-teeth, substantially as and for the purpose described.

209,005. Cultivators. John C. Bean, Orangeville, Ill. Filed Sept. 7, 1878.

Brief.—Hinged and tenoned beams, with removable cross-bars and interchangeable plows, to adjust the frame to various widths or close the beams together.



Claim.—A cultivator plow consisting of the hinged beams *a a*, with tongue and groove, the removable cross-pieces A, the removable cross clamping-bolts *b b*, the removable vertical brace *m*, the hinged braces *n n*, and the rigid frame-handles, whereby the beams are closed together or adjusted to any desired width, and adapted for use with the plows, as described.

209,006. Electro-Magnetic Dental Pluggers. William G. A. Bonwill, Dover, Del., assignor to S. S. White, Philadelphia, Pa. Filed Nov. 14, 1871.

Claim.—1. The combination of an electro-magnet, a frame mounted thereon, extending between the coils and rising above the magnet, and a vibrating armature or mallet suspended from said frame, substantially as described.

2. The combination of the electro-magnet, its cross-bar, and the plugger-socket, the cross-bar being provided with a central aperture in line with the bore of the socket, whereby the plugger-shank may be passed through both

socket and cross-bar and between the coils of the magnet, to be acted upon by the armature of the magnet.

3. The combination of an electro-magnet with an armature or mallet, provided with a set-screw to strike upon a plugging-tool, substantially as described.

4. The combination of an electro-magnet, a vibrating armature or mallet, and set-screws to prevent direct contact of the mallet and magnet, substantially as described.

5. The combination of the electro-magnet, the frame, the mallet, and a set-screw carried by the frame for regulating the throw or play of the mallet, substantially as described.

6. The combination of the electro-magnet, the frame rising above the magnet, the armature or mallet suspended from the frame, and a spring located between the mallet and the frame to throw the mallet outward when the electric circuit is broken, substantially as described.

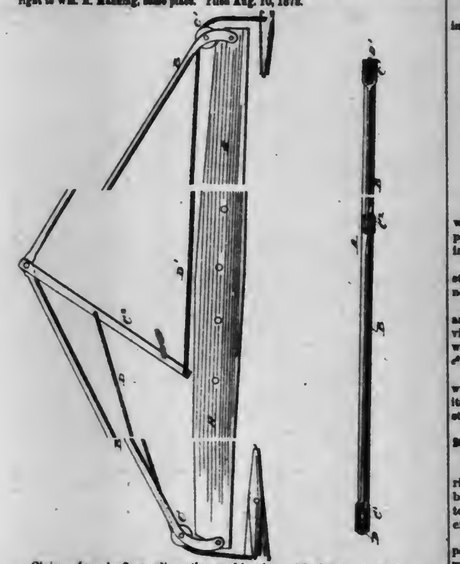
7. The combination of the frame, a mallet carried thereby, the open or slotted tool-socket, and a plugging-tool, whereby the tool may be revolved during the operation of the instrument by the hand of the operator.

8. A finger-key consisting of a pivoted lever mounted upon the frame of the instrument, to make and break the circuit, substantially as described.

9. The combination, with the circuit making and breaking key or lever, of a wedge or device acting on the key to permanently open the circuit when the instrument is not in use, substantially as described.

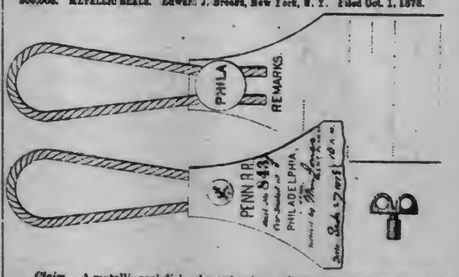
10. The combination, in an electro-magnetic dental plugger, of an electro-magnet, a frame mounted thereon, a vibrating armature or mallet suspended from the frame and adapted to impart blows to a plugging-tool, an automatic circuit-breaker, disconnected from the instrument, and a temporary circuit-breaker mounted on the instrument itself and under the complete control of the operator, substantially as described.

209,007. Draft-Equalizers. Lewis C. Brehm, Decorah, Iowa, assignor of one-half his right to Wm. H. Manning, same place. Filed Aug. 10, 1878.



Claim.—In a draft-equalizer, the combination, with the bar A, of the meeting braces or bars B B, having the pulleys C C', and provided at their apex with a lever C², to which are attached cords D D', as shown and described, one passing over the pulley C and the other over the pulley C', substantially as and for the purpose specified.

209,008. Metallic Seals. Edward J. Brooks, New York, N. Y. Filed Oct. 1, 1878.



Claim.—A metallic seal-disk adapted to be applied to a sealing-shackle, and constructed with one or more projecting studs, in combination with a labeling tag having an aperture or apertures at its upper end to receive said stud or studs, the latter serving to attach said tag in the act of pressing the seal, substantially as herein specified, for the purposes set forth.

209,009. Metallic Cans. John Broughton, Brooklyn, N. Y., assignor to William Vogel, same place. Filed Oct. 16, 1877.

Brief.—The head is slitted to form a free flap, which may be raised by any pointed tool without breaking any joint. Beneath the opening formed by the flap is soldered a covering patch. The head is then soldered to the can. The can is opened by pulling the stripping-flap.



Claim.—A metallic can having a slit or incision in its cover, commencing at the margin thereof and extending inwardly in an angular direction, forming two sides of a right-angled triangle, the hypotenuse of which lies in the diametrical line of the cover, or at right angles to one of its sides, intersecting the edge of the cover at the same point as the incision, in combination with a patch secured to the under side of the cover, substantially as and for the purposes specified.

209,010. Breech-Loading Fire-Arms. Henry C. Ball, Brooklyn, N. Y. Filed Aug. 5, 1876.

Brief.—The locking-brace is operated to unlock the breech-block by pressing forward upon the trigger.



Claim.—1. The extractor R, pivoted within the receiver B, and constructed with an angular projection, *r'*, in combination with the rotating breech-block E, provided with a recess, *e'*, inclosing and operating the extractor, substantially in the manner set forth.

2. The half-cock notch *g'*, constructed of an angular hooked form, substantially as shown, in combination with the sear I, provided with the angular notch F, as and for the purpose specified.

3. The pivoted locking-brace H, provided with a central slot or mortise and shoulder, *h*, in combination with the trigger K, pivoted within said slot, vibrating independently when operated to release the sear, and in connection with the locking-brace when operating to disengage the same from the shoulder *e'* of the breech-block, as set forth.

4. The combination of the compound spring J, by its two outside members, with the locking-brace H, so as to engage it with the breech-block E, and by its middle member with the sear I, in the manner and for the purposes substantially as described.

209,011. Operating Heavy Ordnance. Henry C. Ball, Brooklyn, N. Y. Filed Jan. 6, 1876.

Brief.—The cartridge is placed on a hoist attached to the front of the carriage, and drawn into the gun by a ramrod operating through a hole in the breech, which hole is stopped by a removable lock. The carriage is mounted to the chassis by a spring-clamp, and by a lever or incline and cam the spring exerts a constantly-increasing pressure to check the recoil.

Claim.—1. A muzzle-loading cannon constructed with an opening or small passage through the breech in the axial line of the chamber, in combination with a perforated swab, which remains in the gun when fired, and a removable loading-rod adapted to enter and operate through the said rear opening or pas-

sage in the gun, for the purpose of working the swab and of drawing the charge or load home into the gun, substantially as herein described.

2. A loading-rod adapted to enter the chamber of a gun through an aperture in the breech, having a shoulder near its front end to engage with or take against the swab, and a reduced forward portion to pass through the swab and the cartridge, and provided with a screw-thread to screw into the cartridge or projectile, all substantially as set forth.

3. A loading-rod, in combination with a lanyard or rope operating in a longitudinal groove in said rod from the point of attachment at or near its forward shoulder, so as to draw the charge or load home into the chamber of the gun by the central and direct pull of the lanyard, substantially as described.

4. A loading-rod, in combination with a hand-wheel adapted to slide upon the rod, but not to turn thereon, for rotating the same and for supporting the lanyard at its exit from the rear aperture of the breech, constructed and operated substantially as described.

5. A detachable percussion-firing piece or lock constructed with a shank adapted to enter and securely close the orifice in the breech of the gun, in which shank is a small powder-chamber opening into the chamber of the gun, to contain a small charge of powder for igniting the main charge by filling its central cavity with flame, all substantially as described.

6. A swab constructed to fit the bore of the gun, with a central perforation to allow the passage of the reduced part of the loading-rod, but not the shoulder on said rod, substantially as described.

7. The ammunition-truck, in combination with the elevator for conveying and raising the load or charge into range with the chamber of the gun, substantially as described.

8. The ammunition-truck and elevator, for bringing the load or charge into range with the chamber of the gun, in combination with the cross-slide, for moving the load or charge horizontally close up to the muzzle of the gun, substantially as described.

9. The column of the elevator, in combination with the top and bottom sheaves and the lanyard or tackle for raising or lowering the elevator-platform, substantially as described.

10. The column of the elevator, in combination with the top sheave and its eccentric-spindle, for the purpose of holding the elevator at any desired height, substantially as described.

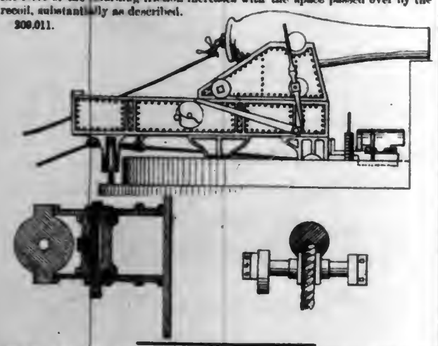
11. The combination of the gun-carriage with the chassis by means of interlocking grippers, constructed substantially as described.

12. The gun-carriage and chassis, in combination with the controlling-spring for checking the recoil, and means, substantially as described, for increasing or diminishing the retarding effect of such spring, substantially as described.

13. The eccentric-shaft which bears upon the controlling-spring, in combination with its lever for increasing the tension of said spring when said lever is operated by the recoil movement of the gun, substantially as described.

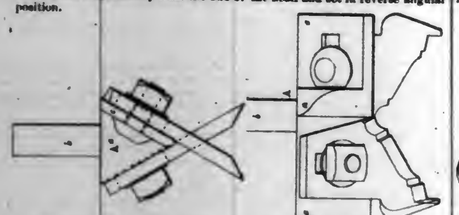
14. The automatic differential apparatus for arresting the recoil movement of the gun within a limited space, consisting of the eccentric shaft and its lever, in combination with the inclined plane and its controlling-spring, whereby the force of the retarding friction increases with the space passed over by the recoil, substantially as described.

209,011.



209,012. TOOLS FOR MAKING ROSETTES FROM WOOD. James H. Burnshew, Baltimore, Md. Filed Mar. 29, 1878.

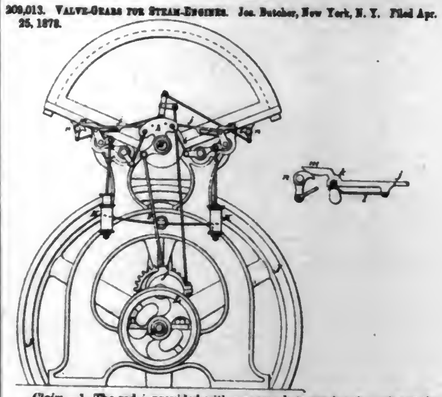
Brief.—Wooden rosettes of any desired diameter and shape are cut by means of two slotted cutters adjustably attached to a head having slotted wings extending laterally from the hub of the head and set in reverse angular position.



Claim.—1. The cutter-head A, consisting of the pin *b* and hub *a*, having the slotted wings *c c*, extending laterally from said hub and set in reverse angular positions with reference to the axis of the device, substantially as herein shown and described.

2. The cutter-head A, consisting of the pin *b* and hub *a*, having the slotted wings *c*, extending laterally from said hub and set in reverse angular position with reference to the axis of the device, combined with the slotted cutters B, substantially as specified.

209,013. VALVE-GEARS FOR STEAM-ENGINES. Jos. Butcher, New York, N. Y. Filed Apr. 25, 1878.

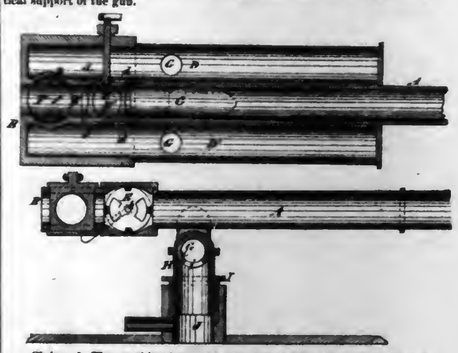


Claim.—1. The rod *j*, provided with a recess, *k*, to receive the wrist of the valve-crank, the spring *l*, secured to it so as to leave a space for the play of the wrist when disengaged, and bent up at the end to press upon said wrist and keep it elastically engaged, and a wiper, *m*, to lift the said rod, all as and for the purposes set forth.

2. The combination of the rod *j*, provided with the recess *k*, spring *l*, and wiper *m*, all as set forth, with the toe *n*, arranged to take under the wiper *m* when the rod advances, and a governor, L, arranged to operate the said toe *n* and cause it to disengage the crank-wrist from the recess *k*, substantially as herein shown.

209,014. AIR-GUNS. Benj. T. Babbitt, New York, N. Y. Filed June 20, 1878.

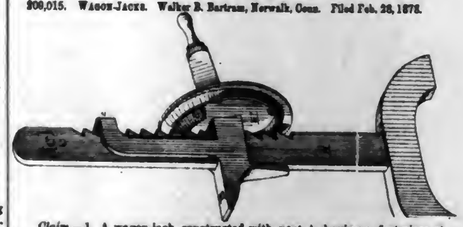
Brief.—Reservoirs for compressed air are located on opposite sides of the barrel. The air is admitted to the barrel through valves operated by means of a crank or handle at the side of the gun. The reservoirs at the sides of the gun communicate with and are charged from a main reservoir through the vertical support of the gun.



Claim.—1. The combination, with the barrel A and chamber B, of the attached duplicate compressed-air reservoirs D D' on opposite sides thereof, and the connected and simultaneously-operated balanced valves E E', between the said reservoirs and the said chamber, substantially as herein described.

2. The combination, with the gun and its attached duplicate compressed-air reservoirs D D' and the stationary air-receiving standard J, of the air-conducting swivel composed of the journaled double-elbow pipe G, the upright pipe H, with its attached journal-box *i*, and the stuffing-box I, substantially as and for the purpose herein set forth.

209,015. WAGON-JACKS. Walker B. Bertram, Norwalk, Conn. Filed Feb. 28, 1878.

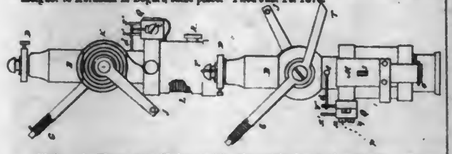


Claim.—1. A wagon-jack constructed with post A, having a foot-piece at its base and a ratchet-rack along its rear edge, combined with a lift, B, sliding thereon, and provided with a frame, *c*, extending upward from said lift and around behind the rack-edge of said post to support the same, and a spiral worm wheel or disk, E, mounted upon and traveling with said lift and engaging with the teeth of said rack, as set forth.

2. A ratchet-rack post, A, with a foot-piece at its base, and a lift, B, sliding

thereon, combined with a disk, E, mounted upon and traveling with said lift, and provided with a double spiral thread, *e*, as shown.

209,016. ELECTRIC APPARATUS FOR GAS-BURNERS. A. Livingston Bogart, Jamaica, N.Y., assignor to Abraham L. Bogart, same place. Filed Jan. 14, 1878.



Claim.—1. The spring K, in combination with the catch *s*, the lever R, and the arms T and G, rigidly secured upon the stem of the cock, as and for the purpose set forth.

2. The combination of the magnet L, armature M, provided with the catch *s*, arm T, spring K, arm G, carrying the elastic contact-point, and the fixed electrode F, as and for the purpose set forth.

3. The combination of the insulating-block Q, the spring-wire *d*, insulated at its outer end, *e*, the stationary pins *x* and *y*, and screws *x'* and *y'*, the spring K, the arm T, fixed upon the stem of the cock, and the magnet L, all arranged as described, to operate in the manner and for the purpose set forth.

4. In combination with the battery S, connecting-wires *m* and *n* and circuit-closer W, the spring K, arm G, carrying the elastic contact-point, arm T, magnet L, armature M, provided with the catch *s*, pins *x* and *y*, spring *d*, connecting-wire *p*, and fixed electrode F, all constructed and arranged substantially as described, to operate conjointly in the manner set forth.

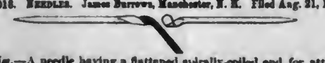
5. The combination of the battery S, wire *n*, provided with a resistance-coil, V, and attached to the insulated ring D of each burner, wire *m*, provided with a circuit-closer, W, insulating-block Q, wire *d*, pins *x* and *y*, screws *x'* and *y'*, and magnet L, as shown and described, for the purpose of turning on and lighting the burners either singly or collectively, substantially as herein set forth.

209,017. BROOMS. Myron T. Boult, Battle Creek, Mich. Filed Mar. 11, 1878.



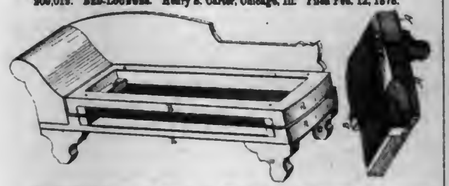
Claim.—The corrugated clamps B B, constructed substantially as described, and provided with a suitable socket-extension, and attached together, for holding the brush or broom, by rivets or other suitable means, as and for the purpose specified.

209,018. NEEDLES. James Burrows, Manchester, N. H. Filed Aug. 21, 1878.



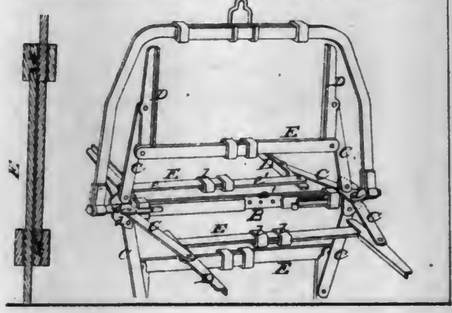
Claim.—A needle having a flattened spirally-coiled end for attachment to the thread, which may be as large or larger than the needle, as described.

209,019. BED-LOUNGES. Henry S. Carter, Chicago, Ill. Filed Feb. 12, 1878.



Claim.—The folding frame A A, provided with the central supporting-rails, B B, in combination with the detachable blocks *a a*, for securing the wire or other fabric within the frame, substantially as set forth.

209,020. HOPE-HOLDING REELS. Cyrus N. Case, Decatur, Ill. Filed June 20, 1878.



Claim.—1. The collapsible rope-reel consisting of the extensible center bar, B, the end arms pivoted thereto, the end rope-supports pivoted to said arms at or at about their middle portions, and the extensible bearing-rods E, pivoted to the inner ends of said supports, all combined substantially as specified.

2. The combination, with a longitudinally-extensible rope-reel, having journal-arms at the ends of its axis of rotation, of an extensible bail affording bearings for the said journals, substantially as specified.

3. In a reel having vibrating end arms and rope-supports, extensible bearing-rods E, connecting said supports, and an extensible center bar, B, of a catch on said bar regulating its extensibility, substantially as specified.

209,021. PRESSURE-GOVERNING GAS-BURNERS. J. H. Chamberlain, Springfield, Mass. Filed Feb. 27, 1878.



Claim.—1. In a gas-burner, the freely-acting disk *m* and valve-stem *r*, operating in and surrounded by a flowing volume of gas by varying pressures, substantially as and for the purpose set forth.

2. The combination, with inlet *c*, chamber *a*, socket *o*, and disk *m*, of the gauze screen *e*, substantially as and for the purpose set forth.

3. The combination of disk *m*, valve-stem *r*, screw *v*, lip *s*, socket *o*, gas-passages 2, gasways 3 and 4, and section *a'* of the burner-case, substantially as and for the purpose set forth.

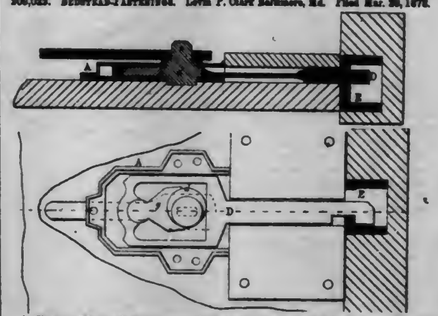
4. The combination of section *a'* of the burner-case, socket *o*, valve-stem *r*, screw *v*, disk *m*, and gasways 2, 3, and 4, substantially as and for the purpose set forth.

5. The combination of sections *a* and *a'* of the burner-case, socket *o*, lip *s*, valve-stem *r*, screw *v*, gasways 2 3 4, spiral spring 10, nut 9, with its slots 15, and tube 8, substantially as and for the purpose set forth.

6. The combination, with valve-stem *r*, of notched collar 5 and tube 8, substantially as set forth, and for the purpose specified.

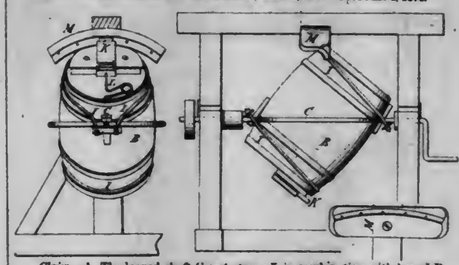
7. The combination of gasway 11, with its lower cone-shaped inlet end, of valve-stem *r*, terminating in a cone-shaped valve at its upper end, and disk *m*, substantially as and for the purpose set forth.

209,022. BEDSTEAD-FASTENINGS. Levin P. Clark, Baltimore, Md. Filed Mar. 20, 1878.



Claim.—The casing A, eccentric *d*, link *g*, and sliding bolt D, in combination with the thimble E.

209,023. WASHING-MACHINES. Darius Coman, Delavan, Minn. Filed June 1, 1878.



Claim.—1. The looped shaft C and straps I, in combination with barrel B, in the manner and for the purpose specified.

2. The barrel B, provided with vent P and automatically-sliding bar K, in combination with the bar M, substantially as and for the purpose specified.

3. In a washing-machine, the looped shaft C and hoops or straps I, in combination with barrel B, provided with automatically-closed vent P in one end and hinged door T in the other, all constructed, arranged, and operating in the manner and for the purpose substantially as herein shown and described.

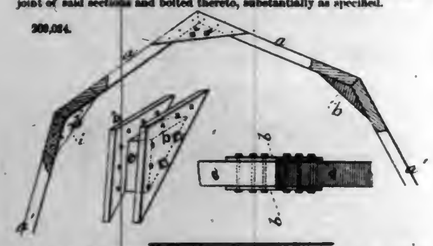
209,024. RAFTERS. Frank M. Covert, Lodi, N. Y., assignor of one-half his right to W. V. Gould, same place. Filed Sept. 7, 1878.

Brief.—A rafter composed of two sections is braced at its joint by an angle plate and two face-plates bolted together and to the rafter.

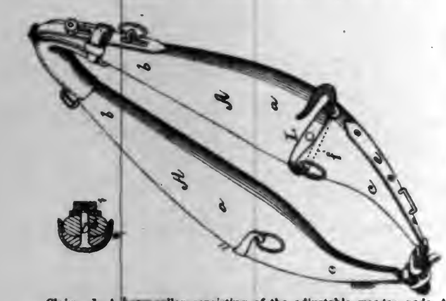
Claim.—1. In a rafter for gambrel or Mansard roofed structures, the sections *a a'*, of different pitch, having the lateral plates *b* secured thereto and breaking their joints, and the angle-plate *c* fitting in between plates *b* in the angle of the sections across their joint, and bolted to said sections, substantially as specified.

2. The combination, with the sections *a a'* of a hip-roof, of the side plates, *b*, breaking joints with said sections, and forming under the same, at their angle, a recess, *i*, and the angle-plate *c*, arranged in said recess across the joint of said sections and bolted thereto, substantially as specified.

200,024.



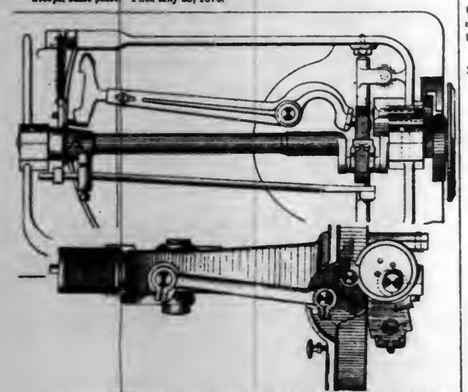
200,025. Horse-Collars. John J. Crowley, Ackley, Iowa. Filed Sept. 14, 1878.



Claim.—1. A horse-collar consisting of the adjustable wooden pads A, having the swells *a*, through draft-hooks L *f*, and the upper and lower curved extensions, *b c*, braced and connected by the slotted metallic straps *d*, hinged together above and below by the metallic straps *e*, having end loops, the hinged portion being protected by the detachable flanged under pad, *v*, strapped around the upper extensions, substantially as specified.

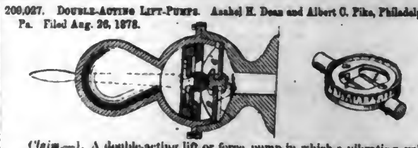
2. A wooden horse-collar having the S-shaped draft-hook L, secured to the face of the side piece transversely, and having an extension, *f*, of the lower branch passed obliquely through the side piece to the exterior, and there secured, the bend at the commencement of the extension forming the breast-strap-ring loop, substantially as specified.

200,026. Sewing-Machines. Cyrus S. Cushman, Philadelphia, Pa., assignor to Berbitt D. Steops, same place. Filed May 25, 1878.



Claim.—In combination with the driving-shaft of a sewing-machine, the horizontal shuttle-operating lever, the short arm of which oscillates in a plane below the axis of said shaft, and which is connected to a crank thereon by means of a link equal in length to the throw of the crank and the needle-bar and needle-bar lever, the latter being connected, by means of a link, to a triangular lever pivoted to the bed of the machine, said triangular lever having pivoted to it an eccentric-strap embracing an eccentric on the driving-shaft, whereby a dip is given to the needle to form the loop for the passage of the shuttle, the shuttle lever and needle-bar lever being operated by their respective mechanisms to accelerate the passage of the shuttle through the loop formed by the dip of the needle, substantially as described.

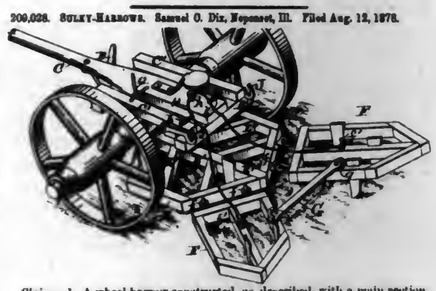
200,027. Double-Acting Lift-Pumps. Asahel H. Dean and Albert C. Pike, Philadelphia, Pa. Filed Aug. 26, 1878.



Claim.—1. A double-acting lift or force pump in which a vibrating valve-plate of circular form is combined with a hemispherical pump-casing having portions *a a*, which extend beyond the limit of vibration of the valve-plate, all substantially as set forth.

2. The combination of the hemispherical pump-chamber and the vibrating valve-plate having loose valves with the valve-chambers provided with loose valves *c c'*, substantially as specified.

200,028. Sulky-Harrows. Samuel O. Dix, Hopeport, Ill. Filed Aug. 12, 1878.



Claim.—1. A wheel-harrow constructed, as described, with a main section, E, of hexagonal form, hinged to the truck-frame, and two diverging sections, F F, hinged to the rear sides of the section E, and connected with each other by a bar, G, pivoted to the sections F F, substantially as described, and for the purpose set forth.

2. The harrow E, hinged to the wheel-frame, and diverging harrows F F, hinged to the harrow E, in combination with the cord H, connected with truck-frame and the harrows F F, and provided with hand-holds *h'*, substantially as described, and for the purpose set forth.

3. The harrow-sections E F F, hinged to each other, in combination with the truck-frame, hooks J and eyes *j'*, and hook-rod Q and eye R, substantially as described, and for the purpose specified.

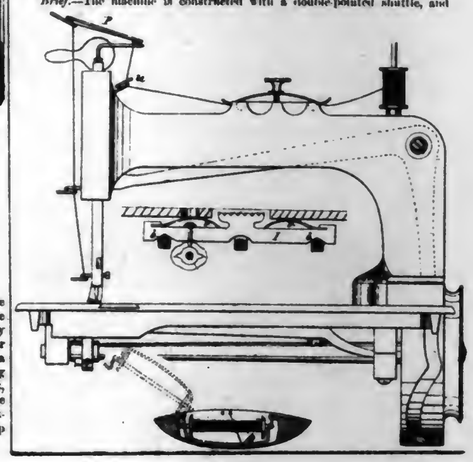
200,029. Apparatus for the Manufacture of Hard Sugar. John O. Denner, New York, N. Y. Filed July 26, 1878.



Claim.—The liquor or solution receivers or holders B, constructed with face-plates *i*, made shorter than the remaining sides thereof, but otherwise closed, whereby an upper overflow-opening is provided, substantially as and for the purpose herein described.

200,030. Sewing-Machines. Louis Evans, Pittsburg, Pa., assignor to himself, John J. Thornton, D. H. Ridgeway, and W. E. Turton, same place. Filed Nov. 26, 1877.

Brief.—The machine is constructed with a double-pointed shuttle, and



forms a perfect stitch when run in either direction. The shuttle is reciprocated in the usual manner, but makes only one movement to two of the needle-bar. The shuttle is open on one side, and is provided with a bobbin carried by a spring bent inwardly to fit the inner surface of the shuttle. This spring, when pressed into its place, is held by a catch. No threading is required, the thread being held between the spring and shuttle, producing the requisite tension. The feed-bar rests upon inclined supports fitting loosely into inclined notches on the under side of the feed-bar. The said bar is thrown forward and upward by a double cam and tappets, and is returned by springs and the inclined notches and supports. The needle-bar is provided with a take-up in the form of a bent wire-spring extending on each side of said bar, with thread-eyes at the extreme points of its extension.

Claim.—1. The feed-bar having a raised serrated middle portion and double-inclined notches upon each side, in combination with stationary angular seat upon each side, vertically-operating springs, and devices for imparting motion to said feed-bar, substantially as described.

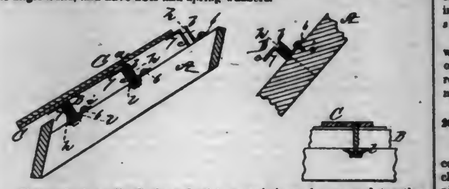
2. The symmetrically-constructed feed-bar I, having double-inclined notches *b*, in combination with springs *e*, arranged upon each side of its serrated face, as set forth, so as to bear laterally against the work-plate, and with stationary angular supporting-seats and an actuating-cam, substantially as described.

3. The combination, with the shuttle, of the bent-spring bobbin-holder O, hinged to said shuttle, with the bowed part folding inwardly to bind the thread between the same and the inside of the shuttle, and form a tension, substantially as described.

4. The combination, with a stationary eye or thread-guide, *e*, of the spring P, located upon the needle-bar, and bent first upon one side and then upon the other of the said needle-bar to form coils, substantially as described.

200,031. Methods of Attaching Slates to Roofs. Samuel Farquhar, Boston, Mass., assignor to John Farquhar's Sons, same place. Filed Sept. 20, 1878.

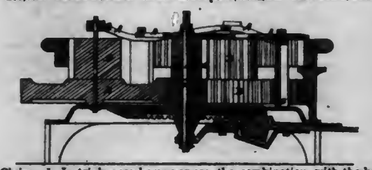
Brief.—Shows purlins formed of two angle-irons so connected as to leave a space between them, and so that the flange of one angle-iron rests on the rafter, and the flange of the other angle-iron gives a bearing to the slates. The nails or bolts holding the slates pass through the space between the flanges of the angle-irons, and have nuts and spring-washers.



Claim.—1. A purlin, B, formed of two angle-irons, *b c*, secured together with a space, *h*, between them, and so arranged that the inner flange, 6, of one will rest on the rafters A, while the outer flange, 7, of the other forms an extended bearing for supporting the slates, in combination with the fastening bolts or nails passing through the space *h*, substantially as and for the purpose described.

2. The spring-washer *l*, in combination with the fastening bolt or nail, slate C, and purlin B, formed of two angle-irons, with a space, *h*, between them, substantially as and for the purpose set forth.

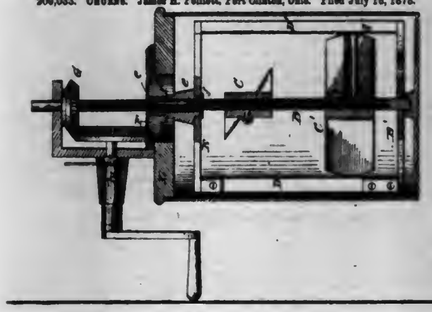
200,032. Horse-Powers. Arthur B. Farquhar, York, Pa. Filed Oct. 3, 1878.



Claim.—1. In triple-gear horse-powers, the combination, with the bevel or ground wheel and the power-supporting frame, of a central shaft, which forms at once an axle or journal on which the bevel-wheel revolves, and a connecting-rod to bind tightly and securely together the two parts of the frame in the line of the lifting-strain exerted by the bevel-wheel, as and for the purposes set forth.

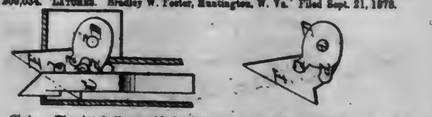
2. The lever-boxes, constructed each with a hook, and arranged on the master-wheel, to engage and support the levers and their stay-rods, as shown and described.

200,033. Churns. James H. Folliott, Fort Clinton, Ohio. Filed July 16, 1878.



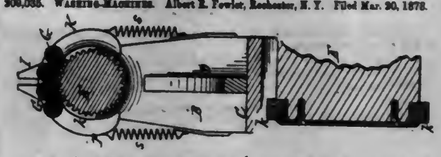
Claim.—The combination of staff D, having pinion G and propellers C C', with the outer dasher, consisting of parts D D' E E', operated by the squirrel collar *c c'* and pinion F, and hung upon pin *g*, and washer *f*, substantially as and for the purpose herein shown and described.

200,034. Latches. Bradley W. Foster, Huntington, W. Va. Filed Sept. 21, 1878.



Claim.—The latch C, provided with cogs *b*, and the pivoted segment D, provided with cogs *d*, and having the projecting cam F, and arranged in a case, A, substantially as and for the purposes herein set forth.

200,035. Washing-Machines. Albert R. Fowler, Rochester, N. Y. Filed Mar. 20, 1878.



Claim.—1. In a washing-machine, such as described, the bearing-plates K, constructed with the thick upper flange, *o*, resting upon and overlapping the top of the wooden standard B, and serving as a thick bearing for the journals of the pressing-rollers, and with their flanges *p p* projecting down in line with or below the bottom of the large roller, E, to serve as a guard to prevent the clothes catching between the end of said roller and the standard as said bearing-plate is raised, said bearing-plates being held down by the coiled springs *s s*, as herein shown and described.

2. In a washing-machine, such as described, the combination, with the washing-roller E and pressing-rollers G G, of the rubber rings *k k* on the ends of the washing-roller, projecting outward to form a tread for the pressing-rollers, for the purpose of gaging the distance between said rollers, preventing noise, and obviating the breaking of buttons, as described.

200,036. Photo-Mechanical Printing. Moodie B. Freeman, Detroit, Mich., assignor of one-half his right to Arthur F. Manser, same place. Filed June 3, 1878.

Claim.—The process of preparing a photo mechanical printing-plate, which consists in flowing a ground glass plate with a solution of albumen, milk, and chrome-alum, and a polished glass plate with ox-gall and a solution of gelatine, nitric ether, and glycerine, then placing the two plates together, and, after drying, forcing apart and treating the made surface on the ground glass plate to the sensitive solutions, substantially in the manner and for the purposes set forth.

200,037. Oil-Cans. Addison E. Gardner, Milan, assignor of one-half his right to Nathan C. Putnam, York, Mich. Filed Mar. 7, 1878.



Claim.—The vent-pipe E for oil-cans, bent upon itself into two parallel parts, *a a'*, the part *a'* being entered into the top of the can on the side opposite to the delivery-spout, and terminating near the bottom and close to the side of the can, constructed and arranged substantially as described and shown.

200,038. Toy Money-Boxes. John Gérard, Trenton, N. J., assignor to Trenton Lock and Hardware Company, same place. Filed July 26, 1878.



Claim.—1. The combination, in a toy bank, of a hollow body, hinged jaw, the head provided with a slit spring to open the jaw, and hook to engage said spring, substantially as described.

2. The combination, in a toy bank, of a hollow body, hinged jaw, the head provided with a slit spring to open the jaw, hook to engage said spring, and rib *f*, substantially as described.

3. The combination, in a toy bank, of a hollow body, hinged jaw, the head provided with a slit spring to open the jaw, hook to engage said spring, and figure within said jaws, substantially as described.

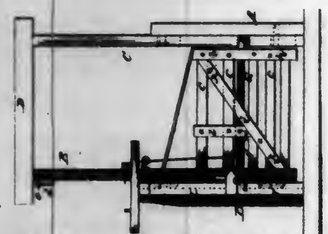
209,039. Stone and Log Sleds. William Gregg, Mason, Mich. Filed Apr. 13, 1878.



Claim.—1. The improved sled, bilged upon its bottom, substantially as and for the purpose described.

2. In a log-sled, the combination, with the bent planks A A', having side pieces, B, attached thereto, of the fastening *c*, attached to both of such planks, and held in place by the end piece, *b*, substantially as described and shown.

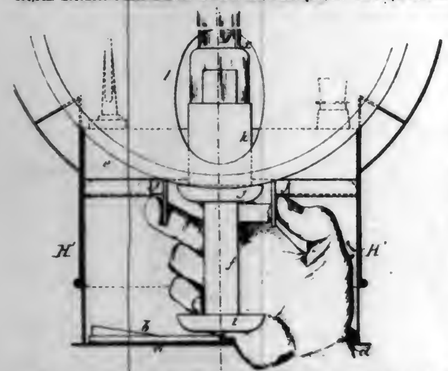
209,040. Gates. C. B. Haldeman and Isaac Haldeman, West Liberty, Iowa. Filed June 11, 1878.



Claim.—1. The combination of post A with the vertically-adjustable frame C D, adjustable hinged post E E', and post B, substantially as and for the purpose herein shown and described.

2. The combination of the hinged and adjustable post E E', having slot *f*, with the hinged gate-slats *c*, end bars, *b*, and adjustable braces *i i*, substantially as and for the purpose herein shown and specified.

209,041. Locomotive Head-Lights. Edwin L. Hall, Philadelphia, Pa. Filed Sept. 30, 1878.



Claim.—1. The combination, in a head-light, of the reflector I, the bottom-box wick-tube *f*, the casing *b*, and the chimney D, all arranged, in respect to each other and to the air-chamber within the head-light, substantially as set forth.

2. The combination, in a head-light, of the wick-tube *f*, the shield *k*, and cap *j*, as set forth.

3. The combination of the extension H' of the exterior casing of a head-light, the said extension being open at the bottom, with a detachable box, adapted to the said extension and carrying the lamp, all substantially as described.

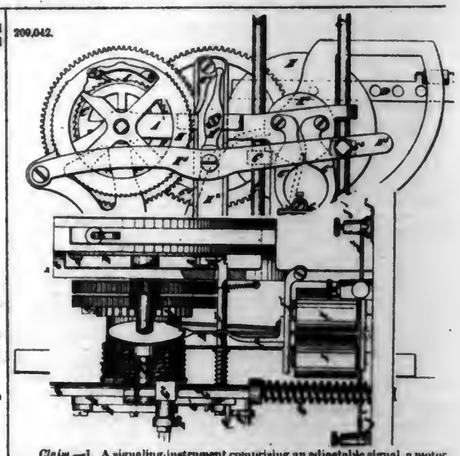
4. The combination, in a head-light, of the casing H, the reflector I secured therein, and a lamp arranged to be introduced into and removed from the casing from below, as specified.

5. The within-described detachable box A, having an opening, *d*, in its base, a slide, *b*, adapted to the opening, and spring-retaining latches J, constructed for manipulation by a hand introduced into the said opening, all being combined substantially as set forth.

209,042. Railway-Signals. Charles E. Hanson, New York, N. Y., assignor, by mesne assignment, to Jessie K. Hanson, same place. Filed Apr. 4, 1878.

Brief.—The mechanism is operated either by mechanical or electrical force. The driving-gear is wound up by passing trains.

209,042.



Claim.—1. A signaling-instrument comprising an adjustable signal, a motor for adjusting such signal, rotary latches driven by said motor, a latch or stop bar for engaging with said latches, pendent levers with V-shaped wedge-like portions, and an electro-magnet adapted to operate said latch or stop bar, whereby the operation of the signal may be controlled by mechanical or electrical force, substantially as specified.

2. The combination, with a pivoted signal-rod, of a rotary grooved cam and a stud on said rod engaging therewith, substantially as specified, whereby the signal is always controlled in its movements and is not liable to displacement.

3. A signaling-instrument comprising the combination, with a motor having a wheel provided with latches, of a latch or stop bar adapted to engage with said latches to retain the signal in its different positions, substantially as and for the purpose specified.

4. A signaling-instrument comprising the combination, with a motor having a wheel provided with latches consisting of inclines and notches, of a latch or stop bar impelled longitudinally toward said wheel, and capable of a vertical or tilting movement as well as a longitudinal movement to effect its engagement with and disengagement from said wheel, substantially as and for the purpose specified.

5. In a signaling-instrument, the combination, with a wheel provided with latches and a latch or stop bar susceptible of a longitudinal movement to engage with such notches, of a safety-piece adapted, on contact with a portion of said bar, to assist its forward movement, or, failing to do this, to lock the instrument, substantially as and for the purpose specified.

6. In a signaling-instrument, the combination, with a wheel provided with latches and a latch or stop bar for engaging therewith, of a yoke or cross-head provided with V-shaped portions, and pendent levers provided with V-shaped portions capable, upon being vibrated, of displacing the yoke or cross-head and imparting longitudinal movement to the latch or stop bar, substantially as and for the purpose specified.

7. In a signaling-instrument comprising a wheel provided with latches and a latch or stop bar provided with a yoke or cross-head, the combination, with such yoke or cross-head, of pendent levers adapted to move said latch or stop bar longitudinally as well as to displace each other, and means for operating said levers, substantially as and for the purpose specified.

8. In a signaling-instrument, the combination of the wheel E, latches *d e*, latch or stop bar F, yoke or cross-head G, levers G^1, tappets or carriers G^2, rods G^3, and springs G^4, substantially as and for the purpose specified.

9. The combination, with a ratchet-wheel, of a pawl, a slide to which said pawl is pivoted, a link connecting said pawl with the means for operating it, an oblique guide, and a stop, substantially as and for the purpose specified.

10. The combination, with the mechanism of a motor in a signaling-instrument, whereby winding up of the motive agent or weight is effected, of a mutilated ratchet-wheel—*i. e.*, a ratchet-wheel having a long space destitute of teeth—connected to said winding mechanism, and a pawl engaging therewith and operated by passing trains, whereby excessive winding of said winding mechanism is obviated, substantially as specified.

11. The combination, with a ratchet-wheel, H, pawl H^1, slide H^2, and link H^3, of the lever H^4 and rod G^3, substantially as specified.

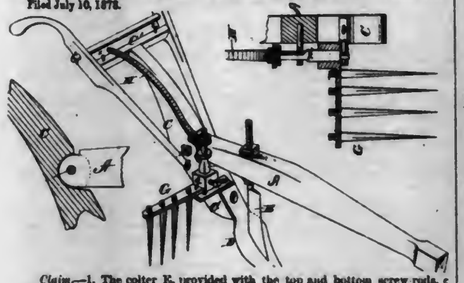
12. In a signaling-instrument comprising a motor for operating the signal, the combination, with a vertically-arranged wheel provided with latches and a latch or stop bar capable of a longitudinal movement and of a vertical movement by gravity at one end, and adapted to interlock with the said latches, of an electro-magnet having an armature provided with an arm engaging with said latch or stop bar, substantially as and for the purpose specified.

13. The combination of a signaling-instrument comprising a motor for imparting motion to a signal, an electro-magnet controlling the operation of such motor, an electrical circuit, and a vibratory circuit-changer consisting of a rock-shaft and arms capable of being adjusted into contact with different binding-posts, and a lever connected with the rock-shaft and vibrated by the motor substantially as and for the purpose specified.

14. The combination, in a signaling-instrument, of relay or relief mechanism comprising rock-shafts for actuating the signal-operating devices, means for operating said rock-shafts, and means for throwing one of said rock-shafts out of operation on the simultaneous operation of the other, substantially as and for the purpose specified.

15. In a signaling-instrument, the combination, with a motor for operating the signal, and means for controlling said motor by either mechanical or electrical force, of a track tappet, lever, or arm, a lever connected therewith for operating on the aforesaid motor by mechanical force, and an electrical circuit-closing lever actuated by said track tappet, lever, or arm, for operating on the aforesaid motor through electrical force, substantially as specified.

209,043. Shovel-Plow and Harrow Attachments. Abram Hearnill, Louisville, Tenn. Filed July 10, 1878.



Claim.—1. The colter E, provided with the top and bottom screw-rods, *e e'*, in combination with the shovel D, beam A, and standard C, the rear end of the beam being hinged to the standard, and adjusted by nuts on the upper screw-rod, *e*, substantially as and for the purposes herein set forth.

2. The vertically-adjustable harrow attachment G, connected to the side of the plow-beam, and operated by the lever H to a suitable angle with respect to the beam, as set forth.

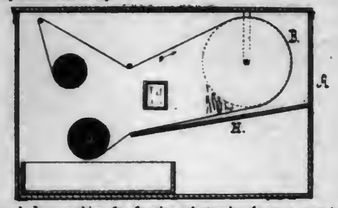
209,044. Package-Wrappers. George V. Hecker, New York, N. Y., assignor to George V. Hecker & Co., same place. Filed Mar. 9, 1878.



Claim.—The herein-described package-wrapper, consisting of the bag provided with a lining of strips or bars, separate and apart from each other, to protect the inside packages from injury, substantially as set forth.

209,045. Machines for Making Plaster Bandages. Charles G. Hill, Arlington, assignor to John W. Selby, Baltimore, Md. Filed Sept. 10, 1878.

Brief.—The bandage is passed underneath a rotating cylindrical sieve, which evenly distributes the plaster.



Claim.—1. In a machine for forming plaster bandages, a rotating sieve adapted to contain the gypsum, in combination with mechanism, as described, for revolving the sieve through the medium of a fillet of textile fabric, as and for the purpose set forth.

2. A machine for forming plaster bandages, consisting essentially of a closed case containing a sieve for holding the gypsum, and mechanism for revolving or agitating the sieve, and for drawing thereunder a fillet of textile fabric and winding the same into a coil, substantially as set forth.

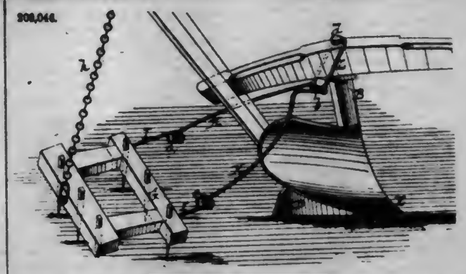
3. In combination with the case A, having one or more hinged sides, the sieve B, removable therefrom and having a detachable head, and the crank-shaft D, substantially as described.

4. In combination with the sieve B and shaft D, the shelf H, as and for the purpose set forth.

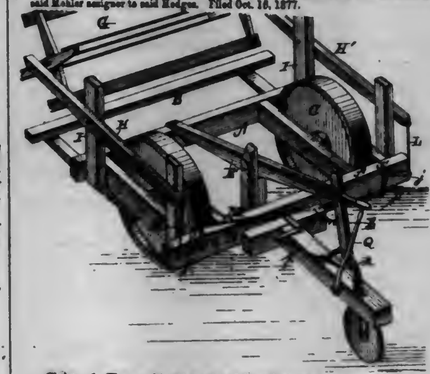
209,046. Combined Plow and Harrow. William G. Hizzed, Easton, Md. Filed Mar. 4, 1878.

Claim.—In combination with a plow having a bolt or projection, *d*, on top of its beam, the harrow G, arms I I, and rods H H, flexibly connected together at *a a*, the bail L passing around the plow-beam and hooked upon the projection *d*, and the ends of the bail connected to the rods H by the removable pin *b*, forming a second joint, and the rear adjusting-chain, A, all constructed substantially as and for the purposes herein set forth.

209,046.



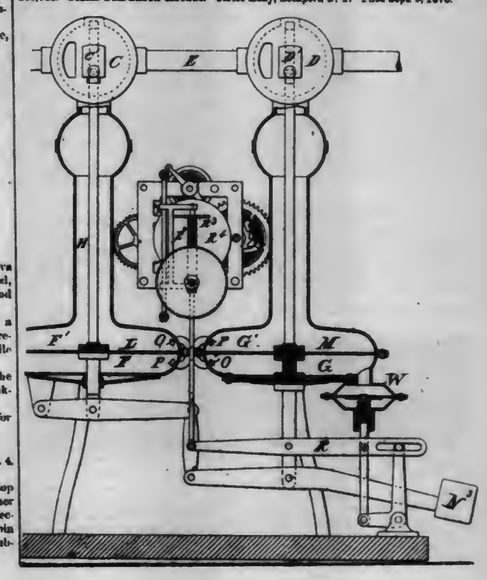
209,047. Harvester-Reels. Andrew J. Hodges, Peoria, and James B. Mohler, Pekin, Ill.; said Mohler assignor to said Hodges. Filed Oct. 16, 1877.



Claim.—1. The combination of reel G and pivoted reel-carriers H H' with standards I, vertical rods L K, vertically-operating elbow-levers J J', connecting-rod M, horizontally-operating elbow-lever P, link-rods N *p*, adjusting-lever Q, and locking-segment R, said parts being so arranged that when said lever is rocked in either direction said elbow-levers J J' are turned on their pivots in opposite directions, substantially as set forth.

2. The combination of reel G and pivoted reel-carriers H H' with standards I, vertical rods L K, vertically-operating elbow-levers J J', arranged in relatively reverse positions, rod M, connecting the upper arm of lever J with the lower arm of lever J', horizontally-operating elbow-lever P, rod N, connecting the rear arm of lever P to the upper arm of lever J, operating-lever Q, rack R, and link-rod *p*, substantially as set forth.

209,048. Steam Diaphragm-Meters. Carlos Holly, Lockport, N. Y. Filed Sept. 9, 1878.



Claim.—1. In a steam-distributing apparatus, the combination of two reducing governing-valves and registering mechanism, as herein specified, to correctly register the actual amount of steam passing through the meter.

2. In a steam-distributing apparatus, the combination of two reducing governing-valves with pressure-chambers and intermediate mechanism, substantially as herein specified, whereby the inlet-valve is partially closed by the steam-pressure and the outlet-valve is partially opened by same steam-pressure, as and for the purposes specified.

3. In a steam-distributing apparatus, the combination of the inlet-valve C' and its pressure-chamber F' with the outlet-valve D' and its pressure-chamber G, and pipes for the purpose of connecting the two pressure-chambers, and an indicating or registering mechanism, as and for the purposes herein set forth.

4. In a steam-distributing apparatus, the combination of the inlet and outlet valves and their pressure-chambers with the pipes O, P, and E, and an indicating or registering mechanism, substantially as described, and for the purpose set forth.

5. In a steam-distributing apparatus, the combination of the inlet and outlet valves, their pressure-chambers, and compensating-levers having an adjusting-fulcrum controlled by the steam-pressure, substantially as described, and for the purposes set forth.

6. In a steam-distributing apparatus, the combination of the inlet and outlet valves, the pressure-chambers, and intermediate chamber W, as and for the purposes set forth.

7. The combination of the adjusting-chamber W with the outlet-valve and indicating or registering mechanism, substantially as described, and for the purposes set forth.

8. The combination of the outlet-valve D' connecting-levers, substantially as shown, friction-wheel R^3 and driving-wheel R^4, operated by clock-work, and diaphragm M, substantially as specified.

9. The combination of the outlet-valve, a variable pressure-chamber having diaphragms or pistons of different areas acted upon by the inlet-pressure of the steam, with the adjusting-chamber W and indicating or registering devices, as and for the purposes set forth.

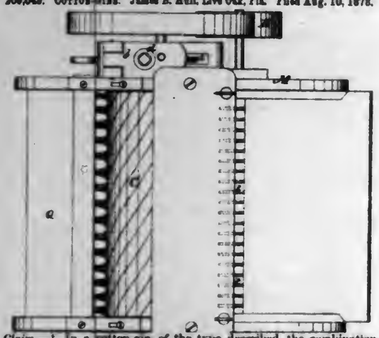
10. The combination of the two valves C' and D' by suitable levers operated by a single weight, as at N^2, as and for the purposes described.

11. In a steam-distributing apparatus, the combination of the inlet and outlet valves and their pressure-chambers with the pipes P and E and an indicating or registering mechanism, substantially as specified.

12. The combination of the valve D', and its connecting rod or stem, attached to lever R, having an adjusting-fulcrum operated by suitable connections, with the adjusting-chamber W, substantially as described.

13. In a steam-distributing apparatus, the combination of the inlet and outlet valves and their pressure-chambers with the pipes O and E and an indicating or registering mechanism, substantially as specified.

209,049. Cotton-Gins. James B. Hall, Live Oak, Fla. Filed Aug. 10, 1878.



Claim.—1. In a cotton-gin of the type described, the combination, with a rotatively-stationary blade, D, and the reciprocating blade E, of a roughened-surface roller having its bearings in movable boxes, and made bodily adjustable toward the blades, substantially as and for the purpose described.

2. The combination, with the adjustable ginning-roller, of the adjustable brush, provided with the guard-plate R, and the chute Q, substantially as shown and described.

3. The combination, in a cotton-gin, with the slotted offset *a* and the ginning-roll, of the hinged sliding box *b*, the perforated bolt *d*, and the screw-rod *e*, substantially as and for the purpose described.

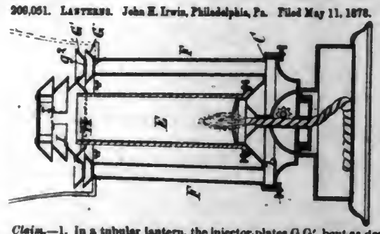
4. The combination, with the movable blades and the crank-shaft I, of the longitudinally-divided pitman H, tenoned at the upper end, and the jointed metal pieces *h h'*, provided with a recess to receive the tenon of the pitman, substantially as and for the purpose described.

209,050. Middlings-Purifiers. Marion Isaksup, Bellefontaine, Ohio. Filed Aug. 16, 1878.



Claim.—A rotary bolt the head of which is provided with fine flour-cloth A and the tail end with coarse feed-middlings cloth D, while the intervening portion of the bolt is covered with sections of bolting-cloth B C, section B being coarser than section A or C, and placed adjacent to section A, while section C is coarser than section A, but finer than sections B and D, and located between the latter-named sections, the several sections of cloth being joined so as to constitute a continuous bolt-clothing of the order and grade of mesh as set forth, substantially as set forth.

209,051. Lanterns. John H. Irwin, Philadelphia, Pa. Filed May 11, 1878.



Claim.—1. In a tubular lantern, the injector-plates G G', bent as described, and the upper one provided with apertures *g'*, in combination with the tubes F and an air-chamber around the burner, substantially as described.

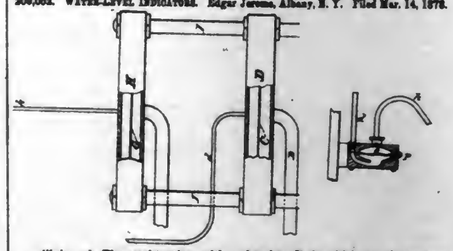
2. The injector composed of the plates G G', in combination with the tubes F, air-chamber around the burner, chimney E, and ejector I, all constructed and operating substantially as described.

3. The interior flaring plate H, in combination with the feed-tubes and burner, and injector-plate G', substantially as described.

4. The cup or disk A, surrounding the burner, in combination with a detachable cap or cover, C, and air-tubes F, attached to the cap, substantially as described.

5. In a tubular lantern, the bottom or oil-pot, in combination with a burner and air-supply tubes and globe, all independent of each other, and connected together by devices which permit them to be detached from each other, substantially as described.

209,052. Water-Level Indicators. Edgar Jerome, Albany, N. Y. Filed Mar. 14, 1878.



Claim.—1. The combination, with a chamber, D, in which an air-pressure is produced by water flowing into it from a boiler or other vessel, of the pipe *d*, reservoir P, with its diaphragm O, and indicator M, as herein specified.

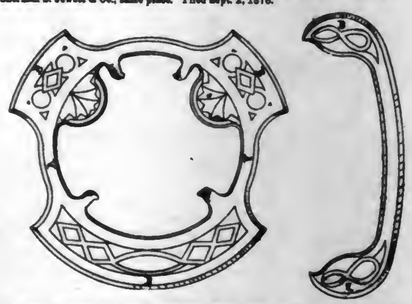
2. The combination, with a chamber, H, in which an air-pressure is produced by water flowing into it from a boiler or other vessel, of the pipe E, communicating with the boiler, and having the bend E', pipe h, and the indicating device M, as herein specified.

3. The reservoir P, with its diaphragm O and glass tube M, in combination with a chamber or chambers, D H, in which an air-pressure is produced by water, and tubes *d* A, in the manner and for the purpose specified.

4. The two extended chambers D H, communicating with the boiler or other vessel by means of the pipe B and bent pipe E', in combination with the pipes *d h*, reservoir P, with diaphragm O, and indicator M, as herein specified.

5. The combination of the rigid connections I between the horizontally-extended chambers D H, constituting a compact instrument, with their respective diaphragms C O, pipes R, E, E', and *d h*, indicator-tube M, reservoir P, and diaphragm O, as and for the purposes herein specified.

209,053. Foot Bars and Rails for Stoves. Josiah Jewett, Buffalo, N. Y., assignor to Sherman S. Jewett & Co., same place. Filed Sept. 2, 1878.

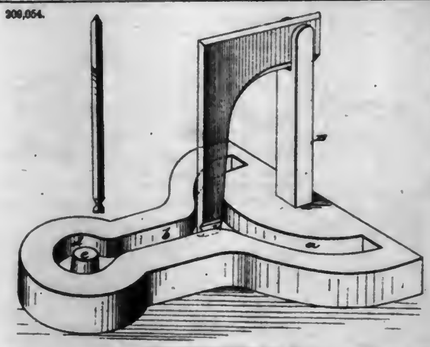


Claim.—The combination, with the foot-bar A, of the flat ornamental surfaces B, projecting from the regular outline of the said bar, for the purposes described, and as herein fully set forth.

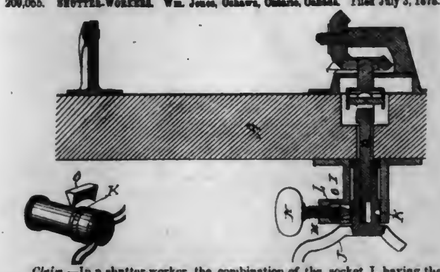
209,054. Molds for Casting Andirons. Samuel E. Jones, Nashville, Tenn. Filed Aug. 31, 1878.

Claim.—An open iron mold for casting dog-irons, made in one piece and having semicircular cavity *a*, groove *b*, enlargement *d*, with core *c*, and the post B, forked at its upper end, constructed and operating substantially as and for the purpose set forth.

209,054.



209,055. Shutter-Workers. Wm. Jones, Oshawa, Ontario, Canada. Filed July 3, 1878.



Claim.—In a shutter-worker, the combination of the socket I, having the projection M, groove K, key O, and thumb-screw N, with the handle J, constructed and operating substantially as and for the purpose set forth.

209,056. Processes for Refining Impure Lead. Nathaniel S. Keith, Brooklyn, N. Y. Filed Apr. 11, 1878.

Brief.—By electrolytic solutions of lead salts, using as an anode the lead to be purified, and precipitating the lead accompanying metals in an acid electrolytic solution.

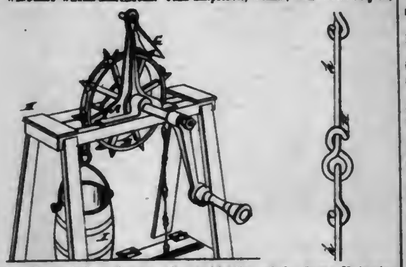
Claim.—1. The process of refining impure lead by making it an anode in an electrolyzing-bath of a salt of lead so prepared as to prevent the formation of oxides or subsalts, and so as not to dissolve the impurities of the anode, substantially as described.

2. In the process of purifying lead by electrolysis, the herein-described electrolyzing solutions, composed of solutions of either acetate or chloride or nitrate of lead, or mixtures of the same, said solutions being made acid by means of either acetic or hydrochloric acids.

3. The herein-described process of separating gold, silver, and other metals from lead, rendering them easy of refinement, and also at the same time obtaining metallic lead in a pure state suitable for manufacturing purposes, by means of electricity, the same consisting in the employment of acid solutions of lead salts in the bath, with an anode of impure lead—the material to be purified.

4. In the process of purifying lead and separating its contents of gold, silver, and other metals by electrolysis, the means employed for retaining the insoluble impurities, keeping them from mixing with the purified lead, the same being a cover of muslin, or equivalent material, surrounding the anode.

209,057. Windlass Water-Elevators. John Knipschoer, Weimar, Tex. Filed July 27, 1878.

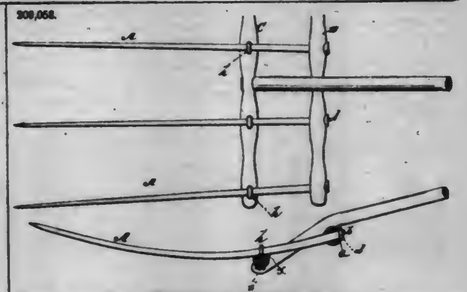


Claim.—In a windlass-elevator, the combination of the frame K, having the standard A, provided with bearing for the axle E, and the double-acting pawl G, with the wheel B, having forks *s s* and chain H *h*, and buckets I I, constructed and operating substantially as and for the purpose set forth.

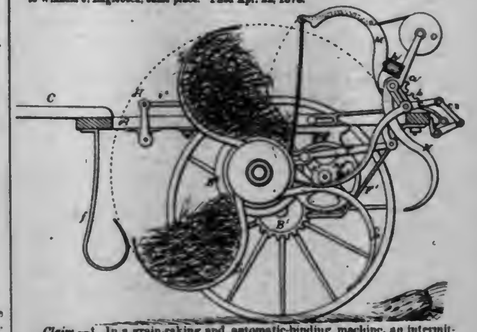
209,058. Forks. William H. Krotzinger, Fort Madison, Iowa. Filed Aug. 24, 1878.

Claim.—In a fork, the combination of the steel prongs A, formed with the shoulder *a* and screw-tenon *b*, the wooden cross-head B, and nuts *d*, and the wooden cross-brace C, having grooves *x*, the eyebolts *h*, and nuts *i*, constructed, arranged, and operating substantially as and for the purposes set forth.

209,058.



209,060. Grain-Binders. Mason A. Keller, Fremont, Ohio, assignor of one-half his right to Winfield J. Englebeck, same place. Filed Apr. 22, 1878.



Claim.—1. In a grain-raking and automatic-binding machine, an intermittently-revolving gatherer having two or more rows of pivoted teeth, in combination with a suitable operating mechanism, and a cylinder or head having mortises therein to allow the teeth a suitable play, as specified.

2. An intermittently-revolving gatherer having the internal gears A^4 and A^5, or their equivalents, in combination with the revolving cylinder and an operating mechanism, for the purpose described.

3. The combination of the intermittently-revolving gatherer, the cam-heads L and L^3, crank-rods *y'* and rollers *y*, to operate in the manner and for the purpose described.

4. The combination of the intermittently-revolving gatherer and the yielding fenders *f f f f*, or their equivalents, for the purpose described.

5. Combined with the intermittently-rotating gatherer, the disk wheel B^3, ratchet-dogs i^2 i^3, and cam-shipper *j*, the whole arranged and constructed to operate in the manner shown and described.

6. In a grain-raking and automatic-binding machine, the combination of the intermittently-rotating gatherer, provided with pivoted teeth, a cam-mortised cylinder or heads, stop L^1, and disk B^4, substantially as shown.

7. In a grain raking and binding machine that automatically binds the grain, the combination, with the rotating gatherer, of the stationary tubular shaft A^1, or its equivalent, for inclosing the driving shaft 18, or its equivalent, that operates the tying mechanism.

8. The combination of the intermittently-revolving gatherer, the tubular shaft A^1, shuttle-seat A^2, shuttle-case K, shaft 18, and pinion 8, all substantially for the purpose set forth.

9. The cam-rack plate L^2, pinion *g*, shaft 18, and spur-pinion 8, in combination with the knot-tying mechanism, substantially as specified.

10. The combination of the crank-wheel *n*, roller *o'*, and pitman T, as shown, and operating in the manner and for the purpose described.

11. The cord-spool O, mounted upon an extension of the compressing-arm N, to operate in the manner and for the purpose described.

12. In a grain raking and binding machine, the combination of the vibrating binding-arm M, the vibrating compressor N, segmental gears *a b*, spring *h*, and spool O, all substantially as shown, for the purpose specified.

13. The combination of the intermittently-revolving gatherer, the rod h^2, shaft i^2, spring-latch E, supporting-fingers P, P^1, and 1st, or their equivalent, to operate in the manner described, for the purpose set forth.

14. The combination of the wheel *n*, the automatic stop 7, clutch 3, wheel B^2, slotted pitman T, and vibrating arms M N, all as and for the purpose set forth.

15. The combination of the band-carrying arm M, intermittently-revolving gatherer and its operating mechanism, and the stationary shuttle-seat A^2, or the equivalent thereof, whereby a joint operation of the band-carrying arm M and the forming mechanism may finish the tie of the band around the bundle.

16. In a grain raking and binding machine, the tying mechanism, when secured to the axis of the rotating gatherer, for the purpose set forth and specified.

17. The combination of the intermittently revolving gatherer, the angular lever 4, and shifting-clutch 3, or their equivalent, for the purpose described.

18. The combination of the recessed heads I^{2a} m^1 m^2 and the metallic circle p_1, for closing the space between the elevating teeth S, for the purpose set forth.

209,060. Sheet-Metal Cans. Alex. B. Lapierre, New York, N. Y., assignor to Christian Classen, same place. Filed Sept. 20, 1878.

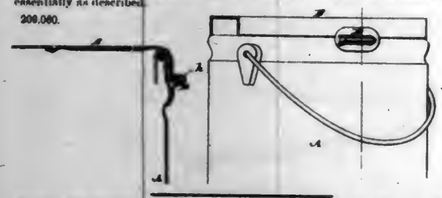
Claim.—1. The combination, with a can body having an inwardly-turned mouth-edge, and with a slip-lid constructed to closely fit over the mouth end of the can, and forming a frangible joint with the body of the can, of a detached

joint-opening cutter interposed between the lid and body of the can, but accessible from the exterior of the latter, and arranged to ride upon said inwardly-turned mouth-edge, essentially as and for the purposes specified.

2. The sheet-metal cap D, in combination with the traveling cutter C, the slip-cover B, and the can-body A, substantially as specified.

3. The cutter U, constructed to straddle the edge of the mouth of the body of the can, and formed with an outwardly-projecting lip or shoulder, *h*, essentially as described.

209,060.



209,061. Book-Sewing Machines. James S. Lowe, Philadelphia, Pa. Filed Sept. 20, 1878.

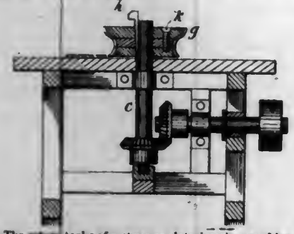


Claim.—1. The combination of the table for supporting the sections, in a book-sewing machine, with a plate or bar, P, having a plane surface long enough to constitute a continuous bearing for a binding fabric which is as wide, or nearly so, as the sections are long, all substantially as set forth.

2. The combination, in a book-sewing machine, of the table D, for supporting the sections, with the plate P, having a groove for guiding a severing-knife, as described.

3. The combination of the plate P and the tension bar or bars M.

209,062. Machines for Dressing and Ornamenting Marble, Slate, &c. Wm. K. Lorens, Toledo, Ohio. Filed June 22, 1878.



Claim.—The rotary tool *g* of a stone or slate dressing machine made in parallel sections, connected together by screws *k*, as shown and described, so that each section may be sharpened separately, and adjustably held on the shaft *e* by the key *h*, all substantially as and for the purposes herein set forth.

209,063. Feed-Strainers. Daniel Machamer and John McCulloch, Lena, Ill. Filed Mar. 23, 1878.



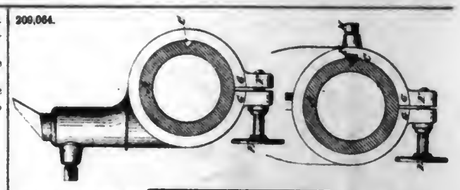
Claim.—The pivoted or hinged valve F and hinged plate H, with means for holding the same at different heights, in combination with pipes J J' and vat I, substantially as and for the purposes set forth.

209,064. Lathes for Turning Regular Forms. Elon A. Marsh, Battle Creek, Mich. Filed Aug. 12, 1878.

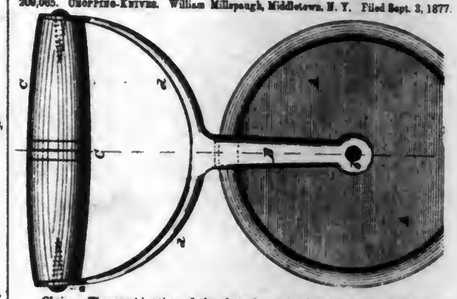
Brief.—The tail stock is held in a vertical position at all times by means of a feather secured in a recess in one of the hinged jaws of the stock, and travels in a longitudinal groove in the bed. The feather can be adjusted, to compensate for wear in the groove, by a set-screw working in a boss formed in one of the jaws.

Claim.—In combination with the cylindrical bed A, having the lengthwise groove C, the tail stock, having jaws G G, the screw E, and the feather I and set-screw H, all combined and arranged as shown and described, for the purpose specified.

209,064.

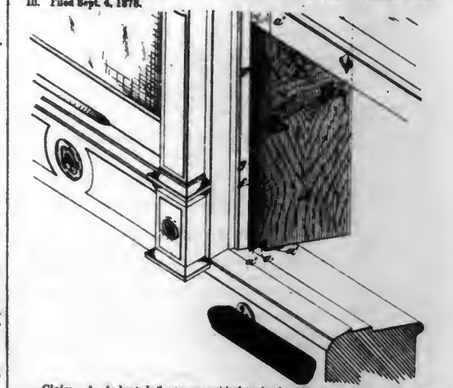


209,065. Chopping-Knives. William Millspaugh, Middletown, N. Y. Filed Sept. 3, 1877.



Claim.—The combination of the slotted standard B, formed with the arms *d d*, secured to the ends of the handle C, and the circular cutter A, pivoted by a bolt or rivet, *b*, in the standard and working in the slot D thereof, substantially as and for the purposes herein set forth.

209,066. Dust-Deflectors for Cars. Horace A. Morgan and Delos J. Gilleland, Decatur, Ill. Filed Sept. 4, 1878.

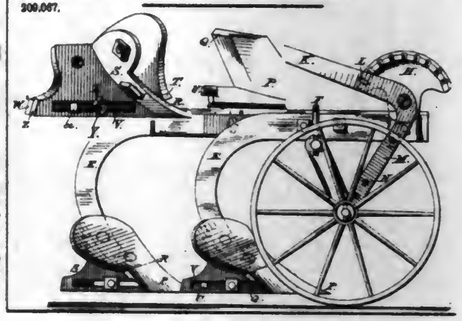


Claim.—1. A dust-deflector provided at its longitudinal center with a joint, whereby its length can be reduced one-half, and arranged to engage with and be held in position beneath a car-window, whether extended or folded together, substantially as and for the purpose specified.

2. As a means for securing the dust-deflector in position within a car-window, the strip E, secured upon the side of said deflector and fitting into the sash-groove *f*, and the spring-catch G *g'*, arranged to engage with the inner face of said groove, substantially as and for the purpose shown.

3. The hereinbefore-described dust-deflector, consisting of the hinged sections A and A, provided with the notches *a*, studs *a'*, and strips E, and having the spring-catch G *g g'* attached to its inner edge, all constructed and combined in the manner and for the purpose substantially as set forth.

209,067.

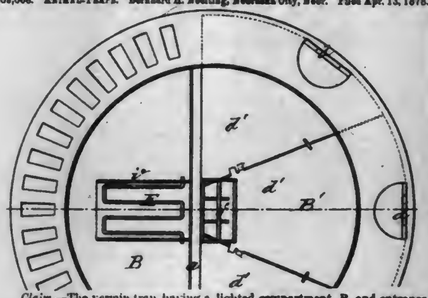


209,067. Plows. Christian Myers, Napa City, Cal. Filed Aug. 29, 1878.

Claim.—1. In a plow, the combination, with the axle D, provided with the arms A A, having spindles B B and studs C C, and the plow-beams E E, of the rod G, for connecting said beams at their forward ends, racks H H, having the lower right-angled portions *h h* secured to said rod G, curved spring-levers K K, having detents L L, and the perforated arms M N, the several parts constructed and relatively arranged to operate substantially in the manner herein shown and described.

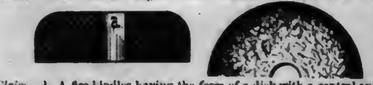
2. In a plow, the slip-share P, having tongue Q and lug U, the frog S and fixed portion T, having groove R and slot V, in combination with sliding portion W' of land-side W, having stud *a*, and bolt and nut X Y, constructed and operating substantially as and for the purposes set forth.

209,068. Animal-Traps. Bernhard H. Noelting, Nebraska City, Nebr. Filed Apr. 13, 1878.



Claim.—The vermin-trap having a lighted compartment, B, and entrance-compartment B', communicating by the passage *a'* in the dividing-wall *a*, the parallel guarding-walls *b*, and the fall E in rear of said passage, and in front of the same the tilting floor-sections *d'*, laterally engaging with each other, resting on a double-inclined bottom, *c*, and the bait-crate *f*, arranged above said floor-sections, substantially as specified.

209,069. Fire-Kindlers. Edgar J. Norris, Baltimore, Md. Filed Oct. 5, 1878.



Claim.—1. A fire-kindler having the form of a disk with a central aperture and rounded edge, substantially as described.

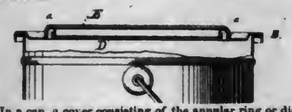
2. A fire-kindler consisting of a resino-carbonaceous base and a hydrocarbon, volatile at the temperature of ignition of the former, the said kindler having the form of a disk with a central aperture, as set forth.

3. A fire-kindler consisting of the comminuted pine described and the residuum of the distillation of coal-oil, substantially as set forth.

4. The fire-kindler herein described, consisting of comminuted pine wood, as set forth, and the residuum of the distillation of coal-oil, the said kindler having the form of a disk with a central aperture and rounded edge, substantially as and for the purpose described.

209,070. Cars. Edwin Norton, Chicago, Ill. Filed Aug. 13, 1878.

Brief.—In one the inner cover is cut out, leaving the smooth bead over which to draw the brush. The inner cover may be secured to the annular disk in any desired manner.



Claim.—In a can, a cover consisting of the annular ring or disk B, having an upwardly-projecting bead, *a*, and the central portion, D, adapted to be cut away, in combination with the secondary cover E, fitting over the bead *a*, substantially as and for the purposes set forth.

209,071. Label-Holders. Alvin A. Noyes, Portland, Me. Filed Aug. 7, 1878.



Claim.—The combination of the clamp *a*, with its points *b* and spring *f*, with the bar *c*, ears *d*, and hood *h*, as and for the purposes herein described.

209,072. Ventilators. Thomas Owens, Washington, D. C. Filed Apr. 11, 1878.

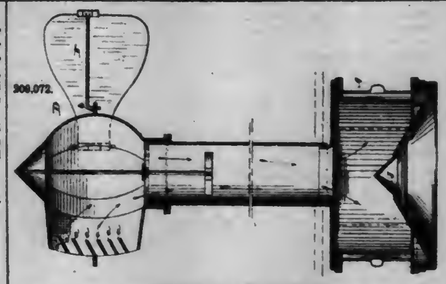
Claim.—1. A wing, F, hinged to the side of the head D, and arranged to be adjusted to hold the face in or out of the wind, substantially as described.

2. A deflecting-chamber provided with a detachable pipe, I, substantially as described.

3. A deflecting-chamber provided with a detachable stopper, J, substantially as described.

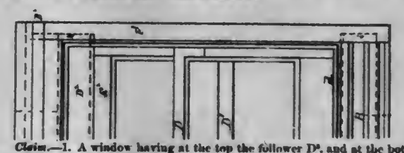
4. The combination in a ventilator of the hinged wings F, head D, face E, pipe B, and deflecting chamber A, substantially as described.

209,072.



209,073. Windows. Augustus K. Phillips, St. Louis, Mo. Filed Jan. 23, 1878.

Brief.—The lower sash-rail is made wide to rise and fall in a box under the window, that ventilation may be obtained between the meeting-rails by raising the lower sash, but without an opening of the window below. A follower is arranged to operate similarly in connection with the upper rail of the upper sash, but is made in a separate piece therefrom. The cap-piece and stool of the frame are arranged with relation to the above. The boxing below is composed of the stool, inner and outer beads, and weather-boards, the latter being beveled on their inner faces, so as to come in contact with the broad sash-rail only at its bottom, and give it there a firm fit and seat.



Claim.—1. A window having at the top the follower D', and at the bottom the weather-boards B and C, beveled on their inner faces, and arranged to operate in connection with the lower sash-rail, substantially as set forth.

2. The combination of the follower provided with a groove in its lower face, the sash having a beaded upper rail, and the window-frame provided with grooves and stops for limiting the movement of the follower, substantially as described.

3. The weather-boards B C, having their inner faces beveled to form spaces between the sashes and weather-boards, and to afford a seat and fit for the lower edge of the sash rail or sill, and to prevent the jamming of the window-bar and the rubbing off of paint from its face, substantially as set forth.

4. The combination, in a window, of the beveled weather-board B, strip *g*, and bead *d*, arranged and operating as described.

5. The combination, with the weather-boards B and C, beveled on their inner faces, of the weather-strips *g g*, sashes D D', parting-bead *f*, and inside bead, *e*, constructed and arranged substantially as described, for admitting of ventilation through the meeting-rails only, as set forth.

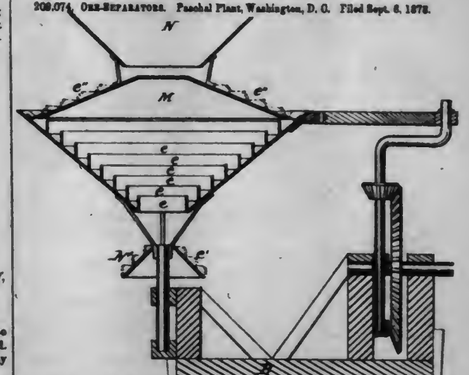
6. The weather-boards B and C, beveled on their faces, and placed on the inside and outside of either the upper or lower sash, or both, in a window-frame, substantially as and for the purposes set forth.

7. The combination of the sash-rail and the beads *d* and *f*, having the recesses below them, the said beads being attached to weather-boards, substantially as set forth, and for the purposes mentioned.

8. The combination of the sash-rail and movable bead *f*, when the latter is placed on top of the weather-board C, and arranged in sliding contact with the sash-rail, and so as to leave the recess below it, substantially as set forth.

9. The weather-board B', partially formed by a portion of the frame-head inside of the inside face-line of the upper sash, being lowered below the line of the top edge of the sash, and formed onto said weather-board, substantially as described, and for the purposes set forth.

209,074. Ore-Separators. Paschal Plant, Washington, D. C. Filed Sept. 6, 1878.

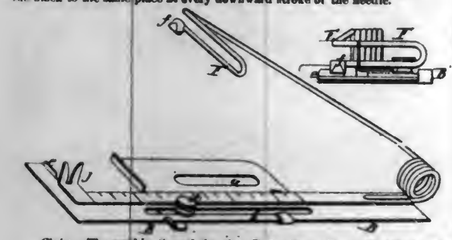


Claim.—1. The funnel-shaped separator E, open at its bottom and provided with the annular stripe *e e*, forming annular channels or grooves upon its inner surface, in combination with mechanism for imparting to it a circular reciprocating motion, substantially as described.

2. The distributer M, supporting the hopper N, and provided with the annular strips *c'*, in combination with the receptacle E and the bowl N', provided with the strips *c'*, substantially as described.

209,075. Tool-Marker for Sewing-Machines. George Rehfuss, Philadelphia, Pa., assignor to the American Buttonhole Overseaming and Sewing Machine Company, same place. Filed Mar. 29, 1878.

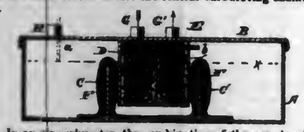
Brief.—The outer end of the spring-arm carrying the recessed block is bent out at right angles thereto, and then returned beneath the portion thus bent. The bed-plate of the marker is provided with a forked or open-slotted plate, which receives the bent portion of the arm, and thereby insures the descent of the block to the same place at every downward stroke of the needle.



Claim.—The combination of the plate B, having a rib, *e*, and slotted plate J, with the arm E, having a laterally-projecting arm, F, which carries a notched block, *f*, as specified.

209,076. Air-Carbureters. George Ramer, Mercer, Pa., assignor of one-half his right to Richard R. Wight. Filed Aug. 23, 1878.

Brief.—The carbureting fluid is carried by the capillary action of suitable wicking from the outer reservoir into the central carbureting-chamber, packed with sponge.



Claim.—In an air-carbureter, the combination of the pan A, with division-walls C, having wicking F placed over them, the top B, with division-walls D and sponge filling E, the service-pipes G G', filling-pipe H, and vents *a b*, all substantially as and for the purposes herein set forth.

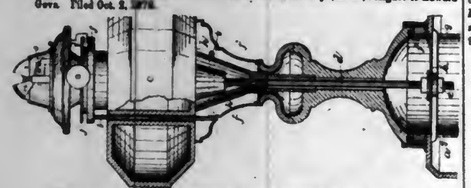
209,077. Lamp-Bowls. Frank Rhind, Brooklyn, N. Y., assignor to Edward Gove. Filed Oct. 2, 1878.



Claim.—1. A bowl or sphere in which the tube *a* is formed with the bowl, and has its upper end joined to the top of the bowl by means of a cap, substantially as shown.

2. As a new article of manufacture, a glass globe or bowl having an opening to receive the usual burner and collar, a glass tube forming an integral part of the bowl, and which projects up at one side of the central opening, and an opening, *d*, close to one side of the main opening, substantially as specified.

209,078. Self-Extinguishing Lamps. Frank Rhind, Brooklyn, N. Y., assignor to Edward Gove. Filed Oct. 2, 1878.



Claim.—1. In a self-extinguishing lamp, a movable sleeve or standard having its lower end made to rest upon the table or other support for the lamp, substantially as shown.

2. A lamp provided with a movable sleeve, a base, and a supporting-standard, the lower end of the sleeve being made to project down through the top of the base and rest upon the table, substantially as described.

3. A lamp provided with a movable sleeve and a rod for actuating the extinguishing device, the rod being connected to the upper end of the sleeve by means of the cement in the upper end thereof, whereby the rod can be adjusted to its proper height, substantially as set forth.

4. An extinguisher-rod, *i*, having a grooved collar attached to its upper end, substantially as specified.

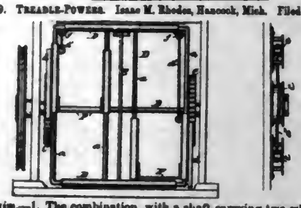
5. A vertically-moving rod, *l*, having a hook or catch at each end passing up through and supported entirely in the burner, substantially as shown.

6. The extinguisher *a*, pivoted eccentrically to the inside of the cone upon the rod or arm *o*, which acts both as a pivot and operating-lever, in combination with an actuating-rod for moving the extinguisher up over the top of the wick, substantially as described.

7. The combination of an extinguisher, a vertically-moving rod, *l*, a grooved collar, and a rod, *i*, that is actuated by the movable sleeve, substantially as set forth.

8. A slide or rod connected to the extinguisher at its upper end, and catching in or under a ring that is secured to the upper end of the rod, connected to the sleeve, substantially as specified.

209,079. Treadle-Powers. Isaac M. Rhoden, Hancock, Mich. Filed Sept. 18, 1878.



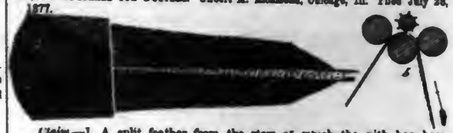
Claim.—1. The combination, with a shaft carrying two wheels, of an oscillating frame carrying sliding treadles provided with binding-surfaces, arranged to reciprocate in the plane of the wheels tangentially to the same, and to be alternately brought into contact therewith by the oscillation of the frame, substantially as and for the purpose described.

2. The combination, with a shaft carrying two wheels, of an oscillating frame carrying sliding treadles provided with binding-surfaces, arranged to reciprocate in the plane of the wheels tangentially to the same, together with a tension device, substantially as described, whereby the depression of the treadle effects the oscillation of the frame, as set forth.

3. The combination, with the gear-wheels C C', of the reciprocating racks *d d*, provided with treadles, and arranged to slide upon an oscillating frame, as described.

4. The oscillating frame D, arranged as described, and having friction-rollers *f*, in combination with the cord *d'*, friction-rollers *e*, and tension-pulley *c*, substantially as described.

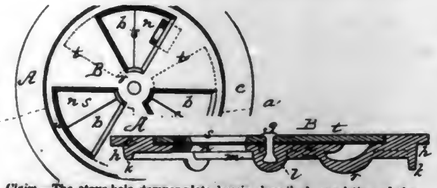
209,080. Feathers for Dusters. Gilbert M. Richmond, Chicago, Ill. Filed July 26, 1877.



Claim.—1. A split feather from the stem of which the pith has been removed, substantially as and for the purpose specified, for use in feather dusters.

2. A split feather from the stem of which the pith has been removed and the stem cleaned, substantially as and for the purpose set forth.

209,081. Combined Stove-Cover and Check-Damper. Hubert Ritter, Middletown, Conn. Filed Sept. 14, 1878.



Claim.—The stove-hole damper-plate herein described, consisting of the centrally-recessed main plate A, having the openings *b*, lands a under ribs *m k*, and recessed lifting-boss *r*, and the revolving plate B, having the openings *s*, said plates A and B being centrally pivoted together by the rivet *g*, cast in the central boss, *l*, substantially as specified.

209,082. Miners' Lamps. William Roberts, Cincinnati, Ohio. Filed Apr. 16, 1878.



Claim.—1. In a safety-lamp, the combination of the transparent shell A, surrounding the flame and provided with the cap or shell H, and the wire-gauze chimneys C D, mounted upon said cap or shell, and arranged one within the other, so as to form an annular space or chamber between them, substantially as described, and for the purpose set forth.

2. The shield E, projections *f*, rods F, ring I, aperture G, studs *h*, reservoir B, and chimneys C and D, as and for the purpose specified.

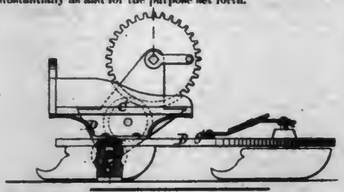
3. The method of fastening together the edges of the wire-gauze chimneys, substantially as described, the same consisting in bending double over said edges the thin metal plates *e*, and then bending said plates and edges in hooked form, engaging and pressing them flat together.

209,083. Propeller-Sleighs. Rudolph Schitter, New York, N. Y. Filed Sept. 18, 1878.

Claim.—1. The combination, with a sleigh having ordinary runners, of a driving-roller provided with a spiral ridge or blade, and arranged transversely with respect to the course of the runners, and suitable mechanism for rotating said roller, substantially as described.

2. The combination, with the pivoted front runner, of two double-armed levers, one of which is secured to the pivot of the runner and the other to a pivot fastened in the platform of the sleigh, and two link-bars, which are pivoted to the ends of the double-armed levers, and to which are secured suitable pedals, substantially as and for the purpose set forth.

209,083.



209,084. Journal-Bearings. William W. Smalley, Bound Brook, N. J., assignor to John Smalley, same place. Filed June 6, 1878.



Claim.—1. A metal journal-bearing having an internal groove or grooves the sides of which are planes, or made up of plane surfaces inclined to the longitudinal axis of the said bearing, for the reception of lubricating material, substantially as and for the purpose specified.

2. The combination, with a metal journal-bearing having an internal groove or grooves inclined to the longitudinal axis of the said bearing, of solid or plastic lubricating material inserted and held in the said groove or grooves, substantially as and for the purpose described.

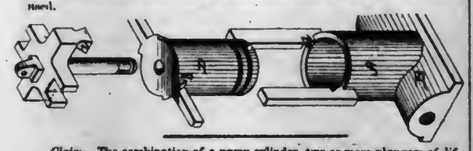
209,085. Stove-Boards. Augustus C. Stoessiger, Chicago, Ill. Filed Sept. 21, 1878.



Claim.—The ornamental stove-support described, consisting of the platform A, made in sections *a*, with radial joints, secured to the base B, clasp C, of one piece of metal, bent as described, to form the plates *c c'* and lugs C', and the dome D, constructed, adapted, arranged, and operating as set forth, for the purpose specified.

209,086. Pumps. Stephen Stucky, Lincoln, Ala. Filed Mar. 8, 1878.

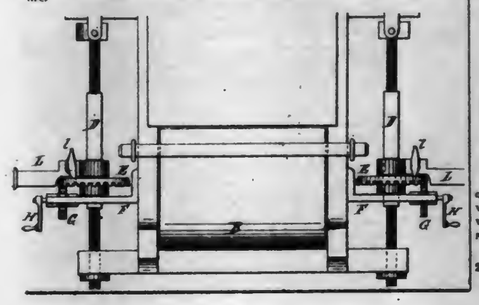
Brief.—The pump is used in connection with hydraulic presses. At first the large plunger is used; when the resistance becomes great the small one is used.



Claim.—The combination of a pump-cylinder, two or more plungers of different sizes, placed one within the other, and suitable locking devices, whereby the larger plunger may be locked in place, and the next smaller continue in operation, and so on, substantially as herein set forth.

209,087. Cotton and Hay Presses. William H. Tappey and Alexander Steel, Petersburg, Va. Filed Aug. 16, 1878.

Brief.—This invention is an improvement upon that described in the patent of Richard Ball, dated June 28, 1870, No. 104,089, reissued July 23, 1872, No. 4,993. The screws are provided with crank and gear mechanism in addition to the levers and pawls, so that the follower may be depressed rapidly when the resistance is slight, and the levers and pawls be used for great pressure.

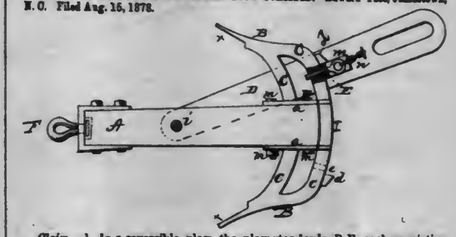


Claim.—1. In a hay and cotton press, the combination, with a right-and-left-hand screw, of a lever and pawl and an independent crank mechanism, arranged to rotate said screw either by said lever and pawl or by said crank mechanism, and independently of each other, to depress or elevate a follower, substantially as set forth.

2. In a hay or cotton press, the combination, with a right-and-left-hand screw, of a crown-wheel, E, pinion G, and crank H, for operating said screw to depress or elevate a follower, substantially as described.

3. In a hay or cotton press, the combination, with a right-and-left-hand screw, of a crown-wheel, E, pinion G, crank H, lever L, and double pawl *l*, for operating said screw by either lever or crank, all arranged and constructed substantially as described, for the purpose specified.

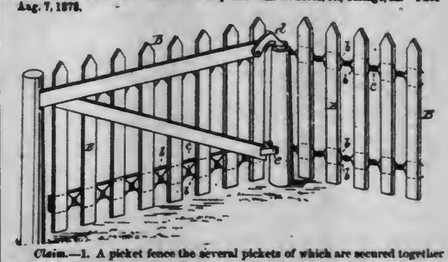
209,088. Rill-Ride, Shovel, and Subsoil Plow Combined. Edward Tate, Jamestown, N. C. Filed Aug. 15, 1878.



Claim.—1. In a reversible plow, the plow-standards B B, each consisting of the two curved bars C C, welded together at one end, and to a plate or bar, *a*, at the other end, in combination with the beam A, having tenon I, for the purposes herein set forth.

2. The combination of the beam A, provided with the tenon I and swiveled clevis F, the plow-standards B B, provided with stops *d* and holes *e*, the pivoted handles D D, with cross-bar E and guides F' F', and the pin *m*, substantially as and for the purposes herein set forth.

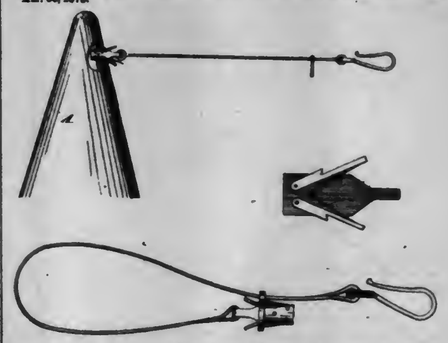
209,089. Picket Fences. Charles H. Terry and Wm. W. Green, Jr., Chicago, Ill. Filed Aug. 7, 1878.



Claim.—1. A picket fence the several pickets of which are secured together by two or more wires passing directly through the same, and disposed at an angle between the pickets to form a truss, substantially as and for the purpose set forth.

2. The pickets B, supported by the wires *b*, passing directly through the same and bent at a double angle, the apex of each angle passing the other to form eyes, through which pass short wires *a*, bent around the wires *b*, to form a truss for the pickets, substantially as and for the purpose described.

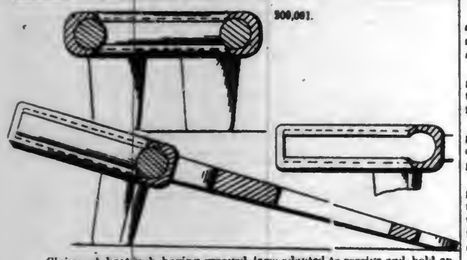
209,090. Hitching-Posts. Henry W. C. Thomas and S. H. Knox, Springfield, Ohio. Filed Mar. 30, 1878.



Claim.—A hitching-post consisting of a case or shell, A, having a smooth outer surface and gradually tapering from its base to the top thereof, and provided with an opening, *a*, adapted for the insertion of a spring-clip connected with a hitching-strap, to engage with the inner wall of the case or shell, substantially as and for the purpose specified.

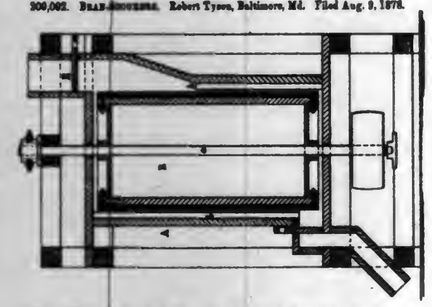
209,091. Boot-Jacks. Charles Tyson, Philadelphia, Pa., assignor of one-half his right to Rex & Bockius, same place. Filed Aug. 19, 1878.

209,091.



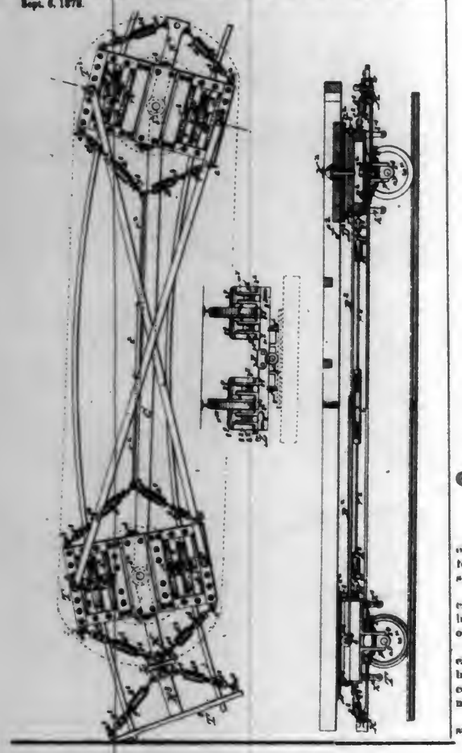
Claim.—A boot-jack having grooved jaws adapted to receive and hold an elastic facing, substantially as and for the purpose set forth.

209,092. Brake-shoulders. Robert Tyson, Baltimore, Md. Filed Aug. 9, 1878.



Claim.—The cylinder A, having the radial ribs *b* and a conducting and a delivery pipe, each provided with a valve, combined with the revolable drum B, having its outer surface covered with a rubbing material, substantially as and for the purpose specified.

209,093. Running-Gear for Railway-Cars. John C. Weaver, New York, N. Y. Filed Sept. 6, 1878.



Claim.—1. The combination of a pair of swiveled car-trucks, two pairs of spring-guys extending obliquely inward from the opposite corners of said trucks, and a central connecting rod or rods uniting said guys, substantially as herein shown and described.

2. The combination of a pair of swiveled car-trucks, two pairs of spring-guys extending obliquely inward from the opposite corners of said trucks, a central connecting rod or rods uniting said guys, and a turn-buckle in each guy for correcting its spring, substantially as herein specified.

3. The combination of a pair of swiveled car-trucks, two pairs of spring guys extending obliquely inward from opposite corners of said trucks, and a central pair of connecting-rods united by a turn-buckle for adjusting all said guys simultaneously and equally, as herein set forth.

4. The combination of a pair of swiveled car-trucks, two pairs of spring-guys extending obliquely inward from the opposite corners of said trucks, and united by a central connecting rod or rods, a pair of draw-heads united to said trucks by vertical pivots, and two pairs of spring-guys extending obliquely from the outer corners of said trucks to the outer ends of said draw-heads, substantially as herein shown and described.

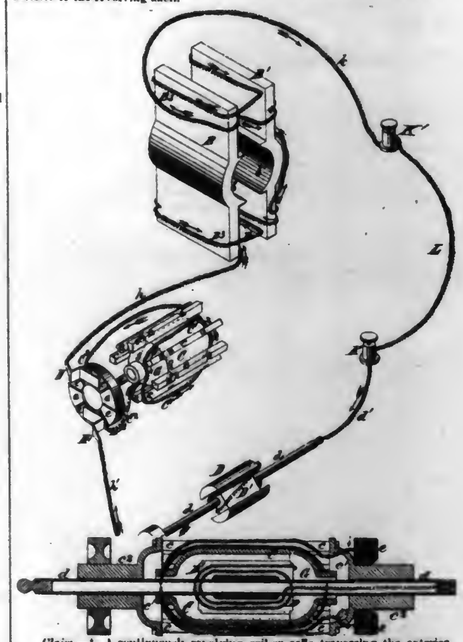
5. The combination of a pair of swiveled car-trucks and two or more pairs of spring-guys attached to the corners of said trucks, said guys having spiral springs with noise-deadening sleeves of rubber or its equivalent, as herein described.

6. A coupling-link having a double wedge, in combination with a pair of pivoted draw-heads having curved faces, and a pair of spring-guys attached to each draw-head, substantially as herein illustrated, for uniting a pair of swiveled trucks under adjoining cars, in the manner set forth.

7. The combination of a pair of swiveled car-trucks, a pair of draw-heads and a connecting draw-bar, united by pivotal bolts at the vertical axes of said trucks, a pair of spring-guys uniting the outer end of each draw-head to the outer corners of its truck, spring guys extending inward from the other corners of both trucks, a connecting rod or rods uniting these guys, a coupling-link having a double wedge in contact with the curved faces of the leading draw-head, and a pair of diagonal bars uniting the two trucks, substantially as herein shown and described, for guiding and steadying the latter, in the manner specified.

209,094. Dynamo-Electric Machine. Edward Weston, Newark, N. J., assignor to Weston Dynamo Electric Machine Company, same place. Filed Dec. 31, 1877.

Brief.—A revolving hollow shell has a series of longitudinal and diametrical coils, independent of each other, connected by a commutator with a fixed electro-magnet within the shell, and also with field of force electro-magnets exterior to the revolving shell.



Claim.—1. A continuously revolving coil or coils traversing the exterior of a hollow carrier or shell composed of a non-conducting or diamagnetic material, in combination with an electro-magnet supported within the interior of such revolving shell, substantially as described.

2. A continuously revolving coil or coils traversing the exterior of a hollow carrier or shell composed of a non-conducting or diamagnetic material, in combination with the poles of one or more stationary electro-magnets supported outside the revolving shell, substantially as described.

3. A continuously-revolving coil or coils traversing the exterior of a hollow carrier or shell composed of a non-conducting or diamagnetic material, in combination with the poles of one or more electro-magnets supported outside the coil, and one or more electro-magnets supported within the interior of the shell upon which the coil or coils are wound, substantially as described.

4. In a dynamo-electric machine, a revolving coil, in combination with a stationary electro-magnet outside of such coil, and a stationary electro-magnet supported within the convolutions of such coil, substantially as and for the purpose set forth.

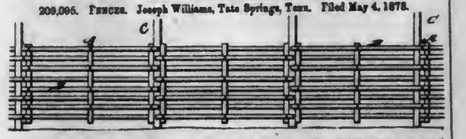
5. A group of coils wound in radially separate systems upon a shell, substantially such as described, rotating around an electro-magnet supported within the shell, and between the poles of electro-magnets arranged outside of the shell, in combination with a commutator the diametrically-opposite strips of which are respectively connected with the opposite ends of the wire composing one of the group of coils upon the rotating shell, whereby the adjoining strips or sectors on either side of a line bisecting the axis of the commutator are of like polarity, and are of opposite polarity to that of the adjoining strips or sectors of the commutator on the opposite side of the said line, in combination with brushes respectively forming an electrical contact with oppositely-polarized strips or sectors of the commutator, each of which brushes constantly maintains contact with two or more adjoining strips or sectors of the commutator of like polarity, substantially as described.

6. In a dynamo-electric machine, substantially such as described, provided with rotating coils traversing the exterior of a shell inclosing an electro-magnet, an electric circuit embracing the coils around one or more of the electro-magnets, and one or more of the coils surrounding the rotating shell, a commutator, brushes, and an external conductor electrically connecting the binding-posts, substantially as described.

7. A commutator composed of a group of metallic sectors, insulated from each other, and mounted radially upon the face of a rotating disk, in combination with two or more brushes, each of which overlaps two or more adjoining sectors of the commutator, substantially as described.

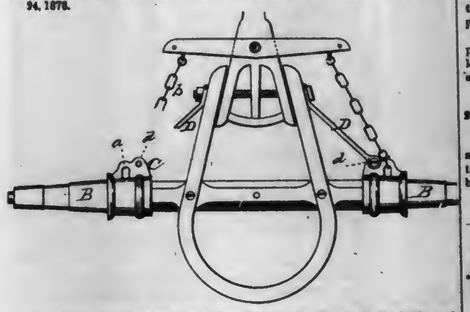
8. In a dynamo-electric machine, substantially such as described, provided with rotating coils traversing the exterior of a shell inclosing an electro-magnet, two distinct operative circuits, each of which includes a portion of the rotating coils, and one or more coils surrounding one or more stationary electro-magnets, substantially as shown and described.

209,095. Fences. Joseph Williams, Tate Springs, Tenn. Filed May 4, 1878.



Claim.—In a fence, the panels constructed each with upright posts A, and boards or rails B, secured to them alternately on opposite sides, and having their ends projecting beyond the end posts, in combination with the false posts C, substantially as and for the purposes set forth.

209,096. Vehicle-Axle Skein. Lucius A. Winchester, White Water, Wis. Filed Aug. 24, 1878.



Claim.—The axle-skein consisting of the skein B, having the horizontal flange or lug C cast upon the front part of its inner or butt end, said lug being provided with a loop, *a*, at its outer end, adapted to receive a stay-chain, *b*, or draft-guide *c*, and an eye *d*, at its inner end for the reception of the hound-brace D, substantially as specified.

209,097. Standards for Carriage-Tops. Francis W. Whitney, Leominster, Mass. Filed Sept. 2, 1878.



Claim.—1. In a carriage-standard, the combination, with one portion of the standard provided with a connected wire ring or annulus, *g*, of two independent grooved clamping-disks and mechanism to force them together to embrace and hold the said annulus and its connected portion of the standard in position by friction between the parts, substantially as described.

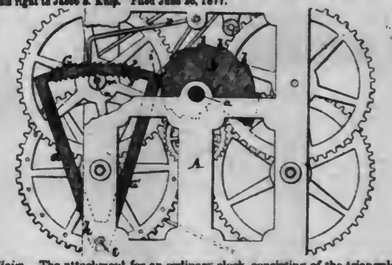
2. The portion *b* of the standard provided with the cap-like part *e*, the independent cap-like portion *i*, the disks *h d*, the portion *a* of the standard, and the annulus *g*, combined with a clamping device to force the disks against the annulus, substantially as described.

3. The cap-like portions *e* and *i* of the standard provided with pins or projections, combined with the disks provided with openings to receive the said pins to hold the disks in position, substantially as described.

4. The combination, with the portion *i* and the standard, of a pin or projection on one to enter a slot or recess in the other to retain the portion *i* in position, substantially as described.

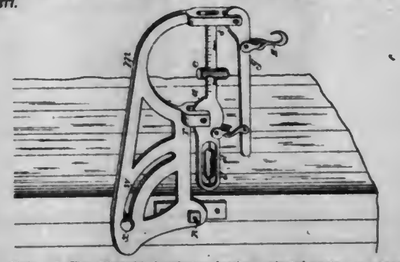
5. The combination, with the portion *a* of the standard, of the annular portion *g* of wire connected with the said standard, substantially as described.

209,098. Striking Attachments for Clocks. D. C. Wolf, Knota, Iowa, assignor of one-half his right to Jacob S. Kulp. Filed June 26, 1877.



Claim.—The attachment for an ordinary clock, consisting of the triangular frame G G′ G″, provided with teeth *x y* on the top bar of the same, pivoted at the bottom junction of the two arms, provided with the stop *i*, and controlled by the spring k, the cam-plate B, mounted upon the shaft *a*, the disk *m*, with pin *n*, and the gravitating pawl D, all constructed, arranged, and operating substantially as and for the purposes herein set forth.

209,099. Weighing Apparatus. Josiah K. Wright, Des Moines, Iowa. Filed Apr. 30, 1877.

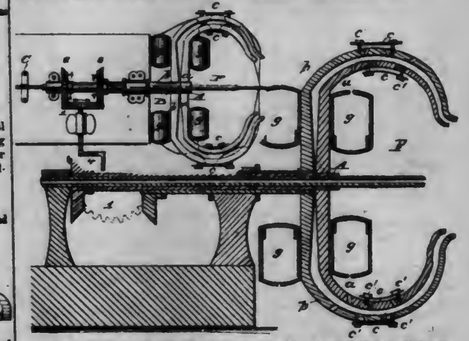


Claim.—1. The adjustable bracket *m*, having a pivotal center, *n*, a concentric slot, *w*, a beam-bearer, *r*, and a lever-bearer, *s*, formed complete in one piece, substantially as and for the purposes shown and described.

2. As an improved article of manufacture, the weighing apparatus composed of the weigh-beam *a b*, having adjustable weights *c* and *d*, the hinged lever *g*, having a depending hook, *z*, and the adjustable bracket *m o w r s*, substantially as and for the purposes shown and described.

209,100. Machines for Twining Wreaths. Geo. B. Shepard, Ogdensburg, N. Y. Filed Oct. 12, 1877.

Brief.—Arms mounted upon oppositely-revolving concentric tubular shafts, and carrying receptacles for twine and tension devices for the same, wrap the twine around the material of which the wreath is composed. The wreath may be formed upon a strengthening cord passed through the tubular shafts.



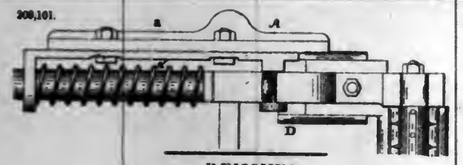
Claim.—In a machine for twining wreaths, &c., the combination of the central tubular shaft, F, with the oppositely-revolving arms *a b*, arranged upon concentric shafts driven by suitable gearing, and provided with cord or twine passages, tension-regulating springs *e e′*, and boxes *g g*, substantially as and for the purpose set forth.

209,101. Loom-Temples. John B. Stanour, Philadelphia, Pa. Filed July 16, 1878.

Brief.—The base of the temple-body is provided with a long slot, to permit its lateral adjustment to suit varying widths of cloth. The body of the temple-frame is made in two parts, so as to be also capable of horizontal and vertical adjustment. The projection which is struck by the lay is also made adjustable, and lateral displacement is prevented by its top being grooved to fit the part of the bar to which it is attached.

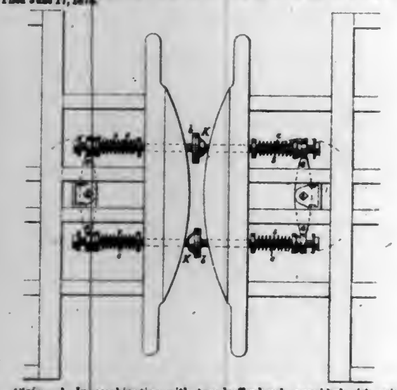
Claim.—The horizontally-slotted plate *c*, having depending slotted plate E, in combination with the plate *c′*, having vertical slots *d*, and the slotted striking-plate D, substantially as described, and for the purpose set forth.

208,101.



REISSUES.

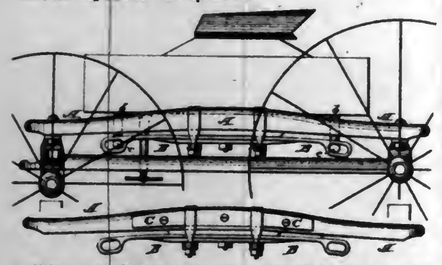
8,448. Car-Bumper. Samuel M. Cummings, Boston, Mass., assignee of part interest to John White and John Marquis, Allegheny, Pa. Patent No. 192,570, dated July 3, 1877. Filed June 17, 1878.



Claim.—1. In combination with two buffer-heads provided with suitable shanks or rods, and arranged upon opposite sides of the center of the same end of a car, a lever pivoted at its center to the car-frame, or other suitable connection secured thereto, and connected at each end with the rear end of one of said buffer shanks or rods, and a spring applied to each of said buffer-rods between the buffer head and the pivoted lever, and adapted to act by its tension to force the buffer-head and pivoted lever apart, substantially as and for the purposes described.

2. The combination of the pivoted equalising-lever *c*, the two rods *s s*, each connected to said lever at opposite ends thereof, and adapted to be moved endwise through the same, the buffer-head *b*, secured in a fixed position on one of the rods *s*, the buffer-head K, secured to the other rod *s* by a ball-and-socket or other universal joint, and the springs *s s*, adapted to act by their tensions to force the buffer-heads and the equalising-lever apart, substantially as and for the purposes described.

8,449. Vehicle-Springs. Edwin Chamberlin, Troy, N. Y., assignee to himself, Lee Chamberlin, and Edward Chamberlin. Patent No. 161,574, dated May 26, 1874; Reissue No. 6,611, dated Aug. 26, 1875. Filed Sept. 10, 1878.



Claim.—1. The side bars, A, and springs B beneath the side bars, in combination with a body, D, the springs being connected to the side bars at or near the center, to form a center bearing for the springs, and the body being connected to the springs at or near their ends, substantially as and for the purposes herein set forth.

2. The body-loops *b*, provided with pivots *c*, in combination with springs B and bars A, substantially as and for the purposes set forth.

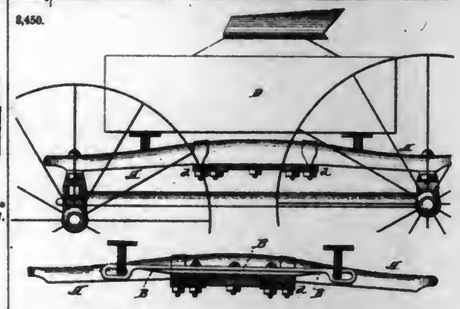
3. The plate C, in combination with the bar A, substantially as and for the purpose set forth.

8,450. Vehicle-Springs. Edwin Chamberlin, Troy, N. Y., assignee to himself, Lee Chamberlin, and Edward Chamberlin. Patent No. 161,574, dated May 26, 1874; Reissue No. 6,611, dated Aug. 26, 1875. Filed Sept. 10, 1878.

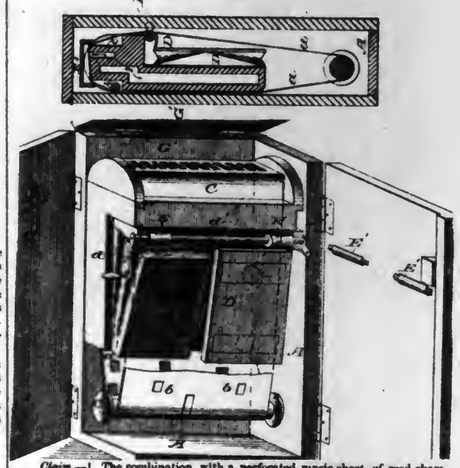
Claim.—1. The side bars, A, and springs B, in combination with transverse bars *d*, forming a center bearing for the springs B, substantially as herein set forth.

2. The side bars, A, cross bars *d*, and springs B on the inner sides of the side bars, in combination with a body, D, the springs being connected to the side bars at or near the center to form a center bearing for the springs, and the body being connected to the springs at or near their ends, substantially as and for the purposes herein set forth.

8,450.



8,451. Automatic Musical Instruments. Elias P. Needham, New York, N. Y. Patent No. 197,048, dated Nov. 13, 1877. Filed July 2, 1878.



Claim.—1. The combination, with a perforated music-sheet, of reed-chamber C and exhaust-bellows D D, the perforations in the sheet corresponding with the air-inlets of said reed-chamber, to produce a tone or chord, and otherwise arranged to form a valve to exclude the air from the reeds, except at such perforations, substantially as described.

2. The combination, with the endless perforated sheet *a* and reed-chamber C, of the shaft *d'*, pulleys E E, and pressure-rollers E' E', arranged to propel the sheet *a*, substantially as and for the purpose specified.

3. The combination, with the crank *d*, pulleys E E, and rolls E' E', of the crank *t*, one or more, arranged to operate the bellows, substantially as and for the purpose set forth.

4. The combination, with the shaft *d'*, of the pulleys E E and rolls E' E', when either the pulleys or rolls, or both, are made of elastic or yielding material, and arranged to move the perforated sheet of a musical instrument, substantially as and for the purpose described.

5. The combination, with the shaft *d'* and pulleys E E, of the rolls E' E', secured to a hinged or otherwise movable part of the case, and arranged substantially as described, so that the endless sheet can be inserted and passed over the pulleys, and the rolls E' E' forced against the sheet, as and for the purpose specified.

6. The combination, with the reed-chamber C, bellows D, and endless sheet *a*, of the case A, provided with the hinged side B, arranged to be secured to the case, and opened to facilitate the insertion of the endless sheet *a*, substantially as and for the purpose set forth.

7. The combination, with a mechanical musical instrument, of the resonant sounding-board or sounding-box E', made movable for the purpose of facilitating the insertion of the music-sheet.

8. The combination, with a mechanical musical instrument operated by an endless sheet or belt, substantially as shown and described, of an exterior case provided with the hinged end G, arranged to facilitate the substitution of one endless sheet for another, substantially as described.

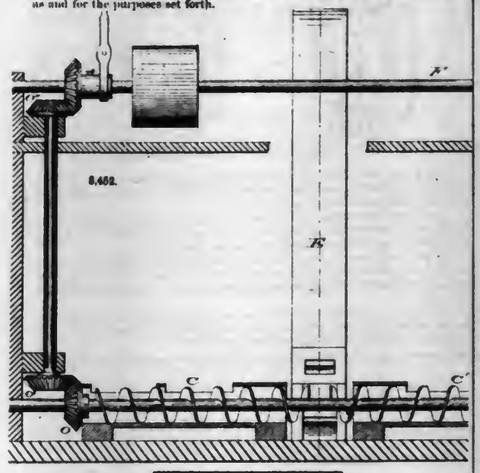
8,452. Device for Unloading Grain from Ships. William Stanton, Erie, Pa., assignor of one-half interest to Wm. H. Whitehead, same place. Patent No. 160,678, dated Mar. 2, 1875. Filed Apr. 13, 1878.

Brief.—Each separate compartment of the ship's hold is provided with a right-and-left-hand screw-conveyer, which is operated by line-shafting and proper connections, together with an elevator-leg suitably operated and shifted from one compartment to another, as each is required to be emptied.

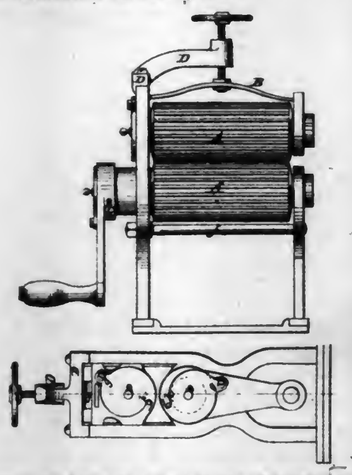
Claim.—1. In the several grain-compartments of a ship's hold, right-and-left incased screw-conveyers C C', generally open at the top, in combination with a line driving-shaft, F, and connecting-gearing and the elevator-leg E, substantially as and for the purposes set forth.

2. The combination, with the right-and-left screw conveyers C C', and their operating-gearing, arranged in the separate grain-storing compartments of a ship's hold, of the line-shaft F with its attachments, said conveyers in each compartment arranged to operate independently of the others as each separate compartment is emptied of its grain, and the leg of the elevator is shifted from an empty to a filled compartment, as herein set forth.

3. In the stowage-compartment of a ship, a screw-conveyer adapted to operate in conjunction with the leg of an elevator-building, in combination with a box or casing, H, which is generally open at the top, except near the said leg, where it is so constructed as to wholly incase the said conveyer, substantially as and for the purposes set forth.



8,453. Fluting-Machines. Samuel G. Cabell, Washington, D. C., assignor, by mesne assignments, to Leon Abbett and Dan'l. Jackson. Patent No. 56,365, dated July 17, 1866; Reissue No. 3,856, dated Mar. 1, 1870. Filed Aug. 27, 1878.



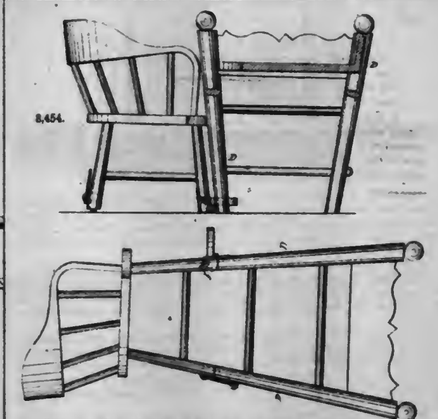
Claim.—1. In a fluting-machine, the combination, substantially as described, of two rolls, one mounted in fixed and the other in movable bearings, said movable roll being held against the other by a centrally-exerted elastic pressure, whereby any tendency of said movable roll to spring away from the other at either end more than at its opposite end is prevented, and said rolls being mounted in a frame so constructed as to leave an unobstructed passage-way for the introduction of a fabric in a line parallel with the rolls, and for its passage through them at right angles to their axes, substantially as set forth.

2. The rigid arm or support D, centrally overhanging the two rolls, in combination with the movable roll and connecting mechanism, substantially as described, whereby the movable roll may be raised and lowered and an unobstructed passage-way provided for the fabric, as set forth.

3. In combination with the fluted rolls A A', one being fixed and the other movable, both supported in bearings at each end, and the movable roll having a central bearing or point of resistance, and said rolls being so arranged as to leave an unobstructed opening between their outer ends for the introduction of the fabric, the spring-bar B, arranged to operate substantially as described.

8,454. High Chairs for Children. John Nichols, Gardner, assignor, by mesne assignments, to Thompson, Perley & Watts, Baldwinsville, Mass. Patent No. 76,801, dated Apr. 14, 1868. Filed May 15, 1878.

8,454.



Claim.—1. In a combined high and low chair, the combination of a hinged reversible leg portion, an irreversible adjustable seat portion, and a tray or platform, substantially as described.

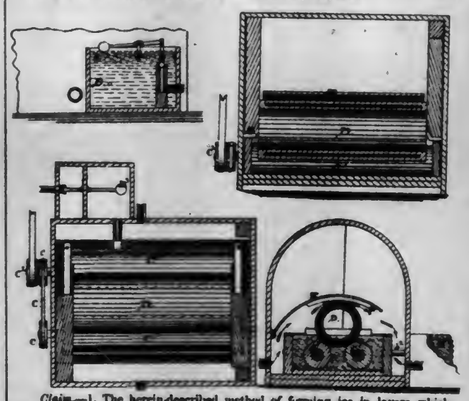
2. In a child's chair convertible from a high to a low chair by a change in position of the lower portions of the pivoted legs which elevate the seat for a high chair, a platform hollowed out at one edge and connected with the said pivoted legs, whereby, when said legs are placed in front of the lowered seat, a space is formed next the front of the said seat, substantially as and for the purpose described.

3. A child's chair composed of a seat part and a movable or pivoted leg part below the said seat, provided with a platform, whereby the same side of the same seat, by a change of position under it of the movable but connected leg part may be used as the high seat or as the low seat, the platform, as the leg part is turned over toward the front of the seat, being brought to a position just in advance of the front of the seat, substantially as described.

4. In a convertible high and low chair, the reversible portions D of the legs of the chair, provided with the platform extended between said legs, and with a flange extending from that side of the platform which is underneath when the chair is used as a high chair, whereby when the portion D is inverted the flange projects upward and about the then upper sides of the platform, substantially as described.

5. In a child's chair, the seat portion, its permanently-connected foot-board, a tray or platform, and movable leg portion, pivoted below the seat portion to elevate it for a high chair, or lower but not reverse it for a low chair, combined with fastening devices to hold the seat and movable leg portions locked together for a high chair, the same foot-board being operative in both positions of the chair, substantially as described.

8,455. Methods of and Apparatus for Manufacturing Ice. Albert Albertson, Jersey City, N. J., assignor, by mesne assignments, to himself, Simon B. Hunt, and Francis E. Pinto. Patent No. 115,609, dated May 30, 1871. Filed Sept. 25, 1878.



Claim.—1. The herein-described method of forming ice in layers, which consists in freezing the water upon a revolving surface by forcing a current of atmospheric air at a low temperature against said surface, upon which the water is taken up in successive films, substantially as above set forth.

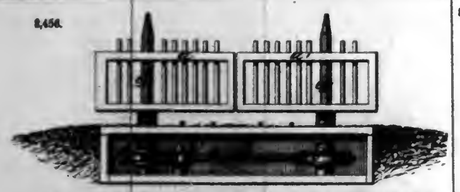
2. The combination of the water-tank C, revolving rollers C' C', and cove D, constructed with hollow walls, all arranged in a freezing-chamber, to operate substantially as set forth.

3. The combination of the revolving hollow cove D and scrapers E upon the ends of the water-tank C, substantially as and for the purpose set forth.

4. The combination of the revolving hollow cove D and deflector F, arranged to operate substantially as set forth.

8,456. Gates. Joseph Nason, Bangor, Me., and Jas. P. Wilson, Boston, Mass., assignors to John E. Goldsworthy. Patent No. 96,306, dated Aug. 27, 1867. Filed June 12, 1878.

8,456.



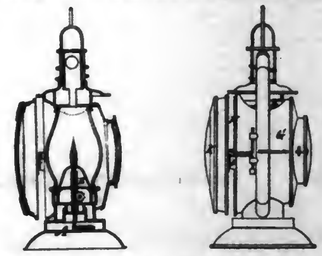
Claim.—1. The combination, with gates arranged in opposite sides of a railroad-track at a street-crossing, of flexible connections—such as a chain or band—engaging wheels or pulleys secured to the shafts on which the gates are mounted, whereby the gates may be simultaneously opened or closed, substantially as specified.

2. The combination, with two pairs of gates arranged on opposite sides of a railway-track at a street-crossing, of flexible connections—such as a chain or band—engaging with wheels or pulleys secured to the shafts on which the gates are mounted, for simultaneously opening or closing them, substantially as specified.

3. The combination, with two pairs of gates arranged on opposite sides of a railway-track at a street-crossing, of flexible connections—such as a band or chain—engaging wheels or pulleys secured to the shafts on which the gates are mounted, and boxes, troughs, or closed receptacles below the surface of the crossing and track, adapted to incase and protect the operating mechanism of the gates, substantially as specified.

4. The combination, with a set of gates mounted on tubular shafts, of wheels rigidly secured to said shafts, so as to turn with the gates, and all of said wheels connected with a chain or band, so that motion may be transmitted from one gate to the other and all the gates simultaneously opened or closed, substantially as set forth.

8,457. Signal-Lanterns. Henry E. Pond, Franklin, Mass., assignor to Robert E. Dietz, New York city. Patent No. 188,671, dated Mar. 20, 1877. Filed June 27, 1878.



Claim.—1. The hood open at one side only, for the attachment and detachment of a removable signal-pane, in combination with a lantern, substantially as and for the purpose herein set forth.

2. In hand-lanterns containing the lamp, draft-tube, and adjustable chimney-support, substantially as described, the hood G, surrounding the burner and chimney, essentially as and for the purpose stated.

3. The combination, with the lantern proper, of the removable hood G and one or more windows detachably connected with the hood, so that one window may be removed and replaced by another, substantially as and for the purposes set forth.

4. A window-pane for hand-lanterns, constructed as follows: consisting of the two sheets of gelatine, with the interposed material, cemented together, and varnished, essentially as and for purposes described.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 15th DAY OF OCTOBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Pages.
Abbett, L., *et al.* (See Cabell, S. G., assignor.) (Reissue.)						
Adriance, W., Poughkeepsie, N. Y. Horse hay-rake	209,004	Oct. 15	602	175	14	580
Alexander, F. M., Marshall, Tex. Car-journal box	208,947	Oct. 15	542	159	14	572
Albertson, A., Jersey City, N. J., assignor, by mesne assignments, to himself, S. B. Hunt, and F. E. Pinto. Method of and apparatus for manufacturing ice. (Reissue)	8,455	Oct. 15	724	209	14	597
American Buttonhole Overseaming and Sewing Machine Company. (See Rehfuss, G., assignor.)						
Atwood, A., Dunellen, N. J. Device for muffling railway-rails	208,880	Oct. 15	467	135	14	563
Babbitt, B. T., New York, N. Y. Air-gun	209,014	Oct. 15	617	179	14	582
Baker, C. H., assignor of one-half interest to J. B. Reynolds, San Francisco, Cal. Horse-power	208,948	Oct. 15	543	159	14	573
Baker, H. H., Plainfield, N. J. Dummy	208,881	Oct. 15	468	135	14	563
Baldwin, S. W., New York, N. Y. Journal and bearing for rolling-mills	208,949	Oct. 15	545	160	14	573
Barnes, J., Rockford, Ill. Harvester-rake	208,950	Oct. 15	546	160	14	573
Barnes, W. L., Charlestown, Ind. Ballot-box	208,951	Oct. 15	549	160 161	14	573
Bartram, W. B., Norwalk, Conn. Wagon-jack	209,015	Oct. 15	619	179	14	582
Bean, J. C., Crossville, Ill. Cultivator	209,005	Oct. 15	604	175 176	14	580
Benner, T. M., Allegheny, Pa. Fire-kindler	208,882	Oct. 15	470	.....	14	563
Berlin, T. N., Farmington, Minn. Medicated pessary	208,883	Oct. 15	470	135	14	563
Blake, R., and S. A. Davis, Newark, N. J. Device for engaging pulleys to wheels	208,884	Oct. 15	471	135	14	563
Boisset, P., New York, N. Y. Propelling vessels	208,952	Oct. 15	551	161	14	573
Bogart, A. L., assignor to A. L. Bogart, Jamaica, N. Y. Electric apparatus for gas-burners	209,016	Oct. 15	619	180	14	583
Bonwill, W. G. A., Dover, Del., assignor to S. S. White, Philadelphia, Pa. Electro-magnetic dental plugger	209,006	Oct. 15	605	176	14	580
Boult, M. T., Battle Creek, Mich. Broom	209,017	Oct. 15	621	180	14	583
Brekke, L. O., assignor of one-half interest to W. H. Manning, Decorah, Iowa. Draft-equalizer	209,007	Oct. 15	607	177	14	581
Brigham, J. W., and T. M. Flenniken, Rockford, Ill. Corn-planter	208,885	Oct. 15	471	136	14	563
Brooks, E. J., New York, N. Y. Baggage-seal	208,953	Oct. 15	552	161	14	574
Brooks, E. J., New York, N. Y. Metallic seal	209,008	Oct. 15	607	177	14	581
Broughton, J., assignor to W. Vogel, Brooklyn, N. Y. Metallic can	209,009	Oct. 15	609	177	14	581
Bryon, W. J. O., Jr., New York, N. Y. Exercising-machine	208,954	Oct. 15	553	161 162	14	574
Bull, H. C., Brooklyn, N. Y. Breech-loading fire-arm	209,010	Oct. 15	610	177 178	14	581
Bull, H. C., Brooklyn, N. Y. Operating heavy ordnance	209,011	Oct. 15	612	178	14	581
Burghardt, J. H. (See Miles and Burghardt.)						
Burnshow, J. H., Baltimore, Md. Tool for making rosettes from wood	209,012	Oct. 15	616	179	14	582
Burrows, J., Manchester, N. H. Needle	209,018	Oct. 15	622	180	14	583
Butcher, J., New York, N. Y. Sharpener for tailor's chalk	208,955	Oct. 15	555	162	14	574
Butcher, J., New York, N. Y. Valve-gear for steam-engines	209,013	Oct. 15	616	179	14	582
Cabell, S. G., Washington, D. C., assignor, by mesne assignments, to L. Abbett and D. Jackson. Fluting-machine. (Reissue)	8,453	Oct. 15	721	209	14	597
Caddy, W. H., Brooklyn, N. Y. Smoking-pipe	208,886	Oct. 15	475	136	14	563
Cadett, J. W. T., 68 Camberwell Grove, Surrey county, England. Camera	208,956	Oct. 15	556	162	14	574
Campbell, S. O., Tower Hill, Ill. Seeding-machine	208,887	Oct. 15	475	137	14	564
Card, B. F., Brooklyn, N. Y. Railway-track	208,957	Oct. 15	556	162	14	574
Carpenter, C. H., Syracuse, N. Y. Coin-holder	208,958	Oct. 15	557	163	14	574
Carter, H. S., Chicago, Ill. Bed-lounge	209,019	Oct. 15	622	180	14	583
Cass, C. N., Decatur, Ill. Rope-holding reel	209,020	Oct. 15	623	181	14	583
Chamberlain, J. N., Springfield, Mass. Pressure-governing gas-burner	209,021	Oct. 15	624	181	14	583
Chamberlin, E., Troy, N. Y., assignor to himself and L. and E. Chamberlin. Vehicle-spring. (Reissue)	8,449	Oct. 15	716	207	14	596
Chamberlin, E., Troy, N. Y., assignor to himself and L. and E. Chamberlin. Vehicle-spring. (Reissue)	8,450	Oct. 15	717	208	14	596
Chamberlin, L., *et al.* (See Chamberlin, E., assignor.) (Reissue.)						
Clark, L. P., Baltimore, Md. Bedstead-fastening	209,022	Oct. 15	626	181	14	583
Claussen, C. (See Lapierre, A. N., assignor.)						
Cleveland Hardware Company. (See Collins, W. G., assignor.)						
Cline, J. C., Philadelphia, Pa. Crucible-machine	208,960	Oct. 15	559	163	14	575
Clough, M. M., Marlborough, Mass. Machine for skiving leather	208,959	Oct. 15	558	163	14	574
Collins, W. G., assignor to Cleveland Hardware Company, Cleveland, Ohio. Metal-shears	208,888	Oct. 15	477	137	14	564
Coman, D., Delavan, Minn. Washing-machine	209,023	Oct. 15	627	181	14	583
Coon, J. D., Centreville, Colo. Breech-loading fire-arm	208,889	Oct. 15	478	137 138	14	564
Cornell, W. N., and C. Tollner, Pulaski, N. Y., assignors to themselves and J. T. and L. H. Stevens, Washington, D. C. Machine for reducing wood to paper-pulp	208,890	Oct. 15	480	138	14	564
Covert, F. M., assignor of one-half interest to W. V. Gould, Lodi, N. Y. Rafter	209,024	Oct. 15	628	182	14	583
Cromer, S., Fort Littleton, Pa. Hood for cooking-stoves	208,891	Oct. 15	480	138	14	564

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Crosby, G. H., East Somerville, Mass. Steam-cock	208,961	Oct. 15	560	163	14	575
Crosby, G. H., East Somerville, Mass. Low-water alarm for steam-boilers	208,962	Oct. 15	561	164	14	575
Crosby, G. H., East Somerville, Mass. Water-gage	208,963	Oct. 15	562	164	14	575
Cross, B. H., Cabaniss, Ga. Cultivator	208,964	Oct. 15	563	164	14	575
Crowell, H. C., assignor to A. H. Gray, Erie, Pa. Shaft and pulley coupling	208,965	Oct. 15	564	164	14	575
Crowley, J. J., Ackley, Iowa. Horse-collar	209,025	Oct. 15	629	182	14	584
Cummings, S. M., Boston, Mass., assignor of part interest to J. White and J. Marquis, Allegheny, Pa. Car-bumper. (Reissue)	8,448	Oct. 15	715	207	14	596
Currier, O., Newark, N. J. Printing and painting machine	208,892	Oct. 15	481	138 and 139	14	564
Cushman, C. S., assignor to N. D. Stoops, Philadelphia, Pa. Sewing-machine	209,026	Oct. 15	630	182	14	584
Da Silva, E. C., Rio de Janeiro, Brazil. Feed-water-regulating valve	208,992	Oct. 15	587	171	14	579
Davis, J. A., Boston, Mass. Sewing-machine	208,967	Oct. 15	565	165	14	575
Davis, R. V. (See Muehling and Davis.)						
Davis, S. A. (See Blake and Davis.)						
Davis, W. O., Bloomington, Ill. Writing-tablet	208,966	Oct. 15	564	165	14	575
Dean, A. H., and A. C. Pike, Philadelphia, Pa. Double-acting lift-pump	209,027	Oct. 15	631	183	14	584
Dietz, R. E. (See Pond, H. E., assignor.) (Reissue.)	209,028	Oct. 15	632	183	14	584
Dix, S. C., Neponset, Ill. Sulky-harrow						
Dodge, W. H. (See Williams and Dodge.)						
Dolloff, W. P., Providence, R. I. Ear-ring	208,968	Oct. 15	568	165	14	576
Donner, J. O., New York, N. Y. Apparatus for manufacturing hard sugar	209,029	Oct. 15	633	183	14	584
Doolittle, T. B., Bridgeport, Conn., assignor, by mesne assignments, to E. F. Phillips, Providence, R. I. Tip for switch-cords	208,969	Oct. 15	568	165	14	576
Doucet, F. A. (See Palmer, C. H., Jr., assignor.)						
Dougine, J. T., San Francisco, Cal. Excavating-machine	208,893	Oct. 15	482	139	14	565
Eads, J. B., St. Louis, Mo. Dredging-machine	208,894	Oct. 15	484	139 and 140	14	565
Eames, F. W., Watertown, N. Y. Vacuum-brake	208,895	Oct. 15	486	140	14	565
Earhart, G. W., Columbus, Ohio. Grain-separator	208,896	Oct. 15	488	140 and 141	14	565
Eberhard, W., and R. Turner, Akron, Ohio. Oatmeal-machine	208,970	Oct. 15	570	166	14	576
Emerson, J. F., Wakefield, Mass. Shoe	208,897	Oct. 15	489	141	14	565
Emerson, L., College Hill, Ohio. Corner-iron for carriage-seats	208,971	Oct. 15	571	166	14	576
Englebeck, W. J. (See Keller, M. A., assignor.)						
Eskridge, B. (See McBonn, C. E., assignor.)						
Estabrook, A. C., assignor to Florence Manufacturing Company, Northampton, Mass. Brush	208,898	Oct. 15	489	141	14	565
Estes, H., Bolton's Depot, Miss. Plow-clevis	208,899	Oct. 15	491	141	14	566
Evans, L., assignor to himself, J. J. Thornton, D. H. Ridgeway, and W. E. Tustan, Pittsburg, Pa. Sewing-machine	209,030	Oct. 15	634	183 and 184	14	584
Fairlamb, C. C., Arena, Wis. Milk-pan cover	208,900	Oct. 15	491	142	14	566
Farquhar, A. B., York, Pa. Horse-power	209,032	Oct. 15	636	184	14	585
Farquhar, S., assignor to J. Farquhar's Sons, Boston, Mass. Attaching slates to roofs	209,031	Oct. 15	636	184	14	585
Farquhar's Sons, J. (See Farquhar, S., assignor.)						
Fillmore, C. W., Marengo, Ill. Vehicle-spring	208,901	Oct. 15	492	142	14	566
Flenniken, T. M. (See Brigham and Flenniken.)						
Florence Manufacturing Company. (See Estabrook, A. C., assignor.)						
Folliott, J. H., Port Clinton, Ohio. Churn	209,033	Oct. 15	637	184	14	585
Foster, B. W., Huntington, W. Va. Latch	209,034	Oct. 15	638	185	14	585
Fowler, A. R., Rochester, N. Y. Washing-machine	209,035	Oct. 15	639	185	14	585
Freeman, J. M., Parkersburg, Ind. Saddle-stirrup	208,972	Oct. 15	572	166	14	576
Freeman, M. R., assignor of one-half interest to A. F. Mansur, Detroit, Mich. Photo-mechanical printing	209,036	Oct. 15	640	.....	14	585
Fuller, C. H., Chicago, Ill. Coin-measure	208,902	Oct. 15	493	142	14	566
Gardner, A. E., Milan, assignor of one-half interest to N. C. Putnam, York, Mich. Oil-can	209,037	Oct. 15	641	185	14	585
Gérard, J., assignor to Trenton Lock and Hardware Company, Trenton, N. J. Toy money-box	209,038	Oct. 15	642	186	14	585
Gerry, M. H., Minneapolis, Minn. Metallic packing for piston-rods, &c	208,973	Oct. 15	572	166	14	576
Gill, J. H., Philadelphia, Pa. Machine for gaging cartridges	208,903	Oct. 15	493	142 and 143	14	566
Gilleland, D. J. (See Morgan and Gilleland.)						
Godley, G. F., Philadelphia, Pa. Car-spring	208,904	Oct. 15	495	143	14	566
Goldsworthy, J. E. (See Nason and Wilson, assignors.) (Reissue.)						
Gould, W. V. (See Covert, F. M., assignor.)						
Gove, E. (See Rhind, F., assignor.)						
Gray, A. H. (See Crowell, H. C., assignor.)						
Green, W. W., Jr. (See Terry and Green.)						
Gregg, W., Mason, Mich. Stone and log sled	209,039	Oct. 15	643	186	14	586
Griest, J. M., Chicago, Ill. Puncturing-pen	208,905	Oct. 15	496	143	14	566
Gulden, W., Minneapolis, Minn. Sign	208,974	Oct. 15	573	167	14	576
Haehnlen, L., Sr. (See Haehnlen, T. D., assignor.)						
Haehnlen, T. D., assignor of one-fifth interest to L. Haehnlen, Sr., Philadelphia, Pa. Ticket-reel	208,906	Oct. 15	498	143	14	567
Haldeman, C. D. and I., West Liberty, Iowa. Gate	209,040	Oct. 15	644	186	14	586
Haldeman, I. (See Haldeman, C. D. and I.)						
Hall, E. L., Philadelphia, Pa. Locomotive head-light	209,041	Oct. 15	645	187	14	586
Hanscom, C. E., assignor, by mesne assignments to J. H. Hanscom, New York, N. Y. Railway-signal	209,042	Oct. 15	646	187 and 188	14	586
Hanscom, J. H. (See Hanscom, C. E., assignor.)						
Heartsill, A., Louisville, Tenn. Shovel-plow and harrow attachment	209,043	Oct. 15	651	188	14	587
Hecker & Co., G. V. (See Hecker, G. V., assignor.)						
Hecker, G. V., assignor to G. V. Hecker & Co., New York, N. Y. Package-wrapper	209,044	Oct. 15	651	188	14	587
Hemmingway, M., Owensborough, Ky. Hog-cholera compound	208,975	Oct. 15	574	.....	14	576
Henshaw, J. S., Goshen, Ky. Gate	208,976	Oct. 15	574	167	14	577
Hill, C. G., Arlington, assignor to J. W. Selby, Baltimore, Md. Machine for making plaster bandages	209,045	Oct. 15	653	188	14	587
Himrod, W. G., Easton, Md. Combined plow and harrow	209,046	Oct. 15	654	189	14	587
Hodges, A. J., Peoria, and J. B. Mohler, Pekin, Ill.; said Mohler assignor to said Hodges. Harvester-reel	209,047	Oct. 15	654	189	14	587
Holly, C., Lockport, N. Y. Steam diaphragm-meter	209,048	Oct. 15	655	189	14	587
Horton, N. N., Kansas City, Mo. Reclining-chair	208,907	Oct. 15	498	144	14	567
Huie, H. R., San Leandro, Cal. Vehicle-spring	208,977	Oct. 15	575	167	14	577
Hull, J. B., Live Oak, Fla. Cotton-gin	209,049	Oct. 15	658	190	14	588
Humblot, P. C., Paris, France. Steam and other turbines	208,908	Oct. 15	499	144	14	567
Hunt, S. B., *et al.* (See Albertson, A., assignor.) (Reissue.)						
Inskeep, M., Bellefontaine, Ohio. Middlings-bolt	209,050	Oct. 15	660	190	14	588
Irwin, J. H., Philadelphia, Pa. Lantern	209,051	Oct. 15	661	190 and 191	14	588

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Isaacs, F. H., Newark, N. J. Sulky-plow	208,978	Oct. 15	576	167	14	577
Jackson, D., *et al.* (See Cabell, S. G., assignor.) (Reissue.)						
Jerome, E., Albany, N. Y. Water-level indicator	209,052	Oct. 15	663	191	14	588
Jewett, G. P. (See Webb, W. A., assignor.)						
Jewett, J., assignor to S. S. Jewett & Co., Buffalo, N. Y. Foot bar and rail for stoves	208,909	Oct. 15	500	144	14	567
Jewett, J. C., Buffalo, N. Y. Combined water cooler and filter						
Jewett & Co., S. S. (See Jewett, J., assignor.)						
Jones, S. E., Nashville, Tenn. Mold for casting andirons	209,054	Oct. 15	666	191	14	588
Jones, W., Oshawa, Ontario, Canada. Shutter-worker	209,055	Oct. 15	666	192	14	589
Keith, N. S., Brooklyn, N. Y. Refining impure lead	209,056	Oct. 15	667	.....	14	589
Keller, M. A., assignor of one-half interest to W. J. Englebeck, Fremont, Ohio. Grain-binder	209,059	Oct. 15	670	192, 193, and 194	14	589
Knipscheer, J., Weimar, Tex. Windlass water-elevator	209,057	Oct. 15	668	192	14	589
Knox, S. H. (See Thomas and Knox.)						
Kretsinger, W. H., Fort Madison, Iowa. Fork	209,058	Oct. 15	669	192	14	589
Kühn, W., Buffalo, N. Y. Target	208,910	Oct. 15	501	145	14	567
Kulp, J. S. (See Wolf, D. C., assignor.)						
Lakin, J. A., Westfield, Mass. Hem-stitching attachment for sewing-machines	208,911	Oct. 15	502	145	14	567
Lambie, R. M., New York, N. Y. Folding table	208,912	Oct. 15	502	145	14	567
Lapierre, A. N., assignor to C. Claussen, New York, N. Y. Sheet-metal can	209,060	Oct. 15	674	194	14	589
Lattin, A. J., San Francisco, Cal. Spring-bed	208,979	Oct. 15	577	168	14	577
Lauten, F. H., New York, N. Y. Paper-feeding apparatus	208,980	Oct. 15	577	168	14	577
Lever, J. S., Philadelphia, Pa. Book-sewing machine	209,061	Oct. 15	675	194	14	590
Lorenz, W. K., Toledo, Ohio. Machine for dressing and ornamenting marble, slate, &c	209,062	Oct. 15	677	194	14	590
Loughran, T., New York, N. Y. Spittoon	208,981	Oct. 15	579	168	14	577
Lucas, J. W., Leesburg, Ky. Grain-drill cleaner	208,982	Oct. 15	579	168	14	577
Macdonald, R., Brooklyn, N. Y. Journal	208,983	Oct. 15	580	169	14	578
Machamer, D., and J. McCulloch, Lena, Ill. Feed-steamer	209,063	Oct. 15	677	195	14	590
Macqueen, J. (See Rushton and Macqueen.)						
Malpass, G. W., Philadelphia, Pa. Water-cooler	208,913	Oct. 15	505	145	14	567
Manning, W. H. (See Brekke, L. O., assignor.)						
Mansur, A. F. (See Freeman, M. R., assignor.)						
Marchal, G. (See Prenot and Marchal.)						
Marquis, J., *et al.* (See Cummings, S. M., assignor.) (Reissue.)						
Marsh, E. A., Battle Creek, Mich. Lathe for turning regular forms	209,064	Oct. 15	678	195	14	590
Martin, G. F. (See Patterson, J., assignor.)						
McBonn, C. E., assignor of one-half interest to B. Eskridge, Folly Mills, Va. Grain-planter	208,914	Oct. 15	506	146	14	568
McCulloch, J. (See Machamer and McCulloch.)						
McGovern, B., Bridgeport, Conn. Coin-holder	208,984	Oct. 15	581	169	14	578
Mercier, E., Springfield, Mass. Nursery-lamp chimney	208,916	Oct. 15	508	147	14	568
Miles, W. A., Copake Iron Works, N. Y., and J. H. Burghardt, Curtisville, Mass. Hot-blast oven	208,915	Oct. 15	507	146 and 147	14	568
Millspaugh, W., Middletown, N. Y. Chopping-knife	209,065	Oct. 15	679	195	14	590
Mitchell, F. W., Hudson, N. Y. Bed-bottom	208,917	Oct. 15	509	148	14	568
Mohler, J. B. (See Hodges and Mohler.)						
Molinier & Co., C. (See Molinier, C., assignor.)						
Molinier, C., Buzet, France, assignor to C. Molinier & Co., (limited,) London, England. Machine for dressing hides and skins	208,918	Oct. 15	510	148	14	568
Moon, H. E., Richmond, Ind. Desk	208,919	Oct. 15	511	148 and 149	14	568
Morgan, H. A., and D. J. Gilleland, Decatur, Ill. Dust-deflector for cars	209,066	Oct. 15	679	196	14	590
Morland, N. (See Rock, F., assignor.)						
Muehling, A., and R. V. Davis, Philadelphia, Pa.; said Davis assignor to said Muehling. Machine for cutting fabrics	208,920	Oct. 15	512	149	14	569
Myers, C., Napa City, Cal. Plow	209,067	Oct. 15	680	196 and 197	14	591
Nash, C., Davis Junction, Ill. Cultivator	208,921	Oct. 15	514	149 and 150	14	569
Nason, J., Bangor, Me., and J. F. Wilson, Boston, Mass., assignors to J. E. Goldsworthy. Gate. (Reissue)	8,456	Oct. 15	725	210	14	597
Needham, E. P., New York, N. Y. Automatic musical instrument. (Reissue)	8,451	Oct. 15	718	208	14	596
Nelson, J. S., Indianapolis, Ind. Neck-yoke attachment for harness	208,922	Oct. 15	516	150	14	569
Nichols, J., Gardner, assignor, by mesne assignments, to Thompson, Perley & Waite, Baldwinsville, Mass. High chair for children. (Reissue)	8,454	Oct. 15	723	209	14	597
Nicoller, F. Z., New York, N. Y. Key for musical string-instruments	208,985	Oct. 15	582	169	14	578
Noelting, B. H., Nebraska City, Nebr. Animal-trap	209,068	Oct. 15	681	197	14	591
Norris, E. J., Baltimore, Md. Fire-kindler	209,069	Oct. 15	682	197	14	591
Norton, E., Chicago, Ill. Can	209,070	Oct. 15	683	197	14	591
Noyes, A. A., Portland, Me. Label-holder	209,071	Oct. 15	684	198	14	591
Owens, T., Washington, D. C. Ventilator	209,072	Oct. 15	685	198	14	591
Palmer, C. H., Jr., assignor of one-half interest to F. A. Doucet, Merrimac, Mass. Carriage	208,923	Oct. 15	517	150	14	569
Patterson, J., assignor to himself and G. F. Martin, Salem, Mass. Valve	208,986	Oct. 15	582	169	14	578
Peacock, J. F., Reno, Nev. Door-knob attachment	208,924	Oct. 15	518	150	14	569
Phillips, A. K., St. Louis, Mo. Window	209,073	Oct. 15	685	198 and 199	14	591
Phillips, D., *et al.* (See Roseawarne, W. H., assignor.)						
Phillips, E. F. (See Doolittle, T. B., assignor.)						
Phillips, M. J., *et al.* (See Roseawarne, W. H., assignor.)						
Pike, A. C. (See Dean and Pike.)						
Pinto, F. E., *et al.* (See Albertson, A., assignor.) (Reissue.)						
Pitcher, H., Fond du Lac, Wis. Spring bed-bottom	208,987	Oct. 15	583	170	14	578
Plant, P., Washington, D. C. Ore-separator	209,074	Oct. 15	687	199	14	591
Plummer, W. S., East Portland, Oreg. Peach-parer	208,988	Oct. 15	584	170	14	578
Pond, H. E., Franklin, Mass., assignor to R. E. Dietz, New York, N. Y. Signal-lantern. (Reissue)	8,457	Oct. 15	726	210	14	598
Powers, J. W., Chicago, Ill. Fruit and vegetable evaporator	208,925	Oct. 15	519	151	14	569
Prenot, L., and G. Marchal, New York, N. Y. Machine for turning wooden heels	208,989	Oct. 15	585	170	14	578
Putnam, N. C. (See Gardner, A. E., assignor.)						
Rebhun, C., Butler, Pa. Window-frame	208,926	Oct. 15	520	151	14	570
Rees, J., *et al.* (See Roseawarne, W. H., assignor.)						
Rehfuss, G., assignor to American Buttonhole Overseaming and Sewing Machine Company, Philadelphia, Pa. Tuck-marker for sewing-machines	209,075	Oct. 15	688	199	14	592
Rex & Bockins. (See Tyson, C., assignor.)						
Reynolds, F. F., Villa Rica, Ga. Washing-machine	208,990	Oct. 15	585	170	14	578
Reynolds, J. B. (See Baker, C. H., assignor.)						
Reznor, G., Mercer, Pa., assignor of one-half interest to R. R. Wight. Air-carbureter	209,076	Oct. 15	689	200	14	592
Rhind, F., Brooklyn, N. Y., assignor to E. Gove. Lamp-bowl	209,077	Oct. 15	690	200	14	592

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Rhind, F., Brooklyn, N. Y., assignor to E. Gove. Self-extinguishing lamp	209,078	Oct. 15	691	200	14	592
Rhodes, I. M., Hancock, Mich. Treadle-power	209,079	Oct. 15	692	200	14	592
Richmond, G. M., Chicago, Ill. Feathers for dusters	209,080	Oct. 15	693	201	14	592
Ridgeway, D. H., *et al.* (See Evans, L., assignor.)						
Ritter, H., Middletown, Conn. Combined stove-cover and check-damper	209,081	Oct. 15	694	201	14	592
Roberts, W., Cincinnati, Ohio. Miner's lamp	209,082	Oct. 15	695	201	14	592
Rock, F., Skaneateles, assignor of one-half interest to N. Morland, Sennet, N. Y. End-gate fastening	208,928	Oct. 15	522	152	14	570
Ropp, J. W., Elyria, Ohio. Toe-weight for horses	208,927	Oct. 15	521	151	14	570
Rosewarne, W. H., Cincinnati, Ohio, assignor, by mesne assignments, to himself, D. Phillips, J. Rees, and M. J. Phillips, Newport, Ky. Apparatus for compressing fuel	208,929	Oct. 15	523	152, 153	14	570
Rosewarne, W. H., Cincinnati, Ohio, assignor, by mesne assignments, to himself, D. Phillips, J. Rees, and M. J. Phillips, Newport, Ky. Coke-oven	208,930	Oct. 15	525	153, 154	14	570
Rushton, T. H., and J. Macqueen, Bolton, England. Combing-machine	208,991	Oct. 15	586	171	14	578
Schlüter, R., New York, N. Y. Propeller-sleigh	209,083	Oct. 15	696	201	14	592
Seibert, N., San Francisco, Cal. Steam-cylinder lubricator	208,931	Oct. 15	526	154	14	570
Seibert, N., San Francisco, Cal. Lubricator	208,932	Oct. 15	526	154	14	571
Selby, J. W. (See Hill, C. G., assignor.)						
Sheldon, A. C., St. Louis, Mo. Passenger-ticket	208,933	Oct. 15	527	154	14	571
Shepard, G. B., Ogdensburg, N. Y. Machine for twining wreaths	209,100	Oct. 15	714	207	14	595
Simmons, J., Coopersville, Mich. Car-coupling	208,934	Oct. 15	528	155	14	571
Slocum, G. S., Newport, R. I. Cartridge-loading machine	208,935	Oct. 15	529	155	14	571
Smalley, J. (See Smalley, W. W., assignor.)						
Smalley, W. W., assignor to J. Smalley, Bound Brook, N. J. Journal-bearing	209,084	Oct. 15	696	202	14	593
Smith, G. T., Jackson, Mich. Middlings-separator	208,936	Oct. 15	530	155, 156	14	571
Smith & Co., J. (See Stamour, J. B., assignor.)						
Smith, J. N., Jersey City, N. J. Car-axle box	208,993	Oct. 15	588	171, 172	14	579
Smitt, J. H., Norwich, Conn. Draw-bar attachment for railway-cars	208,994	Oct. 15	591	172	14	579
Spang, H. W., Reading, Pa. Electro-magnetic railway-signal	208,995	Oct. 15	592	172	14	579
Sprout, A. R., Picture Rocks, Pa. Machine for dipping matches	207,996	Oct. 15	595	173	14	579
Stamour, J. B., assignor of one-half interest to J. Smith & Co., Philadelphia, Pa. Mold for casting temple-rollers	208,997	Oct. 15	596	173	14	579
Stamour, J. B., Philadelphia, Pa. Loom-temple	209,101	Oct. 15	714	207	14	595
Stanton, W., assignor of one-half interest to W. H. Whitehead, Erie, Pa. Device for unloading grain from ships. (Reissue)	8,452	Oct. 15	720	208, 209	14	596
Steel, A. (See Tappey and Steel.)						
Stevens, J. T., *et al.* (See Cornell and Tollner, assignors.)						
Stevens, L. H., *et al.* (See Cornell and Tollner, assignors.)						
Stoessiger, A. C., Chicago, Ill. Stove-board	209,085	Oct. 15	698	202	14	593
Stoops, N. D. (See Cushman, C. S., assignor.)						
Stucky, S., Lincoln, Ala. Pump	209,086	Oct. 15	698	202	14	593
Tappey, W. H., and A. Steel, Petersburg, Va. Cotton and hay press	209,087	Oct. 15	699	202	14	593
Tate, E., Jamestown, N. C. Hill-side, shovel, and subsoil plow combined	209,088	Oct. 15	700	203	14	593
Taylor, T. P., Bridgeport, Conn. Clasp	208,998	Oct. 15	597	173	14	580
Teague, C. E. (See Winter, D. T., assignor.)						
Terry, C. H., and W. W. Green, Jr., Chicago, Ill. Picket-fence	209,089	Oct. 15	701	203	14	593
Thomas, H. W. C., and S. H. Knox, Springfield, Ohio. Hitching-post	209,090	Oct. 15	702	203	14	593
Thompson, Perley & Waite. (See Nichols, J., assignor.) (Reissue.)						
Thorn, T., St. Clair, Pa. Shutter-bower	208,937	Oct. 15	531	156	14	571
Thornton, J. J., *et al.* (See Evans, L., assignor.)						
Tollner, C. (See Cornell and Tollner.)						
Trenton Lock and Hardware Company. (See Gérard, J., assignor.)						
Turner, L. W., Yalesville, Conn. Stove-pipe shelf	208,938	Oct. 15	532	156	14	571
Turner, R. (See Eberhard and Turner.)						
Tuston, W. E., *et al.* (See Evans, L., assignor.)						
Tyson, C., assignor to Rex & Bockius, Philadelphia, Pa. Boot-jack	209,091	Oct. 15	703	203	14	593
Tyson, R., Baltimore, Md. Bran-scourer	209,092	Oct. 15	703	204	14	593
Vogel, W. (See Broughton, J., assignor.)						
Weaver, J. C., New York, N. Y. Running-gear for railway-cars	209,093	Oct. 15	704	204	14	594
Webb, W. A., assignor to G. P. Jewett, Wadley, Ga. Stump-puller	208,999	Oct. 15	597	174	14	580
Weiss, T., Bethlehem, Pa. Hoe	209,000	Oct. 15	598	174	14	580
Weston Dynamo Electric Machine Company. (See Weston, E., assignor.)						
Weston, E., assignor to Weston Dynamo Electric Machine Company. Dynamo-electric machine	209,094	Oct. 15	706	204, 205	14	594
White, J., *et al.* (See Cummings, S. M., assignor.) (Reissue.)						
White, N. J., Lawrence, Mass. Exhaust-nozzle	208,939	Oct. 15	533	156	14	571
White, S. S. (See Bonwill, W. G. A., assignor.)						
Whitehead, W. H. (See Stanton, W., assignor.) (Reissue.)						
Whitney, A. E., Winchester, Mass. Leather-splitting machine	209,001	Oct. 15	599	174	14	580
Whitney, F. W., Leominster, Mass. Standard for carriage-tops	209,097	Oct. 15	711	206	14	595
Wight, R. R. (See Reznor, G., assignor.)						
Williams, J., Tate Springs, Tenn. Fence	209,095	Oct. 15	709	205	14	595
Williams, M. D., and W. H. Dodge, Mishawaka, Ind. Wagon-jack	208,940	Oct. 15	534	157	14	571
Williams, R. S., New York, N. Y. Package for transmission of dental foil	209,002	Oct. 15	600	175	14	580
Wilson, I. A. (See Wilson, L. B., assignor.)						
Wilson, J. F. (See Nason and Wilson.) (Reissue.)						
Wilson, L. B., Caldwell, assignor to himself and I. A. Wilson, Zanesville, Ohio. Reciprocating churn	208,941	Oct. 15	534	157	14	572
Winchester, L. A., Whitewater, Wis. Vehicle-axle skein	209,096	Oct. 15	710	206	14	595
Winter, D. T., assignor of one-half interest to C. E. Teague, Peabody, Mass. Device for measuring and weighing skins	208,942	Oct. 15	535	157, 158	14	572
Wissen, J., Decatur, Ill. Counter-support and seam-protector for boots and shoes	208,943	Oct. 15	538	158	14	572
Wohlmann, V., Cincinnati, Ohio. Fire-escape	208,944	Oct. 15	539	158	14	572
Wolf, D. C., Keota, Iowa, assignor of one-half interest to J. S. Knlp. Striking attachment for clocks	209,098	Oct. 15	712	206	14	595
Woods, G. A., Dumas, Miss. Seed-planter	208,945	Oct. 15	540	159	14	572
Wright, E., Worcester, Mass. Mechanism for operating doffer-combs	208,946	Oct. 15	541	159	14	572
Wright, J. H., Des Moines, Iowa. Weighing apparatus	209,099	Oct. 15	713	206	14	595
Young, C., Sandy Hill, N. Y. Roll suction-box for paper-making machines	209,003	Oct. 15	601	175	14	580

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 15th DAY OF OCTOBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Animal-trap	B. H. Noelting	209,068	Oct. 15	681	197	14	591
Axle box. Car	J. N. Smith	208,993	Oct. 15	588	171, 172	14	579
Axle skein. Vehicle	L. A. Winchester	209,096	Oct. 15	710	206	14	595
Ballot-box	W. L. Barnes	208,951	Oct. 15	549	160, 161	14	573
Bed-bottom	F. W. Mitchell	208,917	Oct. 15	509	148	14	568
Bed-bottom. Spring	H. Pitcher	208,987	Oct. 15	583	170	14	578
Bed-lounge	H. S. Carter	209,019	Oct. 15	622	180	14	583
Bed. Spring	A. J. Lattin	208,979	Oct. 15	577	168	14	577
Bedstead-fastening	L. P. Clark	209,022	Oct. 15	626	181	14	583
Boilers. Low-water alarm for steam	G. H. Crosby	208,962	Oct. 15	561	164	14	575
Boot and shoe counter support and seam-protector	J. Wissen	208,943	Oct. 15	538	158	14	572
Boot-jack	C. Tyson	209,091	Oct. 15	703	203	14	593
Brake. Vacuum	F. W. Eames	208,895	Oct. 15	486	140	14	565
Bran-scourer	R. Tyson	209,092	Oct. 15	703	204	14	594
Broom	M. T. Bouk	209,017	Oct. 15	621	180	14	583
Brush	A. C. Estabrook	208,898	Oct. 15	489	141	14	565
Camera	J. W. T. Cadett	208,956	Oct. 15	556	162	14	574
Can	E. Norton	209,070	Oct. 15	683	197	14	591
Can. Metallic	J. Broughton	209,009	Oct. 15	609	177	14	585
Can. Oil	A. E. Gardner	209,037	Oct. 15	641	185	14	589
Can. Sheet-metal	A. N. Lapierre	209,060	Oct. 15	674	194	14	590
Car-bumper	S. M. Cummings. (Reissue)	8,448	Oct. 15	715	207	14	596
Car-coupling	J. Simmons	208,934	Oct. 15	528	155	14	571
Car draw-bar attachment. Railway	J. H. Smitt	208,994	Oct. 15	591	172	14	579
Car-journal box	F. M. Alexander	208,947	Oct. 15	542	159	14	572
Car running-gear. Railway	J. C. Weaver	209,093	Oct. 15	704	204	14	594
Cars. Dust-deflector for	H. A. Morgan and D. J. Gilleland	209,066	Oct. 15	679	196	14	590
Carbureter. Air	G. Reznor	209,076	Oct. 15	689	200	14	592
Carriage	C. H. Palmer, Jr	208,923	Oct. 15	517	150	14	569
Carriage-seats. Corner-iron for	L. Emerson	208,971	Oct. 15	571	166	14	576
Carriage-top standard	F. W. Whitney	209,097	Oct. 15	711	206	14	595
Cartridge-loading machine	G. S. Slocum	208,935	Oct. 15	529	155	14	571
Cartridges. Machine for gaging	J. H. Gill	208,903	Oct. 15	493	142, 143	14	566
Casting andirons. Mold for	S. E. Jones	209,054	Oct. 15	666	191	14	588
Casting temple-rollers. Mold for	J. B. Stamour	208,997	Oct. 15	596	173	14	579
Chair for children. High	J. Nichols. (Reissue)	8,454	Oct. 15	723	209	14	597
Chair. Reclining	N. N. Horton	208,907	Oct. 15	498	144	14	567
Chalk. Sharpener for tailor's	J. Buteber	208,955	Oct. 15	555	162	14	574
Churn	J. H. Folliott	209,033	Oct. 15	627	184	14	585
Churn. Reciprocating	L. B. Wilson	208,941	Oct. 15	534	157	14	572
Clasp	T. P. Taylor	208,998	Oct. 15	597	173	14	580
Clock-striking attachment	D. C. Wolf	209,098	Oct. 15	712	206	14	595
Cock. Steam	G. H. Crosby	208,961	Oct. 15	560	163	14	575
Coin-holder	C. H. Carpenter	208,958	Oct. 15	557	163	14	574
Coin-holder	B. McGovern	208,984	Oct. 15	581	169	14	578
Coin-measure	C. H. Fuller	208,902	Oct. 15	493	142	14	566
Coke-oven	W. H. Rosewarne	208,930	Oct. 15	525	153, 154	14	570
Combing-machine	T. H. Rushton and J. Macqueen	208,991	Oct. 15	586	171	14	578
Cooler and filter. Combined water	J. C. Jewett	208,909	Oct. 15	500	144	14	567
Cooler. Water	G. W. Malpass	208,913	Oct. 15	505	145	14	567
Cotton-gin	J. B. Hull	209,049	Oct. 15	658	190	14	588
Crucible-machine	J. C. Cline	208,960	Oct. 15	559	163	14	575
Cultivator	J. C. Bean	209,005	Oct. 15	604	175, 176	14	580
Cultivator	B. H. Cross	208,964	Oct. 15	563	164	14	575
Cultivator	C. Nash	208,921	Oct. 15	514	149, 150	14	569
Dental foil. Package for transmission of	R. S. Williams	209,002	Oct. 15	600	175	14	580
Dental plugger. Electro-magnetic	W. G. A. Bonwill	209,006	Oct. 15	605	176	14	580
Desk	H. E. Moon	208,919	Oct. 15	511	148, 149	14	568
Doffer-combs. Mechanism for operating	E. Wright	208,946	Oct. 15	541	159	14	572
Draft-equalizer	L. O. Brekke	209,007	Oct. 15	607	177	14	581
Dredging-machine	J. B. Eads	208,894	Oct. 15	484	139, 140	14	565
Drill cleaner. Grain	J. W. Lucas	208,982	Oct. 15	579	168	14	577
Dummy	H. H. Baker	208,881	Oct. 15	468	135	14	563

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ear-ring	W. P. Dolloff	208,968	Oct. 15	568	165	14	576
Electric machine. Dynamo-	E. Weston	209,094	Oct. 15	706	204, 205	14	594
Elevator. Windlass water-	J. Knipscheer	209,057	Oct. 15	668	192	14	589
End-gate fastening	F. Rock	208,928	Oct. 15	522	152	14	570
Evaporator. Fruit and vegetable	J. W. Powers	208,925	Oct. 15	519	151	14	569
Excavating-machine	J. T. Dougine	208,893	Oct. 15	482	139	14	565
Exercising-machine	W. J. O. Bryon, Jr	208,954	Oct. 15	553	161, 162	14	574
Exhaust-nozzle	N. J. White	208,939	Oct. 15	533	156	14	571
Fabrics. Machine for cutting	A. Muehling and R. V. Davis	208,920	Oct. 15	512	149	14	569
Feathers for dusters	G. M. Richmond	209,080	Oct. 15	693	201	14	592
Fence	J. Williams	209,095	Oct. 15	709	205	14	595
Fence. Picket-	C. H. Terry and W. W. Green, Jr.	209,069	Oct. 15	701	203	14	593
Fire-arm. Breech-loading	H. C. Bull	209,010	Oct. 15	610	177, 178	14	581
Fire-arm. Breech-loading	J. D. Coon	208,889	Oct. 15	478	137, 138	14	564
Fire-escape	V. Wohlmann	208,944	Oct. 15	539	158	14	572
Fire-kindler	T. M. Benner	208,882	Oct. 15	470	.....	14	563
Fire-kindler	E. J. Norris	209,060	Oct. 15	682	197	14	591
Fluting-machine	C. G. Cabell. (Reissue)	8,453	Oct. 15	721	209	14	597
Fork	W. H. Kretsinger	209,058	Oct. 15	669	192	14	589
Fuel. Apparatus for compressing	W. H. Rosewarne	208,929	Oct. 15	523	152, 153	14	570
Gas-burner. Pressure governing	J. N. Chamberlain	209,021	Oct. 15	624	181	14	583
Gas-burners. Electric apparatus for	A. L. Bogart	209,016	Oct. 15	619	180	14	583
Gate	C. D. and I. Haldeman	209,040	Oct. 15	644	186	14	586
Gate	J. S. Henshaw	208,976	Oct. 15	574	167	14	577
Gate	J. Nason and J. F. Wilson. (Reissue)	8,456	Oct. 15	725	210	14	597
Grain-binder	M. A. Keller	209,059	Oct. 15	670	192, 193, 194	14	589
Grain-separator	G. W. Earhart	208,896	Oct. 15	488	140, 141	14	565
Gun. Air-	B. T. Babbitt	209,014	Oct. 15	617	179	14	582
Harness. Neck-yoke attachment for	J. S. Nelson	208,922	Oct. 15	516	150	14	569
Harrow. Sulky-	S. C. Dix	209,028	Oct. 15	632	183	14	584
Harvester-rake	J. Barnes	208,950	Oct. 15	546	160	14	573
Harvester-reel	A. J. Hodges and J. B. Mohler	209,047	Oct. 15	654	189	14	587
Head-light. Locomotive	E. L. Hall	209,041	Oct. 15	645	187	14	586
Heels. Machine for turning wooden	L. Prenot and C. Marchal	208,989	Oct. 15	585	170	14	578
Hides and skins. Machine for dressing	C. Molinier	208,918	Oct. 15	510	148	14	568
Hitching-post	H. W. C. Thomas and S. H. Knox	209,090	Oct. 15	702	203	14	593
Hoe	T. Weiss	209,000	Oct. 15	598	174	14	580
Hog-cholera compound	M. Hemmingway	208,975	Oct. 15	574	.....	14	576
Horse-collar	J. J. Crowley	209,025	Oct. 15	629	182	14	584
Horse-power	C. H. Baker	208,948	Oct. 15	543	159	14	573
Horse-power	A. B. Farquhar	209,032	Oct. 15	636	184	14	585
Horse toe-weight	J. W. Ropp	208,927	Oct. 15	521	151	14	570
Ice. Method of and apparatus for manufacturing	A. Albertson. (Reissue)	8,455	Oct. 15	724	209	14	597
Indicator. Water-level	E. Jerome	209,052	Oct. 15	663	191	14	588
Journal	R. Macdonald	208,983	Oct. 15	580	169	14	578
Journal-bearing	W. W. Smalley	209,084	Oct. 15	696	202	14	593
Knife. Chopping-	W. Millspaugh	209,065	Oct. 15	679	195	14	590
Knob attachment. Door-	J. F. Peacock	208,924	Oct. 15	518	150	14	569
Label-holder	A. A. Noyes	209,071	Oct. 15	684	198	14	591
Lamp-bowl	F. Rhind	209,077	Oct. 15	690	200	14	592
Lamp chimney. Nursery	E. Mecier	208,916	Oct. 15	508	147	14	568
Lamp. Miner's	W. Roberts	209,082	Oct. 15	695	201	14	592
Lamp. Self-extinguishing	F. Rhind	209,078	Oct. 15	691	200	14	592
Lantern	J. H. Irwin	209,051	Oct. 15	661	190, 191	14	588
Lantern. Signal-	H. E. Pond. (Reissue)	8,457	Oct. 15	726	210	14	598
Latch	B. W. Foster	209,034	Oct. 15	638	185	14	585
Lathe for turning regular forms	E. A. Marsh	209,064	Oct. 15	678	195	14	590
Lead. Refining impure	N. S. Keith	209,056	Oct. 15	667	.....	14	589
Leather-skiving machine	M. M. Clough	208,959	Oct. 15	558	163	14	574
Leather-splitting machine	A. E. Whitney	209,001	Oct. 15	599	174	14	580
Loom-temple	J. B. Stanonr	209,101	Oct. 15	714	207	14	595
Lubricator	N. Seibert	208,932	Oct. 15	526	154	14	571
Lubricator. Steam-cylinder	N. Seibert	208,931	Oct. 15	526	154	14	570
Marble, slate, &c. Machine for dressing and ornamenting	W. K. Lorenz	209,062	Oct. 15	677	194	14	590
Match-dipping machine	A. R. Sprout	208,996	Oct. 15	595	173	14	579
Meter. Steam-diaphragm	C. Holly	209,048	Oct. 15	655	189	14	587
Middlings-bolt	M. Inskeep	209,050	Oct. 15	660	190	14	588
Middlings-separator	G. T. Smith	208,936	Oct. 15	530	155, 156	14	571
Musical instrument. Automatic	E. P. Needham. (Reissne)	8,451	Oct. 15	718	208	14	596
Musical string-instruments. Key for	F. Z. Nicolier	208,985	Oct. 15	582	169	14	578
Needle	J. Barrows	209,018	Oct. 15	622	180	14	583
Oatmeal-machine	W. Eberhard and R. Turner	208,970	Oct. 15	570	166	14	576
Ordnance. Operating heavy	H. C. Bull	209,011	Oct. 15	612	178	14	581
Ore-separator	P. Plant	209,074	Oct. 15	687	199	14	591
Oven. Hot-blast	W. A. Miles and J. H. Burghardt	208,915	Oct. 15	507	146, 147	14	568
Package-wrapper	G. V. Hecker	209,044	Oct. 15	651	188	14	587
Packing for piston-rods, &c. Metallic	M. H. Gerry	208,973	Oct. 15	572	166	14	576
Pan cover. Milk-	C. C. Fairlamb	208,900	Oct. 15	491	142	14	566
Paper-feeding apparatus	F. H. Lauten	208,960	Oct. 15	577	168	14	577
Paper-making machines. Roll suction-box for	C. Young	209,003	Oct. 15	601	175	14	580
Paper-pulp. Machine for reducing wood to	W. N. Cornell and C. Tolliner	208,890	Oct. 15	480	138	14	564
Peach-parer	W. S. Plummer	208,988	Oct. 15	584	170	14	578
Pen. Puncturing	J. M. Griest	208,905	Oct. 15	496	143	14	566
Pessary. Medicated	T. N. Berlin	208,883	Oct. 15	470	135	14	563
Pipe. Smoking-	W. H. Caddy	208,886	Oct. 15	475	136	14	563
Planter. Corn-	J. W. Brigham and T. M. Flenniken	208,885	Oct. 15	471	136	14	563

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Planter. Grain-	C. E. McBonn	208,914	Oct. 15	506	146	14	568
Planter. Seed-	G. A. Woods	208,945	Oct. 15	540	159	14	572
Plaster bandages. Machine for making	C. G. Hill	209,045	Oct. 15	653	188	14	587
Plow	C. Myers	209,067	Oct. 15	680	196, 197	14	591
Plow and harrow attachment. Shovel-	A. Heartsill	209,043	Oct. 15	651	188	14	587
Plow and harrow. Combined	W. G. Himrod	209,046	Oct. 15	654	189	14	587
Plow-clevis	H. Estes	208,899	Oct. 15	491	141	14	566
Plow. Combined hill-side, shovel, and subsoil	E. Tate	209,088	Oct. 15	700	203	14	593
Plow. Sulky-	F. H. Isaacs	208,978	Oct. 15	576	167	14	577
Press. Cotton and hay	W. H. Tappey and A. Steel	209,087	Oct. 15	699	202	14	593
Printing and painting machine	O. Currier	208,892	Oct. 15	481	138, 139	14	564
Printing. Photo-mechanical	M. R. Freeman	209,036	Oct. 15	640	.....	14	585
Propelling vessels	P. Boisset	208,952	Oct. 15	551	161	14	573
Pulleys to wheels. Device for engaging	R. Blake and S. A. Davis	208,884	Oct. 15	471	135	14	563
Pump	S. Stucky	209,086	Oct. 15	698	202	14	593
Pump. Double-acting lift-	A. H. Dean and A. C. Pike	209,027	Oct. 15	631	183	14	584
Rafter	F. M. Covert	209,024	Oct. 15	628	182	14	583
Railway-rails. Device for muffling	A. Atwood	208,880	Oct. 15	467	135	14	563
Railway-signal	C. E. Hanscom	200,042	Oct. 15	646	187, 188	14	586
Railway-signal. Electro-magnetic	H. W. Spang	208,995	Oct. 15	592	172	14	579
Railway-track	B. F. Card	208,957	Oct. 15	556	162	14	574
Rake. Horse hay-	W. Adriance	209,004	Oct. 15	602	175	14	580
Rolling-mills. Journal and bearing for	S. W. Baldwin	208,949	Oct. 15	545	160	14	573
Roofs. Attaching slates to	S. Farquhar	209,031	Oct. 15	636	184	14	585
Rope-holding reel	C. N. Cass	209,020	Oct. 15	623	181	14	583
Rosettes from wood. Tool for making	J. H. Burnshow	209,012	Oct. 15	616	179	14	582
Seal. Baggage-	E. J. Brooks	208,953	Oct. 15	552	161	14	574
Seal. Metallic	E. J. Brooks	209,008	Oct. 15	607	177	14	581
Seeding-machine	S. O. Campbell	208,887	Oct. 15	475	137	14	564
Sewing-machine	C. S. Cushman	209,026	Oct. 15	630	182	14	584
Sewing-machine	J. A. Davis	208,967	Oct. 15	565	165	14	575
Sewing-machine	L. Evans	209,030	Oct. 15	634	183, 184	14	584
Sewing-machine. Book-	J. S. Lever	209,061	Oct. 15	675	194	14	590
Sewing-machine hem-stitching attachment	J. A. Lakin	208,911	Oct. 15	502	145	14	567
Sewing-machine tuck-marker	G. Rehfuss	209,075	Oct. 15	688	199	14	592
Shaft and pulley coupling	H. C. Crowell	208,965	Oct. 15	564	164	14	575
Shears. Metal-	W. G. Collins	208,888	Oct. 15	477	137	14	564
Ships. Device for unloading grain from	W. Stanton. (Reissue)	8,452	Oct. 15	720	208, 209	14	596
Shoe	J. F. Emerson	208,897	Oct. 15	489	141	14	565
Shutter-bower	T. Thorn	208,937	Oct. 15	531	156	14	571
Shutter-worker	W. Jones	209,055	Oct. 15	666	192	14	589
Sign	W. Gulden	208,974	Oct. 15	573	167	14	576
Skins. Device for measuring and weighing	D. T. Winter	208,942	Oct. 15	535	157, 158	14	572
Sled. Stone and log	W. Gregg	209,039	Oct. 15	643	186	14	586
Sleigh. Propeller-	R. Schlüter	209,083	Oct. 15	696	201	14	592
Spittoon	T. Loughran	208,981	Oct. 15	579	168	14	577
Spring. Car-	G. F. Godley	208,904	Oct. 15	495	143	14	566
Spring. Vehicle-	E. Chamberlin. (Reissue)	8,449	Oct. 15	716	207	14	596
Spring. Vehicle-	E. Chamberlin. (Reissue)	8,450	Oct. 15	717	208	14	596
Spring. Vehicle-	C. W. Fillmore	208,901	Oct. 15	492	142	14	566
Spring. Vehicle-	H. R. Hule	208,977	Oct. 15	575	167	14	577
Steamer. Feed-	D. Machamer and J. McCulloch	209,063	Oct. 15	677	195	14	590
Stirrup. Saddle-	J. M. Freeman	208,972	Oct. 15	572	166	14	576
Stove-board	A. C. Stoessiger	209,085	Oct. 15	698	202	14	593
Stove-cover and check-damper. Combined	H. Ritter	209,081	Oct. 15	694	201	14	592
Stove-pipe shelf	L. W. Turner	208,938	Oct. 15	532	156	14	571
Stoves. Foot bar and rail for	J. Jewett	209,053	Oct. 15	665	191	14	588
Stoves. Hood for cooking-	S. Cromer	208,891	Oct. 15	480	138	14	564
Stump-puller	W. A. Webb	208,999	Oct. 15	597	174	14	580
Sugar. Apparatus for the manufacture of hard	J. O. Donner	209,029	Oct. 15	633	183	14	584
Switch-cords. Tip for	T. B. Doolittle	208,969	Oct. 15	568	165	14	576
Table. Folding	R. M. Lamble	208,912	Oct. 15	502	145	14	567
Tablet. Writing-	W. O. Davis	208,966	Oct. 15	564	165	14	575
Target	W. Kühn	208,910	Oct. 15	501	145	14	567
Ticket. Passenger-	A. C. Sheldon	208,933	Oct. 15	527	154	14	571
Ticket-reel	T. D. Haehnlen	208,906	Oct. 15	498	143	14	567
Toy money-box	J. Gérard	209,038	Oct. 15	642	186	14	585
Treadle-power	I. M. Rhodes	209,079	Oct. 15	692	200	14	592
Turbines. Steam and other	P. C. Humblot	208,908	Oct. 15	499	144	14	567
Valve	J. Patterson	208,986	Oct. 15	582	169	14	578
Valve. Feed-water-regulating	E. C. De Silva	208,992	Oct. 15	587	171	14	579
Valve-gear. Steam-engine	J. Butcher	209,013	Oct. 15	616	179	14	582
Ventilator	T. Owens	209,072	Oct. 15	685	198	14	591
Wagon-jack	W. B. Bartram	208,015	Oct. 15	619	179	14	582
Wagon-jack	M. D. Williams and W. H. Dodge	208,940	Oct. 15	534	157	14	571
Washing-machine	D. Coman	209,023	Oct. 15	627	181	14	583
Washing-machine	A. R. Fowler	209,035	Oct. 15	639	185	14	585
Washing-machine	F. F. Reynolds	208,990	Oct. 15	585	170	14	578
Water-gage	G. H. Crosby	208,963	Oct. 15	562	164	14	575
Weighing apparatus	J. H. Wright	209,099	Oct. 15	713	206	14	595
Window	A. K. Phillips	209,073	Oct. 15	685	198, 199	14	591
Window-frame	C. Rebhun	208,926	Oct. 15	520	151	14	570
Wreaths. Machine for twining	G. B. Shepard	209,100	Oct. 15	714	207	14	595

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DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of New York.

JOHN S. PERRY, TRUSTEE, &C., NATHAN B. PERRY, AND ANDREW DICKEY *vs.* GEORGE STARRETT.

[*In Equity.—October Term*, 1877.]

An interference in the Patent Office in which priority of invention was awarded against the patent in suit does not conclude the complainant from maintaining his action thereon. The question before the Office did not directly concern the existing patent, but whether another should issue to the contesting applicant, and however it might be were the parties the same, since the respondent here was a stranger to the former proceeding there is no estoppel.

To constitute a new design, that would be patentable as such, it must be so different from all others existing before as to appear to be such to ordinary observers.

The patent granted to John S. Perry and others, May 26, 1874, for a design for stoves, held under this rule to be valid; the *first* claim being interpreted to cover the element of external form as an entirety, without regard to that of the individual parts; the *second*, the element of ornamentation; and the *fifth*, the appearance resulting from the combination of the two elements of form and ornamentation.

Held, that these claims were infringed by the unlicensed sale of a stove "having both form and ornamentation so like those to which said claims relate that whether regard be had to such form or to such ornamentation separately, or to the combined effect of the two, the stoves so sold are calculated, by reason of such resemblance, to deprive the complainants of a part of that market to which under their patent they are exclusively entitled."

The Hecla adjudged to be in appearance substantially like the patented design, (the Argand,) the general effect, both of form and of ornamentation, being the same, notwithstanding minor differences which require study and fixing them in mind to enable a person to tell one from the other when they are not side by side.

Infringement of a design patent may exist notwithstanding that the alleged infringing article is made to carry a distinguishing name or distinguishing marks of other character.

OPINION.—*October* 17, 1878.

WHEELER, *J.*:

This bill is brought for an alleged infringement of Design Patent No. 7,456, issued May 26, 1874, for a design for stoves called the "Argand."

The defenses are want of novelty in the invention patented; that the patent is void because it claims too much; and denial of infringement.

The statute provides, among other things, that any person who by his own industry, genius, efforts, and expense, has invented and produced any new and original design for a manufacture, or ornament to be cast on any article of manufacture, the same not having been known or used by others before his invention or production thereof, or patented, or described in any printed publication, may obtain a patent therefor. (Act of 1870, Sec. 71; Rev. Stat., Sec. 4929.)

This patent was issued under this statute, and has five claims. The first is for the form and outline of the parts for a design for a stove; the second, for the ornamentation for a design for a stove; the third, for any one of the plates having the form and outline for a design, all as described and represented; the fourth, for the ornamentation, as a design, for any one of the plates; and the fifth, for the form and outline and ornamentation for a stove each as represented. The first, second, and fifth are the only ones upon which a decree is sought.

It might be questionable whether the first claim could stand for the parts of a design separately, as a design, from its nature, is an entirety, if it is anything. But, however that may be, it is insisted for the orators that the claim is in effect for the form and outline of a design for a stove. The parts together would constitute the whole, and perhaps it is the same as if the mentioning the parts had been left out. Then it would be for the form and outline of the design. These claims, with the first thus considered, stand as claims for the form and outline and ornamentation, as separate designs, and for them together as one design.

As the novelty of the invention is in issue, it is necessary to ascertain what designs of this sort were in use before it, for it must be new with reference to all others known or used before.

There is controversy as to whether one kind of stoves,

as it embodies a design for the form of a stove or the ornaments, was in existence before or not. This controversy is with reference to the Smith stoves, so called, said to have been like defendant's Exhibit 15[1], which, itself, had not then been made, and none like it that had been are shown. Mr. Smith, the inventor of that stove, applied for a patent for his design after the one in suit had been granted, and a question of interference between him and these patentees was raised in the Patent Office and decided by the Examiner of Interferences. In making that decision it was found that Smith was the first inventor of the design he sought a patent for.

It is argued for the defendant that this finding is conclusive here. But, by the provisions of the statute, it would not be conclusive upon the validity of the Smith patent even, so far as question upon it might arise in court. (Rev. Stat., Sec. 4914.) The patent of the orators was not there in controversy. The question to be determined was whether a patent should be issued to Smith. The finding was incidental to that question. And, however it might be as between the orators and Smith, it was not any finding between the parties to this suit. The defendant was not a party there and could not be bound, and such estoppels must be mutual to be operative. If both parties are not bound, neither is.

That a stove of substantially the same construction as Exhibit 15[1] was in existence before, appears upon the evidence beyond any fair doubt. That it had the same ornamentation does not satisfactorily appear. The shape of the shell was probably substantially the same. There may have been slight differences and may not. The stoves called the "American," and the "Light-House," and the "Oriental" were in existence before.

The ornamentation of the Smith stoves, which were in existence before, is not shown to have been at all like that of the orators' stove, the Argand. Assuming the shape of those Smith stoves to have been like that of Exhibit 15[1], they had not, as a whole, the form and outline of the Argand. There are some features of them and of the Argand that are considerably alike. Their legs, ash-pit sections, and lower mica sections, with their rear extensions, and their upper mica sections except as to the rear extension of that of the Argand, are in shape quite similar. The rest of them are very different from each other. The bases of the Light-House and the Argand, the reservoir sections of the American and the Argand, the tops and urns of the Light-House, the Oriental, and the Argand are all somewhat alike.

Upon these similarities it is argued for the defendant that the patentees have only taken those parts of the other designs and put them together, in mere aggregation, to produce their design, and that in so taking them and putting them together they did not accomplish anything patentable. It is quite clear that any one who should take pages or leaves from several books and put them together into a new book, or take parts of several musical compositions and put them together into a composition by themselves, would not be entitled to a copyright for these productions. (*Reed* vs. *Carusi*, Dist of Md., 1845, 8 Law Rep., 410.) And if all the patentees did was to take the legs of the Smith stove, the base of the Light-House, the ash-pit and mica sections of the Smith stove, the reservoir and top of the American, and the urn of the Oriental, and join them together, it is also clear that they did nothing entitling themselves to a patent. (*Binns* vs. *Woodruff*, 4 Wash., 48; *Wooster* vs. *Crane*, 2 Fisher, 584.) Or, if they did no more than to join them together with such adaptations to each other as would be made by the exercise of the ordinary skill of workmen in that trade, probably they did not. But the evidence shows that they did much more than either. Although the legs of the Argand and of the Smith stove are *cyma reversa* in general form, those of the Argand are quite different from the others in proportion and style. The base of the Argand is not exactly like that of the Light-House. The curves of its ash-pit section are different from those of that section of the Smith stove. The lower mica section of the Smith stove is convex below and concave above in outward form, while that of the Argand is slightly convex throughout. The lines and curves of the mica section of the Argand are different from those of the Smith stove, and in the Argand the rear extension, to include the exit-pipe, is carried upward on that section, while in the Smith stove it is not. And the top and the urn of the Argand differ somewhat from those of either the Light-House or the Oriental.

All these parts were made symmetrical of themselves and in respect to each other, and connected together with appropriate devices, and formed into a harmonious whole, in a manner that could not be done without inventive genius and creative skill. The result was different from anything used or known before.

In *Gorham Company* vs. *White*, (14 Wall., 511,) it was held that, to constitute infringement of a design patent, the designs must be so similar as to appear to ordinary observers to be the same, and that they need not be so near alike as to appear to be the same to experts. It would seem to follow that to constitute a new design that would be patentable as such, it must be so different from all others existing before as to appear to be such to the same class of ordinary observers. Tested by this rule, upon the effect of all the testimony in the case, as well as upon an inspection of the stoves themselves, and considering the Smith stoves to have been in form like Exhibit 15[1], the Argand was new in design in its form and outline. And so of the ornamentation. Well-known devices for ornamenting in different places, upon different articles, were employed; but they were arranged with reference to one another, and upon different parts of the stove with reference to what would be suitable there, so as to produce a new effect. It follows directly that the new form of the stove and new ornamentation upon it together made up a new design for the whole. It was invented and produced by the industry, genius, efforts, and expense of the patentees, and according to the statute they were entitled to a patent for the form and ornamentation separately and for the whole together. If the first claim had stood as a claim for the different parts of the design severally, as described in the specification, there might be a question as to whether some of these parts, by themselves, were not so nearly like the corresponding parts of some of the existing designs as to be substantially the same, and so whether they had not claimed some parts to which they were not entitled. But, upon the construction given to that claim, no such question arises, and it is not shown in any manner that they did in any of their claims really claim too much. And, if it did, it does not appear that they would have done so with any willful default or intent to defraud or mislead the public, without which the patent would not be absolutely void. (Rev. Stat., Sec. 4916; *O'Reilly* vs. *Morse*, 15 How., 62.) Upon these considerations the patent as to the first, second, and fifth claims appears to be valid.

What is claimed to be an infringement is the sale of stoves called by the name of "Hecla." The question as to this part of the case must be as to the substantial identity of the design of them with that of the Argand, within the rule in *Gorham Company* vs. *White*. The most potent evidence is a comparison of the stoves. In appearance they are substantially alike from top to bottom, and so whether viewed as a whole or section by section. There are minor differences, both in form and ornamentation, but the general effect is the same. It requires study of the differences that exist, and fixing them in the mind, to be able to tell one from the other when they are not side by side. They are not only so alike as to deceive ordinary observers, but so as to deceive dealers, large and small, and the ordinary observation of experts, without they go far enough to observe what are really trade-marks. This is not only the result of a comparison of the stoves, but is the effect of the testimony. It is said that they can be distinguished by their names as well as by these marks, and that, therefore, no one would be deceived. This might be true if the names or trade-marks would always be observed, but they may not be. And, if they should always be, the right to have the products bearing the design distinguished from others is not what is granted by the patent. The patent gives the exclusive right to make, vend, and use stoves of that design during the life of the patent. Knowledge of the origin of the patented articles may not be, and probably is not often, the object of the purchaser. The patentees have given the public the benefit of the design as the fruit of their skill and outlay, and the orators are entitled to a monopoly of the products embodying it during the prescribed time.

Let a decree be entered for an injunction and an account accordingly, with costs.

U. S. Circuit Court—Northern District of New York.

JAMES J. ROGERS *vs.* ALBERT G. ENNIS.

[*Opinion July* 9, 1878.]

The introduction of a flavoring-extract, whether in substitution of another or as an additional ingredient of a beverage composition otherwise well known, may be a patentable improvement if new and advantageous results follow.

It is substantially a new composition of matter, and as such may be protected.

Letters Patent of J. J. Rogers, granted July 10, 1877, and December 25, 1877, for beverage compositions are valid.

[*R. H. Duell*, for plaintiff; *M. F. Brown*, for defendant.]

BLATCHFORD, *J.*:

Letters patent were granted to the plaintiff July 10, 1877, for an "improvement in table beverages." The specification states that the invention is "a new and useful composition for a table beverage," and "consists in a mixture of water, sugar, oil of winter-green, cut in alcohol, brewer's yeast, and burnt sugar." It then gives directions as to the manner and proportions in which the ingredients are to be compounded. The claim is:

The composition, as a table beverage, consisting of water, sugar, oil of winter-green, alcohol, yeast, and burnt sugar, in the proportions substantially as described.

Letters patent were granted to the plaintiff December 25, 1877, for an "improvement in birch-beer." The specification states that the invention is "a new and useful composition called birch-beer," and "consists in a mixture of water, sugar, oil of birch, cut in alcohol, home-made yeast, and burnt sugar." It then gives directions as to the manner and proportions in which the ingredients are to be compounded. The claim is:

The improved material herein described for producing beer called birch-beer, and consisting of water, sugar, oil of birch, alcohol, home-made yeast, and burnt sugar, in the proportions substantially as specified.

The defendant contends that all that the plaintiff did was to put into the beer the oil of wintergreen in the one case and the oil of birch in the other; that the plaintiff invented no new process of making the beer, and that his invention was not one of any new or useful composition of matter, because the mere putting into the compound the oil of winter-green or the oil of birch as a flavor is not a useful improvement within the patent laws. The defendant further contends that the use of the oil of winter-green or the oil of birch in the compound is not the use of any material or substantial part of the compound, so as to authorize the granting of a patent for the compound, the use of the other materials to form the compound not being new.

These patents stand on narrow ground, but yet the defendant has infringed each of them by using the exact formula laid down by the patentee in each case. The compositions of matter are shown to be useful, agreeable to those who use them, profitable to the plaintiff through his manufacture and sale of them, and new. This constitutes patentability. Although all the ingredients except the oil of winter-green or the oil of birch may have been compounded together before to make a composition of matter, the addition of the given oil, whether to replace some other ingredient or not, makes a new composition of matter. It appears in evidence that the bark of the birch-tree had been previously used as flavoring matter for a beer; that the plaintiff found he could get a stronger and better flavor at less expense by using the oil of winter-green, the flavor of which is like that of black birch, and that he afterward substituted the oil of birch for the oil of winter-green, with some other slight changes of ingredients and treatment.

There must be a decree for the plaintiff, as prayed for, in regard to each patent, with costs.

U. S. Circuit Court—Eastern District of New York.

CHARLES PARKER *vs.* CHARLES REMHOF.

A fastening for metal boxes in which a projection struck out from the box-body snaps into a corresponding indentation in the rim or cover is infringed by a fastening wherein a perforation in the rim is substituted for the indentation.

The sides of the perforation are the same in function with the indentation, and the two fasteners mechanical equivalents.

Letters Patent No. 26,891, granted George N. Cummings, January 24, 1860, (extended, 1874,) for improved catch for spectacle-cases, are valid, and are not anticipated by the previous state of the art.

[*B. E. Valentine*, for plaintiff; *Matthew Daly*, for defendant.]

DECISION—*October* 9, 1878.

BENEDICT, *J.*:

This action is to recover damages and for an injunction against the defendant for an infringement of the letters patent owned by the plaintiff.

The subject-matter of the invention is a method of fastening for metal boxes.

The invention consists in producing two indentations, one in the forward part of the rim of the cover and struck from the inside so as to produce a protuberance on the outer surface of the rim, the other of like character also from the inside upon the rim of the box part. These indentations are so placed that when the rim closes upon the box, the projection on the rim will snap over the projection on the box, and so form a fastening for the box.

The defendant makes a metal box and puts a hole in place of an indentation from the inside of the rim producing a protuberance, into which hole a protuberance on the box snaps and thus the box is fastened.

The difference between the plaintiff's and the defendant's device is, that in the defendant's fastening the sides of a hole perform the function which in the plaintiff's fastening is performed by the sides of an indentation. The sides of the hole in the rim of the defendant's box perform the same function as that of the sides of the indentation in the plaintiff's box and produce the same result. The plaintiff makes an indentation in the rim of his box to permit the protuberance on the body of the box to snap into it, and so fasten the box. The defendant, instead of making an indentation, cuts a hole which permits the protuberance to snap into it, and by the action of the sides of the hole upon the sides of the protuberance the box is fastened.

There is no difference in principle or effect between the two fasteners, and in my opinion the charge of infringing is made out.

The defendant, as a further defense, denies the validity of the plaintiff's patent for want of novelty, and produces several witnesses and various boxes for the purpose of showing that devices similar to the plaint-

iff's were in use prior to January, 1860, the date of the plaintiff's patent.

Here the burden is upon the defendant to establish the fact of prior use by satisfactory evidence. This has not been done.

Of the various boxes that have been produced only two of them can make any claim to resemble the plaintiff's invention, and the testimony in respect to these two articles is too indefinite and uncertain to warrant the conclusion that they were in existence prior to the plaintiff's patent in the face of evidence from several of the largest dealers in this sort of merchandise that previous to the plaintiff's invention no boxes so fastened were known, and that when the plaintiff introduced his fastening the forms then in use were superseded and no longer salable.

The evidence, as it stands, has failed to convince me that any fastening similar to that of the plaintiff was in public use or on sale in this country prior to the invention of the plaintiff.

There must, therefore, be a decree in favor of the plaintiff.

Issue of October 22, 1878.

Patents	213	No. 209,102	to No.	209,314, inclusive.
Reissues	8	No. 8,458	to No.	8,465, inclusive.
Designs	8	No. 10,872	to No.	10,879, inclusive.
Trade-Marks	21	No. 6,732	to No.	6,752, inclusive.
Labels	7	No. 1,730	to No.	1,736, inclusive.
Total issue	257			

TRADE-MARKS.

[Each certificate bearing date October 22, 1878.]

6,732.—MINERAL WATER.—*Apollinaris Company*, (limited,) London, England, and Apollinaris Brunnen, Germany. Application filed August 1, 1878.

"A representation of a nymph poised in air above a pool of water, as shown."

6,733.—PHOTOGRAPHS AND PHOTOLITHOGRAPHS.—*Artotype Company*, New York, N. Y. Application filed September 19, 1878.

"The fancifully formed word-symbol 'ARTOTYPE.'"

6,734.—SPOOL-COTTON.—*Robert W. Ferguson*, New York, N. Y., assignor to *John Clark, Jr., & Co.*, Glasgow, Great Britain. Application filed September 12, 1878.

"The representation of an elephant standing upon a twisted cable."

6,735.—CHEWING AND SMOKING TOBACCO, CIGARS, AND CIGARETTES. *Goodwin & Co.*, New York, N. Y. Application filed September 30, 1878.

"The pictorial representation of the head or bust of a human figure, having upon it a wig, such as judges formerly wore, substantially as shown."

6,736.—BAKING-POWDERS.—*Joseph C. Grant*, Philadelphia, Pa. Application filed September 9, 1878.

"The title 'FLOWER OF THE EAST.'"

6,737.—CIGARS.—*Christian G. Petersen*, Brooklyn, N. Y. Application filed September 30, 1878.

"The arbitrary words 'ANTONIO Y CLEOPATRA,' as shown."

6,738.—SHAVING-SOAP.—*Christian Pauly*, Jersey City, N. J. Application filed September 13, 1878.

"The word-symbol 'PERUVIAN' and the pictorial representation of a shield."

6,739.—ALLOY OF METAL.—*The Smith & Egge Manufacturing Company*, Bridgeport, Conn. Application filed September 24, 1878.

"The word 'GIANT.'"

6,740.—SALT.—*Ann Deakin*, Hartford, England. Application filed October 11, 1878.

"A representation of a phenix."

6,741.—STEEL PENS.—*Louis Dreka*, Media, Pa. Application filed July 23, 1878.

"The arbitrary name or title 'DREKA.'"

6,742.—CIGARS.—*Morris Jacoby*, New York, N. Y. Application filed October 14, 1878.

"The arbitrary word 'GABRIELLA.'"

6,743.—MEDICATED LOZENGES.—*Sheley & Roberts*, Detroit, Mich. Application filed April 20, 1878.

"The arbitrarily-selected letters A and Z, arranged in a monogram, and the Latin words 'PRO BONO PUBLICO.'"

6,744.—BRAID AND TAPE.—*William H. Stafford*, Woonsocket, R. I. Application filed January 7, 1878.

"The arbitrarily-selected symbol, consisting of an elongated octagonal figure."

6,745.—FLAVOR FOR PORTER.—*Dowe D. Williamson*, New York, N. Y. Application filed August 22, 1878.

"The word-symbol 'PORTERINE.'"

6,746.—BREAD.—*Amon Brown*, New Haven, Conn. Application filed October 5, 1878.

"The word and letters 'BROWN'S A. B.'"

6,747.—CIGARS.—*James D. Culp & Co.*, San Francisco, Cal. Application filed September 5, 1878.

"The truncated cross, X, as shown."

6,748.—THEATRICAL AND GYMNASTIC APPARATUS.—*William Farini*, Westminster, England. Application filed September 26, 1878.

"The arbitrarily-selected letters (or word-symbol) 'ZAZEL.'"

6,749.—SMOKING-TOBACCO.—*Roulhac & Co.*, Durham, N. C. Application filed October 1, 1878.

"The word 'DURHAM' and the figure of the tiger."

6,750.—CIGARS.—*Seubert & Warner*, Syracuse, N. Y. Application filed September 27, 1878.

"The word-symbol 'OPTIMATES,' and the pictorial representation of a table with a box of cigars, a lighted cigar, a match-box, a champagne-bottle, and a wine-glass thereon, all substantially as shown."

6,751.—SOAP.—*Francis Treukamp*, Milwaukee, Wis. Application filed September 30, 1878.

"The arbitrary-selected word 'MONITOR' and the figure of a monitor."

6,752.—COUGH-REMEDIES.—*Channing White*, San Francisco, Cal. Application filed April 22, 1878.

"The name 'THE DR. AUG. KAISER' and the representation of the bird, as shown."

DESIGNS.

[Each design bearing date October 22, 1878.]

10,872.—PENCIL-CASES.—*Charles W. Gesner*, New York, N. Y., assignor to *Aiken, Lambert & Co.*, same place. Application filed August 23, 1878. Term of patent 7 years.

10,873.—CIGAR-BOX.—*Emil Hantsche*, New York, N. Y. Application filed September 28, 1878. Term of patent 7 years.

10,874.—CARPET.—*John Magee*, Brooklyn, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed October 1, 1878. Term of patent 3½ years.

10,875.—CARPET.—*John Neil*, New York, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed October 2, 1878. Term of patent 3½ years.

10,876.—CARPET.—*Thomas J. Stearns*, Boston, Mass., assignor to *Roxbury Carpet Company*, same place. Application filed September 30, 1878. Term of patent 3½ years.

10,877.—PADLOCKS.—*John Gérard*, Trenton, N. J., assignor to *The Trenton Lock and Hardware Company*, same place. Application filed October 11, 1878. Term of patent 14 years.

10,878.—SPOON AND FORK HANDLES.—*Gurden W. Hull*, Wallingford, Conn., assignor to *Simpson, Hall, Miller & Co.*, same place. Application filed October 12, 1878. Term of patent 7 years.

10,879.—MOLDED CARDS.—*Joseph Hollely*, Brooklyn, N. Y. Application filed July 28, 1876. Term of patent 3½ years.

LABELS.

[Each certificate bearing date October 22, 1878.]

1,730.—(Print,) Title: "RIGHT OUT."—*Heppenheimer & Maurer*, New York, N. Y. Application filed October 15, 1878.

1,731.—(Print,) Title: "LITTLE SATAN."—*Heppenheimer & Maurer*, New York, N. Y. Application filed October 15, 1878.

1,732.—(Print,) Title: "THE HIT."—*Heppenheimer & Maurer*, New York, N. Y. Application filed October 15, 1878.

1,733.—(Print,) Title: "U. S. MAIL."—*Heppenheimer & Maurer*, New York, N. Y. Application filed October 15, 1878.

1,734.—(Print,) Title: "BY TRENHOLM'S PATENT LOCKED CART."—*F. H. Trenholm*, Charleston, S. C. Application filed October 11, 1878.

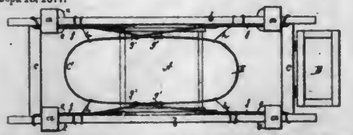
1,735.—Title: "THE NEW ELGIN STOVE POLISH, &c."—*Henry G. Weatherill*, Elgin, Ill. Application filed October 10, 1878.

1,736.—Title: "PURE SILVER COIN WHITE LEAD."—*Western White Lead Company*, Philadelphia, Pa., and Chicago, Ill. Application filed June 20, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

OCTOBER 22, 1878.

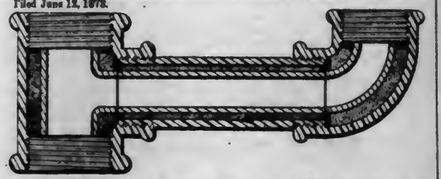
209,102. HORSE AND CATTLE STALLS FOR VESSELS. Benjamin Albee, East Boston, Mass. Filed Sept. 18, 1877.



Claim.—1. The animal-stall described, consisting of the end tie-bars, *c c*, vertical posts *a*, guides *c c*, attached to the side posts, the movable side planks, *d*, sliding in said guides, and the longitudinal sling-supporting rails *b*, and slings A, B, and C, all constructed and arranged substantially as set forth.

2. A cattle or horse stall, as described, consisting of a frame, and having the abdominal sling A, supported by ropes *f*, passing around sheaves or rollers *g* on the bars *b*, thence through post *a*, their ends being secured to the ends of bars *b*, as shown, breast-sling B and breech-sling C, supported at their inner ends by ropes *g' g'* and at their outer ends by ropes *h h*, the other ends of said ropes passing through holes in the bars *b*, to which they are secured, constructed and arranged as described.

209,103. VITREOUS LININGS FOR PIPE-CONNECTIONS. Elijah H. Austin, New York, N. Y. Filed June 12, 1878.



Claim.—The combination, with a glass or vitreous lined pipe, of glass or vitreous lined pipe-fittings, and cement or equivalent packing interposed between the lining of the pipe and lining of the fittings, to constitute a water-tight joint, substantially as set forth.

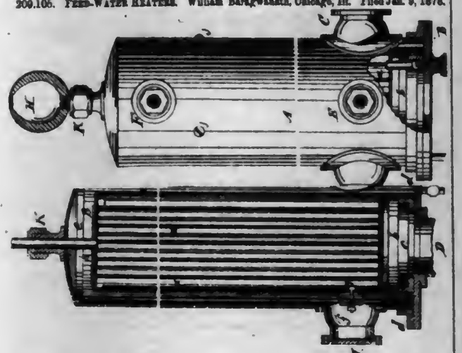
209,104. MAINS AND PIPES. Elijah H. Austin, New York, N. Y. Filed June 12, 1878.



Claim.—1. The process of filling a space formed by and between an internal and external pipe, by partly filling the external pipe with a substance for filling said space, and then forcing said substance into said space by means of an internal pipe or rod, for the purpose specified.

2. The conical plunger and stopper D and its packing *b*, in combination with tube E, filling C, and pipe B, for the purpose specified.

209,105. FEED-WATER HEATERS. William Baragwanath, Chicago, Ill. Filed Jan. 9, 1878.



Claim.—1. The hand-plate *g*, in combination with the cupped opening *f* J, pipe-space *b*, and cases or cylinders A B, substantially as described.

2. The combination of the case A, case or cylinder B, having one or more pipes or flues, with the lower steam-chamber and the steam-pipes D C, both located and operating at or near the bottom, substantially as specified.

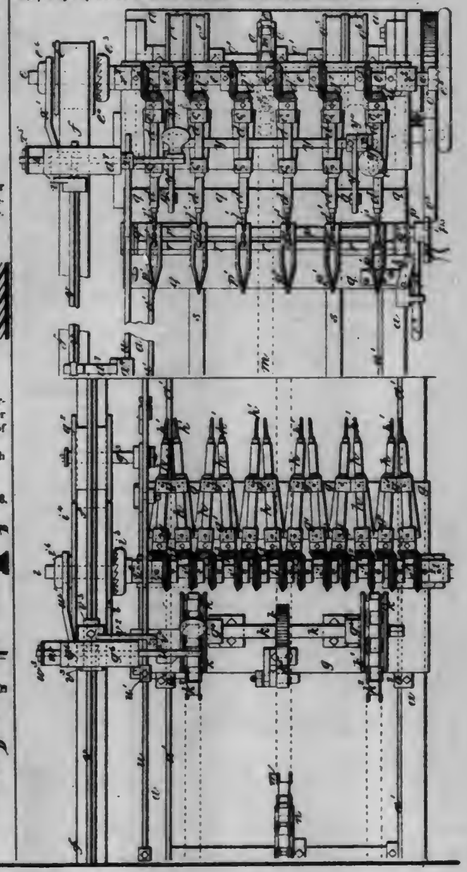
3. The combination of the heater B and water-pipes E F with the case A, flues *a a*, and pipes C D, arranged to force the steam up through the pipes and around between the cases, substantially as and for the purposes specified.

4. The combination, in a feed-water heater, of the heater B with an outer case or jacket and a scum-chamber, substantially as set forth.

5. In a water-heater, the scum-chamber H, in combination with the water-cylinder B, for removing the scum from the upper part of the heater, substantially as specified.

209,106. MACHINES FOR MANUFACTURING BANDS, CORDS, OR ROPES. Leadham Binns, Grove House, Oakenshaw, Low Moor, near Bradford, England. Filed Mar. 4, 1878. Patented in England, June 2, 1877.

Brief.—The spindles *b* are mounted on a traveling bed, which approaches the spindles *d* as the hanks are twisted, and the twist is passed toward the ends of the hanks held by the hooks d^5 by means of fingers g^1 and dividing-wires r^1. The spindles *d* are then thrown into action and the rotary motion of both sets of spindles continued until the cord or band is completed, when the clutches attached to the shafts carrying the driving-gear, which meshes with the gear of the spindles, are automatically disconnected from their driving-pulleys by means of detailed mechanism connected with bars *o* and *r*.



Claim.—1. The spindles *d* and *k*, carrying at one end the hooks d^1 and k^1, the other end having the bevel-toothed pinions d^2 and k^2, engaging with similar gears on their respective shafts at the two ends of the machine, in combination with the driving-shafts *c i*, having thereon the clutches c^2 *l*^{2} and drum or pulley c^1 i^1, for actuating the spindles through said toothed pinion and throwing the hooks d^1 k^1 into and out of operation, substantially as set forth.

2. The combination, with the shafts *p* and *r*, of the fingers p^1 and dividing-wires r^1, the fingers having openings near their ends, through which the wires may pass to secure the independent movement of said fingers and wires, substantially as set forth.

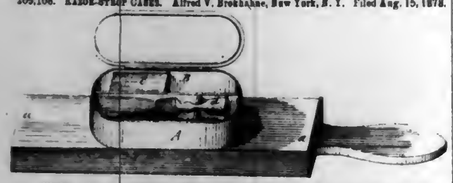
3. The combination, in a machine for manufacturing bands, cords, or ropes, of the spindles *d k*, hooks d^1 k^1, slotted fingers *p*, and wires r^1, arranged and operated substantially as and for the purpose set forth.

209,107. RAZOR-STROPS. Alfred V. Brokhahne, New York, N. Y. Filed July 1, 1878.



Claim.—A combined razor-strop and razor-case formed of a sustaining core or body, provided on each side with flexible stropping-bands, and formed with an internal longitudinal cavity, *f*, opening at the end of the body to receive the razor, with a movable lid or cover, *k*, fixed on the end of the body over the mouth of the cavity, substantially as herein shown and described.

209,108. RAZOR-STROP CASES. Alfred V. Brokhahne, New York, N. Y. Filed Aug. 15, 1878.



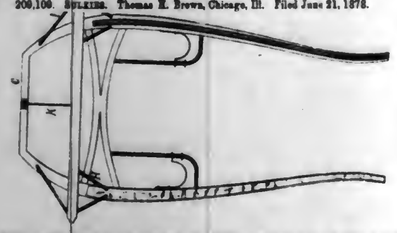
Claim.—1. A shaving appliance consisting of a razor-strop case, *a*, and a shaving-cup, A, the two being so combined that one side of the case forms a bottom for the shaving-cup, substantially as specified.

2. A shaving appliance consisting of a razor-strop case and shaving-cup, the two being so constructed that one side of the case forms a bottom for the cup, and the case itself a base or stand to retain the cup in its proper position when in use, substantially as described.

3. A shaving appliance consisting of a combination of a razor-strop case, *a*, with a soap and brush receptacle, A, the two being so constructed that one side of the case acts in conjunction with the top of the brush-receptacle to keep the removable partition B and the brush in its proper position, substantially as specified.

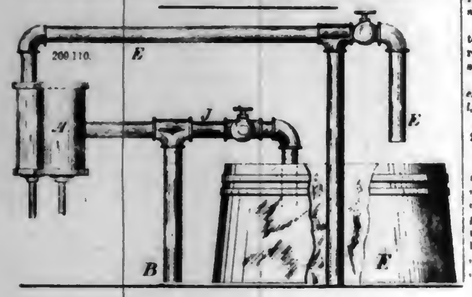
4. A shaving appliance composed wholly of sheet metal, or equivalent water-proof material, and formed of a razor-strop case, *a*, having a receptacle adapted for a shaving-cup formed integral with the case on one of its longitudinal sides, in such manner that the side of the case forms the bottom of the cup, and the case itself a base or stand to retain the cup in its proper position for use, substantially as herein shown and described.

209,109. SULKIES. Thomas H. Brown, Chicago, Ill. Filed June 21, 1878.



Claim.—The brace K, attached to the middle part of the axle-tree A and the rear shaft-bar, C, and combined with them, for the purpose specified.

209,110.

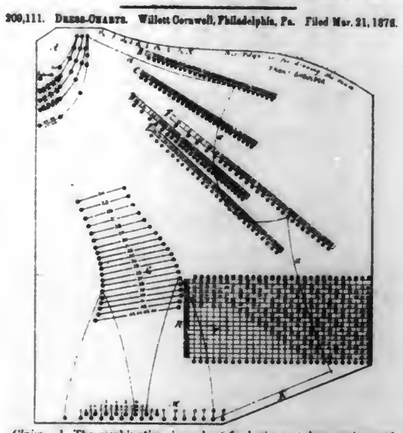


209,110. LOWERING ATTACHMENTS TO HYDRAULIC ELEVATORS. Charles Cookson, Wright's Grove, Ill. Filed Dec. 22, 1877.

Brief.—The weight of the descending platform acts in motion the pump, which returns the escape-water back to the tank.

Claim.—In combination with water-elevator cylinders A, the pipes B, J, and E, provided with suitable cocks, and the water-tank K, for the purpose of controlling the descent of a water-elevator, substantially as specified and shown.

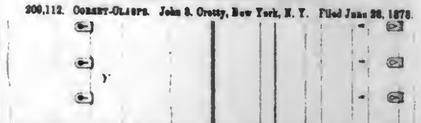
209,111. DRESS-CHARTS. Willett Cornwell, Philadelphia, Pa. Filed Mar. 21, 1878.



Claim.—1. The combination, in a chart for laying out dress-waists with the perforated scales A, B, C, D, E, F, H, I, and M, as described, of the scale G, having the two lines of perforations arranged to describe a curve, and so as to incline toward each other at the upper end of the scale, and toward the front edge of the chart at the top and bottom, substantially as and for the purpose specified.

2. The combination, with the perforated scale S and perforations *r r*, as described, of the perforated scales P, Q, and R, curved at their lower ends, substantially as and for the purpose specified.

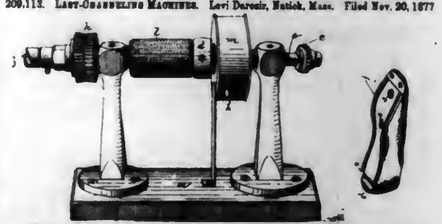
209,112. CORSET-CLASPS. John S. Crotty, New York, N. Y. Filed June 26, 1878.



Claim.—1. A combination busk and clasp composed of three separate and distinct steels, covered and arranged as described, forming the busk and one side of the clasp, all substantially as shown.

2. The combination busk and clasp described and claimed, in combination with the covered steel Y, substantially as and for the purpose set forth.

209,113. LAST-CHANNELING MACHINES. Levi Dorsey, Natick, Mass. Filed Nov. 20, 1877



Claim.—1. In a machine for channeling lasts, the tool-carrying shaft *c*, in combination with the toothed cutting-tool h, constructed, as shown, to cut the recess at the heel rounding from the shoulder 2 to the end of the heel, substantially as described.

2. A machine for channeling lasts having an operating-shaft, *c*, a cutter, *c*, to cut channels in the last, and a cutter, h, constructed, as shown, to cut the recess at the heel rounding from the part 2 rearwardly, substantially as described.

3. A machine for channeling lasts having the shaft *c*, sole-channeling tool *e*, heel-rounding cutter *h*, tool *j*, for boring holes in the soles, and the cylinder *l*, for dressing the last by grinding or abrading, substantially as described.

209,114. GAS-GENERATING FURNACES. Charles F. Dieterich, Baltimore, Md. Filed Aug. 24, 1878.

Brief.—The heat of coke is utilized, upon its discharge from the retorts, in a gas-furnace, where carbonic oxide is produced for burning in the combustion chamber of the retorts. Air is heated in flues in the walls of the generator and conducted to the combustion-chamber of the retorts, where it unites with the gases from the generator, and produces complete combustion for heating the retorts. The iron frame cover of the generator is provided with a plate of fire-brick and an air-chamber. A plate just over the cover has a depending flange dipping into a sand seal. Hot air is conducted from the air-chamber of the cover into the combustion-chamber.

Claim.—1. In combination with a bench of retorts, the generator A, placed below and in front of the same, adjoining its front wall, and having grate-bars to support the coke, and also secondary removable grate-bars, and provided with double front and side walls, and plates a^x a^{xx}, having the intervening air space, *b*, substantially as and for the purposes set forth.

2. In combination with a bench of gas-retorts, the generator A, placed below and in front of the retorts adjoining the front wall of the bench, and having its generating-chamber opening directly into the combustion-chamber B, and the flues or pipes C, placed between the walls of the generator for heating air in its passage through the same to the combustion-chamber, substantially as and for the purposes set forth.

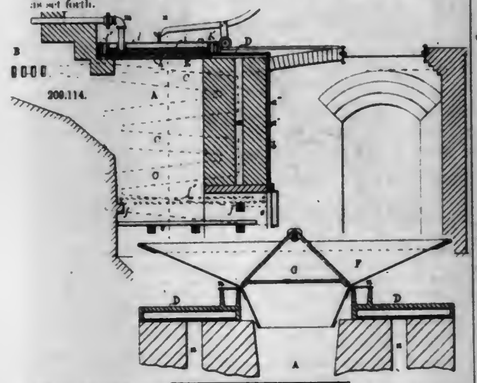
3. The combination, with a bench of retorts, of the generator A, provided with a main and a secondary grate and the combustion-chamber B, the said generator being placed below and in front of the retorts and adjoining the front wall of the same, substantially as specified.

4. In combination with a bench of retorts, the generator A and combustion-chamber B, constructed and arranged substantially in the manner described, a heat-retaining lid or block confined in a frame, said frame being provided with air-spaces, and a detachably-united air-pipe leading to the combustion chamber or bench of retorts, substantially as and for the purposes specified.

5. In combination with the generator A, having at its mouth a non-heat-conducting plate and a trough for holding sand or other material, the cover E, provided with the plate *l*, having depending flanges *l'*, for resting in the sand or other material contained in said trough, substantially as specified.

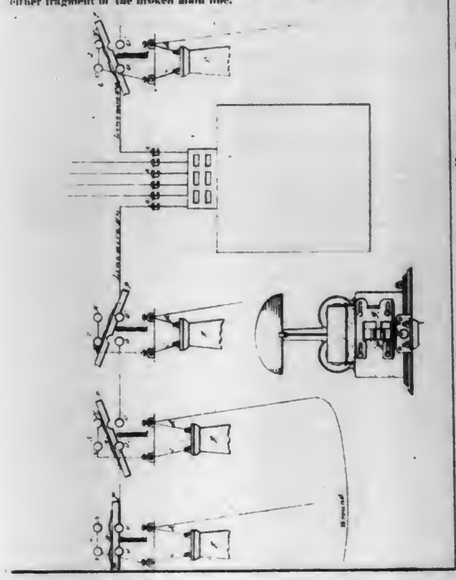
6. The combination, with the generator A and plate D, of the removable funnel F, having suitable supports, and the self-righting door G, substantially as set forth.

209,114.



209,115. SWITCHES FOR DISTRICT-TELEPHONE SYSTEMS. Thos. B. Doolittle, Bridgeport, Conn. Filed Apr. 10, 1878.

Brief.—The switch is of conducting material, and normally constitutes a portion of the main closed circuit. The switch-bar is adapted to be swung about either of two conducting-posts, as centers, into contact with a post connected to earth, thereby affording a circuit from earth of each station with either fragment of the broken main line.



Claim.—1. In a district-telephone system, a series of switches, normally constituting portions of the main line, and adapted to sever the main line and complete a circuit from the earth at any station through either fragment of the broken main line on either side of said station, substantially as and for the purposes specified.

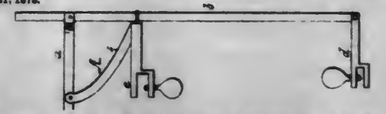
2. A district-telephone switch of conducting material, normally forming a portion of the main line and resting on two conducting-posts of main line, and adapted to be swung about either of said posts, as centers, into contact with a metallic post having a ground-connection, substantially as hereinbefore set forth.

3. The case I, provided with an alarm-bell and armature, a vibratory bar, and four cross-rods and wire connections, substantially as and for the purposes set forth.

4. In combination with the vibratory bar P and the cross-bars N N', the bow-spring R, substantially as and for the purposes set forth.

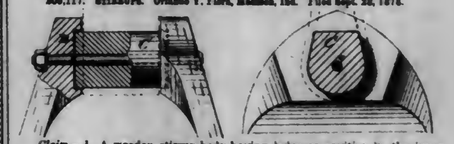
5. The lever ends of the bar P, formed as described, in combination with the suspension-hook *f* and latch *g*, arranged to operate in the manner and for the purpose set forth.

209,116. SEWING-MACHINE FAN ATTACHMENTS. J. W. Fackler, Lamptin, Ga. Filed Feb. 21, 1878.



Claim.—A fan device for sewing-machines, consisting of the bracket A, its clamp, arm *f*, the lever *a*, rod *b*, and clamp-lever *d*, all as set forth.

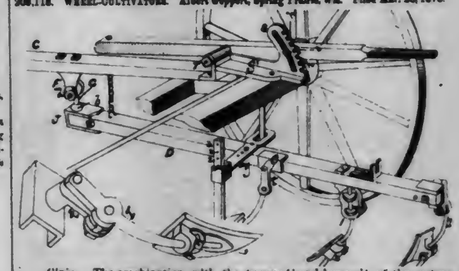
209,117. STIRRUPS. Orlando V. Flora, Madison, Ind. Filed Sept. 28, 1878.



Claim.—1. A wooden stirrup-body having holes or cavities in the inner faces of its bent-up extremities to receive and house the extremities of the strap-block C, substantially as and for the purposes set forth.

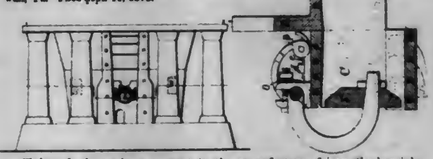
2. In a wooden stirrup, the strap-block C, made cylindrical and arranged to rotate in the sockets D D on a central bolt, *e*, substantially as set forth.

209,118. WHEEL-CULTIVATORS. Albert Guppert, Spring Prairie, Wis. Filed Mar. 23, 1878.



Claim.—The combination, with the tongue C and beam D, of the casting F, with jaws *d d*, the casting J, with bolts *b*, the swiveled pin G, having a flattened eye at its upper end, and the pivoting-bolt *e*, all constructed substantially as and for the purposes herein set forth.

209,119. FLUSHING SLAG OR CINDER FROM BLAST-FURNACES. Henry C. Grittinger, Cornwall, Pa. Filed Sept. 16, 1878.



Claim.—1. As an improvement in the manufacture of iron, the hereinbefore-described method of flushing the cinder, &c., directly from the furnace at intervals, which consists in slackening the blast and opening the flushing-aperture, then throwing on the blast to flush, and again slackening to admit of the closing of the flushing-aperture, substantially as set forth.

2. A blast-furnace provided with the tuyeres, the flushing-aperture, and the door for closing said aperture, substantially as and for the purpose set forth.

3. The hereinbefore-described sectional flushing device or attachment, consisting of the combination of the tymp or water-breast, the water-block or tuyere, provided with the large opening, the hinged door, the weight-plate, and the water-circulating pipes.

209,120. ADJUSTABLE REELS FOR REAPERS. Wm R. Hallett, Brussels, Ill. Filed Sept. 9, 1878.

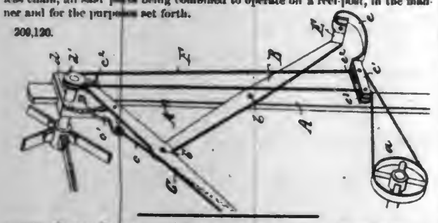
Claim.—1. The bracket D, having notches and a slot, by means of the latter to engage the reel-post, the lever attachments B B', the latter having

spring-rod and pawl, all said parts being combined as shown and described, by means whereof the adjustment of said bracket takes place, in the manner and for the purposes set forth.

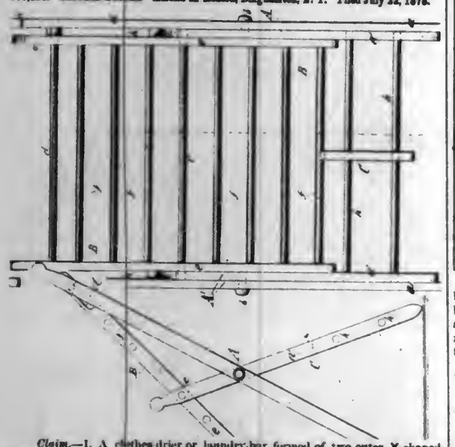
2. In combination with a reel-post, sliding bracket D, and pulley d^2, the main lever B, carrying the arm E, spring e, pulley-frame e^1, pulleys e^2 e^3, and endless chain, by means whereof the said chain can be kept taut, in the manner and for the purposes set forth.

3. The main lever B, carrying the spring e, pulleys e^2 e^3, the hand attachment C, the sliding bracket D, carrying reel-shaft and pulley d^2, and the endless chain, all said parts being combined to operate on a reel-post, in the manner and for the purposes set forth.

200,120.



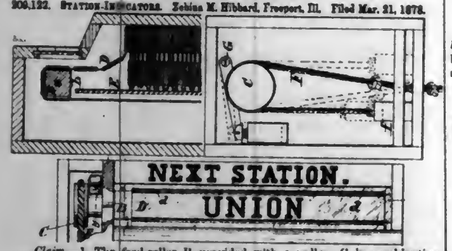
200,121. CLOTHES-DRIER. Amelia A. Heaton, Binghamton, N. Y. Filed July 22, 1878.



Claim.—1. A clothes-drier or laundry-bar formed of two outer X-shaped folding standards, A A', joined at their upper ends by two fixed cross-rounds, c d, in combination with an inner rack-frame, B, mounted within or between the said standards, and at the top thereof, on the cross-rounds c d, being pivoted on one round and capable of sliding on the other, so that the parts are capable of being expanded to present the rack-frame in an elevated overhanging position, or of being folded into a flat parallel form, substantially as herein shown and described.

2. In combination with the folding standards A A' and pivoted folding rack-frame B, held between the said standards, the notched locking-bar C, fixed to one branch of the standards on the cross connecting-rounds h h, and adapted to engage with the rack-frame by springing the rack into the locking-notch when the parts are folded into a flat parallel form, substantially as and for the purpose set forth.

200,122. STATION-INDICATORS. Zebina M. Hibbard, Freeport, Ill. Filed Mar. 21, 1878.



Claim.—1. The feed-roller B, provided with a pulley, C, in combination with a detached cord, F, running loosely over the pulley, and provided with a weight, f, at one end, but free at the other, whereby the roller may be turned and the cord changed to reverse the motion, substantially as described.

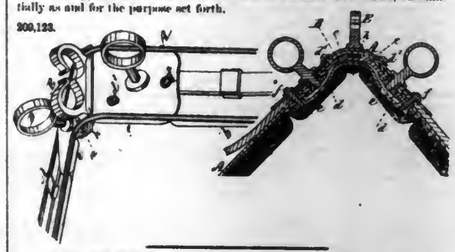
2. The indicator feed-roll B, in combination with the weighted cord F and weighted stop-lever D, substantially as and for the purpose set forth.

200,123. HARNESS-SADDLES. Theodore P. Holmes and James F. Eldridge, Middleborough, Mass. Filed Apr. 26, 1878.

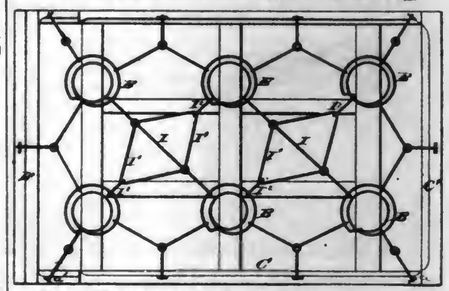
Claim.—1. The combination, with a harness-saddle, of a metallic tree, B, formed of two plates or portions, c d, adapted to fit snugly together without the interposition of any intermediate substance, the upper one, c, being securely attached to the saddle, and having ribs h on its under side to hold the terret nuts g, and the lower or padded portion, d, being made detachable from the upper portion, c, and secured thereto by screws f, all constructed and arranged to operate substantially in the manner and for the purpose described.

2. A harness-saddle provided with a double water-hook, E, and having a hitching-loop, 12, on each side to allow of the reversal of the saddle, substantially as and for the purpose set forth.

200,123.



200,124. BED-BOTTOMS. Theodore R. Jones, Utica, N. Y. Filed June 16, 1877.



Claim.—1. The combination, with four contiguous spiral springs of a bell-bottom arranged as at the angles of a square, of a centrally-located loop or link, composed of two V-shaped wires linked or hinged together at their ends, and four connecting links or rods, one extending from and connecting each angle of the central link with the upper coil of the adjacent spring, substantially as described.

2. In combination with a set of four springs, B, the center rod, I, bent rods I' I', and the four connecting-rods P, as and for the purpose set forth.

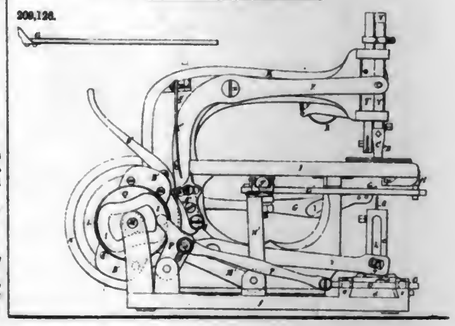
200,125. CURTAIN-CORD TIGHTENERS. George B. Eaton, New York, N. Y., assignor of one-half his right to Duncan F. Hount, same place. Filed Sept. 10, 1878.

Brief.—A plate sliding in a recessed plate carries a screw projecting through a vertical slot in the plate. Upon this screw is mounted a button engaging with it by a screw-threaded shank. This shank also carries the cord-pulley, and has a washer between it and the plate. The button is held on the screw by a riveted head on the latter.



Claim.—The combination, in a curtain-cord tightener, of the base a a, slide b, screw c, screw-knob d, and pulley h with the shouldered head f of the screw, by which the knob is prevented from being screwed off or disengaged from the slide, substantially as herein shown and described.

200,126.



200,126. WAX-THREAD SEWING-MACHINES. Jeremiah Keith, Providence, R. I. Filed Jan. 15, 1878.

Brief.—The presser-foot is automatically raised at each stitch, to facilitate the feeding of the material by a lever operated by a cam on the main shaft. The part bearing on the cam is adjustable, so as to increase or diminish the motion of the presser-foot. The needle is located below the bed-plate of the machine, and operates to feed the material. The thread is held by the needle and a loop-opener for the passage of the shuttle.

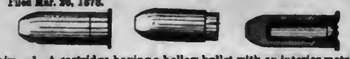
Claim.—1. The combination for effecting and regulating the feed of the needle, each consisting of the grooved cam Q, the slotted arm P, the connecting-rod p, with the adjustable pin q, the obliquely-slotted slide-plate O, and the plate d and its stud a to enter the slot n of the plate O, all being arranged and applied to the driving-shaft, the frame, and the standard c, substantially as set forth.

2. In combination with the presser-carrier, the adjustable lever A' and its clamp-screw a', the cams B' B', and the bent lever Z, all being arranged and applied substantially as set forth.

3. In combination with the shuttle-driver H, the lever G', having the slot e' and abutments f' f', the spherical-headed connection-bolt g', the lever H', and the cam I', all arranged and applied substantially as specified.

4. The loop-opener G, having the angular slot i' and support pin or screw k', in combination with the arms m' o', shaft n', cam q', and spring r', all being arranged and applied substantially as set forth.

200,127. CARTRIDGES. Frank W. Marston, Philadelphia, Pa., assignor to Owen Jones, same place. Filed Mar. 26, 1878.

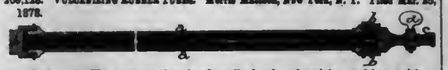


Claim.—1. A cartridge having a hollow bullet with an interior metal lining, substantially as described.

2. A cartridge having a hollow bullet with interior metal lining and an inclosing-shell overlapping the lining and part of the bullet, for the purpose of making the metal surface continuous.

3. The cartridge described, consisting of the hollow bullet a, the interior lining a^1, and shell a^2, combined and arranged as and for the purposes described.

200,128. VULCANIZING RUBBER TUBES. Morris Matteson, New York, N. Y. Filed Mar. 25, 1878.

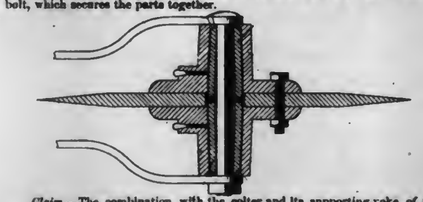


Claim.—1. The process herein described of vulcanizing rubber tubing, which consists in placing the tubing in a suitable pipe or mold, closing the ends of the mold with caps or covers, and then exhausting the air from the mold, so that no air-cells can be formed in the sides of the tubing, and then vulcanizing the tubing in a heater, substantially as set forth.

2. The tube or pipe a, provided with the caps b, nozzle c, for connection with an air-exhausting mechanism, and a cock, d, for preserving a vacuum, substantially as shown.

200,129. PLOW-COLTERS. William McGregor, Rockford, Ill., assignor to H. C. Thompson, same place. Filed Apr. 18, 1878.

Brief.—Disks having hubs, which extend laterally to the yoke, taper and otherwise conform to tapering sleeves, which they inclose, and upon which they revolve, said sleeves having square interior openings, and fitted upon a square bolt, which secures the parts together.



Claim.—The combination, with the colter and its supporting-yoke, of the square bolt passing through and securing the parts together, the tapering sleeves upon said bolt forming the pivotal surface for the colter, and the disks bolted to the colter and provided with hubs, which extend laterally to the yoke and inclose and revolve upon the said sleeves, substantially as specified.

200,130. ANNEALING-FURNACES. Wm. S. McKenna, Pittsburg, Pa. Filed Mar. 6, 1878.

Claim.—1. The combination, with the combustion-chamber, of the journaled bars, set in a suitable frame, and the worm-shaft for revolving the bars, substantially as specified.

2. The combination of the revolving bars and the frame having the pivoted section, wherein the bars are journaled at one end, substantially as and for the purpose specified.

3. In an annealing-furnace having a retort inclosed by tortuous flues, the combustion-chamber having a suitable grate, in combination with the hollow perforated fire-bridge and the feed-chute, the feed-chute being arranged opposite the face of the fire-bridge, substantially as and for the purpose specified.

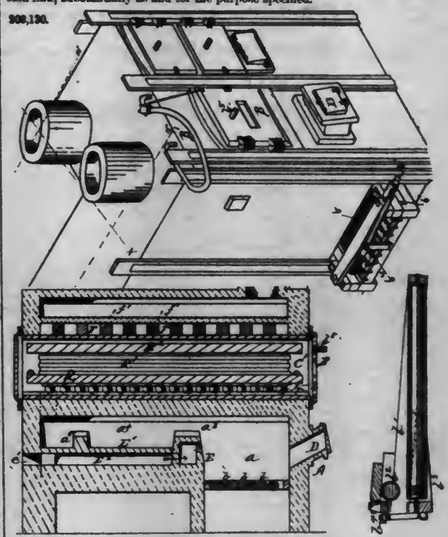
4. The combination, with the annealing-retort, inclosed by tortuous flues, of the combustion-chamber and its grate, the hollow perforated fire-bridge, the air-induction flue, and flue of the combustion-chamber, provided with the supplemental bridge or cross-wall, forming the dust-chamber, the whole arranged substantially as and for the purpose specified.

5. The combination, with the retort of an annealing-furnace, of a series of tortuous flues, C, formed by pendent walls c^3, and verticals c^4 and F, formed by cross-walls f', said flues extending longitudinally and transversely of the retort and connected by ports, whereby the products of combustion are caused to traverse back and forth and envelop the retort, substantially as and for the purpose specified.

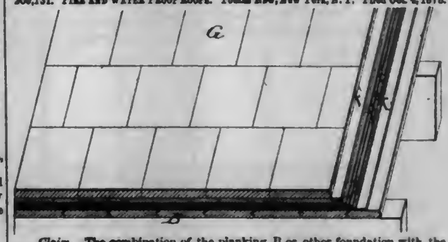
6. The combination, with the combustion-flue of an annealing-furnace, of an inclined hearth, interposed between the combustion-chamber and annealing retort or retorts, substantially as and for the purpose specified.

7. The combination, with the retort-door of an annealing-furnace, of a telegraph or curved elevated rail, B', secured to said furnace, and a suspension-link, substantially as and for the purpose specified.

200,130.

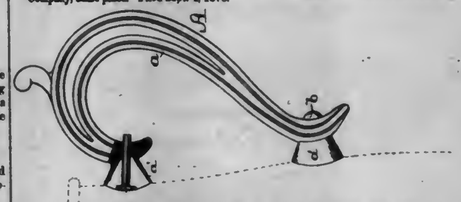


200,131. FIRE AND WATER PROOF ROOFS. Tobias Hess, New York, N. Y. Filed Oct. 4, 1878.



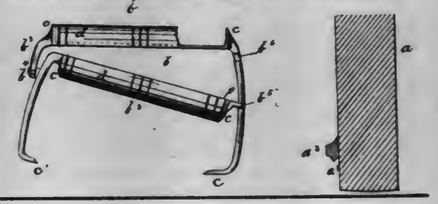
Claim.—The combination of the planking B or other foundation with the dry felt C and layers of saturated felt paper D and bituminous or bituminous composition E, with the layer of cement and sand F and the superimposed tile, brick, or slate G, or other similar material, substantially as above set forth.

200,132. HANDLES FOR TEA AND COFFEE POTS OF ENAMELED IRON-WARE. Frederick G. Niedringhaus and Wm. F. Niedringhaus, St. Louis, Mo., assignors to St. Louis Stamping Company, same place. Filed Sept. 4, 1878.



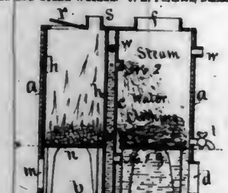
Claim.—The herein-described handle A, having the body a and tips a' a', shaped as described, and formed of a single casting, for the purpose set forth.

200,133. SMOOTHING-IRONS. Newman J. Powell, Fairmont, Nebr., assignor to himself, John Powell, P. A. Powell, and Susanna L. Robinson, Pontiac, Ill. Filed Aug. 13, 1878.



Claim.—In a sad-iron, *a*, provided with the projections a' a², having cross-grooves a³, the handle *b*, having feet *c*, and composed of the part *b'*, having notch or recess *b²*, and part *b³*, having projection *b⁴*, the part *b'* being hinged to and swinging below the part *b³*, substantially as and for the purpose set forth.

209,134. FEED-COOKER AND STEAM-WASHER. J. K. Furiston, Dallas Centre, Iowa. Filed Mar. 27, 1878.



Claim.—1. In a cooking and washing apparatus, the cylindrical case *a a*, having the openings *d* and *f*, the fixed central upright partition, *c*, having the ports Nos. 1 and 2, and the fixed furnace *b m n r s*, all arranged and combined substantially as shown and described, to adapt the device to be operated either for cooking feed or washing clothes, in the manner set forth.

2. The feed-cooking and clothes-washing apparatus composed of the cylindrical case *a a*, having the fixed partition *c* and the openings *d* and *f*, the furnace *b b m n r s*, and the removable perforated bottom *g g*, substantially as shown and described, to be operated in the manner set forth.

209,135. COMBINED BUTTON AND FASTENER. A. M. Richmond, New York, N. Y., assignor to George L. Richmond, East Orange, N. J. Filed Mar. 27, 1878.



Claim.—The button A B, having a stem, C, provided with a rigid cross-head at its end, which operates as a fastener, all substantially as shown and described.

209,136. BUTTER-PACKAGES. Charles H. Robison, Cleveland, Ohio. Filed May 6, 1878.

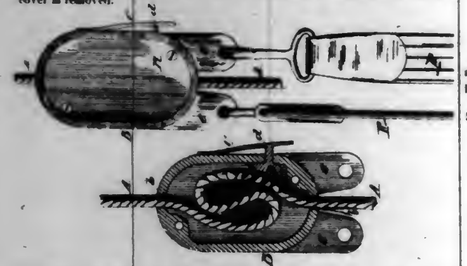
Brief.—The wooden rings are removable. The inner surface of the tin canister is coated with paraffine and bees-wax, or either separately.



Claim.—An improved butter-package consisting of the case A and cover B, provided with an opening and a suitable device for closing the same, in combination with a series of rings or hoops arranged therein one above the other, and having interposed between said rings disks provided with perforations I I, substantially as and for the purpose described.

209,137. FIRE-ESCAPES. Eugene H. Rotschka and Oscar F. Davis, Quincy, Ill., said Rotschka assignor to said Davis, said Davis assignor of one-half his right to Absalom J. Kalb, same place. Filed Feb. 23, 1878.

Brief.—The box, having detachable cover, is provided inside with friction-cars, around which the rope slides, and with a brake-block secured to a retracting-spring, the rope being readily secured in position by passing one end through holes in the ends of the box and around the friction-cars while the cover is removed.



Claim.—1. The herein described friction-block, consisting of box B, having ears or lugs *e e*, openings *b b*, and detachable cover R, in combination with the wedge or brake-block D, having shank *d* and spring C, substantially as herein described, for the purpose set forth.

2. As an improvement in fire-escapes, the combination, with the rope A, of the friction-block B, having detachable cover R, brake D *d*, spring C, tending to release the brake, perforated ears *e e*, and strap F, all arranged and operating substantially as herein described, for the purpose set forth.

209,138. WOOL-WASHING MACHINES. Frederick G. Sargent, Graniteville, Mass. Filed Oct. 1, 1877.

Claim.—1. The roll having a grooved or corrugated felt surface, substantially as and for the purposes described.

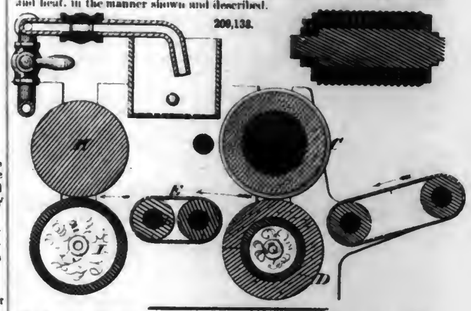
2. The absorbent pressure-roll, composed of large and small rings or washers of felt, arranged substantially as and for the purpose described.

3. The combination of the delivery-rolls C D of a wool-washing machine and the system of squeezing and beating rolls, arranged substantially as shown, and adapted to receive and automatically act upon the fiber as it leaves the washing-machine.

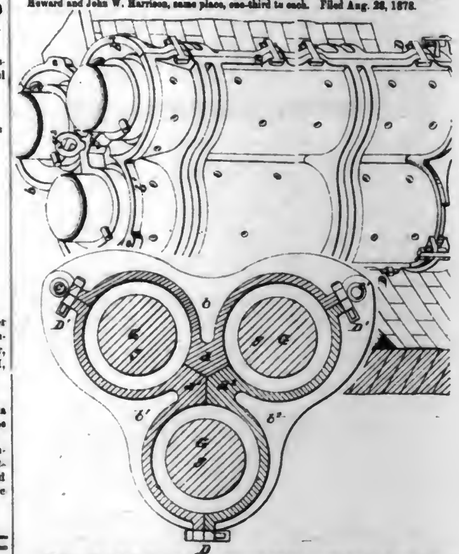
4. In a wool-drying machine, a felt-covered cylinder made hollow and adapted to be heated by steam.

5. A wool-drying machine having its parts constructed and arranged to subject the fiber to the combined action of pressure, the felt absorbent surfaces, and heat, in the manner shown and described.

209,138.

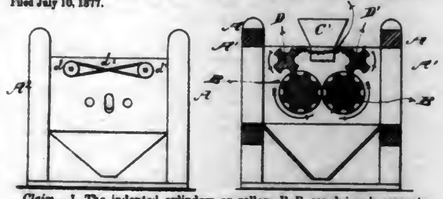


209,139. PIPE-MOLDING MACHINES. Fredk. Shickle, St. Louis, Mo., assignor to Thomas Howard and John W. Harrison, same place, one-third to each. Filed Aug. 28, 1878.



Claim.—In a flask for molding pipes and similar castings, the parts *b b'*, attached to each other at D and D' D', and provided, respectively, with the partitions *d d' d²*, substantially as described.

209,140. GRAIN-SEPARATORS. Roderick A. Smith and George Chase, Spirit Lake, Iowa. Filed July 10, 1877.



Claim.—1. The indented cylinders or rollers B B, revolving in opposite directions, in combination with the fluted rollers D D', which are placed above and revolve in the same direction as cylinders B B, substantially as described.

2. The combination and arrangement of the gear-wheel C, pinions *b b* and *b' b'*, frame A, having an inclination, A³, cylinders B B, fluted rollers D D', and pulleys *d d' d²*, substantially as and for the purpose set forth.

209,141. TEMPORARY BINDERS FOR MANIFOLD WRITING. George Southard, Oakwood, Ill. Filed Mar. 11, 1878.

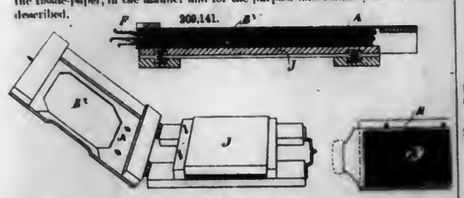
Brief.—The tissue and carbon papers are stitched to tin plates with perforations in their edges. These plates and papers are then firmly secured for convenience in writing by means of pins in connection with the spring-board and clamping-cover.

Claim.—1. The perforated tins H, with tracing-paper B' and tissue-paper, in combination with the spring-board J and cover A, having an opening, H², in the manner and for the purpose substantially as shown and described.

2. The perforated tins H, with tracing-paper B' and tissue-paper, in combination with the loose tins F and clip-board, in the manner and for the purpose substantially as shown and described.

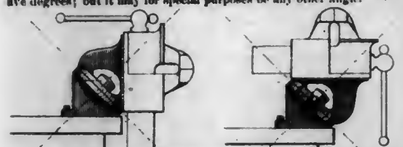
3. The perforated tins H, with tracing-paper attached, in combination with the tissue-paper, in the manner and for the purpose substantially as shown and described.

209,141.



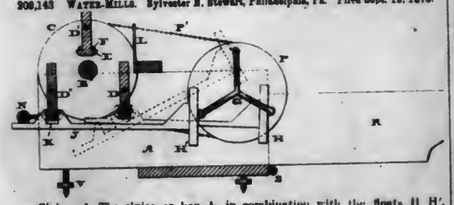
209,142. VISES. William X. Stevens, East Brookfield, Mass. Filed Apr. 1, 1878.

Brief.—To give greater range of adjustment the vise may be attached to the bed-piece as the bed-piece is to the base-piece. The angle is usually forty-five degrees; but it may for special purposes be any other angle.



Claim.—A bench-vise arranged to turn upon an axis inclined to the plane of the jaws, so that the vise may be set with its jaws in either a practically vertical or horizontal position, substantially as and for the purpose specified.

209,143. WATER-MILLS. Sylvester N. Stewart, Philadelphia, Pa. Filed Sept. 13, 1878.



Claim.—1. The sluice or box A, in combination with the floats H H', mounted on a crank-shaft and carrying floating arms J, substantially as and for the purpose set forth.

2. The wheel or heads C C, carrying float-boards D D', in combination with the floating arms J, with notches K, and the throw-off N, substantially as and for the purpose set forth.

3. The float-boards D D', provided with fenders E, in combination with the floating arms J, substantially as and for the purpose set forth.

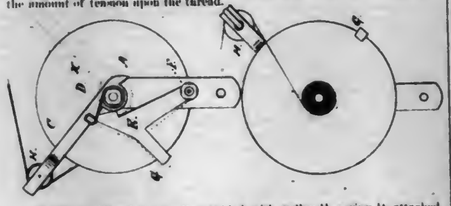
4. The floats provided with weighting and bracing rods or bars F, substantially as and for the purpose set forth.

5. The sluice or box A, in combination with the rods V and the anchoring chain or cord S, substantially as and for the purpose set forth.

6. The sluice or box A, with wings R R, floats H H', crank G, wheel P, arms J, float-boards D D', shaft B, and hold-off rods or spars U, substantially as and for the purpose set forth.

209,144. TENSION-WHEELS. Ole C. Stocle, Milwaukee, Wis., assignor of two-thirds his right to John G. Flint, Jr., same place. Filed Dec. 10, 1877.

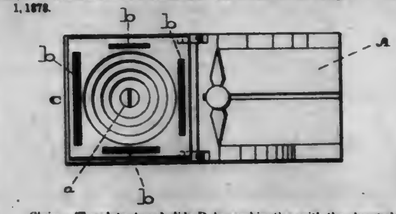
Brief.—The thread, cord, or wire passes from the wheel over a pulley mounted on a lever, which is maintained in position by a spring, such spring also giving the tension by pressing a brake upon the wheel. The lever carrying the pulley is so arranged that when the pull upon the thread is unduly increased it is moved forward and operated to relieve the brake, and consequently the amount of tension upon the thread.



Claim.—1. Wheel A, arm C, provided with pulley H, spring D, attached, one end to arm C and the other end to lever E, in combination with lever E, provided with brake G, substantially as specified.

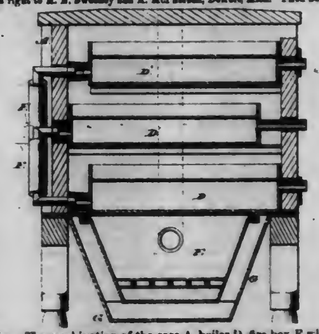
2. Arm C, provided with projection K, in combination with standard B, spring D, and lever E, provided with the brake G, substantially as described.

209,145. COUNTERFEIT-COIN DETECTORS. Edwin Street, South Orange, N. J. Filed Mar. 1, 1878.



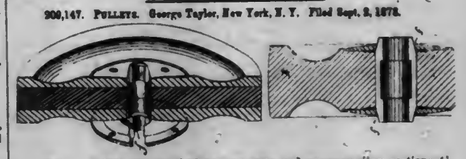
Claim.—The plate A and slide D, in combination with the elevated tray C, provided with concentric concavities *a* and surrounding slots *b*, substantially as and for the purpose set forth.

209,146. EVAPORATOR AND FRUIT-DRIER. Jerome B. Sweetland, Pontiac, assignor of two-thirds his right to H. H. Sweeney and A. McPherson, Detroit, Mich. Filed Sept. 12, 1878.



Claim.—The combination of the case A, boiler D, fire-box E, with surrounding shield C, the pans D' D', and connecting-pipes F F, whereby the hot air is caused to pass under and over the pans D', and the steam at the same time caused to circulate through one or more of the pans, substantially as herein set forth.

209,147. PULLEYS. George Taylor, New York, N. Y. Filed Sept. 2, 1878.



Claim.—A hub composed of two separate and corresponding sections, C C', its sleeve *a a'* being divided longitudinally through its center, and each portion made tapering toward its outer end, to fit into tapering apertures *f* in the side flanges, *b b'*, the said flanges being provided with radial slots *d d'*, and the two sections being secured with screw-bolts *e e e e*, all as herein shown and described.

209,148. ELECTRIC RAILROAD-SIGNALS. Charles D. Tisdale, Boston, Mass. Filed May 27, 1878.



Claim.—1. The described railway-signal apparatus, consisting of the track-levers D D, battery G, signal-levers E E, switches *d d*, electro-magnets F F, studs *e e*, and circuit-wires *e f g*, arranged and applied to the track and the two posts, and to operate substantially as set forth.

2. The combination of the signal-lever E, electro-magnet F, circuit-wire *e g*, spring *d*, stud *e*, and lever D, applied to each of the posts and one of the rails, substantially and to operate as set forth.

209,149. GRAIN-BINDERS. Charles L. Travis, Minneapolis, Minn. Filed Sept. 30, 1878.

Claim.—1. The combination, in a grain-binder, of a receiver, A, with a binder-arm rotating in one direction only, and a vibrating divider, D, mounted on the binder-arm shaft and actuated therefrom by intermediate devices, substantially such as shown.

2. The combination of the stationary grain receptacle, the rotary binding arm, and the compressor-arms, hinged at their lower ends to the outer side of the receptacle, and arranged to turn down at suitable intervals to admit of the bound bundle being discharged over them, as set forth.

3. The combination of the receiver with the rotary arm B and the vibrating divider-arm mounted on concentric axles.

4. In combination with the binder-arm shaft and the arms H, the rock-shaft I, crank J, rod K, and cam L.

3. The combination of the receiver, the binder-arm revolving in one direction only, the divider-arm located at the top of the receiver, and the arms H, hinged at the rear edge of the receiver, said parts being arranged to move in relation to each other in the manner and at the times set forth.

6. The curved compressor-arms H, in combination with the cords N, connected with tension-springs.

209,149.



209,150. CAR-AXLE-BOX LIDS. Reuben Wells, Jeffersonville, Ind., assignor to himself and Joseph W. Sprague, same place. Filed Aug. 31, 1878.



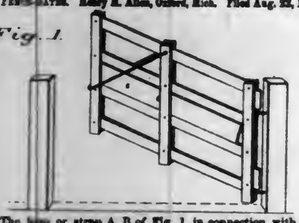
Claim.—1. The combination, with the frame D, provided with the curved cam C, formed with the surfaces *c c'* and recess *c²*, as described, of the cover A, provided with the leaf-spring B, one end of which is riveted or bolted to the cover, as at *b*, the opposite end being made to press against the said cam and take into the recess *c²*, whereby the cover is pressed against its seat when closed and held in any desired position when raised, all substantially as specified.

2. A car-axle-box cover composed of the lid A, the leaf-spring B, having the free end *b'* and the cam C, with its face *c²*, coincident in width with the width of the spring, its face *c*, narrowed at *c²*, and the recess *c'*, as and for the purpose specified.

3. A car-axle box cover composed of the lid A, cam C, having upper bearing-face, *c*, recess *c'*, and intervening face, *c²*, together with leaf-spring B, with its convex bearing end *b'* turned or doubled over upon itself, as at *b²*, as and for the purpose specified.

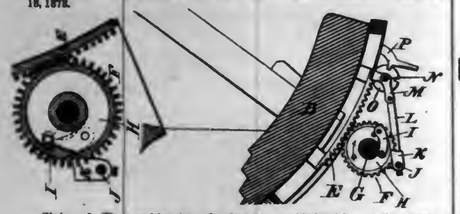
209,151. FENCE-GATES. Henry H. Allen, Oxford, Mich. Filed Aug. 22, 1878.

Fig. 1.



Claim.—The loop or strap A B of Fig. 1, in connection with any loose-jointed fence-gate, for the purpose substantially as set forth.

209,152. FULLING-MILLS. Alonzo C. Arnold and J. H. Aiken, Norwalk, Conn. Filed May 18, 1878.



Claim.—1. The combination of a beater provided with a rack, a pinion gearing into said rack and mounted loosely on a driving-shaft, devices for locking the pinion to the shaft, and tripping devices for automatically releasing the pinion when the beater has reached the proper elevation.

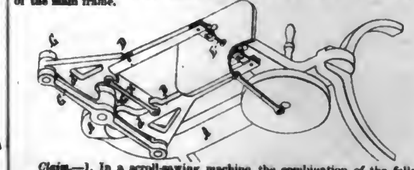
2. In combination with a gravitating head or beater, a pinion or pulley, operating to elevate the same, mounted loosely on a driving-shaft, and tripping devices for automatically releasing the pinion when the beater has reached the proper elevation.

3. The combination, with a continually-rotating shaft, G, provided with the hub H and pivoted dog I thereon, the loose pinion F, rack E, and tripping device K.

4. In combination with the dog I, arranged as and for the purpose described, the arm or tripping device K, adjustable about an axis around which the dog revolves, in combination with the shaft J and dogs K, the rock-shaft N, arms M, link L, and locking devices O P.

209,153. SCROLL-SAWING MACHINES. H. L. Beach, Montrose, Pa. Filed Sept. 27, 1878.

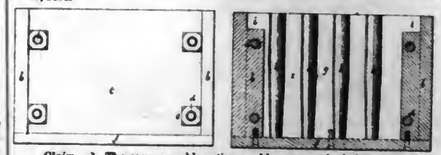
Brief.—A vertical reciprocating movement of the saw is obtained by the rocking motion of two levers, to the forward ends of which the saw is attached. The rear ends of said levers are curved to bear against the curved face of a back post rigidly attached to a curved and rearwardly-projecting upper portion of the main frame, and are pivoted to vertical bars pivoted to said curved part of the main frame.



Claim.—1. In a scroll-sawing machine, the combination of the following elements: a frame, A, provided with a back post, C, the levers D, having their rear ends curved, as at *d*, a saw, E, and the bars G, constructed and operating substantially as and for the purpose specified.

2. In a scroll-sawing machine, the combination of the following elements: a frame, A, provided with a back post, C, the levers D, having their rear ends curved, as at *d*, a saw, E, the bars G, and the bar H, constructed and operating substantially as and for the purposes set forth.

209,154. CRAYON-MOLD-SECTION MOLDS. Charles H. Bill, Waltham, Mass. Filed Sept 25, 1878.



Claim.—1. The crayon-mold-section mold, composed of the side, end, and bottom plates, *b b c e f*, and having the matrices *g*, and the two sets of ribs *h*, arranged therewith, as set forth.

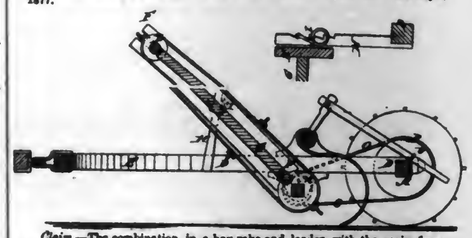
2. The crayon-mold-section mold, substantially as described, provided with the ear-matrices *i i* and the ribs *h*, arranged with the matrix *g* or main chamber of said mold, as set forth.

209,155. BALL-TARGETS. Claudius V. Boughton, Titusville, Pa. Filed Sept. 16, 1878.



Claim.—A ball for trap-shooting, consisting of the ball A, inclosed by the shells B B, having between the ball and the shells a thin film of fulminating or percussion powder, the whole arranged and operating substantially as and for the purposes herein set forth.

209,156. HAY RAKES AND LOADER. David W Beves, Richland Centre, Wis. Filed May 6, 1877.



Claim.—The combination, in a hay rake and loader, with the main frame D E and elevator *F G*, of the notched arms H, pivoted to the frame, and the coiled spring-wire catches I, fastened to the elevator, arranged to pass over the arms H, and by spring-pressure take into the notches thereon, and thus prevent any accidental displacement of the elevator, and at the same time impart a certain degree of flexibility or elasticity to the elevator, substantially as herein set forth.

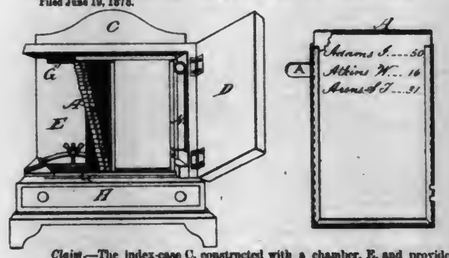
209,157. SEWING-MACHINES. Charles K. Bradford, Lynnfield, assignor to J. F. Farns, Quincy, and J. W. Farns, Boston, Mass. Filed Feb. 23, 1878.



Claim.—1. In a sewing-machine in which two upper threads are employed with a single needle, a main tension for controlling the thread-delivery to the needle, provided with a separate and distinct thread-passage for each of the two threads, in combination with an auxiliary tension, provided also with a separate and distinct thread-passage for each thread, and arranged to control and equalize the delivery of the two threads from the spools to the main tension, as set forth.

2. In combination with the two upper threads and the needle, a thread-separating device, which separates said threads immediately prior to their entering the needle, as and for the purposes set forth.

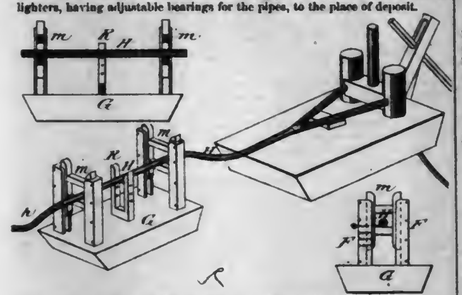
209,158. INDEXING APPARATUS. John H. Carlisle and John T. Taylor, Whitaker's, N. C. Filed June 19, 1878.



Claim.—The index-case C, constructed with a chamber, E, and provided with a series of sliding plates, A, track or guide G G', hinged stop L, door D, and drawer H, as herein described, and for the purpose set forth.

209,159. DREDGING-MACHINES. Geo. W. Cunningham, San Francisco, Cal. Filed June 20, 1878.

Brief.—A dredging-scoop having a rigid handle for operating and elevating the same in combined with a suction-pipe leading to vacuum pumps or cylinders, whereby the dredged material is drawn up from the scoop and deposited in a tank or vessel; or it is conducted along pipes supported by a series of lighters, having adjustable bearings for the pipes, to the place of deposit.



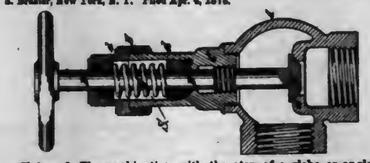
Claim.—1. In a dredging-machine, a flexible suction-pipe provided with a scoop or digger and a rigid handle for operating the same, substantially as and for the purpose set forth.

2. A floating conduit or discharge-pipe of a dredging-machine, in combination with one or more lighters or floats provided with vertically-adjustable bearings, substantially as and for the purpose set forth.

3. The combination, with a flexible suction-pipe having attached thereto a scoop or digger, of a lever-handle connected to said scoop or digger, and passing up through an elongated opening in a beam or other fixture secured to the dredge-boat, substantially as and for the purpose described.

4. A floating conduit or discharge-pipe for dredging-machines, consisting of the rigid sections H, mounted upon adjustable bearings R m m on the lighters G, and connected by flexible sections h h, substantially as and for the purpose set forth.

209,160. STUFFING-BOXES AND PACKING FOR VALVE-STEMS. Charles Deane and William S. Brazier, New York, N. Y. Filed Apr. 4, 1878.



Claim.—1. The combination, with the stem of a globe or angle valve, or analogous article, of a bonnet and a cap therefor fitted together with a face-joint, and containing a stuffing-box formed partly in the bonnet and partly in the cap, and fitted with packing material and a spring, substantially as specified.

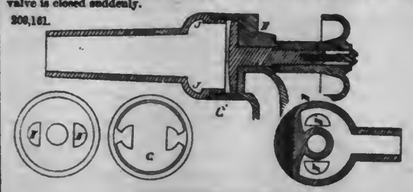
2. The combination of the body A of a globe or angle valve, or analogous article, the bonnet C, provided with an internally screw-threaded portion or nut, the stuffing-box S, having a conoidal end, the cap E, the packing material c, and interposed spring G, substantially as specified.

209,161. WATER BIBBS OR COCKS. Charles J. Elliott and Horace B. McCool, Pottsville, Pa. Filed Apr. 4, 1878.

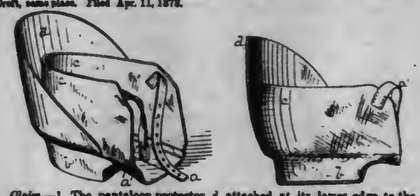
Claim.—1. The water bibb or cock herein described, having the valve G, fitting and working against a ground metal seating in B, and provided with suitable openings for the passage of fluids, substantially as shown.

2. An enlarged recess or offset, J, back of or below the valve in a water bibb or cock, for the purpose of cushioning the pressure of water when the valve is closed suddenly.

209,162.



209,163. PANTALOON-PROTECTORS. Wm. H. Ewing, Pittsburg, Pa., assignor to William M. Croft, same place. Filed Apr. 11, 1878.



Claim.—1. The pantaloon-protector *d*, attached at its lower edge to the boot or shoe, and open at its upper edge for the pantaloon-leg to pass between it and the boot or shoe, substantially as described.

2. The combination, in a pantaloon-protector, of the pieces *c d*, heel-piece *b*, and fastening-straps *a a'*, substantially as set forth.

209,163. BARRELS OR KEGS. Wm. H. Ewing, Pittsburg, Pa., assignor to William M. Croft, same place. Filed May 16, 1878.

Brief.—The retaining-hoop may be made in sections. A rubber gasket may be interposed between the head and the metallic casing. The sheet is passed through rolls or under a hammer to form the bilge; or the bilge may be formed by shearing the plate.



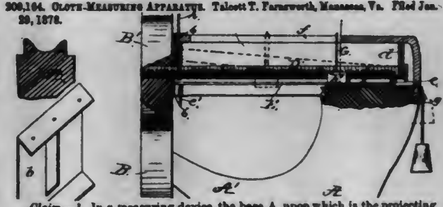
Claim.—1. A keg or barrel having a metallic casing, A, with depressed grooves or corrugations *b*, clips *a*, wooden heads *h*, and retaining-band *e*, arranged substantially as described.

2. The combination of metal casing A, corrugations *b*, clips *a*, retaining-band *e*, head *h*, and hoop *z*, substantially as and for the purposes set forth.

3. In combination with the metal casing of a barrel or keg, one or more interior hoops or bands, *r r'*, adapted to be sprung in place, and held by inwardly-projecting ribs or corrugations *b'*, substantially as and for the purpose set forth.

4. In combination with the metal casing of a barrel or keg, having clips *a* formed on its ends, with depressed corrugations *b*, a retaining-band, *e e'*, made in two or more parts, and a head made in three or more parts, arranged substantially as described, whereby, upon removing one part of the retaining ring or band, the parts of the head may be removed in order.

209,164. CLOTH-MEASURING APPARATUS. Talcott T. Farnsworth, Manassas, Va. Filed Jan. 29, 1878.



Claim.—1. In a measuring device, the base A, upon which is the projecting arm A', roller B, and clamp or vise *b*, substantially as described, and for the purpose set forth.

2. In a measuring device, the sliding block F, to which a spring, cord, or elastic for operating the same is attached, substantially as described, and for the purpose set forth.

3. In a measuring device, the sliding block F, which has a groove on its upper side and has a slot cut through its center, in combination with the cord, elastic, or weight for operating the same, substantially as specified.

4. In a measuring device, the sliding block F, to which a cord, spring, or elastic is attached for operating the same, in combination with the rollers B B' and screw D, substantially as described, and for the purpose set forth.

5. The combination of the following elements: base A, rollers B B', screw D, journals for holding the same, sliding block F, bar E, pivot *c*, and spring or elastic *g*, all the parts mentioned being arranged substantially as described, and for the purpose set forth.

209,165. MIDDLINGS-SEPARATORS. Wm. J. Fender, Minneapolis, Minn., assignee of one-third his right to Jas. Cuthbertson, same place. Filed Aug. 31, 1878.

Claim.—1. In a middlings-purifier, the combination of the chambers D' and G, divided by partition F, and conveyer H, with the suction-fan B, substantially as and for the purposes described.

2. The chambers D' and G, partition F, having pivoted slats *f* and air-spaces between them, in combination with the suction-fan B, constructed and operating as set forth, whereby much of the light dust is taken from the middlings, substantially as described.

3. The spring-hangers K, attached to the shaker-frame by the stud *p* or *j*', washers 2 3 4 5, and bolt I, in combination with the plate L, having slots *k'* and *l''*, and bolt *k''*, substantially as described.

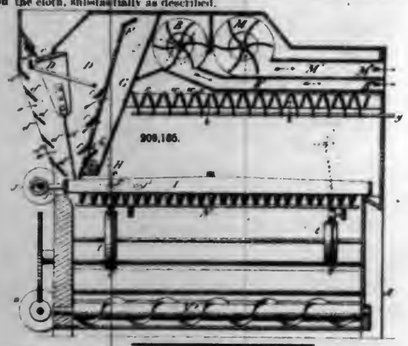
4. The eccentric *j*, vibrating eccentric-straps *j'*, having arms or shanks *j''*, and eye *j*', in combination with the attaching-stud *p* and projecting guide-stud *p'*, and the shaker-frame I, as and for the purposes described.

5. The combination of cords U, pulleys *t t'*, of unequal diameters, and brush N, constructed and operating as described.

6. In a middlings-purifier, the brush N, operating across the under side of the screen, one end moving faster than the other and obliquely to the direction of the flow of the middlings on the screen, substantially as described.

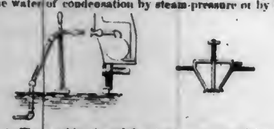
7. The series of pivoted valves *x*, inclined partitions *w*, and regulating-rod *y*, in combination with the suction-fan M, as and for the purposes described.

8. In a middlings-purifier, the combination of the suction-fan M, shaker I, screen I', and brush N, sweeping the under side of the screen at an obtuse angle with the flow of the middlings on the screen, and reversing its movement while off the cloth, substantially as described.



209,166. HEATING RAILROAD-CARS. James W. Graydon, Washington, D. C. Filed Sept. 21, 1878.

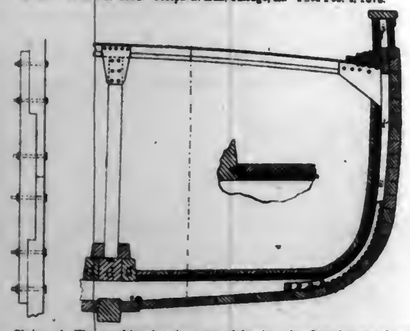
Brief.—Steam is passed through the detachable flexible pipe into the reservoir, from which it is led to the heating coil, provision being made for discharge of the water of condensation by steam-pressure or by the foot.



Claim.—1. The combination of the steam-generator, joints, coupling, lever, valves, steam-reservoir, heating-pipes, and water-receivers, arranged substantially as described, and for the purpose set forth.

2. The water-receiver located in the car-floor, and provided with the spring-valve, in combination with the heating-coil and reservoir, substantially as described.

209,167. SHIP-BUILDING. Joseph B. Hall, Chicago, Ill. Filed Feb. 4, 1878.



Claim.—1. The combination, in a vessel having the floor-frames of wood and the beads and top frames of metal, of a heavy outside planking upon said metal frames, and screw-bolts and fastenings for said planking introduced wholly from the inside, substantially as set forth.

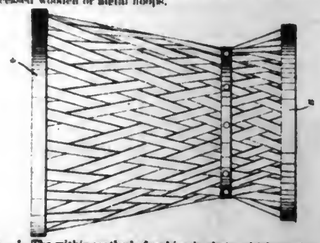
2. The water-way constructed of a series of planks set upon edge and bolted together, with the joints broken, substantially as specified.

3. The water-tight ceiling for the hull, consisting of layers of water-proof fabric laid between courses of thin boards, and turned up vertically on each side of the keelson, substantially as described.

4. The filling or spaces between the frames, ventilated by means of horizontal openings *i'*, extending the whole length of the vessel and formed between the courses of ceiling adjoining the frames, substantially as set forth.

209,168. MANUFACTURE OF WASTE-PAPER BASKETS. William F. Hatfield, Elizabeth, N. J. Filed Jan. 28, 1878.

Brief.—Weaves a mat; interweaves the ends of the mat, forming a cylinder; inserts and secures the bottom; expands the ends of the cylinder, and holds them in recessed wooden or metal hoops.



Claim.—1. The within method of making baskets, which consists in weaving a flat blank of crossed splints, placing the same around a former, and weaving the ends of the splints together, and then applying hoops and a bottom, whereby the splints are held rigidly together, as set forth.

2. A basket in which the body-strips are sprung outward at the top and bottom, and into recesses in hoops *a*, as and for the purpose specified.

209,169. CALENDAR-INKSTANDS. Cyrus B. Howard, Wheeling, W. Va., assignor of one-half his right to E. M. Howard, same place. Filed Mar. 25, 1878.



Claim.—1. The combination of the base B, having the annular partition *b*, the movable case A, having the number of all the days of the month exhibited upon its outer surface, and the ink-well E, having the rim C, exhibiting the days of the week, substantially as described.

2. The case A of an inkstand, provided with notches at the top, and calendar of the days of the month on the side, and an ink-well having a rim with similar notches underneath, and calendar of the days of the week on the side, in combination with the base B, having the annular partition *b*, substantially as described.

209,170. COMPOSITIONS FOR JOURNAL-BEARINGS. John Johnson, Brooklyn, N. Y., assignor to himself and James H. Gilbert, same place. Filed Apr. 16, 1878.

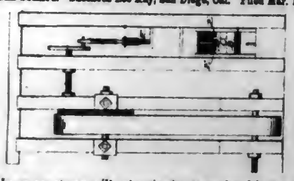
Brief.—Improvement consists in rendering that class of compositions used for journal-bearings and formed of asbestus and plumbago more yielding and less liable to chip, while at the same time preserving the hardness and resistance to percussion of the compound. The composition is formed and vulcanized in sectional molds.

Claim.—1. As a new composition of matter, a plumbago-vulcanite, one of the ingredients of which is asbestus.

2. The method herein described of compounding plumbago, asbestus, sulphur, and rubber, for the purpose of making a self-lubricating journal-bearing compound by intimately mixing the same and rolling the same into sheets previous to being vulcanized.

3. The method of molding and vulcanizing the journal-bearing compound herein described, consisting of rubber, sulphur, plumbago, and asbestus, by forming the same into a sheet, rolling the sheet into a cylinder, (whether with or without a temporary pin,) packing the mold therewith, and subjecting the same to vulcanizing heat, substantially as and for the purposes set forth.

209,171. ORE-STAMPS. Eschoes Lee Kay, San Diego, Cal. Filed Mar. 18, 1878.



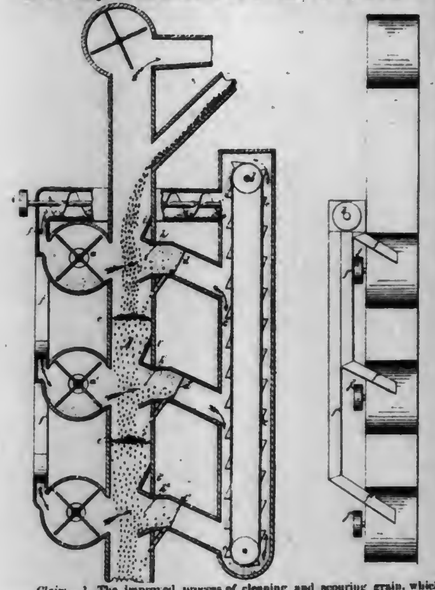
Claim.—In an ore-stamp mill, wherein the stamp-head is attached directly to the crank-wheel, the ore-stamp composed of the steel shoe B and iron plate D, provided with an interposed rubber cushion, C, working loose on bolts E, substantially as set forth.

209,172. HARVESTER CUTTER-BARS. Ezra C. Keys, Allegheny, Pa. Filed Apr. 1, 1878.



Claim.—A cutter-bar for harvesters, provided with dovetailed recesses B and groove *f*, in combination with the wedges C and cutters D, as and for the purpose set forth.

209,173. MACHINES FOR CLEANING GRAIN. John L. Kidwell and James A. Maloney, Georgetown, D. C., assignors to themselves and David L. Shoemaker. Filed Sept. 30, 1878.



Claim.—1. The improved process of cleaning and scouring grain, which consists in subjecting the same to the action of air and sand, or sand or other equivalent material, forced against and through the grain by any suitable means, substantially in the manner hereinbefore described and set forth.

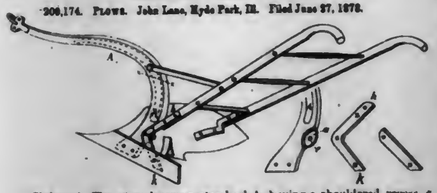
2. In a machine for cleaning grain, the combination, with a vertical grain-spout, of one or more blower or pressure fans, adapted to propel, force, or blow streams of any metallic, vitreous, or silicious material crosswise or in a direction contrary to the falling grain, and independent outlets for the cleaning material, substantially as and for the purpose set forth.

3. In a machine for cleaning grain, the combination, with a wheat-flowing spout, of one or more blower or pressure fans, adapted to propel, force, or blow streams of any metallic, vitreous, or silicious material crosswise or in a direction contrary to the falling grain, and independent outlets for the cleaning material, and an exhaust-fan, substantially as and for the purpose set forth.

4. In a machine for cleaning grain, the combination, with a vertical grain-spout, of one or more blower or pressure fans, adapted to propel, force, or blow streams of any metallic, vitreous, or silicious material crosswise or in a direction contrary to the falling grain, and independent outlets for the cleaning material, and an exhaust-fan and an elevator, substantially as and for the purpose set forth.

5. In a machine for cleaning grain, the combination, with a vertical grain-spout, of one or more blower or pressure fans, adapted to propel, force, or blow streams of any metallic, vitreous, or silicious material crosswise or in a direction contrary to the falling grain, and independent outlets for the cleaning material, and an exhaust-fan, an elevator, and one or more diaphragms for retarding the grain, substantially as and for the purpose set forth.

209,174. PLOWS. John Lane, Hyde Park, Ill. Filed June 27, 1878.



Claim.—1. The plow-beam or standard A, having a shouldered recess, *a*, and consisting of a wrought-metal bar forged and formed in dies, which give shape to the bottom end of the beam or standard, and swage the lip forming the shouldered recess *a* on the rear side of the beam or standard, substantially as and for the purpose shown.

2. The combination of plow-beam or standard A, having shouldered recess *a* and bolt-hole *c*, with the bar *b b*, in which the bar *b b* is made of a single piece, bent curved to fit the shouldered recess *a*, upon which it is secured by a bolt passing through the hole *c*, substantially as and for the purpose set forth.

209,175. SULKY-PLOWS. John Lane, Hyde Park, Ill. Filed June 13, 1878.

Brief.—Construction of frame. Rail-yoke and foot-lift pivoted to seat-arch, and adapted to be rigidly or flexibly connected. Hangers having slotted eyes, in which work the ends of the saddle which supports the plow, whereby the latter is allowed to move back and forth or vibrate. "Slicing-plow" arranged in advance of turn-plow, and adapted to cut a thin furrow-slice, which will fall unturned upon the furrow-slice cut by the latter, and be turned therewith.

Claim.—1. In a sulky-plow, the frame consisting of arch B, foot-rail C, tongue-brace C', and elbow E, combined with the axle A and tongue D, all arranged and bolted or riveted together as shown, and operating substantially as and for the purpose shown.

2. The combination of the bent axle A, the arch B, the latter adjustably attached to the former by means of the bolts *b*, substantially as shown, the crank-axle A', the segment-sleeve a^2, and the lever a^4, substantially as and for the purpose set forth.

3. The rod-brace F, having an eye at one end and a nut and screw-thread at the other end, combined with the arch B, elbow E, and tongue D, all arranged substantially as and for the purpose set forth.

4. The hanger M, having slotted eye *u* and grooves *v*, all substantially as shown, and for the purpose set forth.

5. The foot-lift L, locked in position by the lever R, lock-lever *r*, and link L', and the yoke J, hinged to the foot-lift L by the bolts at *l*, and limited by the stop-hook h^1, and the yoke J, pivoting on the pins h and arch B, and the plow-beam K, connected to the yoke J by means of the saddle P and hangers M, having slotted eyes *u*, all arranged and operating substantially as shown, whereby the depth of plowing is controlled and the plow kept in its steady forward progress while the land-wheel is passing over ridges and furrows and the tongue is swaying laterally, as set forth.

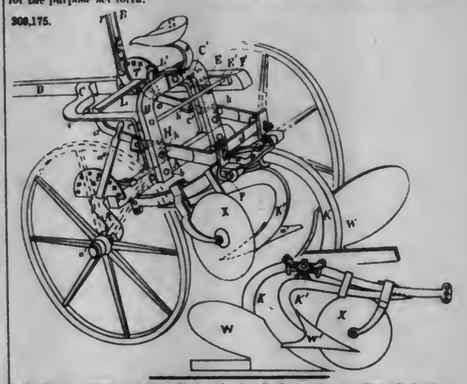
6. The combination of the ball-yoke J, having both limbs *j j'* extending forward of the axle, and the extensions having two perforations, *l l*, and having a stop-hook, h^1, formed offset at the bottom of the extreme forward end, all as shown, with the foot-lift L, connected therewith, substantially as shown, whereby they are made rigid or flexibly connected, as shown, and with the arch B, the axle A, and the plow-beam K, all substantially as and for the purpose set forth.

7. The foot-lift L, bent ⊔ shape, having two arms and a closed end, and the rear ends of the arms *a a'* connected with the extensions *j j'* of the ball-yoke J, and provided for both rigid and flexible connection, as shown, and the forward part of the arms *a a'* bent upward, supporting the closed end as a foot-board rest, as specified, in combination with the ball-yoke J, constructed substantially as shown, and with the arch B, the axle A, and beam K, all substantially as and for the purpose set forth.

8. The combination of the plow W, the beam K, the latter bent curved and supporting plow W, as shown, the slicing-plow W', consisting of a share only, without turning mold-board, in advance of and above the cutting-line of plow W, the beam K', bent curved and supporting slicing-plow W', and connected to the beam K, and the revolving-disk colter X, arranged to cut perpendicularly down by the side of and in advance of the slicing-plow W' to the depth of plowing of the plow W, substantially as and for the purpose set forth and shown.

9. The combination of the slicing-plow W', consisting of a share having an extending high breast, as shown, and for the purpose shown, and without a turning mold-board, plow W, having a turning mold-board, the plow W', arranged in advance of and above the cutting-line of the plow W, and the disk-revolving colter X, the latter arranged to cut down by the side of and in advance of plow W' to the depth of plowing of plow W, substantially as and for the purpose set forth.

209,175.



209,176. VARNISHES. Murdoch Mackay, London, England, assignor to Henry Bash, New York city, N. Y. Filed Feb. 27, 1878.

Brief.—Mixes two parts of benzole with one part of alcohol, and churns six pounds of gum-kauri with one gallon of the solution.

Claim.—The composition for a varnish composed of benzole and alcohol and gum kauri, substantially as specified.

209,177. MACHINES FOR CLEANING GRAIN. James A. Maloney and David L. Shoemaker, Georgetown, D. C., assignors to themselves and John L. Kidwell. Filed Oct. 9, 1878.

Claim.—1. In a machine for cleaning grain, the combination of a horizontal reciprocating screen, over which the grain is passed, with one or more pressure or blower fans and conduits for forcing sand over the surface of said screen, and in a direction transverse to that of the grain to be cleaned, substantially as and for the purpose set forth.

2. In a machine for cleaning grain, the combination of a horizontal reciprocating screen, over which the grain is passed, with one or more pressure or blower fans and conduits for forcing sand over the surface of said screen, and in a direction transverse to that of the grain to be cleaned, and openings for the ingress and egress of the grain, substantially as and for the purpose set forth.

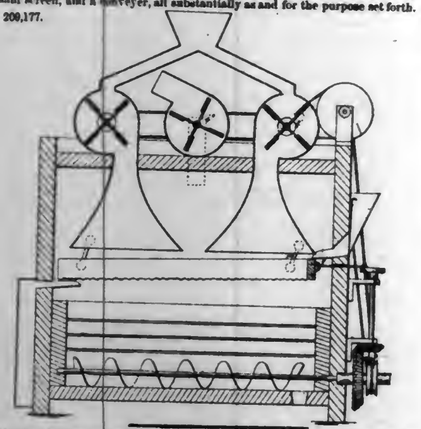
3. In a machine for cleaning grain, the combination of a horizontal reciprocating screen, over which the grain is passed, with one or more pressure or blower fans and conduits for forcing sand over the surface of said screen, and in a direction transverse to that of the grain to be cleaned, and openings for the ingress and egress of grain, and a suction or exhaust fan, substantially as and for the purpose set forth.

4. In a machine for cleaning grain, the combination of a horizontal recip

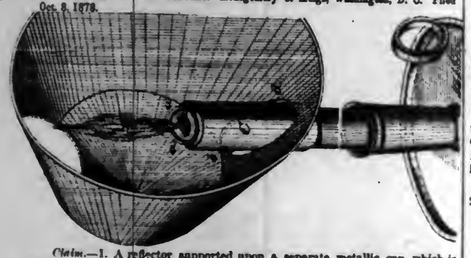
reciating screen, over which the grain is passed, with one or more pressure or blower fans and conduits for forcing sand over the surface of said screen, and in a direction transverse to that of the grain to be cleaned, openings for the ingress and egress of grain, suction or exhaust fan, and inverted hoppers above said screen, substantially as and for the purpose set forth.

3. In a machine for cleaning grain, the combination of a horizontal reciprocating screen, over which the grain is passed, with one or more pressure or blower fans and conduits for forcing sand over the surface of said screen, and in a direction transverse to that of the grain to be cleaned, openings for the ingress and egress of grain, suction or exhaust fan, inverted hoppers above said screen, and a conveyer, all substantially as and for the purpose set forth.

209,177.



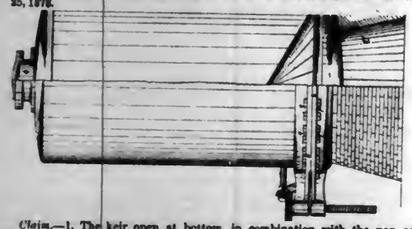
209,178. Reflectors for Candles. Montgomery C. Meigs, Washington, D. C. Filed Oct. 9, 1878.



Claim.—1. A reflector supported upon a separate metallic cap, which is placed over the end of a candle, and adapted to adjust itself thereon, substantially as and for the purposes herein set forth.

2. The combination of a metallic cap, C, with projecting pin *b* and a reflector supported thereon, the whole adapted to be used on a candle, and to adjust itself thereon, substantially as herein set forth.

209,179. Apparatus for Steaming Wood. George Miles, Grantville, Mass. Filed Sept. 25, 1878.



Claim.—1. The keir open at bottom, in combination with the pan and mechanism for moving the keir vertically on and off the pan, as described.

2. The keir open at bottom, in combination with the perforated cone or discharger, the pan and mechanism for moving the keir vertically on and off the said pan, as explained.

3. The cap and base rings, provided with arms and elevating-screws, as described, in combination with the pan and the keir arranged with such rings, as set forth.

4. The cap and base rings, provided with arms and elevating-screws, as described, in combination with the pan and keir, and with the perforated cone or discharger arranged over the said pan and on the base-ring and within the keir, all being essentially as represented.

209,180. Spring-Scales. Thomas C. Miles, New York, N. Y. Filed Mar. 2, 1878.

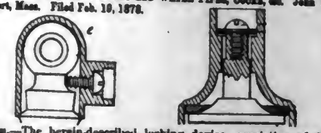
Claim.—1. The combination of an elastic split tubular pencil-holder and point protector with a weighing-scale for light articles, in which the pointer is affixed to a slotted sliding tube, into which the clip may be folded, all arranged substantially as herein set forth.

2. The combination of the elastic split tube A, constructed to form a holder and protector for the point of an ordinary pencil, the tube C, slitted and graduated as shown, the tube D, provided with a pointer, *e*, to play in the slot *c*, and slotted as shown, the clip F, hung to the tube D, and arranged to fold into the hollow of the same out of the way, and the spring E, inclosed in the inner tube, all substantially as set forth.

209,180.

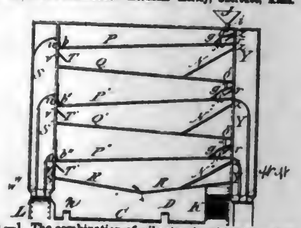


209,181. Locking Devices for Gas and Water Pipes, Cocks, &c. John Miller, Cambridgeport, Mass. Filed Feb. 19, 1878.



Claim.—The herein-described locking device, consisting of the movable hood or cap *c* and set-screw *g*, with or without the seal, and its sealing-ledge, as and for the purpose set forth.

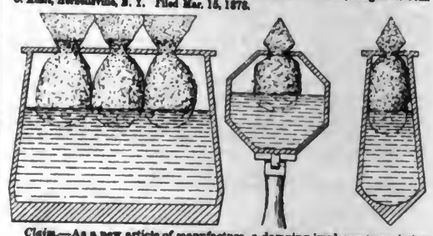
209,182. Middlings-Separators. Abraham Morley, Oberlee, Kans. Filed Jan. 29, 1878.



Claim.—1. The combination of vibrator A, with the series of air-passages S S′ S″, provided with gates W at their lower ends, and gates or orifices *u u′* and orifices V V′ V″ at their upper ends, with the blast-fan L, exhaust-chambers Y Y Y, and exhaust or suction fan K, substantially as herein shown and described.

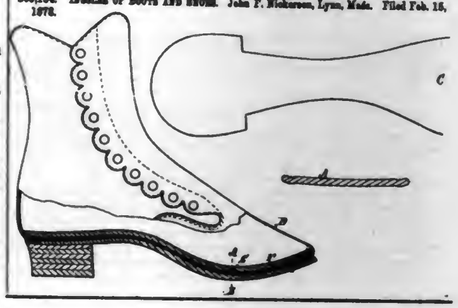
2. The combination of vibrator A with conveying-boards P P′ P″, stationary dusting-boards *g g′ g″*, receiving-boards M M′ M″, middlings-pipes O O′ O″, returning-boards Q Q′, chute-boards T T′ T″, adjustable dusting-boards N N′ N″, delivery-boards R R, dust-passages *s* and *r r r*, substantially as herein shown and described.

209,183. Paper-Damping Implements. Daniel L. Mulford, New York, assignor to John O. Adair, Hornellsville, N. Y. Filed Mar. 15, 1878.



Claim.—As a new article of manufacture, a damping implement consisting of a compressible water-reservoir supplied with a rubber, which is composed of sponge or similar absorbent material, so attached to said reservoir as to communicate therewith through two or more openings therein, and thus be evenly surcharged with water throughout its extended surface, substantially as described.

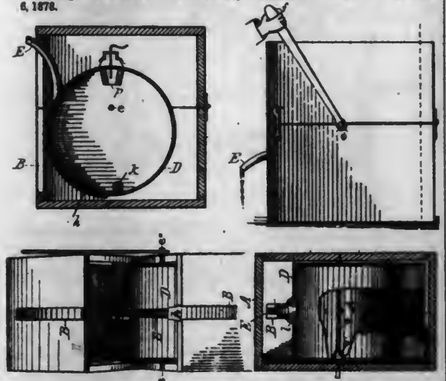
209,184. Insoles of Boots and Shoes. John F. Nickerson, Lynn, Mass. Filed Feb. 15, 1878.



Claim.—1. An insole composed of a sheet of metal and two layers of leather or other suitable material, arranged as set forth, and having the upper of said layers grooved or creased on its upper surface and rounded on its edge, as specified.

2. The combination of one or more re-enforce metallic plates, F, arranged in the heel of the insole, with the metallic plate C and the two layers A B, arranged and composing such insole, substantially as specified.

209,185. Cans for Fluids. Charles E. Nye, Baltimore, Md., assignor to himself and, by mesne assignment, to Monroe L. Ross and Henry P. Hildreth, New York, N. Y. Filed June 6, 1878.



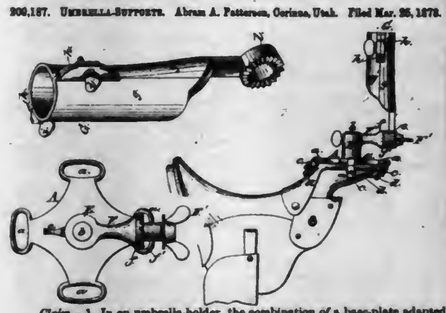
Claim.—1. The cylindrical can D, having the transverse shaft *a* passing through the flat sides, and the spout E, having its lower part, *b*, extending about one-fourth the way around the can, in combination with the case A, in two parts, hinged together, and provided with bearings for the shaft, and the vertical slot B, as set forth.

2. The cylindrical tilting can D, provided with a spout, and on the inner side with the conical tube *p*, secured by its larger end just below the filling-orifice, as shown and described.

209,186. Compositions for Removing Incrustations from Steam-Boilers. Francis J. Obert, Jr., Reading, Pa. Filed Dec. 24, 1877.

Claim.—The compound herein described for removing and preventing incrustation in boilers, consisting of borax, slippery-elm bark, extract of hemlock-bark, or equivalent astringent, aqua-ammonia, and saccharine material, in about the proportion and substantially as set forth.

209,187. Umbrella-Supports. Abram A. Patterson, Corinne, Utah. Filed Mar. 25, 1878.



Claim.—1. In an umbrella-holder, the combination of a base-plate adapted to be attached to the pommel of a saddle or seat of a vehicle, and having an upward-extending pivot-pin, an adjustable swiveling socket fitting upon said pin, and having a laterally-projecting shouldered arm, the end of which is screw-threaded, and a handle-clamp arranged at an angle to said arm, and provided with a collar fitting thereupon, and adapted to be secured in position against the shoulder thereof by a thumb-nut, which engages with the screw-threaded portion of said arm, substantially as and for the purpose set forth.

2. The combination, with the base A, having the strap-eyes *a* and pivot-pin *b*, of the screw-headed swiveling arm F, having the adjustable socket E and serrated shoulder *f*, the clamp-socket G, having the serrated collar *l*, and the thumb-nut F′, substantially as and for the purpose set forth.

209,188. Lanterns. Archibald W. Pratt, Wheeling, W. Va. Filed Oct. 4, 1878.

Claim.—1. In an illuminating apparatus, the combination, with the flame-chamber, of an air conduit or passage, connected with said chamber at top, and adapted to discharge air from this chamber at a point in the region of the base thereof and exterior thereto, for the purpose of counterbalancing the air-currents, substantially as explained.

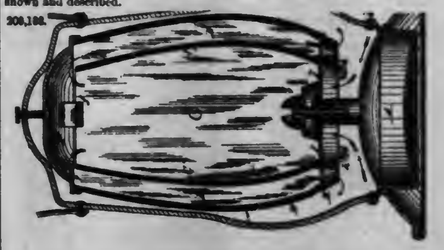
2. In an illuminating apparatus, the combination, with the flame-chamber, of an air conduit or passage, connected with said chamber at or near the top by means of a dome, said conduit discharging air at a point in the region of the base of the flame-chamber and exterior thereto, substantially as and for the purposes set forth.

3. In an illuminating apparatus, the combination, with the flame-chamber, of an exterior globe or chimney, the two being connected at top and forming an air passage, through which air from the flame-chamber may be conducted downwardly and discharged at a point outside of said chamber, but near the base thereof, substantially as shown and described.

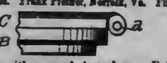
4. In an illuminating apparatus, the combination, with the two globes forming an air-space between them, of the connected supporting-rings, the removable dome affording a support at the top, and the hinged band with its binding-screw, substantially as shown and described.

5. In combination with the dome adapted to cover the two globes and to unite the inner one with the outer one, the strap *f*, fitting in the mouth of the inner globe and adapted to maintain it in proper position, substantially as shown and described.

209,189.

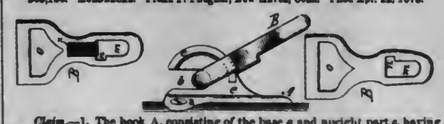


209,189. Oyster-Packages. Frank Pfeiffer, Norfolk, Va. Filed Oct. 11, 1878.



Claim.—In combination with a vessel, A, and cover B, having wooden cross-bar C secured thereto, the metal bar or strap D, fastened to and extending the entire length of the cross-bar, and provided with the eyes *d* at its ends, the bail F, provided at the ends with right-angle crank-arms *f*, which are securely pivoted at their ends to the vessel, and the hooks I, pivoted in the angles at the junctions of the bail and crank-arms for engaging with the eyes *d*, substantially as and for the purposes herein set forth.

209,190. Holdbacks. Frank F. Pfaghar, New Haven, Conn. Filed Apr. 22, 1878.

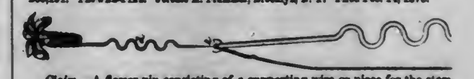


Claim.—1. The hook A, consisting of the base *a* and upright part *c*, having slot *b*, and curved flange *c*, in combination with piece B, having loop *o*, slot *m*, its lateral enlargement *n*, and rubber *x*, as shown and set forth.

2. In a holdback, the hook A, consisting of the base *a* and upright part *c*, having slot *b*, and curved flange *c*, as set forth.

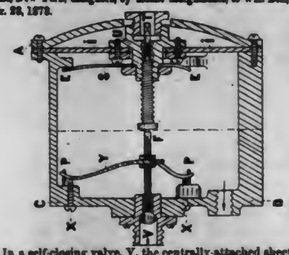
3. In a holdback, the piece B, having loop *o*, slot *m*, its lateral enlargement *n*, and rubber *x*, as set forth.

209,191. Flower-Pins. Jerome H. Plummer, Brooklyn, N. Y. Filed Feb. 14, 1878.



Claim.—A flower-pin consisting of a supporting wire or piece for the stem of the flower, and a flexible binding wire or piece attached to the supporting wire or piece, substantially as specified.

209,192. Pressure-Regulators or Governors. Robert M. Potter, Jersey City, N. J., and William M. House, New York, assignors, by mesne assignments, to Wm. Bell, New York, N. Y. Filed Mar. 28, 1878.



Claim.—1. In a self-closing valve, V, the centrally-attached sheet-spring Y, guided by pins P, and rendered adjustable by the set-screws X in the extended valve-seat C D at the spring's extremities, substantially as and for the purpose set forth.

2. The combination of the flexible disk or diaphragm I, having centrally-attached threaded cap U, with the therein-adjustable spindle F, substantially as and for the purpose described.

3. In a pressure-regulator or governor, the combination of a self-closing valve with the adjustable spindle F, diaphragm I, and spring S, all acting upon each other, substantially as shown and described.

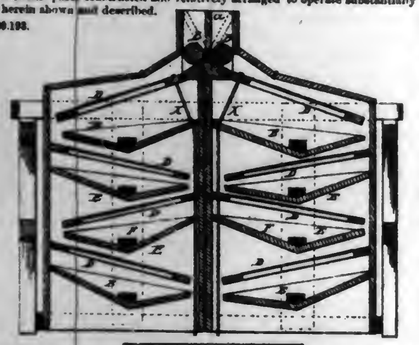
209,193. Flour-Bolts. Casper T. Richey, Hastings, assignor to Oscar S. Holley and Loyal E. Knappen, same place, and Wm. J. Stuart, Grand Rapids, Mich., one-fourth to each. Filed Mar. 7, 1878.

Brief.—Double adjustable flour-bolt, the two parts of which may act together or independently upon the same or different products, for economizing the cost, power, and space required for several distinct machines.

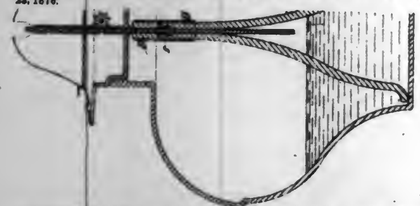
Claim.—1. In a flour-bolting machine, the combination, with the suspended flour-chests C C, hinged together and provided with suitable bolting mechanism, of the shaft S, provided with the adjustable eccentrics H H, or their equivalents, substantially as and for the purpose specified.

2. In a flour-bolting machine, the combination of the suspended flour-chests C C, hinged together, and each provided with a series of sieves, D, intermediate chutes E, and side conductor, F, the stationary frame G, having a hopper provided with feed-rolls B B, and communicating with said flour-chests, and the shaft S, provided with the adjustable eccentrics or their equivalents, the several parts constructed and relatively arranged to operate substantially as herein shown and described.

209,193.

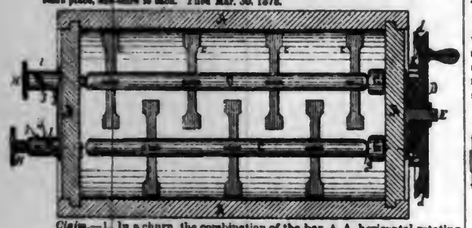


209,194. Lamp-Wick Attachments. Adolf Schreiber, Brooklyn, E. D., N. Y. Filed Mar. 23, 1878.



Claim.—The auxiliary wick-holder consisting of a tube, D, provided with spurs S to secure the wick, constructed substantially as described.

209,195. Churns. William Beachrist, Erie, Pa., assignor to J. C. Mack and M. Durner, same place, each third to each. Filed Mar. 30, 1878.



Claim.—1. In a churn, the combination of the box A A, horizontal rotating dashers C C, with chucks G, and the sleeve I, with slot J, pin H, with lug *j*, and mechanism for rotating said dashers, substantially as herein set forth.

2. In combination with the removable shaft C, the chuck G and sleeve I, with slot J, and pin H, with lug *j*, said parts being arranged as and for the purposes set forth.

209,196. Sand-Boxes for Street-Cars. J. Elliott Shaw, Norristown, Pa. Filed Jan. 17, 1878.



Claim.—In combination with the sand-box A, provided with the curved tubes C and C', the rod or chain D, treadle-lever E, slotted plate b, foot-rest e, spring F, and bracket G, all operating substantially as and for the purpose shown and described.

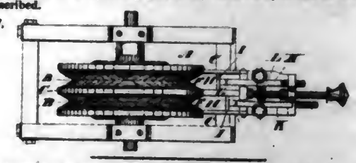
209,197. Wood-Grinding Machines for Paper-Pulp. Whitcup D. Shaw, Ashland, N. H., and H. E. Shaw, Bedford, Quebec, Canada. Filed Sept. 21, 1878.

Claim.—1. The wheel A, having grooves B, substantially as and for the purposes described.

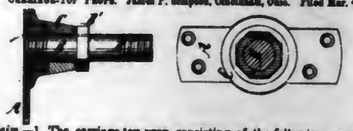
2. The wheel A, having grooves B, with bands C, substantially as and for the purposes set forth.

3. The combination of the boxes H, presser-plates I, racks K, and worm-wheel L with the wheel A, having grooves B, substantially as and for the purposes described.

209,197.



209,198. Carriage-Top Props. James P. Simpson, Cincinnati, Ohio. Filed Mar. 4, 1878.

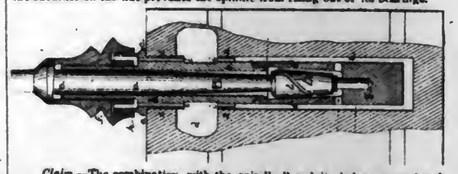


Claim.—1. The carriage-top prop, consisting of the following members: a base-plate, A, provided with an angular neck, A', having a threaded central hole, a hollow sleeve or thimble adapted to fit closely over the angular neck, and a rod or prop, B, having threaded ends and a central collar, said prop being inserted, as shown, so that its collar bears upon and holds the sleeve.

2. In a carriage-top prop, the combination of a base provided with angular boss and threaded hole therein, the broad sleeve or washer adapted to fit closely around the angular neck and bear upon the top sheet or cover, and the prop B, having its inner end screwed into the base, its middle provided with a collar bearing on the sleeve, and its outer end threaded and adapted to receive the stay or brace.

209,199. Spinning-Spindles. James C. Stanley, New Hartford, Conn. Filed June 24, 1878.

Brief.—Near the lower end of the spindle is placed a conical nut, in which a spiral groove is cut. The spiral groove assists in the elevation of the oil, and the shoulder on the nut prevents the spindle from rising out of its bearings.



Claim.—The combination, with the spindle B and its bolster or casing *b*, of the conical spirally-grooved nut D, the several parts arranged substantially as and for the purposes set forth.

209,200. Fog and Alarm Whistles. John H. Tarr, Fairhaven, Mass. Filed Sept. 23, 1878.

Brief.—A piston operated by hand reciprocates within an air-cylinder, which is provided with cylinder-heads having screw-threaded tubular extensions, to either of which a whistle may be attached, which is thus sounded by a pushing or by a pulling power, as the operator may choose. A pair of flanged rings screwed on the air-cylinder are the means of attaching the alarm to any suitable place.



Claim.—1. In a fog-alarm, the air-cylinder A, constructed substantially as described, provided with the piston B, piston-rod *b'*, and handle *h*, in combination with the whistle C, constructed as described, attached to the end of the cylinder and in the longitudinal plane of the piston-rod, substantially as and for the purpose set forth.

2. The cylinder A, provided at each of its ends with an air inlet and outlet, and with means whereby an alarm-whistle proper may be applied at will at either end, in combination with a piston which operates to sound an alarm either by a pushing stroke or by a pulling stroke, substantially as described.

3. In a fog and alarm whistle, the threaded bolt-rings *e*, in combination with the threaded cylinder A, substantially as and for the purpose described.

4. In a fog and alarm whistle, an air-cylinder, A, provided at both ends with mechanism whereby the whistle proper, C, when sounded either by a pushing power or by a pulling power, shall have its air-blast and sound projected in a direction away from the operator, substantially as described.

5. In a fog and alarm whistle, in combination with an air-cylinder, A, having an air-opening in each of its ends and a screw-thread at each end, a whistle proper, C, at one of its ends, a piston, B, having its stem *b'* extending through a rear cylinder-head, and provided with a handle, *h*, and a threaded bolt-ring, *r*, at each end of said cylinder, whereby the said fog and alarm whistle can be retained fixedly in an applied position during the act of sounding a signal by manual power applied directly to the handle *h*, substantially as described.

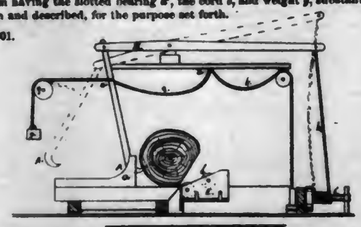
209,201. Log-Turners. James A. Tripp and E. M. Bolles, Union Centre, N. Y. Filed May 1, 1878.

Brief.—The log is turned by means of hinged roller-blocks, provided with a connecting-rod for their simultaneous adjustment, and anti-friction rollers, in connection with a suspended hook and lever connected with and operated by friction-rollers driven by the saw-shaft, in such manner that the hook shall engage with the log on the side bearing against the knee of the head-block.

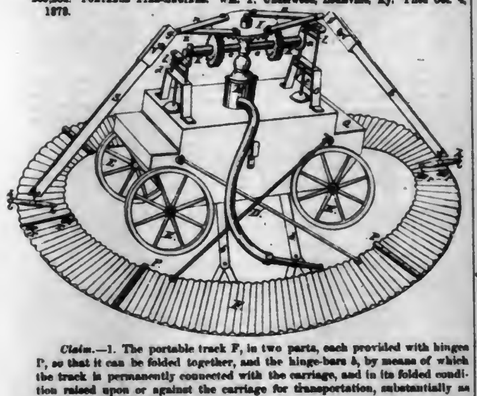
Claim.—1. In combination with the roller-blocks E, the anti-friction rollers *b* and connection-rod F, as herein described.

2. The combination of the hinged blocks E E, carrying the anti-friction rollers *b b*, and the connection-rod F, with the pivoted lever E, provided at its outer end with the hook A, the rope A, friction-rollers D D, lever C, carrying an arm having the slotted bearing *d'*, the cord *e*, and weight *g*, substantially as shown and described, for the purpose set forth.

209,201.



209,202. Portable Fire-Engines. Wm. T. Underwood, Louisville, Ky. Filed Oct. 4, 1878.



Claim.—1. The portable truck F, in two parts, each provided with hinges P, so that it can be folded together, and the hinge-bars *b*, by means of which the truck is permanently connected with the carriage, and in its folded condition raised upon or against the carriage for transportation, substantially as shown and described.

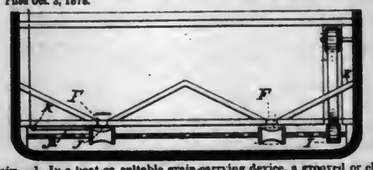
2. The combination of the levers *a*, the horizontal cog-wheel I, the two vertical cog-wheels *j*, having sleeves *k*, cranks Z, pins *d*, and the frames *a l f*, and the shaft *c*, as mechanical means adapted to transmit the power from the animals to the piston-rods *t*, substantially as described and set forth.

209,203. Manufacture of Artificial Tallow. Miguel de la Vega, New York, N. Y., assignor of one-half his right to Santiago Lima, same place. Filed Dec. 16, 1877.

Brief.—As a cheap substitute for tallow in various industrial manufactures, excepting food.

Claim.—The above-described artificial tallow, composed of castor-oil, solid animal fat, and other vegetable oil, and wheat-flour, in the proportions specified, substantially as described.

209,204. Machine for Unloading Grain from Vessels. Chandler J. Wells, Buffalo, N. Y. Filed Oct. 3, 1878.



Claim.—1. In a boat or suitable grain-carrying device, a grooved or channeled floor having openings F and sides sufficiently inclined for the grain to pass down, in combination with the conveyer, substantially as specified, to receive the grain and carry it therefrom.

2. The combination of a grooved or channeled floor, having openings F, with a shut-off, J, operated by means substantially as specified, and a conveyer, substantially as specified.

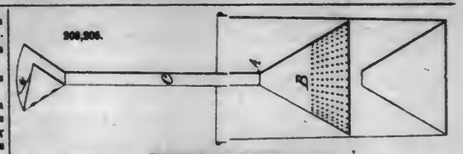
3. A grooved or channeled floor, having openings F, substantially as described, in combination with a protecting-plate, C, for the purposes set forth.

209,205. Egg-Beaters. William H. Wiester, San Francisco, Cal. Filed July 11, 1878.

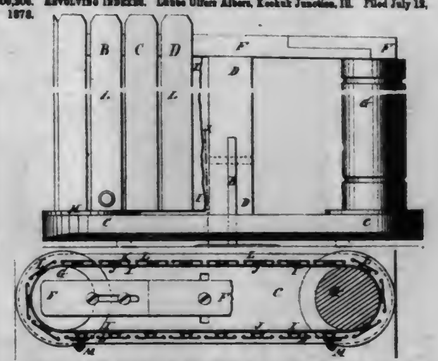
Brief.—The upper half of the conical plunger retains the air inclosed until pressure of the cone beneath forces the air to escape downward and out through the holes.

Claim.—In a device or apparatus for aerating and mixing substances, the combination, with the open-top vessel A, of the inverted funnel-shaped or hollow conical plunger B, having perforations around its lower edge, and extending nearly half-way from the bottom to the top thereof, and provided with a tubular handle, C, and valve *c* at its upper end, substantially as and for the purpose set forth.

209,206.

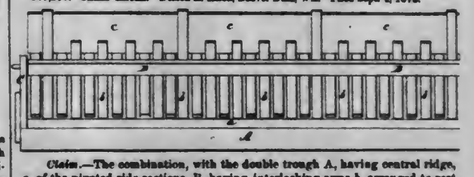


209,206. Revolving Indexes. Lebbe Ulfers Albers, Keokuk Junction, Ill. Filed July 12, 1878.



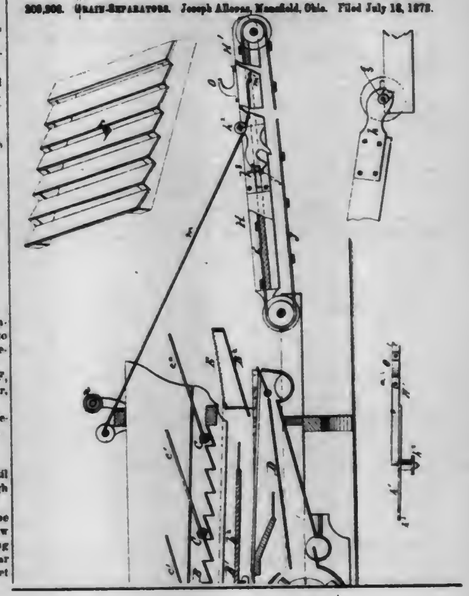
Claim.—The combination of the standard B with the pivoted frame C D F, mounted thereon, the drums G, endless belt I, and the index-plates L, substantially as and for the purpose specified.

209,207. Sheep-Racks. Nelson E. Allen, Beaver Dam, Wis. Filed Sept. 4, 1878.



Claim.—The combination, with the double trough A, having central ridge, *a*, of the pivoted side sections, B, having interlocking arms *b*, arranged to rest upon the ridge *a*, and imperforate pieces *c*, arranged to operate both as screens for the sheep and as doors to exclude access to the trough, substantially as shown and described.

209,208. Grain-Separators. Joseph Allocca, Mansfield, Ohio. Filed July 18, 1878.



Claim.—1. The combination, with the straw-carrier, of the reversely-vibrating lower shaker, H', provided with the removable tail-extension screen or separator E, having the return chute-board, substantially as and for the purpose set forth.

2. The outer section, H', of the stacker, provided with the forked or notched side bars or plates, h^1, having the perforated lugs or ears h^2, adapting it to be applied either directly to the stacker-shaft or to be hinged to the section H, as described.

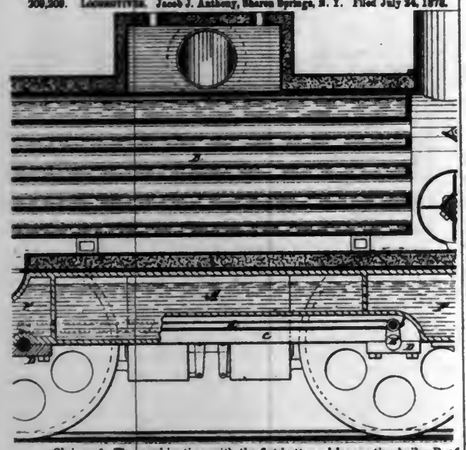
3. The jointed straw elevator or stacker, adapted to be folded against the end of and over upon the separator-frame, in combination with the windlass, cords, and hooks, for adjusting and holding said stacker, as described.

4. The jointed folding stacker, in combination with the endless stacker web or rake and the removable rod P, adapting the web or rake to be folded with the stacker, substantially as described.

5. The outer folding section, H', of the stacker, provided with the hooks O, in combination with the retaining spurs or rollers s on the main frame, for locking the stacker in its folded position, substantially as described.

6. The combination, with the folding stacker, of the cords and windlass for adjusting and holding it, and the retaining-hooks O and friction-rollers s, for locking the stacker in its folded position, substantially as described.

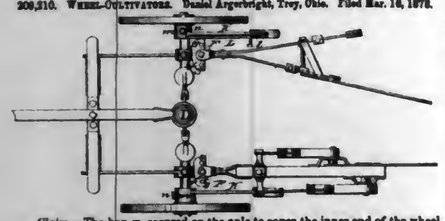
209,209. Locomotives. Jacob J. Anthony, Sharon Springs, N. Y. Filed July 24, 1878.



Claim.—1. The combination, with the flat-bottomed locomotive-boiler B, of the oblong rectangular water-tank A F, all constructed and arranged and the parts being connected as shown and described.

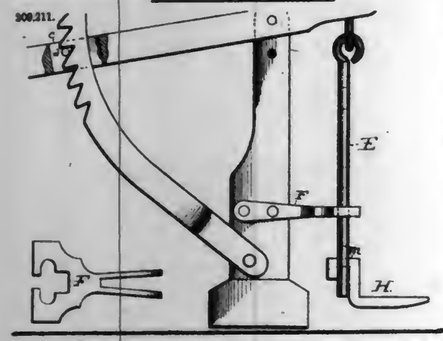
2. The water-tank A, having the journal-boxes D secured thereto for receiving the axles E, and having the recess *c*, for receiving the cranks and connecting-rods of the axles, as herein shown and described.

209,210. Wheel-Cultivators. Daniel Argwright, Troy, Ohio. Filed Mar. 16, 1878.



Claim —The box m, secured on the axle to cover the inner end of the wheel-hub, and provided with drag K and arm L, substantially as set forth.

209,211.



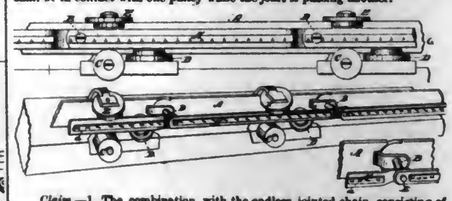
209,211. Lifting-Jacks. Cyrus F. Astro, Saltillo, Ohio. Filed Sept. 30, 1878.

Claim.—1. The combination, with a lifting-jack, of a lifting-bar, E, having a series of slots, *i*, and an adjustable foot-piece, H, suitably connected with the jack.

2. The combination, with a jack of the construction substantially as described, of the slotted lifting-bar, connected at its upper end to the forward end of the operating-lever by means of the link-connection, and guided in its vertical movement by the guide F, and of the adjustable foot-piece H, as described.

209,212. Machines for Stretching and Drying Cloth. Darius Babcock, Oswego, N. Y., assignor of one-half his right to Alanson S. Page, same place. Filed July 27, 1878.

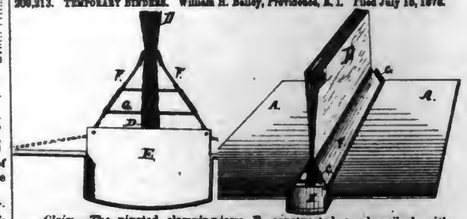
Brief.—The links of the chain are composed of parallel bars—one wider than the other—connected by shouldered rivets. The tenter-hooks are on the narrow bars, the lower edges of which rest on fixed pulleys. The sides of the wider ones rest against and are guided by horizontal flanged pulleys, one of which is placed in advance of the other, so that the solid part of a wide link shall be in contact with one pulley while the joint is passing another.



Claim.—1. The combination, with the endless jointed chain, consisting of the wide links or bars A and the narrow links or bars A', provided with tenter-hooks *a*, the two being connected by the shouldered rivets B, and having the offset-joints, constructed as described, of the flanged pulleys D E, the guide-pin F, and the pulleys C, as and for the purposes set forth.

2. The combination, with the toothed endless chain, consisting of the narrow bar or link A' and the wide bar or link A, the two connected by the shouldered rivets B, of the flanged guide-pulleys D E, the axis or center of one of which is in advance of that of the other, as and for the purpose set forth.

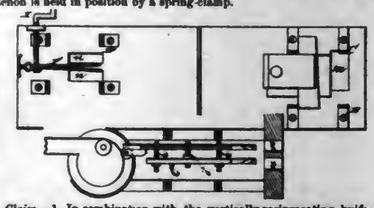
209,213. Temporary Binders. William H. Bailey, Providence, R. I. Filed July 15, 1878.



Claim.—The pivoted clamping-jaws F, constructed, as described, with springs G, covers A, having rods C, and leaves D, secured by and movable upon said rods, as and for the purposes set forth.

209,214. Spoke-Tenoners. Peter Barringer, Fayetteville, Ark. Filed Sept. 7, 1878.

Brief.—Spoke-tenons are trimmed by a reciprocating knife, to which an auxiliary knife is adjustably attached. While operated upon by the knives the tenon is held in position by a spring-clamp.

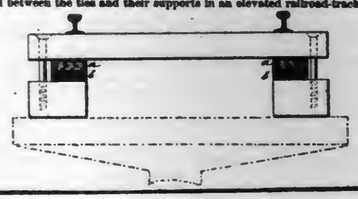


Claim.—1. In combination with the vertically-reciprocating knife C^1, the auxiliary knife C^2, adjustably connected thereto by screws A b, the central screw having inside collar, *i*, substantially as herein set forth.

2. The spring-clamp F, with operating-screw I, in combination with the double knife C^1 C^2, for the purpose herein set forth.

209,215. Insulating Railroad-Tracks. Louis Bastet, Brooklyn, N. Y. Filed Aug. 3, 1878.

Brief.—A combined insulator, consisting of a stone slab and a layer of felt, is placed between the ties and their supports in an elevated railroad-track.



Claim.—1. A sound-deadener between the ties and girders of railroads, formed of an upper stone layer, *a*, and a subjacent felt layer, *b*, as shown and described.

2. The combination of an insulator composed of stone and felt with the ties and tie-supports of a railway, substantially as herein shown and described.

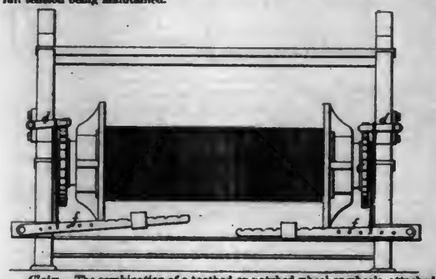
209,216. Fellies for Vehicle-Wheels. Alfred Beck and Thomas Warwick, Birmingham, England. Filed Mar. 16, 1878.



Claim.—A concavo-convex felly with a flange or projection, which serves as a point of attachment for the spokes, and also as a brace for the wall of the felly.

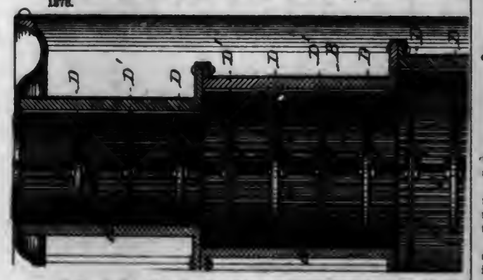
209,217. Let-Off Mechanisms for Looms. Jules Belleard, Macon, France. Filed Mar. 7, 1877. Patented in England, Nov. 6, 1874.

Brief.—For maintaining a uniform tension upon the warps. At each end of the warp-beam is a notched wheel, with the teeth of which the end of a weighted pawl engages, and by the friction thus caused the rotation of the beam is retarded. The teeth at the opposite ends of the beam are arranged alternately with regard to each other, so that when one pawl is raised to the top of one tooth the other pawl is only raised half-way up another tooth, the full tension being maintained.



Claim.—The combination of a toothed or notched wheel or wheels, attached to or forming part of the ends of the yarn-beam of a loom, with a pawl or pawls, *d*, adapted to the teeth or notches of said wheels, and connected to weighted levers on the lower part of the frame, whereby the tension on the warp is due to the frictional contact of the pawls on the said wheels, all substantially as described.

209,218. Steam-Boiler Furnaces. John W. Bookwalter, Springfield, Ohio. Filed June 8, 1878.



Claim.—1. The solid disks D and open disks D', suspended within the fire-chamber of a steam-boiler, and alternating with each other, as and for the purpose specified.

2. The combination, with a steam-boiler having a central fire-chamber decreasing in successive steps from below upward in diameter, of a bridge spanning the top of said chamber, a screw-threaded rod depending from said bridge, and diffuser-plates adjusted on said rod and alternately solid and open, the open plates being of greater diameter than the solid ones and extending out to the walls of said chamber, substantially as specified.

3. A steam-boiler having diffuser-plates alternately solid and open suspended in its fire-chamber, the open plates being of greater diameter than the solid ones, and extending completely across the said chamber, whereby the products of combustion are directed upward in a zigzag course and caused to impinge against the walls of the said chamber, substantially as specified.

209,219. Turbine Water-Wheels. John W. Bookwalter, Springfield, Ohio. Filed June 9, 1878.

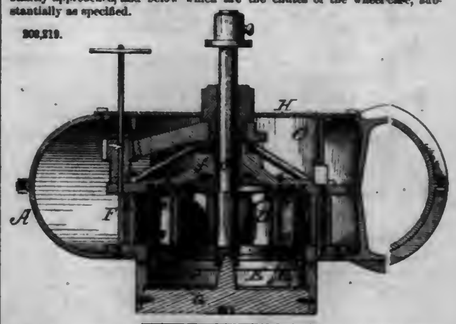
Claim.—1. The wheel D, having its upper and lower plates externally and concentrically grooved and ribbed, substantially as specified.

2. The combination, with the wheel D, having its upper and lower plates grooved and ribbed, as shown at *e*, of the crown-plate *f* and ledge-ring G, respectively above and below said wheel, having corresponding annular ribs and grooves *e'*, to engage with the annular grooves and ribs of the wheel, forming baffle-joints, substantially as specified.

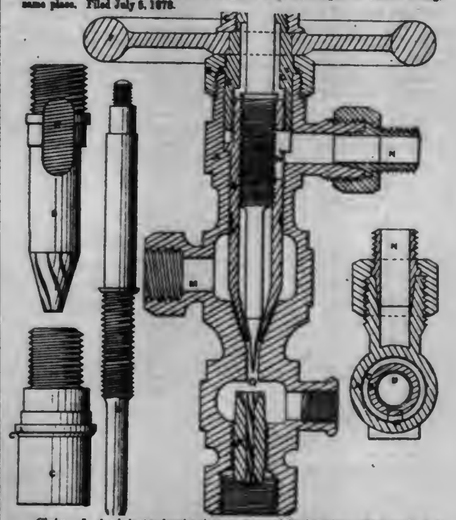
3. The combination, with the metallic scroll-case A and the wheel-case F, of the cap-plate H, attached to the scroll-case, and having the directing-cylinder C, extending downward therefrom and attached to the crown-plate of the wheel-case, substantially as specified.

4. A metallic scroll-case having within it and depending from its cap-plate a rigid directing-cylinder, C, toward which the spiral wall of the scroll constantly approaches, and below which are the chutes of the wheel-case, substantially as specified.

209,219.



209,220. Injectors. Joseph E. Best, Nottingham, England, assignor to Charles Gilling, same place. Filed July 5, 1878.



Claim.—1. An injector having one or more of its interior surfaces adapted to guide water or steam spirally as it passes through said injector, substantially as described.

2. An injector having a steam-delivery nozzle provided internally with means for giving a spiral direction to steam passing therethrough, and externally with means for guiding in a spiral direction the water flowing through the outer shell or casing of said injector, substantially as set forth.

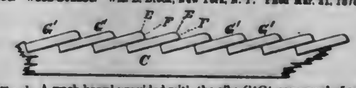
3. The combination, with the shell or casing A, having water-inlet M and steam-inlet N, of the longitudinally-adjustable nozzle B, having lateral opening N', and provided with means for preventing its rotation, and the longitudinally-adjustable spindle D, having an enlarged portion, serving as a ping for the lateral opening of the nozzle, substantially as described.

4. In an ejector, the combination of the casing A, having inward projection P, slotted adjustable nozzle B, screw-cap C, and its operating-wheel, substantially as described, whereby the nozzle may be adjusted in either direction without altering the length of the injector shell or casing.

5. The combination of the injector shell or casing A, having the steam-inlet N and a suitable water-inlet, with the longitudinally-adjustable nozzle B, having the lateral opening N', and provided with means to prevent its rotation, substantially as described.

6. An injector having an internally spiral threaded or grooved delivery-nipple, K, substantially as described.

209,221. Wash-Boards. Wm. E. Brock, New York, N. Y. Filed Mar. 21, 1878.



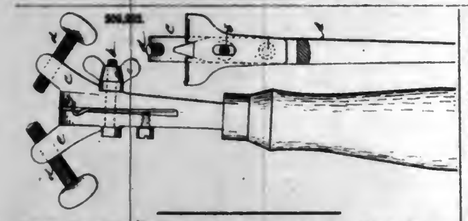
Claim.—1. A wash-board provided with the ribs G' G', composed of narrow strips of glass.

2. A wash-board provided with the ribs G' G', composed of narrow strips of glass ground upon the upper edges, E, and upper faces, F, cemented to and supported by a grooved board backing, C, substantially as shown and described.

209,222. Saw-Sets. Frank A. Buell, Brooklyn, E. D., N. Y. Filed Mar. 26, 1878.

Claim.—The forked shank A, having the adjusting-bolt b and arms *c*, provided with the gage-screws *d*, substantially as and for the purpose specified.

209,222.



209,223. Metal-Fourdrs' Ladle. G. F. Butterfield, Boston, Mass. Filed Dec. 29, 1877.

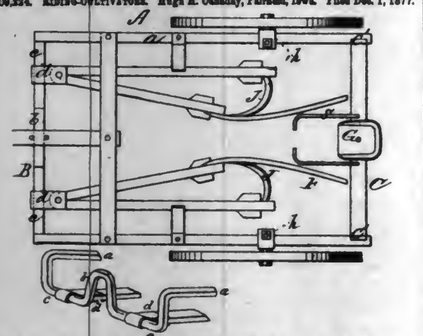


Claim.—1. A ladle having a conduit formed in the side thereof and opening into the bottom of the ladle, substantially as and for the purpose set forth.

2. A ladle having a conduit formed in the side thereof and opening into the bottom of the ladle, and provided with an overhanging cap, substantially as and for the purposes set forth.

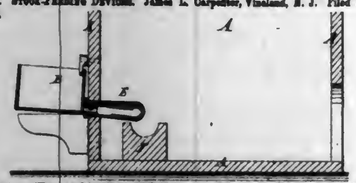
3. A cast-iron ladle provided with a spout, B, having exterior screw-threads and interchangeable snouts or nozzles G, of different sizes, attached in the manner as described, and for the purposes set forth.

209,224. Riding-Cultivator. Hugh H. Canaday, Fairfield, Iowa. Filed Dec. 1, 1877.



Claim.—In a wheel-plow, the frame A, having the horizontal side bars, *a*, extending from end to end, the front bar, B, bent downward at each side at *a'*, and horizontally at *a*, to receive the clevises *d*, thence upward at the middle to form an arch, *b*, for the tongue, the adjustable wheel-clamps *h* on said bars, the rear bar, C, having the seat G and the foot-rests J, connecting the rear ends of the plow-beams and depending therefrom in rear of the shovels, substantially as specified.

209,225. Stock-Feeding Device. Jamin L. Carpenter, Vineland, N. J. Filed June 6, 1878.



Claim.—The combination, with the pen or box A, of the receptacle B for the milk, supported upon the outside of the box, and provided with a series of nipples, E, which project through the pen to the interior thereof, together with a trough, F, arranged beneath the ends of the nipples, substantially as and for the purpose set forth.

209,226. Steam-Boiler Cleaners. Joseph Carter, Blyth, Ontario, Canada. Filed Oct. 12, 1878. Patented in Canada, Oct. 3, 1878.

Brief.—The scum and sediment are extracted from the boiler, and the water passing off with them is filtered, then heated by pipes located in the furnace and conducted into the boiler, thus keeping up a circulation of the water.

Claim.—1. The combination, with a steam-boiler, of the sediment-collector C, filterer A, and heating-pipes D D, as set forth and described.

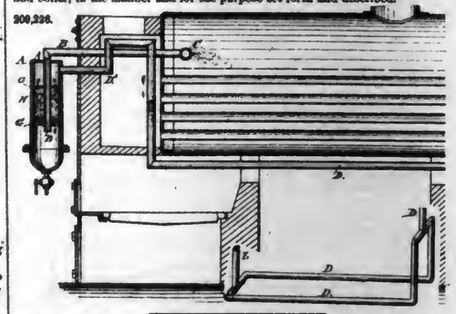
2. The combination, with a steam-boiler, of the sediment-collector, the branch pipes D' and E, with heating-pipes, and a filterer, all arranged as herein set forth and described.

3. The combination, with a steam-boiler, of a filtering apparatus provided with perforated disks G G, filtering material H, and sediment and heating pipes, arranged to operate substantially as set forth, and for the purpose indicated.

4. In a filtering and sediment collecting apparatus for steam-boilers, the perforated pipe C, conduit-pipe B, filtering-vessel A, heating-pipes D D, and their elbow-connections D' and E, all arranged and adapted to collect the sediment from boiler and filter and additionally heat the water before its induction into the boiler, substantially as set forth.

5. The method herein described of maintaining a circulation of the water in the boiler by first extracting the water through a sediment-collector, then filtering and heating by passing it through suitable pipes located in or subjected to the heat of the furnace, whereby a rapid current is kept up through the pipes and boiler, in the manner and for the purpose set forth and described.

209,226.



209,227. Furnace-Feeders. William W. Chapin, Manistee, Mich. Filed Sept. 23, 1878.

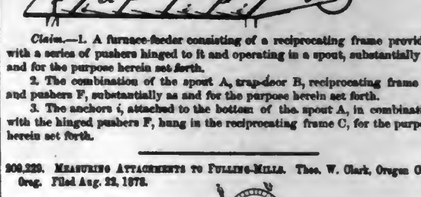
Brief.—A hinged scraper prevents the fuel from being drawn back by the pusher on its return backward.



Claim.—In a furnace-feeding device, the hinged inclined or auxiliary scraper F, in combination with the reciprocating pusher C, constructed and arranged to operate in the manner and for the purpose herein set forth.

209,228. Furnace-Feeders. William W. Chapin, Manistee, Mich. Filed Sept. 14, 1878.

Brief.—The pushers are hinged to a reciprocating frame working in a spout. The spout is provided with anchors on its bottom to prevent the draw-back of the fuel, and a hinged door at its mouth to prevent the sparks from igniting the fuel.

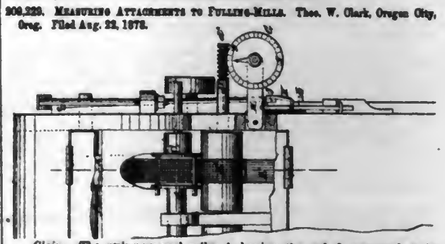


Claim.—1. A furnace-feeder consisting of a reciprocating frame provided with a series of pushers hinged to it and operating in a spout, substantially as and for the purpose herein set forth.

2. The combination of the spout A, trap-door B, reciprocating frame C, and pushers F, substantially as and for the purpose herein set forth.

3. The anchors *i*, attached to the bottom of the spout A, in combination with the hinged pushers F, hung in the reciprocating frame C, for the purpose herein set forth.

209,229. Measuring Attachments to Fulling-Mills. Theo. W. Clark, Oregon City, Oreg. Filed Aug. 22, 1878.



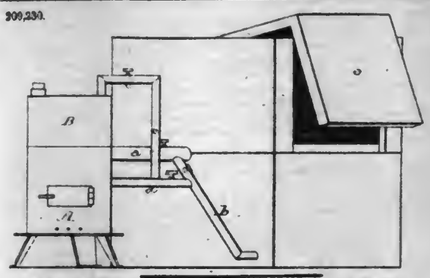
Claim.—The spring-pressed roller A, having the rod *d* connected to its sliding bearing *a*, the notched bar J, having the hook K, the weighted elbow-lever N, and the spring-catch *l*, *l*, in combination with the dial-wheel G, pivoted to the arm H, the worm *d'*, and the roller D, run by friction contact with the endless apron E, formed of the goods being fulled, substantially as and for the purpose set forth.

209,230. Feather-Renovator. James M. Clark, Newcastle, Pa. Filed July 19, 1878.

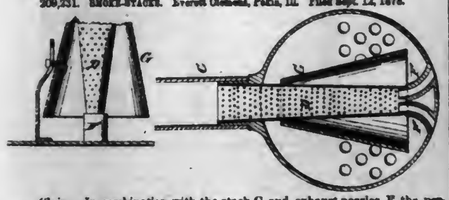
Brief.—Feathers are steamed, dried by hot air, and cooled by a blast of cold air.

Claim.—The combination of the furnace A, reservoir B, pipes *a b a d*, and the coiled pipe Z, substantially as and for the purpose set forth and described.

209,230.

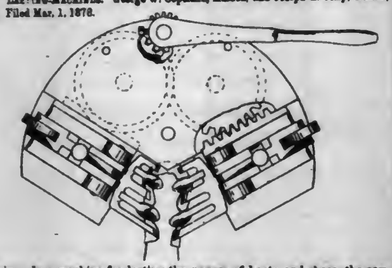


209,231. Smoke-Stacks. Everett Clemens, Pekin, Ill. Filed Sept. 12, 1878.



Claim.—In combination with the stack C and exhaust-nozzles F, the perforated pipe D and flounce G, said pipe and flounce being tapered in opposite directions, and constructed and arranged substantially as and for the purpose herein set forth.

209,232. Lasting-Machines. George W. Copeland, Malden, and Joseph E. Crisp, Boston, Mass. Filed Mar. 1, 1878.



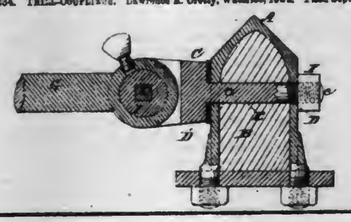
Claim.—In a machine for lasting the uppers of boots and shoes, the combination of two or more gouge-shaped knives, arranged to automatically gouge or cut V-shaped sections or scallops from the edge of an upper, with folding-plates adapted to be closed upon the insole in folding the edge of the upper during the operation of lasting, substantially as specified.

209,233. Bag-Fasteners. Edward W. Cox, Cincinnati, Ohio. Filed May 17, 1878.



Claim.—A bag-fastener consisting of the pieces *b c*, arranged one within a cavity of the other, and the outer one having the two notches *d d'* in its edge for receiving the two ends of a string, in combination with the set-screw *e*, passing through both said pieces *b c*, for clamping them together, as and for the purpose described.

209,234. Thill-Couplings. Lawrence R. Crotty, Waterloo, Iowa. Filed Sept. 3, 1878.

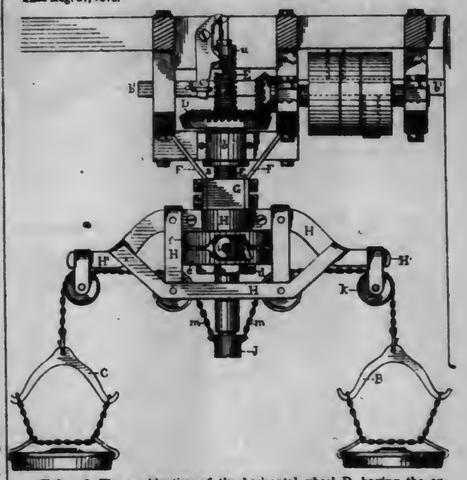


209,235. Table-Leaf Supports. William F. Daly, Peru, Ind. Filed Mar. 12, 1878.



Claim.—A table-leaf support consisting of the hinged and shouldered arm D, the slotted bridge W, and the automatic locking-slide E, having a groove in its upper edge to contain the spring F, whereby the latter is wholly concealed from view.

209,236. Cranes for Hoisting Car-Wheels, &c. William M. Davis, Baltimore, Md. Filed Aug. 27, 1878.



Claim.—1. The combination of the horizontal wheel D, having the extended hub *a*, the outside of which forms a journal, and internally is screw-threaded, the vertical screw E, step J, chains m, and the frame H, having arms H', extended in opposite directions and provided with sheaves, substantially as shown and described.

2. The combination of the horizontal wheel D, screw-threaded through the hub, box G, sustained by the hangers F, and having the depending hollow spindle *c*, through which the lower part of vertical screw E passes freely, step J, to which the chains m are attached, and the frame H, having arms H', extended in opposite directions, and provided on the extremities with sheaves, substantially as shown and described.

3. The combination of the hollow spindle *c*, stationary circular plate *e*, turn-plate *f*, adapted to revolve around the spindle, with or without the intermediate friction-rollers, and the conveyer H, secured so as to revolve with the turn-plate, and with arms extending in opposite directions, which are provided with sheaves, substantially as shown and described.

4. The screw E, adapted to have a vertical movement, and terminating in a spindle, *r*, on which is placed the step J, having the chains m attached, in combination with the sheaves secured to the extremities of the arms H' of the conveyer, which is sustained by the hollow spindle *c*, and adapted to revolve, substantially as shown and described.

5. In combination, the horizontal wheels D, internally screw-threaded screw E, adapted to have a vertical movement, and provided at its upper end with a horizontally-projecting pin, *w'*, which plays in the vertical groove *w*, as shown and described, and for the purpose specified.

6. In combination, a projecting pin fixed to the vertically-moving screw E, the shifting-lever *c'*, pivoted midway between the projecting lugs 3 and 5, the edges whereof slant toward each other, and with its lower arm connected to the sliding rod *b'* of the belt-shifter, substantially as shown and described.

209,237. Molds for Casting Gate-Weights. E. P. Davis and Walter J. Godfrey, Omaha, Nebr. Filed Aug. 6, 1878.

Brief.—Detachable end sections containing the pouring-gate for the molten metal. Uses a series of sections to mold weights of different lengths.

Claim.—1. The ends *a' b'*, detachably secured to the parts *a b* of the metal mold by lap-joints and screws, substantially as and for the purpose described.

2. The part *a* of the metal mold, provided with the detachable end *a'* and projecting lug *n*, in combination with the part *b*, provided with the detachable end *b'* and adjustable plug *k* and pin *m*, substantially as and for the purpose described.



206,236. Spinning-Tops. Auguste Demayresse, Paris, France. Filed May 22, 1878.



Claim.—1. A spinning top in which a dished body with portions cut away is combined with a pivot-pin the point of which is above the lower edge of the body, as set forth.

2. The combination of a base or stand, D, consisting wholly or in part of a reflecting-mirror, with a top the body of which has projecting arms, substantially as specified.

206,239. Clothes-Forcers. William P. Dungan, Jr., Watauga, Texas. Filed Apr. 19, 1878.



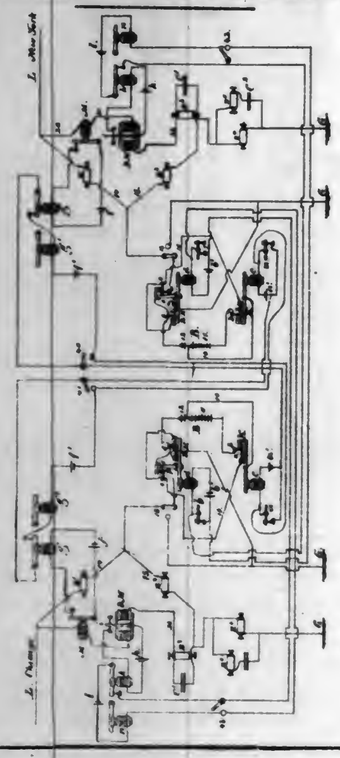
Claim.—1. The combination, in a clothes-washer consisting of an outer and a central cone, of a coil-wire spring arranged around in the space between the open ends of said cones, on a plane therewith, the ends of said spring being attached to the base ends of said cones, for the purpose stated.

2. The inner air-compressing cone, having a guide-stem extending into the handle-tube, and supported by the coil-spring attached to the open ends of the inner and outer cone, for operation, as specified.

206,240. Alloys to be Used with other Alloys. Edmund A. C. Du Plaine, Philadelphia, Pa. Filed Mar. 4, 1878.

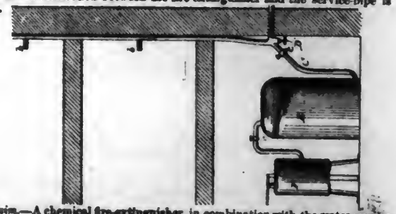
Claim.—The within-described composition for metallic alloy, consisting of one hundred parts copper, one hundred parts nickel, three parts arsenic, and three parts phosphorus, substantially as and for the purposes herein set forth.

206,241.



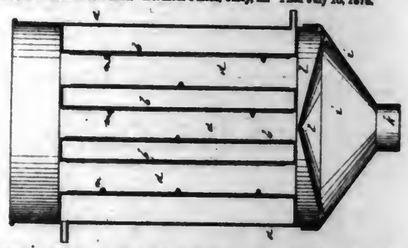
206,242. Fire-Extinguishing Apparatus. Richd. K. Evans, Washington, D. C. Filed Oct. 16, 1878.

Brief.—In case of fire, the water is cut off from the connection with the main, and the connection between the fire-extinguisher and the service-pipe is opened.



Claim.—A chemical fire-extinguisher, in combination with the water-service pipe of a building, a connection, C, and cut-off D *c*, for the purposes described.

206,243. Wheat-Heaters. Abraham Fulton, Cissy, Ill. Filed July 10, 1878.



Claim.—The combination of the cylinder *a*, having division-walls *b*, forming the flat oval flues *d*, interior braces *h*, and ribs *n*, and the bottom convex plate, *l*, in the cap *i*, adjacent to the lower ends of the flues, and of a diameter smaller than that of the cap, and the outlet *k*, substantially as and for the purposes herein set forth.

206,244. Apparatus for Preserving Beer in Kegs. William Geffroy, Jefferson City, Mo. Filed June 6, 1878.



Claim.—1. In a vented bung, the flanged collar A, having valve B, in combination with the screw-cap C, substantially as and for the purpose set forth.

2. In a vented bung, the tube D, having cap *d*, provided with the rigid internal tube E, having the elastic bag F attached thereto, in combination with the flanged collar A, provided with the valve B, substantially as and for the purpose set forth.

206,245. Pads for Horses' Feet. Michael Gallagher, Philadelphia, Pa. Filed Aug. 27, 1878.



Claim.—1. The flexible pad C, having its under or exposed surface enamelled and adapted to fit and fill the cavity in a horse's foot or hoof, substantially as set forth.

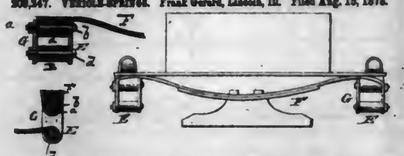
2. In combination with the leather pad C, adapted to fit and fill the cavity of a horse's foot, the strap D', sheath E, and buckle-straps F, D, and G, provided with buckles *f g*, substantially as shown and described.

206,246. Bench-Planes. Patrick Gallagher Eureka, Nev. Filed Aug. 20, 1878.

Brief.—The bit is screwed to the bed of the plane by a clamp-screw, and the lower part of it is pressed to the bed by a spring-acted hinged cover.

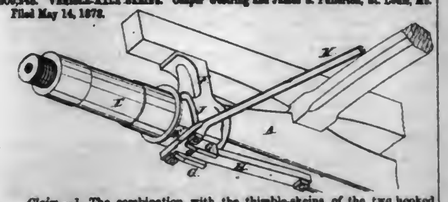
Claim.—In a bench-plane, the combination of a cutting-iron, screwed to the plane by a clamp-screw, with a hinged cap or cover, and with springs attached to a detachable cross-piece or bridge, substantially as and for the purpose specified.

206,247. Vehicle-Springs. Frank Gerard, Lincoln, Ill. Filed Aug. 15, 1878.



Claim.—The combination of the end spring, F, having a perforated block, *a*, welded to it at the end, the bolt *b*, links G G, bolt *d*, and the spring E, having its end curled around the bolt *d*, substantially as herein set forth.

206,248. Vehicle-Axle Skeins. Casper Gostring and James S. Fullerton, St. Louis, Mo. Filed May 14, 1878.



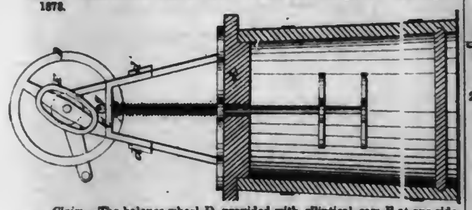
Claim.—1. The combination, with the thimble-skeins, of the two hooked lugs G and the T-headed stay-bar H, substantially as set forth.

2. The combination of the skein E with hooked lugs G and the T-formed stay-bar H of the clip J, secured to said bar and surrounding the thimble-skein.

3. The combination, with the T-formed stay-bar H, of the brace-rod K, substantially as set forth.

4. The combination of axle A, thimble-skeins E E, with hooked lugs G G, T-ended stay bar or bars H, and clips J, substantially as set forth.

206,249. Reciprocating Oturns. James E. Gibbs, Scottsborough, Ala. Filed Aug. 27, 1878.



Claim.—The balance-wheel D, provided with elliptical cam E at one side, in combination with a dasher-staff, having a friction-wheel, *g*, at the upper end, and a circumjacent retracting-spring, as and for the purpose specified.

206,250. Firemen's Ladders. Robert Gilchrist, Louisville, Ky. Filed Jan. 5, 1878.

Brief.—The ladder is vibrated by means of a lower pinion-shaft meshing with spaced cogged sectors, the ladder-sections being drawn together by a guy-rope passing over pulleys upon a four-sided bridle and over pulleys at upper end of ladder, one end of rope being secured to lower round of ladder, and the other end to a windlass located between the weighted sectors. A windlass is arranged in front and rear of the cogged sector, whereby additional means are provided for raising or lowering the ladder and securing the same in desired position. The ladder is braced laterally by ropes extending from upper end down over pulleys upon top of the vertical uprights, in which the ladder is pivoted to windlasses upon the ladder-platform.

Claim.—1. In a fireman's ladder, the combination, with the uprights B B' and the fulcrum-shaft B², of the counterbalancing spaced cogged foot-sectors C, the ladder D, secured thereto, and the shaft E, having under pinions, *f' f'*, engaging the said sectors, substantially as specified.

2. The combination, with a vibrating ladder, D, of the spaced counterbalancing foot-sectors C, and a shaft having under pinions adapted to engage said sectors, substantially as specified.

3. In combination with a swinging ladder, D, and a winding-drum at the lower part thereof, a four-sided bridle, H, secured to said ladder, and provided with the pulleys *i* and a guy-rope, I, extending from said drum around the ladder from end to end thereof, engaging the said pulleys and secured to the lowest round of the ladder, to draw the joints together and increase the rigidity of the ladder, substantially as specified.

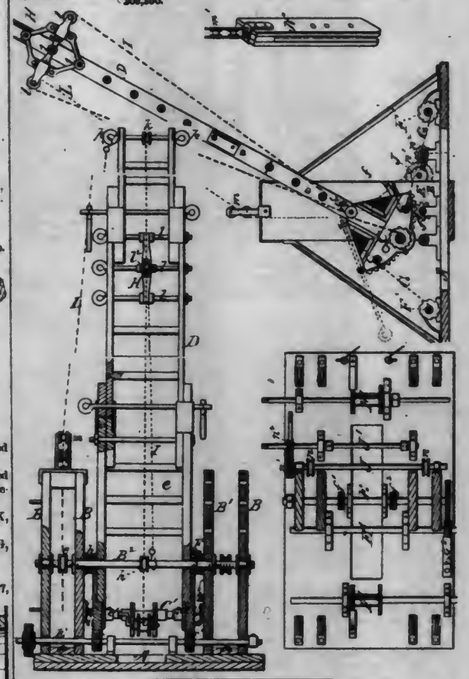
4. The combination, with a swinging ladder and its sectors C, connected by the rods O', of the windlasses F' at each end of the ladder-base, and the flexible connections G, secured at one end to the said windlass and at the other to the sector-braces, substantially as specified.

5. The combination, with a swinging ladder, of the sectors C, having hubs A, and the flexible brake-lever F, adapted to bear upon the said hub, substantially as specified.

6. In combination with a frame, its uprights, and a ladder swinging thereon, and provided with eyes at its upper end, of the rotating double block *m* at the upper end of the said uprights, the pulleys *c* between the said uprights, the winding-drum *n*, and the lateral guys L, secured to said drums, extending around the pulleys *c*, between the sheaves of blocks *m*, upward to the said eyes, substantially as specified.

7. The combination, with the spaced uprights B and B' and a swinging ladder journaled therein, of the extension N, having the double block *m'* at its upper end, and adapted to be secured to the said uprights, substantially as specified.

206,250.



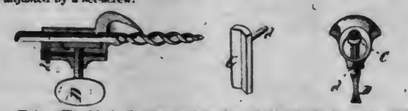
206,251. Slicing-Knife. Geo. A. Gilbert and Henry J. Gilbert, Menomonee, Wis. Filed June 20, 1878.



Claim.—The beam-clamp B, having knuckles *c* and sockets, in combination with standard A, having knuckles *a* and a bolt, *d*, said bolt fitting loosely in the knuckles *c*, substantially as shown and described.

206,252. Countersinks. William R. Gill, Meadville, Pa. Filed Apr. 23, 1878.

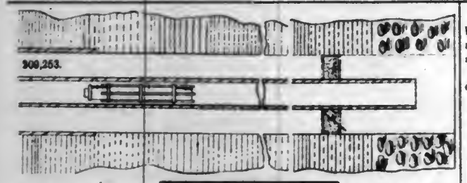
Brief.—The countersink is attached to the bit by a clamping-block having an obtuse-angled face adapting it to rest on the shank of the bit at two points, and provided with a guide-pin upon its upper part, which passes through the body of the countersink, for holding and steadying the clamping-block, which is adjusted by a set-screw.



Claim.—The block C, supported in the tubular shank by means of the guide-pin *d*, and provided with the angular clamping-face, as described, in combination with the screw D, for adjusting said block and clamping the countersink to the bit, as described.

206,253. Devices for Removing Paraffine from Oil-Wells. James D. Glass, Pleasantville, Pa., assignor to himself and Edward A. L. Roberts, Filed Oct. 10, 1878.

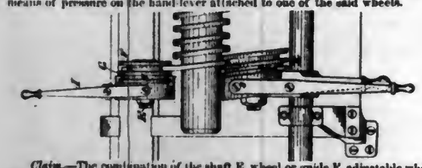
Claim.—A device or devices adapted to enter the tube of an oil-well, and provided with a cup or equivalent means, whereby it will rise and fall as actuated by the pulsation of the gas, substantially as and for the purpose specified.



209,253.

209,254. Machines for Coiling Spiral Springs. George F. Godley, Philadelphia, Pa. Filed Aug. 20, 1877.

Brief.—The end of the rod having been clamped to the mandrel, the coiling begins, the rod passing between the wheels of the traveling guide in a channel formed thereby, which is adapted to the varying size of the rod by means of pressure on the hand-lever attached to one of the said wheels.



Claim.—The combination of the shaft E, wheel or guide F, adjustable wheel G, and lever I, substantially as shown and described, said parts being constructed and arranged to form an adjustable holding and guiding clamp, for the purposes set forth.

209,255. Tripod-Heads for Surveying-Instruments. William Gurley, Troy, N. Y., assignor to W. and L. E. Gurley, same place. Filed Sept. 25, 1878.



Claim.—1. The combination of the annular concavo-convex sliding plate A, the centrally-open convex and concave segments C and D against opposite sides of the said sliding plate, and the tubular connecting device E, substantially as described.

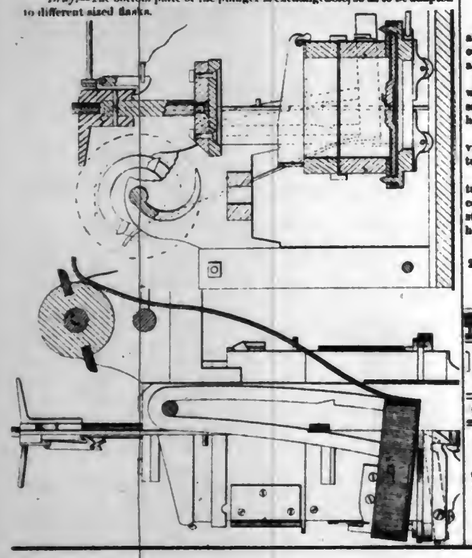
2. The combination of the connected convex and concave segments C and D, the intervening concavo-convex sliding plate, A, and the spring or springs by which the two segments and sliding plate are all pressed together, as set forth.

3. The combination of the connected convex and concave segments C and D, the intervening concavo-convex sliding plate, A, and the screw-clamp G, as described.

4. The combination of the connected convex and concave segments C and D, the intervening concavo-convex sliding plate, A, the spring or springs F, and the screw-clamp H, substantially as described.

209,256. Molding-Machines. Jos. Hackett, Louisville, Ky. Filed May 4, 1878.

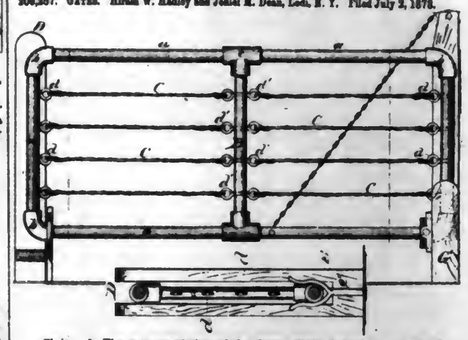
Brief.—The bottom plate of the plunger is exchangeable, so as to be adapted to different sized flasks.



Claim.—1. In a molding-machine, the combination of a suspended sifter having an actuating band-spring with the radial arms of a revolving top shaft, and with a cross check-bar to impart an oscillating motion to the sifter, substantially as described.

2. In a machine for forming sand molds, a truck on ways locked by means of pivoted and weighted pawls to hooks in the upright standards.

209,257. Gates. Hiram W. Hadley and Jabial M. Dean, Lodi, N. Y. Filed July 2, 1878.

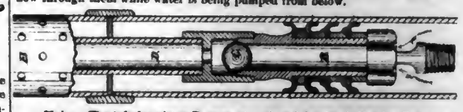


Claim.—1. The gate consisting of the frame divided by the cross-bar B, provided with the double eyes *d'*, and having the end bars provided with the single eyes *d* and the filling wire strands C, attached to said double and single eyes, substantially as described.

2. The combination of the double post D, spring-clasp E, and the pivoted gate, substantially as described.

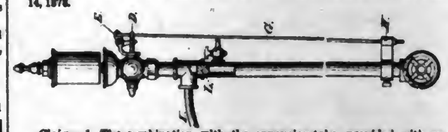
209,258. Oil-Well Pumps. Francis J. Hanna, Kane City, Pa. Filed Sept. 21, 1878.

Brief.—By means of the perforations the well may be steamed, or oil may flow through them while water is being pumped from below.



Claim.—The tubular piston B, open at each end, having ball-valve C at top, and connected by a centrally-open coupling with tubular piston-rod, in combination with pump-barrel, perforated at E, and provided with pipes F G, as and for the purpose specified.

209,259. Low-Water Indicators and Alarms. Alfred Hass, Pickwick, Pa. Filed Sept. 14, 1878.



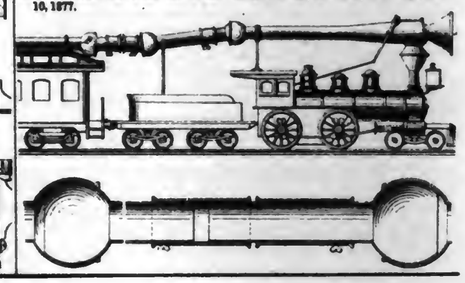
Claim.—1. The combination, with the expansion-tube, provided with an alarm valve and whistle, of the laterally-projecting valve-stem and right-angled or bell-crank lever E, pivoted or fulcrumed above said valve-stem, substantially as and for the purpose herein shown and described.

2. The combination, with the expansion-tube, having an alarm valve and whistle, of the valve-stem D, right-angled lever E, pivoted or fulcrumed above said valve-stem, and adjustable rod G, substantially as and for the purpose herein shown and described.

3. The combination, with the expansion-tube, provided with the usual alarm valve and whistle, of the plug I, secured in the upper end of said expansion-tube, substantially as and for the purpose specified.

4. In a low-water indicator and alarm, the combination of the expansion-tube, having an alarm valve and whistle, and adapted to be secured to the gage-cock of a steam-boiler, and the connecting pipe or tube I, leading from the steam-dome of a boiler to the whistle, substantially as and for the purpose herein shown and described.

209,260. Smoke and Spark Converters. Rowland P. Hill, New York, N. Y. Filed Nov. 10, 1877.

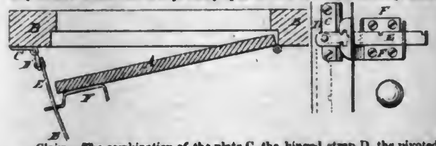


Claim.—1. In combination with a smoke-conveying pipe extending longitudinally over the top of each car, two ball-joints, attached to and forming part of such pipe, and two sliding sleeve-pipes, one attached to each of said ball-joints, all adapted and arranged to allow of the lateral and longitudinal movement of the cars, and of the ready coupling of either end of any car to either end of any other car, substantially as described.

2. My improved pipe-coupling, consisting of ball-joints B, corresponding half-screws, and locking collars, substantially as described.

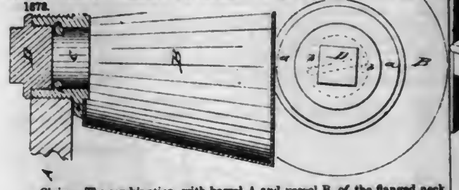
209,261. Door-Fasteners. William Hinchliff, Nashville, Tenn. Filed Aug. 20, 1878.

Brief.—The notched bar is pivoted to a strap which is hinged to the casing. The plate upon the door is provided with flanges so constructed that the bar may be used to hold the door partially open or to fasten it in a closed position.



Claim.—The combination of the plate C, the hinged strap D, the pivoted, notched, and flanged bar E, and the flanged, slotted, and notched plate F with each other, to adapt them to be applied to a door, substantially as herein shown and described.

209,262. Cooling Attachments for Barrels. Jno. Henry, Denison, Tex. Filed July 1, 1878.

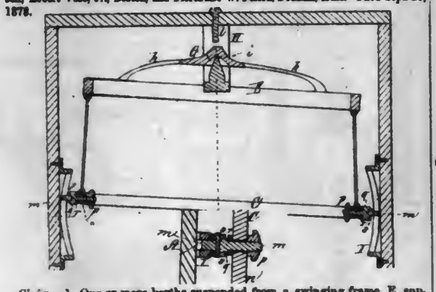


Claim.—The combination, with barrel A and vessel B, of the flanged neck C *a*, provided with interior studs, *b*, by means of which it may be screwed into barrel A from the inside, the neck C being soldered at its lower end under flange *a* to the vessel B, as shown and described.

209,263. Alloys for Coin. William W. Habbell, Philadelphia, Pa. Filed Feb. 7, 1878.

Claim.—The alloy coin metal of gold, silver, and copper, in or about the proportions of seven hundred and fifty (750) parts of gold, twelve thousand and seventy-five (12,075) parts of silver, and one thousand four hundred and twenty-five (1,425) parts of copper, substantially as described.

209,264. Self-Leveling Berths for Vessels. David Huston, Boston, assignor to himself, Robert Vose, Jr., Boston, and Florentine W. Felton, Dedham, Mass. Filed Sept. 26, 1878.



Claim.—1. One or more berths suspended from a swinging frame, E, supported upon the cone *i* of the bracket H, to allow of a movement in all directions, in combination with the screw-stop *l*, to prevent the frame from being thrown off of the point, and suitable guides for keeping the berth or berths in their proper position, substantially as and for the purpose described.

2. In combination with the frame C and guide, the pin or bolt *m*, with its head *q*, friction-rolls *s*, and nut *p*, and the spring *r*, operating substantially in the manner and for the purpose set forth.

209,265. Slate-Surfacing Machines. J. W. Hyatt, Newark, N. J. Filed June 28, 1878.

Brief.—The slab is inserted in the upper end of a vertical box by hand, and forced downward through the box between springs, and thence between the grinding-rolls. The box is supported in vertical guideways.

Claim.—1. The combination, with the grinding-rolls, of the sliding box T and the plunger, whereby the slab is supported and steadied and fed to the grinding-rolls by a positive motion, substantially as and for the purposes described.

2. The combination, with the grinding-rolls, of the spring-plates *r*, supporting the lower edge of the slab, and the feed-plunger U, bearing upon the upper edge of the slab, substantially as and for the purposes set forth.

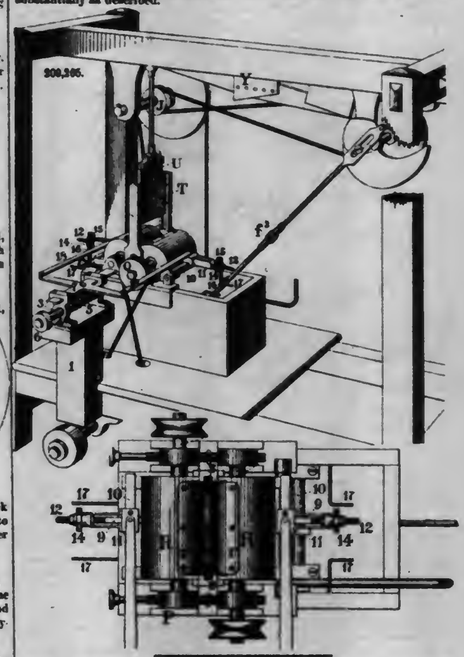
3. The combination, with the grinding-rolls, of the hood, the spring-plates for preventing the slab from falling into the rolls, the sliding box, and the plunger, substantially as described.

4. In combination with the feeding mechanism and the grinding-rolls of a slate-grinding machine, the automatic carrier for delivering the finished slab, substantially as described.

5. The combination, with the feeding-plunger, of the guides in which the plunger moves vertically, and the adjustable walking-beam for varying the feed conformably to the requirements for different lengths of slabs, substantially as described.

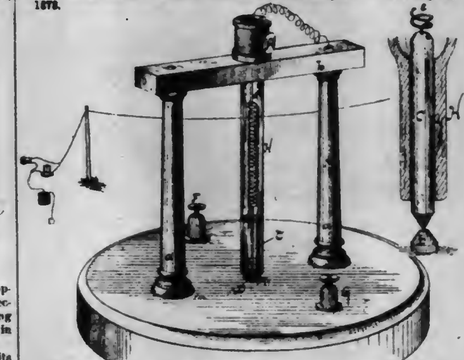
6. The combination, with a grinding-roll, of an automatic device for traversing and feeding up the truing-points, substantially as described.

7. The combination of a truing-point, a traveler, and a feeding device, substantially as described.



209,265.

209,266. Telephone-Transmitters. John H. Irwin, Philadelphia, Pa. Filed July 20, 1878.



Claim.—1. In a telephonic transmitter, the combination, at the point of variable resistance, of a pointed needle of platinum suspended by an elastic support, and an adjustable pencil of carbon.

2. An attenuated point in a battery-circuit, composed of a freely-suspended needle, the point whereof rests upon the blunt point of an opposite needle with an adjustable pressure, as set forth.

3. The pointed needle C, suspended by a wire from an adjusting-key, *f*, or its equivalents, combined with the blunt needle D, fixed to its base, and the two interposed in a battery-circuit, as set forth.

4. The pointed needle C, suspended by a coiled wire, *e*, and adjusted by a key, *f*, in combination with the fixed needle D and the supporting-frame, as set forth.

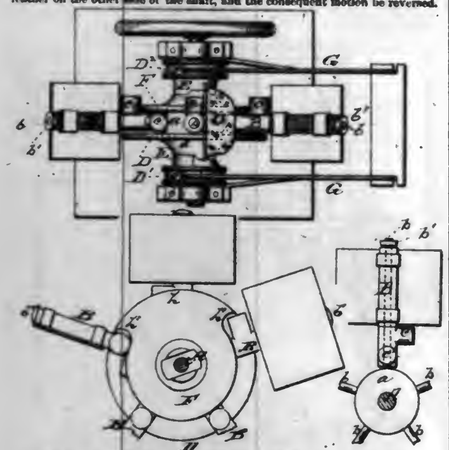
5. The needle C, its suspending-wire, adjusting-key, and fixed needle, D, combined with the supporting-frame and a protection-case, H, of any suitable material, for the purpose set forth.

6. The needle C, suspending-wire *e*, and fixed needle, D, combined with a vitreous protecting-tube, H, provided with internal guides for the needle C, as set forth.

7. A freely-suspended needle, with its end in contact with the end of an opposite needle with an adjustable pressure, combined with guides, whereby said needle is prevented from lateral oscillations, substantially as described.

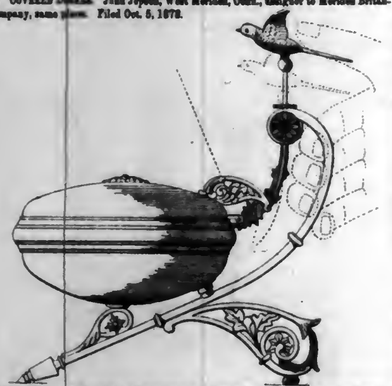
209,267. Feathering Paddle-Wheels. Samuel W. Irwin, Columbia, S. C. Filed Sept. 30, 1878.

Brief.—The shaft being rotated, as the inner spurs on the blade-bearing arms reach the end of the slot in the one disk, the paddles or blades are caused to revolve ninety degrees, thus presenting their planes perpendicular to the plane of rotation, retaining these positions till the outer spurs come in contact with the shoulders on the other disk, when the blades are turned back as at the first. By allowing the disks to make a half-revolution, the paddles will feather on the other side of the shaft, and the consequent motion be reversed.



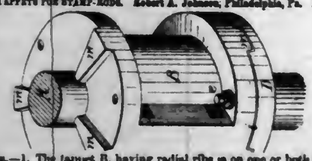
Claim.—In a propeller, the combination, with the main shaft A, having a hub, *a*, with radial arms *b*, of the blade-bearing arms B, rotating on said rods or arms *b*, and provided with spaced cylindrical spurs *e e'* at right angles to each other, the disks D D', locked together, having respectively the curved slot *g* and opposite notches *f f*, and rotating on said shaft at one side of the hub, the disks D² F at the other side of the hub rotating together on the main shaft, and provided respectively with the notches *f f* and flange *h*, and the holding-arms G G, adapted to keep the disks D' D² D and plate F stationary, substantially as specified.

209,268. Covered Dishes. John Jepson, West Meriden, Conn., assignor to Meriden Britannia Company, same place. Filed Oct. 5, 1878.



Claim.—The combination of the body of the dish, the cover hinged thereto, a rod vertically movable in a suitable support in rear of the hinge of the cover, and an extension from the cover to the rear of the hinge, and connected to the said vertical rod, substantially as described.

209,269. Tappets for Stamp-Rods. Robert A. Johnson, Philadelphia, Pa. Filed July 24, 1878.



Claim.—1. The tappet B, having radial ribs *a* on one or both faces, as set forth.

2. The ring D, having in its upper face radial recesses for the reception of corresponding ribs on a tappet, as set forth.

3. The combination of the recessed ring D, the bolts *c*, and the tappet B, having radial ribs *a* on one or both faces, as specified.

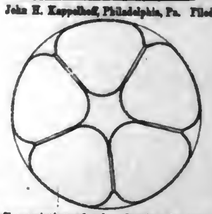
209,270. Rubber Packing. John Johnson, Brooklyn, N. Y. Filed June 12, 1878.

Claim.—1. A composition packing consisting of refractory substances, such as bone-black and a binding material of rubber and sulphur, the proportion of the latter being substantially in excess of twenty-five per cent. of the former, vulcanized to form hard rubber, as described.

2. A composition for packing, consisting of rubber and sulphur, in the proportion to form hard rubber when vulcanized, and bone-black in the proportion substantially greater than twenty-five per cent. of the rubber, as set forth.

3. A composition of rubber, and sulphur, and bone-black, both the latter being in the proportion substantially in excess of twenty-five per cent. of the rubber, as set forth.

209,271. Muffs. John H. Kappelhoff, Philadelphia, Pa. Filed June 27, 1878.



Claim.—1. A muff consisting of a bag having its two side edges brought together and united, to impart an annular shape thereto and form an inner and outer casing to create an intervening space, said bag being constructed with an opening adapted to be closed by a stopper, whereby the bag may be inflated, all constructed and arranged substantially as and for the purpose described.

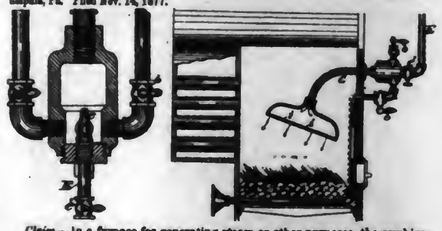
2. A muff composed of an annular closed bag or vessel of india-rubber or other inflatable material, having an aperture for the admission of air, and having radial bands to connect its inner and outer parts and preserve the shape thereof, substantially as shown and described.

209,272. Magic Lanterns for Street-Lamps. Calvin M. Keefer and Robert S. Orrburn, Newcastle, Pa. Filed June 29, 1878.



Claim.—The lamp herein described, having the main base *d*, supporting the side glasses, and the tubular bearing C', for the focusing-sleeve of the lower lens, the false bottom *e*, supported above said main base in the interior of the lamp-chamber, and holding the larger or condensing lens *b'*, the slide-chamber A between said base and bottom, and between the lenses opening toward the main doorway, the slide C in said chamber below the condenser, and the door L, closing both lamp and slide chambers, substantially as specified.

209,273. Apparatus for Promoting Combustion in Furnaces. Isaac Kendrick, Philadelphia, Pa. Filed Nov. 14, 1877.



Claim.—In a furnace for generating steam or other purposes, the combination of the following elements, to wit: a fire or combustion chamber, a perforated heating and distributing retort or chamber for highly heating mingled air and steam, an injecting device for feeding air and steam to the heating and distributing retort, a connecting-pipe, G, one or more flues or pipes for heating air prior to its being fed to the heating and distributing retort, and having valves or dampers for regulating the flow of air through the same, steam-pipe E, valve *e'*, and steam-boiler, arranged and operating together substantially as and for the purposes described.

209,274. Toys. Walter La Montagne, Detroit, Mich. Filed Aug. 31, 1878.

Brief.—The construction and arrangement of the reed and shells, when operated as described, represent the action of the throat and lips in producing and articulating the word-sounds "mamma" and "papa."



Claim.—1. In a device for producing an imitation of the human voice, a reed-tube through which air is forced to produce the larynx action, in combination with a divided shell or case for producing the labial action, said shell having its two parts hinged together and held apart by a spring or its equivalent, substantially as and for the purpose described.

2. The speaking-toy consisting of the tube A, reed B, shells C C', and spring D, constructed and arranged for operation substantially as described.

209,275. Portable Hammock and Shelter-Tent. Charles H. Leycester, Gwynfe-Llangadock, South Wales, Great Britain. Filed Sept. 30, 1878. Patented in England, May 15, 1878.



Claim.—1. The pole A, having at each end a cylindrical extension, A', and collars C, having eyes, as described, in combination with the legs B, applied to the extension A', the hammock D, and the looped supporting-cords connected with the ends of the hammock and passing through the eyes in the collars C and attached to the pole A, substantially as and for the purpose set forth.

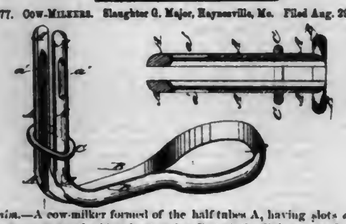
2. The combination of the pole, constructed of two independent sections, adapted to be fitted together at the center by the ferrule and shank, with the legs B, removably pivoted upon cylindrical pins at the ends of the pole, substantially as described.

209,276. Gun-Cleaners. Charles E. Langdon, New Haven, Conn. Filed Sept. 9, 1878.



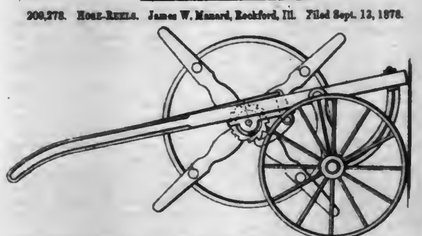
Claim.—The herein-described gun-cleaner, consisting of the spindle, collar, and nut, combined with a series of cup-shaped elastic disks between said nut and collar, the outer side of one disk fitting into the next, and bearing only at the edge, and so as to apply the expanding-force radially, substantially as described.

209,277. Cow-Milkers. Slaughter G. Major, Haynesville, Mo. Filed Aug. 29, 1878.



Claim.—A cow-milker formed of the half-tubes A, having slots *a'* formed in their upper parts, the U or bent spring B, and the link or ring C, substantially as herein shown and described.

209,278. Hose-Reels. James W. Masard, Rockford, Ill. Filed Sept. 12, 1878.



Claim.—1. A hose-carriage frame consisting of side bars which extend rearward of the carrying-wheels and are provided with depending brackets, each of which is formed with two arms, one of said arms secured to the rear end of the carriage-frame and the other to that portion of the frame nearest the axle, the lower end of said brackets provided with axle-arms for supporting the carrying-wheels, substantially as set forth.

2. The combination, with a reel-frame, of a metallic hose-supporting rim or shell secured between the end frames of the reel, said rim constructed with a series of parallel grooves, substantially as set forth.

3. The combination, with a hose-reel, of a reel-supporting axle constructed with grooved journals, and bearings attached to the side beams of the carriage, said bearings provided with set-screws, the inner ends of which engage with the grooves in the axle-journals, substantially as set forth.

4. The combination, with a hose-reel having a ratchet-wheel secured thereto, of a spring-pressed pawl pivoted to the carriage-frame and a rod attached to the pawl-arm, said rod leading to the forward end of the carriage-frame, substantially as set forth.

5. The combination, with the cross-brace, of the swinging loop to embrace the nozzle, as and for the purpose set forth.

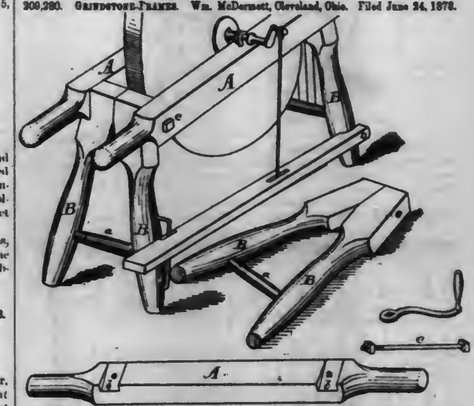
209,279. Paint-Brush Bridles. Mark W. Marsden, Connellsville, Pa. Filed Oct. 4, 1878.

Claim.—The brush-bridle A, of flexible rubber, of conical form, provided with internal serrations or corrugations, *a*, and bead B, constructed as shown and described.

209,279.



209,280. Grindstone-Frames. Wm. McDermott, Cleveland, Ohio. Filed June 24, 1878.



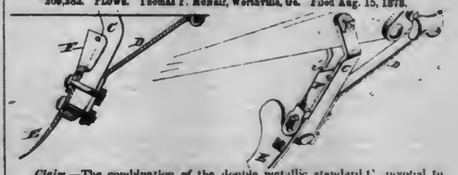
Claim.—The herein-described grindstone-frame, consisting of the two side rails, A A, having the two bevel-gains *b b*, the two sets of legs B B, constructed as described, and forming the ends of the frame, and the two bolts *c c*, all combined as and for the purpose set forth.

209,281. Bag-Fastener and Tag-Holder. David McKenzie, Jr., Washington, D. C., assignee to himself and Alex. McKenzie, same place. Filed May 13, 1878.



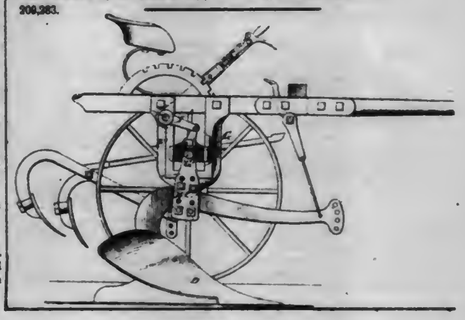
Claim.—As a means for securing the confining-cord C of a mail-bag, the recessed plate A, provided with the lugs *a a* and the dividing-ing *a'*, in combination with the lever B, pivoted between said lugs *a* and *a*, and having the locking projection *b*, said parts being combined to operate substantially as specified.

209,282. Plows. Thomas F. McNair, Worthville, Ga. Filed Aug. 15, 1878.



Claim.—The combination of the double metallic standard C, pivoted to each side of the plow-beam, the shovel E, the cutter F, having pin *i*, and the adjustable slotted brace D, the shovel, the cutter, and the brace being connected to the standard by the same bolts, substantially as herein set forth.

209,283.



209,283. Sulky-Plows. Thomas Meikle, Louisville, Ky. Filed Aug. 31, 1878.

Brief.—A U-shaped standard having its lower end attached to the extended axle-spindle and its upper end secured to the frame, and formed with a groove in its inner edges to receive the tongue of a sliding box, to which the plow is attached outside of the wheel.

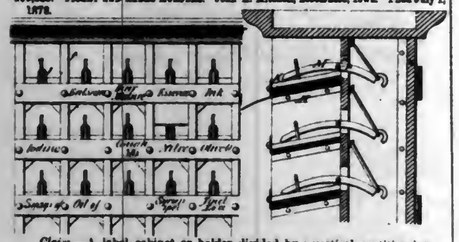
Claim.—In combination, the U-shaped grooved standard F and the sliding box G², with the plow D attached outside of the wheel, as and for the purposes substantially as described.

209,284. Plow-Standards. Thomas Meikle, Louisville, Ky. Filed May 1, 1878.



Claim.—The standard-heel D, having lateral adjustment upon the plow-beam, and provided with the perforated web D', in combination with the double standard C, pivot-bolt *d*, and adjusting-bolt *d'*, substantially as shown and described.

209,285. Ticket and Label Holders. John H. Mitchell, Bloomfield, Iowa. Filed July 1, 1878.

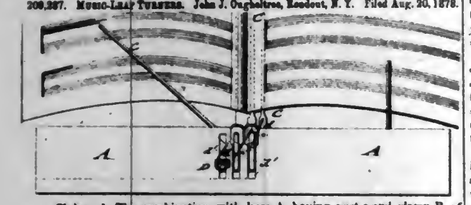


Claim.—A label cabinet or holder divided by a vertical partition into a front and rear chamber, the former having compartments, in each of which is a follower and lever, while the latter contains the rear ends of the levers, the springs, and a door, substantially as shown and described.

209,286. Processes for Disintegrating the Stalks of Hops. Isaac D. Nördlinger, Stuttgart, Wurtemberg, Germany. Filed Sept. 4, 1878.

Claim.—The herein-described process for disintegrating the stalks of hops for the production of fibers adapted for spinning and weaving, by first boiling the same in water containing soap and soda, then peeling off the scales, then boiling again in water containing vinegar or acetic acid, and finally hackling and bleaching the same, substantially as set forth.

209,287. Music-Leaf Turners. John J. Oughstree, Rondout, N. Y. Filed Aug. 20, 1878.

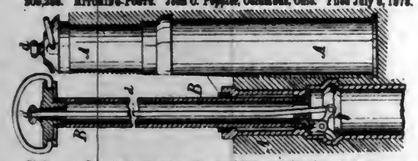


Claim.—1. The combination, with base A, having post *a* and clamp B, of the folding fingers C, pivoted in recess of base, one below the other, and connected by pivot-rods *d* with pivoted key-levers D, as and for the purpose specified

2. In a music-leaf turner, the combination of a base-block having longitudinal recess with pivoted fingers or arms and tripping key-levers connected thereto, to drop the fingers by depressing the keys and turning thereby the leaves, substantially as specified.

3. The combination of a longitudinally-recessed base-block with vertically-swinging fingers or arms that are pivoted into the recess of the block sidewise of each other, and one below the other, so as to fold the fingers one above the other into the recess of the base-block after turning the leaves, substantially as specified.

209,288. Hitching-Posts. John C. Peppler, Columbus, Ohio. Filed July 9, 1878.



Claim.—1. In a hitching-post, the combination of socket A, having groove *a*, with tubular post B, locking bell-crank lever *g*, and rod *d*, substantially as and for the purpose set forth.

2. The stop-flange *h*, in combination with post B and socket A, said socket being provided with an offset or shoulder for engagement with said flange, as and for the purpose set forth.

3. In combination with a sliding post and recessed socket, an annular cushion fixed in the upper end of said socket to prevent shocks.

4. In combination with socket A and sliding post B, cap *c*, and flange *h*, detachable at will from said post, so as to allow its removal for repairs and cleansing and the separation of the parts.

209,289. Speaking-Telephones. George M. Phelps, Brooklyn, N. Y. Filed Feb. 11, 1878.

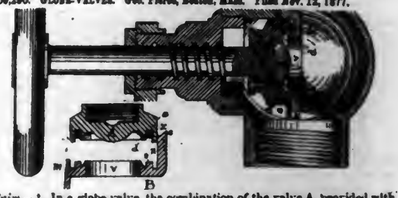


Claim.—1. Two or more magnetic cores whose enveloping helices or coils are placed in the circuit of one and the same line-wire, two or more vibrating diaphragms, and a single mouth-piece or vocalizing-chamber, when combined, arranged, and operated substantially as specified.

2. A permanent magnet having a separate core enveloped in a corresponding helix or coil mounted upon each of its opposite poles, and arranged to receive magnetism therefrom by contact, in combination with two vibrating plates or diaphragms and a single mouth-piece or vocalizing-chamber, substantially as specified.

3. A single induction-plate subdivided into two or more separate and distinct areas of vibration, in combination with two or more magnetic cores and two or more helices or coils, substantially as specified.

209,290. Globe-Valves. Geo. Pierce, Boston, Mass. Filed Nov. 12, 1877.



Claim.—1. In a globe-valve, the combination of the valve A, provided with a recess, *a*, filled or partly filled with packing, with the diaphragm provided with an exterior recess, *b*, a raised seat, *s*, and an interior section, V, whereby the face of the packing is protected from injury from the direct action of the steam when the valve is open and the steam caused to contact with the metal face of the valve inclosed by said packing-recess, all arranged substantially as described.

2. In a globe-valve, the combination of a valve provided with an exterior wall, inclosing a packing, beveled on its lower outer corner, as shown, with a diaphragm, B, having a raised seat surrounded by recess *b* and a wall, *m*, extending upwardly from the said diaphragm, and beveled on its inner upper corner, as described, so that the packing is centered upon the raised seat by the contacting with or impinging on of said lower outer corner of the exterior wall with said inner upper corner of wall *m*, substantially as described.

3. In a globe-valve, the combination of a valve having a recess partly filled with packing and adapted to shut upon a raised seat, with a raised seat of sufficient width to completely shut or close the passage of the steam the instant the raised seat enters the recess and before contacting with the packing, whereby said packing is protected from the impinging action of the steam in closing, substantially as set forth.

4. In a globe-valve, the combination of the valve A, provided with an exterior wall, *c*, on its under surface, extended below the surface of the packing and the opposite wall, *d*, and beveled on its lower outer corner, and the recess filled or partly filled with packing, with the diaphragm B, having a raised seat surrounded by recess *b* and a wall, *m*, extended upward above the level of the raised seat and beveled on its inner upper corner, whereby the packing is centered upon the raised seat, for the purpose set forth.

5. In a globe-valve, the combination of a valve having a recess rectangular in cross-section, filled or partly filled with packing, and adapted to shut upon a raised seat rectangular in cross-section, and with a raised seat sufficiently wide to completely close the recess when said raised seat enters said recess, whereby a straight passage is provided the steam and the packing protected from abrasion, substantially as and for the purpose described.

6. In a globe-valve, the combination of two seats, the one having a recess filled or partly filled with packing, and completely protected from the direct action of the steam by the section or ring V, extended inwardly from the raised seat, as shown, and the other having a raised projection in width to completely fill said recess when first shut thereiu, substantially as described.

7. In a globe-valve, the combination of a valve provided with a recess filled or partly filled with packing, and the deflecting-surface described, with a raised metal seat adapted to fit said recess and having an interior section, V, all arranged substantially as and for the purpose described.

8. In a globe-valve having one metal and one compressible seat, the combination of the exterior wall of the valve, extended somewhat below the inner surface of the valve and beveled on its outer under corner, the side of the valve *x*, and the wall of the chamber, with the wall *m*, the latter being extended above the surface of the seat and beveled on its upper inner corner, all arranged to center the raised metal seat on the compressible seat in the act of closing the valve, as described.

9. The combination of a valve-disk, having an annular recess filled or partly filled with compressible packing, with a raised seat provided with a contacting surface completely covering the packing, and adapted, when shut into the recess, to completely fill the same, substantially as and for the purpose described.

209,291. Wagon-Brakes. William M. Rapp, Notasulga, Ala. Filed Sept. 12, 1878.



Claim.—The combination of the brake-bars F F', rods *s c*, hook-*k*, lever *h*, jointed rod *l*, lever I, and neck-yoke G, substantially as and for the purposes herein set forth.

209,292. Syringes. Warren T. Reaser, Chicago, Ill. Filed Oct. 15, 1878.

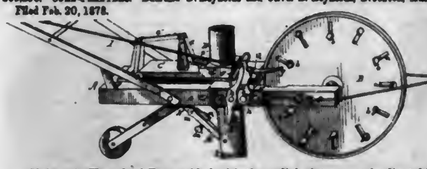
Brief.—The end of the barrel is made up of bars, with openings between them, and in order to prevent the folds of the vagina from catching therein, the piston is made hollow, and lets in air at the proper moment upon the removal of a plug.



Claim.—1. In a plunger-syringe, the combination of the syringe-case provided with the longitudinal slots *a'*, and the piston-rod D, provided with a longitudinal vent-hole, *d*, and plug *d'*, substantially as and for the purpose herein shown and described.

2. The combination of the slotted case A, syringe B, provided with the outer packing ring or rings, *c*, and the piston-rod D, provided with a vent-hole, *d*, and plug *d'*, substantially as and for the purpose specified.

209,293. Corn-Planters. Edmund D. Reynolds and Oliver B. Reynolds, Brockton, Mass. Filed Feb. 20, 1878.



Claim.—1. The wheel B, provided with the radial slots *a a* and adjustable pins *b b*, in combination with the plate C, hopper D, and pivoted arm *g*, substantially as and for the purpose described.

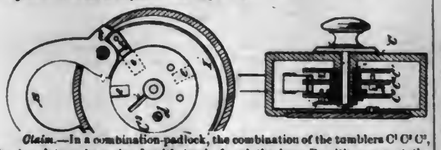
2. The perforated hinged plate C and hopper D, and sliding valve *d'*, in combination with the standards E, swinging beam *s*, bar *c'*, beam *c''*, and post P, all constructed to operate substantially as and for the purpose set forth.

3. The sliding valve *d'*, provided with a central opening beveled on the rear side, and with smaller openings or perforations, substantially as and for the purpose set forth.

4. The hinged plate C, provided with the bent lever G and catch h^2, in combination with the notched arm H, lever A, spring *h'*, and rod I, substantially as and for the purpose set forth.

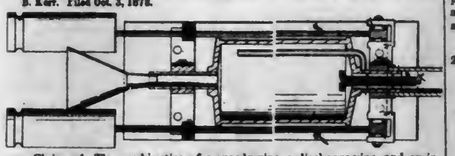
5. In a corn-planter, the adjustable resisting-brace consisting of the bars M and N, with projection *n* and thumb-screw *m'*, constructed to operate substantially as and for the purpose set forth.

209,294. Permutation-Padlocks. George C. Ridgway, Olney, Ill., assignor of one-half his right to Wm. Rhode, same place. Filed Aug. 31, 1878.



Claim.—In a combination-padlock, the combination of the tumblers C^1 C^2 C^3, having slots *c*, the spring I, with tooth *f*, and the hasp B, with arm *m* at the rear end thereof, substantially as and for the purpose herein set forth.

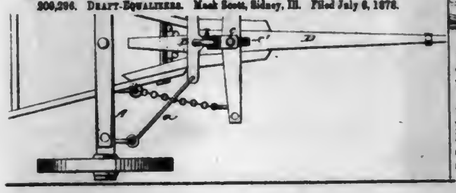
209,295. Water-Closets. Chas. Rogers, Pittsburg, Pa., assignor to himself and Thomas B. Kerr. Filed Oct. 3, 1878.



Claim.—1. The combination of a supply-pipe, a discharge-pipe, and an interposed counterbalanced reciprocating measuring-tank, which effects a discharge into the discharge-pipe when it descends, said combination being and operating substantially as and for the purposes described.

2. The pivoted bent levers, sustaining by one arm the counter-weights and on the other the reservoir, having a limited vertical movement, combined and operating therewith substantially as and for the purposes described.

209,296. Draft-Equalizers. Mack Scott, Sidney, Ill. Filed July 6, 1878.



209,297. Air-Tight Vessels. Thomas H. Shahan, Boston, Mass. Filed Sept. 11, 1878.

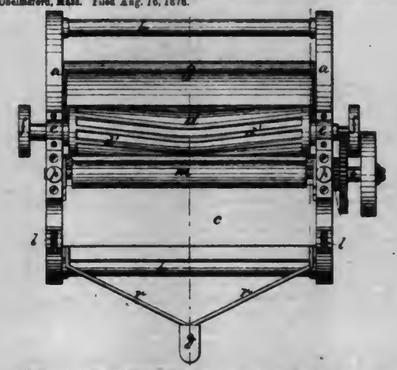


Claim.—1. A vessel having its mouth constructed with a segmental grooved flange, C, in combination with a cover, B, having a segmental tongue, *f*, adapted to the groove in the flange C, and a device for holding the cover in place, substantially as described.

2. The vessel A, having one side of its mouth constructed with a segmental flange, C, having an internal groove, *c*, and the other side of the mouth with a segmental tongue, *d*, in combination with a cover, B, having the segmental tongue *f* and groove *g*, adapted respectively to the groove *c* and tongue *d*, substantially as and for the purpose described.

3. The combination of the vessel A, having its mouth constructed with the grooved flange C and tongue *d*, the cover B, having the tongue *f* and groove *g*, adapted to the groove and tongue of the mouth of the vessel, and a hook, D, embracing a circular shoulder on the cover, and having the end *n*, adapted to catch over the flange C, substantially as and for the purpose described.

209,298. Machines for Unhairing and Scouring Hides and Skins. George T. Sheldon, Chelmsford, Mass. Filed Aug. 16, 1878.



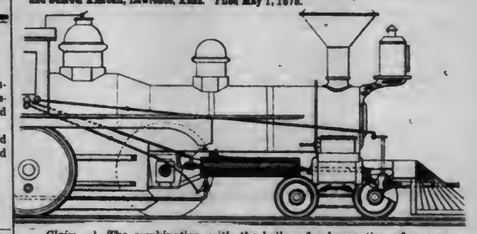
Claim.—1. In combination with the scouring-roll *d*, the yielding feed and pressure roll A, adjusted laterally to and from the scouring-roll *d*, and the feed-roll **m**, adjusted to and from the laterally-adjustable feed and pressure roll A, substantially as and for the purpose set forth and described.

2. In combination with the scouring-roll *d*, the laterally-adjustable roller *h*, with its scraper *h'*, secured to the bearings *i i*, and the vertically-adjustable roller **m**, with its scraper **m'**, secured to the bearings *n n*, substantially as and for the purpose set forth.

3. In combination with the scouring-roll *d* and the laterally-adjustable feed and pressure roll A, of the vertically-adjustable feed-roll **m**, its springs *o o*, adjustable screws *p p*, and the treadle mechanism *q r r s s' r'*, as and for the purpose set forth.

4. In combination, the scouring-roll *d*, the laterally-adjustable feed and pressure roll A, its laterally-adjustable bearings *i i*, springs *k k*, and screws *l l*, and the vertically-adjustable feed-roll **m**, its adjustable bearings *n n*, springs *o o*, and screws *p p*, as and for the purpose set forth.

209,299. Devices for Driving Cattle from Railroad-Tracks. William A. Simpson and Samuel Kimball, Lawrence, Kans. Filed May 1, 1878.

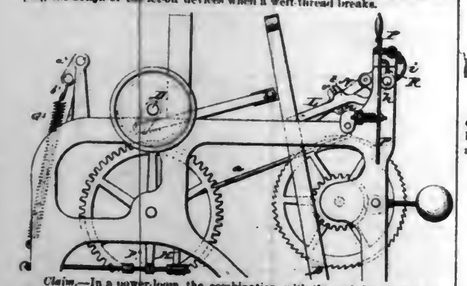


Claim.—1. The combination, with the boiler of a locomotive, of a reservoir connected with said boiler by a suitable pipe, and provided with a stop-cock projecting in front of the locomotive, and having a lever under the control of the engineer, substantially as and for the purpose set forth.

2. The combination, with the boiler of a locomotive, of a suitable reservoir connected with said boiler by a suitable pipe below the water-line, and provided with a stop-cock having diverging nozzles projecting in front of the locomotive, and a water-supply pipe, said pipes and cock being supplied with suitable valves and operating-rods under control of the engineer, substantially as described.

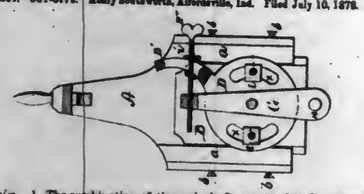
208,300. TAKE-UP AND LET-OFF MECHANISMS FOR LOOMS. Geo. S. Smith, Mystic Bridge, Conn. Filed Mar. 26, 1878.

Brief.—For suspending the operation of the take-up mechanism and stopping the action of the let-off devices when a weft-thread breaks.



Claim.—In a power-loom, the combination, with the weft-fork and its carrier and the lever l', of the rod h, provided with the arm R and the finger i, the lever L, lock M, banter w, and the let-off mechanism, the take-up wheel F, pawl N, shoe O, and adjusting devices v, p, and k, all substantially as and for the purposes herein set forth.

208,301. CUT-OFFS. Henry Southworth, Alfordsville, Ind. Filed July 10, 1878.



Claim.—1. The combination of the rock-shaft arm A, plate B, with adjusting screw C, the adjustable guides *a a*, and the set-screws *b b*, substantially as and for the purposes herein set forth.

2. In combination with the rock-shaft arm A, the adjustable plate B, carrying the adjustable arm G, with its wrist-pin h, for the purposes set forth.

3. The combination of the adjustable wheel D, with slotted arm D', the arm G, with wrist-pin h, and the screw F, with collars or nuts *i i*, as and for the purposes set forth.

4. The combination of the rock-shaft arm A, plate B, with adjusting-screw C, wheel D, with slotted arm D', arm G, adjusting-screw F, and top plate, H, substantially as and for the purposes herein set forth.

208,302. RAILWAY-RAILS. Marshall B. Stafford, New York, N. Y. Filed Oct. 12, 1878.

Brief.—A railway-rail divided upon a longitudinal vertical plane at or near its center, so that one part of the rail has a socket and base, and the other part of the rail fits into this socket. A cushion of some elastic material is to be placed into this socket, and the two parts of the rail fastened and held together by screw-bolts.



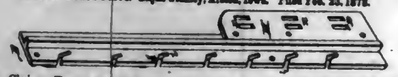
Claim.—1. A railway-rail consisting of the two parts A and B, the latter provided with the cushion D and the former with elongated slots, the two being bolted together, substantially as described.

2. A railway-rail divided at or near the vertical plane through its longitudinal center into the parts A and B, the part B carrying the base of the rail, and having a socket at the foot of the line of section to receive the base of the part B, substantially as set forth, and for the purposes specified.

3. A railway-rail divided vertically into two longitudinal sections, the interior section being rendered elastic by means of a cushion, substantially as specified.

4. A railway-rail divided longitudinally and vertically at or near its center into the parts A B, the part B carrying the base of the rail, and being provided with a socket, C, and cushion D, for the uses and purposes substantially as described.

208,303. FENCE-POSTS. Elijah Stanley, Albion, Iowa. Filed Feb. 23, 1878.



Claim.—The flange H, having two series of mortises, *x*, in combination with the post B, substantially as herein set forth.

208,304. PROCESSES FOR MANUFACTURING GAS. J. A. Stephen, Worcester, England. Filed Mar. 23, 1878. Patented in England, Nov. 30, 1877.

Claim.—The process herein described for producing illuminating-gas, the same consisting in vaporizing the sewage, decomposing the steam thereof by hot metallic surfaces, charging the resulting hydrogen gas with carbonic-acid gas by passing it through heated carbonates, and finally converting the carbonic acid into carbonic oxide, and at the same time enriching the gas by passing the same through heated hydrocarbons, substantially as set forth.

208,305. SLIDE-VALVES. Joseph Straily, Vincennes, Ind., assignor of one-half his right to John T. Young, same place. Filed June 26, 1878.



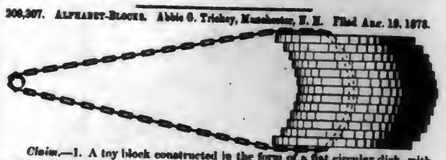
Claim.—The cylindrical valve C, open at both ends and provided with exterior packing-rings, *d*, arch F, and ports *e*, in combination with the chest A, having ports *a a* and *b*, provided with bridges across the same, all constructed and arranged substantially as and for the purposes herein set forth.

208,306. HAT-TIPS. Frederick W. Terrogge, St. Louis, Mo. Filed Sept. 10, 1878.



Claim.—The combination, with a hat, of the tip composed of web *a*, stretched on expanding hoop *b*, for the purpose set forth.

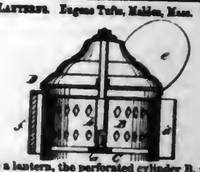
208,307. ALPHABET-BLOCKS. Abbie G. Trickey, Manchester, N. H. Filed Aug. 19, 1878.



Claim.—1. A toy block constructed in the form of a flat circular disk, with a central aperture, and provided on one or both flat surfaces with letters or other characters for teaching purposes, substantially as herein shown and described.

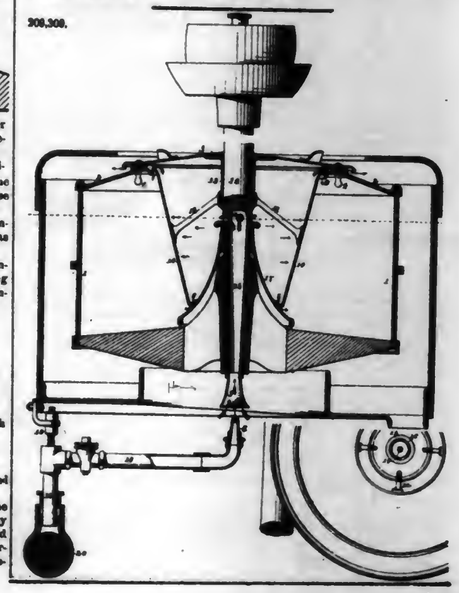
2. As a new article of manufacture, a set of toy blocks constructed in the form of flat circular disks, having central apertures, with letters or other characters on the flat surfaces of the respective blocks, the same being united by means of a chain or cord, substantially as herein specified.

208,308. LANTERNS. Eugene Tufts, Malden, Mass. Filed Sept. 6, 1878.



Claim.—In a lantern, the perforated cylinder B, the top cross-bar, C, having stud *a*, and the shouldered spindle *b*, in combination with a cowl, D, secured on and revolving with said spindle, the vane *c*, having lip *d*, and the weight *f*, as shown and described, for the purpose specified.

208,309.



208,309. CENTRIFUGAL MACHINES FOR PURIFYING AND REFINING SUGAR. Hugh W. Walker and Thos. L. Patterson, Greenock, North Britain. Filed Sept. 12, 1878. Patented in England, Jan. 22, 1877.

Brief.—Air is forced by a steam-jet into the hollow shaft of the machine, thence into a conical shell, where the steam is partially condensed, and from which the remaining air and steam are passed into contact with the sugar under treatment.

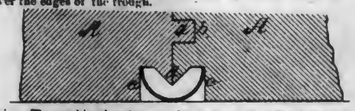
Claim.—1. In an overhead-suspended centrifugal machine, the shaft made hollow at its lower end and provided with a mouth-piece, 5, for the introduction of a jet of steam, and air taken in by the steam at the mouth-piece, and provided with holes in the upper end of the hollow part of the shaft for the issue of the mixture of steam and air into the basket, in combination with a conical shell which is wider at the top, and which leads deposited moisture upward to top outlets, through which, also, the moisture from the cover passes, all substantially as and for the purposes hereinbefore described.

2. The improved means within the basket for removing water of condensation from the mixture of steam and air as near as possible to the points of application of the steam and air, such means consisting of the conical shell, with its wider upper end combined with the cover, and with the annular ring 9, attached to the cover, leading off by the same outlets the moisture from both shell and cover, substantially as hereinbefore described.

3. In a centrifugal machine, the weighted holders loosely hinged to the cover, in combination with the rim of the basket, the holders being adapted to be turned outward by centrifugal force and to catch against the under side of the basket-rim, for the purpose of fastening the cover to the basket, as herein-before described.

208,310. ROOF-BATTENING. John C. Wands, Nashville, Tenn. Filed July 16, 1878.

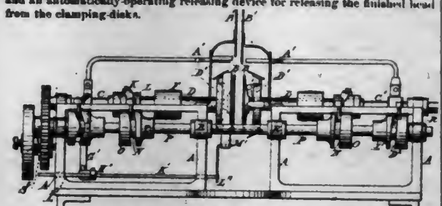
Brief.—The boards are recessed at the lower corner of their adjacent edges to receive a semicircular trough, and the abutting corners over the trough are formed with downwardly-projecting drip-points, to prevent the water weeping back over the edges of the trough.



Claim.—The combination, in a wooden roof, of adjoining boards, tongued and grooved into each other, having a recess under their joint in their under sides, and an angular drip-point extending downward into said recess, and a trough or gutter fitting into said recess under the drip-point, out of contact therewith, substantially as set forth.

208,311. MACHINES FOR MAKING BARREL-HEADS. Abraham Wasse, New Boston, N. H. Filed Sept. 25, 1878.

Brief.—Wooden barrel-heads are automatically cut from a blank and their edges chamfered by means of two rotary cutter-heads carrying suitable cutters mounted upon hollow shafts having a rotary as well as a reciprocating motion; two clamping-disks mounted on rods extending through said hollow shafts, one of which is provided with automatically-operating mechanism for causing it to approach to or recede from the other, which is fixed, in order to automatically seize and hold the blank during the operation and release the head when completed, in connection with a vertical guide for directing the blank as it is inserted; an automatically-operating stopping device for holding the blank until the preceding head has been cut and discharged from between the disks; and an automatically-operating releasing device for releasing the finished head from the clamping-disks.



Claim.—1. In a machine for making barrel-heads, the combination, with the clamping-disks B, their shafts C C', the cutter-heads D', and their hollow shafts D, of the collars H on the latter, the pivoted levers K, attached to said collars, and the drums G on the shaft P, having cam-grooves, in which the ends of the levers K are arranged, substantially as and for the purpose described.

2. The combination of the following elements, to wit: the clamping-disks B B, their shafts C C', the cutter-heads D', their hollow shafts D, and mechanism for reciprocating the same, the pivoted lever S, pivoted to one of the clamp-shafts, and the drum L', having a cam-groove, in which the end of the lever S is arranged, substantially as and for the purpose described.

3. The combination, with the stationary clamping-disk and its shaft, of the vertical releasing-bars M', the rods K', cross-bar H', vertical pivoted lever G', and a horizontal lever, S, attached at one end to the lever G', and having its other end arranged in a cam-groove in the rotating drum L', all arranged to automatically move the bar M' to discharge the finished barrel-head, substantially as shown and described.

4. The combination, with the clamping-disks B and rotary cutters D' of a machine for making barrel-heads, of the upright standards, forming guides B', facing each other and arranged above the disks and cutters, the bifurcated branches A', and mechanism such as described for automatically reciprocating said branches, as and for the purpose described.

5. In combination with the stationary clamping-disk and the rotary cutter, the releasing-bars, automatically operated by suitable mechanism to discharge the finished head, substantially as specified.

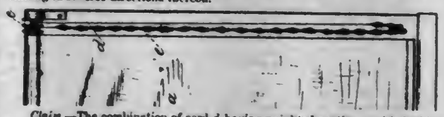
208,312. INDIA-RUBBER BOOTS. George Watkinson, New Haven, Conn., assignor to the L. Candee & Co., same place. Filed Sept. 26, 1878.



Claim.—The herein-described improvement in the manufacture of rubber boots, consisting of a strap for pulling on the boot, one end of which is secured to the leg at the top inside, between the lining and outer covering, and the other end turned down and secured, all substantially as shown and described.

208,313. CURTAIN-FIXTURES. Richard White, Hartford, Conn. Filed Aug. 5, 1878.

Brief.—A counter-balance to the curtain consists of a portion of the curtain-cord being weighted, and its ends secured to a single or double pulley, and winding in reverse directions thereon.



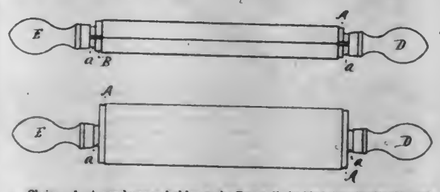
Claim.—The combination of cord *d*, having weighted portion *e*, with double pulley *c*, or its equivalent, roller *b*, and curtain *a*, substantially as and for the purpose set forth.

208,314. REFRIGERATORS. August Zinser, New York, N. Y. Filed July 11, 1878.

Claim.—A refrigerator having a double or hollow inclosing-wall filled with a resinous substance, substantially as described.

REISSUES.

8,458. SAND-PAPER HOLDERS. Norman E. Fay, Abbot, Me., assignor, by mesne assignments, to the Shoe Machine Manufacturing Company, Boston, Mass. Patent No. 124,265, dated Mar. 5, 1872. Filed Aug. 26, 1878.



Claim.—1. A sand-paper holder or buffing-roll divided longitudinally and formed or provided with end projections, and fitted to a central shaft provided with suitable fastenings threaded or arranged thereon to clamp the divisions or jaws of such roll together, substantially as described, and for the purposes specified.

2. In combination, jaws A B, having semi-conical projections *a a*, a central shaft, C, and handles or fastenings D E, concaved, as at *b b*, and arranged to operate upon said semi-conical projections, all substantially as and for the purposes specified.

8,459. LIGHTNING-RODS. Henry W. Farley, Owego, assignor to Charles H. Smith and John Hewitt, Chicago, Ill. Patent No. 91,530, dated June 22, 1869. Filed Oct. 5, 1878.



Claim.—1. A lightning-conductor constructed of a rod of iron having three or more flanges radiating from a solid core, said rod being twisted so that the flanges form diagonal grooves around said core, and in combination therewith a strip or strips of sheet metal possessing superior qualities for conducting electricity and encircling the axis of said iron rod, substantially as herein described.

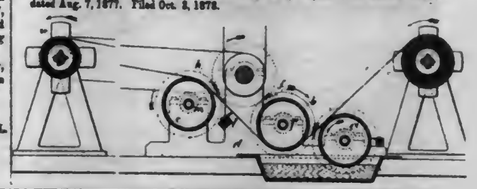
2. A lightning-conductor constructed of a rod of iron having three or more flanges radiating from a solid core, said rod being twisted so that the flanges form diagonal grooves around said core, and in combination therewith a wire or wires of metal possessing superior qualities for conducting electricity and encircling the axis of said iron rod, substantially as hereinbefore described.

3. A lightning-conductor constructed of a rod of iron, galvanized, having three or more flanges radiating from a solid core, said rod being twisted so that the flanges form diagonal grooves around said core, and in combination therewith a wire or wires of metal possessing superior qualities for conducting electricity and encircling the axis of said iron rod, substantially as herein described.

4. A lightning-conductor constructed of a rod of iron galvanized, having three or more flanges radiating from a solid core, said rod being twisted so that the flanges form diagonal grooves around said core, and in combination therewith a strip or strips of sheet metal possessing superior qualities for conducting electricity and encircling the axis of said iron rod, substantially as herein described.

5. A lightning-conductor constructed of a rod of iron, with flanges radiating from a solid core, in combination with a metal possessing superior qualities for conducting electricity, and the socket *d*, conforming to the contour of said rod in cross-section, substantially as herein described.

8,460. WAXING PAPER. Siegfried Hammerschlag, Jersey City, N. J. Patent No. 103,867, dated Aug. 7, 1877. Filed Oct. 3, 1878.



Claim.—1. In a machine for applying wax to the surface of paper, a heated cylinder revolved within the trough containing the wax and acting to heat the wax and apply a layer to a web of paper, substantially as set forth.

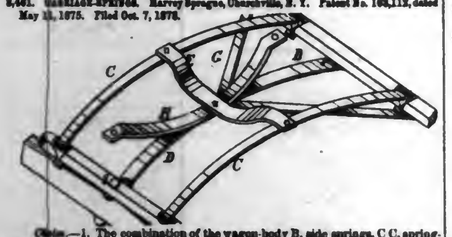
2. The method herein specified of applying wax to the surface of paper, consisting in transferring the melted wax from a trough to the paper by a roller, moving the paper in contact with such roller, and removing the surplus wax by a scraper, substantially as set forth.

3. In a machine for applying wax to the surface of paper, the heated cylinders *a* and *b*, in combination with the trough *n* and scraper *l*, and means for supplying paper, whereby the heated wax is applied to one surface of the web of paper by the roller *a*, and afterward the paper is heated at the other surface to draw the wax into the paper, substantially as set forth.

4. The heated cylinders *a b c*, in combination with the trough *n*, the scraper *l*, and mechanism for revolving the cylinder *c* in the opposite direction to the movement of the paper with which it is in contact, substantially as set forth.

5. The method herein set forth of waxing paper, consisting in spreading the wax upon the surface, heating the paper from the opposite side to spread and fuse the wax into the fabric of the paper, removing the surplus wax, and remelting and polishing the wax upon the paper, substantially as set forth.

8,461. CARRIAGE-SPRINGS. Harvey Sprague, Churchville, N. Y. Patent No. 168,112, dated May 11, 1875. Filed Oct. 7, 1878.



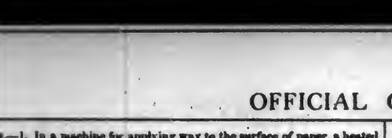
Claim.—1. The combination of the wagon-body B, side springs, C C, spring-reach D, and the cross-strap E, substantially as described.

2. The combination of the side springs, C C, spring-reach D, cross-strap E, body-loop H, and the angular braces G G, extending from the reach to the outer ends of the rear axle, substantially as and for the purposes set forth.

3. The combination, with the springs C C and spring-reach D, of the cross-strap E and the angular braces G G, substantially as set forth.

4. The combination of the pivoted side springs, C C, the reach D, attached below the axles, and the body-loop H, fastened to the reach, operating substantially as and for the purposes set forth.

8,462. BAIL-EARS FOR PAILS. Jonathan Walton, Brooklyn, N. Y., assignor to Double Pointed Tack Company, New York city. Patent No. 77,853, dated May 12, 1868; antedated Apr. 30, 1868; Reissue No. 7,222, dated July 11, 1876. Filed Oct. 9, 1878.



Claim.—1. As a new article of manufacture, a bail-ear for pails made of wire, bent to form a loop at the upper part, a flat body at the lower part, and two prongs for securing the bail-ear to the pail, substantially as specified.

2. The combination of the staple with the bail-ear *a b*, substantially as set forth.

8,463. REFRIGERATORS. George F. Smith, Michigan City, Ind., assignor, by mesne assignments, of three-fourths interest to G. W. Weeks, H. G. Smith, and Abram R. Colbert. Patent No. 193,562, dated July 24, 1877. Filed July 25, 1878.

Brief.—By constructing the ice-box of the entire width of the provision-chamber, with the exception of air-flues at each end, the air is drawn from the extreme outer portions of the provision-chamber. It then passes through the air-flues in the cover, and falls through a central opening in said cover, passes in contact with the ice through side openings in a false bottom, and out through a central opening in the bottom of the ice-box into the provision-chamber, where it is divided into two currents by a partition immediately below said central opening.



Claim.—1. In a refrigerator, the combination of the following elements, viz: an ice-box the width of the provision-chambers, occupying the entire upper portion except spaces at each end for ascending air-currents, a central opening in the bottom of the ice-box, provision-chambers below the ice-box, occupying the entire width, and air-passages out of such chambers around the ends of the ice-box, substantially as and for the purposes set forth.

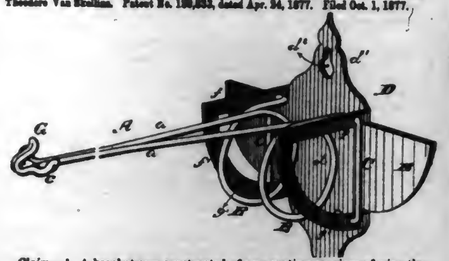
2. In a refrigerator, the combination of the following elements, viz: an ice-box the width of the provision-chambers, occupying the entire upper portion except spaces at each end for ascending air-currents, an air-discharge opening above the center of the ice-box, a central air-discharge opening in the bottom of the ice-box, and air-passages out of the provision-chambers around the ends of the ice-box, substantially as and for the purposes set forth.

3. In a refrigerator, the combination of the following elements, viz: an ice-box the width of the provision-chambers, occupying the entire upper portion except spaces at each end for ascending air-currents, a central air-discharge opening in the bottom of the ice-box, and a false bottom raised above the bottom of the ice-box, having openings near its ends only, and an air passage under it, substantially as and for the purposes set forth.

4. In a refrigerator, the combination of the following elements, viz: an ice-box the width of the provision-chambers, occupying the entire upper portion except spaces at each end for ascending air-currents, a central air-discharge opening in the bottom of the ice-box, and a partition directly under such opening, dividing the air-currents as well as the provision-chambers and air-passages out of the provision-chambers around the ends of the ice-box, substantially as and for the purposes set forth.

5. In a refrigerator, the combination, with the two provision-chambers E E' and the single ice-box D, provided with openings *d'*, and situated above such provision-chambers and extending the entire width of the refrigerator, of the side flues, F F', air-box K, having openings *h*, and the false bottom I, having the side openings, *e e'*, all constructed and arranged substantially as described and shown.

8,464. BRACKETS. Emory H. Bates, Washington, D. C., assignor of one-half interest to Theodore Van Skelline. Patent No. 190,853, dated Apr. 24, 1877. Filed Oct. 1, 1877.



Claim.—1. A bracket-arm constructed of one continuous piece of wire, the two parts *a a* running parallel to each other, the rear portion thereof formed into coils B B, and having projecting arms C C, for attaching the same to a base or back plate, if desired, substantially as and for the purposes set forth.

2. The spring-arm A, having hook G, stops *c c*, arms *a a*, coils B B, and bent rear ends, C C, substantially as and for the purpose set forth.

3. The base-plate D, provided with arms *f f*, perforated at *g g*, upward extension *d'*, having key-hole-shaped slot *d''*, segmental plates *f' f'*, and perforations *g' g'*, substantially as and for the purpose set forth.

4. In a bracket for suspending bird-cages, the hook G, having projections or stops *c c*, for the purpose of preventing a rotary and backward movement to the cage, substantially as and for the purpose set forth.

5. A bracket or base, D, provided with segmental plates *f' f'*, having perforations *g' g'*, for regulating the tension of the spring-bracket arm A, substantially as and for the purpose set forth.

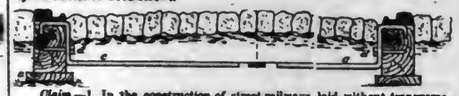
6. A spring-bracket for suspending bird-cages, in combination with devices for adjusting the tension of the spring, substantially as and for the purpose set forth.

7. The combination of the spring-arm A, having bent ends C C, with segmental adjusting-plates *f' f'*, substantially as and for the purpose set forth.

8. A bird-cage bracket constructed with a spring interposed between the supporting-arm and back or base plate, substantially as and for the purpose set forth.

8,465. CONSTRUCTION OF RAILWAYS. Thomas Wm. Clarke, Boston, Mass., assignee of William Post and Marian L. Hyde, administrators of James S. Hyde, deceased. Patent No. 51,904, dated Jan. 2, 1866. Filed May 9, 1878.

Brief.—The cross-tie is made of bar metal. It is turned upward at right angles near the lower inner edge of the longitudinal stringer, again at right angles at the upper inner corner of the stringer, and, laying hold of the top of the stringer in a mortise under the base of the rail, its end is again turned downward into the stringer. The tie is fastened to the inner side of the stringer by drift-bolts or wood-screws.



Claim.—1. In the construction of street-railways laid without transverse sleepers or cross-ties beneath the longitudinal sleepers, stringers, or sills, the combination, with longitudinal wooden sleepers for the support of the rail *b*, of metallic cross-ties *c*, embedded beneath the surface of the pavement which lies between the stringers, and laying hold of said stringers at their upper surfaces below the rail, without chairs or loops which embrace the timber, substantially as herein described.

2. In the construction of street-railways laid without transverse sleepers or cross-ties beneath the longitudinal sleepers, stringers, or sills, as a means of preserving the gage of the track, the combination, with the wooden stringers *b b*, which support the rails, of the metallic cross-ties *c*, abutted against the inside faces of said stringers and holding them apart, and fastened directly to the upper portion of said stringers immediately below the base of the rail, substantially as described.

3. A street-railway track consisting substantially only of the following elements and their connections: longitudinal wooden stringers *b*, for the support of the rail, metallic cross-ties *c*, which lay hold directly of said stringers immediately below the rail and in the upper quarter of the stringers, and the rail supported by the stringer, all combined together, and all except the rail embedded in and below the surface of the pavement, substantially as described.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 22d DAY OF OCTOBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adsit, J. O. (See Mulford, D. L., assignor.)						
Aiken, J. H. (See Arnold and Aiken.)						
Albee, B., East Boston, Mass. Horse and cattle stall for vessels	209,102	Oct. 22	729	211	14	603
Albers, L. U., Keokuk Junction, Ill. Revolving index	209,206	Oct. 22	842	243	14	617
Allen, H. H., Oxford, Mich. Fence-gate	209,151	Oct. 22	787	228	14	610
Allen, N. E., Beaver Dam, Wis. Sheep-rack	209,207	Oct. 22	843	243	14	617
Allonas, J., Mansfield, Ohio. Grain-separator	209,208	Oct. 22	845	244	14	618
Anthony, J., Sharon Springs, N. Y. Locomotive	209,209	Oct. 22	846	244	14	618
Argerbright, D., Troy, Ohio. Wheel-cultivator	209,210	Oct. 22	787	228	14	610
Arnold, A. C., and J. H. Aiken, Norwalk, Conn. Fulling-mill	209,152	Oct. 22	847	244	14	618
Asiro, C. F., Saltillo, Ohio. Lifting-jack	209,211	Oct. 22	730	211	14	603
Austin, E. H., New York, N. Y. Vitreous lining for pipe-connections	209,103	Oct. 22	731	211, 212	14	603
Austin, E. H., New York, N. Y. Main and pipe	209,104	Oct. 22	731	211, 212	14	603
Babcock, D., assignor of one-half interest to A. S. Page, Oswego, N. Y. Machine for stretching and drying cloth	209,212	Oct. 22	848	245	14	618
Bailey, W. H., Providence, R. I. Temporary binder	209,213	Oct. 22	848	245	14	618
Ballou, H. M. (See Tripp and Ballou.)						
Baragwanath, W., Chicago, Ill. Feed-water heater	209,105	Oct. 22	732	212	14	603
Barringer, P., Fayetteville, Ark. Spoke-trimmer	209,214	Oct. 22	849	245	14	618
Bash, H. (See Mackay, M., assignor.)						
Bastet, L., Brooklyn, N. Y. Insulating railway-tracks	209,215	Oct. 22	849	245	14	618
Bates, E. H., Washington, D. C., assignor of one-half interest to T. Van Skelline. Bracket. (Reissue)	8,464	Oct. 22	950	277	14	632
Beach, H. L., Montrose, Pa. Scroll-sawing machine	209,153	Oct. 22	788	229	14	610
Beck, A., and T. Warwick, Birmingham, England. Felly for vehicle-wheels	209,216	Oct. 22	850	246	14	619
Belicard, J., Macon, France. Let-off mechanism for looms	209,217	Oct. 22	851	246	14	619
Bell, W. (See Potter and Sloane, assignors.)						
Bill, C. H., Waltham, Mass. Crayon-mold-section mold	209,154	Oct. 22	789	229	14	610
Binns, L., near Bradford, York county, England. Machine for manufacturing bands, cords, or ropes	209,106	Oct. 22	734	212, 213	14	603
Blount, D. F. (See Katen, G. B., assignor.)						
Bookwalter, J. W., Springfield, Ohio. Steam-boiler furnace	209,218	Oct. 22	851	246	14	619
Bookwalter, J. W., Springfield, Ohio. Turbine water-wheel	209,219	Oct. 22	852	246, 247	14	619
Bott, J. E., assignor to C. Odling, Nottingham, England. Injector	209,220	Oct. 22	853	247, 248	14	619
Boughton, C. V., Titusville, Pa. Ball-target	209,155	Oct. 22	790	229	14	610
Bovee, D. W., Richland Centre, Wis. Hay raker and loader	209,156	Oct. 22	791	229	14	610
Bradford, C. K., Lynnfield, assignor to J. F. Faxon, Quincy, and J. W. Faxon, Boston, Mass. Sewing-machine	209,157	Oct. 22	791	230	14	610
Brazier, W. S. (See Deavs and Brazier.)						
Brock, W. E., New York, N. Y. Wash-board	209,221	Oct. 22	855	248	14	619
Brokhahne, A. V., New York, N. Y. Razor-strop	209,107	Oct. 22	737	214	14	604
Brokhahne, A. V., New York, N. Y. Razor-strop case	209,108	Oct. 22	738	214	14	604
Brown, T. H., Chicago, Ill. Sulky	209,109	Oct. 22	739	214	14	604
Buell, F. A., Brooklyn, N. Y. Saw-set	209,222	Oct. 22	856	248	14	619
Butterfield, G. F., Boston, Mass. Metal-founders' ladle	209,223	Oct. 22	856	248	14	620
Canaday, H. H., Fairfield, Iowa. Riding-cultivator	209,224	Oct. 22	857	249	14	620
Candee & Co., L. (See Watkinson, G., assignor.)						
Carlisle, J. H., and J. T. Taylor, Whitakers, N. C. Indexing apparatus	209,158	Oct. 22	792	230	14	611
Carpenter, J. L., Vineland, N. J. Stock-feeding device	209,225	Oct. 22	858	249	14	620
Carter, J., Blyth, Ontario, Canada. Steam-boiler cleaner	209,226	Oct. 22	859	249	14	620
Chapin, W. W., Manistee, Mich. Furnace-feeder	209,227	Oct. 22	860	249	14	620
Chapin, W. W., Manistee, Mich. Furnace-feeder	209,228	Oct. 22	861	250	14	620
Chase, G. (See Smith and Chase.)						
Clark, J. M., New Castle, Pa. Feather-renovator	209,230	Oct. 22	863	250	14	620
Clark, T. W., Oregon City, Oreg. Measuring attachment to fulling-mills	209,229	Oct. 22	862	250	14	620
Clarke, T. W. (See Hyde, J. S., assignor.) (Reissue.)						
Clemons, E., Pekin, Ill. Smoke-stack	209,231	Oct. 22	864	251	14	621
Colborn, A. R., *et al.* (See Smith, G. F., assignor.) (Reissue.)						
Cookson, C., Wright's Grove, Ill. Lowering attachment to hydraulic elevators	209,110	Oct. 22	739	214	14	604
Copeland, G. W., Malden, and J. E. Crisp, Boston, Mass. Lasting-machine	209,232	Oct. 22	865	251	14	621
Cornwell, W., Philadelphia, Pa. Dress-chart	209,111	Oct. 22	740	215	14	604
Cox, E. W., Cincinnati, Ohio. Bag-fastener	209,233	Oct. 22	865	251	14	621
Crisp, J. E. (See Copeland and Crisp.)						
Croft, W. M. (See Ewing, W. H., assignor.)						
Crotty, J. S., New York, N. Y. Corset-clasp	209,112	Oct. 22	742	215	14	604
Crotty, L. R., Waterloo, Iowa. Thill-coupling	209,234	Oct. 22	866	251	14	621
Cummings, G. W., San Francisco, Cal. Dredging-machine	209,159	Oct. 22	793	230	14	611
Cuthbertson, J. (See Fender, W. J., assignor.)						
Daly, W. F., Peru, Ind. Table-leaf supporter	209,235	Oct. 22	867	252	14	621

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Darozir, L., Natick, Mass. Last-channeling machine	209,113	Oct. 22	743	216	14	604
Davis, E. P., and W. J. Godfrey, Omaha, Nebr. Mold for casting sash-weights	209,237	Oct. 22	869	252	14	621
Davis, O. F. (See Rotschka and Davis.)						
Davis, W. M., Baltimore, Md. Crane for hoisting car-wheels, &c	209,236	Oct. 22	868	252	14	621
Dean, J. M. (See Hadley and Dean.)						
Deavs, C., and W. S. Brazier, New York, N. Y. Stuffing-box and packing for valve-stems	209,160	Oct. 22	794	230	14	611
De la Vega, M., assignor of one-half interest to S. Lima, New York, N. Y. Manufacture of artificial tallow	209,203	Oct. 22	840	.....	14	617
Denayrouze, A., Paris, France. Spinning-top	209,238	Oct. 22	870	253	14	622
Dieterich, C. F., Baltimore, Md. Gas-generating furnace	209,114	Oct. 22	744	{216 {217	14	604
Doolittle, T. B., Bridgeport, Conn. Switch for district-telephone systems	209,115	Oct. 22	747	217	14	605
Double Pointed Tack Company. (See Walton, J., assignor.) (Reissne.)						
Dungan, W. P., Jr., Watauga, Tenn. Clothes-pounder	209,239	Oct. 22	871	253	14	622
Du Plaine, E. A. C., Philadelphia, Pa. Alloy to be used with other alloys	209,240	Oct. 22	871	.....	14	622
Durner, M., *et al.* (See Seachrist, W., assignor.)						
Edison, T. A., Newark, N. J., assignor of one-half interest to G. B. Prescott. Quadruplex-telegraph repeater	209,241	Oct. 22	872	253	14	622
Eldridge, J. F. (See Holmes and Eldridge.)						
Elliott, C. J., and H. B. McCool, Pottsville, Pa. Water hibh or cock	209,161	Oct. 22	795	231	14	611
Evans, R. K., Washington, D. C. Fire-extinguishing apparatus	209,242	Oct. 22	873	.....	14	622
Ewing, W. H., assignor to W. M. Croft, Pittsburg, Pa. Pantaloons-protector	209,162	Oct. 22	796	231	14	611
Ewing, W. H., assignor to W. M. Croft, Pittsburg, Pa. Barrel or keg	209,163	Oct. 22	797	231	14	611
Fackler, J. W., Lumpkin, Ga. Sewing-machine tan attachment	209,116	Oct. 22	749	218	14	605
Farley, H. W., Oswego, assignor to C. H. Smith and J. Hewitt, Chicago, Ill. Lightning-rod. (Reissue)	8,459	Oct. 22	944	275	14	631
Farnsworth, T. T., Manassas, Va. Cloth-measuring apparatus	209,164	Oct. 22	798	231	14	611
Faxon, J. F., *et al.* (See Bradford, C. K., assignor.)						
Faxon, J. W., *et al.* (See Bradford, C. K., assignor.)						
Fay, N. H., Abbot, Me., assignor, by mesne assignments, to Shoe Machine Manufacturing Company, Boston, Mass. Sand-paper holder. (Reissne)	8,458	Oct. 22	943	275	14	631
Fender, W. J., assignor of one-third interest to J. Cuthbertson, Minneapolis, Minn. Middlings-separator	209,165	Oct. 22	799	232	14	611
Flint, J. G., Jr. (See Storle, O. O., assignor.)						
Flora, O. V., Madison, Ind. Stirrup	209,117	Oct. 22	750	218	14	605
Fullerton, J. S. (See Gestring and Fullerton.)						
Fulton, A., Olney, Ill. Wheat-heater	209,243	Oct. 22	874	253	14	622
Gaffron, W., Jefferson City, Mo. Apparatus for preserving beer in kegs	209,244	Oct. 22	875	254	14	622
Gallagher, M., Philadelphia, Pa. Pad for horses' heels	209,245	Oct. 22	876	254	14	622
Gallagher, P., Eureka, Nev. Bench-plane	209,246	Oct. 22	876	254	14	622
Geppert, A., Spring Prairie, Wis. Wheel-cultivator	209,118	Oct. 22	750	218	14	605
Gerard, F., Lincoln, Ill. Vehicle-spring	209,247	Oct. 22	877	254	14	623
Gestring, C., and J. S. Fullerton, St. Louis, Mo. Vehicle-axle skein	209,248	Oct. 22	878	255	14	623
Gibbs, J. E., Scottsborough, Ala. Reciprocating churn	209,249	Oct. 22	878	255	14	623
Gilbert, G. A. and H. J., Menomonee, Wis. Sleigh-knee	209,251	Oct. 22	881	256	14	623
Gilbert, H. J. (See Gilbert, G. A. and H. J.)						
Gilbert, J. H. (See Johnson, J., assignor.)						
Gilchriest, R., Louisville, Ky. Firemen's ladder	209,250	Oct. 22	879	{255 {256	14	623
Gill, W. R., Meadville, Pa. Countersink	209,252	Oct. 22	881	256	14	623
Glenn, J. D., Pleasantville, Pa., assignor to himself and E. A. L. Roberts. Device for removing paraffine from oil-wells	209,253	Oct. 22	882	256	14	623
Godfrey, W. J. (See Davis and Godfrey.)						
Godley, G. F., Philadelphia, Pa. Machine for coiling spiral springs	209,254	Oct. 22	883	257	14	624
Graydon, J. W., Washington, D. C. Heating railway-cars	209,166	Oct. 22	802	232	14	612
Grittinger, H. C., Cornwall, Pa. Flushing slag or cinder from blast-furnaces	209,119	Oct. 22	751	{218 {219	14	605
Gurley, L. E., *et al.* (See Gurley, W., assignor.)						
Gurley, W., assignor to W. and L. E. Gurley, Troy, N. Y. Tripod-head for surveying-instruments	209,255	Oct. 22	884	257	14	624
Hackett, J., Louisville, Ky. Molding-machine	209,256	Oct. 22	885	{257 {258	14	624
Hadley, H. W., and J. M. Dean, Lodi, N. Y. Gate	209,257	Oct. 22	886	258	14	624
Hadley, O. S., *et al.* (See Richey, G. T., assignor.)						
Hall, J. B., Chicago, Ill. Ship-building	209,167	Oct. 22	802	233	14	612
Hallett, W. R., Brussels, Ill. Adjustable reel for reapers	209,120	Oct. 22	753	219	14	605
Hammerschlag, S., Jersey City, N. J. Waxing paper. (Reissne)	8,460	Oct. 22	945	276	14	631
Hanna, F. J., Kane City, Pa. Oil-well pump	209,258	Oct. 22	887	258	14	624
Harrison, J. W., *et al.* (See Shickle, F., assignor.)						
Hatfield, W. F., Elizabeth, N. J. Manufacture of waste-paper baskets	209,168	Oct. 22	804	233	14	612
Haun, A., Pickwick, Pa. Low-water indicator and alarm	209,259	Oct. 22	888	259	14	624
Heaton, A. A., Binghamton, N. Y. Clothes-drier	209,121	Oct. 22	754	219	14	606
Hewitt, J., *et al.* (See Farley, H. W., assignor.) (Reissne.)						
Hibbard, Z. M., Freeport, Ill. Station-indicator	209,122	Oct. 22	755	219	14	606
Hildreth, H. P., *et al.* (See Nye, C. H., assignor.)						
Hill, R. F., New York, N. Y. Smoke and spark conveyer	209,260	Oct. 22	889	259	14	624
Hinchliffe, W., Nashville, Ky. Door-securer	209,261	Oct. 22	890	259	14	625
Hoerr, J., Denison, Tex. Cooling attachment for barrels	209,262	Oct. 22	891	260	14	625
Holmes, T. P., and J. F. Eldridge, Middleborough, Mass. Harness-saddle	209,123	Oct. 22	756	220	14	606
Howard, C. B., assignor of one-half interest to S. M. Howard, Wheeling, W. Va. Calendar-inkstand	209,169	Oct. 22	805	233	14	612
Howard, S. M. (See Howard, C. B., assignor.)						
Howard, T., *et al.* (See Shickle, F., assignor.)						
Hubbell, W. W., Philadelphia, Pa. Alloy for coin	209,263	Oct. 22	891	.....	14	625
Huston, D., assignor to himself and R. Vose, Jr., Boston, and F. W. Pelton, Dedham, Mass. Self-leveling berth for vessels	209,264	Oct. 22	892	260	14	625
Hyatt, J. W., Newark, N. J. Slate-grinding machine	209,265	Oct. 22	893	{260 {261	14	625
Hyde, J. S., deceased, by W. Peet and M. L. Hyde, administrators, and assignors to T. W. Clarke, Boston, Mass. Construction of railways. (Reissne)	8,465	Oct. 22	951	277	14	632
Hyde, M. L., administrator. (See Hyde, J. S.) (Reissne.)						
Irwin, J. H., Philadelphia, Pa. Telephone-transmitter	209,266	Oct. 22	897	261	14	625
Irwin, S. W., Columbia, S. C. Feathering paddle-wheel	209,267	Oct. 22	899	{261 {262	14	626
Jepson, J., assignor to Meriden, Britannia Company, West Meriden, Conn. Covered dish	209,268	Oct. 22	900	261	14	626
Johnson, J., Brooklyn, N. Y. Rubber packing	209,270	Oct. 22	901	.....	14	626
Johnson, J., assignor to himself and J. H. Gilbert, Brooklyn, N. Y. Composition for journal-bearings	209,170	Oct. 22	806	.....	14	612

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Johnson, R. A., Philadelphia, Pa. Tappet for stamp-rods	209,269	Oct. 22	901	262	14	626
Jones, O. (See Marston, F. W., assignor.)						
Jones, T. R., Utica, N. Y. Bed-bottom	209,124	Oct. 22	758	220	14	606
Kalb, A. J. (See Rotschka and Davis, assignors.)						
Kappelhoff, J. H., Philadelphia, Pa. Muff	209,271	Oct. 22	903	262	14	626
Katen, G. B., assignor of one-half interest to D. F. Blonnt, New York, N. Y. Curtain-cord tightener	209,125	Oct. 22	759	220	14	606
Kay, Z. L., San Diego, Cal. Ore-stamp	209,171	Oct. 22	807	234	14	612
Keefer, C. M., and R. S. Orsborn, Newcastle, Pa. Magic lantern for street-lamps	209,272	Oct. 22	903	263	14	626
Keith, J., Providence, R. I. Wax-thread sewing-machine	209,126	Oct. 22	760	{220 {221	{14	607
Kendrick, I., Philadelphia, Pa. Apparatus for promoting combustion in furnaces	209,273	Oct. 22	904	263	14	626
Kerr, T. B. (See Rogers, C., assignor.)						
Keys, E. C., Allegheny, Pa. Harvester cutter-bar	209,172	Oct. 22	808	234	14	612
Kidwell, J. L. (See Maloney and Shoemaker, assignors.)						
Kidwell, J. L., and J. A. Maloney, Georgetown, D. C., assignors to themselves and D. L. Shoemaker. Machine for cleaning grain	209,173	Oct. 22	808	234	14	613
Kimball, S. (See Simpson and Kimball.)						
Knappen, L. E., *et al.* (See Richey, G. T., assignor.)						
La Montagne, W., Detroit, Mich. Toy	209,274	Oct. 22	906	263	14	626
Lane, J., Hyde Park, Ill. Plow	209,174	Oct. 22	809	235	14	613
Lane, J., Hyde Park, Ill. Sulky-plow	209,175	Oct. 22	810	235	14	613
Leycester, C. H., Gwynfé, Llangadock, South Wales, Great Britain. Portable hammock shelter-tent	209,275	Oct. 22	907	264	14	627
Lima, S. (See De la Vega, M., assignor.)						
Longden, C. E., New Haven, Conn. Gun-cleaner	209,276	Oct. 22	908	264	14	627
Mack, J. C., *et al.* (See Seachrist, W., assignor.)						
Mackay, M., London, England, assignor to H. Bash, New York, N. Y. Varnish	209,176	Oct. 22	813	.....	14	613
Major, S. G., Haynesville, Mo. Cow-milker	209,277	Oct. 22	907	264	14	627
Maloney, J. A. (See Kidwell and Maloney.)						
Maloney, J. A., and D. L. Shoemaker, Georgetown, D. C., assignors to themselves and J. L. Kidwell. Machine for cleaning grain	209,177	Oct. 22	814	235	14	613
Manard, J. W., Rockford, Ill. Hose-reel	209,278	Oct. 22	909	265	14	627
Marsden, M. W., Connellsville, Pa. Paint-brush bridle	209,279	Oct. 22	910	265	14	627
Marston, F. W., assignor to O. Jones, Philadelphia, Pa. Cartridge	209,127	Oct. 22	762	221	14	607
Mattson, M., New York, N. Y. Vulcanizing rubber tubes	209,128	Oct. 22	763	221	14	607
McCool, H. B. (See Elliott and McCool.)						
McDermott, W., Cleveland, Ohio. Grindstone-frame	209,280	Oct. 22	911	265	14	627
McGregor, W., assignor to N. C. Thompson, Rockford, Ill. Plow-colter	209,129	Oct. 22	764	222	14	607
McKenna, W. S., Pittsburg, Pa. Annealing-furnace	209,130	Oct. 22	764	222	14	607
McKenzie, A. (See McKenzie, D., Jr., assignor.)						
McKenzie, D., Jr., assignor to himself and A. McKenzie, Washington, D. C. Bag-fastener and tag-holder	209,281	Oct. 22	911	266	14	627
McNair, T. F., Worthville, Ga. Plow	209,282	Oct. 22	912	266	14	627
McPherson, A., *et al.* (See Sweetland, J. B., assignor.)						
Meigs, M. C., Washington, D. C. Reflector for candles	209,178	Oct. 22	815	236	14	614
Meikle, T., Louisville, Ky. Sulky-plow	209,283	Oct. 22	913	266	14	628
Meikle, T., Louisville, Ky. Plow-standard	209,284	Oct. 22	914	267	14	628
Meriden Britannia Company. (See Jepson, J., assignor.)						
Miles, G., Grantville, Mass. Apparatus for steaming wood	209,179	Oct. 22	816	236	14	614
Miles, T. C., New York, N. Y. Spring-scales	209,180	Oct. 22	817	236	14	614
Miller, J., Cambridgeport, Mass. Locking device for gas and water pipes, cocks, &c	209,181	Oct. 22	818	237	14	614
Mitchell, J. H., Bloomfield, Iowa. Ticket and label holder	209,285	Oct. 22	914	267	14	628
Morley, A., Cherokee, Kans. Middlings-separator	209,182	Oct. 22	819	237	14	614
Mulford, D. L., New York, assignor to J. O. Adsit, Hornellsville, N. Y. Paper-damping implement	209,183	Oct. 22	821	237	14	614
New, T., New York, N. Y. Fire and water proof roof	209,131	Oct. 22	767	223	14	607
Nickerson, J. F., Lynn, Mass. Insole for boots and shoes	209,184	Oct. 22	822	237	14	614
Niedringhaus, F. G. and W. F., assignors to St. Louis Stamping Company, St. Louis, Mo. Handles for tea and coffee pots of enameled iron-ware	209,132	Oct. 22	768	223	14	607
Niedringhaus, W. F. (See Niedringhaus, F. G. and W. F.)						
Nördlinger, I. D., Stattgart, Würtemberg, Germany. Disintegrating the stalks of hops	209,286	Oct. 22	916	.....	14	628
Nye, C. H., Baltimore, Md., assignor to himself and, by mesne assignments, to M. L. Ross and H. P. Hildreth, New York, N. Y. Can for fluids	209,185	Oct. 22	823	238	14	615
Obert, F. J., Jr., Reading, Pa. Composition for removing incrustations from steam-boilers	209,186	Oct. 22	823	.....	14	615
Odling, C. (See Bott, J. E., assignor.)						
Orsburn, R. S. (See Keefer and Orsburn.)						
Ongheltree, J. J., Rondont, N. Y. Music-leaf turner	209,287	Oct. 22	916	267	14	628
Page, A. S. (See Babcock, D., assignor.)						
Patterson, A. A., Corinne, Utah Ter. Umbrella support	209,187	Oct. 22	824	238	14	615
Patterson, T. L. (See Walker and Patterson.)						
Paull, A. W., Wheeling, West Va. Lantern	209,188	Oct. 22	825	238	14	615
Peet, W., administrator. (See Hyde, J. S.) (Reissne.)						
Pelton, F. W., *et al.* (See Huston, D., assignor.)						
Peppler, J. C., Columbus, Ohio. Hitching-post	209,288	Oct. 22	917	267	14	628
Pfeiffer, F., Norfolk, Va. Oyster-package	209,189	Oct. 22	827	238	14	615
Pfleghar, F. P., New Haven, Conn. Holdback	209,190	Oct. 22	828	239	14	615
Phelps, G. M., Brooklyn, N. Y. Speaking-telephone	209,289	Oct. 22	918	268	14	628
Pierce, G., Boston, Mass. Globe-valve	209,290	Oct. 22	919	268	14	628
Plummer, J. H., Brooklyn, N. Y. Flower-pin	209,191	Oct. 22	828	239	14	615
Potter, R. M., Jersey City, N. J., and W. M. Sloane, assignors, by mesne assignments, to W. Bell, New York, N. Y. Pressure regulator or governor	209,192	Oct. 22	829	239	14	615
Powell, F. A., *et al.* (See Powell, N. J., assignor.)						
Powell, J., *et al.* (See Powell, N. J., assignor.)						
Powell, N. J., Fairmount, Nebr., assignor to himself, J. and F. A. Powell, and S. L. Robinson, Pontiac, Ill. Smoothing-iron	209,133	Oct. 22	769	223	14	607
Prescott, G. B. (See Edison, T. A., assignor.)						
Purinton, J. K., Dallas Centre, Iowa. Feed-cooker and steam-washer	209,134	Oct. 22	770	223	14	608
Rape, W. M., Notasulga, Ala. Wagon-brake	209,291	Oct. 22	921	268	14	628
Reaser, W. T., Chicago, Ill. Syringe	209,292	Oct. 22	921	268	14	629
Reynolds, E. D. and O. B., Brockton, Mass. Corn-planter	209,293	Oct. 22	922	269	14	629
Reynolds, O. B. (See Reynolds, E. D. and O. B.)						
Rhode, W. (See Ridgeway, G. C., assignor.)						
Richey, G. T., assignor of three-fourths interest to O. S. Hadley and L. E. Knappen, Hastings, and W. J. Stuart, Grand Rapids, Mich. Flour-bolt	209,193	Oct. 22	830	{239 {240	{14	615
Richmond, A. M., New York, N. Y., assignor to G. L. Richmond, East Orange, N. J. Combined button and fastener	209,135	Oct. 22	771	224	14	608
Richmond, G. L. (See Richmond, A. M., assignor.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ridgway, G. C., assignor of one-half interest to W. Rhode, Olney, Ill. Permutation-padlock	209,294	Oct. 22	924	269	14	629
Roberts, E. A. L. (See Glenn, J. D., assignor.)						
Robinson, S. L., *et al.* (See Powell, N. J., assignor.)						
Robison, C. H., Cleveland, Ohio. Butter-package	209,136	Oct. 22	771	224	14	608
Rogers, C., Pittsburg, Pa., assignor to himself and T. B. Kerr. Water-closet	209,295	Oct. 22	925	269	14	629
Ross, M. L., *et al.* (See Nye, C. H., assignor.)						
Rotschka, E. H., and O. F. Davis; said Rotschka assignor to said Davis; said Davis assignor of one-half interest to A. J. Kalb, Quincy, Ill. Fire-escape	209,137	Oct. 22	772	224	14	608
Sargent, F. G., Graniteville, Mass. Wool-washing machine	209,138	Oct. 22	773	224, 225	14	608
Schreiber, A., Brooklyn, N. Y. Lamp-wick attachment	209,194	Oct. 22	831	240	14	616
Scott, M., Sidney, Ill. Draft-equalizer	209,296	Oct. 22	926	270	14	629
Seachrist, W., assignor of two-thirds interest to J. C. Mack and M. Durner, Erie, Pa. Churn	209,195	Oct. 22	831	240	14	616
Shahan, T. H., Boston, Mass. Air-tight vessel	209,297	Oct. 22	927	270	14	629
Shaw, J. E., Norristown, Pa. Sand-box for street-cars	209,196	Oct. 22	832	240	14	616
Shaw, N. H. (See Shaw, W. D. and N. H.)						
Shaw, W. D., Ashland, N. H., and N. H. Shaw, Bedford, Quebec, Canada. Wood-grinding machine for paper-pulp	209,197	Oct. 22	833	241	14	616
Sheldon, G. T., Chelmsford, Mass. Machine for unhairing and scouring hides and skins	209,298	Oct. 22	928	270	14	629
Shickle, F., assignor of two-thirds interest to T. Howard, and J. W. Harrison, St. Louis, Mo. Pipe-molding machine	209,139	Oct. 22	775	225	14	608
Shoe Machine Manufacturing Company. (See Fay, N. H., assignor.) (Reissue.)						
Shoemaker, D. L. (See Kidwell and Maloney, assignors.)						
Shoemaker, D. L. (See Maloney and Shoemaker.)						
Simpson, J. P., Cincinnati, Ohio. Carriage-top prop	209,198	Oct. 22	834	241	14	616
Simpson, W. A., and S. Kimball, Lawrence, Kans. Device for driving cattle from railway-tracks	209,299	Oct. 22	929	271	14	629
Sloane, W. M. (See Potter and Sloane.)						
Smith, C. H., *et al.* (See Farley, H. W., assignor.) (Reissue.)						
Smith, G. F., Michigan City, Ind., assignor, by mesne assignments, of three-fourths interest to C. W. Woods, H. C. Smith, and A. R. Colborn. Refrigerator. (Reissue)	8,463	Oct. 22	948	276, 277	14	632
Smith, G. S., Mystic Bridge, Conn. Take-up and let-off mechanism for looms	209,300	Oct. 22	930	271	14	630
Smith, H. C., *et al.* (See Smith, G. F., assignor.) (Reissue.)						
Smith, R. A., and G. Chase, Spirit Lake, Iowa. Grain-separator	209,140	Oct. 22	775	225	14	608
Southard, G., Oakwood, Ill. Temporary binder for manifold writing	209,141	Oct. 22	776	226	14	608
Southworth, H., Alfordsville, Ind. Cut-off	209,301	Oct. 22	932	271	14	630
Sprague, H., Churchville, N. Y. Carriage-spring. (Reissue)	8,461	Oct. 22	946	276	14	632
Sprague, J. W. (See Wells, R., assignor.)						
Stafford, M. B., New York, N. Y. Railway-rail	209,302	Oct. 22	933	272	14	630
Stanley, E., Albion, Iowa. Fence-post	209,303	Oct. 22	934	272	14	630
Stanley, J. C., New Hartford, Conn. Spinning-spindle	209,199	Oct. 22	835	241	14	616
Stephan, J. A., Worcester, England. Manufacturing gas	209,304	Oct. 22	934	272	14	630
Stevens, W. X., East Brookfield, Mass. Vise	209,142	Oct. 22	778	226	14	609
Stewart, S. N., Philadelphia, Pa. Water-mill	209,143	Oct. 22	778	226	14	609
St. Louis Stamping Company. (See Niedringhaus, F. G. and W. F., assignors.)						
Storie, O. O., assignor of two-thirds interest to J. G. Flint, Jr., Milwaukee, Wis. Tension-wheel	209,144	Oct. 22	780	226	14	609
Street, E., South Orange, N. J. Counterfeit-coin detecter	209,145	Oct. 22	780	227	14	609
Streiley, J., assignor of one-half interest to J. T. Young, Vincennes, Ind. Slide-valve	209,305	Oct. 22	935	272	14	630
Stuart, W. J., *et al.* (See Richey, G. T., assignor.)						
Sweeney, H. N., *et al.* (See Sweetland, J. B., assignor.)						
Sweetland, J. B., Pontiac, assignor of two-thirds interest to H. N. Sweeney and A. McPherson, Detroit, Mich. Evaporator and fruit-drier	209,146	Oct. 22	781	227	14	609
Tarr, J. B., Fairhaven, Mass. Fog and alarm whistle	209,200	Oct. 22	836	241	14	616
Taylor, G., New York, N. Y. Pulley	209,147	Oct. 22	782	227	14	609
Taylor, J. T. (See Carlisle and Taylor.)						
Thompson, N. C. (See McGregor, W., assignor.)						
Tisdale, C. D., Boston, Mass. Electric railway-signal	209,148	Oct. 22	783	227	14	609
Torwegge, F. W., St. Louis, Mo. Hat-tip	209,306	Oct. 22	935	273	14	630
Travis, C. L., Minneapolis, Minn. Grain-binder	209,149	Oct. 22	784	228	14	609
Trickey, A. G., Manchester, N. H. Alphabet-block	209,307	Oct. 22	936	273	14	630
Tripp, J. A., and H. M. Ballou, Union Centre, N. Y. Log-turner	209,201	Oct. 22	838	242	14	616
Tufts, E., Malden, Mass. Lantern	209,308	Oct. 22	937	273	14	630
Underwood, W. T., Louisville, Ky. Portable fire-engine	209,202	Oct. 22	839	242	14	617
Van Skelline, T. (See Bates, E. H., assignor.) (Reissue.)						
Vose, R., Jr., *et al.* (See Huston, D., assignor.)						
Walker, H. W., and T. L. Patterson, Greenock, North Britain. Centrifugal machine for purifying and refining sugar	209,309	Oct. 22	937	273, 274	14	631
Walton, J., Brooklyn, assignor to Double Pointed Tack Company, New York, N. Y. Ball-ear for pails. (Reissue)	8,462	Oct. 22	947	276	14	632
Wands, J. C., Nashville, Tenn. Roof-battening	209,310	Oct. 22	939	274	14	631
Warwick, T. (See Beck and Warwick.)						
Wason, A., New Boston, N. H. Machine for making barrel-heads	209,311	Oct. 22	940	274	14	631
Watkinson, G., assignor to L. Candee & Co., New Haven, Conn. India-rubber boot	209,312	Oct. 22	941	275	14	631
Wells, C. J., Buffalo, N. Y. Machine for unloading grain from vessels	209,204	Oct. 22	840	242	14	617
Wells, R., assignor to himself and J. W. Sprague, Jeffersonville, Ind. Car-axle-box lid	209,150	Oct. 22	785	228	14	610
White, R., Hartford, Conn. Curtain-fixture	209,313	Oct. 22	942	275	14	631
Wiester, W. H., San Francisco, Cal. Egg-beater	209,205	Oct. 22	841	242	14	617
Woods, C. W., *et al.* (See Smith, G. F., assignor.) (Reissue.)						
Young, J. T. (See Streily, J., assignor.)						
Zinsser, A., New York, N. Y. Refrigerator	209,314	Oct. 22	943	.....	14	631

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 22d DAY OF OCTOBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Air-tight vessel	T. H. Shahan	209,297	Oct. 22	927	270	14	629
Alloy for coin	W. W. Hubbell	209,263	Oct. 22	891	.....	14	625
Alloy to be used with other alloys	E. A. C. Du Plaine	209,240	Oct. 22	871	.....	14	622
Alphabet-block	A. G. Trickey	209,307	Oct. 22	936	273	14	630
Axle-box lid. Car-	R. Wells	209,150	Oct. 22	785	228	14	610
Axle skein. Vehicle-	C. Gestring and J. S. Fullerton	209,248	Oct. 22	878	255	14	623
Bag-fastener	E. W. Cox	209,233	Oct. 22	865	251	14	621
Bag-fastener and tag-holder	D. McKenzie, Jr.	209,281	Oct. 22	911	266	14	627
Bands, cords, or ropes. Machine for manufacturing	L. Binns	209,106	Oct. 22	734	212, 213	14	603
Barrel and keg	W. H. Ewing	209,163	Oct. 22	797	231	14	611
Barrel-heads. Machine for making	A. Wason	209,311	Oct. 22	940	274	14	631
Barrels. Cooling attachment for	J. Hoerr	209,262	Oct. 22	891	260	14	625
Basket. Manufacture of waste-paper	W. F. Hatfield	209,168	Oct. 22	804	233	14	612
Bed-bottom	T. R. Jones	209,124	Oct. 22	758	220	14	606
Beer in kegs. Apparatus for preserving	W. Gaffron	209,244	Oct. 22	875	254	14	622
Berth for vessels. Self-leveling	D. Huston	209,264	Oct. 22	892	260	14	625
Bibb or cock. Water	C. J. Elliott and H. B. McCool	209,161	Oct. 22	795	231	14	611
Binder for manifold writing. Temporary	G. Southard	209,141	Oct. 22	776	226	14	608
Binder. Temporary	W. H. Bailey	209,213	Oct. 22	848	245	14	618
Boiler cleaner. Steam-	J. Carter	209,226	Oct. 22	859	249	14	620
Boilers. Composition for removing incrustations from steam-	F. J. Obert, Jr.	209,186	Oct. 22	823	.....	14	615
Boot and shoe insole	J. F. Nickerson	209,184	Oct. 22	822	237	14	614
Boot. India-rubber	G. Watkinson	209,312	Oct. 22	941	275	14	631
Bracket	E. H. Bates. (Reissue)	8,464	Oct. 22	950	277	14	632
Brake. Wagon-	W. M. Rape	209,291	Oct. 22	921	268	14	628
Brush bridle. Paint-	M. W. Marsden	209,279	Oct. 22	910	265	14	627
Butter-package	C. H. Robison	209,136	Oct. 22	771	224	14	608
Button and fastener. Combined	A. M. Richmond	209,135	Oct. 22	771	224	14	608
Can for fluids	C. H. Nye	209,185	Oct. 22	823	238	14	615
Candles. Reflector for	M. C. Meigs	209,178	Oct. 22	815	236	14	614
Cars. Heating railway-	J. W. Graydon	209,166	Oct. 22	802	232	14	612
Cars. Sand-box for street-	J. E. Shaw	209,196	Oct. 22	832	240	14	616
Carriage-top prop	J. P. Simpson	209,198	Oct. 22	834	241	14	616
Cartridge	F. W. Marston	209,127	Oct. 22	762	221	14	607
Casting sash-weights. Mold for	E. P. Davis and W. J. Godfrey	209,237	Oct. 22	869	252	14	621
Chart. Dress-	W. Cornwell	209,111	Oct. 22	740	215	14	604
Churn	W. Seachrist	209,195	Oct. 22	831	240	14	616
Churn. Reciprocating	J. E. Gibbs	209,249	Oct. 22	878	255	14	623
Cloth-measuring apparatus	T. T. Farnsworth	209,164	Oct. 22	798	231	14	611
Cloth stretching and drying machine	D. Babcock	209,212	Oct. 22	848	245	14	618
Clothes-drier	A. A. Heaton	209,121	Oct. 22	754	219	14	606
Clothes-pounder	W. P. Dungan, Jr.	209,239	Oct. 22	871	253	14	622
Coin detecter. Counterfeit-	E. Street	209,145	Oct. 22	780	227	14	609
Cooker and steam-washer. Feed-	J. K. Purinton	209,134	Oct. 22	770	223	14	608
Corset-clasp	J. S. Crotty	209,112	Oct. 22	742	215	14	604
Countersink	W. R. Gill	209,252	Oct. 22	881	256	14	623
Crane for hoisting car-wheels, &c	W. M. Davis	209,236	Oct. 22	868	252	14	621
Crayon-mold-section mold	C. H. Bill	209,154	Oct. 22	789	229	14	610
Cultivator. Riding-	H. H. Canaday	209,221	Oct. 22	857	249	14	620
Cultivator. Wheel-	D. Argerbright	209,210	Oct. 22	846	244	14	618
Cultivator. Wheel-	A. Geppert	209,118	Oct. 22	750	218	14	605
Curtain-cord tightener	G. B. Katen	209,125	Oct. 22	759	220	14	606
Curtain-fixture	R. White	209,313	Oct. 22	942	275	14	631
Cut-off	H. Southworth	209,301	Oct. 22	932	271	14	630
Dish. Covered	J. Jepson	209,268	Oct. 22	900	262	14	626
Door-securer	W. Hinchliffe	209,261	Oct. 22	890	259	14	625
Draft-equalizer	M. Scott	209,296	Oct. 22	926	270	14	629
Dredging-machine	G. W. Cummings	209,159	Oct. 22	793	230	14	611
Egg-beater	W. H. Wiester	209,205	Oct. 22	841	242	14	617
Elevators. Lowering attachment to hydraulic	C. Cookson	209,110	Oct. 22	739	214	14	604
Engine. Portable fire-	W. T. Underwood	209,202	Oct. 22	839	242	14	617
Evaporator and fruit-drier	J. B. Sweetland	209,146	Oct. 22	781	227	14	609
Feather-renovator	J. M. Clark	209,230	Oct. 22	863	250	14	620
Feed-water heater	W. Baragwanath	209,105	Oct. 22	732	212	14	603
Felly for vehicle-wheels	A. Beck and T. Warwick	209,216	Oct. 22	850	246	14	619
Fence-post	E. Stanley	209,303	Oct. 22	934	272	14	630
Fire-escape	E. H. Rotschka and O. F. Davis	209,137	Oct. 22	772	224	14	608
Fire-extinguishing apparatus	R. K. Evans	209,242	Oct. 22	873	.....	14	622

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Flour-bolt	G. T. Richey	209,193	Oct. 22	830	239 240	14	615
Furnace. Annealing	W. S. McKenna	209,130	Oct. 22	764	222	14	607
Furnace-feeder	W. W. Chapin	209,227	Oct. 22	860	249	14	620
Furnace-feeder	W. W. Chapin	209,228	Oct. 22	861	250	14	620
Furnace. Gas-generating	C. F. Dieterich	209,114	Oct. 22	744	216 217	14	604
Furnace. Steam-boiler	J. W. Bookwalter	209,218	Oct. 22	851	246	14	619
Furnaces. Apparatus for promoting combustion in	I. Kendrick	209,273	Oct. 22	904	263	14	626
Furnaces. Flushing slag or cinder from blast-	H. C. Grittinger	209,119	Oct. 22	751	218 219	14	605
Gas. Manufacturing	J. A. Stephan	209,304	Oct. 22	934	272	14	630
Gate	H. W. Hadley and J. M. Dean	209,257	Oct. 22	886	258	14	624
Gate. Fence-	H. H. Allen	209,151	Oct. 22	787	228	14	610
Grain-binder	C. L. Travis	209,149	Oct. 22	784	228	14	609
Grain-cleaning machine	J. L. Kidwell and J. A. Maloney	209,173	Oct. 22	808	234	14	613
Grain-cleaning machine	J. A. Maloney and D. L. Shoemaker	209,177	Oct. 22	814	235	14	613
Grain from vessels. Machine for unloading	C. J. Wells	209,304	Oct. 22	840	242	14	617
Grain-separator	J. Allonas	209,308	Oct. 22	843	243	14	617
Grain-separator	R. A. Smith and G. Chase	209,140	Oct. 22	775	225	14	608
Grindstone-frame	W. McDermott	209,280	Oct. 22	911	265	14	627
Gun-cleaner	C. E. Longden	209,276	Oct. 22	908	264	14	627
Hammock and shelter-tent. Portable	C. H. Leycester	209,275	Oct. 22	907	264	14	627
Harvester cutter-bar	E. C. Keys	209,179	Oct. 22	808	234	14	612
Hat-tip	F. W. Torwegge	209,306	Oct. 22	935	273	14	630
Hides and skins. Machine for unhairing and scouring	G. T. Sheldon	209,298	Oct. 22	928	270	14	629
Hitching-post	J. C. Peppler	209,288	Oct. 22	917	267	14	628
Holdback	F. P. Pfleghar	209,190	Oct. 22	828	239	14	615
Hops. Disintegrating the stalks of	I. D. Nordlinger	209,286	Oct. 22	916	.....	14	628
Horses' heels. Pad for	M. Gallagher	209,245	Oct. 22	876	254	14	622
Hose-reel	J. W. Manard	209,278	Oct. 22	909	265	14	627
Index. Revolving	L. U. Albers	209,206	Oct. 22	842	243	14	617
Indexing apparatus	J. H. Carlisle and J. T. Taylor	209,158	Oct. 22	792	230	14	611
Indicator and alarm. Low-water	A. Hann	209,259	Oct. 22	888	259	14	624
Indicator. Station-	Z. M. Hibbard	209,122	Oct. 22	755	219	14	606
Injector	J. E. Bott	209,220	Oct. 22	853	247 248	14	619
Inkstand. Calendar	C. B. Howard	209,169	Oct. 22	805	233	14	612
Insulating railway-tracks	L. Bastet	209,215	Oct. 22	849	245	14	618
Journal-bearings. Composition for	J. Johnson	209,170	Oct. 22	806	.....	14	612
Ladder. Firemen's	R. Gilchriest	209,250	Oct. 22	879	255 256	14	623
Ladle. Metal-founders'	G. F. Butterfield	209,223	Oct. 22	856	248	14	620
Lamp-wick attachment	A. Schreiber	209,194	Oct. 22	831	240	14	616
Lamps. Magic lantern for street-	C. M. Keefer and R. S. Orsburn	209,272	Oct. 22	903	263	14	626
Lantern	A. W. Paull	209,188	Oct. 22	825	238	14	615
Lantern	E. Tufts	209,308	Oct. 22	937	273	14	630
Last-channeling machine	L. Darozir	209,113	Oct. 22	743	216	14	604
Lasting-machine	G. W. Copeland and J. E. Crisp	209,232	Oct. 22	865	251	14	621
Lifting-jack	C. F. Asire	209,211	Oct. 22	847	244	14	618
Lightning-rod	H. W. Farley. (Reissue)	8,459	Oct. 22	944	275	14	631
Locomotive	J. J. Anthony	209,209	Oct. 22	845	244	14	618
Log-turner	J. A. Tripp and H. M. Ballou	209,201	Oct. 22	838	242	14	616
Loom let-off mechanism	J. Belicard	209,217	Oct. 22	851	246	14	619
Looms. Take-up and let-off mechanism for	G. S. Smith	209,300	Oct. 22	930	271	14	630
Main and pipe	E. H. Austin	209,104	Oct. 22	731	211 212	14	603
Middlings-separator	W. J. Fender	209,165	Oct. 22	799	232	14	611
Middlings-separator	A. Morley	209,182	Oct. 22	819	237	14	614
Milker. Cow-	S. G. Major	209,277	Oct. 22	909	264	14	627
Mill. Fulling-	A. C. Arnold and J. H. Aiken	209,152	Oct. 22	787	228	14	610
Mill. Water-	S. N. Stewart	209,143	Oct. 22	778	226	14	609
Mills. Measuring attachment to fulling-	T. W. Clark	209,229	Oct. 22	862	250	14	620
Molding-machine	J. Hackett	209,256	Oct. 22	885	257 258	14	624
Muff	J. H. Kappelhoff	209,271	Oct. 22	903	262	14	626
Music-leaf turner	J. J. Ongheltree	209,287	Oct. 22	916	267	14	628
Oyster-package	F. Pfeiffer	209,189	Oct. 22	827	238	14	615
Packing. Rubber	J. Johnson	209,270	Oct. 22	901	.....	14	626
Paddle-wheel. Feathering	S. W. Irwin	209,267	Oct. 22	899	261 262	14	626
Padlock. Permutation-	G. C. Ridgway	209,294	Oct. 22	924	269	14	629
Pails. Bail-ear for	J. Walton. (Reissue)	8,462	Oct. 22	947	276	14	632
Pantaloons-protector	W. H. Ewing	209,102	Oct. 22	796	231	14	611
Paper-damping implement	D. L. Mulford	209,183	Oct. 22	821	237	14	614
Paper-pulp. Wood-grinding machine for	W. D. and N. H. Shaw	209,197	Oct. 22	833	241	14	616
Paper. Waxing	S. Hammerschlag. (Reissue)	8,460	Oct. 22	945	276	14	631
Pin. Flower-	J. H. Plummer	209,191	Oct. 22	828	239	14	615
Pipe-connections. Vitreous lining for	E. H. Austin	209,103	Oct. 22	730	211	14	603
Pipe-molding machine	F. Shickle	209,139	Oct. 22	775	225	14	608
Pipes, cocks, &c. Locking device for gas and water	J. Miller	209,181	Oct. 22	818	237	14	614
Plane. Bench-	P. Gallagher	209,246	Oct. 22	876	254	14	622
Planter. Corn-	E. D. and O. B. Reynolds	209,293	Oct. 22	922	269	14	629
Plow	J. Lane	209,174	Oct. 22	809	235	14	613
Plow	T. F. McNair	209,282	Oct. 22	912	266	14	627
Plow-colter	W. McGregor	209,129	Oct. 22	764	222	14	607
Plow-standard	T. Meikle	209,284	Oct. 22	914	267	14	628
Plow. Sulky-	J. Lane	209,175	Oct. 22	810	235	14	613
Plow. Sulky-	T. Meikle	209,283	Oct. 22	913	266	14	628
Pressure regulator or governor	R. M. Potter and W. M. Sloan	209,192	Oct. 22	829	239	14	615
Pulley	G. Taylor	209,147	Oct. 22	782	227	14	609
Pump. Oil-well	F. J. Hanna	209,258	Oct. 22	887	258	14	624
Railway-rail	M. B. Stafford	209,302	Oct. 22	933	272	14	630
Railway-signal. Electric	C. D. Tisdale	209,148	Oct. 22	783	227	14	609
Railway-tracks. Device for driving cattle from	W. A. Simpson and S. Kimball	209,299	Oct. 22	929	271	14	629
Railways. Construction of	J. S. Hyde. (Reissue)	8,465	Oct. 22	951	277	14	632
Raker and loader. Hay	D. W. Bovee	209,156	Oct. 22	791	229	14	610
Razor-strop	A. V Brokhahne	209,107	Oct. 22	737	214	14	604

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Razor-strop case	A. V. Brokhahne	209,108	Oct. 22	738	214	14	604
Reapers. Adjustable reel for	W. R. Hallett	209,120	Oct. 22	753	219	14	605
Refrigerator	G. F. Smith. (Reissue)	8,463	Oct. 22	948	276 277	14	632
Refrigerator	A. Zinsser	209,314	Oct. 22	943	.....	14	631
Roof-battening	J. C. Wands	209,310	Oct. 22	939	274	14	631
Roof. Fire and water-proof	T. New	209,131	Oct. 22	767	223	14	607
Rubber tubes. Vulcanizing	M. Mattson	209,138	Oct. 22	763	221	14	607
Saddle. Harness-	T. P. Holmes and J. F. Eldridge	209,123	Oct. 22	756	220	14	606
Sand-paper holder	N. H. Fay. (Reissue)	8,458	Oct. 22	943	275	14	631
Saw-set	F. A. Buell	209,222	Oct. 22	856	248	14	619
Sawing machine. Scroll-	H. L. Beach	209,153	Oct. 22	788	229	14	610
Scales. Spring-	T. C. Miles	209,180	Oct. 22	817	236	14	614
Sewing-machine	C. K. Bradford	209,157	Oct. 22	791	230	14	610
Sewing-machine fan attachment	J. W. Fackler	209,116	Oct. 22	749	218	14	605
Sewing-machine. Wax-thread	J. Keith	209,126	Oct. 22	760	220 221	14	607
Sheep-rack	N. E. Allen	209,207	Oct. 22	843	243	14	617
Ship-building	J. B. Hall	209,167	Oct. 22	802	233	14	612
Slate-grinding machine	J. W. Hyatt	209,265	Oct. 22	893	260 261	14	625
Sleigh-knee	G. A. and H. J. Gilbert	209,251	Oct. 22	881	256	14	623
Smoke and spark conveyer	R. F. Hill	207,360	Oct. 22	889	259	14	624
Smoke-stack	E. Clemons	209,231	Oct. 22	864	251	14	621
Smoothing-iron	N. J. Powell	209,133	Oct. 22	769	223	14	607
Spinning-spindle	J. C. Stanley	209,199	Oct. 22	835	241	14	616
Spoke-trimmer	P. Barringer	209,214	Oct. 22	849	245	14	618
Spring. Carriage-	H. Sprague. (Reissue)	8,461	Oct. 22	946	276	14	632
Spring. Vehicle-	F. Gerard	209,247	Oct. 22	877	254	14	623
Springs. Machine for coiling spiral	G. F. Godley	209,254	Oct. 22	883	257	14	624
Stall for vessels. Horse and cattle	B. Albee	209,102	Oct. 22	729	211	14	603
Stamp. Ore-	Z. L. Kay	209,171	Oct. 22	807	234	14	612
Stamp-rods. Tappet for	R. A. Johnson	209,269	Oct. 22	901	262	14	626
Stirrup	O. V. Flora	209,117	Oct. 22	750	218	14	605
Stock-feeding device	J. L. Carpenter	209,225	Oct. 22	858	249	14	620
Stuffing-box and packing for valve-stems	C. Deavs and W. S. Brazier	209,160	Oct. 22	794	230	14	611
Sugar. Centrifugal machine for purifying and refining	H. W. Walker and T. L. Patterson	209,309	Oct. 22	937	273 274	14	631
Sulky	T. H. Brown	209,109	Oct. 22	739	214	14	604
Surveying-instruments. Tripod-head for	W. Gurley	209,255	Oct. 22	884	257	14	624
Syringe	W. T. Reaser	209,292	Oct. 22	921	268	14	629
Table-leaf support	W. F. Daly	209,235	Oct. 22	867	252	14	621
Tallow. Manufacture of artificial	M. De la Vega	209,203	Oct. 22	840	.....	14	617
Target. Ball-	C. V. Boughton	209,155	Oct. 22	790	229	14	610
Tea and coffee pots of enameled iron-ware. Handle for	F. G. and W. F. Niedringhaus	209,132	Oct. 22	768	223	14	607
Telegraph repeater. Quadruplex-	T. A. Edison	209,241	Oct. 22	872	253	14	622
Telephone. Speaking-	G. M. Phelps	209,289	Oct. 22	918	268	14	628
Telephone systems. Switch for district-	T. B. Doolittle	209,115	Oct. 22	747	217	14	605
Telephone-transmitter	J. H. Irwin	209,266	Oct. 22	897	261	14	625
Tendon-wheel	O. O. Storlo	209,144	Oct. 22	780	226	14	609
Thill-coupling	L. R. Crotty	209,234	Oct. 22	866	251	14	621
Ticket and label holder	J. H. Mitchell	209,285	Oct. 22	914	267	14	628
Top. Spinning-	A. Denayrouze	209,238	Oct. 22	870	253	14	622
Toy	W. La Montague	209,274	Oct. 22	906	263	14	626
Umbrella-support	A. A. Patterson	209,187	Oct. 22	824	238	14	615
Valve. Globe-	G. Pierce	209,290	Oct. 22	919	268	14	628
Valve. Slide-	J. Streily	209,305	Oct. 22	935	272	14	630
Varnish	M. Mackay	209,176	Oct. 22	813	.....	14	613
Vise	W. X. Stevens	209,142	Oct. 22	778	226	14	609
Wash-board	W. E. Brock	209,221	Oct. 22	855	248	14	619
Water-closet	C. Rogers	209,295	Oct. 22	925	269	14	629
Water-wheel. Turbine	J. W. Bookwalter	209,219	Oct. 22	852	246 247	14	619
Wells. Device for removing paraffine from oil	J. D. Glenn	209,253	Oct. 22	882	256	14	623
Wheat-heater	A. Fulton	209,243	Oct. 22	824	253	14	622
Whistle. Fog and alarm	J. B. Tarr	209,200	Oct. 22	836	241	14	616
Wood-steaming apparatus	G. Miles	209,179	Oct. 22	816	236	14	614
Wool-washing machine	F. G. Sargent	209,138	Oct. 22	773	224 225	14	608

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DECISIONS OF THE COURTS.

U. S. Circuit Court—Eastern District of Virginia.

W. T. BLACKWELL & CO., *vs.* W. E. DIBRELL & CO.

[*In Chancery.—January* 14, 1878.]

[Bill to restrain infringement of Trade-Mark Certificate No. 122, issued to W. T. Blackwell January 3, 1871, for Durham Tobacco.

Complainants manufacture smoking-tobacco at Durham, on the line of the North Carolina Railroad, in Alamance county, North Carolina. Prior to its incorporation, in 1866, the town was known as Durham's Station, after one Dr. Bartlet Durham, through whose farm the railroad passed.

In the year 1859 the firm of Morris & Wright manufactured tobacco at this station, and continued so to do until about 1861, when one of the firm, W. A. Wright, disposed of his interest in the business to his partner, Morris, and left the place, not to return.

Morris was eventually succeeded in business by one J. R. Green, who, in the year 1865, adopted as a trade-mark to distinguish the tobacco made by him the side-figure of a short-horn (Durham) bull, in connection with the words "Durham Smoking Tobacco."

After his death the business of Green, with the right to the trade-mark, finally passed by succession or assignment to the present proprietors, the complainants.

The respondents, Dibrell & Co., doing business at Richmond, Virginia, justify their use of the alleged infringing mark, in which the figure of the head and neck of a short-horn bull is substituted for the full-size view, through title derived from W. A. Wright. Wright is said to have adopted this device in 1869, but to have used the word "Durham" in connection with his tobacco labels as early as 1859, and both at the time and after he ceased to be a member of the firm of Morris & Wright. Respondents deny that any geographical reference is intended in their use of the word "Durham," but that it is to distinguish arbitrarily the goods prepared by them treated with a certain flavoring treacle.

Two suits relative to the trade-mark in question have preceded the present, viz., *Blackwell* vs. *Wright*, (73 N. C., 310,) in which complaint was dismissed on demurrer because of failure to trace title to exclusive use of mark from J. R. Green by formal allegations or assignments, and *Blackwell* vs. *Armistead*, U. S. Circuit Court, Western District of Virginia, in which Armistead, as assignee of Wright, was restrained from use of the mark infringed.]

The objection of estoppel or *res judicata* urged by each party to the suit against the other, because of prior controversies, not maintained. The requisite identities of cause of action, parties to the suit, character or quality of the parties, and subject-matter in contest not existing between the present and the preceding cases.

Long-continued disuse of a trade-mark may work a forfeiture of right as against another who has in the meantime adopted it.

More especially is this true if the mark, though of possible arbitrary significance in its original selection, has become "localized" in the interval, and a geographical meaning attached to its use and to the associated goods.

"Durham Smoking Tobacco" is indicative of tobacco marketed and manufactured at Durham, North Carolina, and it is a fraud upon the public to attach the term to tobacco from other localities.

Whatever the rights of the complainants as against parties resident in Durham, injunction decreed respecting the respondents, who manufacture in Richmond, Virginia, and whose use of the trade-mark "Durham" tends to deceive.

[*S. F. Phillips, Wm. A. Maury*, and others, for complainants; *George Harding, Wm. Henry Browne*, and others, for respondents.]

HUGHES, *J.*

It is useless to review all the points relied upon by counsel on each side in their able arguments in the cause. I shall consider only those questions upon which, in my judgment, the case really turns.

I shall first deal with the objection of estoppel or *res judicata*, urged by each party against the other.

In order for one suit to constitute an estoppel upon any party to another suit, four conditions must coexist, viz.:

1st. There must be an identity of the cause of action.

2d. There must be an identity of parties to the suits.

3d. There must be an identity in the character or quality of the respective parties; and

4th. There must be an identity of the thing in controversy. (See *Smith* vs. *Turner*, 1 Hughes 375.)

These conditions of identity do not exist between the present case and either of the cases of *Blackwell* vs. *Wright*, or *Blackwell* vs. *Armistead*. Those cases, therefore, do not operate as estoppels. Nor do they at all effect the one now under consideration, except so far as they are precedents of authority upon the principles which were decided by them. In *Blackwell* vs.

Wright the decision was upon demurrer to the complaint; and, in technical effect, it was only that Blackwell had not traced his title to his trade-mark by proper allegations from Green; while, on the merits, the decision went only so far as to determine that the allegations of the complaint did not make a case of exclusive right to the trade-mark for the plaintiff. The complaint there did not charge that Wright's use of the trade-mark was a fraud upon the public, or pray for an injunction on that ground. None of these allegations can be made of the complainants' bill in this case.

In *Blackwell* vs. *Armistead* it is true that the decision was upon the principal questions raised in the present case; but, owing to the character of the pleadings, it was based upon grounds narrower and more technical than those upon which I propose to fonnd the present decision. That suit was a trade-mark case. This is more, and involves the question of the fraudulent use of a trade-mark, to the injury of the public at large as well as of the complainants. Therefore, neither of the two cases which have been urged in estoppel governs even as precedents the present one, which I shall now proceed to consider.

Two questions arise upon the pleadings and evidence—

1st. The first is, whether the defendants have any right at all to use a label in which the word "Durham" is used as descriptive of smoking-tobacco, and in which the figure of a short-horn bull is used as a symbol of the word "Durham," their right to the exclusive use of it not being claimed.

2d. The second question is, whether the complainants have a right to the exclusive use of such a label.

In considering the first qnestion, I shall for the sake of brevity speak of the defendants' right to use the label described as Wright's, inasmuch as their title to use such a label could come, nnder the evidence in this cause, only from Wright.

Has, then, Wright or his assignees now, or have they at any time since 1869 had, any right at all to use a label having in it the word "Durham," as descriptive of smoking-tobacco, and having also in it the figure of a short-horn bull or any part of that animal, as a symbol of the word "Durham?" Of course their title to use the word and the symbol stands on the same basis; if it falls as to the word, it falls also as to the symbol of the word.

There can be no doubt of Green's original right to the exclusive use of the full figure of a short-horn bull as a trade-mark. That is virtually conceded by Wright himself in his testimony.

As to the word "Durham" as descriptive of smoking-tobacco, the right to use it is in this cause claimed by defendants, who do business in Richmond, Virginia, and who advertise and sell, as *Durham* smoking-tobacco, tobacco which they put up in Richmond, and which they obtain from any source available to them other than Durham.

Such a practice necessarily deceives every purchaser who, in purchasing this "Durham" smoking tobacco, believes that he is purchasing the fine tobacco put up in the place of that name in North Carolina. Dibrell & Co. claim solely from Wright. What, then, is Wright's title under which this deception comes about?

He claims that he did not in 1860 sell his right in the label used by Morris & Wright to his partner, Morris, when he sold all his interest in the business. He claims that he derived the word "Durham" and the device of a short-horn bull from a Durham mustard-box. He pretends that neither the word nor the device, as invented and used by him, was descriptive or geographical in purport, but that they were arbitrary symbols, and that, having been so at the beginning, he and his assignees have still a right to use them.

The objection to this pretension lies not merely in the improbability of the origin of the use of the word "Durham" and its symbol which Wright recounts, or in the unsatisfactory character of the evidence on which his original right to use the word and its symbol is based, or in the presumption that when he sold in 1861 he sold all his rights to Morris, but it lies also in these two facts, namely: first, that whatever title Wright had to the use of the word "Durham" after leaving Morris in or about the year 1861 was lost by nonnse, his disuse continuing through a period of probably eight or nine years after he left the vicinity of Durham's; and, second, that during this long period of disuse the brand of "Durham Smoking Tobacco" acquired a definite and peculiar meaning with dealers and consumers, the word "Durham" ceasing to be, even if it ever was, a mere arbitrary term, and had obtained a geographical signification as to the place—Durham—and a commercial signification as to the article of tobacco manufactured at Durham. During the interval of disuse the phrase "Durham tobacco" had come to indicate that portion of the produet of a particular region of country which was marketed at the place called Durham's or Durham. The phrase "Durham Smoking Tobacco" had come to indicate, in all markets and among all dealers and consumers, the smoking tobacco marketed and manufactured at this place of Durham, in North Carolina.

It was not until after this signification had attached to the phrase that Wright adopted (or, as he pretends, returned to) the use of the word "Durham," which he had abandoned. If, as he claims, the word "Durham" had in fact been used by him at first as an arbitrary trade-mark, and if, in addition, he had continued the use of it without interruption down to 1866 and on to the present time, that use by him would itself have prevented the other and local signification from attaching to the brand and word; for, in that case, "Durham Smoking Tobacco" would have described two tobaccos—first, those marketed and manufactured at Durham, and, second, those sprinkled with Wright's "Durham Juice."

But he did abandon its use; he stood by for some eight years and allowed a peculiar commercial and local signification to attach to the word "Durham" as descriptive of smoking-tobacco, and not until after that local and commercial signification had come to identify the tobacco labeled with the word all over the country as coming from a particular region and as having a particular quality, and not until after this brand had come to be worth thousands of dollars to the manufacturers of this particular tobacco at this particular place, did he begin (or resume) the use of the device, which he claims to have derived from the mustard-can. To put that word now on tobaccos grown elsewhere than at Durham, even though sprinkled with his "Durham" decoction, is, in the light of the evidence in this case, to pass them off as tobaccos coming from Durham, and is to deceive and defraud all who deal in and purchase the commodity as smoking-tobacco from Durham. It has so come to pass, from Wright's nonuse for eight years, that to manufacture and sell other tobaccos at all and brand them with the word "Durham" is to deceive the public, no matter what liquid may be used on them. Under existing circumstances, to manufacture even Durham tobaccos elsewhere than at Durham, and to sprinkle them with a foreign liquid, is to deceive the public generally and those who put up the genuine article at that place particularly. The manufacture of these tobaccos at that place is the best guarantee which the public and the trade can have that the commercial article labeled "Durham Smoking Tobacco" and sold in all markets is genuine and prepared under the fewest temptations to adulteration.

That the right to use a trade-mark may be lost by abandonment or disnse is too clear to need argument or the support of authority. The law of the subject is stated in the chapter on abandonment, sections 674 to 691, of Browne on Trade-Marks.

It cannot be pretended that in Green's first use of his label, in 1865 or 1866, he had any intention of taking up an old label at second hand, or had any knowledge or belief that Wright, or any one else, could claim the label which he then devised as entirely novel and peculiar. The field was open to his enterprise and invention for establishing his business and inventing his label and trade-mark just as he did.

Green's adoption in 1865 or 1866 of the word "Durham" as descriptive of the best tobacco of North Carolina put up by him, and of the bull as a symbol of the word, was naturally suggested by the facts of his business. If Wright had ever had such a label, which I do not feel that the evidence warrants us to believe, it was in 1865-'66 unknown in Durham; had been abandoned even then for some four years; had never signified anything but tobacco sprinkled with Wright's decoction, and had never borne the valuable and creditable commercial signification which the climate and soil and good husbandry of North Carolina and the enterprise of a Durham manufacturer were about to give it.

By the several facts of Wright's nonuser of the label for eight years, of its never having, even as claimed by him, had any but an arbitrary significance as tobacco sprinkled with a species of artificial treacle, and of its having, during a long period of disuse, acquired a new, wholly different, and well and widely known geographical and commercial signification, Wright lost his right of using the label altogether. His use of it now operates necessarily to mislead and deceive the public as to the source of production and quality of the article bearing the label, thereby defrauding them; and the court will therefore make a decree of perpetual injunction against his further use of it.

II. As to the second question, whether Blackwell & Co. have an exclusive right to the use of the label described in the pleadings, I think, on the evidence submitted, that they have. We have no hesitation in so deciding as against the defendant in this cause, and will incorporate in the decree of the court an order for an account of profits against the defendants, as prayed for in the bill.

The label and trade-mark of complainants was established in 1865 by J. R. Green. His business and that of his successors built up the insignificant and obscure place, Durham's Station, into the flourishing town, Durham. The town grew up during the first four or five years of the use of the label, and owed its growth in chief part to the business indicated by the label. In that respect the case is similar to that of the trade-mark "Cocoaine," *Burnett* vs. *Phalon*, (3 Keyes, 594.) In respect to the commercial article bearing the geographical name, it is similar to that of the Akron Cement, *Newman* vs. *Alvord*, (51 N. Y., 189.) The right of the complainants in this case has the double strength of that of the proprietors of the trade-mark "Cocoaine," and of that of the Akron cement. The use of the principal characteristics of their trade-mark by manufacturers not conducting their business at Durham is a deception put upon the public, and may be enjoined on that ground alone, irrespectively of the trade-mark right. The use of the trade-mark invented by Green, under which he and his successors built up his trade, and built up the town of Durham, like the use of the word "Akron" to the proprietors of the commercial article bearing that name, belongs exclusively to the successors of Green, and the court should secure its exclusive use to them.

I had some doubt whether, in a litigation between Blackwell & Co. on one hand and defendants not doing business in the town of Durham on the other, it was competent for the court to decree that Blackwell & Co. have the exclusive right to the use of the word and symbol characterizing their trade-mark; but it is certainly competent for us to render a decree responsive to the issues made up by the allegations and denials of the bill and answer, one of which is this right of exclusive use claimed by Blackwell & Co. As between the complainants and defendants in this suit, therefore, we may so decree, even though other persons than the defendants to this record be not bound by the decree.

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Issue of October 29, 1878.

Patents	224	No. 209,315 to No. 209,538,	inclusive.
Reissues	9	No. 8,466 to No. 8,474,	inclusive.
Designs	13	No. 10,880 to No. 10,892,	inclusive.
Trade-Marks	15	No. 6,753 to No. 6,767,	inclusive.
Labels	19	No. 1,737 to No. 1,755,	inclusive.
Total issue	280		

TRADE-MARKS.

[Each certificate bearing date October 29, 1878.]

6,753.—MEDICINAL PREPARATION.—*Benjamin R. Buckwalter*, New York, N. Y. Application filed October 10, 1878.

"The word-symbol 'SANDALINE.'"

6,754.—CIGARS, CIGARETTES, AND CHEWING AND SMOKING TOBACCO. *Blaskopf & Brown*, New York, N. Y. Application filed October 12, 1878.

"The fanciful words and letters 'LA PENSEROSA DE B. & B.'"

6,755.—SMOKING-TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed October 16, 1878.

"The double-rule parallelogram in black lines upon blue paper, having imprinted within it, in four parallel lines, the words, numbers, and figure following—that is to say, 'G. W. GAIL & AX'S NAVY, 28 BARRE ST., BALTIMORE, MD.,' and our heretofore-registered trade-mark, as described, all in form, sequence, color, and typography as above set forth and described."

6,756.—CIGARS AND CIGARETTES.—*Harris Brothers*, San Francisco, Cal. Application filed September 23, 1878.

"A figure of a hand and the word-symbol 'MAGIC HAND,' as shown."

6,757.—CIGARS.—*Edward Hilson*, New York, N. Y. Application filed June 8, 1878.

"An oval inclosed by two series of intersecting lines, as is shown."

6,758.—TOILET PREPARATION.—*A. & M. Landon*, Paris, France. Application filed July 2, 1878.

"The smaller and oblong eight-sided member inclosing the signature, and the two geometrical figures and their inclosed monograms, and the larger member having the three columns and the escutcheon, monogram, or interlaced letters, figure of Mercury, female figure, clouds, and phrase 'Au Temple de Flore.'"

6,759.—LIQUID DENTIFRICE.—*Selah R. Van Duzer*, New York, N. Y. Application filed October 16, 1878.

"The arbitrarily-selected words 'FLORAL BELL.'"

6,760.—COSMETIC.—*Selah R. Van Duzer*, New York, N. Y. Application filed October 16, 1878.

"The fanciful title 'BRIDAL BOQUET BLOOM.'"

6,761.—SEWING-MACHINE NEEDLES.—*R. M. Wanzer & Co.*, Buffalo, N. Y. Application filed October 14, 1878.

"The letters or initials 'R. M. W. Co,' and the diamond-shaped symbol, as shown."

6,762.—TOOTH-POWDER.—*Albert L. Calder*, Providence, R. I. Application filed October 9, 1878.

"The word 'DENTINE.'"

6,763.—FLOUR.—*James H. Gambrill*, Frederick, Md. Application filed September 27, 1878.

"The arbitrary word 'GAMBRILL.'"

6,764.—CIGARS.—*Heilbroner & Josepha*, New York, N. Y. Application filed July 31, 1878.

"The fanciful or arbitrarily-selected words 'CABINET DESK.'"

6,765.—BRAID AND TAPE.—*William H. Stafford*, Woonsocket, R. I. Application filed January 7, 1878.

"An arbitrarily selected symbol in the form of a circular disk, having a square projection, extending beyond the periphery of the same."

6,766.—BRAID AND TAPE.—*William H. Stafford*, Woonsocket, R. I. Application filed January 7, 1878.

"The arbitrarily-selected symbol or figure resembling a shield, one end of which forms a semicircle and the other end a semi-octagon."

6,767.—CAPSULES FOR ADMINISTERING MEDICINES.—*John R. Planten*, Brooklyn, N. Y. Application filed October 7, 1878.

"The figure of a shield and the representation of three trees or plants thereon."

LABELS.

[Each certificate bearing date October 29, 1878.]

1,737.—Title: "BARBOUR'S STANDARD BEST IRISH FLAX SHOE THREAD."—*Barbour Brothers*, New York, N. Y. Application filed October 23, 1878.

1,738.—Title: "BARBOUR'S IRISH FLAX BEST SHOE THREAD."—*Barbour Brothers*, New York, N. Y. Application filed September 26, 1878.

1,739.—Title: "E. N. O. CLOUGH'S FEVER AND AGUE CURE."—*E. N. O. Clough*, Leavenworth, Kans. Application filed October 18, 1878.

1,740.—Title: "TURNOUT."—*Heppenheimer & Maurer*, New York, N. Y. Application filed October 21, 1878.

1,741.—Title: "STARR'S LINIMENT."—*F. B. Horne*, Framingham, Mass. Application filed October 11, 1878.

1,742.—Title: "ROSE'S LAXATIVE BONBONS."—*C. P. Rose*, Bristol, Pa. Application filed October 18, 1878.

1,743.—(Print.) Title: "AMERICAN STANDARD GAUGE & TOOL WORKS, PHILADELPHIA, U. S. A."—*John Richards & Co.*, Philadelphia, Pa. Application filed October 12, 1878.

1,744.—Title: "FRINGED WAX GAS LIGHTERS OR TAPERS."—*The Houchin Manufacturing Company*, New York, N. Y. Application filed October 21, 1878.

1,745.—Title: "VAN BUREN'S RHEUMATIC COMPOUND."—*Barent Van Buren*, Chicago, Ill. Application filed October 22, 1878.

1,746.—Title: "LA LINDA."—*Emery Bemis, Jr.*, Boston, Mass. Application filed June 28, 1878.

1,747.—Title: "ARIZONA."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 23, 1878.

1,748.—Title: "JUST ON TIME"—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 23, 1878.

1,749.—Title: "OPERA HOUSE."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 23, 1878.

1,750.—Title: "SNOW FLAKE."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 23, 1878.

1,751.—Title: "OCEAN SPRAY."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 23, 1878.

1,752.—Title: "UNCLE SAM'S DELIGHT."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 23, 1878.

1,753.—Title: "LA VUELTA."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 23, 1878.

1,754.—Title: "CONVERSATION."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 23, 1878.

1,755.—Title: "WEST'S ENGLISH MEDICATED BLACK CURRANT COUGH LOZENGE."—*William West*, Malden, Mass. Application filed October 23, 1878.

DESIGNS.

[Each design bearing date October 29, 1878.]

10,880.—PENCIL-CASES.—*James M. Clark*, Jersey City, N. J. Application filed October 3, 1878. Term of patent 7 years.

10,881.—FUNERAL ORNAMENT.—*Charles H. Learned*, Meriden, Conn. Application filed September 23, 1878. Term of patent 7 years.

10,882.—STICK-CANDY.—*George M. Mills*, Philadelphia, Pa. Application filed September 18, 1878. Term of patent 7 years.

10,883.—STICK-CANDY.—*George M. Mills*, Philadelphia, Pa. Application filed July 25, 1878. Term of patent 14 years.

10,884.—COFFIN-PLATES.—*William C. Beattie*, Taunton, Mass., assignor to *Reed & Barton*, same place. Application filed September 13, 1878. Term of patent 3½ years.

10,885 and 10,886.—BOX.—*Michael I. Weller*, Washington, D. C. Applications filed October 17, 1878. Term of patents 7 years.

10,887.—ORNAMENTATION OF GLASSWARE.—*Henry Franz*, Pittsburg, Pa., assignor to *Campbell, Jones & Co.*, same place. Application filed October 25, 1878. Term of patent 3½ years.

10,888.—CARPET.—*William McCallum*, Yonkers, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed September 19, 1878. Term of patent 3½ years.

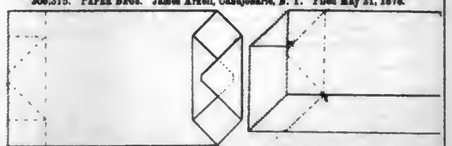
10,889.—CARPET.—*Edmund Pyne*, New York, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed July 31, 1878. Term of patent 3½ years.

10,890 to 10,992, inclusive.—COFFIN-PLATE.—*Alexis Fatoux*, Taunton, Mass., assignor to *Reed & Barton*, same place. Applications filed September 13, 1878. Term of patents 3½ years.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

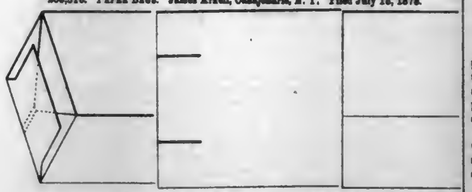
OCTOBER 29, 1878.

209,315. PAPER BAGS. James Arkell, Canajoharie, N. Y. Filed May 21, 1878.



Claim.—A satchel-bottom bag in the usual flattened condition, but having in the vicinity of its mouth end marks, creases, or equivalent devices operating to facilitate the folding of the material, after the distention of the bag, by filling into flaps adapted to close this end of the bag correspondingly in shape to the satchel-like bottom, as set forth and described.

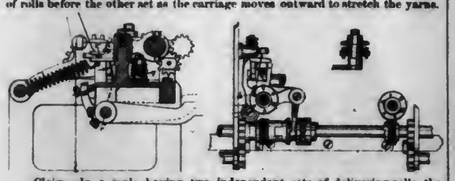
209,316. PAPER BAGS. James Arkell, Canajoharie, N. Y. Filed July 16, 1878.



Claim.—As an improved manufacture, a satchel-bottom sack or bag the material of which is either partially or wholly severed at the two places described, to permit the closing up of the mouth end of the bag with three rectangular and one V-shaped flap-like end portions, as shown and specified.

209,317. SPINNING-MULES. Eben A. Baldwin, North Andover, Mass., assignor to Geo. L. Davis, John A. Wiley, Joseph M. Stone, George G. Davis, Joseph H. Stone, and James H. Davis. Filed July 30, 1878.

Brief.—Rovings of different sizes or weight are spun into yarns of uniform sizes and weight by clock mechanism, which arrests the movement of one set of rolls before the other set as the carriage moves outward to stretch the yarns.



Claim.—In a mule having two independent sets of delivering-rolls, the combination, with mechanism for rotating the rolls, of a changeable clock or contrivance to arrest the movement of one set of rolls before the other set while the carriage moves outward to stretch the yarns, to adapt the mule to simultaneously spin rovings of different sizes or weight and produce therefrom yarns of uniform or like size and weight, substantially as described.

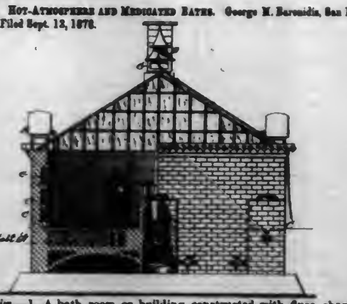
209,318. ART OF SPINNING YARN OR SPINNING-MULES. Eben A. Baldwin, North Andover, Mass., assignor to George L. Davis, John A. Wiley, Joseph M. Stone, Geo. G. Davis, Joseph H. Stone, and James H. Davis. Filed July 30, 1878.

Brief.—The improvement relates to the method of spinning yarn on spinning-mules. The two independent sets of delivery-rolls are connected and operated by a compound gear, so that one set may be run faster than the other in delivering rovings of unequal size and weight. The heavier rovings are delivered slowly, while the lighter require a more rapid revolution of the rolls.



Claim.—That improvement in the art of spinning yarn on spinning-mules having two independent sets of delivery-rollers, to permit rovings of different weight and size to be spun thereon at the same time and produce yarns of equal weight and size, which consists in delivering the rovings by one of said sets of rollers at a greater rate of speed than by the other set, substantially as herein specified.

209,319. HOT-ATMOSPHERE AND MEDICATED BATHS. George M. Baronidis, San Francisco, Cal. Filed Sept. 13, 1878.

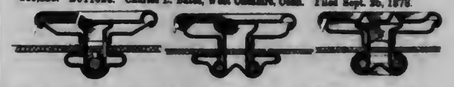


Claim.—1. A bath room or building constructed with flues, channels, or passages in a circuitous manner through the walls and partitions and beneath the floor, and with the spaces between them filled with salt or other equivalent moisture-absorbing substance, substantially as herein described, said flues or passages being connected with a furnace or furnaces and with a chimney-shaft, substantially as and for the purposes herein set forth.

2. A hot-atmosphere bath room or building having its air heated by radiation from the walls and floors without the admission of direct heat or hot air, and having its floor covered with a layer of dried botanical herbs and flowers, substantially as herein described, for the purposes set forth.

3. A hot-atmosphere bath room or building composed and consisting of a room or apartments having circuitous flues, channels, or passages *a b c d* through and between the walls and beneath the floor, connected with furnaces C and with a chimney-shaft, D, and having a filling or layer of salt or other equivalent moisture-absorbent between and upon said flues or passages, a furnace or furnaces, C, with hot-water boilers and heating-coils combined therewith, for the purpose set forth, and a glass roof covering and inclosing the said room or apartments, having a ventilator therein, all constructed substantially as herein described and set forth.

209,320. BUTTONS. Charles E. Bates, West Cheshire, Conn. Filed Sept. 26, 1878.



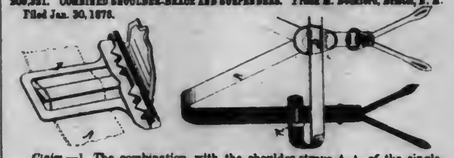
Claim.—1. The combination, with a button, of a button-fastening, one of said parts being provided with suitable prongs, while the other is provided with a curved plate and a retaining-ring, or one or more bars supported on said curved plate, whereby the parts may be firmly secured together by forcing the ends of the prongs against the curved plate, which latter operates to coil the prongs around or partly around the ring or bar, substantially as set forth.

2. The combination, with a button or button-fastening, provided with an annular grooved plate which curves the free extremities of suitable fastening-prongs by engagement therewith, of a ring supported by said grooved plate, and about which said extremities are adapted to coil, substantially as set forth.

3. The combination, with a button, of a button-fastening, one of said parts provided with one or more fastening-prongs, while the other part is provided with an annular grooved plate and a ring supported thereby, said ring adapted to have sufficient play to allow the fastening-prongs to be curved around or partly around the same, and thus enable the prongs to be clamped between the ring and inner surface of the grooved plate, substantially as set forth.

4. In a button, the combination, with the grooved plate placed against the fabric on the side opposite to the button proper, of a flexible covering and an intermediate metallic disk, the latter being formed with edges adapted to bind the edges of the covering between the same and the exterior upper side of the plate, substantially as set forth.

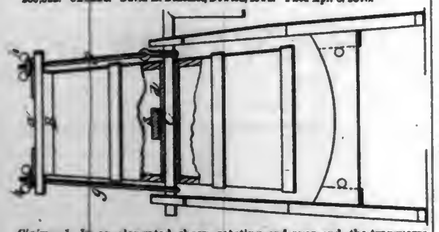
209,321. COMBINED SHOULDER-BRACE AND SUSPENDERS. Frank M. Beckford, Bristol, R. I. Filed Jan. 30, 1878.



Claim.—1. The combination, with the shoulder-straps A A, of the single removable strap or brace B, passing through and supported in the back-piece B, and connected to the straps A A in front, substantially as and for the purpose set forth.

2. The single removable strap or brace D, passing through the back-piece B, in combination with the clasp C, constructed as described, and connected with the slide F, whereby the brace D may be readily detached from the suspenders without disarranging or removing the latter from the body, substantially as described.

209,322. Churns. David H. Benedict, Newton, Iowa. Filed Apr. 8, 1878.



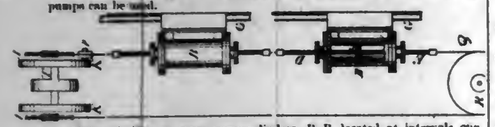
Claim.—1. In an elongated churn, rotating end over end, the transverse sleeve *d*, through the middle portion of the churn, for the passage of the shaft upon which the churn rotates, substantially as specified.

2. The combination, with the churn-body and its lid, having the cross-bar *s*, of shaft C and the rods *g*, connecting said cross-bar and shaft, and the thumb-nuts *h*, substantially as specified.

3. The knock-down churn-frame consisting of the standards E, having the openings *l*, the parallel cross-bars F, having the end tenons engaging with said openings, the pins *p*, and keys *w*, substantially as specified.

209,323. Pumping Apparatus for Raising Water. Francis A. Bishop, San Francisco, Cal. Filed May 3, 1878.

Brief.—By raising the water a little at a time a short distance, smaller pumps can be used.



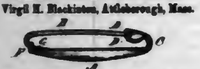
Claim.—1. One or more pump-cylinders, B B, located at intervals one above another in the shaft or incline, each cylinder having a piston, C, which is provided with two piston-rods, D E, the upper piston-rod of each pump being connected with the lower piston-rod of the pump above in a connected series, and the lowermost piston-rod being attached to a flexible connection, Q, which passes under a fixed sheave or pulley, R, thence up parallel with the piston-rods and their connections, over a guide-sheave, I, to a crank-wheel, K, while the upper piston-rod of the series is also attached to a flexible connection, which passes up over a guide-pulley, J, and to a reverse crank-wheel, K, the whole combined and arranged to operate substantially as above specified.

2. A connected series of direct-acting pumps, arranged in the length of an endless cable or flexible connection, and operated by reverse cranks K K, mounted upon a shaft, T, to which the power of the engine is applied, substantially as and for the purpose above described.

3. In a series of direct-acting pumps which are connected in whole or in part by flexible connections, the sheaves I J, for deflecting the strain and direction of the line of piston-rods and cylinders where required, substantially as above specified.

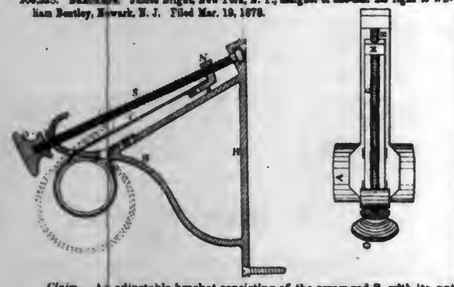
4. The device of the double cranks K K, mounted upon opposite ends of the shaft T, and having their wrist-pins placed diametrically opposite each other, in combination with the connected line of piston-rods and their flexible connections, for the purpose of imparting to the pistons a reciprocating motion, and at the same time preserving a uniform tension at every part of the stroke, substantially as herein set forth.

209,324. Safety-Pins. Virgil H. Blackinton, Attleborough, Mass. Filed Apr. 4, 1878.



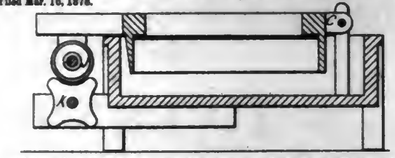
Claim.—The combination of the front plate, A, soldered shank C, strengthening-eye F, spring-pin B, and the hook C, terminating in the opposite expanding ears D D, substantially as described.

209,325. Brackets. James Bright, New York, N. Y., assignor of one-half his right to William Bentley, Newark, N. J. Filed Mar. 19, 1878.



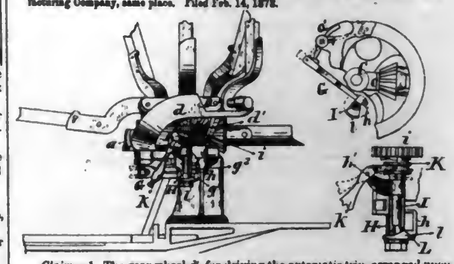
Claim.—As adjustable bracket consisting of the screw-rod S, with its nut N, its milled-headed nut O, the holding-strap C, with the bracket H, substantially as shown and described, and for the purposes set forth.

209,326. Pulp-Strainers. George Campbell, Norfolk, and William Lidgett, Newton, Mass. Filed Mar. 16, 1878.



Claim.—In combination with the sleeve A and the cams K, the friction-roller J, adapted to bear against said cam, the whole constructed to operate substantially as described.

209,327. Harvester-Rakes. Samuel C. Cobb, Janesville, Wis., assignor to Harris Manufacturing Company, same place. Filed Feb. 14, 1878.



Claim.—1. The gear-wheel *d'*, for driving the automatic trip, arranged upon the rake-head D, substantially as described.

2. The rake-head D, bevel-gear *d*, and trip-driving gear *d'*, arranged as specified, and cast together to form a single piece, substantially as described.

3. The independent bracket H, provided with bearings for the trip-shaft, and with a loop or keeper, *h*, for the latch, in combination with the rake-cam to which it is secured, substantially as described.

4. The upright trip-shaft I, in combination with a sliding clutch, K, arranged thereon, and loose pinion *i*, substantially as described.

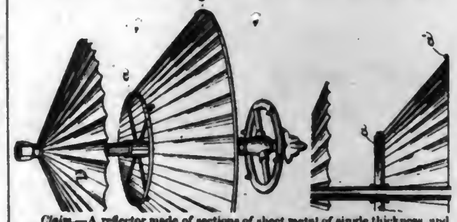
5. The weighted lever *k*, in combination with the clutch K on trip-shaft I and loose pinion *i*, substantially as described.

6. The spring-switch *n*, in combination with the spring-latch G and loop or keeper *h*, substantially as described.

7. The upright shaft I, in combination with the loose pinion *i*, clutch K, cam-trip I, attached to the shaft, and latch G, substantially as described.

8. The latch G, connected to the switch-lever, in combination with the spring *p*, keeper *h*, and rotating cam-trip I, substantially as described.

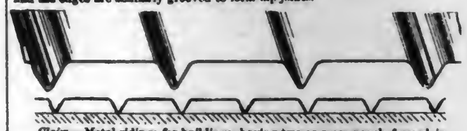
209,328. Reflectors. Charles Cothren, New York, N. Y. Filed Feb. 9, 1878.



Claim.—A reflector made of sections of sheet metal of single thickness, and having an inner and outer finished and reflecting surface, and secured to rods *a a'*, substantially as and for the purposes set forth.

209,329. Metallic Sidings for Buildings. Mason H. Crittenden, St. Paul, Minn., assignor of one-half his right to Edward E. Scribner, same place. Filed Mar. 18, 1878.

Brief.—Each sheet is formed into panels by intermediate V-shaped grooves, and the edges are similarly grooved to form lap-joints.



Claim.—Metal sidings for buildings, having two or more panels formed in each sheet by intermediate V-shaped depressions or grooves, and with V-shaped grooves at each edge of the sheet to form lap-joints, substantially as and for the purposes set forth.

209,330. Paper-Ruling Machines. James Dale, Chicago, Ill. Filed Oct. 14, 1878.

Claim.—1. The mode of cross-ruling a sheet of paper on one side in one continuous operation, which consists in feeding it to the first carrier, where it receives one set of lines, and upon its reaching a given point lifting it bodily from the first carrier out of the way of the succeeding sheet, allowing this to continue on its course underneath, and passing it at an angle to the second carrier, where it receives the other set of lines, substantially as set forth.

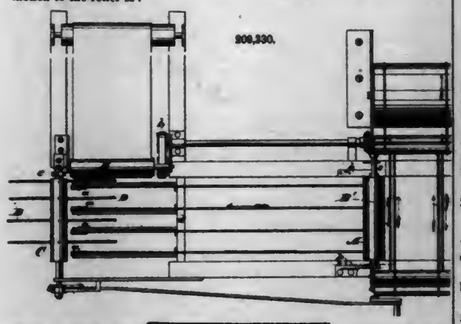
2. In a machine for ruling paper, the combination of two carriers and a lifting device, arranged as described, whereby each sheet, in its turn, after receiving one set of lines on the first carrier, upon reaching a given point is lifted bodily out of the way of the succeeding sheet, and is then drawn off at an angle upon the second carrier, where it receives the cross-lines, substantially as set forth.

3. The shaft C, carrying the fingers D, and connected with the driving-power by mechanism, substantially as described, transmitting to it an intermittent circular motion, whereby the sheets are consecutively lifted, in combination with two carriers, at an angle to each other, as set forth.

4. The combination of the shaft C, provided with the fingers D and having an intermittent circular motion, roller A', having a coincidently-intermittent vertically-reciprocating motion, and friction-roller B, substantially as described, for the purpose set forth.

5. The combination of the cam-wheel *e* upon the shaft C, pivoted lever *f*, connecting-arm *g*, having a stud, *m*, pressing against a spring, *r*, and bearing-frame *h*, substantially as described, for transmitting a vertically-reciprocating motion to the roller A'.

209,330.



209,331. Medical Compounds. Littleton Daniel, Montgomery, Ala. Filed June 19, 1878.

Brief.—Equal portions in bulk, but not in weight, are taken of chloride of zinc, blood-root, and kerosene-oil. The amounts of oil used vary according to the dryness of the sore.

Claim.—A medicine for the treatment of cancers, tumors, wens, carbuncles, and all obstinate sores, composed of chloride of zinc, blood-root, and kerosene-oil, in or about the proportions specified.

209,332. Stove-Ovens. Samuel Darling, Providence, R. I. Filed Sept. 5, 1878.

Brief.—The device shown in Fig. 3 is used with gas-stoves, and that shown in Fig. 5 with lamp-stoves.

Fig. 3.

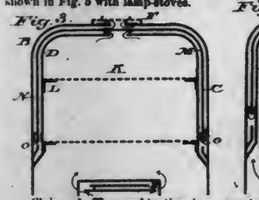
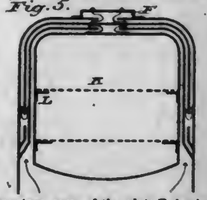


Fig. 5.

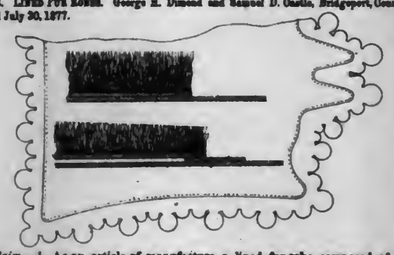


Claim.—1. The combination, in a gas-stove oven, of the plate D, having holes *d d* in the top, plate C, having holes *o o* in the side, plate B, having holes *e e* in the top, space M, and space N, substantially as described, and for the purpose set forth.

2. The combination, in a gas-stove oven, of the plate D, having holes *d d* in the top, plate C, having holes *o o* in the side, plate B, having holes *e e* in the top, space M, space N, grate K, and grate-supporter L.

3. The combination, in a gas-stove oven, of plate D, having holes *d d* in the top, plate C, having holes *o o* in the side, plate B, having holes *e e* in the top, space M, and space N, register E, and warming-plate F, substantially as described.

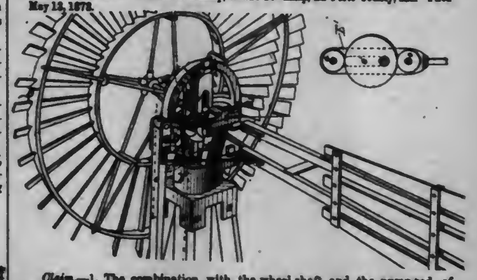
209,333. Lined Fur Robes. George E. Dimond and Samuel D. Castle, Bridgeport, Conn. Filed July 30, 1877.



Claim.—1. As an article of manufacture, a lined fur robe composed of a skin and a lining having its free edges extended beyond the edges of the skin, the skin and lining being united by a series of stitches extended through both the skin and lining.

2. As an improved article of manufacture, a robe composed of a skin and a lining, the free edges of which are extended beyond the edges of the skin, and a bordering-strip inserted between the skin and the extended edges of the lining, the skin, the lining, and the bordering-strip being united by a line of stitching, substantially as described.

209,334. Windmills. Leonard S. Dunlap, Galena Township, La Porte County, Ind. Filed May 13, 1878.



Claim.—1. The combination, with the wheel-shaft and the pump-rod, of the eccentric, circular in form, mounted upon the shaft, the smooth rollers carried in forked and slotted piece B^1, and said forked and slotted piece all being constructed, arranged, and operating as described.

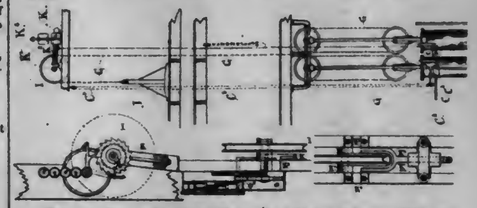
2. The combination, with the wheel-shaft, the pump-rod, and the device for converting and communicating motion, of the projection upon the forked piece and the opening at the side of the arch D, in which said projection slides, for steadying and guiding the pitman, substantially as set forth.

209,335. Hair-Tonics. Adam Emig and Theodor Emig, Sheridan, assignors of one-half their right to Philip Redenbeber and John Carey, Chicago, Ill. Filed Oct. 7, 1878.

Brief.—Seven gallons of kerosene-oil are added to half a bushel of ground white-oak bark. The mixture is allowed to stand for five or six weeks, then strained and perfumed.

Claim.—A compound consisting of an extract of white-oak bark and of kerosene-oil, in about the proportion substantially as specified.

209,336. Hoisting-Machines. John Parsons, Toronto, Ontario, Canada. Filed Jan. 10, 1878.



Claim.—1. The combination, with a water-cylinder of known lifting capacity, of one, two, or more supplementary water-cylinders, arranged in connection with suitable automatic mechanism, to be thrown in and out of working connection as the load on the car varies, substantially in the manner shown, and described.

2. The lever-beam K, mounted on trunnions and divided into two arms of unequal length, on the shorter arm of which the upper rope-wheel of hoist is mounted, and to the adjustably-weighted longer arm is connected a valve or valves of suitable construction, whereby when the load on the car is increased above a given weight the balance of the lever will be disturbed, causing it to move on its fulcrum, and to throw one or more supplementary lifting-cylinders into working connection with the main cylinder, and when the extra load is removed from the car the lever will be returned to its original position, allowing the inlet-valves to the supplementary cylinders to be closed, all arranged substantially in the manner shown and described, to automatically regulate the lifting capacity of the hoist in proportion to the weight to be elevated.

3. The combination of the hoist J, rope G, wheel I, and adjustably-weighted lever-beam K with the inlet-valves of one or more supplementary lifting-cylinders, substantially as shown and described.

4. The piston-head of the supplementary cylinder or cylinders, provided with a valve, H, for the purpose of allowing the cylinder to remain always filled with water, in order that it may be thrown into and out of working connection, with no waste of water or time at any point in the stroke of the piston.

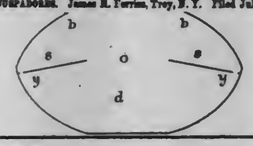
5. The combination, with the upper rope-wheel I, mounted on a tilting beam, of one or more registers or counters arranged to register the amount of water consumed by one or more cylinders, substantially as shown and described.

6. The valves 10 and 11, connected to and arranged in combination with the lever K, for the purpose of automatically operating cylinders of unequal capacity, either singly or jointly, as the load to be lifted requires, substantially as shown and described.

7. The valve C^1, operated from a single check-rope, in combination with the valve C^1, arranged to automatically connect and disconnect the supplementary cylinder or cylinders with the main cylinder of a lifting-hoist, substantially as shown and described.

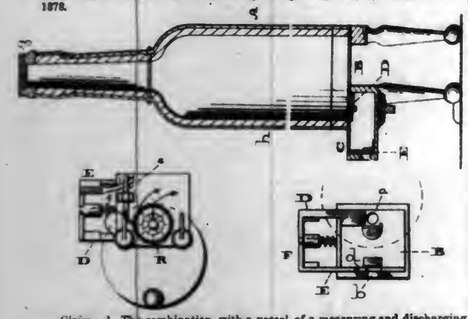
8. The valves 10 and 11, arranged in connection with hydraulic cylinders, as described, in combination with the cam-disk 7, operated through suitable mechanism by the lever 2.

209,337. Cuspadores. James H. Farrin, Troy, N. Y. Filed July 27, 1878.



Claim.—In a spittoon or cuspadore having a rounded or dish-formed base and an open flaring top, and arranged between the bottom of the flaring top and the base, the diaphragm plate S, having the central opening, O, side apertures *y y*, and forming, with the upper and lower curved walls of the dish-formed base, the unconnected inclosures *b* and *d*, as shown and as described.

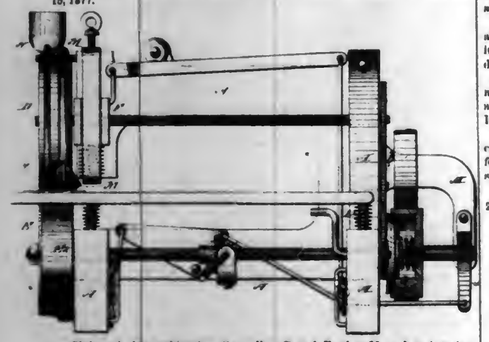
209,338. Liquid Measures and Registers. C. H. Goebel, Philadelphia, Pa., assignor, by mesne assignment, to the United States Liquor Registering Company. Filed Mar. 21, 1878.



Claim.—1. The combination, with a vessel, of a measuring and discharging chamber, C', having slides D E, and the register R, with operating-arms G *e*, substantially as and for the purpose set forth.

2. The vessel A, with bottom plate, B, and cap *g*, in combination with the connecting wires or strips *b*, substantially as and for the purpose set forth.

209,339. Machines for Pressing Seams. Joseph G. Griffith, New York, N. Y. Filed Oct. 15, 1877.



Claim.—1. In combination, the rollers D and E, plow M, and moistening-tube N, as and for the purpose set forth.

2. The plow M, hinged to the frame A, as and for the purpose set forth.

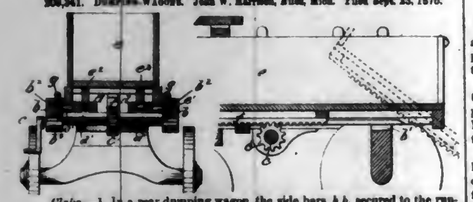
3. The moistening device N, hinged to the frame A, as and for the purpose set forth.

209,340. Adjustable Watch-Keys. Wm. Haines, Philadelphia, Pa. Filed May 10, 1878.



Claim.—The combination and application of a nut and fixed screw, and the metal piece, Fig. 3, to be placed between the jaws at their lower ends, for the opening and closing of a watch-key, in the manner described.

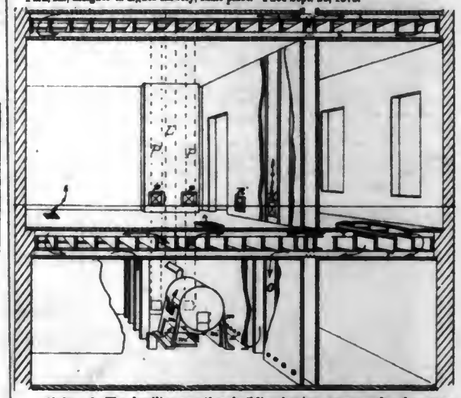
209,341. Dumping-Wagons. John W. Harrison, Niles, Mich. Filed Sept. 23, 1878.



Claim.—1. In a rear-dumping wagon, the side bars, *b b*, secured to the running-gear of the wagon and provided with the slots b^2 b^2, formed in their inner sides for the reception of the trunnions or supporting-pins c^1 c^1 on the body *c*, and having the openings b^3 and retaining-pins *g*, substantially as and for the purpose set forth.

2. In combination with the body *c*, provided with the trunnions c^1 c^1 and friction-bars c^2 c^2 of the side bars, *b b*, having grooves or channels b^3, guide-bars *d d*, having rollers d^1, rack *f*, and pinion e^1, all arranged to operate substantially as and for the purposes set forth.

209,342. Means for Heating and Ventilating Houses. Benjamin B. Hawley, Hyde Park, Ill., assignor to Agnes Hawley, same place. Filed Sept. 26, 1878.



Claim.—1. The dwelling or other building having passages for the warm air immediately under its floor or floors, and other passages in a lower plane in the same floor-spaces for drawing off said air as it cools, substantially as set forth.

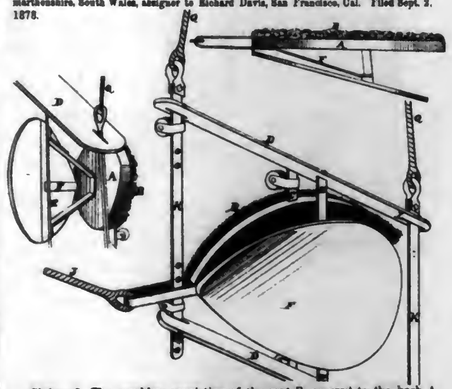
2. The dwelling or other building having passages formed by furring-strips laid across the joints for the distribution of the warm air to the under surface of the flooring and other passages for drawing off said air as it cools, formed by furring-strips attached to the same joints below in a direction across the same.

3. The building provided with a heating-room, and with ceilings and floors above said room provided with passages immediately under the floors for warming the same, and other passages in a lower plane in the same floor-spaces for drawing off the air used in heating after it has become cooled.

4. The combination, with the vertical space between the studding, which may serve either as a down-flue for the cooled air from the room above or as an up-flue for the warm air from below the floor, of the register R' and valve R, arranged relatively and operating substantially as specified.

5. The combination, with the heater and the cold air duct, of the wall m, composed in part of the trap-doors m', the latter arranged to close the duct or fold into and become part of the wall, according as it is desired to admit or shut off the air from the duct.

209,343. Apparatus for Cleaning Ships' Bottoms, &c. John Jones, Llandebie, Carmarthenshire, South Wales, assignor to Richard Davis, San Francisco, Cal. Filed Sept. 2, 1878.



Claim.—1. The scrubber consisting of the mat B, secured to the back A and mounted upon the side frames, D, in combination with the angularly-placed plate F, by which the action of the current holds the scrubber in contact with the bottom of the vessel, substantially as and for the purpose herein described.

2. The scrubbing-mat B, mounted within the frame D by means of the transverse loosely-pivoted bars E K, and provided with the inclined holding-plate F, in combination with the guide and tow ropes J Q, whereby the sides D may be held at an angle with the current and the mat caused to move over the bottom of the vessel, substantially as herein described.

3. The scrubbing-mat B, with its inclined holding-plate F, and the angularly-adjustable sides or frame D, whereby the mat may be moved up and down over the vessel's bottom, in combination with the rollers S, to carry the frame past joints in the plates and other obstructions, substantially as herein described.

209,344. Lifting-Jacks. Jacob O. Joyce, Dayton, Ohio. Filed Mar. 14, 1878.

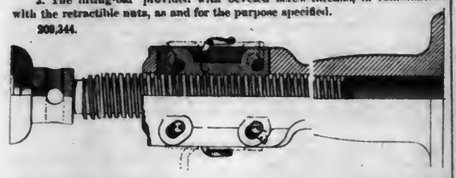
Brief.—The half-nuts are provided with pins, moving in slots of the standard. The upper side of the screw-thread is beveled, so as to force back the half-nuts from engagement as the lifting-bar is raised by hand to the height required to commence lifting.

Claim.—1. The combination, substantially as specified, of the screw-

threaded lifting-bar, the mortised standard provided with oblique slots, and the segmental nuts having lateral pins projecting into said slots.

2. The lifting-bar provided with beveled screw-threads, in combination with the retractible nuts, as and for the purpose specified.

209,344.



209,345. Water-Closet Valves. James P. Kenyon, Brooklyn, N. Y. Filed June 17, 1878.

Brief.—When the weight is removed from the spindle the upper portion of the plunger rises until the flange on the spindle comes in contact with the jam-nut on the lower portion of the plunger. The plunger, as a whole, then rises as the space below it is filled by the passage of water through the fissure in the puppet-valve seat.



Claim.—1. In combination with the cylinder *a*, provided with induction and eduction ports and a wasteway, as shown, the plunger, substantially as described, consisting of two main portions, each having a distinct function and a measurably independent action, as explained, said main portions being connected or swiveled together by the spindle *h*, all for the purposes set forth.

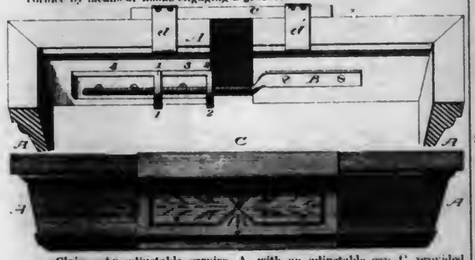
2. In combination with the cylinder and plunger aforesaid, the induction-port and wasteway, so arranged in relation to the traverse of *a* and *a'* as to prevent external leakage and the loss of any water save that intended to be used, as specified.

3. In combination with a plunger and cylinder, constructed and arranged substantially as shown, the choke-flange *i*, to permit and regulate a partial flow, as explained.

4. In combination with the cylinder and plunger, the nut *l*, provided with a small fissure across its face, and puppet *x*, to regulate the filling of the space below the nut, substantially as described.

209,346. Window-Cornices. Charles Lippe, New York, N. Y. Filed Sept. 25, 1878.

Brief.—Cornice is divided centrally. A screw-rod is secured at rear to one half of the cornice, and passes through screw-threaded lugs on the other half. A cap covers the divided part and slides to one side, and is held to the cornice by means of hooks engaging a groove.



Claim.—An adjustable cornice, A, with an adjustable cap, C, provided with any suitable clasps or hooks, *d d'*, said cornice being adjusted by means of the screw-rod R and nuts 1 and 2, all arranged and operating in the manner and for the purpose set forth.

209,347. Apparatus for Boring and Drilling Wells. Orin Martin, Bloomfield, Iowa. Filed Feb. 16, 1878.

Brief.—An apparatus for boring and drilling wells, and elevating the earth therefrom, consisting of a combined base and derrick, provided with pulleys for the operating-ropes, and guide-holes or bearings for the drill-rod, and also having a large or main horizontal driving-wheel on the base. Connected with said wheel by suitable gearing is a horizontal shaft, supported in standards rising from the base, and provided with a sliding pinion, which can be engaged with a minor horizontal drive-wheel, also located on the base, to operate the latter wheel, and thereby rotate the auger-shaft, with which said wheel is connected by a sliding frame passing through the wheel. The horizontal shaft is also provided with a loose clutch-pinion, gearing with a wheel placed on a second horizontal shaft located above the first one, and this upper shaft is provided with a windlass for the rope by which the earth, auger-shaft, and drill-rod are elevated, and also with a wheel having a sliding collar thereon, and a spring-arm to hold said collar rigid with the wheel. When the elevating-rope is detached from the drill-rod, and a rope secured to the collar is attached to the rod, the upper shaft being rotated, the sliding collar is automatically released during every revolution of the wheel by a tripping-arm on the frame striking the outer end of the spring-arm, which allows the collar to slide on the wheel and the drill to fall, thus giving a vertical reciprocating movement thereto.

Claim.—1. The detachable shaft-bearing and auger-operating device *t*, in combination with the minor driving-wheel *c*, substantially as and for the purposes shown and described.

2. The drill-operating device composed of the wheel *a*, having the collar *b c*, and carrying the spring-pawl *a''*, substantially as shown and described.

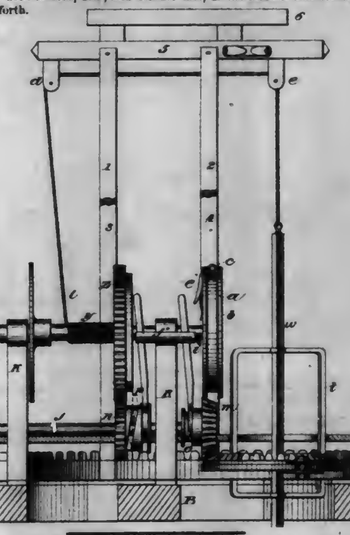
3. The master-wheel G, having arms I, mounted upon the base A B C by means of the flanged anti-friction rollers *g*, the shaft J, mounted on the bearers K, and having the fixed pinion L and the adjustable pinion *m*, and the minor drive-wheel *r*, mounted upon the base A B C by means of anti-friction rollers *s*, all arranged and combined to operate substantially as and for the purposes shown and described.

4. The master-wheel G, the shaft J, having the fixed pinion L and the loose pinion *n*, and the shaft *x*, having the fixed gear-wheel Z, the drill-operating device *a b c a''*, and the fixed cam *i*, all arranged and combined to operate substantially as shown and described.

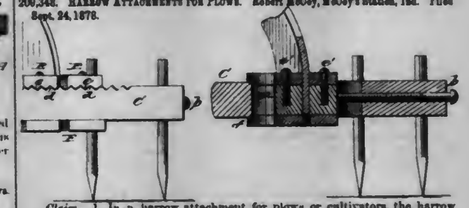
5. The master-wheel G, the shaft J, having the fixed pinion L, and the loose pinion *n*, and the shaft *x*, having gear-wheel Z, the fixed windlass *y*, and the rope *l*, passed over the directing-pulleys *d* and *e* at the top of the derrick, arranged and combined substantially as and for the purposes set forth.

6. The base A B C, the derrick 1 2 3 4 5 6, having the rope-directing pulleys *d* and *e* and the shaft-bearings *f f*, the master-wheel G, having the arms I mounted upon the flanged anti-friction rollers *g*, the minor drive-wheel *r*, mounted upon the flanged rollers *s* and carrying the shaft-bearer *t*, the bearers K, fixed to the base A B C, the shaft J, having the fixed pinion L, the adjustable pinion *m* and loose pinion *n*, the shaft *x*, having the fixed gear-wheel Z, the fixed windlass *y*, and carrying the drilling device *a b c a''*, and the ropes *l* and *d''*, the several parts being arranged, combined, and organized substantially as shown and described, to form a complete apparatus that is adapted to be alternately used to bore, drill, and elevate dirt, in the manner and for the purposes set forth.

209,347.



209,348. Harrow Attachments for Plows. Robert McCoy, McCoy's Station, Ind. Filed Sept. 24, 1878.



Claim.—1. In a harrow attachment for plows or cultivators, the harrow beam or beams C, provided with the elongated slots D and diagonal corrugations or teeth *d*, in combination with the adjustable and diagonally-arranged clamps E, having similar corrugations or teeth *e*, and the blocks F *f*, substantially as herein shown and described.

2. In a harrow attachment for plows or cultivators, the harrow beam or beams C, having elongated slots D, corrugations or teeth *d*, the slots *a*, and set-screws *a'*, in combination with diagonal adjustable corrugated clamps E, diagonal blocks F *f*, and bolts or set-screws *b*, substantially as herein shown and described.

209,349. Barrel-Making Machines. John D. McEachern, Harriston, assignor to Samuel Wallace, Beaforth, Ontario, Canada. Filed Mar. 7, 1878.

Brief.—Barrels and cheese-boxes are formed of veneers by means of a hollow collapsible cylinder driven by peculiarly-arranged gearing; a roller provided with collars for guiding the hoops; a feed-roller and a pressure-bar, arranged in a hinged frame and operated by a treadle; a vertically-swinging saw-frame within the main frame, and having a double-ended saw-arbor, upon which are mounted two circular saws, longitudinally adjustable upon the arbor by an angularly-grooved sliding block, adjustable in ways upon the saw-frame;

grooved sleeves upon the ends of the arbor, and rods with hooked ends connecting the sleeves and sliding block; and suitable operating mechanism.

Claim.—1. The hollow cylinder B, supported upon the shaft C by the divided spiders B^1 B^1, and made from one piece of sheet metal, as described, in combination with the eccentric-shaft B^2, boxes *b b*, and arms b^1 b^1, set-screws *d d*, the lugs d^3 d^3 on the rings d^2 d^2 acting against the knees d^4 d^4, arranged and operated substantially as and for the purpose specified.

2. The stopping-bar 6, with a roller, 5, which acts, as described, upon the stop 7, in combination with the collar 9, substantially as and for the purpose specified.

3. The pulley V^1, provided with the dogs V^2, in combination with the pinion T, attached to the sleeve V, and having the recesses T^1, substantially as and for the purpose specified.

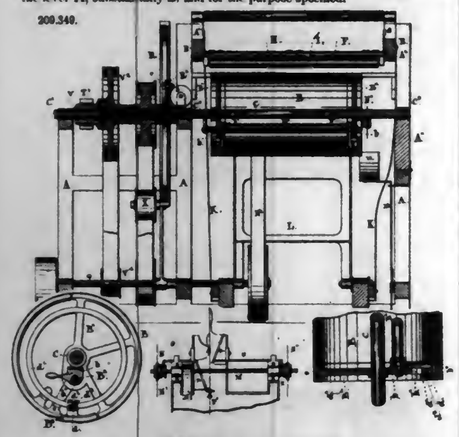
4. The sliding block P, having angular grooves *p p* cut in its face, in combination with the rods O O and sleeves N N, substantially as and for the purpose specified.

5. The hinged arms E E, with the pressure-bar F, operated from the treadle J by the rods K, and provided with the rollers G, H, and I, in combination with the cylinder B, arranged substantially as and for the purpose specified.

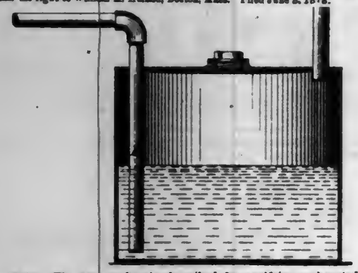
6. The saws N^1, mounted on the mandrel M of the swinging frame L in such manner that the distance between them may be varied by the sliding block P, in combination with the cylinder B, provided with the grooves b^4.

7. The semicircular support 12, held by the upright 13, in combination with the lever 14, substantially as and for the purpose specified.

209,340.

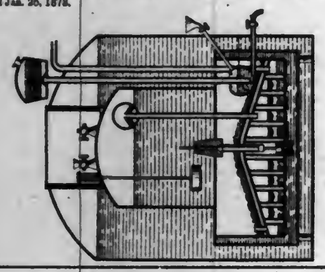


209,350. PROCESSES FOR PURIFYING GAS. Henry W. Merritt, Somerville, assignor of one-half his right to William H. Ireland, Boston, Mass. Filed June 3, 1878.



Claim.—The process herein described for purifying carbureted hydrogen gas or carbureted air by passing the same through a solution of nitrate of mercury, substantially as specified.

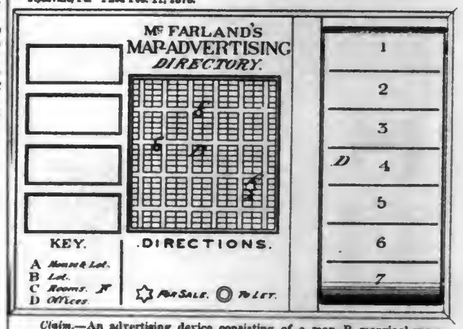
209,351. PURIFIER AND REGULATOR FOR CARBURETERS. Henry W. Merritt, Somerville, assignor of one-half his right to William H. Ireland and William R. Stearns, Boston, Mass. Filed Jan. 26, 1878.



Claim.—1. The combination, with the eduction-pipe and gas or air chamber of a carbureter, of an open vessel arranged within said gas or air chamber, and containing a liquid compound composed of nitric acid and quicksilver, below the surface of which the inner end of said eduction-pipe extends, substantially as described, so that in order to escape from said chamber through said pipe the carbureted air or gas must pass through said compound, by which it is purified and its flow regulated.

2. The combination, with a gas or air carbureter and its eduction-pipe, of a purifier containing a compound of nitric acid and quicksilver, arranged at the inner terminus of said eduction-pipe, so that the carbureted gas or air must pass therethrough before its final escape for consumption, substantially as and for the purpose set forth.

209,352. ADVERTISING DEVICES. John D. McFarland, Erie, assignor to Milton Stewart, Tiosaville, Pa. Filed Feb. 11, 1878.



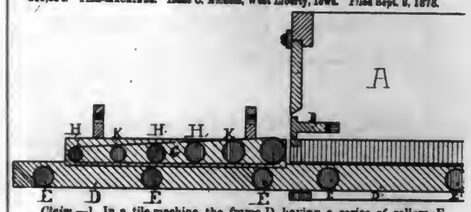
Claim.—An advertising device consisting of a map, B, marginal spaces adapted for receiving cards with addresses or descriptive matter, and pointed instruments, bearing symbols or insignia, to be inserted in said map at any desired point, whereby the observer is directed from the location on the map pointed out by the instrument to the proper card for information relating to said location, substantially as and for the purposes herein set forth.

209,353. BUSH-INSERTERS. George H. Miner, San Francisco, Cal. Filed Apr. 6, 1878.



Claim.—The bush-inserting implement A, provided with the flange or shoulder B, and having the short screw-threaded portion *c* near its lower end, arranged to operate substantially as and for the purpose described.

209,354. TILE-MACHINES. Isaac C. Nichols, West Liberty, Iowa. Filed Sept. 9, 1878.



Claim.—1. In a tile-machine, the frame D, having a series of rollers, E, extending back under the base thereof, in combination with a series of graduated rollers, H, substantially as shown and described, for the purpose specified.

2. In combination with the base A and die B, the graduated supplementary rollers H, for the purpose specified.

3. The frame G, carrying the graduated rollers H and apron K, in combination with frame D and rollers E, substantially as set forth.

4. The frame G, carrying the graduated supplementary rollers H and apron K, in combination with the base A, die B, and board F, substantially as set forth.

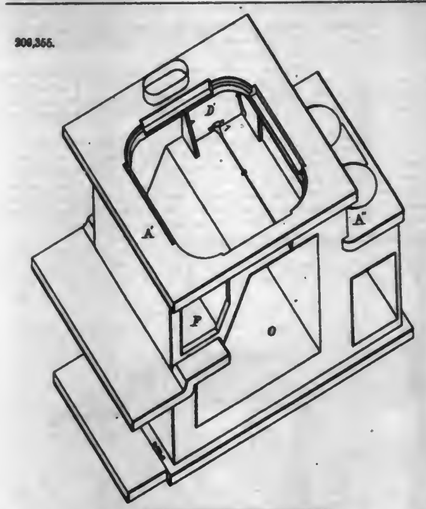
5. The combination and arrangement of the frame G, carrying the graduated supplementary rollers H and apron K, with the base A, die B, board F, frame D, and rollers E, substantially as set forth.

209,355. COOKING-STOVES. Robert S. Oliver, Albany, N. Y., assignor to Rathbone, Sard & Co., same place. Filed July 18, 1878.

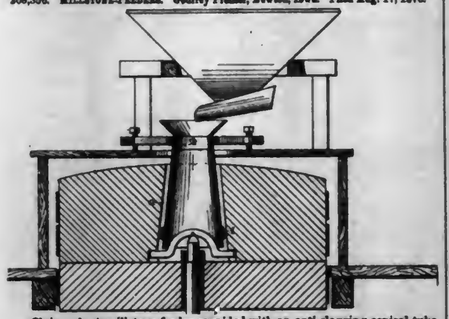
Claim.—1. In combination within a cooking-stove to heat the stove-oven O, the boiler-hole top A' and the lower auxiliary boiler-hole top, A'', the fire-chamber F, arranged upon one of its sides and at its bottom within the oven-inclosure, and the connected stove and range flues B, T'', T', and T''', with the exit-flue located at the top and rear, opposite the oven-door, as shown and described.

2. In combination, and constructed within a cooking-stove to heat the oven O, boiler-hole top A' and lower auxiliary boiler-hole top, A'', the fire-chamber F, its side and bottom inclosure forming a portion of the oven-wall and intruded into its area, with the connected stove and range flues B T' T'' T''', the dampers D' and D'', and with the exit-pipe located at the rear and top, and opposite the oven-door of the stove, as shown and described.

209,355.



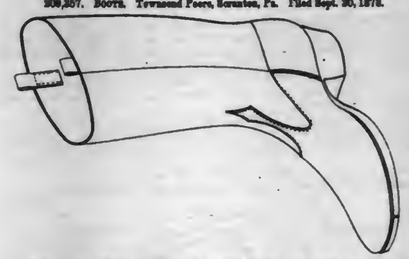
209,356. MILLSTONE-FEEDERS. Godfrey Pfeiffer, Newton, Iowa. Filed Aug. 17, 1878.



Claim.—1. A millstone-feeder provided with an anti-clogging conical tube, adapted to be contracted for the purpose of inserting it within the conical eye of a burr, substantially as described.

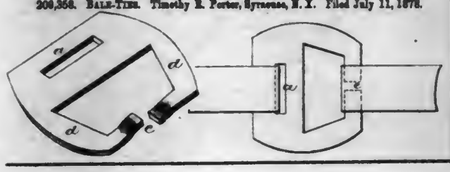
2. As a new article of manufacture, a millstone-feeder consisting of a conical tube contractile as to its diameter, a slip ring or hoop, a mouth-piece, and a supporting-frame separable one from another, substantially as and for the purpose described.

209,357. BOOTS. Townsend Peare, Scranton, Pa. Filed Sept. 30, 1878.



Claim.—An improved article of manufacture, consisting of a boot having a water-proof cloth or canvas leg and a leather vamp, all substantially as and for the purpose described.

209,358. BALE-TIES. Timothy B. Porter, Syracuse, N. Y. Filed July 11, 1878.

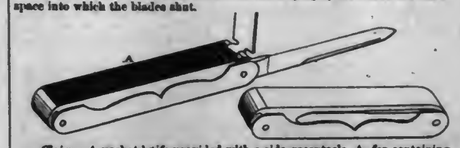


Claim.—1. A reversible bale-tie constructed as herein described, having both ends at *s* turned outward in opposite directions from the plane of the face, as and for the purposes specified.

2. In the reversible bale-tie, the ends at *s* formed as described, in combination with the two inclined sides *d* and the slot *a*, in the manner and for the purposes specified.

209,359. COMBINED KNIFE AND MATCH-SAFE. John G. Rahner, Portland, Oreg. Filed Aug. 30, 1878.

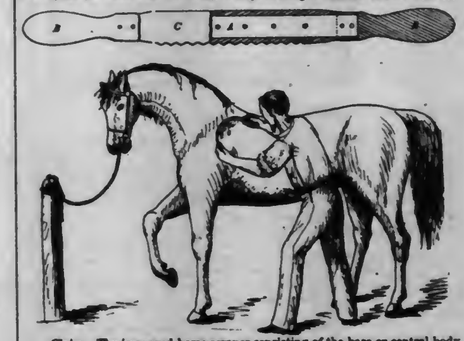
Brief.—The knife is provided with a chamber lying by the side of the usual space into which the blades shut.



Claim.—A pocket-knife provided with a side receptacle, A, for containing small articles, as described.

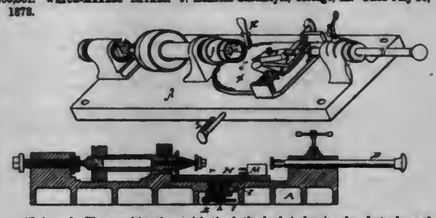
209,360. HORSE-SCRAPERS. Thomas W. Rounds and Thomas L. Reed, Providence, R. I. Filed Aug. 24, 1878.

Brief.—A strip of sheet metal or other suitable flexible material is used as a base, and provided with a covering or edge binding of vulcanized india-rubber.



Claim.—The improved horse-scraper consisting of the base or central body A, provided with suitable handles B, in combination with the elastic covering or binding C, substantially as and for the purposes herein set forth.

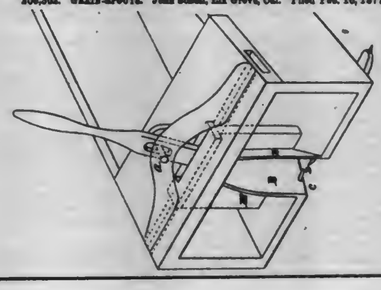
209,361. WATCH-MAKERS' LATHES. J. Heinrich Sandmeyer, Chicago, Ill. Filed July 16, 1878.



Claim.—1. The combination, with the lathe-bed A, having head-stocks and spindle, of the turn-table H, constructed with a graduated edge, and provided with spline *m* and lugs M, the indicator-spring K, adjustable block I, fulcrum-pin *i*, disk-nut *l*, and rod L, substantially as and for the purpose set forth.

2. In combination with a turning-lathe and with the turn-table H arranged upon it, and having spline *m* and lugs M, a tool-holder composed of plate N, having rib *n* and set-screws O and *o*, and of plate P, having tool-receptacle *p* and stud S, the same to be constructed, arranged, and operating substantially in the manner and for the purpose set forth.

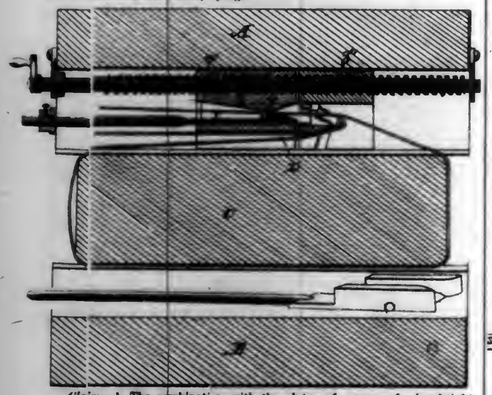
209,362. GRAIN-SPOUTS. John Schell, Elk Grove, Cal. Filed Feb. 16, 1877.



Claim.—The sloping chute A, having the beveled cut C made in its floor at the front, and two sets of hooks, D, for holding sacks, in combination with the diaphragm H and the horizontally-sliding grate E, placed close to the outlet immediately above the hooks, and adapted to close one side while opening the other, substantially as shown, and for the purpose herein described.

209,363. BALE-BAND TIGHTENERS. John L. Sheppard, Charleston, S. C. Filed Aug. 19, 1878.

Brief.—The slides to tighten the band are located in the grooves of the upper platen, one being provided with a buckle-stop and the other with a clutching device. The roller in the clutch serves to hold the end of the band not secured to the buckle until the strain is sufficiently great, and then to release it when the buckle held by the stop is turned over, bending the released end of the band, and thereby tying it.



Claim.—1. The combination, with the platen of a press, of a band-tightener consisting, essentially, of two slides located in the groove between two adjacent rails on the face of the platen, one provided with a buckle-stop and the other with a bale-band clamp, and suitable means for imparting a reciprocating movement to said slides, substantially as set forth.

2. The combination, with the platen of a press, of two reciprocating slides located in the groove between the adjoining rails on the face of the platen, substantially as set forth.

3. In a bale-band tightener, the combination, with two reciprocating slides provided with devices for holding the opposite ends of the band while strain is imparted to same, of an actuating-shaft provided with right and left hand screw-threads, substantially as set forth.

4. In a band-tightener, the combination, with a slide adapted to travel in a groove in the face of the platen, said slide having open slots formed in its sides, of a buckle-stop provided with side lugs which fit within said open slots, substantially as set forth.

5. In a band-tightener, the combination, with two reciprocating slides, of a buckle-stop having a spring plate attached thereto, substantially as set forth.

6. In a band-tightener, a slide provided with outwardly-flaring upper wall, in combination with a sliding clamp having a roller journaled therein which is adapted to be moved toward and from the throat of the slide, substantially as set forth.

7. In a band-tightener, the combination, with a slide having a downwardly-projecting upper wall, of a sliding clamp having a roller journaled therein, substantially as set forth.

8. In a band-tightener, a slide provided with an upper and a lower compartment, the upper compartment having a sliding band clamp located therein, and the lower compartment provided with grooves for retaining and guiding the rear end of the buckle-stop, substantially as set forth.

9. In a band-tightener, the combination, with a slide adapted to travel in a groove in the face of a press-platen, of a sliding clamp provided with a rod and means for regulating the friction on said rod, substantially as set forth.

10. The combination, with the platen of a press, of band-tightening mechanism located within the grooves in the upper platen, and adapted to impart the required strain on opposite ends of the band, substantially as set forth.

11. The combination, with the platen of a press, of band-tightening mechanism, located within the grooves in the platen, and adapted to impart the desired strain and automatically release the opposite ends of the bale-band, substantially as set forth.

209,364. FOG-HORNS. Lewis Smith and Robert Booth, Sherbrooke, Quebec, assignors, by mesne assignment, to Neptune Fog Horn Company, (limited,) Quebec, Canada. Filed June 19, 1878.

Brief.—The pistons of a steam and an air cylinder are connected by a rod, and on the admission of steam into the steam-cylinder both pistons are raised, whereby the air in the air-cylinder is forced through a horn or trumpet, and sounds an alarm. Both cylinders are caused to descend by gravity, when a fresh supply of air is admitted to the air-cylinder. Sliding rods passing through both cylinders and operated by the respective pistons automatically open and close the induction and exhaust valves.

Claim.—1. In a fog-alarm apparatus, the combination of a steam-generator, a steam-cylinder, and an air-cylinder, having in them pistons which are raised by the force of steam admitted to the under side of the piston of the steam-cylinder, and which fall by their own gravity, substantially as described.

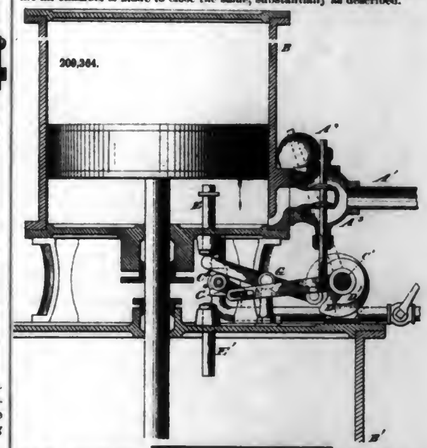
2. In a fog-alarm apparatus, the combination of the steam-cylinder B, air-cylinder B', rods E E', and an automatically-operating valve mechanism consisting of the lever G, disk D, arm C, and rod A', the parts being arranged to operate substantially as and for the purpose set forth.

3. In a fog-alarm apparatus, the combination of the rods E E', operated by the pistons of the cylinders B and B', and the valve-operating lever G, when constructed and operating substantially as set forth.

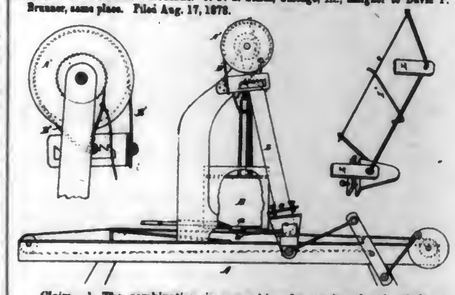
4. In a fog-alarm apparatus, the combination of the steam-induction pipe A', induction-valve A^2, arm C, and eduction-valve C^2, the parts being arranged, with reference to each other, substantially as set forth.

5. In combination with the eduction-pipe of a fog-alarm apparatus, an eduction-valve for allowing the steam to pass from the cylinder, and a cock or valve for regulating the passage of steam in such a manner as to control the downward movement of the pistons in the cylinders thereof, substantially as set forth.

6. In a fog-alarm apparatus, the combination of the cylinders B and B' and their respective pistons, they being arranged, with reference to each other, as described, whereby the piston of the air-cylinder is made to force air through a trumpet or horn provided with a suitable vibrating reed, and thus cause an intermittent alarm to be given, and whereby the piston of the steam-cylinder is made to move the induction-valve into its open position, and the piston of the air-chamber is made to close the same, substantially as described.



209,365. CAKE-CUTTING MACHINES. J. F. S. Smith, Chicago, Ill., assignor to David F. Brunner, same place. Filed Aug. 17, 1878.

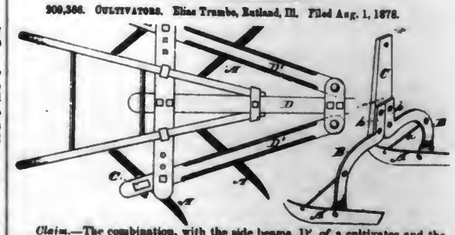


Claim.—1. The combination, in a machine for cutting dough, of the vibrating arms or frame L L, carrying the cutter, with a friction device for retarding the vibration of the said arms, substantially as and for the purposes specified.

2. The combination, in a machine for cutting dough, of the wheel or pulley A', the friction-strap B', and the vibrating arms L L, substantially as and for the purposes specified.

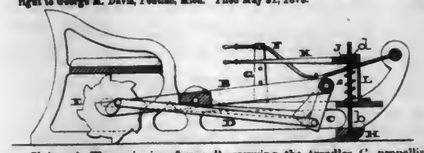
3. The combination, in a machine for cutting dough, of the cutting-wire *a'* and the guard or arm I', freely supporting the said wire and slightly bent upward at its outer end, substantially as and for the purposes specified.

209,366. CULTIVATORS. Elias Trumbo, Rutland, Ill. Filed Aug. 1, 1878.



Claim.—The combination, with the side beams, D', of a cultivator and the standard C, attached thereto, of the independent detachable curved irons B, each having a perforated stem, *b*, at the top, bent at right angles to the body of the curved iron, and a share, A, with its forward edge circular and braced to the independent iron B, all constructed and arranged to operate as shown and described.

209,367. VELOCIPEDE-SLEDS. William H. Upton, Camden, N. J., assignor of one-half his right to George M. Davis, Pontiac, Mich. Filed May 31, 1878.



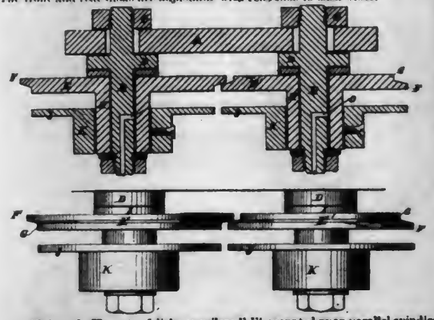
Claim.—1. The swinging frame B, carrying the treadles C, propelling-wheel E, and pitmen D, in combination with the lever F and notched standard *i*, substantially as and for the purpose set forth.

2. The sled-rudder H, in combination with the pressure and guiding lever K and elevating-spring *e*, substantially as and for the purpose set forth.

3. The sled-rudder H, in combination with the shaft *b*, block J, lever K, spring *e*, and standard L, with overhanging end *d*, substantially as and for the purpose set forth.

209,368. BAND-SAW GUIDES. Joseph A. Wells, Oakland, Cal. Filed Aug. 19, 1878.

Brief.—The rim on rear disk serves as a support to the back of the saw. The front and rear disks are adjustable with reference to each other.



Claim.—1. The sets of disks or rollers E E', mounted upon parallel spindles B, so that the outer disks, J, may be adjusted to or from the rear disks, G, to fit and guide different widths of saw-blades, substantially as herein described.

2. The disks G, with their projecting hubs H, rotating upon the spindles B, in combination with the disks J, with the hub K fitted and secured to the inner hubs, so as to be adjustable or reversed upon them, substantially as and for the purpose herein described.

3. The two sets of disks G J, mounted upon parallel spindles, so as to guide the saw, as shown, the rear disks, G, being formed with overlapping flanges F, substantially as and for the purpose herein described.

4. The two sets of rollers E E', rotating upon the parallel spindles B and guiding the saw-blade, as shown, the spindles being laterally adjustable in the plate A, to admit varying thicknesses of saw-blades, substantially as herein described.

5. A guide and support for band-saws, consisting of the rollers mounted upon parallel spindles, so as to be adjustable laterally and also forward and back, to fit the saw and relieve friction, substantially as herein described.

209,369. CLOTHES-WRINGERS. James Young, Amsterdam, N. Y. Filed Aug. 12, 1878.



Claim.—1. A wringing-machine having elastic rollers provided with shafts of steel or of elastic material, such shafts having conical bearings with corresponding conical boxes, substantially as set forth.

2. In combination with the standards A and the shafts of the rollers having their bearings in said standards, the spring cross-bar D, for the purpose specified.

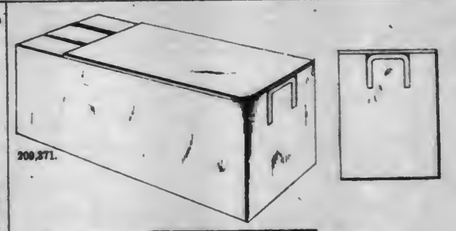
209,370. SHOE-BUTTONS. Quinten M. Youngs and Alfred E. Mathews, Utica, N. Y. Filed Feb. 21, 1878.



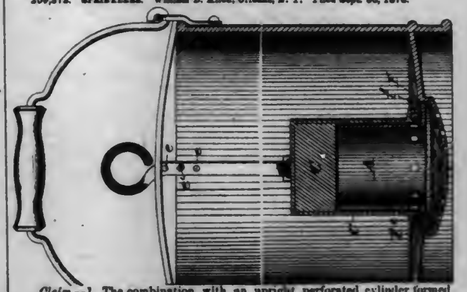
Claim.—A button-head, *a*, having a recessed screw-threaded shank, the outer end of said recess being made V-shaped or countersunk, to adapt it to be secured to a shoe by an ordinary screw without leaving any projecting portion on the inside of the shoe, substantially as set forth.

209,371. DEVICES FOR PREVENTING BOARDS FROM WARPING. William B. Allen, Orleans, N. Y. Filed Aug. 13, 1877.

Claim.—The combination, with a board or plank whose end is provided with a longitudinal groove and two right-angular slits respectively formed on both sides of said groove, of a strip of metal or other rigid substance whose form in cross-section is that of three sides of a square, substantially as and for the purpose described.



209,372. SPRINKLERS. William B. Allen, Orleans, N. Y. Filed Sept. 30, 1878.



Claim.—1. The combination, with an upright perforated cylinder formed in the bottom of a pot or can and a rose located below the same, of a hollow cylindrical valve having a closed top and adapted to have vertical reciprocation relative to said cylinder, substantially as set forth.

2. The combination, with a perforated cylinder formed in the bottom of a can or pot, and having its upper end open, while its lower end is provided with a rose, of a hollow cylindrical valve having a closed top and adapted to fit over said cylinder, substantially as set forth.

3. The combination, with a cylinder formed in the bottom of a pot or can, and having its lower vertical body provided with perforations, together with a rose located below the same, of a hollow cylindrical valve fitting over said cylinder, and provided with a weight or spring adapted to cause it to return with force to its valve-seat when released from suspension above the latter, substantially as set forth.

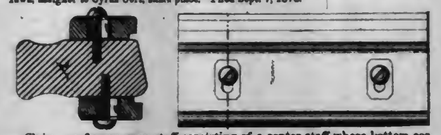
4. The combination, with a perforated cylinder formed in the bottom of a pot or can, a rose located below the same, and a hollow valve adapted to fit over and about said cylinder, of a brace extending across the top of the pot, and a valve-stem or handle working in an opening in the brace, said stem or handle being provided with a vertical series of transverse holes and a stop device, whereby the degree of movement of the valve may be adjustably gaged, substantially as set forth.

5. The combination, with a perforated cylinder formed in the bottom of a can or pot, and a rose located below the same, of a hollow valve adapted to fit over and about the cylinder, the lower edge of said valve being formed with two or more annular projections adapted to engage with a flexible packing-ring, substantially as set forth.

6. The combination, with a pot or can, the bottom of which is formed with an annular recess, and a flexible packing-ring which fits in the latter, of a hollow cylindrical valve, the lower edge of which is provided with two or more ring projections, together with an upright perforated cylinder, about which said valve fits, and a rose located below the bottom of the can, substantially as set forth.

7. The combination, with an upright perforated cylinder located in the bottom of a pot or can, and a hollow valve which fits over and about the same, of a rose having outer convex sides formed with a central imperforate portion, whereby said rose is adapted to discharge radially rather than toward its center, substantially as set forth.

209,373. FURROW-GAGE STAFFS FOR DRESSING MILLSTONES. H. D. Altfather, Maquoketa, Iowa, assignor to Cyrus Cort, same place. Filed Sept. 7, 1878.



Claim.—A furrow-gage staff consisting of a center staff whose bottom corresponds to the shape of the furrow, and of adjustable side strips or rests, substantially as and for the purpose specified.

209,374. BULLY-PLOWS. William D. Arnett, Jefferson County, Colo. Filed Mar. 5, 1878.

Brief.—Machine carrying right and left hand plows, and so constructed that the entire implement may be turned over. Eccentric-wheel attached to axle, and secured in position by lever and rack, whereby depth of furrow is regulated. Driver's seat adapted to be reversed, and secured in position by a clamp.

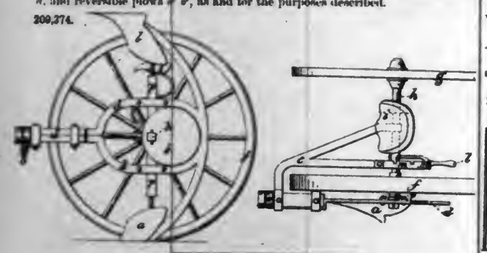
Claim.—1. The combination of the eccentric-wheel *h* with the frames or beams *d*, axle *h*, lever *l*, and ratchet *m*, for the purpose of regulating the depth of the furrow.

2. In a reversible sulky-plow, the combination of a right and left hand plow, an axle, *h*, and wheels *f g*, whereby the entire implement is adapted to be turned over, as described, and for the purposes set forth.

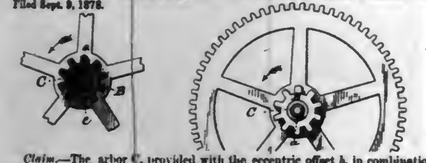
3. A reversible driver's seat, in combination with the axle *h*, arranged to turn over and be secured in the desired position by means of a clamp, as shown.

4. The slide-bars *p*, in combination with the axle *h*, lever *b*, frames or beams *d*, and reversible plows *e e'*, as and for the purposes described.

209,374.



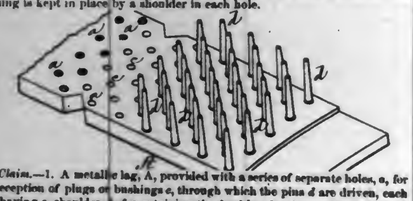
209,375. Reversible Center-Pinions for Watches. C. O. Balliett, Waterloo, Iowa. Filed Sept. 9, 1878.



Claim.—The arbor C, provided with the eccentric offset *b*, in combination with the pinion B, provided with an eccentric offset, *a*, and the concavo-convex spline or key *c*, substantially as described.

209,376. Lugs for Rag-Pickers, &c. Jas. H. Bolser and Samuel G. B. Beals, Northborough, Mass. Filed Sept. 5, 1878.

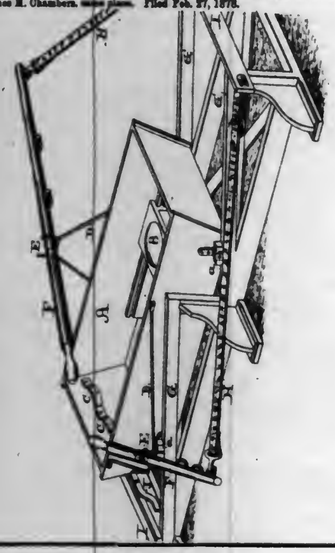
Brief.—A metallic lug, provided with tapering metallic pins driven therein, and secured by wooden bushings or other suitable yielding material. The bushing is kept in place by a shoulder in each hole.



Claim.—1. A metallic lug, A, provided with a series of separate holes, *a*, for the reception of plugs or bushings *c*, through which the pins *d* are driven, each hole having a shoulder, *b*, for retaining the bushing in place, substantially as and for the purpose described.

2. The metallic lug A, having holes *a*, provided with shoulders *b*, in combination with the wooden or other bushings *c* and pins *d*, substantially as and for the purpose set forth.

209,377. Extracting-Machines. Will J. Britt, St. Louis, Mo., assignor of one-half his right to James M. Chambers. same place. Filed Feb. 27, 1878.



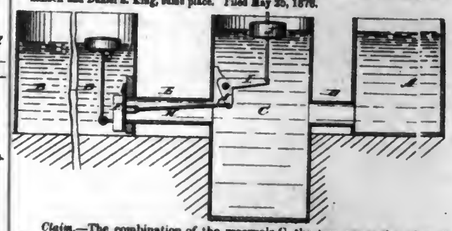
Claim.—1. The herein-described rowing-machine, consisting of the boat A, oar-locks E E, oars F F, ways G G', and straps H H, substantially as described.

2. The combination, in a rowing-machine, of the boat A and the double ways G and G', for the purpose described.

3. The frame I, provided with the spring J, in combination with the boat A, as and for the purpose described.

4. The boat A, provided with the pivoted blocks *a* and the ways G G', substantially as described.

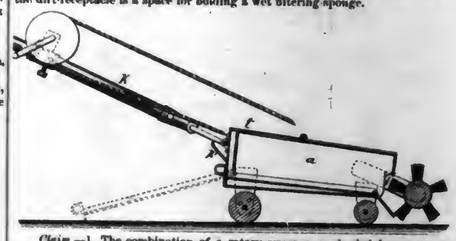
209,378. Self-Feeding Water-Troughs. Alvin M. Brown, Nettleton, Me., assignor to himself and Daniel S. King, same place. Filed May 25, 1878.



Claim.—The combination of the reservoir C, the two connecting-pipes D E, the two floats J G, the valve F, the connecting-rod H, and the elbow-lever I with each other, and with the pond or reservoir B and the trough or tank A, substantially as herein shown and described.

209,379. Sweeping-Machines. Isaac A. Chesel, Brooklyn, N. Y. Filed July 15, 1878.

Brief.—The belt is tightened by lowering the handle. In the rear wall of the dirt-receptacle is a space for holding a wet filtering-sponge.



Claim.—1. The combination of a rotary sweeper, a wheeled box, open at front and rear, and a sponge arranged between said box-openings, as and for the purpose specified.

2. The receptacle for sponge of similar material, in combination with the slit *t* in the box *a*, as set forth.

3. The swinging handle K and stop *k'*, pulleys, belt, and brush, in combination with the dirt-receptacle of a sweeping apparatus, for the purposes described, and substantially as set forth.

209,380. Faucets and Bushings. Austin Connelly, Hoboken, assignor to himself and John V. Smith, Elizabethport, N. J. Filed Sept. 19, 1878.

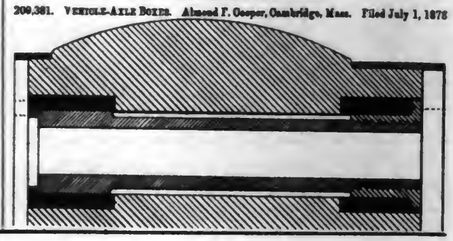


Claim.—1. As an improvement in bushings, the bushing B, adapted to be screwed into the barrel-head, and provided with the tap-hole *f*, heads *k k'*, trefoil opening *m*, flanges *a*, and grooves *o*, to receive and hold the end of the faucet to tap and draw the contents of the barrel, substantially as described.

2. As an improvement in faucets, the cap-nut *e*, with flanges *f*, to lock it into the bushing B, in combination with the piston *j*, substantially as described.

3. As an improvement in faucets, the faucet E, provided with the piston *j*, and cap-nut *e*, provided with the flanges *f*, in combination with the bushing B, having tap-holes *f'*, and devices for locking the nut *e* thereto, substantially as described.

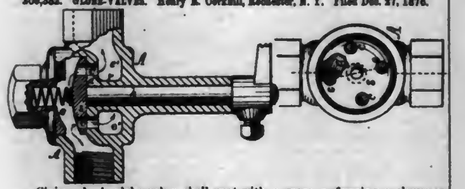
209,381. Vehicle-Axle Boxes. Almond F. Cooper, Cambridge, Mass. Filed July 1, 1878



Claim.—1. In combination with an axle-box for vehicles, rubber cushions, one at each end, when the same are affixed to the axle-box at one end, and a nut made to fit the axle-box at the other by vulcanizing the rubber on the box and nut.

2. As a new article of manufacture, an axle-box for vehicles, fitted with a rubber cushion or cushions, when the cushions are affixed to the box by vulcanizing them on.

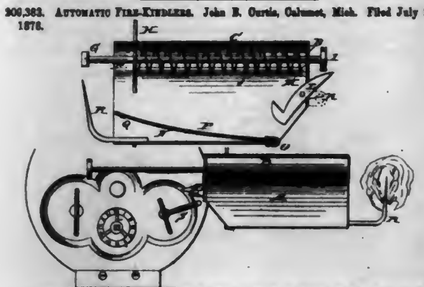
209,382. Globe-Valves. Henry B. Corkhill, Rochester, N. Y. Filed Dec. 27, 1876.



Claim.—1. A globe-valve shell cast with a mass, *r*, forming a sleeve or sheath for the valve-stem and uniting or tying the partition *a* between the chambers with the outside shell, said shell and mass *r* being solid and in one piece, substantially as described, and for the purpose set forth.

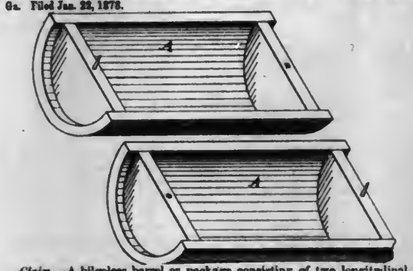
2. A globe-valve consisting of a shell, A, having a tying-mass, *r*, forming a sleeve or sheath for the valve-stem, cast within the chamber *a'*, and forming one piece with the shell, in combination with valve and seat *s* and a and valve-stem *b*, passing longitudinally through said mass *r*, all constructed and arranged substantially as shown and described.

209,383. Automatic Fire-Kindlers. John B. Curtis, Calumet, Mich. Filed July 23, 1878.



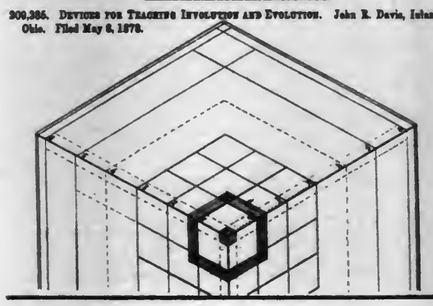
Claim.—In an automatic fire-lighter, the combination of the case A, having circular portion B, provided with the slot C and plate D, the rod F, having match-holder G, guide-plate H, and button I, spiral spring J, and the flat spring N, covered with sand-paper P, and the hook R, constructed and operating substantially as and for the purposes set forth.

209,384. Packages for Bleaching and Packing Rosin. Addison D. Outis, Screven, Ga. Filed Jan. 22, 1878.



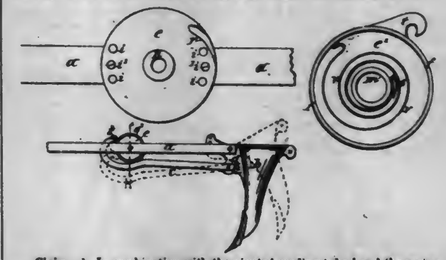
Claim.—A bilgeless barrel or package consisting of two longitudinal independent semicircular wooden sections, having semicircular end heads, and secured together by end hoops, as shown and described.

209,385. Devices for Teaching Involution and Evolution. John R. Davis, Island, Ohio. Filed May 6, 1878.



Claim.—An apparatus or block for demonstrating powers and roots, consisting of a main block with corner recess and graduated edges, and a series of cubical blocks fitted into the corner recess of the main block, some of the blocks being arranged with colored bands along the edges, substantially as and for the purpose set forth.

209,386. Grain-Driller. Benjamin Delong, Caughdenoy, N. Y. Filed June 26, 1878.



Claim.—1. In combination with the pivoted seeding-tube *b* and the spring-plate *a'*, having its spring wound to impart to it a rearward rotary force, the connecting-bar *c*, bent at its forward end to bring it to bear against the lower periphery of the spring-case, and to connect with hook *t* on the front of said case, substantially as described and shown, for the purpose set forth.

2. The combination of the plate *a*, provided with hollow journal *s* and lug *r*, the plate *a'*, provided with hub *m*, lug *s*, and circumferential flange *f*, and having the journal *s* protruding at its outer face, the spring *v*, having hooked ends, the bolt *o*, and leaders *a a*, all constructed and combined substantially as described and shown, for the purpose set forth.

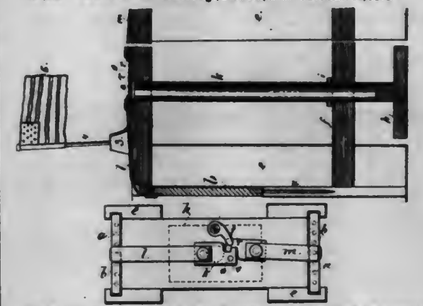
3. In combination with the spring *v*, the plate *a*, provided with a series of holes, *i i i*, diametrically opposite each other, the leader *a*, provided with corresponding holes, and the screws *i' i'*, substantially in the manner shown and described, for the purpose specified.

209,387. Cigar-Slitters. Michael Dillmeier, Dobbs Ferry, N. Y. Filed Apr. 9, 1878.



Claim.—The cigar-slitting device herein described, consisting of the handle A, having a socket, *b*, adapted to receive the end of the cigar, and provided with a longitudinal slot, *b'*, the pivoted lever C, cutting-knife D, and spring E, all constructed substantially as herein shown, for the purpose set forth.

209,388. Animal-Traps. James Edge, Paterson, N. J. Filed Mar. 21, 1878.

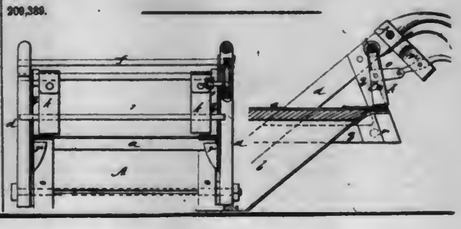


Claim.—1. In a mole-trap, the two weights *b* and spikes *a*, sliding vertically in the frame *c*, and provided with the straps *l m* and hooks *o r*, in combination with the lifter *h* and rod *k*, substantially as set forth.

2. The weights *b* and straps *l m*, in combination with the hooks *o r*, pin *e*, finger *i*, and lifter *h*, substantially as set forth.

3. The combination, in a mole-trap, of the two separate sliding weights *b*, with spikes upon their lower edges, the sustaining-straps *l m*, hooks *o r*, lifter *h*, staff 4, and signal 5, connected to one of the straps, for the purposes and as set forth.

209,389.



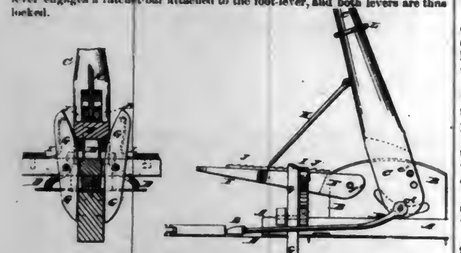
209,389. SCRAPERS. George Eitsman, Round Grove, Ill. Filed Sept. 6, 1878.

Brief.—Lugs are pivoted to a rod connecting the scraper-handles. On each handle is a spring-arm, with a lug having its inner side inclining upward, and a shoulder at its top, between which and the pivoted lugs the scraper-edge not in use is retained. The pivoted lugs are drawn back from over the scraper by a spring thumb-lever, and the projecting ends of a rod connecting them limit their forward movement by coming against the spring-arms.

Claim.—The combination of the revolving scraper A with the handle-arms *d*, spring-arms *q*, lugs *r*, and dogs *k*, substantially as and for the purposes set forth.

209,390. FLOORING-JACKS. David A. Ferris, Tioga Centre, N. Y. Filed Aug. 28, 1878.

Brief.—A pair of spring-acted clamping-levers are operated by a foot-lever, and clamp the instrument to the joist, and the floor plank or board is pressed in place by a hand-lever and its connections. A pawl pivoted to the hand-lever engages a ratchet-bar attached to the foot-lever, and both levers are thus locked.

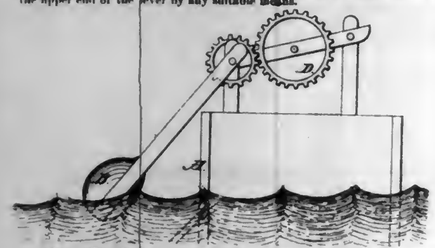


Claim.—1. The combination of the hand-lever C, the rods D, the cross-bar E, the foot-lever F, the ratchet-bar J, the pawl K, the clamping-levers G, and the springs L with each other, and with the base-bar A and the plank B, substantially as herein shown and described.

2. The combination of the ratchet-bar J and the pawl K with the foot-lever F and the hand-lever C, for locking the clamping levers G and the said hand-lever C in place, substantially as herein shown and described.

209,391. WAVE-POWERS. William Filmer, San Francisco, Cal. Filed Feb. 11, 1878.

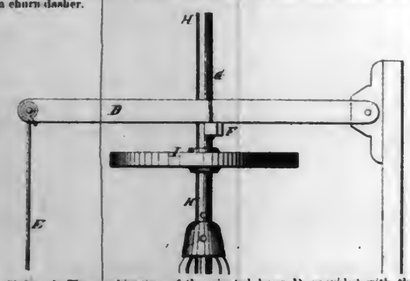
Brief.—A platform is erected to a suitable height above the water, and to a frame thereon is hinged a lever, which lies obliquely downward in the direction of the shore. The lever has an enlarged receptacle at its lower end, into which sufficient weight is placed to supplement the force of the waves, bringing the lever down after it has been lifted. The power is communicated from the upper end of the lever by any suitable means.



Claim.—The floating lever B to the stationary frame A, in combination with gearing for the communication of power, as and in the manner herein described.

209,392. CHURNING APPARATUS. William H. Foster and Isaac C. Roberts, Louisburg, Kans. Filed Aug. 6, 1878.

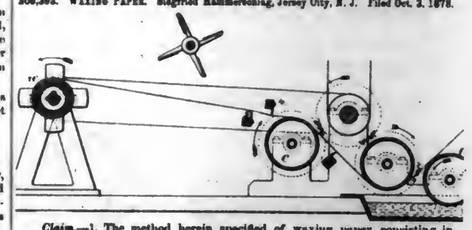
Brief.—The invention consists in the combination of a pivoted lever, provided with a cross-bar and cord, and stirrup and balance-wheel, with the shaft of a churn-dasher.



Claim.—1. The combination of the pivoted lever D, provided with the cross-bar F and the cord G, and the balance-wheel I, with shaft H of a churn-dasher, substantially as herein shown and described.

2. The combination of the pivoted lever D, provided with the cross-bar F and the cord G, the stirrup E, and the balance-wheel I with the shaft H of a churn-dasher, substantially as herein shown and described.

209,393. WAXING PAPER. Siegfried Hammerschlag, Jersey City, N. J. Filed Oct. 3, 1878.



Claim.—1. The method herein specified of waxing paper, consisting in drawing the paper over the surface of a cylinder coated with melted wax at a speed different to the movement of the surface of the cylinder, so as to regulate the thickness of the layer of wax by the relative speed of the paper to that of the surface of the waxed cylinder, substantially as set forth.

2. The combination, in a machine for waxing paper, of a trough for the wax, a heated cylinder for transferring the wax to the paper, and mechanism for moving the waxing-cylinder at a different speed of surface from that of the paper with which it is in contact, substantially as specified.

3. The method herein specified of preparing waxed paper, consisting in transferring the wax to the paper, heating the same to cause its incorporation with the paper, removing the surplus wax, and cooling the paper by a current of air before winding the same on a reel, substantially as set forth.

4. In a machine for applying wax to the surface of paper, the scrapers 4 and 5 at opposite sides of the web, in combination with the cylinder c and winding-reel w, substantially as and for the purposes specified.

209,394. WALL-PAPER TRIMMERS. Russell S. Hill, Magnon, Ill., assignor of one-half his right to John F. Randall, same place. Filed Aug. 10, 1878.



Claim.—The slotted roller F, pinion G, and shipper-arm H, in combination with the pinion D and yielding apron I, substantially as described, and for the purpose specified.

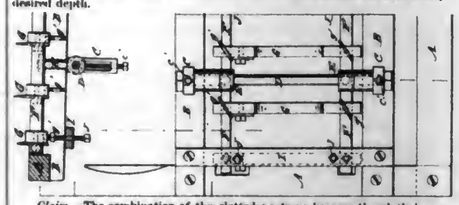
209,395. FRICTION-CLUTCHES FOR FOOT-POWERS. Albert Hoeffer and Albert Seneff, Pottsville, Pa.; said Seneff assignor to said Hoeffer. Filed May 3, 1878.



Claim.—In combination with the shaft *a* and notched hub or collar *c*, secured rigidly thereupon, the loose collar C, having notched rim c^2, and inclined recesses *i i*, rubber washer *s*, loose cone-pulley D, having recess *l* and inclined projections *k k*, straps d^2 d^2, treadle T, and spring S, all combined, arranged, and operating substantially as described, for the purpose herein shown and specified.

209,396. MACHINES FOR CUTTING BASKET-SPLINTS. Andrew I. Hogan, La Clede, Ill., assignor to himself and Uriah Perry, same place. Filed Sept. 17, 1878.

Brief.—A number of knives are adjustably attached to the gate which carries the veneer-cutter, so that the veneer is divided in a number of parallel strips of any desired width. The knives are also adjustable for cuts of any desired depth.



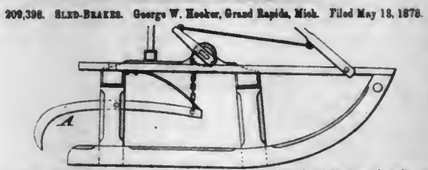
Claim.—The combination of the slotted posts or keepers C and their set-screws c^1, the bar D, the arms and cross-bars E F, the adjustable bars G, provided with set-screws g^1 and knives H, and the stationary bars I and their set-screws J, with each other and with the cross-bars B of the gate or knife-frame A, substantially as herein shown and described.

209,397. ANIMAL-TRAPS. Ashley W. Holland and Edgar H. McKimm, Lathrop, Mo. Filed July 1, 1878.

Claim.—1. The combination, with the case A, having taper hole in top, of the taper perforated plug *k* and hook *j*, as and for the purpose described.

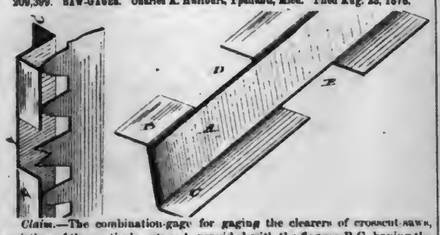
2. The combination, with an animal-trap, substantially as described, of the cover M, having a grain jacket or chamber at the sides, the latter being covered with wire-gauze, as and for the purpose specified.

209,398. SLED-BRAKES. George W. Hooker, Grand Rapids, Mich. Filed May 13, 1878.



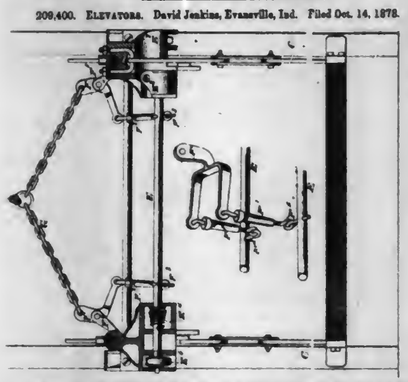
Claim.—The dogs A, pivoted to knees of the sled, having curved ends projecting behind it, and operated by springs and lift mechanism connected with their rear ends, as shown and described.

209,399. SAW-GAGES. Charles A. Horlburt, Ypsilanti, Mich. Filed Aug. 23, 1878.



Claim.—The combination-gage for gaging the clearers of crosscut-saws, consisting of the vertical portion A, provided with the flanges B C, having the openings D E, of unequal depth, constructed and operating substantially as and for the purposes set forth.

209,400. ELEVATORS. David Jenkins, Evansville, Ind. Filed Oct. 14, 1878.



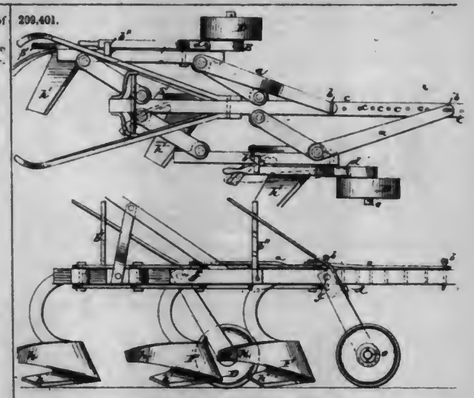
Claim.—1. In combination with the elevator platform, the suspending rods B B and levers or jointed arms A A, to which they are attached, and which serve as bearings for the oscillating shafts E E, as well as boxes for the springs and eccentrics by which the elevator is suspended on the guides in case of accident, substantially as set forth.

2. In combination with ways C C and chain G, the bell-crank levers F F, links F^1, eyebolts F^2 F^2, rods E, eccentrics E^2 E^2, and springs E^1, substantially as set forth.

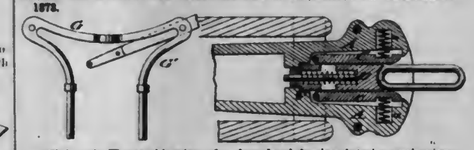
209,401. CULTIVATORS. Moses Johnson, Lockport, N. Y., assignor of one-half his right to Moses C. Richardson, same place. Filed July 19, 1878.

Claim.—The cultivator-tooth F, made of one sheet of metal, bent nearly at right angles, forming a vertical section, *h*, corresponding to the land-side of a plow, which inclines rearwardly from the point to the top, and is provided with a rear extension, curved inward toward the furrow, and having a horizontal or share section, *h'*, with a cutting-edge running backward obliquely from the point, substantially as shown and described.

209,401.



209,402. CAR-COUPLINGS. Ole Johnson and John Johnson, Orono, Iowa. Filed June 29, 1878.



Claim.—1. The combination of a draw-head having interior spring-jaws and a sliding and spring-acted center block with a coupling-link, pin, and retaining-clutch, substantially as described, and for the purpose specified.

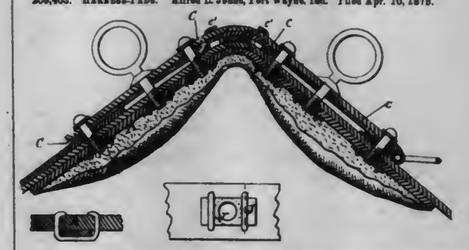
2. The combination of the draw-head having a sliding and spring-acted center block with a guided and spring-acted pin and link-retaining clutch, so that by pushing back the center block the pin and clutch are dropped, substantially as specified.

3. The combination of the draw-head A, having supporting-frame G' and interior slide-block, D, with a vertically-sliding and guided clutch, G, and with the coupling-pin hung to a sliding and spring-acted pin-frame, substantially as specified.

4. The combination, in a car-coupling, of the coupling-pin with a sliding spring-frame having a retaining pivot-stop, substantially as specified.

5. The combination, in a car-coupling, of the vertically-sliding and guided clutch, formed of a horizontal guide-plate, lower arms, and upper spindle, with a sliding and spring-acted pin-frame, and with the coupling-pin hung to pin-frame and guided in horizontal plate of clutch, substantially as specified.

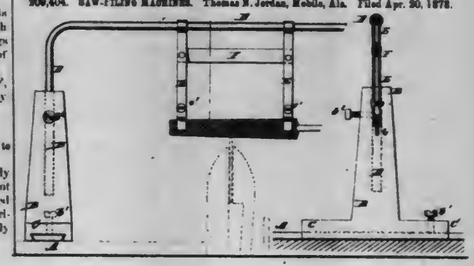
209,403. HARNESS-PADS. Alfred L. Johns, Fort Wayne, Ind. Filed Apr. 10, 1878.



Claim.—1. The metal pad-plates C, made with loops c^2 upon the outer sides of their upper ends, and with the inwardly-projecting flanges c^3 upon their side edges, the said flanges c^3 gradually increasing in height from their upper to their lower ends, substantially as herein shown and described.

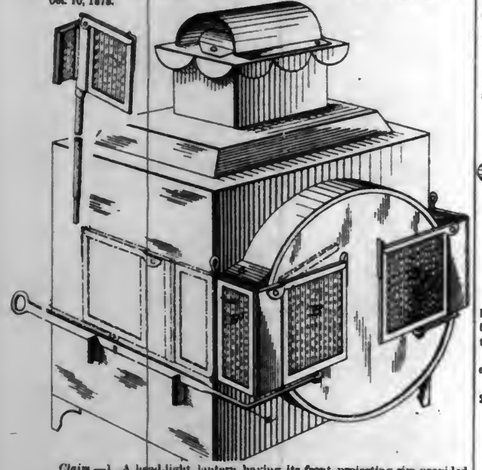
2. The burrs fastened to body of pad by means of staple, as and for the purpose specified.

209,404. SAW-FILING MACHINES. Thomas H. Jordan, Mobile, Ala. Filed Apr. 20, 1878.



Claim.—The combination of the dovetailed base-bar A, the perforated post B, having a dovetailed cross-head, C, upon its lower end, and provided with set-screws b^1 b^2, the bent rod D, and the sliding frame E F with each other, substantially as herein shown and described.

209,405. SIGNALS FOR LOCOMOTIVE HEAD-LIGHTS. William Kelley, Baltimore, Md. Filed Oct. 10, 1878.

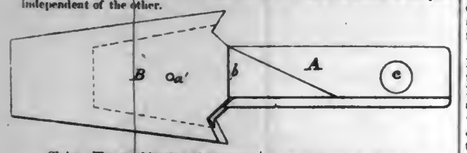


Claim.—1. A head-light lantern having its front projecting rim provided with side openings or windows, with frames around the same, combined with colored front and side glass plates, united or hinged together, and adapted to be placed in front of said lantern and over the side windows thereof, and removed therefrom, substantially as and for the purposes specified.

2. Combined with a head-light lantern having its front projecting rim provided with side openings or windows, colored front and side glass plates, hinged or leaved together, and adapted, when not in use, to be swung back against the side walls of the lantern, by means substantially as herein specified.

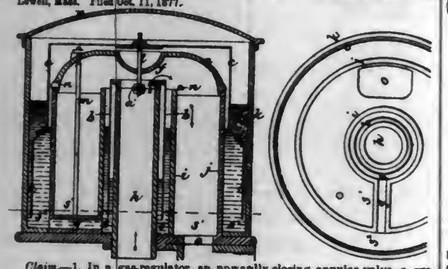
209,406. PLOW-POINTS. Peter Keesler, Butler, Md., assignor of one-half his right to Thomas W. Davis, same place. Filed Apr. 30, 1878.

Brief.—A plow-point with a separate shank, either reversible in the plow independent of the other.



Claim.—The combination of the shank A, made separate from the share and reversible, and provided with the tenon a and bolt-hole c, with the reversible shield B, secured on the tenon by the pin a', constructed and adapted substantially in the manner and for the purpose as herein shown and set forth.

209,407. GAS-PRESSURE REGULATOR. Moses W. Kidder, Boston, assignor to Person Noyes, Lowell, Mass. Filed Oct. 11, 1877.



Claim.—1. In a gas-regulator, an upwardly-closing annular valve, *a*, suspended from a floating inverted cup, *c*, and provided with a sealed depending tube, *b*, which surrounds the inlet-pipe of the regulator, combined with a fixed hemispheroidal valve-seat, *f*, intermediate of said cup *c* and valve *a*, substantially as described.

2. In combination with the upwardly-closing valve or gate *a* and its seat *f*, the inverted floating cup *c*, provided with the conoidal band *d*, said band being so arranged relatively to the liquid packing that its under and inner surface will be entirely submerged therein when said valve or gate is open, and raised entirely above said packing when the valve or gate is closed, or nearly so, substantially as and for the purpose specified.

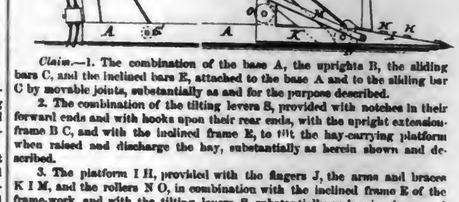
3. In a gas-regulator, the diaphragm *e*, provided with the hemispheroidal seat *f* for the valve, and adapted to arrest the impulse of the gas, as set forth.

4. In a gas-regulator, the combination of the inlet-pipe *h*, annular valve *a*, having depending telescopic tube *b*, inverted cup *c*, connected to said valve, and perforated diaphragm *e*, located between said valve and cup, and provided with valve-seat *f*, as set forth.

5. In a gas-regulator, the combination of the annular connected chambers s s^3 and intervening chamber, s', with the valve *v*, valve-gate *a*, the depending telescopic tube *b*, and the inverted cup *c*, all contained in the casing *k*, as set forth.

209,408. STAIR-CARPET FASTENERS. Moritz Krickl, New York, N. Y. Filed Sept. 28, 1878.

Brief.—The convex side of the plate is toward the carpet, which is not forced into the angle. The nail-holes are at top and bottom of the plate, and are provided with raised bosses, insuring easy withdrawal of the nails.



Claim.—1. As a new article of manufacture, the concavo-convex plate A, having nail-holes *a* and *b* at the upper and lower ends, respectively, and adapted to secure a stair-carpet and to hold the same rounded at the angles, substantially as specified.

2. In a stair-carpet fastener having nail-holes *a b*, the boss *c*, formed around each nail-hole, substantially as and for the purpose specified.

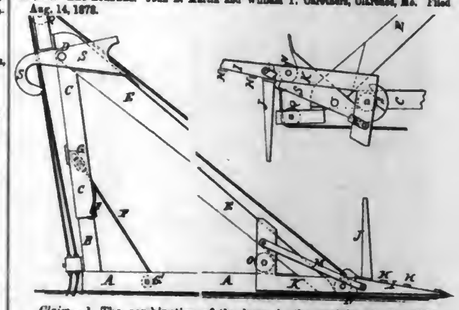
209,409. SELF-LOCKING CLOTHES-PIN. Simeon B. Lucas, Hinsdale, N. Y. Filed Feb. 28, 1878.



Claim.—1. A self-locking clothes-pin in which the jaw A' is provided with two parallel rods, D D', upon which the jaw A slides, a spring, F, being arranged to act upon the jaws midway between said rods D D', the article to be clamped being placed between the jaws at one extremity thereof, whereby said spring F, causing the sliding jaw to cant upon the rods, locks the jaw, as and for the purpose specified.

2. A self-locking clothes-pin consisting of the jaw A', having the staple D D', formed with the spring-guard E in one piece, and the ends clinched upon the jaw A', the jaw A, arranged to slide upon the two rods D D', and the spring F, arranged to act upon said jaws midway between the said rods D D', the article to be clamped being placed between the jaws at one extremity thereof, whereby the said jaws are caused to cant upon said rods when holding a line, &c., between the excisions B, and thus to lock upon said rods substantially in the manner as and for the purpose specified.

209,410. HAY-LOADERS. John B. Martin and William T. Carothers, Clarence, Mo. Filed Aug. 14, 1878.



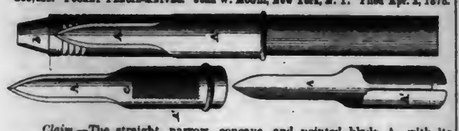
Claim.—1. The combination of the base A, the uprights B, the sliding bars C, and the inclined bars E, attached to the base A and to the sliding bar C by movable joints, substantially as and for the purpose described.

2. The combination of the tilting levers S, provided with notches in their forward ends and with hooks upon their rear ends, with the upright extension-frame B C, and with the inclined frame E, to lift the hay-carrying platform when raised and discharge the hay, substantially as herein shown and described.

3. The platform I H, provided with the fingers J, the arms and braces K I M, and the rollers N O, in combination with the inclined frame E of the frame-work, and with the tilting levers S, substantially as herein shown and described.

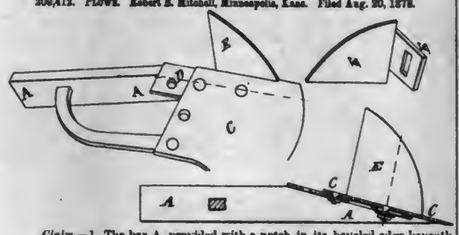
4. The combination of the ropes F, the pulleys G, and the shaft G' with the parts of the extension-frame B C, and with the base-frame A, substantially as herein shown and described.

209,411. POCKET PENCIL-KNIVES. John W. McGill, New York, N. Y. Filed Apr. 2, 1878.



Claim.—The straight, narrow, concave, and pointed blade A, with its open elastic socket A', adapted to be applied to a pencil-case, pen-holder, or the like, and to slide up and down thereon, substantially as and for the purpose described.

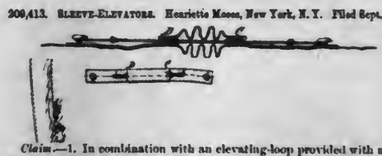
209,412. PLOWS. Robert B. Mitchell, Minneapolis, Kans. Filed Aug. 20, 1878.



Claim.—1. The bar A, provided with a notch in its beveled edge beneath the share C, to receive the flange of the cutter E, substantially as herein shown and described.

2. The cutter E, provided with a flange upon its lower end, having a slot formed in it to receive the fastening-bolt, in combination with the notched bar A and the share C, substantially as herein shown and described.

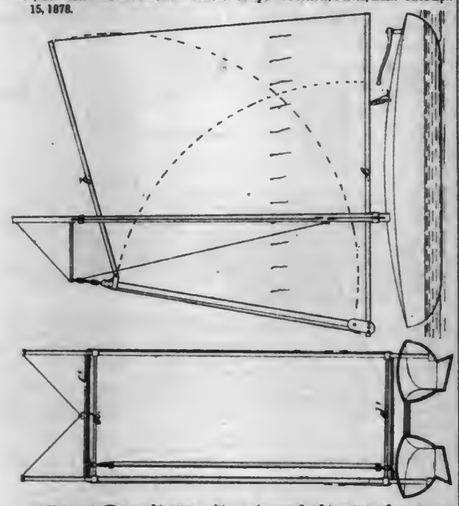
209,413. SLEEVE-ELEVATORS. Henrietta Moore, New York, N. Y. Filed Sept. 9, 1878.



Claim.—1. In combination with an elevating-loop provided with a sustaining-button, substantially as described, a gathering-loop working in the opposite direction, for the purpose of gathering the shirt-sleeve into short folds or gathers, as shown and described.

2. A re-enforcing strip for a shirt-sleeve provided with the short laps C and D, as and for the purposes set forth.

209,414. SAILS AND RIGGING FOR VESSELS. Joseph W. Howroyd, Boston, Mass. Filed Apr. 15, 1878.



Claim.—1. The combination, with a twin vessel, of two sets of masts, one or more on each side, arranged to carry the sail or sails on the weather side of the vessel, substantially as and for the purpose set forth.

2. In combination with a twin vessel provided with one or more masts on each side, a sail and means, substantially as described, by which the sail is shifted from one side to the other, as and for the purpose specified.

3. In a vessel, substantially as described, provided with two masts, the combination, with the gaff and lower boom, of means, substantially as shown and described, by which the sail is supported and free to swing on supports balancing or partially balancing the sail, as and for the purpose described.

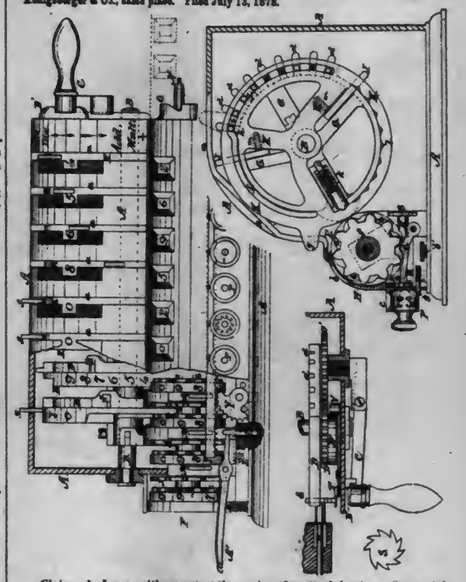
209,415. RIDING-SADDLES. John L. Mothaf, Denison, Tex. Filed Aug. 31, 1878.



Claim.—1. A saddle-tree whose fork A is extended upward to form the horn and downward to form a forked extension that receives girth-rings, as shown and described.

2. The combination, in a saddle-tree, of the side bars and cantel with a convex seat-plate extended back over the cantel, substantially as specified.

209,416. CALCULATING-MACHINES. Willgodt Odhner, St. Petersburg, Russia, assignor to Konigsberger & Co., same place. Filed July 13, 1878.



Claim.—1. In an arithmometer, the series of teeth *d*, having nibs or lateral projections, in combination with the loose setting-wheel having a continuous slot, whose two equal parts are arcs of different radii, and the counting-wheels fixed on the rotating shaft, and the automatic spring-stop attached to one wheel and acting on the other, all constructed and arranged as shown and described, whereby the adjustment of the setting-wheels circumferentially causes the positive movement of the said teeth out or in by the passage of the nibs from one part of the slot into the other, and holds the teeth thus projected or retracted, as specified.

2. In an arithmometer, the combination of the pairs of counting-wheels carrying adjustable teeth, and the setting-wheels, having a toothed section, and an automatic or spring stop for locking the respective wheels together in any adjustment, said stop being attached to a counting-wheel and acting constantly on said toothed section of a setting-wheel, so that when sufficient pressure is applied to the setting-wheel in the direction of its periphery the spring will yield instantly and allow the desired adjustment, as specified.

3. The combination, with a recording-wheel having the cam formed on its inner periphery, and the slides having a fixed angle on the same shaft F, of the recording-wheels, all as shown and described.

4. The toothed part of the recording-wheels and the part having its periphery inscribed with the cipher and nine digits, and the slides all placed side by side on the same shaft F, and the counting-wheels or shaft B, all combined as shown and described, for the purpose specified.

5. In an arithmometer, the combination of the sliding rack-bar, the inscribed cylinders and their shafts, the pinion, mounted loose on the latter, and provided with lugs to engage lugs on the shafts, all as shown and described, whereby the reciprocation of said rack-bar will rotate the cylinders back to zero, but will not move or adjust them when standing on zero, as specified.

6. In an arithmometer, the combination of the spring-lever A' and stop *e'* with the toothed portion of the recording-wheels and the toothed counting-wheels for rotating said recording-wheels, as shown and described.

7. In an arithmometer, the combination of the spring-stop with the cylinders having teeth formed on their inner ends, and the shafts E, ratchets, and push-pawl, as shown and described.

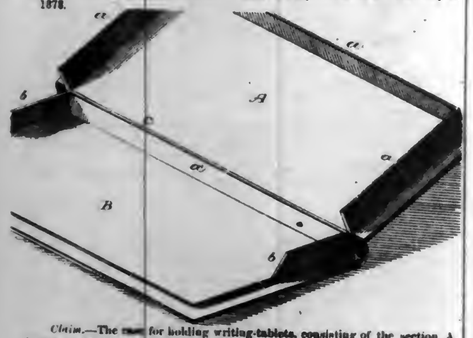
8. In an arithmometer, the combination of the thumb-piece and fixed cam, the shaft or rod F, the recording-wheels, and the lugs on said rod and wheels, as described, whereby the rotation of the shaft will carry all the wheels back to the zero position, as shown and described.

9. In an arithmometer, the combination of the spiral spring *i*, thumb-piece N, fixed cam, and the shaft and recording-wheels, provided with lugs so located

that when the thumb-piece is rotated the lugs will not engage when the recording-wheels are standing on zero, as specified.

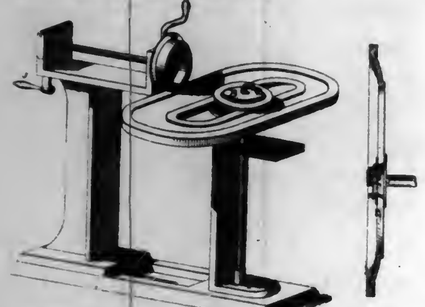
10. In an arithmometer, the combination of the jointed crank having a spring for throwing its outer end inward, the notched catch fixed on the case A, the gears C D, the shaft B, and counting and recording wheels, all as shown and described.

209,417. Cases for Writing-Tablets. William E. O'Bryon, Louis, Mich. Filed July 30, 1878.



Claim.—The case for holding writing-tablets, consisting of the section A, having rigid side and end pieces, *a*, and the section B, having rigid back pieces, *a'*, and fractional side pieces, *b*, between which latter fits the head of the tablet, the two sections being connected by a flexible joint, *c*, substantially as described.

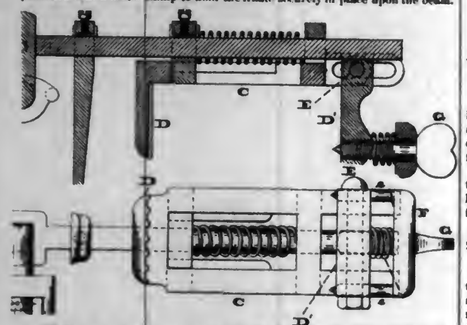
209,418. Machines for Double-Seaming Stove-Boilers. Thomas O'Neill, Jackson, Mich., assignor to Ellen O'Neill. Filed Mar. 15, 1878.



Claim.—A wheel or slide working inside of a frame of irregular shape, said wheel or slide moving in a slot in the frame or otherwise, whose sides are equidistant from the periphery of the form.

209,419. Loom-Temples. Robert P. Pearson, Philadelphia, Pa., assignor, by mesne assignment, to the Dutcher Temple Company, Milford, Mass. Filed Jan. 30, 1878.

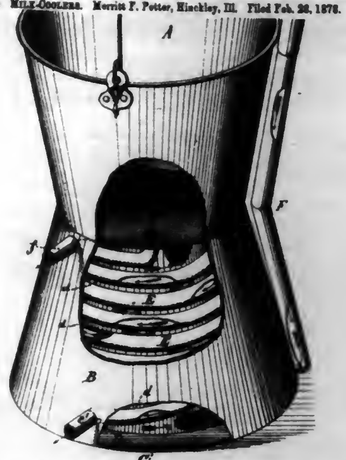
Brief.—The temple-frame has depending arms, one or both of which are adjustable to suit it to breast-beams of various sizes, and one of the arms is provided with a screw-clamp to hold the frame securely in place upon the beam.



Claim.—1. As an improvement in loom-temples, the temple-frame C, in combination with the depending arms D D', rendered adjustable by means of the slots *a* and bolt E, and operating substantially as and for the purpose herein set forth.

2. The frame C, with depending arms D D', in combination with the clamp F, having side pieces, *c*, and the screw G, substantially as and for the purpose set forth.

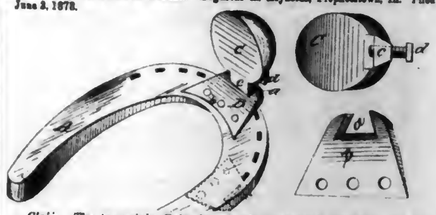
209,420. Milk-Coolers. Merritt F. Potter, Hinckley, Ill. Filed Feb. 26, 1878.



Claim.—1. A bucket or reservoir, A, the two concentric conical vessels B C, and coil E, forming a passage-way, *d*, substantially as shown and described.

2. A bucket or reservoir, A, the two concentric conical vessels B C, and coil E, forming a passage-way, *d*, discharges *e f*, and supply-pipe F.

209,421. Toe-Weights for Horses. Augustus H. Reynolds, Prophetstown, Ill. Filed June 3, 1878.



Claim.—The toe-weight C, having shank *c*, provided with set-screw *d*, in combination with the wedge-shaped plate B, having the dovetailed recess *a*, adapted to be secured to the horseshoe A, substantially as and for the purpose set forth.

209,422. Punch and Die for Making Bale-Ties. John C. Riethmüller, Reserve Township, Allegheny County, Pa., assignor to Simeon H. Drake, New Orleans, La. Filed Nov. 10, 1877.



Claim.—1. As a means for forming bale-ties in which the end of the band is provided with a button-hole slot and a flexible lip, a punch and die constructed to cut an elongated slot, remove a portion of the metal to form the opening for the button, and bend down the remainder of the lip formed by the first cut, substantially as and for the purpose set forth.

2. The die A, provided with vertical mortise *a* and incline *b d*, in combination with the punch D, having two independent inclines from the toe *s* to the heel *h*, separated by an offset at *f*, substantially as and for the purposes set forth.

209,423. Switch-Signaling Apparatus. David Rousseau, Morrisania, N. Y. Filed Mar. 25, 1878.

Brief.—The mechanism which operates the switch locks and is locked by the mechanism which operates the signal, in such a manner that it cannot be set to indicate any other condition of the track but that produced by the switch mechanism. If not set at all, the signal will always indicate "danger." A target-signal having five wings is so operated as to indicate four different conditions of the track. Night-signals are operated by the same mechanisms, and to the same effect.

Claim.—1. The combination, with the switch-lever and a locking-plate attached to the signaling device for locking the said lever, of a stop positively operated by the said lever, for the purpose of stopping the motion of the said locking-plate in either direction, according to the position of the said lever, substantially as herein described.

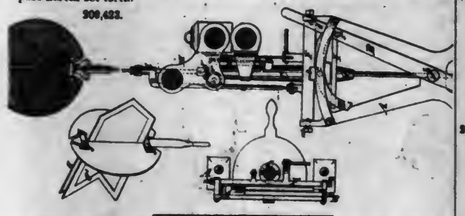
2. The combination, with the switch-lever for operating a switch for three tracks, of a notched signal-operating rock-shaft, F, which locks the said lever when the switch is set for the middle track, but is locked by the said lever during all other positions.

3. A target-signal having five wings, of which four consist of two pairs, the two composing each pair being permanently connected together and adjustable together independently of the target-shaft, and the fifth wing, whereby four signal-indications may be obtained from the same target, substantially as herein described.

4. The combination, with the target-shaft and a target attached thereto having separately-movable wings, of mechanism which moves the said wings independently of said shaft, and which is connected with the said wings by a slide and a swivel, which provide for the turning of the shaft independently of said mechanism, substantially as herein described.

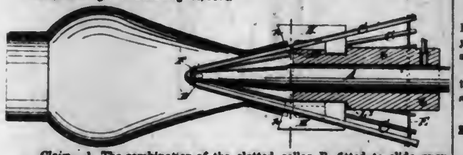
5. The combination, with the switch-lever B and the notched rock-shaft F, for locking the said lever in the central position, of the movable lantern connected with and operated by said rock-shaft, substantially as and for the purpose herein set forth.

209,424. Expansion Steam-Traps. John J. Royle, Manchester, Great Britain. Filed Oct 8, 1878. Patented in England, Feb. 28, 1877.



Claim.—The combination, in an expansion steam-trap, of a central valve box, inlet and outlet tubes attached, respectively, to the top and bottom of said box, an outwardly-opening valve or valves working at right angles to said tubes, a pair of bosses or heads applied to the outer extremities of said tubes, and a pair of outwardly-bowed tension-rods engaging with the spindle or spindles of said valve or valves, substantially as herein shown and described, for the purposes set forth.

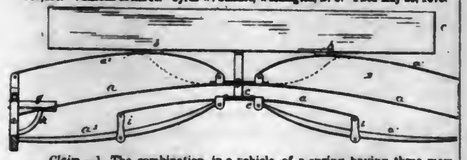
209,425. Machines for Flaring and Crimping Lamp-Chimneys, &c. Charles H. W. Babe, Pittsburg, Pa. Filed Aug. 24, 1878.



Claim.—1. The combination of the slotted collar B, fitted to slide upon the stationary shaft A, with the surrounding bars C, pivoted at the forward end of the shaft A, and resting in the slots *b*² of the collar B, substantially as and for the purpose set forth.

2. The combination, with the stationary shaft A, the surrounding pivoted expansible bars C, and the slotted sliding collar B, of the radial knives A H, secured in the collar B alternately with the bars C, substantially as and for the purpose set forth.

209,426. Vehicle-Springs. Cyrus W. Saladee, Washington, D. C. Filed May 25, 1878.



Claim.—1. The combination, in a vehicle, of a spring having three members, *a a*¹ *a*², the ends of the members *a*¹ *a*² being connected at or near the center of the member *a*, and the outer ends of all the members attached to the axle and bolster, substantially as set forth.

2. The combination of the springs D D, each consisting of three members, and arranged one on each side of the body, and connecting the rear axle and bolster, and the cross-bars *b b*, connecting the members *a*¹ *a*² of the opposite springs, substantially as set forth.

3. The combination of the members *a a*¹ *a*² and auxiliary spring *a*³, substantially as and for the purpose set forth.

4. The clip *c*, combined with the members *a a*¹ *a*² of the spring, substantially as and for the purpose set forth.

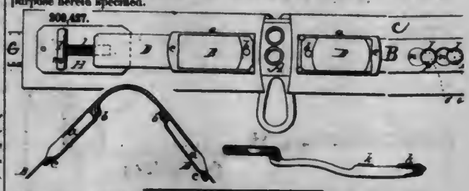
209,427. Gig-Saddles. Samuel S. Sargeant and A. V. Sargeant, Newark, N. J. Filed Sept. 21, 1877.

Claim.—1. The skirt-stiffener B, attached at the upper end of the terret-nut recess *a* to the tree, and extending thence down under the said recess, and through a loop, *c*, at the lower end thereof, substantially as and for the purpose herein specified.

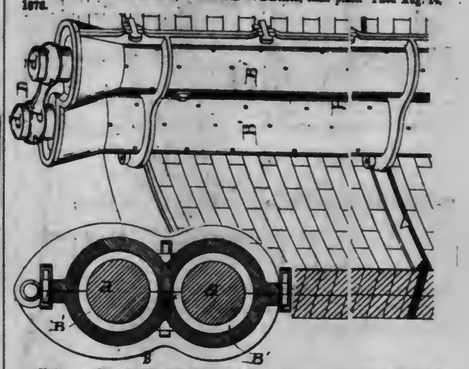
2. The nut-holding socket E, attached to and projecting upward from the upper end of the back-band G, in combination with the terret-nut D, provided with projecting flanges *d d*, substantially as shown, the said flanges being held by the socket in connection with the upper end of the back-band, substantially as and for the purpose herein specified.

3. In combination with the saddle-skirt and back-band, a separable locking device, H I, one part, H, being attached to the lower part of the skirt, and the other part, I, attached to the back-band in a corresponding position, whereby the back-band is detachably held to the lower end of the skirt, in addition to its suspending attachment to the saddle, substantially as and for the purpose herein specified.

209,427.



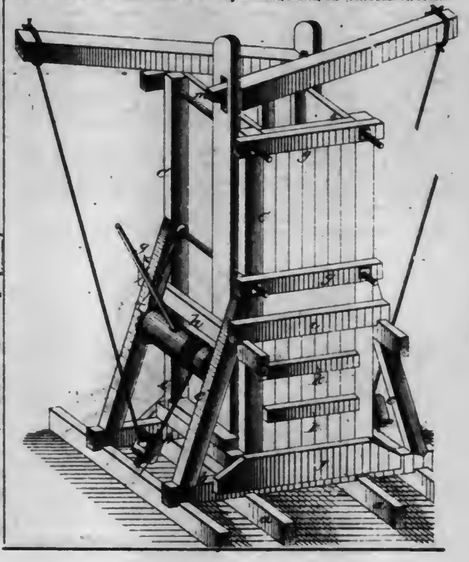
209,428. Pipe-Molding Machines. Frederick Shields, St. Louis, Mo., assignor of two-thirds his right to Thomas Howard and John W. Harrison, same place. Filed Aug. 14, 1878.



Claim.—1. The combination of the flask B, having the compartments B' B', and the pattern D, having the parts *d d*, united at or near their tops by a yoke, *d'*, consisting of two rings and a connecting-bar, substantially as described.

2. The combination of the flask B, having the compartments B' B', and the pattern D, having the parts *d d* and the yoke *d'*, substantially as described.

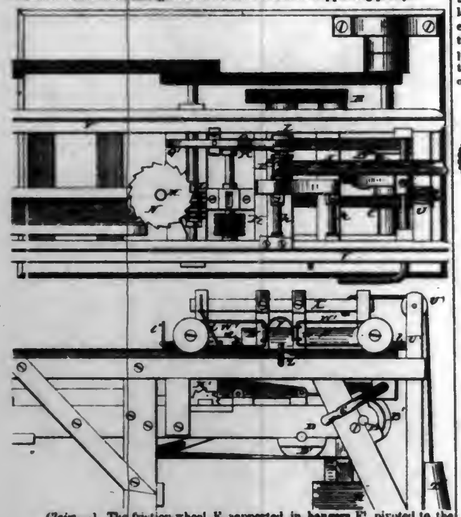
209,429. Cotton and Hay Presses. Drewry R. Smith, Dalton, Ga. Filed Jan. 24, 1878.



Claim.—The construction and arrangement of the double center-posts, with mortises for the large levers to work in, the double large levers, double ropes and pulley-blocks, and double wheels and axles or drums, with the ratchets and pawls, substantially as herein described.

209,430. Machines for Sawing Lath. Dorsus A. H. Starkweather, Greenville, Mich. Filed July 23, 1878.

Brief.—The slabbed lath-bolt is held edge up against a vertical frame of a reciprocating carriage by means of spring clamping-jaws attached to said frame, and is held at one end by a fixed dog, and at the other by an automatically-operating dog, while being fed to a series of vertical saws, which cut it into strips of the proper thickness, then to a horizontal saw, which cuts it the proper length, and to a series of splitters, which separate and guide the laths to an endless apron, working on rollers between guides attached to the main frame, as they come from the saws, and discharges them at the end of the main frame. The speed with which the bolt is fed to the saws is regulated by a friction-wheel with a rubber periphery, and operated by a lever and weight, to increase or lessen the bearing-surface between it and its supporting-pulleys.



Claim.—1. The friction-wheel F, supported in hangers F', pivoted to the arm F², keyed to the sliding shaft G, and operated by the lever G' and weight H, substantially as and for the purposes set forth.

2. The combination of the friction-wheel F and weight H, supported by the hangers F' from the arm F², with the sliding shaft G, lever G', and double pulleys B' and D', substantially as and for the purposes set forth.

3. The combination of the clutch P and spool P', provided with the strap J, and arranged upon the shaft I, with the shifting-lever Q and arm Q', and the carriage, provided with the adjustable guide-arm F and the trip T, substantially as and for the purposes set forth.

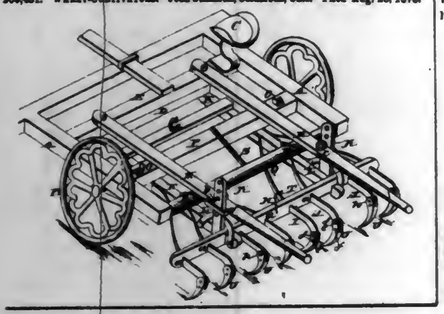
4. In a carriage for lath-machines, the clamps W, springs W', and bail Y, combined and operating substantially as and for the purposes set forth.

5. In a carriage for lath-machines, the automatic dog, composed of the case *c*, dog *a*, working on guides *d*, arm *e*, shaft *f*, and curved lever *g*, and the guide-plate *h*, all combined and operating substantially as shown, for the purposes set forth.

6. In a carriage for lath-machines, the combination of the clamps W, provided with the springs W', and bail Y, with the fixed dog *b* and automatic dog *a*, as described and claimed, for the purpose of operating the slab S, substantially as set forth.

7. The carriage constructed to run upon the rails V, and provided with the adjustable guide F, trip T, and cord and weight T', in combination with the sheave U and post U', and the shifting-lever Q and arm Q', clutch P, and spool P', provided with strap J, constructed and operating substantially as and for the purposes set forth.

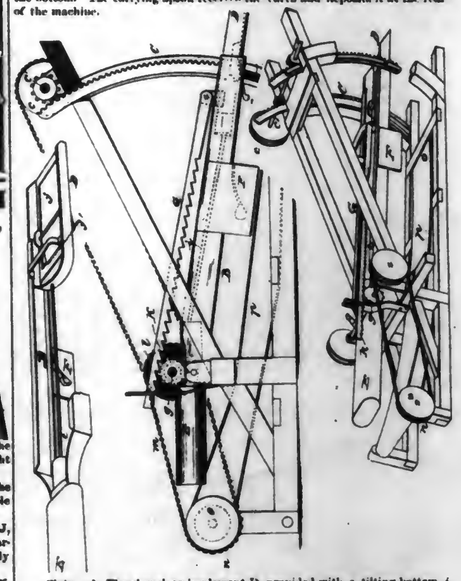
209,431. Wheat-Cultivators. John Stimmell, Columbus, Ohio. Filed Aug. 23, 1878.



Claim.—1. In a wheat-cultivator, the combination of the pivoted cross-bar D, having hinged cultivator-beams F F, provided with the shanks I J, having points U, notched cross-piece H, standards K, having pins *b*, and pivoted handles M, provided with loops N, constructed and operating substantially as and for the purposes set forth.

209,432. Excavators. Asaheus W. Terrill, Mexico, Mo. Filed Mar. 21, 1878.

Brief.—The shovel is attached to the piston-rod of a gas or steam cylinder, and is thereby caused to reciprocate in adjustable ways, the ways and cylinder being pivoted on the same center, whereby they are kept in the same plane. A toothed bar is attached to the shovel, and engages with a ratchet wheel on a transverse shaft secured to the frame of the machine. On the backward movement of the shovel in its ways to dump its load the toothed bar operates the ratchet-wheel, which, by means of intermediate gearing, operates a pinion engaging with curved rack-bars secured to the front ends of the ways, whereby the ways are lowered in the excavation, so that when the shovel moves forward for another load it will strike in a new place. The shovel is provided with a tilting bottom having lateral projections thereon, which engage with spring-latches depending from the ways, to tilt the bottom and dump the earth on an endless carrying-apron during the backward movement of the shovel, and on the forward movement of the shovel the lateral projections of the tilting bottom pass between the forward free ends of the latches and the ways without moving the bottom. The carrying-apron receives the earth and deposits it at the rear of the machine.



Claim.—1. The shovel or implement D, provided with a tilting bottom, *j*, having lateral projections *j'*, substantially as and for the purpose specified.

2. In combination with the shovel D, having the tilting bottom *j j'*, the spring bars or latches F, substantially as and for the purpose described.

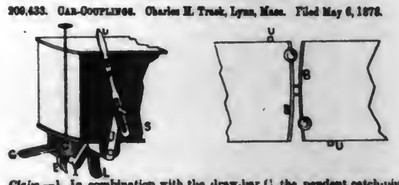
3. The combination of the shovel or implement D, having a tilting bottom, *j j'*, ways B B, latches F, piston and its rod *i*, and gas or steam cylinder E, substantially as and for the purpose set forth.

4. In combination with the shovel or implement D and the ways B B, the saw-toothed bar G, pinion *k*, shafts *g c'*, wheels *d f*, belt *e*, pinions *c*, and toothed segments or racks C, substantially as and for the purpose specified.

5. The combination of the shovel or implement D and serrated bar G with the shaft *g*, provided with the pinion *k* and wheel *l*, belt *m*, wheel *n*, rollers *o o'*, and carrier *p*, substantially as and for the purpose described.

6. The combination, with the shovel D, its ways B B, and carrier or belt *p*, of the cylinder E, its piston and rod *i*, rack or serrated bar G, shaft *g*, provided with pinion *k* and wheels *f l*, belts *e m*, wheel *n*, shaft *c'*, provided with wheel *d* and pinions *c*, and segmental rack-bars C, substantially as and for the purposes set forth.

209,433. Car-Couplings. Charles H. Trask, Lynn, Mass. Filed May 6, 1878.



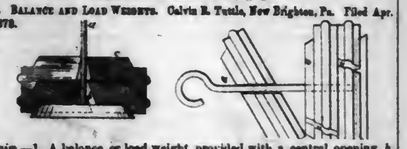
Claim.—1. In combination with the draw-bar C, the pendent catch-pin D E, having the shoulder H, and the pendent link-guider L M, provided with the projection N, arranged to operate with the link G, as and for the purposes set forth.

2. In combination with the catch-pin and link-guider of the draw-bar C, the pivoted bent lever-arm I J, provided with the handle K, so as to control the link G in the act of coupling and uncoupling the same, essentially as and for the purposes set forth.

3. In combination with the bent lever-arm I J, the supplemental hinged lever I', having the handle U, so as to operate the coupling from the top of the car A, as and for the purposes set forth.

4. The combination of the catch-pin D E, link-guider L M, bent lever-arm I J, and supplemental hinged lever P with the draw-bar C and link G, substantially as and for the purposes set forth.

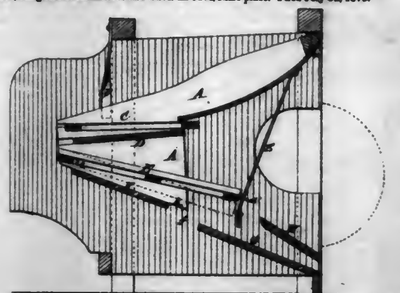
209,434. Balance and Load Weights. Calvin B. Tuttle, New Brighton, Pa. Filed Apr. 19, 1878.



Claim.—1. A balance or load weight provided with a central opening, *b*, and radial opening *c* at an angle to said opening, substantially as and for the purpose specified.

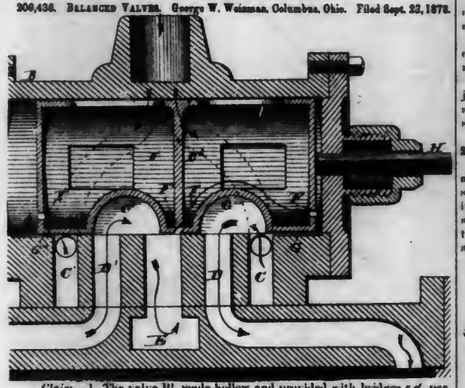
2. The weight *a*, provided with a central opening and angular slot, and with a recess, *i*, and projection *e*, as set forth.

209,435. Grain-Separators. Clayton M. Van Orman and James M. Hagenbaugh, Athens, Mich., assignors to themselves and Thos. H. Ove, same place. Filed July 31, 1878.



Claim.—The combination, in the shaking-shoe A, of the top screen, C, the conveyer-board D, the adjustably-inclined screen, E, pivoted at its outer end, and the wind-board H, all relatively arranged and operating substantially as and for the purpose specified.

209,436. Balanced Valves. George W. Weisman, Columbus, Ohio. Filed Sept. 22, 1878.



Claim.—1. The valve B', made hollow and provided with bridges *c c'*, partition B², and exhaust-passages F F', substantially as and for the purposes described.

2. The combination, with the valve and the exhaust-port E, of the end exhaust-passages, F F', and mechanism for rotating the valve so as to present the said end exhaust-passages alternately over the port E, substantially as and for the purposes described.

3. The combination, with the exhaust E and valve, of the end exhaust-passages, F F', the pin H', and cam-slot S, whereby the valve is caused to rotate by the direct pressure of the steam, substantially as described.

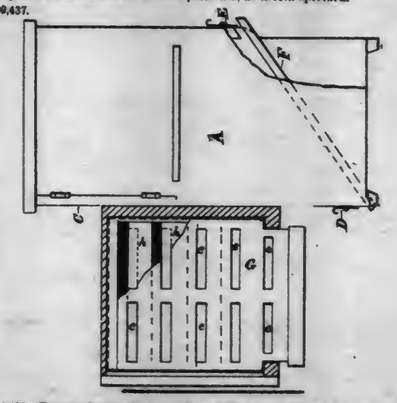
4. The combination, with the exhaust E and valve B', of passages F F' and loose pin-and-slot connection H' H, and in connection therewith the valve-stem and external means for starting the valve in either direction, the whole constituting a means whereby the valve is shifted and also caused to present the passages F and F' alternately over the exhaust E, substantially as and for the purposes described.

5. The combination, with valve B', provided with end exhaust-passages, F and F', of the exhaust E, made inclined at its edges, whereby both passages F and F' are closed when the valve starts from either end of its chamber.

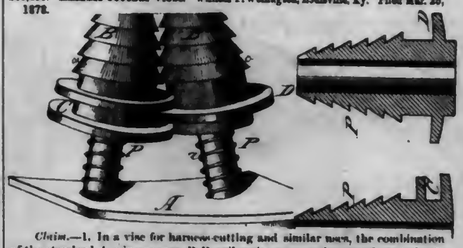
209,437. Bee-Hives. William K. Wilkinson, Osseola, Ga. Filed Apr. 13, 1878.

Claim.—1. In a bee-hive having the honey-compartment in the upper section, C, of the hive, the lower section, A, provided with the slides E D, in combination with the inclined bottom F, whereby the latter may be flushed with water, as herein specified.

2. The bee-hive herein described, consisting of the upper section, C, provided with removable comb-frames, and the lower section, A, having slides E D and inclined bottom F, the sections A and C being separated by a partition composed of the slats *b* and slotted plate G *c*, as herein specified.



209,438. Harness-Cutters' Vises. William P. Wellington, Louisville, Ky. Filed Mar. 25, 1878.



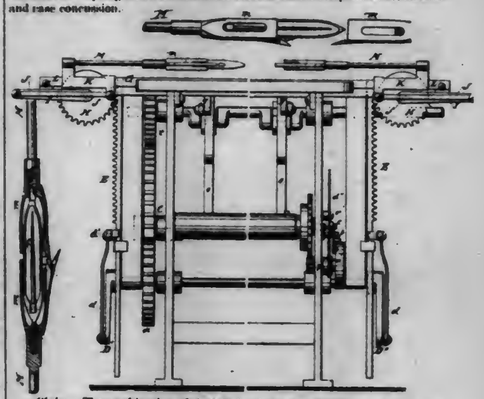
Claim.—1. In a vise for harness-cutting and similar uses, the combination of the standard A, pins or axes P P', coil-springs *a a*, and serrated conical rollers B B, substantially as herein shown and described.

2. In a vise for harness-cutting and similar uses, the serrated conical rollers, provided with interlocking devices D C, substantially as and for the purpose shown and described.

3. In a vise for harness-cutting and similar uses, the interlocking rollers or jaws to open and close by their sliding back and forward in converging guides, and arranged with their teeth in opposite and gradual diverisating positions, substantially as and for the purpose herein shown and described.

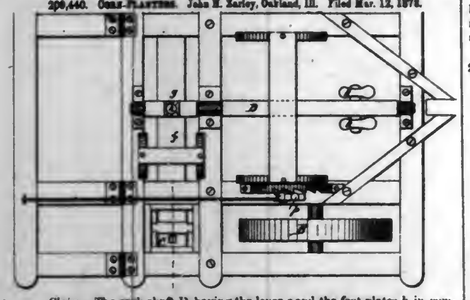
209,439. Shuttle-Motions for Looms. Horace Woodman, Saco, Me. Filed Apr. 13, 1878.

Brief.—The shuttle is handled through the shed by holders mounted on arms carried by blocks reciprocated on the lay-beam by means of a vertically-sliding rack, that oscillates a pinion mounted on the lay-beam, a crank-arm on its shaft being connected by a rod to the sliding block. On one side of the shuttle are two inclined projections, which are engaged by spring-latches on the holders. Spring-followers within the holders receive the point of the shuttle and ease concussion.



Claim.—The combination of shaft D, having cranks D' D², the rods *d*, racks E, pinions H, the cranks I, rods J, slides K, and shuttle-arms M, carrying holders *m*, provided with spring-latches, as and for the purpose described.

209,440. Corn-Planters. John H. Earley, Oakland, Ill. Filed Mar. 12, 1878.



Claim.—The rock-shaft D, having the lever *g* and the foot-plates *k*, in combination with the seed-valve bar *f* of a corn-planter, substantially as shown and described.

209,441. Watch-Winding Devices. William H. Sinn, Boston, Mass. Filed Apr. 8, 1878.



Claim.—In attachments for winding watches having a tube, *c*, to fit the winding-spindle, the combination of a lip with the tube, substantially as and for the purpose described.

209,442. Churn-Dashers. William B. Allen, Orleans, N. Y. Filed Sept. 5, 1878.



Claim.—1. The combination, with the handle and blades of a churn-dasher, of an inverted air-chamber and air-conduits leading from within and near the upper end of said air-chamber downwardly to a point near the dasher-blades, substantially as set forth.

2. The combination, with the handle and blades of a churn-dasher, of an inverted conical air-receptacle and air-conduits leading from within and near the upper end of said receptacle downwardly to a point near the blades of the dasher, substantially as set forth.

3. The combination, with the handle and blades of a churn-dasher, of a sleeve or tube having an inverted air-receptacle attached to its upper end, and air-conduits leading downwardly to a point near the dasher-blades, substantially as set forth.

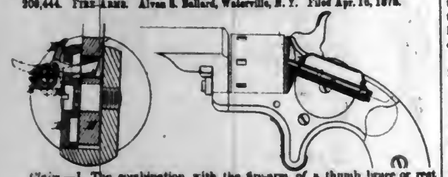
4. The combination, with the handle and blades of a churn-dasher, of an inverted air-receptacle and air-conduits extending from near the dasher-blades upwardly into the air-receptacle, the lower end or ends of said air-conduits provided with lateral branches, substantially as set forth.

209,443. Brick-Kilns. Samuel J. Allen, Zanesville, Ohio, assignor to himself and Herman F. Achauer, same place. Filed June 15, 1878.



Claim.—In a brick-kiln, the furnace C, located within the kiln-wall communicating with the arches D through the eyes *a*, and the hot-air tube or pipe *f*, located beneath the grate-bars and extending into the kiln-arches, constructed and arranged to operate substantially as shown and described.

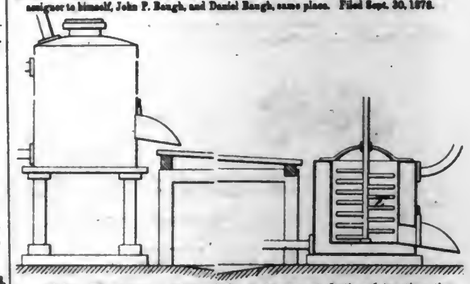
209,444. Fire-Arms. Alvan S. Ballard, Waterville, N. Y. Filed Apr. 16, 1878.



Claim.—1. The combination, with the fire-arm, of a thumb brace or rest hinged to the side of the arm in proximity to the hammer, and arranged to admit of its projection laterally from the side of the arm, and to close up against or within the latter, essentially as described.

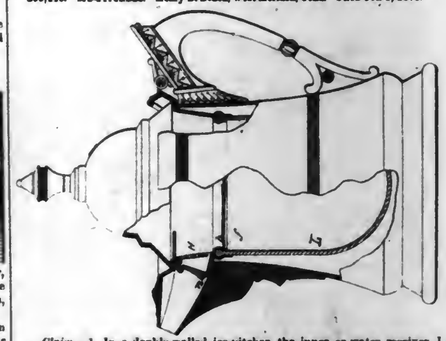
2. The combination, with the fire-arm and a thumb brace or rest hinged to the side of the arm in proximity to the hammer, of means for automatically throwing said brace down or out, and of subsequently raising or closing it, substantially as and for the purposes herein set forth.

209,445. Treatment of Offal for Fertilizers. Edwin P. Baugh, Philadelphia, Pa., assignor to himself, John P. Baugh, and Daniel Baugh, same place. Filed Sept. 30, 1878.



Claim.—The process, substantially as herein set forth, of treating the residuum of fat-rendering tanks—that is to say, agitating the said residuum and exposing it to heat during agitation, after it leaves the main rendering-tank, and before it is subjected to pressure.

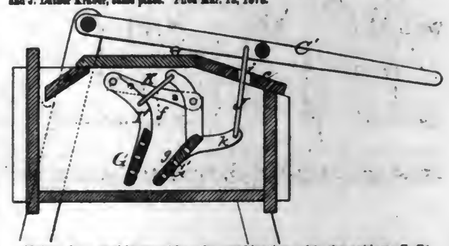
209,446. Ice-Pitchers. Henry B. Beach, West Meriden, Conn. Filed Oct. 5, 1878.



Claim.—1. In a double-walled ice-pitcher, the inner or water receiver, L, constructed of earthen, glass, or similar material, with the enlargement *f* around its edge, combined with a metal band, A, closed upon said enlargement, the metallic flange H extending downward within the pitcher from the neck, and soldered to the metal inclosing the said enlargement, substantially as described.

2. In an ice-pitcher provided with a valve for closing the spout when the pitcher is set upright, the valve constructed with a small aperture, *a*, at the lower edge of the valve, substantially as and for the purpose described.

209,447. Washing-Machines. Leander Becker, York, Pa., assignor to C. Lewis Thomas and J. Luther Kraber, same place. Filed Mar. 13, 1878.



Claim.—In a washing-machine, the combination, with the rubbers G G' and operating-levers C C', of the hangers I', pivoted at their upper ends, and the L-shaped lever-hangers I, pivoted at their middle portions, connected at their upper ends by the rods *f* to the middle portion of the hangers I', and having the rear extensions, *h*, for attachment to the connecting-rods of said operating-levers, substantially as specified.

209,448. Paper-Perforating Machines. Edward W. Blackhall, Toronto, Ontario, Canada. Filed June 18, 1878.

Brief.—The paper to be perforated is placed against stops, which are elevated and depressed simultaneously with the upper feed and perforating rollers. Said rollers are elevated by means of an adjustable cam on the side of a wheel, which cam acts on an arm placed under the shafts of the said rollers. The upper perforating-roller is provided with a universal joint, which permits its operative part to be lifted without arresting its rotary movement.

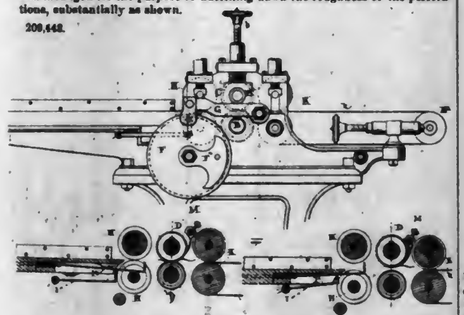
Claim.—1. In a paper-perforating machine, a universal joint introduced into one of the cutter-shafts and combined therewith, for the purpose of enabling the cutters attached thereto to be lifted out of and returned into working connection, and to be driven by gear-wheels continuously in one direction without altering their relative position, substantially as shown and described.

2. The feeding-in rolls H, rotary cutters D D', and finger-bars F, the latter, the upper roll, and the upper cutter being provided with a common intermittent lifting mechanism, as specified, combined with the adjustable cutter-guards M and conveying-rolls K, all arranged substantially as and for the purpose specified.

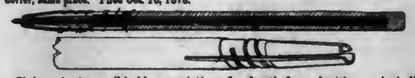
3. The wiper-wheels F, with detachable wipers F', and lifting-bar G, in combination with the feeding-in roller H and driving-shaft B', provided with a universal joint, substantially as shown and described.

4. The conveyer-rolls K, provided with collars K', having a convex face, and arranged for the purpose of flattening down the roughness of the perforations, substantially as shown.

209,449.



209,449. Pencil-Holders. Claus W. Boman, New York, N. Y., assignor to Joseph Reckendorfer, same place. Filed Oct. 16, 1878.



Claim.—1. A pencil-holder consisting of a sheath formed with a conical slit end and an external screw-thread back of said conical end, one or more of the slits being continued back through and preferably beyond said screw-threaded part, in combination with a metallic clamping-sleeve formed with a conical end to fit and compress the conical slit end of the sheath, and with a screw-thread to engage the screw upon the screw-threaded part of the sheath, as and for the purposes set forth.

2. A pencil-holder provided with lead or crayon clamping jaws, in combination with an expanding-spring, substantially as set forth.

3. The combination, substantially as hereinbefore set forth, of the sheath and its jaws, the clamping-sleeve, and an expanding-spring, which acts on the jaws against the pressure of the clamping-sleeve.

4. The combination, with the sheath, of a tubular expanding-spring guide, substantially as and for the purposes set forth.

5. The combination of the clamping-sleeve, the sheath provided with a conical or tapering slit and screw-threaded end, with one or more of said slits prolonged, as described, and the expanding-spring, these elements being for operation substantially as hereinbefore set forth.

209,450. Water-Proof Cloth. Francis Brigham, Wilbur F. Brigham, and S. Myron Hewitt, Hudson, and William F. Fruehe, Marlborough, Mass. Filed Oct. 23, 1878.

Claim.—The gossamer water-proof cloth herein described, having marks in imitation of silks and other thin cloths stamped or rolled upon the goods so as to leave a strong impression on the water-proof side and a weaker one on the reverse side, substantially as described.

209,451. Endless-Track Wheels for Vehicles. Aaron Brosius, Fort Wayne, Ind. Filed Mar. 15, 1878.



Claim.—1. In a vehicle of the class herein described, a series of traveling rests, the elliptical frames, and a traveling belt, said rests and belt having an elastic or yielding connection, combined substantially as and for the purpose specified.

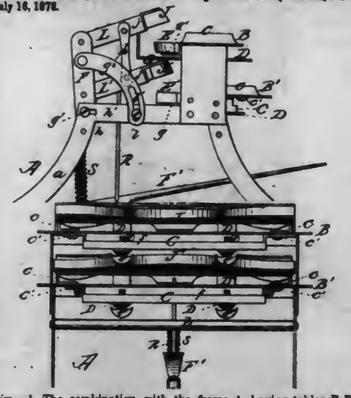
2. The combination of the hollow rests, the rod, spring, belts, pulleys, and shaft with the main traveling belt and elliptical frames, as shown and described.

3. The combination of the long end cross-bars and T-headed fastening-bolts with the short cross-bars and elliptical frames, substantially as and for the purpose specified.

4. The combination of the middle cross-bar, the end cross-bars, and the respective fastening-bolts with the frames and short cross-bars, the heads of the bolts of the middle and end bars being arranged, respectively, lengthwise and transversely of the cross-bars, as and for the purpose specified.

5. The hollow tapered wooden rests, having the metal caps or heads secured to the body of the same, as shown and described.

209,452. Machine for Cutting Blanks for Stove-Pipe Elbows. Malcahi Brown, East Saginaw, Mich., assignor of five-sixths his right to William Q. Atwood, same place. Filed July 16, 1878.



Claim.—1. The combination, with the frame A, having tables B B', with laterally-adjustable guides *c*, of the hangers C, depending from the under side of said tables and provided with a longitudinal slot, and the L-shaped stops D, having a longitudinal slot, and being endwise and laterally adjustable relative to said hangers, substantially as set forth.

2. The combination, with a table, B, having the laterally-adjustable transverse guides *c*, of the hanger C, channeled upon its upper side, and provided with a longitudinal slot, the stops D, having also a longitudinal slot, nuts seated in the channel of said hanger C, and set-screws extending through said slots and engaging the nuts, substantially as specified.

3. The combination, with the parallel tables B B', their ledges *g*, and the knives E E', seated on said ledges, of the parallel vertically-vibrating holders I, I', their knives J J', connecting-plates *p*, a treadle, F', a rigid connecting-rod, R, and a spring, S, substantially as specified.

4. The combination, with a frame, A, having slot *h*, its parallel feed-tables B B', and cutters E E', of the uprights F, carrying the vibrating holders I, I', the knives J J', slotted brace *g*', and adjusting-screws *g*' *l*, combined, arranged, and operating substantially as specified.

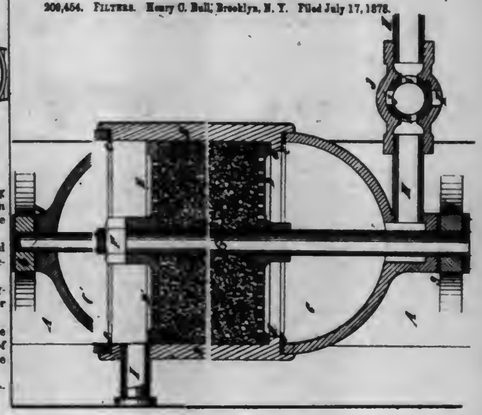
209,453. Calendar-Clocks. Clark B. Bryant and Augustus D. Hendrick, New Haven, Conn., assignors to New Haven Clock Company, same place. Filed Oct. 5, 1878.



Claim.—1. The combination, in a clock-movement, of the calendar-wheel *a*, pointer *b*, the shaft A, extending through the back, and provided with suitable means for turning it, and a pawl at its front end, arranged so as to engage and turn the said wheel by the turning of the shaft, substantially as described.

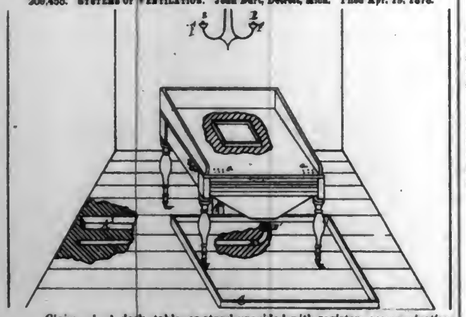
2. The combination, in a clock-movement, of the calendar-wheel *a*, pointer *b*, the shaft A, extending through the back, and provided with suitable means for turning it, and a pawl at its front end, arranged so as to engage and turn the said wheel by the turning of the shaft, and spring on said shaft to hold the pawl from the wheel, substantially as described.

209,454. Filters. Henry C. Bull, Brooklyn, N. Y. Filed July 17, 1878.



Claim.—The combination of the support A, with its legs *b*, body B, end pieces or heads, C C', diaphragms D D', rod or bolt G and its appurtenances, supply-pipe H, cock J, and delivery-pipe I, substantially as and for the purpose specified.

209,455. Systems of Ventilation. John Burt, Detroit, Mich. Filed Apr. 19, 1878.



Claim.—1. A desk, table, or stand provided with registers communicating with fresh-air ducts, in combination with a foul-air exit below such desk or stand, substantially as and for the purpose set forth.

2. A desk, stand, or table provided with a register communicating with a box or pan inclosed within the desk, said box or pan communicating with fresh-air ducts, substantially as and for the purposes set forth.

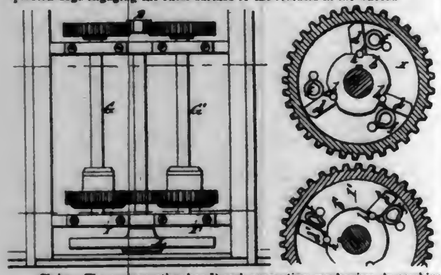
3. A desk, stand, or table constructed substantially as described, in combination with the receptacle B^1, and surrounded by a shield, substantially as and for the purposes specified.

4. The receptacle B^1, for delivering foul air and noxious vapors to the pipe B^2, wherein water, lime-water, or any other substance that will neutralize such foul air may be utilized, substantially as and for the purposes described.

5. The cups F below the burners E, to catch the carbonic-acid gas generated thereby, in combination with a foul-air exit at a lower elevation than said burners, substantially as and for the purpose set forth.

209,456. Devices for Converting Reciprocating Motion into Rotary. William T. Burrows, Washington, Iowa. Filed Mar. 30, 1878.

Brief.—The clutch-wheels are provided with recessed hubs holding therein pivoted dogs engaging the outer surface of the recesses in the wheels.



Claim.—The reciprocating bar D and connecting mechanism, in combination with the alternately-acting recessed wheels I I', provided with the grooved hubs *b b* on the shafts G G', the pivoted dogs *d*, having their friction ends adapted to operate upon the outer surface of the recesses in the wheels, and the direct-acting springs *f*, holding the dogs in quick contact, arranged and constructed to serve as and for the purpose set forth.

209,457. Safety-Clicks for Watch-Barrels. A. Coil, Santa Fé, N. Mex. Filed Mar. 11, 1878.



Claim.—The watch-barrel A, having its lower face provided with the ratchet-wheel *a*, as described, combined with the bottom plate, C, bridge B, and clicks *b b*, the latter passing through the bottom plate, C, and engaging with said ratchet-wheel *a*, as and for the purposes described.

209,458. Calendar-Clocks. Andrew M. Curtiss, Brooklyn, N. Y. Filed Sept. 3, 1878.

Claim.—1. In a calendar-instrument, the combination, with an oscillating date-wheel, of a gear or trundle wheel carried thereby, a toothed sector engaging therewith, and a spring for actuating such sector, substantially as specified.

2. In a calendar-instrument, the combination of an oscillating date-wheel, pawls for actuating the same, a gear-wheel and sector for effecting the return or reverse motion of the date-wheel, and means for releasing the pawls from the date-wheel, substantially as specified.

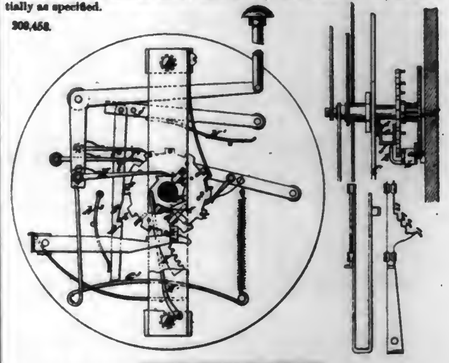
3. In a calendar-instrument, the combination of a month-wheel provided with teeth and a corresponding number of pins arranged at different distances from the periphery of the teeth, a lever actuated by said pins and carrying steps or notches of different projection, whereby the date-wheel and finger may be stopped through the month-wheel at the proper time to indicate the dates of days of various months, substantially as specified.

4. In a calendar-instrument, a month-wheel carrying a secondary wheel or a series of arms—four in number—one carrying an extension or bridge-piece for acting through a lever, on the date-wheel and finger, so as to provide for automatically indicating the twenty-ninth day of February in leap years.

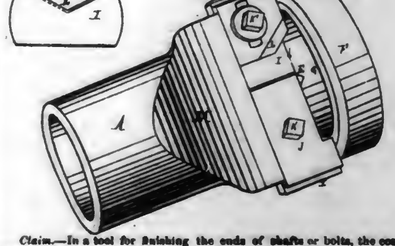
5. In a calendar-instrument, the combination, with an oscillating date-wheel, a gear-wheel or trundle carried thereby, a toothed sector engaging with said gear-wheel or trundle and connected with a lever, and a spring for actuating said sector, of a month-wheel, a pawl carried by the sector-lever and actuating said month-wheel, and preferably, also, a stop-pawl engaging with said month-wheel, substantially as specified.

6. In a calendar-instrument, the combination of a month-wheel provided with teeth and a corresponding number of pins arranged at different distances from the periphery of the teeth, a lever actuated by said pins and carrying an adjustable slide-piece provided with steps or notches of different projection, whereby the date-wheel and finger may be stopped through the month-wheel at the proper time to indicate the dates of days of various months, substantially as specified.

209,459.

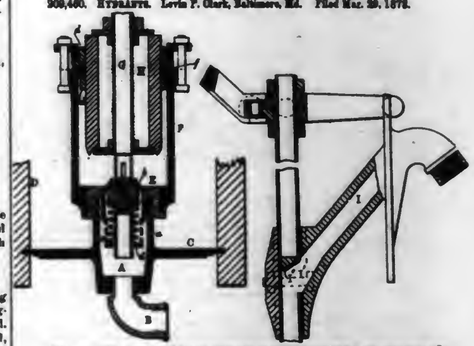


209,459. Oilers. Hiram P. Case, Detroit, Mich. Filed Apr. 12, 1878.



Claim.—In a tool for finishing the ends of shafts or bolts, the combination, with the body A, of the guide-ring F on the end of body, provided with a set-screw, H, to hold a centering-ring, the plate I in the throat of the body, carrying the centering-bit E, which rests on an adjusting-screw, D, the clamping-plates J, and cutters L, substantially as described and shown.

209,460. Hydrants. Levin P. Clark, Baltimore, Md. Filed Mar. 29, 1878.



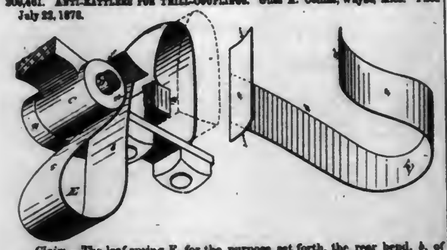
Claim.—1. The india-rubber packing-cups *d*, formed from straight or flat rings, and having their inner edges turned outward by means of a ring of triangular cross-section, the whole being attached to the upper end of the waste-water chamber F, substantially as and for the purpose herein set forth.

2. The plunger H, having its lower end tapered or rounded, as described, combined with the rubber cup *d*, as specified.

3. The nozzle I, constructed in two parts, united by clamping-bolts, combined with the pipe G, having the perforation I', substantially as set forth.

4. The pipe G, having a portion thereof turned inward, forming the tongue I'', combined with a body of lead, solder, or other metal inserted in said pipe and resting on the tongue I'', whereby the pipe is closed, as and for the purpose specified.

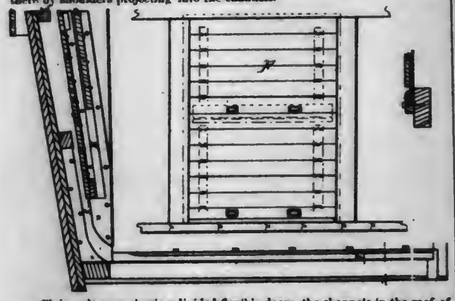
209,461. Anti-Rattlers for Thill-Couplings. Glen H. Collins, Wayne, Mich. Filed July 22, 1878.



Claim.—The leaf-spring E, for the purpose set forth, the rear bend, *b*, of which is provided with a forwardly-projecting flange, *c*, having ends *f*, extending beyond the sides of the spring, to rest upon the ears of the clip, constructed and arranged substantially as described and shown.

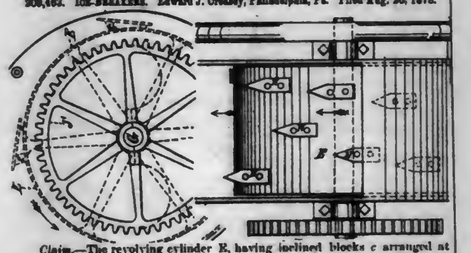
209,462. Freight-Car Doors. Gage M. Cooper, Port Huron, Mich. Filed June 10, 1878.

Brief.—The flexible door is divided into two independent sections, the upper one of which, being slid up in the channels under the roof, is securely retained there by shoulders projecting into the channels.



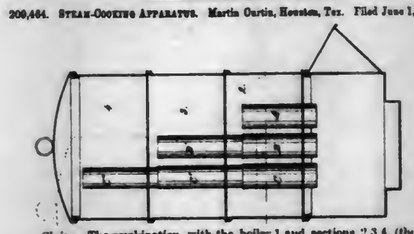
Claim.—In a car having divided flexible doors, the channels in the roof of the car provided with shoulders *s* near their ends, constructed and arranged substantially as described and shown.

209,463. Ice-Breakers. Edward J. Creasey, Philadelphia, Pa. Filed Aug. 20, 1878.



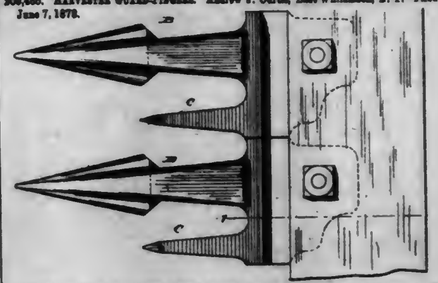
Claim.—The revolving cylinder E, having inclined blocks *c* arranged at suitable distances apart on its periphery, and detachable cutters H, seated thereon, and confined to the cylinder and to the intermediate blocks by means of screws or rivets, substantially in the manner and for the purpose set forth.

209,464. Steam-Cooking Apparatus. Martin Curtis, Houston, Tex. Filed June 1, 1878.



Claim.—The combination, with the boiler 1 and sections 2 3 4, (the latter two having no base flange or projection,) of the tube A and tubes B B' and C C' C'', all constructed and arranged as shown and described, whereby certain parts of the two longer tubes may serve as pivots on which the upper sections may be turned laterally, as specified.

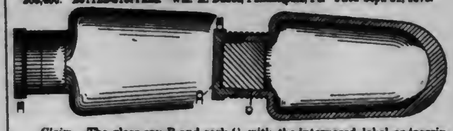
209,465. Harvester Guard-Fingers. Andrew J. Curtis, East Williamson, N. Y. Filed June 7, 1878.



Claim.—1. A harvester-finger formed on opposite sides with a web, E, inclining from a point, F, down to a point, G, back of and below the point of the finger, as shown, said webs also converging forwardly, as set forth.

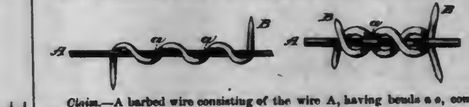
2. The combination of an intermediate finger, C, with a finger, B, constructed with converging webs E, said webs inclining from an elevated point, F, down to a point, G, back of and below the point of the finger, as shown and described.

209,466. Bottle-Stoppers. Wm. H. Dobbs, Philadelphia, Pa. Filed Sept. 21, 1878.



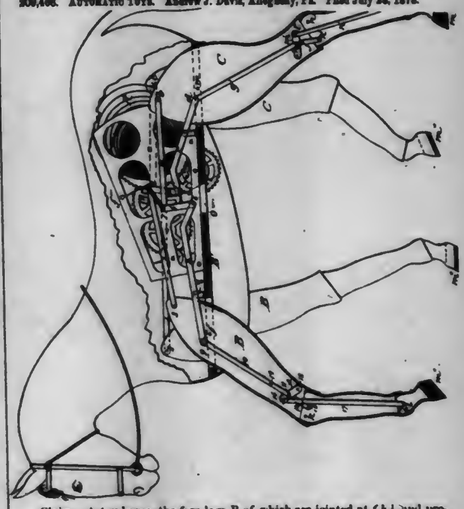
Claim.—The glass cap B and cork C, with the interposed label or inscription piece D, substantially as and for the purpose set forth.

209,467. Barbed-Wire Fences. Michael Daley, Waterman, Ill. Filed July 6, 1878.



Claim.—A barbed wire consisting of the wire A, having bends *a a*, combined with the double-pointed bent barb B, having corresponding bends, and hooked over or fitted to said wire, substantially as set forth.

209,468. Automatic Toys. Andrew J. Davis, Allegheny, Pa. Filed July 24, 1878.



Claim.—A toy horse, the fore legs B of which are jointed at *f k*, and provided with pivoted levers 17, 12, 10, 4, 5, and 1, and the hind legs C jointed at *o n m*, and provided with pivoted levers *n'*, *g''*, *s*, *s*, and *u*, all of which are combined with the compound crank-shaft *f''*, operated by clock-work as a motor, substantially as herein described, and for the purpose set forth.

209,469. Buckle-Tongue Covers for Harness. Marshall B. Dowlin, North Adams, Mass. Filed Aug. 21, 1878.

Claim.—In combination with a crupper, side, or hip strap and its attaching-buckle, a buckle-guard consisting of the loops and intermediate strip, all in one piece, and with both loops on the same side, the said guard being applied to the strap as and for the purpose specified.

209,469.



209,470. Methods of Manufacturing and Filing Iron. Edward R. Edwards, Columbia, Pa. Filed Apr. 23, 1878.

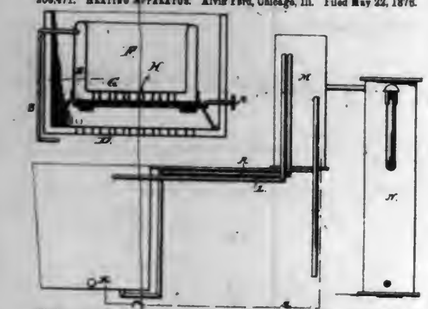


Claim.—1. As an improvement in the mode of utilizing old Bessemer-steel rails, fag-ends, or steel-scrap, preparing said rails, ends, or scrap by piling the same in an open pile, with pieces of wrought-iron, upon a wooden base-board forming part of the pile, subjecting the pile to heat in the bed of a furnace, reducing the same to a bloom, and converting the latter by rolling or hammering into bars, plates, or other forms of malleable iron, as specified.

2. In the manufacture of iron from steel-rail ends or scrap, the pile herein described, consisting of a wooden base and the layers of steel-rail ends or steel pieces packed between with layers and pieces of wrought-iron or scrap of the same, the whole being covered on the sides, ends, top, and bottom with pieces or scrap of wrought-iron, and supported on said wooden base, as specified.

3. The mode herein described of converting old steel-rail ends or steel-scrap into malleable iron, consisting in enveloping with and packing between said rail ends or steel-scrap wrought-iron scrap, to prevent burning and running of the steel, then heating the same, and thereby effecting an intimate mixture of the wrought scrap and steel in the interior of the mass, as well as in the superficial portion, and finally hammering or rolling the mass, substantially as specified.

209,471. Heating Apparatus. Alvin Ford, Chicago, Ill. Filed May 22, 1876.



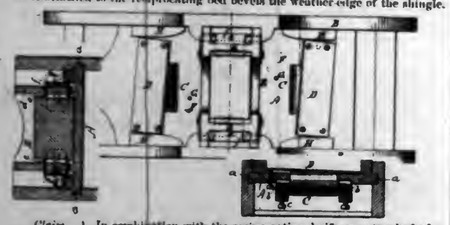
Claim.—1. The metal reservoir M, connected with the fire-box F G H and bottom D by means of pipes S R L, substantially as specified.

2. The combination of the fire and water chamber F G H, having hollow grate-bars and damper K, with the bottom D, substantially as specified.

3. The combination of the steam-heater N with the reservoir M, the reservoir F G H, and the bottom D E, substantially as specified.

209,472. Shingle-Cutting Machines. Wm. Goldie, Fenton, Mich. Filed May 9, 1876.

Brief.—The block is put in box, and is fed down to a reciprocating bed carrying the cutters by its own weight. When passing the cutters, a pair of spring-plates provided with studs are pressed against the block by suitably-arranged wedge-blocks, thus clamping the block while being operated. A knife attached to the reciprocating bed bevels the weather-edge of the shingle.

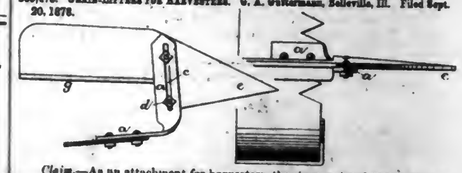


Claim.—1. In combination with the reciprocating knife or cutter-bed of a shingle-cutting machine, the knife F, for the purpose of beveling off the weather side of the shingle at the butt, substantially as herein specified.

2. In a shingle-cutting machine, the combination, with the reciprocating bed A, of the box E, supported centrally over such bed, the spring-plates *f*, carrying studs *e* at the sides of the box, and the wedge-blocks H H' on each end of the reciprocating bed, substantially as described and shown.

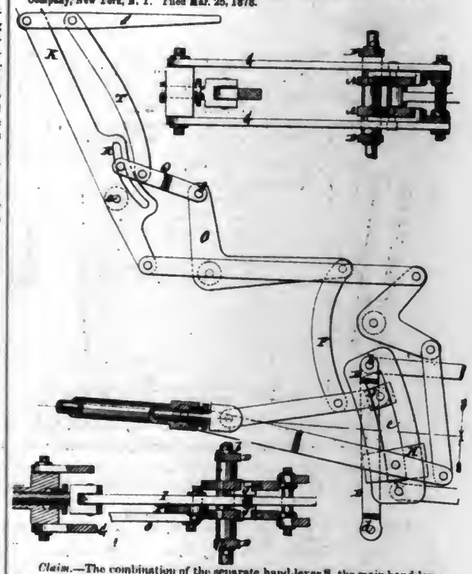
3. In a shingle-cutting machine, the combination of the reciprocating bed A, having inclined cutting-knife D, roller C, and wedge-blocks H H' at each end, with the box E, mounted centrally over such bed and provided with spring-plates *f* and studs *e*, substantially as described and shown.

209,472. Grain-Lifters for Harvesters. G. A. Guttermann, Belleville, Ill. Filed Sept. 20, 1878.



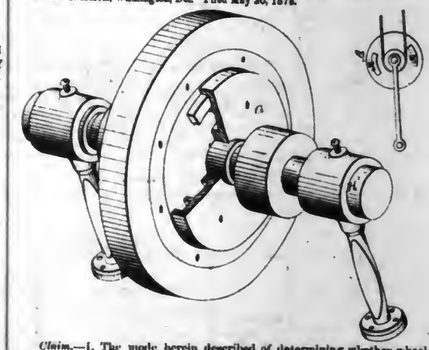
Claim.—As an attachment for harvesters, the sharp-pointed lifting-piece *e*, having flange *g*, in combination with the supporting-arm *a*, having a slotted upright portion for vertically adjusting piece *e*, and a foot for attachment to the cutter-bar, as set forth.

209,474. Valve-Gears for Engines. Robt. Hardie, Govan, and John James, Edinburgh, North Britain, and James G. Cooper, Brooklyn, assignors to the Pneumatic Tramway Engine Company, New York, N. Y. Filed Mar. 25, 1878.



Claim.—The combination of the separate hand-lever S, the main hand-lever X of the valve-gear, having said lever S attached to it, the arc R, the connection T, the rod Q, the bell-crank O, the connection P, and the sliding or adjustable block J, which controls the cut-off valve, essentially as specified.

209,475. Mode and Mechanism for Testing the Balance of Wheels and Pulleys. Thomas C. Harris, Wilmington, Del. Filed May 20, 1878.

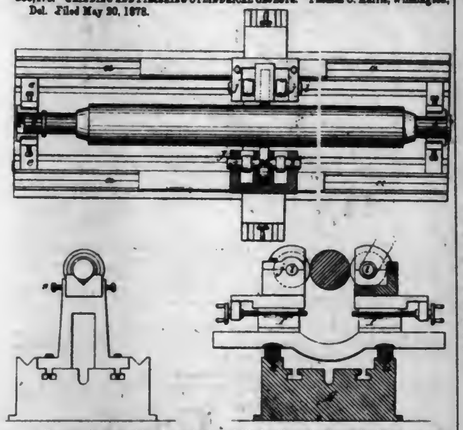


Claim.—1. The mode herein described of determining whether wheels or pulleys on shafts or spindles are properly balanced—that is to say, causing the said wheel or pulley to revolve in bearings which are at liberty to vibrate, as herein set forth.

2. A wheel-testing machine in which two bearings for the shaft carrying the wheel to be tested are combined with and supported by elastic pillars, substantially as set forth.

3. The combination of a wheel, A, with a plate, G, secured to one or both sides of the said wheel, and having a recess for receiving one or more adjustable counterbalancing-segments, substantially as set forth.

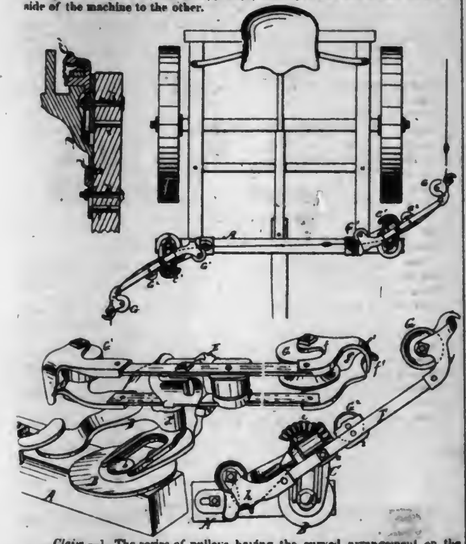
209,476. Grinding and Finishing Cylindrical Objects. Thomas C. Harris, Wilmington, Del. Filed May 20, 1878.



Claim.—In a machine for finishing chilled rolls and other cylindrical objects, the combination of the following elements, namely: first, a substantial bed with longitudinal guides; second, fixed bearings on the bed for the journals at the opposite ends of the rolls; and, third, a movable saddle adapted to guides on the bed, and carrying an adjustable grinding wheel or wheels for acting on one side of the roll, and an adjustable plain wheel for bearing against the opposite side of the roll, all substantially as set forth.

209,477. Guides for Check-Row Wires or Cords. George D. Haworth, Decatur, Ill. Filed Sept. 16, 1878.

Brief.—The parallel bars carrying the rope-pulleys are securely attached to a beveled pinion journaled upon a swinging arm, that has engagement with a cogged segment formed on the front end of a slotted arm that plays about a fixed pivot, for allowing the arms, pulleys, and rope to be transferred from one side of the machine to the other.



Claim.—1. The series of pulleys having the curved arrangement on the swiveling arms, in combination with the wire check-row line, for the purpose of transferring said line over a suitable distance for planting the next succeeding rows.

2. The swiveling guide for the check-row cord or wire, in combination with the pinion E and traveling rack C', or equivalent devices, arranged and operating substantially as described.

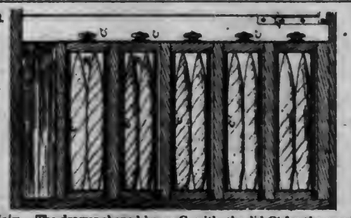
3. The pivoted arms C and D, provided with the rack and pinion, in combination with the swiveling guide for the check-row cord or wire, arranged and operating substantially as described.

4. The pivoted and slotted arm C and pivoted arm D, made adjustable on the frame or bar A, for changing the throw of the guide for the check-row cord or wire.

5. The combination of the guide for the check-row cord or wire, composed of the arm or bars F and guide-pulleys G G', and the pivoted arms C and D, substantially as and for the purpose described.

209,478. Cigar-Cases. Samuel Halbreser, New York, N. Y. Filed June 21, 1878.

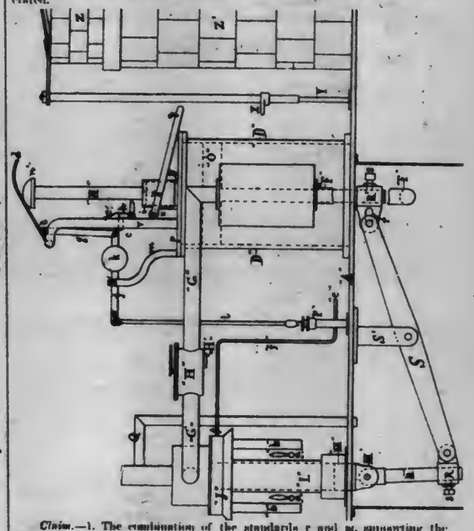
209,478.



Claim.—The drawer-shaped boxes C, with the lid C' for the required revenue-stamps, in combination with the case provided to receive them.

209,479. Carbureting-Machines. Abel Heming, Belleville, N. J. Filed July 22, 1878.

Brief.—Oil is supplied to the generator by a pump operated automatically by the pressure of the gas generated, the gas first moving a piston in contact with the generator, which piston operates the air-pump piston, and this latter, through the medium of suitable levers and trip mechanism, operating the oil-pump. The piston of the air-pump, after having been raised and the pressure of gas in the generator has been relieved, descends by reason of its weight, and raises the piston of the generator, to be again acted upon by the gas generated.



Claim.—1. The combination of the standards *r* and *n*, supporting the levers *j* and *d*, the weight *k*, link *g*, slide *e*, with its spring *o'*, and bell-crank *h*, operated by head *n'* on rod N, as and for the purpose set forth.

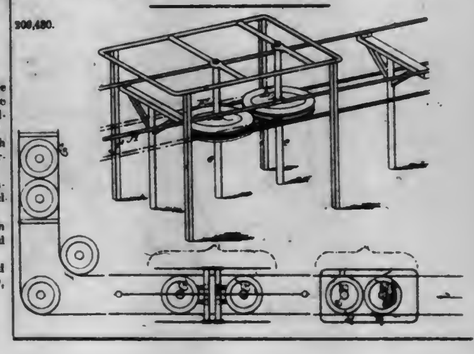
2. The combination of the beam S with the coupler R, secured by set-screw to the rod N', for operating piston M in cylinder L, and coupler R', secured by set-screw to rod N, for operating piston O in air-pump D, all constructed and operated as herein shown and described.

3. The piston M, having cavities *x*, for retaining and evaporating oil, in combination with the generator L.

4. The combination of the feed-pipe *f* and pipe 9, having channel *y* and perforations *x*, with the vaporizing-chamber of the generator L, substantially as and for the purpose set forth.

5. The combination, with the generator L, having piston M arranged within it, and burners *a* arranged without it, as herein described, of a heater, I, as herein set forth.

209,480.



209,480. Railway Systems. Peter Hevner, Philadelphia, Pa., assignor to Geo. E. Hevner, same place. Filed Oct. 3, 1878.

Brief.—An elevated-railway system consisting of tracks formed by two continuous rods and a series of endless traction-ropes, so arranged that the load, which is suspended from the tracks by means of pulley-hangers, can traverse up one side and down the other. The hanger can be fixedly fastened to the rope, and is so arranged that the load is below the rope and the rope below the rail. The road has alternate driving and tightening stations, the driving-stations to have two driving-pulleys, and the tightening-stations to have two tightening-pulleys, said tightening-pulleys and their frame being on small carriages, so that by pulling ropes the carriages are moved, and thus the traction-ropes are tightened.

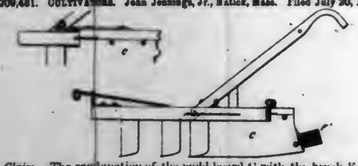
Claims.—1. In an elevated railway, the combination of two continuous rods, forming a double elevated track, with a series of endless traction-ropes, so arranged that the traveling hangers or carriages may traverse the said track continuously, as herein described.

2. A railway in which two continuous lines of elevated rods and a series of endless traction-ropes below the rods are combined with driving-stations arranged at intervals throughout the track, each station having two driving-pulleys, E E′, to which the said endless traction-ropes are applied, substantially in the manner described.

3. An elevated railway in which two lines of elevated rods and a series of endless traction-ropes are combined with alternating driving and tightening stations, the former having driving-pulleys and the latter having tightening-pulleys, with devices by which the said tightening-pulleys may be controlled, all substantially as set forth.

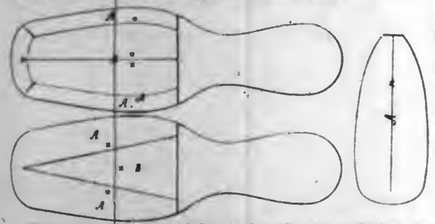
4. The within-described tightening device, consisting of two pulleys, G G′, each carried by an adjustable frame controlled by ropes or chains, substantially as set forth.

209,481. Cultivators. John Jennings, Jr., Natick, Mass. Filed July 20, 1878.



Claim.—The combination of the mold-board C with the brush F, attached to its end, substantially as and for the purpose described.

209,482. Manufacture of Boot and Shoe Soles. Andrew B. Jones, Fayville, assignor to himself and Allan D. Howe, Southborough, Mass. Filed Oct. 7, 1878.



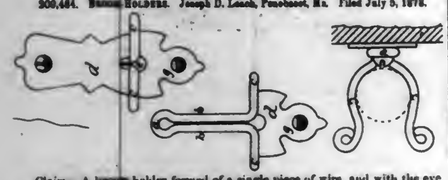
Claim.—As an improvement in boot or shoe soles, a composite inner tap-sole, substantially as described, consisting of a single outside or boundary piece, A, of leather split or opened from its inner edge nearly to its toe or outer edge, and subsequently lost in or out, as explained, and of a filling, B, arranged within such boundary-piece, and composed of one or more pieces of leather, all being essentially as set forth, whereby the outer edge of the boundary-piece, from the heel to and around the toe of the tap-sole, is without or unbroken by any joint, as explained.

209,483. Hair-Pins. Edward Kelly, Baby's Point, Ontario, Canada. Filed Feb. 27, 1878.



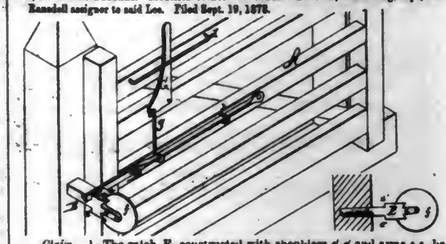
Claim.—As a new article of manufacture, hair-pins constructed in pairs, secured together by elastic connections, substantially as and for the purpose set forth.

209,484. Bridle-Holders. Joseph D. Leach, Pembroke, Me. Filed July 5, 1878.



Claim.—A bridle-holder formed of a single piece of wire, and with the eye *a*, members *b b*, jaws *c c*, and the slotted shield *d*, formed to receive the wire-holder, substantially as described and shown.

209,485. Gate-Latches. Frederick J. Lee and John S. Randall, Harrisburg, Ky.; said Randall assignor to said Lee. Filed Sept. 19, 1878.

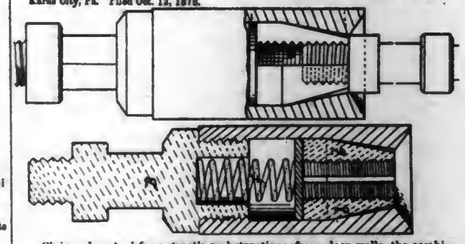


Claim.—1. The catch E, constructed with shoulders *e′ e′* and arms *a a*, between which arms is pivoted the friction-roller *f*, for lifting or depressing the spring-latch D, substantially as and for the purposes set forth.

2. The combination of spring-latch D, catch E, constructed with shoulders *e′ e′*, and friction-roller *f*, pivoted vertically between arms *a a*, substantially as and for the purposes set forth.

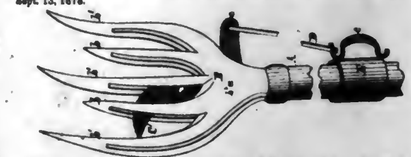
3. The catch E, constructed with shoulders *e′ e′* and arms *a a*, combined with friction-roller *f*, spring-latch D, lever G, and connecting-rod *g*, substantially as and for the purposes described.

209,486. Tools for Extracting Obstructions from Deep Wells. James H. Luther, Kane City, Pa. Filed Oct. 12, 1878.



Claim.—In a tool for extracting obstructions from deep wells, the combination of a cylinder having a tapered cavity with wickers of such width and length as will prevent their turning in the cylinder or escaping from the mouth thereof, substantially as described.

209,487. Hand-Cutting Forks. John Lockhart and George W. Albin, Meega, Ill. Filed Sept. 13, 1878.



Claim.—1. The combination, with a fork, B, having its tines *b′* and fenders *b* slotted longitudinally, of a vibrating knife, substantially as and for the purpose set forth.

2. The combination, with the fork B, having its tines *b′* and fenders *b* slotted longitudinally, of the curved knife C, its front made smooth and its back sickle-edged, substantially as and for the purpose set forth.

3. The combination, with the handle A and fork B, having its tines slotted longitudinally, with or without the fenders *b b*, of the knife C, having a smooth front and sickle back edge, and shank *c*, connecting-rod D, and sliding sleeve E, with or without the handle *e*, substantially as and for the purpose set forth.

209,488. Manufacture of Alum-Cake and Sulphate of Alumina. George T. Lewis, Philadelphia, Pa. Filed July 20, 1878.

Claim.—The process which consists of grinding aluminous materials and mixing them with sulphuric acid in one operation, and afterward heating the resulting mixture to 180° and 220° Fahrenheit, for the manufacture of aluminous cake and alum, substantially as set forth.

209,489. Spindle-Bearings for Spinning-Machines. William C. Macomber, Baltic Conn. Filed Aug. 30, 1878.

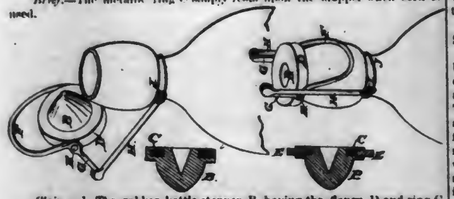
Brief.—The bushing extends through the rail, and the elongated nut secures it and the holder firmly in position. Inside the holder, near the top, is placed a slitted bolster-bearing, which, together with the top of the holder, forms an oil-space. A recessed, perforated, and flanged whirl overhangs the holder, and prevents ingress of foreign matter.



Claim.—The combination of the bushing B, holder D, elongated nut C, spindle F, step *f*, bolster G, having longitudinal slit *b*, and the whirl H, provided with the petticoat *h*, and cup *i*, with holes *x*, all substantially as and for the purposes herein set forth.

209,490. Bottle Stopper and Fastener. Philipp Mallmer, Milwaukee, Wis. Filed June 1, 1878.

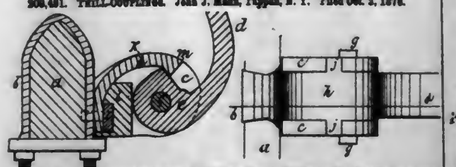
Brief.—The metallic ring C simply rests upon the stopper when cork is used.



Claim.—1. The rubber bottle-stopper B, having the flange D and ring C cast therein, provided with bearings E, substantially as specified.

2. The lever F, having bearings E and arms G extending upward at an obtuse angle with the lever F, and rods H, having shoulders I, pivoted to the upper end of the arms G, substantially as and for the purpose specified.

209,491. Thill-Couplings. John J. Mann, Tappan, N. Y. Filed Oct. 3, 1878.

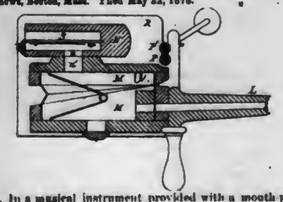


Claim.—1. The combination, with the clip *b*, having side flanges, *c c*, and the thill-iron *d*, having a cam-shaped head, *e*, pivoted upon a transverse bolt, *f*, which has its ends arranged in the side flanges of the clip, of the curved spring-plate *h*, bolted to the clip between the side flanges, and having the beveled flange *m*, all substantially as and for the purpose described.

2. The combination, with the clip *b*, having side flanges, *c*, provided with slots *k*, and the thill-iron *d*, constructed with the cam-shaped head *e*, pivoted upon the transverse bolt *f*, which has its ends arranged in the side flanges of the clip, of the curved spring-plate *h*, bolted to the front face of the clip, and having lateral projections *i* and beveled flange *m*, all substantially as and for the purpose described.

3. The curved spring-plate *h*, attached to the clip *b* by the headed bolt *i*, in combination with the thill-iron *d*, having the cam-head *e*, pivoted on the transverse bolt *f*, and the elastic pad *l*, having a recess fitting the head of the bolt *i*, all substantially as and for the purpose described.

209,492. Mechanical Musical Instruments. E. R. Marshman, New York, N. Y., and Mason J. Matthews, Boston, Mass. Filed May 22, 1878.



Claim.—1. In a musical instrument provided with a mouth-piece adapted to be blown into by the mouth and from the lungs of the performer, a sheet of paper or other flexible material, perforated at suitable intervals to produce a tune, substantially as herein described.

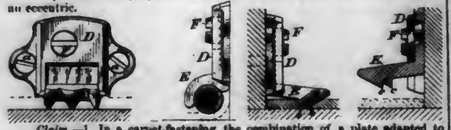
2. In a musical instrument in which is employed a perforated valve-sheet, a flexible wind-chest constructed and arranged and otherwise adapted to be elastically held against the said valve-sheet by tension-spring and by the force of air blown into it.

3. In a reed musical instrument provided with a mouth-piece adapted to be blown into by the mouth and from the lungs of the performer, the flexible music-sheet H, provided with perforations, all of or about one uniform length, substantially as and for the purpose set forth.

4. The tube-board N, wind-chest M, mouth-piece L, and feed-rollers P P′, in combination with the valve music-paper H, substantially as set forth.

209,493. Carpet-Fasteners. Benjamin Martignoni, Westfield, N. Y. Filed May 1, 1878.

Brief.—The clamping-plate moves in vertical guides, and is operated by an eccentric.



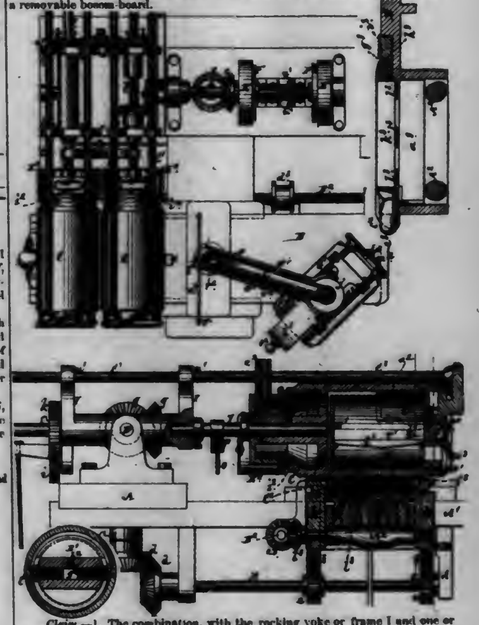
Claim.—1. In a carpet-fastening, the combination of a plate adapted to be fixed to the base-board, wall, or floor, and provided with vertical sideways, a sliding claw adapted to play up and down in the fixed plate, and constructed to bite into or clamp the carpet, and suitable mechanism attached to the fixed plate, whereby the claw may be retained rigidly in position when up or down, as desired, substantially as herein set forth.

2. The combination of the plate D, constructed and adapted to be fixed to the wall or base-board, so as to leave a sideway behind it, the sliding claw E, arranged to play up and down in the fixed plate, and provided with teeth to engage the carpet, and the eccentric F, constructed as described, and all arranged to operate as set forth.

3. In a carpet-fastening, a claw-piece, E, provided on its under surface with teeth or projections *c c*, adapted to play up and down in a socket or slideway, and to clamp the carpet between its under surface and the floor, substantially as and for the purposes set forth.

209,494. Ironing-Machines. Joshua Mason, Paterson, N. J. Filed Mar. 27, 1878.

Brief.—The rocking frame, besides supporting the ironing-rollers, also has bearings for rods, which, extending longitudinally with and above the rollers, carry, independently of said rollers, furnaces arranged therein with a clear space around them, and which may be removed by sliding the rods outward. The furnaces have openings to allow escape of heat into the rollers and passages to admit cold air into the same, and the ashes or soot escaping from the furnaces are caught by a flange and box attached respectively to the front and rear ends of the rollers. The ironing-table is provided on its upper surface with a series of rising and falling loose parallel bars, which are actuated by a rotating spiral cam, and through an interposed sheet of rubber the same motion is communicated from these underlying bars to a similarly-arranged series in a removable bosom-board.



Claim.—1. The combination, with the rocking yoke or frame I and one or more ironing-rollers carried by said rocking yoke or frame, of a removable furnace arranged within each of said rollers and independently carried by the said yoke or frame, essentially as described.

2. In an ironing-machine, the combination, with the ironing roller or device, of an inclosed furnace, B^1, of cylindrical construction, provided with an opening and closing perforated cover, a^3, also with a cold-air-regulating passage, g^3, and distributing apertures h^3, whereby the ironing roller or device is capable of movement around the furnace, and facilities are afforded for regulating the temperature of the ironing roller or device by the admission of cold air between it and the furnace, substantially as specified.

3. The combination, with the furnace B^1, of the overlapping ring D′ and an ironing roller or device arranged to rotate around said furnace, essentially as described.

4. The trough-like shield E^3, in combination with one or more rotating ironing-rollers, C, and one or more furnaces, B^1, arranged within said rollers, and having smoke-boxes d^3 in rear of the rollers, substantially as specified.

5. The self-acting catch or bell-crank lever L, in combination with the main frame A, the rocking yoke or frame I, one or more ironing rollers, C, carried by said yoke or frame, and the treadle J, substantially as specified.

6. The reciprocating ironing-table B, provided with a series of rising and falling loose parallel bars, a^3, on its upper surface, in combination with one or more ironing-rollers or upper ironing devices, and means for successively lifting said bars to give an undulatory ironing-surface to the table, essentially as described.

7. The goods-holder C^2, fitted with a series of loose parallel bars, b^2, in combination with the reciprocating table B, having also a series of loose parallel bars, b^3, the interposed elastic strips F, and means for communicating an undulatory motion to the bars a^3 b^3, substantially as specified.

8. The partially-spiral rotating cams A^3, in combination with the reciprocating ironing-table B, having loose parallel rising and falling bars a^3 in or on its upper surface, substantially as specified.

209,495. Reed-Organs. Mason J. Matthews, Boston, Mass. Filed Oct. 14, 1876.

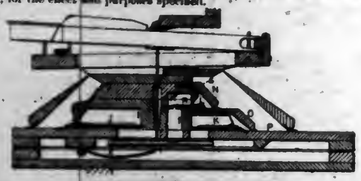
Claim.—1. The tube-board I, constructed in one piece, having the two ordinary sets of reeds J K and the over-set L, together with the cap K′, in combi-

nation with the stop-valves N O and the leak-valves O' O', substantially as specified.

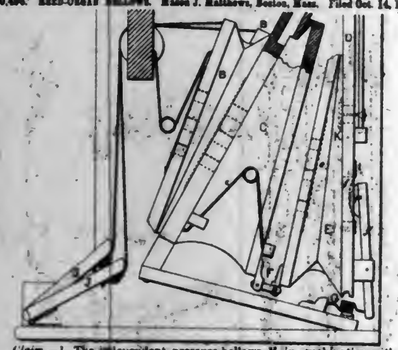
2. The combination and arrangement, with the tubes R and reeds L, of the shade-valve S and stop-valve N, substantially as and for the purpose described.

3. The combination of the subject-matter above claimed (clause 2) with the reeds J, for the effect and purposes specified.

209,496.



209,496. Reed-Organ Bellows. Mason J. Matthews, Boston, Mass. Filed Oct. 14, 1876.



Claim.—1. The independent pressure-bellows E, in combination with the reservoir C of a reed-organ, when constructed and arranged to operate substantially as and for the purpose described.

2. The combination and arrangement of the spring G, lever *f'*, and rubber cloth I, or their equivalents, in combination with the pressure-bellows E, reservoir C, and feeder B of a reed-organ, substantially as and for the effect and purpose set forth.

3. In combination with the reservoir C of a reed-organ, the independent pressure-bellows E, having the valve K, constructed and arranged to operate substantially as and for the purpose set forth.

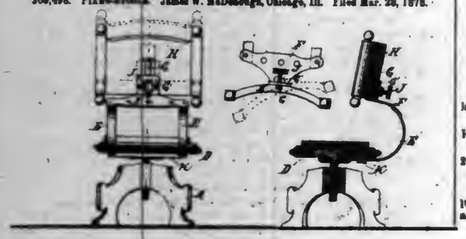
209,497. Printers' Galleys. Matthew McCabe, Brooklyn, N. Y. Filed Sept. 6, 1878.



Claim.—1. In a printers' galley, the combination of a longitudinally and laterally moving side-stick, an adjusting-screw attached to said side-stick, a ratchet attached to one of the rails of the galley, and a hinged or pivoted pawl attached to the side-stick, with the slotted head-piece and the side-rails of the galley-frame, substantially as and for the purposes herein described.

2. The combination, with the side rails of the galley-frame, with the side-stick of the galley, and with a sing or foot-stick provided with plates partly surrounding said side rails and having tongues engaging with grooves therein, of a screw-rod and nuts arranged within the galley-frame on opposite sides of the latter, for tightening up the type both longitudinally and laterally within the galley-frame, essentially as described.

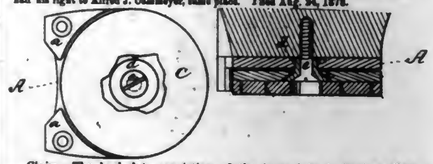
209,498. Plane-Stocks. James W. McDonough, Chicago, Ill. Filed Mar. 28, 1878.



Claim.—1. A plane-stock, constructed substantially as described, having a lever, K, coil-spring Q, cross-piece F, flat springs G G, standards I, and rubber J, as set forth.

2. The combination of the cross-piece F, coil-spring Q, lever K, stay O, rack-bar P, and finger-piece L, as set forth.

209,499. Heels for Boots and Shoes. Peter Miller, New York, N. Y., assignor of one-half his right to Alfred J. Gammeyer, same place. Filed Aug. 24, 1878.



Claim.—The heel-plate consisting of the base-plate A, having offsets a flush with the plane of the heel, and a central opening, *i*, provided with female thread, the revolving disk formed of the leather pad secured to a circular metal plate, the hollow screw *d*, and the screw *e*, passing through the said hollow screw, substantially as specified.

209,500. Washing-Machines. David W. Miller, Whitney's Point, N. Y. Filed Sept. 16, 1878.

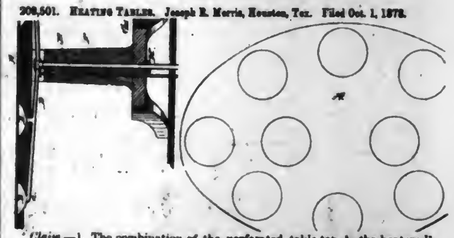
Brief.—The rubber is attached to the rock-shaft by springs. The pressure of the rubber is regulated by means of a lever attached to one end of the rock-shaft, said lever being adjustable by means of a link pivoted at one end to the main standard, the other end engaging with a ratchet on the lever. A trip releases the link, when the rubber is raised from the clothes by a torsion-spring attached to the rock-shaft and standard.



Claim.—1. A washing machine constructed substantially as described, having a lever, K, coil-spring Q, cross-piece F, flat springs G G, standards I, and rubber J, as set forth.

2. The combination of the cross piece F, coil-spring Q, lever K, stay O, rack-bar P, and finger-piece L, as set forth.

209,501. Heating Tables. Joseph B. Morris, Houston, Tex. Filed Oct. 1, 1878.



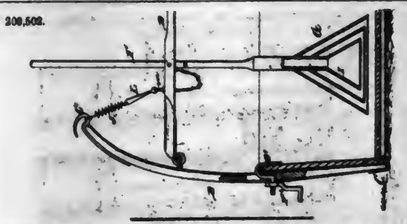
Claim.—1. The combination of the perforated table-top A, the hooters B, horizontal pipes D D, and vertical pipe E, substantially as described.

2. The combination of the central horizontal pipe D, vertical pipe E, pillar F, base G, and nut H, substantially as and for the purpose set forth.

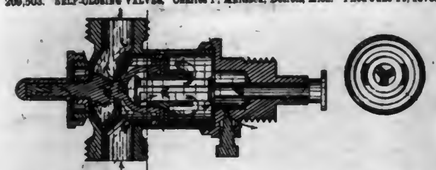
209,502. Washing-Machines. William H. Moss and Oscar B. Day, New Richmond, Ohio. Filed Aug. 31, 1878.

Claim.—The combination of the standard B, hook C', handle F, with pounder G, lever D, spring J, and snap-hook I, and eye *w*, substantially as and for the purpose herein set forth.

209,502.



209,503. Self-Closing Valves. Charles F. Murdock, Detroit, Mich. Filed June 11, 1878.



Claim.—1. In a self-closing valve, the combination of a plug arranged to close to its seat or throat in the opposite direction from that in which the water passes, a piston located on the opposite side of the throat from the plug and connected therewith, a closed cylinder surrounding the piston and subjecting the same to the constant pressure of the water in advance of the throat, a space in rear of the piston having a small outlet, and a secondary valve, by which the entrance of water behind the piston may be instituted or arrested at will.

2. In a self-closing valve, the combination of a conical valve-plug, arranged to enter the seat or throat in the opposite direction from that in which the water passes, and a closing piston connected with the plug and located on the opposite side of the throat, subject to the pressure of the water.

3. The combination, in a self-closing valve, of a main valve or plug, a cylinder and piston to effect the closing of the valve by water pressure, means for admitting water behind the piston to hold the valve open, and an adjustable device to control the discharge of the water from behind the piston, in order to regulate the speed with which the valve closes, said parts being constructed and arranged substantially as shown and described.

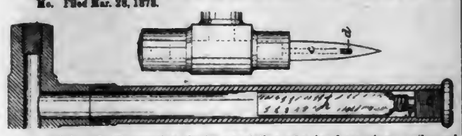
4. The combination, in a self-closing valve, of the valve seat or throat, the piston subject to the pressure of the water in advance of the throat, and the tapering plug connected with the piston and arranged to enter the throat from the rear side against the current of water.

5. In a self-closing valve, the combination, substantially as shown, of a valve-plug, a piston for operating the same, and an adjustable or detachable stop, *w*, arranged to limit the movement of the piston, and thereby control the flow of water without affecting the speed with which the valve opens and closes, substantially as shown and described.

6. In a self-closing valve, the combination, substantially as shown and described, of a main valve-plug closing against the flow of the water, a piston and cylinder to effect the opening and closing of the valve, and a small or secondary valve arranged to admit water into the cylinder behind the piston while the main valve is opening, and to exclude the entrance of water while it is closing.

7. In a self-closing valve, the combination of a piston to cause the closing action of the main valve-plug and a cylinder inclosing said piston and provided with a small outlet-opening in rear of the same, arranged so that the valve is held open by the presence of water behind the piston, and controlled in closing by the escape of the water from the cylinder through the outlet-opening, substantially as described and shown.

209,504. Vent Spikes and Valves for Beer-Barrels. Peter Nussbaumer, St. Louis, Mo. Filed Mar. 28, 1878.



Claim.—1. The venting device consisting of a head carrying a spike and a handle extending laterally from the head, there being longitudinally through the three parts a continuous passage, which communicates with an inwardly-opening valve attached to the handle, and with an orifice through the side of the spike, as and for the purpose set forth.

2. A chambered vent-spike made with a chisel-edge, and of rectangular shape in cross-section, and provided with an opening upon its side near the said chisel-edge, combined with an inwardly-opening valve, as and for the purpose described.

3. The spike having an opening, *d*, with its side farthest from the cutting-edge beveled or cut away to render it self-closing, as described.

4. The combination, with the tubular portion of a spike-vent, of a collapsible valve, made of two flat pieces of flexible material fastened at their edges, so that the faces of said pieces shall be normally in contact at any portion of their length, substantially as described.

209,505. Apparatus for Carbureting Illuminating-Gas. John F. Otten and Joseph Kluber, Cincinnati, Ohio. Filed Aug. 14, 1878.

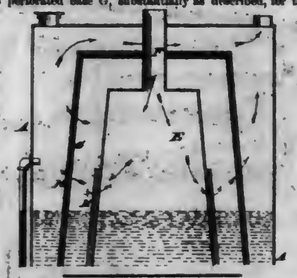
Claim.—1. The apparatus for carbureting illuminating-gas, consisting of the combination of case A, having a suitable inlet and outlet, the central gas-receiver E F, perforated a portion of its height, the perforated concentric case H, and the compound cotton and woolen absorbent H, applied to the receiver and case G, substantially as described, for the purpose specified.

2. The absorbent coverings H, consisting of two knitted, woven, or braided cotton tubes, I J, with a woolen tube, K, interposed between them, in combination with the gas-receiver and perforated case G, substantially as described, for the purpose specified.

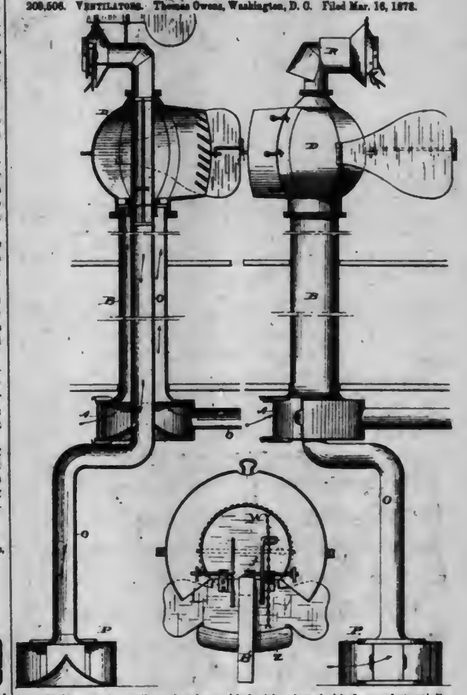
3. The absorbent coverings H, consisting of two knitted, woven, or braided cotton tubes, I J, with a woolen tube, K, interposed between them, in combination with the gas-receiver, substantially as described, for the purpose specified.

4. The absorbent coverings H, consisting of two knitted, woven, or braided cotton tubes, I J, with a woolen tube, K, interposed between them, in combination with the perforated case G, substantially as described, for the purpose specified.

209,506.



209,506. Ventilators. Thomas Owens, Washington, D. C. Filed Mar. 16, 1878.



Claim.—1. A ventilator-head provided with a detachable face, substantially as shown and described.

2. A deflecting box or chamber, A, provided with a conducting pipe or pipes leading to other compartments, substantially as shown and described.

3. The cowl R, constructed with a skin, T, hood W, and wing V, substantially as described.

4. The combination of the collar X, valve-plate W, wing Y, provided with apron Z, and arm *f*, chain h, finger i, and arm B', all constructed and operating substantially as shown and described.

5. In a ventilator, the combination of the head D, provided with adjustable wings F, pipe B, deflecting-box A, pipe O, and chamber P, substantially as described.

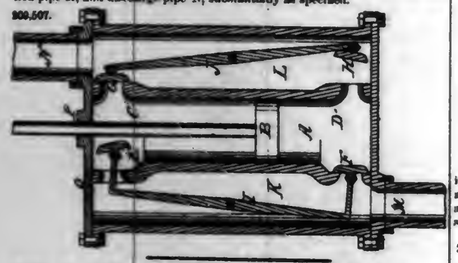
6. In a ventilator, the combination of the cowl R, substantially as described, with the head D, wings F, pipe B, deflecting-box A, pipe O, and chamber P, constructed and operating substantially as described.

208,507. Double-Acting Force-Pumps. George H. Paich, Berrien Point, Wis. Filed Feb 15, 1878.

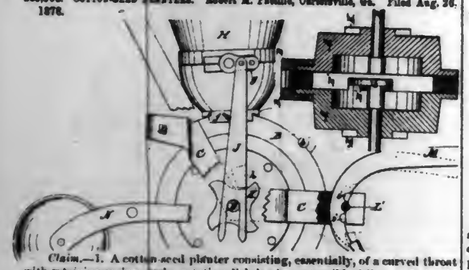
Claim.—1. The double-acting pump discharge-chambers, having pivoted therein equal-armed levers, provided with hinged valves or gates, jointed at their opposite ends, and adapted to alternately open and close ports in opposite ends of said chambers, and connecting the same with the main pump-cylinder, substantially as specified.

2. The combination, with the center cylinder, A, and piston-head B, provided with a suitable pump-rod, of the suction-chamber K, opening at top and bottom into said central cylinder, lever I, pivoted within said suction-chamber, and having its bent ends jointed to valves E and F, the discharge-chamber L, opening also into said center chamber at top and bottom, and having pivoted therein the lever J, with the valves G H jointed to its opposite ends, the suction-pipe M, and discharge-pipe N, substantially as specified.

209,507.



209,508. Cotton-Seed Planters. Robert M. Petillo, Cartersville, Ga. Filed Aug. 26, 1878.



Claim.—1. A cotton-seed planter consisting, essentially, of a curved throat with retaining-spring, and a rotating disk having extensible followers fitting in said throat, combined and arranged substantially as herein described.

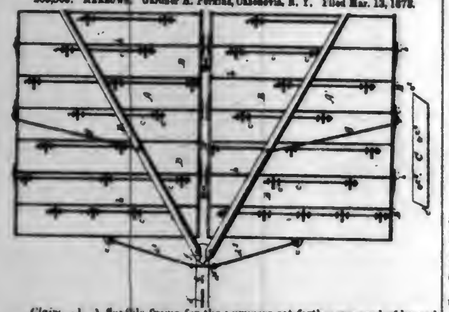
2. The hollow disk A A, made in two sections, in combination with the rigid shaft D, having cam G, and the slotted and shouldered follower-bars E', substantially as shown and described.

3. The combination, with the segmental frame B, having opening c, of the hopper H, having a *shoe*, *d*, and made adjustable on the curve of the segmental frame, to regulate the size of the feed-passage, substantially as described.

4. The combination, with the stirrer having cranks *g*, of the disk having wiper-wheels K, and the vertical bars J, having lugs *h*, and made forked or slotted, so as to embrace the axle, substantially as and for the purpose described.

5. The combination of the angular frame-pieces C C, having recessed offsets to form a vertical slot, the curved and notched beam M, having bolt-seats *i*, and extended down past this point to form the standard for the shovel, together with the fastening-bolt *l'*, arranged to secure the frame-sections and lock the beam, substantially as herein described.

209,509. Harrows. Gardner H. Perkins, Canandaigua, N. Y. Filed Mar. 13, 1878.



Claim.—1. A flexible frame for the purposes set forth, composed of lapped boards or planks placed at right angles to the line of draft, substantially as described.

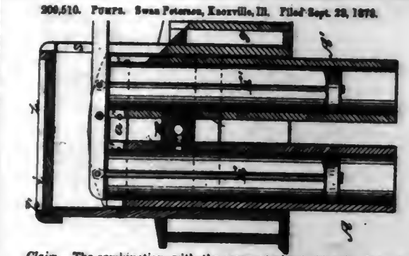
2. The flexible frame constructed in two hinged parts, A A', each part being composed of lapped boards or planks B, flexibly pivoted together and placed at right angles to the line of draft, substantially as and for the purposes set forth.

3. The flexible frame composed of lapped boards or planks secured together at their ends by pivoted straps or plates, substantially as described and shown.

4. The reversible harrow-tooth C', pointed at each end, and having holes *c' c'* at different distances from the opposite sides of its center, constructed and arranged substantially as described and shown.

5. In a harrow, the combination, with the frame, of the teeth C, projecting up through the frame, and the rods *e*, passing through two or more of the teeth, and through staples *f'*, secured to the top of the frame, constructed and arranged substantially as described and shown.

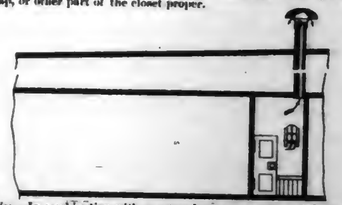
209,510. Pumps. Swan Peterson, Knoxville, Ill. Filed Sept. 23, 1878.



Claim.—The combination, with the pump-stocks A A' and a lever having its fulcrum between said stocks, of piston-rods suspended from the said lever at each side of its fulcrum, the rod at the weight end of the lever being heavier and farther from the fulcrum than the one nearest the power end of the same, substantially as specified.

209,511. Ventilating Water-Closets. Wilhelm Fichhardt, New York, N.Y. Filed Ma. 22, 1877.

Brief.—Disclaims the connection of ventilating-pipes directly to the soil pipe, trap, or other part of the closet proper.



Claim.—In combination with a water-closet proper situated in the room of a building having a window or suitable air-inlet, a ventilating-pipe extending directly from the ceiling of said room out through the top of the building, said pipe being disconnected from the parts composing the closet proper, substantially as herein shown and described.

209,512. Suley-Plows. Chauncy G. Price and James M. Morris, Tama County, Iowa. Filed Feb. 23, 1878.



Claim.—1. The combination, with a crank-axle made with the two right-angular arms formed thereon, of the lever which is fulcrumed on the axle-spindle, and adapted to engage respectively with the outer extremities of said arms by suitable bolt-connection, substantially as set forth.

2. The combination, with a crank-axle provided with the two arms formed right angularly on opposite sides thereof, of the lever, fulcrumed on the axle-spindle, and adapted to be engaged by bolt-connection with either one of the arms, said lever being made with the spring-ratchet, which engages with the segmental rack, substantially as set forth.

3. The combination, with a crank-axle made with the two right-angular arms projecting respectively from opposite sides thereof, of the lever adapted to engage with the outer extremities of the arms, said lever being made with a bifurcated lower end, which loosely embraces the axle-spindle, and adapts the lever to be operated when connected respectively with either one of said angular arms, substantially as set forth.

4. The adjustable clamp composed of the U-shaped side pieces, *l*, and tie-rods *l'*, in combination with a plow-beam and bail and clamping-collars, whereby any width of beam may be secured either above or below the bail, substantially as set forth.

209,513. Pumps. Augustus B. Prouty, Worcester, Mass. Filed Mar. 28, 1878.

Claim.—1. In combination with the cylinder of a portable pump, a supporting-rod having at its lower end a foot-pad or stirrup, and at its upper end a fork or yoke embracing the upper enlarged end of the cylinder, and connected therewith by pivots or hinge-attachment, whereby the foot of the rod is free to swing toward or from the foot of the cylinder, substantially as and for the purposes set forth.

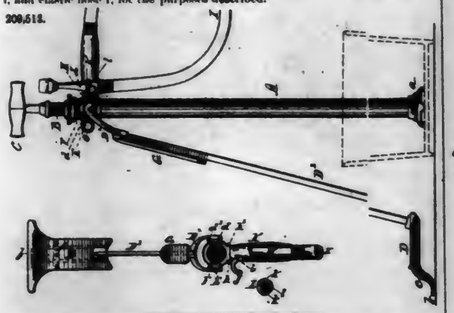
2. In combination with the cylinder in a portable pump, the peculiarly-constructed foot-pad D, curved downward at its outer end, with its inner end rigidly attached in an inclined position to a rod, D', extending to and flexibly connected with the upper end of the cylinder, substantially as and for the purpose stated.

3. In combination, substantially as hereinbefore described, the stirrup-rod D', having bifurcated upper termination, D², provided with hooked extremities *d* and curved flanges *d'*, and the enlarged cylinder-head A', having trunnions E and projecting ears F, for the purposes set forth.

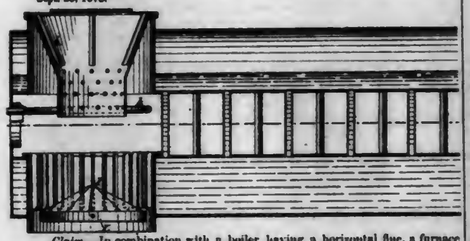
4. The combination, with the pump-cylinder A A', discharge-pipe H, and hose-pipe L, of the handle-piece K, loose on pipe H, and provided with hook J or catch device, for retaining the hose-pipe L, substantially as and for the purpose set forth.

5. In combination, substantially as hereinbefore set forth, the pump-cylinder A, having enlarged head A', with right and left hand lugs *h h'*, the handle-piece K, partially rotative on pipe H and stopping against lugs *h h'*, the hose-pipe L, reduced at *l*, and having lugs or shoulders *k k*, the hook or arm J, lug *i*, and elastic hose l, for the purposes described.

209,513.

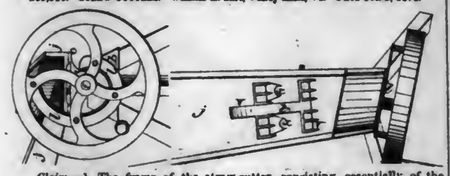


209,514. Steam-Boilers and Furnaces. Cullin W. Reed, Chagrin Falls, Ohio. Filed Sept. 25, 1878.



Claim.—In combination with a boiler having a horizontal flue, a furnace having a vertical grate and a magazine in its upper part, the lower part of said magazine being perforated and surrounded with a perforated air-tube communicating with the open air, the upper part of the magazine being provided with a series of air-tubes extending from the top to the perforated portion, all operating in conjunction to supply a large amount of air to the combustion-chamber, whereby the tar and gases generated in the magazine are consumed, in order to prevent clogging and intensify the heat, substantially as specified.

209,515. Straw-Cutters. William A. Rife, Valley Mills, Va. Filed Oct. 8, 1878.



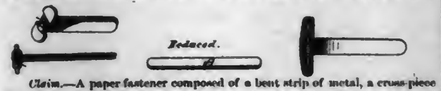
Claim.—1. The frame of the straw-cutter, consisting, essentially, of the legs *a*, castings *b i*, spider *c*, and connecting-bolts, the box for the shaft *f* being made in the two castings, all constructed as shown.

2. The combination of the shaft *f*, box *j*, and the feed mechanism, the feed being connected to the end of the shaft, all arranged substantially as set forth.

3. The combination of the shaft *f*, disk *h*, plate *r*, connecting-rod, and the feeding device, substantially as described.

4. The feed device *t*, having the pronged extensions *e*, fixed pronga *x*, and an operating mechanism, the parts being arranged and combined substantially as specified.

209,516. Paper-Fasteners. Edward A. G. Roulstone, Boston, Mass. Filed Oct. 14, 1878.



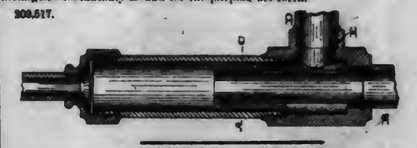
Claim.—A paper-fastener composed of a bent strip of metal, a cross-piece inclosed in the fold of the strip, and a cap or head inclosing the cross-piece and the bend of the strip, substantially as explained.

209,517. Water-Supply for Injectors of Steamboat-Boilers. Saml. Rae, Philadelphia, Pa. Filed July 27, 1878.

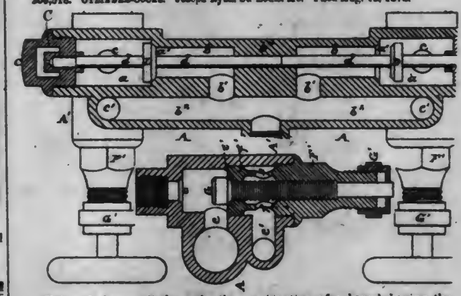
Claim.—1. The combination, with a steam-boiler and feeding device, of the well or chamber A and pipe C, arranged as described in relation to the feed-pipe D and inlet-pipe B, whereby the shock of a rush of water or the vacuum of a withdrawal of water from the feed-pipe D, attached at E, or the collection of air therein, is prevented.

2. An injector for feeding steamboat-boilers with water, in combination with a chamber or well, which is provided with a pipe, C, and is attached to the feed-pipe of the injector, and communicates with the sea-cock or tank, all arranged substantially as and for the purpose set forth.

209,517.



209,518. Cylinder-Cocks. Joseph Ryan, St. Louis, Mo. Filed Aug. 12, 1878.



Claim.—1. In a cylinder-cock, the combination of a barrel having the valve-chambers *a*, seats *a'*, the duplicate passages *b b' b²*, divided by a stationary partition, *b'*, having a V-shaped extremity, with relation to the passages *b²*, outlet *b³*, as shown and described, the reciprocating valves, each having stems projecting from opposite sides, and guided in action by the said partition and the screw-caps C C, substantially as and for the purposes set forth.

2. An automatic cylinder-cock consisting of transverse barrels containing a valve controlling the inlet to said barrels; further, having their internal chamber communicating by passages to the respective valve-chambers in a main barrel containing simultaneously alternating valves, and having said valve-chambers communicating with discharge water-passages, substantially as and for the purpose set forth.

3. A blow-off cock consisting of a main or horizontal barrel, having valve-chambers, each communicating to discharge water-passages, said valve-chambers containing alternating acting valves, forming part of said main barrel, being transverse barrels, having their chambers by passages communicating with the said valve-chambers; further, to the water-discharge passages, each transverse barrel containing a valve to control the said passages that lead to the valve-chambers and to the discharge-passages, substantially as shown and described.

4. The center-piece or tube F, having one or more ports, *f*, screw-cap F', in combination with a hand-screw valve, G, to control the inlet-opening of the said tube F, substantially as set forth.

5. The center-piece F, having the ports *f*, screw-cap F', the hand-screw valve G, its stem passing through said center-piece, in combination with a barrel, its chamber having the seats at *a a'*, by means whereof said chamber is controlled, in the manner and for the purposes set forth.

6. In a cylinder-cock, the combination, with a main and horizontally-arranged barrel containing two alternating valves, of the transverse barrels containing a valve capable of controlling the inlet to said barrels, whereby the water or steam entering the cylinder-cock in first admitted through the chambers of said transverse barrels preparatory to being discharged out of the outlet of the main barrel.

7. As an improved article of manufacture, a cylinder-cock consisting of a barrel, A, arranged horizontally, the barrels A', arranged transversely, the former containing two valves, D D, having stems *d d*, projecting as shown, the valve-chambers *a a*, communicating by passages *b* to passages *b' b²* and main outlet; further, by passages *c c c'* to the chambers of said barrels A', this latter having a valve to control the inlet as well as outlets of said transverse barrels, and effecting the admission and the discharge from the main barrel, substantially as and for the purposes set forth.

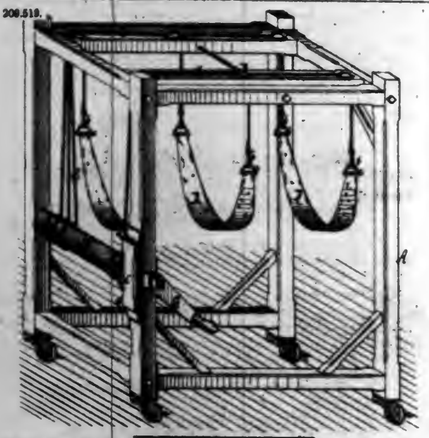
8. The transverse barrels A', having screw-valves G G, (or cocks,) with or without the center-piece F, the horizontal barrel A, containing reciprocating valves D D, each of which has opposite projecting stems *d d*, which are guided by a center partition, *b'*, and screw-caps C C; further, said barrel A having the respective valve-chambers *a a* and seats *a'*, and water-passages *b b' b²*, the latter divided by a V-shaped partition, all said parts being constructed and arranged to operate in the manner and for the purposes set forth.

209,519. Apparatus for Lifting and Carrying Invalids. Sarah T. Sands, New York, N.Y. Filed Oct. 10, 1878.

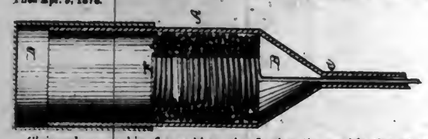
Claim.—1. In an apparatus for lifting and carrying invalids, the combination of a wheel-supported frame, having an opening whereby it is adapted to be brought over a bedstead, a series of pulleys mounted in said frame, a series of ropes or chains passing over said pulleys, and supporting bands or straps capable of being attached to said ropes or chains, all constructed and adapted to operate substantially as described.

2. In an apparatus for lifting and carrying invalids, the combination of a wheel-supported frame, having an opening whereby it is adapted to be brought over a bedstead, a series of pulleys mounted in said frame, a series of ropes or chains passing over said pulleys, bands or straps capable of being attached to the ropes or chains, and a windlass common to the several ropes or chains, all constructed and adapted to operate substantially as described.

209,519.



209,520. Wire-Holders for Making Fence-Gables. Caleb K. Sawyer, Clinton, Mass. Filed Apr. 9, 1878.



Claim.—In a machine for making wire fencing, the combination of the hollow cup or cylinder A, provided with the concaved end B and projecting tube C, and the cover D, all constructed and arranged as described, whereby the wire is drawn from the inside of the ball or cop and straightened by being drawn through the concaved end and tube, substantially as and for the purposes herein set forth.

209,521. Methods of Making Crystallotypes. Joseph Schedler, Jersey City Heights, N. J. Filed Aug. 24, 1878.

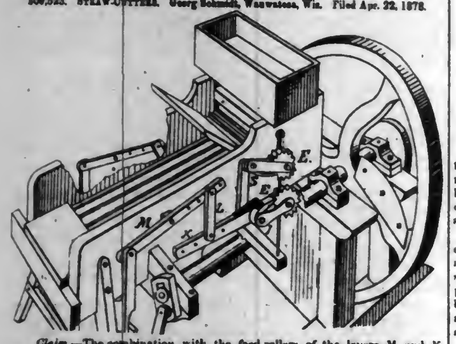
Claim.—The within-described process of producing a level surfaced crystallotype, by spreading on a metal plate a layer of a compound made of a concentrated solution of sulphate of magnesia or other suitable salt and of gum-arabic or other suitable adhesive substance, leaving this layer to dry, then taking an electrotype and rendering the surface of this electrotype fit for printing by spreading over it a protecting layer of asphaltum or other suitable material, then removing such layer from the low portions of said electrotype and adding thereon a fresh deposit of copper, such process being repeated, if necessary, until the entire surface of the electrotype becomes fit for printing therefrom on paper or other material.

209,522. Vehicle-Axle Braces. William H. Schenck, Auburn, W. Va. Filed Sept. 21, 1878.



Claim.—The combination of the axle A, skein-tips B C, and block E with the truss D D', extending from skein-tip to skein-tip, and connected at the center by the hook and eye d d', substantially as set forth.

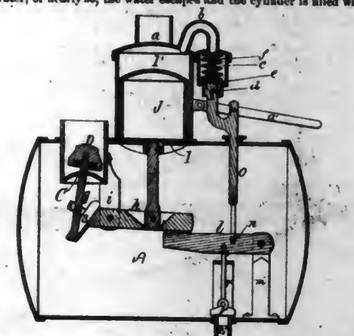
209,523. Straw-Cutters. Georg Schmidt, Wauwatosa, Wis. Filed Apr. 22, 1878.



Claim.—The combination, with the feed-rollers, of the levers M and K, connecting-link L, pawls I and S, and ratchet-wheels E, substantially as specified.

209,524. Air-Forcing Engines. John C. Steutermann, Boston, Mass., assignor to A. D. Fuller & Sons, same place. Filed Sept. 12, 1878.

Brief.—Air is compressed by water under pressure. When the tank is full of water, or nearly so, the water escapes and the cylinder is filled with air.



Claim.—1. The general combination and arrangement of operative parts, substantially as herein explained, consisting of the vessel A, ports and valves C, D, E, F, and I, plunger J, levers *h* and *l*, and lifter *q*, carried by the rod *o*, the stems *g* and *j* being pivoted to the lever *h*, and the stem *r* and lifter-rod *e* to the lever *l*, and the whole operating substantially as and for the purposes set forth.

2. The inclined wiper-cam *s*, applied to the lever *h*, and operating with the stem of the water-supply valve D, substantially as and for purposes stated.

3. The air-inlet pipe *b*, with its valve *c*, in combination with the vessel A and the lifter *q*, substantially as and for purposes stated.

209,525. Pump-Valves. John J. Tonkin, Richmond, Va., assignor of one-half his right to John H. Van Low, same place. Filed Sept. 23, 1878.

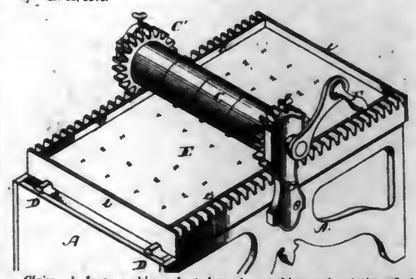


Claim.—1. The pump-valve composed of the cylindrical metallic seat-tube having spaced inducts in its down side and educts in its up side, and a stationary cylindrical rubber tube arranged inside of and fitting closely the seat-tube covering the inducts, and leaving the educts uncovered, substantially as specified.

2. The combination, in a valve, of a cylindrical seat-tube, B, having educts *a* in its up side, near its ends, and inducts *b* in its down side, opposite to and between the said educts, and a tubular rubber cylinder, B', covering the inducts and leaving the educts uncovered, and provided with water-ways *c* between the said inducts, substantially as set forth.

3. A cylindrical rubber valve, B', having the water-apertures *c c* in its cylindrical wall, substantially as specified.

209,526. Machines for Marking Plug-Tobacco. Samuel W. Venable, Petersburg, Va. Filed June 12, 1878.



Claim.—1. In a machine adapted to the marking and printing of plug-tobacco, the combination of a frame, A, guide-track D, and cylinder C, arranged midway between the ends of the track, with a flanged platen, E, geared at both sides to the cylinder, whereby the material to be imprinted can be fed in or delivered from either side of the cylinder, constructed and arranged substantially as described.

2. In a machine adapted to the marking and printing of plug-tobacco, the combination of a frame, A, guide-track D, and cylinder C with a platen geared at both sides to the cylinder C, as shown, and provided with a rectangular surrounding flange, *a a'*, and with a type-surface arranged either in the bed or platen below the line of the flange or on the cylinder at a distance from the bed sufficient to admit plugs of tobacco to pass under the cylinder between it and the bottom of the bed, constructed and arranged substantially as described.

209,527. Corn-Cultivators. Frank T. Verbarg, Vinton, Iowa. Filed Aug. 4, 1877.

Claim.—1. As a means for connecting the axle-arm C with and giving to the same a certain degree of motion upon the frame-bar B, the sleeve *c*, provided with the slot *c'*, the brace-bar E, and the screw F, said parts being combined to operate in the manner and for the purpose specified.

2. In combination with the axle-arm C and plow-beam I, the sleeve G, provided with the plate *g'*, having vertical openings *g''*, the ears *g*, provided with horizontal openings *g'''*, and the bolts H and K, substantially as and for the purpose set forth.

3. As an improvement in wheel-cultivators, the pole A, frame-bar B, axle-arm C, sleeves *c*, having the slots *c'*, ground-wheels D, brace-bars E, screws F, sleeves G, having the ears *g*, plates *g'*, and openings *g''* and *g'''*, plow-beam I, draw-bar L, bolts H and K, and hooked bar N *n*, all constructed and combined to operate in the manner and for the purpose substantially as specified.

209,527.



209,528. Manufacture of Colored Crayons. Charles Walpuski, New York, N. Y., assignor to Joseph Rockenderfer, same place. Filed May 16, 1878.

Claim.—1. A composition for colored leads, consisting of coloring-matter combined with a suitable base, such as kaolin, and with starch and gelatinous matter, substantially as specified.

2. The improvement in the art of making colored leads, consisting in combining coloring-matter, kaolin, starch, and gelatinous material of the character substantially as specified, in about the proportions stated, forming said composition into leads or crayons, and drying the same, as set forth.

3. As a new article of manufacture, a water-color pencil or crayon having the characteristics herein specified.

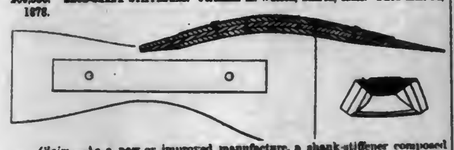
209,529. Flood-Gates. Louis I. Wathen, Morganfield, Ky. Filed June 22, 1878.

Brief.—The force of the water passing through the openings near the lower edge of the gate forces out the levers, thereby releasing the gate-fastenings, and thus opening the gates, and allowing the drift to pass through.



Claim.—The combination, with the frame A B C, of the inclined gate G, having holes H, paddle-levers J K, and the fastening device, substantially as shown and described, and for the purpose set forth.

209,530. Shoe-Shank Stiffeners. Jeremiah M. Watson, Sharon, Mass. Filed Mar. 14, 1878.



Claim.—As a new or improved manufacture, a shank-stiffener composed of two or more arched layers of wood, a series of connecting nails or rivets going into or through them, and a metallic plate-spring arranged against the convex side of the wooden spring, and connected thereto by rivets arranged at or near both ends of the metallic spring, all being substantially as specified and represented.

209,531. File-Cutting Machines. Alfred Wood, Philadelphia, Pa., assignor to himself, Geo. Barnett, and Henry Barnett, same place. Filed Jan. 19, 1878.

Brief.—The cutter-head which carries the anti-friction rollers also carries the cams for operating the cutter, the effect of which is to give the same stroke throughout the blank irrespective of variations therein.

Claim.—1. In a file-cutting machine provided with a suitable bed-plate, the cutting-head adapted to be raised up and then rested down upon the file to be cut, whereby the latter is held in place upon the bed-plate, and the chisel is given the same stroke or traverse irrespective of the size or thickness of the file to be cut, in combination with a cam to lift the chisel situated upon the movable cutter-head, substantially as described.

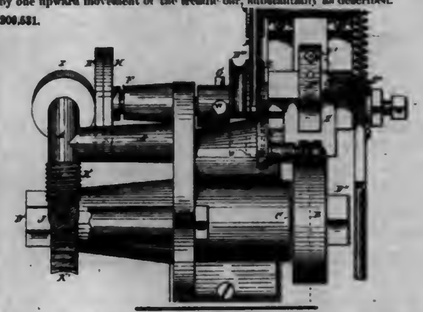
2. In a file-cutting machine, the combination of a cutting-head movable upward and downward, so as to rest its weight upon the file to be cut, and the grooved rollers X, to guide the file and permit it to pass freely under the weight of the cutting-head, substantially as described.

3. In a file-cutting machine, the combination of a chisel, S, a revolving feeding bed, drum, or wheel, B, worm K, and worm-wheel K', and grooved rollers X X, the said chisel being adapted to strike the file to be cut at a point directly above the point of contact of the file with the curved surface of said feeding drum or wheel, substantially as described.

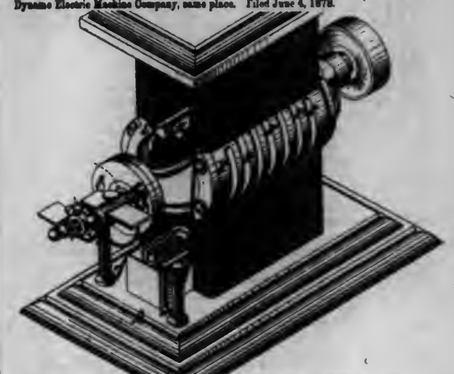
4. In a file-cutting machine, the combination, with the feeding-bed, of two friction-wheels, H and I, worm K, and worm-wheel K', the two former being so arranged that the tread of one wheel traverses in a circle the flat face of the other, the former being adapted to be shifted toward or from the center of the face of the latter, whereby its speed and the speed of the feeding bed can be increased or diminished, substantially as and for the purpose described.

5. In a file-cutting machine, the combination, with the chisel-carrier and the cutting-head, of a slotted treadle-bar, so arranged that the chisel and its carrier can be raised first, and the whole cutting-head immediately afterward, by one upward movement of the treadle-bar, substantially as described.

209,531.



209,532. Dynamo-Electric Machines. Edward Weston, Newark, N. J., assignor to Weston Dynamo Electric Machine Company, same place. Filed June 4, 1878.



Claim.—1. An armature-core having formed in it a series of recesses extending inward from its periphery, in combination with holes extending longitudinally through the core from one end to the other, substantially as and for the purposes set forth.

2. An armature-core composed of a series of short cylinders or disks mounted at intervals upon a common shaft, and bisected from their peripheries to a line near their centers, substantially as and for the purpose set forth.

3. An armature-core composed of a series of disks separated from each other by collars, substantially as described, and mounted upon a hollow shaft, and provided with holes bored radially through the shaft and the collars, for allowing air to be drawn through the shaft and discharged into the spaces between the disks when the armature is rotated, substantially as and for the purpose set forth.

4. An armature, substantially such as described, provided at its ends with the air-chambers G, the outer walls of which are formed by the flanged tubes *g'*, provided with openings, substantially as shown, for the admission of air into such air-chambers, and its discharge through the end pieces, *e*, into the spaces between the disks, substantially as and for the purpose set forth.

5. An armature wound with a double system of coils in diametrically-separate divisions, such divisions being looped together and the loops connected with the commutator-strips, substantially as shown and described.

6. A double system of armature-coils wound and connected substantially as shown and described, in combination with a commutator composed of separately-insulated strips divided from each other on lines at an angle to the axis of the commutator-shaft, and two brushes, each adapted to hold contact with one strip until after it has acquired contact with the next adjoining strip, substantially as and for the purposes set forth.

7. A rotating armature having a recessed core with openings in its ends and in its periphery, in combination with the slots *b'* in the poles of the stationary magnets, substantially as and for the purpose described.

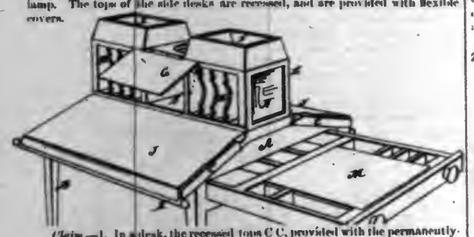
8. Independently-insulated wires or loops connecting the armature-coils with the commutator-strips, carried through the journal of the commutator-shaft, and insulated therefrom, substantially as described.

9. An armature-core provided with the polar extensions B, substantially as described.

10. A dynamo-electric machine, substantially such as described, in combination with a condenser, the opposite sides of which are connected, respectively, with the two binding-posts, with which the operative part of the circuit is connected, substantially as and for the purpose set forth.

209,533. Desks. James Whitbeck, Potter, N. Y. Filed Mar. 23, 1878.

Brief.—The central portion of the desk is hinged at one of its sides and covers a receptacle beneath it, and is also provided with a receptacle for a lamp. The tops of the side desks are recessed, and are provided with flexible covers.



Claim.—1. In a desk, the recessed tops C C, provided with the permanently attached flexible covers J J, having the sticks K K secured to their outer ends, for the purposes set forth.

2. In a desk, the combination of the tops C C, the central box, D, between the same, and the hinged frame E, for covering said box, as herein set forth.

3. The hinged frame E, provided with lamp-receptacle F, book-compartments H H, and boxes I I, in combination with the desks having tops C C and central box, D, for the purposes herein set forth.

209,534. Refrigerators. James A. Whitney, New York, N. Y. Filed Oct. 10, 1878.



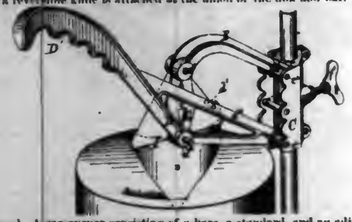
Claim.—1. In a refrigerator, the combination of two fans, located at different sides of the structure, for simultaneous and united operation, whereby the air is moved from one to the other and back again, as set forth.

2. In a refrigerator, the combination of two fans, located at different sides of the structure, and an ice-box, substantially as and for the purpose described.

3. In a refrigerator, the combination of chamber D and its fan E with the ice-box and its fan C, the whole arranged and operating substantially as and for the purpose set forth.

209,535. Can-Openers. Charles M. Williams, Bethel, Ky. Filed Aug. 30, 1878.

Brief.—An adjustable collar on a vertical rod extending upward from a base-plate carries pivoted parallel bars, which are connected by a link at the outer ends. The lower bar is extended beyond the link to form an operating-lever, and a reversible knife is attached at the union of the link and bar.



Claim.—1. A can-opener consisting of a base, a standard, and an adjustable collar, having pivoted thereto an arm and lever for holding and operating the cutting-knife, substantially as described and shown.

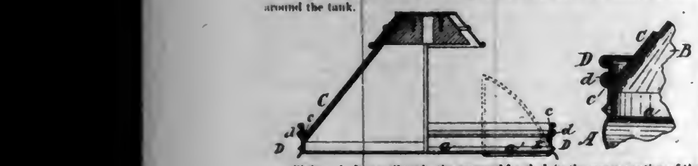
2. The lever D, terminating in a handle, D', arm E, pivoted to collar C and connected by link G, in the manner substantially as herein set forth.

3. The reversible knife I, attached to the link G, when constructed and operated as herein specified.

4. In a can-opener, the combination of the reversible knife I, thumb-screw H, link G, lever D, and pivot d^3, substantially as and for the purpose set forth.

209,536. Oil-Tanks. F. Cortes Wilson and Zadock H. Beals, Chicago, Ill.; said Beals assignor to said Wilson; said Wilson assignor of one-third his right to John G. Evenden, same place. Filed July 31, 1878.

Brief.—The wire in the lower edge of the door need not extend entirely around the tank.



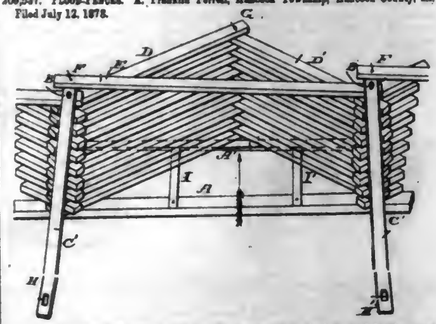
Claim.—1. In an oil-tank, the outward bead, *d*, in the upper portion of the side of the tank, in combination with the sliding door C, the lower edge of which is arranged to enter the bead, substantially as described.

2. The sliding door C, in combination with a wire, *e*, extending from one edge of the door to the other within the chamber, substantially as and for the purpose set forth.

3. The wire E, fastened to the side of the tank inside of the chamber, at the lower edge of the bead *d*, substantially as described.

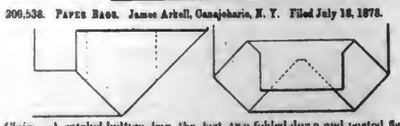
4. An oil-tank provided with an outward bead, *d*, near its upper edge, in combination with the sliding door C, the lower edge of which is constructed to enter the bead, and the wire E, fastened to the inside of the tank, substantially as described.

209,537. Floor-Fences. A. Franklin Ferrell, Hancock Township, Hancock County, Ill. Filed July 12, 1878.



Claim.—A flood-fence consisting of the frame or bed A A' I I', the posts B B', the brace-bars C C', provided with the anchor-pins H H', the swinging rails D D', provided with the breaking-pin G, and the rider E, provided with the breaking-pin F, all substantially as and for the purpose set forth.

209,538. Paper Bags. James Arkell, Canajoharie, N. Y. Filed July 16, 1878.



Claim.—A gusseted bottom bag the last two folded-down and pasted flap-like portions of which are composed of one V shaped and one rectangular flap, substantially as shown and described, for the purposes set forth.

REISSUES.

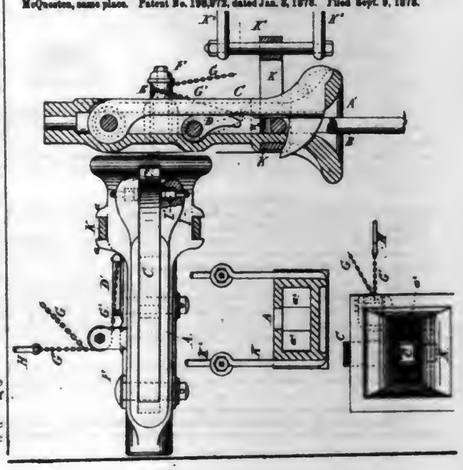
8,466. Soldering-Irons. Jabez A. Bostwick, New York, N. Y., assignor to E. M. Lang & Co., Portland, Me. Patent No. 104,412, dated June 21, 1870. Filed Sept. 3, 1878.



Claim.—1. A tool for soldering the caps on cans, consisting of a soldering-iron revolving about a central pivotal rod, which is made to rest upon and steady the cap during the operation of soldering.

2. The combination of a hollow iron for soldering caps on cans with a separate and inclosed weight for steadying the cap on the can during the operation of soldering.

8,467. Car-Couplings. William Dunn, Hamilton, Ontario, Canada, assignor to Isaac B McQueston, same place. Patent No. 196,972, dated Jan. 8, 1878. Filed Sept. 9, 1878.



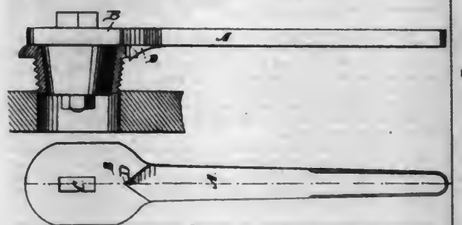
Claim.—1. In combination with the draw-head A, with shoulders a^2 formed therein, the long hook-bar C, made to pass through the lower part of the draw-head, and constructed with the weighted head C^2 and enlargement C^3 immediately in rear of the head, made to extend downward, so as to bear directly upon the link when the same is in position in the draw-head, as and for the purpose described.

2. The hand-rods H and H^1 and chains G, G^1, and G^2, in combination with the friction-roller E and crank-arm D^1, arranged and operating substantially as described, and for the purpose specified.

3. The stirrup K, supported upon the horizontal bars K^1, in combination with the draw-head A, provided with the projecting strips *a*, substantially as described.

4. The combination, in a car-coupling, of draw-head A, shoulders a^2, weighted hook-bar C C^1, made to pass through the lower part of the draw-head, bearing-piece C^1, made to project downward a sufficient distance to bear directly upon the link for the purpose of holding it in a level position, and lifting-tongues D D^1, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

8,468. Bung-Wrenches. John Lacey and George B. Cornell, Chicago, Ill.; said Lacey assignor to said Cornell. Patent No. 118,517, dated Aug. 29, 1871; Reissue No. 5,026, dated Aug. 6, 1872. Filed Aug. 21, 1878.



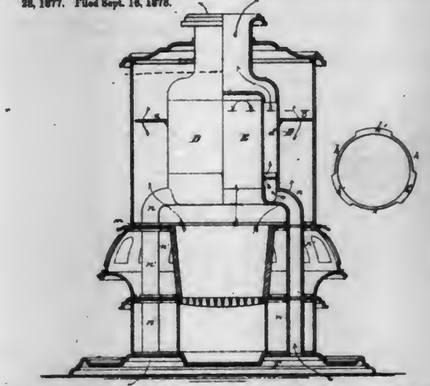
Claim.—1. In a wrench for inserting screw-threaded bung-bushes, a tapering cylindrical core adapted to fit the orifice of the bush, and a projection or means for connecting the wrench to the bush, so as to cause the bush to revolve with the wrench, substantially as and for the purpose specified.

2. The combination, in a wrench for inserting screw-threaded bung-bushes, of a tapering cylindrical core adapted to fit the bore of the bush, a handle for rotating said core, and a mechanism for connecting said core to the bush, so as to cause the bush to revolve with said core, substantially as specified.

3. In combination with the shank or handle of a wrench for inserting screw-threaded bung-bushes, a tapering cylindrical core adapted to fit the orifice of the bush to be inserted to control the direction of the bush and prevent the bush from assuming an oblique position in the bung-hole with reference to the face of the stave while being screwed in, substantially as described.

4. A wrench consisting of a shank, A, plate B, projection D, and core E, said core being adapted to fit the orifice of the bush and prevent it from assuming an oblique position while being screwed into place, substantially as and for the purpose specified.

8,469. Heating-Stoves. James E. Gridley, Chicago, Ill. Patent No. 194,552, dated Aug. 28, 1877. Filed Sept. 16, 1878.



Claim.—The combination and arrangement of the generator D E, air-spreader *h k*, and inlet-tines *a a'*, substantially as described.

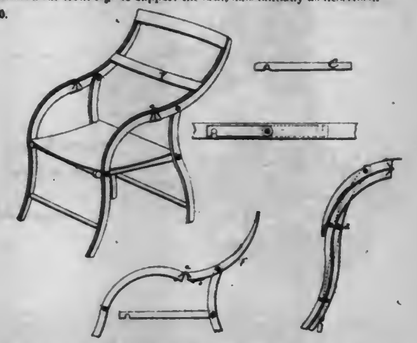
8,470. Folding Chairs. New Haven Folding Chair Company, New Haven, Conn., assignee of Henry S. Golightly and Charles S. Twitchell, same place. Patent No. 27,864, dated Mar. 10, 1863. Filed July 1, 1878.

Claim.—1. In a folding chair, the rear legs extending downward from the rear of the seat, and to which the seat is hinged, the front legs extending above the seat at the front and backward, the combination being substantially as described, and so that in folding the chair the front and rear legs come together in substantially a parallel condition.

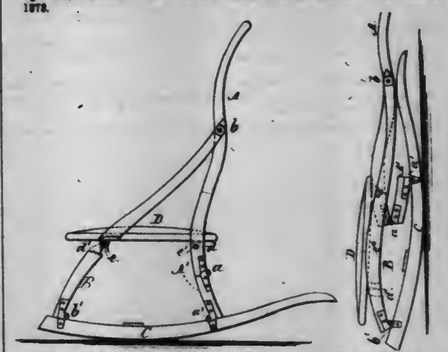
2. In a folding chair, the seat hinged at the rear to the rear legs, which extend above the seat, the front legs extending upward above the seat at the front and backward to form arms for the chair, substantially as described.

3. In a folding chair, the rear legs extending above the seat at the rear, the front legs extending above the seat at the front and backward to form the arms, combined with a folding seat, hinged to the rear legs, and a rundle or bar between the front legs to support the seat, substantially as described.

8,470.



8,471. Folding Rocking-Chairs. Edwin F. Bassell, Jamaica, Vt., assignor, by mesne assignments, to Edward W. Vaill. Patent No. 156,041, dated Oct. 20, 1874. Filed June 26, 1878.



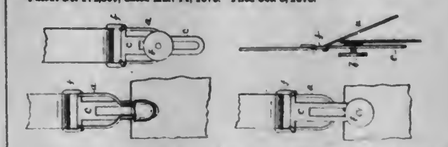
Claim.—1. In a rocking-chair, the parts A and A' of the back, hinged together and to the rockers, in combination with braces extending from the back to the front part of the rockers and connected by pivots, which braces also form the front legs, substantially as set forth.

2. In a rocking-chair, the parts A and A' of the back, hinged together and to the rockers, in combination with braces that also form front legs, and are pivoted at their ends to the rockers and back, respectively, and a seat that is supported at the rear part by the back and the rail *e*, between the front legs, that sustains the forward portion of the seat, substantially as set forth.

3. In a folding rocking-chair, the combination, with the back and seat, of braces that are pivoted to the rockers and back, respectively, and also form front legs to sustain the forward portion of the seat, substantially as set forth.

4. The combination of the clips *d'*, cross-rail *e*, and seat D with the front legs B, back and legs A A', and rockers C, substantially as set forth.

8,472. Supporters for Stockings and other Garments. Benj. J. Greely, Boston, Mass. Patent No. 174,806, dated Mar. 14, 1876. Filed Oct. 3, 1878.



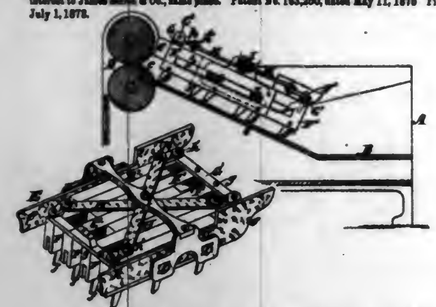
Claim.—1. A device to hold stockings or garments, it being composed of an eye and a headed longitudinally-movable engaging device adapted to press a portion of the garment to be held from one side of the eye through the eye, and thereafter be free to be moved, so as to follow along the said eye into its narrower portion, where the said eye and engaging device co-operate to hold the garment securely, substantially as described.

2. An eye shaped or fashioned to be connected with a strap combined with a headed engaging device made movable along the slot in the said eye, and a connection or support for the engaging device, the headed engaging device being adapted to press a portion of the garment against one face of the eye, and the support for the engaging device to press a portion of the garment against the opposite face of the eye, substantially as described.

3. In a garment-holder, a headed engaging device, extended from a support with which it is connected, combined with a metallic loop or wire adapted to embrace the shank of the engaging device between its head and the support for the engaging device, and hold a portion of the garment about the head and shank of the engaging device, substantially as described.

4. The combination of the parts *a*, *b*, *c*, and *f*, constructed and arranged to operate substantially as described.

8,473. Wool-Washing Machines. Josiah K. Procter, Philadelphia, Pa., assignor of one-half interest to James Smith & Co., same place. Patent No. 163,250, dated May 11, 1876 Filed July 1, 1878.



Claim.—1. The combination of the following elements in a wool-washing machine, viz: a bowl or tank, A, false bottom B, incline C, squeeze-rolls D, and a carrier, E, having downwardly-projecting teeth, and arranged to carry the stock up over the incline by a double movement for every single movement of the fork, as set forth.

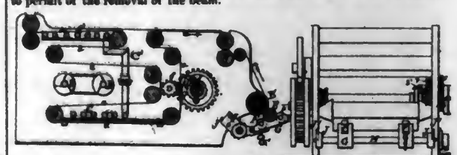
2. In a wool-washing machine, a carrier provided with two series of alternately-reciprocating bars, F F', having downwardly-projecting hinged or swinging teeth *f f*, substantially as shown and described.

3. In combination with the incline C, the fixed frame E, provided with the reciprocating bars F, moving over said incline, substantially as shown and described.

4. In combination with the bars F F', secured to the cross-heads G and G', the arms *g g'*, for producing an alternate reciprocation of said bars, substantially as shown and described.

8,474. Machines for Dyeing and Beaming Yarn. William Lancaster, Constadt, Germany, and John Bullough, Accrington, England. Patent No. 150,060, dated Apr. 21, 1874. Filed June 18, 1878.

Brief.—The yarn passes from the drying apparatus between power-driven gripe-rollers, which deliver it to the beam. The latter may be doffed, when full, without stopping the delivery of the yarn, by shifting interchangeable gears, and thus giving the delivery-rollers a slow motion. The yarn on the beam is compressed and wound evenly through the action of a roller which is compressed against it. This pressure-roller rests on bowls carried by arms attached to a shaft provided with a ratchet. An adjustable lever having a catch and an adjustable weight project toward the main portion of the machine, and through these parts the pressure of the roller against the yarn may be varied, and by the catch and ratchet the arms and roller may be so held as to permit of the removal of the beam.



Claim.—1. The combination of the presser-roller, the cross-shaft, arms, and bowls supporting said roller, the lever K and its adjustable weight, the ratchet-wheel and detent, and the regulating-screw G^3, these parts being arranged for joint operation substantially as set forth.

2. The combination, substantially as hereinbefore set forth, of a group of power-driven tensional-gripe rollers and mechanism whereby the speed or rate of movement of said rollers may be reduced to permit interchange of beams without stopping the machine.

3. In combination with the group of tensional-gripe power-driven rollers arranged for operation in connection with the weaver's beam, as explained, the interchangeable gears mounted on shaft S, and the bell-crank lever provided with a gear to put the said group of rollers in communication with the selected one of said interchangeable gears, as and for the purposes set forth.

THE GRAPHIC CO. NEW YORK

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 29th DAY OF OCTOBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Achauer, H. F. (See Allen, S. J., assignor.)						
Albin, G. W. (See Lockhart and Albin.)						
Allen, S. J., assignor to himself and H. F. Achauer, Zanesville, Ohio. Brick-kiln	209,443	Oct. 29	1088	317	14	656
Allen, W. B., Orleans, N. Y. Device for preventing boards from warping	209,371	Oct. 29	1017	296	14	645
Allen, W. B., Orleans, N. Y. Sprinkler	209,372	Oct. 29	1018	296	14	645
Allen, W. B., Orleans, N. Y. Churn-dasher	209,442	Oct. 29	1087	317	14	656
Altfather, H. D., assignor to C. Cort, Maquoketa, Iowa. Furrow-gage staff for dressing millstones	209,373	Oct. 29	1020	296	14	645
Arkell, J., Canajoharie, N. Y. Paper bag	209,315	Oct. 29	953	279	14	637
Arkell, J., Canajoharie, N. Y. Paper bag	209,316	Oct. 29	955	279	14	637
Arkell, J., Canajoharie, N. Y. Paper bag	209,538	Oct. 29	1193	347	14	670
Arnett, W. D., Jefferson county, Colo. Sulky-plow	209,374	Oct. 29	1020	296	14	645
Atwood, W. Q. (See Brown, M., assignor.)						
Baldwin, E. A., North Andover, Mass., assignor to G. L. Davis, J. A. Wilie, J. M. Stone, G. G. Davis, J. H. Stone, and J. H. Davis. Spinning-mule	209,317	Oct. 29	956	279	14	637
Baldwin, E. A., North Andover, Mass., assignor to G. L. Davis, J. A. Wiley, J. M. Stone, G. G. Davis, J. H. Stone, and J. H. Davis. Spinning yarn on spinning-mules	209,318	Oct. 29	958	280	14	637
Ballard, A. S., Waterville, N. Y. Fire-arm	209,444	Oct. 29	1089	317	14	656
Balliett, C. O., Waterloo, Iowa. Reversible center-pinion for watches	209,375	Oct. 29	1021	297	14	646
Barnett, G., *et al.* (See Weed, A., assignor.)						
Barnett, H., *et al.* (See Weed, A., assignor.)						
Baromidis, G. M., San Francisco, Cal. Hot atmosphere and medicated bath	209,319	Oct. 29	959	280	14	637
Bates, C. E., West Cheshire, Conn. Button	209,320	Oct. 29	961	280	14	637
Baugh, D., *et al.* (See Baugh, E. P., assignor.)						
Baugh, E. P., assignor to himself, J. P. and D. Baugh, Philadelphia, Pa. Treatment of offal for fertilizers	209,445	Oct. 29	1090	317	14	656
Baugh, J. P., *et al.* (See Baugh, E. P., assignor.)						
Beach, H. B., West Meriden, Conn. Ice-pitcher	209,446	Oct. 29	1091	318	14	656
Beals, S. G. B. (See Belser and Beals.)						
Becker, L., assignor to C. L. Thomas and J. L. Kraber, York, Pa. Washing-machine	209,447	Oct. 29	1098	318	14	656
Beckford, F. M., Bristol, N. H. Combined shoulder-brace and suspenders	209,321	Oct. 29	963	281	14	637
Belser, J. H., and S. G. B. Beals, Northborough, Mass. Lag for rag-pickers, &c	209,376	Oct. 29	1022	297	14	646
Benedict, D. H., Newton, Iowa. Churn	209,322	Oct. 29	964	281	14	638
Bentley, W. (See Bright, J., assignor.)						
Bishop, F. A., San Francisco, Cal. Pumping apparatus for raising water	209,323	Oct. 29	965	281	14	638
Blackhall, E. W., Toronto, Ontario, Canada. Paper-perforating machine	209,448	Oct. 29	1093	318	14	656
Blackinton, V. H., Attleborough, Mass. Safety-pin	209,324	Oct. 29	966	281	14	638
Boman, C. W., assignor to J. Reckendorfer, New York, N. Y. Pencil-holder	209,449	Oct. 29	1095	318	14	657
Bools, Z. H. (See Wilson and Bools.)						
Booth, R. (See Smith and Booth.)						
Bostwick, J. A., New York, N. Y., assignor to E. M. Lang & Co., Portland, Me. Soldering-iron. (Reissue)	8,466	Oct. 29	1194	347	14	640
Brigham, F. and W. F., and S. M. Hewitt, Hudson, and W. F. Prusha, Marlborough, Mass. Waterproof cloth	209,450	Oct. 29	1096	.....	14	657
Brigham, W. F. (See Brigham, Hewitt, and Prusha.)						
Bright, J., New York, N. Y., assignor of one-half interest to W. Bentley, Newark, N. J. Bracket	209,325	Oct. 29	966	282	14	638
Britt, W. J., assignor of one-half interest to J. M. Chambers, St. Louis, Mo. Exercising-machine	209,377	Oct. 29	1023	297	14	646
Broslus, A., Fort Wayne, Ind. Endless-track wheel for vehicles	209,451	Oct. 29	1097	319	14	657
Brown, A. M., assignor to himself and D. S. King, Nettleton, Mo. Self-feeding water-trough	209,378	Oct. 29	1024	297	14	646
Brown, M., assignor of five-ninths interest to W. Q. Atwood, East Saginaw, Mich. Machine for cutting blanks for stove-pipe elbows	209,452	Oct. 29	1098	319	14	657
Brunner, D. F. (See Smith, J. F. S., assignor.)						
Bryant, C. B., and A. D. Hendrick, assignors to New Haven Clock Company, New Haven, Conn. Calendar-clock	209,453	Oct. 29	1099	320	14	657
Bull, H. C., Brooklyn, N. Y. Filter	209,454	Oct. 29	1100	320	14	657
Bullough, J. (See Lancaster and Bullough.) (Reissue.)						
Burrows, W. T., Nashua, Iowa. Device for converting reciprocating motion into rotary	209,456	Oct. 29	1102	320 / 321	14	658
Burt, J., Detroit, Mich. System of ventilation	209,455	Oct. 29	1101	330	14	658
Call, A., Santa Fé, New Mexico. Safety-click for watch-barrels	209,457	Oct. 29	1104	321	14	658
Cammeyer, A. J. (See Miller, P., assignor.)						
Campbell, G., Norfolk, and W. Lidgett, Newton, Mass. Pulp-strainer	209,326	Oct. 29	967	282	14	638

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Carey, J., *et al.* (See Emig, A., and T., assignors.)						
Carlsen, A. M., Brooklyn, N. Y. Calendar-clock	209,458	Oct. 29	1104	321	14	658
Carothers, W. T. (See Martin and Carothers.)						
Case, H. P., Detroit, Mich. Chuck	209,459	Oct. 29	1106	322	14	658
Castle, S. D. (See Dimond and Castle.)						
Cave, T. H. (See Van Orman and Hagenbaugh, assignors.)						
Chambers, J. M. (See Britt, W. J., assignor.)						
Chomel, I. A., Brooklyn, N. Y. Sweeping-machine	209,379	Oct. 29	1024	298	14	646
Clark, L. P., Baltimore, Md. Hydrant	209,460	Oct. 29	1107	322	14	658
Cobb, S. C., assignor to Harris Manufacturing Company, Janesville, Wis. Harvester-rake	209,327	Oct. 29	968	282	14	638
Collins, G. H., Wayne, Mich. Anti-rattler for thill-couplings	209,461	Oct. 29	1108	322	14	659
Connelly, A., Hoboken, assignor to himself and J. V. Smith, Elizabethport, N. J. Faucet and bushing	209,380	Oct. 29	1025	298	14	646
Cooper, A. F., Cambridge, Mass. Vehicle-axle box	209,381	Oct. 29	1026	298	14	646
Cooper, G. M., Port Huron, Mich. Freight-car door	209,462	Oct. 29	1109	322	14	659
Cooper, J. G. (See Hardie, James, and Cooper.)						
Corkhill, H. R., Rochester, N. Y. Globe-valve	209,382	Oct. 29	1027	298	14	647
Cornell, G. B. (See Lacey and Cornell. · (Reisnc.)						
Cort, C. (See Altfather, H. D., assignor.)						
Cothren, C., New York, N. Y. Reflector	209,328	Oct. 29	969	282	14	638
Creasey, E. J., Philadelphia, Pa. Ice-breaker	209,463	Oct. 29	1110	323	14	659
Crittenden, M. H., assignor of one-half interest to E. E. Scribner, St. Paul, Minn. Metallic siding for buildings	209,329	Oct. 29	970	283	14	638
Curtin, M., Houston, Tex. Steam-cooking apparatus	209,464	Oct. 29	1110	323	14	659
Curtis, A. J., East Williamson, N. Y. Harvester guard-finger	209,465	Oct. 29	1111	323	14	659
Curtis, J. B., Calumet, Mich. Automatic fire-kindler	209,383	Oct. 29	1028	299	14	647
Cutts, A. D., Screven, Ga. Package for bleaching and packing rosin	209,384	Oct. 29	1029	299	14	647
Dabbs, W. H., Philadelphia, Pa. Bottle-stopper	209,466	Oct. 29	1111	324	14	659
Dale, J., Chicago, Ill. Paper-ruling machine	209,330	Oct. 29	971	283	14	638
Daley, M., Watertown, Ill. Barbed-wire fence	209,467	Oct. 29	1112	324	14	659
Daniel, L., Montgomery, Ala. Medical compound	209,331	Oct. 29	973	.....	14	639
Darling, S., Providence, R. I. Stove-oven	209,332	Oct. 29	973	283	14	639
Davis, A. J., Allegheny, Pa. Automatic toy	209,468	Oct. 29	1113	{324 {325	14	659
Davis, G. G., *et al.* (See Baldwin, E. A., assignor.)						
Davis, G. L., *et al.* (See Baldwin, E. A., assignor.)						
Davis, G. M. (See Upton, W. H., assignor.)						
Davis, J. H., *et al.* (See Baldwin, E. A., assignor.)						
Davis, J. R., Inland, Ohio. Device for teaching involution and evolution	209,385	Oct. 29	1029	299	14	647
Davis, R. (See Jones, J., assignor.)						
Davis, T. W. (See Kessler, P., assignor.)						
Day, O. B. (See Moss and Day.)						
Delong, B., Caughdenoy, N. Y. Grain-drill	209,386	Oct. 29	1030	299	14	647
Dillmeier, M., Dobb's Ferry, N. Y. Cigar-slitter	209,387	Oct. 29	1032	300	14	647
Dimond, G. H., and S. D. Castle, Bridgeport, Conn. Lined fur-robe	209,333	Oct. 29	975	284	14	639
Dowlin, M. R., North Adams, Mass. Buckle-tongue cover for harness	209,469	Oct. 29	1114	325	14	659
Drake, S. N. (See Riethmüller, J. C., assignor.)						
Dunlap, L. S., Galena township, La Porte county, Ind. Windmill	209,334	Oct. 29	976	284	14	639
Dunn, W., assignor to I. B. McQuesten, Ontario, Canada. Car-coupling. (Reissue)	8,467	Oct. 29	1494	347	14	670
Dutcher Temple Company. (See Pearson, R. P., assignor.)						
Edge, J., Paterson, N. J. Animal-trap	209,388	Oct. 29	1032	300	14	647
Edwards, E. F., Columbia, Pa. Manufacturing and piling iron	209,470	Oct. 29	1114	325	14	660
Eiteman, G., Round Grove, Ill. Scraper	209,389	Oct. 29	1033	300	14	648
Emig, A. and T., Sheridan, assignors of one-half interest to P. Rodenheber and J. Carey, Chicago, Ill. Hair-tonic	209,335	Oct. 29	977	.....	14	639
Emig, T. (See Emig, A. and T.)						
Evenden, J. G. (See Wilson and Bools, assignors.)						
Fenson, J., Toronto, Ontario, Canada. Hoisting-machine	209,336	Oct. 29	977	{284 {285	14	639
Ferrell, A. F., Hancock township, Hancock county, Ill. Flood-fence	209,537	Oct. 29	1192	346	14	670
Ferris, D. A., Tioga Centre, N. Y. Flooring-jack	209,390	Oct. 29	1034	300	14	648
Ferriss, J. H., Troy, N. Y. Cuspadore	209,337	Oct. 29	980	285	14	639
Filmer, W., San Francisco, Cal. Wave-power	209,391	Oct. 29	1035	301	14	648
Ford, A., Chicago, Ill. Heating apparatus	209,471	Oct. 29	1115	325	14	660
Foster, W. H., and I. C. Roberts, Louisburg, Kan. Churning apparatus	209,392	Oct. 29	1035	301	14	648
Goebel, C. H., Philadelphia, Pa., assignor, by mesne assignments, to United States Liquor Registering Company. Liquid measure and register	209,338	Oct. 29	980	285	14	640
Goldie, W., Fenton, Mich. Shingle-cutting machine	209,472	Oct. 29	1116	326	14	660
Golightly, H. S., and C. S. Twitchell, assignors to New Haven Folding Chair Company, New Haven, Conn. Folding chair. (Reissue)	8,470	Oct. 29	1198	348	14	671
Greely, B. J., Boston, Mass. Supporter for stockings and other garments. (Reissue)	8,472	Oct. 29	1199	348	14	671
Gridley, J. E., Chicago, Ill. Heating-stove. (Reissue)	8,469	Oct. 29	1197	348	14	671
Griffith, J. G., New York, N. Y. Machine for pressing seams	209,339	Oct. 29	982	{285 {286	14	640
Guttermann, G. A., Belleville, Ill. Grain-lifter for harvesters	209,473	Oct. 29	1117	326	14	660
Hagenbaugh, J. M. (See Van Orman and Hagenbaugh.)						
Haines, W., Philadelphia, Pa. Adjustable watch-key	209,340	Oct. 29	983	286	14	640
Hammerschlag, S., Jersey City, N. J. Waxing paper	209,393	Oct. 29	1036	301	14	648
Hardie, R., Govan, J. James, Edinburgh, North Britain, and J. G. Cooper, Brooklyn, assignor to Pneumatic Tramway Engine Company, New York, N. Y. Valve-gear for engines	209,474	Oct. 29	1118	326	14	660
Harris Manufacturing Company. (See Cobb, S. C., assignor.)						
Harris, T. C., Wilmington, Del. Mode and mechanism for testing the balance of wheels and pulleys	209,475	Oct. 29	1119	327	14	660
Harris, T. C., Wilmington, Del. Grinding and finishing cylindrical objects	209,476	Oct. 29	1121	327	14	661
Harrison, J. W., *et al.* (See Shickle, F., assignor.)						
Harrison, J. W., Niles, Mich. Dumping-wagon	209,341	Oct. 29	984	286	14	640
Hawley, A. (See Hawley, B. R., assignor.)						
Hawley, B. R., assignor to A. Hawley, Hyde Park, Ill. Heating and ventilating houses	209,342	Oct. 29	984	{286 {287	14	640
Haworth, G. D., Decatur, Ill. Guide for check-row wires or cords	209,477	Oct. 29	1122	327	14	661
Hellbroner, S., New York, N. Y. Cigar-case	209,478	Oct. 29	1123	328	14	661
Hendrick, A. D. (See Bryant and Hendrick.)						
Henning, A., Belleville, N. J. Carbureting-machine	209,479	Oct. 29	1124	328	14	661
Hevner, G. E. (See Hevner, P., assignor.)						
Hevner, P., assignor to G. E. Hevner, Philadelphia, Pa. Railway system	209,480	Oct. 29	1126	{328 {329	14	662
Hewitt, S. M. (See Brigham, Hewitt, and Prusha.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hill, R. S., assignor of one-half interest to J. P. Randall, Magnon, Ill. Wall-paper trimmer	209,394	Oct. 29	1037	301	14	648
Hoeffer, A., and A. Seneff, Pottsville, Pa.; said Seneff assignor to said Hoeffer. Friction-clutch for foot-powers	209,395	Oct. 29	1038	302	14	648
Hogan, A. I., assignor to himself and U. Perry, La Clede, Ill. Machine for cutting basket-splints	209,396	Oct. 29	1038	302	14	648
Holland, A. W., and E. N. McKimm, Lathrop, Mo. Animal-trap	209,397	Oct. 29	1039	302	14	648
Hooker, G. W., Grand Rapids, Mich. Sled-brake	209,398	Oct. 29	1041	302	14	649
Howard, T., *et al.* (See Shickle, F., assignor.)						
Howe, A. D. (See Jones, A. B., assignor.)						
Hurlburt, C. A., Ypsilanti, Mich. Saw-gage	209,399	Oct. 29	1041	303	14	649
Ireland, W. H. (See Merritt, H. W., assignor.)						
James, J. (See Hardie, James, and Cooper.)						
Jenkins, D., Evansville, Ind. Elevator	209,400	Oct. 29	1042	303	14	649
Jennings, J., Jr., Natick, Mass. Cultivator	209,481	Oct. 29	1129	329	14	662
Johns, A. L., Fort Wayne, Ind. Harness-pad	209,403	Oct. 29	1045	304	14	649
Johnson, J. (See Johnson, O. and J.)						
Johnson, M., assignor of one-half interest to M. C. Richardson, Lockport, N. Y. Cultivator	209,401	Oct. 29	1043	303	14	649
Johnson, O. and J., Cresco, Iowa. · Car-coupling	209,402	Oct. 29	1044	304	14	649
Jones, A. B., Fayville, assignor to himself and A. D. Howe, Southborough, Mass. Manufacture of boot and shoe soles	209,482	Oct. 29	1129	329	14	662
Jones, J., Llandebie, Carmarthenshire, South Wales, assignor to R. Davis, San Francisco, Cal. Apparatus for cleansing ship's bottoms, &c.	209,343	Oct. 29	986	287	14	640
Jordan, T. N., Mobile, Ala. Saw-filing machine	209,404	Oct. 29	1046	304	14	649
Joyce, J. O., Dayton, Ohio. Lifting-jack	209,344	Oct. 29	988	287	14	640
Kelley, W., Baltimore, Md. Signal for locomotive head-lights	209,405	Oct. 29	1046	304	14	650
Kelly, E., Baby's Point, Ontario, Canada. Hair-pin	209,483	Oct. 29	1130	330	14	662
Kenyon, J. P., Brooklyn, N. Y. Water-closet valve	209,345	Oct. 29	988	287	14	641
Kessler, P., assignor of one-half interest to T. W. Davis, Butler, Md. Plow-point	209,406	Oct. 29	1047	305	14	650
Kidder, M. W., Boston, assignor to P. Noyes, Lowell, Mass. Gas-pressure regulator	209,407	Oct. 29	1048	305	14	650
King, D. S. (See Brown, A. M., assignor.)						
Kluber, J. (See Otten and Kluber.)						
Koutgsberger & Co. (See Oellner, W., assignor.)						
Kraber, J. L., *et al.* (See Becker, L., assignor.)						
Krickl, M., New York, N. Y. Stair-carpet fastener	209,408	Oct. 29	1049	305	14	650
Lacey, J., and G. B. Cornell, Chicago, Ill.; said Lacey assignor to said Cornell. Bung-wrench. (Reissue)	8,468	Oct. 29	1196	347	14	671
Lancaster, W., Constadt, Germany, and J. Bullough, Accrington, England. Machine for drying and beaming yarn. (Reissue)	8,474	Oct. 29	1201	349	14	672
Lang & Co., E. M. (See Bostwick, J. A., assignor.) (Reissue.)						
Leach, J. D., Penobscot, Me. Broom-holder	209,484	Oct. 29	1130	330	14	662
Lee, F. J., and J. S. Ransdell, Harrisburg, Ky.; said Ransdell assignor to said Lee. Gate-latch	209,485	Oct. 29	1130	330	14	662
Lewis, G. T., Philadelphia, Pa. Manufacture of alum-cake and sulphate of alumina	209,488	Oct. 29	1133	.....	14	662
Lidgett, W. (See Campbell and Lidgett.)						
Lippe, C., New York, N. Y. Window-cornice	209,346	Oct. 29	990	288	14	641
Lockhart, J., and G. W. Albin, Neoga, Ill. Band-cutting fork	209,487	Oct. 29	1132	331	14	662
Lucas, S. B., Hinsdale, N. Y. Self-locking clothes-pin	209,409	Oct. 29	1050	305	14	650
Luther, J. H., Karns City, Pa. Tool for extracting obstructions from deep wells	209,486	Oct. 29	1131	330	14	662
Macomber, W. C., Baltic, Conn. Spindle-bearing for spinning-machines	209,489	Oct. 29	1134	331	14	662
Madlener, P., Milwaukee, Wis. Bottle stopper and fastener	209,490	Oct. 29	1134	331	14	663
Mann, J. J., Tappan, N. Y. Thill-coupling	209,491	Oct. 29	1135	331	14	663
Marshman, N. R., New York, N. Y., and M. J. Matthews, Boston, Mass. Mechanical musical instrument	209,492	Oct. 29	1136	332	14	663
Martignoni, B., Westfield, N. Y. Carpet-fastening	209,493	Oct. 29	1134	332	14	663
Martin, J. B., and W. T. Carothers, Clarence, Mo. Hay-loader	209,410	Oct. 29	1051	306	14	650
Martin, O., Bloomfield, Iowa. Apparatus for boring and drilling wells	209,347	Oct. 29	990	288	14	641
Mason, J., Paterson, N. J. Ironing-machine	209,494	Oct. 29	1138	332	14	663
Mathews, A. E. (See Youngs and Mathews.)						
Matthews, M. J. (See Marshman and Matthews.)						
Matthews, M. J., Boston, Mass. Reed-organ	209,495	Oct. 29	1141	333	14	663
Matthews, M. J., Boston, Mass. Reed-organ bellows	209,496	Oct. 29	1143	333	14	664
McCabe, M., Brooklyn, N. Y. Printer's galley	209,497	Oct. 29	1144	333	14	664
McCoy, R., McCoy's Station, Ind. Harrow attachment for plows	209,348	Oct. 29	992	288	14	641
McDonough, J. W., Chicago, Ill. Piano-stool	209,498	Oct. 29	1145	333	14	664
McEachern, J. D., Harriston, assignor to S. Wallace, Seaforth, Ontario, Canada. Barrel-making machine	209,349	Oct. 29	993	289	14	641
McFarland, J. D., Erie, assignor to M. Stewart, Titusville, Pa. Advertising device	209,352	Oct. 29	997	290	14	642
McGill, J. W., New York, N. Y. Pocket pencil-knife	209,411	Oct. 29	1052	306	14	651
McKimm, E. N. (See Holland and McKimm.)						
McQuesten, I. B. (See Dunn, W., assignor.) (Reissue.)						
Merritt, J. M. (See Price and Merritt.)						
Merritt, H. W., Somerville, assignor of one-half interest to W. H. Ireland, Boston, Mass. Purifying gas	209,350	Oct. 29	995	289	14	642
Merritt, H. W., Somerville, assignor of one-half interest to W. H. Ireland and W. R. Stearns, Boston, Mass. Purifier and regulator for carbureters	209,351	Oct. 29	996	289	14	642
Miller, D. W., Whitney's Point, N. Y. Washing-machine	209,499	Oct. 29	1146	334	14	664
Miller, P., assignor of one-half interest to A. J. Cammeyer, New York, N. Y. Heel for boots and shoes	209,500	Oct. 29	1146	334	14	664
Mitchell, R. B., Minneapolis, Kans. Plow	209,412	Oct. 29	1053	306	14	651
Mixer, G. H., San Francisco, Cal. Bush-inserter	209,353	Oct. 29	998	290	14	642
Morris, J. R., Houston, Tex. Heating-table	209,501	Oct. 29	1147	334	14	664
Moses, H., New York, N. Y. Sleeve-elevator	209,413	Oct. 29	1054	307	14	651
Moss, W. H., and O. B. Day, New Richmond, Ohio. Washing-machine	209,502	Oct. 29	1148	334	14	664
Murdock, C. F., Detroit, Mich. Self-closing valve	209,503	Oct. 29	1148	335	14	665
Neptune Fog Horn Company, (limited.) (See Smith and Booth, assignors.)						
New Haven Cloak Company. (See Bryant and Hendrick, assignors.)						
New Haven Folding Chair Company. (See Golightly and Twitchell, assignors.) (Reissue.)						
Nichols, I. C., West Liberty, Iowa. Tile-machine	209,354	Oct. 29	998	290	14	642
Norcross, J. W., Boston, Mass. Sail and rigging for vessels	209,414	Oct. 29	1055	307	14	651
Nothaf, J. L., Denison, Tex. Riding-saddle	209,415	Oct. 29	1056	307	14	651
Noyes, P. (See Kidder, M. W., assignor.)						
Nussbaumer, P., St. Louis, Mo. Vent spike and valve for beer-barrels	209,504	Oct. 29	1150	335	14	665
O'Bryon, W. E., Ionia, Mich. Case for writing-tablets	209,417	Oct. 29	1062	308	14	652
Odhner, W., assignor to Konigsberger & Co., St. Petersburg, Russia. Calculating-machine	209,416	Oct. 29	1057	308	14	651
Oliver, R. S., assignor to Rathbone, Sard & Co., Albany, N. Y. Cooking-stove	209,355	Oct. 29	999	{290 {291	14	642
O'Neill, E. (See O'Neill, T., assignor.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
O'Neill, T., Jackson, Mich., assignor to E. O'Neill. Machine for double-seaming stove-boilers	209,418	Oct. 29	1062	308	14	652
Otten, J. F., and J. Kluber, Cincinnati, Ohio. Apparatus for carbureting illuminating-gas	209,505	Oct. 29	1152	335	14	665
Owens, T., Washington, D. C. Ventilator	209,506	Oct. 29	1153	335 336	14	665
Patch, G. H., Steven's Point, Wis. Double-acting force-pump	209,507	Oct. 29	1155	336	14	665
Pattillo, R. M., Cartersville, Ga. Cotton-seed planter	209,508	Oct. 29	1156	336	14	666
Pearson, R. P., Philadelphia, Pa., assignor, by mesne assignments, to Dutcher Temple Company, Milford, Mass. Loom-temple	209,419	Oct. 29	1063	309	14	652
Perkins, G. H., Catenovia, N. Y. Harrow	209,509	Oct. 29	1158	337	14	666
Perry, U. (See Hogan, A. I., assignor.)						
Peterson, S., Knoxville, Ill. Pump	209,510	Oct. 29	1160	337	14	666
Pfeiffer, G., Newton, Iowa. Millstone-feeder	209,356	Oct. 29	1000	291	14	643
Pickhardt, W., New York, N. Y. Ventilating water-closets	209,511	Oct. 29	1160	337	14	666
Pneumatic Tramway Engine Company. (See Hardie, James, and Cooper, assignors.)						
Poore, T., Scranton, Pa. Boot	209,357	Oct. 29	1001	291	14	643
Porter, T. R., Syracuse, N. Y. Bale-tie	209,358	Oct. 29	1002	291	14	643
Potter, M. F., Hinckley, Ill. Milk-cooler	209,420	Oct. 29	1063	309	14	652
Price, C. G., and J. M. Merritt, Tama county, Iowa. Sulky-plow	209,512	Oct. 29	1161	338	14	666
Proctor, J. K., assignor of one-half interest to J. Smith & Co., Philadelphia, Pa. Wool-washing machine. (Reissue)	8,473	Oct. 29	1200	.....	14	672
Pronty, A. B., Worcester, Mass. Pump	209,513	Oct. 29	1163	338	14	666
Prusha, W. F. (See Brigham, Hewitt, and Prusha.)						
Puffer & Sons, A. D. (See Stentermann, J. C., assignor.)						
Rahner, J. G., Portland, Oreg. Combined knife and match-safe	209,359	Oct. 29	1003	292	14	643
Randall, J. P. (See Hill, R. S., assignor.)						
Ransdell, J. S. (See Lee and Ransdell.)						
Rathbone, Sard & Co. (See Oliver, R. S., assignor.)						
Reckendorfer, J. (See Boman, C. W., assignor.)						
Reckendorfer, J. (See Walpuski, C., assignor.)						
Reed, C. W., Chagrin Falls, Ohio. Steam-boiler and furnace	209,514	Oct. 29	1164	338	14	667
Reed, T. L. (See Rounds and Reed.)						
Reynolds, A. H., Prophetstown, Ill. Toe-weight for horses	209,421	Oct. 29	1064	309	14	652
Richardson, M. C. (See Johnson, M., assignor.)						
Riethmüller, J. C., Reserve township, Allegheny county, Pa., assignor to S. N. Drake, New Orleans, La. Punch and die for making bale-ties	209,422	Oct. 29	1065	309	14	652
Rife, W. A., Valley Mills, Va. Straw-cutter	209,515	Oct. 29	1166	339	14	667
Roberts, I. C. (See Foster and Roberts.)						
Rodenheber, P., *et al.* (See Emig, A. and T., assignors.)						
Roulstone, E. A. G., Boston, Mass. Paper-fastener	209,516	Oct. 29	1167	339	14	667
Rounds, T. W., and T. L. Reed, Providence, R. I. Horse-scraper	209,360	Oct. 29	1003	292	14	643
Rossean, D., Morrisania, N. Y. Switch-signaling apparatus	209,423	Oct. 29	1065	310	14	652
Royle, J. J., Manchester, Great Britain. Expansion steam-trap	209,424	Oct. 29	1068	310	14	653
Rue, S., Philadelphia, Pa. Water-supply for injectors of steamboat-boilers	209,517	Oct. 29	1168	339	14	667
Ruhe, C. H. W., Pittsburg, Pa. Machine for flaring and crimping lamp-chimneys, &c	209,425	Oct. 29	1069	310	14	653
Russell, E. F., Jamaica, Vt., assignor, by mesne assignments, to E. W. Vaill. Folding rocking-chair. (Reissue)	8,471	Oct. 29	1198	348	14	671
Ryan, J., St. Louis, Mo. Cylinder-cock	209,518	Oct. 29	1169	339 340	14	667
Saladee, C. W., Washington, D. C. Vehicle-spring	209,426	Oct. 29	1070	310	14	653
Sandmeyer, J. H., Chicago, Ill. Watchmaker's lathe	209,361	Oct. 29	1004	292	14	643
Sands, S. T., New York, N. Y. Apparatus for lifting and carrying invalids	209,519	Oct. 29	1171	340	14	667
Sargeant, A. V. (See Sargeant, S. S. and A. V.)						
Sargeant, S. S. and A. V., Newark, N. J. Gig-saddle	209,427	Oct. 29	1071	311	14	653
Sawyer, C. K., Clinton, Mass. Wire-holder for making fence-cables	209,520	Oct. 29	1173	340	14	668
Schedler, J., Jersey City Heights, N. J. Making crystallotypes	209,521	Oct. 29	1173	.....	14	668
Schenck, W. H., Auburn, W. Va. Vehicle-axle brace	209,522	Oct. 29	1174	341	14	668
Schmidt, G., Wauwatosa, Wis. Straw-cutter	209,523	Oct. 29	1175	341	14	668
Scholl, J., Elk Grove, Cal. Grain-spout	209,362	Oct. 29	1006	292	14	643
Scribner, E. E. (See Crittenden, M. H., assignor.)						
Seneff, A. (See Roeffer and Seneff.)						
Sheppard, J. L., Charleston, S. C. Bale-band tightener	209,363	Oct. 29	1006	293	14	644
Shickle, F., assignor of two-thirds interest to T. Howard and J. W. Harrison, St. Louis, Mo. Pipe-molding machine	209,428	Oct. 29	1073	311	14	653
Smith, D. R., Dalton, Ga. Cotton and hay press	209,429	Oct. 29	1074	311	14	653
Smith & Co., J. (See Proctor, J. K., assignor.) (Reissue.)						
Smith, J. F. S., assignor to D. F. Brunner, Chicago, Ill. Cake-cutting machine	209,365	Oct. 29	1011	294	14	644
Smith, J. V. (See Connelly, A., assignor.)						
Smith, L., and R. Booth, Sherbrooke, assignors, by mesne assignments, to Neptune Fog Horn Company, (limited,) Quebec, Canada. Fog-horn	209,364	Oct. 29	1009	294	14	644
Starkweather, D. A. H., Greenville, Mich. Machine for sawing laths	209,430	Oct. 29	1075	312	14	654
Stearns, W. R., *et al.* (See Merritt, H. W., assignor.)						
Stentermann, J. C., assignor to A. D. Puffer & Sons, Boston, Mass. Air-forcing engine	208,524	Oct. 29	1175	341	14	668
Stewart, M. (See McFarland, J. D., assignor.)						
Stimmell, J., Columbus, Ohio. Wheat-cultivator	209,431	Oct. 29	1077	312	14	654
Stone, J. H., *et al.* (See Baldwin, E. A., assignor.)						
Stone, J. M., *et al.* (See Baldwin, E. A., assignor.)						
Terrill, A. W., Mexico, Mo. Excavator	209,432	Oct. 29	1078	313	14	654
Thomas, C. L., *et al.* (See Becker, L., assignor.)						
Tonkin, J. J., assignor of one-half interest to J. N. Van Lew, Richmond, Va. Pump-valve	209,525	Oct. 29	1176	342	14	668
Trask, C. H., Lynn, Mass. Car-coupling	209,433	Oct. 29	1079	313	14	654
Trumbo, E., Rutland, Ill. Cultivator	209,366	Oct. 29	1013	294	14	644
Tuttle, C. R., New Brighton, Pa. Balance and load weight	209,434	Oct. 29	1080	314	14	655
Twitchell, C. S. (See Golightly and Twitchell.) (Reissue.)						
United States Liquor Registering Company. (See Goebel, C. H., assignor.)						
Upton, W. H., Camden, N. J., assignor of one-half interest to G. M. Davis, Pontiac, Mich. Velocipede-sled	209,367	Oct. 29	1014	295	14	645
Vaill, E. W. (See Russell, E. F., assignor.) (Reissue.)						
Van Lew, J. N. (See Tonkin, J. J., assignor.)						
Van Orman, C. M., and J. M. Hagenbaugh, assignors to themselves and T. H. Cave, Athens, Mich. Grain-separator	209,435	Oct. 29	1081	314	14	655
Venable, S. W., Petersburg, Va. Machine for marking plug-tobacco	209,526	Oct. 29	1177	342	14	668
Verharen, F. T., Vinton, Iowa. Corn-cultivator	209,527	Oct. 29	1178	342	14	668
Wallace, S. (See McEachern, J. D., assignor.)						
Walpuski, C., assignor to J. Reckendorfer, New York, N. Y. Manufacture of colored crayons	209,528	Oct. 29	1180	.....	14	669
Wathen, L. I., Morganfield, Ky. Flood-gate	209,529	Oct. 29	1181	342	14	669
Watson, J. M., Sharon, Mass. Shoe-shank stiffener	209,530	Oct. 29	1181	343	14	669

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Weed, A., assignor to himself and G. and H. Barnett, Philadelphia, Pa. File-cutting machine	209,531	Oct. 29	1182	343 344	14	669
Weinman, G. W., Columbus, Ohio. Balanced valve	209,436	Oct. 29	1081	314 315	14	655
Wells, J. A., Oakland, Cal. Band-saw guide	209,368	Oct. 29	1014	295	14	645
Weston Dynamo Electric Machine Company. (See Weston, E., assignor.)						
Weston, E., assignor to Weston Dynamo Electric Machine Company, Newark, N. J. Dynamo-electric machine	209,532	Oct. 29	1184	344 345	14	669
Wolfington, W. P., Louisville, Ky. Harness-cutter's vise	209,438	Oct. 29	1084	315	14	655
Woodman, H., Saco, Me. Shuttle-motion for looms	209,439	Oct. 29	1085	315 316	14	655
Whitbeck, I., Potter, N. Y. Desk	209,533	Oct. 29	1187	345	14	670
Whitney, J. A., New York, N. Y. Refrigerator	209,534	Oct. 29	1188	345	14	670
Wiley, J. A., *et al.* (See Baldwin, E. A., assignor.)						
Wilkinson, W. K., Cusseta, Ga. Bee-hive	209,437	Oct. 29	1083	315	14	655
Williams, C. M., Bethel, Ky. Can-opener	209,535	Oct. 29	1189	346	14	670
Wilson, F. C., and Z. H. Beals, Chicago, Ill., assignor, by mesne assignments, of one-third interest to J. G. Evenden. Oil-tank	209,536	Oct. 29	1191	346	14	670
Young, J., Amsterdam, N. Y. Clothes-wringer	209,369	Oct. 29	1016	295	14	645
Young, Q. M., and A. E. Mathews, Utica, N. Y. Shoe-button	209,370	Oct. 29	1017	295	14	645
Zarley, J. H., Oakland, Ill. Corn-planter	209,440	Oct. 29	1086	316	14	656
Zinn, W. H., Boston, Mass. Watch-winding device	209,441	Oct. 29	1087	316	14	656

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 29th DAY OF OCTOBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Advertising device	J. D. McFarland	209,352	Oct. 29	997	290	14	642
Alum-cake and sulphate of alumina. Manufacture of	G. T. Lewis	209,488	Oct. 29	1133	.....	14	662
Animal-trap	J. Edge	209,388	Oct. 29	1032	300	14	647
Animal-trap	A. W. Holland and E. N. McKimm	209,397	Oct. 29	1039	302	14	648
Axle box. Vehicle	A. F. Cooper	209,381	Oct. 29	1026	298	14	646
Axle brace. Vehicle	W. H. Schenck	209,522	Oct. 29	1174	341	14	668
Balance and load weight	C. R. Tuttle	209,434	Oct. 29	1080	314	14	655
Bale-hand tightener	J. L. Sheppard	209,363	Oct. 29	1006	293	14	644
Bale-tie	T. R. Porter	209,358	Oct. 29	1002	291	14	643
Bale-ties. Punch and die for making	J. C. Riethmüller	209,422	Oct. 29	1065	309	14	652
Barrel-making machine	J. D. McEachern	209,340	Oct. 29	993	289	14	641
Basket-splints. Machine for cutting	A. I. Hogan	209,356	Oct. 29	1038	302	14	648
Bath. Hot-atmosphere and medicated	G. M. Barsaldis	209,319	Oct. 29	959	280	14	637
Bee-hive	W. K. Wilkinson	209,437	Oct. 29	1083	315	14	655
Boards from warping. Device for preventing	W. B. Allen	209,371	Oct. 29	1017	296	14	645
Boiler and furnace. Steam	C. W. Reed	209,514	Oct. 29	1164	338	14	667
Boilers. Machine for double-seaming stove	T. O'Neill	209,418	Oct. 29	1062	308	14	652
Boot	T. Poore	209,357	Oct. 29	1001	291	14	643
Boot and shoe heel	P. Miller	209,500	Oct. 29	1146	334	14	664
Boot and shoe soles. Manufacture of	A. B. Jones	209,482	Oct. 29	1129	329	14	662
Bottle-stopper	W. H. Dabbs	209,466	Oct. 29	1111	324	14	659
Bottle stopper and fastener	P. Madlener	209,490	Oct. 29	1134	331	14	663
Bracket	J. Bright	209,325	Oct. 29	966	282	14	638
Brake. Sled	G. W. Hooker	209,398	Oct. 29	1041	302	14	649
Brick-kiln	S. J. Allen	209,443	Oct. 29	1088	317	14	656
Broom-holder	J. D. Leach	209,484	Oct. 29	1130	330	14	662
Buckle-tongue cover for harness	M. R. Dowlin	209,469	Oct. 29	1114	325	14	659
Buildings. Metallic siding	M. H. Crittenden	209,329	Oct. 29	970	283	14	638
Bush-inserter	G. H. Mixer	209,353	Oct. 29	998	290	14	642
Button	C. E. Bates	209,320	Oct. 29	961	280	14	637
Button. Shoe	Q. M. Yeomgs and A. E. Mathews	209,370	Oct. 29	1017	295	14	645
Cake-cutting machine	J. F. S. Smith	209,365	Oct. 29	1011	294	14	644
Calculating-machine	W. Odhner	209,416	Oct. 29	1057	308	14	651
Can-opener	C. M. Williams	209,535	Oct. 29	1189	346	14	670
Car-coupling	W. Dunn. (Reissue)	8,467	Oct. 29	1194	347	14	670
Car-coupling	O. and J. Johnson	209,402	Oct. 29	1044	304	14	649
Car-coupling	C. H. Trask	209,433	Oct. 29	1079	313	14	654
Car door. Freight	G. M. Cooper	209,462	Oct. 29	1109	322	14	659
Carbureting-machine	A. Henning	209,479	Oct. 29	1124	328	14	661
Carbureters. Purifier and regulator for	H. W. Merritt	209,351	Oct. 29	996	289	14	642
Carpet-fastener	B. Martignoni	209,493	Oct. 29	1137	332	14	663
Carpet fastener. Stair	M. Krickl	209,408	Oct. 29	1049	305	14	650
Chair. Folding	H. S. Golightly and C. S. Twitchell. (Reissue.)	8,470	Oct. 29	1198	348	14	671
Chair. Folding rocking	E. F. Russell. (Reissue)	8,471	Oct. 29	1198	348	14	671
Check-row wires or cords. Guide for	G. D. Haworth	209,477	Oct. 29	1122	327	14	661
Chuck	H. P. Case	209,459	Oct. 29	1106	322	14	658
Churn	D. H. Benedict	209,322	Oct. 29	964	281	14	638
Churn-dasher	W. B. Allen	209,442	Oct. 29	1087	317	14	656
Churning apparatus	W. H. Foster and I. C. Roberts	209,392	Oct. 29	1035	301	14	648
Cigar-case	S. Heilbroner	209,478	Oct. 29	1123	328	14	661
Cigar-slitter	M. Dillmeier	209,387	Oct. 29	1032	300	14	647
Clock. Calendar	C. B. Bryant and A. D. Hendrick	209,453	Oct. 29	1099	320	14	657
Clock. Calendar	A. M. Carlsen	209,458	Oct. 29	1104	321	14	658
Cloth. Water-proof	F. and W. F. Brigham, S. M. Hewitt, and W. F. Prusha.	209,450	Oct. 29	1096	.....	14	657
Cock. Cylinder	J. Ryan	209,518	Oct. 29	1169	{339 340	14	667
Cooking apparatus. Steam	M. Curtin	209,464	Oct. 29	1110	323	14	659
Cooler. Milk	M. F. Potter	209,420	Oct. 29	1063	309	14	652
Cornice. Window	C. Lippe	209,346	Oct. 29	990	288	14	641
Crayons. Manufacturing colored	C. Walpuski	209,528	Oct. 29	1180	.....	14	669
Crystallotypes. Making	J. Schedler	209,521	Oct. 29	1173	.....	14	668
Cultivator	J. Jennings, Jr	209,481	Oct. 29	1129	329	14	662
Cultivator	M. Johnson	209,401	Oct. 29	1043	303	14	649
Cultivator	E. Trumbo	209,366	Oct. 29	1013	294	14	644
Cultivator. Corn	F. T. Verhaeren	209,527	Oct. 29	1178	342	14	668
Cultivator. Wheat	J. Stimmell	209,431	Oct. 29	1077	312	14	654
Cuspadore	J. H. Ferriss	209,337	Oct. 29	980	285	14	639
Desk	I. Whitbeck	209,533	Oct. 29	1187	345	14	670

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Drill. Grain	B. Delong	209,386	Oct. 29	1030	299	14	647
Electric machine. Dynamo	E. Weston	209,532	Oct. 29	1184	{344 345	14	669
Elevator	D. Jenkins	209,400	Oct. 29	1042	303	14	649
Engine. Air-forcing	J. C. Steutermann	209,524	Oct. 29	1175	341	14	668
Excavator	A. W. Terrill	209,432	Oct. 29	1078	313	14	654
Exercising-machine	W. J. Britt	209,377	Oct. 29	1023	297	14	646
Faucet and bushing	A. Connelly	209,380	Oct. 29	1025	298	14	646
Fence. Barbed-wire	M. Daley	209,467	Oct. 29	1112	324	14	659
Fence-cables. Wire-holder for making	C. K. Sawyer	209,520	Oct. 29	1173	340	14	668
Fence. Flood	A. F. Ferrell	209,537	Oct. 29	1192	346	14	670
Fertilizers. Treatment of offal for	E. P. Baugh	209,445	Oct. 29	1090	317	14	656
File-cutting machine	A. Weed	209,531	Oct. 29	1182	{343 344	14	669
Filter	H. C. Bull	209,454	Oct. 29	1100	320	14	657
Fire-arm	A. S. Ballard	209,444	Oct. 29	1089	317	14	656
Fire-kindler. Automatic	J. B. Curtis	209,383	Oct. 29	1028	299	14	647
Flooring-jack	D. A. Ferris	209,390	Oct. 29	1034	300	14	648
Fog-horn	L. Smith and R. Booth	209,364	Oct. 29	1009	294	14	644
Foot-powers. Friction-clutch for	A. Hoeffer and A. Seneff	209,395	Oct. 29	1038	302	14	648
Fork. Band-cutting	J. Lockhart and G. W. Albin	209,487	Oct. 29	1132	331	14	662
Gas. Apparatus for carbureting illuminating	J. F. Otten and J. Kluber	209,505	Oct. 29	1152	335	14	665
Gas-pressure regulator	M. W. Kidder	209,407	Oct. 29	1048	305	14	650
Gas. Purifying	H. W. Merritt	209,350	Oct. 29	995	289	14	642
Gate. Flood	L. I. Wathen	209,529	Oct. 29	1181	342	14	669
Grain-separator	C. M. Van Orman and J. M. Hagenbaugh.	209,435	Oct. 29	1081	314	14	655
Grain-spout	J. Scholl	209,362	Oct. 29	1006	292	14	643
Grinding and finishing cylindrical objects	T. C. Harris	209,476	Oct. 29	1121	327	14	661
Hair-tonic	A. and T. Emig	209,335	Oct. 29	977	.....	14	639
Harness-pad	A. L. Johns	209,403	Oct. 29	1045	304	14	649
Harrow	G. H. Perkins	209,509	Oct. 29	1158	337	14	666
Harvester guard-finger	A. J. Curtis	209,465	Oct. 29	1111	323	14	659
Harvester-rake	S. C. Cobb	209,327	Oct. 29	968	282	14	638
Harvesters. Grain-lifter for	G. A. Guttermann	209,473	Oct. 29	1117	326	14	660
Hay-loader	J. B. Martin and W. T. Carothers	209,410	Oct. 29	1051	306	14	650
Head-lights. Signal for locomotive	W. Kelley	209,405	Oct. 29	1046	304	14	650
Heating and ventilating houses	B. R. Hawley	209,342	Oct. 29	984	{286 287	14	640
Heating apparatus	A. Ford	209,471	Oct. 29	1115	325	14	660
Hoisting-machine	J. Fensom	209,336	Oct. 29	977	{284 285	14	639
Horse-scraper	T. W. Rounds and T. L. Reed	209,360	Oct. 29	1003	292	14	643
Horse toe-weight	A. H. Reynolds	209,421	Oct. 29	1064	309	14	652
Hydrant	L. P. Clark	209,460	Oct. 29	1107	322	14	658
Ice-breaker	E. J. Creasey	209,463	Oct. 29	1110	323	14	659
Injector for steamboat-boilers. Water-supply for	S. Rue	209,517	Oct. 29	1168	339	14	667
Iron. Manufacturing and piling	E. B. Edwards	209,470	Oct. 29	1114	325	14	660
Ironing-machine	J. Mason	209,494	Oct. 29	1138	332	14	663
Knife and match-safe. Combined	J. G. Rahner	209,359	Oct. 29	1003	293	14	643
Knife. Pocket pencil	J. W. McGill	209,411	Oct. 29	1052	306	14	651
Lamp-chimneys, &c. Machine for flaring and crimping	C. H. W. Ruhe	209,425	Oct. 29	1069	310	14	653
Latch. Gate	F. J. Lee and J. S. Ramsdell	209,485	Oct. 29	1130	330	14	662
Lath-sawing machine	D. A. H. Starkweather	209,430	Oct. 29	1075	312	14	654
Lathe. Watchmaker's	J. H. Sandmeyer	209,361	Oct. 29	1004	292	14	643
Lifting and carrying invalids. Apparatus for	S. T. Sands	209,519	Oct. 29	1171	340	14	667
Lifting-jack	J. O. Joyce	209,344	Oct. 29	988	287	14	640
Liquid measure and register	C. H. Goebel	209,338	Oct. 29	980	285	14	640
Loom-shuttle motion	H. Woodman	209,439	Oct. 29	1085	{315 316	14	655
Loom-temple	R. P. Pearson	209,419	Oct. 29	1063	309	14	652
Medical compound	L. Daniel	209,331	Oct. 29	973	.....	14	639
Millstone-feeder	G. Pfeiffer	209,356	Oct. 29	1000	291	14	643
Millstones. Furrow-gage staff for dressing	H. D. Altfather	209,373	Oct. 29	1020	296	14	645
Motion. Device for converting reciprocating into rotary	W. T. Burrows	209,456	Oct. 29	1102	{320 321	14	658
Musical instrument. Mechanical	N. R. Marshman and M. J. Matthews	209,492	Oct. 29	1136	332	14	663
Organ. Reed	M. J. Matthews	209,495	Oct. 29	1141	333	14	663
Organ bellows. Reed	M. J. Matthews	209,496	Oct. 29	1143	333	14	664
Paper bag	J. Arkell	209,315	Oct. 29	953	279	14	637
Paper bag	J. Arkell	209,316	Oct. 29	955	279	14	637
Paper bag	J. Arkell	209,538	Oct. 29	1193	347	14	670
Paper-fastener	E. A. G. Roulstone	209,516	Oct. 29	1167	339	14	667
Paper-perforating machine	E. W. Blackhall	209,448	Oct. 29	1093	318	14	656
Paper. Waxing	S. Hammerschlag	209,393	Oct. 29	1036	301	14	648
Pencil-holder	C. W. Boman	209,449	Oct. 29	1095	318	14	657
Piano-stool	J. W. Mellonough	209,498	Oct. 29	1145	333	14	664
Pin. Hair	E. Kelly	209,483	Oct. 29	1130	330	14	662
Pin. Safety	V. H. Blackinton	209,324	Oct. 29	966	281	14	638
Pin. Self-locking clothes	S. B. Lucas	209,409	Oct. 29	1050	305	14	650
Pipe-molding machine	F. Shickle	209,428	Oct. 29	1073	311	14	653
Pitcher. Ice	H. B. Beach	209,446	Oct. 29	1091	318	14	656
Planter. Corn	J. H. Zarley	209,440	Oct. 29	1086	316	14	656
Planter. Cotton-seed	R. M. Pattillo	209,508	Oct. 29	1156	336	14	666
Plow	R. B. Mitchell	209,412	Oct. 29	1053	306	14	651
Plow-point	P. Kessler	209,406	Oct. 29	1047	305	14	650
Plow. Sulky	W. D. Arnett	209,374	Oct. 29	1020	296	14	645
Plow. Sulky	C. G. Price and J. M. Meritt	209,512	Oct. 29	1161	338	14	668
Plows. Harrow attachment for	R. McCoy	209,348	Oct. 29	992	288	14	641
Press. Cotton and hay	D. R. Smith	209,429	Oct. 29	1074	311	14	653
Printer's galley	M. McCabe	209,407	Oct. 29	1144	333	14	664
Pump	S. Peterson	209,510	Oct. 29	1160	337	14	666
Pump	A. B. Prouty	209,513	Oct. 29	1163	338	14	666
Pump. Double-acting force	G. H. Patch	209,507	Oct. 29	1155	336	14	665
Pump-valve	J. J. Tonkin	209,525	Oct. 29	1176	342	14	668
Pumping apparatus for raising water	F. A. Bishop	209,321	Oct. 29	965	281	14	638
Rag-pickers, &c. Lag for	J. H. Belser and S. G. B. Beals	209,376	Oct. 29	1022	297	14	646

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Railway system	P. Hevner	209,480	Oct. 29	1126	328, 329	14	662
Reflector	C. Cothren	209,328	Oct. 29	969	282	14	638
Refrigerator	J. A. Whitney	209,534	Oct. 29	1188	345	14	670
Robe. Lined fur	G. H. Dimond and S. D. Castle	209,333	Oct. 29	975	284	14	639
Rosin. Package for bleaching and packing	A. D. Cutts	209,384	Oct. 29	1029	299	14	647
Ruling machine. Paper	J. Dale	209,330	Oct. 29	971	283	14	638
Saddle. Gig	S. S. and A. V. Sargeant	209,427	Oct. 29	1071	311	14	653
Saddle. Riding	J. L. Nothaf	209,415	Oct. 29	1056	307	14	651
Sail and rigging for vessels	J. W. Norcross	209,414	Oct. 29	1055	307	14	651
Saw-filing machine	T. N. Jordan	209,404	Oct. 29	1046	304	14	649
Saw-gage	C. A. Hurlburt	209,399	Oct. 29	1041	303	14	649
Saw guide. Band	J. A. Wells	209,368	Oct. 29	1014	295	14	645
Scraper	G. Eiteman	209,389	Oct. 29	1033	300	14	648
Seams. Machine for pressing	J. G. Griffith	209,339	Oct. 29	982	285, 286	14	640
Shingle-cutting machine	W. Goldie	209,472	Oct. 29	1116	326	14	660
Ships' bottoms, &c. Apparatus for cleansing	J. Jones	209,343	Oct. 29	986	287	14	640
Shoe-shank stiffener	J. M. Watson	209,530	Oct. 29	1181	343	14	669
Shoulder-brace and suspenders. Combined	F. M. Beckford	209,321	Oct. 29	963	281	14	637
Sleeve-elevator	H. Moses	209,413	Oct. 29	1054	307	14	651
Soldering-iron	J. A. Bostwick. (Reissue)	8,466	Oct. 29	1194	347	14	670
Spring. Vehicle	C. W. Saladee	209,426	Oct. 29	1070	310	14	653
Sprinkler	W. B. Allen	209,372	Oct. 29	1018	296	14	645
Spinning-machines. Spindle-bearing for	W. C. Macomber	209,489	Oct. 29	1134	331	14	662
Spinning-mule	E. A. Baldwin	209,317	Oct. 29	956	279	14	637
Spinning yarn on spinning-mules	E. A. Baldwin	209,318	Oct. 29	958	280	14	637
Steam-trap. Expansion	J. J. Royle	209,424	Oct. 29	1068	310	14	653
Stockings and other garments. Supporter for	B. J. Greely. (Reissue)	8,472	Oct. 29	1199	348	14	671
Stove. Cooking	R. S. Oliver	209,355	Oct. 29	999	290, 291	14	642
Stove. Heating	J. E. Gridley. (Reissue)	8,469	Oct. 29	1197	348	14	671
Stove-oven	S. Darling	209,332	Oct. 29	973	283	14	639
Stove-pipe elbows. Machine for cutting blanks for	M. Brown	209,452	Oct. 29	1098	319	14	657
Strainer. Pulp	G. Campbell and W. Lidgett	209,326	Oct. 29	967	282	14	638
Straw-cutter	W. A. Rife	209,515	Oct. 29	1166	335	14	667
Straw-cutter	G. Schmidt	209,523	Oct. 29	1175	341	14	668
Sweeping-machine	I. A. Chomel	209,379	Oct. 29	1024	298	14	646
Switch-signaling apparatus	D. Rousseau	209,423	Oct. 29	1065	310	14	652
Table. Heating	J. R. Morris	209,501	Oct. 29	1147	334	14	664
Tablets. Case for writing	W. E. O'Bryon	209,417	Oct. 29	1062	308	14	652
Tank. Oil	F. C. Wilson and Z. H. Boots	209,536	Oct. 29	1191	346	14	670
Teaching involution and evolution. Device for	J. R. Davis	209,385	Oct. 29	1029	299	14	647
Thill-coupling	J. J. Mann	209,491	Oct. 29	1135	331	14	663
Thill-couplings. Anti-rattler for	G. H. Collins	209,461	Oct. 29	1108	322	14	659
Tile-machine	I. C. Nichols	209,354	Oct. 29	908	290	14	642
Tobacco. Machine for marking plug	S. W. Venable	209,526	Oct. 29	1177	342	14	668
Toy. Automatic	A. J. Davis	209,468	Oct. 29	1113	324, 325	14	659
Trough. Self-feeding water	A. M. Brown	209,378	Oct. 29	1024	297	14	646
Valve. Balanced	G. W. Weinman	209,436	Oct. 29	1081	314, 315	14	655
Valve-gear for engines	R. Hardie, J. James, and J. G. Cooper	209,474	Oct. 29	1118	326	14	660
Valve. Globe	H. R. Corkhill	209,382	Oct. 29	1027	298	14	647
Valve. Self-closing	C. F. Murdock	209,503	Oct. 29	1148	335	14	665
Velocipede-sled	W. H. Upton	209,367	Oct. 29	1014	295	14	645
Vent spike and valve for beer-barrels	P. Nussbaumer	209,504	Oct. 29	1150	335	14	665
Ventilating water-closets	W. Pickhardt	209,511	Oct. 29	1160	337	14	666
Ventilation. System of	J. Burt	209,455	Oct. 29	1101	320	14	658
Ventilator	T. Owens	209,506	Oct. 29	1153	335, 336	14	665
Vise. Harness-cutter's	W. P. Wolfington	209,438	Oct. 29	1084	315	14	655
Wagon. Dumping	J. W. Harrison	209,341	Oct. 29	984	286	14	640
Wall-paper trimmer	R. S. Hill	209,394	Oct. 29	1037	301	14	648
Washing-machine	L. Becker	209,447	Oct. 29	1092	318	14	656
Washing-machine	D. W. Miller	209,499	Oct. 29	1146	334	14	664
Washing-machine	W. H. Moss and O. B. Day	209,502	Oct. 29	1148	334	14	664
Watch-barrels. Safety-click for	A. Call	209,457	Oct. 29	1104	321	14	658
Watch-key. Adjustable	W. Haines	209,340	Oct. 29	983	286	14	640
Watch-winding device	W. H. Zinn	209,441	Oct. 29	1087	316	14	656
Watches. Reversible center-pinion for	C. O. Balliett	209,375	Oct. 29	1021	297	14	646
Water-closet valve	J. P. Kenyon	209,345	Oct. 29	988	287	14	641
Wave-power	W. Filmer	209,391	Oct. 29	1035	301	14	648
Well boring and drilling apparatus	O. Martin	209,347	Oct. 29	990	288	14	641
Wells. Tool for extracting obstructions from deep	J. H. Luther	209,486	Oct. 29	1131	330	14	662
Wheel for vehicles. Endless-track	A. Brosius	209,451	Oct. 29	1097	319	14	657
Wheels and pulleys. Mode and mechanism for testing the balance of	T. C. Harris	209,475	Oct. 29	1119	327	14	660
Windmill	L. S. Dunlap	209,334	Oct. 29	976	284	14	639
Wool-washing machine	J. K. Proctor. (Reissue)	8,473	Oct. 29	1200	.....	14	672
Wrench. Bung	J. Lacey and G. B. Cornell. (Reissue)	8,468	Oct. 29	1196	347	14	671
Wringer. Clothes	J. Young	209,369	Oct. 29	1016	295	14	645
Yarn. Machine for drying and beaming	W. Lancaster and J. Bullough. (Reissue.)	8,474	Oct. 29	1201	349	14	672

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DECISIONS OF THE COURTS.

Circuit Court of the United States—District of Maine.

PATRICK KELLEHER *et al vs.* JOSEPH O. DARLING.

[*In Equity.—No.* 75.]

The process of smooth-crimping the instep of a moccasin-pac, (Claim 4, Reissue Letters Patent No. 6,098, granted Kelleher and Randlett October 27, 1874,) by manipulating the tip and front pieces of the pac in the act of sewing them together with a flat seam in such manner that the dissimilar edges of the two pieces shall coincide beneath the needle, is an invention not contemplated in the original patent, (No. 122,030, December 19, 1871,) and the reissue is so far invalid.

That an expert in attempting to unite the parts of the pac by lap-seams, according to the invention set forth, might discover the means or manipulation necessary to produce the smooth crimp will not justify a claim therefor, the original patent failing to disclose any such invention.

A suggestion in the specification, or an indication in the drawing or model of the original patent, may oftentimes justify an enlarged description of the invention upon reissue; but if the new description embody a distinct invention, enough should be found in the original specification to apprise others that such additional feature is included.

The process of making and the article made are, in legal contemplation, distinct inventions. Both may be included in a single patent, but none the less the need of a full, clear, and exact description, according to the statute, is indispensable in each case.

When properly pleaded and proven, the statutory defense "that the invention had been patented or described in some printed publication prior to the supposed invention or discovery" by the patentee to the suit, is sustained, if the conflicting patent, whether foreign or domestic, was duly issued or the complete description was published prior to the date of the patent in contest.

Parties defending under such statutory provision are not at liberty to set up any date of invention other than that of the patent or publication relied upon. The effect of these as evidence can only be what is given by the act of Congress.

On the contrary, if the patent in suit be accompanied with the application papers, or if parol proof be submitted, a date of invention much earlier than that arising by presumption from the patent itself may be fixed.

Where the thing patented is an entirety, the statutory defenses must be addressed to the invention itself, not merely to some one or more of the separate features which it comprises.

But this does not prevent each patent in suit, or each invention contained therein as set forth in the distinct claims, from being made the subject of separate pleas in defense, if the party so elects.

Experimental models or incomplete devices, not capable of use as operative machines, cannot impair the rights of the patentee, but if the invention has been made and practiced prior to himself, however restricted such knowledge and use may be, it is fatal to the patent.

Mere delay in applying for patent after invention made works no forfeiture of right.

If, however, others practice the invention in this country, whether with or without the knowledge or consent of the patentee, more than two years prior to the filing of his application, the patent is invalid under the existing law.

A plea in defense, that "the invention named was in public use and on sale more than two years prior to the supposed invention of the complainants," overruled as not within any one of those allowed by statute.

There being two patents in suit, Reissue 6,098 and 6,099, for boot and shoe pacs, both of which had been introduced by the complainants, thus affording *prima facie* evidence of first and original inventorship, and the respondents having failed to set up separate defenses for the shoe-pac patent as distinct from those for the boot-pac, judgment awarded for complainant without regard to any plea alleged other than that of non-infringement.

[*Jas. C. Rundlett* and *W. H. Clifford*, for complainants; *Wm. F. Seavey* and *Chas. P. Stetson*, for respondent.]

OPINION OF THE COURT.—*September* 21, 1878.

CLIFFORD, *J.*:

Persons sued as infringers in an action at law may plead the general issue, and having given the required notice in writing thirty days before, may prove on trial the special matters set forth in the act of Congress, of which the following are material to be noticed in the present case:

1. That the invention had been patented or described in some printed publication prior to the supposed invention or discovery.

2. That the patentee was not the original and first inventor or discoverer of any material or substantial part of the thing patented.

3. That the invention had been in public use or on

sale in this country for more than two years before his application for a patent, or that it had been abandoned to the public. (Rev. Stat., § 4920.)

Notices of the kind must be in writing, and must be given thirty days before the trial, and if the defense is prior invention, knowledge, or use of the thing patented, the requirement is, that it shall state the names of the patentees and the dates of their patents, and when granted, and the names and residences of the persons alleged to have invented, or to have had the prior knowledge of the thing patented, and where and by whom it had been used. Like defenses may be pleaded in equity for relief against infringement, and proofs of the same may be given upon like notice in the answer. Proof to sustain the first defense is sufficient if the patent introduced for the purpose, whether foreign or domestic, was duly issued, or the complete description of the invention was published in some printed publication prior to the supposed invention or discovery, and the patent or printed publication will be held to be prior if it is of prior date to the patent in suit, unless the patent in suit is accompanied by the application for the same, or unless the plaintiff or complainant, as the case may be, introduces parol proof to show that the invention was actually made prior to the date of the patent, or prior to the time the application was filed. Neither the defendant or respondent can be permitted to prove that the invention described in the alleged prior patent, or the invention described in the printed publication, was made prior to the date of such patent or printed publication, for the reason that the patent or publication can only have the effect as evidence that is given to them by the act of Congress. Unlike that the presumption in respect to the invention described in the patent in suit is, if it is accompanied by the application, that it was made at the time the application was filed, and the plaintiff or complainant may, if he can, introduce evidence to show that it was made and reduced to practice at a much earlier date.

Two reissued patents are the subject of the present suit, both of which are of the same date, and were obtained upon the surrender of an original patent previously issued to the same patentees for certain alleged new and useful improvements in the manufacture of moccasin boots and shoes, or boot and shoe pacs, as particularly described in the original specification. Power of the Commissioner to cause a new patent for the same invention to issue in case the original is surrendered is not questioned, nor is it denied that he, in his discretion, may cause several patents to be issued for distinct and separate parts of the thing patented upon demand of the applicant, and upon payment of the required fee for each reissue. (Rev. Stat., §4916, p. 959.) Separate examination will be given to each patent though certain parts of the specification in each are the same, having been borrowed from the original. As described in the original and in each of the reissues, the invention consists in so cutting the leather or material of which the pacs are manufactured as to be able to do all the sewing of the upper parts by machinery instead of by hand, the latter being the method necessarily employed at present, and it also enables the operator to improve the shape, and to so change the position of some of the seams as to add very much to the durability of the pacs. Detailed description is then given in the specification of the reissued patent for the moccasin-boots or boot-pac of the several pieces of which the pac is composed, by special reference to certain figures in the reissued drawings, and in the exact words and figures contained in the original drawings. Appended to that is the description of the manner in which the leg of the boot-pac and the quarter and vamp are cut, the same being given in the same words as in the surrendered patent, from which it appears that the leg of the boot-pac is made in two pieces, that the quarter is formed in one piece crossing and passing forward of the seam in the leg and joining directly on to the vamp, and that the vamp is also stitched to the front part of the leg, all the seams being flat seams, which may be closed by sewing-machines. Every step in the process of cutting and stitching the parts together having been described, the patentee proceeds to state that the different parts are designed and arranged expressly with a view to enable all the seams to be closed by machinery, and to dispense with hand-work altogether in the sewing, even to sewing on the soles, and that for that purpose all the patterns have been simplified so as to admit of lap-seams; and he expresses the belief that there never was a pac made before in which lap-seams were exclusively used, nor in which all the seams, even to sewing on the soles, could be accomplished by machinery, which as he states reduces the cost of manufacture very materially, and allows the use of heavy material for soles, and lighter and less expensive material for uppers. Both of the things patented are called pacs from the manner in which they are used. They are made of a peculiar kind of leather called "moccasin" leather, and are cut large to admit of packing between the inside of the upper leather and the foot of the wearer. Boots and shoes are usually made to fit the foot, but the moccasin-pac, whether boot or shoe, is made much larger than the foot of the wearer, in order that it may contain the desired amount of packing for protection to the foot in extreme cold weather.

I. Coming first to the reissue 6,098, which is the moccasin-boot, and which contains four claims to the effect following:

1. For a moccasin boot or shoe pac formed of five parts, cut as shown and described, and joined together by flat lapped seams.
2. For a moccasin boot or pac with the leg formed of two flat pieces cut as shown and described, and united by two lapped seams, one on each side of the leg, as shown and described.
3. For the quarter of a moccasin-pac cut in the form shown and described and formed into one piece, for the use as specified.
4. For the described process of smooth crimping the instep of a pac or moccasin, consisting in cutting the tip and front with edges of different lengths and of dissimilar outlines, and bending, stretching, and compacting the edges, in the act of sewing with a flat seam, so as to cause them to coincide under the needle, the joining of the differential edges displacing and forcing out the leather of the two parts in such a manner as to form the crimp.

Service was made, and the respondent appeared and filed an answer in respect to the first patent, setting up in substance and effect the following defenses:

First. That the reissued patent, 6098, embraces and includes, both in the specification and claims, new matter not described, suggested, or indicated in the specification of the original patent, nor shown in the drawings or Patent Office model.

Second. That the invention described in the specification of the patent, and claimed in the second claim, was patented to the persons named in the answer prior to the supposed invention by the complainants.

Third. That the patentees are not the original and first inventors of such part of the invention as is described in the specification, and claimed in the second claim of the patent, or any material or substantial part of that which is therein described.

Fourth. That so much of said invention as is so described and claimed in the second claim of the patent was in public use and on sale more than two years prior to the supposed invention by the complainants.

Fifth. That the patentees were not the original and first inventors of any material or substantial part of the invention claimed in the fourth claim of the patent, but that the same was known to and in public use by the persons named in the answer prior to the supposed invention by the patentees.

Sixth. That he has never infringed the first three claims of the patent.

1. Support to the first defense, which is that the feature of the invention claimed in the fourth claim was not described nor indicated or suggested in the original specification, nor shown in the drawings or Patent Office model, finds support both in the specification and fourth claim of the reissued patent under consideration. Extended argument to sustain that defense is quite unnecessary, as it is scarcely possible to imagine what could be added to the description of the process of producing the crimp in the moccasin-boot, to render it more specific and intelligible than it now is, as incorporated into the specification of the reissued patent, nor is any argument necessary to show that every word of the description is new matter, not found in the specification of the original patent, as that is apparent from a comparison of the two instruments. Corresponding addition is also made to the drawings, showing conclusively that the solicitor who applied for the new patent did not deem the drawings of the old patent sufficient to illustrate the new feature added to the invention in the descriptive portion of the reissued specification.

Suggestions of an ingenious character are made in behalf of the complainants to show that an expert, in attempting to unite the described parts of the patented product by the lap-seam, might discover the means of bending, stretching, and compacting the edges of the parts in the act of sewing, so as to cause them to coincide under the needle, as stated in the amended specification, and that by the joining of the differential edges the leather of the two parts would be displaced and forced out in such a manner as to form the crimp shown in the new figure of the drawings; but the patent law, in terms, requires more than that of the patentee before he is entitled to a patent. Before any inventor shall receive a patent for his invention he shall make application therefor in writing, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding, and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains to make, construct, compound, and use the same. (Rev. Stat., p. 954, § 4888.) Apply that rule to the original patent, and it is clear that if the fourth claim of the reissued patent had been inserted in the original patent it could not have been sustained for the want of a compliance with that important requirement of the patent act. Cases arise, undoubtedly, where a suggestion in the specification, or an indication in the drawings or Patent Office model of the original patent, may be sufficient to justify an alteration or enlargement of the description of the invention in the specification of a reissued patent, as where the change consists merely in the substitution of a different material from that of which a device is composed, or in the modification in the form of a device, or in the proportions of the ingredients; but where the alteration consists of a distinct invention, there ought to be found in the original specification enough to fairly apprise other inventors and the public that the invention includes and embodies such additional feature. (*Seymour* vs. *Osborne*, 11 Wall., 544.) Interpolations of new features, ingredients, or devices which were neither described, suggested, nor indicated in the original patent or Patent Office model, are not allowed in the reissued patent, as it is clear that the Commissioner has no jurisdiction to grant a reissue unless it be for the same invention as that included and embodied in the original patent, nor can any new matter be properly introduced into the specification, nor the Patent Office model or drawings in a machine patent be amended, except each by the other. (Rev. Stat., p. 959, § 4916.)

Beyond doubt the invention described in the original patent, though composed of the several parts therein described, is, in legal contemplation, a new and useful manufacture, and it is equally clear that the process of making an article of manufacture is a different invention from that of the product. Both may be included in the same patent, but the required description is as essential and indispensable in the one case as in the other. Viewed in the light of these suggestions, the court is of the opinion that the fourth claim of the reissued patent is void. Patents, in certain cases, may be good in part and void in part, the rule being that whenever a patentee, through inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, has claimed more than that of which he was the original and first inventor or discoverer, his patent shall be valid for all that part which is truly and justly his own, provided the same is a material or substantial part of the thing patented. (Rev. Stat., § 4917; *Goodyear* vs. *Rubber Co.*, 2 Cliff., 374.)

2. Special consideration must also be given to the second and third defenses set up in the answer, as the attempt of the respondent in those two defenses is to show that the matter claimed in the second claim of the patent in suit was patented to others prior to the supposed invention by the complainants, and that the patentees are not the original and first inventors of any material or substantial part of what is claimed in that claim. Such defenses, if well pleaded to the invention described in the patent, would be good defenses, as the act of Congress provides that the defendant in a suit at law may plead the general issue, and, having complied with the requirement as to notice, may give such special matters in evidence, and the provision is that if any one or more of the special matters alleged shall be found for the defendant, judgment shall be rendered for him with costs. Like defenses may be pleaded in equity under like conditions, the allegation in the answer denying infringement supplying the place of the general issue in an action at law. Under that pleading and notice the respondent in an equity suit may prove that the invention described in the patent in suit had been patented or described in some printed publication prior to the supposed invention by the patentee. Doc-

umentary evidence is required to sustain that defense, but, as before remarked, the evidence is sufficient if the patent introduced for the purpose, whether foreign or domestic, was duly issued prior to the alleged invention described in the complainant's patent, or if the complete description of the invention was previously published in some printed publication. Evidence of the kind must be held to be prior in point of time in all cases where the patent or printed publication precedes the date of the patent in suit, unless the patent in suit is accompanied by the application for the same, or unless the complainant introduces parol proof to show that his invention was made prior to the date of the patent or prior to the time the application was filed. Proof of the kind is not admissible on the part of the respondent to show that the invention described in the supposed prior patent or printed publication was made prior to their respective dates, for the reason already stated. Under the second and third defenses, as pleaded, the rule is that the patent in suit affords the complainants a *prima facie* presumption that the patentees are the original and first inventors of that which is therein described as their improvement. Competent proof is requisite to overcome that presumption, as, for example, that the thing patented had been previously patented to another, or that it had been previously described in some printed publication, or that the patentees are not the original and first inventors of the patented improvement, or of any material or substantial part of the same. Where the thing patented is an entirety, consisting of a machine or product, the respondent cannot escape the charge of infringement by alleging or proving that a part of the thing patented is found in one prior patent or machine and another part in another prior patent or machine, and from the two or any greater number of such exhibits draw the conclusion that the patentee is not the original and first inventor of the improvement in question. Instead of that, his plea, which in the action at law is the general issue, is addressed to the entire charge of infringement, which casts the burden to prove that charge upon the plaintiff or upon the complainant in the suit in equity. Infringement is the charge made by the party seeking redress, and it is competent beyond all doubt for the defending party to show that he does not infringe at all, or that his machine, product, or manufacture infringes only a part of the claims of the patent in suit. Authority for that proposition is found in the very nature of the issue between the parties, but the only authority for attacking the originality and validity of the patent is that given by the patent act. Defenses for that purpose must be addressed to the thing patented, and not merely to one of the separate features which it comprises. More than one patent may be included in one suit, and more than one invention may be secured in the same patent, in which cases the several defenses authorized by the patent act may be pleaded to each patent in suit and to each invention included in the charge of infringement. (*Gill* vs. *Wells*, 22 Wall., 24.) Combination patents may be mentioned as examples where more than one invention may be secured in a single patent, and in such a case the patentee may give the description of each combination in one specification, and in that event he can secure the full benefit to each of the inventions by separate claims, referring back to the proper description in the specification. Cases of the kind often arise, and in such a case the party charged with infringement may plead and prove, if he can, the statute defenses to each invention, just as if the two inventions had been embodied in separate patents. Ample support to that proposition is found in the language of the patent act and in the practice of the courts, but where the patent describes an entire invention as a machine, manufacture, or product, the defenses specially authorized by the act of Congress must be addressed to the thing patented, and the evidence introduced to sustain the plea or defense must show that the thing patented had been previously patented to another, or that it had been previously described in some printed publication, or that the patentee was not the original and first inventor of the improvement, to entitle the defendant or respondent to a judgment or decree. Parol proof is sufficient for that purpose, if it shows that the thing patented was actually made and reduced to practice prior to the patented invention. Models made and used merely as experiments, and which were not capable of use as operative machines, cannot affect the right of a patentee holding a patent issued in due form. (*Seymour* vs. *Osborne*, 11 Wall., 539.) Incomplete attempts to construct a machine amount to nothing as evidence to support such a defense, but if the evidence shows that it was complete and operative, even for a temporary use, and that its existence and use were within the knowledge of a few persons, it may be sufficient to establish the proposition that the thing patented was made and used by another prior to the patented invention. (*Coffin* vs. *Ogden*, 18 Wall., 120.)

3. Inventors may, if they can, keep their inventions secret, and if they do for any length of time they do not forfeit their right to apply for a patent unless another in the meantime has made the invention and secured by patent the exclusive right to make, use, and vend the patented product. Within that rule, and subject to that condition, inventors may delay to apply for a patent, but the patent act provides that the defendant or respondent in a suit for infringement may plead the general issue, and, having given the required notice, may prove in defense that the patented invention had been in public use or on sale more than two years before the alleged inventor filed his application for a patent, and the provision in that event also is that if the issue be found for the party setting up that defense the judgment or decree shall be in his favor. Different phraseology was employed in the prior patent act, which made it necessary for the party setting up such a defense to prove that the invention had been in public use or on sale with the consent and allowance of the patentee before his application for a patent. Decided cases adjudicated under that act and certain earlier acts show that a very limited public use or sale of the invention with the consent and allowance of the patentee, if prior to his application for a patent, was sufficient to defeat the right of the inventor to the protection of the patent act. (*Pennock* vs. *Dealogue*, 2 Pet., 19; *Whitney* vs. *Emmet*, Bald., 310; *Ryan* vs. *Goodwin*, 3 Sum., 518; *Wyeth* vs. *Stone*, 1 Story, 281.) Congress, however, interfered, and provided that no patent shall be held to be invalid by means of such purchase, sale, or use prior to the application for a patent as aforesaid, except on proof of abandonment of such invention to the public, or that such purchase, sale, or prior use has been for more than two years prior to such application. (5 Stat. at Large, 354.) Public use or sale, even under that provision, which was in the nature of an amendment to the earlier patent act, in order to defeat the right of the inventor to a patent must have been for the period mentioned with his consent and allowance. (*Pierson* vs. *Eagle Screw Co.*, 3 Story, 305.) Unlike that, the present patent act provides that the defending party, having given the requisite notice, may prove that the invention had been in public use or on sale, in this country, for more than two years before the inventor applied for a patent, and that if that special matter is found in his favor he is entitled to the judgment or decree with costs. Construed in view of these suggestions, the better opinion is that the provision in the present patent act is in the nature of a statute of limitations, and that it is sufficient to defeat the right of the applicant to a patent if it be shown that his invention had been in public use or on sale more than two years prior to his application, without proving that it was with his consent and allowance. Due proof of prior invention and practical use by another is sufficient to defeat the right of the applicant for a patent, because it shows that he is not the original and first inventor of the alleged improvement, even if the prior invention was only made and used for a day, if it clearly appears that it was operative, and that it was actually reduced to practice, the rule being one of actual priority as defined by the rules of law and evidence. None of these principles are controverted by the parties in this case, but the defense of prior public use or sale stands upon a different footing, and depends upon widely different proofs. As before remarked, the inventor may, if he can, keep his invention secret, and, if he does, no length of delay will debar his right to apply for a patent; but if he fails to keep it secret, and it goes into public use or is on sale for more than two years before he applies for a patent, he forfeits all right to the same, and the person sued as an infringer may, if he gives the proper notice, plead that special matter in defense, and, if he proves it, the judgment or decree must be in his favor. In the former case the gist of the defense is that the invention was first made and reduced to practice by another, but in the latter the gist of the defense is that the invention, though made by the applicant for the patent, went into public use or was on sale more than two years before the inventor filed his application for a patent. Nothing of the kind is pleaded in the answer, nor is there any proof in the record to support the proposition, if it had been well pleaded. Reliance for that purpose in pleading is placed upon that feature of the answer in which it is alleged that so much of the invention as is claimed in the second claim of the patent was in public use or on sale more than two years prior to the supposed invention by the complainants. Sufficient has already been remarked to show that such a defense is unwarranted by the act of Congress, which authorizes the defendant or respondent to plead the general issue to the declaration or bill of complaint, and, having complied with the condition as to notice, to give in evidence the special matters enumerated in the same section of the patent act.

Patentees seeking redress for the infringement of their patent must, undoubtedly, allege and prove that they are the original and first inventors of the improvement, and that the same has been infringed by the party against whom the suit is brought. In the first place the burden to establish both of those allegations is upon the party instituting the suit, but the law is well settled that the patent in suit, if introduced in evidence, affords the moving party a *prima facie* presumption that the first allegation is true, and has the effect to shift the burden of proving the defense upon the defending party. (*Blanchard* vs. *Putnam*, 8 Wall., 42; *Seymour* vs. *Osborne*, 11 id., 538.) Where the requisite statute defenses are well pleaded, the defending party may give evidence to overcome that presumption, but if he does not plead and prove those defenses, or some one of them, the *prima facie* presumption is sufficient to entitle the moving party to a judgment or decree. Suppose the rule were otherwise, and that evidence may be admitted, though the defense is not pleaded to show that the invention had been in public use or on sale more than two years before the complainants filed their application for a patent, still the concession would not benefit the respondent in the case before the court, as the record contains no evidence whatever that the invention made by the complainants was ever in public use or on sale even for a day prior to their application for a patent, nor does the respondent set up any such theory, even in argument. His proposition, in contemplation of law, is altogether different. What he contends is, that the invention was made by others prior to the supposed invention by the complainants, and that the prior invention made by others was in public use or on sale more than two years before the complainants applied for their patent. Knowledge of the complainants' invention was never acquired by the public before they filed their application, nor is there the slightest proof in the record that the invention which they made ever went into public use, or was ever on sale even in a single instance before their application for a patent was filed. Even meritorious inventors must keep their inventions secret unless they apply for a patent within two years, and if they do not, and their invention goes into public use, or is on sale in this country for more than that period before they file their application, the invention is forfeited to the public, whether it was in such public use or on sale with or without their consent and allowance, and plea and proof of such special matter is a good defense for one charged with infringement. Infringers may also plead and prove that the patentee of the patent in suit was not the original and first inventor of the improvement in question, and they may prove the issue by showing that the invention had been previously patented by another, or that it had been previously described in some printed publication, or that it had been previously made and actually reduced to practice before the invention was made by the patentee. Such proofs may be introduced, and if they sustain the defense pleaded, the judgment or decree must be for the defending party. These issues, however, are very different from the one raised by the defense that the invention had been in public use or on sale in this country more than two years before the patentee filed his application for a patent, as the latter defense still involves an element of laches on the part of the patentee, in that he did not file his application for a patent at an earlier date, or keep his invention a secret from the public.

4. All the remarks made in respect to the fourth defense as herein arranged apply with equal force to the fifth defense, which is also overruled for the same reasons. Where none of the defenses pleaded are sustained the *prima facie* presumption that the patentee is the original and first inventor of the improvement must prevail, and the patent in this case must accordingly be adjudged valid.

5. Infringement being denied the burden of proof is upon the complainants to establish the charge. Where the invention is embodied in a machine, manufacture, or product, the question of infringement, which is a question of fact, is ordinarily best determined by a comparison of the exhibit made by the respondent with the mechanism described in the complainant's patent. Comparisons of the kind have been carefully made by the court in this case, and the court is of the opinion that the respondent has infringed the first, second, and third claims of the complainants' patent for the boot-pac. Both parties gave evidence upon the subject, but the great weight of the proofs supports the affirmative of the charge. Strong support to that view is also derived from the answer, in which the respondent admits that he has made forty-four hundred and ninety-one pairs of boot-moccasins, in which the lips and fronts were cut with edges of different lengths and dissimilar outlines, and were united by sewing with a flat seam, substantially as set forth in the fourth claim of the patent, the difficulty being to see how that could well be done without infringing the other three claims of the patent. Without entering further into the details of the evidence, suffice it to say that the court has carefully examined and compared the several exhibits in view of all evidence introduced, and is of the opinion, without hesitation, that the respondent has infringed the first three claims of the patent.

II. Reissued letters patent of the same date were also issued to the complainants for new and useful improvements in the manufacture of moccasin-shoes or shoe-pacs, including some of the elements embodied in the patent previously described, and the specification states that the nature of the invention consists in the same peculiarities as those described in the specification of the prior-named patent. Special reference is also made to the drawings annexed to the specification for a description of the various parts of which the invention is composed, to illustrate the relative positions of the several parts of the invention, and the patentees state that there is a free selection of stock in respect to the service each part is designed to sustain when they are put together, and he adds that the principal benefit is found in the fact that the seams can be made flat and be stitched by machinery, thus avoiding all hand-work. By the specification it also appears that the quarter is formed in one piece and that it joins directly on to the vamp and forms a flat seam, both at its junction with the top and with the vamp, allowing both of those seams to be stitched by machinery; and the specification also shows that the vamp is stitched to the other three parts of the thing patented by similar flat lap-seams, thus allowing them all to be closed by the sewing-machine and without hand-work in sewing the parts together; and the patentees further state that the different parts of the shoe-pac as patented are designed and arranged expressly with a view to enable all the seams to be closed by machinery and to dispense with hand-work altogether in sewing, even to the sewing on of the soles, thereby reducing the cost of manufacturing the article very materially, and enabling the shoe-pacs to be made more rapidly, economically, and with less expense of material. Three claims are appended:

1. For a moccasin shoe-pac formed of four parts, cut as shown and described.
2. For a shoe-pac with a quarter cut in the form shown in the third figure of the drawings, made in one piece, to surround the heel and extend forward to the vamp, as specified.
3. For the combination in a shoe-pac of the four parts shown and described when united together by flat lap-seams.

Plenary authority is given to the defending party by the patent act to plead the general issue in a suit for infringement, and if he complies with the requirement as to notice he may introduce evidence and prove any one or more of the special matters specified in that act, and if he proves one or more of them he is entitled to prevail in the suit, but if he does not give the required notice he has no right to introduce such evidence, and the moving party in that event, if he introduced his patent in evidence, is entitled to the benefit of the *prima facie* presumption that he is the original and first inventor of the patented improvement. (*Agawam Co.*, vs. *Jordan*, 7 Wall., 596; *Blanchard* vs. *Putnam*, 8 Wall., 427.) Separate answers in respect to each patent might have been filed by the respondent, or he might elect to state all his defenses in each case in one answer, without waiving any of his legal right, but in the latter case the defenses addressed solely to the patent for the boot-pac have no application to the patent for the shoe-pac. Argument to support that proposition is unnecessary, as the statement of the same is sufficient to secure universal assent. Tested by that rule it is clear that the only defense set up in the second case is the denial of infringement.

Suffice it to say, that the complainants having introduced their patent in evidence, must, under the circumstances, be presumed to be the original and first inventors of the patented improvement, inasmuch as there is neither plea nor proof to the contrary. Neither plea nor proof appearing in the record to overcome the *prima facie* presumption in favor of the complainants, the decree must be that the patent is valid if the proofs are sufficient to establish the charge of infringement. Questions of infringement are questions of fact, in respect to which the parties are chiefly interested in the court's conclusions, and in that view it is not usually deemed necessary to enter much into the details of the evidence, as that would extend the opinion of the court to an unreasonable length. Due comparison of the exhibits has been made in this case, and the court is clearly of the opinion that the charge of infringement is fully proved.

Decree for complainants upon both patents for an account of gains and profits to the extent of the infringement, and for an injunction to the same extent.

U. S. Circuit Court—Southern District of New York.

JAMES L. MARSH *et al. vs.* GEORGE WARREN AND ALEXANDER L. FAIRWEATHER.

The use of a label in the sale of the merchandise it is intended to designate prior to the registry of such label in the Patent Office amounts to a publication thereof, and is a defeat of right agreeably to the provisions of the copyright law, of which the label act of June 18, 1874, is a part.

[*A. Broadnax*, for plaintiffs; *Hall & Blandy*, for defendants.]

OPINION.—*June* 19, 1878.

BLATCHFORD, *J.*:

The statutory provisions which confer the rights and regulate the remedies of persons who register in the Patent Office under the act of June 18, 1874, (18 U. S. Stat. at Large, 1878,) prints or labels designed to be used for any other articles of manufacture than pictorial illustrations and works connected with the fine arts, are those which are contained in sections 4948 to 4971 of the Revised Statutes in regard to copyrights. The exclusive right of printing and publishing given by section 4952 is given to the author or proprietor only on complying with the provisions of sections 4948 to 4971. One of those provisions (§4956) is that no person shall be entitled to a copyright unless he shall "before publication" deliver at the proper office (in this case the Patent Office) "a printed copy of the title of the article in respect of which the copyright is to be claimed." In the present case the first label and its title were registered September 24, 1875. I understand the bill to state that this label was used by the plaintiffs' assignors in the sale of their mixture and of the bottles containing it, to which such label was affixed, before that date, and as early as the mixture itself was sold, to wit, June or July, 1875. The sale of the bottles of the mixture with the label on it was a publication of the label. At all events, the bill does not allege that the title and label were deposited before the publication of the label. Such averment is necessary. As to the other three labels, they and their titles were registered March 20, 1877, and I understand the bill to state that those labels were used by the plaintiffs before that date in the sale of the mixture.

The motion for an injunction is denied.

GEORGE J. SEABURY AND ROBERT M. JOHNSON *vs.* JOHN M. GROSVENOR.

The wares to which the trade-mark "Capcine" was applied having been falsely and fraudulently represented to the public, injunction to restrain use of trade-name was refused.

[*Rowland Cox*, for plaintiff; *J. W. Howe*, for defendant.]

OPINION.—*June* 16, 1877.

BLATCHFORD, *J.*:

The evidence is clear that the plaintiffs were systematically and knowingly carrying on a fraudulent trade. Although they may have omitted the fraudulent, and deceptive, and untrue language from their circulars before this suit was commenced, yet if they have any property in the trade-mark which they claim the title to, they acquired such property by the use, for a considerable time, of such language in the circulars which accompanied the articles they sold and in respect to which the trade-mark is claimed. Such language was to the effect that a celebrated chemist had recently discovered a vegetable principle of great value, and prior to making it generally known had introduced it into hospitals and had generously extended its use to the most successful physicians; that the flattering and astonishing results which characterized its action at once stamped it as the most remarkable principle ever discovered; that this powerful remedy was named "Capcine;" and that it was used in plasters prepared by the plaintiffs and called "Benson's Capcine Plasters." A registered trade-mark is claimed on the word "Capcine." Courts of equity refuse to interfere in behalf of persons who claim property in a trade-mark acquired by advertising their wares under such representations as those above cited, if they are false. It is shown that there is no such article as "Capcine" known in chemistry or medicine or otherwise. The authorities are clear that in a case of this description a plaintiff loses his right to claim the assistance of a court of equity. (*Lee* vs. *Haley*, L. R. 5, Chy. Appeal Cases, 159; *Leather Cloth Company* vs. *American Leather Cloth Company*, 4 De G., I. & S., 142.)

The motion for an injunction is denied.

SOCIETÉ LA ANONYME DES MINES ET FONDERIES DE ZINC DE LA VIEILLE MONTAGNE *vs.* CHARLES H. BAXTER *et al.*

A dealer in dry white oxide of zinc has no remedy against another who uses the same trade-mark to distinguish the oxide when ground in oil.

[*Daniel D. Lord*, for plaintiffs; *Dickerson & Beamer*, for defendants.]

OPINION.—*June* 12, 1877.

BLATCHFORD, *J.*:

On the allegations of the bill the plaintiffs can claim this trade-mark only for the dry white oxide of zinc. It does not appear that they ever sold that article ground in oil, or ever applied such trade-mark to that article ground in oil. The fact that the defendants sell a paint composed of a white oxide of zinc ground in oil, and represent it as containing white oxide of zinc made by the plaintiffs, when it does not contain white oxide of zinc made by the plaintiffs, is no violation of any trade-mark of the plaintiffs. The defendants have not sold the dry white oxide in that state. It is not shown that the plaintiffs have sold such oxide ground in oil. It is true that the oxide is intended to be ground with oil for a paint. So flour is intended to be made into bread. But if a baker should falsely stamp his bread with the mark of a particular brand of flour, the maker of such brand, if having a trade-mark therefor, could not claim that the baker had violated his trade-mark. And so of any other raw material which enters as an ingredient into a compound or article of manufacture.

The application must be denied.

WHEN an applicant for a patent makes oath that he believes himself to be the original inventor of a machine or improvement, the oath is conclusive with the Office, in the absence of proof that some one else made the invention. A patent or a printed description is held to be such proof, and an application will be rejected whenever such publication has been made. Public use in this country is such proof; although, if the public use has been less than two years, the applicant may establish the fact that he made the invention prior thereto. Use in a foreign country is no bar to the grant of a patent in the United States, where the applicant in this country is able to take the oath prescribed by law.

THE government fee on making application for a patent is $15. This entitles the applicant to an examination as to the merits of his alleged invention, and he should, and generally will, receive such information from the Office as will enable him to determine about how much, if anything, in the case, is new. When a patent is allowed the final government fee is $20, which must be paid before the patent can issue, and within six months after the date of allowance. In a large proportion of the applications coming before the Office these are all the fees required by law.

Issue of November 5, 1878.

Patents	204—No.	209,539 to No. 209,742, inclusive.
Reissues	7—No.	8,475 to No. 8,481, inclusive.
Designs	4—No.	10,893 to No. 10,896, inclusive.
Trade-Marks	14—No.	6,768 to No. 6,781, inclusive.
Labels	14—No.	1,756 to No. 1,769, inclusive.
Total issue	243	

TRADE-MARKS.

[Each certificate bearing date November 5, 1878.]

6,768.—CIGARS.—*E. Block & Son*, New York, N. Y. Application filed October 19, 1878.

"The arbitary word 'CARDINAL.'"

6,769.—MEDICINAL PREPARATIONS.—*J. W. Cole & Co.*, Black River Falls, Wis. Application filed September 23, 1878.

"The arbitrarily-selected word-symbol 'CARBOLISALVE.'"

6,770.—WHISKY.—*Chesapeake Whisky Company*, Brooklyn, N. Y. Application filed October 18, 1878.

"A young man standing partially behind a young woman holding her left hand in his left hand, and bending his head over her left shoulder, as if about to kiss her. The figures are represented as standing in front of standing grain, and upon the ground, at their right-hand side, lie her hat and sickle."

6,771.—WRITING-PAPER.—*Cunningham, Curtiss & Welch*, San Francisco, Cal. Application filed July 1, 1878.

"The words 'GOLDEN GATE' and the following-described figure. Below the words 'The Golden Gate' is a figure of a woman holding in her right hand a spear, and at the right of said figure a man with a pickax, and still farther to the right a ship. On the left of the figure is a bear, sheaf of wheat, and a plow. The background consists of the representation of mountains, and the whole is inclosed within a shield, as shown."

6,772.—FINE-CUT CHEWING-TOBACCO.—*Robert Hamilton*, Covington, Ky. Application filed September 26, 1878.

"The pictorial representation of a large vicious-looking dog.'"

6,773.—HAMS, SHOULDERS, AND BACON.—*Christian Klinck*, Buffalo, N. Y. Application filed October 9, 1878.

"The word-symbol 'NATIONAL.'"

6,774.—CIGARS AND CIGARETTES.—*Mayer Brothers*, New Orleans, La. Application filed October 22, 1878.

"The arbitrarily-selected words 'FLOR DE AMERICA.'"

6,775.—CIGARS AND CIGARETTES.—*Mayer Brothers*, New Orleans, La. Application filed October 22, 1878.

"The fancifully-selected words 'DE MI GUSTO.'"

6,776.—SMOKING AND CHEWING TOBACCO.—*Spaulding & Merrick*, Chicago, Ill. Application filed October 4, 1878.

"The word 'THISTLE.'"

6,777.—SAWS.—*The Wheeler, Madden & Clemson Manufacturing Company*, Middletown, N. Y. Application filed October 22, 1878.

"The word 'MONARCH.'"

6,778.—CLAY.—*Star Clay Company*, (limited.) Philadelphia, Pa. Application filed October 21, 1878.

"A star."

6,779.—SPOOL-COTTON.—*The Clark Thread Company*, Newark, N. J. Application filed November 1, 1878.

"A bar, substantially as shown."

6,780.—INFANTS' FOOD.—*The Cereals Manufacturing Company*, New York, N. Y. Application filed August 13, 1878.

"A nearly circular ribbon scroll of oval shape, the ends overlapping each other, and another ribbon scroll lying across and through the center of aforesaid nearly circular or oval shaped ribbon scroll."

6,781.—BRONZE PAINTS.—*J. Marsching & Co.*, New York, N. Y. Application filed October 4, 1878.

"The representation of a palette and brushes."

LABELS.

[Each certificate bearing date November 5, 1878.]

1,756.—Title: "A. A. FREEMAN & CO., 196 SUPERLATIVE."—*A. A. Freeman & Co.*, La Crosse, Wis. Application filed October 16, 1878.

1,757.—Title: "HEGEMAN'S TOLU AND LIVERWORT EXPECTORANT."—*Hegeman & Co.*, New York, N. Y. Application filed October 26, 1878.

1,758.—Title: "HEGEMAN'S FORMERLY VELPEAU'S CELEBRATED REMEDY FOR DIARRHŒA, DYSENTERY, CHOLERA MORBUS," &c. *Hegeman & Co.*, New York, N. Y. Application filed October 26, 1878.

1,759.—Title: "LAIMUN CITRUS, THE BOOK-KEEPER'S FRIEND."—*Staples & Ross*, New York, N. Y. Application filed July 14, 1878.

1,760.—Title: "BANQUET."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 25, 1878.

1,761.—Title: "CRACK SHOT"—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 25, 1878.

1,762.—Title: "EARLY FRIENDS."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 25, 1878.

1,763.—Title: "THE HURDLE."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 25, 1878.

1,764.—Title: "FIRST STROKE."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 25, 1878.

1,765.—Title: "PREMIER."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 25, 1878.

1,766.—Title: "CAMPAIGN."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed October 25, 1878.

1,767.—Title: "FLORIDA ORANGE."—*J. H. Estill*, Savannah, Ga. Application filed October 10, 1878.

1,768.—Title: "DR. WINKLER'S GREAT GERMAN DISCOVERY."—*John Casey*, Buffalo, N. Y. Application filed October 29, 1878.

1,769.—Title: "JAVA MILLS."—*H. Pennington & Co*, Philadelphia, Pa. Application filed October 30, 1878.

DESIGNS.

Each design bearing date November 5, 1878.]

10,893.—BUST.—*August Bartholdi*, Paris, France. Application filed October 16, 1878. Term of patent 14 years.

10,894.—HOLY-WATER FONT.—*Thomas Lloyd*, Boston, Mass. Application filed October 14, 1878. Term of patent 7 years.

10,895.—CHIMNEY-CAPS AND VENTILATORS.—*Dwight B. Rich*, Boston, Mass. Application filed October 18, 1878. Term of patent 7 years.

10,896.—ORNAMENT FOR JEWELRY.—*George H. Draper*, Attleborough, Mass. Application filed September 28, 1878. Term of patent 3½ years.

Erratum.

Through a clerical inadvertence Label No. 1,707 was omitted from the published list of October 1, 1878. To make said list complete, add at the end of page 488 the following:

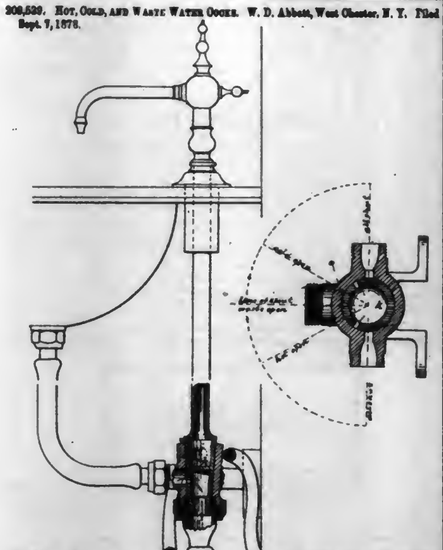
1,707.—Title: "SYRUP OF DOVER'S POWDER."—*W. L. Gregory*, Buffalo, N. Y. Application filed September 25, 1878.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

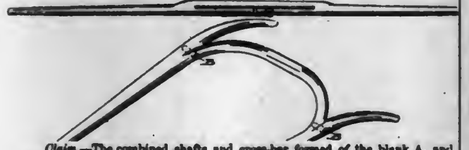
NOVEMBER 5, 1878.

209,539. HOT, COLD, AND WASTE WATER COCKS. W. D. Abbott, West Chester, N. Y. Filed Sept. 7, 1878.



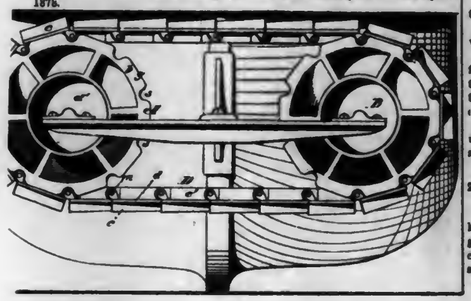
Claim.—A multi-way valve formed with a hollow rotatable valve plug and stem, through which the discharge of the valve takes place, the said valve-plug being constructed with a transverse partition, *h*, and with water-ways entering the side of the plug above the partition and discharging upwardly through the hollow stem, and with a wasteway entering the side of the plug below the partition and discharging downward through the open end of the plug, so arranged that the water or waste ways may be opened or closed by partial rotations of the hollow stem and plug, substantially as shown and described.

209,540. SHAFTS FOR VEHICLES. John Q. Adams, Royal Oak, Mich. Filed Aug. 23, 1878.



Claim.—The combined shafts and cross-bar formed of the blank A, and provided with the bolts B B, substantially as and for the purpose herein set forth.

209,541. GRAIN-WHEEL PROPELLERS. Luther Alvord, South Hadley, Mass. Filed Apr. 9, 1878.



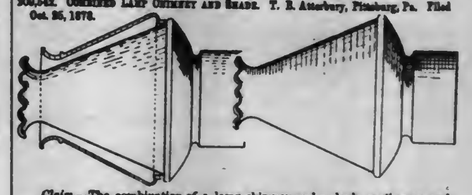
Claim.—1. The two or more propeller-wheels, A B, having the floats *h*, held in place between a perimeter and hub, when geared together by an endless chain working upon said perimeters to move in unison, substantially as shown and described.

2. The combination, with two or more propeller-wheels, A B, constructed as shown and described, of an endless chain provided with blades and engaging with the perimeters of said wheels, to cause them to move together.

3. The chain D, constructed, as shown and described, of the plates *d*, blades *e*, links *d'*, and lugs *o*, in combination with the flanges *g g*, depressions *c*, intermediate bearing-surfaces of the flanges, and channel between them, when constructed on one or more wheels, A B, substantially in the manner and for the purpose set forth.

4. The combination, with the stern of a propeller, of the adjustable inclined board T, in the manner and for the purpose set forth.

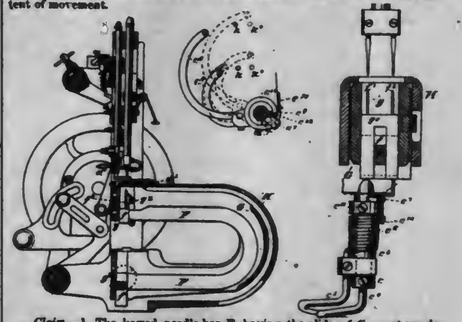
209,542. COMBINED LAMP CHIMNEY AND SHADE. T. B. Atterbury, Pittsburg, Pa. Filed Oct. 26, 1878.



Claim.—The combination of a lamp chimney and a shade resting on and supported by the chimney, which latter projects above the shade, so as to protect the same from heating, becoming smoked, &c., substantially as specified.

209,543. SEWING-MACHINES. Edwin E. Bess, Boston, Mass., assignor to the Consolidated War Thread Sewing Machine Company. Filed May 27, 1878.

Brief.—The post of the machine is of the shape of a U laid upon its side. In this post is a curved carriage, in which work the bar and slides employed to actuate the needles and cast-offs, a movement of the carriage effecting the feed. One of the thread-carriers is mounted upon a sleeve surrounding the bar to which the other is attached, the two being so operated as to have the same extent of movement.



Claim.—1. The bowed needle-bar F, having the slides *f f'*, as above described.

2. The bowed needle-bar carriage G, having ways *g g'*, adapted to receive the needle-bar F and cast-off carriage *g'*, all substantially as set forth.

3. The combination of the bowed needle-bar F, its carriage G, and the work-support H, all substantially as and for the purposes set forth.

4. In combination, the bar *c*, sleeve *c'*, the two thread-guides *c' c'*, the former attached to bar *c* and the latter to sleeve *c'*, and mechanism, substantially such as is described, for causing the travel of both guides to be substantially the same, the whole combination being and operating substantially as described.

5. In combination, the cast-off carriage *g'*, needle-bar carriage G, and needle-bar F, one arm of the needle-bar passing through the cast-off carriage, all substantially as described.

209,544. WIRE-BARBING MACHINES. Frank Billings, Cleveland, Ohio. Filed July 24, 1878.

Brief.—Wires fed through by feed-rollers. Two dies, each for effecting a kind of coil peculiar to itself. When the cutting and coiling head rotates, the guiding-core is drawn outwardly by a cam. On the return rotation of the cutting and coiling head, the guiding-core is returned by the action of a coil-spring.

Claim.—1. The die *o*, having the oval opening placed one side of the cen-

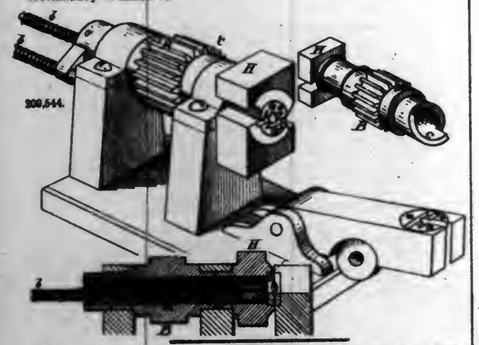
ter, as shown, and having the grooves *f f* arranged in relation to the said oval opening so that one barb may be passed between the two main wires and the other barb pass out one side of the main wires, as described, and for the purpose specified.

2. The die *g*, having an elongated oval opening across its center, and the grooves *f f* arranged close together across the center of the face of the die, so that both the barb-wires will be made to pass between the main wires, as described, and for the purpose specified.

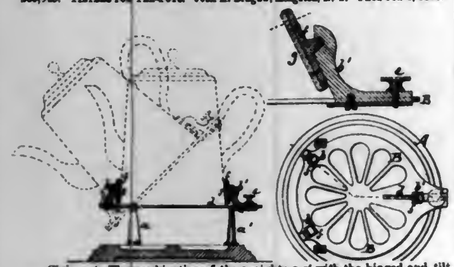
3. The core *c*, in combination with the hollow shaft or shell H, and rotating cutting and coiling head H, as and for the purpose specified.

4. In combination with the core *c* and hollow shaft or shell H, the rods *b b*, with their springs, and the inclines *a* on the end of the shell and on the cross-head *a'*, for imparting the back and forth movement to the said core, substantially as described.

208,544.



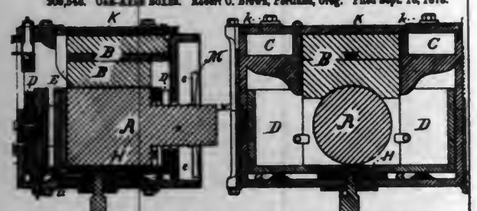
208,545. TILTERS FOR TEA-POTS. John A. Bragaw, Kingston, N. Y. Filed Oct. 4, 1878.



Claim.—1. The combination of the uprights *a a'* with the hinged and tilting platform B, having lug *b* and adjustable sliding lug *b'*, substantially as and for the purpose specified.

2. The combination of the uprights *a a'*, hinged platform B, and lugs *b b'* with the cushioned pads *f*, which are hinged to the lugs *b b'*, respectively, substantially as and for the purpose herein shown and described.

208,546. CAR-AXLE BOXES. Robert C. Brown, Portland, Oreg. Filed Sept. 16, 1878.



Claim.—1. The combination, with an axle-box for railroad or other cars, substantially as described, of the dust-chamber M and fans or wings *c c*.

2. The combination, substantially as described, in an axle-box for railroad or other cars, of the oil-receptacles C C, the openings *g g* and *k*, the rod *h*, and the gages *i i*.

3. The combination, substantially as described, in axle-boxes for railroad or other cars, of the oil-receptacles C C, the openings *g g* and *k*, the rod *h*, and the gages *i i* with the interior box, D, the springs *a a a a*, the bearings B and H, the thrust-blocks E, and the setting-screws *b b*.

4. The combination, substantially as described, in axle-boxes for railroad or other cars, of the dust-chamber M, the fans or wings *c c*, the oil-receptacles C C, the openings *g g* and *k*, the rod *h*, the gages *i i*, the interior box, D, the springs *a a a a*, the bearings B and H, the thrust-blocks E, and the setting-screws *b b*.

208,547. WAGON-LOCKS. George F. Barton, Menomonee, Wis., assignor of two-thirds his right to R. J. Flint and Frank J. McLean, same place. Filed Sept. 21, 1878.

Claim.—1. In a wagon or vehicle, the combination of a swinging axle-tree, a rigid fifth-wheel, and a frictional locking mechanism fastened to the axle-tree and locking itself upon the fifth-wheel when the axle-tree has a tendency to swing independently of the tongue of the wagon, substantially as and for the purpose set forth.

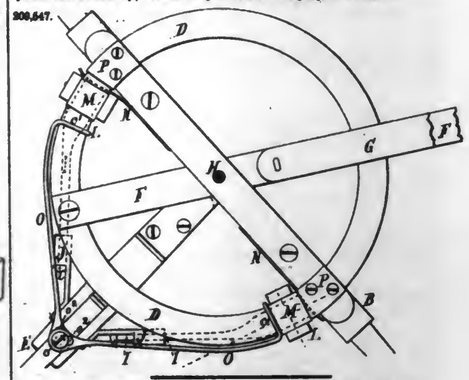
2. In a lock for wagons and other vehicles, the spring N, for keeping the frictional locking mechanism in a condition ready for locking upon the fifth-wheel, substantially as set forth.

3. The combination of the braces I, sleeves J, and pivoted tongue E, whereby the tongue is allowed to operate the rods O, substantially as and for the purpose set forth.

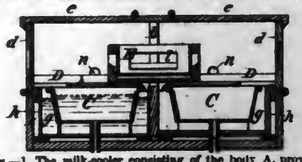
4. In a lock for wagons and other vehicles, the arms O, whereby the locking mechanism is prevented from locking the axle-tree to the fifth-wheel when the tongue is turned, substantially as set forth.

5. The combination of the front and rear bars, F and G, fifth-wheel D, and eyebolt connections *s f*, substantially as and for the purpose set forth.

208,547.



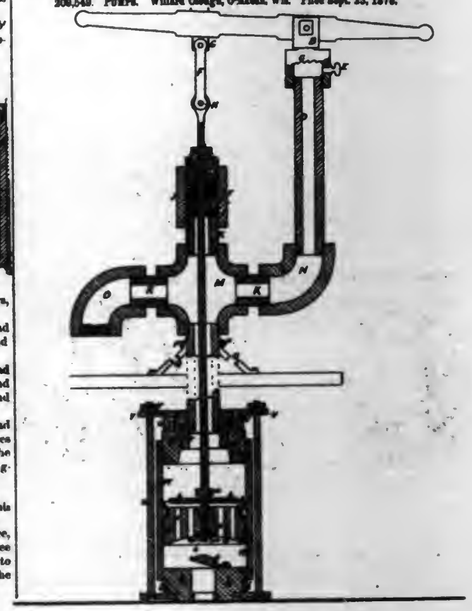
208,548. MILK-COOLERS. Lewis W. Center, Potsdam, N. Y. Filed July 26, 1878.



Claim.—1. The milk-cooler consisting of the body A, provided with the partitions *a b*, doors *d e*, water-receptacles *h*, pans C, and the ice-boxes E, mounted and arranged to slide upon rails, as shown and described.

2. In a milk-cooler, the combination of two communicating compartments, *g*, each provided with a water-vessel and a milk-pan therein, with rails D, extending into the two compartments, and an ice-box, E, mounted upon said rails, and capable of being moved into either compartment or into an intermediate position, at will.

208,549. PUMPS. Willard Clough, Oshkosh, Wis. Filed Sept. 23, 1878.



Claim.—1. A metallic pump constructed with parts O K M J N D C B screwed together, substantially as shown and described.

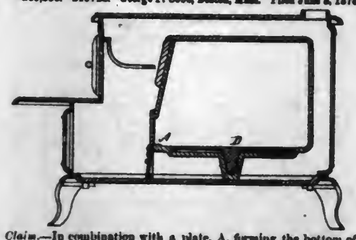
2. The combined fulcrum and air-chamber C D N K E, substantially as shown and described.

3. The wedge-topped brace Q and loose ring P, substantially as shown and described.

4. The shoulder T, screwed to the tube E, by which it may be tightly wedged into the wooden plug S, substantially as shown and described.

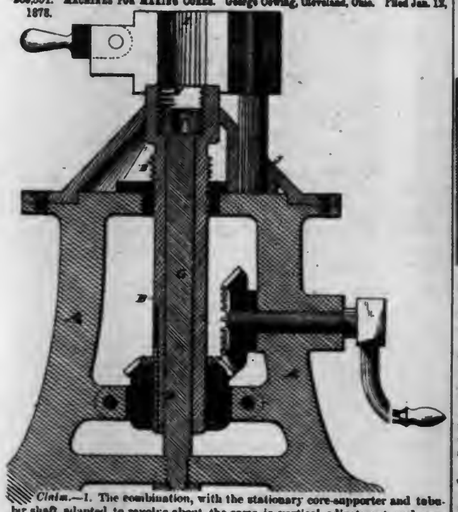
5. The metallic cylinder W, having wooden plugs S and A, with bands U and *i*.

209,550. STOVES. George F. Cobb, Boston, Mass. Filed June 8, 1878.



Claim.—In combination with a plate, A, forming the bottom of the oven, but not forming the base-plate of the stove, recessed, as shown, the revolving plate D, with or without perforations, arranged to fit within said recesses, and not to project above the top of plate A, substantially as and for the purpose set forth.

209,551. MACHINES FOR MAKING CORES. George Cowing, Cleveland, Ohio. Filed Jan. 12, 1878.



Claim.—1. The combination, with the stationary core-supporter and tubular shaft adapted to revolve about the same in vertical adjustment, and provided with a core-forming flask, of the sectional mold formed above the same, the sections of said mold being hinged together and provided with a suitable locking device, substantially as set forth.

2. In a machine for making cores, the shelving or inclined shield J, substantially as set forth.

3. The supporting-plate mounted on the central stem, and of larger diameter than the stem, and having a spiral edge fitting into the bottom of thread B', as and for the purpose set forth.

209,552. CHIMNEY-TOPS AND VENTILATORS. Geo. W. Demond and Louis Demond, Brooklyn, N. Y. Filed Aug. 30, 1878.

Claim.—1. A chimney-top or ventilator the shaft of which is made of tubing having a plug of lignum-vitæ or other suitably hard and porous material beyond the lower end of the walls of the tube to form a socket and bearing, substantially as and for the purpose set forth.

2. A chimney-top or ventilator having the shaft D, made of tubing and filled with oil, and resting upon a plug driven into its lower end, and upon which it revolves, substantially as and for the purpose set forth.

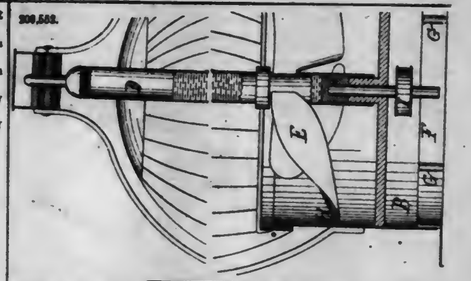
3. The combination of the tubular shaft D, revolving in a vertical position upon a plug of porous material, which is driven into its lower end, with the suction-screw E and winged top C, all constructed, arranged, and operating substantially as set forth.

4. The suction-screw E, having the edges of its wings curved upward, forming a gutter, and the upward projection of the base F having its top curved inward, and channels G on its outside, the suction-screw E inclosed within the cylinder or body of the machine, substantially as and for the purpose set forth.

5. The socket for the top of the shaft, formed of alternate layers of graphite, and washers to hold it in place, substantially as and for the purpose set forth.

6. The combination of the suction-screw E and winged top C with the extension-shaft and pulley I, for attaching power, substantially as and for the purpose set forth.

209,553.

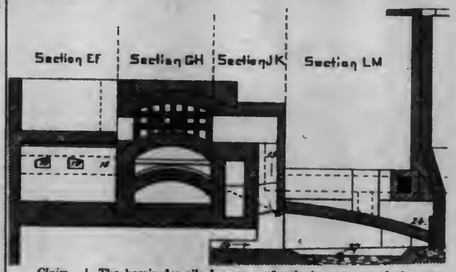


209,553. CHECK-REIN ATTACHMENTS. Charles H. Dow, Providence, R. I. Filed Mar. 25, 1878.



Claim.—In a check-rein attachment, the combination of the metallic frame *a a* and double-fingered removable elastic filling, adapted to be applied and secured to the frame, all substantially as and for the purposes set forth.

209,554. PROCESSES AND FURNACES FOR REDUCING AND SMELTING ORES. William E. C. Eustis, Milton, assignor of one-half his right to Henry M. Howe, Boston, Mass. Filed Sept. 6, 1877.



Claim.—1. The herein-described process of reducing one metal of a compound ore while the other metals therein remain unreduced, which consists in subjecting the ore in a furnace or shaft to a mixture of reducing and non-reducing gases in proportions and under conditions appropriate to the particular metal to be reduced, substantially as herein described.

2. In the working of working ores, the process herein described of continuously generating and burning reducing-gases and utilizing the heat therefrom, which consists in passing the products of the combustion of said reducing-gases effected in the combustion-chamber through the fuel in the gas producer, then conducting the gases so produced to the combustion-chamber, again admitting thereto a supply of heated air, thereby causing complete combustion, and heating said combustion-chamber, and then again conducting the products of this combustion to the gas-producer, thus rendering the process continuous, substantially as described.

3. The combination, with fuel-holding projections 5 6 in the producer, of checker-work 20, substantially as described.

4. The shaft to contain the ore to be treated and its hearth, in combination with a reverberatory furnace and its hearth, placed contiguous to the shaft-hearth, but separated therefrom by a bridge, and with the gate 24, to protect the reduced ore in the shaft and its hearth from the action of the oxidizing-gases in the combustion-chamber, substantially as set forth.

5. The hearth of the combustion-chamber and a flue, 15, to receive the gases from the producers, in combination with a flue, 16 or 17, to carry a part of the products of combustion to a recuperator, and a second flue, 18, to carry another portion of such products of combustion back to the producers, to operate substantially as described.

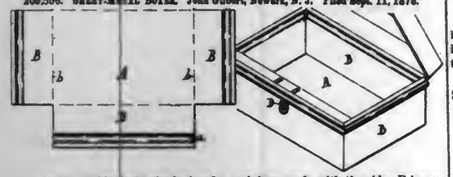
209,555. FIRE-ESCAPES. Obasley Oates, Index, Mo., assignor of one-half his right to William King, same place. Filed Sept. 18, 1878.

Brief.—A frame secured to a building is provided with one friction and two free pulleys. One end of a rope fastened to the frame passes down through a pulley in the handle of a car, thence up over the pulleys in the frame, and down to the ground. The car consists of canvas connecting two bowed rods secured to its axles, and travels up and down on the outside wall of a building.



Claim.—In a fire-escape, the frame A, provided with the free pulleys B and D, having the friction-pulley C placed between them, in combination with the rope E and the semicircular collapsible carriage G, having the hinged handle and rims *d d*, connected by flexible fabric *f*, and further provided with the wheels *e e*, the whole constructed and operating substantially as and for the purpose set forth.

209,556. SHEET-METAL BOXES. John Gilbert, Newark, N. J. Filed Sept. 11, 1878.



Claim.—A blank for the body of a cash-box, made with the sides B in one piece with the bottom A, and a bead or molding, *a*, impressed in each of the sides, substantially as and for the purpose set forth.

209,557. STOVES. John H. Goodfellow, Troy, N. Y., assignor of one-half his right to Philip F. Miller, same place. Filed Apr. 9, 1878.



Claim.—1. In a stove, the cut-off B, constructed and arranged in combination with the fuel-chamber A, substantially as shown and described, so that when such cut-off is unemployed in sustaining the upper portion of the contents of the fuel-chamber A while a lower portion thereof is being removed, as herein set forth, the said cut-off can be retained or supported in a vertical, or nearly vertical, position next to and outside of one of the side walls of said fuel-chamber.

2. The edgewise-moving cut-off B, constructed, arranged, and supported in combination with the fuel-chamber A and a fuel-sustaining grate, substantially as shown and described.

3. The cut-off B and grate F, having supporting-bearings at or near its side opposite to said cut-off, constructed and arranged in combination with the chamber A, substantially as shown and described.

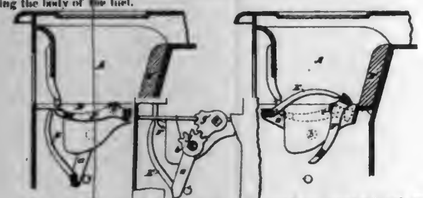
4. The cut-off B and grate F, having bearing-journals J J′, constructed and arranged in combination with the chamber A, substantially as shown and described, and provided with mechanism for simultaneously operating said cut-off and grate, in the manner set forth.

5. The cut-off B, grate F, having bearings J J′ and arm K, or its equivalent, and connecting-link L, constructed and arranged in combination with the chamber A, and to operate substantially as shown and set forth.

6. The cut-off B, provided with supporting-arms C C′, constructed and arranged together substantially as shown and described, so as to be capable of being employed in combination with the chamber A and its fuel-sustaining grate, in the manner substantially as set forth in the above specification.

209,558. STOVES. John H. Goodfellow, Troy, N. Y., assignor of one-half his right to Philip F. Miller, same place. Filed Apr. 9, 1878.

Brief.—The journals fixed to the outer ends of the supporting arms rest in bearings on the under side of the bed-plate. The cut-off slides without moving the body of the fuel.



Claim.—1. The cut-off E, separately constructed and arranged and supported, substantially as described, in combination with the fuel-chamber A and its fuel-sustaining grate, to be movable to and fro from a position at one side, and below, or partly below, the said fuel-sustaining grate, to a position above said grate, and across, or partly across, the lower portion of said fuel-chamber.

2. The cut-off E, separately constructed and arranged, in combination with the fuel-chamber A and its fuel-sustaining grate F, supported by trunnions *c* at or near its side opposite to that of the said cut-off, substantially as shown and described.

3. The cut-off E, separately constructed and arranged and supported, in combination with the chamber A and grate F, and provided with mechanism whereby the said cut-off and grate can be operated together simultaneously, substantially as specified.

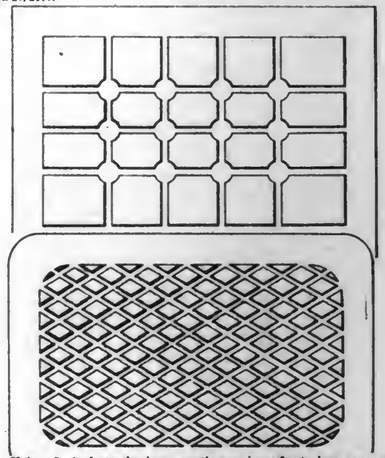
4. The cut-off E, provided with supporting-arms *a*, constructed and arranged, substantially as shown and described, so as to be capable of being employed, in combination with the chamber A and grate F, in the manner substantially as set forth in the above specification.

209,559. SUSPENDER-ENDS. Benjamin J. Grady, Boston, Mass. Filed Oct. 6, 1878.



Claim.—The suspender-end above described, having the loop A A′ secured by a device formed of two cylinders, B B, joined together, each cylinder having the radial projection *b*, with its flat sides lengthwise of the cylinder and of the cord, and inserted in the cord, as described.

209,560. PLASTERS. Smith A. Griffith, Green Township, Hamilton County, Ohio. Filed Dec. 17, 1877.

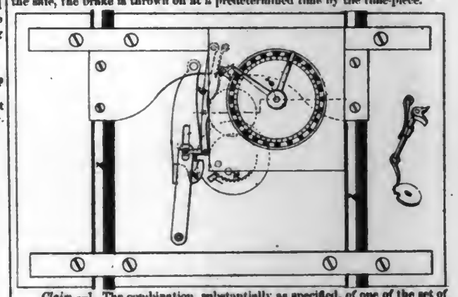


Claim.—1. A plaster having a continuous imperforate base, upon which the preparation is arranged in sections, leaving intervening communicating spaces or channels covered by the base, as set forth.

2. The combination, in a plaster, of the absorbent base and the preparation arranged thereon, to leave intervening spaces or channels, through which perspiration can pass to the base, as set forth.

209,561. TIME-LOCKS. Henry Gross, Cincinnati, Ohio. Filed Nov. 2, 1877.

Brief.—The link is held from the arbor by permutation-disks, one of which is rotated by the time mechanism, and is moved out of place thereby as fast as set up by the spindle, thus preventing unlocking until the time-piece stops. The action of the time mechanism on the disks may be suspended for a while by a brake. To allow of unlocking and locking after the regular hour for closing the safe, the brake is thrown off at a predetermined time by the time-piece.



Claim.—1. The combination, substantially as specified, of one of the set of permutation-tumblers, the time-movement adapted to move such tumbler, a brake to stop the tumbler from turning with the time-movement, and means for automatically throwing the brake off.

2. The combination, substantially as specified, of the time-movement, the permutation-tumbler adapted to be turned thereby, the link-suspension lever, and the equalizing-lever.

209,562. TRIPOD-HEADS FOR SURVEYING-INSTRUMENTS. William Gurley, Troy, N. Y., assignor to W. and L. E. Gurley, same place. Filed Sept. 25, 1878.

Claim.—1. The combination of the stationary centrally-open concentrically concavo-convex plate A, the annular convex and concave segments B and C, and the interior tubular connecting device E, substantially as described, whereby the said convex and concave segments are adapted to slide together upon opposite sides of the said concavo-convex plate, while permitting a plumb-line to hang and be adjusted laterally therethrough, as set forth.

2. The combination of the stationary concavo-convex plate A, the sliding connected convex and concave segments B and C, and the spring or springs H, substantially as described, whereby the said sliding segments are both pressed against the said concavo-convex plate by the said spring or springs.

3. The combination of the stationary concavo-convex plate A and the sliding connected convex and concave segments B and C, having the screw K and bearing L, respectively arranged thereon as described, whereby the said convex and concave segments are adapted to engage with a suitable screw and bearing on the base of an instrument, and be thereby clamped fast, and released, upon the said concavo-convex plate, as set forth.

4. The combination of the stationary concavo-convex plate A, the sliding connected convex and concave segments B and C, having the screw K and bearing L, and the spring or springs H, substantially as described.

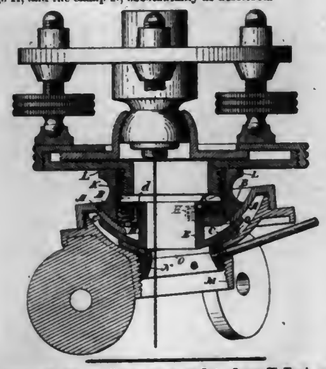
5. The combination of the centrally-open downwardly-convex stationary plate A, the sliding concavo-convex segment C, having an instrument-support, E, extending through the said stationary plate, and the screw-clamp N, substantially as described.

6. The combination of the concavo-convex stationary plate A, the sliding connected connected convex segment B and concavo-convex segment C, and the screw-clamp N, substantially as described.

7. The combination of the concavo-convex plate A, the connected convex segment B and concavo-convex segment C, having the screw K and bearing L, and the clamp N, substantially as described.

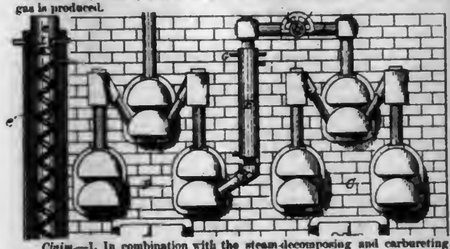
8. The combination of the concavo-convex plate A, the connected convex segment B and concavo-convex segment C, having the screw K and bearing L, the springs H, and the clamp N, substantially as described.

209,562.



209,563. APPARATUS FOR THE MANUFACTURE OF GAS. George W. Harris and Augustus L. Allen, Poughkeepsie, N. Y. Filed July 11, 1878.

Brief.—Oil is vaporized by steam heat, and the vapors are mingled with and carried by water-gas into fixing-retorts, where a permanent illuminating-gas is produced.



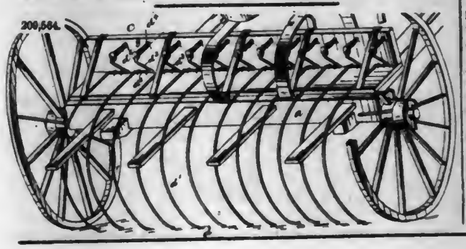
Claim.—1. In combination with the steam-decomposing and carbureting retorts, a vaporizer consisting of an externally-jacketed tube provided with an internal coil of pipe, connected at one end with a steam-generator and at the other with the jacket, the latter being provided with a suitable exhaust-pipe, whereby a thorough circulation of the steam through the coil and jacket is effected, substantially as specified.

2. In combination with the steam-decomposing and the carbureting retorts, a vaporizer heated internally or externally, or both internally and externally, and provided with an oil-inlet at its upper end, whereby the oil may be distributed downward through the vaporizer, through which a current of gas is passed, substantially as and for the purposes specified.

3. In combination with the tube *a*, the annular cup or receptacle, having a raised central edge, into which the oil is fed, and from which it is distributed through the vaporizer in a tubular shower, substantially as specified.

4. The combination of the tube *a*, its coiled pipe and jacket connected with a steam-generator, the annular distributing-cup, and feed-pipe, all constructed and arranged substantially as specified.

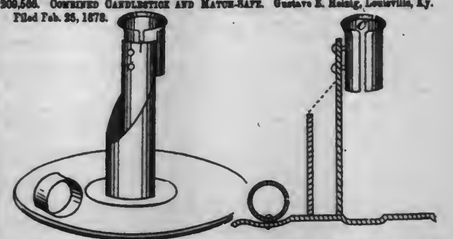
209,564.



209,564. HORSE HAY-RAKES. Joseph Haase, Ostrander, Ohio. Filed Mar. 23, 1878.

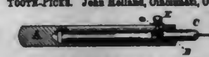
Claim.—The combination, with the rotating rake-head c, composed of the boards c^1 and c^2, united so as to form the angular platform, and provided with holes c^4, as described, of the teeth *d*, having their upper or forward ends formed so as to provide the axis d^2, lever d^3, guide d^4, and shoulder d^5, and spring *g*, arranged to operate substantially as and for the purposes set forth.

209,565. COMBINED CANDLESTICK AND MATCH-SAFE. Gustave E. Haisig, Louisville, Ky. Filed Feb. 25, 1878.



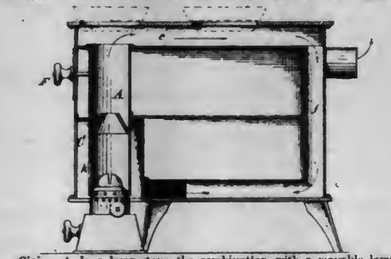
Claim.—The post of a candlestick having at one end a match-safe, integral therewith, and the candle-socket at its other end and upon the opposite side, substantially as described.

209,566. TOOTH-PICKS. John Holland, Cincinnati, Ohio. Filed Dec. 7, 1877.



Claim.—As a new article of manufacture, a tooth-pick consisting of an outer case, A, the tight-fitting inner case or lining, B, piston C, blade D, and slide E, provided with the flange *e*, all arranged to operate substantially as and for the purpose set forth.

209,567. LAMP-STOVES. Edward Hunter, Norwich, Conn. Filed Aug. 31, 1878.



Claim.—1. In a lamp-stove, the combination, with a movable lamp, of a stove body or casing having at its upper end a cooking and heat-diffusing chamber, with its top perforated with a series of holes to permit the insertion of cooking-vessels therein, and its lower end provided with feet, adapting the stove-body to rest on a base independently of the lamp, together with one or more vertical flues inclosed in the stove-body, with their lower ends opening above the supporting-base and adapted to fit over the burners of the lamp, and their upper ends opening into the said cooking-chamber, beneath the perforated top of the same, substantially as herein shown and described.

2. A lamp-stove formed of a metallic chest or casing inclosing an oven-chamber, and formed with one or more vertical cylinders or flues, A A^1, arranged at one end of the case casing, rising parallel with one end of the oven-chamber, with their lower ends adapted to fit over the burners of a lamp or lamps to form the chimney thereto, and with their upper ends opening into one end of a heat-diffusing and cooking chamber at the top of the stove, which overlies the oven, and from which the heat escapes at the opposite end, substantially as herein shown and described.

3. In a lamp-stove, a stove-body constructed with one or more vertical flues, A A^1, serving as chimneys to the lamp, having a vertical adjustment in the stove-body, and provided with manipulating-knobs F F′, projecting therefrom to the exterior of the stove-casing, whereby the flues may be conveniently raised and lowered to adjust the same over the burners of the lamp, substantially as herein shown and described.

209,568. STAINING WOOD. John W. Hyatt, Newark, N. J. Filed Dec. 13, 1877.

Brief.—Improvement consists in the employment of spirituous solutions of the coloring-matter and mordant in lieu of ordinary water solvents, which allows of a special mode of application.

Claim.—1. The combination, with the solid extract of logwood dissolved in alcoholic or methylic spirit, or both, of the tincture of muriate of iron, whereby a dye for producing an ebony appearance is formed, substantially as specified.

2. The process herein described for producing an ebony appearance, which consists in treating a surface with the solid extract of logwood dissolved in alcoholic or methylic spirit, or both, and then applying to the surface thus treated the tincture of muriate of iron, or the reverse of said process, substantially as specified.

209,569. WRENCHES. John W. Hyatt, Newark, N. J. Filed Mar. 7, 1878.

Claim.—1. In a wrench, a mutilated female screw, in combination with a male screw, the latter mounted in spring-bearings in the jaw of the wrench, which is capable of movement on the wrench-bar, substantially as specified.

2. In a wrench, a male screw secured in the jaw of the wrench and provided at each end with spring-bearings, which cause it to engage a mutilated female screw on the wrench-bar, and permit the jaw of the wrench to be moved

toward the head of the wrench, as stated, or toward the handle of the wrench, by raising the male screw and retracting the jaw, substantially as specified.

3. The male screw F, having the edges of its thread milled and mounted in spring-bearings at each end, substantially as set forth.

4. A wrench-jaw provided with a slot, upon each side of which is placed an elongated slot or bearing, to receive the axles of a male screw and permit the movement and rotation thereof in the slot, substantially as specified.

5. A wrench-bar having a mutilated female thread, in combination with a male screw capable of being rotated, and also of being moved toward or away from the wrench-bar, its axis in such movement being parallel to the axis of the wrench-bar, the movements being independent of each other, substantially as set forth.

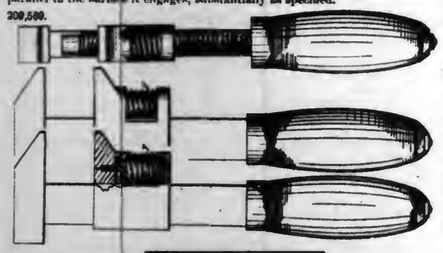
6. A locking mechanism engaging the wrench-bar at more than one point, capable of independent rotation, and of independent parallel movement toward or from the wrench-bar, substantially as set forth.

7. In a wrench, a male screw mounted in the jaw of the wrench, and capable of being rotated and moved with its axis parallel to the surface it engages, substantially as specified.

8. In a wrench, a male screw of a diameter equal to or greater than its length, fitting in a slot in the jaw of the wrench, and capable of independent rotation and parallel movement, in combination with a mutilated female thread, substantially as set forth.

9. In a wrench, a locking mechanism placed upon one side of the wrench-bar, and capable of being either rotated or moved with its operative surface parallel to the surface it engages, substantially as specified.

209,569.

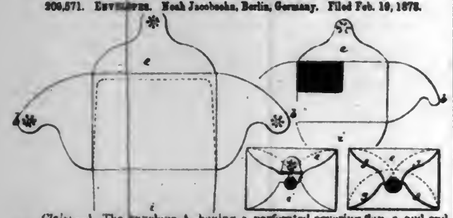


209,570. VARNISHES. John W. Hyatt, Newark, N. J. Filed Jan. 21, 1878.

Claim.—1. The combination, with the solid extract of logwood dissolved in either alcoholic or methylic spirit, or both, of a resin soluble in alcohole or methylic spirit, or of pyroxyline, or the equivalent of such resin or pyroxyline, and the tinctnre of muriate of iron, to produce a varnish for effecting an ebony appearance, substantially as specified.

2. The process herein described for producing an ebony appearance, which consists in treating a surface with the solid extract of logwood, dissolved as aforesaid and combined with a gum or resin or pyroxyline, and applying to the surface thus treated, or to portions thereof, the tincture of muriate of iron, or the reverse of such process, substantially as set forth.

209,571. ENVELOPES. Noah Jacobsohn, Berlin, Germany. Filed Feb. 19, 1878.



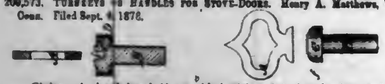
Claim.—1. The envelope A, having a perforated covering-flap, *c*, and end flaps, *a a*, that are provided with downwardly-projecting noses *b b*, all arranged so that, in folding, the two noses *b* and *b* will cover one another and the upper edge of the flap *i*, and will be beneath the perforations of the flap *c*, substantially as specified.

2. In an envelope, the colored border *g* on the outer exposed side of the flap or flaps thereof, the color of said exposed border being soluble in water, so that it will be diffused on the surface of the envelope if an attempt is made to open the envelope by moisture or steam, substantially as specified.

209,572. PACKING FOR JOURNAL-BOXES. William V. Kay, Lake Forest, Ill. Filed Oct. 1, 1878.

Claim.—As a packing for journal-boxes, axle-boxes, and the like, the substance known as "cotton-seed hulls," the same being the combination of the hulls of the cotton-seed and the cotton fiber which still clings to them after passing through the process of separation from the seed, substantially as described.

209,573. TURNKEYS OR HANDLES FOR STOVE-DOORS. Henry A. Matthews, Waterbury, Conn. Filed Sept. 4, 1878.

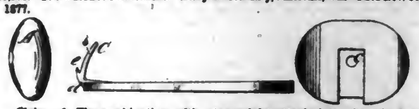


Claim.—A shank-head, C, provided with a slot, *f*, and a key or handle, A, fitting in said slot, combined with a metal casing, D, substantially in the manner and for the purposes specified.

209,574. COMPOUNDS FOR PREVENTING INCRUSTATION IN STEAM-BOILERS. Frederick M. Mayhary, Milwaukee, Wis. Filed Apr. 11, 1878.

Claim.—A compound composed of chicken-dung water, leather, hair, soda, lime, salt, saltpeter, alum, ammonia, and tar, in about the proportions and prepared substantially as described.

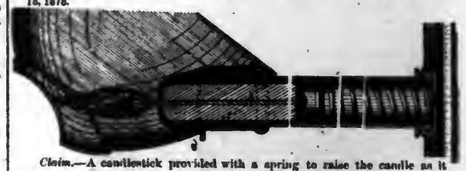
209,575. TOE-WEIGHTS FOR HORSES. Henry D. McKinney, Janesville, Wis. Filed Nov. 30, 1877.



Claim.—1. The combination, with a toe-weight attached to a horse's shoe, of the adjustable clip C, provided with clamped foot *a* to fit onto the shoe, lip *c*, on which the weight rests, and shank *d*, substantially as described and claimed, and for the purposes set forth.

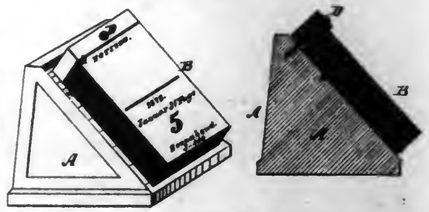
2. Adjustable clip C, provided with a clamped foot, *a*, lips *d* and *e*, and shank *b*, in combination with a horse toe-weight, substantially as described, and for the purposes set forth.

209,576. CANDLESTICK-REFLECTORS. Montgomery C. Meigs, Washington, D. C. Filed Oct. 18, 1878.



Claim.—A candlestick provided with a spring to raise the candle as it burns, in combination with a fastening device, *a*, at or near the top of the tube, and a reflector to engage with said fastening device, whereby the reflector is held in position to reflect the light as the candle is moved upward, the reflector being parabolic in section, or made of parts of two cones, and surrounding and enveloping the flame on all sides, except that toward which the light is to be directed, substantially as herein set forth.

209,577. CALENDARS. Heinrich Meineke, Hannover, Prussia, assignor to Constantine Schmidt, New York, N. Y. Filed Aug. 30, 1878.



Claim.—1. The detachable calendar-pad B, formed into a stump at the upper end, which stump is perforated, combined with a pin, D, and stand A, all arranged so that the pin projects from the inclined face of the stand on which the pad itself rests, substantially as specified.

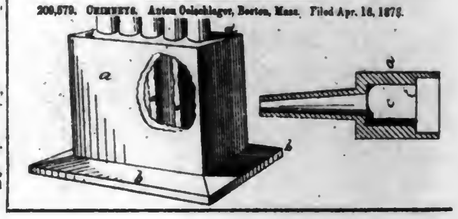
2. The combination of the detachable calendar-pad B with the stand or frame A, and with the clamping device that secures the stump at the upper end of the pad to the face of said stand or frame, but permits the removal of said stump at any time, and always leaves the lower parts of the sheets constituting the pad accessible, substantially as specified.

209,578. OIL-CANS. Thomas Moran, Erie, Pa., assignor of one-half his right to Alfred Murphey, same place. Filed Jan. 21, 1878.



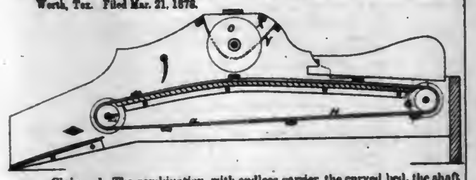
Claim.—The combination, with an oil-can, of the valve D, hung within the spout, the direct connecting-rod C, the spring G, tube H, valve F, vents *i i'*, and vent-passage I, said parts being arranged and operating substantially as and for the purposes mentioned.

209,579. CHIMNEYS. Anton Oelschlager, Boston, Mass. Filed Apr. 16, 1878.



Claim.—The hereinbefore-described chimney, consisting of the main portion *a*, top *d*, flues *c*, and flange *b*, the chimney in all its parts being made integral, cast or molded in a single piece from artificial stone, iron, or similar substance, for the purpose of preventing all danger from falling bricks, substantially as set forth.

209,580. HAND-CUTTING FENDERS FOR TREADLING-MACHINES. James M. O'Neall, Fort Worth, Tex. Filed Mar. 27, 1878.



Claim.—1. The combination, with endless carrier, the curved bed, the shaft N, and cutters O, of the convex guard V, constructed and arranged substantially as described.

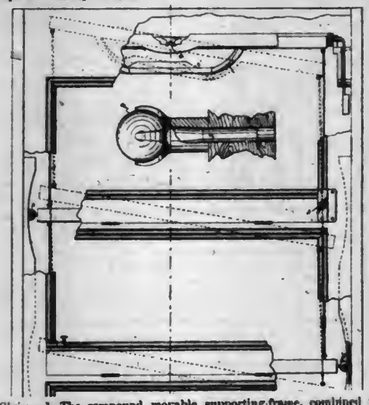
2. In combination with the band-cutters O and carrier H, the fixed convex bed D, having its highest point or convexity immediately beneath the cutters, as shown and described.

209,581. METHODS OF AFFIXING REVENUE-STAMPS TO PLUG-TOBACCO. Robert W. Oliver and John E. Robinson, Richmond, Va. Filed Aug. 16, 1878.



Claim.—The method of affixing revenue-stamps to plug-tobacco which consists in adhesively attaching such stamp to the wrapper, inserting the corners thereof through incisions in the same, and adhesively securing said corners to the reverse of the wrapper, then securing the wrapper to the plug, and finally compressing the whole, substantially as described.

209,582. SUSPENDED SHIPS' BERTHS. Dana Parks, Boston, Mass., assignor to Henry Smith, same place. Filed Sept. 19, 1878.



Claim.—1. The compound movable supporting-frame, combined with a berth suspended therefrom by means of jointed connecting-rods attached to each corner of the inner frame of the compound frame, to operate substantially as described.

2. The compound movable supporting-frame, and the berth suspended therefrom by means of jointed connections extending from each corner of the inner frame, as described, and provided with projections *p*, combined with the curved guideways, fixed with relation to the berth-frame, to operate substantially as described.

3. The berth provided at its ends with friction-rollers, combined with the curved guideways, substantially as described.

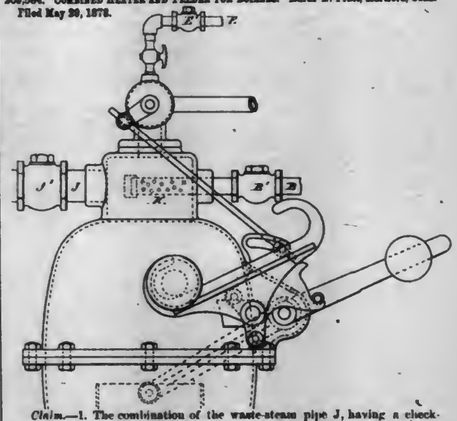
209,583. SIGNS. Horace Petrie, Philadelphia, Pa. Filed Mar. 26, 1878.



Claim.—1. The combination, with a painted or gilded mica letter, design, or ornament, of a thin backing of india-rubber, leather, or other suitable flexible material, extending beyond the edges of said mica to protect the latter from injury and constitute the shading of the letter, design, or ornament, substantially as described.

2. The herein-described mode of lettering, temporarily or permanently, by attaching mica letters or ornaments (gilded or painted) to flexible material or back, and causing the back or the extension beyond the mica letter of the back to adhere to the surface of the glass or other material to be lettered, substantially as described.

209,584. COMBINED HEATER AND FEEDER FOR BOILERS. Rufus H. Pratt, Hartford, Conn. Filed May 20, 1878.



Claim.—1. The combination of the waste-steam pipe J, having a check-valve, J', and the pipe B, having the sprinkler K, with an automatic boiler-feeding mechanism, constructed and arranged for operation substantially as shown, and for the purpose described.

2. The combination of the check-valve E' with the air-escape pipe E of the automatic heating and feeding mechanism for steam-boilers, constructed and arranged substantially as herein shown and described.

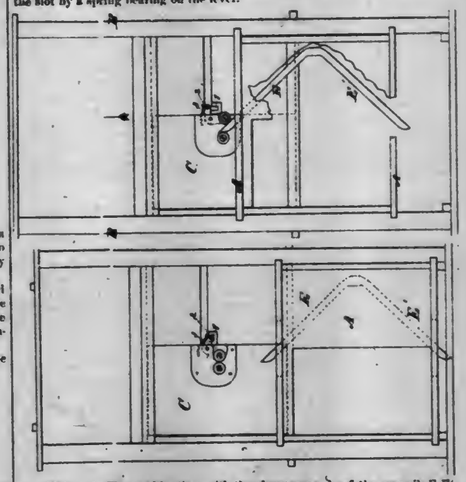
209,585. COTE-HOLDERS. George H. Raymond and George B. Perkins, Bridgeport, Conn. Filed Apr. 11, 1878.



Claim.—The open shell A, provided with the notches *a a a*, flanges B B, and curved lips *c c*, all substantially as described, and for the purpose set forth.

209,586. HATCHWAY-DOORS. John C. Richardson, New York, N. Y. Filed July 31, 1878.

Brief.—A cam-rib on the elevator-car passes between two projections on the door, opening and closing the same. One of the projections is on the end of a bell-crank lever, which serves as a lock to the door by a pin at its other end engaging a slot or catch in the door-framing. The pin is held in place in the slot by a spring bearing on the lever.



Claim.—1. The combination, with the elevator-car A, of the cam-rib E E' and projections on the door C, said rib being arranged to engage immediately on the projections, all arranged and operating substantially as specified.

2. The combination, with the door to an elevator and a cam-rib for operating the same by the ascent and descent of the elevator-car, of two projections to be operated on by said cam-rib, one of which projections is affixed to the door and the other to a latch or bolt, which is released by the cam before opening the door, as set forth.

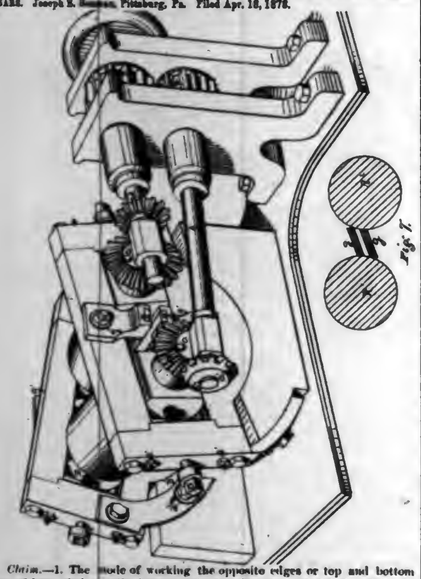
208,587. Pruning Implements. William R. Rose, Glenville, Cal. Filed May 6, 1878.



Claim.—1. In a pruning implement, the saw F, attached to the handle E, the rear edge of the saw forming the cutting-blade D, and provided with the projecting chisel G, in combination with the cutting-blade C, substantially as and for the purpose set forth.

2. The handle A, having the concave and convex plate secured to one side, so that its convex edge C forms one blade of a shears, and the concave edge B forms a pruning-knife, in combination with the handle E, having the saw F rigidly secured to it, and the lower end of the saw forming the blade D of the shears, substantially as herein described.

208,588. Machines for Edging, Sizing, and Straightening Non-Cylindrical Metal Bars. Joseph S. Seaman, Pittsburg, Pa. Filed Apr. 12, 1878.



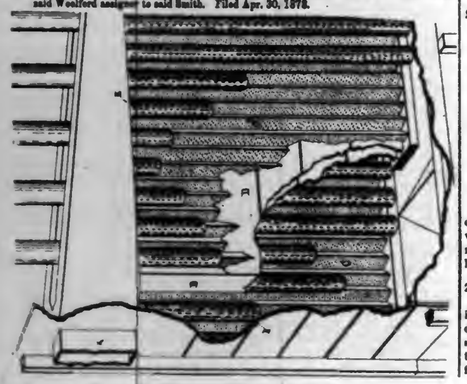
Claim.—1. The mode of working the opposite edges or top and bottom faces of bars, skelps, rails, beams, and other like non-cylindrical articles by causing them to pass between a pair of rolls at other than a right angle to one or both the rolls, while prevented from rotating by top and bottom guides, substantially in the manner and for the purposes above set forth.

2. The combination of revolving rolls, rocking frames or housings, and self-adjusting roll-bearings in the housings, substantially as described.

3. A rocking frame or housing, having guide-supports attached thereto, in combination with inclined rolls and parallel guides, substantially as set forth.

4. A pair of parallel guides, *g g*, Fig. 7, tilted on their longitudinal axial lines to an oblique position, arranged between a pair of revolving rolls and parallel therewith or at an acute angle thereto, substantially as set forth.

208,589. Grain-Drier. Marshall P. Smith and William W. Woolford, Baltimore, Md.; said Woolford assignor to said Smith. Filed Apr. 30, 1878.



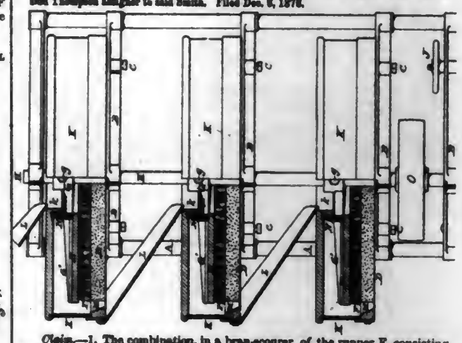
Claim.—1. A drying-chamber having an interior lining of perforated and corrugated sheet metal, the spaces behind the said corrugations, in combination with openings in the walls of the chamber, forming conduits for the escape of the moist waste air, substantially as set forth.

2. The central exhaust-flue, D, covered with perforated and corrugated sheet metal, the spaces behind the said corrugations, in combination with openings in the walls of the chamber, forming conduits for the escape of the moist waste-air, substantially as set forth.

3. A drying-chamber having an interior lining of perforated metal, in combination with one or more central exhaust-flues covered with perforated metal, operating substantially as set forth.

4. The main conduit K, in combination with the series of vertical blast-pipes E E and the drying-chamber lined with perforated metal, substantially as set forth.

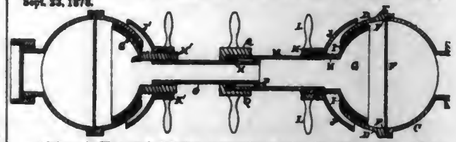
208,590. Bran-Scourers. Alexander H. Smith and Salathiel S. Thompson, St. Louis, Mo.; said Thompson assignor to said Smith. Filed Dec. 6, 1878.



Claim.—1. The combination, in a bran-scourer, of the runner E, consisting of suitable disks carrying bristles or other brush material, F, and supported on and secured directly to central shaft, H, bed stone or plate D, having orifice M, spout L, for forming communication between orifice M and neck *k*, curb K, and necks or tubes N *k*, substantially as set forth.

2. The combination of the rotating brush E F, curb K, and necks or tubes N and *k*, the latter making part respectively of the brush-frame and of the curb, and forming a loose-fitting lap-joint, and constituting the passage through which the bran passes between the spout L and the scouring-surface, substantially as set forth.

208,591. Couplings for Hydrant-Suctions. Jas. Stoddard, San Francisco, Cal. Filed Sept. 23, 1878.

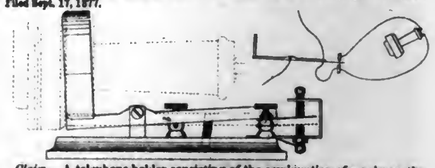


Claim.—1. The semi-globular connecting-section D, with its flange E, in combination with the interior section, G, packing I, exterior loose section, J, and the screw-collar K, whereby the desired angle is obtained and a tight joint formed, substantially as herein described.

2. The pipes M and O, fitting each other, as shown, and provided with the internal and external stops N P and the screw-coupling and stuffing-box Q, in combination with the hydrant and engine, connecting adjustable joints, substantially as and for the purpose herein described.

3. A means of connecting engines with hydrants or other water-ways, consisting of the sections D D′, with their internal and external sections G G′ and J J′, washers I, and screw-collars K, in combination with the telescopic pipes M and O and stuffing-box Q, substantially as and for the purpose herein described.

208,592. Automatic Switch or Cut-Out for Telephones. Thos. A. Watson, Boston, Mass., assignor to G. G. Hubbard, trustee of the Bell Telephone Company, same place. Filed Sept. 17, 1877.



Claim.—A telephone-holder consisting of the combination of a yoke on the end of a lever of the first order, made to tilt by the removal of the telephone, with two stationary points, the one making circuit-connection through the signaling or call instrument, the other through the telephone, substantially as herein shown and set forth.

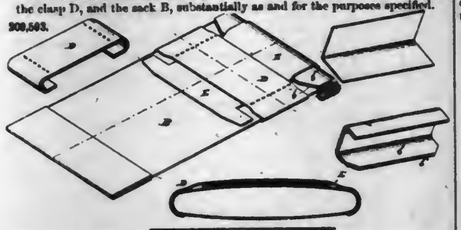
208,593. Envelopes. James H. Weaver, Chicago, Ill. Filed May 24, 1878.

Claim.—1. The sack or pouch B, open at one end and there folded upon itself by laying over both the front and back of the sack upon the front, in combination with the flaps *b* and *b′* and a tongue on the front of the pouch, the said tongue and flaps being arranged substantially as specified with relation to each other and the mouth or open end of the pouch, for the purposes set forth.

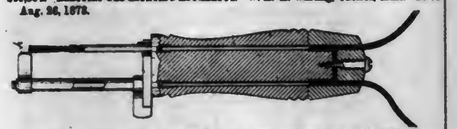
2. The sack or pouch B, having its front and back stuck or fastened together at one end to there form a flat surface or stamp-tag, and open at the other end and there folded by laying the front and back of the pouch upon the front thereof, in combination with the flaps *b* and *b′* and a flap upon the front of the pouch, substantially as and for the purposes specified.

3. The combination of the flaps *b* and *b′*, the shouldered tongue or flap E, the clasp D, and the sack B, substantially as and for the purposes specified.

208,593.



208,594. Electric Gas-Lighting Apparatus. W. H. H. Whiting, Chelsea, Mass. Filed Aug. 26, 1878.



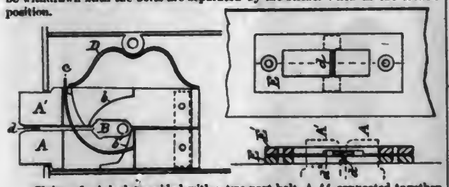
Claim.—1. An electric gas-lighting apparatus constructed with a handle, *c*, having wires arranged therein for placing it in electric circuit, in combination with a fixed and a vibrating electrode, operating substantially as and for the purpose described.

2. The handle *c*, adapted to be placed in electric circuit, as set forth, combined with the metallic brush-like electrode, and the vibrating electrode *h* and the tube and thumb-piece, substantially as described.

3. In a gas-lighting apparatus, the metallic brush-like electrode, combined with a vibrating electrode, and means to move it in contact with and past the brush-like electrode, substantially as described.

208,595. Locks. Orrin De Witt White, Clinton, Iowa. Filed June 7, 1878.

Brief.—The two bolts, when together, hold the key in the lock, and it cannot be withdrawn until the bolts are separated by the striker when in the locked position.



Claim.—1. A lock provided with a two-part bolt, A A′, connected together at or near their inner ends, and having a key-hole, B, through them, narrower when the two parts of the bolt are close together than the width of the bit of the key, substantially as and for the purposes described.

2. The lock having the two-part bolt A A′, connected together and provided with a key-hole, B, in combination with a strike-plate having a wedge-shaped strike-bar, *d*, substantially as and for the purposes described.

3. The two-part strike-plate E E′, having the recesses *d*² *d*², and provided with the wedge-shaped strike-bar *d′*, having lugs *d*¹, adjustable in the recesses between the plates, substantially as and for the purposes described.

4. In combination with the two-part bolt A A′, the springs *e* D, adjusted to hold the bolt in place, substantially as described.

208,596. Harness-Rosettes. Bryce A. Wilson, Providence, R. I., assignor to Peter K. Wilson, New York, N. Y. Filed July 30, 1878.



Claim.—As an improved article of manufacture, a harness ornament consisting of the sheet-metal concaved shell A, of a diminishing thickness from the center to the periphery thereof, and highly burnished, as described, the attaching-loop *e*, and glass disk D, arranged substantially as and for the purpose specified.

208,597. Gas-Generators. Augustin I. Ambler and William R. Ambler, New York, N. Y., assignors, by mesne assignments, to S. M. Whipple, Granville, Mass. Filed June 13, 1878.

Brief.—Oil is vaporized by steam heat, and the vapors are heated in a separate retort, and finally in a mixing-retort, with superheated steam.

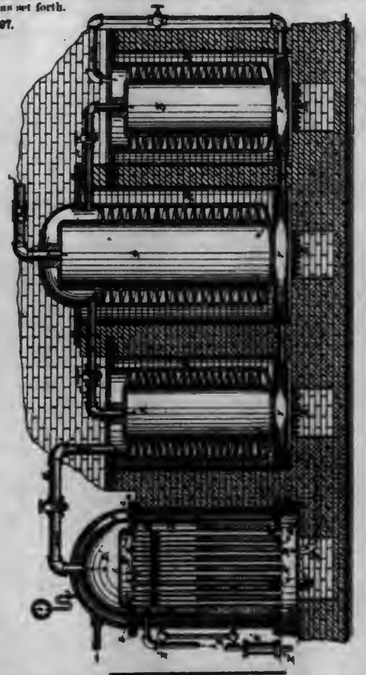
Claim.—1. The combination of chamber B′, head-plate A′, and tubes A, constructed as described, and made separate from the inner casing, D, so as to rise and fall within said casing, and allow of the expansion and contraction of the metal without breaking the joints, substantially as set forth.

2. The vaporizing-vessel constructed, as described, of two cylinders, one arranged within the other, and provided with a dome having double walls, in combination with the chamber B′, plate A′, and tubes A, made separate from the inner casing, D, as described, and the spaces being connected by hollow bolts or apertures for the passage of the vapors, substantially as specified.

3. The combination of the vaporizer or oil-receptacle, the retorts 2, 3, and 4, constructed as described, the superheaters 7 7 7, furnaces K K, and connecting-pipes G I I′.

4. In the vaporizer, constructed as described, the tubes A and plate A″, to which the lower ends of the tubes are secured, in combination with a layer of mercury, *d*′, for the purpose of protecting the joints of the tubes, substantially as set forth.

208,597.

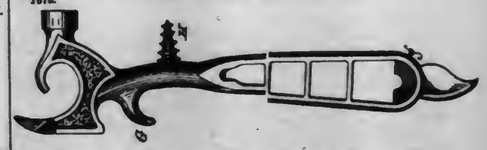


208,598. Umbrella Tip-Cups. Walter S. Atwood, Waterbury, Conn., assignor to himself and American Ring Company, same place, one-half to each. Filed Aug. 26, 1878.



Claim.—The tip-cup having its entire cylindrical portion corrugated, for the purposes and as set forth.

208,599. Combination Implements. Charles A. Babcock, Buffalo, N. Y. Filed Feb. 20 1878.



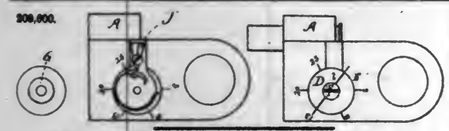
Claim.—As an article of manufacture, a combination instrument having at one end a stove-cover lifter, tack-drawer, and hammer, and at the other end a can-opener, and provided at intermediate points with a corkscrew, H, and ball-hook G, the latter being turned up toward the handle, substantially as and for the purpose set forth.

208,600. Registering Attachments for Fire-Arms. George A. Badger, Quincy, Mass. Filed Aug. 26, 1878.

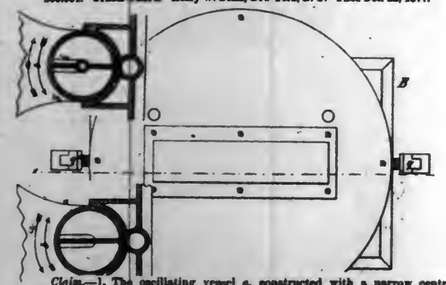
Claim.—1. In combination with the discharge-chamber of a fire-arm, a registering-indicator, provided with an operative arm or projection extending into the path traversed by the cartridge or a portion thereof when being introduced into the discharge-chamber, whereby the contact of the cartridge with such operative arm shall actuate the registering devices and cause the same to indicate the number of cartridges thus introduced within such discharge-chamber, substantially as specified.

2. In combination, the chamber A, dial E, disk D, provided with suitable actuating devices, and lever J, projecting into the path of the cartridge, all operating together substantially as and for the purposes specified.

208,600.



208,601. STEAM-TRAPS. Henry W. Beins, New York, N. Y. Filed Dec. 22, 1877.

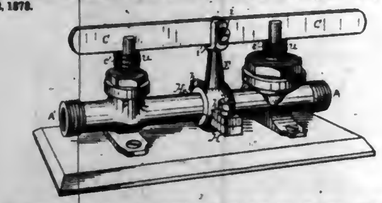


Claim.—1. The oscillating vessel *a*, constructed with a narrow central waist, *p*, and with a wide upper end, so that the two water-chambers are largest at the upper end, in combination with the inlet and outlet water and steam ports, and the base B and the guard-arms and cushions, substantially as and for the purposes set forth.

2. An oscillating vessel having a pair of equal water-chambers on the respective sides of its axis, and adapted to receive and discharge water at its bottom, as aforesaid, in combination with pendulums within the respective chambers of said vessel, for opening and closing air-vents in the tops of said chambers, said vents being automatically opened simultaneously with the opening of the inlet water-ports of the respective chambers.

3. The combination of a pair of pendulums, a pair of vent-valves, operated by said pendulums, and a steam-valve, operated by one of said pendulums, with an oscillating vessel having a pair of trunnions at bottom, provided, respectively, with inlet and outlet water-ports, a central partition forming two equal water-chambers on the respective sides of the axis of said trunnions, and a top plate provided with a pair of air-vents and a pair of steam-ports for the said water-chambers, said valves being applied, respectively, to said air-vents and steam-ports, said steam-valve inclosed in a steam-chest, the axes of said pendulums parallel to the axis of said trunnions, said trunnions seated in bearings having water-ports, and said vessel arrested in its respective inclined positions by guard-arms, substantially as hereinbefore specified.

208,602. FLUID-PRESSURE REGULATORS. John F. Bennett, Pittsburg, Pa. Filed Aug. 26, 1878.

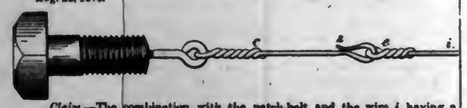


Claim.—1. In a device for regulating fluid-pressure in pipes, a flexible diaphragm arranged to operate as a valve to open and close the passage through the pipe, in combination with a flexible diaphragm arranged in a separate chamber or part of the pipe, both diaphragms being exposed on one side to the contents of the pipe, and connected by mechanical means, substantially as described, whereby the motion of one diaphragm will be communicated to the other.

2. In combination with the beam C and followers *e e'* and *e e'*, elastic springs arranged, one on each side of the pivot-post E, to cushion the bearings of the beam upon the followers, substantially as set forth.

3. The combination of diaphragms *a a'*, followers *e e'* and *e e'*, beam C, and an adjustable fulcrum or pivot post, E, substantially as and for the purposes set forth.

208,603. DEVICES FOR FATCHING BOILERS. Francis A. Bidwell, Berwick, Conn. Filed Aug. 22, 1878.

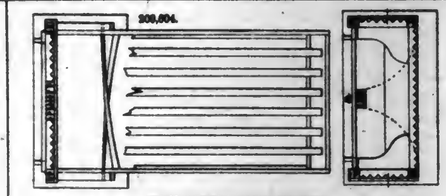


Claim.—The combination, with the patch-bolt and the wire *i*, having a loop, *c*, of the short separate link *e*, having a hook at one end for the loop *c*, and a connection at the other end for the bolt, substantially as set forth.

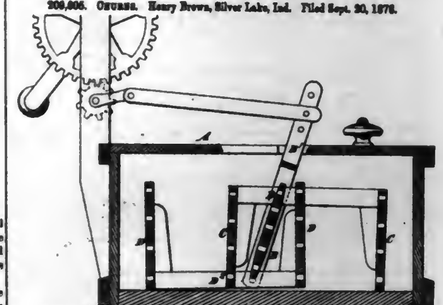
208,604. WARDROBE-BEDSTEADS. Harlan P. Hackman, Philadelphia, Pa., assignor of one-half his right to Charles S. Greene, same place. Filed Sept. 9, 1878.

Claim.—The folding portion of a wardrobe-bedstead projecting into the base or stationary portion thereof, in combination with torsional springs, one end of each spring being connected to one side rail, and the other end passed loosely through the opposite side rail and beyond the same and secured to the base, so as to form the axis of the folding portion, substantially as and for the purpose set forth.

208,604.

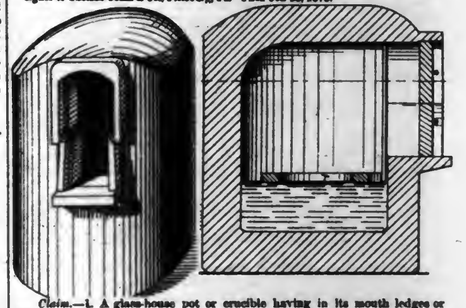


208,605. CHURNS. Henry Brown, Silver Lake, Ind. Filed Sept. 20, 1878.



Claim.—The combination, with the box A, of the central oscillating dasher, B, and pairs of dashers C C' and D D', respectively connected with the top and bottom of the oscillating dasher, so as to receive reciprocating motion in opposite directions, substantially as set forth.

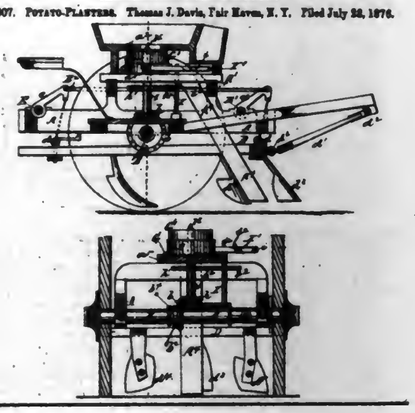
208,606. GLASS-HOUSE POTS. Thomas Coffin, Baldwin Township, Allegheny County, assignor to Thomas Coffin & Co., Pittsburg, Pa. Filed Oct. 18, 1878.



Claim.—1. A glass-house pot or crucible having in its mouth ledges or shoulders or supports for two or more stoppers, whereby each stopper may be removed or inserted independently of the stopper immediately above or below, substantially as set forth.

2. A glass-house pot or crucible having a mouth vertically high enough to admit the usual ring, in combination with two or more stoppers independently supported, whereby each is separately removable, substantially as set forth.

208,607. POTATO-PLANTERS. Thomas J. Davis, Fair Haven, N. Y. Filed July 22, 1876.



Claim.—1. The feeding mechanism consisting of disk G, adjustable rim G', shaft H, provided with gear-wheel *h*, segmental casing *a'*, and shaft I, carrying the distributing-arm I', in combination with the bevel-geared driving-wheel *b*, having on its hub the groove *b'*, and adjustable on the axle, as shown, lever K, rod K', short lever K², and hand-lever F, whereby the movement of the hand-lever lowers the plow-frame and also starts the feeding mechanism, as specified.

2. The revolving feeding apparatus G G' I *i*, constructed and operated as and for the purpose set forth.

3. The feed-arm I' and the feed-slide J, with its arm J', the ing *f'*, and pring *f*, all arranged and operated as and for the purpose set forth.

208,608. DEFECATION, DECOLORIZATION, AND REFINING OF SACCHARINE LIQUIDS. Jacob W. Demstre, New York, N. Y. Filed Oct. 9, 1878.

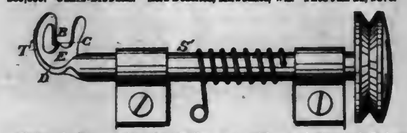
Claim.—1. The process of treating saccharine liquids to defecate and decolorize the same, which consists in mixing nitrates therewith, as set forth.

2. The process of treating saccharine liquids to defecate and decolorize the same, which consists in mixing neutral nitrate of zinc therewith, as specified.

3. The process of defecating and decolorizing saccharine solutions, which consists in mixing therewith, as set forth, a nitrate, preferably neutral nitrate of zinc, and organic matter, all as described.

4. The process of defecating and decolorizing saccharine liquids, in which an alkaline nitrate or a nitrate of an alkaline earth is employed, which consists in mixing such nitrate with the liquid, and subsequently filtering the mixture through bone-black to cause such nitrate to exert its effect, as set forth.

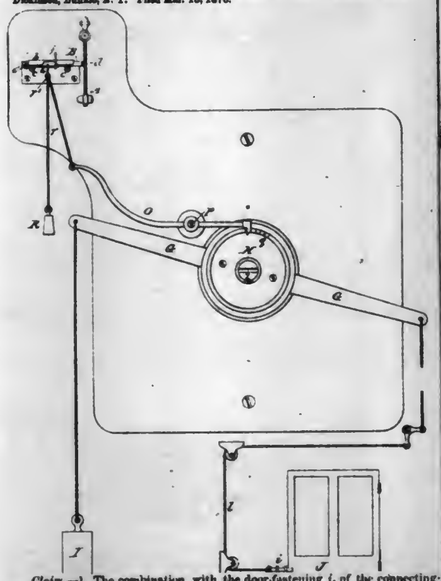
208,609. GRAIN-BINDERS. Ezra Dederick, Milwaukee, Wis. Filed Jan. 21, 1878.



Claim.—1. In a machine for binding grain with a cord, the shaft S', having the V-shaped binding-hook T', provided with a shoulder, D, inclined or curved, as described, for conducting the cord against the spring B, and between it and the point C, substantially as and for the purpose specified.

2. The shaft S', provided with hook T', catch A, spring B, projecting point C, and shoulder D, all substantially as and for the purpose specified.

208,610. ELECTRIC APPARATUS FOR OPENING DOORS OF ENGINE-HOUSES. Samuel V. Dickinson, Buffalo, N. Y. Filed Mar. 13, 1878.



Claim.—1. The combination, with the door-fastening *i*, of the connecting-rope *l*, releasing-lever G, provided with notched hub H, weight I, and pawl O, substantially as and for the purpose set forth.

2. The combination, with the pawl O, of the weight R, connecting-loop *r*, provided with rope *r'*, and releasing-bolt B, arranged so that a slight movement of the bolt will release the rope *r*, and cause the weight to fall a distance before acting upon the pawl, substantially as and for the purpose set forth.

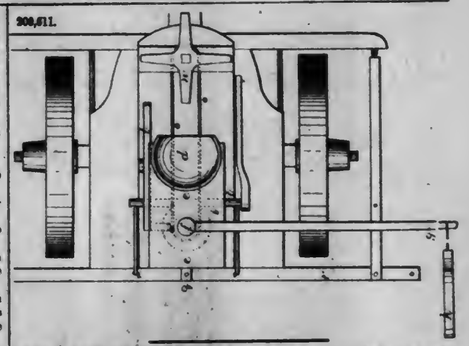
3. The combination, with the pawl O, of the weight R, connecting-rope *r*, provided with loop *r'*, sliding bolt B, pivoted pin *c*, and supporting-hook *f*, substantially as and for the purpose set forth.

4. The combination, with the door-fastening *i*, of the connecting-rope *l*, weighted releasing-lever G, pawl O, releasing-weight R, sliding bolt B, and alarm-hammer A, substantially as and for the purpose set forth.

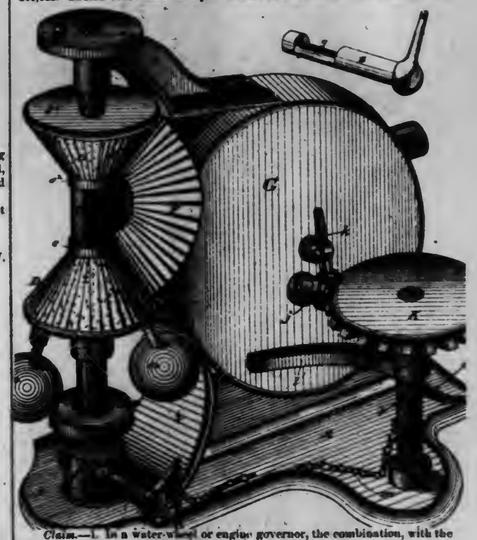
208,611. LAND-MARKERS. Wm. Everitt, Delaware Station, N. J. Filed Sept. 13, 1878.

Claim.—The combination of the windlass *n*, belt or chain *o*, shaft *f*, arm *g*, provided with drag *h*, and a locking device, substantially as shown.

208,611.



208,612. ENGINE-GOVERNORS. Henry T. Farnsworth, Bellefonte, Pa. Filed Aug. 19, 1878.



Claim.—1. In a water-wheel or engine governor, the combination, with the governor proper and the gate opening and closing shaft, of a cam grooved or slotted shaft, and a chain or its equivalent, arranged and operating substantially as herein shown and described, for the purposes specified.

2. In a water-wheel or engine governor, the combination, with the governor proper, the gate-operating shaft, and the intermediate grooved or slotted shaft, and the connecting-chain or its equivalent, of a float connected therewith, substantially as herein shown and described, for the purpose set forth.

3. An engine or water-wheel governor sleeve, C, provided with the rubber cones D D, held thereon by the flanges *c c²* and threaded plates *c' c²*, and means for securing the cones to said plates, substantially as herein shown and described, for the purpose set forth.

4. The sleeve C, formed with two detachable sections, *c c'*, having flanges *c c²* and plates *c' c²*, in combination with the rubber or frictional cones D D, substantially as herein shown and described, for the purpose set forth.

208,613. BREECH-LOADING FIRE-ARMS. Richard Fay, Philadelphia, assignor of one-fourth his right to George B. Harrison, Pottstown, Pa. Filed Sept. 30, 1878.

Brief.—When the breech is opened the breech-block comes in contact with one end of a spring-acted lever, the other end of which, being in contact with a downwardly-projecting heel of the hammer, cocks the latter. The spring, acting on the lever, returns the breech-block to its closing position, leaving the hammer cocked and the arm ready for action.



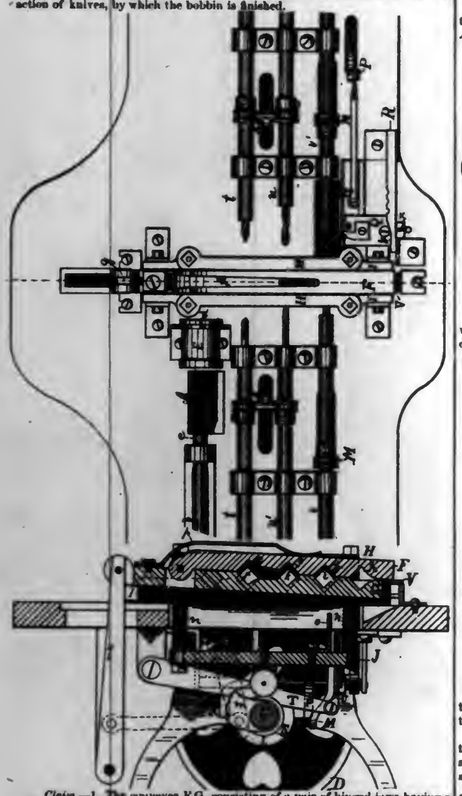
Claim.—1. The lever F and breech-block, in combination with the elevating-spring G, substantially as and for the purpose set forth.

2. The breech-block having its pivot at rear, in combination with the lever

F, bearing against the front portion of said block, and the hammer C, having a downwardly-projecting heel, H, at its lower end, substantially as and for the purpose set forth.

209,614. MACHINES FOR MAKING BOBBINS. George W. Glazier, Salem, and Oscar E. Waite, Lynn, Mass. Filed Nov. 27, 1876.

Brief.—The square blanks are fed from a hopper to a hollow auger, by which they are turned, and from which they are fed to sliding reciprocating conveyer, consisting of two bars hinged together at their ends, and bearing a series of holding-notches. By means of this conveyer and a pair of clamping-bars, the turned blanks are successively presented to the action of a number of borers, and are finally delivered to lathe-centers, which present them to the action of knives, by which the bobbin is finished.



Claim.—1. The conveyer F G, consisting of a pair of hinged jaws having a series of notches upon their meeting faces, held together with a yielding pressure, and provided with suitable mechanism for imparting to them a reciprocating motion, substantially as described, and for the purpose specified.

2. The clamping-bars H I, provided with a series of holding-notches upon their inside faces, one of which bars is rigidly secured to the bed or table of the machine, and the other has a vertical reciprocating motion, substantially as described, and for the purpose specified.

3. The combination of the conveyer F G and clamping-bars H I, substantially as described, and for the purpose specified.

4. The combination of the clamping-bars H I, conveyer F G, and the stop V, which engages with the upper member thereof, substantially as described, and for the purpose specified.

5. The combination of the conveyer F G, clamping-bars H I, and revolving spindles set in line with the holding-notches of the clamping-bars, substantially as described, and for the purpose set forth.

6. The combination of the conveyer F G, clamping-bars H I, revolving spindles set in line with the holding-notches in said bar, and the hollow auger E, substantially as described, and for the purpose set forth.

7. The combination of the conveyer F G, clamping-bars H I, tool-bearing spindles *t t* and *u u'*, lathe-center-bearing spindles *v v'*, and carriage Q, bearing chisel *w*, said carriage and spindles *v v'* provided with means for actuating one by the other, substantially as described.

8. The combination of the cam *m*, bar J, and clamping-bars H I, substantially as described, and for the purpose set forth.

9. The combination of the cam *n*, bar J, clamping-bars H I, conveyer F G, levers *q r*, connected together, and cam *s*, substantially as described, and for the purpose set forth.

10. The combination of the cam *m*, bar J, standard *o*, reciprocating conveyer F G, and the stop V, substantially as described, and for the purpose set forth.

11. The combination of the conveyer F G, clamping-bars H I, and their actuating mechanism with the cam *a*, lever *b*, plunger *c*, hopper A, hollow auger E, spindles *t t* and *u u'*, levers K K, and cams L L, substantially as described.

12. The combination of the cams N N, levers M M, and spindles *v v'*, bearing lathe-centers, with the carriage Q, bearing chisel *w* and projection *y*, lever P, and cams O and R, substantially as described, and for the purpose set forth.

13. The combination of the spindles *v v'*, carriage Q, lever P, and cam O with the vertically-sliding smoothing-chisel Z and its actuating-cam S, substantially as described, and for the purpose set forth.

14. The knife-point *d*, affixed in a stationary position to the framing of the machine and in the path of the rounded blocks, substantially as described, and for the purpose specified.

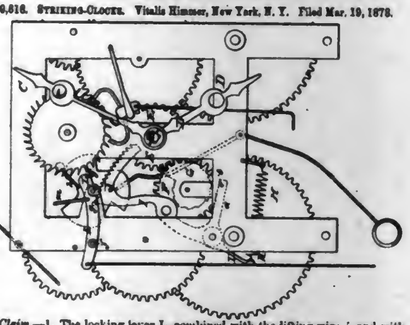
209,615. APPARATUS FOR MAKING VINEGAR AND AGEING LIQUORS. Archibald Graham, Fancy Hill, Va. Filed Mar. 30, 1878.

Brief.—The vinous or vinegar material is placed in the tub, and is drawn therefrom by the cloth, and is exposed to the air as it flows down the cloth. A body of shavings or charcoal is placed upon the upper false bottom.



Claim.—The cask A, having false bottoms B C and the standard D, provided with the rings H I and supporting the tub E, in combination with rods F and cloths G, substantially as described.

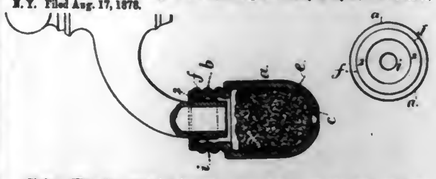
209,616. STRIKING-CLOCKS. Vitalis Himmer, New York, N. Y. Filed Mar. 19, 1878.



Claim.—1. The locking lever L, combined with the lifting-wire *j*, and with the depressing-wire *h* and segment J of a striking-clock movement, substantially as and for the purpose specified.

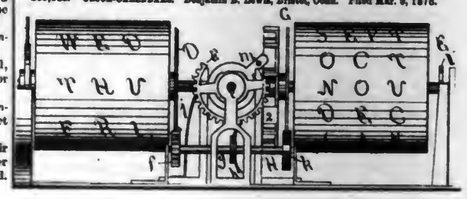
2. The locking-lever L, having the pin *g*, for stopping the motion of the toothed segment J, and provided with the projecting wire or arm *m*, for operating in combination with the vane M, substantially as herein shown and described.

209,617. FILTERS. John W. Hughes, Brooklyn, assignor to Mary A. Myers, West Chester, N. Y. Filed Aug. 17, 1878.



Claim.—The glass vessel *a*, having a screw-neck, *b*, at one end, and a discharge-hole, *c*, at the other end, and receiving the filtering material, in combination with the elastic diaphragm *f* and metallic ferrule *f'*, that screws upon the neck *b* and clamps the diaphragm directly to the same, substantially as set forth.

209,618. CLOCK-CALENDARS. Benjamin B. Lewis, Bristol, Conn. Filed Mar. 9, 1878.



Claim.—1. The day-of-the-week roller provided with mechanism for moving it daily one division, in combination with the day-of-the-month shaft *i* and connecting operative mechanism, the latter receiving its impulse through the medium of the day-of-the-week mechanism, substantially as described, and for the purpose specified.

2. The day-of-the-week roller provided with mechanism for moving it one division daily, in combination with the wheel D, pinion *f*, shaft *g*, cam *h*, and wheel E on the day-of-the-month shaft, substantially as described, and for the purpose specified.

3. The day-of-the-month shaft *i*, carrying an arm and pin, *m*, and provided with mechanism for moving one division daily, in combination with the month-of-the-year mechanism, acting upon the pin *m* to take it up at the end of its first movement after the last day of each short month and carry it forward to the first day of the succeeding month, substantially as described, and for the purpose specified.

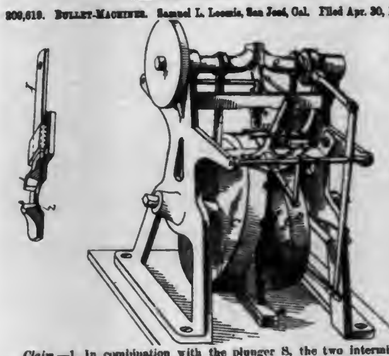
4. The month-of-the-year wheel O and gage-wheel H, in combination with the day-of-the-month shaft *i*, bearing pin *m*, the shaft *g*, bearing wheel *k*, and mechanism for operating said shafts *g* and *i*, substantially as described, and for the purpose specified.

5. In a calendar mechanism, the gage-wheel H, provided with twelve projecting gages representing the twelve months of the year, the same having their front edges at a uniform distance from each other, but widened at the rear edge more or less, according to the lengths of the respective months, substantially as described, and for the purpose specified.

6. The shaft *g*, bearing wheel *k*, and mechanism for moving it daily one-half of a revolution, in combination with wheel G, gage-wheel H, and mechanism for imparting an impulse to the gage-wheel at the end of each month simultaneously with the movement of the shaft *g*, substantially as described, and for the purpose specified.

7. The day-of-the-week roller provided with mechanism for moving it one division daily, in combination with gearing D *f*, shaft *g*, bearing cam *h* and wheel *k*, the shaft *i*, bearing wheel E and pin *m*, the roller F, wheel G, and gage-wheel H, substantially as described, and for the purpose specified.

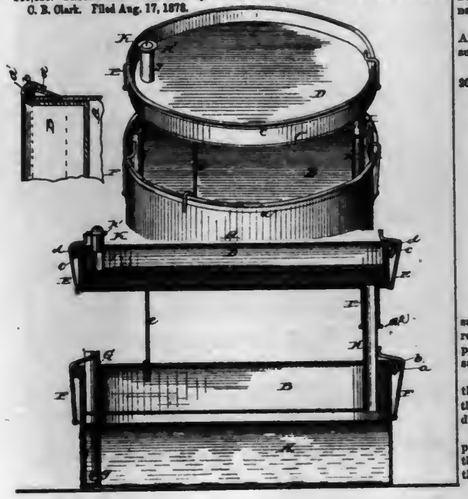
209,619. BULLET-MACHINES. Samuel L. Loomis, San José, Cal. Filed Apr. 30, 1878.



Claim.—1. In combination with the plunger S, the two intermittingly-rotated die-wheels C D, arranged on axes oblique to each other, and provided with pockets *d d*, formed in, but not extending entirely across, their adjacent faces, and uniting at the point of contact of the wheels, to form a matrix or mold of desired shape, as and for the purpose set forth.

2. The swinging plates *r r'*, in combination with the die-wheels C D and frame A, substantially as described.

209,620. FRUIT-DRIERS. Marcus S. Lyons, Armada, Mich., assignor of one-half his right to O. B. Clark. Filed Aug. 17, 1878.

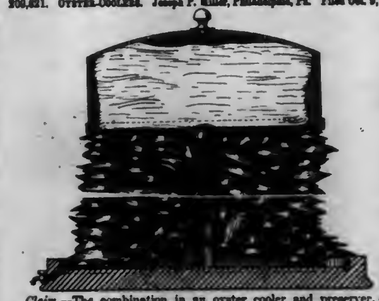


Claim.—1. The combination of the steam-generator A, having flange *b*, hooks F F, steam-supply pipe H, with pipe-seat *a'*, pipe I, and steam-chamber C, with hooks E and valve K, substantially as shown and specified.

2. In a fruit-drier, the generator A, with flange *a*, indicator G, and hooks F F, in combination with drying-pan B, having flange *b*, adapted, in connection with flange *a*, for reception of packing, to render the joints steam-tight, substantially as shown, and for the purpose described.

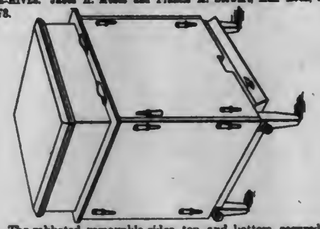
3. The steam-chamber C, having the adjustable supports *s s* pivoted thereto, and pipe I and pipe-seat *a'*, for supporting the detachable steam-chamber C, with drying-pan B and valve K, substantially as shown and specified.

209,621. OYSTER-COOLERS. Joseph P. Miller, Philadelphia, Pa. Filed Oct. 9, 1878.



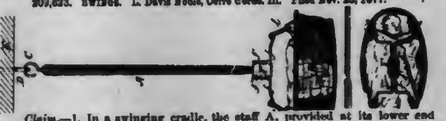
Claim.—The combination, in an oyster cooler and preserver, of a base-plate or support having a vertical socket, and a perforated ice-receiver having a stem or rod which is vertically adjustable in said socket, substantially as set forth.

209,622. BEE-HIVES. James H. Moore and Francis M. Stewart, Half Rock, Mo. Filed June 8, 1878.



Claim.—The rabbeted removable sides, top, and bottom, secured to posts by staples and pins, as specified.

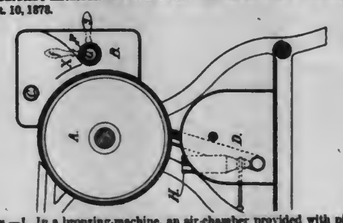
209,623. SWINGS. L. Davis Noble, Cerro Gordo, Ill. Filed Nov. 23, 1877.



Claim.—1. In a swinging cradle, the staff A, provided at its lower end with a sling or support for the cradle, and at its upper end with a wide flat hook, C, to engage with a staple, D, and permit the cradle to swing longitudinally without turning or oscillating laterally, substantially as described.

2. The combination of the socket F, secured to the lower end of the staff A, with the removable laterally-projecting arms *f f*, connected to the cradle, substantially as described, for the purpose specified.

209,624. BRONZING-MACHINES. Robert E. Peterson and Edward J. Frost, Philadelphia, Pa. Filed Oct. 10, 1878.



Claim.—1. In a bronzing-machine, an air-chamber provided with pipes for supplying and keeping in constant circulation and agitation a current or currents of air charged with particles of bronze or other powder for deposit on paper or other substance with properly-sized or otherwise prepared retaining-surface, substantially as described.

2. The air-chamber B, with its partition X, the supply-pipe C, passing through said chamber, perforated within and tight without, to the blower D, the discharging-pipe E, the movable and adjustable pipes F and G, with handles *f* and *g*, and the bronze-receiver H, all substantially as described.

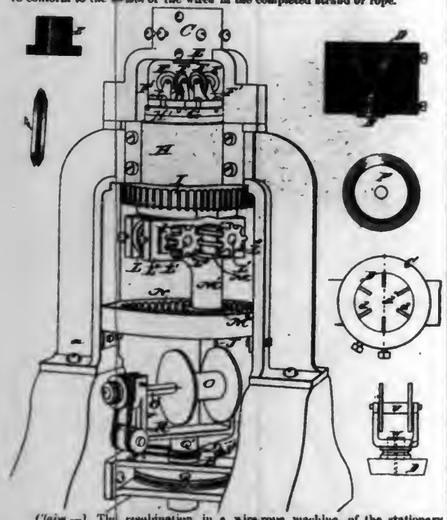
3. The combination of the air-chamber B, the supply-pipe C, the discharge-pipe E, the movable and adjustable slotted pipes F and G, the receiver H, and the blower D with each other and with the revolving cylinder A, all as and for the purpose substantially as described.

209,625. Processes of Bronzing and Flocking Paper, Cotton, Linen, &c. Robert E. Peterson and Edward J. Frost, Philadelphia, Pa. Filed Oct. 10, 1878.

Claim.—The process of bronzing, flocking, or otherwise powdering paper or other fabric prepared by sizing or other like process to receive and retain said bronze or other powder, by passing the same through a chamber through which currents of air charged with bronze or other powder are kept in rapid circulation by means of proper machinery provided for that purpose, substantially as described.

209,626. Wire-Rope Machines. Charles K. Pickles and Robt. Burns, St. Louis, Mo. Filed July 11, 1878.

Brief.—The twisting device consists of a series of rollers, grooved in their peripheries, there being one roller for each strand or wire, and arranged relatively to each other so as to inclose a space equal in size to that of the intended rope or strand. The rollers are arranged at an inclination from a perpendicular, to conform to the twists of the wires in the completed strand or rope.



Claim.—1. The combination, in a wire-rope machine, of the stationary retaining-die E, the rotating twisting device consisting of a series of rollers, F F F F F F, inclined and arranged as shown, and attached to the plate G, and suitable mechanism for rotating such twisting device, and also for drawing the rope or strand through the same, substantially as described.

2. The combination, in a wire-rope machine, of the stationary retaining-die E, the guide-die D, the rotating twisting device consisting of a series of rollers, F F F F F F, inclined and arranged as shown, and attached to the plate G, and suitable mechanism for rotating such twisting device, and also for drawing the rope or strand through the same, substantially as described.

3. The combination, in a wire-rope machine, of the twisting device consisting of a series of rollers, F F F F F F, inclined and arranged as shown, and attached to the plate G, and suitable mechanism for rotating such twisting device and for drawing the rope or strand through the same, substantially as described.

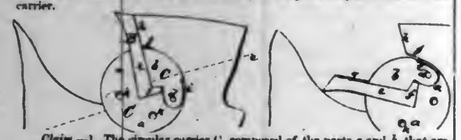
4. The combination of the die E, rollers F F F F F F, inclined and arranged as shown, the plate G, shaft H', bearing H, wheel I, shaft J, pinion K, rolls L L, shafts L' L', frame L² L², pinions L² L², shaft M, bearing M', pinion M², and internal gear, N, substantially as described.

5. The combination of the inclined rollers F F F F F F, plate G, shaft H', wheel I, frame L² L², rolls L L, shafts L' L', pinions L² L², shaft M, bearing M', pinion M², and rack N, substantially as described.

6. The combination of the reel U, frame W, pulley V, dies D E, inclined rollers F F F F F F, shaft H', plate G, wheel I, pinion K, and shaft J, substantially as described.

209,627. Interstice Saw-Teeth. Frederick Schley, New York, N. Y. Filed Oct. 5, 1878.

Brief.—The tooth is provided with a rearwardly-projecting foot, and is secured within the saw-blade by means of a circular and jointed carrier provided with a recess to receive the tooth and its foot, and with a recess in the outer edge of the link portion of the carrier, corresponding to a recess formed in the upper outer end of the circular cavity in the plate adapted to receive the carrier.



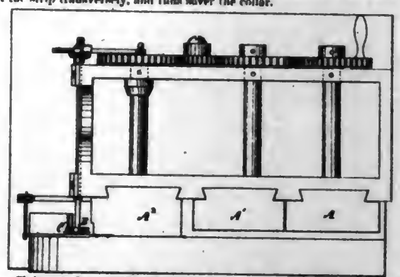
Claim.—1. The circular carrier C, composed of the parts *a* and *b*, that are hinged together for combination with a detachable saw-tooth, which is clamped between said parts *a* and *b*, substantially as herein shown and described.

2. The circular jointed carrier C, composed of the parts *a* and *b*, which are pivoted together, and constructed with recess *i* in the outer part of the link *b*, for operation substantially as herein shown and described.

3. The combination of the saw-tooth B, having foot *f*, with the circular carrier C, which is composed of the parts *a* and *b*, recessed to receive the tooth and its foot between them, substantially as herein shown and described.

209,628. Paper-Collar Machine. Chas. Spofford, New York, N. Y. Filed June 27, 1878.

Brief.—Three dies are arranged longitudinally adjacent to each other, with a distance of half a collar's length between the second and third dies. Rotary cutters secured to the side of feed-rollers are arranged at that end of the machine opposite to which the paper is fed in, so as to draw the paper along and to cut a strip from the same. The first die embosses a collar on one edge of the strip finally cut from the wider strip fed to the machine. The second die stamps the collar embossed by the first-named die, and causes it to pass out of the machine. The third die embosses a collar upon the opposite edge of the said paper strip, and the rotary cutter cuts and thereby forms one edge of the collar, and shears arranged at a collar's length from the last-named die cut the strip transversely, and thus sever the collar.



Claim.—1. In a machine for making paper collars, the combination of the collar-forming dies with the rotary cutters C, actuated by the motive-gearing of the machine, and arranged to cut the strip from which the collars are formed from the sheet employed conjointly with the forming of the collars, as described.

2. In a machine for making paper collars, the dies A and A^1, longitudinally adjacent to each other, and arranged to form a collar on one edge of a paper strip of a width equal to the sum of the greatest and least width of the collar produced, and the die A^2, placed at the distance of one-half a collar from the die A^1, to stamp a collar upon the opposite edge of the strip, as and for the purpose specified.

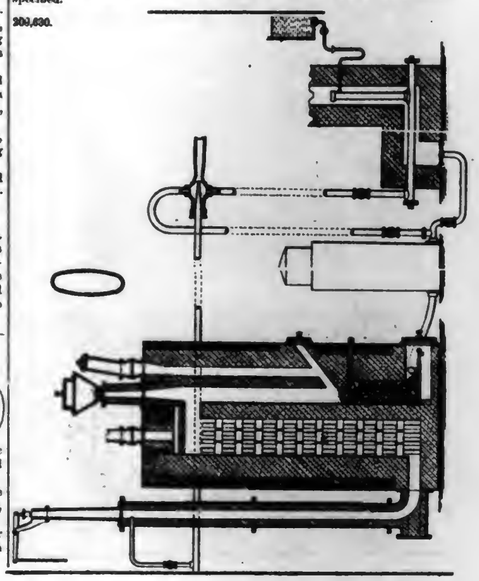
3. In a machine for making paper collars, the intermittently-rotating feed-rollers B, carrying the cutters C, arranged on the table of the machine on the end toward which the paper travels when fed, whereby the paper, in feeding the machine, is drawn along the table by said rollers to the dies successively, and the strip from which the collars are formed is cut therefrom, as and for the purpose specified.

209,629. Lamp-Lighters. Frederick G. Stephenson, Plainville, Conn., assignor of one-half his right to T. B. Stephenson, same place. Filed Sept. 27, 1878.



Claim.—The abrasive cylinder B, mounted on a pin to rotate in a suitable frame, in combination with match-drawing mechanism, which carries the match substantially lengthwise with said cylinder, in the manner and for the purpose specified.

209,630.



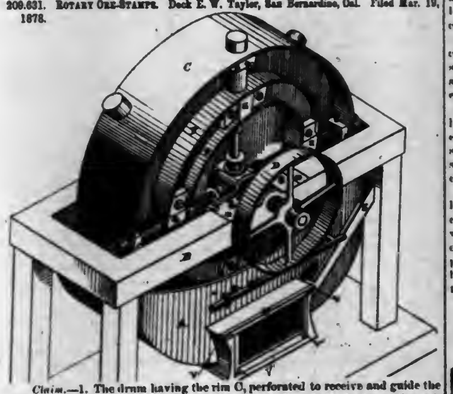
209,630. Apparatus for the Manufacture of Illuminating-Gas. Myron H. Strong, Brooklyn, N. Y., assignor to Lemuel W. Serrell, trustee for said Strong, Sidney Cornell, Henry M. Pierson, and Walter E. Lawton. Filed Aug. 10, 1877.

Brief.—Water-gas is made by the decomposition of steam in contact with incandescent carbon and stored in a holder. From here part of the gas is conducted to a furnace and burned under retorts in which olefiant gas is made from oil, and part of it is conducted to the eduction-pipe for the olefiant gas, and the two gases are mixed, by a steam-jet, in proper proportion to form an illuminating-gas.

Claim.—1. The combination, with the decomposing-chamber for making non-luminous gas, of a holder for the same, a retort for making olefiant gas, a supply-tank for liquid hydrocarbon to the retort, a gas-pipe and burner for heating such retort, and connecting-pipes and a steam-injector for mixing the gases, substantially as set forth.

2. In the manufacture of illuminating-gas, the combination of a decomposing-chamber for making non-luminous gas, a holder for storing such non-luminous gas, a retort for the production of olefiant gas, an apparatus for supplying liquid hydrocarbon to such retort, a burner or burners for heating such retort by the combustion of non-luminous gas, and means for mixing the non-luminous gas and the olefiant gas in the proper proportion for producing the illuminating-gas, substantially as specified.

209,631. Rotary Ore-Stamps. Dock E. W. Taylor, San Bernardino, Cal. Filed Mar. 19, 1878.



Claim.—1. The drum having the rim C, perforated to receive and guide the stamps, as shown, and provided with the flanges F, to hold the boxes through which the stems pass, substantially as shown, and for the purpose herein described.

2. The boxes formed of the two parts G, held in place by the flanges F, in combination with the screws H' and nuts, constructed as shown, to hold the boxes and adjust them, for the purpose herein described.

3. The strap M, provided with the radial sleeve screws N, in combination with the partition or web 2, to center the stems, substantially as described.

4. The rotary drum and radial stamps J, in combination with flanges O O', one so constructed as to hold the tappets and allow the stamps to fall upon the dies at the proper time, while the other lifts and retracts them after a blow, substantially as shown, and for the purpose herein described.

5. The adjusting devices for the flanges O O', consisting of the plates P, with their guides Q and screws R, for elevating and depressing the flanges, substantially as shown, and for the purpose herein described.

6. The screens T, secured in the mortar by means of the frames U, having the wedge-shaped or angular lugs V and posts V', fitting into corresponding sockets, substantially as shown, and for the purpose herein described.

7. The drum C, with its stamps J, mounted upon an independent frame, B, and operated as shown, in combination with the semicircular mortar, A, with its dies, and the screens T, and securing frames U, substantially as shown, and for the purpose herein described.

209,632. Galvanic Piles for Medical Purposes. F. J. Teague, Chicago, Ill. Filed Sept. 13, 1878.



Claim.—1. In a galvanic pad for medical application, the series of cut-away plates C, gradually increasing in size, in combination with the upper series of disk-plates, D, substantially as described.

2. In a galvanic pad, the case A, provided with a removable cover, in combination with the plates composing the pile, arranged loosely within the former, and thereby held in place to form the pile, substantially as described.

3. The case A, provided with an aperture, *a*, in its bottom, in combination with the perforated disk-plate B, plates C and D, and cover E, substantially as described.

4. The case A, in combination with the plates C and D, composing the pile, the spring F, and cover E, secured to the case by a detachable fastening, substantially as described.

209,633. Cultivators. Willard A. Van Brunt and Spencer E. Davis, Horicon, Wis. Filed Aug. 6, 1878.

Claim.—1. The combination, with drag-bars, provided with suitable teeth or hoes, of a supporting-shaft journaled eccentrically to its longitudinal axis, and provided with transverse arms, part of which extend on one side and part on the opposite side of said shaft, the same being adapted to cause said drag-bars to be moved so as to adjust the several teeth or hoes in single or double rank, substantially as set forth.

2. The combination, with the drag-bars of a cultivator, of an eccentrically-journaled shaft provided with transverse arms, part of the latter extending on one side and the remaining part on the opposite side of the shaft, said arms being adapted by the rocking movement of said shaft to be all placed in the same vertical or in the same horizontal plane with each other, and at the same time out of alignment with the supporting-shaft, substantially as set forth.

3. The combination, with the drag-bars of a cultivator, of connecting-arms secured transversely to an eccentrically-journaled shaft, said arms extending at equal distances, part of them on one side and part on the opposite side of a straight line passing through the bearings of said shaft, substantially as set forth.

4. In a cultivator, the combination, with a series of drag-bars, of a supporting-shaft journaled eccentrically at its opposite ends, and provided with single transverse arms extending on opposite sides of the same, said drag-bars being pivoted to the arms at points equidistant from a straight line passing through the bearings of said shaft, substantially as set forth.

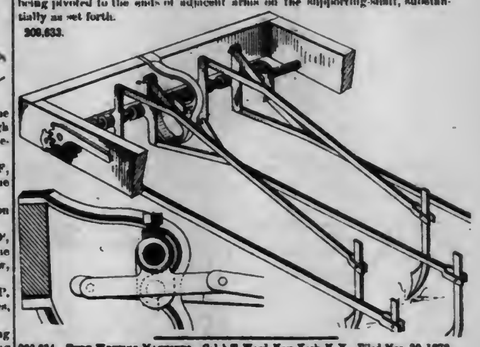
5. In a cultivator, the combination, with a series of drag-bars, of a supporting-shaft journaled eccentrically at its opposite ends, and provided with arms axially adjustable on said supporting-shaft, said arms having the drag-bars pivoted thereto at points equidistant from a line passing through the eccentric-bearings of the supporting-shaft, substantially as set forth.

6. The combination, with a series of cultivator drag-bars formed with bifurcated ends, of a supporting-shaft journaled eccentrically at its opposite ends, said shaft provided with a series of arms, each of which projects on opposite sides of the shaft, the bifurcated ends of the drag-bars being pivoted to the ends of adjacent arms on the supporting-shaft, substantially as set forth.

7. The combination, in a cultivator, with a series of drag-bars formed with bifurcated ends, of a supporting-shaft journaled eccentrically at its opposite ends, and supported by a bracket bearing located between its end bearings, said shaft provided with a series of arms, each of which projects on opposite sides of the shaft, the bifurcated ends of the drag-bars being pivoted to the ends of adjacent arms on the supporting-shaft, substantially as set forth.

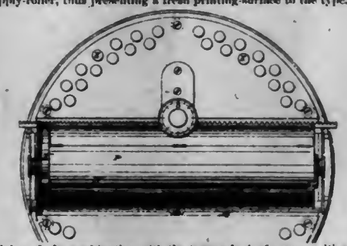
8. In a cultivator, the combination, with a series of drag-bars formed with bifurcated ends, of a supporting-shaft journaled eccentrically at its opposite ends, and provided with an adjustable collar, having an arm formed therewith, which has a rocking bearing on a bracket located between the end bearings of the supporting-shaft, the latter provided with a series of arms, each of which projects on opposite sides of the shaft, the bifurcated ends of the drag-bars being pivoted to the ends of adjacent arms on the supporting-shaft, substantially as set forth.

209,633.



209,634. Type-Writing Machines. Caleb T. Ward, New York, N. Y. Filed Mar. 30, 1878.

Brief.—Each type-lever has a pin near its type end, which strikes and lifts a projection or ring with which the feed mechanism is connected. The pin is placed at varying distances from the type end of the several levers, to correspond with the distance the cylinder carrying the paper is to be turned to effect spacing between the letters. The nearer the pin is placed to the type the greater will be the feed. The type, in its upward movement, strikes and lifts the inking-roller, which latter, on its return, is revolved by reason of being geared with the supply-roller, thus presenting a fresh printing-surface to the type.



Claim.—1. In combination with the type-rods A of a type-writing machine swinging from radial bearings B, attached to segments C, the vertical rods E for operating and the pins or projections F for regulating the spacing, substantially as described.

2. In a type-writing machine, an automatic inking device consisting of a fountain-roller, G, set between the hangers T, on whose axis a frame, S, with feed-roller R, swings, in combination with gearing U U', of different diameters, for the purpose of producing a fresh surface on the feed-roller for each type to strike, substantially as described.

3. In a type-writing machine, an adjustable revolving griper, W, con-

structed of rubber or other elastic substance, in combination with the cylinder P, for the use and purpose specified.

4. In a type-writing machine, the combination of the brush or elastic spool Y, the radial arm Z, central gear-wheel, *a*, pinion *b*, and shaft *c*, substantially as herein set forth, shown, and described.

209,635. LIFTING-JACK. Henry M. Willis, Minoola, N. Y., assignor of one-half his right to Garry Vanderbeek, same place. Filed Oct. 15, 1878.



Claim.—1. In a lifting-jack, the combination of the notched standard B with the lifting-plate D, connecting-rods *b*, and double-armed lever C, arranged substantially as described.

2. In a lifting-jack, the lifting-plate D, having the projecting legs d^1 d^2 d^3, substantially as described.

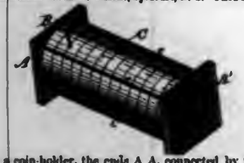
209,636. REFLECTORS FOR LAMPS. James H. White, New York, N. Y., assignor to Manhattan Brass Company, same place. Filed Sept. 23, 1878.



Claim.—1. The combination, with the reflector, of the tubular slide *d*, clip *c*, plate *b*, and screw *e*, the clip *a* surrounding the tube *d*, substantially as and for the purposes set forth.

2. The sheet-metal clip *g*, attached to the tube *d*, in combination with the clip *c*, plate *b*, screw *e*, and reflector *a*, substantially as set forth.

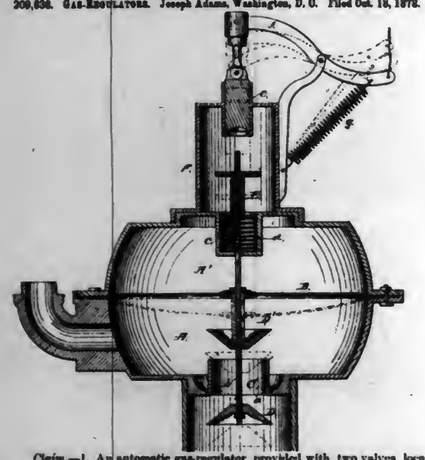
209,637. COIN-HOLDERS. John W. Whittle, Syracuse, N. Y. Filed Sept. 18, 1878.



Claim.—1. In a coin-holder, the ends A A, connected by the flexible ribs *a a a*, permanently secured to the same, substantially as described, and for the purpose specified.

2. In a repeating coin-holder, the ends A A, perforated, and connected by the flexible ribs *a a a*, having the fastening device consisting of the loop B and the end C, all constructed and arranged substantially as described, and for the purpose specified.

209,638. GAS-REGULATORS. Joseph Adams, Washington, D. C. Filed Oct. 18, 1878.



Claim.—1. An automatic gas-regulator provided with two valves located upon opposite sides of an inlet-orifice, and made positively adjustable either to cut off the gas or admit it in unlimited supply, substantially as herein shown and described.

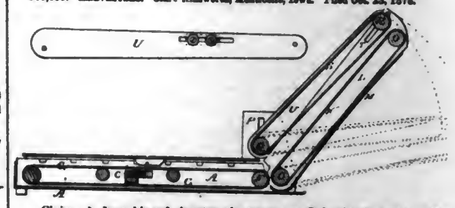
2. The gas-regulator case, having a tubular inlet, forming valve-seats *a a'*, in combination with the two reversely-arranged valves located upon the stem suspended from the diaphragm, substantially as and for the purpose described.

3. The combination, in a gas-regulator, with a suspended stem carrying two valves arranged upon opposite sides of the inlet-orifice, of a lifting-spring, substantially as described, arranged to prevent the upper valve from permanently seating itself, as set forth.

4. The combination, with the upper hemisphere, A', formed with a cup-shaped recess, *c*, of the valve-stem *b*, extended through said recess, and provided with a sleeve having an offsetting flange, together with the spiral spring *d*, located in said recess *c*, and arranged to bear against the flange of the sleeve, as and for the purpose described.

5. The combination, with the upper extension of the valve-stem, of the plunger *e*, the lever *f*, and spring *g*, substantially as and for the purpose described.

209,639. HARVESTERS. Clark Ainsworth, Monticello, Iowa. Filed Oct. 23, 1878.



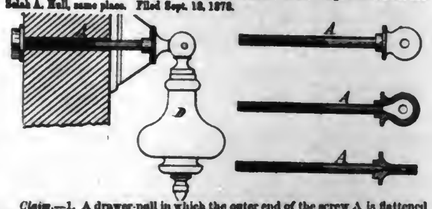
Claim.—1. In a hinged elevator, the top apron, S, having its upper roller connected to its lower one by rigid connections, the upper roller being adjusted back and forth by the movement of the frame L up and down, substantially as shown.

2. The hinged elevator-frame, provided with longitudinal slots at its upper end for the shaft of the upper roller to move in, in combination with an upper apron having its rollers united by connecting bars or strips, substantially as specified.

3. The hinged elevator-frame L, having the fixed roller O and sliding roller R at its upper end, in combination with the two rollers O and Q, journaled in the end of the platform-frame A, the roller Q being made adjustable away from the lower apron in the slotted bearings P, substantially as described.

4. In an elevator, the combination of the three rollers, placed together at the joint of the elevator and bed frame, connecting side pieces, U, the hinged elevator-frame, and the sliding roller R of the upper apron, substantially as described.

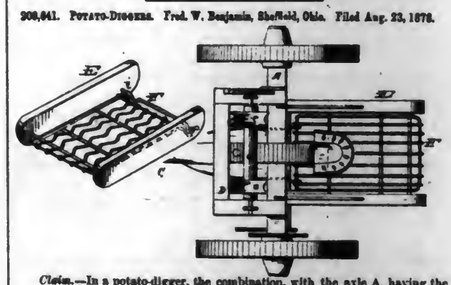
209,640. DRAWER-PULLS. Thomas S. Alexander, Meriden, Conn., assignor to himself and Selah A. Hall, same place. Filed Sept. 18, 1878.



Claim.—1. A drawer-pull in which the outer end of the screw A is flattened and has a soft-metal head cast upon it, so that the pivot-hole may pass through the soft metal and the flattened end of the screw, substantially as herein shown and described.

2. A drawer-pull in which the end of the stem of the knob D has the pivot-hole formed at one side of its center to form a stop to prevent the knob from swinging inward against the front of the drawer, substantially as herein shown and described.

209,641. POTATO-DIGGERS. Fred. W. Benjamin, Sheffield, Ohio. Filed Aug. 23, 1878.



Claim.—In a potato-digger, the combination, with the axle A, having the cog-wheel J_3 of the pinion m, cog-wheel K, pinion n, and the frame E, provided with open wire shaker F, composed of vertically-corrugated wires, and connected with the crank-shaft *i*, said shaker resting on the inclined portion of the rods or wires, whereby the rear end of the separator is vibrated vertically, substantially as herein set forth.

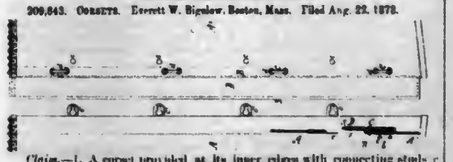
209,642.



209,642. BALANCE-SPRINGS FOR TIME-KEEPERS. Maximilian D. Berlin, Providence, and Henry P. Morgan, Westerly, assignors of one-third their right to E. Holbrook, Providence R. I. Filed May 16, 1878.

Claim.—A balance-spring having a varying area of cross-section in different parts of its length, substantially as herein described.

209,643. CORSETS. Everett W. Bigelow, Boston, Mass. Filed Aug. 22, 1878.



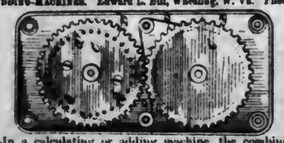
Claim.—1. A corset provided at its inner edges with connecting-studs *c* and clasps *c'*, and their supporting-steels, as set forth, and having arranged between the said steels, and projecting from one of the body parts A A' of the corset, a fly, B, as described, to connect with the corset a detachable busk, D, separate from said studs, clasps, and their supporting-steels, all being substantially as represented.

2. A corset, A A', provided at its front edges with connecting-studs *c* and clasps *c'*, and their supporting-steels, and also having a fly, B, and a detachable busk, D, arranged with and applied to such fly, substantially as set forth.

3. A busk, D, composed of two steels and of a covering therefor, having arranged in it, as shown, separate pockets for reception of such steels, and also having between such pockets lacing holes or eyelets or devices for fastening or aiding in fastening the busk to a corset.

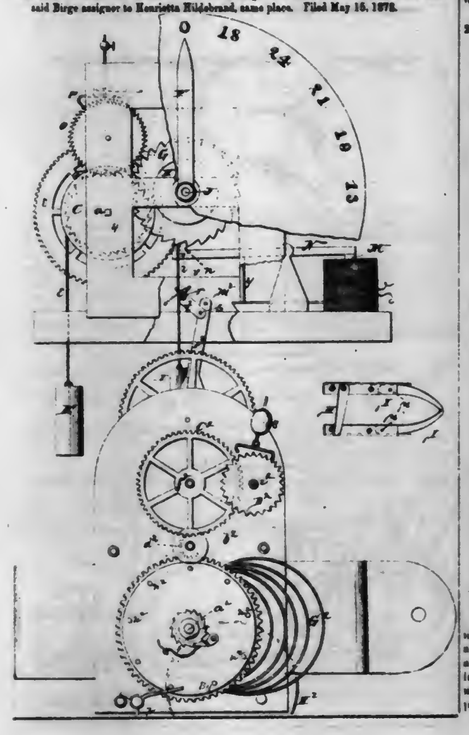
4. A detachable busk composed of two steels and a covering therefor, arranged as explained, and composed of two steels and a covering therefor, provided with pockets for their reception, and also having between such pocket lacing holes or eyelets arranged in it, and having a lacing attached to it, to serve with such eyelets or holes to fix it to a corset, as explained.

209,644. ADDING-MACHINES. Edward L. Bill, Wheeling, W. Va. Filed Aug. 30, 1878.

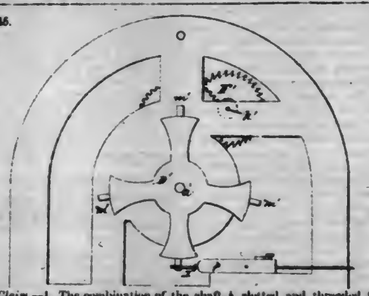


Claim.—In a calculating or adding machine, the combination, with the toothed perforated drums B B', with or without a tension-spring, of the registering-tape D and case A, having the viewing-apertures F F' and segmental or other shaped slot H, substantially as and for the purpose set forth.

209,645. FIRE-ALARM TELEGRAPHS. Lewis Birge and Charles D. Williams, St. Paul, Minn., said Birge assignor to Henrietta Hildebrand, same place. Filed May 15, 1878.



209,645.



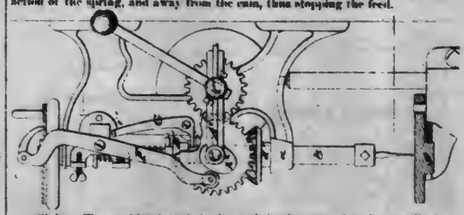
Claim.—1. The combination of the shaft *h*, slotted and threaded tube *k*, wheel H, with cord *i* and weight I, the hand F, and thumb-nut J, substantially as and for the purposes herein set forth.

2. The rocking shaft *r*, with arm *t*, having pin *s*, in combination with the pin *r* on the armature-lever N, for the purposes herein set forth.

3. The combination of the automatic circuit-breaker D^1, provided with non-conducting pins n^1, the automatic circuit-closer, consisting of the pivoted jaws l^1 and springs *p'*, and the cut-out H^1, all substantially as and for the purposes herein set forth.

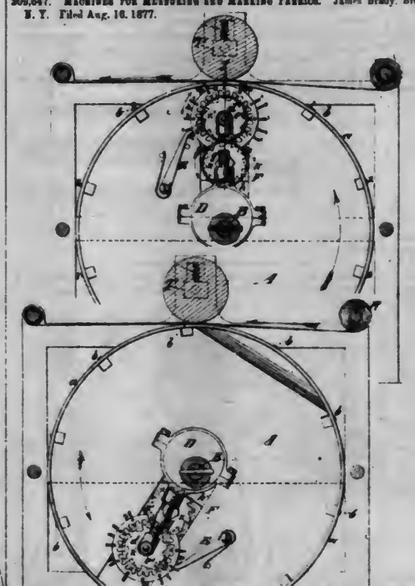
209,646. METAL-DRILLING MACHINES. Edwin E. Boynton, George M. Coburn, and Thomas F. Carver, Worcester, Mass., assignors to Edwin E. Boynton, same place. Filed Aug. 6, 1878.

Brief.—The collar on the spindle, coming in contact with the foot of the L-shaped lever, causes the upper end to hold the pawl-arm back against the action of the spring, and away from the cam, thus stopping the feed.



Claim.—The combination of the lever G, having arms *i i'*, the spindle E, having collar B', and the feed-lever F, as and for the purpose specified.

209,647. MACHINES FOR MEASURING AND MARKING FABRICS. James Brady, Brooklyn, N. Y. Filed Aug. 16, 1877.



Claim.—1. The combination, with the measuring-wheel in a measuring machine, of a type-wheel arranged to rotate on a shaft revolving around the axis of the measuring-wheel, one or more of the types in which type-wheel are automatically projected from and withdrawn within the surface of the measuring-wheel by the movement of said shaft from and toward the said axis of said measuring-wheel, by mechanism substantially as herein described, and for the purpose set forth.

2. The combination, with the measuring-wheel in a measuring-machine and one or more type-wheels arranged upon a reciprocating axis within said measuring-wheel, of mechanism, substantially as herein described, for automatically reciprocating the said axis to project and withdraw the types, substantially as and for the purpose specified.

3. The combination, with a measuring-wheel having openings in its periphery, of one or more internal type-wheels fitted upon reciprocating axles, the type of which wheels are automatically projected from and withdrawn into the said openings by the reciprocation of said axles from and toward the shaft of said measuring-wheel, by mechanism substantially as herein set forth, and substantially as and for the purpose herein described.

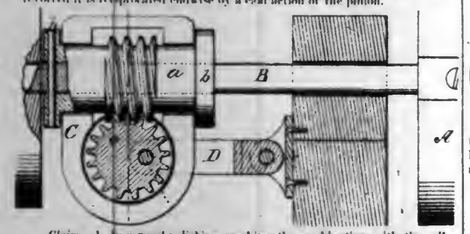
4. The combination of the measuring-wheel, having in its periphery fixed types and openings for the passage of movable types, and one or more type-wheels, the types of which are automatically thrust out through said openings and withdrawn within said openings, by mechanism substantially as herein described, and substantially as and for the purpose specified.

5. In a measuring, counting, or registering machine, the combination of the intermittently-rotating driving wheel *i*, the driven toothed wheel *i'*, the side projection *n* on the said driving wheel, for moving the said driven wheel through a distance of one tooth at every revolution of the said driving wheel, and one or more side projections, *n'*, on the said driven wheel, for producing the separation of series of numbers by the movement of the latter wheel at intervals through a distance of two teeth, substantially as and for the purpose specified.

6. The combination, with the measuring wheel A, having fixed types *b*, and the holes *c c'* in its rim, of the type-wheel *d'*, the ratchet-wheel *i*, the toothed wheel *i'*, the transmitting gears *k* and *k'*, the type-wheel *d*, the sliding carriage F, carrying said wheels *d d' i i' k k'*, the fixed eccentric D, rod *g*, and pawl E, all operating to move the types into position and thrust them through the holes *c c'*, substantially as and for the purpose set forth.

209,648. SANDPAPERING-MACHINE. Alson Bridgman, Berlin, Wis., assignor of one-half his right to James L. Perry, same place. Filed Apr. 2, 1878.

Brief.—A pinion eccentrically mounted in an arm hinged to a fixed bracket gears into a worm on the polishing roll above, so that as the roll is revolved it is reciprocated endwise by a cam action of the pinion.



Claim.—1. In a wood polishing machine, the combination, with the roller A and its shaft B, having worm *a* and collars *b*, of the suspended boxing C, its gear *c*, and pulley D, substantially as specified.

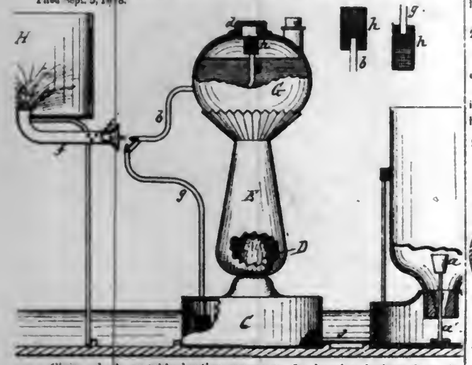
2. In a sand paper roller, A, having semicircular grooves *g*, with rounded edges *h*, the sunken fastening strips *j*, of semicircular form in cross-section, substantially as specified.

209,649. HANDLES FOR TABLE-KNIVES. William H. Brown, Waterbury, Conn., and Isaac Osgood, Utica, N. Y. Filed Jan. 23, 1878.



Claim.—As an improvement in table-knives or other articles of cutlery, a handle for the same having a closed butt or end, all made of a seamless wrought or drawn metallic shell, substantially as herein shown and described, for the purpose specified.

209,650. HEATING APPARATUS. Abner Burbank, Rochester, N. Y., assignor to Austin V. M. Sprague, Edmund Ocumpaugh, and George W. Ross Lewis, same place, one-fourth to each. Filed Sept. 5, 1878.



Claim.—1. A portable heating apparatus for burning hydrocarbons, in which are combined a cylinder, H, having tube *f*, the receptacle C', the chimney or heat-conductor E, the separate boiler G, resting on the chimney, with a pipe, *b*, proceeding from the boiler, and a pipe, *g*, proceeding from an oil-fount, the two pipes uniting in front of the tube, *f*, for conveying oil and steam and injecting the oil through said tube to the interior of the cylinder H, substantially as shown and described, and for the purpose specified.

2. In a portable heating apparatus, the combination of the oil-fount G, chimney or heat-conductor E, and separate boiler G, provided with the pipes *b g*, constituting an injector, the whole forming an attachment capable of raising the oil and injecting the same through pipe *f* into the cylinder H, substantially as shown and described, and for the purpose specified.

3. In a portable heating apparatus such as described, the combination, with pipes *b g*, of the perforated screens *h h*, inclosing the induction ends of said pipes, and having their perforations as small as or smaller than the discharge-orifices of said pipes, as herein shown and described.

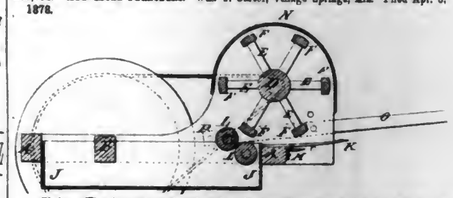
209,651. BROW-BANDS FOR BRIDLES. E. R. Osborne, Newark, N. J. Filed Aug. 28, 1878.



Claim.—1. As a new article of manufacture, a brow-band composed of a leather cover, a filling of paper or vulcanized fiber, and an embedded strengthening-strip of metal, all substantially as set forth.

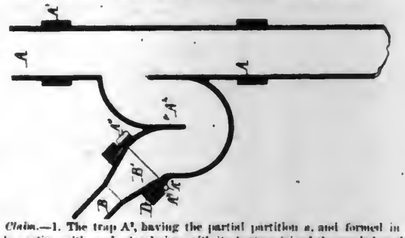
2. A brow-band for a horse-bridle, composed of an outer covering of leather or cloth, glazed or otherwise, and a filling of straw or other paper, combined with an inclosed strengthening-strip of metal having central or marginal serrations to penetrate and hold to the filling, as set forth.

209,652. HARVESTER-THRASHERS. Wm. T. Carter, Village Springs, Ala. Filed Apr. 3, 1878.



Claim.—The harvester-thrasher herein described, consisting essentially of the rotary beater D E F, fingers K, cutter M, rollers L L, arranged beneath the beaters, box J, and casing N, the whole mounted on wheels, and combined and arranged for operation as specified.

209,653. TRAPS. William Christie, New York, N. Y. Filed Apr. 3, 1878.



Claim.—1. The trap A^3, having the partial partition *a*, and formed in a single casting with such stand-pipe, with its bottom joined thereto below the opening, as shown, in combination with a stand-pipe, A, extending from the bottom to or near the top of the building, and with a branch pipe, B, so that the trap shall not only perform its ordinary functions relatively to the communication to and from the branch, but shall, when the branch is disused, tend to keep full by any water trickling down the stand-pipe, as herein specified.

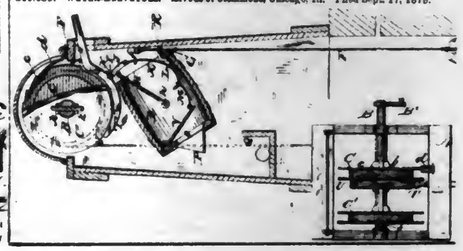
2. The stand-pipe A A^1, trap A^3, hub A^4, and projections A^5, in combination with the branch pipe B B' and locking-piece D D', as and for the purposes herein specified.

209,654. SOLUBLE COATINGS FOR PILLS. William H. Clark, New York, N. Y. Filed Oct. 17, 1878.

Brief.—Two parts of gum-arabic are added to one part of gelatine, and dissolved in hot water.

Claim.—As a new article of manufacture, pills coated with a fluid gelatinizing transparent compound consisting of gum-arabic and gelatine, in the proportions substantially as set forth.

209,655. WATER-ELEVATORS. Aiveus J. Clemmens, Chicago, Ill. Filed Sept. 17, 1878.



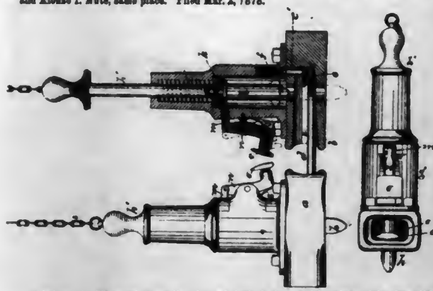
Claim.—1. The combination of the bucket D, pivoted bail H, link I, strap J, curved wire K, ring L, flat link M, and hinged valve V, substantially as described, for the purposes specified.

2. The perforated strap J, rendered adjustable within the link I by means of the pin N, for the purpose of causing the valve to open more or less widely when the bucket is tilted, substantially as described.

3. The combination of the bucket and its suspending and winding apparatus with the guide-wire rod F and the stop R, for automatically tilting the bucket, substantially as described, for the purpose specified.

4. The combination of the shaft B, having the longitudinal flanges *b b*, the drums C C', and the locking-wedges *k k*, whereby the said drums are enabled to be slid along the shaft until the flanged portion is passed, and then independently turned to the right or left to adjust the chains or ropes to suit the height of the water in the well, and to be securely held in adjusted position by the wedges, substantially as described.

209,656. CAR-COUPLINGS. Charles L. Cloutman, Farmington, N. H., assignor to himself and Alonzo I. Nute, same place. Filed Mar. 2, 1878.

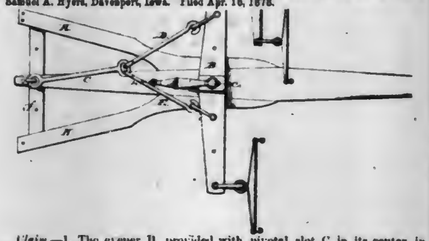


Claim.—1. The rod *k'*, collar *k*, and bolt *h*, in combination with the slide-rest and lever *n*, operating by contact of the levers on approaching couplings to release the coupling pin or bolt, all substantially as described.

2. A coupling-pin-operating rod, *k'*, having a collar, *k*, in combination with the slide-rest *m*, spring-lever *n*, and striking-piece *a*, substantially as and for the purpose described.

3. In a car-coupling, a presser, *c*, rounded at its forward end, and having a guiding-stem, *c'*, in combination with the casing *g* and its contained spring *f*, substantially as described.

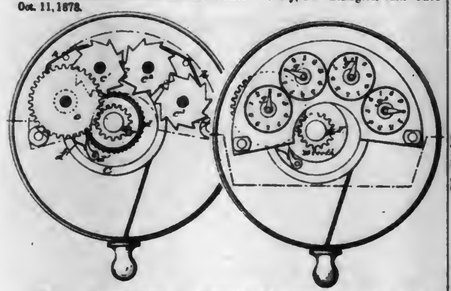
209,657. DRAFT-EQUALIZERS. David S. Cole, Washington, assignor of one-half his right to Samuel A. Hyers, Davenport, Iowa. Filed Apr. 16, 1878.



Claim.—1. The evener B, provided with pivotal slot C in its center, in combination with the rods D E and link C, pivoted to the tongue, substantially as described.

2. The evener B, pivoted in its center, and provided with apertures for interchanging from a two-horse to a three-horse evener, in combination with the rods D E and link C, pivoted to the tongue, substantially in the manner and for the purpose set forth.

209,658. REGISTERING TAPE-MEASURES. James F. Conly, New Lexington, Ohio. Filed Oct. 11, 1878.



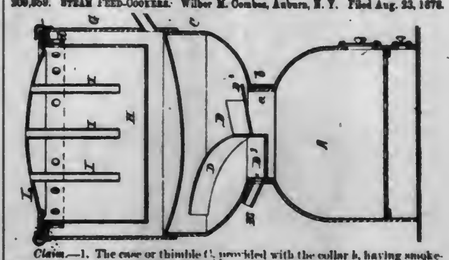
Claim.—1. In a measuring, registering, and calculating machine, the tape-reel provided with a single adjustable bearing, whereby the said reel is capable of being moved toward and from the first registering wheel, *a*, to admit of the interposition of various-sized interchangeable calculating cog-wheels for measuring and recording specified lengths of material, substantially as described, and for the purpose set forth.

2. In a measuring, registering, and calculating device, the interchangeable calculating cog-wheels F, each wheel being constructed with reference to specified lengths of material, substantially as described.

3. The combination of the adjustable tape-reel C and drum D with the interchangeable calculating cog-wheels F, when constructed and arranged substantially as described, and for the purpose set forth.

4. The combination of the adjustable tape-reel C, and drum D with the interchangeable calculating cog-wheels F, registering-wheels *c' c² c³*, and the index and dial-plate, when constructed in the manner described, and for the purpose set forth.

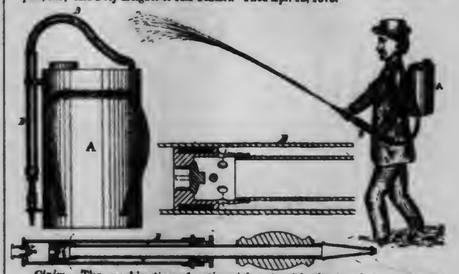
209,659. STEAM FEED-COOKERS. Wilber M. Combes, Auburn, N. Y. Filed Aug. 23, 1878.



Claim.—1. The case or thimble C, provided with the collar *b*, having smoke-pipe E, the flanges D D, lip D^2, and fins D^3, in combination with the fire-pot A, provided with the collar *a*, having perforation *x*, substantially as and for the purposes herein set forth.

2. The cover L, with pipes I, in combination with the kettles H G, having perforations, as described, substantially as and for the purposes herein set forth.

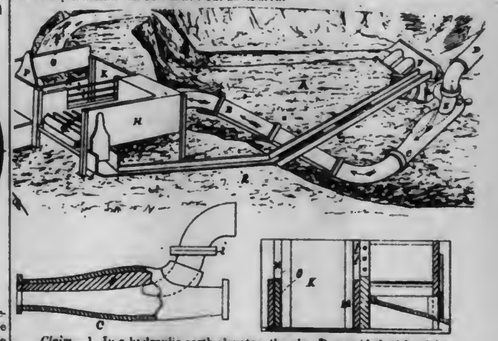
209,660. FIRE-EXTINGUISHING APPARATUS. J. E. Candlet and Albert J. Doty, Philadelphia, Pa.; said Doty assignor to said Candlet. Filed Apr. 12, 1878.



Claim.—The combination of extinguisher A with the hand-pump B, said pump being located at the end of the discharging hose D, constructed as shown and described, and for the purpose set forth.

209,661. HYDRAULIC-MINING APPARATUS. Geo. W. Cranston, San Francisco, Cal. Filed July 25, 1877.

Brief.—This invention is an improvement on that embraced in Patent No. 183,216, granted December 12, 1876, to the same patentee. The joint between the nozzle-pipe and the water-supply pipe is made adjustable, so that by loosening the screws of the joint the relative position of the machine to the supply-pipe can be adjusted, after which it is secured. When the water-supply is small, the area of the chamber in the ground-section is diminished by inserting a block therein. The elevating-spout connects with a settling-tank, which receives the heavier particles of matter, and the tank has overflow-gates, through which the clear water passes to a return-channel, and thence to a tail-section to be used again. The settling-tank also has a gate or valve, through which the heavy material can be washed out as desired.



Claim.—1. In a hydraulic earth elevator, the pipe D, provided with a joint at *i*, in combination with the ground-section C and spout B, substantially as and for the purpose described.

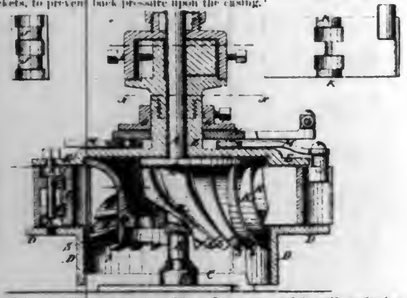
2. In a hydraulic earth-elevator, the ground-section C, provided with the

chamber I and block J in the upper part of said chamber, for diminishing the area thereof, substantially as and for the purpose set forth

3. In a hydraulic mining apparatus, the settling tank K, having the over flow gates M and O, and the gate P, in combination with the return channel or spout P', substantially as and for the purpose herein described

209,662. TURBINE WATER-WHEELS. Jacob Croft, Scipio, Utah. Filed July 16, 1878.

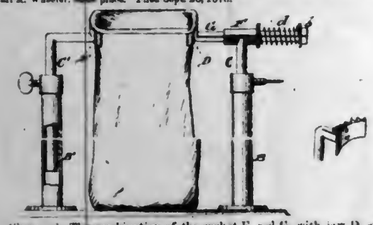
Brief.—The gates are hinged to the posts that connect the upper and lower parts of the casing. Flanges are attached to the lower parts of the curved buckets, to prevent back pressure upon the casing.



Claim.—1. The combination of lugs J on posts and lugs K on the inner sides of gates, said lugs being pivoted together, for the purpose set forth.

2. The rearwardly and downwardly curved buckets of a turbine wheel, provided with flanges S, projecting up and attached to lower side of adjacent buckets, in combination with casing D, for the purpose specified

209,663. BAG-HOLDER. Samuel M. Dalzell, Sharon, Pa., assignor of one-half his right to Earl A. Wheeler, same place. Filed Sept. 28, 1878.



Claim.—1. The combination of the socket F, rod G, with jaw D, spring *d*, and nut or its equivalent *b*, for the purpose herein set forth.

2. The combination of the hollow posts B B', adjustable rods C C', inclined curved and toothed jaws D D', socket F, bar G, and spring *d*, all constructed substantially as and for the purpose herein set forth.

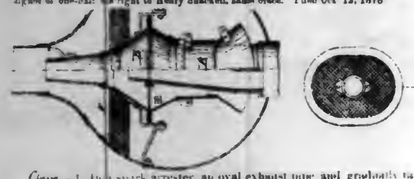
209,664. MANUFACTURE OF CONTRATE-WHEELS. H. J. Davies, Brooklyn, S. Y., and Walter D. Davies, Ansonia, Conn. Filed Oct 2, 1878.



Claim.—1. The method of making contrate wheels, the same consisting in first converting a flat circular metal blank into a toothed wheel by cutting suitable teeth or gaps in its periphery, and then swaging or upsetting the outer edge thereof, so that it shall stand at an angle to the plane of the body of the wheel, substantially as described.

2. As a new article of manufacture, a contrate wheel consisting of a sheet metal body, 7, whose toothed edge is swaged or upset so as to constitute a toothed flange, 9, standing at an angle to said body 7, substantially as described.

209,665. SPARK-ARRESTERS FOR LOCOMOTIVES. A. Davis, Montreal, Quebec, Canada, assignee of one-half his right to Henry Shackell, same place. Filed Oct 12, 1878



Claim.—1. In a spark arrester, an oval exhaust pipe and gradually tapering oval petticoat pipe, arranged substantially as specified.

2. In a spark arrester, the combination, with an oval steam exhaust pipe, of a surrounding or inclosing oval upwardly tapering or petticoat pipe, open at its lower end and provided with an internal perforated diaphragm or plate, constructed and arranged substantially as and for the purpose set forth.

3. The combination, with a smoke box and smoke stack, of the oval exhaust pipe, the oval petticoat-shaped pipe having an inner perforated diaphragm, C, and the second or outer perforated diaphragm or plate, F, all arranged substantially as and for the purpose set forth

209,666. FRUIT-JAR PROTECTORS. Susan H. Deove, Centreville, Ohio. Filed Oct. 4, 1878.

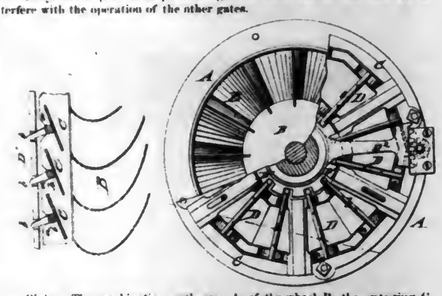


Claim.—1. A protector for the tops of jars or cans, consisting of a tubular portion, to be inserted into the mouth of the jar, and a protecting-flange, which covers and shields the top edge of the jar, as and for the purpose specified.

2. The combination, with the protector A, constructed as described, of a funnel, U, applied in the manner and for the purpose specified.

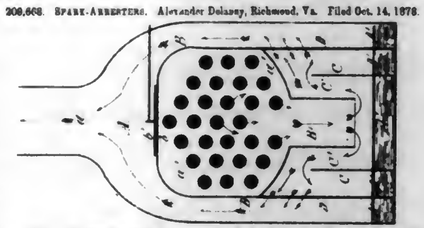
209,667. WATER-WHEELS. Thomas Dehart, Meadows of Dan, Va. Filed June 7, 1878.

Brief.—The open recess permits a gate to rise if choked, and does not interfere with the operation of the other gates.



Claim.—The combination, with case A, of the wheel B, the gate-ring C, having recesses *a*, open on top, the radial gates D, having cranked pivot-rods *b*, and the recessed wheel D', the latter vibrated as and for the purpose specified.

209,668. SPARK-ARRESTERS. Alexander Delaney, Richmond, Va. Filed Oct. 14, 1878.

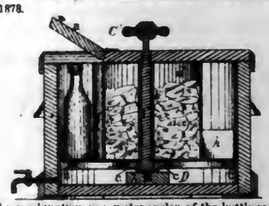


Claim.—1. The combination, with the smoke-box of a spark arrester or boiler, of a supplemental smoke box arranged to form a diving flue and ascending flues around said supplemental smoke-box, substantially as described, for the purpose specified.

2. The combination, with the smoke-box or diaphragm B, forming a diving flue, B', of the perforated screens D, substantially as described, for the purposes specified.

3. The combination, with the smoke-box A and the flues *a'*, of the diaphragm or supplemental smoke-box B, arranged to form a diving flue, B', the diaphragm C, perforated screens D, and the water-reservoir A', all arranged and operating substantially as described, for the purpose specified.

209,669 COOLERS FOR WATER AND BOTTLED BEVERAGES. Lorenz Dello, Baltimore, Md. Filed July 18, 1878.



Claim.—The combination, in a water-cooler, of the bottle-receptacles *b* and central ice-chamber, *d* having a perforated bottom, and provided with the vertical pipe *f*, located so as to coincide with the opening in the cover closed by the lid *a*, a seat for the receptacles, and ice-chamber secured to the vertical revolving shaft C, which latter projects through the cover, and is provided on the end with the handle *c'*, as set forth.

209,670. CORN PLANTING AND HILLING MACHINES. Lawrence Drane, Morgantown, W. Va. Filed July 13, 1878.

Claim.—1. The shaft *b'* and quadrant-cam *e*, in combination with shanks *g* and shovels *i*, as and for the purpose specified.

2. The frames *f f'*, working in the frame *c'*, the latter provided with arms *b' b'*, in combination with the shaft *b'*, having cams *e* and arms *c'*, and the shanks *g* and shovels *i*, substantially as and for the purposes set forth.

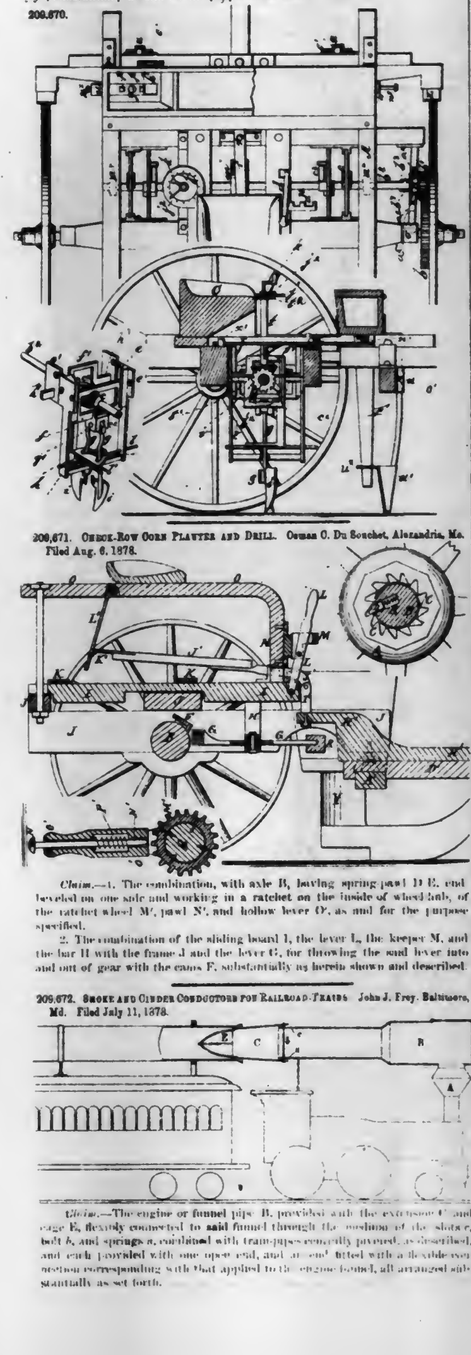
3. The shovels *i*, constructed as shown, with shanks *g*, pivoted at *s* in recurvating frame, combined with jawed tongue *h* and operating mechanism, substantially as specified.

4. The frame *c'*, having groove *c*, in combination with the reciprocating frame *f*, cam *e*, frame *f'*, and shaft *b'*, as and for the purposes set forth.

5. The shaft *b'*, operating the feed slides *y y* in the hoppers *h'*, in combination with the feed-tubes F, shovels *i i*, and indicators *j' j'*, constructed and operating substantially as and for the purposes set forth.

6. The combination of the jawed tongue *h*, having guide-bars *l*, with the shovels *g i*, operated by the cams *e* and arms *c'* upon the shaft *b'*, and frames *f f'*, substantially as and for the purposes set forth.

209,670.



209,671. CHECK-ROW CORN PLANTER AND DRILL. Osman C. Du Souchet, Alexandria, Mo. Filed Aug. 6, 1878.

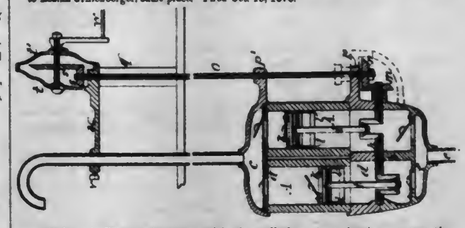
Claim.—1. The combination, with axle B, having spring-pawl D E, and bevelled on one side and working in a ratchet on the inside of wheel-hub, of the ratchet-wheel M', pawl N', and hollow lever O', as and for the purpose specified.

2. The combination of the sliding board I, the lever L, the keeper M, and the bar H with the frame J and the lever G, for throwing the seed lever into and out of gear with the cams F, substantially as herein shown and described.

209,672. SMOKE AND CINDER CONDUCTORS FOR RAILROAD-TRAINS. John J. Frey, Baltimore, Md. Filed July 11, 1878.

Claim.—The engine or funnel pipe B, provided with the extension C and cage E, firmly connected to said funnel through the medium of the slotted bolt *b*, and springs *a*, combined with tram-pipes centrally pivoted, as described, and each provided with one open end, and an end fitted with a flexible cross-section corresponding with that applied to the engine-funnel, all arranged substantially as set forth.

209,673. PUMPS. John M. Grillenberger, Syracuse, N. Y., assignee, by mesne assignment, to Rosina Grillenberger, same place. Filed Oct. 15, 1878.



Claim.—1. The combination, with the cylinders A A, having on top the plate *a*, provided with valves, and the cap *c*, mounted on top of said plate, of the chamber *d*, provided with suction-pipe *e*, horizontal diaphragm *f*, and partition *g*, the crank shaft *h*, rods *i i*, and plungers *k k*, provided with valves, all constructed and arranged substantially in the manner described and shown.

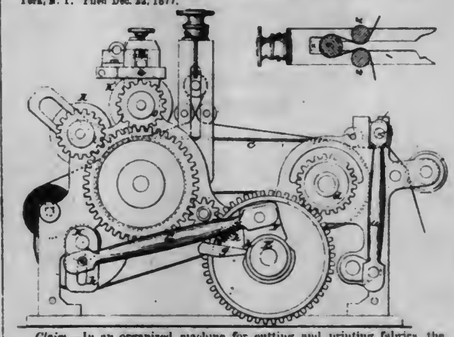
2. In combination with the cylinders A A, crank shaft *h*, and rod *o*, the cap *c*, provided with lug *p'*, and the chamber *d*, provided with lug *p*, substantially as specified and shown.

3. The combination of the cylinders A A, cap *c*, rod *r*, chamber *d*, divided horizontally at the axial center of the crank shaft *h*, and provided on their respective adjacent edges with bearings for the said shaft, all constructed and combined substantially as described and shown.

4. In combination with the rod *o*, provided with pinion *s*, the standard *q*, provided with case *t t'*, the gear wheel *s'*, mounted on a shaft extended through the said case, and the crank *w*, all substantially as specified and shown.

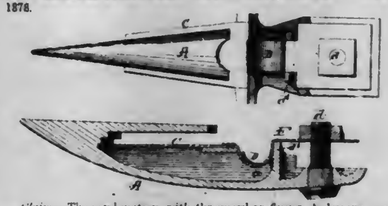
5. In combination with the rod *o*, gears *s s'*, and discharge-pipe, the standard *q*, provided with the case *t t'* and the arm *u*, and set-screw *v*, substantially in the manner described and shown, for the purpose set forth.

209,674. MACHINES FOR PRINTING AND CUTTING FABRICS. William D. Grimshaw, New York, N. Y. Filed Dec. 22, 1877.



Claim.—In an organized machine for cutting and printing fabrics, the combination of the following instrumentalities: a carrier, C, mounted upon rotating drums B B', having a simultaneous forward movement through a part of their revolution only; one or more printing-cylinders, K K', arranged to operate coincident with said carrier, and provided with one or a series of groups of type and adjacent inking devices; a device for cutting the fabric transversely and arranged to operate during the stoppage of the carrier; a device for cutting the fabric longitudinally during the forward movement of the carrier; and an adjustable take-up device for regulating the travel of the fabric between the printing-cylinders and cross-cutting devices, the several parts being arranged to operate automatically by means of a continuously rotating shaft, substantially as described.

209,675. HARVESTER GUARD-FINGERS. Demas L. Grover, Groton, N. Y. Filed Sept. 12, 1878.



Claim.—The combination, with the guard or finger, A, having a recess *a*, of the ledger-plate C, formed with the downwardly-curved shank D, and having its head F extended to the rear end of the guard and fastened by a bolt, *d*, substantially as and for the purposes herein set forth.

209,676. SPRING BED-BOTTOMS. Daniel Haire, Lime Spring, Iowa. Filed Feb. 11, 1878.



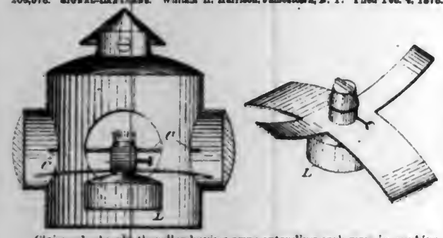
Claim.—The combination of the hinged sections C and C', the hinges connecting the sections being alternately at top and bottom, said sections resting on coiled springs G H, and connected to the bed A by the hooked lock-bars *n n*, which secure the bed to the frame, substantially as and for the purposes herein set forth.

209,677. CUTTING-NIPPERS. Thomas G. Hall, New York, N. Y. Filed Aug. 30, 1878.



Claim.—The combination, with the levers *c d* and plates *p*, of the pin *g*, arranged between said levers, and in front of their fulcrums, as and for the purpose specified.

209,678. SIGNAL-LANTERNS. William H. Harrison, Jamestown, N. Y. Filed Feb. 4, 1878.



Claim.—1. An elastic collar having arms extending each way, in combination with the lantern and lamp L, substantially as described.

2. The stops C, in combination with the elastic collar, lantern, and lamp L, substantially as described.

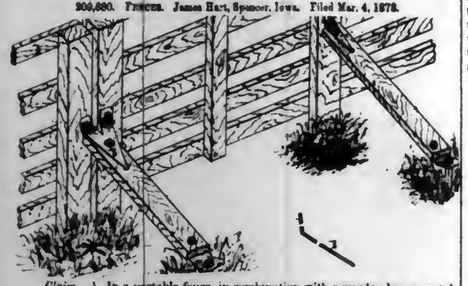
209,679. TABLE-CUTLERY. George L. Hart and Henry Fisher, Bridgeport, assignors to James D. Frary, New Britain, Conn. Filed Oct. 12, 1878.

Brief.—The wooden handle is softened and the barbed tang then driven in. The wood, on drying and hardening, shrinks firmly around the barbs.



Claim.—The herein described process for securing tanged cutlery to solid wood handles, consisting in forcing the barbed or enlarged tang into the softened wood handle, so that the wood in drying contracts upon the said barb or enlargement, substantially as described.

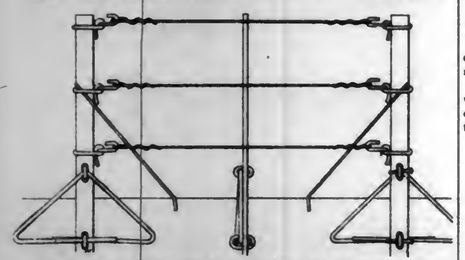
209,680. FENCES. James Hart, Spencer, Iowa. Filed Mar. 4, 1878.



Claim.—1. In a portable fence, in combination with a wooden brace, metal pieces E, substantially as shown and described.

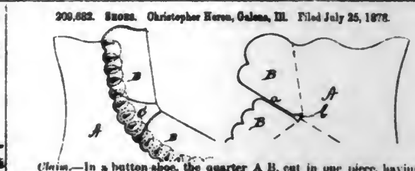
2. In a portable fence, in combination with a wooden brace, metal pieces E and F, substantially as shown and described.

209,681. IRON FENCE-POSTS. Samuel Heaton, Cedar Rapids, Iowa. Filed Jan. 8, 1878.



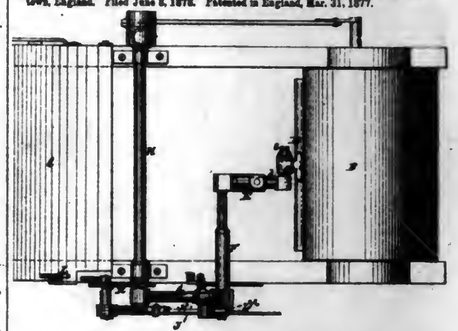
Claim.—In combination with the slotted fence-post and staples and keys, the brace formed of a rod bent into triangular shape, as shown and described, whereby said brace is adapted for adjustment with its base or lower side at different angles to the post, as and for the purpose specified.

209,682. SHOES. Christopher Heron, Galena, Ill. Filed July 25, 1878.



Claim.—In a button-shoe, the quarter A B, cut in one piece, having the opening *a b* across the instep and the gusset C inserted, all substantially as shown and described.

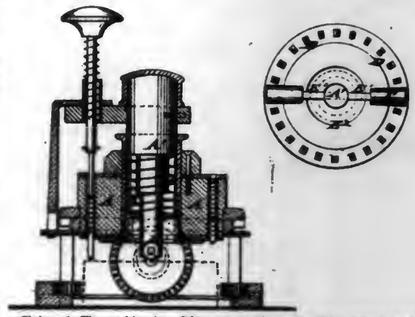
209,683. SHEET-DELIVERY APPARATUS FOR PRINTING-PRESSES. James Hird, Bishopstown, England. Filed June 8, 1878. Patented in England, Mar. 31, 1877.



Claim.—The combination of the swiveling suction mouth-piece D, the telescopic tube *J*, the mouth-piece socket E, the sleeve F, the hollow vibrating arm or lever G, the hollow exhaust-shaft H, the pinion M, the rack N, the valve J, means for automatically opening and closing said valve, and the cylinder B and receiving-board C of the press, essentially as specified.

209,684. TYPE-WRITING MACHINES. Juan A. Hitter, Jr., St. Martinsville, La. Filed May 13, 1878.

Brief.—The type-wheel is revolved by hand, through the medium of gearing, until the required type is under the plunger, by the depression of which the face of the type is brought in contact with the paper on the table below. A central spring-standard, passing through the center of the type-wheel, carries two inking-rollers, which deliver the ink to the type as the wheel is revolved, the said rollers being held in contact with the under side of the type-wheel by the spring. When it is desired to ink the rollers, the device is taken from the table, and after the rollers have been pressed outward from the type-wheel, they are passed over a suitable inking-pad. The platform rests on four standards provided with pinions, which engage a rack on each side, whereby spaces between letters are made.



Claim.—1. The combination of the type-carrying table with a central spring-cushioned standard carrying the inking-rollers at the lower end, substantially as described.

2. The type-carrying revolving table, supported on a movable platform with upright posts and lower bottom pinions, in combination with side racks of a base guide-frame to move table forward after a letter is printed, substantially as and for the purpose set forth.

209,685. BLOW-PIPES. Charles Hoffmann, New York, N. Y. Filed Oct. 16, 1878.

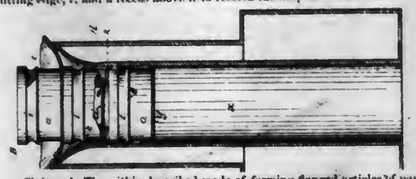


Claim.—1. In a blow pipe, the combination of the outer pipe, A, and inner pipe, B, both open at one end, the inner pipe extending through and beyond the outer pipe, and adapted to receive a tube for supplying air, in combination with a hollow support, D, communicating with the pipe A, for supplying the same with gas, substantially as and for the purpose described.

2. In a blow-pipe, the combination, with an air pipe and a gas pipe, which are arranged one within the other, open at one end, and respectively adapted to be connected with an air and gas supply source, of a device for automatically shutting off the gas, substantially as described.

209,686. MANUFACTURE OF FLANGED ARTICLES OF PAPER. Henry A. Hoase, Bridgeport, Conn. Filed July 23, 1878.

Brief.—A former or a series of independent formers are forced, with the material to be shaped, through a heated die. Each former is provided with a cutting edge, *c*, and a recess above it to receive the surplus material.



Claim.—1. The within-described mode of forming flanged articles of paper or other materials—that is, by drawing a sheet of material through a hollow heated die over a traversing former, upon which the edge of the material is folded to form the flange, and on which it remains during the passage of the same through the stationary die, as specified.

2. The mode of forming flanged articles, consisting in passing a series of independent dies, B, one after another, with intervening sheets of material, through the die A, substantially as specified.

3. The within-described flanged articles of paper or equivalent material, made of one piece with a flange, plaited, and of uniform thickness, as set forth.

4. The die B, provided with a projection, *a*, corresponding in form with the article to be drawn, and with a rib, *c*, adapted to pass through the outer die, for the purpose set forth.

5. The die provided with a sharp-edged rib, *c*, and recess *l*, as and for the purpose set forth.

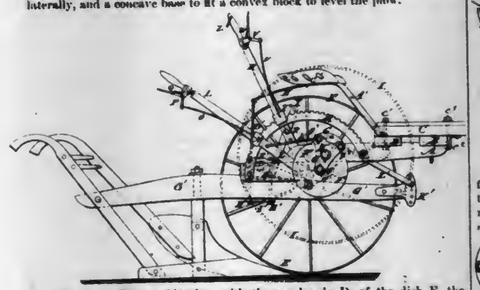
209,687. CARPET-SWEEPERS. Livorus Hull, Charlestown, Mass. Filed Sept. 19, 1878.



Claim.—The combination, with the rotating brush and its case and dust-pans, of the loose arms *e*, slotted at *f* to engage with pin *g*, and provided with curved lifters *h*, substantially as and for the purpose described.

209,688. SULKY BREAKING-PLOWS. Edward T. Hunter, Hallsville, Ill. Filed Sept. 9, 1878.

Brief.—A disk fastened to the crank axle near its edge, and pivoting the spindle-plate at its center. The latter has a small plate bolted to its outer end, which forms a keeper for the disk, and has a rod connection with the lever. The coupling-blocks have interior ring-grooves to fit adjusting-pins on the crank; also holes horizontally enlarged at the ends to allow the plow to vibrate laterally, and a concave base to fit a convex block to level the plow.



Claim.—1. The combination, with the crank-axle D, of the disk F, the pivoted angle-plate G, the spindle H, the wheel I, the sliding plate J, the pivoted rod K, and the lever L, as and for the purpose specified.

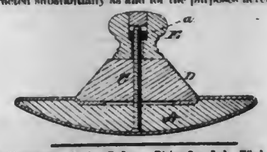
2. The combination of the block F', convexed and corrugated upon its upper side, with the lower block, E', concaved and corrugated upon its lower side, the four bolts H', and the bottom plate, I', for connecting the plow-beam adjustably with the axle D, substantially as herein shown and described.

3. The combination of the adjustable pin J' with the bent axle D, provided with holes to receive it, and the blocks E', provided with a ring-groove in their grooved faces, substantially as herein shown and described.

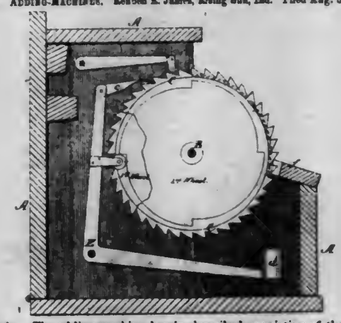
209,689. BLOTTERS. James H. Heaton, Connersville, Ind. Filed Sept. 25, 1878.

Claim.—The combination of the rounded wooden body A, formed with the recess *x* in its upper side, at its center, and having inclined end walls, the headed bolt C, having its head fitting in a countersink in the under side of the body, the block D, with inclined edges, and the knob E, with interior metal nut *e*, all constructed substantially as and for the purposes herein set forth.

209,689.

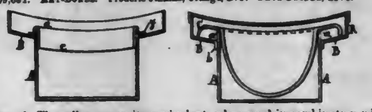


209,690. ADDING-MACHINES. Reuben R. James, Rising Sun, Ind. Filed Aug. 30, 1878.



Claim.—The adding-machine herein described, consisting of the right-angular levers pivoted at their angle on shaft E, and weighted at the lower end, the pawls pivoted to the upper end of said levers and the arms carrying friction-rollers, the cams and the toothed inscribed counting-wheels, and the slotted case A, all constructed and arranged to operate as specified.

209,691. HAT-BOXES. Frederic Jinkins, Orange, N. J. Filed Feb. 21, 1878.

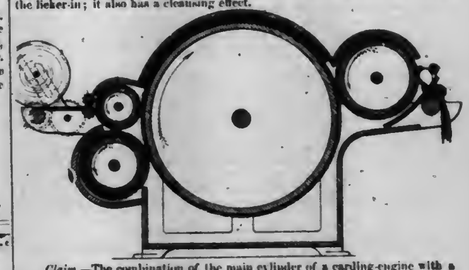


Claim.—1. The collar *a c*, or its equivalent, when used in combination with the body A and flange B of a hat-box.

2. The hat-box constructed with the body A projecting upward through the flange B, to form the seat *a*, as herein described and shown.

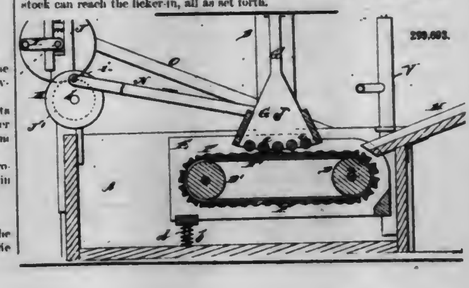
209,692. CARDING-MACHINES. Charles Jones, Glen Riddle, Pa., assignor of one-half his right to Henry Riddle, same place. Filed Feb. 4, 1878.

Brief.—A "fancy" clothed cylinder is arranged on lower side of main cylinder, beneath the licker-in, so that it shall serve by its continuous action to raise the surplus stock left in the main cylinder by the doffer before it can reach the licker-in; it also has a cleansing effect.



Claim.—The combination of the main cylinder of a carding-engine with a fancy-cylinder adapted to bearings arranged in respect to the lower portion of the main cylinder, as described, so that it shall serve by continuous action to raise the surplus stock left in the main cylinder by the doffer before the said stock can reach the licker-in, all as set forth.

209,693.



209,693. WASHING-MACHINES. Daniel T. Jones, Yellow Springs, Ohio. Filed Feb. 16, 1878.

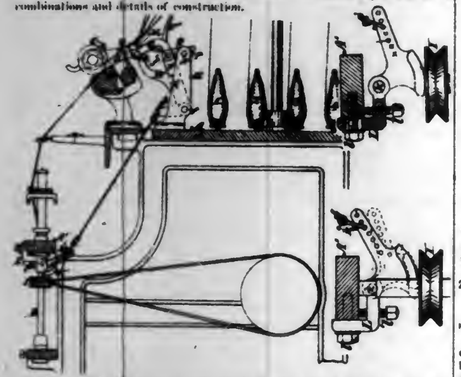
Brief.—Improvement on the machine patented to John H. Atwater, July 31, 1855, No. 13,340, consisting in supporting the rubbing-boards on pins entered by vertically-acting springs, and adding a pump, the whole operated from a wringer attached to one end of the washing-machine box.

Claims.—1. In a washing-machine, the combination of a swinging and yielding rubber, an intermittingly rotating and yielding apron, a pump, and connecting mechanism, substantially as described, for operating the same from and by the motion of a pair of wringer-rolls located at one end of the washing-machine box, substantially as herein set forth.

2. The combination, with a washing-machine box, A, of the frame E, roller D, with shaft *a*, roller D', one or more springs, *b*, and pins *d*, and the endless elastic belts F', with corrugated slats F, all substantially as and for the purposes herein set forth.

209,694. STOP-MOTIONS FOR SPINNING OR TWISTING MACHINES. John H. Knowles, Philadelphia, Pa. Filed Apr. 13, 1878.

Brief.—When a thread breaks and the rod through which it passes falls, the pivoted levers are unfastened, and by gravity fall forward and elevate the top roll, thus causing a cessation of the feed. At the same time, and by the same forward movement of the pivoted levers, a friction-brake is lowered upon the whirl of the spindle, and, from its surface shape and being pivoted to the bolster-rail, operates to speedily stop the spindle. There are improvements in combinations and details of construction.



Claim.—1. In combination with the lever F, latch Q, and shaft N, the ratchet or detent P', having a shoulder, *p'*, cut to a point or line below the center of said shaft, substantially as described, whereby, when the point of the latch is below the center of the shaft, said latch will be retained in such position, but when the detent is slightly oscillated said shoulder will raise the point of the latch above the center of the shaft, as described, so that the pulling of the latch will further oscillate the detent until latch and detent are disengaged, as set forth.

2. The combination of stand E, levers F, latch Q, rod N, thread-rods M, and detent P', having a shoulder, *p'*, and tooth *p²*, substantially as described, for the purpose of holding back said levers when the thread-bars have fallen and the levers are retracted, as set forth.

3. The thread-rods M, having hooks and eyes at their opposite ends and bends to avoid contact with the rod P, when swung back and out of use, in combination with said rod P and their supporting-rod N, as shown and described.

4. The combination of taper bars G, levers F and K, whirl I, latch Q, detent P', and appurtenant mechanism, substantially as described, completing connection between said taper bars and levers, whereby a slight movement of the detent will effect a disengagement of latch and detent and allow the levers to fall by their own gravity, as and for the purpose set forth.

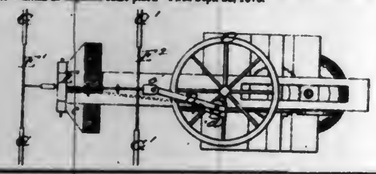
3. The lever K, having segmental face, as described, in combination with the whirl or disk I, the spindle D, bracket J, bolster-rail A', and connecting and operating mechanism, arranged substantially as described, so that after frictional contact of the face of the lever with the whirl or disk the motion of said whirl or disk shall cause the lever to wedge and stop the spindle, as set forth.

209,695. VEHICLE-SPRINGS. Ira M. Linderman, Elmira, N. Y. Filed Oct. 12, 1878.



Claim.—The vehicle attachment consisting of the side bars, A, having recess *a*, the strengthening spring plate B, the leaf-springs E, secured thereto by clips *b* within the recess, and the reversely-concaved axle and body springs C D, constructed and adapted to operate as and for the purpose specified.

209,696. AUTOMATIC TAPS. William H. Love, Washington, D. C., assignor of one-half his right to William L. Haskins, same place. Filed Sept. 28, 1878.

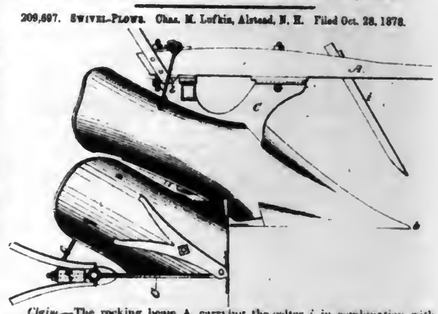


Claim.—In a dry fan, the combination, with a frame, A, a vertical shaft, C', master-wheel C, pinion *a*, and clock mechanism rotating said shaft, of the end frame, E, carrying rock-shaft *b*, having a fan-blade, the connecting-rod C', having transverse rods E' E', carrying the fans G G', the hanger *c*, and arm *b'*, connecting said rod C' and rock-shaft *b*, as specified.

2. The combination, with a frame, A, a clock-train, a vertical shaft rotated by said train and having a master-wheel, C, on its end, an angular end frame, E, its rock-shaft *b*, carrying a fan-blade, connecting-rod C', the transverse rods E' E', having fans G G', the hanger *c*, and arm *b'*, connecting said rod C' and the rock-shaft *b*, of the coil-spring S, secured to the frame, and a rod, H, connecting said spring and said arm *b'* of the rock-shaft *b*, substantially as specified.

3. The combination, with the frame A, having the end frame, E, the rock-shaft *b*, carrying the fly-fan *c*, and a mechanism actuating the same, of the coil-spring S, secured at one end to the frame A, and connected at the other with said rock-shaft by the rod H and cord *d'*, substantially as specified.

209,697. SWIVEL-PLOWS. Chas. M. Loftin, Alstead, N. H. Filed Oct. 28, 1878.



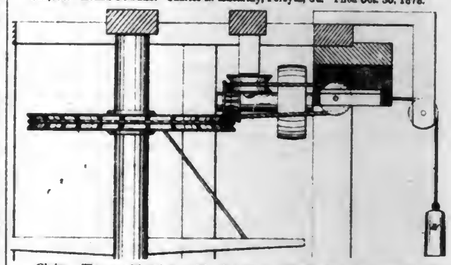
Claim.—The rocking beam A, carrying the colter *i*, in combination with the standard C, hinged to said beam, as described, the colter being shifted into line with the point *b* by means of the rocking beam, all constructed and arranged to operate substantially as set forth.

209,698. PROCESSES OF PURIFYING AND INCREASING THE ILLUMINATING POWER OF GAS. Orasio Lago, Flushing, N. Y. Filed Oct. 22, 1878.

Claim.—1. The process of purifying gas which consists in passing the same through animal charcoal or bone-black, substantially as described.

2. The process of purifying and enriching gas at a single operation, which consists in passing the same through animal charcoal or bone-black which has been impregnated or saturated with a suitable hydrocarbon, substantially as described.

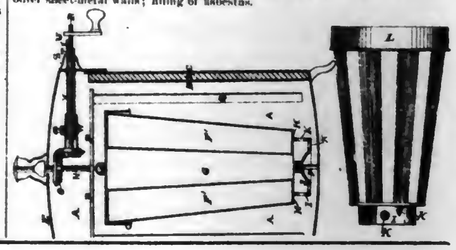
209,699. HORSE-POWERS. Charles E. Macarthy, Forsyth, Ga. Filed Oct. 30, 1878.



Claim.—The combination, with the master-wheel and the speed-wheel, arranged in planes at right angles to each other, of the endless rope belt and the tension-pulley, arranged in a plane at right angles to both the master-wheel and speed-wheel, and adapted, in connection with one or more idlers, to distend the belt in a direction laterally to the line of belt running from the speed-wheel to said master-wheel, substantially as and for the purpose described.

209,700. LIQUID-REFRIGERATORS. William H. Mansfield, San Francisco, Cal., assignor to Thomas C. Van Ness and Robert B. Williams, same place. Filed Sept. 7, 1878.

Brief.—By means of the perforations in the ring and plate which support the circularly-arranged molds, the refrigerating-liquid passes into the central chamber to extract heat from the fourth side of the rectangular mold. The circle of molds is stationary; but revolving stirrers agitate the refrigerant in the surrounding chamber. The containing vessel is made of inner leaden and outer sheet-metal walls; filling of asbestos.

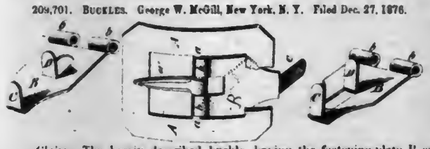


Claim.—1. The radial ice molds F', constructed, as shown, around a central cylinder, G, which forms a part of each mold, and having the intervening angular spaces N between them, substantially as and for the purpose herein described.

2. The circularly-arranged molds F', having one side formed of the central cylinder G, in combination with the annular disk H and perforated ring and bottom I J, inclosing a sub-chamber connecting with the interior cylinder, substantially as and for the purpose herein described.

3. In combination with an ice-machine and agitator, F', and shaft and bevel wheel N O, the crank-rod R, provided with a stop, U, and sleeve V, having a portion at its end cut away, as described.

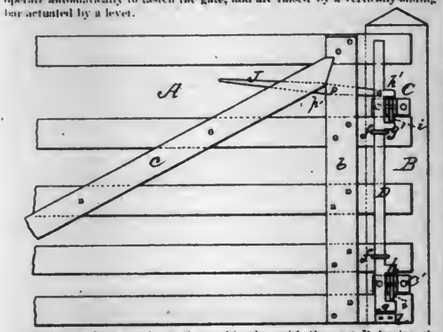
209,701. BUCKLES. George W. McGill, New York, N. Y. Filed Dec. 27, 1876.



Claim.—The herein-described buckle, having the fastening-plate B constructed with the prong D from the internal portion of the plate, and the prong C from the free end thereof, both being in the same longitudinal line, and substantially as specified.

209,702. GATE-LATCHES. Oliver Metz and John Metz, St. John's, Ohio. Filed Sept. 14, 1878.

Brief.—Covered brackets upon the gate-post inclose pivoted latches, which operate automatically to fasten the gate, and are raised by a vertically-sliding bar actuated by a lever.

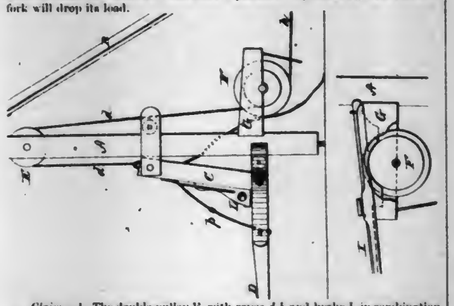


Claim.—1. In a gate-latch, the combination, with the post B, having the brackets C C', each of which is provided with a gravitating-dog, *i*, recessed into its under side, of the hinged gate A, having the vertical latch-bar D, provided with lugs *g g'*, extending under said dogs, substantially as specified.

2. The combination, with the post B, having brackets C C', recessed upon their under sides at *r*, and the gravitating-dogs *i*, pivoted in said recesses, of the gate A, having fin-rails arranged to raise said dogs, pass beyond them, and to allow them to drop over the rail, and the latch-bar D, having the lugs *g g'* extending under and across said dogs, and a lever pivoted to the gate and engaging said latch-bar, substantially as specified.

209,703. HAY-ELEVATORS. George Miller, Salisbury, Mo. Filed Sept. 7, 1878.

Brief.—The sliding frame, having a pivoted hay-fork, is provided with a latch to hold the fork in a horizontal position. By releasing the latch the fork will drop its load.



Claim.—1. The double pulley F, with ropes *d b* and brake I, in combination with the sliding frame C, with fork D, post A, and pulley E, substantially as and for the purposes herein set forth.

2. The combination of the frame C, pivoted fork D, latch L, and wire frame *p*, substantially as and for the purposes herein set forth.

209,704. TOOL-HANDLES. William Millspaugh, Middletown, N. Y. Filed Oct. 14, 1878.

Brief.—By the pointed ferrule and large opening in the handle, a current of air is allowed to circulate around the shank inside the handle, to prevent burning of the latter.

Claim.—1. In combination with a tool-handle, a pointed, slotted, or scalloped ferrule, substantially as and for the purposes herein set forth.

2. The handle provided with a fastening device and enlarged opening, in combination with the shank and open, scalloped, or pointed ferrule, substantially as and for the purposes herein set forth.

3. A tool-handle having an air-chamber, *r*, formed around the shank in the handle, in combination with devices, substantially as described, for holding the shank in the handle, constructed to allow air to circulate around the shank, as herein set forth.

4. The combination of the shank with shoulder, the loose washer, open ferrule, and handle with fastening device and air-chamber, substantially as and for the purposes herein set forth.

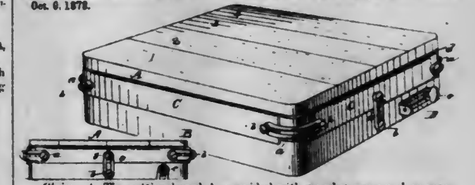
209,704.



209,705. MANUFACTURE OF COMPOSITE ROOFING. Tobias New, New York, N. Y. Filed Oct. 26, 1872.

Claim.—A roof with a foundation of one or more layers of dry felt and of alternate layers of bitumen or bituminous composition and of saturated felt, laid as above, with a superimposed layer of native bitumen covered and protected by gravel, substantially as above set forth.

209,706. CUTTING-BOARDS FOR LEATHER-WORK. Ezekiel Nicholson, Lynn, Mass. Filed Oct. 9, 1878.



Claim.—1. The cutting-board A, provided with an edge-groove, *d*, in combination with the base B, secured to the cutting-board by means of the clamp C, having a flanged edge, and the elastic loops, all substantially as shown and described.

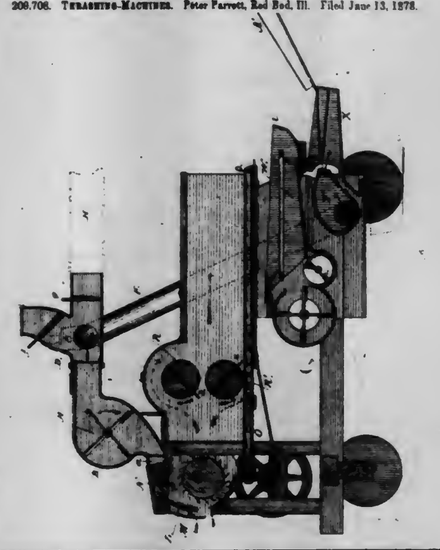
2. In combination, the cutting-board A, base B, clamp B, elastic loops *a* and fastenings *b*, and the legs D, provided with adjusting-screws, all arranged substantially as shown and described.

209,707. KETTLE-COVERS. Chauncey M. Orton, Glens Falls, N. Y. Filed Apr. 13, 1878.



Claim.—The combination of the bail B, having the ring *c* and hook *d*, with the cover A, as herein shown and described.

209,708. THRASHING-MACHINES. Peter Parrott, Red Bud, Ill. Filed June 13, 1878.



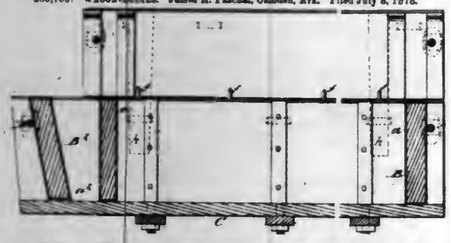
Claim.—1. In a threshing-machine, the combination, with the cylinder and front guard-plate, I, of the obliquely-placed plates N, located above the cylinder, and the fan and dust-passage leading to the latter, substantially as shown and described, whereby the dust is drawn away from the spaces in front of and over the cylinder without permitting escape of grain-kernels in the same directions.

2. The combination, with a threshing apparatus, substantially as described, of the two oppositely-rotating pickers, consisting of hollow perforated cylinders and intermittently-projecting teeth, as specified.

3. The combination, with the two oppositely-rotating pickers, consisting of hollow perforated cylinders having diametrical slots in their ends, and the toothed bars T, projecting through said slots, of the four stationary grooved plates, the latter having the most eccentric portions of their grooves located as specified, so as to cause the teeth of the pickers to be projected alternately from the cylinders on the front side thereof, and thus divide or separate the straw.

4. The combination, substantially as described, with fan A and cylinder C, of the hollow head D, having the lateral upper and rear arms or branches, in which are dust-discharge openings, provided, respectively, with adjustable slides *e f g*, to adapt it for discharging dust in any one of three directions, as specified.

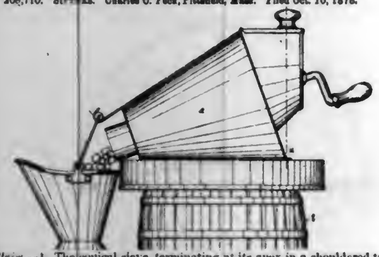
209,709. Wagon-Bodies. James H. Paschal, Camden, Ark. Filed July 8, 1878.



Claim.—1. The spurs *f*, in combination with the side pieces, A, as shown and described, for the purpose specified.

2. The combination of the end piece B^1 and grooves a^1, end piece B and grooves *a*, side pieces, A A, and floor C, to form a feed-trough, as herein shown and described.

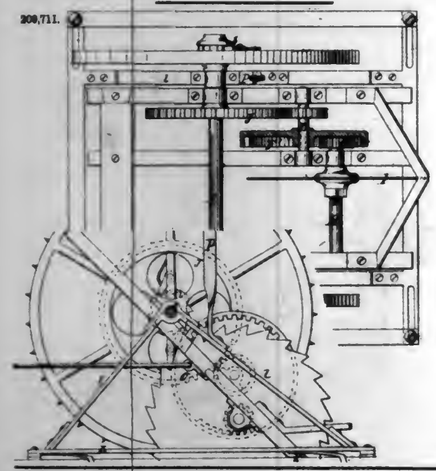
209,710. Sifters. Charles O. Peck, Pittsfield, Mass. Filed Oct. 10, 1878.



Claim.—1. The conical sieve, terminating at its apex in a shouldered tubular cylindrical axial extension, *h*, substantially as and for the purpose described.

2. The inclosing-case a and hopper, combined with the rotating conical sieve, having a head, *e*, provided with an opening, *f*, to admit ashes into the sieve for but a portion of each rotation of the sieve, substantially as described.

209,711.



209,711. Ice-Cutting Apparatus. George Rufus Pierpont, North Haven, Conn. Filed Oct. 24, 1877.

Claim.—1. The described adjustable gage, provided with spring-guides and combined with the driving-shaft and supports, substantially as specified.

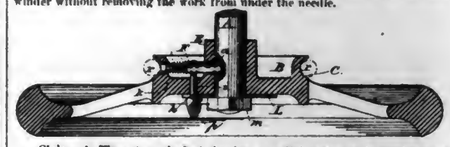
2. In an ice-cutting machine, the stays *l*, depending from the main axle and serving to support the driver's seat, which is arranged thereupon in the rear of the axle, and to carry the gage independently of the saw frame and the draft-bar, whereby the driver's position will be unaffected by the motions of the saw-frame, and his weight thrown upon the gage, so as to keep it in place, substantially as described.

3. An adjustable gage for an ice-cutting machine, provided with spring-guides and combined with stays or supports for attaching it to the machine, substantially as described.

4. In an ice-cutting machine having a frame-work, a saw, and operating mechanism, the combination of the saw-carrying frame, hung upon the main axle independently of the frame-work of the machine, and the draft-bar attached directly to the under side of the saw-frame, so as to insure a direct draft, and acting as a pressure mechanism and guide, substantially as described.

209,712. Clutches for Band-Wheels of Sewing-Machines. George M. Pratt, Middletown, Conn., assignor to the Victor Sewing Machine Company, same place. Filed Sept. 11, 1878.

Brief.—To enable the operator of the machine to operate the bobbin-winder without removing the work from under the needle.

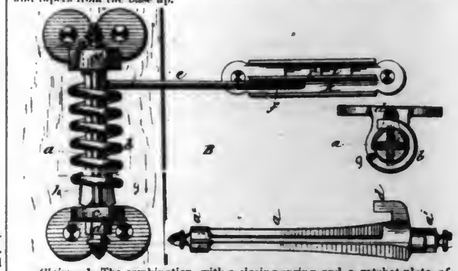


Claim.—1. The rotary shaft A, having a radial socket, *a*, in combination with the pulley B, the vertical spring-pin F, adapted to engage said socket, and the pivoted cam I, on the face of the pulley, adapted to engage the spring-pin for releasing it from the socket in the shaft, substantially as described.

2. The combination of shaft A, having the radial socket, the pulley having the perforated collar and rim C, and the slotted hub portion *k*, and the pin F, surrounded by a spiral spring, and having projecting pin *h*, and the cam I, substantially as described.

209,713. Door-Springs. Frank J. Randall, Aurora, Ill. Filed June 22, 1878.

Brief.—The bearing-plate has separate smooth and ratchet grooves, with which the yielding hook termination of the bearing arm engages, to either hold the door in any desired position or to close it. The spring-support is ribbed and tapers from the base up.



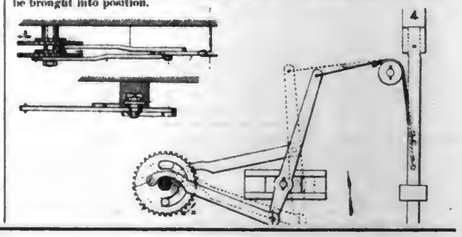
Claim.—1. The combination, with a closing-spring and a ratchet-plate, of a yielding catch controlled by the spring and arranged, substantially as described, to disengage itself from the ratchet-plate under undue force applied to close the door on which said plate is carried.

2. The combination, with a spring having its bearing-arm constructed with a yielding catch, of a bearing-plate having parallel plain and ratchet grooves or trenches, into either of which the bearing-arm yielding catch may be adjusted laterally, substantially in the manner and for the purpose herein set forth.

3. The spring-support *a*, made tapering and of angular cross-section, as described, in combination with the coil-spring having its fixed end coils *g* bound upon said support, and held between it and the slot forming projection or arm *d*, and its remaining coils free from said support, and terminating in a hook-shaped spring bearing-arm, *e f*, as and for the purpose set forth.

209,714. Shuttle-Box Mechanism for Looms. Henry B. Renwick, New York, N. Y., assignor to George Crompton, Worcester, Mass. Filed Apr. 22, 1878.

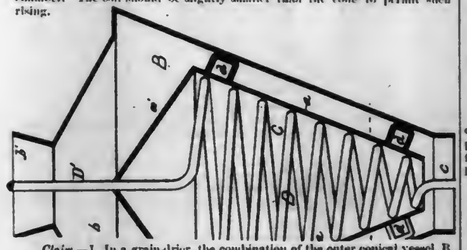
Brief.—The shuttle-box lever is mounted upon a slide, and has attached to it, on each side of the slide, a rod connecting with crank-pins on gears, such as are used in the "Knowles" loom. By rotating either or both of the said gears, in the same or in opposite directions, either box of a tier of three or four may be brought into position.



Claim.—The herein-described combination of two crank-pins, mechanism to operate them, a single lever mounted upon a slide, two connecting-rods joining the crank-pins with the said lever each side its pivotal point upon the slide, and a connection, substantially such as is described, between the said lever and a tier of shuttle-boxes, whereby said lever will operate a tier of shuttle-boxes, substantially as set forth.

209,715. Apparatus for Preparing Cereals for Food. Eli Ross and John W. McLeod, Boston, Mass., assignors to United States Steam Feed Company, same place. Filed Feb. 4, 1878.

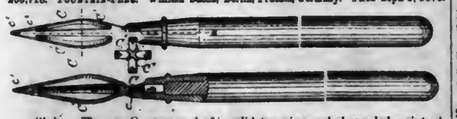
Brief.—The loops simply rest upon the inner surface of the outer cone, so that any extra or unusual expansion of the grain will not deflect the walls of either cone, but will raise the inner and increase the capacity of the annular chamber. The coil should be slightly smaller than the cone to permit such rising.



Claim.—1. In a grain-drier, the combination of the outer conical vessel, B, the inner conical vessel, C, having loops or supports *d d*, and a heating device operating on the interior of said inner conical vessel, substantially as set forth.

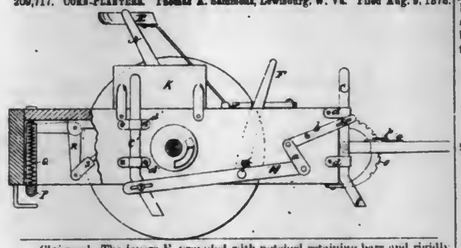
2. The combination of the outer conical vessel, B, having the inverted conical top *b* and hopper *b'*, the inner conical vessel having the loops or supports *d* and conical top *a'*, and the conical coil D, arranged within said inner vessel, and having its terminals extending outward at opposite ends thereof, and of the outer vessel, substantially as described.

209,716. Fountain-Pens. William Sachs, Berlin, Prussia, Germany. Filed Sept. 9, 1878.



Claim.—The pen C, composed of a solid tapering and channeled point, c^1, a solid shank, *c*, and the leaves or blades C', all combined and constructed and operating substantially as described, for the purpose specified.

209,717. Corn-Planters. Thomas A. Semmons, Lewisburg, W. Va. Filed Aug. 9, 1878.



Claim.—1. The levers F, provided with notched retaining-bars and rigidly connected to rock-shafts G, the rock-shafts G carrying oscillating levers H at their outer ends, and the vertically sliding standards of the opening and covering shovels loosely connected with the opposite ends of the lever H, all combined with each other and the frame-work, substantially as shown and described.

2. A corn-planter having a feed-slide constructed with subjacent rack-bar, and combined with a segmental pinion rigidly attached to the shaft of the drive-wheels, the said slide and rack being arranged to move longitudinally out of engagement with the pinion, as and for the purpose described.

3. The combination of a reciprocating feed-slide having a subjacent rack, a segmental pinion on the drive-shaft, and a retracting-spring, the said slide and rack being arranged to move longitudinally out of engagement with the pinion, substantially as described.

4. A reciprocating feed-slide having several holes to receive the grains, arranged transversely to the line of reciprocation, in combination with a subjacent bed-piece having holes in alignment with the holes of the slide, but arranged at different distances or points along the throw of the slide, as set forth.

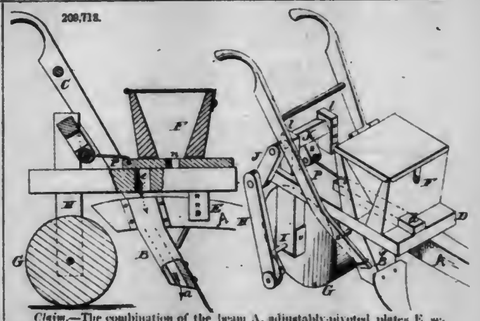
5. A reciprocating feed-slide held into engagement with its actuating device by an adjustable block in the rear of the slide forming an abutment, as described.

6. The platform having communicating slots *l s*, and the laterally-adjustable lever N, combined with the slide J, having a projecting arm, and the cross-head T, connected with the abutment-blocks O, substantially as and for the purpose described.

7. The tongue U, having a yoke-shaped rear end pivoted to the frame-work, the curved notched bar *o*, passing through a slot in the tongue, and the latch *p*, arranged to lock the tongue to the notched bar, all combined substantially as shown and described.

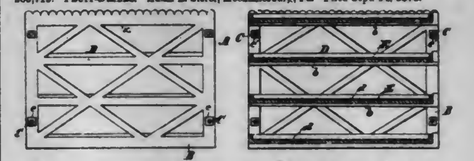
209,718. Corn-Planters. George A. Sharp, Harmony, Ky. Filed Sept. 12, 1878.

209,718.



Claim.—The combination of the beam A, adjustably-pivoted plates E, secured to the platform D, hopper F, hangers I, roller G, with crank-axle and the pitman H, rocking shaft K, with arms J *o*, and the rod P, for imparting motion from the roller to the slide in the hopper, substantially as and for the purposes herein set forth.

209,719. Fruit-Driers. Adam L. Bierer, Mechanicsburg, Pa. Filed Sept. 14, 1878.

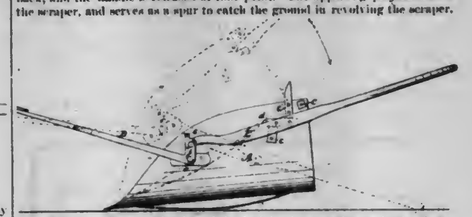


Claim.—1. The metallic skeleton-frame A, consisting of parallel open sides B B, having tray ledges or ways *b b*, and held by transverse rods or cross-pieces C C, substantially as shown and described.

2. The combination of metallic skeleton-frame A, having open sides B B, held parallel by transverse rods C C, and formed with ledges or ways *b b*, with sliding trays D, having open bottoms *d* and porous cloth sheets E E, substantially as shown and set forth.

209,720. Earth-Scrapers. Benjamin Slusser, Sidney, Ohio, assignee of one-half his right to W. H. C. Goode, same place. Filed Aug. 30, 1878.

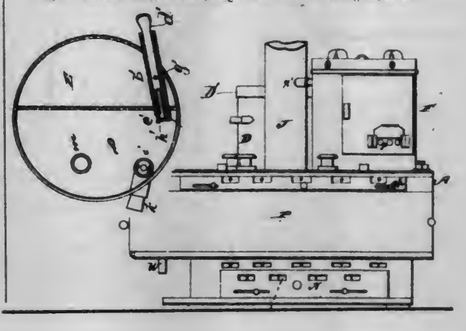
Brief.—The handle is pivoted to angular projections of the bail, extending above the pivotal points of the latter. Legs at the extremities of these projections serve as stops for the swinging handle. Upon the inner side of the handle is a lug, which slides between two lugs on the rear of the side of the scraper, and rests between them. By the dumping of the scraper it slides back, and the handle is released at that point. The upper lug projects above the scraper, and serves as a spur to catch the ground in revolving the scraper.



Claim.—1. The combination of the bail having angular projection *b*, the handle E, pivoted to said angular projection and having bar *d*, and the scraper pivoted to the bail at *a*, and provided with vertical lugs *c c'*, one of which is made to project and form a spur, substantially as shown and described.

2. The combination of the scraper, the pivoted bail having angular projection *b*, with inwardly extended lug *c*, and the handle E, pivoted to said angular projection, substantially as and for the purpose described.

209,721. Stoves. James G. Smith, Chagrin Falls, Ohio. Filed Aug. 31, 1878.



Claim.—1. A stove, A, having its fire-box surrounded by a steam-generating reservoir, B, and this reservoir surrounded by a steam-heating chamber, C, the two being connected by a tube having stop-cock *h*, as and for the purposes herein set forth.

2. A stove, A, having its fire-box provided with a surrounding steam-generating reservoir, B, a steam-heating chamber, C, surrounding the reservoir, and a removable wooden casing, P, inclosing the whole, substantially as and for the purposes herein set forth.

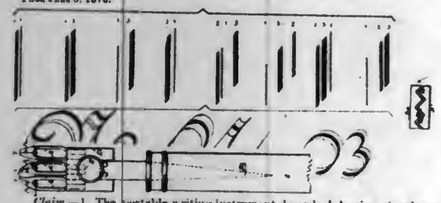
3. The combination of the receiving reservoir D, the self-feeding reservoir E, with vent *b*, and the connection *b'*, as and for the purposes herein set forth.

4. The combination of the generating-reservoir B, surrounding the fire-box of the stove A, the reservoir E, cocks *h*, and the feed-pipe *d*, substantially as and for the purposes herein set forth.

5. The connecting-cocks *h h*, in combination with the steam-generating reservoir B and surrounding heating-chamber C, for the purposes herein set forth.

6. The conducting-tubes *i* and *m*, in combination with the reservoirs D and B and chamber C, for the purposes herein set forth.

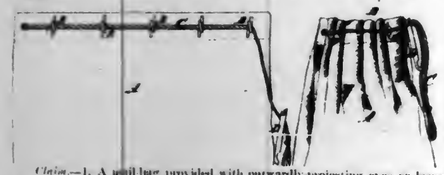
209,722. MULTIPLE PENS. Frederick Beenuckus, Bonn-on-the-Rhine, Prussia, Germany. Filed June 5, 1878.



Claim.—1. The portable writing instrument described, having the clamps D' D'' mounted on the holder B, with their inner faces grooved or undulated, as shown, and provided with two or more pens having cavities A' for retaining ink, as and for the purposes herein specified.

2. A portable writing or marking instrument, having a holder, B, clamps D' D'', with undulated inner faces, and a single clamping-screw, E, serving to compress the clamps upon the pens A, as and for the purposes herein specified.

209,723. MAIL-BAG FASTENINGS. William J. Stowell, Baltimore, Md. Filed Sept. 30, 1878.

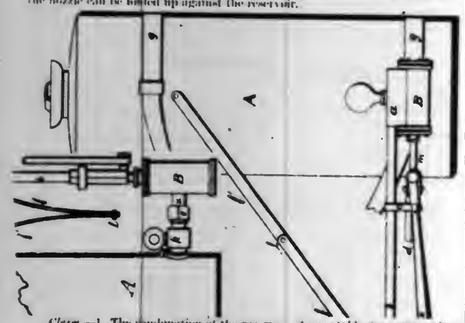


Claim.—1. A mail-bag provided with outwardly-projecting eyes or loops B entirely around its open end at or near the edge, adapted to co-operate with the draw-rope C, for the purpose set forth.

2. The combination, with the bag, provided with the projecting loops or eyes around its open end, of the draw-rope C and clamping device D, all constructed and arranged as shown and described.

209,724. FIRE-EXTINGUISHERS. John W. Sutton, New York, N. Y. Filed Oct. 8, 1878.

Brief.—The apparatus is operated while on the back of the operator, and the nozzle can be folded up against the reservoir.



Claim.—1. The combination of the reservoir of a portable fire-extinguisher charged with water and chemical solutions, with a pump attached to said reservoir for throwing said solutions therefrom, and worked by a crank-movement, and operated by a person while carrying said extinguisher upon said person's back, for the purposes specified.

2. In combination with a reservoir and pump, the conducting and supporting pipe *b*, for the purposes set forth.

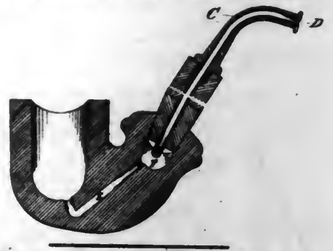
3. In combination with the reservoir A, pump B, and supporting-pipe *b*, the folding bar *f f'*, for the purpose specified.

209,725. PIPE-STEMS. James W. Tallmadge, New York, N. Y. Filed Oct. 3, 1878.

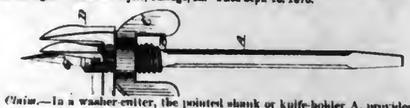
Claim.—1. A pipe-stem consisting of an exterior of wood and an interior of glass, the glass lining being made in a single piece, and extending through both the mouth-piece and stem, and projecting below the lower end of the stem, substantially as shown.

2. The combination of the glass tube *D*, held in mouth-piece C, the upper end of the tube being bent and the mouth-piece applied thereto as described, the two parts forming practically one piece, substantially as described.

209,725.



209,726. DEVICES FOR CUTTING WASHERS. William F. Tilton, McKeary, assignor of one-half his right to Chas. A. Taylor, Chicago, Ill. Filed Sept. 18, 1878.



Claim.—In a washer-cutter, the pointed shank or knife-holder A, provided with a screw-thread and slot, as shown, in combination with knives D and G and thumb-screw C, all arranged substantially as and for the purpose set forth.

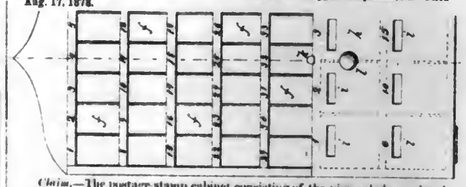
209,727. LOCKS FOR SPINNING-FLIERS. John B. Thorwarth and Mike Harrison, Brooklyn, E. D., N. Y. Filed Aug. 15, 1878.

Brief.—The spindle has a longitudinal slot cut diametrically through its top, which extends downward and communicates with another slot arranged obliquely thereto. A pin extends across the flier-neck, and has its ends firmly secured in the walls thereof, and, being inserted in the slots in the spindle and properly adjusted, forms, in conjunction with said slots, a secure lock or retaining means for the flier and spindle.



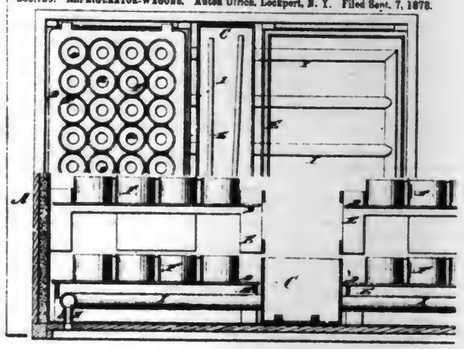
Claim.—The combination, with the tapering flier-neck, provided with the pin *a*, extending diametrically therethrough and having its opposite ends firmly fixed in the wall thereof, of the tapering spindle B, having the open longitudinal slot *c* cut diametrically through its top, and the straight channel *d*, communicating with the lower end of said slot, but arranged obliquely thereto, as and for the purpose set forth.

209,728. POSTAGE-STAMP-RECORDING CABINETS. Hollis T. Taggart, Emporium, Pa. Filed Aug. 17, 1878.



Claim.—The postage-stamp cabinet consisting of the pigeon-holes *g*, closed by the door *h*, which is provided with slots *i*, corresponding to the said pigeon-holes and numbered according to the different denominations of stamps, in combination with the pigeon-holes *f*, substantially as and for the purpose described.

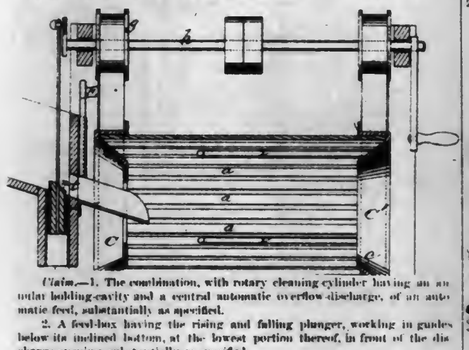
209,729. REFRIGERATOR-WAGONS. Anton Ulrich, Lockport, N. Y. Filed Sept. 7, 1878.



Claim.—1. In a refrigerator-wagon, the box A, provided with the central ice-pan, C, and the trays D, having rings F, and provided with openings *a* through the tray, combined and operating substantially as set forth.

2. The combination of the refrigerator-wagon box having top and doors, as described, the ice-pan C, provided with pipes I H *h*, the racks E, and the perforated trays D, with rings, all constructed substantially as and for the purpose set forth.

209,730. PEANUT-CLEANERS. Benton H. Vollmer, Norfolk, Va. Filed Sept. 7, 1878.



Claim.—1. The combination, with rotary cleaning-cylinder having an annular holding-cavity and a central automatic overflow-discharge, of an automatic feed, substantially as specified.

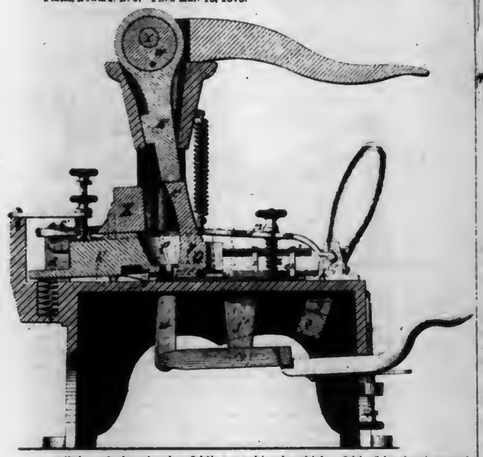
2. A feed-box having the rising and falling plunger, working in guides below its inclined bottom, at the lowest portion thereof, in front of the discharge-opening, substantially as specified.

3. The cleaning-cylinder having the annular concave cheek-heads, guiding the falling contents inward as they are carried over, and thereby preventing accidental or undue discharge, substantially as specified.

4. In a cleaning-cylinder, the combination, with the concave annular head C', of the short lifting-ribs *z*, extending from the discharging-head a portion of the length of the cylinder, substantially as specified.

5. The concave annular heads cast with reversed cylinder-flanges, to the inside of which the slats or body of the cylinder is fastened, substantially as specified.

209,731. MACHINES FOR FOLDING AND SHAPING LEATHER. Joseph Walden and George Platts, Newark, N. J. Filed Mar. 13, 1878.



Claim.—1. In a leather-folding machine in which a fold of leather is forced into a crevice, the combination of a folding-plate with an abutment against which the folding-plate brings up, thereby accurately determining the shape of the fold, substantially as described.

2. In a leather-folding machine, a pressure-plate provided with spring abutments, against which the leather to be folded is forced, which abutments are set on a spring and retire into a recess cut in the pressure-plate when said pressure-plate is forced against the leather, substantially as described.

3. In a leather-folding machine in which a sheet of leather is laid upon a folding-surface, and has its edge folded by a folding-plate before it is pressed into a crevice between two movable jaws, or a movable jaw and a plate, the combination, with such jaws or jaw and plate, of the means, substantially as herein described, for forcing said folding-plate against the leather, thereby giving to its edge a preparatory fold, as set forth.

4. In a leather-folding machine in which a blight or fold of leather is forced into a crevice, the combination of a folding-plate with the means, substantially as described, independent of the pressure-lever, for widening the crevice, and thereby allowing of the withdrawal of the folding-plate before pressure is applied to the pressure-plate, as set forth.

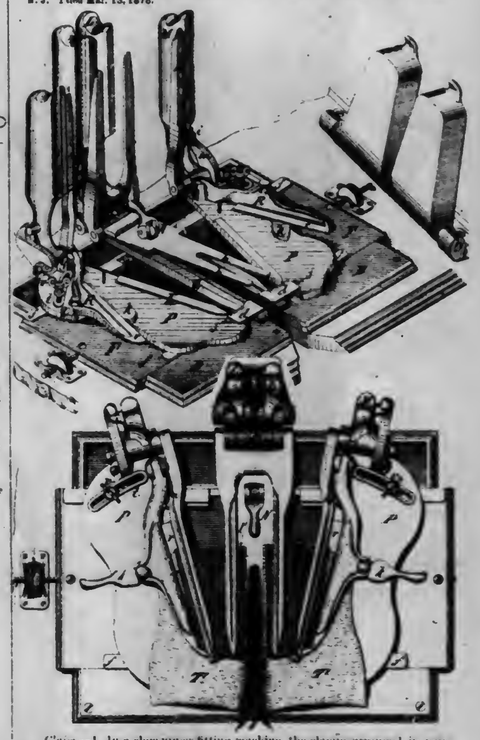
5. In a machine for folding leather, the combination of a pressure-plate and a lever connected therewith, by means of which the distance between the pressure-plate and the bed-plate can be determined, which lever can also be elevated by means of a hook, thereby forcing the pressure-plate against the bed-plate, substantially as described.

6. In a leather-folding machine, in combination with the pressure-plate, the means, substantially as specified, of applying the pressure equally to both sides of the pressure-plate, substantially as stated.

7. In a leather-folding machine, in combination with a folding-plate, the means, substantially as specified, for applying pressure to the edges of the folding-plate by an apparatus shaped to correspond with such edges.

8. In a leather-folding machine, the means of depressing simultaneously the front and back of the pressure-plate, substantially as described.

209,732. SHOE-UPPER-FITTING MACHINES. Joseph Walden and George Platts, Newark, N. J. Filed Mar. 13, 1878.



Claim.—1. In a shoe-upper-fitting machine, the clamps arranged in pairs, substantially as shown and described, whereby the two gores of a shoe are simultaneously fitted without changing the position of the parts, all substantially as set forth.

2. A shoe-fitting machine, arranged substantially as described, with the means, substantially as herein shown and described, for laterally adjusting the folding-clamp of the machine according to the varying widths of the gores to be fitted, in combination with the means, substantially as herein shown and described, for angularly adjusting said folding-edge according to the varying angles of the gores to be fitted, all substantially as herein set forth.

3. A shoe-fitting machine having a sliding plate, which carries a swinging plate provided with the folding-edge, whereby the location of said edge may be adjusted for operation both laterally and angularly, substantially as described.

4. A shoe-fitting machine adapted to fit two gores simultaneously, and provided with an opening in the table, into which the lining *z* is drawn out of the way of the operating parts of the machine, substantially as described.

5. A shoe-fitting machine adapted to fit two gores simultaneously, provided with a clamp having a slot or opening, into which the leather is drawn out of the way of the operating parts of the machine, substantially as described.

6. A shoe-fitting machine adapted to fit two gores simultaneously, provided with an opening in the table, into which the lining *z* is drawn out of the way of the operating parts of the machine, substantially as described, and a corresponding opening in the clamp, for the removal from the operating parts of the machine in opposite directions of the lining and leather, substantially as described.

7. A shoe-fitting machine provided, first, with clamps for holding the lining and edges for folding it upon; second, with independent clamps for holding the gore when in position; and, third, with independent weights adapted to press together the lining, the gore, and the leather, each of these parts being pivoted to the machine, and constructed so that when they are lowered upon the material they will always come to the same place on the plate on which the material is held, substantially as described.

8. In a shoe-fitting machine, a pivoted adjustable plate, P, having attached to it a folding-blade to fold the lining, a clamp to clamp the gore, and a weight to press together the lining, the gore, and the leather, substantially as described.

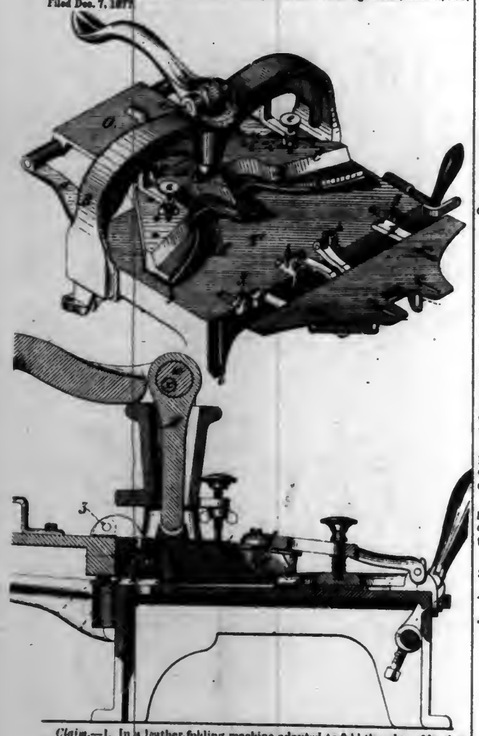
9. In a shoe-fitting machine provided with a laterally-adjustable edge determining the width of the gore, a scale to determine the adjustment of such plate, substantially as described.

10. In a shoe-fitting machine, a folding-blade over which the lining is folded, and which is adapted to be drawn laterally from beneath the folds so made, substantially as described.

11. In combination with a folding-blade adapted to be forced against a folding-edge, the cam-lever *k*, substantially as described.

12. In a shoe fitting machine, two independent clamps adapted to clamp and hold the two edges of the gore, two independent clamps adapted to hold the gore after it is placed in position, and two independent weights adapted to press and hold together the lining, the gore, and the leather, substantially as described.

209,733. Leather-Folding Machines. Joseph Walder and George Platts, Newark, N. J. Filed Dec. 7, 1877.



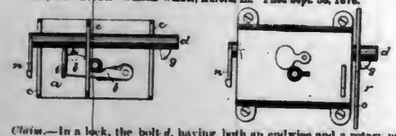
Claim.—1. In a leather folding machine adapted to fold the edge of leather or similar material, in combination with a presser-plate, the means herein described for adjusting the width of the crevice independently of the means for compressing the leather in said crevice, so that different thicknesses of leather may be operated upon and a perfect crease made, substantially as described.

2. In a leather folding machine in which a folding-blade enters a crevice which is subsequently closed, in combination with the folding-blade, the means, substantially as herein shown and described, for preventing the withdrawal of the leather upon the withdrawal of the folding-blade, substantially as set forth.

3. In a machine adapted to fold the edge of leather or similar material, the pressure-plate having two movements, as described, one down to compress the fold, the other forward over the fold to more perfectly fold the leather, substantially as described.

4. In a leather-folding machine, a folding-blade provided with slots or holes, through which the leather-clamping apparatus passes, which apparatus is used to prevent the withdrawal of the leather on the withdrawal of the folding-blade, substantially as described.

209,734. Locks. William Walker, Aurora, Ill. Filed Sept. 30, 1878.

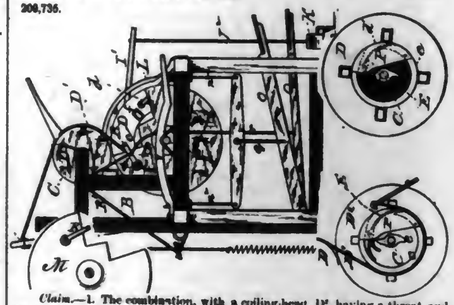


Claim.—In a lock, the bolt *d*, having both an endwise and a rotary movement, and provided with an arm, *n*, catch *g*, and wing *h*, in combination with its inclosing case *a*, having the flanges *c c i* and a locking-latch, *l*, overlapping the wing *h*, to lock the bolt in position, substantially as shown.

209,736. Machines for Coiling Hoops. John H. Ward, Delphos, Ohio. Filed Sept. 14, 1878.

Brief.—The rotating coiler-head carries an annular former having a throat, in which the end of the hoop is caught and firmly held by a vibrating griper attached to said former. Across the throat is secured a removable steel face-plate with a notched edge, which allows the griped end of the hoop to pass out when the coil is pushed off. The coil is held upon the former by a laterally-movable and double-notched guard-plate, which, when adjusted to the desired position, is held by a check-bar engaging the stem of said plate. The driving-pulley shaft has its bearings in two swecel beams arranged to move in exactly vertical planes, and operated by a treadle mechanism, for effectually preventing slipping and imparting a reliable rotation to the coiler-head. The coil is prevented from binding on the head by a curved stationary guard-strip arranged over and slightly to one side of the head.

209,736.



Claim.—1. The combination, with a coiling-head, D^2, having a throat and griper, of a steel face-plate removably secured to the said head across its throat, as and for the purpose specified.

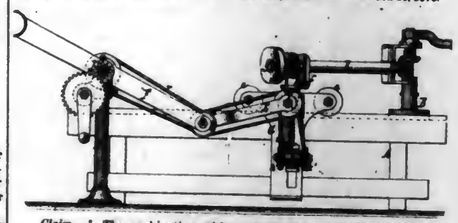
2. The combination, with a coiling-head and a guard-plate, M, laterally movable relative thereto, and adapted to hold the coil upon the said head, of a check lever, V, engaging the stem of the said plate and holding it stationary, substantially as specified.

3. In a hoop-coiling machine, the combination, with a shaft, E^2, having a pulley, F, and carrying the rotating coiler-head, D^2, of the vibrating beams H, the hangers H^2, suspending one end of said beams, the shaft G^2, having its bearings in said beam and carrying the driving-pulley G, the treadle-lever F^2, connecting-bar I, and the rods J, connecting the remaining ends of said beams to the said bar I, substantially as specified.

4. The combination, with a coiler-head, D^2, and a double-notched guard-plate, M, working therewith, of the angular finger R, pivoted to said plate and extending across its edge, a treadle mechanism actuating said finger, and a spring, S, raising the latter after each operation, substantially as specified.

5. The combination, with the revolving head D^2, of the curved stationary guard-strip L, arranged slightly to one side of said head and over the former *e*, for the purpose of preventing the coil from binding on said head, substantially as specified.

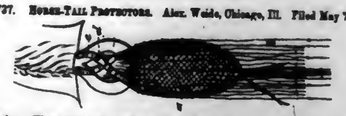
209,736. Mechanical Movements. Albin Warth, Stapleton, N. Y. Filed Oct. 16, 1878.



Claim.—1. The combination, with a working machine, B, of a swivel-arm, which forms the bearings for the shaft transmitting motion to said working machine, a vertical shaft which connects with the swivel-arm by a bracket, a table which supports the work to be acted on by the working machine, a carriage which supports the bearing of the vertical shaft, guide-rails for said carriage, which are secured to the side of the work-supporting table, two jointed arms which swing in vertical planes, and suitable belts and pulleys for transmitting motion from the driving-shaft to the working machine, all constructed and adapted to operate substantially as and for the purpose set forth.

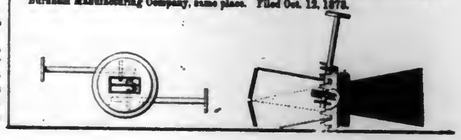
2. The combination, with the swivel-arm D, working machine B, table A, carriage C, and vertical shaft *e*, of a jointed bracket, *f*, to allow the working machine to move toward and from the surface of the table, substantially as described.

209,737. Horse-Tail Protectors. Alex. Weide, Chicago, Ill. Filed May 7, 1878.



Claim.—The herein-described horse-tail protector, consisting of bag *a*, fringes *b*, straps *c*, and buckles *d*, all constructed and arranged to be attached to the harness substantially as and in the manner set forth.

209,738. Lamp-Burners. William H. Woodin, Waterbury, Conn., assignor to Benedict & Burnham Manufacturing Company, same place. Filed Oct. 12, 1878.



Claim.—1. In a lamp-burner, the combination of two wick-tubes, both starting from the base, face to face, running upward diagonally, and having their upper ends brought into substantially the same vertical plane and edge to edge, substantially as described.

2. In a lamp burner, the combination of two wick-tubes, both starting from the base, face to face, running upward diagonally, and having their upper ends brought into substantially the same vertical plane edge to edge, with a wick-adjusting device, substantially as described.

3. In a lamp-burner, the combination of two wick-tubes, both starting from the base, face to face, running upward diagonally, and having their upper ends brought into substantially the same vertical plane, edge to edge, with an independent adjusting device for each of said tubes, substantially as described.

209,739. Rails. Rosin W. Welch, Georgetown, D. C., assignee of four-fifths his right to Edward P. Welch, James H. Welch, James P. Willett, and Charles Read, same place. Filed Sept. 26, 1878.

Brief.—The vibrations caused by a passing train are lessened by a reversible cord of rubber or other elastic material introduced into a longitudinal groove in the tread of the rail, a portion of the same extending above the upper portion of the rail, and upon which the wheels travel.



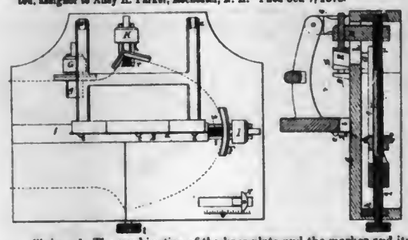
Claim.—The combination of the grooved rail A with a reversible cord, R, of rubber or other elastic incompressible material arranged in the groove, with the upper edge thereof projecting above the tread of the rail, substantially as described.

209,740. Metallic Pump-Valves. William Ap Williams, Oambria, Wis. Filed Sept. 14, 1878.



Claim.—The combination, with the inwardly-beveled valve-seat *a*, of the valve S, having the hemispherical rubber block *b*, the top weight-plate, *c*, resting thereon, and the ribbed or triangular under stem, *d*, connected to said weight-plate by a screw rod or stem passing through a central hole in said rubber block *b*, the latter fitting down into the concave valve-seat, substantially as specified.

209,741. Machines for Marking Boot and Shoe Fronts. George O. Wilson, Farmington, assignor to Riley H. Parker, Rochester, N. H. Filed Oct. 7, 1878.



Claim.—1. The combination of the base-plate and the marker and its operative carrier with the series of gages provided with mechanism for adjusting them for different sizes of boot-fronts to be marked, all being arranged to operate substantially as set forth.

2. The combination of the base-plate and the marker and its operative carrier with the series of gages and the scale-index provided with mechanism for adjusting them, substantially as described.

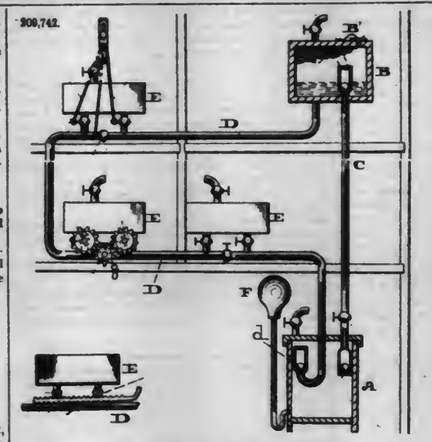
3. In a machine for marking the uppers of boots or shoes, the combination of the arm *s*, shafts K L, bevel-gears *o p*, and the screws *q r u*, for operating the adjustable gages or their carrier, all being substantially as shown and described.

209,742. Hot-Water Heating Apparatus. James D. Willoughby, Philadelphia, Pa. Filed Dec. 3, 1877.

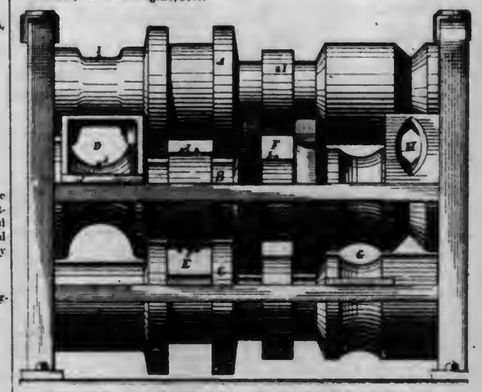
Claim.—1. In a hot water heating apparatus for buildings, the boiler A, from which the supply of hot water is automatically forced by the expansion of steam generated therein, and the closed reservoir B, for receiving the water from the boiler, in combination with a pipe leading directly from the boiler to the reservoir, and provided with a valve, whereby the return of water is prevented, and a pipe also connecting the reservoir with the boiler and arranged to pass through the compartments of a building, said pipe also connecting with means for radiating the heat therein, and provided with a valve adapted to open when steam pressure thereon is decreased, and thereby admit of a return of the water into the boiler, where it will be reheated, substantially as shown and described.

2. In a hot-water heating apparatus for buildings, the radiators F, adapted to be arranged within the apartments thereof, in combination with the pipes t' D, and boiler A, and reservoir B, connected by said pipes, substantially as set forth, the whole making a complete circuit, in which all the water will circulate, substantially as shown and described.

209,742.



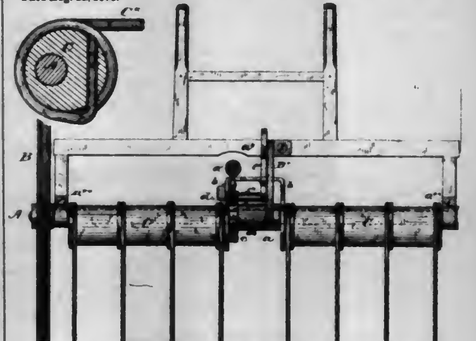
209,743. Rolls for Reducing Old Iron Railway-Rails. Burroughs P. Brunger, San Francisco, Cal. Filed Aug. 13, 1877.



Claim.—The rolls A B C, provided with the passes D E F G H and spurs I, in combination with the holding guide J, having the irregularly-shaped interior, as described.

REISSUES.

8,475. Horse Hay-Rakes. Cyrus B. Holden, Worcester, Mass., assignor, by mesne assignments, to William M. Field, Port Chester, N. Y. Patent No. 76,700, dated Apr. 14, 1868. Filed Aug. 22, 1878.



Claim.—1. An oscillating rake-head mounted on a rotating axle, and having bearings through which the axle rotates when the rake is advancing, substantially as described.

2. An oscillating rake-head mounted on a rotating axle, in combination with a rotating ratchet-wheel and a device for connecting the rake-head to the ratchet at the will of the operator, for the purpose of raising the teeth and discharging the hay when the rake is advancing.

3. A rake-head composed of two parts, connected by a yoke, in combination with a ratchet-wheel rotating between the parts when the rake is advancing, and a device for connecting the rake-head to the ratchet-wheel, for the purpose of raising the teeth and discharging the hay.

4. In a wheeled horse hay-rake, the combination of a revolving axle, a rocking head mounted on said axle as its center of oscillation, a lifting ratchet-wheel attached to said axle and revolving therewith, a pawl or detent attached to the head and capable of engaging with the ratchet to dump the load, and a stop against which the pawl or detent strikes at its extreme forward movement to automatically release it from the ratchet and reset the rake-teeth, substantially as described.

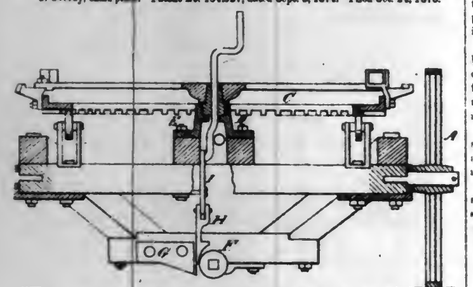
5. In a wheeled horse hay-rake, a revolving axle having a central lifting-wheel, combined with a draft-frame having a long rear cross-bar, a^3, with end and middle connections to the axle, constituting bearings in which said axle rotates, substantially as described.

6. The tubular head C, composed of two parts, connected by the yoke *b*, in combination with the axle A, the ratchet *c*, and pawl *d*, substantially as and for the purpose specified.

7. The arrangement and combination of the hook *f* and yoke *b* with the tubular head C and its teeth C^2, substantially as set forth.

8. The tubular head C, arranged eccentrically upon the axle A, in such manner as to permit the innermost ends of the teeth C^2 to be passed through such tubular head without interfering with the axle, substantially as and for the purpose specified.

8,476. HORSE-POWERS. Ole O. Stavle, Milwaukee, Wis., assignor of one-half interest to John O. Overby, same place. Patent No. 154,927, dated Sept. 8, 1874. Filed Oct. 24, 1878.

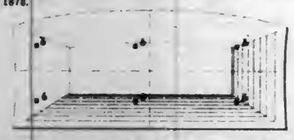


Claim.—1. A horse power with its master-wheel C set on a hollow center-pin, E, with slot in the pillow-block or bearing D, so that the wheel and pin can move sidewise in order to adjust the wheel without breaking, substantially as described.

2. A horse power with brake H, holder F, stud G, and master-wheel C, in combination with hollow center-pin E, arranged substantially as described.

3. Master-wheel C, in combination with hollow center-pin E, substantially as described.

8,477. HEEL-STIFFENER FOR BOOTS AND SHOES. George V. Sheffield, Northbridge, Mass., assignor, by mesne assignments, to Ruth A. Cook. Patent No. 102,720, dated May 3, 1870. Filed May 4, 1878.



Claim.—1. As an improved article of manufacture, a heel-stiffener one surface of which is formed with compressed beveled edges and the opposite surface made plain by cutters, substantially as set forth.

2. The method of forming heel-stiffeners, consisting in subjecting the blank to compression, and forming compressed beveled edges, and removing surplus material on the opposite side of the blank by knives or cutters while the counter or stiffener is retained in the die, substantially as set forth.

8,478. MOUNTING GLAZIERS' DIAMONDS. Philip Sinss, Baltimore, Md. Patent No. 64,157, dated Apr. 23, 1867. Filed Oct. 23, 1878.



Claim.—1. The within described glazier's diamond, the same having the breaker B jointed or pivoted to the handle A and the diamond-block swiveled to the breaker, substantially as and for the purpose set forth.

2. A glazier's diamond holder in which the diamond-block is swiveled directly to the end of the notched breaker, as set forth.

3. A glazier's diamond holder in which the diamond-block is swiveled directly to the end of the notched breaker, while the other end of the breaker is attached to the handle, the relation of the parts being such that the notches do not project beyond the line between the handle and diamond-block, as set forth.

8,479. COFFEE AND PEANUT ROASTERS. Casmus L. Hall, Ypsilanti, Mich., assignor of part interest to Samuel W. Parsons and George W. Parsons. Patent No. 196,904, dated Nov. 6, 1877. Filed Aug. 17, 1878.

Claim.—1. A coffee-roaster having, in combination, a cylindrical oven in which the roasting-cylinder is revolved, a furnace situated below and partially in front of said oven, and having its combustion-chamber extended upwardly on the front side of the oven, and a circular flue extending from such combustion-chamber around the rear side and over the top of the oven, and terminating in an exit-flue at the front of said oven, substantially as described and shown.

2. The combination, with the cylindrical oven in which the roasting-cylinder is placed, a furnace below and partially in front of such oven, and extending the entire length of the same, a circular flue around the rear side and over the top of the oven, and an exit-flue *m* on top of the oven and of the same length as such oven, substantially as described and shown.

3. A furnace and oven adapted to receive a removable perforated coffee-roasting cylinder, consisting of an inner cylindrical shell of the same length as the outer shell, and having an open end to receive the roasting-cylinder, an outer shell extending almost entirely around the inner shell, and rigidly secured thereto, and forming a space nearly around the sides of the inner shell, but not at the ends of the same, a furnace within such outer shell below and partially in front of the inner shell, an exit projecting from the upper front edge of the outer shell, and a door in the inner shell between the exit-flue and the furnace, constructed and arranged substantially as described and shown.

4. In a coffee-roaster, the combination, with a cylindrical oven, of a roasting cylinder mounted in a frame adapted to slide in and out of such oven, and a crank, S, and gearing P R, supported in the end of such sliding frame, substantially as described and shown.

5. A roasting-cylinder consisting of wire-cloth secured to suitable cylinder-heads mounted upon a driving-shaft, and provided with radial arms or stays and adjusting-nuts, substantially as and for the purposes herein set forth.

6. The front dampers, *b*, and rear dampers, *a*, in combination with the inner and outer shells, A B, substantially as and for the purposes specified.

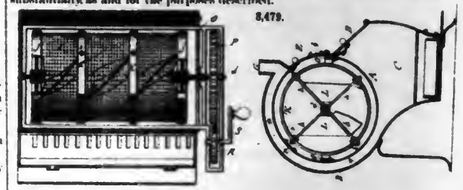
7. The combination of the inner shell, A, provided with interior ribs *m*, the outer shell, B, having combustion-chamber C and exit G, with the flue *a*, partially surrounding the inner shell, and the movable frame O, with the roasting-cylinder, all substantially as and for the purposes herein set forth.

8. The combination of the inner and outer shells, A and B, the former being provided with interior ribs, *m*, and dampers *b a*, and the latter having combustion-chamber C, with the furnace H and exit G, both arranged at the front of the machine, with the flue *a* surrounding the inner shell, and the roasting-cylinder supported upon the movable frame O, all constructed and arranged to operate substantially as and for the purposes set forth.

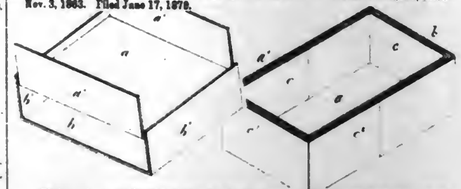
9. In combination with a roasting-cylinder, made of wire-cloth secured to suitable heads, and with the surrounding bands K, the devices, substantially as herein described, for securing the proper longitudinal tension of the wires and the uniform radial tension from the shaft, substantially as set forth.

10. The spirally-curved wings secured to and in combination with the radial arms, provided with adjusting-nuts, the shaft *d*, and roasting-cylinder, substantially as and for the purposes described.

8,479.



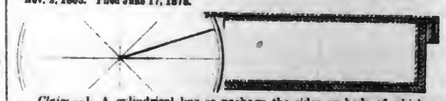
8,480. MANUFACTURING BOXES. John Sperry, New York, N. Y. Patent No. 40,507, dated Nov. 3, 1863. Filed June 17, 1878.



Claim.—1. A grain-bound box made of pieces *a a' b b'* and bands *c*, which are so arranged in relation to each other that the grain of one layer crosses the grain of the adjacent layer, substantially as specified.

2. Making the bottom and the sides of a wooden box either partially or wholly of one or more pieces of material by turning the edges up or in and overlapping the corners, so that the grains of the veneer cross and strengthen the same, substantially as set forth.

8,481. MANUFACTURING BOXES. John Sperry, New York, N. Y. Patent No. 40,507, dated Nov. 3, 1863. Filed June 17, 1878.



Claim.—1. A cylindrical box or package the sides or body of which are composed of layers of wood so arranged in relation to each other that the grain of one layer crosses the grain of the adjacent layer, substantially as specified.

2. A cylindrical box or package the sides or body of which are composed of layers of wood so arranged in relation to each other that the grain of one layer crosses the grain of the adjacent layer, the several layers being united to each other by glue or cement, as and for the purpose set forth.

3. A cylindrical box or package the sides or body of which are composed of layers of wood, the grain of one layer crossing the grain of the adjacent layer, and strengthened by bands or hoops placed inside or outside, and secured to the body, as set forth.

4. The bottom or end of a cylindrical box or package composed of layers of wood, the grain of one layer crossing the grain of the other, the middle layer being bent inwardly toward the center, to form one layer of the permanent end of the box, substantially as shown and described.

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 5th DAY OF NOVEMBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abbatt, W. D., West Chester, N. Y. Hot, cold, and waste water cock	209,539	Nov. 5	1	1	14	681
Adams, J., Washington, D. C. Gas-regulator	209,638	Nov. 5	113	33	14	696
Adams, J. Q., Royal Oak, Mich. Shafts for vehicles	209,540	Nov. 5	2	1	14	681
Ainsworth, C., Monticello, Iowa. Harvester	209,639	Nov. 5	114	33	14	696
Alexander, T. S., assignor to himself and S. A. Hull, Meriden, Conn. Drawer-pull	209,640	Nov. 5	115	33	14	696
Allen, A. L. (See Harris and Allen.)						
Alvord, L., South Hadley, Mass. Chain-wheel propeller	209,541	Nov. 5	2	1	14	681
Ambler, A. I. and W. R., New York, N. Y., assignors, by mesne assignments, to S. M. Whipple, Grantville, Mass. Gas-generator	209,597	Nov. 5	63	19	14	689
Ambler, W. R. (See Ambler, A. I. and W. R.)						
American Ring Company. (See Atwood, W. S., assignor.)						
Atterbury, T. B., Pittsburg, Pa. Combined lamp chimney and shade	209,542	Nov. 5	4	2	14	681
Atwood, W. S., assignor to himself and American Ring Company, Waterbury, Conn. Umbrella tip-cup	209,598	Nov. 5	66	19	14	689
Babcock, C. A., Buffalo, N. Y. Combination implement	209,599	Nov. 5	66	19	14	689
Badger, G. A., Quincy, Mass. Registering attachment for fire-arms	209,600	Nov. 5	67	19	14	689
Bean, E. E., Boston, Mass., assignor to Consolidated Wax Thread Sewing Machine Company. Sewing-machine	209,543	Nov. 5	5	2	14	681
Belus, H. W., New York, N. Y. Steam-trap	209,601	Nov. 5	68	20	14	690
Benedict & Burnham Manufacturing Company. (See Weeden, W. N., assignor.)						
Benjamin, F. W., Sheffield, Ohio. Potato-digger	209,641	Nov. 5	116	34	14	696
Bennett, J. F., Pittsburg, Pa. Fluid-pressure regulator	209,602	Nov. 5	70	20	14	690
Berlitz, M. D., Providence, and H. P. Morgan, Westerly, assignors of one-third interest to E. Holbrook, Providence, R. I. Balance-spring for time-keepers	209,642	Nov. 5	117	34	14	697
Bidwell, F. A., Norwich, Conn. Device for patching boilers	209,603	Nov. 5	72	20	14	690
Bigelow, E. W., Boston, Mass. Corset	209,643	Nov. 5	117	34	14	697
Bill, E. L., Wheeling, W. Va. Adding-machine	209,644	Nov. 5	118	35	14	697
Billings, F., Cleveland, Ohio. Wire-barbing machine	209,544	Nov. 5	6	2	14	681
Birge, L., and C. D. Williams; said Birge assignor to H. Hildebrand, St. Paul, Minn. Fire-alarm telegraph	209,645	Nov. 5	119	35	14	697
Blackman, H. P., assignor of one-half interest to C. S. Greene, Philadelphia, Pa. Wardrobe-bedstead	209,604	Nov. 5	72	21	14	690
Boynton, E. N., G. M. Coburn, and T. F. Carver, assignors to E. N. Boynton, Worcester, Mass. Metal-drilling machine	209,646	Nov. 5	122	36	14	697
Brady, J., Brooklyn, N. Y. Machine for measuring and marking fabrics	209,647	Nov. 5	123	36	14	697
Bragan, J. A., Kingston, N. Y. Tilter for tea-pots	209,545	Nov. 5	7	3	14	682
Bridgman, A., assignor of one-half interest to J. L. Perry, Berlin, Wis. Sandpapering-machine	209,648	Nov. 5	126	36	14	698
Brown, H., Silver Lake, Ind. Churn	209,605	Nov. 5	73	21	14	690
Brown, R. C., Portland, Oreg. Car-axle box	209,546	Nov. 5	8	3	14	682
Brown, W. H., Waterbury, Conn., and I. Osgood, Utica, N. Y. Handle for table-knives	209,649	Nov. 5	127	37	14	698
Brunner, B. P., San Francisco, Cal. Roll for reducing old iron railway-rails	209,743	Nov. 5	227	68	14	711
Burbank, A., assignor to A. V. M. Sprague, E. Ocumpaugh, and G. W. R. Lewin, Rochester, N. Y. Heating apparatus	209,650	Nov. 5	128	37	14	698
Burns, R. (See Pickles and Burns.)						
Burton, G. F., assignor of two-thirds interest to R. J. Flint and F. J. McLean, Menomonee, Wis. Wagon-lock	209,547	Nov. 5	9	3,4	14	682
Cahoone, E. R., Newark, N. J. Brow-band for bridles	209,651	Nov. 5	129	37	14	698
Carter, W. T., Village Springs, Ala. Harvester-thrasher	209,652	Nov. 5	130	37	14	698
Carver, T. F. (See Boynton, Coburn, and Carver.)						
Center, L. W., Potsdam, N. Y. Milk-cooler	209,548	Nov. 5	11	4	14	682
Christie, W., New York, N. Y. Trap	209,653	Nov. 5	130	38	14	698
Clark, C. B. (See Lyons, M. S., assignor.)						
Clark, W. N., New York, N. Y. Soluble coating for pills	209,654	Nov. 5	131	.....	14	698
Clemmons, A. J., Chicago, Ill. Water-elevator	209,655	Nov. 5	132	38	14	698
Clough, W., Oshkosh, Wis. Pump	209,549	Nov. 5	12	4	14	682
Clontman, C. L., assignor to himself and A. I. Nute, Farmington, N. H. Car-coupling	209,656	Nov. 5	133	38	14	699
Cobb, G. F., Boston, Mass. Stove	209,550	Nov. 5	13	4	14	683
Coburn, G. M. (See Boynton, Coburn, and Carver.)						
Coffin & Co., T. (See Coffin, T., assignor.)						
Coffin, T., Baldwin township, Allegheny county, assignor to T. Coffin & Co., Pittsburg, Pa. Glass-house pot	209,606	Nov. 5	74	21	14	690
Cole, D. S., Washington, assignor of one-half interest to S. A. Hyers, Davenport, Iowa. Draft-equalizer	209,657	Nov. 5	134	39	14	699
Combes, W. M., Auburn, N. Y. Steam feed-cooker	209,650	Nov. 5	137	39	14	699
Comly, J. F., New Lexington, Ohio. Registering tape-measure	209,658	Nov. 5	135	39	14	699
Condict, J. E., and A. J. Doty, Philadelphia, Pa.; said Doty assignor to said Condict. Fire-extinguishing apparatus	209,660	Nov. 5	137	40	14	699
Consolidated Wax Thread Sewing Machine Company. (See Bean, E. E., assignor.)						
Cook, R. A. (See Sheffield, G. V., assignor.) (Reissue.)						
Cowing, G., Cleveland, Ohio. Machine for making cores	209,551	Nov. 5	14	5	14	683

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cranston, G. W., San Francisco, Cal. Hydraulic mining apparatus	209,661	Nov. 5	138	40	14	699
Croft, J., Scipio, Utah Ter. Turbine water-wheel	209,662	Nov. 5	139	41	14	700
Crompton, G. (See Renwick, H. B., assignor.)						
Dalzell, S. M., assignor of one-half interest to E. A. Wheeler, Sharon, Pa. Bag-holder	209,663	Nov. 5	140	41	14	700
Davies, H. J., Brooklyn, N. Y., and W. D. Davies, Ansonia, Conn. Manufacture of contrate-wheels	209,664	Nov. 5	141	41	14	700
Davies, W. D. (See Davies, H. J. and W. D.)						
Davis, A., assignor of one-half interest to H. Shackell, Montreal, Quebec, Canada. Spark-arrester for locomotives	209,665	Nov. 5	142	41	14	700
Davis, S. E. (See Van Brunt and Davis.)						
Davis, T. J., Fair Haven, N. Y. Potato-planter	209,607	Nov. 5	74	21, 22	14	690
Decastro, J. W., New York, N. Y. Defecation, decolorization, and refining of saccharine liquids	209,608	Nov. 5	76	.....	14	691
Decou, S. H., Centreville, Ohio. Fruit-jar protector	209,666	Nov. 5	143	42	14	700
Dederick, E., Milwaukee, Wis. Grain-binder	209,609	Nov. 5	77	22	14	691
Dehart, T., Meadows of Dan, Va. Water-wheel	209,667	Nov. 5	144	42	14	700
Delaney, A., Richmond, Va. Spark-arrester	209,668	Nov. 5	145	42	14	700
Demond, G. W. and L., Brooklyn, N. Y. Chimney-top and ventilator	209,552	Nov. 5	15	5	14	683
Demond, L. (See Demond, G. W. and L.)						
Dickinson, S. V., Buffalo, N. Y. Electric apparatus for opening doors of engine-houses	209,610	Nov. 5	78	22, 23	14	691
Dolle, L., Baltimore, Md. Cooler for water and bottled beverages	209,669	Nov. 5	146	42	14	700
Doty, A. J. (See Conklet and Doty.)						
Dow, C. H., Providence, R. I. Check-rein attachment	209,553	Nov. 5	16	5	14	683
Dunne, L., Morgantown, W. Va. Corn planting and hilling machine	209,670	Nov. 5	147	43	14	700
Du Sonchet, O. C., Alexandria, Mo. Check-row corn planter and drill	209,671	Nov. 5	149	43	14	701
Enstis, W. E. C., Milton, assignor of one-half interest to H. M. Howe, Boston, Mass. Process and furnace for reducing and smelting ores	209,554	Nov. 5	16	6	14	683
Everitt, W., Delaware Station, N. J. Land-marker	209,611	Nov. 5	79	23	14	691
Farnsworth, H. T., Bellefonte, Pa. Engine-governor	209,612	Nov. 5	80	23, 24	14	691
Fay, R., Philadelphia, assignor of one-fourth interest to G. R. Harrison, Pottstown, Pa. Breech-loading fire-arm	209,613	Nov. 5	81	24	14	691
Field, W. H. (See Holden, C. B., assignor.) (Reissue.)						
Fisher, H. (See Hart and Fisher.)						
Flint, R. J., *et al.* (See Burton, G. F., assignor.)						
Frary, J. D. (See Hart and Fisher, assignors.)						
Frey, J. J., Baltimore, Md. Smoke and cinder conductor for railway-trains	209,672	Nov. 5	151	44	14	791
Frost, E. J. (See Peterson and Frost.)						
Gates, C., assignor of one-half interest to W. King, Index, Mo. Fire-escape	209,555	Nov. 5	19	6	14	683
Gilbert, J., Newark, N. J. Sheet-metal box	209,556	Nov. 5	19	7	14	684
Glazier, G. W., Salem, and O. E. Wait, Lynn, Mass. Machine for making bobbins	209,614	Nov. 5	82	24, 25	14	692
Goode, W. H. C. (See Slusser, B., assignor.)						
Goodfellow, J. H., assignor of one-half interest to P. F. Miller, Troy, N. Y. Stove	209,557	Nov. 5	21	7	14	684
Goodfellow, J. H., assignor of one-half interest to P. F. Miller, Troy, N. Y. Stove	209,558	Nov. 5	22	7	14	684
Graham, A., Fancy Hill, Va. Apparatus for making vinegar and aging liquors	209,615	Nov. 5	85	25	14	692
Greely, B. J., Boston, Mass. Suspender-ends	209,559	Nov. 5	23	7	14	684
Greene, C. S. (See Blackman, H. P., assignor.)						
Griffith, S. A., Green township, Hamilton county, Ohio. Plaster	209,560	Nov. 5	24	8	14	684
Grillenberger, J. M., assignor, by mesne assignments, to R. Grillenberger, Syracuse, N. Y. Pump	209,673	Nov. 5	152	44	14	701
Grillenberger, R. (See Grillenberger, J. M., assignor.)						
Grimshaw, W. D., New York, N. Y. Machine for printing and cutting fabrics	209,674	Nov. 5	153	44	14	701
Gross, H., Cincinnati, Ohio. Time-lock	209,561	Nov. 5	25	8	14	684
Grover, D. L., Groton, N. Y. Harvester guard-finger	209,675	Nov. 5	155	45	14	701
Gurley, L. E., *et al.* (See Gurley, W., assignor.)						
Gurley, W., assignor to W. and L. E. Gurley, Troy, N. Y. Tripod-head for surveying-instruments	209,562	Nov. 5	28	8, 9	14	684
Haire, D., Lime Spring, Iowa. Spring bed-bottom	209,676	Nov. 5	155	45	14	701
Hall, C. L., Ypsilanti, Mich., assignor of part interest to S. W. and G. W. Parsons. Coffee and pea-nut roaster. (Reissue)	8,479	Nov. 5	232	69	14	712
Hall, T. G., New York, N. Y. Cutting-nippers	209,677	Nov. 5	156	45	14	702
Harris, G. W., and A. L. Allen, Poughkeepsie, N. Y. Apparatus for the manufacture of gas	209,563	Nov. 5	30	9	14	685
Harrison, G. R. (See Fay, R., assignor.)						
Harrison, M. (See Thorwarth and Harrison.)						
Harrison, W. C., Jamestown, N. Y. Signal-lantern	209,678	Nov. 5	156	45	14	702
Hart, G. L., and H. Fisher, Bridgeport, assignors to J. D. Frary, New Britain, Conn. Table-cutlery	209,679	Nov. 5	157	46	14	702
Hart, J., Spencer, Iowa. Fence	209,680	Nov. 5	157	46	14	702
Hause, J., Ostrander, Ohio. Horse hay-rake	209,564	Nov. 5	32	9	14	685
Heaton, S., Cedar Rapids, Iowa. Iron fence-post	209,681	Nov. 5	158	46	14	702
Heinig, G. E., Louisville, Ky. Combined candlestick and match-safe	209,565	Nov. 5	33	9	14	685
Heron, C., Galena, Ill. Shoe	209,682	Nov. 5	159	46	14	702
Hildebrand, H. (See Birge and Williams, assignors.)						
Himmer, V., New York, N. Y. Striking-clock	209,616	Nov. 5	86	26	14	692
Hipkins, W. L. (See Love, W. H., assignor.)						
Hird, J., Bishopstown, England. Sheet-delivery apparatus for printing-presses	209,683	Nov. 5	159	47	14	702
Hitter, J. A., Jr., St. Martinsville, La. Type-writing machine	209,684	Nov. 5	161	47	14	702
Hoffmann, C., New York, N. Y. Blow-pipe	209,685	Nov. 5	162	47	14	702
Holbrook, E. (See Berlitz and Morgan, assignors.)						
Holden, C. B., Worcester, Mass., assignor, by mesne assignments, to W. H. Field, Port Chester, N. Y. Horse hay-rake. (Reissue)	8,475	Nov. 5	228	68	14	711
Holland, J., Cincinnati, Ohio. Tooth-pick	209,566	Nov. 5	33	10	14	685
House, H. A., Bridgeport, Conn. Manufacture of flanged articles of paper	209,686	Nov. 5	163	47	14	703
Howe, H. M. (See Enstis, W. E. C., assignor.)						
Hubbard, G. G., trustee. (See Watson, T. A., assignor.)						
Hughes, J. W., Brooklyn, assignor to M. A. Myers, Westchester, N. Y. Filter	209,617	Nov. 5	87	26, 27	14	692
Hull, L., Charlestown, Mass. Carpet-sweeper	209,687	Nov. 5	164	48	14	703
Hull, S. A. (See Alexander, T. S., assignor.)						
Hunter, E., Norwich, Conn. Lamp-stove	209,567	Nov. 5	34	10	14	685
Hunter, E. T., Hallsville, Ill. Sulky breaking-plow	209,688	Nov. 5	164	48	14	703
Huston, J. N., Connersville, Ind. Blotter	209,689	Nov. 5	166	48	14	703
Hyatt, J. W., Newark, N. J. Staining wood	209,568	Nov. 5	36	.....	14	685
Hyatt, J. W., Newark, N. J. Wrench	209,569	Nov. 5	36	10	14	685
Hyatt, J. W., Newark, N. J. Varnish	209,570	Nov. 5	38	.....	14	686
Hyers, S. A. (See Cole, D. S., assignor.)						
Jacobsohn, N., Berlin, Germany. Envelope	209,571	Nov. 5	39	10	14	686
James, R. R., Rising Sun, Ind. Adding-machine	209,690	Nov. 5	167	49	14	703
Jinkins, F., Orange, N. J. Hat-box	209,691	Nov. 5	168	49	14	704
Jones, C., assignor of one-half interest to H. Riddle, Glen Riddle, Pa. Carding-machine	209,692	Nov. 5	169	50	14	703

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Jones, D. T., Yellow Springs, Ohio. Washing-machine	209,693	Nov. 5	170	50	14	704
Kay, W. V., Lake Forest, Ill. Packing for journal-boxes	209,572	Nov. 5	40	.....	14	686
King, W. (See Gates, C., assignor.)						
Knowles, J. H., Philadelphia, Pa. Stop-motion for spinning or twisting machines	209,694	Nov. 5	171	50, 51	14	704
Lewin, G. W. R., *et al.* (See Burbank, A., assignor.)						
Lewis, B. B., Bristol, Conn. Clock-calendar	209,618	Nov. 5	88	26	14	692
Linderman, I. M., Elmira, N. Y. Vehicle-spring	209,695	Nov. 5	173	51	14	704
Loomis, S. L., San José, Cal. Bullet-machine	209,619	Nov. 5	91	26, 27	14	693
Love, W. H., assignor of one-half interest to W. L. Hipkins, Washington, D. C. Automatic fan	209,696	Nov. 5	174	51	14	704
Lufkin, C. M., Alstead, N. H. Swivel-plow	209,697	Nov. 5	175	52	14	704
Lugo, O., Flushing, N. Y. Purifying and increasing the illuminating power of gas	209,698	Nov. 5	176	.....	14	704
Lyons, M. S., Armada, Mich., assignor of one-half interest to C. B. Clark. Fruit-drier	209,620	Nov. 5	92	27	14	693
Macarthy, C. E., Forsyth, Ga. Horse-power	209,699	Nov. 5	177	52	14	704
Manhattan Brass Company. (See White, J. H., assignor.)						
Mansfield, W. H., assignor to T. C. Van Ness and R. N. Williams, San Francisco, Cal. Liquid-freezer	209,700	Nov. 5	178	52	14	704
Matthews, H. A., Waterbury, Conn. Turnkey or handle for stove-doors	209,573	Nov. 5	40	11	14	686
Maybury, F. M., Milwaukee, Wis. Compound for preventing incrustation in steam-boilers	209,574	Nov. 5	41	.....	14	686
McGill, G. W., New York, N. Y. Buckle	209,701	Nov. 5	179	52	14	705
McKinney, H. D., Janesville, Wis. Toe-weight for horses	209,575	Nov. 5	41	11	14	686
McLean, F. J., *et al.* (See Burton, G. F., assignor.)						
McLeod, J. W. (See Ross and McLeod.)						
Meigs, M. C., Washington, D. C. Candlestick-reflector	209,576	Nov. 5	42	11	14	686
Meineke, H., Hanover, Prussia, assignor to C. Schmidt, New York, N. Y. Calendar	209,577	Nov. 5	43	12	14	686
Metz, J. (See Metz, O. and J.)						
Metz, O. and J., St. Johns, Ohio. Gate-latch	209,702	Nov. 5	180	53	14	705
Miller, G., Salisbury, Mo. Hay-elevator	209,703	Nov. 5	181	53	14	705
Miller, J. P., Philadelphia, Pa. Oyster-cooler	209,621	Nov. 5	93	27	14	693
Miller, P. F. (See Goodfellow, J. H., assignor.)						
Millspaugh, W., Middletown, N. Y. Tool-handle	209,704	Nov. 5	182	53	14	705
Moran, T., assignor of one-half interest to A. Murphey, Erie, Pa. Oil-can	209,578	Nov. 5	43	12	14	686
Morgan, H. P. (See Berlitz and Morgan.)						
Moses, J. H., and F. M. Stewart, Half Rock, Mo. Bee-hive	209,622	Nov. 5	94	27	14	693
Murphey, A. (See Moran, T., assignor.)						
Myers, M. A. (See Hughes, J. W., assignor.)						
New, T., New York, N. Y. Manufacture of composite roofing	209,705	Nov. 5	183	.....	14	705
Nicholson, E., Lynn, Mass. Cutting-board for leather-work	209,706	Nov. 5	183	54	14	705
Noble, L. D., Cerro Gordo, Ill. Swing	209,623	Nov. 5	94	28	14	693
Nute, A. L. (See Cloutman, C. L., assignor.)						
Ocumpaugh, E., *et al.* (See Burbank, A., assignor.)						
Oelschlegger, A., Boston, Mass. Chimney	209,579	Nov. 5	44	12	14	686
Oliver, R. W., and J. E. Robinson, Richmond, Va. Affixing revenue-stamps to plug-tobacco	209,581	Nov. 5	45	13	14	687
O'Neall, J. M., Fort Worth, Tex. Band-cutting feeder for thrashing-machines	209,580	Nov. 5	45	12	14	687
Orton, C. M., Glens Falls, N. Y. Kettle-cover	209,707	Nov. 5	184	54	14	705
Osgood, I. (See Brown and Osgood.)						
Overby, J. O. (See Storle, O. O., assignor.) (Reissue.)						
Parker, R. H. (See Wilson, G. C., assignor.)						
Parks, D., assignor to H. Smith, Boston, Mass. Suspended ship's berth	209,582	Nov. 5	46	13	14	687
Parrott, P., Red Bud, Ill. Thrashing-machine	209,708	Nov. 5	184	54, 55	14	705
Parsons, G. W., *et al.* (See Hall, C. L., assignor.) (Reissue.)						
Parsons, S. W., *et al.* (See Hall, C. L., assignor.) (Reissue.)						
Paschal, J. H., Camden, Ark. Wagon-body	209,709	Nov. 5	186	55	14	706
Peck, C. O., Pittsfield, Mass. Sifter	209,710	Nov. 5	187	55	14	706
Perkins, G. B. (See Raymond and Perkins.)						
Perry, J. L. (See Bridgman, A., assignor.)						
Peterson, R. E., and E. J. Frost, Philadelphia, Pa. Bronzing-machine	209,624	Nov. 5	95	28	14	693
Peterson, R. E., and E. J. Frost, Philadelphia, Pa. Bronzing and flocking paper, cotton, linen, &c	209,625	Nov. 5	96	.....	14	694
Petrie, H., Philadelphia, Pa. Sign	209,583	Nov. 5	47	13	14	687
Pickles, C. K., and R. Burns, St. Louis, Mo. Wire-rope machine	209,626	Nov. 5	97	28, 29	14	694
Pierpont, G. R., New Haven, Conn. Ice-cutting apparatus	209,711	Nov. 5	188	55, 56	14	706
Platts, G. (See Walden and Platts.)						
Pratt, G. M., assignor to Victor Sewing Machine Company, Middletown, Conn. Clutch for band-wheels of sewing-machines	209,712	Nov. 5	189	56	14	706
Pratt, R. N., Hartford, Conn. Combined heater and feeder for boilers	209,584	Nov. 5	48	13, 14	14	687
Randall, F. J., Aurora, Ill. Door-spring	209,713	Nov. 5	190	56	14	706
Raymond, G. N., and G. B. Perkins, Bridgeport, Conn. Coin-holder	209,585	Nov. 5	49	14	14	687
Reed, C., *et al.* (See Welch, R. W., assignor.)						
Renwick, H. B., New York, N. Y., assignor to G. Crompton, Worcester, Mass. Shuttle-box mechanism for looms	209,714	Nov. 5	191	56, 57	14	706
Richardson, J. C., New York, N. Y. Hatchway-door	209,586	Nov. 5	49	14	14	687
Riddle, H. (See Jones, C., assignor.)						
Robinson, J. E. (See Oliver and Robinson.)						
Rose, W. R., Glennville, Cal. Pruning implement	209,587	Nov. 5	50	15	14	688
Ross, E., and J. W. McLeod, assignors to United States Steam Feed Company, Boston, Mass. Apparatus for preparing cereals for food	209,715	Nov. 5	193	57	14	707
Sachs, W., Berlin, Prussia. Fountain-pen	209,716	Nov. 5	194	57	14	707
Sammons, T. A., Lewisburg, West Va. Corn-planter	209,717	Nov. 5	194	57, 58	14	707
Schley, F., New York, N. Y. Insertible saw-tooth	209,627	Nov. 5	99	29	14	694
Schmidt, C. (See Meineke, H., assignor.)						
Seaman, J. S., Pittsburg, Pa. Machine for edging, sizing, and straightening non-cylindrical metal bars	209,588	Nov. 5	51	15	14	688
Serrell, L. W., trustee. (See Strong, M. H., assignor.)						
Shackell, H. (See Davis, A., assignor.)						
Sharp, G. A., Harmony, Ky. Corn-planter	209,718	Nov. 5	196	58	14	707
Sheffield, G. V., Northbridge, Mass., assignor, by mesne assignments, to R. A. Cook. Heel-stiffener for boots and shoes. (Reissue)	8,477	Nov. 5	230	69	14	712
Sierer, A. L., Mechanicsburg, Pa. Fruit-drier	209,719	Nov. 5	197	58	14	707
Sinsz, P., Baltimore, Md. Mounting glazier's diamonds. (Reissue)	8,478	Nov. 5	231	69	14	712
Slusser, B., assignor of one-half interest to W. H. C. Goode, Sidney, Ohio. Earth-scraper	209,720	Nov. 5	198	58	14	707
Smith, A. H., and S. S. Thompson, St. Louis, Mo.; said Thompson assignor to said Smith. Bran-scourer	209,590	Nov. 5	56	17	14	688
Smith, H. (See Parks, D., assignor.)						
Smith, J. G., Chagrin Falls, Ohio. Stove	209,721	Nov. 5	199	59	14	707
Smith, M. P., and W. W. Woolford, Baltimore, Md.; said Woolford assignor to said Smith. Grain-drier	209,589	Nov. 5	54	16, 17	14	688
Soennecken, F., Bonn-on-the-Rhine, Prussia, Germany. Multiple pen	209,722	Nov. 5	201	59, 60	14	708

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sperry, J., New York, N. Y. Manufacturing boxes. (Reissue)	8,480	Nov. 5	234	69	14	712
Sperry, J., New York, N. Y. Manufacturing boxes. (Reissue)	8,481	Nov. 5	234	70	14	712
Spofford, C., New York, N. Y. Paper-collar machine	209,628	Nov. 5	100	29, 30	14	694
Sprague, A. V. M., *et al.* (See Burbank, A., assignor.)						
Stephenson, F. G., assignor of one-half interest to T. B. Stephenson, Plainville, Conn. Lamp-lighter	209,629	Nov. 5	102	30	14	694
Stephenson, T. B. (See Stephenson, F. G., assignor.)						
Stewart, F. M. (See Moses and Stewart.)						
Stoddard, J., San Francisco, Cal. Coupling for hydrant-suctions	209,591	Nov. 5	56	17	14	687
Storie, O. O., assignor of one-half interest to J. O. Overby, Milwaukee, Wis. Horse-power. (Reissue)	8,476	Nov. 5	230	68	14	712
Stowell, W. J., Baltimore, Md. Mail-bag fastening	209,723	Nov. 5	203	60	14	708
Strong, M. H., Brooklyn, N. Y., assignor to L. W. Serrell, trustee. Apparatus for the manufacture of illuminating-gas	209,630	Nov. 5	103	30	14	695
Sutton, J. W., New York, N. Y. Fire-extinguisher	209,724	Nov. 5	204	60	14	708
Taggart, H. T., Emporium, Pa. Postage-stamp-recording cabinet	209,728	Nov. 5	207	61	14	708
Tallmadge, J. W., New York, N. Y. Pipe-stem	209,725	Nov. 5	205	61	14	708
Taylor, C. A. (See Tilton, W. F., assignor.)						
Taylor, D. E. W., San Bernardino, Cal. Rotary ore-stamp	209,631	Nov. 5	104	31	14	695
Thompson, S. S. (See Smith and Thompson.)						
Thorwarth, J. B., and M. Harrison, Brooklyn, N. Y. Lock for spinning-tiers	209,727	Nov. 5	206	61	14	708
Tilton, W. F., McHenry, assignor of one-half interest to C. A. Taylor, Chicago, Ill. Device for cutting washers	209,726	Nov. 5	206	61	14	708
Tongue, F. J., Chicago, Ill. Galvanic pile for medical purposes	209,632	Nov. 5	105	31	14	695
Ulrich, A., Lockport, N. Y. Refrigerator-wagon	209,729	Nov. 5	208	62	14	708
United States Steam Feed Company. (See Ross and McLeod, assignors.)						
Van Brunt, W. A., and S. E. Davis, Horicon, Wis. Cultivator	209,633	Nov. 5	107	31, 32	14	695
Vanderbeck, G. (See Willis, H. M., assignor.)						
Van Ness, T. C., *et al.* (See Mansfield, W. H., assignor.)						
Vellines, B. H., Norfolk, Va. Pea-nut cleaner	209,730	Nov. 5	209	62	14	709
Victor Sewing Machine Company. (See Pratt, G. M., assignor.)						
Wait, O. E. (See Glazier and Wait.)						
Walden, J., and G. Platts, Newark, N. J. Machine for folding and shaping leather	209,731	Nov. 5	210	62, 63	14	709
Walden, J., and G. Platts, Newark, N. J. Shoe-upper-fitting machine	209,732	Nov. 5	213	63, 64	14	709
Walden, J., and G. Platts, Newark, N. J. Leather-folding machine	209,733	Nov. 5	215	64, 65	14	710
Walker, W., Aurora, Ill. Lock	209,734	Nov. 5	217	65	14	710
Ward, C. T., New York, N. Y. Type-writing machine	209,634	Nov. 5	109	32	14	695
Ward, J. H., Delphos, Ohio. Machine for coiling hoops	209,735	Nov. 5	218	65, 66	14	710
Warth, A., Stapleton, N. Y. Mechanical movement	209,736	Nov. 5	219	66	14	710
Watson, T. A., assignor to G. G. Hubbard, trustee, Boston, Mass. Automatic switch or cut-out for telephones	209,592	Nov. 5	58	17	14	688
Weaver, J. H., Chicago, Ill. Envelope	209,593	Nov. 5	59	18	14	688
Weeden, W. N., assignor to Benedict & Burnham Manufacturing Company, Waterbury, Conn. Lamp-burner	209,738	Nov. 5	221	66	14	710
Weide, A., Chicago, Ill. Horse-tail protector	209,737	Nov. 5	221	66	14	710
Welch, E. P., *et al.* (See Welch, R. W., assignor.)						
Welch, J. H., *et al.* (See Welch, R. W., assignor.)						
Welch, R. W., assignor of four-fifths interest to E. P. and J. H. Welch, J. P. Willett, and C. Reed, Georgetown, D. C. Rail	209,739	Nov. 5	222	67	14	711
Wheeler, E. A. (See Dalzell, S. M., assignor.)						
Whipple, S. M. (See Ambler, A. I. and W. R., assignors.)						
White, J. H., assignor to Manhattan Brass Company, New York, N. Y. Reflector for lamps	209,636	Nov. 5	111	32	14	696
White, O. D., Clinton, Iowa. Lock	209,595	Nov. 5	61	18	14	689
Whiting, W. H. H., Chelsea, Mass. Electric gas-lighting apparatus	209,594	Nov. 5	60	18	14	689
Whittle, J. W., Syracuse, N. Y. Coin-holder	209,637	Nov. 5	112	33	14	696
Willett, J. P., *et al.* (See Welch, R. W., assignor.)						
Williams, C. D. (See Birge and Williams.)						
Williams, R. N., *et al.* (See Mansfield, W. H., assignor.)						
Williams, W. Ap, Cambria, Wis. Metallic pump-valve	209,740	Nov. 5	223	67	14	711
Willis, H. M., assignor of one-half interest to G. Vanderbeck, Mineola, N. Y. Lifting-jack	209,635	Nov. 5	110	32	14	696
Willoughby, J. D., Philadelphia, Pa. Hot-water heating apparatus	209,742	Nov. 5	224	67	14	711
Wilson, B. A., Providence, R. I., assignor to P. K. Wilson, New York, N. Y. Harness-rosette	209,596	Nov. 5	62	18	14	689
Wilson, G. C., Farmington, assignor to R. H. Parker, Rochester, N. H. Machine for marking boot and shoe fronts	209,741	Nov. 5	223	67	14	711
Wilson, P. K. (See Wilson, B. A., assignor.)						
Woolford, W. W. (See Smith and Woolford.)						

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 5th DAY OF NOVEMBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adding-machine	E. L. Bill	209,644	Nov. 5	118	35	14	697
Adding-machine	R. R. James	209,690	Nov. 5	167	49	14	704
Axle box. Car	R. C. Brown	209,546	Nov. 5	8	3	14	682
Bag-holder	S. M. Dalzell	209,663	Nov. 5	140	41	14	700
Bars. Machine for edging, sizing, and straightening non-cylindrical metal	J. S. Seaman	209,588	Nov. 5	51	15	14	688
Bed-bottom. Spring	D. L. Haire	209,676	Nov. 5	155	45	14	701
Bedstead. Wardrobe	H. P. Blackman	209,604	Nov. 5	72	21	14	690
Bee-hive	J. H. Moses and F. M. Stewart	209,622	Nov. 5	94	27	14	693
Berth. Suspended ship's	D. Parks	209,582	Nov. 5	46	13	14	687
Blotter	J. N. Huston	209,689	Nov. 5	166	48	14	703
Blow-pipe	C. Hoffmann	209,685	Nov. 5	162	47	14	702
Bobbins. Machine for making	G. W. Glazier and O. E. Wait	209,614	Nov. 5	82	24, 25	14	692
Boilers. Combined heater and feeder for	R. N. Pratt	209,584	Nov. 5	48	13, 14	14	687
Boilers. Compound for preventing incrustation in steam	F. M. Maybury	209,574	Nov. 5	41	.....	14	686
Boilers. Device for patching	F. A. Bidwell	209,603	Nov. 5	72	20	14	690
Boot and shoe fronts. Machine for marking	G. C. Wilson	209,741	Nov. 5	223	67	14	711
Boot and shoe heel stiffener	G. V. Sheffield. (Reissue)	8,477	Nov. 5	230	69	14	712
Box. Sheet-metal	J. Gilbert	209,556	Nov. 5	19	7	14	684
Boxes. Manufacturing	J. Sperry. (Reissue)	8,480	Nov. 5	234	69	14	712
Boxes. Manufacturing	J. Sperry. (Reissue)	8,481	Nov. 5	234	70	14	712
Bran-scourer	A. H. Smith and S. S. Thompson	209,590	Nov. 5	56	17	14	688
Bridles. Brow-band for	E. R. Cahoone	209,651	Nov. 5	129	37	14	698
Bronzing and flocking paper, cotton, linen, &c	R. E. Peterson and E. J. Frost	209,625	Nov. 5	96	.....	14	694
Bronzing-machine	R. E. Peterson and E. J. Frost	209,624	Nov. 5	95	28	14	693
Buckle	G. W. McGill	209,701	Nov. 5	179	52	14	705
Bullet-machine	S. L. Loomis	209,619	Nov. 5	91	26, 27	14	693
Calendar	H. Meineke	209,577	Nov. 5	43	12	14	686
Can. Oil	T. Moran	209,578	Nov. 5	43	12	14	686
Candlestick and match-safe. Combined	G. E. Heinig	209,565	Nov. 5	33	9	14	685
Candlestick-reflector	M. C. Meigs	209,576	Nov. 5	42	11	14	686
Car-coupling	C. L. Cloutman	209,656	Nov. 5	133	38	14	699
Carding-machine	C. Jones	209,692	Nov. 5	169	50	14	703
Carpet-sweeper	L. Hull	209,687	Nov. 5	164	48	14	703
Cereals for food. Apparatus for preparing	E. Ross and J. W. McLeod	209,715	Nov. 5	193	57	14	707
Chimney	A. Oelschleger	209,579	Nov. 5	44	12	14	686
Chimney-top and ventilator	G. W. and L. Demond	209,552	Nov. 5	15	5	14	683
Churn	H. Brown	209,605	Nov. 5	73	21	14	690
Clock-calendar	B. B. Lewis	209,618	Nov. 5	88	26	14	692
Clock. Striking	V. Himmer	209,616	Nov. 5	86	26	14	692
Cock. Hot, cold, and waste water	W. D. Abbatt	209,539	Nov. 5	1	1	14	681
Coffee and peanut roaster	C. L. Hall. (Reissue)	8,479	Nov. 5	232	69	14	712
Coin-holder	G. N. Raymond and G. B. Perkins	209,585	Nov. 5	49	14	14	687
Coin-holder	J. W. Whittle	209,637	Nov. 5	112	33	14	696
Coutrate-wheels. Manufacture of	H. J. and W. D. Davies	209,664	Nov. 5	141	41	14	700
Cooker. Steam feed	W. M. Combes	209,659	Nov. 5	137	39	14	699
Cooler for water and bottled beverages	L. Dolle	209,660	Nov. 5	146	42	14	700
Cooler. Milk	L. W. Center	209,548	Nov. 5	11	4	14	682
Cooler. Oyster	J. P. Miller	209,621	Nov. 5	93	27	14	693
Cores. Machine for making	G. Cowing	209,551	Nov. 5	14	5	14	683
Corset	E. W. Bigelow	209,643	Nov. 5	118	34	14	697
Cultivator	W. A. Van Brunt and S. E. Davis	209,633	Nov. 5	107	31, 32	14	695
Cutlery. Table	G. L. Hart and H. Fisher	209,679	Nov. 5	157	46	14	702
Draft-equalizer	D. S. Cole	209,657	Nov. 5	134	39	14	699
Drawer-pull	T. S. Alexander	209,640	Nov. 5	115	33	14	696
Drilling-machine. Metal	E. M. Boynton, G. M. Coburn, and T. F. Carver	209,646	Nov. 5	122	36	14	697
Elevator. Hay	G. Miller	209,703	Nov. 5	181	53	14	705
Elevator. Water	A. J. Clemmons	209,655	Nov. 5	132	38	14	698
Engine-houses. Electric apparatus for opening doors of	S. V. Dickinson	209,610	Nov. 5	78	22, 23	14	691
Envelope	N. Jacobsohn	209,571	Nov. 5	39	10	14	686
Envelope	J. H. Weaver	209,593	Nov. 5	59	18	14	688
Fan. Automatic	W. H. Love	209,696	Nov. 5	174	51	14	704
Fence	J. Hart	209,680	Nov. 5	157	46	14	702
Fence-post. Iron	S. Heaton	209,681	Nov. 5	158	46	14	702
Filter	J. W. Hughes	209,617	Nov. 5	87	26	14	692
Fire-arm. Breech-loading	R. Fay	209,613	Nov. 5	81	24	14	691
Fire-arms. Registering attachment for	G. A. Badger	209,600	Nov. 5	67	19	14	689
Fire-escape	C. Gates	209,555	Nov. 5	19	6	14	683
Fire-extinguisher	J. W. Sutton	209,724	Nov. 5	204	60	14	708

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Fire-extinguishing apparatus	J. E. Condiet and A. J. Doty	209,660	Nov. 5	137	40	14	699
Fruit-drier	M. S. Lyons	209,620	Nov. 5	92	27	14	693
Fruit-drier	A. L. Sierer	209,719	Nov. 5	197	58	14	707
Gas. Apparatus for the manufacture of	G. W. Harris and A. L. Allen	209,563	Nov. 5	30	9	14	685
Gas. Apparatus for the manufacture of illuminating	M. H. Strong	209,630	Nov. 5	103	30	14	695
Gas-generator	A. I. and W. R. Ambler	209,597	Nov. 5	63	19	14	689
Gas-lighting apparatus. Electric	W. H. H. Whiting	209,594	Nov. 5	60	18	14	689
Gas. Purifying and increasing the illuminating power of	O. Lugo	209,698	Nov. 5	176	.....	14	704
Gas-regulator	J. Adams	209,638	Nov. 5	113	33	14	696
Glass-house pot	T. Coffin	209,606	Nov. 5	74	21	14	690
Glazier's diamonds. Mounting	P. Sinaz. (Reissue)	8,478	Nov. 5	231	69	14	712
Governor. Engine	H. T. Farnsworth	209,612	Nov. 5	80	23, 24	14	691
Grain-binder	E. Dederick	209,609	Nov. 5	77	22	14	691
Grain-drier	M. P. Smith and W. W. Woolford	209,589	Nov. 5	54	16, 17	14	688
Harness-rosette	B. A. Wilson	209,596	Nov. 5	62	18	14	689
Harvester	C. Ainsworth	209,639	Nov. 5	114	33	14	696
Harvester guard-finger	D. L. Grover	209,675	Nov. 5	155	45	14	701
Harvester-thrasher	W. T. Carter	209,652	Nov. 5	130	37	14	698
Hat-box	F. Jinkins	209,691	Nov. 5	168	49	14	703
Hatchway-door	J. C. Richardson	209,586	Nov. 5	49	14	14	687
Heating apparatus	A. Burbank	209,650	Nov. 5	128	37	14	698
Heating apparatus. Hot-water	J. D. Willoughby	209,742	Nov. 5	224	67	14	711
Hoop-coiling machine	J. H. Ward	209,735	Nov. 5	218	65, 66	14	710
Horse-power	C. E. Macarthy	209,699	Nov. 5	177	52	14	704
Horse-power	O. O. Storle. (Reissue)	8,476	Nov. 5	230	68	14	712
Horse-tail protector	A. Weide	209,737	Nov. 5	221	66	14	710
Horse toe-weight	H. D. McKinney	209,575	Nov. 5	41	11	14	686
Hydrant-suctions. Coupling for	J. Stoddard	209,591	Nov. 5	56	17	14	688
Ice-cutting machine	G. R. Pierpont	209,711	Nov. 5	188	55, 56	14	706
Implement. Combination	C. A. Babcock	209,599	Nov. 5	66	19	14	689
Jar protector. Fruit	S. H. Decou	209,666	Nov. 5	143	42	14	700
Kettle-cover	C. M. Orton	209,707	Nov. 5	184	54	14	705
Knives. Handle for table	W. H. Brown and I. Osgood	209,649	Nov. 5	127	37	14	698
Lamp-burner	W. N. Weeden	209,738	Nov. 5	221	66	14	710
Lamp chimney and shade. Combined	T. B. Atterbury	209,542	Nov. 5	4	2	14	681
Lamp-lighter	F. G. Stephenson	209,629	Nov. 5	102	30	14	694
Lamp-reflector	J. H. White	209,636	Nov. 5	111	32	14	696
Land-marker	W. Everitt	209,611	Nov. 5	79	23	14	691
Lantern. Signal	W. H. Harrison	209,678	Nov. 5	156	45	14	702
Latch. Gate	O. and J. Metz	209,702	Nov. 5	180	53	14	705
Leather folding and shaping machine	J. Walden and G. Platts	209,731	Nov. 5	210	62, 63	14	709
Leather-folding machine	J. Walden and G. Platts	209,733	Nov. 5	215	64, 65	14	710
Leather-work. Cutting-board for	E. Nicholson	209,706	Nov. 5	183	54	14	705
Lifting-jack	H. M. Willis	209,635	Nov. 5	110	32	14	696
Liquid-freezer	W. H. Mansfield	209,700	Nov. 5	178	52	14	704
Loom shuttle-box mechanism	H. B. Renwick	209,714	Nov. 5	191	56, 57	14	706
Lock	W. Walker	209,734	Nov. 5	217	65	14	710
Lock	O. D. White	209,595	Nov. 5	61	18	14	689
Lock	H. Gross	209,561	Nov. 5	25	8	14	684
Lock. Time	G. F. Burton	209,547	Nov. 5	9	3, 4	14	682
Lock. Wagon	W. J. Stowell	209,723	Nov. 5	203	60	14	708
Mail-bag fastening	J. F. Comly	209,658	Nov. 5	135	39	14	699
Measure. Registering tape	J. Brady	209,647	Nov. 5	123	36	14	697
Measuring and marking fabrics. Machine for	A. Warth	209,736	Nov. 5	219	66	14	710
Mechanical movement	F. J. Tongue	209,632	Nov. 5	105	31	14	695
Medical purposes. Galvanic pile for	G. W. Cranston	209,661	Nov. 5	138	40	14	699
Mining apparatus. Hydraulic	T. G. Hall	209,677	Nov. 5	156	45	14	702
Nippers. Cutting	W. E. C. Eustis	209,554	Nov. 5	16	6	14	683
Ores. Process and furnace for reducing and smelting	W. V. Kay	209,572	Nov. 5	40	.....	14	686
Packing for journal-boxes	C. Spofford	209,628	Nov. 5	100	29, 30	14	694
Paper-collar machine	H. A. House	209,686	Nov. 5	163	47	14	703
Paper. Manufacture of flanged articles of	B. H. Vellines	209,730	Nov. 5	209	62	14	709
Peanut-cleaner	W. Sachs	209,716	Nov. 5	194	57	14	707
Pen. Fountain	F. Soennecken	209,722	Nov. 5	201	59, 60	14	708
Pen. Multiple	W. N. Clark	209,654	Nov. 5	131	.....	14	698
Pills. Soluble coating for	J. W. Tallmadge	209,725	Nov. 5	205	61	14	708
Pipe-stem	O. C. Du Souchet	209,671	Nov. 5	149	43	14	701
Planter and drill. Check-row corn	T. A. Sammons	209,717	Nov. 5	194	57, 58	14	707
Planter. Corn	G. A. Sharp	209,718	Nov. 5	196	58	14	707
Planter. Corn	T. J. Davis	209,607	Nov. 5	74	21, 22	14	690
Planter. Potato	L. Dunne	209,670	Nov. 5	147	43	14	700
Planting and hilling machine. Corn	S. A. Griffith	209,560	Nov. 5	24	8	14	684
Plaster	E. T. Hunter	209,688	Nov. 5	164	48	14	703
Plow. Sulky breaking	C. M. Lufkin	209,697	Nov. 5	175	52	14	704
Plow. Swivel	F. W. Benjamin	209,641	Nov. 5	116	34	14	696
Potato-digger	J. F. Bennett	209,602	Nov. 5	70	20	14	690
Pressure regulator. Fluid	W. D. Grimshaw	209,674	Nov. 5	153	44	14	701
Printing and cutting fabrics. Machine for	J. Hird	209,683	Nov. 5	159	47	14	702
Printing-presses. Sheet-delivery apparatus for	L. Alvord	209,541	Nov. 5	2	1	14	681
Propeller. Chain-wheel	W. R. Rose	209,587	Nov. 5	50	15	14	688
Pruning implement	W. Clough	209,549	Nov. 5	12	4	14	682
Pump	J. M. Grillenberger	209,673	Nov. 5	152	44	14	701
Pump	W. Ap Williams	209,740	Nov. 5	223	67	14	711
Pump-valve. Metallic	R. W. Welch	209,739	Nov. 5	222	67	14	711
Rail	B. P. Brunner	209,743	Nov. 5	227	68	14	711
Railway-rails. Roll for reducing old iron	J. Hause	209,564	Nov. 5	32	9	14	685
Rake. Horse hay	C. B. Holden. (Reissue)	8,475	Nov. 5	228	68	14	711
Rake. Horse hay	C. H. Dow	209,553	Nov. 5	16	5	14	683
Rein attachment. Check	T. New	209,705	Nov. 5	183	.....	14	705
Roofing. Manufacture of composite	C. K. Pickles and R. Burns	209,626	Nov. 5	97	28, 29	14	694
Rope machine. Wire	J. W. Decastro	209,608	Nov. 5	76	.....	14	691
Saccharine liquids. Defecation, decolorization, and refining of	A. Bridgman	209,648	Nov. 5	126	36	14	698
Sandpapering-machine	F. Schley	209,627	Nov. 5	99	29	14	694
Saw-tooth. Insertible	B. Slusser	209,720	Nov. 5	198	58	14	707
Scraper. Earth	E. E. Bean	209,543	Nov. 5	5	2	14	681
Sewing-machine	G. M. Pratt	209,712	Nov. 5	189	56	14	706
Sewing-machines. Clutch for band-wheels of	J. Q. Adams	209,540	Nov. 5	2	1	14	681
Shafts for vehicles	C. Heron	209,662	Nov. 5	159	46	14	702
Shoe	J. Walden and G. Platts	209,732	Nov. 5	213	63, 64	14	709
Shoe-upper-fitting machine	C. O. Peck	209,710	Nov. 5	187	55	14	706
Sifter	H. Petrie	209,583	Nov. 5	47	13	14	687
Sign	J. J. Frey	209,672	Nov. 5	151	44	14	701
Smoke and cinder conductor for railway-trains	A. Delaney	209,668	Nov. 5	145	42	14	700
Spark-arrester	A. Davis	209,665	Nov. 5	142	41	14	700
Spark-arrester for locomotives	J. B. Thorwarth and M. Harrison	209,727	Nov. 5	206	61	14	708
Spinning-fliers. Lock for	J. H. Knowles	209,694	Nov. 5	171	50, 51	14	704
Spinning or twisting machines. Stop-motion for	P. J. Randall	209,713	Nov. 5	190	56	14	706
Spring. Door	M. D. Berlitz and H. P. Morgan	209,642	Nov. 5	117	34	14	697
Spring for time-keepers. Balance	I. M. Linderman	209,695	Nov. 5	173	51	14	704
Spring. Vehicle	H. T. Taggart	209,728	Nov. 5	207	61	14	708
Stamp-recording cabinet. Postage	D. E. W. Taylor	209,631	Nov. 5	104	31	14	695
Stamp. Rotary ore	H. W. Beins	209,601	Nov. 5	68	20	14	690
Steam-trap	G. F. Cobb	209,550	Nov. 5	13	4	14	683
Stove	J. H. Goodfellow	209,557	Nov. 5	21	7	14	684
Stove	J. H. Goodfellow	209,558	Nov. 5	22	7	14	684
Stove	J. G. Smith	209,721	Nov. 5	199	59	14	707
Stove	H. A. Matthews	209,573	Nov. 5	40	11	14	686
Stove-doors. Turnkey or handle for	E. Hunter	209,567	Nov. 5	34	10	14	685
Stove. Lamp	W. Gurley	209,562	Nov. 5	28	8, 9	14	684
Surveying-instruments. Tripod-head for	B. J. Greely	209,559	Nov. 5	23	7	14	684
Suspender-ends	L. D. Noble	209,623	Nov. 5	94	28	14	693
Swing	J. A. Bragan	209,545	Nov. 5	7	3	14	682
Tea-pots. Tilter for	L. Birge and C. D. Williams	209,645	Nov. 5	119	35	14	697
Telegraph. Fire-alarm	T. A. Watson	209,592	Nov. 5	58	17	14	688
Telephones. Antomatic switch or cut-out for	P. Parrott	209,708	Nov. 5	184	54, 55	14	705
Thrashing-machine	J. M. O'Neall	209,580	Nov. 5	45	12	14	687
Thrashing-machines. Band-cutting feeder for	R. W. Oliver and J. E. Robinson	209,581	Nov. 5	45	13	14	687
Tobacco. Affixing revenue-stamps to plug	W. Millspaugh	209,704	Nov. 5	182	53	14	705
Tool-handle	J. Holland	209,566	Nov. 5	33	10	14	685
Tooth-pick	W. Christie	209,653	Nov. 5	130	38	14	698
Trap	C. T. Ward	209,634	Nov. 5	109	32	14	695
Type-writing machine	J. A. Hitter, Jr.	209,684	Nov. 5	161	47	14	702
Type-writing machine	W. S. Atwood	209,598	Nov. 5	66	19	14	689
Umbrella tip-cup	J. W. Hyatt	209,570	Nov. 5	38	.....	14	686
Varnish	A. Graham	209,615	Nov. 5	85	25	14	692
Vinegar and aging liquors. Apparatus for making	J. H. Paschal	209,709	Nov. 5	186	55	14	706
Wagon-body	A. Ulrich	209,729	Nov. 5	208	62	14	708
Wagon. Refrigerator	W. F. Tilton	209,726	Nov. 5	206	61	14	708
Washers. Device for cutting	D. T. Jones	209,693	Nov. 5	170	50	14	704
Washing-machine	T. Dehart	209,667	Nov. 5	144	42	14	700
Water-wheel	J. Croft	209,662	Nov. 5	139	41	14	700
Water-wheel. Turbine	F. Billings	209,544	Nov. 5	6	2	14	681
Wire-barbing machine	J. W. Hyatt	209,568	Nov. 5	36	.....	14	685
Wood. Staining	J. W. Hyatt	209,569	Nov. 5	36	10	14	685
Wrench							

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DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of New York.

JOHN J. SCHILLINGER *vs.* HERMANN A. GUNTHER.

Reissue Letters Patent No. 4,364, granted J. J. Schillinger, May 2, 1871, (Original Patent No. 105,599, July 19, 1870,) construed to be, after disclaimer entered March 1, 1875, (VII OFFICIAL GAZETTE, 387,) for a concrete pavement formed in blocks or sections, and with tar-paper or its equivalent interposed in the joints during the process of laying the pavement to make the sections separable.

Such joint or separation as might result from the natural shrinkage of contiguous sections in settling is not of the invention; that consists in the *artificial* division consequent upon interposing tar-paper or, temporarily, a trowel or cutting instrument to fit the joint.

The disclaimer has no relation to the statements of effect or result contained in the specification, but simply concedes that certain subject-matter stated is not of the invention of the patentee.

A correction of a mistake as to a certain effect said to be obtained is the office of a reissue and not of a disclaimer.

Whatever distinctive profit belongs to the use of the patented improvement, the plaintiff is entitled to recover.

But where the *quantum* of such profit is not shown affirmatively by license fee or otherwise, and it does not appear that the profits of infringing manufacture are wholly due to the use of the improvement, nominal damages alone can be awarded.

Certain findings of the master accordingly overruled, the profits of manufacture not being apportioned between those arising from the general character of the pavement and those pertaining to the use of the specific improvement patented.

[*J. Vansant Wood* and *E. Fitch*, for the plaintiff; *A. V. Briesen*, for the defendant.]

OPINION.—*October* 17, 1878.

BLATCHFORD, *J.*:

The plaintiff's patent is for an improvement in concrete pavements. Such pavements existed before the plaintiff's invention. The specification of the patent states that the invention "relates to a concrete pavement which is laid in sections, so that each section can be taken up and relaid without disturbing the adjoining sections." The invention relates merely to the laying of the pavement in sections so as to "allow the blocks to be raised separately without affecting the blocks adjacent thereto," and so as to allow "the several blocks to heave separately from the effects of frost." There is nothing new in the composition of the pavement, as one formed of concrete made "by mixing cement with sand and gravel or other suitable material to form a plastic compound." The point of the invention, as set forth in the specification, is that the pavement, being made in sections, the joints between the sections have placed in them "strips of tar-paper, or equivalent material, arranged between the several blocks or sections in such a manner as to produce a suitable tight joint, and yet allow the blocks to be raised separately without affecting the blocks adjacent thereto." It was not new to lay concrete pavements in sections. The plaintiff, after this suit was brought, filed a disclaimer, disclaiming any claim merely to the laying of a concrete pavement in detached blocks or sections without the interposition between the blocks or sections of the tar-paper or its equivalent, and admitting that it was not new to lay a concrete pavement in sections. As the specification before the disclaimer was filed stated, the concrete, when laid in blocks without the interposition of the tar-paper or its equivalent in the joints between the blocks, would shrink in setting, so that the second laid block would not adhere to the first laid block, and the joints would "soon fill up with sand or dust," and the pavement would be "sufficiently tight for many purposes," while the blocks would be "detached from each other," and could be "taken up and relaid, each independent of the adjoining blocks." The disclaimer "disclaims the forming of blocks from plastic material without interposing anything between their joints while in the process of formation." By the "tight joint" produced by the interposition of the tar-paper, or equivalent material, the specification states that the patentee means that the tar-paper "constitutes a tight water-proof joint." The specification sets forth that after one block or section is completed the tar-paper is placed along the edge where the next block is to be formed, and the plastic com-

position for the next block is put against the tar-paper; that the tar-paper does not adhere to the block first formed, when placed against it, although it may adhere to the edge of the block formed after it is put in its place in the joint, and that hence the joints between the blocks are free, so that each block can be removed separately. The specification describes the mode of making the blocks to be to spread the plastic mass on the bed of the pavement, "either in molds or between movable joists of the proper thickness," so as to form the edges of the blocks, one block being formed after the other, the joists or partitions between the block first formed and the block next to be formed being removed after the block first formed has set, and the second block being next formed, "each succeeding block being formed after the adjacent blocks have set." Nothing is claimed as new in respect to this mode of forming blocks of concrete pavement. The sole claim of the patent left after the disclaimer is this:

The arrangement of tar-paper or its equivalent between adjoining blocks of concrete, substantially as and for the purpose set forth.

It was therefore open to the defendant to lay a concrete pavement in detached blocks or sections by the use of molds or movable joists or partitions, in the manner described in the plaintiff's specification, each succeeding block being formed after the adjacent blocks have set, and to avail himself of the fact affirmed in the plaintiff's specification that, without the use of tar-paper or its equivalent interposed in the joint, the concrete will, in setting, shrink so that the second block, when set, will not adhere to the first, and the blocks, when completed, will be detached from each other, and thus to make a concrete pavement in sections which can be taken up and relaid, each independent of the adjoining sections. It may be that without the use of something extraneous to make a joint, such as the permanent interposition of tar-paper or equivalent material between the blocks, or the creation of a joint by inserting a trowel or other cutting instrument between the blocks and then removing the instrument, leaving the joint an open one for the time, the detachment of the blocks from each other will not be as effectual or complete as when a joint is formed by the interposed tar-paper or trowel, and the blocks cannot be as easily or completely taken up and relaid, each independently of the adjoining blocks. The claim of the plaintiff's patent is for the interposition of the extraneous material to form the joint, whether the permanent tar-paper, or the temporary trowel or cutting instrument. It is for the artificial division of the pavement by the joint thus made, aside from and in addition to any division resulting from the shrinking in setting of the concrete in the second block when placed against the completely set concrete in the first block. I do not understand that the plaintiff by his disclaimer affirms that anything stated in his specification is not true, or affirms that it is not true that if the sections are made without the interposition of anything, either permanently or temporarily, between the sections, the blocks will be "detached from each other and can be taken up and relaid, each independent of the adjoining blocks." All that the disclaimer affirms is that the plaintiff was not the first to invent what he disclaims, but that it was previously invented by some one else. It does not affirm that the plaintiff did not invent it at all, or that the effect set forth in the specification as resulting from laying the pavement with nothing interposed in the joint, either permanently or temporarily, will not result. A correction of a mistake as to the statement of the effect of laying the pavement in sections without interposing anything in the joint is the office of a reissue, and not of a disclaimer.

There was an interlocutory decree for the plaintiff on the 22d of April, 1875, adjudging that the plaintiff's patent was valid and that the defendant had infringed it, and referring it to a master "to take and state and report to the court an account of all such concrete pavement or sidewalk made or caused to be made or used or sold by the said defendant since the 2d day of May, 1871, and also the gains and profits which the said defendant has received by or from the manufacture, use, or sale of the said patented improvement, and that he also ascertain and report what, if any, damages the said complainant has suffered or sustained by reason of the said infringement over and above and beyond said gains and profits." Subsequently an order was made setting forth that "it appears to this court that the defendant has made or laid sectional concrete pavements or sidewalks in different methods or modes of construction, all of which methods are claimed to be violation of said patent," and ordering that the master proceed in said accounting under the said decree of April 22, 1875, "and take and state an account of all the sectional concrete pavements or sidewalks made or laid by the defendant, or under his authority, since the 2d day of May, 1871, specifying, as far as may be, the method or methods pursued by the defendant in making or laying the same, and the amount laid under each method, if more than one, to the end that in the decree which shall be made upon the master's report it shall be determined and decreed whether all of the methods of laying concrete pavement which have been practiced or pursued by the defendant are or are not within the patent which has been adjudged to be good and valid and to have been infringed by the defendant, and whether the defendant is therefore liable to pay to the plaintiff damages for all or any portion of the concrete pavements which have been constructed by him or under his authority."

The master has made his report. He states in it that he directed the defendant to make out and produce before him "an account of all cement or concrete pavements or sidewalks made or laid by him since the 2d day of May, 1871; also the date when laid, the place where, the number of square feet, the price per foot, and the total amount received;" that such accounts were produced, and are submitted with the report; that "the defendant was also required to produce an account showing the cost or expense of laying such pavements and sidewalks, and the profits derived therefrom by the defendant;" that the defendant produced no detailed account showing such cost or expenses, but produced estimates of expenses, which are submitted with the report; and that the cost or expense to the defendant of laying the cement pavements or sidewalks stated in his several accounts is not exceeding 17 cents per square foot." The report states the defendant has laid, as appears from his accounts, 162,843¼ square feet of sectional cement pavements, and received therefor the sum of $38,380.70; that the cost of the same, at the rate of 17 cents per square foot, was $27,683.39; that the sum of $10,697.31 is "the profits made by the defendant in the laying of the sectional pavements laid by him," and "is the damage sustained by the complainant, if all of the pavements referred to were laid in the manner or according to the process described in the complainant's patent, or are such pavements as are claimed in said patent." The report also shows that some of the pavement so laid by the defendant was laid with tar-paper or its equivalent between the joints; that some of it was laid by leaving metal plates in the joints and afterward withdrawing said plates and pouring melted pitch into the open joints; that some of it was made in the last-named way, except that the joints were filled with cement; that some of it was made with the use of joists, removed before the joint was formed, nothing being left between the blocks but a trowel or other instrument, or metal strips were used to make a joint or a separation into blocks during the process of laying the pavements; and that some of it was laid by a method which this court has held on attachment proceedings to be an infringement.

The defendant has filed several exceptions to the report. The report states that the defendant's estimates of expenses are not accurate or reliable, but are greatly overstated as to quantity of materials used and the cost thereof, and that such estimates charge too much per barrel for cement and for too much cement. Exceptions 1, 2, 3, and 4, covering the above matters, are disallowed. Exception 5 excepts to the finding that the cost or expense to the defendant of laying the cement pavements, stated in his several accounts, is not exceeding 17 cents per square foot, and is disallowed. As to Exception 6, I think the evidence shows that the sum of $809 in respect of the pavements for Coburn and Birdsall should have been deducted from the sum of $5,637.74, mentioned in paragraph 4 of the report. Exceptions 7, 10, 13, 16, and 18, and part of Exception 17, relate to the 17 cents per square foot as cost, and are disposed of by the ruling as to Exception 5, and are disallowed. Exceptions 8 and 9 proceed upon the ground that it does not infringe the plaintiff's patent to lay sectional cement pavements by leaving metal plates in the joints, and afterward withdrawing said plates and pouring melted pitch into the open joints, and are disallowed. Exceptions 11 and 12 proceed upon the ground that it does not infringe the plaintiff's patent to lay sectional cement pavements by leaving metal plates in the joints, and afterward withdrawing said plates and filling the joints with cement, and are disallowed. Exceptions 14 and 15 proceed upon the ground that it is not true that a trowel or other instrument or metal strips were used to make a joint or a separation into blocks during the process of laying the pavement mentioned in the report as having been laid with the use of joists, removed before the joint was formed, nothing being left between the blocks. I find the fact to be otherwise. There is nothing in the Russ patent or the Little patent like the method of procedure or pavement described in the part of the report to which Exceptions 14 and 15 relate. They are disallowed. So much of Exception 17 as relates to the sum of $8,709.80 is disallowed. Exception 19 excepts to the finding of $10,697.31 as profits, and insists that the master should have found that the defendant made no profits in laying sectional cement pavements in the various ways set forth in the report. Exception 20 is to the effect that the master "has found that the manufacturer's profit of the defendant in laying the several cement pavements which are set forth in the report is the measure of damage sustained by the complainant by the alleged infringement of his patent, whereas the said master should have found that the manufacturer's profits is not the true measure of damages in such cases." Exception 22 is to the effect that the master "has failed to report that the complainant has not proved the value of his invention and the license fees, if any, which he actually received for the use of the invention, and that, therefore, the complainant has not shown himself to be entitled to any but nominal damages for the use of his said invention by this defendant."

The decree directed the master to report the profits received by the defendant from the manufacture, use, or sale of the patented improvement. It is those profits alone which the plaintiff can recover. He cannot recover anything more as profits. He cannot recover the profits of the manufacture, sale, or use of anything but the patented improvement. He cannot recover the profits of the manufacture, use, or sale of anything found in the pavement or of any part of the pavement except the patented improvement. Whatever distinctive profit belongs to the use of "the arrangement of tar-paper or its equivalent between adjoining blocks of concrete, substantially as and for the purpose set forth" in the patent, is the profit to be recovered. Such distinctive profit must be shown affirmatively by the plaintiff. If he fails to show it, he can recover nothing as profits. The plaintiff has proved no license fee as showing the value of the patented improvement. Nor has he otherwise shown the value of the patented improvement. No evidence on that subject was given before the master. The reference proceeded on the principle that all the value or usefulness there was in the pavement laid by the defendant was due to the permanent or temporary interposition in the joint during the process of laying of something external to make a separation into blocks or sections. This was clearly a mistake. The plaintiff's invention contributed but a small part of the usefulness of the pavement. As a concrete pavement, with all the advantages due to the smoothness and durability of such pavement, it was a valuable pavement, without being in blocks or sections made by the use of the patented improvement. The advantage of being in blocks made by the use of the patented improvement was an advantage which does not give to the plaintiff the right to recover the profits of laying the entire pavement. These principles are well settled. (*Mowry* vs. *Whitney*, 14 Wallace, 620, 649; *Philp* vs. *Knock*, 17 Wallace, 460; *Gould's M'f'g Co.* vs. *Cowing*, 12 Blatchf. C. C. R., 243; *Gould's M'f'g Co.* vs. *Cowing*, 12 OFFICIAL GAZETTE of Patent Office, 942; *Black* vs. *Munson*, before Mr. Justice Hunt, in the Circuit Court of the United States for the Northern District of New York, June, 1877; *Buerk* vs. *Imhaeuser*, 10 OFFICIAL GAZETTE of the Patent Office, 907; *Blake* vs. *Robertson*, 4 Otto, 728; *Garretson* vs. *Clark*, 14 OFFICIAL GAZETTE, 485.) Exceptions 19, 20, and 22 are allowed so far as they claim that the master should not have reported any sum as profits under the interlocutory decree.

The master also reports that "the complainant is entitled to recover from the defendant a further sum as special damage, on account of the laying of the pave-

ment for Andrew Dold, which pavement was laid in the same manner as the City Hall pavement, above referred to, the proofs showing that said pavement was contracted for and laid by the defendant in October, 1876, but is not included in any of the accounts tendered by him, and that it is shown that the complainant gave to Dold a bid or estimate for the said work, and that he was underbid by the defendant, and thus was damaged to the amount of $900." Exception 21 excepts to the report because it finds "that the complainant is entitled to recover from the defendant special damages on account of the laying of a pavement for Andrew Dold, and that the proofs show that said pavement was laid in the same manner as the City Hall pavement." So much of Exception 21 as excepts to the report of the $900 as special damage is allowed. Exception 22, before cited, is broad enough to be an exception to the report of the $900 as damages. The remarks before made as to the allowance of profits apply to this $900. If entitled in any event to any allowance of damages in respect of the Dold pavement, the plaintiff must show the value of the patented invention as distinct from the value of the rest of the Dold pavement, and can in no event recover as damages the entire $900. The rest of Exception 21 is disallowed.

An order will be entered disposing of the exceptions in accordance with this decision.

Issue of November 12, 1878.

Patents	209—	No. 209,744 to No.	209,952, inclusive.
Reissues	10—	No. 8,482 to No.	8,491, inclusive.
Designs	12—	No. 10,897 to No.	10,908, inclusive.
Trade-Marks	21—	No. 6,782 to No.	6,802, inclusive.
Labels	4—	No. 1,770 to No.	1,773, inclusive.
Total issue	256		

TRADE-MARKS.

[Each certificate bearing date November 12, 1878.]

6,782.—BOTTLED BIRCH OR FERMENTED BEER.—*Milton Bartley*, Pittsburg, Pa. Application filed October 16, 1878.

"A band or cap, of red color, applied to the top of the bottles."

6,783.—COSMETICS.—*Josephine T. Burtis*, Rochester, N. Y. Application filed October 21, 1878.

"The words 'MADAME BOURTISSE & Co.' and 'PEARL MIST,' with the reclining figure of a female between them, as shown."

6,784.—CLEANSING AND POLISHING PREPARATION.—*N. T. Folsom & Co.*, Boston, Mass. Application filed September 4, 1878.

"The arbitrarily-selected word 'COALINE.'"

6,785.—LAMP-WICKINGS.—*Fletcher Manufacturing Company*, Providence, R. I. Application filed June 27, 1878.

"The word-symbol 'FLETCHER.'"

6,786.—COTTON SHEETINGS AND SHIRTINGS.—*B. B. & R. Knight*, Providence, R. I. Application filed October 28, 1878.

"Two figures, male and female, represented in Highland costume."

6,787.—PERFUMERY.—*H. B. Slaven*, San Francisco, Cal. Application filed October 18, 1878.

"The word-symbol 'YOSEMITE.'"

6,788.—OILED CLOTHING.—*Abner J. Tower*, Boston, Mass. Application filed September 13, 1878.

"The representation of a fish."

6,789.—WRITING-PAPER.—*Blanchet Frères & Kléber*, Rives, France. Application filed October 16, 1878.

"The letters and words 'B. F. K., RIVES, No.,' preceded and followed by two crossed daggers, as shown."

6,790.—CARTRIDGES AND PERCUSSION-CAPS.—*Eley Brothers*, (limited,) London, England. Application filed October 23, 1878.

"The arbitrary letters 'E. B.,' used in conjunction with the word 'QUALITY.'"

6,791.—SMOKING-TOBACCO AND CIGARETTES.—*Goodwin & Co.*, New York, N. Y. Application filed November 2, 1878.

"The word-symbol 'OLD FRIEND.'"

6,792.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Thomas H. Hall*, New York, N. Y. Application filed October 24, 1878.

"The fanciful word-symbol 'ARMÉR.'"

6,793.—STILL AND SPARKLING WINES.—*Rudolph Henkell*, Mainz (or Mayence) on the Rhine, Grand Duchy of Hesse-Darmstadt, Germany. Application filed October 12, 1878.

"A circular design showing two cupids supporting a bunch of grapes above a cask, as shown."

6,794.—DRAWING-PAPER.—*Keufel & Esser*, New York, N. Y. Application filed October 24, 1878.

"The arbitrarily-selected word-symbol 'PARAGON.'"

6,795.—CIGARS.—*C. Brewer & Sons*, Boston, Mass. Application filed October 28, 1878.

"The word-symbol 'FLORA TEMPLE' and the representation of the mare Flora Temple driven in a trotting-sulky."

6,796.—CIGARS.—*C. Brewer & Sons*, Boston, Mass. Application filed October 28, 1878.

"The word-symbol 'BOSTON LIGHT' and the representation of the Boston light-house."

6,797.—CIGARS.—*C. Brewer & Sons*, Boston, Mass. Application filed October 28, 1878.

"The word-symbol 'YACHT CLUB' and the representation of the yachts on the water."

6,798.—SOAP.—*D. S. Brown & Co.*, New York, N. Y. Application filed October 16, 1878.

"The arbitrarily-selected word 'RUSSIAN.'"

6,799.—GLASSWARE.—*Corning Glass Works*, Corning, N. Y. Application filed October 28, 1878.

"The word-symbol 'CORNING.'"

6,800.—COD-LIVER OIL.—*George I. McKelvey*, Philadelphia, Pa. Application filed October 25, 1878.

"The figure of a fish and anchor, arranged as shown."

6,801.—CIGARS.—*Byron A. Shotwell*, New York, N. Y. Application filed October 28, 1878.

"The word-symbol 'STONE HEADS.'"

6,802.—CIGARS.—*Henry Zimmermann*, Chicago, Ill. Application filed November 4, 1878.

"The word-symbol 'ELFIN.'"

DESIGNS.

[Each design bearing date November 12, 1878.]

10,897.—WRITING-PAPER.—*Henry C. Bainbridge*, Brooklyn, N. Y. Application filed October 26, 1878. Term of patent 3½ years.

10,898.—FONT OF PRINTING-TYPE.—*Paul Grey*, Chicago, Ill. Application filed September 30, 1878. Term of patent 14 years.

10,899.—FONT OF PRINTING-TYPE.—*William Murray*, Chicago, Ill. Application filed September 30, 1878. Term of patent 14 years.

10,900 to 10,905, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed September 13, 1878. Term of patents 3½ years.

10,906.—PATTERN FOR HAND-WHEELS FOR VALVES.—*Charles E. Pease*, Dayton, Ohio. Application filed October 30, 1878. Term of patent 7 years.

10,907.—TOY MONEY-BANKS.—*Arnold Seligsberg*, New York, N. Y. Application filed October 29, 1878. Term of patent 7 years.

10,908.—INKSTAND-HOLDERS.—*Albert Patitz*, West Meriden, Conn., assignor to *Bradley & Hubbard Manufacturing Company*, same place. Application filed November 1, 1878. Term of patent 3½ years.

LABELS.

[Each certificate bearing date November 12, 1878.]

1,770.—Title: "COLGATE & CO.'S NEW SOAP."—*Colgate & Co.*, New York, N. Y. Application filed November 1, 1878.

1,771.—Title: "DR. MARIA F. HALLER'S WIENER KRAUTER-THEE." *Andreas Stamm*, Chicago, Ill. Application filed November 4, 1878.

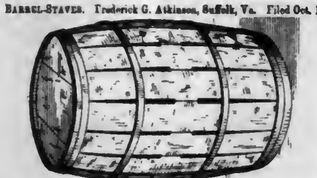
1,772.—Title: "DR. MARIA F. HALLER'S WIENER BALSAM."—*Andreas Stamm*, Chicago, Ill. Application filed November 4, 1878.

1,773.—Title: "MEDICATED CREAM FOR EXTERNAL APPLICATION." *Medicated Cream Company*, New York, N. Y. Application filed November 5, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

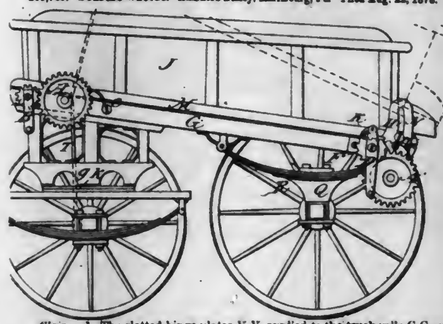
NOVEMBER 12, 1878.

209,744. BARREL-STAVES. Frederick G. Atkinson, Suffolk, Va. Filed Oct. 19, 1878.



Claim.—A barrel-stave having the opposite edges parallel to each other, and provided at or near its center with a projecting spreading shoulder or shoulders upon one or both edges thereof, as and for the purposes set forth.

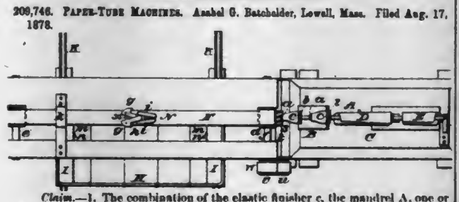
209,745. DUMPING-WAGONS. Hamilton Bailey, Harrisburg, Pa. Filed Aug. 22, 1878.



Claim.—1. The slotted hinge-plates V V, applied to the truck-rails G G, or their equivalents, and adapted to hinge the vehicle-bed J thereto adjustably for different elevations, substantially as and for the purpose set forth.

2. The combination of the hinge-plates V V, wheel A′, lever D, ratchet-pinion F Q, pawls K and X, hook W, and props N¹ N², connected with shaft Z by chains a a a′ a′, and operating to adjust bed J at its rear end, substantially as set forth.

209,746. PAPER-TUBE MACHINES. Asahel G. Batchelder, Lowell, Mass. Filed Aug. 17, 1878.



Claim.—1. The combination of the elastic finisher c, the mandrel A, one or more bore-finishers, a, and one or more benders, D E, all being arranged and applied substantially as set forth.

2. The combination of one or more elastic finishers, c, the mandrel A, one or more bore-finishers, a, one or more tubular non-elastic or outside-surface finishers, b, and one or more benders, D E, all being applied and arranged substantially as specified.

3. The front bender provided with the helical front edge, arranged as and for the purpose set forth, in combination with the mandrel, extending entirely through the said edge, as specified.

4. The hooked nippers N, substantially as described, composed of the hooked and crossed shanks x x, provided with the cams g g and closing-spring h, as set forth.

5. The combination of two or more sets of hooked nippers, N, the endless belt or carrier F, and the arch k, all arranged, constructed, and to operate substantially as set forth.

6. The rack-carriages I I, provided with mechanism for operating them, as described, in combination with the endless belt F and two or more sets of nippers, N, applied thereto, all being essentially as set forth.

7. The combination of the mandrel, one or more benders, and one or more bore and outer-surface finishers, as described, with the endless carrier F, and two or more sets of nippers, N, and the rack-carriages I I, provided with mechanism for operating them, substantially as specified.

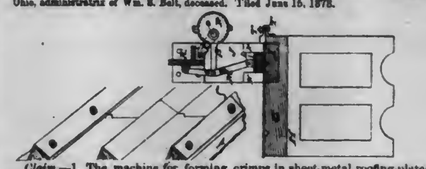
8. The combination of the mandrel A, one or more bore-finishers, a, and one or more elastic outside-surface finishers, c c.

9. The bender D, made substantially as explained—viz., of a plate (see Fig. 5) bent in a conical, spiral, or volute, and having its front edge helical with and gradually approaching the axis of it, (the said bender,) all being essentially as represented.

10. The rack-carriages I I, provided with mechanism for operating them, as described, in combination with the endless belt F.

11. The combination of the mandrel A, one or more bore-finishers, a, one or more elastic outside-surface finishers, c, and one or more non-elastic outer-side finishers, b.

209,747. MACHINES FOR MAKING SHEET-METAL ROOFING. Jabe Bolt, Mount Washington, Ohio, administratrix of Wm. S. Bolt, deceased. Filed June 15, 1878.



Claim.—1. The machine for forming crimps in sheet-metal roofing-plates, consisting of a table having a front and rear groove, a vertically-reciprocating crimping-bar, L, provided with a rib to fit into the rear groove, and operated from the driving-shaft O by means of eccentrics R R thereon, connected by arms S S to the toggle-levers M M, which suspend the bar from the beam K, substantially as described, for the purpose specified.

2. The table of the crimping-machine, formed with a front groove, which, after a roofing-plate is crimped along one edge by the die and rear groove, and is then reversed, shall receive the crimp already formed while a crimp is being made in the opposite edge, substantially as described.

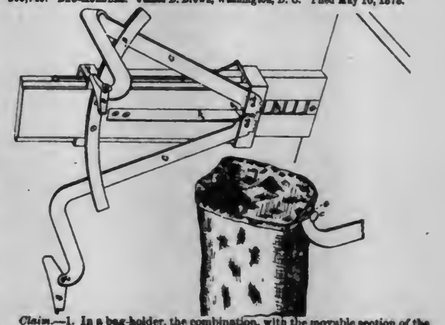
209,748. MAGAZINE-GUNS. Thomas G. Bennett, New Haven, Conn. Filed Aug. 2, 1878.



Claim.—1. The opening E in the receiver A, located in relation to the rotating cylinder D and the breech of the chamber as shown and described, whereby cartridges can be inserted through said opening and be carried into the chamber by closing the breech, or can be fed back into the magazine, as preferred, substantially as set forth.

2. In combination with the receiver A, provided with the opening E, the lid B, secured to the receiver by the pivoted spring-arm C, all arranged to operate substantially as shown and described.

209,749. BAG-HOLDERS. James B. Brown, Washington, D. C. Filed May 10, 1878.



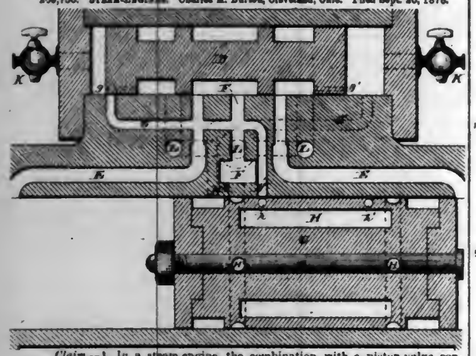
Claim.—1. In a bag-holder, the combination, with the movable section of the post thereof, of the bag-holding arms, hinged or pivoted at or near the bottom of said movable section, and connected substantially as described, so as to insure uniformity of movement, and the guides for said arms attached to and movable with said movable section of the post, substantially as and for the purposes set forth.

2. In a bag-holder of the character herein specified, the combination, with the movable section of post which carries the hinged arms, of the spring-dog secured to said movable section, and adapted to engage with the ratchet-bar located upon the stationary section, said spring-dog being controlled by a cam having a hand-rod connected therewith, and movable up and down with the adjustable section of post, substantially in the manner shown and described.

3. In combination with the horizontally and vertically adjustable arms, the bag holding jaws pivoted thereon, and controlled by a set-screw, substantially as shown and described, so that the requisite inclination may be given the mouth of the bag, for the objects named.

4. In a bag-holder, the combination of the two vertically-adjustable arms, provided with the jaws f and set-screws e, said arms being hinged to the movable portion of the post of the machine, and adapted to automatically separate, in order to conform in position to the width or area of the mouth of the bag, substantially as shown and described.

209,750. STEAM-ENGINES. Charles H. Burton, Cleveland, Ohio. Filed Sept. 20, 1878.

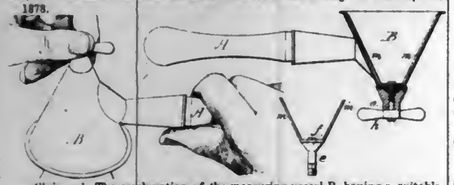


Claim.—1. In a steam-engine, the combination, with a piston-valve constructed with ports through its opposite ends and exhaust-ports G G', of a steam-piston provided with an exhaust-steam chamber, H, annular ports h h', connecting therewith, and ports H' H', leading to the main exhaust-passage F, substantially as set forth.

2. The combination, with the valve D, of the steam-cocks K K, whereby the location of the valve in its chamber may be governed at the will of the engineer by opening either valve, and the motion of the piston thereby controlled, substantially as and for the purposes described.

3. The steam-engine consisting of the combination, with the cylinder and steam chest, of hollow piston C and valve D, the steam ports E g, and exhaust-ports F G G' H H', substantially as and for the purposes described.

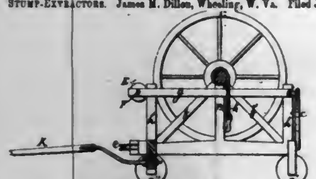
209,751. ICE-CREAM MEASURE AND MOLD. William Clewell, Reading, Pa. Filed Apr. 29, 1878.



Claim.—1. The combination of the measuring-vessel B, having a suitable handle, with a scraping arm or arms adapted to the said vessel, and admitting of being turned therein, all substantially as set forth.

2. The combination of the measuring vessel A, the spindle e, passing through and arranged to turn in the said vessel, and carrying a scraping arm or arms, m, with a handle, h, secured to the spindle, all substantially as described.

209,752. STUMP-EXTRACTORS. James M. Dillon, Wheeling, W. Va. Filed June 6, 1878.

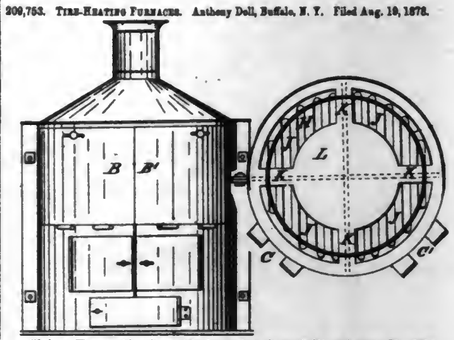


Claim.—1. In a stump-pulling machine, the frame A, mounted on wheels a a' a'' a''', and the drum D, chain k, wheel C, rope n', and sheaves s s', placed flatwise close together directly in front of the wheel C, with the rope passing between them, whereby the rope may be pulled either to the right, left, or straight ahead, all arranged, combined, and operated substantially as herein described.

2. The combination, with the frame A, wheels a a' a'' a''', drum D, chain k, wheel C, rope n', and shaft F, drum-wheel E, and power-wheel G, rope n², and sheaves b b', placed flatwise close together directly in front of the wheel C, with the rope passing between them, whereby the rope may be pulled in any direction, all arranged, combined, and operated substantially as herein described.

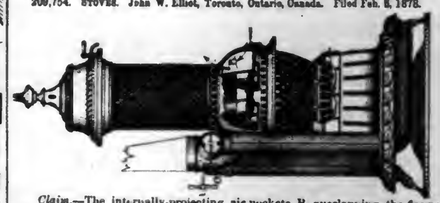
3. In a stump-pulling machine, the combination, with the frame-work of the carriage A, of the arched brace e, substantially as herein shown, and for the purposes set forth.

209,753. TIRE-HEATING FURNACES. Anthony Doll, Buffalo, N. Y. Filed Aug. 19, 1878.



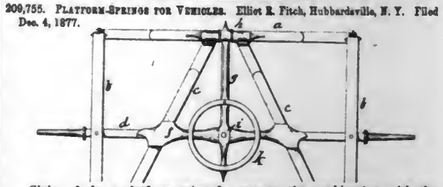
Claim.—The combination, with the casing, doors B B', and grate H, of the spreading-plate L, its arms K, and damper Q above the arms, as set forth.

209,754. STOVES. John W. Elliot, Toronto, Ontario, Canada. Filed Feb. 6, 1878.



Claim.—The internally-projecting air-pockets B, overlapping the fire-pot J, and constructed as described, so that the air of the room is admitted through an aperture in the lower end of each pocket, and after becoming heated escapes through a hole in the top of the said pocket B, re-entering the room, substantially as set forth.

209,755. PLATFORM-SPRINGS FOR VEHICLES. Elliot R. Fitch, Hubbardsville, N. Y. Filed Dec. 4, 1877.

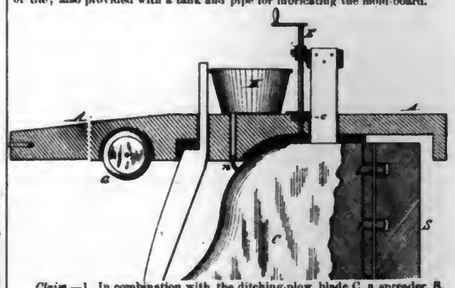


Claim.—1. In a platform-spring for wagons, the combination, with the cross-spring a and side springs, b b, arranged as described, of the two diagonal springs c c, having their rear ends secured to the side springs, b b, and their forward ends secured to the under side and at the center of the cross-spring a by a loop or stirrup, e, and adapted to support the bars or frame f g h and fifth-wheel k, substantially as set forth.

2. In a spring-platform, the combination of side springs, b b, end spring, a, and converging springs c c, having their ends secured respectively to the end spring and side springs, substantially as specified.

209,756. DITCHING-PLOWS. John M. Fudge, Francis M. Holmes, and Sam McDonald, Niles Township, Delaware County, Ind. Filed Oct. 3, 1878.

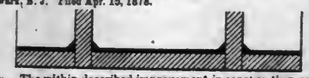
Brief.—The opening blade or mold adjusts vertically upon the beam, and carries wings or spreaders hinged to its rear, and is adjustable for various sizes of tile; also provided with a tank and pipe for lubricating the mold-board.



Claim.—1. In combination with the ditching-plow blade C, a spreader, S, hinged thereto, having two wings or walls, s s, and the wedges or wedge-plates w, adapted to spread and hold said wings at varying widths, substantially as shown and described.

2. The wings s s, forming the sides of the spreader, and having horizontal grooves, in combination with the wedge-plates w, plow-blade C, beam A, and a lifting-screw, E, substantially as shown and described.

209,757. CONSTRUCTION OF CEMENT VATS FOR TANNING AND OTHER PURPOSES. Wm. A. Gay, Newark, N. J. Filed Apr. 15, 1878.



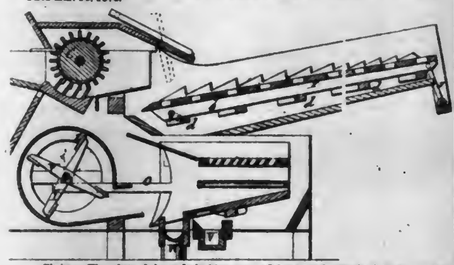
Claim.—The within-described improvement in constructing vats, consisting in building the sides and cross-walls of concrete in temporary molds, removing the latter, filling in between the walls with concrete to form the bottom, and coating the same with cement, as set forth.

209,758. PLOWS. Andrew Geodyear, Albion, Mich. Filed Mar. 25, 1878.



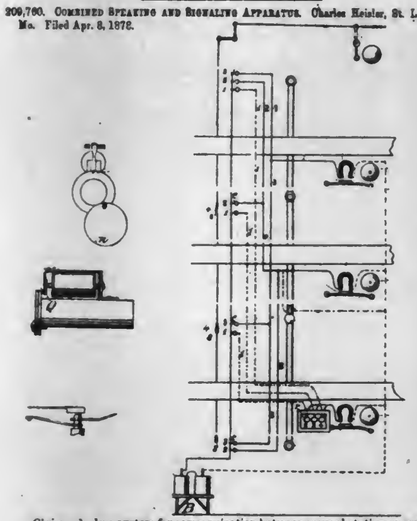
Claim.—In combination with the land-side of a plow, the inclined lugs B and B', attached thereto, and adjustable arm C, pivoted to one leg and adjustably supported in the other for adjusting the double-beveled wheel D, both vertically and laterally, substantially as set forth.

209,759. GRAIN-SEPARATORS. William I. Harvey and Henry S. Mitchell, Lock Haven, Pa. Filed Mar. 16, 1878.



Claim.—The slats d d, made in V or curved form, and attached to the under side of the shaker I, for the purposes herein set forth.

209,760. COMBINED SPEAKING AND SIGNALING APPARATUS. Charles Heisler, St. Louis, Mo. Filed Apr. 8, 1878.

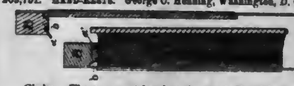


Claim.—1. In a system for communication between several stations or apartments of a building, the combination of a central speaking-tube having all of the stations or apartments in its circuit together with a main electrical conductor from a galvanic battery, from which conductor in each station or apartment is taken a series of branch conductors, in number corresponding with the number of rooms or stations, each of the said branches having circuit devices capable of removing the mouth-piece of the speaking-tube at its respective destined stations, or for the purpose of sounding an alarm to indicate the coming of a message.

2. A tube having mouth pieces in different apartments, said mouth-piece adapted to be opened or closed by an electrical current, which is operated from any of the apartments.

3. The combination speaking-tube and electric signal, said signal adapted to open or close the mouth-piece of said tube.

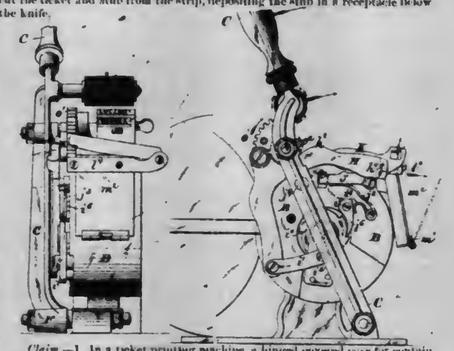
209,761. HAND-RESTS. George C. Hensing, Washington, D. C. Filed Mar. 13, 1878.



Claim.—The arm-rest having the stock B, with a recess, b, and india-rubber strip or block a', substantially as and for the purpose described.

209,762. TICKET-PRINTING PRESSES. Thomas B. Jeffery, Chicago, Ill. Filed June 16, 1876.

Brief.—This machine operates upon a continuous ticket-strip, on which tickets and agents' stubs or coupons are printed alternately, following each other. Said strip passes from a receptacle over a feeding-drum, thence over a platen to be printed, and finally under a vibrating double-edged knife, which severs the ticket from its agent's stub and the stub from the strip, the stub being deposited in a receptacle immediately below the said knife, while the ticket falls out of the machine. The operating-lever of the machine carries the printing plate or type on an arm provided with two segments of varying radii, which mesh with stationary racks on the frame of the machine, one of which segments, with its corresponding rack, operates to throw the type against the surface of an inking-roller, also carried by the operating-lever above the arm of the type-arm, while the other segment throws the type against the platen to print the ticket lying on the same. Friction-rollers on the operating-lever control a bell-crank lever, which, by pawl and ratchet, moves the feeding-drum at a time when the type are thrown up against the inking-roller. One of said friction-rollers also operates to depress an arm, which releases the feeding-drum to allow it to be moved. A second lever, pivoted next to the bell-crank lever, carries at its forward end the double-edged knife, pivoted to the front of the machine, at one side, so as to cut at right angles to the direction of the feed. This lever is also operated by a friction-roller on the operating-lever. When the said operating-lever is moved forward, the type is brought down against the ticket and stub lying on the platen and the knife is elevated. When moved backward, the feeding-drum is first moved to feed forward the strip the length of a ticket and stub, and when the operating-lever is moved backward still farther, the drum ceases to move and the double-edged knife descends to cut the ticket and stub from the strip, depositing the stub in a receptacle below the knife.



Claim.—1. In a ticket-printing machine, a hinged covered case for containing a coil or roll of ticket-blanks, having a projecting guide attached to the cover and partly encircling the feed-roller, substantially as shown and described.

2. The case B, for containing the feed roller, made with a curved platen, b', and with the toothed segment p, for guiding the type to the paper, and with the toothed segment p', for turning the type under the ink-roller.

3. In combination with the handle or lever C, the ink-roller, the type-holder, and rollers for operating the knife and the feed-drum, all being supported on and carried by such handle.

4. The type-holder O, provided with segments of toothed gearing of different radii or curvatures, in combination with stationary racks adapted therefor, substantially as and for the purposes described.

5. In combination, mechanism, substantially as described, for feeding a continuous strip of paper a distance equal to a ticket and its connected coupon, and the double-edged knife, operating by a single shearing cut to sever such ticket from its adjacent coupon and to sever both from the strip, substantially as shown and described.

6. In combination, mechanism, substantially as described, for feeding a continuous strip of paper a distance equal to a ticket and its connected coupon, the double-edged knife, and the cutting-plates P P', between which the severed coupons or register-pieces pass, while the ticket is discharged from the machine.

7. In combination with the lever C and its actuating-rollers, the bell-crank lever H, having on one of its arms a curved edge, and on its other arm the pivoted link i', to transmit motion to the feed roller or drum.

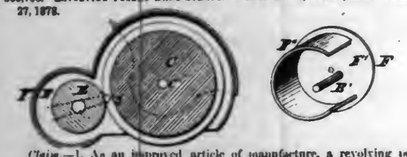
8. In combination with the lever C and with the double-edged knife, the pivoted lever operating the same, and having a curved edge, on which its operating-roller moves, and an elongated or oblong aperture, into which the end of the knife or knife-stock is inserted.

9. A removable die-plate for a ticket-printing machine, provided not only with the requisite type for printing, but also furnished with a hardened sharp indenting-type of higher elevation than the printing-type, and adapted to make an ineffaceable impression in the body of the ticket, for the purpose set forth.

10. In combination with levers C and K, a vibrating shearing knife having two parallel cutting-edges, in combination with two stationary cutting-edges, between which such knife works to sever a registering-piece or coupon from its corresponding ticket, and also from the continuous strip of paper, substantially as shown and described.

11. In combination, the feeding apparatus, the devices for severing the ticket and register from a continuous strip, and a receptacle or box, into which the severed registering-piece falls, substantially as and for the purposes set forth.

209,763. Revolving Pocket Hand-Stamps. Wm. H. Keeler, Buffalo, N. Y. Filed Aug. 27, 1878.



Claim.—1. As an improved article of manufacture, a revolving pocket hand-stamp, consisting, essentially, of a partially-open casing, A, a revolving type-wheel, C, an inking-roller, E, and a cover, H, to close the partially-open casing, said cover being pivoted to said casing on both sides thereof at a point coinciding with the center of the type-roller, substantially as and for the purpose specified.

2. A hand-stamp in which the inking and type wheels are inclosed within a partially-open casing, said casing being provided with a guard or cover, pivoted on both sides of said casing in line with the type-roller pivots, and arranged to close the opening in said casing, substantially as and for the use and purpose stated.

3. In a printing stamp, a revolving inking-pad, said pad being arranged within a cylindrical casing, with its pivot eccentric to the center of revolution of said casing, whereby by turning said casing the inking-roller is caused to advance to or recede from the impression-plate, substantially as and for the use and purpose indicated.

4. The casing A, of the contour of two intersecting circles, having the type-wheel chamber B and inking-roller chamber B', said casing being provided with the segmental part H, pivoted on both sides of said casing at a point coinciding with the center of the roller-chamber B, and arranged to close the opening therein, as and for the object stated.

5. In a hand-stamp having a revolving type-wheel, the combination, with the casing A, of the segmental part H, secured to said casing by the slotted studs L, said casing being provided with the grooves P, whereby the type-wheel C is locked within its bearings in said studs L, substantially in the manner as and for the purpose mentioned.

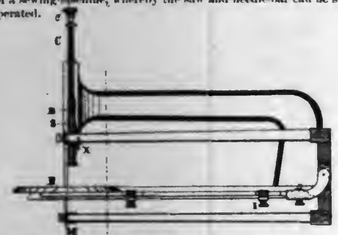
6. The combination, with the wheel C, having its bearings within the slotted studs L, of the sides A', provided with the grooves P, said studs being arranged to revolve within said sides, and thereby to lock the wheel, substantially as and for the object stated.

7. The combination, with the disk F', having the spindle E', eccentric to the said disk, of the rim F'' and the inking-roller E, as stated.

8. A revolving hand-stamp embodying the following elements in combination: a partially-open casing, A, having a type-wheel chamber, B, and an inking-roller chamber, B', a type-wheel, C, an inking roller, E, and a sliding piece arranged to close the open part of the casing, said inking-roller being arranged with capability of adjustment relative to its position with the type-wheel, as and for the object stated.

209,764. Clamps for Attaching Scroll-Saws to Sewing-Machines. John G. Letellier, Chicago, Ill. Filed Mar. 5, 1878.

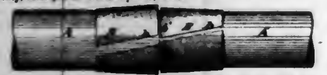
Brief.—The frame of a scroll-saw is connected by an arm at its upper forward part to an adjustable clamp attached to the upper and lower ends of the needle-bar of a sewing-machine, whereby the saw and needle-bar can be simultaneously operated.



Claim.—1. The adjustable clamp consisting of the sleeve S, rod C, arms *a b*, and set-screws *c* B, and sleeve carrying an arm, X, for giving motion to the saw M, as set forth.

2. The combination of the clamp with the needle-bar of a sewing-machine, when connected with the ends of said bar, the arm X, and a scroll saw.

209,765. Shaft-Couplings. August Lochner, St. Louis, Mo., assignor of one-half his right to John B. Reilly, same place. Filed Sept. 23, 1878.



Claim.—1. In the double-taper sleeve B, the accommodation-slittings *b* and *b'* as means for the reception and centering of shafts of equal or unequal diameters, as herein set forth.

2. In combination with said accommodation-slittings *b* and *b'*, the compression-rings C C', blank shouldered rim 1 C, and the screw-threaded rim 2 C', for light compression through the action of the shouldered nut D, as described and set forth herein.

3. In the secure attachment of the shaft ends of a coupling-joint to the sleeves B, the set-screws *c*, as set forth and herein shown.

209,766. Rein-Holders. Jacob C. Maple, Trenton, N. J., assignor to W. S. Manley. Filed Apr. 30, 1878.

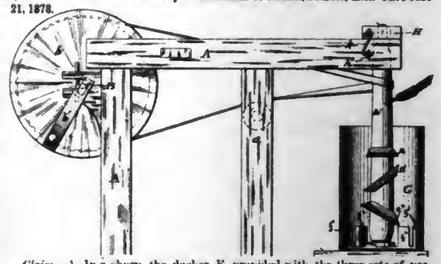
Claim.—1. A rein-holder consisting of a plate or frame, A, provided with a lip or projection, *a*, and with a pivoted dog, *b*, between which and the lip the rein may be griped, substantially as set forth.

2. The plate A, provided with the lip and dog, and having an annular rounded face, B, as set forth.

209,766.



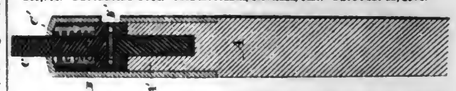
209,767. Churns. Austen G. McBrayer and Franklin G. Thomas, Shannon, Miss. Filed June 21, 1878.



Claim.—1. In a churn, the dasher E, provided with the three sets of perforated arms *e e' e''*, the first set being arranged at right angles and the latter two at oblique angles to the longitudinal axis of the said dasher E, substantially as and for the purpose set forth.

2. In combination with the dasher E, provided with the sets of wings *e e' e''*, of the ink or socket F, having the end pieces, *f' f'*, and triangular-shaped uprights *f'' f''*, substantially as and for the purpose set forth.

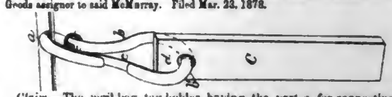
209,768. Detonating-Toys. John McConnell, Cleveland, Ohio. Filed June 12, 1878.



Claim.—1. A cane or other stick provided at its end with a chamber in which an inwardly spring-pressed plunger works, the rod of said plunger projecting through the bottom of the chamber, which latter is formed with a side slot, substantially as set forth.

2. The combination of cane A, ferrule B, slot B', and spring-plunger C C', substantially as specified.

209,769. Tag-Holders. Robert McMurray and William H. Goods, Washington, D. C.; said Goods assignor to said McMurray. Filed Mar. 23, 1878.



Claim.—The mail-bag tag-holder having the part *a*, for connecting with the mail-bag, with sides parallel, or nearly so, and with or without the eyelet-seat *d*, and having one of the sides bent inward, as shown at *b*, and provided with the snap-spring *c*, and having the enlarged hook *b'*, for holding the tag C, all substantially as and for the purpose set forth.

209,770. Composition for Forming Cement, Mortar Coatings for Walls, &c. Emil Meyer, Kopenick, near Berlin, Prussia, Germany. Filed May 31, 1878.

Claim.—The combination and composition of fluor-spar in a cold state with water-glass in presence of water for making castings, cements, or coatings, substantially as specified.

209,771. Curtain-Rollers. Josiah Nesbitt and Alexander Anderson, Toronto, Ontario, Canada. Filed Feb. 25, 1878.

Brief.—One end of the roller rests in a socket in a plate pivoted eccentrically to the bracket. The roller end has a stop engaging with a stop on the bracket. The bearing-plate has a downwardly-projecting arm, by pulling the cord against which the roller is disengaged from the stop, and at the same time lifted through an arc, so that when the cord is released it returns to engagement by the force of gravity alone. The curtain is fastened to the roller by semicircular clips, the ends of which are turned centrally inward, one end being driven into the roller and the other sprung into a groove.

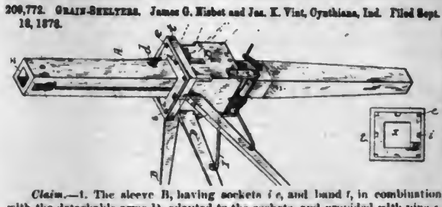


Claim.—1. The combination of the bracket A, having a circular slot, the eccentrically-pivoted disk C, having a bearing, *a*, forward of the pivot, and a lever, F, and a spool and pin, the bracket and spool being provided with engaging devices, the whole being constructed for operation substantially as described.

2. The following elements in combination, viz: the bracket A, having a circular slot and the lip *c*, the eccentrically-pivoted disk C, having the lever F and a bearing, *a*, forward of the pivot end, provided with a projection which rests in the slot of the bracket A and forms a stop therewith, and the spool D upon its center-pin *b*, the said spool being provided with stops *d*, all arranged substantially as specified.

3. A roller, H, with a slot, *h*, cut in it to receive the window-blind, in combination with metallic clips G, shaped substantially as shown, and for the purpose specified.

209,772. Grain-Shelters. James G. Hisbet and Jas. K. Vint, Cynthiana, Ind. Filed Sept. 18, 1878.

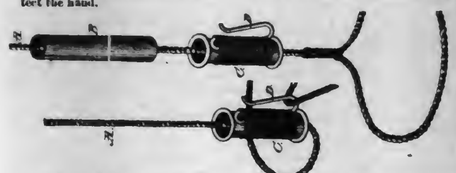


Claim.—1. The sleeve B, having sockets *i e*, and band *t*, in combination with the detachable arms D, adapted to the sockets, and provided with pins *s*, as set forth.

2. The staff A, with its adjustable awning-support, having a central channel, *x*, extending the entire length to ventilate the stack, perforated by the lower end, as set forth.

209,773. Fire-Escapes. Douglass Ottinger, Erie, Pa. Filed July 17, 1878.

Brief.—The rope, having a slip-noose at one end and a loop at the other, is provided with a metal tube, which slides freely on the rope, the tube having a hook, into which the rope is placed after having been passed around the waist, whereby the operator can regulate his descent by grasping the free portion of the rope in his hand below the hook. A rubber hand-tube is employed to protect the hand.

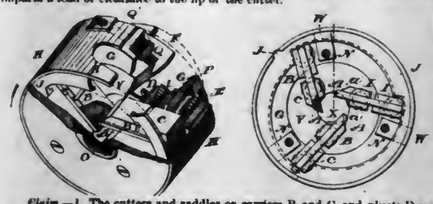


Claim.—1. The improved fire-escape apparatus herein described, consisting of the rope A, above described, having the metal tube C, with hook D attached.

2. In a fire-escape, the rope A, having the metal tube C, with hook D attached, and the rubber tube B, constructed and arranged to operate as shown and described.

209,774. Screw-Cutting Dies. Ole Pederson, Joliet, Ill. Filed Apr. 8, 1878.

Brief.—To provide for changing the angle of the cutters, and adapt the device to rods of different sizes, each cutter is held in two saddles, one pivoted to the frame and the other to the toothed ring. The concave back of the cover imparts a lead or clearance to the lip of the cutter.



Claim.—1. The cutters and saddles or carriers B and C, and pivots D and E, in combination with concentric rings G and V, worm-gear Q, cam-ring J, shell H, and diaphragm F, for the purposes and in the manner substantially as shown and described.

2. The cover M, with concave back, in combination with cutters and sleeve-screws I I, for the purposes and in the manner substantially as shown and described.

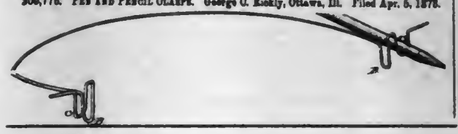
209,775. Piano-Forte Pedals. Abram A. Rhoutan, Worcester, Mass. Filed Feb. 2, 1878.



Claim.—1. A piano-pedal having two steps, adapted for use of either without change of adjustment, and made integral or in one piece, substantially as and for the purposes hereinbefore set forth.

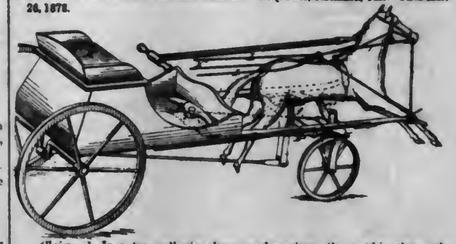
2. In combination with the pedal-bar A, the extension-arm D, attached by means of the ear-pieces *e*, clamp-plate *g*, and screws *f*, substantially as shown and described.

209,776. Pen and Pencil Clasps. George C. Bickly, Ottawa, Ill. Filed Apr. 5, 1878.



Claim.—A pen and pencil clasp consisting of a single wire bent to reach around the back of the head, and formed with hooks B B in front of the ears, and having two more bends to form the clamps C C, substantially as described.

209,777. Toy Galloping Horse and Carriage. A. Q. Ross, Cincinnati, Ohio. Filed Mar. 26, 1878.



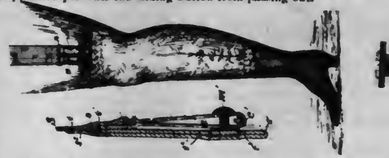
Claim.—1. In a toy galloping horse and carriage, the combination, substantially as specified, of the pivoted horse and the driving means attached to the horse's head or neck, reaching thence to the seat, for imparting a positive rocking motion to such horse from the seat of the carriage.

2. In a toy galloping horse and carriage, the combination, substantially as specified, of the pivoted horse and the stiff driving-rod attached to the horse's head or neck, for imparting a positive rocking motion thereto from the seat of the carriage.

3. In a toy galloping horse and carriage, the combination, substantially as specified, of the pivoted horse, the stiff thills, and the bracket for rigidly connecting the front ends of the thills, said bracket being carved to admit of the galloping motions of the horse.

209,778. Stocking Supporter and Clasp. C. C. Shelby, New York, N. Y. Filed Sept. 28, 1878.

Brief.—The slot in the clasp is closed at the upper end by the attaching-loop, which prevents the sliding button from passing out.



Claim.—1. The spring-jaw clasp A, formed of a piece of metal doubled back on itself, and provided with a slot extending longitudinally from the doubled end nearly to the opposite end, in combination with the button *m* and the transverse link *n*, one part of which prevents the button from sliding out of the slot, and the other part of which serves as means for attaching the supporting-web, substantially as described.

2. The combined web and sliding button-clasp, having the web attached to the clasp and button, folded back in one continuous strip, and stitched together in the manner herein described—that is to say, by passing it through the link, folding it back to the point *s*, carrying it forward to the point *s'*, and then back to the point *s''*, and stitching the parts together at *t t'*, substantially as described.

209,779. Plows. Jas. A. Smith, Wenona, Ill. Filed July 27, 1878.

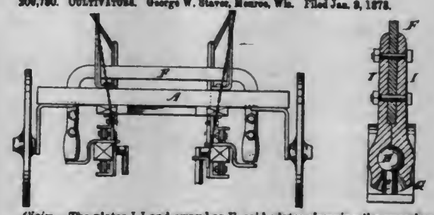
Brief.—The supporting-wheel revolves upon a fixed or non-revolving axle, which is adjustable back and forth upon its supporting-brackets, said axle serving as a brace between the mold-board and land-side, and having a dirt-collar and canopy attached thereto.



Claim.—1. In a plow, the combination of supporting-wheel F, axle E, adapted to serve as a brace between the mold-board and land-side, with capability of horizontal adjustment along the supporting-brackets, the dirt-collar *c*, and canopy G, attached to said axle, substantially as described.

2. The combination and arrangement of the axle E, respective brackets *a* and *b*, with dirt collar or collars *c*, wheel F, and canopy G, with the plow A B, as described.

209,780. Cultivators. George W. Staver, Monroe, Wis. Filed Jan. 9, 1878.



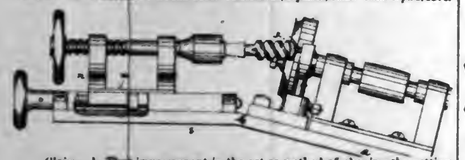
Claim.—The plates I I and sway-bar F, said plates clamping the sway-bar and inclosing the balls H, in combination with plates G, post E, and the beams C, substantially as set forth.

209,781. Method of Uniting the Rubber Rolls of Wringers. Henry H. Strong, Cornwall, N. Y. Filed Mar. 6, 1878.



Claim.—The method, as described, of uniting the rubber rolls of the wringers to their metallic shafts by forcing the said rolls upon a conical hollow perforated sheath, filling said sheath with liquid cement, driving the metal shaft into the open end of the sheath, thereby causing the cement to exude from the perforations or openings upon the rubber, and finally withdrawing the sheath, thus allowing the rubber to contract upon the shaft, substantially as and for the purpose set forth.

209,782. Manufacture of Auger-Bits. James Swan, Seymour, Conn. Filed Sept. 2, 1878.



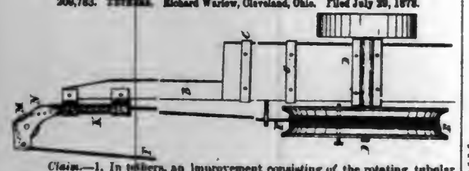
Claim.—1. The improvement in the art or method of shaping the cutting portions and forming the clear of a bit or auger provided with a tapered unthreaded center-point which consists in advancing the bit in the direction of its length, while the tapered center-point is held by a rest, and partially rotating the said bit, as described, to thereby move the bit laterally and longitudinally with respect to the axis of a rotating cutting-wheel, which acts upon the bit being so moved forward laterally, and rotated to form the clear and shape the bit, substantially as set forth.

2. In a machine for shaping the cutting portions of bits and augers, the combination, with a cutting-wheel and mechanism for advancing the bit, of a rest to receive, hold, and direct the tapered point of the bit or auger while being acted upon to form the clear, substantially as described.

3. In a machine to shape the cutting portions of bits and augers and form the clear, the combination, with a rotating cutting-wheel, of a stationary rest to receive, hold, and direct the tapered center-point of the bit or auger while being advanced, and simultaneously therewith moved laterally by the action of the tapered point upon the rest, the cutting-wheel operating to form the clear, substantially as set forth.

4. In a machine to shape the cutting portions of bits and augers, the face *a* of the bed, and the cutting-wheel and rest thereon, combined with the fixed inclined face *b* of the bed, the carriage *m* mounted thereon, the screw to adjust the carriage longitudinally, and the screw-threaded bit holding and advancing spindle, to operate substantially as described.

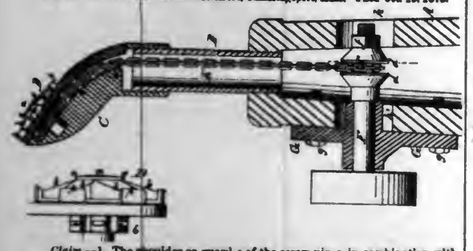
209,783. Tethers. Richard Warlow, Cleveland, Ohio. Filed July 29, 1878.



Claim.—1. In tethers, an improvement consisting of the rotating tubular spindle, provided with a sheave, and hung to the shaft or post of the tether, arranged to admit of the line passing through the tube of the spindle and over the sheave, and operating conjointly with the wheel E, spring G, and pulley M, substantially as and for the purpose set forth.

2. In tethers, the tubular rotating spindle K and sheave M, in combination with the line F, wheel E, shaft D, and spring G, substantially as described, and for the purpose set forth.

209,784. Pen-Holder. Amos Whittemore, Cambridgeport, Mass. Filed Oct. 19, 1878.



Claim.—1. The shoulder or guard *e* of the screw-pin *a*, in combination with the outer guards, *p*, and the knives *k* of the rotary cutter-head D, substantially as and for the purposes described.

2. In combination with the rotary cutter-head and the outside guards, *p*, the center-pin *a*, adjustable substantially as described, and for the purpose set forth.

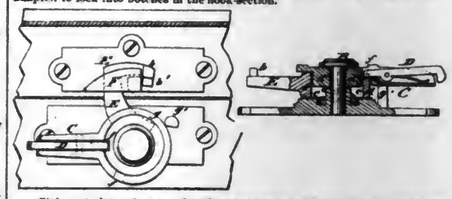
3. In a peg-float having the inclined head-stock C and hollow supports A B, the grooves *i i* in the head-stock, and a chain, E, which passes around a wheel, *b*, on the spindle or hub of which the cutter-head D is fixed, in combination with wheel *b'*, substantially as described.

4. In combination with an endless chain, E, which passes around the upper wheel, *b*, on the spindle of which is applied the cutter-head D, the adjustable bearing G, attached to the hollow pedestal A, as and for the purpose set forth.

5. In a peg-float of the kind described, an inclined head-stock, C, which is recessed at *e* and grooved at *i i*, and mounted on tubular supports A B, in combination with an endless chain, E, and wheels *b b'*, when the said chain passes around wheel *b*, and the cutter-head is fixed to the hub of this wheel, as set forth.

209,785. Fasteners for Meeting-Rails of Sashes. Wm. Winkel, Pluckemin, N. J. Filed Apr. 16, 1878.

Brief.—An oscillating lever is made in two sections, which swing on a common pivot. The hook-section binds on a catch-piece on the adjoining rail, and is eccentrically pivoted to the handle-section, enabling the sashes to be drawn closely together. The handle-section is provided with a spring-bolt, adapted to lock into notches in the hook-section.



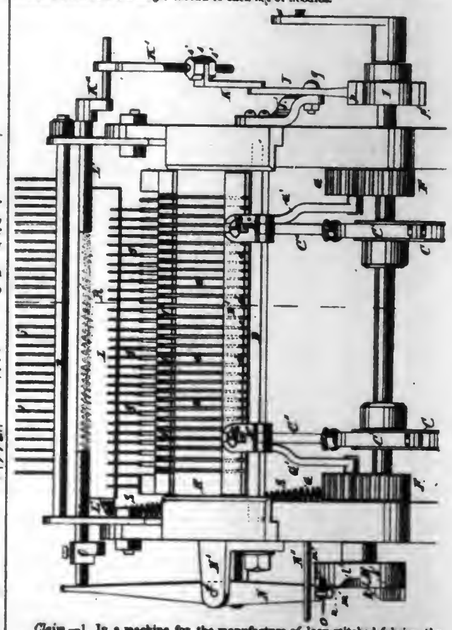
Claim.—1. In a fastener for the meeting-rails of sashes, an oscillating lever, made of an eccentrically-pivoted and spring-acted hook-section, and of a handle-section that may be locked to or released from the hook-section, so as to actuate the latter for closing or opening the fastener, substantially as and for the purpose set forth.

2. The combination, in a fastener for the meeting-rails of sashes, of a spring-acted and eccentrically-pivoted hook-section, E, having vertical and horizontal end lugs, *b b'*, and of an actuating handle-section, C, having spring bolt D, that locks to or releases the hook-section, with the catch-piece F, having raised segmental guide-piece and recessed shank, substantially as and for the purpose specified.

3. In a fastener for the meeting-rails of sashes, an oscillating lever consisting of a spring-acted and eccentrically-pivoted hook-section, and of an actuating handle-section, with locking spring-bolt, the hook-section having an exterior projection or stop, in combination with a fixed stop-pin or post of the base-plate, substantially as and for the purpose described.

209,786. Crocheting-Machines for Making Looped Fabrics. Charles Young, Chicago, Ill., assignor to Albert G. Mack, same place. Filed July 16, 1878.

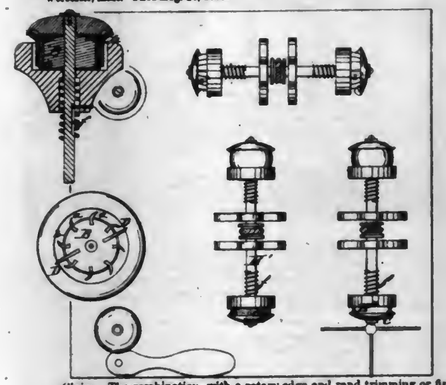
Brief.—A single series of needles, yarn-guides, threads, and loop-pins. Each are operated by cams, levers, eccentrics, springs, &c., to produce a loop-stitched fabric from a single thread to each set of needles.



Claim.—1. In a machine for the manufacture of loop-stitched fabrics, the combination, with a single series of loop-pins, of a single series of needles and a single series of oscillating and laterally-reciprocating guide-arms and operating mechanism, whereby each thread is carried by said arms up and to the right over two needles, then to the left under two needles, then the space over another needle to the left, then back of and around the loop-pins, then respectively up and to the left, over and down to the right under a single needle at each complete operation, so as to form a single series of loops and holding-stitches, substantially as specified.

2. The bar I, provided with the arms *g*, cam-wheel I, provided with the projections *p p'*, bar J, connecting-rod K K', crank K'', cam-wheel M, provided with the projections and depressions *k k' l l' m m'* n, rod or arm N, friction-roller *o*, rod L', stop O, and springs R S, in combination with the eccentrics C, bands C', pitmen C'', frame D D', carrying the needles *a*, wheels F G, pitmen G', and bar H, carrying the pins *b*, and a suitable supporting-frame, all constructed and operating substantially as and for the purposes specified.

209,787. Machines for Trimming and Finishing Boot and Shoe Soles. Israel Adams, Worcester, Mass. Filed Aug. 14, 1878.



Claim.—The combination, with a rotary edge and rand trimming or finishing tool, of a grooved guard-plate to protect the upper, said tool being arranged and adapted to rotate independently of the guard-plate, substantially as described.

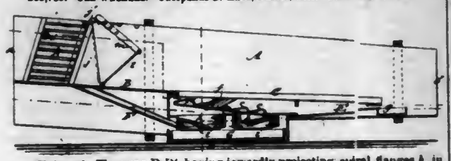
209,788. Hats, Shades, &c. Michael Affel, Ripley, Ohio, assignor to himself and John Wickliffe Gardner, same place. Filed June 1, 1878.



Claim.—1. A hat, basket, shade, or other article consisting of notched interlocking pieces or splits that are stitched or laced together at the notched points, substantially as and for the purpose set forth.

2. A hat, basket, shade, or other article constructed of sectional pieces or splits that are notched at two or more points on both sides, so as to interlock with the adjoining splits, they being connected by a stitching or lacing passing around the notched portions, substantially as set forth.

209,789. Ore-Washers. Theophilus T. Allen, Denver, Colo. Filed May 8, 1878.



Claim.—1. The pans D D', having inwardly-projecting spiral flanges *h*, in combination with the sluice A, substantially as and for the purpose herein shown and described.

2. The combination, in a gold-washer, of the grating C, riffles *c*, and pans D D', having the internal spiral flanges *h*, substantially as shown and described.

3. The combination of the angular plates *f* with the riffles *c*, as shown and described.

4. The sluice A, having side boxes, *j*, gates *j'*, gratings *k*, the pans D D', pipes F F', riffles *c*, and grating C, in combination, substantially as shown and described.

209,790. Prepare-Steps. Thomas V. Allis, New York, N. Y. Filed Aug. 26, 1878.



Claim.—A barbed bar for fences, consisting of a rib of triangular or equivalent form, having a single row of triangular barbs with parallel sides formed on one edge of the rib, the base portions of the several barbs connected together by a continuous fin which projects from the rib, substantially as set forth.

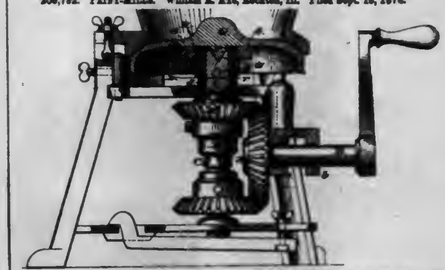
209,791. Fountain-Pens. Joseph Ayres, Kenton, Ohio. Filed June 26, 1878.

Claim.—A pen-blank having the shank A^1, the point A^2, and the wings or projections *a a*, forming the points a^1 a^1 and recesses a^2 a^2, substantially as described, for the purpose specified.

209,792.



209,792. Paint-Mills. William R. Ake, Rockton, Ill. Filed Sept. 16, 1878.



Claim.—In a paint-mill, the combination of the lower grinding-disk, G, having studs P and T, with the sleeve D and shaft C, having step O set eccentrically in its upper end, and the removable collar R, having slots *r* and arms S, and suitable driving mechanism, substantially as and for the purpose set forth.

209,793. Heating Cars. Wm. C. Baker, New York, N. Y. Filed Jan. 21, 1878.

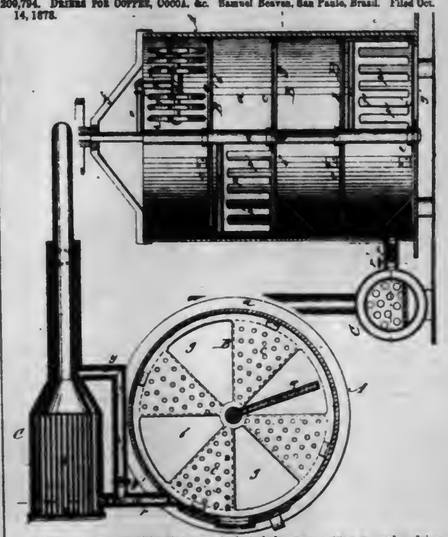


Claim.—1. The method herein specified of heating railway-cars, which consists in supplying steam heat by a pipe to a heat-radiating apparatus within the cars while the latter are at rest, absorbing the heat from the steam by a bath of sand or equivalent material surrounding the steam-pipe and in contact therewith, and radiating the heat from the sand into the cars, substantially as set forth.

2. The caloric-storage radiator formed of a metallic case surrounding a steam-pipe, and having the intermediate space filled with sand or equivalent material, for the purposes and as set forth.

3. The caloric-storage radiator formed of a cylindrical metallic case, with a steam-pipe passing through the same, and the intermediate space filled with sand or equivalent material, in combination with the non-conducting jacket *f*, that partially surrounds such caloric-storage radiator and is movable, for the purposes and as set forth.

209,794. Driers for Coffee, Cocoa, &c. Samuel Beaven, San Paulo, Brazil. Filed Oct. 14, 1878.



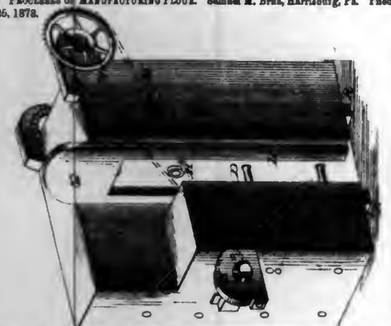
Claim.—1. The combination of a jacketed furnace, a blower, and a drier, the latter being provided with two air-supply pipes, the one connected to the furnace near to and the other remote from the body of the stove, whereby hot air of different temperatures may be forced into the drier, as shown and described.

2. A drier provided with horizontal foraminous trays B, consisting of one fixed and one loose disk, arranged to operate as and for the purpose specified.

3. The combination, with the drying apparatus A and jacketed furnace C, of the pipes e and g and dampers e' g', arranged substantially as and for the purposes set forth.

4. In combination with the cylinder a of a drying apparatus, the foraminous trays B, consisting of a fixed disk, b, and loose disk c, provided with openings g, and arranged for operation substantially as and for the purposes described.

209,795. PROCESSES OF MANUFACTURING FLOUR. Samuel M. Brua, Harrisburg, Pa. Filed May 25, 1878.



Claim.—The process of producing an improved grade of flour, consisting, essentially, in continuously mingling the corresponding grades of the valuable products of the first and after grindings, respectively, for running off the finished flour uniformly pending the regrinding and the reboltting, substantially in the manner and for the purpose specified.

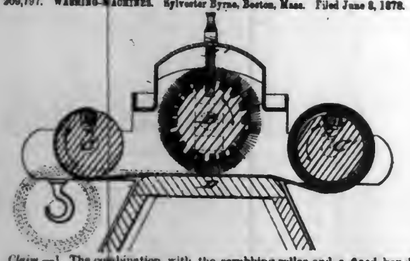
209,796. LETTERS AND NUMBERS FOR SIGNS. Jos. A. Bruce, Brooklyn, N. Y. Filed Sept. 30, 1878.



Claim.—1. Letters and numbers for signs made of two or more thin layers, A, of wood, and provided with cut-out portions, into which are placed plates B, of transparent or opaque glass, inserted in grooves in one of the intermediate layers, substantially as described.

2. Letters and numbers for signs made of two or more thin layers, A, of wood, and provided with cut-out portions, into which are placed plates B, of transparent or opaque glass, protected by ornamental scroll-work C, substantially as described.

209,797. WASHING-MACHINES. Sylvester Byrne, Boston, Mass. Filed June 8, 1878.



Claim.—1. The combination, with the scrubbing-roller and a fluted bench below the same, of winding and unwinding rollers, and of perforated troughs arranged between the scrubbing and unwinding or winding-up rollers, substantially as and for the purpose set forth.

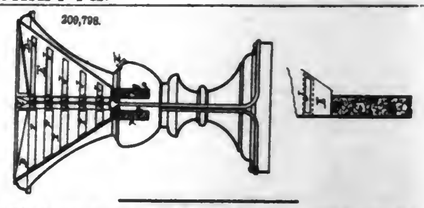
2. The combination, in a machine for washing heavy fabrics, of unwinding and winding-up rollers, arranged at opposite sides of a central scrubbing-roller, with a supporting frame having two open boxes or bearings at one side of the rollers, for the purpose set forth.

3. In a machine for washing heavy fabrics, the supporting-frame having hooks or hangers below the bearings, and the winding-up roller for supporting the unwinding-roller thereon in passing the fabric with uncleaned side up through the machine, substantially as set forth.

209,798. FLOWER-POTS. John A. Conway, Toledo, Ohio. Filed Oct. 26, 1878.

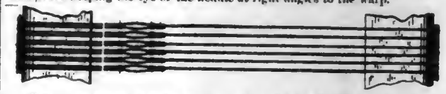
Claim.—The auxiliary vapor-chambers or wings E and perforated tubes or pipes G, substantially as described, as an improvement on the original invention, as above set forth.

209,798.



209,799. HARNESS FOR LOOMS. John H. Crowell, Providence, R. I., assignor of one-half his right to Kendrick Loom Harness Company, same place. Filed May 1, 1878.

Brief.—The upper cord of the heddle is doubled upon itself, and the eye formed by metal clasps, so as to leave a loop below the eye, through which the lower cord passes, the latter passing down on either side of the lower heddle-shaft, thus keeping the eye of the heddle at right angles to the warp.

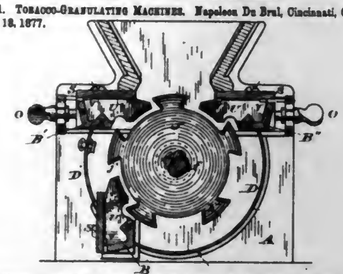


Claim.—A weaver's harness the several heddles of which are composed of two twines interlocked, and each secured to its respective rig-band, as described, and the eyes of which are formed by uniting with metal clasps the heddle-twines, which are returned upon themselves and laid side by side, substantially as and for the purposes described.

209,800. LEATHER-STUFFING COMPOSITIONS. Martin L. Dewees, Elk City, and Wm. W. Green, Cambridgeborough, Pa. Filed Nov. 13, 1877.

Claim.—The herein-described compound, consisting of the heavy deposit or sediment found in petroleum-oil tanks, known as "B. S" oil, said oil having been subjected to burning in the open air, and tallow in proportion, substantially as and for the purpose specified.

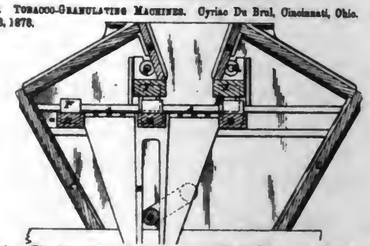
209,801. TOBACCO-GRANULATING MACHINES. Napoleon Du Brul, Cincinnati, Ohio. Filed Dec. 18, 1877.



Claim.—1. A tobacco scrap machine constructed with a revolving cylinder, I J, made up of short sections armed with knives K K, a corresponding series of stationary knives, U U, with interstices through which the revolving knives K K pass, and a grating, D D', extending concentrically around the lower part of the cylinder, so as to retain the tobacco to be acted on by the cylinder until sufficiently reduced in size, and then permit its escape, substantially as described.

2. The combination of the revolving cylinder I J, armed with knives K K, and the knives U U, mounted in adjustable holders B' B'', moved in and out by set-screws O O, to vary the fineness to which the tobacco is cut, as explained.

209,802. TOBACCO-GRANULATING MACHINES. Cyriac Du Brul, Cincinnati, Ohio. Filed Jan. 8, 1878.



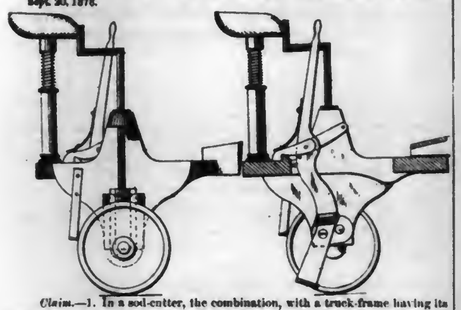
Claim.—The two rows of stationary knives H H and hopper B, for feeding the tobacco between them, in combination with reciprocating grating D, provided with three rows of knives, F F F, and with ranges of apertures d d between said rows of knives, the several rows of knives F F F acting successively on the stationary knives H H, through the interstices of which they pass, in the manner and for the purposes set forth.

209,803. COMBINATION-TOOLS. Dunbar S. Dyson, Bloomington, Ill. Filed Sept. 11, 1878.



Claim.—As a new article of manufacture, the herein-described compound implement or tool, consisting of the slotted and flat beveled handle, the hammer, and toothed or serrated scraper, substantially as and for the purposes specified.

209,804. SOD-CUTTERS. Horace D. Eddy and Joseph M. Kasson, Glenville, Ohio. Filed Sept. 20, 1878.



Claim.—1. In a sod-cutter, the combination, with a truck-frame having its two wheels adapted to be maintained in independent vertical adjustment, of a sod-cutting knife formed as described, and located in approximate vertical plane below the axial line of the wheels, together with a lever which is operated to raise and lower said knife, substantially as set forth.

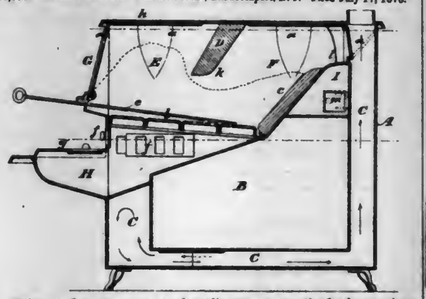
2. In a sod-cutter, the combination, with a truck-frame whose two sides are capable of being maintained in independent vertical adjustment, and a knife formed as described, of a lever connecting with the latter and provided with a spring-pressed catch, which is adapted to engage with a catch-fastening formed on the frame, and thereby hold said knife raised from operative position, substantially as set forth.

209,805. NAP OR PLUSH GOODS. Thomas Goodall, Sanford, Me. Filed Apr. 5, 1877.

Brief.—The fabric is woven of loosely-twisted yarns, from which a nap is raised on the face of the goods. A coating of paste or adhesive substance is applied to the back of the fabric, and, becoming absorbed into the fibers of the fabric and nap, holds the partially loosened nap fibers of the latter in place.

Claim.—As a new article of manufacture, the nap or plush fabric herein described, formed from loosely-twisted yarns or threads, and having the fibers that form the nap or plush held in place by means of a coating of adhesive cement applied to the back of the fabric, as and for the purpose set forth.

209,806. COOKING-STOVES. Wm. A. Greene, Elizabethport, N. J. Filed July 17, 1878.



Claim.—1. In a stove or range for culinary purposes, the fire box or chamber provided with a pendent unperforated partition, arranged transversely across the same under the long center between two sets of pot-holes, so as to form two fuel-chambers for slow and fast cooking, and arranged to cut off communication between the two divisions except under the bottom of the same, substantially as set forth.

2. In a stove or range for culinary purposes, a pendent partition, D, arranged transversely across the fire-box, so as to divide it into two parts, the said partition being inclined, as shown, so as to give the chamber E a hopper shape and avoid choking the passage from the chamber E to F, substantially as set forth.

3. The combination of the refractory side-lining plates s s with the refractory partition D, the ends of the latter being arranged to rest in recesses in the former, substantially as set forth.

4. The refractory partition D, having its lower posterior edge rounded or beveled, and arranged to stand inclined in the fire-chamber with its lower edge to the front, substantially as set forth.

5. The combination of the stove-front provided with a hole or holes, d d, the poker c, having a flattened end, a perforated fire-bed having a smooth and substantially flat surface, and the pendent partition D, all arranged substantially as set forth.

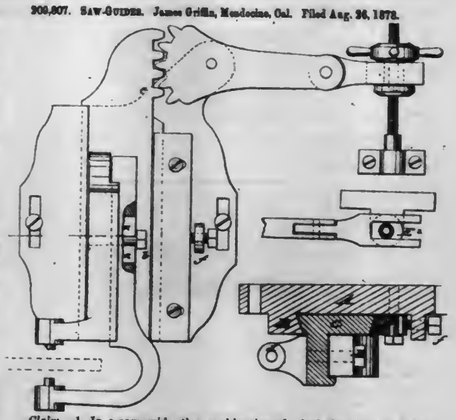
6. A suitable fire-bed, in combination with the partition D and the stove-holes h i, arranged on opposite sides of the said partition, substantially as set forth.

7. The perforated door, in combination with the perforated fire-bed and the pendent partition D, all arranged substantially as set forth.

8. The chamber I, provided with a door or registered aperture, m, and having apertures l l in its roof, in combination with the fire box or chamber divided into two parts, E F, all substantially as set forth.

9. The combination of the fire box or chamber, divided into two parts, E F, by means of a partition, D, with the oven B and flue C arranged around the same, substantially as herein set forth.

209,807. SAW-GUIDES. James Griffin, Mendocino, Cal. Filed Aug. 26, 1878.

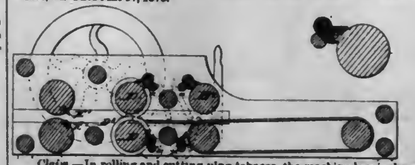


Claim.—1. In a saw-guide, the combination of a bed-plate having a fixed and a movable guide-rail with a laterally-adjustable slide-plate having a fixed and an adjustable guide arm or post for the saw, substantially as specified.

2. In a saw-guide, the combination of sliding and guided slide-plate, carrying the guide arms or posts for the saw, with a fulcrumed and jointed lever and intermeshing rack-gear and adjusting nut and bolt, substantially as set forth.

3. In a saw-guide, the combination of a bed-plate having a fixed and a movable guide-rail with a laterally-adjustable slide-plate having a fixed and an adjustable guide post or arm, the movable guide-rail being clamped to the slide-plate by clamp-screw f after the guide-arms are adjusted to the saw, substantially as and for the purpose described.

209,808. MACHINES FOR ROLLING AND CUTTING TOBACCO. Harrison W. Holley, Hale's Ford, Va. Filed June 17, 1878.



Claim.—In rolling and cutting plug-tobacco, the machine herein described, consisting, essentially, of three sets of pressure-rolls, arranged successively close together, an endless feed-belt passing through the first set of rolls, longitudinal knives on the second set, and transverse knives on the third set, all of said rolls being geared together, as shown and described.

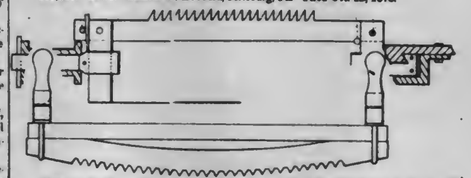
209,809. REVERSIBLE FILTERS. Edward C. Houghton, Boston, Mass., assignor of one-half his right to Jos. Grant, same place. Filed Aug. 5 1878.



Claim.—1. The herein-described improved reversible filter, consisting of the filter-box d, made alike in both ends, and containing the filtering material m, and provided with annular internal flanges e e', strainers f f', screw-threaded rings g g', and chambers h h', substantially as and for the purpose set forth.

2. The combination, with the filter-box d, its strainers f f', and filtering material m, of the screw-coupling e, with its sprinkler or perforated diaphragm n, substantially as and for the purpose set forth.

209,810. SAWS. Charles W. Hubbard, Pittsburg, Pa. Filed Oct. 12, 1878.



Claim.—1. A saw (whether crosscut, gang, or mulay) composed of longitudinal sections, the front section (being the saw proper) having teeth, and the other section or sections being blank and of a thickness not greater than that of the front section, said sections being placed edge to edge when in use and connected together, substantially as and for the purpose specified.

2. A crescent-saw composed of a cutting-section bellied or curved longitudinally, and with the back edge substantially parallel to the front, and a straight back section or blank, the two sections connected so as to permit of independent longitudinal expansion, substantially as and for the purpose specified.

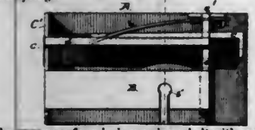
209,811. PATTERNS FOR CASTING STOVE-LEG ATTACHMENTS. Moses H. Huntley, Quincy, Ill. Filed Mar. 2, 1878.



Claim.—The pattern for casting attachment-lugs, consisting of the main portion having the upright branch *a'* and the separate detachable curved branch *b'*, substantially as specified.

209,812. LOCKS. John Jost, San Francisco, Cal. Filed Apr. 12, 1878.

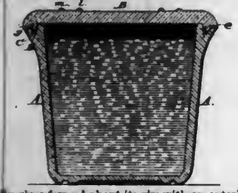
Brief.—The bolt carries the tumblers, and they are held in position by a slight frame and springs.



Claim.—The open case for a lock carrying a bolt with spring-tumblers pivoted thereto, consisting of the back plate A, with key-hole, the face-plate C', through which the end of the bolt projects, the plate *f*, with which the notches in the tumblers engage, the plates *c' c'*, for guiding the tumbler-springs, the plate B, and the strips *d a*, all constructed and arranged substantially as described and shown.

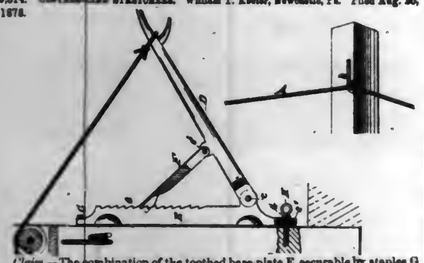
209,813. JELLY-GLASSES. James J. Johnston, Columbiana, Ohio, assignor of one-half his right to Henry C. Fry, Rochester, N. Y. Filed July 16, 1877.

Brief.—The packing is composed of a cord dipped in melted wax and Canada gum.



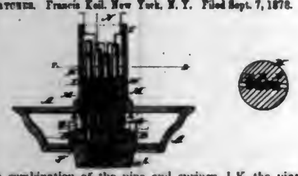
Claim.—A jelly-glass formed about its rim with an exterior and outwardly-projecting flange, C, in which a V-shaped groove, D, is made, with its outer wall terminating at a plane below the rim of the glass and its inner and less inclined wall at the said rim, as shown, in combination with the flat cover B, having a V-shaped flange, *e*, intermediate in position between the flat under surface of cover B and the plane *f* upon the under side of its rim, said flange being recessed and wedged within the groove D, and a packing being arranged within the annular recess *g*, all substantially as shown and described, and for the purposes set forth.

209,814. CLOTHES-LINE STRETCHERS. William T. Keefer, Newcastle, Pa. Filed Aug. 30, 1878.



Claim.—The combination of the toothed base-plate E, securable by staples G and pin or set-screw H to the line-post B, with the hooked lever D, pivoted to the lug *c* on the base-plate E, and provided with the pivoted pawl F, working in the rack *e*, substantially as and for the purpose set forth.

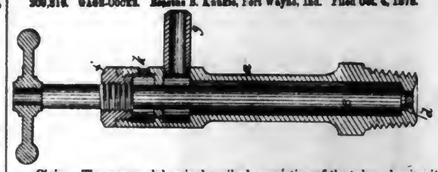
209,815. LATCHES. Francis Keil, New York, N. Y. Filed Sept. 7, 1878.



Claim.—1. The combination of the pins and springs J K, the pins and springs L M, the perforated and slotted cylinder H, and the key N with the perforated tumbler G, the latch B, and the perforated projection in the case A, substantially as herein shown and described.

2. The combination of the spring D, the bent lever E, provided with the projection *e'*, and the stop F with the latch B, the transversely-slotted stem of the knob C, and the case A, substantially as herein shown and described.

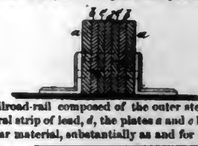
209,816. GAGE-COCKS. Reuben B. Kunkle, Fort Wayne, Ind. Filed Oct. 4, 1878.



Claim.—The gage-cock herein described, consisting of the tube *a*, having its upper end closed by the nut *f*, and provided with the chamber *h*, having the opening *k*, the said chamber being between the said nut and the discharge-pipe or nose *g*, and a valve-seat, *d*, formed at its inner lower end adjacent to the opening in the boiler, in combination with the valve-stem *e*, constructed and arranged substantially as and for the purpose described.

209,817. RAILROAD-RAILS. Louis Leypoldt, New York, N. Y. Filed Oct. 5, 1878.

Brief.—A railroad-rail consisting of two outer steel plates and two inner iron plates, between which there is a lead plate. Between the iron and steel plates there are strips of paper. The plates are placed on edge, and are firmly united by bolts.



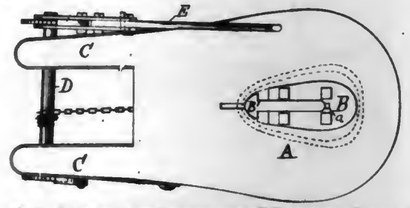
Claim.—A railroad-rail composed of the outer steel plates, *a a*, inner iron plates, *c*, and central strip of lead, *d*, the plates *a* and *c* being separated by layers of leather or similar material, substantially as and for the purposes set forth.

209,818. GAME-TABLES. William M. Lloyd, New York, N. Y. Filed Oct. 4, 1878.



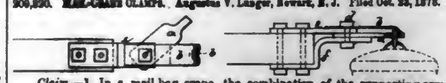
Claim.—A game-table formed of the table or board A, provided with the semicircular row of cups B, the inclined guide-cushions C, the button-cushions D, and the guards E, substantially as herein shown and described.

209,819. APPARATUS FOR FORMING HORSE-COLLARS. Louis Lang, Evansville, Ind. Filed Oct. 12, 1878.



Claim.—In a collar-former, the combination of the slotted base A, provided with the stationary projection B and sliding portion B' *a d*, with the spring *c*, shaft D, and pawls, ratchets, lever, and chain, constructed and operating substantially as and for the purpose set forth.

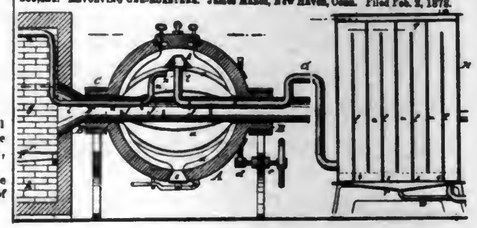
209,820. MAIL-CRANE CLAMPS. Augustus V. Langer, Newark, N. J. Filed Oct. 23, 1878.



Claim.—1. In a mail-bag crane, the combination of the supporting-arm with the pivoted bolt *a* and with the spring *b*, said spring being rigidly secured to the arm, so that it cannot swing aside when the bolt *a* swings aside, substantially as specified.

2. The combination of the bolt *a* and spring-plate *b* with the plates *e f* and with the arm of a mail-crane, substantially as herein shown and described.

209,821. REVOLVING OIL-ROASTERS. James Mapes, New Haven, Conn. Filed Feb. 2, 1878.



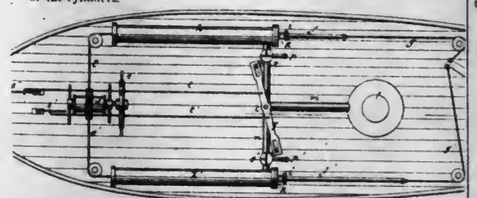
Claim.—1. The combination, with the roasting-globe A, of the stationary furnace-flue F, extending entirely through said globe to the chimney, as and for the purpose described.

2. The combination, with the flue F, of the blower-pipe *s s'* and the condenser-pipe G, having hollow conical top *k*, as and for the purpose set forth.

3. The condensing and washing chamber H, containing perforated diaphragms *q s* and the partitions *t u*, substantially as and for the purpose specified.

209,822. STEAM STEERING APPARATUS. Samuel C. Martin, South Amboy, N. J. Filed Oct. 2, 1878.

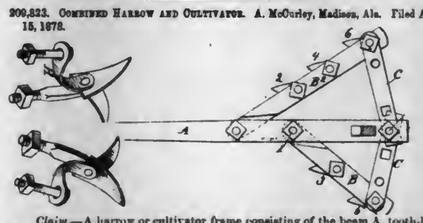
Brief.—The tiller-ropes are connected to piston-rods, and may be drawn by turning the steering-wheel, or by the admission of steam to one or the other of the cylinders.



Claim.—1. In a steering apparatus, the combination of the steam-cylinders, provided with pistons and piston-rods, connected with tiller-ropes, the drum *d* and ropes *e e'*, the valves *a a'*, and the centrally-located lever *g*, connected therewith, and provided with the rods *t t'* and hand-levers *s s'*, operating side by side, all as shown and described, for the purpose specified.

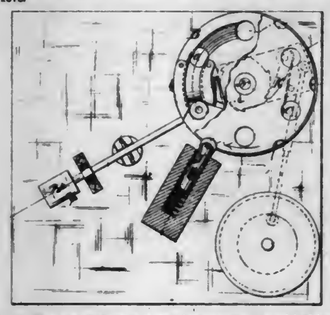
2. In a steering apparatus, the combination, with the tiller of the drum *d* and its attached steering-wheel *c*, the ropes *e e'* and *g g'*, the cylinders *k k'*, and valve mechanism for shutting off or letting on steam, and the rods *f f'*, having piston-heads working in said cylinders, and connected with ropes *g g'*, all as shown and described, whereby the tiller may be operated by steam or hand power, as set forth.

209,823. COMBINED HARROW AND CULTIVATOR. A. McCurley, Madison, Ala. Filed Aug. 15, 1878.



Claim.—A harrow or cultivator frame consisting of the beam A, tooth-bars B B', and adjustable spacing-bars C C, the bars on one side being longer than on the other, as shown and described, so that in cultivating on both sides of a row the line of draft may be thrown to one side, to prevent the horse or workman from tramping on the plants in the row.

209,824. CARTRIDGE-WEIGHING MACHINES. Matthew McBride, Philadelphia, Pa. Filed Sept. 13, 1878.



Claim.—1. The combination of a cartridge-carrier, a fixed bed having two delivery-openings, a plate or track separating the two openings, and a scale-beam arranged in the path of the cartridges, so as to deliver them to one or the other of the delivery-openings, according to the weight.

2. The combination of the carrier, the plates I, the incline, the two outlets, and the scale-beam, when arranged substantially as shown.

3. In a cartridge-weighing machine, the combination of a movable cartridge holder or die and a stationary scale, arranged in the path of the moving cartridges to receive and sustain them successively and determine their course through the machine from that point forward, substantially as described and shown.

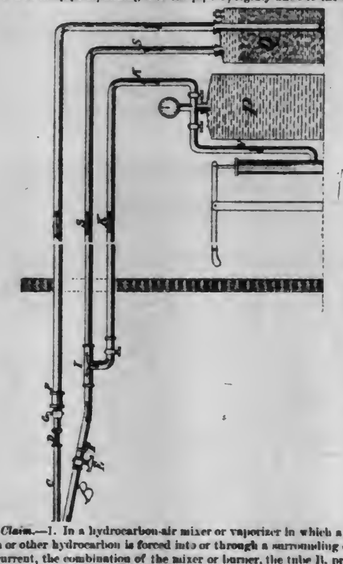
4. In a cartridge-weighing machine, the combination of a rotary vertically-chambered carrier, two delivery-openings at different levels, and a scale-beam arranged to sustain the cartridges one at a time, and determine their course to one or the other outlet, according to the weight, substantially as shown.

5. In combination with the carrier, the scale-beam, and the two discharge-openings at different points, the plates or guides arranged to sustain the elevated cartridges, and at the same time permit the carrier to advance those which have descended.

6. In combination with the rotary carrier, the scale-beam, and the two delivery-openings at different points, the plates or guides l, pivoted and provided with springs, whereby they are adapted to yield when a cartridge-head comes in contact with their edges.

209,825. APPARATUS FOR MIXING HYDROCARBONS WITH AIR AND BURNING THE SAME. Frederic G. Mensinga, New York, N. Y. Filed Mar. 12, 1877.

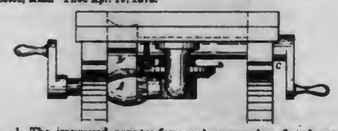
Brief.—The pump forces air into the compressed-air reservoir, from which it passes, suitably regulated by cocks, both to the oil-tank and burner, so that it both forces the oil to the burner and supplies air for mixing with and burning it there. The mixer or burner is made adjustable by means of the flexible tube Z and the pipe D, sliding into the pipe C, rigidly fixed to the burner.



Claim.—1. In a hydrocarbon-air mixer or vaporizer in which a jet of petroleum or other hydrocarbon is forced into or through a surrounding compressed-air current, the combination of the mixer or burner, the tube B, provided with stop-cock E, rigidly connected to the mixer, and communicating with the compressed-air reservoir by a flexible tube, the tube C, rigidly connected with the mixer, and the tube D, provided with stop-cock G, leading from the oil-reservoir through the tube C to the mixer, whereby the latter is made adjustable and the supply of air and oil is regulated, substantially as described.

2. The combination, with the mixer, having connections as described, of the compressed-air reservoir, the air-pipes K and S, the coupling I, and the oil-reservoir, whereby the air is furnished to the mixer and oil-reservoir simultaneously, substantially as described.

209,826. MACHINERY FOR FORMING HEEL-STIFFENERS FOR BOOTS AND SHOES. John R. Moffitt, Boston, Mass. Filed Apr. 19, 1878.



Claim.—1. The improved counter-former A, grooved or fluted around its flanged end, substantially as described.

2. In combination, the revolving counter-former A, presser C, and auxiliary supports D D', arranged together as described, the parts C D D' being so formed that each will act upon only a small portion of the blank in lines crosswise of the blank and close together, in order that only a small portion of the blank may be acted upon at any given time.

3. In combination, the fluted counter-former A, gear B, and presser C, all substantially as described.

4. In combination, the fluted counter-former A, gear B, presser C, and supports D D', all substantially as described.

209,827. TICKET PRINTING AND RECORDING MACHINES. John Moss, New York, and John H. Smith and Geo. J. Hill, Buffalo, assignors to the Oash Recording Machine Company, New York, N. Y. Filed May 27, 1878.

Brief.—The inclosing-case consists of two parts hinged together. Within the upper part is pivoted a frame, the free end of which is normally pressed upward by a spring. Said frame carries the type-wheels, their operating-slides, the mechanism for operating the latter, and the inking-ribbon-carrying rolls. The upper movable platen is also pivoted to it above the type-wheels, and it carries on its under side a standard for the roller that receives the printed recording-strip. The rock-lever that serves to depress the upper platen and type-wheel-carrying frame also operates a vertically-sliding frame that carries several pawls for operating the inking-ribbon and recording-strip rolls.

Claim.—1. The combination, with the stationary table H and the stationary case A, of the frame a a, pivoted at one end of the case, and the type-wheels C, hung in fixed bearings in said frame and thus vibrating with it, the

platen lever F, the eccentric or rock lever G, and the stationary handle b'', projecting vertically from the case parallel to or alongside the rock-lever, all as shown and described, for the purpose specified.

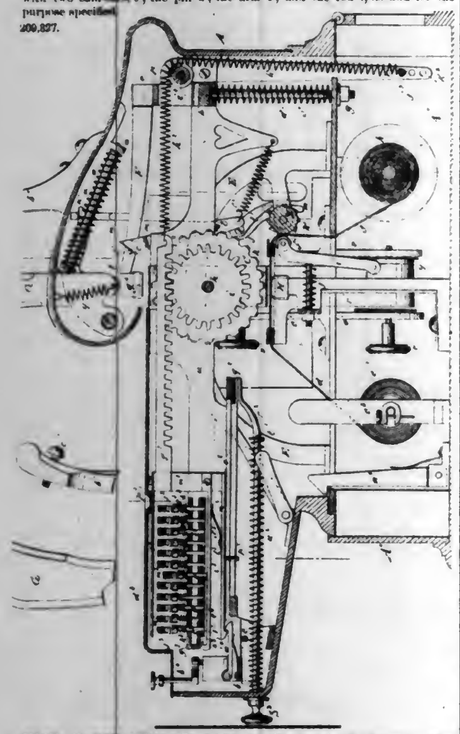
2. The combination, with the rolls d^1 and h^1, table or bed H, and type-wheels C, the idle-roller f^1, hung in the pivoted spring-pressed frame f^2, the actuating or feeding roller g^1, hung in stationary bearings, the ratchet k^1, and the pawl F, sliding frame n^1, and arm n^2, of the rocking lever G and the pivoted frame a, on which the type-wheels are hung, all as shown and described, whereby the operation of the lever G depresses the platen and moves the strip just after the descent of the frame carrying the type-wheels.

3. The vertically-sliding slotted frame m^1, having pawls b^2 and f^3, the rock-lever having the arm n^1, the spring w, the fixed feed-rolls p^1 and g^1, for moving the ink-ribbon and strip d, respectively, the frame a a, and type-wheels C, hung thereon, and the stationary table or bed H, all combined as shown and described, for the purpose specified.

4. The case A, made in two longitudinal parts, hinged together at one end and detachably connected at the other, in combination with the table H and strip-carrying rolls, one attached to the bed of the case, and the type-wheels and ink-ribbon rolls attached to the hinged portion of the same, all arranged and operating as shown and described, for the purpose specified.

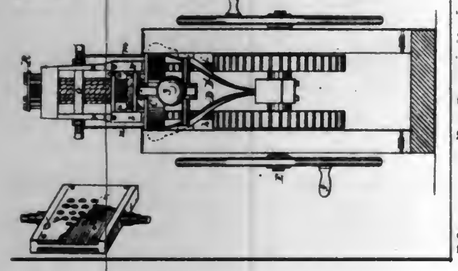
5. The combination, with the notched wheels, of the forked lever provided with two cam-ears, c^1, the pin c^2, the arm F, and the rod l, as and for the purpose specified.

209,827.



209,828. MACHINES FOR BORING BRUSH-BLOCKS. Albert Hawxhay, New Orleans, La. Filed Oct. 15, 1878.

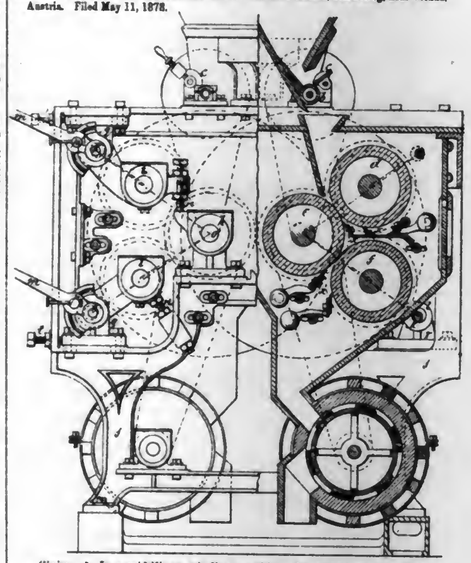
Brief.—The brush block Blank to be drilled is placed upon a vertically-adjustable table and fed to a series of vertical drills having double vertical cutting-edges and spiral spindles, and arranged to be operated by a vertically-reciprocating follower formed of an upper and a lower metal plate provided with holes corresponding with the diameter of the spindles, and a middle plate of steel tapped to fit the spiral portion of the spindles. The pointed upper ends of the spindles operate against a cap for lessening the friction on said spindles.



Claim.—1. In a drilling-machine, the combination of a series of drills having spiral spindles, all of which are arranged to be operated by the forward and backward movement of a follower, O, having an inner plate, 4, furnished with spiral holes, as described, and for the purpose set forth.

2. A drilling-machine composed of a bed-plate, C, upon which is mounted a frame, Q, having a cap, R, for receiving the upward pressure of the drills when the latter are put in motion through the action of the follower O, to which power is transmitted through connecting-rods m m' and pinions b b', the latter being in gear with cog-wheels that are secured upon a driving-shaft for the said purpose.

209,829. ROLLER-MILLS FOR REDUCING GRAIN. Lorenz Nemelka, Simmering, near Vienna, Austria. Filed May 11, 1878.



Claim.—1. In a middlings-grinding machine, the means employed for adjusting the position of the yielding grinding-rolls relatively to that of the roll mounted in stationary bearings, which consist in the combination, with said yielding rolls, of the fulcrumed bearings i, shafts k, eccentrics l, levers m and their grooved segments, the set-screws p, and the brackets g, all arranged and operating substantially as described.

2. The combination of the roller d or f, brackets i, axle k, eccentrics l, and levers m, essentially as described, and for the purpose described.

3. The combination of the roller d or f with brackets i, axle k, eccentric l, levers m, and set-screws n, essentially as described, and for the purpose described.

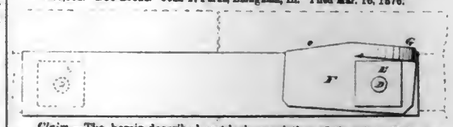
4. The means employed to prevent the yielding rolls from being jammed against the roll mounted in stationary bearings, which consist in the set-screws n and a fixed support or abutment for such set-screws either on the frame or fixed bearing h, in combination with said yielding or swinging bearings, substantially as shown and described.

209,830. ROOFING MATERIAL. Tobias New, New York, N. Y. Filed Nov. 2, 1878.

Brief.—Two or more layers of paper or other similar material are caused to adhere by means of rosin dissolved in rosin-oil, or a medium product obtained from the distillation of turpentine, between the turpentine proper and the rosin. Fiber, such as wool, hair, or woody fiber, may be added to the compound to give toughness and elasticity.

Claim.—As a new article of manufacture, a ready-prepared roofing consisting of two or more layers of paper or fabric, in combination with layers of vegetable rosin, prepared as described, with or without the fiber, and the whole reduced to a solid mass by pressure, substantially as described.

209,831. NUT-LOCKS. John T. Parks, Effingham, Ill. Filed Mar. 16, 1878.



Claim.—The herein-described nut-lock, consisting of the plate F, having the perforation O, spring-lip G, and turned-down corner c, applied as set forth.

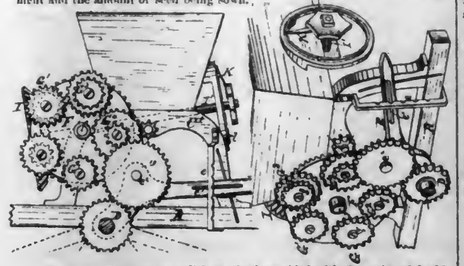
209,832. PICTURE-FRAMES. Hilarius Pattberg, Jersey City Heights, N. J. Filed Oct. 1, 1878.



Claim.—The corner-pieces C C, made with shoulders a, inner lips, b, and outer parts, d, constructed for combination with the parts A B of a picture-frame, substantially as herein shown and described.

209,833. INTERCHANGEABLE GEARING FOR GRAIN-DRILLS. Charles Perrin, Springfield, Ohio. Filed Oct. 21, 1878.

Brief.—Upon a journaled disk, near its periphery, are journaled double varying-sized cog-wheels, for engagement with a transmitting-wheel, and with a pinion on the distributing-wheel shaft. The disk has cogs, that engage with a bevel-wheel mounted on a shaft, provided on its opposite end with an index lever moving over a dial, for denoting which of the series of wheels is in engagement and the amount of seed being sown.



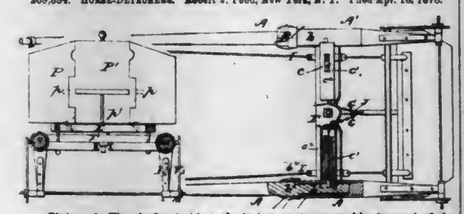
Claim.—1. The revolving disk or wheel provided with the series of double gears of different or varying diameters, substantially as and for the purpose set forth.

2. A series of interchangeable double gears intermediate between the driving-wheel and distributer or driven wheel shaft, any one of which gears may be brought into action without removing the others from the machine, substantially as described.

3. The revolving disk, carrying the series of interchangeable double gears, in combination with the adjustable transmitting-wheel D, substantially as described.

4. The revolving disk F, provided with the series of double gears of varying diameters, as described, in combination with the bevel-wheel I, shaft V, and index-lever K, or equivalent devices for effecting the adjustment of said disk, substantially as and for the purpose set forth.

209,834. HORSE-DETACHERS. Robert J. Pond, New York, N. Y. Filed Apr. 18, 1878.

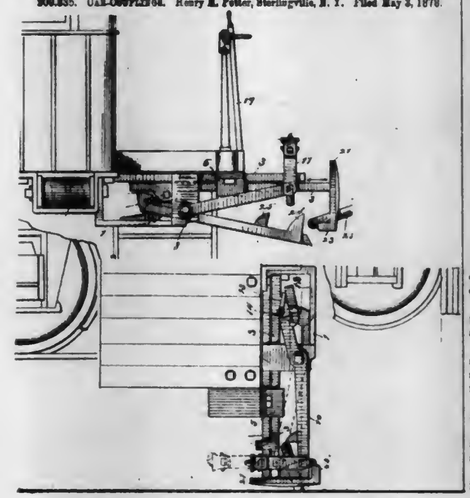


Claim.—1. The shafts A A', made in two parts, separable forward of the whiffletree, in combination with the cross-bar F, inclosed guiding-sockets e^2, attached to the bar and containing the longitudinally-sliding bolts e and springs e^1, and with the two chains G G and lever I', substantially as described.

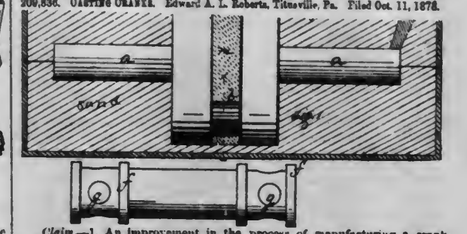
2. The dash-board P, constructed with the lever-section P', connected to the apparatus for unlocking the traces and thills, substantially as described.

3. The dash-board P and lever-section P', combined with springs for the purpose of holding the section P' normally in position as a part of the dash-board, substantially as described.

209,835. CAR-COUPLINGS. Henry H. Potter, Sterlingville, N. Y. Filed May 3, 1878.



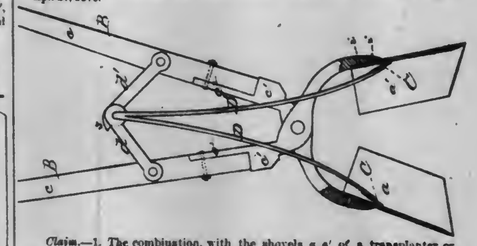
209,836. CASTING CRANKS. Edward A. L. Roberts, Titusville, Pa. Filed Oct. 11, 1878.



Claim.—1. An improvement in the process of manufacturing a crank-axle, consisting in placing a tubular perforated re-enforce in a mold properly constructed and casting the crank-shaft within and through it, so as to become incorporated therewith and form a bearing-surface thereon, substantially as and for the purpose specified.

2. A crank having a hollow crank-pin cast into the same, into, through, and around which pin the metal of the casting passes, substantially as and for the purpose specified.

209,837. POST-HOLE DIGGERS AND TRANSPLANTERS. William M. Ryan, Moline, Ill. Filed Apr. 27, 1878.

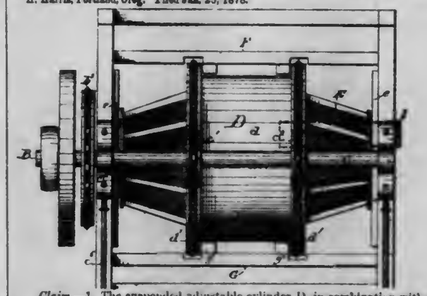


Claim.—1. The combination, with the shovels a a' of a transplanter or post-hole digger, of the scrapers C, thrust down the inside of said shovels by the opening of the handles, substantially as specified.

2. The combination, with the post-hole digger a a' B, of the toggle-jointed rods d d', the diverging spring-rods D D', and the scraping-blades C C, substantially as specified.

3. The combination, with the transplanter a a' B, of the rods d d', rule-jointed together, and provided with a stop, s, the diverging spring-rods D D', and the scrapers C on the ends of the said rods, substantially as specified.

209,838. MILLS FOR GRINDING ORE. William C. Salmon, John F. Salmon, and William H. Harris, Portland, Oreg. Filed Jan. 25, 1878.



Claim.—1. The suspended adjustable cylinder D, in combination with the crushing-cylinder B, located within the suspended cylinder, substantially as described.

2. In combination with a suspended adjustable cylinder, an adjustable supporting-shaft, C, and the supporting-chains for holding the same, substantially as described.

3. In combination with a suspended cylinder, substantially as described, adapted to receive and hold the ore to be crushed, the revolving crusher, substantially as described, and mechanism, substantially as described, for adjusting the suspended cylinder to and from the crusher.

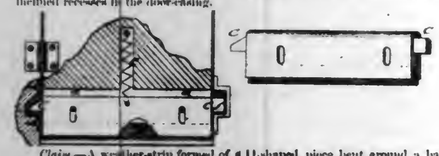
4. In combination with a cylinder having grooves d^3, as described, the removable dies, substantially as described.

5. In combination with the suspended cylinder and devices for holding the same in its proper position, the yielding spring g, as and for the purpose described.

6. In combination with the suspended cylinder, the bars P G, one of which is adjustable, as and for the purpose described.

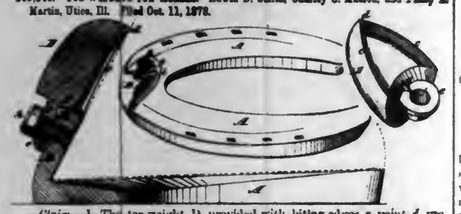
209,839. WEATHER-STRIPS. Nelson Smith, Vinton, Iowa. Filed Aug. 5, 1878.

Brief.—A weather-strip is formed of a U-shaped piece of metal bent about a bar whose ends project beyond the ends of the weather-strip, so as to enter inclined recesses in the jambs of the door-casing.



Claim.—A weather-strip formed of a U-shaped piece bent around a bar, C, the latter being made to project beyond the former at each end, so as to enter inclined recesses in the jambs of the door-casing, as described.

209,840. TOE-WEIGHTS FOR HORSES. Edwin D. Smith, Charley C. Mason, and Philip R. Martin, Utica, Ill. Filed Oct. 12, 1878.



Claim.—1. The toe-weight D, provided with biting-edges *c*, point *d*, projection *e*, having the eye *f*, and the V-shaped projection or lug *g*, in combination with the inclined stud B of the shoe A, and with the bolt *b*, substantially as and for the purpose described.

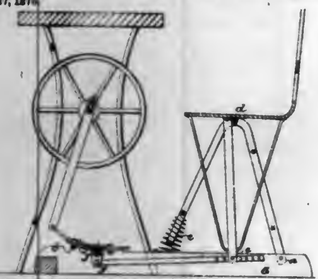
2. The shoe A, provided with the inclined stud B, having the threaded hole *a* and V-shaped screws or recesses *b*, in combination with the toe-weight D and with the bolt *b*, substantially as and for the purpose described.

209,841. OVERSHOE SANDALS, OR BOOTS. Calvin E. Town, Washington, D. C. Filed May 7, 1878.



Claim.—In a shoe or other form of outer foot-wear, a yielding metallic plate interposed between the inner and outer layers of the sole, said plate having teeth or prongs formed thereon, and bent at right angles to the plate, the points of the prongs or teeth being flush with the wearing-surface of the sole, substantially as set forth.

209,842. COMBINED CHAIR AND TREADLE-POWER. Joseph B. Underwood, Fayetteville, N. C. Filed July 27, 1878.



Claim.—1. A chair having a compound rocking movement, connected to and combined with the treadle of a sewing-machine or other mechanism, for the purpose of utilizing the movement of the body to assist in driving the treadle.

2. A rocking chair having its seat pivoted to its legs, its front legs held up by springs, and provided with a connection for the treadle of a machine, substantially as described.

3. A chair arranged to rock on its hind legs, and having a second set of pivots for the seat, combined with the treadle, a connecting-rod, and a frame or projection rigidly attached to the chair-seat, and connected with said treadle by the connecting-rod, substantially as described.

4. The base-bars G G, having notches *b* to receive the treadle-rod, in combination with the chair and sewing-machine, as described.

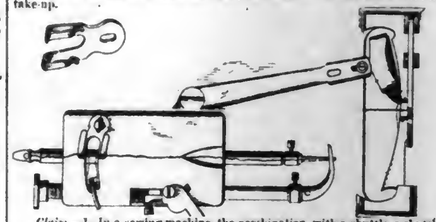
5. The saddle *e*, having in the middle an arch, *f*, with pendent projection *g*, in combination with the treadle and a connecting-rod for operating the same, as described.

6. The chair-seat pivoted at *d* to a rocking frame, and made vertically adjustable, substantially as described.

7. The chair-seat pivoted at *d*, and having a pendent frame or projection, in combination with the frame pivoted at its rear upon its legs and sustained in front upon springs *e e*, together with the connecting-rod I and the treadle C, substantially as and for the purpose described.

209,843. SEWING-MACHINES. William W. Wells, Norwalk, Ohio, assignor to the Dauntless Manufacturing Company, same place. Filed July 17, 1878.

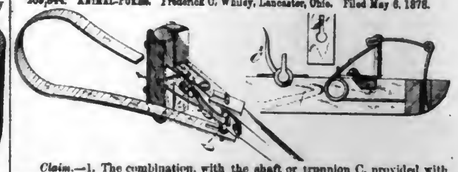
Brief.—The improvements consist, first, in a shuttle-race the inner face of which is provided with an inclined abutment projecting within the same at a point corresponding to the end of the stroke of the shuttle, and, second, in a staple slotted at one end, so as to be adjustable, and provided at the other end with parallel horizontal arms, which are bent back to form spring-loops to receive the thread, said staple being adapted to operate in connection with the take-up.



Claim.—1. In a sewing-machine, the combination, with a shuttle, a shuttle-lever, and shuttle-carrier, rigidly secured thereto, of a shuttle-race the inner surface or track of which is provided with an inclined abutment, projecting within the same at a point corresponding to the extreme throw or travel of the nose of the shuttle, whereby the nose of the shuttle will be forced snugly against the shuttle-carrier at the end of every stroke of the shuttle-lever, substantially as set forth.

2. The combination, with the take-up of a sewing-machine, of a sheet-metal staple provided with an elongated slot in one end, and its opposite end bifurcated and bent back into loops, the extreme ends of which are resilient, to allow of the introduction and retention of the thread within said sheet-metal looped guides, substantially as set forth.

209,844. ANIMAL-POKER. Frederick C. Whitley, Lancaster, Ohio. Filed May 6, 1878.

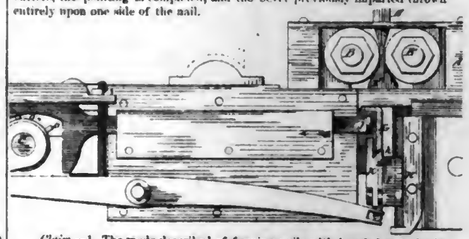


Claim.—1. The combination, with the shaft or trunnion C, provided with the locking-spurs, of the tapering or wedge-shaped lever C', for rotating said shaft, as described.

2. The combination, with the shaft or trunnion C, provided with the locking-spurs and lever, of the flanged slotted slide for locking the lever, substantially as described.

209,845. MACHINES FOR THE MANUFACTURE OF HORSESHOE-NAILS. Job Whysall, Jr., and Charles M. Merrick, New Brighton, Pa. Filed May 11, 1878.

Brief.—The nail is fed through hopper into the rolls, by which it is drawn, flattened, and beveled on both sides of the point. It then falls into jaws of a vertically-reciprocating holder, by which it is properly presented (at one side of a vertical plane passing through the center of the dies) to the reciprocating V-shaped cutter, through the action of which, in conjunction with the stationary cutters, the pointing is completed, and the bevel previously imparted thrown entirely upon one side of the nail.



Claim.—1. The mode described of forming nails with beveled ends, by indenting the shank from both sides, and then by the process of shearing setting the point to leave the bevel only on one side, as set forth.

2. The combination, with horseshoe-nail-forming dies, of projections *x'*, arranged across the grooves thereof, to indent the front and back of the flat nail-blank near the point, as set forth.

3. The combination of the forming and drawing rolls, griper, and operating devices, arranged, as described, to receive the blank as it falls from the dies, carry the same to a position opposite the cutter, and hold it until sheared, as set forth.

4. The combination of the rolls, cutter below and at one side the center thereof, and the griper J, reciprocating substantially as set forth.

5. The combination of the reciprocating carriage I, fixed jaw *g*, and movable jaw *g'*, constructed and arranged to carry the nail laterally below the rolls, substantially as and for the purpose set forth.

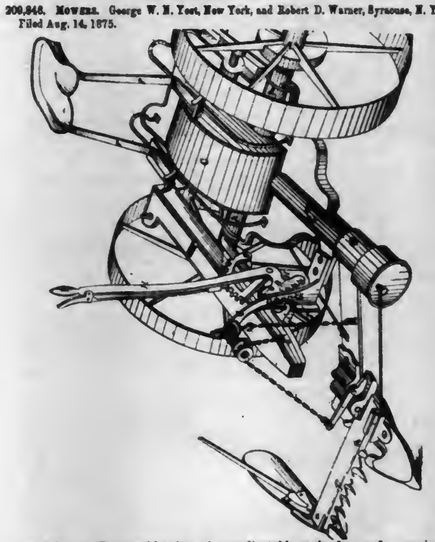
6. The combination of the reciprocating carriage, its jaws, spring, and lever K, and slide L, having a lug, *j*, substantially as set forth.

7. The combination of the reciprocating cutter *p*, plates *c e*, and bevel-ended pins *d d*, arranged on opposite sides of the opening between the plates, substantially as and for the purpose set forth.

8. The stripper G, combined and operating with the cutter with a movement independent thereof, substantially as and for the purpose set forth.

9. The combination of the rolls and tube, consisting of the parts E E', one having arms embracing the other, and adapted to receive and round out the nail-blank, substantially as set forth.

209,846. MOWERS. George W. H. Yost, New York, and Robert D. Warner, Syracuse, N. Y. Filed Aug. 14, 1875.

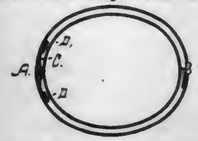


Claim.—1. The combination of an adjustable main frame of a mowing-machine, provided with an operator's seat behind the main axle, and with an upward-extended horn on the fore end, with a lifting-lever connected with the draft-tongue and such main frame, and with a lifting-chain attached to such draft-tongue, and extended around and over a pulley on the upper end of such horn, and connected with the finger-bar, substantially as described.

2. The combination of a lifting-lever, connected with both the adjustable main frame and draft-tongue of a mowing-machine, with a lifting-chain attached to such draft-tongue, and extended around and over a pulley on the upper end of a vertical horn on the fore end of such main frame, and connected with the finger-bar, substantially as described.

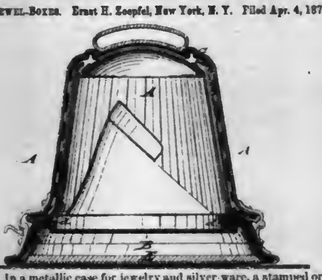
3. The combination of a lifting-lever, connected with both the adjustable main frame and draft-tongue of a mowing-machine, with a lifting-chain attached to such draft-tongue, and extended around and over a pulley on the upper end of a vertical horn on the fore end of such main frame, and attached to a tilting-lever pivoted so as to rest and work on the inner end of the finger-bar, substantially as described.

209,847. SPRING-BRACELETS. Frederick Young and Edwd. C. Keer, Newark, N. J. Filed Sept. 28, 1878.



Claim.—The bracelet having the loose spring C inserted in the joint end A, and passing between the hinge and the inside or lining, and adapted to close the bracelet, in combination with the stops D, substantially as specified.

209,848. JEWEL-BOXES. Ernst H. Zoepfel, New York, N. Y. Filed Apr. 4, 1878.



Claim.—1. In a metallic case for jewelry and silver-ware, a stamped or spun top section having an annular top rim or bead, with a depressed center portion within the same for the ornamental cap or mounting, substantially as shown and described.

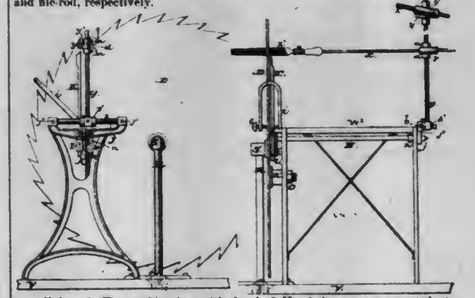
2. In a jewelry-case, the metallic top section, A, having perforations or holes, and a leather or flexible covering glued or cemented thereto, as and for the purpose set forth.

3. In a metallic case for jewelry, a bottom section made of an exterior molding and depressed center portion, in combination with a bottom filling and an exhibiting-block secured into the depressed center portion, substantially as set forth.

4. In the metallic jewelry-case, a spun or stamped bottom section having an exterior molding, an annular seat for the top section, and an interior depressed portion, substantially as specified.

209,849. SAW-FILING MACHINES. David K. Allington, East Saginaw, Mich. Filed Mar. 27, 1877.

Brief.—A horizontal rocking shaft supports at one end the file-guiding bracket, and at the other a pointer to show the proper relation of the file to the tooth to be filed. The bracket is composed of three parts—one rigidly secured to the rock-shaft, and having a transverse arm, on which the second part is pivoted, and also slides laterally, bearing the upright, on which is the third part itself, composed of two parts pivoted together and sliding on the upright and file-rod, respectively.



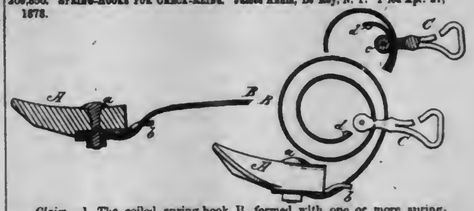
Claim.—1. The combination, with the shaft H, of the arm *g*, supported at one end of the same and guiding the file-carrying arm, and the guide-rod E at the opposite end of such shaft, placed parallel to the said arm, substantially as and for the purpose set forth.

2. The combination, with the arm *g*, vertically adjustable in a block, and adapted to be moved laterally and to be inclined in a vertical plane, as desired, of the block *y'*, revolving upon such arm, and the block *y*, pivoted to the block *y'*, and guiding the file-carrying arm, substantially as and for the purpose set forth.

3. The combination, with the shaft H, of the brackets *j'*, bar *b*, block *b'*, sliding upon such bar, rod *g*, adjustable in said block, blocks *y y'* on the said rod, and the file-carrying arm, constructed and arranged substantially as described and shown.

4. The combination of the studs *f* on the face of the standard W, and the swinging loop-clamp *i*, having set-screw *i'*, constructed and arranged substantially as described and shown.

209,850. SPRING-HOOKS FOR CHECK-REINS. James Annin, Ir. Roy, N. Y. Filed Apr. 27, 1878.



Claim.—1. The coiled spring-hook B, formed with one or more spring-plates, and provided with a cross-piece, *d*, at its extremity, as and for the purpose specified.

2. The saddle A, in combination with the spring-hook B, provided with end cross-piece, *d*, and loop *b*, substantially as and for the purpose set forth.

3. The combination of the saddle A, coiled spring-hook B, and rein-hook C, provided with friction-roller *c*, for the purpose of retaining a check-rein in position, as specified.

209,851. COVERS FOR GOBLETS OR CUPS. Hudson H. C. Arnold, Lebanon, Tenn. Filed Sept. 19, 1878.



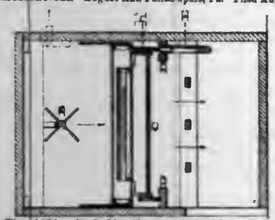
Claim.—1. The combination, with goblets and cups for beverages, of a cover which has a sliding mouth-piece, operated by a self-acting lever, whereby said mouth-piece may be drawn back sufficiently to allow the beverage to flow freely into the mouth, and at the same time prevent the mustache coming in contact with the beverage, and again closing up to prevent flies getting into the contents of the goblet or cup, substantially as set forth.

2. The combination of cover B, finger-rest C, and tongue D, substantially as set forth.

3. The combination of mouth piece E, self-acting lever F, and arms G G, substantially as set forth.

4. The combination of cover B, finger-rest C, tongue D, sliding mouth-piece E, self-acting lever F, and arms G G, substantially as and for the purpose set forth.

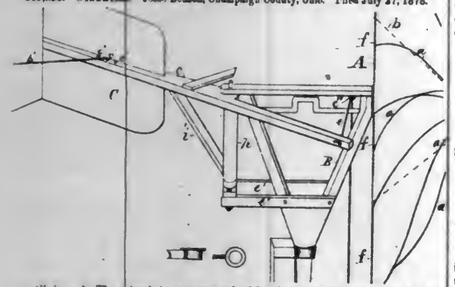
209,852. REFRIGERATORS. August Axt, Philadelphia, Pa. Filed Aug. 19, 1878.



Claim.—1. The shifting ice-holder C, provided with water-pipe *h*, in combination with the supporting and channeled ways D, provided with a discharge pipe or pipes, E, substantially as and for the purpose set forth.

2. The refrigerator-case having a mechanically-operated fan, B, in combination with the shifting ice-holder C, with water-pipe *h*, and the supporting and channeled ways D, with discharge pipe or pipes E, all substantially as and for the purpose set forth.

209,853. WINDMILLS. Jesse Benson, Champaign County, Ohio. Filed July 27, 1878.

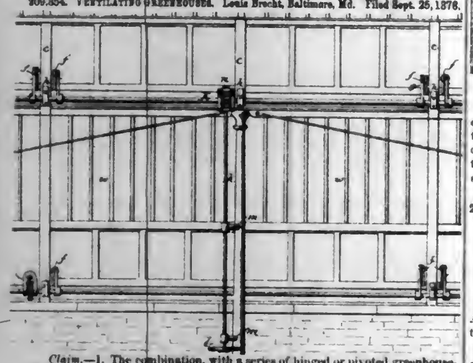


Claim.—1. The wheel A, constructed with a large conical body, having the spiral flanges or wind-guides *a* rigidly affixed thereto, and gradually increasing in their width from the apex of the cone *b* to its base-line, where they are bent out flat at right angles with the axial line of the wheel, so as to form the extended angular points *f*, as and for the purpose set forth.

2. A wind-wheel in which its rudder or guide-vane extends rearward in line with the main shaft, is pivoted vertically to the fork-frame, its stem extended forward across the top of said fork on one side, so as to allow a horizontal movement through the arc of a circle in the opposite direction only, and having its rear end bent at an angle outward from the direction of such movement, to adapt it to operate more readily in folding up toward the wheel, for the purpose shown and specified.

3. In combination with a bent governor-vane, C, as described, the adjustable brace *b'*, as and for the purpose set forth.

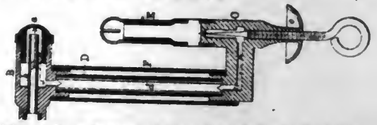
209,854. VENTILATING GREENHOUSES. Louis Brecht, Baltimore, Md. Filed Sept. 25, 1878.



Claim.—1. The combination, with a series of hinged or pivoted greenhouse-windows, of a movable shaft, bar, or part, connected with said windows, respectively, by intermediate connections, and provided with a series of gear-teeth and a rotatory operating rod or handle mounted in fixed bearings, and provided with a suitable gear engaging with the gear-teeth of said shaft, bar, or part, substantially as and for the purpose set forth.

2. The combination of the swinging greenhouse-windows, their connected rods *f*, the horizontal shaft provided with the arms *h* and gear-wheel I, and the worm K, engaging with said gear and provided with a suitable operating rod or handle.

209,855. VAPOR-BURNERS. William Brenlan, Baltimore, Md., assignor of one-half his right to R. F. Danforth, same place. Filed June 22, 1878.



Claim.—1. In a vapor-burner, the generator B, having the button *a* and internal pipe, *b*, adapted to convey fluid within said button, a fluid-supply pipe uniting with the generator, a burner and a vapor-supply pipe, uniting the generator and burner, all combined substantially as specified.

2. The generator B and valve-chamber C, united by a connection consisting of the pipes D and F, the former inclosing the rod *d*, all substantially as specified.

209,856. VEHICLE-WHEELS. Thomas Brown, Forest Lake, assignor of one-half his right to M. B. Wright, Susquehanna Depot, Pa. Filed Oct. 26, 1878.



Claim.—A metallic wheel having a metal-cased hub, A, the metallic rim or felly C, and the double-forked spokes B, whereof the branches *l* spread directly outward to the rim, and the branches *l'* spread laterally inward to each end of the hub-case, substantially as specified.

209,857. BOTTLE-STOPPER FASTENERS. John Bryan, Canton, Ill. Filed July 2, 1878.



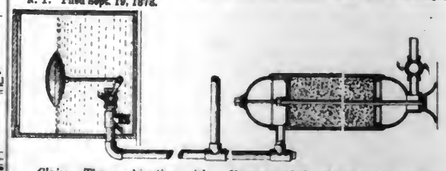
Claim.—1. The combination of handle B, provided with a stopper, and the wires E, each bent as shown, and suitably connected to its respective wings H and to a bottle, substantially as and for the purposes set forth.

2. The stopper A, provided with gasket C and handle B, having wings H, in combination with wires E, bent as shown, and suitably attached at one end to said wings, and at the other by suitable connections to a bottle, substantially as and for the purposes set forth.

3. The combination of stopper A and handle B, wires E and F, wires E being bent, as shown, and suitably attached to wings H and to wire F, substantially as and for the purposes set forth.

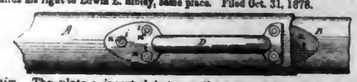
4. The stopper more particularly hereinbefore described—viz., provided with gasket C and handle B, provided with recessed shank rotating in a vertical recess in the stopper A *a*—in combination with the wires E, bent as shown, and suitably attached to the bottle, substantially as and for the purposes set forth.

209,858. APPARATUS FOR SUPPLYING AND FILTERING WATER. Henry C. Bull, Brooklyn, N. Y. Filed Sept. 19, 1878.



Claim.—The combination, with a filter provided with suitable inlet and outlet pipes, a tank into which said outlet-pipe leads, a valve or cock operated through a float in the tank, and an inwardly-opening check-valve, of a waste or escape passage and a cock or valve for establishing communication between the inlet-pipe and filter, or between said filter and the waste or escape passage, substantially as and for the purpose specified.

209,859. ATTACHING HANDLES TO HOSE. Cornelius Callahan, Chelsea, Mass., assignor of two-thirds his right to Edwin E. Bibley, same place. Filed Oct. 31, 1878.



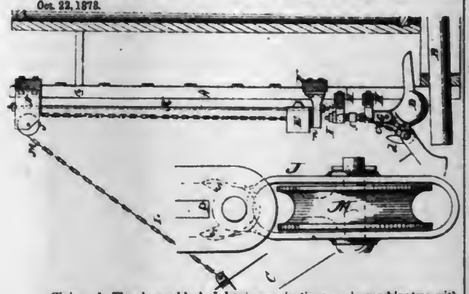
Claim.—The plate *a*, inserted between the outer and inner textile fabrics, A B, in combination with the handle D and rivets *a*, whereby the piercing of the water-proof coating C is avoided, substantially as set forth.

209,860. TEXTILE-FABRIC HOSE-PIPE. Cornelius Callahan, Chelsea, Mass., assignor of two-thirds his right to Edwin E. Bibley, same place. Filed Oct. 31, 1878.



Claim.—A fabric hose-pipe of equal diameter throughout, substantially as described.

209,861. SWING-PIPES FOR WATER-TANKS. James Castelo, Cedar Rapids, Iowa. Filed Oct. 22, 1878.



Claim.—1. The sheave-block J, having projections *s s*, in combination with feather P, weight E, and pipe C, substantially as and for the purposes described.

2. The weight D, hinged to the swivel I, and having hook *d*, and combined with pipe C, substantially in the manner set forth.

3. In combination with the swivel I, arm *t*, the chains *c c*, and swing-pipe C, substantially as described.

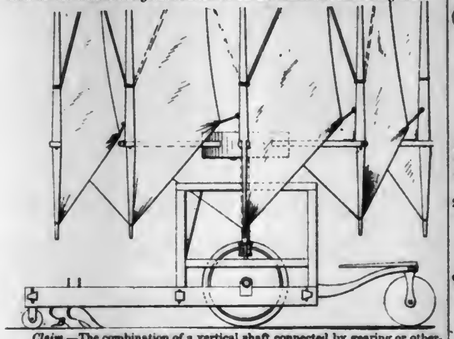
4. The combination of swing-pipe C, swivel I, chain or bail *c c*, weight D, and conduit-pipe B, substantially in the manner and for the purposes set forth.

5. The combination of pipe C, sheave M, cord or chain L, weight E, and cushion *n*, substantially as set forth.

6. The combination of pipe C, sheave M, weight E, and guide rod K, substantially in the manner and for the purposes set forth.

209,862. WIND-ENGINES. John Cook, Kirkwood, Ill. Filed May 29, 1878.

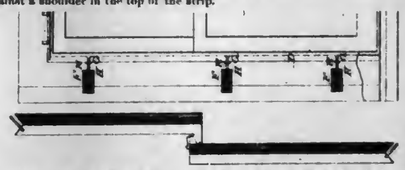
Brief.—The masts are hinged to the horizontal arms, in order that a suitable number of the former may be folded down to a horizontal position, when the force of the wind is too great to allow of all the masts and sails being used.



Claim.—The combination of a vertical shaft connected by gearing or otherwise with machinery to be driven, a hub with a series of horizontal radiating arms secured to said shaft, and a series of masts provided with sails and hinged in the outer ends of the arms, substantially as and for the purposes herein set forth.

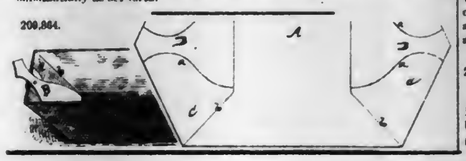
209,863. WINDOWS. Daniel E. Cooke, Brantford, Ontario, Canada, assignor, by mesne assignment, of one-half his right to Robert Grigor. Filed June 11, 1878.

Brief.—Provides V-shaped sashes and guides. The guide-strips are yielding on one side by means of screws, nuts, and springs. Pins in the screws behind the strips hold the screws in place. The strips are limited in their forward movement by removable pieces in the top of the window-frame setting against a shoulder in the top of the strip.



Claim.—The sash-frame K, having V-shaped sides, combined with the window-frame, having on one side stationary V-shaped slides, and on the other the adjustable V-shaped slides D, springs F, screws E, pins G, and nuts H, all substantially as set forth.

209,864.



209,864. FRUIT-VENDERS' DISHES. George O. Cole, Hillsdale, N. J. Filed Aug. 29, 1878.

Claim.—A butter or fruit dish formed of a blank, A, cut at each end to form the center tongue, B, and side wings, *c c*, the tongues, B B forming, when the dish is completed, projecting handles at the ends, substantially as herein set forth.

209,865. SWEAT-BANDS FOR HATS. James W. Covey and Henry Chambury, Newark, N. J. Filed Nov. 6, 1878.



Claim.—1. An improved sweat-band for hats, consisting of a strip or band of leather, enameled cloth, or similar suitable material, having its outer edge stiffened with hatters' varnish or similar material, turned over and curved or bent, and set to form an outwardly turned flange, substantially as described.

2. A sweat-band consisting of strip or band of leather, enameled cloth, or similar suitable material, and a lining-strip charged with hatters' varnish or similar material, the upper edge of the former being turned over to embrace the latter, and thus form a doubled outer edge, which edge is curved or bent, and set to form an outwardly turned flange, substantially as described.

3. The band 2 and strip 3, united by a seam, 4, and having their upper edges charged with hatters' varnish, and curved or bent to form the outwardly-turned flange 7, substantially as described.

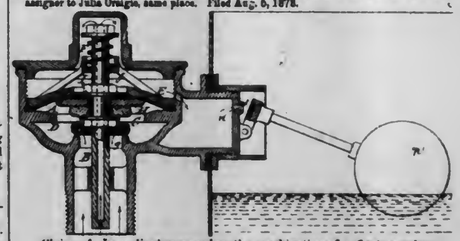
4. A sweat-band for hats, consisting of the band 2 and lining-strip 3, the latter having an extended tongue, 9, whereby the meeting edges of the said band are firmly secured together, substantially as described.

209,866. HAME-FASTENERS. Geo. A. Coulter, Omaha, Nebr. Filed Oct. 4, 1878.



Claim.—The combination, with loop B and retaining-hook C, of the hooked lever D, bent at the angle specified, and having the projection *d* and its eye *e* extending back of same toward the median line of the shorter arm, all as shown and described, to operate as set forth.

209,867. DIAPHRAGM-VALVES FOR WATER-TANKS, &c. Hugh H. Craigie, Stamford, Conn., assignor to Julia Craigie, same place. Filed Aug. 6, 1878.



Claim.—1. In a diaphragm-valve, the combination of a float or valve, a, governing a discharge-orifice above the diaphragm, and a valve-disk, C, governing a discharge-orifice below the diaphragm, with the movable actuating-diaphragm A, constructed of flexible leather, substantially as and for the purpose set forth.

2. In a diaphragm-valve, a movable diaphragm, A, supported at its circumference by a fixed annular plate or plates, D E, and at its center by a movable central disk or disks, I H, which, at the end of the diaphragm's stroke, coincide and present a continuous surface and solid support, on which the diaphragm becomes cushioned and protected from the pressure of the water, substantially as herein shown and described.

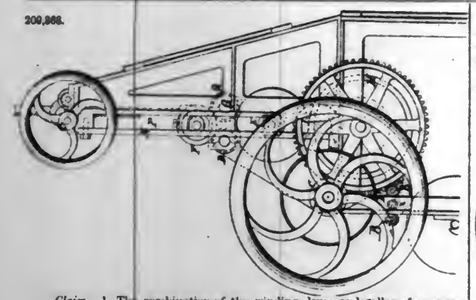
3. The combination, in a diaphragm-valve, of the actuating-diaphragm A, dividing the valve-cavity into upper and lower pressure chambers, a valve-disk, C, controlling the admission of the pressure below the diaphragm, with a tubular valve-stem, B, on which the said diaphragm and disk are sustained, and which conveys the water-pressure from beneath the said disk to the chamber above the diaphragm, substantially as and for the purpose set forth.

4. In a diaphragm-valve, the combination of the actuating-diaphragm A and the disk C, which controls the admission of water below the diaphragm, with the auxiliary spring F, acting upwardly on the diaphragm and valve to counterbalance the weight thereof, and thus assist the unseating of the valve and render the diaphragm more sensitive to the water-pressure, substantially as set forth.

209,868. MACHINES FOR CUTTING AND ROLLING PAPER. Ernest Dangeiss, Brussels, Belgium. Filed Aug. 10, 1878.

Brief.—The web of paper passes over the tension-rolls to the pressure-roll D, where it is cut; thence to the bobbins on roll E, where the strips are wound by the drum H. The rolls D and G rest upon the bobbins, and the blades Q guide the paper onto them.

209,868.



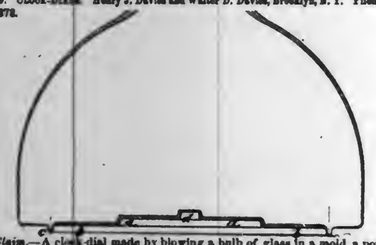
Claim.—1. The combination of the winding drum and roller of a paper-winding machine with a pressure-roll, D, and a roll, D, provided with rings or blades, the said pressure-roll and roll G having bearings in the same adjustable plates or frame, substantially as set forth.

2. The combination of a winding-roller, E, cutter-roll F, and roll G, provided with rings or blades for guiding the rolls of paper, substantially as specified.

3. The combination of a pressure-roll, guide-roll G, and cutter-roll with the winding-roll of a paper-winding machine.

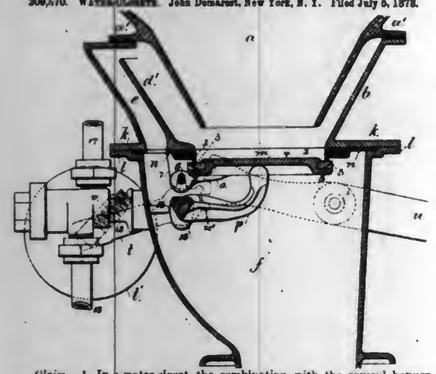
4. The combination of winding mechanism and a winding-roll, E, with guides P, provided with removable plates N, as and for the purpose set forth.

209,869. CLOCK-DIALS. Henry J. Davies and Walter D. Davies, Brooklyn, N. Y. Filed June 4, 1878.



Claim.—A clock-dial made by blowing a bulb of glass in a mold, a portion of which conforms to the contour and profile of the dial, and afterward breaking away the superfluous portion of the said bulb, substantially as herein described.

209,570. WATER-CLOSETS. John Demarest, New York, N. Y. Filed July 5, 1878.



Claim.—1. In a water-closet, the combination, with the conical hopper *b* and receiver *f*, of the separate plate *n*, introduced at the joint between the hopper and receiver, and having an opening beneath the lower end of the basin *a*, and the valve *m* closing upwardly beneath such plate *n*, substantially as set forth.

2. The valve *m*, with its spindle within the receiver *f*, and the receiver and plate, having an opening above the spindle, in combination with the overflow-dam *d'* and the water-way *e*, which empties behind the valve, for the purposes and as set forth.

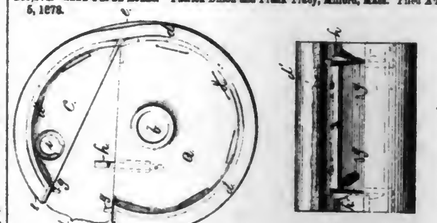
3. The receiver *f* of the water-closet, the valve-seat, and the overflow *s* above the valve-seat, in combination with the valve *m*, having an elastic face and loose hinge, and the arm *p*, acting against the center of the valve, the axle *r*, and the actuating-arm of the axle outside of the receiver *f*, substantially as set forth.

4. The combination, with the valve or pan in a water-closet, of the actuating pull-lever *u*, pinion-teeth *u'*, counterpoise *t'*, axle *r*, and lever-arm *p*, substantially as set forth.

5. The axle *r*, introduced within the hopper or container of the water-closet, and having a shoulder, 17, and washer 18, in combination with the plate 9, against the inside of which the washer rests, and the spring 10, as and for the purposes set forth.

6. The case *v* of the water-closet valve, provided with a screw at one end around the stem 16, in combination with the water-closet receiver *f*, into which the stem passes and the case screws, and the cam 15 on the axle *r* within the receiver, acting against the stem 16, substantially as set forth.

209,871. SAND-PAPER ROLLS. Patrick Dillon and Frank Tracy, Milford, Mass. Filed Aug. 5, 1878.



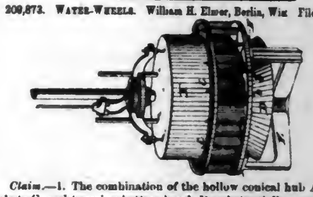
Claim.—A sand-paper roll or disk composed of two sections, A and C, and the elastic cushion *d*, when one of the sections is greater than the other, so that the greater may receive the axis *b*, one of the parts having the spring-catch *h* and the other the catch and finger-orifice *i*, and when the cushion is wire-stitched to the sections, as and for the purpose set forth.

209,872. SWEAT-LEATHERS FOR HATS. George H. Dimond, Bridgeport, Conn. Filed Oct. 31, 1878.



Claim.—The combination of a lapped and stretched edge sweat-leather with a covered reed, united and formed substantially as described.

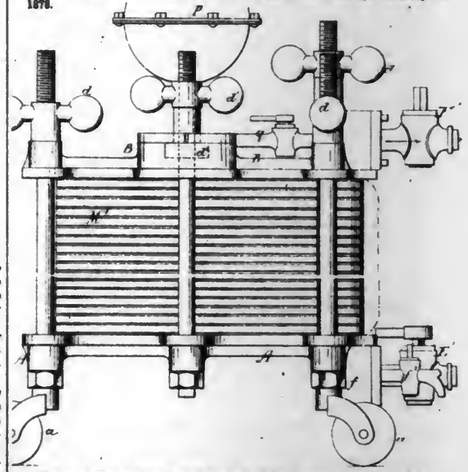
209,873. WATER-WHEELS. William H. Elmer, Berlin, Wis. Filed July 25, 1878.



Claim.—1. The combination of the hollow conical hub A, shaft B, inclined buckets C, and tapering bottom band, D, substantially as and for the purposes herein set forth.

2. The combination, with the wheel-casing and top cap, of the gate L, with rods *k*, spider J, nuts *i*, and guide-rods *k*, substantially as and for the purposes herein set forth.

209,874. FILTERING APPARATUS. Lorenz A. Enzinger, Worms, Germany. Filed Sept 30, 1878.



Claim.—1. The combination of the top and bottom plates, with their pockets, with screens and filtering-plates, having openings corresponding with the said pockets, and forming therewith chambers E and F, which communicate through openings *o*, and through the screens with filtering-sheets confined between the screens, all substantially as specified.

2. In a filter, the series of screens and intermediate filtering-sheets, having openings which assist in forming chambers E F, and passages so arranged that the liquid cannot pass from one chamber to the other excepting through the filtering-sheets, as specified.

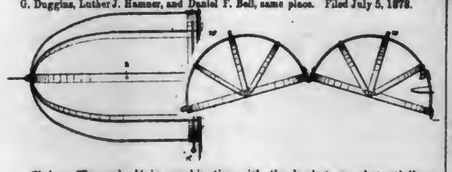
3. A filter-screen consisting of a frame having two sheets of wire-gauze and openings, o^3, one of which communicates through openings in the frame with the space between the screens, as set forth.

4. The combination of the series of removable filter-screens with a guide-plate, H.

5. The combination of a filtering apparatus having inlet and outlet chamber E F with devices, substantially as described, whereby the gas from aerated waters under filtration may pass from one chamber to the other, while the water is compelled to pass through the filtering material.

6. The combination of the filter-chambers with chamber P, float Q, carrying a valve, *r*, and the pipe *q'*, all substantially as specified.

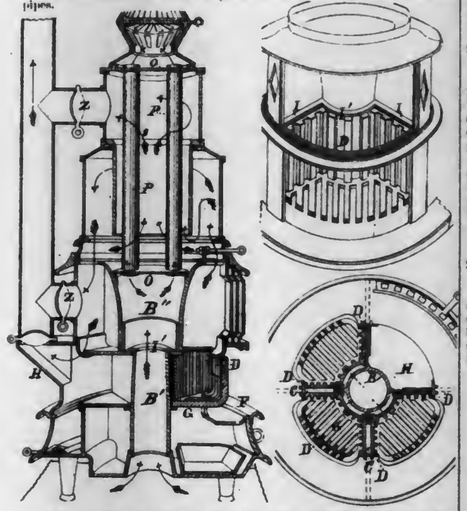
209,875. HAY RAKER AND STACKER. Reuben B. Eubank, Jr., Miami, Mo., assignor to Geo. G. Duggins, Luther J. Hamner, and Daniel F. Bell, same place. Filed July 5, 1878.



Claim.—The rods *h'*, in combination with the basket *w*, substantially as described, and for the purposes set forth.

209,876. HEATING-STOVES. Lewis Fagin, Cincinnati, Ohio. Filed Sept. 16, 1877.

Brief.—Arranged around a central air-flue are four compartments, three of which are separate fire-places and the fourth a smoke-exit. The central air-flue, in combination with reverberating-chamber, pendent cylinder, and air-pipes.



Claim.—1. The separated independent grates and fire-places, arranged around a central air-heating flue, in combination with a single smoke-exit, H, substantially as and for the purpose described.

2. The vertical division of the stove into four compartments, three of which are occupied as independent fire-places and the fourth as a smoke-discharging flue, substantially as described.

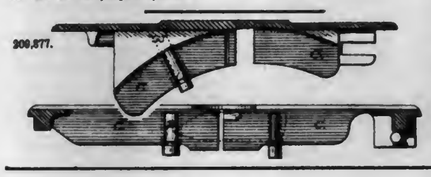
3. The combination of the conical section B″ of the air-flue, which serves as a deflector of the products of combustion, with the annular reverberatory chamber and pendent cylinder R, arranged substantially as described, for the purpose specified.

4. The air-tubes B′, B″, and F, constructed as described, in combination with the diaphragms O, substantially as and for the purpose described.

3. The combination of the vertically-ledged linings D with the projecting deflectors I I′, arranged above the air-spaces, substantially as described, for the purpose specified.

6. The cog-toothed liners D, in combination with the front, sides, and back of the grate of the stove, the front liners being applied to the upper part only of the grate, the same constructed to be applied and removed in the manner and for the purpose specified.

209,877.

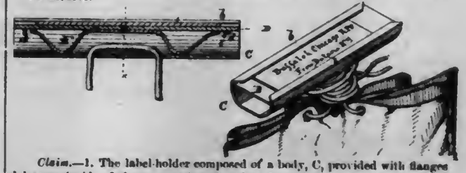


209,877. SHUTTLE-RACES FOR SEWING-MACHINES. John M. Fair and Wm. Hirss, Buffalo, N. Y. Filed Sept. 25, 1878.

Brief.—The front side of the shuttle-race is provided with friction-rollers journaled in adjustable bearings. The rollers serve to lessen the friction of the shuttle, to deaden the noise of the same, and to facilitate its passage through the loop of the middle thread.

Claim.—In combination with the shuttle-race of a sewing-machine, one or more friction-rollers, over which the shuttle is adapted to traverse, substantially as and for the purpose specified.

209,878. MAIL-BAG FASTENER AND LABEL-HOLDER. H. B. Ferris, Batavia, N. Y. Filed Oct. 21, 1878.



Claim.—1. The label-holder composed of a body, C, provided with flanges *b b* on each side of the top opening, the plate D, and one or more springs, F, for holding the label, in combination with the bag and cord, all substantially as set forth.

2. The combination of the semi-tubular body C, provided with the flanges *b b*, the plate D, having lugs *e e*, the pins *d d*, and one or more springs, F, substantially as and for the purposes herein set forth.

209,879. HOG-CHOLERA COMPOUNDS. D. S. French, Delphi, Ind. Filed Oct. 7, 1878.

Claim.—A composition consisting of the following ingredients, to wit: Black antimony, Spanish brown, rosin, podophyllin, sanguinaria, leptandria, sulphate of iron, salpeter, alum, sulphur, charcoal, salt, poke-root, cayenne-pepper, and soft soap, in about the proportions and for the purposes set forth.

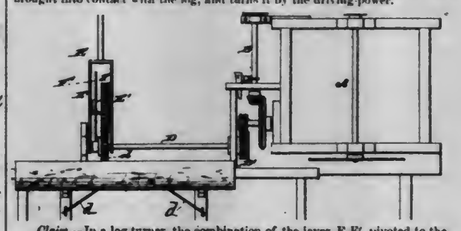
209,880. PROCESS OF COLORING PHOTOGRAPHIC PICTURES. Douglas F. Frink, New York, N. Y. Filed July 22, 1878.

Claim.—1. The process of fixing or producing photographic pictures on glass which consists in treating an unmounted photograph to a bath in a compound of sulphuric ether, alum, and water, in about the proportions specified, and then securing it, face downward, to a plate of glass by means of a paste composed of rice-powder, sulphate of quinine, and water, in substantially the proportions specified, for the purposes set forth.

2. The process of producing colored photographic pictures on glass which consists in mounting the picture, face downward, on the glass, and treating it with a compound of castor-oil or vaseline, aux vesica, tincture of capsicum, and oil of sassafras, mixed in substantially the proportions named, and applying color either to the paper of the picture or to a glass behind it, substantially as set forth.

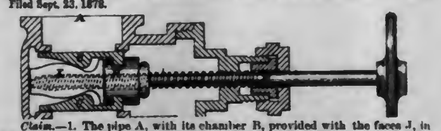
209,881. LOG-TURNERS. Silas W. Gatts and M. L. Gatts, Williams Township, Wood County, W. Va. Filed Oct. 12, 1878.

Brief.—Upon a shaft parallel to the saw-carriage is hung a frame, in which is a toothed wheel geared to the shaft, which is so connected by suitable mechanism with the saw-shaft as to be operative or not, at pleasure. The turner having been thrown into gear, the frame, by means of a handle or lever attached thereto, is revolved about the shaft on which it swings till the toothed wheel is brought into contact with the log, and turns it by the driving-power.



Claim.—In a log-turner, the combination of the lever E E′, pivoted to the shaft D, and carrying the wheels F F′, with the shaft D, having gears *d* and D′, connected by adjustable gearing and driving mechanism with the saw-shaft A, substantially as set forth.

209,882. WATER-GATES. Philip Giovannini and Bruno Bunzerscheidt, San Francisco, Cal. Filed Sept. 23, 1878.



Claim.—1. The pipe A, with its chamber B, provided with the faces J, in combination with the disks or gates C, moving loosely across the passage and forced to a bearing after they reach the proper point by means of the cam-block L, surrounding the end of the valve-rod, and raised by the valves and screw, substantially as herein described.

2. The combination of the disks or gates C, provided with the flanges K K, fitted to be moved across the water-pipe A by means of the screw-stem F and nut H, said disks having the lugs M and operated by the cam-block L, surrounding the end of the valve-rod, and raised by the valves and screw, substantially as and for the purpose herein described.

209,883. Manufacture of Wagon-Axles. Theodor Graser, Oswego, N. Y. Filed Aug. 30, 1878.

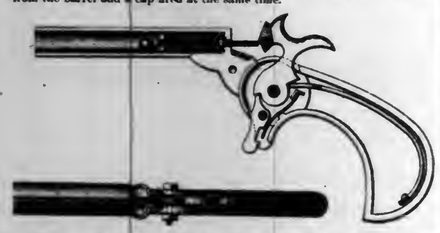


Claim.—1. The within-described mode of forming from one tube a seamless hollow axle with tapering spindles, by making on top of the ends of the tube the V-shaped excision E, and joining the edges of said excision by a swage of the requisite taper, substantially as specified.

2. The within-described mode of forming from one tube a seamless hollow axle having tapering spindles with screw-threads on their end, by making on top of the ends of the tube the V-shaped excision E, then joining the edges of said excision by a swage of the requisite taper, and further compressing and upsetting the end by a swage of smaller circumference, substantially as set forth.

209,884. Toy Pistols. Louis Gregot, Brooklyn, N. Y., assignor to himself and Christian L. Hines, same place. Filed Aug. 23, 1878.

Brief.—By means of the double-faced hammer a missile may be projected from the barrel and a cap fired at the same time.

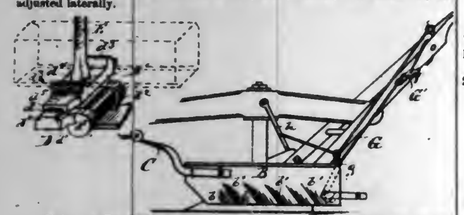


Claim.—1. In a toy pistol, a hammer having a double head, one side being arranged for shooting off a ball or its equivalent and the other for exploding a paper cap, in combination with a pistol constructed substantially as herein set forth.

2. In a toy pistol, the barrel provided with an interior spring-plunger and a cup arranged in rear of and at an angle with the line of the barrel, in combination with a double-headed hammer, substantially as and for the purposes herein set forth.

209,885. Plow Attachments. Martin Hain and David Hain, Hermann, Mo. Filed May 30, 1878.

Brief.—A fender having its lower edge serrated or cut, and the cut part bent so as to form teeth, between which are open spaces, through which soil passes to the plants. A casting for adjustably securing the forward end of the bar to which the fender is attached to plow-beam, whereby said fender may be adjusted laterally.

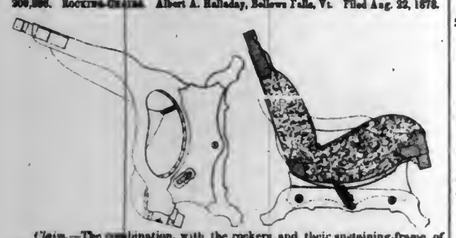


Claim.—1. The fender B, having its lower edge cut or serrated, and the cut part bent inward and outward, leaving open spaces *b'* between teeth *b*, as and for the purpose set forth.

2. The fender B, the connecting-bar C, having one end adjustably secured to the fender, the other end hinged to a casting consisting of the under and upper parts, D D', the former having slot *d*, bearing-edges d^1 d^2, the latter having bearings d^3 d^3, and d^4, the bolt E, having flaring head *e*, and plow-beam, all said parts being combined to operate as set forth.

3. The combination of the fender B, the arm or connecting-bar C, the upper and lower castings, D D', the bolt E, the cord G, cord-fastener G', the stop *h*, and the cord H, all said parts being constructed to operate in the manner and for the purpose set forth.

209,886. Rocking-Chairs. Albert A. Halladay, Bellows Falls, Vt. Filed Aug. 22, 1878.



Claim.—The combination, with the rockers and their sustaining-frame, of rocker-guards movable independently of said rockers and frame, and pivoted to the latter, and connected to the rockers by devices to admit of such guards being moved on their pivots by and with the rockers when in movement, all being substantially as set forth.

209,887. Coin-Holders. Orville S. Harmon, Brooklyn, N. Y., assignor of one-half his right to Frederick A. Phillips, New York, N. Y. Filed Oct. 18, 1878.



Claim.—1. A coin-holder composed of two rectangular frames, connected at the back, and adjustable relatively to each other, for the purpose of receiving and retaining coins, substantially as specified.

2. A coin-holder composed of two rectangular frames, connected at the back, and held in position at the front by a device connecting them together, substantially as specified.

3. A coin-holder composed of a single piece of wire, bent to form two rectangular frames, and having the ends fastened by being bent around the body, central bar, or common back of the said two frames, substantially as specified.

209,888. Coin-Holders. Orville S. Harmon, Brooklyn, assignor of one-half his right to Frederick A. Phillips, New York, N. Y. Filed June 18, 1878.



Claim.—1. A blank so cut or provided with incisions that it may be readily bent to form a number of connected arms or bars for holding coins between them, substantially as specified.

2. A blank cut or provided with incisions, forming connected arms or bars of a coin-holder, and provided with channeled or corrugated arms or bars, substantially as specified.

3. A blank cut or provided with incisions, forming connected arms or bars, and bent transversely at a short distance from the ends of the arms or bars, and bent at the ends of the bars inward about parallel with the main portions of the bars, substantially as and for the purpose specified.

4. A coin-holder made in one piece, composed of arms or bars connected by flexible hinge-like portions, and adapted to be adjusted for securing or releasing coins, substantially as specified.

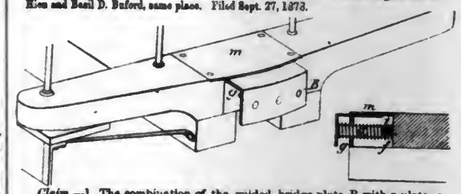
5. A coin-holder made in one piece, composed of arms or bars connected at both ends by flexible hinge-like portions, extending about parallel with the main portions of the arms or bars, and preferably channeled or corrugated, substantially as specified.

209,889. Stove-Handles. James M. Harper, El Paso, Ill. Filed Oct. 16, 1878.



Claim.—The handle B, having shanks *b b* and hooks *b' b'*, in combination with the hooks A A, having curved leaves *a* and bearing *a'*, as and for the purpose set forth.

209,890. Platforms for Railway-Cars. Phillip Hien, Rock Island, Ill., assignor to Sarah Hien and Basil D. Buford, same place. Filed Sept. 27, 1878.



Claim.—1. The combination of the guided bridge-plate B with a plate, *g*, and confining-plate *m*, all constructed and adapted to the platform of a car, substantially as described.

2. The combination of the bridge-plate B and its guide-rods *s s* with a platform having a recess or recesses for receiving the said pins and a plate, *g*, for guiding the latter, all substantially as specified.

3. The within-described bridge composed of two guided spring-plates, one on the platform of one car and the other on the platform of the adjoining car, and each plate having a rounded outer end, all substantially as set forth.

209,891. Electric Gas-Burners. Chas. H. Hinds, New York, N. Y. Filed Apr. 17, 1878.



Claim.—1. The gas-burner consisting of the asbestus body A, provided with a lava tip having an electrode embedded therein, in combination with the ring E, embracing said body, and provided with the spark-conductor D, substantially as set forth.

2. As a new article of manufacture, a replaceable gas-burner tip formed entirely of the composition known as "lava," and having embedded therein an electrode, one terminal of which is adjacent to the gas-orifice, while the other projects outwardly for attachment to a suitable conductor.

209,892. Refrigerating and Air-Cooling Apparatus. Daniel L. Holden, Philadelphia, Pa., and Edward W. Byrn, Washington, D. C.; said Byrn assignor to said Holden. Filed May 14, 1878.

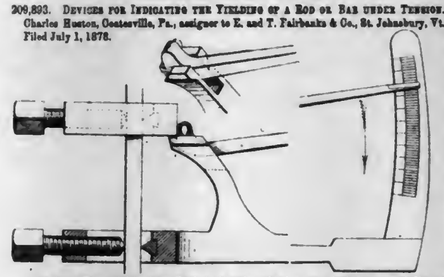
Brief.—The non-congealable liquid is refrigerated before being sprayed with the air into the receptacle B.

Claim.—1. The walled receptacle B, having at the top an open upper end, provided with a spray-pipe, and lateral openings at the bottom, shielded by deflectors upon the inside, substantially as and for the purpose described.

2. In combination with the receptacle B, constructed as described, the pockets F, located upon the sides of said receptacle for the formation of ice, substantially as described.

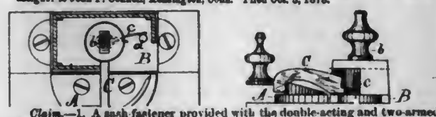
3. The receptacle B, having an open top and a trough-shaped bottom, with side openings covered by deflectors, in combination with the two concentrically-arranged pipes having registering outlet-orifices for the air and liquid, substantially as and for the purpose described.

209,893. Devices for Indicating the Yielding of a Rod or Bar under Tension. Charles Huston, Coatesville, Pa., assignor to E. and T. Fairbanks & Co., St. Johnsbury, Vt. Filed July 1, 1878.



Claim.—The within-described indicating device, consisting, essentially, of two clamps adapted to the rod or bar to be tested; in combination with a lever adapted to the said clamps, and a graduated scale carried by one of the clamps, and serving with the lever to determine the extent to which that portion of the bar between the clamps will be stretched under tension, all substantially as set forth.

209,894. Fasteners for Meeting-Rails of Sashes. Joseph W. Johnson, New Britain, assignor to John P. Connell, Kensington, Conn. Filed Oct. 3, 1878.

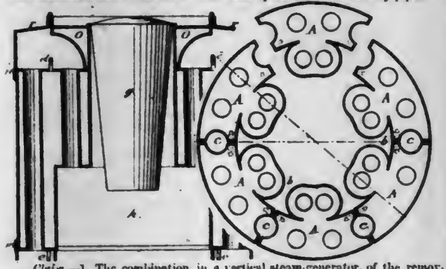


Claim.—1. A sash-fastener provided with the double-acting and two-armed helical spring, with its horizontal arms bearing against the sweep and base-plate, respectively, and adapted for throwing the sweep both endwise and sidewise, substantially as described.

2. The shouldered cam-plate A, in combination with the slotted and chambered sweep C, rear plate, B, and double-acting spring *c*, one arm of which engages a stop on the rear plate at one side of the sweep, and the other engages the sweep at one side of the chambered portion, substantially as described, and for the purpose specified.

209,895. Steam-Boilers. Thaddeus C. Jay, Titusville, Pa. Filed May 20, 1878.

Brief.—The sections of the boiler are removable. Each section is provided with semicircular grooves, so that when the sections are united they form direct and return flues. The steam and water spaces are connected by pipes.

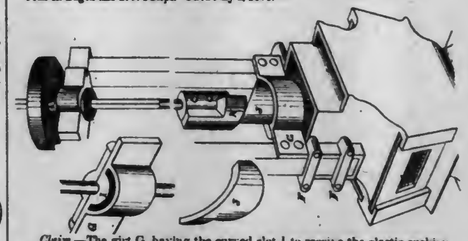


Claim.—1. The combination, in a vertical steam-generator, of the removable segments or sections A, each section being provided with a semicircular groove, which, when the sections are united, forms a fire-tube, the sections being held together by hoops *m n*, substantially as shown and described.

2. The combination, in a vertical sectional steam-generator, of the segments or sections A A, steam-dome O, the under side of which forms a deflecting-plate, as herein described, and the hinged tops or lids *r r*, constructed and arranged to operate substantially as set forth.

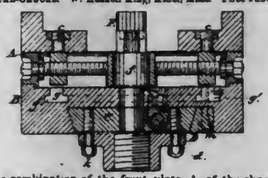
3. A vertical steam-generator the sections of which are provided with semicircular grooves, forming, when united, direct and return flame-tubes, the annular steam-dome O, central magazine or reservoir, *g*, and the water and steam pipes *d* and *e*, substantially as described and shown.

209,896. Ore-Stamps. Stephen Kendall, Jackson, Cal., assignor of one-half his right to John A. Eagon and T. J. Phelps. Filed July 8, 1878.



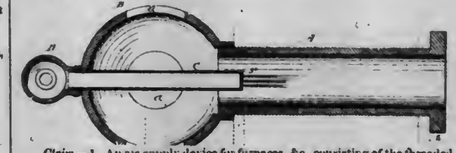
Claim.—The girt G, having the curved slot I to receive the elastic cushion K, in combination with the curved encircling cam J, tappet N, and stamp-stem L, substantially as and for the purpose herein described.

209,897. Lathe-Chucks. W. Haskell King, Athol, Mass. Filed June 4, 1878.



Claim.—The combination of the front plate, A, of the chuck and the radially-sliding dogs, the intermediate plate, B, connected adjustably to the former by means of the screws *a*, provided with nuts *a'*, sitting in recesses in the front plate, and with heads on their lower ends sitting in the annular slots *g'*, and the rear plate, C, fitting in a dovetailed transverse recess in the rear of the plate B, the whole constructed and arranged to operate substantially as specified.

209,898. Smoke-Consuming Devices for Furnaces. William M. Kirby, Pittsburg, Pa. Filed Sept. 12, 1878.

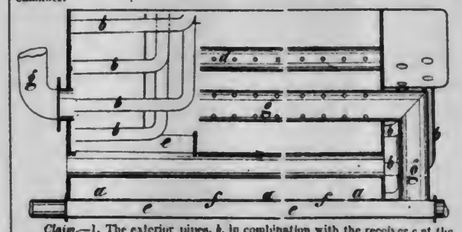


Claim.—1. An air-supply device for furnaces, &c., consisting of the threaded tube A, having an enlargement, *s*, adapted for attachment to the double walls *x y*, the globe-casing B, steam-nipple C, having fine end perforations *a'* and globe-coupling D, communicating with the nipple and with the steam-pipe, constructed and arranged as set forth.

2. The threaded tube A, having an enlargement, *s*, and combined with the globe-case B, nipple C, coupling D, and adapted for attachment to the walls of a fire-box, as specified.

209,899. Steam-Boilers. Luther Knight, Arlington, Vt., assignor of one-half his right to William O. Allen, Cambridge, N. Y. Filed Nov. 1, 1877.

Brief.—The ends of all the heating-tubes are concentrated in the end extension of the boiler, by which all the water is made to pass through the perforated pipes in the upper portion of the boiler. The sediment trapped in the perforated pipes is carried down to a chamber at the bottom of the boiler, which is also provided with a perforated top. The mud is then blown out from this chamber.



Claim.—1. The exterior pipes, *b*, in combination with the receiver *c* at the end of the boiler, and in combination with it, by which the combined circulation of the water in all the tubes is concentrated in said receiver, at the same time enlarging the heating-surface, the whole to be constructed and operated substantially as described.

2. The combination of tubes *b* outside of the boiler with perforated tubes *d* in the steam-space thereof, for the purpose of separating or breaking the water and perfecting its circulation and evaporation.

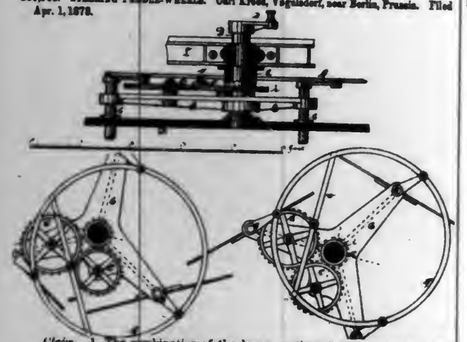
3. The horizontally-arranged perforated pipes *g*, the mud-collector *e*, and the perforated bottom of the boiler, in combination, the parts being connected substantially as described, by which the mud is collected in the chamber at the bottom of the boiler, and by which the sediment is at the same time collected off of the surface of the water and blown out through the mud-chamber with the mud.

209,900. Picture-Frames. Albert Kemp, New York, N. Y. Filed Oct. 23, 1878.



Claim.—The combination, with an embossed pasteboard picture-frame having a countersunk opening to expose the picture, of a dish-shaped pasteboard back cemented to the frame over the opening, to stiffen the same and support the picture, substantially as shown and described.

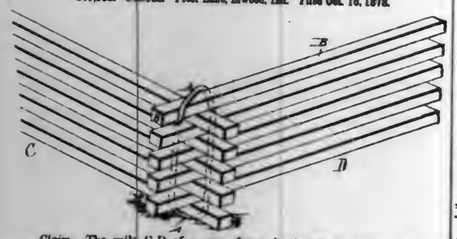
209,901. Steering Paddle-Wheels. Carl Krebs, Vogelsdorf, near Berlin, Prussia. Filed Apr. 1, 1878.



Claim.—1. The combination of the lower casting, A, top casting, C, and intermediate bearing-plate, B, vertical paddle-shafts, b, and paddles a a' a², with mechanism for rotating the paddle-frame and feathering the paddles, and the hull of the boat, provided with an opening and seat for the bearing-plate, so as to produce a water-tight joint between the same, as herein set forth.

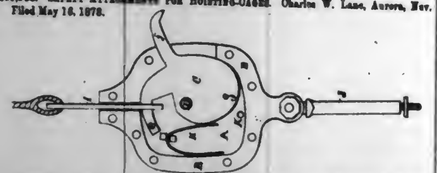
2. The combination of the outer ring, f, the loose collar or sleeve h, having spur-disk i, the large spur-wheel k, and intermediate pinion, r, connected with the ring f, with the paddle-shaft D, the paddles and the vertical paddle-shafts having cranked upper ends, as and for the purpose set forth.

209,902. Fences. Peter Lane, Elwood, Ind. Filed Oct. 16, 1878.



Claim.—The rails C D of a worm fence, having their intersecting ends bound together by the looped wire A, twisted and tightened by the upper rail, B, as shown and described.

209,903. Safety Attachments for Hoisting-Cages. Charles W. Lane, Aurora, Nev. Filed May 16, 1878.

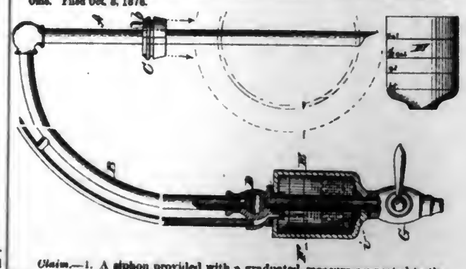


Claim.—1. The case formed of the sides A A and the edge-piece B, to contain the latch C and connect the cage with the hoisting rope, said sides being perforated at K, substantially as shown, and for the purpose herein described.

2. The latch C, composed of the hook e, the cam g, and the trigger f, formed in one piece, and mounted upon the pivot-pin D within the case A, in combination with the spring H, substantially as herein described.

3. The latch C, with the hook e, projecting trigger f, and cam G, in combination with the spring H, link I, and king-bolt J, and the inclosing and nailing case A, substantially as shown, and for the purpose herein described.

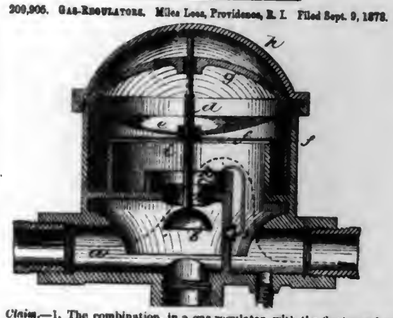
209,904. Devices for Drawing and Measuring Liquids. Amos F. Lapham, Marion, Ohio. Filed Oct. 8, 1878.



Claim.—1. A siphon provided with a graduated measure connected to the long leg thereof, for the purposes herein set forth.

2. The combination of the siphon A H, measure E, stop-cocks D G, and the tube F with opening i, all constructed substantially as and for the purposes herein set forth.

209,905. Gas-Regulators. Miles Loss, Providence, R. I. Filed Sept. 9, 1878.

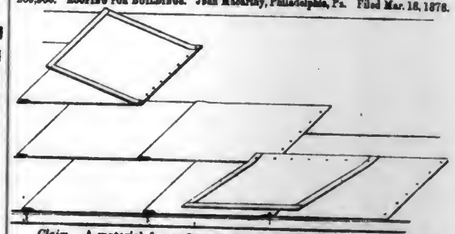


Claim.—1. The combination, in a gas-regulator, with the float e and valve b, of the removable annular mercury-cup f, constructed and arranged substantially as shown, and for the purpose described.

2. The combination, with the float e, the removable annular mercury-cup f, and guard-rim k, of the tap l, arranged substantially as and for the purpose set forth.

3. The combination, in a gas-regulator, with the valve b, regulating-float e, and removable mercury-cup f, of the relief-valve n, constructed and arranged for operation substantially as and for the purpose set forth.

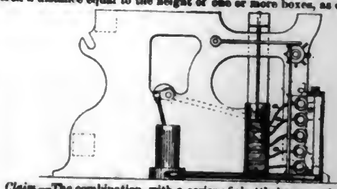
209,906. Roofing for Buildings. John Macarthy, Philadelphia, Pa. Filed Mar. 18, 1878.



Claim.—A material for roofing, composed of a layer of fibrous material, a thin sheet of lead or its alloys, and bituminous material, with which the fibrous layer is prepared, and which causes the sheet of metal to adhere, as and for the purposes set forth.

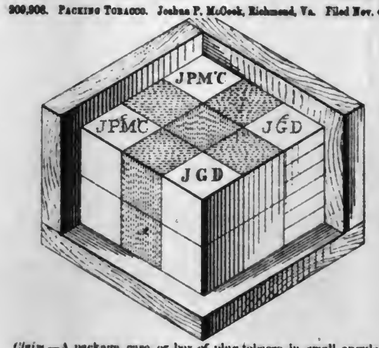
209,907. Shuttle-Box Motions for Looms. Levi J. Masterson, Philadelphia, Pa. Filed July 16, 1878.

Brief.—The shuttle-boxes of a loom are operated by filling and exhausting the air from expansible cells. The valves are controlled by a pattern-chain, so that one or more cells are filled or exhausted and the shuttle-boxes raised or lowered a distance equal to the height of one or more boxes, as desired.



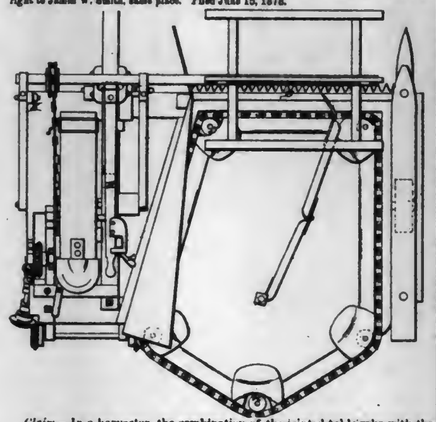
Claim.—The combination, with a series of shuttle-boxes and a fluid forcing or compressing mechanism, of intermediate devices and controlling mechanism, whereby said boxes are operated by compressed air or other fluid, substantially as described.

209,908. Packing Tobacco. Joshua P. McCook, Richmond, Va. Filed Nov. 4, 1878.



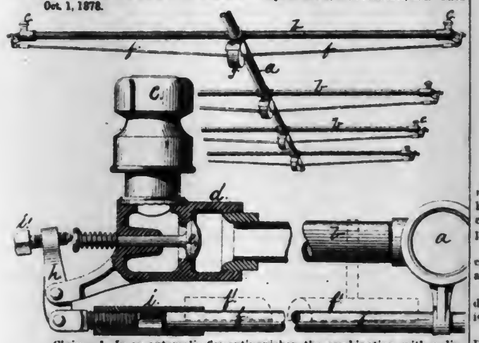
Claim.—A package, case, or box of plug-tobacco in small angular pieces of different dimensions wrapped in foils of different colors, as set forth.

209,909. Harvester-Rakes. Andrew A. Miller, Smithton, Ill., assignor of one-half his right to James W. Smith, same place. Filed June 15, 1878.



Claim.—In a harvester, the combination of the jointed table-rake with the endless drive-chain, arranged to follow an irregular path circumferential to the rake-pivot, substantially as and for the purposes set forth.

209,910. Automatic Fire-Extinguishers. Joseph A. Miller, Jr., Providence, R. I. Filed Oct. 1, 1878.



Claim.—1. In an automatic fire-extinguisher, the combination, with a distributer, of a valve held to its seat by the pressure of the water in the pipes, and opened by the expansion of metal or fluid, or both, substantially as and for the purpose set forth.

2. The combination, with the pipe b and distributer c, of the valve e and lever h, arranged to open the water-supply by the expansion of metallic rods or tubes or the expansion of fluids, substantially as described.

3. The combination, in an automatic fire-extinguisher, with the valve, of the rod or tube f and lever h, substantially as and for the purpose set forth.

4. In an automatic fire-extinguisher operated by the expansion of metal by heat, the shield f', arranged to protect the metal from the water.

5. The combination, with a supply-valve and a rod or tube, f, arranged and adapted to open the valve by the expansion of metal, fluids, or both, of means for adjusting the rod to the temperature at which it is desired the valve shall be automatically opened, substantially as set forth.

6. In an automatic fire-extinguisher, the combination, with the valve for regulating the supply of water to the distributer, of a rod connected with the valve by a set-screw or equivalent adjusting device, said rod arranged and adapted to actuate the valve by the expansion and contraction of metal or fluids, and a pawl or equivalent device for retaining the valve in an open position, substantially as set forth.

7. The combination, with the valve e and metal rod f, of the lever h and adjusting-screw i', arranged to open the valve, substantially as and for the purpose set forth.

8. In an automatic fire-extinguisher, the combination, with the main pipe a and branches b b, of the distributer c and suitable valves operated by the expansion of metal or fluids, protected by shields, the whole secured to the branch pipes and under the same, as and for the purpose set forth.

209,911. Bridle-Bits. William S. Mitchell, Washington, D. C. Filed Nov. 2, 1878.



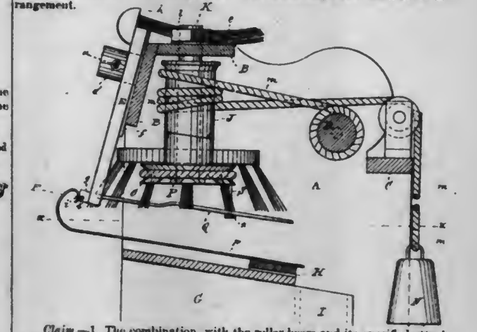
Claim.—1. The combination, in a reversible bit, of a mouth-piece provided with cheek-pieces having end rings for cheek-reins and a strap secured to said cheek-pieces between the end rings and mouth-piece, and adapted to be brought over the animal's nose or under its lower jaw, said strap forming the fulcrum of the bit, whereby the mouth-piece and cheek-pieces are converted into a lever, by which the requisite pressure can be maintained upon either the upper or lower jaw of the animal, irrespective of the position of its head, in order to give the driver complete control, substantially as described.

2. In combination with the mouth-piece, constructed in one or more parts, the cheek-pieces having end rings for cheek-reins, and provided with an adjustable strap intermediate of the end rings and mouth-piece, and adapted to be brought over the nose or under the lower jaw of the animal and the rings attached to the end of said mouth-piece for the guiding-reins, substantially as described.

3. The combination, with the cheek-pieces B of a bit, of the swiveling loops F and strap G, substantially as described.

209,912. Automatic Clearers for Spinning-Mules. Severin Mock, Philadelphia, Pa. Filed July 5, 1878.

Brief.—Improvement on Patent No. 158,218, December 29, 1874. As the bristles clear the roller-beam, the offset at the upper end of the reciprocating slide clears the steel roller-stands. The apron is caused to sweep the carriage-board clear to the spindles. The band which drives the reciprocating slide is cleared by means of a revolving brush. The connecting-band has a novel arrangement.



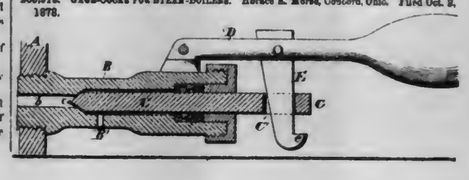
Claim.—1. The combination, with the roller beam and its specified attachments, of the reciprocating slide E, provided with the brush-block h, said block having tufts of bristles s s s, and an offset at the upper end of said slide, to clear the steel roller-stands on the upper side of the roller-beam as the slide passes in front of the same in clearing the beam, substantially as set forth.

2. The longitudinal wire i, having elbows i' i', in combination with the reciprocating slide E, strip g, and blanket-apron F, substantially in the manner and for the purpose set forth.

3. The revolving brush U, in combination with the band P, the brush being driven by means of the pulleys O' O and band P, or other equivalent mechanism, substantially as set forth.

4. The combination of the cord w, having a weight, N, with the back shaft D, drum J, supporting-pulley L, and driving-pulley O, substantially as and for the purpose set forth.

209,913. Gage-Cocks for Steam-Boilers. Horace R. Morse, Concord, Ohio. Filed Oct. 9, 1878.



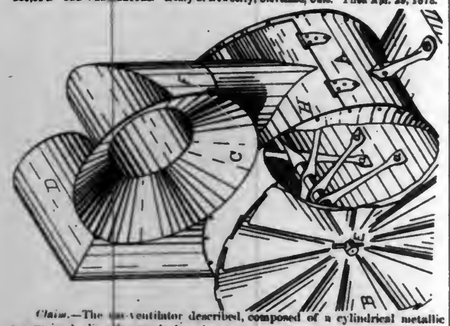
Claim.—1. In a gage-cock, the combination, with the valve-stem, of a wedge connected with suitable means for being moved transversely to the movement of the valve-stem and open and close the valve, substantially as set forth.

2. In a gage-cock, the combination, with the valve-stem, of a lever-handle having a wedge secured thereto, said wedge being arranged to engage with the valve-stem and operate the same as the lever-handle is raised or lowered, substantially as set forth.

3. In a gage-cock, the combination, with the body B, valve-stem C, provided with slot C', of the lever D and wedge-shaped arm E, substantially as set forth.

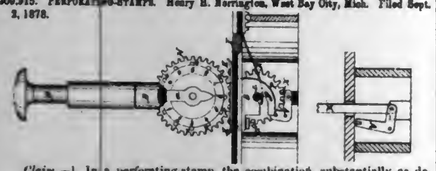
4. In a gage-cock, the combination, with the valve-stem C, provided with slot C', of the lever D and wedge-shaped arm E, the latter furnished with a stop, *e*, substantially as set forth.

209,914. Car-Ventilators. Henry B. Newberry, Cleveland, Ohio. Filed Apr. 29, 1878.



Claim.—The car-ventilator described, composed of a cylindrical metallic reservoir, A, directly attached to the roof of a car, and having hinged door H, the pipe-elbow F, with expanded mouth C, connected to the hinged door H, the wind-wheel B, having its face presented toward the end of the car, in the same direction as the expanded mouth C, and mounted on the end of the shaft E, the revolving paddles or beaters *a*, arranged at different angles in such receptacle, and having the shaft E passing through the middle of each, and the escape-pipe D, all constructed, arranged, and operated substantially as and for the purpose set forth.

209,915. Perforating-Stamps. Henry H. Norrington, West Bay City, Mich. Filed Sept. 3, 1878.



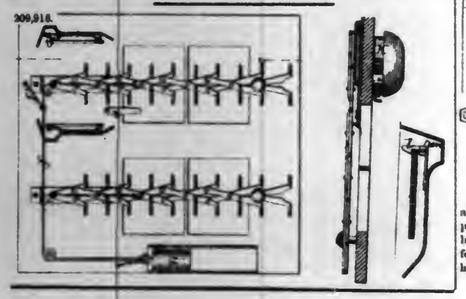
Claim.—1. In a perforating-stamp, the combination, substantially as described, of a vertically-acting plunger and a punching-wheel and gear fixed on the same shaft, having its bearings in the arms of said plunger, a feed-shaft attached to the bed-plate and a pinion and gear, the die-carrying slide, also a device for supporting said feed-shaft, substantially as described, so that when the plunger and punching-wheel are forced down the gears will remain in mesh, as specified.

2. In a perforating-stamp, the combination of the feed-plate having the curved slot in its wing or downward extension, the shaft L, and the levers, connecting-rod or link, and the plunger, for reciprocating the feed-plate, as shown and described.

3. In a perforating-stamp, the feed-plate working through a slot in the bed-plate, and having a slotted wing or downward extension, the described devices for connecting the feed-plate and plunger, and a spring-clip for holding the paper on the bed-plate, all said parts being combined substantially as shown and described.

4. In a perforating-stamp, the combination of the spring-supported plunger, the levers T V W, link X, hollow standard A, the shaft L, and the feed-plate S, having the downward extension *g*, with a curved slot, and the spring R, all as shown and described, whereby the reciprocation of the plunger moves the shaft L downward in the slot and simultaneously reciprocates the feed-plate horizontally, as specified.

209,916.



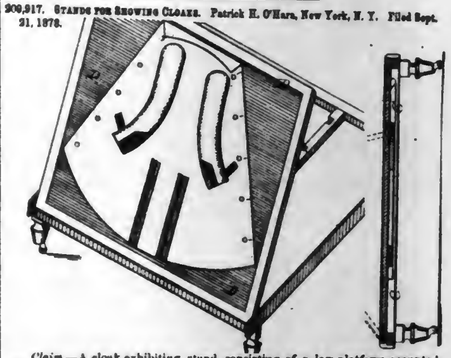
209,916. Fire-Escapes. Anton Ochsner, New Haven, Conn. Filed Aug. 15, 1878.

Brief.—A lazy-tong ladder with lateral arms or steps is fastened at one end to the wall of a house, and is operated by a cord and counterbalanced by a weight. A projection on the ladder strikes a detent in falling, thereby releasing a spring alarm mechanism.

Claim.—1. In a fire-escape, the combination of a ladder constructed of lazy-tongs, an alarm, and spring mechanism for working the alarm, and a detent to hold in check the alarm mechanism and to be thrown wholly out of engagement therewith by the extension of the ladder, substantially as specified.

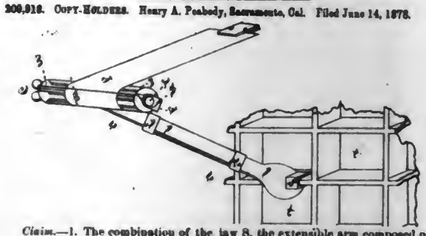
2. In a fire-escape, the combination of a ladder constructed of lazy-tongs, each arm of which is provided with one or more lateral projections to form steps or rounds, and a rope or chain for operating said ladder, substantially as shown and described.

209,917. Stands for Showing Cloaks. Patrick H. O'Hara, New York, N. Y. Filed Sept. 21, 1878.



Claim.—A cloak-exhibiting stand consisting of a low platform mounted upon caster-legs, adapting it to be shifted from place to place, and having a cloth-covered adjustable top, substantially as and for the purposes set forth.

209,918. Copy-Holders. Henry A. Peabody, Sacramento, Cal. Filed June 14, 1878.



Claim.—1. The combination of the jaw S, the extensible arm composed of *a a' b b'*, and the frame F with the drum *m*, handle *e*, notched wheel *r*, and spring *u*, substantially as and for the purposes set forth.

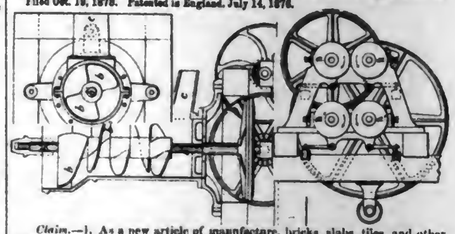
2. The drum *m*, composed of the disks *d*, wires *w*, pieces *o*, strips *o'*, spring *v*, and the spindle *e*, substantially as above set forth.

209,919. Devices for Pulling Off Boots and Shoes. William C. Peckham and David F. McKitrick, Troy, Ohio. Filed Sept. 9, 1878.



Claim.—A boot or shoe provided with a staple or an eye, substantially as shown and described, and adapted to be used with a hook for the purpose of drawing off the boot or shoe from the foot, as set forth.

209,920. Manufacture of Bricks and Tiles. Michel Poletti, Fribourg, Switzerland. Filed Oct. 16, 1878. Patented in England, July 14, 1878.



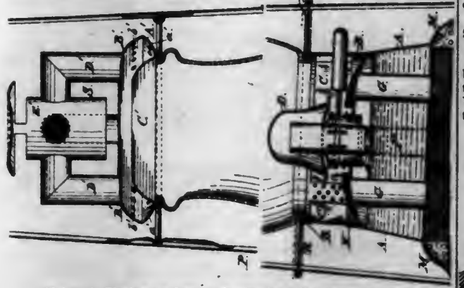
Claim.—1. As a new article of manufacture, bricks, slabs, tiles, and other articles adapted to be used for floors, sidewalks, passages, cellars, and other places, as also as substitutes for paving-stones for roads and streets, the same being made, by the means and in the manner substantially as shown and set forth, to be very dense, hard, perfectly impermeable, and resisting extremes of heat and cold, as herein set forth.

2. In the manufacture of bricks, slabs, tiles, and other like articles, the

combined processes of, first, diluting the loam or clay by heat; second, crushing and grinding the diluted clay by means of cylinders, crushers, and grinders; third, condensing the ground mass; fourth, subjecting the same to a primary compression into approximate shape; fifth, covering the products with brick, tile, or other similar powder; and, sixth, alternately drying and compressing the products before they are finally subjected to the process of burning, all substantially as herein set forth.

3. The combination, in a furnace composed of equidistant fire-places, arranged at or near the arched roof and in relation to bridges, and the axle of the furnace, as described, of openings in the sole arranged equidistantly from side to side, and so as to cause the products of combustion to descend uniformly through the mass by passing both against the walls and toward the centers, in combination with channels under the sole, conveying the products of combustion to a central flue below said channels and communicating with a chimney.

209,921. Lanterns. Elias B. Roque, Jersey City, N. J. Filed Oct. 25, 1878.



Claim.—1. The lantern-fount A, having its wall extended upward to form the globe-holder B, and provided with the translucent or transparent windows C, separated by the perforated panels, substantially as described, and for the purpose set forth.

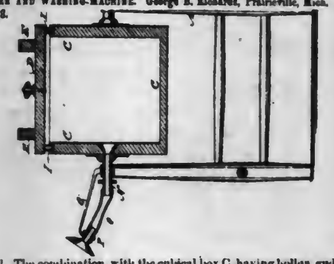
2. In combination with a lamp-fount, a pyramidal deflector, connected with draft-passages extending through the body of the lamp, and one or more foraminous diffusers, secured to the top of the lamp-fount directly above one or more air-passages extending through said fount, whereby air is supplied to the flame both inside and outside of the deflector, substantially as and for the purposes specified.

3. In combination with the air-passages extending through the lamp-fount, a space below said fount, having foraminous walls, and a hinged bottom, having a central aperture and a series of foraminous partitions, forming chambers, communicating with the upward air-passages, substantially as and for the purpose specified.

4. In combination with the globe and globe-holder of a lantern, an upper section consisting of a concavo-convex perforated annulus, a concavo-convex perforated disk, united at its edge to the outer edge of the annulus, an internal concavo-convex deflector, and a series of bent exit-tubes, communicating with a central exit-flue, whereby a current of cold air is established through the upper flue to prevent heating, substantially as specified.

5. The combination, with the exit-flue E' and bent tubes D' D', of the concavo-convex disk located above said exit-flue, with its convex surface downward, and having a downwardly-turned lip, at the inner terminus of which is an annular row of perforations, substantially as described, and for the purpose set forth.

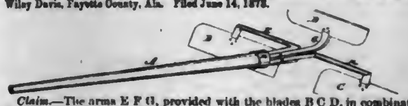
209,922. Churn and Washing-Machine. George B. Richards, Prairieville, Mich. Filed Apr. 27, 1878.



Claim.—1. The combination, with the cubical box C, having hollow gudgeon B, of the bushing N, flexible tube O, the funnel-bushing P, and the bent supporting-rod Q, for hobbling the funnel-bushing P at a higher level than said gudgeon B, as and for the purpose herein shown and described.

2. The combination of the cubical box-body C, grooved in its upper edge, the rubber packing I, cover D, projecting cross-bars E, hinged loops F, set-screws H, metal straps G, and metallic corner-straps G', the several parts constructed and relatively arranged as and for the purposes herein shown and described.

209,923. Cotton-Hoes. Eelbert H. Rogers, Boley Springs, assignor of one-half his right to Wiley Davis, Fayette County, Ala. Filed June 14, 1878.



Claim.—The arms E F G, provided with the blades B C D, in combination with the helve or handle A, band *a*, and fastening screws or rivets, substantially as and for the purpose described.

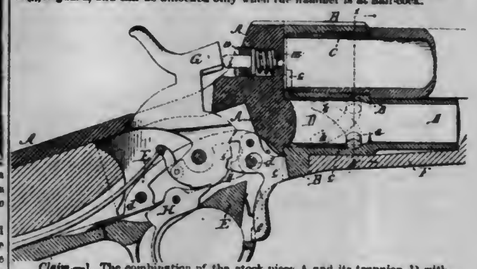
209,924. Palettes for Testing Oils. Henri Rousix, Paris, France. Filed July 3, 1878.



Claim.—A palette for testing oils, consisting of a white-porcelain plate, A, provided on each end with a longitudinal cavity or recess, *a*, for the reception of dropping-tubes or barettes, and with a series of concave cavities or cups, *b*, the ground of the palette between the cups *b* being black, substantially as described, for the purpose specified.

209,925. Breech-Loading Fire-Arms. Jacob Reperton, Philadelphia, Pa. Filed Sept. 3, 1878.

Brief.—The barrel swings laterally on a longitudinal axis to open the breech, and is moved forward in the act of opening by a pin passing through the axis, and working in a curved or diagonal slot in the sleeve of the barrel. When in proper position the barrel is locked by a spring-catch in front of the trigger-guard, and can be unlocked only when the hammer is at half-cock.



Claim.—1. The combination of the stock-piece A and its trunnion D with the breech-piece B, provided with helical slots *b* and pin *a*.

2. The combination of the rotating and receding breech-piece B with the extractor *c*, encircling the trunnion D, both the breech-piece and extractor turning upon the trunnion D, and the extractor secured thereon by the pin *a*, so as to be prevented from moving forward.

3. In a fire-arm in which the barrel rotates on a longitudinal axis to open and close the breech, the locking-catch *c*, adapted to engage in a notch in the rear end of the breech-piece, and provided with a rearward projection, *g*, in combination with the hammer, provided with notch *i*, by which the catch *c* is prevented from being operated to unlock the barrel till the hammer is brought to the proper position, all as shown and described.

4. The combination, substantially as described, of the hammer G and its spring, the firing-pin *l*, the spring *m*, and the nut *n*, for the purpose specified.

209,926. Handle Attachments for Traveling-Bags and Satchels. Edwin Rumpp and Arno Weinrich, Philadelphia, Pa. Filed July 16, 1878.



Claim.—The combination, in a traveling-bag or valise, of a ferrule, B, on the handle, and a plate, *a*, on the frame, with a socket on one adapted to and inclosing, or nearly inclosing, a head on the other, all as set forth.

209,927. Machines for Tying in Warps. James Stockleton and Joseph F. Binns, Halifax, assignors to said Binns, Abraham Akeroyd, Bradford, England, A. K. P. Joy, Winchester, and Henry Binns, Lowell, Mass. Filed Jan. 25, 1876.

Brief.—For automatically tying together or uniting the threads of a new warp to those of the old warp retained in the reed and harness removed from the loom to this machine. The old warp is placed horizontally above the new, and each is divided by leash-rods, having each alternate thread above and below the rods; fingers separate an old and a new warp from the lot; a needle engages the two. The end of each thread is then severed, and the two are then tied together in a fast knot by means of the needle and warp-holders, which clasp the two ends of the warp drawn up through them by the needle, a looping-hook, that winds them about a rest, and a crochet or similar hook working within the loop-rest, which hook forms the knot, a cast-off, and a knot-tightener, that draws the tied ends away and places the tied warps on a receiver, where they are held. Mechanism is provided to stop the machine in case the warps break or are not correctly picked up by the needle.

Claim.—1. The combination of a carriage and a screw-shaft, and mechanism to impart to the shaft and carriage a regular motion, with devices adapted to impart an additional movement to such shaft and carriage to adapt the movement of the carriage to fine or coarse warps.

2. The separating-fingers and rods connected therewith, in combination with the reciprocating slide and devices adapted to rock the fingers, substantially as described.

3. In combination, a needle adapted to pick up warps in pairs, holders *e e'*, to hold the warps distended, and knot-tying devices adapted to tie a fast knot in the warps, substantially as described.

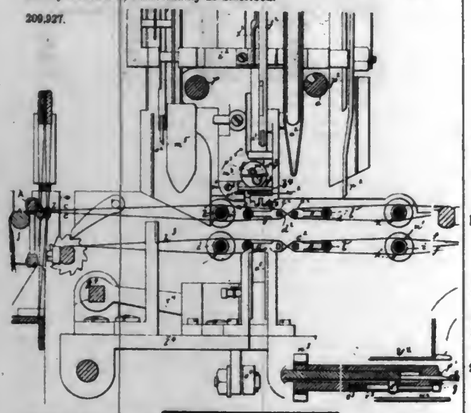
4. The separating-blades provided with ribs or feathers and mechanism for operating the same, in combination with knives or cutting devices to separate and cut the threads before they are tied, substantially as described.

5. The combination, with the carriage and warp-needle, of the sliding plate, the warp-feelers or catches, and devices to operate the catches to stop

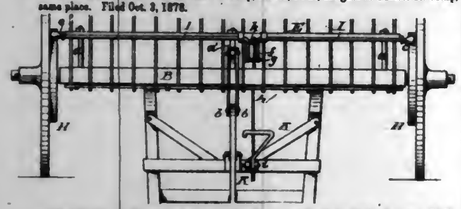
the machine when a warp thread breaks or is not caught by the needle, substantially as described.

6. The combination of the needle with the pivoted warp feelers or catches and a toothed shaft, adapted to engage the catch if not elevated by the warp held by the needle, substantially as described.

209,927.



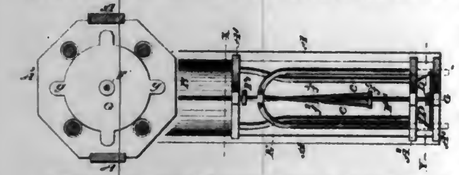
209,928. HORSE HAY-RAKES. Dennis P. Sharp, Ithaca, N. Y., assignor to Charles M. Sharp, same place. Filed Oct. 3, 1878.



Claim.—1. In a mounted horse-rake, the combination, with the rims H H, attached to the wheels, of the rods I I, mounted upon the rider-bar, and connecting directly with said rims by the slotted heads c c of the rods, as shown and described, and for the purpose specified.

2. In a mounted horse-rake, the combination of the rims H H, attached to the wheels, the rods I I, mounted upon the rider-bar, and provided with slotted heads connecting with said rims, the cranks *f f*, connection h, and foot-lever K, as shown and described, and for the purpose specified.

209,929. HAND CORN-PLANTERS. William Shepard, Jonesburg, Mo. Filed June 27, 1877.



Claim.—1. The plungers E, their rods E', carrying the cross-piece F', the shaft F', having the bearings *f f'*, stems *f' f'*, and the respective cut-offs F G', the latter having projections *g*, and said cut-offs being arranged with relation to each other as described, in combination with feed-tubes C C and discharge-tubes D D, to operate in the manner and for the purposes set forth.

2. In a hand seed-planter, the forked plungers E, their rods E', having the cross-piece F', the shaft F', carrying the bearings *f f'*, stems *f' f'*, and the cut-offs F G', arranged with relation to each other as shown and described, and the latter having projections *g*, the feed-tubes C C, the discharge-tubes D D, the grain-holder having feed-holes *h*, and the frame parts A A' A² A³, all said parts being combined to operate substantially in manner and for the purposes set forth.

209,930. FLUTING-MACHINES. Charles G. Shepard and Peter Adams, Jr., Buffalo, N. Y., assignors to said Shepard and Walter J. Shepard, same place. Filed Oct. 24, 1878.

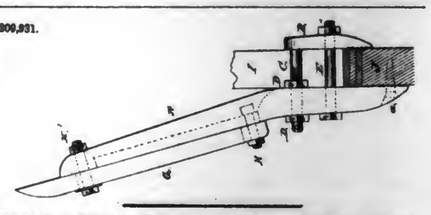


Claim.—A fluting-roller composed of a hollow body, A, perforated end plates, B B, journals C C, and central shaft, D, all cast in one piece, substantially as shown and described.

208,931. THILL-SUPPORTERS. William Smith, Carmi, Ill. Filed Oct. 19, 1878.

Claim.—A thill-supporter consisting of an arm, A, having at its lower end the clamping device B, for attaching it to a carriage-spring, and at its upper end an adjustable bar, G, for securing the thills, substantially as described.

209,931.



209,932. GRAVE-SHIELD AND BODY-PROTECTOR. Solomon S. Smick, Fort Wayne, Ind. Filed Oct. 31, 1878.



Claim.—1. A grave-shield or body-protector consisting of a bed-plate, side and end rods, and top strips, all connected together in a permanent manner, substantially as herein set forth.

2. The combination of the bed-plate A, continuous protecting-rods B, top plate, C, strips D, and nuts F, substantially as and for the purposes herein set forth.

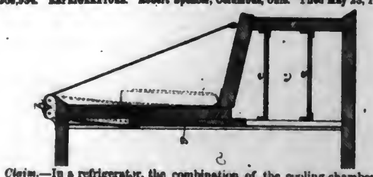
209,933. POCKET TRAVELING-BOXES. Daniel M. Somers, Brooklyn, N. Y. Filed Oct. 7, 1878.



Claim.—1. As a new article of manufacture, a sheet-metal box consisting of a body and of a cover, which is provided with an auxiliary compartment, C, from the bottom of which projects a central post, to which the rotating member of an indicating mechanism is attached, substantially as described.

2. As a new article of manufacture, a sheet-metal box consisting of a body and cover, which is provided with an auxiliary compartment, C, from the bottom of which projects a central post, to which is attached the index-hand or pointer of a compass, substantially as described.

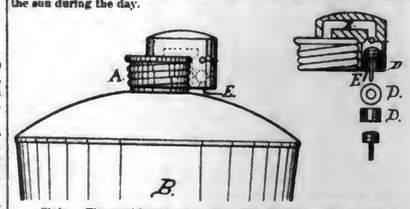
209,934. REFRIGERATORS. Robert Spencer, Columbus, Ohio. Filed May 23, 1877.



Claim.—In a refrigerator, the combination of the cooling-chamber a, offset *c*, door *d*, connecting rope or chain, slide *g*, and pulleys *h*, the door *d* and slide *g* being so connected that when the door is raised or lowered upon its hinges the slide will move vertically down or up, whereby warm air is prevented from passing into the chamber a when the door *d* is raised, substantially as shown and described.

209,935. AIR-VENTS FOR STREET-LAMP RESERVOIRS. Isaac Stead, Philadelphia, Pa. Filed Oct. 28, 1878.

Brief.—This vent admits air to supply sufficient pressure for feeding the oil at night, but prevents the exit of vapor when the reservoir is warmed by the sun during the day.



Claim.—The combination of a reservoir, B, for holding and supplying oil to a self-generating gas-burner, with the automatic self-opening and closing air-vent, composed of a valve, C, seat D, and air-vent or passage E, as shown and described, and for the purpose specified.

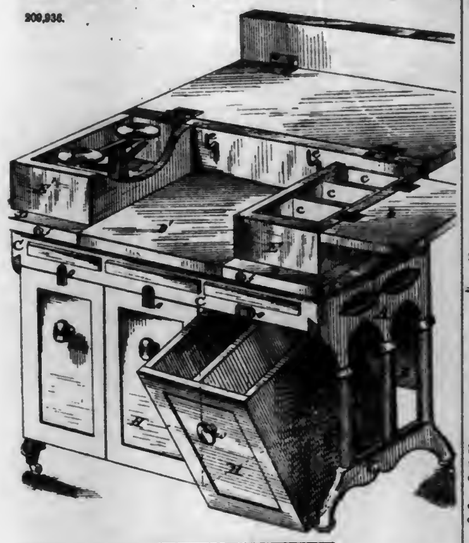
209,936. KITCHEN-CABINETS. William H. Stewart, Butler, Mo. Filed Sept. 16, 1878.

Claim.—1. A kitchen-cabinet provided with a skeleton-frame open at the sides and bottom, said frame consisting of skeleton end frames, connected at the bottom by a longitudinal rod, a partially-closed back, a box for containing sugar, flour, or other food or food materials, adjusted upon and supported by said rod, and arranged to tilt downward or upward to open or close, said box being provided on its bottom with means for retaining it in place on the rod, and being freely removable from the frame at will, and a suitable fastening for said box when closed, substantially as described.

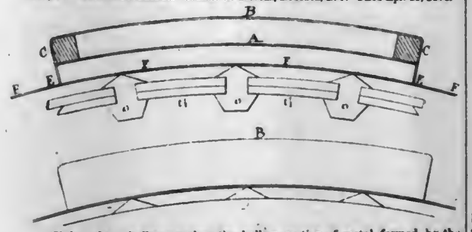
2. A kitchen-cabinet consisting, essentially, of a tabular top, a supporting skeleton-frame open at the sides and bottom, said frame consisting of skeleton end frames, connected at the bottom by a longitudinal rod, a partially-closed back, and a series of food-receptacles underneath said top, adjusted upon and

supported by said rod, and arranged to tilt downward or upward to open or close, the several boxes provided with means for retaining them in place on the rod, being independent of each other and separately removable from the structure at will, substantially as described.

209,936.

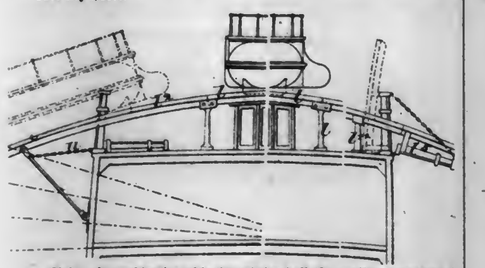


209,937. BOILER-COVERINGS. Francis B. Stevens, Hoboken, N. J. Filed Apr. 15, 1878.



Claim.—In a boiler-covering, the hollow section of metal formed by the inner sheet of metal, A, the outer sheet of metal, B, and the side sheets of metal, C C, with the projecting flanges E E, in combination with the thin sheet metal F F, interposed between the hollow sections and the boiler.

209,938. MEANS FOR LAUNCHING LIFE-BOATS, &c. John A. Stockwell, Lee, England. Filed May 1, 1877.



Claim.—In combination with the tubular hull, the cradles or runners *k*, provided with anti-friction wheels or rollers, as and for the purpose described.

209,939. MUFFLERS FOR THE ESCAPE OF EXHAUST-STEAM. William H. Swift, Medford, assignor of one-half his right to Charles F. Brown, Reading, Mass. Filed Jan. 23, 1878.

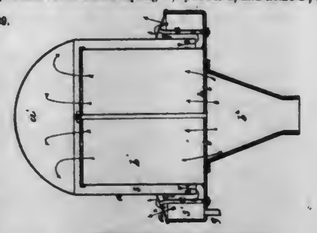
Claim.—1. A muffler for steam-pipes, composed of a casing or chamber adapted to be applied to a steam-pipe, and arranged internally to form a sinuous passage from the steam-pipe to the open air, and provided with perforations *i*, through which the steam passes before being discharged, substantially as and for the purpose set forth.

2. The muffler herein described and shown, consisting of the cylinder *a*, having dome a^1 and perforated flange a^2, and the perforated pan *b*, having cylinder b^1, perforated diaphragm b^2, coupling b^3, and escape-pipe *g*, all arranged substantially as described.

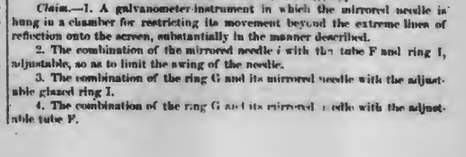
3. In a muffler for escaping steam, the cylinder b^1, adapted to contain water, and provided with flues *i*, for the passage of steam, and also with induction and eduction pipes, whereby the water is kept in circulation, substantially as and for the purpose described.

4. The cylinder b^1, provided with flues *i*, induction-pipe *f*, and eduction-pipe *f'*, combined with the coupling b^3, cylinder *a*, and dome a^1, as set forth.

209,939.



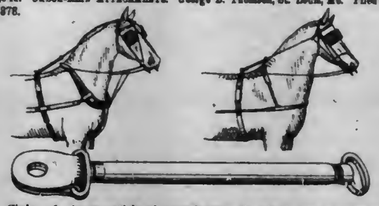
209,940. FOLDING TABLES. John Bostwick Terry, Ithaca, N. Y., assignor of one-half his right to S. D. Thompson, same place. Filed Aug. 19, 1878.



Claim.—1. The diagonal braces *b*, recessed upon the edges to receive the legs when folded, and provided with the headed pins *n*, in combination with the hinged legs *c' c''* and plates or straps *i*, the latter having notched slots *f* to engage with the pins *n*, as set forth.

2. In a folding table, the board *a*, diagonal braces *b*, legs *c' c''*, with their end braces, *c c' f f'*, the slotted straps or plates *i*, and pins *n*, constructed and operating as herein shown and described.

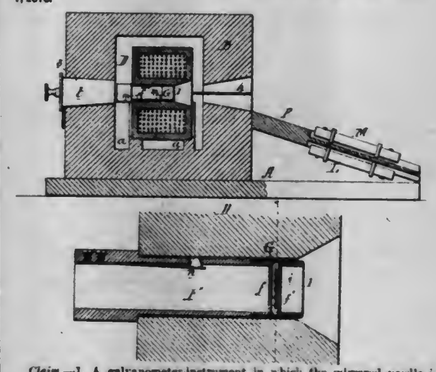
209,941. CHECK-REIN ATTACHMENTS. George B. Thomson, St. Louis, Mo. Filed Oct. 15, 1878.



Claim.—1. As an article of manufacture, the check-rein attachment composed of a rubber tube, in the ends of which are inserted metallic shanked eyes, and secured therein by exterior metallic clasps or wire, substantially as set forth.

2. In combination with check-rein attachment composed of rubber tube and metallic terminal eyes, secured as described, the leather tongue or strap, substantially as and for the purposes set forth.

209,942. REFLECTING-GALVANOMETERS. William Thomson, Glasgow, Scotland. Filed Jan. 7, 1878.



Claim.—1. A galvanometer-instrument in which the mirrored needle is hung in a chamber for restricting its movement beyond the extreme lines of reflection onto the screen, substantially in the manner described.

2. The combination of the mirrored needle *i* with the tube F and ring I, adjustable, so as to limit the swing of the needle.

3. The combination of the ring G and its mirrored needle with the adjustable glazed ring I.

4. The combination of the ring G and its mirrored needle with the adjustable tube F.

5. The combination of the ring G and its mirrored needle with the tube F, having a glazed end.

6. The combination of the galvanometer-coil, the tube F, its four projecting knobs m, and spring-pin n.

7. The combination of the galvanometer-coil with an inclosing box or sheath of iron, whereby the terrestrial and other external magnetism is cut off from the said coil.

8. The combination of the galvanometer-coil D and its inclosed mirrored needle i with the iron box or sheath.

9. The combination of the mirrored needle with an iron sheath having an opening, h.

10. The combination of the galvanometer-coil, having a central opening, in which the mirrored needle is hung, with a box or sheath having an opening, s, in line with the central opening of the coil.

11. The combination of the iron sheath having an opening, s, with the soft-iron plug t.

12. The sheath B, divided on a horizontal plane passing centrally through the openings h and s.

13. The combination of the upper half of the sheath and its projections s', s'', and x with the lower half of the sheath and its recesses v and w.

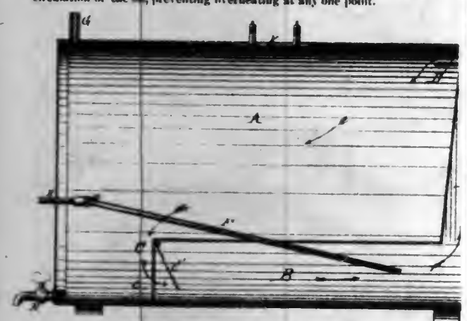
14. The combination of the iron casing containing the coil and its mirrored needle with an adjustable magnet.

15. The combination of the iron casing containing the coil and its mirrored needle with a fixed magnet, L, and adjustable magnet M.

16. The within-described method of varying the sensibility of the instrument by diminishing or increasing the magnetism of the iron sheath, as set forth.

209,943. Oil-Stills. Ole Tilkes, Pittsburg, Pa. Filed May 18, 1878.

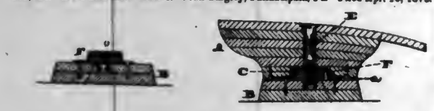
Brief.—Steam injected through the pipe E into the sub-chamber creates a circulation of the oil, preventing overheating at any one point.



Claim.—1. In an oil-still, the sub-chamber B, provided with inlet-openings and discharge-tubes, substantially as and for the object set forth.

2. The combination, in an oil-still, of the chamber B, having the inlet-openings *c c c c*, and the steam or hot-air pipe E, provided with two or more discharge branches or tubes, whereby the oil is caused to circulate through the still, all constructed and operating substantially as and for the purpose set forth.

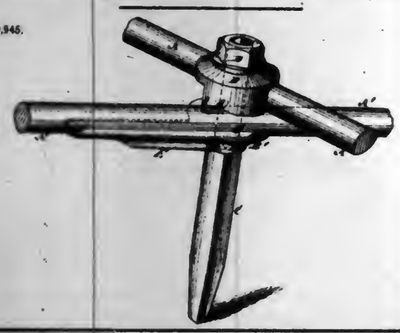
209,944. Boot and Shoe Heels. John Tingley, Philadelphia, Pa. Filed Apr. 10, 1878.



Claim.—1. The angular-shaped plate F, secured to the lower portion, ft, of the heel, and inclosing a nut upon the screw E, in combination with the upper portion or foundation of the heel, formed with an angular-shaped recess adapted to receive the plate F, substantially as herein shown and described, and for the purposes set forth.

2. The combination and arrangement of the two parts of a boot or shoe heel with plate F and screw E, passing through the upper portion of the heel, and down through plate F into the lower portion, B, said plate being fitted in an angular-shaped recess, substantially as shown and described.

209,945.

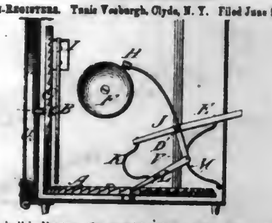


209,945. Harrows. Cornelius B. Tompkins, Elmira, N. Y. Filed Oct. 31, 1878.

Claim.—1. The combination of harrow-teeth, the clamps B B', having recesses for reception of the rods or bars A A', locking stops or projections *k*, formed on or attached to said clamps, and rods or bars A A', provided with recesses or stops *l*, arranged to engage with the stops or projections on said clamps, whereby the bars or rods are restrained from endwise movement or rotation relatively to the clamps and teeth, substantially as and for the purposes specified.

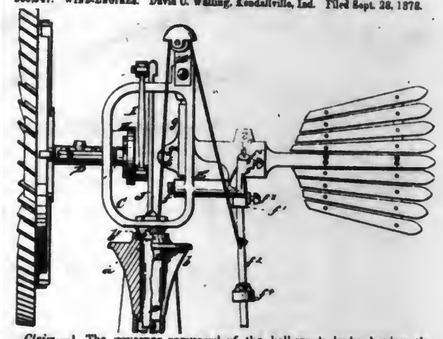
2. The combination, with either or each of the clamps B B', of a grooved projection or shoe, E, arranged to extend laterally from one or each of said clamps, for strengthening or supporting the bars or rods of the harrow-frame, substantially as shown and described.

209,946. Alarm-Registers. Tunis Vosburgh, Clyde, N. Y. Filed June 5, 1878.



Claim.—In a bell-indicator, the combination of the base-wheel A, disk-wheel C, and ratchet-wheel B, having pawl I, with the lever D E and dog L, connected by the spring-arm V, and operated by springs K M, to cause the hammer H to strike the bell F and the dog L to move the wheels, substantially as and for the purposes set forth.

209,947. Wind-Engines. David C. Walling, Kendallville, Ind. Filed Sept. 28, 1878.



Claim.—1. The governor composed of the bell-crank body, having the horizontal shaft *f*, sleeves f^1 f^2, with set-screws, the rod f^3, and adjustable weight f^4, and the link f^5 f^6, combined with the vane, as shown, for the purpose specified.

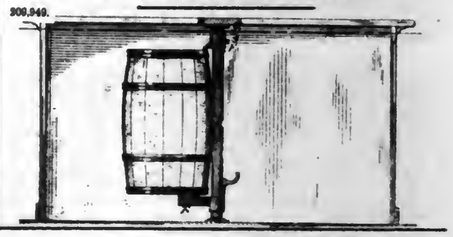
2. The capped sleeve B B', the upwardly-extending annular flange b^1, shoulder b^2, and longitudinal flanges *b*, made of one piece of metal, and adapted to serve in combination with the derrick-frame and rotating frame, as and for the purpose set forth.

209,948. Preparation of Boned Hams. Alexander Warner, New York, N. Y. Filed Oct. 15, 1878.



Claim.—The within-described mode of preparing boneless hams, the same consisting in passing the binding-ties around the ham and beneath the rind of the same, whereby when the ham is boiled the rind can be easily removed without disturbing the binding-ties, as herein shown and described.

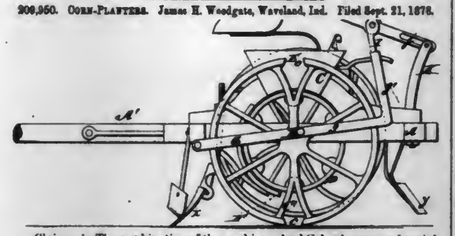
209,949.



209,949. Swinging Barrels, Casks, &c., Beneath Counters. John A. Westlake, Cooperstown, N. Y. Filed Oct. 30, 1878.

Claim.—A revolving pivot-post arranged beneath a counter, resting in bearings at the upper end beneath the counter, and at the lower end, above the floor, provided with a bracket to receive the chine of the barrel or box at the bottom, and an adjustable grapple at the top to hold the barrel or box against the pivot-post and upon the bracket.

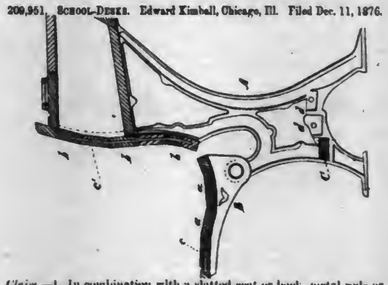
209,950. Corn-Planters. James H. Woodgate, Waveland, Ind. Filed Sept. 21, 1878.



Claim.—1. The combination of the marking-wheel C, having severed periphery *e* and bifurcated spoke C', the axle B, and body A, with the seed-wheel D, with adjustable bottoms *d d'*, of corresponding numbers and portions with the markers and with the shield F, as and for the purpose set forth.

2. In a seeding-machine, the marking-wheel C, having two or more bifurcated spokes, C', and the periphery severed at its junction with the bifurcated spokes, substantially as set forth.

209,951. School-Desks. Edward Kimball, Chicago, Ill. Filed Dec. 11, 1876.



Claim.—1. In combination with a slatted seat or back, metal rods or wires placed between the supports, and passing through the intermediate slats and into the boundary-slats, so as to hold the rods in place and prevent the unequal springing of the slats, substantially as specified.

2. The standards A, provided with a series of recesses, *d*, in combination with the foot-rest C, substantially as and for the purpose specified.

209,952. Processes of Producing Transfer-Pictures. Charles Palm and Julius Fechtler, New York, N. Y. Filed Sept. 26, 1878.

Claim.—1. A transfer-picture having an outer covering of varnish, with the same outline as the printed picture, which is insoluble in water, but soluble by heat, substantially as specified.

2. The within-described process of producing transfer-pictures and transferring the same, which consists in first printing the picture on paper, then printing thereon a coating of water-proof varnish, soluble by heat, coinciding in outline with the printed picture, then rendering the varnish adhesive by heat, applying the picture to the fabric, and removing the paper.

REISSUES.

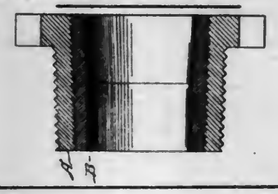
8,482. Cotton-Bale Ties. George A. Soaver, New York, N. Y., assignor, by mesne assignments, to R. W. Rayne. Patent No. 77,770, dated May 12, 1868. Filed Aug. 10, 1878.

Brief.—The hooked end of the wire tie sustains the straight end when strain is exerted by the tightened band.



Claim.—A bale-tie link consisting of a single piece of stiff wire, bent into the form of a parallelogram, and so that the end *c*, where the two ends of the wire cross each other, is made to sustain and support the end *d*, substantially as shown and described, and for the purposes set forth.

8,483.



8,483. Bushings for Faucet-Holes. Samuel R. Thompson, Boston, Mass., assignor, by mesne assignments, to William C. McKean, George H. Jackson, and Jefferson Brown, Jr. Patent No. 141,473, dated Aug. 5, 1873. Filed Oct. 29, 1878.

Claim.—1. A compound bushing for faucet-holes of barrels, &c., consisting of a rigid sleeve or casing and a yielding lining, B, as set forth.

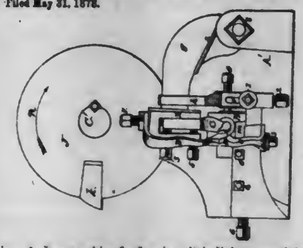
2. The combination of a casing, A, and a lining, B, having a double-beveled internal formation, as shown and described, and for the purpose set forth.

8,484. Eyelets for Securing Buckles to Straps. Charles W. White, Boston, Mass., assignor of part interest to Guyton P. Loring and Dennison W. B. Jackson. Patent No. 206,055, dated July 16, 1878. Filed Nov. 1, 1878.



Claim.—A buckle having an eyelet firmly secured to the attaching-plate, ready for use in eyeleting the attaching-plate to the standing strap.

8,485. Chain-Machines. Jane Fitzpatrick, Wheeling, W. Va., administratrix of Luke Fitzpatrick, deceased, and Jacob Schinneller, Pittsburg, Pa. Patent No. 73,518, dated Jan. 21, 1868. Filed May 31, 1878.



Claim.—1. In a machine for forming chain-links, a revolving oval mandrel, (when viewed in cross-section,) in combination with a bending mechanism and a cutter, so arranged and operating with relation to each other that the link will be severed from the forming links on the mandrel at the larger end of the blank, substantially as herein described.

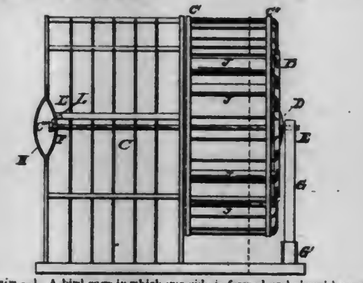
2. In a machine for forming link-blanks, a continuous revolving oval mandrel, (when viewed in cross-section,) in combination with a bending mechanism and a means for separating and advancing the bar as it is coiled on the mandrel, substantially as herein described.

3. In a machine for forming link-blanks, a continuous revolving oval mandrel, (when viewed in cross-section,) in combination with guide B, set D, guide *e*, and cutter, as herein described and set forth.

4. The spring-set D and guide *e*, in combination with the cutter C, constructed, arranged, and operating substantially as herein described, and for the purposes set forth.

5. In a machine for forming link-blanks, the mandrel A, having a recess, P, in combination with a guide, B, provided with opening R, substantially as herein described, and for the purpose set forth.

8,486. Bird-Cages. Anson E. Mook, East Pembroke, N. Y. Patent No. 189,251, dated Apr. 3, 1877. Filed Oct. 26, 1878.



Claim.—1. A bird-cage in which one side is formed and closed by a revolving wheel, substantially as and for the object specified.

2. In a bird-cage, a wheel having its rim supported on one side only, as and for the object stated.

3. A bird-cage in which one side is formed and closed by a wheel having its rim supported on one side only, as and for the purpose specified.

4. The combination, with the revolving cage-wheel B, of a series of perches, J, as described, for the object specified.

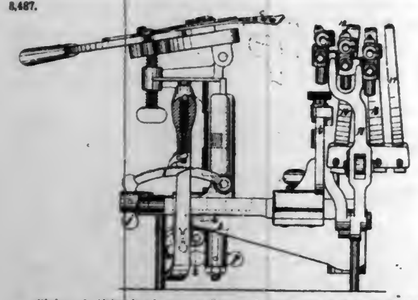
5. The combination, with the body of a cage having the wheel B on its exterior, of the series of perches J, as and for the object stated.

6. In a bird-cage, a body having its fourth side formed and closed by a cage wheel the rim of which is supported on one side only, said wheel being provided with a series of perches, as and for the purpose specified.

7. The wheel B, provided with the rod D, having head C^{10}, in combination with the opening L and standard G, as and for the object specified.

8,487. Lasting-Machines. Henry G. Thompson, Milford, Conn., assignor to Henry G. Thompson, as trustee of the Magnetic Lasting Machine Association. Patent No. 203,673, dated May 14, 1878. Filed Nov. 1, 1878.

8,487.



Claim.—1. Crimping jaws or pullers to draw over and plait in the uppers of boots and shoes, in combination with an adjusting-lever and locking devices, for elevating and depressing the jaws and locking the same fast at any desired position.

2. In combination, crimping jaws or pullers, the pivoted supporting-plate and its carrying-slide, a lever to adjust the jaws and plate vertically, and locking devices to hold them in adjusted position, substantially as set forth.

3. In a lasting-machine, jaws or pullers provided with holes back of their working-edges, to push the edge of the upper over upon the inner sole and hold it while sole-fastenings are being driven through the said holes and below the upper surfaces of the jaws, combined with a tipping supporting-plate, upon which the jaws are carried, and an adjusting device, substantially as described, to tip the said plate and jaws and hold and adapt them to the shape of the bottom of the last.

4. Crimping jaws or pullers and a tipping or supporting plate pivoted at its inner end, in combination with an adjusting device or screw to turn the plate on its pivot, to adjust the jaws or pullers to conform to the shape of the last.

5. In combination, crimping jaws or pullers to draw over and plait in the uppers of boots and shoes, the supporting-plate pivoted at its inner end, the set-screw or equivalent to adjust the outer end of the plate to give to the pullers any desired elevation or depression requisite to conform the same to the shape of the last, and devices to adjust the position of the jaws vertically and horizontally.

6. The combination, in a lasting-machine, of the following instrumentalities, viz: an adjustable pivoted supporting-plate, crimping-jaws, mechanism to reciprocate the jaws longitudinally and to close them as they move forward, and an adjusting-lever adapted to be operated to press the forwardly-moving jaws down upon the upper, so that the pullers bear with a yielding pressure upon the upper while the tacks are being driven, substantially as described.

7. In a lasting-machine, jaws or pullers provided with holes back of the working-edges, to push over the edge of the upper of a boot or shoe, and to permit sole-fastenings to be driven through the said holes for the purpose of securing the upper to the inner sole, in combination with a tipping supporting-plate, devices, substantially as described, to adjust the plate-carrier vertically, and a locking device to hold the plate and carrier, substantially as described.

8. The combination, with the head *h* of the machine, adapted to be supported on a swiveling jack, of shank-lasting mechanism, substantially as described, and mechanism to move all of such shank-lasting mechanism independently with relation to the toe and heel lasting devices, to adapt the shank lasting mechanism to shoes of different sizes.

9. In a lasting-machine, the head, arms *D*, shank-lasting fingers, and springs to bear upon the sides of the upper, in combination with mechanism to simultaneously adjust the arms and their fingers and springs vertically and longitudinally with relation to the head and the height and length of the last, substantially as described.

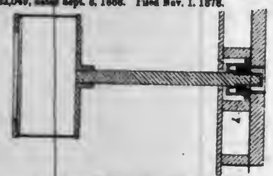
10. In a lasting-machine provided with shank lasting mechanism, the combination, with the head carrying such shank-lasting mechanism, of a horizontally-movable frame, a vertically-movable slide, and devices to move and adjust such frame and slide horizontally and vertically to simultaneously place the shoe and the shank-lasting mechanism in operative position according to the size of the shoe.

11. In combination, the finger-carrying slide, the arms and fingers, and link and lever to close and open the arms, to operate substantially as described.

12. The jaws curved downward from their fulcra to their points or ends, in order that when pressed down upon the shoe by the adjusting-lever the jaws will yield to permit the entire inner curved portion of both jaws to act with a yielding pressure while they draw over and fit the upper to the configuration of the last.

13. Crimping jaws or pullers made entirely of sheet spring-steel, and curved, as described, from their front ends to their fulcra, to adapt themselves to the folded-over edges of the upper at the toe and heel of the last, as set forth.

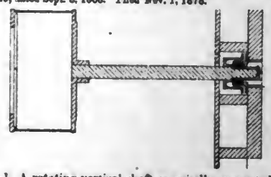
8,488. SELF-BALANCING CENTRIFUGAL MACHINES. David M. Weston, Boston, Mass. Patent No. 82,049, dated Sept. 3, 1868. Filed Nov. 1, 1878.



Claim.—1. In a centrifugal machine, the upright rotary shaft, supported at its lower end only, and the cylinder connected with the said shaft, combined with the bearing in which the shaft rests and rotates, and the easily-yielding spring outside the box, substantially as and for the purpose described.

2. The centrifugal cylinder and the upright cylinder-shaft, supported at its lower end only, and made of sufficient length with reference to the diameter of the cylinder, as described, to prevent the excessive angular oscillation of the machine, combined with the support for the said shaft and yielding spring, operating as set forth.

8,489. SELF-BALANCING CENTRIFUGAL MACHINES. David M. Weston, Boston, Mass. Patent No. 82,049, dated Sept. 3, 1868. Filed Nov. 1, 1878.



Claim.—1. A rotating vertical shaft or spindle supported by its lower end only, and a box fitted to embrace its lower end, combined with a flexible or yielding spring surrounding the outside of the box, substantially as and for the purpose described.

2. A rotating vertical shaft or spindle supported by its lower end only, a box fitted to embrace its lower end, and a flexible or yielding spring placed outside the box, combined with a fixed support external to the spring, substantially as and for the purpose described.

3. A rotating vertical shaft or spindle supported by its lower end only, a box fitted to embrace its lower end, a yielding spring supported outside the box, combined with a sleeved pulley attached to the said shaft and extended downward about the yielding spring and box at the lower end of the rotating spindle, operating substantially as and for the purpose described.

8,490. POCKET LIGHTING DEVICES. George Selden, Erie, Pa., assignee, by mesne assignments, of Philos B. Tyler, William M. Chandler, and L. F. Standish. Patent No. 50,860, dated Nov. 7, 1865; Reissue No. 7,927, dated Oct. 23, 1877. Filed Nov. 2, 1878.



Claim.—1. In a pocket lighting device, a magazine, case, or shell for containing the strip or coil of repeating-match, provided with a lip or nose-piece, projected beyond the outlet opening or passage for the match, and serving to uphold the match against the action of the igniting device.

2. In a pocket lighting device, a magazine, case, or shell for containing a repeating-match, provided with a lip or nose-piece, substantially as described, for upholding the match and an igniting device, between which and the lip or nose-piece the match is ignited.

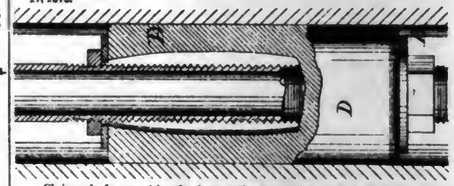
3. In a pocket lighting device, a magazine, case, or shell for containing the strip or coil of repeating-match, provided with an outlet opening or passage for said match, and a lip or nose-piece projected beyond said outlet on a line parallel, or nearly so, with the line of feed of the match.

4. In a pocket lighting device, a magazine, case, or shell, with a lip or nose-piece for upholding the repeating match against the action of the igniting device, and over which the match is fed outward, in combination with an igniting device arranged parallel, or nearly so, with the duct or passage through which the wick or match passes to be ignited.

5. In a pocket lighting device, the combination of a magazine, case, or shell for inclosing a strip or coil of repeating-match, a nose-piece extending beyond the outlet therefor in the magazine, case, or shell, a permanently-attached igniter, acting, in conjunction with said nose-piece, to effect the ignition of the repeating-match, and a device for feeding the repeating-match over the nose-piece.

6. The combination, in a pocket lighting device, of an inclosing case, shell, or magazine, a strip or coil of repeating-match, a lip or nose-piece, substantially as described, for upholding said match against the action of the igniting device, a toothed wheel or equivalent device for feeding the match over the nose-piece, and a permanently-attached igniter, between which and the nose-piece the match is ignited.

8,491. PACKING DEEP WELLS. Alonzo H. Fowler and Edward J. Morgan, Ithaca, N. Y., said Morgan assignor to said Fowler. Patent No. 51,167, dated Nov. 28, 1865. Filed May 17, 1878.



Claim.—1. In a packing for deep wells, the combination, with the eduction-tube, of a pressing device and a hollow cylinder, made of yielding material, encircling said eduction-tube, and mounted loosely between the two parts of the device which presses the cylinder against the wall of the well.

2. In an oil-well packer, a hollow cylindrical block, D, having the sides thinner near the center than at the end, substantially as set forth.

3. In an oil-well packer, an eduction-tube screw-threaded, a hollow cylindrical packing, D, and annular plates mounted on the screw-threaded tubing to press the packing against the wall of the well, substantially as set forth.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 12th DAY OF NOVEMBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adams, I., Worcester, Mass. Machine for trimming and finishing boot and shoe soles	209,787	Nov. 12	282	84	14	723
Adams, P., Jr. (See Shepard and Adams.)						
Affet, M., assignor to himself and J. W. Gardner, Ripley, Ohio. Hat, shade, &c	209,788	Nov. 12	284	84	14	723
Akeroyd, A., *et al.* (See Shackleton and Binns, assignors.)						
Allen, T. T., Denver, Colo. Ore-washer	209,789	Nov. 12	284	85	14	723
Allen, W. C. (See Knight, L., assignor.)						
Allington, D. K., East Saginaw, Mich. Saw-filing machine	209,849	Nov. 12	347	104	14	731
Allis, T. V., New York, N. Y. Fencing-strip	209,790	Nov. 12	285	85	14	723
Anderson, A. (See Nesbitt and Anderson.)						
Annin, J., Le Roy, N. Y. Spring-hook for check-reins	209,850	Nov. 12	348	104	14	731
Arnold, H. H. C., Lebanon, Tenn. Cover for goblets or cups	209,851	Nov. 12	349	104	14	731
Atkinson, F. G., Suffolk, Va. Barrel-stave	209,744	Nov. 12	237	71	14	717
Axe, W. R., Rockton, Ill. Paint-mill	209,792	Nov. 12	287	85	14	723
Axt, A., Philadelphia, Pa. Refrigerator	209,852	Nov. 12	350	104	14	732
Ayers, J., Kenton, Ohio. Fountain-pen	209,791	Nov. 12	286	85	14	723
Bailey, H., Harrisburg, Pa. Dumping-wagon	209,745	Nov. 12	238	71	14	717
Baker, W. C., New York, N. Y. Heating cars	209,793	Nov. 12	288	86	14	723
Batchelder, A. G., Lowell, Mass. Paper-tube machine	209,746	Nov. 12	239	71	14	717
Beaven, S., San Paulo, Brazil. Drier for coffee, cocoa, &c	209,794	Nov. 12	289	86	14	723
Bell, D. F., *et al.* (See Eubank, R. B., Jr., assignor.)						
Belt, J., administratrix. (See Belt, W. S.)						
Belt, W. S., deceased, J. Belt, administratrix, Mount Washington, Ohio. Machine for making sheet-metal roofing	209,747	Nov. 12	240	72	14	717
Bennerscheidt, B. (See Giovannini and Bennerscheidt.)						
Bennett, T. G., New Haven, Conn. Magazine-gun	209,748	Nov. 12	241	72	14	717
Benson, J., Champaign county, Ohio. Windmill	209,853	Nov. 12	351	105	14	732
Binns, H., *et al.* (See Shackleton and Binns, assignors.)						
Binns, J. P. (See Shackleton and Binns.)						
Brecht, L., Baltimore, Md. Ventilating greenhouses	209,854	Nov. 12	352	105	14	732
Breslau, W., assignor of one-half interest to R. F. Danforth, Baltimore, Md. Vapor-burner	209,855	Nov. 12	353	105	14	732
Brown, C. F. (See Swift, W. H., assignor.)						
Brown, J., Jr., *et al.* (See Thompson, S. R., assignor.) (Reissue.)						
Brown, J. B., Washington, D. C. Bag-holder	209,749	Nov. 12	243	72	14	717
Brown, T., Forest Lake, assignor of one-half interest to M. B. Wright, Susquehanna Depot, Pa. Vehicle-wheel	209,856	Nov. 12	354	106	14	732
Brua, S. M., Harrisburg, Pa. Manufacturing flour	209,795	Nov. 12	290	87	14	724
Bruce, J. A., Brooklyn, N. Y. Letter and number for signs	209,796	Nov. 12	291	87	14	724
Bryan, J., Canton, Ill. Bottle-stopper fastener	209,857	Nov. 12	355	106	14	732
Buford, B. D., *et al.* (See Hien, P., assignor.)						
Bull, H. C., Brooklyn, N. Y. Apparatus for supplying and filtering water	209,858	Nov. 12	356	106	14	732
Burton, C. H., Cleveland, Ohio. Steam-engine	209,750	Nov. 12	244	72, 73	14	718
Byrn, E. W. (See Holden and Byrn.)						
Byrne, S., Boston, Mass. Washing-machine	209,797	Nov. 12	292	87	14	724
Callahan, C., assignor of two-thirds interest to E. E. Sibley, Chelsea, Mass. Attaching handles to hose	209,859	Nov. 12	357	106	14	732
Callahan, C., assignor of two-thirds interest to E. E. Sibley, Chelsea, Mass. Textile-fabric hose-pipe	209,860	Nov. 12	357	107	14	732
Cantelo, J., Cedar Rapids, Iowa. Swing-pipe for water-tanks	209,861	Nov. 12	358	107	14	733
Cash Recording Machine Company. (See Moss, Smith, and Hill, assignors.)						
Chandler, W. M. (See Tyler, Chandler, and Standish.) (Reissue.)						
Charmbury, H. (See Corey and Charmbury.)						
Clewell, W., Reading, Pa. Ice-cream measure and mold	209,751	Nov. 12	246	73	14	718
Cole, G. O., Hillsdale, N. J. Fruit-vender's dish	209,864	Nov. 12	361	108	14	733
Connell, J. P. (See Johnson, J. W., assignor.)						
Conway, J. A., Toledo, Ohio. Flower-pot	209,798	Nov. 12	293	87	14	724
Cook, J., Kirkwood, Ill. Wind-engine	209,862	Nov. 12	359	107	14	733
Cooke, D. E., Brantford, Ontario, Canada, assignor, by mesne assignments, of one-half interest to R. Grigor. Window	209,863	Nov. 12	360	108	14	733
Corey, J. W., and H. Charmbury, Newark, N. J. Sweat-band for hats	209,865	Nov. 12	361	108	14	733
Coulter, G. A., Omaha, Nebr. Hame-fastener	209,866	Nov. 12	363	108	14	733
Craigie, H. H., assignor to J. Craigie, Stamford, Conn. Diaphragm-valve for water-tanks, &c	209,867	Nov. 12	364	109	14	733
Craigie, J. (See Craigie, H. H., assignor.)						
Crowell, J. H., assignor of one-half interest to Kendrick Loom Harness Company, Providence, R. I. Harness for looms	209,799	Nov. 12	294	88	14	724
Danforth, R. F. (See Breslau, W., assignor.)						
Dangoise, E., Brussels, Belgium. Machine for cutting and rolling paper	209,868	Nov. 12	366	109	14	733
Dauntless Manufacturing Company. (See Wells, W. W., assignor.)						
Davies, H. J. and W. D., Brooklyn, N. Y. Clock-dial	209,869	Nov. 12	367	109	14	734
Davies, W. D. (See Davies, H. J. and W. D.)						

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Davis, W. (See Rogers, E. H., assignor.)						
Demarest, J., New York, N. Y. Water-closet	209,870	Nov. 12	367	109, 110	14	734
Dewees, M. L., Elk City, and W. W. Green, Cambridgeborough, Pa. Leather-stuffing composition	209,800	Nov. 12	295	.....	14	724
Dillon, J. M., Wheeling, W. Va. Stump-extractor	209,752	Nov. 12	246	73	14	718
Dillon, P., and F. Tracy, Milford, Mass. Sand-paper roll	209,871	Nov. 12	368	110	14	734
Dimond, G. H., Bridgeport, Conn. Sweat-leather for hats	209,872	Nov. 12	369	110	14	734
Doll, A., Buffalo, N. Y. Tire-heating furnace	209,753	Nov. 12	247	73	14	718
Du Brul, C., Cincinnati, Ohio. Tobacco-granulating machine	209,802	Nov. 12	296	88	14	724
Du Brul, N., Cincinnati, Ohio. Tobacco-granulating machine	209,801	Nov. 12	295	88	14	724
Duggins, G. G., *et al.* (See Enbank, R. B., Jr., assignor.)						
Dyson, D. S., Bloomington, Ill. Combination-tool	209,803	Nov. 12	297	89	14	724
Eagon, J. A., *et al.* (See Kendall, S., assignor.)						
Eddy, H. D., and J. M. Kasson, Glenville, Ohio. Sod-cutter	209,804	Nov. 12	298	89	14	725
Elliot, J. W., Toronto, Ontario, Canada. Stove	209,754	Nov. 12	248	74	14	718
Elmer, W. H., Berlin, Wis. Water-wheel	209,873	Nov. 12	370	110, 111	14	734
Enzinger, L. A., Worms, Germany. Filtering apparatus	209,874	Nov. 12	370	111	14	734
Enbank, R. B., Jr., assignor to G. G. Duggins, L. J. Hamner, and D. F. Bell, Miami, Mo. Hay raker and stacker	209,875	Nov. 12	372	112	14	735
Fagin, L., Cincinnati, Ohio. Heating-stove	209,876	Nov. 12	374	112	14	735
Fair, J. M., and W. Hinze, Buffalo, N. Y. Shuttle-race for sewing-machines	209,877	Nov. 12	375	112	14	735
Fairbanks & Co., E. and T. (See Huston, C., assignor.)						
Fechteler, J. (See Palm and Fechteler.)						
Ferree, H. B., Batavia, N. Y. Mail-bag fastener and label-holder	209,878	Nov. 12	375	112	14	735
Fitch, E. R., Hubbardsville, N. Y. Platform-spring for vehicles	209,755	Nov. 12	248	74	14	718
Fitzpatrick, J., administratrix. (See Fitzpatrick and Schinneller.) (Reissue.)						
Fitzpatrick, L., deceased, by J. Fitzpatrick, administratrix, Wheeling, W. Va., and J. Schinneller, Pittsburg, Pa. Chain-machine. (Reissue)	8,485	Nov. 12	452	137	14	745
Fowler, A. H., and E. J. Morgan, Ithaca, N. Y.; said Morgan assignor to said Fowler. Packing deep wells. (Reissue)	8,491	Nov. 12	461	139	14	746
French, D. S., Delphi, Ind. Hog-cholera compound	209,879	Nov. 12	376	.....	14	735
Frink, D. F., New York, N. Y. Coloring photographic pictures	209,880	Nov. 12	376	.....	14	735
Fry, H. C. (See Johnston, J. J., assignor.)						
Fudge, J. M., F. M. Holmes, and S. McDonald, Niles township, Delaware county, Ind. Ditching-plow	209,756	Nov. 12	249	74	14	718
Gardner, J. W. (See Affel, M., assignor.)						
Gatts, M. L. (See Gatts, S. W. and M. L.)						
Gatts, S. W. and M. L., Williams township, Wood county, W. Va. Log-turner	209,881	Nov. 12	377	113	14	735
Gay, W. A., Newark, N. J. Construction of cement vats for tanning, &c	209,757	Nov. 12	250	74	14	719
Giovannini, P., and S. Bennerscheidt, San Francisco, Cal. Water-gate	209,882	Nov. 12	378	113	14	735
Goodall, T., Sanford, Me. Nap or plush goods	209,805	Nov. 12	299	.....	14	725
Goods, W. H. (See McMurray and Goods.)						
Goodyear, A., Albion, Mich. Plow	209,758	Nov. 12	251	75	14	719
Grant, J. (See Houghton, E. C., assignor.)						
Graser, T., Oswego, N. Y. Manufacture of wagon-axles	209,883	Nov. 12	379	113	14	736
Green, W. W. (See Dewees and Green.)						
Greene, W. A., Elizabethport, N. J. Cooking-stove	209,806	Nov. 12	299	89, 90	14	725
Greget, L., assignor to himself and C. L. Hines, Brooklyn, N. Y. Toy pistol	209,884	Nov. 12	380	113	14	736
Griffin, J., Mendocino, Cal. Saw-guide	209,807	Nov. 12	301	90	14	725
Grigor, R. (See Cooke, D. E., assignor.)						
Hain, D. (See Hain, M. and D.)						
Hain, M. and D., Hermann, Mo. Plow attachment	209,885	Nov. 12	380	114	14	736
Halladay, A. A., Bellows Falls, Vt. Rocking-chair	209,886	Nov. 12	382	114	14	736
Hamner, L. J., *et al.* (See Enbank, R. B., Jr., assignor.)						
Harmon, O. S., Brooklyn, assignor of one-half interest to F. A. Phillips, New York, N. Y. Coin-holder	209,887	Nov. 12	383	114	14	736
Harmon, O. S., Brooklyn, assignor of one-half interest to F. A. Phillips, New York, N. Y. Coin-holder	209,888	Nov. 12	384	114	14	736
Harper, J. M., El Paso, Ill. Stove-handle	209,889	Nov. 12	385	115	14	736
Harris, W. H. (See Salmon and Harris.)						
Harvey, W. I., and H. S. Mitchell, Lock Haven, Pa. Grain-separator	209,759	Nov. 12	252	75	14	719
Heisler, C., St. Louis, Mo. Combined speaking and signaling apparatus	209,760	Nov. 12	253	75	14	719
Henning, G. C., Washington, D. C. Hand-rest	209,761	Nov. 12	254	76	14	719
Hien, P., assignor to S. Hien and B. D. Buford, Rock Island, Ill. Platform for railway-cars	209,890	Nov. 12	385	115	14	736
Hien, S., *et al.* (See Hien, P., assignor.)						
Hill, G. J. (See Moss, Smith, and Hill.)						
Hinds, C. H., New York, N. Y. Electric gas-burner	209,891	Nov. 12	386	115	14	736
Hines, C. L. (See Greget, L., assignor.)						
Hinze, W. (See Fair and Hinze.)						
Holden, D. L., Philadelphia, Pa., and E. W. Byrn, Washington, D. C.; said Byrn assignor to said Holden. Refrigerating and air-cooling apparatus	209,892	Nov. 12	387	115	14	736
Holley, H. W., Hale's Ford, Va. Machine for rolling and cutting tobacco	209,808	Nov. 12	302	90	14	725
Holmes, F. M. (See Fudge, Holmes, and McDonald.)						
Houghton, E. C., assignor of one-half interest to J. Grant, Boston, Mass. Reversible filter	209,809	Nov. 12	303	90	14	725
Hubbard, C. W., Pittsburg, Pa. Saw	209,810	Nov. 12	304	91	14	725
Huntley, H. H., Quincy, Ill. Pattern for casting stove-leg attachments	209,811	Nov. 12	305	91	14	726
Huston, C., Coatesville, Pa., assignor to E. and T. Fairbanks & Co., St. Johnsbury, Vt. Device for indicating the yielding of a rod or bar under tension	209,893	Nov. 12	388	116	14	737
Jackson, D. W. B., *et al.* (See White, C. W., assignor.) (Reissue.)						
Jackson, G. H., *et al.* (See Thompson, S. R., assignor.) (Reissue.)						
Jeffery, T. B., Chicago, Ill. Ticket-printing press	209,762	Nov. 12	255	76, 77	14	719
Jett, J., San Francisco, Cal. Lock	209,812	Nov. 12	306	91	14	726
Johnson, J. W., New Britain, assignor to J. P. Connell, Kensington, Conn. Dash-fastener	209,894	Nov. 12	389	116	14	737
Johnston, J. J., Columbiana, Ohio, assignor of one-half interest to H. C. Fry, Rochester, N. Y. Jelly-glass	209,813	Nov. 12	307	91	14	726
Joy, A. K. P., *et al.* (See Shackleton and Binns, assignors.)						
Joy, T. C., Titusville, Pa. Steam-boiler	209,895	Nov. 12	390	116	14	737
Kasson, J. M. (See Eddy and Kasson.)						
Keefer, W. T., New Castle, Pa. Clothes-line stretcher	209,814	Nov. 12	308	92	14	726
Keeler, W. H., Buffalo, N. Y. Revolving pocket hand-stamp	209,763	Nov. 12	258	77	14	720
Keer, E. C. (See Young and Keer.)						
Kell, F., New York, N. Y. Latch	209,815	Nov. 12	309	92	14	726
Kendall, S., Jackson, Cal., assignor of one-half interest to J. A. Eagon and T. J. Phelps. Ore-stamp	209,896	Nov. 12	390	116	14	737
Kendrick Loom Harness Company. (See Crowell, J. H., assignor.)						
Kimball, E., Chicago, Ill. School-desk	209,951	Nov. 12	449	136	14	745

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King, W. H., Athol, Mass. Lathe-chuck	209,897	Nov. 12	391	117	14	737
Kirby, W. M., Pittsburg, Pa. Smoke-consuming device for furnaces	209,898	Nov. 12	392	117	14	737
Knight, L., Arlington, Vt., assignor of one-half interest to W. C. Allen, Cambridge, N. Y. Steam-boiler	209,899	Nov. 12	393	117	14	737
Komp, A., New York, N. Y. Picture-frame	209,900	Nov. 12	394	117	14	738
Krebs, C., Vogelsdorf, near Berlin, Prussia. Steering paddle-wheel	209,901	Nov. 12	395	118	14	738
Kunkle, E. B., Fort Wayne, Ind. Gage-cock	209,816	Nov. 12	310	92	14	726
Lane, C. W., Aurora, Nev. Safety attachment for hoisting-cages	209,903	Nov. 12	396	119	14	738
Lane, P., Elwood, Ind. Fence	209,902	Nov. 12	396	118	14	738
Lapham, A. F., Marion, Ohio. Device for drawing and measuring liquids	209,904	Nov. 12	398	119	14	738
Lees, M., Providence, R. I. Gas-regulator	209,905	Nov. 12	399	119	14	738
Lettelier, J. G., Chicago, Ill. Clamp for attaching scroll-saws to sewing-machines	209,764	Nov. 12	260	77	14	720
Leypoldt, L., New York, N. Y. Railway-rail	209,817	Nov. 12	310	92	14	726
Lloyd, W. M., New York, N. Y. Game-table	209,818	Nov. 12	311	93	14	726
Loehner, A., assignor of one-half interest to J. B. Reilly, St. Louis, Mo. Shaft-coupling	209,765	Nov. 12	260	77	14	720
Long, L., Evansville, Ind. Apparatus for forming horse-collars	209,819	Nov. 12	312	93	14	726
Loring, G. P., *et al.* (See White, C. W., assignor.) (Reissue.)						
Lunger, A. V., Newark, N. J. Mail-crane clamp	209,820	Nov. 12	312	93	14	726
Macarthy, J., Philadelphia, Pa. Roofing for buildings	209,906	Nov. 12	399	119	14	738
Mack, A. G. (See Young, C., assignor.)						
Manes, J., New Haven, Conn. Revolving ore-roaster	209,821	Nov. 12	313	93	14	726
Manley, W. S. (See Maple, J. C., assignor.)						
Maple, J. C., Trenton, N. J., assignor to W. S. Manley. Rein-holder	209,766	Nov. 12	261	78	14	720
Martin, P. R. (See Smith, Matson, and Martin.)						
Martin, S. G., South Amboy, N. J. Steam steering apparatus	209,822	Nov. 12	314	94	14	727
Masterson, L. J., Philadelphia, Pa. Shuttle-box motion for looms	209,907	Nov. 12	400	120	14	738
Matson, C. C. (See Smith, Matson, and Martin.)						
McBrayer, A. G., and F. G. Thomas, Shannon, Miss. Churn	209,767	Nov. 12	262	78	14	720
McBride, M., Philadelphia, Pa. Cartridge-weighing machine	209,824	Nov. 12	316	94	14	727
McConnell, J., Cleveland, Ohio. Detonating toy	209,768	Nov. 12	263	78	14	720
McCook, J. P., Richmond, Va. Packing tobacco	209,908	Nov. 12	401	120	14	739
McCurley, A., Madison, Ala. Combined harrow and cultivator	209,823	Nov. 12	315	94	14	727
McDonald, S. (See Fudge, Holmes, and McDonald.)						
McKean, W. C., *et al.* (See Thompson, S. R., assignor.) (Reissue.)						
McKitrick, D. F. (See Peckham and McKitrick.)						
McMurray, R., and W. H. Goods, Washington, D. C.; said Goods assignor to said McMurray. Tag-holder	209,769	Nov. 12	263	78	14	720
Mensinga, F. C., New York, N. Y. Apparatus for mixing hydrocarbons with air and burning the same	209,825	Nov. 12	318	94	14	727
Merrick, C. M. (See Whysall and Merrick.)						
Meyer, E., Copenick, near Berlin, Prussia, Germany. Composition for forming cement, mortar coatings for walls, &c	209,770	Nov. 12	264	.....	14	720
Miller, A. A., assignor of one-half interest to J. W. Smith, Smithton, Ill. Harvester-rake	209,909	Nov. 12	402	120	14	739
Miller, J. A., Jr., Providence, R. I. Automatic fire-extinguisher	209,910	Nov. 12	403	121	14	739
Mitchell, H. S. (See Harvey and Mitchell.)						
Mitchell, W. S., Washington, D. C. Bridle-bit	209,911	Nov. 12	405	121, 122	14	739
Mock, S., Philadelphia, Pa. Automatic clearer for spinning-mules	209,912	Nov. 12	406	122	14	739
Moffitt, J. R., Boston, Mass. Machinery for forming heel-stiffeners for boots and shoes	209,826	Nov. 12	320	95	14	727
Mook, A. E., East Pembroke, N. Y. Bird-cage. (Reissue)	8,486	Nov. 12	453	138	14	745
Morgan, E. J. (See Fowler and Morgan.) (Reissue.)						
Morse, H. R., Concord, Ohio. Gage-cock for steam-boilers	209,913	Nov. 12	407	122	14	739
Moss, J., New York, J. H. Smith and G. J. Hill, Buffalo, assignors to Cash Recording Machine Company, New York, N. Y. Ticket printing and recording machine	209,827	Nov. 12	321	95, 96	14	727
Nawadny, A., New Orleans, La. Machine for boring brush-blocks	209,828	Nov. 12	324	96	14	728
Nemelka, L., Simmering, near Vienna, Austria. Roller-mill for reducing grain	209,829	Nov. 12	325	97	14	728
Nesbitt, J., and A. Anderson, Toronto, Ontario, Canada. Curtain-roller	209,771	Nov. 12	265	79	14	720
New, T., New York, N. Y. Roofing material	209,830	Nov. 12	326	.....	14	728
Nisbet, J. G., and J. K. Vint, Cynthiana, Ind. Grain-shelter	209,772	Nov. 12	266	79	14	721
Newberry, H. S., Cleveland, Ohio. Car-ventilator	209,914	Nov. 12	408	123	14	740
Norrington, H. H., West Bay City, Mich. Perforating-stamp	209,915	Nov. 12	409	123	14	740
Ochsner, A., New Haven, Conn. Fire-escape	209,916	Nov. 12	410	123	14	740
O'Hara, P. H., New York, N. Y. Stand for showing cloaks	209,917	Nov. 12	412	123	14	740
Ottinger, D., Erie, Pa. Fire-escape	209,773	Nov. 12	267	79	14	721
Palm, C., and J. Fechteler, New York, N. Y. Producing transfer pictures	209,952	Nov. 12	450	.....	14	745
Parks, J. T., Effingham, Ill. Nut-lock	209,831	Nov. 12	326	97	14	728
Pattberg, H., Jersey City Heights, N. J. Picture-frame	209,832	Nov. 12	327	97	14	728
Peabody, H. A., Sacramento, Cal. Copy-holder	209,918	Nov. 12	413	124	14	740
Peckham, W. C., and D. F. McKitrick, Troy, Ohio. Device for pulling off boots and shoes	209,919	Nov. 12	414	124	14	740
Pederson, O., Joliet, Ill. Screw-cutting die	209,774	Nov. 12	267	79	14	721
Perrin, C., Springfield, Ohio. Interchangeable gearing for grain-drills	209,833	Nov. 12	327	98	14	729
Phelps, T. J., *et al.* (See Kendall, S., assignor.)						
Phillips, F. A. (See Harmon, O. S., assignor.)						
Poletti, M., Fribourg, Switzerland. Manufacture of bricks and tiles	209,920	Nov. 12	414	124, 125	14	740
Pond, R. J., New York, N. Y. Horse-detacher	209,834	Nov. 12	329	98	14	729
Potter, H. H., Sterlingville, N. Y. Car-coupling	209,835	Nov. 12	330	98, 99	14	729
Rayne, R. W. (See Seaver, G. A., assignor.) (Reissue.)						
Reilly, J. B. (See Loehner, A., assignor.)						
Requa, E. B., Jersey City, N. J. Lantern	209,921	Nov. 12	416	125	14	741
Rheutan, A. A., Worcester, Mass. Piano-forte pedal	209,775	Nov. 12	268	80	14	721
Richards, G. B., Prairieville, Mich. Churn and washing-machine	209,922	Nov. 12	418	125	14	741
Rickly, G. C., Ottawa, Ill. Pen and pencil clasp	209,776	Nov. 12	269	80	14	721
Roberts, E. A. L., Titusville, Pa. Casting cranks	209,836	Nov. 12	332	99	14	729
Rogers, E. H., Boley Springs, assignor of one-half interest to W. Davis, Fayette county, Ala. Cotton-hoe	209,923	Nov. 12	419	126	14	741
Ross, A. Q., Cincinnati, Ohio. Toy galloping horse and carriage	209,777	Nov. 12	269	80	14	721
Ronalx, H., Paris, France. Palette for testing oils	209,924	Nov. 12	419	126	14	741
Rumpp, E., and A. Weinreich, Philadelphia, Pa. Handle attachment for traveling bags and satchels	209,926	Nov. 12	422	127	14	741
Rupertus, J., Philadelphia, Pa. Breech-loading fire-arm	209,925	Nov. 12	420	126	14	741
Ryan, W. M., Moline, Ill. Post-hole digger and transplanter	209,837	Nov. 12	333	99	14	729
Salmon, J. F. (See Salmon and Harris.)						
Salmon, W. C. and J. F., and W. H. Harris, Portland, Oreg. Mill for grinding ore	209,838	Nov. 12	333	99, 100	14	729
Schinneller, J. (See Fitzpatrick and Schinneller.) (Reissue.)						
Seaver, G. A., New York, N. Y., assignor, by mesne assignments, to R. W. Rayne. Cotton-bale tie. (Reissue)	8,482	Nov. 12	450	137	14	745

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Selden, G. (See Tyler, Chandler, and Standish, assignors.) (Reissue.)						
Shackleton, J., and J. P. Binns, Halifax, assignors to said Binns, A. Akeroyd, Bradford, England, A. K. P. Joy, Winchester, and H. Binns, Lowell, Mass. Machine for tying in warps	209,927	Nov. 12	422	127, 128, 129	14	741
Sharp, C. M. (See Sharp, D. P., assignor.)						
Sharp, D. P., assignor to C. M. Sharp, Ithaca, N. Y. Horse hay-rake	209,928	Nov. 12	427	129	14	742
Shelby, C. C., New York, N. Y. Stocking supporter and clasp	209,778	Nov. 12	270	80	14	721
Shepard, C. G., and P. Adams, Jr., assignors to said Shepard and W. J. Shepard, Buffalo, N. Y. Fluting-machine	209,930	Nov. 12	429	129	14	742
Shepard, W., Jonesburg, Mo. Hand corn-planter	209,929	Nov. 12	428	129	14	742
Shepard, W. J. (See Shepard and Adams, assignors.)						
Sibley, E. E. (See Callahan, C., assignor.)						
Smick, S. S., Fort Wayne, Ind. Grave-shield and body-protector	209,932	Nov. 12	430	130	14	742
Smith, E. D., C. C. Matson, and P. R. Martin, Utica, Ill. Toe-weight for horses	209,840	Nov. 12	336	100	14	730
Smith, J. A., Wenona, Ill. Plow	209,779	Nov. 12	271	81	14	721
Smith, J. H. (See Moss, Smith, and Hill.)						
Smith, J. W. (See Miller, A. A., assignor.)						
Smith, N., Vinton, Iowa. Weather-strip	209,839	Nov. 12	335	100	14	730
Smith, W., Carmi, Ill. Thill-supporter	209,931	Nov. 12	430	130	14	742
Somers, D. M., Brooklyn, N. Y. Pocket traveling-box	209,933	Nov. 12	431	130	14	742
Spencer, R., Columbus, Ohio. Refrigerator	209,934	Nov. 12	432	130	14	742
Standish, L. F. (See Tyler, Chandler, and Standish.) (Reissue.)						
Staver, G. W., Monroe, Wis. Cultivator	209,780	Nov. 12	272	81	14	721
Stead, I., Philadelphia, Pa. Air-vent for street-lamp reservoirs	209,935	Nov. 12	433	131	14	742
Stevens, F. B., Hoboken, N. J. Boiler-covering	209,937	Nov. 12	435	131	14	743
Stewart, W. H., Butler, Mo. Kitchen-cabinet	209,936	Nov. 12	434	131	14	742
Stockwell, J. A., Lee, England. Launching life-boats, &c	209,938	Nov. 12	435	132, 133	14	743
Strong, H. N., Cornwall, N. Y. Uniting the rubber rolls of wringers	209,781	Nov. 12	273	81	14	722
Swan, J., Seymour, Conn. Manufacture of auger-bits	209,782	Nov. 12	273	82	14	722
Swift, W. H., Medford, assignor of one-half interest to C. F. Brown, Reading, Mass. Muffler for the escape of exhaust-steam	209,939	Nov. 12	437	133	14	743
Terry, J. B., assignor of one-half interest to S. D. Thompson, Ithaca, N. Y. Folding table	209,940	Nov. 12	438	133	14	743
Thomas, F. G. (See McBrayer and Thomas.)						
Thompson, H. G., Milford, Conn., assignor to H. G. Thompson, trustee. Lasting-machine. (Reissue)	8,487	Nov. 12	454	138	14	745
Thompson, S. R., Boston, Mass., assignor, by mesne assignments, to W. C. McKean, G. H. Jackson, and J. Brown, Jr. Bushing for faucet-holes. (Reissue)	8,483	Nov. 12	451	137	14	745
Thompson, S. D. (See Terry, J. B., assignor.)						
Thomson, G. B., St. Louis, Mo. Check-rein attachment	209,941	Nov. 12	439	133	14	743
Thomson, W., Glasgow, Scotland. Reflecting-galvanometer	209,942	Nov. 12	439	134	14	743
Tilton, O., Pittsburg, Pa. Oil-still	209,943	Nov. 12	442	134	14	744
Tingley, J., Philadelphia, Pa. Boot and shoe heel	209,944	Nov. 12	443	134	14	744
Tompkins, C. B., Elmira, N. Y. Harrow	209,945	Nov. 12	411	134	14	744
Town, C. E., Washington, D. C. Overshoe, sandal, or boot	209,841	Nov. 12	337	101	14	730
Tracy, F. (See Dillon and Tracy.)						
Tyler, P. B., W. M. Chandler, and L. F. Standish, assignors, by mesne assignments, to G. Selden, Erie, Pa. Pocket lighting device. (Reissue)	8,490	Nov. 12	460	139	14	746
Underwood, J. B., Fayetteville, N. C. Combined chair and treadle power	209,842	Nov. 12	338	101	14	730
Vint, J. K. (See Nisbet and Vint.)						
Vosburgh, T., Clyde, N. Y. Alarm-register	209,946	Nov. 12	445	135	14	744
Walling, D. C., Kendallville, Ind. Wind-engine	209,947	Nov. 12	446	135	14	744
Warlow, R., Cleveland, Ohio. Tether	209,783	Nov. 12	275	82	14	722
Warner, A., New York, N. Y. Preparation of boned hams	209,948	Nov. 12	446	135	14	744
Warner, R. D. (See Yost and Warner.)						
Weinreich, A. (See Rumpp and Weinreich.)						
Wells, W. W., assignor to Dauntless Manufacturing Company, Norwalk, Ohio. Sewing-machine	209,843	Nov. 12	339	101, 102	14	730
Westlake, J. A., Cooperstown, N. Y. Swinging barrels, casks, &c., beneath counters	209,949	Nov. 12	447	136	14	745
Weston, D. M., Boston, Mass. Self-balancing centrifugal machine. (Reissue)	8,488	Nov. 12	457	138	14	746
Weston, D. M., Boston, Mass. Self-balancing centrifugal machine. (Reissue)	8,489	Nov. 12	459	138	14	746
Whiley, F. C., Lancaster, Ohio. Animal-poke	209,844	Nov. 12	341	102	14	730
White, C. W., Boston, Mass., assignor of part interest to G. P. Loring and D. W. B. Jackson. Eyelet for securing buckles to straps. (Reissue)	8,484	Nov. 12	451	137	14	745
Whittemore, A., Cambridgeport, Mass. Peg-float	209,784	Nov. 12	276	82	14	722
Whysall, J., Jr., and C. M. Merrick, New Brighton, Pa. Machine for the manufacture of horseshoe-nails	209,845	Nov. 12	342	102, 103	14	730
Winkel, W., Pluckemin, N. J. Sash-fastener	209,785	Nov. 12	277	83	14	722
Wright, M. B. (See Brown, T., assignor.)						
Woodgate, J. H., Waveland, Ind. Corn-planter	209,950	Nov. 12	448	136	14	745
Yost, G. W. N., New York, and R. D. Warner, Syracuse, N. Y. Mower	209,846	Nov. 12	344	103	14	731
Young, C., assignor to A. G. Mack, Chicago, Ill. Crocheting-machine for making looped fabrics	209,786	Nov. 12	278	83, 84	14	722
Young, F., and E. C. Keer, Newark, N. J. Spring-bracelet	209,847	Nov. 12	346	103	14	731
Zoepfel, E. H., New York, N. Y. Jewel-box	209,848	Nov. 12	346	103	14	731

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 12th DAY OF NOVEMBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Alarm-register	T. Vosburgh	209,946	Nov. 12	445	135	14	744
Animal-poke	F. C. Whiley	209,844	Nov. 12	341	102	14	730
Auger-bits. Manufacture of	J. Swan	209,782	Nov. 12	273	82	14	722
Axles. Manufacture of wagon-	T. Graser	209,883	Nov. 12	379	113	14	736
Bag-holder	J. B. Brown	209,749	Nov. 12	243	72	14	717
Bale tie. Cotton-	G. A. Seaver. (Reissue)	8,482	Nov. 12	450	137	14	745
Barrel-stave	F. G. Atkinson	209,744	Nov. 12	237	71	14	717
Barrels, casks, &c., beneath counters. Swinging	J. A. Westlake	209,949	Nov. 12	447	136	14	745
Bird-cage	A. E. Mook. (Reissue)	8,486	Nov. 12	453	138	14	745
Boiler-covering	F. B. Stevens	209,937	Nov. 12	435	131	14	743
Boiler. Steam-	T. C. Joy	209,895	Nov. 12	390	116	14	737
Boiler. Steam-	L. Knight	209,899	Nov. 12	393	117	14	737
Boilers. Gage-cock for steam-	H. R. Morse	209,913	Nov. 12	407	122	14	739
Boot and shoe heel	J. Tingley	209,944	Nov. 12	443	134	14	744
Boot and shoe soles. Machine for trimming and finishing	I. Adams	209,787	Nov. 12	282	84	14	723
Boots and shoes. Device for pulling off	W. C. Peckham and D. F. McKitrick	209,919	Nov. 12	414	124	14	740
Boots and shoes. Machinery for forming heel-stiffeners for	J. R. Moffitt	209,896	Nov. 12	320	95	14	727
Bottle-stopper fastener	J. Bryan	209,857	Nov. 12	355	106	14	732
Bracelet. Spring-	F. Young and E. C. Keer	209,847	Nov. 12	346	103	14	731
Bricks and tiles. Manufacture of	M. Poletti	209,920	Nov. 12	414	124, 125	14	740
Bridle-bit	W. S. Mitchell	209,911	Nov. 12	405	121, 122	14	739
Brush-blocks. Machine for boring	A. Nawadny	209,828	Nov. 12	324	96	14	728
Buckles to straps. Eyelet for securing	C. W. White. (Reissue)	8,484	Nov. 12	451	137	14	745
Cabinet. Kitchen-	W. H. Stewart	209,936	Nov. 12	434	131	14	742
Car-coupling	H. H. Potter	209,835	Nov. 12	330	98, 99	14	729
Cars. Heating	W. C. Baker	209,793	Nov. 12	288	86	14	723
Cars. Platform for railway-	P. Hien	209,890	Nov. 12	385	115	14	736
Cartridge-weighing machine	M. McBride	209,824	Nov. 12	316	94	14	727
Casting cranks	E. A. L. Roberts	209,836	Nov. 12	332	99	14	729
Casting stove-leg attachments. Pattern for	H. H. Huntley	209,811	Nov. 12	305	91	14	726
Cement, mortar coatings for walls, &c. Composition for forming	E. Meyer	209,770	Nov. 12	264	.....	14	720
Centrifugal machine. Self-balancing	D. M. Weston. (Reissue)	8,488	Nov. 12	457	138	14	746
Centrifugal machine. Self-balancing	D. M. Weston. (Reissue)	8,489	Nov. 12	459	138	14	746
Chain-machine	L. Fitzpatrick and J. Schinneller. (Reissue.)	8,485	Nov. 12	452	137	14	745
Chair and treadle power. Combined	J. B. Underwood	209,842	Nov. 12	338	101	14	730
Chair. Rocking-	A. A. Halladay	209,886	Nov. 12	382	114	14	736
Churn	A. G. McBrayer and F. G. Thomas	209,767	Nov. 12	262	78	14	720
Churn and washing-machine	G. B. Richards	209,922	Nov. 12	418	125	14	741
Cloaks. Stand for showing	P. H. O'Hara	209,917	Nov. 12	412	123	14	740
Clock-dial	H. J. and W. D. Davies	209,869	Nov. 12	367	109	14	734
Clothes-line stretcher	W. T. Keefer	209,814	Nov. 12	308	92	14	726
Cock. Gage-	E. B. Knukle	209,816	Nov. 12	310	92	14	726
Coffee, cocoa, &c., drier	S. Beaven	209,794	Nov. 12	289	86	14	723
Coin-holder	O. S. Harmon	209,887	Nov. 12	383	114	14	736
Coin-holder	O. S. Harmon	209,888	Nov. 12	384	114	14	736
Copy-holder	H. A. Peabody	209,918	Nov. 12	413	124	14	740
Crocheting-machine for making looped fabrics	C. Young	209,786	Nov. 12	278	83, 84	14	722
Cultivator	G. W. Staver	209,780	Nov. 12	272	81	14	721
Curtain-roller	J. Nesbitt and A. Anderson	209,771	Nov. 12	265	79	14	720
Desk. School-	E. Kimball	209,951	Nov. 12	449	136	14	745
Dish. Fruit-venders'	G. O. Cole	209,864	Nov. 12	361	108	14	733
Drills. Interchangeable gearing for grain-	C. Perrin	209,833	Nov. 12	327	98	14	726
Engine. Steam-	C. H. Barton	209,750	Nov. 12	244	72, 73	14	718
Engine. Wind-	J. Cook	209,862	Nov. 12	359	107	14	733
Engine. Wind-	D. C. Walling	209,947	Nov. 12	446	135	14	744
Faucet-holes. Bushing for	S. R. Thompson. (Reissue)	8,483	Nov. 12	451	137	14	745
Fence	P. Lane	209,902	Nov. 12	396	118	14	738
Fencing-strip	T. V. Allis	209,790	Nov. 12	285	85	14	723
Filter. Reversible	E. C. Houghton	209,809	Nov. 12	303	90	14	725
Filtering apparatus	L. A. Enzinger	209,874	Nov. 12	370	111	14	734
Fire-arm. Breech-loading	J. Rupertus	209,925	Nov. 12	420	126	14	741
Fire-escape	A. Ochsner	209,916	Nov. 12	410	123	14	740
Fire-escape	D. Ottinger	209,773	Nov. 12	267	79	14	721
Fire-extinguisher. Automatic	J. A. Miller, Jr.	209,910	Nov. 12	403	121	14	739
Flour. Manufacturing	S. M. Brua	209,795	Nov. 12	290	87	14	724

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Flower-pot	J. A. Conway	209,798	Nov. 12	293	87	14	724
Fluting-machine	C. G. Shepard and P. Adams, Jr.	209,930	Nov. 12	429	129	14	742
Furnace. Tire-heating	A. Doll	209,753	Nov. 12	247	73	14	718
Furnaces. Smoke-consuming device for	W. M. Kirby	209,898	Nov. 12	392	117	14	737
Galvanometer. Reflecting	W. Thomson	209,942	Nov. 12	439	134	14	743
Game-table	W. M. Lloyd	209,818	Nov. 12	311	93	14	726
Gas-burner. Electric	C. H. Hinds	209,891	Nov. 12	386	115	14	736
Gas-regulator	M. Lees	209,905	Nov. 12	399	119	14	738
Gate. Water	P. Giovannini and B. Bennerscheidt	209,892	Nov. 12	378	113	14	735
Goblets or cups. Cover for	H. H. C. Arnold	209,851	Nov. 12	349	104	14	731
Grain-separator	W. I. Harvey and H. S. Mitchell	209,730	Nov. 12	252	75	14	719
Grain-shelter	J. G. Nisbet and J. K. Vint	209,772	Nov. 12	266	79	14	721
Grave-shield and body-protector	S. S. Smick	209,932	Nov. 12	430	130	14	742
Gun. Magazine	T. G. Bennett	209,748	Nov. 12	241	72	14	717
Hame-fastener	G. A. Coulter	209,866	Nov. 12	363	108	14	733
Hams. Preparation of boned	A. Warner	209,948	Nov. 12	446	135	14	744
Hand-rest	G. C. Henning	209,761	Nov. 12	254	76	14	719
Harrow	C. B. Tompkins	209,945	Nov. 12	444	134	14	744
Harrow and cultivator. Combined	A. McCurley	209,823	Nov. 12	315	94	14	727
Harvester-rake	A. A. Miller	209,909	Nov. 12	402	120	14	739
Hat, shade, &c	M. Affel	209,788	Nov. 12	284	84	14	723
Hats. Sweat-band for	J. W. Corey and H. Charmbury	209,865	Nov. 12	361	108	14	733
Hats. Sweat-leather for	G. H. Dimond	209,872	Nov. 12	369	110	14	734
Hoe. Cotton	E. H. Rogers	209,923	Nov. 12	419	126	14	741
Hog-cholera compound	D. S. French	209,879	Nov. 12	376	.....	14	735
Hoisting-cages. Safety attachment for	C. W. Lane	209,903	Nov. 12	396	119	14	738
Horse-collars. Apparatus for forming	L. Long	209,819	Nov. 12	312	93	14	726
Horse-detacher	R. J. Pond	209,834	Nov. 12	329	98	14	729
Horse toe-weight	E. D. Smith, C. C. Matson, and P. R. Martin.	209,840	Nov. 12	336	100	14	730
Horseshoe-nails. Machine for the manufacture of	J. Whysall, Jr., and C. M. Merrick	209,845	Nov. 12	342	102, 103	14	730
Hose. Attaching handles to	C. Callahan	209,859	Nov. 12	357	106	14	732
Hose-pipe. Textile fabric	C. Callahan	209,860	Nov. 12	357	107	14	732
Hydrocarbons with air and burning the same. Apparatus for mixing	F. C. Mensinga	209,825	Nov. 12	318	94	14	737
Ice-cream measure and mold	W. Clewell	209,751	Nov. 12	246	73	14	718
Jelly-glass	J. J. Johnston	209,813	Nov. 12	307	91	14	726
Jewel-box	E. H. Zoepfel	209,848	Nov. 12	346	103	14	731
Lamp reservoirs. Air-vent for street	I. Stead	209,935	Nov. 12	433	131	14	742
Lantern	E. B. Regna	209,921	Nov. 12	416	125	14	741
Lasting-machine	H. G. Thompson. (Reissue)	8,487	Nov. 12	454	138	14	745
Latch	F. Keil	209,815	Nov. 12	309	92	14	726
Lathe-chuck	W. H. King	209,897	Nov. 12	391	117	14	737
Leather-stuffing composition	M. L. Dewees and W. W. Green	209,800	Nov. 12	295	.....	14	724
Letter and number for signs	J. A. Bruce	209,796	Nov. 12	291	87	14	724
Life-boats, &c. Launching	J. A. Stockwell	209,938	Nov. 12	435	132, 133	14	743
Lighting device. Pocket	P. B. Tyler, W. M. Chandler, and L. F. Standish. (Reissue.)	8,490	Nov. 12	460	139	14	746
Liquids. Device for drawing and measuring	A. F. Lapoam	209,904	Nov. 12	398	119	14	738
Lock	J. Jett	209,812	Nov. 12	306	91	14	726
Log-turner	S. W. and M. L. Gatts	209,881	Nov. 12	377	113	14	735
Loom-harness	J. H. Crowell	209,799	Nov. 12	294	88	14	724
Loom shuttle-box motion	L. J. Masterson	209,907	Nov. 12	400	120	14	738
Mail-bag fastener and label-holder	H. B. Ferren	209,878	Nov. 12	375	112	14	735
Mail-crane clamp	A. V. Lunger	209,820	Nov. 12	312	93	14	726
Mill for grinding ore	W. C. and J. F. Salmon and W. H. Harris.	209,838	Nov. 12	333	99, 100	14	729
Mill for reducing grain. Roller	L. Nemelka	209,829	Nov. 12	325	97	14	728
Mill. Paint	W. R. Axe	209,792	Nov. 12	287	85	14	723
Mower	G. W. N. Yost and R. D. Warner	209,846	Nov. 12	344	103	14	731
Nap or plush goods	T. Goodall	209,805	Nov. 12	299	.....	14	725
Nut-lock	J. T. Parks	209,831	Nov. 12	326	97	14	728
Ore-roaster. Revolving	J. Manes	209,821	Nov. 12	313	93	14	726
Ore-washer	T. T. Allen	209,789	Nov. 12	284	85	14	723
Overshoe, sandal, or boot	C. E. Town	209,841	Nov. 12	337	101	14	730
Packing deep wells	A. H. Fowler and E. J. Morgan. (Reissue.)	8,491	Nov. 12	461	139	14	746
Paddle-wheel. Steering	C. Krebs	209,901	Nov. 12	395	118	14	738
Palette for testing oils	H. Rouaix	209,924	Nov. 12	419	126	14	741
Paper cutting and rolling machine	E. Dangoise	209,868	Nov. 12	366	109	14	733
Paper-tube machine	A. G. Batchelder	209,746	Nov. 12	239	71	14	717
Peg-float	A. Whittemore	209,784	Nov. 12	276	82	14	722
Pen and pencil clasp	G. C. Rickly	209,776	Nov. 12	269	80	14	721
Pen. Fountain	J. Ayers	209,791	Nov. 12	286	85	14	723
Photographic pictures. Coloring	D. F. Frink	209,880	Nov. 12	376	.....	14	735
Piano-forte pedal	A. A. Rheutan	209,775	Nov. 12	268	80	14	721
Picture-frame	A. Komp	209,900	Nov. 12	394	117	14	738
Picture-frame	H. Pattberg	209,832	Nov. 12	327	97	14	728
Pictures. Producing transfer	C. Palm and J. Fechteler	209,952	Nov. 12	450	.....	14	745
Planter. Corn	J. H. Woodgate	209,950	Nov. 12	448	136	14	745
Planter. Hand corn	W. Shepard	209,929	Nov. 12	428	129	14	742
Plow	A. Goodyear	209,758	Nov. 12	251	75	14	719
Plow	J. A. Smith	209,779	Nov. 12	271	81	14	721
Plow attachment	M. and D. Hain	209,885	Nov. 12	380	114	14	736
Plow. Ditching	J. M. Fudge, F. M. Holmes, and S. McDonald.	209,756	Nov. 12	249	74	14	718
Post-hole digger and transplanter	W. M. Ryan	209,837	Nov. 12	333	99	14	729
Printing and recording machine. Ticket	J. Moss, J. H. Smith, and G. J. Hill	209,827	Nov. 12	321	95, 96	14	727
Printing press. Ticket	T. B. Jeffery	209,762	Nov. 12	255	76, 77	14	719
Railway-rail	L. Leypoldt	209,817	Nov. 12	310	92	14	726
Rake. Horse hay	D. P. Sharp	209,928	Nov. 12	427	129	14	742
Raker and stacker. Hay	R. B. Eubank, Jr	209,875	Nov. 12	372	112	14	735
Refrigerating and air-cooling apparatus	D. L. Holden and E. W. Byrn	209,892	Nov. 12	387	115	14	736
Refrigerator	A. Axt	209,852	Nov. 12	350	104	14	732
Refrigerator	R. Spencer	209,934	Nov. 12	432	130	14	742
Rein attachment. Check	G. B. Thomson	209,941	Nov. 12	439	133	14	743

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rein-holder	J. C. Maple	209,766	Nov. 12	261	78	14	720
Reins. Spring-hook for check	J. Annin	209,850	Nov. 12	348	104	14	731
Roofing for buildings	J. Macarthy	209,906	Nov. 12	399	119	14	738
Roofing. Machine for making sheet-metal	W. S. Belt	209,747	Nov. 12	240	72	14	717
Roofing material	T. New	209,830	Nov. 12	326	.....	14	728
Sand-paper roll	P. Dillon and F. Tracy	209,871	Nov. 12	368	110	14	734
Sash-fastener	J. W. Johnson	209,894	Nov. 12	389	116	14	737
Sash-fastener	W. Winkel	209,785	Nov. 12	277	83	14	722
Saw	C. W. Hubbard	209,810	Nov. 12	304	91	14	725
Saw-filing machine	D. K. Allington	209,849	Nov. 12	347	104	14	731
Saw-guide	J. Griffin	209,807	Nov. 12	301	90	14	725
Sawa to sewing-machines. Clamp for attaching scroll	J. G. Lettelier	209,764	Nov. 12	260	77	14	720
Screw-cutting die	O. Pederson	209,774	Nov. 12	267	79	14	721
Sewing-machine	W. W. Wells	209,843	Nov. 12	339	101, 102	14	730
Sewing-machines. Shuttle-race for	J. M. Fair and W. Hinze	209,877	Nov. 12	375	112	14	735
Shaft-coupling	A. Loehner	209,765	Nov. 12	260	77	14	720
Sod-cutter	H. D. Eddy and J. M. Kasson	209,804	Nov. 12	298	89	14	725
Speaking and signaling apparatus. Combined	C. Heisler	209,760	Nov. 12	253	75	14	719
Spinning-mules. Automatic clearer for	S. Mock	209,912	Nov. 12	406	122	14	739
Spring for vehicles. Platform	E. R. Fitch	209,755	Nov. 12	248	74	14	718
Stamp. Ore	S. Kendall	209,896	Nov. 12	390	116	14	737
Stamp. Perforating	H. H. Norrington	209,915	Nov. 12	409	123	14	740
Stamp. Revolving pocket hand	W. H. Keeler	209,763	Nov. 12	258	77	14	720
Steam. Muffler for the escape of exhaust	W. H. Swift	209,939	Nov. 12	437	133	14	743
Steering apparatus. Steam	S. G. Martin	209,822	Nov. 12	314	94	14	727
Still. Oil	O. Tilton	209,943	Nov. 12	442	134	14	744
Stocking supporter and clasp	C. C. Shelby	209,778	Nov. 12	270	80	14	721
Stove	J. W. Elliot	209,754	Nov. 12	248	74	14	718
Stove. Cooking	W. A. Greene	209,806	Nov. 12	299	89, 90	14	725
Stove-handle	J. M. Harper	209,889	Nov. 12	385	115	14	736
Stove. Heating	L. Fagin	209,876	Nov. 12	373	112	14	735
Stump-extractor	J. M. Dillon	209,752	Nov. 12	246	73	14	718
Table. Folding	J. B. Terry	209,940	Nov. 12	438	133	14	743
Tag-holder	R. McMurray and W. H. Goods	209,769	Nov. 12	263	78	14	720
Tanks, &c. Diaphragm-valve for water	H. H. Craigie	209,867	Nov. 12	364	109	14	733
Tanks. Swing-pipe for water	J. Cantelo	209,861	Nov. 12	358	107	14	733
Tanning and other purposes. Construction of cement vats for	W. A. Gay	209,757	Nov. 12	250	74	14	719
Tension. Device for indicating the yielding of a rod or bar under	C. Huston	209,893	Nov. 12	388	116	14	737
Tether	R. Warlow	209,783	Nov. 12	275	82	14	722
Thill-supporter	W. Smith	209,931	Nov. 12	430	130	14	742
Tobacco-granulating machine	C. Du Brul	209,802	Nov. 12	296	88	14	724
Tobacco-granulating machine	N. Du Brul	209,801	Nov. 12	295	88	14	724
Tobacco. Packing	J. P. McCook	209,908	Nov. 12	401	120	14	739
Tobacco rolling and cutting machine	H. W. Holley	209,808	Nov. 12	302	90	14	725
Tool. Combination	D. S. Dyson	209,803	Nov. 12	297	89	14	724
Toy. Detonating	J. McConnell	209,768	Nov. 12	263	78	14	720
Toy galloping horse and carriage	A. Q. Ross	209,777	Nov. 12	269	80	14	721
Toy pistol	L. Greget	209,884	Nov. 12	380	113	14	736
Traveling bags and satchels. Handle attachment for	E. Rumpp and A. Weinreich	209,926	Nov. 12	422	127	14	741
Traveling-box. Pocket	D. M. Somers	209,933	Nov. 12	431	130	14	742
Vapor-burner	W. Breslau	209,855	Nov. 12	353	105	14	732
Ventilating greenhouses	L. Brecht	209,854	Nov. 12	352	105	14	732
Ventilator. Car	H. S. Newberry	209,914	Nov. 12	408	123	14	740
Wagon. Dumping	H. Bailey	209,745	Nov. 12	238	71	14	717
Warps. Machine for tying in	J. Shackleton and J. P. Binns	209,927	Nov. 12	422	127, 128, 129	14	741
Washing-machine	S. Byrne	209,797	Nov. 12	292	87	14	724
Water. Apparatus for supplying and filtering	H. C. Bull	209,858	Nov. 12	356	106	14	732
Water-closet	J. Demarest	209,870	Nov. 12	367	109, 110	14	734
Water-wheel	W. H. Elmer	209,873	Nov. 12	370	110, 111	14	734
Weather-strip	N. Smith	209,839	Nov. 12	335	100	14	730
Wheel. Vehicle	T. Brown	209,856	Nov. 12	354	106	14	732
Windmill	J. Benson	209,853	Nov. 12	351	105	14	732
Window	D. E. Cooke	209,863	Nov. 12	360	108	14	733
Wringers. Uniting the rubber rolls of	H. N. Strong	209,781	Nov. 12	273	81	14	722

OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE.

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Fees for Trade-Marks.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., November 8, 1878.

The fee of $25 required by law to be paid for the registration of Trade-Marks, "in the same manner and for the same purpose as required for Patents," will be payable as follows:

On filing each petition for the registration of a Trade-Mark, $10.

On registering each Trade-Mark, $15.

H. E. PAINE,
Commissioner of Patents.

Approved:
C. SCHURZ, *Secretary.*

COMMISSIONER'S DECISIONS.

BARTON H. JENKS.—*Interlocutory Appeal.*

[*In the matter of the application of Barton H. Jenks, filed October 17, 1874, for* "IMPROVEMENT IN CLOTHES-DRIER."—*Decided October 31, 1878.*]

After final rejection upon the merits and no appeal taken, unimportant amendments or mere requests for reconsideration will not save the case from abandonment under the statute.

It is opposed to good practice to reiterate objections to the merits if the Examiner is satisfied that no mistake has been made in the final rejection.

DOOLITTLE, *Acting Commissioner:*

December 9, 1874, the above application was rejected by the Primary Examiner in the following letter:

This case, as amended, does not seem to present anything patentable beyond the reference already given. The devices are essentially old. The application is now finally rejected.

Claim 1 contains a negation which must be cured before appeal can be taken.

October 9, 1876, applicant requested a reconsideration, as provided, he stated, under Rule 44, Office Practice.

Rule 44 provides that "there must be two rejections upon the claims as originally filed, or, if amended, in a matter of substance, upon the amended claims."

No amendment in matter of substance nor an amendment of any kind has been made since December 9, 1874.

The entire invention was twice finally rejected upon its merits, without regard to the form in which the claims were or might be put.

In such cases a mere request to reconsider will not be sufficient to remove a case from the operation of Section 4894, Revised Statutes.

Section 4909 provides that applicants may appeal to the Board of Examiners-in-Chief on any claim which may have been twice rejected. Primary Examiners are not compelled, unless so directed by the Commissioner, to reconsider their decisions after a second rejection; and if they are confident that they have made no mistake, it is opposed to good practice to constantly reiterate objections to the merits upon mere request or unimportant amendments after a second rejection.

It appears to be necessary to repeat the construction given to this portion of the law by Commissioner Fisher:

Section 32 provides "that all applications for patents shall be completed and prepared for examination within two years after the filing of the petition, and in default thereof or upon failure of the applicant to prosecute the same within two years *after any action therein*, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto," &c. It will be observed that the two years runs not from action by the applicant, but action "of which notice shall have been given to the applicant"—*i. e.*, action by the Office. The petition for renewal is but a part of the action necessary on behalf of the applicant to revive his case. To complete that action and make it effectual, his petition must be accompanied with a specific demand for such proposed action as the status of the case may require. Thus, if the case has been but once rejected the petition for renewal must be accompanied by a demand for a second examination, or by an amendment. If it has been twice rejected the petition will accompany the appeal or the prayer to the Commissioner for further leave to amend. If it has been rejected by the Board the petition must be filed with the appeal to the Commissioner. If it has been rejected by the Commissioner there can be no renewal, unless an appeal to the Supreme Court of the District of Columbia has been taken. (Millspaugh, C. D., 1870, p. 112.)

This construction of Section 32, Act of 1870, (4894 Rev. Stats.,) is reaffirmed, and Rule 39, which provides that "any act which calls such rejected application up for further consideration within the time mentioned will be regarded as constituting a renewal," must be construed accordingly.

The decision of the Examiner is affirmed.

BENJ. F. QUIMBY *vs.* ISAAC H. RANDALL *et al.*—*Interference.*

[*In the matter of the interference between the application of Benjamin F. Quimby, filed January 7, 1878, Letters Patent No. 194,930, granted Isaac H. Randall, September 4, 1877, and Letters Patent No. 197,736, granted Charles H. Shattuck, February 27, 1877, for* "IMPROVEMENT IN WEATHER-STRIPS."—*Decided October 28, 1878.*]

Where the testimony of the successful interference contestant was thought to disclose the statutory bar of public use, the case was remanded to the Primary Examiner, so that if rejected by him the party might pursue his remedy of appeal.

PRACTICE UNDER RULE 59.

DOOLITTLE, *Acting Commissioner:*

In the within matter priority was decided in favor of Quimby September 13, 1878, and limit of appeal fixed for twenty days from that date. I find no notice of appeal having been filed, so that the judgment of priority rendered by the Examiner of Interferences stands in favor of Quimby; but Quimby's application is herewith referred to the Primary Examiner for consideration and action upon the statutory bar alleged against him by the Examiner of Interferences, based upon the proof adduced in the case. If the Primary Examiner finds that the proof sustains the position taken by the Examiner of Interferences, and that the invention was in public use for more than two years prior to the filing of Quimby's application, he will reject the application accordingly. If thus rejected, Quimby can pursue his remedy by appeal, *ex parte*, to the Board of Examiners-in-Chief and to the Commissioner, as prescribed by law and Rules of Practice.

DECISIONS OF THE COURTS.

Circuit Court of the United States—District of Rhode Island.

DARIUS GOFF *et al. vs.* WILLIAM H. STAFFORD *et al.*

[*In Equity.—No.* 977.—*Before* CLIFFORD *and* KNOWLES, *JJ.*]

English Letters Patent No. 1,486, dated June 13, 1863, were sealed and the complete specification filed in December, 1863. Domestic Letters Patent No. 50,318, for the same invention, were granted the foreign patentee October 3, 1865, upon an application filed July 15, 1865. *Doubted*, whether under the circumstances English provisional specification No. 496, filed February 24, 1863, but not published until October 17, 1863, was a prior publication sufficient to overcome the *prima facie* presumption of first and original inventorship in favor of the patentee.

The knowledge derived from a prior publication must, in order to defeat a patent, be sufficient to enable those skilled in the art to practice the invention, failing which requisite English provisional specification No. 496, of 1863, was declared to be inadequate to invalidate the patent in suit.

Patents granted under the act of March 2, 1861, remain in force for the full term of seventeen years. A prior foreign patent for the same invention does not operate to abridge the duration of the grant.

[*Benjamin F. Thurston*, for complainants; *Edwin Ahrich* and *Oscar Lapham*, for defendants.]

OPINION OF THE COURT.—*October* 9, 1878.

CLIFFORD, *J.*:

Redress for infringement may be sought by the owner of a patent in an action at law or by a suit in equity, and the party charged in an action at law may plead the general issue, and having given notice in writing to the plaintiff or his attorney thirty days before, may prove, as a matter of defense, that the invention had been patented or described in some printed publication prior to the supposed invention of the plaintiff. Like defenses may also be pleaded in a suit in equity for relief against an alleged infringement, and proofs of the same may be given upon like notice in the answer of the respondent and with the like effect. (16 Stats. at Large, 208; Rev. Stats., §4920; *Seymour* vs. *Osborne*, 11 Wall., 539.)

Neither party controverts the fact that Marcus B. Westhead, of Manchester, in the Kingdom of Great Britain, received a patent in that country as the inventor of an "improved device for arranging tapes, ribbons, and threads for use," nor that he subsequently, on the 3d of October, 1865, took out a patent in due form in this country for the same invention. By virtue of the last-named patent the patentee became, as the complainants allege, the true and lawful owner of the invention, and that he on the 25th of June, 1877, assigned and conveyed all right, title, and interest in the same to one of the complainants, from whom the other two acquired each a one-third interest in common with the original assignee. They charge infringement, and service having been made, the respondents appeared and filed an answer setting up the following defenses:

1. That the patentee is not the original and first inventor of the improvement embodied in the patent described in the bill of complaint.

2. That the alleged invention, prior to the patent granted for the same, was fully described in the provisional specification of one Henry Masters, and was known to and used by divers persons, whose names, residences, and the places where such knowledge and use were had are not known to the respondents.

3. That the invention, six months and more prior to the date of the patent, had been patented to the same party in a foreign country, limited to the term of fourteen years, and that the foreign patent had expired previous to the assignment, in consequence of which the patent was null and void.

4. They deny that they have infringed the complainants' patent, but admit that they have been engaged in putting up braids in rolls and selling the same under the certain patent therein mentioned, and they deny that the same contains the alleged invention of the assignor of the complainants.

Before giving a detailed description of the devices, the patentee states that the object of the invention is to make up tapes, ribbons, and other narrow fabrics or thread in such a manner that the consumer may be able to unwind or rewind them and retain the coils in a compact form. Two methods by which the invention may be carried into effect are shown in the drawings. Figures 1 and 2 represent in different forms a coil of tape or ribbon, with the patented improvement applied by means of a block of wood or other suitable material, upon which the tape or ribbon is wound in the usual manner. Through a central hole in the block a strip of rubber is passed which is threaded through a roller, the ends of the strip being then united. Rollers of the kind may be constructed of glass or other suitable material, which is an essential device in the apparatus, to which must be added the elastic band, the function of which is to draw the roller downward upon the coils of tape or ribbon, and to act as a clip to bind the one upon the other. Brief description is also given of the mode of operation, the statement being that the coil may be held in one hand and the end drawn with the other until the desired quantity is unwound, the described clip acting as a drag without any disturbance of the coils, being aided by the elastic band which constitutes side-guides for keeping the coils laterally in their places. If a greater length is drawn off than is required it may be readily wound up again in a compact form by holding the roller in one hand and turning round the coils of tape or ribbon with the other. Single coils of the kind may be combined together, of the same or different widths, or otherwise varying in character, each of which, as the patentee states, may be drawn without disturbance of the complete coils. What he claims is, the application of an elastic clip or drag, for the purposes set forth, which is equivalent to a claim for the described apparatus or the combined devices of which the apparatus is composed, though the patentee states expressly that he does not limit himself to the precise arrangement shown and described.

Power to grant letters patent is conferred by law upon the Commissioner, and when that power has been lawfully exercised and a patent has been duly granted, it is of itself *prima facie* evidence that the patentee is the original and first inventor of that which is therein described and secured to him as his invention. Availing themselves of that rule of law, the complainants in this case introduced in evidence the patent described in the bill of complaint, which is sufficient to entitle them to a decree, unless the defenses or some one of them, set up by the respondents, can be sustained.

Two propositions of law applicable to the case may be regarded as settled which require no discussion:

I. That the burden of proof is upon the respondents to show that the assignor of the complainants is not the original and first inventor of the improvement described and claimed in his letters patent:

II. That the burden of proof to sustain the charge of infringement is upon the complainants.

First. Guided by the first of those rules, the Court will proceed to the examination of the defenses which involve the validity of the complainants' patent. Support to the first defense, that the assignor of the complainants is not the original and first inventor of the improvement, is attempted to be derived from the publication of the English provisional protection to Henry Masters. But it is evident that the publication in question does not sustain the proposition. Westhead's English patent is dated June 13, 1863, was sealed December 8, 1863, and the complete specification was filed December 12, in the same year. His application for a patent in this country was filed July 15, 1865, and his patent for the same invention as that patented in England was granted on the 3d of October following. Master's English provisional specification, never patented, was introduced in evidence by the respondents as superseding both the American and the English patent granted to Westhead.

By the record it appears that that provisional specification, though filed the 24th of February, 1863, was never patented, and was never published until the 17th of the following October. Nothing is proved to show why it never went to a patent beyond what appears on its face. It may have been because its statements were inaccurate, or because they were incomplete, or because the apparatus described was inoperative, not new or useful, or not the proper subject of a patent.

Second. Grave doubts are entertained whether such a publication, without more, is sufficient to show that the patentee of an American patent is not the original and first inventor of the improvement described in his patent, but it is not necessary to decide that question, for the reasons which will presently appear. Patented inventions cannot be superseded by the mere production of a foreign publication of the kind, though of prior date, unless the description and drawings contain and exhibit a substantial representation of the patented improvement in such full, clear, and exact terms as to enable any person skilled in the art or science to which it appertains to make, construct, and practice the invention to the same practical extent as they would be enabled to do if the information was derived from a prior patent. Mere vague and general representations will not support such a defense, as the knowledge supposed to be derived from the publication must be sufficient to enable those skilled in the art or science to understand the nature and operation of the mechanism and to carry the invention into operation. (*Seymour* vs. *Osborne*, 11 Wall., 555; *Judson* vs. *Cope*, 1 Fisher, 615.) Apply that rule to the case before the court and it is clear that the publication in question is not sufficient to support the defense set up in the answer.

In the outset he describes his invention as "improvements in spools, bobbins, rollers, and similars," and states that it consists in the construction of spools, bobbins, or rollers with springs, plates, clips, or pins for the retention of the material wound on the spool or bobbin. Express reference is made in the specification to the drawings, from which it appears that every one of the spools is furnished with flanges, which limit the quantity of material which can be wound on the spool; nor is there any suggestion, either in the specification or drawings, that the patentee can dispense with the flanges. Unaccompanied, as the provisional specification in this case is, by any claim showing in precise terms what the party supposed he had invented, it is difficult to define the true nature of the same; but it is clear, both from what is written and from the drawings, that the description is not sufficient to bring it within the rules prescribed by the Court in the case to which reference has already been made. (*Howe* vs. *Morton*, 1 Fisher, 597.) Provisional specifications in the British system seldom or never become the basis of a patent, the party being required within six months from filing the same to file a completed specification, the rule being that the party within that period may make such alterations as he sees fit in his provisional specification, even by adding a supplementary improvement. (*Clark* vs. *Copeland*, 2 Fisher, 227.)

Third. Suppose that is so, still it is insisted by the respondents that the patent is null and void because the invention was first patented to the assignor of the complainants in England for the term of fourteen years, which term expired before the title was acquired by the complainants by virtue of the alleged assignment. Section 6 of the act of March 3, 1839, provides that no person shall be debarred from receiving a patent for any invention or discovery * * * by reason of the same having been patented in a foreign country more than six months prior to his application * * * provided that in all cases such patent shall be limited to the term of fourteen years from the date of publication of such foreign patent. (5 Stats. at Large, 354, §6.) Congress on the 2d of March, 1861, enacted that all

patents hereafter granted shall remain in force for the term of seventeen years from the date of the issue, and all extension of such patents is hereby prohibited. Pursuant to that act of Congress the patent in this case was granted to the assignor of the complainants for the term of seventeen years from the 3d of October, 1865, without any limitation whatever. (12 Ib., 249.) Since then, to wit, July 8, 1870, Congress has provided to the effect that patents here, previously patented in a foreign country, shall expire at the same time with the foreign patent, or if there be more than one at the same time with the one having the shortest term; but in no case shall it be in force more than seventeen years. (16 Ib., 201; Rev. Stats., §4887.) Granted, as the patent in this case was, under the act of the 2d of March, 1861, it is clear that it is valid, and that it will remain in force for the term of seventeen years from the time it was granted. (*Weston* vs. *White*, 13 Blatch., 364; *Anilin* vs. *Manufacturing Company*, 13 OFFICIAL GAZETTE, 273.) Much discussion of the question of infringement will be unnecessary, as the respondents admit that they have been engaged in putting up and selling rolls of braid under the patent described in the answer.

Decree for complainants for an injunction and for an account.

Issue of November 19, 1878.

Patents	226—	No. 209,953 to No.	210,178, inclusive.
Reissues	11—	No. 8,492 to No.	8,502, inclusive.
Designs	12—	No. 10,909 to No.	10,920, inclusive.
Trade-Marks	14—	No. 6,803 to No.	6,816, inclusive.
Labels	6—	No. 1,774 to No.	1,779, inclusive.
Total issue	269		

TRADE-MARKS.

[Each certificate bearing date November 19, 1878.]

6,803.—CANDY.—*Chase & Co.*, Boston, Mass. Application filed October 14, 1878.

"The words 'CANDY OF OUR DADS.'"

6,804.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Ferdinand P. Earle*, New York, N. Y. Application filed October 22, 1878.

"The arbitrary characters 'F. P. E.,' as shown in the fac-simile."

6,805.—FLOUR.—*S. W. Farber & Co.*, Alton, Ill. Application filed September 26, 1878.

"The arbitrarily-selected words 'LITTLE BEAUTY.'"

6,806.—POTASH AND SODA.—*Greenbank Alkali Company*, (limited,) St. Helen's, England. Application filed November 6, 1878.

"A red-colored heart pierced by a blue arrow."

6,807.—CIGARS, CIGARETTES, CHEROOTS, AND SMOKING AND CHEWING TOBACCO.—*Joseph Hirsch*, New York, N. Y. Application filed November 4, 1878.

"The arbitrary word 'TROCADERO.'"

6,808.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Hirschl & Bendheim*, St. Louis, Mo. Application filed October 30, 1878.

"The arbitrary word 'SWEETHEART.'"

6,809.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Solomon Rosenbaum*, New York, N. Y. Application filed November 2, 1878.

"The arbitrary words 'OLD SOL.'"

6,810.—ARTICLES OF USE AND ORNAMENT MADE FROM A BLOOD POWDER OR MIXTURE.—*The Dibble Manufacturing Company*, Trenton, N. J. Application filed April 15, 1878.

"The word-symbol 'HEMACITE.'"

6,811.—STOVE AND SHOE POLISH.—*George A. Hyers*, Chicago, Ill. Application filed October 30, 1878.

"The arbitrarily-selected word 'BONANZA.'"

6,812.—MIXED PAINTS.—*Yates & Co.*, San Francisco, Cal. Application filed October 28, 1878.

"The word-symbol 'CHALLENGE.'"

6,813.—MEDICINAL PREPARATIONS.—*The Pond's Extract Company*, New York, N. Y. Application filed April 14, 1873.

"A pictorial device or landscape, having in its foreground a tall shrub, that extends from the lower left-hand corner to and nearly filling the upper part of the device. The shrub is of a peculiar form, and has blossoms as well as leaves. In the middle ground is a meandering river, and beyond it are men, with axes, felling shrubs or small trees, and a wagon laden with trees or shrubs and drawn by horses. In the background is a high hill, near the base of which is a mill, with smoke ascending from its chimney. Beneath the landscape are the words, in ornamental block letters, 'POND'S EXTRACT.'"

6,814.—CANNED FISH.—*The Eagle Preserved Fish Company*, New York, N. Y. Application filed October 25, 1878.

"A parallelogram inclosed by a series of oblique parallel lines substantially as shown."

6,815.—SMOKING AND CHEWING TOBACCO, CIGARS, AND CIGARETTES. *Goodwin & Co.*, New York, N. Y. Application filed November 8, 1878.

"The word-symbol 'THE COURT.'"

6,816.—CUTLERY.—*Joseph Rodgers & Sons*, (limited,) Sheffield, England. Application filed October 15, 1878.

"A six-rayed star, ✳, and Maltese cross, ✠."

DESIGNS.

[Each design bearing date November 19, 1878.]

10,909.—COFFIN-HANDLES.—*Martin H. Crane*, Cincinnati, Ohio, assignor to *Crane, Breed & Co.*, same place. Application filed October 21, 1878. Term of patent 3½ years.

10,910.—LETTER-BOXES.—*Francis Keil*, New York, N. Y. Application filed November 4, 1878. Term of patent 7 years.

10,911.—HANDLED DISHES.—*Charles A. Rogers*, Boston, Mass. Application filed November 2, 1878. Term of patent 3½ years.

10,912.—HANDLES FOR SPOONS, FORKS, KNIVES, &c.—*Charles F. Richers*, New York, N. Y., assignor to *Wood & Hughes*, same place. Application filed October 30, 1878. Term of patent 3½ years.

10,913.—PADLOCKS.—*John Gérard*, Trenton, N. J., assignor to *The Trenton Lock and Hardware Company*, same place. Application filed October 11, 1878. Term of patent 14 years.

10,914.—BROOCH.—*Hiram Howard*, New York, N. Y. Application filed October 16, 1878. Term of patent 3½ years.

10,915.—FONT OF PRINTING-TYPES.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed November 2, 1878. Term of patent 14 years.

10,916 to 10,919, inclusive.—OIL-CLOTHS.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed October 31, 1878. Term of patents 3½ years.

10,920.—PULLS FOR DRAWERS, &c.—*George W. Tucker*, Waterbury, Conn. Application filed November 8, 1878. Term of patent 7 years.

LABELS.

[Each certificate bearing date November 19, 1878.]

1,774.—Title: "LABEL FOR CIRCULARS, &C."—*M. B. Leavitt*, Boston, Mass. Application filed November 11, 1878.

1,775.—Title: "GINGER APERIENT."—*Edwin J. Haines & Co.*, Haverhill, Mass. Application filed October 30, 1878.

1,776.—Title: "CARBOLIZED COSMOLINE, (SUB-CERATUM PETROLEI CARBOLIZATUM.")—*E. F. Houghton & Co.*, Philadelphia, Pa. Application filed November 4, 1878.

1,777.—Title: "SPREAD EAGLE."—*Heppenheimer & Maurer*, New York, N. Y. Application filed November 8, 1878.

1,778.—Title: "THE GREAT FOKIEN TEA."—*James A. Palmer & Co.*, Philadelphia, Pa. Application filed November 4, 1878.

1,779.—Title: "SAMPLE LABEL."—*John Wanamaker*, Philadelphia, Pa. Application filed October 26, 1878.

1,780.—Title: "ELLIOTT'S GREAT DISCOVERY."—*Dr. John Elliott*, Stockton, Cal. Application filed October 5, 1878.

DISCLAIMER.

168,385.—*Thomas A. Edison*, Newark, N. J.; patented October 5, 1875; disclaimer filed November 16, 1878.

He enters the following disclaimer, to the extent of his interest therein, which is the entire patent, saving and excepting any contract claims which may be alleged by others:

"I do not herein claim an electro-magnetic coil placed in the artificial line and acting to neutralize the effect of the static discharge, as the same is set forth in a previous application made by me September 1, 1874, and known as case 97."

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

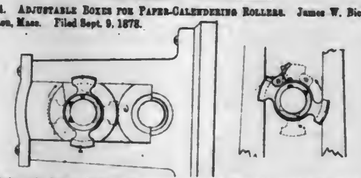
NOVEMBER 19, 1878.

209,953. HOSE. Robert P. Beatty and John H. Haslenbeck, Norwalk, Conn. Filed Mar. 20, 1878.



Claim.—A hose composed of two or more layers of rubber, having one or more seamless braided webs of interlaced filamentous material interposed between and embedded in the said layers, the said web or webs having its or their interlaced filaments arranged in lines oblique to both the longitudinal axis of the hose and to a circle drawn at right angles to the said axis, the obliquity of one portion of the filaments in each web being in a direction opposite to that of the remaining portion, substantially as and for the purpose set forth.

209,954. ADJUSTABLE BOXES FOR PAPER-CALENDERING ROLLERS. James W. Bicknell, Boston, Mass. Filed Sept. 9, 1878.



Claim.—1. In a calendering machine, boxes *c*, flanged to engage the housings to prevent lateral motion of the boxes, and provided with rests to prevent rotation of the boxes in the direction of rotation of the rollers, substantially as described.

2. In a calendering-machine, the combination, with the journals of the rollers, of loose boxes, constructed substantially as described, placed between the housings, as set forth, to permit the boxes to be turned and disengaged from the housings and be removed from the journals of the rolls, substantially as and for the purpose set forth.

3. A one-piece centrally-bored journal-box, provided with turned faces 4, concentric with the central opening of the box to bear against the housings at equal distances from the center of the box, thereby placing the center of the box exactly central between the housings, substantially as described.

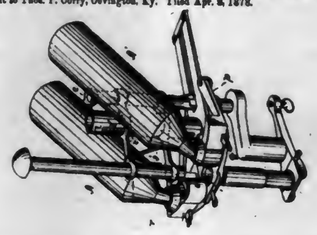
209,955. LAMP-EXTINGUISHERS. Alexander Brandon, New York, N. Y. Filed Dec. 26, 1877.



Claim.—1. As a new article of manufacture for the purpose described, a lamp-flame extinguisher composed of the tube A, ajutage or reducing-nozzle B, and elastic bulb C, combined and arranged substantially as herein set forth.

2. A screw-plug, D, combined with the perforated air-pipe A, elastic bulb C, and retaining-cap E, of a lamp-extinguisher, substantially as and for the purpose herein set forth.

209,956. CARTRIDGE-LOADING DEVICES. George F. Card, Guthrie, Ill., assignor of one-half his right to Thos. F. Corry, Covington, Ky. Filed Apr. 8, 1878.

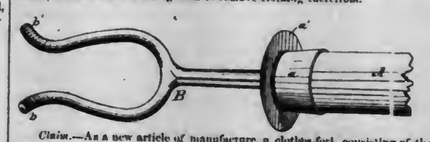


Claim.—1. In a machine for loading cartridges, in combination with a standard supporting the adjustable bed-plate with its pivoted chargers, the two adjustable arms *h*, supporting the wad-cylinder *l* and guiding the rammer, and the two cylinders A A', for powder and shot, said cylinders being also adjustable upon the standard through the medium of a cross-arm, all constructed and arranged substantially as herein shown and described, and for the purposes set forth.

2. In combination with the chargers, each composed of a pivoted arm, *p*, and a cut-off block, with an opening for the passage of the charge, the short tubes *r*, each formed with a flaring base and secured upon the bed plate, and the adjustable hoppers, as herein shown and described, and for the purpose set forth.

209,957. CLOTHES-FORKS. Wm. H. Castle, Geneva, Ohio. Filed Apr. 29, 1878.

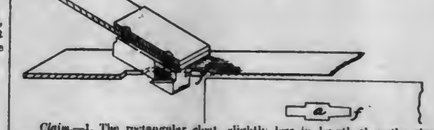
Brief.—The disk or flange formed on the ferrule is for the purpose of preventing the hot water running down the handle, and guiding it back into the boiler, when the fork is being used to remove clothing therefrom.



Claim.—As a new article of manufacture, a clothes-fork consisting of the staff A, having the flanged ferrule *a a'*, and fork B, having tines *b b'*, substantially as shown and described, and as and for the purpose set forth.

209,958. BALE-TIES. George C. Clarke, Cleveland, Ohio. Filed Aug. 14, 1878.

Brief.—The flanges on the front of the cleat are wedge-shaped, and may be inserted through the widest part of the slot in the band when the heel of the cleat is elevated. The flanges then pass along on the under side of the band, and when the heel of the cleat is forced within the slot the flanges lock against the band at the sides of the narrowed slot.



Claim.—1. The rectangular cleat, slightly less in length than the slot with which it is to engage, and having side flanges at its forward portion, which flanges are non-registering, or incapable of registering with the slot when the cleat is wholly within the slot, substantially as and for the purpose specified.

2. A bale-tie cleat having a rectangular body wedge-shaped at its forward end, and having the wedge-shaped flanges on the two sides of the wedge end of the cleat, substantially as and for the purpose specified.

3. A rectangular cleat for bale-ties, said cleat provided with longitudinally wedge-shaped flanges *a f*, or near one extremity and a notched heel at the opposite extremity, substantially as and for the purpose specified.

4. A bale-tie provided with a rectangular cleat, tapered and flanged at its forward end, and a slot of sufficient width at or near its middle to admit the flanges of the cleat, and tapered from its widest part to increase the underlapping of the flanges without weakening the band, substantially as specified.

209,959. FOUNTAIN-PENS. Alonzo T. Cross, Providence, R. I. Filed Apr. 26, 1878.

Brief.—The eccentrically-mounted adjustable air-tube has in its side an orifice, past which extends a pin on a plug, closing the lower end of the tube. The ink-tube is also adjustable.



Claim.—1. The air-tube C, having a side orifice, E, arranged eccentrically with the outer case, A, and made adjustable, substantially as described, for the purpose of regulating the flow of ink to the writing-pen.

2. The adjustable air-tube C, provided with an orifice, E, and combined with an adjustable ink-delivery tube, H, in order that the supply of air may be properly controlled for any specific adjustment of the tube H.

3. The air-tube C, provided with the orifice E, in combination with the plug I, provided with the pin J.

209,960. OUTRIGGER-BOATS. Michael F. Davis, Portland, Me. Filed Apr. 4, 1877.

Claim.—1. The combination of the swinging rowlock and the pin or standard A, having the outward curvature, as herein described.

2. A rowlock, swinging or stationary, having an inward convexity upon the upright and an inset in the sill, as described.

3. A rowlock, swinging or stationary, having the outwardly-inclined arm d^2, as and for the purposes set forth.

4. The outrigger herein described, consisting of the double braces D E and brace F, united at their outer ends, the said brace F being attached at its inner end to the center of the boat, and perpendicularly, or nearly so, to the side of the boat, whereby the latter can be grasped at its center for transportation, substantially as set forth.

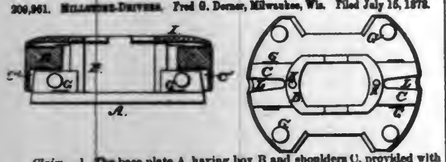
5. In combination with a sliding seat or traveler, having a shouldered runner, the slide with an upright and an overset flange, as and for the purposes set forth.

6. In combination with a traveler, J K, the rack S, having upward-projecting flanges, as and for the purposes set forth.

209,960.



209,961. MILLSTONE-DRIVERS. Fred G. Dorner, Milwaukee, Wis. Filed July 15, 1878.



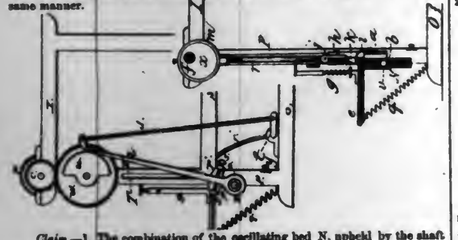
Claim.—1. The base-plate A, having box B and shoulders C, provided with grooves L, for the purpose of carrying off the flour and dust from the surface of the shoulders, substantially as set forth.

2. The combination of the driver E, having longitudinal groove C', transverse to the axis of the recessed bearings H, with the base-plate A, provided with box B and shoulders C, substantially as and for the purpose set forth.

3. The base-plate A, having box B and shoulders C, provided with grooves L, in combination with the driver E, having longitudinal groove C', transverse to the axis of the recessed bearings H, and cap-plate I, for the purposes set forth.

209,962. HOOP-CUTTING MACHINES. John B. Dougherty, Rochester, N. Y., assignor of one-half his right to James Dorsey, same place. Filed Jan. 18, 1878.

Brief.—The planks or boards are placed upon a vibrating bed, and are held in place by spring and slide detents. A reciprocating knife cuts a beveled hoop at every vibration of the bed. Springs suitably arranged behind the knife prevent the hoops from falling under the knife after they are cut, and automatically-operated fingers carry off one-half the number of hoops cut, while the other half is permitted to drop, whereby they are arranged in two groups, each containing those hoops which have been acted upon by the knife in the same manner.



Claim.—1. The combination of the oscillating bed N, upheld by the shaft v, having the leaf s, with the mechanism z, consisting of clamp p, ears p', and set-screws s, as and for the purposes described.

2. The regulating mechanism z, consisting of the clamp p, ears p', and set-screws s, affixed to the lever l and shaft v, by which the oscillations of the bed are adjusted, as and for the purposes described.

3. The rod d, affixed to the lever l and shaft t, the fingers r', slots o', and curved flat springs t, preventing the severed splints from falling under the knife, as and for the purposes described.

4. The combination of the slide d^2 and springs g with the bed N, shaft v, and leaf s, as and for the purposes described.

209,963. SOFT-DOUGH MACHINES. Henry Daub, Baltimore, Md. Filed Sept. 3, 1878.



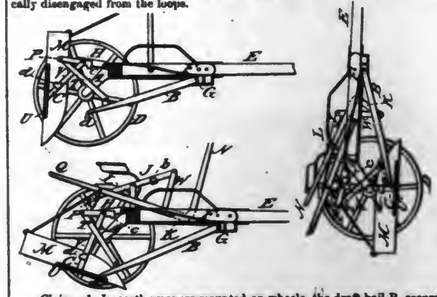
Claim.—1. In a soft-dough machine, and in combination with mechanism for forcing the dough through perforations in a form-plate, one or more tape-wire knives arranged to reciprocate contiguously over the said plate, as set forth.

2. In a soft-dough machine, a form-plate provided with a series of interchangeable forms, substantially as described.

3. In combination with the form-plate, the knives n and springs n, pressing upon and reciprocating with the knives, substantially as described.

209,964. EARTH-SCRAPERS. James H. Edmondson, Valparaiso, Ind. Filed July 12, 1878.

Brief.—This invention is an improvement on Letters Patent numbered 196,143, dated October 16, 1877, and 204,142, dated May 28, 1878, to the same patentee. A draft-bail, loosely connected with the tongue by a loop, and having hooks at its ends, is also connected by rods with the tilting frame, from which the scraper-box is suspended, and as the tilting frame is depressed by the lever connected therewith, the hooked ends of the draft-bail are automatically engaged with loops or catches on the sides of the scraper-box, to hold it in position for loading; and when the tilting frame is elevated to adjust the scraper for transportation or grading, the hooked ends of the draft-bail are automatically disengaged from the loops.



Claim.—1. In earth-scrapers mounted on wheels, the draft-bail B, secured by a loose connection to the tongue E, provided with hooks on its ends, and, in its relation with the other mechanism, arranged to automatically engage with the catches U and hold the scraper to its work in the loading process, and to automatically disengage from the catches when the scraper is to have other positions, as set forth.

2. The combination of the levers N J, connecting-rod W, stirrup b, and tilting frame H, as and for the purpose specified.

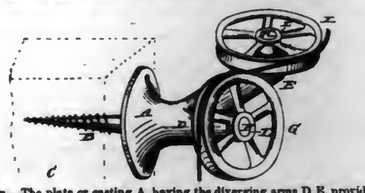
3. The combination of the tilting frame H, lock-levers F, connecting-rods T, and draft-bail B, as specified.

209,965. BUTTONS. William Empson and John Brant, Birmingham, England. Filed Apr. 25, 1878.



Claim.—The button composed of the perforated plate A, fabric B, ring C, and inner ring, D, all combined so that the inner part of the fabric is clamped between the plate A and ring C, and the outer part between the rings C and D, substantially as specified.

209,966. DOOR AND GATE PULLEYS. Homer T. Gates, Hartford, Ohio. Filed July 23, 1878.



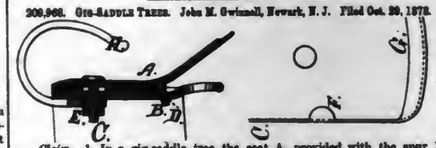
Claim.—The plate or casting A, having the diverging arms D E, provided, respectively, with bearings for a vertical and a horizontal pulley, G I, the plate A being provided with a screw, B, and the whole arranged and operating substantially as herein set forth, for the purpose shown and specified.

209,967. BRUSHES. Frederick W. Comwein, Jersey City Heights, assignor of one-half his right to E. and W. Dixon, Newark, N. J. Filed Sept. 26, 1878.



Claim.—A brush in which the central portion, C, consists, in whole or in part, of wire, and the surrounding border or edge B is wholly of bristles, as and for the purpose specified.

209,968. GIG-SADDLE TREES. John M. Gwinnell, Newark, N. J. Filed Oct. 30, 1878.



Claim.—1. In a gig-saddle tree, the seat A, provided with the spur B, standing obliquely to the plane of the seat, and adapted to enter the hole D of the frame, all substantially as and for the purpose stated.

2. The frame C, having the flanges F and cap G, for securing the edges and end of the jockey, substantially as specified.

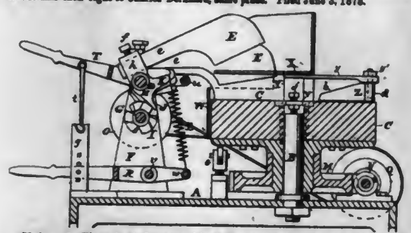
209,969. BENCH-PLANES. Daniel M. Heald, Milford, N. H. Filed Apr. 22, 1878.

Brief.—The cap-iron is provided with a recess to receive the end of a cap-screw carried by a slide made adjustable by means of a screw working in suitable guideways of the plane-iron holder, so that as the cap-screw and slide are moved by the adjusting-screw the plane-iron and cap are moved longitudinally in the throat.



Claim.—The combination, with the plane-body, of an iron-holder, f, pivoted thereto, a slide fitted to the said iron-holder, an adjusting-screw to move the slide longitudinally in the holder, and a cap-screw, o, carried by the slide, the said cap-screw being adapted to engage the cap d, located below the holder, to thereby adjust it and its attached plane-iron in unison, substantially as described.

209,970. MEAT-CHOPPERS. George Jaeggi and C. A. Jaeggi, New York, N. Y., assignors of one-half their right to Charles Bernhard, same place. Filed June 3, 1878.



Claim.—1. The pivoted rotary block C, provided with the shield X, consisting of the horizontal part, having slots o to admit the knives, and the vertical part extending across in front of and about the knives E, said shield being fixed to the side posts, Y, as and for the purposes described.

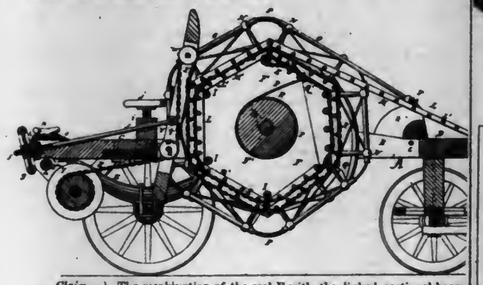
2. The adjustable pivoted lever R, with rod w, and springs L, in combination with the sleeves H, having arms K, and provided with loops to hold the knives, as and for the purposes described.

3. The pivoted lever, T, provided with a catch, and having rod u, in combination with the chopping-knives E, connecting with shaft D, substantially as set forth.

4. The rotary block C, provided with the scraper Z, having two diverse wings, b and d, coupled to the bracket y at the angle formed by said wings, and provided with suitable means for adjusting it to the bracket, substantially as and for the purposes described.

209,971. FIRE-ESCAPES. George Jaeggi and Charles Bernhard, New York, N. Y. Filed June 7, 1878.

Brief.—The ladder is composed of pivoted sections capable of being wound upon a reel for transportation, and when extended is stiffened by wire cables running through tubular hand-rails or guards sustained by posts from the several sections. Said stiffening-cable is wound upon a drum upon the reel-shaft, and is controlled by a peculiar gear mechanism, consisting of a hand-wheel having an eccentric-hub, which rotates loosely upon the drum-shaft, said eccentric-hub rotating within the end of a hollow gear-wheel, which meshes with two wheels, one having one or more teeth more than the other, the one with the least number of teeth being secured to the drum-shaft, while the other is stationary upon the truck-frame, whereby, when the hand-wheel is rotated, the hollow wheel engages with the other two wheels, which causes the one having the less number of cogs to progress merely as many teeth forward as there are less teeth in it than in the stationary wheel, whereby great leverage is obtained upon the stay-ropes. The ladder is projected by means of a chain wound upon the reel, and which passes up over a pulley at top of a swinging post, thence down over pulley near bottom of post, and thence to a windlass, the post acting also as a guide to determine the inclination of the ladder, being controlled in position by a hand-wheel and screw-rod.



Claim.—1. The combination of the reel F with the linked sectional beam or ladder, with the rope, ropes, or chains P, and the rope-guides and winding drum or device R, substantially as and for the purpose herein set forth.

2. The combination of reel F and pivoted link beam-sections, and the rope, ropes, chain, or chains P, with their guides and drum R, with the chain, chains, or ropes X, and its drum Y, substantially as and for the purpose herein described.

3. The combination of the reel and pivoted link beam-sections M', with the rope, ropes, or chain P, their guides O Q, the drum R, with the rope, ropes, or chains X, the guide-rollers W W', drum Y, the post V, adjusting screw-rod f, and wheel g, substantially as and for the purpose herein stated and shown.

4. The combination of the reel F, with its gear H', and pawl K, and pinion I', the beam link-sections M', the rope or ropes P, the guides O and Q, and drum R, the rope X, its guide-rollers W and W', the post V, and drum Y, and screw-rod f, with its hand-wheel g, and the check-rope o, substantially as and for the purpose herein mentioned.

5. The combination of the reel F, the jointed ladder L, rope or chain or chains P, and its guides O and Q and drum R, and the chain or rope X, its guide-rollers W and W', the post V and drum Y, the rod f and wheel g, and the winding-gear G, with the hollow gear U, and the pawl K and pinion I and wheel H', and the check-rope o, substantially as and for the purpose herein stated.

6. The combination of the truck A with the ladder L, and the adjusting-screws f and cross-beam i, and the hind truck-wheel and the springs E and reel F, substantially as and for the purpose herein set forth.

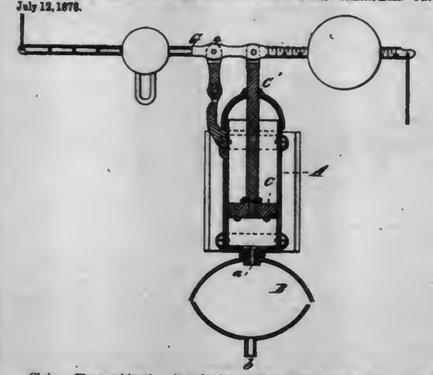
7. The combination of the ladder L and reel F, the truck A, with its hind wheels and forward wheels, and with the levers w', and the rod t and its shoulders F, and the blocks k, the beam i, and screws j, substantially as and for the purpose herein mentioned.

8. In combination with the reel F and its shaft F', the wheels S and S', and hollow gear U and eccentric T', the drum R, rope or chains P, and guides Q and O, and the beam-sections M', substantially as and for the purpose herein set forth.

9. In combination with the butt-link, pivoted beam-sections M', of the rope, ropes, chain, or chains P, and guides O, substantially as and for the purpose herein shown and described.

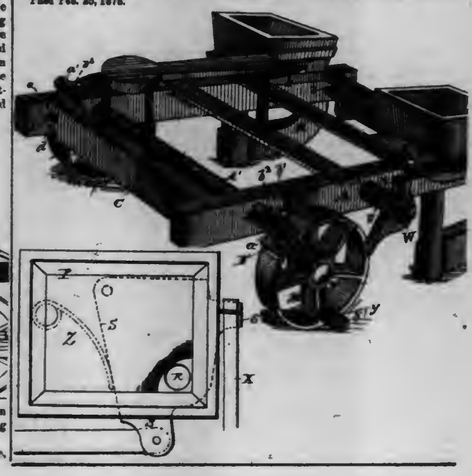
10. The combination of the hose and nozzle with the linked beam-sections, the check-rope o, and the rope or chain P', with suitable guides O, with the reel F, and with truck A, substantially as and for the purpose herein set forth.

209,972. REGULATORS FOR BOILERS AND FURNACES. Jas. A. Lakin, Westfield, Mass. Filed July 12, 1878.



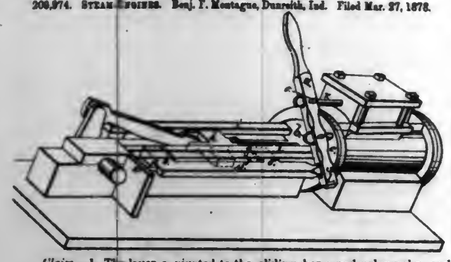
Claim.—The combination, in a draft-regulator, of the chamber B, provided with the orifices a and b, the cylinder A, piston C, piston-rod C', and weighted lever G, all constructed and arranged substantially as described.

209,973. CORN-PLANTERS. Michel Martinchang, Denmark Township, Lee County, Iowa. Filed Feb. 25, 1878.



Claim.—In a corn-planter, the combination, with pivoted feed-plates S, which have movement in a horizontal plane, together with springs Z, whose free extremities have lateral bearing against the inner side edges of said plates and tend to maintain the latter in closed position, of a trip-lever, W, centrally pivoted to the side frame, and having vibrating movement in a vertical plane, together with intermediate connection X, said trip-lever being adapted to be actuated in a single direction by engagement therewith of a wiper, *y*, secured to the side wheel in radial adjustment, substantially as set forth.

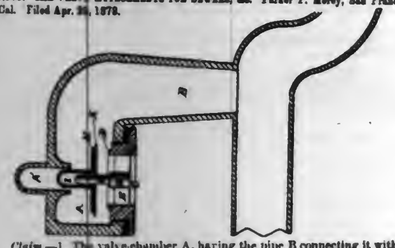
209,974. STEAM-ENGINES. Benj. F. Montague, Dunreith, Ind. Filed Mar. 27, 1878.



Claim.—1. The lever *a*, pivoted to the sliding bar *s* and valve-rod *r*, and having its fulcrum *b* secured to the cylinder-head, all constructed and arranged in the manner shown, and for the purpose set forth.

2. The sliding bar *s*, when provided with the rubber-lined lugs *s s'*, and arranged to operate the valve-rod *r*, by means of the lever *a*, constructed and arranged in the manner shown.

209,975. AIR-VALVE ATTACHMENTS FOR SEWERS, &c. Parker F. Morey, San Francisco, Cal. Filed Apr. 26, 1878.



Claim.—1. The valve-chamber A, having the pipe B connecting it with the upper curve of the trap, and provided with the valve-opening C, having the seat D and the central guide, F, with its supporting central bearing, substantially as shown, and for the purpose herein described.

2. The valve-chamber A, with its hollow extension A′, and the valve-opening C, having the seat D and central guide, F, with a supporting central bearing, substantially as shown, and for the purpose herein described.

3. In combination with the chamber having the extension A′, the seat D G, and the guide-stem F, the valve H, with its socket I, and the elastic disk K, substantially, as shown, and for the purpose herein described.

209,976. WOODEN WELL-CURBING. John P. Haas, San José, Cal. Filed May 31, 1878.

Brief.—A wooden well-curb is composed of sections, each section being composed of straight staves. Alternate staves project at either end, so that when the sections are placed together the projecting staves slide into the spaces, and the sections are firmly interlocked. The lower section is cut square off and provided with a cutting-rim.



Claim.—1. A wooden well curb or tube composed of sections A B C, each section being composed of staves so arranged that alternate staves project at opposite ends, thus forming alternate extensions *e* and spaces *f* at each end of the sections, said sections being banded by hoops *g*, which project over the bases of the spaces, and the extensions *e* being rabbeted to fit under the projecting edges of the hoops, all combined and arranged to operate substantially as above specified.

2. In combination with the lowermost of a series of interlocking sections of a wooden well-curb, as described, the attached metallic rim or edge *h*, substantially as and for the purpose set forth.

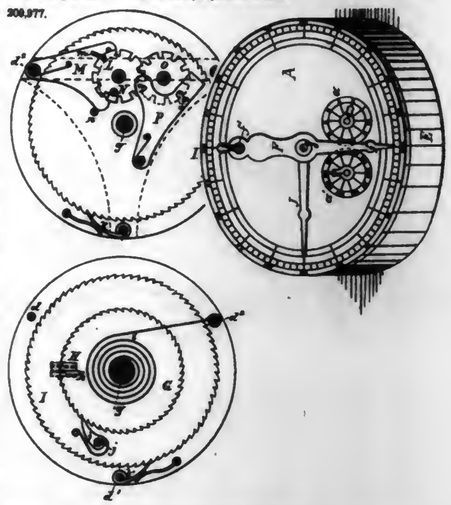
209,977. ADDING-MACHINES. Martin Horgan, Chicago, Ill. Filed Apr. 11, 1878.

Claim.—1. The dial-plate A of an adding-machine, arranged with lever F, having spindle *g*, ratchet-wheel G, stop H *h*, and spring *i*, in combination with the ratchet-wheel I, sleeved upon said spindle *g*, having indicating-finger J and pawls *j* and *k*, all constructed and arranged within a suitable frame, and operating substantially as herein set forth.

2. The wheel I, having stud *n*, the notched disk L, having indicating-finger *l*, stud N, and tumbler M, and the notched disk O, having indicating-finger *o* and tumbler P, all constructed and arranged to operate in combination with an adding-machine, substantially in the manner set forth.

3. In combination with the dial-plate A, lever F, having spindle *g*, ratchet-wheel G, stop H *h*, and spring *i*, the ratchet-wheel I, carrying indicating-finger J, pawl *j*, and stud *n*, in combination with notched disk O, having indicating-finger *l*, stud N, and tumbler M, and notched disk O, having indicating-finger *o* and tumbler P, the whole of it arranged within a suitable frame and casing having dials A, *e*, and *a′*, and pawl *k*, and all constructed, arranged, and operating substantially as and for the purpose set forth.

209,977.



209,978. MANUFACTURE OF ACETIC ACID. Anthony Firz, Long Island City, assignor, by mesne assignments, to Reuben C. Barrows, New York, N. Y. Filed Aug. 22, 1878.

Brief.—An improvement upon existing methods of purification of acetic acid which is obtained from pyroligneous acid.

Claim.—In the treatment of impure acetic acid with permanganate of potash, the distillation of the purified acid in presence of the permanganate, substantially as set forth.

209,979. MANUFACTURE OF ACETIC ACID. Anthony Firz, Long Island City, assignor, by mesne assignments, to Reuben C. Barrows, New York, N. Y. Filed Aug. 22, 1878.

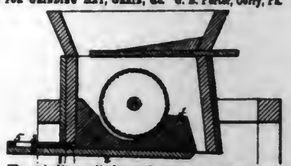
Brief.—An improvement in the manufacture of the pure acid from pyroligneous acid, when permanganate and subsequent distillation are the means of purification.

Claim.—The process of extracting acetic acid from acetate of lime by leaching with sulphuric acid in gradually-weakened solutions, and using the weak acetic acid as a diluter for the sulphuric acid for subsequent operation, as herein specified.

209,980. FERTILIZERS. Anthony Firz, Long Island City, assignor, by mesne assignments, to Reuben C. Barrows, New York, N. Y. Filed June 17, 1878.

Claim.—The fertilizer described, composed of bone and artificial sulphate of lime, combined as and for the purposes herein specified.

209,981. MILLS FOR GRINDING HAY, GRAIN, &c. G. B. Porter, Corry, Pa. Filed Mar. 7, 1878.



Claim.—1. The grinding cylinder or burr composed of a series of circular plates toothed on their peripheral edges, and clamped tightly together upon a horizontal rotating shaft, in combination with a concave having its front half smooth-dressed or toothless and its rear half roughened or toothed, as described, and for the purposes set forth.

2. In combination with the burr composed of toothed disks closely clamped together on a horizontal rotating shaft, the concave *e*, roughened at its rear side and smooth-dressed on its front side, and pivoted on its front side and adjusted by the sliding graduated bar 5, as described, and for the purposes set forth.

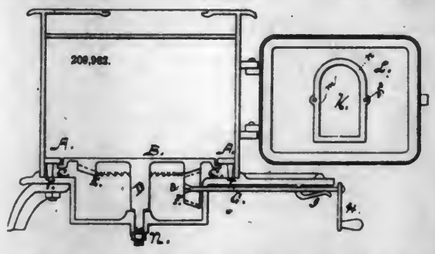
209,982. STOVES. James H. Powell, Newark, N. J., assignor of one-third his right to S. F. Powell, same place. Filed Apr. 13, 1878.

Claim.—1. In a stove or range oven, the bottom made in three parts, the loose ends A, and the revolving center B, substantially as set forth.

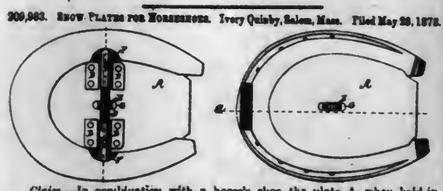
2. The combination of the end pieces, A, and the revolving center B, having the bevel-gear E and the bevel-gear F, hung on the rod G, with the square end *a* and crank H to revolve the bed, substantially as specified.

3. In combination with a stove-oven having the bottom in three parts, the ends A A and the revolving center B, operated by the crank H, the oven-door L, having an aperture for the glass or mica plate K, with a recess, *m*, on the inside, in which the glass rests, and having the metallic strip *n*, covering the edges of the glass, and secured to the door by the screws S, substantially as set forth.

209,982.

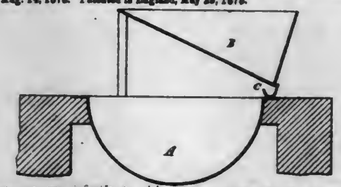


209,983. SHOW-PLATES FOR HORSESHOES. Ivory Quinby, Salem, Mass. Filed May 29, 1878.



Claim.—In combination with a horse's shoe, the plate A, when held in position by the lugs C C and right-and-left screw D, substantially as shown and described.

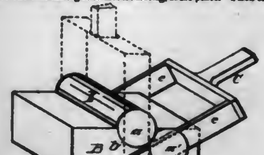
209,984. APPARATUS FOR THE MANUFACTURE OF SALT. Henry Bamford, Brighton, England. Filed Aug. 14, 1878. Patented in England, May 29, 1878.



Claim.—1. The hereinbefore-described apparatus for the manufacture of salt, consisting of the combination of the evaporating pan or kettle and the supplementary inclined bottomed heater, arranged above and only partially covering or overhanging said pan or kettle, whereby the salt may be raked out without obstruction, as set forth.

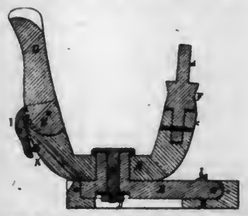
2. The combination, substantially as hereinbefore set forth, of the range or series of kettles, the heater above them inclined at its bottom, and extending from the back or rear sides of the kettles part way only across them, and the gutter extending along at the backs of the kettles beneath the rear lower side of the heater, for the purpose specified.

209,985. DEVICES FOR CLOSING THE END FLAPS OF COIN-WRAPPERS. George Rettig, Chicago, Ill., assignor of one-half his right to Albert Rettig, same place. Filed Apr. 30, 1878.



Claim.—The device described, consisting of block B, having semi-cylindrical groove *b*, the bifurcated lever C, pivoted to said block, and the cylindrical core E, all constructed and arranged substantially as and for the purpose set forth.

209,986. LASTING-JACKS FOR BOOTS AND SHOES. Edwin J. E. Rollins, Alton, N. H. Filed Oct. 21, 1878.



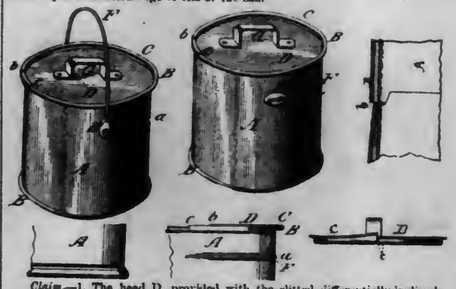
Claim.—1. The shoe-jack body as provided with the auxiliary last heel-rest *c*, and with the main last heel-rest arranged therewith and hinged thereto, substantially as specified.

2. The shoe-jack body as provided with the main and auxiliary last heel-rests, and the adjustable toe-rest, arranged with and applied to the said body, substantially as set forth.

3. The combination of the body-support plate, its lip, and the recessed base-plate (arranged and applied as set forth) with the jack-body pivoted to the support-plate, and provided with the main and auxiliary last heel-rests, and the adjustable toe-rest, arranged with and applied to it (the said body) as specified.

209,987. SHEET-METAL PACKAGES. John P. Ross, Toronto, Ontario, Canada, assignor of one-half his right to William F. Ross, same place. Filed June 13, 1878.

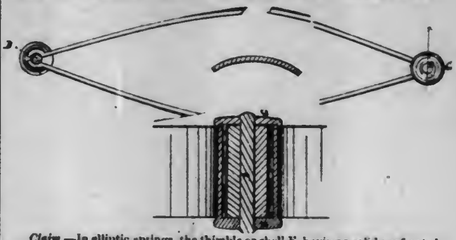
Brief.—The straight edge of cover is inserted under straight edge of the rim of the can, and the head rotated until its straight edge is stopped and bound by the deflected edge of rim of the can.



Claim.—1. The head D, provided with the slitted differentially-inclined edge C, in combination with the cylinder A, provided with the recess B, and having the upper lapping edge slitted and deflected to correspond with the head, arranged and operating substantially as shown and described.

2. The bail F and pivoted lugs E E, in combination with the cylindrical package A, provided with the groove *a*, substantially as shown and described.

209,988. VEHICLE-SPRINGS. Charles F. Shoemaker, Cleveland, Ohio. Filed Sept. 30, 1878.



Claim.—In elliptic springs, the thimble or shell E, having a solid perforated end and an open end, and in the side of said shell a single opening for the admission of the ends of the spring, cap G, and pin D, in combination with the spring, having the ends curved and of equal thickness with that of the rest part of the spring, as herein described, and for the purpose specified.

209,989. CARTRIDGE-EXTRACTORS. James S. Shinn, Atlantic City, N. J. Filed Oct. 16, 1876.

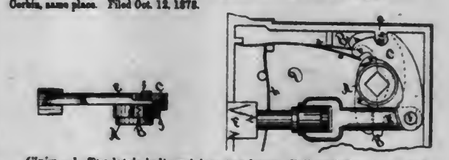


Claim.—1. A cartridge-extractor having springing arms A and B, supplied at the ends with the jaws D and E, and teeth F and G, substantially as and for the purpose specified.

2. A cartridge-extractor having rigid arms A and B, supplied at the ends with jaws D and E, and teeth F and G, in combination with the spring C, substantially as and for the purpose specified.

3. A cartridge-extractor having springing arms A and B, supplied with jaws D and E, and teeth F and G, in combination with the spring C, substantially as and for the purpose specified.

209,990. REVERSIBLE LATCHES. William E. Sparks, New Britain, Conn., assignor to P. & F. Corbin, same place. Filed Oct. 12, 1878.



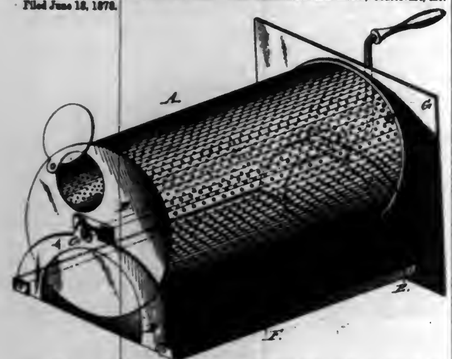
Claim.—1. The latch bolt and bar, two levers, B C, and the slotted hub, in combination with two springs, *d e*, acting to return the parts to their respective positions, both of which springs and levers are acted upon when the latch-bolt is drawn inward by means of the knob-spindle, and only one of which levers and springs is acted upon when the latch-bolt is forced inward through the medium of the striker-plate, substantially as described, and for the purpose specified.

2. In a reversible latch, the bar E of the latch-bolt having the lug *g*, in combination with the slotted hub A, spring *d*, and lever B, operated by the

hub, said lever acting upon the bar through the lug *g*, the latter being set so that when the parts are at rest it is away from and at one side of the lever, so that said lever may move a given distance without moving the bar, substantially as described, and for the purpose specified.

3. In a latch, the combination of the hub A, levers B C, springs *d e*, and bar E, having lug *g*, and hung to the end of the lever C, all operating together substantially as described, and for the purpose specified.

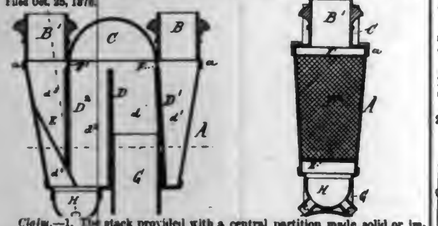
209,991. DEVICES FOR ROASTING COFFEE. John Stevens and Ellis Moore, Centerville, Mo. Filed June 18, 1878.



Claim.—1. In a coffee-roaster, the base formed into a pan, F, beneath the cylinder, in combination with the plate G at the end to close the stove-oven, as and for the purpose set forth.

2. The cylinder A, the base formed into the pan F, the rod C, having stirrers, as described, supported by uprights extending from the base, in combination with the plate G, all substantially as and for the purpose set forth.

209,992. LOCOMOTIVE SMOKE-STACK AND SPARK-ARRESTER. William M. K. Thornton, St. Louis, Mo., assignor of three-eighths his right to Charles L. Thompson, same place. Filed Oct. 25, 1878.



Claim.—1. The stack provided with a central partition made solid or imperforated, a vertical or nearly vertical wire-gauze partition, D^1, extending the whole depth of the body proper of the stack A, a shorter vertical wire-gauze partition, D^2, and an inclined deflecting and arresting partition, E, said stack having two draft-escape passages, B B^1, a spark-receptacle, H, a crown-chamber, C, and exhaust-receiving pipe G, substantially as and for the purpose described.

2. The chamber d^3 in rear of the partition E, and forming an upward extension of the spark-receptacle H, such extension being in rear of the chamber d^2, and being formed by placing the partition E in an inclined position, and having it extend down to, or nearly to, the spark-receptacle and overhang the same, substantially as and for the purpose described.

3. The combination of the imperforated partition D, perforated partition D^2, solid projection F, and imperforated arched crown-chamber C, for covering the chambers d^1 d^2, and permitting the sparks and gases to pass over the partition D, substantially as described.

4. The combination of the imperforated central partition, D, partitions D^1 D^2, and inclined partition E, extended down to, or nearly to, the spark-receptacle H, and inside to form a chamber, d^2, which is an upward extension of the receptacle in rear of the chamber d^3, substantially as described.

209,993. TERRESTRIAL GLOBES. Mungo Turnbull and James Forter, Toronto, Ontario, Canada. Filed July 13, 1878.

Claim.—1. In an educational terrestrial globe, a revolving ecliptic, G, having the device D, for representing the position of the sun therein, substantially as set forth.

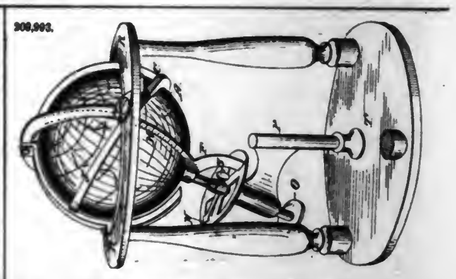
2. In an educational terrestrial globe, the combination, with the solar meridian H, secured to the poles of the globe, with the revolving ecliptic G, provided with friction-pins Q Q opposite the sun's place D, for carrying with it the movable solar meridian, substantially as and for the purposes set forth.

3. In an educational terrestrial globe, the azimuth-circle J C, placed between the ecliptic, composed of the circles R G and the earth, for the purpose of showing at any point upon the earth the sun's altitude, substantially as shown and described.

4. In an educational globe, the ecliptic R, marked with the twelve constellations of the zodiac, divided into thirty degrees each, and the annual calendar of days, in combination with the revolving ecliptic G, provided with the sun's place D, substantially as and for the purpose set forth.

5. In an educational terrestrial globe, the combination of the ecliptic R G, sun's place D, movable solar meridian H, azimuth-semicircle J C, semicircle R, twilight-zone I, graduated circle E, and axial vernier N, constructed and operating substantially as and for the purposes set forth.

209,994. LOCOMOTIVE SMOKE-STACKS. George W. Turner, St. Paul, Minn. Filed Oct. 5, 1878.



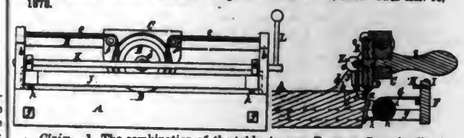
Claim.—1. The arrangement, within the smoke-stack of a locomotive, of a double-conical lining, *a*, contracted at *b*, to aid the exhaust-steam in its action upon the fuel, and having each end in contact with the smoke-stack, to form a strengthening-brace, substantially as herein described.

2. The combination of the stack D E F G, having the double-conical lining *a b c*, and the exhaust-nozzle of a locomotive, arranged and operating substantially as hereinbefore set forth.

3. The combination of the shaft D, having the double-conical lining *a b c*, and the exhaust-nozzle of a locomotive, constructed and arranged substantially as hereinbefore set forth.

4. The combination of the shaft D, inside extension-pipe, H, having the perforations *d*, and the double-conical lining *a b c*, constructed and arranged substantially as hereinbefore set forth.

209,995. PAPER-CUTTING MACHINES. George A. Walker, Boston, Mass. Filed Mar. 15, 1878.



Claim.—1. The combination of the table A, gage F, apron G, and roller *i*, substantially as hereinbefore described.

2. The combination of the gage F, apron G, and roller *i*, having the spring *s*, constructed and operating substantially as and for the purpose hereinbefore set forth.

3. In a paper-cutting machine having an apron, G, or its equivalent, for supporting the paper, the combination of the table A, gage F, and ledge H, the latter located to project over the edge of the paper, substantially as and for the purpose hereinbefore set forth.

4. The combination of the rotary cutter D, operated as set forth, table A, clamp-bar J, stands *b*, and cams *o*, substantially as hereinbefore described.

209,996. WATER-CLOSETS. Darius Wellington, Boston, Mass. Filed July 30, 1877.

Claim.—1. In a water-closet, the combination, with a projecting portion, 2, of a centrally-pivoted pan, packed at its bottom to meet the portion 2 gas-tight, and provided with upwardly-projecting sides to surround the end of portion 2, whereby the pan may also hold sufficient water to immerse and cover the lower end of portion 2, all substantially as and for the purpose described.

2. The horizontal rock-shaft and its pan-carrying arm, in combination with the pan pivoted to the arm, to operate substantially as set forth.

3. The pivoted pan, its carrying-arm, and rock-shaft, in combination with a forked arm and lever to operate it to upset the pan or lock it in closed position, substantially as described.

4. The lever *u*, provided with toe 8 and a spring to depress the lever, in combination with the portion of the arm *t* of the pan rock-shaft, to hold the pan up in closed position, substantially as described.

5. The adjustable foot-lever, in combination with the loop 14, lever *u*, and forked arm *t*, to operate the pan-operating rock-shaft, substantially as described.

6. The valve-opening lever and loose spindle 23, in combination with the independent valve and valve-shell, substantially as described.

7. The valve-opening lever and loose spindle, in combination with the valve and valve-shell and spindle-depressing spring arranged outside the valve-shell to depress the spindle, substantially as described.

8. The water-receiving chamber 38, provided with a projection, 41, substantially as described.

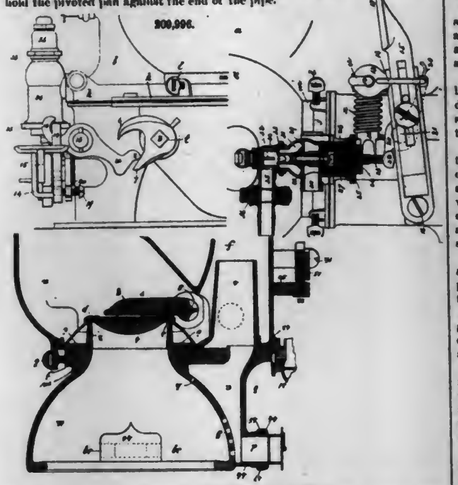
9. The receiver *n*, arranged directly below the pan and the bowl, and provided with the water-leg *f*, in combination with the bowl-support connected therewith and provided with a pipe, *e*, to extend into the water-leg, substantially as described.

10. The bowl provided with the overflow-openings and with a water-regulating opening, *b*, substantially as described.

11. The bowl and its projecting portion provided with a passage, *c*, to discharge its water into a water-leg, in combination with an extension, 46, for the reception of a ventilating-flue pipe, substantially as described.

12. The combination, with a pipe or extension, 2, of a vertically-swinging lever, a pan pivoted to the lever and adapted to abut against the end of the pipe, and with devices to move the swinging lever and lock it in position to hold the pivoted pan against the end of the pipe.

209,996.



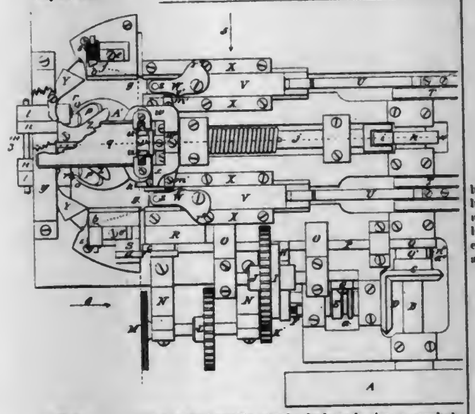
209,997. PULLEYS FOR WINDOW-SASHES. Henry A. Wilbur, Somerville, assignor to Benjamin D. Washburn, Boston, Mass. Filed Mar. 11, 1878.



Claim.—1. In a sash-pulley, the combination of face-plate A, side pieces, B B, which support the wheel, rivet F, and the strip E, cut from the face-plate and attached to said rivet, substantially as shown and described.

2. In a sash-cord guide, the combination, with the two thin metal plates comprising the wheel, and riveted together, as explained, the wearing-block D, confined within a recess formed by bending said plates, substantially as shown and described.

209,998. MACHINES FOR MAKING PAIL-BAILS. Lewis Williams, Bennington, Vt. Filed July 10, 1878.



Claim.—1. As a means for imparting to the feed mechanism a regularly intermittent automatic movement, the combination of lever I, provided with oblong bore and concentric projection e^6, with wheel J, having concentric groove f^7, in which said projection e^6 works, the whole being actuated by a pitman, H, or any other suitable device for producing reciprocating motion, attached to the lever I, substantially as shown, all combined, arranged, and operating substantially in the manner described and shown.

2. The provisions shown for regulating the supply of handles to the machine, consisting of column-guides *t i*, for retaining the handles and keeping them arranged in order, in combination with separating-fingers *u u* and supporting-plate *v*, attached to the reciprocating slide *j*, all arranged to operate substantially as described and set forth.

3. The means provided for forming the offsets or bends in the bail at each end of the handle, consisting of follower d^7, in combination with reciprocating male dies n^7 n^8 and projections r^7 r^8, when constructed and arranged to operate substantially in the manner described and set forth.

4. The described means for making the principal bend of the bail-wire, consisting of the wire-bending devices W W, mounted on reciprocating slides V V, and provided with grooved friction-rollers *h' h'*, in combination with guides Y Y and former A', arranged and operating in the manner and for the purposes described and set forth.

5. The described means for forming the loops or hooks on the ends of the bail-wire, consisting of wire-bending devices W W, mounted and propelled as described, and provided with grooved friction-rolls *h' h'* and lugs r^{10} r^{11}, spring-stops *b b*, interior guides, Z Z, and hook-formers *o o*, all combined and arranged to operate substantially in the manner described and set forth.

6. The mechanism and movements employed for releasing and discharging the finished bail from the machine, consisting of former A', adapted to be depressed and elevated by suitable mechanism, and having the hook-formers so disposed that when such former A' is depressed the bail-hooks formed thereon will engage with spring-hooks *r r*, and when elevated the bail-hooks will be drawn off the hook-formers, said former A' and its attachments being combined and arranged to co-operate with spring-hooks *r r*, substantially in the manner specified.

7. The combination of follower d^7 with former A', armed with projections r^7 r^8, as a means for confining the wire which passes through the handle f^7 in place during the formation of the offsets at either end of the handle, substantially as shown and described.

8. The means provided for rocking or tilting former A', consisting of grooved cam E, lever G, equipped with lug or pin to work in cam-groove *e*, connecting-lever *a'*, and depending arm *b'*, all combined and arranged to operate substantially as described and set forth.

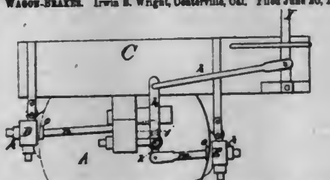
9. In a machine for making pail-bails, the combination of mechanism for automatically feeding at regular intervals and in uniform lengths the wire to the machine and mechanism for cutting off the wire, of substantially the character shown and described, with the mechanism shown for regulating the supply and adjustment of the bail-handles, arranged to co-operate in the same machine substantially in the manner set forth.

10. The combination, in a machine for making pail-bails, of the described mechanism for automatically feeding forward at regular intervals the wire from which the bail is formed, with the described mechanism for bending the wire, substantially as and for the purposes set forth.

11. In a machine for making pail-bails, the combination of the described mechanism for griping and holding the handle, and at same time shaping or forming the offsets in the bail-wire at each end of the handle, with the mechanism described for successively presenting each handle for the insertion of the bail-wire, holding the same during such insertion, and, after such insertion has been made and the wire cut off, releasing the same, substantially as and for the purposes described and set forth.

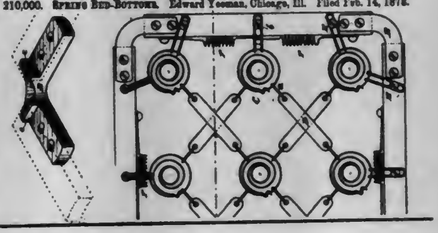
12. In a machine for automatically making pail-bails, the combination of the several described interdependent and co-operative groups of mechanism—viz: the mechanism for confining and controlling the handles during their passage through the machine, the mechanism for automatically feeding the wire at regularly current intervals to the machine, the devices for cutting off the wire, the mechanism for presenting the wire after being handled to the action of the wire-benders, the mechanism for confining both wire and handle and forming the offsets in the bail-wire at the ends of the handles, the mechanism for bending the wire to the form of the bail and turning the hooks at the ends thereof, and the mechanism shown for releasing and discharging the finished bail from the machine, arranged to operate substantially in the manner described and set forth.

209,999. WAGON-BRAKES. Irwin S. Wright, Centerville, Col. Filed June 20, 1878.



Claim.—The means, substantially as herein described, for simultaneously bringing in contact with both sides or opposite edges of a wheel the brake-bars D E, which consist in the roller F, provided with arms or lugs *j j k k* upon the upper and lower sides of said roller, and connecting with the brake-bars by screw-rods *m m*, one end of the roller terminating in a right-angle arm extending in an upward direction, and connected to the brake-lever I by rod *h*, as specified.

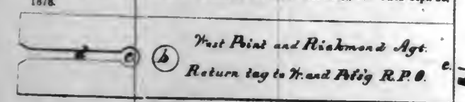
210,000. SPRING BED-BOTTOMS. Edward Yeoman, Chicago, Ill. Filed Feb. 14, 1878.



Claim.—1. The adjustable loops E E, the clamping devices *b b*, the outer rows or series of springs, C C, the rails of the frame, and the inner rows of springs, all of the said springs being connected to each other, and all the said parts being combined and arranged substantially as and for the purposes specified.

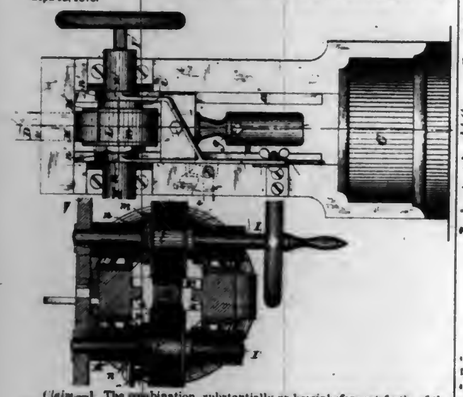
2. Rectangular corner plates or irons B B, having on their under faces the vertical shoulders *c c*, at right angles to each other, the inner ends of the said shoulders approaching each other, and the upper faces of the said irons extending laterally from the outer faces of the said shoulders, in combination with the side and end rails of a spring bed-bottom, substantially as and for the purposes specified.

210,001. BAG TAG AND FASTENER. Hansford Anderson, West Point, Va. Filed Sept. 18, 1878.



Claim.—The described mail-bag tag, as made, not only with the hole *b* and the smaller hole *c*, communicating with the open-ended slit *d*, but with the part *e*, for the label or indicating inscription extending beyond the hole *b*, all substantially as and for the purposes set forth.

210,002. RICE POUNDING AND HULLING MILLS. Fred Brotherhood, Charleston, S. C. Filed Sept. 18, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, of the supporting-frame, the mortar, the lifting-board, cut away or recessed as at *d*, the pestle carried by the lifting board, and the cams acting on the lifting-board above its cut-away portion only, whereby, when the board is thrown up by the impetus imparted to it by the cams above the point to which it is positively raised by the cams, it may be secured in an elevated position, free from the cams, by means substantially such as described, to throw the pestle out of operation without stopping the revolution of the cams.

2. The combination, substantially as hereinbefore set forth, of the supporting-frame, the mortar, the lifting-board actuating the pestle, and recessed or cut away, the cross-head at the lower end of the lifting-board below its cut-away portion, the cams, and the lever-catch to engage the cross-head and throw the pestle out of operation, as described.

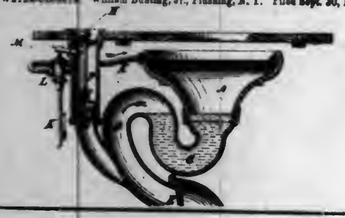
3. The combination, substantially as hereinbefore set forth, of the supporting-frame, the adjustable driving-shaft, the adjustable driven shaft, the cams on said shafts, the lifting-board carrying the pestle, the adjusting lever or levers, and connections between the lever or levers, and one or both of the cam-bearings, whereby the cam or cams may be adjusted toward or from the lifting-board and secured while the mill is working, for the purpose described.

4. The combination of the shaft F, the cam thereon, the lifting-board acted on by the cam, the eccentric-bushings in which the shaft revolves, the collars, on said bushings, the forked lever, and the securing devices, these members being constructed and operating substantially as hereinbefore set forth.

5. The combination, substantially as hereinbefore set forth, of the cam-operated lifting board, the pestle, and the removable boot, detachably connected both with the lifting-board and pestle, for the purposes specified.

6. The combination of the cam, the shaft on which it is mounted, having the enlarged middle portion and the screw-thread, the collars on the shaft between which the cam is secured, and the clamping-nut, these members being constructed to operate in connection with the lifting-board, substantially as hereinbefore set forth.

210,003. WATER-CLOSETS. William Busting, Jr., Flushing, N. Y. Filed Sept. 30, 1878.



Claim.—1. The method of producing an automatic discharge of the bowl of a water-closet by exhausting the air from a siphonal discharge-pipe connected therewith, substantially in the manner herein set forth.

2. The combination, with the trap and bowl of a water-closet, of a siphonal discharge-pipe, C D, air-exhausting device F G, and check-valve E, substantially as and for the purpose herein set forth.

3. The combination of the pull H and air-exhausting device F G, operating to produce a discharge of the bowl A and trap C of a water-closet, with a lever, M, and valve L, operating to supply a flow of water to said bowl, all substantially as and for the purpose herein set forth.

210,004. BAG-TIE AND ADDRESS-HOLDER. John A. Barchard, Freeport, Ill. Filed Mar. 19, 1878.

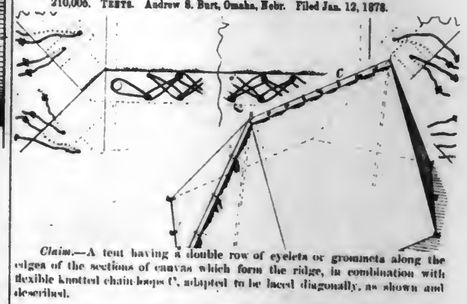


Claim.—1. The block A, having the perforated lug and T-head, with or without eye *d*, substantially as and for the purpose described.

2. The block A, having the T-head and perforations, as set forth, and formed with an address-chamber, the mouth of which opens at the base of the T-head, substantially as described.

3. The combination, with block A, having the eye or eyes and T-head, of the cord provided with stop *s*, substantially as described.

210,006. TENTS. Andrew S. Burt, Omaha, Nebr. Filed Jan. 12, 1878.



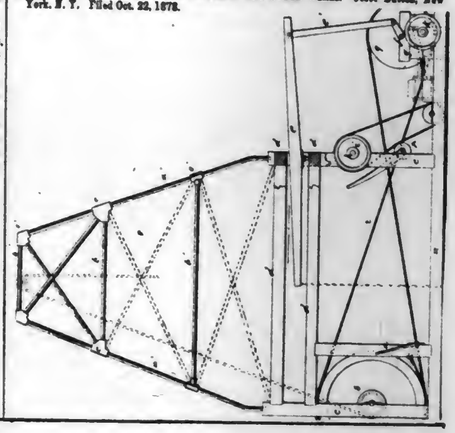
Claim.—A tent having a double row of eyelets or grommets along the edges of the sections of canvas which form the ridge, in combination with flexible knotted chain loops C, adapted to be laced diagonally, as shown and described.

210,006. ROTARY CUTTERS FOR TRIMMING BOOT AND SHOE SOLES AND HEELS. James H. Buell, Boston, Mass. Filed Feb. 26, 1878.



Claim.—A cutting-tool composed of a central cylindrical hub and a series of detachable cutting-blades provided with a chisel-shaped cutting edge, and secured to said hub with their front sides inclined to radial lines by means of a dovetailed joint extending longitudinally of said hub, substantially as and for the purposes described.

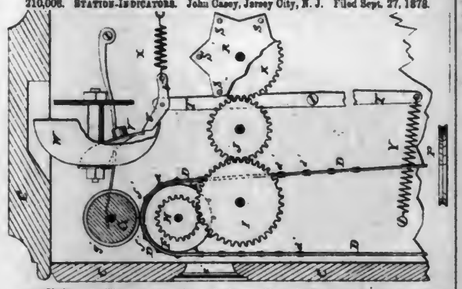
210,007. DRILLING-MACHINES FOR ARTESIAN AND OTHER WELLS. Jesse Button, New York, N. Y. Filed Oct. 22, 1878.



Claim.—1. The drilling-machine tower T, consisting of the supports *a'*, screw-braces *b'*, and screw-joints *c'*, as shown and described.

2. The combination, with the frame, constructed substantially as set forth, of the beam *e*, shaft *f*, intermediate shaft, *h*, and drum *s*, arranged for operation as described.

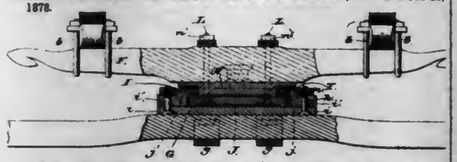
210,008. STATION-INDICATORS. John Casey, Jersey City, N. J. Filed Sept. 27, 1878.



Claim.—1. The combination of the endless indicator-belt D, the three rollers E F G, the four gear-wheels H I J K, the two ratchet-wheels L L, the two pawls M M, and the lever N with each other, with the case C, attached to a car, and with the inclined and grooved blocks P, secured in the road-bed, substantially as herein shown and described.

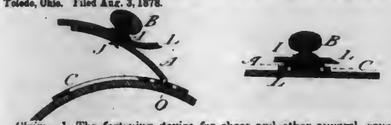
2. The combination of the wheel R, provided with the pins S, the lever T, provided with the pivoted cross-bar U, and the springs X Y, with the hammer V of the gong W, and with the gear-wheels, the ratchet-wheels, the pawls, and the lever that drive the indicator-rollers and endless belt, substantially as herein shown and described.

210,009. FIFTH-WHEELS FOR VEHICLES. Samuel S. Claar, Bedford, Pa. Filed Oct. 12, 1878.



Claim.—The combination, with the bed-plate G, secured to the axle, and provided with eyes *i* upon its edge, of the disk J, bearing on said plate, and provided with the screw-bolts L, the overhanging ring I, having lugs F, the clamp-bolts k, the rabbeted cap-plate N, passed over the bolt L, the head-block F, and a clip device securing the bolts L to the block, substantially as specified.

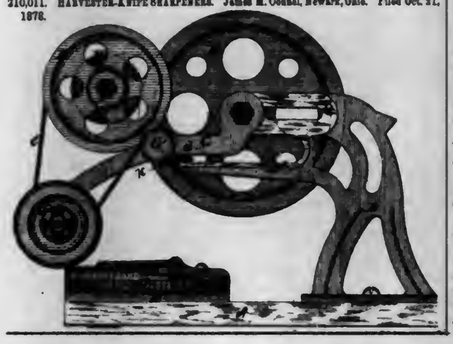
210,010. FASTENING DEVICES FOR SHOES, &c. Joseph W. Cleese and Bernhard Zipfel, Toledo, Ohio. Filed Aug. 3, 1878.



Claim.—1. The fastening device for shoes and other apparel, consisting of the plate C, with its slot and two series of holes, as shown, the plate A, with its hooks O O, adapted to engage with the holes of the plate C, and the button B, provided with the shank J, arranged to be passed through the plate A, and engaged in locked position, by means of its turned points, with the slot in plate C, all substantially as and for the purpose stated.

2. In a fastening device for shoes and other apparel, the combination, with the plate A, as shown, of the button B, washer I, and the shank J, provided with a bifurcated end to form a catch, all substantially as and for the purpose stated.

210,011. HARVESTER-KNIFE SHARPENERS. James M. Counsel, Newark, Ohio. Filed Oct. 21, 1878.



Claim.—1. The standard D, provided with the arms D' and D², in combination with the sliding arm G, carrying the entire operating mechanism, said arm G being pivoted and sliding in the arm D', and is supported on the arm D², substantially as herein set forth.

2. An elastic cushion, *i*, with an adjustable plunger or follower, *k*, arranged in the sliding arm G, in combination with the supporting-arm D² and the operating mechanism carried upon said sliding arm, and arranged substantially as described, whereby the centrifugal force of the driving wheel exerts a downward tendency on said sliding arm, for the purposes herein set forth.

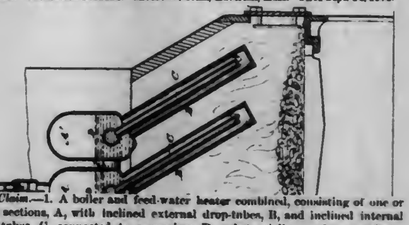
3. The arm D², having concave groove, in combination with the plunger *k* and cushion *i* in the sliding arm G, for the purposes set forth.

210,012. JEWEL-CASKETS. Augustus Conradt, Middletown, Conn., assignor to the Middletown Plate Company, same place. Filed Oct. 12, 1878.



Claim.—In combination with the lid D and its lever G, the flexible connection H and the roller J, adapted to be operated by the wheels B, to automatically open and close the lid by the rolling of the wheels, substantially as set forth.

210,013. SECTIONAL BOILERS. Alonzo W. Cram, Haverhill, Mass. Filed Sept. 14, 1878.

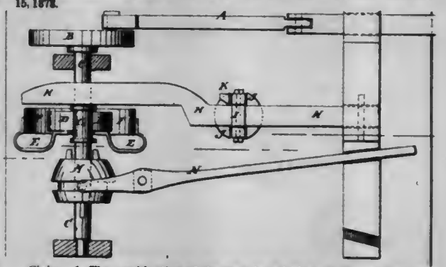


Claim.—1. A boiler and feed-water heater combined, consisting of one or more sections, A, with inclined external drop-tubes, B, and inclined internal drop-tubes, C, connected to cross-pipes D, substantially as shown and described.

2. The boiler herein described, consisting of two or more sections, A A', having inclined bottoms, to which are secured external inclined drop-tubes, B, with internal inclined drop-tubes, C, connected to cross-pipes D, that are provided with T or branch pipes *a b*, constructed and arranged substantially as and for the purpose set forth.

3. The combination herein described of the external inclined drop-tubes, B, and internal tubes, C, with cross-pipes D, arranged for interchangeably feeding and blowing out the boiler, as shown and specified.

210,014. MECHANICAL MOVEMENTS. David E. Cripe, North Manchester, Ind. Filed Oct. 15, 1878.



Claim.—1. The combination of the cam-shaped block D, the roller G, the lever H, and the adjustable weighted frame I J with the shaft C, the crank-wheel or crank B, and the driving-pitman A, substantially as herein shown and described.

2. The combination of the spring L with the weighted frame I J, the lever H, the roller G, the block D, and the shaft C, substantially as herein shown and described.

3. The combination of the bent arms E and the guard-band F with the block D, attached to the shaft C, and with the roller G, pivoted to the weighted lever H, substantially as herein shown and described.

4. The combination of the clutch M and the clutch-lever N with the shaft C and the block D, upon which the roller G of the weighted lever H works, substantially as herein shown and described.

210,015. SHUTTERS. Wm. Cruse and John D. Isaacs, Oakland, Cal. Filed Sept. 12, 1878.

Brief.—The slats rest in removable bead-strips. A metallic strip slides vertically in a space in one of the bead-strips, grooved on its side next to the framing. The metallic strip has oblique slots, in which play eccentric-pins of ferrules on the slat-tenons, said tenons and ferrules passing through perforations in the bead-strip. The metallic strip is operated by a knob on the end of a projection of the strip passing through a recess in the bead.

Claim.—1. The blind-slats N, turning upon tenons or gudgeons which enter the bead-strips B B′ at the sides, on one side said gudgeons having ferrules G, with the eccentric-pins F, in combination with the sliding plate E, moving in a rabbet in the back of the bead-strip, and having the oblique slots M to receive the pins F, substantially as herein described.

2. The bead-strips B B′, fitted to receive the blind-slats, which turn upon gudgeons, as shown, one of said strips having a rabbet in its exterior face, so that the slat-operating plate will be below the face, and the whole may be introduced to or removed from the frame without cutting the latter, substantially as herein described.

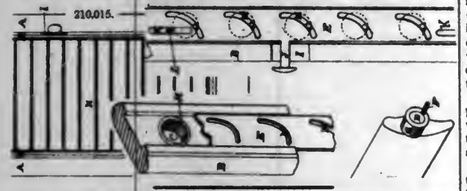
3. The rotating blind-slats N, with their eccentric-pins or crank-arms F, operated by the sliding plate E, with its oblique slots M, in combination with the flat plate J, attached to the sliding plate and projecting out through the quirk to obviate cutting the stile or frame, substantially as herein described.

4. The obliquely-slotted plate E, moving in the rabbeted groove, as shown, in combination with the rotating slats N, with their eccentric-pins F, entering said oblique slots, whereby a rotary motion of the slats is produced by a rectilinear movement of the plate E, substantially as herein described.

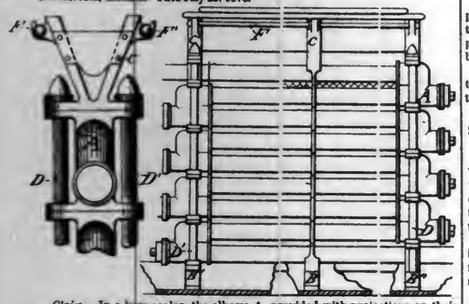
5. The rabbeted bead-strip B, fitted to receive the directly-acting obliquely-slotted sliding plate E upon one side, and the ferrules of the rotating blind-slat gudgeons upon the other, said bead-strip being provided with the lining or journal rings H, substantially as herein described.

6. The directly-acting obliquely-slotted sliding plate E, operating to turn the slats by means of eccentric-pins F, as shown, said plate having the longitudinal slot K, through which a screw may pass to fasten it to the frame or stile without interfering with its action, substantially as herein described.

210,015.

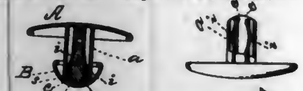


210,016. Beer-Coolers. Caroline Deckebach, Cincinnati, Ohio, administratrix of Frederick C. Deckebach, deceased. Filed July 26, 1878.



Claim.—In a beer-cooler, the elbows A, provided with projections on their upper and lower sides, through holes in which rods D D′ pass, in combination with said rods D D′, supports B B′, rods F F′, and trough-support C C′, substantially as shown and described.

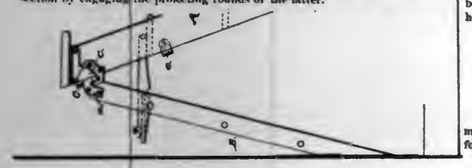
210,017. Collar and Sleeve Buttons. Wellington P. Dolloff, Providence, R. I. Filed July 27, 1878.



Claim.—In a sectional collar or sleeve button, the combination, with a back plate, A, having tubular post *a* and recesses *b′*, and the spring-griper *i i*, having angular jaws *c*, inside of said post, of a face-plate, B, having solid post *b*, provided with a groove, *g*, near its base, a swell, *s*, outside of said groove, and a rounded tapering end, *h*, substantially as specified.

210,018. Extension Step-Ladders. Charles E. Doty and George W. Flint, Rock Falls, Ill. Filed May 8, 1878.

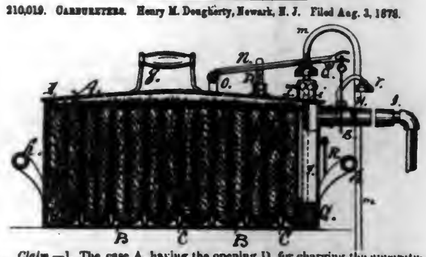
Brief.—A step-ladder joint consists of two plates on the leg of one section, forming a recess to receive a plate on the leg of the other section, said plate having a hooked projection engaging a hook on one of the adjacent plates. Hooked projections on one ladder-section, and also on one of the plates of the recessed joint-connection, slide in a groove in the leg of the other section, forming an extension-ladder. Pivoted hooks on one section maintain the extended section by engaging the projecting rounds of the latter.



Claim.—1. In a step-ladder, the peculiar joint formed by the recesses *b b*, plates C C *c c*, and plates *a a*, constructed and arranged substantially as shown, and for the purpose mentioned.

2. The section B, provided with the grooves *d d*, in combination with the section A, having guides *c c a a*, hooks *f f*, and projections of the rounds, all arranged and operating substantially as and for the purpose specified.

210,019. Carburetters. Henry M. Dougherty, Newark, N. J. Filed Aug. 3, 1878.



Claim.—1. The case A, having the opening D, for charging the apparatus, and for the inflow of air to be carbureted, in combination with the spring-bar *a* and cap Q, for opening and closing the opening D, it being closed when not in use to prevent the evaporation of gasoline, the hook E, to hold the cap Q closed upon the opening D when the apparatus is being carried about, and the wire S, made to extend to the lower part of the building, so that in use the opening and closing may be effected without going to the apparatus, substantially as set forth.

2. The case A, filled with the vertical double folds of jute rope or jute packing B, having the bend at the bottom of the apparatus, in combination with the vertical perforated tubes E and horizontal tubes C, for conducting the carbureted air from the top of the apparatus to the bottom, and thence to a store-chamber, F, substantially as set forth.

3. In combination with the case A, filled with jute packing, and having the tubes E and C, the metal tube or chamber F, perforated at the lower end, G, to allow of the inflow of gas into the said chamber, to connect with the service-pipe H, substantially as specified.

4. The carbureter constructed substantially as set forth, with the jute packing B and tubes E and C, in combination with the perforated plate *i* in the bottom of the opening D and the perforated section G of the tube F, to prevent the possibility of any fire communicating with the interior of the carbureter, substantially as set forth.

5. The siphon embracing the pipe K, self-closing faucet L, and rubber tube *m*, in combination with the case A and tube F, substantially as and for the purpose specified.

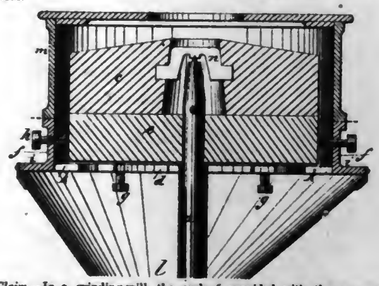
210,020. Working Nickel Ores and Manufacture of Nickel. Jules Garnier, Paris, France. Filed Feb. 2, 1877. Patented in England, Mar. 20, 1876.

Claim.—1. The process herein described of deoxidizing nickel in a furnace without deoxidising the iron contained in the nickel ore by subjecting the pulverized ore, in the presence of limestone, to a blast within the furnace, thereby combining the silica, the magnesia, and other bases contained in the ore with the lime, and allowing the iron to pass off with the slag, substantially as specified.

2. The process herein described of separating impurities from nickel during its treatment on a reverberatory furnace by passing currents of air into the furnace, and the simultaneous addition of pure ores having a base of oxide of nickel, substantially as specified.

3. The process herein described of tempering the refined nickel while melted, and of freeing the bath of the oxides and slags remaining in suspension, by the addition of an alloy of nickel and manganese to the bath of nickel or alloy of nickel while on the hearth of the reverberatory furnace or in a Bessemer converter, substantially as specified.

210,021. Millstone-Dress and Chop-Conveyer. Charles Galigher, Cairo, Ill. Filed Aug. 19, 1878.



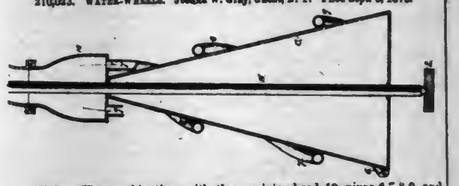
Claim.—In a grinding-mill, the curb *f*, provided with the supporting-bed-plate *d*, having the skirt-apertures *k*, in combination with the discharge-hopper *l* and the bed-stone *c*, substantially as and for the purpose specified.

210,022. Cigar-Holders. Wallace Goodwin, Detroit, Mich. Filed June 10, 1878.



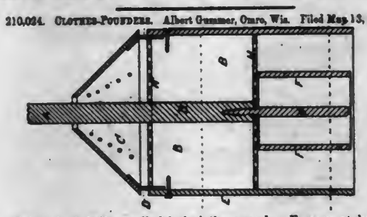
Claim.—The pointed hollow tube B, having a side slot, D, jointly with a mouth-piece, substantially as shown and described, and for the purpose set forth.

210,023. Water-Wheels. Joshua W. Gray, Ghent, N. Y. Filed Sept. 6, 1878.



Claim.—The combination, with the receiving-head 10, pipes 6 7 8 9, and spindle S, of the supporting-cone C, substantially as described.

210,024. Clothes-Pounder. Albert Gummer, Omro, Wis. Filed May 13, 1878.

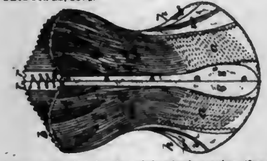


Claim.—1. A hollow cylindrical clothes-pounder, E, open at both ends, and having frame B B and screens H H′, substantially as shown and described.

2. The hollow cylinder E, having frame B B and screens H H′, in combination with perforated cone C, substantially as shown and described, for the purpose specified.

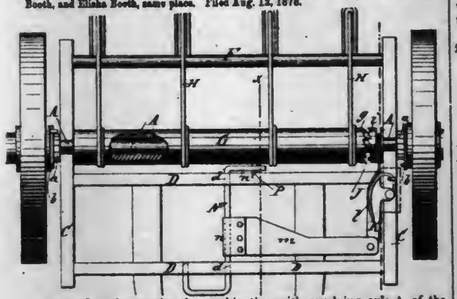
3. The clothes-pounder composed of the hollow cylinder E, having frame B B, the screens H H′, removable cone C, and supplementary removable cylinder F, having block or blocks G, substantially as shown and described.

210,025. Corsets. Seligman Gutman, New York, N. Y., assignor to Lewis Schiele & Co., same place. Filed Oct. 21, 1878.



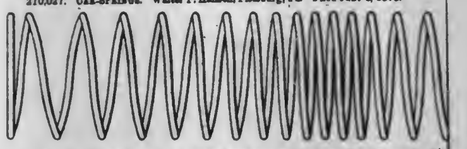
Claim.—A corset having in the abdominal portion thereof latitudinal or horizontal stiffeners of whalebone or other suitable material, extending forward from about the front hip line on each side, substantially as herein shown and described, for supporting the abdomen, in the manner set forth.

210,026. Horse Hay-Rakes. D. F. Hosker, Kempton, Ind., assignor to himself, Vincent G. Booth, and Elisha Booth, same place. Filed Aug. 12, 1878.



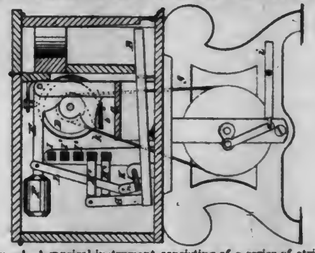
Claim.—In a horse-rake, the combination, with revolving axle A, of the loose surrounding rake-head G, having teeth *g* at one end, the sibling sleeve keyed to the shaft and having teeth *i*, and the treadle mechanism K m N, as and for the purpose specified.

210,027. Car-Springs. Walter P. Hansell, Pittsburg, Pa. Filed June 4, 1878.



Claim.—A coiled spring in which the distances between the coils gradually increase from the center to the ends of the spring, substantially as shown and specified.

210,028. Piano-Violins. Frederiebon Harris, Louisiana, Mo. Filed Apr. 9, 1878.



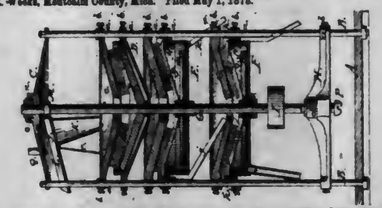
Claim.—1. A musical instrument consisting of a series of strings, a set of keys with several fingers in each set, arranged to operate upon the same string, a revolving bowing-disk, and a set of muffling-pads corresponding to the strings, all combined and arranged substantially as shown and described.

2. The combination, with the sounding-board having frets *m*, and with violin-strings mounted above the same, of the series of rock-shafts I, having arms H and J, the vertical weighted bars G, and the keys B, substantially as shown and described.

3. The combination, with the operating-fingers and keys, of a continuous rock-bar, K, extended over the ends of the keys, the lifting-bar L, and weighted arm E, carrying the muffling-pad, substantially as and for the purpose described.

4. The bowing-disk consisting of a wheel or pulley, having a rubber tube about its periphery, with a face of silk or hair charged with rosin, substantially as and for the purpose described.

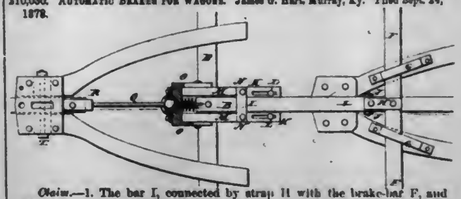
210,029. Bran-Scourers. William Harris, Greenville, assignee of one-half his right to H. R. Weeks, Montcalm County, Mich. Filed May 1, 1878.



Claim.—1. The herein-described apparatus for scouring bran, consisting of the base A, posts B B, cap C, driving-shaft G, secured in bearings in the cap C and adjustable cross-arm H, corrugated plate J, frames N N′, having wire screens *g*, jackets D E F, spout K, attached to spring *s*, frames *c* and O O, said jackets and frames having sleeves *a* and clamping-screws *b*, for adjustment upon posts B B, the several parts being constructed, arranged, and combined to operate, in relation to each other, substantially as and for the purpose specified.

2. The jackets D E F and frames *c* and O O, each having sleeves *a* and clamping-screws *b*, in combination with the posts B B, driving-shaft G, having adjustable bearings in the cap C and cross-arm H, and carrying corrugated wheel or plate J, and frames N N′, having screens *g*, substantially as and for the purpose specified.

210,030. Automatic Brakes for Wagons. James G. Hart, Murray, Ky. Filed Sept. 24, 1878.



Claim.—1. The bar I, connected by strap H with the brake-bar F, and with the reach by straps J, as and for the purpose described.

2. The plate K, having slotted side parts, the connected side bars, M, having bolts L, the U-strap O, and the spring P, combined and arranged in a wagon-brake, as and for the purpose specified.

210,031. Vehicle Shifting Seats. John A. Hawthorn, Lancaster, Pa., assignor of one-half his right to Aldais F. Hawthorn, same place. Filed Oct. 31, 1878.

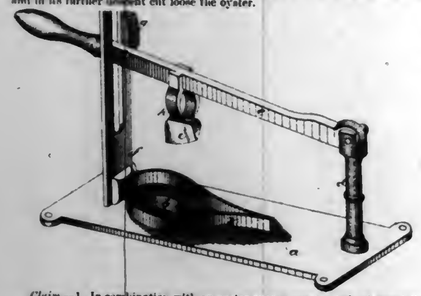


Claim.—1. The cross-piece or brace F, provided with a central lug or piece, E, in combination with the pair of supports O, each end adapted to the double bearings on the seat and sill plates B′ P, substantially as and for the purpose specified.

2. In combination with the leg or piece E on brace F, the arched and hinged plate D, having notch *d*, when provided with a projecting foot or piece, G, a spring, H, eyed leg *i*, wires I J, and lever L, the whole arranged and operating substantially as and for the purpose herein described.

210,032. Oyster-Openers. Peter Heimlich, Syracuse, N. Y. Filed Aug. 22, 1878.

Brief.—The shell is placed on its edge and sustained in position by the spring-clamp, for the knife to be brought down and cut the hinge of the shell, and in its further descent cut loose the oyster.

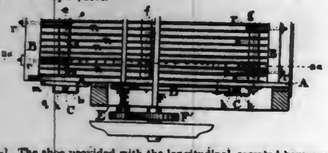


Claim.—1. In combination with an oyster-opener constructed substantially as herein described, the base-plate having a recess, *b*, therein, with a spout, *c*, leading therefrom, as set forth.

2. The spring-catch *k*, surrounding the recess *b*, in combination with the base-plate *a*, substantially as and for the purposes specified.

3. The combination of the wedge-knife *i* and spreader *h*, for opening shell-fish, substantially as and for the purposes described.

210,033. Corn-Sheller Separators. Ephraim Herriott, Brimfield, and George S. Smith, Elmwood, Ill. Filed July 27, 1878.



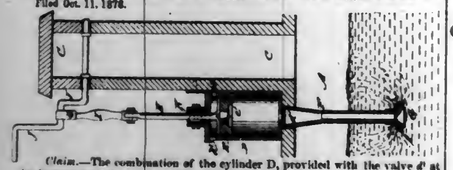
Claim.—1. The shoe provided with the longitudinal serrated bars *a a*, and suspended by spring-bars C C, set at an incline, substantially as and for the purposes described.

2. The serrated bars *a a*, supported on the cross-rods *s f g*, and separated by the blocks *o o*, and held in place on the frame B by means of tension-rods *r*, substantially as and for the purposes described.

3. In a corn-sheller separator, a shoe, B, arranged with raking-bars *a a*, tensions *r r*, blocks *o*, springs C, geared shafts E F, eccentric D, one on either side, hanging valve *a'*, and chutes *a b d*, arranged and operating as described.

4. In a corn sheller, the combination and arrangement, with the shoe B, having rakes *a a* and eccentrics D D, connected with shafts E F, of four inclined springs or suspenders, C, gate *a'*, and chutes *a b d*, as described.

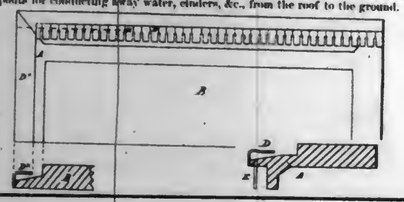
210,034. Water-Ejectors. Jerome S. Higgins and Riverious T. Higgins, California, Mo. Filed Oct. 11, 1878.



Claim.—The combination of the cylinder D, provided with the valve *d'* at its bottom and the air-holes *d''* at its top, directly under the cover, the piston E, provided with the valve *e'*, the tube F, provided with the distributer G, the piston-rod H, and the pivoted connecting-rod I, with a well, cistern, tank, or other water-reservoir, and with a crank, J, or other operating mechanism, substantially as and for the purpose described.

210,035. Gutter-Guards for Car-Roofs. Richard H. Hooper, Boston, Mass. Filed Aug. 20, 1877.

Brief.—Consists of a bent sheet of metal applied to the eaves of the car or "monitor," and extending the length of the same, and in combination therewith spouts for conducting away water, cinders, &c., from the roof to the ground.

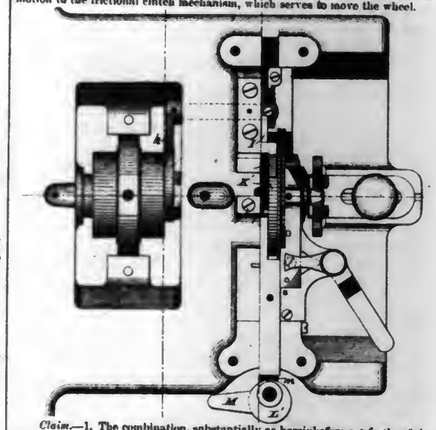


Claim.—1. The combination, with a railroad-car roof, of one or more flanges, D, extending upward from said roof and bent inward toward the middle of the same, when constructed and arranged to operate substantially as described and shown.

2. The combination, with a railroad-car roof, of one or more flanges, D, and one or more spouts or conductors, E, all constructed and arranged to operate substantially as described and shown.

210,036. Sewing-Machines. J. A. House, Bridgeport, Conn. Filed May 6, 1878.

Brief.—A feed-wheel is mounted upon a sleeve encircling the shaft of a revolving hook. This feed-wheel is operated by a cam on the hook-shaft, which acts upon an arm of a rock-shaft, said rock-shaft, through a tappet, giving motion to the frictional clutch mechanism, which serves to move the wheel.



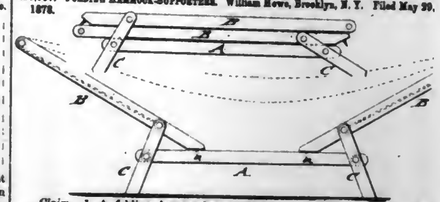
Claim.—1. The combination, substantially as hereinbefore set forth, of the driving-shaft, the rotary hook-shaft, the rotary hook having a differential motion imparted to it, and the intermittently-operating feed-wheel revolving about the hook-shaft and actuated therefrom by connecting mechanism, substantially as described.

2. The combination, substantially as hereinbefore set forth, of the frame of the machine, the rotary hook, its shank or shaft, the feed-wheel, and the hollow stud enveloping the hook-shank, and upon the eccentrically-formed portion of which the wheel is mounted so as to be capable of adjustment vertically.

3. The combination, substantially as hereinbefore set forth, of the driving-shaft, the rotating hook-shaft, the cam thereon, the rock-shaft, the tappet on the rock-shaft actuated by the cam, the feed-wheel rotating about the hook-shaft, and the frictional clutch-connections actuated by the rock-shaft upon each revolution of the cam, for the purpose described.

4. The combination of the intermittently-operated rock-shaft, its toe, the feed-wheel, its disk or ring, the griper mounted in a slot thereof, its spring, the stop-pins on said disk, the adjusting-bar acting upon one of said pins, and the spring bearing upon the other, these members being constructed and operating substantially as hereinbefore set forth, to adjust the feed.

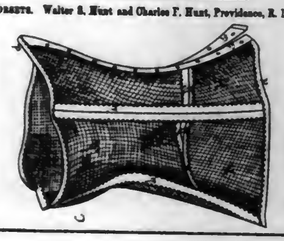
210,037. Folding Hammock-Supporters. William Hews, Brooklyn, N. Y. Filed May 29, 1878.



Claim.—1. A folding hammock-supporter consisting, essentially, of the base-section A, the two side sections, B, and the pivoted legs C, all constructed and relatively arranged substantially as herein set forth.

2. The combination of a base-section, pivoted supporting-legs, and swinging side sections pivoted to the legs, the side sections being secured by suitable locking devices to the base-section, substantially as specified.

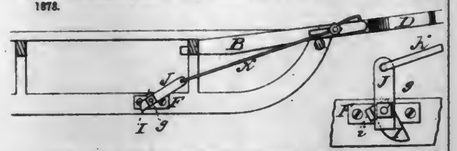
210,038. Corsets. Walter S. Hunt and Charles T. Hunt, Providence, R. I. Filed Apr. 18, 1878.



Claim.—1. In combination with the body A of a wire-gauze corset, extending below the waist in front and back, but cut short along the natural waist-line at D above the hips, the detachable hip part K, the lacings *f* and *g*, and the stays *b b* all constructed and arranged to operate substantially as described.

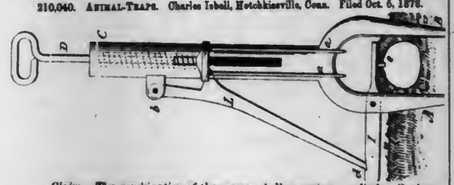
2. In a wire-gauze corset, the opening D along the natural waist-line, between the stays *b b* or *b* G, and above the close-fitting hip part K, substantially as described.

210,039. Automatic Sleigh-Brake. Howard Hunt, Twin Grove, Wis. Filed Sept. 23, 1878.



Claim.—An automatic sleigh-brake consisting of the vertical levers J, pivoted to the side of the runner, and connected to the draft-rod by the rods K, each brake-lever having pivoted to its lower end and in the same line the inside tooth, I, having an outward flange-stop, *i*, on its upper rear corner in rear of the pivot *g*, which connects the tooth and lever together and to the runner, substantially as specified.

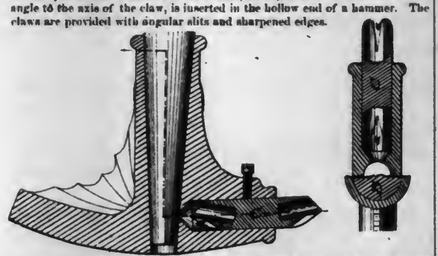
210,040. Animal-Traps. Charles Isbell, Hotchkissville, Conn. Filed Oct. 5, 1878.



Claim.—The combination of the prongs A B, carrying a cylinder, C, above, slide D, and spring thereon within the cylinder, prongs *a a*, attached to the slide D, the hinged latch L, and trip I, provided with downward projections *e*, substantially as described.

210,041. Nail-Extractors. Christian F. Knauer, Urach, Wurttemberg, Germany. Filed Sept. 12, 1878.

Brief.—A double reversible steel claw, having end cavities drilled at an angle to the axis of the claw, is inserted in the hollow end of a hammer. The claws are provided with angular slits and sharpened edges.



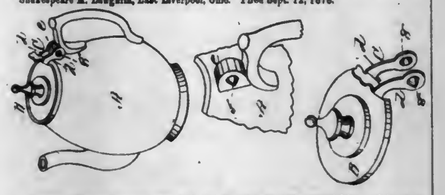
Claim.—1. In a nail-extractor, the combination, with a lever-handle and hammer-head having a hollow end, of a double reversible steel claw, substantially as described, and for the purpose set forth.

2. In a nail-extractor, a double steel claw having end cavities, with angular slits and sharpened edges, substantially as herein shown and described.

3. In a nail-extractor, a double steel claw having holes or cavities drilled at an oblique angle to the axis of the claw, angular slits with sharpened ends at the under side, and the upper portion of the ends cut off at an angle to give point to the sharpened slit ends, substantially as described, and for the purpose set forth.

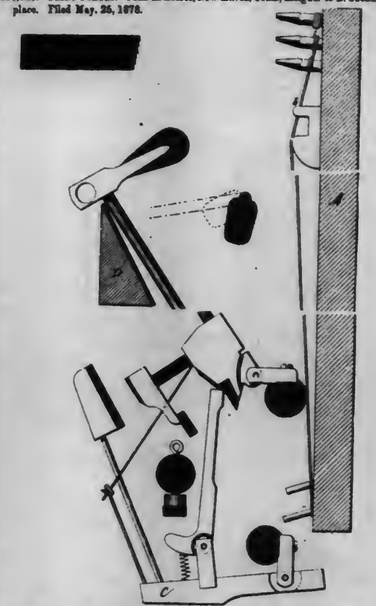
4. In a nail-extractor, the combination, with a hammer-head having a solid nail, and a socket or cavity and set-screw at the other end, of a double reversible slitted and pointed steel claw, substantially as specified.

210,042. Detachable Metallic Covers for Vessels Made of Pottery, Glass, &c. Shakespeare M. Laughlin, East Liverpool, Ohio. Filed Sept. 12, 1878.



Claim.—The removable metallic lid B, with its bifurcated hinge C, in combination with and adapted to embrace or spring over the projection *e* of the vessel A, to which it is attached by means of teats or points *f* entering corresponding sockets or recesses *g*, substantially as and for the purpose set forth.

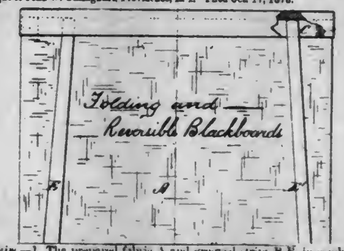
210,043. Piano-Fortes. John R. Lomas, New Haven, Conn., assignor to B. Shoninger, same place. Filed May 25, 1878.



Claim.—1. In combination with the hammer and wires of a piano, the soft-pedal shaft carrying a felt cushion, arranged between the arm of the hammer and the wires, substantially as described.

2. The supporting-rods of a piano-action inclosed within a fabricated network, substantially as described.

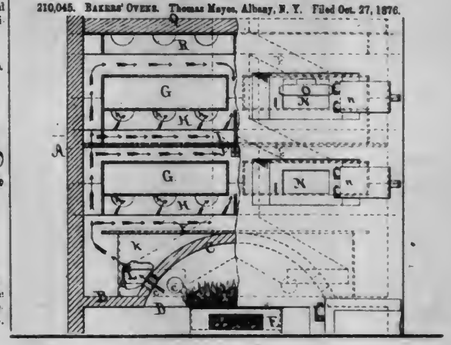
210,044. Folding Blackboards. Benj. G. Luther, Hebronville, Mass., assignor of one-half his right to John W. Tillinghast, Providence, R. I. Filed Oct. 17, 1878.



Claim.—1. The prepared fabric A and grooved strips B B, in combination with the stretchers E or E', inserted into the grooves C, and operated substantially as described.

2. The reversible strips B B, combined with the prepared flexible fabric A, substantially as described.

210,045. Bakers' Ovens. Thomas Mayo, Albany, N. Y. Filed Oct. 27, 1876.

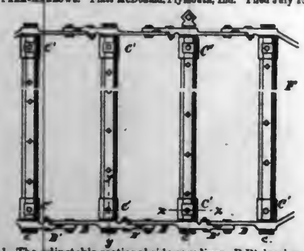


Claim.—1. The combination, with the casing A, having a partition, B, arch C, provided with the opening *c*, and deflecting-plate F, of the detachable fire-box E, ovens G, division-plate I, dampers J, and flues K, L, and M, as and for the purpose herein set forth.

2. The combination of the ovens G with the flues P, as and for the purpose herein specified.

3. In combination with the ovens G, the bearing-bars H, provided with the openings *h*, as and for the purpose herein specified.

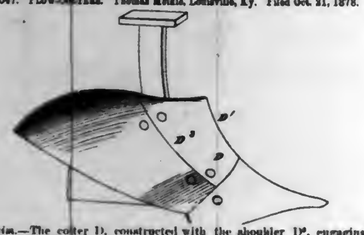
210,046. FARM-HARROWS. Platt McDonald, Plymouth, Ind. Filed July 15, 1878.



Claim.—1. The adjustable sectional side couplings, B B', having the central double dovetailed slot, *a*, slot G, bolts E and F, and the end fork, *e*, in combination with the T-shaped end tenon, C, of the tooth-bar, substantially as specified.

2. In a harrow frame, the side bars having the double dovetail slots *a*, adapted to receive the end tenons of the tooth-bars for automatic adjustment, as shown and described.

210,047. PLOW-COULTERS. Thomas Mehle, Louisville, Ky. Filed Oct. 21, 1878.



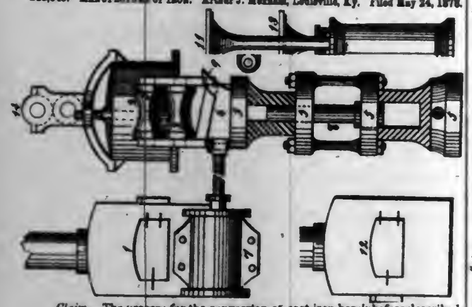
Claim.—The coulter D, constructed with the shoulder D², engaging the standard, and the flange D², extending rearward over the frog on the mold-board side of the plow, perforated with holes for the bolts *d* and *d'*, for attaching it to the frog, in combination with the standard and frog of the plow, and so constructed as to form proper joints and inclinations with the point and mold-board, as and for the purposes substantially as set forth.

210,048. METALLIC FASTENERS. George W. McGill, New York, N. Y. Filed Mar. 28, 1878.



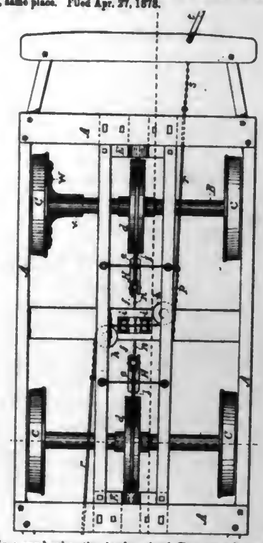
Claim.—A T-shaped metallic fastener consisting of the vertically-split prong B B, having its end extension, A', and side extension, A, bent and folded to form the fastener-head, as herein described, for the purposes specified.

210,049. MANUFACTURE OF IRON. Arthur J. Morham, Louisville, Ky. Filed May 24, 1878.



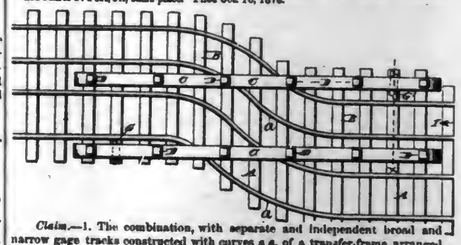
Claim.—The process for the conversion of cast-iron hereinbefore described, consisting of first puddling said iron, and, by means of a squeezer, expelling cinder therefrom; then, without reheating the mass thus purified of cinder, closely fitting the same into a cinder-tight press, and therein rapidly welding and condensing the iron by reducing its mass in length only without altering its transverse sectional area, as described; and, finally, finishing the bloom thus formed and condensed by rolling it into desired shapes of bar or other merchantable iron.

210,050. CAR-BRAKES. Charles H. Nye, Baltimore, Md., assignor of one-half his right to O. H. Stevenson, same place. Filed Apr. 27, 1878.



Claim.—In a car-brake, the brake-wheel D, secured to the center of the axle, brake-levers H I, the ends of which are secured to the stanchions E, and having the brake-shoes *d* to clamp the wheel on opposite sides, chains *n* and *p*, friction-rollers, and brake-staff *t*, arranged and constructed as herein shown and described.

210,051. CAR-TRUCK TRANSFERS. Thomas Post, Wilmington, N. C., assignor to himself and James F. Post, Jr., same place. Filed Oct. 16, 1878.

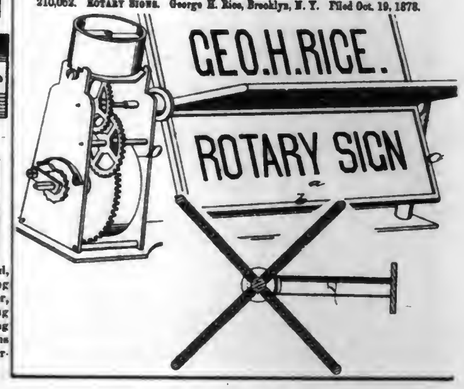


Claim.—1. The combination, with separate and independent broad and narrow gage tracks constructed with curves *a a*, of a transfer-frame arranged to span said curved portions of the track, substantially as set forth.

2. The combination, with the transfer-frame and narrow and broad gage tracks, of chock-bolts adapted to be moved over one of the rails of either the broad or narrow gage tracks and retain the truck on the inclined plane of either track, substantially as set forth.

3. The combination, with the transfer-frame, of trucks provided with vertically-adjustable abutments or stops and the car-bodies with truck-pins, substantially as set forth.

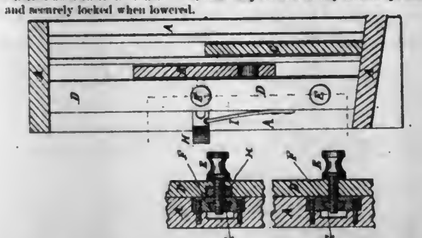
210,052. ROTARY SIGNS. George H. Rice, Brooklyn, N. Y. Filed Oct. 19, 1878.



Claim.—A four-bladed revolving sign having each of its blades made of two plates of looking-glass, arranged back to back in a suitable frame, and having the letters of the name or other matter removably secured thereon, substantially as specified.

210,053. SASH-FASTENERS. William D. Roper and Joshua W. Mitchell, Deep Creek, Va., assignors to themselves and Wm. S. Johnson, same place. Filed Oct. 10, 1878.

Brief.—The bead may be adjusted so as to allow the sash to work freely whether swollen or shrunken. The sash may be held in any desired position, and securely locked when lowered.



Claim.—1. The combination of the clamping-screws E, the slotted plates F, and the sliding nuts G with the stop D and the frame A of a window, substantially as herein shown and described.

2. The combination of the sliding, slotted, and notched bar H, the spring I, and a screw or pin, E, with the stop D, the frame A, and the sash B of a window, substantially as herein shown and described.

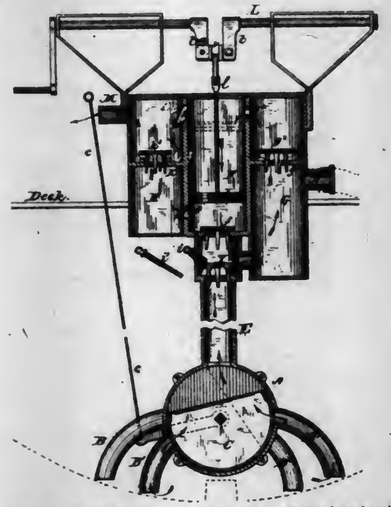
210,054. COLORING-MATTERS DERIVED FROM ANILINE AND ITS HOMOLOGUES. François Z. Roussin, Paris, France, assignor to Alcide François Poirrier, same place. Filed Oct. 22, 1878.

Claim.—1. The new artificial coloring-matters herein described, obtained by the reaction of the diazoic derivative of sulphanilic acid upon the amines, the amides, and the phenols, as described.

2. The process of producing colors suitable for dye-stuffs by the reaction of the diazoic derivatives of sulphanilic acid upon the amides, and amines, and phenols, substantially as set forth.

210,055. PUMPS. Edwin Sanders, Maitland, Yarmouth, Nova Scotia, Canada. Filed Sept. 23, 1878.

Brief.—Water can be pumped from either side of the keel, or from the outside.



Claim.—1. In a ship's pump, the combination of induction-branches, leading to opposite sides of the keelson, with a main pipe, E, into which they all conduct the water, and with a valve or valves operated by a single rod extending to the deck, by a movement of which rod, at the will of the operator, any or all of the induction-branches and the main pipe can be closed by a person on deck, substantially as described.

2. The cylinder A, provided with the internal rotary valve, C, operated by a rod, *c*, extending to the deck, in combination with the main pipe E and the several induction-branches leading to different sides of the bilge, substantially as described.

3. In a pump having three chambers, F G H, a piston, J, valves *f h h' f'*, and ports *g g² h'*, the valve *g²*, arranged above the lower end of chamber G, in combination with the auxiliary induction pipe or port N, arranged below said valve, and with the main induction, substantially as described.

4. In a pump, the combination of a double-arm crank, *t t*, and U-shaped reversible crank-pin *e* with the plunger or piston, whereby the stroke can be shortened and power increased in using the device as a force-pump, substantially as described.

210,056. PERMUTATION-LOCKS. Wm. H. G. Savage, Kingston, Ontario, Canada. Filed Sept. 24, 1878.

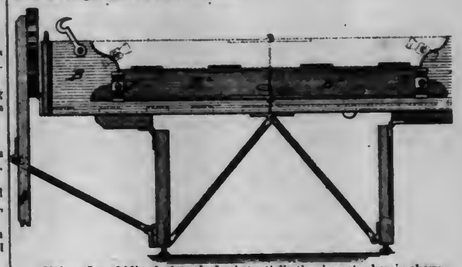


Claim.—1. In combination tumbler-locks, a revolving spindle and tumbler, in combination with an axially-adjustable face-plate and a clamping set-screw passing through the edge of the door to a sleeve or collar of the face-plate, substantially as set forth.

2. A face-plate, C, whose sleeve C' turns in a circular recess of the door, and is secured by a clamp-screw that passes through the edge of the door up to the sleeve, as shown and described, so that the set-screw cannot be reached until the safe-door is opened.

210,057. WARDROBE-BEDSTEADS. David D. Sharp, Philadelphia, Pa. Filed July 12, 1878.

Brief.—When a bedstead is formed it is locked in that position by turning down the hinged sections of the side rails.



Claim.—In a folding bedstead of substantially the character herein shown, the transversely-divided side rail, B, having its upper portion, B', made separate and hinged to it, said hinged upper portion being also divided transversely, and the two parts united together by a hinge, *a*, whereby, when the part B' is turned down, the divided side rail becomes locked and cannot be folded, as set forth.

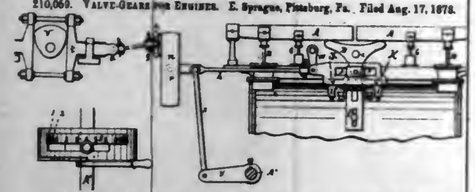
210,058. DOUBLE-ACTING FORCE-PUMPS. Ellis L. Spencer, Tama City, Iowa. Filed Sept. 2, 1878.



Claim.—1. In a double-acting force-pump, the combination, with a vertically-adjustable guide-bar, working in a pumping-cylinder, with its two extremities projecting through slots formed in the same, of a valve-piston and piston-rod, said guide-bar being made with a central disk formation, which fits snugly within the cylinder, and to which the piston-rod is connected, substantially as set forth.

2. In a double-acting force-pump, the combination, with a guide-bar whose extremities project through slots formed in a pumping-cylinder and engage with suitable connections, of a valve-piston provided with an inverted arch and a piston-rod, which latter connects in vertical adjustment with a central disk formed on said guide-bar and fitting within the cylinder, substantially as set forth.

210,059. VALVE-GEARS FOR ENGINES. E. Sprague, Pittsburg, Pa. Filed Aug. 17, 1878.



Claim.—1. The rocking plate D, provided with a pivoted slide-block, *f*, moving in a guide, *g*, furnished with tappets *i*, in combination with the adjustable block having tripping-screws *m* and connecting-rod A, substantially as herein described, and for the purpose set forth.

2. In combination with the connecting-rod *h*, the link *n*, connecting-rod S, with the cam-yoke *t*, and guide *g*, and slide-block *f*, tappets *i*, and adjustable block having tripping-screws *m*, substantially as herein described, and for the purpose set forth.

3. The recessed link *n*, for the reception of anti-friction wheels *p* on the end of the connecting-rod *h*, substantially as herein described, and for the purpose set forth.

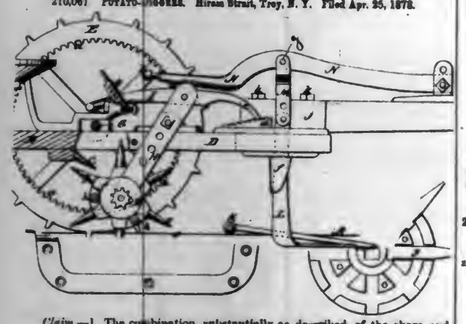
4. The link *n*, provided with side projections, *q*, and adjustable piece *r*, in combination with the connecting-rod S, cam-yoke *t*, and cam *v*, substantially as herein described, and for the purpose set forth.

5. Pivoted on the shaft A', a holder, D', in combination with the lever *c'*, lever B', stand *g'*, and notched plate J', substantially as herein described, and for the purpose set forth.

210,060. COMPOUNDS FOR PREVENTING RADIATION OF HEAT. Philipp Stralitz, Berlin, Prussia. Filed Oct. 26, 1878.

Claim.—The compound herein described, for the purpose specified, consisting of infusorial earth, rye-meal, coal-tar, animal-hair, cotton-seed hulls, and water, in or about the proportions specified.

210,061 POTATO-DIGGERS. Hiram Strait, Troy, N. Y. Filed Apr. 25, 1878.



Claim.—1. The combination, substantially as described, of the share and its T-horn, the yoke pivoted to arms L, the pivoted lever extending back to the driver's seat, and the perforated and swiveled latch-bar, all constructed and arranged as shown and described.

2. The combination, substantially as described, of the rotary digger, pinions, and toothed wheel-rims *a*, the pendent swinging arms in which it is journaled, the curved pawl-lever pivoted to said arms, and the toothed inclines, for the purpose of throwing the digger into or out of action and holding it fixed in either position, as specified.

3. The combination of the vertically-adjustable share and its attached T-horn, the digger, the bars H, having a series of perforations to permit vertical adjustment, and the levers N I, for operating the share and digger, as shown and described.

4. In combination with the frame D and plates *j*, the tongue F, the transverse pivot-bolt, and the vertical adjusting-screws in front and rear of said pivot-bolt, as shown and described, for the purpose specified.

210,062. CIGAR-PRESSES. James W. Suras, Venice, Ill., assignor to Henry F. Weehrheide, same place. Filed Oct. 31, 1878.



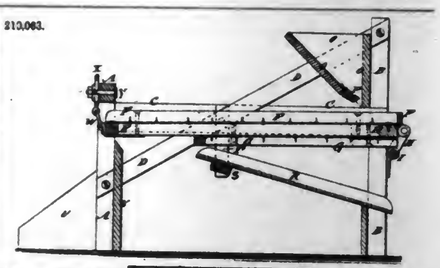
Claim.—As an improvement in presses for cigar-molds, the bench A, provided with adjustable slides B B, in connection with the cam-shaft D, provided with the handle D', substantially as and for the purpose described.

210,063. GRAIN-SEPARATORS. Henry E. Walker, Fountain, Minn. Filed May 14, 1878.

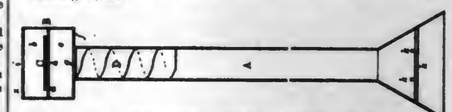
Claim.—1. The combination, with the shoe C, supported at the feed end upon the arms of the rock-shaft I, having adjustable arm J, and at the discharge end by the adjustable plate X and link W, of a hopper having a variable seed-opening, substantially as described.

2. The combination of the variable feed O, the shoe having screens of different fineness and supported by adjustable rock-shaft at one end and by the adjustable link at the other, of the dividing-chute pivoted to and moving with said shoe, substantially as described.

210,063.



210,064. WASHING-MACHINES. Frank A. Tappan and Samuel A. Shaw, Kansas City, Mo. Filed Aug. 21, 1878.



Claim.—1. The tube or pipe A, having its lower end expanded or flared, as shown, and provided with the bars *k*, and its upper end fitted with the spiral D, in combination with the box B, the same being divided into the chambers *b* and *c*, and the valve C, substantially as and for the purpose herein set forth.

2. In combination with the tube or pipe A, the box B, the said box being divided by the partition *a* into the chambers *b* and *c*, the one *b* containing the valve C and provided with the openings *g*, *h*, and *i*, substantially as and for the purpose herein specified.

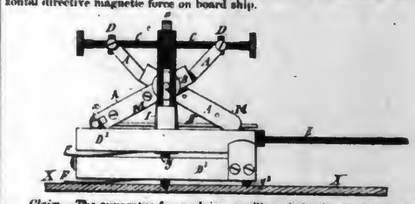
210,065. STOVE-DOOR KNOBS. Henry A. Tweed, Brooklyn, N. Y. Filed Mar. 4, 1878.



Claim.—My improved knob, which consists of a metallic cup, C, bearing against a bolt, D, an insulating non-combustible finger-piece, A, and clamp B, provided with a screw-thread, E, screwing on the spindle D, substantially as described.

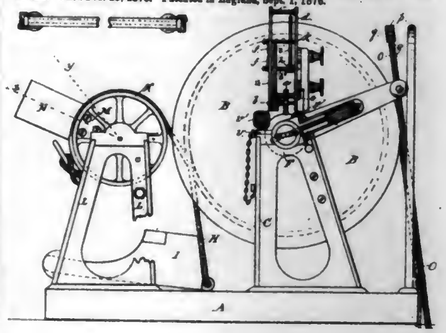
210,066. MARINERS' COMPASSES. Sir William Thomson, Knight, Glasgow, North Britain. Filed Dec. 31, 1877. Patented in England, Dec. 18, 1876.

Brief.—Employs deflecting-magnets for purpose of measuring the horizontal directive magnetic force on board ship.



Claim.—The apparatus for applying auxiliary deflecting-magnets, consisting of the adjustable and jointed frames A, supported on the H-stand D', and carrying at their lower arms the magnets M, right-and-left-handed micrometer-screw O, gimbaled nuts D, indicating-disk *a*, divided scale H', and spring F, substantially as and for the purpose set forth.

210,067. DEEP-SEA-SOUNDING APPARATUS. Sir William Thomson, Knight, Glasgow, North Britain. Filed Feb. 25, 1878. Patented in England, Sept. 1, 1876.



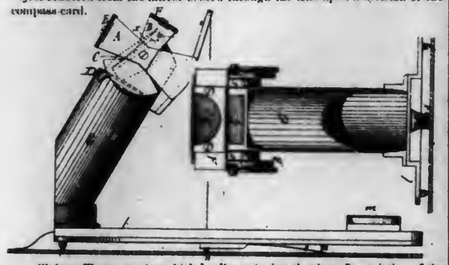
Claim.—1. The gage-tube prepared on its interior with chromate of silver or red prussiate of potash, for the purpose of obtaining a definite mark showing the height to which liquid has been forced into the tube, thereby indicating the depth to which the gage has been submerged below the surface of the sea.

2. The gage-tube fitted with valves at its upper and lower ends, for the purpose of allowing the water to enter and compress the air as the tube is being sunk, and to retain the water and allow the compressed air to escape as the tube is being hauled in, substantially as shown and described.

3. The brake consisting of the pulley G, rope H, weighted lever I, the pulley K, lever M, weight N, operating in combination for automatically binding and releasing the drum B, substantially as set forth.

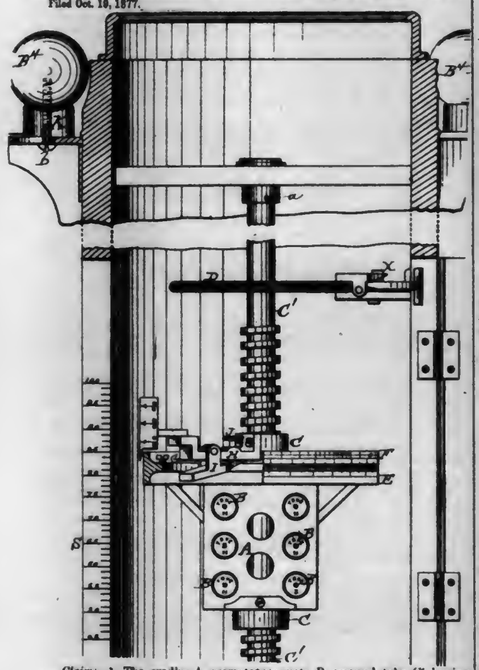
210,068. DEVICES FOR TAKING AZIMUTHS. Sir William Thomson, Knight, Glasgow, North Britain. Filed Dec. 31, 1877. Patented in England, Dec. 18, 1876.

Brief.—Azimuths of objects obtained by means of an adjustable mirror and shades mounted on a tubular leg, within which is a lens. The image of an object reflected from the mirror is seen through the lens upon a division of the compass-card.



Claim.—The apparatus which I call my "azimuth-mirror," consisting of the tubular leg G and lens D, the mirror C, and movable shades A E B F, and the level *m*, all mounted upon the frame *l*, provided with a central pivot, feet, and resting-springs, as herein shown and described.

210,069. MARINERS' COMPASSES. Sir William Thomson, Knight, Glasgow, North Britain. Filed Oct. 16, 1877.



Claim.—1. The cradle A, corrector-magnets B, screwed tube C', having orifice *a* at its upper part for affording communication with the heeling-magnet, nut, or collar C, hinged shutter M, hand-wheel D, and clamp X, as and for the purpose set forth.

2. The circle E, divided into degrees for indicating the amount of deflection of the compass-card obtained by the raising or lowering of the corrector, in the manner set forth.

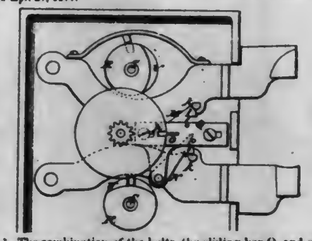
3. The auxiliary or guide circle F, mounted on the circle E, and having two scales thereon for indicating the corrective force of the magnets, as set forth.

4. The vertical scale S, for indicating the increase or diminution of the corrective force applied by the raising or lowering of the corrector-magnets, as set forth.

3. The iron balls or globes B', secured near the top of the binnacle, and adapted to turn in azimuth and slide toward or away from the binnacle, as set forth.

6. The arm H, arranged between guides I, to prevent horizontal movement thereof, and carrying clamping-screw J, for clamping the rim G of circle E, and holding the cradle and correctors in any angular position, substantially as specified.

210,070. TIME-LOCKS. Jacob Weimar, New York, N. Y., assignor to Herring & Co., same place. Filed Apr. 27, 1877.

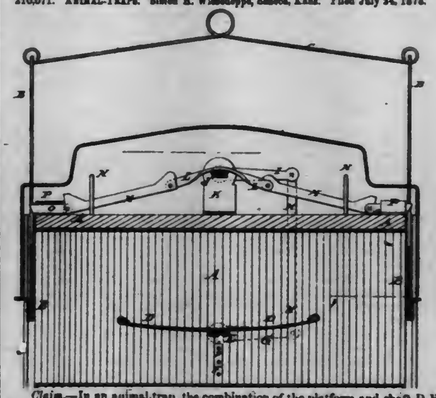


Claim.—1. The combination of the bolts, the sliding bar Q, and cam-pieces M N.

2. The combination of the bolt-studs *k*, the cam-pieces, the sliding bar, and time-wheel.

3. The combination of the time-wheel, sliding bar, cam-pieces, and bolts with the operating-spindles of a permutation lock or locks.

210,071. ANIMAL-TRAPS. Simon H. Wiesedoppe, Seneca, Kans. Filed July 24, 1878.



Claim.—In an animal-trap, the combination of the platform and shaft D E, the crank-arms and connecting-rod G I H, the shaft and equal-armed lever J L, and the connecting-bars and sliding bolts M O with each other, and with the box A and the sliding doors B, substantially as herein shown and described.

210,072. BOOT AND SHOE CLEANERS. G. Frederick Ziegler, Jersey City, N. J., assignor to Dora Hagedorn, New Brighton, N. Y. Filed Apr. 19, 1878.

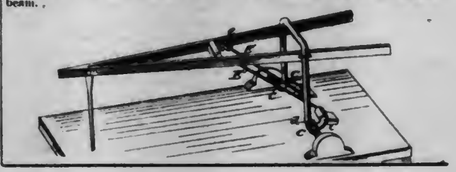


Claim.—1. The removable frame composed of the cross-pieces *i*, yoke *h*, and arch *m*, made removable from the metal pan *b c d*, in combination with the brushes *f* for the sole, *k* for sides of the shoe, the brushes *l* for the toe, and the brushes upon the arch *m* for the top of the shoe, substantially as set forth.

2. The combination, with the shoe scrapers or brushes, of the plate *a*, forming a platform and the dirt-pan thereof, substantially as set forth.

210,073. CULTIVATORS. William T. Addison, Newcastle, Ind. Filed Sept. 23, 1878.

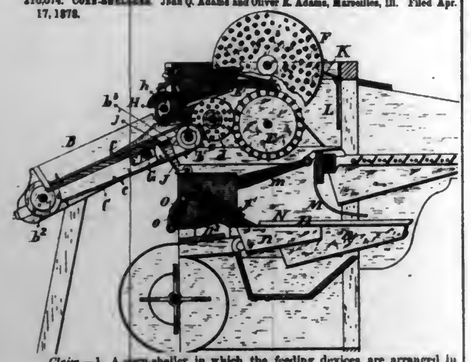
Brief.—One end of the beam-coupling encircles the axle; a rod from the other connects with the tongue, held on the axle by a set-screw. It may be moved in or out, or turned upon the axle to raise or lower the point of the plow-beam.



Claim.—1. In a cultivator, the combination, with its axle or beam, of the cranked arms or bars C, having set or adjusting screws *d*, substantially as and for the purpose specified.

2. The combination, with the beam or axle of a cultivator, of the cranked bar C, set-screw *d*, and adjustable rods or braces E, substantially as and for the purpose specified.

210,074. CORN-SHELLERS. John Q. Adams and Oliver R. Adams, Marseilles, Ill. Filed Apr. 17, 1878.



Claim.—1. A corn-sheller in which the feeding devices are arranged in relation to each other, so that the path of the corn from the elevator to the shelling devices will be along an incline substantially a continuation of the plane of the inclined elevator, substantially as described.

2. The inclined feed-elevator B, in combination with the picker-wheel shaft and bevel-runners arranged in relation to the head-roller of the elevator, so that the moving surfaces over which the corn passes after leaving the elevator are in substantially the same inclined plane as the latter, substantially as described.

3. In a corn-sheller, the shelling devices, in combination with an elevator and devices for forcing the feed to the shelling mechanism, all arranged and operating to provide a continuous path for the corn in substantially the same plane from the outer end of the elevator to and into the shelling devices.

4. The elevator-chains provided with projections *e* at suitable intervals, in combination with sprocket-wheels on the head-roller, mechanism for giving a positive motion to the roller, and shelling devices, whereby the chains are made to operate as a force-feeding device, substantially as described.

5. The picker wheel shaft, in combination with sprocket-wheels on the head-roller, over which the elevator-chains run, extending in between the picker-wheels, whereby the elevator-chains are carried in close to the shaft to deliver the corn directly upon the latter, substantially as described.

6. The head-roller provided with sprocket-wheels, in combination with the counter-shaft G, carrying the sprocket-wheels O^1 g^1, the sprocket-wheel d^2 on the picker-wheel shaft, the chains G^2 g^2, and the elevator-chains C, substantially as described.

7. The counter-shaft G, mounted in bearings adjustable longitudinally on the elevator, in combination with the sprocket-wheels and chains, whereby motion is communicated from the picker-wheel shaft to the head-roller, substantially as described.

8. The head-roller provided with sprocket-wheels for the elevator-chains, in combination with the force-feed beater-shaft H and the picker-wheel shaft, substantially as described.

9. A chain force-feeding device, in combination with a force-feed beater-shaft, substantially as described.

10. The elevator B, provided with apertures or openings b^2 in the floor thereof, just in front of the sprocket-wheels on the head-roller, substantially as and for the purpose set forth.

11. The conductor J, arranged below the openings in the floor of the elevator, and extending into the interior of the sheller above the corn-shoe, substantially as and for the purpose set forth.

12. The conductor J, provided with separating-flanges *j*, in combination with the elevator, having apertures b^2 in its flooring, and the elevator-chains C, substantially as described.

13. The cob-guard K, provided with a slot, K', attached to the rear end of the sheller-frame, and arranged to cover the entire space in rear of the straight runner and for some distance at the sides of the latter, substantially as described.

14. The straight runner and bevel runners, in combination with a sheet, L, of flexible material, suspended by a hinge-joint at the rear end of the machine just back of the shelling-wheels, and free to swing back and forth, substantially as and for the purpose set forth.

15. The bent wires M, attached to the rear end of the cob-shoe, and arranged in relation thereto, substantially as and for the purpose set forth.

16. The cob-shoe m, in combination with the corn shoe or screen, and a device, arranged at the rear end of the cob-shoe and between the two, for catching and retaining the silk above and out of contact with the corn-shoe, substantially as described.

17. The bracket R, attached to the grain-elevator, in combination with the swinging arm S and the spout P, substantially as described.

18. A pivoted support for the grain-spout P, arranged centrally within the discharge-opening of the grain-elevator, substantially as described.

19. The feed-elevator provided with carrying and forcing chains, in combination with the picker wheels, the force-feed beater-shaft, bevel runners, and straight runners, and rag-irons, all arranged and operating substantially as described.

210,075. BIT-BRACES. Charles H. Amidon, Buffalo, N. Y. Filed Sept. 26, 1878.

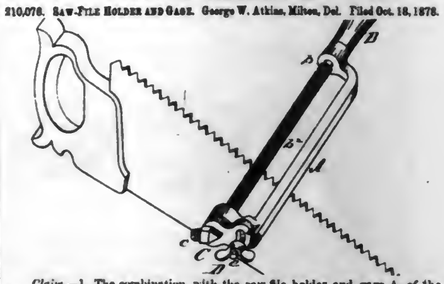
Brief.—The socket is provided with a diametrical slot, in which are placed two clamping-jaws to receive the shank of the bit, which is firmly secured by a threaded nut or screw-sleeve provided with a converging end.

Claim.—In a bit-brace, the combination, with the socket portion B, provided with a diametrical slot, *c*, having an annular end, *d*, of two clamping-jaws, F, provided with transverse edges *f*, adapted to seize the shank of the bit, V-shaped depressions *g* in the lower portions of their faces, and having the upper portions of their curved backs depressed below the surface of the portion B, and a screw-sleeve, H, provided with a converging end, *h*, substantially as shown and described.

210,076.



210,078. SAW-FILE HOLDER AND GAGE. George W. Atkins, Milton, Del. Filed Oct. 18, 1878.

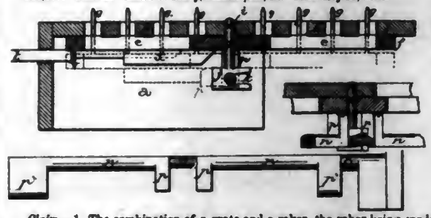


Claim.—1. The combination, with the saw-file holder and gage A, of the segmentally-slotted bracket C, screw-stud *c*, and nut or thumb-screw D, said bracket being adapted to receive one end of the file b^1, thereby rendered adjustable upon its axis, as described.

2. The improved saw-file holder and gage consisting of the handle B, gage and holder A, having its ends bent and provided with a socket and opening, b b^1, for the file, and the segmentally-slotted bracket C, having a socket to receive the outer end of the file, and a set-screw or other fastening, *c*, the gage and holder A being provided with the screw-stud *c*, holding-nut, or thumb-screw D, as described.

3. The combination, with the saw-file holder and gage A and slotted bracket C, of the file b^1, adjustable on its axis to regulate its cant, as described.

210,077. GRATES. Milton T. Bailey, Philadelphia, Pa. Filed May 25, 1878.



Claim.—1. The combination of a grate and a raker, the raker being made vertically adjustable and to turn freely upon its pivot, so that after it has been raised upward it can be used to clean out the ashes and cinders, substantially as shown.

2. The combination of a grate having the circular slots *s* with the raker *d*, having the projections *p*, and a rod or other suitable device for raising the raker upward, substantially as described.

3. The center-pin *h*, having the head *j*, and slot *k*, in combination with the raker and grate, substantially as set forth.

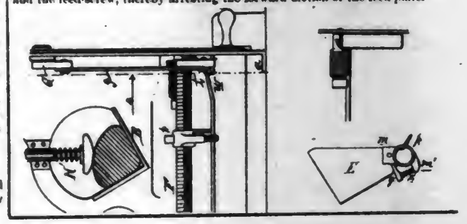
4. The combination of the raker, the center-pin, and the rod *n*, having the shoulders p^1, substantially as specified.

5. The combination of the pit *a*, having a hole, *l*, on one side and a recess, *m*, on the other, with the rod *n* and raker, the rod having both a rotary and an endwise movement, for the purposes substantially as shown.

6. The combination of the pit *a*, grate *b*, center-pin *h*, having head *j* and slot *k*, rod *n*, having the shoulders p^1, the hole *l* in one side of the pit, and a recess in the other for the rod *n* to fit in, all being arranged and combined to operate substantially as described.

210,079. SLICING-MACHINES. John G. Baker, Philadelphia, Pa., assignor to Enterprise Manufacturing Company. Filed Aug. 19, 1878.

Brief.—The projection w on the frame disengages the threaded spring-lever and the feed-screw, thereby arresting the forward motion of the feed-plate.



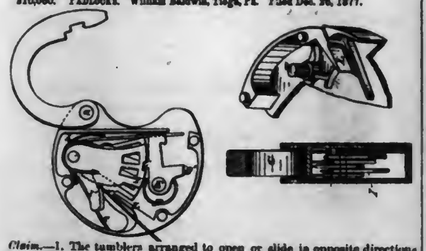
Claim.—The combination of the feed-screw, feed-plate, and spring-lever, pivoted to the latter and adapted to the screw, with a projection, w, on the frame, as described.

210,079. ARTIFICIAL-LEATHER COMPOSITIONS. R. Edward Ball, Jamaica, N. Y. Filed Feb. 15, 1878.

Brief.—Ground glue, nine pounds; water, six pounds; ferric chloride, three-fourths pound; glycerine, five pounds; alum, one and a half pound; quercitannic acid, three and a quarter pounds. To this may be added mineral paint in sufficient quantity to color.

Claim.—The compound or mixture for producing a durable surface on paper, linen, cotton, or other fibrous or textile material, consisting of dissolved glue, ferric chloride, glycerine, alum, and quercitannic acid, in or about the proportions specified.

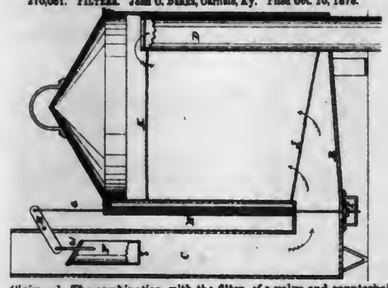
210,080. PADLOCKS. William Baldwin, Tioga, Pa. Filed Dec. 26, 1877.



Claim.—1. The tumblers arranged to open or slide in opposite directions by the pressure of a flat key sliding endwise between their oblique opposing edges, substantially as set forth, in combination with the guide w, constructed substantially as described, to support the lower edge of the key.

2. The curtain L, constructed and applied as described, to conceal the vital parts of the lock, in combination with tumblers I, resting against the back of said curtain, as shown.

210,081. FILTERS. John G. Banks, Carlisle, Ky. Filed Oct. 10, 1878.



Claim.—1. The combination, with the filter, of a valve and counterbalance-cup, so arranged that the weight of the water will both open and close the valve, substantially as described.

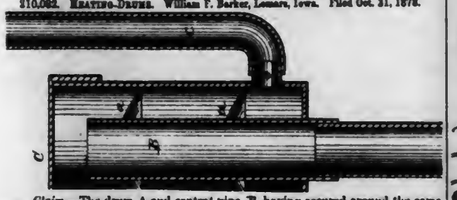
2. The combination of the cup F, lever E, and valve I with the inlet-pipe C and the filter proper, having an outlet at the bottom, the cup and valve being made to counterbalance each other, substantially as described.

3. The combination of the inlet-pipe C, cup F, lever E, rod G, and pipe H, substantially as and for the purpose specified.

4. The cup F, provided with a strainer, arranged diagonally, and with an opening in the bottom, substantially as and for the purpose specified.

5. The combination of the diaphragms J K, inlet C, outlet D, cup F, lever E, and valve I, the whole arranged and constructed substantially as described.

210,082. HEATING-DRUMS. William P. Barker, Lenara, Iowa. Filed Oct. 31, 1878.



Claim.—The drum A and central pipe, B, having secured around the same convex deflecting-plates *a* and pipe C, substantially as and for the purpose set forth.

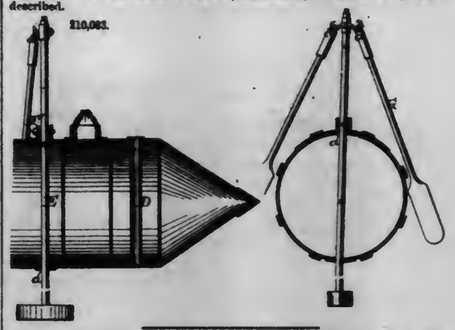
210,083. LIFE-RAFTS. Conrad Bohrs, Hoperille, N. J. Filed June 27, 1878.

Claim.—1. In a life-boat, the combination, with a cylindrical air-tight body, of a vertically-adjustable rod, passing centrally through the same and projecting therefrom at both ends, the lower end being provided with a weight, and the upper end constructed to support oars for propelling the boat, substantially as described.

2. In a life-raft, the combination, with a cylindrical air-tight body, pointed at one or both ends, of a rod, which passes centrally through said body so as to project therefrom at both ends, a weight secured to the lower end of said rod, hooks or equivalent devices secured to the upper end of the rod, and oars, which are adapted to engage with said hooks or their substitutes, substantially as and for the purpose described.

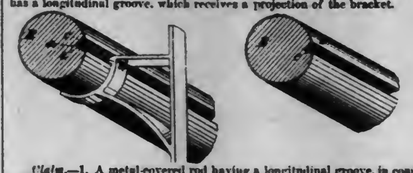
3. In a life-raft, the combination, with a cylindrical body, pointed at one or both ends, of a weighted rod passing centrally through said body, a covered frame hinged to said body, and a rope or chain, which is fastened to said frame and adapted to be connected to the rod, substantially as and for the purpose described.

210,083.



210,084. BRACKET-RODS. William S. Blake, Boston, Mass., assignor to himself and William H. Brown, Waterbury, Conn. Filed Aug. 7, 1878.

Brief.—A removable metal-covered rod is seated in an open bracket, and has a longitudinal groove, which receives a projection of the bracket.



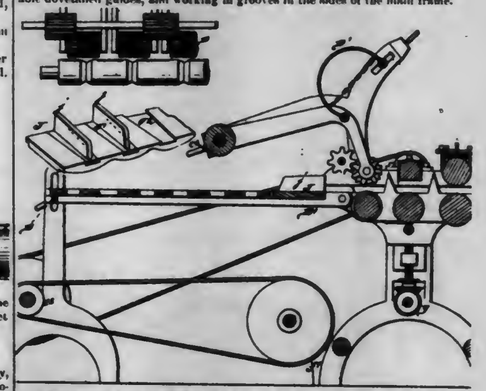
Claim.—1. A metal-covered rod having a longitudinal groove, in combination with brackets having tongues adapted to engage with said groove, substantially as and for the purpose set forth.

2. A wooden rod having a longitudinal groove and provided with a thin metal covering, a portion of which is forced tightly into said groove, in combination with a bracket having a tongue adapted to engage with said groove, substantially as described.

3. A wooden rod having a longitudinal groove and provided with a tubular thin metal covering having an inwardly-extending hollow bead or ridge which fits snugly within said groove, whereby is formed a metal-covered rod having a longitudinal groove in its metal surface, in combination with a bracket having a tongue adapted to engage with said groove, substantially as and for the purpose set forth.

210,085. MACHINES FOR MAKING WOODEN BARREL-HOOPS. George W. Bowen and Emanuel Nichols, Grass Lake, Mich. Filed June 29, 1878.

Brief.—Wooden barrel-hoops can be shaved and bent by means of suitable cutters attached to a rotary head; a frame which supports the table upon either side of the cutter-head and supports the feed-rolls, and which is made in two parts, pivoted together near the center, each part being vertically adjustable; a series of independently-adjustable feed-rolls held in or out of contact with the hoops by curved springs; a removable hoop-guide table, provided with removable dovetailed guides, and working in grooves in the sides of the main frame.

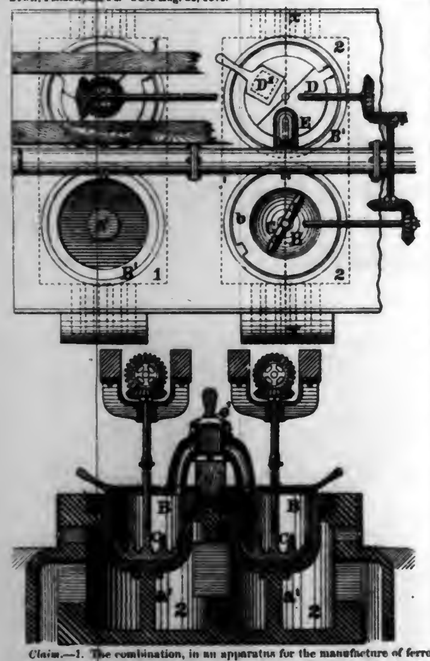


Claim.—1. The sides B^1 B^1, pivoted near their center and vertically adjustable at both ends, in combination with removable tables working in grooves therein, as herein specified.

2. The independent feed-rolls, hung in separate frames, which are pivoted adjustably at one end and operated by springs D^1, adapted to be held either in contact with the table or out of contact by said springs, as and for the purpose specified.

3. The removable hoop-guide table J, having removable dovetailed guides *j*, combined with the slides B' B', as specified.

210,086. APPARATUS FOR THE MANUFACTURE OF FERROCYANIDE OF POTASSIUM. Henry Bower, Philadelphia, Pa. Filed Aug. 26, 1878.



Claim.—1. The combination, in an apparatus for the manufacture of ferrocyanide of potassium, of a gas-heating furnace having its combustion-chamber divided into a series of separate non-communicating compartments, and a series of calcining-pots suspended in pairs in the several compartments of the furnace, substantially as set forth.

2. The combination, in an apparatus for the manufacture of ferrocyanide of potassium, of a heating-furnace, a series of covered calcining-pots, each having a gas-escape tube leading from an opening in its lid, and a draft-flue communicating with the gas-escape tubes of the calcining-pots, and provided with a regulating-damper for governing the draft therefrom, substantially as set forth.

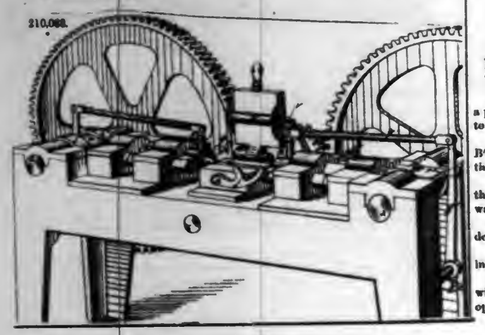
3. The combination, in an apparatus for the manufacture of ferrocyanide of potassium, of a heating furnace or chamber having a supporting-ring built into its top and a vertical supporting-pier upon its floor, and a calcining-pot, which is suspended at top by a circumferential flange on the supporting-ring and rests at bottom on the supporting-pier, substantially as set forth.

4. The combination, in an apparatus for the manufacture of ferrocyanide of potassium, of a calcining-pot having a circumferential top flange, a supporting-ring within and upon which said flange rests, and a divided cover composed of a rear section, having lugs to retain it in position and an opening to communicate with a gas-escape tube, and a removable front section, provided with a sliding feed-door, substantially as set forth.

210,087. FOOD FOR HORSES AND CATTLE. Henry Brankhold, New York, N. Y. Filed Oct. 4, 1878.

Claim.—As a new article of food, a compound consisting of brewers' grains intimately mixed with salicylic acid and dried by natural or artificial heat, substantially as specified.

210,088.



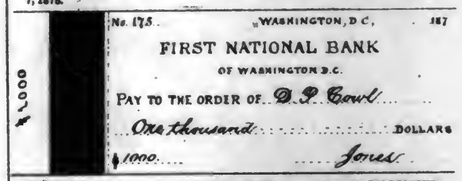
210,089. MACHINES FOR MAKING METALLIC SPOOLS. Latham Brigham, Cleveland, Ohio, assignor to Cleveland Rolling Mill Company, same place. Filed Aug. 26, 1878.

Brief.—A divided holder supports the barrel or tube, the ends of which are contracted. Two springs on the holder clamp the heads in position. Two pressers next advance, forcing the heads on the barrel, and holding them while the ends of the barrel are being flanged over against the heads.

Claim.—1. In a machine for making metallic spools, the combination of a holding-block for holding the barrel while operated on, pressure-blocks for forcing the heads or disks of the spool upon the barrel, and acts or punches for flanging the ends of the barrel against the disks, substantially as described.

2. In a machine for making metallic spools, a holding-block made in two parts, adapted to hold the spool between such parts, in combination with clips or springs v, arranged for holding the disks of the spool, substantially as set forth.

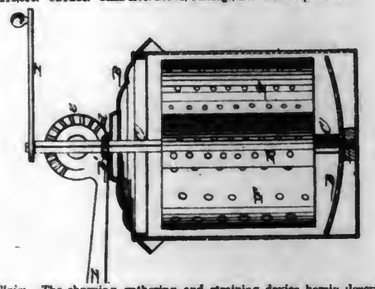
210,089. BANK-CHECKS, DRAFTS, &c. Franklin W. Brooks, New York, N. Y. Filed Nov. 7, 1878.



Claim.—1. A paper having incorporated between the layers of pulp forming its body a localized and independent strip or piece of carbon-paper, or other coloring-matter or metal foil capable of receiving or transferring impressions made on the exterior surface of the covering-paper, substantially as and for the purposes set forth.

2. As a new article of manufacture, a bank-check draft, or other evidence of value printed or formed upon paper having at one or more localities, between the layers of pulp of which the paper is formed, a concealed incorporated piece or film of carbon-paper or other coloring-matter or metal foil capable of receiving or transferring impressions made exteriorly, as hereinbefore set forth.

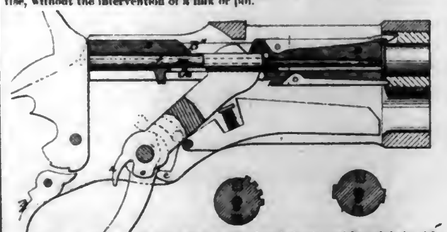
210,090. CHURNS. Saml. McC. Brown, Carthage, Mo. Filed Sept. 9, 1878.



Claim.—The churning, gathering, and straining device herein described, consisting, essentially, of the perforated wings F, perforated plate D, shaft C, crank I, lever L, having segmental gear *s*, and pinion D', as set forth.

210,091. MAGAZINE FIRE-ARMS. Andrew Burgess, Owego, N. Y. Filed Aug. 21, 1877.

Brief.—The bolt is moved directly by the locking-lever, working in a mortise, without the intervention of a link or pin.



Claim.—1. The combination of a mortised and shouldered breech-bolt with a pivoted lever working in the mortise or against the shoulders, to move and to lock the bolt, substantially as described.

2. The breech-bolt described, having a segmental surface, B', and shoulder B'', in combination with the pivoted brace, to move and lock said bolt, substantially as specified.

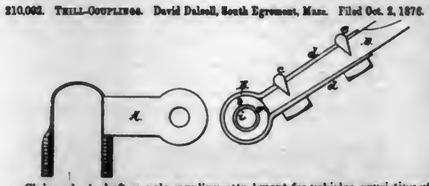
3. A swinging brace locking the breech-bolt at an angle with the axis of the barrel, in combination with longitudinal ribs and grooves to resist the upward tendency of the breech-bolt, substantially as described.

4. The brace, the bolt, and the firing-pin, in combination, substantially as described, whereby the firing-pin is withdrawn by the unlocking of the brace.

5. The combination of the ejecting-pin and hammer, arranged and operating to expel the cartridge, substantially as specified.

6. A pivoted carrier provided with the point or points *c*, in combination with the segment or segments *a* of the pivoted lever, whereby the carrier is operated to rise and fall, substantially as described.

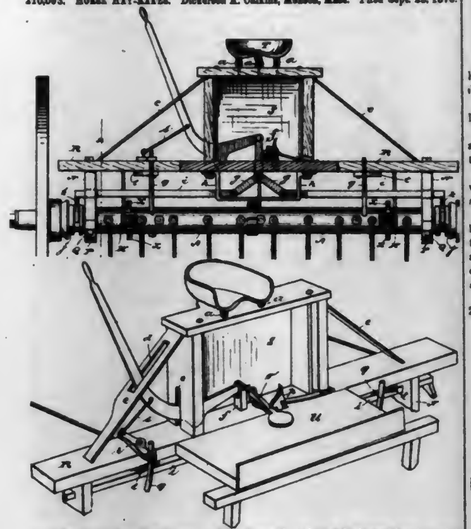
210,092. THILL-COUPLINGS. David Dalzell, South Egremont, Mass. Filed Oct. 2, 1878.



Claim.—1. A shaft or pole coupling attachment for vehicles, consisting of a jack or shackle, A, a connected eye part, B, having the projecting flanges *d d*, an interposed elastic packing, *b*, and the detachable shank iron D, arranged within the flanges *d d* and bearing upon the elastic packing *b*, substantially as described.

3. An elastic cylindrical packing, *b*, provided with a slotted and compressible bushing, *i*, substantially as set forth.

210,093. HORSE HAY-RAKES. Dickerson A. Calkins, Monson, Mass. Filed Sept. 28, 1878.

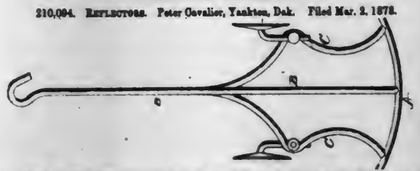


Claim.—1. The combination of the lever Y, rod *s*, and pivoted hook *r* with the arm *g* and rake-head A, as set forth.

2. The combination of the catch *o*, lock *p*, arm *m*, and rake-head A, as set forth.

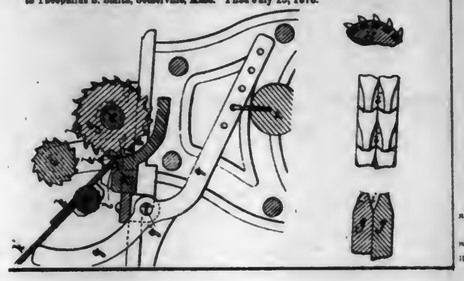
3. The combination of the buttons *l*, arms *q*, and rake-head A, as set forth.

210,094. REFLECTORS. Peter Cavalier, Yankton, Dak. Filed Mar. 2, 1878.



Claim.—The braces C C, bent to form loops or receptacles for attaching reflectors, in combination with the suspending-rod B and lamp-supporting rod A, as set forth.

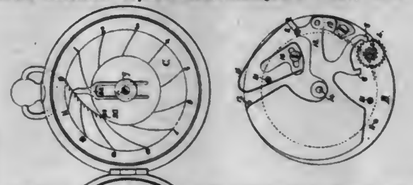
210,095. BARK-REDUCING MACHINES. Wm. Chicken, Chelsea, assignor of one-half his right to Theophilus S. Smith, Somerville, Mass. Filed July 15, 1878.



Claim.—1. The combination, with the cutting cylinder and bar *p*, of the hinged feed-apron *k* and the lever *q*, provided at its lower end with an adjustable weight, substantially as and for the purpose set forth.

2. A grinding-cylinder for bark-mills having its teeth arranged in longitudinal rows, with broad forwardly-inclined front faces, terminating at their tops in straight cutting-edges, and having broad forwardly-inclined rear surfaces, the teeth of each row being separated by spaces which are V-shaped or triangular in a section on a line from the centers of the bases to the forward top edges of the said teeth, substantially as described, and for the purpose set forth.

210,096. PEDOMETERS. Benjamin S. Church, Scarborough, N. Y. Filed Sept. 24, 1878.



Claim.—1. The combination, with the counterbalanced actuating-lever 10, having pallets 6 8, of the star-wheel 4 and driving-pinion 3, substantially as described.

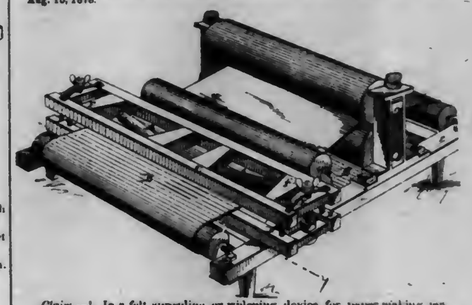
2. The combination, with the weighted actuating-lever 10, of the attaching-link 2 and compensating-spring 15, substantially as described.

3. The combination, with the registering mechanisms, the weighted actuating-lever 10, and compensating-spring 15, of the adjusting-block 16, substantially as described.

4. The combination of the registering-disk C, indicator 20, differential wheels 18 19, flanged and stepped hub 9, and spring 22, substantially as described.

5. The combination of an adjustable indicator with the registering-disk, having a variable scale whose divisions increase in number from the innermost to the outermost, or vice versa, and which are subdivided by a unit-line graduated by a scale of inches, whereby the pedometer may be set to suit the length of step of the user and record the distance traveled over, substantially as described.

210,097. FELT-STRETCHERS FOR PAPER-MACHINES. Orson W. Clark, Appleton, Wis. Filed Aug. 10, 1878.

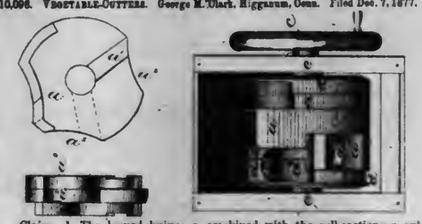


Claim.—1. In a felt spreading or widening device for paper-making machines, two pairs of rolls arranged in an inclination to the width of the felt, one roll of each pair being journaled in yielding bearings, and means for regulating the tension on the adjustable bearing-frames, substantially as set forth.

2. In a felt-spreading device for paper-making machines, a roll-supporting frame consisting in the combination of an upper and lower horizontal section, said upper section being adjustable under elastic spring-pressure relative to the lower section, and both said sections having longitudinally-inclined rolls journaled therein, substantially as set forth.

3. The combination, with the two frame-sections in which the upper and lower angle-rolls are respectively journaled, of vertical guide-rods connecting the same, and bolt-shafts provided with spring mechanism and clamping devices, adapted to adjust said sections relative to each other, substantially as set forth.

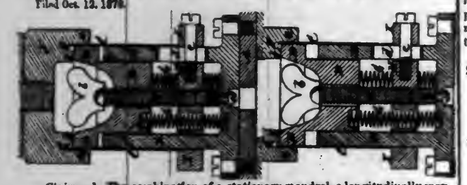
210,098. VEGETABLE-CUTTERS. George M. Clark, Higganum, Conn. Filed Dec. 7, 1877.



Claim.—1. The looped knives *g*, combined with the roll-sections *n*, substantially as shown and described.

2. The looped knives *g* and the roll-sections *n*, provided with the knife-sockets n^1 and cut-aways n^2, combined and arranged substantially as shown and described.

210,099. MACHINES FOR WIRING AND FLANGING. Christian Clausen, New York, N. Y. Filed Oct. 12, 1878.



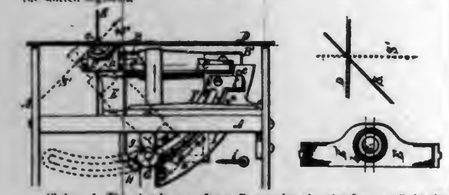
Claim.—1. The combination of a stationary mandrel, a longitudinally-movable end extension of said mandrel, of like exterior dimensions with the mandrel, one or more springs arranged to force outward the mandrel-extensions, and a movable mold or die constructed to bend inwardly and to round the exposed end or edge of the can-body or article, substantially as specified.

2. The combination of the adjustable outside follower, I, with the mandrel B, the mandrel-extension D, forced outward by one or more springs, and the mold or die J, constructed to round and turn inward the exposed end edge of the article carried by the follower I, mandrel B, and mandrel-extension D, essentially as described.

3. The combination, with the stationary mandrel B, of the mandrel-extension D, supported by one or more springs, the screw E, constructed to act as a stop to said extension against outward thrust by said spring or springs, and the inside and outside followers, H I, actuated by said screw, substantially as specified.

210,100. CIRCULAR SAWING MACHINES. John Connell, Rochester, N. Y. Filed Jan. 26, 1878.

Brief.—The arbor of a "tilting" circular saw is hung in such a manner that the axial line of the tilting movement shall be in the plane of the saw, and in or near the plane of the upper surface of the table, whereby the saw, while being tilted, has no lateral movement at said line, and the saw does not materially change its plane. The saw is tilted by means of a slotted segment having upon the under surface of its upper bar teeth, which engage with a pinion, by which it is operated. The angle of inclination of the saw is limited by means of fixed and adjustable pins, against which a lug on the upper end of the segment strikes, and which fit in holes in a segmental bar, serving as a guide for the slotted segment.



Claim.—1. The circular-saw frame C, carrying the circular saw S, having the pivotal or axial line of its tilting movement in both the plane of the saw and the plane of the table, in combination with the supports E E', having circular V-shaped grooves, the saw-frame C, having circular V-shaped tongues fitting in said grooves, and frame A, substantially as shown and described.

2. The two corresponding and oppositely-placed adjustable supports E E' for the saw-frame, bolted to the frame A, but made movable thereon, provided with circular grooves *b*, as shown, in combination with said saw-frame and frame A, substantially as described, and for the purpose set forth.

3. The clamping device composed of shaft G, nut *g*, pinion *f*, and segment F, in combination with frame A and saw-frame C, substantially as set forth.

4. A tilting saw-frame, C, carrying the circular saw S, in which the supports are in the plane of the saw and on opposite sides thereof, substantially as shown, and for the purpose set forth.

5. The combination of the segment F, provided with a lug, *i*, segmental guide-bar I, provided with fixed and adjustable pins *c*, *c'*, and *i*, and pin-holes *a*, frame A, and saw-frame C, substantially as herein shown and described.

210,101. COMPOSITION PAVEMENTS. John P. Cranford, Brooklyn, N. Y., assignor to himself and Nathan B. Abbott, same place. Filed Mar. 1, 1878.



Claim.—The method herein specified of laying bituminous pavement upon a suitable foundation, consisting in spreading the bituminous material, and then placing upon the same blocks or pieces of stone, and consolidating the same by ramming or rolling, substantially as set forth.

210,102. MIDDLINGS-BOLTS. Giles S. Orrance, Clinton, N. Y. Filed Sept. 20, 1878.



Claim.—The combined flour and middlings bolt herein described, consisting of the reel A, having near its reception end graded flour-bolting cloth applied to the exterior of the bars *a*, and the remainder clothed with graded middlings-bolting cloth, applied flush with the inside of bars *a*, and joined to the flour-bolting cloth, substantially as described.

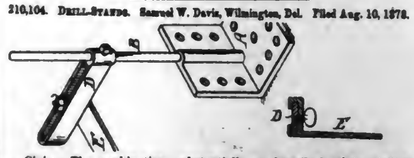
210,103. APPARATUS FOR DRESSING BOOT AND SHOE SOLES. George Dunforth, Cochituate, Mass. Filed Aug. 7, 1878.



Claim.—1. In a machine for dressing the soles of boots and shoes, the cylinder *a*, having slot *c*, in combination with a shaft provided with hooks *e*, the cylinder being adapted to revolve in a direction opposite to the points of said hooks, substantially as shown.

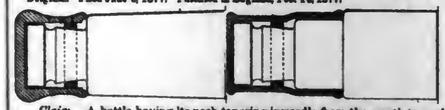
2. The combination of the cylinder *a*, provided with the slot *c*, heads *d e*, shaft *f*, ratchet *i*, and dog *h*, substantially as described.

210,104. DRILL-STANDS. Samuel W. Davis, Wilmington, Del. Filed Aug. 10, 1878.



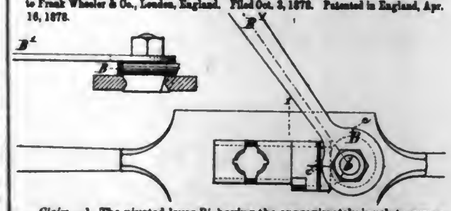
Claim.—The combination, substantially as described, of the drill-stand stem B, the arm D, arranged to swing thereon, and the plate E, adjustable on the arm D, arranged to project beyond the same, and provided with a number of recesses, to any one of which may be adapted the stem of a drilling-tool, as set forth.

210,105. BOTTLE-STOPPERS. Joseph Doulcoeur, Sr., and Alfred Doulcoeur, Jr., Brussels, Belgium. Filed June 4, 1877. Patented in England, Feb. 14, 1877.



Claim.—A bottle having its neck tapering inwardly from the mouth toward the bottom, and constructed with an annular groove, in combination with an elastic ring adapted to said groove, and a cup or cap, *a*, having its lower edge constructed to engage with the elastic ring, roll it out of the annular groove, and compress it between the inclined neck of the bottle and the interior of the cup or cap, substantially as described.

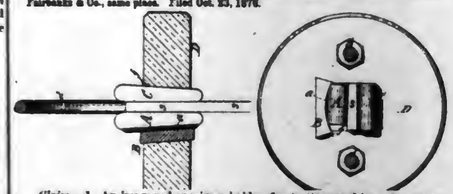
210,106. SCREW-STOCKS. Percival Everitt, Great Eyburgh, assignor of one-half his right to Frank Wheeler & Co., London, England. Filed Oct. 3, 1878. Patented in England, Apr. 16, 1878.



Claim.—1. The pivoted lever B', having the approximately involute cam or curve B, provided with the line, mark, or indentation *c*, and the plain side or edge *d*, in combination with the stock having the removable marked die-pressing piece, constructed substantially as described, next to said lever, substantially as and for the purpose set forth.

2. The lever B', having the cam or curve B, in combination with the stock having the removable die-pressing piece, constructed substantially as described, next to said lever, essentially as set forth.

210,107. TESTING-MACHINES. Franklin Fairbanks, St. Johnsbury, Vt., assignor to E. & T. Fairbanks & Co., same place. Filed Oct. 23, 1876.

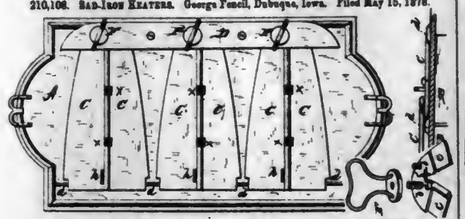


Claim.—1. An improved specimen-holder for testing-machines, formed by the combination, with the clamp head or heads D, provided with a central wedging-socket, *f*, of the adjustable swiveling wedge or wedges A, formed narrower than the wedge-sockets, and capable of swiveling and lateral movements upon its seat *a*, the meeting face of one of which (the seat or wedge) being convex, while that of the other is concave, convex, or flat, substantially as herein shown and described.

2. In a specimen-clamp for testing-machines, the combination, with the clamp head or heads D, provided with central wedge-sockets, *f*, of the square or flat wedge or wedges C and adjusting or swiveling wedges A, substantially as shown and described.

3. The combination, in a specimen-clamp for testing-machines, with the clamp head or heads D, having central wedge-sockets, *f*, of the square or flat wedges C, the swiveling adjusting-wedges A, and the movable wedge-seat *a* B, substantially as herein shown and described.

210,108. SAD-IRON HEATERS. George Fencil, Dubuque, Iowa. Filed May 15, 1878.

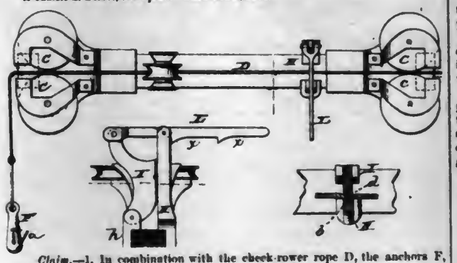


Claim.—1. A sad-iron heater composed of a plate, A, of suitable size to fit a stove, cast with a series of depending chambers, B, and each chamber provided with geared covers C C, substantially as herein set forth.

2. The combination of the covers C C, connected together by cogs *a*, the pivot-pins *b*, bar D, and handle F, substantially as and for the purposes herein set forth.

3. The lugs or ribs *d*, formed on the plate A, in combination with the swinging covers C, having beveled edges, substantially as and for the purposes herein set forth.

210,109. CHECK-ROWERS. Elisha Ferguson, Crescent City, Ill., assignee of one-half his right to Charles E. Barber, same place. Filed Oct. 8, 1878.

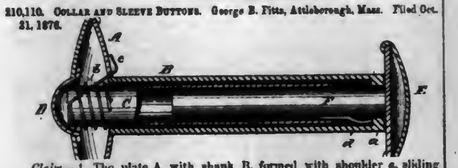


Claim.—1. In combination with the check-rower rope D, the anchors F, made hollow and provided with the arms *a*, for the purposes herein set forth.

2. A clamping device arranged upon the beam of a check-rower for holding the rope in turning, substantially as herein set forth.

3. The forked standard H, having groove *b*, the hinged arm I, and lever L, with projections *x*, all combined with a check-rower, substantially as and for the purposes herein set forth.

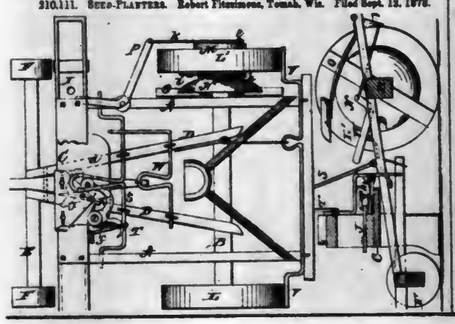
210,110. COLLAR AND SLEEVE BUTTONS. George B. Fitts, Attleborough, Mass. Filed Oct. 31, 1878.



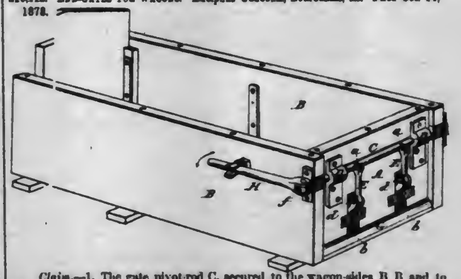
Claim.—1. The plate A, with shank B, formed with shoulder *a*, sliding tube C, spring *b*, and cap D, in combination with plate E, shank F, and spring *d*, constructed to operate substantially as and for the purpose set forth.

2. In a button or stud, the combination, with the plate or plates thereof, of a spring-catch, *c*, substantially as and for the purpose set forth.

210,111. SEED-PLANTERS. Robert Fitzsimons, Tomah, Wis. Filed Sept. 13, 1878.



210,112. END-GATES FOR WAGONS. Adolphus Godbois, Bourbonais, Ill. Filed Oct. 14, 1878.



Claim.—1. The gate pivot-rod C, secured to the wagon-sides B B and to the end-gate, free to be turned in its bearings independent of the opening and closing of the gate, in combination with rods having an eccentric connection with said gate pivot-rod, and the catches adapted to be raised by such eccentric connections.

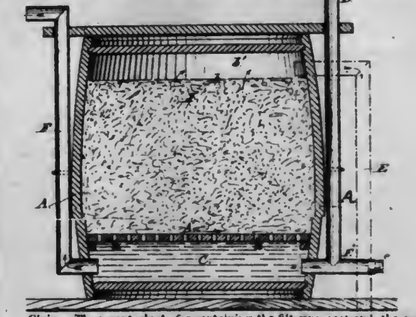
2. The turning pivot-rod C of the end-gate of a wagon, having lug-cranks *a* connected to fastening-catches F by slotted rods E, substantially as and for the purpose stated.

3. The crank-handle H, pivoted to one end of the gate-rod C, and adapted to be turned thereon into a position as a crank to said gate-rod, for the purpose stated.

4. The combination, with a turning pivot-rod of the end-gate of a wagon, of an operating crank-lever connected with said pivot-rod, whereby the latter is caused to have a turning movement independent of the gate, to effect the withdrawal of the catches and the opening and closing of the gate.

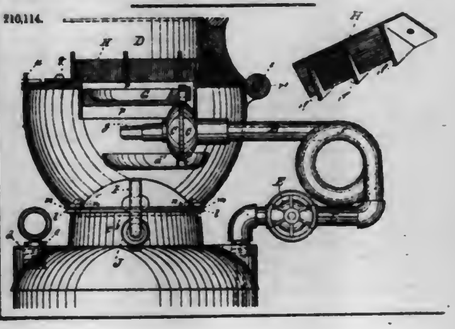
5. Devices for opening, closing, and holding open the end-gate of a wagon, pivoted at or near its upper end, consisting of the vertically-acting catches F, the slotted rods E, connecting them with crank-lugs *a* on the gate-rod C, the springs *d*, arranged to act upon said catch-connections, as described, and a crank-lever H, connected with and operating said pivot-rod, the catches, and gate, substantially as and for the purpose stated.

210,113. CISTERN-FILTERS. Virgil A. Gates, Charleston, W. Va. Filed Oct. 25, 1878.



Claim.—The receptacle A, for containing the filtering material, the perforated false bottom A', with the chamber C below it, the induction-pipe D, for conducting water from the roof into the chamber C, the eduction-pipe E, for conducting water from above the filtering material to the cistern, and the overflow-pipe F, all constructed, combined, and arranged to operate substantially as described.

210,114.



210,114. TINNERS' AND ROOFERS' GASOLINE-FURNACE. Charles Gutrow, Philadelphia, Pa. Filed May 13, 1878.

Claim.—1. A cover of the sheets *l* and *m*, of asbestus and mica, in combination with the top plate, *k*, of the projection *s* of the gasoline-chamber, to prevent the heat of the combustion-chamber passing through said plate *k* into the gasoline, substantially as set forth.

2. The ribbed rest H, in combination with the heating-chamber D, having ribs *j*, for holding the soldering-irons in position to be heated, substantially as set forth.

3. The double-concave disk-burner C C, in combination with the feed-pipe M and cup *d*, substantially as and for the purpose set forth.

210,115. SIGHTS FOR FIRE-ARMS. Adolphus Gipperich, Richmond, Va. Filed May 11, 1878.



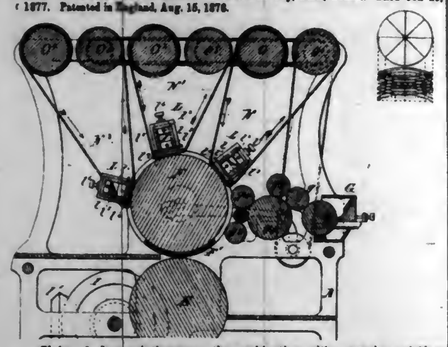
Claim.—1. An open sight for fire-arms, having in its center a transparent refractive substance to intercept the rays of the light and refract them to illuminate said substance, substantially as and for the purpose specified.

2. In an open sight for fire-arms, a center-piece consisting of a transparent refractive substance, having one of its faces inclined at an angle to the plane of its axis, substantially as described.

3. In an open sight for fire-arms, a center-piece consisting of a transparent and refractive substance, having one of its faces inclined at an angle to the plane of its axis, and said inclined face being slightly hollowed or scooped out, substantially as and for the purpose specified.

4. An open sight for fire-arms, consisting of a cylindrical frame provided with one or more radial arms and a central sleeve, held upon or supported by said arm or arms, in combination with a diopter, all arranged and operating substantially as and for the purpose specified.

210,116. PLATE-PRINTING MACHINES. Constant A. Guy, Paris, France. Filed Oct. 19, 1877. Patented in England, Aug. 15, 1878.



Claim.—1. In a printing-press, the combination, with a rotating printing-cylinder carrying the plate from which the impressions are taken and a series of intermittently-moving wiper-cloths, of a corresponding series of wiper-cages or tension devices, adapted to reciprocate the said wiper-cloths laterally, and to regulate their pressure upon the plate, substantially as described, for the purpose specified.

2. In a printing-press, the combination, with a rotating printing-cylinder carrying the plate from which the impressions are taken and a series of intermittently moving wiper-cloths, of a corresponding series of wiper-cages or tension devices provided with flexible pads, and adapted to reciprocate said wiper-cloths laterally, regulate their pressure upon the plate, and insure perfect contact between said cloths and the plate, substantially as described, for the purpose specified.

3. In a printing-press, a series of intermittently-moving and laterally-reciprocating wiper-cloths, arranged to unwind from one supporting-roll and wind upon another supporting-roll, a corresponding series of laterally-reciprocating wiper-cages or tension devices provided with flexible pads, under which said cloths are caused to travel, a rotating printing-cylinder carrying the plate from which the impressions are taken, a pressure-cylinder, and an inking mechanism, all driven from a main driving-shaft, and constructed and operating as described, for the purpose specified.

4. The combination, with the wiper-cages or tension devices L L, constructed as described, and the wiping cloths N N^1 N^2, of the arms l^2, levers M, shafts N K, and the driving mechanism, all constructed and operating substantially as described.

5. The combination, with the wiper-cages or tension devices and the mechanism for reciprocating the same, as described, of the wiper-cloths N N^1 N^2, rollers O O^1 O^2 O^3 O^4 O^5, and their pulleys and belts B^1 B^2 B^3 B^4 B^5, the pulley R, ratchet p^1, pawl p^2, connecting-rod *p*, lever l^2, and the printing-cylinder F, substantially as described, for the purpose specified.

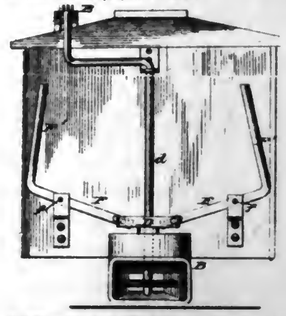
6. The combination of the printing-cylinder, the pressure-cylinder, the inking mechanism, the reciprocating wiper-cages or tension devices, the wiper-cloths N N^1 N^2, and the feed mechanism and mechanism for reciprocating the tension devices and cloths with the main driving shaft and pulley D, pinion *d*, cog-wheels *e f* I I^1, to operate the whole mechanism from one driving-shaft, as described.

210,117. CAR-COUPLINGS. Sarah A. Haydock, Ostrander, Ohio. Filed June 7, 1878.

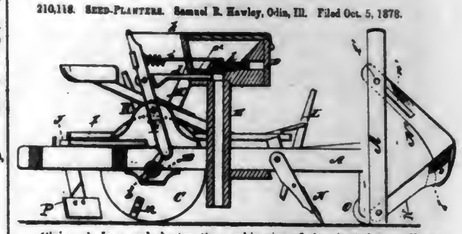
Claim.—1. The combination, with the pivoted treadle E and its spring *b*, of the bent rod *d* and coupling-pin D, substantially as and for the purpose set forth.

2. The combination, with the coupling-pin-operating rod *d*, of the crank-levers F F^1, buffer B, coupling-link *g'*, spring *g*, and pin D, substantially as shown and described, for the purpose set forth.

210,117.



210,118. SEED-PLANTERS. Samuel R. Hawley, Odin, Ill. Filed Oct. 5, 1878.



Claim.—1. In a seed-planter, the combination of the pivoted lever F, provided with the short pivoted slide *d*, and the spring *i*, provided with the cut-off *h*, extending beyond the slide *d*, operated by the knockers *b b* and the retracting-spring *k*, with the hopper D, substantially as and for the purposes set forth.

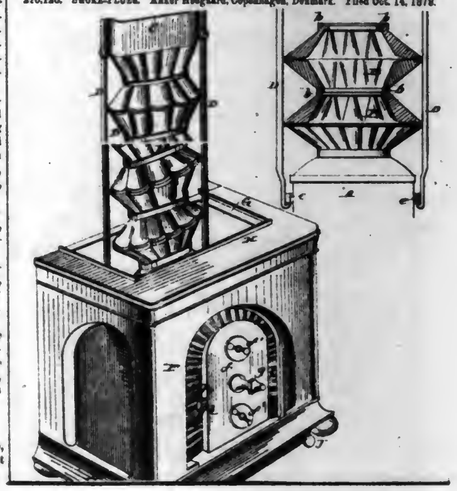
2. The drill-tender N', having the elongated slot *n'* working between the bars of the frame A on the pivot *e'*, in combination with the drill N *t*, having the drill-tender pivoted thereto, as shown and described, for the purposes set forth.

210,119. BRACELETS. Louis Hockmans, Wrentham, Mass., assignor of two-thirds his right to William H. Wade and Edward P. Davis, same place. Filed Oct. 21, 1878.



Claim.—A bracelet each half of which is constructed of two channel-shaped pieces whose bottoms form the edges and whose sides form the front and back of the bracelet, said pieces being suitably connected, and ornamented or not, as desired, substantially as and for the purposes set forth.

210,120. SMOKE-FLUES. Anker Hoegaard, Copenhagen, Denmark. Filed Oct. 14, 1878.



Claim.—1. The combination of the superimposed conical sections B B of a flue with the soot-box C, rods D D, and stove or heater A, substantially as and for the purpose set forth.

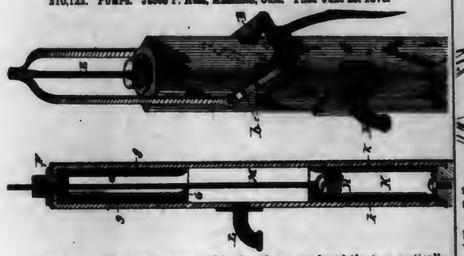
2. The combination of the mantel F, base-piece E, having flange *e* and studs *e'*, open flanged top plate, G, and plate or shelf H, substantially as and for the purpose specified.

210,121. UMBRELLA-COVERS. Gustav Held, New York, N. Y. Filed Oct. 23, 1878.



Claim.—In combination with an umbrella cover or case, an inner truncated sheet-metal cap having a circumferential recess, in which the fabric on the edge of the hole in the center of said cover or case is fastened by means of a wire band or other suitable means, and an outer truncated sheet-metal cap, which is fitted on the upper part of the inner cap, and is secured thereto by means of solder introduced between the two caps, substantially as shown and described.

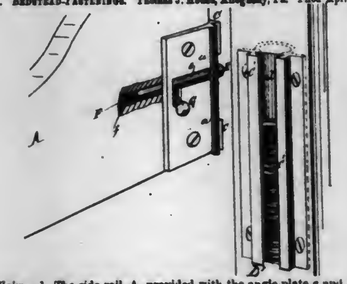
210,122. PUMPS. Jacob F. Hess, Massillon, Ohio. Filed June 26, 1878.



Claim.—1. The combination, with the plunger-rod and the two vertically-depending connections, of the handle formed with arms which are pivoted to the pump-cylinder, and embrace opposite sides of the latter, said arms having a graded series of holes for adjustable engagement with the connecting-rods, substantially as set forth.

2. The combination, with upper and lower cylinders, G and K, provided with packing *g* and *k*, and their respective plungers P and H, secured to a single plunger-rod, of cylinder M, formed in vertical line between the said plunger-cylinders and final discharge-spout L, directly communicating with the same, substantially as set forth.

210,123. BEDSTEAD-FASTENINGS. Thomas J. House, Allegheny, Pa. Filed Apr. 29, 1878.

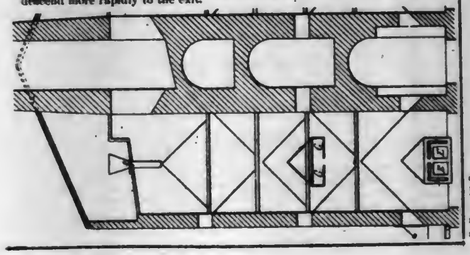


Claim.—1. The side rail, A, provided with the angle-plate *a* and bolt E, in combination with the slotted box *d*, spring D', and the dovetail device *c c'*, substantially as shown and described.

2. The combination of the slotted box *d*, spring D', bolt E, and the side rail of a bedstead, all constructed and operating as described.

210,124. KILNS FOR DRYING VEGETABLES, &c. Eduard Hundhausen, Buckau, near Magdeburg, Prussia. Filed Sept. 20, 1878.

Brief.—The grated plates allow the smaller particles to pass through and descend more rapidly to the exit.

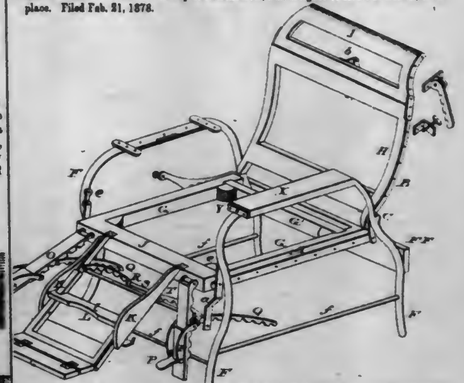


Claim.—1. A drying-kiln having a series of inclined and grated drying-plates, arranged substantially in the manner described.

2. A drying-kiln having a series of inclined and grated drying-plates, the spaces between the bars of one series being wider than the spaces between the bars of the series of plates below, as set forth.

3. The combination of the kiln, furnace, and flue with the heat-distributer G, having a longitudinal slot on its under side, as and for the purpose set forth.

210,125. INVALID-CHAIRS. Anthony Ishe, Lancaster, Pa., assignor to Israel L. Landis, same place. Filed Feb. 21, 1878.



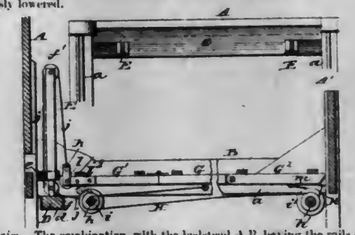
Claim.—1. An invalid or reclining chair provided with a central adjustable foot-rest and two independently-adjustable leg and foot rests, one on each side the first named, operating substantially as and for the purpose set forth.

2. The combination, as set forth, of the arm-boards N, the perforated front plate, Y, the rod Z, and hinged tablets *t* T, whereby such tablets may be used, when extended, as a book-rest or table, and, when folded, as an upholstering for the arms.

3. The combination of the back pivoted in the slot on the back-standard F, the movable seat provided with strap A, the lever *a*, pivoted to the front standard, F, above the seat, and the foot-rest pivoted to the front edge of the seat, and attached by means of the racks Q to the lever *a*, as and for the purpose set forth.

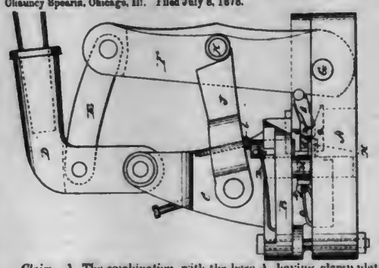
210,126. INVALID-BEDSTEADS. Geo. Iveson, Greenwich Station, Ohio. Filed July 22, 1878.

Brief.—While the head section is being elevated, the entire frame is drawn toward the head of the bedstead, and the supplemental foot-section is simultaneously lowered.



Claim.—The combination, with the bedstead A B, having the rails or ways *a*, of the slat-supporting pieces G G^1, hinged together in two sections and provided with rollers *g g*, standards E, having pulleys *f f'*, cords H and *j*, and shafts *h h'*, provided with pulleys *i i'*, substantially as shown and set forth, for the purpose described.

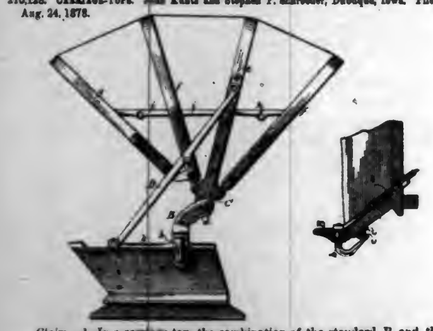
210,127. SAW-SWAGES. Simon Kinney, Bay City, Mich., assignor of one-half his right to Chauncy Spearin, Chicago, Ill. Filed July 8, 1878.



Claim.—1. The combination, with the base A, having clamp-plate H, and cap B, having standard C, of the cam-arm J, post F, roller K, link E, and lever D, to operate the clamp I, the swage-block Q, and anvil M, as set forth.

2. The combination of the vertically-adjustable anvil M, guide-block N, spring O, screw *d*, swage-block Q, and clamps H I, arranged and operating substantially as and for the purposes set forth.

210,128. CARRIAGE-TOPS. John Kantz and Stephen F. Shroeder, Dubuque, Iowa. Filed Aug. 24, 1878.



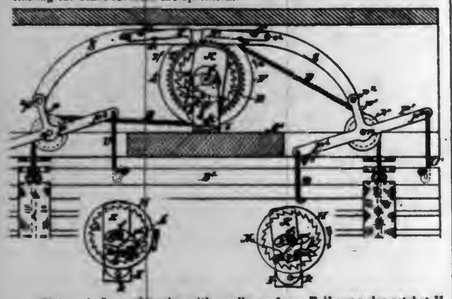
Claim.—1. In a carriage-top, the combination of the standard B and the bow-plate C, having the shoulder *d* of the brace D, and the arm *k*, for the purpose of preventing the top from tipping forward and of holding it stationary in an upright position, substantially as described and shown.

2. The hook-bolts *b*, having pivoted bearing-plates *c* on their lower ends, substantially as and for the purpose set forth.

3. In a carriage top, the combination, with the standards clamped to the sides of the seat, of the rearwardly-extending arms *k*, cast with the standards, and the jointed braces for holding the top, substantially as described and shown.

210,129. VENETIAN BLINDS. Ezra B. Lake, Delance, N. J. Filed Mar. 27, 1878.

Brief.—Attached to the fusee, upon which the cords for raising and lowering the blind are wound, is an annular ratchet-wheel, its teeth projecting inwardly. An upright lever is pivoted at its lower end, and the axis of the fusee passes through a segmental slot in the lever, allowing it to move laterally through a small arc. To the lever are attached two pawls in such manner that the rapid raising of the blind causes one to hit the ratchet-teeth and throw the lever, and with it the other pawl, into lock with the teeth on the other side. Surrounding the ratchet-wheel is a toothed wheel, its teeth projecting straight outward. An arched bar has two pawls on either side of the wheel, engaging in contrary directions with its teeth. The arched bar at either end is attached to ⊥-levers. The two other ends of the ⊥-levers are attached to cords, one of which is attached to the inner edge of the top slat and the other to the outer. Pulling down the blind causes one pawl to engage with the wheel, pushing over the arched bar, raising one edge of the slats and lowering the other. Raising the blind reverses the operation.



Claim.—1. In combination with a roller or fusee, F, the annular ratchet H, pivoted lever K, and pawls M and N, arranged and operating substantially as shown and described.

2. In combination with the roller or fusee F and slat B^3, the levers I^2 I^3, arched girt S, pawls S^1 S^2, and cords U V, arranged and operating substantially as shown and described.

3. In combination with a Venetian blind having a spring for elevating the same, and a roller or fusee for receiving the cords on which the slats are hung, a locking device operating to arrest the ascent of said blind by the mere manipulation of the latter, substantially as set forth.

4. In combination with a Venetian blind having a spring for elevating the same, and a roller or fusee for receiving the cords on which the slats are strung, means for causing the inclination of the slats to be varied or controlled by the raising and lowering of said blind, as set forth.

210,130. SPREADING AND DRYING GLUE. Edward W. Leggett, Elizabeth, N. J., assignor of one-fourth his right to Hugo Scherring, New York city, and Joseph Glatz, Brooklyn, N. Y. Filed Mar. 23, 1878.

Brief.—Liquid glue is poured into the annular rotary trough, and the latter is then revolved. A film of glue adheres to the trough, and is partially dried by the current of air, which is drawn through the trough by the propeller. As the trough begins a second revolution, a second film is deposited on the partially-dried film, and this is repeated until the layer of glue has reached the desired thickness.

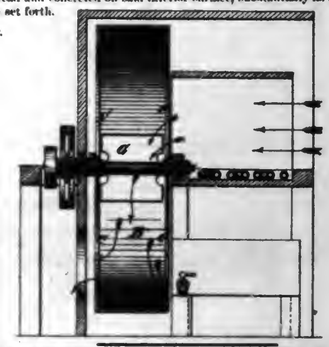
Claim.—1. The process of forming glue into desiccated sheets by concretion and simultaneous desiccation, as herein described, wherein the glue is deposited in successive layers to form a sheet of the same, each layer being desiccated, or partly desiccated, before the deposition of the next layer, till the sheet has acquired the desired thickness, substantially as and for the purpose set forth.

2. In a glue spreading and drying apparatus, the annular rotary trough for receiving a charge of glue, and, by rotation, forming a sheet of glue on its interior, substantially as and for the purpose set forth.

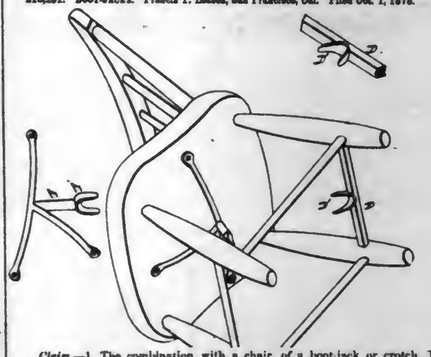
3. The combination, with the annular rotary trough, of a heater and mechanism for circulating air over or through said heater and through said trough, substantially as and for the purpose specified.

4. The combination, in a glue spreading and drying apparatus, of an annular trough, B, for holding, spreading, and concreting glue upon its interior surface, substantially as herein described, and an air-propeller, G, placed in central relation with the said trough, for forcing air through said trough and radially outward against the interior surface of said trough, for desiccating glue spread and concreted on said interior surface, substantially as and for the purpose set forth.

210,130.



210,131. BOOT-JACKS. Francis T. Lossen, San Francisco, Cal. Filed Oct. 1, 1878.



Claim.—1. The combination, with a chair, of a boot-jack or crotch, D', secured upon a round or brace thereof, substantially as and for the purposes set forth.

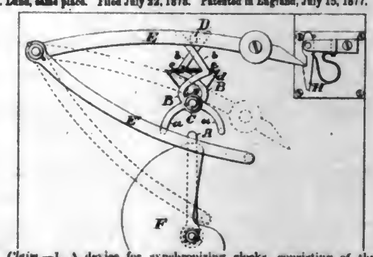
2. A boot-jack attachment consisting of a heel-catcher, D', and a toe-catcher, F', adapted to be applied to a chair, substantially as herein set forth.

210,132. PAPER-FASTENERS. Francis J. Lippitt, Washington, D. C. Filed Oct. 19, 1878.



Claim.—The improved paper-fastener A', of soft metal rolled or coiled into a tubular conical shape, substantially as shown and described.

210,133. ELECTRIC-CLOCK REGULATORS. George Laud, London, England, assignor to John A. Lund, same place. Filed July 22, 1878. Patented in England, July 15, 1877.



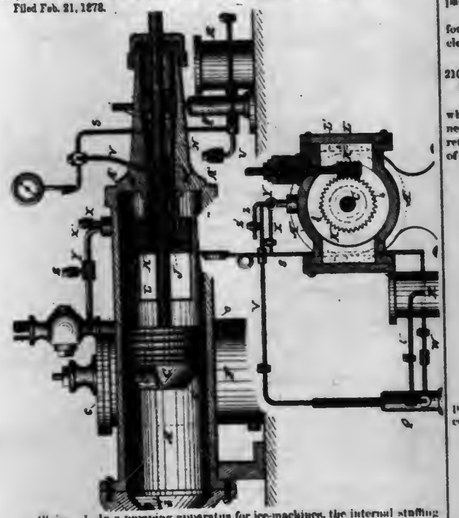
Claim.—1. A device for synchronizing clocks, consisting of the levers B B, fulcrumed at C, having arms *a a*, for setting the hand, and cam-arms *b b*, which present their opposed faces to the action of a pin or projection, D, moving between them, all so arranged that as said pin or projection approaches the fulcrum C the arms *b b* are parted and the arms *a a* caused to embrace the hand A, substantially as set forth.

2. The levers B B, having arms *a a*, adapted to embrace the hand A, and arms *b b*, so shaped that as the pin D is moved between them toward their fulcrum it first causes the arms *a a* to approach each other, and then permits them to spring apart, substantially as and for the purposes set forth.

3. The weighted lever E, bearing the pin D, sustained when raised by a suitable catch, and when released adapted to actuate in its fall the levers B B through the medium of its pin D, substantially as set forth.

4. The combination of the hand A, levers B B, constructed substantially as set forth, their operating-pin D, weighted lever E, cam F, and ratch H, arranged and operating together to form a synchronizing attachment for clocks, substantially as shown and described.

210,134. PUMPS FOR ICE AND REFRIGERATING MACHINES. James C. Mack, Brooklyn, N. Y. Filed Feb. 21, 1878.



Claim.—1. In a pumping apparatus for ice-machines, the internal stuffing-box, J K, grooved upon its periphery and adapted to be turned by external means, substantially as and for the purposes described.

2. In a pump, the piston-head C, with the faces *c' c'*, substantially as described.

3. In combination with the solid fixed chambered bushing M, the pump Q and connecting-pipes, whereby oil is forced into said bushing or air exhausted from the same, substantially as described.

4. In a pump, a worm or equivalent gear, operated from the outside, for adjusting an internal stuffing-box, substantially as described.

5. In a pump, a pump-head having a curvilinear recess and flat recesses, substantially as described.

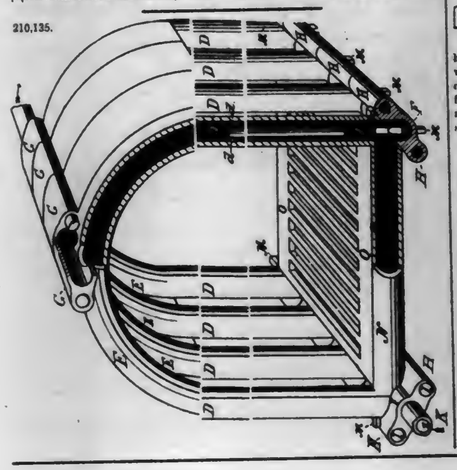
6. The combination of the oil-pump Q and reservoir R with the pipes V, W, S, and U and their cocks, substantially as and for the purposes described.

7. The combination of the cylinder A with the pipes X Y Z and their cocks, substantially as and for the purposes described.

8. The combination, with the inlet and outlet pipes, of the pipes X, substantially as and for the purposes described.

9. The combination, with the outlet and inlet pipes and their cocks, of the pipes Z and X and their cocks, substantially as and for the purposes described.

210,135.



210,135. SECTIONAL STEAM-GENERATORS. George Marshall, Thomas Ibbotson, and John Bailey, Belleville, Ill. Filed Apr. 30, 1878.

Brief.—Each section has cast upon it a projection on each side of the water and steam communicating apertures, and, when joined together, form a continuous hole for the reception of the bolts by which all the sections are secured to each other. The circulating-tubes are held in position by screw-plugs, and by the removal of which the sediment may be blown off.

Claim.—1. The cast sections having vertical legs D D, crown-pipe E, and transverse pipes F F and G, communicating from section to section in the boiler.

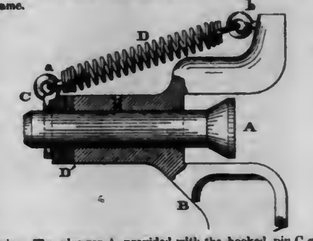
2. The combination, in a boiler, of the sections having the parts D E F G, and the end sections having in addition the horizontal pipe or portion N.

3. The combination, with the cast sections D D E, of the stay-bolts I, passing through lugs H, cast upon the sections.

4. The combination of the sections D D E, axial pipes J, and plugs M, forming the support of the pipes J, and made removable for the purpose of cleaning out the pipes D, substantially as set forth.

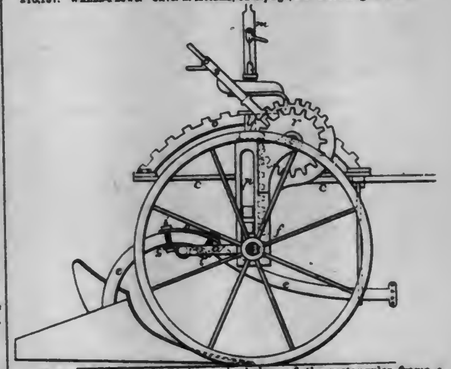
210,136. LOOM-PICKER CHECKS. Francis McCormick, Philadelphia, Pa. Filed July 18, 1878.

Brief.—The picker-check consists in a plunger fitted to slide in a stock which is fastened to the loom, and which is kept in position by a spring connecting the two outside of the stock. The head of the plunger receives the return blow of the picker, the spring easing and gradually checking the force of the same.



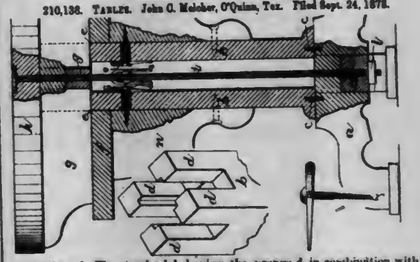
Claim.—The plunger A, provided with the hooked pin C *a*, the stock B, provided with the hook *b*, and the spring D outside of the plunger and stock, combined and operating substantially as and for the purpose set forth.

210,137. WHEEL-PLOWS. Oliver S. Meeham, Champaign, Ill. Filed Aug. 17, 1878.



Claim.—The arrangement, in a wheel-plow, of the rectangular frame *e*, having seat-frame *l* rigidly secured to the inside thereof, the axle *a*, provided with lever *m* and four bearings, as described, and having the plow-beam pivoted to the central bent portion thereof, the slotted frame *f*, secured to the frame *e*, and having one of the end bearings of the axle in its lower end, the rack-bar *p*, wheel *r*, and lever *s*, all constructed and arranged to operate as described.

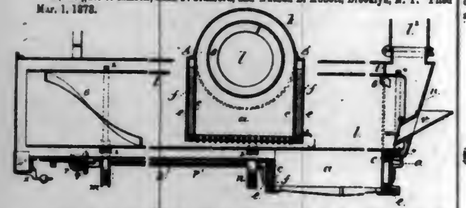
210,138. TABLES. John O. Meloher, O'Quinn, Tex. Filed Sept. 24, 1878.



Claim.—1. The standard *b*, having the prongs *d*, in combination with the shelf *f*, having the hole *e*, cross-pieces *g*, top *h*, rod *l*, base *a*, and nut *l*, substantially as shown.

2. The standard *b*, composed of three or more sides or pieces, each one having a hole, *s*, screw *r*, wedge *s*, and brace *u*, the wedges being driven between the heads of the screws and the inner sides of the standard, all combined substantially as set forth.

210,139. APPARATUS FOR DRYING AND HEATING GRAVEL, &c. William Morgan, New York, assignor to himself, John P. Cranford, and Nathan B. Abbott, Brooklyn, N. Y. Filed Mar. 1, 1878.



Claim.—1. In combination with the portable furnace for drying gravel, and the surrounding shell *s* thereof, the revolving drying-cylinder *l*, supporting-rollers *m m*, *n n*, and *o o*, the rollers *o o* being supported in bearings outside the front water-space of the furnace and the casing *u* at the base of the chimney *P*, and surrounding the forward end of the cylinder *l*, substantially as set forth.

2. The revolving drying-cylinder *l*, surrounding casing *k*, partition *t*, and casing *s*, in combination with the hoppers *v* and *v*², and swinging doors or valves *w* and *x*, substantially as set forth.

210,140. BENCH-DOGS. Charles Merrill, New York, N. Y. Filed Apr. 5, 1878.

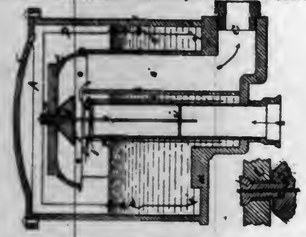
Brief.—The shaft which carries the plate is reversible, so that the side having the teeth or the plain side can be presented to the stuff when desired. Said shaft is vertically adjustable by means of an arm having a cam-face, which engages with the shaft, and a threaded orifice in the rear for the reception of a screw, by which it is operated, upon a cross-bar in the frame.



Claim.—1. In a bench-stop, the combination of the following elements: a clamping device, E, a pin, F, supported in a frame, A, and a regulating-screw, D, constructed and operating substantially as and for the purpose indicated.

2. In a bench-stop, the combination of the following elements: a frame, A, plate B, shaft C, pin F, clamping device E, and regulating-screw D, constructed and operating substantially as and for the purpose set forth.

210,141. GAS-PRESSURE REGULATORS. Person Noyes, Lowell, Mass. Filed May 6, 1878.

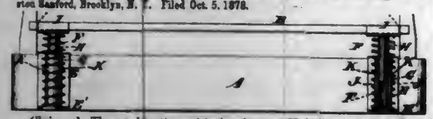


Claim.—1. In a gas-pressure regulator, the floating gas-holder D, provided with peripheral corrugations *e* and the inclined flange *e'*.

2. The valve-seat G, adapted to tilt on the dome *e*, combined with the valve F, substantially as described.

3. The valve-ring *f*, provided with the knife-edge *f'* and the outer flange or edge, *f''*, as and for the purpose specified.

210,142. VENTOLE-SPRINGS. Stanton Palmatier, Leeds, assignor of one-half his right to Gelston Sanford, Brooklyn, N. Y. Filed Oct. 5, 1878.



Claim.—1. The combination, with the plungers H, hollow cylinders G, and springs F, of the movable false bolster B and plates or clips I, for attaching said plungers to said movable false bolster, substantially as and for the purpose set forth.

2. The combination, with the bolster A, of the yokes E E', hollow cylinders G, attached to said yokes, plungers H, fitted to slide within the said cylinders, springs F, and movable false bolster, substantially as and for the purpose specified.

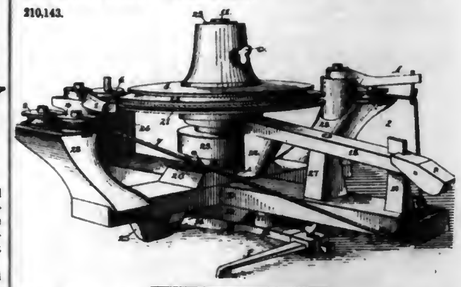
210,143. CHECK-ROWERS FOR CORN-PLANTERS. Seth W. Perkins, Cambridge, Ill. Filed Apr. 5, 1878.

Claim.—1. In a check-rower operated by a rope, the combination, with the main wheel 5, of the standards 28 28, each having two pulleys, 2 2, and swinging arm 1, the standard 24, with single pulley 4 and two swinging arms, 3, and the rope 7, arranged in around the various parts, substantially as and for the purposes herein set forth.

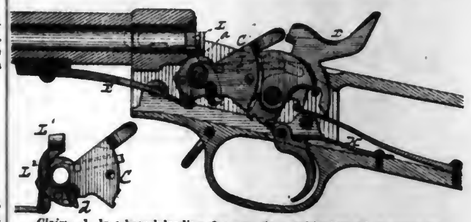
2. In a check-rower operated by a rope, the combination of the spindle 11, with disk 13, having pin *c*, the boxing and collar 23, with internal gear, and the wheel 5, with set-screw *c*, all arranged upon the same vertical shaft or spindle, substantially as herein set forth.

3. The lever 18, with pivoted catch 9 and arm 12, having rubber A, in combination with the wheel 5 and disk 13, for throwing the wheel out of gear and locking the spindle, as herein set forth.

210,143.



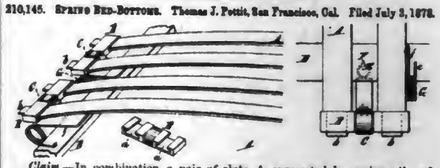
210,144. BREECH-LOADING FIRE-ARMS. Joseph C. Potmecky, Austin, Tex. Filed Aug. 9, 1878.



Claim.—1. In a breech-loading fire-arm, the combination of an extractor inserted in the barrel and working on a line therewith, and an ejector pivoted to the frame and working on the arc of a circle, and a pivoted breech-block for operating both the extractor and the ejector, substantially as herein set forth.

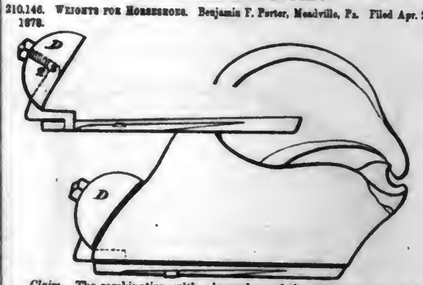
2. The combination of the extractor or starter L_1, with projection *a*, the ejector L^1, with pivoted arm L^2, and the breech-block C, with shoulder *b* and dog *d*, substantially as and for the purpose specified.

210,145. SPRING BED-BOTTOMS. Thomas J. Pettit, San Francisco, Cal. Filed July 3, 1878.



Claim.—In combination, a pair of slats, A, supported by springs G and connected by a metal plate, E, the webbing C, having ring E, and the hook F, secured to the end rail, D, constructed and operating substantially as and for the purposes set forth.

210,146. WEIGHTS FOR HORSESHOES. Benjamin F. Porter, Meadville, Pa. Filed Apr. 27, 1878.



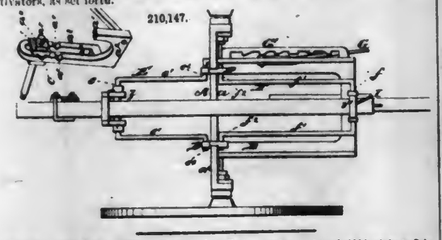
Claim.—The combination, with a horseshoe, of the toe-weight D, screwed to a standard by means of a nut, and an attaching-standard, adapted to be screwed to the shoe by means of a screw-thread, all substantially as shown, for the purposes set forth.

210,147. PLOW-SULKY AND CULTIVATOR. George P. Price, Carlisle Station, Ohio. Filed Oct. 12, 1878.

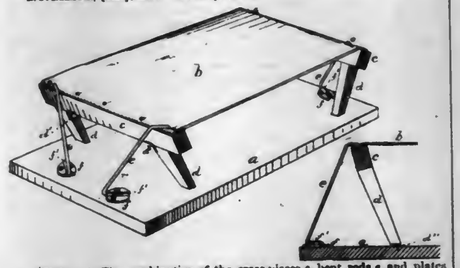
Brief.—A front and rear plow-crank with hinged clamps to the beam, and with pivot-hooks to the frame, allowing said cranks to be sprung out and removed to readily adapt the sulky for a plow or a gang of cultivators.

Claim.—In a plow-sulky, the combination of the frame F, composed of the arms f^1 f^1 and short arms f^2 f^2, provided with the removable frame f^3, the short arms f^2 f^2 being adapted to be sprung into and removed from holes in the frames D D, in combination therewith, and with the frame E, composed of the arms E', *c*, c^1 c^1, and *z*, removably connected to a clamping-frame upon the plow-beam near its rear end, and adapted to be operated by suitable levers, as G J, for the purpose of permitting the plow-beam to be removed and replaced by cultivators, as set forth.

210,147.



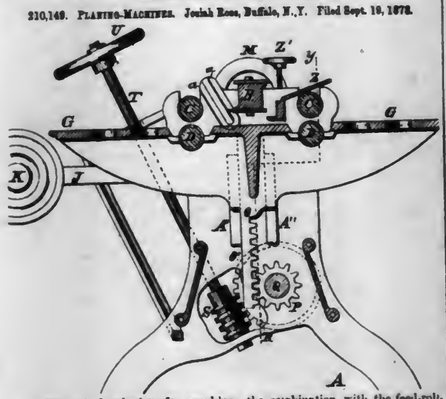
210,148. CAMP-BEDS. William G. Richardson, Boston, assignor of one-half his right to John B. F. Ramsdell, Quincy, Mass. Filed May 6, 1878.



Claim.—1. The combination of the cross-pieces *c*, bent rods *e*, and plates *f*, provided with the grooves *f'*, all arranged substantially as and for the purpose herein set forth.

2. The herein-described camp-bed, consisting of the cross-pieces *c*, canvas *b*, hinged legs *d*, provided with spurs d^2, rods *e*, and grooved plates *f f'*, all substantially as and for the purposes above specified.

210,149. PLANING-MACHINES. Josiah Rose, Buffalo, N. Y. Filed Sept. 19, 1878.



Claim.—1. In planing, &c., machines, the combination, with the feed-rollers C, pivoted within the yokes F, of the levers J and weights K, said levers being fulcrumed at I, and caused to act upon the lower extremity of said yokes midway between the rollers C, as and for the purpose stated.

2. In a planing-machine, the standards A, having the bearings for and in combination with the obliquely-arranged shaft T, provided with the hand-wheel U and worm S, the worm-wheel R, secured to the shaft Q, together with the pinions P and the gear-toothed rack-bars O on the table G, whereby said table is vertically raised and lowered without change of plane, as and for the object specified.

3. A planing-machine having a hood, V, provided with projecting sliding bars *b* and arms X, said projections *b* being constructed to engage with obliquely-arranged guides *a* on the standards A A', and the arms X to rest upon the rollers C, as specified, for the object stated.

4. The combination, with the standards A A', having the obliquely-arranged projecting guides *a*, of the hood and chip-breaker V, provided with the projecting slides *b* and arms X, the latter being arranged to rest upon the feed-rollers C, as and for the purpose stated.

210,150. COMBINED LAND-ROLLER AND CLOD-CRUSHER. Robert A. Emerson, Bowen's Prairie, Iowa. Filed Sept. 23, 1878.

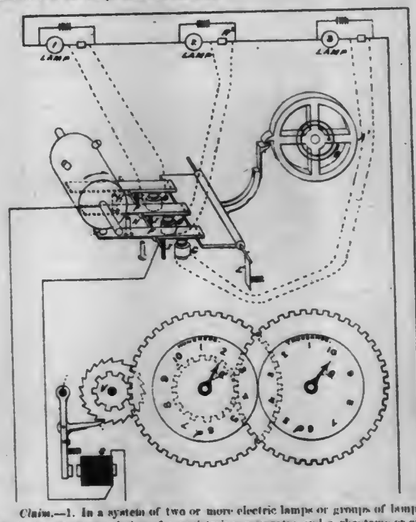


210,150.

Claim.—The combined land-roller and clod-crusher, consisting of end pieces, A, runners B, hinged adjustable crushing-boards D, and roller C, substantially as and for the purpose set forth.

210,151. ELECTRIC METERS. William E. Sawyer, New York, N. Y. Filed Oct. 17, 1878.

Brief.—As any lamp of the system is lighted, a derived circuit from the lamp operates one of a series of relays, which closes another derived circuit of the main line, in which is placed the electric register, whereby the aggregate times that all the lamps burn are recorded.



Claim.—1. In a system of two or more electric lamps or groups of lamps, an electric meter consisting of a registering apparatus and a rheostat or circuit-breaker driven by clock-work or other well-known mechanical appliances, and operating to intermittently actuate the registering apparatus, when a lamp or lamps, or a group of lamps, is lighted.

2. In a system of two or more electric lamps or groups of lamps, an electric meter consisting of a registering apparatus and as many separate electric parts or apparatus connected to the lamps or groups of lamps as there are lamps or groups of lamps in circuit, each of said electrical parts or apparatus being separately connected with its respective lamp or group of lamps, and each separately actuating the register.

3. In an electric meter, the combination of two or more electro-magnets, G G, and their armatures, the action of any one or more of which will start the register and denote the time any one or more lamps of a series is illuminated and the amount of current consumed in that time by each lamp.

4. In an electric meter, a separate electro-magnet, S, and its armature, by which the registering device is operated, in combination with one or more electro-magnets, G, by which the machinery of the meter is started, the two magnets to be connected, substantially as described, by which a series of electric impulses through G are successively concentrated upon S and made to register the current of each lamp in the series.

5. The combination, with two or more electric lamps or groups of lamps, of a single registering-meter, common to all of them, constructed to register for each and all of the lamps, substantially as shown and described.

210,152. SWITCHES FOR ELECTRIC LIGHTS. William E. Sawyer, New York, and Albon Man, Brooklyn, N. Y. Filed Oct. 15, 1878.

Brief.—After the lamp has been automatically cut out of circuit by the weakening of the current through the lamp, the current can only be turned into the lamp by moving a switch to remove a resistance from the lamp-branch circuit by degrees.

Claim.—1. The combination, with an electric-lamp-lighting switch, of an apparatus which operates to prevent the completion of the lamp-circuit when there is no current to energize the lamp.

2. The combination, with an electric-lamp-lighting switch, of an apparatus energized by the current which actuates the lamp, and that operates when there is an interruption in the flow of the current to close the circuit of the lamp against a sudden recurrence of such flow.

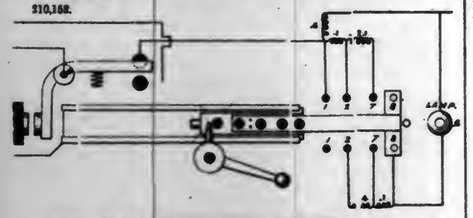
3. The combination, with an electric lamp and a lamp-lighting switch, of two electrical circuits connected therewith, the switch operating to reduce the resistance of one circuit and increase the resistance of the other in such manner that at each reduction in the resistance of one circuit there will be an increase in the resistance of the other.

4. The combination of an electric lamp and a lamp-lighting switch of electrical circuits, so arranged that as the resistance in the circuit of the lamp is lessened, and consequently more current caused to flow through the lamp, the resistance of an extraneous channel or channels is increased, each reduction in

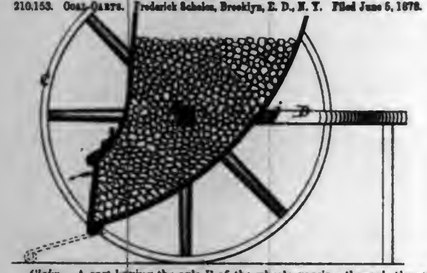
the resistance of the lamp-circuit being accompanied by such increase in the resistance of the extraneous channel or channels that the resistance of the main or branch circuit, which contains the circuit of the lamp and the extraneous channel or channels, is maintained constant, or nearly so.

5. An electric-lamp-lighting switch or apparatus which, after an interruption in the flow of current, operates to prevent the lighting of the lamp until it shall have first been brought into the position which it occupies when the lamp is not lighted.

210,152.



210,153. CART-GEARS. Frederick Schaim, Brooklyn, E. D., N. Y. Filed June 5, 1878.



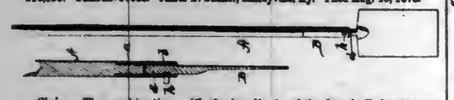
Claim.—A cart having the axle B of the wheels passing through the stationary body intermediate of its top and bottom, and to which it is rigidly attached, the discharge end of the body being entirely below and the open top above the axle, and said body being inclined from its upper front edge to its lower rear edge below the axle, the discharge-mouth of the body being provided with a tail-gate, all as shown and described, whereby the body is adapted to unload the contents by gravity and without dumping, as set forth.

210,154. EGG-PACKERS. Hattie J. Schmid, Ohey, Ill. Filed Aug. 17, 1878.



Claim.—The combination of the perforated plate A, the cluster of rings D, hinged to the plate, and a catch, I, substantially as and for the purpose set forth.

210,155. GARDEN-TOOLS. James D. Shaffer, Shelbyville, Ky. Filed Aug. 15, 1878.



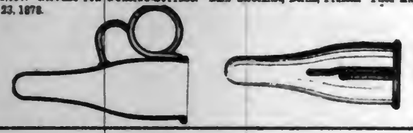
Claim.—The combination, with the handle A, of the ferrule B, having two sets of female threads, *a b*, and set-screw *b*, and a garden-tool provided with a screw-shank, *d*, having recess *f*, all substantially as and for the purposes herein set forth.

210,156. FOLDING LEGS FOR SOFA-BEDSTEADS. Peter Schultes and Christian Walter, Mendota, Ill. Filed Mar. 9, 1878.



Claim.—The leg of a sofa or other article of furniture turning upon a spring-pin, in combination with the face-plate A, having a vertical and horizontal groove, as shown and described.

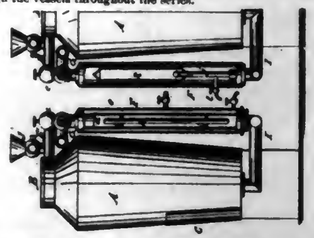
210,157. NIPPLES FOR NURSING-BOTTLES. Emil Siebenlist, Berlin, Prussia. Filed May 23, 1878.



Claim.—The india-rubber nipple having an external air-inlet or vent-tube formed integral therewith, and communicating with the interior of the nipple and the atmosphere, as and for the purpose set forth.

210,158. DIFFUSION APPARATUS. Rudolf Sieg, New Orleans, La., assignor to William Mansfield Howland, New York, N. Y. Filed Feb. 20, 1878.

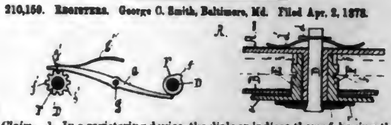
Brief.—The conducting-pipes connecting the successive diffusion-vessels are provided with steam-heating tubes and jackets, for keeping the diffusion-liquid warm in its passage through the series of vessels. The liquid is passed up through the vessels throughout the series.



Claim.—1. The valved heater F, connected with the receptacles A by the pipes E' I, substantially as and for the purpose specified.

2. The conductor and heater consisting of the tube *d*, having the internal heating-tube h, and the steam-jacket *e*, substantially as herein described.

210,159. REGISTERS. George O. Smith, Baltimore, Md. Filed Apr. 2, 1878.



Claim.—1. In a registering device, the dials or indices thereof, having their arbors situated within a sealed case and normally locked, in combination with mechanism which automatically releases them at the moment when registration is being effected, the said dials being exterior to the sealed case, and constituting cover-plates for the arbor-orifices, substantially as set forth.

2. In a registering device, the dials or indices thereof, having their arbors situated within a sealed case, each dial actuating at each complete revolution the next dial in the train, and at the same time releasing a locking mechanism, the said dials being exterior to the sealed case, and constituting cover-plates for the arbor-orifices, substantially as described.

3. In combination with the main plate, having tubular shaft, the dials *a*, bolt D, and locking mechanism, substantially as described.

4. In combination with the arbors F F, having, respectively, a series of teeth and a cam, the lever G, having lug *g'* and spring *g''*, and the plate B, substantially as described.

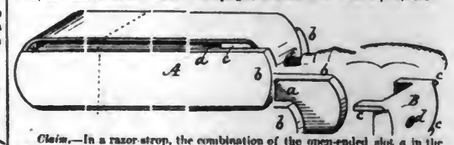
5. In combination with the plate A, having shaft E, and wheel *a*, having arbor F, the plate B, substantially as described.

210,160. DRAFT-EVENERS. Melvin O. Smith, Chenango Forks, N. Y. Filed July 15, 1878.



Claim.—The draft-evener herein described, consisting of the bar A, notched rubber block H, keeper C, tubular plates D, and clevises H, all constructed and relatively arranged as and for the purpose specified.

210,161. RAZOR-STROPS. Austin V. M. Sprague, Rochester, N. Y. Filed Sept. 5, 1878.

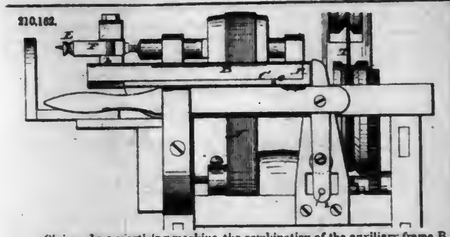


Claim.—In a razor-strop, the combination of the open-ended slot *a* in the block A and the slide B resting therein, provided with flanges *c c*, which rest and slide upon the edges *b b*, as shown and described, and for the purpose specified.

210,162. MORTISING-MACHINES. Samuel Stone, Bristol, Conn. Filed Sept. 23, 1878.

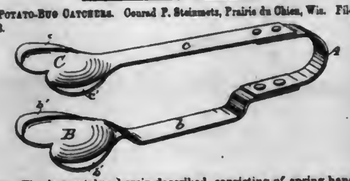
Brief.—The mortising-tool is attached to a rotating shaft mounted in bearings upon an auxiliary reciprocating frame, moving in guides upon the main frame, and operated by a driving-screw, which passes through a threaded orifice formed in an arm depending from the auxiliary frame, and a driving-shaft arranged below and parallel with said screw, provided with a belt-wheel to receive the power from the engine, and a hand-wheel to transmit the power to the driving-screw through a pinion on said shaft, and a gear-wheel attached to a pulley on said screw. The depth of the mortise is regulated by a clutch on the driving-shaft, operated by a compound lever. The tool-frame is drawn back by a weight connected to the pulley on the driving-screw by a cord passing over said pulley, and over a pulley in the upper part of an upright attached to the main frame.

210,162.



Claim.—In a mortising-machine, the combination of the auxiliary frame B, carrying the auger and chisel E F, with the driving-screw G, driving-shaft H', and weight and clutch for operating it reciprocally, substantially as set forth.

210,163. POTATO-BUG CATCHERS. Conrad P. Steinmetz, Prairie du Chien, Wis. Filed Oct. 10, 1878.



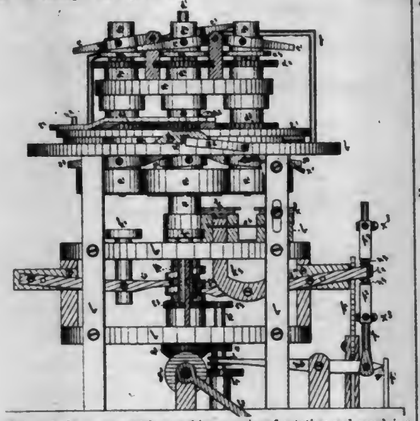
Claim.—The bug-catcher herein described, consisting of spring-handle A, arms *b* and *c*, with concave jaws B and C fitting into each other, as shown, each of said jaws having flanged edges or sides, substantially as and for the purposes set forth.

210,164. WATER-WHEELS. Phillip Storall, Newnan, Ga. Filed Sept. 21, 1878.



Claim.—The gate K, having gear *a*, spirally-grooved post F *f*, pinion I, and studs I, housed within the dome C, above the water-wheel, in combination with the said dome and water-wheel K', and with the chutes formed by the parts A B and flange on dome C, as and for the purpose set forth.

210,165. MACHINES FOR MAKING METAL SCREWS. Levi W. Stockwell, Ravenna, Ohio, assignor, by mesne assignments, to John C. Grannis, trustee for Bradford Howland and Frederick W. Woodbridge. Filed Apr. 29, 1877.



Claim.—1. In a screw-cutting machine, a series of rotating and revolving rod-holders, in combination with a series of tools adapted to operate simultaneously and successively upon two or more rods to perform the operations of milling, threading, and pointing the rods, or either two of such operations, substantially as described.

2. The combination, with a rotating rod-carrier and a series of rotating rod-holders supported by the carrier, of a tool to cut a screw-thread upon one rod, and a cutting-off tool to cut off a screw already formed and located at the end of another rod, both tools operating simultaneously and successively, substantially as described.

3. The combination, with a rotating head provided with a series of rotating rod-holders, of a tool to turn down the circumference of one rod, a tool to cut a screw-thread upon another rod, and a cutting-off tool to sever a threaded screw from another rod, all adapted to operate simultaneously and successively, substantially as described.

4. The ring e^1, having a toothed segment, with a slip-tooth, e^6, at each end of the segment, and its pawl m^1, in combination with the carrier d^3 and wheel c^2, substantially as described.

5. The carrier d^3, in combination with the ring e^1, pawl m^1, cam c^3, and stop n^1, substantially as described.

6. The carrier d^3, in combination with spindle d^5, wheels d d^4, clutch a^4, lever c^4, and cam *g*, substantially as described.

7. The combination of the shaft d^1, wheels d d^4 d^2 g^1, shaft g^2, spindle d^5, and clutch a^4, substantially as described.

8. The combination of the carrier a^1, ring e^1, pawl m^1, spindle d^5, wheels d^2 g^1 c^2, shaft g^2, and sliding box *s*, substantially as described.

9. The combination of a series of vertical rod-holders, with a series of tools beneath the rods, in such manner that each tool may operate on each rod by bringing them successively in vertical line with each other to perform different steps in the formation of screws, and so that the weight of each rod, when released in its holder, will cause it to approach the tool beneath it, substantially as described.

10. In combination with the chuck for revolving the reduced and threaded rod, the chamfering-cutter, adapted to chamfer the head of the screw while the same is being severed from the rod by the cutting-off tool, substantially as described.

11. The combination of the worm h^4 with the wheels c^2 i^1 e^3, worm m^2, worm-wheel h^3, and clutch *i*, substantially as described.

12. The combination of the worm h^4, clutch *i*, levers i^2 and m^4, and the rod p with stops p^2 p^3, springs n^4 m^3, and the cam-spring p^1, substantially as described.

13. The combination of lever p^2 with clutch *c*, wheels *h* and g^4, threaded shaft g^3, nut *n*, lever F, rod o^2, spring o^3, collar x^2, lever h^1, and cam-spring *i*, substantially as described.

14. The combination of worm h^4 with the tool-holders and levers i^2 p^2 h^1, cam-spring *i*, clutch *c*, wheel *h*, shaft g^3, wheels g^1 d^2, spindle d^5, and chuck a^1, substantially as described.

15. The shaft g^3, in combination with the wheels *l l'*, screw *m*, nut F, holder h^2, wheels g^1 d^2, and spindle d^5, substantially as described.

16. The gage c^4, in combination with the chuck a^1, lever s^2, and cam s^1, substantially as described.

17. The sliding collar 6 and scroll-ring 3, in combination with the jaws 2 2, having convergent outer ends, and the seats 4 4, having convergent slots and grooves for the jaws to fit into, substantially as described.

210,166. BRUSHES. Charles H. Stratton, Portland, Me. Filed June 5, 1878.



Claim.—The ferrule herein described, consisting of top *a*, having central opening *c*, rim *b*, and points *d*, and made of metal and in one piece, substantially as and for the purposes described.

210,167. RAIL-FASTENERS. John W. Thomas, Tyrone, Pa. Filed May 21, 1878.



Claim.—1. In a rail-lock or fastener, the case A, constructed in two parts, substantially as shown and described, one part, *a*, having an aperture, *d*, and a slight elevation, *p*, and the part a^1 provided with a lateral projection or stud, *e* substantially as and for the purpose set forth.

2. The combination, with the case A, having the shaft or spindle D, provided with the lever C and cams *g g*, of the springs *h h* and the key E, adapted to fit the spindle D and operate it and the lever C, substantially as and for the purpose set forth.

3. The combination, with the partition, of the two-part case A *a* a^1, said partition being provided with a slotted aperture, f^1, of the lever C and its feather-shaft D, substantially as and for the purpose set forth.

210,168. PORTABLE LADDERS FOR GATHERING FRUIT. Luther H. Titus, San Gabriel, Cal. Filed May 10, 1878.

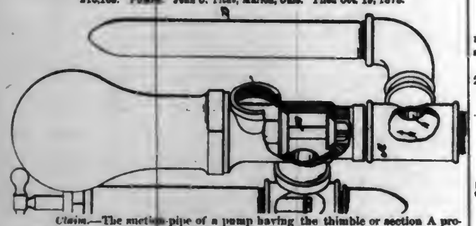


Claim.—1. The fruit-gatherer consisting of the horizontal frame K, supported midway by the two wheels, and having spikes or anchors at one end, the ladder pivoted to hangers below the axis of said wheels and adjustable in inclination, and the hopper D, with its chute suspended above the frame in suitable relation to the ladder, substantially as described.

2. The combination, with the frame mounted and rocking upon the two wheels, of anchors or spikes secured at one end thereof, substantially as and for the purpose stated.

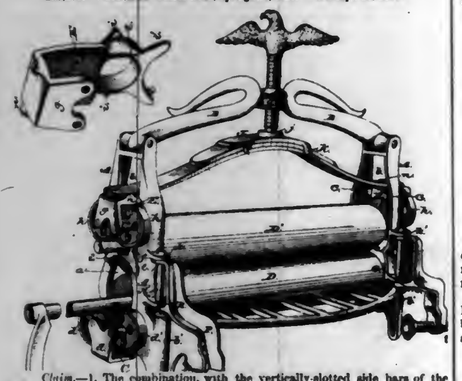
3. In a fruit-gatherer, the hook C and attached cord passing through staples at N in the side of the ladder, the cord having a weight attached to its lower end, all substantially as and for the purpose stated.

210,169. PUMPS. John C. Titus, Marion, Ohio. Filed Oct. 19, 1878.



Claim.—The suction-pipe of a pump having the thimble or section A provided with the concussion-chamber D, operating substantially as and for the purpose set forth.

210,170. WATCHES. James Todd, Springfield, Ohio. Filed Sept. 28, 1878.

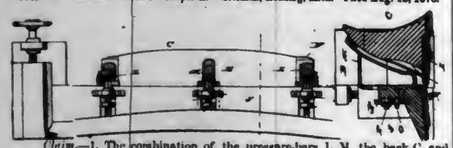


Claim.—1. The combination, with the vertically-slotted side bars of the frame, A, of the sliding boxes arranged outside of the frame, and having outside offsets, the journals of the top roller extending through said boxes, and anti-friction rollers journaled in the offsets of said boxes, passing beyond each other and bearing upon the said roller-journals, substantially as specified.

2. In a clothes-wringer, the combination, with the side bars, A, having vertical slots a formed therein, and the opposite notches *a* in the edge walls of said slots, of a slide, E, carrying the anti-friction rollers h in its upper portion, and provided with an offset, *l*, at its lower part, adapted to be received in said slots, and the guide-stops *i i'*, the former adapted to pass through the notches *a* aforesaid and bear against the inside of the side bars, and the latter to bear against the outside of the same, substantially as set forth.

3. The side bars, A, having outside upturned boxes, C, at their lower ends, the anti-friction rollers *d'*, journaled in said boxes and extending beyond each other, and the roller D, having journals *s* extending through the said side bars, and having their bearings on said rollers, combined, arranged, and operating substantially as set forth.

210,171. VENEER-CUTTERS. Jasper A. Waterman, Reading, Mich. Filed Aug. 12, 1878.



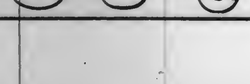
Claim.—1. The combination of the pressure-bars L M, the back C, and curved knife I, as set forth.

2. The combination of the pressure-bars L M and curved knife I with the back C, having a concave and a convex face, as set forth.

3. The combination of the pressure-bars L M, front J, and back C, as set forth.

210,172. PIANO-FORTE STRINGS. Edwin J. Watson and Paul Bauer, Worcester, Mass. Filed Nov. 3, 1877.

Brief.—The core is of such form as to prevent the covering wire slipping longitudinally thereon while in use.



Claim.—An a new article of manufacture, a piano-string composed of a core oval, triangular, quadrilateral, or polygonal (except round and round and flattened) in cross-section, throughout its entire length, and a wrapping of coiled wire, substantially as and for the purpose set forth.

210,173. HORSESHOE-PADS. Clark A. Wells, Boston, Mass. Filed Oct. 26, 1878.



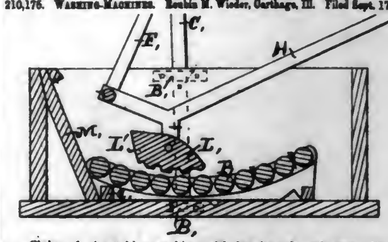
Claim.—The removable horseshoe-pad herein described, consisting of the rubber body B and leather plate C, the V-shaped slot *x*, and spurs D, constructed and adapted to be applied as set forth, for the purpose described.

210,174. HORSE HAY-FORKS. Henry H. Welsh and J. C. Schwenck, Nevada, Ohio. Filed Oct. 14, 1878.



Claim.—In a horse hay-fork, the combination, with the movable upright A and tine B, of the lever C, jaws *a*, lever D, and armed lever E, substantially as and for the purpose set forth.

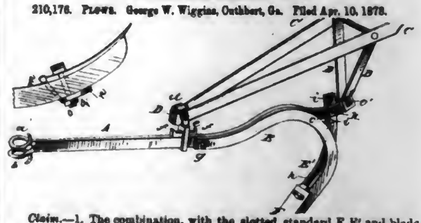
210,175. WASHING-MACHINES. Reubin M. Wieder, Carthage, Ill. Filed Sept. 17, 1878.



Claim.—1. A washing-machine with bearings B and removable bars C, combined with swinging arms F, having bars H pivoted to them, and bearing rubber-board L, having an upward face on one edge, and arranged to act on rollers P and on board M by rubbing and beating, substantially as set forth.

2. A washing-machine with a swinging frame, F H, bearing rubber-board L, arranged to be moved up and down and back and forth by handles, combined with rollers P and board M, for rubbing and beating, substantially as set forth.

210,176. PLOWS. George W. Wiggins, Cuthbert, Ga. Filed Apr. 10, 1878.

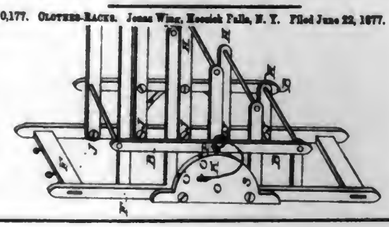


Claim.—1. The combination, with the slotted standard E E' and blade or point F, of the slotted washer a, having an obtuse-angled shank, *l*, provided with a cross-piece, *n*, bearing upon the upper edge of the blade or point F, and headed screw-bolt *o*, having nut *q*, substantially as and for the purpose specified.

2. The combination, with the beam A, of the handles C C, supported at their rear ends upon said beam by the pivoted braces B B, and connected at their forward convergent ends to said beam by the keeper or yoke *d*, secured to the slide or frame D, keyed to the beam by the key or wedge *e*, substantially as shown and described, and for the purpose set forth.

3. The combination, with the beam A, having a number of apertures, *a a'*, of the bifurcated U-shaped standard E E, having a fixed perforated arm, E', substantially as and for the purpose set forth.

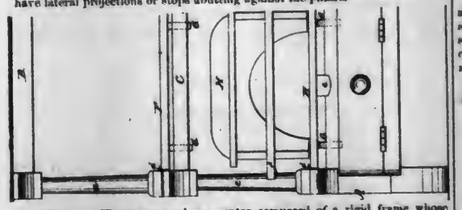
210,177. CLOTHES-RACKS. Jonas Wing, Hoosick Falls, N. Y. Filed June 22, 1877.



Claim.—In a clothes-rack, in combination, the projecting pivoted and overlapping frames H H H H, the pivoted connecting-bars B, the semicircular blocks D, the keying apparatus K, the pin P, and back frame, F, arranged to operate as shown and described.

210,178. STORE-SHELVING. James C. Wright, Louisville, Ky. Filed Aug. 20, 1878.

Brief.—A tapering frame-work consisting of a series of counters or shelves supported one above another by pillars. The base portion, containing drawers and sliding shelves above them, is double, with a space lengthwise of the structure between said drawers and shelves. The counter next above the base has sliding shelves extending entirely across the frame. Removable frames or super-shelving are placed upon the sliding shelves of the base, and have lateral projections or stops abutting against the pillars.



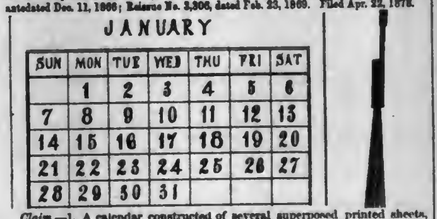
Claim.—1. The store or shop counter composed of a rigid frame whose horizontal parts A B C are of different lengths, and placed one above another, and the sliding shelves E F, as shown and described.

2. The double frame having a space between the base portions, A, and the separate sliding counters E, combined substantially as shown and described.

3. The combination of the removable super-shelving, having the lateral projections, with the sliding counters and the fixed pillars c of the frame, as shown and described.

REISSUES.

8,482. CALENDARS. C. W. Bryan, Springfield, Mass., assignor, by mesne assignments, to Clark W. Bryan and Jesse F. Tapley, same place. Patent No. 82,213, dated Feb. 26, 1867; antedated Dec. 11, 1866; Reissue No. 3,306, dated Feb. 23, 1869. Filed Apr. 22, 1878.



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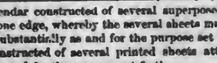
SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Claim.—1. A calendar constructed of several superposed printed sheets, attached together at one edge, whereby the several sheets may be successively and easily removed, substantially as and for the purpose set forth.

2. A calendar constructed of several printed sheets attached to a head-piece, substantially as and for the purpose set forth.

3. A calendar constructed of several superposed printed sheets attached to a head-piece, and having attached to the last of said sheets a counting-house calendar, substantially as herein described and specified.

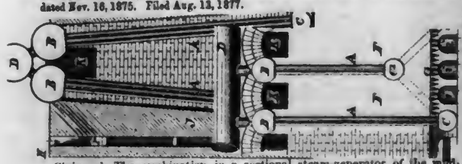
8,493. CORSETS. David H. Fanning, Worcester, Mass. Patent No. 199,377, dated Jan. 15, 1878. Filed Oct. 26, 1878.



Claim.—1. A corset one half of which is provided with a single steel, *g*, having eyes *h*, combined with the other half of the corset, provided with two steels, *d a*, placed edge to edge, the steel *a*, most remote from the edge, being provided with pins to co-operate with the eyes *h*, the steel *g* overlapping the steel *d*, substantially as shown and described.

2. In a corset, two single steels, *g d*, one at each edge of each half of the corset, and a double or stiffer steel, *a a'*, placed next the edge of the said single steel *d*, but farther back from the edge of the corset, the single steel *g* at one edge of the corset being provided with eyes, and the steel *a* located back from the edge of the corset and above the steel *a'* with studs, whereby the two single steels *g d* at the extreme edges of the corset, when the corset is hooked together at the front, will fall the one over the other and alongside of the double steel, the connection between the two steels *a b* at one edge of the corset being flexible, to operate substantially as described.

8,494. STEAM-BOILERS. Jos. Firmenich and Flavius P. Stiker, Buffalo, N. Y., assignors to Jos. Firmenich, George Firmenich, and Frank Firmenich, same place. Patent No. 199,977, dated Nov. 16, 1875. Filed Aug. 13, 1877.



Claim.—1. The combination, in a sectional steam generator, of the mud-drum C, the steam and water drum B, inclined water-tubes A, and steam-receiver D, all constructed and arranged to form an upper contracting combustion chamber, as and for the purpose set forth.

2. The combination, in sectional steam-generators, of the lower longitudinal drum, B, mud-drum C, the inclined series of water-tubes A, connecting said drums, arranged to form an upper tapering combustion-chamber, and the central series of circulating-tubes connecting said drums, for the purpose herein set forth and described.

3. The combination, in sectional steam-generators, of the longitudinal water-drum C, longitudinal steam and water drum B, the former flattened on its upper surface and the latter on its under surface, and connected together by a series of water-tubes in an inclined position from bottom to top, whereby the flame, as it decreases in intensity, is made to impinge with more force upon the tubes in the contracted portion of the combustion-chamber, substantially as herein described.

4. In steam-generators consisting, essentially, of the mud-drums C and steam and water drums B, connected by rows of heating tubes A, the auxiliary section composed of the drum C', heating-tubes A, and drum C, said auxiliary section being located above the grate G, arranged between the drums C, and connected therewith by the inclined pipes E', substantially as and for the use and purpose specified.

8,495. SAP-SPOUTS. J. B. Sargent, New Haven, Conn., assignor, by mesne assignments, to Charles C. Post, Burlington, Vt. Patent No. 76,590, dated Apr. 7, 1868. Filed Sept. 4, 1878.



Claim.—1. A sap-spout constructed with the hollow screw-shank B, having formed in the shank, between the screw and the base of the spout, the chamber C C, in the manner and for the purpose set forth.

2. A sap-spout provided with the packing *a* around the shank, in the manner and for the purpose substantially as herein set forth.

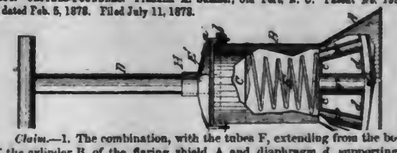
3. A sap-spout provided with a shoulder, A, to bear upon and close the opening into the tree, and a shank to penetrate said opening, combined with an intervening part, *c*, of less diameter than said shank, to form a chamber, as set forth.

4. A sap-spout having a shoulder, A, and neck *c* between said shoulder and its shank, combined with an opening, *c*, in said neck communicating with the spout-tube, through which the sap escapes.

5. A sap-spout having a screw-shank, B, combined with a drainage-gutter, *g*, cut across the screw-thread, substantially as shown.

6. A sap-spout provided with a hook, E, integral with said spout, for the purpose set forth.

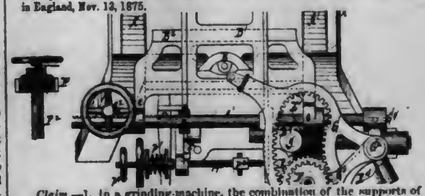
8,496. CLOTHES-POUNDERS. Franklin A. Sumner, Old Fort, N. C. Patent No. 199,942, dated Feb. 5, 1878. Filed July 11, 1878.



Claim.—1. The combination, with the tubes F, extending from the bottom of the cylinder B, of the flaring shield A and diaphragm *d*, supporting the outer ends of the tubes, as set forth.

2. The combination of the hollow cylinder B, the hollow flaring base A, as described, the tubes F F, extending from the bottom of the cylinder nearly to the bottom of the base, the diaphragm *d*, the piston C, and the spiral spring E, placed in the cylinder, between the piston and the bottom *c* of the cylinder, substantially as and for the purpose set forth.

8,497. GRINDING-MACHINES. Louis Bollmann, Vienna, Austria, assignor to Mary Bollmann, same place. Patent No. 192,144, dated June 19, 1877. Filed Sept. 19, 1878. Patented in England, Nov. 13, 1875.



Claim.—1. In a grinding-machine, the combination of the supports of the grinding-disk with a protecting-hood applied to spring-bars or springs to take up the shock of a bursting disk, substantially as described.

2. In a grinding-machine, the combination, with the work-supporting reciprocating bed or table, and with the grinding-disk, of mechanism for increasing automatically the distance between the bed and the grinding-disk when the bed moves in one direction, and for diminishing said distance when the bed moves in the opposite direction, substantially as and for the purpose set forth.

3. In a grinding-machine, the combination, with the work-supporting reciprocating table, with the grinding-disk, and with mechanism for increasing and diminishing the distance between said table and grinding-disk, as described, of elastic cushions or springs to allow the table to yield if the pressure of the grinding-disk on the work exceeds a certain limit, substantially as set forth.

4. The combination, with the work-supporting reciprocating table C, having friction-rollers, of the bed B', having inclines, whereby the table is adapted to be raised or lowered, substantially as shown and described.

5. The combination, with the work-supporting reciprocating table, of the toothed segment-lever G, with the continuously-revolving gear-wheel F, and the adjustable toothed section G', to lengthen and shorten the stroke of the reciprocating table, substantially as described.

6. The combination, with the reciprocating table, the mechanism for lengthening and shortening its stroke, and the vertically-adjustable slide-rest which supports said table, of mechanism adapted to follow the up-and-down motion of the slide-rest, substantially as described.

7. The combination, with the slide-rest, of friction-pallets and lever mechanism, arranged to operate in both directions to produce automatic side motion of the slide-rest, substantially as set forth.

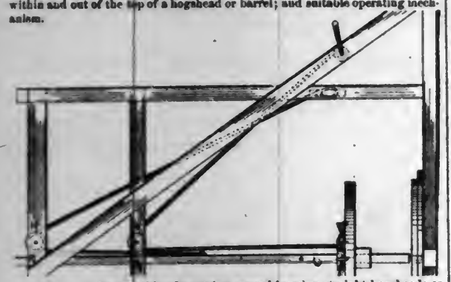
8. The combination, with the slide-rest C, and with its end rollers, of covering-aprons to protect the mechanism below against dust, substantially as set forth.

9. The combination, in a grinding-machine, of a vertically-sliding support, B, a swinging bed, B', seated thereon, a rising and falling slide-rest, and a reciprocating work-supporting table, all constructed and adapted to operate substantially as and for the purpose set forth.

10. The combination, with the work-supporting table, of a perforated pipe connected to a hose, said table being adapted to support the work above the perforated pipe, substantially as and for the purpose described.

8,498. MACHINES FOR MAKING BARRELS. Samuel P. Hodgen, Martling, Mo., and John W. Yelten, Denver, Colo.; said Yelten assignor to said Hodgen. Patent No. 176,928, dated June 20, 1876. Filed Nov. 4, 1878.

Brief.—Straight hogsheads or barrels may be set and hooped by means of a circular platform, upon which the staves are placed, and upon which is a chine-board; a circular follower mounted upon a vertically-adjustable shaft, and adapted to act as a clincher for clinching the nails used in securing the hoops to the staves and joining them at the splice, and to be vertically adjusted within and out of the top of a hogshead or barrel; and suitable operating mechanism.



Claim.—1. In a machine for setting up and hooping straight hogsheads or barrels, the combination, with a platform, of a circular follower, and adjusting mechanism whereby said follower is adapted to be adjusted vertically within and out of the top of a hogshead or barrel, and for clinching the nails used in securing the hoops to the staves, and joining them at the splice, substantially as herein shown and described.

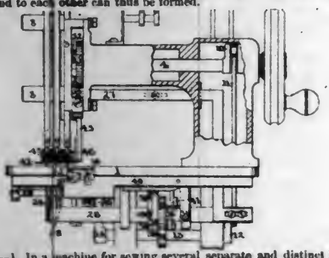
2. In a machine for setting up and hooping straight hogsheads or barrels, the combination, with a platform and chine-board, of a circular follower, and adjusting mechanism whereby said follower is adapted to be adjusted within and out of the top of a hogshead or barrel, substantially as and for the purpose herein shown and described.

3. In a machine for setting up and hooping straight hogsheads or barrels, the combination, with a platform, of a shaft, and follower mounted thereon, and adjusting mechanism whereby said shaft and follower are adapted to be adjusted within and out of the top of a hogshead or barrel, substantially as and for the purpose herein shown and described.

4. In a machine for setting up and hooping straight hogsheads and barrels, the combination, with a platform, of a shaft, and a follower adjustably mounted on said shaft, and adjusting mechanism whereby said follower and shaft are adapted to be adjusted within and out of the top of a barrel, substantially as and for the purpose herein shown and described.

8,499. SEWING-MACHINES. Lake Henry, Methuen, Mass. Patent No. 94,740, dated Sept. 14, 1869. Filed Dec. 26, 1877.

Brief.—The needle-bar is provided with two arms projecting horizontally from the same, on which are placed two auxiliary needle-bars, so as to slide thereon. These auxiliary needle-bars are connected by bars to the looping devices beneath the bed-plate of the machine, so that they can be moved together at right angles to the line of feed. A cam is employed to effect this reciprocation, and lines of stitching of varied sinuosity with respect to the main line and to each other can thus be formed.



Claim.—1. In a machine for sewing several separate and distinct lines of stitching, the combination, with the several distinct stitching mechanisms, of the mechanism, substantially as described, for imparting to said stitching mechanisms a lateral movement with respect to the line of the feed, whereby several lines of stitching may be made, one or more of which will be sinuous and parallel to, or of variable sinuosity in respect to each other, essentially as specified.

2. The combination, with a primary needle-bar working in a fixed position, and one or more supplementary needle-bars, each one of which is connected to its respective looping-hook, as set forth, of the mechanism herein described for automatically imparting a lateral movement to the said supplementary needle-bars and looping-hooks, in the manner and for the purpose specified.

3. The combination of the rock-shaft 13, and mechanism for operating the same, arm 14, and rods 16 and 21, with the shuttle-carrier 17, arm 22, rock-shaft 23, and looping-hooks 24, as and for the purpose herein specified.

4. The combination of one or more supplementary needle-bars, 9, looping-hooks 24, and connecting-bars 27 and 28 with the cam-disk 36 and spring 40, as and for the purpose specified.

5. The combination of one or more supplementary needle-bars, 9, looping-hooks 24, and connecting-bars 27 and 28 with the rock-shaft 13, arms 32 and 34, rod 35, pawl 33, ratchet-wheel 37, cam-disk 36, and spring 40, all essentially as herein specified.

8,500. CABINETS. George Lillibridge, Jamestown, N. Y. Patent No. 147,661, dated Feb. 17, 1874. Filed Nov. 11, 1873.



Claim.—1. A chest for tea, coffee, &c., having an outward projection or trough near its base, provided with an opening for the removal of its contents, substantially as set forth and described.

2. The vertical slide or plate D, in combination with chest A, having an outward projection or trough near its base, provided with an opening for the removal of its contents, substantially as set forth and described.

3. The inclined false bottom C, in combination with chest A, having an outward projection or trough near its base, provided with an opening for the removal of its contents, substantially as set forth and described.

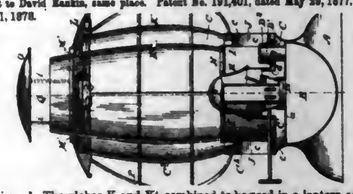
8,501. BARREL-HOOPS. Lewis Reed, New York, N. Y., assignor, by mesne assignments, to Lewis Reed & Co. Patent No. 147,284, dated Feb. 10, 1874; Reissue No. 7,932, dated Oct. 30, 1877. Filed Oct. 28, 1878.



Claim.—1. As a new manufacture, a wooden barrel-hoop having a flare by means of an edgewise curvature of the strip or piece of wood of which the hoop is made, substantially as described.

2. The method herein described of fabricating wooden flared barrel-hoops, consisting of giving to the block of wood from which the stripe of which the hoops are to be made are cut a permanent curve, and then cutting from the edge of such block stripe that may be of substantially-rectangular cross-section, and then bending such stripe flatwise to form hoops that are flaring, and yet may be of equal thickness across from edge to edge.

8,502. LANTERNS. Evan F. Cash and Alfred L. Baron, Bellaire, Ohio, assignors of one-third interest to David Rankin, same place. Patent No. 191,401, dated May 29, 1877. Filed Nov. 11, 1878.



Claim.—1. The globes K and K', combined to be used in a lantern as outer and inner globes, similar in form, with walls a little curved outwardly, and of slightly less diameter at the top than at the bottom, and of such size, relatively, that when one is placed within the other the space between them shall have about the same capacity as the interior of the smaller globe, substantially as described.

2. In a lantern, the combination of an outer and an inner globe, of substantially the same form, so that the two globes shall be about equidistant from each other at all points, and of such a size, relatively, that the capacity of the space between the globes shall about equal the capacity of the inner globe, substantially as described and shown.

3. In a lantern, the combination of an air-supply chamber between the globes, a combustion-chamber within the inner globe, and connecting air-passages between the two chambers, the two chambers being of about the same capacity, substantially as described and shown.

4. In a lantern, the combination of the air-chamber C^3 between the two globes, the air-chamber C^2 between the double walls of the upper part of the base, and the air-chamber C^1 between the top of the oil-reservoir and the diaphragm above it, said air-chamber being closed except for the entrance of air above the outer globe and for the exit of air into the interior of the cone, substantially as and for the purposes set forth.

5. In combination with the upper base, A, of a lantern and the air-chamber C^2, extending around said upper base, the openings J J' in such upper base, substantially as and for the purposes set forth.

6. In a lantern, the combination of the openings J J' and the perforated disk N, substantially as set forth.

7. In a lantern, the combination of the base A A', the oil-reservoir B, and the opening J, extending through the air-chamber C^2, without openings into said air-chamber, substantially as and for the purposes set forth.

8. The method of counterbalancing the air-columns in a lantern by a column of air in an air-chamber between the globes and a column of air contained in the combustion-chamber, the two columns being connected by passages leading through the burner, and being of about the same volume, substantially as described.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 19th DAY OF NOVEMBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abbott, N. B. (See Cranford, J. P., assignor.)						
Abbott, N. B., *et al.* (See Morgan, W., assignor.)						
Adams, J. Q. and O. R., Marseilles, Ill. Corn-sheller	210,074	Nov. 19	596	178	14	768
Adams, O. R. (See Adams, J. Q. and O. R.)						
Addison, W. T., Newcastle, Ind. Cultivator	210,075	Nov. 19	595	177	14	767
Amidon, C. H., Buffalo, N. Y. Bit-brace	210,075	Nov. 19	599	178	14	768
Anderson, H., West Point, Va. Bag tag and fastener	210,001	Nov. 19	520	156	14	758
Atkins, G. W., Milton, Del. Saw-file holder and gage	210,076	Nov. 19	600	179	14	768
Bailey, J. (See Marshall, Ibbotson, and Bailey.)						
Bailey, M. T., Philadelphia, Pa. Grate	210,077	Nov. 19	601	179	14	768
Baker, J. G., Philadelphia, Pa., assignor to Enterprise Manufacturing Company. Slicing-machine	210,078	Nov. 19	602	179	14	768
Baldwin, W., Tioga, Pa. Padlock	210,080	Nov. 19	604	179	14	769
Ball, R. E., Jamaica, N. Y. Artificial-leather composition	210,079	Nov. 19	603	.....	14	769
Banks, J. C., Carlisle, Ky. Filter	210,081	Nov. 19	604	180	14	769
Barber, C. E. (See Ferguson, E., assignor.)						
Barker, W. F., Lemars, Iowa. Heating-drum	210,082	Nov. 19	605	180	14	769
Baron, A. L. (See Cash and Baron.) (Reissue.)						
Barrows, R. C. (See Pirz, A., assignor.)						
Bauer, P. (See Watson and Bauer.)						
Beatty, R. P., and J. H. Haulenbeck, Norwalk, Conn. Hose	209,953	Nov. 19	465	141	14	751
Behre, C., Hopeville, N. J. Life-raft	210,083	Nov. 19	606	180	14	769
Bernhard, C. (See Juengst and Bernhard.)						
Bernhard, C. (See Juengst, G. and C. A., assignors.)						
Bicknell, J. W., Boston, Mass. Adjustable box for paper-calendering rollers	209,954	Nov. 19	466	141	14	751
Blake, W. S., Boston, Mass., assignor to himself and W. H. Brown, Waterbury, Conn. Bracket-rod	210,084	Nov. 19	607	180	14	769
Bollmann, L., assignor to M. Bollmann, Vienna, Austria. Grinding-machine. (Reissue)	8,497	Nov. 19	710	212 213	14	783
Bollmann, M. (See Bollmann, L., assignor.) (Reissue.)						
Booth, E., *et al.* (See Hacker, D. F., assignor.)						
Booth, V. C., *et al.* (See Hacker, D. F., assignor.)						
Bowen, G. W., and E. Nichols, Grass Lake, Mich. Machine for making wooden barrel-hoops	210,085	Nov. 19	608	181	14	769
Bower, H., Philadelphia, Pa. Apparatus for the manufacture of ferrocyanide of potassium	210,086	Nov. 19	609	181	14	770
Brandon, A., New York, N. Y. Lamp-extinguisher	209,955	Nov. 19	467	141	14	751
Brant, J. (See Empson and Brant.)						
Braunhold, H., New York, N. Y. Food for horses and cattle	210,087	Nov. 19	611	.....	14	770
Brightman, L., assignor to Cleveland Rolling Mill Company, Cleveland, Ohio. Machine for making metallic spools	210,088	Nov. 19	611	182	14	770
Brooks, F. W., New York, N. Y. Bank check, draft, &c.	210,089	Nov. 19	613	182	14	770
Brotherhood, F., Charleston, S. C. Rice pounding and hulling mill	210,002	Nov. 19	521	157	14	758
Brown, S. M., Carthage, Mo. Churn	210,090	Nov. 19	614	182	14	770
Brown, W. H. (See Blake, W. S., assignor.)						
Bryan, C. W., assignor, by mesne assignments, to C. W. Bryan and J. F. Tapley, Springfield, Mass. Calendar. (Reissue)	8,492	Nov. 19	705	210	14	783
Bunting, W., Jr., Flushing, N. Y. Water-closet	210,003	Nov. 19	524	157	14	758
Burchard, J. A., Freeport, Ill. Bag-tie and address-holder	210,004	Nov. 19	525	158	14	758
Burgess, A., Owego, N. Y. Magazine fire-arm	210,091	Nov. 19	615	183	14	770
Burt, A. S., Omaha, Nebr. Tent	210,005	Nov. 19	526	158	14	758
Busell, J. H., Boston, Mass. Rotary cutter for trimming boot and shoe soles and heels	210,006	Nov. 19	526	158	14	758
Button, J., New York, N. Y. Drilling-machine for artesian and other wells	210,007	Nov. 19	527	158	14	758
Calkins, D. A., Monson, Mass. Horse hay-rake	210,093	Nov. 19	617	183 184	14	771
Card, G. F., Guthrie, Ill., assignor of one-half interest to T. F. Corry, Covington, Ky. Cartridge-loading device	209,956	Nov. 19	468	141	14	751
Casey, J., Jersey City, N. J. Station-indicator	210,008	Nov. 19	528	159	14	759
Cash, E. F., and A. L. Baron, assignors of one-third interest to D. Rankin, Bellaire, Ohio. Lantern. (Reissue)	8,502	Nov. 19	718	214	14	784
Castle, W. H., Geneva, Ohio. Clothes-fork	209,957	Nov. 19	470	142	14	751
Cavalier, P., Yankton, Dak. Ter. Reflector	210,094	Nov. 19	618	184	14	771
Chicken, W., Chelsea, assignor of one-half interest to T. S. Smith, Somerville, Mass. Bark-reducing machine	210,095	Nov. 19	619	184	14	771
Church, B. S., Scarborough, N. Y. Pedometer	210,096	Nov. 19	620	184	14	771
Claar, S. S., Bedford, Pa. Fifth-wheel for vehicles	210,009	Nov. 19	529	159	14	759
Clark, G. M., Higganum, Conn. Vegetable-cutter	210,098	Nov. 19	624	185	14	771
Clark, O. W., Appleton, Wis. Felt-stretcher for paper-machines	210,097	Nov. 19	622	185	14	771
Clarke, G. C., Cleveland, Ohio. Bale-tie	209,958	Nov. 19	471	142	14	751
Claussen, C., New York, N. Y. Machine for wiring and flanging	210,099	Nov. 19	625	185	14	772
Cleveland Rolling Mill Company. (See Brightman, L., assignor.)						
Clouse, J. N., and B. Zipfel, Toledo, Ohio. Fastening device for shoes, &c.	210,010	Nov. 19	530	159	14	759
Connel, J. M., Newark, Ohio. Harvester-knife sharpener	210,011	Nov. 19	531	159 160	14	759
Connell, J., Rochester, N. Y. Circular sawing machine	210,100	Nov. 19	626	186	14	772
Conradt, A., assignor to Middletown Plate Company, Middletown, Conn. Jewel-casket	210,012	Nov. 19	532	160	14	759
Corbin, P., *et al.* (See Sparks, W. E., assignor.)						
Corbin, P., *et al.* (See Sparks, W. E., assignor.)						
Corry, T. F. (See Card, G. F., assignor.)						
Cram, A. W., Haverhill, Mass. Sectional boiler	210,013	Nov. 19	532	160	14	759
Cranford, J. P., *et al.* (See Morgan, W., assignor.)						
Cranford, J. P., assignor to himself and N. B. Abbott, Brooklyn, N. Y. Composition pavement	210,101	Nov. 19	627	186	14	772
Cranson, G. S., Clinton, N. Y. Middlings-bolt	210,102	Nov. 19	628	186	14	772

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Cripe, D. E., North Manchester, Ind. Mechanical movement	210,014	Nov. 19	534	160	14	759
Cross, A. T., Providence, R. I. Fountain-pen	209,959	Nov. 19	472	142	14	751
Cruse, W., and J. D. Isaacs, Oakland, Cal. Shutter	210,015	Nov. 19	535	161	14	759
Dalzell, D., South Egremont, Mass. Thill-coupling	210,092	Nov. 19	616	183	14	771
Danforth, G., Cochituate, Mass. Apparatus for dressing boot and shoe soles	210,103	Nov. 19	629	186	14	772
Davis, E. P., *et al.* (See Heckmann, L., assignor.)						
Davis, M. F., Portland, Me. Outrigger-boat	209,960	Nov. 19	472	142 / 143	14	751
Davis, S. W., Wilmington, Del. Drill-stand	210,104	Nov. 19	630	187	14	772
Deckebach, C., administratrix. (See Deckebach, F. C.)						
Deckebach, F. C., deceased, by C. Deckebach, administratrix, Cincinnati, Ohio. Beer-cooler	210,016	Nov. 19	536	161	14	760
Dixon, E., *et al.* (See Geaswein, F. W., assignor.)						
Dixon, W., *et al.* (See Geaswein, F. W., assignor.)						
Dolloff, W. P., Providence, R. I. Collar and sleeve button	210,017	Nov. 19	537	161	14	760
Dorner, F. G., Milwaukee, Wis. Millstone-driver	209,961	Nov. 19	474	143	14	752
Dorsey, J. (See Dougherty, J. B., assignor.)						
Doty, C. E., and G. W. Flint, Rock Falls, Ill. Extension step-ladder	210,018	Nov. 19	537	161	14	760
Dougherty, H. M., Newark, N. J. Carbureter	210,019	Nov. 19	538	162	14	760
Dougherty, J. B., assignor of one-half interest to J. Dorsey, Rochester, N. Y. Hoop-cutting machine	209,962	Nov. 19	475	143	14	752
Doulceron, A., Jr. (See Doulceron, J., Sr., and A., Jr.)						
Doulceron, J., Sr., and A., Jr., Brussels, Belgium. Bottle-stopper	210,105	Nov. 19	630	187	14	772
Duesh, H., Baltimore, Md. Soft-dough machine	209,963	Nov. 19	477	144	14	752
Edmondson, J. H., Valparaiso, Ind. Earth-scraper	209,964	Nov. 19	479	144	14	752
Empson, W., and J. Braut, Birmingham, England. Button	209,965	Nov. 19	480	145	14	752
Enterprise Manufacturing Company. (See Baker, J. G., assignor.)						
Everitt, P., Great Ryburgh, assignor of one-half interest to F. Wheeler & Co., London, England. Screw-stock	210,106	Nov. 19	631	187	14	772
Fairbanks & Co., E. and T. (See Fairbanks, F., assignor.)						
Fairbanks, F., assignor to E. and T. Fairbanks & Co., St. Johnsbury, Vt. Testing-machine	210,107	Nov. 19	632	187	14	772
Fanning, D. H., Worcester, Mass. Corset. (Reissue)	8,493	Nov. 19	706	210	14	783
Fencil, G., Dubuque, Iowa. Sad-iron heater	210,108	Nov. 19	633	188	14	773
Ferguson, E., assignor of one-half interest to C. E. Barber, Crescent City, Ill. Check-rower	210,109	Nov. 19	634	188	14	773
Firmenich, F., *et al.* (See Firmenich and Stiker, assignors.) (Reissue.)						
Firmenich, G., *et al.* (See Firmenich and Stiker, assignors.) (Reissue.)						
Firmenich, J., and F. P. Stiker, assignors to J., G., and F. Firmenich, Buffalo, N. Y. Steam-boiler. (Reissue)	8,494	Nov. 19	706	211	14	783
Fitz, G. B., Attleborough, Mass. Collar and sleeve button	210,110	Nov. 19	635	188	14	773
Fitzsimons, R., Tomah, Wis. Seed-planter	210,111	Nov. 19	635	188 / 189	14	773
Flint, G. W. (See Doty and Flint.)						
Foster, J. (See Turnbull and Foster.)						
Gadbouis, A., Bourbonnais, Ill. End-gate for wagons	210,112	Nov. 19	636	189	14	773
Galigher, C., Cairo, Ill. Millstone-curb and chop-conveyer	210,021	Nov. 19	542	162	14	760
Garnier, J., Paris, France. Working nickel-ores and manufacture of nickel	210,020	Nov. 19	540	.....	14	760
Gates, H. T., Hartford, Ohio. Door and gate pulley	209,966	Nov. 19	480	145	14	752
Gates, V. A., Charleston, W. Va. Cistern-filter	210,113	Nov. 19	638	189	14	773
Gefroter, C., Philadelphia, Pa. Tinner's and roofer's gasoline-furnace	210,114	Nov. 19	639	189	14	774
Geaswein, F. W., Jersey City Heights, assignor of one-half interest to E. and W. Dixon, Newark, N. J. Brush	209,967	Nov. 29	481	145	14	752
Gipperich, A., Richmond, Va. Sight for fire-arms	210,115	Nov. 19	640	190	14	774
Glintz, J., *et al.* (See Leggett, E. W., assignor.)						
Goodwin, W., Detroit, Mich. Cigar-holder	210,022	Nov. 19	542	162	14	760
Grannis, J. C., trustee. (See Stockwell, L. W., assignor.)						
Gray, J. W., Ghent, N. Y. Water-wheel	210,023	Nov. 19	543	162	14	761
Gummer, A., Omro, Wis. Clothes-pounder	210,024	Nov. 19	544	163	14	761
Gutman, S., assignor to L. Schiele & Co., New York, N. Y. Corset	210,025	Nov. 19	544	163	14	761
Guy, C. A., Paris, France. Plate-printing machine	210,116	Nov. 19	641	190	14	774
Gwinnell, J. M., Newark, N. J. Gig-saddle tree	209,968	Nov. 19	481	145	14	752
Hacker, D. F., assignor to himself, V. C. and E. Booth, Kempton, Ind. Horse hay-rake	210,026	Nov. 19	545	163	14	761
Hagedorn, D. (See Ziegler, G. F., assignor.)						
Hansell, W. P., Pittsburg, Pa. Car-spring	210,027	Nov. 19	546	164	14	761
Harris, F., Louisiana, Mo. Piano-violin	210,028	Nov. 19	547	164	14	761
Harris, W., Greenville, assignor of one-half interest to H. R. Weeks, Montcalm county, Mich. Bran-scourer	210,029	Nov. 19	548	164	14	761
Hart, J. G., Murray, Ky. Automatic brake for wagons	210,030	Nov. 19	549	164	14	761
Haulenbeek, J. H. (See Beatty and Haulenbeek.)						
Hawley, S. R., Odin, Ill. Seed-planter	210,118	Nov. 19	644	191	14	774
Hawthorn, A. F. (See Hawthorn, J. A., assignor.)						
Hawthorn, J. A., assignor of one-half interest to A. F. Hawthorn, Lancaster, Pa. Vehicle shifting-seat	210,031	Nov. 19	550	165	14	761
Haydock, S. A., Ostrander, Ohio. Car-coupling	210,117	Nov. 19	643	190	14	774
Heald, D. M., Milford, N. H. Bench-plane	209,969	Nov. 19	482	146	14	753
Heckmann, L., assignor of two-thirds interest to W. H. Wade and E. P. Davis, Wrentham, Mass. Bracelet	210,119	Nov. 19	645	191	14	774
Heegaard, A., Copenhagen, Denmark. Smoke-flue	210,120	Nov. 19	645	191	14	774
Heery, L., Methuen, Mass. Sewing-machine. (Reissue)	8,499	Nov. 19	715	213 / 214	14	784
Helmlich, P., Syracuse, N. Y. Oyster-opener	210,032	Nov. 19	551	165	14	762
Held, G., New York, N. Y. Umbrella-cover	210,121	Nov. 19	646	192	14	775
Herring & Co. (See Weimar, J., assignor.)						
Herriott, E., Brimfield, and G. S. Smith, Elmwood, Ill. Corn-sheller separator	210,033	Nov. 19	552	165	14	762
Herriott, E., Brimfield, and G. S. Smith, Elmwood, Ill. Pump	210,122	Nov. 19	647	192	14	775
Hess, J. F., Massillon, Ohio. Pump	210,034	Nov. 19	553	165	14	762
Higgins, J. S. and R. T., California, Mo. Water-aerator						
Higgins, R. T. (See Higgins, J. S. and R. T.)						
Hodgen, S. P., Martling, Mo., and J. W. Yelton, Denver, Colo.; said Yelton assignor to said Hodgen. Machine for making barrels. (Reissue)	8,498	Nov. 19	713	213	14	784
Hooper, R. H., Boston, Mass. Cinder-guard for car-roofs	210,035	Nov. 19	554	166	14	762
House, J. A., Bridgeport, Conn. Sewing-machine	210,036	Nov. 19	555	166 / 167	14	762
House, T. J., Allegheny, Pa. Bedstead-fastening	210,123	Nov. 19	648	192	14	775
Howe, W., Brooklyn, N. Y. Folding hammock-supporter	210,037	Nov. 19	557	167	14	762
Howland, W. M. (See Sieg, R., assignor.)						
Hundhausen, E., Buckau, near Magdeburg, Prussia. Kiln for drying vegetables, &c	210,124	Nov. 19	649	192 / 193	14	775
Hunt, C. F. (See Hunt, W. S. and C. F.)						
Hunt, H., Twin Grove, Wis. Automatic sleigh-brake	210,039	Nov. 19	558	167	14	763
Hunt, W. S. and C. F., Providence, R. I. Corset	210,038	Nov. 19	557	167	14	762

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Ibbotson, T. (See Marshall, Ibbotson, and Bailey.)						
Isaacs, J. D. (See Cruse and Isaacs.)						
Isbell, C., Hotchkissville, Conn. Animal-trap	210,040	Nov. 19	539	168	14	763
Iske, A., assignor to I. L. Landis, Lancaster, Pa. Invalid-chair	210,125	Nov. 19	650	193	14	775
Iveson, G., Greenwich Station, Ohio. Invalid-bedstead	210,126	Nov. 19	651	193	14	775
Johnson, W. S. (See Roper and Mitchell, assignors.)						
Juengst, C. A. (See Juengst, G. and C. A.)						
Juengst, G. and C. A., assignors of one-half interest to C. Bernhard, New York, N. Y. Meat-chopper	209,970	Nov. 19	482	146	14	753
Juengst, G., and C. Bernhard, New York, N. Y. Fire-escape	209,971	Nov. 19	484	146 / 147 / 148	14	753
Kinney, S., Bay City, Mich., assignor of one-half interest to C. Spearin, Chicago, Ill. Sawsavage	210,127	Nov. 19	652	193	14	775
Knauer, C. F., Urach, Württemberg, Germany. Nail-extractor	210,041	Nov. 19	540	168	14	763
Knutz, J., and S. F. Schroeder, Dubuque, Iowa. Carriage-top	210,128	Nov. 19	653	194	14	776
Lake, E. B., Delanco, N. J. Venetian blind	210,129	Nov. 19	654	194	14	776
Lakin, J. A., Westfield, Mass. Regulator for boilers and furnaces	209,972	Nov. 19	488	148	14	753
Landis, I. L. (See Iske, A., assignor.)						
Laughlin, S. M., East Liverpool, Ohio. Detachable metallic cover for vessels made of pottery, glass, &c	210,042	Nov. 19	561	168	14	763
Leggett, E. W., Elizabeth, N. J., assignor of one-fourth interest to H. Scherring, New York, and J. Glatz, Brooklyn, N. Y. Spreading and drying glue	210,130	Nov. 19	656	195	14	776
Lessen, F. T., San Francisco, Cal. Boot-jack	210,131	Nov. 19	657	195	14	776
Lillibridge, G., Jamestown, N. Y. Canister. (Reissue)	8,500	Nov. 19	717	214	14	784
Lippitt, F. J., Washington, D. C. Paper-fastener	210,132	Nov. 19	658	195	14	776
Lomas, J. R., assignor to B. Shoninger, New Haven, Conn. Piano-forte	210,043	Nov. 19	562	168	14	763
Lund, G., assignor to J. A. Lund, London, England. Electric-clock regulator	210,133	Nov. 19	658	196	14	776
Lund, J. A. (See Lund, G., assignor.)						
Luther, B. G., Hebronville, Mass., assignor of one-half interest to J. W. Tillinghast, Providence, R. I. Folding blackboard	210,044	Nov. 19	563	169	14	763
Mack, J. C., Brooklyn, N. Y. Pump for ice and refrigerating machines	210,134	Nov. 19	659	196	14	777
Man, A. (See Sawyer and Man.)						
Marshall, G., T. Ibbotson, and J. Bailey, Belleville, Ill. Sectional steam-generator	210,135	Nov. 19	663	197	14	777
Martischang, M., Denmark township, Lee county, Iowa. Corn-planter	209,973	Nov. 19	489	149	14	753
Mayes, T., Albany, N. Y. Baker's oven	210,045	Nov. 19	563	169	14	763
McCormick, F., Philadelphia, Pa. Loom-picker check	210,136	Nov. 19	664	197	14	777
McDonald, P., Plymouth, Ind. Farm-harrow	210,046	Nov. 19	564	169	14	764
McGill, G. W., New York, N. Y. Metallic fastener	210,048	Nov. 19	566	170	14	764
Mecham, O. S., Champaign, Ill. Wheel-plow	210,137	Nov. 19	664	197	14	777
Meikle, T., Louisville, Ky. Plow-colter	210,047	Nov. 19	565	170	14	764
Melcher, J. C., O'Quinn, Tex. Table	210,138	Nov. 19	665	198	14	777
Middletown Plate Company. (See Conradt, A., assignor.)						
Mitchell, J. W. (See Roper and Mitchell.)						
Montague, B. F., Dunreith, Ind. Steam-engine	209,974	Nov. 19	490	149	14	754
Moore, E. (See Stevens and Moore.)						
Morey, P. F., San Francisco, Cal. Air-valve attachment for sewers, &c	209,975	Nov. 19	491	149	14	754
Morgan, W., New York, assignor to himself, J. P. Cranford, and N. B. Abbott, Brooklyn, N. Y. Apparatus for drying and heating gravel, &c	210,139	Nov. 19	666	198	14	778
Morrill, C., New York, N. Y. Bench-dog	210,140	Nov. 19	667	198	14	778
Moxham, A. J., Louisville, Ky. Manufacture of iron	210,049	Nov. 19	567	170	14	764
Naas, J. P., San José, Cal. Wooden well-curbing	209,976	Nov. 19	492	150	14	754
Nichols, E. (See Bowen and Nichols.)						
Norgren, M., Chicago, Ill. Adding-machine	209,977	Nov. 19	493	150	14	754
Noyes, P., Lowell, Mass. Gas-pressure regulator	210,141	Nov. 19	668	198	14	778
Nye, C. H., assignor of one-half interest to C. H. Stevenson, Baltimore, Md. Car-brake	210,050	Nov. 19	569	171	14	764
Palmatier, S., Leeds, assignor of one-half interest to G. Sanford, Brooklyn, N. Y. Vehicle-spring	210,142	Nov. 19	669	199	14	778
Perkins, S. W., Cambridge, Ill. Check-rower for corn-planters	210,143	Nov. 19	670	199	14	778
Petmecky, J. C., Austin, Texas. Breech-loading fire-arm	210,144	Nov. 19	671	199	14	778
Pettit, T. J., San Francisco, Cal. Spring bed-bottom	210,145	Nov. 19	672	200	14	778
Pirz, A., Long Island City, assignor, by mesne assignments, to R. C. Barrows, New York, N. Y. Manufacture of acetic acid	209,978	Nov. 19	494	.....	14	754
Pirz, A., Long Island City, assignor, by mesne assignments, to R. C. Barrows, New York, N. Y. Manufacture of acetic acid	209,979	Nov. 19	495	.....	14	754
Pirz, A., Long Island City, assignor, by mesne assignments, to R. C. Barrows, New York, N. Y. Fertilizer	209,980	Nov. 19	495	.....	14	754
Poirrier, A. F. (See Ronssin, F. Z., assignor.)						
Porter, B. F., Meadville, Pa. Weight for horseshoes	210,146	Nov. 19	673	200	14	778
Porter, G. B., Corry, Pa. Mill for grinding hay, grain, &c	209,981	Nov. 19	496	150	14	754
Post, C. C. (See Sargent, J. B., assignor.) (Reissue.)						
Post, J. F., Jr. (See Post, T., assignor.)						
Post, T., assignor to himself and J. F. Post, Jr., Wilmington, N. C. Car-truck transfer	210,051	Nov. 19	570	171	14	764
Powell, J. H., assignor of one-third interest to S. F. Powell, Newark, N. J. Stove	209,982	Nov. 19	496	150	14	754
Powell, S. F. (See Powell, J. H., assignor.)						
Price, G. P., Carlisle Station, Ohio. Plow sulky and cultivator	210,147	Nov. 19	673	200	14	778
Quinby, I., Salem, Mass. Snow-plate for horseshoes	209,983	Nov. 19	497	151	14	755
Ramsdell, J. B. F. (See Richardson, W. G., assignor.)						
Rankin, D. (See Cash and Baron, assignors.) (Reissue.)						
Ransford, H., Brighton, England. Apparatus for the manufacture of salt	209,984	Nov. 19	498	151	14	755
Reed & Co., L. (See Reed, L., assignor.) (Reissue.)						
Reed, L., New York, N. Y., assignor, by mesne assignments, to L. Reed & Co. Barrel-hoop. (Reissue)	8,501	Nov. 19	717	214	14	784
Rettig, A. (See Rettig, G., assignor.)						
Rettig, G., assignor of one-half interest to A. Rettig, Chicago, Ill. Device for closing the end flaps of coin-wrappers	209,985	Nov. 19	499	151	14	755
Rice, G. H., Brooklyn, N. Y. Rotary sign	210,052	Nov. 19	571	171	14	764
Richardson, W. G., Boston, assignor of one-half interest to J. B. F. Ramsdell, Quincy, Mass. Camp-bed	210,148	Nov. 19	674	200	14	779
Rollins, E. J. E., Alton, N. H. Lasting-jack for boots and shoes	209,986	Nov. 19	499	152	14	755
Roper, W. D., and J. W. Mitchell, assignors to themselves and W. S. Johnson, Deep Creek, Va. Sash-fastener	210,053	Nov. 19	572	172	14	765
Ross, J., Buffalo, N. Y. Planing-machine	210,149	Nov. 19	675	201	14	779
Ross, J. F., assignor of one-half interest to W. F. Ross, Toronto, Ontario, Canada. Sheet-metal package	209,987	Nov. 19	500	152	14	755
Ross, W. F. (See Ross, J. F., assignor.)						
Roussin, F. Z., assignor to A. F. Poirrier, Paris, France. Coloring-matter derived from aniline and its homologues	210,054	Nov. 19	572	.....	14	765

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Rynerson, R. A., Bowen's Prairie, Iowa. Combined land-roller and clod-crusher	210,150	Nov. 19	677	201	14	779
Sanders, E., Maitland, Yarmouth, Nova Scotia. Pump	210,035	Nov. 19	573	172	14	765
Sanford, G. (See Palmatier, S., assignor.)						
Sargent, J. B., New Haven, Conn., assignor, by mesne assignments, to C. C. Post, Burlington, Vt. Sap-spout. (Reissue)	8,495	Nov. 19	708	211	14	783
Sawyer, W. E., New York, N. Y. Electric-meter	210,151	Nov. 19	677	202	14	779
Sawyer, W. E., New York, and A. Man, Brooklyn, N. Y. Switch for electric lights	210,152	Nov. 19	679	202	14	779
Savage, W. H. G., Kingston, Ontario, Canada. Permutation-lock	210,056	Nov. 19	575	172	14	765
Scherring, H., *et al.* (See Leggett, E. W., assignor.)						
Schiele & Co., L. (See Gutman, S., assignor.)						
Schmid, H. J., Olney, Ill. Egg-poacher	210,154	Nov. 19	682	202	14	780
Scholes, F., Brooklyn, N. Y. Coal-cart	210,153	Nov. 19	681	202	14	780
Schroeder, S. F. (See Kuntz and Schroeder.)						
Schultes, P., and C. Walter, Mendota, Ill. Folding leg for sofa-bedsteads	210,156	Nov. 19	683	203	14	780
Schwenck, J. C. (See Welsh and Schwenck.)						
Shaffer, J. D., Shelbyville, Ky. Garden-tool	210,155	Nov. 19	683	203	14	780
Shaw, S. A. (See Tappan and Shaw.)						
Shinn, J. S., Atlantic City, N. J. Cartridge-extractor	209,989	Nov. 19	502	152	14	755
Shoemaker, C. F., Cleveland, Ohio. Vehicle-spring	209,988	Nov. 19	501	152	14	755
Shoninger, B. (See Lomas, J. R., assignor.)						
Shupe, D. D., Philadelphia, Pa. Wardrobe-bedstead	210,057	Nov. 19	576	173	14	765
Siebenlist, E., Berlin, Prussia. Nipple for nursing-bottles	210,157	Nov. 19	684	203	14	780
Sieg, R., New Orleans, La., assignor to W. M. Howland, New York, N. Y. Diffusion apparatus	210,158	Nov. 19	685	203	14	780
Smith, G. C., Baltimore, Md. Register	210,159	Nov. 19	686	204	14	780
Smith, G. S. (See Herriott and Smith.)						
Smith, M. O., Chemango Forks, N. Y. Draft-evener	210,160	Nov. 19	687	204	14	780
Smith, T. S. (See Chicken, W., assignor.)						
Sparks, W. E., assignor to P. and F. Corbin, New Britain, Conn. Reversible latch	209,990	Nov. 19	503	153	14	755
Spearin, C. (See Kinney, S., assignor.)						
Spencer, E. L., Tama City, Iowa. Double-acting force-pump	210,058	Nov. 19	576	173	14	765
Sprague, A. V. M., Rochester, N. Y. Razor-strop	210,161	Nov. 19	687	204	14	780
Sprague, E., Pittsburg, Pa. Valve-gear for engines	210,059	Nov. 19	577	173	14	766
Steinmetz, C. P., Prairie du Chien, Wis. Potato-bug catcher	210,163	Nov. 19	689	205	14	781
Stevens, J., and E. Moore, Coatesville, Mo. Device for roasting coffee	209,991	Nov. 19	504	153	14	756
Stevenson, C. H. (See Nye, C. H., assignor.)						
Stiker, F. P. (See Firmenich and Stiker.) (Reissue)						
Stockwell, L. W., Ravenna, Ohio, assignor, by mesne assignments, to J. C. Grannis, trustee. Machine for making metal screws	210,165	Nov. 19	690	205 / 206	14	781
Stone, S., Bristol, Tenn. Mortising-machine	210,162	Nov. 19	688	204 / 205	14	780
Stovall, P., Newnan, Ga. Water-wheel	210,164	Nov. 19	689	205	14	781
Strait, H., Troy, N. Y. Potato-digger	210,061	Nov. 19	580	174	14	766
Stratton, C. H., Portland, Me. Brush	210,166	Nov. 19	694	207	14	781
Strelitz, P., Berlin, Prussia. Compound for preventing radiation of heat	210,060	Nov. 19	579	.....	14	766
Sumner, F. A., Old Fort, N. C. Clothes-pounder. (Reissue)	8,496	Nov. 19	709	212	14	783
Sursa, J. W., assignor to H. F. Weohrheide, Venice, Ill. Cigar-press	210,062	Nov. 19	581	174	14	766
Tapley, J. F., *et al.* (See Bryan, C. W., assignor.) (Reissne.)						
Tappan, F. A., and S. A. Shaw, Kansas City, Mo. Washing-machine	210,064	Nov. 19	583	174	14	766
Thomas, J. W., Tyrone, Pa. Sash-fastener	210,167	Nov. 19	695	207	14	781
Thompson, C. L. (See Thornton, W. M. K., assignor.)						
Thomson, W., Glasgow, North Britain. Mariner's compass	210,066	Nov. 19	584	175	14	766
Thomson, W., Glasgow, North Britain. Deep-sea-sounding apparatus	210,067	Nov. 19	586	175 / 176	14	766
Thomson, W., Glasgow, North Britain. Device for taking azimuths	210,068	Nov. 19	589	176	14	767
Thomson, W., Glasgow, North Britain. Mariner's compass	210,069	Nov. 19	590	176	14	767
Thornton, W. M. K., assignor of three-eighths interest to C. L. Thompson, St. Louis, Mo. Locomotive smoke-stack and spark-arrester	209,992	Nov. 19	505	153	14	756
Tillinghast, J. W. (See Luther, B. G., assignor.)						
Titus, J. C., Marion, Ohio. Pump	210,169	Nov. 19	697	207	14	782
Titus, L. H., San Gabriel, Cal. Portable ladder for gathering fruit	210,168	Nov. 19	696	207	14	781
Todd, J., Springfield, Ohio. Wringer	210,170	Nov. 19	697	208	14	782
Turnbull, M., and J. Foster, Toronto, Ontario, Canada. Terrestrial globe	209,993	Nov. 19	506	153 / 154	14	756
Turner, G. W., St. Paul, Minn. Locomotive smoke-stack	209,994	Nov. 19	509	154	14	756
Tweed, H. A., Brooklyn, N. Y. Stove-door knob	210,065	Nov. 19	584	175	14	766
Wade, W. H., *et al.* (See Heckmann, L., assignor.)						
Walker, G. A., Boston, Mass. Paper-cutting machine	209,995	Nov. 19	510	154	14	756
Walker, H. E., Fountain, Minn. Grain-separator	210,063	Nov. 19	582	174	14	766
Walter, C. (See Schultes and Walter.)						
Washburn, B. D. (See Wilbur, H. A., assignor.)						
Waterman, J. A., Reading, Mich. Veneer-cutter	210,171	Nov. 19	699	208	14	782
Watson, E. J., and P. Bauer, Worcester, Mass. Piano-forte string	210,172	Nov. 19	700	208	14	782
Weeks, H. R. (See Harris, W., assignor.)						
Weimar, J., assignor to Herring & Co., New York, N. Y. Time-lock	210,070	Nov. 19	593	177	14	767
Wellington, D., Boston, Mass. Water-closet	209,996	Nov. 19	511	155	14	756
Wells, C. A., Boston, Mass. Horseshoe-pad	210,173	Nov. 19	700	208	14	782
Welsh, H. H., and J. C. Schwenck, Nevada, Ohio. Horse-hay-fork	210,174	Nov. 19	701	209	14	782
Weohrheide, H. F. (See Sursa, J. W., assignor.)						
Wheeler & Co., F. (See Everitt, P., assignor.)						
Wieder, R. M., Carthage, Ill. Washing-machine	210,175	Nov. 19	702	209	14	782
Wiesedeppe, S. H., Seneca, Kana. Animal-trap	210,071	Nov. 19	594	177	14	767
Wiggins, G. W., Cuthbert, Ga. Plow	210,176	Nov. 19	702	209	14	782
Wilbur, H. A., Somerville, assignor to B. D. Washburn, Boston, Mass. Pulley for window-sashes	209,997	Nov. 19	513	155	14	757
Williams, L., Bennington, Vt. Machine for making pail-bails	209,998	Nov. 19	514	155 / 156	14	757
Wing, J., Hoosick Falls, N. Y. Clothes-rack	210,177	Nov. 19	703	209	14	782
Wright, I. S., Centreville, Cal. Wagon-brake	209,999	Nov. 19	518	156	14	757
Wright, J. C., Louisville, Ky. Store-shelving	210,178	Nov. 19	704	210	14	783
Yelton, J. W. (See Hodgen and Yelton.) (Reissne.)						
Yeoman, E., Chicago, Ill. Spring bed-bottom	210,000	Nov. 19	519	156	14	757
Ziegler, G. F., Jersey City, N. J., assignor to D. Hagedorn, New Brighton, N. Y. Boot and shoe cleaner	210,072	Nov. 19	595	177	14	767
Zipfel, B. (See Clouse and Zipfel.)						

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 19th DAY OF NOVEMBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Acid. Manufacture of acetic	A. Pirz	209,978	Nov. 19	494	.....	14	754
Acid. Manufacture of acetic	A. Pirz	209,979	Nov. 19	495	.....	14	754
Adding-machine	M. Norgren	209,977	Nov. 19	493	150	14	754
Animal-trap	C. Isbell	210,040	Nov. 19	559	168	14	763
Animal-trap	S. H. Wiesedeppe	210,071	Nov. 19	594	177	14	767
Azimuths. Device for taking	W. Thomson	210,068	Nov. 19	589	176	14	767
Bag-tie and address-holder	J. A. Burchard	210,004	Nov. 19	525	158	14	758
Bag tag and fastener	H. Anderson	210,001	Nov. 19	520	156	14	758
Bails. Machine for making pail	L. Williams	209,998	Nov. 19	514	155 / 156	14	757
Bale-tie	G. C. Clarke	209,958	Nov. 19	471	142	14	751
Bark-reducing machine	W. Chicken	210,095	Nov. 19	619	184	14	771
Barrel-making machine	S. P. Hodgen and J. W. Yelton. (Reissue.)	8,498	Nov. 19	713	213	14	784
Bed-bottom. Spring	T. J. Pettit	210,145	Nov. 19	672	200	14	778
Bed-bottom. Spring	E. Yeoman	210,000	Nov. 19	519	156	14	757
Bed. Camp	W. G. Richardson	210,148	Nov. 19	674	200	14	779
Bedstead-fastening	T. J. House	210,123	Nov. 19	648	192	14	775
Bedstead. Invalid	G. Iveson	210,126	Nov. 19	651	193	14	775
Bedstead. Wardrobe	D. D. Shupe	210,057	Nov. 19	576	173	14	765
Bedsteads. Folding leg for sofa	P. Schultes and C. Walter	210,156	Nov. 19	683	203	14	780
Bench-dog	C. Morrill	210,140	Nov. 19	667	198	14	778
Bit-brace	C. H. Amidon	210,075	Nov. 19	599	178	14	768
Blackboard. Folding	B. G. Luther	210,044	Nov. 19	563	169	14	763
Blind. Venetian	E. B. Lake	210,129	Nov. 19	654	194	14	776
Boat. Outrigger	M. F. Davis	209,960	Nov. 19	472	142 / 143	14	751
Boiler. Sectional	A. W. Cram	210,013	Nov. 19	532	160	14	759
Boiler. Steam	J. Firmenich and F. P. Stiker. (Reissne.)	8,494	Nov. 19	706	211	14	783
Boilers and furnaces. Regulator for	J. A. Lakin	209,972	Nov. 19	488	148	14	753
Boot and shoe soles and heels. Rotary cutter for trimming	J. H. Bissell	210,006	Nov. 19	526	158	14	758
Boot and shoe cleaner	G. F. Ziegler	210,072	Nov. 19	595	177	14	767
Boot and shoe soles. Apparatus for dressing	G. Danforth	210,103	Nov. 19	629	186	14	772
Boot-jack	F. T. Lessen	210,131	Nov. 19	657	195	14	776
Boots and shoes. Lasting-jack for	E. J. E. Rollins	209,986	Nov. 19	499	152	14	755
Bottle-stopper	J., Sr., and A. Doulceron, Jr.	210,105	Nov. 19	630	187	14	772
Bracelet	L. Heckmann	210,119	Nov. 19	645	191	14	774
Bracket-rod	W. S. Blake	210,084	Nov. 19	607	180	14	769
Brake. Automatic sleigh	H. Hunt	210,039	Nov. 19	558	167	14	763
Brake. Car	C. H. Nye	210,050	Nov. 19	569	171	14	764
Brake for wagons. Automatic	J. G. Hart	210,030	Nov. 19	549	164	14	761
Brake. Wagon	I. S. Wright	209,999	Nov. 19	518	156	14	757
Bran-scourer	W. Harris	210,029	Nov. 19	548	164	14	761
Brush	F. W. Gesswein	209,967	Nov. 19	484	145	14	752
Brush	C. H. Stratton	210,166	Nov. 19	694	207	14	781
Button	W. Empson and J. Braut	209,965	Nov. 19	480	145	14	752
Button. Collar and sleeve	W. P. Dolloff	210,017	Nov. 19	537	161	14	760
Button. Collar and sleeve	G. B. Flitz	210,110	Nov. 19	635	188	14	773
Calendar	C. W. Bryan. (Reissue)	8,492	Nov. 19	705	210	14	783
Canister	G. Lillibridge. (Reissue)	8,500	Nov. 19	717	214	14	784
Car-coupling	S. A. Haydock	210,117	Nov. 19	643	190	14	774
Car-roofs. Cinder-guard for	R. H. Hooper	210,035	Nov. 19	554	166	14	762
Carbureter	H. M. Dougherty	210,019	Nov. 19	538	162	14	760
Carriage-top	J. Kuntz and S. F. Schroeder	210,124	Nov. 19	653	194	14	776
Cart. Coal	F. Scholes	210,153	Nov. 19	681	202	14	780
Cartridge-extractor	J. S. Shinn	209,989	Nov. 19	502	152	14	755
Cartridge-loading device	G. F. Card	209,956	Nov. 19	468	141	14	751
Chair. Invalid	A. Ishe	210,125	Nov. 19	650	193	14	775
Check, draft, &c. Bank	F. W. Brooks	210,089	Nov. 19	613	182	14	770
Check-rower	E. Ferguson	210,109	Nov. 19	634	188	14	773
Churn	S. M. Brown	210,090	Nov. 19	614	182	14	770
Cigar-holder	W. Goodwin	210,022	Nov. 19	542	162	14	760
Clock regulator. Electric	G. Lund	210,133	Nov. 19	658	196	14	776
Clothes-fork	W. H. Castle	209,957	Nov. 19	470	142	14	751
Clothes-pounder	A. Gunsmer	210,024	Nov. 19	544	163	14	761
Clothes-pounder	F. A. Sumner. (Reissne)	8,496	Nov. 19	709	212	14	783
Clothes-rack	J. Wing	210,177	Nov. 19	703	209	14	782
Coffee-roasting device	J. Stevens and E. Moore	209,991	Nov. 19	504	153	14	756
Coin-wrappers. Device for closing the end flaps of	G. Rettig	209,985	Nov. 19	499	151	14	755
Coloring-matters derived from aniline and its homologues.	F. Z. Roussin	210,054	Nov. 19	572	.....	14	765
Compass. Mariner's	W. Thomson	210,066	Nov. 19	584	175	14	766

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Compass. Mariner's	W. Thomson	210,069	Nov. 19	590	176	14	767
Cooler. Beer	F. C. Deckebach	210,016	Nov. 19	536	161	14	760
Corn-sheller	J. Q. and O. R. Adams	210,074	Nov. 19	596	178	14	768
Corn-sheller separator	E. Herriott and G. S. Smith	210,033	Nov. 19	552	165	14	762
Corset	D. H. Fanning. (Reissue)	8,493	Nov. 19	706	210	14	783
Corset	S. Gutman	210,025	Nov. 19	544	163	14	761
Corset	W. S. and C. F. Hunt	210,038	Nov. 19	557	167	14	762
Cultivator	W. T. Addison	210,073	Nov. 19	595	177	14	767
Diffusion apparatus	R. Sieg	210,158	Nov. 19	685	203	14	780
Dough machine. Soft	H. Ducsh	209,963	Nov. 19	477	144	14	752
Draft-evener	M. O. Smith	210,160	Nov. 19	687	204	14	780
Drill-stand	S. W. Davis	210,104	Nov. 19	630	187	14	772
Drum. Heating	W. F. Barker	210,082	Nov. 19	605	180	14	769
Egg-poacher	H. J. Schmid	210,154	Nov. 19	682	202	14	780
Electric lights. Switch for	W. E. Sawyer and A. Man	210,152	Nov. 19	679	202	14	779
End-gate for wagons	A. Gadbouis	210,112	Nov. 19	636	189	14	773
Engine. Steam	B. F. Montague	209,974	Nov. 19	490	149	14	754
Fertilizer	A. Pirz	209,980	Nov. 19	495	.....	14	754
Fifth-wheel for vehicles	S. S. Claar	210,009	Nov. 19	529	159	14	759
File holder and gage. Saw	G. W. Atkins	210,076	Nov. 19	600	179	14	768
Filter	J. C. Banks	210,081	Nov. 19	604	180	14	769
Filter. Cistern	V. A. Gates	210,113	Nov. 19	638	189	14	773
Fire-arm. Breech-loading	J. C. Petmecky	210,144	Nov. 19	671	199	14	778
Fire-arm. Magazine	A. Burgess	210,091	Nov. 19	615	183	14	770
Fire-arms. Sight for	A. Gipperich	210,115	Nov. 19	640	190	14	774
Fire-escape	G. Juengst and C. Bernhard	209,971	Nov. 19	484	{146 147 148}	14	753
Flue. Smoke	A. Heegnard	210,120	Nov. 19	645	191	14	774
Fork. Horse hay	H. H. Welsh and J. C. Schwenck	210,174	Nov. 19	701	209	14	782
Furnace. Tinner's and roofer's gasoline	C. Gefrorer	210,114	Nov. 19	639	189	14	774
Gas-pressure regulator	P. Noyes	210,141	Nov. 19	668	198	14	778
Globe. Terrestrial	M. Turnbull and J. Foster	209,993	Nov. 19	506	{153 154}	14	756
Glue. Spreading and drying	E. W. Leggett	210,130	Nov. 19	656	195	14	776
Grain-separator	H. E. Walker	210,063	Nov. 19	592	174	14	766
Grate	M. T. Bailey	210,077	Nov. 19	601	179	14	768
Gravel, &c. Apparatus for drying and heating	W. Morgan	210,139	Nov. 19	666	198	14	778
Grinding-machine	L. Bollmann. (Reissue)	8,497	Nov. 19	710	{212 213}	14	783
Hammock-supporter. Folding	W. Howe	210,037	Nov. 19	557	167	14	762
Harrow. Farm	P. McDonald	210,046	Nov. 19	564	169	14	764
Harvester-knife sharpener	J. M. Connel	210,011	Nov. 19	531	{159 160}	14	759
Hoop. Barrel	L. Reed. (Reissue)	8,501	Nov. 19	747	214	14	784
Hoop-cutting machine	J. B. Dougherty	209,962	Nov. 19	475	143	14	752
Hoops. Machine for making wooden barrel	G. W. Bowen and E. Nichols	210,065	Nov. 19	608	181	14	769
Horses and cattle. Food for	H. Braunhold	210,087	Nov. 19	611	.....	14	770
Horseshoe-pad	C. A. Wells	210,173	Nov. 19	700	208	14	782
Horseshoes. Snow-plate for	I. Quinby	209,983	Nov. 19	497	151	14	755
Horseshoes. Weight for	B. F. Porter	210,146	Nov. 19	673	200	14	778
Hose	R. P. Beatty and J. H. Hanlenbeck	209,953	Nov. 19	465	141	14	751
Indicator. Station	J. Casey	210,008	Nov. 19	528	159	14	759
Iron. Manufacture of	A. J. Moxham	210,049	Nov. 19	567	170	14	764
Jewel-casket	A. Conradt	210,012	Nov. 19	532	160	14	759
Kiln for drying vegetables, &c	E. Hundhausen	210,124	Nov. 19	649	{192 193}	14	775
Ladder. Extension step	C. E. Doty and G. W. Flint	210,018	Nov. 19	537	161	14	760
Ladder for gathering fruit. Portable	L. H. Titus	210,168	Nov. 19	696	207	14	781
Lamp-extinguisher	A. Brandon	209,955	Nov. 19	467	141	14	751
Land-roller and clod-crusher. Combined	R. A. Rynerson	210,150	Nov. 19	677	201	14	779
Lantern	E. F. Cash and A. L. Baron. (Reissue.)	8,502	Nov. 19	718	214	14	784
Latch. Reversible	W. E. Sparks	209,990	Nov. 19	503	153	14	755
Leather composition. Artificial	R. E. Ball	210,079	Nov. 19	603	.....	14	769
Lock. Permutation	W. H. G. Savage	210,056	Nov. 19	575	172	14	765
Lock. Time	J. Weimar	210,070	Nov. 19	593	177	14	767
Loom-picker check	F. McCormick	210,136	Nov. 19	664	197	14	777
Meat-chopper	G. and C. A. Juengst	209,970	Nov. 19	482	146	14	753
Mechanical movement	D. E. Cripe	210,014	Nov. 19	534	160	14	759
Metallic fastener	G. W. McGill	210,048	Nov. 19	566	170	14	764
Meter. Electric	W. E. Sawyer	210,151	Nov. 19	677	202	14	779
Middlings-bolt	G. S. Cranson	210,102	Nov. 19	628	186	14	772
Mill for grinding hay, grain, &c	G. B. Porter	209,981	Nov. 19	496	150	14	754
Mill. Rice pounding and hulling	F. Brotherhood	210,002	Nov. 19	521	157	14	758
Millstone-curb and chop-conveyer	C. Galigher	210,021	Nov. 19	542	162	14	760
Millstone-driver	F. G. Dorner	209,961	Nov. 19	474	143	14	752
Mortising-machine	S. Stone	210,162	Nov. 19	688	{204 205}	14	780
Nail-extractor	C. F. Knaner	210,041	Nov. 19	560	168	14	763
Nickel-ores and manufacture of nickel. Working	J. Garnier	210,020	Nov. 19	540	.....	14	760
Nipple for nursing-bottles	E. Siebenlist	210,157	Nov. 19	684	203	14	780
Oven. Baker's	T. Mayes	210,045	Nov. 19	563	169	14	763
Oyster-opener	P. Heimlich	210,032	Nov. 19	551	165	14	762
Package. Sheet-metal	J. F. Ross	209,987	Nov. 19	500	152	14	755
Padlock	W. Baldwin	210,080	Nov. 19	604	179	14	769
Paper-calendering rollers. Adjustable box for	J. W. Bicknell	209,954	Nov. 19	466	141	14	751
Paper-cutting machine	G. A. Walker	209,995	Nov. 19	510	154	14	756
Paper-fastener	F. J. Lippitt	210,132	Nov. 19	658	195	14	776
Paper-machines. Felt-stretcher for	O. W. Clark	210,097	Nov. 19	622	185	14	771
Pavement. Composition	J. P. Cranford	210,101	Nov. 19	627	186	14	772
Pedometer	B. S. Church	210,096	Nov. 19	620	184	14	771
Pen. Fountain	A. T. Cross	209,959	Nov. 19	472	142	14	751
Piano-forte	J. R. Lomas	210,043	Nov. 19	562	168	14	763
Piano-forte string	E. J. Watson and P. Bauer	210,172	Nov. 19	700	208	14	782
Piano-violin	F. Harris	210,028	Nov. 19	547	164	14	761
Plane. Bench	D. M. Heald	209,969	Nov. 19	482	146	14	753
Planing-machine	J. Ross	210,149	Nov. 19	675	201	14	779

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Planter. Corn	M. Martischang	209,973	Nov. 19	489	149	14	753
Planter. Seed	R. Fitzsimons	210,111	Nov. 19	635	{188 189}	14	773
Planter. Seed	S. R. Hawley	210,118	Nov. 19	644	191	14	774
Planters. Check-rower for corn	S. W. Perkins	210,143	Nov. 19	670	199	14	878
Plow	G. W. Wiggins	210,176	Nov. 19	702	209	14	782
Plow-colter	T. Meikle	210,047	Nov. 19	565	170	14	764
Plow sulky and cultivator	G. P. Price	210,147	Nov. 19	673	200	14	778
Plow. Wheel	O. S. Mecham	210,137	Nov. 19	664	197	14	777
Potassium. Apparatus for the manufacture of ferrocyanide of	H. Bower	210,086	Nov. 19	609	181	14	770
Potato-bug catcher	C. P. Steinmetz	210,163	Nov. 19	689	205	14	781
Potato-digger	H. Strait	210,061	Nov. 19	580	174	14	766
Pottery, glass, &c. Detachable metallic cover for vessels made of	S. M. Laughlin	210,042	Nov. 19	561	168	14	763
Press. Cigar	J. W. Sarsa	210,062	Nov. 19	581	174	14	766
Printing machine. Plate	C. A. Guy	210,116	Nov. 19	641	190	14	774
Pulley. Door and gate	H. T. Gates	209,966	Nov. 19	480	145	14	752
Pulley for window-sashes	H. A. Wilbur	209,997	Nov. 19	513	155	14	757
Pump	J. F. Hess	210,122	Nov. 19	647	192	14	775
Pump	E. Sanders	210,055	Nov. 19	573	172	14	765
Pump	J. C. Titus	210,169	Nov. 19	697	207	14	782
Pump	E. L. Spencer	210,058	Nov. 19	576	173	14	765
Pump. Double-acting force	J. C. Mack	210,134	Nov. 19	659	196	14	777
Pump for ice and refrigerating machines	P. Strelitz	210,060	Nov. 19	569	.....	14	766
Radiation of heat. Compound for preventing	C. Behre	210,083	Nov. 19	606	180	14	769
Raft. Life	D. A. Calkins	210,093	Nov. 19	617	{183 184}	14	771
Rake. Horse hay	D. F. Hacker	210,026	Nov. 19	545	163	14	761
Rake. Horse hay	A. V. M. Sprague	210,161	Nov. 19	687	204	14	780
Razor-strop	P. Cavalier	210,094	Nov. 19	618	184	14	771
Reflector	G. C. Smith	210,159	Nov. 19	686	204	14	780
Register	G. Fencil	210,108	Nov. 19	633	188	14	773
Sad-iron heater	J. M. Gwinnell	209,968	Nov. 19	481	145	14	752
Saddle tree. Gig	H. Ransford	209,984	Nov. 19	498	151	14	755
Salt. Apparatus for the manufacture of	J. B. Sargent. (Reissue)	8,495	Nov. 19	708	211	14	783
Sap-spout	W. D. Roper and J. W. Mitchell	210,053	Nov. 19	572	172	14	765
Sash-fastener	J. W. Thomas	210,167	Nov. 19	695	207	14	781
Sash-fastener	S. Kinney	210,127	Nov. 19	652	193	14	775
Saw-swage	J. Connell	210,100	Nov. 19	626	186	14	772
Sawing machine. Circular	J. H. Edmondson	209,964	Nov. 19	479	144	14	752
Scraper. Earth	P. Everitt	210,106	Nov. 19	631	187	14	772
Screw-stock	L. W. Stockwell	210,165	Nov. 19	690	{205 206}	14	781
Screws. Machine for making metal	P. F. Morey	209,975	Nov. 19	491	149	14	754
Sewers, &c. Air-valve attachment for	L. Heery. (Reissue)	8,499	Nov. 19	715	{213 214}	14	784
Sewing-machine	J. A. House	210,036	Nov. 19	555	{166 167}	14	762
Sewing-machine	J. C. Wright	210,178	Nov. 19	704	210	14	783
Shelving. Store	J. N. Clouse and B. Zipfel	210,010	Nov. 19	530	159	14	759
Shoes, &c. Fastening device for	W. Cruse and J. D. Isaacs	210,015	Nov. 19	535	161	14	759
Shutter	G. H. Rice	210,052	Nov. 19	571	171	14	764
Sign. Rotary	J. G. Baker	210,078	Nov. 19	602	179	14	768
Slicing-machine	W. M. K. Thornton	209,992	Nov. 19	505	153	14	756
Smoke-stack and spark-arrester. Locomotive	G. W. Turner	209,994	Nov. 19	509	154	14	756
Smoke-stack. Locomotive	W. Thomson	210,067	Nov. 19	586	{175 176}	14	766
Sounding apparatus. Deep-sea	L. Brightman	210,088	Nov. 19	611	182	14	770
Spools. Machine for making metallic	W. P. Hansell	210,027	Nov. 19	546	164	14	761
Spring. Car	S. Palmatier	210,142	Nov. 19	669	199	14	778
Spring. Vehicle	C. F. Shoemaker	209,988	Nov. 19	501	152	14	755
Spring. Vehicle	G. Marshall, T. Ibbotson, and J. Bailey.	210,135	Nov. 19	663	194	14	777
Steam-generator. Sectional	J. H. Powell	209,982	Nov. 19	496	150	14	754
Stove	H. A. Tweed	210,065	Nov. 19	584	175	14	766
Stove-door knob	J. C. Melcher	210,138	Nov. 19	665	198	14	777
Table	A. S. Burt	210,005	Nov. 19	526	158	14	758
Tent	F. Fairbanks	210,107	Nov. 19	632	187	14	772
Testing-machine	D. Dalzell	210,092	Nov. 19	616	183	14	771
Thill-coupling	J. D. Shaffer	210,155	Nov. 19	683	203	14	780
Tool. Garden	T. Post	210,051	Nov. 19	570	171	14	764
Truck transfer. Car	G. Held	210,121	Nov. 19	646	192	14	775
Umbrella-cover	E. Sprague	210,059	Nov. 19	577	173	14	766
Valve-gear for engines	G. M. Clark	210,098	Nov. 19	624	185	14	771
Vegetable-cutter	J. A. Hawthorn	210,031	Nov. 19	550	165	14	761
Vehicle shifting-seat	J. A. Waterman	210,171	Nov. 19	699	208	14	782
Veneer-cutter	J. S. and R. T. Higgins	210,034	Nov. 19	553	165	14	762
Water-aerator	W. Bunting, Jr.	210,003	Nov. 19	524	157	14	758
Water-closet	D. Wellington	209,996	Nov. 19	511	155	14	756
Water-closet	J. W. Gray	210,023	Nov. 19	543	162	14	761
Water-wheel	P. Stovall	210,164	Nov. 19	689	205	14	781
Water-wheel	F. A. Tappan and S. A. Shaw	210,064	Nov. 19	583	174	14	766
Washing-machine	R. M. Wieder	210,175	Nov. 19	702	209	14	782
Washing-machine	J. P. Naas	209,976	Nov. 19	492	150	14	754
Well-curbing. Wooden	J. Button	210,007	Nov. 19	527	158	14	758
Wells. Drilling-machine for artesian and other	C. Claussen	210,099	Nov. 19	625	185	14	772
Wiring and flanging machine	J. Todd	210,170	Nov. 19	697	208	14	782
Wringer							

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Rule for Correcting Errors in Letters Patent.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., November 23, 1878.

Where a mistake, incurred through the fault of the Office, is clearly disclosed by the records or files of the Office, a certificate, showing the fact and nature of such mistake, signed by the Secretary of the Interior, countersigned by the Commissioner of Patents, and sealed with the seal of the Patent Office, will, at the request of the patentee or his assignee, be indorsed without charge upon the Letters Patent, and recorded in the records of patents.

Where a mistake, incurred through the fault of the Office, constitutes a sufficient legal ground for a reissue, such reissue will be made, for the correction of such mistake only, without charge of Office fees, at the request of the patentee.

Mistakes not incurred through the fault of the Office, and not affording legal grounds for reissues will not be corrected after the delivery of the Letters Patent to the patentee or his agent.

No changes or corrections will be made in Letters Patent after the delivery thereof to the patentee or his agent, except as above provided.

H. E. PAINE,
Commissioner of Patents.

Approved:
C. SCHURZ,
Secretary of the Interior.

THE "Rules of Practice," containing full instructions for filing applications, caveats, &c., and all the essential forms required in practice before the Office, are furnished gratuitously on application to the Commissioner of Patents; also copies of the "Patent Laws," being extracts from the Revised Statutes, so far as they relate to patent matters.

COMMISSIONER'S DECISIONS.

HOOSIER DRILL COMPANY *vs.* JOS. INGELS.—*Interference.*

[*In the matter of the interference between the application of the Hoosier Drill Company, for the registration of the word "Hoosier" as a trade-mark on drills, and the certificate of registration No. 4,650, to Joseph Ingels, May 5, 1877.*]

In interferences in trade-mark cases Office Rule 86 and section 4939, Revised Statutes, do not restrict the Office to the determination of the question of priority of adoption, but all evidence pertinent in showing ownership in a trade-mark is to be received and considered.

No analogy between trade-marks and patents, or applications for patents, is created by the phrase "priority of invention" occurring in section 4904, Revised Statutes. Neither prior invention, use, or adoption is necessary to entitle one to the registration of a trade-mark, if the same mark on same class of goods has not been registered or received for registration.

Section 4944, Revised Statutes, providing for an action on the case for making in the Patent Office a false and fraudulent entry respecting a trade-mark, does not supersede or obviate the necessity of an interference proceeding.

MOTION TO REHEAR.

DOOLITTLE, *Acting Commissioner:*

This is a motion to rehear the decision of the Commissioner rendered in this case July 31, 1878, affirming the ruling of the Examiner of Interferences to the effect that this Office cannot assume to inquire into matters of disputed ownership pertaining to a trade-mark, but must confine its inquiries in interference proceedings exclusively to the question of priority of adoption.

The practice of the Office in interferences relating to the registration of trade-marks, as prescribed by a portion of Office Rule 86, is as follows:

> In case of conflicting applications for registration, the Office reserves the right to declare an interference, in order that the parties may have opportunity to prove priority of adoption or right; and the proceedings on such interference will follow as nearly as practicable the practice in interferences upon applications for patents.

In accordance with this rule a time is fixed for filing preliminary statements setting forth the date of adoption and the nature and extent of use of the trade-mark by the respective applicants, and subsequently times are fixed for taking testimony, for the hearing, &c.

It is not competent now to inquire into the legality of the practice of declaring interferences in trade-mark cases. The rules prescribe it, and the Commissioner

and Secretary of the Interior have in a recent special case reaffirmed the practice.

But it is still proper to inquire as to what cases the practice is applicable.

In that portion of the rule giving the parties the opportunity to prove priority of adoption or right, the phrase "or right" would appear to have a wider signification than has been given to it by the previous decisions in this case. It would seem to authorize the Office to inquire into all those matters provided for by section 4939 of the Revised Statutes, disputes concerning which may arise in the course of a contest between applicants for registration. That section prescribes that—

> The Commissioner of Patents shall not receive and record any proposed trade-mark which is not and cannot become a lawful trade-mark, or which is merely the name of a person, firm, or corporation unaccompanied by a mark sufficient to distinguish it from the same name when used by other persons, or which is indentical with a trade-mark appropriate to the same class of merchandise, and belonging to a different owner, and already registered or received for registration, or which so nearly resembles such last-mentioned trade-mark as to be likely to deceive the public.

Among the marks which the Commissioner of Patents is therein prohibited from registering are those which are "identical with the trade-mark appropriated to the same class of merchandise and belonging to a different owner, and already registered or received for registration."

The question whether a trade-mark, sought to be registered which is already registered or received for registration, belongs to a different owner, constitutes the entire basis for an interference proceeding in this class of cases, and all evidence which is pertinent in showing title of ownership in a trade-mark should be received and considered in determining that question.

The phrase "priority of adoption" does not occur in the statute, and unless ownership in a trade-mark can be acquired by priority of adoption alone the Office is not restricted to that single inquiry. But there are other ways of acquiring such title, as by assignment, license, acquiescence, or operation of law.

Whatever other analogies there may be between trade-marks and patents, none is created or arises by the phrase "priority of invention" occurring in section 4904, Revised Statutes, relating to interferences between applications and patents. The exercise of invention is an indispensable prerequisite to the grant of a valid patent, but there need be no invention exercised as to trade-marks. Words and marks well-known for ages can be properly appropriated as trade-marks; and title thereto or the right of property in their use has also "very little analogy to that which exists in copyrights or in patents for inventions." (*Canal Co.* vs. *Clark*, 13 Wall., 311.)

Under the statute neither prior invention, use, or adoption of any kind is necessary to entitle one to the registration of a trade-mark. A simple intention to adopt and use a mark is sufficient to obtain protection by registration, if the same has not before been registered or received for registration for the same class of goods.

The Commissioner, in his decision above referred to, remarks:

> If these parties were before the Office both in the position of applicants, and a question of disputed ownership was raised between them, based upon some subsequent action or agreement of the one first to adopt, and inuring to the benefit of his opponent, undoubtedly the only just and equitable way of ascertaining to whom the award should be made would require an examination of all the testimony respecting title or ownership.

In this paragraph the Commissioner must have overlooked the fact adverted to at the outset of his decision, that these applications were pending at the same time—the Hoosier Drill Company having filed their application April 24, 1877, nearly a month before the certificate of registration to Ingels was issued, and in which application the former party had stated in their declaration, under oath, that this trade-mark "had been used by said company for about ten years, and by its predecessor and assignor eight or nine years before."

With this declaration before it the Office should have withheld its certificate of registration to Ingels, from the same State, and whose mark was the same on the same class of goods, until the matter of ownership between the parties could have been determined. The certificate to Ingels having issued by inadvertence, the settled practice in interferences in patent cases should, if the statute were silent, apply, viz: The inadvertent issue of a patent to one party while an application for the same invention by another is pending will not prejudice the latter in an interference proceeding, but both parties will be treated as on the same footing. (*Smith* vs. *Barber*, C. D., 1875, p. 5; *Davis* vs. *Scharffe*, 14 OFFICIAL GAZETTE, 345.)

If, however, under the provisions of the statute already quoted, this Office has jurisdiction at all over questions of title, it makes no difference whether the mark in dispute is registered or simply received for registration, nor what the nature may be of the particular circumstances constituting the alleged ownership on the part of a later applicant.

It is neither the province nor the purpose of the Office in passing upon questions of title in these cases to cancel or invalidate a registration already made, but to determine whether a subsequent application shall also be permitted to register the same mark, or in case there are pending conflicting applications to determine which shall be registered to the exclusion of the other.

An interference is a proceeding instituted by the Office to obtain information on these points. The legal rights of the parties as to matters other than that of registration and their enforcement belong to the courts. I think, therefore, the citation of section 4944, Revised Statutes as indicating a remedy for a party seeking to register a mark already registered or received for registration, hardly pertinent. That section provides that—

> Any person who shall procure the registry of any trade-mark, or of himself as the owner of a trade-mark, or an entry respecting a trade-mark, in the Patent Office, by making any false or fraudulent representations or declarations, verbally, or in writing, or by any fraudulent means, shall be liable to pay any damages sustained in consequence of any such registry or entry to the person injured thereby, to be recovered in an action on the case.

What the Office is required to do appears to be preliminary to and a basis for such a proceeding. At any rate there is nothing in that or any other section intimating that the Office should refer the contending parties before it to that remedy, or await the result of an action on the case between them, or be bound by such judgment when rendered.

The only case cited by the Examiner of Interferences to sustain the view that this Office has not jurisdiction over questions of this character is *Swift* vs. *Peters*, (11 OFFICIAL GAZETTE, 1110.) In that case the point was attempted to be made that in view of the proof, if the trade-mark was not the property of Swift, neither did it belong to Peters, the registrant, but that it had been

adopted and used by the firm of Snowden & Peters, which firm was dissolved, and the right to use thereafter did not vest in Peters. It was simply held that the title of a registrant as between him and *third* parties would not be considered; that the decision of the Office would be confined to the parties of record. Peters having registered his trade-mark it was the duty of Swift to at least overcome Peters' *prima facie* right, which he failed to do. Part of the syllabus in that case is wrong and probably misled the Examiner.

The question of acquirement of title to a trade-mark by acquiescence and operation of law was considered in the cases of *Kidd & Co.* vs. *Mills, Johnson & Co.*, (C. D., 1874, 28;) *Davidge* vs. *Durall*, (Vol. 18 C. D., p. 256.)

In view of these various considerations the motion to rehear is granted, and the case remanded to the Examiner of Interferences for determination of the question of "right" between the parties upon the proofs not heretofore considered.

The Examiner of Interferences will fix a day of hearing.

JOHN W. WHEAT.—*Interlocutory Appeal.*

[*In the matter of the interference between the applications of John W. Patterson, filed June* 18, 1878, *Charles Koch, filed May* 2, 1878, *and John W. Wheat, filed February* 12, 1878, *for* "IMPROVEMENT IN WASHING-MACHINES."—*Decided October* 23, 1878.]

Extent of use need not be set forth by the contestant in his preliminary statement, if the date assigned for completion and use of the invention is within two years of the filing of the application.

An admission of public use, in the statement, more than two years prior to filing application concludes the interference if the opponent be a patentee; but if there be other applicants to the contest to be affected by such admission, proofs must be taken that their rights may be preserved.

DOOLITTLE, *Acting Commissioner:*

In this case Wheat, the earlier applicant, after setting forth the dates of the conception of his invention, the reduction of it to the form of sketches and models, and the completion of a working machine containing the invention, fails to set forth the extent of use of that machine, but contents himself with the statement that he found it satisfactory. These dates are all within the two years prior to the filing of his application.

Office Rule 53 states that one of the uses of the preliminary statement is to determine whether the interference shall proceed. The extent of use to which an invention has been put after its completion is quite necessary to be given in order to ascertain whether the same has been in public use for more than two years prior to the filing of the application. If such a use is admitted by an applicant it is fatal to his application under the provisions of Section 4886, Revised Statutes, and the interference need not proceed if the applicant's opponent is a patentee. Where both are applicants the statement of such public use by one cannot bar the other without an opportunity is afforded of examination and cross-examination of witnesses.

In the Dermody and Pennock decision, cited by the Examiner of Interferences, Pennock was the patentee, and the alleged use on the part of the applicant, to whose preliminary statement objection was made, occurred more than six years prior to the filing of his application. It was necessary to determine whether such use was a public use of the completed machine at that time. For this reason the preliminary statement was required to be amended; and all the motions and decisions in that case had reference to this one point of public use for more than two years prior to the filing of Dermody's application.

So far, then, as extent of use is concerned of a machine or other invention completed within two years previous to the filing of the application, it is unnecessary that the extent of use after completion be stated, if the preliminary statement is clear in setting forth the actual date of completion, and its use in a single instance.

The decision of the Examiner of Interferences is reversed, and the statement of Mr. Wheat will be received.

Issue of November 26, 1878.

Patents	212	No. 210,179	to No.	210,390, inclusive.
Reissues	7	No. 8,503	to No.	8,509, inclusive.
Designs	15	No. 10,921	to No.	10,935, inclusive.
Trade-Marks	37	No. 6,817	to No.	6,853, inclusive.
Labels	9	No. 1,781	to No.	1,789, inclusive.
Total issue	280			

TRADE-MARKS.

[Each certificate bearing date November 26, 1878.]

6,817.—CAST-IRON PLOWS.—*B. F. Avery & Sons*, Louisville, Ky. Application filed November 6, 1878.
"The word-symbol 'PIGMY.'"

6,818.—STEEL PLOWS.—*B. F. Avery & Sons*, Louisville, Ky. Application filed November 6, 1878.
"The word-symbol 'TINY TIM.'"

6,819.—PREPARATIONS OF COCOA AND CHOCOLATE.—*Henry McCobb*, New York, N. Y. Application filed October 4, 1878.
"The owl holding the cup and perched upon a box, and the sun rising from the sea behind him."

6,820.—CIGARS.—*Estabrook & Eaton*, Boston, Mass. Application filed October 15, 1878.
"The words 'EL LUZON.'"

6,821.—MEDICINAL PREPARATION.—*E. F. Houghton & Co.*, Philadelphia, Pa. Application filed October 25, 1878.
"The fanciful word 'PETROLEOL.'"

6,822.—SAWED PINE SHINGLES.—*Jerry R. Hall*, Bay City, Mich. Application filed October 18, 1878.
"The word 'HALL,' in capital letters, in connection with the three capital letters X X X."

6,823.—CORN-SHELLERS.—*Kingsland, Ferguson & Co.*, St. Louis, Mo. Application filed October 24, 1878.
"The arbitrarily-selected word 'VIBRATOR.'"

6,824.—GUN IMPLEMENTS.—*Charles D. Leet*, Bridgeport, Conn., assignor to *Schuyler, Hartley & Graham*, New York city. Application filed August 15, 1878.
"The figure of a dog's head holding a game-bird in its mouth, and the whole inclosed in a circle."

6,825.—MEDICINAL PREPARATION.—*Francis M. Pease*, Lee, Mass. Application filed October 30, 1878.
"The word-symbol 'POTASKA.'"

6,826.—SMOKED HERRINGS.—*George T. Peters*, Jersey City, N. J. Application filed November 9, 1878.
"A symbol consisting of a letter X traversing the representation of a tree, with which are combined the words 'Windsor Herring.'"

6,827.—WHIPS.—*Peck, Osden & Co.*, Westfield, Mass. Application filed October 14, 1878.
"The word-symbol 'JASEFORI.'"

6,828.—CAKES.—*Samuel Sides*, St. Louis, Mo. Application filed September 20, 1878.
"The word 'ANGELS.'"

6,829.—TIPS FOR BOOTS AND SHOES.—*The American Shoe Tip Company*, Boston, Mass. Application filed October 18, 1878.
"The letters 'A. S. T. CO.,' used symbolically and arbitrarily."

6,830.—SMOKING AND CHEWING TOBACCO AND CIGARS.—*B. Frank Weyman*, Pittsburg, Pa. Application filed November 9, 1878.
"The word-symbol 'TOUCHSTONE.'"

6,831.—SMOKING AND CHEWING TOBACCO AND CIGARS.—*B. Frank Weyman*, Pittsburg, Pa. Application filed November 9, 1878.
"The fancifully-selected words 'VEST POCKET.'"

6,832.—SMOKING AND CHEWING TOBACCO AND CIGARS.—*B. Frank Weyman*, Pittsburg, Pa. Application filed November 9, 1878.
"The fancifully-selected words 'AS YOU LIKE IT.'"

6,833.—RIBBONS.—*Oberteufer, Abegg & Co.*, New York, N. Y. Application filed November 1, 1878.
"A circular figure representing a target."

6,834.—SALVE.—*Amanda Ahl*, Stillwater, Minn. Application filed October 16, 1878.
"The word 'NONPAREIL' and the monogram formed of the letters A. A."

6,835.—WRITING-PAPER.—*Blanchet Frères & Kléber*, Rives, France. Application filed October 16, 1878.
"The representation of a shield bearing in its upper field three circular designs, and in its lower field a conventional representation of a dolphin."

6,836.—MEDICINAL PREPARATION.—*Frank Inglis*, Detroit, Mich. Application filed October 17, 1878.
"The circle having two straight horizontal lines and two vertical lines drawn across it, dividing the space between the horizontal lines into three spaces, and used in connection with the word 'FIR.'"

6,837.—MEN'S AND BOYS' CLOTHING.—*Banner Brothers*, New York, N. Y., and San Francisco, Cal. Application filed November 12, 1878.
"The letters 'B. B.,' interwoven as a monogram, placed upon a banner."

6,838.—LADIES' CORSETS.—*Benjamin A. Bourne*, Gloucester House, 37 Piccadilly, England. Application filed September 13, 1878.
"The figure of a swan."

6,839.—LADIES' CORSETS.—*Benjamin A. Bourne*, Gloucester House, 37 Piccadilly, England. Application filed September 13, 1878.
"The word-symbol 'SWANHILL.'"

6,840.—MEDICINAL PREPARATION.—*Josiah F. Kendall*, North Tarrytown, N. Y. Application filed October 14, 1878.
"The name and word 'KENDALL'S PERSICARIA.'"

6,841.—MEDICAL COMPOUNDS.—*Nathan Mercer*, Montreal, Quebec, Canada. Application filed July 27, 1877.
"The word-symbol 'PHOSFOZONE.'"

6,842.—SPARKLING RUSSET CIDER.—*Benjamin F. Merritt*, New York, N. Y. Application filed April 24, 1878.
"The monogram 'B. F. M. Co.' and the three stars, as shown."

6,843.—SHOES.—*Kenny & McPartland*, New York, N. Y. Application filed October 23, 1878.
"The words 'PEERLESS CASTILIAN.'"

6,844.—WRINGING, FLUTING, AND PLAITING MACHINES AND SAD-IRONS.—*American Machine Company*, Philadelphia, Pa. Application filed June 24, 1878.
"The word 'CROWN,' or the representation of the crown."

6,845.—COLOGNE-WATER.—*John Davis*, West Bay City, Mich. Application filed October 23, 1878.
"The arbitrarily-selected letters and words 'O. D. KOLONE, NUR BETTA,' as shown."

6,846.—CIGARS.—*Glaccum & Schlosser*, New York, N. Y. Application filed October 28, 1878.
"The arbitrarily-selected words 'DRUMMER BOY.'"

6,847.—HEATERS FOR WARMING DWELLINGS, &c.—*Gold's Heater Manufacturing Company*, New York, N. Y. Application filed November 6, 1878.
"The arbitrary word-symbol 'HEALTH.'"

6,848.—TANNED LEATHER.—*Samuel Haight*, Ballston Spa, N. Y. Application filed November 4, 1878.
"The representation of a bull's head and the arbitrary letters 'S. H.'"

6,849.—CIGARS.—*William Simpson*, Springfield, Mass. Application filed November 11, 1878.
"The words 'TOP OF THE HEAP.'"

6,850.—SMOKING AND CHEWING TOBACCO.—*W. C. Thomas*, Richmond, Va. Application filed July 2, 1878.
"The shield of gold, with the device of the lion's paw holding the tobacco-leaves, resting on the wreath and overarched by the rainbow."

6,851.—FLOUR.—*James Gordon & Co.*, Sparta, Ill. Application filed November 11, 1878.
"The word-symbol 'GAZELLE.'"

6,852.—SOAP.—*Procter & Gamble*, Cincinnati, Ohio. Application filed November 4, 1878.
"The word-symbol 'TOWN TALK.'"

6,853.—WHISKY.—*John B. Peacock & Co.*, Philadelphia, Pa. Application filed October 31, 1878.
"The cross and the letters 'P P C G,' inclosed within a shield-shaped figure."

DESIGNS.

[Each design bearing date November 26, 1878.]

10,921.—HAND-BELLS.—*John P. Connell*, Kensington, Conn. Application filed September 16, 1878. Term of patent 7 years.

10,922.—RADIATOR-BASES.—*Martin H. Crane*, Cincinnati, Ohio, assignor to *Crane, Breed & Co.*, same place. Application filed October 31, 1878. Term of patent 3½ years.

10,923.—HEATING-STOVES.—*Chauncy H. Castle*, Quincy, Ill., assignor to *Comstock, Castle & Co.*, same place. Application filed November 2, 1878. Term of patent 7 years.

10,924.—ROCKING-CHAIRS.—*Eugene A. Fuchs*, Brooklyn, E. D., N. Y., assignor to *C. and G. Spoerl*, same place. Application filed October 4, 1878. Term of patent 3½ years.

10,925.—SASH AND BLIND TRIMMINGS.—*James L. Howard*, Hartford, Conn., assignor to *James L. Howard & Co.*, same place. Application filed November 4, 1878. Term of patent 7 years.

10,926.—BLIND-LIFTS.—*James L. Howard*, Hartford, Conn., assignor to *James L. Howard & Co.*, same place. Application filed November 4, 1878. Term of patent 7 years.

10,927.—COFFIN-SCREWS.—*William M. Smith*, West Meriden, Conn., assignor to *Meriden Britannia Company*, same place. Application filed November 1, 1878. Term of patent 14 years.

10,928.—PULLS FOR DRAWERS, &c.—*George W. Tucker*, Waterbury, Conn. Application filed November 8, 1878. Term of patent 7 years.

10,929 and 10,930.—STOVES.—*Nicholas S. Vedder*, Troy, and *Tobias S. Heister*, Lansingburg, N. Y., assignors to said *Vedder*. Applications filed November 15, 1878. Term of patents 3½ years.

10,931 and 10,932.—COOKING-STOVES.—*Nicholas S. Vedder*, Troy, and *Tobias S. Heister*, Lansingburg, N. Y., assignors to said *Vedder*. Applications filed November 15, 1878. Term of patents 3½ years.

10,933.—COOKING-STOVES.—*Nicholas S. Vedder* and *Francis Ritchie*, Troy, and *Tobias S. Heister*, Lansingburg, N. Y., assignors to said *Vedder*. Application filed November 15, 1878. Term of patent 3½ years.

10,934.—STOVES.—*Nicholas S. Vedder*, Troy, and *Tobias S. Heister*, Lansingburg, N. Y., assignors to *Comstock, Castle & Co.*, Quincy, Ill. Application filed November 2, 1878. Term of patent 7 years.

10,935.—COVERINGS FOR CHAIRS AND PARLOR-SUITES.—*Joseph H. Travis*, New York, N. Y., assignor to *M. and H. Schrenkeisen*, same place. Application filed November 4, 1878. Term of patent 3½ years.

LABELS.

[Each certificate bearing date November 26, 1878.]

1,781.—Title: "BEST PICKLES."—*Curtice Brothers*, Rochester, N. Y. Application filed November 9, 1878.

1,782.—Title: "BURBANK'S GREASE EXTRACTOR."—*Henry A. Burbank*, Towanda, Pa. Application filed November 14, 1878.

1,783.—Title: "DR. BANCROFT'S GERMAN ELIXIR."—*Atha B. Crooks*, Newark, N. J. Application filed November 18, 1878.

1,784.—Title: "INDICATORS."—*Andrew Dougherty*, Brooklyn, N. Y. Application filed November 15, 1878.

1,785.—(Print,) Title: "A. A. FREEMAN & Co., 196 DUNDAS."—*A. A. Freeman & Co.*, La Crosse, Wis. Application filed October 16, 1878.

1,786.—(Print,) Title: "A. A. FREEMAN & Co., 196 NONPAREIL."—*A. A. Freeman & Co.*, La Crosse, Wis. Application filed October 16, 1878.

1,787.—Title: "AQUA A. SANTA MARIA DELLA SCALA, OR CARMELITEN GEIST."—*Missionary Society at Mount Carmel Monastery*, county of Anderson, Kans. Application filed November 6, 1878.

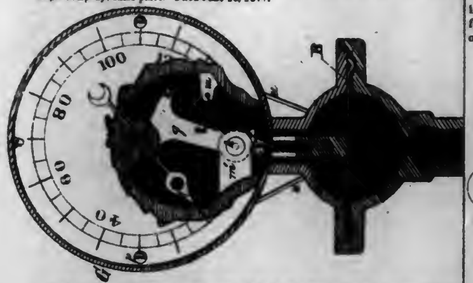
1,788.—Title: "SOUTH AMERICAN WRAPPER."—*John R. Sutton*, Brooklyn, N. Y. Application filed November 20, 1878.

1,789.—Title: "DR. WATERS' HAIR RESTORER."—*Frank Waters*, New York, N. Y. Application filed November 20, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

NOVEMBER 26, 1878.

210,179. STEAM-GAGES. Richard C. Blake, Hamilton, Ohio, assignor to the Blake Steam Gage Company, same place. Filed June 18, 1877.



Claim.—1. An adjustable stem attached to the diaphragm of a steam-gage, and constructed to abut against the cam-shaped arm of a sector, *g*, for operating the index, the whole combined substantially as and for the object specified.

2. The diaphragm B, adjustable stem D *e*, sector *g*, and back spring, *n*, or weight O, in combination with the pinion *i*, substantially as and for the purpose described.

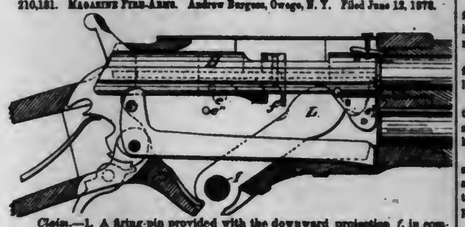
3. The chamber H, provided with ings *m'* and *m''*, cast with and forming part of the gage-case G, substantially as and for the purpose described.

210,180. MACHINES FOR CHECKING PISTOL-HANDLES. James H. Ballard, Springfield, Mass., assignor to D. B. Wesson. Filed Oct. 14, 1878.



Claim.—The combination, in a checking-machine, of the index D and sleeve D', revolving in a bearing or support, the spirally-grooved shaft A, and the vibrating frame B, adapted to have a pattern-tool and revolving cutter secured therein, substantially as described.

210,181. MAGAZINE FIRE-ARMS. Andrew Burgess, Owego, N. Y. Filed June 12, 1878.



Claim.—1. A firing-pin provided with the downward projection *f*, in combination with the brace L and reciprocating bolt, substantially as described.

2. The combination of the bolt, the firing-pin provided with a downward projection *f'*, and the locking-lever L, by which the forward movement of the firing-pin to fire the cartridge is prevented until the bolt is locked.

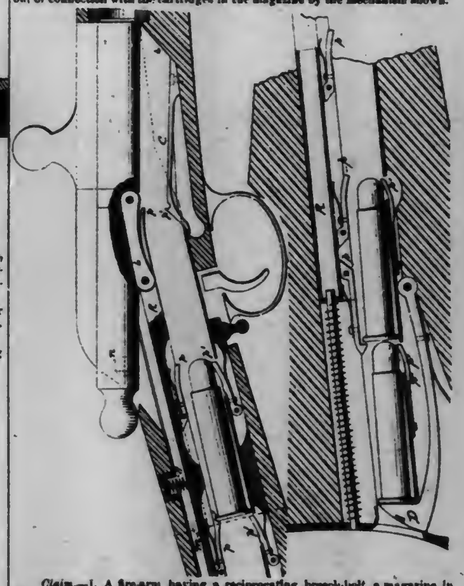
3. A starting-lever, *e*, pivoted to the movable part of the breech mechanism, in combination with studs or projections on the sides of the frame, as and for the purpose described.

4. The pivoted starting-lever *e*, in combination with the bolt and with a stop or stops projecting from the inside of the receiver.

5. In a magazine-gun, the combination of a reciprocating bolt, a carrier, and an adjustable stop, consisting of an eccentric pin or screw, S', to engage the breech-bolt and thereby limit the movement of the parts and prevent the delivery of the cartridges to the chamber of the barrel, as set forth.

210,182. MAGAZINE-GUNS. Andrew Burgess, Owego, N. Y. Filed Sept. 10, 1878.

Brief.—The cartridges are fed into the magazine through a hole in the butt-plate, having a transverse spring-cover beveled at one side. The positive feed is effected by a feed-bar linked to the bolt. This feed-bar may be lifted out of connection with the cartridges in the magazine by the mechanism shown.



Claim.—1. A fire-arm having a reciprocating breech-bolt, a magazine in the breech, a spring, C, to raise the head of a cartridge when the breech is open, and an incline, *i*, to raise the point of cartridge, substantially as described.

2. The pawls *p*, attached to the feeding-rod E, and provided with springs to press them into engagement with the cartridges in the magazine, and having the bearings *p''*, to limit their entrance into the magazine, all combined and arranged to propel the cartridges forward, substantially as described.

3. The combination, with the rod E, of the spring S, to effect its engagement with the cartridges, and a lifting device to disengage the cartridge in the magazine, substantially as and for the purpose specified.

4. The pawls *p'*, springing into the magazine to prevent the cartridges from moving rearward, and attached to the rod E', for retiring them from the interior of the magazine, in combination with an opposite propelling device to move the cartridges forward, substantially as described.

5. The combination of the reciprocating breech-bolt, the link L, and the feed-bar E, when said feed-bar is provided with mechanism by which it may be lifted out of operative connection with the magazine, as set forth.

6. In combination with the loading-orifice of the magazine in the butt of the arm, a transverse cover having the incline *d*, and constructed substantially as described, so as to be adapted to yield for the admission of cartridges and hold them when in the magazine, substantially as shown and described.

7. A loading-tube holding a plurality of cartridges, a magazine of a size to admit the insertion of said tube, said magazine having pawls or teeth, which spring into the periphery of the magazine, and are depressed by the loading-tube when the latter is inserted, all in combination, substantially as and for the purpose described.

210,183. SKIVING-MACHINES FOR LEATHER. Francis M. Carter, Marlborough, Mass. Filed Aug. 17, 1878.

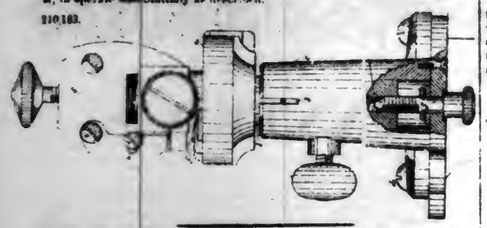
Claim.—1. The combination, with the knife and feeding mechanism, of a non-revolving supporting-surface, *c*, for the material being skived, a shank, *b*, connected therewith, a post to receive and guide the shank in a vertical direction, and adjusting devices to raise and lower the said supporting-surface with relation to the knife and feeding mechanism, according to the thickness of the material being skived, substantially as described.

2. In a skiving-machine, the combination, with the feeding-wheel, of a cleaner, to operate substantially as described.

3. In a skiving-machine, the combination, with the knife and the supporting-surface for the material being skived, of a feeding and a smoothing wheel, to operate substantially as described.

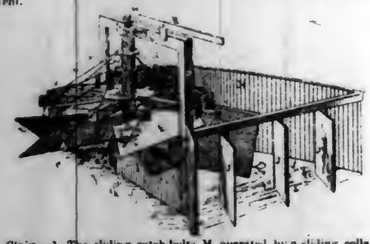
b. The knife-holder *c* a nut and knife and the screw *a*, combined with the portion *b* of the knife-holder, provided with the threaded bar *l* and with the screw *m*, to operate substantially as described.

210,183.



210,184. CURRENT WATER-WHEELS. Wallace W. Cleaveland, Marshall, Mich. Filed May 2, 1878.

Brief.—The lower bulk-head surrounds the shaft at its inner end, to more effectually confine the water to the side of the wheel receiving the force of the current.

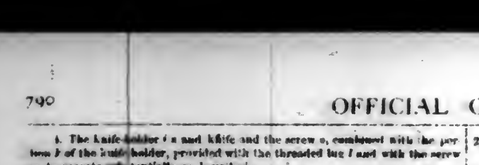


Claim.—1. The sliding catch-bolts M, operated by a sliding collar, N, on the wheel-shaft B, and suitable connecting rods *n*, whereby each bucket may be caught by catch or loop on the front of bucket E, and held up automatically, and the wheel caused to stop without shutting off the water.

2. A hollow wheel-shaft, B, combined with a sliding collar, N, connecting with each catch-bolt M, and operated by rod Q, connected with said collar N at lower end, and extending thence upward through the interior of said shaft to a suitable lever, whereby said collar and the catch-bolts M, to which it is connected, may be operated through the center of the wheel-shaft B.

3. Combined with the bulk-head H and a current water-wheel, substantially as described, a bulk-head, I, extended past the main shaft B, substantially as set forth, to confine and direct the water upon the skirt of the wheel and prevent waste of water.

210,185. FLOATING-DOCKS. Josiah L. Clark and John Standfield, Westminster, England. Filed June 26, 1878. Patented in England, Feb. 9, 1878.

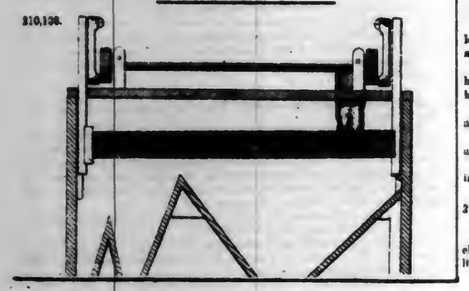


Claim.—1. The floating dock constructed of adjustably connected portions or sections, adapted to be raised or lowered independently or together, the same consisting, essentially, of the buoyant sides or portions of the sides and the body of the dock, to which they are attached by vertical grooves or slides, whereby either said attached portions or the body of the dock may be raised and supported entirely above the water.

2. The combination, substantially as hereinbefore set forth, of the body of the dock and the sliding or adjustable portions, whereby, after having exhausted the lifting power of the dock in its ordinary or U form, the said adjustable portions may be lowered and pumped dry and the lifting power of the dock greatly increased.

3. The combination of the body C, the permanently-fixed corners or buoyant portions B of the sides, and the sliding or hinged buoyant portions A, substantially as and for the purpose set forth.

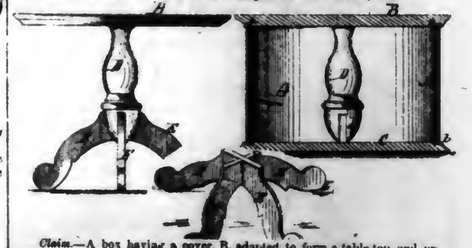
210,186.



210,186. FLOUR BOLTING MACHINES. Miles F. Glenmer, Fin Rock, N. C. Filed Sept. 15, 1878.

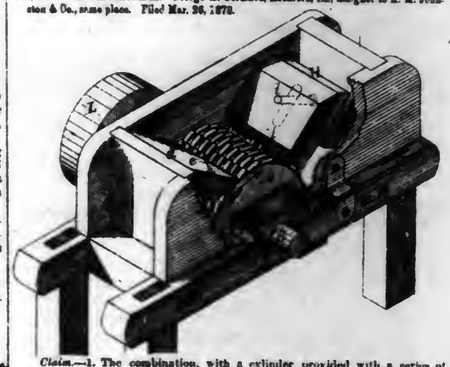
Claim.—The combination, with a bolting-trough suspended within the frame or casing of the apparatus by means of rigidly-attached end supports, which move in guides and project above the top of the casing, of a driving-shaft provided with crank-wheels on opposite ends thereof, and pitmen pivoted to the bolt-trough supports and to wrist-pins on the crank-wheels, substantially as set forth.

210,187. TABLES. Morton E. Converse, Bridge, N. H. Filed Feb. 26, 1878.



Claim.—A box having a cover, B, adapted to form a table-top, and provided with a standard, D, and legs F E, or equivalent supporting parts, partially or wholly detachable from and reattachable to the same by means of the slots *c d* in said standard, or their equivalent, substantially as and for the purpose herein specified.

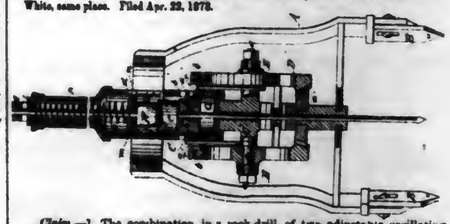
210,188. OATMEAL-MACHINES. George H. Cormack, Rockford, Ill., assignor to A. M. Johnston & Co., same place. Filed Mar. 26, 1878.



Claim.—1. The combination, with a cylinder provided with a series of teeth, separated by annular grooves, of a hopper plate provided with a notched edge, which fits closely the teeth and grooves on the cylinder, substantially as set forth.

2. The combination, with a toothed cutting-cylinder and a toothed cutting-plate, of the bevel-edged plate, operating to prevent the grain from being thrown from the cylinder, substantially as set forth.

210,189. ROCK-DRILLS. Uriah Cummings, Buffalo, N. Y., assignor to himself and Arthur W. White, same place. Filed Apr. 22, 1878.



Claim.—1. The combination, in a rock-drill, of two adjustable oscillating levers, arranged to move simultaneously in opposite directions, substantially as herein shown and described.

2. The combination, in a rock-drill, of the pawls r, the oscillating lever, having arms E, the sleeve A^1, having studs *a'*, and a clutching device, as herein shown and described.

3. The barrel C, having the angled slots *b'*, the pawls r, having pins r', and the sleeve A^1, in combination, as herein shown and described.

4. The sleeve A^1, having studs *a'* and the ratchet *c'*, and barrel C, having a spiral slot, *d*, in combination, substantially as herein shown and described.

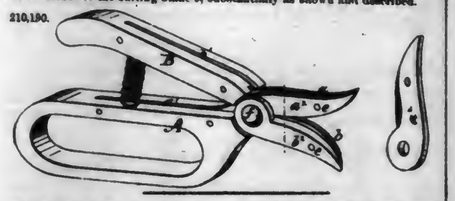
5. The combination of the adjustable tube *p* with the barrel C for containing the drill-actuating spring *o*, substantially as herein shown and described.

210,190. WIRE-BAND CUTTERS. Henry Curtis, Chicago, Ill., assignor of one-fourth his right to J. Russell Parsons, Keokuk Falls, N. Y. Filed Sept. 10, 1877.

Brief.—The handles may be of wood. One cutting-blade, owing to its beveled side, indents the wire about an eighth of an inch from the cut, and retains it against the flat plate of the other blade.

Claim.—In shears for cutting wire bands, the combination of a cutting-blade, *b*, to which is attached a receiving plate or ledge, b^2, recessed at b^3, and provided with a loop through which the pivot *f* passes, with a second cutting-blade, *a*, provided with a plate, a^2, chisel-beveled at a^3, and clasped between the branches of the cutting-blade *b*, substantially as shown and described.

210,190.

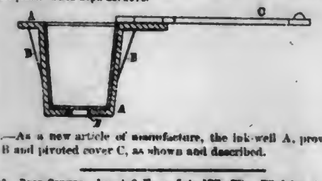


210,191. TOBACCO-GRANULATING MACHINES. Napoleon Du Brul, Cincinnati, Ohio. Filed Jan. 31, 1878.



Claim.—The tobacco-scrap machine constructed with a stationary casing-plate, A, containing the feeding-hopper H and discharge-duct J, and armed with teeth or breakers F, and a vertical convex-faced revolving disk, E, armed with teeth or breakers G, passing through the interstices between the teeth F, substantially as and for the purposes herein shown and described.

210,192. INKSTANDS. Geo. Elsey, Springfield, Mass., assignor of one-half his right to Elisha Ridley, same place. Filed Sept. 23, 1878.



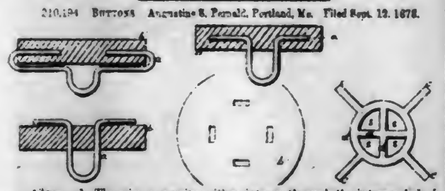
Claim.—As a new article of manufacture, the ink-well A, provided with the wings B and pivoted cover C, as shown and described.

210,193. BOOT-COVERS. Joseph S. Fargo, Lake Mills, Wis. Filed Apr. 4, 1878.



Claim.—The spring-back herein described, consisting of a single wire harness bearing-bow diverging from each other toward their ends and bent to form the semicircular portions, substantially as described, and for the purpose set forth.

210,194. BUTTONS. Augustine S. Parnell, Portland, Me. Filed Sept. 12, 1878.



Claim.—1. The wire *a*, passing either into or through the interior disk, *b*, having the loop to receive the sewing-threads, and having its ends bent down flat as herein described, in order to hold the wire in place, as shown and set forth.

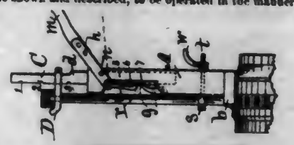
2. The wire or strips *a c*, stamped or cut out from a single piece of metal, as shown, in combination with the interior disk, as and for the purposes described.

210,195. TIRE-TIGHTENERS. John Fox, Monroe, Iowa. Filed Oct. 21, 1878.

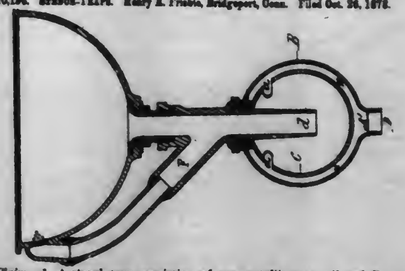
Claim.—1. The lever *m*, having the forks *h h*, and carrying the hinged hoop-form pawl *r*, in combination with the post A, having the opening *f* and the pawl *g*, and the sliding rack-bar C, substantially as shown and described, for the purpose specified.

2. The improved tire-tightener, composed of the post A *b b*, having the opening *f*, pawl *g*, and clamping device *s t w*, the lever *m h h*, having the pendent pawl *r*, and the adjustable rack-bar C, carrying the sliding block D, substantially as shown and described, to be operated in the manner specified.

210,196.



210,196. STENCH-TRAPS. Henry B. Frisbie, Bridgeport, Conn. Filed Oct. 26, 1878.



Claim.—1. A stench-trap consisting of two metallic cases, C and B, arranged concentrically one within the other, leaving a space, H, between them, both secured to an inlet-connection, A, and having waste-outlets *a a* in globe C, and an outlet, D, in globe B, substantially as and for the purpose set forth.

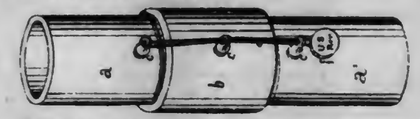
2. The combination of the concentrically-arranged cases B and C, with a space, H, therebetween, and a dip-pipe, *d*, all constructed and arranged substantially as shown, and for the purpose set forth.

210,197. BLASTING-POWDER. Philip M. Gallaher, Willet Lloyd, and George S. Walker, Danville, Pa. Filed Apr. 30, 1878.

Brief.—Improvement consists in combining sulphate of copper with certain other ingredients, as set forth in the claim.

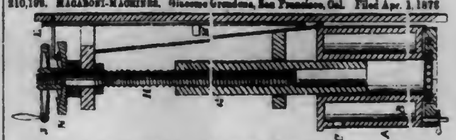
Claim.—The combination, with nitrate of soda or potash, sulphur, charcoal, ground bark, and sulphate of iron, of sulphate of copper, all taken in about the proportions as and for the purposes set forth

210,198. DEVICES FOR ATTACHING SEALS TO PIPE-JOINTS IN DISTILLERIES. Adolph Georg, Chicago, Ill. Filed Jan. 17, 1878.



Claim.—In a device for sealing pipe-joints in distilleries, the combination, with the pipe *a a'* and coupling *b*, of the eyebolts *c*, attached to the said pipe and coupling, and the wire *e*, doubled and passed through the said eyebolts, and having its ends joined by a seal, *f*, all substantially as and for the purposes set forth.

210,199. MACARONI-MACHINES. Giacomo Grondona, San Francisco, Cal. Filed Apr. 1, 1878.



Claim.—1. The cylinders A and B, with their dies and pistons, and plunger G, with the operating-screw H, in combination with the ratchet-wheel N, the double actuating-pawls I, and the hand-lever D, substantially as shown, and for the purpose herein described.

2. In a macaroni-machine having a screw-shaft plunger, and cylinder, the ratchet N and pawls I, having an extension, P, in combination with the movable arms L, for releasing the pawls from the ratchet, substantially as shown, and for the purpose herein described.

210,200. MACHINES FOR CUTTING ESCUTCHEONS. O. C. Hill, Rockford, Ill. Filed Nov. 27, 1877.

Brief.—Strips are fed to the cutters by an automatic intermitting feeding device. The key-hole is perforated, and the face and back formed by cutters before the escutcheon is finally cut from the block.

Claim.—1. The combination, substantially as described, of an automatic feeding device and a key-hole or mortise-cutting device, whereby the stick from which the escutcheons are to be cut is alternately fed forward and operated upon.

2. The combination, substantially as described, of an automatic intermittent feeding device and a face-cutting device, whereby the stick from which escutcheons are to be cut can be alternately fed forward and operated upon

3. The combination, substantially as described, of a key-hole or mortise-cutting device cutting a hole in the stick, and of a face-cutting device cutting

down across the hole subsequent to the cutting of key-hole, whereby a smooth unbroken edge is secured to the face of the key-hole or mortise.

4. The combination, with cutting-tools for forming the opposite faces of an escutcheon and boring-tools for partially forming the key-holes, of the automatic reciprocating chisels, cutting alternately the opposite sides of a key-hole, and means for gradually advancing the chisels while in operation, substantially as set forth.

5. In an escutcheon machine, the shafts D and D, substantially as described, provided with proper cutting-tools, and so arranged that they move in the direction of their length toward the wood and operate on it from opposite directions, one forming the face of one escutcheon and the other forming the back of another escutcheon, which escutcheon it also cuts loose.

6. The combination, with shafts E F, mounted on sliding tables, and means for actuating said shafts, of boring-tools attached to the adjacent ends of said shafts, the parts being arranged substantially as set forth, whereby the stick will be pierced in opposite directions and in the same vertical plane, substantially as set forth.

7. In a machine for manufacturing escutcheons, the combination, with tools for forming the escutcheon, of the grasping-jaw *c* and fixed jaw *a*, substantially as set forth.

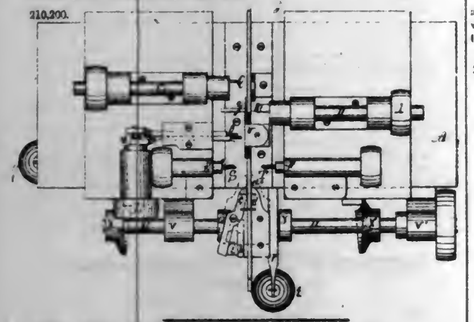
8. The combination, substantially as described, of levers *e* and *i*, cams *k* and *o*, bar *b*, and jaw *c* and *d*.

9. In the manufacture of escutcheons, the process, substantially as described, of operating on the wood in the following manner: cutting the key-hole from one side of the stick and forming the face of the escutcheon on its opposite side, to produce an escutcheon with key-hole having solid side walls and edges on both sides clear, sharp, and well defined, then shaping the back of the escutcheon and cutting it from the stick, as herein described.

10. The herein described method of making escutcheons, rosettes, &c., from continuous strips of material moved endwise in regular succession to one revolving cutter, which forms one side, and to another revolving cutter, which forms the other side and also cuts the completed disk from the strip, substantially as described and set forth.

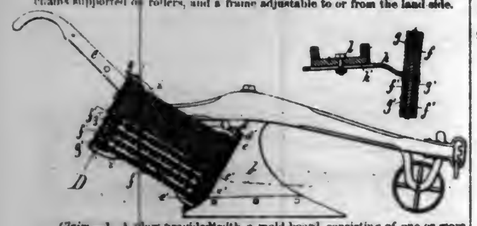
11. The combination, with cutting-tools for forming the opposite faces of an escutcheon and chisels for cutting the key-hole in the same, of two independent boring-tools arranged to cut separate holes in the stick in the same vertical plane, substantially as set forth.

210,200.



210,201. PLOWS. Thomas E. Jefferson, Boston, Mass. Filed Oct. 7, 1878.

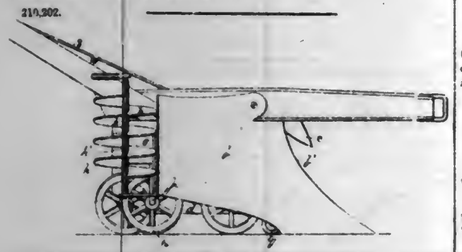
Brief.—The mold-board formed of an endless apron or a series of endless chains supported on rollers, and a frame adjustable to or from the land side.



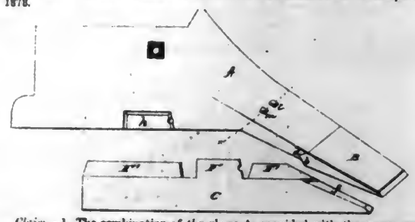
Claim.—1. A plow provided with a mold-board consisting of one or more endless traveling belts, chains, or bands, *f f' f'*, and two or more rotary rollers, *e e' g g'*, as and for the purpose set forth.

2. In a plow, the combination of the endless apron *f f' f'*, supporting-rollers *e e' g g'*, stay or stays *i i*, and adjustable brace or support *k*, as and for the purpose set forth and described.

210,202.



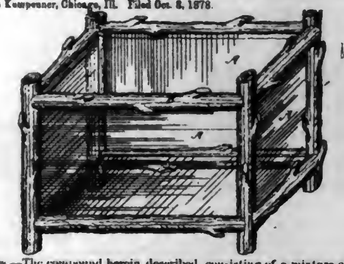
210,203. PLOWS. Wilton F. Jenkins and Charles W. Jenkins, Richmond, Va. Filed Apr. 19, 1878.



Claim.—1. The combination of the share A, provided with the upper and lower recesses, *b b'*, and the removable cutter C, provided with the top and bottom wings or laps, F, F', substantially as and for the purposes herein set forth.

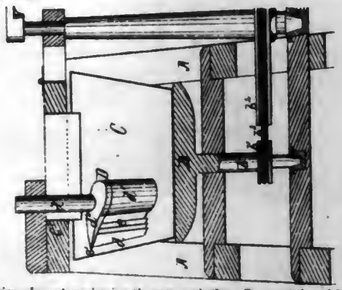
2. The combination of the share A, provided with the chilled socket *a* and recesses *b b'*, the reversible plow-point B, with shank D, and the cutter C, with wings or flaps F F', all constructed substantially as and for the purposes herein set forth.

210,204. PLASTIC COMPOSITIONS FOR THE MANUFACTURE OF AQUARIUM-FRAMES, &c. Adolphe Kemperer, Chicago, Ill. Filed Oct. 8, 1878.



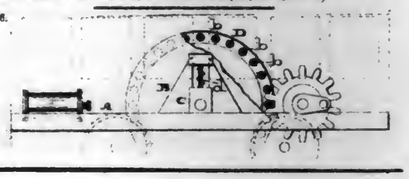
Claim.—The compound herein described, consisting of a mixture of sand, fire-clay, coal-tar, and asphaltum, for forming the frames of aquariums by the process substantially herein set forth.

210,205. ROTARY CHURNS. Samuel Leslie and James A. Lyon, Independence, Iowa. Filed Sept. 6, 1878.



Claim.—In a churn having the rotary platform B, vessel C, and lid C', the breaker D, composed of the continuous curved wall *d*, corrugated at *e*, the curved heel d^1, and the inclined top or shield d^2, together with the shank d^3, all arranged to operate substantially as and for the purpose specified.

210,206.



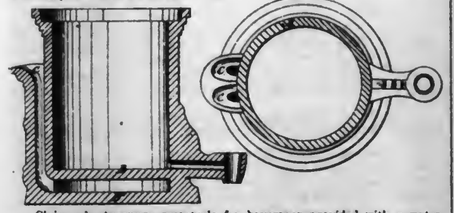
210,206. TRACTION-WHEELS FOR STREET-CARS. E. Manley, Philadelphia, Pa. Filed Apr. 22, 1878.

Claim.—1. The traction-wheel D, formed with two treads, *a a*, and separate tooth-rounds *b b*, substantially as and for the purpose set forth.

2. The wheeled truck A, with slotted standards B, springs *d*, and mechanically-operated wheel E, in combination with the rising and falling traction-wheel D, formed with two treads, *a a*, and separated tooth-rounds *b b*, all constructed, arranged, and operating as herein set forth.

210,207. COMBINED URN AND WATER-BOTTOM. J. Miller, Trenton, N. J., assignor to Prosaro Extract Company, same place. Filed Oct. 27, 1877.

Brief.—One tube allows the air to escape from the bottom when the water is being poured into the other.

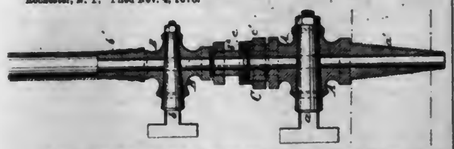


Claim.—A stoneware receptacle for beverages provided with a water-bottom having communication with two tubes formed upon the outside of said urn into one homogeneous piece therewith, substantially as described.

210,208. DETERGENTS. Charles C. Parsons, New York, N. Y. Filed Aug. 7, 1878.

Claim.—A compound consisting of not more than six (6) per centum of oleic acid and aqua ammonia, by volume, forming a solution of oleate of ammonia in an excess of aqua ammonia.

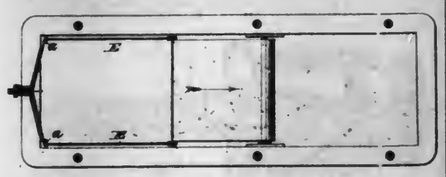
210,209. HOSE-COUPLING FAUCETS FOR BEER-FERMENTING VESSELS. John M. Pfaedler, Rochester, N. Y. Filed Nov. 4, 1878.



Claim.—The combination of the stop-cock A, having threaded taper shank a^1, and the threaded nipple a^2, with the stop-cock B, having corrugated taper shank b^1 and the flanged nipple b^2, and with the threaded and flanged thimble C, substantially as and for the purpose set forth.

210,210. COFFINS. Henry F. Quist, Holyoke, Mass. Filed Oct. 30, 1877.

Brief.—A curtain with spring-roller, operating-cords, &c., is arranged directly under the face-plate.

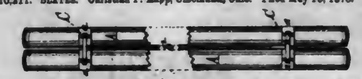


Claim.—1. As an improvement in coffins having a face-opening, the combination therewith of an internal rolling or folding curtain and an operating device, substantially such as shown, extending to the outside of the coffin, whereby the curtain may be closed or opened from the outside without opening the coffin.

2. The combination of the coffin having the face-opening, the internal spring-roller or other retracting device, the flexible blind connected thereto, and a cord extending from the shade through the coffin to its outside.

3. In combination with the coffin, the internal horizontal roller and shade, the guides *a*, and the cords E, passed around the face-opening through the guides, and thence to the outside of the coffin.

210,211. SLATES. Christian F. Rapp, Cincinnati, Ohio. Filed May 16, 1878.



Claim.—1. The hinge-link B, formed of the metal plates *b b* and connecting-rod b^2, substantially as and for the purpose set forth.

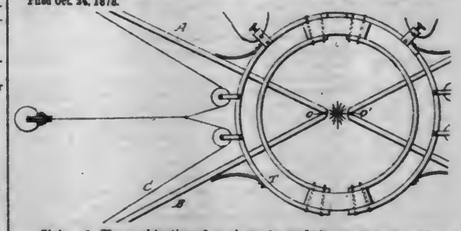
2. The combination of the slates A, recessed at *a*, link B, and staples C, constructed and arranged substantially as and for the purpose set forth.

210,212. MORSE-DETACHERS. Lafayette H. Reed, Brattleborough, Vt. Filed Apr. 27, 1878.



Claim.—The combination, with the longitudinally-operating detaching devices D D *a a* on the ends of whiffletree A, of bars F F, retracting-springs *o o*, bar guides *i i*, and wedge H, substantially as and for the purpose set forth.

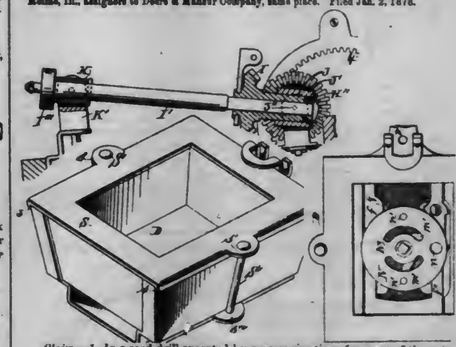
210,213. CARBON-REGULATOR FOR ELECTRIC LIGHTS. James H. Rogers, Washington, D. C. Filed Oct. 24, 1878.



Claim.—1. The combination of an electrode, made in two or more sections or points, brought into contact with one another at a point opposite the other electrode, and within the area of consumption, with a motor or feeding-power common to them all, so that one section cannot be fed faster than the other, but will always keep the points even and joined together in the area of consumption.

2. The combination of A B, geared and driven together at O by any suitable device, in combination with A' and B', similarly geared and driven together at O', substantially as and for the purposes herein set forth and described.

210,214. COMBINED DRILL AND CORN-PLANTER. Andrew Ranstetler and Michael Ranstetler, Molina, Ill., assignors to Deere & Manzur Company, same place. Filed Jan. 2, 1878.



Claim.—1. In a seed-drill operated by gear-connections from one of the supporting-wheels, the rotating shaft P, hung in oscillating bearings J and K at its ends, to permit it to oscillate laterally while passing over uneven surfaces, substantially as described, and for the purpose specified.

2. The shaft H, having pinions H' H'', combined with the driving-gear 4, pinion I, laterally and longitudinally oscillating shaft P, and lever I'', substantially as described, and for the purpose specified.

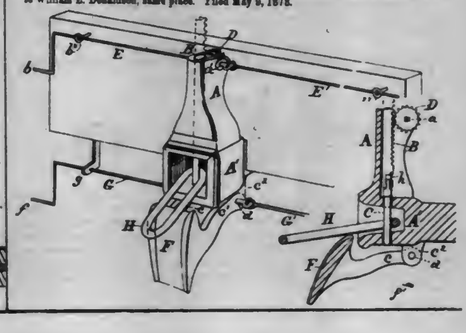
3. The shaft M, having cams *m'*, or equivalent devices, for receiving motion from actuating mechanism, arranged to operate with the seed-cup plate P, and a fixed plate, N, seated between the series of cams *m'* and the seed-cup plate P, substantially as and for the purpose specified.

4. The plate S, combined with the seed-box D and its bottom plate, and with the bolts S', substantially as described, and for the purpose specified.

5. In a corn-planter, the removable conductor Q, which is inserted within the seed-tube, and discharge-valve R, journaled to each other, substantially as described, and for the purpose specified.

6. The conductor Q and discharge-valve R, constructed as described, and journaled to each other, to adapt them to seating and removal from the seed-tubes without the use of bolts or other fastenings, substantially as described, and for the purpose specified.

210,215. CAR-COUPLINGS. James W. Soapp, Jasper, Tenn., assignor of one-third his right to William E. Donaldson, same place. Filed May 9, 1878.

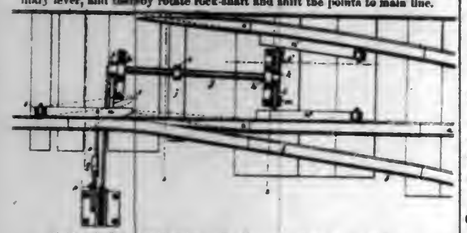


Claim.—1. The footboi bar H, having a slot and hook, *a*, on the lower end to connect with the coupling-pin, and adjusted to slide vertically in the slot of the standard A by means of the pinion D, adjusted in the slot of the standard, and operated by the connecting-rods E E' and cranks *b b'*, substantially as and for the purposes described.

2. The link guide F, having arms *c c'* attached to the lug c^2 under the draw head by bolt *d*, and operated by means of the rods G G' and cranks *f f'*, substantially as and for the purposes described.

210,218. RAILWAY-SWITCHES. George H. Soule, Bangor, Me., assignor of one-half his right to Clark Soule. Filed May 27, 1878.

Brief.—The switch-points are controlled by a rock-shaft between them, having a finger which enters a hole in the switch-bar, said rock-shaft being actuated by the flanges of passing wheels acting upon treadles which rest upon pivoted levers connected with an arm of rock-shaft. In front of the switch-points is an auxiliary lever or treadle, which is held in operating position by a weighted lever, whereby it can be operated by hand to allow a train to pass into the siding. When not operated by hand the weighted lever keeps the auxiliary lever or treadle in position to keep the main line clear; but a train coming out of siding will push the auxiliary lever to the right, and thereby prevents the wheels from depressing it, and allows the train to advance on main line. When approaching switch on main line, if wrongfully set, the wheels depress the auxiliary lever, and thereby rotate rock-shaft and shift the points to main line.

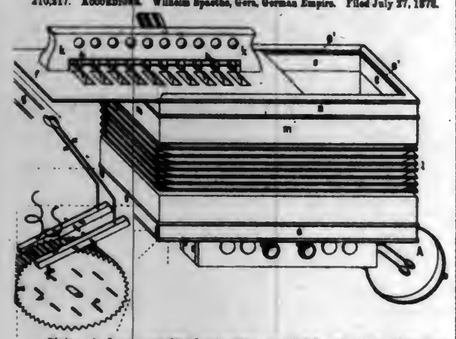


Claim.—1. The combination, with the rock-shaft and switch-points, of safety-levers *l l'*, at the rear of the switch-points, and a safety-lever, *l'*, and an auxiliary lever, *n*, in front of the switch-points, to automatically change the switch-points and retain the train on the main track, substantially as described.

2. The primary lever *P*, connected rock-shaft, and switch-points, in combination with the auxiliary lever, arranged in advance of the point of the switch, and governing mechanism to maintain the auxiliary lever *n* in position next the main track *a*, to operate substantially as described.

3. An auxiliary lever, *n*, for operating the switch-points, adapted to be thrown automatically or otherwise out of and to be automatically brought into operative position, substantially as described.

210,217. ACCORDEONS. Wilhelm Spoetho, Gera, German Empire. Filed July 27, 1878.

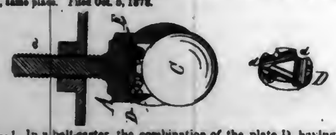


Claim.—1. In an accordion having the cover *f* sliding in grooves lined with leather, the loose rim part *g*, combined and arranged therewith, substantially as described.

2. The metallic bushes of the wooden keys of an accordion, as specified, and for the purpose set forth.

3. In combination with an accordion, the drum A, wheel *a*, provided with pins or teeth *b*, and levers *c c*, carrying the drum-sticks *n n*, substantially as set forth, and for the object in view.

210,219. CASTERS. William D. Spencer, Middletown, Conn., assignor to himself and Henry S. Leonard, same place. Filed Oct. 5, 1878.



Claim.—1. In a ball-caster, the combination of the plate D, having three triangularly-arranged grooves, *d*, the oblong rollers E, made shorter than the grooves, the ball C, and cup A, substantially as and for the purpose described.

2. In a ball-caster, three oblong rollers, arranged in a triangular manner in three intersecting grooves, and made shorter than the grooves of the bearing-plate in which they move, and having their ends cone-shaped, substantially as and for the purpose described.

210,219. HORSE-COLLARS. Charles H. Stevens, Chicago, Ill. Filed Apr. 25, 1878.



Claim.—1. The combination, in a horse-hame collar, of the jointed or flexible plate A, the casing-leathers C and D, the shoulder-pad E, and the rim F, substantially as described, and for the purposes set forth.

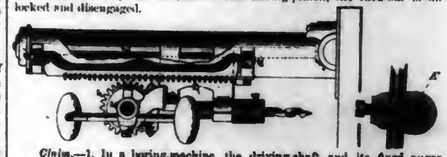
2. The plate A, made in two parts, flexibly joined at their lower ends, incased and combined in a horse-collar, substantially as and for the purposes specified.

3. The plate A, made in two parts, having their lower extremities tapered, embraced, and held in the box B, substantially as shown, and for the purposes set forth.

4. A hame-collar provided with U-shaped plate, A, and having the leather portions that incase the plate and those that further form the body of the collar and rim secured to each other in the relation substantially as shown and described, and for the purposes specified.

210,220. BORING-MACHINES. James Swan, Seymour, Conn. Filed May 25, 1878.

Brief.—A bevel-pinion keyed to the driving-shaft engages permanently with a bevel-pinion keyed to the auger-shaft, and a rack-bar pivoted at both ends and provided with a locking device at the lower end is thrown into engagement with the driving-pinion, whereby the auger is withdrawn from the stuff. By reversing the rotation of the driving-pinion, the rack-bar is unlocked and disengaged.



Claim.—1. In a boring-machine, the driving-shaft and its fixed auger-driving bevel-pinion F, combined with a rack pivoted at both ends to the case, and adapted to be thrown into engagement with the bevel-teeth of the said bevel-pinion, and held in this position by the automatic locking of its lower end in its bearing, substantially as and for the purpose described.

2. In a boring-machine, the pivoted rack and its locking device to retain the rack-teeth in engagement with the auger-driving pinion on the main shaft, combined with the auger-driving pinion F, whereby, by a movement of the driving-shaft and pinion F in a direction the reverse of that in boring, the said rack is liberated from the locking device and the said pinion, substantially as described.

210,221. OUTSIDE FOR METAL-SCREW MACHINES. Emery Parker, New Britain, and Horace E. Jones, Hartford, assignors to the Russell & Erwin Manufacturing Company, New Britain, Conn. Filed Mar. 19, 1878.



Claim.—1. The combination, in a screw-blank holder, of a pair of jaws, fitted to receive the head of a blank and to engage with the shank thereof beneath the head, with an ejector, which co-operates with the jaws in holding the head of the blank, and also operates as an ejector, substantially as described.

2. A blank holder for screw threading and pointing machines, embodying, in combination, a pair of griping-jaws, a recessed seat for the head of a blank, and an ejector, substantially as described.

210,222. TOOTHED CYLINDERS FOR WORKING COTTON, WOOL, &c. Frank P. Pendleton, Philadelphia, Pa. Filed Sept. 19, 1878.

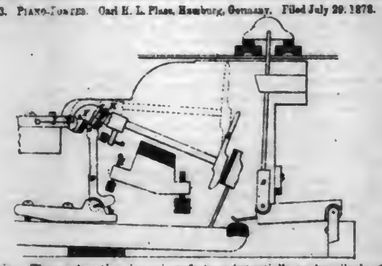
Brief.—Two wires are wound in one groove, so as to produce a cylinder of sufficient fineness without reducing the thickness of the ridges between the grooves. A toothed and a blank wire, or two toothed wires, may be wound in one groove, and wires of differently-shaped teeth may be used.



Claim.—1. A cylinder or roll for working fibrous materials having a spiral groove cut from end to end in its outside surface, in combination with two wires wound and secured in the groove, for the purpose described.

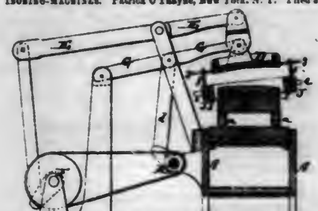
2. The combination of a toothed and a blank wire, both wound and secured in one groove cut spirally from end to end in the outside surface of a cylinder, as described.

210,223. PIANO-FORTES. Carl H. L. Plass, Hamburg, Germany. Filed July 29, 1878.



Claim.—The combination, in a piano forte, substantially as described, of a helical spring between the hopper-stick and the hammer-butt, said butt having a screw pin for regulating the spring pressure.

210,224. IRONING-MACHINES. Patrick O'Thayne, New York, N. Y. Filed June 5, 1878.

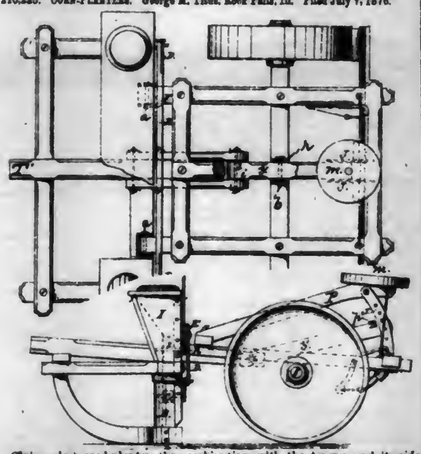


Claim.—1. The combination of the ironing-tool D, in a shirt-ironing machine, with the lever E and with the lever G, in manner described, so that said tool will be moved up and down by the lever E, and at the same time oscillated by the lever G, substantially as specified.

2. The combination of an ironing-table, B, having a convex upper surface, with the ironing-tool D, having a concave lower surface, said ironing-tool being connected to mechanism which imparts to it a combined reciprocating and oscillating movement, substantially as herein shown and described.

3. The combination of the ironing-table B with the surrounding frame or frames I J, that serve to clamp the shirt-bosom to the ironing-board, and with mechanism whereby said frame or frames are alternately raised and lowered for preventing the adhesion of the fabric to the ironing-board, substantially as specified.

210,225. CORN-PLANTERS. George M. Titus, Rock Falls, Ill. Filed July 7, 1878.



Claim.—In a seed-planter, the combination, with the tongue and its side bars, N N, of the lever Y, having stirrups *p*, and pivoted to the axle and to bars N, perforated segments J J, with a stop-pin, and seat *m*, substantially as and for the purpose set forth.

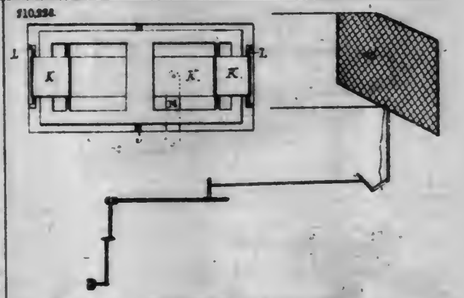
210,226. DEVICES FOR REGULATING THE FLOW OF GAS. Eugene Tourné, New Orleans, La. Filed Feb. 5, 1878.

Brief.—The oscillation of the platform operates the gas-cock, by means of the strap, bell-crank levers, and rods. The extent of movement may be regulated by means of the series of perforations in the lever-arms, in which the connecting-rod is inserted.

Claim.—1. In combination with the platform mechanism and stop-cock, one or more bell-cranks having a series of perforations, as set forth.

2. In combination with the bell-cranks and connecting-rods, the platform G, centrally pivoted, and having flexible strap K and bars L, substantially as described.

210,226.



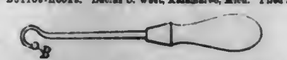
210,227. TAP-VALVES. Maximilian Wain, Pittsburg, Pa. Filed Oct. 16, 1878.



Claim.—1. The ring A, provided with the arm, in combination with the pivoted valve B and spring C.

2. The device for closing casks, &c., consisting of the ring A, provided with the threaded shanks and slotted arm, the pivoted valve B, provided with the rubber packing, and the spiral spring C, applied as shown.

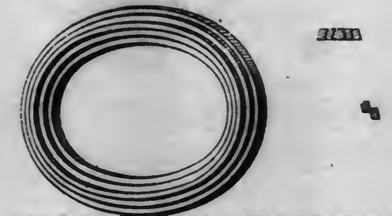
210,228. BUTTON-HOOKS. Lucius C. West, Kalamazoo, Mich. Filed July 20, 1878.



Claim.—A shoe-buttoner of the form described, provided at the point of the hook with a small spherical knob, B, substantially as described, and for the purpose set forth.

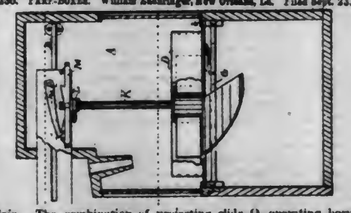
210,229. METHODS OF MANUFACTURING ARTICLES OF WOOD. George F. White, Frankford, Philadelphia, Pa. Filed Sept. 18, 1878.

Brief.—Specially adapted to making picture-frames and similar articles.



Claim.—The method of manufacturing articles of wood by sawing from a board or plank a nest of two or more figures, with beveled edges, in such a manner that when the figures are developed they will wedge, one within the other, forming a rigid body, with close-fitting joints, substantially as shown and described.

210,230. FARE-BOXES. William Eschbrager, New Orleans, La. Filed Sept. 23, 1878.



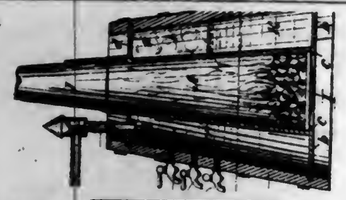
Claim.—The combination of projecting slide O, operating horizontally, with pawl *n*, pivoted thereto, horizontal ratchet-wheel M, replacing-spring *p*, shaft K, carrying said ratchet-wheel, and horizontal partitioned dumping fare-receiver D, said parts being arranged in connection with casing A so as to constitute in themselves a complete fare-box adapted to display separately each fare, substantially as set forth.

210,231. AGRICULTURAL BOILERS. Henry Voth, G. F. Sackenreuther, and Christopher Hoff, Pekin, Ill. Filed Apr. 10, 1878.

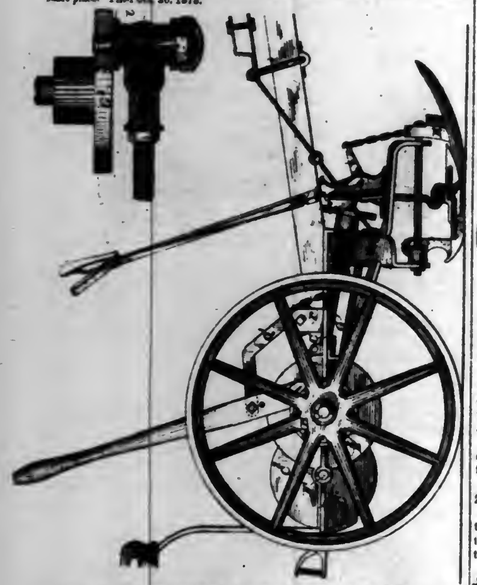
Claim.—1. The boiler consisting of the open tubular fire-pot, cast in one piece, with top and bottom flanges, *a b*, the internal grates, and the outside wooden staves, seated at their upper and lower ends upon the flanges of the fire-pot, as shown.

2. The fire-pot A, cast in one piece, of a conical or tapering form, with the flanges *a b c*, as described and shown.

210,231.



210,232. MOWERS. William R. Baker, Chicago, Ill., assignor to C. H. & L. J. McCormick, same place. Filed Oct. 26, 1878.



Claim.—1. The combination of the shoe, the swivel-bolt on its rear lug, the vertically-slotted front lug, the two-part coupling-frame, the connecting-bolt passing through the lugs of the coupling-frame and of the shoe, and the roller on the connecting-bolt playing in the slot of the front lug of the shoe, these members being constructed and operating substantially as set forth.

2. The combination, substantially as hereinbefore set forth, of the main frame, the doubly-hinged brace or coupling-frame, the cutting apparatus, the shoe provided with front and rear lugs, the double-joint or swiveling connection between the coupling-frame and the rear lug on the shoe, and the roller playing in a slot or way in the front lug of the shoe, and carried by the coupling-frame, and partaking of its vertical movements.

3. The combination, substantially as hereinbefore set forth, of the main frame, the doubly-hinged brace or coupling-frame, the shoe, the cutting apparatus, the double-joint or swiveling connection between the rear lug on the shoe and the coupling-frame, the vertically-adjustable roller and slot connection between the coupling-frame and the front lug on the shoe, and the rocking lever mounted upon the coupling-frame toward its outer end near the shoe, and flexibly connected with the front lug thereon.

4. The combination, substantially as hereinbefore set forth, of the main frame, the stiff or rigid tongue, the two-part brace or coupling-frame hinged to the main frame beneath the tongue and projecting in advance of the inner driving-wheel, the shoe, the cutting apparatus, the slotted lug near the point of the shoe, the heel-lug on the shoe, the tarving rod or bolt in said heel-lug, the pivot-pin passing through said rod and the coupling-frame, and the roller carried by the front end of said pin and playing in the slot of the front lug on the shoe as the guards rock.

5. The combination of the main frame, the slotted lifting-lever, its bent or elbow-link, the lifting-chain secured at one end thereto, the roller over which it passes, and the hinged brace or coupling-frame to which the chain is attached at its outer end, these members being constructed and operating substantially as hereinbefore set forth, whereby the cutting apparatus may be elevated and the lever locked by the strain on the lifting-chain.

6. The combination of the main frame having the narrow projection or arm *b* at front, the tongue rigidly secured to said arm, the brace or coupling-frame hinged to the main frame at two points, one beneath the arm thereof and the other near the axle, and the lifting-lever flexibly connected with the coupling-frame inside the driving-wheel at the side of the narrow portion or front arm of the frame and near the heel of the tongue, substantially as hereinbefore set forth, whereby provision is made for the attachment of the draft-connection and to accommodate the rocking lever, as described.

7. The combination of the main frame having the narrow front portion or arm *b*, the hinged brace or coupling frame, the hinged cutting apparatus, the stiff or rigid tongue, the vertically-rocking double-tree plate or holder, and the flexible draft-connection between said holder and the hinged brace, these members being constructed and operating substantially as hereinbefore set forth.

8. The combination of the crank-wheel, the wrist-pin, the two-armed or double-sleeved pitman-box, the nut on the end of the wrist-pin overlapping the end of the wrist-pin-enveloping sleeve of the pitman-box, and the cap on the end of said sleeve, substantially as and for the purpose set forth.

9. The T shaped pitman-box or two-armed coupling-sleeve U U', made in a single piece, having the annular groove or lubricating-recess in one sleeve and the communicating oil-chamber in the other, the one sleeve being provided with a screw-thread to secure the pitman, and the other with the external screw-thread, by which is attached the screw-cap to inclose and protect the outer end of the wrist-pin and its nut, substantially as hereinbefore set forth.

10. The combination, substantially as hereinbefore set forth, of the crank-shaft wheel, the seat or socket thereon, the wrist-pin, the two-armed pitman box or coupling-sleeve, the nut on the outer end of the wrist-pin, the cap on the outer end of the sleeve of the pitman-box which surrounds the wrist-pin, and the pitman connected with the other sleeve of the box, whereby the working parts are protected and loss of oil is prevented.

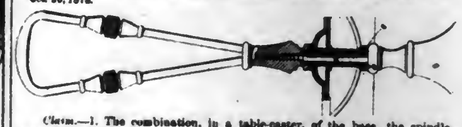
210,233. COLORING-MATTERS TO BE USED AS DYES. Heinrich Baum, Hochst-on-the-Main, Germany, assignor to Meister, Lucius & Brüning, same place. Filed June 29, 1878.

Brief.—These colors are produced by the reactions of disulfobetanaphtholic acids upon the diazo compounds of xyloidine.

Claim.—1. A dye formed by the reaction of the disulfobetanaphtholic acids and the diazo compound of xylole, substantially as described.

2. The process of making scarlet dyes by treating the diazo compounds of xylole with the isomeric forms of the sulfobetanaphtholic acids, as set forth.

210,234. TABLE-CASTERS. Henry B. Beach and Edgar B. Beach, West Meriden, Conn. Filed Oct. 26, 1878.



Claim.—1. The combination, in a table-caster, of the base, the spindle rising therefrom, and so as to form a shoulder at its junction with the base, a rotating carrier having its central opening larger than the spindle around which it rotates, and a non-metallic sleeve to fill the space between said spindle and carrier and form the bearing, substantially as described.

2. The combination, in a table-caster, of the base, the spindle rising therefrom, and so as to form a shoulder at its junction with the base, a rotating carrier having its central opening larger than the spindle around which it rotates, and a non-metallic collar, *e*, on said shoulder, and flange *f*, to inclose said collar, all substantially as described.

3. The combination of the metallic spindle, rotating carrier, non-metallic sleeve, and handle, when said sleeve is constructed to form the bearing or rest for the handle, substantially as described.

210,235. GUN-WIPERS. John S. Birch, Orange, N. J. Filed Apr. 22, 1878.

Brief.—The socket which receives the wiping-head is screw-threaded internally and externally, and is provided with a collar or nut, which screws upon the outside to compress the longitudinal sections, and thereby adjust the socket to different-sized heads.



Claim.—1. The combination, with the rod of a gun-wiper, of the wiping-head D, having screw-shank G, and the tapered split and expanding chuck-nut E, having the contracting collar F, substantially as described.

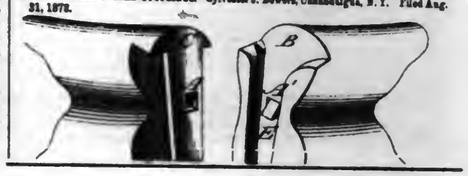
2. The improved gun-wiper herein described, consisting of the telescopic tubes A, B, and C, with spring-studs H I, expanding chuck-nut E, contracting collar F, and the wiping-head D, all combined and arranged substantially as described.

210,236. LAMP-BURNERS. Eli J. Blackham, Bridgeport, assignor to Benedict & Burnham Manufacturing Company, Waterbury, Conn. Filed Nov. 7, 1878.



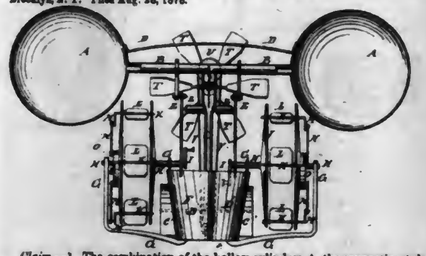
Claim.—In a lamp-burner, the deck constructed with an aperture to receive the deflector, combined with the deflector constructed with a shoulder near its lower edge to rest on the upper surface of the deflector, and an extension or flange below turned upon the under side of the deck, substantially as described.

210,237. HORSE-COLLAR COUPLINGS. Sylvester J. Bowers, Canandaigua, N. Y. Filed Aug. 31, 1878.



Claim.—A collar-fastener composed of two portions adapted to fit upon the free ends of a collar, one of which is provided with the tongue or tenon A, having a stop, C, upon the upper end, the other having a groove, A', with an enlarged opening, B, upon its upper side, to facilitate the entrance of the tongue or tenon, all substantially as shown and described.

210,239. AIR-SHIPS. John F. Cameron, New York, assignor to Elizabeth W. M. Cameron, Brooklyn, N. Y. Filed Aug. 26, 1878.



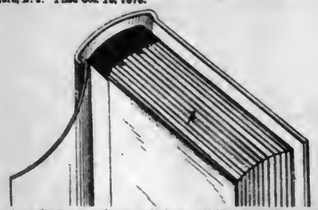
Claim.—1. The combination of the hollow cylinders A, the connecting-tube B, the arched connecting-diaphragm D, and the suspended boat E F with each other, substantially as herein shown and described.

2. The combination of the U-tube C with the tube B, that connects the cylinders A, and with the suspended boat E F, substantially as herein shown and described.

3. The combination of the shaft S, the propeller-wings T, the pulley and band U V, the jointed supporting-bar W, the connecting-bar X, and the bracket and rollers Y Z with each other, and with the cylinders A, the connecting-tube B, the arched diaphragm D, and the suspended boat E F, substantially as herein shown and described.

4. The combination of the rigid lever A' and the rope B' with the connecting tube B, the cylinders A, the arched diaphragm D, and the suspended boat E F, substantially as herein shown and described.

210,238. COPYING-BOOKS. William D. Chandler, Edwin Wickstead, and James D. Van Voorhis, Cranford, N. J. Filed Oct. 16, 1878.

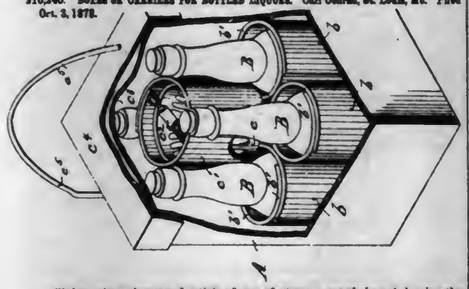


Claim.—1. A package or packages of sheets of letter-copying paper rendered permanently moist by being saturated or coated with a compound composed of glycerine, pearlash, and French chalk, in the proportions specified, substantially as set forth.

2. The combination, in a letter-press book for copying letters, &c., of a series of intersecting guards or strips, *a a a*, of rubber cloth or other moisture-proof material, arranged as shown, for protecting the back of the book, and precluding the moisture applied to the leaves from soaking through it, substantially as specified.

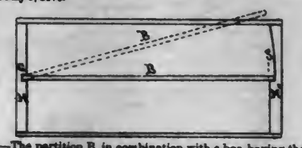
3. The combination of a book for taking copies of letters, &c., having its leaves rendered permanently moist by being saturated or coated with a deliquescent and slowly-evaporating compound, composed of glycerine, pearlash, and French chalk, in the proportions specified, with a series of intersecting guards or strips, of rubber cloth or other moisture proof material, extending the entire length of the leaves, each strip lapping over and forming an independent back for a suitable number of sheets, for retaining the moisture in the leaves and protecting the back of the book, substantially as herein shown and described.

210,240. BOXES OR CARRIERS FOR BOTTLED LIQUORS. Carl Conrad, St. Louis, Mo. Filed Oct. 3, 1878.



Claim.—As an improved article of manufacture, a sample-box, A, having the bail *c*' and lid *c*', the lower nests, *b' b' b' b'*, containing bottles B, and the nest *a*, supported top of said lower nests and between the necks of the said bottles, by means whereof the same, together with the devices to open said bottles and test their contents, are packed, in the manner and for the purposes set forth.

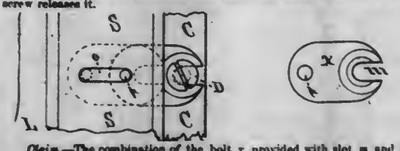
210,241. FRUIT AND PACKING BOXES. Matthew Cooke and Robert J. Cooke, Sacramento, Cal. Filed July 9, 1878.



Claim.—The partition B, in combination with a box having the end H, with groove G, and end H', having seat S, with the inclined upper wall, substantially as and for the purposes set forth.

210,242. BOX-FASTENERS. Matthew Cooke and Robert J. Cooke, Sacramento, Cal. Filed July 9, 1878.

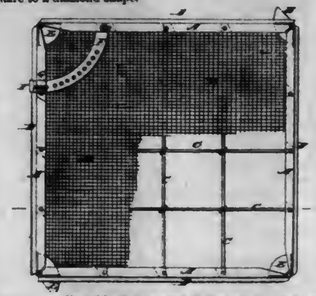
Brief.—The bolt is prevented from being unfastened until a turn or two of screw releases it.



Claim.—The combination of the bolt *x*, provided with slot *m* and tenon *p*, secured between the lid L and cleat S, which is provided with the slot *n*, for admitting *p*, to permit the sliding of the bolt *x* and the screw D, secured in the chest C, substantially as and for the purposes above set forth.

210,243. ADJUSTABLE SIEVES. John Dildine, Milton, Pa. Filed Oct. 30, 1878.

Brief.—The meshes of the sieve are made smaller by adjusting the frame from a square to a diamond shape.



Claim.—1. An adjustable sieve formed of the bars A, hinged to each other at their adjacent ends, the wire-cloth B, and the cross-wires C, substantially as herein shown and described.

2. The combination of strengthening-sectors E with the adjacent hinged ends of the bars A, the wire-cloth B, and the cross-wires C, substantially as herein shown and described.

3. The combination of the curved arm F and its screw or pin G with the hinged bars A, the wire-cloth B, and the cross-wires C, substantially as herein shown and described.

4. An adjustable sieve formed of the hinged bars A, the wire-cloth B, the cross-wires C, the angle-strips D, the strengthening-sectors E, the curved bar F, and its screw or pin G, substantially as herein shown and described.

210,244. RAILROAD-TRACES. Ephraim R. Dingley, New York, N. Y. Filed Oct. 16, 1878.

Brief.—The vibrations of the rails, as also the wheels, are lessened by means of a rubber strip extending along the outside of the head of the rails, and conforming to the configuration thereof, and of such height that the passing wheels bear thereon.



Claim.—A railroad-rail provided with a concaved rubber bearing-block, E, extending around and over one side of the head of the rail, to destroy the side vibration of the rail and the ringing sound of the wheels of cars, as specified.

210,245. ELECTRIC GAS-LIGHTING APPARATUS. W. E. Fasor, Cleveland, Ohio. Filed Apr. 4, 1878.

Claim.—1. The gas-conduit C, cast in one piece with the outer case, and combined with the operating devices, as described, so as to support the same, substantially as set forth.

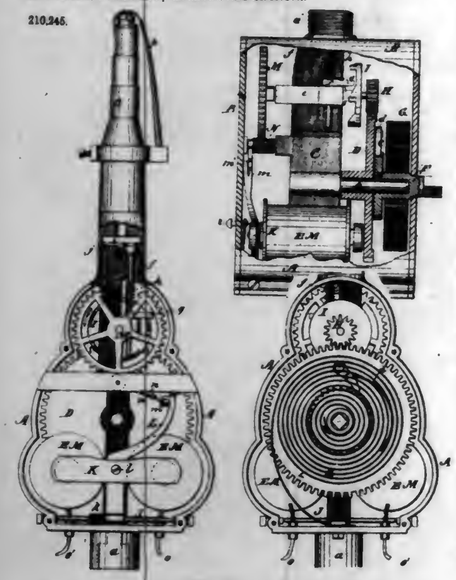
2. The vertical gas-conduit having stud *b*, combined with the wheel D, arranged loosely thereon and carrying pawl and spring, the ratchet-wheel E, with attached squared sleeve F, and driving-spring G, connected at one end to the sleeve F and at the other to the case, substantially as shown and described.

3. The combination, with the case A and removable burner O, of the wheel I, arranged to be driven by the actuating mechanism, the vertical rock-shaft *f*, having rigid arm *g*, spiral spring *h*, and cut-off *i*, arranged between the removable burner and the case to control the flow of gas, substantially as described.

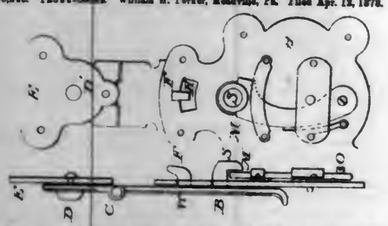
4. The sliding rock-shaft *f*, surrounded by a packing at its upper end, and having a cut-off, *i*, and arm *g*, combined with a spiral spring, *h*, arranged to exert both a torsional and longitudinal tension, substantially as described.

5. The combination, with case A, having central conduit, C, of the magnets E M, located one upon each side of said conduit, together with the operating mechanism, as described, having its driving-spring and main drive-wheels at one end of said magnet and upon one of said conduits, and having its escapement at the other end of said magnets and upon the opposite side of the conduit, and its cut-off or valve intermediate between said escapement and main drive-wheels, substantially as shown and described.

210,245.



210,246. TRUSS-LOCK. William H. Porter, Meadville, Pa. Filed Apr. 12, 1878.



Claim.—1. The round catch S, the hook F, in combination with the slot H, constructed as described, for the purposes set forth.

2. The hasp B, attached to the plate E by a rivet, D, in combination with the catch S, the hook F, and the slot H, constructed as described, for the purposes set forth.

210,247. METALLIC FENCES. Christopher L. Frink, Rockville, Conn. Filed June 3, 1878.



Claim.—1. In combination, the rails *g*, the filling-blocks *w w' w''*, and pickets *u*, arranged for use as described.

2. In combination, the rails *g*, filling-blocks *w w' w''*, pickets *u*, screws *s*, and wedge-pins *y*, arranged for use substantially as described.

3. In combination, the rails *g*, caps *r*, pickets *s*, and screws *t*, arranged for use as described.

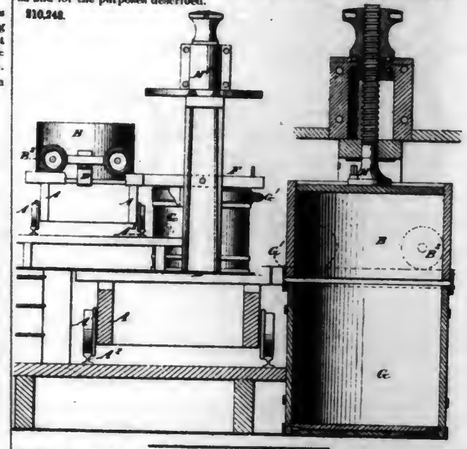
4. In combination, the rails *g*, cap *i*, socket *j*, screws *k*, post-body *l*, cap *m*, socket *n*, post-base *o*, and screws *p*, arranged for use as described.

210,248. TOBACCO-PRESSES. Frederick W. A. Fuller, Louisville, Ky. Filed Sept. 24, 1878.

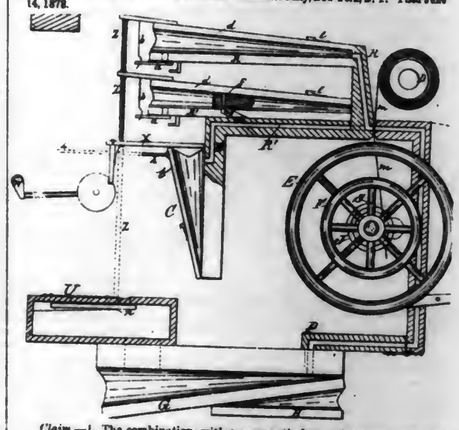
Claim.—1. The combination, in a tobacco-press, of the truck A and drum B, mounted upon wheels running on a track on said truck, and provided with a false bottom, E, and hinged gate C, substantially as and for the purposes set forth.

2. In combination, the hogshead G, the track F, the drum B, and the adjustable connecting-hoop G', constructed and operating together substantially as and for the purposes described.

210,248.



210,249. MECHANICAL MUSICAL INSTRUMENTS. Marriot Gally, New York, N. Y. Filed June 14, 1878.



Claim.—1. The combination, with a pneumatic key-action in a mechanical musical instrument, of the perforated music-sheet and a tripping-valve, substantially as and for the purpose specified.

2. The combination, with the primary keys of a pneumatic key-action, of sub-pneumatic keys, substantially as and for the purpose specified.

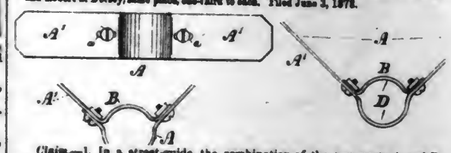
3. The combination, with the sub-pneumatic key A', of air-duct R' and a tripping-valve operative during the movement of its primary key.

4. A movable fulcrum, mechanically operated in the key-action of a musical instrument, for the purpose of increasing or diminishing the power of the stroke.

5. The combination, with pneumatic keys operated by a music-sheet, of finger-keys, the pneumatic keys and the finger-keys both arranged to act upon the push-pins Z, substantially as specified.

6. In a mechanical musical instrument, the motor-shaft Q, with a brake for retarding the same, and a yielding connection between the shaft and its driving device, substantially as and for the purpose specified.

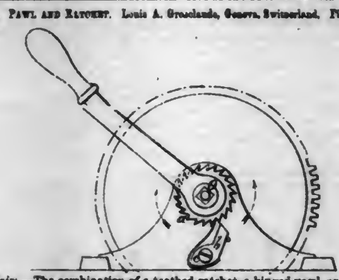
210,250. STREET-SIGNS. John N. Greene, Indianapolis, Ind., assignor to William H. Tucker and Robert S. Dorsey, same place, one-third to each. Filed June 3, 1878.



Claim.—1. In a street-guide, the combination of the two parts A and B, one or both of said parts being constructed of sheet metal, and together forming both the arms and the clasp, and being suitably bolted together, forming the entire guide, substantially as herein shown and specified.

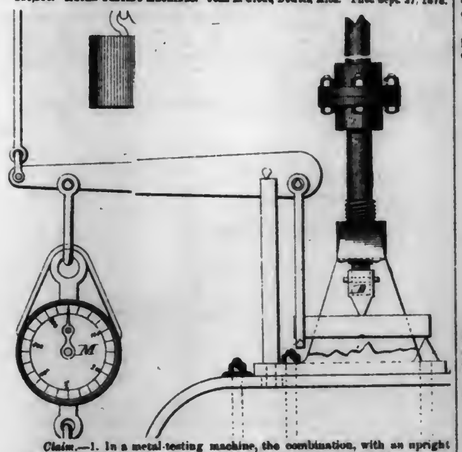
2. In a street-guide, the sheet-metal part A, forming the two guide-arms A' A', in combination with the clasping or clamping part B, for attaching it to a hasp-post, substantially as herein shown and specified.

210,251. PAWL AND RATCHET. Louis A. Grosclaude, Geneva, Switzerland. Filed Nov. 1, 1878.



Claim.—The combination of a toothed ratchet, a hinged pawl, and a spring attached to the tail of the pawl, extending between the pawl and ratchet, and so as to rest upon said ratchet and support the pawl when the ratchet is moving from the pawl or the pawl from the ratchet, but draw the pawl into action when the movement is reversed, substantially as described.

210,252. METAL-TESTING MACHINES. John R. Grout, Detroit, Mich. Filed Sept. 27, 1878.



Claim.—1. In a metal-testing machine, the combination, with an upright rotating screw-shaft adapted to have vertical movement, of a fuller suitably secured to the lower extremity of the same, substantially as set forth.

2. In a metal-testing machine, the combination, with a fuller suitably secured to the lower extremity of a vertical shaft, adapted to be uniformly moved downward, of two supports for the test-bar, located below and respectively on opposite sides of said fuller, substantially as set forth.

3. In a metal-testing machine, the combination, with a fuller suitably secured to an upright rotating shaft, adapted to have a uniform vertical movement, of two knife-edged supports for the test-bar, located below and respectively on opposite sides of said fuller, substantially as set forth.

4. In a metal-testing machine, the combination, with two supports for the test-bar, of an upright rotating screw-shaft, having a fuller suitably secured to its lower extremity, which is located above and centrally between said supports, together with a guide-arm formed with an opening, through which the fuller works in vertical movement, substantially as set forth.

5. In a metal-testing machine, the combination, with a rotating vertical shaft having screw-threaded engagement with a supporting device, and provided with a fuller at its lower extremity, which is thereby adapted to be gradually forced downward with a uniform movement, of two supports for the test-bar, located below and respectively on opposite sides of said fuller, substantially as set forth.

6. In a metal-testing machine, the combination, with a fuller or equivalent device which is vertically adjustable, of supports located respectively below and on opposite sides thereof, together with a scale-beam which connects with one of said supports and is adapted to indicate the degree of pressure transversely imposed upon the test-bar, substantially as set forth.

7. In a metal-testing machine, the combination, with a vertically-adjustable fuller, of supporting devices adapted to provide bearing for the opposite extremities of a test-bar as the latter is transversely suspended thereby, said supports being movable, so as to accommodate themselves to the elongation of said test-bar under pressure, substantially as set forth.

8. In a metal-testing machine, the combination, with a scale-beam whose short arm indirectly connects with one of the test-bar supports, and whose long arm is provided with a spring-balance, of a counterbalancing-weight suspended by a connection passing over a pulley or equivalent device located in horizontal plane above said scale-beam and connecting with the long arm of the latter, substantially as set forth.

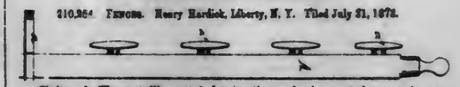
9. In a metal-testing machine, the combination, with a fuller suitably secured to a screw-shaft, and two supports for the test-bar, located below and on opposite sides of the fuller, of a vertical link, to which one of said supports is connected, and a scale-beam connecting with the link, the long arm of said scale-beam being provided with a spring-balance exerting pressure downward, and a counterbalancing-weight exerting force in the opposite direction, substantially as set forth.

210,253. LETTER-BOXES. Robert Hale, Minneapolis, Minn. Filed Oct. 25, 1878.



Claim.—A street letter-box constructed substantially as described, and consisting of the body A, the cap B, smaller than the top of the body, and provided with an opening for the admission of mail matter, and the guard C, projecting inwardly and upwardly, all arranged to operate as and for the purpose set forth.

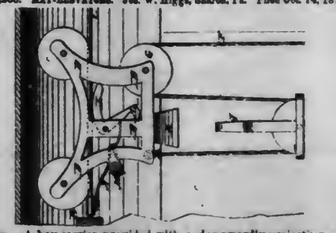
210,254. FENCES. Henry Hardick, Liberty, N. Y. Filed July 31, 1878.



Claim.—1. The metallic post A, having the anchoring cross-bar *a* cast upon its lower end, and buttons *a'* upon one of its vertical sides, for the attachment of the wire rails B, substantially as specified.

2. The stay-post D, intermediate to two rail-posts, A A, of a fence, and provided with the foot *d*, for attaching and anchoring the vertical cross-tie C of the rail B, substantially as specified.

210,255. HAY-ELEVATORS. Jos. W. Higgs, Sharon, Pa. Filed Oct. 14, 1878.



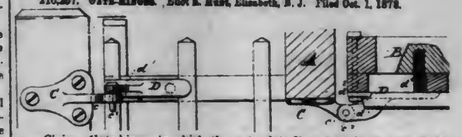
Claim.—A hay-carrier provided with a downwardly-projecting angle-bar, I, pivoted at its angle to the carriage D, and operated in combination with the pulley-block, loop J, and spring N, arranged as shown and described, for the purpose specified.

210,256. RULING ATTACHMENTS FOR PEN-HOLDERS. Joseph Hoffman, New York, N. Y. Filed Nov. 13, 1878.



Claim.—The grooved pen-holder, in combination with the fillet or ring mounted thereon, and provided with a guard rod or strip and a tongue, substantially as set forth.

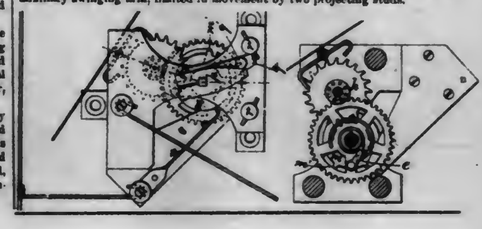
210,257. GATE-HINGES. Eliot B. Hunt, Elizabeth, N. J. Filed Oct. 1, 1878.



Claim.—Gate-hinges in which the gate-plate D projects in the rear of the base of its eye-arm d^3, and has a hole formed through the said projection to receive the fastening-bolt, and has a screw-stud, d^4, cast upon the inner side of its forward part, to be screwed into the bar of the gate, substantially as herein shown and described.

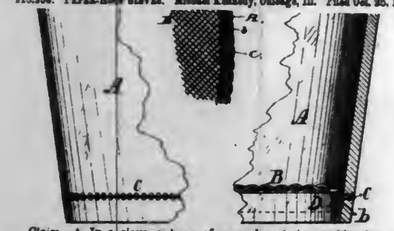
210,258. RIVAL-BOXES FOR ELECTRIC REGISTERS. John B. Johnson, Boston, and Harrison Whittemore, Malden, Mass. Filed Mar. 12, 1878.

Brief.—A circuit-closer upon a spring-actuated shaft makes one revolution when released. The spring is wound by a crank attached to the spring-shaft. The movement of the said crank is limited to precisely one revolution by an auxiliary swinging arm, limited in movement by two projecting studs.



Claim.—In a circuit-closer for electric time-registers, the combination of the shaft *b*, with its arm or projection *p*, swinging arm *q q'*, the stationary projections *r r'*, the one-tooth ratchet *d*, pawl *e*, and the circuit-wheel *w*, with its insulated spring *u*, as and for the purpose set forth and described.

210,359. PAPER-HOOP SIEVES. Michael Kennedy, Chicago, Ill. Filed Oct. 26, 1877.

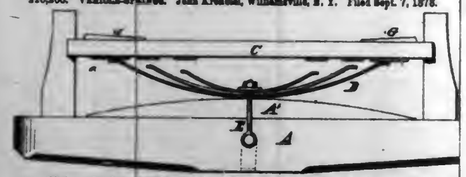


Claim.—1. In a sieve, a hoop of paper-board, in combination with the sieve-bottom secured directly thereto, substantially as described.

2. A paper hoop, A, in combination with the sieve-bottom B, secured to the hoop by sewing or stitching thereto, substantially as described.

3. The paper hoop A, having its sides flaring from the bottom, in combination with the sieve-bottom B, having its edge turned over to form a flange, *b*, and stitching C, whereby the hoop and bottom are fastened together and the bottom drawn taut, substantially as described.

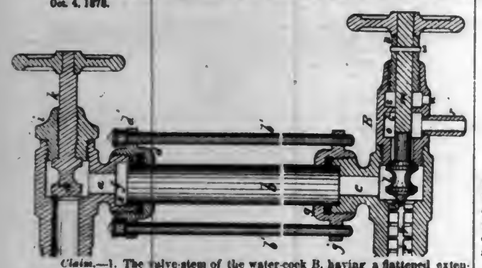
210,360. VEHICLE-SPRINGS. John Krehbiel, Williamsville, N. Y. Filed Sept. 7, 1878.



Claim.—1. A wagon having its bolster A provided with the convex bearing-piece A', a series of independent differently-curved leaf-springs, D, and the spring-board C, the whole being constructed and arranged in a manner substantially as and for the purpose specified.

2. The combination, with the bolster A and spring-board C, of a series of independent leaf-springs, D, said springs being arranged in relation to one another and the spring-board as described, and secured to the bolster by the eyebolts or their equivalent, E, as and for the object stated.

210,361. WATER-GAGES FOR STEAM-BOILERS. Erastus B. Kunkle, Fort Wayne, Ind. Filed Oct. 4, 1878.

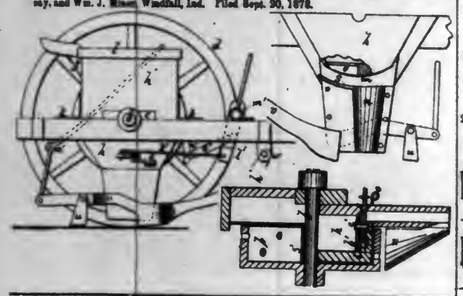


Claim.—1. The valve-stem of the water-cock B, having a flattened extension, *q*, and scraper *p*, substantially as and for the purposes set forth.

2. The chamber *s*, combined and arranged in connection with the blow-off opening of the cock B, substantially as and for the purposes set forth.

3. The combination of the sleeve *v* and cross-pin *w* with the valve-stem *n* and cock B, for the purposes described, and as set forth.

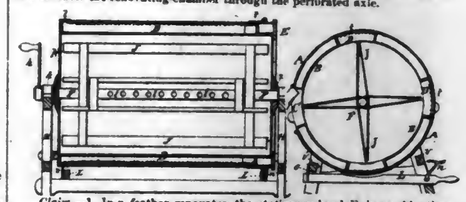
210,362. COMBINED SEED-DRILL AND CORN-PLANTER. Thomas J. Lindsay, David A. Lindsay, and Wm. J. Minor, Windfall, Ind. Filed Sept. 30, 1878.



Claim.—The seed-boxes *h h'*, divided horizontally on line with axle, the lower part, *h*, having spout and plate *e*, and a bottom provided with plate *b' c'*, cut-off *d'*, and two openings, whereby *h* is adapted to operate as a planter, or with the perforated flanged cylinders *p* as a drill, as shown and described.

210,363. STEAM FEATHER-RENOVATORS. Albert Marble, Takeaska, Mich., assignor of one-half his right to Albert Cone, same place. Filed Nov. 2, 1878.

Brief.—Steam admitted to the stationary head through the perforation therein passes between the cylinders and heats the same. Steam, disinfectants, and oil enter the renovating-chamber through the perforated axle.

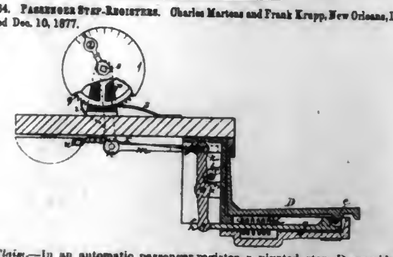


Claim.—1. In a feather-renovator, the stationary head E, in combination with the revolving cylinder A, substantially as shown and described.

2. In a feather-renovator, the combination of the levers L L, hook *n*, and bar *r* with the cylinder A, substantially as and for the purpose shown and described.

3. In a feather-renovator, the combination, with the concentric cylinders A B, of the uniting head N, head G, and stationary head or ring E, substantially as and for the purpose herein shown and described.

210,364. PASSENGER STEP-REGISTERS. Charles Marteau and Frank Krupp, New Orleans, La. Filed Dec. 10, 1877.



Claim.—In an automatic passenger-register, a pivoted step, D, provided with wedge *e*, for operating on a friction-roller, *f*, that is fitted in the rear end of a sliding rod, *g*, as described, and for the purpose set forth.

210,366. COFFEE-HULLING APPARATUS. Jose A. Mesquera, Caracas, Venezuela. Filed Apr. 27, 1878. Patented in England, Feb. 12, 1878.

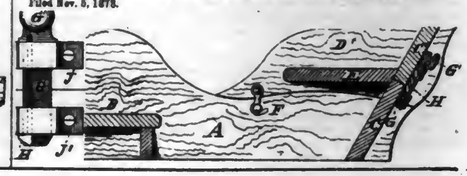


Claim.—1. The tumblers G G, provided with actuating-springs and back stops, combined and arranged as described, and having their rubbing faces transversely serrated, as shown, in combination with a principal rotating cylinder, having its peripheral surface longitudinally furrowed with serrations of the character described, as a means for abrading and removing the hulls of coffee and other analogous berries or grains, the whole being constructed and arranged to operate substantially in the manner described and set forth.

2. In machines for hulling coffee, the combination of the cylinder A with the tumblers G G, having their rubbing-faces transversely serrated, as described, and pivoted intermediately between stops *d* and springs *a*, as described, whereby a double positive motion is imparted to the tumblers, the first or primary motion being in a line directly toward the peripheral surface of the cylinder, the last or secondary motion being in a line partially tangential to the same, substantially as set forth.

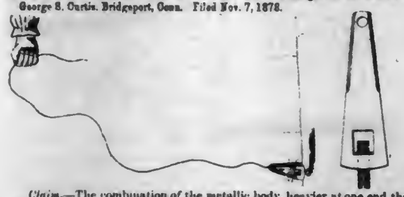
3. In machines for hulling coffee, a main rotating cylinder, having its surface furrowed with longitudinal serrations, in which the broader faces are the leading or rubbing faces, in combination with oscillatory tumblers pivoted and controlled in their movements, as herein described, having their rubbing-surfaces furrowed with transverse serrations, differing in pitch from those of the main cylinder, but having the broader faces of such serrations set in opposite direction to those of the main cylinder, when constructed and arranged to operate substantially in the manner described and set forth.

210,368. CHILDREN'S CARRIAGE AND SLEIGH BODIES. Christian Pfeffer, Buffalo, N. Y. Filed Nov. 5, 1878.



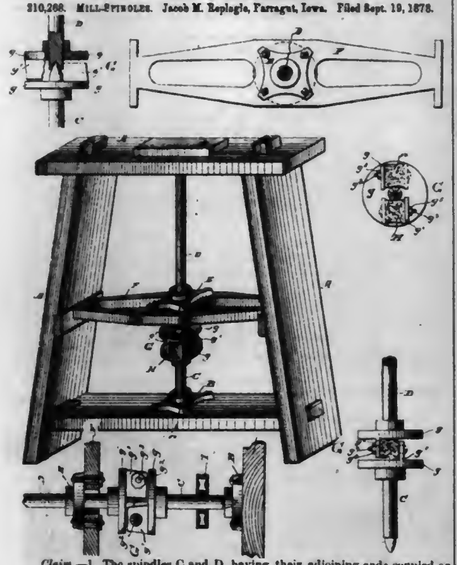
Claim.—A child's carriage or sleigh box composed of the curved sides A, seat B, and dash-board C, in combination with an auxiliary seat-frame, D', with the end-board C' and seat E, said auxiliary seat-frame being removably secured upon the forward end of the box proper by means of two staples, J J', one affixed to the said box and the other to the auxiliary seat-frame, and a sliding bolt, G, having the spring-catch H, as and for the object stated.

210,367. TOY TORPEDOES. William H. Reiff, New Haven, assignor of one-half his right to George S. Curtis, Bridgeport, Conn. Filed Nov. 7, 1878.



Claim.—The combination of the metallic body, heavier at one end than the other, with a cavity to receive the pellet, and a plug projecting from the heavier end, and free to be moved to and from the seat of the pellet, substantially as described.

210,268. MILL-SPINDLES. Jacob M. Replogle, Farragut, Iowa. Filed Sept. 19, 1878.



Claim.—1. The spindles C and D, having their adjoining ends coupled or held together by a coupling, G, provided with rubber or other suitable springs H, substantially as and for the purpose set forth.

2. The combination, with the spindles C and D, having their adjoining ends held or coupled together, of the adjustable tram-pot E and bridge-tree F, substantially as and for the purpose set forth.

3. The coupling G, composed of the plates *g*, lugs g^1 g^1, nutted bolts g^2 g^2, and springs H, substantially as and for the purpose set forth.

210,269. DECORATED FELT HATS. William B. Rice, Bridgeport, Conn. Filed Sept. 16, 1878.



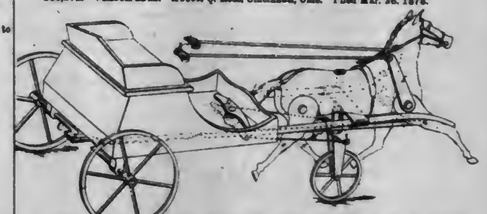
Claim.—The spotted felt herein described, having small knots or knubbles of wool B formed in dense round knubbles, and capable of uniting with the adjacent fibers in felting, as described, intimately mingled with the ordinary wool A, and forming a united fabric having the decorative effect herein specified.

210,270. METHODS OF MANUFACTURING FELT FOR HATS, &c. William B. Rice, Bridgeport, Conn. Filed Sept. 16, 1878.



Claim.—The within-described method of producing spotted felt, by overcarding wool of a different hue or shade, and distributing the knots thus formed in the web in the forming of the felted article, substantially as and for the purposes herein specified.

210,271. VELOCIPEDES. Abbott Q. Ross, Cincinnati, Ohio. Filed Mar. 26, 1878.



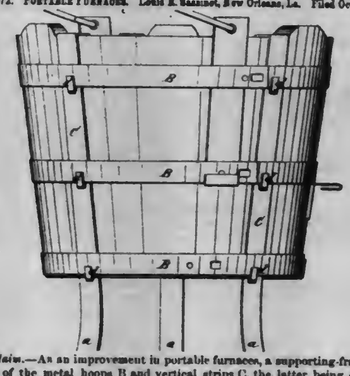
Claim.—1. A toy horse and carriage in which the wheels of the carriage are connected with the pivoted legs of the horse, substantially as specified, so that the propulsion of the carriage will impart a trotting motion to the legs of the horse.

2. In a toy horse and carriage, the combination, substantially as specified, of the cranked axle of the propelling wheel or wheels, the pivoted legs of the horse, and suitable connecting-rods.

3. In a toy horse and carriage, the combination, substantially as specified, of the cranked axle of the propelling wheel or wheels, the cross-linked pivoted legs of the horse, and suitable connecting-rods from one pair of legs to the cranks of the axle.

4. In a toy horse and carriage, the combination, substantially as specified, of the cranked axle of the propelling wheel or wheels, the cross-linked pivoted legs of the horse, the rods connecting the cranks to the legs, rigid bars on one pair of legs, and stiff rods for pulling and pushing on said bars from the seat of the carriage.

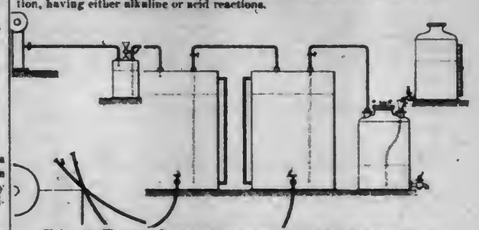
210,272. PORTABLE FURNACES. Louis R. Sassinet, New Orleans, La. Filed Oct. 7, 1878.



Claim.—As an improvement in portable furnaces, a supporting-frame composed of the metal hoops B and vertical strips C, the latter being extended below the furnace to form legs *a*, and provided with struck-up tongues *d*, upon which, outside the strips, the hoops rest, and thus support the furnace, while the frame is fastened to the furnace by the bent-over ends of the strips at the top, as shown and specified.

210,273. MANUFACTURE OF BLEACHING-LIQUIDS. Thomas Simon, Comte de Dienheim-Brochocki, Paris, France, assignor to himself and Cornelius Roosevelt, same place. Filed Oct. 14, 1878. Patented in France, Feb. 9, 1878.

Brief.—Combinations of hypochlorite of soda and chlorate of soda in solution, having either alkaline or acid reactions.

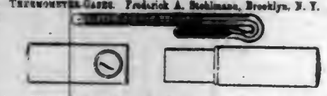


Claim.—1. The manufacture of a new product called "chlorozone," which may be used in acid or alkaline form—i. e., as oxygenated and chlorous decolorizing agent having for a base a soluble alkali or alkaline earth—substantially as herein shown and set forth.

2. The process hereinbefore described of obtaining the product called "chlorozone," which consists in saturating an alkaline solution by a more or less considerable current of hypochlorous-acid gas, produced by the decomposition in the cold of hypochlorites or of chlorates by an acid and a current of air, essentially as described.

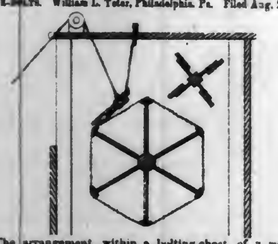
3. The process of bleaching herein set forth, which consists in the employment of chlorozone in acid or alkaline solution, as set forth.

210,274. THERMOMETER-CASES. Frederick A. Stohlmann, Brooklyn, N. Y. Filed Nov. 4, 1878.



Claim.—The combination, with the medical thermometer case, of a lens inserted in the said case, substantially as and for the purposes set forth.

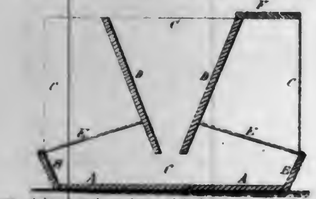
210,275. FLOUR-BOLTS. William L. Tetar, Philadelphia, Pa. Filed Aug. 23, 1878.



Claim.—1. The arrangement, within a bolting-chest, of a reel-bolt and an overhung brush, suspended by flexible cords or straps from the bolting chest, so that the brush may rest obliquely upon the outer surface of the reel, as herein described.

2. The combination and arrangement, within a bolting-chest, of a revolving bolt and an inclined brush resting against it, and a fan-wheel extending along the upper and outer surface of the bolt, and revolving toward it in such manner that its air-waves may strike the cloth, in the manner and for the purpose described.

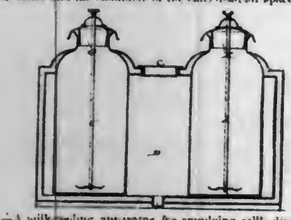
210,276. HOG-TROUGHS. Washington H. Tucker, Stone Fort, Ill. Filed Oct. 1, 1878.



Claim.—A hog-trough consisting of the bottom A, sides B B, elevated ends C C, converging boards D D, rods E, and platform F, all constructed as shown and described.

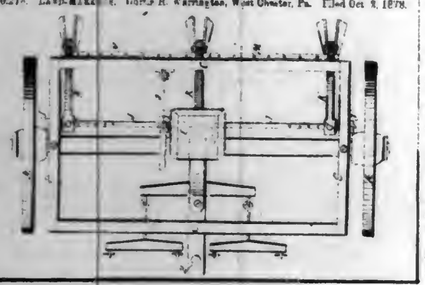
210,277. MILK-COOLERS. Frank K. Ward, Washington, D. C. Filed Nov. 6, 1878.

Brief.—The cans has double walls and single-walled raised portions, between which latter and the shoulders of the cans dead-air spaces are formed.



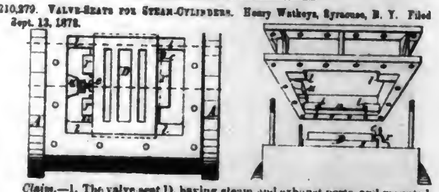
Claim.—A milk-cooling apparatus for supplying milk direct to the consumer, consisting of the double-walled cans D, containing single-walled cans, and having single-walled raised portions E F G, between which and the shoulders of the cans an air-space is formed, substantially as and for the purpose set forth.

210,278. LAND-MARKERS. Horace H. Warrington, West Chester, Pa. Filed Oct. 9, 1878.



Claim.—A land-marker consisting of a two-wheeled vehicle, a rod, J, pivoted in its frame, C, standards K, made fast to said rod and carrying plows, and a spacing-bar, M, said standards being adjustable on rod J and bar M, as shown and described.

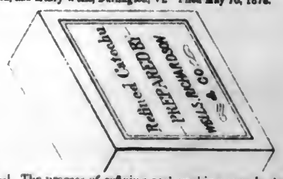
210,279. VALVE-SEATS FOR STEAM-CYLINDERS. Henry Watheys, Syracuse, N. Y. Filed Sept. 13, 1878.



Claim.—1. The valve-seat D, having steam and exhaust ports, and mounted loose on the cylinder-face, and provided with flange *s*, in combination with lugs or shoulders either on the cylinder-face or interior of the steam-chest, and having a flange engaging with that of the valve-seat, and a set-screw or key arranged to adjust and tighten it longitudinally in its position, substantially as described.

2. The combination of the valve-seat D, mounted loose on the cylinder-face, and provided with flange *s*, the rib *c*, attached to the cylinder face, and the set-screw *e*, fitted in sockets *w* and *c*, respectively, in the end of the steam-chest and end of valve-seat, substantially as specified and shown.

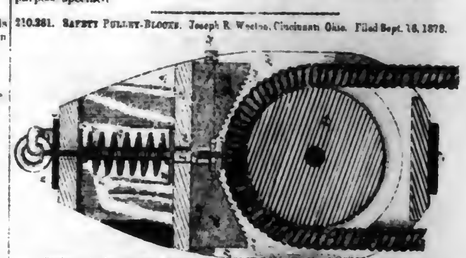
210,280. REFINING AND PACKING CATECHU. Edward Wells, Albert E. Richardson, William J. Van Patten, and Henry Wells, Burlington, Vt. Filed May 10, 1878.



Claim.—1. The process of refining and packing catechu herein described, which consists in first placing the catechu in a vessel containing a sufficient quantity of water, then subjecting it to the action of steam heat, at the same time introducing into the mass steam of a high temperature, thereby liquefying the catechu and forcing the lighter substances to the surface, then skimming, straining, and settling, and finally placing the catechu, while still liquid, in boxes holding certain specified quantities, as herein set forth.

2. The herein-described article of manufacture, consisting of refined and concentrated catechu, incased in a tight integument or envelope, as and for the purpose specified.

210,281. SAFETY PULLEY-BLOCKS. Joseph R. Wesbo, Cincinnati, Ohio. Filed Sept. 16, 1878.



Claim.—1. In a safety pulley-block, the combination of a rope, wheel, and sliding wedge.

2. A pulley-block provided with a wheel, a clamp for securing the rope, and appliances, substantially as described, whereby the clamp is brought toward the wheel when the weight is removed, substantially as set forth.

3. The combination, with a pulley-block, of a double wedge, as D, having teeth on its under surface, substantially as and for the purposes set forth.

4. The combination, with a pulley-block, of a wedge, D, consisting of parts *c* and *d*, substantially as and for the purpose set forth.

5. In a pulley-block, the combination of wedge D, stem F, having teeth *f*, and a retracting device, stem G, spring I, and plate H, substantially as and for the purposes specified.

6. In a pulley-block, the combination of set-screws K, plate L and spring I, substantially as specified.

7. The combination of stem G, nut *g*, spring I, and plate J, substantially as and for the purposes specified.

8. In a pulley-block, a device, consisting of a double wedge, for stopping the pulley-cord in either direction it may run when the latter breaks.

9. In an automatic safety pulley, having abrading surfaces to bear against the rope when broken, the adjustable sheave-journal secured in slot *f*, and supported by set-screw V, substantially as and for the purpose specified.

210,282. SPADE ATTACHMENTS FOR FIRE-ARMS. Joseph P. White, Savannah, Ga. Filed May 20, 1878.

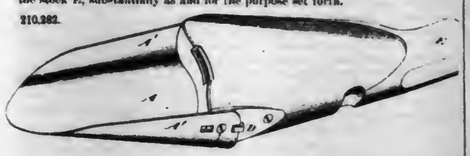
Claim.—1. A spade or scoop pivoted to the upper and under edges of the stock of a fire-arm, substantially in the manner described, whereby when it is opened for use its greatest width will be in line with the greatest diameter of the stock, as set forth.

2. The breech-plate C, having recesses C C formed in its edges for the reception of projections upon the spade in combination with the stock of the arm and the swinging spade.

3. The spade or scoop A, provided with projections A', for entering recesses in the breech-plate, and thus aiding in supporting the spade when in position for use, substantially as set forth.

4. The combination of the recessed spade or scoop, the locking-bolt D, and the stock E, substantially as and for the purpose set forth.

210,283. FENCE-POSTS. William H. Whittier, Fremont, Nebr. Filed Oct. 26, 1878.

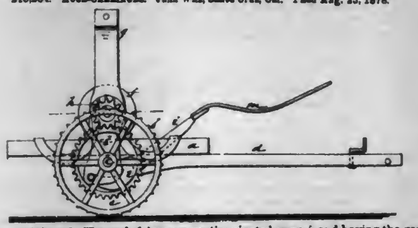




Claim.—1. A metallic fence-post consisting of the post A, having pivoted thereto the braces B, whereby the said braces, being pivoted to the post, are adapted to be driven into the ground after the post has been driven down, substantially as and for the purposes set forth.

2. A metallic fence-post consisting of the post A, having twisted base *a*, braces B, pivoted to the post, having curved angular portions *c* and points *d*, for the purposes set forth.

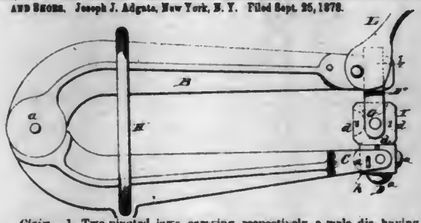
210,284. HOES-CARRIAGES. John Wils, Santa Cruz, Cal. Filed Aug. 23, 1878.



Claim.—1. The reel *f*, hung upon the pivoted arms *i*, and having the gears *h* upon its shaft or trunnions, in combination with the gears *c*, truck-wheels *b*, and truck-frame, substantially as and for the purposes set forth.

2. The combination and arrangement of the reel *f*, brace *g*, arms *i*, lever *m*, links *l*, and gears *c h* with the truck-frame *a*, substantially as and for the purposes set forth.

210,285. STRETCHERS FOR FORMING SWELLS OR ENLARGEMENTS IN THE UPPERS OF BOOTS AND SHOES. Joseph J. Adgate, New York, N. Y. Filed Sept. 25, 1878.



Claim.—1. Two pivoted jaws, carrying, respectively, a male die, having a series of faces, and a corresponding female die, and provided with compressing mechanism, for the purposes herein set forth.

2. The combination of a rotating male die, having a series of faces, and a corresponding rotating female die, arranged in the ends of pivoted jaws, and a compressing mechanism, for the purposes herein set forth.

3. The combination of the grooved jaw B, sliding bar F, with fork G, female die I, and eccentric-lever L, with an opposing male die, substantially as and for the purposes herein set forth.

4. The combination of the jaw A, with fork C, male die D, with pin A, the jaw B, bar F, with fork G, female die I, lever L, and ring H, all constructed substantially as and for the purposes herein set forth.

210,286. COMBINED DATING AND CANCELING STAMP. Charles Armstrong, Russell G. Woodward, and Lorenz Mahler, Chicago, Ill.; said Woodward assignor to E. P. Waber, same place. Filed May 7, 1878.

Claim.—1. The combination of a pivoted slotted plunger and two saw-toothed wheels in a separate frame, rotated by ratchets operated by the depression of the handle, which wheels are pivoted side by side and move in opposite directions, whereby the stamp is printed upon and a narrow slit is torn or cut out, substantially as described.

2. The combination of the pivoted slotted plunger I and the saw-toothed wheels G in a separate frame, for the purpose of canceling a stamp by printing as well as by tearing into a portion, and the mailing-plunger, all these parts being operated by the handle, whereby a letter is properly stamped for the mail and the postage-stamp erased by the same movement of the handle, substantially as described.

3. The herein-described inking-pad, consisting of an exteriorly screw-threaded cup filled with porous material, in combination with the internally screw-threaded ring M, holding a piece of skin or other suitable material, *x*, by means of a band, *m*, all of which being constructed and arranged substantially as and for the purpose specified.

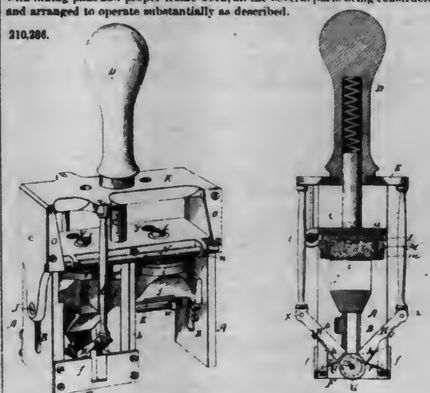
4. The frame A and the inking-pad-carrying wheels L L, pivoted thereto, the guide-eyes *n* for bar N, with pawl *p*, in combination with the handle-head E, having guides O, the whole of which being constructed and arranged to operate substantially as and for the purpose set forth.

5. The plate *a* of bearing-frame A, having openings *y*, and wheels L L, pivoted to said plate, and having hole Y and a screw-threaded cup for holding porous material, in combination with the ring M, skin covering *x*, and band *m*, substantially as and for the purpose set forth.

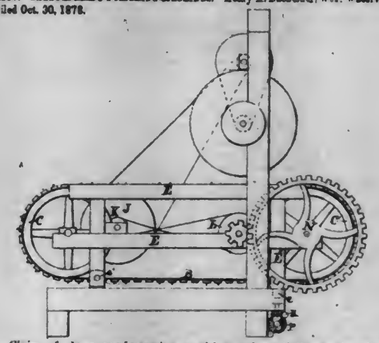
6. The herein-described inking-pads attached to wheels, which are pivoted to bearing-frame plate *a*, having eyes *n* for bar N, and pawl *p*, in combination with the handle D and head E, carrying the revolving plunger, and having guides O, all of which being constructed, arranged, and operating substantially as described and shown.

7. The herein-described combined dating and canceling stamp, wherein are combined a dating and a canceling pivoted slotted printing-plunger, with type-holding faces, two toothed wheels, in a separate frame, for further canceling the stamp, all operated by the same movement of the handle, in connection with inking-pads and proper frame-work, all the several parts being constructed and arranged to operate substantially as described.

210,286.



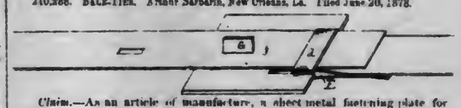
210,287. SANDPAPERING POLISHING-MACHINES. Henry A. Batchelder, West Waterville, Me. Filed Oct. 30, 1878.



Claim.—1. In a sandpapering-machine, substantially as described, the combination of the frame or bed E with the hinged support at end *e'*, and the support *e* at the other end, adjustable by nut *l*, screw *l*, bevel-gear P, and crank R, substantially as and for the purposes set forth.

2. In combination with the frame or bed E, the screw *l*, supporting nut *i*, rubber ring or spring *e*, bevel-gear P, and crank R, substantially as and for the purposes set forth.

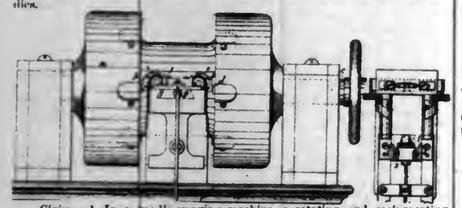
210,288. BALE-TIES. Arthur Barbarin, New Orleans, La. Filed June 20, 1878.



Claim.—As an article of manufacture, a sheet-metal fastening-plate for bale-ties, having a tongue, upper strap, and lower strap, struck up as described, so that said straps may grasp the ends of the tie or band with a spring-like pressure.

210,289. NEEDLE-SWAGING MACHINES. Philo M. Boers, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place. Filed July 20, 1878.

Brief.—The variable device consists of a shaft within the die-holder, provided with an eccentric portion, which receives the stroke of the treadle; an arm on said shaft connected by link with a sleeve turning loosely upon its shaft, and controlled in its rotation by a pin upon the reciprocating blank-holder working in a spiral slot in the sleeve, and a spring-arm for locking the sleeve in position when not required to rotate. The advance of the blank-holder changes the position of the eccentric and determines the throw of the dies.



Claim.—1. In a needle-swaging machine, a rotating and reciprocating chuck to hold the blank, combined with dies *t*, two rotating tappet-cylinders to actuate the dies, and an automatically-operated variable device to increase the throw of the dies just after swaging the point and eye-forming portions of the needle-blank.

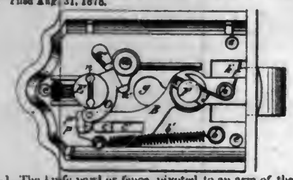
2. The die-holder and its eccentric or variable device, combined with the sleeve and intermediate connections, and the regulating-plate to operate the eccentrics, substantially as described.

210,290. PLOW ATTACHMENTS. Washington A. Bolick, John D. Bolick, and John T. Fancett, Brighton, Tenn. Filed Mar. 22, 1878.



Claim.—In combination with the beam A and colter D, the plate C, provided with the slots *a a*, and constructed with the oblique recess or socket case *b* and adjusting-screw bolts *c c*, substantially as shown and described, and for the purpose specified.

210,291. LATCHES. Edward W. Brettell, Newark, N. J., assignor to Thomas W. Langstroth, same place. Filed Aug. 31, 1878.



Claim.—1. The knife-pawl or fence, pivoted to an arm of the key-tumbler case, and provided with a projection which fits between the holding-posts, in the manner and for the purpose described.

2. The combination of the key-tumbler case, provided with the arm *p*, knife-pawl *o*, pivoted to the key-tumbler case, and provided with a projection with fits between the holding-posts, and bolt B, having upon its rear end the projection *p'*, as and for the purpose set forth.

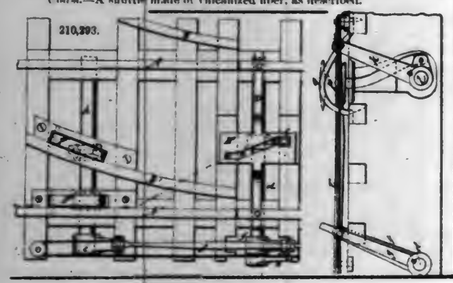
3. The key-tumbler case E and knife-pawl *o*, pivoted to the key-tumbler case, and provided with a projection which fits between the holding-posts, in combination with the sliding bolt B, spring *b'*, knob F, and spring *j*, all constructed and arranged for joint operation in the manner and for the purpose set forth.

4. In a latch, the sliding bolt herein described, in combination with the rotating knob F, having a spindle provided with recess *h* and inclined notches *i i*, the heart-shaped opening *g g'* in the lock-case, and stop-spring *j*, for the purpose of holding the bolt in position and preventing the withdrawal of the knob, substantially as shown and described.

210,292. LOOM-SHUTTLES. Henrick P. Briggs, North Adams, Mass. Filed May 14, 1878.

Claim.—A shuttle made of vulcanized fiber, as described.

210,293.



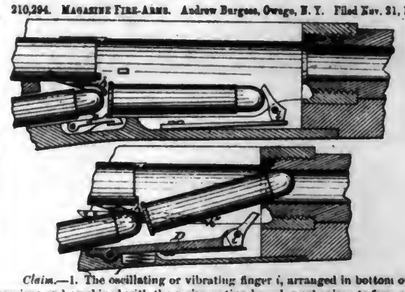
210,293. RAILWAY-SWITCHES. Erskine H. Bronson, Ottawa, Ontario, Canada. Filed Feb. 28, 1878.

Brief.—The switch-rod has a cam provided with a transverse slot. Directly underneath is a journaled shaft having three projecting arms, one of which is inserted in the slot. One of the other arms is for operating the switch by hand, the turning of the shaft causing the first arm to traverse the slot and throw the switch. The third arm is connected in both directions of the track to similar arms connected to similar shafts. These shafts have short arms, to which are attached vertical rods. These rods are depressed on one shaft, and the shaft thereby turned, by the flange of the engine-wheel coming in contact with treadles attached thereto. On the other shaft the rods are raised or lowered by a projecting pin of the engine coming in between a fixed cam attached to the ties and a cam attached to the upper end of the rods.

Claim.—1. The guard *q*, arranged over the cam *p'*, to hold the projecting arm of the locomotive to its work, to prevent it from riding over the cams without throwing the switch-rails.

2. The combination, with rod D, of the diagonally-slotted cam E, whose slot is straight at each end, and the shaft *d*, having an operating-arm, *e*, and the movable switch-rails, as shown and described.

210,294. MAGAZINE FIRE-ARMS. Andrew Burgess, Owego, N. Y. Filed Nov. 21, 1878.



Claim.—1. The oscillating or vibrating finger *i*, arranged in bottom of the receiver and combined with the reciprocating breech mechanism, to form a stop or detent for the cartridges as they are loaded in the magazine, and to guide their points to the barrel-chamber when moved by the bolt, substantially as described.

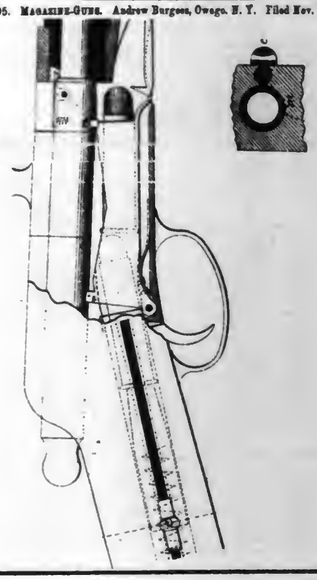
2. A spring-stop fixed in the bottom of the frame to engage the point of the cartridge and hold it in the magazine, when so arranged and combined with a reciprocating bolt, substantially as described, as to be forced to disengagement by the propulsion of the cartridge forward in closing the breech, substantially as specified.

3. The hand A, arranged in combination with the breech-bolt, substantially as described, to spring down behind the forward cartridge, drive it forward, and stop the next cartridge from advancing before it.

4. The magazine provided with a slot or opening, for the purpose specified, the compressor, and the laterally-moving bar for closing the slot, all in combination, substantially as set forth.

5. The rear stock, provided with a magazine-tube and with a loading passage or opening through the butt, which enters the magazine-tube at a point in front of that to which the follower in the magazine can be retracted, to permit the introduction of the cartridges into the magazine through said loading-tube, substantially as described.

210,295. MAGAZINE-GUNS. Andrew Burgess, Owego, N. Y. Filed Nov. 19, 1878.

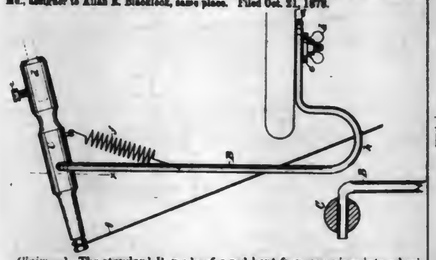


Claim.—1. The combination of the following elements, to wit: a magazine in the rear continuing under the bolt in a pivoted carrier, said carrier being hinged at its rear in line with the magazine, and operating to raise the cartridge to the barrel by the movement of the breech-bolt, and to form a direct passage to the chamber.

2. A cartridge-carrier pivoted at the front of the magazine, and forming a continuation thereof, said carrier having spring sides, as described, to release the first cartridge and hold the next from expulsion by the magazine-spring, substantially as set forth.

3. The compressor *c*, operating through a slot in the magazine and in the stock from the outside, in combination with a rod or ribbon for closing said slot, substantially as specified.

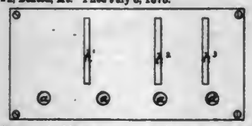
210,296. FAN ATTACHMENTS FOR SEWING-MACHINES, &c. James W. Chambers, Baltimore, Md., assignor to Allan B. Blacklock, same place. Filed Oct. 21, 1878.



Claim.—1. The standard B, made of a rod bent from one piece into a horizontal portion, *a*, for attachment to the under side of the table, and having a dipping or downward bend, *b*, in combination with the pivoted wooden lever, the spring *f*, and cord *g*, substantially as described, and for the purpose set forth.

2. The standard B, made in one piece, with a right-angular bend at its upper end, in combination with the wooden lever C, fulcrumed directly on said right-angular extension, together with the spring and pulling-cord, arranged as and for the purpose set forth.

210,297. MUSICAL INSTRUMENTS. Lorenzo Chase, Portland, assignor of one-half his right to James O. Brown, Boston, Mass. Filed July 8, 1878.



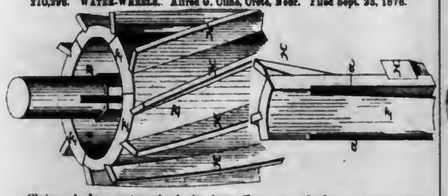
Claim.—1. In a musical instrument, a sectional sounding-board, the sections being adapted in size and thickness and arranged to be specially responsive to certain notes, the sections being connected by strips of parchment or other equivalent material, as shown, all in the manner and for the purposes set forth.

2. In a musical instrument, the semi-detached diaphragm H, in combination with the specially-responsive sounding boards or sections, substantially in the manner and for the purposes set forth.

3. The sectional sound-board having the sections connected together as described—viz., by strips of parchment or its equivalent, all in the manner and for the purposes set forth.

4. In a musical instrument, the combination of the sectional sound-board, as described, with the diaphragm H and valve R, substantially in the manner and for the purposes set forth.

210,298. WATER-WHEELS. Alfred G. Cline, Crete, Nebr. Filed Sept. 23, 1878.



Claim.—1. In a water-wheel, the drum E, composed of the removable sections F, constructed and operating substantially as set forth.

2. A water-wheel, E, composed of the sections F, having grooves *a a* and ribs H, in combination with the flanges *b b* on the outer ends of the arms C C, secured to the shaft D, constructed and operating substantially as and for the purposes set forth.

210,299. SAW-FILING MACHINES. John Coston, Bowden, Ga. Filed Aug. 15, 1878.

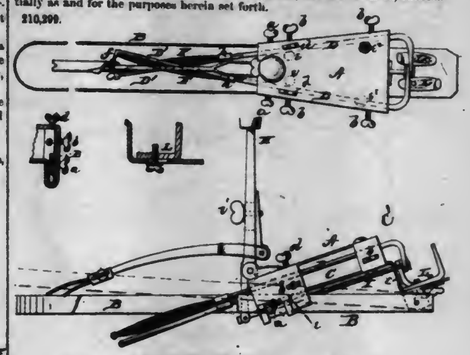
Brief.—A U-shaped support spans the base of the machine, pivoted near the rear corners, and extends forward and rests on the saw-cylinder, astride one or more saws. Files are brought into contact with different-sized saws by turning the support on its pivot, and when at proper place are set by screws passing through downwardly-projecting flanges of a cap-plate against the sides of the support. Length of stroke of file is regulated by adjustable abutting stops.

Claim.—1. The combination of the frame A, adjustable bent bar B, and adjustable stops L L, whereby the length of the stroke of the files on the teeth is regulated to suit teeth of different conditions, as herein set forth.

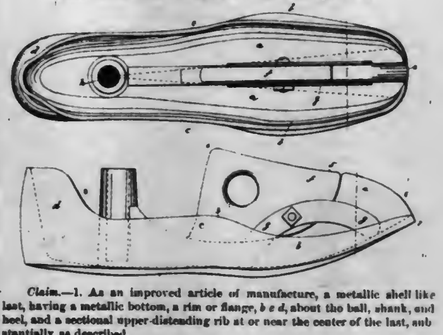
2. The elastic cushions a' a^2 a^3, interposed between the frame A and the bearings C C, with their adjusting-screws *b d*, as and for the purposes herein set forth.

3. The combination of the file-arms D D, having their rear ends bent inward, the pitman I, connecting the arms together, and the lever H, substantially as and for the purposes herein set forth.

210,299.



210,300. LASTS. Arthur W. Coz, Auburn, Me. Filed July 20, 1878.

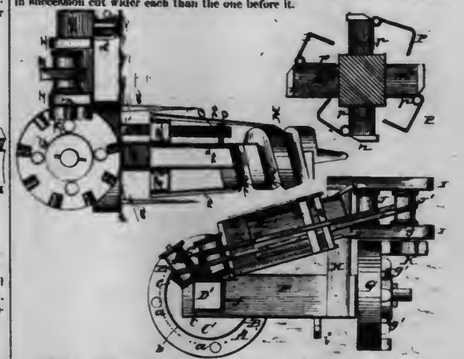


Claim.—1. As an improved article of manufacture, a metallic shell like last, having a metallic bottom, a rim or flange, *b e d*, about the ball, shank, and heel, and a sectional upper-distending rib at or near the center of the last, substantially as described.

2. In an iron last, the sectional rib *e f* and attaching devices to connect the movable portion *f* with the fixed portion *e*, substantially as described.

210,301. WELL-AUGERS. James Curley and Walter F. Warren, Henning, Tenn. Filed Sept. 24, 1878.

Brief.—Auger is formed to deliver earth from both grooves into a lateral chamber, in which runs the lower end of an elevator-belt. By gearing on the sweep the elevator is operated, the earth falling from the buckets upon an extensible trough or chute. Reaming and curbing knives follow the auger, and in succession cut wider each than the one before it.



Claim.—1. In a well-auger or earth-boring machine, the combination, with the auger or boring shaft, of the slotted beam F, suspended ground-wheel G *g'*, cog-wheel K, belt pulleys or drums J J' *d d'* O, and endless elevator belt or chain E, substantially as and for the purpose herein shown and described.

2. The combination, with the auger or boring shaft, of the endless elevating belt or chain and belt pulleys or drums, and the adjustable belt-boxes L L, substantially as and for the purpose herein shown and described.

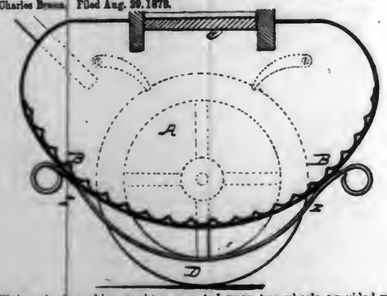
3. The auger constructed with the spiral grooves *n* n', extending around, and both ending on the same side of the auger, substantially as and for the purpose herein shown and described.

4. The combination, with the auger, of the inclined upright knives, connected therewith and arranged to cut the earth in the manner substantially as and for the purpose herein shown and described.

5. The combination, with the auger and shaft, of vertically hinged and bent or curved curbing-knives P, arranged to be turned or folded between the upright knives, substantially as and for the purpose herein shown and described.

6. The combination, with the auger and shaft, of the inclined upright knives and hinged curbing-knives, substantially as and for the purpose herein shown and described.

210,302. WASHING-MACHINES. Alexander R. Dickason, Lyndon, Kans., assignor to himself and Charles Brown. Filed Aug. 30, 1878.

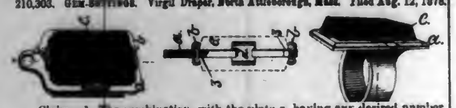


Claim.—1. A washing-machine mounted upon two wheels, provided with a locking mechanism, whereby the wheels may be made to act as rockers, substantially as herein set forth.

2. The combination of the box A, the wheels D D, provided with notches *x x* in their peripheries, and the pawls F, substantially as and for the purposes herein set forth.

3. The springs I I, attached to the under side of the box A, in combination with the wheels D, for the purposes herein set forth.

210,303. GEM-SETTINGS. Virgil Draper, Forth Attleborough, Mass. Filed Aug. 12, 1878.



Claim.—1. The combination, with the plate *a*, having any desired number of notches formed on its inner edge, of jewel-clamps, each formed with a shank which fits into one of said notches, shoulders on the lower end of the shank which rest against the lower surface of the plate, and the upper end of the clamp being outwardly bent to rest upon the upper surface of the plate, while the upper portion is of semicircular form, substantially as set forth.

2. The combination, with the plate *a*, of jewel clamps, the lower ends of which are secured against the inner edge of said plate, while the upper ends are semicircular in form, and rest upon the upper surface of said plate, substantially as set forth.

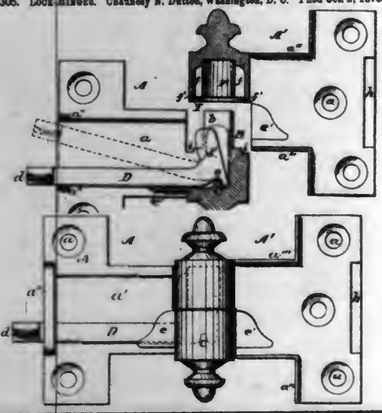
3. A jem or jewel clamp made with two semicircular clamps, *b*, united by the piece *d*, and arranged to be secured in a slot of the frame, so as to hold two stones or gems on opposite sides of the frame, substantially as and for the purpose set forth.

4. The combination, with the plate *a*, of a sheet-metal clamp having its lower end secured to the inner edge of the plate, while its upper portion is bent outwardly and the upper end bent inwardly and forced downwardly against the outwardly-inclined faces of the jewel, substantially as set forth.

210,304. MANUFACTURE OF FUEL FROM CARBONACEOUS POWDERS, &c. Cyprien T. Du Motay and Edward Stern, Paris, France. Filed Aug. 6, 1878.

Claim.—The new fuel consisting of carbonaceous powder, kaolin or clay, magnesia or lime, and petroleum-tar, compounded in the proportions and manner substantially as shown and described.

210,305. LOCK-HINGES. Chauncey H. Dutton, Washington, D. C. Filed Oct. 2, 1878.



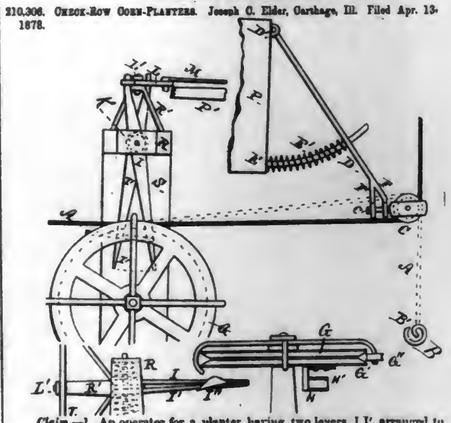
Claim.—A hinge composed of the two parts or members A A', the one part having a central recess, F, formed in its inner periphery, and series of notches *f*, and the other part having a slotted pintle, B, and locking-lever D, constructed and operating substantially as and for the purpose specified.

2. In a hinge constructed substantially as described, the part A, provided with a central bearing, C, and recess *a'*, in combination with the locking-lever D, having the notch *c* and wedge-shaped projection *d'*, and with the part A', provided with the notches *f*, operating substantially as and for the purpose specified.

3. The part A', having the annular recess l and the recess *c'*, in combination with the part A, having the shoulder *i* and projection or offset *c*, substantially as and for the purpose specified.

4. The portion A', constructed with the lateral flanges *a'''*, which fit over the corresponding edges of the part A, substantially as and for the purpose specified.

210,306. CHECK-ROW CORN-PLANTERS. Joseph C. Elder, Carthage, Ill. Filed Apr. 13, 1878.



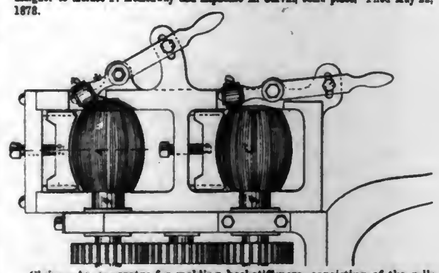
Claim.—1. An operator for a planter having two levers, I I', arranged to move together in opposite directions, combined with slide I'', and measuring-wheel G, having driving projection H, arranged substantially as set forth.

2. In an operator for a planter, the measuring-wheel G, with a projection, H, combined with two connected levers, I I', arranged to move together in opposite directions, and the slide I'', to prevent their interference, substantially as set forth.

3. An operator for a planter having the pulley C, to receive the cord A, in combination with its carrier, having a spring, so as to regulate the tension of the cord when the planter is in action, substantially as set forth.

4. An operator for a planter having the cord A and stake B, with its upper portion bent spirally around the vertical portion in a horizontal plane to form a flat head, projecting to all sides, substantially as set forth.

210,307. APPARATUS FOR MOLDING HEEL-STIFFENERS. Alfred L. Elliot, Somerville, Mass., assignor to Horace P. Hemenway and Alphonso H. Carvill, same place. Filed May 22, 1878.



Claim.—An apparatus for molding heel-stiffeners, consisting of the rolls A B and C D, constructed and arranged substantially as described, and adapted to form the flange of a heel-stiffener by successive operations.

210,308. COMPOUNDS FOR ROOFING. William G. Elliot, Williamsport, Pa. Filed Nov. 21, 1878.

Claim.—The compound herein described, consisting of gasoline or coal-tar, asphaltum, oxide of iron, and India-rubber, either with or without the powdered materials, when compounded substantially in the manner set forth, and for the purpose specified.

210,309. WEATHER-STRIPS. Parce England, Lincoln, Nebr. Filed Oct. 31, 1878.

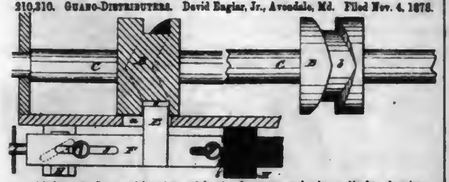
Brief.—A rod adapted to rotate is inserted in a groove in the side of the sash frame, and when operated by a suitable handle binds against the window-frame and tightens the window. A recess in the sash-frame receives the handle when not in use. The rod is made flat on one side, to produce the binding action.



Claim.—1. A combined sash-lock and weather-strip consisting of a binding-rod arranged to rotate in a groove in the edge of the window-sash, and extending the full length of the same, and provided with a suitable handle, substantially as described.

2. The combination of the rotating rod B, having a right-angular lever-handle, with the sash having a transverse recess to receive said handle and allow the free movement of the sash, substantially as described.

210,310. GUANO-DISTRIBUTERS. David Eaglar, Jr., Avondale, Md. Filed Nov. 4, 1878.



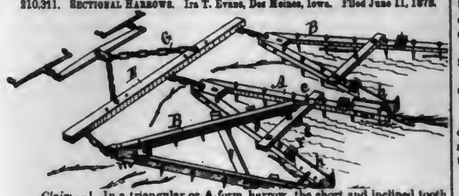
Claim.—1. In combination with the hopper and the cylinder having a cam-groove and located within the hopper, the clearer or scraper plate C' and a movable bar, D, to which said plate is attached, as shown and described.

2. In combination with the hopper and cam-grooved cylinder, the regulator E and the horizontally-sliding bar F, to which said regulator is attached, and with which it reciprocates as the cylinder revolves, as shown and described.

3. In combination with the hopper and cam-grooved feed-cylinder, the regulator E, working in the groove, the horizontally-slotted bar F, and the diagonally-slotted bar or auxiliary slide G, and pins *k*, which pass through the diagonal slots *i*, substantially as specified.

4. The combination of the swiveled adjusting-screw with the auxiliary slide G, having a lug, *l*, through which the screw passes, and provided with diagonal slots *i*, the slotted guides H, the pins *k*, passing through said slots, the reciprocating regulator-slide F, and the grooved feed-cylinder, all as shown and described.

210,311. SECTIONAL HARROWS. Ira T. Evans, Des Moines, Iowa. Filed June 11, 1878.

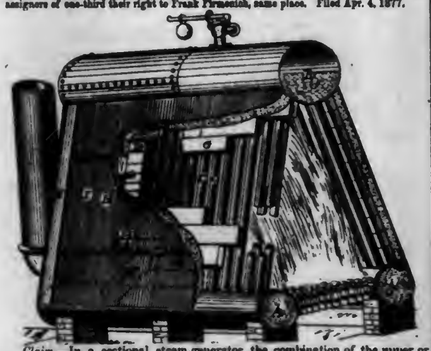


Claim.—1. In a triangular or A-form harrow, the short and inclined tooth *w* in the front and center, in combination with the two series of straight teeth in the angling side bars, substantially as shown and described, to operate in the manner set forth.

2. The heel-plates A, in combination with the rear ends of the contiguous teeth-bearing bars of the sections A and B, substantially as and for the purposes shown and described.

3. The adjustable and flexible harrow composed of the sections A B B, each having heel-plates *h* on their contiguous teeth-bearing bars, the evener E, the connecting-chains 1 2 3, and the adjustable connecting-chains *f f*, substantially as shown and described, to be operated in the various ways and for the various purposes set forth.

210,312. STEAM-GENERATORS. Joseph Firmenich and George Firmenich, Buffalo, N. Y., assignors of one-third their right to Frank Firmenich, same place. Filed Apr. 4, 1877.

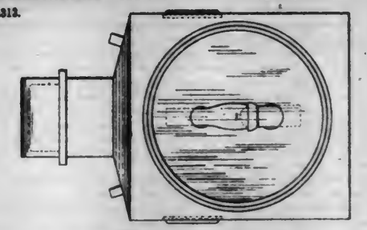


Claim.—In a sectional steam-generator, the combination of the upper or single longitudinal drum, B, the side longitudinal water-drums, A, a double series of multiple water-tubes, C, connecting said drums, and arranged at an inclination, so as to form an angular combustion-chamber, C'', between them, the bridge-wall D, and the rear pipe, E, connecting the mud-drums, all constructed and arranged substantially as described.

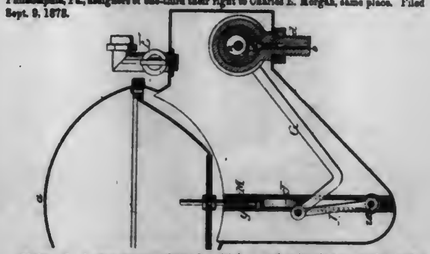
210,313. SIGNAL HEAD-LIGHTS. William Forsyth, Altoona, Pa. Filed Feb. 6, 1878.

Claim.—A locomotive head-light having transparencies in the sides of the lantern case for signaling purposes, said transparencies being located in the upper portion of the lantern above the reflector, so as to be illuminated by the rays of light which pass through the opening formed in the reflector for the passage of the lamp-chimney, substantially as set forth.

210,313.



210,314. RIVER-PRESSURE GAS-REGULATORS. John M. Foster and George E. Lockwood, Philadelphia, Pa., assignors of one-third their right to Charles E. Morgan, same place. Filed Sept. 9, 1878.



Claim.—1. A pressure-regulator in which a casing having an outlet to the burners is combined with a valve for admitting gas to said casing, a diaphragm exposed to the pressure of gas therein, and devices whereby the diaphragm is caused to effect the opening and closing of the ports of the valve, as set forth.

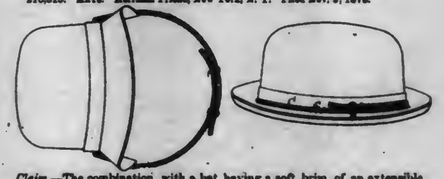
2. The combination of the diaphragm and the valve with the rod M, the frame J, the guided rod *w*, the arms I, and the rod G, as specified.

3. The combination of the valve *f* and its eccentric *n* with the valve *s*, as set forth.

4. The combination of the valve *f* with the adjustable disk *g*, as set forth.

5. The combination of the valve *f* and its stem *m*, with angular end, the disk *g* and its round stem *v*, and the rod G, one arm of which is adapted to the angular end of the stem *m*, while the other arm has a friction-clutch adapted to the stem *v*, as specified.

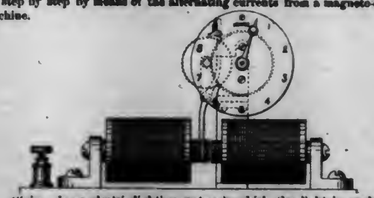
210,315. HATS. Herman Friend, New York, N. Y. Filed Nov. 9, 1878.



Claim.—The combination, with a hat having a soft brim, of an extensible chin-band, which is fastened to the lower part of the hat-crown, substantially in the manner and for the purpose set forth.

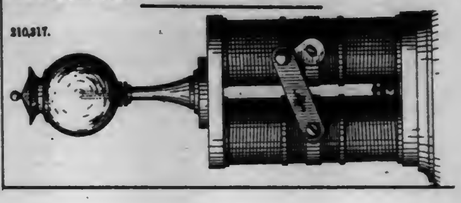
210,316. ELECTRIC METERS FOR MEASURING THE CURRENT OF ELECTRICITY. Jim Billings Fuller, Brooklyn, N. Y. Filed Nov. 14, 1878.

Brief.—The armature of a polarized armature moves the index of a register step by step by means of the alternating currents from a magneto-electric machine.



Claim.—In an electric-lighting system in which the light is produced by alternating currents, an electro-magnet placed in the main or induced current circuit, or in a shunt therewith connected and having a polarized armature, the vibrations of which actuate a train of register-wheels, substantially as and for the purpose specified.

210,317.



210,317. INDUCTION APPARATUS FOR LIGHTING BY ELECTRICITY. Jim Billings Fuller, Brooklyn, N. Y. Filed Sept. 30, 1878.

Brief.—Secondary and primary coils are wound separately over longitudinal sections of the iron core. The secondary coils are wound upon the polar portions of the cores.

Claim.—1. The double electro-magnet herein described, the main coils of which are included in the circuit of a main conductor from a generator of alternating electric currents, producing in said magnet consequent magnetic poles, as shown, and around which poles are coiled helices of wire for receiving the currents induced by the polar changes, said helices being included in the local circuit with the lamp.

2. The combining of the several polar helices, as shown and described, for producing one, two, or four lights from the same instrument.

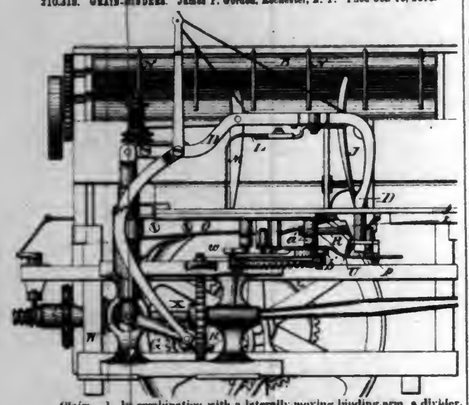
3. The connecting-arm M and the seat O, arranged substantially as shown and described, for governing the amount of light.

210,318. DOMESTIC BOILERS. Joshua B. Godwin, Washington, N. C. Filed May 7, 1878.



Claim.—The boiler proper, B B', provided with the annular flange *b*, from which extends a downwardly-projecting sleeve, C, and provided with draft-apertures *c c*, opened and closed by a sliding ring, E, arranged upon the shoulder or flange *b* of the boiler, substantially as shown and set forth, for the purpose specified.

210,319. GRAIN-BINDERS. James F. Gordon, Rochester, N. Y. Filed Oct. 16, 1878.



Claim.—1. In combination with a laterally-moving binding arm, a divider-arm mounted thereon and arranged to separate therefrom after the two have entered the grain, substantially as and for the purpose described.

2. In combination with the vibrating binder-arm D, the pivoted arm J and link K.

3. In combination with a horizontally vibrating binder arm, two depending arms, one fixed and the other movable in relation thereto, arranged to act upon the head of the grain and prevent the loose grain from clinging to the bundles at the head.

4. In a binding-machine having a table or receiver, on which the loose grain is delivered, two arms arranged to descend through the grain at its head and separate from each other, for the purpose of separating the head of each bundle from the loose grain.

5. In combination with the binder-arm D, arranged to operate as described, the arms L and N, substantially as shown.

6. In combination with a binder arm arranged to vibrate around a vertical axis, substantially as shown, a delivery or carrier arm arranged to act against the heads of the sheaves and move them outward, substantially as shown.

7. The arm L, pivoted to the binder-arm D, and arranged to swing outward at the same or a greater speed than the nose of the said binder-arm, for the purpose of delivering the bound bundles squarely from the machine.

8. In combination with an upper clamping-jaw, Q, and twister P, a lower clamping jaw, R, having a knife or cutter attached, substantially as shown.

9. The combination of a stationary eye or socket and a sliding jaw, R, provided with a shoulder, *s*, sliding into said socket to hold the wire, and with a cutter, *o*, acting against an outside shoulder to sever the wire, substantially as shown.

10. A wire fastening mechanism consisting of an upper clamping-jaw, Q, a lower clamping and cutting jaw, R, and an intermediate twister, P, having a single hook or single series of hooks, arranged for joint operation as shown and described.

11. The combination of the vibrating arm O, having the twister-head and its sliding operating-rack T, mounted thereon, the arm U, pivoted to the arm O, and the fixed plate V, provided with slots to operate arm U, as shown.

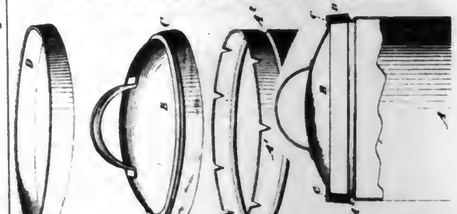
12. In a grain-binder, the combination, substantially as heretofore set forth, of the wire holder or jaw R, having the wire-cutter attached, the pivoted arm a^1, having the roller thereon, the switch b', or equivalent, and stationary track a^2, for the purpose set forth, whereby both the clamp and the cutter are actuated positively.

13. In a grain-binder, the combination, substantially as hereinbefore set forth, of the wire-holder R, the pivoted arm a^1, having the roller thereon, the stationary track, and a switch, b', or its equivalent, located at a central point in the track, for the purpose set forth.

14. The twister-hook arranged in relation to the wire-cutter and plate, substantially as described, whereby the wire is bent at right angles, or practically so, under said hook or hooks, for the purpose set forth.

15. In a grain-binder, the combination, substantially as hereinbefore set forth, of the wire-holder R, its actuating-roller, the stationary track, and a switch b', or equivalent, located centrally in said track, for the purpose set forth.

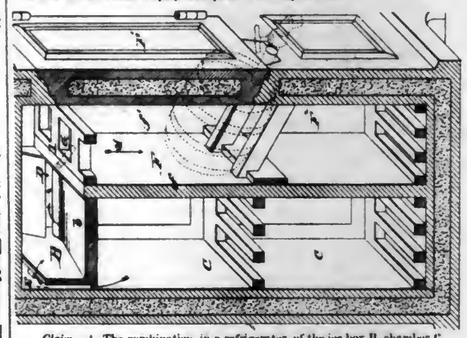
210,320. FRUIT-CANS. Miles G. Graham, Cobleskill, N. Y. Filed June 5, 1878.



Claim.—1. The combination of a can, A, constructed with a flexible edge, A^1, the cover B, with a flaring flange, elastic packing l', and flaring compressing ring, D, substantially as set forth.

2. The combination of the flexible-edged can A, constructed with a fillet, A^1, the cover, with a flaring flange, resting on the fillet, and the flaring compressing ring D, substantially as set forth.

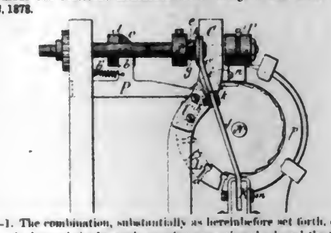
210,321. REFRIGERATORS. William Grayson, St. Louis, Mo., assignor to St. Louis Refrigerator and Wooden Gutter Company, same place. Filed May 11, 1878.



Claim.—1. The combination, in a refrigerator, of the ice-box B, chamber C, flues D and E, chamber F, and pipe G, the chambers C and F being separated by the partition *f*, which extends downward to the bottom of said chambers, and the pipe G leading from the ice-box B and discharging into the chamber F, as and for the purpose specified.

2. The combination, in a refrigerator, of an ice-chamber, located in the upper part of the refrigerator, and two preserving-chambers, arranged beneath the ice-chamber and separated from each other by a tight partition, the bottom of the ice-chamber above one of such preserving-chambers being tight, to prevent the drip-water from descending into that chamber, and the other part of the bottom of the ice-chamber being perforated, to allow the drip-water to fall down into the preserving-chamber, which is directly under the perforated portion of the ice-chamber bottom, substantially as described.

210,322. MACHINES FOR FINISHING HORSESHOE-NAILS. George L. Hall, Boston, Mass. Filed Nov. 9, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, of the swaging-dies, the intermittingly moving pocket or carrier wheel, and the finishing-die and punch or plunger.

2. The guide *s*, in combination with the dies I I' and carrier L.

3. The shield or guard *s*, in combination with the guide *s*, carrier L, and dies I I'.

4. In combination with the roller dies, the carrier-wheel, and the reciprocating plunger or punch, the shafts E F, the cams thereon, and intermediate mechanism for communicating the proper intermittent motion from said cams to the carrier wheel and the punch, substantially as set forth.

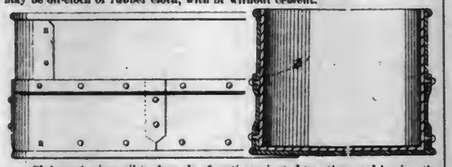
210,323. DREDGE-CHOCKS. Robert W. Harrison, Baltimore, Md. Filed Nov. 2, 1878.



Claim.—The combination, with the horizontal roller of a dredge-chock journaled to the gunwale of a vessel, of a vertical roller having a head or shoulder justify at its upper end, and removably journaled at one end of the horizontal roller, and having its ends projecting above and some distance below the same, substantially as and for the purpose described.

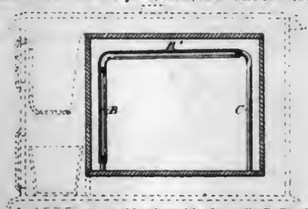
210,324. IRON TANKS FOR HOLDING PETROLEUM. Eli E. Hendrick, Carbondale, Pa. Filed Oct. 7, 1878.

Brief.—The cement covering of the lap-joints of the sections and rivet projections is boiled coal-tar, or is one part red lead and two parts linseed oil. If the lining is paper, hydraulic cement or lime is added to the cement. Lining may be oil-cloth or rubber cloth, with or without cement.



Claim.—An iron oil-tank made of sections riveted together, and having the interior lap-joints and rivet projections plastered with a cement filling, and covered with a lining of cloth or paper cemented to the interior of the tank, and covered with a water and oil proof composition, substantially as specified.

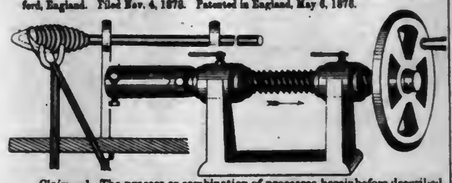
210,325. OVENS. John R. Heywood, Boston, Mass. Filed Nov. 7, 1878.



Claim.—1. An oven, in combination with the walls B B', the bottom of wall B being above the bottom of the oven to admit of circulation, as described.

2. The oven attachment above described, composed of the frame C and the sheet metal B B', extending from near the bottom of the frame at one side and across the frame at the top nearly to the other side, the whole constructed and adapted for use substantially as described.

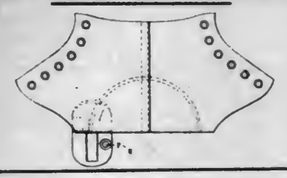
210,326. ORNAMENTING ARTICLES OF GLASS. William J. Hodgetts, Wordsley, Kingswinford, England. Filed Nov. 4, 1878. Patented in England, May 6, 1876.



Claim.—1. The process or combination of processes hereinbefore described, and illustrated in the accompanying drawings, for ornamenting articles of glass, whereby an appearance is given to the surface of the articles somewhat similar to that of fine wicker or basket work, the said ornamenting being effected by coiling one or more threads of colorless or colored glass upon a hollow glass bulb or cylinder, from which the article is to be subsequently manufactured, and blowing the said threaded hollow bulb or cylinder in a ribbed mold, substantially as described and illustrated.

2. The herein-described apparatus for effecting the coiling of glass threads upon hollow glass bulbs or cylinders, the same consisting of mechanism, substantially as specified, for sustaining and revolving the glass bulb or cylinder in proximity to a quantity of heated glass from which the threads are to be drawn, and for causing at the same time a motion of the bulb and thread-yielding material past each other in the direction of the length of the bulb or cylinder, as set forth.

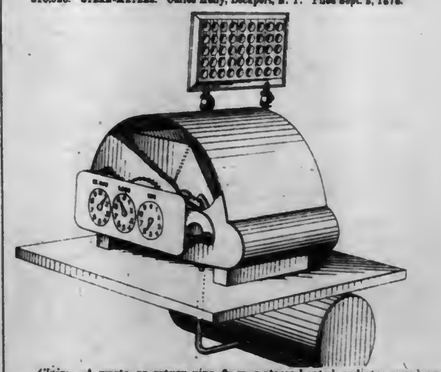
210,327.



210,327. COUNTER-GUIDES. George F. Hollis, Marlborough, Mass., assignor of one-half his right to G. S. Russell, same place. Filed Apr. 10, 1878.

Claim.—As an improved article of manufacture, the throat-plate adapted to be secured to the post, and its attached counter-guide, adapted to operate substantially as described.

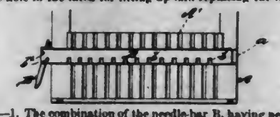
210,328. STEAM-METERS. Carlos Holly, Lockport, N. Y. Filed Sept. 9, 1878.



Claim.—A waste or return pipe from a steam-heated radiator, employed for warming buildings, in combination with a fluid-meter, as and for the purpose herein set forth.

210,329. KNITTING-MACHINES. Samuel Huff, Mohican, Ohio. Filed Oct. 5, 1878.

Brief.—Improvement upon the "Lamb knitting-machine." In narrowing the heels of stockings the notches in the sliding bar register with the grooves in the needle-bed, so that the tails of the needles may be drawn up into the recess above the cams and out of operation. In order to hold a needle thus drawn up, it is necessary to slide the needle-bar slightly to one side, so that its grooves may not register with those of the needle-bed. A hand-hook is inserted through the hole in the latch for lifting up and replacing the needles.



Claim.—1. The combination of the needle-bar B, having needle-slots *b*, with the cam-lever B' and bed-plate A A' *a*, as specified.

2. The carriage C, having cams *c e c* and recess D, combined with the needles *x d*, bed-plate A A' *a*, and needle-bar B *b*, as herein specified.

3. The combination of the bed-plate A A' *a* with the needle-bar B *b b'*, cam-lever B', needles *x d*, latch H *s*, and carriage C *e*, having recess D, as and for the purpose set forth.

210,330. SEWING-MACHINE SHUTTLES. George W. Hunter, Washington, D. C., assignor of one-half his right to Henry M. Baker, same place. Filed Aug. 10, 1878.

Brief.—A sewing-machine shuttle is provided with a series of longitudinal tension-slots and a thread guide or retainer. The shuttle-thread passes through one of said slots around the periphery of the shuttle to the retainer, the tension of the thread being regulated by the distance intervening between the selected slot and the retainer.



Claim.—1. A sewing-machine shuttle comprising a shuttle-body and a thread-retainer, the body being provided with a series of longitudinal slots, which are arranged at different distances from said retainer, the shuttle-thread passing through one of said slots around the periphery of the shuttle to the retainer, and the degree of tension being varied in direct proportion to the distance intervening between the particular slot selected and the retainer, substantially as set forth.

2. A sewing-machine shuttle provided with a series of longitudinal tension slots or openings, formed in a portion of the body of the shuttle which is of less diameter than the shuttle-nose or front end, as and for the purposes set forth.

210,331. MANUFACTURE OF MILK OR ALABASTER GLASS. Joseph Kompoer, Görlitz, Prussia. Filed Nov. 15, 1878.

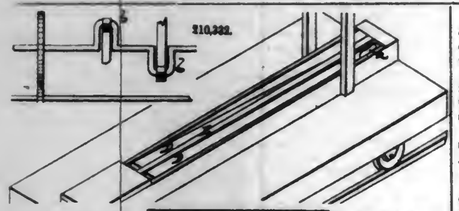
Claim.—1. The method of producing milk or alabaster glass, consisting in the admixture of feldspar, fluor-spar, and heavy spar with the ordinary glass materials, and fusing therewith, as and for the purpose set forth.

2. The method of producing milk or alabaster glass, consisting in the admixture of feldspar, fluor-spar, and witherite with the ordinary glass materials, and fusing therewith, as and for the purpose set forth.

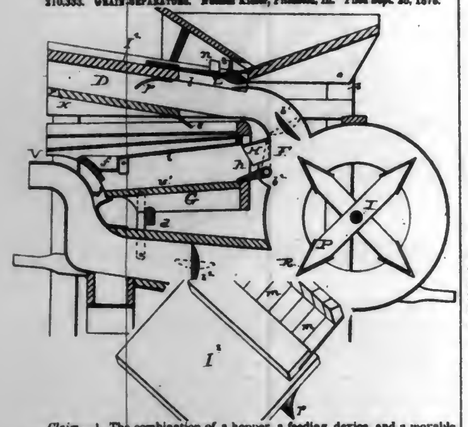
210,332. HAND-CARS. Christopher C. Kerr, Springfield, Mo., assignor to himself, J. Bohlberry, J. W. Miller, J. W. McOulloh, M. Bohlberry, and R. S. Waddell, same place. Filed Aug. 29, 1878.

Claim.—A hand-car constructed with two central longitudinal compartments, and furnished with the elongated levers D D, said levers being suitably connected to crank-shaft *b*, and adapted to be operated by one or more persons standing thereon and alternately throwing their weight upon the levers, as set forth.

210,332.



210,333. GRAIN-SEPARATORS. Nathan Kibler, Pittsfield, Ill. Filed Sept. 26, 1878.



Claim.—1. The combination of a hopper, a feeding device, and a movable board having flexible slats, all operated in the manner as described.

2. In a fanning-mill, the side rods or bars, *o*, for suspending the shoe and operating the agitating or feeding device, substantially as and for the purpose set forth.

3. The combination and arrangement, with a fan and a set of separating-sieves, of three air channels or passages, provided with suitable valves for regulating the currents of air, the upper air-passage being arranged immediately under the hopper, forming a communication with the incoming grain from the said hopper, the intermediate air-passage forming a communication with the sieves in the shoe, and the lower air-passage arranged under the sieves, substantially as shown, and for the purpose set forth.

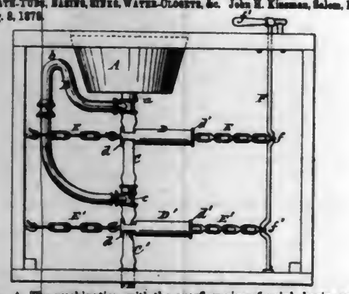
4. The movable boards P and K, forming the top and bottom of the upper air-channel, and provided with the shields *p e*, respectively, for the purpose set forth.

5. In combination with the feeding device, the adjustable board P, having at its inner end a series of flexible slats, *m*, and projections *n*, substantially as and for the purpose set forth.

6. A fan-wheel for a fanning-mill having double blades, meeting at an angle, to render it reversible, substantially as shown and described.

7. The combination, with the shoe-frame S of a fanning-mill, of the separator-sieve T and side bars, *w*, so connected that the sieve can have a gentle lateral motion.

210,334. BATH-TUBS, BASINS, SINKS, WATER-CLOSETS, &c. John H. Kinsman, Salem, Mass. Filed Aug. 8, 1878.



Claim.—1. The combination, with the overflow-pipe of a sink, basin, or like device, of a compressible and expansible tube, that can be closed by pressure, and thus cut off all escape of gas, and on the removal of the pressure will automatically open for the flow of liquids, substantially as and for the purposes set forth.

2. The combination, with a sink, basin, or like device, of a siphon overflow-pipe, B, the short leg of which arises from near the bottom of said basin or other device, while in its opposite end, or in the exit-pipe with which it connects, is a section of compressible and expansible pipe, which can be closed to cut off the escape of gas, or, when pressure is removed, will automatically open for the escape of the contents of the basin, tub, or like device, substantially as described.

3. The combination, with a basin, sink, water-closet, or like device, of an outlet-pipe and an overflow-pipe, a portion of one or both of which is composed of some flexible or elastic or compressible and expansible material, substantially as and for the purposes set forth.

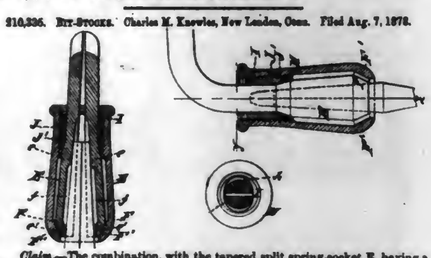
4. The combination of a spring-compressor, adapted to be operated automatically or positively, with the elastic and compressible portion or section of the outlet or overflow pipe, or both, of a tub, sink, or like device, substantially as and for the purpose set forth.

5. The combination of compressor D, carrying spring *e*, operated by crank-arm *f*, and shaft F, with pipe C, substantially as and for the purposes set forth.

6. The combination of basin or sink A with siphon B, exit-pipe C, and spring-compressor D, substantially as and for the purposes set forth.

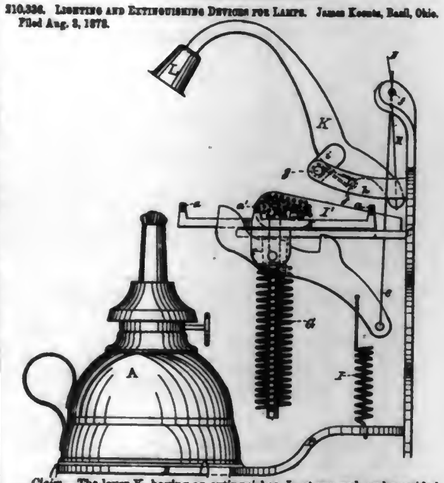
7. The combination of tub, sink, or basin, or like device, A, with exit-pipe C C', overflow B, and spring-compressor D D', with chains E and E' and crank-rod F *f f'*, substantially as and for the purposes set forth.

210,336. BIT-STOCKS. Charles M. Knowles, New London, Conn. Filed Aug. 7, 1878.



Claim.—The combination, with the tapered split spring-socket E, having a conical extremity, F, of a primary clamping-ferrule, H, having a conical interior bearing, F', and a female screw-thread, J', and a secondary screw clamping-ferrule, I, having an oval or oblong opening, *k*, and a male screw-thread fitted to the said female screw-thread, substantially as and for the purpose specified.

210,336. LIGHTING AND EXTINGUISHING DEVICES FOR LAMPS. James Keenan, Basil, Ohio. Filed Aug. 8, 1878.



Claim.—The lever K, having an extinguisher, L, at one end, and provided with a cord, N, at its other end, in combination with the fulcrum-pin *j*, arm *h*, spring M, carrier E, and lamp A, substantially in the manner and for the purpose set forth.

210,337. SPRING SHADE-ROLLERS. J. Christopher Lahr, Philadelphia, Pa. Filed Sept. 23, 1878.

Brief.—In the hollow end of the spring-roller a fixed collar is mounted upon the spindle. The inner periphery of the hollow end is ratcheted except a small portion. A loose ring is inserted between the collar and ratchet, and has an open portion corresponding to the aforesaid unratcheted part of the roller. A pawl adapted to engage said ratchet is mounted on the collar. A pin on the pawl near its toe is adapted to engage with a lug on the ring, and also with notches on the inner periphery of the latter. The line of attachment of the curtain to the roller is adjacent to the blank portion of the ratchet-roller.



Claim.—1. In a spring shade-roller having a pawl or dog and ratchet or detent, and in combination therewith, a sliding ring or band, operating substantially as described, to prevent engagement between said pawl or dog and ratchet or detent when the shade is ascending and descending, as set forth.

2. In combination with the pawl or dog and ratchet or detent of a spring shade-roller, a ring or band interposed between said parts, and formed with a slot or opening, through which the pawl or dog is permitted to pass in order to engage with the ratchet or detent.

3. The band or ring H, having a slot or opening, *h*, lug h^1, and recessed or indented ear h^2, in combination with the ratchet and pawl, substantially as shown and described.

4. The combination of ring or band H, having slot or opening *h*, teeth h^1, lug h^2, and ear h^3, with the pawl or dog F, having pin *f'*, and the ratchet, substantially as shown and described.

5. In combination with the pawl or dog F and band H, having the slot or opening *h*, the annular ratchet G, mutilated at *g'*, to permit the spring to reverse the motion of the roller when the shade has been drawn down its full extent, substantially as shown and set forth.

6. The combination of the roller having the line of attachment of the shade marked thereon with reference to the blank portion of the ratchet with said ratchet, so that when the shade is wholly unwound the roller may be revolved sufficiently by pulling the shade to release the pawl and permit the spring to reverse the motion of the roller and wind up the shade, as set forth.

210,338. MAIL-BAGS. Benjamin Landon, Canton, Pa. Filed Oct. 26, 1878.



Claim.—1. The metallic plates A, having rounded ends *a*, brought close together and secured within clips B, which are closed on the outside and open on the inside, as shown and described.

2. The turned upper free edges of the pouch laid against the under sides of the plate A, in combination with the wooden strips *d* and rivets *e*, the former arranged against the under side of the turned portion of pouch, as and for the purpose set forth.

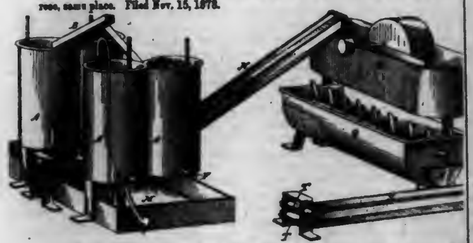
3. The combination, with plate A, of the catch *f*, having end hole, and the plate *g*, having hole *h*, as and for the purpose specified.

4. The plate *j*, riveted to the plate of mouth-piece, in combination with the plate *k*, adapted to prevent the label from being slipped out before the bag is opened, as described,

5. The plate *k*, set over the edge of the plate to which it is attached, and forming a lip, to close the front opening in plate *j*, as shown and described.

6. As an improvement in mail bags, pouches, &c., the metallic plates A, pivoted together at the ends to form a mouth-piece, in combination with the wooden strips *d* and the mail bag or pouch C, substantially as described.

210,339. SEPARATING AND CLEANING VEGETABLE FIBERS FOR PAPER-PULP. Charles Lange, New Orleans, La., assignor of one-half his right to Clement B. and George B. Penrose, same place. Filed Nov. 15, 1878.



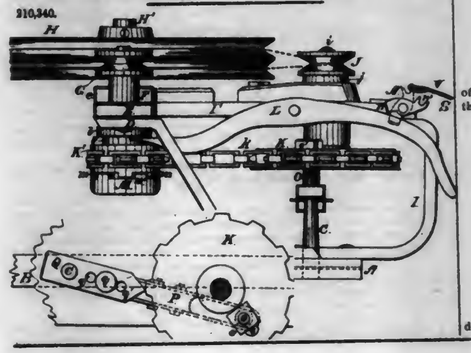
Claim.—1. The process herein described for cleaning and preparing the fiber of fibrous plants and reducing it to pulp, the same consisting in boiling the fiber in the saccharate of alkali from two to ten hours, then pressing the fiber between rollers, next grinding in a pulp-mill, and subsequently mixing, draining, pressing, and drying, substantially as herein described.

2. The tank A, provided with the door E and cock F, and steam-pipe C, in combination with the open pipe G, provided with the cap H, and the perforated diaphragms D and I, when constructed to operate substantially as and for the purpose set forth.

3. The tank A, provided with the door E and cock F, and having the pipe G and diaphragms D and I, in combination with the apron J, rollers K K, carrier N, engine O, mixer Q, apron S, and rollers T T, when combined to operate substantially as and for the purpose set forth.

4. The tank A, provided with the door E and cock F, and having the pipe G, perforated steam-pipe C, and diaphragms D and I, in combination with the reservoir M and spout L, substantially as and for the purpose herein specified.

210,340.



210,340. CHECK-ROW ATTACHMENTS FOR CORN-PLANTERS. Tyler C. Lord, Joliet, Ill. Filed June 26, 1878.

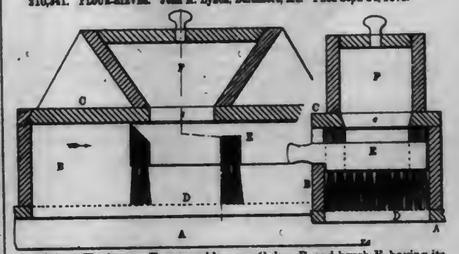
Claim.—1. In a check-row attachment for corn-planters, the double pulley H, having polygonal grooves *h*, constructed substantially as shown, and for the purpose specified.

2. The combination of the horizontally-operating double-grooved pulley H, pulley J, having a frictional bearing, *j*, and pulleys G G, operating substantially as and for the purpose specified.

3. The combination of the horizontally-operated pulley H and shaft H' with chain-wheels K' and K, wrist-pin O, slotted pitman P, and lever C, substantially as and for the purpose specified.

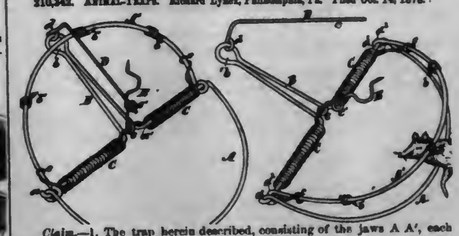
4. The lever L, operating in combination with the pivoted catch N, having pressure-foot *n* and forked end *n'*, and with the anchored cord V, substantially as and for the purpose specified.

210,341. FLOUR-SIEVES. John H. Lynch, Baltimore, Md. Filed Sept. 24, 1878.



Claim.—The hopper F, removable cover C, box B, and brush E, having its handle *d* projecting from said box, and adapted to be reciprocated in a slot formed in a side thereof, combined with the barrel-lid A, having the opening *a* covered by gauze D, rigidly secured to said lid, substantially as and for the purpose specified.

210,342. ANIMAL-TRAPS. Richard Lyner, Philadelphia, Pa. Filed Oct. 14, 1878.



Claim.—1. The trap herein described, consisting of the jaws A A', each composed of a piece of wire bent to the required form and hooked or hinged together, the wire of jaw A' being continued and bent to form a handle, B, for the trap, said jaws and handle being combined with the spiral spring C, connected to both jaws, the bait-hook E, and trigger D, substantially as shown and described.

2. The combination of the bent-wire jaws A A', coiled spring C, bait-hook E, and trigger D, substantially as shown and described.

3. The spring C, made in two sections, one section having its coils reversed with respect to those of the other and integral therewith, as described and shown.

4. The combination, with the jaws A A' and chord a^1, of the spring C, made in two sections, one having coils reversed with respect to those of the other, said spring being locked within the outline or between the ends of the jaws and its extremities attached to the jaw A, as and for the purpose described.

210,343. BREAD-CUTTERS. Carl W. Madsen, Chicago, Ill. Filed Aug. 10, 1878.



Claim.—The combination, with the cutter or knife C, handle D, and axis *e*, of the case B, constructed as shown and described, for the purpose of cleaning the knife each time it is lifted from the article being cut, as set forth.

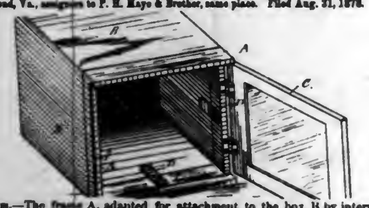
210,344. CHURNS. Joseph E. Marquis, Sharon, Ohio. Filed Aug. 7, 1878.



Claim.—The oscillating keg B, provided with the perforated semicircular dasher C, resting on the lower wall of said keg about the middle of its length,

and having a stem, *l*, attached to the head of the keg by hook and staple, so that the dasher is removable, substantially as specified.

210,346. REMOVABLE COVERS FOR SHOW-BOXES. Peter H. Mayo and Thomas Atkinson, Richmond, Va., assignors to P. H. Mayo & Brother, same place. Filed Aug. 31, 1878.



Claim.—The frame A, adapted for attachment to the box B by internal clips, D, or dowels, provided with a door, C, and having its interior and exterior surfaces flush with those of the box, as shown and described.

210,348. COIN-COUNTERS. Marshall McComb, Pittsburg, Pa. Filed Jan. 19, 1878.

Brief.—A tilting plate is inserted flush with the surface of a counter, and has its mouth projecting beyond the edge of the latter, to be depressed by the hand.



Claim.—The plate B, arranged to occupy a horizontal position in or upon a counter, A, with its end projecting beyond the edge thereof, and pivoted at or near the center, so that the outer end may be depressed, substantially as and for the purpose set forth.

210,347. PLASTIC LININGS FOR FIRE-CHAMBERS. Hamilton W. McKenzie, Alliance, Ohio. Filed July 3, 1878.

Brief.—The compound consists of Bolivar stone or clay as the principal article, fire-clay impregnated with mica or isinglass, asbestus or its equivalent, and borax or a soluble glass.

Claim.—1. Fire-linings for furnaces, stoves, and the like, consisting of Bolivar stone or clay, fire-clay, asbestus, and a flux, substantially as herein set forth.

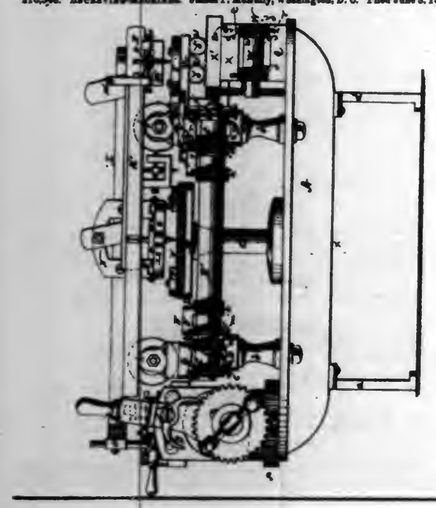
2. In the process of making plastic fire linings or tiles, Bolivar stone or clay, crushed to small grains and subjected to a high degree of heat, for the purpose stated, and then reduced to a fine powder, with the specified materials.

3. The process of making plastic fire-linings, which consists in crushing Bolivar stone or clay into small grains, subjecting them to intense heat, grinding these with the specified materials in the proportions substantially as set forth, and with water forming it into a plastic state, for use as such linings.

4. A plastic fire-lining composed of Bolivar stone or clay, fire-clay, and asbestus, in combination with a fluxing agent made active subsequent to the application of the lining to the fire-chambers, for the purpose herein set forth.

5. A compound for fire-linings adapted to be molded and set-hardened, and fluxed only after application to the stove, consisting of Bolivar stone or its equivalent, fire-clay impregnated with mica or its equivalent, asbestus, plaster-of-paris, and soluble glass, substantially as and for the purpose set forth.

210,349. ENGRAVING-MACHINES. James F. McNally, Washington, D. C. Filed June 3, 1878.



Claim.—1. In an engraving-machine, carriage-beds B B', having milled bands *a*, friction-bands *c*, and groove *d*, substantially as shown and described, and for the purpose set forth.

2. In an engraving-machine, carriage-beds B B', having bands *a*, milled part their length, groove *d*, formed by two friction-bands, *a c*, when resting and secured on columns *b b'*, substantially as described, and for the purpose set forth.

3. The rollers or gear-shafts E E', of uniform size, having two sets of milled and friction bands, with a friction-tongue rising from the latter at each end, substantially as shown and described.

4. The adjustable plain metal platforms F F', having friction-shoulders *p*, groove *q*, and milled bands *l*, substantially as shown and described, and for the purpose set forth.

5. The carriages G G', having on the under side friction-bands *r*, groove *u*, and milled bands *s*, and surmounted by two stationary heads, *k k'*, supporting a triple gearing-shaft, H H', on which are carried three sizes and sets of gear-wheels, substantially as shown and described.

6. The gearing-shafts working on centers in stationary heads *k k'*, and carrying three sizes of milled wheels and accompanying friction-wheels, having tongues rising therefrom, all arranged substantially as shown, and for the purpose described.

7. The carriage G', milled and grooved on the under side, carrying stationary heads *k k'*, gearing-shaft H, provided with a stud, 4, and bracket 7, substantially as shown and described.

8. The roller-shafts E E', having two sets of gearing at each end, in combination with carriage-beds B B', substantially as shown and described.

9. The roller-shafts E E', having double sets of milled and friction gearings at each end, in combination with carrying-platforms F F', milled and grooved on the under side, substantially as shown and described.

10. The roller-shafts E E', in combination with carriages G G', constructed as described, substantially as shown, and for the purpose set forth.

11. The roller-shafts E E', with two sets of milled and friction gearings at each end, in combination with carriage-beds B B', platforms F F', and carriages G G', substantially as shown and described.

12. The revolving gearing-shafts H H', working on centers, provided with three sizes of gearing-wheels, milled on their periphery, three corresponding friction-wheels, having friction-tongues rising therefrom, in combination with stationary heads *k k'*, fixed on carriages G G', carriages G G', roller-shafts E E', and carriage-beds B B', mounted on columns *b b'*, fixed to a machine-bed, A, substantially as shown and described.

13. The diamond-bar K, having a milled band, 29, friction-shoulders 29', forming a groove on the under side, provided with brackets M' M², holding diamond-holder 8¹ on the end, and diamond-holder 8² on the side, substantially as shown and described.

14. The diamond-bar K', having a milled band, 30, friction-shoulders 30', forming a groove on the under side, provided with a bracket, M, holding diamond-holder 8, substantially as shown and described.

15. The time-carriage L, having a milled band, 31', and friction-shoulders forming a groove, 31, on the under side, provided with a rest at the end, and diamond-lifters P² P² on each side, secured to the arbors N N'; to which are also attached on hinge-joints two tracing-handles and two crank-handles for raising and lowering the diamond-lifters, substantially as shown and described.

16. The time-carriage L, milled and grooved on the under side, provided with tracing-handles, diamond-lifters P² P², and a rest, in combination with the larger tongued friction-wheels 2 and milled wheels 2' on revolving shafts H H', substantially as shown and described.

17. The time-carriage L, milled and grooved on the under side, provided with tracing-handles, diamond-lifter, and a rest, working on the larger-tongued friction-wheel, and milled wheels on revolving shafts H H', in combination with diamond-bar K, working on a smaller set of the tongued friction-wheels 1 on shaft H H', substantially as shown and described.

18. The time-carriage L, milled and grooved on the under side, having tracing-handles, diamond-lifters, and a rest, working on gearing-wheels on shafts H H', in combination with diamond-bar K', riding on a smaller set of gear-wheels, 3, on shafts H H', substantially as shown and described.

19. The time-carriage L, milled and grooved on the under side, having tracing-handles, diamond-lifters, and a rest when riding on gear-wheels 2 on revolving shafts H H', diamond-bar K, milled and grooved on the under side, having a bracket on the end and one on the side, to support diamond-holders when riding on a set of gear-wheels, 1, on the revolving shafts H H', diamond-bar K', milled and grooved on the under side, having a diamond-holder bracket at the end when riding on a set of gear-wheels, 3, on the revolving shafts H H', in combination with stationary heads *k k'*, carriages G G', milled and grooved on the under side, platforms F F', table D, gear-rollers E E', and carriage-beds B B', supported by columns *b b*, secured to machine-bed A, substantially as shown and described.

20. The diamond-bars K K', having diamond-holders on the end and side, gearing on gear-wheels 1 and 3 on revolving shafts H H', in combination with diamond-lifters P² P², time-carriage L, and tracing-table U on the reciprocating carriage, substantially as shown and described.

21. The straight-edged clamps 17 and 18, in combination with table D, arranged substantially as shown and described, and for the purpose set forth.

22. The combination of table D, index V, clamps 17' and 18', and straight-edged clamps 17 18, tracing-handles O, platforms F F', revolving shafts E E', carriage-beds B B', columns *b b*, and machine-bed A, substantially as shown.

23. The combination of time-carriage L, tracing-handles O, platforms F F', tracing-table D, provided with index V, clamps 17' 18', and straight-edged clamps 17 and 18, column C, and machine-bed A, substantially as shown and described.

24. The carriage-way Q, secured to the machine-bed A, grooved and milled on the upper edges, substantially as shown and described.

25. The gearing-roller W, having a milled band at each end, and a friction-tongue rising from one of the bands, and gear-roller W', having a milled band at both ends, with a friction-tongue rising from the band at one end, and a large wheel, Z, milled on its periphery, secured on the other, substantially as described and set forth.

26. The carriage-truck X, milled and grooved on the under side to correspond with the milling and grooving in carriage-way Q and the milling and tongues on rollers W W', provided with head-blocks X' X², milled and grooved on the top, substantially as shown and described.

27. The carriage-truck X, milled and grooved on the under side, surmounted by pillow-blocks grooved and milled on the upper edge, in combination with gear-rollers W W', having milled bands at each end, a friction-tongue, Y, rising from the milled bands w', and the milled and grooved carriage-way Q, each meshing into and working on the other, substantially as and for the purpose described.

28. The two gearing-shafts Y Y', milled at each end and having a friction-tongue at one end, substantially as shown and described.

29. The two gearing-shafts Y Y', with milled bands at both ends and a friction-tongue at one end, in combination with the milled and grooved head-blocks X' X², and which they mesh and on which they work, carriage X, gear-rollers W W', and carriage-way Q, secured to machine-bed A, substantially as described and set forth.

30. The table U, provided with a finger-indicator, a circular index, milled on its periphery, a disk with an elongated neck, means for securing a former and a pendent finger, when milled and grooved on the under side to mesh in gearing-rollers Y Y', in combination with said gear-rollers Y Y', grooved and milled pillow-blocks, carriage X, milled and grooved on the under side, gear-rollers W W', carriage-way Q, milled wheel Z, milled arm I, bracket 7, and carriage G', substantially as shown and described.

31. The combination of table U, milled circular index 6', a finger-indicator, index 6, with perforated neck, toggling onto stud 4 on carriage G', former 25, rest 6, and diamond-points in diamond-holders 8, secured to diamond-bars K K', substantially as shown and described.

32. The wheel Z, milled on its periphery, in combination with gear-roller W', carriage-way Q, carriage X, pillow-blocks X' X², gear-rollers Y Y', table U, milled arm I, bracket 7, and carriage G', substantially as shown and described.

33. The arm I, milled on its under edge, in combination with milled wheel Z', reciprocating combination carriage, carriage G', diamond-bars K K', time-carriage L, and diamond-holders 8 8¹ 8², substantially as shown and described.

34. The former 25, adjusted to the tracing-table U, in combination with rest 6, substantially as shown and described.

35. The index R, stayed by lock 27, in combination with indicator 28, graduating-machine 8, working on a center in the machine-bed A, substantially as shown and described.

36. The index T, carrying a former, 16, stayed by a lock, 28', above the graduating-machine 8, substantially as shown and described.

37. The index R, working on a center in the machine-bed A, in combination with graduating-machine 8, index T, carrying former 16 and locks 27 27', and indicators 28 28', substantially as shown and described.

38. The combination of index R, graduating-machine 8, lock 27, indicator 28, index T, lock 27', indicator 28', former 16, rest 15 on time-carriage L, tracing-handles O, diamond-bars K K', diamond-holders 8, and tables D and U, substantially as shown and described.

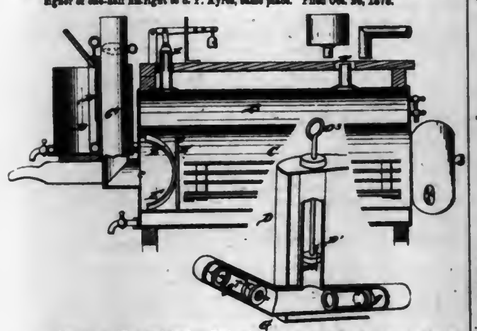
39. The combination of the carriage-beds B B', gear-wheels E E', carriages G G', heads *k k'*, gear-shafts H H', gearing-wheels 1 2 3, diamond-bars K K', diamond-holders 8 8¹ 8², time-carriage L, diamond-lifters P² P², rest 15, former 16, index T, lock 27', indicator 28', graduating-machine 8, indicator 28, lock 27, index R, machine-bed A, column C, tracing-table D, having an index and two sets of clamps, with tracing-handles O and platforms F, also the carriage-way Q, roller-shafts W W', gear-wheel Z, arm I, bracket 7, carriage G' and carriage X, blocks X' X², gear-rollers Y Y', tracing-table U, indexes 5 5', with diamond-points 5 5¹ 5², and stud 4 on carriage G', all substantially as shown and described.

210,349. BREAST-STRAP ROLLERS. James S. Nelson, Millersburgh, Ill. Filed Oct. 18, 1877.



Claim.—The anti-friction roller B, made in two similar sections, each provided with ribbed recess and lug *b'* and *b²*, substantially as and for the purpose set forth.

210,350. FEED-COOKERS AND STEAM-GENERATORS. Milton R. Oliver, Osceola, Iowa, assignor of one-half his right to S. P. Ayres, same place. Filed Oct. 26, 1878.



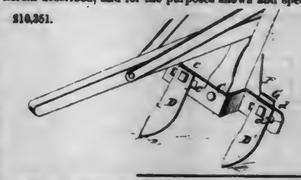
Claim.—1. The fuel-feeder E, having recess *e* and spring-arms E', constructed and adapted to operate in relation to the furnace C and its exit *c*, as and for the purpose set forth.

2. The cylinder D', piston D² D³, pipe G, and valves *g g'*, as shown, in combination with the reservoir D and boiler B, as and for the purpose set forth.

210,351. PLOWS AND CULTIVATORS. Littleton M. Otwell, Roswell, Ga. Filed July 29, 1878.

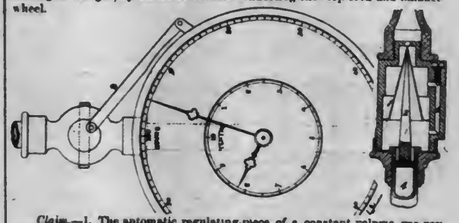
Claim.—The combination, with the angular foot-plate C, having horizontally-slotted wings *c d*, of the laterally-adjustable blades D D' and the rake or harrow F, set at an angle, and the body of which, G, is slotted vertically, to permit its vertical adjustment, all arranged and operating substantially as herein described, and for the purposes shown and specified.

210,351.



210,352. GOVERNING AND RECORDING APPARATUS FOR GAS. David R. Peebles, Edinburgh, Scotland. Filed Nov. 4, 1878. Patented in England, Feb. 23, 1878.

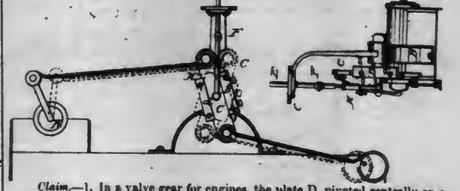
Brief.—The time mechanism is stopped or released, upon shutting off or turning on the gas, by means of devices connecting the stop-cock and balance-wheel.



Claim.—1. The automatic regulating-piece of a constant-volume gas-governor, made in the form of a flanged cone, or flanged tube and cone combined, the point of the hollow cone acting as valve to the exit-orifice, and, when not raised by the gas, resting on a central pointed stud or needle, substantially as hereinbefore described.

2. The combination consisting of the automatic constant-volume gas-governor, with a clock-work movement having a balance-wheel escapement, to which is applied a stopping-slide connected to the stop-cock controlling the gas-supply through the governor, as hereinbefore described.

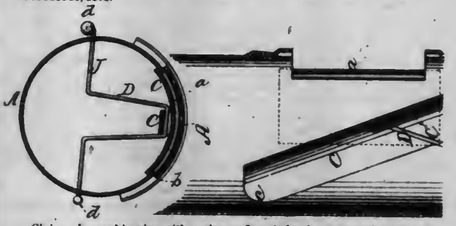
210,353. VALVE-GEARS FOR ENGINES. Benjamin P. Perry, Richmond, Ind. Filed Nov. 18, 1878.



Claim.—1. In a valve gear for engines, the plate D, pivoted centrally on a fixed point, and having attached thereto an adjustable sliding plate, the opposite ends of said plate being connected, respectively, to the valve-stem and the eccentric, substantially as herein shown and described.

2. The stem E, provided with the joint F and socket H, in combination with the oscillating slide-plate C and plate D, substantially as and for the purpose specified.

210,354. STOVE-PIPE DAMPER AND REGULATOR. Thomas C. Phelan, Gloversville, N. Y. Filed June 15, 1878.

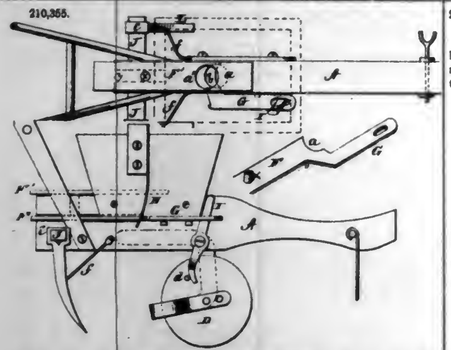


Claim.—In combination with a pipe or flue, A, having an opening, *a*, in its side, and the damper C, hinged to said pipe below the said opening, and provided with a staple, C', of the crank D on the shaft J, the latter having its bearings in and projecting through the stove-pipe, and provided with handles *d*, constructed and arranged to operate substantially as specified.

210,355. GRAIN-DROPPERS. Abner P. Powers, Flowery Branch, assignor of one-half his right to John H. Powers, Cochran, Ga. Filed Sept. 13, 1878.

Claim.—The combination of the beam A, provided with a horizontal slot, as described, and a vertical slot, *y*, in the top portion, the lower slide, F, provided with the projecting side arm, G, and seed-opening *a*, the upper slide, F', provided with seed-opening *a'*, and connected with the lower slide by the pin or stud *x*, the lever I, and wheel D, with pin *d*, all constructed substantially as and for the purposes herein set forth.

210,355.



210,356. TEETH FOR HAND-RAKES. Edmund Quinlan, Sheboygan Falls, Wis. Filed Aug. 6, 1878.



Claim.—The improved hand-rake herein shown and described, the teeth of which consist of wire sections A *b*, bent or doubled near the middle and inserted into the rake-head in planes parallel to each other, substantially in the manner and for the purpose specified and set forth.

210,357. SPINDLES FOR SPINNING MACHINERY. F. J. Rabbeth, Providence, R. I. Filed Apr. 20, 1878.

Brief.—Improvements: A dead-spindle made in two or more sections, and jointed together by socket-joints and rendered flexible. Oil is carried upward and downward from the reservoir by the internally spirally and externally vertically scored bushing within the sleeve. The bobbin-carrier supports the bobbin below the joints of the spindle, and is made of solid sections separately jointed at one end to a revolving sleeve or a spindle, so that its outer surface may be brought into contact with the interior of the bobbin by centrifugal action, and thus cause a positive rotative connection.



Claim.—1. A dead-spindle constructed in two or more longitudinal sections jointed together, substantially as described.

2. A dead-spindle composed of two or more sections flexibly jointed together, substantially as described.

3. A dead-spindle constructed in two or more longitudinal sections socket-jointed together, and provided at the joints with yielding packing for preventing undue vibration, substantially as described.

4. The combination, with a dead-spindle, an oil-reservoir at its base, and a whirl having a sleeve provided with an interior annular recess near its upper end, of a bushing within the sleeve, which is spirally scored internally and vertically scored externally, substantially as described, whereby oil is conveyed upward next the spindle to the annular recess, and thence downward outside the bushing to the reservoir, as set forth.

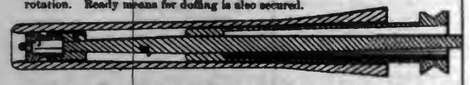
5. The combination, with a flexibly-jointed dead-spindle, of a bobbin-carrier arranged to support a bobbin at a point below the joints of the spindle, substantially as described, whereby the bobbin is enabled to readily find its true axis when in operation, as set forth.

6. The combination, with a flexibly-jointed dead-spindle, of a bobbin-carrier and whirl-sleeve rotating on the shank of the spindle, which is rigidly mounted in a base fitted for rigid attachment to the rail of a spinning-machine, substantially as described, whereby the shank, bobbin-carrier, and whirl-sleeve are maintained in a truly vertical position, while permitting the jointed portion of the spindle to adapt itself to unequally-balanced bobbins, as set forth.

7. The combination, with a bobbin-driver, of a centrifugal bobbin-holder composed of solid sections, which are separately jointed at one end to a revolving sleeve or a spindle, substantially as described.

210,358. SPINDLES FOR SPINNING-MACHINES. F. J. Rabbeth, Providence, R. I. Filed May 11, 1878.

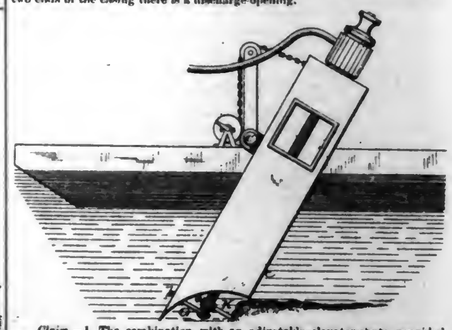
Brief.—A cup is fitted upon the spindle, and a plug secured in the bottom. The latter is preferably made of vulcanized elastic rubber, and fitted within the former. The plug is expansible by centrifugal force, and operates within the cup by frictional contact, to firmly unite the bobbin and spindle during rotation. Ready means for doffing is also secured.



Claim.—The combination, with a live-spindle and a bobbin, of a cup and an expansible plug, substantially as described, whereby the bobbin and spindle are rotatively connected only when the spindle is revolving and the plug expanded by centrifugal force, as set forth.

210,359. EXCAVATING AND DREDGING MACHINES. St. Julien Ravenel, Charleston, S. C., assignor to Paul S. Calder, same place. Filed Oct. 23, 1878.

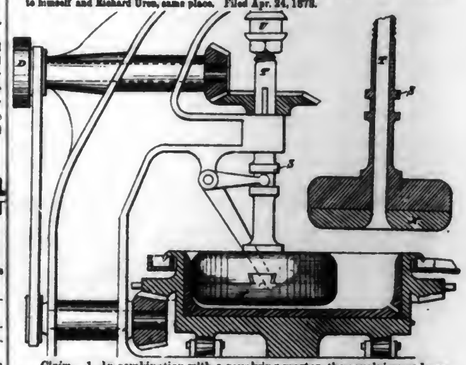
Brief.—An adjustable excavating-chute, with a revolving shaft in the same, having on one end a rotary engine and on the other hooks or cutters. There are propeller-blades attached to the shaft within the casing, and between the two ends of the casing there is a discharge-opening.



Claim.—1. The combination, with an adjustable elevator-chute, provided with a discharge-opening intermediate with respect to its opposite ends, of revolving cutters located at the lower end of the chute or casing, and one or more propeller-blades located within the casing between its lower end and discharge-opening, substantially as set forth.

2. The combination, with an adjustable excavator chute or casing, of a revolving shaft, provided on opposite ends with a rotary engine and cutters or hooks, and having one or more propeller-blades secured to the shaft within the casing, substantially as set forth.

210,360. MILLS FOR PULVERIZING ORES. Joseph W. V. Rawlins, Houghton, Mich., assignor to himself and Richard Uren, same place. Filed Apr. 24, 1878.



Claim.—1. In combination with a revolving mortar, the revolving and vertically-reciprocating pestle, substantially as described.

2. The revolving mortar having the series of projections on its periphery, in combination with the bell-crank and revolving pestle having the shoulder S, whereby a vertical reciprocating motion is imparted to the pestle, substantially as described.

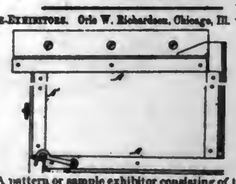
3. The pestle having the upright shaft T, provided with the shoulder S, and the spring U near the top, in combination with the bell-crank, and the revolving mortar, and the frame, substantially as described.

210,361. GATES. Isaac M. Rhodes, Hancock, Mich. Filed Sept. 21, 1878.



Claim.—The combination of the gate A, having square collar B, with the double spring C, adapted to clasp opposite faces of said collar in an open or closed position, as specified, for the purpose set forth.

210,362. SAMPLE-EXHIBITORS. Orin W. Richardson, Chicago, Ill. Filed Mar. 9, 1878.



Claim.—1. A pattern or sample exhibitor consisting of two pairs of mirrors, A A′, one pair adjustable with relation to the other, those in the same pair being connected to each other, and each connected pair being independent of the other, and those in one connected pair being higher than those in the other at their upper edges, and one connected pair having their lower edges raised above the lower edges of those in the other pair, thereby adapting the same exhibitor to samples or patterns of different width from each other, giving a greater field of vision, and allowing the edges of the samples or patterns to be covered by the edges of one pair of mirrors, substantially as and for the purposes specified.

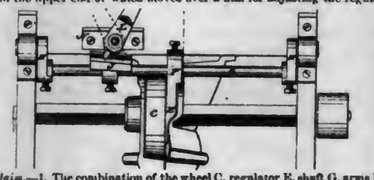
2. The combination, in a pattern-exhibitor consisting of four mirrors, of a pair of mirrors, arranged vertically and hinged to each other at two vertical edges, and the hook C, the latter for holding the said mirrors at right angles to each other.

210,363. CHEWING-TOBACCO. Henry H. Rittenhouse, Philadelphia, Pa., assignor to himself and Alfred Meller, same place. Filed Oct. 19, 1878.

Claim.—As an improved chewing-tobacco, the combination of tobacco with glycyrrhizine, as and for the purpose set forth.

210,364. GRAIN-DRILLS. Alonzo Runyan, Ostawka, Ohio. Filed Oct. 21, 1878.

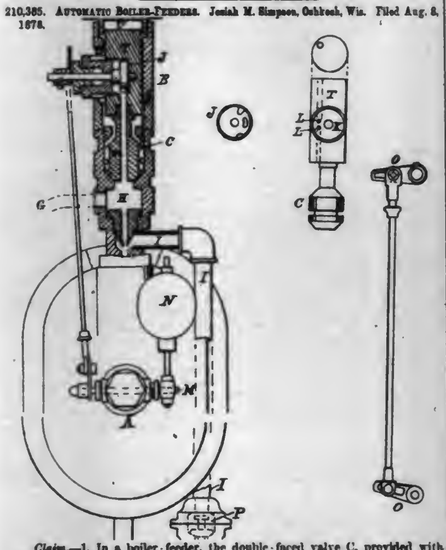
Brief.—The shaft carrying the adjustable regulator is journaled in swinging arms attached to the hopper. On the shaft is an adjustable diagonally-grooved block, into which plays the lower end of a lever pivoted to the hopper, and the upper end of which moves over a dial for adjusting the regulator.



Claim.—1. The combination of the wheel C, regulator E, shaft G, arms H H, grooved plate J, and lever L, substantially as described.

2. The combination of the shaft G, arms H H, grooved plate J, and lever L, substantially as described, and for the purpose specified.

210,365. AUTOMATIC BOILER-FEEDERS. Josiah M. Simpson, Oshkosh, Wis. Filed Aug. 5, 1878.



Claim.—1. In a boiler-feeder, the double-faced valve C, provided with steam-passage V and stem T, having ports L L, in combination with the auxiliary valve J, connecting-rod O O, and rock-shaft M, constructed and operating substantially as and for the purposes set forth.

2. In a boiler-feeder, the steam-valve and siphon-case B, provided with the steam-chambers H and U, steam and water inlets and outlets F, G, E, and I, constructed and operating substantially as and for the purposes set forth.

3. The combination, with the water-chamber A, provided with the float S, inlet W, and outlet R X, of the rock-shaft M, counter-balance N, connecting-rod O O, the stem T, valves J C, and case B, having steam and water inlets and outlets, constructed and operating substantially as and for the purposes set forth.

4. In a boiler-feeder, the siphon D and water-pipe I, having check-valve P, in combination with the water-chamber A, having float S, case B, having steam and water inlets and outlets E F G I, valves C J, steam-chambers H U, and cranks and rods O O, constructed and operating substantially as and for the purposes set forth.

210,366. DENTAL CHAIRS. Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place. Filed June 6, 1878.

Claim.—1. The combination, substantially as hereinbefore set forth, of the base, the differential windlass, pulleys mounted in the base above the windlass, a pulley carried by an endwise-moving chair-supporting plunger, and a cord passing from the windlass or shaft over the intermediate pulleys and around or under the pulley on the plunger.

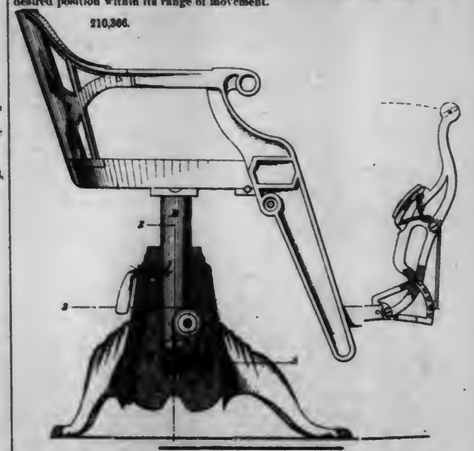
2. The combination, substantially as hereinbefore set forth, of the base or stand, a differential windlass mounted therein, pulleys also mounted in the base, over which the windlass-cord passes, a plunger moving freely endwise in the base and carrying the chair body or seat, and a pulley carried by the lower or inclosed end of the supporting plunger, on the shank of which the plunger is free to turn or swivel, and around which pulley the windlass-cord passes from the intermediate pulleys, whereby the plunger is supported and controlled in its endwise movements by the differential windlass-cord while free to turn horizontally.

3. The combination, substantially as hereinbefore set forth, with the foot-board or platform of a dental chair, of a pivoted supplementary foot-rest, consisting of side arms or bars, connected at or near their outer ends by a turning or swiveling bar, forming a foot or limb support, said supplementary foot-rest being adapted to be adjusted or rocked on its pivots toward and from the chair-seat.

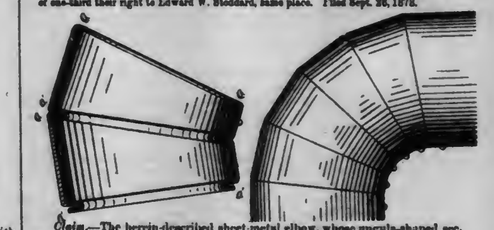
4. A supplementary foot-rest for dental chairs, constructed substantially as hereinbefore set forth, consisting of pivoted or adjustable side arms or bars, provided with a foot or limb support near the outer ends thereof, and with an additional bar or foot-support intermediate of the limb-support and the pivots or points of attachment of the side arms to the chair-frame, the said foot-rest being adapted to be moved or adjusted toward and from the seat and be secured in its adjusted position.

5. A foot-rest for dental chairs, substantially as hereinbefore set forth, consisting of side arms or brackets pivoted to the ordinary foot-board or platform, a cross-bar forming a foot or limb support connecting the arms or brackets, a curved segmental rack mounted on the foot-board, and a spring-detent carried by the pivoted foot-rest, adapted to engage the rack to lock the rest in any desired position within its range of movement.

210,366.

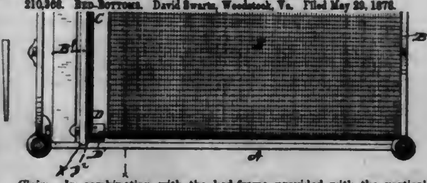


210,367. SHEET-METAL ELBOWS. John Stears and William Meyn, Detroit, Mich., assignors of one-third their right to Edward W. Stoddard, same place. Filed Sept. 26, 1878.



Claim.—The herein-described sheet-metal elbow, whose angula-shaped sections are jointed together by the internal male and female flanges, *a a′*, substantially as set forth.

210,368. BED-BOTTOMS. David Swartz, Woodstock, Va. Filed May 29, 1878.



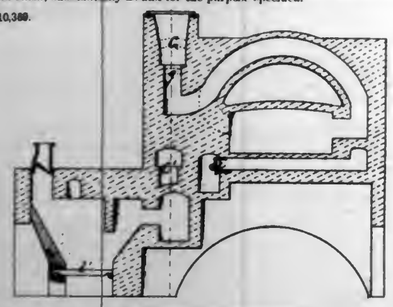
Claim.—In combination with the bed-frame provided with the vertical grooves *x x* in the side rails, near the head, and circular recesses *y* in the front board, the readily-detachable bottom, consisting of the rollers D D, provided with pierced blocks D^1, having ratchets D^2, and journaled into the cross-piece B^1, the double-acting spring C, and the flexible sheet E, substantially as set forth.

210,369. METALLURGIC FURNACES. William Swindell, Alleghany, Pa. Filed Mar. 23, 1878.

Claim.—1. The combination, with the roof or arch of the producer, of the deflecting wall, adapted to cause the dip of the gas, which accumulates near the roof before its escape from the producer, substantially as specified.

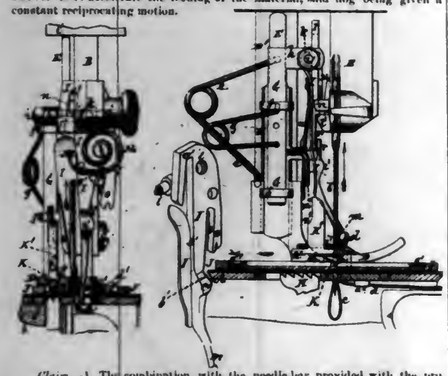
2. The combination of the producer, the working hearth, the arch spanning the hearth and divided into air and combustion flues, and the two sets of dampers interposed between the producer and hearth and the combustion flues and stack, substantially as and for the purpose specified.

210,369.



210,370. BUTTON-HOLE-STITCHING ATTACHMENTS FOR SEWING-MACHINES. Augustus H. Tait, Jr., Jersey City Heights, N. J., assignor of one-half his right to Edward Ham, same place. Filed Mar. 23, 1878.

Brief.—The shuttle-thread is drawn up in a loop after each stitch, and held in position for the needle to pass through on its next downward movement. A hooked lever is operated to descend through the needle-plate and engage the shuttle-thread, then rise and draw the loop in the path of the needle. A plate having an elongated opening in its center with curved ends is used under the presser-foot. This plate is held in position by a dog projecting below the presser-foot, which fits in a groove in the upper side of the plate. This groove is provided with ratchet-teeth at its curved ends, with which the dog engages, and serves to accelerate the feeding of the material, said dog being given a constant reciprocating motion.



Claim.—1. The combination, with the needle-bar provided with the projection a, of the hook-bar I, having the lifting-extremity a' and incline a', the spring-cam or latch M, the pivots i l, arranged at right angles with each other, and the rising-and-falling bar G and its controlling-spring g, substantially as specified.

2. The hook-bar I, having a rising-and-falling motion, constructed with a rear leg, s, and slot s, in combination with the bar E, provided with the rest r, the bar G, and the pivots i and l, essentially as described.

3. The combination of the rising-and-falling hook-bar I, having a cam-like projection, c', on its face, the bars E and G, the pivots i and l, and the spring s, substantially as specified.

4. The combination, with the presser-foot bar D', of the bar E, the face-plate or head C, the bar G, connected with the bar E by one or more guides, f, the spring g, the pivot i, the sleeve k, the pivot l, and the hook-bar I, essentially as described.

5. The combination of the needle-plate provided with a stud or projection, a², and the hook-bar I, substantially as and for the purpose herein described.

6. The combination of the presser-foot provided with a tubular projection, c', with the slotted feed-plate having a roughened under surface and fitted to the said projection on the presser-foot, substantially as and for the purpose herein described.

7. The independent feed-plate J, constructed with a longitudinal slot, d', in it, and having its under surface serrated and its upper surface formed with a groove or way, f', running in parallel courses, and terminating in opposite end toothed semicircular portions g', in combination with the sliding pawl-holder K', the spring-pawl K, the needle-bar having a projection, F', the rising-and-falling bar G, having a projection, n', and the presser-foot provided with a tubular projection, c', essentially as described.

210,371. LUBRICATORS. Robert W. Taverner, West Bay City, Mich., assignor of one-half his right to H. H. Harrington, same place. Filed Sept. 3, 1878.

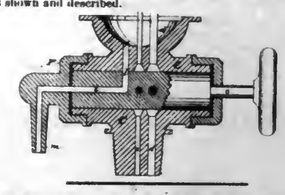
Claim.—1. In a lubricator, the combination, substantially as described, with an oil-reservoir, of a steam-injection passage and tube and an oil-conducting passage and tube, the latter having its mouth facing that of the steam-tube.

2. In a lubricator, the combination, substantially as shown and described, of the oil-cup, the steam and oil passages and tubes, arranged as specified, and the valves seated in reverse directions, as and for the purpose set forth.

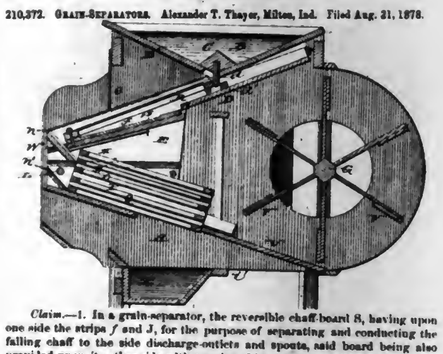
3. In a lubricator, the combination of the adjustable hollow oil-feed plug, having a lateral orifice and notches or grooves in its conical end, and the neck of the oil-reservoir, all constructed as shown and described.

4. In a lubricator having an aperture in the bottom for the discharge of the sediment, and a plug with angular passage registering with said aperture, the cap F, made in one piece with the nozzle n, and attached to a fixed part of the lubricator, so as not to move with the plug, all constructed and arranged substantially as shown and described.

210,371.



210,372. GRAIN-SEPARATORS. Alexander T. Thayer, Milton, Ind. Filed Aug. 31, 1878.

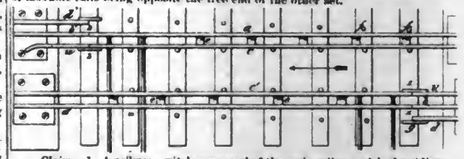


Claim.—1. In a grain-separator, the reversible chaff-board S, having upon one side the strips *f* and J, for the purpose of separating and conducting the falling chaff to the side discharge-outlets and spouts, said board being also provided upon its other side with a series of bars, *l*, converging, substantially as shown, and for the purposes herein described.

2. The herein-described vibrating feed and agitating device C, arranged to cover the opening at the bottom of the hopper, and being formed with a series of transverse passages, *c*, opening into and adapted to conduct the grain in suitable quantities from the hopper into the opening in its bottom, whereby the grain will be agitated and distributed, as herein set forth, in combination with the vibrating shoe and screen, substantially as shown and specified.

210,373. RAILROAD-SWITCHES. Warner W. Todd and Henry M. Tschudy, Philadelphia, Pa. Filed Nov. 11, 1878.

Brief.—A switch capable of directing cars from a main line onto sidings which extend in opposite directions from the switch, the movable rails on each side of said switch being in pairs, the two of each pair united together, the pair or set on one side consisting of one main line rail and a rail of one of the sidings, and on the other side of the remaining main line rail and the corresponding rail of the other siding. The two sets of movable rails are cut on different transverse lines, and are so arranged that to keep the main line open they approach each other, and to open the sidings they are carried from each other, this movement being necessitated on account of the fixed end of each set of movable rails being opposite the free end of the other set.



Claim.—1. A railway-switch composed of the main rails *a* and *b*, the siding rails *c* and *d*, *a* and *c* being movable and *b* and *d* fixed, and the main switch rail *a'*, as set forth.

2. The combination of the main and side switch-rails *a c* and *a' c'* with the fixed main rails *b b'* and fixed side rails, *d d'*, as set forth.

3. The combination of the switch-rails, main and side rails, and the guard-rails *v w*, as set forth.

4. In combination with the two sets of switch-rails adapted to move inward and outward at opposite ends, the inner and outer lines of stops, as set forth.

5. In a railway-switch substantially of the construction described, the braces *e e*, connecting the switch-rails on each side, as set forth.

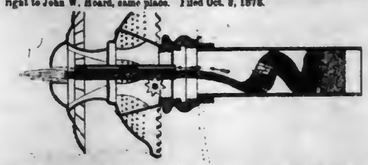
210,374. CARTRIDGES. William Trabue, Louisville, Ky. Filed Sept. 7, 1878.



Claim.—1. A series of loaded shells connected one to another, a proxleter mined distance apart, by non elastic cords or equivalents, whereby the movement of the advanced shell drags positively into accurate position the succeeding shells, as and for the purpose described.

2. A metallic cartridge-case formed with one or more annular grooves, provided with a fibrous packing, substantially as and for the purpose set forth.

210,375. LAMP-BURNERS. Henry W. Vaughan, Providence, R. I., assignor of one-half his right to John W. Heard, same place. Filed Oct. 8, 1878.



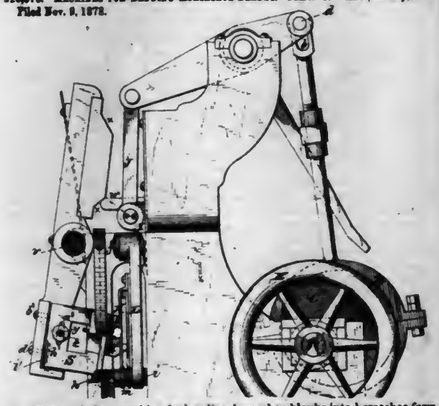
Claim.—1. A laterally-imperforate wick-tube reaching nearly or quite to the bottom of the fluid-chamber of the lamp, and operating, by means of a porous plug or its equivalent at or near its bottom, to retain all the wick above such plug or equivalent, and also to prevent any communication of the vapor or air within such tube with the vapor or air contained in the other parts of the lamp.

2. A wick-tube provided with an internal wick support or floor near its bottom, serving to sustain all the wick at an elevation above but near the bottom of the lamp and above the lower end of such tube, such support acting by capillary attraction to afford the only means of supplying oil or liquid to the wick within the tube, as and for the purpose set forth.

3. In combination with a non-perforate wick-tube extending to or nearly to the bottom of the oil-chamber, a diaphragm of porous material within the same near its bottom, serving not only to prevent the pouring out of fluid from the main reservoir in case of overturning the lamp, but also to prevent explosions in case the fluid-sealing be interrupted or broken by tipping the lamp when the fluid is low.

4. In combination, a non-perforate wick-tube extending to or nearly to the bottom of the oil-chamber, a porous plug within said tube at or near its bottom, and an inlet to admit air into the body of the lamp, substantially as and for the purposes set forth.

210,376. MACHINES FOR BENDING HORSESHOE-BLANKS. James T. Walker, Albany, N. Y. Filed Nov. 9, 1878.



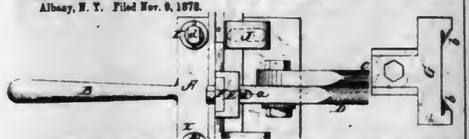
Claim.—1. In a machine for bending horseshoe-blanks into horseshoe form, a mechanism, substantially as herein described, to give the blank the required form, and which controls the inclination of the wall of the crease in the process of bending.

2. In a machine for bending horseshoe-blanks into horseshoe form, a mechanism, substantially as herein described, to give the blank the required form, and adapted by adjustment to vary or control the inclination of the wall of the crease in the process of bending.

3. In a machine for bending horseshoes, a bending mechanism, substantially as herein described, operating in connection with a former, and constructed to hold the four corners of the blank and control the twisting tendency of the iron, substantially as herein set forth.

4. The combination of the adjustable frame B, provided with the shouldered recess *b'*, the plate *f'*, and set-screws *d'*, for the purposes set forth.

210,377. DEVICES FOR GAGING THE CUTTING OF HORSESHOE-BLANKS. James T. Walker, Albany, N. Y. Filed Nov. 9, 1878.



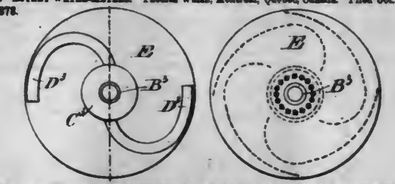
Claim.—1. A clamp or clamping device, substantially as herein described, arranged to gripe a bar of horseshoe-iron in the center of the horseshoe-blank, for gaging the cutting of the iron uniformly from the center to one end of the blank, substantially as herein set forth.

2. The gripe or clamp G, provided with the projections *b b*, arranged to fit in the inner ends of the nail grooves of a horseshoe-blank, for the purposes herein set forth.

3. The combination of the plate A, handles B C, pivoted lever D, and gripe or clamp G, substantially as and for the purposes herein set forth.

4. The rollers I and adjustable guides J, in combination with the plate A, handles B C, lever D, and gripe G, for the purposes herein set forth.

210,378. ROTARY WATER-METERS. Thomas Walsh, Montreal, Quebec, Canada. Filed Oct. 21, 1878.



Claim.—1. The wheel E, constructed, arranged, and operated as described, in combination with the wheel C^2 D^2, substantially as and for the purposes set forth.

2. In a water-meter, the wheel composed of parts C^2 and D^2, arranged for part of the fluid to pass through, and having the nipple F^2, substantially as and for the purposes set forth.

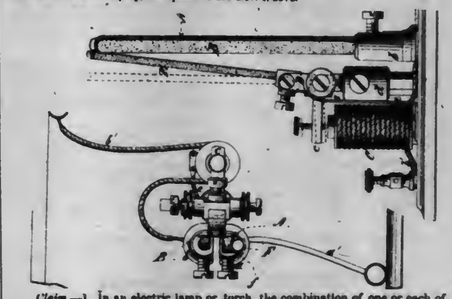
210,379. RUBBER BELTINGS. Abraham D. Westbrook, Lambertville, N. J. Filed May 20, 1878.



Claim.—1. In a belt composed of one or more layers of suitable textile fabric folded, a strip of rubber interposed between the abutting edges of the folded fabric or covering, substantially as and for the purpose described.

2. In a belt composed of one or more layers of suitable textile fabric folded, a strip of rubber interposed between the abutting edges of the folded fabric or covering, and underlapping and overlapping one of said edges, and of a strip of rubber for covering the joint between such edges, substantially as and for the purpose set forth.

210,380. ELECTRIC LIGHTS. Edward Weston, Newark, N. J., assignor to Weston Dynamo-Electric Machine Company, same place. Filed Nov. 4, 1878.



Claim.—1. In an electric lamp or torch, the combination of one or each of the electrodes with a rod or cylinder composed of lime glass, or other material the vapor of which is combustible, and is of greater conductivity than the vapor of carbon, substantially as and for the purpose set forth

2. An electric torch composed of two stationary electrodes fixed in relatively parallel positions, and respectively connected with the opposite poles of a battery or other source of electricity, and having cemented or otherwise attached to the outer side of one or each electrode a rod or cylinder of lime glass, or other material the vapor of which is combustible, and is of greater conductivity than the vapor of carbon, substantially as and for the purpose set forth.

3. In combination with an electric lamp, candle, or torch in which the position of the arc is varied by the combustion of the electrodes, an automatic igniter composed of a movable conducting body, a spring, and an electro-magnet, the helix of which is included in the circuit which supplies the current for the arc, the spring operating to move and hold the igniter against or between the points of the electrodes when the arc is extinguished, and the electro-magnet operating to move and hold the igniter away from the points of the electrodes when the arc is established, substantially as described.

4. In combination with the negative electrode B of an electric lamp or torch, the positive electrode A, having twice the area of the negative electrode in cross-section, and being provided with the longitudinal groove *f*, in which is cemented or otherwise secured the stick F of lime glass or other material, as and for the purposes set forth.

5. Broadly, in combination with an electric candle or torch in which the position of the arc is varied by the combustion of the electrodes, a movable igniter having a variable range of motion automatically governed in its operation by the current, substantially as described.

210,381. PIANO-FORTE DAMPER-ACTIONS. Otto Wessell, Adam Nickel, and Rudolph Groos, New York, N. Y. Filed Nov. 2, 1878.

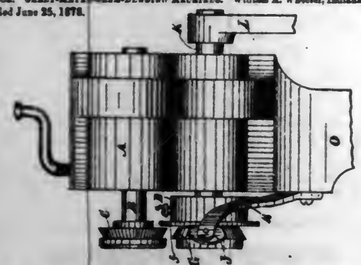


Claim.—1. The combination, with a wooden main action rail and with the damper-crank or lifting-bar of the instrument, of metallic bearings for the pivots of said crank or bar, secured to the face of the wooden rail, and fitted or provided with cloth bushes for said pivots, substantially as specified.

2. The combination of the circular metallic plate-bearings C, having sock-

ets *c* mounted on their faces, the cloth brushes D, inserted within said sockets, the wooden main section rail A, to or within which the plate-bearings C are secured, and the damper-crank or lifting-bar E, having pivots *e* fitted to turn within said bushes, essentially as and for the purposes specified.

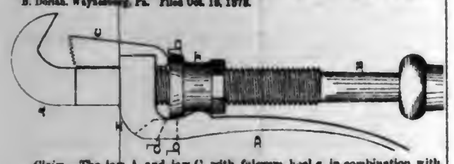
210,382. SHEET-METAL SEAM-BENDING MACHINES. William A. Wheeler, Indianapolis, Ind. Filed June 25, 1878.



Claim.—1. In a sheet-metal-flange-bending machine, the bending-roller G, with hub R, having a screw-thread on its outer periphery, combined with the adjustable annular ring D, with flange *f* on its outer periphery and a counter-sunk face, whereby said ring is permitted to be adjusted forward and permit the flange *f* to overlap the bending-roller, substantially as shown and described.

2. The adjustable annular face-plate ring D, with flange *f* and counter-sunk face, combined with the mandrel K and bending-roller G in an adjustable manner, substantially as shown and described.

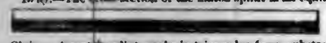
210,383. PIPE-TONGS. J. Atwood White, Philadelphia, assignor of one-half his right to S. B. Dorlan, Waynesburg, Pa. Filed Oct. 16, 1878.



Claim.—The jaw A and jaw C, with fulcrum-heel *a*, in combination with the screw-collar F, having a flange, *b*, with a curved face, and the lever D, having an arc-shaped portion, *d*, to lock with the curved face of flange *b*, all constructed and operating substantially as and for the purpose set forth.

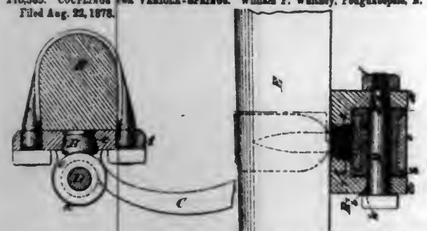
210,384. MATCH-SPLINTS. John R. White, Hunterville, Ala. Filed Sept. 19, 1878.

Brief.—The cross-section of the match-splint is an equilateral triangle.



Claim.—A match-splint made in triangular form, substantially as and for the purpose herein described.

210,385. COUPLINGS FOR VEHICLE-SPRINGS. William F. Whitney, Poughkeepsie, N. Y. Filed Aug. 22, 1878.



Claim.—1. In a coupling for the springs of side-bar vehicles, the combination, with the spring C, having the eye *e*, and the head A, attached to the under side of the side bar, and constructed with a cavity, *c*, intermediately of the ears of the head, of the elastic cushion B, arranged in said cavity, as and for the purpose described.

2. The bolt D, constructed with the fin, teat, or projection immediately on the inner side of its head, and with a shoulder, *d'*, in rear of its screw-threaded end, in combination with the head A, having ears *a a'*, one of which is provided with a notch, *i*, in its exterior face, for receiving the fin or teat, the shoulder *d'* bearing against the inner side of the opposite ear, substantially as shown and described.

210,386. FIRE AND BURGLAR ALARMS. John D. William, Rising Sun, Ind. Filed Oct. 12, 1878.

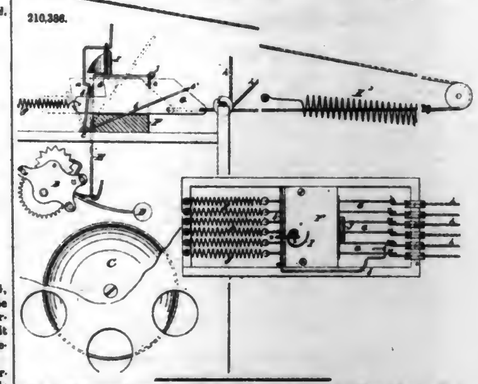
Claim.—1. The combination, with the line of cord or wire, of the re-enforcing springs K, fixed to said line at one end and to an immovable object at the other, substantially as and for the purpose described.

2. The slides C, having beveled ends, in combination with the rocking bar *b*, having extension *b'*, the rod E, with a catch, *a*, and the alarm mechanism, substantially as described.

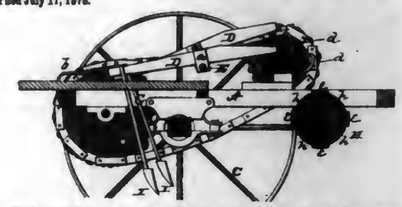
3. The slides C, held under a tension and provided with notches *e*, in combination with the guide-piece F, and the detachable stop-plate J, as and for the purpose described.



210,386.



210,387. COMBINED SPADING AND SEEDING MACHINES. John S. Williams, Chicago, Ill. Filed July 11, 1878.

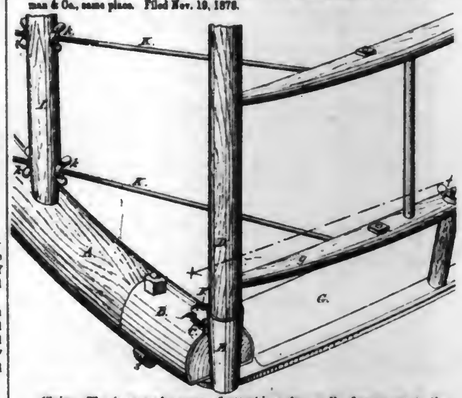


Claim.—1. The combination of a series of spades, forced by a positive motion into the ground, through the medium of a rotating shaft having cams attached thereto, and retracted by springs, and a rotating seed-cylinder, substantially as herein set forth.

2. The combination of the walking-beams D, provided with the shanks G and spades I, the springs *b*, and the rotating beam F, with cams *d* secured thereon, substantially as and for the purposes herein set forth.

3. The seed-cylinder H, constructed of the heads *f*, grooved bars *e*, and curved perforated metallic plates *h*, sprung into the grooves on the bars *e*, substantially as herein set forth.

210,388. GRAIN-CRADLES. Robert Winterbotham, Columbus, Ohio, assignor to Brown, Hinman & Co., same place. Filed Nov. 19, 1878.



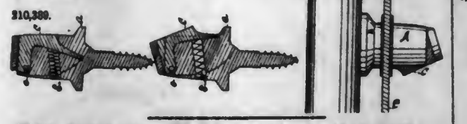
Claim.—The improved means of attaching the cradle finger-post to the snath, the same consisting in a ring or open ferrule adapted to fit the heel of a snath, and having a socketed seat projecting diametrically therefrom, in combination with a ferrule adapted to fit upon the lower end of a finger-post and provided with a diametrically-projecting arm, having a lug projecting therefrom, and adapted to fit in and interlock with the socket in the seat on the ferrule or ring of the snath, substantially as described.

210,389. CURTAIN-FASTENINGS. James Woods, Jr., Somerville, Mass. Filed Mar. 16, 1877.

Brief.—A slotted standard with screw-shank contains a spring-actuated catch or latch pivoted at its outer end.

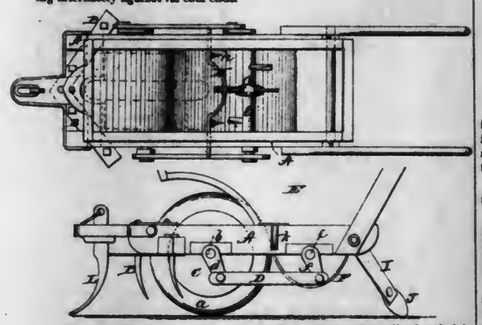
Claim.—A curtain-fastening consisting of a solid standard, A, slotted from top to base, as shown, combined with a catch, *a*, pivoted at *c*, so that its top part forms an oscillating head-piece to the standard, by means of which the catch is operated, and its lower portion projects beyond the standard throughout its entire length to engage the curtain-grommet, and is held out by a spring, *s*, inserted in openings made in the opposite sides of said slot, and at an acute angle to the back side of the same, all arranged and operating substantially as set forth.

210,389.



210,390. COTTON-PLANTERS. Willis W. Woodward, Athens, Ga. Filed Oct. 9, 1878.

Brief.—Transverse agitating-arm is operated by the connecting-bars coming alternately against its cam ends.



Claim.—1. The horizontal toothed bar H, provided with inclined ends *k k*, arranged across the seed-box, and having a lateral reciprocating motion through the means of the pitman D acting on the inclined ends *k*, as and for the purposes herein set forth.

2. The combination of the rotary stirrer G and the laterally-reciprocating toothed bar H, as and for the purposes herein set forth.

3. The combination of the wheel C with projection *a*, rotary stirrer G, laterally-reciprocating agitator H, and coverers I J, all constructed substantially as and for the purposes herein set forth.

210,391. MAIL-BAG FASTENER AND TAG-HOLDER. Julius Metz, Denver, Colo. Filed Oct. 14, 1878.



Claim.—1. In a combined mail-bag fastening and tag-holder, the bag-attaching end of said holder provided with holes *d d*, through which the fastening-cord is passed, at a point located and arranged between the attaching end of the holder and the open end of the label slip-holding case, whereby the tying of the cord serves as the means of securing the label-slip in place.

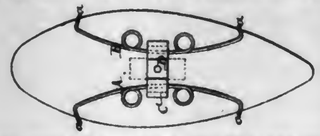
2. The tag or label-slip holder having the cord-receiving holes *d d*, the neck formation *i i*, and the label-slip-receiving case *b*, provided with open end, all arranged in relation to each other, for the purpose stated.

3. The attaching end extension of the tag or label-slip holder bent to an angle with the plane of the card or ticket holding surface, for the purpose stated.

4. A combined mail-bag fastening and tag-holder, consisting of the fastening-cord A and the tag or label-slip holder B, having the end cord-receiving holes, *d d*, the label-slip case *b*, provided with an open end, and the handle E, all arranged and adapted for use substantially as described.

REISSUES.

8,503. CUTTLE-FISH HOLDERS. Andrew H. Alverson, New Haven, Conn., assignor to Gottlob Gunther, New York city, N. Y. Patent No. 176,893, dated June 30, 1876. Filed Nov. 11, 1878.

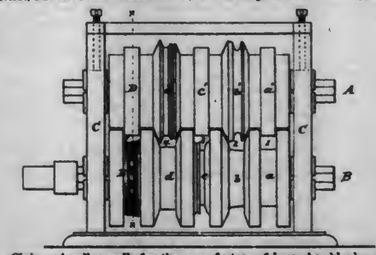


Claim.—The combination, in a holder for cuttle-fish or other articles, of two springs, A B, constructed with a hook at each end, a suitable connection for the springs, and a fastening device adapted to engage with the wires of a bird-cage, substantially as described.

8,504. CLOCK-CASE. Henry J. Davis, Brooklyn, N. Y. Design No. 10,806, dated May 21, 1878. Filed Nov. 9, 1878.

Claim.—A design for the glass fronts of clock-cases in which the glass is ornamented or embellished to present the appearance of a curtained window, the upper part of which is occupied by the dial of the clock, substantially as herein specified.

8,505. ROLLS FOR ROLLING HORSESHOE-BLANKS. William M. Greenwood and John H. Clarke, Cincinnati, Ohio. Patent No. 167,096, dated Aug. 24, 1875. Filed Sept. 28, 1878.



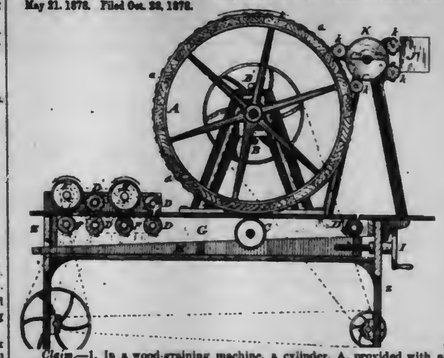
Claim.—A roll or rolls for the manufacture of horseshoe-blanks, comprising a series of preliminary grooves, substantially as herein described, for forming a bar with central rib and fuller outer margin, and a finishing-groove adapted to form an inner flange or web and transverse depressions in the central rib, as and for the purpose described.

8,506. HORSESHOE-BLANK BARS. William M. Greenwood and John H. Clarke, Cincinnati, Ohio. Patent No. 167,096, dated Aug. 24, 1875. Filed Sept. 28, 1878.



Claim.—A horseshoe-blank having a continuous or flat upper surface and an under surface consisting of an external fullered ridge, a more protuberant middle portion, transversely indented, and an inclined or tapering inner margin, formed by the displacement of the metal from the protuberant portion in forming and indenting the central ridge, all substantially as herein set forth.

8,507. GRAINING-MACHINES. George Pahring, Cincinnati, Ohio. Patent No. 204,078, dated May 21, 1878. Filed Oct. 28, 1878.



Claim.—1. In a wood-graining machine, a cylinder, A, provided with an engraved or embossed periphery in counterpart of the grain to be imitated, in combination with, and arranged in contiguity to, the described color-imparting device K *k*, whereby the cylinder is adapted to simultaneously indent and color the so-indented parts of a board suitably fed and pressed against it.

2. In a wood-graining machine, the drum A, having on its peripheral face the plate *a*, presenting the counter-impression of the grain to be imitated, in combination with the described rollers K *k* near the upper part of said drum, for supplying coloring-matter to the said plate, and the described rolling support C, substantially as set forth.

3. In a wood-graining machine, the combination of engraved or embossed drum A *a*, feed-rollers D D' D'', filling and finishing rollers E E', and bed-rollers F F', as and for the purposes specified.

4. The process of ornamenting surfaces which consists in impressing the surface of a board with indentations, and by the same operation coloring such indentations so as to resemble cedar or other wood grain, substantially as set forth.

8,508. TRAVELING-CAPS. Adolph Schwarz, New York, N. Y. Patent No. 160,844, dated Mar. 16, 1875. Filed Nov. 15, 1878.



Claim.—The cap-body A, having an attached, closed, or continuous cape, C, provided with one or more openings for the eyes or any other portion of the face, said cape being adapted to be folded up to form the band, substantially as shown and described.

8,509. MACHINES FOR LIFING AND DRYING PASTEBOARD. Gustav L. Jaeger, New York, N. Y. Patent No. 26,301, dated Apr. 26, 1872. Filed Nov. 11, 1878.

Claim.—1. The combination of a brush for spreading the paper with the feed table leading to the paper-cylinder, said brush being actuated by a cam on the side of the paper-cylinder, substantially as herein shown and described.

2. The combination, with the paper-cylinder and with the pasting device, of gripers h, extending throughout the entire length of the paper-cylinder, substantially as and for the purpose set forth.

3. The combination of the pasting device with two arms, which form the bearings for said roller, and are hinged to the main frame, and with a lever adapted to be actuated by hand or foot, substantially as described, so as to allow of throwing the paste-roller out of contact with the paper-cylinder whenever it may be desirable.

4. The combination, with the pasteboard-cylinder, of a gage, *k*, and of mechanism adapted to raise said gage at the proper moment to allow the pasteboard to be carried in by the gripers of said pasteboard-cylinder, substantially as set forth.

5. The combination of throwing-off dogs with the gripers of the pasteboard-cylinder, substantially as and for the purpose herein shown and described.

6. The combination, with the drying-drum, of a stove situated in the interior of the drum, said drum being adapted to revolve round the stove, substantially as and for the purpose set forth.

7. The combination, with the calender-roller, of journal-boxes adapted to be moved by the gravity of said roller toward the drying-drum, substantially as and for the purpose described.

8. The combination of two endless aprons, L M, with the calender-roller O and drying drum N, substantially as set forth.

9. The combination, in a drying apparatus for pasteboards, of two drums, with means for maintaining them in a heated state, and two endless aprons adapted to receive the separate boards, which are fed to them successively, and bear them along in contact with the drying-drum, substantially as shown and described.

10. The combination, with the drums or rollers N O and the aprons L M, of suitable strippers for lifting the pasteboards from the drums and guiding them forward between the belts, substantially as set forth.

11. The combination, in an apparatus for drying pasteboards, of two or more drying-cylinders and two or more continuous belts or aprons, so arranged relatively to the drying-cylinders as to bear the separate boards continuously forward in contact with the drying-cylinder and deliver them at the exit, the feeding-apron also so arranged as to form a convenient surface to receive the boards as they are fed to it, and so arranged relatively to another continuous belt or apron that the boards shall be delivered from between the two in a smooth and flat form, substantially as shown and described.

8,509.

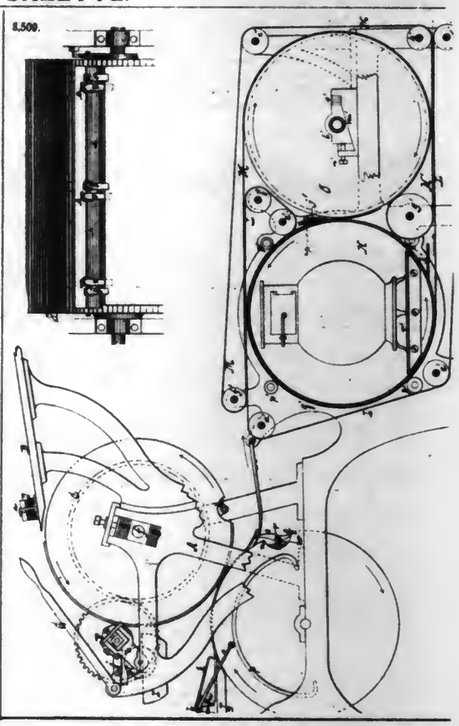


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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 26th DAY OF NOVEMBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adgate, J. J., New York, N. Y. Stretcher for forming swells or enlargements in boot and shoe uppers	210,285	Nov. 26	834	246	14	803
Alverson, A. H., New Haven, Conn., assignor to G. Gunther, New York, N. Y. Cuttle-fish holder. (Reissue)	8,503	Nov. 26	958	278	14	819
Armstrong, C., R. G. Woodward, and L. Muther: said Woodward assignor to E. P. Weber, Chicago, Ill. Combined dating and canceling stamp	210,286	Nov. 26	835	246	14	803
Atkinson, T. (See Mayo and Atkinson.)						
Ayres, S. P. (See Oliver, M. B., assignor.)						
Baker, H. M. (See Hunter, G. W., assignor.)						
Baker, W. R., assignor to C. H. and L. J. McCormick, Chicago, Ill. Mower	210,232	Nov. 26	776	231	14	796
Barbarin, A., New Orleans, La. Bale-tie	210,288	Nov. 26	838	247	14	803
Batchelder, H. A., West Waterville, Me. Sandpapering polishing-machine	210,287	Nov. 26	837	246	14	803
Baum, H., assignor to Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Coloring-matter to be used as dyes	210,233	Nov. 26	781	.....	14	796
Beach, E. B. (See Beach, H. B. and E. B.)						
Beach, H. B. and E. B., West Meriden, Conn. Table-caster	210,234	Nov. 26	782	232	14	796
Beers, P. M., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Needle-swaging machine	210,289	Nov. 26	839	247	14	804
Benedict & Burnham Manufacturing Company. (See Blackham, E. J., assignor.)						
Birch, J. S., Orange, N. J. Gun-wiper	210,235	Nov. 26	783	232	14	796
Blackham, E. J., Bridgeport, assignor to Benedict & Burnham Manufacturing Company, Waterbury, Conn. Lamp-burner	210,236	Nov. 26	783	232	14	796
Blacklock, A. R. (See Chambers, J. W., assignor.)						
Blake, R. C., assignor to Blake Steam Gage Company, Hamilton, Ohio. Steam-gage	210,179	Nov. 26	723	215	14	789
Blake Steam Gage Company. (See Blake, R. C., assignor.)						
Bolick, J. D. (See Bolick and Fancett.)						
Bolick, W. A. and J. D., and J. T. Fancett, Brighton, Tenn. Plow attachment	210,290	Nov. 26	840	247	14	804
Bowers, S. J., Canandaigua, N. Y. Horse-collar coupling	210,237	Nov. 26	784	232	14	796
Braun, C. (See Dickason, A. R., assignor.)						
Brettell, E. W., assignor to T. W. Langstroth, Newark, N. J. Latch	210,291	Nov. 26	841	247 / 248	14	804
Briggs, H. P., North Adams, Mass. Loom-shuttle	210,292	Nov. 26	842	.....	14	804
Bronson, E. H., Ottawa, Ontario, Canada. Railway-switch	210,293	Nov. 26	843	248	14	804
Brown, Hinman & Co. (See Winterbotham, R., assignor.)						
Brown, J. O. (See Chase, L., assignor.)						
Bullard, J. H., Springfield, Mass., assignor to D. B. Wesson. Machine for checking pistol-handles	210,180	Nov. 26	724	215	14	789
Burgess, A., Owego, N. Y. Magazine fire-arm	210,181	Nov. 26	725	215	14	789
Burgess, A., Owego, N. Y. Magazine-gun	210,182	Nov. 26	726	216	14	789
Burgess, A., Owego, N. Y. Magazine fire-arm	210,294	Nov. 26	844	248	14	804
Burgess, A., Owego, N. Y. Magazine-gun	210,295	Nov. 26	845	249	14	804
Cameron, E. W. M. (See Cameron, J. F., assignor.)						
Cameron, J. F., New York, assignor to E. W. M. Cameron, Brooklyn, N. Y. Air-ship	210,238	Nov. 26	785	233	14	797
Carter, F. M., Marlborough, Mass. Skiving-machine for leather	210,183	Nov. 26	728	216	14	789
Carvill, A. H., *et al.* (See Elliot, A. L., assignor.)						
Chambers, J. W., assignor to A. R. Blacklock, Baltimore, Md. Fan attachment for sewing-machines, &c	210,296	Nov. 26	846	249	14	805
Chandler, W. D., E. Wickstead, and J. D. Van Voorhis, Cranford, N. J. Copying-book	210,239	Nov. 26	786	233	14	797
Chase, L., Portland, assignor of one-half interest to J. O. Brown, Benton, Me. Musical instrument	210,297	Nov. 26	847	249	14	805
Clark, J. L., and J. Standfield, Westminster, England. Floating-dock	210,185	Nov. 26	730	217	14	790
Clarke, J. N. (See Greenwood and Clarke.) (Reissue.)						
Cleaveland, W. W., Marshall, Mich. Current water-wheel	210,184	Nov. 26	729	216	14	790
Clemmer, M. P., Pin Hook, N. C. Flour-bolting machine	210,186	Nov. 26	732	217	14	790
Cline, A. G., Crete, Nebr. Water-wheel	210,298	Nov. 26	848	249	14	805
Cone, A. (See Marble, A., assignor.)						
Conrad, C., St. Louis, Mo. Box or carrier for bottled liquors	210,240	Nov. 26	787	233	14	797
Converse, M. E., Rindge, N. H. Table	210,187	Nov. 26	733	218	14	790
Cooke, M. and R. J., Sacramento, Cal. Fruit and packing box	210,241	Nov. 26	788	234	14	797
Cooke, M. and R. J., Sacramento, Cal. Box-fastener	210,242	Nov. 26	789	234	14	797
Cooke, R. J. (See Cooke, M. and R. J.)						
Cormack, G. H., assignor to A. M. Johnston & Co., Rockford, Ill. Oatmeal-machine	210,188	Nov. 26	734	218	14	790
Coston, J., Bowdon, Ga. Saw-filing machine	210,299	Nov. 26	849	250	14	805
Cox, A. W., Auburn, Me. Last	210,300	Nov. 26	850	250	14	805
Cummings, U., assignor to himself and A. W. White, Buffalo, N. Y. Rock-drill	210,189	Nov. 26	735	218	14	790
Curley, J., and W. F. Warren, Henning, Tenn. Well-auger	210,301	Nov. 26	851	250	14	805
Curtis, G. S. (See Reiff, W. H., assignor.)						
Curtis, H., Chicago, Ill., assignor of one-fourth interest to J. R. Parsons, Hoosick Falls, N. Y. Wire-band cutter	210,190	Nov. 26	736	218	14	790
Davies, H. J., Brooklyn, N. Y. Design for clock-cases. (Reissue)	8,504	Nov. 26	958	.....	14	819
Deere & Mansur Company. (See Runstetler, A. and M., assignors.)						
Dickason, A. R., Lyndon, Kans., assignor to himself and C. Braun. Washing-machine	210,302	Nov. 26	852	251	14	806

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dildine, J., Milton, Pa. Adjustable sieve	210,243	Nov. 26	790	234	14	797
Dingley, E. R., New York, N. Y. Railway-track	210,244	Nov. 26	790	234	14	797
Donaldson, W. E. (See Snapp, J. W., assignor.)						
Dorlan, S. B. (See White, J. A., assignor.)						
Dorsey, R. S., *et al.* (See Greene, J. N., assignor.)						
Draper, V., North Attleborough, Mass. Gem-setting	210,303	Nov. 26	853	251	14	806
Du Brul, N., Cincinnati, Ohio. Tobacco-granulating machine	210,191	Nov. 26	377	219	14	791
Du Motay, C. T., and E. Stern, Paris, France. Manufacture of fuel from carbonaceous powders, &c.	210,304	Nov. 26	854	.....	14	806
Dutton, C. N., Washington, D. C. Lock-hinge	210,305	Nov. 26	855	251	14	806
Echelberry, J., *et al.* (See Kerr, C. C., assignor.)						
Echelberry, M., *et al.* (See Kerr, C. C., assignor.)						
Elder, J. C., Carthage, Ill. Check-row corn-planter	210,306	Nov. 26	856	251	14	806
Elliot, A. L., assignor to H. P. Hemenway and A. H. Carvill, Somerville, Mass. Apparatus for molding heel-stiffeners	210,307	Nov. 26	857	252	14	806
Elliot, W. G., Williamsport, Pa. Compound for roofing	210,308	Nov. 26	858	.....	14	806
Elsey, G., assignor of one-half interest to E. Risley, Springfield, Mass. Inkstand	210,192	Nov. 26	738	219	14	791
Englar, D., Jr., Avondale, Md. Guano-distributer	210,310	Nov. 26	859	252	14	807
Eugland, P., Lincoln, Nebr. Weather-strip	210,309	Nov. 26	858	252	14	806
Evans, I. T., Des Moines, Iowa. Sectional harrow	210,311	Nov. 26	860	252; 253	14	807
Facer, W. E., Cleveland, Ohio. Electric gas-lighting apparatus	210,245	Nov. 26	791	235	14	797
Fargo, J. E., Lake Mills, Wis. Book-cover	210,193	Nov. 26	739	219	14	791
Faucett, J. T. (See Bolick and Faucett.)						
Felder, P. S. (See Ravenel, S., assignor.)						
Fernald, A. S., Portland, Me. Button	210,194	Nov. 26	739	219	14	791
Firmenich, F. (See Firmenich, J. and G., assignors.)						
Firmenich, G. (See Firmenich, J. and G.)						
Firmenich, J. and G., assignors of one-third interest to F. Firmenich, Buffalo, N. Y. Steam-generator	210,312	Nov. 26	862	253	14	807
Forker, W. H., Meadville, Pa. Trunk-lock	210,246	Nov. 26	793	235	14	798
Forsyth, W., Altoona, Pa. Signal head-light	210,313	Nov. 26	863	253	14	807
Foster, J. M., and G. E. Lockwood, assignors of one-third interest to C. E. Morgan, Philadelphia, Pa. High-pressure gas-regulator	210,314	Nov. 26	863	253	14	807
Fox, J., Monroe, Iowa. Tire-tightener	210,195	Nov. 26	740	220	14	791
Friend, H., New York, N. Y. Hat	210,315	Nov. 26	865	254	14	807
Frink, C. L., Rockville, Conn. Metallic fence	210,247	Nov. 26	793	235	14	798
Frisbie, H. R., Bridgeport, Conn. Stench-trap	210,196	Nov. 26	741	220	14	791
Fuller, F. W. A., Louisville, Ky. Tobacco-press	210,248	Nov. 26	794	235; 236	14	798
Fuller, J. B., Brooklyn, N. Y. Electric meter for measuring the current of electricity	210,316	Nov. 26	865	254	14	807
Fuller, J. B., Brooklyn, N. Y. Induction apparatus for lighting by electricity	210,317	Nov. 26	866	254; 255	14	808
Gallaher, P. M., W. Lloyd, and G. S. Walker, Danville, Pa. Blasting-powder	210,197	Nov. 26	742	.....	14	791
Gally, M., New York, N. Y. Mechanical musical instrument	210,249	Nov. 26	795	236	14	798
Georg, A., Chicago, Ill. Device for attaching seals to pipe-joints in distilleries	210,198	Nov. 26	744	220	14	791
Godwin, J. B., Washington, N. C. Domestic boiler	210,318	Nov. 26	867	255	14	808
Gordon, J. F., Rochester, N. Y. Grain-binder	210,319	Nov. 26	867	255; 256	14	808
Graham, M. G., Codeskill, N. Y. Fruit-can	210,320	Nov. 26	872	256	14	808
Grayson, W., assignor to St. Louis Refrigerator and Wooden Gutter Company, St. Louis, Mo. Refrigerator	210,321	Nov. 26	873	257	14	808
Greene, J. N., assignor of two-thirds interest to W. H. Tucker and R. S. Dorsey, Indianapolis, Ind. Street-sign	210,250	Nov. 26	797	236	14	798
Greenwood, W. M., and J. N. Clarke, Cincinnati, Ohio. Roll for rolling horseshoe-blanks. (Reissue)	8,505	Nov. 26	959	278	14	819
Greenwood, W. M., and J. N. Clarke, Cincinnati, Ohio. Horseshoe-blank bar. (Reissue)	8,506	Nov. 26	960	278	14	819
Grondona, G., San Francisco, Cal. Macaroni-machine	210,199	Nov. 26	744	220	14	791
Grosclaude, L. A., Geneva, Switzerland. Pawl and ratchet	210,251	Nov. 26	798	236	14	799
Gross, R. (See Wessell, Nickel, and Gross.)						
Grout, J. R., Detroit, Mich. Metal-testing machine	210,252	Nov. 26	798	237	14	799
Gunther, G. (See Alvorson, A. H., assignor.) (Reissue.)						
Hale, R., Minneapolis, Minn. Letter-box	210,253	Nov. 26	800	237	14	799
Hall, G. L., Boston, Mass. Machine for finishing horseshoe-nails	210,322	Nov. 26	874	257	14	808
Harlick, B., Liberty, N. Y. Fence	210,254	Nov. 26	801	237	14	799
Harrington, H. H. (See Tavener, R. W., assignor.)						
Harrison, R. W., Baltimore, Md. Dredge-chock	210,323	Nov. 26	876	257	14	809
Heft, C. (See Voth, Sackenreuther, and Heft.)						
Hem, E. (See Tait, A. H., Jr., assignor.)						
Hemenway, H. P., *et al.* (See Elliot, A. L., assignor.)						
Hendrick, E. E., Carbondale, Pa. Iron tank for holding petroleum	210,324	Nov. 26	877	258	14	809
Heywood, J. R., Boston, Mass. Oven	210,325	Nov. 26	877	258	14	809
Higgs, J. W., Sharon, Pa. Hay-elevator	210,255	Nov. 26	801	238	14	799
Hill, C. C., Rockford, Ill. Machine for cutting escutcheons	210,200	Nov. 26	745	221	14	791
Hoard, J. W. (See Vaughan, H. W., assignor.)						
Hodgetts, W. J., Wordsley, Kingswinford, England. Ornamenting articles of glass	210,326	Nov. 26	879	258; 259	14	809
Hoffman, J., New York, N. Y. Ruling attachment for pen-holders	210,256	Nov. 26	802	238	14	799
Hollis, G. F., assignor to G. S. Russell, Marlborough, Mass. Counter-guide	210,327	Nov. 26	881	259	14	809
Holly, C., Lockport, N. Y. Steam-meter	210,328	Nov. 26	881	259	14	809
Huff, S., Mohican, Ohio. Knitting-machine	210,329	Nov. 26	882	259	14	809
Hunt, E. S., Elizabeth, N. J. Gate-hinge	210,257	Nov. 26	803	238	14	799
Hunter, G. W., assignor of one-half interest to H. M. Baker, Washington, D. C. Sewing-machine shuttle	210,330	Nov. 26	883	260	14	809
Jaeger, G. L., New York, N. Y. Machine for lining and drying pasteboard. (Reissue)	8,509	Nov. 26	962	279	14	820
Jefferson, T. E., Boston, Mass. Plow	210,201	Nov. 26	748	222	14	792
Jefferson, T. E., Boston, Mass. Plow	210,202	Nov. 26	749	222	14	792
Jenkins, C. W. (See Jenkins, W. F. and C. W.)						
Jenkins, W. F. and C. W., Richmond, Va. Plow	210,203	Nov. 26	750	222	14	792
Johnson, J. B., Boston, and H. Whittemore, Malden, Mass. Signal-box for electric registers	210,258	Nov. 26	804	238	14	799
Johnston & Co., A. M. (See Cormack, G. H., assignor.)						
Jones, H. K. (See Parker and Jones.)						
Kempenner, A., Chicago, Ill. Plastic composition for the manufacture of aquarium-frames, &c.	210,204	Nov. 26	751	223	14	792
Kempner, J., Gorlitz, Prussia. Manufacture of milk or alabaster glass	210,331	Nov. 26	884	.....	14	809
Kennedy, M., Chicago, Ill. Paper-hoop sieve	210,259	Nov. 26	805	239	14	800
Kerr, C. C., assignor to himself, J. Echelberry, J. N. Miller, J. W. McCulloh, M. Echelberry, and R. S. Waddell, Springfield, Mo. Hand-car	210,332	Nov. 26	885	260	14	809

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kibler, N., Pittsfield, Ill. Grain-separator	210,333	Nov. 26	886	260	14	810
Kinsman, J. H., Salem, Mass. Bath-tub, basin, sink, water-closet, &c.	210,334	Nov. 26	887	261	14	810
Knowles, C. M., New London, Conn. Bit-stock	210,335	Nov. 26	890	261	14	810
Koontz, J., Basil, Ohio. Lighting and extinguishing device for lamps	210,336	Nov. 26	891	261	14	810
Kunkle, E. B., Fort Wayne, Ind. Water-gage for steam-boilers	210,261	Nov. 26	807	239	14	800
Krehbiel, J., Williamsville, N. Y. Vehicle-spring	210,260	Nov. 26	806	239	14	800
Krupp, F. (See Martens and Krupp.)						
Lake, J. C., Philadelphia, Pa. Spring shade-roller	210,337	Nov. 26	892	261	14	810
Landon, B., Canton, Pa. Mail-bag	210,338	Nov. 26	894	262	14	811
Langstroth, T. W. (See Brettell, E. W., assignor.)						
Langa, C., assignor of one-half interest to C. B. and G. B. Penrose, New Orleans, La. Separating and cleaning vegetable fiber for paper-pulp	210,339	Nov. 26	895	262	14	811
Leonard, H. S. (See Spencer, W. D., assignor.)						
Leslie, S., and J. A. Lyon, Independence, Iowa. Rotary churn	210,205	Nov. 26	751	223	14	792
Lindsay, D. A. (See Lindsay and Miner.)						
Lindsay, T. J. and D. A., and W. J. Miner, Windfall, Ind. Combined seed-drill and corn-planter	210,262	Nov. 26	808	239; 240	14	800
Lloyd, W. (See Gallaher, Lloyd, and Walker.)						
Lockwood, G. E. (See Foster and Lockwood.)						
Lord, T. C., Joliet, Ill. Check-row attachment for corn-planters	210,340	Nov. 26	896	262; 263	14	811
Lynch, J. H., Baltimore, Md. Flour-sieve	210,341	Nov. 26	899	263	14	811
Lynex, R., Philadelphia, Pa. Animal-trap	210,342	Nov. 26	899	263	14	811
Lyon, J. A. (See Leslie and Lyon.)						
Madsen, C. W., Chicago, Ill. Bread-cutter	210,343	Nov. 26	900	263	14	811
Manley, E., Philadelphia, Pa. Traction-wheel for street-cars	210,206	Nov. 26	752	224	14	793
Marble, A., assignor of one-half interest to A. Cone, Tekonsha, Mich. Steam feather-renovator	210,263	Nov. 26	810	240	14	800
Marquis, J. E., Sharon, Ohio. Churn	210,344	Nov. 26	901	264	14	811
Martens, C., and F. Krupp, New Orleans, La. Passenger step-register	210,264	Nov. 26	811	240	14	800
Mayo & Brother, P. H. (See Mayo and Atkinson, assignors.)						
Mayo, P. H., and T. Atkinson, assignors to P. H. Mayo & Brother, Richmond, Va. Removable cover for show-boxes	210,345	Nov. 26	902	264	14	812
McComb, M., Pittsburg, Pa. Coin-counter	210,346	Nov. 26	903	264	14	812
McCormick, C. H., *et al.* (See Baker, W. R., assignor.)						
McCormick, L. J., *et al.* (See Baker, W. R., assignor.)						
McCulloh, J. W., *et al.* (See Kerr, C. C., assignor.)						
McKenzie, H. W., Alliance, Ohio. Plastic lining for fire-chambers	210,347	Nov. 26	903	.....	14	812
McNally, J. F., Washington, D. C. Engraving-machine	210,348	Nov. 26	905	265; 266	14	812
Meister, Lucius & Brüning. (See Baum, H., assignor.)						
Mellor, A. (See Rittenhouse, H. N., assignor.)						
Metz, J., Denver, Colo. Mail-bag fastener and tag-holder	210,391	Nov. 26	957	277	14	819
Meyn, W. (See Stern and Meyn.)						
Miller, J., assignor to Pressure Extract Company, Trenton, N. J. Combined urn and water-bottom	210,207	Nov. 26	753	223	14	793
Miller, J. N., *et al.* (See Kerr, C. C., assignor.)						
Miner, W. J. (See Lindsay and Miner.)						
Morgan, C. E. (See Foster and Lockwood, assignors.)						
Mosquera, J. A., Caracas, Venezuela. Coffee-hulling apparatus	210,265	Nov. 26	811	240; 241	14	800
Muther, L. (See Armstrong, Woodward, and Muther.)						
Nelson, J. S., Hillsborough, Ill. Breast-strap roller	210,349	Nov. 26	910	266	14	813
Nickel, A. (See Wessell, Nickel, and Gross.)						
Oliver, M. B., assignor of one-half interest to S. P. Ayres, Osceola, Iowa. Feed-cooker and steam-generator	210,350	Nov. 26	910	266	14	813
O'Thayne, P., New York, N. Y. Ironing-machine	210,224	Nov. 26	771	228	14	795
Otwell, L. M., Roswell, Ga. Plow and cultivator	210,351	Nov. 26	911	266	14	813
Parker, E., New Britain, and H. K. Jones, Hartford, assignors to Russell & Erwin Manufacturing Company, New Britain, Conn. Check for metal-screw machines	210,221	Nov. 26	767	228	14	794
Parsons, C. C., New York, N. Y. Detergent	210,208	Nov. 26	754	.....	14	793
Parsons, J. R. (See Curtis, H., assignor.)						
Peebles, D. B., Edinburgh, Scotland. Governing and recording apparatus for gas	210,352	Nov. 26	912	267	14	813
Peistring, G., Cincinnati, Ohio. Graining-machine. (Reissue)	8,507	Nov. 26	961	278	14	819
Pendleton, F. P., Philadelphia, Pa. Toothed cylinder for working cotton, wool, &c.	210,222	Nov. 26	768	228	14	794
Penrose, C. B., *et al.* (See Langa, C., assignor.)						
Penrose, G. B., *et al.* (See Langa, C., assignor.)						
Perry, B. P., Richmond, Ind. Valve-gear for engines	210,353	Nov. 26	913	267	14	813
Pfaudler, J. M., Rochester, N. Y. Hose-coupling faucet for beer-fermenting vessels	210,209	Nov. 26	754	224	14	793
Pfeffer, C., Buffalo, N. Y. Child's carriage and sleigh-box	210,266	Nov. 26	813	241	14	800
Phelan, T. C., Gloversville, N. Y. Stove-pipe damper and regulator	210,354	Nov. 26	913	267	14	813
Plass, C. H. L., Hamburg, Germany. Piano-forte	210,223	Nov. 26	770	228	14	795
Powers, A. P., Flowery Branch, assignor of one-half interest to J. H. Powers, Cochran, Ga. Grain-dropper	210,355	Nov. 26	914	267	14	813
Powers, J. H. (See Powers, A. P., assignor.)						
Pressure Extract Company. (See Miller, J., assignor.)						
Quinlan, E., Sheboygan Falls, Wis. Tooth for hand-rakes	210,356	Nov. 26	915	268	14	814
Quint, H. F., Holyoke, Mass. Coffin	210,210	Nov. 26	755	224	14	793
Rabbeth, F. J., Providence, R. I. Spindle for spinning machinery	210,357	Nov. 26	915	.....	14	814
Rabbeth, F. J., Providence, R. I. Spindle for spinning-machines	210,358	Nov. 26	918	.....	14	814
Rapp, C. F., Cincinnati, Ohio. Slate	210,211	Nov. 26	756	224	14	793
Ravenel, S., assignor to P. S. Felder, Charleston, S. C. Excavating and dredging machine	210,359	Nov. 26	919	268	14	814
Rawlins, J. W. V., assignor to himself and R. Uren, Houghton, Mich. Mill for pulverizing ores	210,360	Nov. 26	920	268	14	814
Reed, L. H., Brattleborough, Vt. Horse-detacher	210,212	Nov. 26	757	225	14	793
Reiff, W. H., New Haven, assignor of one-half interest to G. S. Curtis, Bridgeport, Conn. Toy torpedo	210,267	Nov. 26	814	241	14	801
Replogle, J. M., Farragut, Iowa. Mill-spindle	210,268	Nov. 26	815	241	14	801
Rhodes, I. M., Hancock, Mich. Gate	210,361	Nov. 26	921	268	14	814
Rice, W. R., Bridgeport, Conn. Decorated felt hat	210,269	Nov. 26	816	242	14	801
Rice, W. R., Bridgeport, Conn. Manufacturing felt for hats, &c.	210,270	Nov. 26	817	242	14	801
Richardson, A. E. (See Wells, Richardson, Van Patten, and Wells.)						
Richardson, O. W., Chicago, Ill. Sample-exhibitor	210,362	Nov. 26	921	269	14	814
Risley, E. (See Elsey, G., assignor.)						
Rittenhouse, H. N., assignor to himself and A. Mellor, Philadelphia, Pa. Chewing-tobacco	210,363	Nov. 26	923	.....	14	815
Rogers, J. H., Washington, D. C. Carbon-regulator for electric lights	210,213	Nov. 26	757	225	14	793
Roosevelt, C. (See Simon, T., assignor.)						
Ross, A. Q., Cincinnati, Ohio. Velocipede	210,271	Nov. 26	818	242	14	801

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Runstetler, A. and M. assignors to Deere & Mansur Company, Moline, Ill. Combined drill and corn-planter	210,214	Nov. 26	758	225, 226	14	793
Runstetler, M. (See Runstetler, A. and M.)						
Runyan, A., Catawba, Ohio. Grain-drill	210,364	Nov. 26	923	269	14	815
Russell & Erwin Manufacturing Company. (See Parker and Jones, assignors.)						
Russell, G. S. (See Hollis, G. F., assignor.)						
Sackenreuther, G. P. (See Voth, Sackenreuther, and Hefft.)						
Sasslnot, L. R., New Orleans, La. Portable furnace	210,272	Nov. 26	819	242	14	801
Schwarz, A., New York, N. Y. Traveling cap. (Reissue)	8,508	Nov. 26	902	279	14	819
Simon, T., assignor to himself and C. Roosevelt, Paris, France. Manufacture of bleaching-liquids	210,273	Nov. 26	820	243	14	801
Simpson, J. M., Oshkosh, Wis. Automatic boiler-feeder	210,365	Nov. 26	924	269	14	815
Snapp, J. W., assignor of one-third interest to W. E. Donaldson, Jasper, Tenn. Car-coupling	210,215	Nov. 26	760	226	14	793
Soule, C. (See Soule, G. H., assignor.)						
Soule, G. H., Bangor, Me., assignor of one-half interest to C. Soule. Railway-switch	210,216	Nov. 26	761	226	14	794
Spaethe, W., Gera, German Empire. Accordion	210,217	Nov. 26	763	227	14	794
Spencer, W. D., assignor to himself and H. S. Leonard, Middletown, Conn. Caster	210,218	Nov. 26	763	227	14	794
Standfield, J. (See Clark and Standfield.)						
Starr, E. T., assignor to S. S. White, Philadelphia, Pa. Dental chair	210,366	Nov. 26	925	270	14	815
Stern, E. (See De Motay and Stern.)						
Stern, J., and W. Meyn, assignors of one-third interest to E. W. Stoddard, Detroit, Mich. Sheet-metal elbow	210,367	Nov. 26	928	270	14	815
Stevens, C. H., Chicago, Ill. Horse-collar	210,219	Nov. 26	765	227	14	794
St. Louis Refrigerator and Wooden Gutter Company. (See Grayson, W., assignor.)						
Stoddard, E. W. (See Stern and Meyn, assignors.)						
Stohlmann, F. A., Brooklyn, N. Y. Thermometer-case	210,274	Nov. 26	823	243	14	802
Swan, J., Seymour, Conn. Boring-machine	210,220	Nov. 26	766	227	14	794
Swartz, D., Woodstock, Va. Bed-bottom	210,368	Nov. 26	929	270	14	815
Swindell, W., Allegheny, Pa. Metallurgic furnace	210,369	Nov. 26	929	.....	14	815
Tait, A. H., Jr., assignor of one-half interest to E. Hem, Jersey City Heights, N. J. Button-hole-stitching attachment to sewing-machines	210,370	Nov. 26	931	271	14	816
Tavener, R. W., assignor of one-half interest to H. H. Harrington, West Bay City, Mich. Lubricator	210,371	Nov. 26	933	271	14	816
Teter, W. L., Philadelphia, Pa. Floor-bolt	210,275	Nov. 26	824	243	14	802
Thayer, A. T., Milton, Ind. Grain-separator	210,372	Nov. 26	934	271	14	816
Titus, G. M., Rock Falls, Ill. Corn-planter	210,225	Nov. 26	772	229	14	795
Todd, W. W., and H. M. Tschudy, Philadelphia, Pa. Railway-switch	210,373	Nov. 26	936	272	14	816
Tourné, E., New Orleans, La. Device for regulating the flow of gas	210,226	Nov. 26	772	229	14	795
Trabue, W., Louisville, Ky. Cartridge	210,374	Nov. 26	937	272	14	816
Tschudy, H. M. (See Todd and Tschudy.)						
Tucker, W. H., *et al.* (See Greene, J. N., assignor.)						
Tucker, W. H., Stone Fort, Ill. Hog-trough	210,276	Nov. 26	825	243	14	802
Uren, R. (See Rawlins, J. W. V., assignor.)						
Van Patten, W. J. (See Wells, Richardson, Van Patten, and Wells.)						
Van Voorhis, J. D. (See Chandler, Wickstead, and Van Voorhis.)						
Vaughan, H. W., assignor of one-half interest to J. W. Hoard, Providence, R. I. Lamp-burner	210,375	Nov. 26	938	272	14	817
Voth, H., G. P. Sackenreuther, and C. Hefft, Pekin, Ill. Agricultural boiler	210,231	Nov. 26	775	230	14	795
Waddell, R. S., *et al.* (See Kerr, C. C., assignor.)						
Walker, G. S. (See Gallaher, Lloyd, and Walker.)						
Walker, J. T., Albany, N. Y. Machine for bending horseshoe-blanks	210,376	Nov. 26	940	272, 273	14	817
Walker, J. T., Albany, N. Y. Device for gaging the cutting of horseshoe-blanks	210,377	Nov. 26	942	273	14	817
Walsh, T., Montreal, Canada. Rotary water-meter	210,378	Nov. 26	943	274	14	817
Walz, M., Pittsburg, Pa. Tap-valve	210,227	Nov. 26	773	229	14	795
Ward, F. K., Washington, D. C. Milk-cooler	210,277	Nov. 26	825	.....	14	802
Warren, W. F. (See Curley and Warren.)						
Warrington, C. H., West Chester, Pa. Land-marker	210,278	Nov. 26	826	244	14	802
Watkeys, R., Syracuse, N. Y. Valve-seat for steam-cylinders	210,279	Nov. 26	827	244	14	802
Weber, E. P. (See Armstrong, Woodward, and Muther, assignors.)						
Wells, E., A. E. Richardson, W. J. Van Patten, and H. Wells, Burlington, Vt. Refining and packing catechu	210,280	Nov. 26	828	244	14	802
Wells, H. (See Wells, Richardson, Van Patten, and Wells.)						
Wessell, O., A. Nickel, and R. Gross, New York, N. Y. Piano-forte damper-action	210,381	Nov. 26	947	275	14	817
Wesson, D. B. (See Bullard, J. H., assignor.)						
West, L. C., Kalamazoo, Mich. Button-hook	210,228	Nov. 26	774	229	14	795
Westbrook, A. D., Lambertville, N. J. Rubber belting	210,379	Nov. 26	944	274	14	817
Weston Dynamo Electric Machine Company. (See Weston, E., assignor.)						
Weston, E., assignor to Weston Dynamo Electric Machine Company, Newark, N. J. Electric light	210,380	Nov. 26	944	274	14	817
Weston, J. R., Cincinnati, Ohio. Safety pulley-block	210,281	Nov. 26	829	244, 245	14	802
Wheeler, W. A., Indianapolis, Ind. Sheet-metal-seam-bending machine	210,382	Nov. 26	948	275	14	818
Wheeler & Wilson Manufacturing Company. (See Beers, P. M., assignor.)						
White, A. W. (See Cummings, U., assignor.)						
White, G. F., Frankford, Pa. Manufacturing articles of wood	210,229	Nov. 26	774	230	14	795
White, J. A., Philadelphia, assignor of one-half interest to S. B. Dorlan, Waynesburg, Pa. Pipe-tongs	210,383	Nov. 26	949	275	14	818
White, J. H., Huntsville, Ala. Match-splint	210,384	Nov. 26	949	275	14	818
White, J. P., Savannah, Ga. Spade attachment to fire-arms	210,282	Nov. 26	831	245	14	802
White, S. S. (See Starr, E. T., assignor.)						
Whitney, W. F., Poughkeepsie, N. Y. Coupling for vehicle-springs	210,385	Nov. 26	950	276	14	818
Whittemore, H. (See Johnson and Whittemore.)						
Whittler, W. H., Fremont, Nebr. Fence-post	210,283	Nov. 26	833	245	14	803
Wickstead, E. (See Chandler, Wickstead, and Van Voorhis.)						
William, J. D., Rising Sun, Ind. Fire and burglar alarm	210,386	Nov. 26	951	276	14	818
Williams, J. S., Chicago, Ill. Combined spading and seeding machine	210,387	Nov. 26	953	276	14	818
Wilz, J., Santa Cruz, Cal. Hose-carriage	210,284	Nov. 26	833	245	14	803
Winterbotham, R., assignor to Brown, Hinman & Co., Columbus, Ohio. Grain-cradle	210,388	Nov. 26	954	276, 277	14	818
Woods, J., Jr., Somerville, Mass. Carriage-curtain fastening	210,389	Nov. 26	955	277	14	818
Woodward, R. G. (See Armstrong, Woodward, and Muther.)						
Woodward, W. W., Athens, Ga. Cotton-planter	210,390	Nov. 26	956	277	14	819
Zachringer, W., New Orleans, La. Fare-box	210,230	Nov. 26	774	230	14	796

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 26th DAY OF NOVEMBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Accordion	W. Spaethe	210,217	Nov. 26	763	227	14	794
Air-ship	J. F. Cameron	210,238	Nov. 26	785	233	14	797
Animal-trap	R. Lynex	210,342	Nov. 26	899	263	14	811
Aquarium-frames, &c. Plastic composition for the manufacture of	A. Kempenner	210,204	Nov. 26	751	223	14	792
Auger. Well-	J. Curley and W. F. Warren	210,301	Nov. 26	851	250	14	805
Bale-tie	A. Barbarin	210,288	Nov. 26	838	247	14	803
Band cutter. Wire-	H. Curtis	210,190	Nov. 26	736	218	14	790
Bath-tub, basin, sink, water-closet, &c.	J. H. Kinsman	210,334	Nov. 26	887	261	14	810
Bed-bottom	D. Swartz	210,368	Nov. 26	929	270	14	815
Belting. Rubber	A. D. Westbrook	210,379	Nov. 26	944	274	14	817
Bending machine. Sheet-metal-seam-	W. A. Wheeler	210,382	Nov. 26	948	275	14	818
Bit-stock	C. M. Knowles	210,335	Nov. 26	890	264	14	810
Blasting-powder	P. M. Gallaher, W. Lloyd, and G. S. Walker.	210,197	Nov. 26	742	.....	14	791
Bleaching-liquids. Manufacture of	T. Simon	210,273	Nov. 26	820	243	14	801
Boiler. Agricultural	H. Voth, G. P. Sackenreuther, and C. Hefft.	210,231	Nov. 26	775	230	14	795
Boiler. Domestic	J. B. Godwin	210,318	Nov. 26	867	255	14	808
Boiler-feeder. Automatic	J. M. Simpson	210,365	Nov. 26	924	269	14	815
Boilers. Water-gage for steam-	E. B. Kunkle	210,261	Nov. 26	807	239	14	800
Book. Copying-	W. D. Chandler, E. Wickstead, and J. D. Van Voorhis.	210,239	Nov. 26	786	233	14	797
Book-cover	J. E. Fargo	210,193	Nov. 26	739	219	14	791
Boot and shoe uppers. Stretcher for forming swells or enlargements in	J. J. Adgate	210,285	Nov. 26	834	246	14	803
Boring-machine	J. Swan	210,220	Nov. 26	766	227	14	794
Box-fastener	M. and R. J. Cooke	210,242	Nov. 26	789	234	14	797
Bread-cutter	C. W. Madsen	210,343	Nov. 26	900	263	14	811
Breast-strap roller	J. S. Nelson	210,349	Nov. 26	910	266	14	813
Button	A. S. Fernald	210,194	Nov. 26	739	219	14	791
Button-hook	L. C. West	210,228	Nov. 26	774	229	14	795
Can. Fruit-	M. G. Graham	210,320	Nov. 26	872	256	14	808
Cap. Traveling-	A. Schwarz. (Reissue)	8,508	Nov. 26	902	279	14	819
Car-coupling	J. W. Snapp	210,215	Nov. 26	760	226	14	793
Car. Hand-	C. C. Kerr	210,332	Nov. 26	885	260	14	809
Cars. Traction-wheel for street-	E. Manley	210,206	Nov. 26	752	223	14	793
Carriage and sleigh box. Child's	C. Pfeffer	210,266	Nov. 26	813	241	14	800
Carriage-curtain fastening	J. Woods, Jr.	210,389	Nov. 26	955	277	14	818
Cartridge	W. Trabue	210,374	Nov. 26	937	272	14	816
Caster	W. D. Spencer	210,218	Nov. 26	763	227	14	794
Caster. Table-	H. B. and E. B. Beach	210,234	Nov. 26	782	232	14	796
Catechu. Refining and packing	E. Wells, A. E. Richardson, W. J. Van Patten, and H. Wells.	210,280	Nov. 26	828	244	14	802
Chair. Dental	E. T. Starr	210,366	Nov. 26	925	270	14	815
Churn	J. E. Marquis	210,344	Nov. 26	901	264	14	811
Churn. Rotary	S. Leslie and J. A. Lyon	210,205	Nov. 26	751	223	14	792
Clock-cases. Design for	H. S. Davies. (Reissue)	8,504	Nov. 26	958	.....	14	819
Coffee-hulling apparatus	J. A. Mosquera	210,265	Nov. 26	811	240, 241	14	800
Coffin	H. F. Quint	210,210	Nov. 26	755	224	14	793
Coin-counter	M. McComb	210,346	Nov. 26	903	264	14	812
Cooker and steam-generator. Feed-	M. B. Oliver	210,350	Nov. 26	910	266	14	813
Cooler. Milk-	F. K. Ward	210,277	Nov. 26	825	.....	14	802
Counter-guide	G. F. Hollis	210,327	Nov. 26	881	259	14	809
Cuttle-fish holder	A. H. Alverson. (Reissue)	8,503	Nov. 26	958	278	14	819
Cylinder for working cotton, wool, &c. Toothed	F. P. Pendleton	210,222	Nov. 26	768	228	14	794
Detergent	C. C. Parsons	210,208	Nov. 26	754	.....	14	793
Distilleries. Device for attaching seals to pipe-joints in	A. Georg	210,198	Nov. 26	744	220	14	791
Dock. Floating-	J. L. Clark and J. Standfield	210,185	Nov. 26	730	217	14	790
Dredge-chock	R. W. Harrison	210,323	Nov. 26	876	257	14	809
Drill and corn-planter. Combined	A. and M. Runstetler	210,214	Nov. 26	758	225, 226	14	793
Drill and corn-planter. Combined seed-	T. J. and D. A. Lindsay and W. J. Miner.	210,202	Nov. 26	808	239, 240	14	800
Drill. Grain-	A. Runyan	210,364	Nov. 26	923	269	14	815
Drill. Rock-	U. Cummings	210,189	Nov. 26	735	218	14	790
Dyes. Coloring-matter to be used as	H. Baum	210,233	Nov. 26	781	.....	14	796
Electric light	E. Weston	210,380	Nov. 26	944	274	14	817
Electric lights. Carbon-regulator for	J. H. Rogers	210,213	Nov. 26	757	225	14	793
Electric meter for measuring the current of electricity	J. B. Fuller	210,316	Nov. 26	865	254	14	807

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Electric registers. Signal-box for	J. B. Johnson and H. Whittemore	210,258	Nov. 26	804	238	14	799
Electricity. Induction apparatus for lighting by	J. B. Fuller	210,317	Nov. 26	866	254 255	14	808
Elevator. Hay-	J. W. Higgs	210,255	Nov. 26	801	238	14	799
Engraving-machine	J. F. McNally	210,348	Nov. 26	905	265 266	14	812
Escutcheons. Machine for cutting	C. C. Hill	210,300	Nov. 26	745	221	14	791
Excavating and dredging machine	S. Ravenel	210,359	Nov. 26	919	262	14	814
Fare-box	W. Zachringer	210,230	Nov. 26	774	230	14	795
Faucet for beer-fermenting vessels. Hose coupling	J. M. Pfaudler	210,309	Nov. 26	754	224	14	793
Feather-renovator. Steam	A. Marble	210,261	Nov. 26	810	240	14	800
Fence	H. Hardick	210,254	Nov. 26	801	237	14	799
Fence. Metallic	C. L. Frink	210,247	Nov. 26	793	235	14	798
Fence-post	W. H. Whittier	210,283	Nov. 26	833	245	14	803
Fire and burglar alarm	J. D. William	210,386	Nov. 26	951	276	14	818
Fire-arm. Magazine	A. Burgess	210,181	Nov. 26	725	215	14	789
Fire-arm. Magazine	A. Burgess	210,294	Nov. 26	844	248	14	804
Fire-arms. Spade attachment for	J. P. White	210,282	Nov. 26	831	245	14	802
Fire-chambers. Plastic lining for	H. W. McKenzie	210,347	Nov. 26	903	.....	14	812
Flour-bolt	W. L. Teter	210,275	Nov. 26	824	243	14	802
Flour-bolting machine	M. P. Clemmer	210,186	Nov. 26	732	217	14	790
Fruit and packing box	M. and R. J. Cooke	210,241	Nov. 26	788	234	14	797
Fuel from carbonaceous powders, &c. Manufacture of	C. T. Du Motay and E. Stern	210,304	Nov. 26	854	.....	14	806
Furnace. Metallurgic	W. Swindell	210,369	Nov. 26	929	.....	14	815
Furnace. Portable	L. R. Sassinot	210,272	Nov. 26	819	242	14	801
Gas. Device for regulating the flow of	E. Tourné	210,226	Nov. 26	772	229	14	795
Gas governing and recording apparatus	D. B. Peebles	210,352	Nov. 26	912	267	14	813
Gas lighting apparatus. Electric	W. E. Facer	210,245	Nov. 26	791	235	14	797
Gas-regulator. High-pressure	J. M. Foster and G. E. Lockwood	210,314	Nov. 26	863	253	14	807
Gate	I. M. Rhodes	210,361	Nov. 26	921	268	14	814
Gem-setting	V. Draper	210,301	Nov. 26	853	251	14	806
Glass. Manufacture of milk or alabaster	J. Kempner	210,331	Nov. 26	884	.....	14	809
Glass. Ornamenting articles of	W. J. Hodgetts	210,326	Nov. 26	879	258 259	14	809
Grain-binder	J. F. Gordon	210,319	Nov. 26	867	255 256	14	808
Grain-cradle	R. Winterbothom	210,388	Nov. 26	954	276 277	14	818
Grain-dropper	A. P. Powers	210,355	Nov. 26	914	267	14	813
Grain-separator	N. Kibler	210,333	Nov. 26	886	260	14	810
Grain-separator	A. T. Thayer	210,372	Nov. 26	934	271	14	816
Graining-machine	G. Pelstring. (Reissue)	8,507	Nov. 26	961	278	14	819
Guano-distributer	D. Englar, Jr.	210,310	Nov. 26	859	252	14	807
Gun. Magazine	A. Burgess	210,182	Nov. 26	726	216	14	789
Gun. Magazine	A. Burgess	210,295	Nov. 26	845	249	14	804
Gun-wiper	J. S. Birch	210,235	Nov. 26	783	232	14	796
Harrow. Sectional	I. T. Evans	210,311	Nov. 26	860	252 253	14	807
Hat	H. Friend	210,315	Nov. 26	865	254	14	807
Hat. Decorated felt	W. R. Rice	210,269	Nov. 26	816	242	14	801
Hats, &c. Manufacturing felt for	W. R. Rice	210,270	Nov. 26	817	242	14	801
Head-light. Signal	W. Forsyth	210,313	Nov. 26	863	253	14	807
Heel-stiffeners. Apparatus for molding	A. L. Elliot	210,307	Nov. 26	857	252	14	806
Hinge. Gate-	E. S. Hunt	210,257	Nov. 26	803	238	14	799
Hinge. Lock-	C. N. Dutton	210,305	Nov. 26	855	251	14	806
Horse-collar	C. H. Stevens	210,219	Nov. 26	765	227	14	794
Horse-collar coupling	S. J. Bowers	210,237	Nov. 26	784	232	14	796
Horse-detacher	L. H. Reed	210,212	Nov. 26	757	225	14	793
Horseshoe-blank bar	W. M. Greenwood and J. N. Clarke. (Reissue.)	8,506	Nov. 26	960	278	14	819
Horseshoe-blanks. Device for gaging the cutting of	J. T. Walker	210,377	Nov. 26	942	273	14	817
Horseshoe-blanks. Machine for bending	J. T. Walker	210,376	Nov. 26	940	272 273	14	817
Horseshoe-blanks. Roll for rolling	W. M. Greenwood and J. N. Clarke. (Reissue.)	8,505	Nov. 26	959	278	14	819
Horseshoe-nails. Machine for finishing	G. L. Hall	210,322	Nov. 26	874	257	14	808
Hose-carriage	J. Wilz	210,284	Nov. 26	833	245	14	803
Inkstand	G. Elsey	210,192	Nov. 26	738	219	14	791
Ironing-machine	P. O'Thayne	210,224	Nov. 26	771	228	14	795
Knitting-machine	S. Huff	210,329	Nov. 26	882	259	14	809
Lamp-burner	E. J. Blackham	210,236	Nov. 26	783	232	14	796
Lamp-burner	H. W. Vaughan	210,375	Nov. 26	938	272	14	817
Lamp lighting and extinguishing device	J. Koontz	210,336	Nov. 26	891	261	14	810
Land-marker	C. H. Warrington	210,278	Nov. 26	826	244	14	802
Last	A. W. Cox	210,300	Nov. 26	850	250	14	805
Latch	E. W. Brettell	210,291	Nov. 26	841	247 248	14	804
Leather-skiving machine	F. M. Carter	210,183	Nov. 26	728	216	14	789
Letter-box	R. Hale	210,253	Nov. 26	800	237	14	799
Liquors. Box or carrier for bottled	C. Conrad	210,240	Nov. 26	787	233	14	797
Lock. Trunk-	W. H. Forker	210,246	Nov. 26	793	235	14	798
Loom-shuttle	H. P. Briggs	210,292	Nov. 26	842	.....	14	804
Lubricator	R. W. Tavener	210,371	Nov. 26	933	271	14	816
Macaroni-machine	G. Grondona	210,199	Nov. 26	744	220	14	791
Mail-bag	B. Landon	210,338	Nov. 26	894	262	14	811
Mail-bag fastener and tag-holder	J. Metz	210,391	Nov. 26	957	277	14	819
Match-splint	J. H. White	210,384	Nov. 26	949	275	14	818
Metal-testing machine	J. R. Grout	210,252	Nov. 26	798	237	14	799
Mill for pulverizing ores	J. W. V. Rawlins	210,360	Nov. 26	920	268	14	814
Mill-spindle	J. M. Replogle	210,268	Nov. 26	815	241	14	801
Mower	W. R. Baker	210,232	Nov. 26	776	231	14	796
Musical instrument	L. Chase	210,297	Nov. 26	847	249	14	805
Musical instrument. Mechanical	M. Gally	210,249	Nov. 26	795	236	14	798
Needle-swaging machine	P. M. Beers	210,289	Nov. 26	839	247	14	804
Oatmeal-machine	G. H. Cormack	210,188	Nov. 26	734	218	14	790
Oven	J. R. Heywood	210,325	Nov. 26	877	258	14	809
Paper-pulp. Separating and cleaning vegetable-fiber for	C. Lauga	210,339	Nov. 26	895	262	14	811

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Passenger step-register	C. Martens and F. Krupp	210,264	Nov. 26	811	240	14	800
Pasteboard. Machine for lining and drying	G. L. Jaeger. (Reissue)	8,509	Nov. 26	962	279	14	820
Pawl and ratchet	L. A. Grosclaude	210,251	Nov. 26	798	236	14	799
Pen-holders. Ruling attachment for	J. Hoffman	210,256	Nov. 26	802	238	14	799
Piano-forte	C. H. L. Plass	210,223	Nov. 26	770	228	14	795
Piano-forte damper-action	O. Wessell, A. Nickel, and R. Gross	210,381	Nov. 26	947	275	14	817
Pistol-handles. Machine for checking	J. H. Bullard	210,180	Nov. 26	724	215	14	789
Planter. Check-row corn-	J. C. Elder	210,306	Nov. 26	856	251	14	806
Planter. Corn-	G. M. Titus	210,225	Nov. 26	772	229	14	795
Planter. Cotton-	W. W. Woodward	210,390	Nov. 26	956	277	14	819
Planters. Check-row attachment for corn-	T. C. Lord	210,340	Nov. 26	896	262 263	14	811
Plow	T. E. Jefferson	210,301	Nov. 26	748	222	14	792
Plow	T. E. Jefferson	210,302	Nov. 26	749	222	14	792
Plow	W. F. and C. W. Jenkins	210,303	Nov. 26	750	222	14	792
Plow and cultivator	L. M. Otwell	210,351	Nov. 26	911	266	14	813
Plow attachment	W. A. and J. D. Bollck, and J. T. Fancett.	210,290	Nov. 26	840	247	14	804
Press. Tobacco-	F. W. A. Fuller	210,248	Nov. 26	794	235 236	14	798
Pulley-block. Safety	J. R. Weston	210,281	Nov. 26	829	245	14	802
Railway-switch	E. H. Bronson	210,293	Nov. 26	843	248	14	804
Railway-switch	G. H. Soule	210,216	Nov. 26	761	226	14	794
Railway-switch	W. W. Todd and H. M. Tschudy	210,373	Nov. 26	936	272	14	816
Railway-track	E. R. Dingley	210,244	Nov. 26	790	234	14	797
Rake tooth. Hand-	E. Quinlan	210,356	Nov. 26	915	268	14	814
Refrigerator	W. Grayson	210,321	Nov. 26	873	257	14	808
Roofing-compound	W. G. Elliot	210,308	Nov. 26	858	.....	14	806
Sample-exhibitor	O. W. Richardson	210,362	Nov. 26	921	250	14	814
Sandpapering polishing-machine	H. A. Bachelder	210,287	Nov. 26	837	246	14	803
Saw-filing machine	J. Coston	210,299	Nov. 26	849	250	14	805
Screw machines. Chuck for metal-	E. Parker and H. K. Jones	210,221	Nov. 26	767	228	14	794
Sewing-machine button-hole-stitching attachment	A. H. Tait, Jr.	210,370	Nov. 26	931	271	14	816
Sewing-machine shuttle	G. W. Hunter	210,330	Nov. 26	883	260	14	809
Sewing-machines, &c. Fan attachment for	J. W. Chambers	210,296	Nov. 26	846	249	14	805
Shade-roller. Spring	J. C. Lake	210,337	Nov. 26	892	261	14	810
Sheet-metal elbow	J. Stern and W. Meyn	210,367	Nov. 26	928	270	14	815
Show-boxes. Removable cover for	P. H. Mayo and T. Atkinson	210,345	Nov. 26	902	264	14	812
Sieve. Adjustable	J. Dildine	210,243	Nov. 26	790	234	14	797
Sieve. Flour-	J. H. Lynch	210,341	Nov. 26	899	263	14	811
Sieve. Paper-hoop	M. Kennedy	210,259	Nov. 26	805	239	14	800
Sign. Street-	J. N. Greene	210,250	Nov. 26	797	236	14	798
Slate	C. F. Rapp	210,211	Nov. 26	756	224	14	793
Spading and seeding machine. Combined	J. S. Williams	210,387	Nov. 26	953	276	14	818
Spinning-machine spindle	F. J. Rabbeth	210,358	Nov. 26	918	.....	14	814
Spinning-machinery spindle	F. J. Rabbeth	210,357	Nov. 26	915	.....	14	814
Spring coupling. Vehicle-	W. F. Whitney	210,385	Nov. 26	950	276	14	818
Spring. Vehicle-	J. Krehbiel	210,260	Nov. 26	806	239	14	800
Stamp. Combined dating and canceling	C. Armstrong, R. G. Woodward, and L. Muther.	210,286	Nov. 26	835	246	14	803
Steam-gage	R. C. Blake	210,179	Nov. 26	723	215	14	789
Steam-generator	J. and G. Firmenich	210,312	Nov. 26	862	253	14	807
Steam-meter	C. Holly	210,328	Nov. 26	881	259	14	809
Stench-trap	H. R. Frisbie	210,196	Nov. 26	741	220	14	791
Stove-pipe damper and regulator	T. C. Phelan	210,354	Nov. 26	913	267	14	813
Table	M. E. Converse	210,187	Nov. 26	733	218	14	790
Tank for holding petroleum. Iron	E. E. Hendrick	210,324	Nov. 26	877	258	14	809
Thermometer-case	F. A. Stohlmann	210,274	Nov. 26	823	243	14	802
Tire-tightener	J. Fox	210,195	Nov. 26	740	220	14	791
Tobacco. Chewing-	H. N. Rittenhouse	210,363	Nov. 26	923	.....	14	815
Tobacco-granulating machine	N. Du Brul	210,191	Nov. 26	737	219	14	791
Tongs. Pipe-	J. A. White	210,383	Nov. 26	949	275	14	818
Toy torpedo	W. H. Relff	210,267	Nov. 26	814	241	14	801
Trough. Hog-	W. H. Tucker	210,276	Nov. 26	825	243	14	802
Urn and water-bottom. Combined	J. Miller	210,297	Nov. 26	753	223	14	793
Valve-gear for engines	B. P. Perry	210,353	Nov. 26	913	267	14	813
Valve-seat for steam-cylinders	H. Watkeys	210,279	Nov. 26	827	244	14	802
Valve. Tap-	M. Walz	210,227	Nov. 26	773	229	14	795
Velocipede	A. Q. Ross	210,271	Nov. 26	818	242	14	801
Washing-machine	A. R. Dickason	210,302	Nov. 26	852	251	14	806
Water-meter. Rotary	T. Walsh	210,378	Nov. 26	943	274	14	817
Water-wheel	A. G. Cline	210,208	Nov. 26	848	249	14	805
Water-wheel. Current	W. W. Cleaveland	210,184	Nov. 26	729	216	14	790
Weather-strip	P. England	210,309	Nov. 26	858	252	14	806
Wood. Manufacturing articles of	G. F. White	210,229	Nov. 26	774	230	14	795

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COMMISSIONER'S DECISIONS.

W. C. THOMAS.—*Trade-Mark.*

[*Appeal from the decision of the Examiner of Trade-Marks in the matter of the application of W. C. Thomas for the registration of a trade-mark, filed July* 20, 1878.—*Decided November* 18, 1878.]

There is nothing in the law or in public policy opposed to the registration of Masonic or other society symbols as trade-marks.

DOOLITTLE, *Acting Commissioner:*

Applicant asks to register as a trade-mark "the figure of a shield of gold with the device of the lion's paw holding the tobacco-leaves resting on the wreath and overarched by the rainbow." This is the essential part of his mark, but he proposes to use it in connection with other words and symbols. Several of these symbols, such as the rainbow, the words Royal Arch, &c., are Masonic emblems, and their incorporation as part of the matter to be registered is objected to by the Examiner of Trade-Marks on the ground that it is opposed to public policy.

He cites, as authority, the opinion of the Commissioner in the case of John F. Tolle, (2 OFFICIAL GAZETTE, 415,) wherein it was held that Masonic emblems could not be divested of their ordinary signification, and therefore as trade-marks would be either descriptive or deceptive, and in either case could not become legal trade-marks.

I cannot agree to the doctrine of that case. There is no law giving to the Masonic fraternity a monopoly of the symbols used by them, and I see no reason why this Office should not hold in the same respect the symbols and emblems of the Odd Fellows, and of other secret societies, and the particular emblems used most by certain religious organizations.

In regard to the character of the deception that might be caused by the use of such symbols on manufactured goods the decision cited is silent. It is inferred, however, from a careful perusal of the opinion, that the public might be led to think that the manufacturer using the mark was a Mason, when he was not; or that, being a Mason, his goods were of first-rate quality when, in truth, they were very poor.

On consulting the statute, however, I find nothing at all indicating that the function of a trade-mark is to point out the character or social standing of its owner or the quality of his goods. Nor is there anything in the Office Rules requiring us to apply any tests of this kind.

The sole and independent office of a trade-mark is to distinguish the goods of one person from the same kind of goods made or sold by another. The relations to society the manufacturer bears or the peculiar quality of his goods are determined by the public in other ways.

No doubt, on the ground of public policy, the Office could refuse the registration of a trade-mark opposed to good morals—an obscene picture, for instance; but the plea of public policy could hardly justify the Office in holding that the symbols and emblems of secret or other organizations, drawn from sources common to all, were the exclusive property of such societies, or had by such adoption become vested with such "mystic significance" as to render it unlawful to apply them to vulgar use as marks upon articles of trade.

The decision of the Examiner is reversed.

JOHN BIGELOW.—*Interlocutory Appeal.*

[*In the matter of the application of John Bigelow, filed December* 29, 1877, *for letters patent for* "IMPROVEMENT IN SEWING-MACHINES." *Decided December*, 1878.]

Applicant having in his original specification described an improved trimmer in a sewing-machine as applicable to any single or double thread, straight or zigzag stitch sewing-machine: *Held*, that an amendment stating that it was immaterial how such stitch was made, whether by a vibrating cloth-plate or by a vibrating needle, was not new matter.

Appeal cases returned from an appellate tribunal to the Primary Examiner for further action must take precedence over all other applications awaiting action, except similar appeal cases previously returned.

DOOLITTLE, *Acting Commissioner:*

A prominent feature in applicant's original specification is the production of a zigzag stitch. The advantage of a zigzag stitch, and the manner and means of accomplishing this, are referred to throughout. On page 6 it is said:

> By simple mechanical changes for the application of the power, my trimmer can easily be applied to any single or double thread, straight or zigzag, sewing-machine. My invention is now illustrated as applied to a Blanchard overseam machine.

It is quite evident from this description that applicant could then have made a claim for the combination of the trimmer described with any particular zigzag-stitch sewing-machine.

June 24, 1878, amendment "O" was allowed, in which applicant sets forth as his fourth improvement a method of uniting fabrics by means of sewing a line of zigzag stitching in connection with his trimmer.

In view of these facts I do not regard it as a departure from the original invention to permit applicant to state the additional fact, he not being, nor claiming to be, the inventor of the zigzag stitch *per se*, that it is immaterial how such stitch is made, and whether by and through the means of vibrating cloth-plate or by vibrating needle, &c., as set forth in his amendment "T."

The Commissioner concurs in holding that when a case on appeal has been returned for any reason from an appellate tribunal to the Primary Examiner for further action, it shall take precedence for action by the Examiner over all other applications awaiting action by him, except other similar appeal cases previously returned to him.

The Examiner will please pursue this rule in the present instance.

DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of New York.

FRANCES L. EGBERT, EXECUTRIX, &C., *vs.* PHILIP LIPPMANN AND AUGUST SELIGMANN.

The policy introduced in the act of March 3, 1839, and followed in the existing act of July 8, 1870, (Secs. 4886 and 4920, Rev. Stats.,) makes a public use of an invention more than two years prior to filing the application for patent equivalent to an absolute abandonment to the public.

Consent and allowance of the inventor are not necessary to the forfeiture, but *a fortiori* consent to a use in public not followed by an application for patent within two years afterward renders the patent when granted invalid.

Hence, where the invention had been made and used in one instance in public as early as 1855, but for which the application for patent was not filed until 1866, it was declared to be abandoned and the reissue patent (original No. 56,345, S. H. Barnes, July 17, 1866,) invalid.

[*George Gifford*, for plaintiff; *John B. Staples*, for defendants.]

OPINION.—*September* 26, 1878.

BLATCHFORD, *J.:*

The patent in this case was applied for in March, 1866. The answer sets up, as a defense, that more than two years before such application the invention was known and in use in the United States. The bill alleges that at the time of the application the invention had not been for more than two years in public use with the consent or allowance of the patentee. The answer denies that at the time of the application the invention had not been for more than two years in public use. After the defendants had introduced evidence for the purpose of showing that the invention had been made by others before the patentee made it, the plaintiff introduced evidence showing that the patentee made the invention—a pair of corset-steels—in the year 1855. At that time he made a pair of steels containing the invention patented, and gave them to a lady, who wore them. They lasted her a long time. He made another pair for her early in 1858, which she wore a long time. She saw him at work on this pair. She knew, about 1863, of his making at that time another pair for another lady. The first two pairs of steels made were worn in several pairs of corsets, being ripped from one pair and put into other pairs. These first two pairs were made for a lady who, in 1863, became the wife of the patentee. After her marriage to him, and in 1863, she was wearing a pair of corsets with these steels, and she ripped them out on one occasion in that year, and the patentee showed them to one Sturges, and explained to him how they were made.

The seventh section of the act of July 4, 1836, (5 U. S. Statutes at Large, 119,) provided that a patent should be issued if it should not appear to the Commissioner of Patents that the invention had been in public use or on sale, with the applicant's consent or allowance, prior to his application for the patent. The fifteenth section of that act provided that, in a suit for infringement, the defendant should have judgment if it should be proved that the thing patented had been in public use or on sale, with the consent and allowance of the patentee, before his application for a patent. By the seventh section of the act of March 3, 1839, (5 U. S. Statutes at Large, 354,) it was enacted that every person who shall have purchased or constructed any newly-invented machine prior to the application by the inventor for a patent, shall be held to possess the right to use, and vend to others to be used, the specific machine so made or purchased, without liability therefor to the inventor, and that "no patent shall be held to be invalid by reason of such purchase, sale, or use prior to the application for a patent as aforesaid, except on proof of abandonment of such invention to the public, or that such purchase, sale, or prior use has been for more than two years prior to such application for a patent." The patent in question was applied for and issued when the act of 1839 was in force. The effect of that act is to require that an inventor shall not permit his invention to be used in public at a period earlier than two years prior to his application for a patent, under the penalty of having his patent rendered void by such use. Consent and allowance by the inventor are not necessary to such invalidity. But, *a fortiori*, consent to a use in public, not followed by an application for a patent within two years afterward, makes the patent, when granted, invalid. The policy introduced by the act of 1839 is continued in the act of July 8, 1870, and in the Revised Statutes. The twenty-fourth section of the act of 1870 (16 U. S. Statutes at Large, 201) provides that a patent may be obtained for an invention if it has not been in public use or on sale for more than two years prior to the application for such patent, unless it is proved to have been abandoned. This provision is embodied in section 4886 of the Revised Statutes. The sixty-first section of the act of 1870, (16 U. S. Statutes at Large, 208,) now section 4920 of the Revised Statutes, provides that it shall be a defense to a suit for the infringement of a patent that the thing patented had been in public use or on sale in the United States for more than two years before the application for the patent, or had been abandoned to the public. The policy introduced by the act of 1839, and thus continued, is that the inventor must apply for his patent within two years after his invention is in such a condition that he can apply for a patent for it, and that if he does not apply within such time, but applies after the expiration of such time and obtains a patent, and it appears that his invention was in public use at a time more than two years earlier than the date of his application, his patent will be void, even though such public use was without his knowledge, consent, or allowance, and even though he was in fact the original and first inventor of the thing patented and so in public use. Such public use for such a length of time is made equivalent to absolute abandonment.

The use proved in this case was a sufficient public use, or use in public, to invalidate the patent. It was not a use for experiment, or a use in private, or a private use. It was a practical use in public of the completed article. No secrecy was maintained or enjoined as to the article or its structure. The fact that the inventor from time to time declared that he intended to obtain a patent for the invention, and that his delay was caused by ill health, cannot operate to destroy the peremptory consequence imposed by the statute because of the lapse of time in connection with the public use.

The bill must be dismissed with costs.

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*Specifications of patents issued since November 20, 1866, commencing with No. 59,740, have been printed, also the classes of Grain-Binders and Cartridges. Drawings of all patents, from earliest to present date, have been photolithographed, with few exceptions, but the copies of about 35,000 in the classes of Harrows and Diggers, Plows, Planters, Seeders, Distillation, Metallurgy, Metal Coating, Ore, Sugar, Salt, Brewing and Bleaching, Chemicals, Dyeing, Explosives, Fertilizers, Fats and Glue, Graining, Oils, Painting, Preserving, Garden and Orchard, Carriages and Wagons, Railroad-Cars, Metals X to Z, Drafting, Electricity, Horology, Measuring Instruments, Optics, Fire-Arms, Guns, Ordnance, and Projectiles, were destroyed by the fire of September 24, 1877. These are being reproduced as rapidly as possible.

The copies of the following classes were damaged, but many were saved by recutting, which reduced the size of the sheet without injuring the figure. Until new copies are reproduced orders will be filled from them: Bee-Culture, Brushing and Scrubbing, Butchering, Care of Live Stock, Dairy, Fences, Tobacco, Vegetable-Cutters, Brakes and Gins, Harvesters L to Z, Mills, Thrashing, Furnaces, Gas-Fittings, Lamps, Stoves, and Sewing-Machines.

CAVEATS.—Inventors filing caveats in the Office should be careful to describe their invention or improvement with accuracy, and illustrate such inventions as are capable of illustration with care and thoroughness.

Caveats are placed in the hands of the Examiners, who should not be expected to understand what the inventor means unless the latter has sufficiently matured his invention to clearly describe and illustrate it.

Caveats are sometimes filed in the Patent Office stating that the caveator is engaged in a series of experiments intended to accomplish certain results, and giving nothing more than a vague hint of the means by which the result is to be attained. As the courts have frequently decided that results are not patentable, the practice of the Patent Office is to the effect that a caveat cannot cover more ground than a patent. So, where a caveat describes more than one invention, the Examiner frequently overlooks a portion of the caveat, knowing that under the rules caveators are confined to a single invention.

Complaints are often made that caveats have been overlooked, and patents issued to subsequent applicants, when the fault lies in the hasty preparation of the caveat papers. The rules are explicit, that the caveat must describe the invention as fully as the inventor is able to do; that the drawings shall be of the same size as the drawings to accompany an application for a patent, (8 by 13 inches, on a sheet 10 by 15 inches, with an inch margin all round,) and on tracing-muslin, or light bristol-board or drawing-paper, which can be folded without breaking. A careful compliance with the rules will greatly facilitate the work of the Office, and will go a long way toward insuring the accuracy which is so necessary in securing their just rights to inventors.

ANY person, whether citizen or alien, (other than an officer or employee of the Patent Office,) may procure a patent for an invention original with himself by paying the fees and adopting the course of procedure prescribed by law and the rules. Only citizens of the United States, or aliens who have resided in the country one year and made oath of intention to become citizens, can file caveats in the confidential archives of the Patent Office.

Issue of December 3, 1878.

Patents	199—No. 210,392 to No. 210,590,	inclusive.
Reissues	5—No. 8,510 to No. 8,514,	inclusive.
Designs	10—No. 10,936 to No. 10,945,	inclusive.
Trade-Marks	13—No. 6,854 to No. 6,866,	inclusive.
Labels	17—No. 1,790 to No. 1,806,	inclusive.
Total issue	244	

TRADE-MARKS.

[Each certificate bearing date December 3, 1878.]

6,854.—AXES AND HATCHETS.—*W. H. Crossman & Brother*, New York, N. Y. Application filed October 28, 1878.

"The fancifully-selected word-symbol 'PRESIDENT.'"

6,855.—SKIRTS AND CORSETS.—*Detroit Skirt & Corset Company*, Detroit, Mich. Application filed November 9, 1878.

"The word-symbol 'SHELBY.'"

6,856.—HEALING COMPOUND.—*Benjamin W. Dyer*, New York, N. Y. Application filed November 13, 1878.

"The arbitrarily-selected words 'BLACK WONDER.'"

6,857.—ROASTED COFFEES, GROUND SPICES, PEPPER, AND MUSTARD.—*Etienne Guittard*, San Francisco, Cal. Application filed November 21, 1878.

"A pictorial group of three female figures, the central one standing, with a bear at her feet, and supporting upon her left arm the American flag."

6,858.—PREPARED CHOCOLATE.—*Etienne Guittard*, San Francisco, Cal. Application filed November 21, 1878.

"A pictorial group of three female figures, the central one standing, with a bear at her feet, and supporting upon her left arm the American flag."

6,859.—PISTOLS AND GUNS.—*Graham & Haines*, New York, N. Y. Application filed November 1, 1878.

"The words 'BAND UP.'"

6,860.—MEDICAL PREPARATION.—*A. J. Seymour*, Pecatonica, Ill. Application filed November 4, 1878.

"The vignette or picture, and the name 'SEYMOUR' in connection with it."

6,861.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Henry M. Morris*, Brooklyn, N. Y. Application filed October 11, 1878.

"The word-symbol 'PARTAGAS" and two ellipses, arranged as shown."

6,862.—BEER, ALE, AND PORTER.—*Schramm & Schnabel*, San José, Cal. Application filed November 21, 1878.

"The word-symbol 'FREDERICKSBURG.'"

6,863.—LYE IN PACKAGES FOR DOMESTIC USE.—*The Excelsior Lye Company*, Chicago, Ill. Application filed November 9, 1878.

"The word-symbol 'HOME.'"

6,864.—LYE IN PACKAGES FOR DOMESTIC USE.—*The Excelsior Lye Company*, Chicago, Ill. Application filed November 9, 1878.

"The character or symbol of a cross."

6,865.—LYE IN PACKAGES FOR DOMESTIC USE.—*The Excelsior Lye Company*, Chicago, Ill. Application filed November 9, 1878.

"The word-symbol 'GLOBE.'"

6,866.—PREPARATION FOR REMOVING STAINS, &C., FROM SILK, WOOLEN, &C.—*The Western Manufacturing Company*, San Francisco, Cal. Application filed July 5, 1878.

"The word-symbol 'SAPONICA,' and the name or title 'BOLAND'S.'"

LABELS.

[Each certificate bearing date December 3, 1878.]

1,790.—Title: "BUDWEISER LAGER BIER."—*C. Conrad & Co.*, Mainz-Geisenheim-on-the-Rhine, and St. Louis, Mo. Application filed November 21, 1878.

1,791.—Title: "BANCROFT'S GERMAN BALSAM."—*Atha B. Crooks*, Newark, N. J. Application filed November 18, 1878.

1,792.—Title: "ROCK OIL SALVE."—*John T. Clark*, Pilot View, Ky. Application filed November 25, 1878.

1,793.—Title: "IMPERIAL PACKING COMPANY."—*Joseph W. Follett*, New York, N. Y. Application filed November 15, 1878.

1,794.—(Print,) Title: "JAPAN TEAS."—*Etienne Guittard*, San Francisco, Cal. Application filed November 21, 1878.

1,795.—(Print,) Title: "EXCELLENT."—*Etienne Guittard*, San Francisco, Cal. Application filed November 21, 1878.

1,796.—(Print,) Title: "E. GUITTARD & CO., 405 & 407 SANSOME STREET, SAN FRANCISCO." *Etienne Guittard*, San Francisco, Cal. Application filed November 21, 1878.

1,797.—(Print,) Title: "ETELKA."—*Heppenheimer & Maurer*, New York, N. Y. Application filed November 22, 1878.

1,798.—Title: "ROSE CREAM."—*James S. Plumb*, Syracuse, N. Y. Application filed November 22, 1878.

1,799.—Title: "BROWN'S BEST FAMILY FLOUR FOR C. B. & Y."—*Hicks, Brown & Co.*, Mansfield, Ohio. Application filed November 25, 1878.

1,800.—Title: "COLEMAN'S BEST ST. LOUIS FLOUR."—*Hicks, Brown & Co.*, Mansfield, Ohio. Application filed November 25, 1878.

1,801.—Title: "PEACHES."—*E. Schoenberg & Co.*, Baltimore, Md. Application filed November 5, 1878.

1,802.—Title: "TOMATOES."—*E. Schoenberg & Co.*, Baltimore, Md. Application filed November 5, 1878.

1,803.—Title: "GREEN PEAS."—*E. Schoenberg & Co.*, Baltimore, Md. Application filed November 5, 1878.

1,804.—Title: "SUGAR CORN."—*E. Schoenberg & Co.*, Baltimore, Md. Application filed November 5, 1878.

1,805.—Title: "FRESH COVE OYSTERS."—*E. Schoenberg & Co.*, Baltimore, Md. Application filed November 5, 1878.

1,806.—(Print,) Title: "ÆTNA."—*William Wicke & Co.*, New York, N. Y. Application filed November 21, 1878.

DESIGNS.

[Each design bearing date December 3, 1878.]

10,936.—BEDSTEADS.—*John Dawson*, Williamsburg, N. Y. Application filed September 30, 1878. Term of patent 7 years.

10,937.—CROCHETED JACKET.—*John Holmes*, Boston, Mass. Application filed July 24, 1878. Term of patent 3½ years.

10,938.—RUNNING-GEAR FOR BABY-CARRIAGES.—*Adolph Shoeninger*, Chicago, Ill. Application filed September 19, 1877. Term of patent 3½ years.

10,939.—SLEDS.—*Adolph Shoeninger*, Chicago, Ill. Application filed October 1, 1878. Term of patent 3½ years.

10,940.—COOKING-RANGES.—*Nicholas S. Vedder*, Troy, and *Tobias S. Heister*, Lansingburg, N. Y., assignors to said *Vedder*. Application filed November 15, 1878. Term of patent 3½ years.

10,941 and 10,942.—STOVES.—*Nicholas S. Vedder*, Troy, and *Tobias S. Heister*, Lansingburg, N. Y., assignors to said *Vedder*. Applications filed November 15, 1878. Term of patents 3½ years.

10,943.—COVERS FOR BIBLES.—*Frank M. Dillie*, Cincinnati, Ohio. Application filed November 19, 1878. Term of patent 7 years.

10,944.—HANDKERCHIEF-BORDER.—*John Grimshaw*, Paterson, N. J. Application filed November 2, 1878. Term of patent 3½ years.

10,945.—COOKING-STOVES.—*Nicholas S. Vedder*, Troy, and *Tobias S. Heister*, Lansingburg, N. Y., assignors to said *Vedder*. Application filed November 15, 1878. Term of patent 3½ years.

DISCLAIMER.

87,241.—*Riley Burdett*, Chicago, Ill.; patented February 23, 1869; disclaimer filed November 29, 1878.

Disclaims that part of the claim in the aforenamed specification which is in the following words, to wit:

4. In connection with the reed-board A, having the sets *a b* and L, as described, the independent dampers B and M, as set forth—

which is the fourth claim in said specification mentioned, and which disclaimer is to operate to the extent of the said fourth claim in said letters patent vested in your petitioner, who has paid ten dollars into the Treasury of the United States agreeably to the requirements of the act of Congress in that case made and provided.

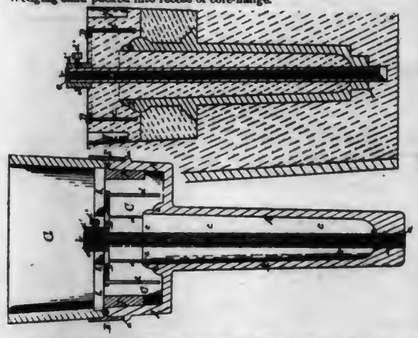
The specifications of all patents issued since July 1, 1871, are in print, and will be furnished, with the drawing, without extra charge. The specifications of most of the patents issued from November 20, 1866, to July 1, 1871, are in print, and where such is the case the Office will furnish them with the drawings; but it will not undertake to reprint copies which have been exhausted.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

DECEMBER 3, 1878.

210,392. SAND-CORE MOLDS. S. Jarvis Adams, Pittsburg, Pa. Filed Apr. 6, 1878.

Brief.—Packs sand in core-box by jarring; rotates sand-reservoir to strike off sand; removes reservoir and ring supporting it on the core-box. In enlarged cavity of mold fits a divided molded ring. To place core in mold, insert a rod into the mold, its end resting in a core-print at bottom of mold. Over this rod slides core, having a central tube. Flange of core centers upper end of core. Wedging-sand packed into recess of core-flange.



Claim.—1. The core-box A, provided with the annular rib or bead *e* around the cylindrical portion *c*, extending into the cope-cavity for forming the rabbet in the core, substantially as set forth.

2. The combination of the rod or tube *b* and the supporting-comb D, substantially as and for the purposes set forth.

3. The supporting-comb D, removably attached to the strengthening rod or tube *b* by means of the socket *d'* and set-screw *d*, or equivalent mechanism, substantially as and for the purposes set forth.

4. The combination of the core-box and the ring E, carrying one or more formers, F, substantially as and for the purposes set forth.

5. The core provided with the depression or depressions *y* in the side thereof, substantially as and for the purposes set forth.

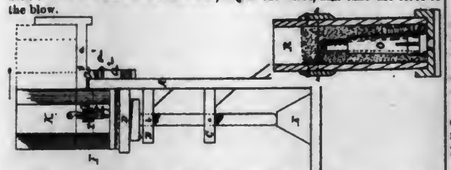
6. The sand-reservoir G, provided upon its bottom with transverse bars *h*, adapted to support the sand in the reservoir, and to cut the same from the core-box, substantially as set forth.

7. The combination of the core-box, strengthening rod or tube, and supporting-comb, substantially as and for the purposes set forth.

8. The combination of the core-box A, separate ring E, and reservoir G, substantially as and for the purposes set forth.

210,393. METHODS AND APPARATUS FOR FORMING MOLDS FOR CASTING. S. Jarvis Adams, Pittsburg, Pa. Filed Oct. 27, 1877.

Brief.—The base of the core-box may be made open, and a jarring-block used to hold the base of the core box, center the wires, and take the force of the blow.



Claim.—1. The herein-described method of forming molds or cores, by jarring a flask or core-box, having applied thereto a reservoir containing an amount of sand in excess of that required to fill the flask or core-box, whereby the desired density or firmness in the upper portion of the sand is obtained, substantially as set forth.

2. The stand D, sliding vertically in suitable guides, for imparting a jar to the flask, substantially as described.

3. The combination of the frame or support A, stand D, sliding vertically in suitable guides, and the block or weight E, substantially as and for the purposes set forth.

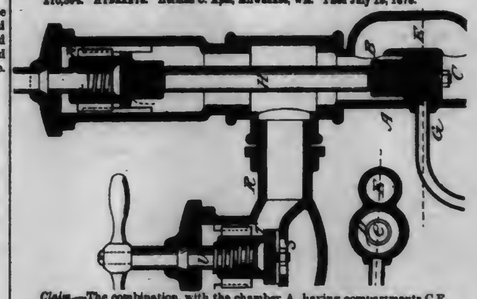
4. The combination of the jarring-stand, flask, and sand-reservoir, substantially as and for the purposes set forth.

5. The adjustable shelf *a*, in combination with the sand-reservoir and flask, substantially as and for the purposes set forth.

6. The partible flask F, having the recesses *i*, formed between the two parts thereof, to permit the vertical movement of the pattern during the formation of the mold, substantially as described.

7. The combination of the flask, sand-reservoir, and weight or follower L, placed in said reservoir, substantially as and for the purposes set forth.

210,394. HYDRANTS. Herman C. Apel, Milwaukee, Wis. Filed July 15, 1878.



Claim.—The combination, with the chamber A, having compartments C E, communicating with each other, and partition B, of the valve D, waste-pipe G, two-way pipe R, having orifice S and valve T, whereby the waste-pipe may be closed and water be drawn when desired from the faucet, as specified.

210,395. HEAD-RESTS FOR COFFINS. Wilber W. Bell, Bangor, Mich. Filed Apr. 19, 1878.



Claim.—1. In a head-rest for coffins, the combination, with the bar A, of the slides B B', having set-screws C C' and sockets *b*, substantially as described and shown.

2. In a coffin head-rest, the combination, with the slides B B', of the braces D D' and head-rest E, substantially as described and shown.

3. The improved adjustable coffin-rest consisting of the adjustable slotted bar A, the slides B B' on such bar, the braces D D', connected at one end to said slides and at the other to the head-rest E, the slotted locking-bar F, and the head-rest E, having the plate H, all substantially as described and shown.

210,396. GRATE-BEARING BARS. James Hamrick, Syracuse, N. Y. Filed June 26, 1878.

Brief.—A knife-edge bearing-bar is serrated, by which the air is allowed to pass freely between the grate-bars and bearers.



Claim.—1. In a grate-bearing bar, the pyramidal points or teeth *t t*, forming the bearing-surface of the bar B by beveling off the sides of the bar A, and by the transverse V-shaped grooves, substantially as and for the purposes above set forth.

2. In a grate-bearing bar, the longitudinal ridge *l*, between the bases of the pyramidal points *t t*, constructed and operating substantially as and for the purposes above set forth.

3. The above-described grate-bearing bar, constructed with the square ends A, beveled sides C C, and transverse V-shaped grooves forming the pyramids *t t*, and the ridge *l*, extending longitudinally between the bases of the pyramids, substantially as and for the purposes above specified.

210,397. SLEEVE-BUTTONS. Lion Barre, New York, N. Y. Filed May 16, 1878.



Claim.—The combination of a flat open ring, terminating in a lap on itself and an upward-turned end, with the shank and head of a sleeve-button, substantially as described.

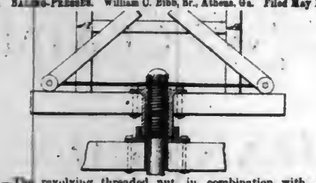
210,398. HORSESHOE-CALKS. Henry A. Bartholomew, Brooklyn, N. Y. Filed Aug. 7, 1878.

Brief.—The shoe is provided with slots or grooves in the upper surface, in which fit nuts for receiving the threaded neck of the calk. The arrangement facilitates cleaning dirt from the parts.



Claim.—In combination with shoe having the slot B, the calk D, provided with bolt and nut C, as and for the purpose set forth.

210,399. BALING-PRESSES. William C. Bibb, Sr., Athens, Ga. Filed May 13, 1878.



Claim.—The revolving threaded nut, in combination with traversing threaded windlass, substantially as described, and for the purpose set forth.

210,400. SPINNING-RING AND SPINDLE SUPPORTS. John Birkenhead, Mansfield, Mass. Filed Oct. 7, 1878.

Brief.—The spinning ring, or one or more of the supports of the shank of the spindle, is provided with one or more soft-metal or yielding projections, to enable the said ring to be adjusted into concentricity with the spindle, or vice versa.

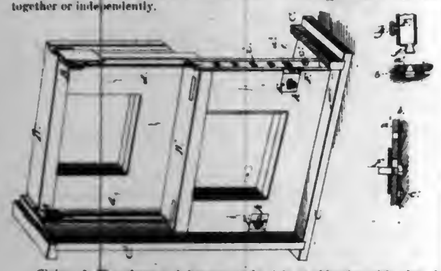


Claim.—1. In a ring-spinning frame, the spinning-ring, or one or more of the supports of the spindle, provided with one or more yielding projections and sockets therefor, substantially as described, arranged therewith and to operate essentially in manner and for the purpose set forth.

2. In a ring spinning frame, the spinning-ring, or one or more of the supports of the spindle, provided with one or more yielding projections, substantially as described, arranged therewith and to operate essentially in manner and for the purpose set forth.

210,401. SASH-BALANCES. Charles T. Brittain, Butler, Pa. Filed Apr. 22, 1878.

Brief.—A set of pulleys is secured in the jambs, over which cords pass. The ends of the cords are attached to the upper sash, and to bars which slide in grooves formed in the stiles of the lower sash. Bolts with dovetail heads engage with openings in the plates or bars. The sashes may be operated together or independently.

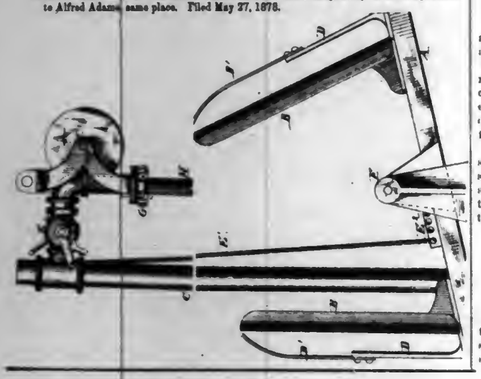


Claim.—1. The plates *a a'*, having studs *c'*, in combination with plate *b*, or its equivalent, provided with openings to receive stud *c'*, as and for the purpose set forth.

2. The sash *D'*, in combination with bars *a a'* and bolt F, incased in box K, as and for the purpose set forth.

3. In combination with a window-frame provided with plate *b*, the pulleys A B, cords *d*, sashes D *D'*, bars *a a'*, provided with studs *c'* and openings *i n'*, and bolts F, provided with dovetailed heads *f*, all arranged and operating as described, and for the purpose set forth.

210,402. HOSE-RACKS. Thomas J. Cain, Cleveland, Ohio, assignor, by mesne assignments, to Alfred Adams, same place. Filed May 27, 1878.



Claim.—1. A hose rack having a rocking bed-piece, A, to which are attached arms for supporting the hose, substantially as described and shown.

2. A hose rack having a rocking bed-piece, A, connected with a valve, and the valve opened by means of the rocking motion of the bed-piece, substantially as described and shown.

3. In a hose-support, the elastic finger D, substantially as and for the purposes shown.

4. A guide consisting of a stationary axle and two or more rings, wheels, or rolls turning thereon, substantially as described and shown.

5. In a hose rack or reel, the guide G, substantially as described and shown.

6. In a hose rack or reel, the guide G and sheave I, substantially as described and shown.

7. In a hose-rack, the bed-piece A, arms B, and fingers D and D', substantially as described and shown.

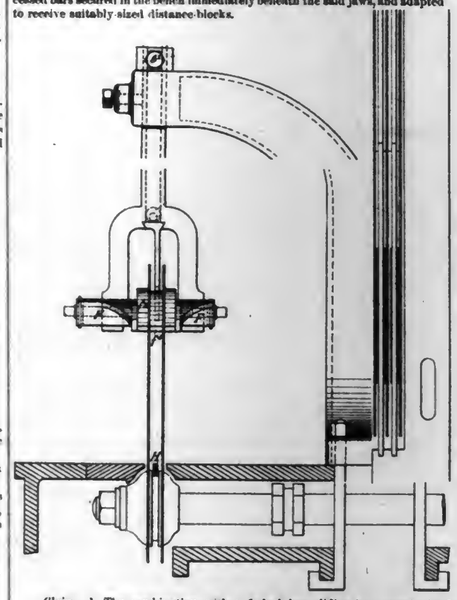
8. In a hose rack or reel, the combination of the bed-piece A, arms B, fingers D and D', connecting-rod E', valve E, and stand-pipe C, substantially as described and shown.

9. In a hose-reel, the combination, with a ratchet connected with a suitable hydrant-valve, of a pawl adapted to be operated by the unwinding of the hose and automatically returned to its former position, substantially as set forth.

10. In a hose-reel, the combination, with a ratchet connected to a hydrant-valve, of a pawl provided with a lever, which latter is adapted to be moved by suitable mechanism during the unwinding of the hose, and immediately upon release from said mechanism to return to its vertical position by means of a weight which is secured to its lower extremity, substantially as set forth.

210,403. CIRCULAR-SAW GUIDES. John Cason, Sheffield, England. Filed Oct. 22, 1878.

Brief.—A gang of circular saws can be steadied while being operated by means of a forked bar vertically adjustable; a standard rigidly attached to the bench, and provided with adjustable jaws, sliding on the forked ends of said bar, and with intermediate jaws furnished with distance-blocks, detachably secured in the forked part of said bar, one of said intermediate jaws being interposed between every two adjacent saws, in connection with a series of recessed bars secured in the bench immediately beneath the said jaws, and adapted to receive suitably-sized distance-blocks.

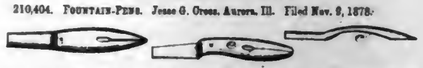


Claim.—1. The combination, with a forked bar sliding in a standard, of adjustable jaws or bearing-faces sliding on the jaws of said fork, essentially as and for the purpose described.

2. The herein-described steadying apparatus, adapted to steady two or more saws mounted on the same spindle, the same consisting in an intermediate jaw or jaws furnished with a distance block or blocks mounted in the fork of a bar, the jaws of which fork act to sustain the saws on the outside, and one of said intermediate jaws being interposed between every two saws, as set forth.

3. The improved construction and arrangement of the bars placed in the saw-slots of saw-benches in which several saws are mounted on the same spindle—that is to say, the said bars having recesses in the fore parts thereof, adapted to receive therein suitably-formed distance-blocks of a width equal to the distance between the adjacent saws, and being mounted in the saw-slots of the loose plates of the said bench, essentially as and for the purpose described.

210,404. FOUNTAIN-PENS. Jesse G. Cross, Aurora, Ill. Filed Nov. 9, 1878.



Claim.—The detachable pen-fountain, substantially as described, having the curved portion *c*, longitudinally slitted, as shown, and an end piece or shank, adapting it to be readily applied to and used with ordinary pen-holders and ordinary metallic pens.

210,405. COMBINATION OF VEGETABLE OILS AND GRAHAMITE FOR THE MANUFACTURE OF VULCANIZED COMPOUNDS. Austin G. Day, New York, N. Y. Filed Mar. 8, 1877.

Claim.—The herein-described specific product formed by the combination of grahamite, or its equivalent, with another resinous body, and with vegetable oil and sulphur, substantially in the manner and for the purposes set forth.

210,406. COMPOUNDS FOR THE MANUFACTURE OF KERITE. Austin G. Day, New York, N. Y. Filed Mar. 8, 1877.

Claim.—In the process of making crude kerite compounds, the within-described special improvement, consisting in combining clay, or other equivalent earths, with the vegetable or mineral oils, the resinous body or bodies, and sulphur, substantially in the manner and for the purposes set forth.

210,407. COMPOUNDS OF INDIA-RUBBER AND KERITE. Austin G. Day, New York, N. Y. Filed Mar. 8, 1877.

Claim.—The new vulcanized product herein described, consisting of the combination of crude kerite with natural india-rubber, substantially in the proportions specified.

210,408. MANUFACTURE OF KERITE FROM GUMS AND OILS. Austin G. Day, New York, N. Y. Filed Mar. 8, 1877.

Claim.—The within-described specific vulcanized compound, composed of vegetable or mineral oils, a resinous body or bodies, and sulphur, substantially as set forth.

210,409. MANUFACTURE OF KERITE. Austin G. Day, New York, N. Y. Filed Mar. 8, 1877.

Claim.—The within-described process of making a vulcanized product by combining crude kerite or artificial caoutchouc with natural india-rubber, substantially in the manner and for the purposes set forth.

210,410. PREPARING VEGETABLE OILS FOR THE MANUFACTURE OF KERITE. Austin G. Day, New York, N. Y. Filed June 2, 1877.

Claim.—The process of preparing vegetable oils for use in forming kerite compounds by subjecting such oils to the action of sulphur at a high temperature, substantially as described.

210,411. MANUFACTURE OF ARTIFICIAL CAOUTCHOUC OR KERITE. Austin G. Day, New York, N. Y. Filed Mar. 8, 1877.

Claim.—1. The above-described specific process of making a vulcanized compound for the purposes mentioned, by combining and treating cotton-seed oil, coal-tar, or its equivalent, linseed-oil, acid, and sulphur, substantially in the manner set forth.

2. The above-described process of combining and treating cotton-seed oil, coal-tar, or its equivalent, linseed-oil, acid, and sulphur, for the purpose of making a vulcanized compound, substantially in the manner set forth.

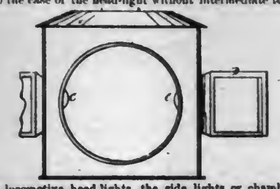
3. The combination, substantially in the manner and for the purpose described, of vegetable or animal wax with any mixture designed to form a crude kerite compound, and composed of vegetable or mineral oils, a resinous body or bodies, and sulphur.

4. The combination, substantially in the manner and for the purpose described, of ozocerite with any mixture designed to form a crude kerite compound, and composed of vegetable or mineral oils, a resinous body or bodies, and sulphur.

5. The combination, substantially as described, of oxide of iron with any mixture designed to form a crude kerite compound, and composed of vegetable or mineral oils, a resinous body or bodies, and sulphur.

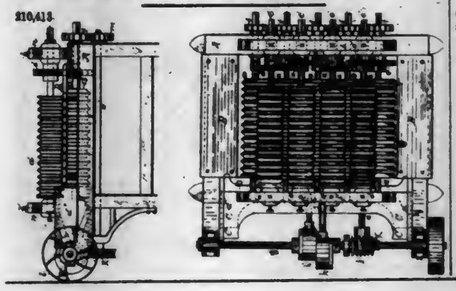
210,412. SIGNAL HEAD-LIGHTS. Andrew Dressell, Ernst H. Voth, and John G. Voth, Cleveland, Ohio, assignors to Derthea Dressell and Charles W. Voth, same place. Filed Oct. 26, 1878.

Brief.—The invention is an improvement on the construction shown in Patent No. 202,711, dated April 23, 1878, and consists in attaching the side lights directly to the case of the head-light without intermediate tubes or passages.



Claim.—In locomotive head-lights, the side lights or chambers, D, provided with a reflector, glass face and sides, constructed substantially as described, and connected directly to the sides of the head-light, and in open relation therewith, and to the reflector thereof by openings C and E, respectively, as herein set forth, and for the purposes specified.

210,413.



210,413. FELTING-MACHINES. Henry G. Ellsworth, Painesville, Ohio, assignor to Elizabeth Ellsworth, same place, and Charles A. Avery, New York, N. Y. Filed Oct. 25, 1878.

Brief.—For felting hat-bodies and other material, and consist of a series of vibrating and rotating rolls, said rolls controlled and operated by a variable train of gears.

Claim.—1. In a machine for felting, the vibrating and rotating rolls *a' a*, the upper rolls, *a'*, provided with a vertical adjustment by means of the springs *n*, in combination with the spur-gears *e' e* and variable train of gears *f*, with their intermediates *i*, substantially as described, and for the purpose set forth.

2. The combination of the vibrating and rotating rolls *a' a* with the cross-heads C' C, guides *d d*, and eccentrics *h' h*, substantially as described.

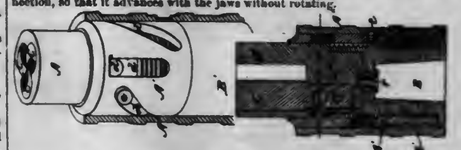
210,414. PIPE COUPLINGS OR JOINTS. John Enright, Cleveland, Ohio. Filed Sept. 30, 1878.



Claim.—In pipe couplings or joints, the gland provided with a female screw, whereby it is screwed upon the pipe, and said pipe being screwed into a flanged or unflanged collar or boss, in combination with said pipe, and the collar or boss having a recess or countersink adapted to receive said gland and packing, whereby the gland may follow up continuously the packing when required, substantially as and for the purpose described.

210,415. CHUCKS. Charles Gage, Boston, Mass. Filed Feb. 18, 1878.

Brief.—The griping-jaws have a cylindrical extension fitting into corresponding sockets in a shell, A, whereby they may be rotated without danger of lateral displacement. The shell A is connected to the bolt by a swivel-connection, so that it advances with the jaws without rotating.



Claim.—1. The shell A, having the jaw and tool-holding spaces or sockets, the lateral slots *s*, and the guiding-pin *d*, combined with the jaws C, having the fixed pins *s*, and the slotted shell A^1, adapted to guide the shell A and rotate the jaws C, substantially as described.

2. The shell A, provided with the pin d^2 and slot *s*, and carrying the jaws C, having the laterally-projecting plus *c*, in combination with the screw-threaded shell A^1, having the longitudinal slot d^1 and spiral slots *d*, and with the screw-threaded bolt B, all so arranged that a rotation of the bolt will project or retract the shell A without rotating it, and at the same time operate the griping-jaws C, to grasp or release the tool, substantially as described.

3. The bolt B, having the annular flange B^1, adapted to fit snugly within the outer shell or casing, A^3, and prevent the access of dust, &c., to the screw-threaded portions of the bolt and shell A^1, respectively, at all times, substantially as described.

210,416. PROCESSES OF APPLYING DESIGNS, &c., TO GLASS. John Gast, Brooklyn, N. Y. Filed June 10, 1878.

Claim.—The process herein described of applying designs to glass, which consists in first applying a heavy ground of light color or white to the transfer paper, then applying the design upon the ground, and then transferring the whole to the glass, substantially as set forth.

210,417. MAIL-BAG FASTENER AND TAG-HOLDER. Josiah B. Gathright, Louisville, Ky. Filed Oct. 30, 1878.

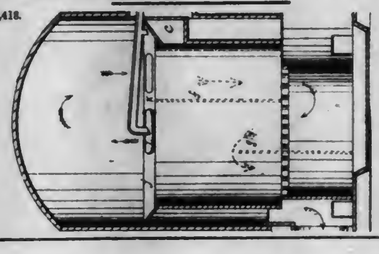


Claim.—1. The fastener A, provided with slots *a* and *b*, substantially as and for the purpose herein shown and described.

2. The fastener A, provided with slots *a* and *b*, and holes *d*, *e*, *f*, and *g*, substantially as and for the purpose herein shown and described.

3. In a mail-bag fastener and tag-holder, the combination, with the fastener A, provided with the socket B, of the cross-bars K and L, all substantially as and for the purpose stated.

210,418.

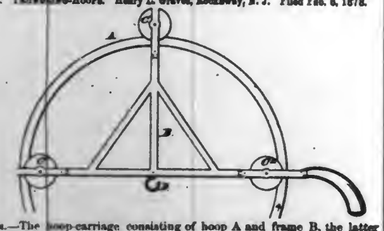


210,418. HOT-AIR FURNACES. John M. Graff, Brooklyn, N. Y. Filed Apr. 26, 1878.

Brief.—A comparatively direct draft is produced on uncovering the opening K'. An indirect draft, as indicated by the arrow, is caused by closing the same opening.

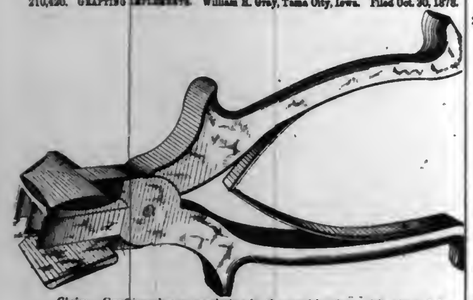
Claim.—The vertical flue-strips *f g*, arranged in the space between the fire-pot *i* and outer casing of the furnace, in combination with the inclined ring *j* on the upper part of the fire-pot, constructed with openings K K' on opposite sides of the flue-strip *f*, and the sliding damper *l*, having a curvilinear operating-arm projecting through the feed-chute *e* of the furnace, whereby the damper can be moved to open or close the openings K K' in front or rear of the flue-strip *f*, substantially as and for the purpose described.

210,419. TRUNDLING-HOOPS. Henry L. Graves, Rockaway, N. J. Filed Feb. 6, 1878.



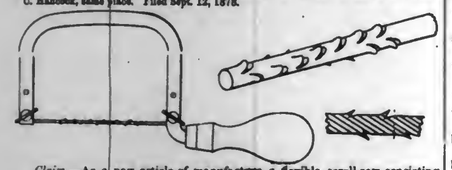
Claim.—The hoop-carriage consisting of hoop A and frame B, the latter supported at the sides and upper part, respectively, of the hoop by wheels C C' C', and provided at its lower end with a hook, D, substantially as and for the purpose set forth.

210,420. GRAFTING IMPLEMENTS. William H. Gray, Tama City, Iowa. Filed Oct. 30, 1878.



Claim.—Grafting-shears consisting in the combination, with pivoted handles provided with spring mechanism tending to maintain same apart, of a pair of blades, one of which latter has a flat bearing-face, while the other has an angular-shaped knife or knives formed in same piece therewith, substantially as set forth.

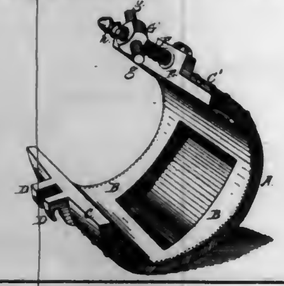
210,421. SCROLL-SAWS. George W. Griffin, Franklin, N. H., assignor to himself and Parker C. Hancock, same place. Filed Sept. 12, 1878.



Claim.—As a new article of manufacture, a flexible scroll-saw consisting of a wire of steel provided with struck-up burr-teeth on its surface to enable it to cut in all directions, substantially as described.

210,422. HOSE-CLAMPS. Daniel D. Hayes, San Francisco, Cal. Filed July 26, 1878.

Brief.—A yielding cylinder with inside pocket has rigid metallic edges and lugs thereon, the lugs on one side duplex, and forming concave bearings beneath to receive the trunnions of a transverse nut on a screw-bolt passing through the lug on the opposite side.

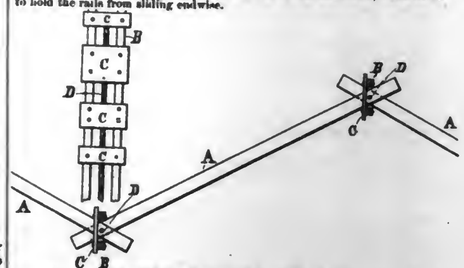


Claim.—1. The combination, with the band A of the hooked lugs D D, screw-bolt F, turning in bearing E, and the traveling nut G, having arms *g g*, substantially as and for the purposes set forth.

2. A hose-clamp for closing breaks or ruptures in hose, consisting of the band A, the interior flap or pocket, B, and the lock or fastening composed of the plates C C', the lugs D D upon one, and the screw-bolt F upon the other, with its traveling nut G, having projecting arms *g g*, all constructed and arranged together substantially as described, to operate as set forth.

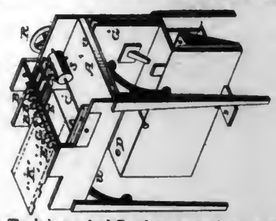
210,423. FENCES. Wm. Hyatt, Rexville, Ind. Filed May 9, 1878.

Brief.—A bar or rod passes through the ends of the fence-rails, which serves to hold the rails from sliding endwise.



Claim.—A fence composed of the rails A, stakes B, slats or cross-ties C, and upright bars or rods D, all substantially as herein shown and described, and for the purpose specified.

210,424. MECHANICAL MUSICAL INSTRUMENTS. Henry B. Horton, Ithaca, N. Y. Filed Mar. 15, 1878.



Claim.—1. The balance-wheel E, when arranged to act conjointly with foot-pedal 9, bellows 8, and pitman, in the manner and for the purpose specified.

2. The series of pins 1 2 3 in roller S, arranged to operate their corresponding clicks, as shown.

3. The apertures *m m m* in the valve-sheet K, when arranged to operate in combination with offsets 7 and ratchet-wheels B, in the manner shown.

4. The lateral indentations *p p* in valve-sheet K, when arranged to act conjointly with corrugated disk P', bars S'' and T, stud W, and pads B', substantially in the manner and for the purpose set forth.

5. The reed-plate S', metal pipe-box R, and the top plate, A, having apertures H, when combined, constructed, and arranged to operate for the purpose specified.

6. The corrugated disk P', in combination with bars S'' and T, stud W, and pads B', when arranged to operate as shown.

7. The valve-sheet provided with the apertures L and N, when said apertures are constructed and arranged to operate as described and shown.

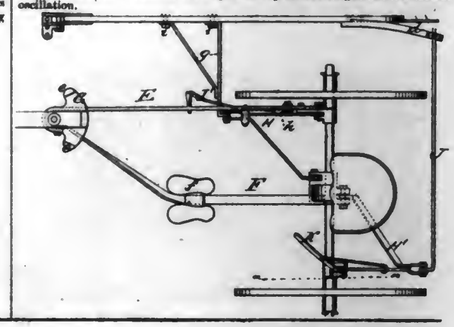
8. Clicks A' A', with offsets 7, when arranged to operate in combination with valve-sheet K, cylinder S, with pins 1 2 3, and ratchet-wheel B, as shown and described.

9. The click-bar A', when made in two parts, substantially as and for the purpose specified.

10. The equalizing-bellows G'' and blocks S' and T', with their springs and knob D, when combined and arranged to operate substantially as and for the purpose set forth.

210,425. RIDING-PLOWS. David W. Hughes, Butler County, Ohio. Filed Feb. 9, 1878.

Brief.—Plow outside of frame. Lifted at the point and "winged" by levers and cranks. Between the stops on the plate the tongue has free lateral oscillation.

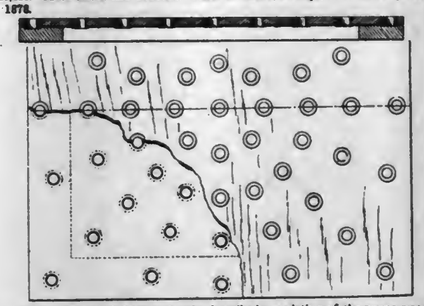


Claim.—1. The combination, with an axle of a riding-plow sulky, of a side frame consisting of the angular bar E, having a vertical and horizontal branch, and the bar F, having a horizontal and inclined branch, converged to form a plate for a pivoted tongue in front, substantially as specified.

2. In combination with a sulky-plow frame and a plow outside of the wheels, the angular arm H, pivoted to the axle, the arm-brace *g*, attached to the plow-beam and coupled therewith, and the lever J', fulcrumed on said axle and connected with said arm, substantially as specified.

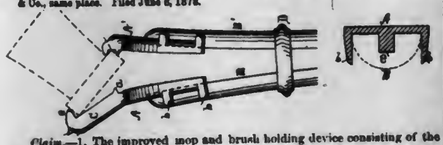
3. The combination, with a plow and its carriage, of the vibrating brace H', the connecting-rod J, and a lever, K, as and for the purpose specified.

210,426. CHAIR BACKS AND BOTTOMS. Frank G. Johnson, Brooklyn, N. Y. Filed Apr. 30, 1878.



Claim.—The chair-bottom herein described, consisting of the upper wood sheet and lower metal sheet, both being perforated and fastened together by eyelets, as and for the purpose set forth.

210,427. MOP AND BRUSH HOLDERS. Melvin H. Lovell, Erie, Pa., assignor to F. F. Adams & Co., same place. Filed June 6, 1878.



Claim.—1. The improved mop and brush holding device consisting of the bifurcated handle, the jaw A, having an extension, C, projected at an angle thereto, and having the two teeth or series of teeth or jaws *a c*, and the jaw A', as described.

2. In combination with the prongs of the bifurcated handle and the parts A A', which are to be attached thereto, the lugs *b b*, projecting from the shanks of said parts A A', and adapted to be clinched down upon said prongs, as set forth.

210,428. MOP AND BRUSH HOLDERS. Melvin H. Lovell, Erie, Pa., assignor to F. F. Adams & Co., same place. Filed May 29, 1878.



Claim.—1. In a mop and brush holder, the combination of a bifurcated handle with a jaw on one branch of the bifurcated portion and an adjustable sliding jaw on the other branch, substantially as described.

2. The longitudinally-sliding jaw B', having a socket for the reception of the part *s* of the bifurcated handle, and a recess, *r*, combined with the stop *s*, substantially as described.

3. The combination, with the bifurcated handle, of the locking-ring B, having its opposite inner longitudinal and transverse surfaces shaped to correspond to the contour of the parts of the handle, substantially as described, for the purpose specified.

210,429. REMOVABLE COVERS FOR SHOW-BOXES. Peter H. Mayo and Thomas Atkinson, Richmond, Va., assignors to P. H. Mayo & Brother, same place. Filed Oct. 12, 1878.



Claim.—The combination of the frame A, provided with hooked clips C and a door, D, with the box B, provided with grooves G, to receive the clips C, substantially as set forth.

210,430. HAND-DRILLS FOR STONE-WORKING, MINING, &c. Andrew Nicol, Scranton, Pa. Filed Nov. 6, 1878.

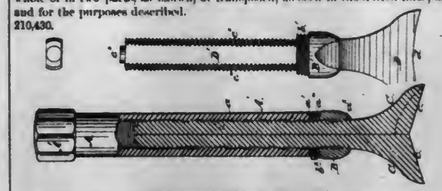
Claim.—1. In a hand-drill for coal-mining, the cylindrical socket A, having the internal screw-thread, *s*, therein, in combination with removable tools in pairs, such as C C, having screw-threads *c''* on their tangs, to be screwed into socket A, constructed to operate as described.

2. The cylindrical socket A of a miner's hand-drill, having the internal screw-thread, *s*, therein, and the screw cap or thimble B, in combination with the removable drill or cutters C C, having screw-threaded tangs or any of the interchangeable bits, drills, cutters, or picks shown, substantially as and for the purposes described.

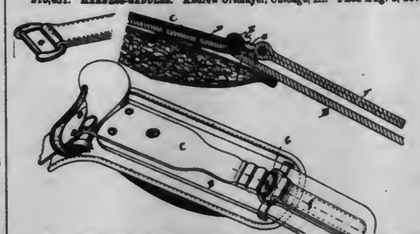
3. The cylindrical socket A of a miner's hand-drill, having the internal screw-thread, *s*, therein, and the screw cap or thimble B', in combination with the bit or chisel D, having a flattened and screw-threaded tang, D', constructed to operate substantially as described.

4. A miner's hand-drill, such as above described, composed of the cylindrical socket A, having the internal screw-thread, *s*, therein, screw cap or thimble B or B', and removable and interchangeable bits, cutters, picks, or drills, either whole or in two parts, as shown, or transposed, as seen in the dotted lines, as and for the purposes described.

210,430.



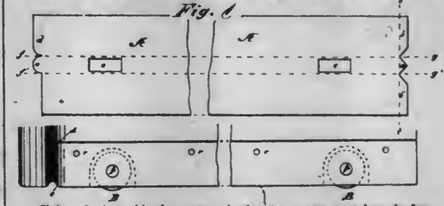
210,431. HARNESS-SADDLES. Andrew Ortmayer, Chicago, Ill. Filed Aug. 6, 1878.



Claim.—The combination, in a harness-saddle, of the metallic fork C, the metallic hook E, made separately from the said fork, the skirt B, arranged underneath the said fork and having therein the cross-slit *f*, made just below the end of the said fork, and the clip or loop G, arranged in the said hook, the upper end of the said hook being passed into the slit *f* and underneath the skirt, and being riveted to the fork by means of spuds or rivets passing through the skirt, thus connecting the fork, skirt, and hook firmly together, and closing the exposed or open end of the hook, and retaining the loop G therein by reason of the abutting therewith of the end of the fork and of the upper edge formed in the skirt in consequence of the slit *f*, substantially as specified.

210,432. BOOK-COVER PROTECTORS. Daniel W. Page, Chicago, Ill. Filed May 14, 1878.

Fig. 1.



Claim.—1. A combined corner and edge book-cover guard made from a continuous piece of sheet metal, and bent inwardly upon both front and rear corners and the intervening edge, substantially as described, and for the purposes set forth.

2. The sheet-metal book-cover corner-guard having the meeting edges of the metal in the face of the cover-edge, substantially as shown, and for the purposes specified.

3. The blank A, Fig. 1, notched as shown at *a*, and adapted to be bent upward in the lines *f g* and *f' g'*, to embrace the bottom edge of a book-cover, and inwardly in the line *s t*, to bring the edges of the projections *a*, *b*, and *b'* together upon the face of the front cover-edge, substantially as shown and described.

4. The blank A, Fig. 1, notched at one end to leave the central projection, *c*, and side projection, *d*, adapted, when the guard is formed and applied to the bottom edge of the book-cover, to be bent inward to clasp the rear corner, substantially as shown, and for the purposes stated.

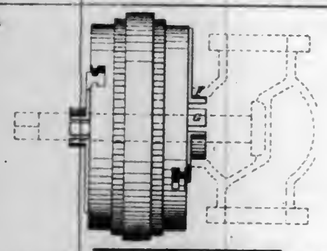
5. The guard A, notched and otherwise formed, as shown, to fold and clasp both outer and inner corners and the intervening edge of the book-cover, and provided with the carriage-rollers B, substantially as described, and for the purpose specified.

210,433. VALVE-GRINDERS. John H. Phelan, New York, N. Y. Filed Sept. 19, 1878.

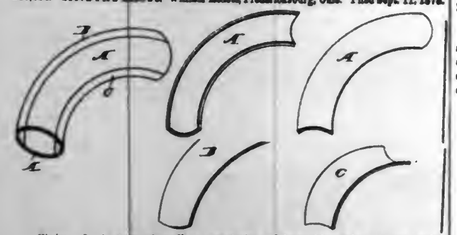
Brief.—Two sets of radial slides are operated by disk-plates on the opposite faces of the device. One set moves inwardly, and forms a bearing for the valve-stem to rotate in; the other moves outwardly, and locks the device to the inner periphery of the valve-bonnet.

Claim.—In a tool or fixture to aid in grinding valves to their seats, the combination of a series of studs capable of radial motion to and from a common axis, to form an artificial bearing for the valve-stem, with like means for securely attaching and centering the fixture to the bonnet or bonnet-way, and valve-seat therein.

210,433.



210,434. STOVE-PIPE ELBOWS. William Rolots, Fredericksburg, Ohio. Filed Sept. 11, 1878.

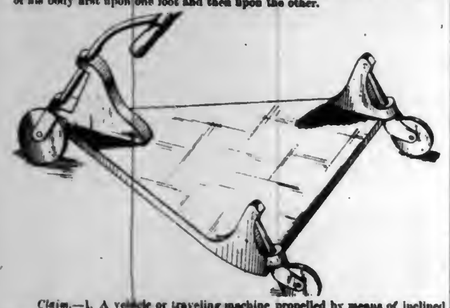


Claim.—1. A stove-pipe elbow consisting of two side strips, A, top strip, B, and bottom strip, C, of sheet metal, united at their longitudinal edges, and having the proper longitudinal and lateral curvature, without a seam in the bottom portion of the elbow, substantially as and for the purposes described.

2. The combination of four pieces of sheet metal, cut to curved patterns longitudinally of the elbow, said pieces being of substantially the curvature described, so that when pressed to conform to the arc of the circumference of the elbow and united by longitudinal seams, substantially in the manner shown and described, the top and bottom portions of the elbow are formed without seam or joint.

210,435. VELOCIPEDES. John B. Root, New York, N. Y. Filed May 8, 1878.

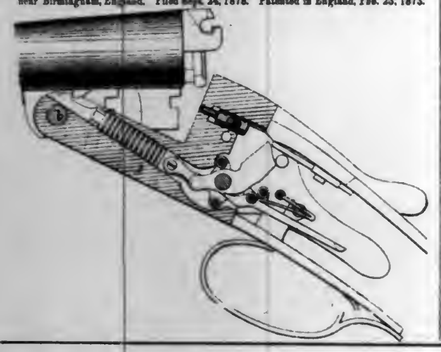
Brief.—The caster wheels are mounted upon inclined axes, which causes the vehicle to travel forward in a zigzag course as the rider throws the weight of his body first upon one foot and then upon the other.



Claim.—1. A vehicle or traveling machine propelled by means of inclined caster-wheels, substantially as described.

2. A vehicle or traveling machine consisting of a platform mounted upon rearwardly-inclined caster-wheels and a guide-wheel, constructed and operating substantially as set forth.

210,436. BREECH-LOADING GUNS. William M. Scott, Birmingham, and Thomas Baker, Aston, near Birmingham, England. Filed Sept. 24, 1878. Patented in England, Feb. 23, 1873.

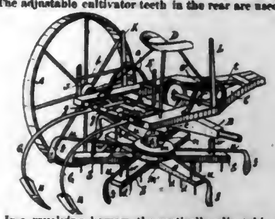


Claim.—1. The combination, with the gun-stock, the single or double barrel, hinged at a proper point between the breech and muzzle, so as to drop down to expose the breech, and the hammer or exploding devices located in the stock, of independent locking mechanism to secure the breech of the barrel to the break-off, a projection or projections on the under side of the barrel, at a suitable point between the hinge and breech, and a sliding rod for each barrel, arranged in one or more recesses in the gun-stock, substantially parallel with the length of the gun, in the manner described, so as to be made to slide by the action of the projection or projections on the barrel, to cock the hammer or hammers ready for firing, in turning the barrel on its hinge to expose the breech for loading, substantially as set forth.

2. The herein-described cocking mechanism for drop-down guns, the same consisting of a projection on the under side of the gun-barrel, and a sliding rod located in a recess in the gun-stock, and provided with a lug at its forward end, adapted to be engaged by the projection on the under side of the barrel, and to be drawn forward to cock the hammer, or its equivalent, substantially as set forth.

210,437. ROTARY HARROW AND CULTIVATOR. Samuel Smith, Mabelvale, assignor to himself and Dudley E. Jones, Little Rock, Ark. Filed June 4, 1878.

Brief.—The harrow is adjusted vertically on the shaft E with a set-screw, and raised or lowered by the quadrant. The rotation is produced by the shovels extending beyond, the harrow-frame and dipping in the ground on the lower side of the beveled collar, which lifts the shovels on one side and lowers them on the other. The adjustable cultivator-teeth in the rear are used as markers.



Claim.—1. In a revolving harrow, the vertically-adjustable shaft E, with beveled disk or collar r, rigidly attached thereto, and adjustable collar p, in combination with a revolving harrow, S, having stirrups w and upper set of revolving arms u, with drag-teeth or shovels f, whereby the harrow receives a rotary motion, in the manner and for the purpose substantially as shown and described.

2. In a rotary harrow, the vertically-adjustable shaft E, with rigidly-attached beveled collar r and adjustable collar p, in the manner and for the purpose substantially as shown and described.

3. In a rotary harrow, the vertical adjustable shaft E, with collar p, in combination with the draft bar or brace R, with catches or ratchet-teeth R', and the foot-lever and pawl t t', in the manner and for the purpose substantially as shown and described.

4. In a rotary harrow, the vertically-adjustable harrow-shaft E, with beveled collar r, rigidly attached, and adjustable collar p, with draft bar or brace R, the chain c, sheave F, shaft F', and lever L, in the manner and for the purpose substantially as shown and described.

5. In a rotary harrow, the combination of the foot-lever t with pawl t' and spring t^2, the adjustable draft bar or brace R, with catches or ratchet-teeth R', and swivel-joint s, the adjustable collar p, and vertically-adjustable shaft E, whereby the said shaft is braced and prevented from bending as the revolving harrow-teeth engage with the ground, in the manner and for the purpose substantially as shown and described.

6. In a rotary harrow, the combination of a vertically-adjustable shaft, E, with beveled collar r, having a revolving harrow below said collar, and a revolving set of drag-pointed arms u above, whereby a revolving motion is imparted to said harrow as the drags f enter and leave the ground, in the manner and for the purpose substantially as shown and described.

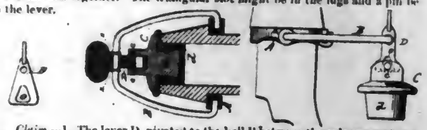
7. In a revolving harrow, the harrow-arms S, provided with stirrups w, in combination with the revolving drag-pointed arms u, whereby said drag-arms are revolved with the harrow-arms, in the manner and for the purpose substantially as shown and described.

8. In a revolving harrow, the upper set of revolving arms, u, provided with drag-points or shovels f, and secured to a central hub, u u', and adapted to be operated by a beveled collar, r, on the vertically-adjustable shaft E, whereby said drag-points are raised and lowered as they revolve on said collar r, in the manner and for the purpose substantially as shown and described.

9. In combination with a revolving harrow provided with an upper set of revolving arms, u u, and drag points or teeth f, the adjustable shaft u, with adjustable collars a' a' a' a', and plow-beams G, provided with slots g, and plows H, operated to be raised and lowered by the crank-shaft c, levers J and K, and connecting-rod b, in the manner and for the purpose substantially as shown and described.

210,438. BOTTLE-STOPPER FASTENINGS. Thomas S. Smith, Fair Haven, Conn. Filed Oct. 29, 1878.

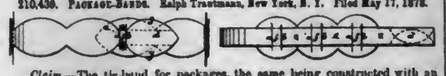
Brief.—The neck-band is elliptical, so as to fit different-sized bottle-necks, and is latched together. The triangular slot might be in the lugs and a pin be in the lever.



Claim.—1. The lever D, pivoted to the ball B between the enlargements x x, and having the triangular slot o, in combination with the band A, ball B, and cap C, connected to the lever by a pin passing through the triangular slot in the lever, all the said parts constructed and combined as and for the purposes shown and set forth.

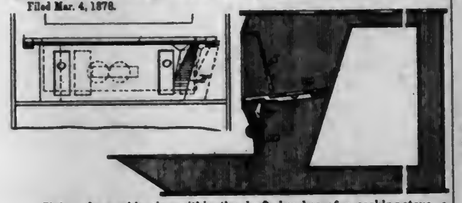
2. In bottle-stopper fastener, the lever D, having the triangular slot o, as and for the purpose described.

210,439. PACKAGE-BANDS. Ralph Trautmann, New York, N. Y. Filed May 17, 1878.



Claim.—The tie-band for packages, the same being constructed with an enlarged head-piece, d, at one end, and with two or more incisions, a b, at the other end, all arranged so that in closing or opening the band the sides g g of the head-piece must be folded under the middle of the same, substantially as specified.

210,440. DRAFT-DEFLECTING PLATES IN COOKING-STOVES. Theodore R. Way, Troy, N. Y. Filed Mar. 4, 1878.



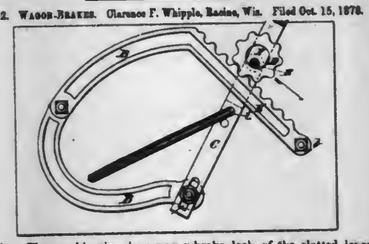
Claim.—In combination within the draft-chamber of a cooking-stove, a swinging draft-deflecting plate, hinged to the inside of the stove-front, and a sliding damper-plate having a curved and rearwardly-projecting upturned foot, which engages the end of the hinged plate in the manner specified, so as to force the latter up to close the space between the grate and front stove-wall when the draft-damper is opened, and release it to swing down when the draft-damper is closed, as shown and described.

210,441. HATS. Wilhelm Wetzel, New York, N. Y. Filed May 6, 1878.



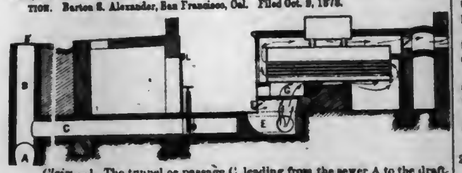
Claim.—The hat made with the indentations, recesses, or cavities c, provided in number and relative position to relieve the nerves of the head from pressure when the hat is worn, substantially as and for the purpose herein set forth.

210,442. WAGON-BRAKES. Clarence F. Whipple, Racine, Wis. Filed Oct. 15, 1878.



Claim.—The combination, in a wagon-brake lock, of the slotted lever C, frame B B', and wheel D, having the hole F materially larger than the bolt E, constructed and operating substantially as described.

210,443. METHODS OF EXTRACTING GASES OF SEWERS AND CONSUMING SAME BY COMBUSTION. Barton S. Alexander, San Francisco, Cal. Filed Oct. 9, 1878.



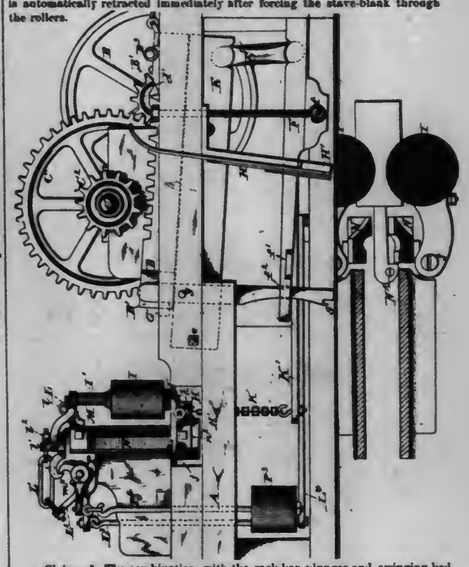
Claim.—1. The tunnel or passage C, leading from the sewer A to the draft-chamber E or fire-grate of a furnace, and provided with the valve D, in combination with the damper F, substantially as and for the purpose herein described.

2. The draft-chamber E or grate of a boiler-furnace, with its draft-passage and valve F, in combination with the tunnel or passage C, leading from said draft-chamber to the sewer A, and provided with the gate D, together with the siphon water-gage L, substantially as and for the purpose herein described.

3. The sewer A, with its tunnel or passage C, connecting with the furnace or draft-chamber E of a boiler, said sewer having the perforated man-hole cover B', or equivalent means for admitting fresh air and providing a circulation through the sewer, substantially as herein described.

210,444. MACHINES FOR DRESSING STAVES. Asa M. Benson, Cleveland, Ohio. Filed Oct. 9, 1878.

Brief.—The stave-blank is placed on a swinging bed extending longitudinally beneath a plunger provided with an inclined surface, and a rack-bar upon its upper rear portion, for engagement with a drive-pinion for actuating said rack-bar, and forced between two automatically-operating centering-rollers, and fed to two knives, (by which it is dressed,) having their edges set well out in advance of the heel, and provided with an intermediate channel. The plunger is automatically retracted immediately after forcing the stave-blank through the rollers.



Claim.—1. The combination, with the rack-bar plunger and swinging bed formed to extend longitudinally beneath the same, of the foot-treadle, pivoted below said bed, and having link-connection therewith, substantially as set forth.

2. The combination, with the rack-bar plunger, swinging bed extending longitudinally beneath the same, and foot-treadle having link-connection with said bed, of the upright pivoted lever, which has trip engagement with the free end of the treadle, and is adapted to be operated by engagement with a stud formed on the plunger, substantially as set forth.

3. The combination, with the rack-bar plunger and right-angular arm projecting therefrom, of the upright spring-bar, having its lower extremity secured to the frame, while its upper extremity is adapted to have lateral engagement with said arm as the plunger is driven forward, substantially as set forth.

4. The combination, with drive-pinion C^2 and rack-bar plunger D^1, whose upper surface engages therewith, of swinging bed E, extending longitudinally beneath said plunger, together with link E' and treadle F, adapted to act as a lever of the first order, substantially as set forth.

5. The combination, with rollers I, the upper extremities of whose shafts are seated in hinged frames L, formed with lever-arms l, of spring or weight L' and intermediate connecting mechanism, said hinged frames operating as levers of the first order, substantially as set forth.

6. The combination, with rollers I, the upper extremities of whose shafts are seated in pivoted frames L, having their rear portions formed with lever-arms l, of link L', bell-crank L^2, upright link L^3, and spring or weight L^4, substantially as set forth.

7. In a stave-dresser, the combination of knives fastened rigidly to hinged plates M N^3, the said structure provided with lever-arms M^3, lever P, link P^2, and weight or spring P^3, substantially as and for the purposes described.

8. The combination, in a stave-dresser, of knives rigidly attached to pivoted frames, and provided also with weight or spring connection, and, in connection therewith, rollers I, with their shafts seated in pivoted frames and held together at both ends by spring or weight mechanism, said shaft-frames being pivoted to the knife-frame, substantially as and for the purposes described.

9. The combination, with the frames L, of the adjusting devices P^2 P, whereby, in connection with the frame M, the rollers are given any desired inclination, substantially as and for the purposes described.

10. In a stave-dressing machine, a knife having the edge n^2 set well out in advance of the heel n^1, and an intermediate channel, n^3, substantially as and for the purposes described.

11. In a stave-dresser, the plunger D^1, provided with rack-bar and inclined surface d^1, substantially as and for the purposes described.

210,445. CAMERAS. Stewart L. Bergstresser, Condersport, assignor to E. L. & J. B. Bergstresser, Hublersburg and Emeora, Pa. Filed May 2, 1878.

Claim.—1. In a camera-frame provided with the ground glass, the combination of the shaft c, provided with rollers e, castings g, double T-plate f, shafts j, and friction-rollers k, substantially as described.

2. The combination of the castings g, which serve as bearings for the shaft c, set-screws i, bearings h, shafts j, and friction-rollers k, whereby the rollers are clamped against both sides of the track b, and can be made to bite upon it with any desired force, substantially as set forth.

3. The combination of a plate, f, having an extension, e, with the lever n, and a clamping device for securing them together, whereby the frame provided with the ground glass can be adjusted from side to side, substantially as specified.

4. The combination of the lever *q*, pivoted upon the rod *m* and connected to the side pieces, *n*, with the curved rod *r* and set-screw *s*, substantially as shown.

5. The combination of the lever *q*, connected to the side pieces, *n*, rod *r*, set-screw *s*, and a spring for throwing the lever upward as soon as the set-screw is released, substantially as described.

6. The combination of the shaft *x*, provided with a thumb-screw, side pieces, *n*, slides *o*, and an adjusting-cord, substantially as specified.

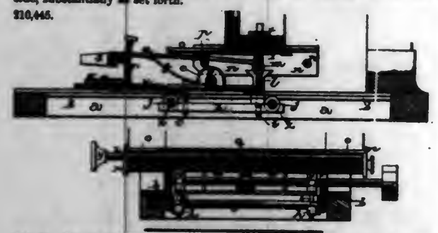
7. The combination of the movable end of a camera, and mechanism for adjusting it back and forth, with a frame provided with the ground glass, and mechanism for adjusting the same back and forth upon the movable end of the camera, whereby the said frame containing the ground glass can be given a double adjustment at the same time, substantially as set forth.

8. The combination of the cord *l*, shaft *x*, adjusting-shaft 3, ratchet 4, and dog 5, whereby the distance the frame provided with the ground glass may move can be regulated, substantially as shown.

9. The combination of the side pieces, *n*, slides *o*, connected to the frame, provided with the ground-glass cross-bar *m* upon the standard *l*, whereby the ground-glass frame is connected to the mechanism for moving back and forth upon the track *b*, substantially as described.

10. In a camera-frame, the combination of a mechanism for moving the frame-work back and forth upon the tracks *b*, a mechanism for moving the frame independently back and forth in the side pieces, *n*, a lever for tilting the ground-glass frame back and forth, and a lever for adjusting it from side to side, substantially as set forth.

210,445.



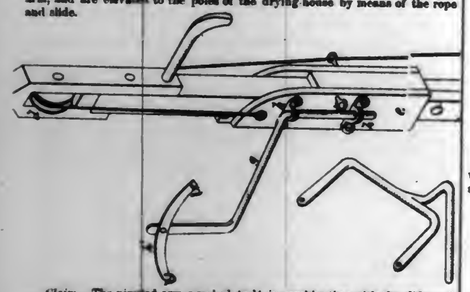
210,448. ORNAMENTATION OF FIRE-ARMS AND OTHER ARTICLES OF METAL. Otto Bodenstein, New York, N. Y. Filed Sept. 23, 1878.



Claim.—The herein described method of ornamenting plated-metal surfaces, which consists in applying a coloring substance to and in the deep engraved or cut body-lines of figures formed on articles of metallic manufacture after such articles have been coated or plated by nickel, silver, or other plating substances, or when having been bronzed or blued, whereby parts so cut in the articles are preserved from rust by moisture or dampness and the articles ornamented, substantially as and for the purpose set forth.

210,447. TOBACCO-BOISTING APPARATUS. Lewis W. Brewster, Canton, Ky. Filed Oct. 3, 1878.

Brief.—The upper part of the standard is provided with means for its attachment in a vertical position to the poles of the barn or drying-house. The sticks holding the tobacco are carried in hooks on the outer end of the pivoted arm, and are elevated to the poles of the drying-house by means of the rope and slide.

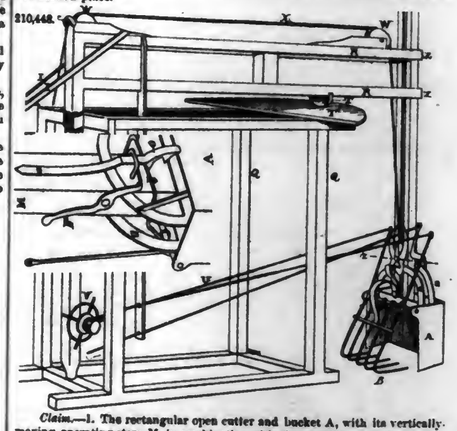


Claim.—The pivoted arm *g* and plate *h'*, in combination with the slide *c* of the tobacco-hoist, for the purposes set forth, and substantially as described.

210,449. DREDGING AND DITCHING MACHINES. D. Bridge, Coquille, Oreg. Filed Sept. 2, 1878.

Brief.—An ordinary frame-work for supporting the crane is placed on a scow, or other suitable device for transporting the apparatus, and the crane is constructed and counterbalanced as usual, with the exception that it is made of two arms instead of one, and has the guide-straps for the cutter-handle placed at the ends of the arms, the handle or stem passing down through said straps. The cutter is rectangular in shape, and is open at the top, bottom, and one side, and on the open side and bottom are arranged grappling hooks or fingers, secured on a pivot rod extending across between the upper corners of the open side of the cutter. A pair of nippers sliding in a guide-groove on the cutter-stem engages with a catch on the same to elevate the cutter, and they are released from said catch by the compression of their upper ends in the lower guide-strap of the crane, when the cutter falls and penetrates the earth by its own gravity, after which the grappling hooks or fingers, which have been held open during the descent by a spring, are closed by drawing on ropes or chains attached to arms secured on the pivot-rod of the hooks, thus holding the load in the cutter. These hooks are held closed during the elevation of the cutter by a spring-catch engaging with a ball secured to the pivot-rod, and by releasing the catch the hooks are opened by the spring and the load allowed to fall in the desired place.

210,448.



Claim.—1. The rectangular open cutter and bucket A, with its vertically-moving operating-stem M, in combination with the movable grappling hooks or plate B B, fitted to pass beneath the load and hold it in place until raised, substantially as herein described.

2. The cutting and containing bucket A, having the grappling-hooks B swinging upon the axle or bar N, said hooks being provided with the bail J, catch O, and releasing-lever F, and the actuating or opening spring D, substantially as herein described.

3. The bucket A, with its stem M, moving vertically in the guides Z Z, in combination with the lifting-chains X X, tongs or nippers K, and catch H, substantially as and for the purpose herein described.

4. The bucket A, with its stem M, moving vertically, as shown, and the lifting-chain and nippers, in combination with the grappling-hooks B, swinging upon the shaft N, the arms E, chain U, and operating-drum V, whereby the hooks are entered beneath the bucket, substantially as herein described.

5. The vertically-moving bucket A, with its guiding-stem M and lifting-chain X, in combination with the frame Q, having the platform T', and the double-armed crane R, with its traveler T, and the counterpoise-arms I, substantially as and for the purpose herein described.

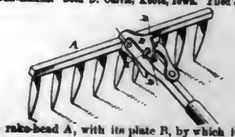
210,449. IRONING AND BOSOM BOARDS. George C. Carnell, Glassborough, N. J. Filed Aug. 8, 1877.

Brief.—The swinging clamp that secures the article to be ironed between it and the end of the board is covered with cord or textile material, to increase the friction and prevent the soiling of the article being ironed.



Claim.—The metallic pivoted clamp D, attached to the board B, and provided with the cord or textile covering d^2, substantially as described and shown, and for the purpose set forth.

210,450. GARDEN-RAKES. Seth D. Carris, Keota, Iowa. Filed June 27, 1878.

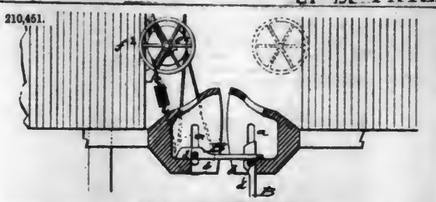


Claim.—The rake-head A, with its plate B, by which it is pivoted to the slotted handle, so as to change its angle with the handle, as shown, said plate having the lugs or stops D at each side, to limit the alternate movements of the head to an acute angle and obtuse angle to the handle as the rake is drawn over the ground, substantially as herein described.

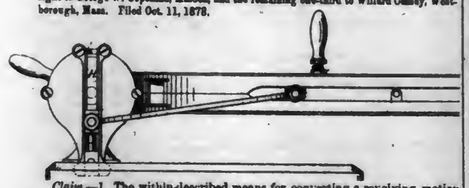
210,451. CAR-COUPLINGS. Charles W. Carnell, Wauseon, Ohio. Filed Sept. 27, 1878.

Claim.—The combination, in a car-coupling, of a draw-head having vertical side slots, a a, and the hook and link B, having a fixed cross-pin, *d*, the latter passing through said slots, as and for the purpose specified.

210,451.



210,452. MECHANICAL MOVEMENTS. Joseph E. Crisp, Boston, assignor of two-thirds his right to George W. Copeland, Malden, and the remaining one-third to Willard Conney, Westborough, Mass. Filed Oct. 11, 1878.



Claim.—1. The within-described means for converting a revolving motion into a reciprocating movement, and for varying the stroke of a connecting-rod, consisting of a driving-shaft, a crank, a pitman, a reciprocating block, a guide capable of revolution, and a connecting-bar, all arranged and combined to operate substantially as described.

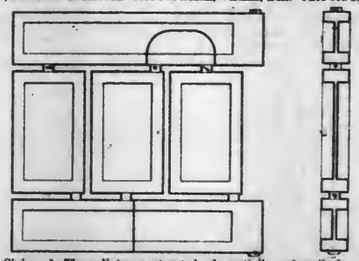
2. As a means for varying the stroke of a reciprocating connecting-bar, a reciprocating sliding block, laying hold of one end of the connecting-bar, in combination with a suitable guide provided with means for partial revolution, substantially as and for the purposes described.

3. As a means for determining the position of a cross-head in relation to the end of a reciprocating connecting-bar or other driving mechanism, the adjustable rack R, reciprocating pinion V_1, and the rack R^1.

4. As a means for increasing the reciprocating stroke of a connecting-bar, the reciprocating pinion V_1, fastened upon one end of the connecting-bar, and the rack R^1, all arranged to operate substantially as described.

5. The following-described means for varying the stroke of a connecting-bar, for increasing the stroke of a cross-head, and for changing the position of a cross-head in relation to the end of the connecting-bar, consisting in a guide provided with means for partial revolution, as described, a block reciprocating within the slide and laying hold of a connecting-bar, a connecting-bar carrying upon its end a pinion, a stationary rack capable of adjustment, a reciprocating rack, and the reciprocating pinion, all combined and arranged to operate substantially as described.

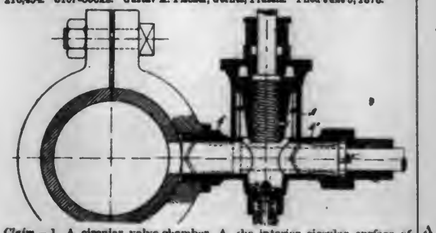
210,453. HEAT-RADIATORS. John H. Farnham, Waltham, Mass. Filed Oct. 21, 1878.



Claim.—1. The radiator constructed substantially as described—viz., of the hollow columns and intermediate boxes, arranged, paneled, constructed, and provided with partitions and inducts and educts to the columns, essentially as set forth.

2. Each section as composed of a shallow box paneled on its opposite sides and provided with an induct and educt, as explained.

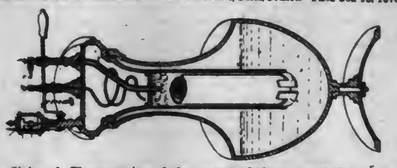
210,454. STOP-COCKS. Gustav A. Fischer, Görlitz, Prussia. Filed June 5, 1878.



Claim.—1. A circular valve-chamber, A, the interior circular surface of which forms the seat for the circular ring E, in combination with two branches, A' and A'', opposite each other, and whose interior areas are perfectly circular in their sections, in the manner and for the purpose substantially as described.

2. In combination with a plug stop-valve, the draining-valve G, with lever *g* and spring *i*, arranged to operate in the manner and for the purpose specified.

210,455. LIGHTING APPARATUS. Jean A. Fouchet, Paris, France. Filed Oct. 18, 1878.



Claim.—1. The mounting of the spongy platinum, consisting of a gun-metal setting, grooved or recessed longitudinally to receive the end of a platinum wire, on which, by means of a small plate, the sponge is fixed, whereby the same is rendered easily accessible for adjustment and removal, substantially as set forth.

2. The combination, with the holder of the spongy platinum, of a hood lantern to protect the same against atmospheric action, said hood or lantern being connected with the gas-cock, so as to be lifted or depressed by operating said cock, substantially as shown and set forth.

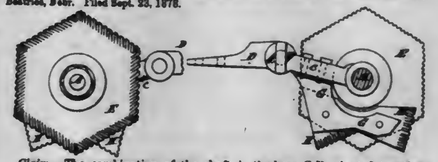
3. The combination, with the platinum sponge-holder, its lantern or hood adapted to be raised and lowered, as specified, and gas-jet, of an intermediate lamp or wick and oil-reservoir, under the arrangement shown and described.

4. In a lighting apparatus in which hydrogen gas is generated by the action of dilute sulphuric acid on zinc, the construction and arrangement of the reservoir, the same consisting of a lead-lined gas-generating chamber terminating in a neck, the upper part of which is enlarged to contain an oil-reservoir capable of holding a comparatively large body of oil, substantially as set forth.

5. The combination, in a lighting apparatus, of the gas-generating reservoir with a tubular receptacle provided with vertically-slit lead-coated supports, the whole being arranged substantially as described, so as to be adapted to hold a coiled sheet of zinc, said tubular receptacle being connected with the gas-tube and nozzle, substantially as set forth.

6. The combination, with the reservoir and zinc-foil-containing tube, of a filter arranged in the manner described, and operating substantially as set forth.

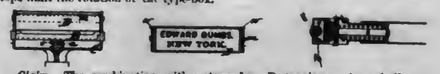
210,456. BAND-CUTTING ATTACHMENTS FOR THRASHING-MACHINES. Marvin W. Freeman, Bentrice, Nebr. Filed Sept. 23, 1878.



Claim.—The combination of the shaft A, the bars C D, pivoted together by bolts provided with cross-heads, which engage with the inclines or notches formed on the bearing-surface of the said bars, the rotating polygonal cutter E, the stationary cutter H, having an angular lower edge, and the supporting-plate G, with each other, to adapt the device to be attached to the cap or cover of a thrashing-machine, substantially as and for the purpose described.

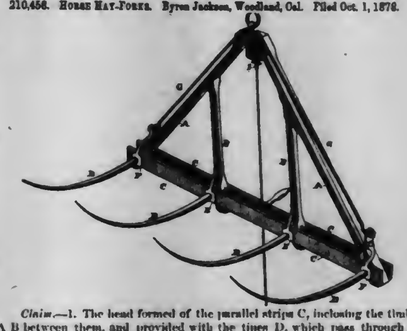
210,457. HAND-STAMPS. Edward Gumbs, Jersey City, N. J. Filed June 5, 1878.

Brief.—The spindle of the type-box is surrounded by a spiral spring, which operates to turn the type-plate outward, when the arms carrying the type-box are pushed upward or out of contact with the frame carrying the inking-pad. Stops limit the rotation of the type-box.



Claim.—The combination, with a stamp-box, D, turning on its spindle *m*, of the projections *w* and the internal spiral spring, *x*, arranged to operate substantially in the manner and for the purpose described.

210,458. HORSE HAY-FORKS. Byron Jackson, Woodland, Cal. Filed Oct. 1, 1878.

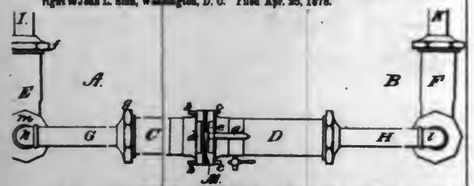


Claim.—1. The head formed of the parallel strips C, inclosing the timbers A B between them, and provided with the tines D, which pass through the timbers and side strips, and are secured by nuts, substantially as and for the purpose herein described.

2. The improvement in horse-forks consisting of the head formed of the parallel strips C, and inclosing the timbers A B, in combination with the tines D, passing through and uniting these timbers, and the braces E F, substantially as and for the purpose herein described.

3. The bail G, having the eye or loop formed in the center, said bail being shaped to fit the timbers A, and hinged or journaled at its lower end in the eyes in the braces F, substantially as and for the purpose herein described.

210,459. PIPE-COUPLINGS FOR CARS. Francis King, Baltimore, Md., assignor of one-half his right to John L. Sinn, Washington, D. C. Filed Apr. 25, 1878.



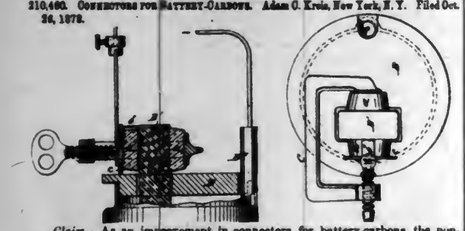
Claim.—1. An automatic metallic pipe-coupling, consisting of the sections A B, composed of the pipes I K, elbows E F, pipes H G, cylinders C D, and guides *b c e*, all connected and combined substantially as described, and for the purpose specified.

2. The anti-friction joint composed of the grooved ring E and washer *s*, both provided with suitable packing, in combination with the socketed pipe E C, having the screw-cap *f m g*, substantially as described, and for the purpose specified.

3. The extensible joint consisting of the pipe G, having the grooved ring E and the washer *s*, in combination with the enlarged pipe C, having the elongated socket, and the interior spiral spring, S, substantially as described, and for the purpose specified.

4. The elbows E F, provided with a socket in each end, in combination with the pipes I K and elbowed pipes G H, when the same are provided with a grooved ring, E, and washer *s*, and secured in said sockets by a screw cap, substantially as and for the purpose specified.

210,460. CONNECTORS FOR BATTERY-CARBONS. Adam C. Kreis, New York, N. Y. Filed Oct. 26, 1878.

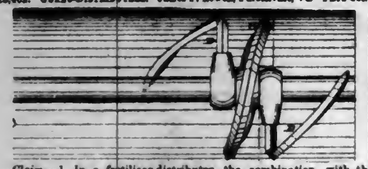


Claim.—As an improvement in connectors for battery-carbons, the non-corrodible non-conducting blocks *a a'*, interposed between the battery-carbon B' and the corrodible-metal attachments of the battery, in combination with carbon B', copper conducting-disk *c*, screw-clamp C, and connecting-strip *b*, of good conducting non-corrodible metal, substantially as described.

210,461. LUBRICATING COMPOUNDS. Joseph M. Lippincott, Kilbuck Township, Allegheny County, assignor to Henry C. Von Tine, Pittsburg, and Andrew Howard, Wilkins Township, Pa. Filed Dec. 18, 1877.

Claim.—As a lubricant, the herein-described compound of crude petroleum, petroleum residuum, and turpentine, substantially in the proportions as set forth.

210,462. GUANO-DISTRIBUTERS. James F. Lovell, Purcellville, Va. Filed Oct. 24, 1878.



Claim.—1. In a fertilizer-distributer, the combination, with the hopper having the diagonally-arranged discharge-aperture, of a distributer-wheel, placed diagonally on its revolving axis, so as to operate as specified.

2. The combination of the arms D, which extend first radially from the shaft, and are then bent laterally, and also curved concentrically to the axis, with the cam-shaped distributer-wheel and the discharge-orifice, located beneath said wheel, all as shown and described, for the purpose specified.

3. The combination, with the diagonally-arranged discharge-aperture and the cam-shaped wheel traversing the same, of the slide having a similarly-arranged aperture, as specified.

210,463. WHIFFLETREES. Calvin D. Marsh, Williamsport, Pa. Filed Nov. 12, 1878.

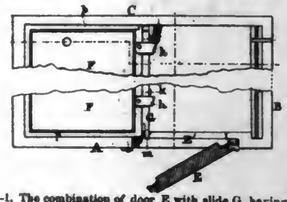


Claim.—1. The improved whiffletree described, having the parts A^1 A^2 connected by the flexible hinge B, in combination with the strap C and extended spring D, arranged for joint operation as and for the purposes herein specified.

2. The stop-ties G, in combination with the hinged parts A^1 A^2 and extended front spring, D, as herein specified.

3. The compound whiffletree described, having the two parts A^1 A^2, hinge B, strap C, half-elliptic spring D, gib E, and stop-ties G, with their holding means g^1 g^2, combined and arranged as and for the purposes herein specified.

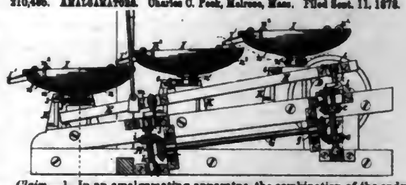
210,464. REFRIGERATORS. James C. Moore, Peoria, Ill. Filed Mar. 27, 1878.



Claim.—1. The combination of door E with slide G, having knobs *k* and cleats *h*, as described.

2. In combination with cut-off G, the cleats *h*, with inclined surface next to said slide, and the knobs or projections *k*, for the purpose of jamming said slide when closed against the face of the box F or ice-chest, substantially as shown.

210,465. AMALGAMATORS. Charles C. Peak, Melrose, Mass. Filed Sept. 11, 1878.



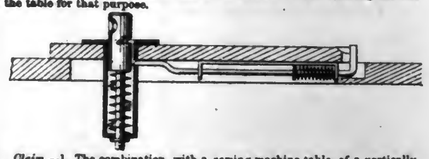
Claim.—1. In an amalgamating apparatus, the combination of the endwise and laterally moving platform E, one or more pan-supporting spiders, a a', journaled in said platform, the forked rod *p*, cross-head J, curved shoes r r, and the fixed stands K, provided with grooves *s*, substantially as and for the purposes described.

2. The combination of an amalgamating-pan made of copper, and a discharge spout or orifice made wholly or in part of iron, substantially as and for the purposes described.

3. In combination with the pan I and spider a a', the screw-hook n^2 and nut n^3, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

210,466. THREAD-CUTTING ATTACHMENTS FOR SEWING-MACHINES. Henry Pollock, Fredericton, New Brunswick, Canada. Filed Aug. 21, 1878.

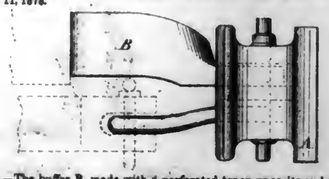
Brief.—A thread-cutter for a sewing-machine, consisting of a cutting-knife set into a vertically-sliding spring-bolt, acted upon by a horizontally-sliding and spring-acted locking-bolt. When not in use the cutter is pressed down flush with the top of the machine-table, and held by the locking-bolt, and when it is required for use it is thrown up through a hole of the table by withdrawing the locking spring-bolt, which has its outer end bent up along the side of the table for that purpose.



Claim.—1. The combination, with a sewing-machine table, of a vertically-guided and spring-acted cutter-carrying bolt, and of a horizontally-sliding and spring-acted locking-bolt, by which the cutter-bolt is locked or released, as required, substantially as and for the purpose set forth.

2. The combination of a guide-socket of the sewing-machine table with a spring-bolt having a fixed cutting-blade and notch, and with a sliding and spring-acted locking-bolt having outer bent-up end to be conveniently taken hold of, substantially as and for the purpose described.

210,467. BUFFERS FOR LOCOMOTIVE-TENDERS. George W. Prescott, Battle Creek, Mich. Filed Oct. 11, 1878.

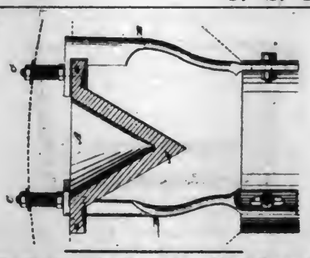


Claim.—The buffer B, made with a perforated tenon upon its end to adapt it to be secured to an ordinary draw-head by the pin that secures the coupling-link to the said draw-head, substantially as herein shown and described.

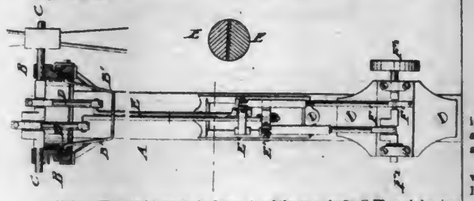
210,468. COWLS, &c., FOR LOCOMOTIVE SMOKE-STACKS. George W. Prescott, Battle Creek, Mich. Filed Oct. 11, 1878.

Claim.—In a spark-arrester, the cone A, secured by fastenings B, attached adjustably to inside of stack and outside of cone, turned over the flange of cone, and fastened by bolts C, the latter passing upwardly through flange and secured on top by nuts, all constructed and arranged as specified.

210,468.

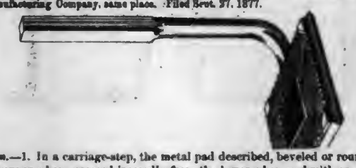


210,469. DEVICES FOR TRANSMITTING MOTION. George H. Russell, Cheyenne, Wyo. Filed Sept. 26, 1878.



Claim.—The combination, in frame A, of the two shafts C F^1, each having two cranks at right angles to each other, the two pairs of pitmen D E, the cross-bars E', and the split perpendicular shaft E, guided in a shoe, B', the latter shaft being composed of two independent slide-rods, as and for the purpose specified.

210,470. CARRIAGE-STEPS. Francis A. Sawyer, 2d, Boston, Mass., assignor to the Rubber Step Manufacturing Company, same place. Filed Sept. 27, 1877.



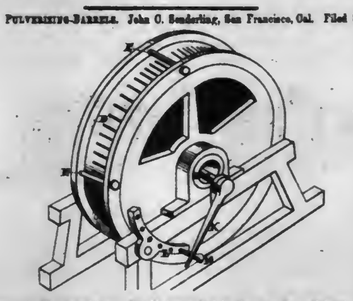
Claim.—1. In a carriage-step, the metal pad described, beveled or rounded along its upper edge, recessed inwardly from the lower edge, and with or without the grooves or indentations *c*, for the purpose set forth.

2. In an elastic carriage-step, the combination of a metal pad, a resilient plating of rubber and fibrous re-enforcing material arranged between said rubber and pad, to be entirely inclosed by said rubber and protected from the action of the weather, as described, all united by vulcanization under pressure, as set forth.

3. In an elastic carriage-step, the combination of a metal pad beveled or rounded along its upper edge with a rubber plating beveled or rounded at its edge, substantially coincident with the bevel or curvature of the plate, as and for the purpose described.

4. An elastic carriage-step consisting of a metal pad completely plated with rubber on its upper surface and edge, having the tread or flat upper surface of rubber not extended beyond the edge of the plate, and molded thereon by vulcanization, substantially as described.

210,471. PULVERIZING-BARRELS. John C. Sanderling, San Francisco, Cal. Filed Sept. 2, 1878.



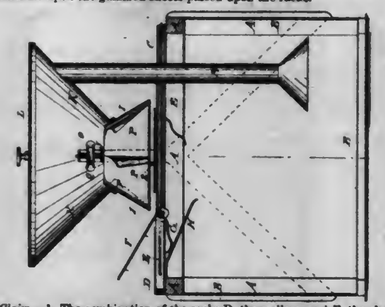
Claim.—1. The crushing-roller F, journaled in the arm G, and having frictional contact with the barrel, said arm being supported by the independent shaft I, and adjusted by the arm K, with its bolding-rack, substantially as and for the purpose herein described.

2. The roller F, journaled in the hinged arms G H, which allow the roller to rise and fall and adjust itself to irregularities, said arm or arms being keyed to the independent shaft I, passing through the hollow trunnions, and held at any point, substantially as herein described.

3. The independent shaft I, passing through the trunnions B of the rotating cylinder or barrel, and supported upon exterior bearings, so as to be adjustable independent of any movement of the barrel, said shaft supporting and governing the position of the roller, shoe, or hammer F, substantially as herein described.

210,472. STAMP-DRYING MACHINES. John F. Seymour, New York, N. Y. Filed Oct. 18, 1878.

Brief.—One or more burners are placed beneath the funnel-shaped ends of the pipe to heat the air drawn into the case by means of the fan, which also forces the air upon the gummed sheets placed upon the racks.

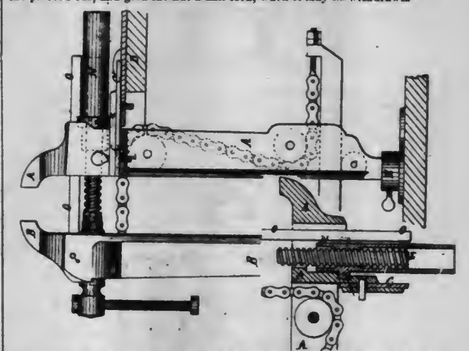


Claim.—1. The combination of the racks D, the endless cord E, the clamping-bars F, the projecting arms G, and the inclined plate H with each other, and with the grooved bars C, attached to the incased frame A B, substantially as herein shown and described.

2. The combination of the double cone-case I K, the pipe M, and the fan-wheel O P, made with curved or scroll-shaped wings, with the incased frame A B, and with the sliding racks D, substantially as herein shown and described.

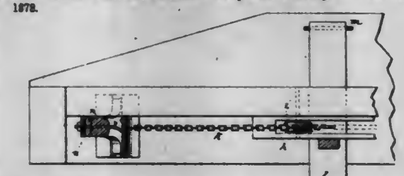
210,473. STANDING BENCH-VISES. James K. B. Solomon, Riegelsville, N. J. Filed Oct. 14, 1878.

Brief.—To remove the nut and screw protector, disengage the screw, lift the pivoted bar, and give the nut a half-turn, when it may be withdrawn.



Claim.—The bar O, pivoted in jaw B, and passing through jaw A, in combination with an independent screw-socket, N, having notched collar *n'*, as and for the purpose described.

210,474. LEATHER-FINISHING MACHINES. Henry Stahl, Bloomburg, Pa. Filed June 18, 1878.



Claim.—1. The treadle-lever *l*, chain *k*, and toggles *a a'*, in combination with the bed of a leather-finishing machine, substantially as and for the purposes set forth.

2. In a leather-finishing machine, the combination of toggle-levers *a a'*, chain *k*, cam-pulley *i*, and treadle-lever *l*, all substantially as shown and described, for the purpose specified.

210,475. CAR-AXLE BEARINGS. Asa E. Stratton, Jr., Braselia, Tex. Filed July 16, 1878.



Claim.—A box or brass provided with a bearing-surface, *a*, having the cavities *f* and grooves *d*, arranged as and for the purpose specified.

210,476. METHODS OF CONNECTING SPOUTS TO BOILERS. John Traguer, New York, N. Y. Filed Nov. 4, 1878.

Claim.—The improved method of attaching sputs to boilers, consisting in forming a recess around the body of the sput, into which recess the metal of the boiler is worked and the joint brazed, substantially as shown and described.

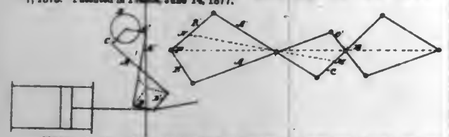
210,476.



210,477. MEDICAL COMPOUNDS. James W. B. Turk, Bushco, Tenn. Filed Apr. 20, 1878.

Claim.—A medical compound formed from the roots of the red physic, the white John, and the dogwood, in the proportions and manner substantially as herein set forth and described.

210,478. DEVICES FOR TRANSMITTING MOTION. Eugene Vicaire, Paris, France. Filed June 7, 1878. Patented in France, June 14, 1877.



Claim.—1. As a new mechanical movement, a compound beam or lever composed of six bars, two of which, A A′, are pivoted between their ends upon a common fixed fulcrum, and the other four, B B′ C C′, of which are pivoted to the outer ends of A A′, and have their own outer ends jointed together, substantially as shown and described.

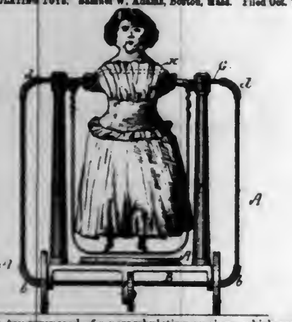
2. The combination, with the reciprocating parts of an engine having reaction due to the inertia of the moving parts, of the bars A A′ B B′ C C′, the said bars A A′ being pivoted upon a common fixed fulcrum, and one of the end joints being provided with a counter-weight, D, having a reverse movement from the part of the machine attached to the other end, as described.

210,479. BED-SPRINGS. La Fayette Wildermuth, New Lexington, Ohio. Filed Oct. 25, 1878.



Claim.—The spring bottom herein described, consisting of the series of double slats and springs, said springs being properly connected at the top, while at the bottom each spring is connected to the slats by an open loop, said loops being continuous on their under sides, and forming the connecting rod D, as and for the purpose set forth.

210,480. PERAMBULATING TOYS. Samuel W. Adams, Boston, Mass. Filed Oct. 7, 1878.



Claim.—1. A toy composed of a perambulating carriage, which constitutes the support of the doll or counterfeit child, a doll or representative child suspended from or upon such carriage, and a suitable connection between the axle of the carriage and the suspensory of the child, whereby the rotations of the axle are transmitted to such suspensory to effect rising and falling or jumping motions of said child, substantially as and for purposes stated.

2. A toy composed of a perambulating carriage, which constitutes the support of the counterfeit child, a doll or child suspended from or upon such carriage, a suitable connection between the axle of the carriage and suspensory of the child, whereby the rotations of the axle are transmitted to such suspensory to effect rising and falling or jumping motions of said child and swinging movements of the rope, substantially as and for purposes stated.

3. The combination, with the perambulator A and child K, of the continuous shaft composed of the axle B, shaft G, and flexible connections *b b* and *d d*, substantially as and for purposes stated.

4. The combination of the perambulator, eccentric, shaft, child, and rope with suitable means of transmitting the motions of the axle to the shaft, substantially as and for purposes stated.

5. A toy composed of a perambulator, a child suspended from and swinging upon it, and a rope describing circular sweeps about the child, substantially as and for purposes stated.

210,481. SIEVES. Lycurgus E. Ambrose, Mason City, Ill. Filed Aug. 23, 1878.

Brief.—The hoop may be secured to a wooden body.

Claim.—In a sieve, the hoop or band C, swaged to form the round bead *b*, and having the wire bottom B resting thereon, in combination with the rim or body A, formed with the flange *a*, and the two parts being united and held together by the swaged groove *d* in both, substantially as herein set forth.

210,481.



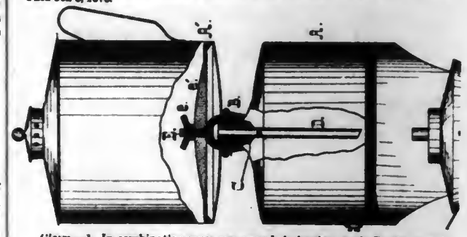
210,482. HOOP-FASTENERS. Alban Andrin, Beverly, Mass. Filed Apr. 15, 1878.

Brief.—The T-nail may be forged, punched, dropped, or bent solid, or made of doubled-up wires.



Claim.—The hoop-fastening consisting of the staple *d*, having the short prongs *d*″, adapted to embrace the outer and slightly penetrate the inner end of the hoop, and centrally-elongated clinch-nail *d*′, adapted to pass through both ends of the hoop and be clinched on the inner side thereof, substantially as described.

210,483. COFFEE-POTS. Jose Antonio Antunes, Rio de Janeiro, Brazil, assignor to John W. Cockman; said Cockman assignor of one-half his right to John W. Selby, Baltimore, Md. Filed Oct. 8, 1878.



Claim.—1. In combination with the vessel A, having neck B, the vessel A′, having plug C, tube D, laterally perforated, and strainer *c*′, as set forth.

2. In combination with the vessel A′, having packed stopper B, the rod E, strainer *c*′, nut *c*, and boiler A, substantially as described.

210,484. DENTAL SPITTOONS. George W. Archer, Rochester, N. Y. Filed May 11, 1878.

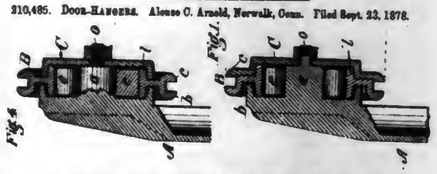
Brief.—The bottom of the receiving-vessel extends below the outlets for the saliva for the purpose of retaining the gold fillings falling therein.



Claim.—1. In a dental spittoon, the spittoon A, constructed with a closed bottom, *d*, to receive and retain the gold fillings, and perforations *f f* above the bottom, to allow discharge of the liquid contents.

2. In combination with the swinging frame C, provided with the pivoted ring *g*, the two vessels A B, provided at their upper end with coincident curved flanges *a b*, the flange of the lower or outer vessel resting directly upon said ring, and the flange of the upper or inner vessel resting on that of the lower one, the whole arranged so that the said vessels are self-centering, and can be detached by simply lifting off, as shown and described.

210,485. DOOR-HANGERS. Alonzo C. Arnold, Norwalk, Conn. Filed Sept. 23, 1878.



Claim.—1. A sheave, B, composed of two parts, *b* and *c*, of equal diameters, with an offset on one of said parts to form the tread of the sheave, the said parts being constructed to fit side by side, so that one shall form a flange on one side of the tread and the other on the other side, substantially as shown and described.

2. The combination, in a door-hanger, of the body A, provided with the rigid stud or journal *a*, the anti-friction rolls *c*, arranged to bear directly on the stud *a*, the sheave B, with a central opening to inclose and bear on said rolls, and the plate C, whether said plate terminates below the flange of the sheave, as in Fig. 4, or extends out so as to form one of the flanges, as in Fig. 1, the same being secured to the stud *a*, and fitting over the end of the rolls and the hub *l* of the sheave, all substantially as herein set forth.

210,486. CLOTH-FOLDING MACHINES. Lucien J. Boilot, Benoit's Mills, Mo. Filed July 11, 1878.

Claim.—1. The combination of measuring-rollers F and G, spring board or plate L, and roller N, having retractible pins or catches *t*, hinged to the rod T at their inner ends, said pins being projected outward and held in an erect position or retracted and placed in an inclined position within the roller N by the outward or inward movement, respectively, of said rod, substantially as and for the purpose set forth.

2. The combination, with the rollers F and G, of the trough C, having movable ends *e*, attached by screw-threaded ears *d*, extending through longitudinal slots in the bottom of the trough to a right-and-left-handed screw-rod, D, each end *s* being moved simultaneously back or forth on the turning of winch d^3, as set forth.

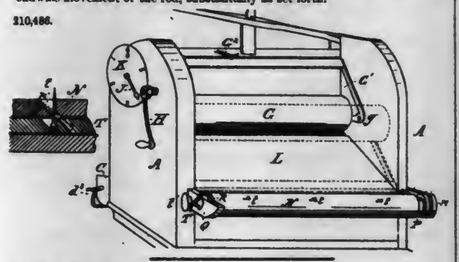
3. The combination, with the measuring-rollers F and G, of the clamping-bars U and V and sliding cutter or knife W, for the purpose set forth.

4. The roller N, supported at one end within an ear, O, upon the bearing P, and at the other end upon an open-topped bearing, Q, and provided in its interior with an axial rod, T, sliding within said roller and carrying pins *t*, hinged to said rod, and adapted to be retracted within or projected out through the same longitudinally, substantially as set forth.

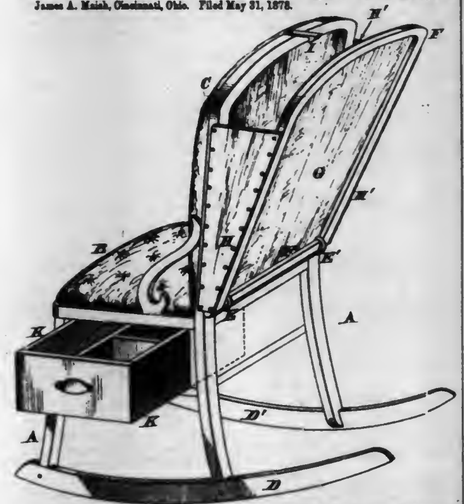
5. The combination of measuring-rollers F and G, indicator J K, spring board or plate L, and roller N with retractible pins or catches *t*, substantially as and for the purpose set forth.

6. The rod T, arranged to slide horizontally within the roller N, and having suitable slots, within which are hinged the pins or catches *t*, which are projected above or retracted within said roller in a longitudinal direction on the endwise movement of the rod, substantially as set forth.

210,486.

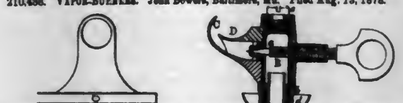


210,487. SEWING-CHAIRS. George C. Bovey, Columbus, assignor of one-half his right to James A. Maish, Cincinnati, Ohio. Filed May 31, 1878.



Claim.—As a new article of manufacture, a sewing-chair consisting, essentially, of the chair A B C, mounted on rockers D D′, and having applied to its back C the pocket E E′ F G H H′, a work-box, K, being located beneath seat B in such a manner as to be readily drawn out either to the right or left of said rocking-chair, as herein described, and for the purposes set forth.

210,488. VAPOR-BURNERS. John Bowers, Baltimore, Md. Filed Aug. 13, 1878.

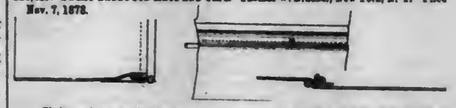


Claim.—1. In combination with the chamber B, the shield D, resting upon a cylindrical portion of the said chamber, and adapted for circumferential adjustment, substantially as herein specified.

2. The deflector C, placed loosely upon a cylindrical portion of the chamber B, to admit of its adjustment circumferentially of the said chamber, as described, in combination with the locking-nut *b*, substantially as herein specified.

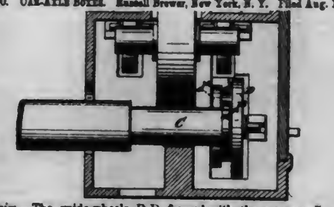
3. A vapor-burner consisting of the following essential elements in combination, viz: a fixed chamber having a suitable valve for controlling the exit of vapor therefrom, a circumferentially and independently adjustable deflector and shield situated on the said chamber, and locking devices for the said deflector and shield, substantially as and for the purpose herein set forth.

210,489. SWEAT-BANDS FOR HATS AND CAPS. Thomas W. Bracher, New York, N. Y. Filed Nov. 7, 1878.



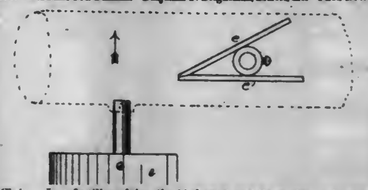
Claim.—A sweat for hats and caps composed of a band of leather, or other equivalent soft material, and a lining of oil-silk, or other suitable material, said lining being secured to the band by a row of stitches, and provided with a flap adapted to be folded over the row of stitches and protect the body of the hat or cap against the perspiration which may follow the threads composing the stitches, substantially as set forth.

210,490. CAR-AXLE BOXES. Russell Brewer, New York, N. Y. Filed Aug. 10, 1878.



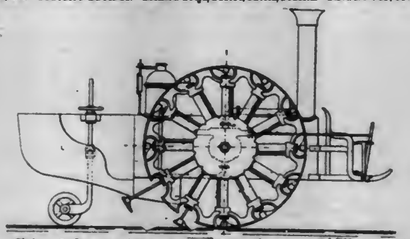
Claim.—The guide-wheels D D, formed with the grooves d^1 and flanges d^2 d^3, of unequal diameter, in combination with the journal C, having the disk or flange *a* on its end, substantially as and for the purpose set forth.

210,491. PADDLES FOR DRIERS. Benjamin F. Brightman, Bristol, Me. Filed Nov. 18, 1878.



Claim.—In a fertilizer-drier, the V-shaped paddle or shoe *c c*′, arranged as above described, so that when the carrying-shaft is turned in its usual direction the side *c* of the paddle carries the matter toward the discharge-pipe, and when the shaft is reversed the side *c*′ agitates the matter without moving it forward, substantially as and for the purpose herein set forth.

210,492. TRACTION-ENGINES. Richard Brejo, Zobrze, Silesia, Prussia. Filed Nov. 19, 1878.

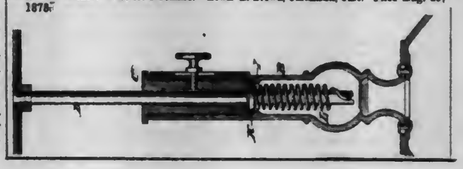


Claim.—1. In a traction or road engine, a pair of revolving wheels turning independently of each other on a fixed axle, and provided with a series of sliding feet or shoes projected radially outward from the periphery of the wheels, so as to exert a traction force upon the ground and a radial pressure upon the wheel axle, substantially as herein shown and described.

2. In a traction or road engine, a revolving driving-wheel having a hub provided with steam-passages, hollow spokes, sliding pistons, piston-rods carrying shoes or feet, and steam-tubes, in combination with a stationary steam box or chest having means for regulating the admission of steam to the driving-wheel, substantially as herein set forth.

3. The steam-chest provided with an apertured face-plate and divided into steam inlet and exhaust compartments, and having slides or valves, and suitable devices for operating the latter, in combination with the fixed axle and the revolving traction-wheel, having steam-channels corresponding with the apertures in the steam-chest, and radially-sliding traction feet or shoes, substantially as and for the purpose set forth.

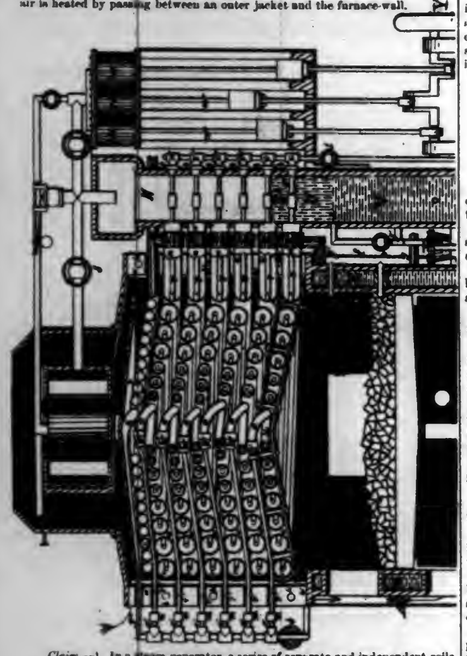
210,493. SPRING WEIGHING-SCALES. Lewis E. Brown, Cincinnati, Ohio. Filed Aug. 29, 1878.



Claim.—The combination, in a spring-balance scale, of the standard B, the platen D, supporting the platform, the spring L, secured to said platen and to an annular disk, K, confined between the projection I and guide C, substantially as and for the purpose specified.

210,494. STEAM-GENERATING APPARATUS. William F. Brown, New York, N. Y., assignor to Hydrocarbon Steam Generating Company, same place. Filed Oct. 3, 1878.

Brief.—The coils are arranged horizontally and independently in sections, and also each coil may be removed without interfering with the working of the adjoining coils. The lower series may be "floored" when found desirable. Wet and dry steam may be used singly or together in supplying the engine. The air is heated by passing between an outer jacket and the furnace-wall.



Claim.—1. In a steam-generator, a series of separate and independent coils located on horizontal planes, or nearly so, one above another, each of said coils receiving water at or near its center, and discharging said water or steam, or both, from the other end of said pipe, from which said coil is made, as set forth.

2. The combination, in a coil steam-generator, of the upper coil or coils, arranged and connected so that the water is first introduced in the uppermost coils, thence to the stand-pipes, and in turn to the steam-generating coils at or near their center, substantially as described.

3. In a horizontal-coil steam-generator, the process, as herein described, of first introducing water through the uppermost coil, thence to the stand-pipe, whereby water is supplied to each coil separately or simultaneously, and then discharging the steam generated therein into the steam-reservoir from the end of said coils, substantially as described and set forth.

4. In a horizontal-coil steam-generator, the surrounding water-jacket, in combination with a surrounding or annular air-jacket, whereby the air is heated and radiation of heat prevented, said air-jacket being provided with apertures for the introduction of pipes, and also air-inlets for supplying air to the furnace, constructed and arranged to operate substantially as shown and described.

5. In a horizontal-coil steam-generator, the coils of which are arranged to allow the heat to pass freely through the interstices between the coils, in combination with a perforated deflector, whereby the heat is evenly diffused, and sufficiently retarded to allow the said coils to absorb the heat, as set forth and described.

6. The combination, in a steam-generator, of the steam-dome, suspended within the uptake, and the steam-reservoir, whereby by suitable connections dry steam from the reservoir and superheated steam from the dome may be commingled and supplied to the engine, or either of them, as set forth and described.

7. In a coil steam-generator the coils of which are arranged on horizontal planes, or nearly so, the pipes increasing in diameter from the center, and resting in recesses in the standard S', and held in position within the combustion-chamber by straps on the same plane as the coils, whereby said coils are free to expand or contract without hinderance, as set forth and described.

8. In combination with a coil steam-generator, the trap *d*, pipe *f*, one or more branch pipes, *f'*, and their connections, whereby one or more of the series of steam-generating coils may be flooded, as herein set forth and described.

9. A coil steam generator made up of and arranged in horizontal sections, in combination with a surrounding jacket constructed of vertical sections, whereby the generating-section may be removed and replaced without interrupting the action of the remaining sections while in use, substantially as described.

10. The combination, in a coil steam-generator, of the removable coil-sections, their independent connections *a* and *a'*, the sectional jacket B, and the stand-pipes Y' and H, as shown and described.

11. The combination, in a coil steam-generator made up of removable sections horizontally located, and the vertical sectional jacket provided with doors for the inspection and cleaning of said coil-sections, the section of the jacket being provided with indentations to receive the coils and the flanges for uniting the sections of the jacket together, in the manner and for the purpose set forth and described.

210,495. WINDOW-SCREENS. Edward T. Burrows, Portland, Me. Filed Oct. 28, 1878.

Brief.—At one side of the sliding screen-frame, in a groove inclosing a rib on the window-frame, are located springs, which are held and operated by sliding bars. These bars enter a vertical slot, in which is a sliding plate having oblique slots engaging pins on the sliding bars. This plate also acts, by means of an oblique slot and pin, on a bolt, which engages notches in the rib. The sliding plate is actuated by means of an arm projecting through a vertical slot in the screen-frame.



Claim.—1. The combination, with a sliding obliquely-slotted bar or slide, of one or more springs, each having a centrally-attached bar or pin connected to said slide, substantially as and for the purpose specified.

2. In combination with the adjustable screen or sash frame A, the presser-springs B B, pins *d d*, having right-angled projections *e e*, and obliquely-slotted slide D, substantially as and for the purpose specified.

3. In combination with the adjustable screen or sash frame A, the lock-bolt C, having right-angled arm or projection *d'*, slide D, having oblique slot *c*, and operating-springs B B, substantially as and for the purpose specified.

210,496. MALT EXTRACTS. John Carnrick, Cornhill, N. J. Filed Dec. 27, 1877.

Brief.—In manufacturing this extract the water used for making the infusion is not heated above 120° Fahrenheit, and the heat for concentrating is not raised above this temperature, whereby the albuminous substances are not coagulated.

Claim.—The herein-described compound extract of malt, composed of the concentrated liquid extracts of barley, wheat, and oats, containing their natural proportions of uncoagulated albumen and diastase, substantially as herein set forth.

210,497. MANUFACTURE OF PAPER FOR BANK-NOTES, BONDS, CHECKS, &c. George W. Casilear, Washington, D. C. Filed Oct. 22, 1878.

Brief.—The pulp, dyed in different colors, is distributed from separate boxes upon the felt and formed into continuous sheets.

Claim.—1. The process of making paper of two or more distinctive colors, by using different coloring-matter in separate compartments of paper-pulp, which is afterward united in one continuous sheet, substantially as described.

2. The process of making paper of two or more distinctive colors, by combining with the pulp, in separate compartments, the different-colored fiber, such as silk, jute, or other material, which is afterward united in one continuous sheet.

3. The process of making a sensitive or safety paper, by using fugitive or permanent colors, or these in combination, to be incorporated in the body of the paper while in the vats, to be afterward formed into sheets, substantially as and for the purpose described.

210,498. MILLSTONE-DRIVERS. Patrick H. Childress, Waynesborough, Va. Filed Sept. 25, 1878.



Claim.—The combination, with the jointed driver-sections A, having forks a swiveling about a loose ring, of the flat frame-plates C D and the bolts or pillars *b*, having shoulders *c* and nuts *d*, arranged to both clamp and hold apart the frame-plates about the inner ends of the driver-sections, and also serve as pivotal bearings for said sections, substantially as shown and described.

210,499. GRATE-BARS. George H. Clarke, Brooklyn, and Charles Van Wagenen, New York, N. Y.; said Van Wagenen assignor to said Clarke. Filed Oct. 23, 1878.



Claim.—The furnace grate-bar hereinbefore described, consisting of a series of transversely-arched bars, *a a*, connected together by the bars *b b* to form a section, and strengthened longitudinally by continuing one or more of the bars *a a* downward, substantially as set forth.

210,500. BARBERS' CHAIRS. Joseph Clough, Providence, R. I. Filed Mar. 6, 1878.

Claim.—1. The head-rest provided with a curved stem, which is notched on its inner side, in combination with the chair-back provided with a curved head-rest bar, and with a socket curved to correspond with said stem, and having on the concave side of said curved bar and socket a spring-catch to engage with notches of the stem, substantially as and for the purposes specified.

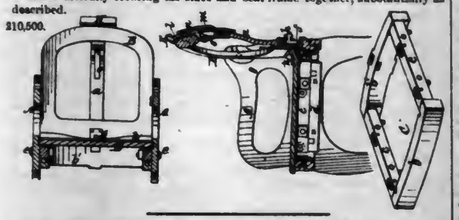
2. The combination, in a chair, of a sliding seat and a back pivoted directly to and supported by the sides of the chair, and loosely jointed at its lower end with the rear end of the seat, substantially as described.

3. The combination, with a pivoted back having a locking-bolt, of a sliding seat loosely jointed to the back, and provided with a projecting stud, which enters a recess in the frame of the chair when the pivoted back is locked, substantially as described.

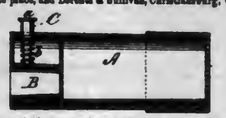
4. The combination, with the sliding seat, and the back supported by the sides of the chair, mounted on a fixed pivot, and loosely connected with the seat, so that it and the back move together, of the protecting-shield *h*, which guards or covers the variably-opened joint between seat and back, substantially as described.

5. The combination, with the sides of the chair, of a longitudinal bearing on the inner side of each, a seat-frame provided with bearings for the seat, and bolts for laterally securing the sides and seat-frame together, substantially as described.

210,500.

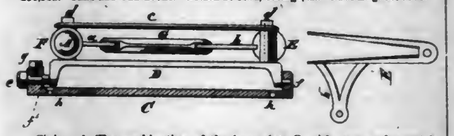


210,501. CIGAR-PERFORATOR AND MATCH-BOX. William B. Conway, Blacksburg, assignor to Charles H. Miller, same place, and Lorentz & Sullivan, Christiansburg, Va., one-half to each. Filed Oct. 26, 1878.



Claim.—The box and cigar-punch jointly, consisting of the box A, having recess B, to receive the end of a cigar, and a spring punch or cutter, C, working in said recess, constructed and arranged to operate substantially as specified.

210,502. OARS AND OAR-LOCKS. Nathan B. Cook, Chicago, Ill. Filed Aug. 30, 1878.



Claim.—1. The combination of the base-plate C, with ears or lugs at its ends, the rocking plate D, provided with vertical pins *d d*, the handle A, oar B, coupling-irons E F, brackets *a b*, and connecting-link G, all substantially as and for the purposes herein set forth.

2. In combination with the bed-plate C and rocking plate D, having pivots *f f'*, the sliding bolt or pivot-pin *e* and set-screw *g*, substantially as and for the purposes herein set forth.

210,503. MEAT-TENDERER. Thomas J. Coulter, Elizabeth City, N. J., assignor to himself and Augustus W. Merwin, Wilton, Conn. Filed Sept. 25, 1878.

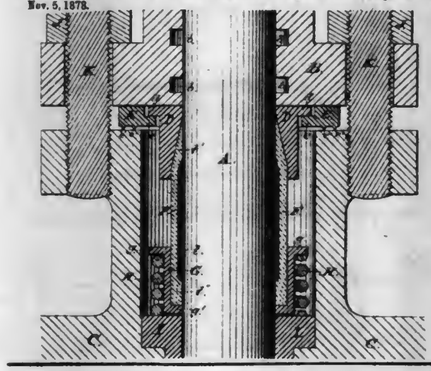


Claim.—1. In a meat-tenderer, the combination of the block A, needles B, shank C, slotted tube E, lug *e*, slotted lever H, and pin I, substantially as described.

2. In a meat-tenderer, the combination of a piercer consisting of the block A, needles B, and shank C with the tube E and ring F, connected together by means of the cone *f*, substantially as described, and for the purpose set forth.

3. In a meat-tenderer, the combination of a piercer consisting of the block A, needles B, and shank C with a tube, E, and ring F, connected by a perforated cone, substantially as and for the purpose set forth.

210,504. PISTON-ROD AND VALVE-STEM PACKINGS. George M. Davis, Chicago, Ill. Filed Nov. 5, 1878.



Claim.—1. A piston or other rod packing in which the wear is taken up by the contraction of a metallic ring surrounding the packing, in the manner substantially as specified.

2. In a stuffing-box, an annular metallic packing, in combination with a contracting ring surrounding its reduced end, whereby the wear of the packing is taken up, substantially as specified.

3. In a stuffing-box, an annular metallic packing-ring, in combination with an expanding and contracting ring, whereby the rod is relieved of pressure from the packing-ring in the presence of steam, and the wear of the ring taken up in its absence, as shown and described.

4. In a stuffing-box, an annular metallic packing-ring provided with a conical end, and a rabbet between its shouldered ends, whereby a water-space is formed between the rod and the packing, as shown and described.

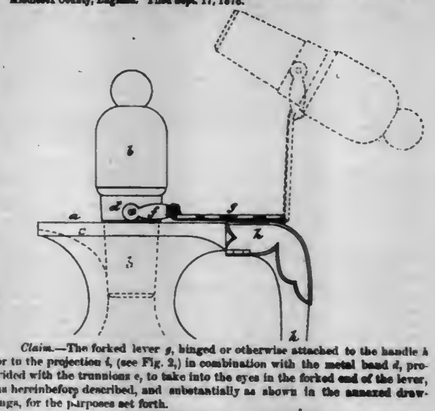
5. In a stuffing-box, an annular metallic packing-ring made in two or more parts, in combination with a follower at one end, by which the parts are held in place, and the contracting ring at its opposite end, which takes up the wear, substantially as described.

6. In a stuffing-box, an annular metallic packing provided at one end with a follower and spring, in combination with a contracting ring which surrounds its effective packing-surface, substantially as specified.

7. As an article of manufacture, an annular metallic packing, F, (made of one or more pieces,) provided with a conical end and a rabbet between its shouldered ends, substantially as described.

8. In combination with a stuffing-box and gland, the rabbeted supporting-ring E and the ring D, for the purpose specified.

210,505. BOTTLE-STOPPER FASTENERS. Henry W. Doe, Sherwood Street, Golden Square, Middlesex County, England. Filed Sept. 17, 1878.



Claim.—The forked lever *g*, hinged or otherwise attached to the handle A or to the projection *i*, (see Fig. 2,) in combination with the metal band *d*, provided with the trunnions *e*, to take into the eyes in the forked end of the lever, as hereinbefore described, and substantially as shown in the annexed drawings, for the purposes set forth.

210,506. LOCKS FOR FIRE-ARMS. William W. Dodge, Washington, D. C. Filed Oct. 30, 1878.



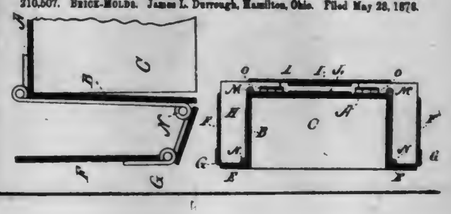
Claim.—1. The combination of a hammer and a trigger, each provided with an arm having a hooked end, so constructed and arranged that the hooks may engage with each other and sustain the hammer in an elevated, or partially elevated, position.

2. The combination of the hammer A, having a hooked and pointed arm, *a*, and the trigger B, having a hooked and notched arm, *b*, whereby the trigger is adapted to sustain the hammer in its different positions.

3. The combination of the hammer A and trigger B, each provided with a rigid hooked arm and a pawl, C, located between the hammer and trigger, and pivoted to one or the other, substantially as shown, whereby the hammer is adapted to be operated by the trigger or to be sustained in an elevated, or a partially elevated, position by the engagement of the hooks, as described.

4. The combination of the hammer A, provided with the hooked arm *a*, the trigger B, provided with the hooked and notched arm *b*, and a pawl, C, located between the hammer and trigger and pivoted to one or the other, substantially as shown, whereby the hammer is rendered capable of elevation and release by means of the hammer and trigger jointly, or by the trigger alone, substantially as described.

210,507. BRICK-MOLDS. James L. Darrough, Hamilton, Ohio. Filed May 28, 1878.

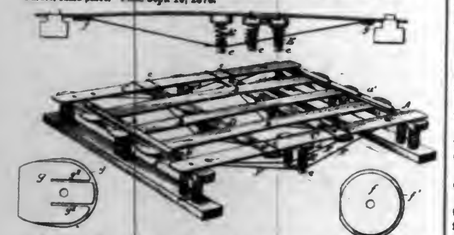


Claim.—1. A brick-machine mold whose sides B and ends C are hinged to its bottom A, substantially as specified.

2. The brick-mold consisting of the sides B and ends C, hinged to the bottom A, combined with the outer case, F H, the mold and case being connected by hinges N, G, P, and K, substantially as specified.

3. The hinged mold A B C, outer case, F H, hinges N, G, P, and K, and handles I and J, all combined substantially as specified.

210,508. SPRING BED-BOTTOMS. Charles Eade, Honesdale, Pa., assignor to himself and H. J. Tarble, same place. Filed Sept. 19, 1878.



Claim.—1. In a spring bed-bottom, the combination, with the slats B and end bars, A A', of the longitudinal and transverse slats C D, held in a curved form by spring-wires stretched along their under sides, substantially as and for the purpose set forth.

2. In a bed-bottom, the combination, with a slat and a wire for holding such slat in a curved form, of the metal plates *f g*, secured to opposite ends of such slat, the first plate being provided with a flange over which the wire is bent, and the second plate with a flange and with locking-grooves to secure the ends of the wire, substantially as described and shown.

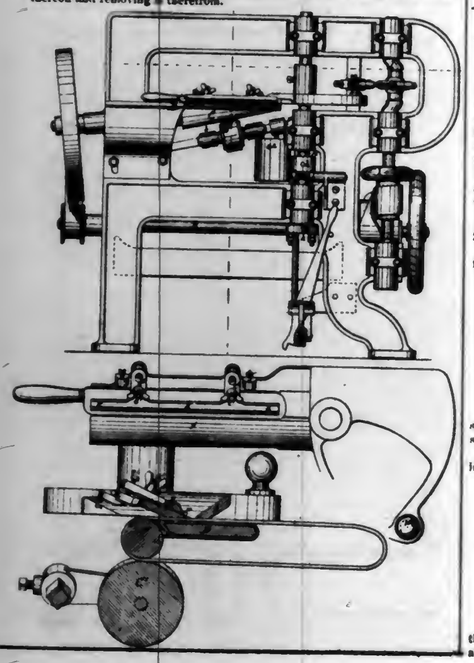
3. In a bed-bottom, the notched slats B, setting into notches in one of the cross-pieces, and removably held by a pivoted strip, *b*, substantially as described and shown.

4. In a bed-bottom, the combination of the notched cross-pieces A A', having fastened and pivoted strips *a' b*, with the slats B, notched on their sides near one end, substantially as described and shown.

5. In a bed-bottom, the combination of the cross-pieces A A', removably-secured slats B, and longitudinal and transverse spring-tensed slats C D, constructed and arranged substantially as described and shown.

210,509. HAT-SHAVING MACHINES. Rudolf Eickemeyer, Yonkers, N. Y. Filed Nov. 16, 1878.

Brief.—The supporting-bed and a serrated cone-shaped roller are arranged so as to occupy the interior of the hat-body. An adjustable friction-roller is so arranged as to impinge on the cone-shaped roller, with the hat-body to be dressed interposed between them. By this means the hat-body is caused to traverse around the supporting-bed and cone-shaped roller, thus presenting the hat-body to the action of a reciprocating knife. The knife-supporting frame is elevated and the friction-roll depressed simultaneously by the operation of a treadle, allowing easy access to the supporting-bed for placing the hat-body thereon and removing it therefrom.



Claim.—1. In a hat-shaving machine, the combination, with a reciprocating shaving-knife, of a supporting-bed, substantially as described.

2. In a hat-shaving machine, the combination, with a reciprocating shaving-knife, of a supporting-bed and mechanism for separating them, substantially as described.

3. In a hat-shaving machine, the combination, with a reciprocating shaving-knife and a supporting-bed, of mechanism for adjusting them with reference to each other, substantially as described.

4. In a hat-shaving machine, the combination, with a supporting-bed, of a shaving-knife and frame pivotally mounted on a shaft which is vertically adjustable, substantially as described.

5. The combination, with a shaving-knife, of a supporting-bed provided with an elastic covering, substantially as described.

6. The combination, with a supporting-bed and a shaving-knife, of feeding mechanism, substantially as described, for rotating a hat-body while partially flatly laid upon the bed, as set forth.

7. The combination, with the bed and knife, of a driven conical roll and a feed-wheel, substantially as described.

8. The combination, with the bed, knife, and conical roll, of a feed-wheel which is adjustable longitudinally with reference to the conical roll, substantially as described.

9. The combination, with the bed, knife, and conical roll, of a feed-wheel controlled by a weighted lever, substantially as described.

10. The combination, with the bed and conical roll, of a feed-wheel and a treadle, substantially as described, whereby the feed-wheel may be moved away from the conical roller to stop the feed, as set forth.

11. The combination, with the bed, conical roll, feed-wheel, and treadle, of a stop-lever, substantially as described, whereby the feed-wheel may be maintained out of working relations with the conical roll, as set forth.

12. The combination, in a hat-shaving machine, of the shaving-knife and a vibrating knife-frame provided with a clamping-bar and adjusting-screws, substantially as described.

13. The combination, with the shaving-knife, of a pivoted vibrating knife-frame, which is balance-weighted, and a crank-shaft connected therewith and balance-weighted, substantially as described, whereby the knife is smoothly driven, as set forth.

14. The combination, with the vibrating knife, its frame, and spindle, of a treadle for lifting them, substantially as described.

15. The combination, with the knife, its frame, spindle, and treadle, of a stop-lever for maintaining them in an elevated position, substantially as described.

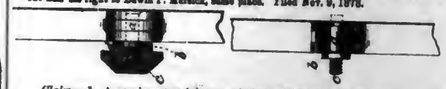
16. The combination, with the feed-wheel and knife, of a treadle common to both, substantially as described, whereby the feed-wheel is placed into operative position in advance of the placing of the knife, and the knife removed therefrom in advance of the corresponding movement of the wheel, as set forth.

17. The combination, with the vibrating knife and frame, of a crank-shaft and a link flexibly connected to the frame and shaft, substantially as described.

18. The combination, with the bed and feeding mechanism, of a drag-bar for smoothing the hat-body, substantially as described.

19. The combination, with the knife and its frame, of a knife-guard mounted on the frame, or forming a part thereof, and located in front of the edge of the knife and parallel therewith, substantially as described.

210,510. TOP-JOINTS FOR CARRIAGES. James G. English, New Haven, Conn., assignor of one-half his right to Edwin F. Mersick, same place. Filed Nov. 9, 1878.



Claim.—1. A carriage-top joint consisting of the knuckle-jointed arms, the rivet *a*, riveted at one end into the joint side, the shoulder or head *b*, bearing against the opposite side of said joint, a screw-stem, *c*, and a nut button or head, *e*, having a shouldered countersink, and a screw-socket adapted to receive and conceal said screw-stem and fixed head, and prevent the nut-button from working against the joint, substantially as described.

2. A carriage-top-joint rivet, *a*, having a fixed head, *b*, and a screw-stem, *c*, supplemented by a nut-button, *e*, having a shouldered countersink and screw-socket, as shown and described.

210,511. TACK-DRIVERS. Philo S. Felter, Canaseraga, N. Y. Filed Apr. 20, 1878.

Brief.—The tack is held in the device by a spring, and is forced into the floor by a driver, the point of which conforms to the shape of the tack-head.



Claim.—1. The combination, with an obtuse angular carpet-hook, of a slotted guide-plate, B, adapted to receive said hook, and a driver, C, having stop *d*, as set forth.

2. The guide-plate B, having base-wings *b*, a vertical slot, *c*, and a spring in said slot, substantially as specified.

210,512. SHEET-METAL CANS. Joseph S. Field, Brooklyn, N. Y. Filed Sept. 20, 1878.

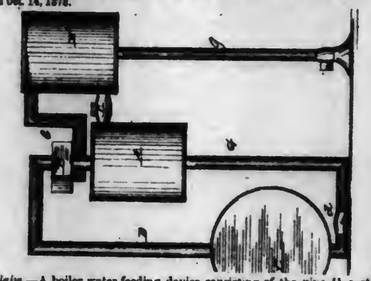


Claim.—1. In combination with a sheet-metal can having an offset, *d*, within the same, the cover *e*, resting upon that offset, and provided with the crown *g* and flange *i*, that is soldered to the rim of the can, substantially as set forth.

2. The sheet-metal can having the offset *d* within the same, in combination with the cover *e*, having a crown, *g*, and flange *i*, and a piece of metal introduced between the edge of the can and the crown of the cover, substantially as set forth.

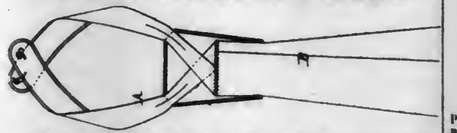
3. In combination with a pail or can of sheet metal, a cover having a crown, *g*, and a horizontal, or nearly horizontal, rim, *i*, surrounding the crown, and soldered at its edge to the top edge of the can, substantially as set forth, whereby the can may be opened by the leverage of the crown upon the flange when force is applied to the former, as set forth.

210,513. WATER-FEEDING DEVICES FOR BOILERS. Benjamin F. Fitch, La Crosse, Wis. Filed Oct. 14, 1878.



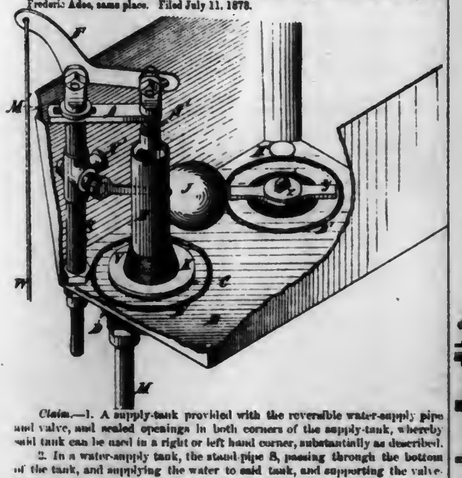
Claim.—A boiler water-feeding device consisting of the pipe H, a steam-chest, B, and its slide-valve *s*, pipe E, tank A, supplemental tank or reservoir F', pipes *c*, *e*, and G, all constructed and arranged substantially as and for the purpose set forth.

210,514. NECK-TIES. Jacob H. Fleisch, New York, N. Y. Filed Oct. 10, 1878.



Claim.—A scarf consisting of an open-back neck-band, a scarf-apron suspended from said neck-band, and a detached sliding scarf-knot situated at the junction of the neck-band and the apron, all constructed and adapted to operate substantially as described.

210,515. SERVICE-TABLE. James Foley, Brooklyn, N. Y., assignor of one-half his right to Frederic Adee, same place. Filed July 11, 1878.



Claim.—1. A supply-tank provided with the reversible water-supply pipe and valve, and sealed openings in both corners of the supply-tank, whereby said tank can be used in a right or left hand corner, substantially as described.

2. In a water-supply tank, the stand-pipe S, passing through the bottom of the tank, and supplying the water to said tank, and supporting the valve-moving lever F, operating the valve V, substantially as described.

3. A water-supply tank provided with two indentations or grooves, M', substantially as described.

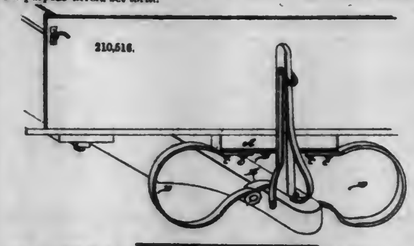
4. In a water-supply tank, an air-tube, G, connecting with the cup D, and delivering the air contained in said cup on the entrance of the water therein, substantially as described.

5. The combination, in a water-supply tank, of the tube S, serving as the water-supply and as a support for the valve-lever F, the annular valve V, closed by a spring, S', and after-wash cup D, substantially as described.

210,516. WAGON-BOLSTER SPRINGS. Hiram J. Gage, Kalamazoo, Mich. Filed Aug. 3, 1878.

Claim.—1. A wagon-bolster spring consisting of separate and independent springs, connected to the wagon-bolster by joints at their lower ends, and their upper ends having the wagon-box support fastened to them, substantially as herein set forth.

2. The combination of the springs D D, the yoke E, jointed to and forming connection between the lower ends of the springs, the plate B, forming connection between their upper ends, and the support A, substantially as and for the purpose herein set forth.



210,517. PROCESSES OF MANUFACTURING BUCKWHEAT-FLOUR. Howell H. Gilbert and Arthur G. Gilbert, Fulton, assignors of one-third their right to Ransom B. True, Syracuse, N. Y. Filed Mar. 6, 1878.

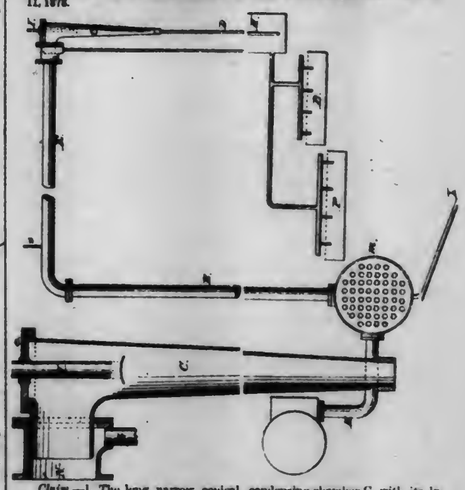
Claim.—The herein-described process of manufacturing buckwheat-flour, consisting of, first, coarsely cracking or breaking the grain, so as to detach the hulls and inner skins from the starchy parts of the kernels, then separating the fine flour from the product, then separating the hulls from the farina or starchy fragments, then separating the fine skins from the farina, then grinding the farina to flour, and bolting the product, together with the fine flour from the first separation, substantially as set forth.

210,518. BELT-FASTENERS. William W. Glover, Aurora, Ill. Filed Feb. 18, 1878.



Claim.—The belt-fastener shown and described, consisting of the bed or plate provided with the straight teeth *c*, cast or made integral therewith, and made oblong in cross-section, the longer part of their bases being in the direction or pull of the belt, and having wedged-shaped entering ends or tips, and also provided with the central transverse rib or bar, *b*, made of wedge form, all as and for the purposes set forth.

210,519. CONDENSERS FOR STEAM-ENGINES. Simeon A. Goodwin, Dayton, Ohio. Filed Jan. 11, 1878.



Claim.—1. The long, narrow, conical, condensing-chamber C, with its injection-pipe I, removable cover *c*, and pocket N, for catching the feed-water, substantially as described.

2. The combination of the condenser C, as described, with the hot-well H, stamps H, and pans P, arranged substantially as specified.

3. The combination of the condenser C and the tubular heater *u* with the drain-pipe *x*, arranged as shown, and for the purpose specified.

4. The combination of the pipe C with the pocket N, to conduct the feed-water to the feed-pump, substantially as and for the purpose specified.

210,520. GRAIN-BINDERS. James F. Gordon, Rochester, N. Y. Filed May 7, 1878.

Claim.—1. In an automatic grain-binding machine, the combination of a fixed binding mechanism, a quadrant platform and rake, and an eccentrically-curved board or guide to act against the butts of the moving grain, having one end adjustable to and from the axis of the rake, substantially as shown.

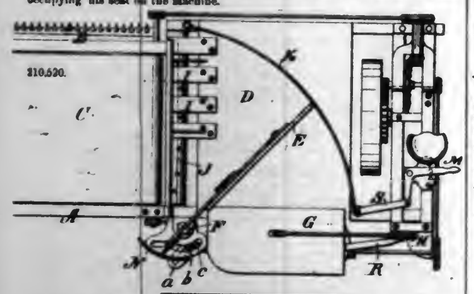
2. In an automatic grain-binder, the combination of an adjustable inclined

guide, to act against the butts of the moving grain, and a rake having, while in action, an endwise movement in addition to the ordinary movement, whereby it is caused to adapt itself to the different positions of the inclined guide.

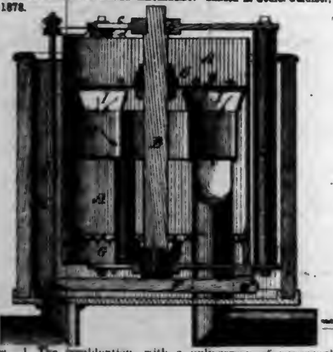
3. The combination, in an automatic harvester and binder, of a conveyer, C, and binder-arm G, and an intermediate platform, D, and sweep-rake E, as shown.

4. In combination with the sweep rake E, the pivoted guard K, the link S, and the hand-lever M, arranged in position to be operated by the driver while occupying his seat on the machine.

210,520.



210,521. PULP-SCREENS FOR PAPER MACHINERY. Simeon L. Gould, Gardiner, Me. Filed Nov. 4, 1878.



Claim.—1. The combination, with a pulp-screen of paper-making machinery, of means for directing a jet or jets of water upon the under side of such screen.

2. A pulp screen for paper making machinery, composed of a cylinder or vessel having a perforated or reticulated partition through which the pulp passes and is screened, the vessel being contained in a suitable cistern and being rotated by proper means.

3. In combination with the rotary vessel and its screen, a device for effecting jogging motions of such vessels and screen.

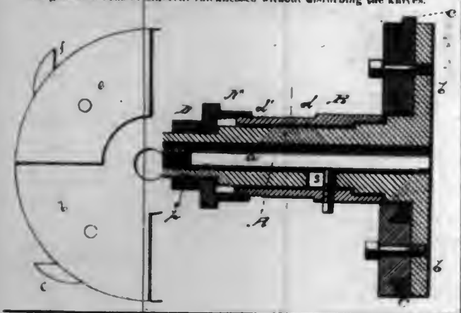
4. The combination, with the rotary vessel and its screen, and the device for imparting jogging thereto, of means for varying the distance between such vessel and the jogging mechanism, whereby the extent of such jogging motions is increased or diminished or dispensed with, as the case may be.

5. The combination, with the rotary vessel and its screen, of the water-jet pipes, supplied with water from a suitable head.

6. The rotary vessel provided with the foraminous screen and mounted upon a beam, with provision for raising and lowering the latter.

210,522. CUTTER-HEADS. Jacob H. Osiley and Henry F. Osiley, East Saginaw, Mich. Filed Nov. 9, 1878.

Brief.—By means of a cutter-head having a stationary section carrying a pair of knives, and a second section sliding thereon and provided with a pair of knives, and an adjusting nut rotating on the fixed section and engaging a threaded portion of the movable section, the head can be adjusted to tongue and groove boards of different thicknesses without disturbing the knives.

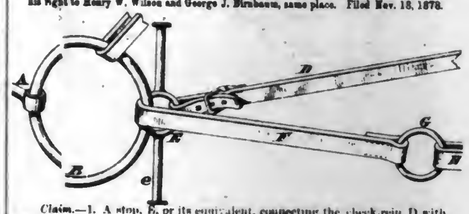


210,523. MEANS FOR ATTACHING THE FORE-END STOCK TO GUN-BARRELS. George Hackett, Birmingham, England. Filed Oct. 30, 1878. Patented in England, Mar. 9, 1878.



Claim.—As a fore-end fastening for drop-down guns, the combination, with the fore end and projection or loop on the under side of the gun-barrel, of a spring and locking-pin, or its equivalent, pressed forward by the said spring to engage in a recess to secure the barrel to the fore end, the said recess being provided with an incline to act against the end of the locking-pin and cause its retraction against the pressure of the spring, to release the barrel from the fore end, by force applied to prize apart the barrel and fore end, substantially as set forth.

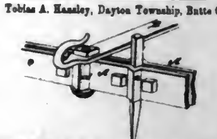
210,524. CHECK-REIN ATTACHMENTS. Oscar Hanks, Cincinnati, Ohio, assignor of two-thirds his right to Henry W. Wilson and George J. Birnbaum, same place. Filed Nov. 18, 1878.



Claim.—1. A stop, E, or its equivalent, connecting the check-rein D with driving-line H, and serving to arrest the bit-ring B when said line H is pulled, substantially as herein described, and for the purpose set forth.

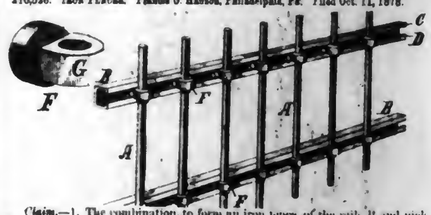
2. The stop E, strap F, and ring G, adapted for use in connection with bit-ring B, check-rein D, and driving-line H, substantially as herein described, and for the purpose set forth.

210,525. HARROWS. Tobias A. Hanley, Dayton Township, Butte County, Cal. Filed Oct. 19, 1878.



Claim.—In a harrow, the half-plates A, provided with half recesses a' to receive the brace-bolts, in combination with the rigid braces B B and the diagonal brace B', and bolts and nuts for securing the parts rigidly together, as shown and described.

210,526. IRON FENCES. Francis O. Hanson, Philadelphia, Pa. Filed Oct. 11, 1878.



Claim.—1. The combination, to form an iron fence, of the rails B and pickets A, by means of the rotary connector F, whereby the rails and pickets can be caused to assume varied inclinations relatively to each other.

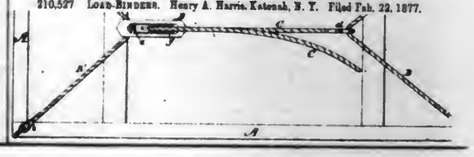
2. In an iron fence, the rotary connector F, adapted to hold the picket, to be rotatably secured to or within the rail, and to be bound to both rail and picket by means of a key or its equivalent.

3. In an iron fence, the hollow slotted rail B, provided with flanges C D, or their equivalent, in order to retain the rotary connectors, in combination with said rotary connectors, substantially as shown and described.

4. In an iron fence, the connector F, provided with a slot for the picket or post, and with an extension adapted to be contained and revolve within the rail.

5. The combination, substantially as shown and described, of the rails B, pickets A, rotary connectors F, and keys K, the whole forming a composite iron fence.

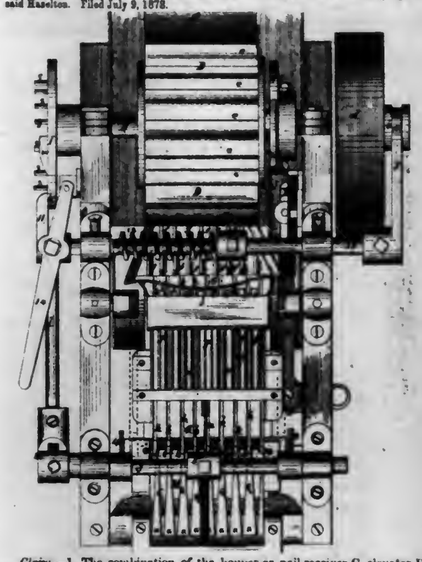
210,527 LOAD-BINDERS. Henry A. Harris, Katonah, N. Y. Filed Feb. 22, 1877.



Claim.—1. The improved hay-binding apparatus, consisting of the slack ropes, catch pulley-block, and top connecting-rope, C, as shown and described.

2. The combination of the slack ropes, having snap-hooks attached, the rope C', and the pulley-block, having a pivoted dog, with the hay rack having rings at its corners, as shown and described, for the purpose specified.

210,528. MACHINES FOR FEEDING NAILS TO BOOT AND SHOE HEELING DEVICES. Samuel Harris, Jr., Boston, Mass., and Samuel Shephard, Nashua, N. H., assignors of one-third their right to H. L. Haselton, Boston, Mass., and said Harris assignor of his remaining right to said Haselton. Filed July 9, 1878.



Claim.—1. The combination of the hopper or nail-receiver C, elevator D, and platform G substantially as and for the purpose herein specified.

2. The guideways *f f* on the platform G, constructed, arranged, and operating substantially as and for the purpose herein specified.

3. The inclined platform G, provided with nail-conveying slots *h h*, and arranged to have its upper end free to be raised, as set forth, in combination with a vibrating hammer or lifter, K, to repeatedly raise the free end of the platform, for the purpose of gradually moving the nails forward in the said slots, substantially as herein specified.

4. The tubes or openings *i i* in the platform G, between the slots *h h* thereof, in combination with the reciprocating stops *j j*, substantially as and for the purpose herein specified.

5. The chute-plate H, in combination with the tubes or openings *i i* and hopper C, substantially as and for the purpose herein specified.

6. The reciprocating slide-plate M, provided with notches *e e*, and arranged and operating substantially as and for the purpose herein specified.

7. The lifter N, operating substantially as and for the purpose herein specified.

8. The spring fingers Q Q, in combination with the slide-plate M, substantially as and for the purpose herein specified.

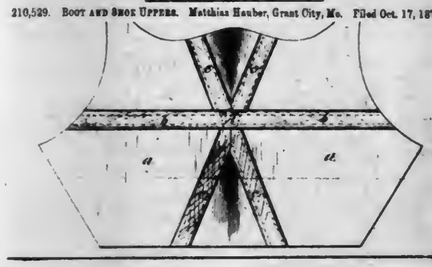
9. The presser-stop Y, constructed and operating in combination with the slotted platform G, substantially as and for the purpose herein specified.

10. The hinged transferring-carrier R, constructed and operating substantially as and for the purpose herein specified.

11. A device for automatically stopping the machine at the close of each complete functional movement, consisting of the loose pulley Z, clutch 6, spring sliding rod 10, with its projecting arms, and the notched cam-plate I, substantially as and for the purpose herein specified.

12. A machine for automatically inserting nails into skimmers or nail-holders, organized with a device for lifting the nails from a hopper or receiver and placing them in arranging guides or ways, a conveyer for arranging and conveying the nails in lines or rows, a device for taking them singly from the rows and depositing them each in a determinate position, and a carrier for transferring them in determined and relatively-arranged positions to the holes of the skimmer, substantially as herein specified.

210,529. BOOT AND SHOE UPPERS. Matthias Hauber, Grant City, Mo. Filed Oct. 17, 1878.



Claim.—1. A shoe-back of one piece of leather, crimped to conform to the heel and ankle portion of the foot, and held in such position by braces of fabric secured thereto.

2. A shoe-back of one piece of leather, crimped to conform to the heel and ankle portion of the foot, and held in such position by the union-brace secured thereto, substantially as shown and described.

3. A shoe provided with a shoe-back, *a a*, of one piece of leather, crimped as described, and having quarter-braces *b b* and diagonal braces *c c c c* stitched to the inside thereof, and meeting at the greatest point of crimp depression, substantially as shown and described.

210,530. NUT-LOCKS. Robert R. Hazen, Sr., Calmus, Iowa. Filed June 22, 1878.

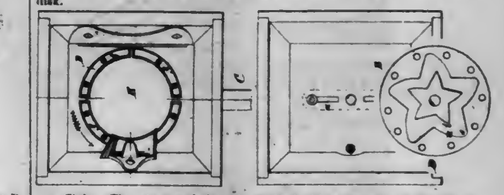
Brief.—An ordinary fish plate is provided with a button pivoted thereto at one end, and has a transverse slit cut in its other end to form a loop. Over this plate is placed a locking-bar having a series of holes cut therein to fit over the nuts, and fastened at one end by a tongue fitting into the loop in the fish plate, and at the other end by passing a correspondingly-shaped slot over the button and turning down said button between two outwardly-projecting lugs.



Claim.—In combination with a series of bolts and nuts, the plate or bar E, formed with a loop, *d*, at one end, and having a button, C, pivoted at the other end, and the locking-bar D, formed with openings *e*, tongues *f*, and lug *i*, all substantially as and for the purpose set forth.

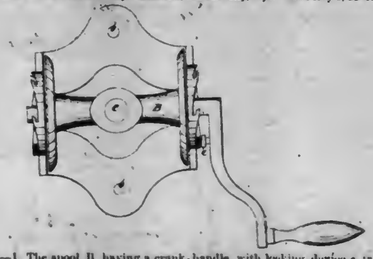
210,531. CORN-PLANTERS. Alexander Hetrot and William W. Dunn, Peoria, Ill. Filed Oct. 19, 1878.

Brief.—The feed-disk has formed in its under side a star-shaped groove, into which a pin on the reciprocating slide takes to impart rotary motion to the disk.



Claim.—The rotary seed-plate D, provided with a groove or a projection somewhat star-shaped in form, as described, in combination with a reciprocating shake-bar, C, provided with one or more studs, and the plate B, provided with one or more slots, substantially as and for the purpose set forth.

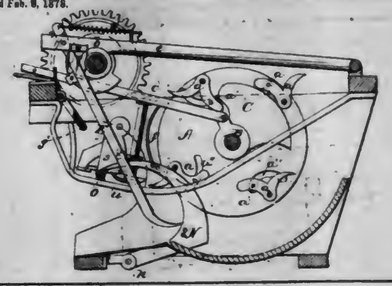
210,532. CLOTHES-LINE REELS. Floyd Heavener, Laramie City, Wyo. Filed May 1, 1878.



Claim.—1. The spool B, having a crank-handle, with locking device *c*, in combination with the supporting-frame, having open-slotted bearings, surrounded by a concentric series of laterally-projecting ratchet-teeth, as described.

2. The supporting-frame having a series of hook-shaped ratchet-teeth, combined with the crank-handle of the spool, having a locking device adapted to engage with said locking-teeth, substantially as described.

210,533. GRAIN-BINDERS. Hector A. Holmes and Watson M. Holmes, Owatonna, Minn. Filed Feb. 6, 1878.



Claim.—1. In a binder, the wheel A, with packers *a*, in combination with cam C, arm *c*, and dog *b*, substantially as and for the purposes set forth.

2. The hinged compressor E *e*, adapted to be operated by spring *e'* and crank-arm *b'*, substantially as and for the purposes set forth.

3. The combination of crank-arm *b''* with arm *g''* of the trip *g*, operating shipper I, substantially as and for the purposes set forth.

4. The combination of compressor-arm E, hinged to movable arm *c*, and adapted to be operated by spring *e'*, with arm *g'*, trip-lever *h*, shipper I, gear K, and clutch L, substantially as described.

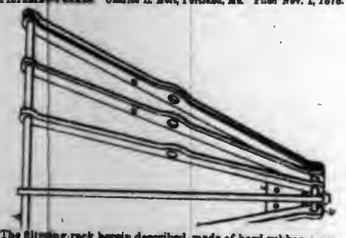
5. The hollow shaft Q, with its hooked end *q*, and internal shaft, *q'*, with its curved end *q''*, operated as described, and combined with hook *r*, substantially as described.

6. The combination, with the wheel P, having a segmental rack on one side, for operating the tying mechanism, and a cam-surface on the other side, to operate the cord-grasper, of a shipper which throws in and out of operation at intervals, substantially as described.

7. In combination with grasper O, hook *r*, and spring *r'*, the hollow shaft Q, having hooked end *q*, and internal shaft, *q'*, with its curved end *q''*, substantially in the manner and for the purposes set forth.

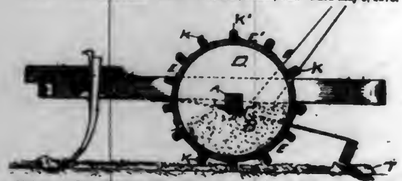
8. The grasper O, moving in hinged sleeve *s'*, attached to the vertical grasping-plate *s*, and operated by gear-wheel P and spring *p''*, and combined with needle N, substantially as set forth.

210,534. **FILTERING-FRAME.** Charles L. Holt, Portland, Me. Filed Nov. 1, 1878.



Claim.—The filtering-rack herein described, made of hard rubber, composed of the slats *a*, rings *b c*, and having the separate and removable strainer *c*, as herein set forth.

210,536. **SEED-PLANTER.** David W. Heskell, Dallas, Tex. Filed May 8, 1878.



Claim.—1. In a planter, the circular drum D, in combination with sections E and projections K, the said projections K being situated between the sections E, as shown and described.

2. In a planter, the circular drum D, composed of sides D^1 D^2, sections E, and projections K, the under side of projections K terminating on the line of the inner surface of sections E, as and for the purpose set forth.

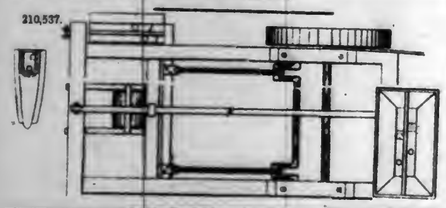
3. In a planter, the circular drum D, in combination with the T-shaped projections K and sections E, said sections having slides or regulators G on their outer face, substantially as described, and for the purpose set forth.

210,536. **FEED-WATER HEATERS.** Edward Huber, Marion, Ohio. Filed Aug. 1, 1878.



Claim.—The combination, with the boiler A, of the circular water-jacket E, consisting of a strip of metal bolted at its edges to the outside of that portion of the shell of the boiler which forms the smoke-chamber, and bent or swelled up in the center to receive the water, as described.

210,537.

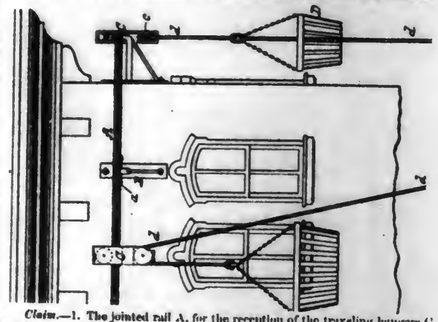


210,538. **SUBSTITUTES FOR TOBACCO.** Joseph P. R. James, Reed's Landing, Minn. Filed Nov. 16, 1878.

Claim.—The tobacco substitute herein described, consisting of spikenard, red clover, hyssop, hops, slippery-elm bark, tarroot rope, pennyroyal, mullein leaves, kinnikinic, wild-cherry bark, and ginseng, as and for the purpose specified.

210,539. **FIRE-ESCAPES.** James Kerr, Pittsburg, Pa. Filed July 21, 1877.

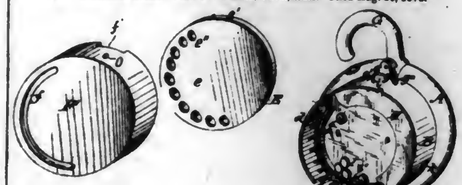
Brief.—The rail is supported at its joints upon dishing-plates and brackets.



Claim.—1. The jointed rail A, for the reception of the traveling hangers C of a fire-escape, in combination with the coupling-plates *a* and brackets B, said plates being secured to said rail at its joints and resting upon the bracket-rods *a*, substantially as shown and described.

2. In combination with rail A, jointed and supported by plate *a*, and bracket B, as described, the basket D, rope *d*, and traveling hanger C, as shown, and for the purpose specified.

210,540. **INDICATOR-LOCKS.** John H. Kinsman, Salem, Mass. Filed Aug. 23, 1878.



Claim.—1. The combination, with a lock, of the cover E, rotating case B, the fixed interior chamber containing disks adapted to form different combinations, and provided with strip C and wall C', substantially as and for the purposes set forth.

2. The combination of the rotating case B with cover E and strip C, pins *d*, wall C', and spring-stop *c*, substantially as and for the purposes set forth.

3. The combination of cover E, having spring-piece E' on its under face, with post *b''* and case B, substantially as and for the purposes set forth.

4. The combination of the rotating case B, supplied with disks, as set forth, shield H, cover E, provided with apertures *e''*, and cap F, having slot *f*, substantially as and for the purposes set forth.

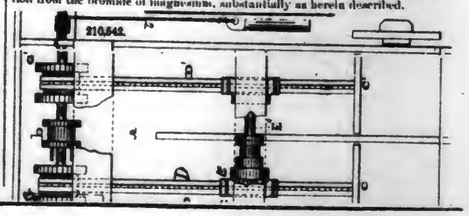
5. In combination with a rotating case, B, the lock-shackle provided with stud *g*, having arms or projections *g' g''*, whereby said arms or projections impinge upon and also enter into said case, and prevent its movement and the opening of the lock, or, being released therefrom, will allow its movement and the opening of the lock, substantially as and for the purposes set forth.

6. In an indicator-lock, the combination of movable cap F, having hole or slot *a*, with shackle *ti*, having arm *g*, provided with projection *i*, substantially as and for the purposes set forth.

210,541. **PROCESSES OF RECOVERING SALT FROM ITS ADMIXTURE WITH IMPURITIES IN CRUDE BRINE.** Joseph H. König, Mason City, W. Va., assignor to himself, E. Oakes, and Herman Lerner, same place. Filed Oct. 28, 1878.

Claim.—The process of recovering chloride of sodium from its admixture with impurities in crude brine, which consists in precipitating the chloride of barium by sulpheric acid, filtering out the precipitate, then precipitating the calcium and iron together as a sulcarbamate by the addition of sal-soda, and afterward separating the clear liquor and crystallizing the pure salt out of solution from the bromide of magnesium, substantially as herein described.

210,542.

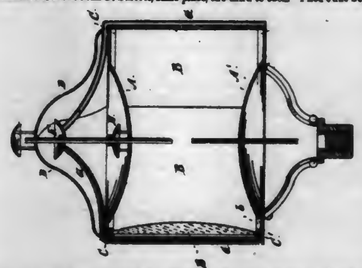


210,542. **HAY-PRESSES.** Isaac R. Kulp, Ratfald, Pa. Filed Oct. 16, 1878.

Brief.—The device obviates the necessity of a person entering the bale-box to stamp the hay. One of the packing-followers only may be used by disengaging the other from the operating-shaft. When the material is sufficiently packed, the ordinary plates is used to compress it into a bale.

Claim.—The packing-followers C C', rack-bars D D', shifting-pinion E, pinion E', ropes or chains F F', drums G G', clutch *b*, and weighted rope or chain J, combined and operating substantially as and for the purpose set forth.

210,543. **REFLECTORS FOR ELECTRIC LIGHTS.** Aloysius A. Lambert, Chicago, Ill., assignor to Mathias Benner and John P. Barrett, same place, one-third to each. Filed June 28, 1878.



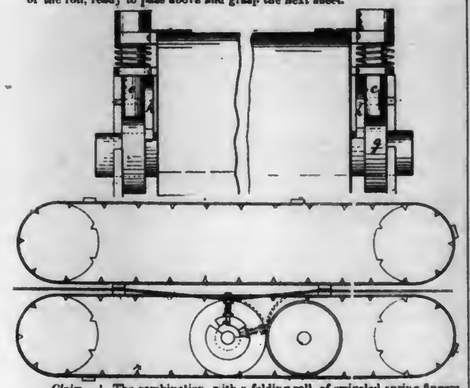
Claim.—1. The combination of an upper and lower convex paraboloid reflector with surrounding plano-convex lenses, for completing the diffusion of the light, substantially as described.

2. In combination with the reflectors A A' and lenses B, the cover D, provided with devices for preventing moisture from entering and coming in contact with the carbon points, substantially as and for the purpose specified.

3. The cover or cap D, provided with the drip-cup F and drip-tubes G, in combination with the ring or rim C, for preventing the entrance of moisture to the carbon points, substantially as specified.

210,544. **PAPER-FOLDING MACHINES.** George Loader, Pittsburg, Pa. Filed Oct. 14, 1878.

Brief.—The fingers are attached to spring-rods on the end of the roll, which are raised and partially rotated by the cams, so as to cause the fingers to turn over the sheet as it is carried along by the gripers, and grasp it on the line of fold, holding it to the roll until the fold is completed by the adjacent roll or belt, when the fingers are turned out of the fold to an angle to the axis of the roll, ready to pass above and grasp the next sheet.



Claim.—1. The combination, with a folding-roll, of swiveled spring-fingers moving therewith, and mechanism, substantially as specified, for operating the same, whereby the fingers are caused to rise and fall to clamp a sheet along the line of fold, and are partially rotated to engage and disengage the paper, substantially as specified.

2. The combination, in a paper-folder, of a folding-roll, clamping-fingers moving with the roll, and fixed cam mechanism adapted to lift, drop, and partially rotate the fingers, substantially as and for the purpose specified.

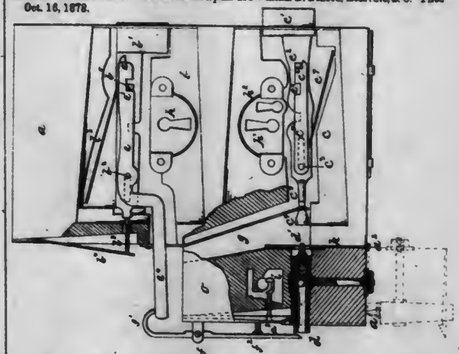
3. The combination, in a paper-folder, of the belts provided with cross-bars or springs for controlling the sheet, a folding-roll provided with automatically-acting swiveling fingers for clamping the sheet to the roll, and mechanism coacting with the folding-roll to double the sheet, substantially as and for the purpose specified.

210,545. **CAPS FOR BOTTLE-STOPPERS.** John P. Lindsay, New York, N. Y., assignor of one-half his right to James E. Wildey, same place. Filed Sept. 5, 1878.



Claim.—The bisected cap P P, with each of its sections provided with arms S S, hinged or pivoted together in pairs, scissors-like, in combination with the hasp T, staple U, and clasps or bands R R, connected to the lower ends to the arms S S, substantially as and for the purpose set forth.

210,546. **ALARM-LOCKS.** Thomas B. Lumpkin and William D. Benson, Roseville, S. C. Filed Oct. 16, 1878.



Claim.—1. The combination, with the bolt b^1 in lock *b*, and bolt c^1, having extension c^2, in lock *c*, of the dog *e*, having the extension or arm e^1, lever *f*, and the springs b^2 and *g*, the lower end, *f'*, of the lever *f* and the bolt c^1 being arranged with reference to each other, and having suitable intermediate connecting mechanism, substantially as set forth.

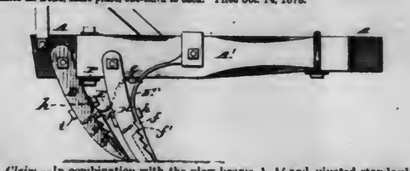
2. The combination, with the bolts b^1 and c^1, constructed as described, and arranged, respectively, in locks *b* and *c*, and operated by springs b^2 and *g*, and dog *e*, having the extension e^1, of the pistol *d* and rocking-lever *f*, all arranged to operate substantially as set forth.

210,547. **AUTOMATIC ADVERTISING APPARATUS.** Owen J. McGaan and George A. Jenks, Chicago, Ill. Filed Apr. 17, 1878.



Claim.—The combination, with the case A, provided with the opening F, and landscape or picture H, of the vertically-moving advertising-band G, laterally-moving band K, and clock-work mechanism, substantially as described, for imparting motion to both bands from a common motor.

210,548. **PLOWS.** Stephen P. McKinzy, Barretteville, Ga., assignor to Joshua Dooly and James M. Bond, same place, one-third to each. Filed Oct. 14, 1878.



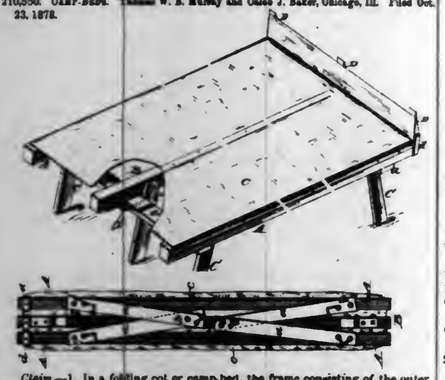
Claim.—In combination with the plow-beams A A' and pivoted standards D H, the adjustable braces E E', having hooked shoulders *f*, bolts *h*, and nuts *i*, whereby said hooked shoulders may be secured in the notches *g* of the standards, so as to form additional supports or abutments for the shares or shovels affixed upon the standards, substantially in the manner and for the purpose set forth.

210,549. **BRAKE-ROD ATTACHMENTS.** David C. Montgomery, St. Joseph, Mo., assignor of one-half his right to Zechariah Montgomery, same place. Filed Oct. 12, 1878.



Claim.—The attachment for vehicle-brakes, consisting of a frame or body having heads *a a'* upon its ends, shoulders *i* upon its sides, and a cross-bar, *e*, of the followers *d* straddling said side bars, springs S S' between the heads and followers, and the brake-rod sections extending through the heads and springs and secured to the followers, substantially as specified.

210,550. CAMP-BEDS. Thomas W. B. Murray and Caleb J. Baker, Chicago, Ill. Filed Oct. 23, 1878.

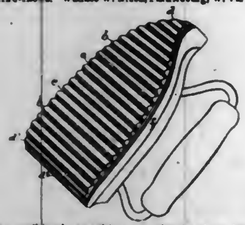


Claim.—1. In a folding cot or camp-bed, the frame consisting of the outer slats or bars connected by pivoted arms, in combination with the central slat or bar having brackets for the reception of the said arms when extended, the said slats or bars being all united by the flexible covering, substantially as and for the purpose herein shown and specified.

2. In a folding frame for cots or camp-beds, consisting, essentially, of the bars A A, united by pivoted arms, and bar B, having brackets for the reception of said arms, the folding legs C C, arranged to rest, when extended, against the extended arms *a a*, which are thereby prevented from being displaced, substantially as and for the purpose herein set forth.

3. The improved folding cot or camp-bed herein described, consisting of the outer frame-bars, A A, united by pivoted arms *a a*, central frame-bar, B, having brackets *a' a'*, for the reception of said arms, folding legs or supports C C, pivoted to the sides of bars A A B, hinged uprights or supports D D, and flexible covering *e*, secured to the frame-bars A A B and uprights D D, all in the manner and for the purpose herein shown and specified.

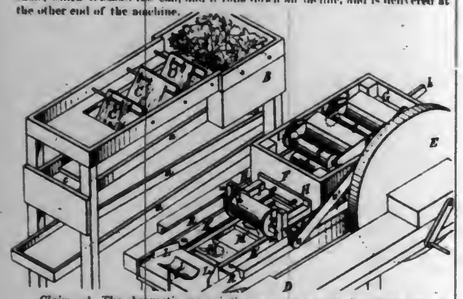
210,551. POLISHING-IRONS. Wallace W. Hiron, Parkersburg, W. Va. Filed Sept. 18, 1878.



Claim.—The combined smoothing and glossing iron, having its entire face on the same plane, provided with the small rounded surfaces *b*, separated from each other by continuous grooves *c*, extending across the face of the iron, and rounded, as shown at *f*, and having the corrugated curved point *d* and the double heel d' d'', substantially as and for the purposes described.

210,552. CAN-PRINTING MACHINES. William R. Norris, Baltimore, Md. Filed Jan. 9, 1878.

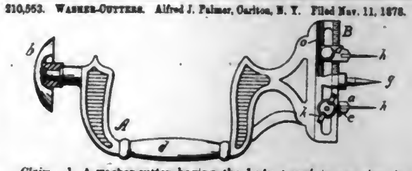
Brief.—The automatically operated grippers A *b* seize the can while it rests upon the table *d* and revolve it over the type M M', the ink being supplied by *g g'*, each series being separately suspended upon cars traveling upon tracks of different gage and elevation, in order that each set shall ink its proper type only. At the end of the stroke projections on the can grippers pass spreading-cams, which release the can, and it rolls down an incline, and is delivered at the other end of the machine.



Claim.—1. The chromatic can-printing machine herein described, consisting of the supporting frame D, railways R R', and inclined plane N, in combination with the type board M M', can holder *d*, guides L L, cams K K, and sliding car F, with clamp H, substantially as specified.

2. The adjustable clamp H, having guides *n n*, revolving disks *h h*, and springs *l l*, in combination with the cams K K and spring guides L L, substantially as and for the purpose specified.

210,553. WASHER-CUTTERS. Alfred J. Palmer, Carlton, N. Y. Filed Nov. 11, 1878.



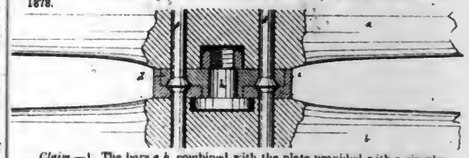
Claim.—1. A washer-cutter having the body A cast in one piece in the form of a bit-stock, provided with a centering point, *g*, and unremovable breast-knob *b*, and adapted to receive detachable independent cutters *h*, substantially as described.

2. A stock, A, cast in one piece, provided with a rotary unremovable breast-knob, *b*, and slotted part B, standing at right angles with the axis of the stock and forming part thereof, substantially as described and shown.

3. A washer-cutter stock, A, having a slotted part, B, as described, provided with grooves *c*, made parallel with the slots, one on each side of the part B, and extending from the axial line of the stock outward in opposite directions.

4. The cutter-heads *a*, for holding the blades A, provided with concave shoulders *s* and hooked lips *f*, for the purpose set forth.

210,554. WHIFFLETREE-IRONS. Charles H. Palmer, Jr., Merrimac, Mass. Filed Nov. 1, 1878.

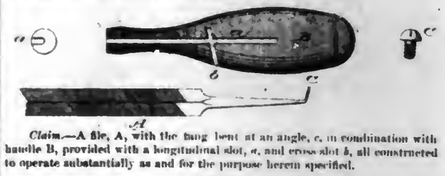


Claim.—1. The bars *a b*, combined with the plate provided with a circular flange, the disk within it, and the connecting-bolt *h*, the head and nut of which are concealed in recesses in the said bars, substantially as described.

2. A whiffletree and cross-bar connecting device composed of a disk adapted to be attached to the cross-bar, a plate provided with a circular flange adapted to be connected with the whiffletree, to surround or inclose the disk and form a water-tight joint at the cross-bar, and a central bolt, *h*, the said disk and plate being provided with openings for the reception of bolts and rivets, substantially as shown and described.

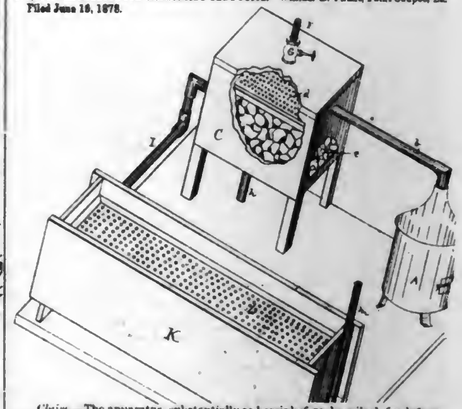
210,555. TOOL-HANDLES. Aaron S. Pennington, Paterson, N. J. Filed Oct. 29, 1878.

Brief.—The handle is provided with a longitudinal slot running parallel to its length to about the middle; also a slot crossing the first-mentioned one at about the length of the end of the tang from the end of the handle. The tang of the tool is bent a short distance from the end, inserted in the longitudinal slot, and pushed up until it reaches the cross-slot, when it is turned and secured in position by a set-screw inserted at the junction of the slots.



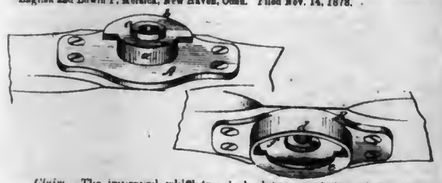
Claim.—A file, A, with the tang bent at an angle, *c*, in combination with handle B, provided with a longitudinal slot, *a*, and cross-slot *b*, all constructed to operate substantially as and for the purpose herein specified.

210,556. APPARATUS FOR DEFECATING CANE-JUICE. William H. Pilant, Point Coupee, La. Filed June 10, 1878.



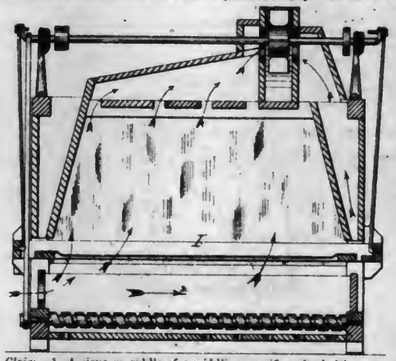
Claim.—The apparatus, substantially as hereinbefore described, for defecating cane-juice, consisting of the combination of a furnace, A, pipe *b*, scrubber and washer G, having perforated trays *d e*, and absorbent filling, with water-supply pipe F, and outlet *h*, connecting-pipe I, and juice-receiver K.

210,557. WHIFFLETREE-PLATES. Benjamin S. Porter, Ottawa, Ill., assignor to James G. English and Edwin F. Merwick, New Haven, Conn. Filed Nov. 14, 1878.



Claim.—The improved whiffletree lock-plates, consisting of the part A, having the hub *a*, provided with the semicircular flange *b*, and the collar *c* outside of said flange, and the part B, having the circular rim *d*, the semicircular flange *e*, and the collar-receiving opening *g*, all constructed and adapted to form a continuous half-circle bearing, and a single lock on one side of the bolt, requiring a complete turn of the whiffletree, end for end, to separate said half-circle lock.

210,558. MIDDLINGS-SEPARATORS. John Walter Pyne, Louisville, Ky. Filed Oct. 24, 1878.



Claim.—1. A sieve or riddle of a middlings-purifier, the bolting material of which hangs loosely, so that in the vertically-reciprocating motion of the riddle, caused by mechanism, a wave motion is given to its bolting-surface, substantially as set forth.

2. A sieve or riddle with its bolting material hanging loosely, having a compound motion—to wit, a rapid vertical and longitudinal movement—and a wave motion to the bolting material, caused by mechanism, substantially as described.

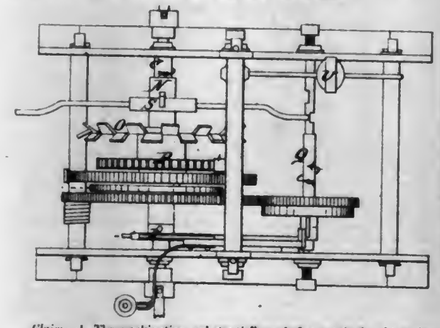
3. The combination, substantially as described, of the casing having a series of openings at the bottom for the discharge of the purified material, and an opening at the head end of the casing for the admission of air into the machine, a vertically-reciprocating riddle, and a suction-fan.

4. The combination, with a vertically-moving riddle-frame having side journals, of the adjustable boxes having curved slots for communicating a longitudinal motion to said frame.

5. The combination, in a middlings-purifier, of the main shaft, having a suction-fan, pulleys, and a crank at each end of the shaft, the pitmen, the riddle-frame, and mechanism for operating the conveyer, substantially as set forth.

210,559. REGULATING MECHANISM FOR INCUBATORS, &c. Edward S. Renwick, Millburn, N. J. Filed Nov. 11, 1878.

Brief.—A thermostat and engine and detent, a liquid speed-controller, and valves which control the heat by opening or closing flues through which passes hot air from lamps or gas-lights, or steam from a steam-boiler.



Claim.—1. The combination, substantially as before set forth, of two thermostatic bars by means of a connecting-lever, which has its fulcrum carried by one of said bars and its arm connected with the other of said bars.

2. The combination, substantially as before set forth, of a thermostatic bar, arranged horizontally with a counterpoise weight.

3. The combination, substantially as before set forth, of the engine-shaft, detent-motor, and engine-detent, whereby the detent-motor is wound up by the engine.

4. The combination, substantially as before set forth, of the engine, engine-detent, detent-motor, and regulator-detent.

5. The combination, substantially as before set forth, of the engine, liquid speed-controller, and engine-detent.

6. The combination, substantially as before set forth, of a thermostatic bar, regulator-detent, detent-motor, engine-detent, and engine.

7. The combination, substantially as before set forth, of the engine, liquid speed-controller, engine-detent, detent-motor, and regulator-detent.

8. The combination, substantially as before set forth, of the regulator-detent, detent-motor, engine-detent, engine, and valve.

9. The combination, substantially as before set forth, of a thermostatic bar, regulator-detent, detent-motor, engine-detent, engine, and valve.

10. The combination, substantially as before set forth, of the detent and the shifting weight.

11. The combination, substantially as before set forth, of the thermostat and the shifting weight.

210,560. HOSE-BANDS. Frederick W. Robertshaw, Pittsburg, Pa. Filed Aug. 23, 1878.



Claim.—1. The metallic hose-band A, having the bevel-faced interlocking catches *a a* on either end, substantially as shown and described.

2. The hose-band A, having one end formed with two or more undercut catches, *a*, and the other end slotted for its passage, and having the forward edge of the slot acute, substantially as described.

3. The hose-band A, having interlocking ends and one or more compression-ridges formed on its inner face, substantially as shown.

210,561. VEHICLES. John C. Russell, Salter's Station, S. C. Filed Oct. 26, 1878.



Claim.—1. In a vehicle, substantially as described, the carriage-body and front wheels, detachable together from the hind wheels, in combination with the sulky-frame, supported by the hind wheels, substantially as set forth and shown.

2. The seat G of the sulky-frame, forming the panel for the rear side of the buggy-body, substantially as described and shown.

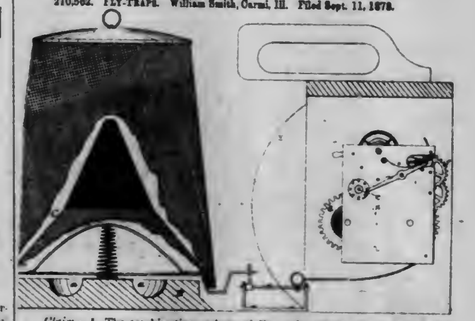
3. The sulky-bottom K, secured to the rear bolster, and covered by the body C when the vehicle is used as a carriage or buggy, substantially as described and shown.

4. The body C, hinged to the forward bolster, *d*, and detachably connected with the rear part of the running gear of the vehicle, substantially as described and shown.

5. The thill coupling arms *f*, projecting from the rear axle, substantially as described and shown.

6. The combination, with the rear axle and springs, supporting the side bars, B, of the body C, supported by the front axle, and detachably secured to such side bars, and the reach H, removably coupled with the hind axle or bound frame, substantially as described and shown.

210,562. FLY-TRAPS. William Smith, Carmi, Ill. Filed Sept. 11, 1878.



Claim.—1. The combination, substantially as described, of a receptacle for flies, having entrances at the bottom, and an alarm mechanism, consisting of an agitator located at the base of said receptacle, and a time and striking mechanism for imparting vibration to said agitator at suitable intervals, as specified.

2. The combination, substantially as described, of the agitator and fly-receptacle or prison-chamber, the clock or time and striking train, the trip-lever, the pinion on the shaft *c*, and the spring-dog of the striking-train, all as shown and described, to operate as specified.

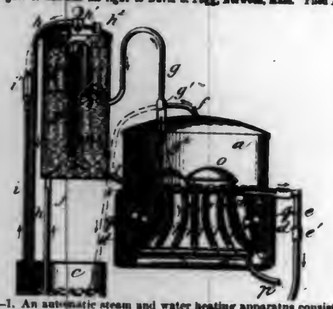
3. The combination of the spring rock-lever with the time and striking mechanisms and the agitator and fly-receptacle, as specified.

4. The combination, with a fly-receptacle, of a suspended agitator adapted to be vibrated, substantially as and for the purpose described.

5. The combination of the annular agitator, the recessed bait-receptacle, and the fly receptacle, as shown and described.

6. The combination of the agitator and the spring-support for the same and the fly-receptacle, as set forth.

210,563. APPARATUS FOR HEATING APARTMENTS, RAILROAD-CARS, &c. Ira A. Salmon, Boston, assignor of one-half his right to David S. Fogg, Norwood, Mass. Filed Apr. 10, 1878.



Claim.—1. An automatic steam and water heating apparatus consisting of boiler *a*, tank *b*, with receptacle *c*, and pipes *h* and *j*, with the pipes *e*, *f*, *g*, *k*, and *l*, with valves and connections, substantially as described, and for the purposes specified.

2. An automatic steam and water heating apparatus consisting of boiler *a* and tank *b*, with the pipes *e*, *f*, *g*, *k*, and *l*, with valves and connections, substantially as described, and for the purpose set forth.

3. The boiler *a*, in combination with the jacket *d*, substantially as and for the purpose set forth.

4. The tank *b*, with its chambers b^1 and b^2, and pipes *m* and *n*, with their valves, operating as described and set forth.

5. Tank *b*, having compartments b^1 and b^2, and pipes *m* and *n*, with their valves, in combination with a steam-boiler, substantially as described.

6. The combination of pipes *i* *e*, and their valves i^1 and e^1, with tank *b*, as described, and a steam-boiler and radiator, substantially as and for the purpose set forth.

7. The combination of tank *b*, having compartments b^1 and b^2, pipes *m* and *n*, with their valves, with reservoir *c*, substantially as described, and for the purpose set forth.

210,564. FEATHER-RENOVATOR. Daniel B. Sanders, Burlington, Mich. Filed July 23, 1878.

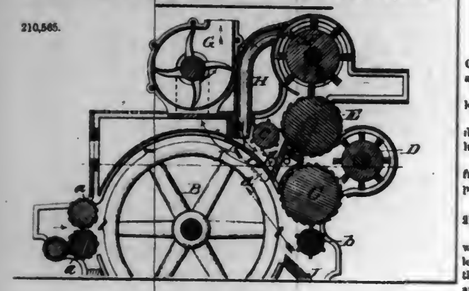


Claim.—1. The rod *l*, in combination with the door D, arranged substantially as and for the purpose herein shown and described.

2. The combination, with the feather-receptacle of a feather-renovator, of the oil-box T, wholly within the steam-space, and provided with a gauze top and sliding cover, and supply-tube *t*, substantially as and for the purpose herein shown and described.

3. In combination with and forming an essential part of a feather-renovator, the within-described steam-generator, formed of two concentric semi-cylinders, having its steam-dome 4 provided with a funnel-shaped top, 6, pressure and supply table 5, and flexible tube 10, the several parts constructed and relatively arranged to operate substantially as and for the purpose specified.

210,565.



210,565. BURRING-MACHINES. Frederick G. Sargent, Graniteville, Mass. Filed June 13, 1878.

Brief.—The burrs are thrown out from above the girt through passages formed in sides of machine and carried back below the girt. Air is forced against burrs, &c., from above by means of tube and brushes. An adjustable gate below the lower guard-cylinder regulates the draft of air to the fan.

Claim.—1. In a burring-machine, the combination of a girt or partition located between the picking and burring cylinders, a passage, *d*, at one or both ends of the girt, and a fan arranged to produce a current of air through said passage or passages, substantially as shown, whereby the burrs and particles of fiber are carried outward at the ends of the girt and returned into the machine on the opposite side of the girt.

2. In a burring-machine, the combination of the side passage or passages, *d*, located substantially as shown and described, a passage, H, and brush F, said passage H extending from the brush into the machine, for the purpose of conducting the blast from said brush inward, to assist in delivering the burrs through the side openings.

3. In a burring-machine, the combination of the cylinders E *c*, brush F, girt I, side passage or passages, *d*, and exhaust-fan G, substantially as shown and described.

4. The combination, in a burring-machine, of a transverse girt or partition, located in front of a burring or guard cylinder, with side passage or passages, *d*, to return the burrs from said cylinder into the machine in advance of the girt.

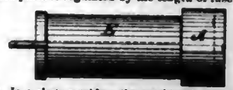
5. The combination, in a burring-machine, of a suction-fan, G, a girt, I, arranged substantially as shown and described, and a passage, *d*, around the end of the girt, and provided with an air-inlet, *g*, substantially as set forth.

6. The combination, in a burring-machine, of a suction-fan, applied substantially as shown and set forth, with the adjustable board or gate J, located as shown and described, to control the admission of air.

7. The combination, in a burring-machine, of an inclined board, J, adjustable as to its degree of inclination, with the guard-cylinder and fan, all operating to assist in effecting a separation of the burrs from the fiber, as set forth.

210,566. SHOT-CARTRIDGES. Henry H. Schleber, Rochester, N. Y. Filed Nov. 6, 1878.

Brief.—The case is made in sections, which are retained in place by a fuse, which is ignited by the charge in firing, and which, when it is consumed, allows the sections to separate and the shot to scatter. The point at which such separation takes place is regulated by the length of fuse used.



Claim.—1. In a shot-cartridge, the combination, substantially as described and shown, of a shot-confining case divided or made in sections, in order that it may open or separate to release the shot, and a fuse, applied directly or indirectly, to permit the opening of the case at the required point.

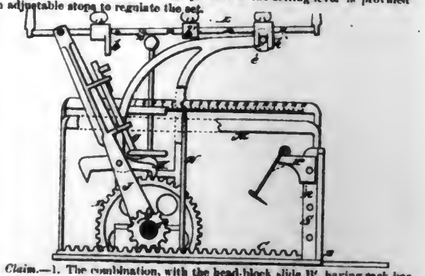
2. In a shot-cartridge, the combination of a divided or separable shot-confining case, a combustible wrapper inclosing and confining the same, and a fuse extending to the rear of the cartridge, to be ignited by the charge, and so arranged as to ignite the combustible wrapper, as shown.

3. The combination of a divided shot-confining case, the combustible confining-wrapper, and the central fuse connected with said wrapper.

4. In a long-range shot-cartridge, a divided or separable shot-case, in combination with a combustible device to prevent the opening of the case, substantially as described, so that fire will be communicated thereto from the charge of the gun.

210,567. SAW-MILL HEAD-BLOCK. Benjamin E. Sergeant, Greensborough, N. C. Filed Sept. 7, 1878.

Brief.—The rack-bars on the two slides are engaged by two pinions, which can be operated together or singly, and in both directions, by the same setting-lever, by the operation of which a weighted double-acting dog is made to engage a ratchet-wheel, which can be connected with or disconnected from one of the pinions by a clutch. A lever-rod pivoted to the setting-lever is provided with adjustable stops to regulate the set.



Claim.—1. The combination, with the head-block slide B', having rack-bar C', of the shaft F, loose pinion D', spring *d*, clutch C1, feathered on the shaft, and the lever H, substantially as and for the purpose herein set forth.

2. The lever-rod L, with movable sets *h* *h*, in combination with the setting-lever J, for the purpose herein set forth.

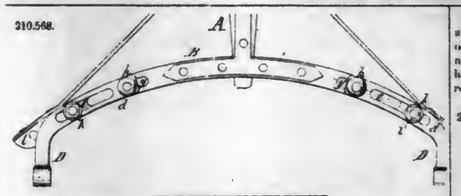
3. The combination of the ratchet-wheel I, lever J, weighted double-acting dog K, and sliding counter-balance O, substantially as and for the purpose herein set forth.

4. The combination of the adjustable pin *c*, having set-nut *c*'', with the frame having slot *c*', and with the lever-rod L, and slotted set *h*, as and for the purpose set forth.

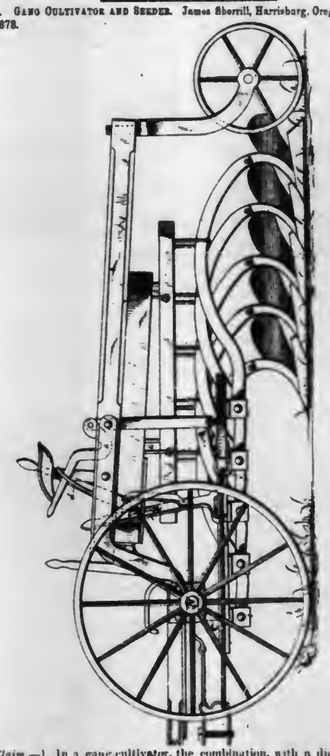
210,568. VEHICLE-POLES. Benson H. Shearer, Rockford, N. Y. Filed Oct. 4, 1878.

Claim.—The combination, with the pole A, of the cross-piece B, provided with slots *g* and bolt-holes *i*, the adjustable eye-pieces D D, provided with leaves *d*, having slots *o* and bolt-holes *f*, fastening-bolts *h*, made stationary in the leaves *d*, and bolts *b*, made stationary in the cross-piece B, substantially as and for the purpose set forth.

210,568.



210,569. GANG CULTIVATOR AND SEEDER. James Sherrill, Harrisburg, Oreg. Filed July 27, 1878.



Claim.—1. In a gang cultivator, the combination, with a diagonal cross-bar, to which the forward extremities of the plow-beams are secured, and which is adapted to move the plows collectively to or from the land, of levers and connecting mechanism adapted to vary and maintain said bar in any desired vertical adjustment, substantially as set forth.

2. The combination, with a diagonal cross-bar, to which the forward and downwardly-curved extremities of the plow-beams are secured, and a second diagonal cross-bar, to which the rear arched portions of said beams are loosely connected, so as to have free vibratory movement in a lateral direction, of a lever which engages with said front diagonal cross-bar and operates the same in a rocking motion, whereby said plow-beams are thrown to or from the land, substantially as set forth.

3. In a gang-cultivator, the combination of the two diagonal cross-bars, to which, respectively, the forward and rear bodies of the plow-beams are connected, said bars being adapted to be independently varied in adjustment to or from the ground, and said forward cross-bar being adapted to be laterally moved or rocked, substantially as set forth.

4. A gang-cultivator constructed with a bar, to which the plow-beams are secured, and which is capable of moving the plows laterally to or from the land, in combination with mechanism adapted, respectively, to vary the degree of the angular inclination of the plow-points to the ground, and to bodily raise or lower the plows relative to the latter, substantially as set forth.

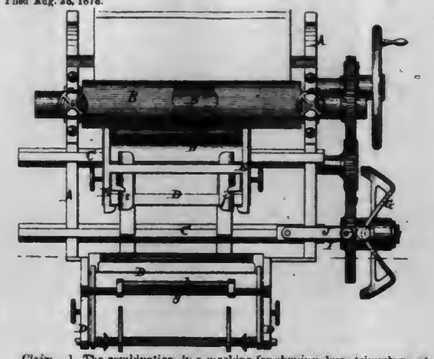
5. The combination, with the front diagonal cross-bar, having depending clamp-pieces on its under side, to which the plow-beams are pivoted, of the upright lever, provided with a spring-clamp, and the horizontal locking-bar, having notches with which the side projection of said lever engages, substantially as set forth.

6. The combination, with the front diagonal cross-bar, to which the plow-beams are indirectly pivoted, of the levers attached to the top frame, and the connecting-links secured to opposite ends of the cross-bar, said levers being adapted to engage with rock-bars, substantially as set forth.

7. The combination, with the front diagonal cross-bar, to which the plow-beams are indirectly pivoted, so as to have independent vertical movement, of the central draft-clevis, connecting by rods with the axle-tree and said diagonal cross-bar, the latter being provided with rod-connecting clevises, which are longitudinally adjustable thereon, substantially as set forth.

8. The combination, with the top frame, having loop-engagement with the axle-tree at its fore-and end, and provided with a caster-wheel at its rear end, of the rear diagonal cross-bar, supporting the plow-beams by loops, and connected with the top frame by bell-crank levers, which latter are operated by a hand-lever and intermediate connecting-links, and ratchet-lever engaging with a rock-bar, substantially as set forth.

210,570. MACHINES FOR SHAPING DRESS-TRIMMINGS. Gustave Simon, New York, N. Y. Filed Aug. 28, 1878.



Claim.—1. The combination, in a machine for shaping dress-trimmings, of pressure-rollers and a gage or carriage having a reciprocating motion lengthwise of said rollers, adapted and serving to guide the unshaped trimming between the rollers in an undulating line, substantially as described.

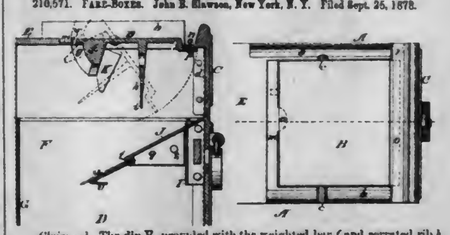
2. The combination, in a machine for shaping dress-trimmings, of pressure-rollers and a reciprocating gage or carriage for guiding the unshaped trimming between said rollers, the gage or carriage being provided with tension-rollers to regulate the movement of the trimming, substantially as described.

3. The combination, in a machine for shaping dress-trimmings, of pressure-rollers and a reciprocating gage or carriage for guiding the unshaped trimming between said rollers, the gage or carriage being provided with bearings to support a reel containing the unshaped trimming, substantially as described.

4. The combination, in a machine for shaping dress-trimmings, of pressure-rollers and a reciprocating gage or carriage for guiding the unshaped trimming between said rollers, the gage or carriage being provided with tension-rollers for regulating the movement of the trimming, and being provided with suitable bearings to support a reel containing the unshaped trimming, substantially as described.

5. The combination, with pressure-rollers and a reciprocating gage or carriage for guiding the unshaped trimming between said rollers, of the jointed arm I, latch J, and cam-wheel G, engaging with the jointed arm, substantially as shown and described.

210,571. FARE-BOXES. John B. Slawson, New York, N. Y. Filed Sept. 25, 1878.



Claim.—1. The dip B, provided with the weighted bar *f* and serrated rib *h*, in combination with the shortened cover E of box A, to prevent the abstraction of the fare through the inspection-opening on the driver's side of the box when the dip is depressed, as in depositing a fare, substantially as set forth.

2. The dip B, provided with stop K, in combination with the shortened cover E of the box A, for the purpose set forth.

3. A dip, B, provided with stop K and serrated rib *h*, in combination with a shortened cover, E, of the box A, for the purpose set forth.

4. The combination of a dip having a stop, K, to prevent it from descending beyond a regulated point, with a money-drawer having a rigid slide, J, either with or without teeth, spikes, or hooks on its lower edge, and running in an opposite direction to the inclination of the dip when depressed, whereby the abstraction of fare through the inspection-opening on the passengers' side of the box is prevented, substantially as set forth.

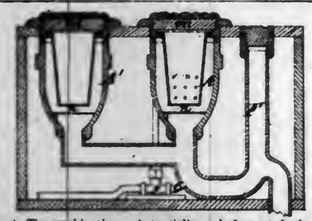
5. A money-drawer, D, of a fare-box, provided with a rigid slide, J, either with or without teeth, spikes, or hooks on its lower edge, and running in an opposite direction to the inclination of the dip when depressed, in combination with a dip having a serrated rib, *h*, whereby abstraction of the fare is prevented through either of the inspection-openings, substantially as set forth.

6. The combination of a dip having a stop, K, and serrated rib *h* with a money-drawer provided with a rigid slide, J, either with or without teeth, spikes, or hooks on its lower edge, and running in an opposite direction to the inclination of the dip when depressed, substantially as set forth.

210,572. GARBAGE-RECEPTACLES. James J. Slevin, New York, N. Y. Filed Oct. 7, 1878.

Brief.—A garbage-receptacle having two garbage-hoppers and ring-frames, forming garbage-holes, covers for hoppers, drain-pipe, cleaning-pipe and cover of same, and water-supply pipe.

210,572



Claim.—1. The combination, substantially as before set forth, of the garbage-hopper, arranged under the sidewalk, the drain-pipe with which the neck of said hopper is connected, the ring-frame forming the garbage-hole for the entrance and removal of garbage, and the garbage-bucket inserted into the garbage-hopper.

2. The combination, substantially as before set forth, of the garbage-hopper, arranged under the sidewalk, the ring-frame forming the garbage-hole, the drain-pipe of the hopper, the cleaning-pipe, and the cover thereof.

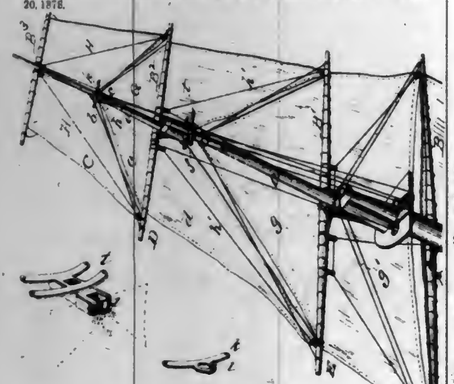
3. The combination, substantially as before set forth, of the garbage-hopper, arranged under the sidewalk, the ring-frame forming the garbage-hole, and the non-conducting cover for said hole, plated at its upper side with iron plates.

4. The combination, substantially as before set forth, of the garbage-hopper, arranged under the sidewalk, the ring-frame forming the garbage-hole, the garbage-bucket, the drain-pipe, and the water-pipe for supplying water to the drain-pipe.

5. The combination, substantially as before set forth, of the garbage-hopper, arranged under the sidewalk, the garbage-bucket, the ring-frame forming the garbage-hole, the cover for the same, the drain-pipe, and the water-pipe for supplying water to the drain-pipe, the cleaning-pipe, and the removable cover thereof.

6. The combination, substantially as before set forth, of two garbage-hoppers, a ring-frame forming a garbage-hole for each of said hoppers, and a cover for each ring-frame, with a single drain-pipe and one or more garbage-buckets.

210,573. REEFING AND FURLING SAILS. William H. Spooner, Portsmouth, Va. Filed Nov. 20, 1878.



Claim.—1. The combination, with a mast, A, having the royal, top-gallant, top-sail, and foreyards B' B' B' B, of the royal C, having an angular lower edge, *b*, the sectional top-gallant sail D, above and below the top-gallant yard, and bent thereto, the upper section being triangular and fitting into the angular lower part of the royal, and the lower section having an angular lower edge, the top-sail E, formed in two sections, the upper being triangular and fitting into the angular lower edge of the top-gallant sail, and the lower square, and the foresail, substantially as specified.

2. A sectional top-gallant sail consisting of the triangular part *c*, bent to the top-gallant yard and above the same, and a part, *d*, also bent thereto, having the angular foot *f*, and extending below the yard, substantially as specified.

3. A top-gallant sail bent to its yard and reaching above and below the same, substantially as specified.

4. A sectional top-sail consisting of a triangular portion, *g*, above its yard, and a square portion below the same, in combination with a top-gallant sail, D, having an angular lower edge, designed to receive the correspondingly-shaped part *g* of the top-sail, substantially as specified.

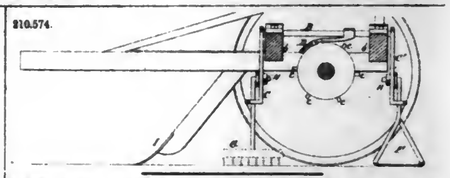
5. The combination, with a royal-sail having an angular lower edge and a loop or eyelet, *n*, at the apex of said angular portion, of the royal-mast jack, having a hook, *l*, designed to engage said loop or eyelet *n*, substantially as specified.

6. The combination, with a top-gallant sail having an angular lower edge, and provided at the apex of said angle with a loop, *n*, of the top-mast trestle-trees *t*, having a hook, *l*, designed to engage said loop, substantially as specified.

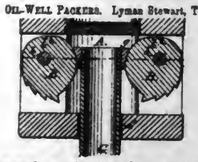
210,574. COTTON CHOPPER AND RAKE. Chauncey A. Sprague and John W. Clardy, Weaver's Station, Ala. Filed Oct. 30, 1878.

Claim.—In a cotton-chopper, the combination of the roller having the two sets or series of pins *c c'*, alternating in position, as specified, and arm D, having its free end forked, as shown, the rock-shaft B, a vertically-slotted crank-arm, the bent hoe-shank, and the nut and washer for clamping the same in any adjustment on said arm, as set forth.

210,574.



210,575. ANCHORS FOR OIL-WELL PACKERS. Lyman Stewart, Titusville, Pa. Filed Dec. 18, 1878.



Claim.—1. A support for an oil well packer, provided with locking devices which engage with the wall of the well, to support the packer against the downward thrust of the superincumbent tubing.

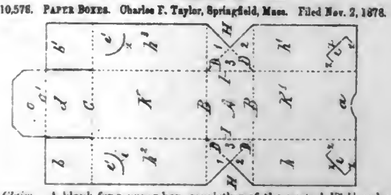
2. A support for an oil-well packer, provided with locking devices, which are held from contact with the wall of the well as the packer is being lowered into position, in combination with a tripping mechanism which is actuated by contact with the rock of the well, to release the locking devices, and permit them to engage with the wall of the well.

3. As a support for an oil-well packer, the cylinder A, in combination with the dogs B, substantially as set forth.

4. The combination of the cylinder A, dogs B, and the locking device G *g* or I' C, substantially as set forth.

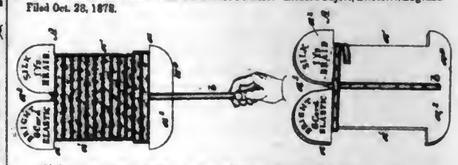
5. The combination, with the cylinder A, dogs B, and detent I' C, of the pipe I, substantially as set forth.

210,576. PAPER BOXES. Charles F. Taylor, Springfield, Mass. Filed Nov. 2, 1878.



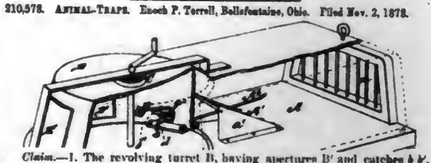
Claim.—A blank for a paper box, consisting of the parts *h* K' *k'* and *o*, *d*, *h*, *b'*, *h'*, K, and *h'*, arranged as shown, on each side of the parts A 1 2 3, within the lines B I D D, and having cut in the parts *h'* and *h'* thereof the circular slits *i i*, and in the parts *h h'* the slits *x x*, with the transverse slits *s s*, cut at the ends thereof, substantially as and for the purpose set forth.

210,577. CARDS FOR HOLDING AND EXHIBITING BRAID. Richard Taylor, Leicester, England. Filed Oct. 28, 1878.



Claim.—As a new article of manufacture, the filled card or package consisting of the card A, having a notch or slit, *a*², or opening *a*³, and a length of elastic braid or cord applied to said card in the manner described—viz., beginning at one end of said card, extending lengthwise over the face of the latter through the slit or opening, then wrapped and tacked, as set forth, so as to leave a free projecting end, *b*, which can be pulled or tested without undoing or disturbing the wrapped portion.

210,578. ANIMAL-TRAPS. Enoch P. Terrell, Bellefontaine, Ohio. Filed Nov. 2, 1878.



Claim.—1. The revolving turret B, having apertures B' and catches *b b'*, in combination with spring C, shield E, lever D, spring *d*, and prison-chamber, as set forth.

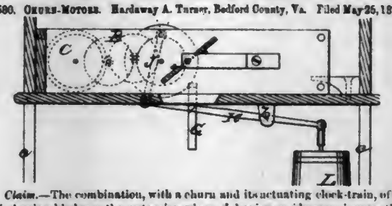
2. The combination of the turret B B' *b b'*, bait-lever D *d*, shield E, and spring C with the prison-chamber A *a*, gate A', and lever A' *a'*, as and for the purpose specified.

210,579. MAIL-BAGS. Polydore S. Thomson and Frank M. Thomson, Jersey City, N. J. Filed Nov. 15, 1878.



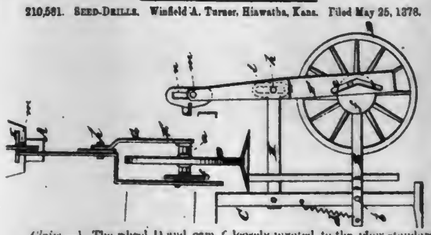
Claim.—The combination of the cruciform staple *s*, or its equivalent, and the retaining-plate extending through the top thereof, substantially as described.

210,580. CHURN-MOTORS. Hardaway A. Turner, Bedford County, Va. Filed May 25, 1878.



Claim.—The combination, with a churn and its actuating clock-train, of the fly I, having blades *e*, the extension-wings *d*, having guideways *i* upon their lateral edges, formed by turning the edges of the said wings upward and over, and adapted to receive the fly-blades *e*, and the adjusting-screws *o*, substantially as specified.

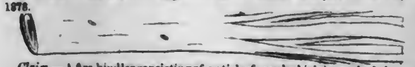
210,581. SEED-DRILLS. Winfield A. Turner, Hiawatha, Kans. Filed May 25, 1878.



Claim.—1. The wheel D and cam *f*, loosely pivoted to the plow-standard by arms E, in combination with the vibrating lever F, pivoted in the center, and provided with crooked slot *e* to receive the cam-pin, and with a pin, *n*, to operate in slot *n* of seed-slide I, as specified.

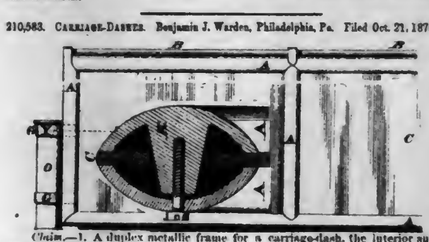
2. The combination of the pivoted arms E, carrying the wheel D, the spring *d*, lever F, bar G, and brace H, with slot *i*, substantially as and for the purposes set forth.

210,582. FIRE-KINDLERS. John D. Walker, Stamford, Conn.; Samuel Roberts (administrator of said Walker, deceased) assignor to John F. Mathews, same place. Filed July 10, 1878.



Claim.—A fire-kindler consisting of a stick of wood which is crushed through a portion of its length, and then dried, substantially in the manner hereinbefore set forth.

210,583. CARRIAGE-DASHES. Benjamin J. Warden, Philadelphia, Pa. Filed Oct. 21, 1878.

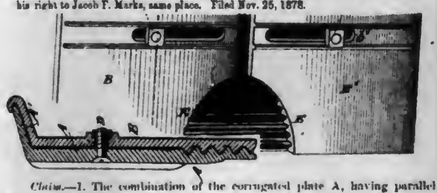


Claim.—1. A duplex metallic frame for a carriage-dash, the interior surfaces of which are concave or of semi-tubular form, adapted to clamp and secure the dash-leather in position, substantially as herein set forth.

2. A dash for carriages, composed substantially of the duplex metallic frames A, the fibrous material C, and dash-rail B, having its ends secured between upper end projections of the clamping-frames, when constructed and combined in the manner herein set forth.

3. In combination with the duplex metallic carriage dash-frames A and panel C, the whip-socket O, secured by band G, substantially as herein set forth.

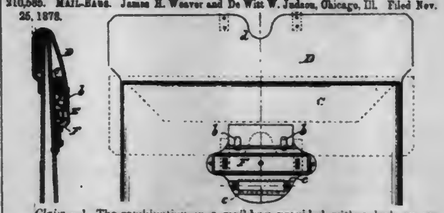
210,584. STOVE-BACK LININGS. Charles W. Warner, La Fayette, Ind., assignor of one-half his right to Jacob F. Marks, same place. Filed Nov. 25, 1878.



Claim.—1. The combination of the corrugated plate A, having parallel faces, and being of uniform thickness throughout its extent, and having a flange, A', on its upper edge, and one or more adjustable plates, B and B', constructed substantially as set forth, attached to the plate A, having a grooved flange, embracing the flange A', and corrugated to correspond with the plate A, as and for the purposes substantially as described.

2. An adjustable stove-back lining combining in its construction a flanged back plate, A, and adjustable extension plates B B', sawing therefrom or attached thereto by slot and bolt, and cut away, as at E and E', on the lower opposite corners, to prevent cracking of the plate A, substantially as described.

210,585. MAIL-BAGS. James H. Weaver and De Witt W. Judson, Chicago, Ill. Filed Nov. 25, 1878.



Claim.—1. The combination, in a mail-bag provided with a lock on one side and with the hooks or fastening B B on the other, of the tongue or flap C, having therein eyes to receive the said hooks, and of the flap D, provided with one or more hasps, all arranged substantially as specified, with relation to each other, for the purposes set forth.

2. The combination, in a mail-bag, of the external flap, D, having therein the finger-notch *d* and the clasps *b b*, the latter being arranged substantially as specified, with relation to the said flap, for the purposes set forth.

3. A lock containing as features of its construction the clasps *b b* and the clasping lips *c c*, the former clasps for containing or holding the facing-slip, and the latter clasps or lips for holding the slide-tag, in combination with a mail bag, substantially as and for the purposes specified.

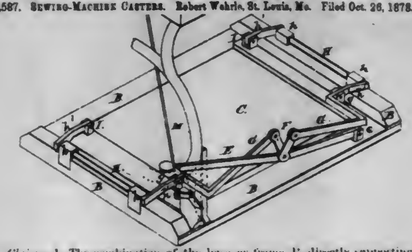
210,586. MAIL-BAGS. James H. Weaver and De Witt W. Judson, Chicago, Ill. Filed Nov. 25, 1878.



Claim.—1. A mail-bag provided at its upper end with the broad flaps B B, one of the latter being provided with the staple C, and the others slotted to receive the said staple, in combination with a snap-hook linked to the bag.

2. The combination of the grooved or recessed bar or handle F, provided at one end with the snap-hook G, the staples C and C', and the flaps B B, all arranged substantially as specified, with relation to each other and the mouth of the bag A, for the purposes set forth.

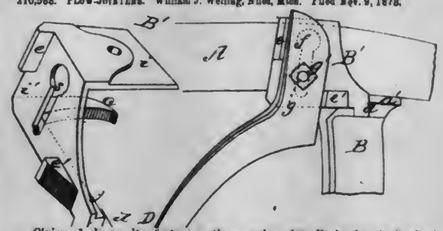
210,587. SEWING-MACHINE CASTERS. Robert Wahrle, St. Louis, Mo. Filed Oct. 26, 1878.



Claim.—1. The combination of the base or frame B, directly supporting the sewing-machine, and inner base-frame or platform, C, supported upon casters, and connected to frame B by a lifting device, for the purpose set forth.

2. The combination of frame B, platform C, casters D, levers and links E F G, shaft H, arm *h'*, and catch L, substantially as and for the purpose set forth.

210,588. PLOW-JOINTERS. William J. Welling, Niles, Mich. Filed Nov. 9, 1878.

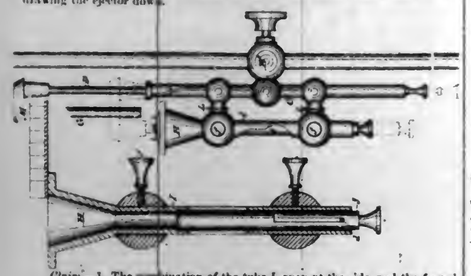


Claim.—1. In a colter-fastening, the angular plate B', having in its horizontal wing a bolt-hole, on its vertical wing the key-hole slot *e* and stop-flanges *c c'*, and upon its front and rear edges, respectively, the hook-prong *c* and catch-spur *d*, substantially as specified.

2. The combination, with the beam A, standard B, and through-bolt *b*, of an angular metallic fastening-plate, B', having its horizontal branches *i* extending over and across the said beam, and provided with a hole for the passage of said bolt, and its vertical branches *i'* extending down the cheek of the said beam, and provided with a key-hole slot, *e*, the stop-flanges *c c'*, the hook-prong *c*, extending across the beam and embracing the front end of the standard bearing, and the spur *d*, extending over and bearing upon the flange of said bearing, the colter-shank *f*, the bolt *g*, and nut *g'*, all arranged and operating as set forth.

210,589. APPARATUS FOR FILLING AND CAPPING CAPSULES. Thomas Whitfield, Chicago, Ill. Filed Aug. 12, 1878.

Brief.—The cap of the capsule is inserted (reversed) upon the stop or ejector and the powder poured into it. The body of the capsule is then placed mouth downward upon the powder and the plunger pressed down. This forces the two parts together inclosing the powder. The filled capsule is released by drawing the ejector down.

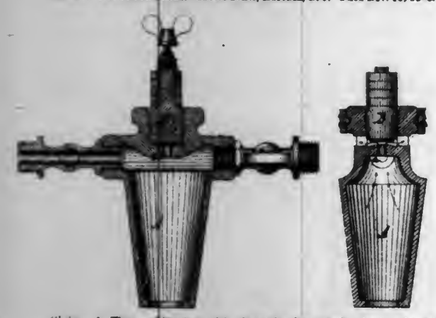


Claim.—1. The combination of the tube I, open at the side, and the funnel H, forming at their junction a shoulder, whereby a stop is provided for the cap of the capsule, and its inner surface caused to fit the shell thereof, with a plunger adapted to swing diagonally over the tube and then descend vertically, and a suitable stop or ejecting device, substantially as described.

2. The combination of the rigidly connected graduated trough M, funnel H, and tube I, having a lateral opening, all said parts being fixed in position, the stop device J, fitted and sliding in said tube and inclosing spring K, all substantially as shown and described.

3. The combination, in a capsule-filling machine, of the tube I and pin *d* with the hollow rod J, having angular slots arranged to operate substantially as described.

210,590. BUNGS FOR CASKS. Albert Zoller, Hoboken, N. J. Filed Nov. 19, 1878.

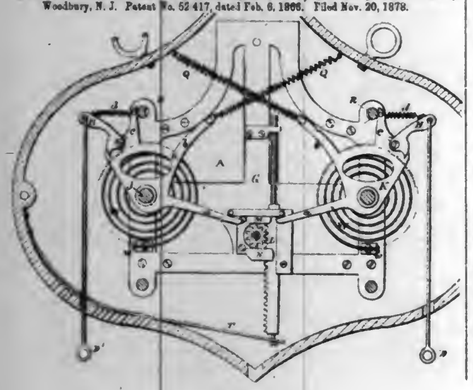


Claim.—1. The combination, with a bung having a hollow body, of a safety-valve, arranged on the top part thereof, and one or more branch pipes communicating with the interior of the bung-body, all adapted to operate substantially as shown and described.

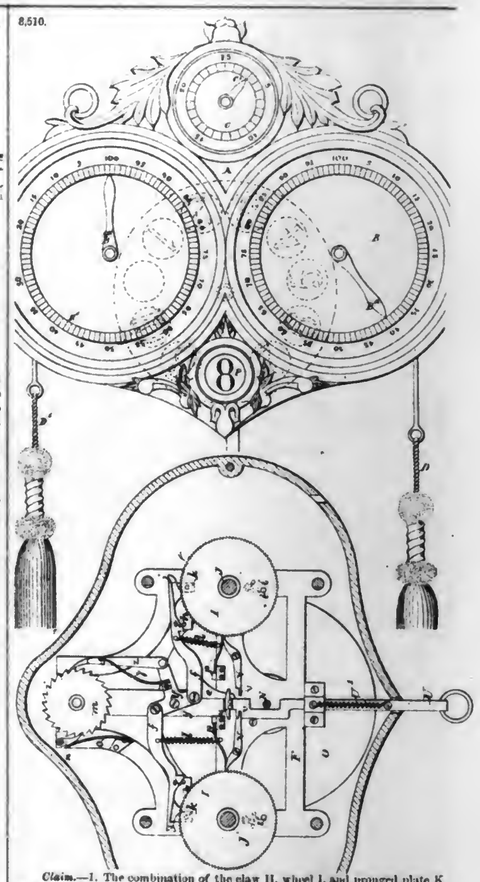
2. The combination, with a bung having a hollow body, of a safety-valve, a device for fastening down said safety-valve, and one or more branch pipes communicating with the interior of the bung-body, all adapted to operate substantially as shown and described.

REISSUES.

8,510. REGISTERING-MACHINES. R. H. Ingersoll, Biddeford, Me., assignor to S. McHenry, Woodbury, N. J. Patent No. 52,417, dated Feb. 6, 1866. Filed Nov. 20, 1878.



8,510.



Claim.—1. The combination of the claw H, wheel I, and pronged plate K, as and for the purpose described.

2. The combination of the pronged plate K, rack L, pinion M, and figured dial O, substantially as described.

3. The combination of the spring-slide U, pawls V V, wheels I I, and springs W W, substantially as described and specified.

4. The lever Y, in its combination with the arms *f f*, wheels I I, and pawl Z.

5. The described combination of the wheels I I, lug *k*, notch *j*, incline *g*, and pin *h*.

6. The slide U, spring W, prong *e*, lever Y, and arms *f f*, operating substantially as described and represented.

7. In a machine for registering numbers, the combination of duplex indicating mechanisms adapted to be actuated by one handle in such manner that when actuated by said handle each indicator necessarily makes an enumeration simultaneously with and for each enumeration of the other indicator, and a stopping device adapted to prevent one of the indicators being turned back beyond its zero or starting point, substantially as set forth.

8. In a machine for registering numbers, the combination of two separate indicators, with one prime mover or actuating-handle, directly connected to each indicator, independently of each other, in such manner that when operated by said handle each indicator necessarily makes an enumeration for each enumeration of the other indicator, substantially as described.

9. In a machine for registering numbers, the combination of two or duplex indicating mechanisms, actuated by one prime mover or handle, and another or second indicator and intermediate mechanism, adapted to be operated by one of the first indicators to register the number of times said first indicator is turned back to or started from zero, substantially as set forth.

10. In a machine for registering numbers, the combination of two separate indicating mechanisms, operated independently of each other by one and the same actuating-handle, in such manner that each actuation of the handle that causes an enumeration by one indicator necessarily causes an enumeration by the other indicator, and another or second indicator and intermediate mechanism, adapted to be operated by one of the first indicators to register the number of times said first indicator is turned back to or started from the zero, substantially as described.

11. In a machine for registering numbers, the plate or prime mover K, with its prongs or arms *a* and *e*, in combination with independent counting mechanisms, substantially as set forth.

12. In a machine for registering numbers, the combination of the forks *c* and *a* and detent H of plate K with ratchet-wheel I, rack L, and toothed wheel M, substantially as described.

13. In a machine for registering numbers, the plate or prime mover K, tooth or detent H, and ratchet-wheel I, in combination with rod or bar L and ratchet-wheel M, substantially as set forth.

14. In a machine for registering numbers, the combination of two separate indicators, adapted to be operated independently of each other by one and the same handle, in such manner that each indicator necessarily makes an enumeration for each enumeration of the other indicator, and a stop and detent to prevent one of the indicators being turned back beyond its zero or starting point, substantially as described.

15. In a machine for registering numbers, the combination of duplex indicators, actuated by one handle, a stopping device, to prevent one of the duplex indicators being turned back beyond its zero or starting point, and another or second indicator and intermediate mechanism, adapted to be operated by said one of duplex indicators, to record the number of times said one of duplex indicators is turned back to or started from zero, substantially as set forth.

16. In a machine for registering numbers, the combination of a counting mechanism, a stopping device to prevent the counter being turned back beyond zero, and another or second counter and intermediate mechanism, adapted to be operated by the first counter to record the number of times the first counter has been turned back to or started from zero, substantially as described.

17. In a machine for registering numbers, the combination, with a counting mechanism, of a second counter and a rocking lever and its two detents or teeth, adapted to be operated by the first counter to record the number of times the first counter is turned back to or started from zero, substantially as set forth.

18. In a machine for registering numbers, the combination of the lever Y, tooth *j*, and detent Z with counting-wheel *n*, substantially as set forth.

19. In a machine for registering numbers, the combination of the disk I, its tooth or detent *k*, rocking lever Y, its teeth or detents *j* and Z, and counting-wheel *n*, substantially as described.

20. In a machine for registering numbers, the combination of two or more indicators and their actuating mechanisms, independently of each other, with another or secondary indicator and intermediate mechanism, adapted to be operated by each primary indicator in such manner that the secondary indicator makes an enumeration for each enumeration of either of the primary indicators, substantially as set forth.

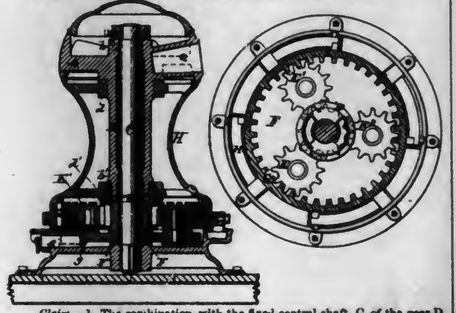
21. In a machine for registering numbers, the combination of the slide L with the prime movers K K of two or more independent counters, substantially as described.

22. In a machine for registering numbers, the combination of a ratchet-tooth with an actuating pawl or detent having an incline plane or bearing, and a pin or tooth whose action on the said incline plane withdraws the pawl from its engagement with the ratchet-tooth, substantially as set forth.

23. In a machine for registering numbers, a rocking lever receiving its actuating force and operating an indicating mechanism in one direction, and actuating a slide or rod in another direction to operate another indicating mechanism, substantially as described.

24. In a machine for registering numbers, a rocking lever receiving its actuating force and operating an indicating mechanism in one direction, and actuating a slide or rod in another direction to operate another indicating mechanism, and a spring to restore said slide or rod to its normal position, substantially as set forth.

8,511. CAPSTANS. John T. Heathern, Providence, R. I., and Barton D. Thayer, New York, N. Y., assignors, by mesne assignments, to the American Ship Windlass Company, Providence, R. I. Patent No. 147,567, dated Feb. 17, 1874. Filed Sept. 18, 1873.



Claim.—1. The combination, with the fixed central shaft, C, of the gear D, provided with recesses or sockets in its upper surface, and the driving-head provided with a sleeve, B, the lower end of which is adapted to engage within the recesses in the gear D, substantially as set forth.

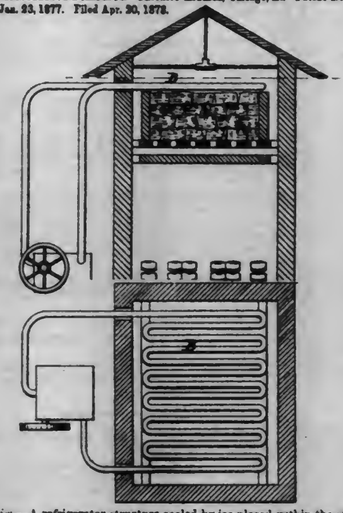
2. The combination, with the fixed central shaft, C, the gear D, and driving-head provided with a sleeve constructed to engage with gear D, of the disk-plate F, loosely mounted on the shaft C, and means for locking said disk-plate to the base of the capstan, substantially as set forth.

3. The combination, with the fixed central shaft, C, of the gear-wheel D, loose on the shaft, and driven by the sleeve B, the intermediate gear, E, (one or more of them,) the disk-plate F, arranged to be locked to the base, and the barrel H, provided with the toothed rim G, the whole arranged and operated substantially as and for the purposes set forth.

4. The combination, with a central shaft, of a capstan-head provided with an axial sleeve, a driving-gear loose on the shaft, and driven by the sleeve, a barrel mounted on said sleeve, and provided with an internal gear, a disk-plate carrying pinions which connect said driving-gear with the barrel-gear, and a locking device, whereby said disk-plate may be prevented from rotating, substantially as described.

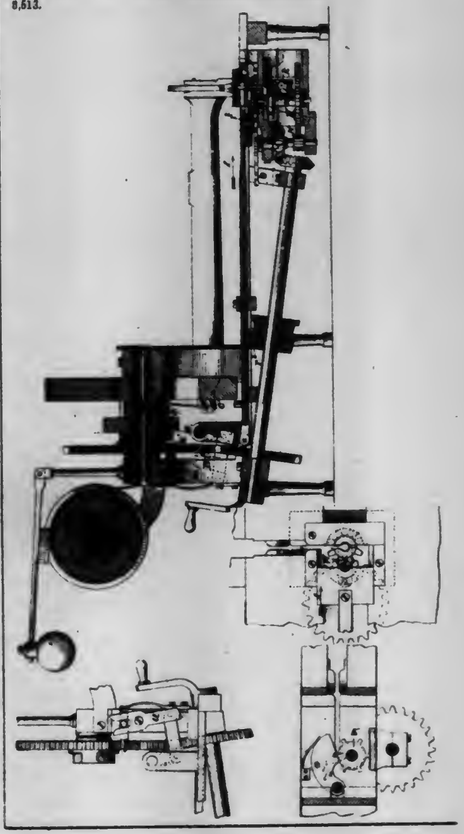
5. The combination, with a fixed central shaft, of the disk-plate F, gear D, arranged to actuate the power-gears, hollow sleeve B, and capstan-head A, all loose on the central shaft, with the barrel H and a locking device, by which the barrel may be locked to the capstan-head, or the disk F to the base, substantially as and for the purposes set forth.

8,512. REFRIGERATOR-BUILDINGS. Theodore Krausch, Chicago, Ill. Patent No. 186,561, dated Jan. 23, 1877. Filed Apr. 30, 1878.



Claim.—A refrigerator structure cooled by ice placed within the structure, in combination with an auxiliary cooling apparatus, by means of which a refrigerant is circulated within the cooling structure to chill the air which comes in contact with the ice, and thereby retard the consumption of the latter, substantially as described.

8,513.



8,513. GRAIN-BINDER. George Warner, West Liberty, Iowa, assignor, by mesne assignments, to C. H. & L. J. McCormick, Chicago, Ill. Patent No. 67,389, dated July 30, 1867. Filed Sept. 24, 1878.

Claim.—1. The combination, substantially as hereinbefore set forth, of a binding or wire-carrying arm with a supplementary hinged or pivoted finger or tucker to force the wire into the twister.

2. The combination, substantially as hereinbefore set forth, of a binding or wire-carrying arm, a supplementary hinged or pivoted finger or tucker pivoted thereon, and a spring to keep the tucker and wire-carrying arm normally in contact.

3. The combination, substantially as hereinbefore set forth, of a wire-carrying arm, a supplementary finger or tucker pivoted thereon, a spring which holds them normally in contact, and a separate guide which causes them to pass on opposite sides of the twister.

4. The combination, substantially as hereinbefore set forth, of the twister with the wire-carrying arm, acting on one side thereof, and the supplementary finger or tucker, (pivoted on the wire-carrying arm,) acting on the other.

5. The combination, substantially as hereinbefore set forth, of the wire-forcing wheel, the pivoted rocking wire-holder, and the cutting-knife mounted thereon and moving therewith.

6. The combination, substantially as hereinbefore set forth, of the twister-wheel, the wire-forcing wheel, the pivoted rocking wire-holder, and the cutting-knife carried thereby.

7. The combination, substantially as hereinbefore set forth, of the slotted intermittently-rotating twister with the clamping-slide movable therethrough and rotating therewith.

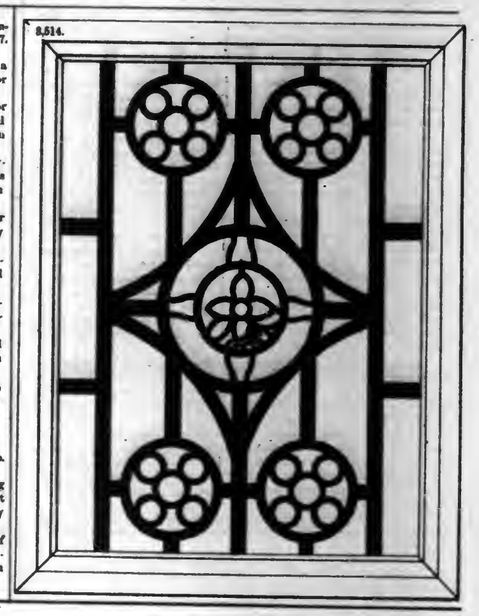
8. The combination, substantially as hereinbefore set forth, of the twister, its clamping-slide, the wire-forcing wheel, its holder, and the cutter on the holder.

8,514. ORNAMENTED WINDOW-GLASS. Robert M. Tudor, Philadelphia, Pa. Patent No. 191,270, dated May 29, 1877. Filed Nov. 20, 1878.

Claim.—1. As a new manufacture, paper having opaque lines imitating the lead sash-bars of stained-glass windows and stained or colored transparent or translucent spaces or figures adapted to ornamenting windows, substantially as and for the purpose set forth.

2. As a new manufacture, an ornamented glass window-pane consisting of ordinary glass, in combination with a paper containing opaque lines and transparent or translucent colored spaces imitating leaden sash and colored glass in stained windows, substantially as set forth.

8,514.



THE GRAPHIC CO.

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3d DAY OF DECEMBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adams, A. (See Cain, T. J., assignor.)						
Adams & Co., F. F. (See Lovell, M. N., assignor.)						
Adams, S. J., Pittsburg, Pa. Sand-core mold	210,392	Dec. 3	1	1	14	825
Adams, S. J., Pittsburg, Pa. Method and apparatus for forming molds for casting	210,393	Dec. 3	3	1	14	825
Adams, S. W., Boston, Mass. Perambulating toy	210,480	Dec. 3	91	23	14	836
Adee, F. (See Foley, J., assignor.)						
Alexander, B. S., San Francisco, Cal. Extracting gases of sewers and consuming same by combustion	210,443	Dec. 3	55	.....	14	831
Ambrose, L. E., Mason City, Ill. Sieve	210,481	Dec. 3	93	23	14	836
American Ship Windlass Company. (See Henthorn and Thayer, assignors.) (Reissue.)						
Andrén, A., Beverly, Mass. Hoop-fastener	210,482	Dec. 3	93	24	14	836
Antunes, J. A., Rio de Janeiro, Brazil, assignor to J. W. Coachman; said Coachman assignor of one-half interest to J. W. Selby, Baltimore, Md. Coffee-pot	210,483	Dec. 3	94	24	14	836
Apel, H. C., Milwaukee, Wis. Hydrant	210,394	Dec. 3	5	1	14	825
Archer, G. W., Rochester, N. Y. Dental spittoon	210,484	Dec. 3	95	24	14	836
Arnold, A. C., Norwalk, Conn. Door-hanger	210,485	Dec. 3	96	24	14	836
Atkinson, T. (See Mayo and Atkinson.)						
Avery, C. A., *et al.* (See Ellsworth, H. G., assignor.)						
Baker, C. J. (See Murray and Baker.)						
Baker, T. (See Scott and Baker.)						
Ball, W. W., Bangor, Mich. Head-rest for coffins	210,395	Dec. 3	6	1	14	825
Bamrick, J., Syracuse, N. Y. Grate-bearing bar	210,396	Dec. 3	7	2	14	825
Barre, L., New York, N. Y. Sleeve-button	210,397	Dec. 3	7	2	14	825
Barrett, J. P., *et al.* (See Lambert, A. A., assignor.)						
Bartholomew, H. A., Brooklyn, N. Y. Horseshoe-calk	210,398	Dec. 3	8	2	14	825
Benner, M., *et al.* (See Lambert, A. A., assignor.)						
Benson, A. M., Cleveland, Ohio. Machine for dressing staves	210,444	Dec. 3	56	13, 14	14	831
Benson, W. D. (See Lumpkin and Benson.)						
Bergstresser, E. L., *et al.* (See Bergstresser, S. L., assignor.)						
Bergstresser, J. B., *et al.* (See Bergstresser, S. L., assignor.)						
Bergstresser, S. L., Condersport, assignor to E. L. and J. B. Bergstresser, Hublersburg and Renovo, Pa. Camera	220,445	Dec. 3	59	14	14	831
Bibb, W. C., Sr., Athens, Ga. Baling-press	210,399	Dec. 3	8	2	14	826
Birkenhead, J., Mansfield, Mass. Spinning-ring and spindle-support	210,400	Dec. 3	9	3	14	826
Birnbaum, G. J., *et al.* (See Hanks, O., assignor.)						
Bodenstein, O., New York, N. Y. Ornamentation of fire-arms and other articles of metal	210,446	Dec. 3	60	15	14	832
Boillot, L. J., Bonnot's Mills, Mo. Cloth-folding machine	210,486	Dec. 3	96	25	14	836
Bond, J. M., *et al.* (See McKinny, S. P., assignor.)						
Bovey, G. C., Columbus, assignor of one-half interest to J. A. Maish, Cincinnati, Ohio. Sewing-chair	210,487	Dec. 3	98	25	14	837
Bowers, J., Baltimore, Md. Vapor-burner	210,488	Dec. 3	99	25	14	837
Bracher, T. W., New York, N. Y. Sweat-band for hats and caps	210,489	Dec. 3	99	25, 26	14	837
Brewer, R., New York, N. Y. Car axle box	210,490	Dec. 3	101	26	14	837
Brewster, L. W., Canton, Ky. Tobacco-hoisting apparatus	210,447	Dec. 3	61	15	14	832
Bridges, D., Coquille, Oreg. Dredging and ditching machine	210,448	Dec. 3	62	15	14	832
Brightman, B. F., Bristol, Me. Paddle for driers	210,491	Dec. 3	102	26	14	837
Brittain, C. T., Butler, Pa. Sash-balance	210,401	Dec. 3	10	3	14	826
Broja, R., Zabrze, Silesia, Prussia. Traction-engine	210,492	Dec. 3	102	27	14	837
Brown, L. E., Cincinnati, Ohio. Spring weighing-scales	210,493	Dec. 3	105	27	14	837
Browne, W. F., assignor to Hydrocarbon Steam Generating Company, New York, N. Y. Steam-generating apparatus	210,494	Dec. 3	105	28	14	838
Burrowes, E. T., Portland, Me. Window-screen	210,495	Dec. 3	109	29	14	838
Cain, T. J., assignor, by mesne assignments, to A. Adams, Cleveland, Ohio. Hose-rack	210,402	Dec. 3	11	3, 4	14	826
Carnell, G. C., Glassborough, N. J. Ironing and bosom board	210,449	Dec. 3	63	16	14	832
Carrick, J., Cresskill, N. J. Malt extract	210,496	Dec. 3	110	.....	14	838
Carris, S. D., Keota, Iowa. Garden-rake	210,450	Dec. 3	64	16	14	832
Casilear, G. W., Washington, D. C. Manufacture of paper for bank-notes, bonds, checks, &c.	210,497	Dec. 3	111	.....	14	838
Casson, J., Sheffield, England. Circular-saw guide	210,403	Dec. 3	12	4, 5	14	826
Childress, P. H., Waynesborough, Va. Millstone-driver	210,498	Dec. 3	111	29	14	838
Clardy, J. W. (See Sprague and Clardy.)						
Clarke, G. H., Brooklyn, and C. Van Wagenen, New York, N. Y.; said Van Wagenen assignor to said Clarke. Grate-bar	210,499	Dec. 3	112	29	14	838
Clough, J., Providence, R. I. Barber's chair	210,500	Dec. 3	113	29	14	838
Coachman, J. W., *et al.* (See Antunes, J. A., assignor.)						
Comey, W., *et al.* (See Crisp, J. E., assignor.)						
Conway, W. B., assignor to C. H. Miller, Blacksburg, and Lorentz & Sullivan, Christiansburg, Va. Cigar-perforator and match-box	210,501	Dec. 3	115	30	14	839
Cook, N. B., Chicago, Ill. Oar and oar-lock	210,502	Dec. 3	116	30	14	839
Copeland, G. W., *et al.* (See Crisp, J. E., assignor.)						
Cornell, C. W., Wauseon, Ohio. Car-coupling	210,451	Dec. 3	64	16	14	832

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Coulter, T. J., Elizabeth City, N. J., assignor to himself and A. W. Merwin, Wilton, Conn. Meat-tenderer	210,503	Dec. 3	116	30	14	839
Crisp, J. E., Boston, assignor to G. W. Copeland, Malden, and W. Comey, Westborough, Mass. Mechanical movement	210,452	Dec. 3	65	17	14	833
Cross, J. G., Aurora, Ill. Fountain-pen	210,404	Dec. 3	14	5	14	826
Davis, G. M., Chicago, Ill. Piston-rod and valve-stem packing	210,504	Dec. 3	118	30, 31	14	839
Day, A. G., New York, N. Y. Combination of vegetable oils and grahamite for the manufacture of vulcanized compounds	210,405	Dec. 3	15	.....	14	827
Day, A. G., New York, N. Y. Compound for the manufacture of kerite	210,406	Dec. 3	16	.....	14	827
Day, A. G., New York, N. Y. Compound for india-rubber or kerite	210,407	Dec. 3	17	.....	14	827
Day, A. G., New York, N. Y. Manufacture of kerite from gums and oils	210,408	Dec. 3	18	.....	14	827
Day, A. G., New York, N. Y. Manufacture of kerite	210,409	Dec. 3	20	.....	14	827
Day, A. G., New York, N. Y. Preparing vegetable oils for the manufacture of kerite	210,410	Dec. 3	21	.....	14	827
Day, A. G., New York, N. Y. Manufacture of artificial caoutchouc or kerite	210,411	Dec. 3	22	.....	14	827
Dee, H. W., Sherwood street, Golden Square, Middlesex county, England. Bottle-stopper fastener	210,505	Dec. 3	120	31, 32	14	839
Dodge, W. W., Washington, D. C. Lock for fire-arms	210,506	Dec. 3	120	32	14	839
Dooly, J., *et al.* (See McKinny, S. P., assignor.)						
Dressell, A., E. H., and J. G. Voth, assignors to D. Dressell and C. W. Voth, Cleveland, Ohio. Signal head-light	210,412	Dec. 3	25	5	14	827
Dressell, D., *et al.* (See Dressell and Voth, assignors.)						
Dunn, W. W. (See Hearst and Dunn.)						
Durrough, J. L., Hamilton, Ohio. Brick-mold	210,507	Dec. 3	122	32	14	839
Eade, C., assignor to himself and H. J. Tarble, Honesdale, Pa. Spring bed-bottom	210,508	Dec. 3	123	33	14	840
Eickemeyer, R., Yonkers, N. Y. Hat-shaving machine	210,509	Dec. 3	125	33	14	840
Ellsworth, E., *et al.* (See Ellsworth, H. G., assignor.)						
Ellsworth, H. G., assignor to E. Ellsworth, Painesville, Ohio, and C. A. Avery, New York, N. Y. Felting-machine	210,413	Dec. 3	26	5	14	827
English, J. G., *et al.* (See Porter, B. S., assignor.)						
English, J. G., assignor of one-half interest to E. F. Mersick, New Haven, Conn. Top-joint for carriages	210,510	Dec. 3	129	34	14	840
Enright, J., Cleveland, Ohio. Pipe coupling or joint	210,414	Dec. 3	27	6	14	827
Farnham, J. N., Waltham, Mass. Heat-radiator	210,453	Dec. 3	67	17	14	833
Felter, P. S., Cazenovia, N. Y. Tack-driver	210,511	Dec. 3	130	34	14	840
Field, J. S., Brooklyn, N. Y. Sheet-metal can	210,512	Dec. 3	130	34	14	840
Fischer, G. A., Gorlitz, Prussia. Stop-cock	210,454	Dec. 3	68	17	14	833
Fitch, B. F., La Crosse, Wis. Water-feeding device for boilers	210,513	Dec. 3	131	34	14	841
Fleisch, J. H., New York, N. Y. Neck-tie	210,514	Dec. 3	132	35	14	841
Fogg, D. S. (See Salmon, L. A., assignor.)						
Foley, J., assignor of one-half interest to F. Adee, Brooklyn, N. Y. Service-tank	210,515	Dec. 3	133	35	14	841
Fonchet, J. A., Paris, France. Lighting apparatus	210,455	Dec. 3	69	17	14	833
Freeman, M. W., Beatrice, Nebr. Band-cutting attachment for thrashing-machines	210,456	Dec. 3	70	18	14	833
Gage, C., Boston, Mass. Chuck	210,415	Dec. 3	28	6	14	827
Gage, H. J., Kalamazoo, Mich. Wagon-bolster spring	210,516	Dec. 3	134	36	14	841
Gast, J., Brooklyn, N. Y. Applying designs, &c., to glass	210,416	Dec. 3	30	.....	14	827
Gathright, J. B., Louisville, Ky. Mail-bag fastener and tag-holder	210,417	Dec. 3	30	6	14	827
Gilbert, A. G. (See Gilbert, N. H. and A. G.)						
Gilbert, N. H. and A. G., Fulton, assignors of one-third interest to R. B. True, Syracuse, N. Y. Manufacturing buckwheat-flour	210,517	Dec. 3	135	.....	14	841
Glover, W. W., Aurora, Ill. Belt-fastener	210,518	Dec. 3	136	36	14	841
Goodwin, S. A., Dayton, Ohio. Condenser for steam-engines	210,519	Dec. 3	138	36	14	841
Gordon, J. F., Rochester, N. Y. Grain-binder	210,520	Dec. 3	139	36	14	841
Gould, S. L., Gardiner, Me. Pulp-screen for paper machinery	210,521	Dec. 3	141	37	14	842
Graff, J. M., Brooklyn, N. Y. Hot-air furnace	210,418	Dec. 3	31	7	14	828
Graves, H. L., Rockaway, N. J. Trundling-hoop	210,419	Dec. 3	32	7	14	828
Gray, W. H., Tama City, Iowa. Grafting implement	210,420	Dec. 3	32	7	14	828
Griffin, G. W., assignor to himself and P. C. Hancock, Franklin, N. H. Scroll-saw	210,421	Dec. 3	33	7	14	828
Guiley, H. F. (See Guiley, J. H. and H. F.)						
Guiley, J. H. and H. F., East Saginaw, Mich. Cutter-head	210,522	Dec. 3	143	37	14	842
Gumbs, E., Jersey City, N. J. Hand-stamp	210,457	Dec. 3	71	18	14	833
Hackett, G., Birmingham, England. Attaching the fore-end stock to gun-barrels	210,523	Dec. 3	144	37, 38	14	842
Hancock, P. C. (See Griffin, G. W., assignor.)						
Hanks, O., assignor of two-thirds interest to H. W. Wilson and G. J. Birnbaum, Cincinnati, Ohio. Check-rein attachment	210,524	Dec. 3	146	38	14	842
Handley, T. A., Dayton township, Butte county, Cal. Harrow	210,525	Dec. 3	147	38	14	842
Hanson, F. O., Philadelphia, Pa. Iron fence	210,526	Dec. 3	147	38	14	842
Harris, H. A., Kanonah, N. Y. Load-binder	210,527	Dec. 3	148	39	14	842
Harris, S., Jr., Boston, Mass., and S. Shepherd, Nashua, N. H.; said Harris assignor of all, and said Shepherd assignor of one-third interest to H. L. Hazelton, Boston, Mass. Machine for feeding nails to boot and shoe heeling devices	210,528	Dec. 3	149	39, 40	14	843
Hauber, M., Grant City, Mo. Boot and shoe upper	210,529	Dec. 3	153	40	14	843
Hayes, D. D., San Francisco, Cal. Hose-clamp	210,422	Dec. 3	34	8	14	828
Hazelton, H. L. (See Harris and Shepherd, assignors.)						
Hazen, R. S., Sr., Calmus, Iowa. Nut-lock	210,530	Dec. 3	154	40	14	843
Hearst, A., and W. W. Dunn, Peoria, Ill. Corn-planter	210,531	Dec. 3	154	40	14	843
Heavener, F., Laramie City, Wyo. Ter. Clothes-line reel	210,532	Dec. 3	155	41	14	843
Henthorn, J. T., Providence, R. I., and B. D. Thayer, New York, N. Y., assignors, by mesne assignments, to American Ship Windlass Company, Providence, R. I. Capstan. (Reissue)	8,511	Dec. 3	224	59	14	853
Holmes, H. A. and W. M., Owatonna, Minn. Grain-binder	210,533	Dec. 3	156	41	14	843
Holmes, W. M. (See Holmes, H. A. and W. M.)						
Holt, C. L., Portland, Me. Filtering-frame	210,534	Dec. 3	158	41	14	844
Horton, H. B., Ithaca, N. Y. Mechanical musical instrument	210,424	Dec. 3	36	8	14	828
Hoshall, D. W., Dallas, Tex. Seed-planter	210,535	Dec. 3	158	42	14	844
Howard, A., *et al.* (See Lippincott, J. M., assignor.)						
Huber, E., Marion, Ohio. Feed-water heater	210,536	Dec. 3	160	42	14	844
Hughes, D. W., Butler county, Ohio. Riding-plow	210,425	Dec. 3	38	8	14	828
Humphrey, M., Concord, N. H. Corn-planter	210,537	Dec. 3	160	42	14	844
Hyatt, W., Rexville, Ind. Fence	210,423	Dec. 3	35	8	14	828
Hydrocarbon Steam Generating Company. (See Browne, W. F., assignor.)						
Ingersoll, R. H., Biddeford, Me., assignor to S. McHenry, Woodbury, N J. Registering-machine. (Reissue)	8,510	Dec. 3	221	58, 59	14	852
Jackson, B., Woodland, Cal. Horse hay-fork	210,458	Dec. 3	72	18	14	833
James, J. P. R., Reed's Landing, Minn. Substitute for tobacco	210,538	Dec. 3	161	.....	14	844
Jenks, G. A. (See McGann and Jenks.)						
Johnson, F. G., Brooklyn, N. Y. Chair back and bottom	210,426	Dec. 3	39	9	14	829
Jones, D. E. (See Smith, S., assignor.)						
Judson, D. W. (See Weaver and Judson.)						
Kerr, J., Pittsburg, Pa. Fire-escape	210,539	Dec. 3	162	43	14	844

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
King, F., Baltimore, Md., assignor of one-half interest to J. L. Sinn, Washington, D. C. Pipe-coupling for cars	210,459	Dec. 3	73	18	14	834
Kinsman, J. H., Salem, Mass. Indicator-lock	210,540	Dec. 3	163	43	14	844
König, J. H., assignor to himself, E. Oakes, and H. Lerner, Mason City, West Va. Recovering salt from its admixture with impurities in crude brine	210,541	Dec. 3	164	.....	14	844
Krausch, T., Chicago, Ill. Refrigerator-building. (Reissue)	8,512	Dec. 3	225	59	14	853
Kreis, A. C., New York, N. Y. Connecter for battery-carbons	210,460	Dec. 3	74	19	14	834
Kulp, I. R., Hatfield, Pa. Hay-press	210,542	Dec. 3	165	43	14	845
Lambert, A. A., assignor of two-thirds interest to M. Benner and J. P. Barrett, Chicago, Ill. Reflector for electric lights	210,543	Dec. 3	166	44	14	845
Lander, G. Pittsburg, Pa. Paper-folding machine	210,544	Dec. 3	167	44	14	845
Lerner, H., *et al.* (See König, J. H., assignor.)						
Lindsay, J. P., assignor of one-half interest to J. E. Wildey, New York, N. Y. Cap for bottle-stoppers	210,545	Dec. 3	169	44	14	845
Lippincott, J. M., Kilbuck township, Allegheny county, assignor to H. C. Van Tine, Pittsburg, and A. Howard, Wilkins township, Pa. Lubricating compound	210,461	Dec. 3	75	.....	14	834
Lorentz & Sullivan, *et al.* (See Conway, W. B., assignor.)						
Lovell, M. N., assignor to F. F. Adams & Co., Erie, Pa. Mop and brush holder	210,427	Dec. 3	39	9	14	829
Lovell, M. N., assignor to F. F. Adams & Co., Erie, Pa. Mop and brush holder	210,428	Dec. 3	40	9	14	829
Lowell, J. P., Purcellville, Va. Guano-distributer	210,462	Dec. 3	76	19	14	834
Lumpkin, T. B., and W. D. Benson, Rossville, S. C. Alarm-lock	210,546	Dec. 3	169	45	14	845
Maish, J. A. (See Bovey, G. C., assignor.)						
Marks, J. F. (See Warner, C. W., assignor.)						
Marsh, C. D., Williamsport, Pa. Whiffletree	210,463	Dec. 3	77	19	14	834
Mathews, J. F. (See Walker, J. D., assignor.)						
Mayo & Brother, P. H. (See Mayo and Atkinson, assignors.)						
Mayo, P. H., and T. Atkinson, assignors to P. H. Mayo & Brother, Richmond, Va. Removable cover for show-boxes	210,429	Dec. 3	41	9	14	829
McCormick, C. H., *et al.* (See Warner, G., assignor.) (Reissue.)						
McCormick, L. J., *et al.* (See Warner, G., assignor.) (Reissue.)						
McGann, O. J., and G. A. Jenks, Chicago, Ill. Automatic advertising apparatus	210,547	Dec. 3	170	45	14	845
McHenry, S. (See Ingersoll, R. H., assignor.) (Reissue.)						
McKinny, S. P., assignor of two-thirds interest to J. Dooly and J. M. Bond, Barrettsville, Ga. Plow	210,548	Dec. 3	171	45	14	845
Mersick, E. F. (See English, J. G., assignor.)						
Mersick, E. F. (See Porter, B. S., assignor.)						
Merwin, A. W. (See Coulter, T. J., assignor.)						
Miller, C. H., *et al.* (See Conway, W. B., assignor.)						
Montgomery, D. C., assignor of one-half interest to Z. Montgomery, St. Joseph, Mo. Brake-rod attachment	210,549	Dec. 3	172	46	14	845
Montgomery, Z. (See Montgomery, D. C., assignor.)						
Moore, J. C., Peoria, Ill. Refrigerator	210,464	Dec. 3	78	19	14	834
Murray, T. W. B., and C. J. Baker, Chicago, Ill. Camp-bed	210,550	Dec. 3	173	46	14	846
Nicol, A., Scranton, Pa. Hand-drill for stone-working, mining, &c	210,430	Dec. 3	41	10	14	829
Nixon, W. W., Parkersburg, W. Va. Polishing-iron	210,551	Dec. 3	174	46	14	846
Norriss, W. R., Baltimore, Md. Can-printing machine	210,552	Dec. 3	175	46, 47	14	846
Oakes, E., *et al.* (See König, J. H., assignor.)						
Ortmayer, A., Chicago, Ill. Harness-saddle	210,431	Dec. 3	42	10	14	829
Page, D. W., Chicago, Ill. Book-cover protector	210,432	Dec. 3	43	10	14	829
Palmer, A. J., Carlton, N. Y. Washer-cutter	210,553	Dec. 3	176	47	14	846
Palmer, C. H., Jr., Merrimac, Mass. Whiffletree-iron	210,554	Dec. 3	177	47	14	846
Peck, C. D., Melrose, Mass. Amalgamator	210,465	Dec. 3	79	20	14	834
Pennington, A. S., Paterson, N. J. Tool-handle	210,555	Dec. 3	178	47	14	846
Phelan, J. H., New York, N. Y. Valve-grinder	210,433	Dec. 3	44	10	14	829
Pilant, W. H., Point Coupee, La. Apparatus for defecating cane-juice	210,556	Dec. 3	178	48	14	846
Pollock, H., Fredericton, New Brunswick, Canada. Thread-cutting attachment for sewing-machines	210,466	Dec. 3	80	20	14	834
Porter, B. S., Ottawa, Ill., assignor to J. G. English and E. F. Mersick, New Haven, Conn. Whiffletree-plate	210,557	Dec. 3	179	48	14	847
Prescott, G. W., Battle Creek, Mich. Buffer for locomotive-tenders	210,467	Dec. 3	81	20	14	834
Prescott, G. W., Battle Creek, Mich. Cone, &c., for locomotive smoke-stacks	210,468	Dec. 3	81	20	14	834
Pyne, J. W., Louisville, Ky. Middlings-separator	210,558	Dec. 3	180	48	14	847
Redett, W., Fredericksburg, Ohio. Stove-pipe elbow	210,434	Dec. 3	45	11	14	830
Renwick, E. S., Millburn, N. J. Regulating mechanism for incubators, &c	210,559	Dec. 3	181	48, 49	14	847
Roberts, S., administrator. (See Walker, J. D.)						
Robertshaw, F. W., Pittsburg, Pa. Hose-band	210,560	Dec. 3	186	49	14	847
Root, J. B., New York, N. Y. Velocipede	210,435	Dec. 3	46	11	14	830
Rubber Step Manufacturing Company. (See Sawyer, F. A., 2d, assignor.)						
Russell, G. H., Cheyenne, Wyo. Ter. Device for transmitting motion	210,469	Dec. 3	82	21	14	835
Russell, J. C., Salter's Station, S. C. Vehicle	210,561	Dec. 3	187	50	14	847
Salmon, L. A., Boston, assignor of one-half interest to D. S. Fogg, Norwood, Mass. Apparatus for heating apartments, railway-cars, &c	210,563	Dec. 3	189	50, 51	14	848
Sanders, D. B., Burlington, Mich. Feather-renovator	210,564	Dec. 3	191	51	14	848
Sargent, F. G., Graniteville, Mass. Burring-machine	210,565	Dec. 3	193	51	14	848
Sawyer, F. A., 2d, assignor to Rubber Step Manufacturing Company, Boston, Mass. Carriage-step	210,470	Dec. 3	83	21	14	835
Schleber, H. H., Rochester, N. Y. Shot-cartridge	210,566	Dec. 3	194	51	14	848
Scott, W. M., Birmingham, and T. Baker, Aston, near Birmingham, England. Breech-loading gun	210,436	Dec. 3	47	11, 12	14	830
Selby, J. W., *et al.* (See Antunes, J. A., assignor.)						
Sergeant, B. E., Greensborough, N. C. Saw-mill head-block	210,567	Dec. 3	195	52	14	848
Senderling, J. C., San Francisco, Cal. Pulverizing-barrel	210,471	Dec. 3	85	21	14	835
Seymour, J. F., New York, N. Y. Stamp-drying machine	210,472	Dec. 3	86	21	14	835
Shearer, B. H., Rushford, N. Y. Vehicle-pole	210,568	Dec. 3	196	52	14	848
Shepherd, S. (See Harris and Shepherd.)						
Sherrill, J., Harrisburg, Oreg. Gang cultivator and seeder	210,569	Dec. 3	197	52	14	849
Simon, G., New York, N. Y. Machine for shaping dress-trimmings	210,570	Dec. 3	199	53	14	849
Sinn, J. L. (See King, F., assignor.)						
Slawson, J. B., New York, N. Y. Fare-box	210,571	Dec. 3	200	53	14	849
Slevin, J. J., New York, N. Y. Garbage-receptacle	210,572	Dec. 3	203	53	14	849
Smith, S., Mabelvale, assignor to himself and D. E. Jones, Little Rock, Ark. Rotary harrow and cultivator	210,437	Dec. 3	49	12	14	830
Smith, T. S., Fair Haven, Conn. Bottle-stopper fastening	210,438	Dec. 3	51	12	14	830
Smith, W., Carmi, Ill. Fly-trap	210,562	Dec. 3	188	50	14	847
Solomon, J. K. B., Riegelsville, N. J. Standing bench-vise	210,473	Dec. 3	87	22	14	835
Spooner, W. H., Portsmouth, Va. Reefing and furling sails	210,573	Dec. 3	204	54	14	850
Sprague, C. A., and J. W. Clardy, Weaver's Station, Ala. Cotton chopper and rake	210,574	Dec. 3	205	54	14	850
Staib, H., Blossburg, Pa. Leather-finishing machine	210,474	Dec. 3	87	22	14	835

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Drg.	Vol.	Page.
Stewart, L., Titusville, Pa. Anchor for oil-well packers	210,575	Dec. 3	206	54	14	850
Stratton, A. E., Jr., Brazoria, Tex. Car-axle bearing	210,475	Dec. 3	89	22	14	835
Tarble, H. J. (See Eade, C., assignor.)						
Taylor, C. F., Springfield, Mass. Paper box	210,576	Dec. 3	207	54	14	850
Taylor, R., Leicester, England. Card for holding and exhibiting braid	210,577	Dec. 3	208	55	14	850
Terrell, E. P., Bellefontaine, Ohio. Animal-trap	210,578	Dec. 3	209	55	14	850
Thayer, B. D. (See Heathorn and Thayer.) (Reissue.)						
Thomson, F. M. (See Thomson, P. S. and F. M.)						
Thomson, P. S. and F. M., Jersey City, N. J. Mail-bag	210,579	Dec. 3	210	55	14	850
Trageser, J., New York, N. Y. Connecting sputs to boilers	210,476	Dec. 3	89	22	14	835
Trautmann, R., New York, N. Y. Package-band	210,439	Dec. 3	52	12	14	831
True, R. B. (See Gilbert, N. H. and A. G., assignors.)						
Tudor, R. M., Philadelphia, Pa. Ornamented window-glass. (Reissue)	8,514	Dec. 3	228	61	14	854
Turk, J. W. B., Euchee, Tenn. Medical compound	210,477	Dec. 3	90	.....	14	836
Turner, H. A., Bedford county, Va. Churn-motor	210,580	Dec. 3	211	55	14	851
Turner, W. A., Hiawatha, Kans. Seed-drill	210,581	Dec. 3	212	56	14	851
Van Tine, H. C., *et al.* (See Lippincott, J. M., assignor.)						
Van Wagenen, C. (See Clarke and Van Wagenen.)						
Vicaire, E., Paris, France. Device for transmitting motion	210,478	Dec. 3	90	23	14	836
Voth, C. W., *et al.* (See Dressell and Voth, assignors.)						
Voth, E. H. (See Dressell and Voth.)						
Voth, J. G. (See Dressell and Voth.)						
Walker, J. D., deceased, S. Roberts, administrator, and assignor to J. F. Mathews, Stamford, Conn. Fire-kindler	210,582	Dec. 3	213	56	14	851
Warden, B. J., Philadelphia, Pa. Carriage-dash	210,583	Dec. 3	213	56	14	851
Warner, C. W., assignor of one-half interest to J. F. Marks, La Fayette, Ind. Stove-back lining	210,584	Dec. 3	214	56	14	851
Warner, G., West Liberty, Iowa, assignor, by mesne assignments, to C. H. & L. J. McCormick, Chicago, Ill. Grain-binder. (Reissue)	8,513	Dec. 3	226	60, 61	14	854
Way, T. B., Troy, N. Y. Draft-deflecting plate in cooking-stoves	210,440	Dec. 3	52	13	14	831
Weaver, J. H., and D. W. Judson, Chicago, Ill. Mail-bag	210,585	Dec. 3	215	57	14	851
Weaver, J. H., and D. W. Judson, Chicago, Ill. Mail-bag	210,586	Dec. 3	216	57	14	851
Wehrle, R., St. Louis, Mo. Sewing-machine caster	210,587	Dec. 3	217	57	14	851
Welling, W. J., Niles, Mich. Plow-jointer	210,588	Dec. 3	218	58	14	851
Wetzel, W., New York, N. Y. Hat	210,441	Dec. 3	53	13	14	831
Whipple, C. F., Racine, Wis. Wagon-brake	210,442	Dec. 3	54	13	14	831
Whitfield, T., Chicago, Ill. Apparatus for filling and capping capsules	210,589	Dec. 3	219	58	14	852
Wildermuth, L., New Lexington, Ohio. Bed-spring	210,479	Dec. 3	91	23	14	836
Wilkey, J. E. (See Lindsay, J. P., assignor.)						
Wilson, H. W., *et al.* (See Hanks, O., assignor.)						
Zoller, A., Hoboken, N. J. Bung for casks	210,590	Dec. 3	220	58	14	852

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 3d DAY OF DECEMBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Advertising apparatus. Automatic	O. J. McGann and G. A. Jenks	210,547	Dec. 3	170	45	14	845
Amalgamator	C. C. Peck	210,465	Dec. 3	79	20	14	834
Animal-trap	E. P. Terrell	210,578	Dec. 3	209	55	14	850
Axle bearing. Car-	A. E. Stratton, Jr.	210,475	Dec. 3	89	22	14	835
Axle box. Car-	R. Brewer	210,490	Dec. 3	101	26	14	837
Barrel. Pulverizing-	J. C. Senderling	210,471	Dec. 3	85	21	14	835
Battery-carbons. Connector for-	A. C. Krels	210,460	Dec. 3	74	19	14	834
Bed-bottom. Spring	C. Eade	210,508	Dec. 3	123	33	14	840
Bed. Camp-	T. W. B. Murray and C. J. Baker	210,550	Dec. 3	173	46	14	846
Belt-fastener	W. W. Glover	210,518	Dec. 3	136	36	14	841
Boilers. Connecting sputs to	J. Trageser	210,476	Dec. 3	89	22	14	835
Boilers. Water-feeding device for	B. F. Fitch	210,513	Dec. 3	131	34	14	841
Book-cover protector	D. W. Page	210,432	Dec. 3	43	10	14	829
Boot and shoe heeling devices. Machine for feeding nails to	S. Harris, Jr., and S. Shepherd	210,528	Dec. 3	149	39, 40	14	843
Boot and shoe upper	M. Hauber	210,529	Dec. 3	153	40	14	843
Bottle-stopper cap	J. P. Lindsay	210,545	Dec. 3	169	44	14	845
Bottle-stopper fastener	H. W. Dee	210,505	Dec. 3	120	31, 32	14	839
Bottle-stopper fastening	T. S. Smith	210,438	Dec. 3	51	12	14	830
Braid. Card for holding and exhibiting	R. Taylor	210,577	Dec. 3	208	55	14	850
Brake-rod attachment	D. C. Montgomery	210,549	Dec. 3	172	46	14	845
Brake. Wagon-	C. F. Whipple	210,442	Dec. 3	54	13	14	831
Brick-mold	J. L. Durrough	210,507	Dec. 3	122	32	14	839
Bung for casks	A. Zoller	210,590	Dec. 3	220	58	14	852
Burring-machine	F. G. Sargent	210,565	Dec. 3	193	51	14	848
Button. Sleeve-	L. Barre	210,397	Dec. 3	7	2	14	825
Camera	S. L. Bergstresser	210,445	Dec. 3	59	14	14	831
Can. Sheet-metal	J. S. Field	210,512	Dec. 3	130	34	14	840
Cane-juice. Apparatus for defecating	W. H. Pilant	210,556	Dec. 3	178	48	14	846
Caoutchouc or kerite. Manufacture of artificial	A. G. Day	210,411	Dec. 3	22	.....	14	827
Capstan	J. T. Heathorn and B. D. Thayer. (Reissue.)	8,511	Dec. 3	224	59	14	853
Capsules. Apparatus for filling and capping	T. Whitfield	210,589	Dec. 3	219	58	14	852
Car-coupling	C. W. Cornell	210,451	Dec. 3	64	16	14	832
Cars. Pipe-coupling for	F. King	210,459	Dec. 3	73	18	14	834
Carriage-dash	B. J. Warden	210,583	Dec. 3	213	56	14	851
Carriage-step	F. A. Sawyer, 2d	210,470	Dec. 3	83	21	14	835
Carriages. Top-joint for	J. G. English	210,510	Dec. 3	129	34	14	840
Cartridge. Shot-	H. H. Schleber	210,566	Dec. 3	194	51	14	848
Caster. Sewing-machine	R. Wehrle	210,587	Dec. 3	217	57	14	851
Casting. Method and apparatus for forming molds for	S. J. Adams	210,393	Dec. 3	3	1	14	825
Chair back and bottom	F. G. Johnson	210,426	Dec. 3	39	9	14	829
Chair. Barber's	J. Clough	210,500	Dec. 3	113	29	14	838
Chair. Sewing-	G. C. Bovey	210,487	Dec. 3	98	25	14	837
Chuck	C. Gage	210,415	Dec. 3	28	6	14	827
Churn-motor	H. A. Turner	210,580	Dec. 3	211	55	14	851
Cigar-perforator and match-box	W. B. Conway	210,501	Dec. 3	115	30	14	839
Cloth-folding machine	L. J. Boillot	210,486	Dec. 3	96	25	14	836
Clothes-line reel	F. Heavener	210,532	Dec. 3	155	41	14	843
Cock. Stop-	G. A. Fischer	210,454	Dec. 3	68	17	14	833
Coffee-pot	J. A. Antunes	210,483	Dec. 3	94	24	14	836
Coffin head-rest	W. W. Ball	210,395	Dec. 3	6	1	14	825
Cotton chopper and rake	C. A. Sprague and J. W. Clardy	210,574	Dec. 3	205	54	14	850
Cultivator and seeder. Gang	J. Sherrill	210,569	Dec. 3	197	52	14	849
Cutter-head	J. H. and H. F. Gulley	210,522	Dec. 3	143	37	14	842
Door-hanger	A. C. Arnold	210,485	Dec. 3	96	24	14	836
Dredging and ditching machine	D. Bridges	210,448	Dec. 3	62	15	14	832
Driers. Paddle for	B. F. Brightman	210,491	Dec. 3	102	26	14	837
Drill for stone-working, mining, &c. Hand-	A. Nicol	210,430	Dec. 3	42	10	14	829
Drill. Seed-	W. A. Turner	210,581	Dec. 3	212	56	14	851
Electric lights. Reflector for	A. A. Lambert	210,543	Dec. 3	166	44	14	845
Engine. Traction-	R. Broja	210,492	Dec. 3	102	27	14	837
Engines. Condenser for steam-	S. A. Goodwin	210,519	Dec. 3	138	36	14	841
Fare-box	J. B. Slawson	210,571	Dec. 3	200	53	14	849
Feather-renovator	D. B. Sanders	210,564	Dec. 3	191	51	14	848
Feed-water heater	E. Huber	210,536	Dec. 3	160	42	14	844
Felting-machine	H. G. Ellsworth	210,413	Dec. 3	26	5	14	827
Fence	W. Hyatt	210,423	Dec. 3	35	8	14	828
Fence. Iron	F. O. Hanson	210,526	Dec. 3	147	38	14	842
Filtering-frame	C. L. Holt	210,534	Dec. 3	158	41	14	844
Fire-arm lock	W. W. Dodge	210,506	Dec. 3	120	32	14	839
Fire-arms and other articles of metal. Ornamentation of	O. Bodenstein	210,446	Dec. 3	60	15	14	832

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Fire-escape	J. Kerr	210,539	Dec. 3	162	43	14	844
Fire-kindler	J. D. Walker	210,582	Dec. 3	213	56	14	851
Flour. Manufacturing buckwheat	N. H. and A. G. Gilbert	210,517	Dec. 3	135	.....	14	841
Fly-trap	W. Smith	210,562	Dec. 3	188	50	14	847
Fork. Horse hay	B. Jackson	210,458	Dec. 3	72	18	14	833
Fountain-pen	J. G. Cross	210,404	Dec. 3	14	5	14	826
Furnace. Hot-air	J. M. Graff	210,418	Dec. 3	31	7	14	828
Garbage-receptacle	J. J. Slevin	210,572	Dec. 3	203	53	14	849
Glass. Applying designs, &c., to	J. Gast	210,416	Dec. 3	30	.....	14	827
Glass. Ornamented window	R. M. Tudor. (Reissue)	8,514	Dec. 3	228	61	14	854
Grafting implement	W. H. Gray	210,420	Dec. 3	32	7	14	828
Grain-binder	J. F. Gordon	210,520	Dec. 3	139	36	14	841
Grain-binder	H. A. and W. M. Holmes	210,533	Dec. 3	156	41	14	843
Grain-binder	G. Warner. (Reissue)	8,513	Dec. 3	226	60, 61	14	854
Grain-binder	G. H. Clarke and C. Van Wagenen	210,499	Dec. 3	112	29	14	838
Grate-bar	J. Bamrick	210,396	Dec. 3	7	2	14	825
Grate-bearing bar	J. P. Lowell	210,462	Dec. 3	76	19	14	834
Guano-distributer	G. Hackett	210,523	Dec. 3	144	37, 38	14	842
Gun-barrels. Attaching the fore-end stock to	W. M. Scott and T. Baker	210,436	Dec. 3	47	11, 12	14	830
Gun. Breech-loading	T. A. Hansley	210,525	Dec. 3	147	38	14	842
Harrow	S. Smith	210,437	Dec. 3	49	12	14	830
Harrow and cultivator. Rotary	W. Wetzel	210,441	Dec. 3	53	13	14	831
Hat	R. Eickemeyer	210,509	Dec. 3	125	33	14	840
Hat-shaving machine	T. W. Bracher	210,489	Dec. 3	99	25, 26	14	837
Hats and caps. Sweat-band for	A. Dressell, and E. H. and J. G. Voth	210,412	Dec. 3	25	5	14	827
Head-light. Signal	I. A. Salmon	210,563	Dec. 3	189	50, 51	14	848
Heating apartments, railway-cars, &c. Apparatus for	L. W. Brewster	210,447	Dec. 3	61	15	14	832
Hoisting apparatus. Tobacco	A. Andrén	210,482	Dec. 3	93	24	14	836
Hoop-fastener	H. L. Graves	210,419	Dec. 3	32	7	14	828
Hoop. Trundling	H. A. Bartholomew	210,398	Dec. 3	8	2	14	825
Horseshoe-calk	F. W. Robertshaw	210,560	Dec. 3	186	49	14	847
Hose-band	D. D. Hayes	210,422	Dec. 3	34	8	14	828
Hose-clamp	T. J. Cain	210,402	Dec. 3	11	3, 4	14	826
Hose-rack	H. C. Apel	210,394	Dec. 3	5	1	14	825
Hydrant	E. S. Renwick	210,559	Dec. 3	181	48, 49	14	847
Incubators, &c. Regulating mechanism for	G. C. Carnell	210,449	Dec. 3	63	16	14	832
Ironing and bosom board	A. G. Day	210,406	Dec. 3	16	.....	14	827
Kerite. Compound for the manufacture of	A. G. Day	210,408	Dec. 3	18	.....	14	827
Kerite from gums and oils. Manufacture of	A. G. Day	210,409	Dec. 3	20	.....	14	827
Kerite. Manufacture of	A. G. Day	210,410	Dec. 3	21	.....	14	827
Kerite. Preparing vegetable oils for the manufacture of							
Leather-finishing machine	H. Staib	210,474	Dec. 3	87	22	14	835
Lighting apparatus	J. A. Fonchet	210,455	Dec. 3	69	17	14	833
Load-binder	H. A. Harris	210,527	Dec. 3	148	39	14	842
Lock. Alarm	T. B. Lumpkin and W. D. Benson	210,546	Dec. 3	169	45	14	845
Lock. Indicator	J. H. Klusman	210,540	Dec. 3	163	43	14	844
Locomotive-tenders. Buffer for	G. W. Prescott	210,467	Dec. 3	84	20	14	834
Lubricating compound	J. M. Lippincott	210,461	Dec. 3	75	.....	14	834
Mail-bag	P. S. and F. M. Thomson	210,579	Dec. 3	210	55	14	850
Mail-bag	J. H. Weaver and B. W. Judson	210,585	Dec. 3	215	57	14	851
Mail-bag	J. H. Weaver and D. W. Judson	210,586	Dec. 3	216	57	14	851
Mail-bag fastener and tag-holder	J. B. Gathright	210,417	Dec. 3	30	6	14	827
Malt extract	J. Carurick	210,406	Dec. 3	110	.....	14	838
Meat-tenderer	T. J. Coulter	210,503	Dec. 3	116	30	14	839
Mechanical movement	J. E. Crisp	210,452	Dec. 3	65	16, 17	14	833
Medical compound	J. W. B. Turk	210,477	Dec. 3	90	.....	14	836
Middlings-separator	J. W. Pyne	210,558	Dec. 3	180	42	14	847
Millstone-driver	P. H. Childress	210,498	Dec. 3	111	29	14	838
Mold. Sand-core	S. J. Adams	210,392	Dec. 3	1	1	14	825
Mop and brush holder	M. N. Lovell	210,427	Dec. 3	39	9	14	829
Mop and brush holder	M. N. Lovell	210,428	Dec. 3	40	9	14	829
Motion. Device for transmitting	G. H. Russell	210,469	Dec. 3	82	21	14	835
Motion. Device for transmitting	E. Vicaire	210,478	Dec. 3	90	23	14	836
Musical instrument. Mechanical	H. B. Horton	210,424	Dec. 3	36	8	14	828
Neck-tie	J. H. Fleisch	210,514	Dec. 3	132	35	14	841
Nut-lock	R. S. Hazen, Sr.	210,530	Dec. 3	153	40	14	843
Oar and oar-lock	N. B. Cook	210,502	Dec. 3	116	30	14	839
Package-band	R. Trautmann	210,439	Dec. 3	52	12	14	831
Packing. Piston-rod and valve-stem	G. M. Davis	210,504	Dec. 3	118	30, 31	14	839
Paper box	C. F. Taylor	210,576	Dec. 3	207	54	14	850
Paper-folding machine	G. Lauder	210,544	Dec. 3	167	44	14	845
Paper for bank-notes, bonds, checks, &c. Manufacture of	G. W. Casilear	210,497	Dec. 3	111	.....	14	838
Paper machinery. Pulp-screen for	S. L. Gould	210,521	Dec. 3	141	37	14	842
Pipe coupling or joint	J. Enright	210,414	Dec. 3	27	6	14	827
Planter. Corn	A. Hearst and W. W. Dunn	210,531	Dec. 3	154	40	14	843
Planter. Corn	M. Humphrey	210,537	Dec. 3	160	42	14	844
Planter. Seed	D. W. Hoshall	210,535	Dec. 3	158	42	14	844
Plow	S. P. McKinny	210,548	Dec. 3	171	45	14	845
Plow-jointer	W. J. Welling	210,588	Dec. 3	218	58	14	851
Plow. Riding	D. W. Hughes	210,425	Dec. 3	38	8	14	828
Pole. Vehicle	B. H. Shearer	210,568	Dec. 3	196	52	14	848
Polishing-iron	W. W. Nixon	210,551	Dec. 3	174	46	14	846
Press. Baling	W. C. Bibb, Sr.	210,399	Dec. 3	8	2	14	826
Press. Hay	I. R. Kulp	210,542	Dec. 3	165	43	14	845
Printing machine. Can	W. R. Norriss	210,552	Dec. 3	175	46, 47	14	846
Radiator. Heat	J. N. Farnham	210,453	Dec. 3	67	17	14	833
Rake. Garden	S. D. Carris	210,450	Dec. 3	64	16	14	832
Registering-machine	R. H. Ingersoll. (Reissue)	8,510	Dec. 3	221	58, 59	14	852
Refrigerator	J. C. Moore	210,464	Dec. 3	78	19	14	834
Refrigerator-building	T. Krausch. (Reissue)	8,512	Dec. 3	225	59	14	853
Rein attachment. Check	O. Hanks	210,524	Dec. 3	146	38	14	842
Rubber or kerite. Compound of india	A. G. Day	210,407	Dec. 3	17	.....	14	827
Saddle. Harness	A. Ortmayer	210,431	Dec. 3	42	10	14	829
Sails. Reefing and furling	W. H. Spooner	210,573	Dec. 3	204	54	14	850
Salt from its admixture with impurities in crude brine. Recovering	J. H. König	210,541	Dec. 3	164	.....	14	844
Sash-balance	C. T. Brittain	210,401	Dec. 3	10	3	14	826

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Saw guide. Circular	J. Casson	210,403	Dec. 3	12	4, 5	14	826
Saw-mill head-block	B. E. Sergeant	210,567	Dec. 3	195	52	14	848
Saw. Scroll	G. W. Griffin	210,421	Dec. 3	33	7	14	828
Scales. Spring weighing	L. E. Brown	210,493	Dec. 3	105	27	14	837
Screen. Window	E. T. Burrowes	210,495	Dec. 3	109	29	14	838
Sewer-gases and consuming the same by combustion. Extracting	B. S. Alexander	210,443	Dec. 3	55	.....	14	831
Sewing-machine thread-cutting attachment	H. Pollock	210,466	Dec. 3	80	20	14	834
Show-boxes. Removable cover for	P. H. Mayo and T. Atkinson	210,429	Dec. 3	41	9	14	829
Sieve	L. E. Ambrose	210,481	Dec. 3	93	23	14	836
Smoke-stacks. Cone, &c., for locomotive	G. W. Prescott	210,468	Dec. 3	84	20	14	834
Spinning-ring and spindle-support	J. Birkenhead	210,400	Dec. 3	9	3	14	826
Spittoon. Dental	G. W. Archer	210,484	Dec. 3	95	24	14	836
Spring. Bed	L. Wildermuth	210,479	Dec. 3	91	23	14	836
Spring. Wagon-bolster	H. J. Gage	210,516	Dec. 3	134	36	14	841
Stamp-drying machine	J. F. Seymour	210,472	Dec. 3	86	21	14	835
Stamp. Hand	E. Gumbs	210,457	Dec. 3	71	18	14	833
Stave-dressing machine	A. M. Benson	210,444	Dec. 3	56	13, 14	14	831
Steam-generating apparatus	W. F. Browne	210,494	Dec. 3	105	28	14	838
Stove-back lining	C. W. Warner	210,584	Dec. 3	214	56	14	851
Stove-pipe elbow	W. Redett	210,434	Dec. 3	45	11	14	830
Stoves. Draft-deflecting plate in cooking	T. B. Way	210,440	Dec. 3	52	13	14	831
Tack-driver	P. S. Felter	210,511	Dec. 3	130	34	14	840
Tank. Service	J. Foley	210,515	Dec. 3	133	35	14	841
Thrashing-machines. Band-cutting attachment for	M. W. Freeman	210,456	Dec. 3	70	18	14	833
Tobacco. Substitute for	J. P. R. James	210,538	Dec. 3	161	.....	14	844
Tool-handle	A. S. Pennington	210,555	Dec. 3	178	47	14	846
Toy. Perambulating	S. W. Adams	210,480	Dec. 3	91	23	14	836
Trimmings. Machine for shaping dress	G. Simon	210,570	Dec. 3	199	53	14	849
Valve-grinder	J. H. Phelan	210,433	Dec. 3	44	10	14	829
Vapor-burner	J. Bowers	210,488	Dec. 3	99	25	14	837
Vehicle	J. C. Russell	210,561	Dec. 3	187	50	14	847
Velocipede	J. B. Root	210,435	Dec. 3	46	11	14	830
Vise. Standing bench	J. K. B. Solomon	210,473	Dec. 3	87	22	14	835
Vulcanized compounds. Combination of vegetable oils and grahamite for the manufacture of	A. G. Day	210,405	Dec. 3	15	.....	14	827
Washer-cutter	A. J. Palmer	210,553	Dec. 3	176	47	14	846
Well packers. Anchor for oil	L. Stewart	210,575	Dec. 3	206	54	14	850
Whiffletree	C. D. Marsh	210,463	Dec. 3	77	19	14	834
Whiffletree-iron	C. H. Palmer, Jr.	210,554	Dec. 3	177	47	14	846
Whiffletree-plate	B. S. Porter	210,557	Dec. 3	179	48	14	847

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DECISIONS OF THE COURTS.

U. S. Circuit Court—District of Rhode Island.

ALEXANDER HENRY *vs.* THE PROVIDENCE TOOL COMPANY.

[*In Equity.*—No. 857.]

By the provisions of the patent act of July 8, 1870, Congress never intended to extend the term of the domestic patent beyond the legal term secured to the foreign patentee when the domestic patent was granted.

Hence, Letters Patent No. 119,846, granted Alexander Henry October 10, 1871, for improvement in rifled fire-arm, expired by limitation of law with the original English patent, granted for fourteen years from November 15, 1860.

The prolongation of the English patent for a further term after the expiration of the original does not save the domestic patent from lapsing under the statute.

Public use in this country of the invention of the foreign patentee more than two years prior to filing the application for domestic patent is a defeat of the patent by the terms of the existing law of 1870. The public use thus made essential is a use in public, not necessarily a use by the public generally.

Rifled shot-guns obtained from the foreign patentee, Henry, and containing the patented improvements, having been used in public in this country by at least one or two persons more than two years prior to filing the domestic application, *Held* to defeat the domestic patent thereafter granted, (No. 119,846, October 10, 1871.)

[*Chauncy Smith*, for complainant; *Benjamin F. Thurston* and *J. C. B. Woods*, for defendants.]

OPINION OF THE COURT.—*October* 9, 1878.

CLIFFORD, *J.*:

Vigilance is necessary to entitle an individual to the privileges which the act of Congress grants to an inventor. It is not enough that he should show his right by invention, but he must in due time secure it in the mode required by law. (*Shaw* vs. *Cooper*, 7 Pet., 319.) Meritorious inventors cannot be debarred from receiving a patent for their inventions by reason of the same having been first patented in a foreign country, nor can the patent be held invalid on that account, or be held void because the invention had been known or used in a foreign country before it was made here, if it had not been patented or described in some printed publication. Provision is also made that an invention first patented in a foreign country may be subsequently patented here, if the invention shall not have been introduced into public use here for more than two years prior to the application; but the express enactment is that the domestic patent shall expire at the same time with the foreign patent, or, if there be more than one, at the same time with the one having the shortest term. (16 Stats. at Large, §§ 25 to 62, pp. 201, 208.) Such was the language of the act under which the patent in controversy was issued, and the present act also provides, in the same words, that the domestic patent shall be so limited as to expire at the same time with the foreign patent; or, if there be more than one, at the same time with the one having the shortest term. (Rev. Stats., § 4887.)

Improvements in rifled fire-arms constitute the subject-matter of the patent described in the bill of complaint; and the patentee states that the invention relates to the arrangement and construction of such fire-arms, and that the essential peculiarity of the improvement consists in the form of the rifled bore, which, as he states, includes a series of planes, angles, and grooves, adding that these surfaces may be formed or arranged in various ways; that, instead of relying wholly upon acute angles, semicircular or curvilinear projections or indentations, they may be produced upon the interior of the bore, and he gives examples illustrating some of the modes of construction. In one example of the improved bore, consisting of such a combination of planes and narrow curvilinear or angular surfaces or portions, he states that the surface of the bore, as made up of wide planes and narrow grooves, admits of a plug or missile of larger size than usual, and, of course, requires less expansion to fill the planes than one which touches the centers of the planes only; and he adds, in this connection, what it is important to notice, that while it requires less expansion to fill the planes, there is less windage, and that the planes with the grooves have more power to insure the

proper rotation of the missile or ball. Besides that, he also gives another example of the invention in which the planes and internal projections, either round, square, or acute, are combined, so as to afford double the number of points of bearing for the missile when in the barrel, and less windage before starting it, and requiring less expansion of the same to fill up the planes, while there is an equal amount or more power to cause the missile to rotate. Transverse sections of portions of the barrel of the fire-arm are given in the drawings, showing several modifications of the invention. In the modification shown in Figure 1 the barrel is rifled so that in its end view or transverse section it presents a quadrilateral figure with angular projections or bands extending inward from the angles of the planes, or, in other words, the rifling of the barrel forms four plane surfaces, and the periphery of the projectile, which is indicated by a dotted circle, touches the planes at the centers; and, in addition to the bearing-surfaces thus obtained, there are angular projections which extend inward from the planes, so that the apex of each of the projections is concentric with the center of the surfaces of its contiguous planes. These four ridges thus afford a further bearing or support to the projectile, and by these means double the number of points of bearing are obtained. These annular ridges also fill up to a great extent the spaces between the angles of the planes and the periphery of the projectile, thus reducing the windage by lessening the amount of the expansion necessary to cause the projectile to fit the grooves of the barrel, so that the rotary or spiral motion of the projectile is obtained with greater certainty, and consequently its flight is rendered more accurate. Equally minute and satisfactory explanations of the other figures of the drawings are also given in the specification, which are omitted in the opinion for the sake of brevity. Appended to the specification is a single claim, as follows:

What I claim is the system of rifling or grooving fire-arms in which a series of planes or flat surfaces are combined with angular, curved, or rectangular ridges or bands, either intervening between the planes or intersecting the same, as hereinbefore described and shown in the drawings.

These explanations are sufficient to show the nature of the invention which it is alleged the respondents have infringed. Service was made, and the corporation respondents appeared and filed an answer, setting up, among others, the following defenses:

1. That the patentee is not the original and first inventor of the improvement.

2. That the patent is invalid, because it is not alleged therein that the invention had not been in public use or on sale in this country for more than two years prior to the application, the supposed invention having been first patented in a foreign country.

3. That the patent in suit, granted on the 10th of October, 1871, expired by operation of law on the 15th of November, 1874, when the foreign patent first obtained by the patentee expired by limitation of law.

4. That the alleged invention, or a substantial and material part thereof claimed as new, was, before the invention of the patentee, described in each of the several patents set forth in the answer.

5. That the alleged invention, or a substantial and material part thereof claimed as new, was, before the invention of the patentee, known to and used by the persons named in the answer and amended answer, and whose residences and the places where such prior knowledge and use were had are also specified and alleged in the answer and amended answer.

6. That the patentee first obtained a patent for the supposed invention in a foreign country, and that the invention had been introduced into public use in this country for more than two years prior to his application for the patent described in the bill of complaint.

Defenses not urged at the argument will be omitted in this investigation.

7. They deny that they have made, used, or vended the supposed invention of the complainant, or that they have rifled fire-arms, or that they have sold such as were rifled upon the system described in his patent, or that they have in any manner infringed upon his exclusive rights secured in the said patent.

Two of the defenses, to wit, the third and sixth, will be first considered, for the reason that they were more discussed at the hearing than the others, and for the further reason that if one or both are sustained it will save the necessity of examining the others.

First. Of these the first is that the patent, though not granted here until the 10th of October, 1871, expired on the 15th of November, 1874, when the foreign patent expired, which was previously granted to the same party for the same invention. Letters patent were granted to the complainant for the same invention by Great Britain, on the 15th of November, 1860, nearly eleven years before the patent granted to him here bears date. Complainant's patent in suit, which was issued here, was granted under the act of the 8th of July, 1870, the twenty-fifth section of which provides that such a patent shall expire at the same time with the foreign patent, or, if there be more than one, at the same time with the one having the shortest term. British patents at that period were granted for the term of fourteen years, and of course the foreign patent granted to the complainant expired at the time alleged in the answer. Grant that, and it follows that the patent here expired at the same time, unless the proposition of the complainant can be sustained that the language of the act of Congress, as copied from the twenty-fifth section of the act, includes not only the term of the foreign patent then in force, but also the term of any prolongation which the patentee might procure from the foreign government. (16 Stats. at Large, 201.) Acts of Parliament at different periods have been passed empowering the Crown, by order in council, to prolong the term of a patent under certain restrictions, qualifications, and conditions. By the act in force at the time in question, section 69 provides to the effect that if a patentee shall, before the expiration of his patent, petition Her Majesty, in council, setting forth that he has been unable to obtain a due remuneration for the expenses and labor in perfecting his invention, and that an exclusive right for the period of seven years will not suffice for that purpose, Her Majesty is authorized to refer the matter to the judicial committee of the privy council, and if the report of the committee is favorable "it shall be lawful for Her Majesty, if she shall so think fit, to grant an extension thereof for any term not exceeding fourteen years." (Agnew's Treatise, chap. viii, p. 179.) Henry, the patentee, made seasonable application to the Crown for the prolongation of his patent, stating, among other things, that recently a contract had been made by an American firm with the Turkish Government to supply six hundred thousand arms, to be made with the barrels rifled on his system, and that he would be unable to derive any benefit from the contract in the shape of royalties, unless the term of his patent was extended. Due report was made by the privy council November 11, 1874, in favor of prolonging the patent for four years, upon certain restrictions and conditions, but the case shows that the report was not read at the board until thirteen days after the foreign patent expired, reckoning from its date. On that date it was read, and Her Majesty, in council, ordered "that the Lord Chancellor, upon the receipt thereof, do cause new letters patent, according to the tenor and effect of the order," to be made and sealed, and that a new patent be granted to the petitioner upon the conditions therein specified. New letters patent, it is provided by a later act of Parliament, shall be sealed and bear date as of the day after the expiration of the term of the original patent which may first expire. (Agnew's Treatise, p. 179.) Viewed in the light of these provisions, the complainant contends that by the true construction of the act of Parliament the prolongation of a patent is the same in effect as the extension of the original term, and that the extension, by relation, begins to operate at the moment when the original term expired, and the court is inclined to adopt that view as the correct exposition of the act of Parliament. (*Saxby* vs. *Hennet*, Law Rep., 8 Exch., 313.)

Suppose that is so, still it does not touch the question in this case, the question here being, What is the true construction of the act of Congress under which the patent in suit was granted? When granted, the foreign patent was still in full force, and would not expire for the period of three years; nor could any one foreknow whether a petition for prolongation would ever be seasonably presented; or, if presented, whether any prolongation would ever be granted. Congress employs the words "the foreign" patent, evidently referring to the term of the foreign patent to define the term of the domestic patent. Had Congress intended to grant a patent for an indefinite term, or for an uncertain and undefined duration, they would have employed suitable words to express such an intent. Our patent act requires every patentee, before he shall receive a patent, to file in the Patent Office a written description of his invention, and of the manner and process of making and using it, in such full, clear, and exact terms as to enable any person skilled in the art to make and use the same.

Requirements of the kind are enacted for several important purposes:

I. That the Government may know what they have granted, and what will become public property when the term of the monopoly expires.

II. That licensed persons, desiring to practice the invention, may know during the term how to make, construct, and use the invention.

III. That other inventors may know what part of the field of invention is unoccupied. (*Gill* vs. *Wells*, 22 Wall., 27.)

Adopt the theory of the complainant and none of those requirements would be of any avail, as none could foreknow whether the term of the patent was for three or seven years, or for some intermediate term of duration, the effect of which would be to make the rights of property in this country depend upon the discretion exercised by a foreign sovereign. Support to that view is derived from the words of the section, which refer not only to the foreign patent, but, if there be more than one, to the one having the shortest term, which, in effect, excludes the theory that the provision in any view can be held to include any subsequent prolongation or extension of the monopoly beyond what was then vested in the foreign patentee. If Congress had intended otherwise the language would have been different, and words would have been employed to signify that the domestic patent should continue as long as the same invention was protected by the foreign government.

Under the system prevailing here of extending patents for seven years, while the original term was for fourteen years only, the extended term would, in fact, have been a new grant, had not the eighteenth section of the same act provided that the extended patent should have the same effect, in law, as though it had been originally granted for the term of twenty-one years. (5 Stats. at Large, 125.) Even admit that the prolongation of the term is, under the foreign system, a continuation of the original patent, and that it takes effect from the day the original patent expires, without any lapse whatever, still it is clear that the admission is of no weight in the present case, as the question to be decided here is, What right does our patent act confer upon a patentee who first patented his invention in a foreign country? Her Majesty, as all must admit, had the power to refuse the petition for prolongation altogether, or to grant it, as she did in this case, upon terms and conditions not found in the original patent. Beyond all doubt she may grant the prolongation for the whole period recommended by the judicial committee, or for a less period of time, and no one in the case before the court could tell what her action in the premises would be until it took place, which was thirteen days after the term of the original patent expired. In fine, the Crown in such matters is supreme under the law of England, and is free to grant the royal favor in whole or in part, or to withhold it altogether. Extensions, when they were authorized here, were inchoate rights under the law, and were so far property that such a right could be sold and conveyed by an instrument of sufficient scope to show clearly that the grantor intended to convey the estate absolutely or upon condition. Assignments of the original patent might or might not convey the right to the extension, dependent upon the language of the instrument, and the intent, expressed or implied, of the parties.

Enough appears in these suggestions to show that there is a wide difference between the legal discretion which the Commissioner of Patents exercised under the act of Congress granting extensions, and the prerogative power exercised by the Crown in granting what is called prolongations of original patents. Applications of the kind here, if the statutory conditions were fulfilled, the Commissioner of Patents had no right to refuse; but a patentee in the foreign country petitioning for a prolongation of the term, if he obtains his request at all, obtains it not as a legal right but as a royal favor, which of itself goes far to support the proposition of the respondents that Congress never intended to extend the term of the domestic pat-

ent beyond the legal term secured to the foreign patentee when the domestic patent was granted. Great inconvenience would result from the opposite rule, as neither the authorities of the United States, nor inventors, or the public would ever, in such a case, be able to know what the patentee acquired under a patent granted here, in a case where the invention had previously been patented in a foreign country. Neither the act of a foreign sovereign, nor the act of a foreign legislature, can have the effect to prolong the term of a patent granted here beyond the term which the act of Congress prescribes. Nothing short of a special act of Congress can breathe new life into such a patent, after the term prescribed by law has expired. Tested by these several considerations, the court is of the opinion that the patent in suit ceased to be operative when the original foreign patent expired. Repugnant propositions are earnestly, and, no doubt, sincerely urged by the eminent counsel for the complainant, and, in view of the circumstances, the court deems it proper to say that there is another view of the case equally decisive against the right of the complainant to maintain the present suit.

Second. That the supposed invention was first patented in a foreign country, and that the same had been introduced into public use in this country for more than two years prior to his application for the patent described in the bill of complaint. Inventions first patented in a foreign country may be patented here, "provided the same shall not have been introduced into public use in the United States for more than two years prior to the application." (16 Stats. at Large, 201.) Evidence was given by the respondents showing that the invention was known and used in this country to a considerable extent for more than two years prior to the time when the complainant applied for a patent. Proofs to that effect come from several witnesses, of whom John Boyden was first examined. He testified to the effect that he made the acquaintance of the complainant while on a visit to Edinburgh, in Scotland, in the year 1853, and that he subsequently, at various times during several years, purchased of him shot-guns of his manufacture, which were sold by the witness in this country as he found customers; that in the year 1863 the complainant sent to the witness a sporting rifle containing the patented system of rifling the bore, which, as the witness states, he sold to Nathan Washburn during that year. Three more rifles, containing the same improvement, were sent by the complainant during the succeeding year to the witness, two of which were kept until "some two or three years since," the other one having been returned the year following after it was received. Speaking of the rifle first received, which was sold to Washburn, the witness states that it "created something of a sensation," and that it was accompanied by a certificate of its performance. Newspaper descriptions of the same, it appears, had also been sent to the witness, giving accounts of the "performances of the rifles and their capacity." Washburn paid one hundred and seventy-five dollars for the rifle, which sum was transmitted to the complainant. He, the witness, also states that the first rifle was exhibited to a few persons before it was sold, and that the three rifles received the next year were sent to be sold if customers could be found; that two of the number were used and exhibited at target-practice, one of which was purchased by the owner of the one first sent, but was subsequently returned on account of a defect, and that the other was used by the witness. Both Washburn and the witness used these two rifles on different occasions in practicing and at turkey-shoots, and the witness states that he used his rifle at the Adirondacks, shooting deer. Sufficient appears to show that the complainant desired the witness to act as his agent and make sale of the rifles sent, and the witness states that he paid over to the complainant the money received for the second rifle, and that he made efforts without success to sell the other two; that he sent one to a firm of gun-dealers in New York for sale, but, being a muzzle-loader, it was not easy to sell the kind in competition with breech-loaders. He also states that three more military rifles were sent to him during those years as samples, with the purpose of obtaining an order for arms to supply a military organization, but that no order was received. Statements of a similar character are found in the deposition of Nathan Washburn, who was also called by the respondents. Among other things, he states that he first saw a rifle having its barrel rifled as described in the patent in 1863 at the office of the preceding witness, and that he became interested in the rifle from the targets exhibited, which it was said were made with it; that he purchased the rifle in 1863, as represented by the witness, to whom it had been sent for sale. Inquiries were then made of the witness as to the manner and extent the rifle had been used by him subsequent to that time. His answers were to the effect following: That he first went out with the rifle and tried it with a target, and that he found the shooting very satisfactory; that he then attended turkey-shoots, which he followed until they "barred him out" from shooting if he used the rifle with the rifled bore in question; that he made use of the first rifle for some two or three years at shooting-matches, and occasionally permitted others to use it; that he purchased a year later a more nicely finished rifle of the same construction, which proved defective, and he exchanged it for another with the preceding witness. Superadded to that, the witness states that he visited Edinburgh in 1865, and that while there he ordered of the complainant a rifle of the kind, without limit as to price; that in the course of six months a magnificently finished rifle came to hand, the cost of which in currency, at the then premium on gold, amounted to one thousand dollars; that he purchased the rifle for exhibition, but that he had tried its shooting capacity and pronounces it a "splendid shooting gun;" that he thinks he had fired the first rifle purchased fifteen hundred times; that Colonel Berdan called at his house several times to see the rifle, and spent most of two days in examining the rifle and its ammunition, and afterward constructed one and exhibited it at Long Island to a large number of persons; that he, the witness, fired the second one two or three times before "the accident" happened, and that he fired the substitute a great many times, but cannot tell how many. Two of the rifles which the witness purchased were exhibited in court for inspection, and the court is of the opinion that they contain the exact system of rifling described in the patent. Two or more witnesses were examined by the respondents to show that the patented system of rifling the bore of rifles was copied by the company which manufactured

Sharps rifle more than two years before the application for a patent here was filed in the Patent Office.

Suffice it to say, without reproducing the evidence, that it tends strongly to support the views of the respondents. Waiving that, the testimony of the other two witnesses, whose credit is above suspicion, is amply sufficient to show that the invention was very extensively known among our citizens; that it had been sold or offered for sale in repeated instances, and that it had been used in public many times and almost without number. Of these facts there is no doubt, and the only remaining question is as to their effect. Foreigners have never been permitted to take out a patent in this country, when their invention had first been patented abroad, without some restrictions beyond what was attached to our own inventors. No patent under the act of July 4, 1836, for an invention previously patented in a foreign country was valid unless the patent granted here was applied for within six months after the publication of the foreign patent. (5 Stats. at Large, 121.) Six months was the limitation in that act, but the subsequent act provided that a delay for that period should not debar the party from securing a patent here, provided the invention shall not have been introduced into public and common use in the United States prior to the application for such a patent. (5 Ib., 354.) Nothing is contained in the succeeding act touching the present question, except that the term of a patent is extended from fourteen to seventeen years. (12 Ib., 246.) Quite different regulations, and such as are more liberal to the foreign patentee, were enacted in the act under which the patent in controversy was granted. (16 Ib., 201.) Delay to apply for a patent here, however long within the lifetime of the foreign patent, will not debar the applicant in this country from receiving a patent, provided the invention shall not have been introduced into public use in the United States for more than two years prior to the application. Examined in the light of that provision, the only remaining question is whether the evidence exhibited by the respondents proves that the invention had been introduced into public use for more than two years prior to the time when the application for the patent in this case was filed.

Even meritorious inventions first patented in a foreign country could not be patented here under the act of July 4, 1836, unless the application for the patent here was filed within six months after the publication of the foreign patent, and they were exposed to the danger of having their patents defeated under the act of March 3, 1839, in case it could be shown that the invention had been introduced into public and common use for any time, however short, prior to the filing of the application. Defendants in a suit upon a patent granted here might, under the act of July 4, 1836, plead the general issue, and give in evidence that the invention had been in public use or on sale, with the consent and allowance of the patentee, before his application for a patent, and, if they proved the allegation, they were entitled to judgment. (5 Ib., 123.) Cases arose under that provision in which it was held that proof of public use with the consent and allowance of the patentee, even for a day, was sufficient to sustain the defense. (*Pennock* vs. *Dialogue*, 2 Pet., 13; *Shaw* vs. *Cooper*, 7 Ib., 318; *Mellus* vs. *Silsbee*, 4 Mason, 109.) Hardships grew out of the stringency of that rule, and Congress enacted in the act of March 3, 1839, that no such forfeiture should occur by reason of such purchase, sale, or use, except on proof of abandonment, or that such purchase, sale, or prior use has been for more than two years prior to such application for a patent. Expounding that provision, Justice Nelson said, the patentee may forfeit his right to the invention if he constructs it and vends it to others to use, or if he uses it publicly himself, in the ordinary way of a public use of a machine, at any time prior to two years before he makes his application for a patent. (*Pitts* vs. *Hall*, 2 Blatch., 235.) Other cases of repute decide in the same way, nor is the Court aware that there is any conflicting decision. (*McClurg* vs. *Kingsland*, 1 How., 207; *McMillan* vs. *Barclay*, 195; *Agawam Co.* vs. *Jordan*, 7 Wal., 607; *Fruit Jar Co.* vs. *Wright*, 4 Otto, 94.) Justice Swayne says, in the latter case, that a single instance of sale or of use by the patentee may, under the circumstances, be fatal to the patent, and that such is the construction of the clause as given by authoritative adjudications. (*Roemer* vs. *Simon*, 5 Ib., 219.) Judicial decisions in England also decide that the phrase, public use, employed in patents granted there, means use in public or in a public manner, in opposition to a secret use, and that it does not mean use by the public generally. (*Carpenter* vs. *Smith*, 1 Web. Pat. Case, 532; Hindmarch on Pat., pp. 108, 112; *Shad* vs. *William*, 2 Web. Pat. Cases, 126.) By public use, says Curtis, is meant use in public—that is to say, if the inventor himself makes and sells the thing to be used by others, or it is made by one other person only, with his knowledge and without objection, before his application for a patent, *a fortiori*, if he suffers it to get into general use, it will have been in public use. (Curtis on Pat., 4th ed., § 382.) Adjudication to that effect might be multiplied almost without number, but those already referred to are quite sufficient to show that by public use is meant use in public, as stated by all the well-considered authorities upon the subject. (*Coffin* vs. *Ogden*, 18 Wall., 124; *Reed* vs. *Cutter*, 1 Story, 597; *Bedford* vs. *Hunt*, 1 Mason, 305.) Apply those rules to the case before the Court, and it is clear that the sixth defense is well sustained, and that the respondents are entitled to a decree upon both grounds, which renders it unnecessary to examine the other questions raised by the pleadings.

Decree in favor of the respondent that the bill of complaint be dismissed with costs.

U. S. Circuit Court—District of Massachusetts.

LOUIS H. MAHN *vs.* HARRISON HARWOOD *et al.*

[*No.* 983.—*Before* CLIFFORD *and* LOWELL, *JJ.*]

The third claim in Reissue Letters Patent No. 7,046, granted to J. H. Osgood, April 11, 1876, declared to be invalid. A double cover being old for other game-balls its use in a base-ball, to which the claim had been limited, is merely nothing but ordinary mechanical adaptation.

[*Joseph C. Fraley* and *P. J. Flatley*, for complainant; *James E. Maynadier*, for defendants.]

OPINION OF THE COURT.—*October* 9, 1878.

LOWELL, *J.*:

This suit is brought for the infringement of James H. Osgood's patent, issued May 21, 1872, No. 127,098, as reissued April 11, 1876, Reissue No. 7,046. The description is substantially similar in both patents, but the general statement of the invention in the opening, and the claims at the close are different. The invention

relates to the coverings for base-balls and other similar articles, but the claims make no mention of other articles besides base-balls. The patentee describes coverings of leather cut in a hemispherical shape, and how they are to be fitted and sewed, with a peculiar stitch, which is the subject of claims not now in controversy. After one leather cover has been put on, and has become dry, another similar cover is fitted and sewed in like manner above the first. The third claim, which is alleged to be infringed, is:

The covering of a base-ball consisting of an outer and an inner covering, each of which is composed of two pieces of leather, and applied to the ball independently of each other, substantially as and for the purpose specified.

By reference to the specification, the purpose of the second cover is to enable the ball to bear severe usage better than it could with a single cover.

The defendant makes a ball with leather covers, each of which is composed of two pieces, and is therefore within the third claim, unless that claim shall be confined to the hemispherical form described in the patent. His ball has a certain amount of yarn wound round the inner cover or binder before the outer cover is put on. In a suit by this complainant against another defendant in the third circuit, this form of ball was held to infringe the patent, and we see no reason to dissent from that decision.

Our information concerning the decision above mentioned is derived from certain admissions and other oral testimony contained in this record, with copies of some of the depositions used in that case, from which it would appear that the novelty of the invention was decided on a very different state of facts from that which is before us.

It is proved in this record, and admitted in argument, that long before 1872, balls made of twine, wound on a core, with a single cover of leather, were old and well known; and that balls made in other modes, such as by winding yarn or twine round a bunch or bundle of scraps of cloth, or other similar substance, or by winding yarn loosely round a core of lead or a small bag of shot, were covered with two covers of leather in substantially the mode of the patent. It is admitted in this case, though it was not in the case in Pennsylvania, that this double cover was used by the defendant years before the date of the patent, and that this use was known to the patentee.

In this state of facts the plaintiff cannot hold a patent for a double covering for balls generally; and he contends that the term "base-balls," in his third claim, means only the balls used by a certain association of persons who regulate the games of the clubs, which are made of yarn, wound on a small core of cork or india-rubber to a certain size and of a given weight. These are much harder, and will bear, and are required to bear, much more severe usage than the balls used some years ago. The regulations were substantially what they now are when the patent was issued. On the other hand, the defendant contends that the claim cannot be thus contracted, and that if it were, it is still void for want of novelty.

It is quite within the decisions to construe a word in the patent, such as "base-ball," in a way to save the patent, if that is one of its meanings, though not the only or even the most common one; provided that, by such a construction, the patentee will receive exactly what he has invented, and every one else can use all that is old.

We are, therefore, disposed to say that the third claim may be limited, and that upon this record it may be held that the patentee was the first to combine the double leather cover (which was well-known on balls made of "gimpings," with yarn wound round them, and on other forms with ball,) to a ball of a harder kind, equally well known, but which before had been used with single leather cover or with none.

But we are of opinion that such a combination is not patentable. It is not claimed in the patent, and does not appear to be true, that any new or different effect is sought or obtained, unless, perhaps, in degree, by the double cover as applied to the one ball rather than the other. A changed mode of playing the game required a harder ball, and one of well-known form was adopted, and to it was added the second cover, which was also well known and often used in the softer balls. This is a change of form which appears, in view of the state of the art, to be within the line of ordinary mechanical adaptation, and nothing more.

Bill dismissed.

ELISHA FOOTE *vs.* GEORGE FROST *et al.*

[*In Equity.*—No. 891.—*Before* CLIFFORD *and* LOWELL, *JJ.*]

The office of Commissioner of Patents does not disqualify the individual from obtaining a patent thereafter for an invention made while holding office.

The patent of the complainant is for a wire bag-fastener. A patent of prior date (No. 57,247, August, 1866) to his invention, setting forth a device of similar structural plan, but made of a slotted metal plate instead of wire, and intended as a fastener for the lacings of shoes and corsets: *Held*, under the circumstances of the case, not to affect his patent.

The shoe-lace fastener was not shown to be practicable, and this, too, although the place of suit rendered such evidence more than usually accessible. Its absence, with operativeness disputed, deemed significant, and the substitution of wire for the metal plate to be more than a mere change of material. If the first working device thereby resulted, then the prior invention did not anticipate that of the complainant.

[*Elisha Foote, pro se*, for complainant; *James E. Maynadier*, for defendants.]

OPINION OF THE COURT.—*October* 9, 1878.

LOWELL, *J.:*

The complainant holds a patent, No. 135,899, for an "improvement in grain-bands, bag-ties, &c." The claim is for a holder substantially as described in the specification, which is a piece of annealed iron wire, bent into the shape shown in the drawings; the upper part is oblong, and makes a loop to which the band or cord is permanently attached; the free end of the cord is then passed round the grain-bag, or other thing to be held, and brought between the straight or converging sides of the lower end of the holder, where it is held by the strain, which tends to tighten the wire, but can be at once released by a pull on the free end of the cord.

The patent is dated in 1873, but the evidence is clear and uncontradicted that the invention was made in 1867, or early in 1868. At that time the complainant was Commissioner of Patents, and the respondent argues that he was prohibited by law from taking out a patent, after his commission had expired, for an invention that he made while he was in office. The words of the statute and its intent alike prove that the prohibition upon the Commissioner was not intended to fetter his inventive faculties, or deprive him of the fruits of his skill or ingenuity, but merely to prevent bias and interest in his public capacity; when that ceases, the interdict is removed. The law in 1867 was, that the Commissioner should be disqualified and interdicted from acquiring or taking, except by inheritance, during the period for which he should hold his appointment, any right or interest, directly or indirectly, in any patent "which has been (that is, before the date of the statute) or may hereafter be granted." (Stat. Mar. 3, 1836, 5 Stats., 118.) This provision is now found in Revised Statutes, section 480, somewhat simplified, but with the same meaning, that the Commissioner shall not voluntarily acquire any interest in any patent during his term; but he no more loses his right to take out a patent after he becomes a private citizen than he forfeits one which he already held before his appointment; and there is no more objection to giving his invention its true date in his case than in any other.

The only question of fact which has been made is, whether either of the four patents exhibited by the defendants anticipates the plaintiff's invention. Two of them are dated in 1870, after the time at which, as is now admitted, the plaintiff had completed his discovery. The third, that of Cook, is for a device entirely different in its mode of operation from that of the complainant, and is not much relied on by the defendants. The fourth is that of Butterfield, No. 57,247, granted in August, 1866, for an improved fastening for shoe-lacings, which the inventor says will hold the lacings of a shoe, corset, or other article, so as to prevent the lacing from working loose in the eyelets. It describes a thin plate of metal, to be inserted in the upper part of the shoe where the lacing ends; it is to be of elliptical or other suitable form, with a slot with converging sides, and an eye through which the lacing may enter, and the patentee says that, as the lacing is drawn toward the point or angle of the slot, it becomes pinched by the opposite converging sides so as effectually to hold the lacing. He says, in another passage, that the friction of the sides of the slot will suffice to hold the lacing firmly, and prevent it from getting loose. Here is, undoubtedly, a device very closely resembling the plaintiff's holder. The doubt insisted on by the plaintiff in his argument seems to us to have much force. It is that, though the patentee is described as living in Boston, no evidence is produced that his mode of fastening proved to be practicable, as applied to the lacing of a shoe, and that the absence of such evidence, in a place where the trade in shoes is so largely carried on, is noticeable. Upon inspection of Butterfield's specification and drawings, and of a specimen shoe introduced in argument, we are led to doubt whether this mode of fastening would answer the purpose. The strain is quite differently applied in a shoe from what it is in a grain-bag, and it is not clear to us that the friction of the sides of the slot would hold the lacing firmly. It may be that the difficulty, if it be a real one, arises from the plate being made of sheet metal instead of wire. If the result is attained by the plate, a mere change of material would be unimportant; but—when the question is, Who first completed a working device?—a change of material by which the result is for the first time obtained is very important.

The point is a narrow one, but on the whole we think it well taken, and that the defendant has failed to prove that Butterfield's invention did, in fact, anticipate the holder of the plaintiff in the sense of the patent law.

Interlocutory decree for the complainant.

GEORGE K. SNOW *vs.* VARNUM N. TAYLOR.

[*In Equity.*—No. 854.—*Before* CLIFFORD *and* LOWELL, *JJ.*]

Patent No. 132,547, to G. K. Snow, for the method of cutting out collars from paper or other suitable material, independent of the means of cutting, in such a way as to bring the wide parts of one series opposite the narrow parts of the adjoining series: *Held* to be void, in view of the fact that linen collars had been cut in this mode by hand long before the date of this invention, and that in various branches of manufacture material had been cut in such a way as to bring the wide part of one article against the narrow part of the next, so as to save material. Even had the limitation contended for been adapted to collars cut from a stock precisely wide enough for his collars, the method would only be a neat application of a well-known operation, and would not be patentable.

[*Chauncey Smith* and *William W. Swan*, for complainant; *Edmund Wetmore* and *William A. Jenner*, for defendant.]

OPINION OF THE COURT.—*October* 9, 1878.

LOWELL, *J.:*

This suit was brought for the infringement of two patents; but as to one of them no evidence was taken, and it is not now under consideration. Patent No. 132,547, which is the one in controversy, was issued to the complainant in October, 1872. It states the saving of material which is obtained by cutting out collars in such a way as to bring the wide parts of one series opposite the narrow parts of the adjoining series, and gives several illustrative figures or patterns of collars cut in this mode from a strip of paper. The claim is for—

The method of cutting two or more series of collars, side by side, from a strip of paper, or other suitable material, in such a manner that the wide parts of the collar of one series shall come opposite to the narrow parts of the adjoining series, substantially as described.

That linen collars had been cut in this mode, by hand, long before the date of the invention is admitted. It is further a matter of common knowledge, and is mentioned by some of the witnesses, that in various branches of manufacture material has been cut in such a way as to bring the wide part of one article of the manufacture against the narrow part of the next, so as to save material.

In this state of facts, it is clear that a patent for this mode of using material for collars is not patentable. (See *Milligan & Higgins Glue Co.* vs *Upton*, decided in this district, October, 1874, and the cases cited in the opinion of Clifford, J. That decision has lately been affirmed by the Supreme Court. See also case decided at the same term of this court, in which the appeal was not prosecuted and the decree was affirmed, *Needham* vs. *Washburn*, 7 OFFICIAL GAZETTE, 649; and *Brown* vs. *Piper*, 91 Mass., 37.)

The complainant contends that his claim may be limited to collars cut from a strip precisely wide enough for two collars, or two series of collars, and for cutting such a strip so that each edge of the strip shall form an edge of each collar.

If such a limitation were adopted, we think the method described would only be a neat application of a well-known operation—that is to say, the only improvement would be in cutting a strip of precisely the proper width for two collars, and would not be patentable. But the patentee, by his description, his drawings, and his claim distinctly refuses to be thus limited. As he is not content with claiming whatever of machinery or other means he may have invented for cutting collars—and it is understood that he has patents for these—but attempts to monopolize a well-known mode of cutting generally, independently of means, we must pronounce his patent void.

Bill dismissed with costs.

MARCUS C. ISAACS *vs.* ADDISON W. ABRAMS.

[*In Equity.*—No. 916.—*Before* CLIFFORD *and* LOWELL, *JJ.*]

Patent No. 180,717, to M. C. Isaacs, in which the claim is for "a railway-track broom, constructed with a brush of uneven face—that is, one portion of the brush longer than the other"—sustained.

It is not invention to change one well-known material for another, or to apply a well-known process, without some adaptation, more than every skilled mechanic could apply to a new art or subject; but a change in the form of a machine or instrument, though slight, if it works a successful result, not before accomplished in a similar way in the art to which it is applied, or in any other, is patentable.

[*Causten Browne* and *Jabez S. Holmes*, for complainant; *John S. Abbott*, for defendant.]

OPINION OF THE COURT.—*October* 9, 1878.

LOWELL, *J.*:

In August, 1876, the complainant obtained a patent, No. 180,717, for an improvement in railway-track brooms. He declares in this specification that, "heretofore, brushes for cleaning railroad-tracks have been made with a broom of even face—that is, the brush of the broom, of whatever material made, has been of uniform length." He describes his improvement to consist of making the brush of unequal lengths; one part adapted to brushing the surface of the rail, and the other longer part to clearing either side of the rail, according to its construction. The claim is for—

A railway-track broom, constructed with a brush of uneven face—that is, one portion of the brush longer than the other—substantially as and for the purpose set forth.

The defendant has argued that brushes with a uniform surface being well known, no invention was required to construct one with an uneven surface.

We cannot take this view of the case. It is not invention to change one well-known material for another, or to apply a well-known process, without some adaptation, more than every skilled mechanic could apply, to a new art or subject; but a change in the form of a machine or instrument, though slight, if it works a successful result, not before accomplished in a similar way in the art to which it is applied, or in any other, is patentable. There is evidence that this improvement did accomplish such a result, and that it was accepted and adopted by the trade and went into general use.

The question of fact is, whether the patentee was the first inventor of this improvement. He carries his invention back, by a fair preponderance of proof, to October, 1874. The defendant alleges that he had made similar brooms many years before 1874, and that the plaintiff, when he did make the new kind of broom, stole it from one of the witnesses in the case. We have examined the evidence, which it would be unprofitable to recapitulate. We are satisfied, not only that the defendant has failed to rebut the presumption afforded by the patent, but that the plaintiff has proved that he was the first and true inventor of the improvement.

Interlocutory decree for the complainant.

Issue of December 10, 1878.

Patents	239	No. 210,591 to No. 210,829, inclusive.
Reissues	7	No. 8,515 to No. 8,521, inclusive.
Designs	24	No. 10,946 to No. 10,964, inclusive.
Trade-Marks	9	No. 6,867 to No. 6,875, inclusive.
Labels	9	No. 1,807 to No. 1,815, inclusive.
Total issue	288	

TRADE-MARKS.

[Each certificate bearing date December 10, 1878.]

6,867.—CIGARS.—*Henry Muller*, New York, N. Y. Application filed November 18, 1878.

"The symbol-words 'FISHER'S SPORT.'"

6,868.—ALE.—*H. & G. Simonds*, Reading, England. Application filed January 15, 1877.

"The figure or representation of a hop-leaf and the fac-simile of the signature of our firm-name."

6,869.—COLOGNE-WATER.—*The Wexford Company*, New York, N. Y. Application filed November 15, 1878.

"The word 'BELGRAVIA.'"

6,870.—CUTLERY.—*George Wostenholm & Son*, Sheffield, England. (Re-registration.) Application filed November 2, 1871.

"The letters I X L in combination."

6,871.—TEAS.—*Griffin & Co.*, San Francisco, Cal. Application filed November 29, 1878.

"The words 'HARVEST QUEEN.'"

6,872.—CHEWING AND SMOKING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*Marburg Brothers*, Baltimore, Md. Application filed October 19, 1878.

"The pictorial representation of a man grotesquely clad in coarse fisherman's habiliments, with rod and tackle, carpet-bag, and palm-leaf fan in hand, and the arbitrarily-selected words 'LONE FISHERMAN.'"

6,873.—PLUG CHEWING-TOBACCO.—*Hugh M. Cochran*, McConnelsville, Ohio. Application filed August 22, 1878.

"The word-symbol 'FARMERS,' with the four triangular-shaped spaces, arranged, two at each end of the word 'PLUG,' and so as to nearly constitute squares, with a diagonal strip running through each."

6,874.—HOSIERY AND KNIT GOODS.—*Jesson & Hanifen*, Philadelphia, Pa. Application filed November 11, 1878.

"A globe, representing the world, with the two continents traced in gilt lines upon its surface. Hovering over the globe is a representation of an American eagle."

6,875.—PRINT-BUTTER.—*A. E. Phillips*, Washington, D. C. Application filed December 2, 1878.

"The letters 'P. P.'"

DESIGNS.

[Each design bearing date December 10, 1878.]

10,946 to 10,952, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed November 29, 1878. Term of patents 3½ years.

10,953.—STOVES.—*Nicholas S. Vedder* and *Francis Ritchie*, Troy, and *Tobias S. Heister*, Lansingburg, N. Y., assignors to said *Vedder*. Application filed November 15, 1878. Term of patent 3½ years.

10,954.—COMBINED GLASS VESSELS.—*Frank C. Winship*, Bridgeport, Ohio, assignor to *La Belle Glass Company*, same place. Application filed November 22, 1878. Term of patent 3½ years.

10,955.—FONT OF PRINTING-TYPES.—*Thomas MacKellar*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed November 2, 1878. Term of patent 14 years.

10,956.—GROUP OF STATUARY.—*John Rogers*, New Canaan, Conn. Application filed November 14, 1878. Term of patent 14 years.

10,957.—STOVE.—*Nicholas S. Vedder* and *Francis Ritchie*, Troy, and *Tobias S. Heister*, Lansingburg, N. Y., assignors to said *Vedder*. Application filed November 15, 1878. Term of patent 3½ years.

10,958.—BROOCH.—*Stephen C. Howard*, New York, N. Y. Application filed November 7, 1878. Term of patent 3½ years.

10,959.—SHOES.—*John Kenz* and *George Kraft*, New Orleans, La. Application filed November 26, 1878. Term of patent 3½ years.

10,960.—BREASTPINS.—*Hiram S. Somes*, Attleborough, Mass. Application filed September 28, 1878. Term of patent 3½ years.

10,961.—WOVEN BORDERS FOR TOWELS.—*Richard T. Webb*, Randalstown, Ireland. Application filed November 14, 1878. Term of patent 3½ years.

10,962.—WOVEN FABRICS.—*Richard T. Webb*, Randalstown, Ireland. Application filed November 23, 1878. Term of patent 3½ years.

10,963.—WOVEN BORDERS FOR TOWELS.—*Richard T. Webb*, Randalstown, Ireland. Application filed November 23, 1878. Term of patent 3½ years.

10,964.—WOVEN FABRICS.—*Richard T. Webb*, Randalstown, Ireland. Application filed November 23, 1878. Term of patent 3½ years.

LABELS.

[Each certificate bearing date December 10, 1878.]

1,807.—Title: "SPOON BUSK."—*James Bowers*, Newark, N. J. Application filed November 25, 1878.

1,808.—(Print,) Title: "DEUSNER'S MERCHANDISE TOKEN."—*Philip Deusner, Jr.*, Kokomo, Ind. Application filed November 27, 1878.

1,809.—Title: "THE SELF-MEASURING AND SCALE PACKAGE."—*Guittard & Co.*, San Francisco, Cal. Application filed November 26, 1878.

1,810.—Title: "FLUID COSMOLINE (PETROLEOL)."—*E. F. Houghton & Co.*, Philadelphia, Pa. Application filed December 2, 1878.

1,811.—(Print,) Title: "ADVANCE OIL WORKS."—*Alonzo K. Lynch*, Brooklyn, N. Y. Application filed November 29, 1878.

1,812.—Title: "SIBERIAN CHILBLAIN OINTMENT."—*James S. Plumb*, Syracuse, N. Y. Application filed November 27, 1878.

1,813.—(Print,) Title: "BLAZES."—*The New York Label Publishing Company of Nicholas Witsch and Jacob Schmitt*, New York, N. Y. Application filed November 29, 1878.

1,814.—(Print,) Title: "HORTENSIA."—*William Wicke & Co.*, New York, N. Y. Application filed November 29, 1878.

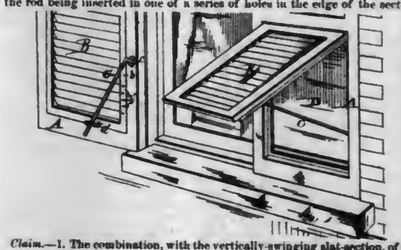
1,815.—Title: "ROCHESTER'S ABSORBING CUSHION."—*Samuel N. Rochester*, St. Louis, Mo. Application filed November 14, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

DECEMBER 10, 1878.

210,591. WINDOW-BLINDS. Henry L. Ambler, Cleveland, Ohio. Filed Oct. 30, 1878.

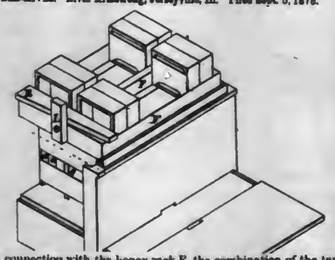
Brief.—A hook on the lower edge of a vertically-swinging slat-section of a blind is adapted to engage a rod hinged to the side frame, and passing diagonally across a portion of the section, locking the latter. The rod is bent at its joint to swing through the blind and hold the section out at an angle, the end of the rod being inserted in one of a series of holes in the edge of the section.



Claim.—1. The combination, with the vertically-swinging slat-section, of the metallic rod loosely secured to the shutter-frame and formed with the right-angular stem, whereby it is adapted to be swung through the frame-opening when the slat-section is open, and maintain the latter in desired angular adjustment, the slat-section being provided with the catch, adapted by engagement with said rod to lock said section in closed position, substantially as set forth.

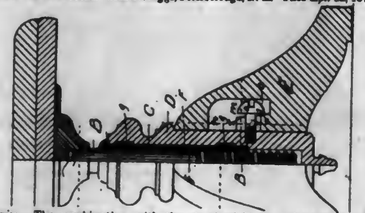
2. The combination, with vertically-swinging slat-section B, provided with catch *d*, of metallic rod C, formed with right-angular stem *c*, by which it is loosely secured to frame A, said rod being adapted to swing through opening D when the slat-section is used as an awning, and maintain the same in angular adjustment by end engagement with a graded series of holes, *b'*, rod C being further adapted, by lateral engagement with catch *d*, to lock the slat-section in closed position, substantially as set forth.

210,592. BEE-HIVES. Elvin Armstrong, Jerseyville, Ill. Filed Sept. 5, 1878.



Claim.—In connection with the honey-rack F, the combination of the taper slat R and button L, substantially as and for the purpose set forth.

210,593. PIANO-STOOLS. Joshua Briggs, Peterborough, N. H. Filed Apr. 12, 1878.

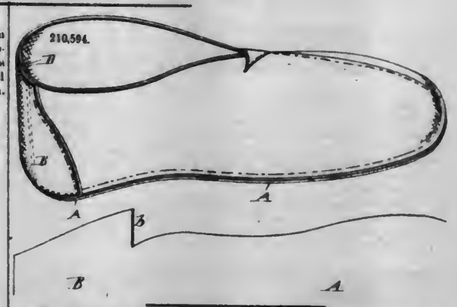


Claim.—The combination, with the standard D of a piano-stool and the screw-threaded socket C, composed of the parts *f* and *d*, the latter provided with feathers *g g*, of the screw-threaded seat-shaft B, substantially as described.

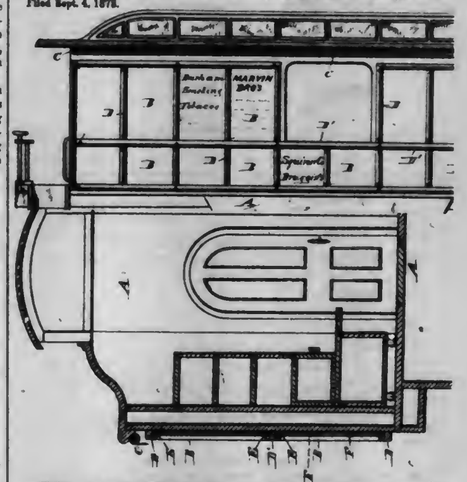
210,594. SLIPPERS. William H. Burck and James E. Curtiss, Canandaigua, N. Y. Filed Nov. 4, 1878.

Claim.—1. The blank shown and described, consisting of the sole portion A, counter B, formed with triangular side extensions, *b b*, all made of a single piece of material, substantially as set forth.

2. A slipper having the sole A, the counter B, provided with lateral extensions *b b*, made integral with the sole and united to the upper, substantially as set forth.



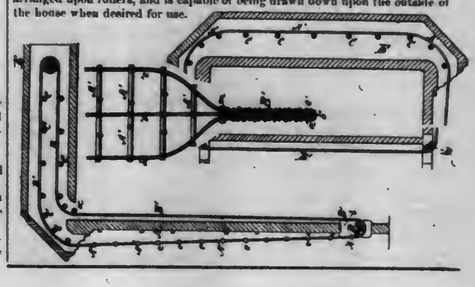
210,595. ADVERTISING MERCHANDISE-CARS. Augustus H. Burhans, Burlington, Iowa. Filed Sept. 4, 1878.



Claim.—A merchandising-car, A, having its exterior side divided into advertising-spaces B, and provided with a roller-curtain, C, a series of vertical molding-cleats, D, a removable horizontal cleat, D', and advertising-plates fitting within grooved ways formed in said cleats, together with rubber strips E, inserted in said grooves, and rubber pieces F, interposed between said plates and their respective spaces at suitable central points thereof, substantially as set forth.

210,596. FIRE-ESCAPES. Elbert L. Burnham, Yonkers, N. Y. Filed May 29, 1878.

Brief.—A ladder of endless strands, a portion thereof having rounds, is arranged upon rollers, and is capable of being drawn down upon the outside of the house when desired for use.

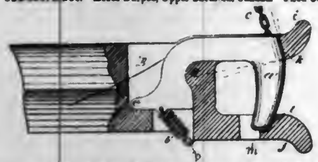


Claim.—1. The ladder with endless strands, having the part A' with rounds and the part B' devoid of rounds, in combination with the wall A and rollers C, substantially as and for the purposes herein set forth.

2. The combination of the stop *m* with the ladder having endless strands, constructed as described, and the wall A, all substantially as and for the purpose herein set forth.

3. The ladder with endless strands, having its part B', which is devoid of rounds, formed of the strands *a' b' c'*, brought together and united, substantially as and for the purposes herein set forth.

210,597. CAR-COUPLING. Moses Burpee, Upper Sheffield, Canada. Filed Oct. 5, 1878.



Claim.—1. In a car-coupler, the hook *a'*, having the enlarged base of its rear end loosely set within the recess B, in combination with the draw-head formed with a bearing, *d*, for the hook when under draft, and with the recess B sufficiently large to admit of a back play of the hook and its clearing the bearing *d*, the said hook being unpivoted, and having its fulcral point at the end *e* when it is raised, substantially as herein shown and described, and for the purposes set forth.

2. The draw-head A, formed with recesses which constitute bearings for the forward portion of the hook, and with an enlarged recess, B, and bearing *d* for the rear portion of the hook when under draft, in combination with the hook *a'* and spring E, substantially as specified.

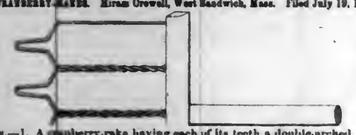
210,598. TOBACCO-PIPES. George Castleden, Canterbury, England. Filed Aug. 15, 1878.



Claim.—1. A pipe for smoking tobacco, consisting of a hollow reversible cylinder, *a*, or its equivalent, provided with a removable cork stopper or plug, *b*, adapted for closing either end of such cylinder, and having a hole through the bowl, about centrally thereof, adapted to receive an ordinary removable stem, all substantially as shown and described.

2. The reversible bowl having a plug, *b*, adapted for either of its ends, and two openings leading into the bowl, one for the stem and the other for the plug, as shown and described.

210,599. CRANBERRY-RAKES. Hiram Crowell, West Sandwich, Mass. Filed July 19, 1878.



Claim.—1. A cranberry-rake having each of its teeth a double-arched bow, essentially as represented.

2. A cranberry rake having its teeth composed of double-arched bows, arranged and twisted together, and applied to a head or bar, substantially as set forth.

210,600. DASH-RAIL FOR VEHICLES. Francis J. Derrig, Akron, Ohio. Filed Oct. 29, 1878.



Claim.—1. A dash having a beveled strip secured thereto, with its thin edge adjacent to the upper cross-bar of the dash-frame, and its thick edge arranged to force apart the upper edges of the front and rear sides of the dash, in combination with a dash-rail, B, formed with inwardly-converging flanges, substantially as set forth.

2. A dash having a beveled strip secured thereto, with its thin edge overlapping the side of the upper cross-bar of the dash-frame, and its thick edge arranged to force apart the upper edges of the front and rear sides of the dash, in combination with a dash-rail, C, and barb-pin D, substantially as set forth.

210,601. TRAVELING CRANES. William H. Elliot, New York, N. Y. Filed Aug. 2, 1878.

Claim.—1. A traveling crane consisting of two wheel-frames, a platform, and a derrick, constructed in the manner described, whereby the load may be raised at one end of the car and lowered at the other end entirely within the lines of the base, substantially as set forth.

2. In a traveling crane, the combination of the driving-shaft *g*, pulleys *g'* and *g''*, belt *g'''*, and wheels *a''* with a car, constructed as described, whereby the space between the projecting ends of the wheel-frames is left unobstructed, substantially as and for the purpose set forth.

3. A traveling crane having a car constructed and a derrick arranged upon the car, as described, whereby the boom is allowed to reach the unobstructed open spaces between the ends of the wheel-frames at each end of the car, substantially as specified.

4. In a traveling crane, the combination of the adjustable boom *c''*, with its pulleys *i' i'* and its rope *i''*, the gear *e'* and worm *e''*, the stationary hook *n'*, and trip-hook *n''*, whereby the depositing of the load is greatly facilitated, substantially as described.

5. In a crane or derrick, the combination of the hook *n''* and pawl *o* with the hook *n'*, whereby the load may be dropped, substantially as specified.

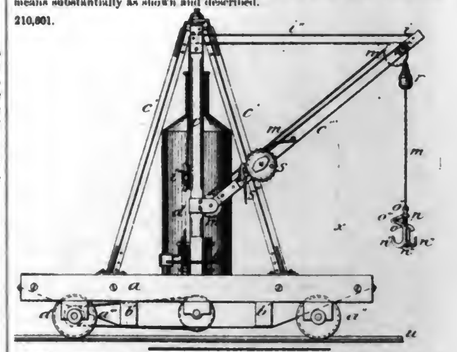
6. In a crane or derrick, the combination of the weight *e* and cord *r'* with the hooks *u*, substantially as and for the purpose specified.

7. In a crane or derrick, the windlass *s*, in combination with the weight and cord *r* and *r'* and the hooks *u*, substantially as and for the purpose specified.

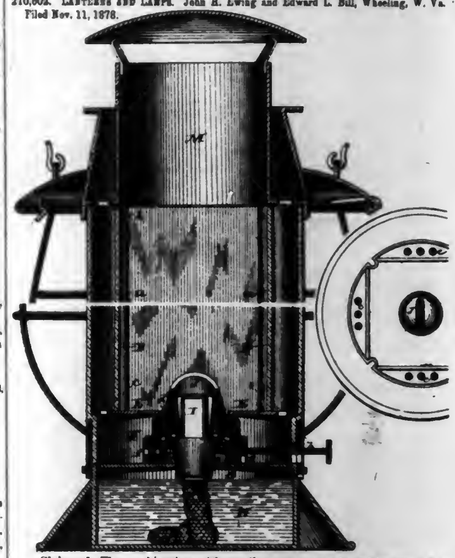
8. In a crane or derrick, the pawl *r'''*, in combination with the windlass *s*, weight and cord *r* and *r'*, and the hooks *u*, substantially as and for the purpose set forth.

9. A car for a traveling crane constructed in the manner set forth, and provided with a derrick, which is arranged upon said car as shown, and is made adjustable to the grade of the street and to the height of the rails by the means substantially as shown and described.

210,601.



210,602. LANTERNS AND LAMPS. John H. Ewing and Edward L. Bill, Wheeling, W. Va. Filed Nov. 11, 1878.



Claim.—1. The combination, with an oil cup or reservoir and burner, of an air-chamber formed within the lower end of the globe or chimney, the upper wall of said air-chamber consisting of a plate interposed between the burner and globe, which operates to cut off a direct communication from said air-chamber with the flame-chamber of the globe or chimney, substantially as set forth.

2. The combination, with an oil cup or reservoir and burner, of an air-chamber located within the lower end of the globe or chimney, the upper wall of said air-chamber consisting of a plate interposed between the burner and lower end of the burner, the upper wall of said air-chamber, between the burner and inner surface of the flame-chamber, being imperforate, and the cone of the burner perforated, whereby the air supply to the interior of the globe is cut off except by the air-passages leading to the burner, substantially as set forth.

3. The combination, with a globe provided with air-passages within the same, of a plate provided with a central aperture for the burner, and with air-passages on its outer edge that register with the air-passages in the globe, that portion of the plate located between the burner and inner walls of the globe air-passages being imperforate, substantially as set forth.

4. The combination, with a globe provided with detachable slides, arranged to form air-passages, said globe constructed with a step or shoulder on its lower end, of a removable plate located within the lower end of the globe, said plate provided with air-passages located to register with the several air-passages of the globe, substantially as set forth.

5. The combination, with a globe formed with ribs or flanges on its inner side, and independent slides or partitions secured between said ribs or flanges, to form air-passages, of a removable plate supported upon a collar or step formed on the lower portion of the globe, said plate serving to support the slides and intercept the passage of air from said air-passages to the interior space of the globe, substantially as set forth.

6. The combination, with an oil cup or reservoir and burner, of a globe or chimney provided with separate and independent air-passages, the lower portion of said globe extending down below the eduction ends of said air-passages and forming the periphery of an air-chamber, and an imperforate plate located between the burner and walls of the flame-chamber, for preventing the supply of air from flowing directly into the flame-chamber of the globe or chimney from said air-chamber, substantially as set forth.

7. The combination, with a lantern-guard, its ring, and an oil-cup adapted to be detachably secured to the guard-ring, of a globe having interior air-passages, the lower end of the globe extending down to form the periphery of an air-chamber, and a plate located within the globe, serving to form the upper wall of said air-chamber, substantially as set forth.

8. The combination, with the chimney of a lantern, of a collar surrounding the same, to form an intervening air-space, and connected with the chimney by a bottom plate having openings that register with air-passages in the globe of the lantern, substantially as set forth.

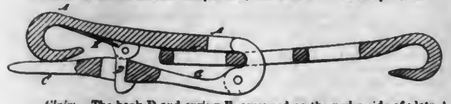
9. The combination, with the chimney of a lantern, of a collar surrounding the same, and adapted to form an intervening air-chamber, and a bottom plate connecting the chimney and collar, said plate provided with air-openings that register with air-passages in the globe, the outer edge of said plate provided with a depending flange that fits over the upper edges of the globe, substantially as set forth.

10. The combination, with a globe provided with one or more interior air-passages, of a chimney of smaller diameter than the upper end of the flame-chamber of the globe, said chimney constructed with an annular air-chamber, which is located, in part, directly over the interior space or flame-chamber of the globe, substantially as set forth.

11. The combination, with a globe provided with interior air-passages, of a chimney having a collar secured thereto by a bottom plate furnished with openings that register with the air-passages in the globe, and a deflector secured to said surrounding collar, substantially as set forth.

12. In a lantern or lamp, an air-chamber located below the burner and provided with a close periphery, and air-induction passages that connect with air-passages leading to the upper portion of the lantern or lamp, in combination with a plate interposed between the oil-receptacle and globe or chimney, said plate being imperforate between the walls of the flame-chamber and burner, and serving to cause air entering beneath the same to be conducted to the flame-chamber of the globe or chimney through the cone of the burner, substantially as set forth.

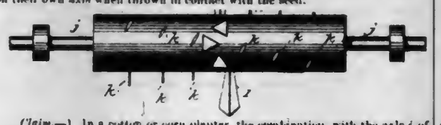
210,603. HAME-FASTENERS. Joseph Frank, New York, N. Y. Filed May 11, 1878.



Claim.—The hook D and spring E, arranged on the under side of plate A, to operate in connection with the slotted lever C, as and for the purpose specified.

210,604. COTTON AND CORN PLANTERS. James M. Hall, Larissa, Tex. Filed Nov. 2, 1878.

Brief.—The larger agitators on the central portion of the cylinder revolve on their own axis when thrown in contact with the seed.



Claim.—1. In a cotton or corn planter, the combination, with the axle *j*, of the agitators I, secured thereto and arranged to rotate or turn upon their own axis during the rotation of the axle, as set forth.

2. The axle *j*, provided with spiral lines of cogs or pegs *k*, in combination with the rotary agitators I, substantially as and for the purpose specified.

210,605. PLAITING-MACHINES. Edward S. Harding, Baltimore, Md., assignor to John N. Hibner and Joseph Hibner, Hamilton, Ohio. Filed Mar. 16, 1878.



Claim.—1. A plaiting-machine consisting of a series of round needles or bars rigidly secured in pairs in a suitable frame, substantially as described.

2. A plaiting-machine consisting of a series of parallel needles rigidly secured in a suitable frame, in combination with detachable supporting-bars B, substantially as described.

3. A plaiting-frame having a series of parallel needles secured thereto, in combination with laterally-adjustable supporting bars, substantially as described.

4. In combination with the rectangular frame provided with needles *a a*, the detachable and adjustable bars B and folder E, substantially as described.

210,606. FOLDING AND EXTENSION BEDSTEADS. James T. Hatfield, Hoboken, N. J. Filed May 8, 1878.

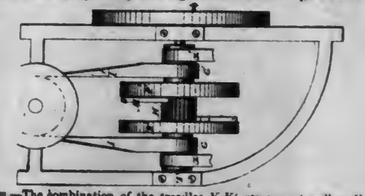
Claim.—The extension slide E, composed of the side rails, *d*, hooks *f*, and jointed cross-piece *e*, in combination with the main bolsteal, having the side rails, B B, and jointed cross-pieces C D, substantially as specified.

210,606.



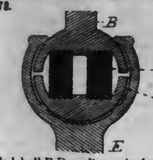
210,607. SCROLL-SAWING MACHINES. John M. Hopkins, Reynoldsville, Pa. Filed June 13, 1878.

Brief.—The saw is operated by means of two alternately-reciprocating treadles, connected by straps to pulleys under the saw-table, which, in turn, are connected by straps to a spool-pulley mounted on a shaft in front of the aforesaid pulleys, for the purpose of preventing friction when miter-gear is used.



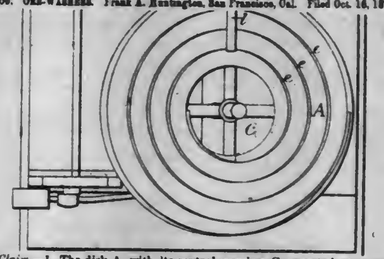
Claim.—The combination of the treadles K K', straps *x x'*, pulleys G G', wheels F F', with the ratchets S S, ratchet-wheel H, straps I I', and spool J, substantially as shown and described.

210,608. UNIVERSAL JOINTS FOR HOISTING-BLOCKS. Charles W. Hunt, West New Brighton, N. Y. Filed Oct. 2, 1878.



Claim.—The divided ball B D, or its equivalent, having a spring, C, which causes the parts of the ball to press against the rigid envelope E, substantially as described.

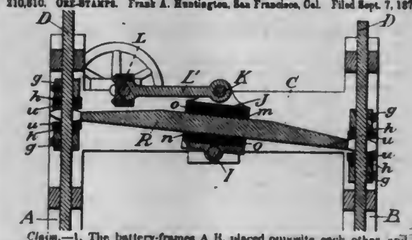
210,609. ORE-WASHERS. Frank A. Huntington, San Francisco, Cal. Filed Oct. 16, 1878.



Claim.—1. The disk A, with its central opening, C, mounted at an angle, and provided with the involute riffle *e*, said disk having imparted to it a rotary motion, either intermittent or continuous, substantially as and for the purpose described.

2. The inclined disk A, with its central opening, C, and involute riffle *e*, in combination with the sprinkler or water-pipe *h*, substantially as and for the purpose described.

210,610. ORE-STAMPS. Frank A. Huntington, San Francisco, Cal. Filed Sept. 7, 1878.



Claim.—1. The battery-frames A B, placed opposite each other, and connected near their upper ends by the beams C, in combination with the walking beam K and the tappets *g h u* on the stamp-stem, substantially as and for the purpose specified.

2. The battery-frames A B, connected as described, and having their

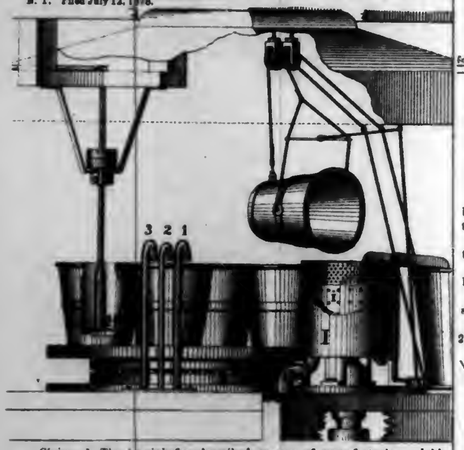
stamp-stems D provided with two tappets, *g h s*, which are secured at a short distance apart, in combination with the walking-beam E, mounted at its middle in the rocking box J, while its extremities pass between the two tappets on the stamp-stem, substantially as and for the purpose specified.

3. The box J, mounted at its lower side on a shaft, I, and connected at its upper side with the crank-shaft L by a pitman, L′, said box having a passage for the walking-beam E and the cushion-chambers *m n*, substantially as and for the purpose specified.

4. The walking-beam E, having the plates *q*, with their trunnions *r* secured to its sides, in combination with the rocking box J, with its elongated holes and cushions *o*, substantially as and for the purpose described.

5. The walking-beam E, provided with the pawl *v*, in combination with the tappet having the ratchet *w*, for revolving the stamp, substantially as specified.

210,611. APPARATUS AND PROCESSES FOR THE MANUFACTURE OF NITRO-CELLULOSE. John W. Hyatt, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed July 12, 1878.



Claim.—1. The hereinbefore-described process of manufacturing soluble fiber from paper by disintegration, conversion, desiccation, and ablution, substantially as set forth.

2. The combination and arrangement of a turn-table, a stirrer, a centrifugal machine, and a washing-vat, substantially as and for the purposes set forth.

3. The combination, with a converting-vessel, of a stirrer having inclined blades, to induce a centrifugal swirl in the acids and the saturated flakes, and a centripetal swirl in the fresh flakes, substantially as set forth.

4. The combination, with a converting-vessel and a stirrer, of a device for lifting and lowering the stirrer, substantially as and for the purposes set forth.

5. The combination, with the disintegrator, of the feeding-rollers and the guide-teeth, substantially as and for the purposes set forth.

6. The combination, with the disintegrator, the feed-rollers, and the guide-teeth, of the guide bar *c*, substantially as and for the purpose described.

210,612. APPARATUS FOR WASHING PAPER-PULP. John W. Hyatt and John G. Jarvis, Newark, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. Filed Aug. 8, 1878.

Brief.—The washing-tank is furnished with a false perforated bottom and tightly-closed top. The water is introduced under the bottom under pressure, thus maintaining a constant flow.

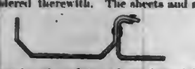


Claim.—1. The hereinbefore-described method of washing granulated fiber in induced upward and downward currents flowing through a porous filtering-bottom, substantially as and for the purposes described.

2. The combination of a tightly-closed washing-tank, a false bottom of porous filtering material, an inlet-pipe below the filtering-bottom, and an outlet-pipe, also below the filtering-bottom, substantially as and for the purposes set forth.

210,613. SHEET-METAL ROOFING. William G. Hyndman, Cincinnati, Ohio. Filed Nov. 11, 1878.

Brief.—As a new article of manufacture, the sheets are struck out and anchors riveted or soldered therewith. The sheets and anchors are afterward bent, as desired.



Claim.—A sheet-metal roofing-plate and cap formed from one and the same piece of metal, and an anchor riveted or soldered thereto, substantially as and for the purpose specified.

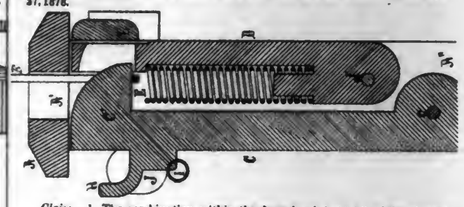
210,614. FEED-COOKING APPARATUS. Albert Knox, Osceola, Iowa. Filed Jan. 14, 1878.

Claim.—The combined furnace and boiler A B C, having the curved water-elevating spouts 1 2 3 4 fixed in the corners intermediate between the furnace and boiler walls, to extend from near the bottom of the furnace and boiler to near the top of the boiler, and the sectional perforated and removable diaphragm D, when arranged and combined to operate in the manner and for the purposes set forth.

210,614.



210,615. CAR-COUPLINGS. Dennis S. Krick and Nicholaus Raichard, Erie, Pa. Filed Sept. 27, 1878.



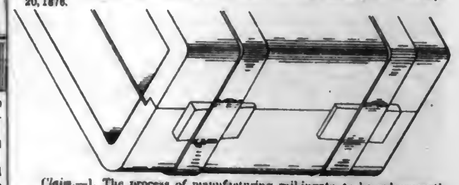
Claim.—1. The combination, within the draw-head A A′ A″, of the pivoted bottom piece, D, adapted to lift the link B, substantially as described, and for the purposes mentioned.

2. The combination of the bottom piece, D, spring E, and link B, substantially as and for the purposes set forth.

3. The combination of the bottom piece, D, tumbler L′, lever L, and link R, substantially as shown.

4. The combination of the catch C C′, arm K, and hook J, substantially as shown.

210,616. MANUFACTURE OF RAILWAY-RAILS. Bernard C. Lauth, Pittsburg, Pa. Filed Sept. 20, 1878.



Claim.—1. The process of manufacturing rail-ingots, to be subsequently worked into railway-rails, which consists in casting two malleable metals, or two qualities of the same malleable metal, simultaneously in an ingot-mold on opposite sides of a thin sheet-metal diaphragm capable of being rendered fluid under the heat of the poured metals, substantially as set forth.

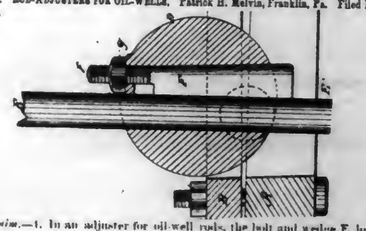
2. The method of making railway-rails hereinbefore described, which consists in casting two malleable metals, or different qualities of the same malleable metal, simultaneously in an ingot-mold on opposite sides of a thin fusible sheet-metal diaphragm capable of being rendered fluid under the heat of the poured metals, and then reducing by hammers or rolls, or both, the ingot so made to the desired rail form, substantially as set forth.

210,617. MANUFACTURE OF BUTTONS AND OTHER ARTICLES FROM VEGETABLE IVORY, &c. Warren J. Lewis, Leominster, Mass., assignor to Vulcanite Manufacturing Company. Filed Dec. 22, 1877.

Claim.—1. The within-described method of making articles from vegetable ivory, which consists in pulverizing the same and subjecting it to pressure in heated molds, with or without an intermixture of agglutinizing matter, substantially as set forth.

2. As improved articles of manufacture, buttons or other articles formed by subjecting pulverized vegetable ivory to pressure in heated molds, substantially as set forth.

210,618. ROD-ADJUSTERS FOR OIL-WELLS. Patrick H. Melvin, Franklin, Pa. Filed Feb. 9, 1878.



Claim.—1. In an adjuster for oil-well rods, the bolt and wedge F, located parallel with the polish-rod, in combination with a trunnioned head, substantially as shown and described.

2. In an adjuster for oil-wells, the combination of a vertical wedge, made to fit along and partly around the polish-rod, with a trunnioned head provided with a suitable slot for the reception of said rod and said wedge, substantially as shown and described.

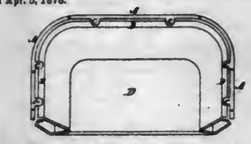
3. The combination of the trunnioned head D D′, the rod E, wedge-bolt F *f*, and nut *g*, substantially as shown and described, and for the purpose specified.

210,619. TREATING BURNT PYRITES. James Mason, Eynsham Hall, near Witney, England. Filed Feb. 11, 1878.

Claim.—1. The treatment of the residues or residual products resulting from the burning of iron pyrites containing copper, herein referred to, so as to render them suitable for the production of iron and steel, by first submitting such residues, without previous disintegration, to the action of either water or of water acidulated with either sulphuric or with hydrochloric acid, in order to effect the separation of any salts or compounds of copper which may be soluble therein, and then submitting the burnt ore thus treated, without previous disintegration, to a heating or calcining process, in order that any sulphur contained therein may be entirely, or practically entirely, expelled.

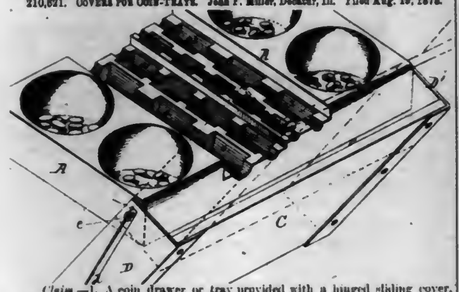
2. The treatment of the residues or residual products resulting from the burning of iron pyrites containing copper, herein referred to, so as to render them suitable for the production of iron and steel, by first submitting such residues, without previous disintegration, to the action of either water or of water acidulated with either sulphuric or with hydrochloric acid, in order to effect the separation of any salts or compounds of copper which may be soluble therein, and then submitting such residues to a calcining process, either alone or in conjunction with salt, by preference at a low temperature, in order that a further proportion of the compounds of copper may be rendered soluble, and, after such compounds have been separated by any of the solvents before mentioned, submitting the residue thus treated to a further heating or calcining process, in order that the sulphur contained therein may be entirely, or practically entirely, expelled.

210,620. SHIFTING-RAILS FOR VEHICLES. Ebenezer Miller, Fredericton, New Brunswick, Canada. Filed Apr. 5, 1878.



Claim.—The herein-described shifting-rail for carriage-tops, consisting of the bar or rod A, provided with inwardly-projecting lugs C, having upper and lower lips adapted to embrace the flange B of the carriage-seat D, and secured thereto by screws *c*′, substantially as and for the purpose described.

210,621. COVERS FOR COIN-TRAYS. John F. Miller, Decatur, Ill. Filed Aug. 10, 1878.

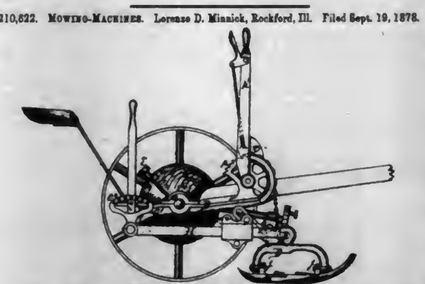


Claim.—1. A coin drawer or tray provided with a hinged sliding cover, applied and operating substantially as described.

2. The combination, with the coin drawer or tray A, of the cover C, having the slotted end plates or flanges, D D′, substantially as and for the purpose set forth.

3. The hinged sliding cover C, provided with the obliquely-slotted end plate, D, in combination with the fixed pivotal pins *e*, uniting it to the tray A, substantially as and for the purpose set forth.

210,622. MOWING-MACHINES. Lorenzo D. Minnick, Rockford, Ill. Filed Sept. 19, 1878.



Claim.—1. The combination, with the main frame of a mowing machine, of a straight or practically straight coupling-arm, the inner end of which is provided with a hook, which engages with the main frame at a point in advance of the supporting-axle, and the outer end having the shoe or arm thereof rigidly secured thereto, whereby the coupling-arm is adapted to be readily detached from the frame, and may be moved vertically and radially, substantially as set forth.

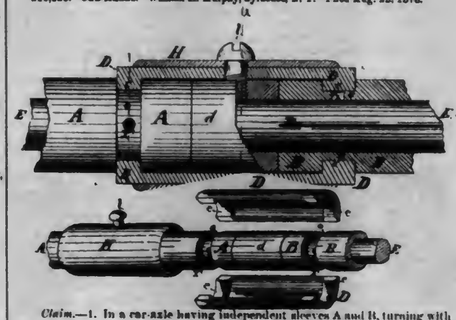
2. The combination, with the coupling-arm, of a push-bar provided with a hooked end attached to the upper side and front portion of the coupling-arm, whereby the push-bar is held from lateral displacement, and the coupling-arm is allowed a rocking movement thereon, substantially as set forth.

3. The combination, with a slotted draft-arm rigidly secured to the coupling-arm, of a sliding head connected with the push-bar, said sliding head provided with a stud which engages in the inclined slot in the draft-arm, substantially as set forth.

4. The combination, with a slotted draft-arm rigidly secured to the coupling-arm, of a sliding head connected with the push-bar, and a hand-lever, ratchet-device, and connecting-rod for moving the sliding head to and fro on the push-bar, substantially as set forth.

5. The combination, with the axel gear-case, of the removable portion having upward-rising arms provided with stud-journals, on which the intermediate gear-wheels are fitted to revolve, substantially as set forth.

210,623. CAR-AXLES. William H. Murphy, Syracuse, N. Y. Filed Aug. 23, 1878.



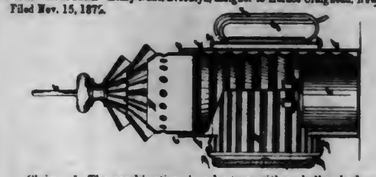
Claim.—1. In a car-axle having independent sleeves A and B, turning with the wheels, the semi-cylindrical shouldered couplings D D, adapted to lock said sleeves against a meeting shoulder of the axle E, and confined in their coupling position by a sleeve, H, substantially as and for the purpose herein set forth.

2. In a car-axle, the combination, with the wheel-sleeves A and B, having the shouldered end bearings, *a a*, of the solid axle E, having the shoulder *d*, and the semi-cylindrical couplings A B, having end bearing-shoulders, *c c*, and their confining-sleeve H, adapted for use substantially as herein set forth.

3. The shouldered axle E *d*, the wheel-sleeves A and B, having the end shouldered bearings, *a a*, the semi-cylindrical couplings D D, having coincident shouldered bearings *c c*, the confining-sleeve H for said couplings D D, and the screw *l*, passing through said confining-sleeve, one of said couplings D, and into the axle-shoulder, whereby the said semi-cylindrical couplings and their confining-sleeve are secured to the solid axle.

4. The wheel-sleeves A and B, provided with apertures *x x*′ on their inner shouldered bearings, *a a*, and the apertures *i i* in their outer end shouldered bearings, in combination with the groove *m* in the solid axle E and the semi-cylindrical coupling D, whereby the sleeves, the coupling, and the solid axle are lubricated, and the lubricant confined within said parts.

210,624. LANTERNS. Henry Nahe, Brooklyn, assignor to Horace Craighead, New York, N. Y. Filed Nov. 15, 1877.



Claim.—1. The combination, in a lantern with a shell or body composed of two intersecting cylinders, one vertically and the other horizontally arranged, the former containing a lamp, the latter provided with an opening for the emission of light, of a polyzonal semi-cylindric reflector fitted within the vertical cylinder of the shell, and a series of reverse angular reflectors arranged longitudinally in the horizontal cylinder, substantially as specified.

2. The combination, in a lantern with a shell composed of two intersecting cylinders, one vertically and the other horizontally arranged, the former containing the lamp, and the latter provided with an opening for the emission of light, of a semi-cylindric polyzonal reflector, preferably made of sheet metal, and of corresponding form inside and outside, and arranged within the vertical cylinder of the shell, and a series of reverse angular reflectors arranged longitudinally in the horizontal cylinder of the shell, the said semi-cylindric polyzonal reflector being capable of adjustment behind the lamp for use, or in front of the lamp for precluding the emission of light from the lantern, substantially as specified.

3. The combination, in a lantern with a shell or body composed of two intersecting cylinders, one vertically and the other horizontally arranged, the former containing the lamp, the latter provided with an opening for the emission of light, of a semi-cylindric polyzonal reflector fitted within the vertical cylinder of the shell, and suspended from a cowl attached to the shell, so as to be free to turn or oscillate relatively thereto, for the purpose of adjusting the said reflector therein, substantially as specified.

4. The combination of the shell A B, the lamp C, hinged cover D, cowl E, adapted to oscillate relatively to the shell, semi-cylindric polyzonal reflector G, reflector H, and the handle *e* or *f*, substantially as specified.

5. The combination of the shell A B, cover D, and catch *a b*, substantially as specified.

6. The combination of the shell A B, provided with a stop, *b*, and the adjustable semi-cylindrical polyzonal reflector G, substantially as specified.

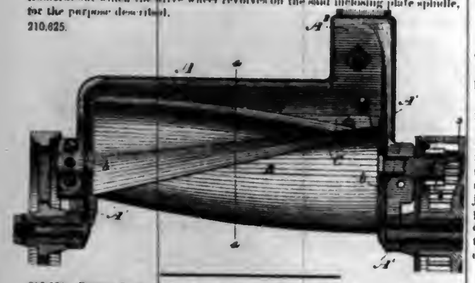
210,625. LAWN-MOWERS. Alvah F. Osborne, Trumansburg, N. Y., assignor to Orman Osborne, same place. Filed Nov. 7, 1878.

Claim.—1. The drive-wheel of a lawn-mowing machine open at one side only, and provided with an internal spur-gear adapted to mesh with and drive a pinion to impart motion to a rotary cutter, in combination with a plate or disk inclosing the gearing, a portion or extension of which plate forms the journal upon which the drive-wheel turns, substantially as hereinbefore set forth.

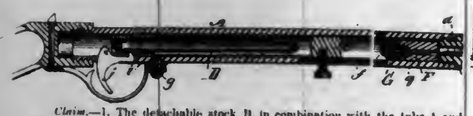
2. The lawn-mower frame A, cast with the side extensions, A^1, rising from the central or horizontal portion of the frame, which is slightly concave for the reception of a rotary cutter having its bearings in said extensions, and with an extension, A^2, at one side, to which the handle or tongue of the machine is attached, substantially as hereinbefore set forth.

3. The combination, substantially as hereinbefore set forth, of the single drive wheel, the supporting wheel, the frame inside of or between these wheels, and provided with a steel axle for the supporting wheel, the handle secured to the frame inside of and close to the drive-wheel, the inside gear inclosing plate, its tubular spindle or journal for the drive wheel, and the stud axle of the frame, about which the drive wheel revolves on the said inclosing plate spindle, for the purpose described.

210,625.



210,626. BREECH-LOADING FIRE-ARMS. Edward L. Perry, Paterson, N. J. Filed July 31, 1878.



Claim.—1. The detachable stock B, in combination with the tube A and trigger guard A, one end of which is detachably connected to the tube, and the other end detachably connected to the stock B, substantially as and for the purpose set forth.

2. The hollow slotted plunger C, in combination with spring D and tube A, said spring being attached at its rear end to a cross-bar within the plunger, and at its forward end to the tube A, the parts being arranged and combined as shown and described.

3. The tube A, formed with elongated slot *f*, and the hollow slotted detachable plunger C and spring D, attached at its rear end within the plunger, and at its forward end to the tube, in combination with the removable and adjustable breech F, firing-pin *g*, and elastic buffer G, said breech being independent of the plunger, and operating substantially as specified.

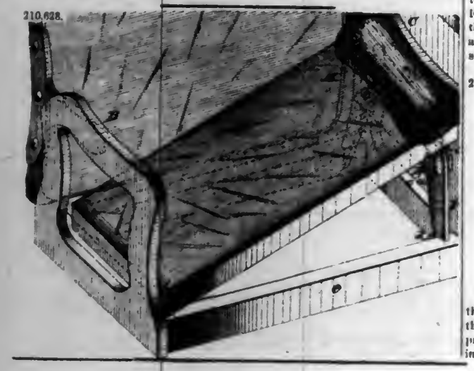
210,627. HEATING-DRUM. William L. Phillips, Brooklyn, N. Y. Filed May 20, 1878.

Brief.—The products enter the drum at C, and, after enveloping the air-pipe, are discharged at D. Direct draft is through E.



Claim.—The combination, with drum A, having inlet-pipe C and outlet-pipe D, relatively arranged as described, of the air-duct F, extending from bottom to top of the drum, and passing obliquely between said pipes, substantially as specified.

210,628.



210,628. CONVERTIBLE CAR SEATS AND COUCHES. Charles A. Piccioli, Montgomery, Ala. Filed Oct. 16, 1878.

Claim.—1. A folding support consisting of a cross-bar having standards pivoted or hinged to the opposite ends thereof, said support constructed and arranged to be applied to a car seat and retain the cushion in an inclined position, substantially as set forth.

2. A folding support consisting of a grooved cross-bar, in combination with standards pivoted or hinged to the opposite ends thereof, said standards being constructed to fold within the sides of the cross-bar, substantially as set forth.

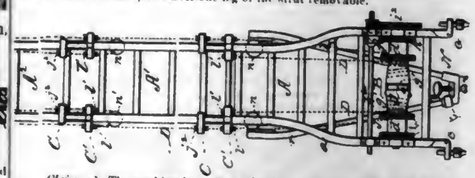
210,629. WIRE BALE-TIES. James M. Pollard, New Orleans, La., assignor to Moses Schwartz. Filed July 1, 1878.



Claim.—As a new article of manufacture, the buckle, Figs. 1 and 2, formed of two pieces, the pieces being exactly alike, and curved to fit each other, and when interlocked swaged in such manner as to form a solid buckle, with its side pieces twisted around each other, as shown and described.

210,630. LADDERS. Jean E. Richard, New York, N. Y. Filed Mar. 23, 1878.

Brief.—Forms guides in one piece, with slot for the ladder-rail, open slot for sliding ladder-rail, pulley-slot, and brace-arm. Pivots the brace-arms and folds them adjustably by lock-jointed brace-rods. Forms the winding-drum in three sections, the middle one adapted to rotate independently of the others, and secured to them by a spring-catch, locking perforated flanges on their adjacent ends. Raising-ropes wind in one direction on the middle section and pass over guide-pulleys to the upper section. Brace-ropes wind in the opposite direction and pass over guide-pulleys on the end of brace-rods to the upper section. Employs a V-shaped strut with U-shaped foot-rest, adjusting-screw, and open branch and slide, to render one leg of the strut removable.



Claim.—1. The combination, with the shaft *c* and the fixed end sections, *d'*, having flanges *e'*, provided with perforations *i*, of the rotating middle section, *d*, having similar perforated flanges and an angular locking-catch, substantially as specified.

2. The end guide, C, for extension-ladders, having slot *j* for the ladder-rail, open slot j^2 for the sliding ladder-rail, and a slot, j^3, for a pulley, substantially as specified.

3. The lower guide, C', for extension-ladders, having central opening, *k*, for the ladder-rail, lateral openings k^1 k^2 for pulleys, open slot k^3 for the rail of the sliding sections, and a brace-arm, *m*, having a pulley, *m'*, substantially as specified.

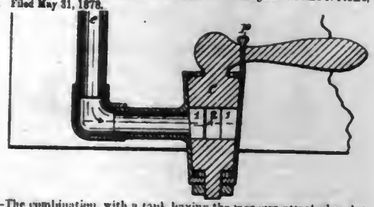
4. The combination, with the spaced guides C C', of the pivoted brace-arm *m* and lock-jointed brace-rod *p'*, substantially as specified.

5. The combination, with the ladder-section A, having guides C C', the former with outside pulleys, P, and the latter with inner and outer pulleys, l l^1, the ladder-section A^1, having foot-pulleys *n* and guides C C', the former with inner pulleys, P, and the latter with inner and outer pulleys, l l^1, and the ladder-section A^2, having foot-pulleys *n'*, of the winding-cords D, secured at one end to a drum, passing thence over the pulleys l l^1, thence downward around the foot-pulleys *n*, thence upward between the pulleys l l^1, around the outer pulleys, l, of the section A^1, thence downward around the foot-pulleys *n* of section A^2, thence upward between the pulleys P l^1 of section A^1, thence upward to the upper end of section A^2, to which they are then secured, substantially as specified.

6. In combination with the section A^1 and the pivoted rails *r r'* of the strut L, the U-shaped foot-rest N, having an adjusting-screw, P, and an open branch, *s*, and the slide *t*, confining the rail *r* to the rest N, substantially as specified.

7. In combination with a sectional extension-ladder, A A^1 A^2, its drum B, and the raising-ropes D, passing in front of the said drum and secured thereto, the guides C C', having brace-arms *m* and pulleys *m'*, the brace-ropes J, secured to the end of the top section, passing over the pulleys *m'*, downward in rear of the said drum, and secured thereto, whereby the extension-ropes are wound around the drum as the brace-ropes are payed off therefrom, and the reverse, substantially as specified.

210,631. LIQUID-MEASURES. James J. Roberts, Geddes, N. Y., assignor to Frank J. Plumb, same place. Filed May 31, 1878.



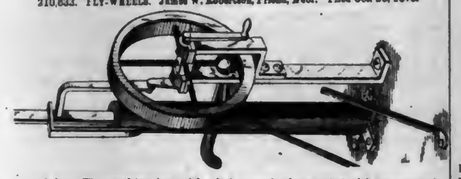
Claim.—The combination, with a tank having the measure attached under the bottom, of the two-way cock *c*, having the discharge passage 1 transversely through the plug, and the lateral branch passage 2 intersecting the same, and provided with the removable pin *p*, all constructed and combined substantially in the manner described and shown, for the purpose set forth.

210,632. CIGAR-MACHINES. Robert Roberts, St. Joseph, Mo. Filed Jan. 23, 1878.



Claim.—The combination, with the two front rollers, C E, of a thin strip, I, and a spring-pressed roll, G, arranged as shown and described, to facilitate the taking in of the binder and wrapper.

210,633. FLY-WHEELS. James W. Robertson, Friend, Nebr. Filed Oct. 23, 1878.



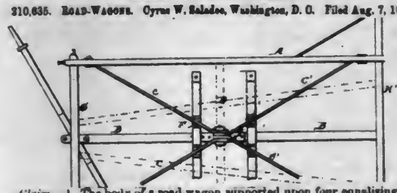
Claim.—The combination, with a balance-wheel provided with an eccentric-shaped rim, of a weight adapted to be adjustably secured to one of the spokes of the balance-wheel, substantially as set forth.

210,634. FRUIT-PICKERS. William W. Rodgers, Hartland, Vt. Filed Nov. 22, 1877.



Claim.—A fruit-gatherer having the following combination of parts, namely: the pole A, the ferrule *j*, the rod *i*, the slide *f*, with the mortise *g*, the jaw *a*, attached to the pole A, the jaw *b*, with the curved end *c*, working in the mortise *g*, and the bag B, substantially as described.

210,635. ROAD-WAGONS. Cyrus W. Saladee, Washington, D. C. Filed Aug. 7, 1878.

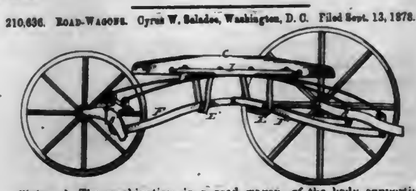


Claim.—1. The body of a road-wagon supported upon four equalizing bars, the inner ends of which are pivoted to operate together at a point central between the axles, and their outer ends at or near the points of junction of the bolster and rear axle, with the side bars constructed and arranged to operate in combination with a supporting-spring suspended centrally below the body from opposite bars of the frame, as set forth.

2. In a road-wagon, the diagonally-arranged equalizing-bars *c c'*, having their inner ends pivoted to the bracket or connection of a cross or longitudinal central spring, B, and their outer ends pivoted to the side bars or to the bolster and rear axle, the whole constructed and arranged to operate substantially as and for the purpose set forth.

3. The combination of the equalizing-bars *c c'*, suspended in a plane below the side bars, A, bolster G, and rear axle, H, connected by said side bars, and central supporting spring or springs arranged below the body, substantially as set forth.

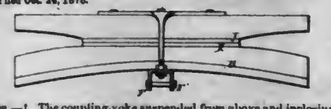
210,636. ROAD-WAGONS. Cyrus W. Saladee, Washington, D. C. Filed Sept. 13, 1878.



Claim.—1. The combination, in a road-wagon, of the body-supporting springs, connected and arranged above the axles, and the equalizing-levers, connected and arranged below the axles, and having their bearings between their ends in brackets supported by the body, substantially as set forth.

2. The combination of the body C, brackets E E', equalizing-bars F F', and side springs, D D, supporting the body, substantially as specified.

210,637. FIFTH-WHEEL COUPLING-YOKES FOR WAGONS. Cyrus W. Saladee, Washington, D. C. Filed Oct. 24, 1878.

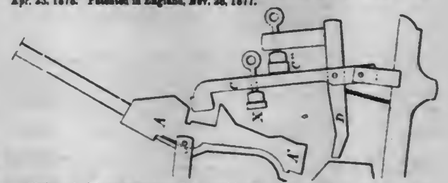


Claim.—1. The coupling-yoke suspended from above and inclosing the front axle, in combination with a detachable or adjustable shackle, having ears or attachments for the front end or ends of the lower detachable bar spring or springs, substantially as set forth.

2. The combination of the yoke having hanging arms and T-plate D, and detachable shackle F, with ears or equivalent attachments for the lower spring, substantially as set forth.

3. The yoke attached to the bolster, combined with the shackle, detachably arranged below the axle, and adjustable on the arms of the yoke, as set forth.

210,638. PIANO-ACTIONS. Jean Schwander and Joseph Herrburger, Paris, France. Filed Apr. 23, 1878. Patented in England, Nov. 26, 1877.

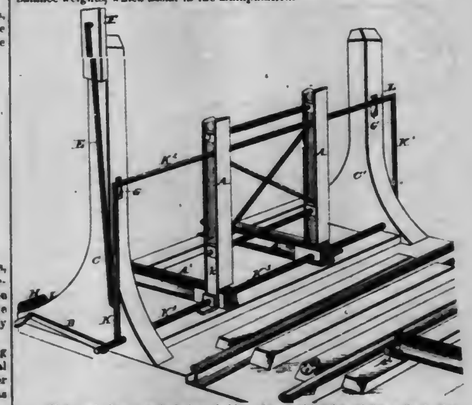


Claim.—1. The escapement C, in combination with the cheek D, these parts being made and applied as shown and described, and provided with the regulating-pieces X and C^w.

2. In combination with the prolongation A^r of the hammer-butt A, the cheek D and the pivoted escapement C, the cheek D being pivoted on said escapement, substantially as shown and described.

210,639. RAILWAY-CROSSINGS. Ezekiel Shelton, Alliance, Ohio. Filed May 10, 1878.

Brief.—A section of track-rails is braced and bolted together, so that it can be thrown vertically upward. A rod passes through the ends of the fixed rails, and through a strap bolted to the ends of the movable rails, thereby serving as a hinge. Another rod passes through the throw end of the movable rails, and these rods are connected at either end. The hinge-rod has a crank-lever at its outer end for raising and lowering the draw. A rope passes from the ends of the outer rod, up over pulleys in posts at the side, to counterbalance-weights, which assist in the manipulation.



Claim.—1. In a vertical draw-bridge, the combination of the rails A, the cross-bar K^3, the connecting-rods K and K^1, and the lever D, substantially as described and shown.

2. In a vertical draw-bridge for railroad-crossings, the combination of the rails A, the connecting-rods E and K, and the signal apparatus F, substantially as described and shown.

3. The combination of a hinged section of a railway-track with a suspending-cord, a raised pulley at rear of section, and a counterbalance-weight, substantially as set forth.

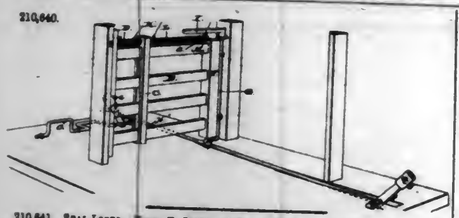
4. In a vertical draw-bridge, the combination of the rails A, hinged with the stationary rails A^1, the uprights C and C', the weights H H, cords L, and pulleys G, substantially as described and shown.

210,640. FARM-GATES. Sarten C. Skoup, Carey, Ohio. Filed Nov. 16, 1878.

Claim.—1. In a farm-gate operated by connecting-rods secured to double cranks upon opposite sides of the gate, to be automatically opened and closed by passing vehicles, the arms secured to the double cranks and provided with adjustable balance-weights provided with set-screws, constructed, combined, and operating as and for the purposes set forth.

2. In a farm-gate, the combination of the latch-bolt D, eyebolt M, and helical springs K and L with the vertical shaft G, provided with the perforated arm I, and secured by connecting-rods to the automatically-operating double cranks upon opposite sides of the gate, substantially as and for the purpose set forth.

210,640.



210,641. SEAL-LOCKS. Henry T. Smith and Daniel W. Vowles, Washington, D. C. Filed Aug. 19, 1878.



Claim.—1. The combination of the clamp composed of the sections *a b*, for securely holding a rope *a* bolt, *i*, and a seal at one end of the bolt, as set forth.

2. The clamping-sections *a b*, in combination with the rope *j*, the bolt *i*, having slots *q q*, and the turning button, having slots *s s*, substantially as and for the purposes set forth.

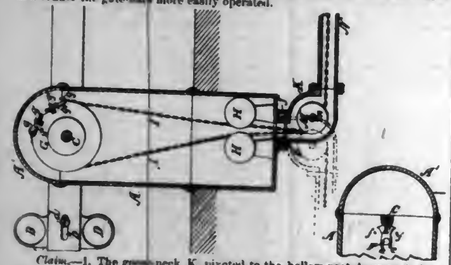
3. The clamping-sections *a b*, in combination with the rope *j*, the bolt *i*, disk *m*, pins *m'*, and the seal over the disk, as set forth.

4. The clamping-sections *a b*, in combination with the rope *j*, the bolt *i*, the button *c*, and a seal over the button, as set forth.

5. The combination of the section *a*, having serrated ring *d* and concavity *s*, the section *b*, having groove *f*, holes *a o o' o'* through its sides, and concavity *t*, and a screw-bolt, *i*, substantially as and for the purposes described.

210,642. RAILWAY SAFETY-GATES. Henry A. Stearns, Pawtucket, R. I., assignor to Stephen A. Jenks, same place. Filed Aug. 15, 1878.

Brief.—A goose neck is pivoted to the lower portion of the hollow gate-post, for the purpose of receiving and guiding the chains which connect the gate-bars on opposite sides of the track, so that they will operate simultaneously. Segmental bearings for the shafts of the gate-arms sustain the weight and render the gate-bars more easily operated.



Claim.—1. The goose-neck K, pivoted to the hollow post A, so as to turn to any desired angle, in combination with suitable internal mechanism for connecting and operating the gate arms, substantially as and for the purpose specified.

2. The goose-neck K, pivoted to the hollow post A, and arranged to operate in combination with the pulleys G, H, and M, and the chains or ropes I, substantially as and for the purpose specified.

3. The combination of the pivoted goose-neck K with the hollow water-tight post A and duct N, substantially as and for the purpose specified.

4. The segmental bearings E, constructed as described, and arranged to operate in combination with the studs F, stops *f*, and shaft C, substantially as and for the purpose specified.

210,643. INDICATORS FOR STEAM-ENGINES, &c. Harris Taber, Corning, N. Y. Filed Oct. 30, 1878.

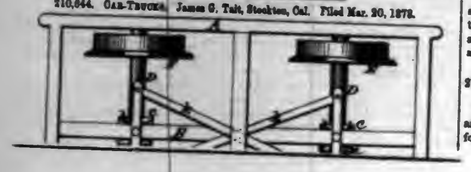


Claim.—1. The combination, substantially as before set forth, of the vibratable lever, the link, the curved guide-body, and the guide.

2. The combination, substantially as before set forth, of the piston, the link, the curved guide-body, the guide, and the vibratable lever.

3. The combination, substantially as before set forth, of the piston, the curved guide-body, the guide, the link, the vibratable lever, and the paper-roll.

210,644. CAR-TRUCKS. James G. Tait, Stockton, Cal. Filed Mar. 20, 1878.



Claim.—The truck-frame A, supported upon wheels E, each of which is mounted upon a short axle, D, the inner end of which axle is mounted in a sliding box, C, so that the two boxes are opposite each other, each box having a slotted projecting portion, *h*, in combination with the parallel bars J J, which are pivoted to the beam B, so that their ends rest in the slots of the sliding boxes, and connected by the cross-bars *k*, substantially as and for the purpose above described.

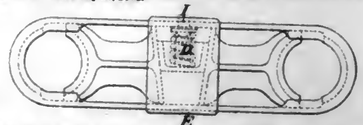
210,645. PHOTOGRAPHIC STUDIOS. Edwin C. Thompson, Williamsburg, N. Y. Filed June 26, 1878.



Claim.—1. In combination with the photographic studio or gallery B, provided with a skylight, C, and having an open end, D, the curtain E, roller G, and adjusting-cords F F', all being constructed and arranged to operate as and for the purposes set forth.

2. In combination with the photographic studio or gallery B, provided with a skylight, C, and having open ends D or J, the sliding door K, having the vertical slot L, as and for the purposes set forth.

210,646. PITMAN-CONNECTIONS. Alfred Torroquist, New York, assignor to Rufus Dutton, Yonkers, N. Y. Filed May 16, 1878.



Claim.—1. A pitman-joint with ball and sockets, the sockets of which press equally on opposite sides of the ball in the direction of the thrust, in combination with a device for automatically taking up the wear on the joints, substantially as and for the purposes described.

2. A single wedge-block and spring acting upon the bearings at both ends of the pitman, in the manner as and for the purposes specified.

3. The loop E, in combination with the rivet 1, for keeping the parts in place, substantially as described.

210,647. LOADING AND UNLOADING SHIPS. Hans P. Tothammer, San Francisco, Cal. Filed Sept. 20, 1878.

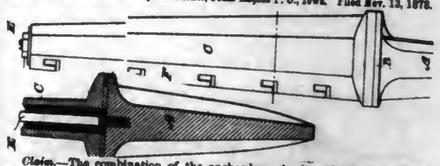


Claim.—1. The improvement in loading piles, timbers, and lumber into or discharging it from ships, consisting in the employment of a rope or chain, I, one end of which is secured to a drum, G, and which passes into the vessel through a port, C or D, and around a sheave or pulley, J, and thence back through the port in a secondary drum, H, to which it is secured, said secondary drum being connected with and driven by the drum G, substantially as and for the purpose described.

2. The drums G H and pulleys *r s*, mounted upon the lighter E, and arranged as described, in combination with the rope or chain I, one end of which is connected with the drum G, and which passes into the vessel through the port C and around a pulley, J, and thence back to the drum H, upon which it is wound, the whole operated by a steam-engine on the lighter, substantially as and for the purpose described.

3. The drum G, mounted on the lighter E, and provided with the toothed wheel *m*, said drum being driven by a steam-engine, in combination with the longitudinally-movable drum H, with its toothed wheel *n*, and the lever O, whereby the toothed wheel *n* of the drum H is thrown into or out of gear with the toothed wheel *m* of the drum G, substantially as and for the purpose described.

210,648. FENCE-POSTS. Lafayette Turner, Cedar Rapids P. O., Iowa. Filed Nov. 13, 1878.



Claim.—The combination of the anchor-base A, the tubular ribbed and slotted post C, resting on and connected adjustably with the base, as specified, the tie-rod E, firmly fixed to the base and provided with the means specified at its top for clamping and holding the post and base together, all arranged and operating substantially as set forth.

210,649. FURNACES AND DAMPER-REGULATORS. Robert L. Walter, Boston, Mass. Filed May 20, 1878.

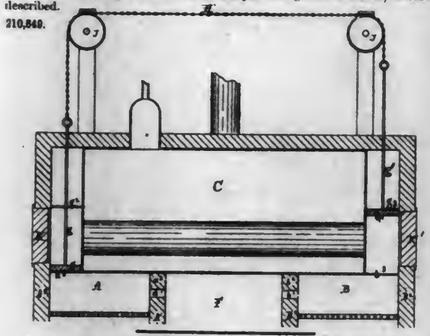
Claim.—1. In combination with the fire-boxes A and B, the flues a^1 b^1 and a^2 b^2, as and for the purpose specified.

2. In combination with the fire-boxes A and B, the flues a^1 b^1 and the deflectors a^3 b^3, as and for the purpose specified.

3. The combination of the dampers G G', rods g g', chain H, and pulleys J J with the flues a^2 g^2 and b^2 g^2, so that when the dampers close one set of flues the other set of flues will be opened, substantially as described.

4. In a steam-generator, the combination of the fire-boxes A B, flues a^1 b^1, a^2 b^2, g^1 g^2, tubular boiler C, and dampers G G', all constructed and arranged together as set forth, and so that each damper shall govern two flues, as above described.

210,649.



210,650. LAWN-RAKES. John Welchhart, San Francisco, Cal. Filed Mar. 20, 1878.



Claim.—1. A hand or lawn rake having a stationary rake-head, and provided with horizontal shoes arranged at each end thereof and above the points of the rake-teeth, to rest upon the cut grass or leaves during the process of raking, and prevent the teeth from penetrating the soil or sod and tearing or injuring the same, substantially as set forth.

2. A hand or lawn rake provided with horizontal shoes capable of vertical adjustment to bring said shoes to the desired height above the points of the rake-teeth, substantially as and for the purpose specified.

3. A hand or lawn rake having teeth formed with knife or cutting edges upon their inner faces, and horizontal shoes secured to the extended ends of the rake head, and disposed above the points of the teeth, substantially as and for the purpose set forth.

4. A hand or lawn rake having teeth formed with knife or cutting edges, and provided with horizontal shoes formed with vertical shanks passing up through openings in the extended ends of the rake-head, and vertically adjustable therein, substantially as and for the purpose specified.

210,651. WHIFFLETREES. Stephen J. White, Belleville, Ontario, Canada. Filed Apr. 17, 1878.



Claim.—1. The T-joint F, in combination with an evener and single-tree, substantially as described.

2. The combination of the double evener B, having hook-formed inner ends, extensions C, having hook-formed outer ends, and lock pins or bolts, substantially as described.

3. The combination of the evener B, extension C, center whiffletrees, A, and joint G, constructed substantially as described.

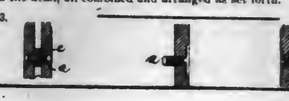
4. The combination of the evener B, extension C, whiffletrees A, draw-bar D, and stay-chains K K, substantially as described.

210,652. MEAT-TENDERERS. Cullen K. Whittier, Boston, Mass. Filed Sept. 7, 1878.



Claim.—The described utensil, consisting of the head, the awls inserted therein, the plate moving upon the awls, the springs, and the rod *s*, passing through the head, all combined and arranged as set forth.

210,653.

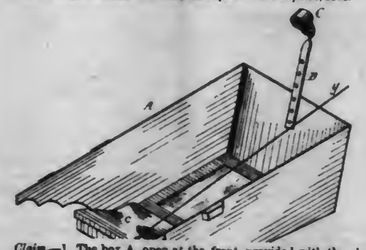


210,653. KNITTING-MACHINE NEEDLES. George H. Adams and Harrison Adams, Hill, N. H. Filed May 10, 1878.

Brief.—The length of the latch-pivot is less than the breadth of the body of the needle. The sides of the needle are compressed, so as to force the displaced metal into the holes and over the ends of the pivot, thus preventing said pivot from coming loose and working out.

Claim.—A knitting-machine needle having the latch secured therein by an independent pivot of a length shorter than the width of the needle-body, and the pivot held in place by the metal being depressed on the outer faces of the body on each side of the two pivot ends, as and for the purposes set forth.

210,654. ATTACHMENTS FOR LAWN-MOWERS. Wilson D. Ayers, Elmira, N. Y., assignor of one-half his right to Daniel M. Mackey, same place. Filed Sept. 30, 1878.



Claim.—1. The box A, open at the front, provided with the plate *a* at the rear of the cutter, and with the hinged shield *c* and operating cord or rod *y*, substantially as set forth.

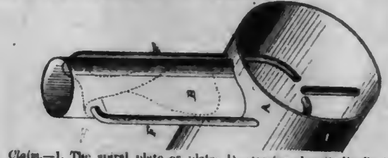
2. The combination of the box A, ring C, adapted to the handle of the mower, and bar D, adjustable on the box, as set forth.

210,655. PROCESSES FOR MAKING ARTIFICIAL LEATHER, &c. E. Edward Ball, Jamaica, N. Y. Filed Feb. 28, 1878.

Brief.—The distinguishing feature is the preliminary treatment with glycerine, whereby greater flexibility is insured than when the glue and glycerine compound alone is applied, which is the usual method.

Claim.—The method of treating paper or fabric to produce an imitation surface, consisting in first saturating with glycerine, then coating with a mixture of glue and glycerine, and then subjecting to the action of an astringent, as set forth.

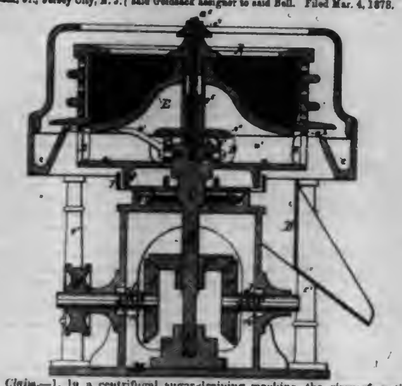
210,656. SPARK-EXTINGUISHERS. James H. Bartlett, Woodland, assignor of one-half his right to John Bateman, Oakville, Cal. Filed July 29, 1878.



Claim.—1. The spiral plate or plates D, standing longitudinally in the chimney, as shown, and having the integral curved cup-shaped receptacle E at the top, extending from side to side of the chimney, to arrest the upwardly-flying sparks, constructed and arranged substantially as herein described.

2. The spiral plate or plates D, standing longitudinally in the chimney R, as shown, and having the curved or cup-shaped receptacle E at the top, in combination with the return-tubes F, to carry the sparks back, substantially as herein described.

210,657. CENTRIFUGAL MACHINES. William T. Ball, New York, N. Y., and Joseph Goldsack, Jr., Jersey City, N. J. (said Goldsack assignor to said Ball. Filed Mar. 4, 1878.



Claim.—1. In a centrifugal sugar-draining machine, the circumferential side wall of the basket, provided with one or more openings, D, whereby the drained sugar may be discharged from the basket through said wall, as described.

2. In a centrifugal sugar-draining machine, the basket A, having one or more apertures, D, in its circumferential side wall for the discharge of the sugar from the basket, together with the gate B, whereby said apertures may be opened and closed, as described.

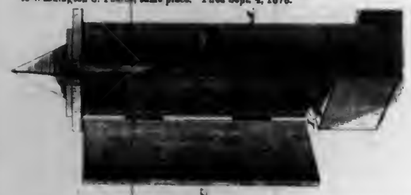
3. In a centrifugal sugar-draining machine, the combination, with the basket A, having the discharge-apertures D in its circumferential side wall, and the interior annular projection, a^3, of the conical gate or valve E, with the levers e^1, provided with pins e^2, engaging slotted plate e^3, adapted to be revolved on its axis and held in a desired position thereon, as described, and for the purpose set forth.

210,658. CLOTHES-LINE FASTENERS. James P. Boosen, Hoboken, N. J., assignor to Pauline Boosen, same place. Filed Sept. 27, 1878.



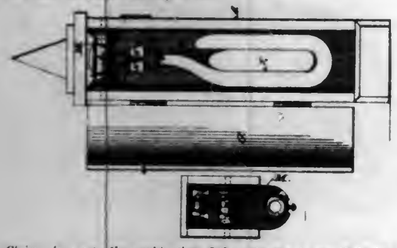
Claim.—In a clothes line fastener, the crane D, hinged at *c d* to a window-frame having upright hook *f* and pulley *b*, and provided with a running latch, *e*, in combination with a post, B, having ring-bolt and pulley *a*, as shown and described.

210,659. GATE-FASTENER. Robert J. Booth, Des Arc, Ark., assignor of one-third his right to Washington C. Pearce, same place. Filed Sept. 4, 1878.



Claim.—A combined gate-post and keeper consisting of the post A, having chamber B, provided with the side bar, G, having recesses *d d'* D, and pivoted keepers I I', and spring K, levers F F', and door C, combined, arranged, and operating substantially as set forth.

210,660. GATES. Robert J. Booth, Des Arc, Ark., assignor of one-third his right to Washington C. Pearce, same place. Filed Aug. 26, 1878.



Claim.—In a gate, the combination of the gate-post A, provided with the chamber K, with the gate C, having the heel-post F, provided with neck G, secured in bearings, and the chain M, pinned to the top of said heel-post F, and encircling the same, and provided with the weights J and N N, constructed and operating substantially as and for the purposes set forth.

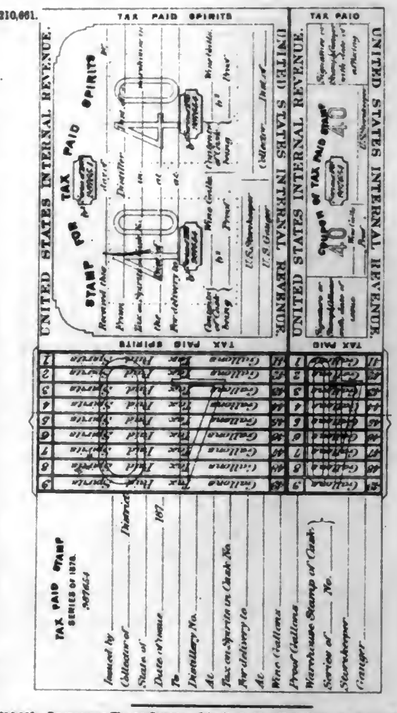
210,661. REVENUE-STAMPS. John Bowles, Washington, D. C., and Abram P. Eastaks, Philadelphia, Pa. Filed Jan. 14, 1878.

Claim.—1. In a revenue-stamp having a portion intended to remain fixed to the cask, and two or more portions adapted and intended for removal after the stamp has been affixed to the cask, the combination of the following elements upon the portion to remain fixed and upon those which are to be removed, viz: first, similar serial numbers or other marks of designation; second, written and printed statements of the quantity of spirits represented and protected by the stamp; and, third, written and printed receipts or statements of officials, the last two being written and printed upon the face of the stamp in such position that the removed portions shall display a part of the same, and give proper indication of what remains upon the cask, substantially as described.

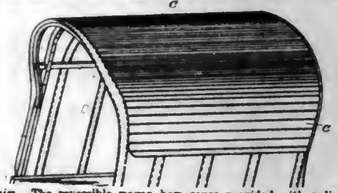
2. A revenue-stamp having a portion or portions adapted and intended for removal after the stamp has been affixed to the package, and a slip or slips of paper or other proper material of about the size and form of the removable portion or portions, attached to the back of the stamp directly opposite such removable portion or portions, in such a way that said slip or slips may be easily detached, substantially in the manner and for the purposes hereinbefore described.

3. In a revenue stamp having a portion intended to remain fixed to the cask, and one or more portions adapted and intended for removal, the combination of a stamp proper with coupons and an additional stamp or coupon with coupons, the additional stamp or coupon being adapted for separation from its coupons and from the stamp proper, substantially in the manner and for the purposes hereinbefore described.

210,661.



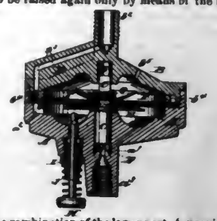
210,662. REVERSIBLE WAGON-COVERS. John Boyle, New York, N. Y. Filed May 30, 1878.



Claim.—The reversible wagon-bow cover provided with a lining, C, of water-proof material extending over its horizontal portion, as and for the purposes described.

210,663. GAS-LIGHT EXTINGUISHERS. Philipp Brand and Edward J. King, Jacksonville, Ill. Filed Nov. 14, 1878.

Brief.—The rod H must be pushed up to raise the valve D, when gas will flow until the pressure is diminished at the meter, the gas supporting the valve by means of the diaphragm. When the pressure is removed the valve falls back to its seat, to be raised again only by means of the rod H.



Claim.—1. The combination of the lower part, A, provided with the socket a^1, the tubular projection a^2, and the port a^3, the upper part, B, provided with the socket b^1, the tubular projection b^2, the port b^3, the ring-groove b^4, and the air-hole b^5, the valve-stem and valve C D, the disk E, the flexible diaphragm F, and the weight-cup G, with each other, substantially as herein shown and described.

2. The combination of the lower part, A, provided with the socket a^1, the tubular projection a^2, and the port a^3, the upper part, B, provided with the socket b^1, the tubular projection b^2, the port b^3, the ring-groove b^4, and the air-hole b^5, the valve-stem and valve C D, the disk E, the flexible diaphragm F, the weight-cup G, and the rod, stuffing-box, and spring H I J, with each other, substantially as herein shown and described.

210,664. DISINFECTING-PAINTS. David E. Bruinig, Brooklyn, N. Y. Filed Oct. 9, 1878.

Claim.—The composition herein described, consisting of silicic acid or feldspar, metalline gum, shellac, linseed-oil, red lead, manganese, carbolic acid, and spirits of turpentine, prepared substantially as described, for a disinfecting-paint.

210,665. CLASPS. F. Barton Brown, Boston, Mass. Filed Nov. 13, 1878.



Claim.—1. In combination, the V-shaped pieces A B, pivot C, and spring D, one jaw of A being between the two parts of B, and vice versa, all substantially as described.

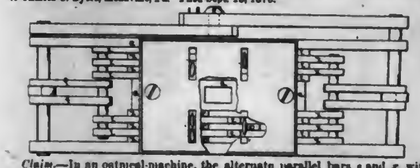
2. In combination, the double V-shaped piece A, the two single V-shaped pieces B and E, pivot C, and spring D, the jaw a lying between the two parts of B, and vice versa, and the jaw a^2 lying between the two parts of E, and vice versa, all substantially as described.

210,666. STOCKING-SUPPORTERS. F. Barton Brown, Boston, Mass. Filed Oct. 11, 1878.



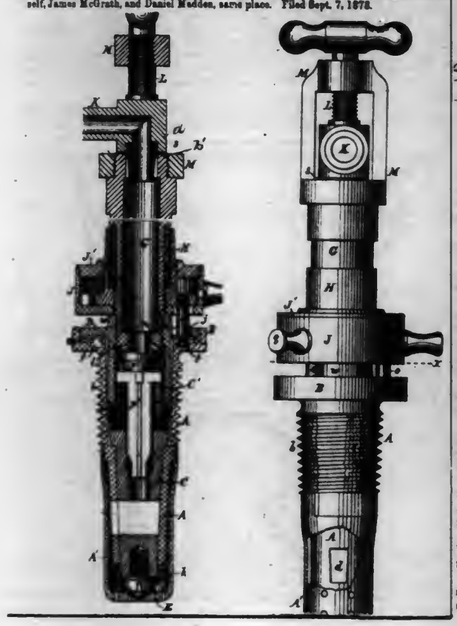
Claim.—The webbing A and clasp E, in combination with the cord C, the cord C adapted not only to connect together the ends of the webbing A, but also to connect the clasp E with the webbing A, all as described.

210,667. OATMEAL-MACHINES. John F. Byers, Ravenna, Ohio, assignor of one-half his right to Charles C. Byers, Meadville, Pa. Filed Sept. 18, 1878.



Claim.—In an oatmeal-machine, the alternate parallel bars *s* and *s'*, with their sides in continuous contact, and provided on their upper edges with knives *s c'*, and depressions across the top of the bars for the escape of the meal, substantially as described.

210,668. VALVES FOR BARRELS, KEGS, &c. Joseph Byrne, Boston, Mass., assignor to himself, James McGrath, and Daniel Madden, same place. Filed Sept. 7, 1878.



Claim.—1. The plug-valve consisting of a valve seat or shell, A, and a valve, C C', flanged, as shown, in combination with the delivery-pipe G and a key, substantially as described, for the purpose specified.

2. The flanged valve-seat A and slots *f*, the flanged valve C C' and holes *j*, and screw E, arranged and operating together substantially as described, for the purpose specified.

3. The delivery-pipe G, casing M, screw L, and bent pump-pipe K, substantially as described, for the purpose specified.

4. The washer *a*, in combination with the tube *a'*, shoulder *b'*, and a pump-pipe or other pipe, substantially as described, for the purpose specified.

210,669. CRANK-HANDLES. William B. Coates, Philadelphia, Pa. Filed Sept. 17, 1878.

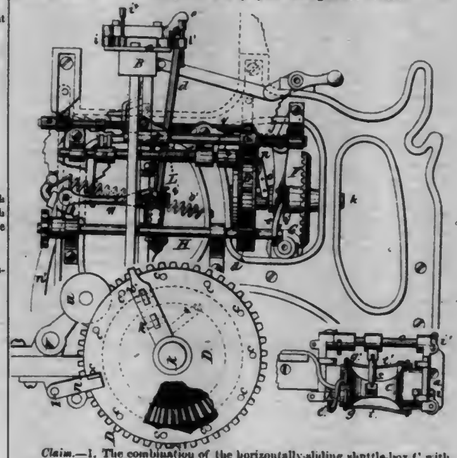
Brief.—The flanges assist the button and tightening-screw in holding the two arms in position for use.



Claim.—An adjustable crank-handle or winch, the same consisting of slotted arms, one of which is provided with an attaching end, and the other with a grasping-piece, the embracing-flanges, an overlapping button, and a screw, substantially as and for the purpose set forth.

210,670. LOOMS. Stephen Colvin and Horatio A. Remington, River Point, R. I. Filed Dec. 14, 1877.

Brief.—For weaving handkerchiefs, &c. The pattern-wheel rotates once to form the border, and remains stationary while the plain central portion is being woven. The shuttle-box is double and slides horizontally across the lay, and is connected with a rock-shaft by a rod. A segment-gear on the rock-shaft engages a similar one on the end of an upright shaft carried by the sword of the lay. A forked rod, governed by the pattern-wheel through a connecting rock shaft, engages with pins on either side of the upright shaft to move the boxes. The pattern-wheel is loose upon its shaft, and is engaged with a ratchet-wheel fast on the shaft by a spring-acted lever mounted on the side of the pattern-wheel, that carries a pawl which projects through both wheels.



Claim.—1. The combination of the horizontally-sliding shuttle-box C with rocker-shaft *c*, rod *s*, upright shaft *d*, connecting segment-gears and lay H, and operating mechanism, arranged substantially as set forth, and for the purpose described.

2. The shuttle-binders *t t'*, levers *g g'*, lever *h*, and spring *c'*, in combination with a double shuttle-box, substantially as and for the purpose specified.

3. In combination with the pattern-wheel D, ratchet J, and mechanism for operating said ratchet, connecting and disconnecting mechanism, substantially as described, whereby the said pattern-wheel is connected to the ratchet and caused to revolve therewith a definite period, then disconnected therefrom and allowed to remain stationary for another definite period, substantially as and for the purpose specified.

4. The combination of ratchet-wheel J, lever *m*, pawl-bolt *l*, and pattern-wheel D with shaft V, wheel *n*, connecting-rod *c''*, and forked rod *w*, substantially as and for the purpose set forth.

5. The forked rod *w*, swinging arm *n'*, and spring *c'*, in combination with upright shaft *d*, rocker-shaft *c*, rod *s*, and shuttle-box C, substantially as and for the purpose specified.

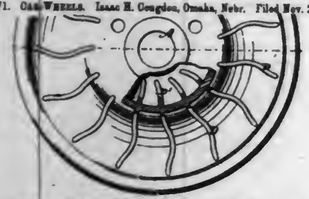
6. The combination, with a double shuttle-box, of the hinged gates *i i'* and pins *i²* for securing the same, whereby the said gates can be operated independently of each other, to admit of the removal of either of the shuttles while the box is in motion or at rest, substantially as set forth.

7. The combination of the shaft I, provided with the arms *n* and *p*, the shaft L, provided with the arms *q* and *r*, the lay provided with the projection *x*, and the cloth-roll carrying the loop *f*, in combination with the pattern-wheel, substantially as and for the purpose set forth.

8. The shaft H, with its gear-wheel *d''*, lever *e*, and sliding collar *g''*, in combination with the pattern-wheel and its locking devices, substantially as and for the purpose set forth.

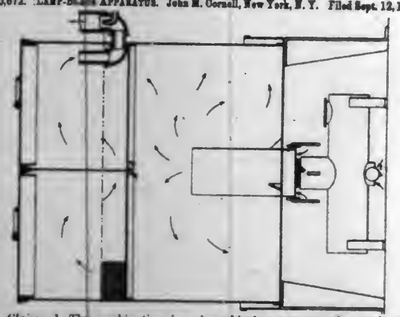
9. The shaft V, provided with the arm carrying the roller *n*, and with the arm *n'*, the rod *c''*, and forked rod *w*, in combination with the pattern-wheel D, substantially as described, and for the purpose specified.

210,671. CAR-WHEELS. Isaac H. Congdon, Omaha, Nebr. Filed Nov. 26, 1878.



Claim.—A car-wheel formed of a single plate at its rim and a double plate at its hub, with sinuous ribs extending from the rim through the inner plate, and connecting to the outer plate, substantially as shown and described.

210,672. LAMP-BLACK APPARATUS. John M. Cornell, New York, N. Y. Filed Sept. 12, 1878.



Claim.—1. The combination, in a lamp-black apparatus, of a smoke-producing burner having a central air-tube, a concentric chimney supported above said burner, and in which the impurities of the carbon are consumed by the flame of said burner, and a pair of semi-annular dampers at the bottom of said chimney for regulating the access of air to the exterior of said flame, substantially as herein shown and described.

2. The combination, in a lamp-black apparatus, of a smoke-producing burner, having a central air-tube, a concentric chimney supported above said burner, and in which the impurities of the carbon are consumed by the flame of said burner, and a free smoke-black-collecting chamber communicating directly with the top of said chimney, substantially as herein shown and described, for the purpose specified.

3. The combination, in a lamp-black apparatus, of a smoke-producing burner having a central air-tube, a concentric chimney supported above said burner, and in which the impurities of the carbon are consumed by the flame of said burner, and a series of free smoke-black-collecting chambers and connecting screens of fine gauze to arrest the liberated and purified carbon particles, as herein specified.

4. The combination, in a lamp-black apparatus, of a smoke-producing burner having a central air-tube, a concentric chimney supported above said burner, and in which the impurities of the carbon are consumed by the flame of said burner, a series of free smoke-black-collecting chambers and connecting screens of fine gauze to arrest the liberated and purified carbon particles, and an escape-pipe containing a draft-jet for drawing air into said air-tube and chimney and the smoke through said screens, as herein set forth.

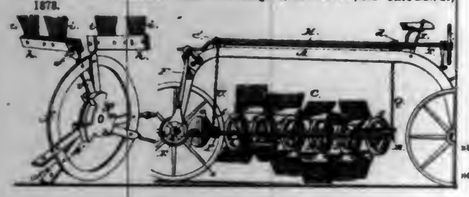
5. The combination, in a lamp-black apparatus, of a smoke-producing burner having a central air-tube, a concentric chimney supported above said burner, and in which the impurities of the carbon are consumed by the flame of said burner, a series of free smoke-black-collecting chambers and connecting-screens of fine gauze to arrest the liberated and purified carbon particles, an escape-pipe containing a draft-jet for drawing air into said air-tube and chimney and the smoke through said screens, and dampers for regulating the admission of air into said air-tube and chimney, and thereby regulating the quality and quantity of the product, as herein specified.

210,673. STOVE-DOOR KNOBS. William Cunliff, Providence, R. I. Filed Jan. 5, 1878.



Claim.—The combination, with a stove-door knob, of a door-fastening bolt provided at both end portions with the bearing-shoulders and the door-clamping device, substantially as described.

210,674. STREET-SWEEPER. Charles W. Cunningham, San Francisco, Cal. Filed Nov. 29, 1878.

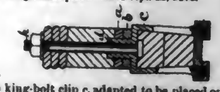


Claim.—1. In a street-sweeping machine, the combination of the bent levers F F, provided at their lower ends with the clutches E E, and at their upper ends with the short arms *a a*, with the slotted angular plate G, secured to the rod H, provided with the hand-lever I, substantially as and for the purpose set forth.

2. In a street-sweeping machine, the revolving brush C, consisting of the rings *f*, having spokes *f*' extending from beyond the periphery of the rings *f*, and terminating in the hub *g* upon the shaft Z, in combination with the brushes *h i*, secured to the outer ends of the spokes *f*, in line with the shaft Z, in three or more series, each one of a series being slightly in advance of the succeeding one, and equidistant from the other brushes in the same series, substantially as and for the purpose set forth.

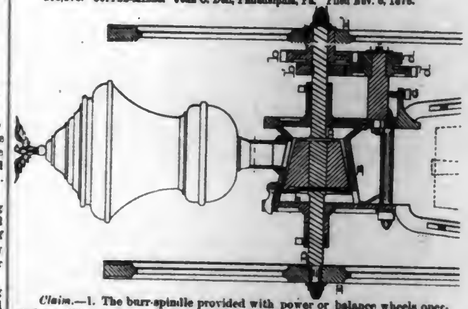
3. In a street-sweeping machine, the circle or wheel *f*, for supporting or carrying the brushes *h i*, composed of the arms *f*', the outer ends, *f*', of which are twisted into line with the shaft Z, ring *f*, of wrought-iron, and the hub *g*, cast upon the inner ends of said arms, combined and operating as and for the purpose set forth.

210,675. VEHICLE FIFTH-WHEELS. John Double, Southington, Conn., assignor of one-half his right to J. B. Savage, same place. Filed Sept. 12, 1878.



Claim.—The king-bolt clip *c*, adapted to be placed over the axle and under the friction-plate secured to said axle, and having a hollow trunnion, *d*, projecting upward a distance equal to the thickness of both friction-plates, in combination with the ordinary friction-plates *a b* and the king-bolt *b*, passing through said hollow trunnion, substantially as described, and for the purpose specified.

210,676. COFFEE-MILLS. John O. Dell, Philadelphia, Pa. Filed Nov. 6, 1878.



Claim.—1. The burr-spindle provided with power or balance wheels operated at different degrees of speed, substantially as and for the purpose set forth.

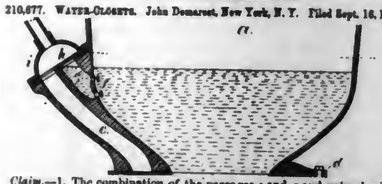
2. The burr-spindle carrying at opposite ends the fixed and loosely-connected power or balance wheels E E', in combination with the intermediate gearing *b b' d d'*, substantially as and for the purpose set forth.

3. The shell or bed B, rotatably fitted to the heads, whereby the spout or inlet may be overturned, substantially as and for the purpose set forth.

4. The burr fitted loosely on the spindle or shaft, and connected thereto by the spring F, whereby, in the event of obstructions between the burr and shell, said spring automatically leaves its seat, thus relieving the burr, substantially as set forth.

5. The spindle D, balance-wheel E', and gearing *b b' d d'*, in combination with the adjusting-screw G, substantially as and for the purpose set forth.

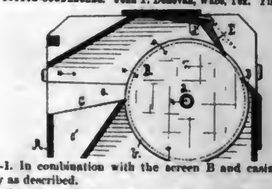
210,677. WATER-CLOSETS. John Demarest, New York, N. Y. Filed Sept. 16, 1878.



Claim.—1. The combination of the passages *e* and *g* and valve *h* with the water-closet basin *a*, substantially as described.

2. The combination, with the water-passages *e g* and valve, of a cover, *i*, having an opening connected with a ventilating-pipe, substantially as set forth.

210,678. COTTON-CONDENSERS. John T. Donovan, Waco, Tex. Filed Nov. 5, 1878.

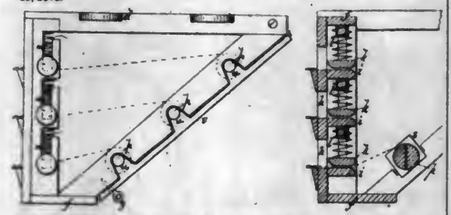


Claim.—1. In combination with the screen B and casing A, the flap E, substantially as described.

2. In combination with the casing A and screens C and B, the flap E, as set forth.

3. In combination with the screen B, the tapering passage, as set forth, and the flap E and piece D, substantially as described.

210,679. HOLDERS FOR WRAPPING-PAPER. William H. Denty, Shamokin, Pa. Filed Oct. 12, 1878.



Claim.—In combination with the frame, substantially as described, the ledges *i*, spring-strips *k*, rollers *p*, adjustable boxes *s*, and hinged strip *e*, as set forth.

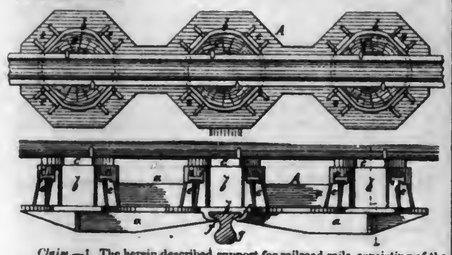
210,680. PADDLE-WHEELS. George L. Elliott, New York, N. Y. Filed Nov. 12, 1878.



Claim.—Improved paddle-wheels in which the paddles B are made in the form of rectangular parallelograms, and are provided with elliptical apertures C through their middle parts, of such a size that their areas may be from one-fourth to one-third the area of the said paddles, and in such positions that their centers may be in the centers of the paddles, and their transverse and conjugate axes may be respectively parallel with the side and end edges of the said paddles, substantially as herein shown and described.

210,681. RAILROAD-TRACK TIE AND SUPPORT. George F. Folsom, Boston Highlands, Mass. Filed Nov. 15, 1878.

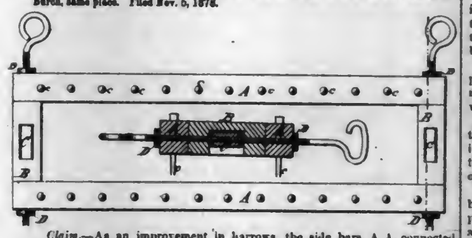
Brief.—A railroad track support consisting of cast-iron sections provided on the upper part with cast-iron sockets to receive wooden blocks, and on the lower part with transverse and longitudinal flanges, and with dovetail recesses for the cross-braces.



Claim.—1. The herein described support for railroad rails, consisting of the cast-iron sections A, provided with sockets *b* on the upper part, and with transverse and longitudinal flange *a a* and dovetail recesses *f* on their lower part, substantially as and for the purpose described.

2. In a support for railroad rails, the sockets *b*, cast in one piece with the foundation A, and formed with openings *e*, for the purposes and substantially as described and shown.

210,682. HARROWS. Aaron F. French, Denison, Iowa, assignor to himself and Edwin K. Burch, same place. Filed Nov. 5, 1878.



Claim.—As an improvement in harrows, the side bars, A A, connected with the ends B B by screw-threaded rods passed transversely through the side, and engaging nuts or burrs C, mortised in the bars B, and nuts D, screwed against the sides of the bars A, substantially as described.

210,683. COMBINED BROADCAST-SEEDER, CULTIVATOR, AND GRAIN-DRILL. Thomas Galloway and John Larsen, Oshawa, Ontario, Canada. Filed Mar. 16, 1878.

Brief.—Pivoted valves adjusted to deflect the seed into either a drill or broadcasting tube through a branched tube.

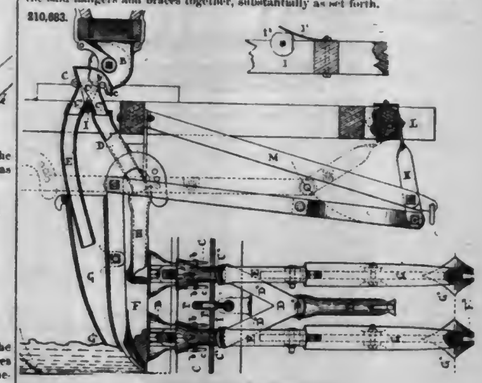
Claim.—1. The shaft I, having a series of valves, C², secured thereto, and provided with the block P, combined with the spring P, substantially as described.

2. The hopper C, provided with divergent grain-passages C' C², having swinging valves C², combined with the grain-conductor tubes D, with divergent branches D' D², and a scattering-tube, substantially as set forth.

3. The distributers B and hoppers C, having divergent grain-passages C' C², and swinging valves C², combined with the tubes E and teeth G F, all arranged substantially as set forth.

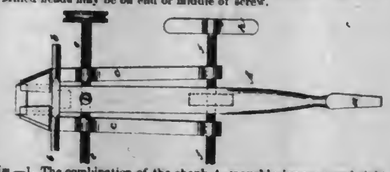
4. The pivoted supporter I, having the hangers K, combined with the drag-bars of a broadcast-seeder and grain-drill, and with the braces M, the central one of which serves also as a draft-bar, and detachable pins for securing the said hangers and braces together, substantially as set forth.

210,683.



210,684. NUT AND TAP WRENCHES. Joseph Goodrich, Henry, assignor of one-fourth his right to James B. Waller, Cook County, Ill. Filed Apr. 2, 1878.

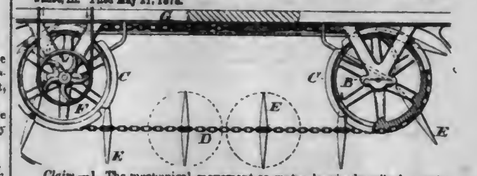
Brief.—The shank is made to fit into a brace, tap-wrench, lathe, or a bench. Milled heads may be on end or middle of screw.



Claim.—1. The combination of the shank A, movable jaws *c c*, and right- and-left-hand screws *e f*, working independently of each other, substantially as set forth.

2. The combination of guides *b b* with the shank A, for supporting the jaws *c*, substantially as herein set forth.

210,685. ENDLESS-CHAIN PROPELLERS. Joseph Goodrich, Henry, assignor of a part of his right to James B. Waller and C. B. Goodrich, same place, and William R. Goodrich, Kewanee, Ill. Filed May 21, 1878.



Claim.—1. The mechanical movement or motor herein described, consisting of blades so pivoted as to be in equipoise or balance, and free to rotate on their axes, without guides or other mechanical constraint, between endless traveling chains or belts running on sheaves mounted on shafts having fixed bearings, substantially as set forth.

2. The combination of the pivoted blades E E, arranged so as to be in equipoise or true balance on their pivots, free to rotate, and without guides or other mechanical constraint, with the endless chains or belts D D and pulleys C C, when all are arranged to operate substantially as set forth.

3. The combination of the pivoted blades hung upon vertical pivots, so that they may be in equipoise with the vertical shafts B B, horizontally-rotating pulleys C C, and endless chains D D, when arranged in such a manner that the axes upon which the blades rotate will be perpendicular with the surface of the water, or nearly so, substantially as set forth.

4. Two or more endless belts or chains around sheaves, in combination with bars G, or other equivalent obstructive device, arranged parallel, or nearly parallel, and close to the chains on one side, and two or more blades, E E, hung and arranged to rotate freely on axial pivots *a a*, and without guides or other mechanical constraint, when moving in one direction, and to be feathered by the bars G, and constrained to move edgewise in the other direction, substantially as set forth.

5. An arrangement consisting of a series of blades pivoted between two endless traveling chains on the prolonged axes of the blades, so that they may be in equipoise and free to rotate in either direction, and also free to turn and avoid any floating obstacle, substantially as set forth.

210,686. HINGES. Henry E. Griffin, Olympia, Wash. Filed Mar. 19, 1878.

Brief.—The hinge is held in place by screws passing through the legs at cross-section.

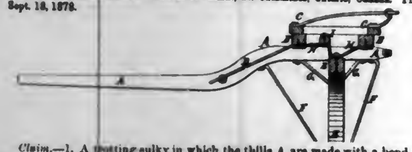
Claim.—1. An improved door-hinge made of knuckle-sections with inclined legs, secured to holes of the door and casing by fastening-screws, substantially as set forth.

2. The fastening-legs of the hinge-sections, having central end spurs to mark the place for boring holes for the legs, substantially as specified.

210,686.



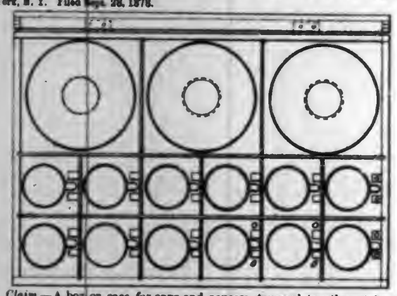
210,687. TROTTING-SULKIES. William J. Hamill, St. Catharines, Ontario, Canada. Filed Sept. 18, 1878.



Claim.—1. A trotting-sulky in which the thills A are made with a bend or offset at a little distance from their rear ends, substantially as herein shown and described.

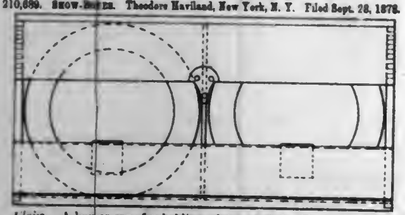
2. A sulky-frame formed by the combination of the bent thills A, the two cross-bars B, the seat C, the foot-rests or stirrups D, and the connecting-braces F G H with each other, and with the whiffletree I and the arched axle E, substantially as herein shown and described.

210,688. CASES OR BOXES FOR HOLDING CUPS AND SAUCERS. Theodore Haviland, New York, N. Y. Filed Sept. 26, 1878.



Claim.—A box or case for cups and saucers, tongued together at its corners, having a hinged cover, and provided with compartments of two sizes, the partitions being secured in position, as shown and described, said smaller compartments being provided with lugs or projecting pieces on one side to hold the cups firmly by their handles, as shown and described, the whole being constructed in the manner and for the purposes specified.

210,689. SHOW-BOXES. Theodore Haviland, New York, N. Y. Filed Sept. 26, 1878.

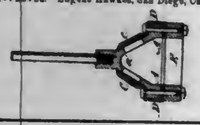


Claim.—A box or case for holding plates on their side, tongued together at its corners, provided with vertical partitions only, notched into the sides of the box to secure them firmly in place, having one of its sides hinged to raise and lower, and having a hinged and chambered or recessed cover, arranged, as described and shown, to close down over the whole case and cover the upper front surface of the plates, as shown.

210,690. PREPARING PAPER TO TAKE COPIES. Frederick Hawke, London, England. Filed Oct. 18, 1877. Patented in England, May 17, 1877.

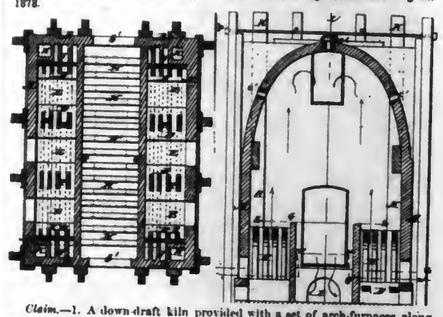
Claim.—The preparation of special copying papers by mixing oxalic or citric acid, in combination with the perchloride or sulphate of iron, with the pulp during the process of manufacture, as hereinbefore described.

210,691. PUMP-VALVES. Eugene Hawkes, San Diego, Cal. Filed Dec. 24, 1877.



Claim.—The combination, in a pump-valve, of the plate A, having side-open projections *a'*, the two outwardly-opening valves C, the packing D, and the ring E, arranged as shown and described.

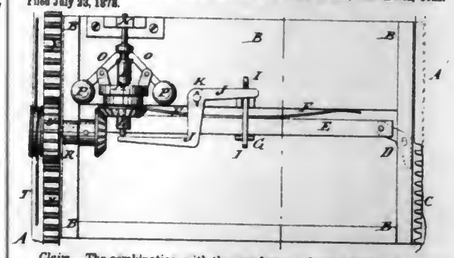
210,692. BRICK AND TILE KILNS. Napoleon B. Heafer, Bloomington, Ill. Filed Aug. 24, 1878.



Claim.—1. A down-draft kiln provided with a set of arch-furnaces along each side wall, extending inward about one-third the breadth of the said kiln, and having fire-spaces formed through their arches, substantially as herein shown and described.

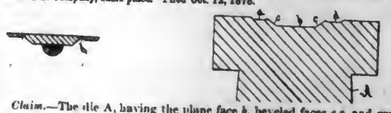
2. The combination of the arch-furnaces F, the fire-walls G, the cross-flues H, the longitudinal flue I, and the outlet cross-flues J with the four chimneys K, substantially as herein shown and described.

210,693. SAFETY ATTACHMENTS FOR ELEVATORS. Richard H. Hill, New Haven, Conn. Filed July 23, 1878.



Claim.—The combination, with the way-frame A, having the fixed racks C, of a carriage, B, provided with slotted pivoted pawls D, the latch-arm G, and the arm K, the lever I J, and the sliding governor-spindle L, all arranged substantially as and for the purpose specified.

210,694. DIES FOR FORGING CARRIAGE-CLIPS. Merritt Hine, Unionville, Conn., assignor to Union Nut Company, same place. Filed Oct. 12, 1878.



Claim.—The die A, having the plane face *b*, beveled faces *c c*, and grooves *d d* outside of said beveled faces, substantially as described, and for the purpose specified.

210,696. SHOES. Francis M. Hoyt, Haverhill, Mass. Filed Nov. 18, 1878.



Claim.—The improved manufacture or shoe-upper composed of the main part A and the auxiliary parts B C D, formed, arranged, and applied substantially as set forth.

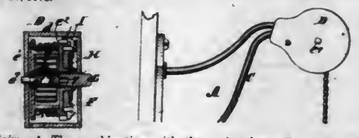
210,696. CURVED RAILWAY-RAILS. William W. Humphrey, Boston, Mass. Filed Aug. 21, 1878.

Brief.—Improvement on Patent No. 202,945, and consists in inserting balls in the tread of the curved rail instead of rollers, thereby relieving, at the same time, lateral as well as longitudinal binding of the wheels.



Claim.—A curved rail for steam or horse cars, with balls inserted in the tread of the rail, as described, and for the purpose set forth.

210,697. ADJUSTABLE SUSPENSION-BRACKETS. J. Christopher Lake, Camden, N. J. Filed Aug. 27, 1878.



Claim.—1. The combination, with the spring-drum E, ratchet F, and a suitable pawl engaging with the teeth of said ratchet, of the friction-plate H, impinging against the ratchet, to control the freedom of motion of the drum, and the adjusting-screw G, whereby the tension of said plate is adjusted, substantially as and for the purpose set forth.

2. In combination with the pulley or drum E and the ratchets F and f^2, having teeth arranged in reverse directions, the double-ended pawl I, operating to engage its alternate ends with the teeth of said ratchet, as set forth.

3. The combination, with the spring-drum E, ratchet F, shaft e^2, and screw G, of the friction-brake H, ratchet f^2, and double-ended pawl I, substantially as shown and described.

210,698. PIPE-TONGS. William L. Lay, Oil City, Pa., (administrator of Oliver B. Lay, deceased,) assignor to the Eaton, Cole & Burnham Company. Filed Feb. 23, 1878.

Brief.—More than one of these bits may be used in either jaw or in both jaws.



Claim.—1. A bit for insertion in the jaws of pipe-tongs, shaped with equal angles at all its biting-edges, so as to enable it to be turned and a different edge presented as one is worn, and made with a taper, so as to be firmly driven into a proper groove for its reception, substantially as shown and described.

2. A jaw of a pair of pipe-tongs made with a tapering groove for the reception of a removable tapering bit, such groove being so cut in such jaw as to allow one edge of such bit to project against the pipe to be grasped by such tongs, and that lower edge of such groove cut in said jaw on a line which makes with the line of said projecting edge of such bit an angle double that made by the line of said projecting edge with the center line of said bit, so that the said projecting edge of the tapering bit shall be parallel to the grasping surface of the other jaw of the tongs, substantially as shown and described.

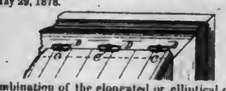
3. A jaw of a pair of pipe-tongs with a tapering groove for the reception of a tapering bit, and strengthened at the larger end of such groove, as shown at *b'*, by additional metal, to compensate for that cut away by such larger end of said groove, substantially as shown and described.

4. A tapering bit for the jaw of a pipe-tongs, made longer than the width of said jaw, and so inserted in such jaw that its larger end projects from such jaw, and its smaller end is nearly flush with the other side thereof, or projects therefrom less than the distance of such side from the line between the end of the jaws and the rivet of the tongs, substantially as described.

5. A tapering groove cut transversely across the jaw of a pipe-tongs, for the reception of the smaller end of a removable tapering bit, but not large enough to receive the large end thereof, so that said bit cannot be driven through said groove, substantially as shown and described.

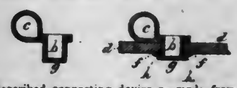
6. A bit for insertion in the jaw of pipe-tongs, made of steel or other hard metal, in the form of the frustum of a pyramid, with three or more sharp equiangular edges, substantially as shown and described.

210,699. AWNING-FASTENINGS. William H. Macy, New York, N. Y., assignor to John Boyle, same place. Filed May 29, 1878.



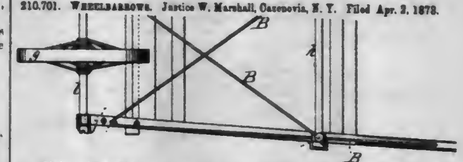
Claim.—The combination of the elongated or elliptical eyes B B, secured in longitudinal position to the margin of the awning, and the screw eyes C C, for securing the same, in the manner described.

210,700. SHOE OR GARMENT FASTENINGS. Léon Magnist, Paris, France. Filed Sept. 19, 1878.



Claim.—The described connecting device as made from a single strip of metal, having the closed depression or cup *b* at or near one end, and an opening, *a*, at or near its other end, and these ends when applied being interlocked, as shown, to form an eye, *e*, and the closed bottom *g* of the cup being doubled and compressed at its edge to form a rim, all as set forth.

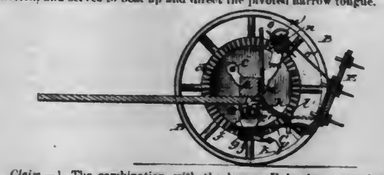
210,701. WHEELBARROWS. Justice W. Marshall, Cazenovia, N. Y. Filed Apr. 2, 1878.



Claim.—In combination with the wheelbarrow A, the side truss-braces, B, commencing each at the handle, extending downward through the leg, thence upward through an eye on the bearing-arm, thence diagonally across the body to the other leg, substantially as specified.

210,702. HARROWS. Silas C. Matteson, Campbellsport, Wis. Filed Aug. 29, 1878.

Brief.—The tooth-bars are loosely pivoted in the cross-bars to adapt them readily to lateral operation. The bracket depending in the rear from the axle is slotted, and serves to bear up and direct the pivoted harrow-tongue.



Claim.—1. The combination, with the harrow E, having a number of independently-moving tooth-beams, of the jointed tongue C, slotted tongue-support *l*, lever *k*, pinion *g*, gear-wheel *d*, axle A, and wheels B, substantially as and for the purpose set forth.

2. The axle A, having a tapering or dovetailed slotted bracket, *e e'*, in combination with the correspondingly-shaped journal-box *f*, whose shaft is provided with a pinion, *g*, and having a bar, *h*, lever *i*, collar and arm *j f*, lever *k*, connected to the tongue of the harrow, and gear-wheel *d*, substantially as and for the purpose set forth.

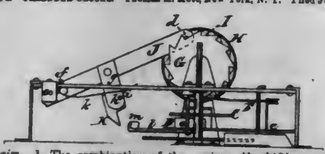
210,703. AX-HANDLE ATTACHMENTS. George P. Merrill, Canterbury, N. H. Filed July 24, 1878.

Brief.—The handle is attached to the ax by means of an elongated collar provided with a projecting part passing through the eye of the ax, and having a threaded end, upon which is screwed an elongated plate, which covers the end of the eye, and firmly secured in position by a screw inserted through it and screwed into the handle.



Claim.—The herein-described device for attaching and clamping axes to their handles, the same consisting of the collar located on the handle below and in contact with the lower surface of the ax, the bolt passing up through the ax-eye, the plate screwed as a nut upon the end of bolt, and the screw driven into the head of the helve, and keeping the plate from turning, all constructed, arranged, and operating as specified.

210,704. CALENDAR-CLOCKS. Thomas H. Mott, New York, N. Y. Filed July 20, 1878.



Claim.—1. The combination of the register H, shifting-pawl F, ratchet-wheel G, detent-wheel I, adapted to lock the register H in both directions, and having faces of its teeth rising perpendicularly, or substantially so, above and in the path of the pawl or its equivalent, and the pawl J, substantially as hereinbefore set forth.

2. The combination of the pawl F, wheel G, register H, detent-wheel I, pawl J, and trip K, substantially as set forth.

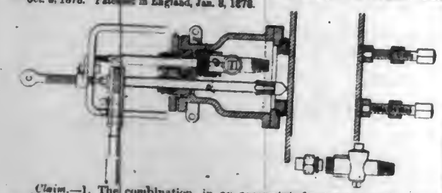
210,705. RAIL-CHAIRS. John R. Neff, Philadelphia, Pa. Filed June 1, 1878.

Brief.—Rail-chairs having supporting portions both for the tread and flange of the car-wheels.



Claim.—In combination with the rail ends *a a*, the rail joint and chair made in one piece, having a central ⊥-groove for the reception of the ends of the rails, said chair embracing the rails closely on both sides and at the base, its outside part being in the form of a rail, its upper surface slightly elevated above the top of the rail, and its inside part, *d'*, elevated and adapted to receive the flange of the wheel, thus forming a continuous rail-joint, as shown and described.

210,706. MACHINES FOR TAPPING MAINS. James Penney, Stockport, Great Britain. Filed Oct. 8, 1878. Patented in England, Jan. 9, 1878.

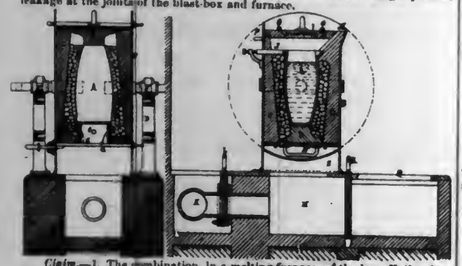


Claim.—1. The combination, in an apparatus for tapping mains under pressure, of a working-chamber having a rotary cover, a sliding rotary tool holder or shaft passing upward through a gland in said cover, a removable yoke supported by perforated lugs on the curb of said chamber, an adjustable nut-bracket attached to said yoke, and an axial feed-screw working in said bracket, and engaging with the extended upper end of said shaft above a driving-square, as herein shown and described, for the purpose set forth.

2. In an apparatus for tapping mains under pressure, the improved rotary and sliding cock holder or shaft herein specified, having at its inclosed lower end a large axial socket with internal longitudinal grooves to receive lateral flanges on the ferrule tap or cock, and an internal spring to press against the side of the latter for supporting and releasing said tap or cock, in the manner set forth.

210,707. REVERSIBLE MELTING-FURNACES. Albert Piat, Paris, France. Filed July 26, 1878. Patented in England, Jan. 6, 1877.

Brief.—The crucible is held firmly in place in the furnace by the bottom support and flange and rod at the top. After filling the space around the crucible with fuel, the cup-shaped cover is put on, the furnace is inverted, and the blast turned on. After the upper part of the crucible is well heated, the furnace is reversed, the cup-shaped cover removed, the fuel is renewed, and the crucible charged with metal. A flat cover is now put on top of the furnace and the smelting is carried on. The top and bottom are-shaped flanges prevent leakage at the joints of the blast-box and furnace.

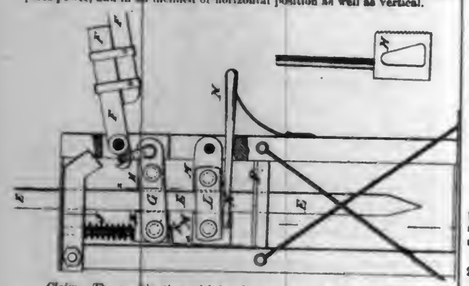


Claim.—1. The combination, in a melting-furnace, of the base F, the abutment J, and the layer C, of refractory material, to support the crucible, as shown and described.

2. The combination, with crucible A and furnace B C H, of the cup-shaped cover G, having hooks *b*, as and for the purpose set forth.

210,708. LIFTING-JACKS. Thomas W. Platt and Arthur M. Orwig, Windfall, Ind. Filed Sept. 13, 1878.

Brief.—The device is designed to be used either as a lifting-jack or as a press power, and in an inclined or horizontal position as well as vertical.



Claim.—The combination, with bar E, of the lever F, clasps G H L M, and spring-supported lever N, the latter pivoted to lower clasp, as and for the purpose specified.

210,709. DOUBLE RACK-BAR FOR RECIPROCATING MOTIONS. Charles Potter, Jr., and James F. Hubbard, Plainfield, N. J. Filed July 2, 1878.



Claim.—The double rack-bar of one piece of metal, slotted transversely, with the edges and ends of the slots rounded at both sides, and having the stay that connects the ends of the teeth all formed of one piece of metal, the same being a new article of manufacture, as specified.

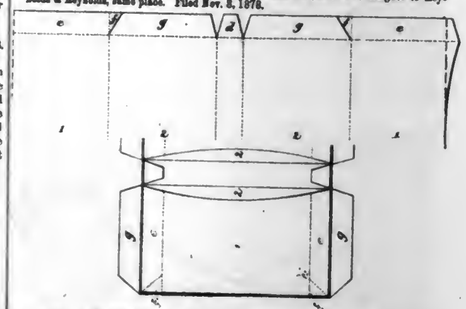
210,710. PISTONS FOR OIL-WELL PUMPS. Joseph B. Potter, Knox P. O., assignor of one-half his right to the Jarecki Manufacturing Company, (limited,) Erie, Pa. Filed July 10, 1878.



Claim.—1. A piston for pumps, consisting of a shell, C, forming a fluid chamber or passage, C, and having a valve located at the bottom of the same, and having perforations *a a a* above said valve, and metallic expansible bands or rings D E F upon said shell opposite said perforations, which are adapted to be expanded, so as to pack said piston by the pressure of fluid through said perforations from within said chamber, as described.

2. The combination of the extensible rings, perforated shell, and perforated check-valve, said parts being arranged to operate substantially as and for the purposes set forth.

210,711. BOOK-COVER PROTECTORS. Lucius D. Reynolds, Dayton, Ohio, assignor to Reynolds & Reynolds, same place. Filed Nov. 8, 1878.



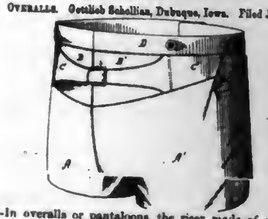
Claim.—The protector for book-covers, having the parts 1, with their under folds, *e* or *e* and *f*, and the parts 2, with their outer folds, *g*, lapping the parts 1, as and for the purposes described.

210,712. LENSES FOR SPECTACLES. Jonathan R. Lowell, Hill, N. H. Filed June 24, 1878.



Claim.—A spectacle-lens having an annular beveled and polished edge in addition to the usual beveled securing-edge, and so arranged as to produce two separate focuses, in the manner shown, and for the purpose specified.

210,713. OVERALLS. Gottlieb Schollhas, Dubuque, Iowa. Filed June 12, 1878.



Claim.—In overalls or pantaloons, the riser made of a central piece or pieces, B B', and side pieces, C C', secured together and to the waistband D and seat portions A A', the said side pieces being continued to form the back-straps, substantially as described and shown.

210,714. MANUFACTURE OF PAPER-BOARD. J. Frederick Shoeder, Kimberton, Pa. Filed Oct. 14, 1878.

Claim.—1. The pipes D, hinged or pivoted at or near their back edges in suitable supports to permit their being raised and lowered or folded, substantially as and for the purpose set forth.

2. In combination with heating-pipes D, metallic plates E, applied thereto, forming rests for the boards to be dried, and causing the heat from said pipes to be distributed uniformly over said boards, as set forth.

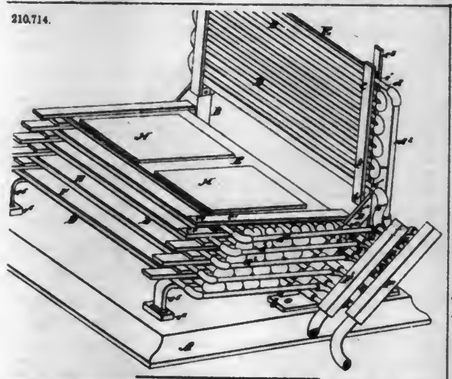
3. The combination, with hinged or folding heating-pipes, of heat-distributing plates, secured to and moving therewith, substantially as set forth.

4. The arrangement of the tiers composed of pipes D and plates E in a slightly inclined position, so as to induce currents of air between said tiers, and to cause the flow off of the water of condensation, as set forth.

5. The combination, with pipes D and plates E, of bars C and frames B, substantially as shown and described.

6. The combination, with pipes D and manifolds F F', of flexible pipes or equivalent connections G G', substantially as and for the purpose set forth.

210,714.



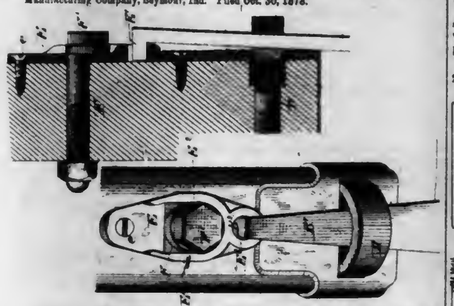
210,715. LOOM-TEMPLES FOR WEAVING TUBULAR FABRICS. Gottlieb F. Simon, Bristol, R. I., assignor to the National Rubber Company. Filed May 2, 1878.

Brief.—The temple-wires are secured at their ends against longitudinal displacement; occupy the interior of the fabric, so as to keep it properly distended; occupy spaces between the dents of the reed, and are controlled by the harness.



Claim.—The combination, with the reed of a loom and a harness, of temple-wires or cords, which are secured at each end against longitudinal movement, occupy spaces between the dents of the reed, and are controlled by the harness, substantially as described.

210,716. SCYTHE-SNATH FASTENERS. John Simpson, Cleveland, Ohio, assignor to Seymour Manufacturing Company, Seymour, Ind. Filed Oct. 30, 1878.

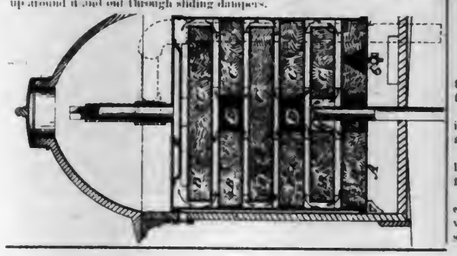


Claim.—1. The combination, with an eccentric or cam headed bolt, of a socket plate in which the ear of the scythe-shank is adapted to be secured, said plate having a flange, with which the eccentric head of said bolt engages as it is turned in adjusting the set of the scythe, substantially as set forth.

2. The plate E, pivoted at *e*, and provided with socket E' and flanges E², in combination with the eccentric or cam headed bolt F, substantially as and for the purposes described.

210,717. CARBURETERS FOR GAS. William M. Sloane, New York, N. Y., assignor to Daniel H. Burnett, same place. Filed Nov. 23, 1878.

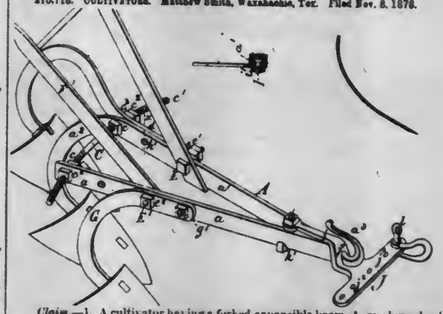
Brief.—The carbureter is charged with gasoline, which is distributed onto and absorbed by the cages until they will absorb no more, which is made known by the appearance of the oil at the drip-cock, which is protected from clogging by a wire-gauze cone formed in the lower cage. In case the drip-cock should become clogged the overflow of oil into the gas-pipe is avoided by carrying said pipe into the second cage and protecting the same by an inverted cup, serving as a seal to shut off the escaping gas when the fluid rises in the vessel to a point above the open mouth of the inverted cup. Air to be carbureted passes from the room by a pipe to the top of the carbureter and down through the same. The carbureter is heated by the warm air from the room below, passing up around it and out through sliding dampers.



Claim.—1. In a carbureter, the combination of the shell A, the cages B B', made entirely of foraminous material, packed with absorbent material, and alternately of greater and less diameter, those of the greater having central openings, D, whereby circulating passages are formed alternately at the center and around the circumference, substantially as described.

2. In a carbureter, the lower cage, B, having a foraminous cone fixed therein, and surrounded by the absorbent packing C, in combination with the drip-cock *b*, as and for the purpose set forth.

210,718. CULTIVATORS. Matthew Smith, Waxahachie, Tex. Filed Nov. 8, 1878.



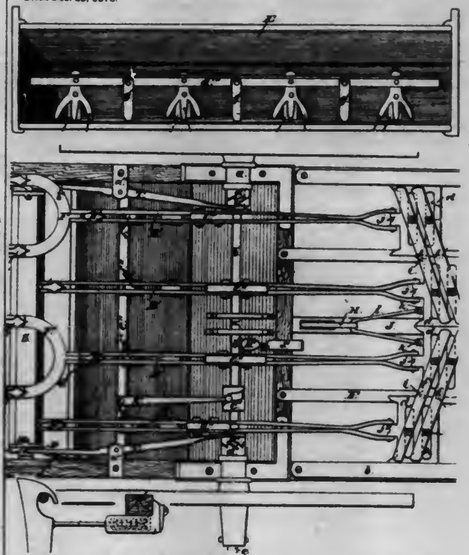
Claim.—1. A cultivator having a forked expansible beam, A, one branch, a', of which is terminated with a curved shovel support, a^3, and the other branch, a, made straight and without a shovel-support, and adapted to have a removable shovel-support, G, attached to it, either forward of or abreast with the curved permanent shovel-support a^3, substantially as and for the purpose set forth.

2. In combination with a cultivator, A, having a draft-hook, a^2, the goose-neck clevis-plate J, having apertures j' j^2, whereby it can be slipped upon the beam and confined to it by a single bolt, substantially as and for the purpose set forth.

3. The combination of the adjusting clevis-plate J, reversible eccentric clevis-hook L, and hook a^3 of the cultivator-beam, substantially as and for the purpose set forth.

4. The draft-adjusting clevis-plate J, having its shank *j* of goose-neck shape, provided with apertures j' j^2, in combination with the hooked end of the V-shaped beam A, the two branches a a' of the beam, and the T bolt fastening K, substantially as set forth.

210,719. GRAIN-DRILLS. Joshua M. Smith and Henry W. C. Thomas, Springfield, Ohio. Filed Feb. 28, 1878.



Claim.—1. The plates *d*, to which the drag-bars are attached *serlatim*, shutting each other, and actuated by sets of shifting bars *e* and *f*, to shift the bars from a straight to a V shaped or diagonal rank, as set forth.

2. The guide plates *b*, between which the ends of the bars *e* are confined, in combination with the plates *d* and the bars *e* and *f*, the whole constructed and arranged as specified.

3. The lifting lever N, provided with the catch *o* and pivotal slot *p*, in combination with the lifting-bar S and segmental ratchet M, substantially as specified.

4. The hollow spindles *a*, in combination with the wheels 1, whose hubs extend beyond the spindles, and are keyed to the ends of the stub-axles *c'*, provided on their inner ends with clutches *d'*, the whole constructed and arranged substantially as specified.

210,720. JOINTS FOR OIL-WELL TOOLS. Henry S. Southard, North East, and Hiles O. Crowell and John K. Halleck, Erie, assignors of one-half their right to George E. Southard, North East, Pa. Filed May 29, 1878.

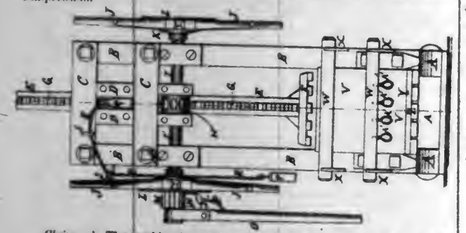


Claim.—1. In a deep-well tool joint or coupler, the box B, made with a tapered and slotted extension, B', substantially as and for the purposes set forth.

2. In a deep-well tool joint or coupler, the tapered shank D on the part A, in combination with the clamping-extension B' of the box B on the part A', substantially as and for the purposes set forth.

210,721. SAILING-PRESSES. Rowlin S. Squires and Frank Kaiser, Kansas City, Mo. Filed Sept. 13, 1878.

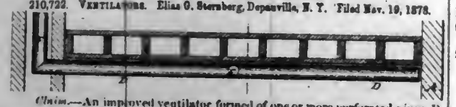
Brief.—When the follower has been run nearly down, by means of the spoke-wheels, the lever is used for applying greater power, to complete the compression.



Claim.—1. The combination of the rack-bar G, the gear-wheel H, the shaft I, the spoke-wheel J K L, and the ratchet wheel, pawl, spring, and lever M N P O, with each other, with the shaft E of the follower F, and with the frame-work A B C D of the press, substantially as herein shown and described.

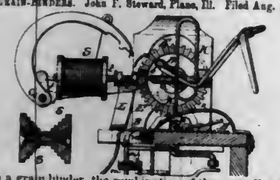
2. The combination of the double pawl Q, the cord R, the guides S, and the weight T with the rack-bar G, attached to the shaft E of the follower F, and with the frame-work A B C D of the press, substantially as herein shown and described.

210,722. VENTILATORS. Elias O. Sternberg, Depauville, N. Y. Filed Nov. 19, 1878.



Claim.—An improved ventilator formed of one or more perforated pipes, D, extending along and secured to the ceiling of a room, and provided with an outlet-pipe, F, extending into and up through a chimney, a stove-pipe, or other flue, to a point above the level of the ceiling, to which the said pipes D are attached, substantially as herein shown and described.

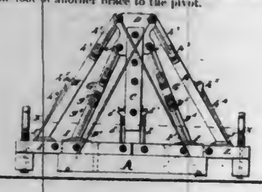
210,723. GRAIN-BINDERS. John F. Steward, Plano, Ill. Filed Aug. 14, 1877.



Claim.—In a grain binder, the combination of the gears E s, the spindle or arbor *t*, and the spool S, provided with ledges, and held on said spindle by friction, and arranged to be rotated thereby in the opposite direction to that in which it is turned for paying out the wire, for the purpose herein set forth.

210,724. SUPPORTING-FRAMES FOR EXCAVATING-MACHINES. Hosea T. Stock, Toledo, Ohio. Filed July 23, 1878.

Brief.—An upright post on the end of the car has a pivot on its upper end for holding the excavating machinery, at the sides of which are lugs and sockets for holding the upper end of braces. Two braces are permanently attached, resting on a transverse beam on the car-bed, and two rods crossing each other are attached to the rear corners of the car. The transverse beam is extended by bolting pieces to either side. At the outer end of these splice-pieces a jack is attached for steadying the car from the ground, and near the end a socket for receiving the foot of another brace to the pivot.



Claim.—1. The combination of the jack-arms L L and outer lateral braces, H H, made removable, and arranged substantially as and for the purpose herein described.

2. The combination of the removable jack-arms L L and permanent sill K, as herein shown and described.

3. The general combination and arrangement, with relation to the base or bed A, of the double mast or crane-post B C, metal cap D, bracing-rods F F, lateral braces G G H H, removable jack-arms L L, and permanent sill K, as herein shown and described.

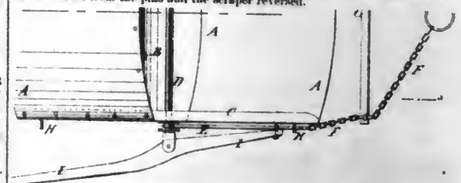
210,725. REVOLVING FIRE-ARMS. Alonzo L. Sweet, Norwich, Conn., assignor of one-half his right to the Bacon Arms Company, same place. Filed Sept. 6, 1878.



Claim.—In a revolving fire-arm, the combination of the trigger, the stop jointed to the trigger, a fulcrum on or below the recoil-shield for the stop, and a spring in the trigger for adjusting the stop, all substantially as and for the purposes herein set forth.

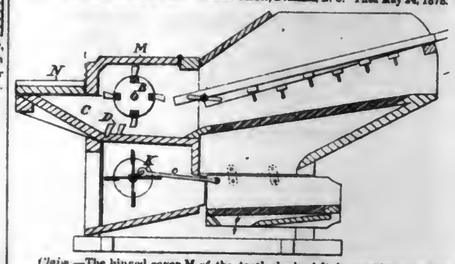
210,726. ROAD-SCRAPERS. Parham R. Thaxton, Jerseyville, assignor to himself and A. G. Palmer, Jacksonville, Ill. Filed Aug. 23, 1878.

Brief.—The scraper is of the double reversible kind. Draft-rods on either side reach from the axis to the front corners, whence there is a flexible connection by chains to the ends of an evener. The rods bear under projecting pins near the corners. The forward ends of the handles hook over the rods, so that by pulling the rear ends of the handles toward each other the rods are disconnected from the pins and the scraper reversed.



Claim.—The combination of the rod D, the draw-rods, chain, and stretcher E F G, the pins H, and the levers I with the double scraper A B C, substantially as herein shown and described.

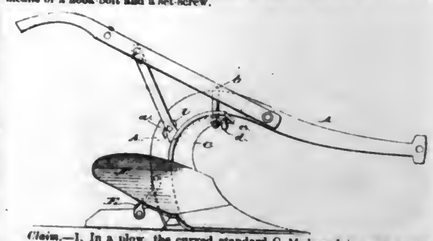
210,727. PEA AND BEAN HULLERS. John M. Turner, Bethania, N. C. Filed May 24, 1878.



Claim.—The hinged cover M of the toothed wheel H, in combination with the hinged lid N, the latter serving as a feed-table for the pease and beans when open, and as a lid for the feed-chute, and a locking device for the cover M when closed, substantially as described.

210,728. PLOWS. James Uric, Sr., Evansville, Ind. Filed Nov. 26, 1878.

Brief.—The plow-beam may be raised or lowered upon the standard by means of a hook-bolt and a set-screw.



Claim.—1. In a plow, the curved standard C, V-shaped in cross-section, having the frog B, and provided with slots *a* and *c*, hook-bolt *b*, and set-screw *e*, substantially as and for the purpose set forth.

2. In a plow, the combination of the curved standard C, slotted at *c*, with the hook-bolt *b*, nut *d*, set-screw *e*, and curved beam A, constructed substantially as and for the purpose set forth.

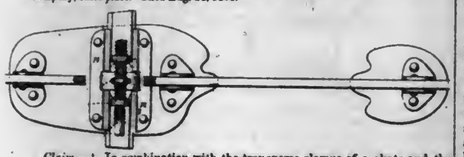
210,729. CREAM-RAISING APPARATUS. Spencer S. Weldon, Rockford, Ill. Filed Aug. 5, 1878.



Claim.—1. The apparatus herein described for cooling milk, consisting, essentially, of an outer case having a water-inlet and the adjustable water-outlet, and containing can or cans B, provided with cover or covers D, having depending flanges, and of sufficient weight to submerge the can or cans below the water line or exit, substantially as set forth.

2. A skimmer of cone form, substantially as set forth.

210,730. SKATES. Ephraim F. Weston, Wolcottville, Conn., assignor to Union Hardware Company, same place. Filed Aug. 26, 1878.



Claim.—1. In combination with the transverse clamps of a skate and the actuating-screw thereof, the H-shaped plate *s*, forming the slides for both the clamps, and also holding the screw in position endwise, substantially as set forth.

2. In combination with the sole-plate, transverse sliding clamps, and the screw for operating the same, the plate *s*, extending across the sole-plate and receiving the sliding clamps, substantially as set forth.

210,731. ANNEALING GLASS. Claudine Ribod Wayss, Lyons, France. Filed Aug. 29, 1877. Patented in France, June 7, 1877.

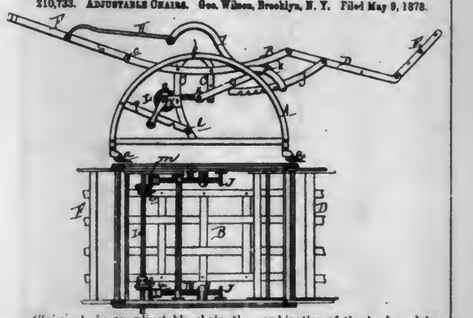
Claim.—The improved process of annealing glass consisting in burying or immersing the glass, when cold, in solid substances reduced to powder, such as pounded stone, plaster, lime, fire-clay, and, in short, any solid capable of attaining the degree of heat necessary for the annealing operation, substantially as and for the purpose herein specified.

210,732. FIRE-SHOVELS. Samuel Whitson, Green Point, N. Y. Filed Aug. 1, 1878.



Claim.—A shovel consisting of the two pieces A B, the former secured on a short neck of the latter by a tongue and slot, *a b*, and a single rivet, as shown and described.

210,733. ADJUSTABLE CHAIRS. Geo. Wilson, Brooklyn, N. Y. Filed May 9, 1878.



Claim.—1. In an adjustable chair, the combination of the back and leg sections, pivoted to the seat-frame, with the cross horizontal shaft L, the horizontal screw-shafts M at the sides of the chair, and the bar O, having nuts which work back and forth on the screw-shafts between their bearings, the said parts being adapted to adjust the back-section through the pivoted arm-rests H and bars I, and the leg-section through the frame J, substantially as described and shown.

2. The combination, with the supporting-frame A, of the seat-frame B, pivoted centrally to the supporting-frame by hangers C and adjustably held by locking-bars P, the back-section F, pivoted to the seat-frame and to the arm-rests H, the bars I, pivoted to the forward ends of the arm-rests and to the sides of the seat-frame, the leg-section D, pivoted to the seat-frame and adjustably connected to the lower ends of the bars I by the locking-frame J, and the cross-shaft L, screw-shafts M, and bars O, for adjusting simultaneously the back and leg sections, all substantially as described and shown.

210,734. PERMANENT WAYS OF RAILWAYS. Charles Wood, Middlesbrough, England. Filed Sept. 12, 1878. Patented in England, Nov. 10, 1877.

Brief.—The V-shaped tie, unprovided with projections of any sort, has a slot cut in it on either side of the bridge-seat. A single chair or clip spanning the space under the rail passes through the slots, one end being turned down upon the flange of the rail on one side, the other end being extended upward, so that a wedge can be driven between it and the rail, securely fastening the rail to the tie.



Claim.—1. The combination of the wholly-detachable chair or clip, inserted through the sleeper, (the sleeper being unprovided with a permanent lug, lip, ledge, or fixedly-secured rib or projection of any sort,) crossing beneath or spanning that portion of it upon which the rail directly rests, and projecting above the sleeper at both sides of the foot or base of the rail, and a single key or wedge above the sleeper to removably secure the clip or chair, and serving also, without other means, to retain the rail in the chair, substantially as hereinbefore set forth.

2. The chair or clip wholly detachable from the sleeper, and provided with a projection upon it held securely up to the under side of the sleeper by the same key or wedge which alone serves to bind the rail down to the sleeper, unprovided with a projection of any sort, substantially as hereinbefore set forth.

3. The combination, substantially as hereinbefore set forth, of the trough-like sleeper, provided with openings, and the chair or clip, shouldered or ribbed beneath the sleeper, and wholly detached therefrom, whereby the rail, sleeper, and clip may be secured together by the single wedge or key acting directly against the rail, at one side, above the sleeper, which is without any permanent lug or projection, as set forth.

4. The hereinbefore-described clip or chair, having the heat or bow shape, the shoulders *a' c'*, and the upwardly-projecting inwardly-inclined arm or jaw, whereby it is adapted, in combination with a key or wedge, above and at one side of the base or foot of the rail, to secure the rail, essentially as shown in the drawings.

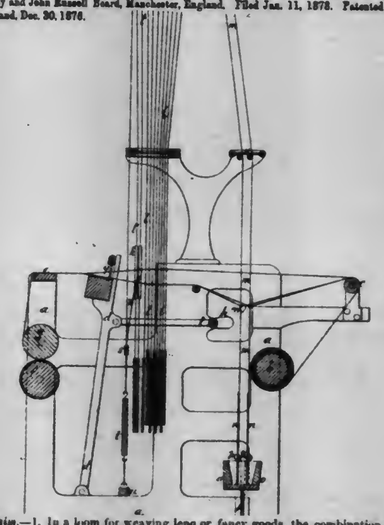
210,735. MANUFACTURE OF CLEANED AND PLANISHED IRON. W. Dewees Wood, Pittsburg, Pa. Filed Oct. 14, 1878.

Claim.—1. In the manufacture of planished sheet-iron, the improvement in the method of operation, substantially as described, which consists in annealing the sheets in a close box while in contact with charcoal and water, or their described equivalents, followed by cold-rolling, and preliminary to reheating and finishing with an intermediate coating and baking.

2. In the manufacture of planished sheet-iron, the combination of the following steps: first, annealing the uncaled sheets in a close box while in contact with charcoal and water, or their described equivalents; second, cold-rolling the sheets; third, again annealing with a carbonaceous coating; and, fourth, finishing by reheating to a low heat, rolling, and hammering, substantially as set forth.

3. The mode of cleaning uncaled or uncleaned iron preliminary to subsequent treatment, by subjecting the material or articles to be cleaned to the annealing process in a close box while in contact with charcoal and water, or their described equivalents, substantially as set forth.

210,736. LOOMS FOR WEAVING LENO, &c. Thomas Aldred, Macclesfield, assignor to John Deady and John Russell Beard, Manchester, England. Filed Jan. 11, 1878. Patented in England, Dec. 20, 1876.



Claim.—1. In a loom for weaving leno or fancy goods, the combination of the elongated wire couplings *k*, with the slip heads *r*, passing through said couplings, cords *t*, attached to the front hooks of a jacquard-bar, *s*, and suitable springs for drawing said bar downward, substantially as described, and for the purpose set forth.

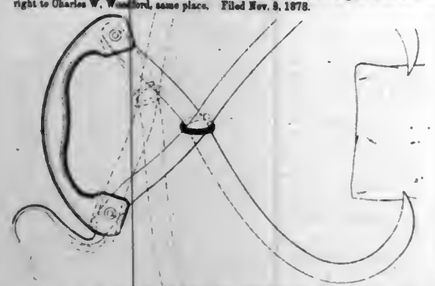
2. The adjustable frame *o*, having the screws *g*, in combination with the

cords *m*, attached directly to the jacquard-hooks, and having the mails *m'* for the leno-threads, the tensor-springs *n*, reed *r*, and the leno-harness, substantially as described.

3. The elongated wire couplings *k* and slip-heddle *r*, in combination with the tensors *t*, cords *l'*, attached to the front jacquard-hooks, cords *m*, attached to the rear jacquard-hooks, and having mails *m'*, and the adjustable tensor *n*, for keeping the leno-warp stretched, substantially as described.

4. The adjustable frame *o* and screws *p*, having adjusting-nuts, in combination with the mail-cords *m* and tensors *n*, substantially as described.

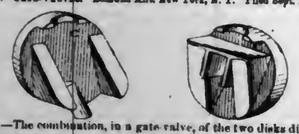
210,737. ICE-TONGS. Nathaniel R. Allen, Montreal, Quebec, Canada, assignor of one-half his right to Charles W. Woodford, same place. Filed Nov. 9, 1878.



Claim.—1. In a pair of ice-tongs, the combination, with the two curved arms, or hobbers proper, pivoted at their upper ends to a right bar or handle connecting them, of a ring or loop attaching them together at or near the point where they cross each other, substantially as herein set forth.

2. The combination, in a pair of ice-tongs, of two curved arms, pivoted to a bar or handle, a ring or other fastening, and thumb-rest or projection carried out from the upper end of one arm, all as herein set forth, and for the purposes described.

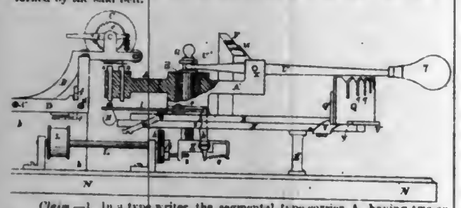
210,738. GATE-VALVE. Edmund Allt, New York, N. Y. Filed Sept. 25, 1878.



Claim.—The combination, in a gate-valve, of the two disks directly secured to the valve-stem, and having oppositely-inclined projections adapted to bear against and ride upon each other, the projections on one disk being provided with lugs setting between the projections on the other, whereby any lateral movement of one disk across the other is prevented, and the proper wedging action is given to the disks, substantially as specified.

210,739. TYPE-WRITING MACHINES. Homer Anderson and Frank Anderson, Peekskill, N. Y. Filed Jan. 15, 1875.

Brief.—The pivoted segment carries two rows of type, the inner row being lower-case letters. Said segment is pivoted to the upper plate, which is capable of sliding over the fixed lower one for the purpose of bringing either upper or lower case letters into operative position. A lever is fulcrumed on the extended end of the segment, by which said segment is turned to the required position and the hammer operated. The short end of the lever elevates the post in the hollow central standard, whereby a pawl lifts and suddenly releases the short arm of a lever, which operates to throw the hammer against the stem of a type and project it against the paper on the platen. The long end of the lever is depressed into notches in segmental plates, which notches vary in depth to correspond with the spacing required for different letters. The central post is therefore elevated a less or greater distance, according to the letter or type over the hammer, and since said post is connected with the paper-carriage feeding mechanism, said carriage is correspondingly moved for spacing between letters. A spring-pressed lever presses or clamps an endless belt to the under side of the paper-carriage, which belt passes around rollers operated by the depression of the post. The inking-ribbon is moved by the same shaft that is turned by the said belt.



Claim.—1. In a type-writer, the segmental type-carrier A, having two or more parallel rows of slots for type, *a a*, substantially as and for the purpose set forth.

2. The combination of the type-carrier A, provided with two or more rows of spaces for type, the sliding plate B, and paper-carrier D, for the purposes set forth.

3. The combination of the type-carrier A, sliding base B, lever C, and guide-plates Q Q', substantially as described.

4. The combination of the lever U, stem G, pawl *h*, lever *l*, and spring *z* with the hammer H, for operating the hammer, as shown.

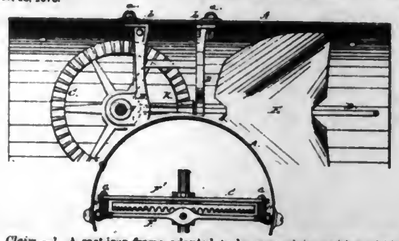
5. The combination of the lever U, the stem G, pin S, and the pawl pivoted to the lever *j* with the ratchet *k*, shaft L', pulleys I, K, rollers R R, belt *m*, clamping-lever *f f'*, and paper-carrier D, for moving said paper-carrier after each stroke of hammer, as herein shown and described.

6. The combination of the lever U, stem G, and the belt and pulleys operated by the pawl and ratchet mechanism, with the spools R' and S, and the rollers *r r*, for moving the ink-ribbon after each stroke of the hammer, as shown.

7. The combination of the lever V, plates B B', and type-carrier A, for shifting the movable plate and placing either capitals or small letters over the hammer, as desired, as shown and described.

8. The combination of the supplementary guide-plate Q' with the guide-plate Q, substantially as and for the purpose shown.

210,740. ARTIFICIAL-DRAFT APPARATUS. James B. Andrews, New York, N. Y. Filed Nov. 16, 1878.

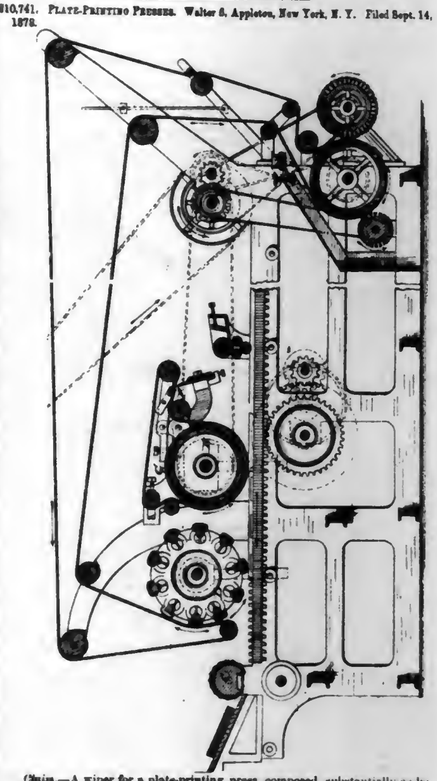


Claim.—1. A cast-iron frame adapted to be secured in position within a stove-pipe, and provided with horizontal and vertical bearings for the shaft of a driving-wheel, and the shaft of a fan, substantially as hereinbefore set forth.

2. The frame cast separate from and adapted to receive the independent bar F', to form a double bearing for the driving-shaft, substantially as shown and described.

3. The combination and arrangement, with the pipe A, of the frame, driving-shaft, and gear C, fan E, shaft D, and pinion-gear K, substantially as and for the purposes hereinbefore set forth.

210,741. PLATE-PRINTING PRESSES. Walter S. Appleton, New York, N. Y. Filed Sept. 14, 1878.

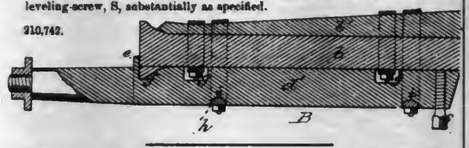


Claim.—A wiper for a plate-printing press, composed, substantially as before set forth, of an endless fibrous wiper-belt and a revolving elastically-surfaced drum, which drives the belt and brings it in contact with the plate.

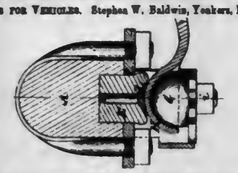
210,742. SPINDLE ATTACHMENTS FOR VEHICLE AXLE-TREES. Rollin H. Arnold, Honeoye, N. Y. Filed Nov. 9, 1878.

Claim.—The spindle attachment for axle-trees, consisting of the iron axle-stump A, having a shoulder, *a*, and clips *c*, a subsidiary axle-arm, B, having in its body the recesses *f g*, designed to receive said shoulder and clips, respectively, the raised flange *e*, abutting against the shoulder *a*, the clips *l l*, embracing both the arm and stump and clamping them together, and the rear leveling-screw, S, substantially as specified.

210,742.



210,743. COUPLINGS FOR VEHICLES. Stephen W. Baldwin, Yonkers, N. Y. Filed Oct. 21, 1878.



Claim.—1. In a carriage-coupling, the combination of the inverted cup, attached to the spring or shaft-iron of the vehicle, and the spherical or partly spherical knuckle, attached to or carried by the head of the coupling, and arranged to receive on and over it the inverted cup, which forms the working half or portion of the joint, substantially as specified.

2. The combination, with the coupling-head, having an opening in it extending below the working-level of the joint, of the inverted cup H, attached to the spring or shaft-iron of the vehicle, the spherical or partly spherical knuckle G, attached to or carried by said head, and arranged to receive on or over it said cup, and a spring or elastic cushion arranged to bear down on the inverted cup, substantially as shown and described.

210,744. LASTS. Flavel A. Beach, Chicago, Ill., assignor of one-half his right to George H. Van Pelt, same place. Filed Mar. 18, 1878.



Claim.—1. A two-part last in which the lower or metal portion extends upward at or through the rear of the upper or wood portion, to have contact or connection with the jack, substantially as and for the purposes set forth.

2. In a two-part last, the metal thimble D, extending through the upper or wood portion A, with bottom iron part C, to relieve the wood from the hammer-blows and the strain of the jack-pin, substantially as described.

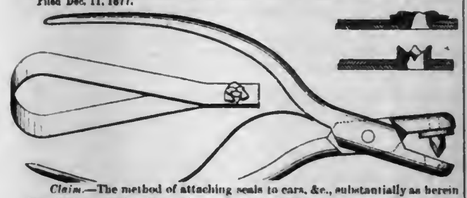
3. The combination, in a last, of the metal bottom-facing C, rigid stud D, and wood portion A, substantially as shown and described, and for the purposes specified.

4. In a last composed of a wood portion, A, and rigid metal part C, the intermediate removable strut F, substantially as described, and for the purposes set forth.

210,745. MANUFACTURE OF STEEL. Fidel Berchtold, Cleveland, Ohio. Filed Apr. 9, 1878.

Claim.—A composition to be introduced into molten iron to assist in converting the same into steel, consisting of Prussian blue, the described oxidized mixture of iron filings and sand, carbonate of potash, cyanide of potassium, borate of soda, carbonate of soda, silicate of potash or soda, and carbon, in the proportions described, substantially as set forth.

210,746. METHODS OF ATTACHING SEALS TO CARS. William S. Brewster, Chicago, Ill. Filed Dec. 11, 1877.



Claim.—The method of attaching seals to cars, &c., substantially as herein described, consisting in passing a strip of friable sheet metal through the staples, laying the ends coincident and punching them simultaneously with a pointed punch, the burrs of one punched end passing through the other, and then upsetting said burrs, as set forth.

210,747. THRASHING-MACHINES. Levi Bronson, Buffalo, N. Y., assignor of one-half his right to the Pitts Agricultural Works, same place. Filed May 4, 1878.

Claim.—1. In a thrashing-machine, the main frame A, having the foot-pulley *e* of the belt E arranged in its lower forward corner, and the forward extension, A', raised above the bottom sill of the main frame, to permit the front wheels to turn under the extension A', substantially as shown and described.

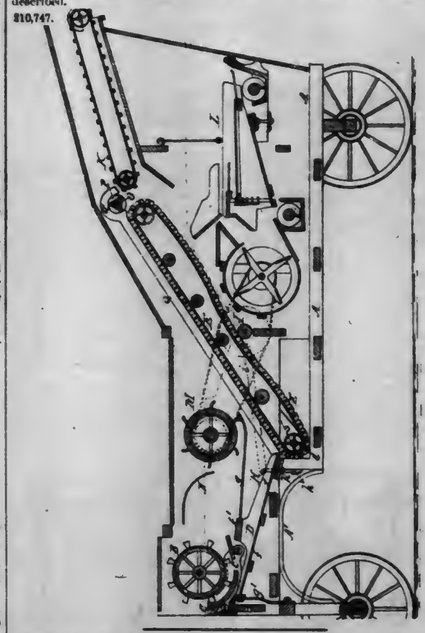
2. In a thrashing-machine, the main frame A, having the foot-pulley *e* of the belt E arranged in its lower forward corner, and the forward extension, A', containing the thrashing mechanism and a grain and straw carrier, and raised above the bottom sill of the main frame to permit the front wheels to turn under the extension A', substantially as shown and described.

3. The combination, with the thrashing-cylinder B, concave C, cellular belt E, and toothed cylinder M, arranged above the lower portion of the belt E, of the shaking grain and straw carrier D, composed of a tight bottom plate, *f*, arranged to deliver the grain upon the foot of the belt E, and a rake, *g*, carrying the straw to the toothed cylinder M, by which the straw is thrown upon the upper portion of the cellular belt, substantially as shown and described.

4. The combination, with the belt E and angular picker O, provided with circular end plates, P P', of the side guards, Q, constructed with extensions Q', encircling the upper portions of the circular plates P', substantially as and for the purpose set forth.

5. In combination with the thrashing mechanism and cellular belt E, the shaking straw and grain carrier D, arranged between the thrashing mechanism and the belt E, and the shaking-shoe L, arranged on the rear side of the belt E, driving-shaft I, and connecting-rods *i i'*, substantially as shown and described.

210,747.

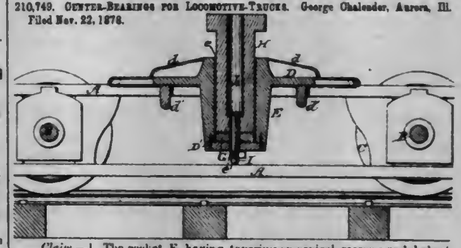


210,748. DEVICES FOR HOLDING METALLIC STAPLES. William J. Brown, Jr., Philadelphia, Pa. Filed Nov. 7, 1878.



Claim.—As an improved article of manufacture, the rod for stringing metallic staples, having its ends recessed or tapered at each side, slotted in the center, and loaded with staples, which are secured to the rod by a suitable band, as and for the purpose set forth.

210,749. CENTER-BEARINGS FOR LOCOMOTIVE-TRUCKS. George Chalender, Aurora, Ill. Filed Nov. 22, 1878.



Claim.—1. The socket E, having tapering or conical recess *e* and hole *e'*, ovoidal in form, as described, operating, in combination with the bearings G H and center-pin I, substantially as and for the purpose specified.

2. The cylindrical socket-bearing H, constructed as described, with its lower bearing-surface made convex, and the block G, having its upper surface made correspondingly concave in lateral or cross section, operating, in combination with the socket E, so as to permit of a rocking motion in a lateral direction only, substantially as set forth.

3. The plate D, having the upper radial webs, *d*, and lower truss-webs, *d'*, in combination with the side framing, A, substantially as and for the purpose specified.

210,750. GAS-REGULATORS. Joseph L. Chapman, Philadelphia, Pa., assignor of one-half his right to John Roberts, same place. Filed Aug. 16, 1878.

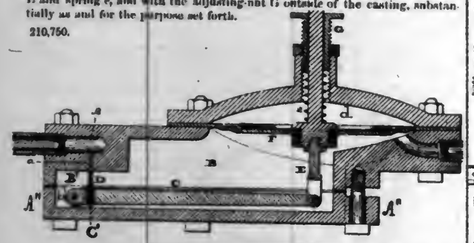
Claim.—1. The chamber H, with lateral extension B', under the chamber A, in combination with the valve-carrying lever C, connected to the diaphragm

F, and mounted on rods *b* beneath the high-pressure chamber A, whose lower wall has a vertical valve-opening, *a*, arranged substantially as and for the purpose set forth.

2. The high-pressure chamber A and diaphragm-chamber *d*, with a detachable top, in combination with the low-pressure chamber B, having a detachable cap, A″, at its bottom, substantially as and for the purpose set forth.

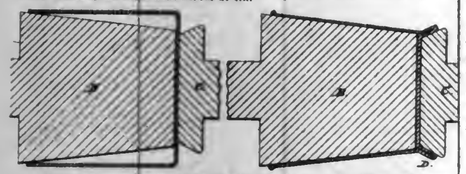
3. The diaphragm F, in combination with the upwardly-extending spindle E and spring *e*, and with the adjusting-nut G outside of the casting, substantially as and for the purpose set forth.

210,750.



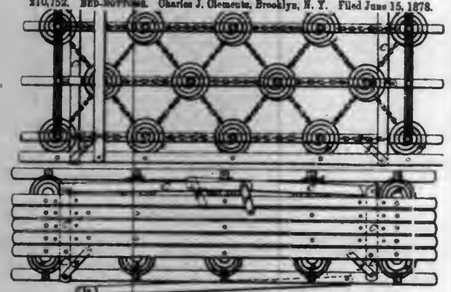
210,751. MANUFACTURE OF SHEET-METAL VESSELS. Jules Chaumont, Woodhaven, N. Y., assignor to Lelance & Crosjean Manufacturing Company. Filed Oct. 23, 1878.

Brief.—Any space that may exist between the two thicknesses of the annular foot may be filled with solder or tin.



Claim.—The mode of forming annular seamless vessels with annular supporting flange or foot, by spinning a blank, such as described, down the sides of one and up the sides of another cone-shaped mandrel, the mandrels holding the bottom of the blank rigidly between their disk-faces, substantially as set forth.

210,752. BED-BOTTOMS. Charles J. Clements, Brooklyn, N. Y. Filed June 15, 1878.

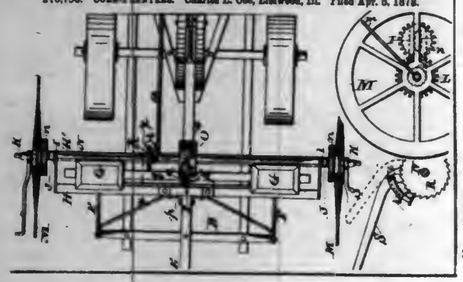


Claim.—1. A spring bed-bottom constructed with two or more jointed guide-bars extending across the width of the bed upon which the slats are mounted, whereby said slats may slide toward and from each other, and the guide-bars fold down against the side of the bed-bottom when closed, substantially as and for the purpose specified.

2. In a spring-bed, guide-bars C, provided with hinged joints *c*, as and for the purpose described.

3. In a folding bed-bottom, the combination, with the horizontally-sliding slats, of the jointed guide-bars C, the said slats being coupled to the guide-bars, as described, so as to admit of the slats being drawn together and extended upon the guide-bars, and allow the latter to fold parallel, or nearly so, with the slats, substantially as and for the purpose specified.

210,753. CORN-PLANTERS. Charles E. Coe, Elmwood, Ill. Filed Apr. 5, 1878.

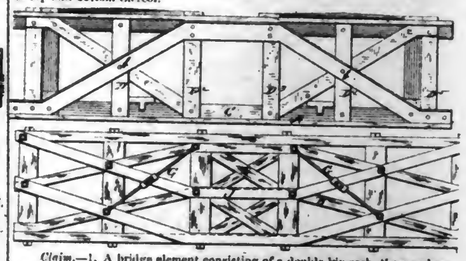


Claim.—1. The shaft N, having a cam-grooved disk, O, and pinions *n*, in combination with wheels M, pinions L, shaft P, and arms *p′ p″* and bar *q*, substantially as described, and for the purpose specified.

2. The combination of the shaft N, cam-grooved disk O, rock-shaft P, lever S, pawl *r*, and ratchet R, arranged to operate in manner substantially as and for the purpose specified.

210,754. TRUSS-BRIDGES. Solon Conklin, Kirkwood, assignor of one-half his right to B. B. Clark, New York, N. Y. Filed July 26, 1878.

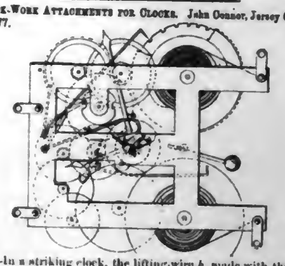
Brief.—The diagonal members of the hip-arches are bolted together at their intersection, the ends thereof extending to the abutment-posts, and being bolted to top and bottom thereof.



Claim.—1. A bridge element consisting of a double hip-arch, the members of which extend horizontally along the middle panels, and thence in straight diagonal lines to the ends of the span, crossing each other between the middle panels and end posts, and bolted together at the points of crossing or intersection, substantially as described.

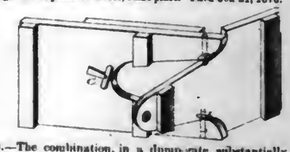
2. The combination of said double-hip-arch element with straight top and bottom chords, posts, and diagonals, substantially as described.

210,755. LOCK-WORK ATTACHMENTS FOR CLOCKS. John Connor, Jersey City, N. J. Filed Mar. 13, 1877.



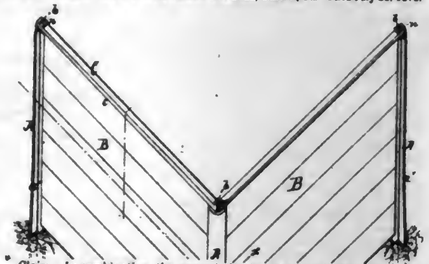
Claim.—In a striking clock, the lifting-wire *b*, made with the flattened and doubly-inclined beak or part *a*, for operation substantially as herein shown and described.

210,756. END-GATES FOR WAGONS. Gilbert S. Cryse, Fond du Lac, Wis., assignor of one-half his right to Benjamin F. Moore, same place. Filed Oct. 21, 1878.



Claim.—The combination, in a dump-gate, substantially as described, of the forked and tongue-shaped sections, double hinge-joints, ball-hinges, T-button, and grooved back piece.

210,757. FENCES. John Davis and Charles Boormann, Atlanta, Ga. Filed July 23, 1878.

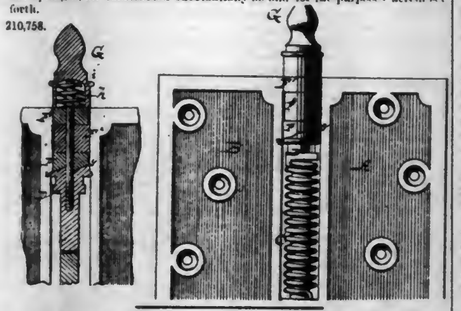


Claim.—In combination, the posts A, having the longitudinal grooves *a*, ribs *a′*, and the bolts *b*, the boards B, and cap-pieces C, with downwardly-turned edges *c*, and secured by nuts *n*, constructed and arranged as described, and for the purpose specified.

210,758. SPRING-HINGES. Ira S. Davis, Ypsilanti, Mich. Filed Oct. 1, 1878.

Claim.—The combination, in a spring-hinge, of the spring C, ratchet-head D, eye F, provided with ratchet-teeth, screw G, with recess *i* in its head, and the spring *h*, all constructed substantially as and for the purposes herein set forth.

210,758.



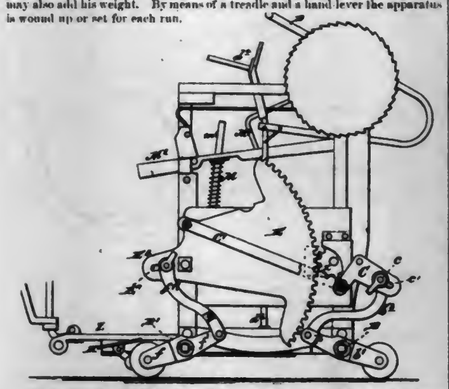
210,759. POCKET-BOOK FRAMES. Robert Debacher, New York, N. Y., assignor to Schimper Brothers, same place. Filed Nov. 7, 1878.



Claim.—The combination of the single-angle half-frame A and U-shaped half-frame B, the two frames being pivoted together at their opposite ends, with the clamping-strip *d*, adapted to the angle-frame, for confining one side of the pocket in place, the other side of the pocket being clamped within the hollow frame B, all substantially as shown and described.

210,760. MOTORS. William Dickinson, St. Cloud, Minn. Filed Oct. 26, 1878.

Brief.—The weight of the device itself is used to operate it. An operator may also add his weight. By means of a treadle and a hand-lever the apparatus is wound up or set for each run.



Claim.—1. The toothed segment E, having adjusting-slot E′, in combination with a pinion, train of gear, and gravitating weight, as set forth.

2. The shafts B B′, having arms *b b′ f g*, with rollers, and provided with means for elevating the machine by both hand and foot, as specified.

3. The shaft B, arms *b′ b²*, link *b³*, pin *c*, and channel-iron C, in combination with the adjustable segment E and link C′, as shown and set forth.

4. The arm B² on the shaft B, and link *d*, in combination with lever D′, adapted to receive feeding device *d²*, and with the segment E and connections, as set forth.

5. The shaft B′, arm *f*, extension *f′*, link *f″*, in combination with slot E′ and segment E, as set forth.

6. The shafts B B′ and arms *b b′ f g*, in combination with hand-lever I² *d* *d²* D′ and foot-lever H A A′, as set forth.

7. The lever G, having pulley-slot *m* and spring M, in combination with pulley *g′* and guide, as set forth.

8. The lever G, spring M, lever M², in combination with catch-lever M³ and trigger M⁴, as and for the purpose set forth.

210,761. UNIVERSAL WOOD-WORKERS. William H. Doane and George W. Bogbee, Cincinnati, Ohio, assignors to J. A. Fay & Co., same place. Filed Aug. 31, 1878.

Brief.—Two adjustable tables (one for the power-fed machine and the other for the hand-fed cutter) are attached to a standard, which has a single base and double upper portion.

Claim.—1. A universal wood-worker, on one side of which a horizontal cutter-head operates on stuff fed over it by hand, while on the other side a horizontal cutter-head operates on stuff fed under it by power, such a machine having the respective tables for said two cutter-heads mounted side by side at a distance apart, so as to leave a free open space between, where a belt or belts may run from a counter-shaft to drive the said cutter-heads.

2. In a universal wood-worker, on one side of which a horizontal cutter-head operates on stuff fed over it by hand, while on the other side a horizontal cutter-head operates on stuff fed under it by power, the combination, substantially as specified, of the respective tables for said two cutter-heads, mounted side by side at a distance apart, and the separate arbors of said two cutter-heads, which have pulleys on their ends overhanging the space between the tables.

3. In a universal wood-worker, on one side of which a horizontal cutter-head operates on stuff fed over it by hand, while on the other side a horizontal cutter-head operates on stuff fed under it by power, the combination, substantially as specified, of the respective tables for said two cutter-heads, mounted side by side at a distance apart, the separate arbors of said two cutter-heads, which have pulleys on their ends overhanging the space between the tables, and independent driving-pulleys on a single counter-shaft adapted to drive the said cutter-heads either separately or together.

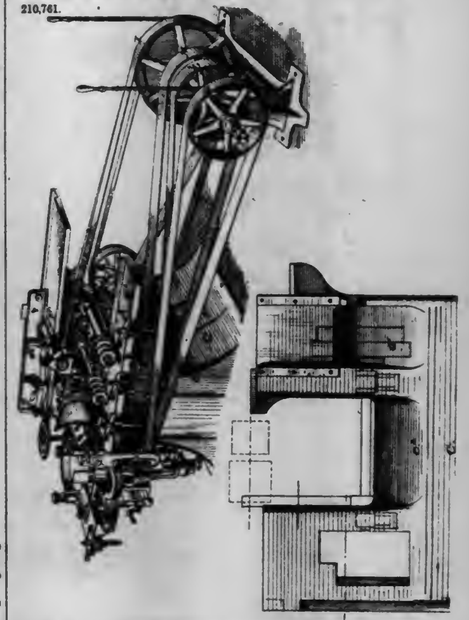
4. In a universal wood-worker, the combination, substantially as specified, of the hand wood-worker and the molding-machine, arranged on a single frame and pointing with their front ends in opposite directions, with a single counter-shaft arranged across the end of the machine behind the hand wood-worker.

5. In a universal wood-worker combining in its construction a molding-machine and a hand wood-worker, the combination, substantially as before set forth, of the counter-shaft, the pulleys thereon for separately driving through belts the two axially-arranged independent cutter-heads, and the intermediate shaft below the path of said belts for driving the feed-gear of the molding-machine from the hand wood-worker side of the combined machine.

6. In a universal wood-worker, the combination, substantially as specified, of the counter-shaft, the loose driving-sleeve thereon, the duplex friction-clutch, a loose pulley on the driving-sleeve adapted to be driven by one face of the friction-clutch, and a fast but shiftable pulley on the counter-shaft adapted to be driven by the other face of the friction-clutch.

7. The main frame of a universal wood-worker composed, substantially as specified, of a single casting formed with two stands, and a low connecting-web to leave a gap between the stands, on each of which a table or tables and cutter-heads are mounted for planing purposes.

210,761.



210,762. UNIVERSAL WOOD-WORKERS. William H. Doane and George W. Bogbee, Cincinnati, Ohio, assignors to J. A. Fay & Co., same place. Filed Aug. 31, 1878.

Brief.—The improvement in this case lies in certain details of construction on the power side of the machine.

Claim.—1. The combination and arrangement, substantially as specified, of the general counter-shaft of the machine, the pulley on the arbor of the upper cutting-cylinder, the feed-rolls, the feed-roll driving-shaft, and a train of wheels for transmitting motion from said driving-shaft to the feed-rolls, said train of wheels being arranged outside of the straight path of the belt, which runs from the general counter-shaft to the pulley of the upper cutting-cylinder.

2. The combination, substantially as specified, of the feed-roll, the fixed shaft E′, the sleeve-bearing of the feed-roll shaft, hinged to said shaft E′, the fixed bracket under the feed-roll, and the set-screw in this bracket for limiting the descent of the sleeve-bearing.

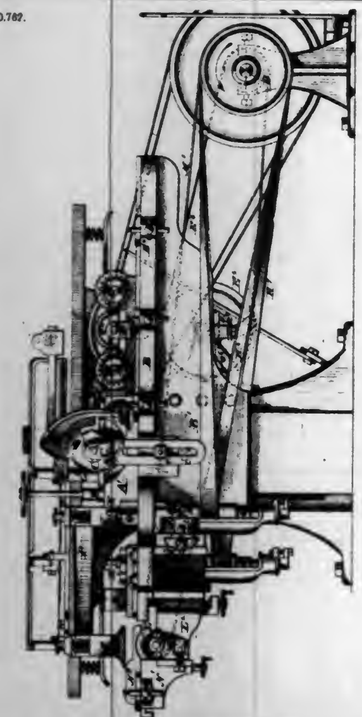
3. The vertically-adjustable main table of the molding-machine, provided with a permanent fence, substantially as and for the purpose specified.

4. The combination, substantially as specified, of the presser-foot over the lower cutting-cylinder and the swinging arm carrying said presser-foot, and adapted to be swung laterally entirely clear of the cutting-cylinder and its tables.

5. The combination, substantially as specified, of the laterally-adjustable pivoted bonnet and the swiveled supporting-standard thereof.

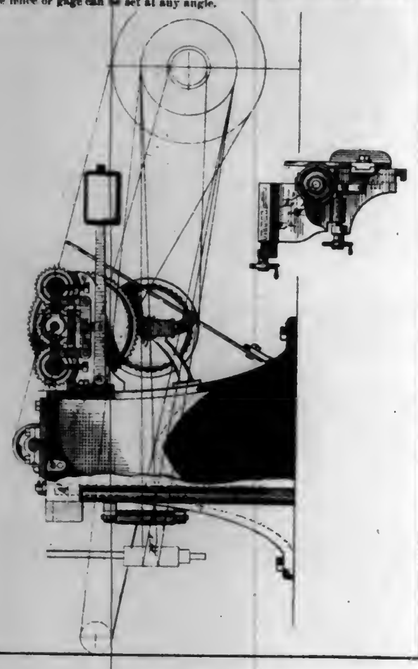
6. The combination, substantially as specified, of the endwise-adjustable bearings of the upper cutting-cylinder and the bonnet supported on such bearings.

210,762.



210,763. UNIVERSAL WOOD-WORKERS. William H. Doane and George W. Bagbee, Cincinnati, Ohio, assignors to J. A. Fay & Co., same place. Filed Aug. 31, 1878.

Brief.—The two tables of the hand worker are made separately adjustable. The fence or gage can be set at any angle.



Claim.—1. The combination, substantially as specified, of the table, the slide-bar connected therewith, the link for automatically sliding said bar and table, and the screw-spindle for raising and lowering the table.

2. The combination, substantially as specified, of the table, the slide bar, and the lever pivoted to the table and adapted to operate on the slide bar.

3. The combination, substantially as specified, of the table, the slide-bar connected therewith, the lever adapted to operate on the slide bar, the link for automatically moving the latter, and the screw-spindle for raising and lowering the table.

4. The fence and its supporting-bar, directly connected together by cylindrical studs on one engaging elongated straight grooves in the other, which connection provides for adjusting the fence circularly as well as up and down on its supporting-bar.

5. The combination, substantially as specified, of the fence and its supporting-bar, directly connected together by cylindrical studs on one engaging elongated straight grooves in the other, and a clamping device for rigidly securing the fence to its supporting-bar, after proper adjustment thereon.

210,764. DOOR-HOLDING DEVICES. Osbourn Dorsey, Washington, D. C. Filed June 8, 1878.

Brief.—By turning the knob the sliding bar on the door may be secured so as to hold the door in any desired position.



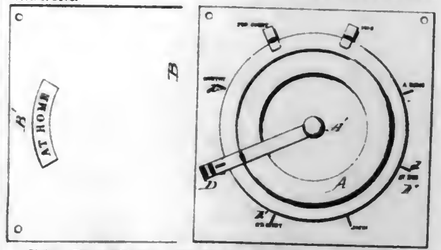
Claim.—1. In a door holding device, the combination, with a rod, C, hinged or pivoted to the door-casing or structure, of a slide, B, and lever D, having a pin, *g*, engaging said slide, and provided with a pivoted arm, *d*, connecting with the knob-spindle of the door by a sleeve or collar, E, substantially as and for the purpose set forth.

2. In a door-holding device, its lever D, provided with a transverse pin, *i*, and the pin *g*, having a slot, *j*, in combination with the notched slide B and case A, having the tubular shoulder *h*, substantially as and for the purpose specified.

3. The knob-spindle collar E, having the slot *f*, in combination with the said spindle having a projection, *e*, and arm *d*, connected to the lever D of the door-holding device, substantially as and for the purpose set forth.

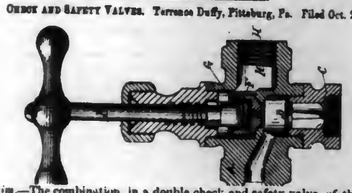
4. The combination, with the lever D, having the pin *g*, of the propping-lever *l*, substantially as and for the purpose specified.

210,765. OFFICE-INDICATORS. John B. Duffie, Little Rock, Ark., assignor to Edward H. Chamberlain, same place, and Marcus A. Wallace, Jackson, Mo., one-fourth to each. Filed Mar. 9, 1878.



Claim.—The combination, with the plate B, provided with opening B' and pegs *d*, of the rotary information-disk A A' and spring-handle D, having register-slot, as and for the purpose set forth.

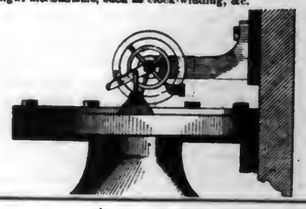
210,766. CHECK AND SAFETY VALVES. Terrance Duffy, Pittsburg, Pa. Filed Oct. 24, 1878.



Claim.—The combination, in a double check and safety valve, of the globe A, the receiving-chamber C, the stem B, the receiving check-valve D, the discharge-valve E, the spiral spring F, the bush G, and the discharge-chamber H, all arranged in combination substantially as herein described, and for the purpose set forth.

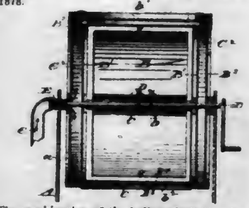
210,767. VOCAL ENGINES. Thomas A. Edison, Menlo Park, N. J. Filed Nov. 27, 1878.

Brief.—The vibrations of a diaphragm sensitive to sound-waves are communicated to a rotating shaft, and, by suitable connecting devices, applied as a motor for light mechanisms, such as clock-winding, &c.



Claim.—A vocal engine consisting of a diaphragm or other body capable of being set in motion by sound-waves, a shaft, and reciprocating mechanism, substantially as and in the manner set forth.

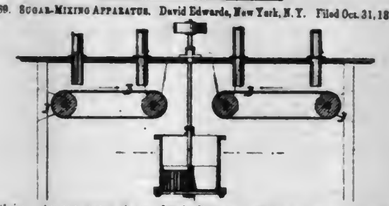
210,768. FEATHER-RENOVATORS. David Eddy, Sidney, Ill., assignor to James Whitcomb. Filed Sept. 14, 1878.



Claim.—1. The combination of the hollow shaft H, tube E, conduit *e*, and boiler G', substantially as shown, and for the purpose specified.

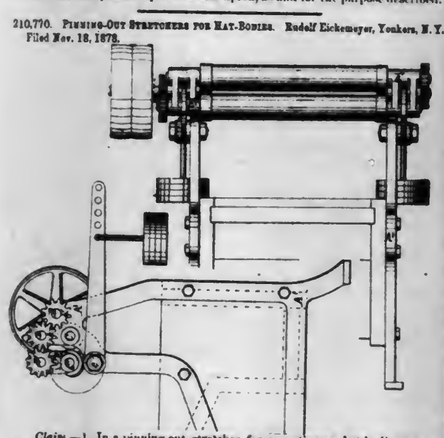
2. The hollow walls B' and B², with hooks *f f*, screens C C, having covers *b' b²*, and screen C', with cover *b'*, in combination with tube E and conduit *e*, and boiler G', substantially as shown and described.

210,769. SUGAR-MIXING APPARATUS. David Edwards, New York, N. Y. Filed Oct. 31, 1878.



Claim.—An apparatus for mechanically conveying sugar from centrifugal machines or tanks to a mixing-cylinder, for disintegrating the same, consisting in the combination, substantially as hereinbefore set forth, of one or more pipes extending from the centrifugal machine or tank, an endless imperforate apron immediately beneath the end of the said pipe or pipes, and a cylinder arranged at the end of and beneath the imperforate apron, and provided with a perforated bottom and a rotary agitating device for disintegrating the sugar delivered into the cylinder by the endless apron, as and for the purpose described.

210,770. PINNING-OUT STRETCHERS FOR HAT-BODIES. Rudolf Eickemeyer, Yonkers, N. Y. Filed Nov. 18, 1878.



Claim.—1. In a pinning-out stretcher for operating on hat-bodies, two or more pairs of geared rolls which are progressively speeded, substantially as described.

2. In a pinning-out stretcher, two or more pairs of geared rolls progressively increased in diameter, substantially as described.

3. The combination, in a pinning-out stretcher, of two or more positively-driven rolls, variably speeded and fixedly mounted in their bearings, with two or more variably-speeded rolls, mounted in yokes and controlled by a weighted lever or levers, substantially as described.

4. The combination, in a pinning-out stretcher, of an upper and a lower pair of rolls with a driving-shaft provided at each end with a gear, for engaging, respectively, with the gearing of the two pairs of rolls, substantially as described.

210,771. ELASTIC HAT-BLOCKS. Rudolf Eickemeyer, Yonkers, N. Y. Filed Nov. 18, 1878.

Claim.—1. An elastic hat-block for pressing hats, provided at its rear side with an aperture for the insertion of the hand or fingers, substantially as described.

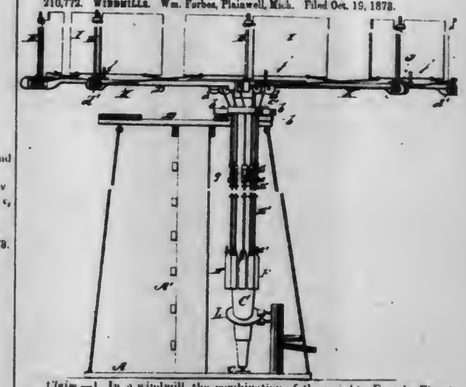
2. An elastic hat-block for pressing hats, provided with a rigid finger-socket at its rear side, substantially as described.

3. The combination, with an elastic hat-block for pressing hats, of a rigid finger-socket provided at its inner end with a flange, substantially as described, as and for the purposes set forth.

210,771.



210,772. WINDMILLS. Wm. Forbes, Plainwell, Mich. Filed Oct. 19, 1878.



Claim.—1. In a windmill, the combination of the weights F, rods E' *e e'*, and slotted plates G *g* with the ropes K and sails I, substantially as and for the purposes set forth.

2. In a windmill having radial arms D, provided with pulleys *d d'* and stops J *j*, the combination of the weights F, rods E', having hooks *e e'*, with the slotted plates G *g*, adapted to be disconnected therefrom, and the ropes K and sails I, so that any one of the sails may be detached from its weight, as set forth.

3. The frame H, having recess *b* and friction-rollers *b' b' b' b'*, in combination with shaft C, disk C' arms D, sails I, and weights G, as specified.

4. The masts H, serving the double function of supporting the sail and acting as a shaft for the pulley *d*, in combination with the sails I *i* and weights F, as specified.

210,773. DASH-RAIL FASTENERS. Joinville F. Fowler, Alliance, Ohio. Filed Sept. 23, 1878.

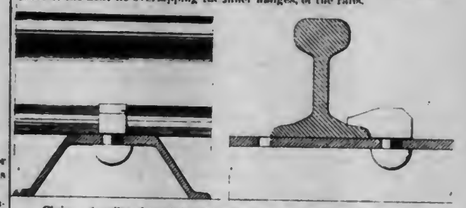


Claim.—1. The dash-rail fastener C, consisting of the thimble-shaped receptacle *c*, having clamping-arms or clips *c' c'*, substantially as set forth.

2. The combination, with the dash-frame and dash-rail B, of the thimble-shaped fastener C *c*, having the clamping-arms or clips *c' c'*, substantially as and for the purpose specified.

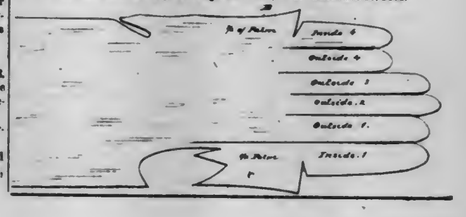
210,774. MODES OF FASTENING RAILS TO METALLIC SLEEPERS. Franz B. Freudenberg, Lear, near Rahrort, Germany, assignor to Charles James A. Dick, Philadelphia, Pa. Filed Oct. 28, 1878. Patented in Germany, Jan. 10, 1878.

Brief.—A railroad-track in which the rails are combined with ties having permanent hooked studs, those of one tie overlapping the outer flanges, and those of the next tie overlapping the inner flanges, of the rails.



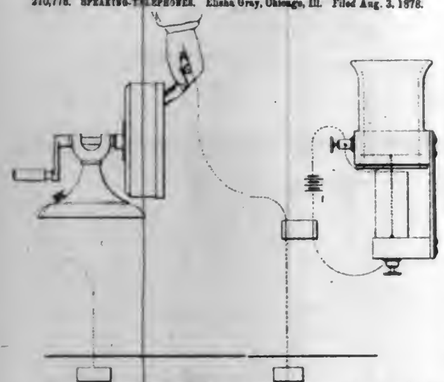
Claim.—A railroad-track in which the rails are combined with ties having permanent hooked studs, those of one tie overlapping the outer flanges of the rails, and those of the next tie overlapping the inner flanges, and so on throughout the track, as set forth.

210,775. GLOVES. Sigmund Gogs, New York, N. Y. Filed June 20, 1878.



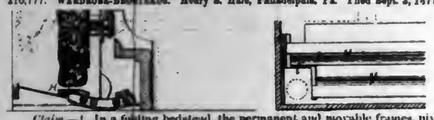
Claim.—A blank for forming gloves, having the edges of the parts B and C of the palm concaved in order to make the glove conform to the hand, as set forth.

210,776. SPEAKING-TELEPHONES. Elisha Gray, Chicago, Ill. Filed Aug. 3, 1878.



Claim.—The combination, in a telegraphic circuit of a telephonic transmitter capable of transmitting articulate sounds or spoken words with a receiver capable of reproducing such sounds or words through the intervention of animal tissue in frictional contact with said receiver.

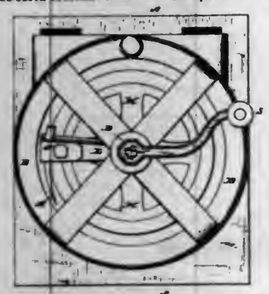
210,777. WARDROBE-BEDSTEADS. Henry S. Hale, Philadelphia, Pa. Filed Sept. 3, 1877.



Claim.—1. In a folding bedstead, the permanent and movable frames, pivoted to each other by means of a shaft or pins adapted to a slot or slots in one or other of the frames, as described, in combination with rollers *j*, carried by the movable frame, separate from the pivoting devices, and adapted to rails on the permanent frame, all substantially as set forth.

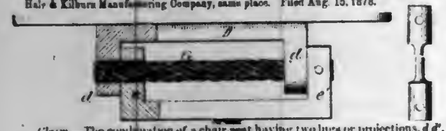
2. The combination of the grooved segments with a detachable board, H, as described.

210,778. CHEESE-CLOTH CUTTERS. Orris C. Harris, Newport, N. Y. Filed Aug. 3, 1878.



Claim.—A cheese-cloth cutter having a block, A, hinged piece B, crank S, rod F, spring Q, washers R I J, arm L, knife M, and a piece or holder, H, arranged on the spindle i, as set forth.

210,779. SPRINGS FOR KNITTING-CHAIRS. Henry Howson, Philadelphia, Pa., assignor to the Hale & Kilburn Manufacturing Company, same place. Filed Aug. 15, 1878.

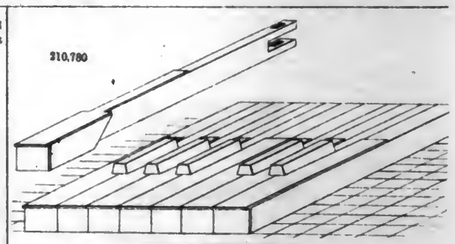


Claim.—The combination of a chair seat having two lugs or projections, *d d'*, and a stand having two lugs or projections, *e e'*, with a torsion-spring, G, secured at one end to one lug, *d*, of the seat, and at the opposite end to the lug *e'* of the stand, and fitting freely in the lug *d'* of the seat, and in the lug *e* of the stand, all as set forth.

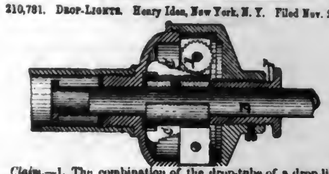
210,780. PIANO-KEYS. John W. Hyatt, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed May 31, 1878.

Claim.—1. As a new article of manufacture, a blank key-board covered with a continuous strip or roll of plastic composition, substantially as specified.

2. The within-described process of forming piano or analogous keys, which consists in covering a key-board blank with a strip of plastic material, and then cutting out each key from the coated blank, substantially as specified.



210,781. DROP-LIGHTS. Henry Ilsen, New York, N. Y. Filed Nov. 22, 1878.

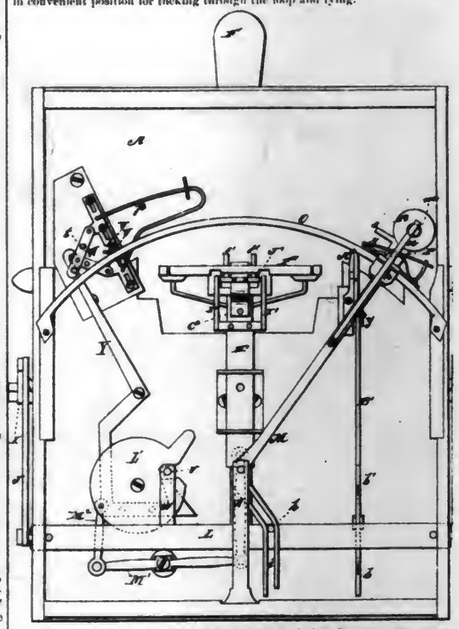


Claim.—1. The combination of the drop-tube of a drop-light with two inclined clamps constructed to embrace the drop-tube, and having their outer surfaces inclined downwardly and inwardly, and two rotating disks or wheels journaled opposite to the inclined faces of the clamps, and bearing on the same, substantially as and for the purpose described.

2. In a drop-light, the combination, with two clamps, C C, constructed to embrace the drop-tube, and provided with inclined outer surfaces having a series of teeth, of two rotating toothed wheels, D D, meshing with the teeth on the clamps, substantially as and for the purpose described.

210,782. BOOK-STITCHING MACHINES. Ansbel A. Johnson, West Union, Iowa, assignor of one-half his right to Henry D. Washburn, same place. Filed Oct. 12, 1878.

Brief.—The hooked needles are forced through the paper lying on the slotted bed plate. The lever M carries the thread and deposits its end in the bite of the nippers N, the point *s* striking the pin *t*, and operating the toggle. As the lever returns, the thread unwinds and passes over the arms G', and through the shears A', which cut it, when the pliers S take the new end, and the arms G' carry the cut thread up to the needles, which, on being withdrawn, carry the thread with them, leaving a loop in the center, and pulling the two ends through in convenient position for tucking through the loop and tying.



Claim.—1. The combination of the base A, bed-plate B, having slot *a* and gage C, the cross-head D, with needle-holder *f* and needles *d*, the perforated guide-bar G, links *b*, and operating-lever F, substantially as and for the purposes herein set forth.

2. The pivoted arm M, carrying the spool R, and provided with the pliers or nippers S, for the purposes herein set forth.

3. The combination of the pivoted arm M, having slot *i*, and carrying the spool and pliers, as described, link *k*, segment O, and cross-bar L, with pin *b*, all substantially as and for the purposes herein set forth.

4. The combination of the pliers V, spring *p*, toggle-joint W, lever Y, pin *r* on the arm *w* of the cross-bar L, and the pin *t*, substantially as and for the purpose herein set forth.

5. The combination of the shears A', link *y*, lever B', with inclines *b' b'*, and the cross-bar L, operated by the lever F and rods I J, substantially as and for the purpose herein set forth.

6. The combination of the slide C', with cross-head D', having pins *d'*, the journaled bar F', with arms G', the slide H', links I', angle-plate J, and pins *f'*, all substantially as and for the purpose herein set forth.

7. The combination with the slide H' and devices connected thereto, of the pin *e*, notched cam I', and levers M' M', as and for the purpose herein set forth.

210,783. CAR-AXLES. Nathaniel Jones, Syracuse, N. Y. Filed Sept. 17, 1878.

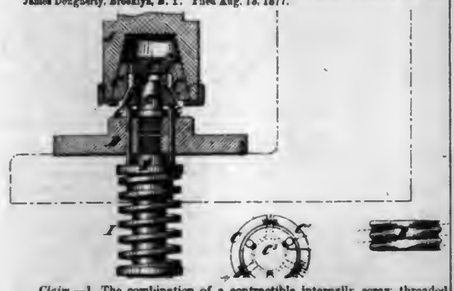


Claim.—1. In combination with the wheels A A', the solid, divided, or undivided axle B, provided with a movable collar, *d*, recessed therein, and having one or more lugs, *i*, and the slotted sleeve D, projecting from the wheel A', for the purposes set forth.

2. The combination of the solid axle B, having circumferential groove *x*, the collar *d*, with one or more lugs, *i*, and the sleeve D, with one or more slots, *a*, having notches *b* at their inner ends, and a locking device, for the purposes set forth.

3. The key *h*, in combination with the sleeve D, having slot *a*, with notch *b*, and the collar *d*, with lug *i*, for the purposes herein set forth.

210,784. MACHINES FOR FORMING SCREW-THREADS IN SHEET METAL. Arthur B. King and James Dougherty, Brooklyn, N. Y. Filed Aug. 13, 1877.



Claim.—1. The combination of a contractible internally screw-threaded female die and an expansible externally screw-threaded male die, substantially as and for the purpose set forth.

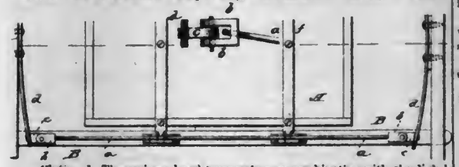
2. A male die consisting of a piece of metal coiled and shaped externally so that it may form a screw-thread, substantially as and for the purpose specified.

3. The combination, with a sectional die capable of being contracted by the operation of the plunger-head of a press, and provided with a cap-piece, of a male die formed of coiled spring metal and a taper mandrel, on which said male die fits, and whereby said male die may be expanded when forced over the same by the cap-piece of the female die, substantially as and for the purpose specified.

4. The combination, with an internally-tapered expansible male die, of a taper mandrel receiving said male die upon it, and a support for said die sustained by a spring adapted to yield to permit the said die to be forced over the said mandrel, and afterward to serve as a push-piece to release the die from the mandrel, substantially as specified.

5. The combination of the female die, C C' C² C³, plunger-head J, male die B, mandrel E, yielding support and push-piece F, and spring I, substantially as and for the purpose specified.

210,785. VEHICLE-SPRINGS. Sidney D. King, West Pittston, Pa. Filed Sept. 17, 1878.



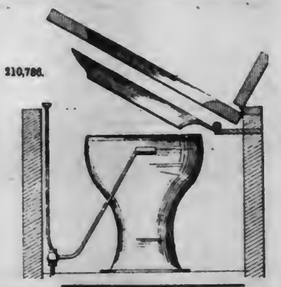
Claim.—1. The springs *d* and truss-rods *a*, in combination with the link *b* and swivel *c*, for adjusting the tension of the springs, as herein described.

2. The bow-springs *d*, adjustable truss-rods *a*, and body A, in combination with the side bars or springs, H, substantially as herein specified.

210,786. URINAL-SAFES FOR WATER-CLOSETS. Thomas G. Knight, Brooklyn, N. Y. Filed June 14, 1878.

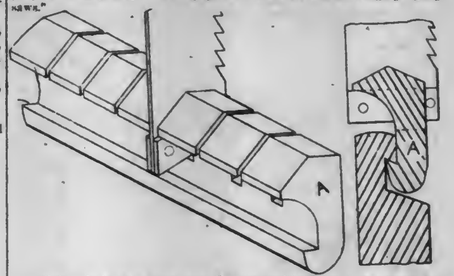
Claim.—A urinal-safe smaller than the opening in the wood casing, resting on the hopper, and hinged to a plate attached to the wood-work of the water-closet.

210,786.



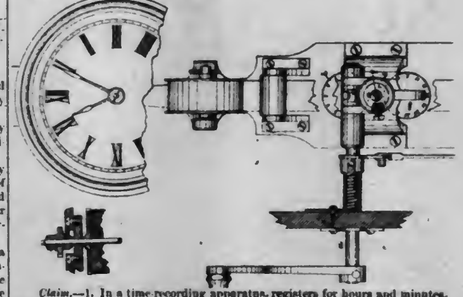
210,787. HANGING GANG-SAWS. Chaney Lamb, Clinton, Iowa, assignor to C. Lamb & Sons, same place. Filed Nov. 23, 1878.

Brief.—The ends of the saws are provided with lugs, and secured in suitable slots formed in a solid metallic gage-bar and hook-having a lip in its lower part, to hook in the bottom rail of the saw-gate, and a ridge in its upper part, to crush any obstruction that may get between the bar and the log, for the purpose of doing away with the gage-bars and hooks used in hanging "gang-saws."



Claim.—In hanging gang-saws, the gage and hook-bar A, fitted with slots and lip, substantially as shown and described.

210,788. TIME-REGISTERING CLOCKS. Isaac M. Lane, Rockland, and Warren S. Hill, Boston, Mass. Filed June 3, 1878.



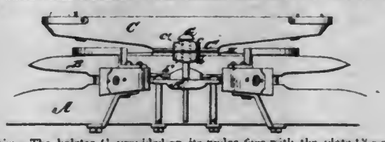
Claim.—1. In a time-recording apparatus, registers for hours and minutes, and a reciprocating pad and key, arranged in a carrier or plunger common to both, to record the time and impress upon a strip a character or letter to indicate a person, substantially as described.

2. In a time-recording apparatus, registers for hours and minutes, a pad, a key, a carrier or plunger common to both, and mechanism to reciprocate the pad and key, to emboss or impress upon a strip the time and a character or letter to indicate the person, substantially as described.

3. The plunger *r* and pad *p*, and registers *h m*, and the key *q*, provided with a notch, 11, combined with a feed, *w*, interposed between the registers, substantially as described.

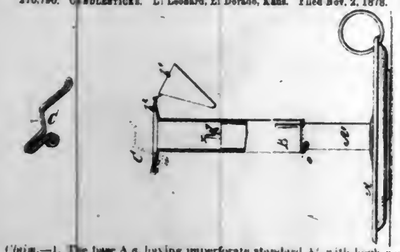
4. The sleeve *s* and notched plunger and key, combined with the cam *t* and shaft *u*, substantially as described.

210,789. FIFTH-WHEEL COUPLINGS. William Lehmann, Menominee, Mich. Filed Nov. 2, 1878.



Claim.—The bolster C, provided on its under face with the plate C' *c c'*, sand-board B, provided with the plate H *h h'*, and the axle A, having plate A', in combination with the bolt G, passing through said plates and operating in front of said bolster, sand board, and axle, substantially as and for the purposes set forth.

210,790. CANDLESTICKS. L. Leonard, El Dorado, Kans. Filed Nov. 2, 1878.



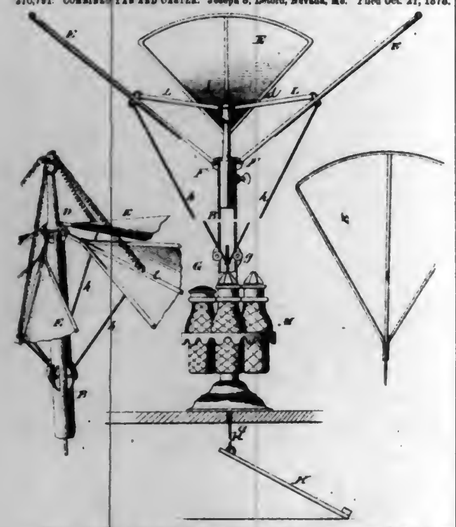
Claim.—1. The base A *a*, having imperforate standard A', with hook *y* and pin *x*, constructed and adapted to operate, in relation to an adjustable cylinder, as set forth.

2. The cylinder B, having friction-spring *b*, in combination with the imperforate standard A', having pin *x*, as set forth.

3. The spring wick-holder C and cylinder B *b'*, in combination with the standard A', pin *x*, and hook *y*, as set forth.

4. The base A, standard A', pin *x*, hook *y*, as shown, in combination with the cylinder B, spring *b*, cap *b'*, flange *b²*, and spring wick-holder C, as and for the purpose set forth.

210,791. COMBINED FAN AND CASTER. Joseph S. Letord, Nevada, Mo. Filed Oct. 21, 1878.



Claim.—1. The standard H, constructed with the projections F and G, in combination with the fan-stems *e* and the rollers *g*, constructed and operating together as and for the purposes substantially as described.

2. The pedal K, in combination with the cords H and *h* and the fans E, constructed and operating together as and for the purposes substantially as described.

3. The standard B, in combination with the caster M, the adjustable stem D, and the elastic bands L, constructed and operated together as and for the purposes substantially as described.

210,792. METHODS OF SECURING LOOPS AND STUDS TO SUSPENDER-ENDS AND OTHER ARTICLES. John P. Lindsay, New York, N. Y. Filed Sept. 5, 1878.



Claim.—A garment suspender or supporter, with its lower or one end doubled and passed through the lower loop of the securing-plate of the button A, and thence in under the said plate, between it and the supporter, and finally out through the other loop of said plate, after which it is fastened to itself, as shown and described, for the purpose of intercepting the contact of the button or its securing-plate with the skin of the wearer, as set forth.

210,793. APPARATUS AND PROCESSES FOR DRYING CEREALS. Frederic A. Luckenbach, New York, N. Y. Filed Aug. 5, 1878.

Claim.—1. In an apparatus for drying Indian corn and other cereals, a grain vessel or chamber having a valve or valves, substantially as set forth, for making it air-tight, and provided with a steam-jet device for partially exhausting air therefrom, and for rapidly drawing air and steam through the same, substantially as and for the purpose herein specified.

2. In an apparatus for drying Indian corn and other cereals, a grain vessel or chamber having a valve or valves, substantially as set forth, for making it air-tight, and provided with a steam-exhaust-jet device and a steam-superheating device, substantially as and for the purpose herein specified.

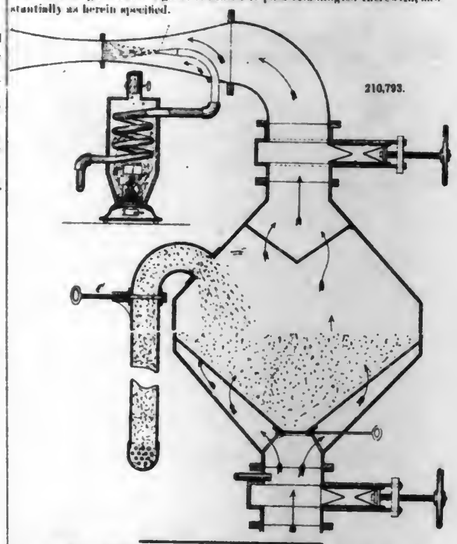
3. In an apparatus for drying Indian corn and other cereals, the combination of a grain vessel or chamber having a valve or valves, substantially as set forth, for making it air-tight, a steam-exhaust-jet device for drawing air and steam therefrom, and a blower for forcing air, hot or cold, into the same, substantially as and for the purpose herein specified.

4. A process of drying Indian corn and other cereals, consisting in first partially exhausting the air from the vessel or chamber containing the grain, then admitting steam under pressure into the same, and rapidly forcing it through the mass of grain by the combined action of its pressure and the exhaustive action of a steam-jet or its equivalent, and finally forcing and drawing heated and cool air through the mass of grain, substantially as and for the purpose herein specified.

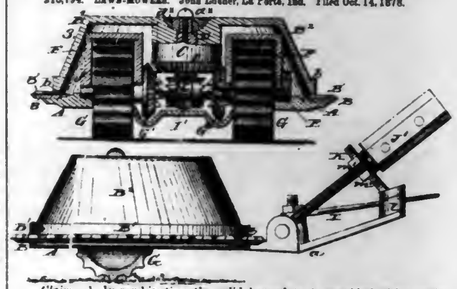
5. In a process of drying Indian corn and other cereals, forcing steam into the mass of grain under pressure, and at the same time employing a steam-exhaust jet to draw the steam more rapidly through and from the same, substantially as herein specified.

6. In a process of drying Indian corn and other cereals, charging the containing vessel or chamber with grain by the inward flow of air through a pipe or tube, through which the grain is caused to pass commingled therewith, substantially as herein specified.

210,793.



210,794. LAWN-MOWERS. John Lasher, La Porte, Ind. Filed Oct. 14, 1878.



Claim.—1. In combination, the solid base-plate A, provided with a series of radial knives or cutters, B, and having a horizontal shaft, E, and drive-wheels C C, the bridge-piece *d*, having post or standard D, the conoidal closed cap or head D², having the cutters B' and cogged sleeve C, the washer *d²*, and central screw *d'*, all arranged and combined substantially as and for the purpose herein shown and specified.

2. In combination, the diametrical drive-shaft E, journaled in boxes *f f* in the base-plate A, and having a central squared part or section; clutch-hub H, sliding upon said squared section, and provided with a central circumferential groove or depression; loose bevel-wheels G' G², having notched or serrated hubs facing the notched sides of the sliding clutch-hub H; sleeve H', inserted loosely in the annular recess in the clutch-hub H, and provided with the lugs or projections *n n*; spring-lever I', vertical shaft *i*, and lever-handle I, all arranged and operating substantially in the manner and for the purpose herein shown and set forth.

3. In combination with base-plate A, having the extension or platform *o*, provided with the posts or studs *l l*, the perforated and bifurcated handle bail or socket J', pivoted in said extension *o*, and T-shaped brace K, pivoted by its cross-piece between the studs *l l*, and its screw-threaded stem inserted through the perforation in the handle-socket, and held in place adjustably by jam-nuts *n' n'*, substantially as and for the purpose herein shown and described.

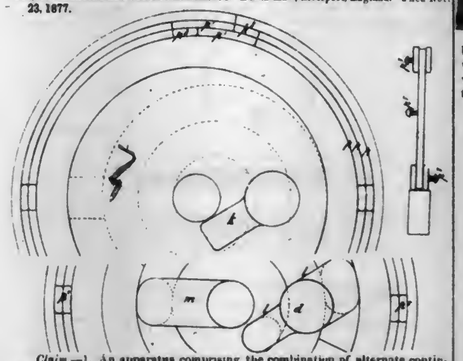
210,795. BOOT-JACKS. Jacob Martin, Cairo, Ill. Filed June 24, 1878.

Claim.—As a new article of manufacture, a bracket provided at one end with a pivotal attaching-plate, and having its opposite end adapted for use as a boot-jack, substantially as and for the purpose specified.

210,795.



210,796. HEATING AND COOLING APPARATUS. Edwin Maw, Liverpool, England. Filed Nov. 23, 1877.

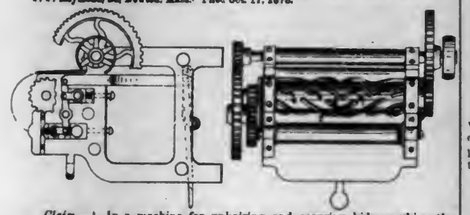


Claim.—1. An apparatus comprising the combination of alternate continuous spiral passages, arranged one outside another, each provided with an inlet and an outlet, certain of said spiral passages being for air, gas, or liquid to be heated or cooled, and the alternate passages for the agent used to impart or abstract heat to or from said air, gas, or liquid, substantially as herein specified.

2. The combination, with an apparatus for the reception of gases, liquids, or solids, of plates *p*, and distance-pieces *p' p² p³* between them, substantially as and for the purpose specified.

3. The combination of the distributers *k l m* with the spiral passages, substantially as and for the purpose specified.

210,797. MACHINES FOR UNHAIRING AND SCOURING HIDES AND SKINS. James W. McDonald, Woburn, assignor of one-half his right to Thomas William Clarke, Boston, and F. F. Raymond, 2d, Newton, Mass. Filed Oct. 17, 1878.



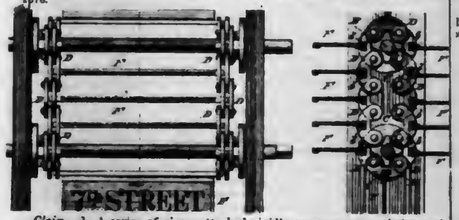
Claim.—1. In a machine for unhairing and scouring hides or skins, the combination, with feed-rolls and a supporting-roll, of a lever and intermediate mechanism, whereby, by a single movement of the lever, the feed-rolls are separated and the supporting-roll is adjusted with reference to the scouring-roll, all substantially as set forth.

2. In machines for unhairing, working, and scouring skins and hides, the combination of the feed-rolls D D', one of which can be separated and held apart from the other, and a scouring-roll and a supporting-roll, G, which can be moved and held from said scouring-roll, all arranged to operate substantially as and for the purposes described.

3. A scouring-roll provided with a series of spiral elevations, *s*, and depressions *s'*, substantially as described.

4. The combination of the table E, feed-rolls D D', bed H, supporting-roll G, and scouring-roll, all arranged to operate substantially as described, and each part provided with the particular adjustment set forth.

210,798. STATION-INDICATORS. Ferdinand C. D. McKay, Paterson, N. J. Filed Nov. 12, 1878.



Claim.—1. A series of signs attached rigidly to one or more chains and projecting outward from the same, whereby a change of position of the signs is effected when the chain changes position, making a new indication at each change, substantially as herein set forth.

2. A series of signs provided with projecting lugs, polygonal in cross section, at their ends, in combination with chains having corresponding slots or holes for the insertion of the lugs, substantially as herein set forth.

3. The combination of the chains D D, provided with prismatic openings in their links, and passed around toothed wheels or pulleys, the signs F F, provided with lugs inserted in said openings, an inclosing-case, and means for rotating the chains, substantially as and for the purposes herein set forth.

210,799. FILES. William Millspaugh, Middletown, N. Y. Filed Sept. 3, 1878.



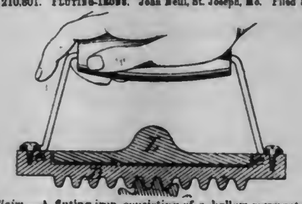
Claim.—In a file, the heel formed with opening *a*, extending into the file beyond where the file is cut, and the outer edges of the heel solid or intact, whereby the contraction and expansion in tempering are provided for to prevent cracking, and in any event to prevent cracking entirely across the heel of the file, substantially as and for the purpose set forth.

210,800. CHURNS. George R. Nebinger, Philadelphia, Pa. Filed Oct. 28, 1878.



Claim.—The improved rotary churn-dasher herein described, consisting, essentially, of the central horizontal shaft, the arms C, curved at their back edges and straight on their front edges, and the slats D, attached to said arms on their curved or back edges, said slats being separate from one another and from the central shaft by narrow spaces, and occupying thus the entire length of the arms, as and for the purpose set forth.

210,801. FLUTING-IRONS. John Neill, St. Joseph, Mo. Filed Sept. 14, 1878.



Claim.—A fluting-iron consisting of a hollow corrugated roller, provided with a heating-billet, and a fluting-plate, corrugated on its under side and recessed upon its upper side, for the reception of a heating-plate, said fluting-plate being provided with a suitable handle, and adapted to be used in conjunction with the corrugated roller, substantially as and for the purpose specified.

210,802. PUMPS. William C. Nelson, Vallejo, Cal. Filed Oct. 19, 1878.



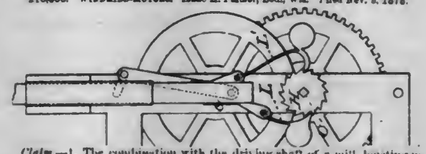
Claim.—1. The disk E, having dishing outer surface, E', recess *e*, and shoulder *e'*, in combination with cylinder D, cap *d*, and packing, as specified.

2. The piston-valve C, carrying the piston C', adapted to oscillate and operate as and for the purpose set forth.

3. The piston-rod made in sections and composed of the parts A A, having shoulders or collars *a*, and the body B, having valve-ports, in combination with the reciprocating piston-valve C' C' *c*, as specified.

4. The body B, having exit-port *b'*, inlet ports *b b*, and provided with the partition B', constructed and adapted to operate, relatively to a piston and valves, as set forth.

210,803. WINDMILL-MOTORS. Isaac H. Palmer, Ledi, Wis. Filed Nov. 9, 1878.



Claim.—1. The combination with the driving-shaft of a mill, hoisting-machine, or other mechanism, and a ratchet-wheel on one end thereof, of a reciprocating plunger-bar, pawls on the end of said bar alternately engaging said ratchet-wheel, a crank-shaft, and a pitman connecting said shaft and bar, substantially as specified.

2. The combination, with the driving-shaft C, having a ratchet-wheel, H, of the reciprocating plunger-bar J, the pawls I, I', hinged on the ends of said plunger, provided with a weight outside of their pivots, and engaging the said ratchet wheel alternately, a pitman, and crank-shaft, substantially as set forth.

210,804. DUMPING-GRATES FOR STOVES AND FURNACES. Albert J. Redway, Avondale, assignor to Redway & Burton, Cincinnati, Ohio. Filed Apr. 5, 1878.



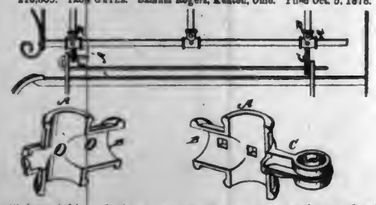
Claim.—1. The grate-latch provided with catch W Y, and with the open or hook connection Z, substantially as and for the purposes set forth.

2. The grate-latch provided with catch W Y, the open or hook connection Z, and shoulder *b*, substantially as and for the purposes set forth.

3. The latch provided with shoulder *b*, in combination with grate C and cross-bars S and *a*, substantially as and for the purposes set forth.

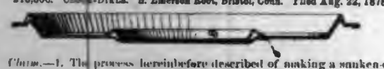
4. The latch provided with apertare V and catch W Y, in combination with a bottom, D, hung on axes E and E F, substantially as and for the purposes specified.

210,805. IRON GATES. Samuel Rogers, Kenton, Ohio. Filed Oct. 5, 1878.



Claim.—A hinge for iron gates, cast in two parts, each part forming the half-socket A, half-socket B, and arm C, with eye *a*, as and for the purpose herein set forth.

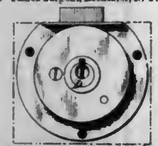
210,806. CLOCK-DIALS. S. Emerson Root, Bristol, Conn. Filed Aug. 22, 1878.



Claim.—1. The process hereinbefore described of making a sunken-center paper dial, which consists in preparing and finishing the paper front of the dial with the usual figures thereon when in the flat, and afterward striking up the sunken center and covering its edge with an ornamental ring, substantially as described.

2. In a dial, the ring D, having prongs *b*, in combination with the dial proper, having quadrangular holes, with the slug remaining therein hanging to one side and bent down against the prongs, substantially as described, and for the purpose specified.

210,807. LOCKS. James Sargent, Rochester, N. Y. Filed Oct. 29, 1878.



Claim.—A lock for a door or drawer, having a circular lock-case, and a back plate of greater width than the same, said back plate being provided with a lip of a length less than the greatest width of the back plate, the lock-case and the lip being adapted to set in a circular recess in the door or drawer, and a rectangular continuation of said recess, the lip setting flush with the edge of the door or drawer, substantially as and for the purpose specified.

210,808. BLUING-PACKAGES. Henry Sawyer, Chelsea, Mass. Filed Oct. 3, 1878.



Claim.—1. The commercial package consisting of a box containing two or more packages of granulated or powdered bluing and a bottle, the contents of each package and the capacity of the bottle being relatively such that the bottle filled with water and the contents of a package constitute a package of liquid bluing of due strength ready for use, substantially as set forth.

2. The package for producing liquid bluing herein set forth, consisting in a bottle and two or more boxes of powdered or granulated bluing, the boxes having mouths adapted to fit into that of the bottle, the capacity of the bottle and the contents of each of the boxes being such as to make, when the latter is combined with the bottle full of water, a bottle of liquid bluing, all inclosed in one box, for the purpose set forth.

210,809. ELECTRIC LAMPS. William E. Sawyer, New York, and Albon Man, Brooklyn, N. Y. Filed Nov. 5, 1878.

Claim.—1. In an electric lamp, the cap D', provided with an insulated contact, J, for the purpose of establishing the electric connection of the lamp with the terminals of the conductors leading from the generator when the lamp is set in a suitable holder, substantially as shown and described.

2. An internal conductor in an electric lamp, consisting of strips of metal fluted or plain, insulated at their ends or heads with slips of mica or other suitable insulating material, and bound together to insure solidity of construction.

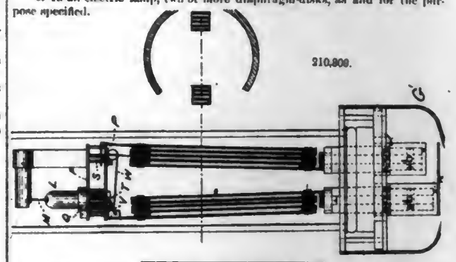
3. In an electric lamp, the combination of the diaphragm P, standard J', sliding bar L, spring W, and stirrup V, in the manner substantially as described.

4. A sliding anvil, L, held in a socket, Q, and supported by a spring to carry the burner M and hold it against the hammer K, the contact-points to be of platinum or iridium, substantially as described.

5. The herein-described method of charging the globe of an electric lamp with nitrogen, consisting, first, of replacing the original gaseous contents of the globe with hydrogen, and then replacing the hydrogen with nitrogen.

6. In an electric lamp, two or more diaphragm-disks, as and for the purpose specified.

210,809.



210,810. STOCKINGS. Almira Selby, Baltimore, Md. Filed Nov. 9, 1878.



Claim.—1. A stocking having two thicknesses of material at the knee, integral with the body of the stocking, as set forth.

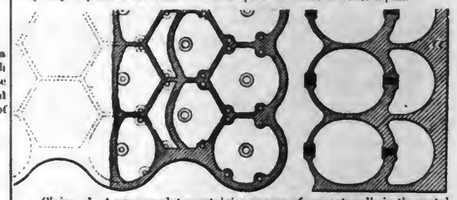
2. A stocking having its heel and toe re-enforced by a separate thickness of material integral with the body of the stocking, substantially as set forth.

3. A stocking having a pocket in front of the knee, and extending wholly or partially around the stocking, as set forth.

4. A stocking having two thicknesses of material about the knee portion, each thickness terminating in a contracted and elastic rim, and being integral with the body of the stocking, as set forth.

210,811. ARMORS FOR VESSELS. Edward W. Serrell, Castleton, N. Y. Filed Oct. 7, 1878.

Brief.—This armor for ships and fortifications is formed of cellular blocks of steel or other material, in which the cells are so disposed or arranged that they may at pleasure be filled with or emptied of water or other liquid.



Claim.—1. An armor-plate containing ranges of separate cells in the metal of the armor-plate itself, in combination with means for entirely filling each cell with water or other liquid, confining the same within such cell, or allowing the withdrawal of such liquid, substantially as set forth.

2. The cellular armor-plates provided with two ranges of cells in the metal of the armor, the outer range being nearly hemispherical and the inner range being nearly spherical at the ends, and with hexagonal partitions between the cells in the respective ranges, substantially as set forth.

210,812. HORSESHOE AND PAD. Granville C. Shaw, Washington, D. C. Filed Oct. 26, 1878.

Claim.—1. The combination, with a horseshoe and pad, of side and toe clips, removably connected to both shoe and pad, all as shown and described.

2. The combination, with a horseshoe having the recesses *a a*, of removable side and toe clips attached to the shoe and supporting a pad lying in the opening of the shoe, substantially as described, and for the purpose set forth.

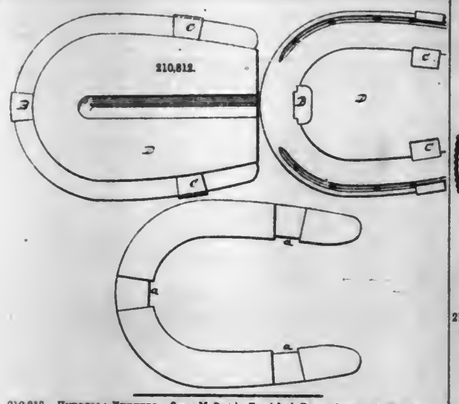
3. The combination, with a horseshoe having the recesses *a a*, of the pad D, having flanges *a'* and recesses *e e*, toe-clip B, and side clips, C, substantially as described, and for the purpose set forth.

4. A shoe having the clip C, provided with the shoulder *o* and bent portions *m m*, substantially as described, and for the purpose set forth.

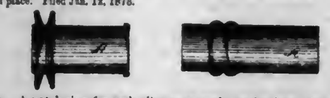
5. A shoe having the toe-clip B, provided with the shoulder *o'* and upward projection, *s*, substantially as described, and for the purpose set forth.

6. The pad D, provided with the flange *a'* and recesses *e*, substantially as described, and for the purpose set forth.

210,812.

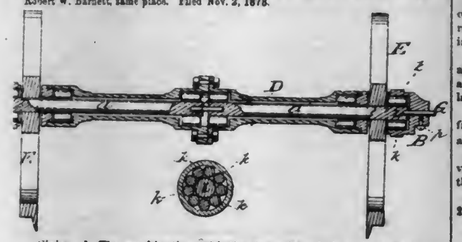


210,813. UMBRELLA-RUNNERS. Orren M. Smith, Frankford, Pa., assignor to S. W. Evans & Son, same place. Filed Jan. 12, 1878.



Claim.—A notch-ring for umbrellas or parasols, made of one piece of sheet-metal tubing, having two annular flanges adjacent to each other, and each flange made of a double thickness of the sheet-metal of the tube, spread outwardly and folded double, substantially as set forth.

210,814. CAR-AXLES. Orlando D. Spalding, Mitchell, Iowa, assignor of one-half his right to Robert W. Barnett, same place. Filed Nov. 2, 1878.

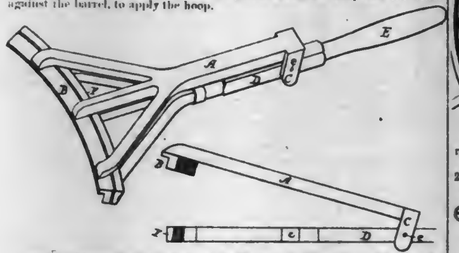


Claim.—1. The combination, with the sleeve D and the axle-sections *a a'*, separated by a pin, *f*, of the pedestals B, anti-friction rollers *k*, recessed therein and affording bearings to the axle-journals I, the pins G, and set-screw *p*, arranged and operating substantially as specified.

2. The combination, with the tubular sleeve D, having bearings at its ends and at each side of the center of its length, of the axle-sections *a a'*, included in said sleeves and rotating independently on said bearings, the spacing-pin *f*, the transporting-wheels E, secured on the said axle-sections, the box-pedestals B, having chambers formed therein, the anti-friction rollers *k*, pins G, and set-screws *p*, all arranged and operating substantially as specified.

210,815. BARREL-HOOP STRETCHERS. David Stallard, Jr., New Liberty, Ky. Filed Aug. 20, 1878.

Brief.—One of the curved pieces is placed inside the hoop and the other against the barrel, to apply the hoop.



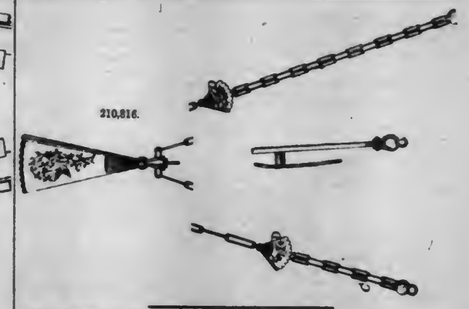
Claim.—The combination of circles B F, stems A D, ears C, and handle E, substantially as herein described and set forth.

210,816. CHATELAINES. George D. Stevens, East Orange, N. J. Filed Nov. 14, 1878.

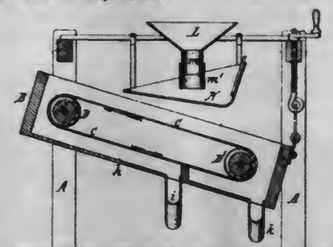
Claim.—1. A chatelaine consisting of a supporting-plate having a clevis, through which passes a chain constructed with two stops, each of which is arranged intermediate of the ends of the chain and the clevis, substantially as shown and described.

2. A supporting-plate for chatelaines having an attached double loop for fastening the same in the button-hole of a garment, and an attached clevis for supporting a chain, substantially as described.

210,816.



210,817. COFFEE-SEPARATORS. Henry B. Stevens, Buffalo, N. Y., assignor to George L. Squier, same place. Filed Sept. 26, 1878.



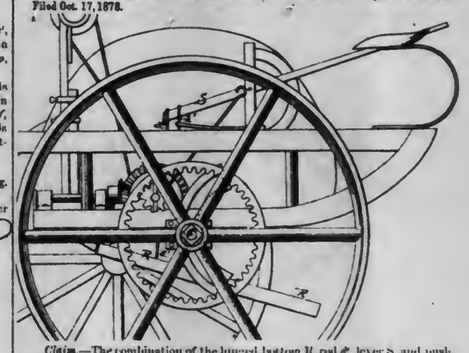
Claim.—1. In a machine for separating round from flat or irregular grains or seeds, the combination, with an inclined endless belt or apron, C, of the rollers D D', constructed with a convex portion, *a*, near each end, for stretching the endless apron transversely, substantially as set forth.

2. The combination, with the stationary main frame A, of the inclined apron C, arranged in the movable frame B, pivoted at its upper end to the stationary main frame, and made vertically adjustable at its lower end for regulating the inclination of the apron, substantially as set forth.

3. The combination, with the stationary frame, of the inclined apron C and frame B, provided with bottom h, having discharge-openings *i k*, substantially as and for the purpose set forth.

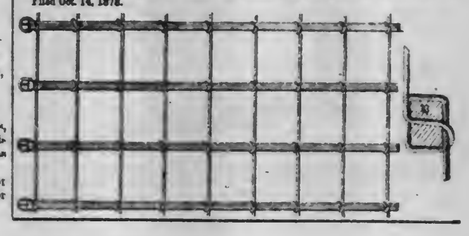
4. The combination, with the inclined apron C, of the feed-hopper L, provided with adjustable sleeve *m'*, and shaking shoe N, substantially as and for the purpose set forth.

210,818. CORN-HARVESTERS. James Stewart and John W. Jones, Schooley's Station, Ohio. Filed Oct. 17, 1878.



Claim.—The combination of the hinged bottom H, rod *h'*, lever S, and push-rod *h'*, substantially as and for the purposes herein set forth.

210,819. MANUFACTURE OF FLY-NETS FOR HORSES. Samuel Stewart, Landisburg, Pa. Filed Oct. 14, 1878.



Claim.—The improved method or process of forming fly-nets for horses or other animals, consisting of securing the transverse strips or pieces to the longitudinal strips by passing the transverse strip or piece underneath and then back over the longitudinal strip, thus forming a loop, then passing the free end of the transverse strip or piece through the longitudinal strip and drawing it closely around the latter, all as shown and described.

210,820. WAGON-RACKS. Levi Talcott, Minetto, N. Y. Filed Nov. 18, 1878.



Claim.—1. As an improvement in wagon-racks, the cleats *b*, to which the planks forming the wings are attached, having rubber face *d*, in combination with cross-bars B and hinges *c*, to clasp the sides of the wagon-body and hold the rack on the same, substantially as described.

2. As an improvement in wagon-racks, the hinged wings, held to the body by the cross-bars B, and the hasps *e*, in combination with movable boards *f* and movable end-boards *g*, secured in place by pins *i*, to form a close body above the main body A, and in addition thereto, substantially as described.

210,821. VENTS FOR BARRELS AND KEGS. William Thomas, Jersey City, N. J. Filed Sept. 12, 1878.

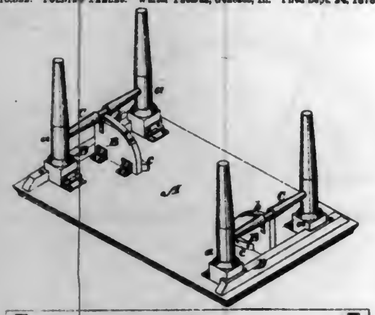
Brief.—The neck of the rubber valve, owing to the affinity of brass and sulphur, adheres chemically to the brass tube. The upper end of bore of bung may be lateral.

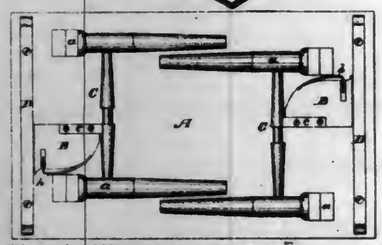


Claim.—1. As an improvement in vents for barrels and kegs, the improved automatic valve above specified, constructed in the form of a hollow wedge, with an expansible neck at its large outer end, thin sensitive lips at its inner extremity, thick cheeks to support said lips, a molded chamber extending between said cheeks, and a cut aperture between said lips, in combination with a supporting vent-tube, over the inner end of which said neck is stretched, substantially as herein shown and described, for the purpose set forth.

2. The combination of an elastic vent-valve, of vulcanized rubber, in the form of a hollow wedge, having thin sensitive lips *v v* and a neck, *w*, at its respective extremities, a non-compressible tube of brass having a nipple end, to which said neck is applied, and a compressible bung or plug having a cylindrical bore to receive said tube, substantially as herein specified, for the purposes set forth.

210,822. FOLDING TABLES. Walter Thomas, Geneseo, Ill. Filed Sept. 24, 1878.

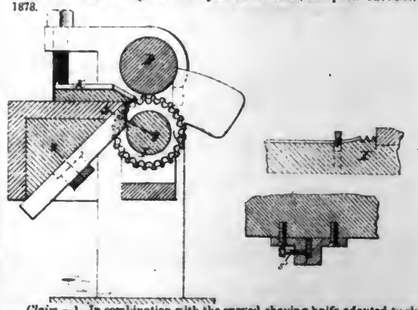




Claim.—1. In a folding table, the braces B B, hinged to the table-bed A, and provided with the projecting cleats *c c* and springs *b b*, in combination with the rungs C and legs *a a a a*, substantially as and for the purpose herein set forth.

2. In a folding table, the combination of the folding braces B B, springs *b b*, rungs C C, legs *a a a a*, and cleats D D with the table-bed A, the whole being arranged, constructed, and operated in the manner described.

210,823. MACHINES FOR SPLITTING AND BEVELING LEATHER. George L. Tyler, Lynn, Mass., assignor of two-thirds his right to T. W. Tyler and C. O. Beede, same place. Filed Nov. 11, 1878.

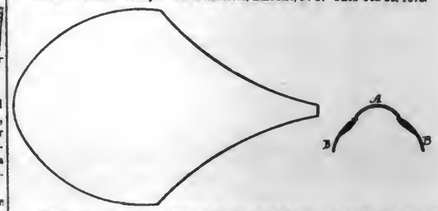


Claim.—1. In combination with the curved shaving-knife adapted to shave a beveled strip, *s*, of the form shown, from the side of a sheet of material, the trimming-knife arranged to separate the thin edge from the beveled strip, and adapt said strip for use as a rand, suitable feeding mechanism being employed to propel the material against the knives.

2. The combination of the trimming-knife with the shaving-knife and the grooved feed-roller, as set forth.

3. The combination of the trimming-knife with the shaving-knife, grooved feed roller, and edge-gage, as set forth.

210,824. BOOTS. Henry E. Van Benschoten, Hilledale, N. Y. Filed Oct. 21, 1878.



Claim.—1. As an improvement in the manufacture of boots, the patterns A B, substantially as shown and described.

2. A boot made up from the patterns A B, with or without the top portion, C, all substantially as shown and described.

3. The combination, with the parts C B, of the strap E, applied through a slot, as shown, and one end sewed on the inside and the other upon the outside of the leg, all substantially as herein set forth.

210,825. IRON FENCES. James H. Van Dorn, Cleveland, Ohio. Filed Aug. 6, 1877.

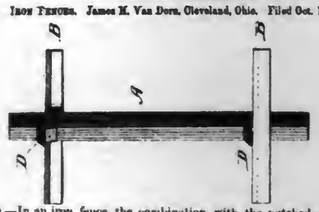
Brief.—The picket is notched at its corners. A metal washer, having an opening corresponding with the cross-section of the picket, is slipped down on the picket and turned partly around to engage with the notches. The stringer is then applied to the picket and slipped down until it rests upon the washer.



Claim.—1. In an iron fence, the combination, with a stringer, of the notched picket A and the washer G, applied to the picket and adapted to support the stringer, substantially as described.

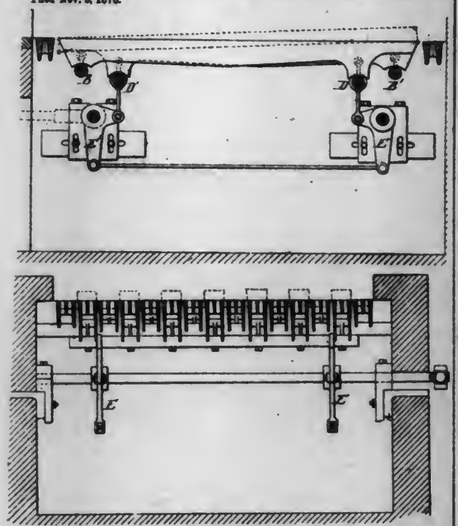
2. The combination, with the stringer B, having the downwardly projecting side flanges, C C, of the picket A and the washer G, substantially as described, for the purpose specified.

210,826. IRON FENCES. James M. Van Dorn, Cleveland, Ohio. Filed Oct. 1, 1878.



Claim.—In an iron fence, the combination, with the notched or recessed pickets A and the stringers B, of the wedges D, having double heads, one part of which enters the recesses in the pickets and the other part rests on the stringers, substantially as described.

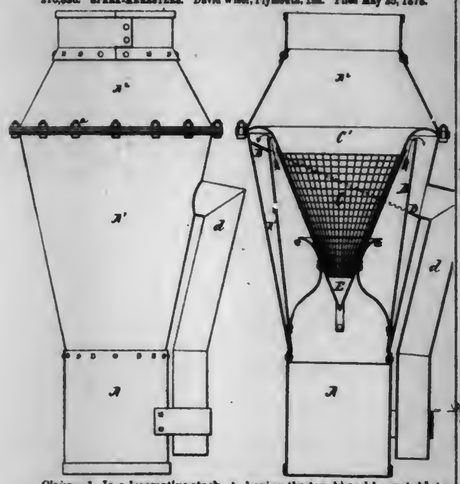
210,827. MOVABLE FIRE-BARS FOR FURNACES, &c. Alphonse E. Wackernie, Paris, France. Filed Nov. 6, 1878.



Claim.—1. A furnace-grate consisting of a series of bars pivoted alternately at opposite ends of the grate, in combination with levers E and connecting-rod *e*, whereby a vibrating motion in opposite directions may be imparted to adjacent grate-bars on their opposite pivoting-points, substantially as set forth.

2. The combination of a series of grate-bars pivoted alternately at opposite ends to transverse stationary rods B B' with independent movable lifting-bars D D', substantially as described.

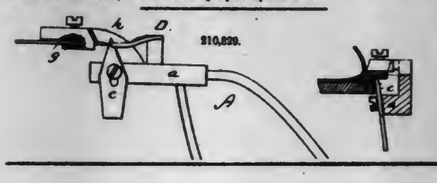
210,828. SPARK-ARRESTERS. David Wiser, Plymouth, Ind. Filed May 25, 1878.



Claim.—1. In a locomotive-stack, A, having the top A^1 and bonnet A^2, together with the deflector B, annulus D, and pipe *d*, the combination, with the screen C, of the solid rim or ring C', all constructed and arranged to operate substantially as and for the purpose specified.

2. In combination, the stack A, deflector B, top A^1, bonnet A^2, annulus D, and pipe *d*, together with the screen C, extending over and around the top of the deflector, and with its upper edge secured in the joint of the said top and bonnet, and supported at its lower end by the cone E, having the outwardly-flared rim or base *e*, as and for the purpose specified.

210,829.



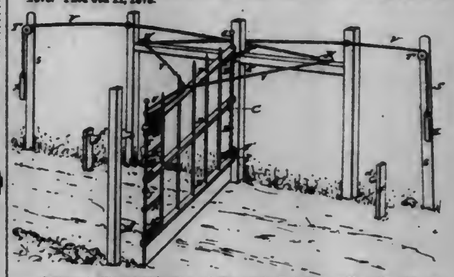
210,829. APPARATUS FOR TRIMMING THE SOLE-EDGES OF BOOTS AND SHOES. Joseph D. Westgate, Lynn, Mass. Filed May 24, 1878.

Claim.—1. The combination, with a stock or handle, A, of a bar, *a*, carrying the adjustable cutter *c*, and having an arm, *b*, carrying the adjustable cutter *g*, the two cutters being arranged at right angles to each other, substantially as and for the purpose described.

2. The combination, with a handle, A, and a bar, *a*, carrying two adjustable cutters, *c g*, arranged at right angles to each other, of the arm D, attached to said bar and constructed with the lip *t*, for guarding the upper of a boot or shoe, substantially as and for the purpose described.

REISSUES.

8,515. GATES. Albert G. Rockfellow, Ashland, Oreg. Patent No. 201,703, dated Mar. 26, 1878. Filed Oct. 11, 1878.



Claim.—1. The combination of the pintle C, having collars E, with supporting adjustable staples F of the gate-post, and with compensating-springs F' of the staples, substantially as and for the purpose set forth.

2. The combination of the pintle C, having collars E, with the oppositely-coiled shutter-springs H_1 whose ends are respectively affixed to the gate and gate-post, substantially as specified.

3. The latch-rods I J, jointed at or near the mid-height of the gate, and fulcrumed to screw-eyes K, in combination with the slotted pieces D of the gate, the guiding-screw eyes M M, and their springs M' N, substantially as set forth.

4. The combination of the jointed, guided, and spring-acted latch-rods I and J with the adjustable catches O of the gate-post, substantially as and for the purpose set forth.

5. The combination of the jointed latch-rods with a hinge-shaped clasp or lock of the upper piece of the gate, and with the catches of the gate-post, to lock the latch-rods and gate, substantially as described.

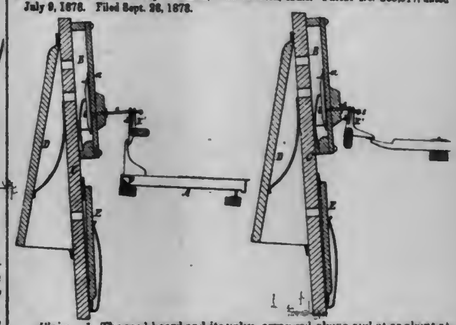
6. An adjustable catch for the latch-rods, consisting of a threaded bolt or shank and double curved head, substantially as set forth.

7. The catch-head O, provided with the central notch, F, and secondary notches or offsets Q, substantially as specified.

8. The combination, with the jointed latch-rods I J, of an endless cord or loop, U, and of a draw-rope, V, which is arranged to pass over pulleys W and pulleys T of posts S, substantially as set forth.

9. The combination of the swinging and spring-cushioned gate, having jointed and spring-acted latch-rods, with the operating-cords U and V, and with the retaining-catches *d* at each side of the gate, substantially as and for the purpose set forth.

8,516. REED-ORGANS. Henry W. Smith, West Newton, Mass. Patent No. 205,917, dated July 9, 1878. Filed Sept. 28, 1878.



Claim.—1. The reed-board and its valve, arranged above and at or about at a right angle with the key, in combination with the bellows-board C and the two flies D E, arranged with the key, substantially as represented.

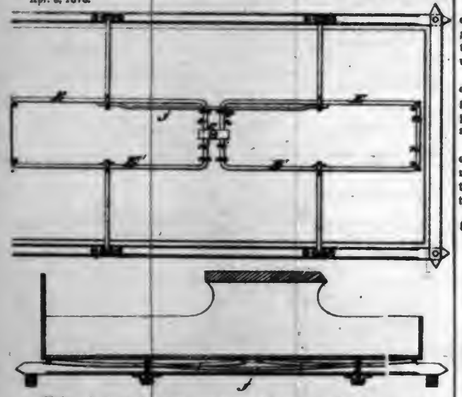
2. The key A, lever E', push-pin *c*, reed-board *a*, valve *b*, wind-chest B, bellows-board C, and the two flies D E, combined and arranged substantially as shown and described.

3. The lever E', provided with the tongue *d* and the adjusting-screw *s*, combined and arranged with the reed-valve *b*, push-pin *c*, and the key A, substantially as and for the purposes set forth.

4. The lever E', arranged and combined with the reed-valve *b*, push-pin *c*, and the key A, all being essentially as shown, and to enable the push-pin to be moved in by such lever on the key being struck.

5. In combination with the reed-board and its valve, arranged with the key, as shown, the fly or bellows-board D, pivoted at top to the board C, and arranged as represented, so as to project above the key and below it and the reed-board, as set forth.

8,517. VEHICLE-SPRINGS. William F. Whitney, Poughkeepsie, N. Y., assignor of one-half interest to Edward Storm, same place. Patent No. 177,307, dated May 9, 1876. Filed Apr. 8, 1878.



Claim.—1. A torsion-spring consisting of a rod of arched form longitudinally, with an arm at a distance from either end, substantially as herein described.

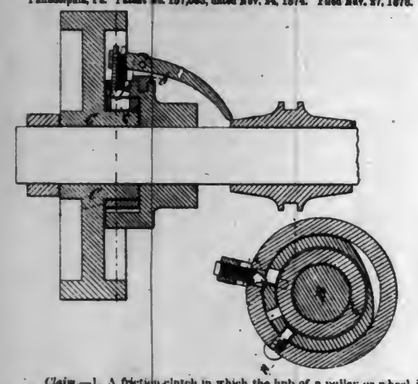
2. A torsion-spring consisting of a rod of arched form longitudinally, with an arm at a distance from either end, and having in said arm an eye, the axis of which is parallel, or thereabout, with the torsional axis of the spring, substantially as herein described.

3. The combination, with the body and side bar of a side-bar wagon, of a torsional spring consisting of an arched rod or bar having an arm at a distance from either end, the ends of the said rod or bar and the extremity of the said arm being connected, respectively, with the body and the side bar, substantially as herein described.

4. The combination, with the body and one of the side bars of a side-bar wagon, of a spring consisting of a rod or bar having an arm which is distant from both its ends, the said rod or bar being connected at its ends with the wagon-body, and the said arm being connected with the side bar, the construction and arrangement being such that the said rod or bar will be subjected to torsion, and at the same time free to bend upward and downward under the weight of the wagon-body, substantially as herein set forth.

5. The auxiliary spring or equalizing-bar J, in combination with two torsion springs, substantially as and for the purpose herein described.

8,518. FRICTION-CLUTCHES. Charles E. Burwell, Miller's Falls, Mass., and Frank G. Bates, Philadelphia, Pa. Patent No. 157,083, dated Nov. 24, 1874. Filed Nov. 27, 1878.



Claim.—1. A friction-clutch in which the hub of a pulley or wheel is combined with an annular friction device, and with mechanism for applying friction circumferentially to the said hub through the medium of the said device, substantially as set forth.

2. In a friction-clutch, the combination of the hub of a pulley or wheel with a spring-ring, and with mechanism whereby the said ring may be contracted to the said hub and released therefrom, substantially as set forth.

3. The combination of a carrier or false hub secured to a shaft and a spring-ring, *m*, connected to the said carrier, with a screw or pin passing through the carrier, and having a tapering or wedge-shaped end adapted to a projection or hole in the ring, and with mechanism for operating the said pin and causing the same to contract the said spring-ring, all substantially as set forth.

4. The combination of a carrier secured to a shaft, a spring-ring connected to the said carrier, a lever arranged to be operated by a sleeve on the shaft, and an adjustable pin carried by the lever, and having a conical or wedge-shaped end for operating on the ring, all substantially as set forth.

5. The combination of the said carrier, spring-ring, and lever with a wedge-shaped pin arranged to slide in the carrier and to be acted on by a screw carried by the lever, all substantially as specified.

6. The combination of the carrier, a spring-ring, and a screw, *s*, by which the said ring is loosely connected to the carrier, substantially as described.

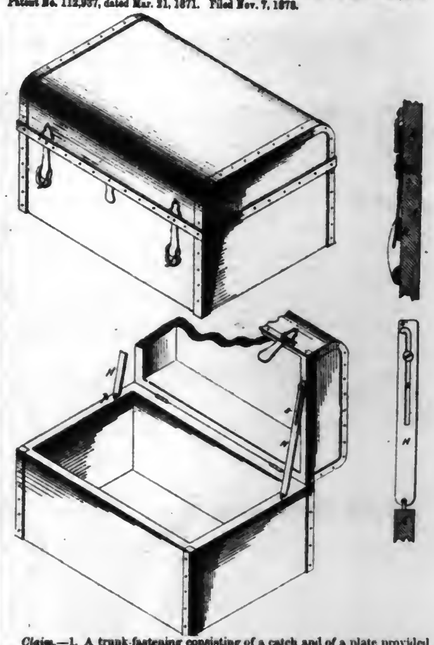
8,519. COVERINGS FOR CHAIRS, &c. Joseph H. Travis, New York, N. Y., assignor to M. & H. Schraubstaedter. Design No. 10,753, dated July 9, 1878. Filed Nov. 29, 1878.

Claim.—1. A design for a material for covering chairs and parlor-suits, consisting of a combination of figured goods or material with embroidered goods, or figured goods of another material or figure, the former being arranged to cover the main part of the seat and back, and the latter to be across the upper part or top of the back, as herein shown and described

2. A design for a material for covering chairs and parlor-suits, consisting of a combination of figured goods or material with embroidered goods, or figured goods of another material or figure, the former being arranged to cover the main part of the seat or back, and the latter to lie along the front part of the seat, as herein shown and described.

3. A design for a material for covering chairs and parlor-suits, consisting of a combination of figured goods or material with embroidered goods, or figured goods of another material or figure, the former being arranged to cover the main part of the seat and back, and the latter to lie along the upper part of the back and the front of the seat, as herein shown and described.

8,520. TRUNKS. John C. Locke, Rochester, N. Y., assignor to John J. Cowell, Newark, N. J. Patent No. 112,937, dated Mar. 21, 1871. Filed Nov. 7, 1878.

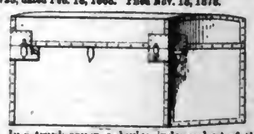


Claim.—1. A trunk-fastening consisting of a catch and of a plate provided with a spring catching device, one to be applied to the cover and the other to the body of the trunk independent of the trunk-lock, and adapted to automatically engage with each other in closing the trunk.

2. A trunk-fastening consisting of a catch and of a plate provided with a spring catching device, one to be applied to the cover and the other to the body of a trunk independent of the trunk-lock, and adapted to automatically engage with each other in closing the trunk, said catch constructed with a cavity for the insertion of the finger to disengage said catching device, substantially as described.

3. The pivoted or hinged stays H H, provided with the slots *s s'*, when arranged to lie flat between the ends of the body and cover when the trunk is closed, as herein shown and described, for the purpose specified.

8,521. TRUNKS. Edward Semple, Chicago, Ill., assignor to John J. Cowell, Newark, N. J. Patent No. 74,723, dated Feb. 18, 1868. Filed Nov. 18, 1878.



Claim.—1. In a trunk-cover, a device independent of the trunk-lock, consisting of a plate constructed with a projection substantially parallel with the vertical plane of the plate, combined with a second plate, constructed with a socket to receive said projection, and the said two parts constructed to be applied, one plate to the cover and the other to the body of the trunk, substantially as described.

2. In a trunk-cover, a device independent of the trunk-lock, consisting of a plate constructed with a projection substantially parallel with the vertical plane of the plate, a second plate, constructed with a socket to receive said projection, and the said two parts constructed to be applied, one plate to the cover and the other to the body of the trunk, and provided with a locking device to secure said two parts together in their closed condition, substantially as described.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10th DAY OF DECEMBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adams, G. H. and H., Hill, N. H. Knitting-machine needle	210,653	Dec. 10	299	82	14	871
Adams, H. (See Adams, G. H. and H.)						
Aldred, T., Macclesfield, assignor to J. Dendy and J. R. Beard, Manchester, England. Loom for weaving leno, &c	210,736	Dec. 10	382	104, 105	14	881
Allen, N. R., assignor of one-half interest to C. W. Woodford, Montreal, Canada. Ice-tongs	210,737	Dec. 10	384	105	14	882
Allt, E., New York, N. Y. Gate-valve	210,738	Dec. 10	384	105	14	882
Ambler, H. L., Cleveland, Ohio. Window-blind	210,591	Dec. 10	241	63	14	863
Anderson, F. (See Anderson, H. and F.)						
Anderson, H. and F., Peekskill, N. Y. Type-writing machine	210,739	Dec. 10	385	105, 106	14	882
Andrews, J. B., New York, N. Y. Artificial-draft apparatus	210,740	Dec. 10	388	106	14	882
Appleton, W. S., New York, N. Y. Plate-printing press	210,741	Dec. 10	388	106	14	882
Armstrong, E., Jerseyville, Ill. Bee-hive	210,592	Dec. 10	232	63	14	863
Arnold, R. H., Honeoye, N. Y. Spindle attachment for vehicle axle-trees	210,742	Dec. 10	389	106	14	882
Ayers, W. D., assignor of one-half interest to D. M. Mackey, Elmira, N. Y. Attachment for lawn-mowers	210,654	Dec. 10	300	82	14	871
Bacon Arms Company. (See Sweet, A. L., assignor.)						
Baldwin, S. W., Yonkers, N. Y. Coupling for vehicles	210,743	Dec. 10	300	107	14	883
Ball, R. E., Jamaica, N. Y. Making artificial leather, &c	210,655	Dec. 10	300	.....	14	871
Barnett, R. W. (See Spalding, O. D., assignor.)						
Bartlett, J. H., Woodland, assignor of one-half interest to J. Bateman, Oakville, Cal. Spark-extinguisher	210,656	Dec. 10	301	82	14	871
Bateman, J. (See Bartlett, J. H., assignor.)						
Bates, F. G. (See Burwell and Bates.)						
Beach, F. A., assignor of one-half interest to G. H. Van Pelt, Chicago, Ill. Last	210,744	Dec. 10	392	107	14	883
Beard, J. R., *et al.* (See Aldred, T., assignor.)						
Beede, C. O., *et al.* (See Tyler, G. L., assignor.)						
Beermann, C. (See Davis and Beermann.)						
Bell, W. T., New York, N. Y., and J. Goldsack, Jr., Jersey City, N. J.; said Goldsack assignor to said Bell. Centrifugal machine	210,657	Dec. 10	302	82, 83	14	871
Berchtold, F., Cleveland, Ohio. Manufacture of steel	210,745	Dec. 10	393	.....	14	883
Bill, E. L. (See Ewing and Bill.)						
Boesen, J. P., assignor to P. Boesen, Hoboken, N. J. Clothes-line fastener	210,658	Dec. 10	303	83	14	872
Boesen, P. (See Boesen, J. P., assignor.)						
Booth, R. J., assignor of one-third interest to W. C. Pearce, Des Arc, Ark. Gate-fastener	210,659	Dec. 10	304	83	14	872
Booth, R. J., assignor of one-third interest to W. C. Pearce, Des Arc, Ark. Gate	210,660	Dec. 10	305	83	14	872
Bowles, J., Washington, D. C., and A. P. Eastlake, Philadelphia, Pa. Revenue-stamp	210,661	Dec. 10	305	84	14	872
Boyle, J. (See Macy, W. H., assignor.)						
Boyle, J., New York, N. Y. Reversible wagon-cover	210,662	Dec. 10	309	64	14	872
Brand, P., and E. J. King, Jacksonville, Ill. Gas-light extinguisher	210,663	Dec. 10	309	84	14	872
Breidig, D. E., Brooklyn, N. Y. Disinfecting-paint	210,664	Dec. 10	310	.....	14	873
Brewster, W. S., Chicago, Ill. Attaching seals to cars	210,746	Dec. 10	393	107	14	883
Briggs, J., Peterborough, N. H. Piano-stool	210,593	Dec. 10	233	63	14	863
Bronson, L., assignor of one-half interest to Pitts Agricultural Works, Buffalo, N. Y. Thrashing-machine	210,747	Dec. 10	394	107, 108	14	883
Brown, F. B., Boston, Mass. Clasp	210,665	Dec. 10	311	85	14	873
Brown, F. B., Boston, Mass. Stocking-supporter	210,666	Dec. 10	312	85	14	873
Brown, W. J., Jr., Philadelphia, Pa. Device for holding metallic staples	210,748	Dec. 10	396	108	14	883
Bugbee, G. W. (See Doane and Bugbee.)						
Burch, E. K. (See French, A. F., assignor.)						
Burch, W. H., and J. E. Curtiss, Canandaigua, N. Y. Slipper	210,594	Dec. 10	234	64	14	863
Burhans, A. H., Burlington, Iowa. Advertising merchandise-car	210,595	Dec. 10	234	64	14	863
Burnham, E. L., Yonkers, N. Y. Fire-escape	210,596	Dec. 10	235	64	14	863
Burpee, M., Upper Sheffield, Canada. Car-coupling	210,597	Dec. 10	236	64	14	864
Burtnett, D. H. (See Sloane, W. M., assignor.)						
Burwell, C. E., Miller's Falls, Mass., and F. G. Bates, Philadelphia, Pa. Friction-clutch. (Reissue)	8,518	Dec. 10	482	136	14	896
Byers, C. C. (See Byers, J. F., assignor.)						
Byers, J. F., Ravenna, Ohio, assignor of one-half interest to C. C. Byers, Meadville, Pa. Oatmeal-machine	210,667	Dec. 10	312	85	14	873
Byrne, J., assignor to himself, J. McGrath, and D. Madden, Boston, Mass. Valve for barrels, kegs, &c	210,668	Dec. 10	313	85	14	873
Castleden, G., Canterbury, England. Tobacco-pipe	210,598	Dec. 10	237	65	14	864
Celluloid Manufacturing Company. (See Hyatt, J. W., assignor.)						
Celluloid Manufacturing Company. (See Hyatt and Jarvis, assignors.)						
Chalender, G., Aurora, Ill. Center-bearing for locomotive-trucks	210,749	Dec. 10	396	108	14	883
Chamberlain, E. H., *et al.* (See Duffie, J. S., assignor.)						
Chapman, J. L., assignor of one-half interest to J. Roberts, Philadelphia, Pa. Gas-regulator	210,750	Dec. 10	398	108	14	883
Chaumont, J., Woodhaven, N. Y., assignor to Lalance & Grosjean Manufacturing Company. Manufacture of sheet-metal vessels	210,751	Dec. 10	399	109	14	884
Clark, B. S. (See Conklin, S., assignor.)						
Clarke, T. W., *et al.* (See McDonald, J. W., assignor.)						
Clements, C. J., Brooklyn, N. Y. Bed-bottom	210,752	Dec. 10	400	109	14	884

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Coates, W. B., Philadelphia, Pa. Crank-handle	210,669	Dec. 10	314	86	14	873
Coe, C. E., Elmwood, Ill. Corn-planter	210,753	Dec. 10	401	109	14	884
Colvin, S., and H. A. Remington, River Point, R. I. Loom	210,670	Dec. 10	315	86	14	873
Congdon, I. H., Omaha, Nebr. Car-wheel	210,671	Dec. 10	317	87	14	874
Conklin, S., Kirkwood, N. Y., assignor of one-half interest to B. S. Clark. Truss-bridge	210,754	Dec. 10	402	110	14	884
Connor, J., Jersey City, N. J. Lock-work attachment for clocks	210,755	Dec. 10	403	110	14	884
Cornell, J. M., New York, N. Y. Lamp-black apparatus	210,672	Dec. 10	317	87	14	874
Cowell, J. J. (See Locke, J. C., assignor.) (Reissue.)						
Cowell, J. J. (See Semple, E., assignor.) (Reissue.)						
Craighead, H. (See Nahe, H., assignor.)						
Crowell, H., West Sandwich, Mass. Cranberry-rake	210,599	Dec. 10	238	65	14	864
Crowell, H. C. (See Southard, Crowell, and Hallock.)						
Cryne, G. S., assignor of one-half interest to B. F. Moore, Fond du Lac, Wis. End-gate for wagons	210,756	Dec. 10	404	110	14	884
Cunliff, W., Providence, R. I. Stove-door knob	210,673	Dec. 10	320	87	14	874
Cunningham, C. W., San Francisco, Cal. Street-sweeper	210,674	Dec. 10	321	87	14	874
Curtiss, J. E. (See Burch and Curtiss.)						
Davis, I. S., Ypsilanti, Mich. Spring-hinge	210,758	Dec. 10	405	111	14	884
Davis, J., and C. Beermann, Atlanta, Ga. Fence	210,757	Dec. 10	404	111	14	884
Debacher, R., assignor to Schimper Brothers, New York, N. Y. Pocket-book frame	210,759	Dec. 10	405	111	14	885
Deeble, J., assignor of one-half interest to J. B. Savage, Southington, Conn. Vehicle fifth-wheel	210,675	Dec. 10	322	88	14	874
Dell, J. C., Philadelphia, Pa. Coffee-mill	210,676	Dec. 10	322	88	14	874
Demarest, J., New York, N. Y. Water-closet	210,677	Dec. 10	324	88	14	874
Dendy, J., *et al.* (See Aldred, T., assignor.)						
Derrig, F. J., Akron, Ohio. Dash-rail for vehicles	210,600	Dec. 10	238	65	14	864
Dick, C. J. A. (See Freudenberg, F. B., assignor.)						
Dickinson, W., St. Cloud, Minn. Motor	210,760	Dec. 10	406	111, 112	14	885
Doane, W. H., and G. W. Bugbee, assignors to J. A. Fay & Co., Cincinnati, Ohio. Universal wood-worker	210,761	Dec. 10	407	112, 113	14	885
Doane, W. H., and G. W. Bugbee, assignors to J. A. Fay & Co., Cincinnati, Ohio. Universal wood-worker	210,762	Dec. 10	409	113, 114	14	885
Doane, W. H., and G. W. Bugbee, assignors to J. A. Fay & Co., Cincinnati, Ohio. Universal wood-worker	210,763	Dec. 10	412	114	14	886
Donovan, J. T., Waco, Tex. Cotton-condenser	210,678	Dec. 10	324	88	14	874
Dorsey, O., Washington, D. C. Door-holding device	210,764	Dec. 10	414	115	14	886
Dougherty, J. (See King and Dougherty.)						
Douty, W. H., Shamokin, Pa. Holder for wrapping-paper	210,679	Dec. 10	325	89	14	875
Duffie, J. S., assignor of one-half interest to E. H. Chamberlain, Little Rock, Ark., and M. A. Wallace, Jackson, Mo. Office-indicator	210,765	Dec. 10	415	115	14	886
Duffy, T., Pittsburg, Pa. Check and safety valve	210,766	Dec. 10	416	115	14	886
Dutton, R. (See Torrquist, A., assignor.)						
Eastlake, A. P. (See Bowles and Eastlake.)						
Eaton, Cole & Burnham Company. (See Lay, O. B., assignor.)						
Eddy, D., Sidney, Ill., assignor to J. Whitcomb. Feather-renovator	210,768	Dec. 10	417	116	14	887
Edison, T. A., Menlo Park, N. J. Vocal engine	210,767	Dec. 10	416	115	14	886
Edwards, D., New York, N. Y. Sugar-mixing apparatus	210,769	Dec. 10	418	116	14	887
Eickemeyer, R., Yonkers, N. Y. Pinning-out stretcher for hat-bodies	210,770	Dec. 10	419	116	14	887
Eickemeyer, R., Yonkers, N. Y. Elastic hat-block	210,771	Dec. 10	420	116	14	887
Elliot, W. H., New York, N. Y. Traveling-crane	210,601	Dec. 10	239	65, 66	14	864
Elliott, G. L., New York, N. Y. Paddle-wheel	210,680	Dec. 10	326	89	14	875
Evans & Son, S. W. (See Smith, O. M., assignor.)						
Ewing, J. H., and E. L. Bill, Wheeling, W. Va. Lantern and lamp	210,602	Dec. 10	242	66, 67	14	864
Fay & Co., J. A. (See Doane and Bugbee, assignors.)						
Folsom, G. F., Boston Highlands, Mass. Railway-track tie and support	210,681	Dec. 10	327	89	14	875
Forbes, W., Plainwell, Mich. Windmill	210,772	Dec. 10	421	117	14	887
Fowler, J. F., Alliance, Ohio. Dash-rail fastener	210,773	Dec. 10	422	117	14	887
Frank, J., New York, N. Y. Hame-fastener	210,603	Dec. 10	245	67	14	865
French, A. F., assignor to himself and E. K. Burch, Denison, Iowa. Harrow	210,682	Dec. 10	328	89	14	875
Freudenberg, F. B., Laar, near Ruhrort, Germany, assignor to C. J. A. Dick, Philadelphia, Pa. Fastening rails to metallic sleepers	210,774	Dec. 10	423	117	14	887
Galloway, T., and J. Larsen, Oshawa, Ontario, Canada. Combined broadcast-seeder, cultivator, and grain-drill	210,683	Dec. 10	329	90	14	875
Goge, S., New York, N. Y. Glove	210,775	Dec. 10	424	118	14	887
Goldsack, J., Jr. (See Bell and Goldsack.)						
Goodrich, C. B., *et al.* (See Goodrich, J., assignor.)						
Goodrich, J., Henry, assignor of one-fourth interest to J. B. Waller, Cook county, Ill. Nut and tap wrench	210,684	Dec. 10	330	90	14	875
Goodrich, J., assignor of part interest to J. B. Waller and C. B. Goodrich, Henry, and W. R. Goodrich, Kewanee, Ill. Endless-chain propeller	210,685	Dec. 10	331	90	14	875
Goodrich, W. R., *et al.* (See Goodrich, J., assignor.)						
Gray, E., Chicago, Ill. Speaking-telephone	210,776	Dec. 10	424	118	14	888
Griffin, H. E., Olympia, Washington Ter. Hinge	210,686	Dec. 10	332	91	14	875
Hale, H. S. Philadelphia, Pa. Wardrobe-bedstead	210,777	Dec. 10	425	118	14	888
Hale & Kilburn Manufacturing Company. (See Howson, H., assignor.)						
Hall, J. M., Larissa, Tex. Cotton and corn planter	210,604	Dec. 10	246	67	14	865
Hallock, J. K. (See Southard, Crowell, and Hallock.)						
Hamill, W. J., St. Catherine's, Ontario, Canada. Trotting-sulky	210,687	Dec. 10	333	91	14	876
Harding, E. S., Baltimore, Md., assignor to J. N. and J. Hibner, Hamilton, Ohio. Plaiting-machine	210,605	Dec. 10	246	67	14	865
Harris, O. C., Newport, N. Y. Cheese-cloth cutter	210,778	Dec. 10	427	119	14	888
Hatfield, J. T., Hoboken, N. J. Folding and extension bedstead	210,606	Dec. 10	247	68	14	865
Haviland, T., New York, N. Y. Case or box for holding cups and saucers	210,688	Dec. 10	333	91	14	876
Haviland, T., New York, N. Y. Show-box	210,689	Dec. 10	334	91	14	876
Hawke, F., London, England. Preparing paper to take copies	210,690	Dec. 10	335	.....	14	876
Hawkes, E., San Diego, Cal. Pump-valve	210,691	Dec. 10	335	92	14	876
Heafer, N. B., Bloomington, Ill. Brick and tile kiln	210,692	Dec. 10	336	92	14	876
Herrburger, J. (See Scwander and Herrburger.)						
Hibner, J., *et al.* (See Harding, E. S., assignor.)						
Hibner, J. N., *et al.* (See Harding, E. S., assignor.)						
Hill, R. H., New Haven, Conn. Safety attachment for elevators	210,693	Dec. 10	337	92	14	876
Hill, W. S. (See Lane and Hill.)						
Hine, M., assignor to Union Nut Company, Unionville, Conn. Die for forging carriage-clips	210,694	Dec. 10	338	92	14	876
Hopkins, J. H., Reynoldsville, Pa. Scroll-sawing machine	210,607	Dec. 10	248	68	14	865
Howson, H., assignor to Hale & Kilburn Manufacturing Company, Philadelphia, Pa. Spring for tilting-chairs	210,779	Dec. 10	428	119	14	888
Hoyt, F. M., Haverhill, Mass. Shoe	210,695	Dec. 10	339	93	14	876

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hubbard, J. F. (See Potter and Hubbard.)						
Humphrey, W. W., Boston, Mass. Curved railway-rail	210,696	Dec. 10	339	93	14	877
Hunt, C. W., West New Brighton, N. Y. Universal joint for hoisting-blocks	210,608	Dec. 10	249	68	14	865
Huntington, F. A., San Francisco, Cal. Ore-washer	210,609	Dec. 10	249	68	14	865
Huntington, F. A., San Francisco, Cal. Ore-stamp	210,610	Dec. 10	250	69	14	865
Hyatt, J. W., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N.Y. Apparatus and process for the manufacture of nitro-cellulose	210,611	Dec. 10	251	69	14	866
Hyatt, J. W., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N.Y. Piano-key	210,780	Dec. 10	428	119	14	888
Hyatt, J. W., and J. G. Jarvis, Newark, N. J., assignors to Celluloid Manufacturing Company, New York, N. Y. Apparatus for washing paper-pulp	210,612	Dec. 10	255	70	14	866
Hyndman, W. G., Cincinnati, Ohio. Sheet-metal roofing	210,613	Dec. 10	256	70	14	866
Iden, H., New York, N. Y. Drop-light	210,781	Dec. 10	429	119	14	888
Jarecki Manufacturing Company, (limited.) (See Potter, J. B., assignor.)						
Jarvis, J. G. (See Hyatt and Jarvis.)						
Jenks, S. A. (See Stearns, H. A., assignor.)						
Johnson, A. A., assignor of one-half interest to H. D. Washburn, West Union, Iowa. Book-stitching machine	210,782	Dec. 10	430	120	14	888
Jones, J. W. (See Stewart and Jones.)						
Jones, N., Syracuse, N. Y. Car-axle	210,783	Dec. 10	431	120	14	889
Kaiser, F. (See Squires and Kaiser.)						
King, A. R., and J. Dougherty, Brooklyn, N. Y. Machine for forming screw-threads in sheet metal	210,784	Dec. 10	432	120	14	889
King, E. J. (See Brand and King.)						
King, S. D., West Pittston, Pa. Vehicle-spring	210,785	Dec. 10	434	121	14	889
Knight, T. G., Brooklyn, N. Y. Urinal-safe for water-closets	210,786	Dec. 10	435	121	14	889
Knox, A., Osceola, Iowa. Feed-cooking apparatus	210,614	Dec. 10	257	70	14	866
Krick, D. S., and N. Raichard, Erie, Pa. Car-coupling	210,615	Dec. 10	258	70	14	866
Lake, J. C., Camden, N. J. Adjustable suspension-bracket	210,697	Dec. 10	340	93	14	877
Lalance & Grosjean Manufacturing Company. (See Chaumont, J., assignor.)						
Lamb, C., assignor to C. Lamb & Sons, Clinton, Iowa. Hanging gang-saws	210,787	Dec. 10	435	121	14	889
Lamb & Sons, C. (See Lamb, C., assignor.)						
Lane, Z. M., Rockland, and W. S. Hill, Boston, Mass. Time-registering clock	210,788	Dec. 10	436	121, 122	14	889
Larsen, J. (See Galloway and Larsen.)						
Lauth, B. C., Pittsburg, Pa. Manufacture of railway-rails	210,616	Dec. 10	259	71	14	866
Lay, O. B., deceased, W. L. Lay, Oil City, Pa., administrator, and assignor to Eaton, Cole & Burnham Company. Pipe-tongs	210,698	Dec. 10	342	93, 94	14	877
Lay, W. L., administrator. (See Lay, O. B.)						
Lehmann, W., Menominee, Mich. Fifth-wheel coupling	210,789	Dec. 10	438	122	14	889
Leonard, L., El Dorado, Kans. Candlestick	210,790	Dec. 10	438	122	14	890
Letord, J. S., Nevada, Mo. Combined fan and caster	210,791	Dec. 10	439	122	14	890
Lewis, W. J., Leominster, Mass., assignor to Vulcanite Manufacturing Company. Manufacture of buttons, &c., from vegetable ivory, &c	210,617	Dec. 10	260	.....	14	866
Lindsay, J. P., New York, N. Y. Securing loops and studs to suspender-ends, &c	210,792	Dec. 10	440	123	14	890
Locke, J. C., Rochester, N. Y., assignor to J. J. Cowell, Newark, N. J. Trunk. (Reissue)	8,520	Dec. 10	484	136	14	896
Luckenbach, F. A., New York, N. Y. Apparatus and process for drying cereals	210,793	Dec. 10	440	123	14	890
Lusher, J., La Porte, Ind. Lawn-mower	210,794	Dec. 10	443	123, 124	14	890
Mackey, D. M. (See Ayres, W. D., assignor.)						
Macy, W. H., assignor to J. Boyle, New York, N. Y. Awning-fastening	210,699	Dec. 10	343	94	14	877
Madden, D., *et al.* (See Byrne, J., assignor.)						
Magniez, L., Paris, France. Shoe or garment fastening	210,700	Dec. 10	343	94	14	877
Man, A. (See Sawyer and Man.)						
Marshall, J. W., Cazenovia, N. Y. Wheelbarrow	210,701	Dec. 10	344	94	14	877
Martin, J., Cairo, Ill. Boot-jack	210,795	Dec. 10	444	124	14	890
Mason, J., Eynsham Hall, near Witney, England. Treating burnt pyrites	210,619	Dec. 10	261	.....	14	867
Matteson, S. C., Campbellsport, Wis. Harrow	210,702	Dec. 10	345	95	14	877
Maw, E., Liverpool, England. Heating and cooling apparatus	210,796	Dec. 10	444	124, 125	14	891
McDonald, J. W., Woburn, assignor of one-half interest to T. W. Clarke, Boston, and F. F. Raymond, 2d, Newton, Mass. Machine for unhairing and scouring hides and skins	210,797	Dec. 10	446	126	14	891
McGrath, J., *et al.* (See Byrne, J., assignor.)						
McKay, F. C. D. Paterson, N. J. Station-indicator	210,798	Dec. 10	448	126	14	891
Melvin, P. H., Franklin, Pa. Rod-adjuster for oil-wells	210,618	Dec. 10	261	71	14	866
Miller, E., Fredericton, New Brunswick, Canada. Shifting-rail for vehicles	210,620	Dec. 10	262	71	14	867
Miller, J. F., Decatur, Ill. Cover for coin-trays	210,621	Dec. 10	262	71	14	867
Millspaugh, W., Middletown, N. Y. File	210,799	Dec. 10	449	126	14	891
Minnick, L. D., Rockford, Ill. Mowing-machine	210,622	Dec. 10	263	72	14	867
Moore, B. F. (See Cryne, G. S., assignor.)						
Morrill, G. P., Canterbury, N. H. Ax-handle attachment	210,703	Dec. 10	346	95	14	877
Mott, T. H., New York, N. Y. Calendar-clock	210,704	Dec. 10	347	95	14	877
Murphy, W. H., Syracuse, N. Y. Car-axle	210,623	Dec. 10	266	72	14	867
Nahe, H., Brooklyn, assignor to H. Craighead, New York, N. Y. Lantern	210,624	Dec. 10	267	72	14	867
National Rubber Company. (See Simon, G. F., assignor.)						
Nebinger, G. R., Philadelphia, Pa. Churn	210,800	Dec. 10	450	127	14	891
Neff, J. R., Philadelphia, Pa. Rail-chair	210,705	Dec. 10	348	95	14	877
Neill, J., St. Joseph, Mo. Fluting-iron	210,801	Dec. 10	451	127	14	891
Nelson, W. C., Vallejo, Cal. Pump	210,802	Dec. 10	451	127	14	891
Orwig, A. M. (See Platt and Orwig.)						
Osborne, A. P., assignor to O. Osborne, Trumansburg, N. Y. Lawn-mower	210,625	Dec. 10	268	73	14	867
Osborne, O. (See Osborne, A. P., assignor.)						
Palmer, A. C. (See Thaxton, P. B., assignor.)						
Palmer, I. H., Lodi, Wis. Windmill-motor	210,803	Dec. 10	452	127	14	891
Pearce, W. C. (See Booth, R. J., assignor.)						
Penney, J., Stockport, Great Britain. Machine for tapping mains	210,706	Dec. 10	349	96	14	878
Perry, E. L., Paterson, N. J. Breech-loading fire-arm	210,626	Dec. 10	270	73	14	868
Phillips, W. L., Brooklyn, N. Y. Heating-drum	210,627	Dec. 10	271	73	14	868
Piat, A., Paris, France. Reversible melting-furnace	210,707	Dec. 10	351	96	14	878
Piccioli, C. A., Montgomery, Ala. Convertible car seat and couch	210,628	Dec. 10	272	74	14	868
Pitts Agricultural Works. (See Bronson, L., assignor.)						
Platt, T. W., and A. M. Orwig, Windfall, Ind. Lifting-jack	210,708	Dec. 10	352	96	14	878
Plumb, F. J. (See Roberts, J. J., assignor.)						
Pollard, J. M., New Orleans, La., assignor to M. Schwartz. Wire bale-tie	210,629	Dec. 10	273	74	14	868
Potter, C., Jr., and J. F. Hubbard, Plainfield, N. J. Double rack for reciprocating motions	210,709	Dec. 10	353	97	14	878
Potter, J. B., Knox P. O., assignor to Jarecki Manufacturing Company, (limited,) Erie, Pa. Piston for oil-well pumps	210,710	Dec. 10	354	97	14	878
Raichard, N. (See Krick and Raichard.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Raymond, F. F., 2d, *et al.* (See McDonald, J. W., assignor.)						
Redway, A. J., Avondale, assignor to Redway & Burton, Cincinnati, Ohio. Dumping-grate for stoves and furnaces	210,804	Dec. 10	453	128	14	892
Redway & Burton. (See Redway, A. J., assignor.)						
Remington, H. A. (See Colvin and Remington.)						
Reynolds, L. D., assignor to Reynolds & Reynolds, Dayton, Ohio, Book-cover protector	210,711	Dec. 10	355	97	14	878
Reynolds & Reynolds. (See Reynolds, L. D., assignor.)						
Richard, J. E., New York, N. Y. Ladder	210,630	Dec. 10	273	74	14	868
Roberts, J. (See Chapman, J. L., assignor.)						
Roberts, J. J., assignor to F. J. Plumb, Geddes, N. Y. Liquid-measure	210,631	Dec. 10	275	75	14	868
Roberts, R., St. Joseph, Mo. Cigar-machine	210,632	Dec. 10	276	75	14	869
Robertson, J. W., Friend, Nebr. Fly-wheel	210,633	Dec. 10	277	75	14	869
Rockefellow, A. G., Ashland, Oreg. Gate. (Reissue)	8,515	Dec. 10	478	135	14	895
Rodgers, W. W., Hartland, Vt. Fruit-picker	210,634	Dec. 10	278	76	14	869
Rogers, S., Kenton, Ohio. Iron gate	210,805	Dec. 10	455	128	14	892
Root, S. E., Bristol, Conn. Clock-dial	210,806	Dec. 10	456	128	14	892
Rowell, J. R., Hill, N. H. Lens for spectacles	210,712	Dec. 10	356	98	14	878
Saladee, C. W., Washington, D. C. Road-wagon	210,635	Dec. 10	279	76	14	869
Saladee, C. W., Washington, D. C. Road-wagon	210,636	Dec. 10	280	76	14	869
Saladee, C. W., Washington, D. C. Fifth-wheel coupling-yoke for wagons	210,637	Dec. 10	281	77	14	869
Sargent, J., Rochester, N. Y. Lock	210,807	Dec. 10	456	128	14	892
Savage, J. B. (See Deeble, J., assignor.)						
Sawyer, H., Chelsea, Mass. Bluing-package	210,808	Dec. 10	457	129	14	892
Sawyer, W. E., New York, and A. Man, Brooklyn, N. Y. Electric lamp	210,809	Dec. 10	459	129	14	892
Schimper Brothers. (See Debacher, R., assignor.)						
Schollian, G., Dubuque, Iowa. Overalls	210,713	Dec. 10	357	98	14	878
Schrenkeisen, H., *et al.* (See Travis, J. H., assignor.)						
Schrenkeisen, M., *et al.* (See Travis, J. H., assignor.)						
Schwander, J., and J. Herrburger, Paris, France. Piano-action	210,638	Dec. 10	282	77	14	869
Schwartz, M. (See Pollard, J. M., assignor.)						
Selby, A., Baltimore, Md. Stocking	210,810	Dec. 10	461	129	14	892
Semple, E., Chicago, Ill., assignor to J. J. Cowell, Newark, N. J. Trunk. (Reissue)	8,521	Dec. 10	486	136	14	896
Serrell, E. W., Castleton, N. Y. Armor for vessels	210,811	Dec. 10	461	129	14	892
Seymour Manufacturing Company. (See Simpson, J., assignor.)						
Shaw, G. C., Washington, D. C. Horseshoe and pad	210,812	Dec. 10	462	130	14	892
Sheeder, J. F., Kimberton, Pa. Manufacture of paper-board	210,714	Dec. 10	357	98	14	878
Shelton, E., Alliance, Ohio. Railway-crossing	210,639	Dec. 10	282	77, 78	14	869
Shoup, S. C., Carey, Ohio. Farm-gate	210,640	Dec. 10	283	78	14	869
Simon, G. F., Bristol, R. I., assignor to National Rubber Company. Loom-temple for weaving tubular fabrics	210,715	Dec. 10	359	99	14	879
Simpson, J., Cleveland, Ohio, assignor to Seymour Manufacturing Company, Seymour, Ind. Scythe-snath fastener	210,716	Dec. 10	361	99	14	879
Sloane, W. M., assignor to D. H. Burtnett, New York, N. Y. Carburetor for cars	210,717	Dec. 10	362	99	14	879
Smith, H. T., and D. W. Vowles, Washington, D. C. Seal-lock	210,641	Dec. 10	284	78	14	870
Smith, H. W., West Newton, Mass. Reed-organ. (Reissue)	8,516	Dec. 10	480	135	14	895
Smith, J. M., and H. W. C. Thomas, Springfield, Ohio. Grain-drill	210,719	Dec. 10	365	100	14	879
Smith, M., Waxahachie, Tex. Cultivator	210,718	Dec. 10	363	100	14	879
Smith, O. M., assignor to S. W. Evans & Son, Frankford, Pa. Umbrella-runner	210,813	Dec. 10	463	130	14	893
Southard, G. E. (See Southard, Crowell, and Hallock, assignors.)						
Southard, H. S., North East, and H. C. Crowell and J. K. Hallock, Erie, assignors of one-half interest to G. E. Southard, North East, Pa. Joint for oil-well tools	210,720	Dec. 10	367	100	14	880
Spalding, O. D., assignor of one-half interest to R. W. Barnett, Mitchell, Iowa. Car-axle	210,814	Dec. 10	464	130	14	893
Squier, G. L. (See Stevens, H. B., assignor.)						
Squires, R. S., and F. Kaiser, Kansas City, Mo. Baling-press	210,721	Dec. 10	368	101	14	880
Stallard, D., Jr., New Liberty, Ky. Barrel-hoop stretcher	210,815	Dec. 10	465	130	14	893
Stearns, H. A., assignor to S. A. Jenks, Pawtucket, R. I. Railway safety-gate	210,642	Dec. 10	286	78, 79	14	870
Sternberg, E. G., Depauville, N. Y. Ventilator	210,722	Dec. 10	369	101	14	880
Stevens, G. D., East Orange, N. J. Chatelain	210,816	Dec. 10	465	131	14	893
Stevens, H. B., assignor to G. L. Squier, Buffalo, N. Y. Coffee-separator	210,817	Dec. 10	466	131	14	893
Steward, J. F., Plano, Ill. Grain-binder	210,723	Dec. 10	370	101	14	880
Stewart, J., and J. W. Jones, Schooley's Station, Ohio. Corn-harvester	210,818	Dec. 10	468	131 / 132	14	893
Stewart, S., Landisburg, Pa. Manufacture of fly-nets for horses	210,819	Dec. 10	469	132	14	893
Stock, H. T., Toledo, Ohio. Supporting-frame for excavating-machines	210,724	Dec. 10	371	101	14	880
Storm, E. (See Whitney, W. F., assignor.) (Reissue.)						
Sweet, A. L., assignor of one-half interest to Bacon Arms Company, Norwich, Conn. Revolving fire-arm	210,725	Dec. 10	372	102	14	880
Tabor, H., Corning, N. Y. Indicator for steam-engines, &c	210,643	Dec. 10	287	79	14	870
Tait, J. G., Stockton, Cal. Car-truck	210,644	Dec. 10	289	79	14	870
Talcott, L., Minetto, N. Y. Wagon-rack	210,820	Dec. 10	469	132	14	894
Thaxton, P. B., Jerseyville, assignor to himself and A. C. Palmer, Jacksonville, Ill. Road-scraper	210,726	Dec. 10	373	102	14	880
Thomas, H. W. C. (See Smith and Thomas.)						
Thomas, W., Jersey City, N. J. Vent for barrels and kegs	210,821	Dec. 10	470	133	14	894
Thomas, W., Geneseo, Ill. Folding table	210,822	Dec. 10	472	133	14	894
Thompson, E. C., Williamsburg, N. Y. Photographic studio	210,645	Dec. 10	290	80	14	870
Tornquist, A., New York, assignor to R. Dutton, Yonkers, N. Y. Pitman-connection	210,646	Dec. 10	291	80	14	870
Tothammer, H. P., San Francisco, Cal. Loading and unloading ships	210,647	Dec. 10	292	80	14	870
Travis, J. H., New York, N. Y., assignor to M. and H. Schrenkeisen. Covering for chairs, &c. (Reissue Design)	8,519	Dec. 10	484	.....	14	896
Turner, J. M., Bethania, N. C. Pea and bean huller	210,727	Dec. 10	374	102	14	880
Turner, L., Cedar Rapids P. O., Iowa. Fence-post	210,648	Dec. 10	293	80	14	870
Tyler, G. L., assignor of two-thirds interest to T. W. Tyler and C. O. Beede, Lynn, Mass. Machine for splitting and beveling leather	210,823	Dec. 10	473	133	14	894
Tyler, T. W., *et al.* (See Tyler, G. L., assignor.)						
Union Hardware Company. (See Weston, E. F., assignor.)						
Union Nut Company. (See Hine, M., assignor.)						
Urie, J., Sr., Evansville, Ind. Plow	210,728	Dec. 10	375	102	14	880
Van Benschoten, H. E., Hillsdale, N. Y. Boot	210,824	Dec. 10	474	133	14	894
Van Dorn, J. H., Cleveland, Ohio. Iron fence	210,825	Dec. 10	475	134	14	894
Van Dorn, J. H., Cleveland, Ohio. Iron fence	210,826	Dec. 10	475	134	14	894
Van Pelt, G. H. (See Beach, F. A., assignor.)						
Vowles, D. W. (See Smith and Vowles.)						
Vulcanite Manufacturing Company. (See Lewis, W. J., assignor.)						
Wackernie, A. E., Paris, France. Movable fire-bar for furnaces, &c	210,827	Dec. 10	475	134	14	895
Walker, R. L., Boston, Mass. Furnace and damper-regulator	210,649	Dec. 10	295	81	14	870
Wallace, M. A., *et al.* (See Duffie, J. S., assignor.)						
Waller, J. B. (See Goodrich, J., assignor.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Washburn, H. D. (See Johnson, A. A., assignor.)						
Weichhart, J., San Francisco, Cal. Lawn-rake	210,650	Dec. 10	296	81	14	871
Welden, S. S., Rockford, Ill. Cream-raising apparatus	210,729	Dec. 10	375	103	14	881
Westgate, J. D., Lynn, Mass. Apparatus for trimming the sole-edges of boots and shoes	210,829	Dec. 10	477	135	14	894
Weston, E. F., assignor to Union Hardware Company, Wolcottville, Conn. Skate	210,730	Dec. 10	376	103	14	881
Weyer, C. R., Lyons, France. Annealing glass	210,731	Dec. 10	377	.....	14	881
Whitcomb, J. (See Eddy, D., assignor.)						
White, S. J., Belleville, Ontario, Canada. Whiffletree	210,651	Dec. 10	297	81	14	871
Whitney, W. F., assignor of one-half interest to E. Storm, Poughkeepsie, N. Y. Vehicle-spring. (Reissue)	8,517	Dec. 10	481	136	14	896
Whitnum, S., Green Point, N. Y. Fire-shovel	210,732	Dec. 10	378	103	14	881
Whittier, C. K., Boston, Mass. Meat-tenderer	210,652	Dec. 10	298	81	14	871
Wilson, G., Brooklyn, N. Y. Adjustable chair	210,733	Dec. 10	378	103	14	881
Wiser, D., Plymouth, Ind. Spark-arrester	210,828	Dec. 10	476	134	14	895
Wood, C., Middlesbrough, England. Permanent way of railways	210,734	Dec. 10	379	104	14	881
Wood, W. D., Pittsburg, Pa. Manufacture of cleaned and planished iron	210,735	Dec. 10	380	.....	14	881
Woodford, C. W. (See Allen, N. R., assignor.)						

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 10th DAY OF DECEMBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Advertising merchandise-car	A. H. Burhans	210,595	Dec. 10	234	64	14	883
Awning-fastening	W. H. Macy	210,699	Dec. 10	343	94	14	877
Ax-handle attachment	G. P. Morrill	210,703	Dec. 10	346	95	14	877
Axle. Car-	N. Jones	210,783	Dec. 10	431	120	14	889
Axle. Car-	W. H. Murphy	210,623	Dec. 10	266	72	14	867
Axle. Car-	O. D. Spalding	210,814	Dec. 10	464	130	14	893
Axle-trees. Spindle attachment for vehicle	R. H. Arnold	210,742	Dec. 10	389	106	14	882
Bale-tie. Wire	J. M. Pollard	210,629	Dec. 10	273	74	14	868
Barrel-hoop stretcher	D. Stallard, Jr.	210,815	Dec. 10	465	130	14	893
Barrels and kegs. Vent for	W. Thomas	210,821	Dec. 10	470	133	14	894
Bed-bottom	C. J. Clements	210,752	Dec. 10	400	109	14	884
Bedstead. Folding and extension	J. T. Hatfield	210,606	Dec. 10	247	68	14	865
Bedstead. Wardrobe	H. S. Hale	210,777	Dec. 10	425	118	14	888
Bee-hive	E. Armstrong	210,592	Dec. 10	232	63	14	883
Blind. Window	H. L. Ambler	210,591	Dec. 10	231	62	14	863
Bluing-package	H. Sawyer	210,808	Dec. 10	457	129	14	892
Book-cover protector	L. D. Reynolds	210,711	Dec. 10	355	97	14	878
Book-stitching machine	A. A. Johnson	210,782	Dec. 10	430	120	14	889
Boot	H. E. Van Benschoten	210,824	Dec. 10	474	133	14	894
Boot and shoe sole edges. Apparatus for trimming	J. D. Westgate	210,829	Dec. 10	477	135	14	895
Boot-jack	J. Martin	210,795	Dec. 10	444	124	14	890
Bracket. Adjustable suspension	J. C. Lake	210,697	Dec. 10	340	93	14	877
Brick and tile kiln	N. B. Heafer	210,692	Dec. 10	336	92	14	876
Bridge. Truss	S. Conklin	210,754	Dec. 10	402	110	14	884
Buttons and other articles from vegetable ivory, &c. Manufacture of	W. J. Lewis	210,617	Dec. 10	260	....	14	866
Candlestick	L. Leonard	210,790	Dec. 10	438	122	14	890
Car-coupling	M. Burpee	210,597	Dec. 10	236	64	14	864
Car-coupling	D. S. Krick and N. Raichard	210,615	Dec. 10	258	70	14	866
Car seat and couch. Convertible	C. A. Piccioli	210,628	Dec. 10	272	74	14	868
Cars. Attaching seats to	W. S. Brewster	210,746	Dec. 10	393	107	14	883
Carbureter for cars	W. M. Sloane	210,717	Dec. 10	362	99	14	879
Carriage-clips. Die for forging	M. Hine	210,694	Dec. 10	338	92	14	876
Centrifugal machine	W. T. Bell and J. Goldsack, Jr.	210,657	Dec. 10	302	82, 83	14	871
Cereals. Apparatus and process for drying	F. A. Luckenbach	210,793	Dec. 10	440	123	14	890
Chair. Adjustable	G. Wilson	210,733	Dec. 10	378	103	14	881
Chairs, &c. Covering for	J. H. Travis. (Reissue)	8,519	Dec. 10	484	.....	14	896
Chatelaine	G. D. Stevens	210,816	Dec. 10	465	131	14	893
Cheese-cloth cutter	O. C. Harris	210,778	Dec. 10	427	119	14	888
Churn	G. R. Nebinger	210,800	Dec. 10	450	127	14	891
Cigar-machine	R. Roberts	210,632	Dec. 10	276	75	14	869
Clasp	F. B. Brown	210,665	Dec. 10	311	85	14	873
Clock. Calendar-	T. H. Mott	210,704	Dec. 10	347	95	14	877
Clock-dial	S. E. Root	210,806	Dec. 10	456	128	14	892
Clock. Time-registering	Z. M. Lane and W. S. Hill	210,788	Dec. 10	436	121, 122	14	889
Clocks. Lock-work attachment for	J. Connor	210,755	Dec. 10	403	110	14	884
Clothes-line fastener	J. P. Boesen	210,658	Dec. 10	303	83	14	872
Coffee-mill	J. C. Dell	210,676	Dec. 10	322	88	14	874
Coffee-separator	H. B. Stevens	210,817	Dec. 10	466	131	14	893
Coin-trays. Cover for	J. F. Miller	210,621	Dec. 10	262	71	14	867
Cooking apparatus. Feed-	A. Knox	210,614	Dec. 10	257	70	14	866
Cotton-condenser	J. T. Donovan	210,678	Dec. 10	324	88	14	874
Crane. Traveling-	W. H. Elliot	210,601	Dec. 10	239	65, 66	14	864
Crank-handle	W. B. Coates	210,669	Dec. 10	314	86	14	873
Cream-raising apparatus	S. S. Weldon	210,729	Dec. 10	375	103	14	881
Cultivator	M. Smith	210,718	Dec. 10	363	100	14	879
Cups and saucers. Case or box for holding	T. Haviland	210,688	Dec. 10	333	91	14	876
Dash-rail fastener	J. F. Fowler	210,773	Dec. 10	422	117	14	887
Door-holding device	O. Dorsey	210,764	Dec. 10	414	115	14	886
Draft apparatus. Artificial-	J. B. Andrews	210,740	Dec. 10	388	106	14	882
Drill. Grain-	J. M. Smith and H. W. C. Thomas	210,719	Dec. 10	365	100	14	879
Drop-light	H. Iden	210,781	Dec. 10	429	119	14	888
Drum. Heating-	W. L. Phillips	210,627	Dec. 10	271	73	14	868
Elevators. Safety attachment for	R. H. Hill	210,693	Dec. 10	337	92	14	876
End-gate. Wagon	G. S. Cryne	210,756	Dec. 10	404	110	14	884
Excavating-machines. Supporting-frame for	H. T. Stock	210,724	Dec. 10	371	101	14	880
Fan and caster. Combined	J. S. Letord	210,791	Dec. 10	439	122	14	890
Feather-renovator	D. Eddy	210,768	Dec. 10	417	116	14	887
Fence	J. Davis and C. Beermann	210,757	Dec. 10	404	111	14	884
Fence. Iron	J. H. Van Dorn	210,825	Dec. 10	475	134	14	894

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Fence. Iron	J. H. Van Dorn	210,826	Dec. 10	475	134	14	894
Fence-post	L. Turner	210,648	Dec. 10	293	80	14	870
Fifth-wheel coupling	W. Lehmann	210,789	Dec. 10	438	122	14	889
Fifth-wheel coupling-yoke for wagons	C. W. Saladee	210,637	Dec. 10	281	77	14	869
Fifth-wheel. Vehicle	J. Deeble	210,675	Dec. 10	322	88	14	874
File	W. Millspaugh	210,799	Dec. 10	449	126	14	891
Fire-arm. Breech-loading	E. L. Perry	210,626	Dec. 10	270	73	14	868
Fire-arm. Revolving	A. L. Sweet	210,725	Dec. 10	372	102	14	880
Fire-escape	E. L. Burnham	210,596	Dec. 10	235	64	14	863
Fluting-iron	J. Neill	210,801	Dec. 10	451	127	14	891
Fly-wheel	J. W. Robertson	210,633	Dec. 10	277	75	14	869
Friction-clutch	C. E. Burwell and F. G. Bates. (Reissue.)	8,518	Dec. 10	482	136	14	896
Fruit-picker	W. W. Rodgers	210,634	Dec. 10	278	76	14	869
Furnace and damper regulator	R. L. Walker	210,649	Dec. 10	295	81	14	870
Furnace. Reversible melting-	A. Piat	210,707	Dec. 10	351	96	14	878
Furnaces, &c. Movable fire-bar for	A. E. Wackerule	210,827	Dec. 10	475	134	14	895
Gas-light extinguisher	P. Brand and E. J. King	210,663	Dec. 10	309	84	14	872
Gas-regulator	J. L. Chapman	210,750	Dec. 10	398	108	14	883
Gate	R. J. Booth	210,660	Dec. 10	305	83	14	872
Gate	A. G. Rockfellow. (Reissue)	8,515	Dec. 10	478	135	14	895
Gate. Farm-	S. C. Shoup	210,640	Dec. 10	283	78	14	869
Gate-fastener	R. J. Booth	210,659	Dec. 10	304	83	14	872
Gate. Iron	S. Rogers	210,805	Dec. 10	455	128	14	892
Gate-valve	E. Allt	210,738	Dec. 10	384	105	14	881
Glass. Annealing	C. R. Weyer	210,731	Dec. 10	377	.....	14	881
Glove	S. Goge	210,775	Dec. 10	424	118	14	887
Grain-binder	J. F. Steward	210,723	Dec. 10	370	101	14	880
Hame-fastener	J. Frank	210,603	Dec. 10	245	67	14	865
Harrow	A. F. French	210,682	Dec. 10	328	89	14	875
Harrow	S. C. Matteson	210,702	Dec. 10	345	95	14	877
Harvester. Corn-	J. Stewart and J. W. Jones	210,818	Dec. 10	468	131, 132	14	893
Hat-block. Elastic	R. Eickemeyer	210,771	Dec. 10	420	116	14	887
Hat-bodies. Pinning-out stretcher for	R. Eickemeyer	210,770	Dec. 10	419	116	14	887
Hides and skins. Machine for unhairing and scouring	J. W. McDonald	210,797	Dec. 10	446	126	14	891
Heating and cooling apparatus	E. Maw	210,796	Dec. 10	444	124, 125	14	891
Hinge	H. E. Griffin	210,686	Dec. 10	332	91	14	875
Hinge. Spring-	I. S. Davis	210,758	Dec. 10	405	111	14	884
Hoisting-blocks. Universal joint for	C. W. Hunt	210,608	Dec. 10	249	68	14	865
Horseshoe and pad	G. C. Shaw	210,812	Dec. 10	462	130	14	892
Ice-tongs	N. R. Allen	210,737	Dec. 10	384	105	14	882
Indicator for steam-engines, &c	H. Tabor	210,643	Dec. 10	287	79	14	870
Indicator. Office-	J. S. Duffie	210,765	Dec. 10	415	115	14	886
Indicator. Station-	F. C. D. McKay	210,798	Dec. 10	448	126	14	891
Iron. Manufacture of cleaned and planished	W. D. Wood	210,735	Dec. 10	380	.....	14	881
Knitting-machine needle	G. H. and H. Adams	210,651	Dec. 10	289	82	14	871
Ladder	J. E. Richard	210,630	Dec. 10	273	74	14	868
Lamp-black apparatus	J. M. Cornell	210,672	Dec. 10	317	87	14	874
Lamp. Electric	W. E. Sawyer and A. Man	210,809	Dec. 10	459	129	14	892
Lantern	H. Nahe	210,624	Dec. 10	267	72	14	867
Lantern and lamp	J. H. Ewing and E. L. Bill	210,602	Dec. 10	242	66, 67	14	864
Last	F. A. Beach	210,744	Dec. 10	392	107	14	883
Leather, &c. Making artificial	R. E. Ball	210,655	Dec. 10	300	.....	14	871
Leather splitting and beveling machine	G. L. Tyler	210,823	Dec. 10	473	133	14	894
Lifting-jack	T. W. Platt and A. M. Orwig	210,708	Dec. 10	352	96	14	878
Liquid-measure	J. J. Roberts	210,631	Dec. 10	275	75	14	868
Lock	J. Sargent	210,807	Dec. 10	456	128	14	892
Lock. Seal-	H. T. Smith and D. W. Vowles	210,641	Dec. 10	284	78	14	870
Loom	S. Colvin and H. A. Remington	210,670	Dec. 10	315	86	14	873
Loom for weaving leno, &c	T. Aldred	210,736	Dec. 10	382	104, 105	14	881
Loom-temple for weaving tubular fabrics	G. F. Simon	210,715	Dec. 10	359	99	14	879
Mains. Machine for tapping	J. Penney	210,706	Dec. 10	349	96	14	878
Meat-tenderer	C. K. Whittier	210,652	Dec. 10	298	81	14	871
Motion. Double-rack for reciprocating	C. Potter, Jr., and J. F. Hubbard	210,709	Dec. 10	353	97	14	878
Motor	W. Dickinson	210,760	Dec. 10	406	111, 112	14	885
Mower. Lawn-	J. Lusher	210,794	Dec. 10	443	123, 124	14	890
Mower. Lawn-	A. P. Osborne	210,625	Dec. 10	268	73	14	867
Mowers. Attachment for lawn-	W. D. Ayers	210,654	Dec. 10	300	82	14	871
Mowing-machine	L. D. Minnick	210,822	Dec. 10	263	72	14	867
Nets for horses. Manufacture of tly-	S. Stewart	210,819	Dec. 10	469	132	14	893
Nitro-cellulose. Apparatus and process for the manufacture of	J. W. Hyatt	210,611	Dec. 10	251	69	14	866
Oatmeal-machine	J. F. Byers	210,667	Dec. 10	312	85	14	873
Ore-washer	F. A. Huntington	210,609	Dec. 10	249	68	14	865
Organ. Reed-	H. W. Smith. (Reissue)	8,516	Dec. 10	480	135	14	895
Overalls	G. Schollian	210,713	Dec. 10	357	98	14	878
Paddle-wheel	G. L. Elliott	210,680	Dec. 10	326	89	14	875
Paint. Disinfecting-	D. E. Breinig	210,664	Dec. 10	310	.....	14	873
Paper-board. Manufacture of	J. F. Sheeder	210,714	Dec. 10	357	98	14	878
Paper. Holder for wrapping-	W. H. Dority	210,679	Dec. 10	325	89	14	875
Paper-pulp. Apparatus for washing	J. W. Hyatt and J. G. Jarvis	210,612	Dec. 10	255	70	14	866
Paper to take copies. Preparing	F. Hawke	210,690	Dec. 10	335	.....	14	876
Pea and bean huller	J. M. Turner	210,727	Dec. 10	374	102	14	880
Photographic studio	E. C. Thompson	210,645	Dec. 10	290	80	14	870
Piano-action	J. Schwander and J. Herrburger	210,638	Dec. 10	282	77	14	869
Piano-key	J. W. Hyatt	210,780	Dec. 10	428	119	14	888
Piano-stool	J. Briggs	210,593	Dec. 10	233	63	14	863
Pitman-connection	A. Tornquist	210,646	Dec. 10	291	80	14	870
Plaiting-machine	E. S. Harding	210,605	Dec. 10	246	67	14	865
Planter. Corn-	C. E. Coe	210,753	Dec. 10	401	109	14	884
Planter. Cotton and corn	J. M. Hall	210,604	Dec. 10	246	67	14	865
Plow	J. Urie, Sr.	210,728	Dec. 10	375	102	14	880
Pocket-book frame	R. Debacher	210,759	Dec. 10	405	111	14	885

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Press. Baling	R. S. Squires and F. Kaiser	210,721	Dec. 10	368	101	14	880
Printing press. Plate	W. S. Appleton	210,741	Dec. 10	388	106	14	882
Propeller. Endless-chain	J. Goodrich	210,685	Dec. 10	331	90	14	875
Pump	W. C. Nelson	210,702	Dec. 10	451	127	14	891
Pump-valve	E. Hawkes	210,691	Dec. 10	335	92	14	876
Pumps. Piston for oil-well	J. B. Potter	210,710	Dec. 10	354	97	14	878
Pyrites. Treating burnt	J. Mason	210,619	Dec. 10	261	.....	14	867
Rail-chair	J. R. Neff	210,705	Dec. 10	348	95	14	877
Rails to metallic sleepers. Fastening	F. B. Freudenberg	210,774	Dec. 10	423	117	14	887
Railway-crossing	E. Shelton	210,639	Dec. 10	282	77, 78	14	869
Railway-rail. Curved	W. W. Humphrey	210,696	Dec. 10	339	93	14	877
Railway-rails. Manufacture of	B. C. Lauth	210,616	Dec. 10	259	71	14	866
Railway safety-gate	H. A. Stearns	210,642	Dec. 10	286	78, 79	14	870
Railway-track tie and support	G. F. Folsom	210,681	Dec. 10	327	89	14	875
Railways. Permanent way for	C. Wood	210,734	Dec. 10	379	104	14	881
Rake. Cranberry	H. Crowell	210,599	Dec. 10	238	65	14	864
Rake. Lawn	J. Weichhart	210,650	Dec. 10	296	81	14	871
Roofing. Sheet-metal	W. G. Hyndman	210,613	Dec. 10	256	70	14	866
Sawing machine. Scroll	J. H. Hopkins	210,607	Dec. 10	248	68	14	865
Saws. Hanging gang	C. Lamb	210,787	Dec. 10	435	121	14	889
Scraper. Road	P. B. Thaxton	210,726	Dec. 10	373	102	14	880
Screw-threads in sheet metal. Machine for forming	A. R. King and J. Dougherty	210,784	Dec. 10	432	120	14	889
Scythe-snath fastener	J. Simpson	210,716	Dec. 10	361	99	14	879
Seeder, cultivator, and grain-drill. Combined broadcast	T. Galloway and J. Larsen	210,683	Dec. 10	329	90	14	875
Sheet-metal vessels. Manufacture of	J. Chaumont	210,751	Dec. 10	399	109	14	884
Ships. Loading and unloading	H. P. Tothammer	210,647	Dec. 10	292	80	14	870
Shoe	F. M. Hoyt	210,695	Dec. 10	339	93	14	876
Shoe or garment fastening	L. Magniez	210,700	Dec. 10	343	94	14	877
Shovel. Fire	S. Whitnum	210,732	Dec. 10	378	102	14	881
Show-box	T. Haviland	210,689	Dec. 10	334	91	14	876
Skate	E. F. Weston	210,730	Dec. 10	376	103	14	881
Slipper	W. H. Burch and J. E. Curtiss	210,594	Dec. 10	234	64	14	863
Spark-arrester	D. Wiser	210,828	Dec. 10	476	134	14	895
Spark-extinguisher	J. H. Bartlett	210,656	Dec. 10	301	82	14	871
Spectacles. Lens for	J. R. Rowell	210,712	Dec. 10	356	98	14	878
Spring for tilting-chairs	H. Howson	210,779	Dec. 10	428	119	14	888
Spring. Vehicle	S. D. King	210,785	Dec. 10	434	121	14	889
Spring. Vehicle	W. F. Whitney. (Reissue)	8,517	Dec. 10	481	136	14	896
Stamp. Ore	F. A. Huntington	210,610	Dec. 10	250	69	14	865
Stamp. Revenue	J. Bowles and A. P. Eastlake	210,661	Dec. 10	305	84	14	872
Staples. Device for holding metallic	W. J. Brown, Jr.	210,748	Dec. 10	396	108	14	883
Steel. Manufacture of	F. Berchtold	210,745	Dec. 10	393	.....	14	883
Stocking	A. Selby	210,810	Dec. 10	461	129	14	892
Stocking-supporter	F. B. Brown	210,666	Dec. 10	312	85	14	873
Stove-door knob	W. Cunliff	210,673	Dec. 10	320	87	14	874
Stoves and furnaces. Dumping-grate for	A. J. Redway	210,804	Dec. 10	453	128	14	892
Street-sweeper	C. W. Cunningham	210,674	Dec. 10	321	87	14	874
Sugar-mixing apparatus	D. Edwards	210,709	Dec. 10	418	116	14	887
Sulky. Trotting	W. J. Hamill	210,687	Dec. 10	333	91	14	876
Suspender-ends, &c. Securing loops and studs to	J. P. Lindsay	210,792	Dec. 10	440	123	14	890
Table. Folding	W. Thomas	210,822	Dec. 10	472	133	14	894
Telephone. Speaking	E. Gray	210,776	Dec. 10	424	118	14	888
Thrashing-machine	L. Bronson	210,747	Dec. 10	394	107, 108	14	883
Tobacco-pipe	G. Castleden	210,598	Dec. 10	237	65	14	864
Tongs. Pipe	O. B. Lay	210,698	Dec. 10	342	93, 94	14	877
Truck. Car	J. G. Tait	210,644	Dec. 10	289	79	14	870
Trucks. Center-bearing for locomotive	G. Chalender	210,749	Dec. 10	396	108	14	883
Trunk	J. C. Locke. (Reissue)	8,520	Dec. 10	484	136	14	896
Trunk	E. Semple. (Reissue)	8,521	Dec. 10	486	136	14	896
Type-writing machine	H. and F. Anderson	210,739	Dec. 10	385	105, 106	14	881
Umbrella-runner	O. M. Smith	210,813	Dec. 10	463	130	14	893
Valve. Check and safety	T. Duffy	210,766	Dec. 10	416	115	14	886
Valve for barrels, kegs, &c	J. Byrne	210,668	Dec. 10	313	85	14	873
Vehicle-coupling	S. W. Baldwin	210,743	Dec. 10	390	107	14	883
Vehicle dash-rail	F. J. Derrig	210,600	Dec. 10	238	65	14	864
Vehicles. Shifting-rail for	E. Miller	210,620	Dec. 10	262	71	14	867
Ventilator	E. G. Sternberg	210,722	Dec. 10	369	101	14	880
Vessels. Armor for	E. W. Serrell	210,811	Dec. 10	461	129	14	892
Vocal engine	T. A. Edison	210,767	Dec. 10	416	115	14	886
Wagon-cover. Reversible	J. Boyle	210,662	Dec. 10	309	84	14	872
Wagon-rack	L. Talcott	210,820	Dec. 10	469	132	14	894
Wagon. Road	C. W. Saladee	210,635	Dec. 10	279	76	14	869
Wagon. Road	C. W. Saladee	210,636	Dec. 10	280	76	14	869
Water-closet	J. Demarest	210,677	Dec. 10	324	88	14	874
Water-closets. Urinal-safe for	T. G. Knight	210,786	Dec. 10	435	121	14	889
Well tools. Joint for oil	H. S. Southard, H. C. Crowell, and J. K. Hallock.	210,720	Dec. 10	367	100	14	880
Wells. Rod-adjuster for oil	P. H. Melvin	210,618	Dec. 10	261	71	14	866
Wheel. Car	I. H. Congdon	210,671	Dec. 10	317	87	14	874
Wheelbarrow	J. W. Marshall	210,701	Dec. 10	344	94	14	877
Whiffletree	S. J. White	210,651	Dec. 10	297	81	14	871
Windmill	W. Forbes	210,772	Dec. 10	421	117	14	887
Windmill-motor	I. H. Palmer	210,803	Dec. 10	452	127	14	891
Wood-worker. Universal	W. H. Doane and G. W. Bugbee	210,761	Dec. 10	407	112, 113	14	885
Wood-worker. Universal	W. H. Doane and G. W. Bugbee	210,762	Dec. 10	409	113, 114	14	885
Wood-worker. Universal	W. H. Doane and G. W. Bugbee	210,763	Dec. 10	412	114	14	886
Wrench. Nut and tap	J. Goodrich	210,684	Dec. 10	330	90	14	875

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DECISIONS OF THE COURTS.

U. S. Circuit Court—District of California.

RICHARD F. KNOX *et al. vs.* THE GREAT WESTERN QUICKSILVER MINING COMPANY.

PATENTS—*Profits Recoverable in Equity.*—In a suit in equity for the infringement of a patent by the use of the patented invention, the patentee is entitled to recover the profits resulting to the infringer from the use of the invention.

SAME—*Royalty.*—In such case the patentee is not limited in his recovery in equity to the amount of the royalty established by him for the use of his invention.

PROFITS DEFINED.—The profits which the patentee is entitled to recover in equity from the infringer by use of the patented invention are not the profits of the business, but the value of the advantages derived by the infringer from the use of the invention over what he would have by the use of other machines then known and open to the public, and adequate to produce an equally beneficial result.

SAME.—The fact that the general result of the business is unprofitable does not affect the recovery. The question is, What advantage in the reduction of cost, &c., has been derived from the use of the invention?

ACCOUNT EXTENDS TO TIME OF TAKING.—The account should be extended to the time of the taking, including the profits resulting from the use of the invention, whether by means of the particular machine in use at the time of the commencement of the suit, or of others subsequently constructed and used.

INVENTION COMPARED WITH EXISTING MACHINES.—For the purposes of an account of profits, the comparison of the invention should be made with other machines in existence, or known, and open to public use at the time of the infringement complained of, and not with machines subsequently invented, or for the first time constructed or known, or machines not open to public use.

EVASION—*Change of Location of Part.*—A change of location of a part in a patented combination, where there is no new function performed by the changed member in its new location, will not evade a patent.

[*M. A. Wheaton*, for complainants; *Estee & Boalt, Cope & Boyd*, and *Garber & Thornton*, for defendant.]

OPINION.—*November* 18, 1878.

SAWYER, *C. J.*:

To discuss all that is said by counsel in support of the exceptions to the master's report would be to re-examine the questions tried and determined in the action at law now in the Supreme Court on writ of error, and again considered on the original hearing of this case.

1. It is earnestly urged that the master adopted an erroneous principle in estimating the profits which the complainant is entitled to recover. That it being shown that complainant had established a royalty of $6,000 for each furnace of twenty tons capacity for the use of his invention, the amount of the royalty is the utmost limit of the amount he is entitled to recover in equity, as well as at law. But the statute and the rule established by the decisions of the Supreme Court are otherwise. The statute provides that, "upon a decree being rendered in any such case for an infringement, the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained." (Rev. Stats., § 4921.) This is an express statutory recognition of the different measures of recovery in suits in equity and actions at law; and it not only expressly authorizes the recovery in equity of the profits resulting from the use of the invention, but in addition thereto the damages which the complainant would be entitled to recover at law; and the latter, in the discretion of the court, may also be trebled. The established royalty might be the measure of the mere damages, but it constitutes no element affecting the profits derived by the defendant from the use of the invention unless it is paid, and if paid there would be no occasion for an account. In *Packet Co.* vs. *Sickles*, the Supreme Court recognizes the right to recover profits made by the use of the invention, where it is said that "the rule in suits of equity of ascertaining by a reference to a master the profits which the defendant has made by the use of the plaintiff's invention," stands upon the principle "of converting the infringer into a trustee for the patentee, as regards the profits thus made." (19 *Wall.*, 617; see, also, *Burdell* vs. *Denig*, 2 Otto, 720; *Cowing* vs. *Rumsey*, 4 Fisher, 277; *Vaughan* vs. *C. P. R. R. Co.*,

4 Saw., 282.) In *Mowry* vs. *Whitney* (14 Wall., 651) the court say upon this subject:

> The question to be determined in this case is, What advantage did the defendant derive from using the complainant's invention over what he had in using other processes then open to the public, and adequate to enable him to obtain an equally beneficial result? The fruits of that advantage are his profits. They are all the benefits he derived from the existence of Whitney's invention. * * * The inquiry then is, what was the advantage in cost, in skill required, in convenience of operation, or marketability in bringing car-wheels by Whitney's process from the condition in which they are when taken hot from the molds to a perfected state, over bringing them to the same state by those other processes, and thus rendering them equally fit for the same service. That advantage is the measure of profits.

2. But it is urged that the evidence does not show that defendant made any profits, and that the master erred in finding as profits the difference in the cost of reduction of ores between the infringing furnace and other furnaces open to public use, when it does not appear that that amount of profits, or indeed any profits, resulted from working the mine. The Supreme Court answers this objection by saying, in substance, that it is not the profits of the business as a business that is to be considered, but the advantage derived to the infringer in the diminished cost, &c., of carrying on the business by the use of the invention. Thus, in the Cawood Patent case, (4 Otto, 710,) the Supreme Court say upon this point:

> It has been argued that it would have been better for these defendants if, instead of repairing the crushed and exfoliated ends of the rails, they had cut off the ends and relaid the sound parts, or had caused the rails to be rerolled. Experience, it is said, has proved that repairing worn-out ends of rails is not true economy, and, hence, it is inferred that defendants have derived no profits from the use of plaintiff's invention. The argument is plausible, but it is unsound. Assuming that experience has demonstrated what is claimed, the defendants undertook to repair their injured rails. They had the choice of repairing them on the common anvil or on the complainant's machine. By selecting the latter they saved a large part of what they must have expended in the use of the former. To that extent they had a positive advantage growing out of their invasion of the complainant's patent. If their general business was unprofitable, it was the less so in consequence of their use of the plaintiff's property. They gained, therefore, to the extent that they saved themselves from loss. In settling an account between a patentee and an infringer of the patent, the question is not what profits the latter has made in his business or from his manner of conducting it, but what advantage has he derived from his use of the patented invention.

And again, in the recent case of *Mevs* vs. *Conover*, (11 OFFICIAL GAZETTE, 1112, not yet reported in Otto,) the Supreme Court say:

> The only errors assigned in this case are to the confirmation of the master's report, and they relate to the ascertainment of the profits which the defendant had made by his unauthorized use of the plaintiff's invention. That the machine employed by the defendant in splitting wood was an infringement of the plaintiff's patent is established by the decree which sent the case to the master, and no complaint is made of that; but it is contended that the master erred in reporting that there was saved to the defendant seventy-five cents per cord in the wood split by him and made into bundles. In the ascertainment of profits made by an infringer of a patented invention the rule is a plain one. The profits are not all he made in the business in which he used the invention, but they are the worth of the advantage he obtained by such use; or, in other words, they are the fruits of that advantage. (*Mowry* vs. *Whitney*, 14 Wall., 651.) We are not convinced that the rule declared in that case was not followed in this. The patented invention infringed by the defendant was a new and improved machine for splitting kindling-wood, and a distinguishing feature of it—perhaps the principal feature—was a device for the automatic feeding of the wood to the reciprocating splitting-knives or cutters by a movable platform or apron carried forward by an endless chain. That device the defendant used, though it is said he used it in another machine known as Green's. The evidence is full and uncontradicted, that an advantage is gained in splitting kindling-wood by a machine with that device of at least seventy-five cents a cord over splitting it by hand or without that device. It was in harmony with this evidence that the master reported and the court decreed. It is urged, however, that the Green machine in which the defendant used the plaintiff's invention was old and defective, and that no profits were actually received from such an use. But if such be the fact, if the defendant was a loser by splitting wood with the Green machine, his loss was less to the extent of seventy-five cents on each cord split than it would have been had he not used the patented invention. Such a result was equivalent to an equal gain, and it was rightly estimated as a part of the profits for which the infringer was responsible.

It can scarcely be supposed that the defendant in this case has gone on for more than three years at a loss, reducing ores to the extent of about a hundred thousand tons, the reduction of which required the erection and use of two new furnaces of the same kind, in the face of and pending this litigation, and at the risk of being muleted in large damages if finally unsuccessful in the litigation. But, however this may be, the cases cited authoritatively dispose of this exception and foreclose further discussion upon the point in this court.

3. Another exception is, that the master should have limited his accounting to the one furnace which had been constructed prior to the commencement of this suit, and not extended it to the two furnaces erected and used at the same mine pending the suit; that as to the latter the causes of action had not arisen, and they are not involved in this accounting. The suit is for an infringement of complainants' patent by the use of his invention. It is not a matter of any moment by what particular machine defendant accomplished the infringement. He was infringing at the commencement of the suit, which is to obtain an account of the profits resulting from the infringement, and an injunction against further infringement.

Defendant continued the infringement by using the same furnace then in use, and by constructing and using others at the same mine. The profits resulting from the infringement in the use of the invention are sought to be recovered. The Supreme Court have held that the accounting should be continued down to the time of taking the account; and if so, I see no reason why it should not cover the profits of the entire infringement by use of the invention, by whatever machine effected, as well as the profits resulting from the use of the particular machine used at the time of the commencement of the suit. If the infringement is by the manufacture and sale of the invention, the accounting must necessarily extend to all sales to the time of the accounting, or the accounting must stop at the commencement of the action; for the same machine cannot well be made and sold before the bringing of the suit, and again after its commencement. I can perceive no reason for applying a different rule in the case of the use of an invention from that applicable to its manufacture and sale. Besides, an injunction would certainly not be limited to the machine in use before, or at the time of, the institution of the suit. I think the accounting properly embraced all the machines containing the invention used by the defendant at its mine down to the time of the accounting.

4. Assuming what is called the "modified Green furnace"—the last one erected by defendant—not to be an infringement, it is claimed that this furnace was open to public use, and is equal to or better than complainants', and that the comparison for the purpose of ascertaining the profits should have been made with this furnace. But this furnace was not in existence during a large portion of the time covered by the accounting. If not an infringement, it is the first furnace of the kind ever constructed. It was built pending this suit, long after its commencement, and long after the judgment at law, and, doubtless, with the careful purpose of evading complainants' patent. It is possible that somebody may yet invent a furnace far superior to any now in use. If such should be the case before this accounting is finally settled, would it be pretended that the comparison should be made with such furnace because at the time of the infringement complained of that furnace was not invented or patented, and, therefore, was open to public use if the defendant or others had only known enough to make one of the kind? Such a claim would be simply preposterous. The comparison must be with machines at the time of the infringement, both known and open to public use.

5. Another exception is, to the allowance by the master in the accounting of the profits resulting from the use of the modified Green furnace, which, it is claimed, is not an infringement of complainants' patent.

This furnace was constructed April 10, 1877—after the trial and judgment in the action at law—and doubtless, as before remarked, with a view to avoiding the future consequences of the judgment in that action. It is the only furnace referred to by defendant's counsel not before the jury on the trial of that action. As it was not passed upon by the jury, it is necessary to inquire whether it is an infringement.

The jury found the original Green furnace to be an infringement, and the verdict settles the point as to that furnace so long as the judgment in the action at law stands. If the original Green furnace is an infringement, no proposition can be plainer to my mind than that the modified Green furnace is equally so. The modification consists in so reducing the height of the furnace above the fire-places that the top will be at the proper distance above the fires for the exit-flues to admit of the fumes being maintained at a temperature sufficiently high to pass out before condensation—that is to say, at the same or about the same height above the fires at which the exit-flues in the original Green furnace passed out at the side of the furnace—then inserting the exit-tubes in the center of the top, so that the fumes shall pass out at the top instead of the side, as in the original, there being two fire-places on each side of the modified furnace in the same positions as in the original. It is earnestly insisted by defendant's counsel, that by this location and arrangement of the flues the heat from the fires is not drawn across the furnaces as in the complainants' and in the original Green furnace—one of the objects to be accomplished by locating the exit-flues in the side opposite the fire-places—and that, therefore, one important element in the complainants' combination and improvement is wanting. But it is perfectly plain to be seen that the heat is drawn across by this arrangement substantially, and even precisely, as in the original. The heat from the fire-places on one side is drawn to the center and from the opposite side to the same point, where the heat from the fires on the opposite sides unites and passes out through the flues, the two operating together and drawing the heat entirely across the furnace, heating all the ore uniformly. Or, look at the modified furnace in another aspect. Pass a solid plane of the full width of the furnace down through the center of the flues to the bottom of the furnace, leaving half of the flues on each side, and we have two furnaces placed back to back, each with fire-places on one side and exit-flues on the opposite side, at the top, to be sure, but also in the side at the same height and in the same position as in the original Green furnace; and in each furnace the heat is drawn entirely across and passes out at the opposite side at the same height and position as in the original Green furnace. Cut off the top of the original Green furnace at the exit-flues, and the exit-flues, without changing their position, will be at the top as well as in the sides opposite the fire-places, and will be in the same position as in the modified Green furnace, divided into two, as suggested. In this aspect there is, in fact, no change in the location of the flues. It can make no difference that we do not, in fact, insert the partition and make two furnaces thereby instead of one double furnace. It in no way affects the operation of drawing the heat across. The operation is precisely the same in both. In the language of the master, "it has substantially the same combination of the same parts, and the same number of parts, all operating in substantially the same way, and producing the same results, the only change being in the place of the outlet vapor-flue." In *Adams* vs. *Joliet Manufacturing Company*, it is said by the Court: "A change of location of a part in a combination, where there is no new function performed by the changed member in its new location, will not evade a patent." (12 OFFICIAL GAZETTE, 94.) In this case the changed part—if, in the view suggested, there can be said to be a change—performs no new function. It operates in precisely the same way and accomplishes the same result in the same mode in the combination. This exception must, therefore, be overruled. If I am in error upon this point, the master has made a separate report as to the profits resulting from using the modified Green furnace, and the Supreme Court will be able to correct the decree in this particular, if right in other respects.

6. As to the other points of the master's report to which exceptions have been taken, I agree with the master. The Neate and Luckhardt furnaces are the only ones, besides the Almaden furnace, to which testimony was, with any degree of definiteness, directed with reference to profits; and neither of them was open to public use without payment of a royalty, as the evidence shows. But if the comparison is to be made with either of them, I do not think the result would be more favorable to the defendant. There can be no doubt, from the evidence, that either the furnace of complainant, or either of the Green furnaces, is greatly superior to either the Neate or Luckhardt furnace. After a careful consideration of all the testimony, and especially if other elements of profits indicated by the evidence—such as more perfectly and uniformly roasting the ores, the greater saving of quicksilver, the diminished sickness of the workmen from salivation, and the like—be considered, as they should be, I do not think a dollar per ton by any means too high an estimate of the advantages derived from using either of the former over either of the latter. If there is any error, there seems an under rather than an over estimate of profits. One dollar per ton is not a very large amount of profit in the reduction of a single ton of ore. The reduction in cost of so common and simple an operation as splitting a cord of kindling-wood by the patented machine, in one of the cases already cited, was nearly as much. The large amount in the aggregate results from the immense quantities of ores reduced during the more than three years covered by the accounting that have elapsed pending this contest.

The aggregate amount may seem "crushing," as suggested by defendant's counsel, when compared with the $6,000 per twenty-ton furnace royalty for which the right to use the invention might have been purchased. But if so, this legitimate result, in case of final defeat,

was one of the risks assumed by defendant when it elected to contest the complainants' right, rather than pay the royalty properly demanded should the patent turn out to be valid, and to have been infringed. The defendant entered into the contest advisedly, well knowing the consequences of defeat, for when the complainants elected an account in equity as their most advantageous remedy, the defendant drove them to an action at law, doubtless to avoid the accounting and limit them to damages; and when the action at law was brought again endeavored to confine complainants to mere damages by moving to strike from the complaint the part preserving the right to an account in this suit after establishing their right at law, but the motion was denied by Mr. Justice Field. (3 Saw., 422.) The defendant, therefore, can have no ground of complaint on the score of the large amount recovered, provided it be fairly the result of the use of complainants' duly patented inventions.

I am not satisfied from the large mass of evidence, which seems to cover the entire field of quicksilver mining and furnaces, that at the time of issuing the patents held by complainants it had been demonstrated by actual experiments that any furnace then known would profitably reduce quicksilver ores of the grades now advantageously worked by complainants' and the Green furnaces. It is apparent to me, from the evidence, that complainants' furnace was the first to practically and profitably reduce low-grade quicksilver-ores; and that these furnaces of complainants and defendant are still superior to any others in use, and are capable of profitably reducing ores that cannot be worked with profit in other furnaces not embodying substantially the same elements and combinations. The Luckhardt furnace is the one apparently most confidently relied on by the defendant as being practicable and most nearly approaching in usefulness those used by complainants and the defendant. Defendant erected and used for a time one of them at its mine, and, although its testimony is to the effect that it was a success, but of too small capacity, the significant fact remains that it was torn down and, when demolished, defendant did not build another Luckhardt furnace of larger capacity, but did erect in its place a Green furnace, which was afterward followed by another, notwithstanding the pending litigation and the risk of being called upon to account for a large amount of profits resulting from its use in case of failure to defeat the pending actions.

Besides, other mine-owners pay the large royalty established by the complainants for the use of their inventions, which they would not be likely to do if there were other furnaces equally good, or nearly so, open to public use or to be had at a smaller royalty. These facts of themselves speak volumes in favor of the superiority of the furnaces of complainants, and those constructed and used by defendant, over the Luckhardt or any other furnace. The testimony, all considered, leaves no doubt on my mind that the furnaces used by complainants and defendant, and those embodying the same elements and combinations and operating upon the same principles, are greatly superior to any others in use for reducing quicksilver ores. And it also seems clear to me that the Green furnace and the modified Green furnace embody the elements and combinations found in complainants' furnace.

This suit was commenced in October, 1874. Upon the application of defendant, the proceedings were stayed and the complainants required to bring their action at law to establish their rights under their patents, which was accordingly done. After a laborious trial the jury, under instructions of the court as to the law applicable to the case, found the patents held by plaintiffs to be valid and the Green furnace to be an infringement, the verdict being special upon each claim by itself. The verdict was set aside upon some of the subordinate claims, but confirmed by the court on the other and principal claims. Judgment was entered in February, 1876, and a writ of error to the Supreme Court perfected February 4, 1878. The validity of the complainants' patents and their infringement having been established in the action at law, nothing was left to be done except for complainants to apply for their injunction and accounting in the equity suit which had in the meantime been stayed. The accounting resulted in the master's report now under consideration. If there is any error in these proceedings, in my judgment, it is not in the accounting, but it will be found in my construction of the patents in the action at law. Upon that point, as counsel were informed at the time, and again upon the decision of the motion for new trial, my mind was not wholly free from doubt—not that a better furnace for reducing quicksilver-ores had been constructed by complainants than was ever before in use, but whether the claims in the patents were sufficient to secure the valuable features combined in the furnace. Defendants took their exceptions, and, a bill of exceptions having been duly settled, the construction adopted is now before the Supreme Court for review. If the judgment in the action at law should be affirmed, I can perceive no error in the accounting. If reversed, of course, the basis of the accounting will be withdrawn. I regret that the final decison of the action at law could not have been had before passing upon the master's report.

Let the exceptions to the master's report be overruled, the report be confirmed, and a final decree entered for complainants in accordance therewith.

U. S. Circuit Court—District of Massachusetts.

THE AMERICAN WHIP COMPANY *vs.* HEZEKIAH LOMBARD.

[*In Equity.—No.* 826.]

Patent No. 53,003, to L. Hull, for gage-lathe, and reissue of same, No. 7,262, construed and sustained. It is now well settled that the patentee or owner of a patent for a combination is as much entitled to equivalents as the patentee or owner of any other class of inventions. By an equivalent in such a case it is meant that the element or ingredient substituted for the one withdrawn performs the same function as the other, and that it was well known at the date of the patent in question as a proper substitute for the one omitted in the patented combination.

The invention, consisting chiefly in the combination, in a machine for shaping whip-stocks, of a holding and feeding mechanism with revolving cutters having their axis of rotation at right angles, or nearly so, to the axis of the stocks, and of guides for directing and controlling the action of the cutters, as described in the specification and shown in the drawings, is infringed by a machine in which numerous blades are substituted for the burrs of the patentee, and where a formal change merely is made in the clamping and advancing mechanism by combining the two in one apparatus instead of performing the operation by two separate devices.

[*Solomon J. Gordon* and *Thomas L. Livermore*, for complainants; defendant, *pro se.*]

OPINION OF THE COURT.—*October* 9, 1878.

CLIFFORD, *J.:*

Power to grant letters patent is conferred by an act of Congress, and when that power has been lawfully exercised, and a patent has been duly granted, it is of itself *prima facie* evidence that the patentee is the original and first inventor of that which is therein described and secured to him as his invention. Defective patents may in certain cases be surrendered and reissued for the same invention in a corrected form, and when that is done in conformity with the requirements of law, the same *prima facie* presumption arises in favor of the patentee as that which arose in his favor from the original patent before it was surrendered. Sufficient appears to show that the assignor of the complainants became and was the inventor of a new and useful improvement in gage-lathes, and that letters patent were granted to him as such inventor for the same; that the patentee, for due cause shown, surrendered the original patent, and that a new patent, with an amended specification, was subsequently issued to the complainants for the same invention; which is the subject of the present controversy. Service was made, and the respondent appeared and filed an answer. Such defenses only as were pressed at the argument will be noticed, of which the following are the most material:

First. That the assignor of the complainants was not the original and first inventor of the patented improvement.

Second. That the charge of infringement is not proved; that the respondent never made, used, or sold the patented improvement, and never in any way infringed the rights of the complainants under their patent.

Applicants for a patent are required by the patent act to give a short title or description of the invention or discovery, correctly indicating its nature and design, and, pursuant to that requirement, the original patentee stated in the specification that he had invented a new and useful machine for dressing whip handles or stocks, or other articles of a like nature, adding thereto that the object of his invention was to properly round and shape the handles or stocks of whips and other articles of like character.

Important explanations are superadded, substantially as follows: That to accomplish the work correctly the stock must travel longitudinally toward the cutting devices, or vice versa, in order that the material removed from the stock may be stripped or cut lengthwise of the same, instead of around it or transversely, so that the surface of the stock will be left smooth; and he adds that the proper form or shape must be given to the stock at the same time that its surface is being finished, and consequently that the cutting apparatus must be controlled by a guide corresponding to the taper or form of the stock or handle of the whip. Preceding, as those explanations do, the statement of the claims of the patentee, they show in concise terms the true nature and character of the organized machine, and it is obvious that he intended by those explanations to illustrate in a general way the mode of operation by which the several devices, when combined, will accomplish the described new and useful result.

Decisive support to that proposition is found in the paragraph which follows those explanations, in which the patentee states that the invention consists chiefly in the combination of a holding and feeding mechanism and revolving cutters having their axis of rotation at right angles, or nearly so, to the axis of the stock (meaning the whip-handle) to be rounded and shaped, and the described guides for controlling the action of the cutters (meaning the described cutting apparatus of the machine) as fully explained in the specification and drawings. Machines of the kind must of course have a frame of a suitable form to support the other parts of the machine, as shown in the drawings. The machine in this case has a carriage mounted upon the frame, the carriage being arranged to travel on guides or rails, for the purpose of giving a longitudinal motion to the stock. Standards are also mounted upon the carriage for supporting the mandrels which hold the stock in proper position to be guided to the cutters.

Devices of the kind for holding the stock are indispensable, and the specification shows that they are rotated by suitable gearing in such a manner as to keep the stock constantly revolving while it is under the action of the cutting apparatus. Means of attaching the stock to the mandrels are also shown, which is accomplished by clasping each end between a pair of levers, pivoted on a device called a "head," mounted on the inner ends of the mandrels, which serves as a fulcrum to the levers, and also causes them to revolve. Between the outer end of each pair of the levers there is arranged a cone, which can be longitudinally adjusted by a screw formed on the mandrels in a way to spread or release the outer ends of the levers, so as to close or open their inner ends, between which the opposite ends of the stock are held in proper position to the cutters. Suffice it to say, without entering further into the details, that every element of the machine and its mode of operation are given in the specification, confirming the remarks previously made that the invention consists in the combination of the described mechanism for rounding and shaping stocks or handles for whips, or other articles of a like nature, including the described holding and feeding mechanism, together with the cutting apparatus, having its axis of rotation at right angles, or nearly so, to the axis of the stock, with the described guides for controlling and regulating the action of the cutters with their entire apparatus, as shown in the specification and drawings.

Five claims are annexed to the specification, the first two of which only will be reproduced, as it is not now claimed that the other three have been infringed:

1. The combination, in a machine for shaping whip-stocks, of two rotating and adjustable clamps for holding the whip-stock, with revolving cutters, whose axis of rotation is at right angles to the axis of the stock, substantially as described, for the object set forth.

2. The combination, in a machine for shaping whip-stocks, of revolving cutters, the adjustable and rotating clamps for holding and revolving whip-stocks, and the guides through which the stock is passed for firmly holding the stock while being dressed by the cutters, as described.

Whip handles or stocks are constructed in the rough before they are in a suitable condition to be dressed and smoothed, or rounded and shaped, by the machine described in the complainants' patent, which is true also of the whip-stocks manufactured by the respondent.

Undressed whip-stocks of the kind in controversy are described by the respondent as composed of eleven pieces, as follows:

I. A middle piece of wood or rattan, called a wedge,

to which is attached a spike at one end and a piece of whalebone at the other.

II. On this central core or wedge are laid four other pieces of rattan, called sidings, which are half round, with one edge planed off so as to allow them to fit the wedge or center piece.

III. Then there are four other pieces of rattan, called chinks, shaped so as to fit the pieces of siding, to fill up the crevices between the siding pieces and make the handle large enough for a whip-stock.

IV. All these pieces being thus prepared, they are then glued or cemented together before the stock is in a suitable condition to be dressed and finished in the machine.

Stocks of the kind are composed of rattan, whalebone, and glue, besides the spike at butt-end. When constructed in the rough they are not fit for the market.

Four things are required of the machine in order to dress the rough stock and make it salable as a finished article:

First. It must have means for holding the stock during the operation of dressing the article.

Second. It must have means of advancing and rotating the article at the same time.

Third. Means of guiding the rough article must be furnished, so as to preserve its shape during the operation.

Fourth. It must have a cutting apparatus to reduce the circumference of the rough article from butt to tip as it is advanced and rotated.

By referring to the specification, it appears that the patentee adopted for holding devices two standards to support two mandrels having a pair of levers, which clasp each end of the whip-stock. Having devised means to hold the article, his next step was to provide an apparatus to advance the stock and cause it to rotate at the same time, which he accomplishes by a carriage traveling on rails and by a gearing causing the mandrels to revolve as the apparatus advances. Two notched plates are provided for guiding devices, sliding upon each other, so that when the stock is in the notches of the plates and between them, "they close upon the stock and steady it under the cutting action." Two upright revolving steel burr-cylinders are provided as reducing devices, and it must be admitted that they are admirably adapted to the accomplishment of the function, without risk of injury even to the most slender part of the stock.

Argument to show that the patented invention is one of merit and of a highly useful character is quite unnecessary, as the remarks already made are amply sufficient to demonstrate that proposition to every impartial and well-informed mind; but it must be remembered that it is not a patent for the result, nor can it receive a construction which will shut out all other improvements. None of the elements or devices of the patent are claimed, nor do either of the claims, which it is alleged the respondent has infringed, warrant the construction that the original patentee was the original and first inventor of the entire machine. Instead of that, both the first and the second claims plainly proceed upon the ground that the invention is for a combination of old elements, and the words of the specification afford persuasive and convincing proof that such is the true theory of the patent, whether the question is tested by the specification or the claims which it is alleged have been infringed. Viewed in the light of these suggestions, it is clear that the invention consists chiefly in the combination of a holding and feeding mechanism with revolving cutters having their axis of rotation at right angles, or nearly so, to the axis of the stock, and of guides for directing and controlling the action of the cutters, as described in the specification and shown in the drawings.

Suppose that is so, still it is contended by the complainants, and well contended, that the patentee or owner of a patent for a combination is as much entitled to equivalents as the patentee or owner of any other class of inventions. Doubts at one time existed as to the correctness of that proposition, but it is now well settled in accordance with the views of the complainants. (*Gould* vs. *Rees*, 15 Wall., 194; *Gill* vs. *Wells*, 22 Ib., 28.)

Questions of the kind usually arise in comparing the machine of the defendant with that of the plaintiff, and the rule is, that if the defendant omits entirely one of the elements or ingredients of the patented combination without substituting any other in its place, he does not infringe the plaintiff's patent; and if he substitutes another in the place of the one omitted, which is new, or which performs a substantially different function, or, even if it is old, was not known at the date of the plaintiff's patent, as a proper substitute for the omitted element or ingredient, then the charge of infringement is not maintained. By an equivalent in such a case, it is meant that the element or ingredient substituted for the one withdrawn performs the same function as the other, and that it was well known at the date of the patent in question as a proper substitute for the one omitted in the patented combination. Hence it follows that a party who merely substitutes another old element or ingredient for one of the elements or ingredients of a patented combination, is an infringer if the substitute performs the same function as the one omitted, and was well known at the date of the patent as a proper substitute for the element or ingredient employed in the patented combination. (*Roberts* vs. *Harnden*, 2 Cliff., 504.) Mere formal alterations of a combination in letters patent do not constitute any defense to the charge of infringement, as the inventor of such an improvement is as much entitled to suppress every other combination of the same devices to produce the same result as the inventor of any other patented process or product. Examples of the kind frequently arise in suits for infringement, as where a spring is substituted for a lever to produce power, or where a weight is substituted for a spring to produce pressure, and many others, where the same rule must be applied.

Much discussion of the first defense is not required, as it is obvious that the evidence introduced by the respondent is insufficient to overcome the *prima facie* presumption arising from the patent that the assignor of the complainants was the original and first inventor of the improvement. Incomplete as the evidence is in respect to the Sacket machine, it is clear beyond all doubt that it cannot be held to support that defense. Taken as a whole, the evidence fails to satisfy the court that the supposed invention was ever completed as an operative machine. Nor is the evidence sufficiently full and explicit to enable the court to understand what its construction was, or its precise mode of operation.

Persistent efforts appear to have been made by the supposed inventor to induce manufacturers in his neighborhood to adopt it, without success; and the proof is, that, in almost every instance in which it was tried, it split the whalebone, and that, when it did not, it left it in a worse shape to finish by hand than it was before the stock was put into the machine.

These efforts to introduce the machine were made twenty years ago, and have not since been renewed, showing to the satisfaction of the court that it was a mere experiment, and that it was finally abandoned. Such a defense requires better evidence to support it, and in the absence of such evidence the defense must be overruled. Grant that, and still the respondent denies that he has ever made, used, or sold the patented improvement, which, in the view of the court, is the principal issue between the parties. Questions of the kind where the invention is embodied in a machine, are usually best determined by a comparison of the machine made by the respondent with the mechanism described in the specification and drawings of the complainants' patent. Very material aid in making that comparison has been derived in this case from the testimony of the expert witness examined by the complainants.

Nothing can be plainer than the proposition that it was the object of the assignor of the complainants to construct a machine that would round and shape undressed whip-stocks and other similar articles with greater facility and with less expense than it could be accomplished by hand, all of which he effected by the devices of the machine described in the specification and shown in the drawing, and it is equally certain that the respondent desired to accomplish the same thing and nothing more, unless it was to change the form of the devices so as to avoid the charge of infringement. He knew what the devices were which were employed by the assignor of the complainants, and he was entirely familiar with the patented machine and its mode of operation. Years of experience had proved its utility and adaptation to accomplish the object for which it was constructed and patented. Beyond all question it embodies a particular plan, and the evidence satisfies the court that the respondent borrowed every feature of his plan from the patented machine.

All agree that such a machine, to be successful, must have a holding and feeding mechanism; that it must have means to cause the stock to revolve as it advances, and that it must have revolving cutters with axis of rotation at right angles, or nearly so, to the axis of the stock, and that it must be provided with guides for controlling and regulating the cutters in order to keep the stock constantly revolving, while it is subjected to the cutting or rasping operation. Proof of conclusive character is found in the record that the object of the respondent in constructing his machine was the same as that of the assignor of the complainants, and the court is of the opinion that he accomplishes it by substantially the same means. Decided support to that proposition is derived from a comparison of the two machines and from the testimony of the expert witnesses.

Enough appears to show that the respondent adopted the same combination as that adopted by the assignor of the complainants—that is, that he provided means for holding, presenting, advancing, rotating, and reducing the undressed stock as is described in the specification and drawings of the patent. Changes were made by him in two of the necessary devices. Instead of burrs to scrape off the enamel of the rattans and whalebone, he uses numerous blades, sometimes as many as a hundred and twenty, that perform the same function as the burrs in the patented machine. Blades of the kind were first adopted by the original patentee, but he soon discarded them and substituted the burrs, which are much to be preferred. Formal change is also made in the clamping and advancing mechanism, by combining the two in one apparatus—that is, the respondent's device is made to do two things instead of having the two things done by separate devices, the difference being that the assignor of the complainants clamps his stocks to a carriage and moves the carriage, whereas the respondent makes the clamps also serve as the propelling instrumentality. Suffice it to say that the expert examined by the complainants states that he finds in the model of the respondent what he regards as substantially the same combination of devices and for precisely the same purpose as those specified and claimed in the first and second claims of the complainants' patent. Extended reasons are given by the witness in support of the conclusion, but it is unnecessary to reproduce his testimony. It is fully corroborated by a comparison of the alleged infringing exhibit with the patented improvement. Nor is it necessary to examine into the extent of the infringement, as that will fall within the province of the master.

Decree for the complainants for an account and for an injunction.

THE patents, trade-marks, designs, and labels published in this number complete the issues of patents, &c., for the year 1878. In the two remaining numbers of this volume of the OFFICIAL GAZETTE none will appear. Those which would have been announced therein will, by a change in the practice of dating patents, appear in Nos. 1 and 2, Vol. 15, of the OFFICIAL GAZETTE, bearing date January 7 and 14, 1879, respectively.

The official order directing this change will be published in the next number of the GAZETTE.

Issue of December 17, 1878.

Patents	248	No. 210,830	to No.	211,077, inclusive.
Reissues	7	No. 8,522	to No.	8,528, inclusive.
Designs	10	No. 10,965	to No.	10,974, inclusive.
Trade-Marks	42	No. 6,876	to No.	6,917, inclusive.
Labels	5	No. 1,816	to No.	1,820, inclusive.
Total issue	312			

TRADE-MARKS.

[Each certificate bearing date December 17, 1878.]

6,876.—MATCHES AND OTHER SIMILAR FIRE AND LIGHT PRODUCERS.—*American Fusee Company*, (limited,) Erie, Pa. Application filed December 6, 1878.

"The word-symbol 'SANATIVE.'"

6,877.—PERFUMERY.—*Americus Bell*, Matawan, N. J. Application filed November 14, 1878.

"A monogram composed of the letters 'A. B.'"

6,878.—CHEWING AND SMOKING TOBACCO.—*Joseph G. Dill*, Richmond, Va. Application filed November 21, 1878.

"The fanciful or arbitrarily-selected word 'CHIEFTAIN.'"

6,879.—CHEWING AND SMOKING TOBACCO.—*Joseph G. Dill*, Richmond, Va. Application filed November 21, 1878.

"The fanciful or arbitrarily-selected words 'BALD EAGLE.'"

6,880.—CHEWING AND SMOKING TOBACCO.—*Joseph G. Dill*, Richmond, Va. Application filed November 21, 1878.

"The fanciful or arbitrarily-selected words 'GRAND DUCHESS.'"

6,881.—CHEWING AND SMOKING TOBACCO.—*Joseph G. Dill*, Richmond, Va. Application filed November 21, 1878.

"The fanciful or arbitrarily-selected word 'SUNBEAM.'"

6,882.—MEDICAL COMPOUND FOR THE CURE OF CATARRH AND COLDS.—*Ely Brothers*, Owego, N. Y. Application filed November 4, 1878.

"The arbitrarily-selected words 'CREAM BALM.'"

6,883.—FARM AND AGRICULTURAL IMPLEMENTS, MACHINES, AND APPARATUS.—*Arthur B. Farquhar*, York, Pa. Application filed November 25, 1878.

"The word 'FARQUHAR.'"

6,884.—BOILER-SCALE ERADICATORS.—*William Goldstein*, New York, N. Y. Application filed November 16, 1878.

"The boiler, medals, medallion, and figure of a man, all arranged as shown."

6,885.—BORAX SOAP.—*Penrose W. Hirst*, Camden, N. J. Application filed October 26, 1878.

"The letters X X X."

6,886.—LINIMENT.—*Loraine S. Hodgkins*, Brewer, Me. Application filed July 23, 1878.
"The letters 'H. H. B.,' arranged as a monogram, and the arbitrarily-selected words 'GREAT PRAIRIE.'"

6,887.—CHEMICALLY-PREPARED WICKS.—*Louis Hellman*, Chicago, Ill. Application filed November 4, 1878.
"The symbol of the parti-colored wick and the name 'HELLMAN'S.'"

6,888.—PORTLAND CEMENT.—*Stephen L. Merchant*, New York, N. Y. Application filed November 16, 1878.
"The fanciful title 'IMPERIAL' and the name 'S. L. MERCHANT.'"

6,889.—SHOE-BLACKING.—*C. H. Morse & Co.*, Rochester, N. Y. Application filed December 2, 1878.
"The word-symbol 'HANDY BOX.'"

6,890.—BEVERAGE.—*Daniel E. Poor*, Boston, Mass. Application filed November 2, 1878.
"The word-symbol 'ROYAL.'"

6,891.—FINE-CUT CHEWING-TOBACCO.—*Reid, Murdoch & Fischer*, Chicago, Ill. Application filed November 4, 1878.
"The word 'STRAWBERRY.'"

6,892.—PLUG-TOBACCO.—*Reid, Murdoch & Fischer*, Chicago, Ill. Application filed November 4, 1878.
"The word-symbol 'STERLING.'"

6,893.—SHIRTS.—*Stark & Loewenthal*, New York, N. Y. Application filed November 22, 1878.
"The arbitrarily-selected word-symbol 'CHALLENGE.'"

6,894.—RAZORS.—*Henry Sears & Co.*, Chicago, Ill. Application filed October 15, 1878.
"The word 'QUEEN.'"

6,895.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Robert Ulmer*, New York, N. Y. Application filed November 1, 1878.
"The word 'PALLASO.'"

6,896.—COLOGNE-ATOMIZERS.—*Vogeler, Son & Co.*, Baltimore, Md. Application filed December 3, 1878.
"The word-symbol 'OCEAN SPRAY.'"

6,897.—BISCUITS, CRACKERS, &c.—*Walter G. Wilson & Co.*, Philadelphia, Pa. Application filed November 29, 1878.
"The word-symbol 'PEARCE.'"

6,898.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"The word-symbol 'COLUMBIA BANK.'"

6,899.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"The figures and words '130, R. ESTERBROOK & CO.'s EASY WRITER.'"

6,900.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"The figures and name '161, R. ESTERBROOK & CO.'s.'"

6,901.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"The figures and words '284, R. ESTERBROOK & CO.'s BLACKSTONE.'"

6,902.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"The figures and words '280 R. ESTERBROOK & CO.'s J.'"

6,903.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"The figures and words '1876, R. ESTERBROOK & CO.'s TELEGRAPHIC.'"

6,904.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"The figures and words '135 R. ESTERBROOK & CO.'s.'"

6,905.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"The figures and words '14, R. ESTERBROOK & CO.'s BANK.'"

6,906.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"The figures and words '048 R. ESTERBROOK & CO.'s FALCON.'"

6,907.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"The figures and words '256 R. ESTERBROOK & CO.'s TECUMSEH.'"

6,908.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"The arbitrary word-symbol 'COLUMBIA FALCON.'"

6,909.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 4, 1878.
"The words and figures '1743 R. ESTERBROOK & CO.'s JEFFERSON.'"

6,910.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 4, 1878.
"The words and figures '792 R. ESTERBROOK & CO.'s E.'"

6,911.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 4, 1878.
"The figures and words '267 R. ESTERBROOK & CO.'s FRANKLIN.'"

6,912.—MATCHES AND OTHER SIMILAR FIRE AND LIGHT PRODUCERS.—*American Fusee Co.* (limited,) Erie, Pa. Application filed August 20, 1878.
"The word-symbol 'AMERICAN.'"

6,913.—BITTERS.—*Charles R. Burrage*, San Francisco, Cal. Application filed October 1, 1878.
"The word-symbol 'CALIFORNIA.'"

6,914.—CHAMPAGNE.—*Juda Julius Berenburg*, London, England. Application filed August 31, 1878.
"The letters 'J. J. B.,' the portrait of the Earl of Beaconsfield, and the arbitrarily-selected word 'BEACONSFIELD.'"

6,915.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*S. Hernsheim & Bro.*, New Orleans, La. Application filed August 27, 1878.
"The word 'JUG.'"

6,916.—CHOCOLATE, BROMA, AND COCOA.—*Domingo Ghirardelli*, San Francisco, Cal. Application filed November 22, 1878.
"The word-symbol 'CALIFORNIA EAGLE.'"

6,917.—PENS.—*The Esterbrook Steel Pen Manufacturing Co.*, Camden, N. J. Application filed December 2, 1878.
"Words and figure: 'No. 2 WEBSTER & MORTON'S IMPERIAL.'"

DESIGNS.

[Each design bearing date December 17, 1878.]

10,965.—COOKING-STOVES.—*John V. B. Carter*, Cleveland, Ohio, assignor to *Myers, Osborn & Co.*, same place. Application filed October 23, 1878. Term of patent 7 years.

10,966.—SHIRT-BOSOM.—*James H. Marley*, Newark, N. J. Application filed October 22, 1878. Term of patent 7 years.

10,967.—WATCH-CHAIN CHARM.—*Charles S. Pine*, Providence, R. I. Application filed November 15, 1878. Term of patent 3½ years.

10,968.—CIGAR-BOXES.—*Leopold Simons*, New York, N. Y. Application filed December 2, 1878. Term of patent 3½ years.

10,969.—CHAIR AND PARLOR-SUIT COVERINGS.—*Joseph H. Travis*, New York, N. Y., assignor to *M. & H. Schrenkeisen*, same place. Application filed November 29, 1878. Term of patent 7 years.

10,970.—CIGAR-BOXES.—*Michael I. Weller* and *George R. Repetti*, Washington, D. C. Application filed November 30, 1878. Term of patent 7 years.

10,971.—FONT OF ORNAMENTAL PRINTING-TYPES.—*Julius Herriet*, New York, N. Y., assignor to *David Wolfe Bruce*, same place. Application filed December 2, 1878. Term of patent 14 years.

10,972.—METALLOPHONE.—*Cadwallader M. Raymond*, Boston, Mass. Application filed October 25, 1878. Term of patent 3½ years.

10,973.—SLEEVELESS CROCHETED JACKET.—*John Holmes*, Boston, Mass. Application filed October 26, 1878. Term of patent 3½ years.

10,974.—HANDLES.—*William R. McComas*, Oakley, assignor to *Crane, Breed & Co.*, Cincinnati, Ohio. Application filed December 9, 1878. Term of patent 3½ years.

LABELS.

[Each certificate bearing date December 17, 1878.]

1,816.—Title: "HEYL PAPER FASTENERS."—*William J. Brown, Jr.*, Philadelphia, Pa. Application filed December 5, 1878.

1,817.—Title: "1876. DAVIS' HARD FINISH."—*P. Hayden*, Newark, N. J. Application filed November 20, 1878.

1,818.—Title: "PECTORAL."—*James D. Judge*, Boston, Mass. Application filed November 18, 1878.

1,819.—Title: "KRAUSER'S FLORIDA COUGH SYRUP."—*E. Krauser & Bro.*, Milton, Pa. Application filed November 23, 1878.

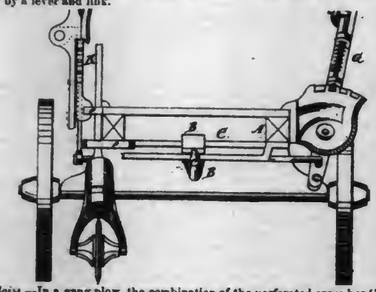
1,820.—Title: "CHICAGO STOVE POLISH."—*Henry G. Weatherill*, Elgin, Ill. Application filed December 5, 1878.

TITLES, BRIEFS, DRAWINGS AND CLAIMS OF PATENTS GRANTED

DECEMBER 17, 1878.

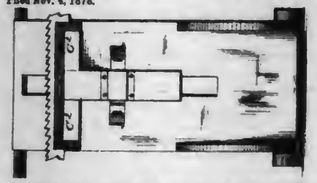
210,830. GANG-PLOWS. George Armstrong and Robert Armstrong, executor of James Armstrong, Jr., deceased, Elmira, Ill.; said Robert Armstrong assignor to said George Armstrong. Filed Feb. 25, 1878.

Brief.—A long clevis-bar: its rear end pivoted with lateral adjustment; its front end swung laterally by a lever and link. Colter raised in a vertical socket by a lever and link.



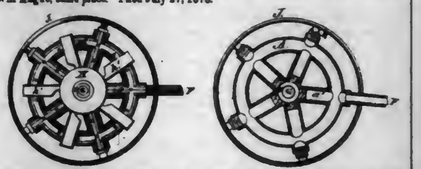
Claim.—In a gang-plow, the combination of the perforated cross-bar C, the adjustably-pivoted draw-bar B, the perforated movable bar D, pivoted lever G, and segmental rack K, all substantially as and for the purposes herein set forth.

210,831. BAG-HOLDERS. Daniel Arndt, Cleveland, Ohio, assignor to George W. Gardner, same place. Filed Nov. 4, 1878.



Claim.—The combination, with the truck, of a bag-holder attached to a sliding support and a cross-head, C^3, attached to the said support in such relation thereto that when the support is slid to the extremity of the truck-frame the cross-head will, with said extremity of the truck-frame, form a vise, substantially as and for the purposes described.

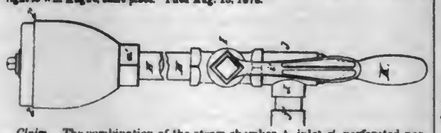
210,832. STEAM-BLOWERS. Robert Atherton, Paterson, N. J., assignor of one-half his right to Will Hague, same place. Filed July 27, 1878.



Claim.—1. The hollow perforated frame formed by the combination of the hollow rim A, partially-hollow and partially-solid arms a', recessed center B b', bush C, oil-hole d', and plug D in center, and the plugs E and connecting-pipe F in rim, substantially as herein shown and set forth.

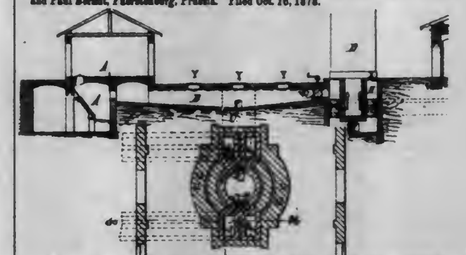
2. The combination of the hollow perforated frame formed by the combination of the hollow rim A, partially-hollow and partially-solid arms a', recessed center B b', bush C, oil-hole d', and plug D in center, and the plugs E and connecting-pipe F in rim, shaft G, fan H, nut I, and the outside case, J, with each other, substantially as herein shown and set forth.

210,833. STEAM-FLUE CLEANERS. Robert Atherton, Paterson, N. J., assignor of one-half his right to Will Hague, same place. Filed Aug. 15, 1878.



Claim.—The combination of the steam-chamber A, inlet a', perforated partition B, center hole, b', fan-case D, and outside beading or shoulder, d', the conical fan consisting of the cone E, spirally-set blades or wings e', bush F, recess G, oil-hole g', the spindle C c', loose washer c^2, the extension-pipe H, the stop-cock I i', T-connection J, attachment j', and the handle K, with each other, arranged substantially as set forth.

210,834. LIME AND OTHER KILNS. Johann Baldermann, Finkenherd, assignor to himself and Paul Berndt, Paarstenberg, Prussia. Filed Oct. 16, 1878.



Claim.—1. The arrangement herein described of double sets of regenerators F L and N O, that connect with the same kiln, C, for the purpose of permitting the current of gas and air and of the products of combustion to be reversed from time to time, substantially as specified.

2. In a lime and other kiln operated by gas, two or more sets of regenerators, which are worked alternately, substantially as described, and for the purpose set forth.

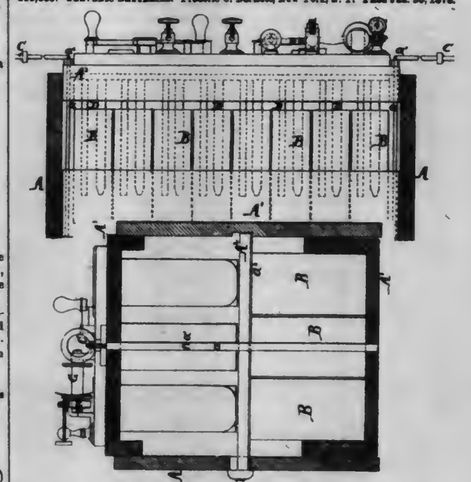
3. The reversing-valves a and c, in combination with two or more regenerators on gas-kilns for lime, plaster-of-paris, and other substances, substantially as shown.

4. A gas-kiln for lime, plaster-of-paris, bricks, and other substances, closed on top, substantially as shown, in combination with a chimney, a gas-generator, two or more alternately-working sets of regenerators, and the necessary flues, with reversing-valves, substantially as shown and described, and for the purpose set forth.

5. The arrangement and disposition of a limekiln, C, with alternately-working regenerators F L and N O, in combination with gas-generator A, condenser B, reversing valves a and c, damper W, register X, air-lock S and T, and chimney D, as shown and described, and for the purpose set forth.

6. In combination with a kiln constructed and operated substantially as specified, the damper W and register X, arranged substantially as set forth.

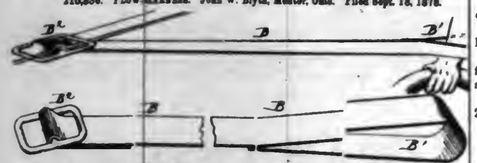
210,835. GALVANIC BATTERIES. Frederic C. Bartlett, New York, N. Y. Filed Jan. 30, 1878.



Claim.—1. The removable soft-surfaced cover A^1 a^2, arranged, as shown, in an opening in the case A, and adapted to serve as a cover to the cups B when out of use, as herein specified.

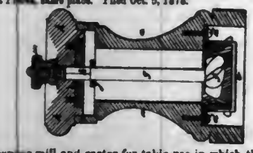
2. The threaded rings or nuts C on the lifting-rods c, in combination with the tray A^1, containing the cups B, the casing A, and the removable cover A^1 a^2, as and for the purposes specified.

210,836. FLOW-HARNESS. John W. Blyth, Mentor, Ohio. Filed Sept. 18, 1878.



Claim.—The combination, with the driving-reins of a harness, of supplemental driving-rein attachments, each consisting of the strap B, provided with engaging device B^1 or equivalent device, and hand-loop B^2, substantially as set forth.

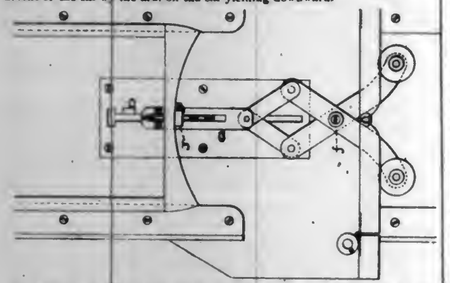
210,837. COMBINED PEPPER-MILL AND CASTER. Pierre Chalas, Valentigney, France, assignor to Peugeot Freres, same place. Filed Oct. 5, 1878.



Claim.—A pepper-mill and caster for table use in which the grinding-cone is operated by rotating the top or bottom of the receptacle itself, substantially as shown and described.

210,838. HATCHWAY-DOOR MECHANISMS. Thomas J. Cloes, Philadelphia, Pa. Filed Apr. 26, 1878.

Brief.—A hinged spring-arm on the car, yielding downward, engages a swinging forked arm on a vertically-sliding guide-bar, to which is pivoted a series of lazy-tong levers, having friction-rollers at their lower ends acting on the under side of the hatchway-doors. Branches or pins on the lower end of the forked arm move in a slot downward and rearward, and thereby permit disengagement with the arm on the car. Disengagement is also effected in the ascent of the car by the arm on the car yielding downward.



Claim.—1. A series of jointed levers operating after the manner of lazy-tongs, and opening the door or doors of a hoistway by the action of the descending car engaging with said levers, for the purpose specified.

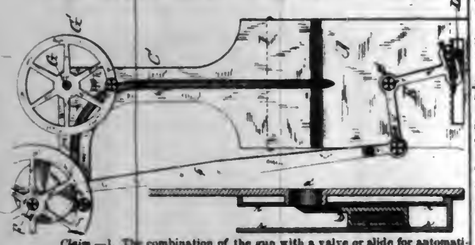
2. The lazy-tong levers, in combination with mechanism for controlling the self-closing door or doors by the ascent of the car, substantially as and for the purpose set forth.

3. The latch F, in combination with the lazy-tongs and the projecting arm J of the car, substantially as and for the purpose set forth.

4. The latch F, with pin or bolt E, and the flanges *d*, with slots *e*, substantially as and for the purpose set forth.

5. The guide-hook G and latch F, in combination with the hoistway-doors and the car and connecting levers, substantially as and for the purpose set forth.

210,839. SOFT-CAKE MACHINES. Erskine A. Coles, Philadelphia, Pa., assignor to George R. Hill and George H. Smith, Alexandria, Va., one-third to each. Filed Sept. 27, 1878.



Claim.—1. The combination of the gun with a valve or slide for automatically closing the holes *a* or tubes *a'*, and with a cutting-edge for severing the dough into cakes, substantially as described.

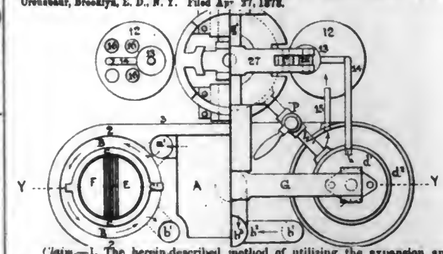
2. The combination of the automatic valve and cutting-edge with the gun and with a follower, B, which moves forward when the valve is retracted and cutting-edge set for a new cut, and remains stationary during the time when the cake-holes are closed and the cutting-edge is in operation, substantially as described.

3. In a dough-cutting machine, the knife D, having means for heating it connected with it, for the purposes set forth.

4. In a dough-cutting machine, the hollow knife D, for the admission of a heating material, substantially as described.

5. The stationary shaft G and its fixed uprights C, in combination with the follower and the ratchet-wheel and pawl operated from the driving-shaft F by an eccentric rod or its equivalent, substantially as described.

210,840. METHODS OF UTILIZING BISULPHIDE OF CARBON AS A MOTIVE POWER. Robert Ormesbear, Brooklyn, E. D., N. Y. Filed Apr. 27, 1878.



Claim.—1. The herein-described method of utilizing the expansion and contraction of the vapor of bisulphide of carbon and of compounds thereof as a motive power—to wit, by adding heat to and extracting heat from such vapor at each revolution of the engine, substantially as described.

2. The herein-described method of utilizing bisulphide of carbon and compounds thereof as a motive power—to wit, by alternately increasing and decreasing the tension of the vapor thereof by the addition of heat thereto and the abstraction of heat therefrom without condensing the said power-producing vapor to a liquid during the operation of the motor.

3. The furnace A, heating-chambers B B, vapor-chambers V V', and displacers F F, in combination with a working-cylinder, K, the whole connected and operating substantially as described, with an initial pressure in chambers V V' of over fifteen pounds per inch, produced without a compressing-pump.

4. The furnace A, heating-chambers B B, vapor-chambers V V', and displacers F F, in combination with regenerators E E and a working-cylinder, K, the whole connected and operating substantially as described, with an initial pressure in chambers V V' of over fifteen pounds per inch, produced without a compressing-pump.

5. The method herein described of producing motive power by the expansion and contraction, during each revolution of the engine, of vapors and gases produced within the mechanism employed from liquids and non-gaseous ingredients.

6. The combination, with a cooling-vessel, D, forming part of a vapor-chamber, V, of water-basins d^1 d^2, formed in one piece with said cooling-vessel D, as described.

7. The combination, with a cooling-vessel, D, and a heating-vessel, C, forming a vapor-space, V, of fire-gas-directing flanges C', cast upon such vessel C, and forming part of its heating-surface, substantially as described.

8. The combination, with vapor-spaces V V', of springs L L, which store the momentum of the continuously-moving displacers F F and of rocking-beam G, with other reciprocating attachments, substantially as described.

9. The combination, with a vapor-space, V, and a working-cylinder, K, of the stuffing-box fluid-packing chamber M, connected with the interior of the vessel to which the stuffing-box is attached, so as to submit chamber M to the pressure existing in such vessel, in order to prevent leakage into chamber M, substantially as described.

10. The combination, with a vapor-space, V, and a displacer, F, with a free space between the displacer F and the walls of said space V, of a guide-rod, N.

11. The combination, with vapor-spaces V V', displacers F F, guide-rods N N, and working-cylinder K, of the regenerators E E, when incorporated in said displacers F F, substantially as described.

12. The combination, with a motor in which power is produced by vapors or gases produced within the mechanism, which are alternately contracted and expanded during each revolution of the engine, of a velocity-controlling valve, P, through which, when open, the gases pass alternately both ways during each revolution of the engine.

13. The combination, with the vapor-spaces V V', displacers F F, regenerators E E, and working-cylinder K, of rock-shaft *g'*, driving-pin R upon loose wheel 20, bolt 22, and fly-wheel ing 21, for reversing the engine.

14. The combination, with vapor-spaces V V', displacers F F, and working-cylinder K, of the piston I, constructed with a packing and lubricating chamber, S, between the packing-rings *i i*.

15. The combination, with the vapor-spaces V V', displacers F F, and working-cylinder K, of the annular static fluid-packing chamber 7 between vessels C D.

16. The combination, with vapor-spaces V V' and displacers F F, of smoke-jacket n around the working-cylinder K, with independent smoke-passages n' n' and damper b^3.

17. The combination, with vapor-spaces V V', displacers F F, and working-cylinder K, of the cock 7 and equalising-channel 29, connecting the two vapor-channels leading to opposite ends of the cylinder K.

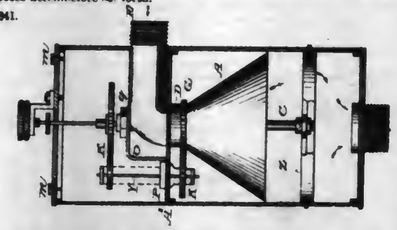
18. The combination, with vapor-spaces V V', displacers F F, and working-cylinder K, of the water-cistern 12, provided with cooling-tubes 16 16, for the purpose named.

210,841. ROTARY WATER-METERS. William H. Cusack and Edward B. Veronee, Nashville, Tenn. Filed Oct. 25, 1878.

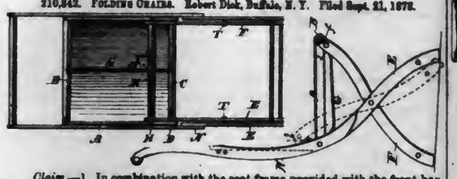
Claim.—1. The arrangement and combination, in a water-meter, of a revolving hollow cone, A, inclosing a curved and downward hollow arm, B, resting on the lower part on the pointed bearing C, and kept in position on the upper part by the short pipe D, which abuts against and in the socket of the pipe E, through which flows the water direct from the main water-work pipes, causing the above curved arm and cone freely to revolve, and forming a continuous pipe from the main water-work pipes to the point where the water is discharged into the lower chamber, Z, substantially as and for the purposes hereinbefore set forth.

2. The arrangement and combination, in a water-meter, of the hollow revolving cone A, inclosing the curved and hollow arm B, the partition or diaphragm A^2, the packing-spring O, and the annular cog-wheel G, adjusted to the top of the revolving cone A, which moves the train of wheel-works K K, to which may be attached any registering mechanism, substantially as and for the purposes hereinbefore set forth.

210,841.



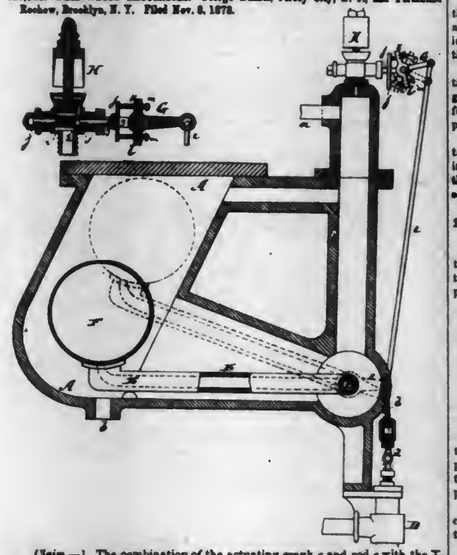
210,842. FOLDING CHAIRS. Robert Disk, Buffalo, N. Y. Filed Sept. 21, 1878.



Claim.—1. In combination with the seat-frame provided with the front bar, B, and pivoted to the back-frame N N, the back-leg frame F F, provided with the concavities *f f* at their upper ends, and the bar K, provided with the projections H H, as and for the purposes set forth.

2. In combination with the seat-frame pivoted to the back-frame N N, and provided with the heat elastic wire G, the back-leg frame F F and the bar K, provided with the perforation *f'*, as and for the purposes set forth.

210,843. FEED-WATER REGULATORS. George Dinkel, Jersey City, N. J., and Ferdinand Reehow, Brooklyn, N. Y. Filed Nov. 6, 1878.



Claim.—1. The combination of the actuating-crank *e* and rod *e* with the T-shaped lever G, and with the valve-stem *f* of a steam-whistle, substantially as herein shown and described.

2. The steam-whistle H, provided with valve *h*, spring *i*, and stem *j*, and combined with the lever G, which has two arms, *k* and *l*, substantially as herein shown and described.

3. The combination of the lever G and its arms *k l* and screws *m m* with the valve *h* of a steam-whistle, substantially as specified.

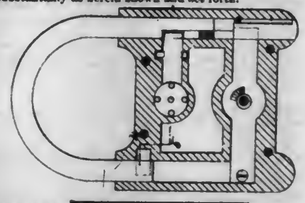
4. The combination of the vessel A, its float F, arm E, and shaft B with the crank *c*, adjustable rod *d*, and valve in supply-pipe D, substantially as specified.

210,844. SEAL-LOCKS. Eugene Farrot, Paris, France. Filed Oct. 26, 1878.

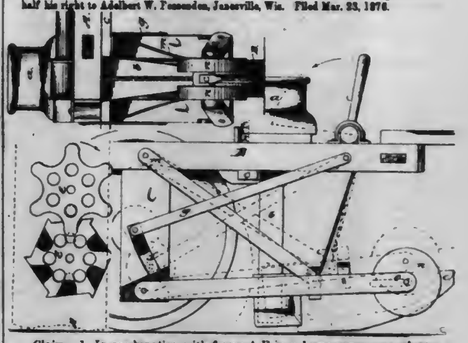
Claim.—1. The combination, in a padlock, with a mechanism for piercing paper which is held exposed to view on the face of the lock, of a curved rod or harp, the longer arm of which is capable of sliding and rotating in its bearing, said arm being notched, as described, to actuate said mechanism, substantially as herein shown and set forth.

2. A padlock composed of two recessed plates and a hinged movable plate, in combination with a curved rod provided with recesses and projections, and also with spring-plate and a transmission-lever, as hereinbefore described, the latter actuating, when the padlock is opened, a cylinder provided with piercing-points, all substantially as herein shown and set forth.

210,844.



210,845. HORSE-POWER CORN-PLANTERS. Albert H. Fenenden, Porter, assignee of one-half his right to Adelbert W. Fenenden, Janesville, Wis. Filed Mar. 23, 1876.



Claim.—1. In combination with frame A E in a horse-power corn-planter, the loose bearings working in slots in the pendants *e*, and pivoted rods *g*, to adapt the machine to uneven surfaces by the rising and falling of the wheels independently of each other, substantially in the manner described, as and for the purposes set forth.

2. In a horse-power corn-planter, substantially as described, the combination of the runners *c c c* with double arms *o o o*, double braces *m m m*, double gage-wheels *n n n*, and windlass attachment, for the purpose of opening a furrow for the seed, all combined and constructed as described, and for the purposes set forth.

3. In a horse-power corn-planter, substantially as described, the combination of the seed-boxes *a a a*, with the revolving bottoms, provided with openings, the ratchet-wheels *s s s*, springs *j j j* and *k k k*, and conductors *b b b* with the pockets and internal arrangements, as and for the purposes hereinbefore set forth.

210,846. FEED-WATER HEATERS FOR STEAM-BOILERS. Benjamin Ford, Union Township, Allegheny County, Pa. Filed Oct. 26, 1878.

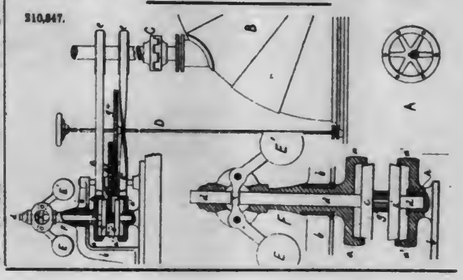
Brief.—When the pressure of the water is greater than the slit in the longitudinal pipe will admit in its normal position, the slit will yield and open, and thus prevent it from choking. The lower chamber adjusts itself to a horizontal position.



Claim.—1. The combination of the swinging trough or chamber *g*, longitudinal pipe C, provided with longitudinal slots *e*, and longitudinal crown-piece D, constructed, arranged, and operating, with relation to each other and the feed-pipe B and boiler, substantially as hereinbefore described, and for the purpose specified.

2. The combination, with the feed-pipe B, crown-piece D, and trough or chamber *g*, of the slotted pendants *f* and set-screws *h*, substantially as and for the purpose herein shown and described.

210,847.

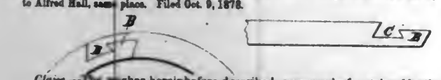


210,847. GOVERNORS. William H. Frees, Minneapolis Township, Hennepin County, Minn. Filed Apr. 3, 1878.

Claim.—1. In combination with the vertically-stationary drums a a', shaft d, and governor-balls E E', with their connecting arms, the tapered disks c c', with intermediate pinion, g', between said disks, all arranged substantially as and for the purpose set forth.

2. The combination and arrangement of the drum a', hollow step h, and shaft d, whereby the drum and shaft are enabled to run independently of and without coming in contact with each other, substantially as hereinbefore specified.

210,848. LEATHER WASHERS. Timothy Gingras, Buffalo, N. Y., assignor of one-half his right to Alfred Hall, same place. Filed Oct. 9, 1878.



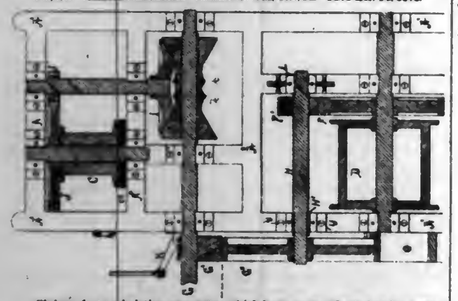
Claim.—The washer hereinbefore described, composed of a strip of leather bent into form, and having both extremities provided with the dovetailed tenons B and the grooves C, as and for the purpose set forth.

210,849. DUST-PANS. Edward K. Goss, Chicago, Ill. Filed May 17, 1878.



Claim.—A dust-pan consisting of the body A, provided with the handle F, in combination with the yielding lid C, hinged or jointed at its rear end to the cross-piece or top B, and there provided with the thumb-piece or lifter E, the said lid being arranged between the sides of the body and turned down at its forward end to there meet the bottom of the pan, the said parts being also connected to each other by means of a spring, D, arranged below the lid, substantially as and for the purposes specified.

210,850. HOISTING-MACHINES. Leonard H. Hall, Erie, Pa. Filed Mar. 14, 1878.



Claim.—1. In a hoisting apparatus which has a crane adapted to be swung, the combination, with said crane, of the drum or pulley C', chain c, drum C, pinions I I', shaft i, and conical friction-wheels I' I'', constructed and operating substantially as and for the purposes mentioned.

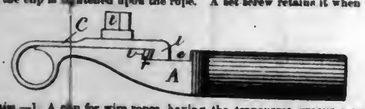
2. In combination with the drum C, shaft i, and cone friction-wheel I, the shaft G, sliding double-cone friction-wheels I' I'', yokes k k, sliding bar K', and lever K, said parts being arranged and operating substantially as and for the purposes mentioned.

3. The combination, in a hoisting apparatus, of the hoisting-drum D, wheels F F', and shaft H, which is journaled at one end in a swiveled journal-box, and at the other end in an eccentric journal-box, and bears at that end a friction-wheel, G'', which operates, in conjunction with a friction-wheel, upon the main shaft, or upon a dead friction-block, O, as regulated by said eccentric journal-box H', when moved by the lever h, substantially as and for the purposes set forth.

4. The combination, upon the main shaft of a hoisting apparatus, of the friction-wheel G', for operating the hoisting-drum D, and the friction-wheels I' I'', for operating the swinging drum C, said parts being arranged and operating substantially as and for the purposes herein set forth.

210,851. CLIPS FOR WIRE TRAMWAYS. Andrew S. Hallidie, San Francisco, Cal. Filed Sept. 11, 1878.

Brief.—Improvement on Patents Nos. 110,971 and 115,310. Consists in a transverse diagonal and beveled groove in the body of the clip, the outer end of the overlapping portion fitting therein, into which groove a wedge being driven, the clip is tightened upon the rope. A set-screw retains it when tightened.



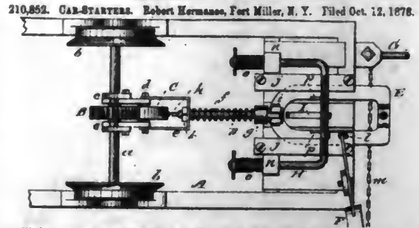
Claim.—1. A clip for wire ropes, having the transverse groove c, and the extremity of the lapped portion C bent downward into the groove, so as to form a lug, l, in combination with the wedge or key r, substantially as and for the purpose described.

2. The body A of a rope clip, made gradually thicker toward its outer end, and provided with a transverse groove, c, the inner edge or shoulder of which is made inclined and diagonal, as described, and having the extremity of the overlapped leaf C provided with a lug, l, the inner edge of which is inclined in the same direction, in combination with the wedge shaped key r, with its correspondingly-inclined edges, substantially as and for the purpose described.

3. The overlapping leaf C of a rope-clip, provided with the slotted hole s, and having the screw or bolt t, passing through the slotted hole, and secured in the body-piece A, in combination with a wedge-shaped tightening device, substantially as and for the purpose described.

4. The wedge-shaped key r, as described, for acting upon and varying the binding or griping strain of the leaf C upon the wire rope, substantially as and for the purpose described.

210,852. CAR-STARTERS. Robert Hermance, Fort Miller, N. Y. Filed Oct. 12, 1878.



Claim.—1. The combination of the ratchet-wheel H, levers e, bolt d, pawl C, rod f, sleeve g, chain or strap h, spring D, and U-shaped plate c with the axle a, substantially as and for the purpose specified.

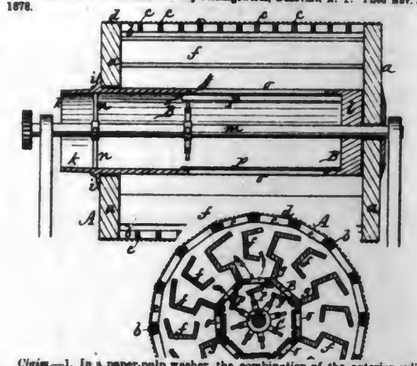
2. The sliding plate E, ways j, and lugs p, in combination with stop l, rod H, springs o, and rod f, substantially as and for the purpose set forth.

3. The weighted dog F, in combination with the sliding plate E and ways j, provided with holes or openings for the hooked end of the dog F to engage, substantially as and for the purpose described.

4. The combination, with the weighted dog F, chain m, and brake-rod G, of the sliding plate E, formed with lugs p, stop l, and rod H, and the springs o, substantially as and for the purpose set forth.

5. The combination of the weighted dog F, chain m, brake-rod G, ways j, sliding plate E, formed with lugs p, stop l, rod H, spring o, draft-rod f, sleeve g, chain or strap h, spring D, U-shaped plate c, bolt d, pawl C, levers e, and ratchet-wheel B, with axle a, substantially as and for the purpose set forth.

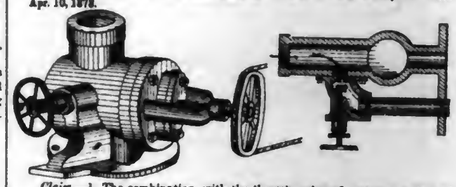
210,853. PAPER-PULP WASHERS. Henry Hollingsworth, Dansville, N. Y. Filed Nov. 30, 1878.



Claim.—1. In a paper-pulp washer, the combination of the exterior cylinder, A, provided with the buckets *f f*, and the open-ended interior cylinder, B, provided with the ports *o o* and automatic valves *p p*, the buckets raising the water and discharging the same through the valves, and the interior cylinder carrying the water off through the open end, as shown and described, and for the purpose specified.

2. In a paper-pulp washer, the combination, with the cylinder B, provided with the automatic valves *p p*, of the gage C, provided with extensible arms *s s*, as shown and described, and for the purpose specified.

210,854. THROTTLE-VALVES FOR STEAM-ENGINES. William J. Innis, Oil City, Pa. Filed Apr. 10, 1878.

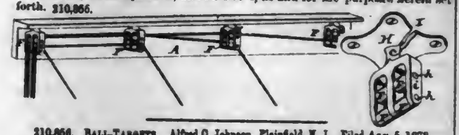


Claim.—1. The combination, with the throttle valve of a steam engine, of a secondary valve, constructed substantially as shown, and for the uses and purposes mentioned.

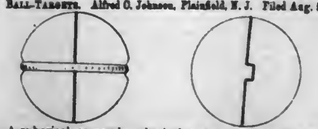
2. In combination with the throttle-valve of a steam-engine, a pipe or other suitable means of communication or conduct from the main steam pipe of an engine to the heater thereof, or to the jacket of the working parts thereof, provided with a suitable cock or valve, substantially as and for the purpose described.

210,855. PULLEYS FOR AWNINGS. Demetrius Jannopoulo, St. Louis, Mo. Filed Mar. 20, 1878.

Claim.—In store or other awnings, the swivel-hung and many-sheaved pulley composed of pulley-frame i, pins h, sheaves F, shank and button c, with overhanging slotted plate H, and its slot I, as and for the purposes herein set forth. 210,855.



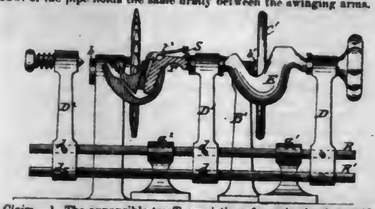
210,856. BALL-TARGETS. Alfred C. Johnson, Plainfield, N. J. Filed Aug. 5, 1878.



Claim.—A spherical, or nearly spherical, target, made in two parts, with a groove passing round it, to retain a rubber band or other suitable securing device, substantially as shown.

210,857. MACHINES FOR TURNING PIPES. Bengt A. Jonasson, Warren, Pa. Filed July 18, 1878.

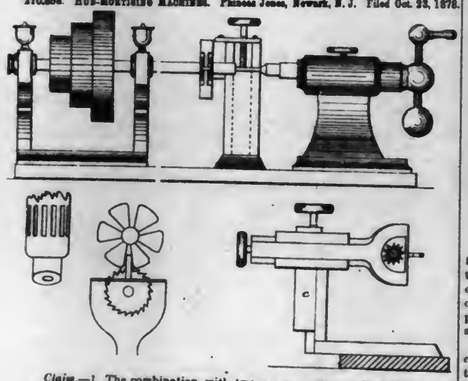
Brief.—The pattern is held and rotated between two swinging arms, by which it is pressed to the revolving guide-wheel. The material is held and rotated likewise, and is pressed to a rotary cutter. An expansible tap entering the bowl of the pipe holds the same firmly between the swinging arms.



Claim.—1. The expansible tap T, consisting of a main shank provided with a groove, and a secondary section, t, hinged to the main shank, and shaped so as to fit into the groove, in combination with the coiled expanding-spring S, substantially as described.

2. In a pipe-turning machine, the following form E, arranged within swinging arms D D', in combination with the sectional expansible tap T, substantially as described.

210,858. HUB-MORTISING MACHINES. Phineas Jones, Newark, N. J. Filed Oct. 23, 1878.



Claim.—1. The combination, with two or more cutters, adjustable toward or from each other, of a horizontally and vertically movable rest for the hub to be operated on.

2. The combination, with two or more cutters, adjustable toward or from each other, of a horizontally and vertically movable rest provided with a projection for sustaining a hub, a bed, bearings, and mandrel, substantially as set forth.

210,859. ROTARY HAY-RAKES. Augustus C. Kaiser and Hans H. Stangard, Sycamore, Ill., assignors of one-third their right to Samuel Robinson, same place. Filed Oct. 23, 1878.

Claim.—1. The bisected axle-box C C', bolted to the support D, with the bolt extending in an upwardly-inclined position, with or without the flange c^1, substantially as and for the purpose set forth.

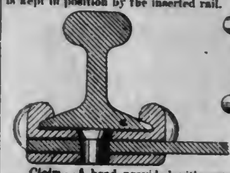
2. The rake-head hinge consisting of the clip c, having an axis, c^1, passing through an eyebolt, c^2, secured in place by jam-nuts c^3, substantially as and for the purpose set forth.

3. The clutch K K' on the driving or transporting wheel axle, the part K' having an adjustable cam and a lever, L, and the part K provided with a projection and a lever, J, in combination with the jointed, pivoted, and locking levers and the rake-head, substantially as and for the purpose set forth.

4. The combination, with the lever J on the axle A, of the adjustable cam M, to limit the throw of the rake-head, substantially as and for the purpose set forth.

210,860. RAILWAY-SWITCH BARS. James A. Kirby, Chicago, Ill., assignor to William B. Keep, same place. Filed Jan. 24, 1878.

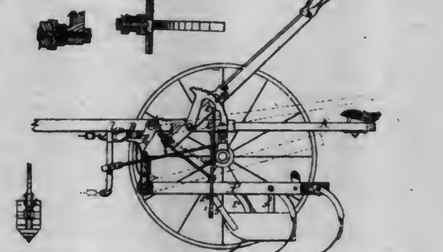
Brief.—The device consists of a plain rectangular connecting-bar, a clamp head, and a bolt. The head has seat and flanges to hold the rail. The connecting-bar is passed through a transverse recess in the head, and held in place by the bolt passed through the head and bar. The bolt is prevented from dropping through by a flaring head set in countersink in the clamp-head, and is kept in position by the inserted rail.



Claim.—A head provided with seat and flanges to retain the rail, and a transverse opening or recess below said seat, in combination with a bridle-bar and locking devices in the interior of the head, kept in engagement by the inserted rail, substantially as specified.

210,861. CULTIVATORS. William A. Knowlton and Andrew Rutledge, Rockford, Ill. Filed Apr. 30, 1878.

Brief.—Construction of pendent bracket and its connection to plate of drag-bar. Evener with upper and lower hooks, the pendants removable. The devices for securing the shovels and allowing them to turn in or out. Seat-bars turn forward.



Claim.—1. A pendant provided with bracing arms adapted to be secured to the side of the tongue-beam and to the under side of the cross-bar connecting the tongue-beams, the lower end of said pendant provided with a socket, in combination with a joint-bar having a journal, *b'*, which turns within the socket on the pendant, the lower end of the joint-bar provided with a stud, *b''*, and the plate of the drag-bar journaled on said stud and secured by a bolt, substantially as set forth.

2. The evener having end hooks rigidly secured thereto for the attachment of the whiffletrees, in combination with removable vertical eveners pivoted to the straps of the end hooks, the lower ends of said vertical eveners provided with hooks to receive the whiffletrees, and draft-links secured at their rear ends to the axle-tree, while their forward ends are attached to the vertical eveners, substantially as set forth.

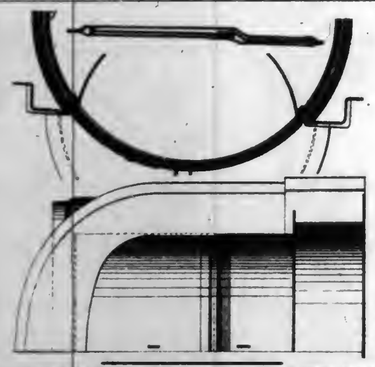
3. The combination, with the herein-described three-part shovel-standard, of grooved blocks adapted to receive the forward and rear edges of the side plates of the standard, and adapted to receive a shovel on the front side of the forward block, held in place thereon and made vertically adjustable on the standard by a screw bolt or bolts passed from the front through the parts between the side plates of the standard.

4. The combination, with the three-part shovel-standard herein described, of grooved blocks adapted to receive the forward and rear edges of the side plates of the standard, the front face of the forward block adapted to receive the convex surface of the shovel-block secured to the shovel, and held in place and made adjustable on the standard by means of the screw-bolt in the slot of the shovel-back passing through the grooved blocks and between the side plates of the shovel-standard, substantially as and for the purpose hereinbefore set forth.

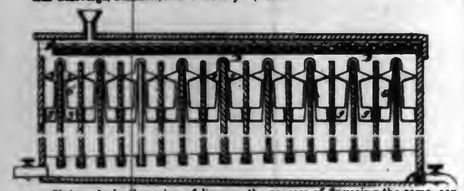
210,862. FIRE-PLACE HEATERS. Joseph R. Lancaster, New York, N. Y., assignor to Open Stove Ventilating Company, same place. Filed June 5, 1878.

Claim.—The combination of the upper guideways, the upper sliding doors, provided with the supporting-heads at the top and the lower guide-flanges at the bottom, and the lower sliding doors, substantially as described

210,862.



210,863. PROCESSES AND APPARATUS FOR AGING AND IMPROVING DISTILLED LIQUORS. Max Leasburgh, Baltimore, Md. Filed July 17, 1878.



Claim.—1. In the aging of liquors, the process of flavoring the same, consisting in subjecting liquor to the aromatic vapors resulting from the action of air upon fusel-oil, substantially as set forth.

2. In the aging of liquors, the process for flavoring and improving the same, consisting in subjecting liquor to the aromatic vapors resulting from the action of air upon fusel-oil, and simultaneously separating therefrom a portion of its own fusel-oil, substantially as set forth.

3. The process for aging and improving alcoholic liquors, consisting in passing liquor successively through a series of tanks provided with suitably-extended surfaces for collecting fusel-oil thereon, and alternately with said successive charges passing a current of warm air up through said tanks, whereby the fusel-oil collected on said surfaces is aromatized and incorporated into the next succeeding charge of liquor, substantially as set forth.

4. An apparatus for aging liquors, consisting in the combination of a series of tanks placed in regular series in different horizontal planes, and having communication with each other, the same being respectively provided with vertical plates for collecting the fusel-oil from liquors, substantially as set forth.

5. In an apparatus for aging liquors, a tank provided with a series of vertical plates which collect the fusel-oil, in combination with devices supported upon the top edges of alternate plates and formed with lateral studs to maintain all the plates in proper vertical position, substantially as set forth.

6. In apparatus for aging liquors, the combination, with a tank, of a series of vertical plates fitted therein, and suitable means for supporting said plates above the tank-bottom, whereby a space is formed between the lower edges of said plates and the tank-bottom, substantially as set forth.

7. In apparatus for aging liquors, the combination, with a tank, of a series of vertical plates located therein and longitudinal metallic supports provided with transverse grooves, in which said plates fit in vertical bearing, substantially as set forth.

8. In apparatus for aging liquors, the combination of a series of tanks located in different horizontal planes and formed with inclined bottoms, said tanks being connected together by suitable pipes, substantially as set forth.

9. In apparatus for aging liquors, a tank provided with plates for collecting fusel oil, in combination with a removable cover having a perforated delivery-pipe secured to the longitudinal central portion of its under side, substantially as set forth.

10. In apparatus for aging liquors, the combination, with a tank formed with openings at its top and bottom for permitting of the passage of air through the same, of a series of vertical plates supported in raised position from the tank bottom, and separating devices for maintaining the upper bodies of said plates in proper relative position, substantially as set forth.

210,864. TESTING BRIDGES. Louis Laubscher, Fort Wayne, Ind. Filed Oct. 14, 1878.



Claim.—1. A bridge having a reservoir formed upon it by the erection of side and end walls, and which reservoir is to be filled with water as a means for testing the strength of the bridge, substantially as shown.

2. In combination with a bridge, the end and side walls, water-proof material for covering the inside of the reservoir, and suitable clamps to unite the edges of the material together, substantially as set forth.

210,866. FLOUR-BOLTS. Spencer Lewis and Frederick A. Baker, Jr., Tiffin, Ohio. Filed Aug. 21, 1878.

Claim.—1. The combination, with a polygonal slatted reel and a yielding shaft or reel, of a bolt-cloth passing about the same as a continuous belt, substantially as set forth.

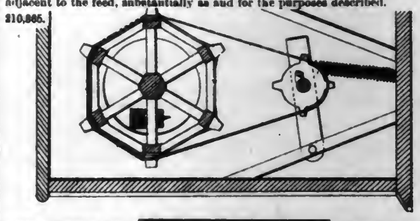
2. The combination, with a polygonal slatted reel and a yielding shaft or reel, both said reels being provided with pinions at their respective opposite extremities, of a bolt-cloth made in continuous-belt form, and having its edges provided with chains, which bind the cloth and engage with said pinions, substantially as set forth.

3. The combination, with a polygonal slatted reel and a continuous bolt-cloth, of a reel or shaft about which the latter passes, said reel or shaft being provided with a pulley located between its extremities which is adapted to maintain the central portion of the cloth taut, substantially as set forth.

4. The combination, with a continuous bolt-cloth, of upper and lower shafts or reels about which the same passes like a belt, said lower shaft or reel being formed of less diameter than the upper one, and thereby adapting the sides of said bolt-cloth to incline downwardly and inwardly, substantially as set forth.

5. The combination, with the bolt-cloth, of the flexible flange at its edge adjacent to the feed, substantially as and for the purposes described.

210,865.



210,866. MACHINES FOR BORING BRUSH-BLOCKS. Clemens A. Mahle, Cerry, Pa. Filed Mar. 11, 1878.

Brief.—Angular bits are mounted on a carrier-plate in groups of different inclination, and are revolved by a crank attached to the carrier-plate. The bits are guided by two parallel stationary bearing-plates, and the block is fed to them by a sliding block-board having one fixed and one hinged adjustable bearing-surface. The block-board is positively actuated by a treadle and intermediate mechanism, and is withdrawn from the bits by a weight. The holes produced are angular beveled slots.



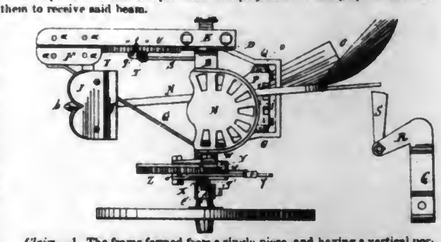
Claim.—1. The combination of the bearings G H, carrier-plate F, and drill-rods I, the said drill-rods being arranged in groups, and the rods of each group placed at a different angle, whereby the different-angled holes of each block are successively bored by the same machine, substantially as shown.

2. The combination of the treadle V, lever T, connected thereto and having a weight connected to its rear end, cranked lever, and movable block-board O, substantially as described.

3. The movable block-board O, having the fixed part K and the hinged adjustable part J, substantially as set forth.

210,867. SULEY-PLOWS. William W. Marsh, Sycamore, Ill. Filed Apr. 16, 1878.

Brief.—Construction of axle. Reversible sliding head carrying land wheel spindle, and provided with pins for connection with operating devices, adapting said spindle to be reversed when worn. Construction of plow-beam support, which is pivoted to bail and provided with projections forming spaces between them to receive said beam.



Claim.—1. The frame formed from a single piece, and having a vertical portion, B′, provided with a head to receive the sliding head for operating the land-wheel, and a vertical portion, B″, provided with an opening, C, all substantially as and for the purpose specified.

2. The frame formed from a single piece, having the vertical portions B′ B″ to receive the spindles for the wheels, and provided with the opening C and the recess or shoulder D for attaching the tongue-support, substantially as specified.

3. The reversible head W, provided with lugs g′ and pins e′ e′, and carrying the spindle D′, in combination with a supporting-head and devices for enabling the spindle to be reversed when worn, substantially as specified.

4. The pivoted plate P, provided with the ears n and with the projections i, which form spaces j between them, in combination with the bail or swinging frame Q, the rod o, and the plow-beam, substantially as and for the purposes herein set forth.

210,868. STEAM-PACKINGS. Richard Martin, Brooklyn, N. Y. Filed Oct. 10, 1878.

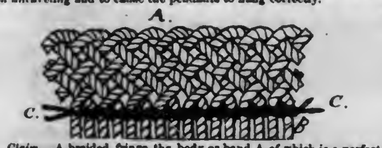
Claim.—As a new article of manufacture, the fibrous or vegetable packing hereinbefore described, having a foraminous sheet-metal lining extending partly, but not wholly, through it, substantially as hereinbefore set forth.

210,868.



210,869. FRINGE. August Moll, New York, N. Y. Filed June 24, 1878.

Brief.—The body of the fringe is braided, and there are interwoven at the edge of the body or band longitudinal cords or twisted yarns, to keep the band from unraveling and to cause the pendants to hang correctly.



Claim.—A braided fringe the body or band A of which is a perfect braid, the fringed part B of which is formed of pendants of single yarns of the braided body A, and having the longitudinal cord C, substantially as and for the purpose herein set forth.

210,870. FIRE-PLACE HEATERS. Alonzo R. Morgan, Astoria, assignor to Open Stove Ventilating Company, New York, N. Y. Filed Mar 6, 1878.

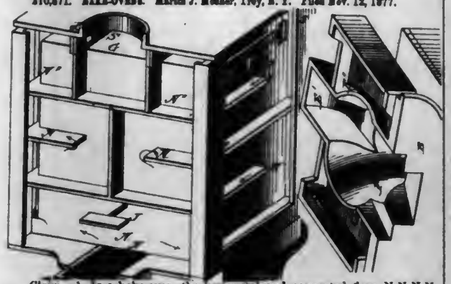


Claim.—1. The fire-box A, having a distinctively-formed and capacious rearward extension chamber, D, at the top, instead and in place of the ordinary pipe-connection, and the reverberatory chamber E, in combination, when said extension D terminates at and unites with said reverberatory chamber and said reverberatory chamber is located with its bottom accessible through the extension D.

2. The combination of the open-fronted fire box A, front plate, B B′, having flange J, and the frame I, having flange K, with a fire-place, substantially as described.

3. The combination of the open-fronted fire-box A, having expansion-chamber D, front plate, B B′, having flange J, frame I, having flange K, and the reverberatory chamber E, substantially as described.

210,871. BAKE-OVENS. Martin J. Mosher, Troy, N. Y. Filed Nov. 12, 1877.



Claim.—1. In a bake-oven, the horizontal and connected flues N N N N, formed in the exterior oven-case at the back and sides, the damper-apertures and dampers S′ S′, the top flues, S″ S″, central top flue, G, and the connecting-dampers d d, arranged to operate as herein described and shown.

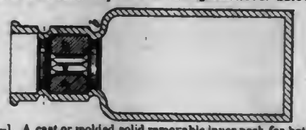
2. In a bake-oven, in combination with the fire-cylinder F′, rear flue, E′, and damper J, the horizontal and connected flues N N N N and N″ N″, formed in the exterior case, the top flues, S″ S″, center flue, G, and dampers d d, arranged to operate as herein described and shown.

3. In a bake-oven, the flue H H below the oven, connected with the hot-air-distributing chamber M, and apertures o o o o, with the openings and dampers S′ S′, for circulating a hot-air current into and through the oven O″ O″, and discharging the same into the flues N″ N″, as herein described and shown.

4. In a bake-oven, the entering air-passages Z Z in the base, the hot-air passages F″ F″, the bottom oven-flue H H, the heat-distributing chamber M, apertures o o o o, and the openings and dampers S′ S′, connecting the oven interior with the exterior-case flues N″ N″, as the same is herein shown and described.

5. In an oven shelf, the raised points P P P P, arranged upon its upper surface so as to support a cooking utensil and allow a current of hot air to circulate between the utensil and the shelf, as herein described and shown.

210,872. MUCILAGE-HOLDERS. Stephen S. Newton, Binghamton, N. Y. Filed May 17, 1878.

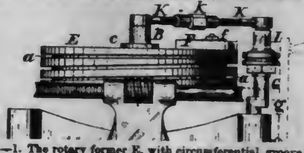


Claim.—1. A cast or molded solid removable inner neck for bottles, having vertical flutes or ribs and grooves continuous from top to bottom, substantially as set forth.

2. In combination with a bottle-neck, a rubber inner neck having longitudinal ribs and grooves, substantially as and for the purpose set forth.

210,873. MACHINES FOR BENDING METAL. William T. Nichols, Chicago, Ill. Filed Jan. 25, 1878.

Brief.—A spiral groove is formed around the former, into which is placed edgewise a metal strip, fastened at one end by the device shown. The outer edge of said strip is made to fit into the groove in the follower, the latter being adapted to slide up and down on an eccentric journal-post. By revolving the former in the manner shown the metal is bent edgewise around it.

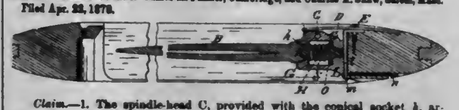


Claim.—1. The rotary former E, with circumferential groove a, as and for the purpose set forth, in combination with the rotary follower I and the eccentric journal-post G, and a device to hold said journal-post in adjustment, substantially as and for the purpose set forth.

2. The journal-shaft B of the former, in combination with the follower-journal G and the adjustable rigid connecting device K k, substantially as and for the purpose set forth.

3. The revolving follower I, composed of the thimble, collars i′, and set i, all constructed and arranged substantially as described.

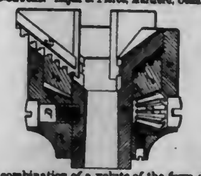
210,874. LOOM-SHUTTLES. James M. Palmer, Cambridge, and Charles A. Shaw, Salem, Mass. Filed Apr. 22, 1878.



Claim.—1. The spindle-head C, provided with the conical socket h, arranged concentrically with the hole or bearing in which the spindle-shank works, the spindle B, provided with the cone K, arranged concentrically with the shank of the spindle, the spring H, and pin O, all combined and arranged to operate substantially as and for the purpose specified.

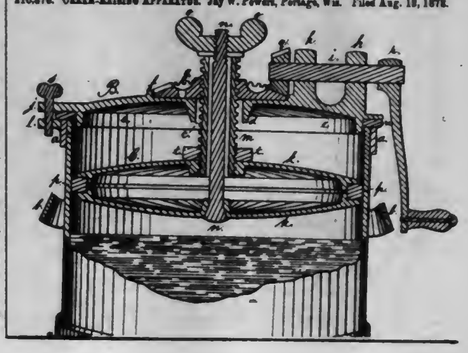
2. In combination with the cone K, arranged concentrically with the shank of the spindle, the auxiliary cone P and its conical socket, substantially as and for the purpose set forth.

210,875. DRILL-CHUCKS. Elijah S. Pierce, Hartford, Conn. Filed Mar. 23, 1878.



Claim.—The combination of a volute of the form described and shown, developed upon the sides of a hollow cone, having its wider faces toward the center, with correspondingly-shaped teeth upon the inclined ends of the jaw of a chuck, substantially as and for the purpose herein shown and described.

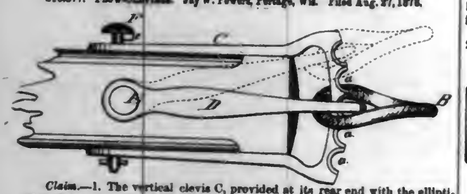
210,876. OREAR-RAISING APPARATUS. Jay W. Powers, Portage, Wis. Filed Aug. 16, 1878.



Claim.—1. In a vacuum milk-vessel, the cover B, provided with the hole c, ring *f*, bearings *h h*, packing *e*, lugs *f*, and guard *c*, and in connection therewith the crank *r*, pinion *q*, and nut *g*, arranged substantially as and for the purposes specified.

2. In the piston C, the combination of the upper and lower plates, *k k*, with the hollow piston-rod *n*, the tightening-rod *n*, tightening-nut *o*, and the gasket *p*, for the purposes specified.

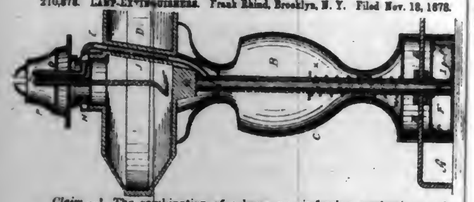
210,877. PLOW-CLEVISES. Jay W. Powers, Portage, Wis. Filed Aug. 27, 1878.



Claim.—1. The vertical clevis C, provided at its rear end with the elliptical or oblong hole *b*, and at its forward end with the anterior notches, *a a a*, standing at right angles to and interlocking with an ordinary draft-clevis, provided at its forward end with the posterior notches, *c c c*, the two combining to form one clevis, as specified.

2. In combination with the vertical clevis C and the horizontal clevis D, the twisted link B and the lock-bolt F, substantially as described, and for the purposes specified.

210,878. LAMP-EXTINGUISHERS. Frank Rhind, Brooklyn, N. Y. Filed Nov. 18, 1878.



Claim.—1. The combination of a lamp, an air-forcing mechanism, and a movable sleeve, substantially as shown.

2. The combination of a lamp, a fixed standard, a movable sleeve, and an air-forcing mechanism, substantially as described.

3. The combination of a movable sleeve, having the upper part of the bellows or other air-forcing mechanism secured to it, with the hollow standard, having the lower part of the air-forcing mechanism secured to it, the said mechanism being operated by the movement of the sleeve, substantially as set forth.

4. A lamp-collar having an air-chamber formed in its upper part, substantially as specified.

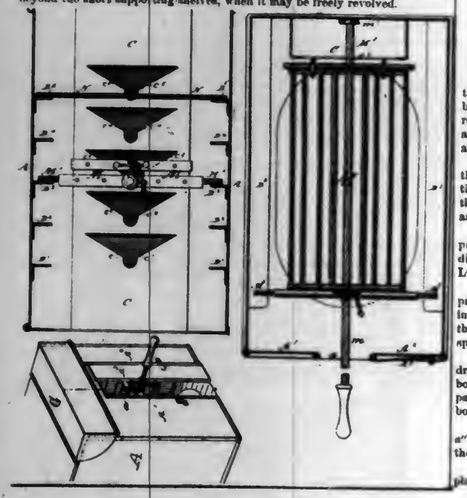
5. A lamp-collar having a female thread for the reception of the male thread of the burner and an air-chamber formed above said thread and connected with an air-forcing mechanism, substantially as shown.

6. A lamp-burner having an opening through its side to connect with an air-chamber in the collar, and a tube to extend up to or near the flame, substantially as described.

7. The combination of the base A, standard B, movable sleeve C, bowl D, bellows F, a tube through the bowl of the lamp, an air-chamber in the collar, and a tube in the burner for conveying the air to the flame, substantially as set forth.

210,879. COOKING APPARATUS. John P. Roberts, New York, N. Y. Filed May 24, 1878.

Brief.—The gridiron may be pulled forward until the cross-arms project beyond the short supporting-shelves, when it may be freely revolved.

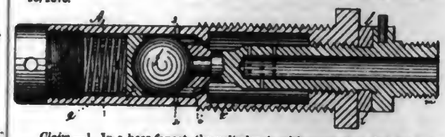


Claim.—1. The case A, having doors A^1 A^2 and short shelves B^1 B^2, adapted to serve in the manner described relatively to a gridiron or analogous cooking utensil, and to a fire-containing structure below, as and for the purposes herein specified.

2. The case A, having the short shelves B^1 B^2 and swivel-bearings c^1 c^2, in combination with a gridiron, M, having a pivot, M^1, and arms M^2 M^2, substantially as and for the purposes herein specified.

3. The case A, having the short shelves B^1 B^2 on its interior, and projecting vertical plate C near its back end, provided with triangular openings having swivel-bearings c^1 c^2 at their apices, as herein specified.

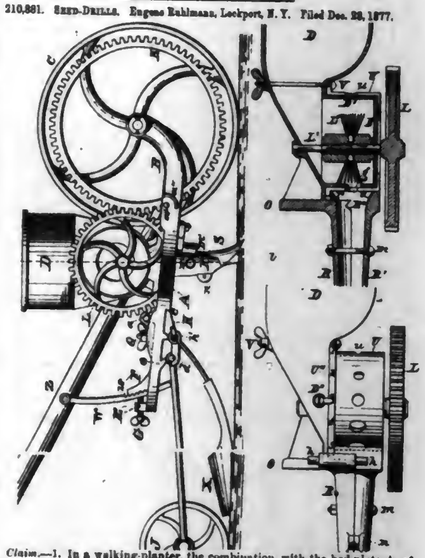
210,880. BEER-FAUCETS. John Rowe, Jr., and John S. Knight, Rockport, Mass. Filed Nov. 18, 1878.



Claim.—1. In a beer-faucet, the cylinder A, with screw-threaded front portion and perforated smooth portion, constructed with separate chambers *c c*, shoulders *i*, and screw-caps *j n*, and provided with spring *h*, disk or follower *g*, and elastic ball-valve *f*, all substantially as and for the purposes described.

2. In a beer-faucet, in combination with the perforated cylinder A, constructed with separate chambers *c c* and shoulder *i*, and provided with screw-head *j*, spring *h*, disk *g*, and elastic ball-valve *f*, the independent perforated cylinder B, constructed with screw-threaded end *m*, nut *k*, washer *l*, and cup-shaped head, which, when the cylinder is in place within the cylinder A, abuts against and holds the ball-valve back from its seat, all substantially as and for the purposes described.

210,881. SEED-DRILLS. Eugene Kahlmann, Lockport, N. Y. Filed Dec. 28, 1877.



Claim.—1. In a walking-planter, the combination, with the bed-plate A, of the wheel C, provided with the gear-wheel K, the seed-box D, pivoted to said bed-plate and provided with the protuberating ring D′ and gage-ring U, the revolving brush L″, driven by the gear-wheels L and K, spout R, and plow S, attached to said spout, the whole constructed and arranged substantially as and for the purpose specified.

2. The seed-box D, having the protuberating ring D′, in combination with the seed-gage U, consisting of the perforated ring sliding over the protuberation D′, as specified, said gage being rendered attachable to the seed-box by the bolt V and the projection *s*, acting upon the flange U″ on said seed-gage, as and for the object stated.

3. The combination, with the seed-box D, having the protuberation D′, provided with the aperture *g*, of the seed-gage U, provided with a series of differently-sized apertures, *u*, the plate N, with the lugs *e* and aperture *f*, spindle L′, brush L″, and the gear-wheel L, as described.

4. The combination, with the seed-box D, having the protuberation D′, provided with notches in its edge, of the plate N, having the aperture *f*, serving as a bearing for the shaft L′, said plate being held in place by the lugs *e* and the inwardly-projecting flange *u*″ on the seed-gage U, as and for the purpose specified.

5. The combination, with the seed-box D, formed with one-half of the dropping-spout R in one piece, of the part R′, secured to said part R by the bolt *m*, the steady-pin in the lug *n*, and the V-shaped projection R″ on said part R′ fitting a correspondingly-shaped groove in the flange O of the seed-box, as described.

6. The combination, with the platform A, having the pivots *a′ a′* and guards *a″ a″*, of the handles Y, loosely placed upon said pivots and bearing against the circular guards *a″*, as and for the purpose specified.

7. The combination, with the frame A, having centrally the bolt Q, of the plate H, secured to the under side of the frame by said bolt, and provided with

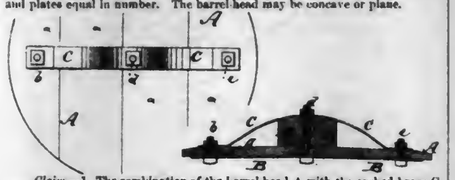
ears *b′* for attachment of the coverer X, and having the bearing for the pivots *d* of the fork I, as and for the object specified.

8. A seed-box consisting of the hopper D, having the protuberating ring D′, flange O, with the pivots *h*, and one-half of the dropping-spout R cast in one piece, as and for the purpose specified.

9. In a walking-planter, a seed-box having the flange O, provided with the pivots *h*, and the dropping-spout R, furnished with a lug, *m*, in combination with the platform A and lever T, said lever being pivoted to the under side of the platform and arranged to engage the lug *m* either on the top or bottom side thereof, as and for the object stated.

210,882. BARREL-HEADS. Henry Schwarzwalder, New York, N. Y. Filed Nov. 19, 1878.

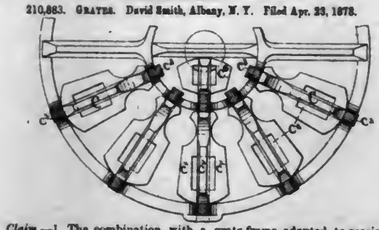
Brief.—The plate need not be in line with the brace; or two such plates may be used with one brace, or two braces with one plate, or several braces and plates equal in number. The barrel-head may be concave or plane.



Claim.—1. The combination of the barrel-head A with the arched brace C, plug D, and bolts *b d e*, substantially as herein shown and described.

2. The combination of the barrel-head A with the arched brace C, plug D, plate B, and bolts *b d e*, substantially as herein shown and described.

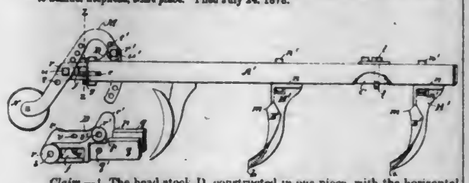
210,883. GRATES. David Smith, Albany, N. Y. Filed Apr. 23, 1878.



Claim.—1. The combination, with a grate-frame adapted to receive a reciprocating motion, as herein described, of a series of radially-winged grate-bars, C, arranged in said grate-frame transversely to its line of motion, and in such manner that the said bars will be automatically rotated upon their journals c^3 by the reciprocating motion of the grate-frame, as herein set forth.

2. The combination, with a circular grate-frame, of a series of radially-winged grate-bars, C, arranged as herein described, two or more of them being provided with winged portions c^2, extending into or near the center of the fire-bed, all of said grate-bars being antomatically rotated by the motion derived from the movement of the grate-frame, as herein set forth.

210,884. CULTIVATORS. Frederick W. Talley, Canaseraga, N. Y., assignor of one-third his right to Samuel Stephens, same place. Filed July 24, 1878.

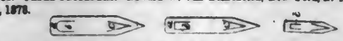


Claim.—1. The head-stock D, constructed in one piece, with the horizontal mortise *f*, lateral recesses *p p*, vertical plate *e*, front and rear side bearings, *r r′*, and bolt-holes *s s′* and *s s′*, as shown and described.

2. The improved cultivator-blade having a uniform width about equal to one-third of its length, V-shaped cutting-edges at each end with the point in the middle, and the whole in the form of about a third-pointed portion of a band making one spiral turn around and from end to end upon a cylinder having its diameter about one-fourth of its length, as shown and described.

3. In a cultivator, the improved blade having V-shaped cutting end edges and the particular spiral form and proportions specified, in combination with the standard, and secured thereto with all straight lines in the spiral working surface of the blade inclined upward, rearward, and laterally, and with the lower middle point, *b*, and the upper side corner, *m*, in a vertical plane, *y y*, coincident with that in which the blade is drawn forward in use, as shown and described.

210,885. PAPER-FASTENERS. Edward W. Van Benschoten, New York, N. Y. Filed June 19, 1878.



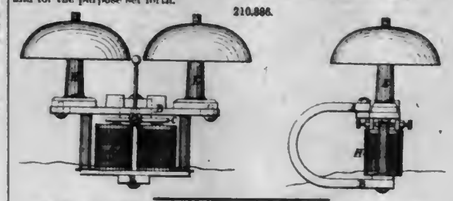
Claim.—As an improved article of manufacture, a cloth and paper fastener formed of a flat strip of metal, having one end dull, adapted for a head, and provided with the tongue *b*, and the opposite end tapered gradually and uniformly to a sharp penetrating-point, in line with its shank or body, with an internal bendable nib formed by a slit concentric with and within the outline of the point, and of similar length therewith, whereby the fastener is adapted to be forced lengthwise directly into the material to be fastened, substantially as herein shown and described.

210,886. POLARIZED ARMATURES FOR ELECTRIC BELLS. Thomas A. Watson, Boston, Mass. Filed Aug. 1, 1878.

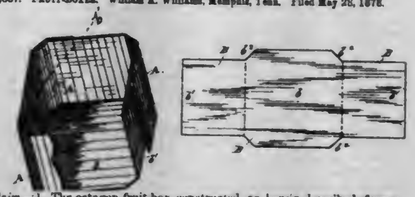
Claim.—1. The combination of the centrally-pivoted soft-iron armature, metal frame, and permanent magnet or magnets, as and for the purpose set forth.

2. The combination of the electro-magnet, permanent magnet or magnets, and armature centrally pivoted and facing the ends of the electro-magnet, as and for the purpose set forth.

210,886.



210,887. FRUIT-BOXES. William A. Williams, Memphis, Tenn. Filed May 28, 1878.

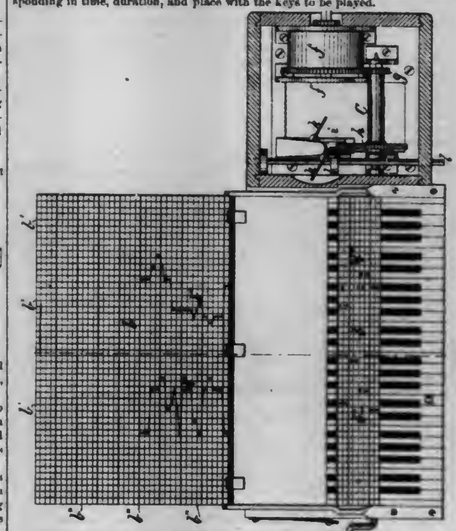


Claim.—1. The octagon fruit-box constructed, as herein described, from a blank, A, transversely scored and bent to form the sides, and a second blank, B, formed, as shown, with a wide central portion, *b*, and narrow spinned attaching ends b^1 b^1, united by oblique shoulders b^2 b^2, so as to fit within the sides A A_1, as explained.

2. The blank B, constructed with a wide central portion, *b*, and narrow ends b^1, united by oblique shoulder b^2, as herein shown and described.

210,888. NOTE-INDICATORS FOR MUSICAL INSTRUMENTS. George Woods, Cambridgeport, Mass. Filed Mar. 18, 1878.

Brief.—The sheet moves automatically in a perpendicular direction to the key-board, which presents a continuous piece of music to the player, corresponding in time, duration, and place with the keys to be played.



Claim.—1. The herein-described note-indicator, consisting of movable sheet-music *b*, combined with a stationary index or imitation key-board, or ordinary key-board, and suitable automatic mechanism for its operation, as and for the purpose set forth.

2. The herein-described sheet-music *b*, provided with note-marks b''' b''', the size of which indicates their relative length or duration, in combination with an imitation key-board, or key-board, as and for the purpose set forth.

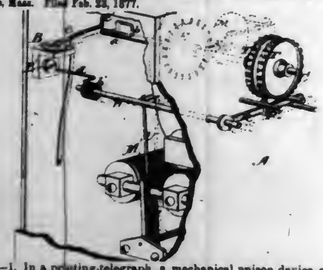
3. The herein-described sheet-music *b*, provided with vertical lines, bars, or rows b' b' b', horizontal lines, bars, or rows b'' b'' b'', and note-marks b''' b''' b''', as and for the purpose set forth.

210,889. MEDICATED SOAPS. E. Allen Adams, Washington, D. C. Filed Nov. 18, 1878.

Brief.—The base consists of a soap made from pure olive-oil and soda. This is combined with the other ingredients in the following proportions: soap basis, one thousand and ninety-five grains; thymol, five grains; salicylic acid, one scruple; boracic acid, one scruple; sulpho-carbolate of sodium, one dram.

Claim.—The herein-described composition of matter, consisting of olive-oil soap, thymol, borscic and salicylic acids, and the sulpho-carbolate of sodium.

210,890. PRINTING-TELEGRAPHS. George L. Anders, Boston, assignor to E. Baker Welch, Cambridge, Mass. Filed Feb. 23, 1877.



Claim.—1. In a printing-telegraph, a mechanical unison device acting independently of the press mechanism, and brought into action by currents of one polarity, and disconnected by a current of opposite polarity.

2. In a printing-telegraph having its type-wheel operated or controlled by electro-magnetism, so as to rotate step by step, a mechanical unison device acting independently of the press mechanism, and brought into action by main-line currents of one polarity, and disconnected by a main-line current of opposite polarity.

3. In a printing-telegraph having two contiguous type-wheels fixed upon the same arbor and operated or controlled by electro-magnetism, so as to rotate step by step, a unison device which is brought into action when one type-wheel is used for printing, and disconnected on moving the printing-pad or type-wheels so that an impression can be taken from the other type-wheel, substantially as and for the purpose set forth.

4. In a printing-telegraph, the combination, with the type-wheel arbor or its equivalent, of the screw *a* and pin *b* upon said arbor, the hooked lever *c*, the lever *d*, shifting-bar W, and projection *b'* upon the same, substantially as and for the purpose set forth.

5. In a printing-telegraph, the combination, with the printing-magnet placed in the main-line circuit, of the printing mechanism and a retarding device, which prevents the printing mechanism from moving sufficiently to effect an impression unless a prolonged current is transmitted through the printing-magnet, substantially as and for the purpose set forth.

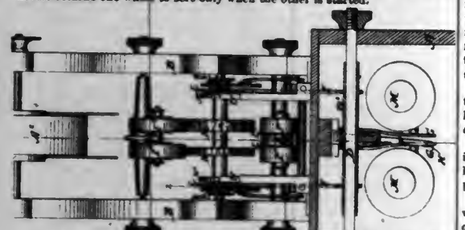
6. In a printing-telegraph, the combination of the printing-magnet M', armature P', lever G, pawl H, wheel *l i*, and pendulum-escapement P', substantially as and for the purpose set forth.

7. In a printing-telegraph, the combination, with the lever G, of the lever R and printing-pad, substantially as and for the purpose set forth.

8. In a printing-telegraph having two contiguous type-wheels fixed upon the same arbor, and operated or controlled by electro-magnetism so as to rotate step by step, the combination, substantially as described, of the type-wheel magnet, a magnet for shifting the printing-pad from one type-wheel to the other, or for shifting the type-wheels themselves, operated by reversals of the current, and a printing-magnet, all placed in the same main-line circuit, and a retarding device acting to prevent an impression unless a prolonged current is transmitted, and a unison device acting independently of the press mechanism, and brought into action and disconnected by currents of opposite polarity.

210,891. PRINTING-TELEGRAPHS. George L. Anders, Boston, assignor to E. Baker Welch, Cambridge, Mass. Filed June 12, 1877.

Brief.—Two contiguous and independently-rotated type-wheels are each worked by separate levers. The levers are both actuated by the armature of a single electro-magnet. A tongue vibrates between the poles of the magnet in either direction, according to polarity of the current, which tongue serves to connect the armature with either one of the type-wheel levers. A unison device returns one wheel to zero only when the other is started.



Claim.—1. A printing-telegraph having two contiguous type-wheels independently rotated step by step by separate levers, in combination with a single electro-magnet, actuating one or the other of the type-wheels and their respective unison devices, according to the polarity of the current transmitted through said actuating-magnet, substantially as and for the purpose set forth.

2. The combination of two contiguous and independently-rotated type-wheels and their respective propelling devices, the electro-magnet M, and polarized director H, substantially as and for the purpose set forth.

3. The combination of the shaft D, carrying two levers, I I, acting upon independent type-wheels, and two arms, G G, the armature C, polarized tongue H, and foot F, substantially as and for the purpose set forth.

4. A printing-telegraph having two contiguous and independently-rotated type-wheels, each of which is released and returns to the unison-point when the other commences to rotate, substantially as and for the purpose set forth.

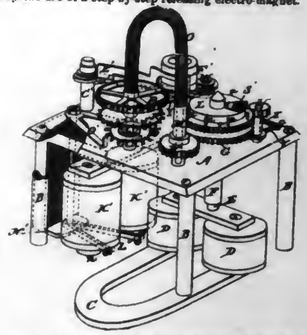
5. The combination of the ratchet-wheels N N, pawls U U, rock-shafts V V', arms W W, levers I I, and pins X X, substantially as and for the purpose set forth.

6. The combination of the pinion O, segmental rack R, notched disk K', and arm O', substantially as and for the purpose set forth.

7. The combination of the magnet M', armature U', arm C', toothed wheel K', printing-pad P', and notched wheels L' L', substantially as and for the purpose set forth.

210,892. PRINTING-TELEGRAPHS. George L. Anders, Boston, assignor to E. Baker Welch, Cambridge, Mass. Filed Feb. 19, 1878.

Brief.—The shaft of a magneto-generator has a uniform velocity of rotation, and, through the elastic connection of a coil-spring, actuates the type-wheel. Such type-wheel is released by means of magnetic currents derived from the generator by the use of a step-by-step releasing electro-magnet.



Claim.—1. In a printing-telegraph, a type-wheel driven from a continuously-rotating shaft, on which are supported the coils of an electro-magnet, and mechanism, substantially as described, whereby the type-wheel is released with a step-by-step motion, regulated by the currents generated on the rotation of said coils.

2. In a printing-telegraph having a type-wheel released step by step by magneto-electric currents, the combination, with the type-wheel, of the continuously-rotating armature of the generator of the magneto-electric currents releasing the type-wheel, and suitable gearing connecting the type-wheel to the said rotating armature, substantially as and for the purpose set forth.

3. In a printing-telegraph, a retarding device consisting of a toothed wheel rotated at a uniform rate by the motor rotating the type-wheel, but at a slower rate than that of the type-wheel, substantially as and for the purpose set forth.

4. The combination of the oscillating arm Y, the spring S², or its equivalent, for retracting said arm, the spring-pawl B', the toothed wheel R, and the toothed wheel H, rotated by the same motor that rotates the wheel R and the type-wheel, but at a rate slower than that of the type-wheel and wheel R, substantially as and for the purpose set forth.

5. The combination, with the continuously-rotating armature of the generator of the magneto-electric currents releasing the type-wheel, of an arbor rotating with said armature, a type-wheel and escapement-wheel connected to said arbor by an elastic frictional connection, and an escapement vibrated by the magneto-electric currents produced by the generator, substantially as and for the purpose set forth.

6. The combination, with the rotating armature of a generator of magneto-electric currents, of the arbor E, gear-wheel G upon said arbor, pinion N, connected to said gear-wheel and type-wheel P, toothed wheel R, and escapement-wheel S, connected to said pinion by an elastic frictional connection, substantially as and for the purpose set forth.

7. The combination of the pinion N, U-shaped rod M, helical spring G, and sleeve carrying the type-wheel P, substantially as and for the purpose set forth.

8. The combination, with the continuously-rotating armature of a generator of magneto-electric currents, of the arbor E, the gear-wheel G, the gear-wheel I, connected to said arbor E by a spring, S¹, or its equivalent, as described, and having thereon a series of pins, *a a a*, or their equivalents, the arm D', carrying the printing-roller, and an escapement, which holds the wheel I and prevents it from being rotated by the arbor E when the type-wheel is rotating, and releases said wheel and allows it to rotate with the arbor E sufficiently to permit one of the pins *a a a*, or its equivalent, to pass the end of the arm D' when the rotation of the type-wheel is arrested, substantially as and for the purpose set forth.

9. The combination, with the continuously-rotating shaft K, of the arm Y, the pawl B, the toothed wheel H upon the arbor E, the spring S², or its equivalent, and the escapement holding and releasing the printing mechanism, substantially as and for the purpose set forth.

10. The combination of the gear-wheel I, the pinion U, cross-piece V, having arms *c c'*, and rotating with the pinion U, the escapement-arm Z, having hooks *b b'*, arm Y, and spring S², or its equivalent, substantially as and for the purpose set forth.

11. The combination of the rotating coils D D, arbor E, gear-wheel G, gear-wheel I, connected to the arbor E by the spring S¹, and provided with pins *a a a*, or their equivalents, pinion U, cross-piece V, escapement-arm Z, arm Y, spring S², arm D', carrying the printing-roller, pinion N, U-shaped rod M, spiral spring O, type-wheel P, toothed wheel R, escapement-wheel S, toothed wheel H, spring-pawl B', escapement O', vibrating armature L, and the polarized type-wheel magnet, substantially as and for the purpose set forth.

12. An armature for a Siemens polarized magnet having two arms or extremities, each magnetized by induction to the same polarity, substantially as and for the purpose set forth.

210,893. PRINTING-TELEGRAPHS. George L. Anders, Boston, assignor to E. Baker Welch, Cambridge, Mass. Filed Apr. 30, 1878.

Claim.—1. In a printing-telegraph having two contiguous type-wheels, either of which may be used at will, the combination, with two independently-actuated printing-pads, of a polarized director operated by a change in the polarity of the current to determine the action of one or the other of the printing-pads, substantially as and for the purpose set forth.

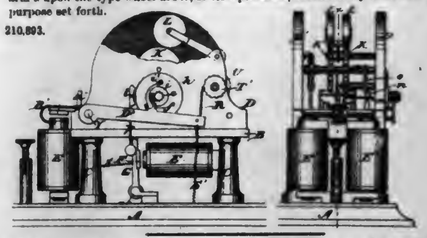
2. In a printing-telegraph having two contiguous type-wheels, either of which may be used at will, the combination, with a polarized director carried by the lever X, of the lever m and stop *s* on the type-wheel shaft, acting to hold the type-wheels at unison when the director is in one position, and to permit them to rotate when the director is in the other position, according to the polarity of the exciting-current, substantially as and for the purpose set forth.

3. In a printing-telegraph having two contiguous type-wheels, the printing-levers P P', the polarized director B', constructed and operating as described, and acting to move either one of the said printing-levers, according to the polarity of the current, substantially as and for the purpose set forth.

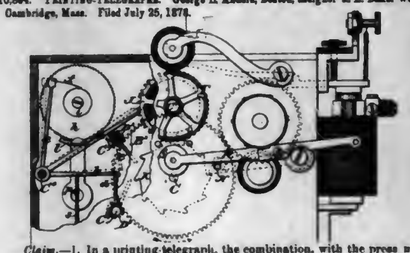
4. The combination of the lever X, the polarized director B', pivoted thereto and bent at the end round and under the end of the lever X, the armature F', and magnet E', substantially as and for the purpose set forth.

5. The combination of the polarized director B', the arm *m*, constructed and operating as described, and provided with a projection, *n*, and the unison-arm *s* upon the type-wheel arbor, or its equivalent, substantially as and for the purpose set forth.

210,893.



210,894. PRINTING-TELEGRAPHS. George L. Anders, Boston, assignor to E. Baker Welch, Cambridge, Mass. Filed July 25, 1878.



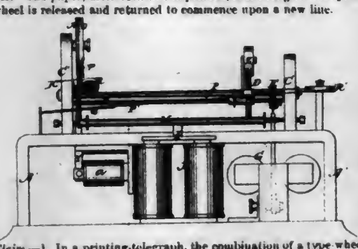
Claim.—1. In a printing-telegraph, the combination, with the press mechanism, of a toothed wheel or its equivalent fixed upon the type-wheel arbor or its equivalent, controlling the press mechanism, and an escapement which permits the free movement of the controlling device in one direction, but retards its movement in the other direction, substantially as and for the purpose set forth.

2. In a printing-telegraph, the combination, with the press mechanism, of a toothed wheel or its equivalent fixed upon the type-wheel arbor or its equivalent, an arm oscillated by the action of the toothed wheel and controlling the press mechanism, a spring-pawl attached to the said arm, a serrated wheel rotated by said pawl, and an escapement, substantially as and for the purpose set forth.

3. In a printing-telegraph, the combination, with the toothed wheel J or its equivalent fixed upon the type-wheel arbor or its equivalent, of the oscillating arm *a*, rock-shaft C', arm *e*, pawl *f*, toothed wheel *i*, serrated wheel *h*, escapement *l*, pendulum *p*, and arms *b d c'*, substantially as and for the purpose set forth.

210,895. PRINTING-TELEGRAPHS. George L. Anders, Boston, assignor to E. Baker Welch, Cambridge, Mass. Filed Aug. 14, 1877.

Brief.—A revolving type-wheel moves laterally along the lines of a sheet of paper. The paper, after each line is printed, is fed longitudinally, while the type-wheel is released and returned to commence upon a new line.



Claim.—1. In a printing-telegraph, the combination of a type-wheel moved step by step by electro-magnetism, and also moving laterally, an electro-magnet in the main-line circuit operating the printing-pad and moving the type-wheel laterally after each impression, and an electro-magnet operated by reversals of the main-line current to effect the return of the type-wheel to its starting-point and the longitudinal movement of the paper, substantially as and for the purpose set forth.

2. The combination of the rotating type-wheel and press, feed devices for carrying a sheet of paper past the same, electro-magnets G J *s*, and operating devices whereby the said magnets impart the rotation to the wheel, adjust wheel laterally, and operate the press, as set forth.

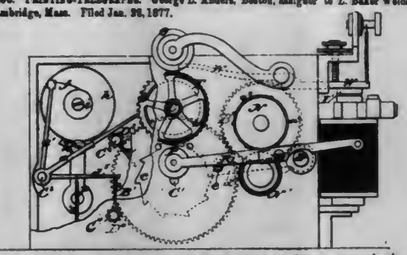
3. The combination, with the impression device of a printing-telegraph, of the pawl K, operated thereby at each impression, the ratchet-wheel N, wheel O, cords P P', spiral spring Q, or its equivalent, and a sliding carriage connected therewith and moving the type-wheel or paper sheet laterally, substantially as and for the purpose set forth.

4. The combination of the rotating-type-wheel, the ratchet-wheel N, operating the devices for carrying the type-wheel laterally, devices for imparting an intermittent rotation to the wheel N, and pawl Y, operating to release or retain the wheel N, as set forth.

5. In combination with a type-wheel moving laterally for printing on a sheet of paper, a unison-stop which is released at the commencement or termination of such movement, substantially as and for the purpose set forth.

6. The combination, with the type-wheel and mechanism rotating the same step by step by electro-magnetism, of the shaft B, sleeve X, provided with the flange W, the rock-shaft H, carrying the extended impression-pad M, and operated by electro-magnetism or mechanically, the pawl K, connected to the rock-shaft H, the ratchet-wheel N, wheel O, cords P P, rod U, sleeve T, arm V, spring Q, the releasing-pawls Y *b*, and the toothed wheel C, and paper-cylinder S', substantially as and for the purpose set forth.

210,896. PRINTING-TELEGRAPHS. George L. Anders, Boston, assignor to E. Baker Welch, Cambridge, Mass. Filed Jan. 26, 1877.



Claim.—1. In a printing-telegraph having two contiguous type-wheels rotated step by step by the action of alternate positive and negative currents, an electro magnet or magnets for shifting the printing-pad and paper strip, or for shifting the type-wheels connected to the line by the movement of the armature of the type-wheel magnet or magnets, substantially as and for the purpose described.

2. In a printing-telegraph having two contiguous type-wheels rotated step by step by the action of alternate positive and negative currents, an electro magnet or magnets for shifting the printing-pad and paper strip, or for shifting the type-wheels, operating to shift in one direction by a prolonged current of one polarity, and in the other direction by a prolonged current of opposite polarity, substantially as and for the purpose described.

3. In a printing-telegraph having two contiguous wheels rotated step by step by the action of alternate positive and negative currents, the combination, with the type-wheel magnet or magnets, of two electro-magnets operating mechanism for shifting the printing-pad and paper strip, or the type-wheels when excited by a prolonged current, as described, one magnet shifting in one direction and the other magnet shifting in the other direction, and each placed in a branch of the main-line circuit, which branches are respectively connected to the line as the type-wheel magnet or magnets is influenced by a positive or negative current, substantially as and for the purpose set forth.

4. The combination, substantially as set forth, of a main driving-train, mechanism for rotating a type-wheel or type-wheels, mechanism for moving the printing-pad to effect an impression, and a specific gearing connecting said mechanisms, so that both are driven by the said driving-train when the action of mechanism rotating the type-wheel or type-wheels is controlled by electro-magnetism, so that a step-by-step rotation is given, and the mechanism moving the printing-pad is controlled by a device operated by the type-wheel mechanism, in connection with a retarding device which permits the free movement of the controlling device in one direction, but retards its movement in the other direction, whereby the action of the printing-pad is automatically effected on arresting the step-by-step movement of the type-wheel or type-wheels.

5. A unison device acting to stop the type-wheel at each revolution, and released by a periodic variation in the strength of the line-current, substantially as and for the purpose set forth.

6. A printing-telegraph having two contiguous type-wheels rotated step by step by the action of alternate positive and negative currents controlling mechanism driven by a main driving-train, and connected to the type-wheel mechanism by epicyclic gearing, substantially as described, having its press mechanism driven by the same driving-train, and controlled by a device operated by the type-wheel mechanism in connection with a retarding device, acting as described, to cause the printing to be automatically effected on the arrest of the step-by-step movement of the type-wheel, and having a mechanism for shifting the printing-pad and paper strip or the type-wheels, operated by a prolongation of the main-line current, substantially as and for the purpose described.

7. A printing-telegraph having its type-wheels rotated step by step by the action of alternate positive and negative currents, having its printing mechanism controlled by a device operated by the type-wheel mechanism, in connection with a retarding device, as described, so that the action of the printing mechanism is automatically effected on arresting the step-by-step movement of the type-wheel, and having a unison device operated by a periodic increase of the main-line current.

8. The combination, in a printing-telegraph, of a type-wheel or contiguous type-wheels rotated step by step, a press or type-wheel shifting device, and a unison device, all separately and independently operated by the direct action of the main-line current, with mechanism for moving the printing-pad to effect an impression, operated automatically on arresting the step-by-step movement of the type-wheel or type-wheels.

9. The combination of the magnets M' M', when arranged and connected to the line as described, with the pivoted armature L and press-shifting mechanism operated thereby, substantially as and for the purpose described.

10. The combination of the printing-pad P', frame R, levers W W', rock-shaft armature L, and magnets M' M', substantially as and for the purpose described.

11. The combination of an escapement-wheel having one tooth longer than the others with the lever W, armature L', and type-wheel magnet M, substantially as and for the purpose described.

12. A feed-roller having alternate smooth and serrated surfaces, substantially as and for the purpose described.

13. The combination of a toothed wheel, *a*, lever *d*, pin *c*, and press-frame R, substantially as and for the purpose described.

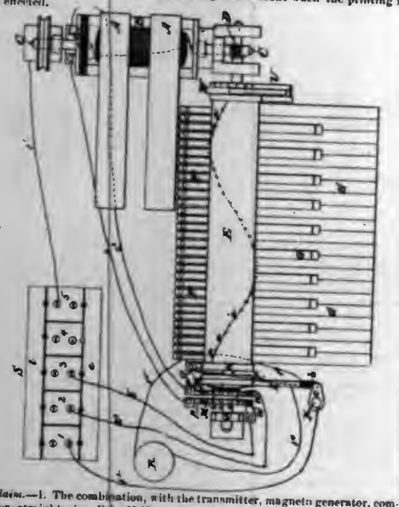
14. The combination, with the magneto-transmitter, of the commutator, keys P' P", and their connections, for sending a continued current of the line

of either polarity, substantially as and for the purpose described.

15. The combination, in a printing-telegraph, of a printing-wheel controlled from a polarized magnet to rotate step by step, and a power-press mechanism provided with an oscillating escapement, which prevents the press from acting except when the succession of currents through the type-wheel magnet is suspended, substantially as set forth.

210,897. TRANSMITTERS FOR PRINTING-TELEGRAPHS. George L. Anders, Boston, assignor to E. Baker Welch, Cambridge, Mass. Filed Dec. 3, 1877.

Brief.—A magneto-generator and transmitter provided with commutators and connections for transmitting intermittent currents of one or both polarities, according to the requirements or kind of receiver in communication; also, a resistance in connection, and particularly adapted to other devices of the transmitter to be shunted, thereby strengthening the current when the printing is to be effected.



Claim.—1. The combination, with the transmitter, magneto generator, commutator, straightening-disks M M′, and resistance-coil R, of the switch S, having four or more divisions, and devices and circuits, substantially as described, whereby the current can be sent through the switch on a long or a short circuit, or intermitted and reversed, as described.

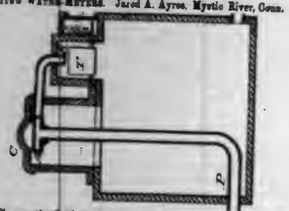
2. The combination of the magneto-generator, the transmitting-cylinder E, pins *a a a*, springs F F, keys G G, disk M, plates *c c′*, insulated plate *b*, resistance-coil R, and connecting-wires l^1, l^2, l^3, l^4, l^5, and l^6, substantially as and for the purpose set forth.

3. The combination of the magneto-generator, the transmitting-cylinder E, pins *a a a*, springs F F, keys G G, disk H, spring O, arm I, standard K, plate C, insulated plate *b*, resistance-coil R, and connecting-wires l^1, l^2, l^3, l^4, l^5, and l^6, substantially as and for the purpose set forth.

4. The combination of the transmitting-cylinder E and its keys, the plates *c c′*, disk H, arm I, and disks M M, and the switch S, resistance-coil, and connections, substantially as and for the purpose as set forth.

5. The combination of the transmitter, its commutator T, straightening-wheels M M′, and their connections, for transmitting intermittent currents of the same or alternate polarity, the receiving-instruments in the same circuit, severally adapted to be operated by said different currents, and the switch arranged in the circuit to transmit the various currents to the different instruments, as set forth.

210,898. OSCILLATING WATER-METERS. Jared A. Ayres, Mystic River, Conn. Filed July 17, 1878.



Claim.—1. The method of maintaining an undiminished air-supply in the air-chamber of a water-meter, consisting in scattering the water into spray within the meter, in order to separate and utilize the air with which it is mingled as it enters.

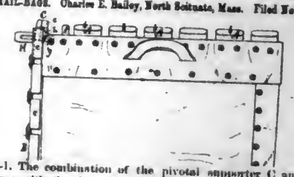
2. The method of measuring water flowing in service-pipes, consisting in dividing the stream of water in the air-chamber of a meter into a number of equal or equivalent streams, measuring one of these streams, and scattering the remainder in spray to maintain the air-volume, substantially as described.

3. In a water-meter, the combination, with the induction-pipe, of a spraying apparatus within the case, substantially as described.

4. In a water-meter, the combination, with the induction-pipe, of a perforated head or cap and a dome, against which the water is dashed and scattered in spray.

5. In a water-meter, the combination of the induction-pipe P, the perforated head or cap A, the spraying-dome C^2, the measuring-bucket T, and the registering apparatus.

210,899. MAIL-BAGS. Charles E. Bailey, North Scituate, Mass. Filed Nov. 29, 1878.



Claim.—1. The combination of the pivotal supporter C and the flexile clasp B, for use with the flanged plates A, when made and applied to a bag substantially as set forth.

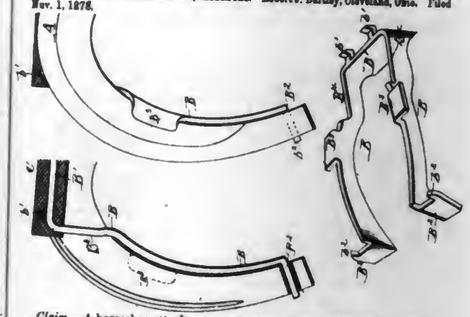
2. The combination of the pivotal supporter C and its sustaining-plate D, arranged with and applied to such supporter essentially as set forth.

3. The combination of the supporter C, pivoted to the bag or to a plate or device fixed thereto, with such bag, the flexile clasp B, and the flanged plates A, applied as specified.

4. The combination of the projection *f* with the bag, the recessed pivotal supporter C, the flexile clasp B, and the flanged plates, arranged and applied substantially as set forth.

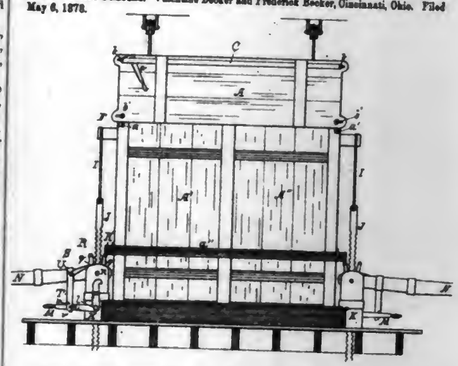
5. The combination of the stops *g h* with the flexile clasp B and its pivotal supporter C, constructed, arranged, and applied substantially as set forth.

210,900. CALK ATTACHMENTS FOR HORSESHOES. Robert J. Bartley, Cleveland, Ohio. Filed Nov. 1, 1878.



Claim.—A horseshoe attachment consisting of a spring-metal piece, B, having heel-calks B^2 B^2, in combination with wide ear-pieces B^3 and toe-piece B^1, provided with lugs b^1, projecting well forwardly from the same, said toe-piece being formed on the depressed front portion, B^1, which latter provides vertical bearing for the toe of the shoe, substantially as set forth.

210,901. BALING-PRESSES. Valentine Becker and Frederick Becker, Cincinnati, Ohio. Filed May 6, 1878.



Claim.—1. In a lever-press case, K, provided with spring L′, block l, rigidly attached to levers M and P, levers *q q′*, connected by bolts R R′, and arms S and T, when used in combination with lever N and alternate ratchet-bar J, substantially as herein described.

2. In a lever-press, the combination of lever N, having arms S and T, with ratchet-bar J, case K, provided with levers M P *q q′*, and spring L′, or its equivalent, substantially as herein described.

3. In a lever-press, the combination of rod *d*, standards D D′, hinged thereto, beam F, ratchet-bar J, case K, and operating mechanism connected therewith, and lever N, substantially as described, and herein set forth.

210,902. INSIDE BLINDS. Lorenzo D. Benner, Galesburg, Ill., assignor of one-half his right to Exley C. Haines, same place. Filed Oct. 22, 1878.

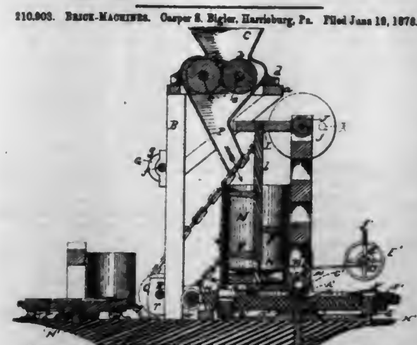
Brief.—The cord pulley is a cylinder journaled in a bracket. It has a circumferential groove at one end, which is deep enough to allow free play to the cord without binding between the pulley and bracket. Segmental portions are removed from opposite sides on the other end of the pulley, so that the cord can be slid over to that end, and, being let go, is jammed between the pulley and bracket. The sheet-metal clasps on the slats have shoulders to limit the movement of the loops.

Claim.—1. In a slat curtain-blind, the metal chains B, constructed of short open links, in combination with the links E and slat A, having the loop C, provided with the shoulders *e e*, substantially as described, and for the purpose set forth.

2. The locking-pulleys G, constructed as described, in combination with chains B, cords H, and slats A A′ A^n, substantially as described, and for the purpose specified.

3. The locking-pulleys M P, constructed as described, in combination with chains I E, cords L Q, and slats A A′, substantially as described, and for the purpose specified.

210,903. BRICK-MACHINES. Casper S. Bigler, Harrisburg, Pa. Filed June 19, 1878.



Claim.—1. In a brick-machine, the wheel E′, provided with one or more scrapers, *f*′, arranged to come in contact with the long edge of the brick as it rises above the mold-table, substantially as set forth.

2. The mold-table provided with the annular elevation F′, in combination with a hinged hopper provided with an aperture, *p*, conforming to the width of the upper surface of the said elevation, substantially as set forth.

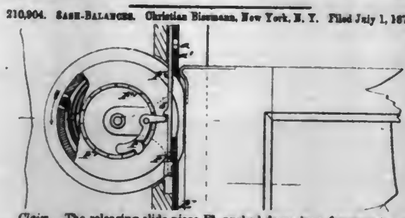
3. In a brick-machine, a propeller for expelling the clay from the hopper, the arms of which are provided with adjustable removable plates, substantially as specified.

4. The guide-wheels P′, for the purpose of sustaining the mold-table and preventing its oscillation, substantially as set forth.

5. The combination of the washers N^r and guide-wheels P′, as set forth.

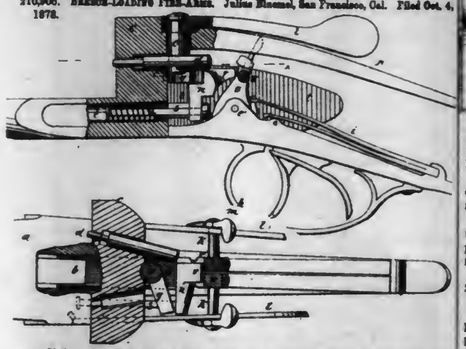
6. The grinding-rollers *b*, in combination with the hopper C, substantially as set forth.

210,904. SASH-BALANCES. Christian Biermann, New York, N. Y. Filed July 1, 1878.



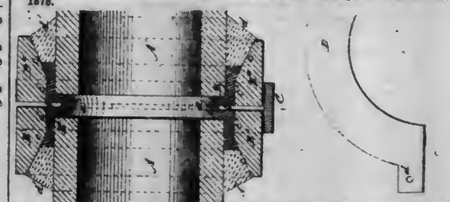
Claim.—The releasing slide-piece F′, pushed down by a finger-rest, *s*, projecting through slot *s′* of the face-plate, in combination with the pawl F, having a forwardly-extending arm, as and for the purpose set forth.

210,905. BREECH-LOADING FIRE-ARMS. Julius Binswel, San Francisco, Cal. Filed Oct. 4, 1878.



Claim.—The combination, in a fire-arm, of the hammers *e*, provided with pins *k*, extending through slots of plates *l l*, the latch-piece *b*, having upwardly-extended shouldered flange *u* and the spring-piece *c*, the arm *p*, having pin *o* and toes *q v*, and the lever *r*, all arranged as shown and described.

210,906. PIPE JOINTS AND COUPLINGS. Alphonse Bodart, Huy, Belgium. Filed Nov. 21, 1878.



Claim.—1. As an improvement in joints and couplings, the packing-ring B, provided with a bead, *a*, and groove *b*, in combination with pipes A A′, metal rings B′ B^{rr}, and exterior hoop, C, applied to form a union between the said pipes, in the manner substantially as described.

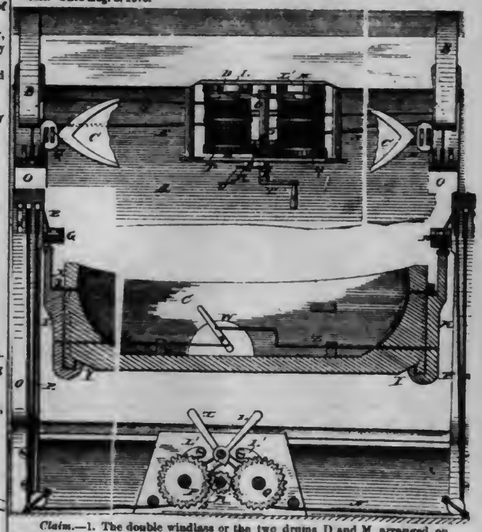
2. As an improvement in joints and couplings, the metal semicircles D, applied to the joint so as to rest in the groove *b*, and used to retain the groove while the lead packing-ring is being compressed and condensed between the rings and the pipes, substantially as described.

210,907. FACE-GUARDS. Martin Bourke, Youngstown, Ohio. Filed June 15, 1878.



Claim.—A face-canopy, substantially as described, made of a sheet of wire-gauze, strengthened and finished at the edges by a border-wire, and provided with the yokes or curves B and C, to fit, respectively, the nose of the person using the canopy, and the pillow upon which the person is resting, as shown and set forth.

210,908. APPARATUS FOR RAISING AND LOWERING BOATS. Martin Bourke, Youngstown, Ohio. Filed Aug. 2, 1878.



Claim.—1. The double windlass or the two drums D and M, arranged on the deck of the vessel so as to be operated separately or together by means of the pinion R and shaft S, in combination with the swinging arms B, tackle-blocks G and H, and posts O, substantially as set forth.

2. The two clutches I and K, freely and separately suspended, and floating on ropes of the two tackle-blocks G and H, for the purpose of separately seizing the two ends of the boat, substantially as set forth.

3. In combination with the clutches for seizing and supporting the ends of the boat, the sliding bolts or rods passing through the ends of the boat, for the purpose of locking or fastening the clutches to the boat, substantially as set forth.

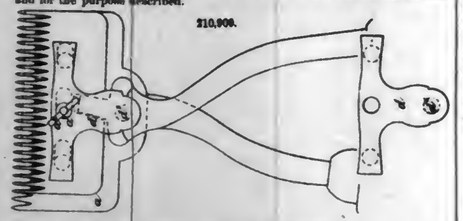
210,909. HORSE-CLIPPERS. William Bown, Birmingham, England. Filed Sept. 27, 1877. Patented in England, Feb. 25, 1874.

Brief.—A single screw bolt and nut holds all the parts together, and the lower plate has a series of transverse slots through it, to permit the escape of hairs and dirt that otherwise might impede the operation of the instrument.

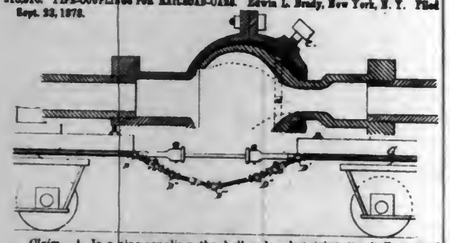
Claim.—1. In a horse-clipper, the T-shaped device *d*, constructed and applied as shown and described, its projecting pins or studs serving, one as an axis for the movable lever to work upon, and the others as guides to the movable cutter-plate.

2. In combination with the reciprocating plate *c*, the T-shaped bar *d*, and a single fastening device, the plate *a*, constructed with a series of long parallel slots, *g g*, chamfered or beveled outward at the top and bottom of the slots, as and for the purpose described.

210,909.



210,910. PIPE-COUPLINGS FOR RAILROAD-CARS. Edwin L. Brady, New York, N. Y. Filed Sept. 23, 1878.

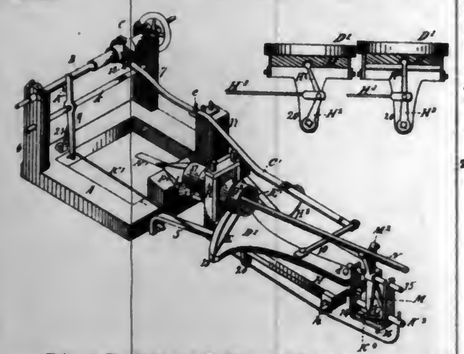


Claim.—1. In a pipe-coupling, the ball-and-socket joint, the ball part of which is provided with a groove for the reception of two or more set-screws in the socket part, arranged as shown, and for the purpose described.

2. The combination of a ball-and-socket joint, provided with a groove, *d*, and set-screws *e e'*, with the side cocks, D D' D'' D''', and intermediate pieces of pipe, all arranged as shown and herein described.

210,911. NAIL-PLATE FEEDERS. Isaac Briggs, Middleborough, Mass. Filed Apr. 12, 1878.

Brief.—The barrel is raised at the proper time by means of toggle-levers operated by the rod H^2, and situated beneath the head-stock and its pivoted bracket.



Claim.—1. The slotted plate K^4, sliding shaft K^3, and griping-levers M M^2, pivoted on the sliding shaft 18, in combination with the rod K^1, rocking lever 9, cam K, spring 21, and nipper-rod or holder N, substantially as set forth.

2. In a feeding mechanism for a nail-machine, the barrel D^2, plate D^1, plate H, cords E, rod H^1, levers H^1 H^2, rod 10, and rod C', combined and arranged to operate substantially as and for the purpose set forth and specified.

3. In a feeding device for a nail-machine, the cam C, in combination with the shaft B, bar or dog 12, rod C', barrel D^2, and mechanism, substantially as described, for raising and rotating said barrel, substantially as and for the purpose set forth.

210,912. DROP-LIGHTS. James Brown, Brooklyn, N. Y., assignor to W. C. Vosburgh & Co., same place. Filed Dec. 4, 1878.



Claim.—In an extension-chandelier, the combination of the following elements: a tube, B, circular box C, helical springs D, and retaining-plates E, provided with the segmental lugs *e*, constructed and operating substantially as and for the purposes set forth.

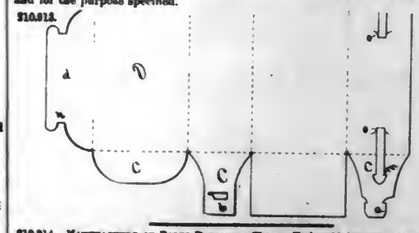
210,913. PAPER BOXES. Joseph P. Buckingham, Chicopee, and Oliver M. Hamilton, Springfield, assignors of one-third their right to George A. Denison, Chicopee, Mass. Filed Aug 5, 1878.

Claim.—1. In a knock-down box, the locking-straps C C C C, two of which have shouldered tongues *a a*, and two of which are provided with eyes *b b*, of a size at their inner sides corresponding in a transverse direction with the width of the tongues outside of the shoulders, and at their opposite and outer sides with the width of the neck inside of said shoulders, substantially as described, and for the purpose specified.

2. In a paper box, the handle shouldered at the ends, in combination with the side having slit *e*, with straight and divergent portions, substantially as described, and for the purpose specified.

3. In a folding box, the handle projecting from one side, in combination with the cover D and its flap *d*, having notches *a a*, substantially as described, and for the purpose specified.

210,913.

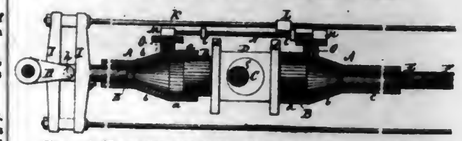


210,914. MANUFACTURE OF PAPER-PULP FROM WOOD. Herbert M. Carpenter, Minneapolis, Minn. Filed May 13, 1878.

Claim.—The process of preparing wood fiber for paper-pulp herein described, and consisting in the use of chloride of lime, soda-ash, or any equivalent material, during the process of cooking the fiber in an open vessel.

210,915. COMPOUND HYDRAULIC ENGINES. Oramill G. Carpenter, Brooklyn, E. D., assignor to Robert Farley, Jr., New York, N. Y. Filed Dec. 24, 1877.

Brief.—The pistons have elastic heads to aid in passing "centers."

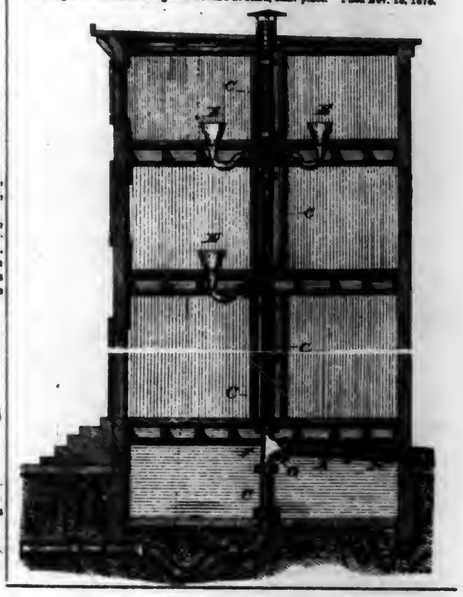


Claim.—1. The combination of the following elements, viz: the two cylinders A A, arranged with their larger ends opposed, the pistons B B F F, coupled together, substantially as shown, the eccentric C, block D, and shaft S, all arranged to operate in connection with the interposed liquid, substantially as set forth.

2. The combination of the cylinders A with valves M_1 adapted to admit liquid to the liquid-space in the cylinders and give relief to the cylinders when overcharged, said valves being arranged to operate in unison with the pistons B F, substantially as set forth.

3. The combination of the cylinder A with a piston having an elastic center, constructed and arranged to operate substantially as set forth.

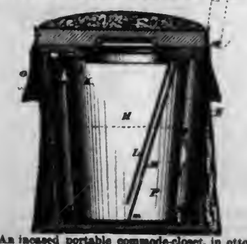
210,916. VENTILATOR AND OVERFLOW FOR SEWER-PIPES. William S. Clark, Philadelphia, Pa., assignor of one-half his right to Edward B. Clark, same place. Filed Nov. 16, 1878.



Claim.—1. In combination with a vertical or rising soil-pipe extending through and open above a building, and connected at its base with a sewer or culvert, an inclined or horizontal branch pipe above the ground-level for ingress of air and for overflow purposes, substantially as and for the purpose set forth.

2. In combination with an upright soil-pipe extending through and open above a building, and connected at its base with a sewer, a T-branch beveled at its lower side, in connection with an air-inlet and overflow pipe, substantially as and for the purpose set forth.

210,917. PORTABLE CLOSETS OR COMMODES. Henry A. Chase, Elmira, N. Y. Filed Dec. 4, 1878.



Claim.—1. An inclosed portable commode-closet, in ottoman form, upholstered upon its top or auxiliary seat, (which forms a support when in use,) and draped by a surrounding depending curtain.

2. A pail or receptacle provided with a flange upon its top, which projects into the seat of the closet, as and for the purpose specified.

3. A pail or receptacle provided with an auxiliary water-chamber, separated from the main chamber, substantially as and for the purpose set forth.

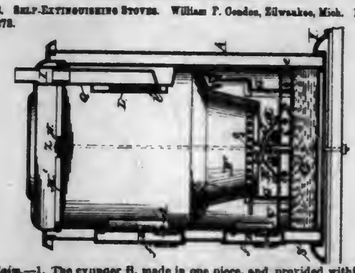
4. A pail or receptacle provided with a perforated partition and an auxiliary water-chamber, as and for the purposes set forth.

5. The pail or receptacle H, provided with the perforated partition L and the partition M, to form a separate water-chamber, substantially as set forth.

6. The tray G, provided with the disinfecting-chamber *g*, in combination with the pail or receptacle, substantially as described.

7. The pail or receptacle H, having an upwardly-projecting flange, which surrounds the opening in the top of the pail, and provided with a cover, removable through the opening in the closet-seat, as and for the purpose described.

210,918. SELF-EXTINGUISHING STOVES. William P. Condon, Kilwaukee, Mich. Filed Dec. 9, 1878.



Claim.—1. The cylinder B, made in one piece, and provided within its interior with fire-pot F and water-tank C, connected by pipes G, and having air-chamber D between the two, substantially as set forth.

2. The combination of the cylinder B with jacket A, provided with sliding door H and door *f*, each having a shut-off, *d*, admitting of vertical and side adjustment, substantially as set forth.

3. The combination of the water-tank C and air-chamber D, the air-chamber having perforations in its sides and top, substantially as set forth.

4. The combination of water-tank C, fire-pot F, and connecting-pipes G, substantially as set forth.

5. The chamber E, interposed between the fire-pot F and air-chamber D, and communicating with latter through openings in its top, substantially as set forth.

6. The combination of water-tank C, fire-pot F, pipes G, and air-chamber D, substantially as set forth.

7. The combination of water-tank C, fire-pot F, pipes G, chamber E, and air-chamber D, substantially as set forth.

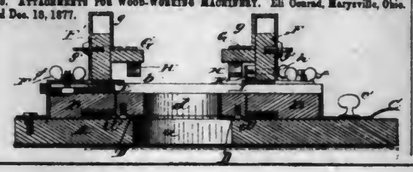
8. The combination of outer jacket, A, and cylinder B, both provided with doors having self-closing shut-offs, water-tank C, fire-pot F, pipes G, and chambers D and E, substantially as set forth.

9. The combination of jacket A and cylinder B with air-chamber D, having perforations in its sides and top, substantially as set forth.

10. The fire-pot F, provided with sockets *e e*, having perforations above, substantially as set forth.

11. The fire-pot F, in combination with water-tank C, the two connected by pipe G, constructed to prevent water splashing into fire-pot, substantially as set forth.

210,919. ATTACHMENTS FOR WOOD-WORKING MACHINERY. Eli Conrad, Marysville, Ohio. Filed Dec. 10, 1877.



Claim.—1. The combination, with the table A, provided with the hole *a*, of the table B, provided with the movable circular plate D, having hole *d*, and mechanism connected therewith, substantially as described, for holding the article to be operated upon, substantially as and for the purpose specified.

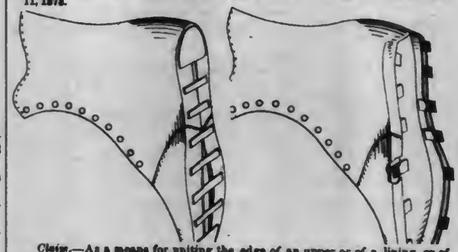
2. The combination, with table A, having hole *a*, of the adjustable table B, provided with movable circular plate D, having hole *d*, substantially as and for the purpose herein shown and described.

3. The combination, with the guides F F', of the supports G G and springs H H, substantially as and for the purpose herein shown and described.

4. The combination of the adjustable guides F F', adjustable supports G G, springs H H, and adjustable spring H', substantially as and for the purpose herein shown and described.

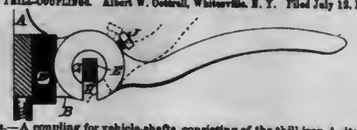
5. The combination, with the table B and movable plate D, of the slotted cross-bars E E, adjustable guides F F', supports G G, springs H H, and adjustable spring H', substantially as and for the purpose herein shown and described.

210,920. LASTING BOOTS AND SHOES. George W. Copeland, Malden, Mass. Filed Nov. 11, 1878.



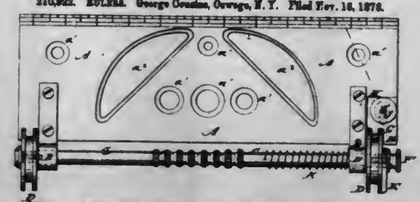
Claim.—As a means for uniting the edge of an upper or of a lining, or of both, to the surface of the insole in the lasting process, a flexible strip or stripe united to the edge of said upper or of said lining, either before or during the lasting process, and cemented to the surface of the insole, or extended across the same, and cemented to the edge of the upper or lining in uniting the said edge of the upper thereon in the lasting process, substantially as and for the purpose described.

210,921. THILL-COUPLINGS. Albert W. Cottrell, Whitesville, N. Y. Filed July 13, 1878.



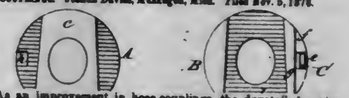
Claim.—A coupling for vehicle-shafts, consisting of the thill-iron A, its ears B C, stationary square pin and rubber block D, and the cylinder G, having a slot communicating with a circular opening arranged eccentrically in the head, all as set forth.

210,922. BUREAS. George Cousins, Oswego, N. Y. Filed Nov. 16, 1878.



Claim.—An improved parallel ruler formed by the combination of the bearing-blocks B, the shaft C, the rollers D, provided with the adjustable stop E and the stationary stop G, the adjustable slotted plate H and its clamping-screw and nut I J, and the spiral spring K, with the plate A, provided with the segment-holes a^3, substantially as herein shown and described.

210,923. HOSE-COUPLINGS. Joshua Davies, Muskegon, Mich. Filed Nov. 5, 1878.



Claim.—1. As an improvement in hose-couplings, the dovetailed projection *c*, with converging sides on piece A, in combination with the dovetailed slot *d*, having converging sides on piece B, to form a close, strong, and water-tight joint or union between the pieces A B and the sections of hose to which they are attached, substantially as described.

2. As an improvement in hose couplings, the piece A, with projecting piece *a*, to connect with one section of hose, and provided with socket *b* in its periphery, in combination with piece B, having projecting piece *b*, to connect with another section of hose, and provided with slot *c*, seating a spring, C, and rabbet *f*, the two pieces A B being united or joined by a dovetailed connection and locked by spring C, engaging slot A, substantially as described.

210,924. LAWN-RAKES. Theodore D. Davis, Syracuse, N. Y., assignor to Julia H. Davis, same place. Filed Nov. 15, 1878.

Claim.—1. In combination, the rake-head composed of two or more pieces, the teeth B, and the fastening devices for clamping the teeth and the extensions thereof in the rake-head, and the handle D, extending over the hood, substantially as shown and described.

2. In a hand-rake, a series of teeth formed of a single piece of wire, and constructed as shown and described.

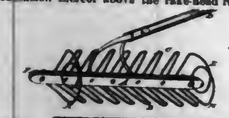
3. In a hand-rake, the end E, serving as a runner and guard, and constructed substantially as shown and described.

4. In a hand-rake, the teeth B and projections or extensions forming hood C, made of a single piece of wire, substantially as shown and described.

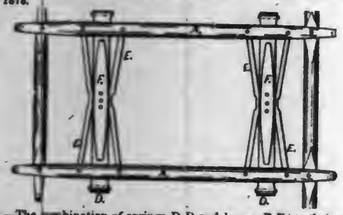
5. In a hand-rake, the combination of teeth B, guards and runners E, and hood C, substantially as shown and described.

6. In combination with head A, a wire tooth bent tapering to an oval point, and the extension thereof above the rake-head rounded, as shown and described.

210,924.



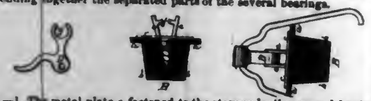
210,925. VEHICLE-SPRINGS. Levi A. Davis and Ambrose L. Davis, Binghamton, N. Y. Filed Sept. 30, 1878.



Claim.—The combination of springs D D and braces E E, or their equivalent, with the bars A A, substantially as and for the purposes shown and described.

210,926. BOTTLE-STOPPER AND STOPPER-FASTENER. Frank Deming and Peter Bacher, Allegheny, assignors to William Sanderman, Pittsburg, Pa. Filed Oct. 31, 1878.

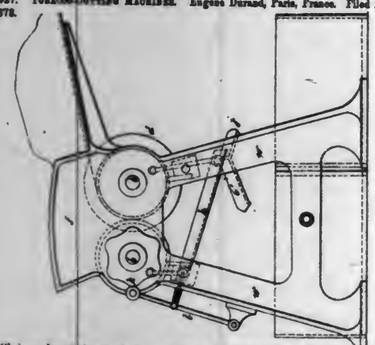
Brief.—The intermediate lever is connected to the yoke and to the stopper-plate by bending together the separated parts of the several bearings.



Claim.—1. The metal plate *c*, fastened to the stopper by the screw *d*, having on top expanding lugs *e*, with pins or points at their insides, substantially as shown and described.

2. The rectangular lever D, with an open slot in the end of its shorter arm, in combination with the lugs *e* and plate *c*, substantially as set forth.

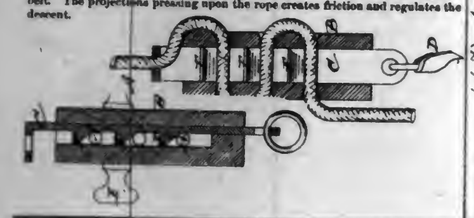
210,927. TOBACCO-CUTTING MACHINES. Eugene Durand, Paris, France. Filed July 11, 1878.



Claim.—In a tobacco-cutting machine, the combination of the grooved cylinders a *a*, the sieve *h*, the chutes *f j*, the rods or straps *l l*, the rock-shaft *i*, the arm *F*, the crank arm *F*, and the cam *k*, substantially as and for the purpose described.

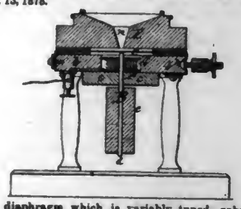
210,928. PIPE-EXPANDER. Wright Duryea, Brooklyn, N. Y. Filed Sept. 6, 1878.

Brief.—A hollow sliding block having handles is provided with horizontal perforations for a rope to pass through zigzag. A sliding plate with inclined projections is inserted in the block, and to its lower end is secured a strap and belt. The projections pressing upon the rope creates friction and regulates the descent.



Claim.—The combination of the friction-plate C, having inclined projections F, and the attaching device D, with the block B and the cord A, rove through said block, all substantially as described.

210,929. DIAPHRAGMS FOR TELEPHONES AND PHONOGRAPHS. Rudolf Eickemeyer, Yonkers, N. Y. Filed Aug. 13, 1878.



Claim.—1. A diaphragm which is variably tuned, substantially as described, whereby it possesses a graduated vibrating capacity, as set forth.

2. A diaphragm which is graduated in thickness, substantially as described.

3. A diaphragm which is graduated in width, substantially as described.

4. A diaphragm which is unequally strained, substantially as described.

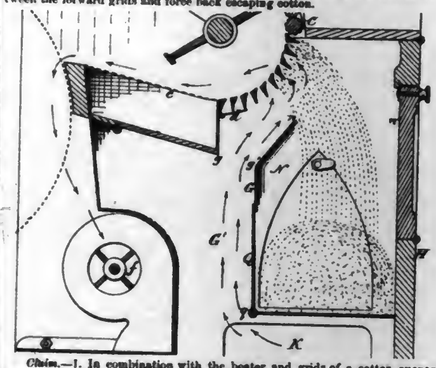
5. The combination, with a diaphragm which is variably tuned, of a magnet or magnets arranged to engage with the diaphragm in a continuous line, or nearly so, substantially as described, whereby the vibrations of the diaphragm will occur in lines at right angles to the line of the magnet or magnets, as set forth.

6. The combination, with a diaphragm, of a straining-bar, D, substantially as described, whereby the diaphragm may be unequally strained, as set forth.

7. The mouth-piece E, having a funnel-shaped outer aperture and an interior elongated funnel-shaped chamber communicating centrally with the center of the outer aperture, substantially as described.

210,930. COTTON OPENERS AND CLEANERS. Harvey Ellis, Whitinsville, Mass. Filed Sept. 19, 1878.

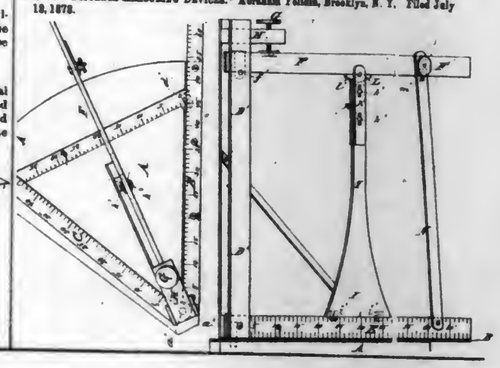
Brief.—The still-air dust-box is open at its top; its forward edge is on a vertical plane passing through the feed-rolls, and its rear side is inclined, to direct the current of air to the grids and beater. The air-passage is contracted and deflected toward the feed-rolls, so as to cause the current of air to enter between the forward grids and force back escaping cotton.



Claim.—1. In combination with the beater and grids of a cotton opener and cleaner, and an air-passage inclined forward, admitting a current of air under and through the grids, the still-air dust-box N, having a free opening, the rear edge, *n*, of which is in a vertical plane, or nearly so, passing through the feed-rolls, and located to operate substantially as shown and described.

2. In combination with the grids and still-air dust-box of a cotton opener and cleaner, constructed substantially as described, the air-passage K G′, contracted at *g g′*, and inclined forward under the grids, substantially as and for the purpose set forth.

210,931. DISTANCE-MEASURING DEVICES. Abraham Folldin, Brooklyn, N. Y. Filed July 13, 1878.

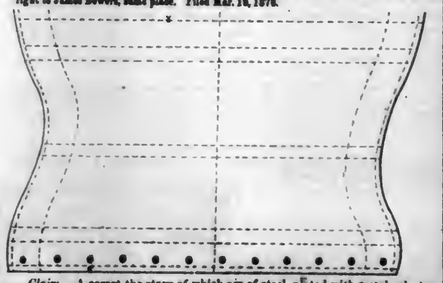


Claim.—1. The upright D′, swinging on the tap *a′*, and carrying the bottom scale, E, and top bar, F, adjustable by the screw G, running through the top block, H, substantially as and for the purpose set forth.

2. The indicator I, carrying the balancing-block L, resting on the axle *k*, as described, and for the purpose specified and set forth.

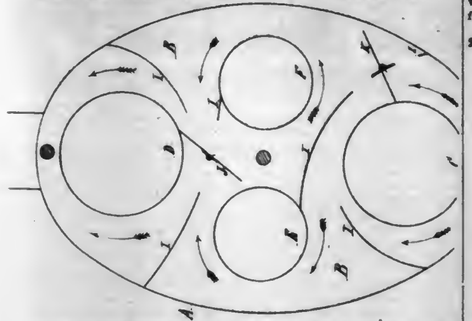
3. The disk A, having the scales B, C, and D, in combination with the upright D′ (carrying the fixed scale K and adjustable top bar, F) and indicator I, substantially as described, and for the purpose specified and set forth.

210,932. GALVANIC CORSETS. Samuel W. Geary, Newark, N. J., assignor of one-half his right to James Bowers, same place. Filed Mar. 19, 1878.



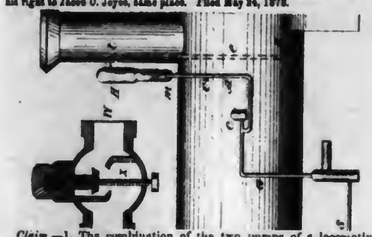
Claim.—A corset the stays of which are of steel, plated with metals electro-positive and electro-negative to each other, and connected by wires or bands, as set forth.

210,933. STOVE-DRUMS. John Gilson, Port Washington, Wis. Filed Oct. 4, 1878.



Claim.—The combination of the drum A, the heads B, cylinders C, D, E, and F, partitions I, and dampers J and K, all substantially as and for the purpose specified.

210,934. FEED-WATER HEATERS. Simeon A. Goodwin, Dayton, Ohio, assignor of one-half his right to Jacob O. Joyce, same place. Filed May 24, 1878.



Claim.—1. The combination of the two pumps of a locomotive—one to deliver the water to an elevated heater, and the other to force the heated water into the boiler by means of the pipe connections A and B, substantially as described.

2. The combination of the heater H with the two pumps and with the exhaust-pipe of one or both of the engines of a locomotive, substantially as described.

3. In the feed-water heater herein described, the check-valve W, in the supply-pipe S′, when arranged as and for the purpose specified.

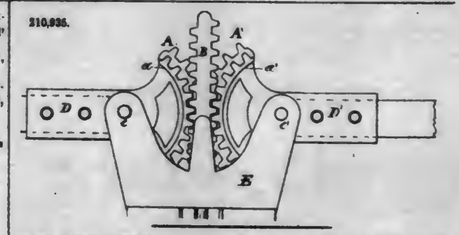
4. The combination of the valve e in pipe A with the feed-water heater H herein described, constructed and arranged as and for the purpose specified.

5. The feed-water heater H, consisting of the narrow tube *h* within a surrounding case, substantially as described.

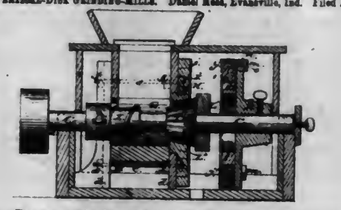
210,935. PUMPS. Peter Hunt Green, Hespeler, Ontario, Canada, assignor to John Walker Green, same place. Filed Dec. 13, 1877.

Claim.—The compound pump-handle, as constructed, comprising two toothed segments, A A′, meshing into each other, and operated by one or two handles, D D′, as may be required, each of the segments A A′ having a smaller toothed segment, *a a′*, cast on its side, the teeth of which smaller segments *a a′* meshing into corresponding teeth on the sides of the pump-rod B, by which means a parallel and frictionless motion is produced, operating substantially as set forth.

210,936.

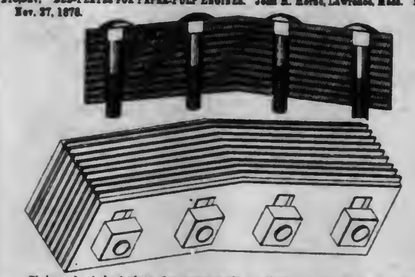


210,936. VERTICAL-DISK GRINDING-MILLS. Daniel Hess, Evansville, Ind. Filed Aug 26, 1878.



Claim.—The recessed adjustable revolving burr J, in combination with spindle C, provided with grinding-disk L′ and cone L, and bed-stone H, provided with grinding-concave L′, whereby the grinding may be done with or without the operation of the burr-stones, as described, and in the manner set forth.

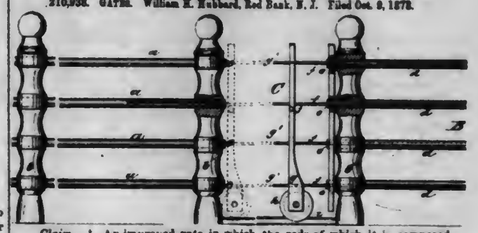
210,937. BED-PLATES FOR PAPER-PULP ENGINES. John H. Horne, Lawrence, Mass. Filed Nov. 27, 1878.



Claim.—1. A bed-plate for paper-pulp engines, composed of a series of clamp-bars and reducing blades, under the construction substantially as herein shown, whereby the said blades constitute in themselves the only divisions between the bars.

2. The construction of each blade as containing the notches in its lower part, whereby the series of blades may be raised some distance after the bolts have reached their highest point in the clamp-bars.

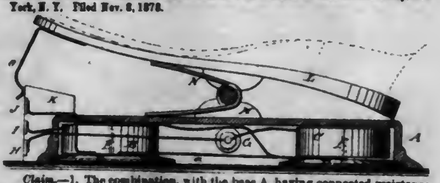
210,938. GATES. William H. Hubbard, Red Bank, N. J. Filed Oct. 9, 1878.



Claim.—1. An improved gate in which the rods of which it is composed telescope or slide into the tubes placed in or constituting the adjoining panel of the fence, substantially as and for the purpose described.

2. The gate C, composed of the horizontal rods *f* and the stile *g*, in combination with the tubes *d* of the panel B, substantially as described.

210,939. PEDAL-SWITCHES FOR CONTROLLING ELECTRIC MOTORS. Charles A. Hussey, New York, N. Y. Filed Nov. 6, 1878.

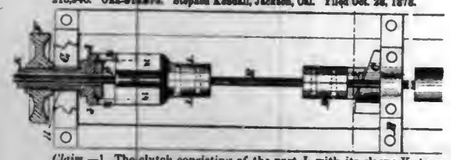


Claim.—1. The combination, with the base A, having connected resistance-coils B C, of the insulated strips H I J, posts F G, block K, spring O, and the

spring-supported pedal L, all arranged as and for the purpose specified.

2. The spring-acted pedal L, the hollow base A, one or more resistance-coils, B C, and a commutator, in combination, substantially as shown and described.

210,940. ORE-STAMPS. Stephen Kendall, Jackson, Cal. Filed Oct. 28, 1878.

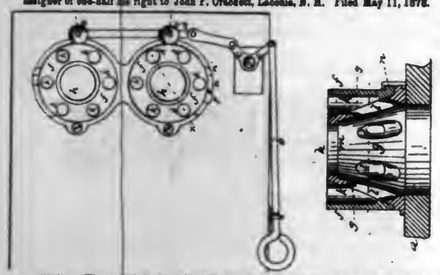


Claim.—1. The clutch consisting of the part J, with its sleeve K, to serve as a guide and journal, and having the driving-pulley secured to it, said part J having the vertical grooves N, in combination with the part L, secured to the stem and provided with the projections M, to fit the grooves, so that the stamp and stem may be rotated and allowed a reciprocating motion, substantially as herein described.

2. The clutch consisting of the parts J and L, with the grooves or slots N and corresponding projections M, secured, respectively, to the driving-pulley and stamp-stem, in combination with the elastic spring or cushion P, to receive the impact of the rising stamp-stem, substantially as herein described.

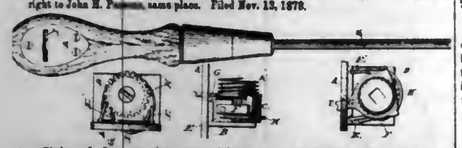
3. In an ore-stamp, the combination of the rod E, the tappet D, having the curved cam-faced projection I, partially surrounding the rod, and the cam C, partially encircling the stamp-rod and concentric to it, substantially as described.

210,941. ADJUSTABLE EXHAUSTS FOR LOCOMOTIVES. Dennis Harrigan, Somerville, Mass., assignor of one-half his right to John P. Crockett, Laconia, N. H. Filed May 11, 1878.



Claim.—The hereinbefore described adjustable tip for locomotive-exhausts, consisting of the cone *g*, provided with the vertical, or nearly vertical, ports *i* and passage *m*, and the cap *f*, provided with the corresponding vertical, or nearly vertical, ports *k* and passage *h*, said parts being constructed and arranged substantially as and for the purpose set forth.

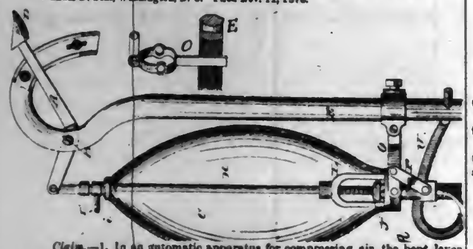
210,942. RATCHET SCREW-DRIVERS. George E. Gay, Augusta, Me., assignor of one-half his right to John H. Pearson, same place. Filed Nov. 13, 1878.



Claim.—1. In a ratchet screw-driver, the combination of the plate A B, the ratchet mechanism, and the handle, substantially as described.

2. In a ratchet screw-driver, the combination of the blade, the toothed wheel C, the pawls E and E', and the operating-catch G, arranged substantially as described.

210,943. APPARATUS FOR COMPRESSING AIR AND FORCING BEER. George W. Harvey and William D. Seal, Washington, D. C. Filed Nov. 11, 1878.



Claim.—1. In an automatic apparatus for compressing air, the bent lever A, or its equivalent, in combination with the compressing-chamber C and the adjustable weight D, for the purpose of giving the chamber a motion eccentric to the motion of the counterpoise or weight D, substantially as set forth.

2. In combination with the compressing-chamber C, the sliding hollow stem M, for the purpose of alternately opening and closing the supply-passages for admitting water and air to the chamber, and also discharging the water, as set forth.

3. The forked lever O and side links, P, or their equivalents, for automatically operating the hollow stem M as the compressing-chamber rises and falls, substantially as described.

4. The slot T in the forked lever, or its equivalent, for allowing the lost motion as the chamber C begins to drop, thus increasing the velocity and stroke or momentum of the chamber in dropping, and insuring the motion of the hollow stem M by the consequent increased action of the forked lever O, as specified.

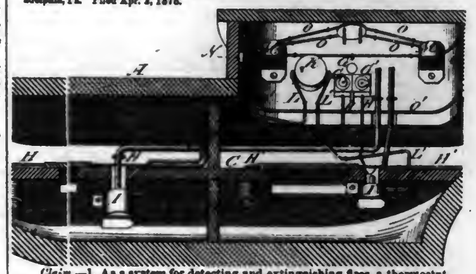
5. In an air-compressing apparatus, the standard provided with the adjustable rest F and adjustable check G, in combination with the bent lever A, substantially as set forth.

6. The combination of the air-compressing chamber C with the suspending rod H, having its upper end made hollow for the escape of air, and the lower end recessed to hold the rubber or elastic pad J, substantially as described.

7. The stirrup L and flanged ring *l*, in combination with the tightening-rod H and valve-seat, substantially as set forth.

8. In an air-compressing apparatus, a transparent chamber provided with a scale for readily ascertaining the height of the water in the chamber and the amount of pressure exerted upon the beer or other liquid, and also when it is necessary to clean the chamber, substantially as set forth.

210,944. SYSTEMS FOR DETECTING AND EXTINGUISHING FIRES. William H. Johnstone, Philadelphia, Pa. Filed Apr. 2, 1878.

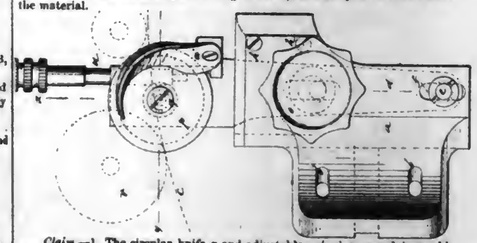


Claim.—1. As a system for detecting and extinguishing fires, a thermostat, F, and an alarm, G'', located in separate apartments, connected by an electric conductor, H, the alarm G'' being operated by electricity from a battery through conductor H and a box of chemical compound, I, located in the same apartment as the thermostat F, and a fire-conductor passing from the vicinity of the alarm G'' to the interior of box I, all operating substantially as described, whereby a fire occurring in one apartment can be detected in another, and can also be extinguished from the former apartment.

2. As a system for detecting and extinguishing fires, a thermostat, F, and an annunciator or indicator, G, located in separate apartments, connected by an electric conductor, H, the annunciator or indicator G being operated by electricity from a battery through conductor H, with a box of chemical compound, I, located in the same apartment as thermostat F, and a fire-conductor passing from the vicinity of the annunciator or indicator G to the interior of box I, all operating substantially as described, for detecting in one apartment a fire which happens in another apartment, and extinguishing the same from the former apartment.

210,945. CANE-SHAVING MACHINES. Charles L. Jones, James W. Smith, and Henry H. Adams, Gardner, Mass. Filed Aug. 26, 1878.

Brief.—The device is attached to a frame in the proximity of feeding-cylinders, by which the rattan is fed to a circular knife, which can be rotated by a hand-screw and worm-sleeve, so as to present different points of the knife to the material. The knife, being mounted at the end of a swinging arm, which is operated by an eccentric-pin working in a slot, can be adjusted to and from the material.

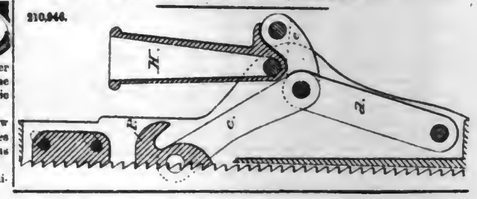


Claim.—1. The circular knife *p* and adjustable swinging arm *d*, in combination with the casting *a* of a cane-shaving machine, substantially as described.

2. The circular knife *p*, cog-wheel *s*, stud *q*, sleeve *r*, and pin *t*, in combination with the worm-shaft *u*, substantially as and for the purpose described.

3. The arbor *i*, provided with the hand-wheel *o* and the cam *n*, and secured to the hub *k* of the casting *a* by the screw *l*, in combination with the adjustable swinging arm *d*, substantially as and for the purpose described.

210,946.

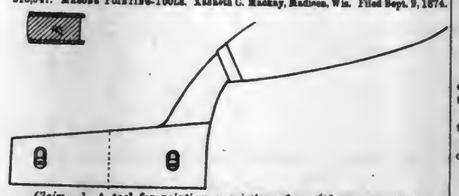


210,946. LIFTING-JACKS. Jacob O. Joyce, Dayton, Ohio. Filed Aug. 30, 1878.

Brief.—The depression of the hand-lever causes the short levers to move toward the standard, which causes the pawl pivoted to one of the said levers to rise and engage with the teeth of the lifting-bar, thereby raising its load.

Claim.—In a lifting-jack, the combination of the short levers *c* and *d* with the link *e*, lever H, and pawl P, substantially as specified.

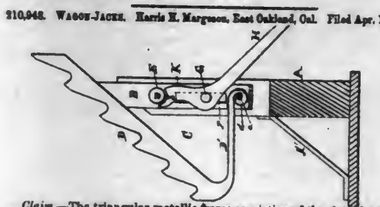
210,947. MASONS' POINTING-TOOLS. Kenneth C. Mackay, Madison, Wis. Filed Sept. 9, 1878.



Claim.—1. A tool for pointing, consisting of a solid part, to which the handle is attached, with the face which is to be applied to the mortar either flat or concave, and with projecting sides riveted or screwed thereto, as set forth.

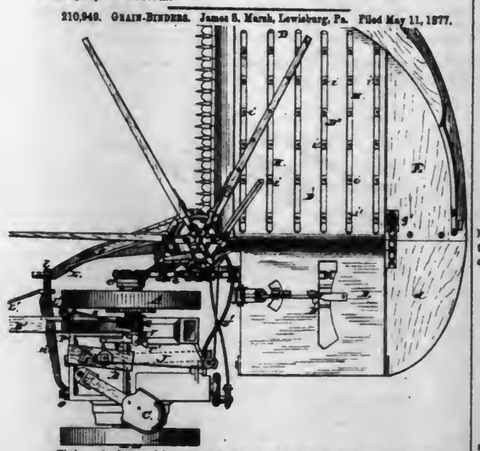
2. A tool for pointing, consisting of a solid part, to which the handle is attached, made either plane or concave, and with sides attached by screws through slots therein, as and for the purpose set forth.

210,948. WAGON-JACKS. Harris H. Margeson, East Oakland, Cal. Filed Apr. 1, 1878.



Claim.—The triangular metallic frame consisting of the slotted uprights H, bearing friction-roller E, serrated plate D, and rod D', with its end *d* coiled around pin *a*, and the cam-lever H K, in combination with the standards A, pedestal, and skeleton-brace K', all constructed, arranged, and operated as and for the purpose set forth.

210,949. GRAIN-BINDERS. James S. Marsh, Lewisburg, Pa. Filed May 11, 1877.



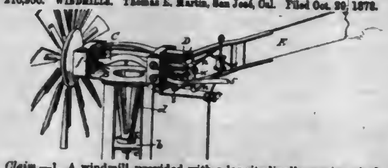
Claim.—1. In combination with the main platform of a rear side-cut two-wheeled harvesting-machine, a detachable supplemental platform or table, in rear of the main frame, carrying an automatic binder, an endless apron for carrying the cut grain to the binder, and gearing, substantially such as described, for operating said binder and endless apron by power derived from the main driving-axle, all constructed, combined, and arranged to operate substantially as set forth.

2. In a rear side-cut two-wheeled harvesting-machine, the combination of a main platform supporting a combined rake and reel, or a reel only, a detachable supplemental platform, in rear of the main frame, carrying an automatic binder, an endless apron for conveying the cut grain to the binder, and gearing, substantially such as described, for operating said binder and endless apron by power derived from the rotation of the main driving-axle, all constructed, combined, and arranged to operate substantially as set forth.

3. In combination with the main frame and main platform, mounted on two caster-wheels, opposite to each other, a short distance in the rear of the cutter-bar, of a rear side-cut harvesting-machine, the adjustable supporting-bar J, and the cross-bar J', pivoted to the main frame and to the platform, by means of which a portion of the weight of the platform is transferred to the main frame, substantially as described.

4. The combination of the standard P, the windlass Q, the strap S, rod *s*, and bars *t*, *t'*, L, and L', for raising, depressing, and tilting the cutters, all constructed, combined, and arranged to operate substantially as described.

210,950. WINDMILLS. Thomas E. Martin, San José, Cal. Filed Oct. 29, 1878.

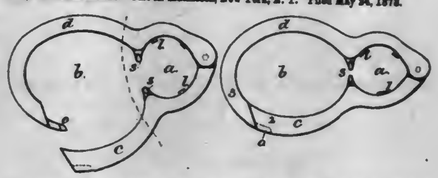


Claim.—1. A windmill provided with a longitudinally-moving shaft, C, in combination with the mechanism shown, for moving the same by means of a thrust from the shaft, substantially as described.

2. The movable shaft C, hinged latch D, and stop 4, in combination with the vane E and frame *n n n'*, as set forth.

3. The curved spring 5, in combination with the vane E and frame *n n n'*, constructed and arranged substantially as described.

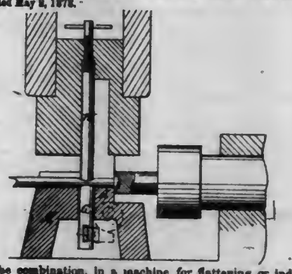
210,951. SAIL-HANKS. Carl A. Mathiesen, New York, N. Y. Filed May 24, 1878.



Claim.—1. The sail-hank made with the two parts *c* and *d*, hinged together at *e*, and provided with the interlocking ends that close together in an outward direction, and are separated by pressing the moving end inwardly before opening the hanks, substantially as set forth.

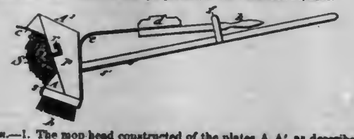
2. The parts *c* and *d* of the sail-hank, hinged and interlocking together substantially as set forth, in combination with the projections *s* near the junction of the eyes *a b*, substantially as and for the purposes set forth.

210,952. DEVICES FOR INDENTING AND HEADING UMBRELLA-RIBS. John McAuliffe, Jersey City, N. J. Filed May 2, 1878.



Claim.—The combination, in a machine for flattening or indenting and heading umbrella-ribs, of the movable clamping-die, a separate adjustable flattening or indenting die, the stationary clamping-die, a reciprocating flattening or indenting die, and a header, substantially as described.

210,953. MOPS. John McCarthy, Syracuse, N. Y. Filed Oct. 24, 1878.



Claim.—1. The mop-head constructed of the plates A A', as described, the sponge S, secured in the cavity of said head, the brush *b*, hinged to the free edge of plate A, and the rubber strip *c* on the free edge of plate A', all constructed and combined substantially as described and shown, for the purpose set forth.

2. The brush *b*, hinged to the rear edge of the mop-head, and provided with means for retaining it in either a forward or a rearward position, substantially as specified and shown.

3. The mop-head formed of the plates A A', joined at one edge at an angle to each other, the plate A' having its inner face concave or centrally depressed, and provided on the free edge of said face with a segmental or deflected rubber strip, for the purpose of collecting the water, substantially as specified.

4. In combination with a mop-head, the wringer *d*, attached thereto by flexible bands *e*, and provided with handle h, and the clasp *f*, attached to the handle of the mop, substantially as described and shown.

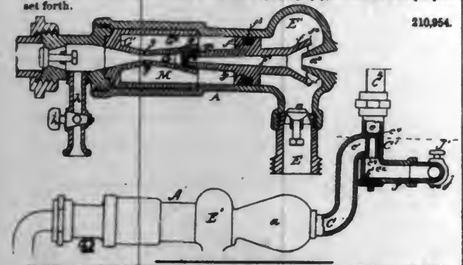
210,954. INJECTORS FOR STEAM-BOILERS. Daniel Minich and Geo. F. Godley, Philadelphia, Pa. Filed Jan. 16, 1878.

Claim.—1. An injector provided with a steam-supply pipe having two connections with the boiler, one of which is placed at the dome or upper part of the boiler, and the other at or near the height of a defined water-line, said pipe being provided with a float-valve to seal and unseal the same, to stop or allow the flow of steam therethrough, to automatically operate the injector by the rise and fall of the water within the boiler from the defined water-line, substantially as set forth.

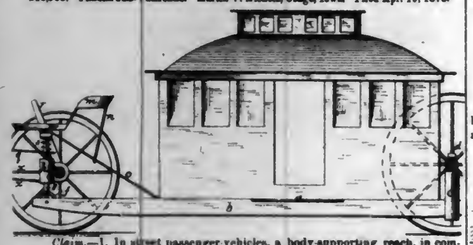
2. The combination of the injector A, the pipe C^1, and float-valve e^3, and connecting-pipes C and J, all arranged substantially as and for the purpose set forth.

3. In combination with the conical nipple a^3, the sliding bridge F, located directly over the water-inlet, and formed with a packing-ring, f^1, flaring end f, conical end f^2, and the ribs f^3, and the stationary or fixed tube G, provided with a chamber, M, and flaring end g' and openings $g\ g$, as and for the purpose set forth.

210,954.



210,955. PASSENGER-VEHICLES. Martin V. Nichols, Osage, Iowa. Filed Apr. 19, 1878.

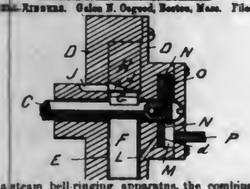


Claim.—1. In street passenger-vehicles, a body-supporting reach, in combination with the body itself, the whole being suspended underneath both the front and rear axle, and supported in connection therewith by means of suitable springs, for the purpose set forth.

2. The Y-shaped reach *b*, in combination with the rear spring-connections, *c c' d*, and the front connecting-link, *f*, and rod *g*, with the spiral spring *e* and driver's perch *m*, supported by the rod *g* and spring *e*, substantially as described.

3. The combination, in a street passenger-vehicle, of a body supported independently by a Y-shaped reach, to which it is rigidly attached, said reach being suspended under both axles by means of suitable springs, and connected by a self-adjusting link with the front support, and a driver's perch entirely detached and supported over the front axle, all substantially as and for the purposes set forth.

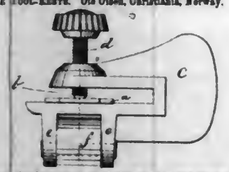
210,956. STEAM BELL-RINGERS. Galen H. Osgood, Boston, Mass. Filed May 17, 1878.



Claim.—1. In a steam bell-ringing apparatus, the combination, with the bell-shaft C, of the cylinder E, piston-head F, steam-chest M, having inlet-port l^1 and outlet-port l^2, valve-plate N, having port *d* and lugs *f*, the dog O, attached to the bell-shaft, and suitable exhaust devices, all arranged and operating substantially as set forth.

2. The sector projection G of the rotating piston-head F, in combination with the bearing *b* for said projection, having a steam-exhaust port, J, all substantially as described, for the purpose specified.

210,957. PORTABLE TOOL-RESTS. Ole Olsen, Christiania, Norway. Filed Oct. 16, 1878.

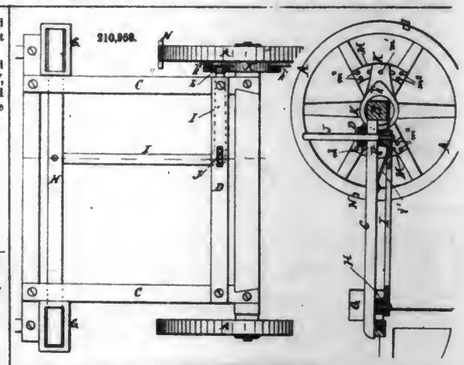


Claim.—The herein described tool-clamp for grinding tools, consisting of the frame *c*, with its side opening, *b*, for the insertion of the tool in a lateral direction, set-screw *d*, and stationary bearings *e e*, for the loosely-rotating roller *f*, all arranged and combined substantially as and for the purpose set forth.

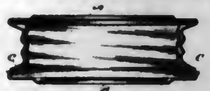
210,958. SEED-DROPPING ATTACHMENTS FOR CORN-PLANTERS. Robert L. Patterson, Belle Plaine, Kans. Filed Oct. 12, 1878.

Claim.—The combination of the elbow-lever I, provided with the friction-wheel L, the upright lever J, the cross-bar K, provided with the shoulders or cams k^1 k^2, and the curved slotted plates M, with the dropping-slide H, the frame C D, and the wheel A, substantially as herein shown and described.

210,959.

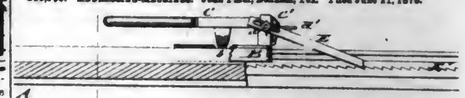


210,959. METALLIC POSTAL ENVELOPES. Henry G. Pearson, New York, N. Y. Filed Oct. 1, 1878.



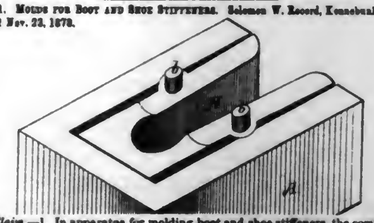
Claim.—The within-described postal envelope, consisting of two parts, A B, both parts being threaded and having flanges D E, while one part may have another flange, C, substantially as set forth.

210,960. ADDRESSING-MACHINES. John Piner, Bonham, Tex. Filed June 21, 1878.



Claim.—The combination, with box A, movable impression-frame B, and hinged platen-lever C, of the shouldered pivot-arm *d*, the end-slotted pawl E, loosely held by nut on said arm, the extension-stop d', and the rack E', all arranged substantially as shown and described, for the purpose specified.

210,961. MOLDS FOR BOOT AND SHOE STIFFENERS. Solomon W. Record, Kennebunk, Me. Filed Nov. 23, 1878.



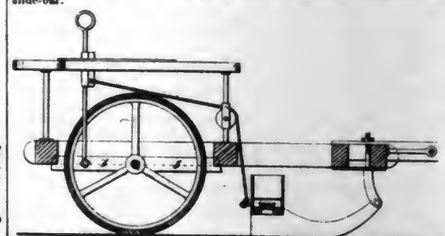
Claim.—1. In apparatus for molding boot and shoe stiffeners, the combination, with a male die or follower, of a female die having a rigid heel-block and hinged wings or side pieces, substantially as set forth.

2. The combination, with the concave heel-block, of wings or side pieces forming a continuation of the heel-block, and hinged or pivoted at points between their ends, substantially as set forth.

3. The heel-block and hinged wings or side pieces, mounted on a removable false floor or plate, substantially as and for the purposes set forth.

210,962. COMBINED FIELD-ROLLER AND PLANTER. John J. Reicherts and David Tipton, Delaware, Ohio. Filed Oct. 21, 1878.

Brief.—The slide-sections of the seeding device are set by a right-and-left-hand screw to graduate the flow of seed, and are adjusted in relation to a corresponding bar which extends across to both seed-boxes and forms the continuous half of the seed-slide. The pockets or recesses in the seed-slide thus formed are cut equally from the corresponding sides of the slide sections and the long slide-bar.



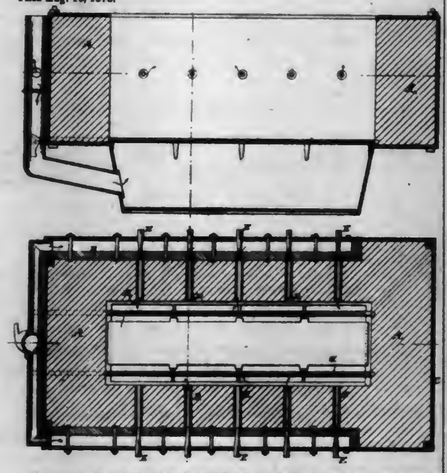
Claim.—The dropping-slides of a seed-planter, consisting of a continuous recessed slide-piece, E^1, and the bars E^2, connected by tongue and groove, said bars having angular arms, that pass through block f^3, and being adjustable by the right-and-left screw and collar f^3, as and for the purpose specified.

210,963. TREATING FIRE-BRICK AND SIMILAR MATERIALS USED FOR METALLURGIC PURPOSES. Asa R. Reynolds, New York, N. Y. Filed Oct. 4, 1878.

Claim.—1. The mode of treating articles made from materials of which fire-brick is composed, or their equivalents, by impregnating them with carbon, as and for the purpose described.

2. Articles made from the materials of which fire-brick is composed, or their equivalents, impregnated with carbon, as and for the purpose described.

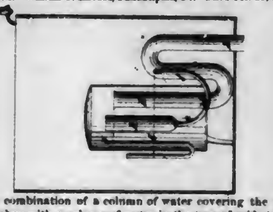
210,964. DECARBONIZING MALLEABLE CAST-IRON, &c. Asa R. Reynolds, New York, N. Y. Filed Aug. 16, 1878.



Claim.—1. In a furnace for decarburizing articles of cast-iron and carburizing articles of wrought-iron, and for other purposes, the combination of elevated wind-chambers with a lower wind-chamber, the upper wind-chamber being provided with tuyeres that conduct the blasts of air at the proper point of elevation and the proper angle to produce a heat at or near the top of the pots or crucibles placed with their contents in the interior of the furnace equal or nearly equal to the heat produced at or near the bottom of said pots or crucibles when the air from said lower wind-chamber is used, substantially as described.

2. The combination of wind-gages E, each provided with a small groove, combined with the upper wind-chambers, and with the tuyeres to control the blasts of air passing through the latter, to bring the top of the pots or crucibles, with their contents, to a heat equal or nearly equal to the heat at or near the bottom of said pots or crucibles, substantially as described.

210,965. SPRINGS. William G. Rhoads, Philadelphia, Pa. Filed Oct. 12, 1878.



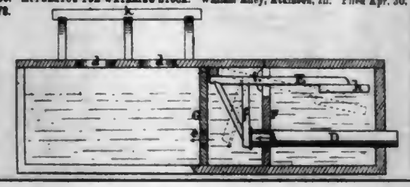
Claim.—1. The combination of a column of water covering the intaking-leg and bend of a siphon with a column of water in the trap of said siphon, and with an intermediate confined and compressed column of air, to produce a difference of fluid-level within and without said intaking-leg, for the purpose of bringing the siphon into action by the release of the air, and the consequent flow of the water toward a common level, all substantially as herein set forth.

2. The combination, with a reservoir, of a trapped siphon having its top bend below the high level or top of the reservoir, and so constructed as that the capacity of its intaking-leg between its sealing and overflow levels shall exceed the capacity of the intaking side of its trap between its sealing and charge levels, substantially as and for the purpose herein set forth.

3. The combination, with a trapped siphon, of an air-releasing or vent tube, substantially as and for the purpose herein set forth.

4. The combination, with a trapped siphon, of a charging cup or reservoir, for the purpose of refilling and sealing the trap after the action of the siphon has ceased, substantially as herein set forth.

210,966. APPARATUS FOR WATERING STOCK. William Riley, Atkinson, Ill. Filed Apr. 30, 1878.



Claim.—1. A trough with perpendicular sides and ends, divided by two partitions, covered by a perforated lid, attached to said trough by hinges.

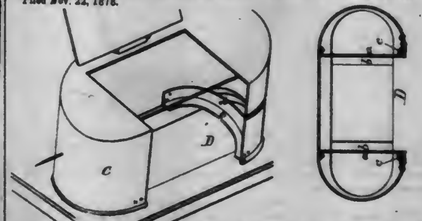
2. A lever working on a bolt in slot of partition next to the end of the trough, to the long arm of which is attached the float *h*.

3. A perpendicular arm supported by a brace attached to the end of the lever to give strength, and having on its lower end a valve to close the pipe, said pipe running through partition and end of trough, to which is attached a pipe or hose.

4. The pipe running through the end of the trough and partition, as described.

5. The lid with holes, separated by partition, supported by brace on top, substantially as described in specification.

210,967. "SMOKE-CONSUMERS" FOR COOKING-STOVES. Edward A. G. Roulstone, Boston, Mass. Filed Nov. 22, 1878.



Claim.—1. The rests or supports *a b*, composed of the bars *a* and ledges *b*, the bars being secured at the rear end to the hood, and at front provided with the grooves *c*, to engage the edges of the opening D, essentially as and for purposes stated.

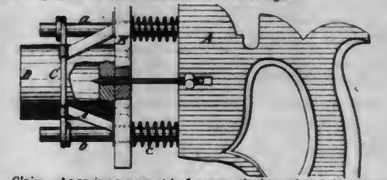
2. The combination, with the slotted hood C, adapted to the purposes stated, of a roasting-spit.

3. The curved supports or bars, in combination with the hood.

4. The barred frame or grid, in combination with the hood, and adapted to fit the curved supports, and constitute a support for culinary vessels.

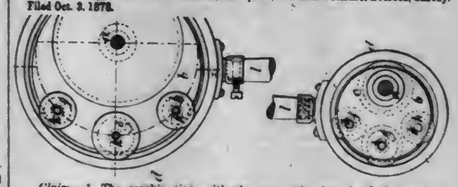
210,968. FIRE-ARMS. Jarvis Royal, Rochelle, Ill. Filed Nov. 9, 1878.

Brief.—Recoil-springs are interposed between the barrel and the stock to prevent injury to the hand when the arm is discharged.



Claim.—As an improvement in fire-arms, the base-plate held on rods *a b*, in contact with springs *c*, which take up the recoil, in combination with the mortar D, rods *a b*, and stock A, substantially as described.

210,969. ANTI-FRICTION ECCENTRICS. Mendel Seharfberg, Vienna, Austria, assignor of one-third his right to Marcus Lowendahl, same place, and Max Gutmann, Dresden, Saxony. Filed Oct. 3, 1878.



Claim.—1. The combination, with the eccentric-ring *d*, of the internal wheels or rollers, the arbors or shafts of such rollers, and the side plates, *b b*, substantially as set forth.

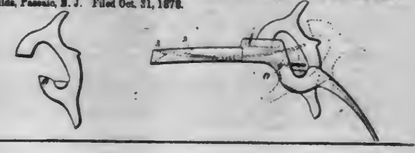
2. The eccentric-ring *f* and internal rollers or wheels, the surfaces in contact being provided with ribs and grooves, in combination with the shaft *a* and the side plates, *b*, that support the arbors or shafts *k*, substantially as set forth.

210,970. BALE-TIES. William Silvester, Pittsburg, assignor to Hugh McDonald, Allegheny Pa. Filed July 9, 1878.



Claim.—In a cotton-bale tie, a button, B, consisting of the neck *b*, having the two cut-away heads *a*, extending in opposite directions, and the washer *c* in the middle of the necks, in combination with the band A, having slots cut in its ends, substantially as shown.

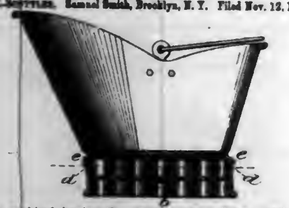
210,971. TOY PISTOLS. Horace A. Smith, Brooklyn, N. Y., assignor to himself and Robert Foulis, Passaic, N. J. Filed Oct. 21, 1878.



Claim.—1. The hammer and trigger made in one piece, of cast metal, and having a heel or angle, *e*, on the forward upper part of the trigger, in combination with a spring in the imitation barrel acting downwardly upon the heel, substantially as set forth.

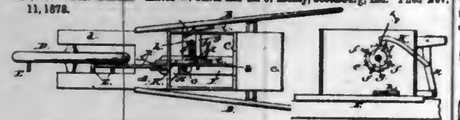
2. In a toy pistol, the hammer, trigger, and trunnions cast in one piece, in combination with the imitation barrel, handle, and cap cast in one piece, and the hammer-spring, that also acts to keep the hammer in its place, substantially as set forth.

210,972. COAL-SCUTTLES. Samuel Smith, Brooklyn, N. Y. Filed Nov. 12, 1878.



Claim.—The coal-hod having the concave-convex bead *c* and vertically-corrugated lower portion or foot, *b*, and the bottom having the upward-projecting vertically-corrugated wall fitting snugly within the said corrugated lower portion or foot, and provided with a flange fitting in the bead of the body, substantially as described.

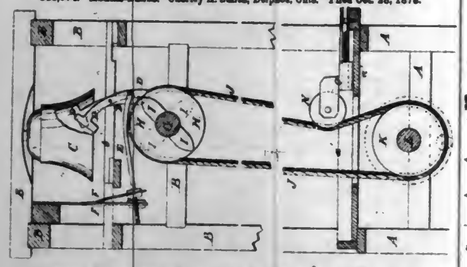
210,973. GRAIN-DRILLS. Milton W. Smith and Eli J. Bixler, Scottsburg, Ind. Filed Nov. 11, 1878.



Claim.—1. The double seed-slide F, working beneath the central partition, *b*, in the bottom of both hoppers, for dropping seed and fertilizers simultaneously, in combination with an agitator, I, operated by a pawl or arm extending from the lever R, and spring J, for imparting to the agitator an intermittent rotary motion, substantially as set forth.

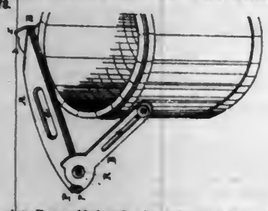
2. In a seed-planter, the V-shaped operating-wheel D, provided with pins E, the lever R, for giving motion to the agitator I, and double seed-slide F, in combination with the locking-arm M, for holding the lever R out of contact with the pins E in the operating-wheel D, constructed and operating substantially as and for the purpose set forth.

210,974. ALARM-BELLS. Charley H. Smith, Delphos, Ohio. Filed Oct. 28, 1878.



Claim.—The combination, in a frame, A B, with the bell C, of the two hammers D, pivoted to timber *b'*, the two end-pivoted bars E, passing through the lower ends of springs F, the rotary shaft G, having wheel H, with two pins, I, on each side, and the band J, connecting wheel H with a pulley on the crank-shaft L, as and for the purpose specified.

210,975. COMBINED STROKER AND HANDLE IN MEASURES. Samuel D. Stauffer, Marietta, Pa. Filed Nov. 6, 1878.



Claim.—The plate B, provided with a long slot, C, and a curved head, *b*, with arresting-points *c*, pivot-plate and pivot F R, pin *p*, and open handle or straight-edge A *a*, the whole arranged and applied substantially as and operating in the manner and for the purpose specified.

210,976. AIR-GUNS. William Masterson, New York, N. Y., assignor to Walter Deady, same place. Filed Mar. 23, 1878.

Brief.—The projectiles are placed in a magazine-tube located within the compressed air chamber in the rear stock, and are fed forward by the pressure of the air. The discharge is effected by the opening of a valve to admit air into the tube in rear of the first bullet.

Claim.—1. In combination with the stock-butt reservoir, the channel-piece through which the bullets are delivered into the barrel, the bullet-magazine tube C, the bullet-follower Z'', and piston Z''', connected with the screw-plug *d'*, and the lever-valve G, carrying the bullet-stopping prong or projection *j*, and actuating the piece X, all substantially as and for the purposes set forth.

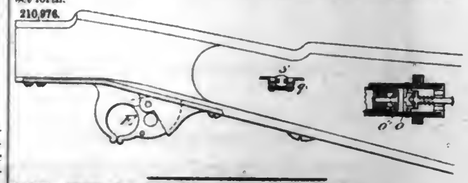
2. In combination, the trigger E, piece *e'*, tumbler *e''*, spring *f*, and the lever-valve G, all substantially as and for the purpose set forth.

3. In combination with the trigger E and its guard, the auxiliary trigger U', substantially as and for the purpose set forth.

4. The pressure-button consisting of the movable piece *s*, the rubber disk *q*, and the ring *r*, clamping the latter tightly in place, all in combination, substantially as and for the purpose set forth.

5. In combination with the stock-butt reservoir, the screw-plug *d''*, carrying the perforated and capped tube *d'*, all substantially as and for the purpose set forth.

210,976.



210,977. BOBBINS. Oscar E. Wait, Rockport, Mass. Filed Apr. 8, 1878.

Brief.—The scores are in two or more sets distributed in different transverse planes, and those in each set extend only partially around the barrel, so that parts of the wood are uncut, and so as to furnish a hold for the different coils of thread.



Claim.—1. A wooden bobbin having two or more sets of scores distributed over the sides of the barrel, with the scores in each set on different transverse planes, substantially as described, and for the purpose specified.

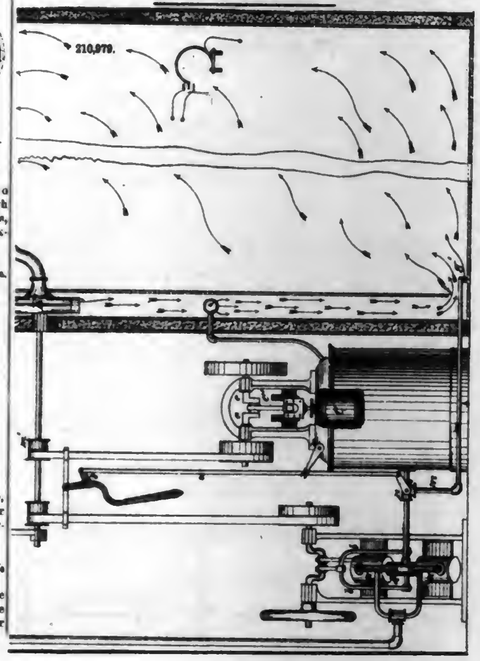
2. A wooden bobbin having two or more sets of diagonal or oblique scores in the sides of its barrel, substantially as described, and for the purpose specified.

210,978. INSTRUMENTS FOR CLEANING COMBS. Charles S. Westcott, Philadelphia, Pa. Filed Apr. 17, 1878.



Claim.—An instrument for cleaning combs, consisting of the plate *b*, slots *i*, pins *c*, and turned-over edge *d*, having slits or apertures *e* formed therein, substantially in the manner and for the purpose set forth.

210,979.



210,979. REFRIGERATING APPARATUS. James A. Whitney, New York, N. Y. Filed Oct. 26, 1878.

Brief.—A compressed-air motor operates the fan in the refrigerator, while the cold expanded air from the exhaust of the cylinder passes into the refrigerator, and is mixed with the air drawn from the top of the chamber by the fan. By the arrangement of a shifting device, the belts, pulleys, cocks, &c., the power is at once applied direct to the fan from the steam-engine, and the air from the pumps passes into the refrigerating-chamber without being compressed, and the air-motor is stopped. The air to be compressed is drawn from the upper part of the chamber to be cooled.

Claim.—1. The combination, for joint operation, of a compressed-air motor, a fan or blower, and a pipe or passage leading from the exhaust of said motor to the structure to be cooled, substantially as and for the purpose herein set forth.

2. The combination of a fan or blower, an air-compressor having its inlet port or passage communicating with the structure to be cooled, and a compressed-air motor for operating the fan or blower, and having its exhaust port or passage communicating with the structure to be cooled, substantially as and for the purpose herein set forth.

3. The combination of an apparatus for injecting a stream or jets of cooled air into the structure to be cooled and a fan or blower for mingling said stream or jets of cooled air with the volume of air contained in said structure, substantially as and for the purpose set forth.

4. The combination of an air-compressor, an air-pipe leading thereto from the structure to be cooled, a compressed-air reservoir, and a compressed-air motor having its exhaust port or passage communicating with the structure to be cooled, substantially as and for the purpose herein set forth.

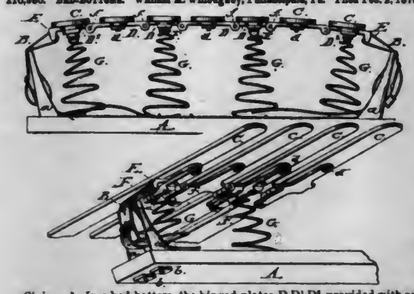
5. The combination of an air-compressor, a compressed-air reservoir, a compressed-air motor having its exhaust port or passage communicating with the structure to be cooled, a system of connected cocks or valves, *n r*, and an outlet-pipe, *m*, substantially as and for the purpose herein set forth.

6. The combination of a chamber or passage, D, with the exhaust pipe or passage of a compressed-air motor, and a fan or blower for circulating through said chamber or passage the volume of air within the structure to be cooled, substantially as and for the purpose herein set forth.

7. The combination of the outlet-pipe *m* and cock *n* with an air-compressor, a compressed-air reservoir, and a compressed-air motor having its exhaust port or passage communicating with the structure to be cooled, substantially as and for the purpose set forth.

8. The combination of a shifting device with the cock *n* of the compressed-air reservoir, the cock *r* of the compressed-air motor, the fan or blower, and a belt or gearing for transmitting power from the said motor to the said fan or blower, substantially as and for the purpose set forth.

210,980. BED-BOTTOMS. William M. Willoughby, Philadelphia, Pa. Filed Feb. 2, 1878.



Claim.—1. In a bed-bottom, the hinged plates D D' D', provided with arms extending at right angles to the lines of the chains, to which arms the slats C are attached, in combination with springs G, attached to hooks F, secured to plates D' D', as and for the purpose set forth.

2. The plates D', with hooks F attached, in combination with springs G and beams A, as and for the purpose set forth.

3. In combination with beam A, the arms *a* and adjustable straps B, attached to hooks formed on plates D', as and for the purpose set forth.

210,981. OIL-FIXTURES FOR ILLUMINATING PURPOSES. Boyd Allen, Boston, Mass., assignor to John F. Donnell, same place. Filed May 15, 1878.



Claim.—The rods D, hinged to the pendant E, and detachably connected to the arms C, substantially as and for the purpose set forth.

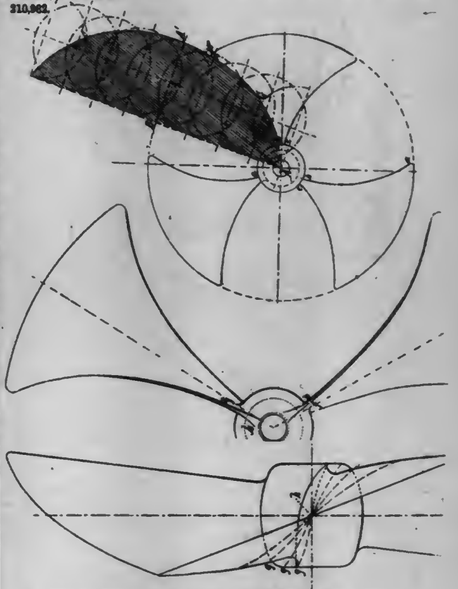
210,982. SCREW-PROPELLERS. Robert Henry Armit, London, England, assignor to William C. Hallett, same place. Filed June 4, 1878. Patented in England, Sept. 15, 1876.

Claim.—1. A propeller-screw or similar article having longitudinal curved blades, the leading or trailing edges, or both, of which are formed on cycloidal curves, substantially as described.

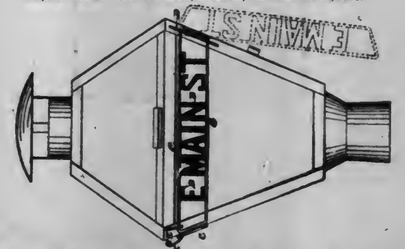
2. A propeller-screw or similar article having blades which are curved longitudinally on reverse curves, determined by the line of sines, and the leading or trailing edges, or both, of which are formed on cycloidal curves, substantially as described.

3. A screw-propeller blade curved longitudinally on a line of sines, substantially as set forth.

210,983.



210,983. STOVE. Charles Ballenet, Richmond, Va. Filed Nov. 2, 1878.



Claim.—The combination, with the lamp, of the cleat D and hook E, fixed thereto, and the name-plate frame C, constructed as specified, to adapt it for connection with and support by the cleat and hook, and to permit its convenient detachment therefrom, as shown and described.

210,984. MANUFACTURE OF GLASSWARE. Daniel Bennett, Baldwin Township, Allegheny County, Pa. Filed July 19, 1878.



Claim.—1. The combination, with a mold adapted for the formation of jar covers and like articles, of a plunger provided with sections *b*, capable of being projected and withdrawn, substantially as specified, said sections grooved on their exterior surface, as at *l*, and the plunger cut away, as at *i*, the whole constructed and operating substantially as specified.

2. A cover for jars, &c., substantially as shown in Fig. 5 of the drawing—that is to say, having a series of lugs or segments, *k*, corresponding in their arrangement to one turn of a thread, substantially as specified.

210,985. MACHINES FOR PRODUCING BRIMS OR SWEAT-BANDS FOR HATS AND CAPS. Thomas W. Brother, New York, N. Y. Filed Nov. 9, 1878.

Claim.—1. A machine for producing brims or sweat-bands for hats, consisting of two wheels, which are adapted to receive the bent edge of a sweat-band between them, and to stretch the same, so that it becomes fixed, substantially as described.

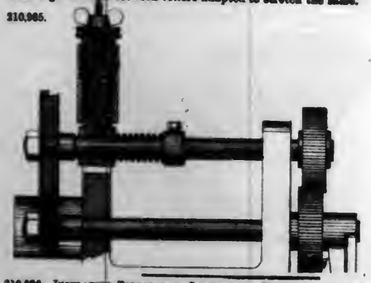
2. The combination, with two wheels adapted to receive the bent edge of a sweat-band between them, of two springs, one of which serves to compress the faces of the wheels in a direction at right angles to their shafts, and the other to compress the same in a direction parallel thereto, substantially as described.

3. The combination, with two wheels adapted to receive the bent edge of a

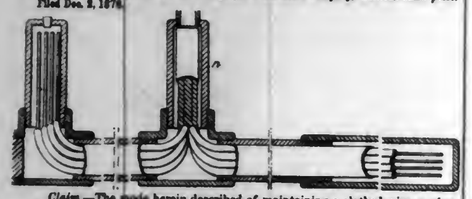
sweat-band between them, and to stretch the same, of a band-guide and a deflector, substantially as and for the purpose described.

4. The method, substantially as herein described, of producing a brim on a sweat-band by bending over one edge of the sweat-band, and passing such bent edge through between rollers adapted to stretch the same.

210,985.

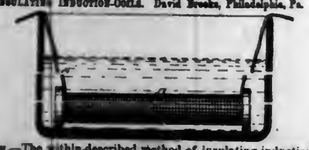


210,986. INSULATING TELEGRAPHIC CONDUCTORS. David Brooks, Philadelphia, Pa., assignor to the Brooks Underground Telegraph Construction Company, (limited,) same place. Filed Dec. 2, 1878.



Claim.—The main herein described of maintaining a clothed wire or wires contained in pipes in an insulated condition by keeping the fibrous covering of the wires in the pipes constantly saturated with an insulating-liquid under pressure, as set forth.

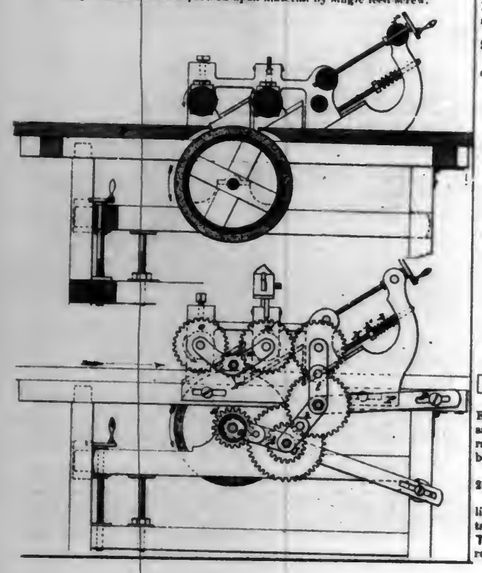
210,987. INSULATING INDUCTION-COILS. David Brooks, Philadelphia, Pa. Filed Oct. 25, 1878.



Claim.—The within-described method of insulating induction-coils or bobbins of wire of electrical instruments—that is to say, by immersing said bobbins or coils in a liquid insulating substance, as set forth.

210,988. SANDPAPERING-MACHINES. Carl Brückner, Cincinnati, Ohio, assignor to J. A. Fay & Co., same place. Filed Apr. 22, 1878.

Brief.—Both feed-rolls pressed upon material by single feed-screw.



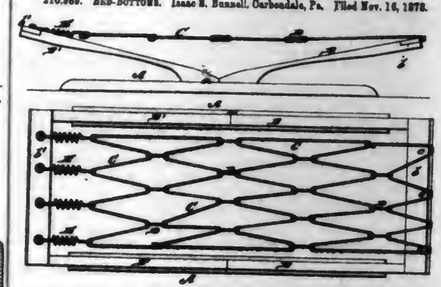
Claim.—1. In a sandpapering or polishing machine, a polishing-roller having a peripheral coating of glue rendered sensitively elastic by proper admixture of glycerine or kindred substance, the whole to act as a yielding surface upon which to secure the sand-paper.

2. In a sandpapering or polishing machine, the feed-rolls provided with a surface of pulverized emery, glass, or similar material, to serve the purposes substantially as described.

3. The combination, with the feed-roll frame, slideways, and adjusting-screw, of spring-buffers arranged to press against the roll-frame, in the direction of its adjustability, with power sufficient to overcome any tendency in the slide-connection to bind, whereby the adjusting-screw is enabled to accurately accomplish its office.

4. In a sandpapering or polishing machine, the feed-roll-driving connection from thence to the shaft of the polishing-drum, composed of intermeshing gear-wheels hung permanently together by links and adjustable supports upon the frame, whereby the links may be rendered rigidly stationary, or at will released, to enable the adjustment of the rolls without severing the driving-connection.

210,989. BED-BOTTOMS. Isaac S. Bunnell, Carbondale, Pa. Filed Nov. 16, 1878.

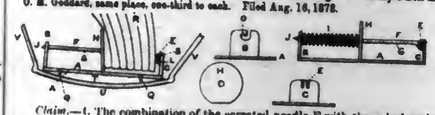


Claim.—The spring-bed herein described, consisting of the base-plates A A, spring arms B B B' B', having cross-pieces *b b'*, the continuous wire C, bent as shown, and connected by links D, and the spiral springs E, the whole constructed, adapted, and arranged to serve as and for the purpose set forth.

210,990. PROCESSES OF WELDING COPPER. James Burns, Verona, Pa., assignor of one-half his right to Peter L. Bonnet, same place. Filed Oct. 14, 1878.

Claim.—The process of welding copper consisting in applying to it, first, a compound of caustic alkali and vegetable fiber, then powdered sulphur, then bringing it to welding heat and applying pressure, substantially as described.

210,991. TEMPORARY BINDERS. Wm. Byrne, Auburn, N. Y., assignor to Henry O'Niel and O. M. Goddard, same place, one-third to each. Filed Aug. 16, 1878.

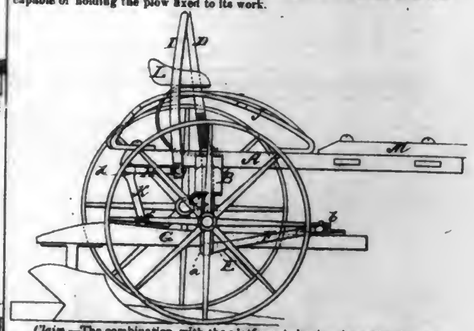


Claim.—1. The combination of the serrated needle F with the spiral spring I and the mutilated washer H, operating as described and set forth.

2. The temporary binder consisting of the covers V V, backs U T, plate A having the flanges B C, hinged needle F, notched and serrated, as described, and the mutilated washer H, substantially as set forth.

210,992. PLOWS. Hugh H. Canaday, Fairfield, Iowa. Filed Nov. 9, 1878.

Brief.—A front and rear crank for a plow-beam, with a third crank or bail capable of holding the plow fixed to its work.

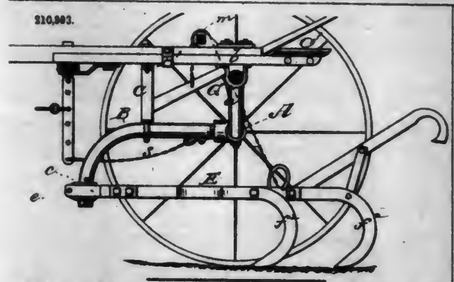


Claim.—The combination, with the platform A, having depending hangers E, the vertically-vibrating bail F, pivoted thereto, and the beam G, coupled to said bail at its front end, of the swinging bail H, its operating-lever I, the ratchet J, and the clevis-bail K, vibrating on the bail H and coupled to the beam, substantially as specified.

210,993. CULTIVATORS. Andrew Canfield, Davenport, Iowa. Filed Oct. 26, 1878.

Claim.—The combination of the tubular axle-tree A, the tubular T-couplings *t*, passed over the ends of said tree and secured thereto, and the horizontally and vertically bent tubular arms B, the horizontal end screwed into said T-couplings, and the vertical end having the vibrating collars *c*, adapted to receive the plow-beams E, substantially as specified.

210,994.



210,994. MAIL-BAGS. Alexander P. Carnagy, Summit Bridge, Del. Filed Nov. 27, 1878.

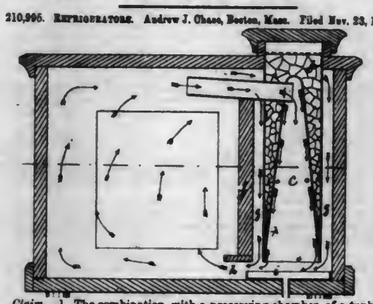


Claim.—1. A mail-bag having a row of eyelets coinciding on opposite sides when the mouth of the bag is closed flat, and a projecting flap having attached to its surface an elastic bar or strip provided with a series of fingers or hooks adapted to pass through said eyelets when the flap is turned down upon the front of the mouth of the bag, substantially as described.

2. A mail-bag having a row of eyelets coinciding on opposite sides when the mouth of the bag is closed, a projecting flap having attached to its surface a bar provided with a series of fingers or hooks adapted to pass through the coincident eyelets when the flap is turned down upon the front of the mouth of the bag, and a series of sockets secured to the rear surface of said bag, and adapted to receive the ends of said fingers or hooks, substantially as described.

3. The combination, in a mail-bag fastening, of the row of eyelets, the bar having the projecting hooks or fingers and hasp, and suitable means for securing said hasp to the front of the bag, substantially as described.

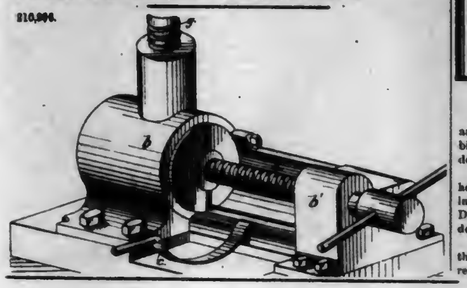
210,995. REFRIGERATORS. Andrew J. Chase, Boston, Mass. Filed Nov. 23, 1878.



Claim.—1. The combination, with a preserving-chamber, of a tank for containing refrigerating material, and having an interior condensing-chamber formed by the inside walls of said tank, one or more pipes connecting and terminating in the upper portion of the condensing-chamber, and one or more passages connecting the lower portion of the condensing chamber with the lower portion of the preserving-chamber, substantially as and for the purpose set forth.

2. The combination, with a preserving-chamber, of an adjacent chamber separated therefrom by a non-conducting wall having one or more passages at its top and bottom, a tank for containing refrigerating material, arranged within said adjacent chamber, and separated from the walls thereof by an intervening space, said tank having an interior condensing-chamber formed by the inside walls of the tank, the upper portion of said condensing-chamber being connected with the preserving-chamber by means of a pipe, and the lower portion of said condensing-chamber being connected with the preserving-chamber by a suitable passage or passages, the lower passages also being connected with the intervening space behind the walls of the tank and the chamber in which it is arranged, all substantially as and for the purposes set forth.

210,996.

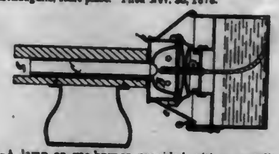


210,998. MACHINES FOR SHAPING AND ORNAMENTING SHEET-METAL VESSELS. Thomas W. Cross, Birmingham, England. Filed July 11, 1878. Patented in England, Mar. 21, 1878.

Brief.—A cylindrical stamped cup-blank is placed in mold, which is then closed. Cup-blank filled with water or any other pliable substance. The mold is then forced into the cylinder by the end screw, and the plunger screwed down to expand the blank into conformity with the mold-cavity.

Claim.—The combination of parts comprising the block *a*, mold *c*, the upright *b*, the horizontal screw *d*, the vertical screw *g*, and the plunger *g'*, fitted in any suitable press, and operating as above set forth, and for the purpose specified.

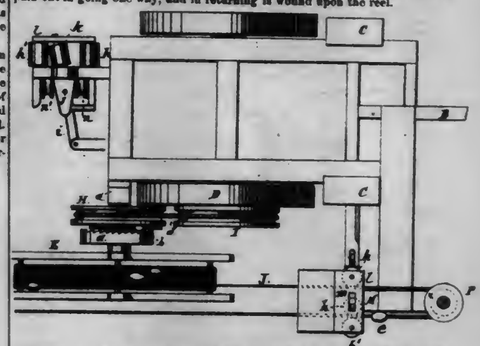
210,997. SAD-IRON HEATERS. Samuel J. Crockett, Boston, Mass., assignor to himself and William J. McLaughlin, same place. Filed Nov. 26, 1878.



Claim.—A lamp or gas-burner provided with a metallic chimney, C, in combination with a smoothing-iron adapted to fit thereover, whereby the direct contact of the flame with the interior or exterior of the iron is avoided, substantially as and for the purpose set forth.

210,998. CHECK-ROW PLANTERS. Christopher G. Cross, Chicago, Ill. Filed Sept. 18, 1878.

Brief.—The cord is staked at only one end of the field, the other end with the surplus being wound upon the reel. As the machine advances, the cord is paid out in going one way, and in returning is wound upon the reel.



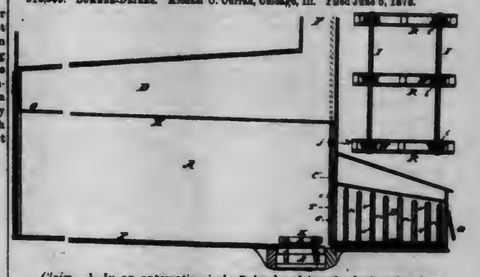
Claim.—1. In a corn-planter, a reel, E, adapted to carry a cord, J, connected and combined with the planter, substantially as described, and with devices for operating the reel, so that the cord will be paid out from the reel when the machine moves across the field in one direction, and be taken up onto the reel when the machine moves in the opposite direction, and operate the check-row mechanism both ways, for the purpose set forth.

2. In combination with the dropping devices of a corn-planter and a check-row cord, a reel, E, pulleys H I, belt *d*, and devices for tightening the belt, substantially as specified.

3. In combination with seed slide or slides of a corn-planter, the lever *i*, rollers *h h' k*, and cord J, for the purpose of operating the seed-slides by the action of the knotted cord, substantially as and for the purpose set forth.

4. The lever *i*, rollers *h h' k*, and pulleys F *n n'*, in combination with the seed-slide and cord J of a planter, substantially as and for the purpose set forth.

210,999. LUMBER-DRIERS. Michael O. Curran, Chicago, Ill. Filed June 5, 1878.



Claim.—1. In an automatic air-draft lumber-drier, the drying-chamber A and the upper horizontal flue, D, connected by the orifice or passage O, combined with the vertical chimney F, extending across the drier, substantially as described.

2. In a lumber drier, the inclined drying-chamber A, having the adjustable hot-air inlet C across its lower or rear end, and the air-outlet O across the ceiling of the higher or front end, in combination with the upper horizontal flue, D, and vertical chimney F, at or toward the rear of the drier, substantially as described.

3. In combination with the drying-chamber A, having its outlet at O, and the steam-pipe chamber B, located on the same level, and having the cold-air register at G, the connecting hot-air passage provided with a register, C, ad-

justable to regulate both the amount of air admitted and the point or the direction of its entrance to the chamber A, substantially as described.

4. In combination with drying and steam-pipe chambers, arranged as shown, and communicating near their common floor-level, the elevated steam-jets *j j*, located over the hot-air opening, substantially as and for the purposes specified.

5. In combination with the floor-tracks of a lumber-drier, the car described, consisting of the shafts I I, loose wheels W, and removable beams R, resting upon the shafts, all substantially as shown, and for the purposes set forth.

211,000. CAR-SPRINGS. Augustus B. Davis, Philadelphia, Pa. Filed Oct. 8, 1878.



Claim.—1. A car-spring consisting of a number of unattached strips of sheet-metal of uniform length having unattached elliptical ends and an unconfined middle portion arranged between the upper and lower bearings, the said middle portion adapted to bow reversely under the load, so as to produce an undulating resilience throughout the spring, which is unrestrained by stops or fastenings, substantially as described.

2. A car spring substantially such as described, consisting of a number of strips of sheet metal unattached at any portion of their lengths, their ends elliptical, and their middle portion, substantially right-lined, arranged between the upper and lower bearings without bolts or other stops or fastenings in restraint of resilient movement, substantially as shown.

3. The combination, with the springs A, of the compensating plates B', applied and operating substantially as and for the purpose set forth.

211,001. GAME-BOARDS. Hosea B. Dunnison, Cambridge, Mass. Filed July 3, 1878.



Claim.—1. A cribbage board having peg-holes arranged in two continuous parallel convoluted series or rows, each series or row contained in or surrounded by a field which contrasts in color with the field containing the other series or row, the rows being clearly defined and distinguished from each other by the fields, as set forth.

2. The sheet-metal box having a semicircular end or ends, a perforated top or cover, and the compartment C, combined with the quadrant-shaped cover D, eccentrically pivoted to the box, as set forth.

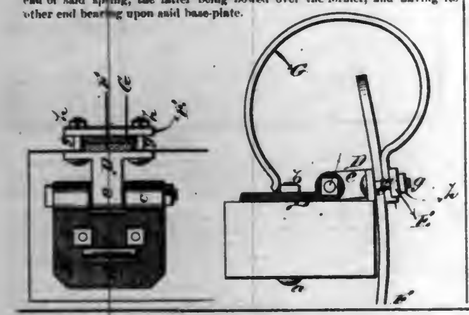
211,002. PLOWS. Woodson Dickerson and William H. Strain, Summerville, Ga., assignors of one-fourth their right to John Taylor, same place. Filed Oct. 19 1878.



Claim.—In a plow, the combination of the perforated bifurcated stock B, having the solid point B' and slotted extensions *b c c*, secured directly to the handles, with the beam A and the pivoted perforated beam-brace D, substantially as set forth.

211,003. HARROWS. Eugene M. Dunbar, Kalamazoo, Mich. Filed June 1, 1878.

Brief.—Harrow-tooth and tension-spring secured to beam by means of tooth-shackle hinged to base-plate, and adapted to clamp said tooth and one end of said spring, the latter being bowed over the former, and having its other end bearing upon said base-plate.



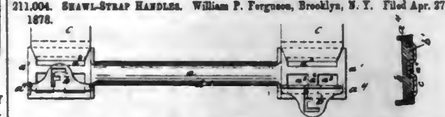
Claim.—1. The combination, with the tooth F and spring G, of the shackle or clamp, consisting of the front plate, D, having the hinge-knuckle *e* and a bolt-hole on each side thereof, the rear plate, E, having corresponding bolt-holes, the bolts *g*, and the nuts *h*, adapted to clamp said tooth and spring, substantially as specified.

2. A harrow-beam having the base-plate B bolted thereon, a tooth-shackle hinged to said base-plate, and a tension-spring bearing upon said tooth-shackle and said base-plate.

3. The combination, with a hinged shackle and a base-plate fixed to the harrow-beam, of the loop or C-spring G, bearing upon the shackle and base-plate, and bowed over the tooth clamped in said shackle, substantially as specified.

4. The combination, with the hinged shackle, its rear plate, E, and the harrow-tooth, of the tension-spring having the offset *k*, engaging under the plate E, substantially as specified.

211,004. SHAWL-STRAP HANDLES. William P. Ferguson, Brooklyn, N. Y. Filed Apr. 27, 1878.

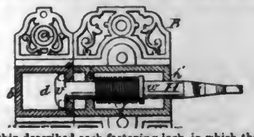


Claim.—1. A carrying device for shawl-straps, consisting of the handle *a* and bodies of the buckles *a' a'*, formed from a single piece of sheet metal and bent in the manner shown, in combination with the retaining-clamps *b b*, hinged to the bodies *a' a'*, and the straps *a c*, substantially as hereinbefore set forth.

2. In a shawl-strap, the hinged clamp *b*, provided with the sections *b' b'*, and the body *a'*, provided with the openings *a³ a³*, when constructed and combined so as to form a retaining device for straps, substantially in the manner hereinbefore set forth.

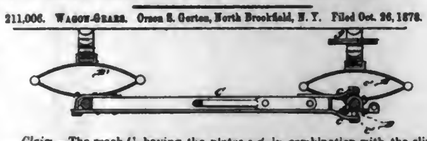
211,005. FASTENERS FOR MEETING-RAILS OF SASHES. John Gérard, Trenton, N. J., assignor to the Trenton Lock and Hardware Company, same place. Filed Oct. 11, 1878.

Brief.—A spring within the case acts to draw the sashes together when in the locked position.



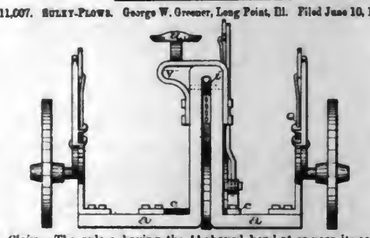
Claim.—The within-described sash-fastening lock, in which the plate B, its cavity *c'*, and partitions *h h'*, and a plate, D, with ribs *w w'*, are combined with the bolt H and its collar *w* and spring I, all substantially as set forth.

211,006. WAGON-GEARS. Orson S. Gerton, North Brookfield, N. Y. Filed Oct. 26, 1878.



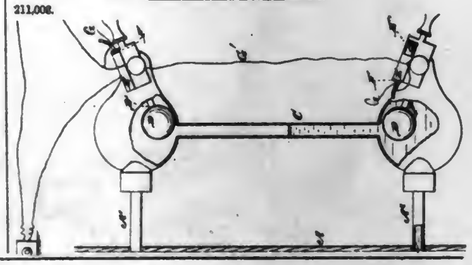
Claim.—The reach C, having the plates *c c'*, in combination with the clip king-bolt D, when said plates are fastened to the clip king-bolt at the top and bottom, substantially as set forth.

211,007. SULKY-PLOWS. George W. Greener, Long Point, Ill. Filed June 10, 1878.



Claim.—The axle *a*, having the U-shaped bend at or near its center, the said bend being made to support the seat, and just wide enough to act as a guide for the plow-beam, and to receive the roller over which the elevating-chain passes, substantially as shown.

211,008.

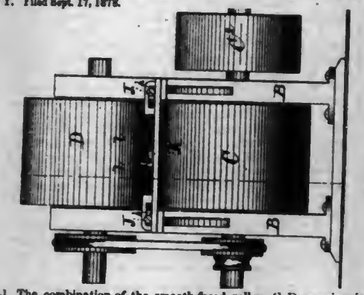


211,009. ELECTRIC ALARMS FOR STEAM-BOILERS. Paul Grimm, Ward I. Fancher, and Hamilton K. Roberts, Glen Cove, N. Y. Filed Oct. 19, 1878.

Claim.—1. The tubes E E, carrying mercury E', and having non-conducting plug F, carrying insulated wires G, in combination with floats D and steam-boiler A, as specified.

2. The tilting tubes E, having means for making and breaking the electric circuit, and actuated by floats D of a steam-boiler, as specified.

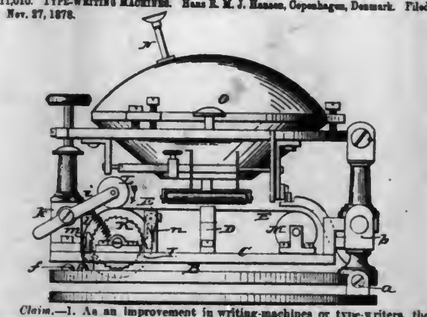
211,009. MACHINES FOR PRESSING AND ROLLING PLASTIC MATERIAL. Thomas Hagerty, Brooklyn, N. Y. Filed Sept. 27, 1878.



Claim.—1. The combination of the smooth-faced rollers C D, running in the same direction and at different rates of speed, and adjustable elastic metallic strips or end-formers H H, arranged and operating as shown and described, for the purpose specified.

2. The yielding centering and delivering device K, constructed and operating as shown and described, for the purpose specified.

211,010. TYPE-WRITING MACHINES. Hans R. M. J. Hansen, Copenhagen, Denmark. Filed Nov. 27, 1878.



Claim.—1. As an improvement in writing-machines or type-writers, the paper feeding mechanism herein described, adapted for feeding paper in the form of a narrow strip or band, and consisting, essentially, of an oscillating plate or frame, C, carrying the feed-rollers I L, anvil D, and guide-roller M, and adapted to receive its tilting or oscillating motion from direct contact of the face of said anvil with the type-heads when these are depressed, substantially as and for the purpose herein shown and specified.

2. The oscillating plate or frame C, having anvil D and rollers M I L, arranged as described, in combination with base-plate B, adjustable coiled spring F, and the set-screws *e f*, substantially as and for the purpose herein shown and specified.

3. The paper-feeding device herein shown and described, consisting, essentially, of the plates B C, hinged together at one end, the contact-plate or anvil D, rollers M I L, ratchet-wheel K, spring-pawls *n n*, adjustable spring F, and set-screws *e f*, all constructed and combined to operate substantially in the manner and for the purpose herein shown and described.

211,011. METALLIC CANS. George L. Harrison, Jr., Philadelphia, Pa., assignor to Harrison Brothers & Company. Filed Nov. 15, 1878.



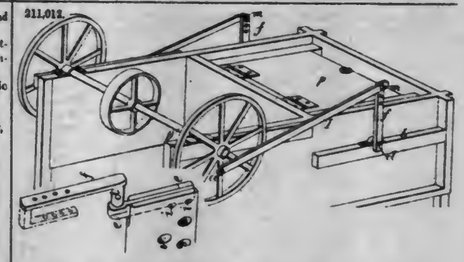
Claim.—1. A sheet-metal can the upper chine of whose body is provided with or formed into a compressible corrugation, and whose cover rests upon said corrugation, is provided with a score or circumferentially-weakened portion, and is united to the body below both score and corrugation by unyielding solder, to the end that blows properly applied to the cover will compress the corrugation to such extent as to permit the vibration of the rim of the cover, so as to rupture it at the weakened portion, substantially as described.

2. In a can the rim of whose cover is secured to the body by unyielding solder, and is provided with a score or other weakened portion, a compressible corrugation, substantially as and for the purpose specified.

211,012 WASHING-MACHINES. Abraham Harshberger, Philadelphia, Pa. Filed May 11, 1878.

Claim.—The tub A, having a closely-fitting lid, *p*, in combination with the dasher J and the rock-shafts *d*, the latter being adapted to bearings formed in or secured to the ends of the tub below the lid of the same, and each rock-shaft having two arms, *e* and *f*, the former arranged entirely within the tub and secured to the dasher, and the arm *f* arranged entirely outside of the tub, for the application of power thereto, all as set forth.

211,012.

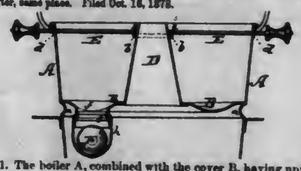


211,013. NECK-TIES. William H. Hart, Jr., Philadelphia, Pa. Filed Oct. 23, 1878.



Claim.—The scarf-tip B, constructed in skeleton form, substantially as and for the purpose set forth.

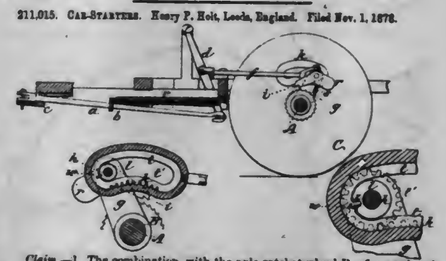
211,014. MILK-BOILERS. Louis Hensel, Berlin, Prussia, assignor of one-half his right to August Krafter, same place. Filed Oct. 16, 1878.



Claim.—1. The boiler A, combined with the cover B, having upwardly-projecting open-ended tube D and downwardly-opening valve F beneath the aperture *f*, substantially as herein shown and described.

2. The combination of boiler A, having the lock-notches *d d*, with the removable cover B, having tube D, and with the cross-bar E, for operation substantially as specified.

211,015. CAR-STARTERS. Henry P. Holt, Leeds, England. Filed Nov. 1, 1878.



Claim.—1. The combination, with the axle ratchet-wheel B, of a pawl and an actuating-pinion therefor, carried by an arm turning loosely on the axle, a fixed segmental rack engaging with and operating said pinion, and the draw-bar united to said loosely-turning ratchet-carrier, adapted for operation in starting the car, substantially as herein set forth.

2. The combination, with the ratchet-pawl *i* and its actuating-pinion *j*, turning loosely on the pawl-stem, the carrying device *g*, and the fixed rack *k*, of a friction device consisting of a collar fixed on the pawl-carrying stem between the carrying device *g* and the pinion *j*, and a spring bearing upon said pinion, and adapted for operation with the axle-ratchet, substantially as herein set forth.

3. The pawl *i*, having a weighted arm, *r*, and combined with the loosely-turning pinion *j*, the rack, and the friction device, for operation in disengaging the pawl after the car is started.

4. The rack-bridle pivoted to the car-frame and supported upon the axle by the arm *g*, in combination with the rack and pinion *j k*, the ratchet, pawl, and the friction device, adapted for operation as described, and allow for the spring of the car-body independent of the rack-and-pinion connection with the car-axle.

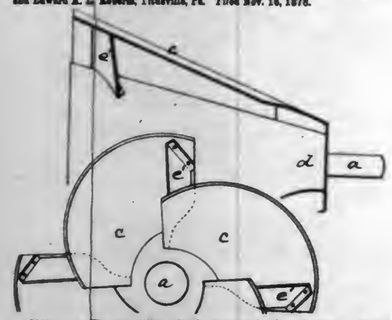
5. The starting device adapted for engagement and disengagement with the axle-ratchet by means of the rack, the shifting-pinion, the pawl, and the friction device, in combination with the multiplying-lever *d* and the connecting-rod *e*, arranged for operation substantially as described.

6. The device for holding the ratchet-pawl out of gear when not in use, consisting of the tooth *w* in the bridle-rack, and the notch Z in the friction collar or disk fixed on the ratchet-stem and interlocking, as stated.

7. The combination, with the weighted ratchet-pawl *i r*, the loosely-turning carrier *g*, the loosely-turning pinion *j*, and the rack-bridle, of the stop-pin *s* on said carrier, for the purpose stated.

8. A car-starting device consisting of the axle ratchet-wheel B, the weighted ratchet *i*, the loosely-turning arm *g*, the loosely-turning pinion *j*, the bridle-rack *k*, the friction device *l m*, the multiplying-lever *d*, and the draw-bar connected with the pinion and ratchet-carrying arm, for operation substantially as described.

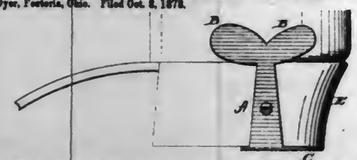
211,016. SCREW-PROPELLERS. Erwin C. Hubbard, Columbiana, Ohio, assignor to himself and Edward A. L. Roberts, Titusville, Pa. Filed Nov. 16, 1878.



Claim.—1. The propeller-wheel composed of a series of blades, *c*, constructed substantially as described, and provided with leading lips in advance of the attachment of the blade to the hub, substantially as and for the purpose specified.

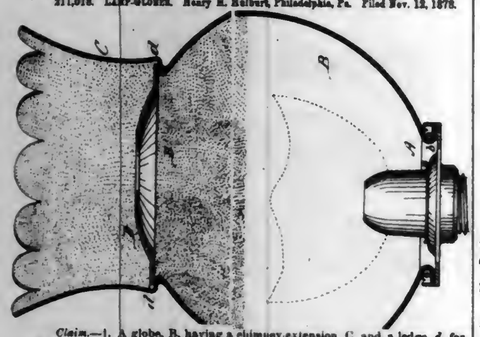
2. The propeller-wheel composed of a series of blades, *c*, constructed substantially as described, and provided with leading lips in advance of the attachments of the blades to the hub, said blades being stayed at their extremities by a series of supplemental segmental blades, corresponding in their arrangement to the segments of a screw-propeller, substantially as specified.

211,017. COMBINED COUNTER AND HEEL-PROTECTOR. Charles W. Hughes and Thomas E. Dyer, Peoria, Ohio. Filed Oct. 8, 1878.



Claim.—The within-described counter and heel-protector for boots and shoes, formed of a single piece of metal, and consisting of the perforated plate C, which is curved and covers the wearing portion of the heel, and is secured thereto by screws or nails, the shank A, secured to the outer surface of the heel, and the shank-protector B B, all as set forth.

211,018. LAMP-GLOBES. Henry H. Hulburt, Philadelphia, Pa. Filed Nov. 12, 1878.

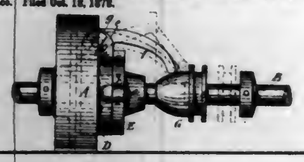


Claim.—1. A globe, B, having a chimney-extension, C, and a ledge, *d*, for the reception of a metal plate, D, said chimney-extension being larger in diameter than the internal diameter of the ledge, so as to admit said plate, substantially as shown and described.

2. In combination with a globe, B, having an extension, C, and ledge or support *d*, a metal plate, D, located therein, substantially as shown and described.

3. In combination with the metal plate or reflector D, a globe, B, having a chimney-like extension, C, the upper half of said globe and the extension being roughened or frosted, to conceal said plate, and the lower half of said globe smooth or plain, to permit the passage of the light reflected downward by the plate D, as set forth.

211,019. CLUTCHES. James E. Hunter, North Adams, Mass., assignor to James Hunter & Son, same place. Filed Oct. 16, 1878.



Claim.—1. The combination, in a friction clutch or pulley, of a friction-band securely connected with the driven or driving shaft, and having its ends joined together by a tightening-screw or cam-bolt, which is actuated by a projecting lever, by the operation of a sliding collar, to effect the clutching action of the band, in combination with a pulley or clutch-wheel, having a friction hub or surface encircled by the said band, substantially as herein set forth.

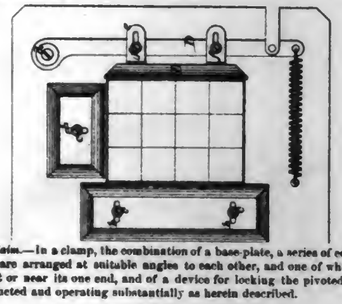
2. In a friction clutch or pulley, the combination of a pulley or clutch-wheel having a friction-hub, C, and a friction-band, D, encircling the same, with a sustaining plate or collar, E, carrying the said band and formed with an elongated hub, F, which extends through the hub of the pulley and forms the bearing therefor, substantially as herein shown and described.

3. The combination, in a friction clutch or pulley, of a friction-band, D, fixed to revolve with the driving or driven shaft, a tightening-screw or cam-bolt connecting together the ends of the band, an operating-lever, I, projecting from the said bolt, and a conical wedging-collar, G, arranged to actuate the said lever, in connection with the pulley A or clutch-wheel formed with a friction surface or hub, C, with which the band engages, substantially as set forth.

4. In a friction-clutch, the combination, with a friction-hub, C, and friction-band D, encircling the same, of the sustaining plate or collar E, keyed to the driving or driven shaft, and connected to the friction-band at diametrically opposite sides by the pins *a a* engaging in slightly-elongated holes in the plate, or vice versa, by which an evenly-distributed and double driving-connection is formed between shaft and band, which also allows the band to adjust itself evenly on the friction-surface when contracted, substantially as herein shown and described.

5. In a friction-clutch, the combination, with the friction-band D and tightening-bolt H, or equivalent, joining together the end of the band, of the adjusting-nuts *f f*, arranged substantially as described, for adjusting the tension of the band, substantially as herein set forth.

211,020. CLAMPS. Charles M. Hyatt, Albany, N. Y., assignor to the Embossing Company. Filed Nov. 27, 1878.



Claim.—In a clamp, the combination of a base-plate, a series of edge-gages, which are arranged at suitable angles to each other, and one of which is pivoted at or near its one end, and of a device for locking the pivoted gage, all constructed and operating substantially as herein described.

211,021. LAMP-BURNERS. Hiram L. Ives, Troy, N. Y., assignor of one-half his right to John S. Saunders, same place. Filed Sept. 12, 1878.



Claim.—1. The wick-tube suspended free from contact with the base of the burner by the braces F F, and connected to the wire gauze diaphragm I, all substantially as and for the purposes set forth.

2. The combination of the perforated shell A, the suspended wick-tube D, braces F F, and the wire gauze diaphragm I, all substantially as set forth.

211,022. ROCK-DRILLS. Thomas B. Jordan and Thomas R. Jordan, London, England. Filed Oct. 4, 1878. Patented in England, June 26, 1878.

Claim.—1. In a machine for drilling rocks and other hard substances, the pawl and the ratchet-wheel h^3, in combination with and for controlling the movement of the wheels h h^1 and nut *g*, substantially as above set forth.

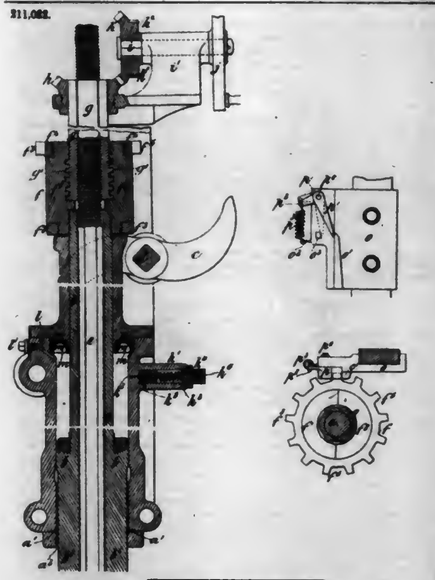
2. The piston trunk or extension b^2, adapted to form a space between it and the interior of the cylinder, in combination with a stop-valve, a^1, and a lever therefor, having grooves a^2 coincident with the valve and the air-receiving space, whereby an additional charge of air is admitted into the cylinder from the space above the valve at each downward stroke of the piston.

3. The means, substantially as herein described, for admitting an additional charge of air into the cylinder at each descending stroke of the piston, in combination with an escape-valve, *k*, attached to the side of the cylinder, near its top, and controlled by a spring adapted to relieve the cylinder at any pressure, according to the power to be used for raising the piston.

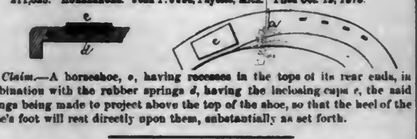
4. For the purpose of varying the angle of rotation to be given to the tool at each stroke, and the consequent feed of the tool, the combination, with the lever *p* and the fixed projecting tongue o^1, of interchangeable cogged collars, each having a different number of teeth, whereby the degree of rotation and the feed are adapted to the nature of the rock being drilled.

3. To prevent the egress of air from the cylinder around the piston-rod b^1 at the upper cylinder-head, a packing consisting of the hollow convex metal ring *m*, having perforations m' m', and the leather ring *n*, seated upon the convex side of said hollow metal ring, whereby the air in the cylinder has access to the concave surface of the ring *n*, and thereby constantly forces it against its seat in the cylinder-head and against the piston-rod.

211,022.

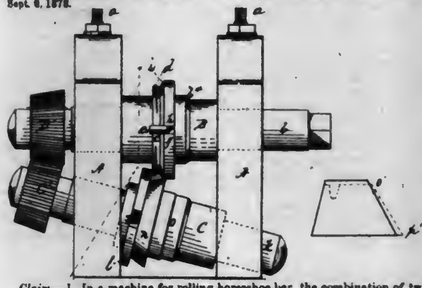


211,023. HORSESHOES. John F. Jubb, Fayette, Mich. Filed Oct. 19, 1878.



Claim.—A horseshoe, *e*, having recesses in the tops of its rear ends, in combination with the rubber springs *d*, having the inclosing cups *c*, the said springs being made to project above the top of the shoe, so that the heel of the horse's foot will rest directly upon them, substantially as set forth.

211,024. MACHINES FOR ROLLING HORSESHOE-BARS. William R. Justas, Chartiers, and William D. Young, Pittsburg, assignors to Shoenberger & Company, Pittsburg, Pa. Filed Sept. 6, 1878.

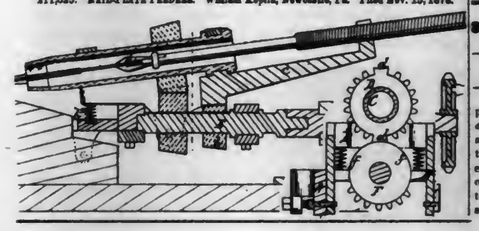


Claim.—1. In a machine for rolling horseshoe-bar, the combination of two flanged rolls, arranged with relation to each other substantially as described, and with the flanges of the rolls angling from the working-faces to form a groove having two parallel and two reversely-sloping sides, substantially as and for the purpose specified.

2. The combination of the rolls B C, provided with flanges *f*, *i*, and *l*, and rings *e n*, substantially as and for the purpose specified.

3. The roll B, having ring *e*, with creasers and transverse knives or cutters, and ring *f*, with bevel *i*, in combination with roll C, having notched ring *l* and bevel-faced ring *n*, the said rolls having convergent axes, substantially as and for the purpose specified.

211,025. NAIL-PLATE FEEDERS. William Koplin, Newcastle, Pa. Filed Nov. 15, 1878.

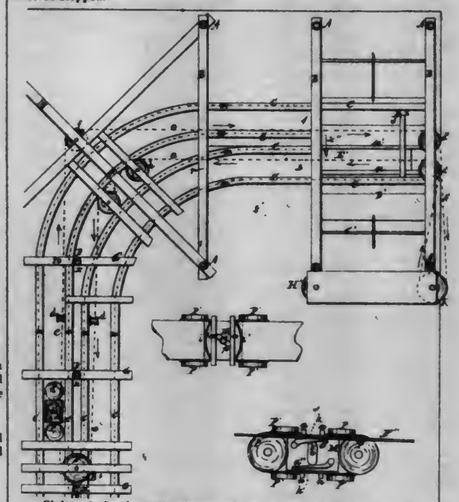


Claim.—1. The combination, in a nail-plate feeder, of a rocking frame carrying a revolving feed-barrel or nail-plate guide, a threaded feed-rod, and a fixed feed-nut arranged on the rocking frame and in line with the axis of the feed-barrel or guide, said feed-nut acting directly on the threaded feed-rod, substantially as and for the purpose specified.

2. The combination, in a nail-plate feeder, of a rocking frame carrying a revolving nail-plate guide or feed-barrel, a pinion with blind teeth, and a mutilated pinion for operating the feed-barrel, a threaded feed-rod, and a fixed feed-nut arranged in the axis of the feed-barrel and on the rocking frame, substantially as and for the purpose specified.

211,026. ELEVATED STREET-RAILWAYS. Charles Leavitt, Cleveland, Ohio. Filed Sept. 12, 1878.

Brief.—The endless propelling-cable is supported on suitable pulleys, and the slack therein is taken up by a sliding pulley connected by a rope with a counterbalancing-weight. The truck is connected with the cable by means of a flanged plate and clamping-dogs on top of said truck, the dogs being operated to clamp the cable against the flanges by means of a cam located on a shaft and operated by the conductor. Connected with the same shaft in a brake mechanism, to be operated when the truck is disconnected from the cable and is to be stopped.

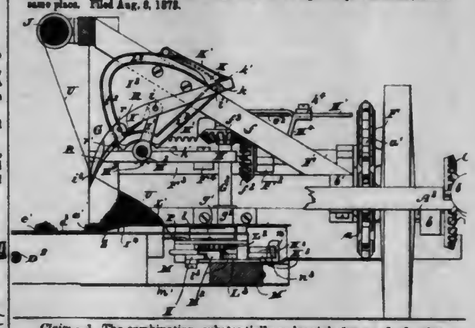


Claim.—1. In elevated railways, the arrangement of leading-pulleys J, *f*, d^c, K, *e*, *h*, and *i*, in combination with the endless cable passing around the slack-pulley *g*, controlled by the counter-weight and cord H' and I', whereby the cable is conducted around the curves and the slack duly compensated, substantially as and for the purpose described.

2. The truck I, plate M, provided with flanges *k*, clamping-dogs a^w, and cam *t*, in combination with the cable F^w, operating conjointly, substantially as and for the purpose specified.

3. The brake consisting of the bars *a a*, spring i^r, cam *p*, shaft N, and cords d^r and e^r, arranged to operate with the cable-clutch on the shaft N, substantially as and for the purpose described.

211,027. GRAIN-BINDERS. William Lethridge, Osage, Iowa, assignor of eight-eighteenths of his right to Martin V. Nichols, and four-eighteenths of his right to Cyrus H. Coster, both of same place. Filed Aug. 8, 1878.



Claim.—1. The combination, substantially as hereinbefore set forth, of the platform having the binder-arm slot a^2 at its inner end, the two driven shafts d^2 d^3, mounted beneath the platform at its inner end, and terminating at their adjacent ends at the opposite sides of said slot, and the endless chains having teeth working in slots *c* in the platform, which extend inward beyond the outer end of the slot a^2, to deliver the grain well in toward the binding mechanism, over the slot in the inner end of the platform, and inside the point to which the binder-arm reaches when it descends into said slot in gathering a gavel, as set forth.

2. The combination of the slotted platform, the series of toothed endless chains, the shafts d^2 E beneath the platform, the sprocket-pulleys thereon, around which the toothed chains pass, the shaft D^2, also beneath the platform, and its sprocket-pulleys and chains for imparting motion to the shafts d^2 and driving the toothed chains, substantially as and for the purpose set forth.

3. The combination, substantially as hereinbefore set forth, of the platform, the shafts d^2 d^2 beneath the platform, and terminating at their inner or adjacent ends upon opposite sides of the binder-arm slot a^2 at the inner end of the platform, the shaft E beneath the outer end of the platform, the grain-feeding chains, the shaft D^2 beneath the platform intermediate its ends, the sprocket-wheel and chain connections between said shaft and the shafts d^2 d^2, the sprocket-wheel on the end of said intermediate shaft, and its driving-chain, for the purpose specified.

4. The combination of the driving wheel axle, the sprocket-wheel thereon, the endless chain driven by the sprocket-wheel, the driven shaft having a sprocket-wheel around which said chain passes, the bevel-pinion on the driven shaft, the upright shaft having a pinion meshing with the pinion on the driven shaft, and the cranks on the upright shaft, by which all the moving parts of the binding mechanism are actuated, substantially as hereinbefore set forth.

5. The combination, substantially as hereinbefore set forth, of the main frame, the driving-wheel axle, the driven shaft F^1 at the front corner of the main frame, the upright shaft driven therefrom, the crank upon its upper end, the reciprocating rack-bar driven by connections with said crank, the oscillating binder-arm shaft crossing above the platform at its inner end, and its pinion driven by the rack-bar.

6. The binder-arm-controlling cam, having the cam-track formed with the abruptly-curved bottom portion, for the purpose set forth.

7. The combination, substantially as hereinbefore set forth, of the rack H^1, the oscillating shaft H^2, its crank, the pinion on the shaft driven by the rack, the slotted or loop-shaped binder-arm to which the crank is pivoted, the pin or roller at the heel end of the binder-arm, and the cam in which said roller works, having a long cam-track at back, an abruptly-curved track at bottom, an abruptly-inclined front track, and a long curved top track, for the purposes specified.

8. The combination of the oscillating binder-arm shaft, its crank, the binder-arm vibrating and traversing on its heel pin or roller, and the two-part cam for controlling the binder arm, consisting of the plates or castings I^3 I^3, provided with corresponding cam-tracks i^3 upon their inner sides, facing each other, and having the stops K K^3, to prevent the movement of the binder-arm at its heel in the wrong direction, these members being constructed and operating substantially as hereinbefore set forth, whereby the binder-arm is caused to descend at the back of the cam-tracks, and reach outward at its point by the oscillating in one direction of its actuating-shaft, and to ascend at the front of said tracks, without reaching outward, by the oscillating of the shaft in the opposite direction to complete the circuit of the tracks.

9. The combination, substantially as hereinbefore set forth, of the inclined bars over the gavel-supporting table and inner end of the grain-platform, the two-part controlling-cam for the binder-arm, secured to and between said bars, with their cam-tracks facing each other, the pin or roller at the heel of the binder-arm, the oscillating binder-arm shaft beneath said bars and cam, and its crank, pivoted in the slotted binder-arm intermediate its heel and point, and working between the two parts of the cam, to cause the binder-arm to traverse at its heel around the irregularly-shaped cam-tracks.

10. The triple shuttle consisting of the combination of the arms Q^1 Q^2, for holding the wire, and the outside front guard arm or member Q^3, substantially as hereinbefore set forth.

11. The combination, substantially as hereinbefore set forth, of the twister-pinion and the reciprocating triple shuttle, having the arms or members Q^1 Q^2, for holding the wire at its end in its slot or guideway to the twister, and the guard arm or member Q^3, to prevent the wire being presented to the twister at an improper time.

12. The combination, substantially as hereinbefore set forth, of the binder-arm, the twister-pinion, and the reciprocating shuttle, having the two arms or members Q^1 Q^2, reciprocating beneath the pinion, with one arm above and the other below the slotted base-plate of the pinion frame or casing, for the purpose specified.

13. The combination, substantially as hereinbefore set forth, of the binder-arm, the twister-pinion, and the triple shuttle having the wire-holding arms and the guard-arm.

14. The combination of the binder-arm, the twister-pinion, its frame or casing, the reciprocating shuttle having the wire-holding arms Q^1 Q^2, the one above and the other below the slotted base plate of the pinion frame, and the cutter carried by the shank or back-bar of the shuttle at the heel end of one of said arms, these members being constructed and operating substantially as hereinbefore set forth.

15. The combined triple shuttle and cutter, consisting of the wire-holding arms Q^1 Q^2, guard-arm Q^3, and knife N^1, these four elements being carried by the reciprocating shank or back bar Q, and operating upon the wire, and in connection with the twister-pinion and its frame or casing, substantially in the manner and for the purpose hereinbefore set forth.

16. The combination, substantially as hereinbefore set forth, of the upright rotating shaft having two cranks, one at its upper end and the other at its lower end, the rack-bar actuated from the upper crank, for operating the binder-arm through connecting mechanism, and the cams actuated by the lower crank, for operating the wire twisting, adjusting, holding, and severing mechanisms.

17. The combination, substantially as hereinbefore set forth, of the twister-pinion, its operating rack, having an intermittent advance movement imparted to it, and the reciprocating swinging wire-placing finger operating upon the wire to place it in the teeth of the twister during the pause in the movement of the rack-bar.

18. The combination, substantially as hereinbefore set forth, of the pivoted wire-placing finger P, alternately moved toward and away from the twister-pinion, its laterally-projecting heel end or crank, the spring, and the fixed stop in the line of movement of the crank at the heel of the finger, whereby the finger, after being brought up to the twister, is caused to swing in to press the back wire into its teeth, as set forth.

19. The combination of the reciprocating shuttle, the swinging wire-placing finger, mounted on the shuttle shank or carrier, the stop against which the heel of the finger abuts, and the intermittently-advancing rack-bar, substantially as and for the purpose hereinbefore set forth.

20. The combination, substantially as hereinbefore set forth, of the shuttle provided with the guard-arm or outside member Q^3, the swinging wire-placing finger on the shuttle shank or carrier, the tripping-stop for swinging in the finger against the wire, and the intermittently-moving rack-bar, imparting motion to the twister-pinion through connecting gearing, whereby the guard-arm is retracted from across the slot through which the wire enters to the pinion (the wire is placed in the pinion teeth while it is at rest) during the interval in the inward movement of the rack-bar, and is held there during the finish of the advance movement of the rack ready to be twisted upon the return movement of the rack, as set forth.

21. The combination, substantially as hereinbefore set forth, of the shuttle, the twister-pinion, the rack-bar, and the two cams, connected, respectively, with the shuttle-carrying bar or shank and the rack-bar, and having differential movements imparted to them by a common crank.

22. The combination, substantially as hereinbefore set forth, of the twister-pinion, the shuttle-carrier or reciprocating bar, the wire-placing finger carried thereby and operating upon the back part of the wire to place it in the pinion, the binder-arm, and the swinging arm or latch carried thereby for placing the front part of the wire in the pinion.

211,028. BUTTONS. Martin Lowenstein, Birmingham, England. Filed Nov. 23, 1878. Patented in England, Sept. 24, 1878.



Claim.—1. In a button, solitaire, sleeve-button link, or similar article, the combination of the following elements: first, an elliptical shank of two halves, both of which are provided with semicircular flanges, to form, when united, the base disk, while one of them has upon the opposite end a hook-like termination; second, a disk or plate held in a recess at the back of the button; third, a spindle having at one end a hook-like termination, and being secured at the other to the disk or plate at the back of the button, substantially as described, the said spindle passing through the hollow of the shank and the hook-like termination, and the plate or disk at the opposite end serving to retain the shank with the hook-like termination and base-disk in position, as set forth.

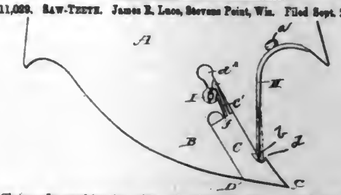
2. The combination, in a button, solitaire sleeve-link, stud, or other like article with the compound hook-like termination, one portion thereof being fixed to the solitaire or botton, and the other movable, as described, of locking mechanism consisting of spring-tongues cut out of the disk or plate secured to the end of the spindle nearest the button, and adapted to engage in the hollow or recesses of the hollow shank to which the movable hook is attached, substantially as described.

3. The combination of a recessed shell or socket attached to the button or solitaire, or similar article, and slotted, as shown, and a plate provided with circumferential springs arranged to project through the slots in the recessed shell, between which and the button the said plate is located, with a spindle having a hook-like termination secured to said plate, and an elliptical shank with hook-like termination held in position on the recessed shell by the hooked end of the spindle, substantially as described, the said elliptical shank being recessed to receive the projecting ends of the circumferential springs, as set forth.

4. In a button, solitaire, or like article having a compound hook-like termination, one portion of which is fixed to the button and the other portion of which is movable, the elliptical shank with hook-like termination and base-disk formed of two parts, both being struck up out of a single sheet of metal and united by a lapped joint, one of said parts or halves having a hook-like termination, and both being provided with a semicircular flange to form the base-disk when united, substantially as described.

5. A button, solitaire, or equivalent article composed, first, of the button; second, a slotted recessed shell or socket secured at the back; third, a plate with circumferential spring-tongues formed by cutting said plate, as shown, the said plate being located between the button and the recessed shell, and the spring-tongues projecting through the slots therein; fourth, a hollow elliptical shank having a base-plate and hook-like termination, said shank being formed of two parts or halves, as shown; and, fifth, a spindle having at one end a hook-like termination, and secured at the other to the spring-plate beneath the recessed shell, substantially as described, the elliptical shank with hook-like termination and base-disk being retained in position on the recessed shell by the hook-like termination on the spindle, and locked to prevent turning by the projection of the springs into the hollow of the elliptical shank, all substantially as set forth.

211,029. SAW-TEETH. James R. Loco, Stevens Point, Wis. Filed Sept. 26, 1878.



Claim.—In combination with a circular-saw plate, A, with teeth B, having slots D d^2 and shoulder f, the cutting-point C, provided with the hooked arm C^1 and notch d, the cam I, and the spring H, with hook h, all constructed substantially as and for the purposes herein set forth.

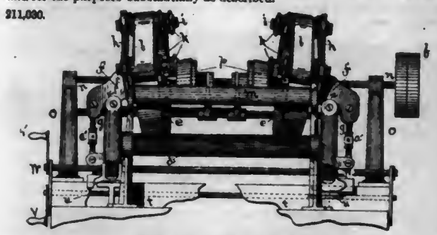
211,030. MACHINES FOR STRETCHING FABRICS. Charles A. Luther, Pawtucket, R. I., assignor to R. and H. Adams, Paterson, N. J. Filed Nov. 1, 1878.

Brief.—The friction-wheels over which the edges of the fabric are carried may be adjusted to any desired angle with each other, with the fabric, and with the plane of the bed of the machine. These friction-wheels may also be separately rotated at varying velocities, or either may be stopped while the other continues its revolutions.

Claim.—1. The combination of the curved hollow arms f f with the right- and left screws a' a' and pivots z z, for the purpose of setting the friction-wheels e e at any desired angle perpendicular to the line of the shaft n, all substantially as described.

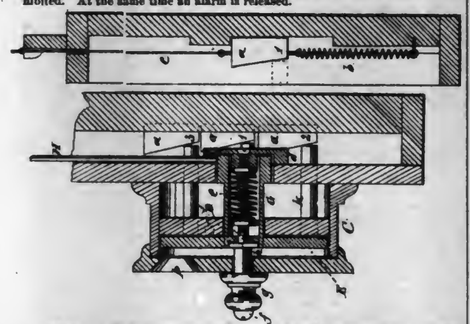
2. The combination of the friction-wheels s s with the friction-clutches p p, bars and connecting-arms r r' and s s', and driving-shaft n, for the purpose of securing a separate or simultaneous operation of said friction-wheels, and at the same or differing velocities, as may be found necessary, all in the manner and for the purposes substantially as described.

211,030.



211,031. ANNUNCIATORS. Francis W. Mallett, Chicago, Ill., assignor to Alfred H. Andrews, Herbert L. Andrews, and Thomas S. Hayden, same place. Filed Nov. 16, 1878.

Brief.—A disk having a hollow cylinder as its axis is rotated by hand against the tension of a coiled spring located within the cylinder, and when released is rotated by said spring in the opposite direction. Numbers inscribed on the face of the disk are visible through a hole in the cover. The disk is locked in its strained position by a pin on a fixed partition entering a hole in the disk, and is released by loose pins passing through the partition, which are raised by inclined planes actuated by springs, which are automatically released in case of fire by a suitable thermostat. The disk will rotate backward until a pin on its under side comes in contact with the raised pin, when the number of the room, connected by thermostat with the particular inclined plane, is exhibited. At the same time an alarm is released.



Claim.—1. In an annunciator, the rotary disk E, in combination with the spring s and cylinder O, all constructed and operating substantially as specified.

2. The combination of the rotary disk E, spring s, cylinder G, pins k, and blocks a, substantially as and for the purpose specified.

3. The combination of the rotary disk E, spring s, cylinder G, pins k and j, and blocks a, substantially as and for the purposes specified.

4. The rod H, in combination with the cylinder G, spring s, disk E, pins k, and blocks a, substantially as and for the purposes specified.

5. The combination of the rotary disk E, cylinder G, spring s, disk s', screw f, and knob g, substantially as and for the purposes specified.

211,032. FRAMES FOR DRYING CURTAINS. Henry F. Marsh, New York, N. Y. Filed Oct. 5, 1878.



Claim.—1. A frame for drying curtains, &c., constructed with telescopic side bars, A A^1, with clamps b c g k and set-screws a h l, and hinged end bars, B B, the said bars A A^1 and B B being provided with pins m, and with an independent adjustable cross-bar, C, substantially as and for the purpose described.

2. In a curtain-drying frame, the adjustable side bars, A A^1, constructed with grooves p p, to receive the pins m, and also a rabbet, r, within which the clamp b is received and slides, substantially as and for the purpose described.

211,033. MILLSTONE-EXHAUST APPARATUS. Moritz Martin, Bitterfeld, Prussia. Filed June 1, 1878. Patented in Belgium, Dec. 5, 1876.

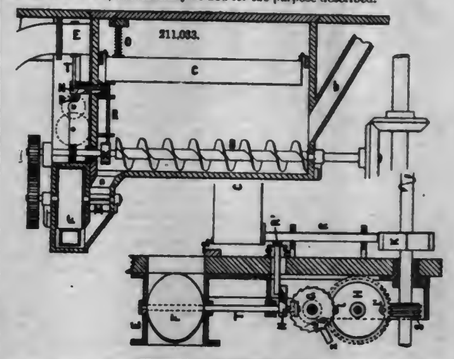
Claim.—1. The combination, with a millstone exhaust or ventilating apparatus, of a flour-separator and mechanisms for automatically stopping the air-current and simultaneously shaking said separator, all substantially as described.

2. The combination, with the separator C, its rod R, having arm R', and the cam-disk K, of the controlling-cam N, substantially as described.

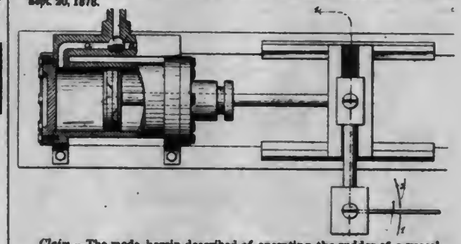
3. The combination, with the separator C, its rod R, having arm R', actuating-disk, and controlling-cam, of the throttle-valve F, substantially as described.

4. In combination with the flour-dust separator C, the rotating cams K, the rod R, having the arm R', the wheel H, provided with pins or studs l and l', the disks G and G', the arm s, the cam-disk P, cam N, and throttle-valve F, substantially as and for the purpose specified.

5. In combination with the flour-dust separator C, the rotating cams K, the leg or rod R, the rotating disks G and G', cam-disk P, throttle-valve F, and chain or rod L, substantially as and for the purpose described.

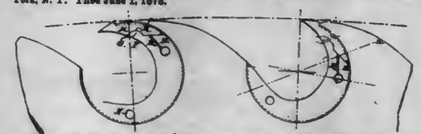


211,034. STEAM STEERING APPARATUS. James C. McAllister, Philadelphia, Pa. Filed Sept. 20, 1878.



Claim.—The mode herein described of operating the rudder of a vessel—that is to say, by connecting the tiller to a piston or pistons arranged in a cylinder or cylinders and constantly subjected to the action of two opposing volumes of steam, which are not exhausted from the cylinder or cylinders while the apparatus is in operation, the relative force of the volumes of steam being governed by the relative sizes of the communications between said volumes of steam and the supply-pipe, all substantially as specified.

211,035. SAW-TEETH. Warren P. Miller, Brooklyn, assignor to R. Hoe & Company, New York, N. Y. Filed June 1, 1878.



Claim.—1. The combination, with a cutting tooth having a shoulder at its back, of an independent shank, the two fitting in a socket cut on curved lines comprising more than one hundred and eighty degrees of a circle, substantially as described.

2. The combination of a cutting-tooth having a shoulder on its back and a depression in its face with an independent shank having a projection on its jaw, to enter said depression and carry and retain in its socket the said tooth, substantially as described.

3. The combination of a cutting-tooth having a shoulder on its back with an independent shank provided with an elastic jaw to retain said tooth in its socket, substantially as described.

4. The combination of a cutting-tooth having a shoulder on its back and independent shank with a socket in the saw-plate cut on a curve comprising more than one hundred and eighty degrees of a circle, to receive said cutting-tooth and shank, substantially as described.

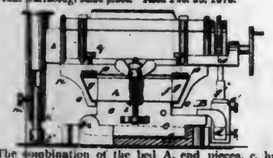
211,036. BAIL-EARS FOR BUCKETS AND PAILS. George C. Hapbeyn, Philadelphia, Pa. Filed Nov. 15, 1878.



Claim.—1. Metallic ears for attaching handles to pails, buckets, and other vessels, constructed each of a single piece of metal plate formed into three triangular sides, with two horizontal parallel ridges across the face, substantially as and for the purpose described.

2. The combination of a bail-ear of a single piece of metal formed into three triangular sides with a metal pail, by soldering the edges of the side projections of said ear thereto, with the broad part uppermost, and tapering downward nearly to a point, substantially as and for the purposes described.

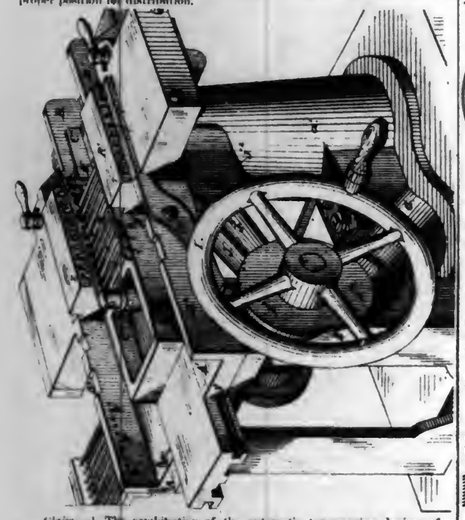
211,037. MILLSTONE-DRESSING MACHINES. David Harracong, Baraboo, Wis., assignor to himself and Jonas Harracong, same place. Filed Feb. 23, 1878.



Claim.—The combination of the bed A, end pieces, c, having guides c, hinged to said bed and adjustable in front in slotted standards *k l m*, frame *o*, adjustable on said end pieces, to support the carriage *n*, substantially as and for the purpose specified.

211,038. TYPE-DISTRIBUTING MACHINES. John North, Middletown, Conn. Filed Dec. 6, 1878.

Brief.—A step by step type-case carriage has vertical side walls, in which are cut wards of shape and size corresponding to the type. Between these walls fits the type case having parallel channels, the open ends of which coincide with the wards. The carriage travels between the vertical inner walls of two platforms or galleys, upon which the type-lines to be distributed are supported by line holders to coincide with rectangular openings in said walls, these openings being of the same distance apart as are the wards. Through the outer walls of the galleys play plungers operated by pneumatic pressure, which force the type-lines inward intermittently, so that when the wards of the carriage coincide with the openings of the galley-walls the types at the inner ends of the lines, which are of similar shape to the coincident wards, will be forced therethrough and into the channels of the case. The carriage has a ward for every shape of type-body in the font, so that as it passes the lines it will be certain to take one type from each. A page to be distributed is separated by the line-holders, which force alternate lines in opposite directions, and hold them in proper position for distribution.



Claim.—1. The combination of the automatic type-moving devices of a type-distributing machine with motive devices, substantially as described, actuated by pneumatic pressure, whereby is obtained a uniform impelling force for the type during the entire operation of the machine, substantially as set forth.

2. The combination, in a type-distributing machine, of a type case or receiver with a type holder arranged at each side thereof, and automatic devices, substantially as described, for forcing types from said holders into opposite sides of the said case, whereby is obtained a double distribution by a single machine.

3. The combination, in a type-distributing machine, of a traveling type case or receiver with line-holders arranged at each side thereof, and automatic distributing devices, substantially as described, by which types are forced from said line holders into both sides of said case, substantially as set forth.

4. The combination, in a type-distributing machine, of a reciprocating type case or receiver, a carriage therefor having its side walls cut into wards corresponding to the shape of variously-notched types, type line holders arranged on each side thereof, and automatic devices for forcing the type from the line-holders into said case or receiver through said wards, substantially as described, whereby is secured a double action of the distributing devices and the use of removable cases or receivers, a number of which may be filled in succession and set aside for further use, as required.

5. The method of separating a page, column, or series of lines of types into two parts, substantially as hereinbefore set forth, the same consisting in forcing alternate lines simultaneously in opposite directions into line-holders adapted for use in connection with the automatic distributing devices of a type-distributing machine.

6. The combination of a type line holder subdivided into a series of line chambers or channels with yielding type-supporters coinciding with said chambers or channels, and receiving therefrom as the lines enter, whereby the end types of the lines are prevented from falling during the process of filling the holders, substantially as set forth.

7. The combination, with the type-line holder of a type-distributing machine, of a shield or guard consisting of a flat plate of equal width to said holder, and having rims or flanges projecting from its sides, substantially as described, whereby when said shield or guard is placed under and against the bottom of the line-holder the end types of the lines therein will be prevented from falling, and the lines retained while the holder is being transferred from place to place.

211,039. CAR-STARTER. Charles H. Nye, Baltimore, Md., assignor of one-half his right to Charles R. Stevenson, same place. Filed May 16, 1878.

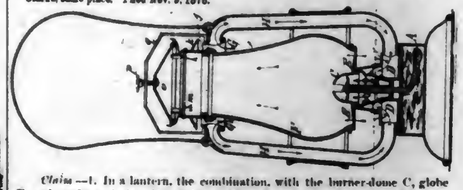


Claim.—1. In combination, the double draw-wheel D, the teeth on the side *a* of which are arranged with their radial edges to draw in a certain direction, and the teeth on the side *b* to draw in the opposite direction, and the draw-bars E H, provided with the swinging draw-hooks *c*, having on the head the beak *c'*, and the transverse rods *h*, and the elastic rubber straps *i*, all arranged as shown and described.

2. In combination, the draw-bars E H, elastic rubber springs *i*, rubber cushion L, and the cross-piece N, as shown and described, and for the purpose specified.

3. The foot-lever *k*, having under one end the spring *n*, and pivoted at the other end to the bolt *p*, in combination with the draw-bar, provided with elongated hole *r* and the rubber springs *i*, as shown and described, and for the purpose specified.

211,040. LANTERNS. John W. Orphy, Rochester, N. Y., assignor to C. T. Ham and F. D. W. Clarke, same place. Filed Nov. 9, 1878.



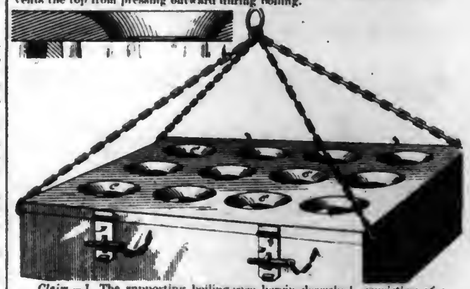
Claim.—1. In a lantern, the combination, with the burner-dome C, globe F, and perforated plate E, admitting the external air to the globe of the air-chamber D, communicating solely with the interior of the dome C, and tubes H, connecting with an air-chamber, G, arranged at or below the top of the globe, substantially as and for the purpose set forth.

2. In a lantern, the combination, with the burner, globe, and pipes H H, of the air-chamber G, composed of the ring *f* and top ring, *k*, arranged to leave an annular opening above the ring *i*, substantially as shown and described.

3. In a lantern, the combination, with the globe F and pipes H H, of the fixed ring *i*, secured to the upper ends of the pipes, and the ring *k*, sleeve *n*, and top plate, *o*, forming the removable top of the lantern, substantially as shown and described.

211,041. CASES FOR SUPPORTING CANS. George H. Perkins and George Brown, Philadelphia, Pa., assignors to the Hannibal Meat Co., (limited,) same place, and of Hannibal, Mo. Filed July 10, 1878.

Brief.—The case consists of a series of cells of the exact size and shape of the cans to be subjected to boiling. The case supports the entire sides and bottom, and a hinged cover, having apertures over the filling-opening, prevents the top from pressing outward during boiling.



Claim.—1. The supporting boiling-case herein described, consisting of a series of cells constructed and operating as described, and of a cover provided with openings coincident with the cells, substantially as and for the purposes set forth.

2. In combination with a supporting boiling-case for cans, consisting of a series of cells constructed and operating to support the cans upon sides and bottom, a cover adapted, when applied, to bear upon or protect the tops of the cans, and provided with a series of openings coincident with the openings in the tops of the cans, substantially as described.

211,042. METALLIC CANS. George H. Perkins and George Brown, Philadelphia, Pa., assignors to the Hannibal Meat Co. (limited,) same place, and of Hannibal, Mo. Filed July 10, 1878.

Claim.—1. A seam for metallic cans, formed by the flat overlap of two portions of metal, one or both of the lapping portions of which is or are provided with a series of indentations struck or formed therein, but not perforating the metal, and approximately transverse to the longitudinal line of the seam, so as to form stiffening-ribs across the seam, substantially as described.

2. A lap-seam for metallic cans, one or both of the overlapping portions of which are provided with indentations approximately transverse to the line of the seam, the edge of each lap being so arranged as to but partially cover up the indentations in the other lap, in order to allow the free access of solder into said indentations in the soldering of the seam, substantially as described.

211,043.

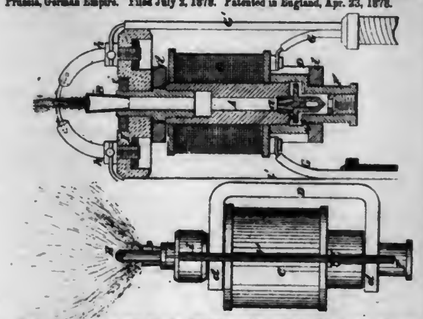


211,043. BEE-HIVES. James F. Petty and Thomas J. Mobley, Frankford, Ind. Filed Nov. 2, 1878.



Claim.—A bee-hive having four independent honey-chambers and four independent brood-chambers, the former above the latter, a central ventilating-tube open at both ends, and opening at its upper end into a four-branched passage, *n*, in the ceiling of the hive, whereby one ventilating-tube is made to ventilate the whole hive, substantially as specified.

211,044. ELECTRIC GAS-LIGHTING DEVICES. Julius Pintsch and Julius Schülke, Berlin, Prussia, German Empire. Filed July 2, 1878. Patented in England, Apr. 23, 1878.



Claim.—1. In an electrical gas lighting and extinguishing apparatus, an electro-magnet the soft-iron hollow core of which forms part of the gas-passage, a permanent magnet having one of its poles connected to one end of said core, a soft-iron valve adapted to close the passage in said core, and arranged between the other end thereof and the other pole of the permanent magnet, substantially as and for the purpose set forth.

2. The combination of the electro-magnet having the soft-iron hollow core A, the unmagnetic valve supporting pipe-section F, the permanent magnet D, having one of its poles in contact with the upper end of said hollow core, and its other lying under the valve-seat, and the soft-iron valve E, substantially as described.

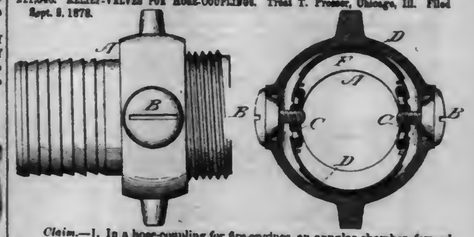
211,045. SIDE SPRINGS FOR VEHICLES. Robert Porter, Hulton, Pa. Filed Nov. 1, 1878.



Claim.—1. The combination, with axle A and head-block C, having the shackles *a a*, of the double C-ended half-elliptic side springs, D, passing out under axle and head-block, respectively, and, returning, fastened to said shackles, said springs D forming the immediate and only support for the vehicle-body, substantially as shown.

2. The combination of the described double C-ended half-elliptic side springs, D, shackles *a a*, axle A, head-block C, and reach or perch *s*, said springs D forming the immediate and only support for the vehicle-body, substantially as set forth.

211,046. RELIEF-VALVES FOR HOSE-COUPLINGS. Trust T. Prosser, Chicago, Ill. Filed Sept. 9, 1878.

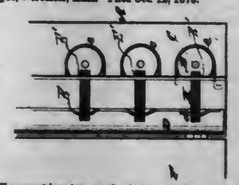


Claim.—1. In a hose-coupling for fire-engines, an annular chamber, formed by an abrupt and uniform enlargement of the water-passage through the coupling at a right angle to the flow of water through the coupling, thus forming a chamber to receive and control the mechanism for operating the valves in the coupling, when constructed in the manner shown and described.

2. In a hose-coupling for fire-engines, the combination of the yokes C C and springs D D for operating the valves, when constructed and operated as shown and described.

3. In a hose-coupling for fire engines, the combination of the coupling A, the valves B B, the springs D D, and the yokes C C, when operated in the manner and for the purpose herein described.

211,047. MECHANISMS FOR OILING SPINDLES IN SPINNING-FRAMES. Joel H. Prouty and Solon S. Sprague, Worcester, Mass. Filed Oct. 12, 1878.



Claim.—The combination of the bolster-rail A, bolsters B, spindles C, and wooden conductors H, having longitudinal pores, with the trough D, having lid F, inclined leaf E, in one piece with said trough, and provided with adjustable loops *e*, the loops *d*, and sockets E', as set forth.

211,048. LOOM-TENTLES. Joel H. Prouty and Solon S. Sprague, Worcester, Mass. Filed Sept. 21, 1878.

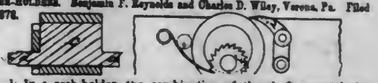
Brief.—In addition to the bearings for the temple, the stand is provided with ears, in which an auxiliary bar is placed. Said auxiliary bar is provided with a spring and a dog, which engages with a notch in the temple-bar. The temple-bar can thus be at any time disengaged from the auxiliary bar and spring and removed from the stand.



Claim.—1. The combination of the notched temple-bar B, stand A *a a'*, auxiliary bar C, spring G, and devices to connect the temple and auxiliary bar, substantially as and for the purpose set forth.

2. The combination of the stand A *a a'* with the temple-bar B *b*, auxiliary bar C, spring G, and dog D *d*, as and for the purpose specified.

211,049. SASH-HOLDERS. Benjamin F. Reynolds and Charles D. Wiley, Verona, Pa. Filed Nov. 12, 1878.



Claim.—1. In a sash-holder, the combination of the shaft eccentrically journaled and the loose roll or annulus, substantially as and for the purpose specified.

2. The shaft provided with eccentric journals and the loose roll or annulus, in combination with the dog and ratchet, substantially as and for the purpose specified.

3. The combination, with the loose roll having an adjustable shaft provided with eccentric journals, of a locking-wedge having a link interposed between the wedge and its pivotal points, substantially as and for the purpose specified.

211,050. METALLIC BINDERS FOR BOOKS. David B. Reynolds, Bellefontaine, Ohio. Filed Oct. 5, 1878.



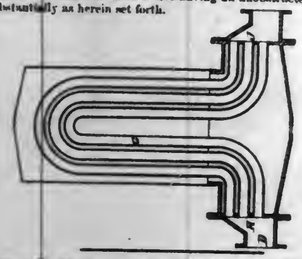
Claim.—The sheet-metal binding-plate having the inwardly projecting teeth *a a* and the ends B B, bent inward, formed with three longitudinal portions, two of which embrace the leaves, to which they are secured by pressure, as and for the purpose set forth.

211,051. FEED-WATER HEATERS. Garrie H. Rhoades, Hartford, Conn., assignor to Henry B. Beach, same place. Filed Oct. 21, 1878.

Claim.—1. In a feed-water heater or condenser, the pipes G, of the form described, having an inverted U part, with the ends curved outward, in combination with the two parallel diaphragms H and J in the shell of the water-chamber, constructed and arranged substantially as herein set forth.

2. In a feed-water heater or condenser, the combination of the pipes G, of the form described, with a water-chamber having an unobstructed bottom, arranged substantially as herein set forth.

211,061.

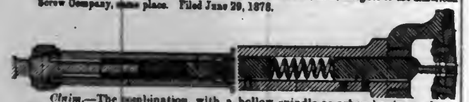


211,062. DUMPING-WAGONS. Leonhard Rodenhausen, Philadelphia, Pa. Filed Nov. 25, 1878.



Claim.—Folding arms connected to the body and running-gear, substantially as described, whereby the front and rear of the body will be simultaneously raised, as stated.

211,063. SCREW-MACHINES. Charles D. Rogers, Providence, R. I., assignor to the American Screw Company, same place. Filed June 29, 1878.



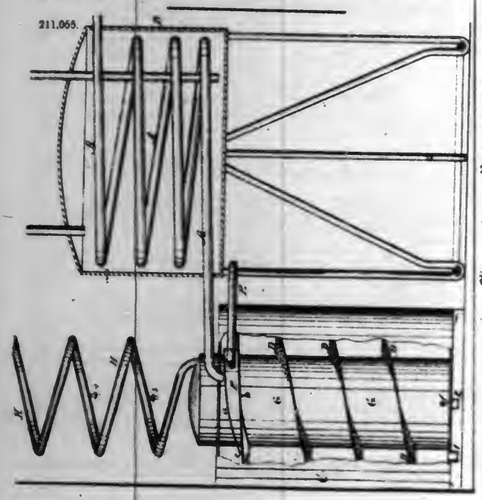
Claim.—The combination, with a hollow spindle or arbor having a clamp for the threading-dies at one end and a pointing-tool within the arbor, of a follower for the tool actuated by a spring and controlled by a hand-screw adjustable at the rear end of the arbor, substantially as described, whereby the power of the spring in forcing the pointing-tool to its work may be readily graduated and adjusted, as set forth.

211,064. PROCESS OF SKELETONIZING LEAVES. Irene L. Rogers, Springfield, Mass. Filed Nov. 23, 1877.

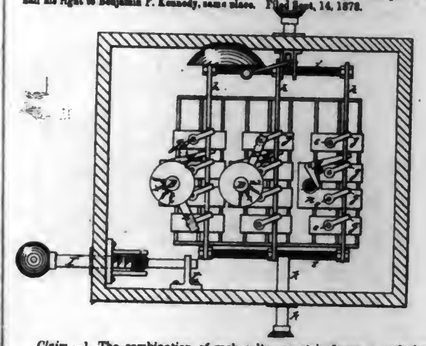
Claim.—1. In the process of preparing leaves, flowers, seed-vessels, &c., for skeletonizing, the separation of the vegetable and fibrous material of the leaves by first softening in muriatic acid and water and subjecting to heat, and afterward removing the vegetable matter, substantially as and in the manner set forth.

2. The process of treating ferns for skeletonizing by first immersing in a solution of chloride of soda and water and subjecting to heat, then freeing the ferns from the soda by immersion in soft water, substantially as and in the manner set forth.

211,065.



211,066. REGISTERING BALLOT-BOXES. Alexander B. Roney, Pittsburg, Pa., assignor of one-half his right to Benjamin F. Kennedy, same place. Filed Sept. 14, 1878.



Claim.—1. The combination of rack *e*, its eccentric finger *g*, and slotted bar *h*, to govern the finger, for the purpose of rendering the rack operative or inoperative, as desired.

2. An adjustable voting-post, D, in combination with and controlling the movements of an indicator inside the box having the political parties or the names of the candidates marked thereon, and the whole so arranged that the different names may be brought to view by the rotation of the post.

3. The combination of a group of vertically-reciprocating racks with a rotating and reciprocating voting-post, D, having an arm, E, to operate the racks, and capable of automatic locking when depressed.

4. The combination of a series of wheels, *d*, racks *e*, springs *f*, and fingers *g* with the reciprocating slotted bar *h*, and an alarm sounded by the reciprocation of said bar *h* in either direction.

5. In a registering ballot-box having reading-apertures on one face, and, in combination therewith, a secondary opaque cover for that face provided with a lock so constructed and located, substantially as described, that the registers must be disconnected from their actuating devices before the said cover can be unlocked.

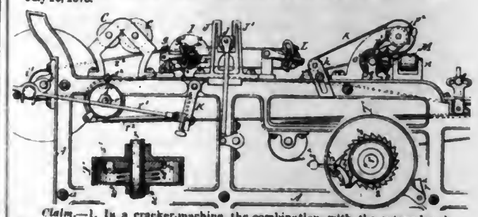
6. In a voting apparatus, the combination of rod I and its bolt *n* with the secondary opaque cover H and keeper *o*, substantially as described.

7. In a voting apparatus, the combination of rod I, having ratchet-teeth formed thereon, with the pivoted pawl, substantially as described, whereby, when the bolt is pushed in to unlock the cover H, the pawl prevents its return, and thereby maintains the registers in a useless condition.

8. The combination of the grooved or shouldered voting-post D, the spring-actuated elbow-lever *q*, and the slotted bar *h*, substantially as described, whereby the same movement of frame *h i k* releases the rack and voting-post.

9. The combination of the numbered tapes, rollers *s*, and wheels W, shafts *e*, wheels *d*, and spring-pawls *l*, with the rod *r*, having lateral spurs *z*, substantially as described, whereby rewinding of the tape can be effected from the exterior.

211,067. CRACKER-MACHINES. James W. Eager and Augustus Eager, Buffalo, N. Y. Filed July 13, 1878.



Claim.—1. In a cracker-machine, the combination, with the rotary brush E, of the pivoted frame F, arm H, and a fastening device applied thereto, for holding the pivoted frame at any desired elevation, substantially as set forth.

2. The combination, with the rotary brush E, supported in the pivoted frame F, and arm H, secured thereto, of the standards G G', one of which is provided with curved slot *g'*, and a fastening device for securing the arm H to the slotted standard, substantially as set forth.

3. The combination, with the rotary brush E, of the pivoted frame F, arm H, slotted standard G, slotted arm *g g'*, fastening-bolt *h*, and set-screw *h'*, substantially as set forth.

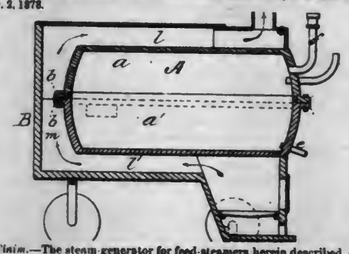
4. The combination, with the feed-apron D and scrap-apron K, of the rotary brush L, arranged at the foot of the scrap-apron for separating the crackers from the scrap, substantially as set forth.

5. The combination, with the feed-apron D and scrap-apron K, of the transverse apron M, having actuating mechanism, and arranged below the head of the scrap-apron on the rear side thereof, for receiving the scrap and conveying it to one side of the machine without reversing the motion of the scrap, substantially as set forth.

6. The combination, with the side frames, A A, and feed-apron D, of the inclined scrap-apron K and foot-roller *k*, supported in adjustable bearings *k'*, so that the roller *k* can be adjusted toward and from the feed-apron D, substantially as set forth.

7. The combination, with the ratchet-wheel *s* and circular case T, of the pawl *s'*, provided with thumb-piece *s²*, projecting through the case T, substantially as set forth.

211,058. STEAM-GENERATORS. Jacob Schofield and David D. Pryor, Newton, Iowa. Filed Nov. 2, 1878.



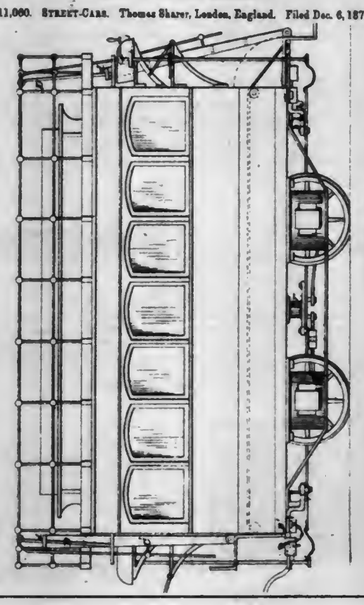
Claim.—The steam-generator for feed-steamers herein described, consisting of a cylindrical boiler, A, made in two flanged sections, the one having a projecting L-shaped recess extending entirely around it, and the other a corresponding recess adapted to form a joint therewith, and its enveloping casing B, divided by the boiler into the upper and lower chambers, *l l'*, and having a removable top, n, and rod *j*, substantially as specified.

211,059. PAPER-WINDING SHAFTS. T. Seymour Scott, Philadelphia, Pa., assignor of one-half his right to J. P. Onderdonk, same place. Filed June 10, 1878.



Claim.—A collapsing shaft for winding paper or other fabrics, consisting of the central shaft, A, the collars C C, the shells F F, and the separating-studs E E, in combination, substantially as and for the purposes set forth.

211,060. STREET-CARS. Thomas Sharer, London, England. Filed Dec. 6, 1878.

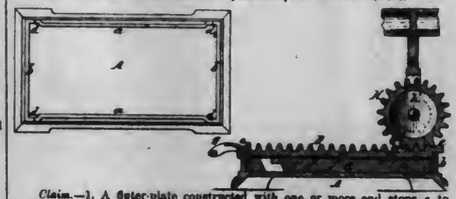


Claim.—1. The combination, with a tramway or street-railway car, of a hinged platform at each end, substantially as described.

2. The combination, with the hinged platforms at opposite ends of the car, of a connecting chain or cord, whereby the throwing down of one of said platforms causes the elevation of the other, substantially as described.

3. The combination, with the hinged platforms, of hinged ladders or stairs leading to the top of the car, and suitable guides for the tops of said ladders, substantially as set forth.

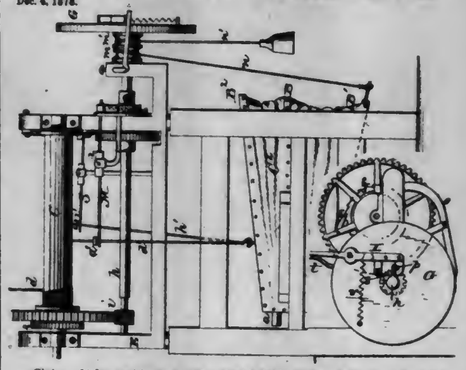
211,061. FLUTING-MACHINES. Charles G. Shepard and Peter Adams, Jr., Buffalo, N. Y., assignors to said Shepard and Walter J. Shepard, same place. Filed Oct. 4, 1878.



Claim.—1. A fluter-plate constructed with one or more end stops, *c*, to prevent the roller from being pushed over the ends of the plate, substantially as set forth.

2. The combination, with the base A, provided with side pieces, *a*, raised end pieces, *b*, and corner pockets, *d*, of the fluter-plate D, provided with raised lips *e* and offsets *f*, substantially as and for the purpose set forth.

211,062. AIR-COMPRESSING APPARATUS. Theodore G. Springer, New York, N. Y. Filed Dec. 4, 1878.



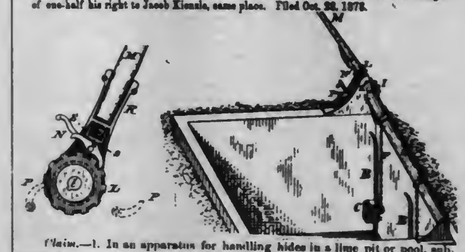
Claim.—1. In combination with a double bellows operated by weights, the loose disk G, placed upon the intermittingly-rotating shaft *h*, the toggle-lever I, with spring *r*, dog *p*, arm *t*, and lug *s* on the shaft, substantially as and for the purposes herein set forth.

2. The combination of the shaft *h*, disk I, with lug *x*, toggle-lever J, dog *w*, and spring *y*, substantially as and for the purposes herein set forth.

3. The pivoted rod M, rod *d'*, connected with the top plate of the double bellows, and the nut *a'* on the rod *d'*, in combination with the toggle-lever J and its attachments, substantially as and for the purposes herein set forth.

4. The combination of the shaft *h*, wheel P, with lug, the brake N, with lever O, toggle-lever R, spring *f'*, and the rod S, operated by the rod *h'* and nut *i'*, substantially as and for the purposes herein set forth.

211,063. APPARATUS FOR HANDLING HIDES. Charles Stutzmann, Cincinnati, Ohio, assignor of one-half his right to Jacob Kienzle, same place. Filed Oct. 26, 1878.

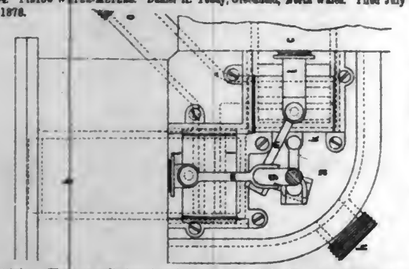


Claim.—1. In an apparatus for handling hides in a lime pit or pool, substantially as set forth, the spears B, whose points are curved or bent toward the interior of the pit, in the manner and for the purposes designated.

2. In an apparatus for handling hides in a lime pit or pool, substantially as set forth, the traveler or block C, with its pair of sheaves or rollers D D', arranged vertically, one over the other, both on the same side of and adapted to operate with the spear B, in the manner explained.

3. In an apparatus for handling hides in a lime pit or pool, substantially as set forth, the pawl and lever mechanism, consisting of the ratchet-wheel L *i*, lever M, two-ended driving-pawl N *n*, tentative pawl P, and lever-socket R, in the described combination with the notched spring-follower S *s*.

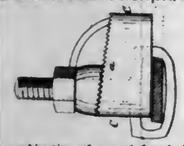
211,064. PISTON WATER-METERS. Daniel H. Tobay, Greenfield, North Wales. Filed July 27, 1878.



Claim.—The two cylinders *b* and *c*, each provided with a piston, *d*, piston-rod *f*, and connecting-rod *m*, in combination with crank-shaft *g*, slide-valves *i* and *l*, water-chamber *a*, induction *h*, and pipe *e*, and with a counter, *n*, as and for the purpose described.

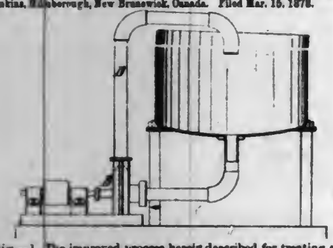
211,065. SCYTHE-SNATH FASTENINGS. Horace W. Thompson, Bellows Falls, Vt. Filed Nov. 30, 1878.

Brief.—Improvement on Patent No. 207,164, dated August 20, 1878.



Claim.—The combination of a snath-ferrule having a slotted head or extension, *t'*, whose outer portion—to wit, the bar *s*—is wedge-shaped, the bevel-faced washer, the nut, and the clamping-loop, substantially as shown and set forth.

211,066. PREPARING GYPSUM FOR USE IN PAPER-MAKING AND OTHER PURPOSES. Cornelius T. Tomkins, Hillsborough, New Brunswick, Canada. Filed Mar. 15, 1878.



Claim.—1. The improved process herein described for treating gypsum for use in paper-making, &c., consisting in subjecting it to continuous agitation in a tank with water and to a continuous circulation, as set forth.

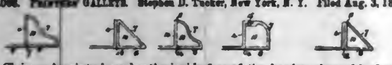
2. As a new article of manufacture, the minutely crystalline form of sulphate of lime herein described, suitable for use in the manufacture of paper, &c., as set forth.

211,067. FENCES. John A. Tornwall, Okolona, Miss. Filed Nov. 2, 1878.



Claim.—The fence herein described, consisting of the alternate posts A B, braces A' B', the inclined rails C C', of which the one next below the top is bound by wire to a post and brace, and thus forms a crotch, while the top rail lies in said crotch, as shown and described.

211,068. PRINTERS' GALLEYS. Stephen D. Tucker, New York, N. Y. Filed Aug. 3, 1878.



Claim.—A printer's galley the inside face of the border whereof is formed by bending the bottom plate up at right angles, said face being sustained in position by additional plates, which are secured to and form with it a tubular structure, substantially as described.

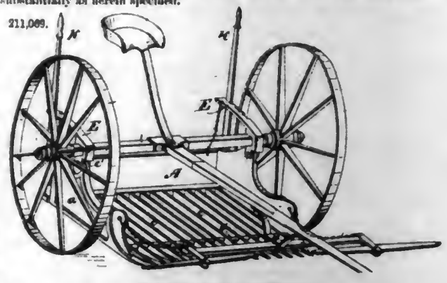
211,069. STONE-GATHERERS. Peter Van Order, Cortland Village, N. Y. Filed Nov. 16, 1878.

Brief.—The tail-board is automatically raised or lowered by the adjustment of the scraper-box.

Claim.—1. The combination of the pivoted scraper-box A, provided with levers K K, rigidly and directly attached to the said box, with the ratchet-arms E E, each provided with a series of notches, whereby said scraper-box may be thrown into position for gathering the stones, into position for transporting the stones, or into position for dumping the stones, as desired, substantially as specified.

2. The ratchet-arms E E, secured to the axle of the apparatus, in combination with the scraper-box pivoted to the lower part of the said ratchet-arms, substantially as herein specified.

211,069.



211,070. MANUFACTURE OF METALLIC NICKEL. Edward Weston, Newark, assignor to Edward E. Quimby, Orange, N. J. Filed Dec. 4, 1878.

Brief.—Metallic nickel deposited from solutions of nickel salts by electrolysis, possessing qualities not hitherto possessed by metallic nickel.

Claim.—As a new article of manufacture, a malleable ductile electro-deposit of nickel, substantially such as described.

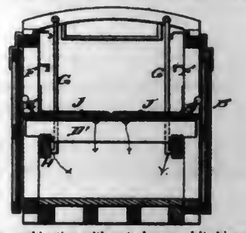
211,071. NICKEL-PLATING. Edward Weston, Newark, assignor to Edward E. Quimby, Orange, N. J. Filed Nov. 13, 1878.

Brief.—This improvement relates to the solutions of nickel from which the metal is deposited.

Claim.—1. The electro-deposition of nickel by means of solutions of the salts of nickel containing boric acid, either in its free or combined state.

2. A solution of the single or double salts of nickel to which has been added boric acid, either in its free or combined state.

211,072. STOCK-CARS. William G. Whitham and Charles C. Schneider, Belmont, Wis. Filed June 1, 1878.



Claim.—1. The combination, with a stock-car and its hinged floor-sections, C *a*, intermediate the floor and roof, of the vibrating stirrups on the sides of the car, and the transverse notched sills supported by said stirrups and sustaining the said sections, substantially as specified.

2. The combination, with a stock-car and its hinged sections C, forming a second floor at each side of the door-posts, of the intermediate sections, J, formed of hinged sub-sections, the guide-rods G, the beams H, extending across the door, and the transverse sills D', substantially as specified.

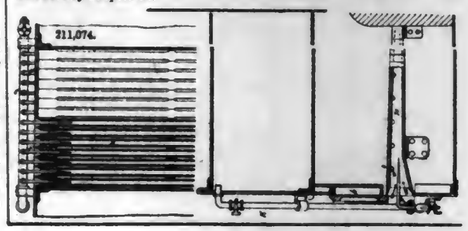
3. The combination, with a stock-car having the vibrating stirrups E at its sides and the hinged vertically-vibrating floor-sections C, of the transverse sills D, having notches *b* in their ends to receive said stirrups, substantially as specified.

211,073. CAN-OPENERS. Jefferson G. Wiggins, Seneca Falls, N. Y. Filed Nov. 20, 1878.



Claim.—In a can, the circular guide ring or plate D, soldered to the lid B, and having its edge bent downward to form a guide and holding-channel, and the opening-wire C, secured at one end to said lid, extending around the guide-plate in the channel thereof, and projecting by its other end through said lid, substantially as specified.

211,074.

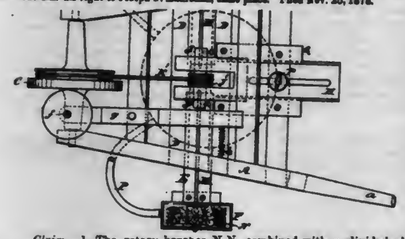


211,074. FURNACES. Thomas W. Williams, Swansea, Wales, Great Britain. Filed Mar. 9, 1878. Patented in England, Feb. 8, 1878.

Brief.—Air is forced through the hollow and perforated grate-bar by means of a steam-nozzle projecting into the flaring opening in the front end of said bar.

Claim.—The combination and arrangement of the tube E *e* and the series of smaller tubes and nozzles F, projecting into the hollow perforated tapering fire-bars of furnaces, substantially as and for the purposes hereinbefore set forth and described.

211,075. GARDEN-SPRINKLERS. Lucius H. Wiswell, Ottawa, Ontario, Canada, assignor of one-half his right to Joseph F. Hanrahan, same place. Filed Nov. 25, 1878.



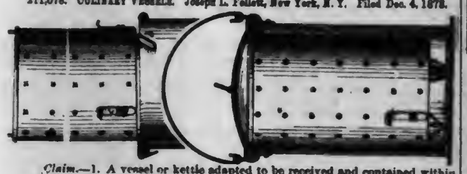
Claim.—1. The rotary brushes N N, combined with a divided shaft, M, adjustable longitudinally, for the purpose set forth.

2. The cups F F and rotary brushes N N, combined with a wheeled frame, A, having shaft M, to operate as set forth.

3. The combination of the wheeled frame A, handles *a*, reservoir B, tubes P, cups F F, sliding bars E E, shaft M, and brushes N N, pulley-sleeve J, and hand K', with a driving and carrying wheel, C, substantially as and for the purpose set forth.

4. The combination, with a wheeled frame, A, carrying a reservoir, B, of a shaft, *c*, having stirring-arms *b*, with said reservoir, and rotary brushes N N, with cups F F, whereby the solid and liquid contents of the reservoir are agitated and distributed, in the manner as set forth.

211,076. CULINARY VESSELS. Joseph L. Follett, New York, N. Y. Filed Dec. 4, 1878.



Claim.—1. A vessel or kettle adapted to be received and contained within an outer vessel or kettle, and provided with hinged legs, arranged to turn outwardly, to form hooks or supports, substantially as and for the purposes set forth.

2. The culinary boiler herein described, consisting of an outer kettle or vessel and an inner perforated kettle or vessel provided with hinged supports, adapted to act either as legs or hooks, with or without lateral hinged hooks or catches, the whole being substantially as shown and set forth.

211,077. FASTENINGS FOR TOBACCO-BAGS. Thomas T. Watson, Richmond, Va. Filed Nov. 2, 1878.



Claim.—The bag of textile fabric with the elastic loop or ring permanently attached at one point to the exterior, near the top, substantially as described.

REISSUES.

8,522. STOCKING-SUPPORTER CLASPS. Rachel Eberle, New York, N. Y., assignor to Christina J. Haley. Patent No. 155,803, dated Oct. 13, 1874. Filed Sept. 27, 1878.

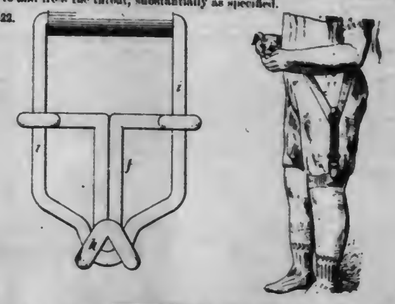
Brief.—This device is composed of two parts—one a loop contracted at its lower end, the other a slide bent to form a head at its lower end, the upper portion connected to the sides of the loop, and adapted to move vertically to and from the contracted portion of the loop.

Claim.—1. In a stocking-supporter, the loop *i*, constructed to form a throat, and the head *h*, the two being connected in the supporter to permit the head to be passed in a vertical line to and from the throat, substantially as set forth.

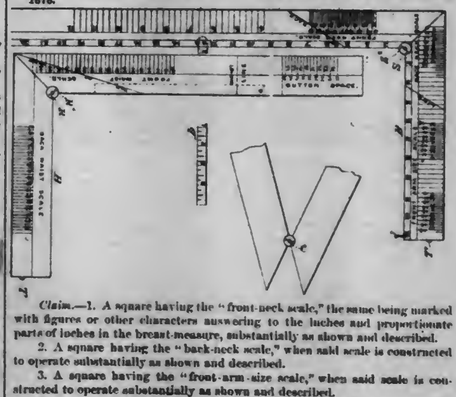
2. The combination, in a stocking-supporter, of a loop having an opening contracted at the lower end and a carrier supporting a head having a neck, *w*, and connected to the loop, substantially as and for the purpose set forth.

3. The combination, in a stocking-supporter, of a loop contracted to form a throat, a head, *h*, and means by which the head may be adjusted in a vertical line to and from the throat, substantially as specified.

8,522.



8,523. DRESS-MAKERS' SQUARES. Caleb H. Griffin, Boston, Mass., assignor of one-half interest to Elizabeth E. Durgin. Patent No. 195,925, dated Oct. 9, 1877. Filed June 3, 1878.



Claim.—1. A square having the "front-neck scale," the same being marked with figures or other characters answering to the inches and proportionate parts of inches in the breast-measure, substantially as shown and described.

2. A square having the "back-neck scale," when said scale is constructed to operate substantially as shown and described.

3. A square having the "front-arm-size scale," when said scale is constructed to operate substantially as shown and described.

4. A square having the line herein denominated "line of back" arranged thereon, substantially as shown and described.

5. A square having the "button-space scale," the same being marked with figures or other characters answering to the inches and proportionate parts of inches of the breast-measure, substantially as shown and described.

6. A square having the "front-waist scale," when said scale is constructed to operate substantially as shown and described.

7. A square having the line herein denominated "top of darts" arranged thereon, substantially as shown and described.

8. A square having the "back-waist scale," the same being marked with figures or other characters answering to the inches and proportionate parts of inches in the breast-measure, substantially as shown and described.

9. A square having the "height-of-darts" scale, the same being marked with figures or other characters answering to the inches and proportionate parts of inches in the measure for slopes of shoulder, substantially as shown and described.

10. A jointed square having one or more bias-scales, and marked substantially as shown and described.

11. A square having the joint *c*, holes S S' R R', and pins T at its inner angle, substantially as shown and described.

12. A square having the "front-arm-size scale" on the body thereof, in combination with the section of pattern marked "Arm-size No. 3," and the perforation P, substantially as shown and described.

13. A square having the scales and lines described, in combination with the perforated scale-pattern marked "Scale O," substantially as shown and described.

8,524. LOCKING-GEAR FOR WINDLASSES. George H. Remington and Joseph P. Manton, Providence, R. I., assignors to the American Ship Windlass Company. Patent No. 174,977, dated Mar. 21, 1876. Filed Sept. 9, 1878.

Claim.—1. In a windlass, the combination, with a wild-cat loosely mounted on the shaft, of a driving-head rigidly secured to the shaft, and one or more locking-blocks, adapted and arranged to lock the wild-cat to the driving-head by moving the block or blocks outwardly from the shaft, and to disconnect such parts by moving the block or blocks toward the shaft, substantially as set forth.

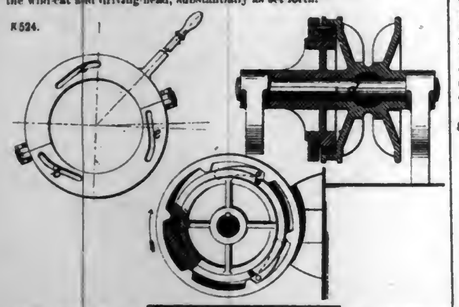
2. In a windlass, the combination, with a wild-cat loosely mounted on the shaft and a driving-head rigidly secured to said shaft, of one or more locking-blocks, adapted to be moved toward and from the shaft, and a ring connected with said locking-block or blocks, whereby a part revolution of said ring will operate to move said block or blocks toward or from the shaft, and connect or disconnect the wild-cat and driving-head, substantially as set forth.

3. In a windlass, the combination, with a wild-cat loosely mounted on the shaft and a driving-head rigidly secured to said shaft, of one or more locking-blocks, located between the periphery of the driving-head and inner periphery of a flange on the wild-cat, and a ring having sockets formed in its periphery, said ring constructed and arranged to move said block or blocks toward or from the shaft, and connect or disconnect the wild-cat and driving-shaft, substantially as set forth.

4. In a windlass, the combination, with a wild-cat loosely mounted on the shaft and a driving-head rigidly secured to said shaft, of one or more locking-blocks, and a ring provided with eccentric or tangential slots for the reception of the locking-block pins, substantially as set forth.

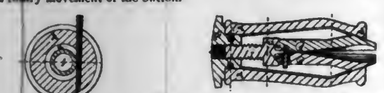
5. In a windlass, the combination, with a wild-cat loosely mounted on the shaft, said wild-cat constructed with an outwardly-projecting flange provided with locking-block recesses on its inner surface, and a driving-head rigidly secured to the shaft, the periphery of said driving-head formed with locking-block recesses, which latter are in vertical plane with the recesses in the flange of the wild-cat, and a ring mounted on the driving-head and connected with the locking-block or blocks, whereby said ring, being partially rotated, operates to move the locking-blocks toward or from the shaft, and connect or disconnect the wild-cat and driving-head, substantially as set forth.

8,524.



8,525. BIT-STOCK. Henry L. Pratt, Brooklyn, N. Y., assignor, by mesne assignments, to Miller's Falls Co., Ewing, Mass. Patent No. 131,229, dated Oct. 1, 1872. Filed Nov. 7, 1878.

Brief.—The shank of the bit is firmly secured and held by means of a pair of longitudinally-moving jaws arranged within a socket provided with inclines near its outer ends. The inner ends of the jaws rest in a depression formed in the end of a threaded foot-piece located at said ends, and passing through a threaded orifice formed in an actuating-button, provided with a cylindrical plug having an annular groove. A longitudinal movement is imparted to the jaws by a rotary movement of the button.

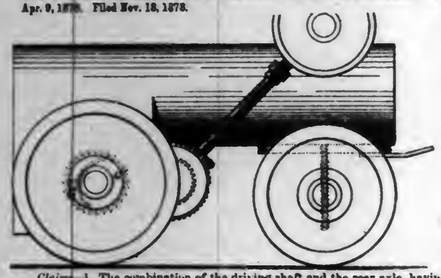


Claim.—1. In a bit-brace, a pair of longitudinally-moving jaws, in combination with a foot-piece located at the inner end of said jaws, and an actuating-button, the foot-piece and button being adapted to impart a longitudinal movement to the jaws by a rotary movement of the button, substantially as described, and for the purpose specified.

2. In a bit-brace, the actuating-button provided with a cylindrical plug having an annular groove, in combination with the inner end of the socket, the retaining-pin, and foot-piece, adapted to act upon the jaws, substantially as described, and for the purpose specified.

3. In a bit-brace, a socket provided with inclines to close the jaws, an actuating-button, B, a threaded foot-piece, and wedge-shaped companion jaws, substantially as and for the purpose specified.

8,526. TRACTION-ENGINES. George Rogers, Mount Vernon, Ohio, assignor of three-fourths interest to Charles G. Cooper, Frank L. Fairchild, and Charles Cooper. Patent No. 173,498, dated Feb. 15, 1876; Reissue No. 7,736, dated June 12, 1877; Reissue No. 8,164, dated Apr. 9, 1878. Filed Nov. 18, 1878.



Claim.—1. The combination of the driving-shaft and the rear axle, having truck-wheels adapted to be loosely or rigidly secured to it, with the supplemental shaft provided with cog-wheels, gearing with wheels on the rear axle, and the intermediate connecting-shaft, engaging at one end the driving-shaft and at the other end the supplemental shaft, as herein shown and set forth.

2. In a traction-engine, the combination, substantially as set forth, of the truck-wheels with the independent spur or gear wheels for driving the same, mounted on the same axis with the truck-wheels and engaging the same, substantially in the manner described, so that each truck-wheel may, when occasion requires, move independently both of the spur-wheel by which it is driven and of the other truck-wheel.

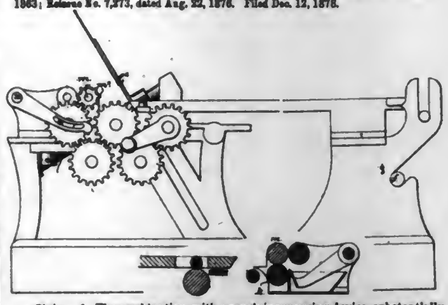
3. In a traction-engine, the combination, with the rear truck-wheels and the independent spur or gear wheels for driving the same, mounted on the same axis with the truck-wheels and engaging them, substantially as described, of the front truck or axle, adapted to turn upon a vertical pivot independently of the boiler, which it in part supports, substantially as set forth.

4. In a traction-engine, a boiler supported so as to be capable of oscillatory movement upon its power-driven axle as an axis, and means for so moving said boiler, in combination with a rotary supplemental shaft, which derives its rotary movement from the driving-shaft of the engine, is carried by and partakes of the movement of the boiler, and gears with wheels on said axle, substantially as shown and set forth.

5. The combination, with the boiler and the driving-shaft, of the rear axle, having truck-wheels adapted to be loosely or rigidly secured to it, and the supplemental shaft operated, substantially as specified, from the driving-shaft, and provided with cog-wheels that gear with wheels on the said axle, substantially as set forth.

6. In a steam traction-engine, which is also adapted to be moved by draft-animals, the combination of these elements: the boiler, the engine proper, power-driven supporting-wheels, mechanism for communicating movement from the driving-shaft of the engine to said wheels, and a pawl-and-ratchet arrangement forming part of said communicating mechanism, and operating to permit, when occasion demands, the said wheels to revolve independently of and without communicating motion to that part of the mechanism intermediate between said pawl-and-ratchet arrangement and the driving-shaft of the engine, the combination being and acting substantially as and for the purposes set forth.

8,527. PAPER-BAG MACHINES. The Union Paper Bag Machine Co., Philadelphia, Pa., assignee, by mesne assignments, of Charles E. Morgan. Patent No. 37,726, dated Feb. 17, 1863; Reissue No. 7,373, dated Aug. 22, 1876. Filed Dec. 12, 1876.



Claim.—1. The combination, with a revolving severing device, substantially as described, of a stationary paper-supporting plate, A, and tension or holding rollers.

2. The combination, with a paper web or tube supporting device, of a revolving severing device and devices for holding the paper web taut while being severed, all substantially as described.

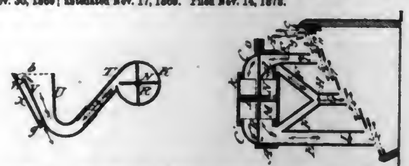
3. The combination, with a paper-tube-supporting bar, of a revolving severing device and a pair of holding-rollers, as *a b*, all substantially as described.

4. The constantly-moving feed-rolls, acting in combination with a web or tube supporting device, all substantially as described.

5. A revolving blade, in combination with tube-supporting bars or plates, to sever portions of tube with overlapping ends, all substantially as described

6. A pair of rolls which hold the tube while being severed, in combination with a blade, which pastes and folds the tube and forms the bottom of the bag.

8,528. MIDDLINGS-SEPARATOR. Joseph Barker, Chicago, Ill., assignor, by mesne assignments, to Lysander Hill, A. L. Brown, and Thomas H. Brown. Patent No. 97,341, dated Nov. 30, 1869; antedated Nov. 17, 1869. Filed Nov. 14, 1878.



Claim.—1. The method or process of purifying and grading middlings by passing them over reciprocating sieves or sieve-sections of different degrees of fineness, and subjecting them, during their passage, to air-currents of different degrees of strength induced over them by a suction fan or fans, whereby light air-currents are applied to the sieves or sieve-sections containing the lighter and finer particles, and stronger air-currents are applied to the sieves or sieve-sections containing only or mainly the coarser or heavier particles, substantially as described.

2. The combination, with the bolting-surface in a middlings-purifier, of two fans in fan-cases, which do not communicate with each other, each fan operating to produce independent air-currents in separate and distinct compartments, and through different sections of the reciprocating bolting-cloth, substantially as set forth.

3. The combination, in a flour-dressing machine, of a reciprocating shaker clothed with bolting-cloth of different degrees of fineness, transverse air-chambers arranged above the shaker, and a fan exhausting from each air-chamber, substantially as described.

4. In a middlings-purifier, the combination of a series of sieves of different degrees of fineness with a suction fan or fans for drawing away the light impurities from the meal passing over or from the sieves, and with valves for regulating the strength of the air-currents thus applied to the several sieves, substantially as described.

5. The combination of the case K, provided with a partition, I, and fan M N, with the partition *d*, pipes F G E' F F', and case B, provided with sieves 1 2 3 4 5, &c., as set forth.

6. The discharge-pipe T U V, provided with a perforated covering, *b*, back board, X, and sieve W, in combination with the case K and fan M N, as described.

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ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17th DAY OF DECEMBER, 1878.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Adams, E. A., Washington, D. C. Medicated soap	210,889	Dec. 17	561	.....	14	913
Adams, H., *et al.* (See Luther, C. A., assignor.)						
Adams, H. H. (See Jones, Smith, and Adams.)						
Adams, P., Jr. (See Shepard and Adams.)						
Adams, R., *et al.* (See Luther, C. A., assignor.)						
Allen, B., assignor to J. F. Donnell, Boston, Mass. Oil-fixture for illuminating purposes	210,981	Dec. 17	674	185	14	927
American Screw Company. (See Rogers, C. D., assignor.)						
American Ship Windlass Company. (See Remington and Manton, assignors.) (Reissue.)						
Anders, G. L., Boston, assignor to E. B. Welch, Cambridge, Mass. Printing-telegraph	210,890	Dec. 17	562	157	14	914
Anders, G. L., Boston, assignor to E. B. Welch, Cambridge, Mass. Printing-telegraph	210,891	Dec. 17	564	158	14	914
Anders, G. L., Boston, assignor to E. B. Welch, Cambridge, Mass. Printing-telegraph	210,892	Dec. 17	566	158	14	914
Anders, G. L., Boston, assignor to E. B. Welch, Cambridge, Mass. Printing-telegraph	210,893	Dec. 17	569	158	14	914
Anders, G. L., Boston, assignor to E. B. Welch, Cambridge, Mass. Printing-telegraph	210,894	Dec. 17	571	159	14	915
Anders, G. L., Boston, assignor to E. B. Welch, Cambridge, Mass. Printing-telegraph	210,895	Dec. 17	574	159	14	915
Anders, G. L., Boston, assignor to E. B. Welch, Cambridge, Mass. Printing-telegraph	210,896	Dec. 17	575	159, 160	14	915
Anders, G. L., Boston, assignor to E. B. Welch, Cambridge, Mass. Transmitter for printing-telegraphs	210,897	Dec. 17	579	160	14	916
Andrews, A. H., *et al.* (See Mallett, F. W., assignor.)						
Andrews, H. L., *et al.* (See Mallett, F. W., assignor.)						
Arnit, R. H., assignor to W. C. Hallett, London, England. Screw-propeller	210,982	Dec. 17	675	186	14	927
Armstrong, G., and R. Armstrong, executor of J. Armstrong, Jr., deceased, Elmira, Ill.: said R. Armstrong assignor to said G. Armstrong. Gang-plow	210,830	Dec. 17	487	137	14	905
Armstrong, J., Jr., deceased. (See Armstrong, G. and R.)						
Armstrong, R., executor. (See Armstrong, G. and R.)						
Arndt, D., assignor to G. W. Gardner, Cleveland, Ohio. Bag-holder	210,831	Dec. 17	488	137	14	905
Atherton, R., assignor of one-half interest to W. Hague, Paterson, N. J. Steam-blower	210,832	Dec. 17	488	137	14	905
Atherton, R., assignor of one-half interest to W. Hague, Paterson, N. J. Steam flue-cleaner	210,833	Dec. 17	489	138	14	905
Ayres, J. A., Mystic River, Conn. Oscillating water-meter	210,898	Dec. 17	581	160	14	916
Bacher, P. (See Deming and Bacher.)						
Bailey, C. E., North Scituate, Mass. Mail-bag	210,899	Dec. 17	583	161	14	916
Baker, F. A., Jr. (See Lewis and Baker.)						
Baldermann, J., Finkenheerd, assignor to himself and P. Berndt, Fuerstenberg, Prussia. Lime and other kilns	210,834	Dec. 17	490	138	14	905
Bannen, P. L. (See Burns, J., assignor.)						
Barker, J., Chicago, Ill., assignor, by mesne assignments, to L. Hill, and A. L. and T. H. Brown. Middlings-separator. (Reissue)	8,528	Dec. 17	803	220	14	942
Bartlett, F. C., New York, N. Y. Galvanic battery	210,835	Dec. 17	492	138, 139	14	905
Bartley, R. J., Cleveland, Ohio. Calk attachment for horseshoes	210,900	Dec. 17	584	161	14	916
Beach, H. B. (See Rhentan, G. H., assignor.)						
Becker, F. (See Becker, V. and F.)						
Becker, V. and F., Cincinnati, Ohio. Baling-press	210,901	Dec. 17	585	161, 162	14	916
Bellenot, C., Richmond, Va. Sign	210,983	Dec. 17	678	187	14	927
Benner, L. D., assignor of one-half interest to R. C. Haines, Galesburg, Ill. Inside blind	210,902	Dec. 17	586	162	14	916
Bennett, D., Baldwin township, Allegheny county, Pa. Manufacture of glassware	210,984	Dec. 17	678	187	14	927
Berndt, P. (See Baldermann, J., assignor.)						
Bigler, C. S., Harrisburg, Pa. Brick-machine	210,903	Dec. 17	588	162	14	917
Bissmann, C., New York, N. Y. Sash-balance	210,904	Dec. 17	590	163	14	917
Bluemel, J., San Francisco, Cal. Breech-loading fire-arm	210,905	Dec. 17	591	163	14	917
Blyth, J. W., Mentor, Ohio. Plow-harness	210,836	Dec. 17	493	139	14	906
Bolart, A., Huy, Belgium. Pipe joint and coupling	210,906	Dec. 17	592	163	14	917
Bourke, M., Youngstown, Ohio. Face-canopy	210,907	Dec. 17	593	164	14	917
Bourke, M., Youngstown, Ohio. Apparatus for raising and lowering boats	210,908	Dec. 17	593	163	14	917
Bowers, J. (See Geery, S. W., assignor.)						
Bown, W., Birmingham, England. Horse-clipper	210,909	Dec. 17	594	164, 165	14	917
Bracher, T. W., New York, N. Y. Machine for producing brims on sweat-bands for hats and caps	210,985	Dec. 17	679	187	14	927
Brady, E. L., New York, N. Y. Pipe-coupling for railway-cars	210,910	Dec. 17	596	165	14	918
Briggs, I., Middleborough, Mass. Nail-plate feeder	210,911	Dec. 17	596	165	14	918
Brooks, D., assignor to Brooks Underground Telegraph Construction Company, (limited.) Philadelphia, Pa. Insulating telegraphic conductors	210,986	Dec. 17	680	187	14	928
Brooks, D., Philadelphia, Pa. Insulating induction-coils	210,987	Dec. 17	681	188	14	928
Brooks Underground Telegraph Construction Company, (limited.) (See Brooks, D., assignor.)						
Brown, A. L., *et al.* (See Barker, J., assignor.) (Reissue.)						
Brown, G. (See Perkins and Brown.)						
Brown, J., assignor to W. C. Voelburgh & Co., Brooklyn, N. Y. Drop-light	210,912	Dec. 17	598	165	14	918
Brown, T. H., *et al.* (See Barker, J., assignor.) (Reissue.)						
Brückner, C., assignor to J. A. Fay & Co., Cincinnati, Ohio. Sandpapering-machine	210,988	Dec. 17	682	188	14	928

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Buckingham, J. P., Chicopee, and O. M. Hamilton, Springfield, assignors of one-third interest to G. A. Denison, Chicopee, Mass. Paper box	210,913	Dec. 17	599	166	14	918
Bunnell, I. S., Carbondale, Pa. Bed-bottom	210,989	Dec. 17	683	188	14	928
Burns, J., assignor of one-half interest to P. L. Bannen, Verona, Pa. Welding copper	210,990	Dec. 17	684	.....	14	928
Byrne, W., assignor of two-thirds interest to H. O'Niel and O. M. Goddard, Auburn, N. Y. Temporary binder	210,991	Dec. 17	685	188	14	928
Canaday, H. H., Fairfield, Iowa. Plow	210,992	Dec. 17	686	189	14	928
Canfield, A., Davenport, Iowa. Cultivator	210,993	Dec. 17	687	189	14	928
Carnagy, A. P., Summit Bridge, Del. Mail-bag	210,994	Dec. 17	688	190	14	929
Carpenter, H. M., Minneapolis, Minn. Manufacture of paper-pulp from wood	210,914	Dec. 17	600	.....	14	918
Carpenter, O. C., Brooklyn, assignor to R. Farley, Jr., New York, N. Y. Compound hydraulic engine	210,915	Dec. 17	600	166	14	918
Chalas, P., assignor to Peugeot Frères, Valentigney, France. Combined pepper-mill and caster	210,837	Dec. 17	494	{139 140}	14	906
Chase, A. J., Boston, Mass. Refrigerator	210,995	Dec. 17	689	190	14	929
Clark, E. B. (See Clark, W. S., assignor.)						
Clark, W. S., assignor of one-half interest to E. B. Clark, Philadelphia, Pa. Ventilator and overflow for sewer-pipes	210,916	Dec. 17	602	166	14	918
Clarke, F. D. W., *et al.* (See Orphy, J. W., assignor.)						
Close, T. J., Philadelphia, Pa. Hatchway-door mechanism	210,838	Dec. 17	494	140	14	906
Clum, H. A., Elmira, N. Y. Portable closet or commode	210,917	Dec. 17	602	166	14	919
Coles, E. A., Philadelphia, Pa., assignor of two-thirds interest to G. R. Hill and G. H. Smith, Alexandria, Va. Soft-cake machine	210,839	Dec. 17	495	{140 141}	14	906
Condon, W. F., Zilwaukee, Mich. Self-extinguishing stove	210,918	Dec. 17	603	167	14	919
Conrad, E., Marysville, Ohio. Attachment for wood-working machinery	210,919	Dec. 17	605	167	14	919
Cooper, C., *et al.* (See Rogers, G., assignor.) (Reissue.)						
Cooper, C. G., *et al.* (See Rogers, G., assignor.) (Reissue.)						
Copeland, G. W., Malden, Mass. Lasting boots and shoes	210,920	Dec. 17	606	{167 168}	14	919
Cotter, C. H., *et al.* (See Lottridge, W., assignor.)						
Cottrell, A. W., Whitesville, N. Y. Thill-coupling	210,921	Dec. 17	607	168	14	919
Cousins, G., Oswego, N. Y. Ruler	210,922	Dec. 17	608	168	14	919
Crackett, J. F. (See Harrigan, D., assignor.)						
Crees, T. W., Birmingham, England. Machine for shaping and ornamenting sheet-metal vessels	210,996	Dec. 17	691	190	14	929
Crenzbaur, R., Brooklyn, N. Y. Utilizing bisulphide of carbon as a motive power	210,840	Dec. 17	498	141	14	906
Crockett, S. J., assignor to himself and W. J. McLaughlin, Boston, Mass. Sad-iron heater	210,997	Dec. 17	693	191	14	929
Cross, C. G., Chicago, Ill. Check-row planter	210,998	Dec. 17	694	191	14	929
Curran, M. C., Chicago, Ill. Lumber-drier	210,999	Dec. 17	695	191	14	929
Cusack, W. H., and E. B. Veronee, Nashville, Tenn. Rotary water-meter	210,841	Dec. 17	503	142	14	906
Davies, J., Muskegon, Mich. Hose-coupling	210,923	Dec. 17	609	168	14	919
Davis, A. B., Philadelphia, Pa. Car-spring	211,000	Dec. 17	697	192	14	930
Davis, A. L. (See Davis, L. A. and A. L.)						
Davis, J. H. (See Davis, T. D., assignor.)						
Davis, L. A. and A. L., Binghamton, N. Y. Vehicle-spring	210,925	Dec. 17	611	169	14	920
Davis, T. D., assignor to J. H. Davis, Syracuse, N. Y. Lawn-rake	210,924	Dec. 17	610	169	14	919
Deady, W. (See Montstorm, W., assignor.)						
Deming, F., and P. Bacher, Allegheny, assignors to W. Sunderman, Pittsburg, Pa. Bottle-stopper and stopper-fastener	210,926	Dec. 17	611	169	14	920
Denison, G. A. (See Buckingham and Hamilton, assignors.)						
Dennison, H. B., Cambridge, Mass. Game-board	211,001	Dec. 17	698	192	14	930
Dick, R., Buffalo, N. Y. Folding chair	210,842	Dec. 17	504	142	14	907
Dickerson, W., and W. H. Strain, assignors of one-fourth interest to J. Taylor, Summerville, Ga. Plow	211,002	Dec. 17	699	192	14	930
Dinkel, G., Jersey City, N. J., and F. Rochow, Brooklyn, N. Y. Feed-water regulator	210,843	Dec. 17	505	142	14	907
Donnell, J. F. (See Allen, B., assignor.)						
Dunbar, E. M., Kalamazoo, Mich. Harrow	211,003	Dec. 17	700	193	14	930
Durand, E., Paris, France. Tobacco-cutting machine	210,927	Dec. 17	612	{169 170}	14	920
Durgin, E. E. (See Griffin, C. H., assignor.) (Reissue.)						
Duryea, W., Brooklyn, N. Y. Fire-escape	210,928	Dec. 17	613	170	14	920
Dyer, T. E. (See Hughes and Dyer.)						
Eberle, R., New York, N. Y., assignor to C. J. Haley. Stocking-supporter clasp. (Reissue)	8,522	Dec. 17	793	218	14	941
Eickemeyer, R., Yonkers, N. Y. Diaphragm for telephones and phonographs	210,929	Dec. 17	614	171	14	920
Ellis, H., Whitinsville, Mass. Cotton opener and cleaner	210,930	Dec. 17	617	171	14	920
Embossing Company. (See Hyatt, C. M., assignor.)						
Fairchild, F. L., *et al.* (See Rogers, G., assignor.) (Reissue.)						
Fancher, W. I. (See Grimm, Fancher, and Roberts.)						
Farley, R., Jr. (See Carpenter, O. C., assignor.)						
Fay & Co., J. A. (See Brückner, C., assignor.)						
Felldin, A., Brooklyn, N. Y. Distance-measuring device	210,931	Dec. 17	618	171	14	920
Ferguson, W. P., Brooklyn, N. Y. Shawl-strap handle	211,004	Dec. 17	701	193	14	930
Ferret, E., Paris, France. Seal-lock	210,844	Dec. 17	506	143	14	907
Fessenden, A. B., Porter, assignor of one-half interest to A. W. Fessenden, Janesville, Wis. Horse-power corn-planter	210,845	Dec. 17	507	143	14	907
Fessenden, A. W. (See Fessenden, A. B., assignor.)						
Follett, J. L., New York, N. Y. Culinary vessel	211,076	Dec. 17	792	217	14	941
Ford, B., Union township, Allegheny county, Pa. Feed-water heater for steam-boilers	210,846	Dec. 17	508	{143 144}	14	907
Fonlds, R. (See Smith, H. A., assignor.)						
Fruen, W. H., Minneapolis township, Hennepin county, Minn. Governor	210,847	Dec. 17	509	144	14	908
Gardner, G. W. (See Arndt, D., assignor.)						
Gay, G. E., assignor of one-half interest J. H. Parsons, Augusta, Me. Ratchet screw-driver	210,942	Dec. 17	698	174	14	922
Geery, S. W., assignor of one-half interest to J. Bowers, Newark, N. J. Galvanic corset	210,932	Dec. 17	619	172	14	921
Gérard, J., assignor to Trenton Lock and Hardware Company, Trenton, N. J. Sash-fastener	211,005	Dec. 17	701	193	14	930
Gilson, J., Port Washington, Wis. Stove-drum	210,933	Dec. 17	619	172	14	921
Gingras, T., assignor of one-half interest to A. Hall, Buffalo, N. Y. Leather washer	210,848	Dec. 17	510	144	14	908
Goddard, O. M., *et al.* (See Byrne, W., assignor.)						
Godley, G. F. (See Minich and Godley.)						
Goodwin, S. A., assignor of one-half interest to J. O. Joyce, Dayton, Ohio. Feed-water heater	210,934	Dec. 17	620	172	14	921
Gorton, O. S., North Brookfield, N. Y. Wagon-gear	211,006	Dec. 17	702	193	14	930
Goss, E. K., Chicago, Ill. Dust-pan	210,849	Dec. 17	510	144	14	908
Green, J. W. (See Green, P. H., assignor.)						
Green, P. H., assignor to J. W. Green, Hespeler, Ontario, Canada. Pump	210,935	Dec. 17	621	172	14	921
Greener, G. W., Long Point, Ill. Sulky-plow	211,007	Dec. 17	703	194	14	930
Griffin, C. H., Boston, Mass., assignor of one-half interest to E. E. Durgin. Dress-maker's square. (Reissue)	8,523	Dec. 17	794	218	14	941

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Grimm, P., W. I. Fancher, and H. K. Roberts, Glen Cove, N. Y. Electric alarm for steam-boilers	211,008	Dec. 17	704	194	14	931
Gutmann, M. (See Scharfberg, M., assignor.)						
Hagerty, T., Brooklyn, N. Y. Machine for pressing and rolling plastic material	211,069	Dec. 17	705	194	14	931
Hague, W. (See Atherton, R., assignor.)						
Haines, R. C. (See Benner, L. D., assignor.)						
Haley, C. J. (See Eberle, R., assignor.) (Reissue.)						
Hall, A. (See Gingras, T., assignor.)						
Hall, L. H., Erie, Pa. Hoisting-machine	210,850	Dec. 17	511	145	14	908
Hallett, W. C. (See Armit, R. H., assignor.)						
Halldide, A. S., San Francisco, Cal. Clip for rope-tramways	210,851	Dec. 17	512	145	14	908
Ham, C. T., *et al.* (See Orphy, J. W., assignor.)						
Hamilton, O. M. (See Buckingham and Hamilton.)						
Hannibal Meat Company, (limited.) (See Perkins and Brown, assignors.)						
Hanrahan, J. F. (See Wisewell, L. N., assignor.)						
Hansen, H. R. M. J., Copenhagen, Denmark. Type-writing machine	211,010	Dec. 17	706	195	14	931
Harrigan, D., Somerville, Mass., assignor of one-half interest to J. F. Crackett, Laconia, N. H. Adjustable exhaust for locomotives	210,941	Dec. 17	627	174	14	922
Harrison Brothers & Co. (See Harrison, G. L., Jr., assignor.)						
Harrison, G. L., Jr., Philadelphia, Pa., assignor to Harrison Brothers & Co. Metallic can	211,011	Dec. 17	707	195	14	931
Harshberger, A., Philadelphia, Pa. Washing-machine	211,012	Dec. 17	708	195	14	931
Hart, W. H., Jr., Philadelphia, Pa. Neck-tie	211,013	Dec. 17	709	196	14	931
Harvey, G. W., and W. D. Seal, Washington, D. C. Apparatus for compressing air and forcing beer	210,943	Dec. 17	629	174	14	922
Hayden, T. S., *et al.* (See Mallett, F. W., assignor.)						
Hensel, L., assignor of one-half interest to A. Krefter, Berlin, Prussia. Milk-boiler	211,014	Dec. 17	710	196	14	931
Hermance, R., Fort Miller, N. Y. Car-starter	210,852	Dec. 17	513	145	14	908
Hess, D., Evansville, Ind. Vertical-disk grinding-mill	210,936	Dec. 17	622	173	14	921
Hill, G. R., *et al.* (See Coles, E. A., assignor.)						
Hill, L., *et al.* (See Barker, J., assignor.) (Reissue.)						
Hoe & Co., R. (See Miller, W. P., assignor.)						
Hollingsworth, H., Dansville, N. Y. Paper-pulp washer	210,853	Dec. 17	515	146	14	908
Holt, H. P., Leeds, England. Car-starter	211,015	Dec. 17	711	196	14	931
Horne, J. H., Lawrence, Mass. Bed-plate for paper-pulp engines	210,937	Dec. 17	623	173	14	921
Hubbard, E. C., Columbiana, Ohio, assignor to himself and E. A. L. Roberts, Titusville, Pa. Screw-propeller	211,016	Dec. 17	713	196	14	932
Hubbard, W. H., Red Bank, N. J. Gate	210,938	Dec. 17	624	173	14	921
Hughes, C. W., and T. E. Dyer, Fostoria, Ohio. Combined counter and heel-protector	211,017	Dec. 17	714	197	14	932
Hulburt, H. H., Philadelphia, Pa. Lamp-globe	211,018	Dec. 17	714	197	14	932
Hunter, J. E., assignor to J. Hunter & Son, North Adams, Mass. Clutch	211,019	Dec. 17	715	197	14	932
Hunter & Son, J. (See Hunter, J. E., assignor.)						
Hussey, C. A., New York, N. Y. Pedal-switch for controlling electric motors	210,939	Dec. 17	625	173	14	921
Hyatt, C. M., Albany, N. Y., assignor to Embossing Company. Clamp	211,020	Dec. 17	717	198	14	932
Iunis, W. J., Oil City, Pa. Throttle-valve for steam-engines	210,854	Dec. 17	516	146	14	908
Ives, H. L., assignor of one-half interest to J. S. Saunders, Troy, N. Y. Lamp-burner	211,021	Dec. 17	718	198	14	932
Jannopoulo, D., St. Louis, Mo. Pulley for awnings	210,857	Dec. 17	516	146	14	908
Johnson, A. C., Plainfield, N. J. Ball-target	210,856	Dec. 17	517	146	14	909
Johnstone, W. H., Philadelphia, Pa. System for detecting and extinguishing fires	210,944	Dec. 17	631	175	14	922
Jonasson, B. A., Warren, Pa. Machine for turning pipes	210,857	Dec. 17	518	147	14	909
Jones, C. L., J. W. Smith, and H. H. Adams, Gardiner, Me. Cane-shaving machine	210,945	Dec. 17	633	175	14	922
Jones, P., Newark, N. J. Hub-mortising machine	210,858	Dec. 17	519	147	14	909
Jordan, T. B. and T. R., London, England. Rock-drill	211,022	Dec. 17	719	198	14	932
Jordan, T. R. (See Jordan, T. B. and T. R.)						
Joyce, J. O. (See Goodwin, S. A., assignor.)						
Joyce, J. O., Dayton, Ohio. Lifting-jack	210,946	Dec. 17	634	175	14	923
Jubb, J. P., Fayette, Mich. Horseshoe	211,023	Dec. 17	721	198	14	933
Justus, W. R., Chartiers, and W. D. Young, assignors to Shoenberger & Co., Pittsburg, Pa. Machine for rolling horseshoe-bars	211,024	Dec. 17	722	199	14	933
Kaiser, A. C., and H. H. Stangaard, assignors of one-third interest to S. Robinson, Sycamore, Ill. Horse hay-rake	210,859	Dec. 17	520	147	14	909
Keep, W. B. (See Kirby, J. A., assignor.)						
Kendall, S., Jackson, Cal. Ore-stamp	210,940	Dec. 17	626	174	14	922
Kennedy, B. F. (See Roney, A. B., assignor.)						
Kienzle, J. (See Steinmann, C., assignor.)						
Kirby, J. A., assignor to W. B. Keep, Chicago, Ill. Railway-switch bar	210,860	Dec. 17	521	147	14	909
Knight, J. S. (See Rowo and Knight.)						
Knowlton, W. A., and A. Rutledge, Rockford, Ill. Cultivator	210,861	Dec. 17	522	148	14	909
Koplin, W., Newcastle, Pa. Nail-plate feeder	211,025	Dec. 17	723	199	14	933
Krefter, A. (See Hensel, L., assignor.)						
Lancaster, J. R., assignor to Open Stove Ventilating Company, New York, N. Y. Fire-place heater	210,862	Dec. 17	525	148	14	909
Lansburgh, M., Baltimore, Md. Process and apparatus for aging and improving distilled liquors	210,863	Dec. 17	526	{148 149}	14	910
Laubscher, L., Fort Wayne, Ind. Testing bridges	210,864	Dec. 17	528	149	14	910
Leavitt, C., Cleveland, Ohio. Elevated street-railway	211,026	Dec. 17	724	199	14	933
Lewis, S., and F. A. Baker, Jr., Tiffin, Ohio. Flour-bolt	210,865	Dec. 17	529	149	14	910
Lottridge, W., assignor of two-thirds interest to M. V. Nichols and C. H. Cotter, Osage, Iowa. Grain-binder	211,027	Dec. 17	727	{200 201}	14	933
Lowendahl, M. (See Scharfberg, M., assignor.)						
Lowenstein, M., Birmingham, England. Button	211,028	Dec. 17	734	201	14	934
Luce, J. R., Stevens Point, Wis. Saw-tooth	211,029	Dec. 17	737	201	14	934
Luther, C. A., Pawtucket, R. I., assignor to R. and H. Adams, Paterson, N. J. Machine for stretching fabrics	211,030	Dec. 17	737	202	14	934
Mackay, K. C., Madison, Wis. Mason's pointing-tool	210,947	Dec. 17	634	175	14	923
Mahle, C. A., Corry, Pa. Machine for boring brush-blocks	210,866	Dec. 17	530	150	14	910
Mallett, F. W., assignor to A. H. and H. L. Andrews and T. S. Hayden, Chicago, Ill. Annunciator	211,031	Dec. 17	739	202	14	935
Manton, J. P. (See Remington and Manton.) (Reissue.)						
Margeson, H. H., East Oakland, Cal. Wagon-jack	210,948	Dec. 17	635	176	14	923
Marsh, H. F., New York, N. Y. Frame for drying curtains	211,032	Dec. 17	741	203	14	935
Marsh, J. S., Lewisburg, Pa. Grain-binder	210,949	Dec. 17	635	176	14	923
Marsh, W. W., Sycamore, Ill. Sulky-plow	210,867	Dec. 17	532	{150 151}	14	910
Martin, M., Bitterfeld, Prussia. Millstone-exhaust apparatus	211,033	Dec. 17	742	203	14	935
Martin, R., Brooklyn, N. Y. Steam-packing	210,868	Dec. 17	534	151	14	910
Martin, T. E., San José, Cal. Windmill	210,950	Dec. 17	638	176	14	923
Mathiesen, C. A., New York, N. Y. Sail-hank	210,951	Dec. 17	638	177	14	923
McAllister J. C., Philadelphia, Pa. Steam-steering apparatus	211,034	Dec. 17	744	204	14	935

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
McAuliffe, J., Jersey City, N. J. Device for indenting and heading umbrella-ribs	210,952	Dec. 17	639	177	14	923
McCarthy, J., Syracuse, N. Y. Mop	210,953	Dec. 17	640	177	14	923
McDonald, H. (See Silvester, W., assignor.)						
McLaughlin, W. J. (See Crockett, S. J., assignor.)						
Miller, W. P., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Saw-tooth	211,035	Dec. 17	745	204	14	935
Miller's Falls Company. (See Pratt, H. L., assignor.) (Reissue.)						
Minich, D., and G. F. Godley, Philadelphia, Pa. Injector for steam-boilers	210,954	Dec. 17	641	177, 178	14	923
Mobley, T. J. (See Petty and Mobley.)						
Moll, A., New York, N. Y. Fringe	210,869	Dec. 17	535	151	14	911
Montstorm, W., assignor to W. Deady, New York, N. Y. Air-gun	210,976	Dec. 17	666	184	14	926
Morgan, A. R., Astoria, assignor to Open Stove Ventilating Company, New York, N. Y. Fire-place heater	210,870	Dec. 17	536	151	14	911
Morgan, C. H., assignor, by mesne assignments, to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine. (Reissue)	8,527	Dec. 17	802	219, 220	14	942
Mosher, M. J., Troy, N. Y. Bake-oven	210,871	Dec. 17	537	152	14	911
Napheys, G. C., Philadelphia, Pa. Ball-ear for buckets and pails	211,036	Dec. 17	746	204	14	935
Narracong, D., assignor to himself and J. Narracong, Baraboo, Wis. Millstone-dressing machine	211,037	Dec. 17	747	204	14	936
Narracong, J. (See Narracong, D., assignor.)						
Newton, S. S., Binghamton, N. Y. Mucilage-holder	210,872	Dec. 17	540	152	14	911
Nichols, M. V., Osage, Iowa. Passenger-vehicle	210,955	Dec. 17	643	178	14	924
Nichols, M. V., *et al.* (See Lottridge, W., assignor.)						
Nichols, W. T., Chicago, Ill. Machine for bending metal	210,873	Dec. 17	540	153	14	911
North, J., Middletown, Conn. Type-distributing machine	211,038	Dec. 17	748	205, 206	14	936
Nye, C. H., assignor of one-half interest to C. H. Stevenson, Baltimore, Md. Car-starter	211,039	Dec. 17	754	206	14	936
Olsen, O., Christiana, Norway. Portable tool-rest	210,957	Dec. 17	645	179	14	924
Onderdonk, J. P. (See Scott, T. S., assignor.)						
O'Niel, H., *et al.* (See Byrne, W., assignor.)						
Open Stove Ventilating Company. (See Lancaster, J. R., assignor.)						
Open Stove Ventilating Company. (See Morgan, A. R., assignor.)						
Orphy, J. W., assignor to C. T. Ham and F. D. W. Clarke, Rochester, N. Y. Lantern	211,040	Dec. 17	755	207	14	936
Osgood, G. N., Boston, Mass. Steam bell-ringer	210,956	Dec. 17	644	178	14	924
Palmer, J. M., Cambridge, and C. A. Shaw, Salem, Mass. Loom-shuttle	210,874	Dec. 17	542	153	14	911
Parsons, J. H. (See Gay, G. E., assignor.)						
Patterson, R. L., Belle Plaine, Kans. Seed-dropping attachment for corn-planters	210,958	Dec. 17	646	179	14	924
Pearson, H. G., New York, N. Y. Metallic postal-envelope	210,959	Dec. 17	647	179	14	924
Perkins, G. H., and G. Brown, assignors to Hannibal Meat Company, (limited,) Philadelphia, Pa., and Hannibal, Mo. Case for supporting cans	211,041	Dec. 17	756	207	14	936
Perkins, G. H., and G. Brown, assignors to Hannibal Meat Company, (limited,) Philadelphia, Pa., and Hannibal, Mo. Metallic can	211,042	Dec. 17	757	208	14	936
Petty, J. F., and T. J. Mobley, Frankford, Ind. Bee-hive	211,043	Dec. 17	758	208	14	937
Peugeot Frères. (See Chalas, P., assignor.)						
Pierce, E. S., Hartford, Conn. Drill-chuck	210,875	Dec. 17	544	153	14	911
Piner, J., Bonham, Tex. Addressing-machine	210,960	Dec. 17	647	179	14	924
Pintsch, J., and J. Schülke, Berlin, Prussia, Germany. Electric gas lighting device	211,044	Dec. 17	759	208	14	937
Porter, R., Hulton, Pa. Side spring for vehicles	211,045	Dec. 17	761	209	14	937
Powers, J. W., Portage, Wis. Cream-raising apparatus	210,876	Dec. 17	545	153	14	911
Powers, J. W., Portage, Wis. Plow-clevis	210,877	Dec. 17	546	154	14	912
Pratt, H. L., Brooklyn, N. Y., assignor, by mesne assignments, to Miller's Falls Company, Ewing, Mass. Bit-stock. (Reissue)	8,525	Dec. 17	799	219	14	942
Prosser, T. T., Chicago, Ill. Relief-valve for hose-couplings	211,046	Dec. 17	762	209	14	937
Pronty, J. H., and S. S. Sprague, Worcester, Mass. Mechanism for oiling spindles in spinning-frames	211,047	Dec. 17	762	209	14	937
Pronty, J. H., and S. S. Sprague, Worcester, Mass. Loom-temple	211,048	Dec. 17	763	209	14	937
Pryor, D. D. (See Schofield and Pryor.)						
Quimby, E. E. (See Weston, E., assignor.)						
Record, S. W., Kennebunk, Me. Mold for boot and shoe stiffeners	210,961	Dec. 17	648	180	14	924
Reicherts, J. J., and D. Tipton, Delaware, Ohio. Combined field-roller and planter	210,962	Dec. 17	649	180	14	924
Remington, G. H., and J. P. Manton, Providence, R. I., assignors to American Ship Windlass Company. Locking-gear for windlasses. (Reissue)	8,524	Dec. 17	798	219	14	941
Reynolds, A. R., New York, N. Y. Treating fire-brick, &c., used for metallurgic purposes	210,963	Dec. 17	651	.....	14	925
Reynolds, A. R., New York, N. Y. Decarbonizing malleable cast-iron, &c	210,964	Dec. 17	652	180	14	925
Reynolds, B. F., and C. D. Wiley, Verona, Pa. Sash-holder	211,049	Dec. 17	764	210	14	937
Reynolds, D. R., Bellefontaine, Ohio. Metallic binder for books	211,050	Dec. 17	765	210	14	937
Rhentan, G. H., assignor to H. B. Beach, Hartford, Conn. Feed-water heater	211,051	Dec. 17	766	210	14	937
Rhind, F., Brooklyn, N. Y. Lamp-extinguisher	210,878	Dec. 17	548	154	14	912
Rhoads, W. G., Philadelphia, Pa. Siphon	210,965	Dec. 17	655	181	14	925
Richey, E. J. (See Smith and Richey.)						
Riley, W., Atkinson, Ill. Apparatus for watering stock	210,966	Dec. 17	658	181	14	925
Roberts, E. A. L. (See Hubbard, E. C., assignor.)						
Roberts, H. K. (See Grimm, Fancher, and Roberts.)						
Roberts, J. F., New York, N. Y. Cooking apparatus	210,879	Dec. 17	549	154	14	912
Robinson, S. (See Kaiser and Stangaard, assignors.)						
Rochow, F. (See Dinkel and Rochow.)						
Rodenhausen, L., Philadelphia, Pa. Dumping-wagon	211,052	Dec. 17	767	210	14	938
Rogers, C. D., assignor to American Screw Company, Providence, R. I. Screw-machine	211,053	Dec. 17	768	211	14	938
Rogers, D., Galion, Ohio. Apparatus for separating refined petroleum into oils of different grades and fire-tests	211,055	Dec. 17	769	211	14	938
Rogers, G., Mount Vernon, Ohio, assignor of three-fourths interest to C. G. Cooper, F. L. Fairchild, and C. Cooper. Traction-engine. (Reissue)	8,526	Dec. 17	800	219	14	942
Rogers, I. L., Springfield, Mass. Skeletonizing leaves	211,054	Dec. 17	769	.....	14	938
Roney, A. B., assignor of one-half interest to B. F. Kennedy, Pittsburg, Pa. Registering ballot-box	211,056	Dec. 17	770	211	14	938
Ronistone, E. A. G., Boston, Mass. "Smoke-convey" for cooking-stoves	210,967	Dec. 17	659	181	14	925
Rowe, J., Jr., and J. S. Knight, Rockport, Mass. Beer-faucet	210,880	Dec. 17	550	154	14	912
Royal, J., Rochelle, Ill. Fire-arm	210,968	Dec. 17	660	182	14	925
Ruger, A. (See Ruger, J. W. and A.)						
Ruger, J. W. and A., Buffalo, N. Y. Cracker-machine	211,057	Dec. 17	773	212	14	939
Ruhlmann, E., Lockport, N. Y. Seed-drill	210,881	Dec. 17	551	155	14	912
Rutledge, A. (See Knowlton and Rutledge.)						
Sanders, J. S. (See Ives, H. L., assignor.)						
Scharfberg, M., assignor of one-third interest to M. Lowendahl, Vienna, Austria, and M. Gutmann, Dresden, Saxony. Anti-friction eccentric	210,969	Dec. 17	661	182	14	925
Schneider, C. C. (See Whitham and Schneider.)						
Schofield, J., and D. D. Pryor, Newton, Iowa. Steam-generator	211,058	Dec. 17	775	212	14	939
Schülke, J. (See Pintsch and Schülke.)						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Schwarzwalder, H., New York, N. Y. Barrel-head	210,882	Dec. 17	553	155	14	913
Scott, T. S., assignor of one-half interest to J. P. Onderdonk, Philadelphia, Pa. Paper-winding shaft	211,059	Dec. 17	776	212	14	939
Seal, W. D. (See Harvey and Seal.)						
Sharer, T., London, England. Street-car	211,060	Dec. 17	776	213	14	939
Shaw, C. A. (See Palmer and Shaw.)						
Shepard, C. G., and P. Adams, Jr., assignors to said Shepard and W. J. Shepard, Buffalo, N. Y. Fluting-machine	211,061	Dec. 17	778	213	14	939
Shepard, W. J. (See Shepard and Adams, assignors.)						
Shoenberger & Co. (See Justus and Young, assignors.)						
Silvester, W., Pittsburg, assignor to H. McDonald, Allegheny, Pa. Bale-tie	210,970	Dec. 17	662	182	14	925
Smith, C. H., Delphos, Ohio. Alarm-bell	210,974	Dec. 17	664	183	14	926
Smith, D., Albany, N. Y. Grate	210,883	Dec. 17	554	155	14	913
Smith, G. H., *et al.* (See Coles, E. A., assignor.)						
Smith, H. A., Brooklyn, N. Y., assignor to himself and R. Foulds, Passaic, N. J. Toy pistol	210,971	Dec. 17	662	182	14	925
Smith, J. W. (See Jones, Smith, and Adams.)						
Smith, M. W., and E. J. Richey, Scottsburg, Ind. Grain-drill	210,973	Dec. 17	663	183	14	926
Smith, S., Brooklyn, N. Y. Coal-scuttle	210,972	Dec. 17	663	183	14	926
Sprague, S. S. (See Pronty and Sprague.)						
Springer, T. G., New York, N. Y. Air-compressing apparatus	211,062	Dec. 17	778	214	14	939
Stangaard, H. H. (See Kaiser and Stangaard.)						
Stauffer, S. D., Marietta, Pa. Combined stroker and handle in measures	210,975	Dec. 17	665	183	14	926
Steinmann, C., assignor of one-half interest to J. Kienzle, Cincinnati, Ohio. Apparatus for handling hides	211,063	Dec. 17	780	214	14	939
Stephens, S. (See Tolley, F. W., assignor.)						
Stevenson, C. H. (See Nye, C. H., assignor.)						
Strain, W. H. (See Dickerson and Strain.)						
Sunderman, W. (See Deming and Bacher, assignors.)						
Taylor, J. (See Dickerson and Strain, assignors.)						
Tebay, D. H., Greenfield, North Wales. Piston water-meter	211,064	Dec. 17	781	214	14	940
Thompson, H. W., Bellows Falls, Vt. Scythe-snath fastening	211,065	Dec. 17	782	215	14	940
Tipton, D. (See Reicherts and Tipton.)						
Tolley, F. W., assignor of one-third interest to S. Stephens, Coxsackie, N. Y. Cultivator	210,884	Dec. 17	555	156	14	913
Tomkins, C. T., Hillsborough, New Brunswick, Canada. Preparing gypsum for use in paper-making and other purposes	211,066	Dec. 17	782	215	14	940
Tornwall, J. A., Okoloma, Miss. Fence	211,067	Dec. 17	783	215	14	940
Trenton Lock and Hardware Company. (See Gérard, J., assignor.)						
Tucker, S. D., New York, N. Y. Printer's galley	211,068	Dec. 17	784	215	14	940
Union Paper Bag Machine Company. (See Morgan, C. H., assignor.) (Reissue.)						
Van Benschoten, E. W., New York, N. Y. Paper-fastener	210,885	Dec. 17	558	156	14	913
Van Order, P., Cortland Village, N. Y. Stone-gatherer	211,069	Dec. 17	785	216	14	940
Veronee, E. B. (See Cusack and Veronee.)						
Vosburgh & Co., W. C. (See Brown, J., assignor.)						
Wait, O. E., Rockport, Mass. Bobbin	210,977	Dec. 17	669	184	14	926
Watson, T. A., Boston, Mass. Polarized armature for electric bells	210,886	Dec. 17	559	156	14	913
Watson, T. T., Richmond, Va. Fastening for tobacco-bags	211,077	Dec. 17	793	21	14	941
Welch, E. B. (See Anders, G. L., assignor.)						
Westcott, C. S., Philadelphia, Pa. Instrument for cleaning combs	210,978	Dec. 17	670	184, 185	14	926
Weston, E., Newark, assignor to E. E. Quimby, Orange, N. J. Manufacture of metallic nickel	211,070	Dec. 17	786	.....	14	940
Weston, E., Newark, assignor to E. E. Quimby, Orange, N. J. Nickel-plating	211,071	Dec. 17	787	.....	14	940
Whitham, W. C., and C. C. Schneider, Belmont, Wis. Stock-car	211,072	Dec. 17	788	216	14	940
Whitney, J. A., New York, N. Y. Refrigerating apparatus	210,979	Dec. 17	670	185	14	927
Wiggins, J. G., Seneca Falls, N. Y. Can-opener	211,073	Dec. 17	789	217	14	940
Wiley, C. D. (See Reynolds and Wiley.)						
Williams, T. W., Swansea, Wales, Great Britain. Furnace	211,074	Dec. 17	790	217	14	941
Williams, W. A., Memphis, Tenn. Fruit-box	210,887	Dec. 17	559	156	14	913
Willoughby, W. M., Philadelphia, Pa. Bed-bottom	210,980	Dec. 17	673	185	14	927
Wisewell, L. N., assignor of one-half interest to J. F. Hanrahan, Ottawa, Ontario, Canada. Garden-sprinkler	211,075	Dec. 17	791	217	14	941
Woods, G., Cambridgeport, Mass. Note-indicator for musical instruments	210,888	Dec. 17	560	157	14	913
Young, W. D. (See Justus and Young.)						

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE GRANTED ON THE 17th DAY OF DECEMBER, 1878.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Addressing-machine	J. Piner	210,960	Dec. 17	647	179	14	924
Aging and improving distilled liquors. Process and apparatus for	M. Lansburgh	210,863	Dec. 17	526	148, 149	14	910
Air and forcing beer. Apparatus for compressing	G. W. Harvey and W. D. Seal	210,943	Dec. 17	629	174	14	922
Air-compressing apparatus	T. G. Springer	211,062	Dec. 17	778	214	14	939
Annunciator	F. W. Mallett	211,031	Dec. 17	739	202	14	935
Bag-holder	D. Arndt	210,831	Dec. 17	488	137	14	905
Bail-ear for buckets and pails	G. C. Napheys	211,036	Dec. 17	746	204	14	935
Bale-tie	W. Silvester	210,970	Dec. 17	602	182	14	925
Ballot-box. Registering	A. B. Roney	211,056	Dec. 17	770	211	14	938
Barrel-head	H. Schwarzwalder	210,882	Dec. 17	533	155	14	913
Battery. Galvanic	F. C. Bartlett	210,835	Dec. 17	492	138, 139	14	905
Bed-bottom	I. S. Bunnell	210,989	Dec. 17	683	188	14	928
Bed-bottom	W. M. Willoughby	210,980	Dec. 17	673	185	14	927
Bee hive	J. F. Petty and T. J. Mobley	211,043	Dec. 17	758	208	14	937
Bell. Alarm	C. H. Smith	210,974	Dec. 17	664	183	14	926
Bell-ringer. Steam	G. N. Osgood	210,956	Dec. 17	644	178	14	924
Bending machine. Metal	W. T. Nichols	210,873	Dec. 17	540	153	14	911
Binder. Temporary	W. Byrne	210,991	Dec. 17	685	188	14	928
Bit-stock	H. L. Pratt. (Reissue)	8,525	Dec. 17	799	219	14	942
Blind. Inside	L. D. Benner	210,902	Dec. 17	586	162	14	916
Blower. Steam	R. Atherton	210,832	Dec. 17	488	137	14	905
Boat raising and lowering apparatus	M. Bourke	210,908	Dec. 17	593	164	14	917
Bobbin	O. E. Wait	210,977	Dec. 17	669	184	14	926
Boilers. Electric alarm for steam	P. Grimm, W. I. Faucher, and H. K. Roberts.	211,008	Dec. 17	704	194	14	931
Boilers. Injector for steam	D. Minich and G. F. Godley	210,954	Dec. 17	641	177, 178	14	923
Books. Metallic binder for	D. R. Reynolds	211,050	Dec. 17	765	210	14	937
Boot and shoe stiffeners. Mold for	S. W. Record	210,961	Dec. 17	648	180	14	924
Boots and shoes. Lasting	G. W. Copeland	210,920	Dec. 17	606	168	14	919
Bottle-stopper and stopper-fastener	F. Deming and P. Bacher	210,926	Dec. 17	611	169	14	920
Brick-machine	C. S. Bigler	210,903	Dec. 17	588	162	14	917
Brick, &c., used for metallurgic purposes. Treating fire-	A. R. Reynolds	210,963	Dec. 17	651	.....	14	925
Bridges. Testing	L. Laubscher	210,864	Dec. 17	528	149	14	910
Brush-blocks. Machine for boring	C. A. Mahle	210,866	Dec. 17	530	150	14	910
Button	M. Lowenstein	211,028	Dec. 17	734	201	14	934
Cake machine. Soft	E. A. Coles	210,839	Dec. 17	495	140, 141	14	906
Can. Metallic	G. L. Harrison, Jr.	211,011	Dec. 17	707	195	14	931
Can. Metallic	G. H. Perkins and G. Brown	211,042	Dec. 17	757	208	14	936
Can-opener	J. G. Wiggins	211,073	Dec. 17	780	217	14	940
Cans. Case for supporting	G. H. Perkins and G. Brown	211,041	Dec. 17	756	207	14	936
Cane-shaving machine	C. L. Jones, J. W. Smith, and H. H. Adams.	210,945	Dec. 17	632	175	14	922
Car-starter	R. Hermance	210,852	Dec. 17	513	145	14	908
Car-starter	H. P. Holt	211,015	Dec. 17	711	196	14	931
Car-starter	C. H. Nye	211,039	Dec. 17	754	206	14	936
Car. Stock	W. C. Whitham and C. C. Schneider	211,072	Dec. 17	788	216	14	940
Car. Street	T. Sharer	211,060	Dec. 17	776	213	14	939
Cars. Pipe-coupling for railway	E. L. Brady	210,910	Dec. 17	596	165	14	918
Carbon as a motive power. Utilizing bisulphide of	R. Crenzbaur	210,840	Dec. 17	498	141	14	906
Chair. Folding	R. Dick	210,842	Dec. 17	504	142	14	907
Clamp	C. M. Hyatt	211,020	Dec. 17	717	198	14	932
Closet or commode. Portable	H. A. Clum	210,917	Dec. 17	602	166	14	919
Clutch	J. E. Hunter	211,019	Dec. 17	715	197	14	932
Coal-scuttle	S. Smith	210,972	Dec. 17	663	183	14	926
Combs. Instrument for cleaning	C. S. Westcott	210,978	Dec. 17	670	184, 185	14	926
Cooking apparatus	J. F. Roberts	210,879	Dec. 17	549	154	14	912
Copper. Welding	J. Burns	210,990	Dec. 17	684	.....	14	928
Corset. Galvanic	S. W. Geery	210,932	Dec. 17	619	172	14	921
Cotton opener and cleaner	H. Ellis	210,930	Dec. 17	617	171	14	920
Counter and heel protector. Combined	C. W. Hughes and T. E. Dyer	211,017	Dec. 17	714	197	14	932
Cracker-machine	J. W. and A. Ruger	211,057	Dec. 17	773	212	14	938
Cream-raising apparatus	J. W. Powers	210,876	Dec. 17	545	153	14	911

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Culinary vessel	J. L. Follett	211,076	Dec. 17	792	217	14	941
Cultivator	A. Canfield	210,993	Dec. 17	687	189	14	928
Cultivator	W. A. Knowlton and A. Rutledge	210,861	Dec. 17	522	148	14	909
Cultivator	F. W. Tolley	210,884	Dec. 17	555	156	14	913
Curtains. Frame for drying	H. F. Marsh	211,032	Dec. 17	741	203	14	935
Distance-measuring device	A. Felldin	210,931	Dec. 17	618	171	14	920
Drill-chuck	E. S. Pierce	210,875	Dec. 17	544	153	14	911
Drill. Grain-	M. W. Smith and E. J. Richey	210,979	Dec. 17	663	183	14	926
Drill. Rock-	T. B. and T. R. Jordan	211,022	Dec. 17	719	198	14	932
Drill. Seed-	E. Ruhlmann	210,881	Dec. 17	551	155	14	912
Drop-light	J. Brown	210,912	Dec. 17	598	165	14	918
Eccentric. Anti-friction	M. Scharfberg	210,969	Dec. 17	661	182	14	925
Electric bells. Polarized armature for	T. A. Watson	210,886	Dec. 17	559	156	14	913
Electric motors. Pedal-switch for controlling	C. A. Hussey	210,939	Dec. 17	625	173	14	921
Engine. Compound hydraulic	O. C. Carpenter	210,915	Dec. 17	600	166	14	918
Engine. Traction	G. Rogers. (Reissue)	8,526	Dec. 17	800	219	14	942
Engines. Bed-plate for paper-pulp	J. H. Horne	210,937	Dec. 17	623	173	14	921
Envelope. Metallic postal	H. G. Pearson	210,959	Dec. 17	647	179	14	924
Fabrics. Machine for stretching	C. A. Luther	211,030	Dec. 17	737	202	14	934
Face-canopy	M. Bourke	210,907	Dec. 17	593	163	14	917
Faucet. Beer-	J. Rowe, Jr., and J. S. Knight	210,880	Dec. 17	550	154	14	912
Feed-water heater	S. A. Goodwin	210,934	Dec. 17	620	172	14	921
Feed-water heater	G. H. Rhentan	211,051	Dec. 17	766	210	14	937
Feed-water heater for steam-boilers	B. Ford	210,846	Dec. 17	508	143, 144	14	907
Feed-water regulator	G. Dinkel and F. Rochow	210,843	Dec. 17	505	142	14	907
Fence	J. A. Tornwall	211,067	Dec. 17	783	215	14	940
Field-roller and planter. Combined	J. J. Reicherts and D. Tipton	210,902	Dec. 17	649	180	14	924
Fire-arm	J. Royal	210,968	Dec. 17	660	182	14	925
Fire-arm. Breech-loading	J. Bluemel	210,905	Dec. 17	591	163	14	917
Fire-escape	W. Duryea	210,928	Dec. 17	613	170	14	920
Fires. System for detecting and extinguishing	W. H. Johnstone	210,944	Dec. 17	631	175	14	922
Flour-bolt	S. Lewis and F. A. Baker, Jr	210,865	Dec. 17	529	149	14	910
Flue-cleaner. Steam	R. Atherton	210,833	Dec. 17	489	138	14	905
Fluting-machine	C. G. Shepard and P. Adams, Jr	211,061	Dec. 17	778	213	14	939
Fringe	A. Moll	210,869	Dec. 17	535	151	14	911
Fruit-box	W. A. Williams	210,887	Dec. 17	559	156	14	913
Furnace	T. W. Williams	211,074	Dec. 17	790	217	14	941
Game-board	H. B. Dennison	211,001	Dec. 17	698	192	14	930
Gas-lighting device. Electric	J. Pintsch and J. Schülke	211,044	Dec. 17	759	208	14	937
Gate	W. H. Hubbard	210,938	Dec. 17	624	173	14	921
Glassware. Manufacture of	D. Bennett	210,984	Dec. 17	678	187	14	927
Governor	W. H. Fruen	210,847	Dec. 17	509	144	14	908
Grain-binder	W. Lottridge	211,027	Dec. 17	727	200, 201	14	933
Grain-binder	J. S. Marsh	210,949	Dec. 17	635	176	14	923
Grate	D. Smith	210,883	Dec. 17	554	155	14	913
Gun. Air-	W. Montstorm	210,976	Dec. 17	666	184	14	926
Harness. Plow-	J. W. Blyth	210,836	Dec. 17	493	139	14	906
Harrow	E. M. Dunbar	211,003	Dec. 17	700	193	14	930
Hatchway-door mechanism	T. J. Close	210,838	Dec. 17	494	140	14	906
Hats and caps. Machine for producing brims on sweat-bands for	T. W. Bracher	210,985	Dec. 17	679	187	14	927
Heater. Fire-place	J. R. Lancaster	210,862	Dec. 17	525	148	14	909
Heater. Fire-place	A. R. Morgan	210,870	Dec. 17	536	151	14	911
Hides. Apparatus for handling	C. Stienmann	211,063	Dec. 17	780	214	14	939
Hoisting-machine	L. H. Hall	210,850	Dec. 17	511	145	14	908
Horse-clipper	W. Bown	210,909	Dec. 17	594	164, 165	14	917
Horseshoe	J. P. Jubb	211,023	Dec. 17	721	198	14	931
Horseshoe-bars. Machine for rolling	W. R. Justus and W. D. Young	211,024	Dec. 17	722	199	14	933
Horseshoe-calk attachment	R. J. Bartley	210,900	Dec. 17	584	161	14	916
Hose-coupling	J. Davies	210,923	Dec. 17	609	168	14	919
Hose-couplings. Relief-valve for	T. T. Prosser	211,046	Dec. 17	762	209	14	937
Hub-mortising machine	P. Jones	210,858	Dec. 17	519	147	14	909
Illuminating purposes. Oil-fixtures for	B. Allen	210,981	Dec. 17	674	185	14	927
Insulating induction-coils	D. Brooks	210,987	Dec. 17	681	188	14	928
Iron, &c. Decarbonizing malleable cast-	A. R. Reynolds	210,964	Dec. 17	652	180	14	925
Lamp-burner	H. L. Ives	211,021	Dec. 17	718	198	14	932
Lamp-extinguisher	F. Rhind	210,878	Dec. 17	548	154	14	912
Lamp-globe	H. H. Hulburt	211,018	Dec. 17	714	197	14	932
Lantern	J. W. Orphy	211,040	Dec. 17	755	207	14	936
Leaves. Skeletonizing	I. L. Rogers	211,054	Dec. 17	769	.....	14	938
Lifting-jack	J. O. Joyce	210,946	Dec. 17	634	175	14	923
Lime and other kilns	J. Baldermann	210,834	Dec. 17	490	138	14	905
Lock. Seal-	E. Ferrot	210,844	Dec. 17	506	143	14	907
Locomotives. Adjustable exhaust for	D. Harrigan	210,941	Dec. 17	627	174	14	922
Loom-shuttle	J. M. Palmer and C. A. Shaw	210,874	Dec. 17	542	153	14	911
Loom-temple	J. H. Prouty and S. S. Sprague	211,048	Dec. 17	763	209	14	937
Lumber-drier	M. C. Curran	210,999	Dec. 17	695	191	14	929
Mail-bag	C. E. Bailey	210,899	Dec. 17	583	161	14	916
Mail-bag	A. P. Carnagy	210,994	Dec. 17	688	190	14	929
Mason's pointing-tool	K. C. Mackay	210,947	Dec. 17	634	175	14	923
Measures. Combined stroker and handle in	S. D. Stauffer	210,975	Dec. 17	665	183	14	926
Middlings-separator	J. Barker. (Reissue)	8,528	Dec. 17	803	220	14	942
Milk-boiler	L. Hensel	211,014	Dec. 17	710	196	14	931
Mill. Vertical-disk grinding-	D. Hess	210,936	Dec. 17	622	173	14	921
Millstone-dressing machine	D. Narraeong	211,037	Dec. 17	747	204	14	936
Millstone-exhaust apparatus	M. Martin	211,033	Dec. 17	742	203	14	935
Mop	J. McCarthy	210,953	Dec. 17	640	177	14	923
Musical instruments. Note-indicator for	G. Woods	210,888	Dec. 17	560	157	14	913
Mucilage-holder	S. S. Newton	210,872	Dec. 17	540	152	14	911
Nail-plate feeder	I. Briggs	210,911	Dec. 17	596	165	14	918
Nail-plate feeder	W. Koplin	211,025	Dec. 17	723	199	14	933
Neck-tie	W. H. Hart, Jr	211,013	Dec. 17	709	196	14	931
Nickel. Manufacture of metallic	E. Weston	211,070	Dec. 17	786	.....	14	940
Nickel-plating	E. Weston	211,071	Dec. 17	787	.....	14	940
Oiling spindles in spinning-frames. Mechanism for	J. H. Prouty and S. S. Sprague	211,047	Dec. 17	762	209	14	937

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Oven. Bake-	M. J. Mosher	210,871	Dec. 17	537	152	14	911
Packing. Steam-	R. Martin	210,868	Dec. 17	534	151	14	910
Pan. Dust-	E. K. Goss	210,849	Dec. 17	510	144	14	908
Paper-bag machine	C. H. Morgan. (Reissue)	8,527	Dec. 17	802	219, 220	14	942
Paper box	J. P. Buckingham and O. M. Hamilton.	210,913	Dec. 17	599	166	14	918
Paper-fastener	E. W. Van Benschoten	210,885	Dec. 17	558	156	14	913
Paper-making, &c. Preparing gypsum for use in	C. T. Tomkins	211,066	Dec. 17	782	215	14	940
Paper-pulp from wood. Manufacture of	H. M. Carpenter	210,914	Dec. 17	600	.....	14	918
Paper-pulp washer	H. Hollingsworth	210,853	Dec. 17	515	146	14	908
Paper-winding shaft	T. S. Scott	211,059	Dec. 17	776	212	14	939
Pepper-mill and caster. Combined	P. Chalas	210,837	Dec. 17	494	139, 140	14	906
Petroleum into oils of different grades and fire-tests. Apparatus for separating refined	D. Rogers	211,055	Dec. 17	769	211	14	938
Pipe joint and coupling	A. Bodart	210,906	Dec. 17	592	163	14	917
Pipes. Machine for turning	B. A. Jonasson	210,857	Dec. 17	518	147	14	909
Planter. Check-row	C. G. Cross	210,998	Dec. 17	694	191	14	929
Planter. Horse-power corn-	A. H. Fessenden	210,845	Dec. 17	507	143	14	907
Planters. Seed-dropping attachment for corn-	R. L. Patterson	210,958	Dec. 17	646	179	14	924
Plow	H. H. Canaday	210,992	Dec. 17	686	189	14	928
Plow	W. Dickerson and W. H. Strain	211,002	Dec. 17	699	192	14	930
Plow-clevis	J. W. Powers	210,877	Dec. 17	546	154	14	912
Plow. Gang-	G. and J. Armstrong, Jr	210,830	Dec. 17	487	137	14	905
Plow. Sulky-	G. W. Greener	211,007	Dec. 17	703	194	14	930
Plow. Sulky-	W. W. Marsh	210,867	Dec. 17	532	150, 151, 161, 162	14	910
Press. Baling-	V. and F. Becker	210,901	Dec. 17	585	161	14	916
Pressing and rolling plastic material. Machine for	T. Hagerty	211,009	Dec. 17	705	194	14	931
Printer's galley	S. D. Tucker	211,068	Dec. 17	784	215	14	940
Propeller. Screw-	R. H. Armit	210,982	Dec. 17	675	186	14	927
Propeller. Screw-	E. C. Hubbard	211,016	Dec. 17	713	196	14	932
Pulley. Awning-	D. Jannopoulo	210,855	Dec. 17	516	146	14	908
Pump	P. H. Green	210,935	Dec. 17	621	172	14	921
Railway. Elevated street-	C. Leavitt	211,026	Dec. 17	724	199	14	933
Railway switch-bar	J. A. Kirby	210,860	Dec. 17	521	147	14	909
Rake. Horse hay-	A. C. Kaiser and H. H. Stangaard	210,859	Dec. 17	520	147	14	909
Rake. Lawn-	T. D. Davis	210,924	Dec. 17	610	169	14	919
Refrigerating apparatus	J. A. Whitney	210,979	Dec. 17	670	185	14	927
Refrigerator	A. J. Chase	210,995	Dec. 17	689	190	14	929
Ruler	G. Cousins	210,922	Dec. 17	608	168	14	919
Sad-iron heater	S. J. Crockett	210,997	Dec. 17	693	191	14	929
Sail-hank	C. A. Mathiesen	210,951	Dec. 17	638	177	14	923
Sandpapering-machine	C. Brückner	210,988	Dec. 17	682	188	14	928
Sash-balance	C. Bissmann	210,904	Dec. 17	590	163	14	917
Sash-fastener	J. Gérard	211,005	Dec. 17	701	193	14	930
Sash-holder	B. F. Reynolds and C. D. Wiley	211,049	Dec. 17	764	210	14	937
Saw-tooth	J. R. Luce	211,029	Dec. 17	737	201	14	934
Saw-tooth	W. P. Miller	211,035	Dec. 17	745	204	14	935
Screw-driver. Ratchet	G. E. Gay	210,942	Dec. 17	628	174	14	922
Screw-machine	C. D. Rogers	211,053	Dec. 17	768	211	14	938
Scythe-snath fastening	H. W. Thompson	211,065	Dec. 17	782	215	14	940
Sewer-pipes. Ventilator and overflow for	W. S. Clark	210,916	Dec. 17	602	166	14	918
Shawl-strap handle	W. P. Ferguson	211,004	Dec. 17	701	193	14	930
Sheet-metal vessels. Machine for shaping and ornamenting	T. W. Crees	210,996	Dec. 17	691	190	14	929
Sign	C. Bellenot	210,983	Dec. 17	678	187	14	927
Siphon	W. G. Rhoads	210,965	Dec. 17	655	181	14	925
Soap. Medicated	E. A. Adams	210,889	Dec. 17	561	.....	14	913
Spring. Car-	A. B. Davis	211,000	Dec. 17	697	192	14	930
Spring. Vehicle-	L. A. and A. L. Davis	210,925	Dec. 17	611	169	14	920
Spring. Vehicle side-	R. Porter	211,045	Dec. 17	761	209	14	937
Sprinkler. Garden-	L. N. Wisewell	211,075	Dec. 17	791	217	14	941
Square. Dress-maker's	C. H. Griffin. (Reissue)	8,523	Dec. 17	794	218	14	941
Stamp. Ore-	S. Kendall	210,940	Dec. 17	626	174	14	922
Steam-generator	J. Schofield and D. D. Pryor	211,058	Dec. 17	775	212	14	939
Steering apparatus. Steam-	J. C. McAllister	211,034	Dec. 17	744	204	14	935
Stock. Apparatus for watering	W. Riley	210,966	Dec. 17	658	181	14	925
Stocking-supporter clasp	R. Eberle. (Reissue)	8,522	Dec. 17	793	213	14	941
Stone-gatherer	P. Van Order	211,069	Dec. 17	785	216	14	940
Stove-drum	J. Gilson	210,933	Dec. 17	619	172	14	921
Stove. Self-extinguishing	W. F. Condon	210,918	Dec. 17	603	167	14	919
Stoves. "Smoke-convey" for cooking-	E. A. G. Roulstone	210,967	Dec. 17	659	181	14	925
Target. Ball-	A. C. Johnson	210,856	Dec. 17	517	146	14	909
Telegraph. Printing-	G. L. Anders	210,890	Dec. 17	562	157	14	914
Telegraph. Printing-	G. L. Anders	210,891	Dec. 17	564	158	14	914
Telegraph. Printing-	G. L. Anders	210,892	Dec. 17	566	158	14	914
Telegraph. Printing-	G. L. Anders	210,893	Dec. 17	569	158	14	914
Telegraph. Printing-	G. L. Anders	210,894	Dec. 17	571	159	14	915
Telegraph. Printing-	G. L. Anders	210,895	Dec. 17	574	159	14	915
Telegraph. Printing-	G. L. Anders	210,896	Dec. 17	575	159, 160	14	915
Telegraphs. Transmitter for printing-	G. L. Anders	210,897	Dec. 17	579	160	14	916
Telegraphic conductors. Insulating	D. Brooks	210,986	Dec. 17	680	187	14	928
Telephones and phonographs. Diaphragm for	R. Eickemeyer	210,929	Dec. 17	614	171	14	920
Thill-coupling	A. W. Cottrell	210,921	Dec. 17	607	168	14	919
Tobacco-bag fastening	T. T. Watson	211,077	Dec. 17	793	218	14	941
Tobacco-cutting machine	E. Durand	210,927	Dec. 17	612	169, 170	14	920
Tool-rest. Portable	O. Olsen	210,957	Dec. 17	645	179	14	924
Toy pistol	H. A. Smith	210,971	Dec. 17	662	182	14	925
Tramways. Clip for rope-	A. S. Hallidie	210,851	Dec. 17	512	145	14	908
Type-distributing machine	J. North	211,038	Dec. 17	748	205, 206	14	936
Type-writing machine	H. R. M. J. Hansen	211,010	Dec. 17	706	195	14	931
Umbrella-ribs. Device for indenting and heading	J. McAuliffe	210,952	Dec. 17	639	177	14	923

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Valve for steam-engines. Throttle	W. J. Innis	210,854	Dec. 17	516	146	14	908
Vehicle. Passenger	M. V. Nichols	210,955	Dec. 17	643	178	14	924
Wagon. Dumping	L. Rodenhausen	211,052	Dec. 17	767	210	14	938
Wagon-gear	O. S. Gorton	211,006	Dec. 17	702	193	14	930
Wagon-jack	H. H. Margeson	210,948	Dec. 17	635	176	14	923
Washer. Leather	T. Gingras	210,848	Dec. 17	510	144	14	908
Washing-machine	A. Harshberger	211,012	Dec. 17	708	195	14	931
Water-meter. Oscillating	J. A. Ayres	210,898	Dec. 17	581	160	14	916
Water-meter. Piston	D. H. Tebay	211,064	Dec. 17	781	214	14	946
Water-meter. Rotary	W. H. Cusack and E. B. Veronee	210,841	Dec. 17	503	142	14	906
Windlasses. Locking-gear for	G. H. Remington and J. P. Manton. (Reissue.)	8,524	Dec. 17	798	219	14	941
Windmill	T. E. Martin	210,950	Dec. 17	638	176	14	923
Wood-working machinery. Attachment for	E. Conrad	210,919	Dec. 17	605	167	14	919

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DECISIONS OF THE COURTS.

U. S. Circuit Court—Southern District of New York.

CLINTON G. COLGATE *vs.* THE WESTERN UNION TELEGRAPH COMPANY.

Letters Patent No. 65,019, granted G. B. Simpson May 21, 1867, are valid, and construed to be for the use, as a conductor of electricity, of a metallic wire insulated by a coating of gutta-percha.

The gist of the invention lies in the discovery of the fact that gutta-percha is a non-conductor of electricity, and in the application of that fact to practical use, by combining gutta-percha with a metallic wire, in the manner and by the means specified, and then using the cable thus formed for conducting electricity along the inclosed wire.

The simple coating of a metallic wire with gutta-percha to protect it from mechanical abrasion, or for any purpose other than that involving the use of the covered wire as an insulated electrical conductor, is not of the invention.

Hence, the prior existence and use of metallic wires coated with gutta-percha, without knowledge of the electrical insulating quality of the coating, cannot impeach a patent based upon the discovery of that fact, and this, too, notwithstanding the pre-existing wires may be capable of use in the manner contemplated by the patent.

The use of the coated wire as an electrical co..ductor was not a mere double use, nor one analogous to any of its uses which had preceded. Nor is the invention lessened because of the known electrical non-conductivity of the genus of substances (gums and resins) to which gutta-percha belongs. The wide range and activity of the search for a superior electrical insulator, suitable for telegraphic purposes, forbids the conclusion that the knowledge of this quality in gutta-percha was a simple deduction from the established characteristics of its genus.

Equally unsound is the view that the use of gutta-percha instead of india-rubber to insulate a wire is a mere change of material—an obvious substitution without patentable merit. The gutta-percha made the insulation for the first time practically perfect, and the change was not one producing merely the same result, nor was it such as involved simple mechanical skill.

Simpson filed application papers for patent, but without model or the payment of the fee, in January and February, 1848, the invention involving the coating of a metallic wire with gutta-percha for electrical insulation. Thereafter another application for the invention was filed by him, in all respects complete, (June, 1849,) which was rejected by the Examiner in October, 1849. January 21, 1851, Simpson, upon request made, received a refund of twenty dollars, balance of fee, as allowed by law if a case be withdrawn after first rejection. In December, 1858, a new application was filed by Simpson, which was refused by the Commissioner, on appeal, February, 1859, and still another application, filed October 8, 1859, was finally rejected upon appeal to the Circuit Court for the District of Columbia, April 9, 1861. May 4, 1866, Simpson filed the application upon which the patent issued. *Held*, upon the proofs, that, in spite of poverty and wrongful Office action, Simpson had exercised exemplary diligence in seeking his patent; that in the long interval he had neither actually nor constructively abandoned the invention, and that, as against adverse public use and priority claimants, he was entitled to be treated as a continuing applicant since January, 1848.

Where the law allowed the refund of the balance of a fee upon condition of the withdrawal of a case at a certain stage, Simpson, who received such balance upon request, but without expressly withdrawing the case, or otherwise manifesting such intention, declared not to be prejudiced by the mistaken Office action.

[*William D. Shipman* and *Frederic H. Betts*, for the plaintiff: *George Gifford*, *George W. Soren*, and *William C. Witter*, for the defendants.]

BLATCHFORD, *J.*:

This suit is founded on letters patent granted to George B. Simpson, as inventor, May 21, 1867, for an "improvement in insulating submarine cables." The specification states that Simpson has invented "a new and useful improvement in electrical conductors for telegraphic purposes." It says:

To enable others to make and use my submarine-telegraph cable I will describe its manufacture thus: I dissolve gutta-percha with chloroform, or any other known solvent; I soften gutta-percha in boiling water, steam, or dry heat; I combine gutta-percha with metallic wire by means of a brush, or by immersing the wire in the solution when in the solvent state; I combine gutta-percha and metallic wire with the fingers, or any machine which may facilitate the operation, and execute the work more perfectly by pressing the gum upon and around the wire, or by spinning it out, when in a plastic state, into thin and ribbon-like strips, and twining it on then tightly and continuously around the wire, thus combining the gutta-percha and metallic wire, and insulating the wire to any extent. By this mode of combination I cover the wire on all sides with a uniform coating of gutta-percha, of any desired thickness, for the purpose of securing a conductor of electricity within the non-conducting substance, (gutta-percha,) which combination forms a "submarine-telegraph cable," flexible and convenient, which may be suspended on poles in the air, submerged in water, or buried in the earth. This mode of combination and insulation confines the electric current to the wire, wires, or other conductors of electricity, shielding it and them from contact with any and all external electric, galvanic, or magnetic influences whatsoever, thus attaining a great triumph in art, namely, the absolute control of electric and galvanic currents for atmospheric and submarine telegraphic communication, and for other electric, galvanic, and magnetic uses.

The claim is in these words:

The combination of gutta-percha and metallic wire in such form as to incase a wire or wires, or other conductors of electricity, within the non-conducting substance, (gutta-percha,) making a "submarine-telegraph cable," at once flexible and convenient, which may be suspended on poles in the air, submerged in water, or buried in the earth to any extent, for atmospheric and subma

rine telegraphic communication, and for other electric, galvanic, and magnetic uses, as hereinbefore described.

It is plain, from the language of the specification, that the point of the invention is, to make use of the fact that gutta-percha is a non-conductor of electricity, to insulate by means of gutta-percha a metallic wire, which is a conductor of electricity, and thus prevent the escape of electricity from the metallic wire when it is suspended in the air, or submerged in water, or buried in the earth, when, but for such insulation, the electricity would escape from the metallic wire. The mode of insulation described is to combine the gutta-percha and the metallic wire in such manner that the wire will be covered on all sides with a uniform coating of gutta-percha. Adequate means of softening the gum and putting it into such condition as to permit it to be so combined with the wire are set forth, and it is declared that such mode of combination and insulation confines the electric current to the wire and shields the wire from contact with all external electric influences. It is manifest that the gist of the invention is the discovery of the fact that gutta-percha is a non-conductor of electricity, and the application of that fact to practical use by combining gutta-percha, by the means specified, with a metallic wire, in the manner described, and then using the cable formed by such combination for the purpose of conducting electricity along the inclosed wire. The point of the invention is not the mere mechanical covering of a metallic wire with gutta-percha, as a mechanical protection from abrasion or injury from without, or for any purpose aside from a use of the covered wire as a conductor of electricity. The claim is substantially a claim to the use, as a conductor of electricity, of a metallic wire insulated by gutta-percha by the means and in the manner described in the specification. The claim is valid, even though a metallic wire covered with gutta-percha existed before the plaintiff's invention, if it was not known that gutta-percha was a non-conductor of electricity and could be used to insulate the wire. The use by the patentee of the wire so covered to conduct electricity was not a double use of the covered wire, even though the covered wire existed before; nor was it a use of it for a purpose at all analogous to any use before made of it, if such prior use of it was not to conduct electricity along the wire, and if it was not before known that gutta-percha was a non-conductor of electricity and could be used to insulate a metallic wire used as a conductor of electricity.

The answer admits the use by the defendant of submarine cables in the insulation of which gutta-percha was employed, but does not admit that it thereby used the invention patented to Simpson. It also sets up that the alleged invention was before known and used; that it had been for more than two years before Simpson's application for a patent therefor in public use in the United States, with the knowledge, consent, and allowance of Simpson; that if Simpson was the first inventor of the alleged invention he wilfully and without excuse and for many years delayed and forebore to apply for a patent for it, and abandoned it and his right to have a patent for it, and dedicated it to the public, and meantime it became known to the public and the defendant from other sources; that the thing claimed by the patent is not patentable subject-matter, and therefore the patent is null and void; and that the patent is void for the reason that the alleged invention consists in applying to telegraph-wires, or in using for telegraphic purposes, what before had been applied to other articles or uses for other purposes, and therefore the invention is not patentable subject-matter.

The fact of infringement by the use by the defendant of what is claimed in the claim of the patent as the invention of Simpson is satisfactorily proved, and was not contested on the hearing.

It is contended for the defendant that the patent is broadly for the combination of gutta-percha with a metallic wire, so that the wire is covered and incased by the gutta-percha, and is not for the use of the combination or for a method of using it, and is not for a discovery or for an invention founded on or involving a discovery; that whenever wire is found covered by gutta-percha in such manner that the gutta-percha is capable of confining electricity to the wire, an article is found which is included in the patent; that whoever so covers wire is as much an infringer of the patent as he is who uses it for telegraphic purposes; and that if the wire be so covered, whoever uses it for a band for a cotton-bale or for a belting for machinery infringes the patent. The construction hereinbefore given to the specification and claim shows that these views on the part of the defendant are not sound.

It is further contended for the defendant that, as it was known that resins and gums, as a genus of articles, were electric insulators, it did not require or involve any invention, when gutta-percha became known, to cover wire with it, to insulate the wire. It is very easy for wisdom, after an event, to say that it was a natural conclusion that gutta-percha would be an insulator from the known insulating properties of gums and resins generally. But the evidence in this case shows that although gutta-percha was known, and the means of softening and manipulating it were known, many experienced men engaged in the business of telegraphy groped about, experimenting first with one device and then with another, in the fruitless effort to secure a practical means of crossing water-courses with lines of telegraph-wires, until it was at length found out that gutta-percha was the needed insulator. It is also shown that Faraday, the distinguished scientist, announced to the world as a new thing the fact that he had discovered that gutta-percha was a good electrical insulator. The position taken is, therefore, untenable.

Equally unsound is the view urged on the part of the defendant that the use of gutta-percha instead of india-rubber to insulate a wire was a mere change of material, and an obvious substitution, and therefore not patentable. The cases of the door-knob and the button and the wagon-reach have no application to a case like the present. Those who were seeking a practically perfect insulator had india-rubber and tried it, and found it not to be what was needed. The present case is not merely one of producing a better or cheaper or more durable article to attain the same result, nor is it one falling within the principle that a change involving only mechanical skill is not patentable.

Nothing that has been put in evidence for the defendant carries back the publication of the discovery of the insulating properties of gutta-percha to a date earlier than the 1st of March, 1848. That is the date of the publication in England of the discovery of such

properties by Faraday. It is entirely clear that Simpson had, prior to that time, made a like discovery. On the 24th of January, 1848, he made oath to a specification for a patent for "a new and improved mode of conducting electricity through water and beneath the earth," and such specification, with the oath and a drawing and a petition for a patent, but without any fee or model, were filed in the Patent Office on the 31st of January, 1848. In that specification Simpson says:

> The nature of my invention consists in insulating the metallic wire, covering it with a glass-bead chain, socketed and closely jointed together; also covering the glass chain with an insoluble india-rubber (or gutta-percha) tube, jointed, cemented, and banded together, thus forming a submarine conductor of electricity, as hereinafter described. To enable others to make and use my invention, I will proceed to describe the combination, its construction, and operation. The metallic wire (A in the drawing) is first insulated with insoluble india-rubber or gutta-percha. The insulated wire is then covered with glass beads B, socketed together so as to form a close joint, every *joint (C) bead* having a groove around the middle sufficient to admit of a band or fastening, to prevent displacement on the wire. *An insoluble india-rubber tube, D*, is then drawn over the glass-bead chain, jointed, cemented, and banded together (E) so as to be both *water and air tight*. The object of this arrangement or combination is to guard against and prevent the water from coming in direct contact with the telegraphic wire, thus securing the entire control of this mysterious agent. This combination secures the object so much desired. By insulating the wire with the gums, prevents the water from coming in direct contact with it; by covering the insulated wire with *glass beads*, closely jointed, confines the electricity to the wire; and if, by the operation of *natural laws*, chemical action produces moisture inside the *india-rubber tube*, the space between the joints of the glass chain being comparatively nominal, the amount of water thus produced and occupying said space would amount to little more than moisture, and even if this moisture were to come in direct contact with other conductors of electricity, it would require a vast amount of surface thus exposed to destroy the entire current; but *the insoluble india-rubber tube* which incases the whole chain, being *in and of itself a powerful non-conductor*, throws up an interminable barrier between the great volume of water outside and the comparative moisture inside the tube, thus effectually confining and controlling the great current of electricity passing over the telegraphic wire. The joints in the glass chain and the elasticity of *the india-rubber tube* when complete, (D,) render it sufficiently flexible to give any desired curve. *Now*, what I claim as my invention, and desire to secure by letters patent, is the combination and arrangement of the *gums and glass* around the telegraphic wire in such form as to secure the controlling power of the mysterious agent, "electricity," as hereinbefore described.

On the 21st of February, 1848, Simpson signed another specification, which he sent to the Patent Office in a letter bearing that date, which letter says:

> Owing to the haste in which I prepared my first specifications they were not as explicit as they ought to have been. I have, therefore, prepared another set, supplying the former deficiency and embracing the whole principle of my plan for which I have asked letters patent.

This specification, like the first one, declares the invention to be "a new and improved mode of conducting electricity through water and beneath the earth." The expressions in the first specification which are varied in the second are put in *italics* in the above copy, and the language found in the second specification which is not found in the first is put in *italics* in the following copy of the second. The second specification says:

> The nature of my invention consists in insulating the metallic wire, covering it with a glass-bead chain, socketed and closely jointed together; also covering the glass chain with an insoluble india-rubber or gutta-percha tube, jointed, cemented, and banded together, thus forming a submarine conductor of electricity, as hereinafter described. To enable others to make and use my invention, I will proceed to describe the combination, its construction, and operation. The metallic wire *a*, in the drawing, is first insulated with insoluble india-rubber or gutta-percha. The insulated wire is then covered with glass beads *b*, socketed together so as to form a close joint, every *joint bead c* having a groove around the middle sufficient to admit of a band or fastening to prevent displacement on the wire. *An insoluble india-rubber or gutta-percha tube, d*, is then drawn over the glass-bead chain, jointed, cemented, and banded together, *e*, so as to be both *air and water tight. In order that the submarine conductor of electricity may be applied to deep waters, I propose to attach around the conductor, at certain distances from each other, globular rings containing any required amount of air, so that the whole structure may be buoyed on the surface of the water or sunk to any desirable depth. Said globular rings are made of india-rubber, covered with the gum-percha, and fastened on the conductor with the same kind of gum.* The object of this arrangement or combination is to guard against and prevent the water from coming in direct contact with the telegraphic wire, thus securing the entire control of this mysterious agent. This combination secures the object so much desired. By insulating the wire with the gums, prevents the water from coming in direct contact with it; by covering the insulated wire with *the glass beads* closely jointed, confines the electricity to the wire; and if, by the operation of *the laws of nature*, chemical action produces moisture inside the *india-rubber or gutta-percha tube*, the space between the joints of the glass chain being comparatively nominal, the amount of water thus produced and occupying said space would amount to little more than moisture, and even if this moisture were to come in direct contact with other conductors of electricity, it would require a vast amount of surface thus exposed to destroy the entire current. But *the insoluble india-rubber or gutta-percha tube*, which incases the whole chain, being *a non-conductor*, throws up an interminable barrier between the great volume of water outside and the comparative moisture inside the tube, thus effectually confining and controlling the great current of electricity passing over the telegraphic wire. The joints in the glass chain and the elasticity of *the india-rubber or gutta-percha tube*, when complete, *d, are* sufficiently flexible to give any desired curve. What I claim as my invention, and desire to secure by letters patent, is the combination and arrangement of *the gums* around the telegraphic wire, in such form as to secure the controlling power of the mysterious agent, electricity, as hereinbefore described.

A careful examination of the first specification leads to the conclusion that in it Simpson uses the words "insoluble india-rubber" to indicate one and the same article that he indicates by the word "gutta-percha;" that he uses the two forms of expression as synonymous and as meaning the same thing: that he does not by "insoluble india-rubber" mean india-rubber, as that substance was then recognized, made insoluble or in the condition of being insoluble, nor in any condition; but that the whole expression "insoluble india-rubber or gutta-percha" means "gutta-percha, otherwise called by me insoluble india-rubber." Thus, in the first specification, he calls the outside tube in one place "an insoluble india-rubber or gutta-percha tube," and in two other places an "insoluble india-rubber tube," and in two other places an "india-rubber tube." He speaks also of first insulating the wire with "insoluble india-rubber or gutta-percha" before covering it, thus insulated, with glass beads. Therefore he clearly contemplated putting gutta-percha next to the wire, in such manner as to insulate the wire, and he also contemplated making of gutta-percha the outside tube, which was to go over the glass beads. He speaks of such tube, calling it an "insoluble india-rubber tube," as "a powerful non-conductor." He therefore clearly means that gutta-percha is a non-conductor, for it is the tube which is to be a non-conductor, and he speaks of the tube as being made of gutta-percha as well as the insulator next to the wire. It is in evidence that these specifications were both of them written by Simpson himself. He was not an educated man, accustomed to the use of precision in language. His spelling is defective and his modes of expression rude. The expression in the claim of the first specification, "the combination of the gums and glass around the telegraphic wire," is criticised as showing that he meant by "insoluble india-rubber" one gum, and by "gutta-percha" another and distinct gum. But the expression is satisfied by a more natural meaning. He says that he puts gutta-percha next to the wire, then glass beads next, outside, and then outside of the glass beads a gutta-percha tube. Here are two coverings of gutta-percha—two envelopes made of that gum—which two, when spoken of collectively, he designates as gums, and he speaks of the whole thing in the claim as "the combination and arrangement of the gums and glass around the telegraphic wire." There is glass between two layers of gum, and these two layers of gum he calls "gums." So, too, the expression "insulating the

wire with the gums" is criticised as showing that he intended two gums. But he speaks of the wire as insulated by the gutta-percha before the glass beads are put on, and, clearly, the insulation thus spoken of is by the one covering of gutta-percha. There would be the use of but one gum to insulate, even if that gum were not gutta-percha.

But much light is shed on the meaning of Simpson by the second specification which he sent to the Patent Office as being more "explicit" than the first one, and as supplying the "former deficiency," and as "embracing the whole principles" of his plan for which he had asked a patent. In the second specification the word "gutta-percha" is used in describing the outside tube in every place where the tube is mentioned. In three places it is spoken of as an "insoluble india-rubber or gutta-percha tube," and in two places as an "india-rubber or gutta-percha tube." In two places where the words in the second specification are "insoluble india-rubber or gutta-percha tube" the corresponding words in the first specification are "insoluble india-rubber tube;" in two places where the words in the second specification are "india-rubber or gutta-percha tube," the corresponding words in the first specification are "india-rubber tube;" and in the fifth place the expression is the same in both specifications, namely, "insoluble india-rubber or gutta-percha tube." The insulation spoken of as taking place before the glass beads are put on is spoken of in both specifications as being made by "insoluble india-rubber or gutta-percha." The globular rings filled with air to buoy the structure, a feature not in the first specification, are described in the second specification as "made of india-rubber and covered with the gum-percha," thus distinctly showing that Simpson did not by "insoluble india-rubber" mean "india-rubber," and that he regarded gutta-percha as a distinct article from india-rubber. A further very marked change in the second specification from the first is that the claim in the second is "the combination and arrangement of the gums around the metallic wire in such form as to secure the controlling power of the mysterious agent, electricity, as hereinbefore described," instead of, as in the first, "the combination and arrangement of the gums and glass around the telegraphic wire in such form as to secure the controlling power of the mysterious agent, 'electricity,' as hereinbefore described." The second specification, like the first, speaks of gutta-percha as a non-conductor of electricity, but it claims the combination and arrangement of the gums—that is, the interior insulating layer of gutta-percha and the exterior tube of gutta-percha—around the wire as the controlling power which confines the current of electricity to the wire and prevents its passing off, and it leaves out any claim to the glass beads in connection with the gutta-percha, whatever operation the glass beads may have as non-conductors of electricity.

It is shown by the testimony of Mr. Barr, one of the two persons who signed their names as witnesses to both of these two specifications, that he knew Simpson at Cincinnati in the years 1846 and 1847; that Simpson experimented first with india-rubber as an insulating covering for wire, and found that it was not a perfect insulator, and that he then experimented with and adopted gutta-percha. There is also evidence that as early as the 10th of January, 1848, Simpson was making inquiry as to gutta-percha, and receiving information in regard to it from Horace H. Day, who was acquainted with it and with some of its properties. The earliest date at which any other person than Simpson is shown to have announced in the United States the insulating and non-conducting property of gutta-percha is the 10th of February, 1848, on which day Mr. French, the president of the Magnetic Telegraph Company, which had a line of telegraph between New York and Washington, stated, in a letter written by him from Washington to Mr. Clark, the secretary of the company, at New York, that he had just made an insulator of gutta-percha in a mold made for a glass insulator, as an experiment, and that it was a non-conductor. It also appears that on the same day Horace H. Day, a dealer in gutta-percha at that time, writes of it as a "new species of india-rubber." In February or March, 1848, Simpson is found in Baltimore, exhibiting to Professor Rogers, a gentleman extensively connected with telegraphy, a piece of wire covered with gutta-percha, which he represented as intended to be used under water at draw-bridges in rivers, and it was then and there tested in water and found to be a good insulator. During the year 1848 Simpson is found in New York and in Baltimore, endeavoring to attract attention to his invention. On the 6th of December, 1848, he made an agreement, in writing, with Horace H. Day, whereby he was enabled to prosecute the application for his patent. Up to that time he had not paid any fee at the Patent Office or filed any model. The agreement in question states that—

> Simpson did, in the winter of 1847 and 1848, and as early as the month of November, 1847, make invention of covering wires for telegraph purposes with gutta-percha, and also with gutta-percha and chain of glass, and with still an additional covering of rubber, and that he is desirous of taking out a patent for the same, or any portion of it which is patentable, and that he has not the means to take out a patent.

And then Simpson "agrees to convey to Horace H. Day, and make over to him one-half of all the right, title, and interest which may result from the patent, on condition of his paying the fees for Patent Office, and preparing model and papers," with this clause: "If no patent is granted, I promise to pay the twenty received back from the Office to Day." In pursuance of this agreement, Simpson, on the 28th of December, 1848, made oath at Baltimore to a new specification, which, with a new petition for a patent and a drawing and a model and thirty dollars fee, were received at the Patent Office on the 2d of April, 1849. The Office required other drawings and specimens, and suggested amendments to the specification, which were supplied on the 16th of June, 1849. The specification, as completed, states the invention to be "a new and improved mode of insulating electro-magnetic telegraph wire," and proceeds thus:

> The nature of my invention is shielding the wire from contact with any or all conducting matter, by covering it with india-rubber, glass beads, and gutta-percha, either together or separate. By this mode the covering and also the wire remains flexible, and can be conveniently and safely laid on the bed of rivers, or be buried in the earth, or be elevated on poles in the air, without liability to come in contact with water or other matter known as conductors of galvanic electricity. To enable others skilled in the arts to make and use my invention, I will describe it thus: The gutta-percha must be softened by any of the well-known processes, and, when in a malleable or plastic state, I spread it in any desired thickness around the wire. This operation, when well and carefully done, is sufficient of itself, without another coating, to insulate the wire, and, for all ordinary practical purposes, may be used without any other preparation. For further security and to guard against rough usage, I also cover the wire with a coating of india-rubber in a plastic state, or with the well-known metallic rubber in a plastic state, and, when the rubber is dry, the whole is to be covered with a series of glass beads of convenient length and thickness. Each bead is perforated so as to fit closely to the rubber, and fitted close to each other by a socket or knuckle joint, produced by having one end of the bead convex while the opposite end is concave, and so placed over the rubber that the convex end of one bead shall fit into the concave end of the next adjoining bead. Over the beads I place a coat of gutta-percha in a plastic state, and the whole thus forms a flexible shield that renders the wire secure against all external influence from water or other conductor of electricity. What I claim as my invention, and desire to secure by letters patent, is the application of gutta-percha as a covering or shield for wire, to insulate it for electro-magnetic telegraphs, and also the application of india-rubber, glass beads, and gutta-percha, together, in the manner and for the purpose hereinbefore described. I do not claim the application of glass alone as a covering to insulate electro-magnetic wires, that having been in use before my discovery.

On the 7th of September, 1849, the Patent Office rejected Simpson's application by the following letter to him:

> Upon examination of your application for letters patent for a mode of insulating telegraph-wires it is found that the invention is not new. You are referred to Messrs. Amos Kendall, Alfred Vail, Samuel F. B. Morse, and others connected with the electro-magnetic telegraph, for information upon this subject. This method of insulating was claimed by some one of the above persons and known at this Office several years since. Irrespective of this fact, it is doubtful if the use of glass in this way could be considered a new and patentable invention or discovery.

Simpson replied to this letter on the 15th of September, but his reply is missing. On the 19th of September the Patent Office wrote to him thus:

> In reply to yours of the 15th instant, I have to state that it is not remembered exactly when wire covered with gutta-percha was deposited in this Office. It was left here by Alfred Vail, then of Washington, to whom you are referred for information. You may be able to reach him through Professor Morse, of New York, or Hon. Amos Kendall, of Washington. The Office does not consider that the form of your glass insulators presents any patentable novelty.

Simpson replied to this letter on the 20th of September, but his reply is not produced. On the 25th of September the Patent Office addressed him thus:

> In reply to yours of the 20th instant, I will state that it is not known when Mr. Vail exhibited his specimen of wire covered with gutta-percha to this Office. He filed no papers at the time, but merely showed the article as a specimen of workmanship. There have been two applications for letters patent prior to yours for covering wire with gutta-percha rejected upon the ground that the insulating property of gutta-percha being known, its use to protect wires, &c., was not a patentable invention, in view of the fact that various other insulating materials had been employed for the same purpose.

On the 27th of September Simpson wrote to the Patent Office as follows:

> Your letter of the 25th instant came to hand last evening. As my discovery dates back to the 23d of November, 1847, I desire to ascertain positively whether the two applications referred to in your letter were filed prior to that date; also, if Mr. Vail's specimen was exhibited before or after that date; also, when and where the first application of gutta-percha to telegraph-wires as an insulator was made and exhibited.

To this letter the Patent Office replied on the 29th of September as follows:

> In reply to your letter of the 27th instant, I have to state that the application of James Reynolds, of New York, for covering wires with gutta-percha was filed in this Office June 9, 1848, and that at present no earlier definite information can be given upon this subject. The pressure of business upon this Office is such that the investigation you desire cannot consistently be made.

To this letter Simpson replied on September 30, but his letter is not furnished. On the 3d of October the Patent Office wrote him as follows:

> I have to acknowledge the receipt of your letter of the 30th ultimo. Your application has received all the attention to which it is entitled, and you have the alternative of withdrawal or appeal from the decision of this Office. In reference to the use of glass beads for insulation of telegraphic wires, I will remark that it has been found, since the last communication addressed to you, that the same invention was claimed under an application filed in this Office by Alexander Jones, of New York, on 20th of February, 1847.

The specification of the application so rejected made prominent and claimed "the application of gutta-percha as a covering or shield for wire to insulate it for electro-magnetic telegraphs," and stated that the wire would be sufficiently insulated if well and carefully covered around with gutta-percha, put on in a plastic state, and that the object was to shield the wire from contact with conducting matter. This is the same invention described in his first specification. The two prior applications for covering wire with gutta-percha, referred to in the Patent Office letter of September 25, were that of John I. Craven, filed May 12, 1848, and that of James Reynolds, filed June 9, 1848. There is no evidence that any one of the persons named in the Patent Office letter of September 7 had any knowledge of the insulating properties of gutta-percha at an earlier date than January 31, 1848, otherwise than as such knowledge may have come to them from Simpson; nor is there any evidence that a specimen of wire covered with gutta-percha was deposited in or exhibited to the Patent Office by Mr. Vail or any other person before January 31, 1848. Simpson gave to the Office the date of November 23, 1847, as the date of his invention of applying gutta-percha to a telegraph-wire as an insulator. His application was rejected on the ground that he was not the first to make such invention. Yet he was told by the Patent Office that the pressure of business in it was so great that it could not investigate and inform him whether the things it referred to as anticipating him were in fact before the date he gave, or when the invention, if made before he made it, was made, and that his application had received all the attention to which it was entitled, and that he could either withdraw it or appeal from the decision of the Office. He conducted his application himself, and not through an agent. During the year 1850 Simpson corresponded with two different patent solicitors in regard to his application, and evinced by his letters an intention to prosecute his application. On the 13th of January, 1851, he wrote to the Patent Office thus:

> Please pay to the order of George B. Simpson, claimant for insulation of telegraph-wire, twenty dollars, balance of patent fee, to be refunded on rejection of claim.

The twenty dollars were refunded by the Patent Office on the 21st of January, 1851. The application for the patent was not otherwise withdrawn. He did not make any further communication to the Patent Office until November, 1858, nor did he renew his application for a patent until the 24th of December, 1858. In May, 1851, he went to Missouri, and remained there until the spring of 1852. He then went over the plains to Oregon or California, or both, and went back and forth, engaged in various employments, poor and unsuccessful, until 1857. In the fall of 1853 he seems to have visited Washington, and to have had an interview with the Commissioner of Patents as to his rejected application, and in January, 1854, he wrote a letter to Mr. Veitch, a gentleman largely interested in telegraphy, in which he says:

> Telegraphing has interested me since the idea first burst upon the public mind, and, as regards insulation of the wire, I still claim precedence, having first used glass, india-rubber, and gutta-percha as early as the fall of 1847. * * * The right to use the gutta-percha belongs to me.

On the 22d of December, 1858, he swore to the specification for a new application. The language of this specification and its claim was, with slightly verbal differences of no importance, like that of the specification and claim of the patent finally issued. This specification with the new application was filed in the Patent Office on the 24th of December, 1858, and on the same day a new fee of thirty dollars was paid. On the

29th of December 1858, his application was rejected in a letter in which the Patent Office said:

Insulating electrodes in gutta-percha is, you are aware, well known. The degree of elasticity is wholly optional, regard alone being had to practical results to the particular end in each case to be obtained. The journals of France, England, and this country, for several years back, fully treat the subject. Your claim is refused.

On the 14th of January, 1859, Simpson wrote to the Patent Office, as follows:

In reply to your note rejecting my application for letters patent for a "submarine telegraph-cable," I have to ask a reconsideration of the case, inasmuch as the scientific journals of England, France, and this country make no mention of the insulation of electrodes in gutta-percha prior to the 1st of August, 1848, and that I have abundant proof of my discovery and insulation of the same as early as the 22d of November, 1847.

This letter was accompanied by an affidavit, sworn to by Simpson on the 14th of January, 1859, to the effect that he believed himself to be "the original and first inventor of the insulation of the telegraph-wire with gutta-percha, or submarine telegraph-cable, as set forth in his specification and drawings of the 24th of January, 1848, and of the 22d of December, 1858." On the 14th of January, 1859, the Patent Office, after receiving said letters and affidavit, informed Simpson by letter that his "alleged invention" had been "abandoned to the public." Thereupon Simpson submitted to the Patent Office a statement in writing, which he called a "history of the case," and also called attention to his former specifications and models, and to various letters and affidavits which accompanied such statement. In this "history of the case" which was sent by him to the Patent Office on the 19th of January, 1859, he gives the 22d of November, 1847, as the date of the conception of his invention, and alleges that in November and December he made a model of metallic wire covered or insulated with cotton thread, wooden beads, and india-rubber hose, and drew his first specification. He recites the making of his first application, the making and filing of his second specification, the filing of his application of April 2, 1849, its rejection, and the withdrawal of the fee. He says: "On the 21st day of January, 1851, I withdrew the patent fee, all the models, drawings, and papers connected with it remaining in the Office. Thus the case remained till 1858." He also states that on the 12th of November, 1858, he withdrew his original specification from the Patent Office for the purpose of renewing his application; that he was informed by the Office that no drawings of his could be found earlier than those belonging to his application of April 2, 1849, and that his original models could not be found in the Office, and that the necessity of procuring evidence as to such drawings and models delayed for a time the making of his application of December 24, 1858. He then recites the filing of that application, its rejection on the 29th of December, 1858, the contents of his letter to the Patent Office of January 14, 1859, and the fact of the rejection of his application on that day on the ground that his invention had been abandoned to the public. He states that on the 24th of November, 1849, he paid to Mr. Day the twenty dollars which were to be refunded by the Patent Office. In reply to the allegation of abandonment, he adduces, as evidence that he did not abandon his invention, the fact that he wrote a letter to Mr. Day on the 24th of November, 1849, stating that his "decision" in that instance did not necessarily imply a total surrender of his claim, and asserting that his claim was valid. Day had written to him on the 19th of November, 1849, regretting his "decision" in regard to his application for a patent, and he, in reply, tells Day that he had duly considered Day's letter, and that it offered nothing which would induce him to change his "decision." This "decision," even if it was a decision, not to then take any further steps in regard to his application by pressing it on the Patent Office, or appealing, or availing himself of other means of redress, was accompanied by the declaration that he did not abandon his invention or his claim. He further states that he was not able to defray the expense incident to a successful prosecution of his claim; that his correspondence with the Patent Office, from November 23, 1847, to the withdrawal of the patent fee in 1851, shows that his application of 1858 is not affected by the objections or decisions of the Office; and that if it should still be argued that his claim was abandoned to the public by the withdrawal of the patent fee, and that the public were not properly notified by him not to appropriate his invention to its use, he suggests that the newspaper publications in 1848 were a legal bar to such action on the part of the public, inasmuch as those publications asserted his claim, and that he had taken the proper steps to secure a patent, and that the public had never since been notified to the contrary. Such were the contents of his "history of the case." As a consequence of Mr. Simpson's appeal or representations his application was examined by three officials in the Patent Office, who, on the 22d of January, 1859, made a report in writing upon it to the Commissioner of Patents. That report states that Simpson first duly applied for a patent for insulating telegraph-wires by coating them with gutta-percha on the 2d of April, 1849; that the application was rejected on the 7th of September, 1849; that he took no appeal from the decision, as provided by law; that on the 21st of January, 1851, the application was duly withdrawn; that from that date he took no steps to secure a patent until November 15, 1858, when he wrote a letter to the Patent Office on the subject; that he afterward filed his application of December 24, 1858; that it was rejected on the 29th of December, 1858, for the reasons then assigned; and that it was again rejected by the letter of the Office of January 14, 1859. The report then says:

The ground of objection to the application now in question is that the alleged invention had been in public and common use for more than two years (in fact, for many years) prior to his present application; that for years past, and before this application was made, the public journals in France, England, and the United States have contained a record of the employment of gutta-percha for insulating telegraphic wires; that such wires are now, and have been, so insulated—notoriously in use in the United States—which use must, by reason of such notoriety, have come to the knowledge of the applicant; and that the fact that he has suffered for more than seven years (from January 21, 1851, to November 15, 1858,) said invention so to be used without taking any steps to prosecute his claim to a patent, in law constitutes such use as having been made with his consent and allowance, thus, by his own act, working an abandonment of his invention to the public. The authorities in support of such ground of objection are abundant and need not here be cited. We think the application should be finally rejected, and so recommend.

On the 2d of February, 1859, this report was confirmed by the Commissioner of Patents, and the application was rejected, and on the next day Simpson was informed of the decision. On the 8th of October, 1859, he made another application to the Patent Office for a patent on a specification like the one of December, 1858, and paid a new fee of thirty dollars. In a paper filed by him in the Office on the 11th of October, 1859, and called "Reasons why a patent should issue to me," he states that the fact that the decisions of the Office in this case in 1849 were made entitles him to the benefit of the law as it would have been if the Office had then granted his patent. On the 24th of October, 1859, the Office advised him that there did not appear to be sufficient reason for reversing the decision of the Office of January 14, 1859; that the papers furnished by him did not "justify non-abandonment," and that his claim was refused. On the next day he wrote to the Office, acknowledging the receipt of its letter of the day before, and said: "Before appealing from your decision, I would inquire on what proof of abandonment to the public does the Office base its decision." On the 4th of November, 1859, the Office, in reply, referred him to the law and practice of the Office, that when an alleged invention had been completed, "and been in public use for more than two years with knowledge and consent, (*i. e.*, not protesting,) the invention cannot be patented." It added: "Your mode of insulating electrodes with gutta-percha has been in public use many years, and is, therefore, within the scope and meaning of the law referred to." On the 26th of November, 1859, the Office, in a letter to Simpson, said:

There do not appear to have been just grounds for the rejection of your application, as per official letter of 1849, and therefore the patent was, as far as known to this Office, rejected upon insufficient grounds, and had the matter been pressed to the final decision then, it would have been granted, it is believed. But this Office is bound to refuse it now by virtue of a statute expressly prohibiting a grant, provided the invention has been more than two years in public use with the knowledge and consent of the inventor, which, in your case, is not denied. Your remedy at the time of rejection lay in an appeal, which was not taken. This would have set aside the decision of the Commissioner, or, even if not, then, having exhausted the means given you by the law to obtain justice, it would have thrown the fault on this Office, and it would be bound to correct its own error. There seems but one course left, and, unless a special act removes the aforesaid disability, the case must stand rejected.

On the 4th of April, 1860, Simpson addressed a letter to the Office insisting that he had not abandoned his invention before he applied for a patent; that the mere withdrawal of the fee was not an abandonment; and that, as the Office had acknowledged that the application was rejected in 1849 on insufficient grounds, it ought to correct its own error. Subsequently a board of three persons in the Patent Office examined the application and reported on it as follows:

The present application was filed October 8, 1859, and, in our opinion, a patent should be refused upon it for the reasons stated by us in regard to the application of 1858. On the ground, then, that this applicant has abandoned his invention to the public, we recommend that a patent on this application be refused.

On the 9th of May, 1860, the Commissioner confirmed that report and refused the patent, and Simpson was notified of such decision on the 15th of May, 1860. At that time, under the provisions of the seventh section of the act of July 4, 1836, (5 U. S. Stats. at Large, 119,) as modified by the eleventh section of the act of March 3, 1839, (Id., 354,) and as further modified by the first section of the act of August 30, 1852, (10 Id., 75,) Simpson had a right to appeal from the decision of the Commissioner rejecting his application to one of the judges of the Circuit Court of the United States for the District of Columbia. He appears to have taken such an appeal to Judge Dunlop, of that court, for the papers on his final application show that on the 9th of April, 1861, Judge Dunlop affirmed the Commissioner's decision of May 9, 1860, and overruled all the reasons of appeal. During the years 1861, 1862, 1863, 1864, and 1865 Simpson was persistent in urging his application upon the attention of the then Commissioner of Patents, both personally and by letter. He also applied to Congress for relief. On the 11th of February, 1862, he presented to the House of Representatives a petition for a patent for his invention. On the 7th of March, 1862, the Committee on Patents reported a bill authorizing the Commissioner of Patents to rehear his application, and to grant it as if it had never been heard or decided. The bill was passed by the House on the 2d of May, 1862. On the 5th of May it was sent to the Senate and referred to the Committee on Patents. On the 10th of July it was reported from that committee. On the 15th and 17th of July, 1862, it was considered by the Senate, but was not passed. On the 4th of May, 1866, Simpson filed the application on which the patent was granted. He swore to the specification on that day. On the 15th of August, 1866, the application was rejected in a letter from the Office, which stated that, as the ground theretofore taken by the Office of abandonment had been sustained by the decision of the court, it was not competent for the Office to go behind that decision, which must be regarded as final, so far as the Office was concerned, so long as it remained unreversed by a higher tribunal. In reply, on the 17th of August, Simpson wrote to the Office claiming that the Office could reverse the entire case and grant a patent if it should find that the prosecution of the application had been continuous; that the withdrawal of the fee was not an abandonment of the claim, and that there was no proof of abandonment. On the 25th of August the Office replied that it had no power to review the decision of Judge Dunlop; that by the eleventh section of the act of March 3, 1839, it was provided that his decision should govern the further proceedings of the Commissioner in the case; that his decision was that the rights of Simpson were forfeited by abandonment of the invention; and that while such decision stood unreversed it must govern, and the Office must decline the further consideration of his claim. The application was then considered by the Examiners-in-Chief on appeal, and they, on the 9th of April, 1867, affirmed the former action of the Office and decided that the application should be refused. The application was then examined by Mr. Hedrick, an examiner in the Patent Office, who, on the 7th of May, 1867, made the following report to the Commissioner of Patents:

I have examined the arguments and papers in the application of George H. Simpson for improved insulator for submarine and other telegraphic lines. I have especially examined the question of novelty at the time of the first application to the Office, and find that the invention was then new, and was sufficiently important to entitle the applicant to a patent. I have also examined the papers submitted by the inventor to show that he never abandoned his claim, and only withdrew his application under protest, and that, therefore, nothing more than constructive abandonment can be made out against him. The whole case is a very extraordinary one. There seems to be no doubt that the invention was one that deserved a patent, and that the inventor did what should have entitled him to a patent, and the Office has at various times held that opinion, but has always, either from mistake as to the character of the invention, as in the first instance, or from the idea that there was a constructive abandonment, refused it to him, while the inventor has, at all times and against all adverse opinions from official and unofficial quarters, asserted that he was entitled to, and should receive, a patent for his invention. This has been continued for near twenty years, until the invention is in general use and the public acting in the belief that the invention is public property.

The patent was on the 10th of May ordered to issue, and was issued on the 21st of May, 1867. Simpson had become a paymaster in the United States Army, and, while such, died at New Orleans, of yellow fever, on the 5th of October, 1867.

The principal defense pressed on the question of novelty is the alleged prior invention of John I. Craven. I have carefully considered the evidence on this sub-

ject and am of opinion that it does not show that Craven's invention was made earlier than at a date subsequent to the filing in the Patent Office by Simpson of a description of his invention.

The publication in Dingler's Polytechnic Journal of 1848 gives an account merely of experiments then in progress and not of a completed invention, even if the part of it in question was published prior to Simpson's invention, and it does not set forth the insulating or non-conducting property of gutta-percha for use with a telegraphic wire under water. The patents of Cook and Brooman do not either separately or together show Simpson's invention. The patent of Wharton shows only the use of gutta-percha as a substitute for leather, and makes no mention of its insulating or non-conducting property in reference to electricity. Nothing is adduced which anticipates Simpson's invention in point of time, as that invention has hereinbefore been construed.

The bill sets forth that the improvement invented by Simpson "was not, at the time of his application for a patent therefor, in public use or on sale with his consent and allowance." It also states that Simpson, being the inventor, made application for a patent for his invention, and that such proceedings were thereon had that the patent was issued. The bill does not set forth any date as the date of the application to which it refers. The answer denies that the improvement of Simpson "was not, at the time of his application for a patent therefor, in public use or on sale with his consent or allowance." It also alleges that the patented improvement has been, for more than two years before Simpson's application for a patent therefor, in public and common use in the United States, without any notice on the part of Simpson that he claimed to be the first and original inventor thereof, and without any objection on his part; but, on the contrary, with his knowledge of and acquiescence in such common use, and with his consent and allowance; and that if he was the first inventor of such improvement, or ever had any right to a patent for it, he wilfully, and without excuse, and for many years, delayed and forbore to apply for a patent for it, and abandoned it and his right to have a patent for it, and dedicated it to the public; and meantime it became known to the public and the defendant from other sources. The answer states no date as the date of the application. Its language, properly construed, sets up a loss of the right to a patent by acquiescence in use, laches, abandonment, or dedication before the application for a patent, and not afterward.

The patent in this case, being issued before the patent act of 1870 was passed, is to be adjudicated under the act of 1836, before cited, and the acts amending the same. The seventh section of the act of 1836 (5 U. S. Stats. at Large, 119,) provides that if the Commissioner of Patents shall decide that the invention covered by an application for a patent is not new, he shall notify the applicant thereof, giving him such references as may be useful "in judging of the propriety of renewing his application" or of altering his specification so as to embrace only what is new. The statute then proceeds:

> In every such case, if the applicant shall elect to withdraw his application, relinquishing his claim to the model, he shall be entitled to receive back twenty dollars, part of the duty required by this act, on filing a notice in writing of such election in the Patent Office, a copy of which, certified by the Commissioner, shall be a sufficient warrant to the Treasurer for paying back to the said applicant the said sum of twenty dollars. But if the applicant in such case shall persist in his claim for a patent, with or without any alteration of his specification, he shall be required to make oath or affirmation anew, in manner as aforesaid.

The statute then provides that if the specification and claim shall not have been so modified as, in the opinion of the Commissioner, shall entitle the applicant to a patent, he may, on appeal and on request in writing, have the decision of a board of three examiners as to the propriety of the Commissioner's decision, the board, or a majority of them, having power to reverse such decision, either in whole or in part, and it being declared that the Commissioner shall be governed by the opinion of the board in the further proceedings to be had on the application. By the eleventh section of the act of March 3, 1839, (5 U. S. Stats. at Large, 354,) the chief justice of the District of Columbia was designated as the officer to hear such appeals, instead of the Board of Examiners. By the first section of the act of August 30, 1852, (10 U. S. Stats. at Large, 75,) it was provided that such appeals might also be made to either of the assistant judges of the Circuit Court of the District of Columbia.

The papers filed by Simpson in the Patent Office January 31, 1848, embraced a petition for a patent, a specification, an oath thereto, and a drawing. There was no model filed or fee paid. Those papers remained in the Patent Office continuously until the 12th of November, 1858, when Simpson procured them from the Office for the purpose of making his renewed application of December 24, 1858. An applicant always had the privilege of amending his specification. Under that privilege Simpson filed his amended specification of February 21, 1848. His application of April 2, 1849, consisted of a petition, specification, oath thereto, drawing, model, and a fee of thirty dollars, and was made complete on the 16th of June, 1849. The specification on that application was entirely sufficient in its description of the mode of preparing the gutta-percha to cover the wire, and of the mode of insulating the wire with the covering of gutta-percha, whatever may be said of the sufficiency, without amendment, of the prior two specifications. The specification of 1849 is not as detailed as those which followed it, but is substantially the same as regards the preparation of the gutta-percha and the coating of the wire with it. There is no ground for any allegation that Simpson's invention was in public use for more than two years before April, 1849, or even June, 1849, or that he abandoned or dedicated it to the public before either of those dates. His specification of 1849 is fairly to be considered, for the purposes of this suit, as an amendment of his two specifications of 1848, and the application of January, 1848, is to be regarded as an application completed in 1849 in such wise that the application made in January, 1848, is to be regarded as a continuous application rejected in October, 1849. By the statute, as it stood at the latter date, the applicant, on the rejection of his application for want of novelty, which was the ground of such rejection of Simpson's application, had placed before him two alternatives. One was to elect to withdraw his application, whereupon, on filing a notice in writing of such election, he would be entitled to receive back twenty dollars. The other was to persist in his claim for a patent, whereupon, on filing a new oath, he could take an appeal. If he did not file a notice of his election to withdraw his application, he was to be regarded as persisting in his claim for a patent. In the present case Simpson did not file any notice of his election to withdraw his application, or any notice that he withdrew his application. He asked for the twenty dollars without withdrawing his application, and although the Office was not authorized to pay him back the twenty dollars unless he withdrew his application, it did so. The Office may have regarded the request for the twenty dollars as equivalent to a withdrawal of the application, but the statute is distinct, and a request to be paid "twenty dollars, balance of patent fee, to be refunded on rejection of claim," cannot be construed as a withdrawal of the application, even though the twenty dollars were refunded and accepted. The statute is distinct, and the applicant may have intentionally refrained from withdrawing his application, while, if the Office had informed him that the twenty dollars would not be refunded unless he first filed a withdrawal of his application, he might have refused to file such withdrawal, lest it might prejudice his rights. He left all the papers in the Patent Office. According to his own statement, he had refunded to Day the twenty dollars fourteen months before he received it back from the Patent Office. Therefore, when he asked the Office for the twenty dollars, it must have been solely because of his need of money. There is no act or declaration of his in connection with the refunding of the twenty dollars that can be construed into an abandonment of his application or of his invention. Nor is there any evidence of any affirmative abandonment of his invention between October, 1849, and December, 1858. There is nothing but the lapse of time. As to that, the evidence shows that he was poor during all that time. He might have taken an appeal from the decision of October, 1849, but the treatment he had received from the Patent Office, afterward acknowledged by it to have been wrong and unjust, and the array of distinguished names in telegraphy presented by the Office to discourage him, with statements showing how greatly the Office relied on information received from them, might well have deterred him from entering at the time on a further contest. The evidence shows that from 1849 to 1858 he was always poor; that he went to the Pacific coast to better his pecuniary condition, and that he worked his way out there. Under all the circumstances, his application of 1858 must be considered, not as a new application, but as a continuation of his prior applications; and so must his applications of 1859 and 1866. From 1858 to 1866 the efforts of Simpson to procure the allowance of his claim to a patent were continuous and persistent, and no laches can be imputed to him, nor is any ground shown for holding that he abandoned his invention after 1858.

In *Adams* vs. *Jones*, (1 Fisher's Patent Cases, 527,) Mr. Justice Grier says, that by the application filed in the Patent Office, the inventor makes a full disclosure of his inventon, and gives public notice of his claim for a patent; and that the delay afterward interposed by the mistakes or obtuseness of public officers, where gross laches cannot be imputed to the applicant, cannot affect his right. In that case an application was made in 1850, and was never withdrawn, and the patent was granted in 1857, and was sustained.

The case of *Dental Vulcanite Co.* vs. *Weatherbee*, (2 Clifford, 555,) was decided by Mr. Justice Clifford, on the Cummings patent of 1864, reissued twice in 1865. The first application was made in 1855, and it was, after three examinations, finally rejected on appeal by the Commissioner of Patents in 1856. It was not further appealed, and was not renewed till 1864, when a new application was filed, on which the patent was issued. In the interval between the filing of the original application and that of 1864 the invention had gone into use to a considerable extent, with the knowledge and consent of the applicant. There was no withdrawal of the application and no evidence of an intent to abandon the invention, except inference from the above facts. It was urged in opposition to the validity of the patent, that Cummings had abandoned his invention because, after the rejection of his application in 1856, he did not appeal or apply anew until 1864. In deciding on this point, Mr. Justice Clifford says:

> Strong doubts are entertained whether any new application was necessary; but, if it was, it is believed to be well settled that the second application must be regarded as having been filed in aid of the first, on which the rejection took place. (*Godfrey* vs. *Eames*, 1 Wall., 317.) Actual abandonment is not satisfactorily proved.

The patent was sustained. The same judge made a like ruling on the same patent in *Goodyear Dental Vulcanite Co.* vs. *Gardiner*, (3 Clifford, 408, 415,) and so did Judge Shepley, in *Goodyear Dental Vulcanite Co.* vs. *Smith*, (1 Holmes, 354,) and Mr. Justice Hunt, in *Goodyear Dental Vulcanite Co.* vs. *Root*, (6 OFFICIAL GAZETTE of Patent Office, 154,) and Judge Emmons, in *Goodyear Dental Vulcanite Co.* vs. *Willis*, (7 Id., 41.) The Supreme Court of the United States, in *Smith* vs. *Goodyear Dental Vulcanite Co.*, (3 Otto, 486,) sustained the Cummings patent against the same objection, holding that the application of 1864 was to be regarded as a continuation of the application of 1855. The case of Cummings was, in all substantial features, like the present case. He did not withdraw any part of the fee originally paid, but it has been shown that withdrawing part of the fee in the case of Simpson is not to be regarded as a withdrawal of the application. The whole matter is summed up by Mr. Justice Strong, in delivering the opinion of the Court in the case last cited, in these words:

> We are not aware that filing a second petition for a patent, after the first has been rejected, has ever been regarded as severing the second application from the first and depriving the applicant of any advantage he would have enjoyed had the patent been granted without a renewal of the application. The contrary was decided by the Circuit Court for the Southern District of Ohio in *Bell* vs. *Daniels* (1 Fish., 372,) and in *Blandy* vs. *Griffith, et al.*, (3 Id., 609,) and these decisions are founded in justice and sound reason.

It was proved in the Cummings case that between the rejection of 1856 and the application of 1864 his invention had come into general public use. In the present case there is no proof that any use in public of Simpson's invention was at any time made with his consent, allowance, or acquiescence.

In the case of *Johnson* vs. *Fassman* (1 Woods, 138,) an application made in 1856 was rejected in 1857 for want of novelty. The applicant took no further steps till 1866, when he took an appeal, which resulted in the granting of a patent. Meantime patents for substantially the same invention were issued to other inventors. During four of the nine years the applicant was a citizen of a State in rebellion. There was no withdrawal of his application. It was held that no direct or implied abandonment was shown.

In *McMullin* vs. *Barclay* (5 Fisher's Patent Cases, 189,) an application was made in 1855, and was finally re-

jected in 1856 on appeal to the Commissioner of Patents. It was not withdrawn, but nothing more was done in regard to it until 1867, when the specification was amended, and on further consideration a patent was granted. Judge McKennan held that there was no abandonment, express or implied, and that the lapse of time was satisfactorily explained.

In *Bevin* vs. *The East Hampton Bell Company* (9 Blatchf., C. C. R., 50,) an application was made in 1852 and rejected two months afterward. The next month the applicant took from the Patent Office his application, and all the papers connected with it, except one drawing, but made no formal withdrawal. He never returned those papers. For ten years he did nothing more. During that time the invention went into open and notorious use, in his own neighborhood and under his own eyes, and so continued for ten years, without remonstrance from him. He was not poor, and was engaged in a successful business. In 1862 he made a new application, and a patent was granted in 1869. It was held that he had abandoned his application of 1852. Great stress was laid by the court on the fact of the taking of all the papers from the Patent Office and withholding them, and on the fact of such use of the invention, and on the fact of the absence of poverty. The present case differs from the Bevin case in the particulars just referred to.

The case of *Marsh* vs. *Sayles* (5 Fisher's Patent Cases, 610) holds that where an application was rejected, and twenty dollars of the fee were refunded, and then there was a delay of eighteen years before the application was renewed, and no attempt is made to explain the delay, it will be held that there was an abandonment of the invention to the public. That is not the present case.

In *Consolidated Fruit Jar Co.* vs. *Wright*, (4 Otto, 92,) the invention was completed in 1859, and no application was made for a patent till 1868. It was held that the facts showed abandonment before the application. No sufficient reason for the delay was given. There was no proof of want of pecuniary means, and there was proof of use by the public for more than two years before the application. The case is unlike that of Simpson.

In *The United States Rifle Co.* vs. *The Whitney Arms Co.*, (11 OFFICIAL GAZETTE of Patent Office, 373,) the answer set up as a defense, that the patent was applied for in 1868, and that the invention had for more than two years before that date been in public use and on sale, with the consent and allowance of the inventor, (Cochran,) and that, prior to that date, it had been abandoned to the public. Cochran applied for a patent for the invention (an improvement in breech-loading guns) in 1859. It was rejected within a month. He took no appeal from the rejection by the Primary Examiner, and one year and twelve days after the rejection he withdrew the application and received a refund of twenty dollars. In 1868 he filed a new application, which was rejected on the ground of abandonment. The Commissioner affirmed such decision, but it was reversed by the Supreme Court of the District of Columbia. The Commissioner then declined to issue the patent, but after the passage of the patent act of 1870, a new application was filed and a patent was issued. During the eight years from 1860 to 1868, Cochran obtained twenty-two different patents on his own application, nine of which related to breech-loading firearms. He prosecuted his other inventions with constancy and energy. The court held that no poverty was shown as a reason for not renewing and pressing his application, and that, if it were, it would tend greatly to dispel the idea of laches. Stress was laid in that case by the court on the withdrawal of the application, and the patent was held to be invalid. The decision in that case is not of weight in reference to the facts of Simpson's case.

On all the points in issue, it must be held that the plaintiff has established his case, and there must be the usual decree for the plaintiff for an injunction and an account, with costs.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., December 20, 1878.

[Order No. 73.]

From and after January 1, 1879, letters patent and certificates of registration will be perfected and ready for delivery upon the day of their date, on which their respective terms will begin to run.

Heads of divisions charged with the preparation and assemblage of the various parts of the letters patent and certificates are instructed that the first issue under the above order will bear date of Tuesday, January 7, 1879, and that upon that day, and upon each succeeding Tuesday thereafter, the weekly issue corresponding to the day and date must be delivered at the room of the Commissioner, in all respects complete, for final signing and sealing.

The last weekly issue under the order and practice heretofore existing will bear date of December 17, 1878, and no patent or certificate will be perfected or take date thereafter until January 7, 1879.

The OFFICIAL GAZETTE of even date with the weekly issue will continue the usual announcements respecting the perfected patents and certificates of that date; but no information, either by GAZETTE or otherwise, will be given as to any pending case about to issue, except to the party in interest, until such case has been finally signed and sealed.

H. E. PAINE,
Commissioner of Patents.

THE government fee on making application for a patent is $15. This entitles the applicant to an examination as to the merits of his alleged invention, and he should, and generally will, receive such information from the Office as will enable him to determine about how much, if anything, in the case, is new. When a patent is allowed the final government fee is $20, which must be paid before the patent can issue, and within six months after the date of allowance. In a large proportion of the applications coming before the Office these are all the fees required by law.

BACK NUMBERS OF THE GAZETTE.—Back numbers of THE OFFICIAL GAZETTE can be procured from the Patent Office from the beginning of the publication in 1872 at the rate of $6 a year, unbound; $7 in half-calf binding, or $8 in full law binding. There are two volumes of THE GAZETTE each year, including the numbers from January to June, and July to December, respectively. Any single volume can also be procured from the Office for one-half the price charged for the yearly. The index to THE GAZETTE accompanies it when any year is ordered.

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CLASSES OF INVENTIONS.

[NOTE.—Inventors and others can be supplied with the specifications and drawings in any of the sub-classes mentioned below, the number and cost of which will be given upon application.]

CLASS 40.—ADVERTISING. (XVII.)

Sub-classes.

1. Articles.
2. Automatic devices.
3. Card-racks.
4. Desks and frames.
5. Door and drawer plates.
6. Dummies and hangers.
7. Illuminated devices.
8. Indicators.
9. Labels.
10. Label-holders.
11. Picture-exhibitors.
12. Show boxes and cards.
13. Show cases and stands.
14. Signs.
15. Tags.

CLASS 1.—AERATION AND BOTTLING. (IX.)

Sub-classes.

1. Aeration.
2. Barrel-agitators.
3. Capping-machines.
4. Charging soda-fountains.
5. Corking and filling.
6. Fire-annihilators.
7. Gas-generators.
8. Portable soda-fountains.
9. Soda-fountains.
10. Soda-water apparatus.
11. Sirup-fountains.

CLASS 123.—AIR AND GAS ENGINES. (XVIII.)

No sub-classes.

CLASS 2.—APPAREL. (V.)

Sub-classes.

1. Cloaks and shawls.
2. Coats and vests.
3. Collars and cuffs.
4. Cutting.
5. Diapers.
6. Embroidery-patterns.
7. Fur goods.
8. Garters and belts.
9. Gloves.
10. Handkerchiefs.
11. Neck-ties.
12. Pants and drawers.
13. Pin and needle cases.
14. Pinking.
15. Pockets.
16. Plaiting.
17. Pockets, Safety attachments for
18. Sewing.
19. Shirts and bosoms.
20. Skirt-elevators.
21. Skirts and protectors.
22. Stretchers and formers.
23. Stockings.
24. Suspenders.
25. Tailoring.
26. Trimmings.
27. Work-boxes.

CLASS 86.—ARMS AND PROJECTILES, MAKING. (XIII.)

Sub-classes.

1. Arms.
2. Bullets and shot.
3. Cannon and ball.
4. Cartridge and caps.
5. Gun-barrels.
6. Ordnance.
7. Riffing.

CLASS 3.—ARTIFICIAL LIMBS. (XX.)

Sub-classes.

1. Arms and hands.
2. Fracture apparatus.
3. Legs.

CLASS 106.—ARTIFICIAL STONE, LIME, AND CEMENT. (XV.)

Sub-classes.

1. Composition.
2. Fire-brick.
3. Limekilns.
4. Molds.
5. Plastering.
6. Processes.

CLASS 4.—BATHS AND CLOSETS. (IX.)

Sub-classes.

1. Basins and stands.
2. Bathing apparatus.
3. Baths.
4. Bath-tubs.
5. Closet-cisterns.
6. Commodes.
7. Driers and disinfectors.
8. Earth-closets.
9. Privy-seats.
10. Shower-baths.
11. Sinks and traps.
12. Urinals.
13. Vapor-baths.
14. Water-closets.
15. Water-closet valves.

CLASS 5.—BEDS. (VIII.)

Sub-classes.

1. Air-beds.
2. Bed-bottoms.
3. Bed-clothing.
4. Bedsteads.
5. Camp-beds.
6. Cording and fastenings.
7. Crib attachments.
8. Extension-bedsteads.
9. Folding bedsteads.
10. Hammocks.
11. Head-sections.
12. Invalid-bedsteads.
13. Mattresses.
14. Mosquito-nets and canopies.
15. Pillows.
16. Sofa-bedsteads.
17. Table-bedsteads.
18. Wardrobe-bedsteads.
19. Wire bed-bottoms.

CLASS 6.—BEE-CULTURE. (II.)

Sub-classes.

1. Bee-hives.
2. Hive appliances.

CLASS 8.—BLEACHING AND DYEING. (VI.)

Sub-classes.

1. Aniline and homologues.
2. Bleaching.
3. Dextrine.
4. Dye and bleach vats.
5. Dyeing.
6. Dyes and mordants.
7. Press-dyeing.
8. Renovating dress.
9. Sizing fabrics.
10. Size preparations.
11. Starch.
12. Wool-cleaning.
13. Wool, Composition for treating

CLASS 9.—BOATS. (XXII.)

Sub-classes.

1. Boat hooks and fenders.
2. Building.
3. Buoys and safes.
4. Detaching, hoisting, and lowering.
5. Life boats and rafts.
6. Life-preservers.
7. Oars and oar-locks.
8. Rafting and booming.
9. Sectional and folding.

CLASS 11.—BOOK-BINDING. (XVII.)

Sub-classes.

1. Albums.
2. Binding-machines.
3. Books and covers.
4. Book and cover protectors.
5. Book-cutting.
6. Book-sewing.
7. Indexing.
8. Ruling-machines.

CLASS 12.—BOOTS AND SHOES. (XI.)

Sub-classes.

1. Boot-blacking machines.
2. Boot-jacks.
3. Boot-trees.
4. Burnishing.
5. Crimping.
6. Edge-planes and shaves.
7. Heels.
8. Ice-creepers.
9. Lasts.
10. Lasting-machines.
11. Pegs.
12. Pegging-jacks.
13. Pegging-machines.
14. Rubber.
15. Shanks and machines.
16. Shoe-fastenings.
17. Soles.
18. Sole and heel cutting.
19. Sole and heel machines.
20. Tips and stiffeners.
21. Tools.
22. Uppers.
23. Upper-machines.

CLASS 13.—BRAKES AND GINS. (VII.)

Sub-classes.

1. Gin attachments.
2. Hackling-machines.
3. Hair-pickers.
4. Oakum-machines.
5. Processes.
6. Reciprocating brakes.
7. Roller-gins.
8. Rotary brakes.
9. Saw-gins.

CLASS 107.—BREAD, CRACKER, AND LOZENGE MAKING. (VIII.)

Sub-classes.

1. Bread and cracker machines.
2. Bread and pastry boards.
3. Cake-cutters.
4. Dough mixers and kneaders.
5. Dough-raisers.
6. Lozenge-machines.
7. Pie crimpers and trimmers.
8. Rolling-pins.

CLASS 7.—BREWING AND FERMENTING. (VI.)

Sub-classes.

1. Fermenting-vats.
2. Hop-backs.
3. Malting.
4. Mashing.
5. Mash-heaters.
6. Preserving beer and wine.
7. Purifying beer and wine.

CLASS 14.—BRIDGES. (IV.)

Sub-classes.

1. Draw-bridges.
2. Ferry-guards.
3. Girders and columns.
4. Piers.
5. Suspension-bridges.
6. Truss-bridges.

CLASS 15.—BRUSHING AND SCRUBBING. (II.)

Sub-classes.

1. Blacking boxes and holders.
2. Boot-cleaners.
3. Brooms.
4. Broom-machines.
5. Brushes.
6. Brush and broom supports.
7. Brush-machines.
8. Carpet-cleaners.
9. Chimney-cleaners.
10. Mats.
11. Mop and brush holders.
12. Mop-wringers.
13. Scrubbing-brushes.
14. Scrubbing-machines.
15. Scrubbing-pails.
16. Shoe-brushes.
17. Street-sweepers.

CLASS 16.—BUILDERS' HARDWARE. (XX.)

Sub-classes.

1. Blind-stops.
2. Bolts.
3. Carpet-fasteners.
4. Casters.
5. Coach-hinges.
6. Door-checks.
7. Door-hangers.
8. Door-securers.
9. Door-springs.
10. Handles.
11. Hinges.
12. Lock-hinges.
13. Miscellaneous.
14. Safe-hinges.
15. Sash-balances.
16. Sash-cord fasteners.
17. Sash-cord guides.
18. Sash-fasteners.
19. Sash-holders.
20. Sash-weights.
21. Sewing-machine casters.
22. Shutter-bowers.
23. Shutter-fastenings.
24. Shutter-workers.
25. Spring-hinges.
26. Stair-rods and securers.
27. Table-hinges.
28. Transom-lifters.
29. Window-bead fasteners.
30. Window and door buttons.

CLASS 17.—BUTCHERING. (II.)

Sub-classes.

1. Appliances.
2. Dressing.
3. Elevators.
4. Grinding and mincing.
5. Meat-tenderers.
6. Sausage-machines.
7. Scalding and singeing.

CLASS 18.—CAOUTCHOUC AND MINOR PLASTICS. (XV.)

Sub-classes.

1. Artificial ivory.
2. Articles.
3. Celluloid.
4. Fabrics.
5. Hard rubber.
6. Machines for coating.
7. Miscellaneous compositions.
8. Soft rubber.
9. Vulcanizing apparatus.
10. Vulcanizing fiber.

CLASS 19.—CARDING. (XXI.)

Sub-classes.

1. Burring.
2. Card-clothing.
3. Carding.
4. Cleaning.
5. Coilers.
6. Combing.
7. Feeding cards.
8. Lapping.
9. Pickers.
10. Wadding.
11. Wool oiling.

CLASS 119.—CARE OF LIVE STOCK. (II.)

Sub-classes.

1. Animal-stocks.
2. Curry-combs.
3. Grooming.
4. Incubators.
5. Poultry-culture.
6. Preparing food.
7. Shearing.
8. Silk-worm culture.
9. Stanchions.
10. Steading and feeding.
11. Straw-cutters.

CLASS 20.—CARPENTRY. (IV.)

Sub-classes.

1. Counters and shelves.
2. Doors.
3. Door-operating devices.
4. Floors.
5. Frame houses.
6. Hatchways.
7. Interiors.
8. Ladders.
9. Lathing.
10. Marquetry.
11. Portable houses.
12. Scaffolding.
13. Shingling-brackets.
14. Shutters.
15. Skylights.
16. Slatted floor-coverings.
17. Stairs.
18. Stair-covers.
19. Weather-strips.
20. Windows.
21. Window-screens.

CLASS 21.—CARRIAGES AND WAGONS. (X.)

Sub-classes.

1. Ambulances.
2. Axle-boxes.
3. Axle-lubricators.
4. Axle-skeins.
5. Axles.
6. Biers.
7. Bodies.
8. Brakes.
9. Brakes. Automatic
10. Brake-levers.
11. Carriage-irons.
12. Children's carriages.
13. Clips.
14. Close carriages.
15. Dash-boards.
16. Detaching horses.
17. Doors.
18. Draft-equalizers.
19. Drays.
20. Dumping-wagons.
21. End-gates.
22. Fellies.
23. Fenders.
24. Fifth-wheels.
25. Hay-racks.
26. Hearses.
27. Holdbacks.
28. Hose-carriages.
29. Hounds.
30. Hub-attaching devices.
31. Hubs.
32. King-bolts.
33. Lumber-wagons.
34. Neck-yokes.
35. Ox-yokes.
36. Poles and shafts.
37. Rein-holders.
38. Road-engines.
39. Running-gear.
40. Sand-bands.
41. Seat-locks.
42. Seats.
43. Shifting seats.
44. Spring-seats.
45. Shifting-rails.
46. Sled-brakes.
47. Sled-propellers.
48. Sleds.
49. Spoke-sockets.
50. Springs.
51. Springs. Platform-
52. Springs. Side
53. Springs. Torsion-
54. Standards.
55. Steps.
56. Sulkies.
57. Thill-couplings.
58. Tires.
59. Tire-tighteners.
60. Top-joints.
61. Top-props.
62. Tops.
63. Tongue-supports.
64. Traction-wheels.
65. Trucks.
66. Umbrella-supports.
67. Velocipedes.
68. Wheelbarrows.
69. Wheels.
70. Whiffletree-hooks.
71. Whiffletrees.
72. Whip-sockets.
73. Windows.

CLASS 59.—CHAINS, STAPLES, AND HORSESHOES. (XIII.)

Sub-classes.

1. Chains.
2. Chain and link making.
3. Horseshoes.
4. Horseshoe-bars. Making
5. Horseshoe-calks. Making
6. Horseshoe-machines.
7. Staples.
8. Staples. Making

CLASS 155.—CHAIRS. (VIII.)

Sub-classes.

1. Barbers' chairs.
2. Car-seats.
3. Chairs.
4. Chair-bottoms.
5. Circus-seats.
6. Convertible chairs.
7. Dentists' chairs.
8. Folding chairs.
9. Foot-rests.
10. Head-rests.
11. Invalid-chairs.
12. Nursery-chairs.
13. Opera-chairs.
14. Oscillating chairs.
15. Piano-stools.
16. Reclining-chairs.
17. Revolving chairs.
18. Rocking-chairs.
19. Settees.
20. Sofas.
21. Step-ladder chairs.
22. Stools and seats.
23. Surgical chairs.
24. Tilting chairs.

CLASS 23.—CHEMICALS AND MEDICINES. (VI.)

Sub-classes.

1. Acids.
2. Alkalies.
3. Apparatus.
4. Capsules.
5. Fire-extinguishing compounds.
6. Hair dyes and tonics.
7. Incrustation-preventives.
8. Insecticides.
9. Internal remedies.
10. Oxygen, ozone, and nitrous oxide.
11. Packing chemicals.
12. Plasters.
13. Salines.
14. Topical remedies.
15. Vaporizers.
16. Veterinary medicines.
17. Wood-saturation.

CLASS 24.—CLASPS AND BUCKLES. (XI.)

Sub-classes.

1. Buckles.
2. Buttons.
3. Buttoners.
4. Button-fasteners.
5. Button-machines.
6. Clasps.
7. Eyelets.
8. Eyeleting-machines.
9. Hooks.
10. Hooks and eyes.
11. Neck-tie fasteners.
12. Paper-clips.
13. Paper-fasteners.
14. Punches.
15. Rings.
16. Safety attachments.
17. Snap-hooks.
18. Tag-fasteners.
19. Ticket-clasps.

CLASS 25.—CLAY AND POTTERY. (XV.)

Sub-classes.

1. Bricks.
2. Brick-kilns.

Brick-machines—

3. Rotary,
4. Reciprocating,
5. Screw.
6. Brick-molds.
7. Crucibles.
8. Drain-tiles.
9. Paving-tiles.
10. Pottery articles.
11. Pottery-kilns.
12. Pottery-machines.
13. Pug-mills, clay-mills, and mortar-mixers.
14. Pulverizers.
15. Roofing-tiles.
16. Sarcophagi.
17. Tile-machines.

CLASS 26.—CLOTH-FINISHING. (XXI.)

Sub-classes.

1. Drying.
2. Finishing.
3. Folding.
4. Napping.
5. Pressing.
6. Shearing.
7. Sponging.
8. Stretching.

CLASS 96.—COATING WITH METAL. (III.)

Sub-classes.

1. Electro-deposition.
2. Galvanizing.
3. Gilding.
4. Glass.
5. Nickel-plating.
6. Silvering.
7. Tinning.

CLASS 27.—COFFINS. (XX.)

Sub-classes.

1. Coffins.
2. Coffin-trimmings.

CLASS 154.—COMPOSITE ROOFING. (XV.)

Sub-classes.

1. Apparatus.
2. Composite.
3. Felt.

CLASS 147.—COOPERING. (XXII.)

Sub-classes.

1. Barrel-head making.
2. Barrel-hoop machines.
3. Barrel-making machines.
4. Basket-making machines.
5. Box-machines.
6. Crozing staves.
7. Dressing staves.
8. Jointing staves.
9. Making staves.
10. Woodenarticles.

CLASS 28.—CORDAGE. (XXI.)

Sub-classes.

1. Balling.
2. Banding.
3. Bobbin-supporters.
4. Braiding.
5. Cord and rope.
6. Covering cord.
7. Finishing yarn and thread.
8. Fuse.
9. Packaging braid and yarn.
10. Reels.
11. Separating rope.
12. Spools.
13. Tassels.
14. Warping.

Winding bobbins—

15. Warp-wind,
16. Weft-wind,
17. Sewing-machine shuttle.
18. Winding spools.
19. Winding tatting-shuttles.
20. Yarn guides and clearers.

CLASS 29.—CRINOLINE AND CORSETS. (V.)

Sub-classes.

1. Bustles.
2. Clasps and springs.
3. Corsets.
4. Hoops and clasps.
5. Hoop-skirts.
6. Pads.
7. Skirt-machines.

CLASS 156.—CURTAIN-FIXTURES. (IV.)

Sub-classes.

1. Carriage-curtain fastenings.
2. Curtain-cord tighteners.
3. Curtain-fixtures.
4. Curtain-rollers and brackets.
5. Curtain-tassels.
6. Friction-rollers.
7. Inside blinds.
8. Ratchet and pawl.
9. Spring-rollers.
10. Window-shades.

CLASS 30.—CUTLERY. (XX.)

Sub-classes.

1. Animal-shears.
2. Button-hole cutters.
3. Can-openers.
4. Curriers' knives.
5. Forks.
6. Fruit-knives.
7. Green-corn knives.
8. Hay-knives.
9. Knives.
10. Pocket-knives.
11. Pruning implements.
12. Razors.
13. Scissors and shears.
14. Twine-cutters.
15. Wick-trimmers.

CLASS 31.—DAIRY. (II.)

Sub-classes.

1. Aerating-churns.
2. Butter-manufacture.
3. Butter-molds.
4. Butter-workers.
5. Cheese-manufacture.
6. Cheese-turners.
7. Churns.
8. Cow-milkers.
9. Double-acting churns.
10. Houses. Dairy.
11. Implements.
12. Milk-pans.
13. Milk-stools.
14. Pails and strainers.
15. Reciprocating churns.
16. Rotary churns.
17. Vibrating churns.
18. Working-body churns.

CLASS 32.—DENTISTRY. (XX.)

Sub-classes.

1. Articulators.
2. Drills and tools.
3. Foil-condensers.
4. Mechanical.
5. Miscellaneous.
6. Molds.
7. Operative.
8. Pluggers.
9. Teeth.

CLASS 124.—DISTILLATION. (III.)

Sub-classes.

1. Aging.
2. Alcohol.
3. Burning-fluid.
4. Condensers.
5. Distilling wood.
6. Fire-tests.
7. Fresh water.
8. Oil.
9. Paraffine.
10. Preparing grain.
11. Refining oils.
12. Turpentine.
13. Revenue-guards.

CLASS 33.—DRAFTING. (XVI.)

Sub-classes.

1. Calipers.
2. Curve-scribers.
3. Designs.
4. Dividers.
5. Ellipsographs.
6. Pantographs.
7. Parallel-rulers.
8. Plotters.

Protractors—

9. Scribers,
10. Stair-curvers.

CLASS 34.—DRIERS. (XIX.)

Sub-classes.

1. Driers.
2. Feather-renovators.
3. Fruit-driers.
4. Grain-driers.
5. Lumber-driers.
6. Malt-driers.
7. Meal-driers.
8. Paper-driers.
9. Smoke-houses.
10. Tobacco-driers.
11. Wool-driers.

CLASS 35.—EDUCATIONAL APPLIANCES. (V.)

Sub-classes.

1. Alphabet-blocks.
2. Arithmetic.
3. Astronomy.
4. Geography.
5. Globes.
6. Maps.
7. Music.
8. Penmanship.
9. Reading.
10. Slates and blackboards.
11. Topography.

CLASS 36.—ELECTRICITY. (XVI.)

Sub-classes.

1. Alarms.
2. Annunciators.
3. Automatic telegraphs.
4. Batteries.
5. Baths.
6. Boat-steering.
7. Body-wear.
8. Burglar-alarms.
9. Cables.
10. Car-brakes.
11. Circuit-closers.
12. Clocks.
13. Compasses.
14. Condensers.
15. Conductors.
16. Dental instruments.
17. Dial-telegraphs.
18. Duplex telegraphs.
19. Electric apparatus.
20. Electricity. Applications of
21. Electric heaters.
22. Electric lights.
23. Electro-magnets.
24. Fire-alarms.
25. Fire-telegraphs.
26. Gas-lighting.
27. Heat-alarms.
28. Incrustation.
29. Indicators.
30. Induction-coils.
31. Insulators.
32. Keys.
33. Lightning-arresters.
34. Lightning-rods.
35. Magnetic locks.
36. Magnetic machines.
37. Magneto-electric.
38. Meters.
39. Morse registers.
40. Motors.
41. Multiplex telegraphs.
42. Music-playing.
43. Ore-separators.
44. Perforating-telegraphs.
45. Printing-telegraphs.
46. Quadruplex telegraphs.
47. Railroad-car telegraphs.
48. Railroad-signals.
49. Recorders.
50. Registers.
51. Regulators.
52. Relays and sounders.
53. Repeaters.
54. Rheostats.
55. Signals.
56. Switches.
57. Telegraphs.
58. Telegraphic circuits.
59. Telephonic telegraphs.
60. Thermostats.
61. Transmitters.
62. Underground-lines.

CLASS 37.—EXCAVATING. (IV.)

Sub-classes.

1. Dredgers.
2. Earth-augers.
3. Earth-works.
4. Excavators.
5. Scrapers.
6. Self-loading carts.
7. Wheeled scrapers.

CLASS 52.—EXPLOSIVES. (VI.)

Sub-classes.

1. Blasting-powder.
2. Fulminates.
3. Gun-cotton.
4. Gunpowder.
5. Matches.
6. Tri-nitro-glycerine.

CLASS 38.—FELTING AND HATS. (XV.)

Sub-classes.

1. Blocks.
2. Blocking and stretching.
3. Bonnets.
4. Brushing and finishing.
5. Conformators.
6. Curling brims.
7. Fabrics.
8. Felting-machines.
9. Flock-cutting.
10. Forming bats.
11. Fulling.
12. Furs and pelts.
13. Hats and caps.
14. Ironing.
15. Pouncing.
16. Pressing.
17. Ventilators.
18. Wiring brims.

CLASS 39.—FENCES. (II.)

Sub-classes.

1. Barbed fences.
2. Fence-posts.
3. Fences.
4. Flood-fences.
5. Gates.
6. Iron fences.
7. Sliding and rolling gates.
8. Swinging gates.
9. Wire fences.
10. Wire-stretchers.

CLASS 71.—FERTILIZERS. (VI.)

Sub-classes.

1. Apparatus.
2. Calcareous.
3. Compositions.
4. Composts.
5. Guano and poudrette.
6. Organic.
7. Phosphates.
8. Sewage and night-soil.

CLASS 41.—FINE ARTS. (V.)

Sub-classes.

1. Artists' appliances.
2. Artificial flowers.
3. Banners and flags.
4. Canvas-stretchers.
5. Decorative painting.
6. Drawing-boards.
7. Easels.
8. Engraving-machines.
9. Engraving-tools.
10. Gilding. Leaf-
11. Herbariums.
12. Medals.
13. Ornamenting cloth.
14. Picture-frames.
15. Pictures.
16. Statuary.
17. Theater appliances.
18. Transfers. Pictorial

CLASS 42.—FIRE-ARMS. (XXII.)

Sub-classes.

1. Air and spring guns.
2. Armor, personal
3. Bayonets.
4. Blow-guns.
5. Bows and cross-bows.
6. Breech-loaders.
7. Cane-guns.
8. Catapults.
9. Gun-barrels.
10. Gun-trimmings.
11. Implements.
12. Locks.
13. Magazine-guns.
14. Muzzle-loaders.
15. Nipples and guards.
16. Pistol-swords.
17. Priming-locks.
18. Revolvers.
19. Riding.
20. Sights.
21. Stocks.
22. Targets.
23. Toy pistols.

CLASS 159.—FIRE-ESCAPES. (IV.)

Sub-classes.

1. Chutes.
2. Escape-ladders.
3. Flexible ladders.
4. Friction.
5. Hoists.
6. Lazy-tongs.

CLASS 43.—FISHING AND TRAPPING. (III.)

Sub-classes.

1. Catchers. (Insect-destroyers.)
2. Decoys.
3. Fishways.
4. Floats.
5. Fumigators. (Insect-destroyers.)
6. Harpoons and spears.
7. Hooks.
8. Moth-exterminators.
9. Nets and seines.
10. Oyster-culture.
11. Oyster-dredgers.
12. Oyster rakes and tongs.
13. Pisciculture.
14. Powder-dusters. (Insect-destroyers.)
15. Reels.
16. Rods.
17. Sinkers.

Traps—

18. Bed-bug,
19. Cage,
20. Fish,
21. Impalement,
22. Insect,
23. Jaw,
24. Self-set and ever-set,
52. Sporting,
26. Victim-set,
27. Wire choker.

CLASS 50.—FLUID-PRESSURE REGULATORS. (XVIII.)

Sub-classes.

1. Gas.
2. Steam.
3. Water.

CLASS 44.—FUEL. (XV.)

Sub-classes.

1. Artificial.
2. Fire-kindlers.
3. Peat-machines.
4. Purifying coal.

CLASS 45.—FURNITURE. (VIII.)

Sub-classes.

1. Book-cases.
2. Book-shelves.
3. Book-supports.
4. Brackets and shelves.
5. Bureaus.
6. Desks.
7. Drawers.
8. Drawing-tables.
9. Extension-tables.
10. Fire-screens.
11. Folding tables.
12. Furniture pads and feet.
13. Hat and coat racks.
14. Hat-holders.
15. Insect-guards.
16. Kitchen-cabinets.
17. Kitchen-tables.
18. Mirrors.
19. Music stands and portfolios.
20. Nursery-gates.
21. Oil-can holders.
22. Packing furniture.
23. Picture-hangers.
24. Quilting-frames.
25. School-furniture.
26. Self-waiting tables.
27. Sewing-machine tables.
28. Soap-holders.
29. Springs.
30. Table-leaf supports.
31. Tables.
32. Towel racks and stands.
33. Umbrella-stands.
34. Upholstering.
35. Wall-pockets.
36. Wall-protectors.
37. Wardrobes.
38. Wash-stands.
39. Window-mirrors.

CLASS 46.—GAMES AND TOYS. (V.)

Sub-classes.

1. Automatic toys.
2. Baby-jumpers.
3. Baby-walkers.
4. Balls and bats.
5. Balls and cues.
6. Billiard appliances.
7. Billiard-balls.
8. Billiard chalk-cups.
9. Billiard-cues.
10. Billiard-cue-tip fasteners.
11. Billiard-cushions.
12. Billiard-tables.
13. Billiard-table levelers.
14. Buzzes and whirligigs.
15. Croquet.
16. Dice-boxes.
17. Dolls.
18. Dumb-bells and clubs.
19. Exercising-machines.
20. Game apparatus.
21. Game-boards.
22. Hobby-horses.
23. Kites.
24. Masks.
25. Playing-cards.
26. Roller-skates.
27. Roundabouts.
28. Skaters' appliances.
29. Skates.
30. Skipping-ropes.
31. Soap-bubble pipes.
32. Spinning-tops.
33. Stilts.
34. Swings.
35. Toy building-blocks.
36. Toy money-boxes.
37. Toys.
38. Trundles and hoops.
39. Whistles.

CLASS 47.—GARDEN AND ORCHARD. (VII.)

Sub-classes.

1. Bird-houses.
2. Bouquet-holders.
3. Cane-strippers.
4. Flower pots and stands.
5. Fruit-gatherers.
6. Grafting.
7. Hop-culture.
8. Plant and tree protectors.
9. Potato-separators.
10. Propagation.
11. Sap-spouts.
12. Trellises.

CLASS 48.—GAS. (III.)

Sub-classes.

1. Anti-combustion.
2. Carbureters.
3. Carbureters. (Jet-mixers.)
4. Center-seals and by-pass valves.
5. Coal-gas.
6. Coal and oil gas.
7. Coal, oil, and water gas.
8. Coal and water gas.
9. Dip pipes.
10. Exhausters
11. Gas-holders.
12. Hydrogen gas.
13. Oil-gas.
14. Oil and water gas.
15. Purifiers.
16. Retort-lids.
17. Retorts and setting.
18. Retort-chargers.
19. Water-gas.
20. Wood-gas.

CLASS 49.—GLASS. (XV.)

Sub-classes.

1. Articles.
2. Cutters.
3. Designing.
4. Enameling.
5. Furnaces. Annealing.
6. Furnaces. Melting.
7. Molds.
8. Ornamentation.
9. Presses.
10. Plate and window.
11. Tools.

CLASS 51.—GRINDING AND POLISHING. (XIV.)

Sub-classes.

1. Abrading materials and tools.
2. Card-grinding.

Curved surfaces—

3. Glass and stone,
4. Metal,
5. Wood.
6. Cutlery-scourers.
7. Edge-tools.
8. Mower and reaper knives.
9. Needle-eyes.
10. Needles, rods, and points.

Plane surfaces—

11. Glass and stone,
12. Metal,
13. Wood.
14. Rumbles.
15. Sheet metal and wire.
16. Strops, hones, and rifles.

CLASS 53.—HARDWARE-MAKING. (XIII.)

Sub-classes.

1. Bridge-irons.
2. Builders' hardware.
3. Cutlery.
4. Eyebolts and hooks.
5. Fence-barbs of sheet metal.
6. Ferrules, rings, and thimbles.
7. Furniture-hardware.
8. Gas and water fittings.
9. Hardware. (Not specified.)
10. Hinges.
11. Leather-workers' hardware.
12. Pens, pencils, and holders.
13. Spinners and weavers.
14. Spoons and forks.
15. Spoons. Manufacture of
16. Springs.
17. Sucker-rod joints.
18. Umbrella-irons.

CLASS 54.—HARNESS. (XI.)

Sub-classes.

1. Bonnets and covers.
2. Bridle-bits.
3. Bridles and halters.
4. Collar-fasteners.
5. Collar-machines.
6. Fly-nets.
7. Gags and muzzles.
8. Hame-fasteners.
9. Hames.
10. Harness.
11. Harness-machines.
12. Harness-saddles.
13. Harness-tools.
14. Hitching posts and ties.
15. Hopples.
16. Horse-boots.
17. Horse-collars.
18. Nose-bags.
19. Nose-rings.
20. Pokes.
21. Riding-saddles.
22. Spurs and stirrups.
23. Tethers.
24. Trace-carriers.
25. Trimmings.
26. Tugs.
27. Whips.

CLASS 55.—HARROWS AND DIGGERS. (I.)

Sub-classes.

1. Clod-crushers.
2. Forks.
3. Harrows.
4. Harrow-teeth.
5. Hoes.
6. Land-rollers.
7. Pivoted teeth.
8. Pivoted tooth-bars.
9. Potato-diggers.
10. Rakes.
11. Revolving harrows.
12. Rollers and harrows.
13. Rotary harrows.
14. Shovels.
15. Stalk-choppers.
16. Stalk-pullers.
17. Stone-gatherers.
18. Transplanters.
19. Wheel-harrows.
20. Wheel-harrows. Rotary

CLASS 56.—HARVESTERS. (VII.)

Sub-classes.

1. Bean-harvesters.
2. Clover-harvesters.
3. Combined rake and tedder.
4. Corn-harvesters.
5. Corn-shockers.
6. Cotton-harvesters.
7. Cutting apparatus.
8. Droppers.
9. Gearing.
10. Grain-bands.
11. Hand-binders.
12. Hand-rakers.
13. Hay-caps.
14. Hay-forks.
15. Hay-loaders.
16. Hedge-trimmers.
17. Hemp and flax harvesters.
18. Horse-rakes.
19. Lawn-mowers.
20. Manure-forks.
21. Mowers.
22. Reels.
23. Revolving rakes.
24. Seats.
25. Self-binders.
26. Self-rakers.
27. Scythes and cradles.
28. Tedders.
29. Thrashers.
30. Track clearers and dividers.

CLASS 149.—HIDES, SKINS, AND LEATHER. CHEMICAL TREATMENT OF. (VI.)

Sub-classes.

1. Artificial leather.
2. Bating.
3. Blacking compounds.
4. Coloring and polishing.
5. Currying leather.
6. Depilating.
7. Dressing leather.
8. Preserving hides.
9. Tanning materials.
10. Tanning processes.
11. Tawing.
12. Treating raw hides.
13. Waterproofing leather.

CLASS 57.—HOISTING. (XII.)

Sub-classes.

1. Barrel-elevators.
2. Barrel-rollers.
3. Car-movers.
4. Cranes and derricks.
5. Differential pulleys.
6. Dumb-waiters.
7. Elevators.
8. Grain-conveyers.
9. Grapples.
10. Hay-elevators.
11. Hay-slings.
12. Hod-elevators.
13. Hoisting-buckets.
14. Ice-elevators.
15. Lifting-jacks.
16. Loading and unloading.
17. Pulleys.
18. Skids.
19. Stump-extractors.
20. Tender-loaders.
21. Track-raisers.

CLASS 58.—HOROLOGY. (XVI.)

Sub-classes.

1. Cannon-pinions.
2. Calendar-clocks.
3. Clocks.
4. Clock-cases.
5. Clock striking.
6. Clock winding.
7. Designs.
8. Escapements.
9. Geographical clocks.
10. Metronomes.
11. Pendulums.
12. Safety-wheels.
13. Stem-winders.
14. Sun-dials.
15. Time-alarms.
16. Time-checks.
17. Watches.
18. Watch-balances.
19. Watch-barrels.
20. Watch-cases.
21. Watch-case springs.
22. Watch dust-caps.
23. Watch-keys.
24. Watch-plates.
25. Watch-regulators.
26. Watch-stops.
27. Watch winding.

CLASS 60.—HOSE AND BELTING. (XI.)

Sub-classes.

1. Belt-fasteners.
2. Belt-machines.
3. Belting.
4. Hose.
5. Hose-machines.
6. Tubing.

CLASS 65.—HOUSEHOLD ARTICLES. (XII.)

Sub-classes.

1. Butter-dishes.
2. Butter, egg, and table tongs.
3. Cake-turners.
4. Canisters.
5. Casters.
6. Caster-bottles.
7. Carpet-stretchers.
8. Cheese-boxes.
9. Cheese-covers.
10. Compound tools.
11. Cork-screws.
12. Culinary.
13. Cups.
14. Dinner-pails.
15. Dishes and plates.
16. Dish-covers.
17. Dish-holders.
18. Dish-mats.
19. Dish stands and trays.
20. Dust-pans.
21. Egg-beaters.
22. Egg-cups.
23. Fish-scalers.
24. Fruit and cake dishes.
25. Fruit-lifters.
26. Jar-lifters.
27. Knife racks and rests.
28. Ladles.
29. Napkin-holders.
30. Oyster-openers.
31. Pitchers.
32. Plate-lifters.
33. Provision-safes.
34. Pie crimpers and trimmers.
35. Salt-cellars.
36. Scoops.
37. Slop-buckets.
38. Spice-boxes.
39. Spittoons.
40. Spittoon-lifters.
41. Tea-service.
42. Tumbler-holders.
43. Twine-holders.
44. Wire articles.

CLASS 61.—HYDRAULIC ENGINEERING. (IV.)

Sub-classes.

1. Aqueducts.
2. Cable-laying.
3. Caissons.
4. Canals.
5. Chutes.
6. Dams.
7. Diving-armor.
8. Docks.
9. Drains.
10. Harbors.
11. Marine-ways.
12. Mining.
13. Pile-drivers.
14. Sea-walls.
15. Tide-powers.
16. Tunnels.
17. Water-gates.

CLASS 162.—INJECTORS AND EJECTORS. (XVIII.)

No sub-classes.

CLASS 63.—JEWELRY. (V.)

Sub-classes.

1. Bracelets.
2. Brooches and pins.
3. Chatelaines and handkerchief-holders.
4. Ear-rings.
5. Finger-rings.
6. Lockets. Manufacture of
7. Ornamental chains.
8. Setting gems.
9. Watch-chain attachments.

CLASS 64.—JOURNALS AND BEARINGS. (XII.)

Sub-classes.

1. Anti-friction rollers.
2. Band-pulleys.
3. Belt-gearing.
4. Belt-shifters.
5. Belt-tighteners.
6. Clutches.
7. Compensating-journals.
8. Expanding pulleys.
9. Flexible shafts.
10. Journal-boxes.
11. Lubricators.
12. Shaft-casings.
13. Shaft-couplings.
14. Shaft-hangers.
15. Sucker-rods.

CLASS 66.—KNITTING AND NETTING. (XXI.)

Sub-classes.

1. Burrs and sinkers.
2. Circular.
3. Darning.
4. Fabrics.
5. Needles.
6. Netting.
7. Stopping.
8. Straight.
9. Take-ups and tensions.
10. Tatting.

CLASS 67.—LAMPS AND GAS-FITTINGS. (XIX.)

Sub-classes.

1. Candlesticks.
2. Car-lamps.
3. Chandeliers.
4. Chimney-holders.
5. Drop-lights and hangers.
6. Extinguishers.
7. Gas-burners.
8. Gas-fittings.
9. Gas-regulating burners.

Lamp-burners—

10. Argand,
11. Multiple-wick,
12. No-chimney.
13. Lamp-chimneys.
14. Lamp-cellars.
15. Lamp-fillers.

Lamps—

16. Forced-draft,
17. Independent,
18. Reservoir,
19. Miners',
20. Safety-tube and central-draft.
21. Lamp-posts.
22. Lamp-shades.
23. Lamp-wicks.
24. Lanterns.
25. Lighting devices.
26. Locomotive head-lights.
27. Match-boxes.
28. Reflectors.
29. Street-lamps.
30. Vapor-burners.
31. Wick-raisers.

CLASS 68.—LAUNDRY. (VIII.)

Sub-classes.

1. Bosom-boards
2. Clamps.
3. Clothes-lines.
4. Clothes-pins.
5. Clothes-pounders.
6. Clothes sticks and tongs.
7. Fluting-irons.
8. Hand-rubbers.
9. Ironing-machines.
10. Ironing-tables.
11. Laundries.
12. Line-fasteners.
13. Mangles.
14. Reels.

Washing-machines—
15. Agitator,
16. Boiler,
17. Combined washing and wringing,

Washing-machines—
18. Cylinder,
19. Pounder,
20. Reciprocating-rubber,
21. Rocking and swinging,
22. Roller,
23. Roller and bed,
24. Rotary rubber,
25. Vertical rubber.
26. Sad-irons.
27. Sad-iron holders.
28. Starching-machines.
29. Wash-boards.
30. Wash-boilers.
31. Wash-tubs.
32. Wringers.
33. Wringer-rolls.

CLASS 69.—LEATHER. (XI.)

Sub-classes.

1. Cutting.
2. Dressing.
3. Machines.
4. Splitting.
5. Stretching.

CLASS 70.—LOCKS AND LATCHES. (XX.)

Sub-classes.

1. Alarm-locks.
2. Bag-locks.
3. Box-fasteners.
4. Car-seat locks.
5. Hasp-locks.
6. Indicator-locks.
7. Key-fasteners.
8. Key-hole guards.
9. Keys.
10. Knobs.
11. Knob attachments.
12. Knob-roses.
13. Latches.
14. Locks.
15. Lock-strikes.
16. Lock-trimmings.
17. Padlocks.
18. Permutation-locks.
19. Permutation-padlocks.
20. Piano-locks.
21. Reversible latches.
22. Safe-bolt work.
23. Seal-locks.
24. Shackles.
25. Till-checks.
26. Time-locks.
27. Trunk-locks.

CLASS 115.—MARINE PROPULSION. (XXII.)

Sub-classes.

1. Buoyant propellers.
2. Chain propellers.
3. Crank-paddles.
4. Feathering paddles.
5. Feathering propeller-blades.
6. Hydraulic propellers.
7. Paddle-wheels.
8. Pneumatic propellers.
9. Screw-propellers.
10. Steering-propellers.
11. Towing.
12. Vibrating propellers.
13. Wheels in channels.

CLASS 72.—MASONRY. (IV.)

Sub-classes.

1. Building-blocks.
2. Cisterns.
3. Construction.
4. Fire-proof buildings.
5. Fire-shields.
6. Garbage-sinks.
7. Iron structures.
8. Sewers.

CLASS 73.—MEASURING INSTRUMENTS. (XVI.)

Sub-classes.

1. Air and gas meters.
2. Anemometers.
3. Balances.
4. Barometers.
5. Bathometers.
6. Bevels.
7. Calculators.
8. Cart-scales.
9. Cloth-measuring machines.
10. Coin-counters.
11. Coin-testers.
12. Diaphragm-meters.
13. Dividing-engines.
14. Dry measures.
15. Dynamometers.
16. Gages.
17. Game-counters.
18. Gas-meters.
19. Grain-meters.
20. Grain-tallies.
21. Grain-tollers.
22. Hydrometers.
23. Hydrostatic scales.
24. Hygroscopes.
25. Liquid-measures.
26. Meters.
27. Odometers.
28. Oscillating meters.
29. Pendulum-scales.
30. Piston-meters.
31. Pressure-gages.
32. Pyrometers.
33. Rain-gages.
34. Recorders.
35. Registers.
36. Rotary-measures.
37. Rotary-meters.
38. Sack-scales.
39. Scale-beams.
40. Scale-measures.
41. Scale-pans.
42. Specific-gravity apparatus.
43. Speed-measures.
44. Sphygmoscopes.
45. Spirit-meters.
46. Spring-scales.
47. Squares.
48. Tailors' measures.
49. Tape measures.
50. Testing illuminating fluids.
51. Testing-machines.
52. Thermometers.
53. Voting-machines.
54. Water-gages.
55. Weather-vanes.
56. Weights.

CLASS 74.—MECHANICAL POWERS. (XII.)

Sub-classes.

1. Cams and eccentrics.
2. Changing speed.
3. Churn motors.
4. Converting motion.
5. Cranks and levers.
6. Fly-wheels.
7. Gearing.
8. Gibs and keys.
9. Horse-powers.
10. Horse-power chains.
11. Horse-power equalizers.
12. Horse-power treads.
13. Machine-brakes.
14. Mechanical movements.
15. Motors.
16. Pawl and ratchets.
17. Pitmans.
18. Treadles.
19. Universal joints.

CLASS 153.—METAL BENDING AND STRAIGHTENING. (XIII.)

Sub-classes.

1. Bars. Bending
2. Bending and straightening.
3. Corrugating and molding.
4. Flanging.
5. Plate bending.
6. Twisting.

CLASS 77.—METAL BORING AND DRILLING. (XIII.)

Sub-classes.

1. Bits.
2. Boring and drilling appliances.
3. Boring-machines.
4. Drill-chucks.
5. Drills. Hand-
6. Drilling-machines.
7. Reamers and drifts.
8. Tapping mains.
9. Ratchet-drills.

CLASS 78.—METAL FORGING, PUNCHING, AND SHEARING. (XIII.)

Sub-classes.

1. Anvils.
2. Cutting.
3. Drop-hammers.
4. Forges.
5. Forging and welding.
6. Furnaces for heating blanks.
7. Lever and sliding shears.
8. Olivers.
9. Power-hammers.
10. Punching.
11. Riveting.
12. Rotary shears.
13. Sawing metals.
14. Tuyeres.
15. Upsetting metal.

CLASS 22.—METAL FOUNDING. (XIV.)

Sub-classes.

1. Bearings.
2. Casting apparatus.
3. Elbow and curved pipe.
4. Hardware.
5. Hollow ware.
6. Ingots and pigs.
7. Materials.
8. Molders' flasks.
9. Molding apparatus.
10. Ordnance and projectiles.
11. Pipes.
12. Pipe and roll molding.
13. Plows.
14. Rolls.
15. Shot and bullets.
16. Soft-metal articles.
17. Tools.
18. Vehicle-wheels.
19. Wheels.
20. Wheel-molding.

CLASS 75.—METALLURGY. (III.)

Sub-classes.

1. Alloys.
2. Assaying.
3. Bessemer metal.
4. Blast-furnace accessories.
5. Blast-furnaces.
6. Burning hydrocarbons.
7. Calcining-kilns.
8. Coke and charcoal.
9. Cupola furnaces.
10. Furnace. Protecting-
11. Gas-furnaces.
12. Hot-blast ovens.
13. Hydrocarbon furnaces.
14. Iron and steel. (Direct.)
15. Lead.
16. Mechanical puddlers and tools.
17. Metals. Reducing, refining, and separating
18. Metals. (Solution and precipitation.)
19. Pigment-furnaces.
20. Puddling-furnaces.
21. Pulverized fuel.
22. Quicksilver.
23. Regenerators.
24. Revolving roasters.
25. Roasting-hearths.
26. Shaft and shelf furnaces.
27. Treating molten iron.

CLASS 158.—METAL ORNAMENTATION. (XIII.)

Sub-classes.

1. Ornamenting.
2. Ornamenting by cutting.
3. Ornamenting by rolling.
4. Ornamenting by stamping and percussion.

CLASS 79.—METAL PERSONAL WEAR. MAKING. (XIII.)

Sub-classes.

1. Buttons and clasps.
2. Eyelets.
3. Ornamental chains.
4. Personal wear.
5. Thimbles. Manufacture and article.
6. Watches and lockets.

CLASS 80.—METAL-ROLLING. (XIII.)

Sub-classes.

1. Cylindrical rolling.
2. Flat and angular.
3. Piles and fagots.
4. Puddlers' balls.
5. Railroad-rails.
6. Rolls, housings, and appliances.
7. Sheet-metal and foil manufacture.
8. Sheet-iron manufacture.
9. Taper-rolling.

CLASS 10.—METAL BOLTS, NUTS, RIVETS, AND SCREWS. (XIII.)

Sub-classes.

1. Bolts and nuts. Dressing and pointing
2. Bolts and rivets.
3. Bolts and rivets. Making
4. Capping screws and nails.
5. Metal-screw machines.
6. Nuts and washers.
7. Nuts and washers. Making
8. Screws.
9. Screw-blank feeders.
10. Screw-cutting machines.
11. Screw-swaging machines.
12. Screw-tapping machines.
13. Screw-threading machines.
14. Taps and dies.
15. Wood-screw machines.

CLASS 148.—METAL TEMPERING, ANNEALING, AND CEMENTATION. (XIV.)

Sub-classes.

1. Apparatus.
2. Compositions.
3. Metals. (Generally.)
4. Sheet and plate metal.
5. Wheels and tires.
6. Wire and springs.

CLASS 76.—METAL TOOLS AND IMPLEMENTS. MAKING (XIII.)

Sub-classes.

1. Angers.
2. Axes and hatchets.
3. Cultivator-irons.
4. Dies.
5. Drills.
6. Farm implements.
7. File-blanks.
8. File-cutting.
9. Files and rasps.
10. Hammers.
11. Harvester-irons.
12. Hoes and shovels.
13. Picks and mattocks.
14. Pitchforks and rakes.
15. Plow-irons.
16. Rake and harrow irons,
17. Saws.
18. Saws, gumming
19. Saw-setting.
20. Saws. Sharpening reciprocating tool-
21. Saws. Sharpening rotary tool-
22. Saw-swaging.
23. Scythes.
24. Tools and implements.
25. Wrenches.

CLASS 134.—METAL TUBING AND WIRE. (XIII.)

Sub-classes.

1. Coiling and bending pipe.
2. Lead-pipe. Making
3. Lightning-rods. Making
4. Lining cylinders with metal.
5. Pinmbers' traps. Making
6. Tubes. Drawing
7. Tubes. Rolling and forging
8. Tubes of sheet metal. Making
9. Wire. Making
10. Wire. Pointing

CLASS 82.—METAL TURNING, PLANING, AND MILLING (XIII.)

Sub-classes.

1. Centers.
2. Cutters and cutter-holders.
3. Gages.
4. Gear-cutting.
5. Key-seat cutters.
6. Lathe-chucks.
7. Mandrels and work-holders.
8. Milling.
9. Milling-cutters.
10. Planer-chucks.

Planers—
11. Reciprocating bed or cutter.

Planers—
12. Rotary.
13. Rests.
14. Shaping and slotting.

Turning—
15. Irregular forms,
16. Miscellaneous.
17. Tapers.
18. Wheels and axles.
19. Watchmakers' lathes.
20. Wrist-pin turners.

CLASS 81.—METAL-WORKING TOOLS. (XIV.)

Sub-classes.

1. Calk-sharpeners.
2. Cutting sharpeners.
3. Hoof trimmers and cleaners.
4. Horseshoeing apparatus.

Nut-wrenches—
5. Pivoted spring-jaw,
6. Ratchet-wheels,
7. Rigid-jaw,
8. Rigid socket and axle-nut,
9. Sliding-jaw.

Pipe-cutters—
10. Inside,
11. Outside.
12. Pipe-expanders.

Pipe-wrenches—
13. Pivoted-jaw,
14. Pivotel-jaw, with cutter,
15. Rigid-jaw and spanner,
16. Sliding-jaw,
17. Sliding-jaw, with cutter.
18. Rod and bolt cutters.
19. Smiths' tongs and clinches.

Vises—
20. Pipe and rod,
21. Smiths',
22. Wood-workers'.
23. Watch-makers' tools.

CLASS 83.—MILLS. (VII.)

Sub-classes.

Grinding-mills—
1. Mill-spindles,
2. Millstone-trams,
3. Millstone-dress,
4. Millstone-exhaust,
5. Feed-regulators,
6. Knife-action,
7. Disk-action. Horizontal
8. Disk-action. Vertical
9. Ball and drum,
10. Compound movement,
11. Rotary beaters,
12. Crushing-rolls,
13. Cone and shell,
14. Cylinder and concave,
15. Grain-samplers,

Grinding-mills—
16. Grist-alarms,
17. Balancing millstones,
18. Coffee,
19. Cane,
20. Gunpowder,
21. Bark,
22. Paint,
23. Hominy.

Bagging grain—
24. Bags,
25. Bag-fasteners,
26. Bag-holders.

Preparing grain—
27. Steaming and dampening,
28. Processes.

Grain-scourers—
29. Cylinder. Vertical
30. Cylinder. Horizontal
31. Conical.
32. Centrifugal,
33. Pestle-action,
34. Screw-action,
35. Reciprocating and endless,
36. Concave face,

Grain-scourers—
37. Disk-face.

Chop-graders—
38. Shaking bolts,
39. Rotary bolts,
40. Gravity,
41. Bran-dusters,
42. Flour processes.

CLASS 84.—MUSIC. (V.)

Sub-classes.

1. Accordions.
2. Banjos and guitars.
3. Barrel-organs.
4. Bells.
5. Bell and tongue pianos.
6. Castanets.
7. Clarionets and flutes.
8. Cornets and trumpets.
9. Couplers.
10. Drums.
11. Exercising devices.
12. Harmonic attachments.
13. Harmonicas.
14. Harps.
15. Insulators.
16. Keys and key-boards.
17. Leaf-turners.
18. Notation.
19. Organ-actions.
20. Organ-bellows.
21. Organ-cases.
22. Organ-pipes.
23. Organ-swells.
24. Pedals.
25. Pianos.
26. Piano-actions.
27. Piano attachments.
28. Piano-frames.
29. Piano-legs.
30. Piano sounding-boards.
31. Pianos without strings.
32. Pipe-organs.
33. Reeds.
34. Reed-boards.
35. Reed-organs.
36. Reed-organ attachments.
37. Self-playing instruments.
38. Steam-organs.
39. Steam-pianos.
40. Stringing pianos.
41. Transposers.
42. Tremolos.
43. Tuning-instruments.
44. Violins.

CLASS 85.—NAILS, SPIKES, NEEDLES, AND PINS. (XIII.)

Sub-classes.

1. Cut-nail making.
2. Horseshoe-nail cutting.
3. Horseshoe-nail-blank finishing.
4. Horseshoe-nail forging.
5. Machine-needles. Making
6. Nail-distributers.
7. Nail-heads. Ornamental and detachable
8. Nail-plate feeders.
9. Nails and spikes.
10. Needles.
11. Pins.
12. Pins. Making
13. Pins. Papering
14. Sewing-needles. Making
15. Shoe nails and tacks.
16. Spike-making.
17. Wrought-nail making.

CLASS 151.—NUT AND BOLT LOCKS. (XIII.)

Sub-classes.

1. Bolt-jam.
2. Dog, key, and pin.
3. Nut and nut-jam.
4. Plate bar and collar.
5. Seat-jam.
6. Washer.

CLASS 87.—OILS, FATS, AND GLUE. (VI.)

Sub-classes.

1. Barrel-linings.
2. Bleaching.
3. Candles and apparatus.
4. Decomposing fats.
5. Detergents.
6. Extracting oils.
7. Glue.
8. Lard-coolers.
9. Lubricants.
10. Lubricating. Treating oils for
11. Oilers.
12. Refining fat-oils.
13. Rendering.
14. Soap.
15. Soap-cutting.
16. Soap manufacture.

CLASS 88.—OPTICS. (XVI.)

Sub-classes.

1. Altitude-instruments.
2. Distance-instruments.
3. Heliostats.
4. Kaleidoscopes.
5. Lenses.
6. Leveling-instruments.
7. Magic lanterns.
8. Microscopes.
9. Photometers.
10. Prisms.
11. Sextants.
12. Spectacles.
13. Stakes and targets.
14. Stereoscopes.
15. Telescopes.
16. Tripod.

CLASS 89.—ORDNANCE. (XXII.)

Sub-classes.

1. Breech-loading.
2. Carriages.
3. Counterpoise-carriages.
4. Disabling.
5. Feed-cases.
6. Implements.
7. Loading.
8. Locks.
9. Machine-guns.
10. Mortars.
11. Muzzle-loaders.
12. Operating ordnance.
13. Shields.
14. Sights.
15. Submarine guns.
16. Tompions and valves.
17. Trunnions.
18. Vents and stoppers.

CLASS 90.—ORE. (III.)

Sub-classes.

1. Amalgamators.
2. Coal-breakers.
3. Crushers.
4. Disintegrating.
5. Dry amalgamators.
6. Jiggers.
7. Mills.
8. Separators.
9. Stamps.
10. Washers.

CLASS 150.—PACKING AND STORING VESSELS. (XIV.)

Sub-classes.

Barrels, buckets, and pails—
1. Barrels and buckets, bent,
2. Barrels and buckets, staves,
3. Bucket and barrel packages,
4. Bungs and vents,
5. Bung-wrenches,
6. Heads and covers,
7. Hoops,
8. Linings and coverings,
9. Pails,
10. Stands.

Bottles and air-tight jars—
11. Bottles,
12. Bottle and jar envelopes,
13. Jars, air-tight,
14. Siphon-bottles,
15. Stopper-fasteners,
16. Stopper-locks,
17. Stoppers.

Boxes, baskets, and tanks—
18. Boxes, bent,
19. Boxes, jointed,
20. Can and bottle cases,
21. Cell-cases,
22. Crates, (not metal,)
23. Folding cases and crates,
24. Fruit-baskets,
25. Grain-baskets,
26. Other baskets,
27. Powders, cases for,
28. Tanks, (not metal.)

Metallic vessels—
29. Boxes and crates,
30. Cans and casks,
31. Closing cans and casks,
32. Ears, bails, and handles,
33. Hermetic sealing,
34. Jackets and linings,
35. Liquid-safes, (domestic,)
36. Milk cans and carriers,
37. Nozzles, caps, and vents,
38. Oiling-vessels,
39. Open vessels,
40. Storage and transfer.

CLASS 91.—PAINTING AND GRAINING. (VI.)

Sub-classes.

1. Colors.
2. Enameling wood.
3. Fire-proofing compounds.
4. Graining.
5. Ink. Printing.
6. Ink. Writing.
7. Japanning.
8. Lamp-black.
9. Mixed paints.
10. Oil-cloth.
11. Painting-machines.
12. Paint-mixers.
13. Stencils.
14. Stove-polishes.
15. Striping-tools.
16. Varnishes.
17. Varnishing-machines.
18. Waterproofing compounds.
19. White lead.

CLASS 92.—PAPER-MAKING. (XV.)

Sub-classes.

1. Bleaching.
2. Bronzing-machines.
3. Calendering.
4. Coating.
5. Digesters.
6. Disintegrating fibrous substances.
7. Fabrics.
8. Fibers.
9. Flocking.
10. Materials.
11. Molding machines and articles.
12. Ornamenting.
13. Paper-board.
14. Paper-hanging machines.
15. Paper-making machines.
16. Parchment.
17. Processes.
18. Pulp-engines and bed-plates.
19. Pulp washing and straining.
20. Rag dusters and engines.
21. Stock-grinders.
22. Waterproofing and sizing.
23. Wood-grinders.

CLASS 93.—PAPER MANUFACTURES. (XVII.)

Sub-classes.

1. Apparel.
2. Articles.
3. Attaching labels.
4. Bags.
5. Bag-machines.
6. Bank notes, checks, and bonds.
7. Barrels.
8. Bosoms.
9. Boxes.
10. Box-machines.
11. Collar, cuff, and bosom machines.
12. Collars and cuffs.
13. Cutters. Reciprocating
14. Cutters. Rotary
15. Envelopes.
16. Envelope-machines.
17. Feeding.
18. Folding.
19. Label and tag machines.
20. Neck-ties.
21. Perforating.
22. Postage and revenue stamps.
23. Tickets.
24. Tube-machines.

CLASS 94.—PAVING. (XV.)

Sub-classes.

1. Concrete.
2. Gutters.
3. Iron pavements.
4. Road-rammers.
5. Stone pavements.
6. Tools.
7. Vault-covers.
8. Wood pavements.

CLASS 95.—PHOTOGRAPHY. (V.)

Sub-classes.

1. Backgrounds and reflectors.
2. Baths. Chemical
3. Baths. Mechanical
4. Burnishers. (Presses.)
5. Cameras.
6. Camera attachments.
7. Camera-stands.
8. Coloring.
9. Daguerreotypy.
10. Dark-chambers.
11. Dippers.
12. Embossing-presses.
13. Enameling.
14. Eye-rests.
15. Head-rests.
16. Heaters and driers.
17. Mechanical printing.
18. Mounts and mounting.
19. Negatives.
20. Photography.
21. Paper.
22. Pictures.
23. Plate-holders.
24. Portable photograph apparatus.
25. Printing-frames.
26. Retouching.
27. Vignetting devices.
28. Washing apparatus.

CLASS 97.—PLOWS. (I.)

Sub-classes.

1. Attachments.
2. Beams.
3. Cleaners.
4. Clevis.
5. Corn-coverers.
6. Colters.
7. Couplings.
8. Cotton-choppers.
9. Cotton-scrapers.
10. Cultivators.
11. Cultivator-teeth.
12. Ditching-plows.
13. Fenders.
14. Gage wheels and runners.
15. Handles.
16. Hand-plows.
17. Land-sides.
18. Mold-boards.
19. Mole-plows.
20. Parallel cultivators.
21. Plows.
22. Points.
23. Revolving mold-boards.
24. Ridgers.
25. Rotary cultivators.
26. Shovel-plows.
27. Side-hill plows.
28. Sod-cutters.
29. Standards.
30. Steam-plows.
31. Straddle-row cultivators.
32. Subsoilers.
33. Weed-turners.
34. Wheel-cultivators.
35. Wheel-cultivators. Straddle-row
36. Wheel-plows.

CLASS 98.—PNEUMATICS. (IX.)

Sub-classes.

1. Aerial navigation.
2. Air-blasts and blast-machines.
3. Air-compressing.
4. Air-pumps.
5. Bellows.
6. Blow-pipes.
7. Car-ventilation.
8. Chimneys and cowls.
9. Fan-blowers.
10. Grain-ventilation.
11. House-ventilation.
12. Mine-ventilation.
13. Piston-blowers.
14. Rotary blowers.
15. Sand-blowers.
16. Water-closet ventilation.
17. Wind-wheels.

CLASS 99.—PRESERVING. (VI.)

Sub-classes.

1. Antiseptics.
2. Apparatus.
3. Artificial butter.
4. Cold.
5. Desiccating food.
6. Egg-testers.
7. Embalming.
8. Exclusion of air.
9. Fumigation.
10. Panification.

CLASS 100.—PRESSES. (XII.)

Sub-classes.

1. Bale-ties.
2. Bale band tighteners.
3. Baling hay.
4. Cheese-presses.
5. Cider and wine presses.
6. Cloth-presses.
7. Cotton and hay presses.
8. Cork presses.
9. Flour-packers.
10. Fruit-packers.
11. Fruit-presses.
12. Hop-presses.
13. Lard and oil presses.
14. Sugar-presses.
15. Tobacco-presses.
16. Wood-presses.

CLASS 101.—PRINTING. (XVII.)

Sub-classes.

1. Addressing.
2. Autographic.
3. Blankets.
4. Block.
5. Branding-stamps.
6. Card, tag, and ticket.
7. Calico and fabric.
8. Chases.
9. Chromatic.
10. Composing-sticks.
11. Copying.
12. Cylinder.
13. Damping.
14. Delivering.
15. Electrotyping.
16. Friskets.
17. Furniture.
18. Galleys.
19. Glass.
20. Hand-stamps.
21. Inking.
22. Lever-presses.
23. Lithographic.
24. Oscillating.
25. Paging and numbering.
26. Perforating-stamps.
27. Plate.
28. Reciprocating.
29. Registering.
30. Rotary.
31. Rules.
32. Setting and distributing.
33. Spool.
34. Stereotyping.
35. Stereotype-blocks.
36. Stereotype-plate holders.
37. Surfaces.
38. Types.
39. Type-beds.
40. Type-cases.
41. Type-machines.
42. Type-writing.
43. Warp and yarn.

CLASS 102.—PROJECTILES. (XXII.)

Sub-classes.

1. Blasting and fuses.
2. Bomb-lances.
3. Cap-boxes.
4. Cap-filling.
5. Cartridge-loading.
6. Cartridges.
7. Flasks and chargers.
8. Lubricating.
9. Marine torpedoes.
10. Packing-boxes.
11. Primers.
12. Projectiles.
13. Rockets.
14. Sabots and wads.
15. Shells.
16. Shell-fuses.
17. Shot-cartridges.
18. Torpedoes.

CLASS 103.—PUMPS. (IX.)

Sub-classes.

1. Air-chambers.
2. Attachments.
3. Beer.
4. Brakes and levers.
5. Cattle.
6. Chain.
7. Compound.
8. Compressed-air water-elevators.
9. Cylinders.
10. Diaphragm.
11. Double-acting.
12. Double-cylinder.
13. Double-piston.
14. Drainage.
15. Fire-engines.
16. Force.
17. Hollow piston-rod.
18. Hydraulic elevators.
19. Hydraulic engines.
20. Hydraulic jacks.
21. Hydraulic presses.
22. Lift.
23. Oil.
24. Oil-collecting.
25. Oscillating.
26. Packing.
27. Pistons.
28. Pump and check valves.
29. Rams.
30. Rotary.
31. Sand.
32. Ship.
33. Syringes.
34. Testing-machines.
35. Windlass water-elevators.

CLASS 104.—RAILWAYS. (IV.)

Sub-classes.

1. Car-replacers.
2. Chairs.
3. Deadening noise.
4. Elevated.
5. Frogs.
6. Gates.
7. Hose-bridges.
8. Inclined planes.
9. Pneumatic.
10. Rails.
11. Rail-joints.
12. Switches.
13. Tank-feeders.
14. Track.
15. Track-cleaners.
16. Track-layers.
17. Track-platforms.
18. Traction.
19. Turn-tables.
20. Ways.

CLASS 105.—RAILWAY-CARS. (X.)

Sub-classes.

1. Axle-boxes.
2. Axle-box lids.
3. Axle-lubricators.
4. Axles.
5. Baskets.
6. Brakes.
7. Brakes. Automatic
8. Brakes. Rail-
9. Brake-shoes.
10. Bumpers.
11. Changeable gage-trucks.
12. Couplings.
13. Draw-bars.
14. Dumping-cars.
15. Freight-cars.
16. Hand-cars.
17. Locomotives.
18. Mail-bag catchers.
19. Passenger-cars.
20. Platforms.
21. Safety-bridges.
22. Safety-cars.
23. Sleeping-cars.
24. Springs.
25. Stake-holders.
26. Starters.
27. Starters and brakes.
28. Steam street-cars.
29. Stock-cars.
30. Street-car poles.
31. Street-cars.
32. Trucks.
33. Wheel-fenders.
34. Wheels.

CLASS 62.—REFRIGERATION. (III.)

Sub-classes.

1. Air-cooling apparatus.
2. Beer-coolers.
3. Corpse-coolers.
4. Ice-cream freezers.
5. Ice-crushers.
6. Ice-machines.
7. Ice picks and shavers.
8. Implements.
9. Milk-coolers.
10. Refrigerators.
11. Refrigerator-buildings.
12. Refrigerator-cars.
13. Water-coolers.
14. Wine-coolers.

CLASS 108.—ROOFING. (IV.)

Sub-classes.

1. Battening.
2. Eaves-troughs.
3. Fenders.
4. Metallic.
5. Roofs.
6. Slate and shingle.
7. Tile.

CLASS 109.—SAFES. (XX.)

Sub-classes.

1. Burglar-proof.
2. Fire-proof.

CLASS 111.—SEEDERS AND PLANTERS. (I.)

Sub-classes.

1. Broadcast.
2. Broadcast. Hand
3. Broadcast. Revolving hoppers.
4. Broadcast. Walking
5. Check-row.
6. Corn-planters.
7. Cotton-planters.
8. Cups on belt.
9. Cups on disk.
10. Drills and broadcast combined
11. Drill-teeth.
12. Elastic feed-wheels.

Fertilizer-distributers—
13. Hand,
14. Revolving-hopper,
15. Walking.
16. Foot-planters.
17. Force-feed.
18. Grain-drills.
19. Grain-drills. Cleaners.
20. Hand-planters.
21. Hand-planters. Oscillating
22. Hand-planters. Reciprocating
23. Hand-planters. Rotating
24. Land-markers.
25. Pivoted seed-cup.
26. Plungers.
27. Potato-planters.
28. Potato-planters. Walking
29. Preparing seed.
30. Rolling hoppers.
31. Screw-feed.
32. Walking-planters.
33. Walking-planters. Vibrating hoppers.

CLASS 112.—SEWING-MACHINES. (XXI.)

Sub-classes.

1. Binders.
2. Bobbin-winders.
3. Braiders and corders.
4. Button-hole.
5. Chain and double chain.
6. Cutting and trimming.
7. Embroidering.
8. Feeding.
9. Guides.
10. Hemmers.
11. Needles.
12. Platters.
13. Presser-feet and lifters.
14. Quilting.
15. Revolving-hook machines.
16. Rufflers and gatherers.
17. Running-stitch.
18. Setters and threaders.
19. Sewing looped fabrics.
20. Sewing shoes.
21. Short-thread.
22. Shuttle-machines.
23. Shuttles and bobbins.
24. Special machines.
25. Straw.
26. Take-ups and tensions.
27. Tuck creasers and markers.
28. Wax-thread.

CLASS 113.—SHEET-METAL WARE. MAKING (XIV.)

Sub-classes.

Burnishing—
1. Cutting printers' leads,
2. Edging sheets,
3. Roller-tools,
4. Screw-thread bending,
5. Seaming sheets.

Soldering—
6. Clamps,
7. Irons,
8. Machines,
9. Methods,
10. Solder-shapes.

Spinning—
11. Tools,
12. Troughs and moldings.

Tubing—
13. Curved and sponts,
14. Grooving and seaming,
15. Pipe-elbows, making
16. Straight, making

Vessels—
17. Angular, bending,
18. Curved, bending,
19. Dis-seaming,
20. Die-shaping,
21. Roller-seaming,
22. Wiring and flanging.

CLASS. 114.—SHIPS. (XXII.)

Sub-classes.

1. Anchors.
2. Anchor-trippers.
3. Armor-clad.
4. Ballasting.
5. Berths, cabins, and furniture.
6. Bilge-water, discharging
7. Bitts, riding and towing
8. Blocks and tackle.
9. Building.
10. Cables and cable-stoppers.
11. Calking.
12. Camels.
13. Capstans and windlasses.
14. Center-boards and keels.
15. Cleats and belaying-pins.
16. Couplings and tow-lines.
17. Dead-lights.
18. Decks and hatches.
19. Fire-extinguishers.
20. Floating-anchors.
21. Floating-docks.
22. Form.
23. Gangways and bridges.
24. Hanks, cringles, and hoops.
25. Hawser-clamps.
26. Ice boats and breakers.
27. Implements.
28. Iron.
29. Leak-stoppers.
30. Light and air ports.
31. Loading and unloading.
32. Masts and spars.
33. Raising sunken vessels.
34. Reefing and furling sails.
35. Sails and rigging.
36. Scows.
37. Scuppers and hawse-holes.
38. Steamboat-chimneys.
39. Steering.
40. Submarine and torpedo.
41. Surge-relievers.
42. Travelers.
43. Turrets.
44. Valve and port stoppers.
45. Ventilating.

CLASS 116.—SIGNALS. (XXII.)

Sub-classes.

1. Alarms.
2. Annunciators.
3. Bells.
4. Bell-hanging.
5. Bell-pulls.
6. Bell-ringing.
7. Burglar-alarms.
8. Call-bells.
9. Car-signals.
10. Door-bells.
11. Fire-alarms.
12. Flag-staff holders.
13. Fog-signals.
14. Fog-whistles.
15. Leak-alarms.
16. Letter-box bells.
17. Mechanical telephones.
18. Nautical signals.
19. Pneumatic signals.
20. Pyrotechnic signals.
21. Railway-signals.
22. Semaphores.
23. Shoal-alarms.
24. Signal-lanterns.
25. Signal-lights.
26. Speaking-tubes.
27. Station-indicators.
28. Switch-signals.
29. Till-alarms.
30. Time-signals.

CLASS 117.—SILK. (XXI.)

Sub-classes.

1. Assorting.
2. Cleaning.
3. Cocooneries.
4. Doubling.
5. Silk.
6. Stretching.
7. Throwing.
8. Winding.

CLASS 118.—SPINNING. (XXI.)

Sub-classes.

1. Bobbin and cop builders.
2. Bobbins, flieps, and spindles.
3. Bolsters and steps.
4. Cop-tubes.
5. Domestic.
6. Doubling.
7. Drawing and evening.
8. Hemp, flax, and hair
9. Mules and jacks.
10. Ring-frames.
11. Rings and travelers.
12. Stopping.
13. Throstles and caps.
14. Twisting-heads.

CLASS 129.—STATIONERY. (XVII.)

Sub-classes.

1. Baggage-checks.
2. Baggage-seals.
3. Ballot-boxes.
4. Bill-files.
5. Blotters.
6. Calendars.
7. Copy-holders.
8. Envelope-openers.
9. Erasers.
10. Fare-boxes.
11. Fountain-pens.
12. Hand-rests.
13. Inkstands.
14. Letter-boxes.
15. Mucilage-holders.
16. Newspaper-files.
17. Paper-weights.
18. Pens.
19. Pen-holders.
20. Pen and pencil cases.
21. Pen racks and cleaners.
22. Pencils.
23. Pencil-clasps.
24. Pencil and crayon holders.
25. Pencil-sharpener.
26. Post-office boxes.
27. Rulers.
28. Scholars' companion.
29. Slate and blackboard rubbers.
30. Sponge-cups.
31. Temporary binders.
32. Ticket-cases.
33. Ticket-reels.
34. Writing-tablets.

CLASS 160.—STEAM AND VACUUM PUMPS. (XVIII.)

No sub-classes.

CLASS 122.—STEAM-BOILERS. (XVIII.)

Sub-classes.

1. Attachments.
2. Cleaners.
3. Coverings.
4. Chemical vapors.
5. Circulation.
6. Fire-tubes.
7. Flashers.
8. Flue and tubular.
9. Heaters and feeders.
10. Incrustation.
11. Indicators.
12. Introducing smoke and gases.
13. Rotary.
14. Sectional.
15. Separators.
16. Superheaters.
17. Tubes and flues.
18. Water fire-boxes.
19. Water-tube.

CLASS 121.—STEAM-ENGINES. (XVIII.)

Sub-classes.

1. Attachments.
2. Beam-engines.
3. Compound.
4. Condensers.
5. Direct-acting.
6. Exhaust mechanism.
7. Fire-engines.
8. Governors.
9. Locomotives.
10. Locomotive attachments.
11. Oscillating.
12. Pistons and packing.
13. Portable, traction, and dummy.
14. Rotary.
15. Steam and air brakes.
16. Steam-hammers.
17. Steam pumping-engines.
18. Steam rock-drills.
19. Steam steering-engines.
20. Traps.
21. Valve-gear.

CLASS 110.—STEAM-BOILER FURNACES. (XVIII.)

Sub-classes.

1. Bagasse.
2. Draft-regulators.

Furnace-feeding—

3. Air.
4. Fuel.
5. Furnaces.
6. Grates and grate-bars.
7. Spark-arresters.

CLASS 136.—STEAM-VALVES. (XVIII.)

Sub-classes.

1. Balanced.
2. Cut-off.
3. Gage-cocks.
4. Governor-valves.
5. Piston-valves.
6. Puppet.
7. Rotary.
8. Slide.
9. Safety.
10. Steam-actuated.
11. Throttle.

CLASS 161.—STEAM WATER-ELEVATORS. (XVIII.)

No sub-classes.

CLASS 125.—STONE-WORKING. (XV.)

Sub-classes.

1. Casing-heads.
2. Channeling-machines.
3. Chucks for rock-drills.
4. Diamond-tools.
5. Dressing slate.
6. Dressing stone.
7. Drill-jars.
8. Drill-rod guides.
9. Drilling and boring.
10. Drills.
11. Millstone-dressing machines.
12. Millstone paint-staffs.
13. Millstone-picks.
14. Mining-machines.
15. Monuments.
16. Processes.
17. Reamers.
18. Sawing stone.
19. Tools.
20. Tube-clamps.
21. Walking-beams.

CLASS 126.—STOVES AND FURNACES. (XIX.)

Sub-classes.

1. Agricultural boilers.
2. Ash-pans.
3. Bake-pans.
4. Bakers' ovens.
5. Barrel-heaters.
6. Car-heaters.
7. Coal-scuttles.
8. Coffee-roasters.
9. Coffee and tea pots.
10. Cooking-stoves.
11. Cooking-stoves. Hearths.
12. Corn-poppers.
13. Dampers.
14. Dampers. Automatic
15. Dish-heaters.
16. Domestic boilers.
17. Domestic boilers. Steamers.
18. Domestic boilers. Water-heaters.
19. Domestic ovens.
20. Fenders.
21. Fire-dogs.
22. Fire-places.
23. Fire-place fronts.
24. Fire-place grates.
25. Fire-pots and linings.
26. Flat-iron heaters.
27. Foot-warmers.
28. Glue-pots.
29. Grates.
30. Gravel-heaters.
31. Gridirons.
32. Heating-drums.

Heating-stoves—

33. Hot-air,
34. Horizontal-body,
35. Open-front,
36. Panel.

37. Hot-air furnaces.
38. Hot-air registers.
39. Lamp-stoves.
40. Lunch-heaters.
41. Magazine cooking-stoves.
42. Magazine fire-place stoves
43. Magazine hot-air furnaces.
44. Magazine-stoves.
45. Platforms.
46. Portable furnaces.
47. Pot and lid lifters.
48. Ranges.
49. Refuse-burners.
50. Reservoir cooking-stoves.
51. Shovels, tongs, and pokers.
52. Soldering-iron heaters.
53. Steam-heaters.
54. Steaming-tables.
55. Stove doors and windows.
56. Stove-hoods.
57. Stove-legs.
58. Stove lids and tops.
59. Stove-pipes.
60. Stove-pipe shelves.
61. Stove-pipe thimbles.
62. Stove-shelves.
63. Tea-kettles.
64. Vapor-stoves.

CLASS 127.—SUGAR AND SALT. (III.)

Sub-classes.

1. Bleaching cane-juice.
2. Bone-black.
3. Centrifugal machines.
4. Confectionery.
5. Cutters and crushers.
6. Cube sugar.
7. Defecating.
8. Diffusion apparatus.
9. Evaporating-pans.
10. Glucose.
11. Mixing.
12. Molds and carriages.
13. Pill-machines.
14. Refining salt.
15. Refining sugar.
16. Salt-making.
17. Sugar-making.
18. Vacuum-pans.

CLASS 128.—SURGERY. (XX.)

Sub-classes.

1. Arms and hands.
2. Atomizers.
3. Bandages.
4. Breast-pumps.
5. Catamenial sacks.
6. Coffins.
7. Coffin-trimmings.
8. Crutches.
9. Depurators.
10. Ear.
11. Eye.
12. Fracture apparatus.
13. Inhalers and respirators.
14. Legs and splints.
15. Medical spoons.
16. Movement cure.
17. Nasal douches.
18. Nipples.
19. Nursing-bottles.
20. Obstetrics.
21. Pessaries.
22. Pharmaceutical.
24. Scarificators and lancets.
24. Speculums.
25. Syringes.
26. Trusses.
27. Veterinary.

CLASS 129.—TANNING. (XI.)

Sub-classes.

1. Leaching.
2. Preparing hides.
3. Stretching.
4. Tanning.
5. Tanners' tools.
6. Tan-vats.

CLASS 130.—THRASHING. (VII.)

Sub-classes.

1. Band cutters and feeders.
2. Clover-hullers.
3. Corn-cribs.
4. Corn-husking implements.
5. Corn-husking machines.

Corn-shellers—

6. Breast and cylinder,
7. Disk-action,
8. Peripheral-action,
9. Ear-grasping,
10. Implements.

11. Cotton-seed hullers.
12. Fans and regulators.
13. Flax-thrashers.
14. Granaries and bins.

Grain-separators—

15. Shaking screws,
16. Rotary screws,
17. Gravity,
18. Oat, seed, and garlic,
19. Screws and riddles,
20. Stackers.

Straw-carriers—

21. Endless aprons,
22. Overhung rakes,
23. Reels,
24. Shaking tables,
25. Vibrators,
26. Walking rakes.

Thrashing-machines—

27. Cylinder-machines,
28. Flail-machines,
29. Dust-conveyers.
30. Vine and seed strippers.

CLASS 131.—TOBACCO. (II.)

Sub-classes.

1. Boxes, cases, and pouches.
2. Cigars and cigarettes.
3. Cigar-cutters.
4. Cigar holders and perforators.
5. Cigar-machines.
6. Curing and preparing.
7. Granulating.
8. Leaf-treating machines.
9. Molding cigars.
10. Mouth-pieces and stems.
11. Packing and bundling.
12. Pipes.
13. Pipe cartridges and cleaners.
14. Plug-making.
15. Plugs and packages.
16. Snuff manufacture.
17. Tobacco cutters.

CLASS 132.—TOILET. (V.)

Sub-classes.

1. Barbers' appliances.
2. Bathing appliances.
3. Combs.
4. Crimping and curling.
5. Hair-pins.
6. Hair and wigs.
7. Jewel-boxes.
8. Monstache-guards.
9. Nail-cleaners.
10. Nets.
11. Toilet-cases.
12. Tooth-picks.

CLASS 133.—TRUNKS AND EQUIPMENTS. (XI.)

Sub-classes.

1. Accouterments.
2. Awnings.
3. Cartridge-boxes.
4. Mail-bags.
5. Package-holders.
6. Portfolios and pocket-books.
7. Shawl-straps.
8. Tents.
9. Traveling-bags.
10. Trunks.

CLASS 135.—UMBRELLAS AND FANS. (V.)

Sub-classes.

1. Automatic fans.
2. Canes.
3. Combined cane and umbrella.
4. Covers.
5. Drip-cups.
6. Fan attachments.
7. Handles and sticks.
8. Ribs and stretchers.
9. Runners and notches.
10. Tip-cups.
11. Toilet-fans.
12. Umbrella-supporters.

CLASS 146.—VEGETABLE CUTTERS AND CRUSHERS. (II.)

Sub-classes.

1. Crushing and grating.
2. Fruit-squeezers.
3. Nut-crackers.
4. Parers and cutters.
5. Shellers and seeders.

CLASS 152.—WAGON, CAR, AND TRACK IRONS. (XIII.)

Sub-classes.

1. Car axles and boxes. Making
2. Car and locomotive irons.
3. Carriage clips and shackles.
4. Carriage-irons. Miscellaneous
5. Car wheels and tires.
6. Fifth-wheels. Making
7. Railway-chairs.
8. Repairing and capping rails.
9. Tire-heating furnaces.
10. Tire-upsetting.
11. Track-irons. Miscellaneous
12. Wagon axles and boxes. Making
13. Wagon tires and fellies. Making

CLASS 141.—WASHING APPARATUS. (VIII.)

Sub-classes.

1. Barrel and bottle washers.
2. Dish cleaners and drainers.
3. Tumbler-washers.
4. Window-washers.
5. Wool-washers.

CLASS 137.—WATER DISTRIBUTION. (IX.)

Sub-classes.

1. Aquariums.

Cocks and faucets—

2. Attachments,
3. Lock-faucets,
4. Reciprocating-valves,
5. Sliding-gates,
6. Tube-compressers,
7. Turning-plugs.

8. Clamps and couplings.
9. Cut-offs and spouts.
10. Fillers.
11. Fountains.
12. Funnels.
13. Hydrants and plugs.
14. Irrigating and sprinkling.
15. Leak-stoppers.
16. Mains and pipes.
17. Nozzles.
18. Sampling-tubes.
19. Service-pipe boxes.
20. Siphons.
21. Tanks.
22. Tapping-pipes.
23. Well-packing.
24. Well-tubing.

CLASS 138.—WATER-WHEELS. (IX.)

Sub-classes.

1. Breast.
2. Gates and chutes.
3. Overshot.
4. Tide.
5. Turbine.
6. Undershot.

CLASS 139.—WEAVING. (XXI.)

Sub-classes.

1. Bag.
2. Basket.
3. Button-hole.
4. Carpet-lining.
5. Carpet-bag looper.
6. Chenille.
7. Circular.
8. Cross-weaving.
9. Fabrics.
10. Fringes.
11. Hair-cloth.
12. Hand looms.
13. Heddle machines.
14. Heddles.
15. Irregular.
16. Jacquard mechanism.
17. Lappet.
18. Looms.
19. Narrow-ware.
20. Pickers.
21. Picker-checks.
22. Pile-fabric looms.
23. Reeds and reed-making.
24. Seats. Cane and straw
25. Shedding.
26. Shirred-fabric machines.
27. Shuttle-boxes.
28. Shuttle-checks.
29. Shuttle-guards.
30. Shuttle-motion.
31. Special machines.
32. Stopping.
33. Take-ups and let-offs.
34. Temples.
35. Tying in warps.
36. Weft-forks.
37. Wire.

CLASS 157.—WHEELWRIGHT-MACHINES. (XXII.)

Sub-classes.

1. Axle-gages.
2. Boring hubs.
3. Carriage-bow setters.
4. Fellies, making
5. Spoke-machines.
6. Tenoning and boring.
7. Tenoning spokes.
8. Tire-setters.
9. Wheelwright-machines.

CLASS 140.—WIRE-WORKING. (XIV.)

Sub-classes.

1. Bending and twisting.
2. Bird-cages.
3. Card-setting.
4. Coiling.
5. Fabrics and articles.
6. Heddle-machines.
7. Screens and sifters.
8. Straightening and measuring.
9. Tools.

CLASS 143.—WOOD-SAWING. (XXII.)

Sub-classes.

1. Band-saw mills.
2. Cant-dogs.
3. Circular-saw mills.
4. Circular sawing machines.
5. Edgers.
6. Firewood—circular saws.
7. Firewood—drag-saws.
8. Hand-saws.
9. Head-blocks.
10. Lath-sawing.
11. Log-turners.
12. Reciprocating saw-mills.
13. Re-sawing.
14. Saws.
15. Saw-bucks.
16. Saw-hanging.
17. Saw-mill appliances.
18. Saw-mill dogs.
19. Saw-teeth.
20. Sawing shingles.
21. Scroll-sawing machines.

CLASS 142.—WOOD-TURNING. (XXII.)

Sub-classes.

1. Cork-machines.
2. Gage-lathes.
3. Lathe-tools.
4. Rope-molding machines.
5. Spoke-lathes.
6. Turning axles.
7. Turning bungs.
8. Turning ovals.
9. Turning irregular forms.
10. Turning regular forms.
11. Wooden-screw machines.

CLASS 144.—WOOD-WORKING MACHINES. (XXII.)

Sub-classes.

1. Bending wood.
2. Boring.
3. Brush-wood machines.
4. Carving.
5. Clapboard-machines.
6. Clothes-pin machines.
7. Chair-stuff shaping.
8. Comb-making.
9. Cutter-heads.
10. Cutting dye-wood.
11. Cutting gears.
12. Cutting shingles.
13. Cutting veneers.
14. Dovetailing.
15. Fence-pickets, making
16. Matches, making
17. Molding.
18. Mortising.
19. Osier-peelers.
20. Packing shingles.
21. Paneling.
22. Pencil-wood, making
23. Planer attachments.
24. Planers, rotary
25. Planers, sliding
26. Planing clapboards and shingles.
27. Planing and matching.
28. Planing and sawing.
29. Rossing bark.
30. Sash and blinds, boring and mortising
31. Sash and blinds, making
32. Sash and blinds, tenoning
33. Shingle-binders.
34. Shoe-pegs, making
35. Skewers, making
36. Slivering.
37. Special work.
38. Splitting and bundling.
39. Tenoning.
40. Universal joiners.
41. Wiring blinds.
42. Wooden pins, making
43. Wooden trays, making
44. Wood ornamentation.
45. Working rattan.

CLASS 145.—WOOD-WORKING TOOLS. (XXII.)

Sub-classes.

1. Augers.
2. Auger-handles.
3. Bench-dogs.
4. Bench-planes.
5. Bit-stocks.
6. Box-openers.
7. Box-scrapers.
8. Chisels.
9. Clamps.
10. Chalk-line holders.
11. Gages.
12. Hammers and hatchets.
13. Hollow augers.
14. Miter-boxes.
15. Nail-extractors.
16. Saw-handles.
17. Screw-drivers.
18. Spoke-shaves.
19. Tools.
20. Tool-handles.
21. Work-benches.

Foreign Patents in Possession of the Office.

Copies of patents issued by other governments have been received in exchange for those of the United States, as follows:

ENGLISH PATENTS.

By an arrangement made about a year ago, copies of English patents are received from the Great Seal Patent Office through the Government mail, by the courtesy of the State Department, immediately upon publication. The Office is now in possession of complete sets of the old law series, 1617–1852, Nos. 1 to 14,359, text and plates, plates on muslin, bound separately, 816 volumes; series of 1852, 1852–1875, same form, 1,750 volumes; and series 1876, 1876 to date, text and plates bound together, 8vo., 120 volumes; a total of 2,676 volumes.

Indexes to the above, alphabetical, chronological, and subject-matter, to the year 1876, have been received; and also complete sets of abridgments to the year 1866.

GERMAN PATENTS.

Complete sets from July 1, 1877, to date, text and plates, 30 volumes.

FRENCH PATENTS.

First series, 1791–1844, comprising 12,543 specifications, 93 volumes text, 46 volumes plates. Second series, 1844–1863, comprising about 6,500 specifications, 87 volumes text, 44 volumes plates. Third series, 1871–1875, including specifications from No. 91,631 to 106,000, 14 volumes text, 14 volumes plates. These are all that have been printed. The patents for the years 1864 to 1870, inclusive, numbered from 60,501 to 91,630, have not been published by the French Government.

AUSTRIAN PATENTS.

Series, 1821–1847, 6 volumes, 3 volumes plates.

BELGIAN PATENTS.

Series, 1854–1877, 24 volumes text, 6 volumes plates.

CANADIAN PATENTS.

1824–1855, 2 volumes.

Italian, Swedish, and Norwegian patents, imperfect sets as far as published. The same of patents issued by New Zealand and Victoria.

Summary of the business transactions of the United States Patent Office for the calendar year ending December 31, 1878, as shown by the Annual Report of the Commissioner of Patents to Congress.

APPLICATIONS RECEIVED, PATENTS ALLOWED, &c.

Applications for patents, including designs	20,260
Applications for reissues of patents	638
Patents issued, including designs	12,935
Patents reissued	509
Caveats filed	2,755
Patents expired during the year, exclusive of designs	2,647
Patents withheld for non-payment of final fee	832
Applications for registration of trade-marks	1,577
Trade-marks registered	1,455
Applications for registration of labels	700
Labels registered	492

Number of patents issued to the several States and Territories, with the ratio of population to each patent granted; also, the number of patents issued to subjects or citizens of foreign governments.

States and Territories.	Patents and designs.	One to every
Alabama	39	25,563
Arizona Territory	2	4,829
Arkansas	45	10,776
California	320	1,750
Colorado	35	1,138
Connecticut	529	1,015
Dakota Territory	5	2,836
Delaware	39	3,209
District of Columbia	146	908
Florida	3	65,582
Georgia	105	1,127
Idaho Territory	2	7,499
Illinois	908	2,547
Indiana	345	4,842
Iowa	325	3,676
Kansas	63	5,784
Kentucky	145	9,110
Louisiana	76	9,564
Maine	140	4,477
Maryland	183	4,267
Massachusetts	1,199	1,216
Michigan	390	3,036
Minnesota	129	3,408
Mississippi	38	21,787
Missouri	315	5,499
Montana Territory	3	3,865
Nebraska	50	2,459
Nevada	36	1,189
New Hampshire	92	3,459
New Jersey	490	1,870
New Mexico Territory	3	30,624
New York	2,509	1,685
North Carolina	53	20,214
Ohio	1,070	2,490
Oregon	35	2,568
Pennsylvania	1,296	2,718
Rhode Island	190	1,143
South Carolina	28	25,200
Tennessee	98	12,842
Texas	130	6,219
Utah Territory	7	12,398

Number of patents issued, &c.—Continued.

States and Territories.	Patents and designs.	One to every
Vermont	109	3,032
Virginia	113	10,842
Washington Territory	13	1,842
West Virginia	58	7,620
Wisconsin	251	4,218
Wyoming Territory	8	1,138
United States Army	4	.....
United States Navy	1	.....
Total	12,354	

Of the patents, including designs, there were granted to the—	
Citizens of the United States	12,354
Subjects of Great Britain, including Canada	336
Subjects of France	60
Subjects of Germany	98
Subjects of other foreign governments	87
Total	12,935

RECEIPTS.

Detailed statement of all moneys received for patents, for copies of records or drawings, or from any other source whatever.

Applications:		
Cash received	$581,927	00
Cash refunded	1,300	00
Net cash	580,627	00
Certificates of deposit	66,113	00
Total cash and certificates	646,740	00
Copies:		
Cash received	46,905	37
Cash refunded	1,319	35
Net cash	45,586	02
Certificates of deposit	2,579	05
Total cash and certificates	48,165	07
Recording assignments:		
Cash received	20,359	55
Cash refunded	639	00
Net cash	19,720	55
Certificates of deposit	737	05
Total cash and certificates	20,457	60
For subscriptions to Official Gazette:		
Cash received	6,499	28
Cash refunded	54	80
Net cash	6,444	48
Certificates of deposit	328	40
Total cash and certificates	6,772	88
Registration of labels:		
Cash received	4,002	00
Cash refunded	960	00
Net cash	3,042	00
Certificates of deposit	198	00
Total cash and certificates	3,240	00
Aggregates.		
Cash received	659,693	20
Cash refunded	4,273	15
Net cash	655,420	05
Certificates of deposit	69,955	50
Total cash and certificates	**725,375**	**55**

EXPENDITURES.

Amount expended under the several appropriations, from January 1, 1878, to January 1, 1879.

Salaries	$380,631	24
Gazette	35,041	63
Contingent expenses	78,065	04
Copies of drawings	50,801	15
Tracings	8,105	29
Photolithographing	40,438	55
Total	593,082	89

RECEIPTS OVER EXPENDITURES.

Total receipts	725,375	55
Total expenditures	593,082	89
	132,292	**66**

OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

VOL 13 & 14

1878

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